

Solar Observations

Volume 2 1983 to 1995



by Bertus (“Bert”) Rhebergen

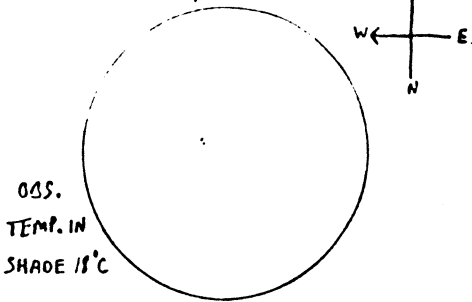
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of the Royal Astronomical Society of Canada



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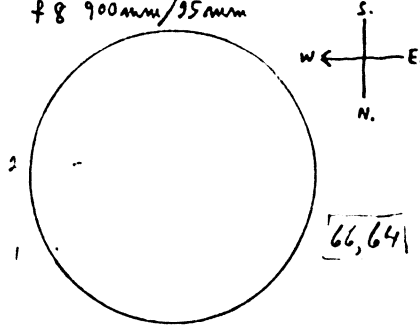
SEPT. 25/93 2:10 P.M. E.D.T.
f 8 900mm/25mm



OBS.
TEMP. IN
SHADE 18°C

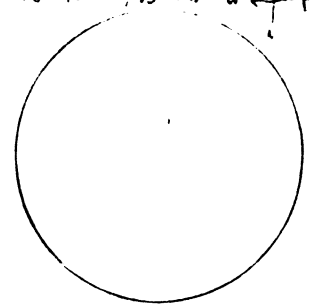
SEEING $\frac{8}{10}$; STEADY.
TRANSP. $\frac{2}{10}$; DEVELOPING OVERCAST.
NO SUNSPOT COUNT.

OCT. 8/93 6:30 P.M. E.D.T.
f 8 900mm/25mm



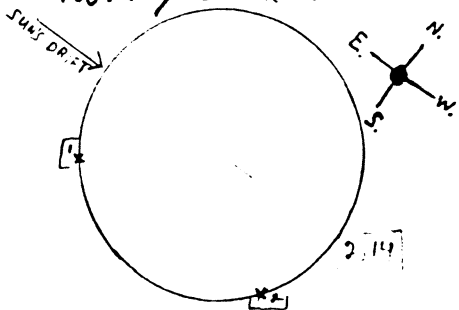
SETTING SUN DISAPPEARING
IN EVENING HAZE.
NO SUNSPOT COUNT,
ESTIMATED COUNT $[(10 \times 2) + 3] = 23$ (10/10)

NOV. 2/93 11:50 AM
f 8 900mm/25mm



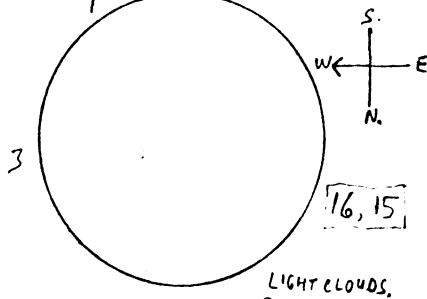
DEVELOPING OVERCAST.
TRANSP. $\frac{1}{10}$.
NO SUNSPOT COUNT.

JUNE 21/94 8:48 P.M. E.D.T.
700mm/18mm f 11.6



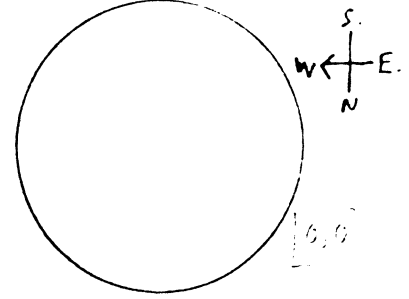
SUN SETTING INTO HORIZON
TREES.
SEEING $\frac{2}{10}$.
TRANSP., SUN OBSERVED IN CLEAR SKY
THROUGH WINDOW SCREEN.
NO SUNSPOTS SEEN.
700mm/18mm, 8:48 P.M.

JUNE 26/94 2:00-2:25 P.M. E.D.T.
900mm/25mm, 18mm, 12mm



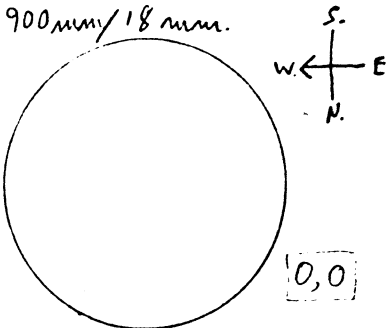
LIGHT CLOUDS.
SEEING $\frac{8}{10}$, TRANSP. $\frac{8}{10}$ $\frac{7}{10}$
NO SPOTS OBSERVED.
SUNSPOT GROUP SEEN BY ERIC
GOLDING, 2:20 P.M.
SPOT # $[(10 \times 1) + 3] = 13$

MAY 26/95 7:15-7:20 E.D.T.
f 8 900mm/18mm



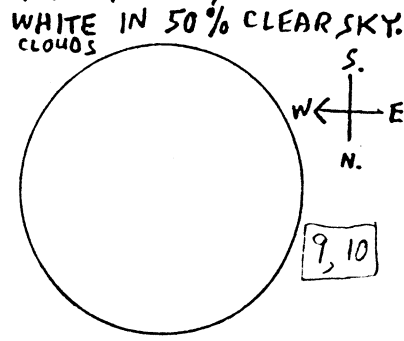
SEEING $\frac{7}{10}$, SMALL RIPPLES.
TRANSP., BLUE SKY WHITE
IN SUN'S AREA. 18mm
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$.

MAY 27 3:22 P.M. E.D.T.
f 8 900mm/18mm.



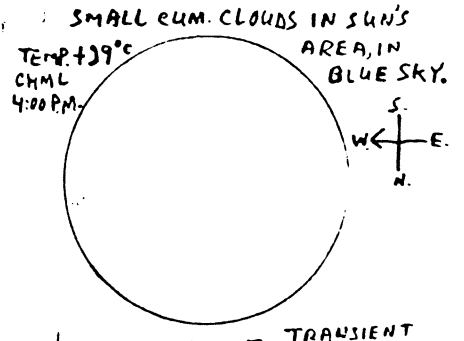
SEEING $\frac{7}{10}$, SMALL RIPPLES
TRANSP. THINNEST HAZE IN
BLUE SKY. RESOLUTION (BECAUSE
OF WIND) $\frac{4}{10}$.
NO SUNSPOTS OBSERVED.; 18mm.
 $[(10 \times 0) + 0] = 0$

MAY 30/95, 4:22-4:24 P.M. E.D.T.
f 8 900mm/18mm

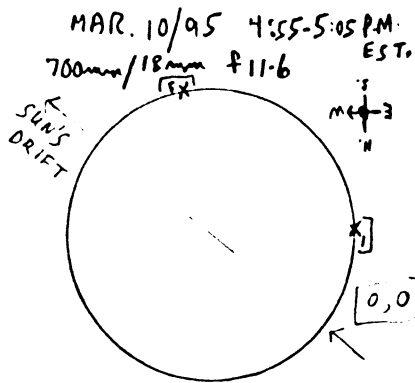


WHITE IN 50% CLEAR SKY.
CLOUDS
SEEING $\frac{8}{10}$ SMALL RIPPLES
TRANSP. $\frac{9}{10}$. RESOLUTION (BE-
CAUSE OF WIND) $\frac{6}{10}$.
REL. # OF SUNSPOTS
 $[(10 \times 0) + 0] = 0$; 4:24 P.M.
E.G.
900mm NO SPOTS,
18mm NO FACULAE.

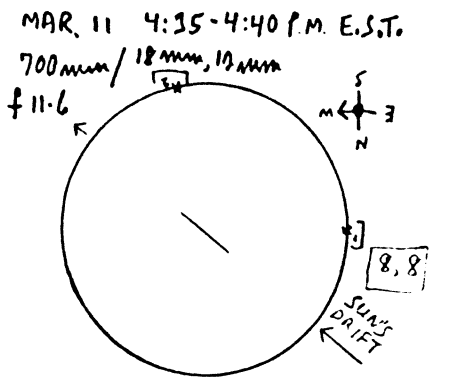
JULY 21/95 4:05-4:20 P.M. E.D.T.
f 8 900mm/18mm



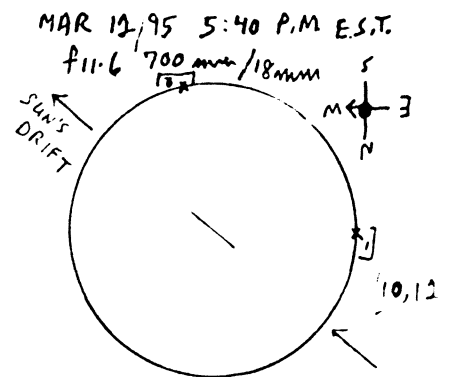
TEMP +29°C
CHML
4:00 P.M.
SMALL cum. CLOUDS IN SUN'S
AREA, IN
BLUE SKY.
SEEING $\frac{8}{10} \leftrightarrow \frac{7}{10}$ TRANSIENT
RIPPLES.
TRANSP. $\frac{8}{10}$. 'GRAIN' OBSERVED
ON SUN; MESH-SCREEN APPEARANCE.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$.
4:20 P.M.; 900mm/18mm.



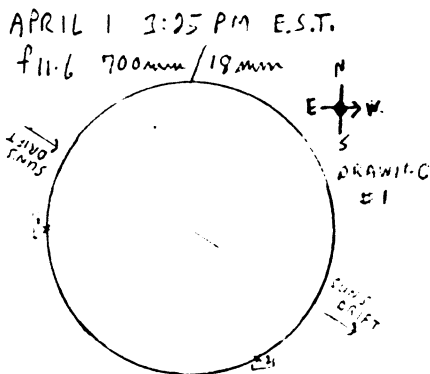
SKY TOTALLY CLEAR IN SUN'S AREA.
SEEING $\frac{7}{10}$; TRANSP, LANDMARKS
SHOW SHARP DETAIL.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$, 18mm.



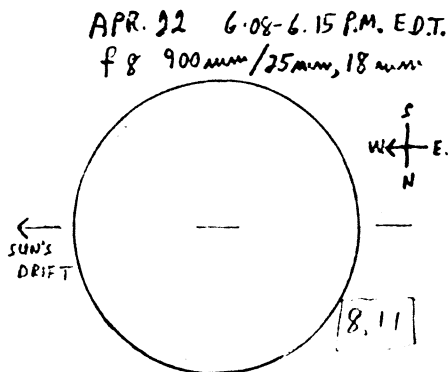
SEEING $\frac{7}{10}$, RIPPLES ALONG
SOLAR LIM. TRANSP, THIN
CIRRUS CLOUD IN SUN'S AREA.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$, $\frac{700mm}{18mm}$



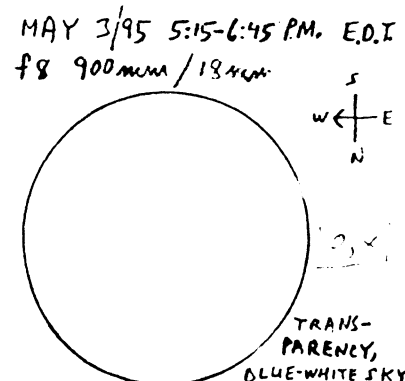
SKIES TOTALLY CLEAR.
SEEING $\frac{7}{10}$, RIPPLES; TRANSP, SKY
WHITE-BLUE IN SUN'S AREA.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$, 18mm



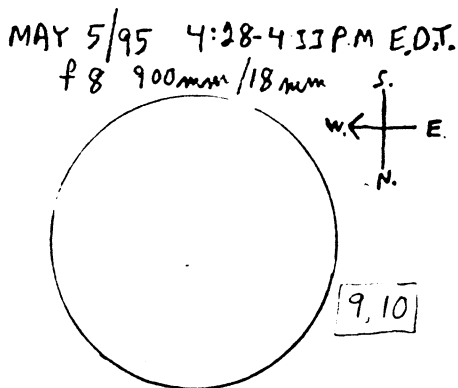
LIGHT 'OVERCAST' CLOUD IN
SUN'S AREA. STEADY IMAGE
TRANSPARENCY $\frac{5}{10}$.



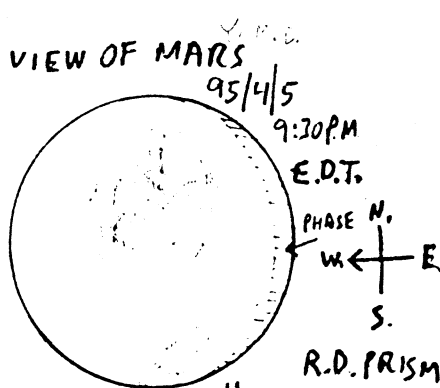
SKY CLEAR IN SUN'S AREA
NO SPOTS OBSERVED.
SEEING $\frac{7}{10}$; TRANSP $\frac{7}{10}$, FAC. EASILY SEEN.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$; $\frac{900mm}{18mm}$



SMALL CLEAR PATCHES IN 80%
CLOUDY SKY. SEEING $\frac{8}{10}$, STEADY.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$; 18mm.
BOB BOTTTS REPORTED NO SPOTS
4/29.

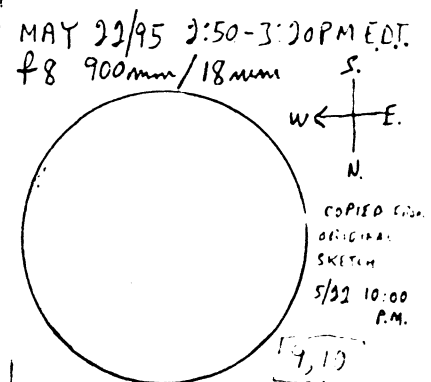


LARGE CUM. CLOUDS IN
BLUE SKY, SEEING $\frac{8}{10}$, STEADY.
TRANSP, SKY BLUE-WHITE IN
SUN'S AREA.
REL. # OF SPOTS
 $[(10 \times 0) + 0] = 0$; $\frac{900mm}{18mm}$



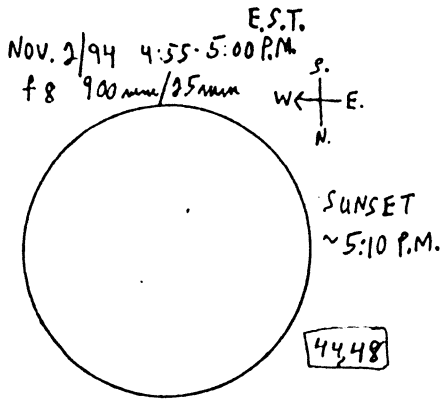
SEEING $\frac{10}{10}$!!
UNIFORM SHADE OF GREY,
8" CELESTRON TELESCOPE
9mm SERIES 3000 EYEPiece.
IMAGE QUALITY SIMILAR
TO LOOKING THRU 7X35
BINOCULARS. !!

NOTES WRITTEN AT 11:00 P.M.

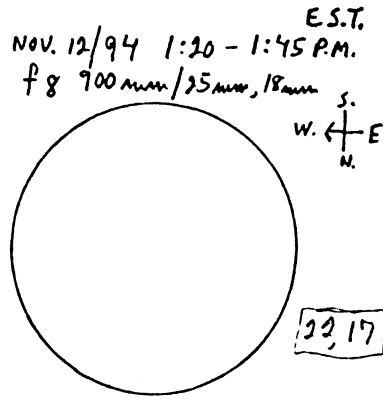


VIEW INTERRUPTED BY
LARGE CLOUDS IN 20%
CLEAR SKY.
SEEING $\frac{5}{10} \leftrightarrow \frac{8}{10}$.
TRANSP. $\frac{8}{10}$.
OF SPOTS $[(10 \times 0) + 0] = 0$; 18mm

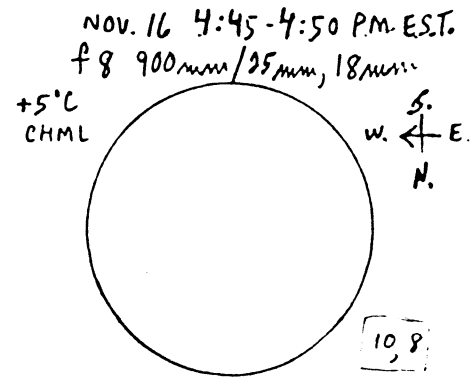
5 83:175



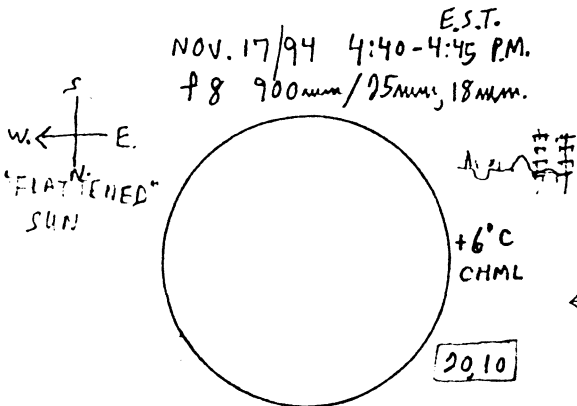
SUN SETTING INTO CIRRO-STRATUS CLOUD COVER. SEEING $\frac{4}{10}$; TRANSP. $\frac{2}{10} \leftrightarrow \frac{9}{10}$. CLOUD PREVENTS SUNSPOT COUNT.



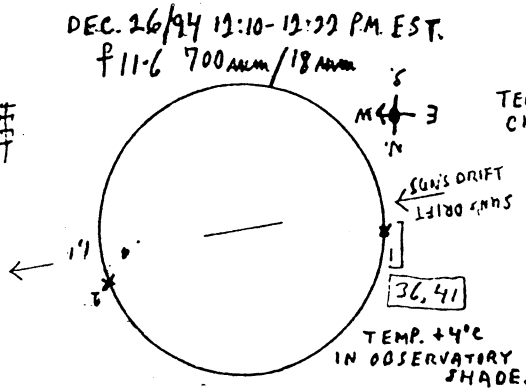
FAST-MOVING THIN OVERCAST. SEEING, STEADY. TRANSPARENCY $\frac{2}{10} \leftrightarrow \frac{5}{10}$. NO SUNSPOTS VISIBLE.



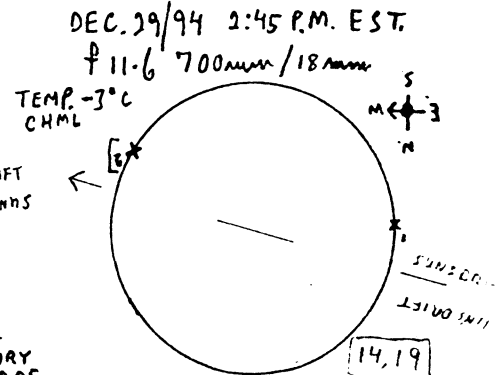
SUNSET BEHIND BUILDING LEVEL WITH DISTANT HORIZON, APPROXIMATELY 4:50 P.M. SEEING $\frac{2}{10}$; NO SUNSPOTS VISIBLE.



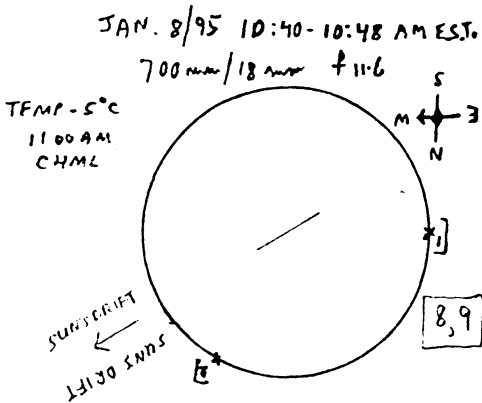
SEEING; SUN SETTING IN "LAYERED" ATMOSPHERE; RIPPLES. NO SPOTS VISIBLE.



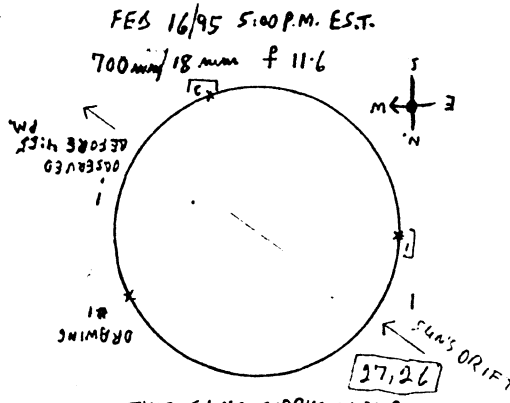
SEEING $\frac{7}{10}$, RIPPLES. TRANSP $\frac{9}{10}$ SKY TOTALLY CLEAR, NO HAZE IN SUN'S AREA. REL. # SPOTS $[(10 \times 2) + 2] = 22$; SEEING $\frac{6}{10}$, FUZZY. SUNSPOT # $[(10 \times 0) + 0] = 0$. 12:22 P.M.; 700mm/12mm. COPIED 12/27 11:30 P.M.



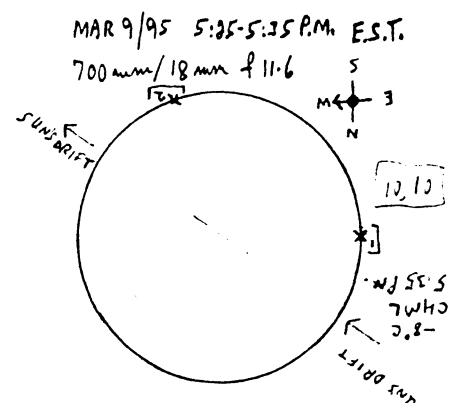
SEEING $\frac{7}{10}$, RIPPLES. TRANSP. $\frac{7}{10}$, LIGHT CIRRO-STRATUS CLOUD. REL. # SPOTS $[(10 \times 0) + 0] = 0$. 2:45 P.M.



FAST MOVING LIGHT CLOUDS IN SUN'S AREA, IN BLUE SKY. SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$ REL. # SPOTS $[(10 \times 0) + 0] = 0$; 700mm/18mm

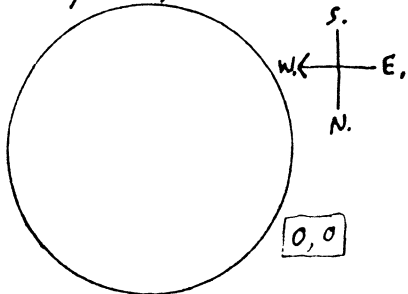


THICKENING CIRRUS CLOUD SEEING $\frac{6}{10}$ TRANSP. $\frac{6}{10} \rightarrow \frac{2}{10}$. REL. # OF SPOTS $[(10 \times 5) + 3] = 53$. 700mm/18mm 5:00 P.M.



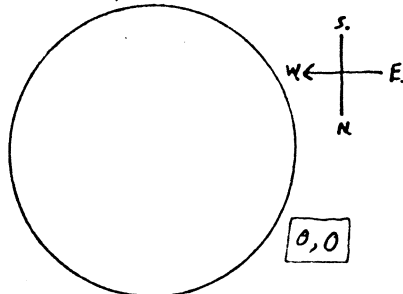
SKIES TOTALLY CLEAR TELESCOPE JIGGLED IN BREEZE. (SMALL BRANCHES MOVE IN BREEZE) REL. # OF SPOTS $[(10 \times 0) + 0] = 0$; 18mm.

JUNE 3/94 5:50-5:55 P.M. E.D.T.
900mm/25mm, 18mm, 12mm, f8



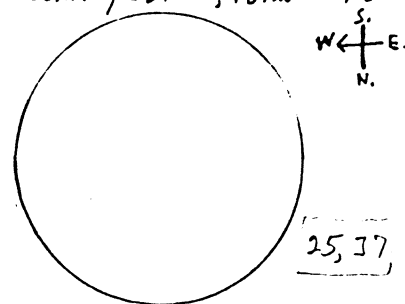
SEEING $\frac{7}{10}$, RIPPLES ALONG LIMB. (25mm)
TRANSP. BLUE-CLEAR SKY.
REL.# OF SPOTS [(10x0)+0]=0
NO IDENTIFIABLE FACULAE

JUNE 5 5:10-5:15 P.M. E.D.T.
900mm/18mm f8



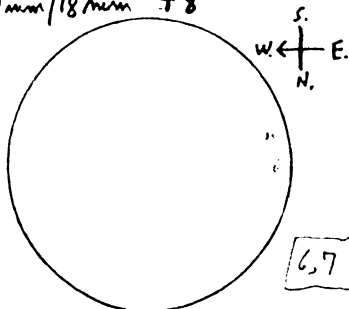
SEEING $\frac{8}{10}$, STEADY
TRANSP. $\frac{7}{10}$, CIRRUS HAZE
IN SUN'S AREA.
REL.# OF SPOTS [(10x0)+0]=0; (18mm)

JUNE 19/94 8:00-8:05 P.M. E.D.T.
900mm/25mm, 18mm f8



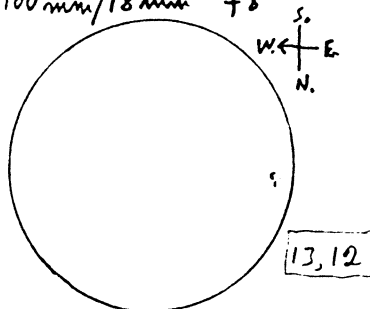
SEEING $\frac{8}{10}$, STEADY
TRANSP. $\frac{8}{10}$, FAC. EASILY SEEN.
LIGHT CIRRUS HAZE IN SUN'S
AREA.
REL.# OF SPOTS [(10x0)+0]=0
(18mm)

JULY 29/94 5:00-5:10 P.M. E.D.T.
900mm/18mm f8



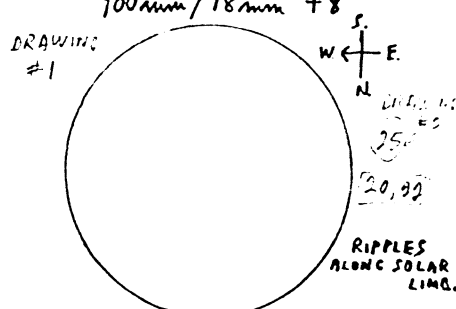
SEEING $\frac{7}{10}$ to $\frac{8}{10}$; TRANSP. $\frac{9}{10}$
GRANULATION SEEN ALONG LIMB.
SKY BLUE-CLEAR IN SUN'S AREA.
REL.# OF SPOTS [(10x0)+0]=0; 18mm.

JULY 30 3:05-3:10 P.M. E.D.T.
900mm/18mm f8



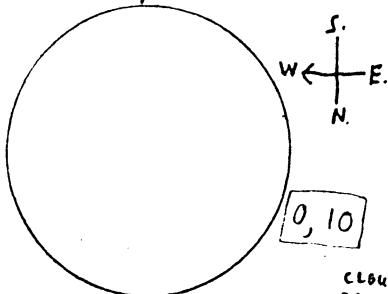
SEEING $\frac{8}{10}$, STEADY
TRANSP. $\frac{7}{10}$, GRAIN DETECTED?
CLEAR SKY WITH CUM. CLOUDS
ALONG HORIZON.
REL.# OF SPOTS [(10x0)+0]=0; 18mm.

SUNDAY, DRAWING #1
SEPT. 18/94 11:50-11:55 A.M. E.D.T.
900mm/18mm f8



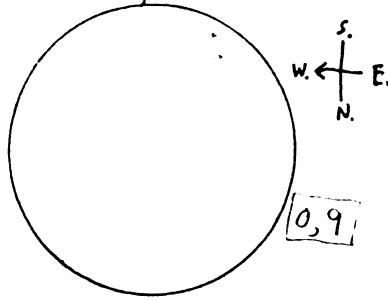
SKY 10% CLEAR WITH
FAST MOVING CLOUDS.
NO FACULAE OBSERVED.
REL.# SPOTS [(10x0)+0]=0; 18mm

SEPT. 20/94 4:52-4:58 P.M. E.D.T.
900mm/18mm f8



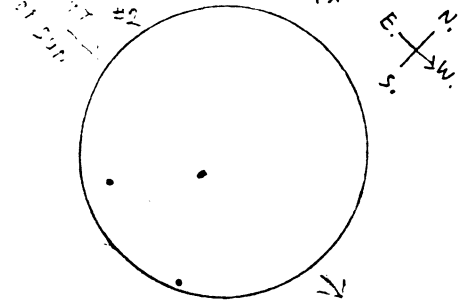
SKY 80% BLUE-CLEAR.
SEEING $\frac{7}{10}$. TRANSPARENCY, THIN
CIRRUS HAZE IN SUN'S AREA.
REL.# OF SPOTS [(10x0)+0]=0; 18mm.

SEPT. 21 4:50-4:58 P.M. E.D.T.
900mm/18mm, 25mm



SKY CLEAR IN SUN'S AREA.
SEEING $\frac{7}{10}$, RIPPLES ALONG LIMB.
TRANSP. $\frac{8}{10}$, FAC. EASILY SEEN.
REL.# OF SPOTS [(10x0)+0]=0; $\frac{900mm}{18mm}$

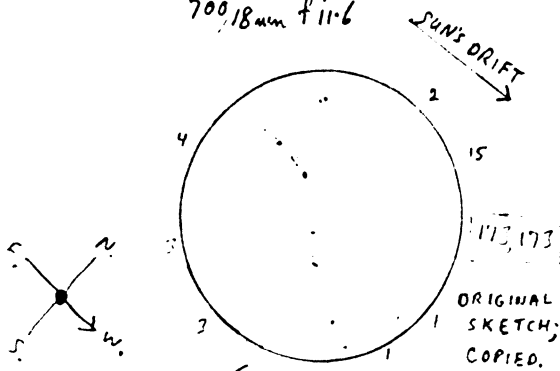
OCT. 18/94 6:00 P.M.
AT 1X



SEEN THROUGH FILTER
AT 1X
BY S.C.S.
6:00 P.M. E.D.T.
SKY TOTALLY CLEAR.

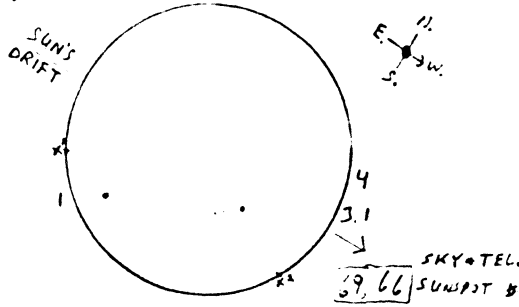
③ 81:167

APRIL 20/92 6:20 P.M. E.D.T.
700mm/18mm f11.6



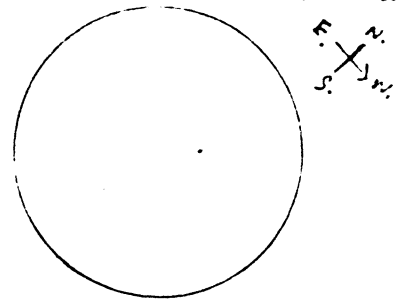
SEEING $\frac{5}{10}$ } THROUGH WINDOW
TRANSP. $\frac{4}{10}$ } SCREEN.
SKY HAZY.
SUNSPOT COUNT $[(10 \times 7) + 2] = 99$, $\frac{700\text{mm}}{18\text{mm}}$

SEPT. 22/92 6:00 P.M. E.D.T.
700mm/18mm f11.6
SKY CLEAR IN SUN'S AREA



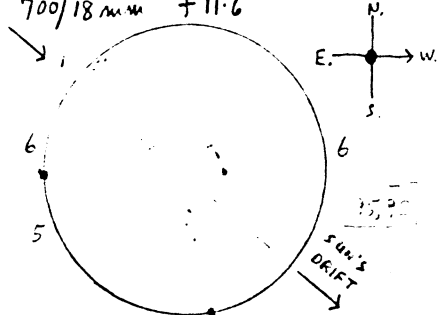
SEEING $\frac{4}{10}$, THROUGH WINDOW SCREEN.
TRANSPARENCY (RESOLUTION) $\frac{6}{10}$.
SUNSPOT COUNT $[(10 \times 4) + 7] = 49$, $\frac{700\text{mm}}{12\text{mm}}$.
 x, x^2 ; POINTS OF CONTACT, SOLAR LIMB WITH EDGE OF EYEPIECE.

MAR 2/93 5:25 P.M. E.S.T.
HAND-HELD 15x80mm
SUN SETTING IN EV. HAZE



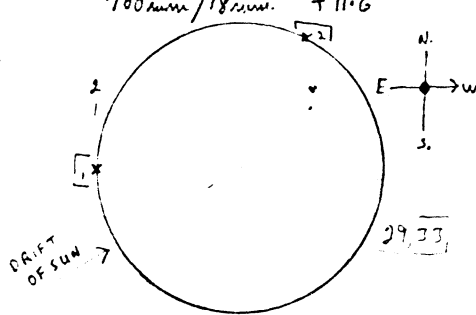
VERY FAST DRAWING PRECLUDES SUNSPOT COUNT, PRESSED FOR TIME.
SEEING $> \frac{5}{10}$; EVENING TRANSP. $< \frac{5}{10}$.

APR. 22/93 5:28-5:35 E.D.T.
700/18mm f11.6



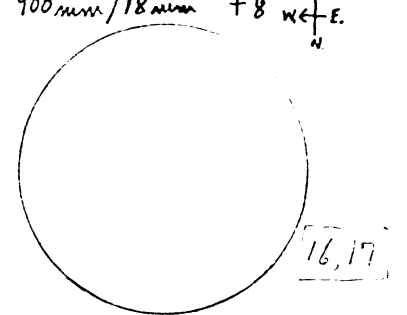
SEEING $\frac{8}{10}$, STEADY } THROUGH WINDOW SCREEN.
RESOLUTION $\frac{4}{10}$ }
HAZE IN SUN'S AREA.
REL. # SPOTS $[(10 \times 4) + 18] = 58$; $\frac{700}{12\text{mm}}$; RES. $\frac{1}{10}$.

NOV. 8, 93 9:08 AM. E.S.T.
700mm/18mm. f11.6



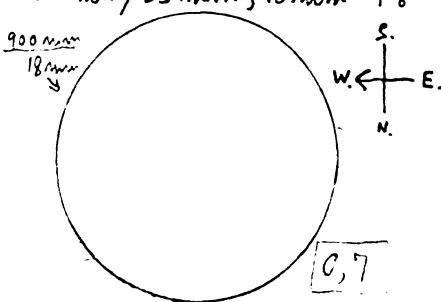
SEEING $\frac{7}{10}$, TRANSP. $\frac{7}{10}$.
LIGHT WHITE CLOUD COVER IN SUN'S AREA.
REL. # SPOTS $10 \times 2 + 23 = 43$; $\frac{700\text{mm}}{18\text{mm}}$; 9:19 A.M.

APRIL 1/94 5:25 P.M. E.S.T.
900mm/18mm f8



SKY CLEAR IN SUN'S AREA
SEEING + TRANSP. $\frac{8}{10}$; GRANULATION VISIBLE? ALONG LIMB.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$

APRIL 4/94 4:50-5:00 P.M. E.D.T.
900mm/25mm, 18mm f8

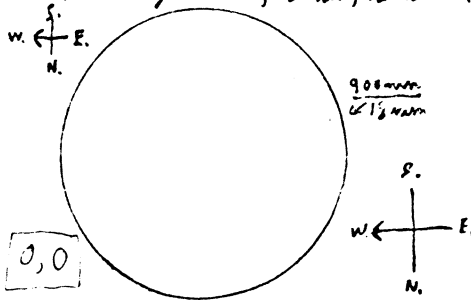


THIN WISPY CIRRUS IN 95% BLUE SKY. RIPPLES ALONG SOLAR LIMB.
SEEING + TRANSP. $\frac{7}{10}$.

REL. # OF SUNSPOTS $[(10 \times 0) + 0] = 0$
AURORAES 94/4/3-4

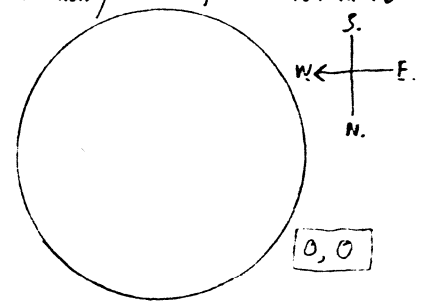
UPTO 20° ELEVATION FROM HORIZON.
ARC → RAYS.

APRIL 7/94 5:30-5:30 P.M. E.D.T.
900mm/25mm, 18mm, 12mm f8



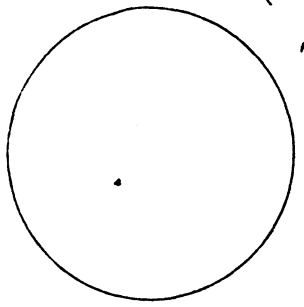
SKY TOTALLY CLEAR.
SEEING $\frac{7}{10}$, RIPPLES.
TRANSP. $\frac{8}{10}$, FACULAE STRUCTURE DETECTED ALONG LIMB.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$

MAY 27/94 5:00-5:10 P.M. E.D.T.
900mm/25mm, 18mm 12mm f8



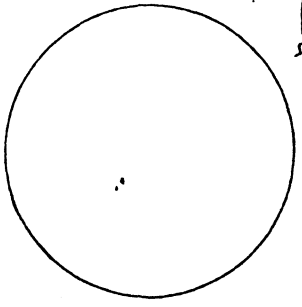
SKY BLUE-CLEAR IN SUN'S AREA.
SEEING $\frac{8}{10}$, STEADY
TRANSP. $\frac{8}{10}$, FAC. EASILY SEEN.
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$

NOV 14/91
-8 900mm
25mm



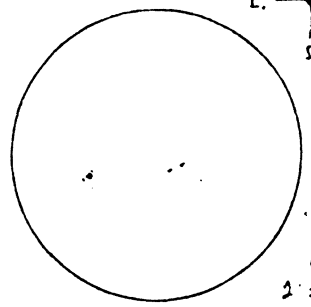
NOV. 14/91 4:00 P.M. E.S.T.
HAZE; TRANSPARENCY 1/10.

NOV. 28
7x35
WITH FILTER



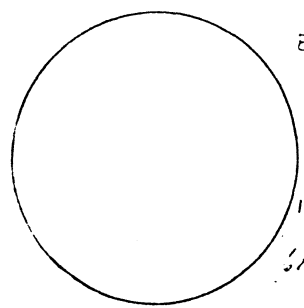
DRIFTING CLOUD IN 50% CLEAR
SKY. CAR ROCKS IN WIND.
NOV 28 12:15 P.M. E.S.T.

NOV. 30
+11 700mm
18mm



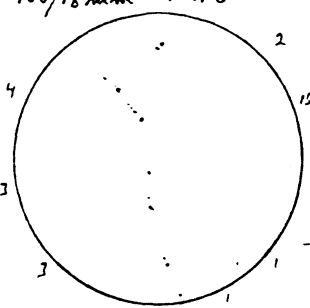
SKY 10% CLEAR WITH FAST
MOVING CLOUDS.
WIND ROARS THROUGH OB-
SERVATORY TREES.
SUNSPOT COUNT $[(10 \times 3) + 11] = 41$

APRIL 3/92
7x35 WITH FILTER



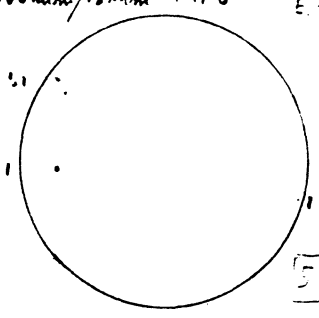
APRIL 3/92 4:30 P.M. E.S.T.
TRANSP. 1/10, DRIFTING CLOUD
IN HAZY SKY.

APRIL 20 6:30 P.M. E.D.T.
700/18mm +11.6



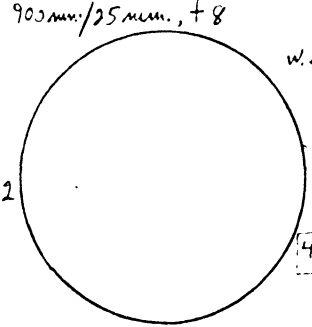
SEEING 5/10 } THROUGH SCREEN
TRANSP. 4/10 } OF KITCHEN WINDOW.
SKY HAZY.
SUNSPOT COUNT $[(10 \times 7) + 29] = 99$, 700mm/18mm.
COPIED FROM ORIGINAL SKETCH, 7:15 P.M.

JULY 27 8:35-8:40 P.M. E.D.T.
700mm/18mm +11.6



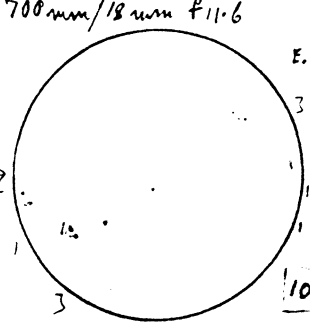
SEEING 6/10 } THROUGH SCREEN
TRANSP. 8/10 } OF KITCHEN WINDOW.
CLEAR SKY IN SUN'S AREA.
SUNSPOT COUNT $[(10 \times 4) + 7] = 44$.
700/12mm, 8:40 P.M., SEEING 5/10.

OCT. 12/92 1:50 P.M. E.D.T.
900mm/25mm, +8



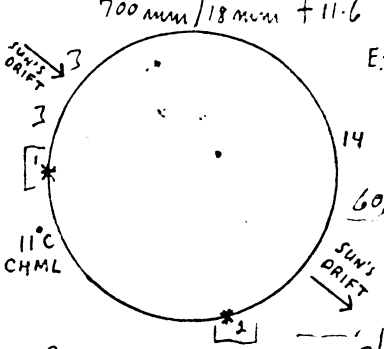
BROKEN CLOUD DECK MOVING
RAPIDLY PAST SUN,
FOLLOWED BY OVERCAST.
RAPID SUNSPOT COUNT
 $[(10 \times 1) + 2] = 12$, 900mm/25mm, 1:50 P.M.

DEC. 10 11:35-11:50 AM. E.S.T.
700mm/18mm +11.6



HOUSE BLOCKS MOST OF STRONG WIND.
BROKEN CLOUDS MOVE RAPIDLY PAST SUN.
SKIES 40% CLEAR.
SEEING 4/10, TRANSP. 8/10.
SUNSPOT COUNT, 11:50
 $[(10 \times 6) + 10] = 70$; 700mm/18mm.

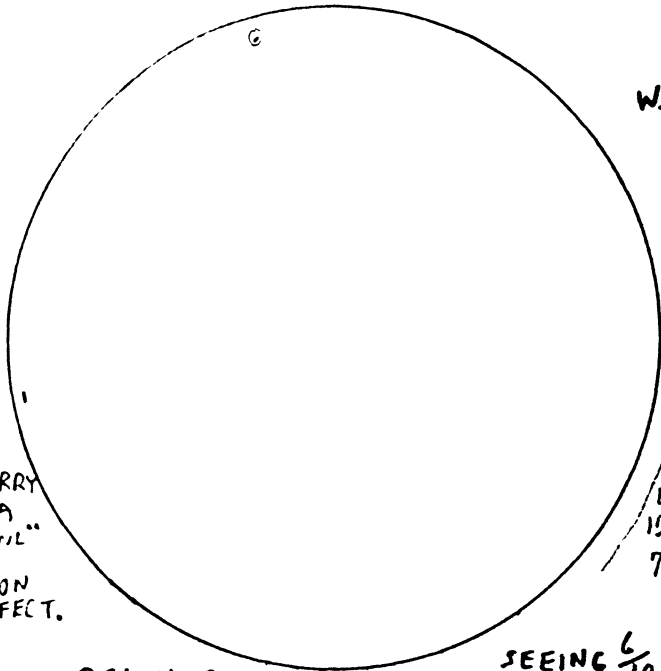
MAR 30/93 4:45 P.M. E.S.T.
700mm/18mm +11.6



ROUGH SKETCH, COPIED 3/30
SKY TOTALLY CLEAR
SEEING + TRANSP. > 7/10.
REL. # SUNSPOTS $[(10 \times 3) + 20] = 50$
700mm; 4:50 P.M.; SEEING 7/10

JULY 12/95 4:02-4:07 P.M. E.D.T.
 THIN CIRRUS BANDS IN BLUE SKY.
 SEEING $\frac{7}{10}$, SMALL RIPPLES.
 TRANSPARENCY $\frac{7}{10}$, HAZE IN SUN'S AREA.

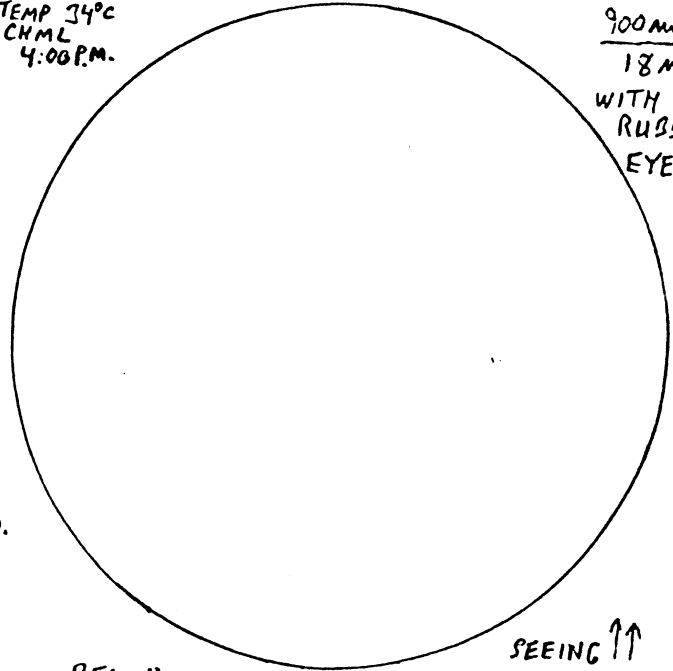
f8 $\frac{900\text{mm}}{25\text{mm}}$



REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$; $\frac{900\text{mm}}{12\text{mm}}$; 4:22 P.M. SEEING $\frac{6}{10}$.

JULY 13 4:10-4:18 P.M. E.D.T.
 HEAT-HAZE IN CLEAR SKY.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSP. $\frac{7}{10}$, NO GRAIN OBSERVED.

TEMP 34°C
 CHML
 4:00 P.M.

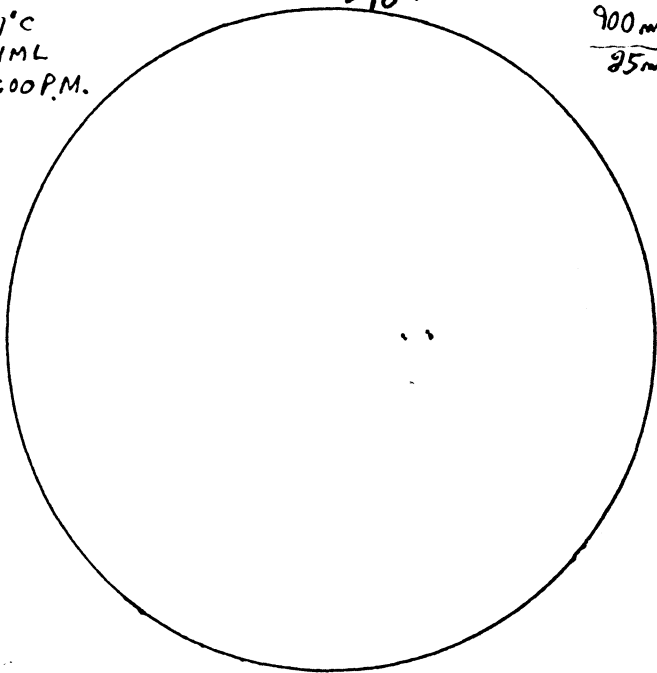


REL. # OF SUNSPOTS $[(10 \times 1) + 2] = 12$; 4:15 P.M. $\frac{900\text{mm}}{18\text{mm}}$.

JULY 14 4:00-4:04 P.M. E.D.T.
 THIN CIRRUS CLOUDS IN SUN'S AREA IN
 SEEING $\frac{8}{10}$, STEADY IMAGE. BLUE SKY.
 TRANSPARENCY $\frac{8}{10}$.

37°C
 CHML
 4:00 P.M.

$\frac{900\text{mm}}{25\text{mm}}$

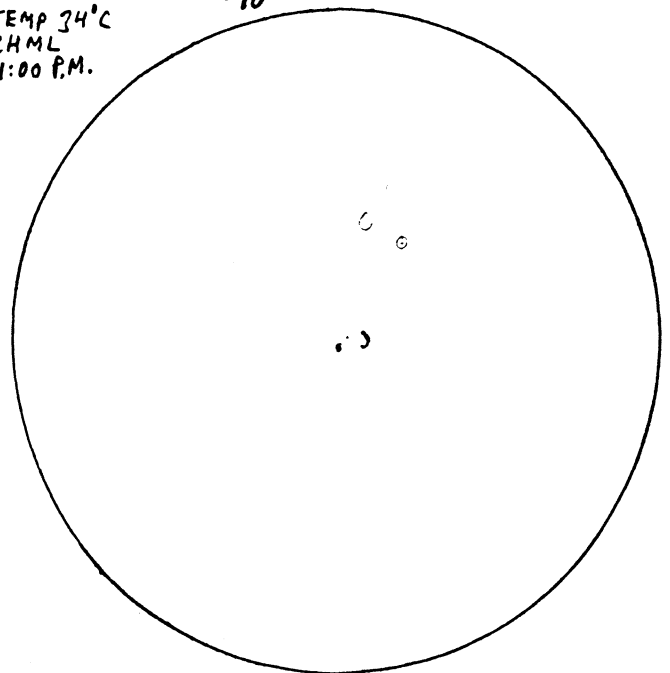


REL. # OF SUNSPOTS $[(10 \times 2) + 4] = 26$
 4:09 P.M.; $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{7}{10}$

HUMIDEX 48°C CHML DRIPPING SWEAT

JULY 15 1:00 P.M. - 1:10 P.M. E.D.T.
 SKY BLUE-WHITE IN SUN'S AREA.
 TRANSP. $\frac{9}{10}$, GRAINY DETAIL OBSERVED.
 SEEING $\frac{8}{10}$, STEADY IMAGE.

TEMP 34°C
 CHML
 1:00 P.M.



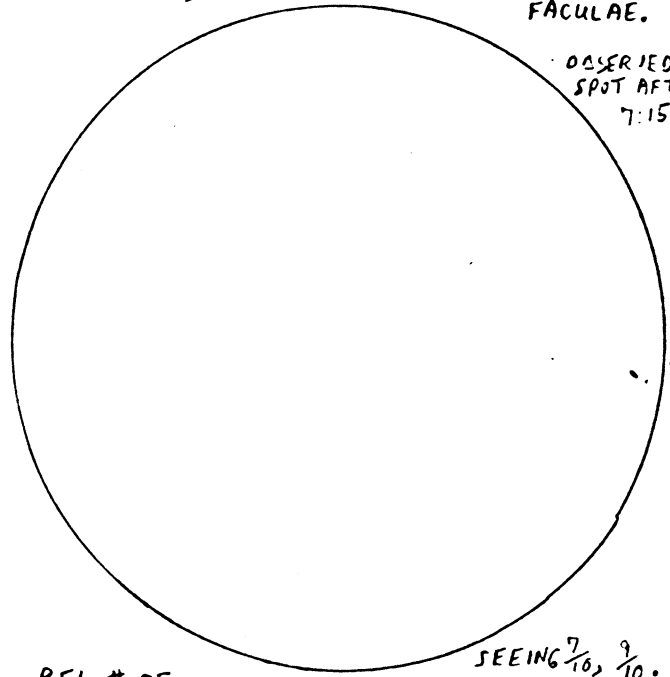
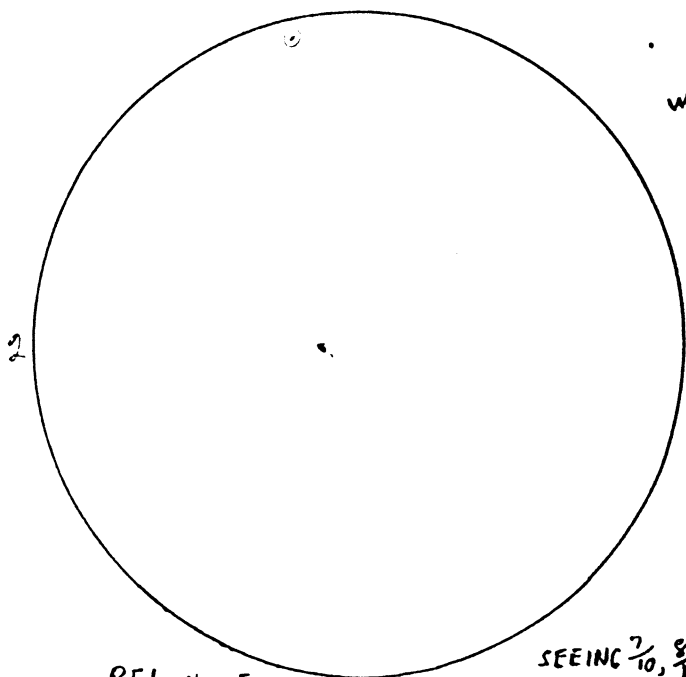
REL. # OF SUNSPOTS $[(10 \times 1) + 10] = 20$
 or $[(10 \times 2) + 10] = 30$
 1:10 P.M.; $\frac{900\text{mm}}{12\text{mm}}$, SEEING $\frac{8}{10}$.

9 SPOTS ON PAPER.
 FORECAST, 11:00 AM 39°C (HUMIDEX 50°)

JUNE 24/95 6:00-6:05 P.M. E.D.T.
 CUM. STRATTO CLOUD IN 30% CLEAR SKY.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARANCY \rightarrow FACULAE NOT SEEN.

f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

JULY 1 6:58-7:18 P.M. E.D.T.
 CUM. AND CIRRUS CLOUDS IN 70% CLEAR SKY.
 SEEING $\frac{9}{10}$, VERY "STEADY" IMAGE.
 TRANSPARANCY $\frac{9}{10}$, VERY SHARP DETAIL IN FACULAE.



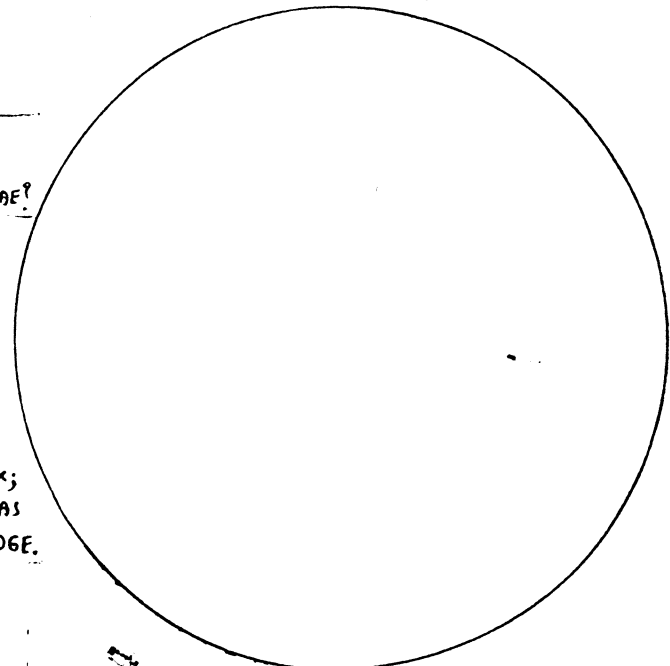
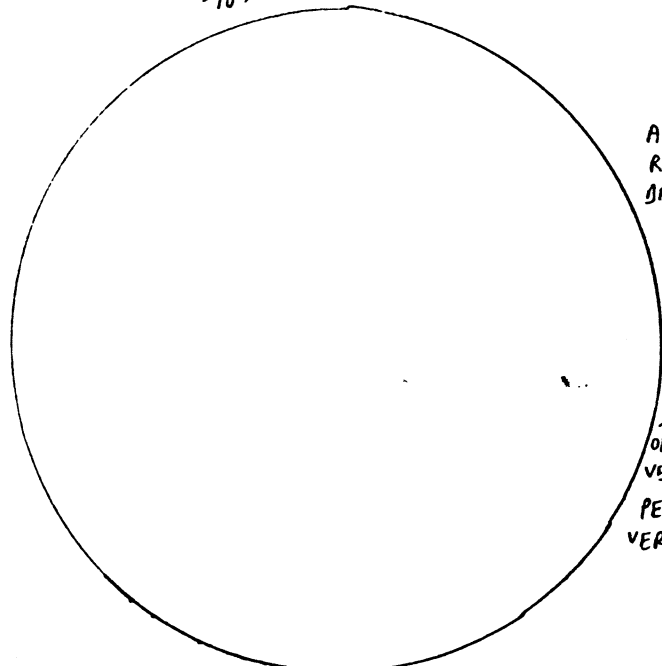
OBSERVED SPOT AFTER 7:15

REL. # OF SUNSPOTS $[(10 \times 1) + 2] = 12$; 6:05 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}, 18 \text{ mm}}$ SEEING $\frac{7}{10}, \frac{8}{10}$.

REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 23$; 5:16 P.M. $\frac{900 \text{ mm}}{12 \text{ mm}, 18 \text{ mm}}$ SEEING $\frac{7}{10}, \frac{9}{10}$.

JULY 2 7:27-7:32 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 TRANSP. $\frac{7}{10}$, SKY WHITE IN SUN'S AREA.
 SEEING $\frac{9}{10}$, VERY SHARP IMAGE.

SKY TOTALLY CLEAR $\sim \frac{7}{2}$
 JULY 3 7:30-7:33 P.M. E.D.T.
 SEEING $\frac{7}{10}$. BLURRY VIEW OF SETTING SUN
 TRANSPARANCY $\frac{7}{10}$, $\sim \frac{7}{2}$. ABOVE TREE-LINE



AREA SUR-ROUNDED BY BRIGHT FACULAE?

STRUCTURE OF FACULAE VERY COMPLEX; PENUMBRA HAS VERY DARK EDGE.

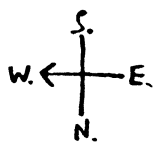
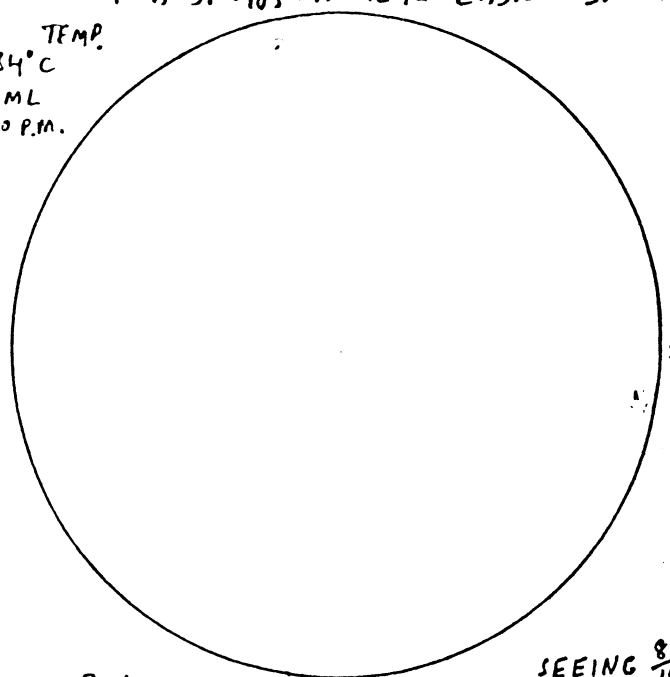
RELATIVE # OF SPOTS $[(10 \times 1) + 3] = 13$
 7:38 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$.

75X 7:38 P.M. REL. # OF SPOTS $[(10 \times 1) + 3] = 13$
 7:35 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$.

f 8 $\frac{900\text{mm}}{25\text{mm}}$

JUNE 18/95 4:10-4:14 P.M. E.D.T.
 LIGHT CIRRUS IN HAZY BLUE SKY.
 SEEING $\frac{9}{10}$, STEADY!! IMAGE.
 TRANSP $\frac{8}{10}$, FACULAE EASILY SEEN.

TEMP.
 +34°C
 CHML
 5:00 P.M.



4:27 P.M.

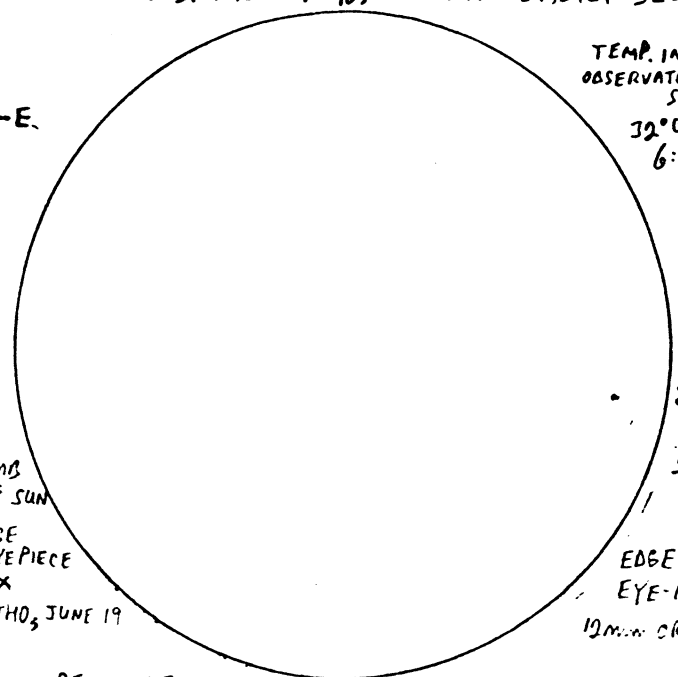
← LIMB OF SUN
 ← EDGE OF EYEPIECE
 75X
 12mm ORTHO, JUNE 19

REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$; 4:19 P.M.; $\frac{900\text{mm}}{12\text{mm}}$;
 $[(10 \times 2) + 3] = 23$; 4:27 P.M.
 or $[(10 \times 1) + 1] + 2 = 13$; 4:27 P.M.

SEEING $\frac{8}{10}$.

JUNE 19 5:12-5:24 P.M. E.D.T.
 HEAT-HAZE IN SUN'S AREA IN TOTALLY CLEAR SKY.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{8}{10}$, FACULAE EASILY SEEN.

TEMP. IN OBSERVATORY SHADE
 32°C
 6:00 P.M.



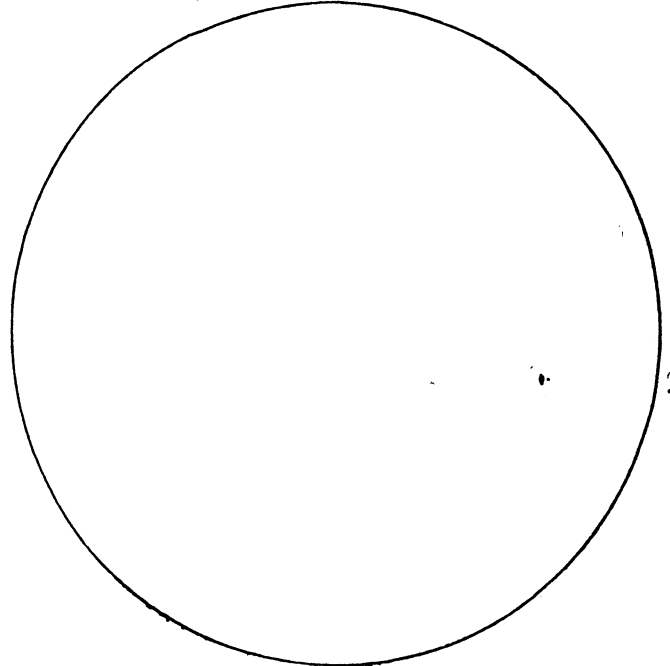
2, 1

50X

EDGE OF EYE-PIECE
 12mm ORTHO

REL. # OF SUNSPOTS $[(10 \times 1) + 3] + 1 = 13$; 5:28 P.M. $\frac{900\text{mm}}{12\text{mm}}$
 SEEING $\frac{8}{10}$.

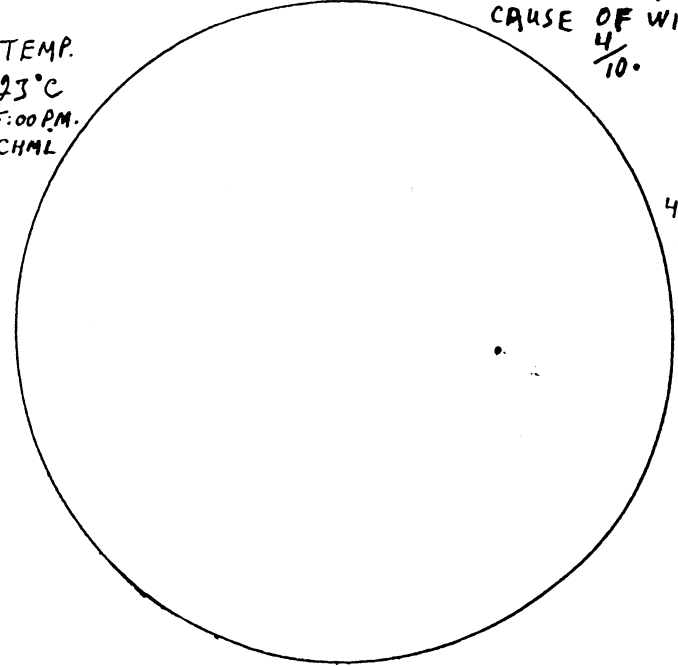
JUNE 20 4:25-4:32 P.M. E.D.T.
 HEAT-HAZE IN TOTALLY CLEAR SKY.
 SEEING $\frac{6}{10}$ \rightarrow $\frac{7}{10}$, RIPPLES; TRANSPARENCY $\frac{7}{10}$, FUZZY.



RELATIVE # OF SUNSPOTS $[(10 \times 1) + 1] = 12$
 SEEING $\frac{6}{10}$; 4:34 P.M.; $\frac{900\text{mm}}{12\text{mm}}$.

JUNE 21 4:00-4:06 P.M. E.D.T.
 SKY WHITE-BLUE IN SUN'S AREA.
 SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{8}{10}$; RESOLUTION (BE CAUSE OF WIND) $\frac{4}{10}$.

TEMP.
 23°C
 5:00 P.M.
 CHML



4:22 P.M.

50X

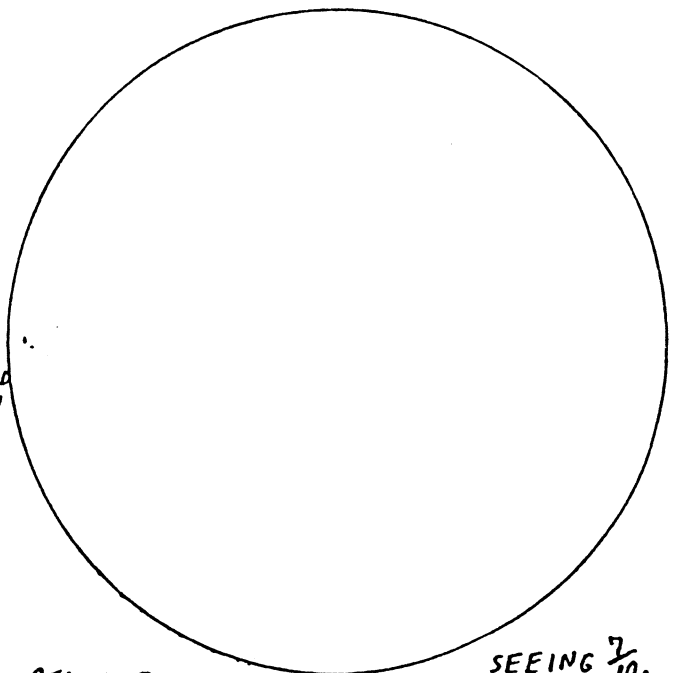
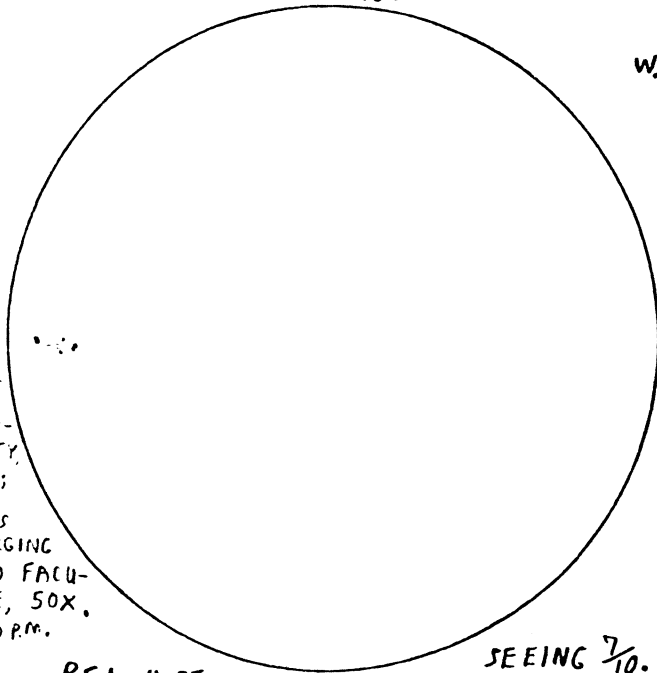
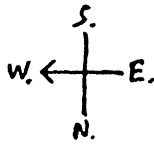
8

REL. # OF SUNSPOTS $[(10 \times 1) + 8] = 18$
 4:06 P.M.; $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{7}{10}$.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

JUNE 12/95 4:32-4:36 P.M. E.D.T.
 LARGE CUM. CLOUDS IN 50% CLEAR SKY.
 SEEING $\frac{7}{10}$, "BLURRY" IMAGE.
 TRANSPARENCY $\frac{9}{10}$, SHARP DETAIL.

JUNE 13 4:27-4:30 P.M. E.D.T.
 SEEING $\frac{8}{10}$, STEADY
 TRANSPARENCY $\frac{9}{10}$, GRAIN DETECTED?
 HAZE IN BLUE SKIES.



2
 17
 10-
 LITY
 7X;
 ITS
 ERGING
 TO FACU-
 AE, 50X,
 :20 P.M.

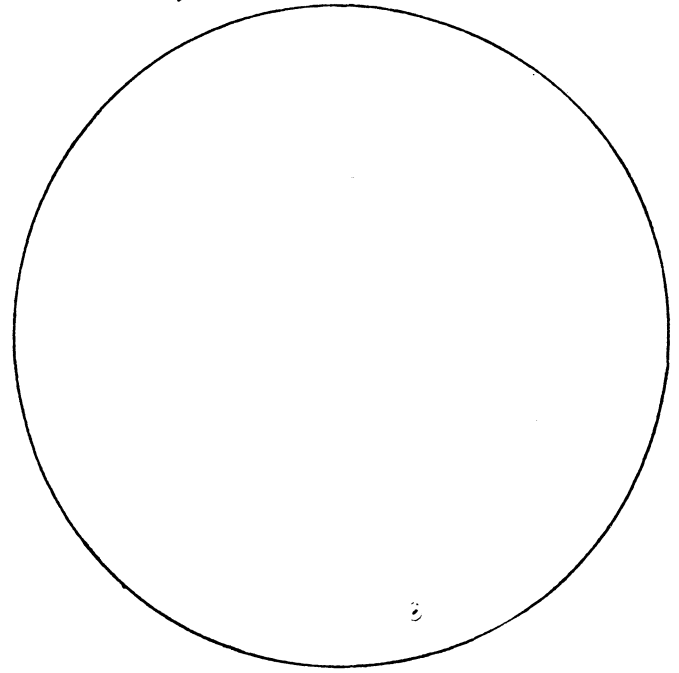
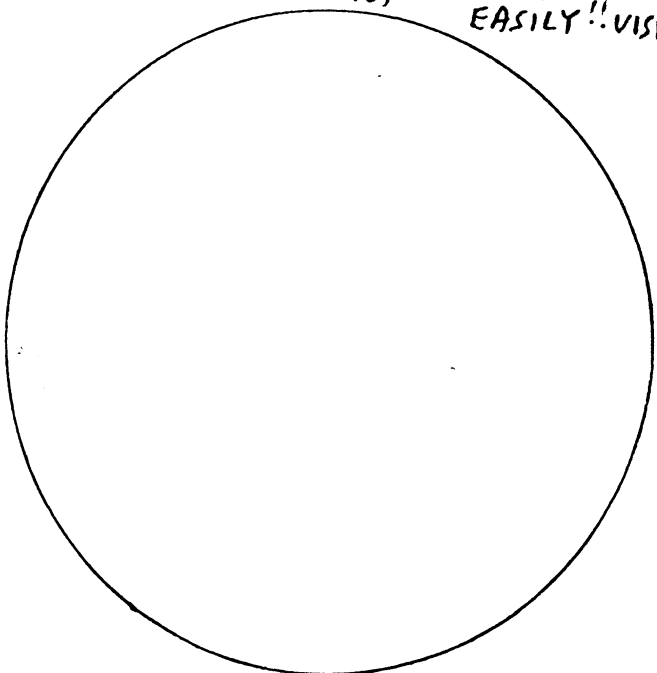
5
 AVERTED
 VISION

REL. # OF
 SUNSPOTS $[(10 \times 1) + 12] = 22$; 5:19 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$ SEEING $\frac{7}{10}$.

REL. # OF
 SUNSPOTS $[(10 \times 1) + 5] = 15$; $\frac{900 \text{ mm}}{12 \text{ mm}}$; 4:45 P.M., SEEING $\frac{7}{10}$.

JUNE 14 7:50-7:52 PM E.D.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, MANY SMALL RIPPLES.
 TRANSPARENCY $\frac{9}{10}$, FACULAE
 EASILY!! VISIBLE.

JUNE 15 7:23-7:27 P.M. E.D.T. $\frac{900 \text{ mm fs}}{18 \text{ mm}}$
 HEAT HAZE IN SUN'S AREA IN TOTALLY
 SEEING $\frac{7}{10}$, MANY SMALL RIPPLES. CLEAR SKY.
 TRANSP $\frac{7}{10}$, GRAIN NOT OBSERVED?



REL. # OF SUNSPOTS $[(10 \times 0) + 0] = 0$
 7:53 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$.

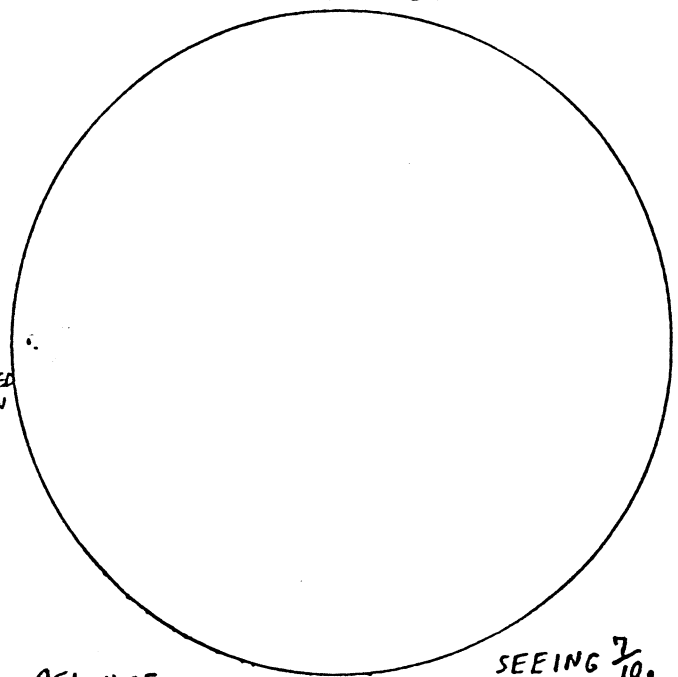
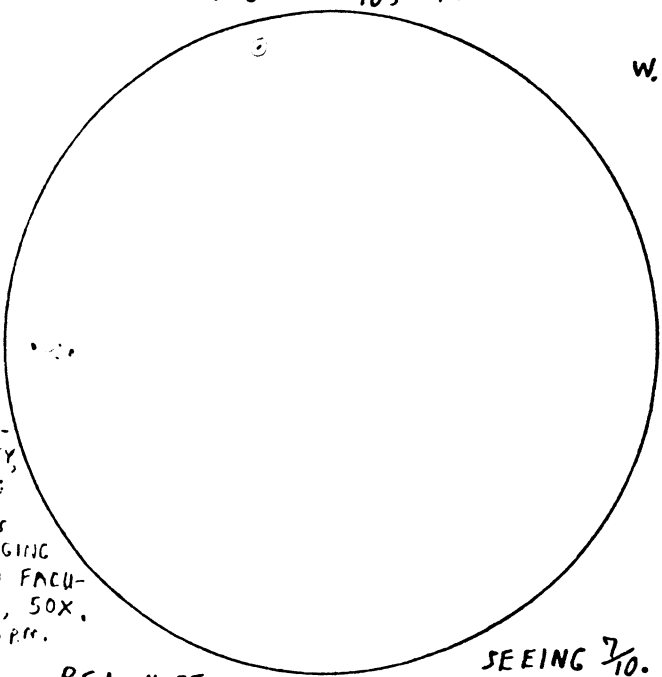
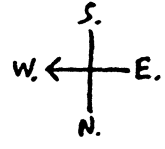
REL. # OF SPOTS $[(10 \times 0) + 0] = 0$; $\frac{900 \text{ mm}}{18 \text{ mm}}$
 NO SPOTS OBSERVED.
 NO FACULAE OBSERVED.

NO SPOTS OBSERVED; 8:02 P.M., 50X ($\frac{900 \text{ mm}}{18 \text{ mm}}$)

f 8 $\frac{900\text{mm}}{25\text{mm}}$

JUNE 12/95 4:32-4:36 P.M. E.D.T.
LARGE CUM. CLOUDS IN 50% CLEAR SKY.
SEEING $\frac{7}{10}$, "BLURRY" IMAGE.
TRANSPARENCY $\frac{9}{10}$, SHARP DETAIL.

JUNE 13 4:27-4:30 P.M. E.D.T.
SEEING $\frac{8}{10}$, STEADY
TRANSPARENCY $\frac{9}{10}$, GRAIN DETECTED?
HAZE IN BLUE SKIES.



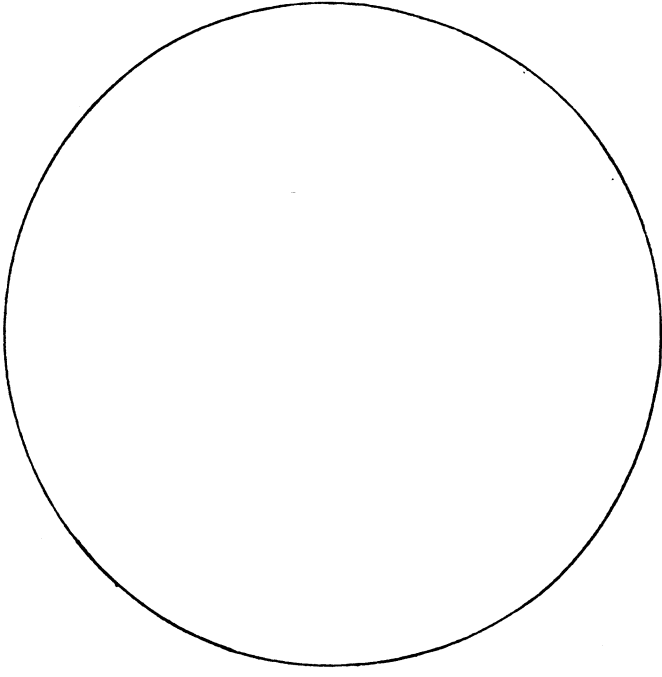
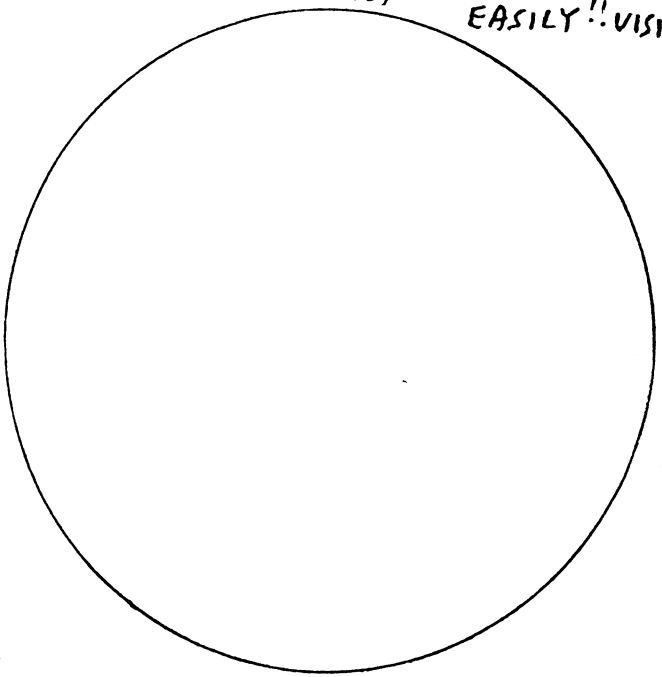
LIMIT OF VISIBILITY 75X;
SPOTS MERGING INTO FACULAE, 50X, 5:22 P.M.

REL. # OF SUNSPOTS $[(10 \times 1) + 12] = 22$; 5:19 P.M.; $\frac{900\text{mm}}{12\text{mm}}$ SEEING $\frac{7}{10}$.

REL. # OF SUNSPOTS $[(10 \times 1) + 5] = 15$; $\frac{900\text{mm}}{12\text{mm}}$; 4:45 P.M., SEEING $\frac{7}{10}$.

JUNE 14 7:50-7:52 P.M. E.D.T.
SKY CLEAR IN SUN'S AREA.
SEEING $\frac{7}{10}$, MANY SMALL RIPPLES.
TRANSPARENCY $\frac{9}{10}$, FACULAE EASILY!! VISIBLE.

JUNE 15 7:23-7:27 P.M. E.D.T. $\frac{900\text{mm}}{18\text{mm}}$ f 8
HEAT HAZE IN SUN'S AREA IN TOTALLY CLEAR SKY.
SEEING $\frac{7}{10}$, MANY SMALL RIPPLES.
TRANSP $\frac{7}{10}$, GRAIN NOT OBSERVED?



REL. # OF SUNSPOTS $[(10 \times 0) + 0] = 0$
7:53 P.M.; $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{7}{10}$.
NO SPOTS OBSERVED; 8:02 P.M., 50X ($\frac{900\text{mm}}{18\text{mm}}$)

REL. # OF SPOTS $[(10 \times 0) + 0] = 0$; $\frac{900\text{mm}}{18\text{mm}}$
NO SPOTS OBSERVED.
NO FACULAE OBSERVED.

f11-6 700mm/18mm.

MAY 21/95 12:55-12:58 P.M. EDT.

SMALL WHITE CLOUDS IN BLUE SKY.

SEEING $\frac{9}{10}$, STEADY IMAGE. RESOLUTION (BECAUSE OF TELESCOPE JIGGLING IN BREEZE)

TRANSP. $\frac{9}{10}$, FAC. EASILY SEEN

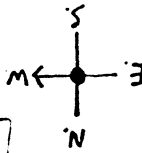
SEEING $\frac{9}{10}$ STEADY
1:00 PM - 1:05 PM

x85

$\frac{6}{10}$

DRIFT OF SUN

SUN'S DRIFT
SUN'S DRIFT



15, 13

SEEING $\frac{9}{10}$, RESOLUTION $\frac{6}{10}$.

REL. # OF

SUNSPOTS $[(10 \times 1) + 4] = 14$; 1:00 P.M.; $\frac{700 \text{ mm}}{18 \text{ mm}}$

JUNE 5 4:22-4:28 P.M. EDT.

LIGHT HAZE IN CLEAR SKY.

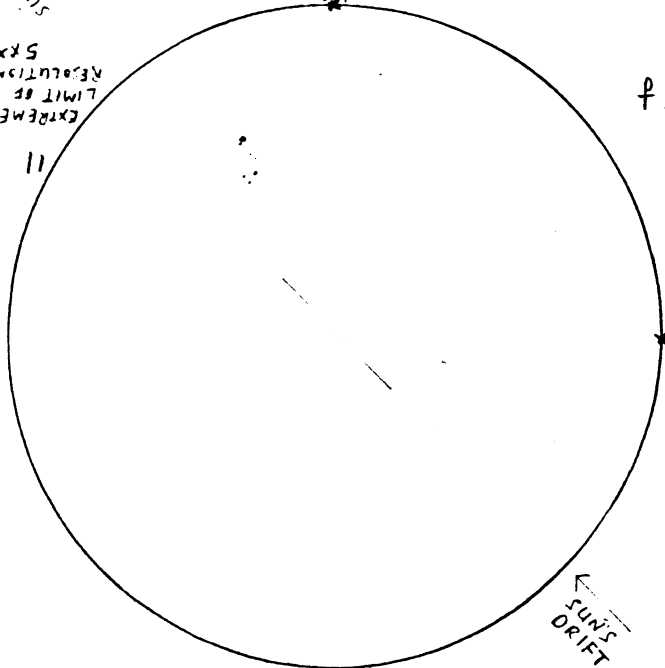
SEEING $\frac{9}{10}$, STEADY IMAGE.

TRANSPARENCY $\frac{9}{10}$, SHARP IMAGE.

SUN'S DRIFT

EXTREME
LIMIT OF
RESOLUTION
5X

11



REL. # OF SUNSPOTS $[(10 \times 1) + 11] = 21$

4:35 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{8}{10}$.

f11-6 700mm/18mm

JUNE 4 3:22-3:27 P.M. EDT.

THIN HAZE IN BLUE SKY.

SEEING $\frac{9}{10}$, STEADY IMAGE.

TRANSP. $\frac{7}{10}$, SMALL DETAIL BLURRED.

DRIFT OF SUN

6

DRIFT OF SUN

SEEING $\frac{9}{10}$

REL. # OF

SUNSPOTS $[(10 \times 1) + 9] = 19$; 3:33 P.M.; $\frac{700 \text{ mm}}{18 \text{ mm}}$

JUNE 6 4:30-4:34 P.M. EDT.

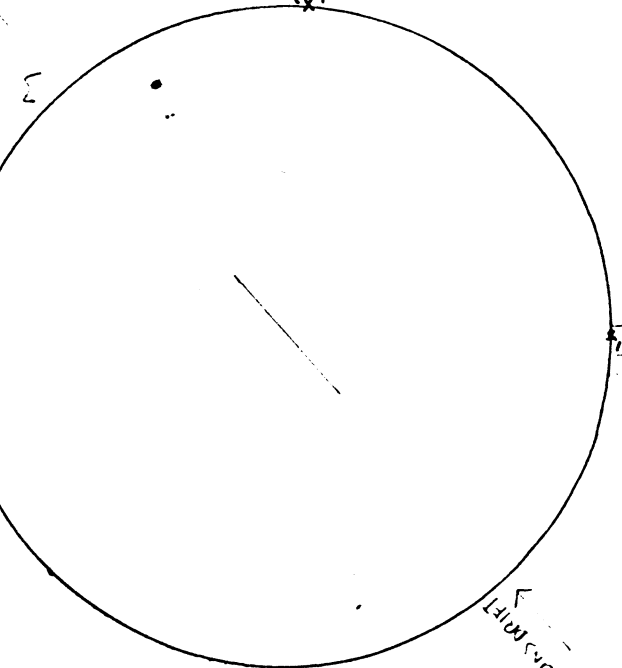
CUM. CLOUDS IN HAZY CLEAR SKIES.

SEEING $\frac{8}{10}$ STEADY IMAGE. ($\frac{8}{10} \leftrightarrow \frac{7}{10}$)

TRANSPARENCY $\frac{8}{10}$, SHARP IMAGE.

SUN'S DRIFT

f11-6 700mm/18mm



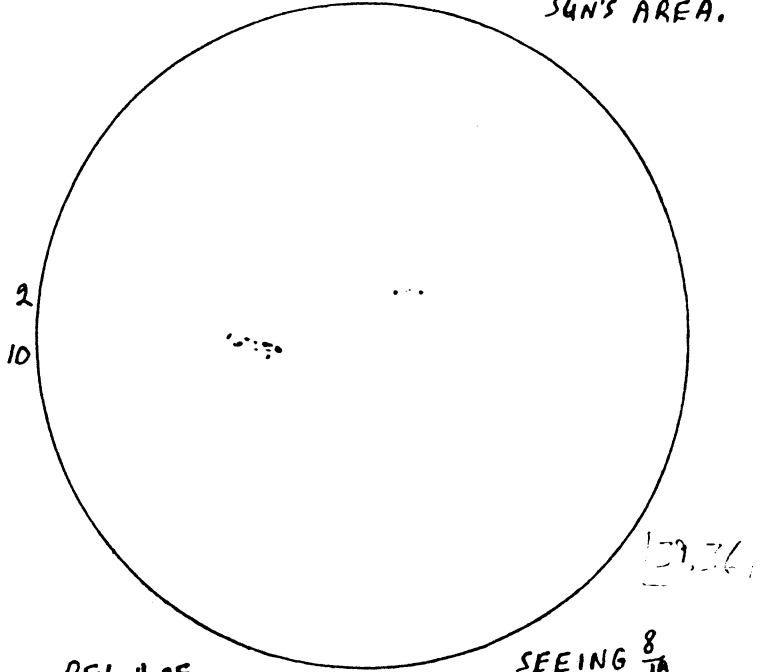
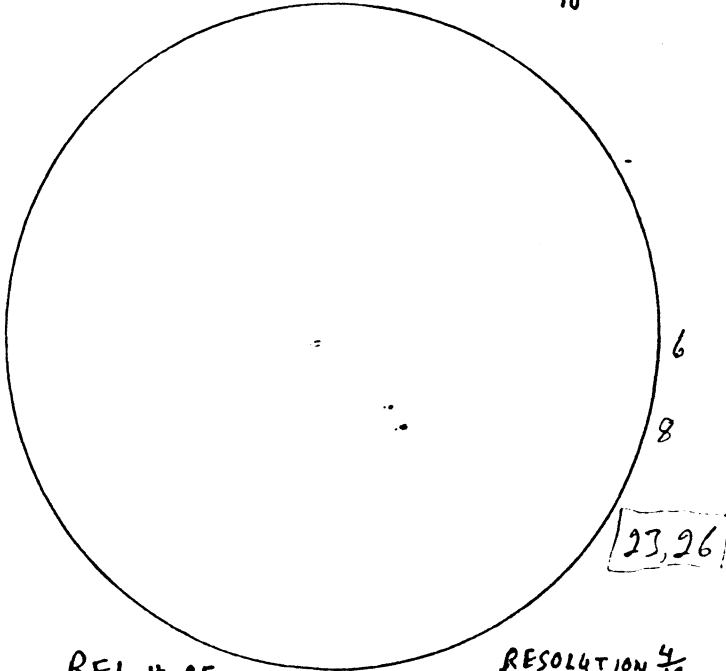
RELATIVE # OF SPOTS $[(10 \times 1) + 3] = 13$

4:35 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$.

MAY 12/95 7:06-7:10 P.M. E.D.T.
 SKY CLEAR IN SUNS AREA.
 SEEING $\frac{7}{10}$, STEADY
 TRANSPARENCY $\frac{9}{10}$
 RESOLUTION (BECAUSE OF WIND) $\frac{4}{10}$

f8 $\frac{900\text{mm}}{25\text{mm}}$

MAY 15 1:50-2:01 P.M. E.D.T.
 SMALL WHITE CLOUDS IN BLUE SKY.
 SEEING $\frac{8}{10}$, SMALLEST RIPPLES.
 TRANSPARENCY $\frac{9}{10}$, SKY BLUE-WHITE IN
 SUN'S AREA.

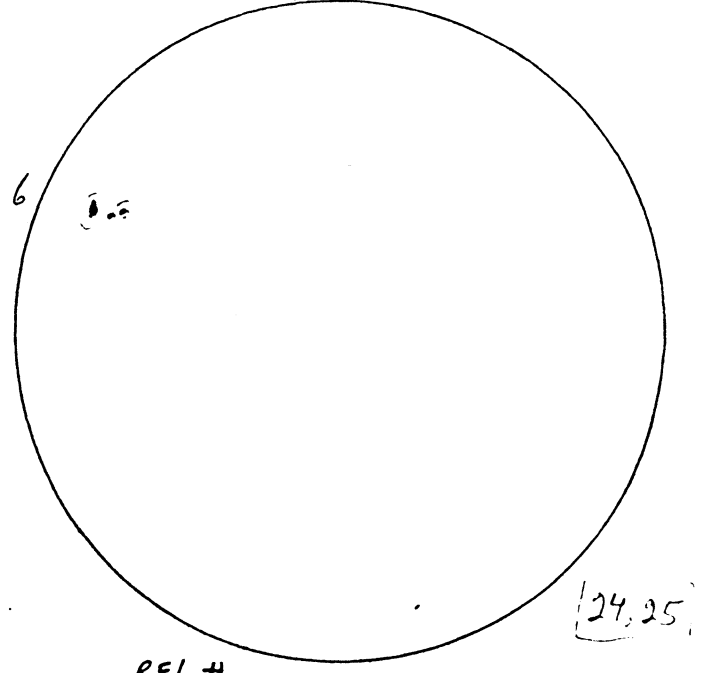
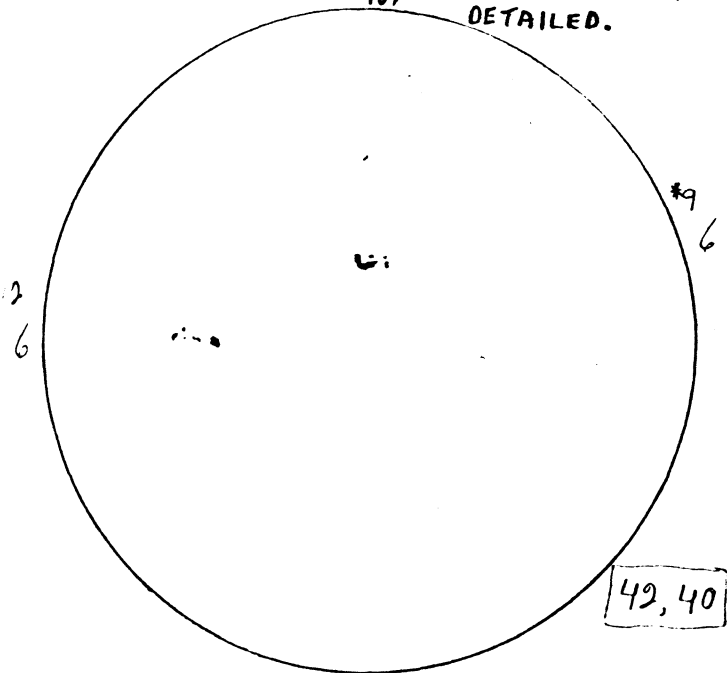


REL. # OF
 SUNSPOTS $[(10 \times 2) + 14] = 34$, 7:12 P.M., $\frac{906\text{mm}}{12\text{mm}}$
 RESOLUTION $\frac{4}{10}$.

REL. # OF
 SPOTS $[(10 \times 2) + 12] = 32$; 2:08 P.M.; $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{8}{10}$

MAY 16 4:20-4:35 P.M. E.D.T.
 CLEAR PATCHES IN BETWEEN DEVELOPING
 SEEING (WHEN CLEAR) $\frac{8}{10}$. SHEEP-WOOL CLOUDS.
 TRANSPARENCY $\frac{9}{10}$, IMAGE EXTREMELY
 DETAILED.

MAY 20 4:57-5:00 P.M. E.D.T.
 LIGHT CIRRUS DEVELOPING IN SUN'S AREA.
 SEEING $\frac{9}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{8}{10} \leftrightarrow \frac{6}{10}$.



REL. # OF SUNSPOTS $[(10 \times 2) + 12] = 32$, 4:35-4:55 P.M.; $\frac{900\text{mm}}{18\text{mm}}$; SEEING $\frac{5}{10}$, 'BUMPY' AIRCELLS
 IN BETWEEN CLOUDS.

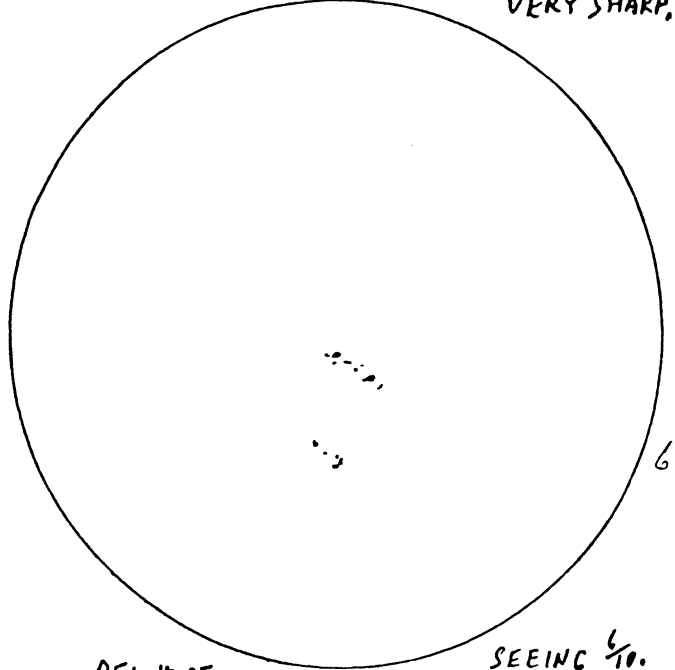
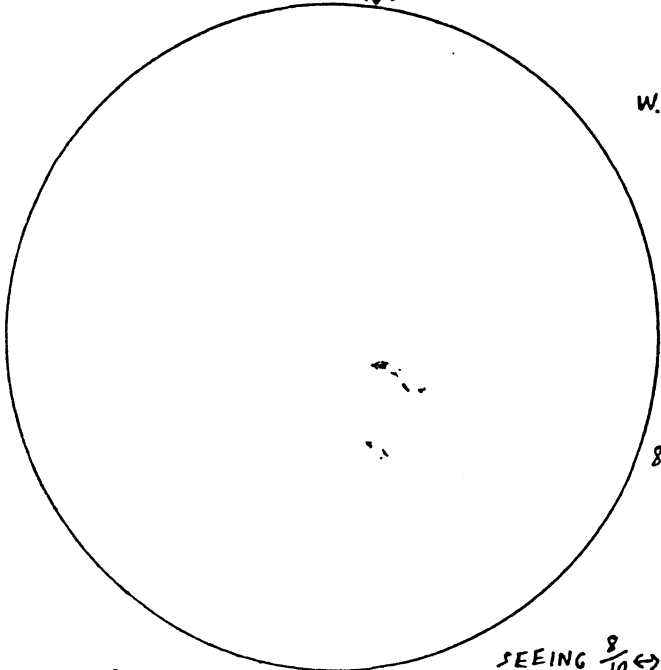
REL. #
 OF SUNSPOTS $[(10 \times 1) + 6] = 16$
 5:05 P.M.; $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{8}{10}$.

* ESTIMATED REL. # OF SPOTS $[(10 \times 2) + 2] = 41$; 5:10 P.M. $\frac{900\text{mm}}$

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

APRIL 14/95 4:57-5:06 P.M. E.D.T.
 LARGE WHITE CLOUDS IN BLUE SKY.
 SEEING $\frac{7}{10}$, BLURRY \leftrightarrow STEADY IMAGE.
 TRANSPARENCY $\frac{9}{10}$, SHARP DETAIL.

APRIL 15 3:45-4:02 P.M. E.D.T.
 SKY BLUE-WHITE IN SUN'S AREA, TOTALLY CLEAR
 SEEING $\frac{4}{10}$, FUZZY IMAGE (DIRTY FILTER?)
 TRANSPARENCY $\frac{9}{10}$, EARTH LANDSCAPE FEATURES
 VERY SHARP.



REL. # OF SUNSPOTS $[(10 \times 2) + 2] = 46$; 5:12 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$; GLIMSED MANY MORE SPOTS BELOW LIMIT OF RESOLUTION

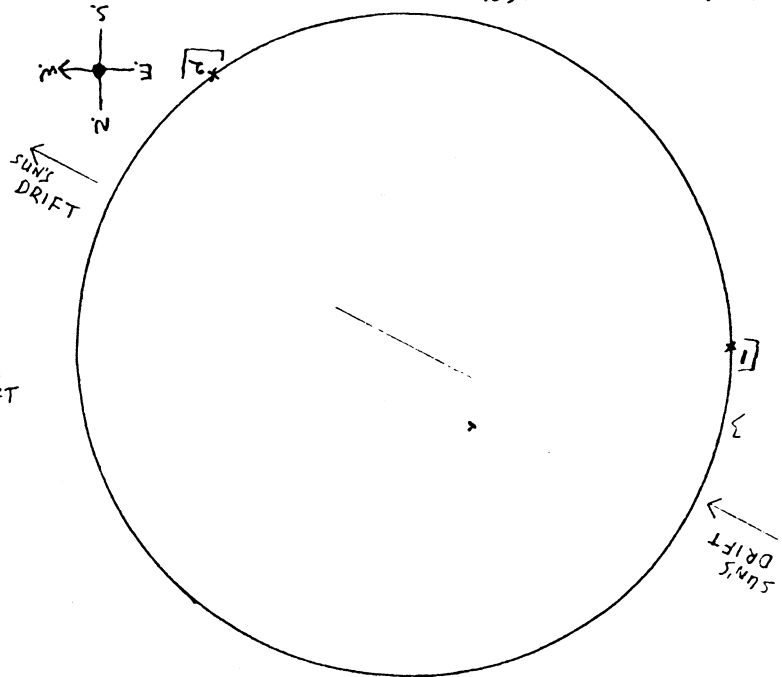
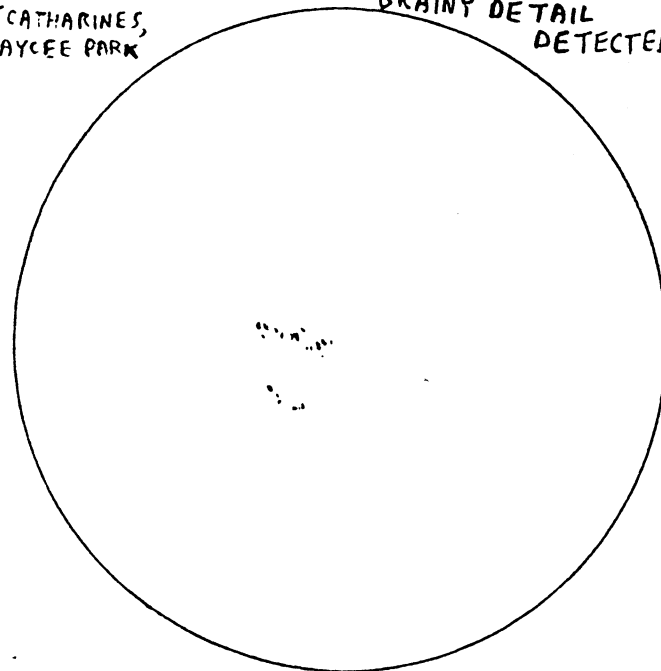
REL. # OF SPOTS $[(10 \times 2) + 20] = 40$; 4:05 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$.

APR. 16 4:05-4:10 P.M. E.D.T.
 SKY BLUE-WHITE IN SUN'S AREA.
 SEEING $\frac{7}{10}$. TRANSPARENCY $\frac{9}{10}$,
 GRAINY DETAIL DETECTED?

MAY 10 3:10-3:13 P.M. E.D.T.
 LIGHT OVERCAST IN SUN'S AREA.
 SEEING $\frac{8}{10}$; STEADY IMAGE.
 TRANSPARENCY $\frac{5}{10}$, SMEARED IMAGE.

ST CATHARINES,
 JAYCEE PARK

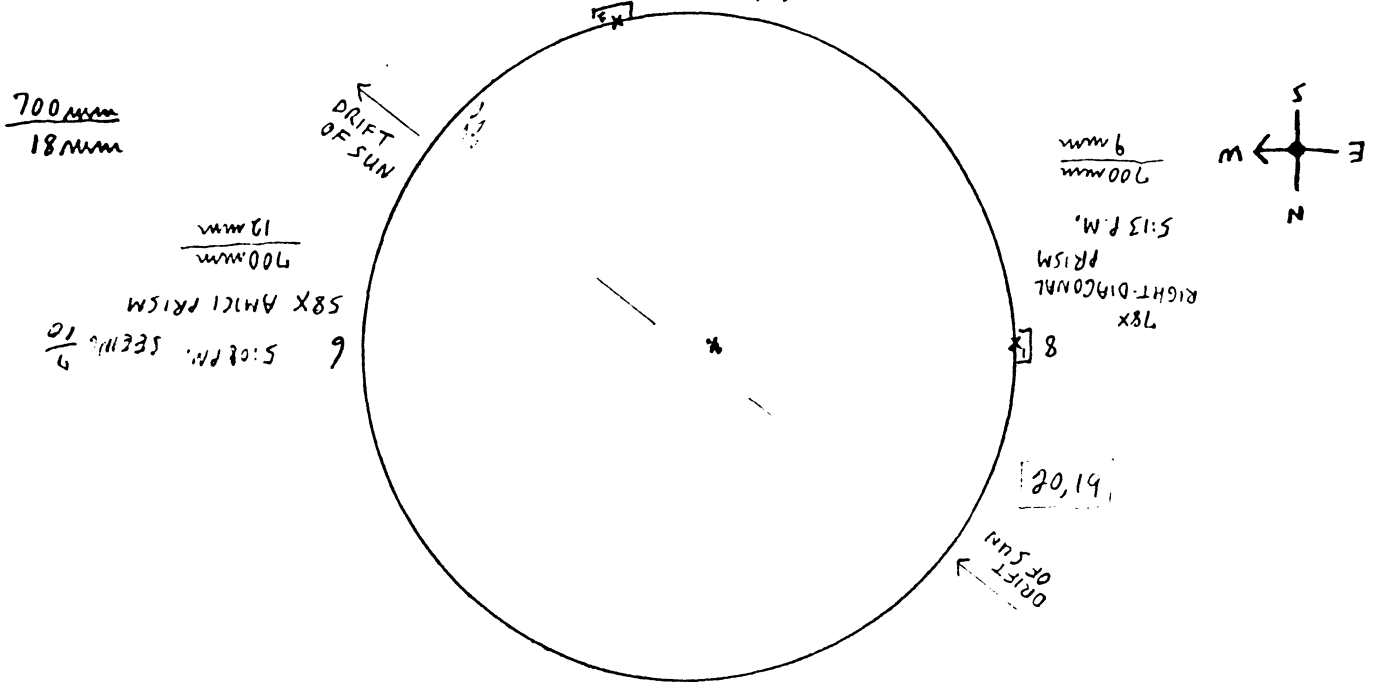
f 11.6 $\frac{700 \text{ mm}}{25 \text{ mm}}$



REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 43$
 4:20 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$.

REL. # OF SUNSPOTS $[(10 \times 1) + 3] = 13$
 $\frac{700 \text{ mm}}{12 \text{ mm}}$; 3:13 P.M., SEEING $\frac{5}{10}$.

MARCH 28/95 4:53-4:57 P.M. E.S.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10} \leftrightarrow \frac{8}{10}$.
 TRANSPARENCY $\frac{9}{10}$, FACULAE VERY VISIBLE.



REL. # OF SUNSPOTS $[(10 \times 1) + 7] = 16$ $\frac{700\text{mm}}{12\text{mm}}$; AMICI PRISM
 $a \quad [(10 \times 1) + 8] = 18$ $\frac{700\text{mm}}{9\text{mm}}$; R. D. PRISM

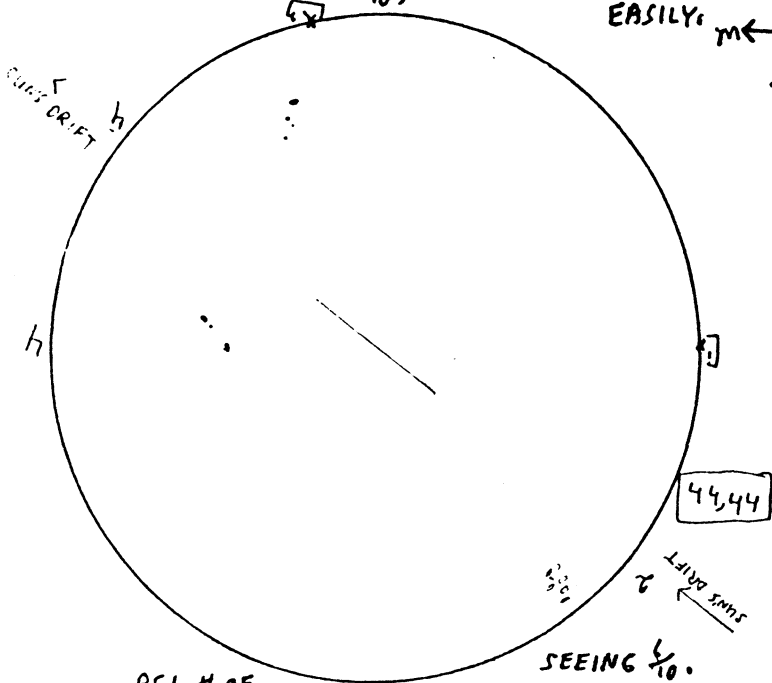
78X AMICI PRISM
 5:00-5:06 P.M.
 SEEING $\frac{7}{10} \leftrightarrow \frac{8}{10}$

78X RIGHT-DIAGONAL PRISM
 5:14-5:22 P.M.
 SEEING $\frac{8}{10} \leftrightarrow \frac{9}{10}$

SMALL SPOT SHOULD BE
 CLOSER TO MAIN SPOT
 IN LOWER DRAWING.

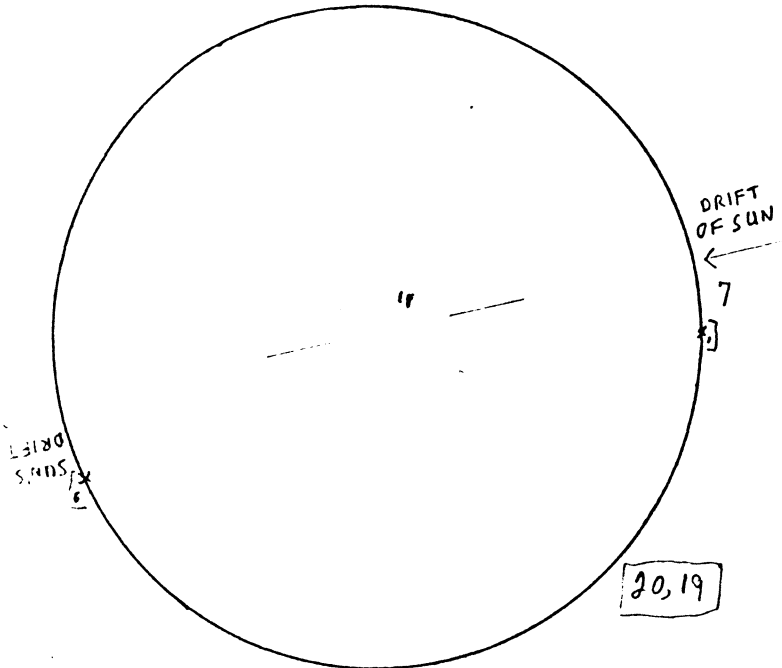
f 11.6 $\frac{700\text{mm}}{18\text{mm}}$

MAR. 24 5:35-5:50 P.M. E.S.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, SMALL RIPPLES ALONG LIMB.
 TRANSPARENCY $\frac{9}{10}$, FACULAE SEEN VERY EASILY.



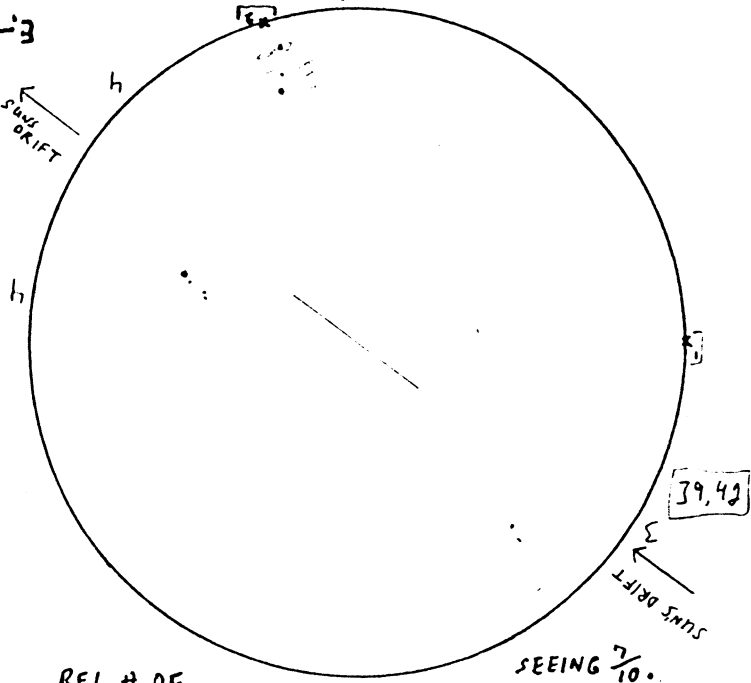
REL. # OF SUNSPOTS $[(10 \times 3) + 10] = 40$; 5:51 P.M.; $\frac{700\text{mm}}{12\text{mm}}$
 SEEING $\frac{6}{10}$.

MAR. 28 12:53-12:58 AM. E.S.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{7}{10}$; RESOLUTION (BECAUSE OF BREEZE) $\frac{3}{10}$.
 TRANSPARENCY $\frac{9}{10}$, GRANULATION DETECTED?



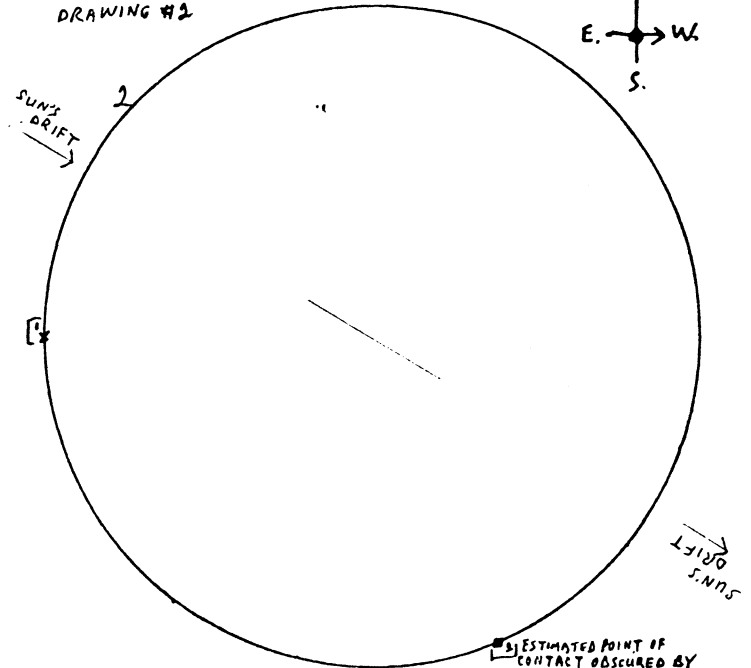
REL. # OF SUNSPOTS $[(10 \times 1) + 7] = 17$
 $\frac{700\text{mm}}{12\text{mm}}$; 11:59 A.M.; RESOLUTION $\frac{3}{10}$.
 SEEING $\frac{8}{10}$. SHARP! DETAIL WHEN TELESCOPE NOT VIBRATING IN BREEZE.

MAR. 25 4:07-4:17 P.M. E.S.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10} \leftrightarrow \frac{8}{10}$, SHARP, FUZZY, SHARP IMAGES.
 TRANSPARENCY $\frac{9}{10}$, FACULAE EASILY SEEN.



REL. # OF SUNSPOTS $[(10 \times 3) + 11] = 41$; $\frac{700\text{mm}}{12\text{mm}}$; 4:18 P.M.
 SEEING $\frac{7}{10}$.

APR. 1 3:42-3:45 P.M. E.S.T.
 LIGHT! CLOUD COVER IN SUN'S AREA.
 SEEING $\frac{6}{10} \leftrightarrow \frac{7}{10}$, FUZZY IMAGE.
 TRANSPARENCY $\frac{7}{10}$, SPOT EASILY SEEN.
 DRAWING #2

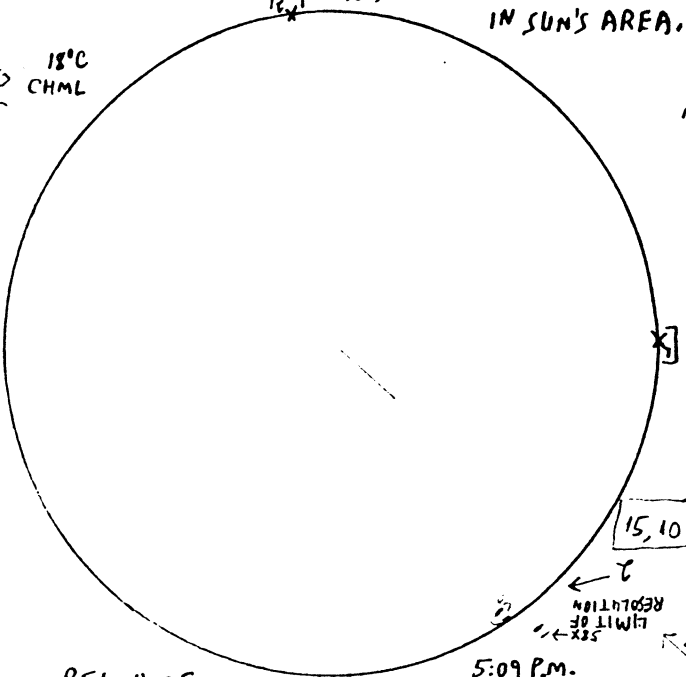


REL. # OF SUNSPOTS $[(10 \times 1) + 2] = 12$
 3.44 P.M.; $\frac{700\text{mm}}{18\text{mm}}$; SEEING $\frac{7}{10}$.

DRAWING MADE RIGHT-SIDE-UP!

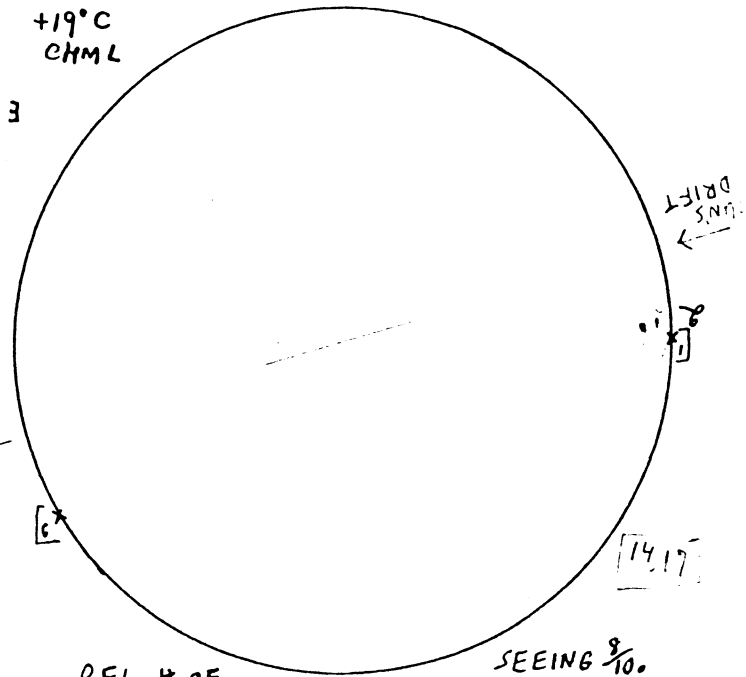
f 11.6 $\frac{700 \text{ mm}}{18 \text{ mm}}$

MAR. 14/95 5:00-5:05 P.M. E.S.T.
 SKY TOTALLY CLEAR. 'NO' BREEZE.
 SEEING $\frac{8}{10}$, IMAGE VERY STEADY.
 TRANSPARENCY $\frac{7}{10}$, SKY MILK WHITE-BLUE
 IN SUN'S AREA.



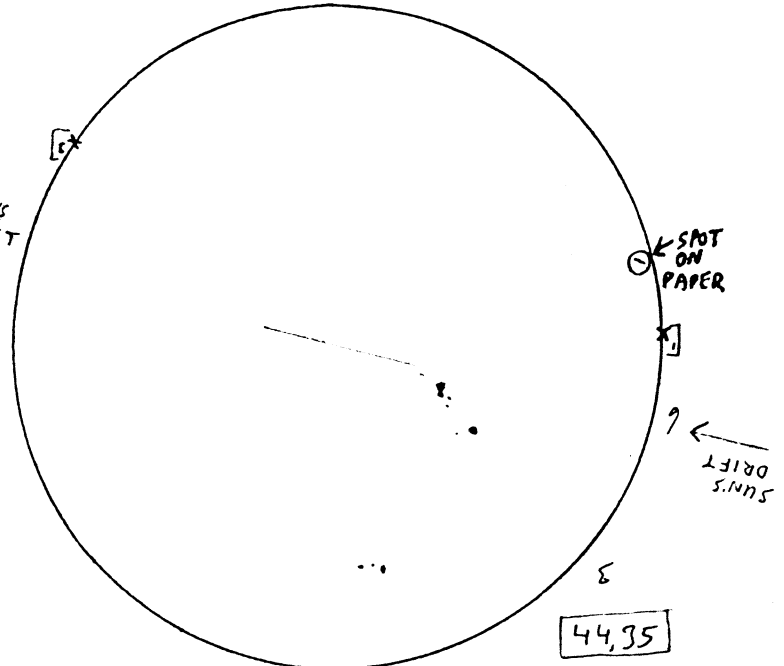
REL. # OF SUNSPOTS $[(10 \times 1) + 2] = 12$; SEEING $\frac{8}{10}$; $\frac{700 \text{ mm}}{12 \text{ mm}}$
 5:09 P.M.

MAR 15 11:50-11:55 A.M. E.S.T.
 STRATUS-CUM. CLOUDS IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY! IMAGE.
 TRANSPARENCY $\frac{7}{10}$, 'FUZZY' IMAGE.



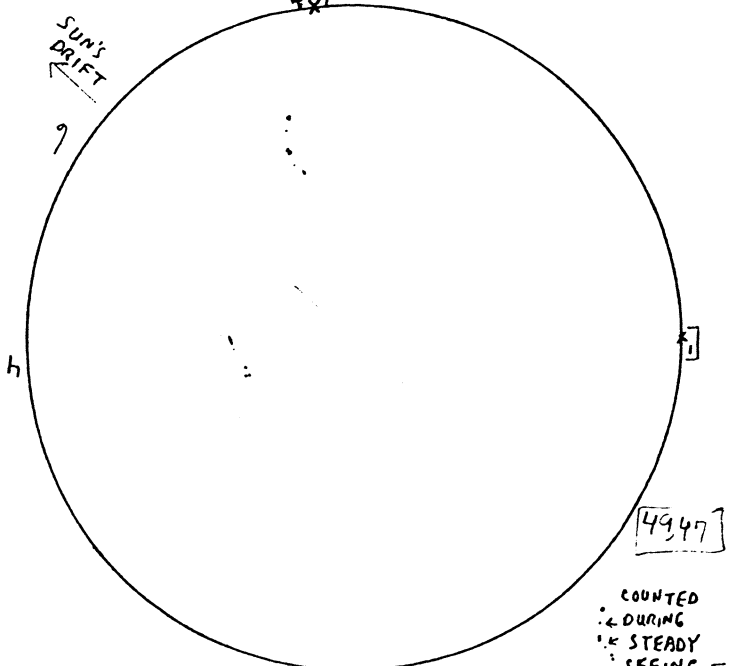
REL. # OF SUNSPOTS $[(10 \times 1) + 2] = 12$; SEEING $\frac{8}{10}$; $\frac{700 \text{ mm}}{12 \text{ mm}}$; 12:58 P.M.

MAR. 18 1:42-1:50 P.M. E.S.T.
 LIGHT CIRRUS CLOUD IN SUN'S AREA. 'NO' BREEZE
 SEEING $\frac{8}{10}$, STEADY! IMAGE. IN OBSERVATORY YARD.
 TRANSPARENCY $\frac{7}{10}$.



REL. # OF SUNSPOTS $[(10 \times 2) + 9] = 29$
 1:58 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{8}{10}$.

MAR. 23 5:28-5:33 P.M. E.S.T.
 SKY WHITE-BLUE IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{8}{10}$, SHARP IMAGE.



REL. # OF SUNSPOTS $[(10 \times 2) + 10] = 30$
 5:34 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$
 RESOLUTION (BECAUSE OF BREEZE) $\frac{4}{10}$.

COUNTED
 DURING
 STEADY
 SEEING
 58x

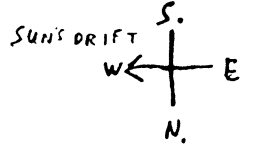
MARCH 4/95 3:50-4:02 P.M. E.S.T.

THIN CIRRUS IN SUN'S AREA.

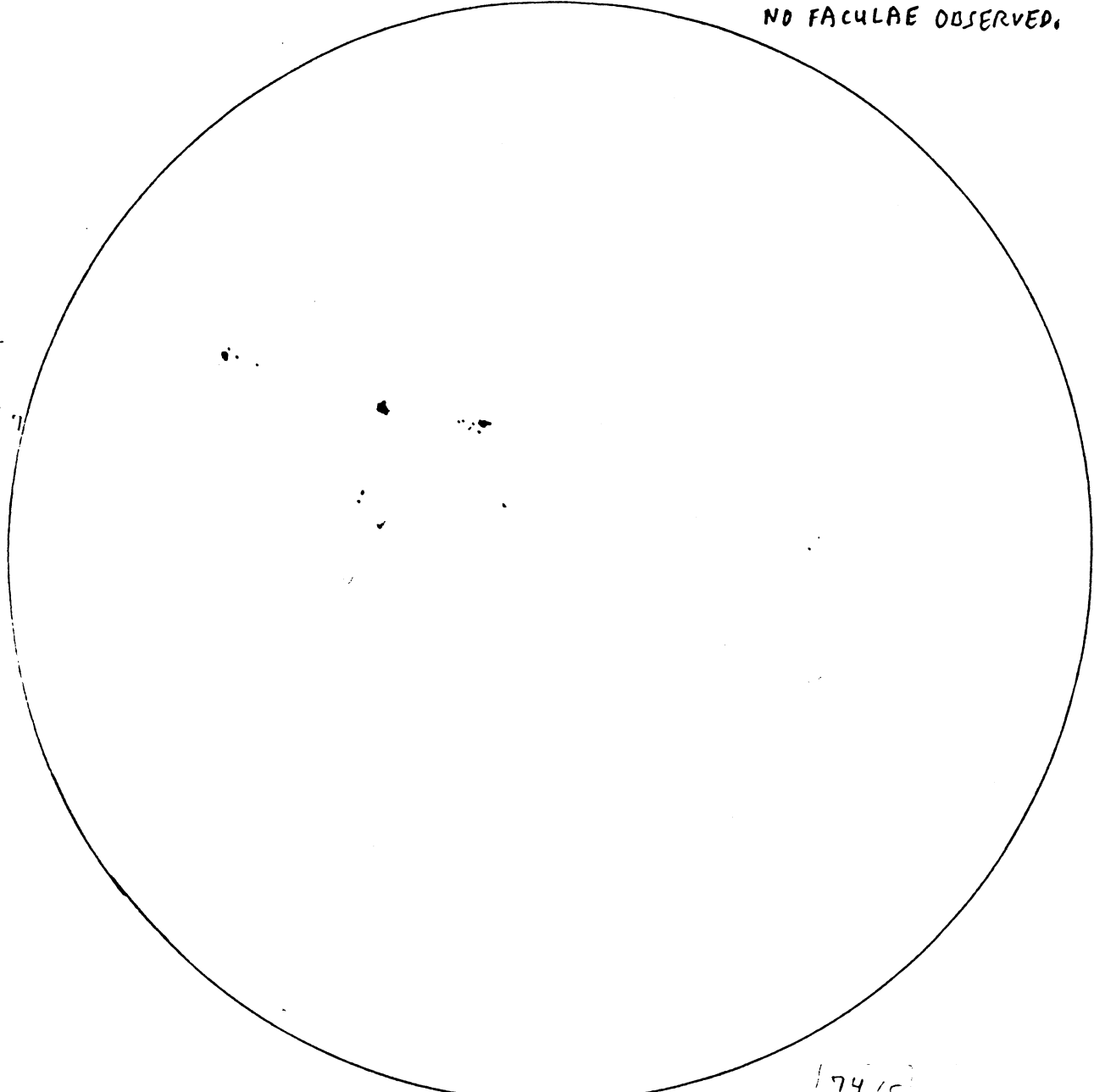
SEEING $\frac{7}{10}$, "FUZZY" IMAGE

TRANSPARENCY $\frac{7}{10}$ GRAINY STRUCTURE GLIMPSED?

NO FACULAE OBSERVED.



$\frac{900\text{mm}}{25\text{mm}}$



5
2
1
1
1
1
1
2
19
+1
20

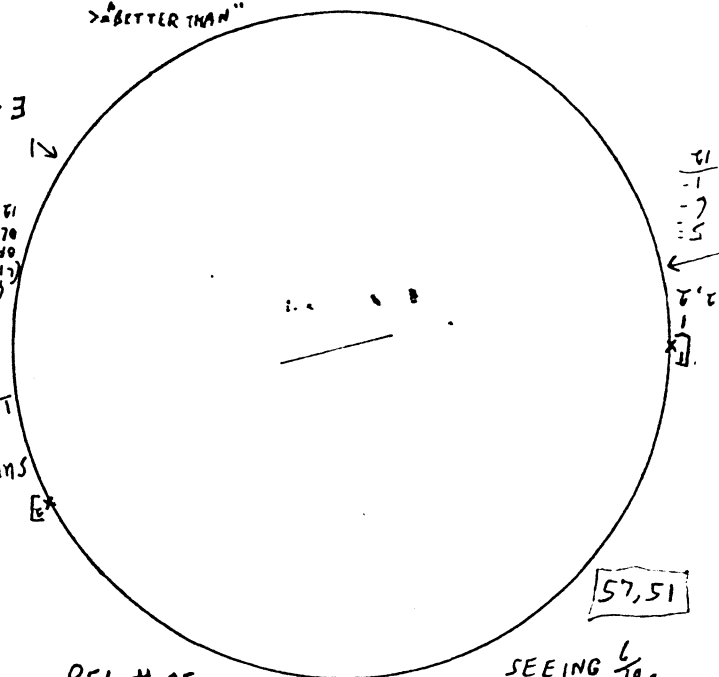
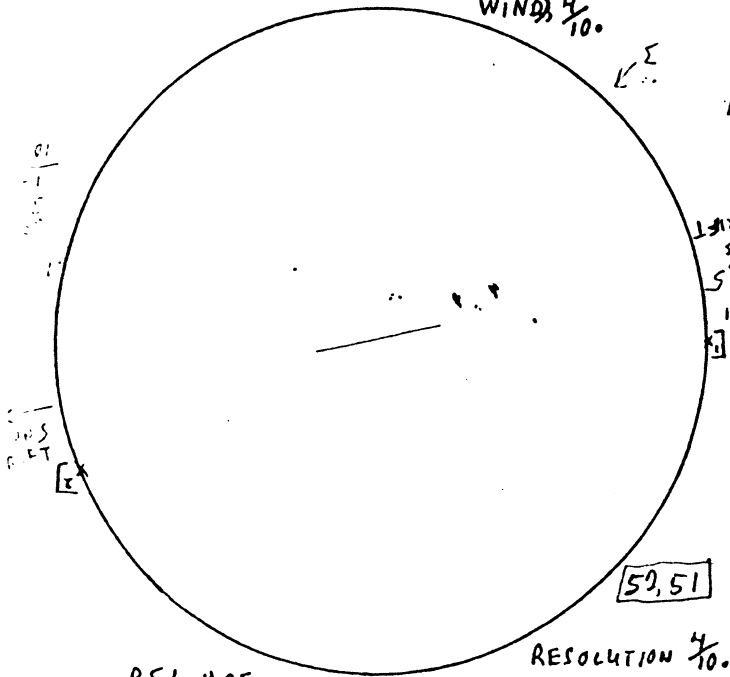
7465

RELATIVE # OF SUNSPOTS $[(10 \times 7) + 19] = 90$

4:12 P.M. ; $\frac{900\text{mm}}{18\text{mm}}$; SEEING $\frac{6}{10}$.

MAR. 1/95 12:00 N. - 12:08 P.M. EST. $\phi 11.6$ $\frac{700 \text{ mm}}{18 \text{ mm}}$
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, STEADY IMAGE.
 TRANSP. $\frac{8}{10}$. RESOLUTION (BECAUSE OF WIND) $\frac{4}{10}$.

MAR. 2 12:00 N. - 12:05 P.M. EST.
 THIN CIRRUS IN SUN'S AREA; NO BREEZE.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $> \frac{6}{10}$
 > "BETTER THAN"

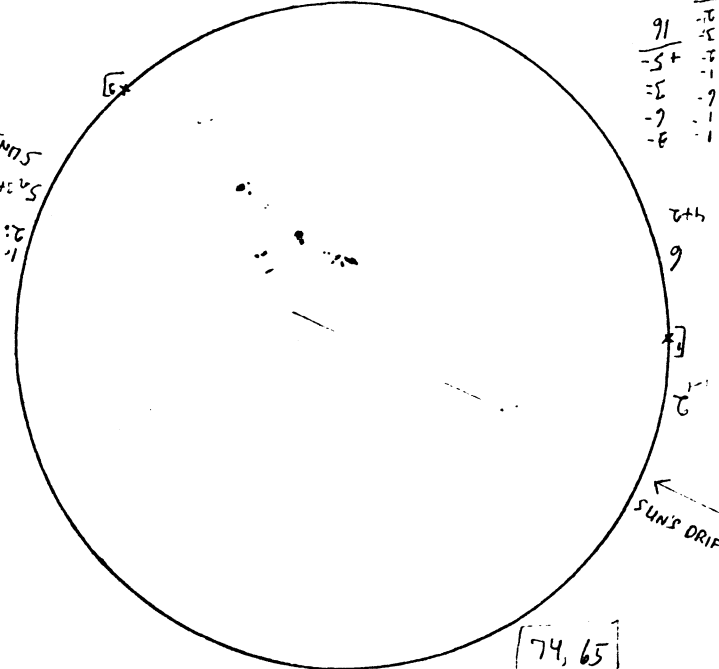
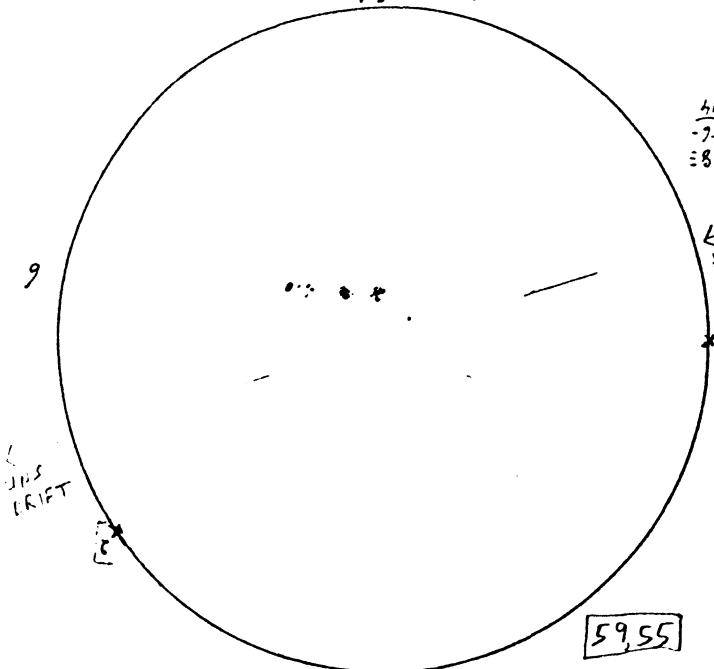


REL. # OF SUNSPOTS $[(10 \times 4) + 10] = 50$; $\frac{700 \text{ mm}}{18 \text{ mm}}$; 12:08 P.M. RESOLUTION $\frac{4}{10}$.

REL. # OF SUNSPOTS $[(10 \times 5) + 12] = 62$; $\frac{700 \text{ mm}}{12 \text{ mm}}$; 12:06 P.M. SEEING $\frac{6}{10}$.

MAR 3 11:58 AM. - 12:10 P.M. EST.
 LARGE WHITE CLOUDS IN 70% CLEAR SKY.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{8}{10}$, SHARP IMAGE.

MAR. 4 2:54 - 3:06 P.M. EST.
 SKY TOTALLY CLEAR, BLUE CLEAR IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{8}{10}$, SHARP IMAGE.

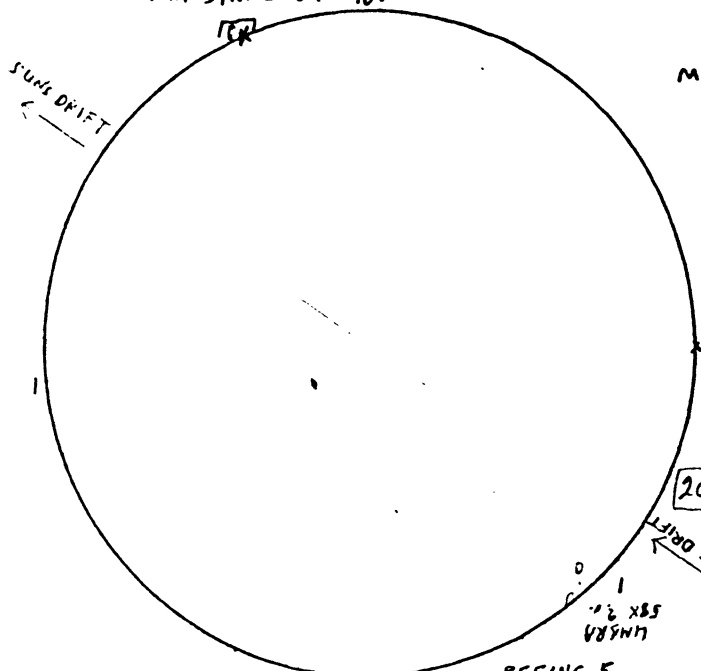


REL. # OF SPOTS $[(10 \times 4) + 14] = 54$
 12:13 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{8}{10}$.
 STEADY.

REL. # OF SPOTS $[(10 \times 5) + 16] = 66$
 $\approx [(10 \times 7) + 14] = 86$
 3:08 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{6}{10}$.

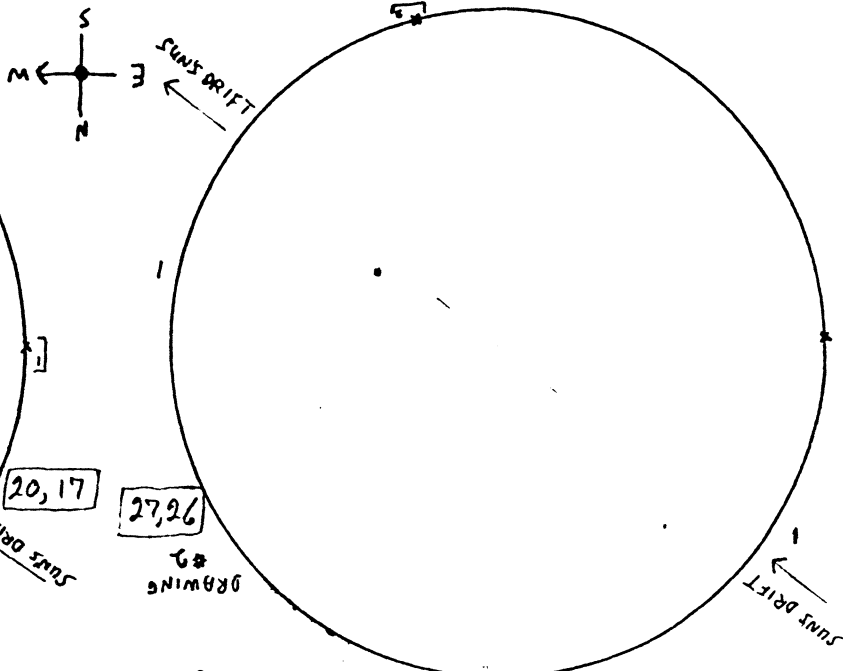
f 11-6 $\frac{700\text{mm}}{18\text{mm}}$

FEB. 14/95 5:00-5:05 P.M. EST.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{6}{10}$, RIPPLES
 TRANSPARENCY $\frac{7}{10}$.



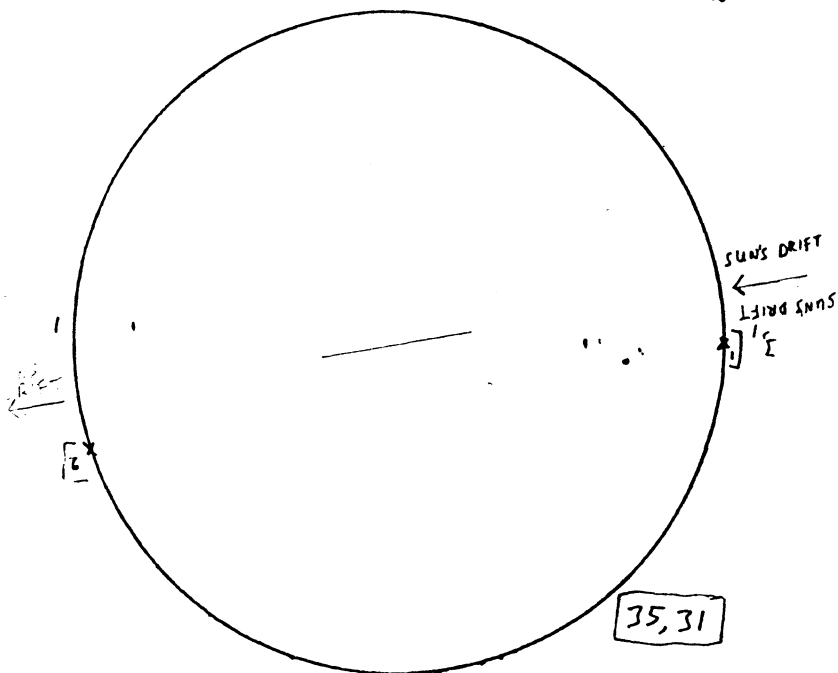
REL # OF SUNSPOTS $[(10 \times 2) + 2] = 22$; 5:05 P.M.; $\frac{700\text{mm}}{19\text{mm}}$; SEEING $\frac{5}{10}$.

FEB 16 5:15-5:20 P.M. EST.
 THIN CIRRUS IN SUNS AREA. "NO" BREEZE.
 SEEING $\frac{6}{10}$, RIPPLES.
 TRANSPARENCY $\frac{6}{10}$.



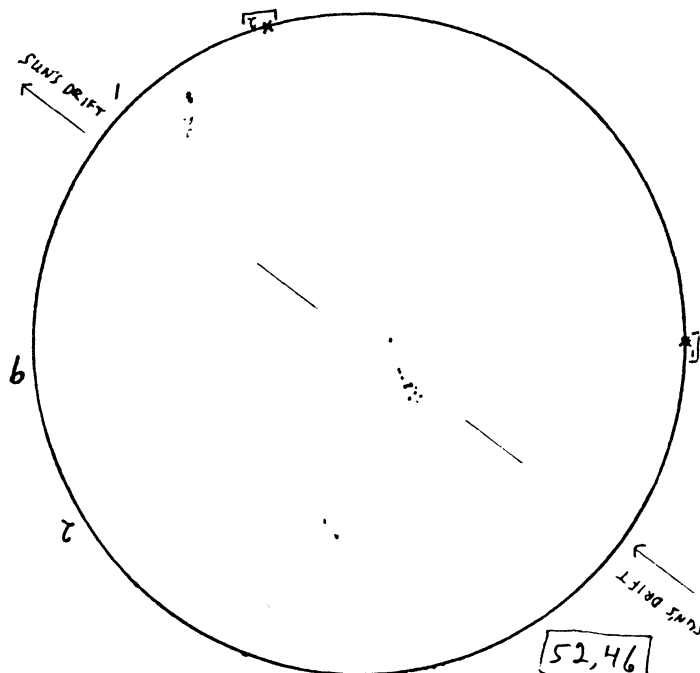
REL # OF SUNSPOTS $[(10 \times 2) + 2] = 22$; 5:20 P.M. $\frac{700\text{mm}}{19\text{mm}}$; SEEING $\frac{6}{10}$.

FEB. 18 12:48-12:55 P.M. E.S.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{4}{10}$; RESOLUTION (BECAUSE OF WIND)
 TRANSPARENCY $\frac{7}{10}$. $\frac{4}{10} \leftrightarrow \frac{7}{10}$.



RELATIVE # OF SUNSPOTS $[(10 \times 3) + 5] = 35$
 12:55 P.M.; $\frac{700\text{mm}}{18\text{mm}}$; SEEING $\frac{6}{10}$.

FEB. 19 4:58-5:05 P.M. EST.
 SKY WHITE-BLUE IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSP. $\frac{7}{10}$, MANY SMALL RIPPLES.

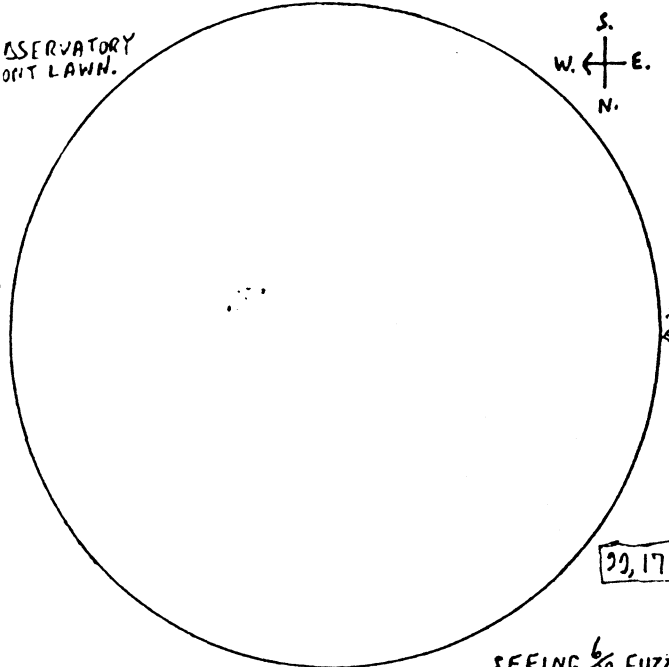
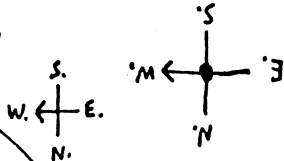


RELATIVE # OF SPOTS $[(10 \times 5) + 12] = 62$
 5:10 P.M.; $\frac{700\text{mm}}{12\text{mm}}$; SEEING $\frac{6}{10} \leftrightarrow \frac{5}{10}$

↑ GROUP SHOULD BE P.L.E. SLANTED.

f8 900mm/25mm
 NOV. 26/94 3:42-3:48 P.M. E.S.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY.
 TRANSPARENCY $\frac{8}{10}$, SHARP DETAIL.

OBSERVATORY
 FRONT LAWN.

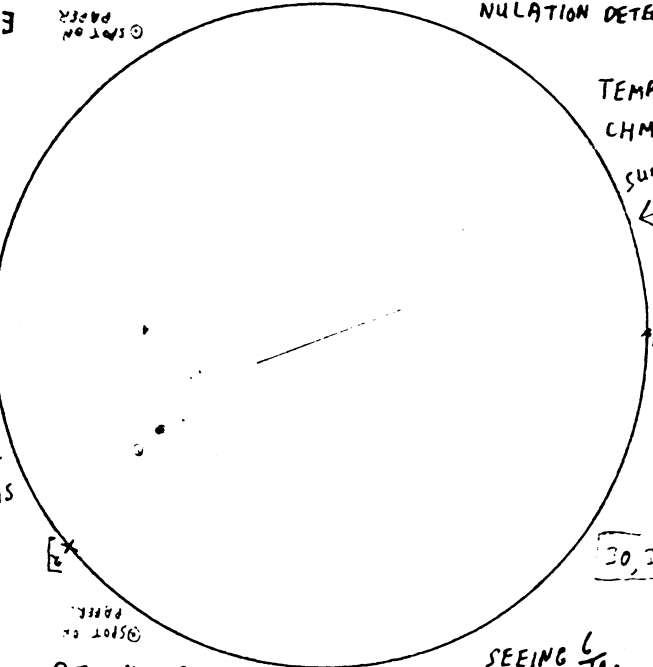


REL. # OF
 SUNSPOTS $[(10 \times 1) + 8] = 18$; 3:48 P.M.; $\frac{900mm}{12mm}$
 SEEING $\frac{6}{10}$, FUZZY.

f11.6 $\frac{700mm}{18mm}$

DEC. 25 12:24-12:32 P.M. E.S.T.
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, RIPPLES ALONG SOLAR LIMB.
 TRANSPARENCY $\frac{8}{10}$, SHARP IMAGE, SOLAR GRA-
 NULATION DETECTED?

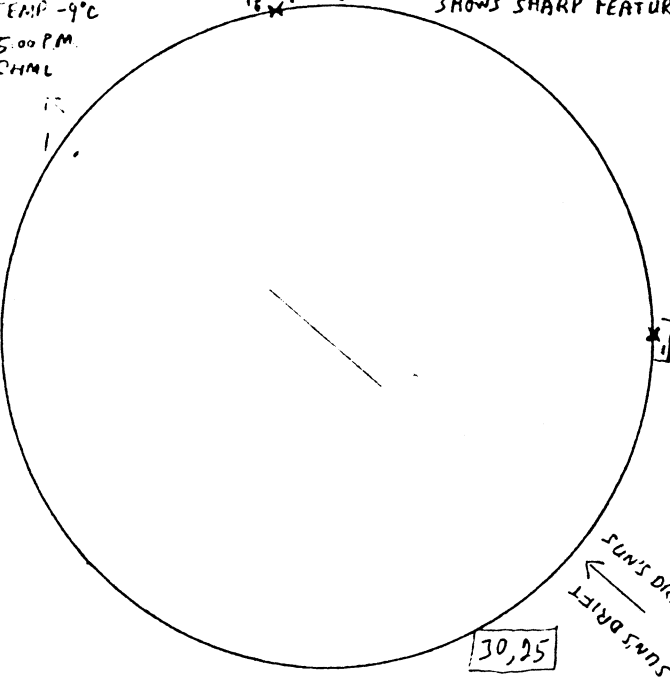
STATION
 PAPER



REL. # OF
 SUNSPOTS $[(10 \times 3) + 7] = 37$; 12:37 P.M.; $\frac{700mm}{12mm}$
 SEEING $\frac{6}{10}$.

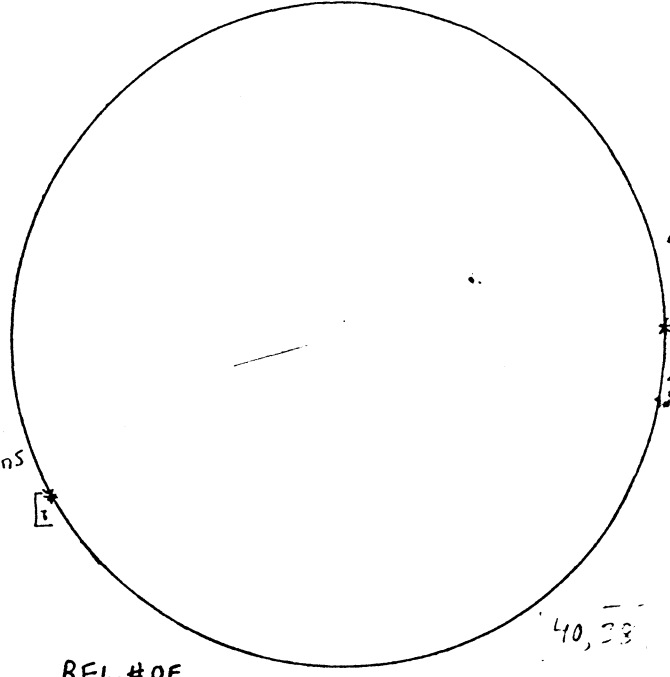
JAN. 28/95 4:35-4:40 P.M. E.S.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{6}{10}$; BOILING, RIPPLES.
 TRANSPARENCY $\frac{8}{10}$, SURROUNDING LANDSCAPE
 SHOWS SHARP FEATURES.

TEMP -9°C
 5:00 P.M.
 CHML



REL. # OF SPOTS $[(10 \times 1) + 1] = 11$
 4:43 P.M.; $\frac{700mm}{12mm}$ RESOLUTION (BECAUSE
 OF WIND) $\frac{6}{10}$.
 BREEZE.

FEB. 3 11:55 AM - 12:05 P.M. E.S.T.
 OPENING IN BETWEEN THICKENING CIRRUS CLOUDS.
 TRANSPARENCY $\frac{6}{10}$.
 SEEING $\frac{8}{10}$, STEADY IMAGE.



REL. # OF
 SUNSPOTS $[(10 \times 2) + 3] = 23$
 SEEING $\frac{8}{10}$; $\frac{700mm}{18mm}$; 12:05 P.M.

9/12/26 12:10-12:22

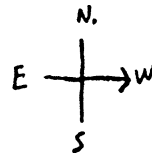
SEEING $\frac{7}{10}$ RIPPLES

TRANSP. NO HAZE IN SUN'S AREA.

SKY TOTALLY CLEAR

700 12:10-12:22
 $\frac{18}{18}$ min

FAINT
↓
VERY FAINT
↓



REL # OF SUNSPOTS 12:22

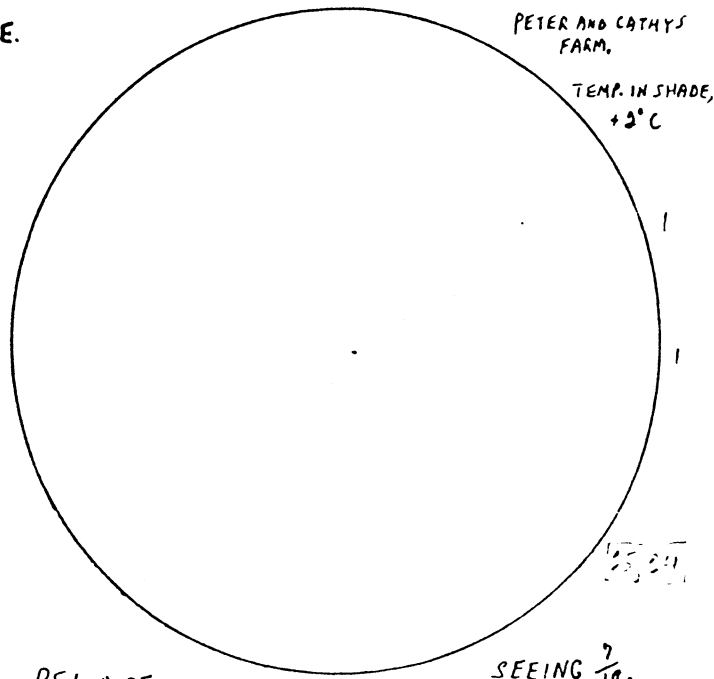
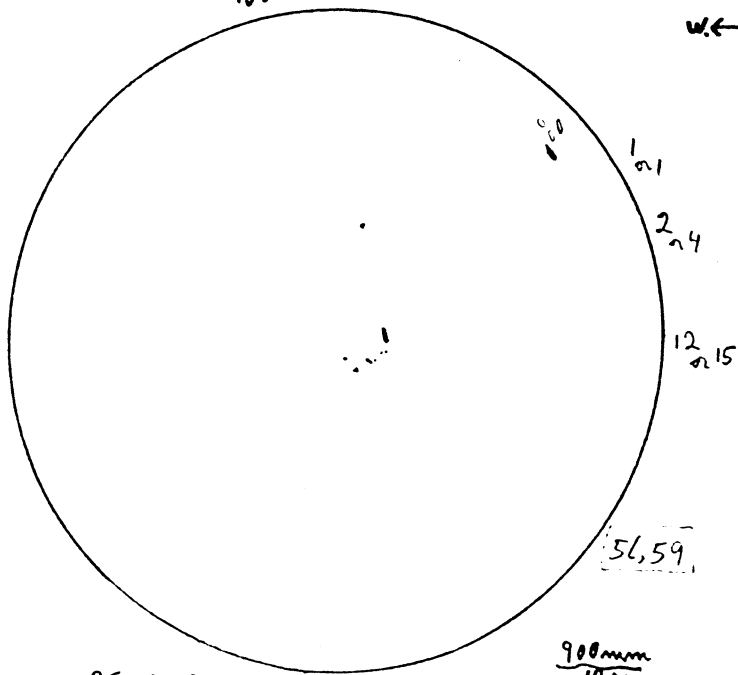
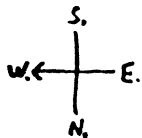
10x2+2=22 $\frac{700}{12}$ SEEING $\frac{6}{10}$, FUZZY

COPIED ONTO A SMALL CIRCLE DRAWING 10/27 11:30 AM.

f8 $\frac{900\text{mm}}{25\text{mm}}$

OCT. 30/94 2:00-2:15 P.M. E.S.T.
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSP. $\frac{9}{10}$, GRANULATION DETECTED.

NOV. 10 3:06-3:09 P.M. E.S.T.
 SKY BLUE-CLEAR IN SUN'S AREA
 SEEING $\frac{8}{10}$; TRANSP $\frac{8}{10}$.
 SMALL TREE-BRANCHES MOVE IN BREEZE.



PETER AND CATHYS FARM.

TEMP. IN SHADE, +2°C

REL. # OF SUNSPOTS $\frac{[(10 \times 3) + 15]}{2[(10 \times 2) + 20]} = \frac{45}{50}$; 2:12 P.M. } RESOLUTION $\frac{8}{10}$,
 2:15 P.M.

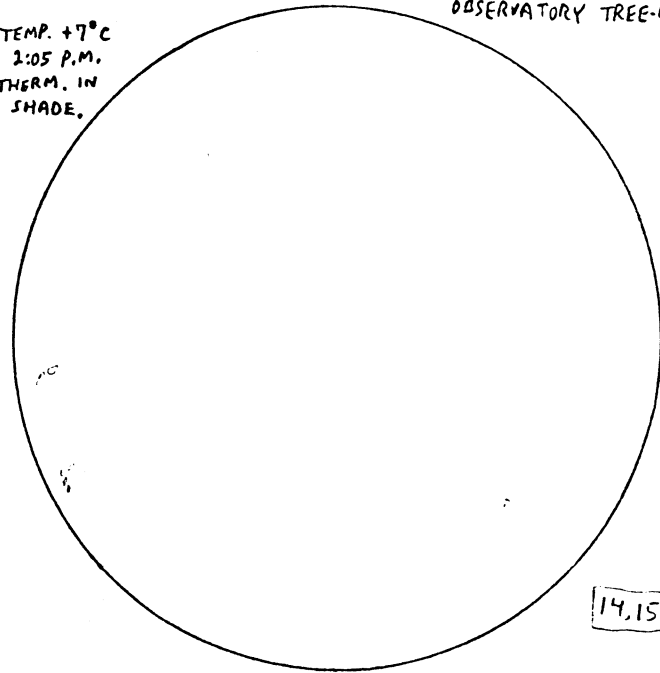
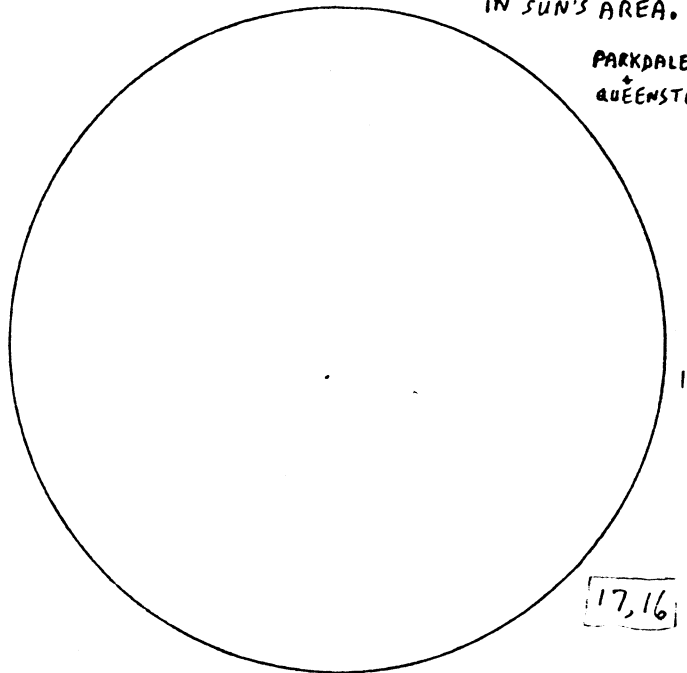
REL. # OF SUNSPOTS $[(10 \times 2) + 2] = 22$; $\frac{900\text{mm}}{12\text{mm}}$; 3:10 P.M. SEEING $\frac{7}{10}$.

NOV. 11 12:10-12:18 P.M. E.S.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, SMALL RIPPLES.
 TRANSPARENCY $\frac{8}{10}$, SKY BLUE-CLEAR IN SUN'S AREA.

NOV. 19 1:20-1:30 P.M. E.S.T.
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $\frac{5}{10}$, MANY RIPPLES ALONG SOLAR LIMB.
 TRANSPARENCY $\frac{8}{10}$. SUN SKIMMING ALONG OBSERVATORY TREE-LINE.

TEMP. +7°C
 2:05 P.M.
 THERM. IN SHADE.

PARKDALE
 QUEENSTON



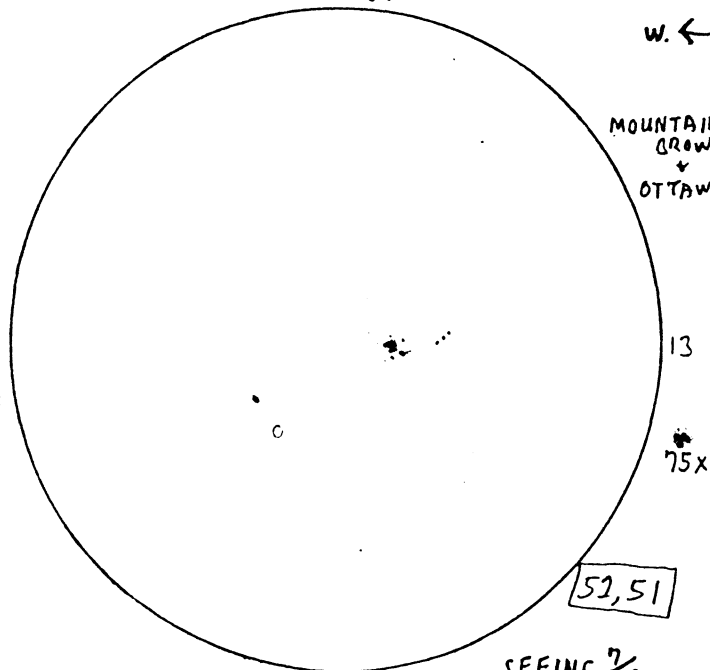
REL. # OF SUNSPOTS $[(10 \times 1) \times 1] = 11$
 $\frac{900\text{mm}}{18\text{mm}}$; 12:15 P.M.; SEEING $\frac{6}{10}$.
 SMALL UNRESOLVED DOUBLE? UMARA.

REL. # OF SUNSPOTS $[(10 \times 0) + 0] = 0$
 $\frac{900\text{mm}}{18\text{mm}}$; SEEING $\frac{5}{10}$; 1:25 P.M.

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OCT. 16/94 2:10-2:15 P.M. E.D.T.
 SHEEP-WOOL CLOUDS IN BLUE SKY.
 SEEING $\frac{7}{10}$, "FUZZY" IMAGE.
 TRANSPARENCY $\frac{7}{10}$, LIGHT CLOUDS.

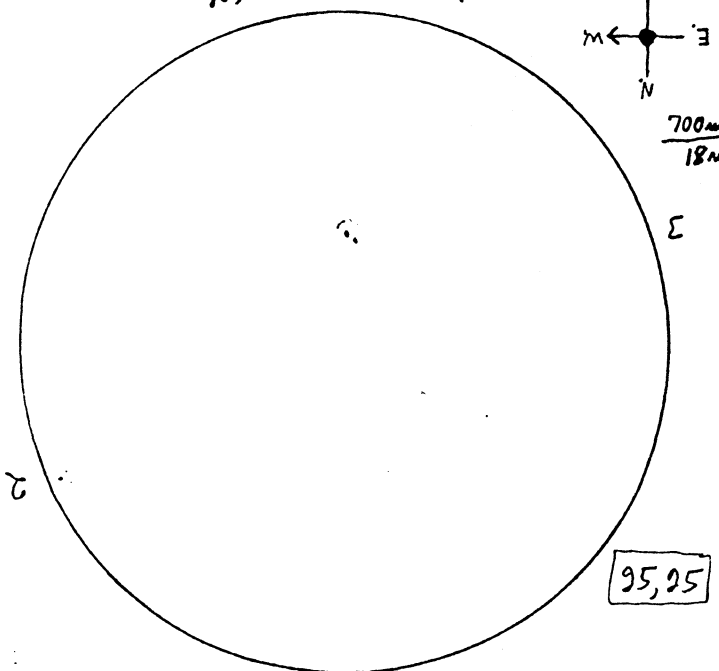
f 8 $\frac{900mm}{25mm}$



REL. # OF SUNSPOTS $[(10 \times 2) + 14] = 34$; $\frac{900mm}{12mm}$; SEEING $\frac{7}{10}$.

OCT. 23 2:25-2:35 P.M. E.D.T.
 LARGE, FAST MOVING CLOUDS IN BLUE SKY.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSP. $\frac{8}{10}$, FACULAE EASILY VISIBLE.

f 11.6 $\frac{700mm}{18mm}$

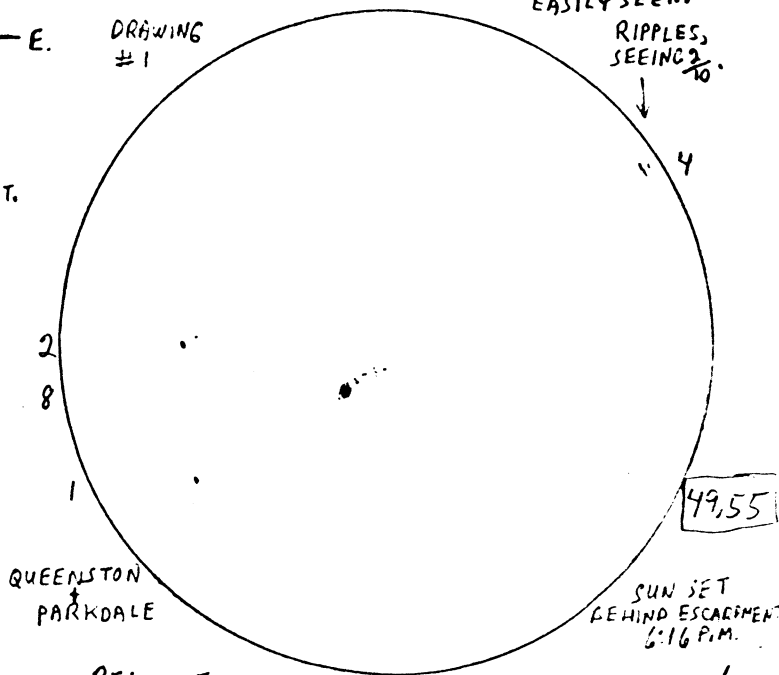


REL. # OF SUNSPOTS $[(10 \times 2) + 5] = 25$
 2:43 P.M.; $\frac{700mm}{12mm}$; SEEING $\frac{7}{10}$.

60mm REFRACTOR ON EQUATORIAL MOUNT,
 WITH ELECTRIC CLOCK DRIVE. !!!

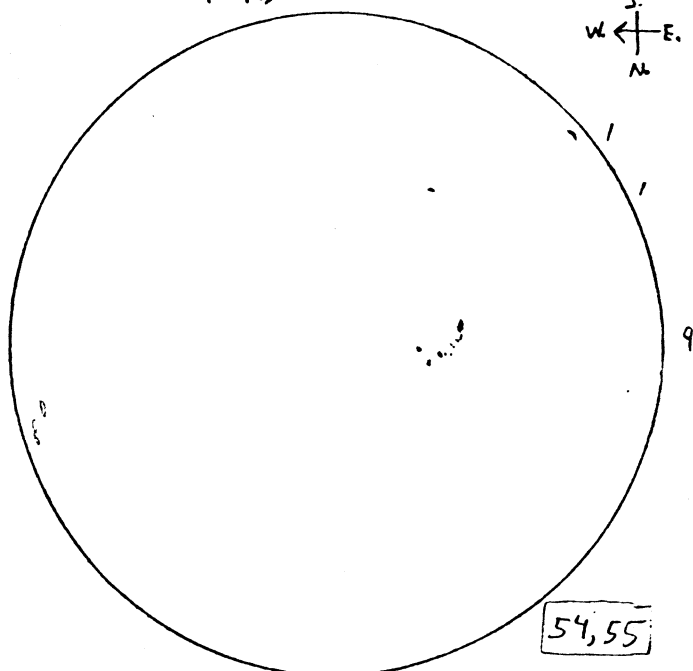
OCT. 18 5:20-5:35 P.M. E.D.T.
 SKY HAZY BLUE IN SUN'S AREA.
 SEEING $\frac{8}{10}$; $\frac{6}{10}$ ALONG LIMBS.
 TRANSPARENCY, $\frac{8}{10}$; SPOT ON LIMB
 EASILY SEEN.

DRAWING #1



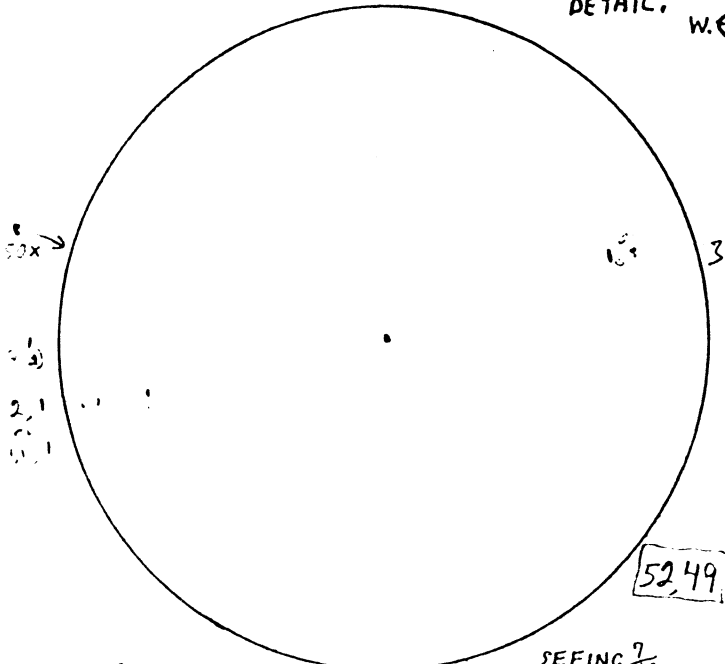
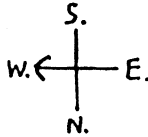
REL. # OF SUNSPOTS $[(10 \times 4) + 15] = 55$; 5:37 P.M.; SEEING $\frac{6}{10}$, RIPPLES.

OCT. 29 3:25-3:33-3:48 P.M. E.D.T.
 LIGHT FAST MOVING CLOUD COVER → CLEAR BLUE SKY.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{7}{10}$, SHARP CONTRAST.



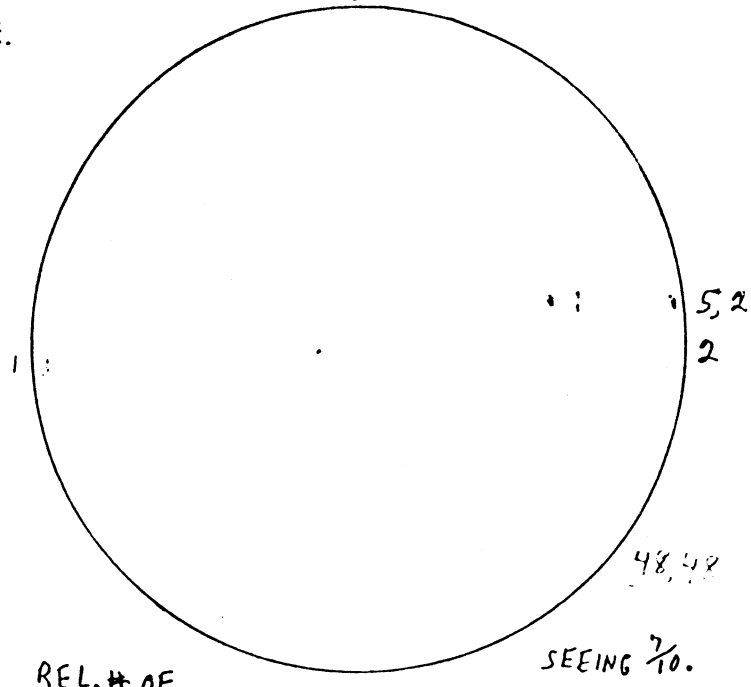
REL. # OF SUNSPOTS $[(10 \times 3) + 11] = 41$
 3:40 P.M.; $\frac{400mm}{12mm, 18mm}$; SEEING $\frac{6}{10}$.

OCT. 10/94 3:18-3:30 P.M. E.D.T. $f \ 8$ $\frac{900 \text{ mm}}{25 \text{ mm}}$
 SKY BLUE IN SUN'S AREA.
 SEEING $\frac{9}{10} \leftrightarrow \frac{7}{10}$, "BUMPY" INTERVALS.
 TRANSPARENCY $\frac{9}{10}$, SHARP FACULAE DETAIL.



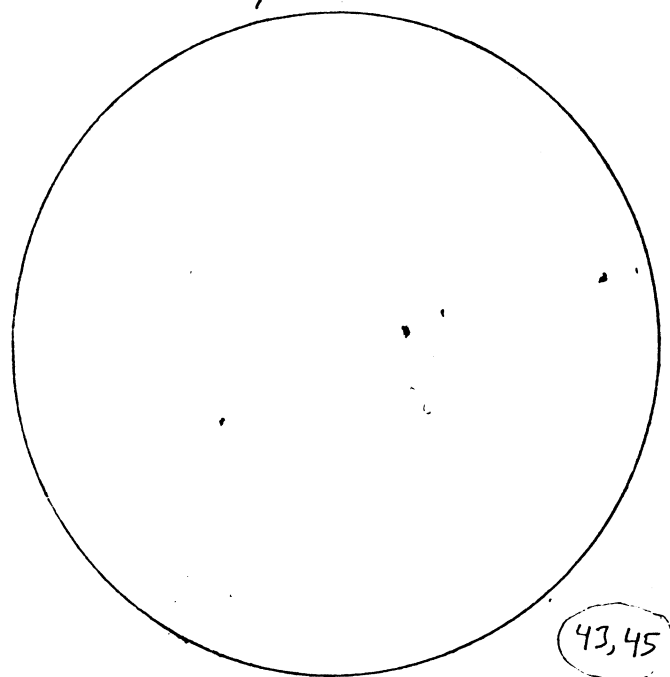
REL. # OF SUNSPOTS $\frac{[(10 \times 4) + 7] = 47}{[(10 \times 5) + 8] = 58} \cdot \frac{900 \text{ mm}}{18 \text{ mm}}$; 3:39 P.M.

OCT. 11 5:25-5:35 P.M. E.D.T.
 TOTALLY CLEAR SKY BLUE IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{9}{10}$, SHARP IMAGE $\sim 10/10$



REL. # OF SUNSPOTS $[(10 \times 4) + 10] = 50$; $\frac{900 \text{ mm}}{12 \text{ mm}}$; 5:45 P.M.

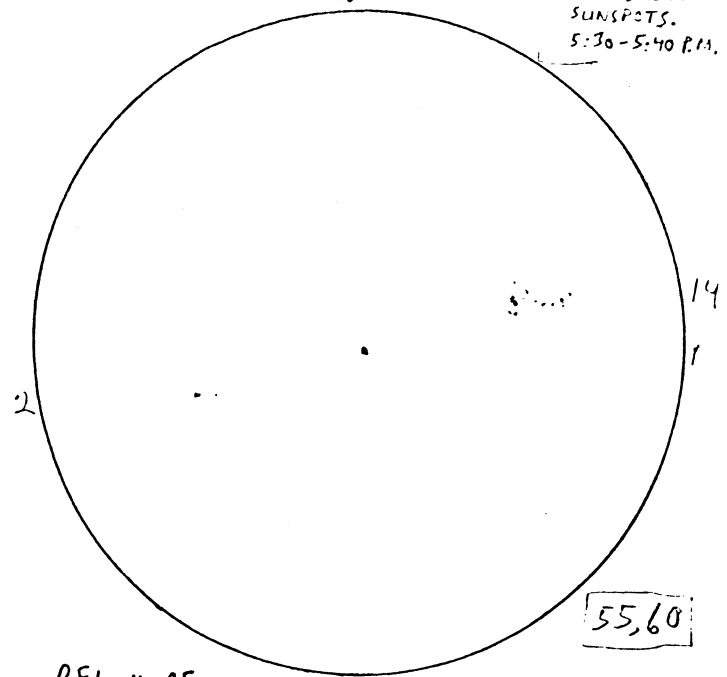
OCT. 12 6:20-6:25 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{4}{10}$, RIPPLES ACROSS SETTING SUN.
 TRANSP. $\sim 10/11$.



SUN SETTING BEHIND ESCARPMENT PRECLUDES SUNSPOT COUNT, 5:25-5:28 P.M.

OCT. 14 5:20-5:30 P.M. E.D.T.
 SKY TOTALLY CLEAR $\sim 10/11$
 SEEING $\frac{9}{10}$, STEADY IMAGE
 TRANSPARENCY $\frac{8}{10}$.

TARA SKETCHED SUNSPOTS. 5:30-5:40 P.M.



REL. # OF SUNSPOTS $[(10 \times 3) + 17] = 47$
 5:30 P.M.; SEEING $\frac{7}{10}$; $\frac{900 \text{ mm}}{19 \text{ mm}}$.

OCT. 8/94 4:17- 4:30 P.M. E.D.T.

INCREASING CIRRO-STRATUS OVERCAST.

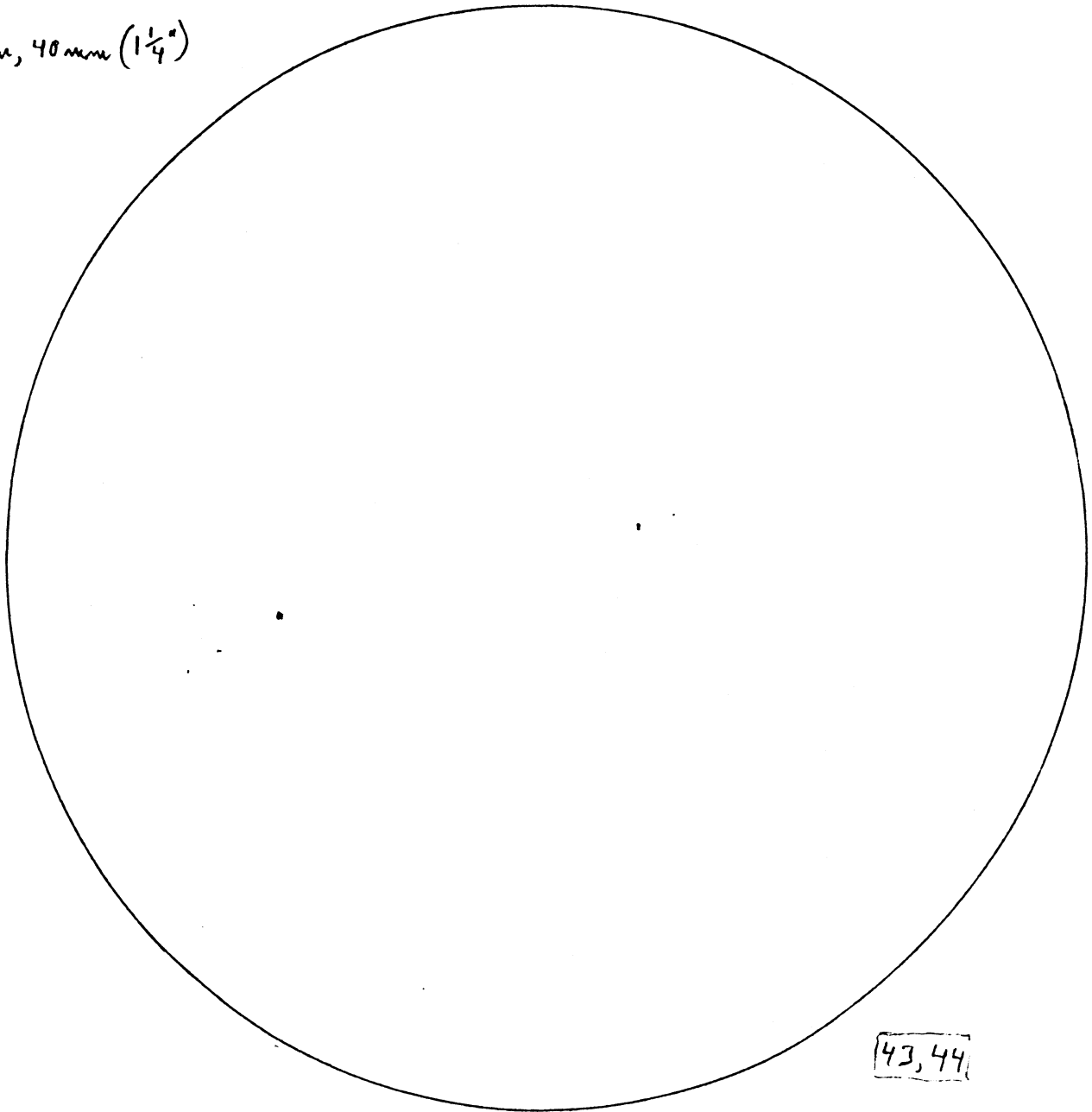
SEEING $\frac{2}{10}$, STEADY IMAGE; TRANSPARENCY $\frac{2}{10} \rightarrow \frac{3}{10} \rightarrow \frac{4}{10}$.
4:15, 4:25, 4:32 P.M.

HENLEY ISLAND PARKING LOT, ST. CATHARINES ONT.



$\frac{900 \text{ mm}}{25 \text{ mm}}$ (INCH)
(.96")

25 mm, 40 mm ($1\frac{1}{4}$ ")



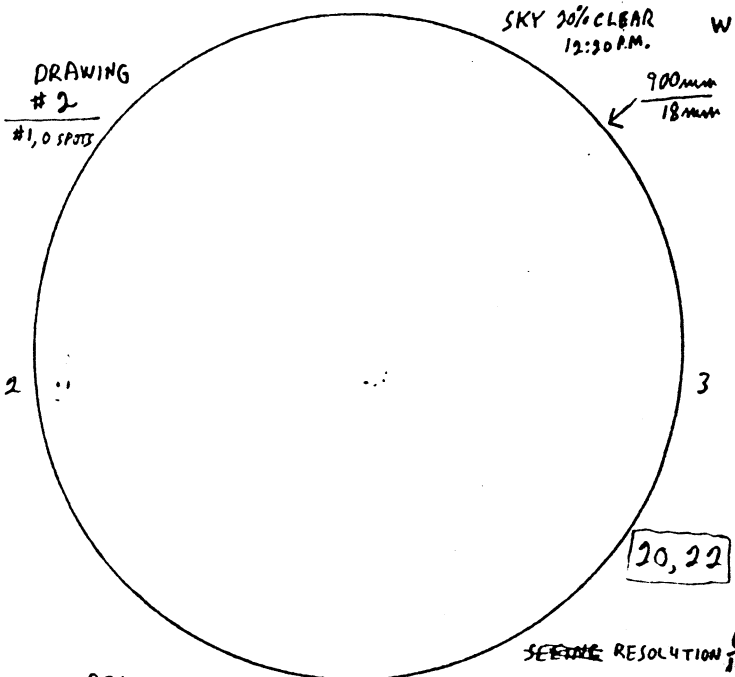
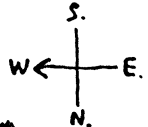
RELATIVE # OF SUNSPOTS $[(10 \times 3) + 7] = 37$
 $[(10 \times 4) + 7] = 47$

$\frac{900 \text{ mm}}{18 \text{ mm}}$; 4:30 P.M., SEEING $\frac{3}{10}$.

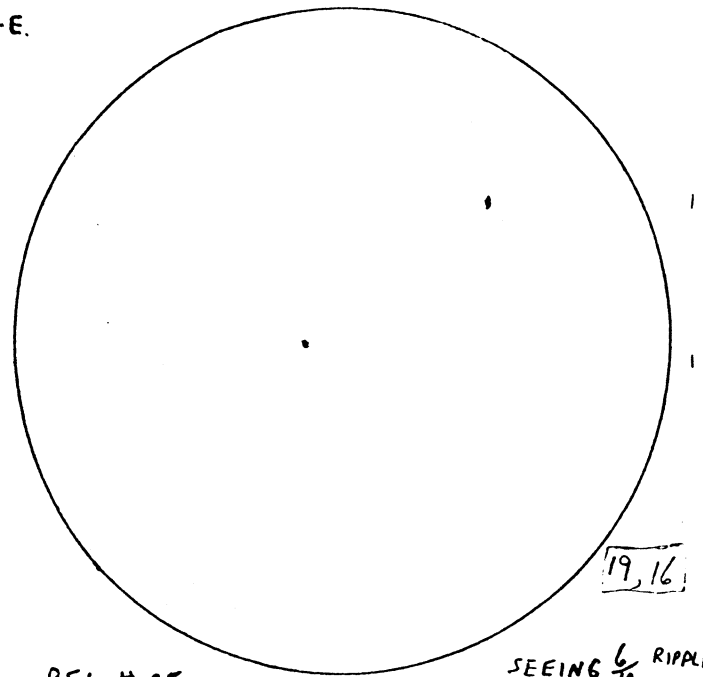
SEPT. 18/94 12:03 - 12:28 P.M. E.D.T.
 SKY 10% CLEAR WITH FAST MOVING
 SEEING STEADY WHEN CLEAR. CUM. NIM. CLOUDS.
 TRANSP. $\frac{8}{10}$.

$\frac{900\text{mm}}{25\text{mm}}$ f8

OCT. 2 2:05 - 2:15
 DRIFTING WHITE CLOUDS IN 80% CLEAR SKY.
 SEEING $\frac{7}{10}$.
 TRANSPARENCY $\frac{9}{10}$.



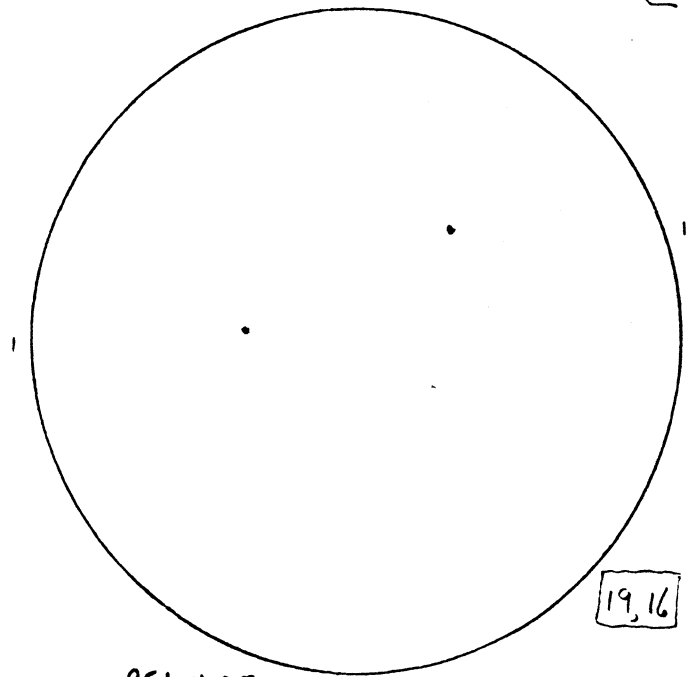
REL. # OF SUNSPOTS $[(10 \times 2) + 5] = 25$; 12:28 P.M.; $\frac{900\text{mm}}{18\text{mm}}$; SEEING RESOLUTION $\frac{6}{10}$.



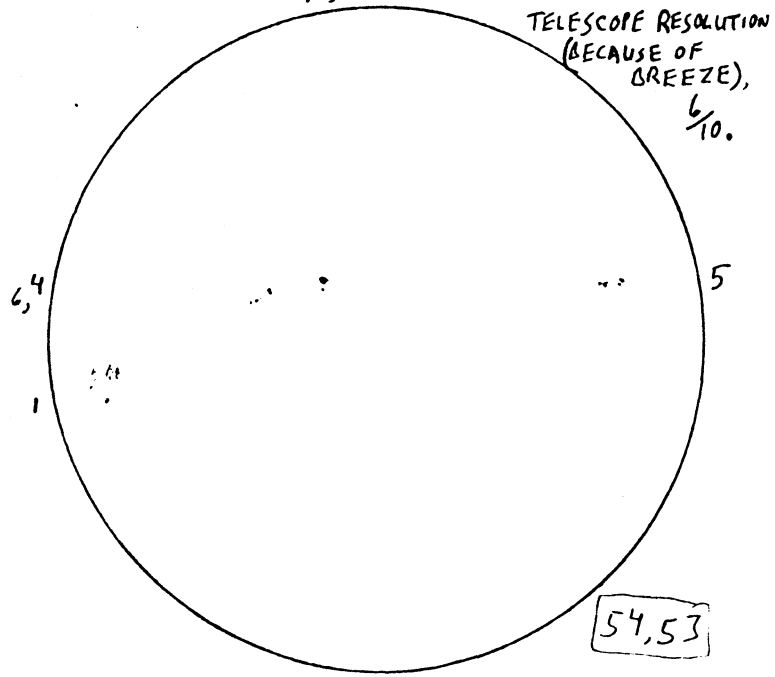
REL. # OF SUNSPOTS $[(10 \times 2) + 2] = 22$; $\frac{900\text{mm}}{12\text{mm}}$; 2:20 P.M.; SEEING $\frac{6}{10}$, RIPPLES.

OCT. 3 5:17 - 5:25 P.M. E.D.T.
 SEEING $\frac{7}{10}$, STEADY \rightarrow SMALL RIPPLES.
 TRANSP. $\frac{3}{10}$ BRAINY STRUCTURE DE-TECTED.
 SKY BLUE-WHITE IN SUN'S AREA.

OCT. 6 4:55 - 5:08 P.M. E.D.T.
 SKY BLUE-WHITE IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{9}{10}$, FACULAE EASILY SEEN.



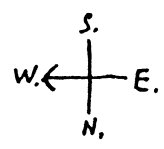
REL. # OF SUNSPOTS $[(10 \times 2) + 2] = 22$
 $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{6}{10}$; 5:26 P.M.



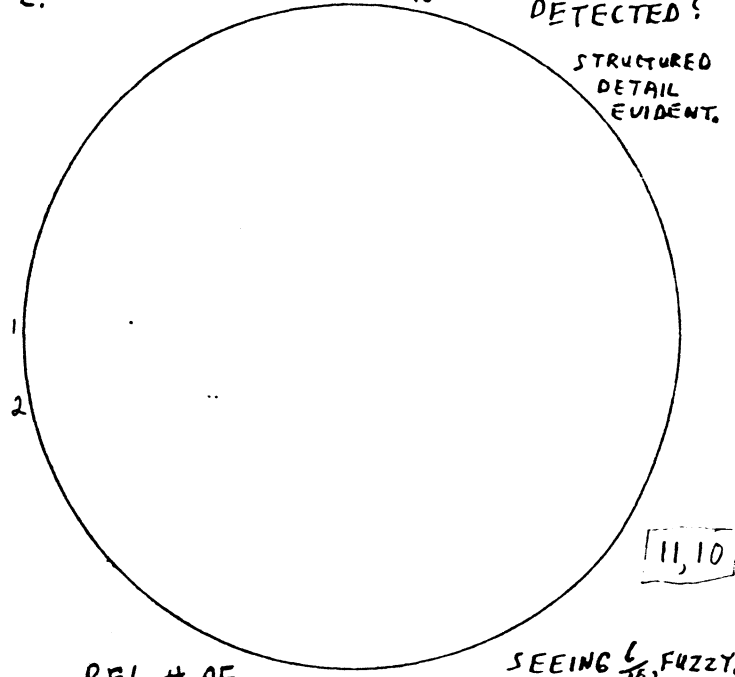
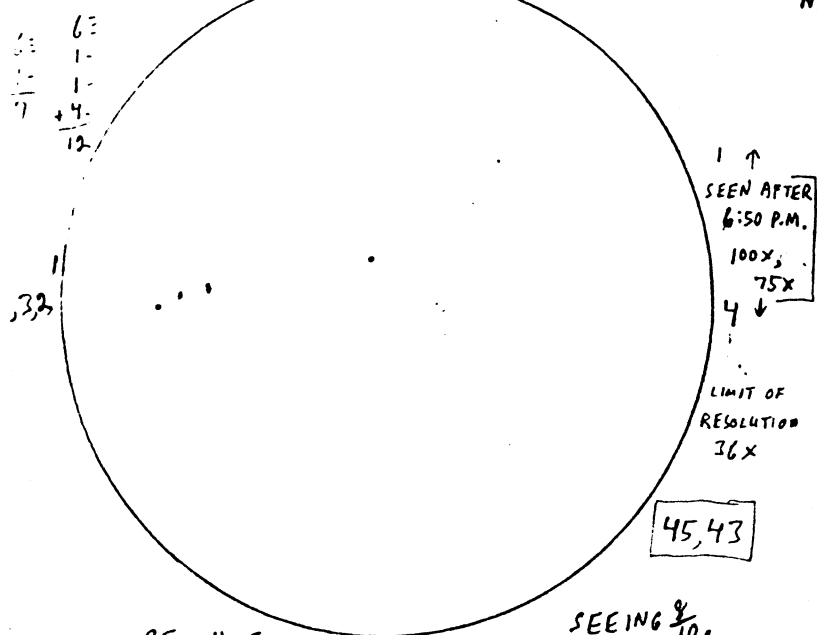
REL. # OF SPOTS $[(10 \times 4) + 16] = 56$
 $\frac{900\text{mm}}{12\text{mm}}$; 5:12 P.M.; (SEEING) (RESOLUTION) $\frac{6}{10}$.

900mm / 25mm f8

AUG. 16/94 6:30-7:10 P.M. E.D.T.
SKY BLUE-WHITE IN SUN'S AREA.
SEEING 8/10, STEADY! IMAGE.
TRANSPARENCY 8/10, GRANULATION DETECTED?



AUG. 22 5:10-5:20 P.M. E.D.T.
SKY WHITE-BLUE IN SUN'S AREA
SEEING 8/10, STEADY IMAGE.
TRANSPARENCY 9/10, GRANULATION DETECTED?



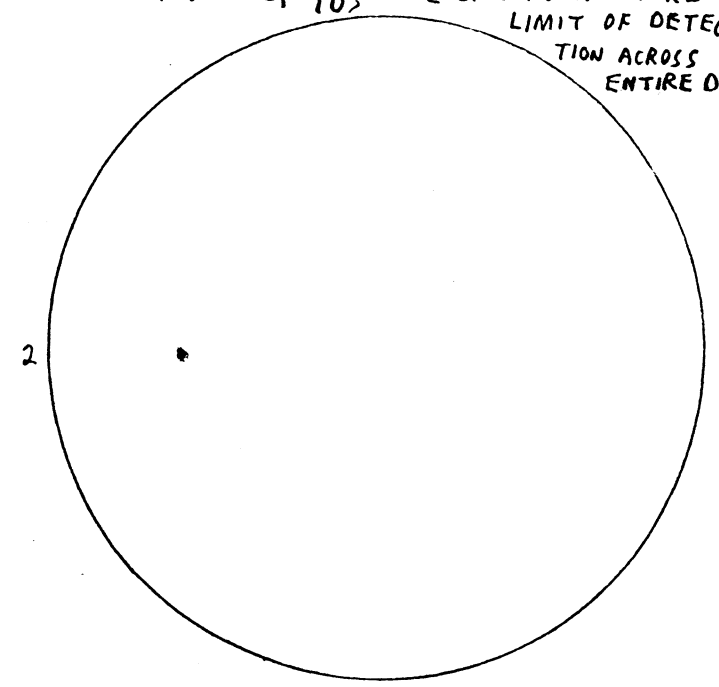
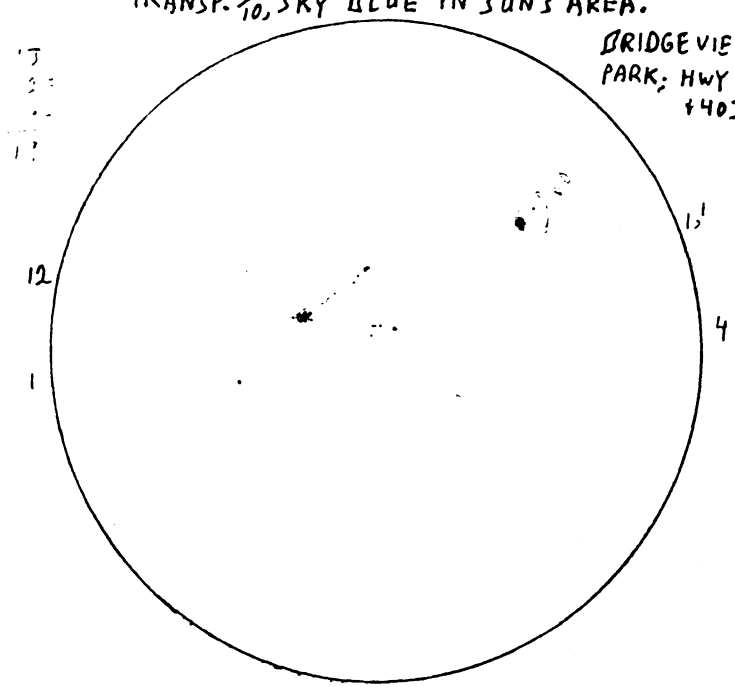
REL. # OF SUNSPOTS [(10x4)+7]=47; 6:40 P.M.; 900mm / 12mm;
[(10x6)+12]=72; 7:00 P.M. " "

REL. # OF SUNSPOTS [(10x2)+3]=23; 5:40 P.M.; 900mm / 12mm

SEPT. 5 4:07-4:33 P.M. E.D.T.
SEEING 9/10, STEADY!! IMAGE
TRANSP. 9/10, SKY BLUE IN SUN'S AREA.

BRIDGEVIEW PARK; HWY 6 +403.

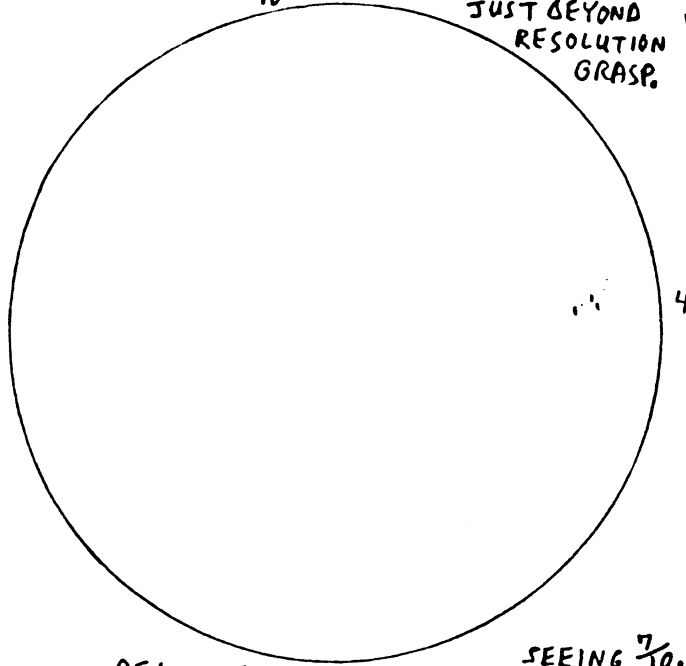
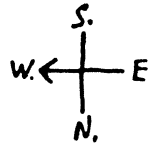
SEPT. 11 5:30-5:22 P.M. E.D.T.
SKY CLEAR IN SUN'S AREA.
SEEING 7/10, "FUZZY" IMAGE.
TRANSPARENCY 9/10, "RICE-GRAIN" STRUCTURE AT LIMIT OF DETECTION ACROSS ENTIRE DISC.



RELATIVE # OF SPOTS [(10x5)+19]=69
4:40 P.M.; 900mm / 12mm; SEEING 8/10.

REL. # OF SUNSPOTS [(10x1)+3]=12
4:24 P.M.; 900mm / 12mm; SEEING 6/10.

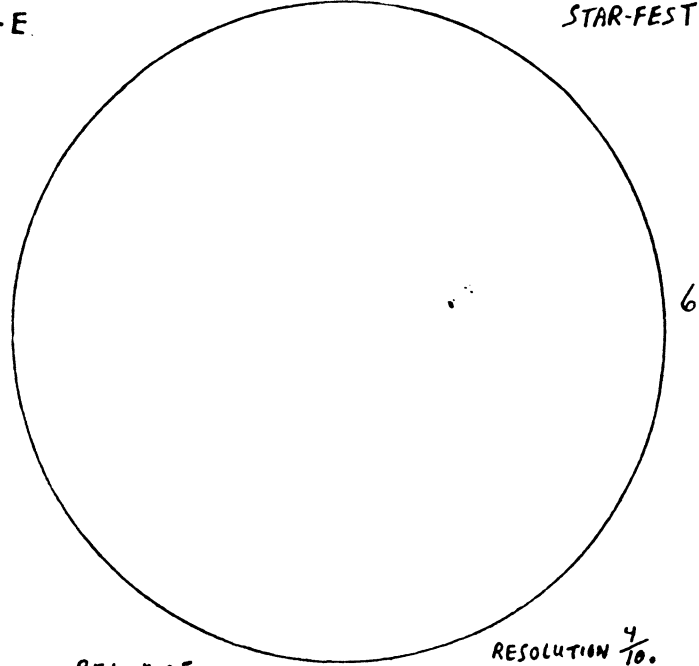
AUG. 3/94 5:15-5:21 P.M. E.D.T. f_8 $\frac{900\text{mm}}{25\text{mm}}$
 THIN HAZE IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY.
 TRANSP. $\frac{8}{10}$, GRANULATION DETECTED?
 JUST BEYOND RESOLUTION GRASP.



REL. # OF SUNSPOTS $[(10 \times 1) + 4] = 14$; 5:25 P.M.; $\frac{900\text{mm}}{19\text{mm}}$, SEEING $\frac{7}{10}$.

AUG. 5 5:58-6:08 P.M. E.D.T.
 SKY 50% CLEAR-BLUE WITH LARGE CUM. CLOUDS.
 SEEING $\frac{8}{10}$, STEADY; TRANSP. $\frac{8}{10}$.
 RESOLUTION (BECAUSE OF BREEZE) $\frac{6}{10}$.

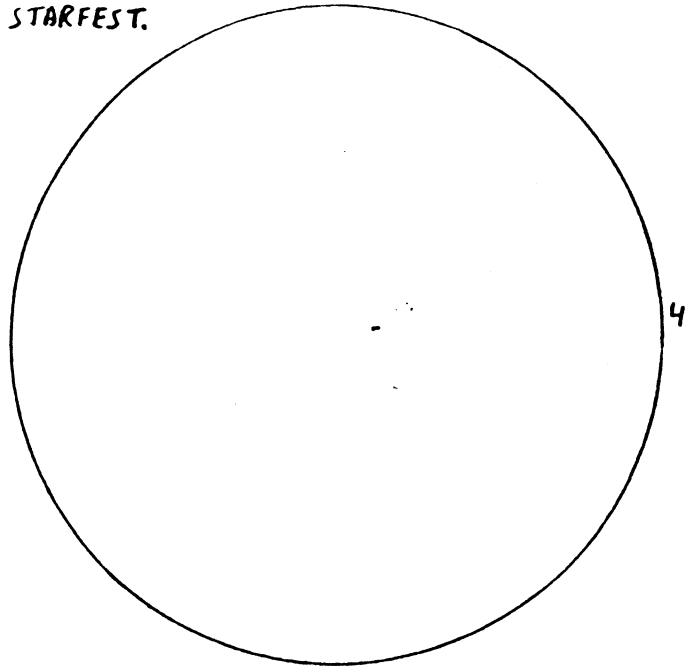
STAR-FEST



REL. # OF SUNSPOTS $[(10 \times 1) + 6] = 16$; 6:18 P.M.; $\frac{900\text{mm}}{12\text{mm}}$, RESOLUTION $\frac{4}{10}$.

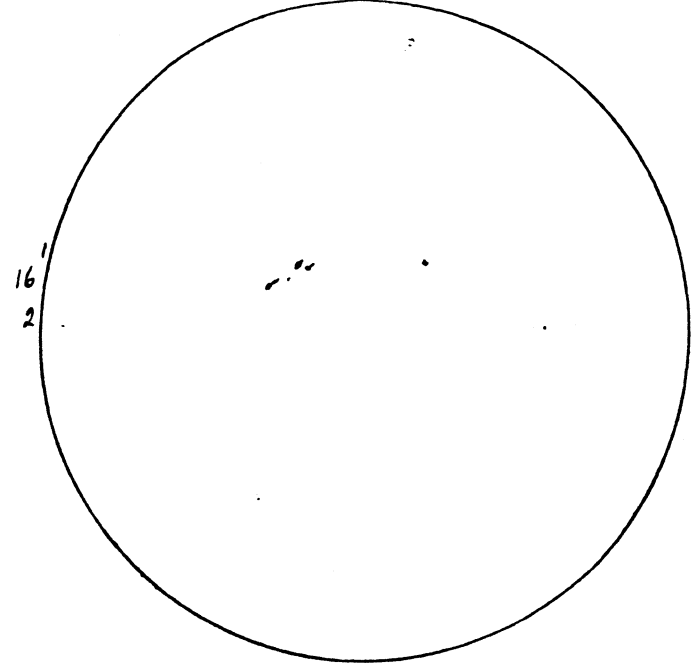
AUG. 6 3:38-3:43 P.M. E.D.T.
 SKY BLUE-CLEAR IN SUN'S AREA, 80% CLOUD.
 SEEING $\frac{7}{10}$; 'FUZZY'; TRANSP. $\frac{8}{10}$, GRAIN DETECTED ALONG LIMB.

STARFEST.



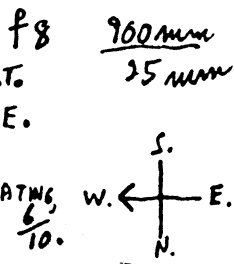
REL. # OF SUNSPOTS $[(10 \times 1) + 4] = 14$
 $\frac{900\text{mm}}{12\text{mm}}$; 3:45 P.M.; SEEING $\frac{6}{10}$.

AUG. 14 6:28-6:45 P.M. E.D.T.
 BROKEN CLOUD IN SUN'S AREA.
 SEEING (WHEN CLEAR) $\frac{8}{10}$, STEADY; IMAGE.
 TRANSPARENCY $\frac{9}{10}$, SHARP DETAIL.

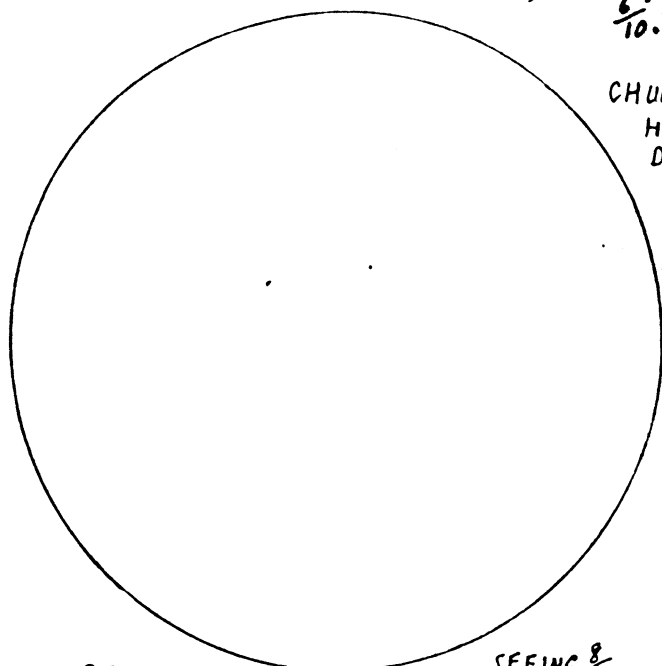


REL. # OF SUNSPOTS $[(10 \times 1) + 19] = 49$
 7:00 P.M.; $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{8}{10}$.

JULY 15/94 7:32-7:40 P.M. E.D.T.
 SUN SETTING INTO EVENING HAZE.
 SEEING $\frac{9}{10}$, STEADY. TRANSP. $\frac{8}{10}$.
 RESOLUTION BECAUSE OF BREEZE, VIBRATING $\frac{6}{10}$.

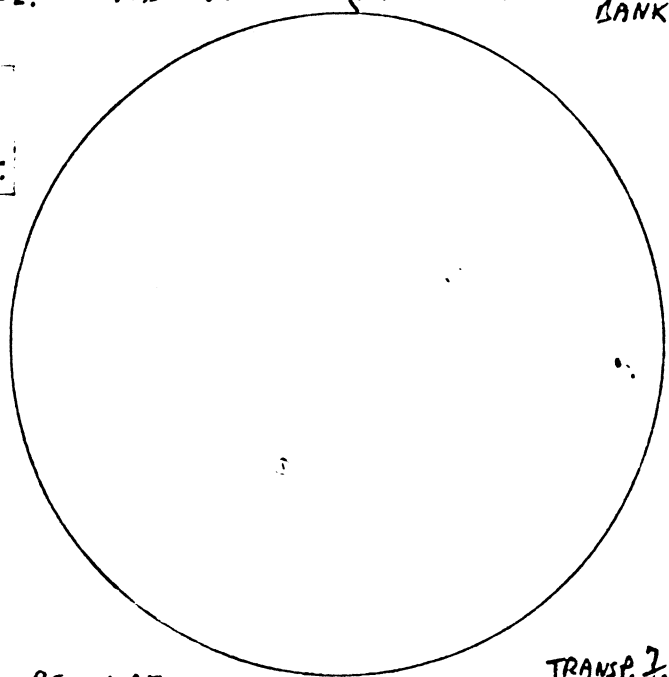


CHURCHILL
 H.S. YARD.
 DUNSMERE ST.



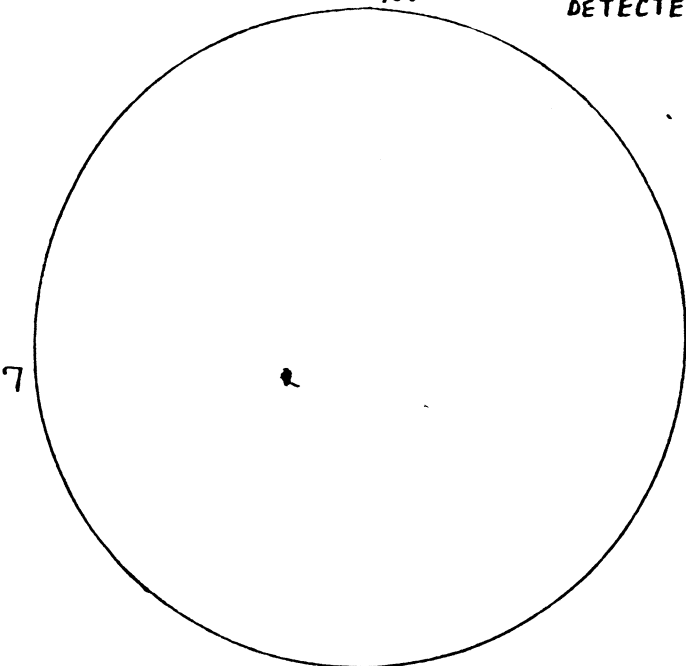
REL. # OF SUNSPOTS $[(10 \times 3) + 6] = 36$; 7:40 P.M.; $\frac{900mm}{12mm}$.
 SEEING $\frac{8}{10}$.

JULY 17 7:26-7:30 P.M. E.D.T.
 SUN SETTING INTO EVENING HAZE.
 SEEING + TRANSPARENCY $\frac{7}{10}$.
 FAST DRAWING (APPROACHING CLOUD BANK.)



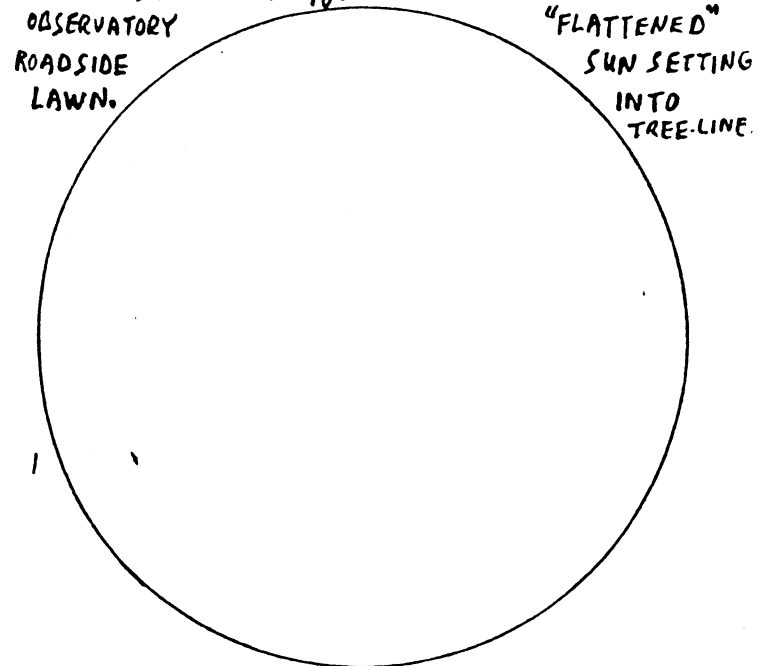
REL. # OF SUNSPOTS $[(10 \times 2) + 4] = 24$; $\frac{900mm}{12mm}$; 7:30 P.M.
 TRANSP. $\frac{7}{10} > \frac{5}{10}$.

JULY 23 5:20-5:25 P.M. E.D.T.
 SKY BLUE CLEAR IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{9}{10}$, GRANULATION DETECTED.

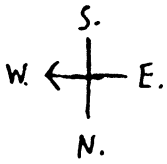


REL. # OF SUNSPOTS $[(10 \times 1) + 7] = 17$
 SEEING $\frac{7}{10}$; 5:26 P.M.; $\frac{900mm}{12mm}$.

JULY 26 8:15-8:20 P.M. E.D.T.
 SKY BLUE-WHITE IN SUN'S AREA.
 SEEING $\frac{6}{10}$; RIPPLES ACROSS SETTING SUN.
 TRANSPARENCY $\frac{9}{10}$, SKY BLUE-WHITE.

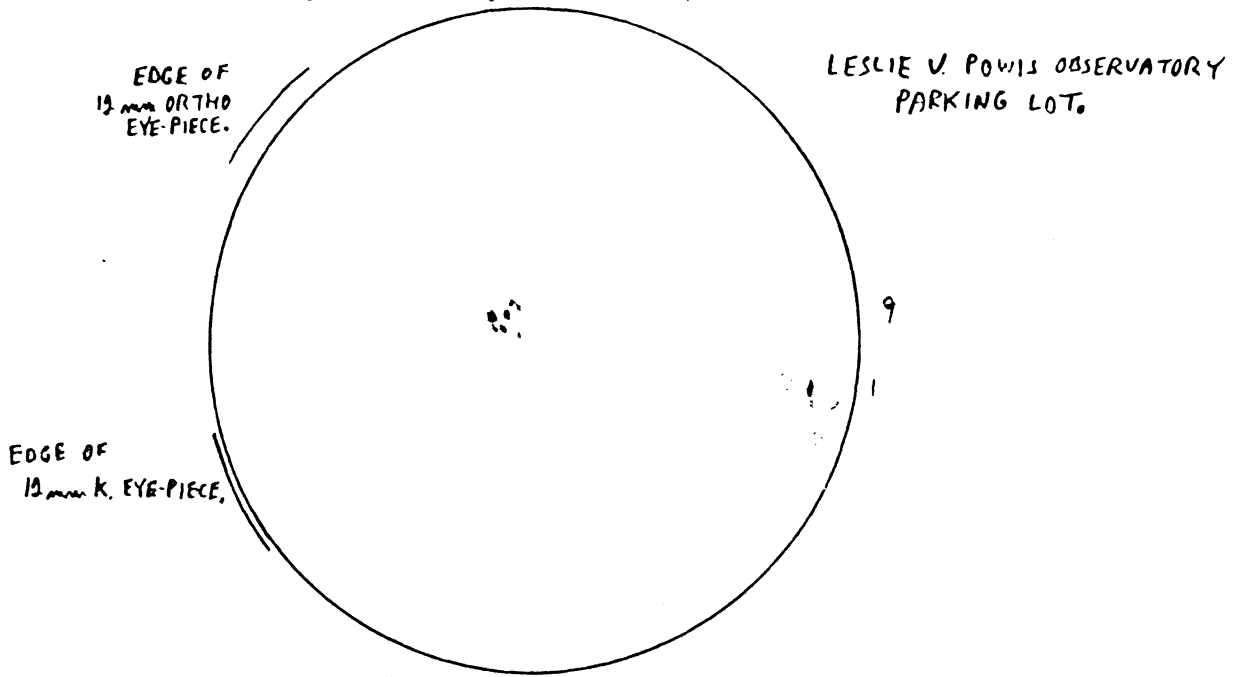


RELATIVE # OF SPOTS $[(10 \times 1) + 1] = 11$
 SEEING $\frac{5}{10}$; $\frac{900}{12mm}$; 8:20 P.M.



JULY 3/94 3:35-3:47 P.M. E.D.T.
SKY TOTALLY CLEAR.
SEEING $\frac{9}{10}$, VERY STEADY IMAGE.
TRANSPARENCY $\frac{9}{10}$, FACULAE VERY EVIDENT.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



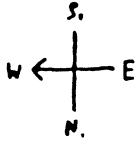
LESLIE V. POWIS OBSERVATORY
PARKING LOT.

REL. # OF SUNSPOTS $[(10 \times 2) + 10] = 30$.

$\frac{900 \text{ mm}}{19 \text{ mm}}$, 3:50 P.M.; ~~SEEING~~ RESOLUTION $\frac{7}{10}$.

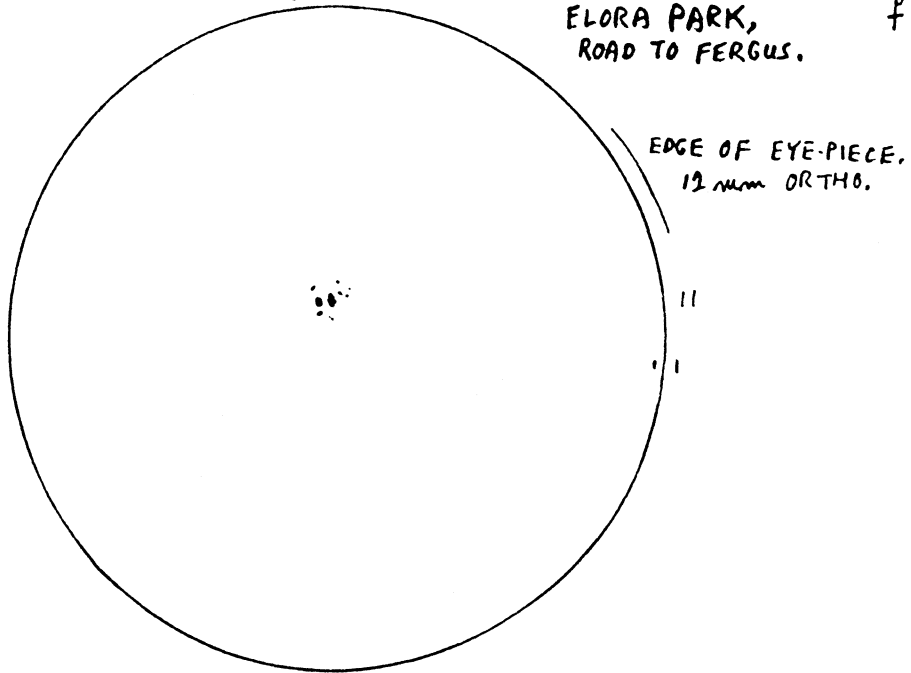
$\frac{900 \text{ mm}}{17 \text{ mm}}$; 3:55-4:07 P.M.; SEEING $\frac{8}{10}$.
SKY TOTALLY CLEAR.

JULY 2/94 5:07-5:15 P.M. E.D.T.
 SKY 50% CLEAR IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE,
 TRANSPARENCY $\frac{7}{10}$, THIN HAZE.



ELORA PARK,
 ROAD TO FERGUS.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



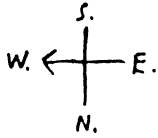
RELATIVE # OF SUNSPOTS $[(10 \times 2) + 12] = 32$

$\frac{900 \text{ mm}}{12 \text{ mm}}$; 5:18 P.M. ; RESOLUTION (BECAUSE OF HAZY CLOUD COVER) $\frac{7}{10}$.

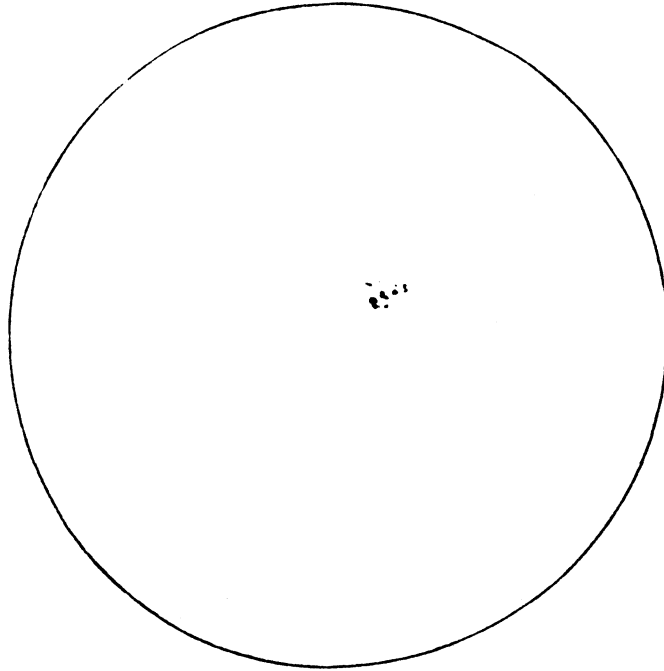
$\frac{900 \text{ mm}}{12 \text{ mm}}$; 5:23 P.M. - 5:31 P.M. ; SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{6}{10} \leftrightarrow \frac{7}{10}$.
 THIN CLOUD THICKENING INTO LIGHT OVERCAST.



JULY 1/94 3:28-3:44 P.M. E.D.T.
 SKY 70% CLEAR WITH FAST MOVING CUM. CLOUDS.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{8}{10}$, IMAGE VERY SHARP.



f8 $\frac{900\text{mm}}{25\text{mm}}$



CUT GRASS AT OBSERVATORY.
 1:30 P.M. - 7:00 P.M.

- 12 OAKVILLE: BRONTE HARBOUR
8:00 P.M.
- CAMBRIDGE: GRAND RIVER
9:00 P.M. - 10:30 P.M.
- OBSERVATORY 11:00-1:00 AM
DOUBLE STARS IN HERCULES,
SATELLITE AS BRIGHT
AS VEGA.
- AIRPLANE WITH GLINDING
LANDING LIGHTS THROUGH
HAZE.

REL. # OF SUNSPOTS $[(10 \times 1) + 12] = 22$
 $\frac{900\text{mm}}{12\text{mm}}$; 3:45 P.M.; SEEING $\frac{8}{10}$, STEADY.

f8 $\frac{900\text{mm}}{9\text{mm}}$; 3:50 - 4:04 P.M.; SEEING (RESOLUTION) $\frac{7}{10}$.
 SKY CLEAR IN SUN'S AREA.



← AT LIMIT OF RESOLUTION
 WITH 25mm EYE-PIECE.

↓ IMAGE DRIFTED UPON
 POLAR AXIS TO LOW?
 ALIGNMENT OKAY.

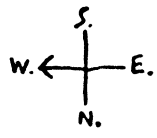
$\frac{900\text{mm}}{25\text{mm}} \quad f8$

JUNE 28/94 4:53-5:00 P.M. E.D.T.

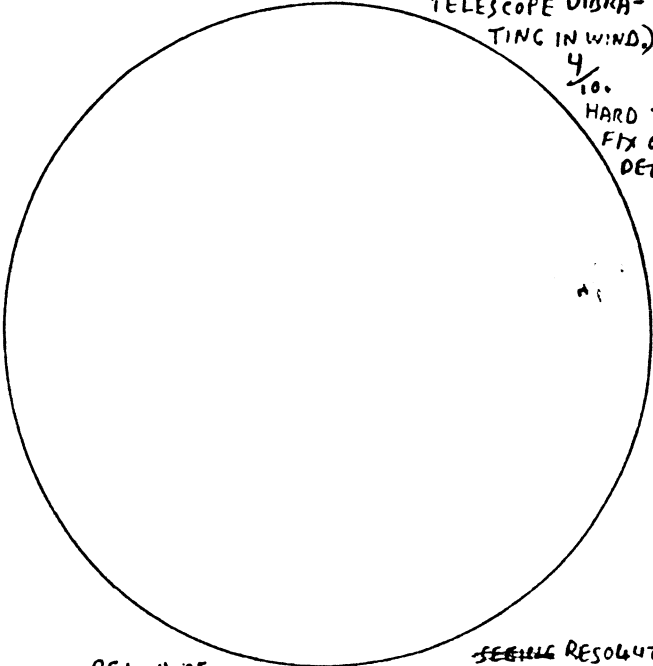
ISOLATED CUM. CLOUDS IN SUN'S AREA.

SEEING $\frac{7}{10}$

TRANSP. $\frac{8}{10}$. RESOLUTION (BECAUSE OF TELESCOPE VIBRATING IN WIND)



$\frac{4}{10}$. HARD TO FIX ON DETAIL.



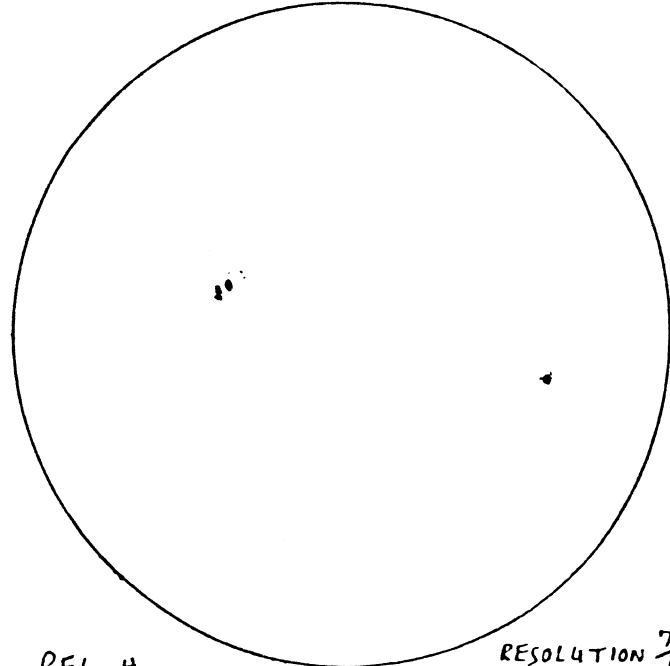
REL. # OF SUNSPOTS $[(10 \times 2) + 4] = 24$; $\frac{900\text{mm}}{12\text{mm}}$, 5:08 P.M. $\frac{5}{10}$.

JULY 4 5:21-5:31 P.M. E.D.T.

SKY CLEAR WITH HEAT-HAZE IN SUN'S AREA.

SEEING $\frac{9}{10}$, STEADY!! IMAGE.

TRANSPARENCY $\frac{7}{10}$, HEAT-HAZE.



REL. # OF SUNSPOTS $[(10 \times 2) + 8] = 28$; 5:33 P.M.; $\frac{900\text{mm}}{12\text{mm}}$ RESOLUTION $\frac{7}{10}$.

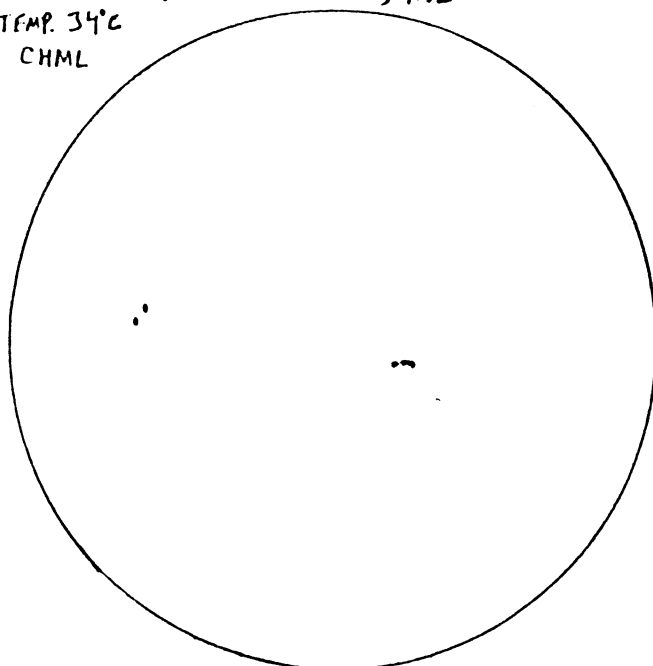
JULY 6 5:18-5:25 P.M. E.D.T.

CUM. CLOUDS IN HAZY SKY.

SEEING $\frac{8}{10}$, STEADY.

TRANSPARENCY $\frac{6}{10}$, HAZE.

TEMP. 34°C
CHML



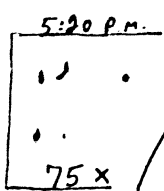
REL. # OF SUNSPOTS $[(10 \times 2) + 7] = 27$

5:28 P.M.; $\frac{900\text{mm}}{12\text{mm}}$; RESOLUTION (BECAUSE OF HAZE), $\frac{6}{10}$.

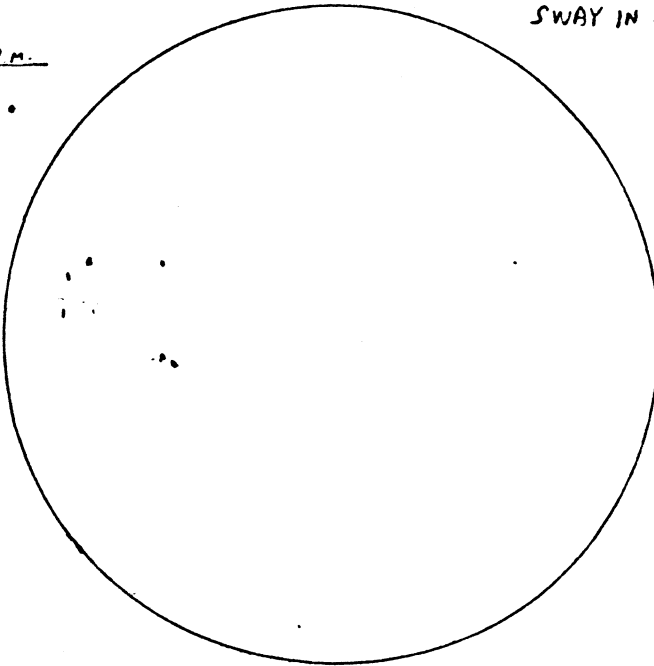
JULY 11 5:00-5:12 P.M. E.D.T.; SKY BLUE-CLEAR IN SUN'S AREA.

SEEING $\frac{8}{10}$, STEADY IMAGE.

TRANSPARENCY $\frac{9}{10}$, GRAINY STRUCTURE DETECTED, RESOLUTION (BECAUSE OF BREEZE) $\frac{5}{10}$; SMALL TREES SWAY IN BREEZE.



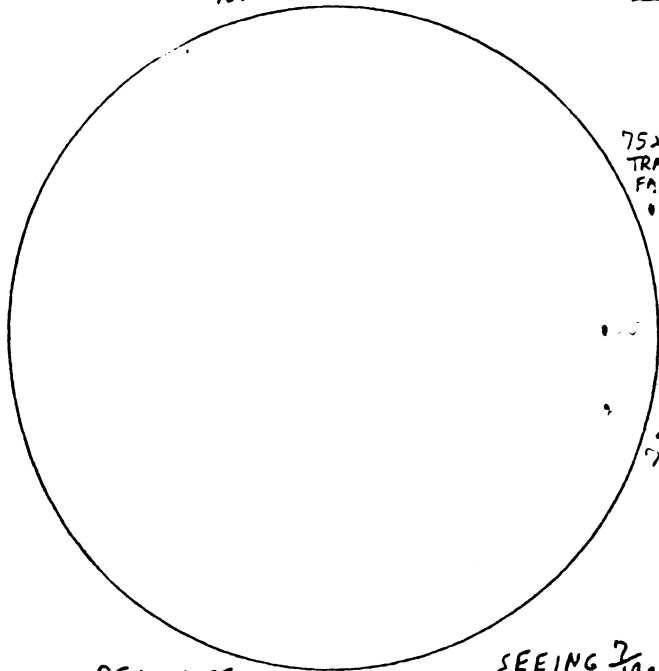
2,1
2,1
6
4=3
3=6
1=14



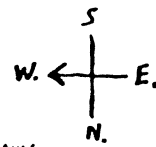
RELATIVE # OF SUNSPOTS $[(10 \times 7) + 14] = 84$

5:15 P.M.; $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{8}{10}$.

JUNE 8/94 4:55-5:05 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, SMALL RIPPLES ALONG SOLAR
 TRANSP. $\frac{7}{10}$, FACULAE EASILY SEEN. LIMB.



REL. # OF
 SUNSPOTS $10 \times 2 + 5 = 25$; 5:08 P.M., $\frac{900\text{mm}}{75\text{mm}}$,
 SEEING $\frac{7}{10}$.

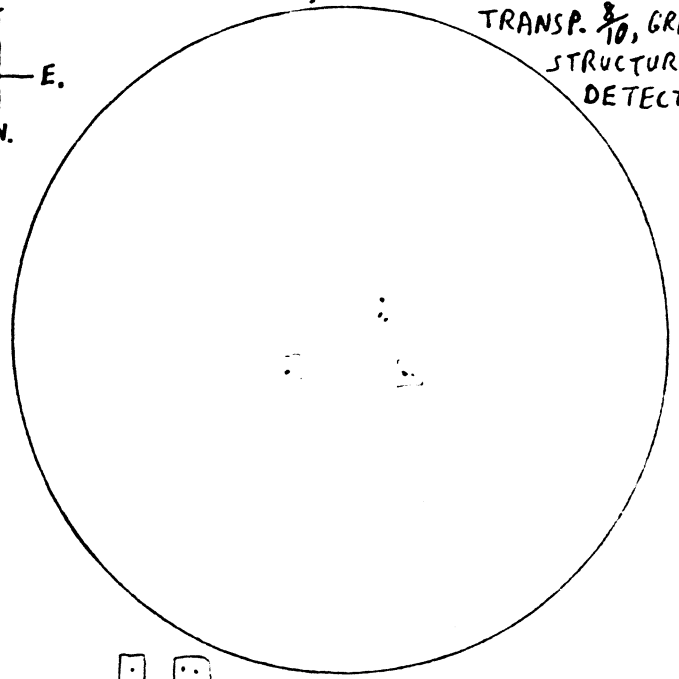


75x SHOWS
 TRAIN OF
 FACULAE

3
 2
 1
 75x

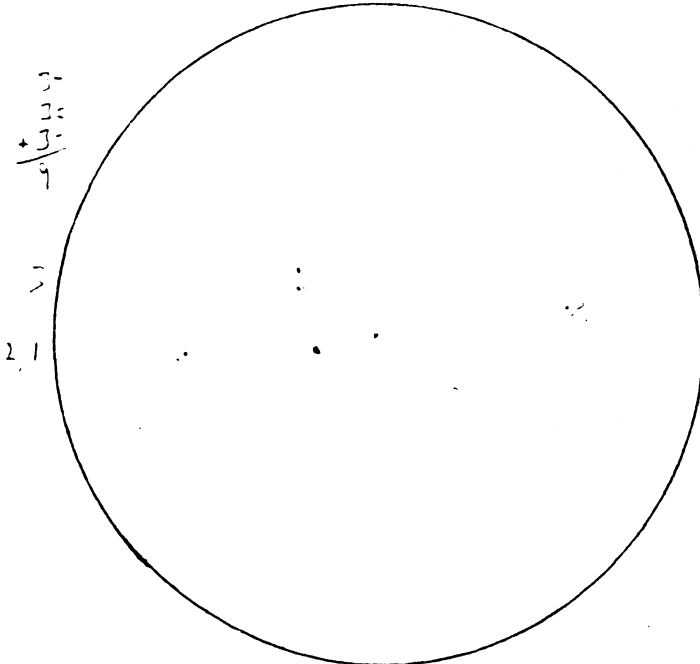
f 8 $\frac{900\text{mm}}{25\text{mm}}$
 MIRROR #1
 (ORIGINAL)

JUNE 12 5:17-5:26^{LOUDS.} P.M. E.D.T.
 SKY BLUE CLEAR IN SUN'S AREA, WITH
 APPROACHING CLOUD BANK.
 SEEING $\frac{7}{10}$, SMALL RIPPLES ALONG LIMB.
 TRANSP. $\frac{8}{10}$, GRAINY
 STRUCTURE
 DETECTED?



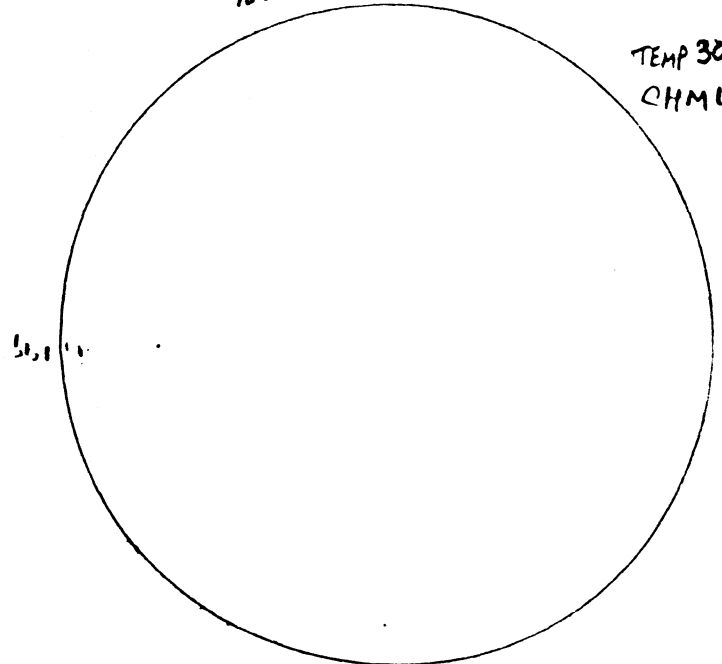
SPOTS SEEN, BUT CLOUD COVER PRECLUDED SKETCH

JUNE 14 5:12-5:23 P.M. E.D.T.
 LIGHT CIRRUS HAZE IN SUN'S AREA.
 SEEING $\frac{7}{10}$, RIPPLES ALONG SOLAR LIMB.
 TRANSPARENCY $\frac{8}{10}$, FACULAE EASILY SEEN.



REL. # OF SPOTS $10 \times 4 + 9 = 49$
 $\frac{900\text{mm}}{12\text{mm}}$; 5:27 P.M., SEEING $\frac{8}{10}$.

JUNE 17 4:14-4:16 P.M. E.D.T.
 SKY CLEAR WITH HEAT HAZE.
 SEEING $\frac{9}{10}$, STEADY.
 TRANSP $\frac{8}{10}$, FACULAE 'GRAIN' DETECTED.



REL. # OF SPOTS $10 \times 3 + 3 = 33$
 4:25 P.M.; $\frac{900\text{mm}}{18\text{mm}}$; SEEING $\frac{8}{10}$.

COULDN'T
 COUNTED AS TWO SPOTS
 BECAUSE OF FORESHORTENING.

TEMP 30°C
 CHML

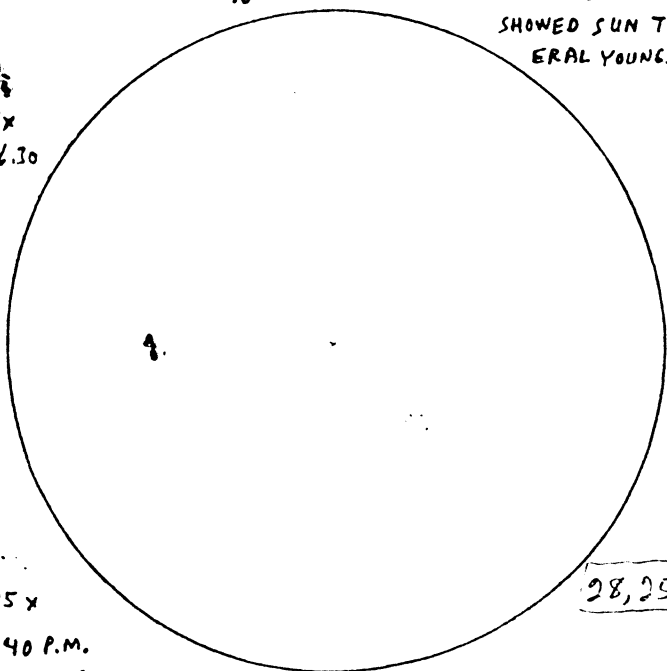
f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

MAY 20/94 5:45-6:30 P.M. E.D.T.

SKY CLEAR IN SUN'S AREA.
SEEING $\frac{9}{10}$, VERY STEADY IMAGE.
TRANSP. $\frac{7}{10}$.

QUEENSTON & MAIN.
SHOWED SUN TO SEVERAL YOUNGSTERS.

75x
5:28-6:30

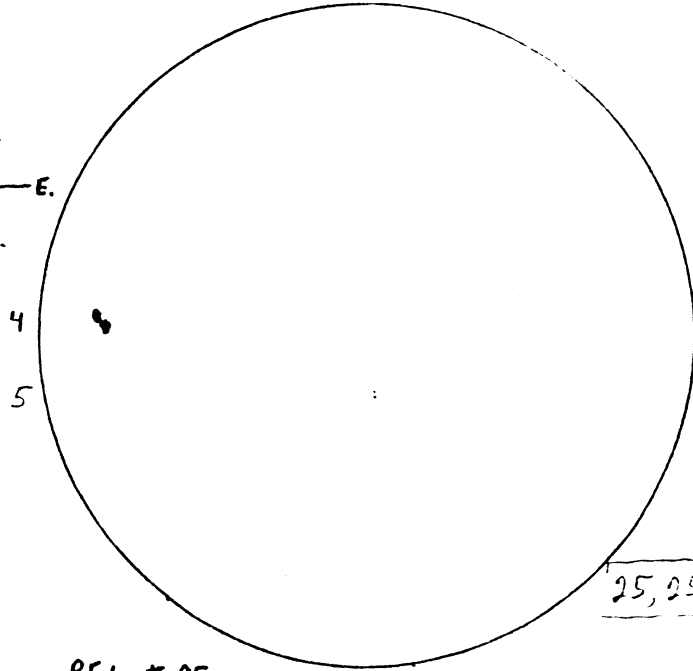
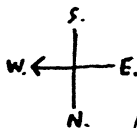


75x
6:40 P.M.

REL. # OF SUNSPOTS $[(10 \times 2) + 13] = 33$; 6:28 P.M., SEEING $\frac{8}{10}$.

MAY 21 5:52-6:00 P.M. E.D.T.

SKY CLEAR; SUN MOVING INTO THIN EVENING HAZE.
SEEING $\frac{8}{10}$, SMALLEST RIPPLES.
TRANSPARENCY $\frac{7}{10}$.



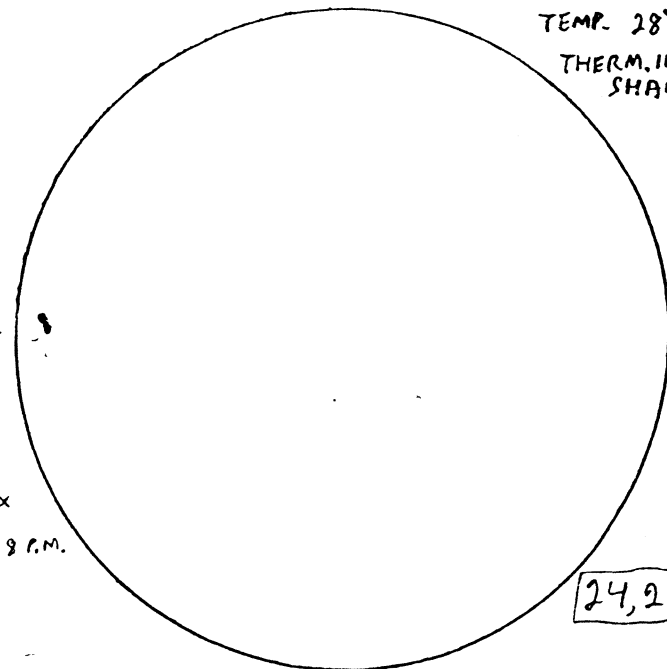
REL. # OF SUNSPOTS $[(10 \times 2) + 9] = 29$; 6:05 P.M., SEEING $\frac{7}{10}$.

MAY 22 2:45-2:52 P.M. E.D.T.

SKY CLEAR IN SUN'S AREA.
SEEING $\frac{6}{10}$, BLURRY DETAIL.
TRANSPARENCY \rightarrow BLUE SKY.

TEMP. 28°C
THERM. IN SHADE.

75x
2:58 P.M.

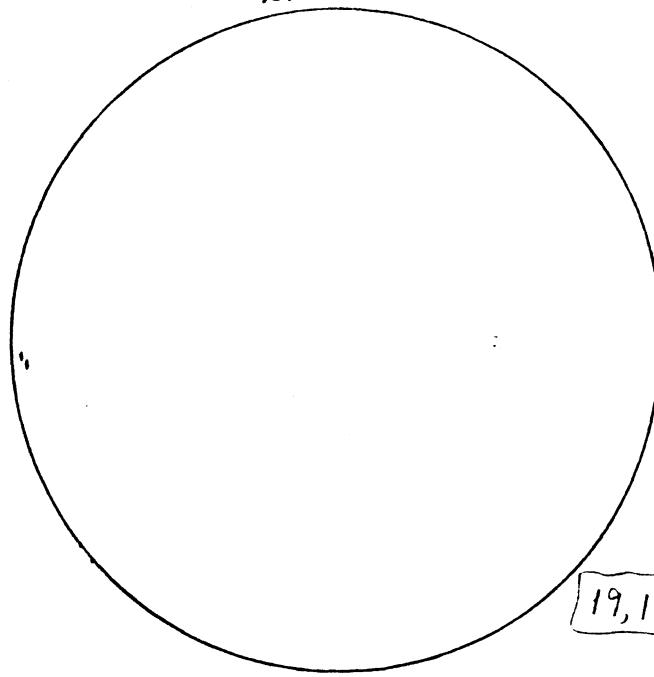


RELATIVE # OF SUNSPOTS $[(10 \times 2) + 5] = 25$
 $\frac{900 \text{ mm}}{12 \text{ mm}}$; 2:58 P.M., SEEING $\frac{6}{10}$.

MAY 23 1:05-1:10 P.M. E.D.T.

SKY BLUE-CLEAR IN SUN'S AREA.
SEEING $\frac{7}{10}$, RIPPLES ALONG SOLAR LIMB.
TRANSPARENCY $\frac{8}{10}$, FACULAE EASILY SEEN.

1



REL. # OF SUNSPOTS $[(10 \times 1) + 9] = 19$
 $\frac{900 \text{ mm}}{12 \text{ mm}}$; 1:12 P.M., SEEING $\frac{7}{10}$.

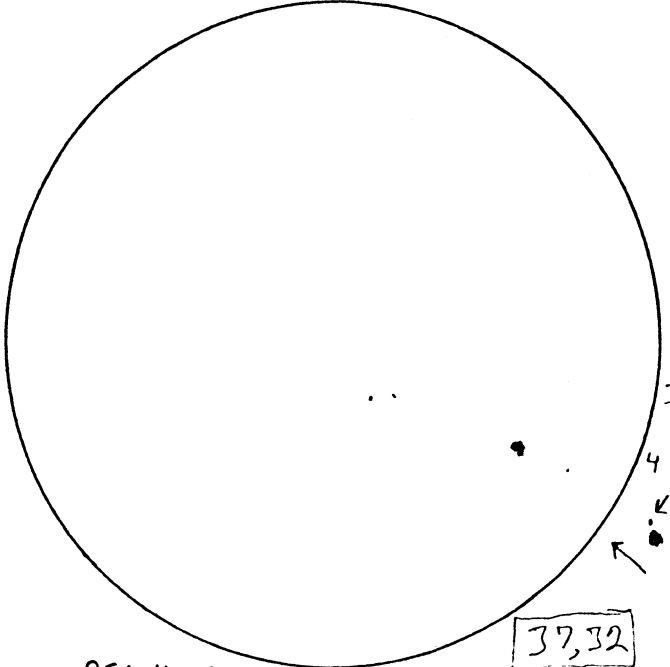
SPOT IN PAPER :

159

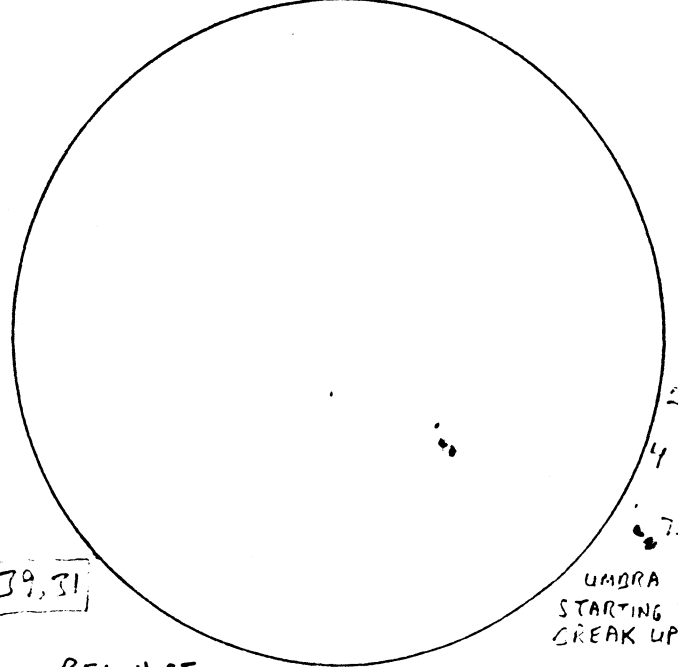
MAY 13/94 6:38-6:48 P.M. E.D.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY.
 TRANSPARENCY $\frac{9}{10}$, FAC. EASILY SEEN.

#8 900mm GARRY W.'S PRIMARY MIRROR
 25mm
 S.
 W. ← — — — → E.
 N.

MAY 14 6:28-6:35 P.M. E.D.T.
 LIGHT CIRRHUS HAZE IN SUN'S AREA,
 SEEING $\frac{9}{10}$, STEADY!!! IMAGE.
 TRANSPARENCY $\frac{7}{10}$, HAZY.



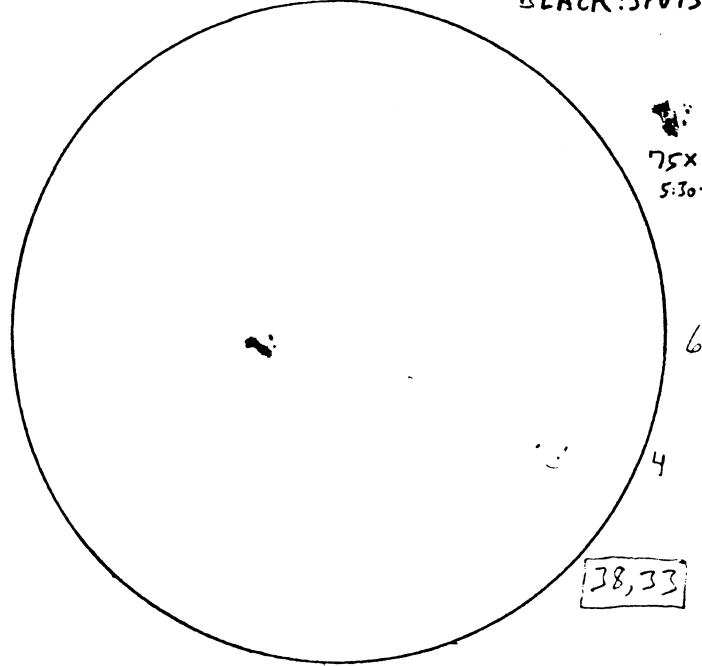
REL. # OF SUNSPOTS $[(10 \times 2) + 7] = 27$



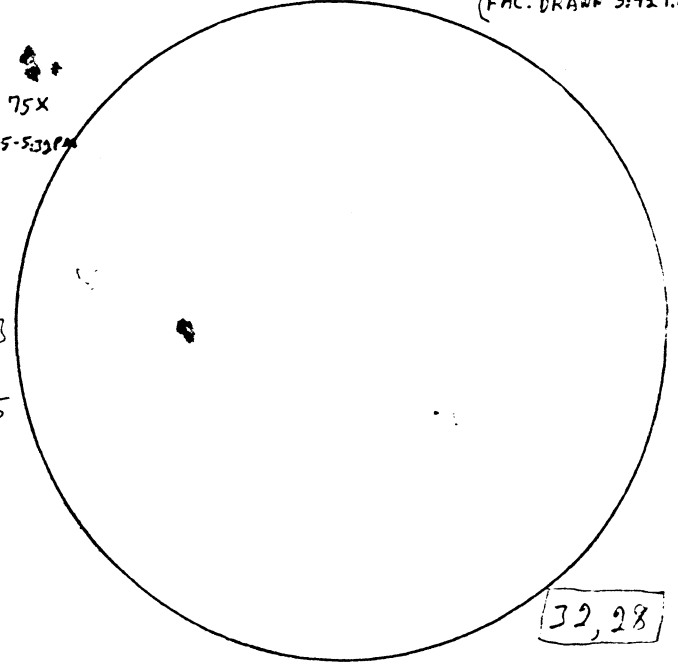
REL. # OF SUNSPOTS $[(10 \times 2) + 6] = 26$; $\frac{900\text{mm}}{12\text{mm}}$; SEEING $\frac{8}{10}$.

MAY 18 5:10-5:25 P.M. E.D.T.
 SKY TOTALLY CLEAR AFTER DAY-TIME
 SEEING $\frac{8}{10}$, SMALLEST RIPPLES ^{CLOUD COVER.}
 ALONG SOLAR LIMB. TRANSP. $\frac{8}{10}$
 BLACK! SPOTS.

MAY 19 5:12-5:22 P.M. E.D.T.
 SKY "TOTALLY" CLEAR; cum. CLOUDS ALONG N.W. HORIZON
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSP. $\frac{8}{10}$, FACULAE EASILY SEEN.
 (FAC. DRAWN 5:42 P.M.)



REL. # OF SUNSPOTS $[(10 \times 2) + 10] = 30$
 $\frac{900\text{mm}}{19\text{mm}}$; SEEING $\frac{7}{10}$; 5:30 P.M.



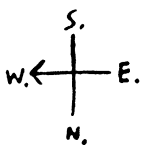
RELATIVE # OF SUNSPOTS $10 \times 2 + 8 = 28$
 $\frac{900\text{mm}}{19\text{mm}}$; SEEING $\frac{6}{10}$; 5:25 P.M.

* LIGHT PATCH IN UMRA AT LIMIT OF RESOLUTION. 75X

MAY 10/94 2:53 - 3:10 P.M. E.D.T.

SKY CLEAR IN SUN'S AREA.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

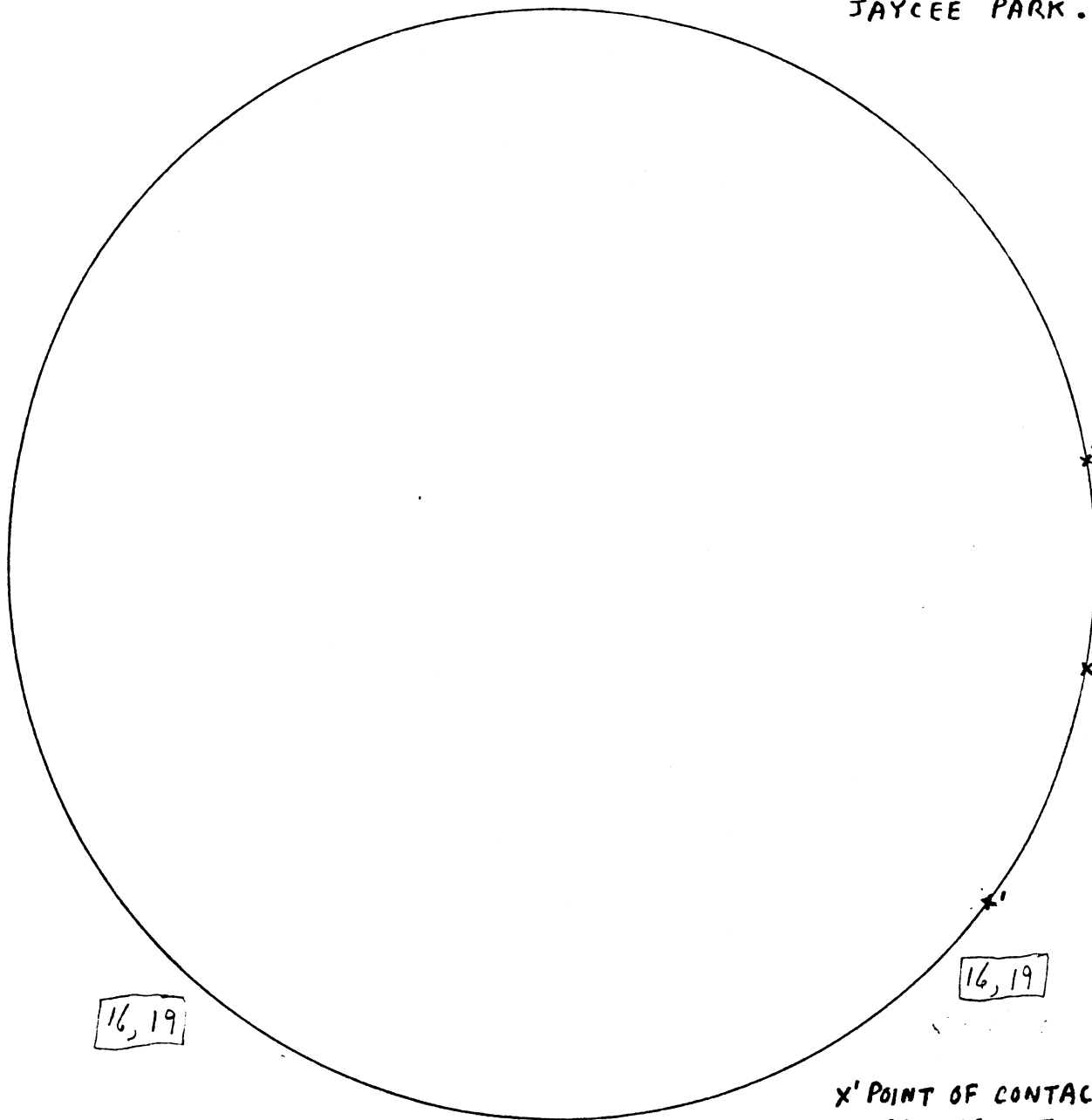


SEEING $\frac{7}{10}$ 'FUZZY' ; TRANSP $\frac{8}{10}$, FAC. EASILY SEEN.

ST. CATHARINES,
JAYCEE PARK.

7.5x

3



16, 19

16, 19

X¹ POINT OF CONTACT,
LUNAR LIMB WITH SOLAR LIMB
2:55 P.M. E.D.T.

REL. # OF SUNSPOTS

$[(10 \times 1) + 3] = 13$; 3:02 P.M. ; $\frac{900 \text{ mm}}{12 \text{ mm}}$

SEEING $\frac{7}{10}$.

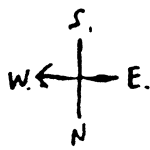
X² POINT OF CONTACT
3:09 P.M. E.D.T.
END OF ECLIPSE.

(76)

OBSERVED ECLIPSE 94/5/10

f 8 900mm ; f 11.6 700mm
25mm, 12mm
WITH CROSS-HAIRS

AMICI PRISM



(157)

16

SHOWED
ECLIPSED SUN
TO PEOPLE
WITH HELPER
GLASS.
~ 1:25

18

8 1:29 P.M. E.D.T.
LIGHT OVERCAST

19

LIGHT STARTED
FLYING, DARKENING
1:34 P.M. E.D.T.

20

NOTICABLE
LIGHT BUILD-UP
1:36 P.M. E.D.T.

21

TOOK PICTURES
1:38 P.M.

22

CLEAR
1:40 P.M.

11, 12
13 1:44 P.M.

17

BAILEY
LEADS
1:37 P.M.
E.D.T.

24

NOTICED
ECLIPSE-WIND
WAS GONE
1:58 P.M.
LIGHT INTENSITY
SIMILAR TO 4

25

10 2:01 P.M.

26

SUNSPOT
RE-APPEARED
BEFORE 2:05 P.M.

27

11 2:18 P.M.
CROSS HAIRS
OUT OF LINES
COLD SOUTH WIND
2:20 P.M.
TURNED COLD
~ 2:15 P.M.

30

13 2:50 P.M.

29

TOO DARK? FOR CAMERA

15

7 ~ 1:22 P.M.

14

CLEAR SKY!!
BAILEY LEADS
1:31 P.M.

POINTS OF
CONTACT 11:45
A.M. E.D.T.
ST CATHARINES
JAYCEE PARK

11:45 AM.

12:05 E.D.T.

MOON OCCULTED
SUNSPOT 12:20 P.M. E.D.T.

NOTICED DIFFERENCE
IN LIGHT 12:22 P.M.

12:28 P.M. E.D.T.

TOOK PICTURES 125" APT.
f 8; 125" /"
12:42 P.M.

12:55 P.M. E.D.T.
CUMULOUS CLOUD (OVERCAST)
INTERFERENCE.

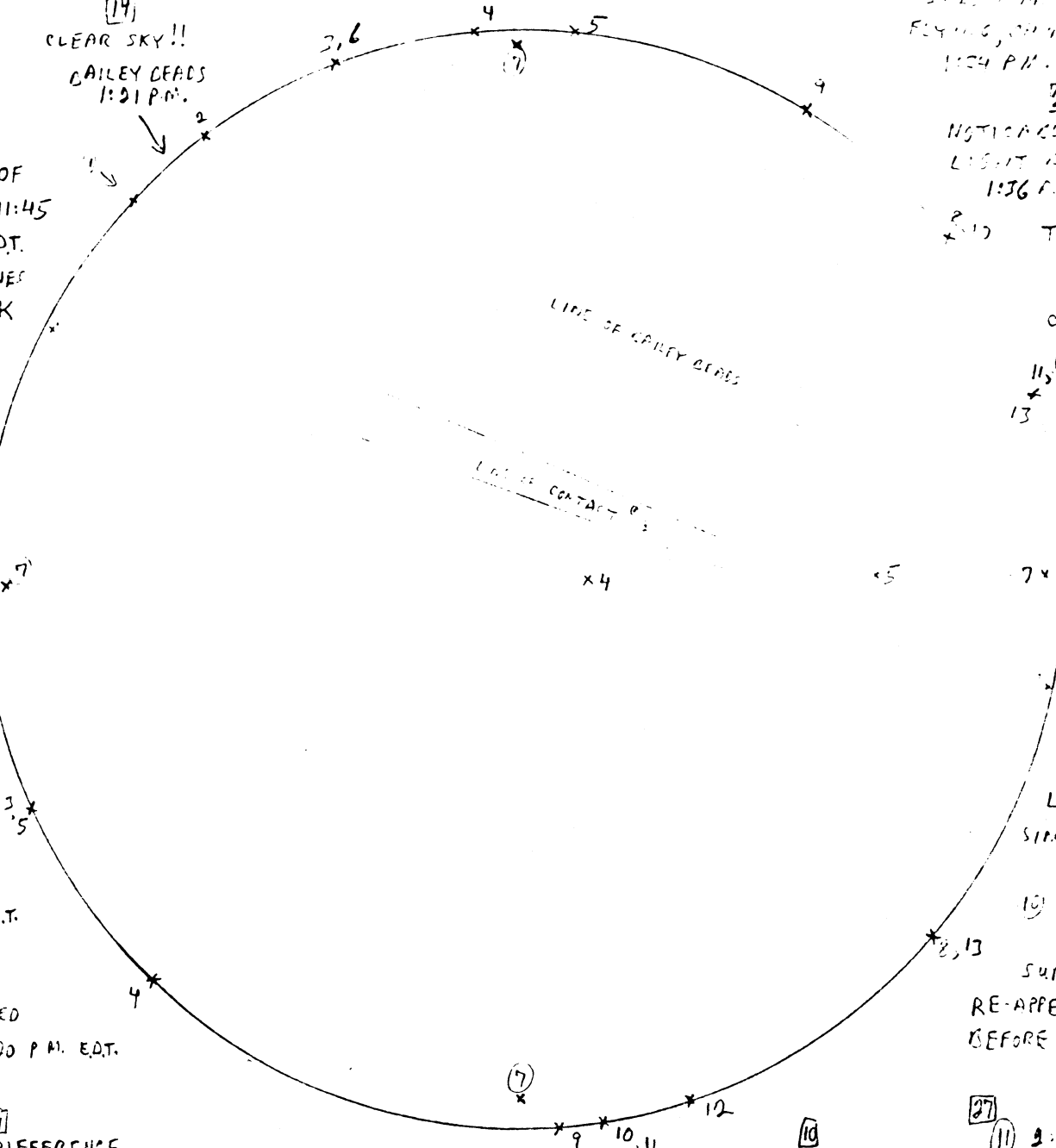
TOOK PICTURES
1:01 P.M. E.D.T.

NOTICED QUIETNESS
1:04 P.M. BIRDS TWITTERING; PEOPLE GONE.

1:13 P.M. E.D.T.
TEMP. DROPPED
WIND CAME FROM WEST
1:18 P.M. E.D.T.

1:20 P.M.

TOOK PICTURES 1:18 P.M.



NOTES DURING SOLAR ECLIPSE 9/5/10 ST CATHARINES, JAYCEE PARK

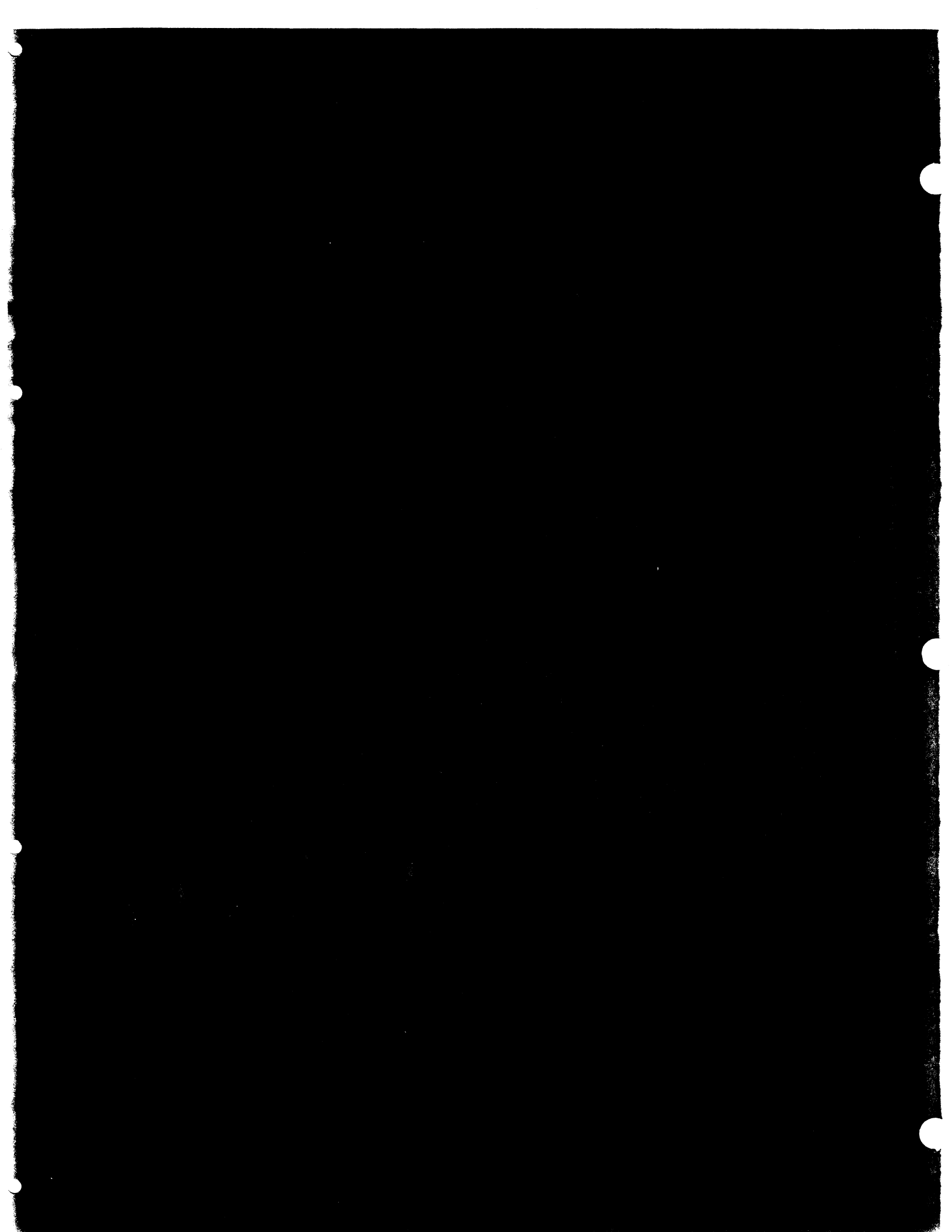
NOTES (□): points of contact (○). (PICTURES ARE LANDSCAPE PICTURES.)

- 1 ○ POINTS OF CONTACT 11:45 AM E.D.T.; BEGINNING OF ECLIPSE.
- 2 ○ POINTS OF CONTACT 12:05 P.M. E.D.T.
- 3 MOON OCCULTED SUNSPOT 12:20 P.M.
- 4 NOTICED DIFFERENCE IN LIGHT 12:22 P.M.
- 5 ○ POINTS OF CONTACT 12:28 P.M.
- 6 TOOK (LANDSCAPE) PICTURES 12:42 P.M.
- 7 CUMULOUS CLOUDS INTERFERENCE 12:55 P.M.
- 8 TOOK PICTURES 1:01 P.M.
- 9 NOTICED QUIETNESS, BIRDS TWITTERING, PEOPLE GONE 1:04 P.M.
- 10 ○ POINTS OF CONTACT 1:13 P.M.
- 11 TEMPERATURE DROPPED, WIND CAME FROM WEST 1:18 P.M. E.D.T.
- 12 TOOK PICTURES, TOO DARK? FOR CAMERA 1:18 P.M.
- 13 ○ POINTS OF CONTACT 1:20 P.M.
- 14 CLEAR SKY!! BAILEY BEADS 1:21 P.M.

- 15 ○ "POINTS OF CONTACT" APPROXIMATELY 1:22 P.M. E.D.T.
- 16 SHOWED ECLIPSED SUN TO PEOPLE, WITH WELDER'S GLASS APPROXIMATELY 1:25 P.M.

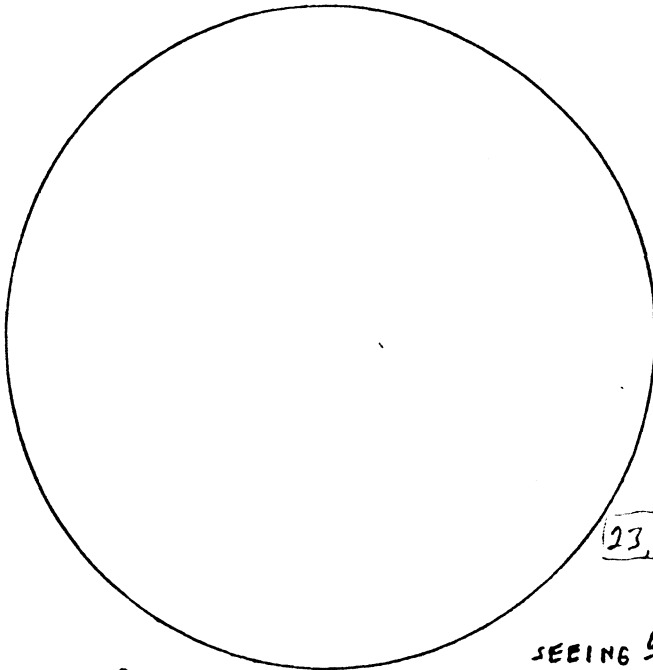
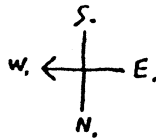
- 17 BAILEY BEADS 1:27 P.M.
- 18 ○ POINTS OF CONTACT 1:29 P.M.; LIGHT! OVERCAST
- 19 BIRDS STARTED FLYING CHIRPING 1:34 P.M.
- 20 NOTICEABLE LIGHT BUILD-UP. 1:36 P.M.
- 21 TOOK PICTURES 1:38 P.M.
- 22 CLEAR SKY 1:40 P.M.
- 23 ○ POINTS OF CONTACT. 1:44 P.M.
- 24 NOTICED "ECLIPSE-WIND" WAS GONE 1:58 P.M.; LIGHT INTENSITY SIMILAR TO 4.
- 25 ○ POINTS OF CONTACT 2:01 P.M.
- 26 SUNSPOT RE-APPEARED BEFORE 2:05 P.M.
- 27 ○ POINTS OF CONTACT 2:18 P.M.; ^{EYE-PIECE}CROSS-HAIRS OUT OF LINE?
- 28 COLD SOUTH WIND
- 29 ○ POINTS OF CONTACT 2:25 P.M.
- 30 ○ POINTS OF CONTACT 2:50 P.M.
- x' POINTS OF CONTACT 2:55 P.M.
- x2 POINTS OF CONTACT 3:09 P.M., END OF ECLIPSE. 3:09 P.M. E.D.T.

BLANK COVER PAGE



SUNDAY!
 MAY 8/94 1:54 P.M. E.S.T.
 SKY BLUE-CLEAR IN SUNS AREA, WITH
 APPROACHING CLOUD BANK.
 SEEING, $\frac{7}{10}$ FUZZY; TRANSP. $\frac{7}{10}$.

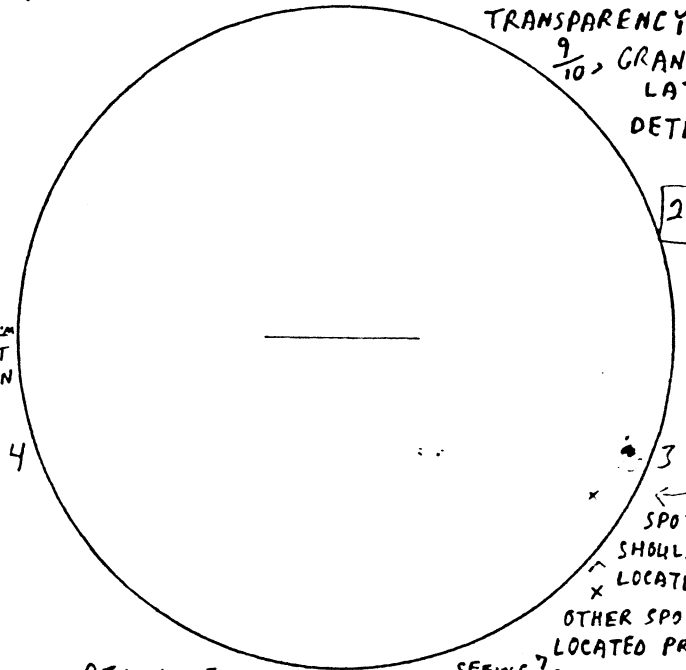
f 8 $\frac{900\text{mm}}{85\text{mm}}$



REL. # OF
 SUNSPOTS $[(10 \times 1) + 7] = 14$; 1:55 P.M.; $\frac{900\text{mm}}{15\text{mm}}$
 SEEING $\frac{6}{10}$.

'S
 MAY 12 4:33-4:44 P.M. E.D.T.
 SKY BLUE-CLEAR WITH ISOLATED
 CLOUDS.
 OBSERVATORY TREES DEFLECT
 STRONG WIND.
 SEEING $\frac{8}{10}$, STEADY!

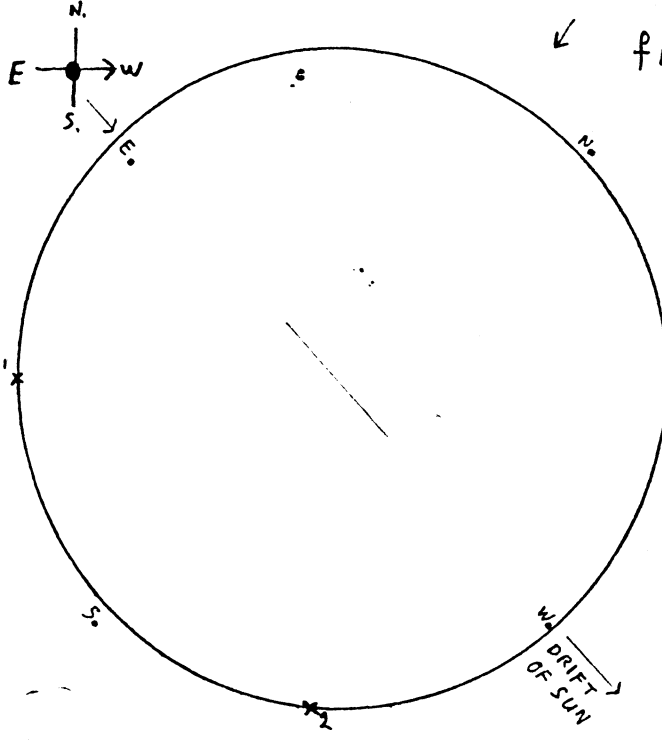
TRANSPARENCY
 $\frac{9}{10}$, GRANU-
 LATION
 DETECTED.



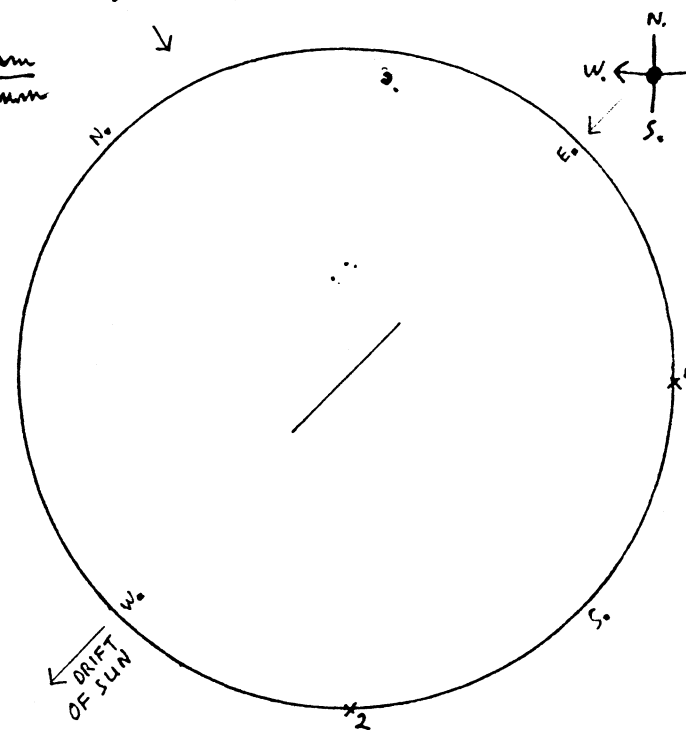
REL. # OF
 SUNSPOTS $[(10 \times 2) + 7] = 27$; 4:18 P.M.; $\frac{900\text{mm}}{12\text{mm}}$
 SEEING $\frac{7}{10}$.

MAY 12
 5:10-5:12 P.M. E.D.T. 5:18-5:21 E.D.T.

f 11.6 $\frac{700\text{mm}}{18\text{mm}}$



AMICI PRISM



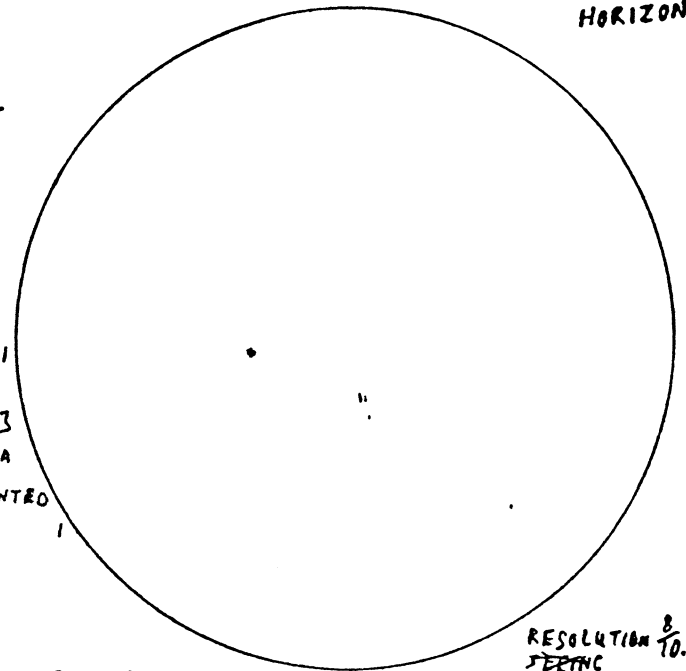
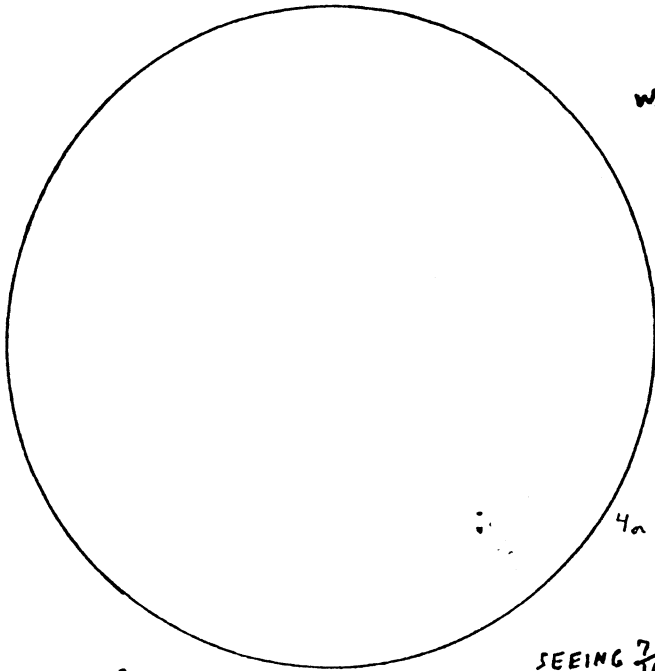
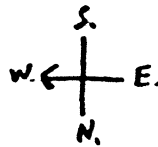
DIAGONAL PRISM

COMARED PRISMS

APRIL 10/94 3:43-3:53 P.M. E.D.T.
 SKY BLUE-CLEAR IN SUNS AREA.
 SMALL TREE BRANCHES SWAY IN BREEZE.
 SEEING $\frac{8}{10}$, STEADY. TRANSP. $\frac{8}{10}$ FAC. VISIBLE.

$\frac{900 \text{ mm}}{25 \text{ mm}}$ +8

APRIL 21 6:25-6:32 P.M. E.D.T.
 SKY CLEAR WITH THINNEST HAZE IN
 SEEING $\frac{6}{10}$; RIPPLES, FUZZY, SUN'S AREA.
 TRANSP. $\frac{8}{10}$; FEATURES SHARP ALONG DISTANT
 HORIZON.

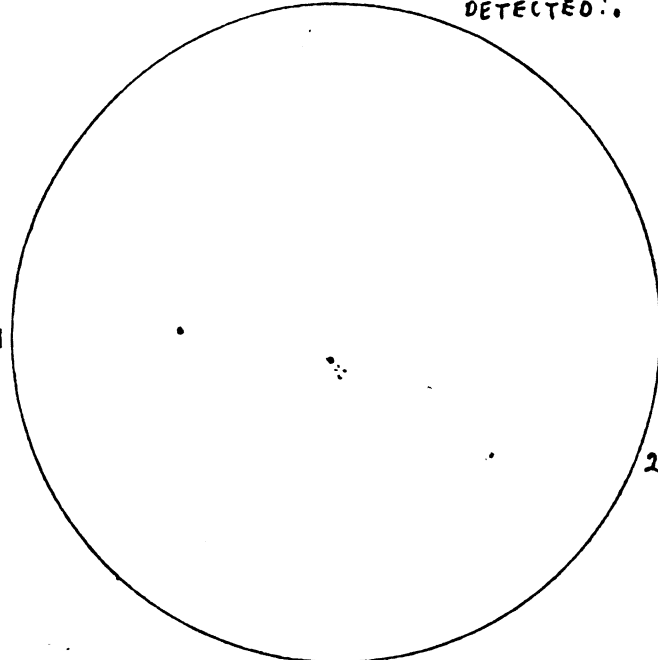


REL. # OF SUNSPOTS $[(10 \times 1) + 4] = 14$, $\frac{900}{19 \text{ mm}}$; 3:50 P.M.,
 $\sim [(10 \times 2) + 4] = 24$ SEEING $\frac{7}{10}$.

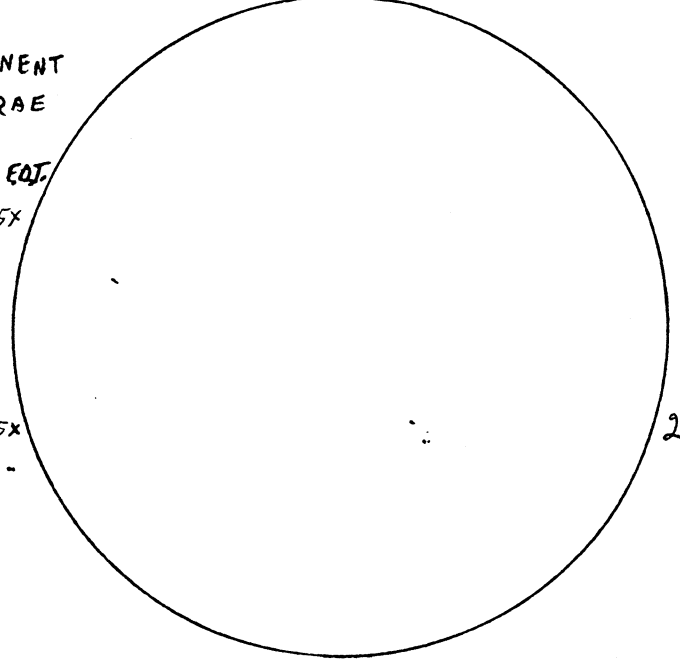
REL. # OF SUNSPOTS $[(10 \times 3) + 5] = 35$; $\frac{900 \text{ mm}}{12 \text{ mm}}$; 6:35 P.M.
 RESOLUTION $\frac{8}{10}$ FEETMC

APR. 22 5:40-5:50 P.M. E.D.T.
 SKY BLUE CLEAR.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{8}{10}$, GRANULATION DETECTED?

MAY 2 5:55-6:03 P.M. E.D.T.
 SKY 70% CLEAR WITH SMALL CUM. CLOUDS
 SEEING $\frac{7}{10}$, SMALLEST RIPPLES ALONG LIMB.
 TRANSPARENCY $\frac{8}{10}$, GRAIN DETECTED?



PROMINENT AURORAE
 5/2-3
 11:30 P.M. EDT.

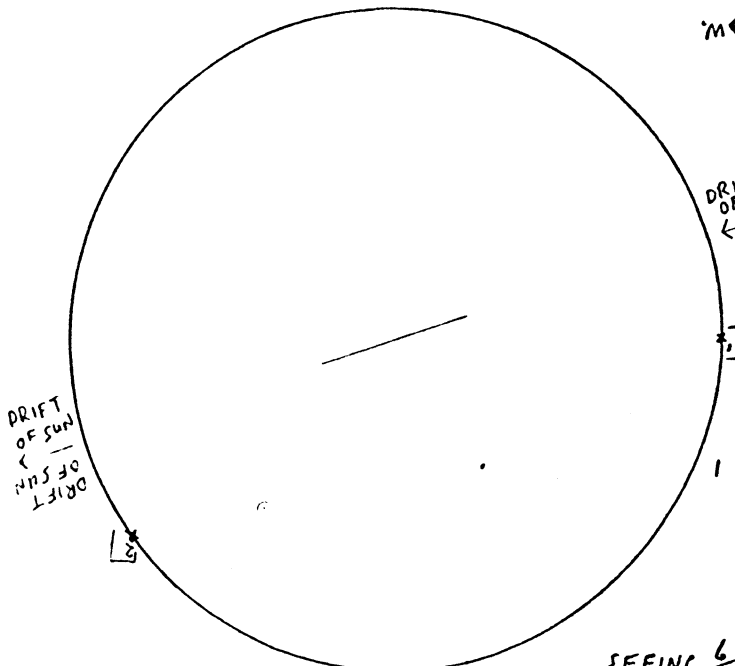
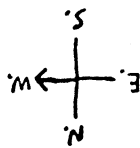


REL. # OF SUNSPOTS $[(10 \times 3) + 11] = 41$
 6:02 P.M.; $\frac{900 \text{ mm}}{19 \text{ mm}}$, SEEING $\frac{6}{10}$.

REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 23$
 6:05 P.M.; $\frac{900 \text{ mm}}{19 \text{ mm}}$; SEEING $\frac{6}{10}$.

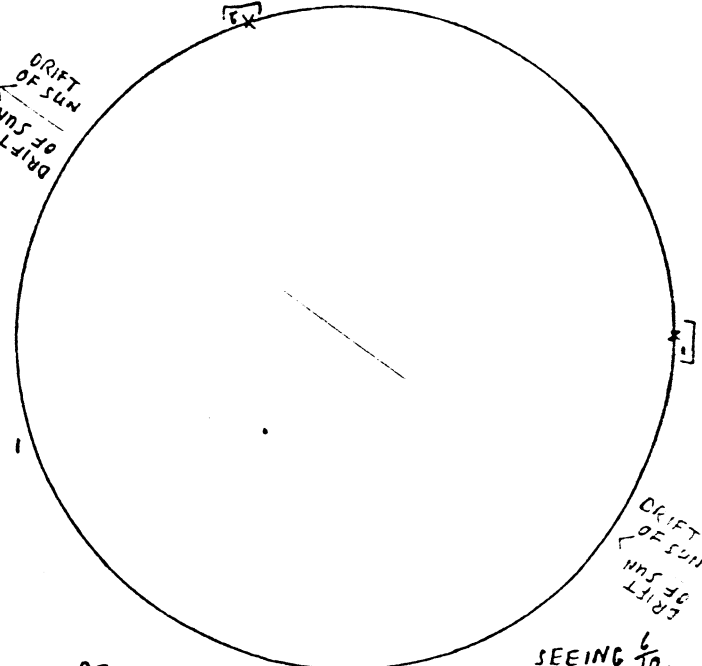
MAR. 19/94 11:20-11:27 A.M. E.S.T.
 SEEING $\frac{7}{10}$, SLIGHTLY "FUZZY" OUTLINE.
 TRANSP. $\frac{8}{10}$, CLEAR-BLUE SKY.
 NO FACULAE DETECTED.

f 11.6
 $\frac{700 \text{ mm}}{18 \text{ mm}}$



REL. # OF
 SUNSPOTS $[(10 \times 1) + 1] = 11$; $\frac{700}{18 \text{ mm}}$; 11:35 A.M.,
 SEEING $\frac{6}{10}$.

MAR 20 4:25-4:28 P.M. E.S.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{7}{10} \leftrightarrow \frac{6}{10}$, SMALL RIPPLES.
 TRANSPARENCY $\frac{9}{10}$.



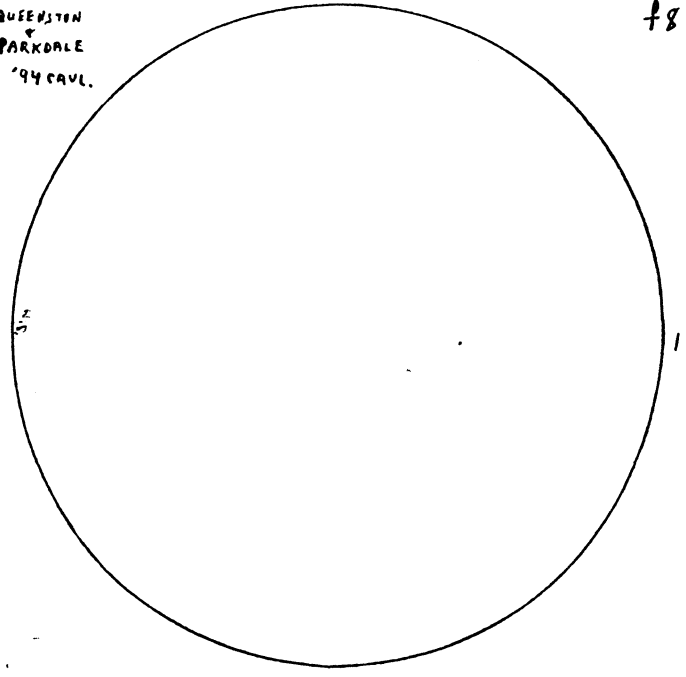
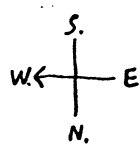
REL. # OF
 SUNSPOTS $10 \times 1 + 1 = 11$; $\frac{700 \text{ mm}}{12 \text{ mm}}$; 4:30 P.M.,
 SEEING $\frac{6}{10}$.

MAR. 26 1:05-1:20 P.M. E.S.T.
 SMALL ISOLATED CLOUDS IN SUN'S AREA.
 FACULAE POORLY SEEN (TURBULENCE)
 SEEING $\frac{7}{10}$ (SMALL RIPPLES); TRANSP. $\frac{8}{10}$.

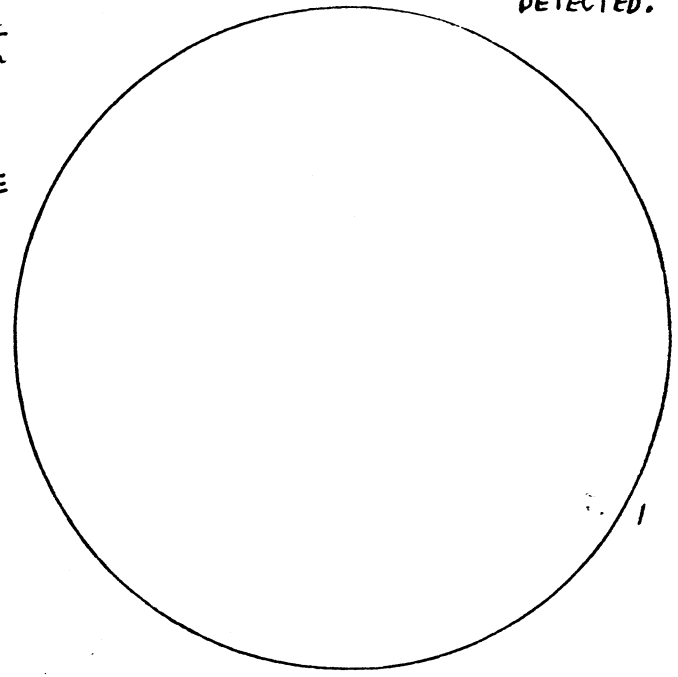
APR. 8 5:25-5:35 P.M. E.P.T.
 HAZY CIRRUS CLOUD IN SUN'S AREA, DE-
 VEOPING INTO OVERCAST ALONG HORIZON.
 SEEING $\frac{8}{10}$, STEADY. TRANSP. $\frac{8}{10}$, FACULAE
 DETECTED.

QUEENSTON
 PARKDALE
 '94 CAUL.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$
 1:25 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$.

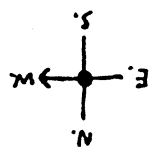


REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$
 5:35 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$.

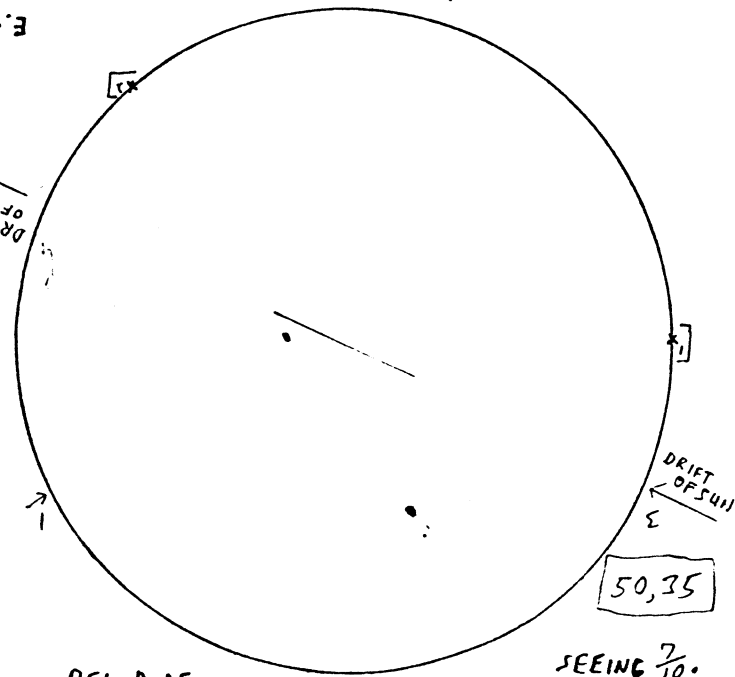
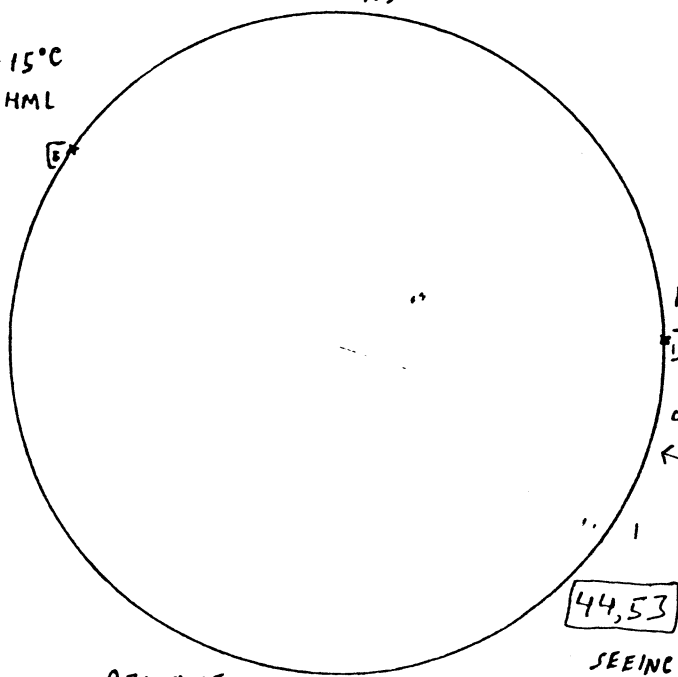
JAN. 20/94 2:40-2:45 P.M. E.S.T.
 CIRRO-STRATUS CLOUD IN SUN'S
 SEEING $\frac{6}{10}$, FUZZY. AREA.
 TRANSPARENCY $\frac{6}{10}$, FUZZY.

$\frac{700 \text{ mm}}{18 \text{ mm}}$ ± 11.6

FEB. 5 2:15-2:23 P.M. E.S.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, SMALL RIPPLES.
 TRANSPARENCY $\frac{3}{10}$, FAC. EASILY VISIBLE.



-15°C
 CHML

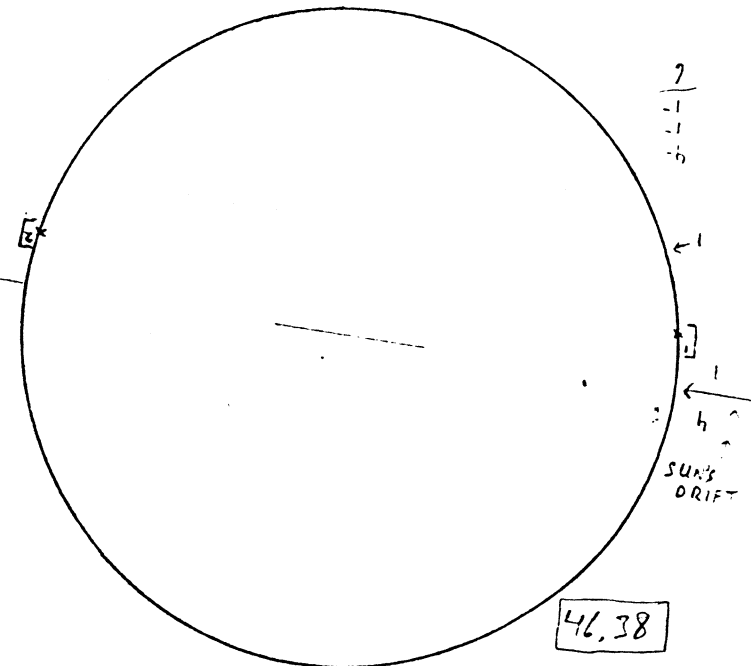
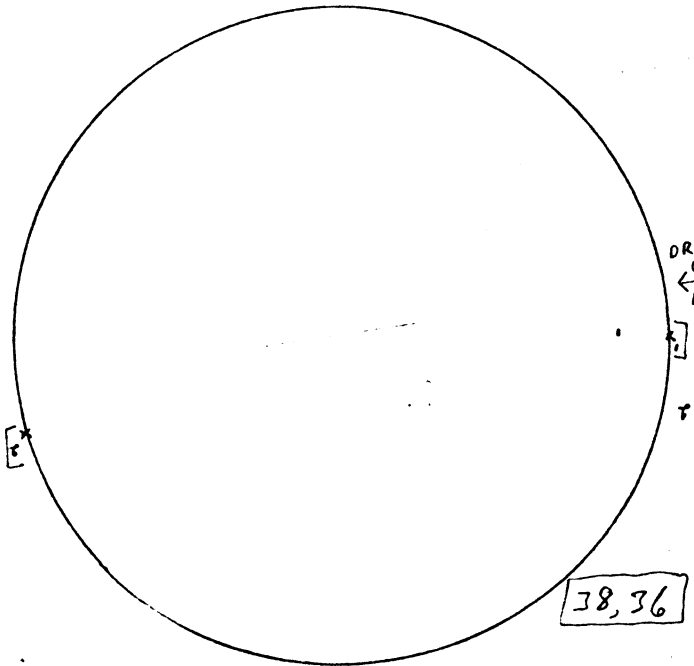


REL. # OF
 SUNSPOTS $[(10 \times 2) + 5] = 25$; $\frac{700 \text{ mm}}{19 \text{ mm}}$; 2:45 P.M.
 SEEING $\frac{6}{10}$.

REL. # OF
 SUNSPOTS $[(10 \times 2) + 4] = 24$; $\frac{700 \text{ mm}}{12 \text{ mm}}$, 2:30 P.M.,
 SEEING $\frac{7}{10}$.

FEB. 26 12:18-12:35 P.M. E.S.T.
 SKY CLEAR BLUE IN SUN'S AREA.
 SEEING $\frac{7}{10}$.
 TRANSPARENCY $\frac{7}{10}$.

FEB. 27 1:26-1:32 P.M. E.S.T.
 SKY CLEAR-BLUE IN SUN'S AREA.
 SEEING $\frac{7}{10}$.
 TRANSPARENCY $\frac{8}{10}$.

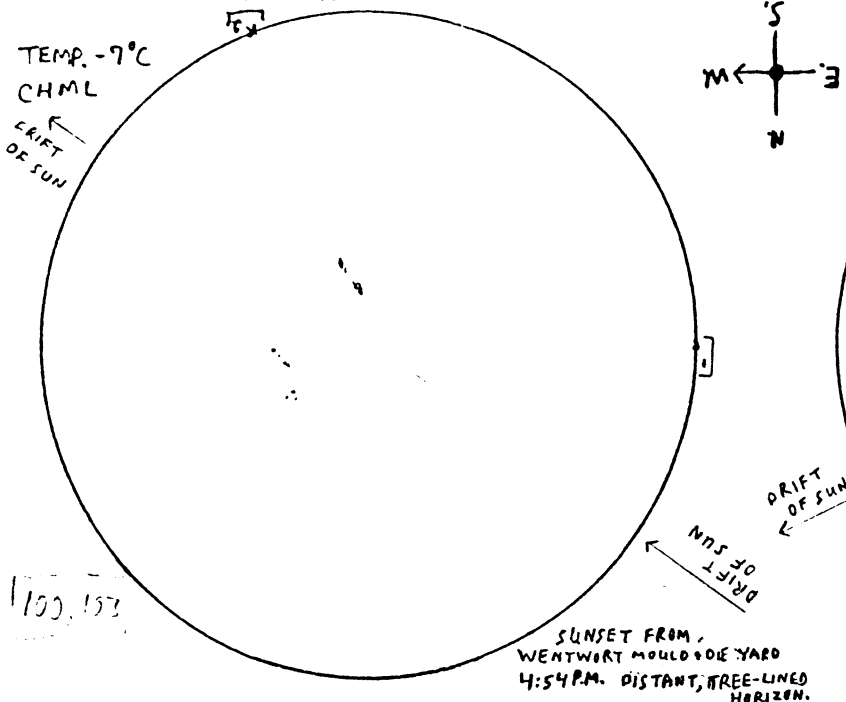


REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 23$
 12:35 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$; SEEING $> \frac{6}{10}$.

REL. # OF SUNSPOTS $[(10 \times 3) + 6] = 36$
 1:35 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{6}{10}$.

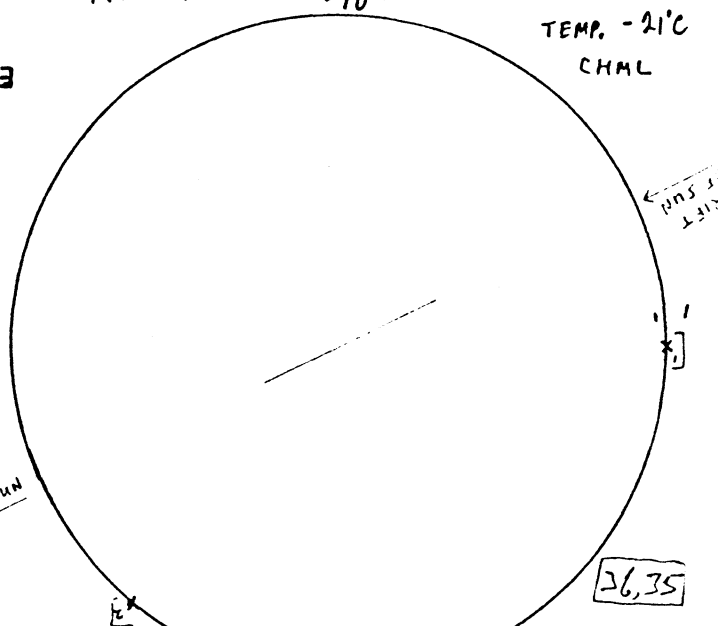
700mm f 11.6
18mm

JAN. 4/94 4:40-4:45 P.M.
"FLATTENED" SUN SETTING INTO
SEEING $\frac{6}{10}$ CLOUD BANDS ALONG
TRANSP. $\frac{7}{10} \rightarrow \frac{2}{10}$ HORIZON.



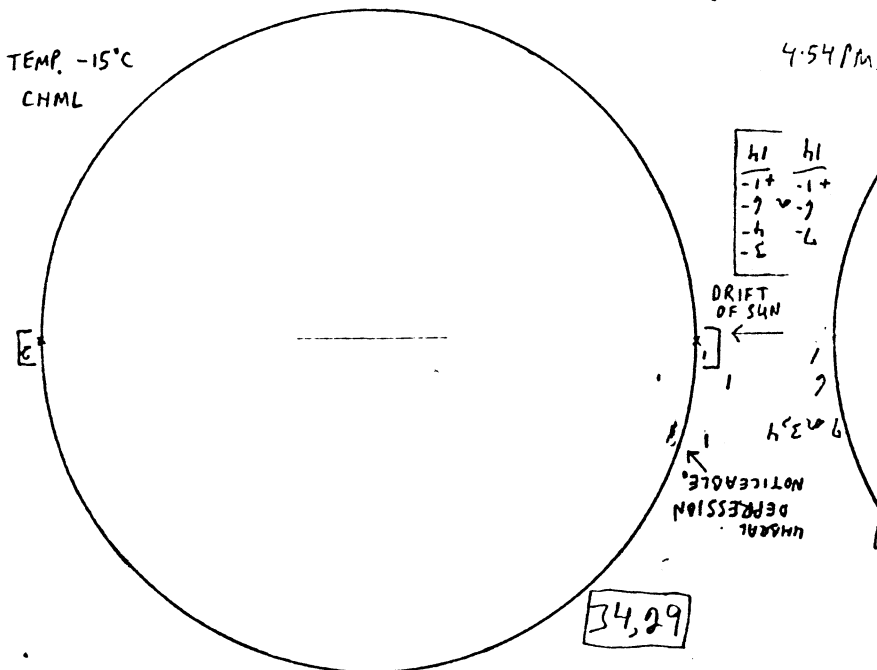
CLOUD BANDS PREVENT SUNSPOT COUNT.

JAN. 15 11:12-11:20 A.M. E.S.T.
LIGHT HAZY CLOUD IN SUN'S AREA, "NO"
SEEING $\frac{6}{10}$, MANY SMALL RIPPLES, BREEZE.
TRANSPARENCY $\frac{6}{10}$.



REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$; 700mm
12mm, 18mm, 11:20 A.M. SEEING $\frac{6}{10}$.

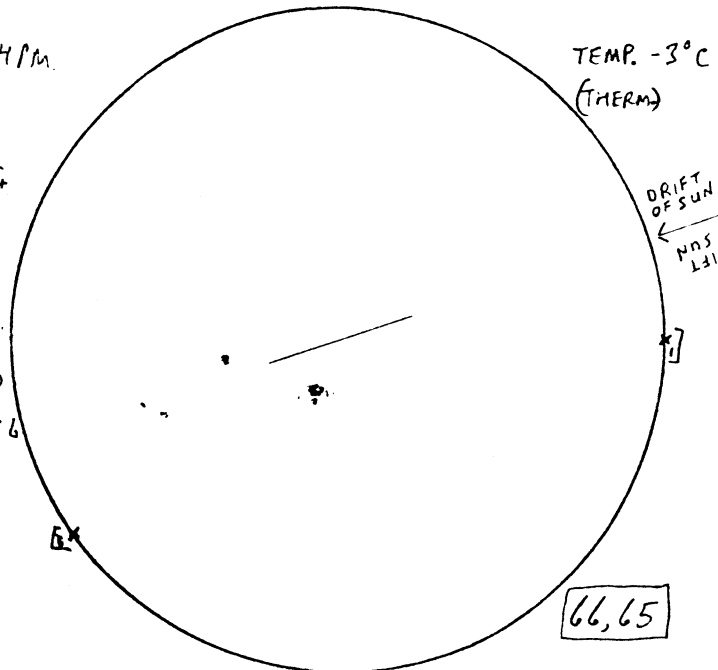
JAN. 16 1:45-1:53 P.M. E.S.T.
LIGH HAZY CLOUD IN SUN'S AREA; RING
SEEING $\frac{8}{10}$, STEADY; TRANSP. $\frac{6}{10}$ ABOVE SUN *
SOLAR GRANULATION DETECTED? ALONG LIMBS.



RELATIVE # OF SUNSPOTS $[(10 \times 2) + 2] = 22$

$\frac{700 \text{ mm}}{12 \text{ mm}}$, 1:54 P.M., SEEING $\frac{7}{10}$, HAZY.
MINIMUM TEMPERATURE 1/19 -29°C (THERM.)

JAN. 22 11:55 A.M. - 12:10 P.M. E.S.T.
SKY CLEAR IN SUN'S AREA; "NO" BREEZE
SEEING $> \frac{7}{10}$, SMALLEST RIPPLES ALONG LIMB.
TRANSPARENCY $\frac{9}{10}$, SHARP! IMAGE.



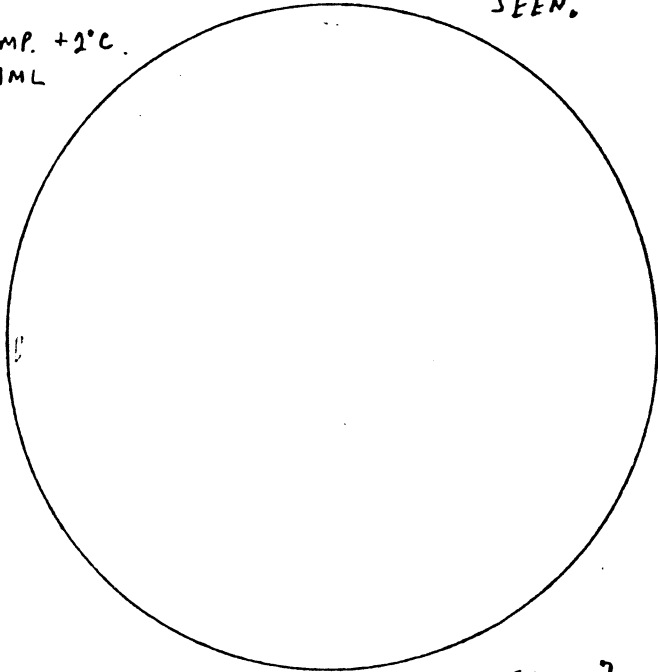
REL. # OF SUNSPOTS $[(10 \times 3) + 14] = 44$
 $\approx [(10 \times 4) + 14] = 54$

$\frac{700 \text{ mm}}{12 \text{ mm}}$; 12:12 P.M.; SEEING $\frac{7}{10}$

153

DEC. 14/93 11:55 A.M. E.S.T.
 CIRRO-STRATUS CLOUD IN
 SEEING $\frac{8}{10}$. SUN'S AREA.
 TRANSPARENCY: FACULAE EASILY
 SEEN.

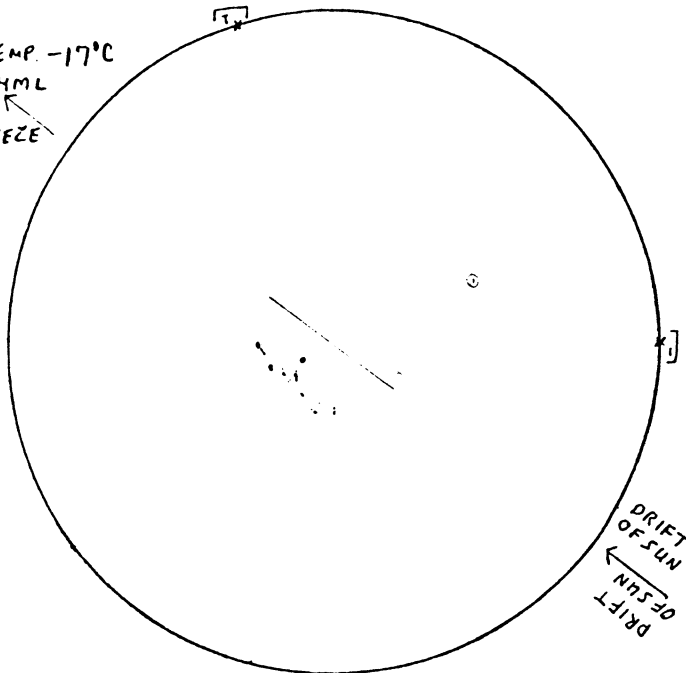
TEMP. +2°C
 CHML



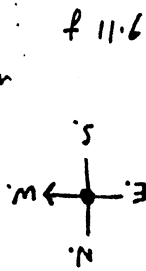
REL. # OF
 SUNSPOTS $[(10 \times 0) + 0] = 0$; $\frac{700 \text{ mm}}{12 \text{ mm}}$; 11:55 AM.

DEC. 26 4:03-4:08 P.M. E.S.T.
 CLOUDS ALONG HORIZON IN FRONT OF SUN.
 SEEING, TRANSP. $\frac{7}{10}$.

TEMP. -17°C
 CHML
 NO BREEZE

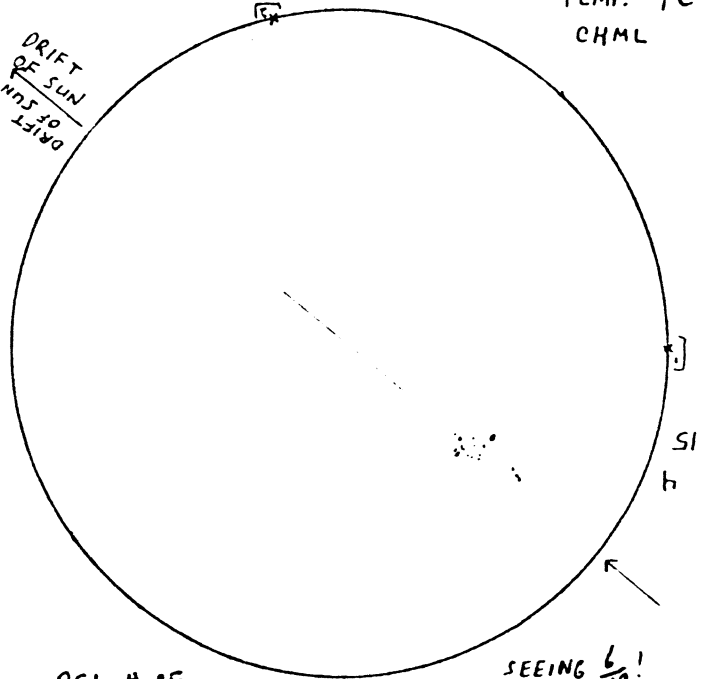


REL. # OF SUNSPOTS $[(10 \times 1) + 12] = 22$; 4.16 P.M., $\frac{700 \text{ mm}}{18 \text{ mm}}$



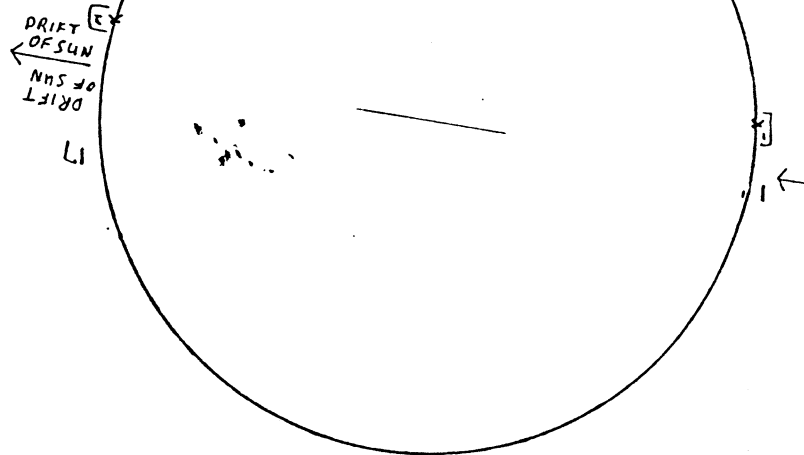
DEC. 23 3:45-3:50 P.M. E.S.T.
 SKY TOTALLY CLEAR. 'NO' BREEZE.
 SEEING $\frac{6}{10}$, RIPPLES.
 TRANSPARENCY $\frac{8}{10}$.

TEMP. -9°C
 CHML



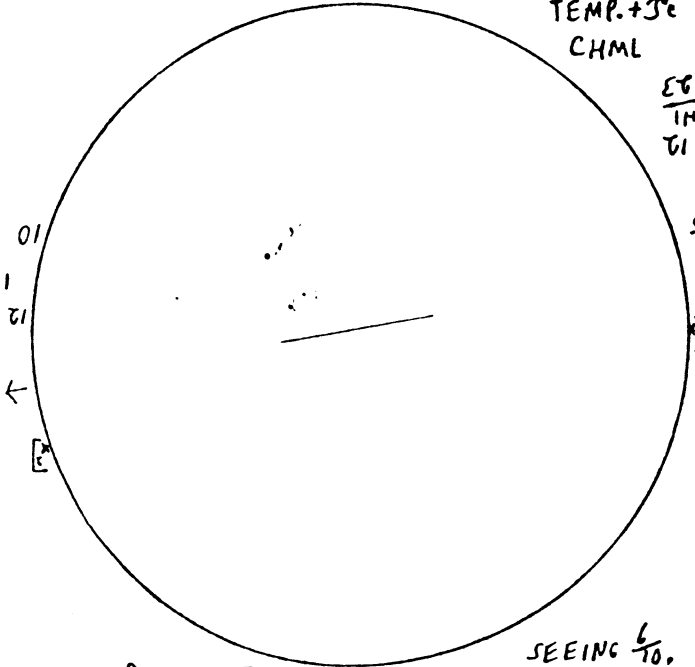
REL. # OF
 SUNSPOTS $10 \times 2 + 19 = 39$; 3:52 P.M., $\frac{700 \text{ mm}}{12 \text{ mm}}$

DEC. 28 1:10-1:24 P.M. E.S.T.
 LONG CLOUD BANK SLOWLY DRIFTING PAST
 SEEING (WHEN CLEAR) $\frac{8}{10}$.
 TRANSPARENCY $\frac{7}{10}$.



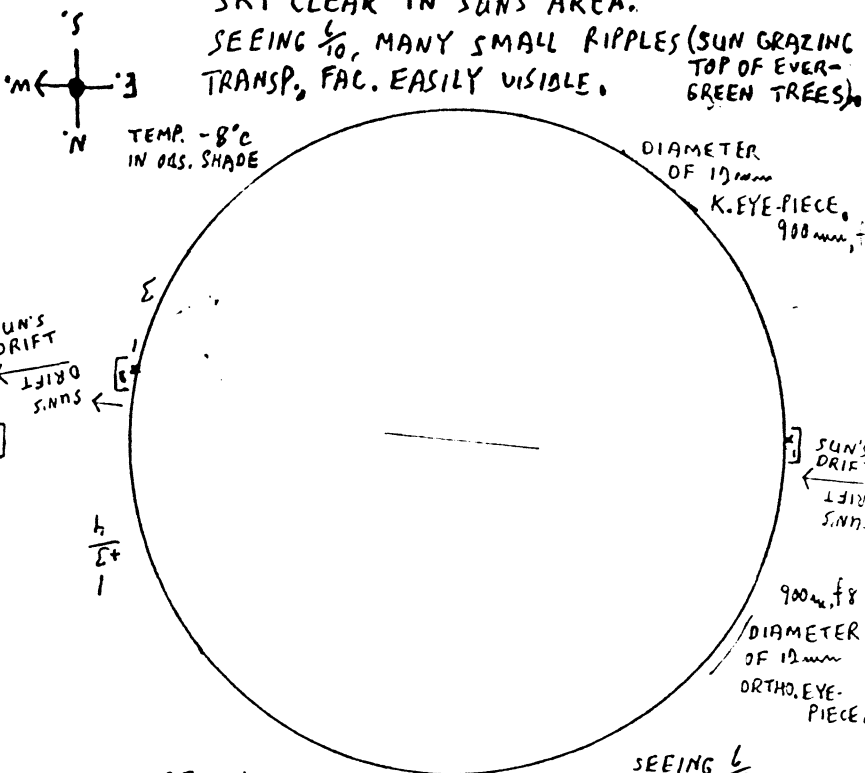
REL. # OF SUNSPOTS $10 \times 2 + 18 = 38$
 1:24 P.M., $\frac{700 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$.

DEC. 8/93 11:50-11:55 A.M. E.S.T.
 SKY HAZY-BLUE IN SUN'S AREA.
 'NO' BREEZE.
 SEEING $\frac{7}{10}$; TRANSP. $\frac{7}{10}$.



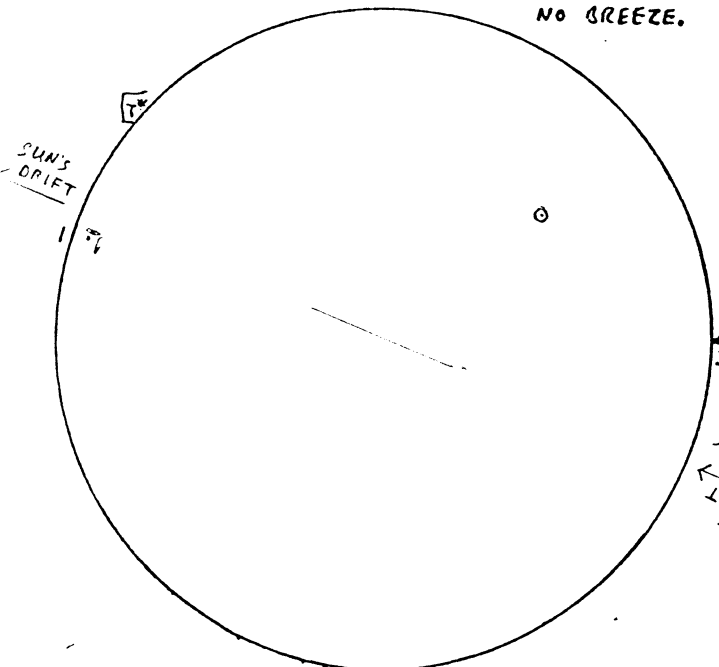
REL. # OF SUNSPOTS $[(10 \times 3) + 3] = 53$ $\frac{700 \text{ mm}}{13 \text{ mm}}$, 12:01 P.M.
 SEEING $\frac{6}{10}$.

DEC. 11 1:15-1:23 P.M. E.S.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{6}{10}$, MANY SMALL RIPPLES (SUN GRAZING TOP OF EVER-GREEN TREES).
 TRANSP., FAC. EASILY VISIBLE.



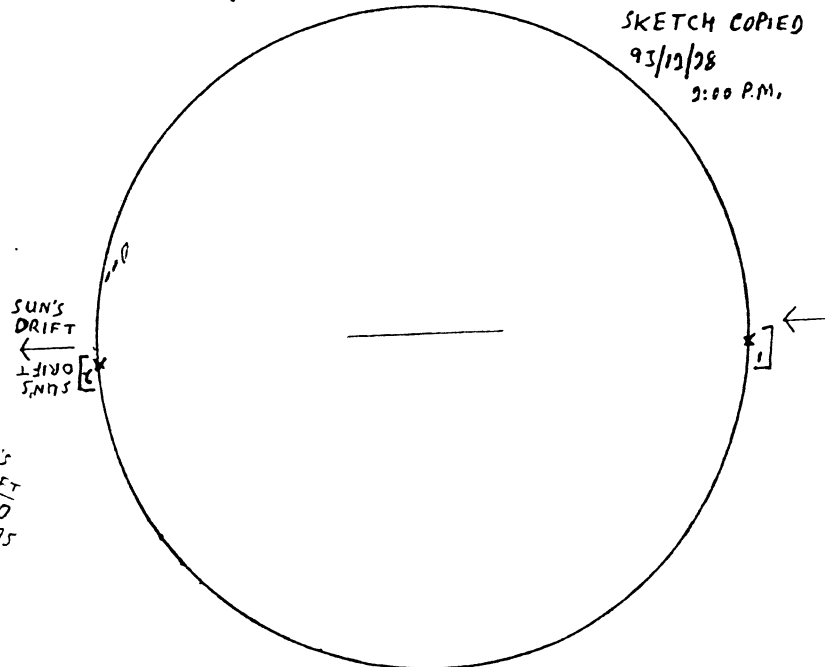
REL. # OF SUNSPOTS $[(10 \times 2) + 4] = 24$; $\frac{700 \text{ mm}}{13 \text{ mm}}$; 1:24 P.M.
 SEEING $\frac{6}{10}$.

DEC. 12 2:10-2:18 P.M. E.S.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$
 TEMP. IN OBSERVATORY SHADE -2°C
 NO BREEZE.



REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$
 2:18 P.M.; $\frac{700 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{5}{10}$.
 0 SPOTS ON PAPER.

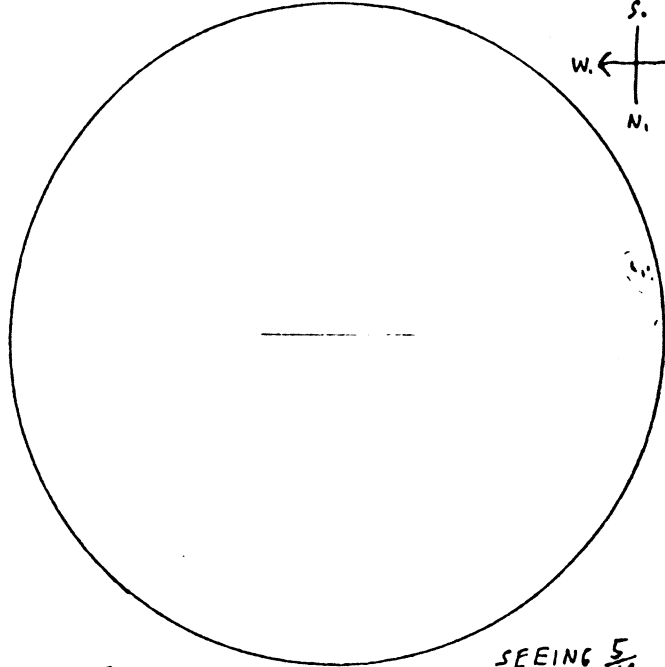
DEC. 13/93 11:55 A.M. E.S.T.
 CIRRUS CLOUD IN SUN'S AREA.
 SEEING $\frac{8}{10}$ STEADY!! IMAGE.
 TRANSP., FACULAE EASILY SEEN.



REL. # OF SUNSPOTS $[(10 \times 0) + 0] = 0$
 $\frac{700 \text{ mm}}{18 \text{ mm}, 12 \text{ mm}}$; 11:59 A.M.; SEEING $\frac{6}{10}$.

f 8 900mm/25mm

NOV. 12/93 2:28 P.M. E.S.T.
THIN CIRRUS IN SUN'S AREA.
SEEING $\frac{7}{10}$, FUZZY.
TRANSP. $\frac{8}{10}$, FACULAE EASILY SEEN.

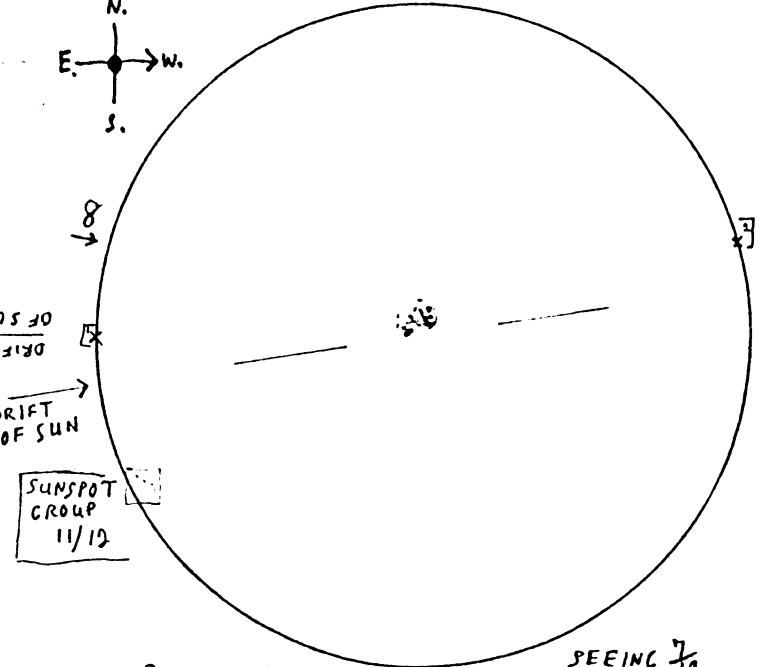


SEEING $\frac{5}{10}$.

REL. # OF
SUNSPOTS $10 \times 1 + 6 = 16$; 2:30 P.M., $\frac{900mm}{12mm}$,

f 11-6 700mm/18mm

NOV. 18 11:55-12:05 P.M. EST.
THIN CIRRUS CLOUD IN BLUE SKY.
SEEING $\frac{8}{10}$. [NO WIND
TRANSPARENCY $\frac{8}{10}$.

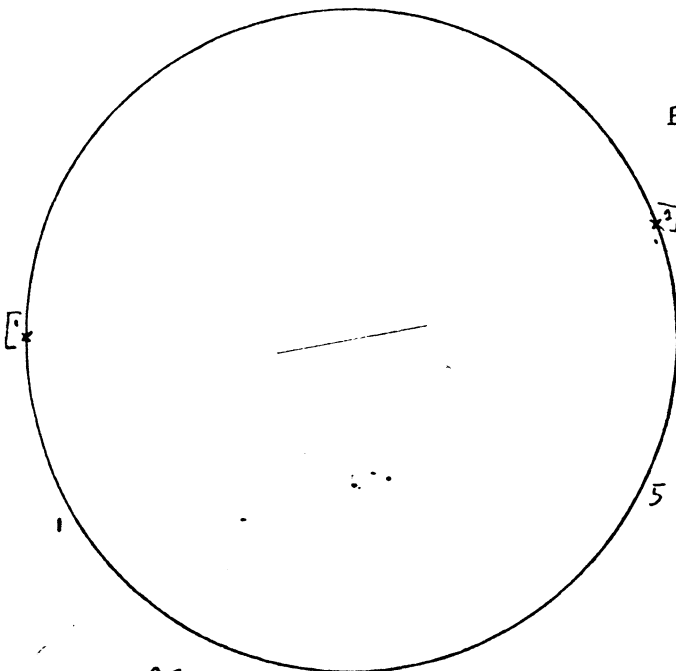


SEEING $\frac{7}{10}$.

REL. # OF
SUNSPOTS $[(10 \times 1) + 8] = 18$; 12:05 P.M. $\frac{700mm}{12mm}$;

NOV. 29 11:48-12:00 P.M. E.S.T.
DRIFTING THIN CIRRUS CLOUD.
SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{7}{10}$.

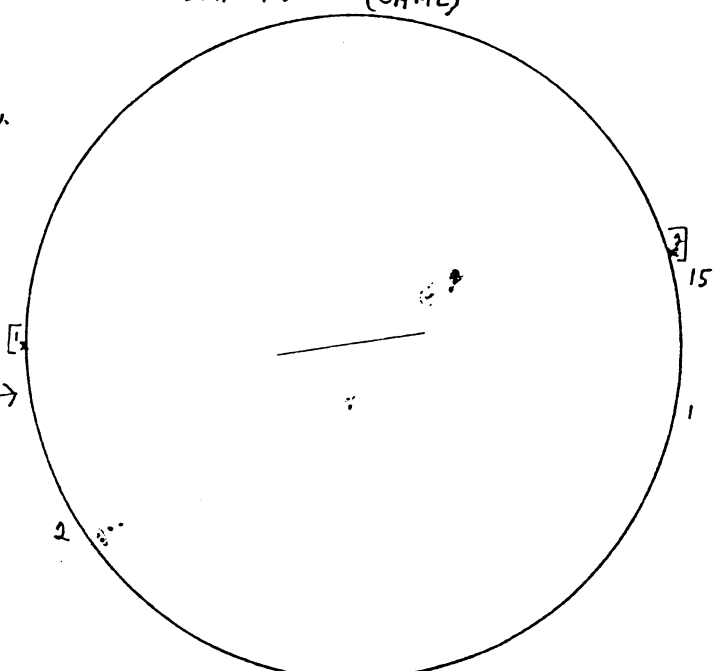
$\frac{700mm}{18mm}$ f 11-6



REL. #
OF SUNSPOTS $[(10 \times 3) + 7] = 37$

12:00 P.M., $\frac{700mm}{12mm}$, SEEING $\frac{6}{10}$.

DEC. 1 11:50-12:00 P.M. E.S.T.
SKY TOTALLY CLEAR.
SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{8}{10}$.
TEMP. +5°C (CHML)



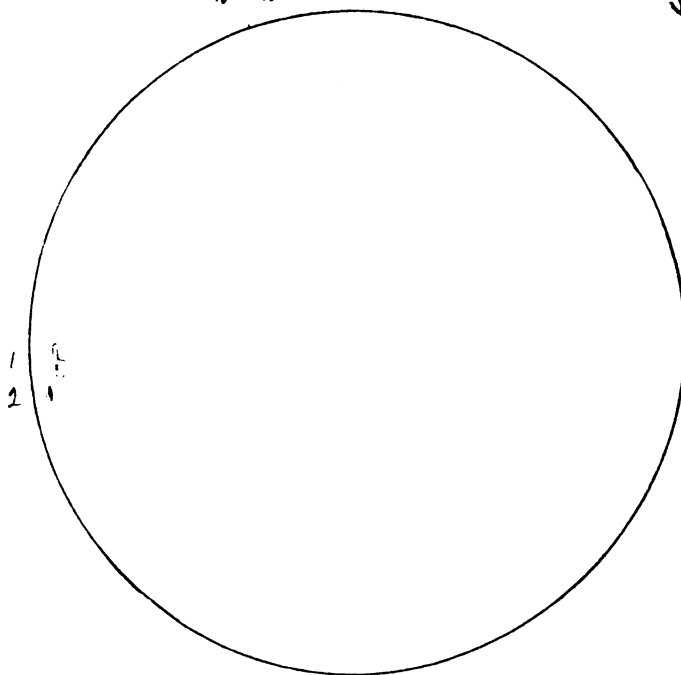
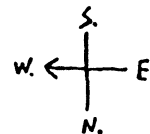
REL. #
OF SUNSPOT $[(10 \times 3) + 18] = 48$

12:05 P.M., $\frac{700mm}{12mm}$, SEEING $\frac{6}{10}$.

NOV. 10/93 12:50 P.M. - 1:00 P.M. E.S.T.
 THINNING HAZE IN BETWEEN CIRRUS-STRATTO CLOUDS.
 SEEING, TRANSPARENCY: SIMILAR TO 9mm VIEW.

$$\frac{7}{10} \Rightarrow \frac{8}{10} \Rightarrow \frac{4}{10}$$

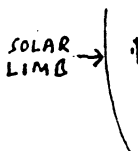
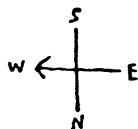
f 8 $\frac{900\text{mm}}{25\text{mm}}$



REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 23$; $\frac{900\text{mm}}{9\text{mm}}$; SEEING $\frac{9}{10}$, STEADY!; 1:00 P.M. E.S.T.
 TRANSP. $\frac{4}{10}$.



f 8 $\frac{900\text{mm}}{9\text{mm}}$; 1:00 P.M. E.S.T.; SEEING, TRANSPARENCY.

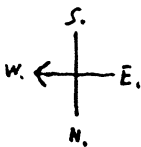


f 8 $\frac{900\text{mm}}{25\text{mm}}$

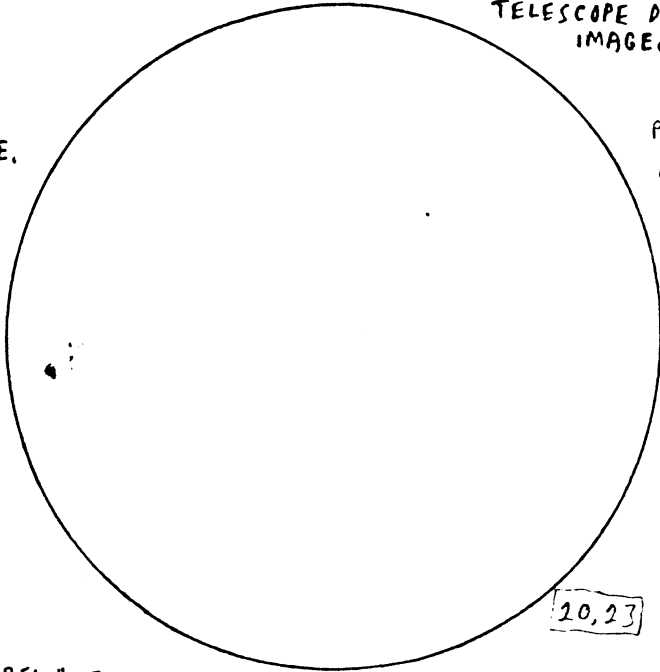
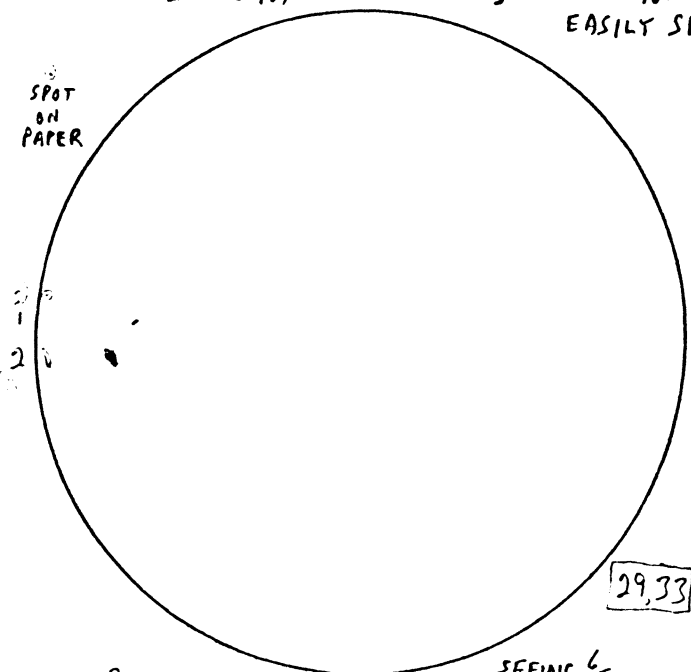
NOV. 8/93 12:58-1:03 P.M. E.S.T.
 ST. CATH., JAYCEE PARK, MED. TREE BRAN-
 CHES MOVE IN BREEZE: 50% SHELTERED.
 SEEING $\frac{8}{10}$, STEADY IMAGE; TRANSP. $\frac{8}{10}$, FACULAE
 EASILY SEEN.

NOV. 9 9:58-10:15 A.M. E.S.T.
 ISOLATED WHITE CLOUDS IN SUN'S AREA.
 MED. BRANCES SWAY IN GUSTY BREEZE.
 SEEING $\frac{8}{10}$; TRANSP. $\frac{8}{10}$. VIBRATING
 TELESCOPE DEGRADE
 IMAGE.

SPOT
ON
PAPER



PARKD.
↑
QUEENS



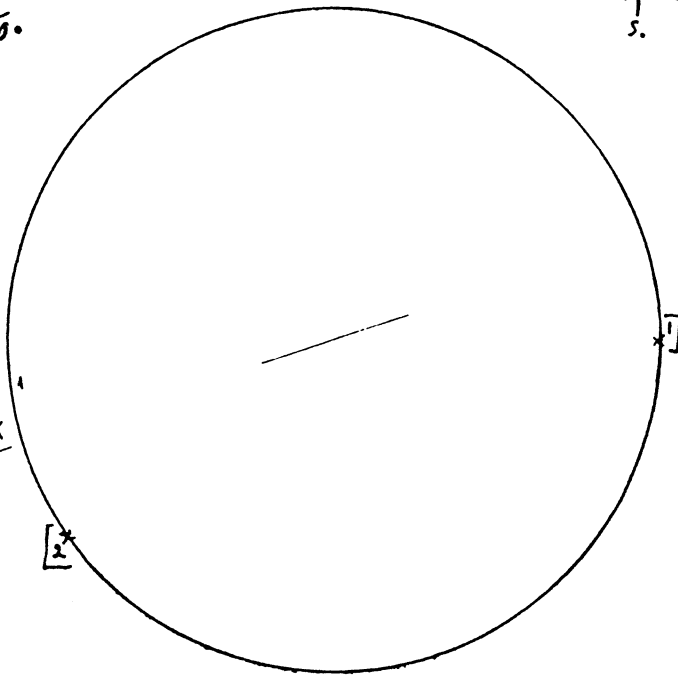
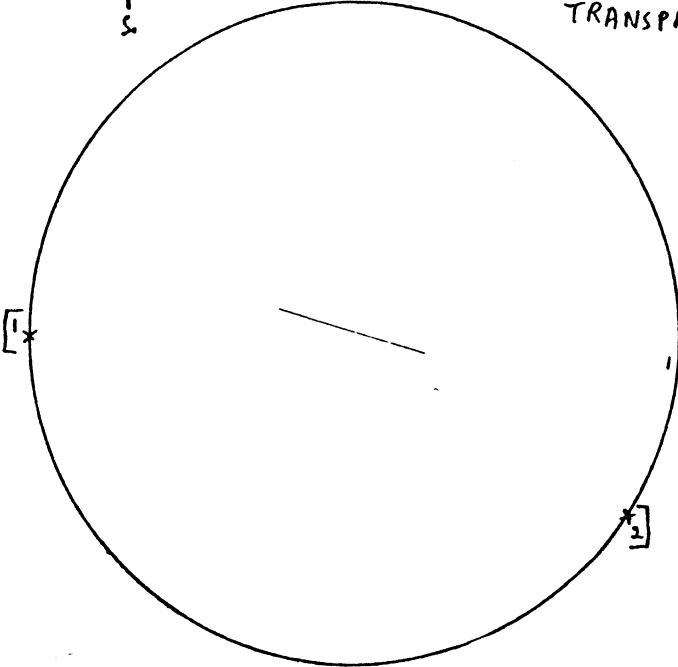
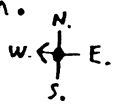
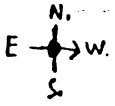
REL. # OF
 SUNSPOTS $[(10 \times 2) + 3] = 23$; $\frac{900\text{mm}}{19\text{mm}}$, 1:05 P.M.
 $\sim [(10 \times 2) + 5] = 25$; SEEING $\frac{6}{10}$.

REL. # OF
 SUNSPOTS $[(10 \times 2) + 3] = 23$; $\frac{900\text{mm}}{12\text{mm}}$, 10:16 A.M., SEEING $\frac{8}{10}$.

AMICI PRISM

NOV. 10 2:05 P.M. E.S.T.
 CIRRUS-STRATUS HAZE IN SUN'S AREA
 SEEING, STEADY IMAGE.
 TRANSPARENCY $\frac{4}{10}$.

RIGHT-DIAGONAL
 PRISM.



SUN'S
DRIFT →

← SUN'S
DRIFT

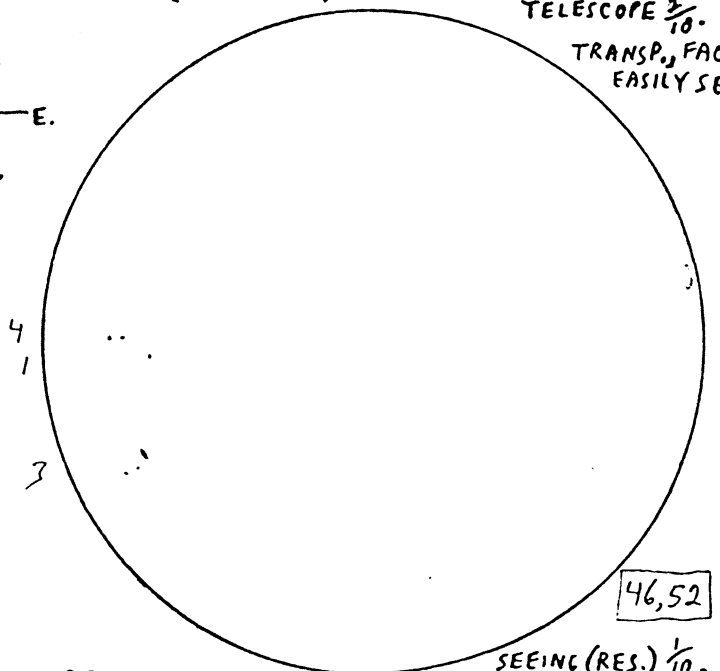
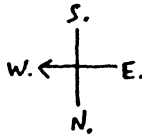
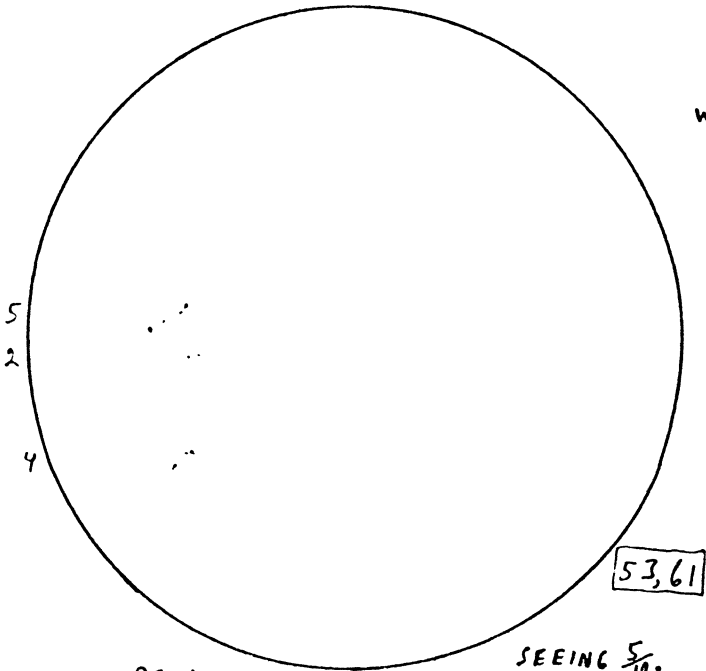
f 11.6 $\frac{700\text{mm}}{18\text{mm}}$

COMPARED PRISMS.

OCT. 23/93 12:45-12:55 P.M. E.D.T.
 THIN CIRRUS-WISPS IN SUN'S AREA.
 SEEING $\frac{7}{10}$. TRANSPARENCY, LIKE LOOKING
 THROUGH FINE-MESH SCREEN.

f 8 $\frac{900mm}{25mm}$

OCT. 24 12:03-12:15 P.M. E.O.T.
 SKY CLEAR IN SUN'S AREA.
 LARGE TREE-BRANCHES MOVE IN WIND.
 SEEING (RESOLUTION) BECAUSE OF VIBRATING
 TELESCOPE $\frac{2}{10}$.
 TRANSP., FAC.
 EASILY SEEN.

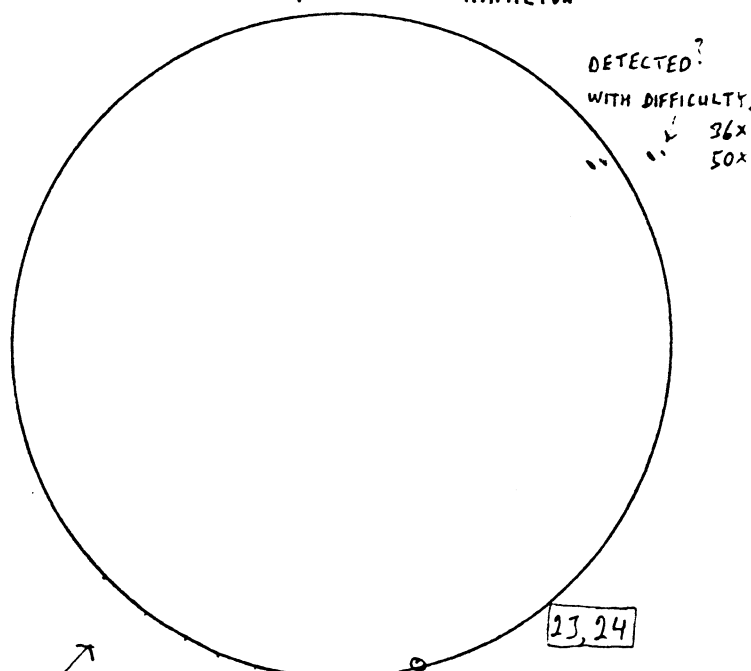
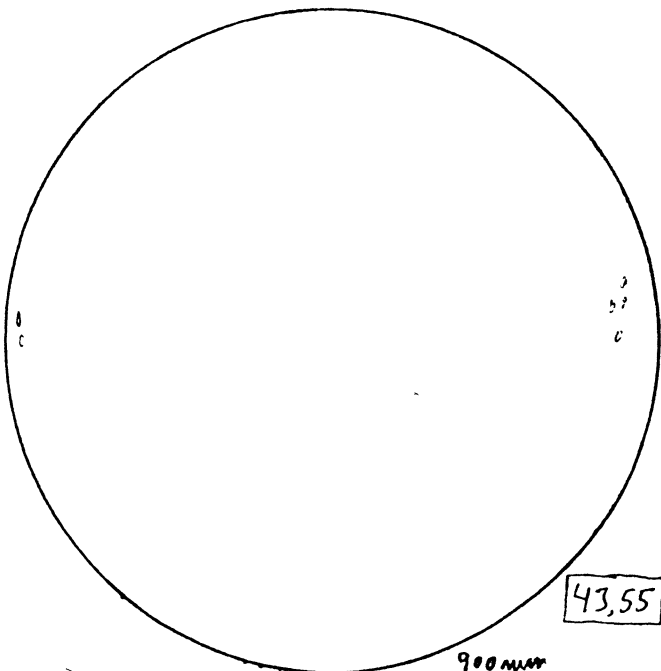


REL.# OF
 SUNSPOTS $[(10 \times 3) + 1] = 41$; $\frac{900mm}{18mm}$; 1:10 P.M.

REL.# OF
 SUNSPOTS $[(10 \times 3) + 8] = 38$; 12:10 P.M.; $\frac{900mm}{18mm}$!

OCT. 26 4:50 P.M. E.D.T.
 FAST DRAWING; CLOUD BANK APPROACHING.
 SEEING $\frac{4}{10}$; TRANSP. $\frac{7}{10}$ FACULAE
 OBSERVED.

OCT. 30 12:20-12:35 P.M. E.D.T.
 CIRRO-STRATUS CLOUD IN SUN'S AREA
 SEEING $\frac{7}{10}$.
 TRANSPARENCY $\frac{2}{10}$.
 HARBOURFRONT PARK,
 HAMILTON



REL.# OF
 SPOTS $10 \times 0 + 0 = 0$; 5:00 P.M., SEEING $\frac{6}{10}$.

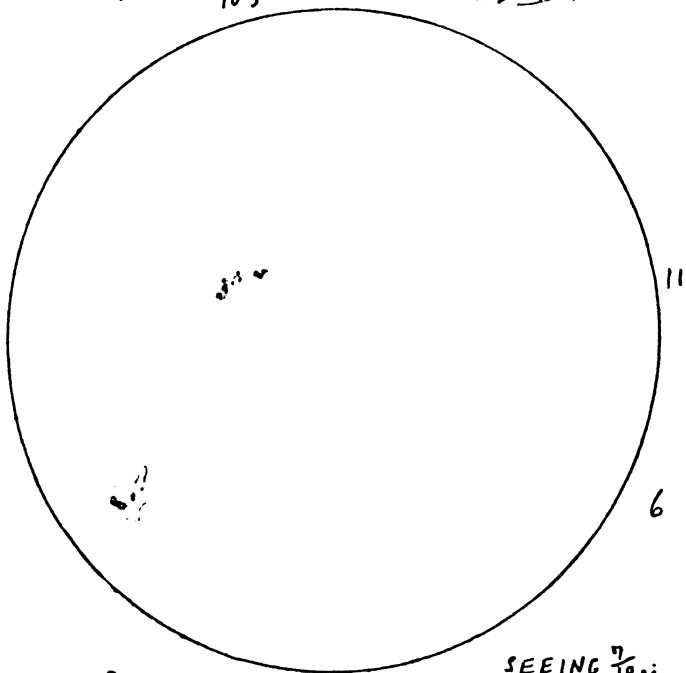
REL.# OF SUNSPOTS $[(10 \times 1) + 1] = 11$

93/11/1: JOHN RHE: SAW 3 SPOTS (PROJECTION)
 ~ 2:00 P.M. M.S.T. (EDMONTON).

$\frac{900mm}{18mm}$; 12:35 P.M.; TRANSP. $\frac{2}{10}$.

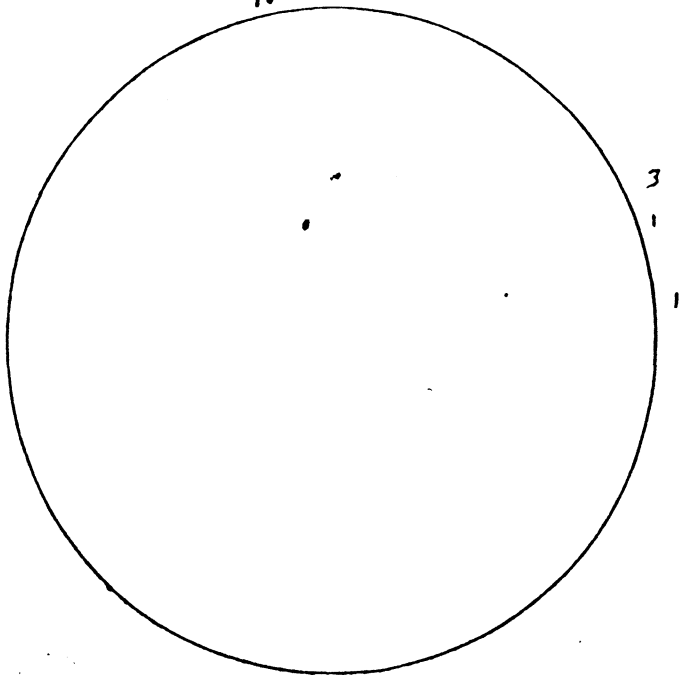
OCT. 7/93 5:30-5:40 P.M. E.D.T.
 MED. TREE BRANCHES MOVE IN WIND.
 SKY TOTALLY CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{9}{10}$, SHARP IMAGE.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



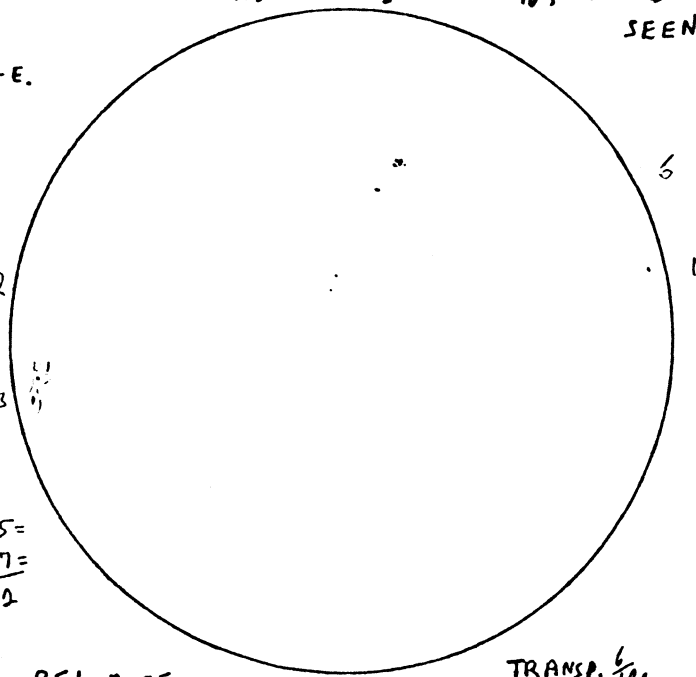
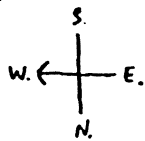
REL. # OF SUNSPOTS $[(10 \times 2) + 17] = 37$; 5:42 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$.
 SEEING $\frac{7}{10}$.

OCT. 13 4:55-5:05 P.M. E.D.T.
 SKY CLEAR IN SUN'S AREA; CLOUD BANK APPROACHING.
 SEEING $\frac{7}{10}$, RIPPLES.
 TRANSP. $\frac{8}{10}$, GRANULATION DETECTED?



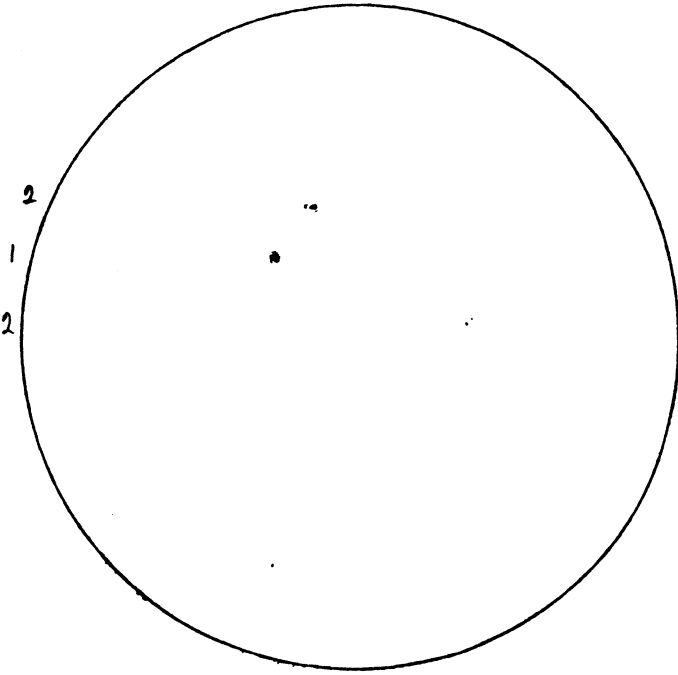
REL. # OF SUNSPOTS $[(10 \times 3) + 5] = 35$
 $\frac{900 \text{ mm}}{12 \text{ mm}}$; 5:08 P.M.; SEEING $\frac{5}{10}$.

OCT. 11 3:50-4:00 P.M. E.D.T.
 JAYCEE PARK, ST. CATHARINES.
 THIN CIRRO-STRATUS CLOUD IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY; TRANSP. $\frac{8}{10}$, FAC. EASILY SEEN.



REL. # OF SUNSPOTS $[(10 \times 4) + 12] = 52$; 4:00 P.M. $\frac{908 \text{ mm}}{12 \text{ mm}}$.
 TRANSP. $\frac{6}{10}$.

OCT. 14 4:58-5:05 P.M. E.D.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, FUZZY.
 TRANSPARENCY $\frac{7}{10}$.

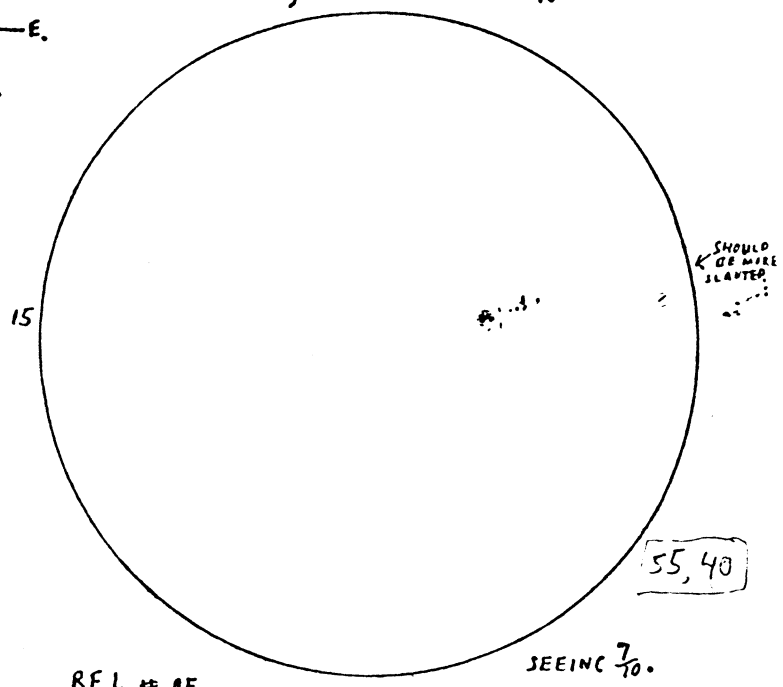
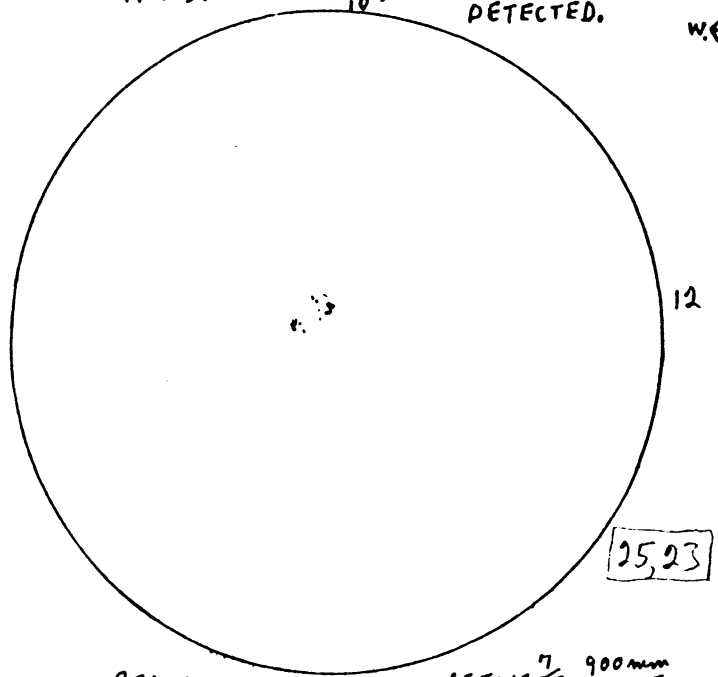
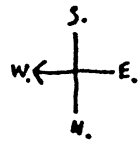


REL. # OF SUNSPOTS $[(10 \times 3) + 5] = 35$
 $\frac{900 \text{ mm}}{12 \text{ mm}}$; 5:10 P.M.; SEEING $\frac{5}{10}$.

SEPT. 24/93 5:05-5:15 P.M. E.D.T.
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{5}{10}$, SPARSE FAC.
 DETECTED.

f8 $\frac{900mm}{25mm}$

SEPT. 30 5:20-5:30 P.M. E.D.T.
 CARSON + LEDUC ST, HAMILTON.
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{8}{10}$.

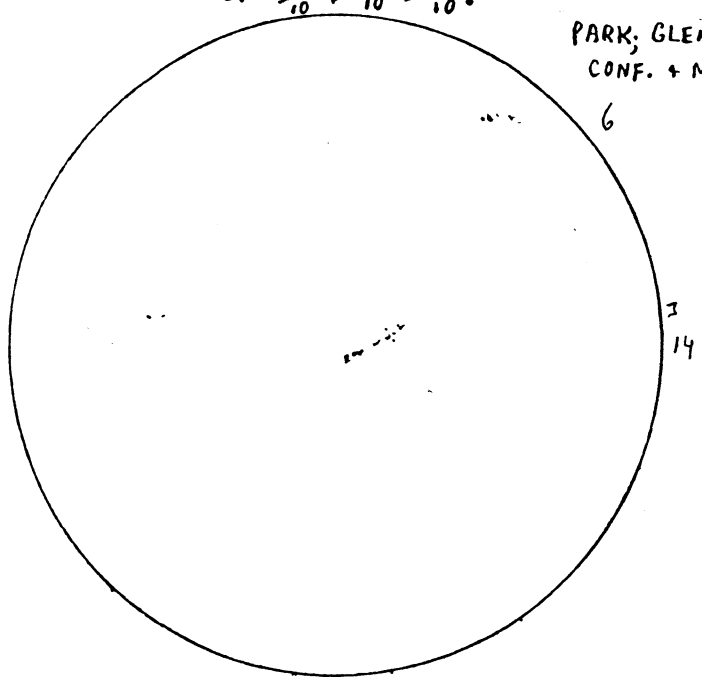


REL. # OF SUNSPOTS $[(10 \times 1) + 12] = 22$; 5:18 P.M.;
 SEEING $\frac{7}{10}$; $\frac{900mm}{15mm}$

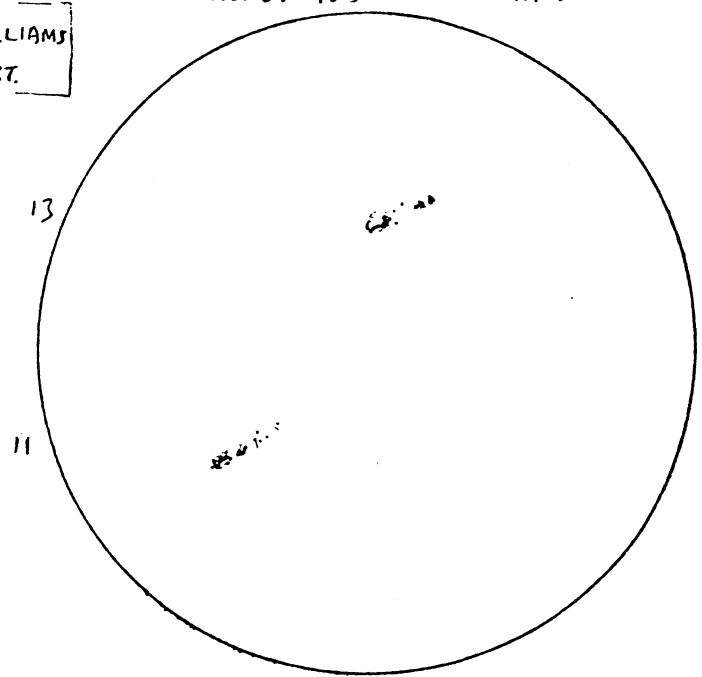
REL. # OF SUNSPOTS $[(10 \times 1) + 15] = 25$; 5:34 P.M., $\frac{900mm}{12mm}$,
 SEEING $\frac{7}{10}$.

OCT. 2 3:18-3:28 P.M. E.D.T.
 CIRRUS SHEEP-WOOL CLOUDS IN SUN'S AREA.
 SEEING $\frac{7}{10}$, STEADY WITH RIPPLES
 TRANSP. $\frac{7}{10} \rightarrow \frac{5}{10} \rightarrow \frac{7}{10}$.

PARK, GLEN WILLIAMS
 CONF. + MAIN ST.



OCT. 5 5:30-5:40 E.D.T.
 CLEAR SKY IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{8}{10}$, SHARP DETAIL.



REL. # SUNSPOTS $[(10 \times 3) + 2] = 53$
 3:28 P.M.; $\frac{900mm}{12mm}$; SEEING $\frac{6}{10}$.

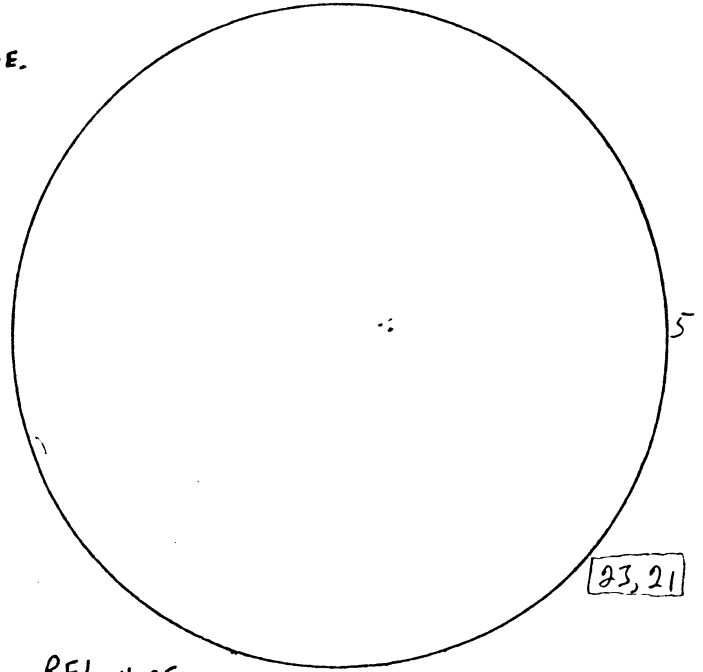
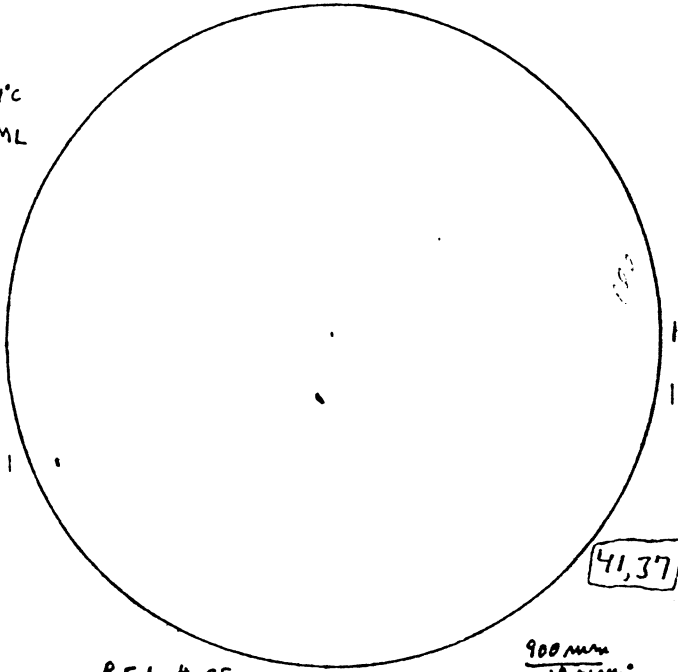
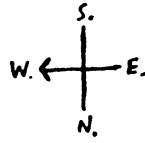
REL. # OF SUNSPOTS $[(10 \times 2) + 24] = 44$
 5:45 P.M., $\frac{900mm}{12mm}$; RESOLUTION, $\frac{6}{10}$.
 BECAUSE OF WIND.

f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

AUG. 30/93 5:16-5:21 P.M. E.D.T.
MILKY-WHITE HAZE IN SUN'S AREA.
SEEING $\frac{8}{10}$, STEADY IMAGE.
TRANSP. $\frac{7}{10}$, THROUGH HAZE.

SEPT. 5 3:35-3:50 P.M. E.D.T.
CUMULOUS CLOUDS IN 70% CLEAR SKY.
SEEING $\frac{6}{10}$, FUZZY.
TRANSPARENCY, FACULAE DETECTED.

24°C
HML

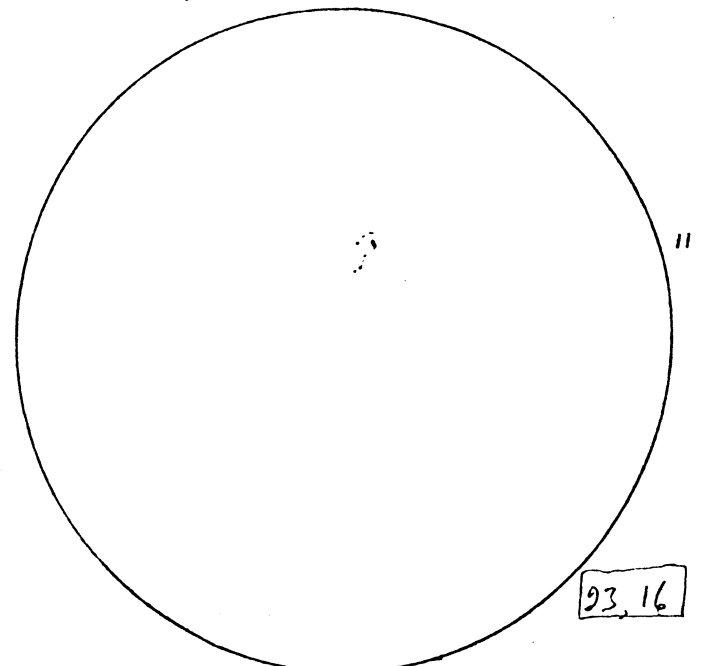
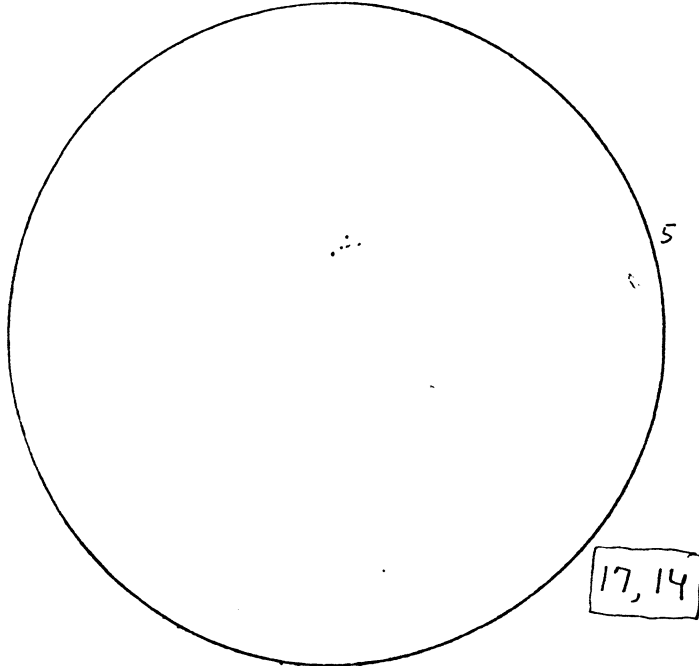


REL. # OF
SUNSPOTS $[(10 \times 3) + 3] = 33$; 5:21 P.M.; SEEING $\frac{7}{10}$.
 $\frac{900 \text{ mm}}{12 \text{ mm}}$;

REL. # OF
SUNSPOTS $[(10 \times 1) + 5] = 15$; 3:50 P.M. $\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{6}{10}$.

SEPT. 19 3:55-4:10 P.M. E.D.T.
SKY BLUE-CLEAR IN SUN'S AREA.
SEEING $\frac{7}{10}$, FUZZY. WITH DIFFICULTY.
TRANSP. (RESOLUTION); FACULAE SEEN

SEPT. 23 12:27-12:48 P.M. E.D.T.
OBSERVATORY PARKING LOT.
FAST-MOVING CLOUDS IN 50% BLUE-CLEAR SKY.
SEEING $\frac{6}{10}$. TRANSPARENCY $> \frac{7}{10}$.



RELATIVE # OF SUNSPOTS $[(10 \times 0) + 5] = 15$

$\frac{900 \text{ mm}}{12 \text{ mm}}$, 4:06 P.M.; SEEING $\frac{6}{10}$.

REL. # OF SUNSPOTS $[(10 \times 0) + 17] = 21$

12:43 P.M.; $\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{5}{10}$.

STARFEST

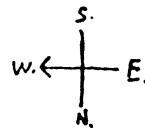
AUG. 21/93 2:00-2:15 P.M. E.D.T.

SKY BLUE-CLEAR IN SUN'S AREA.

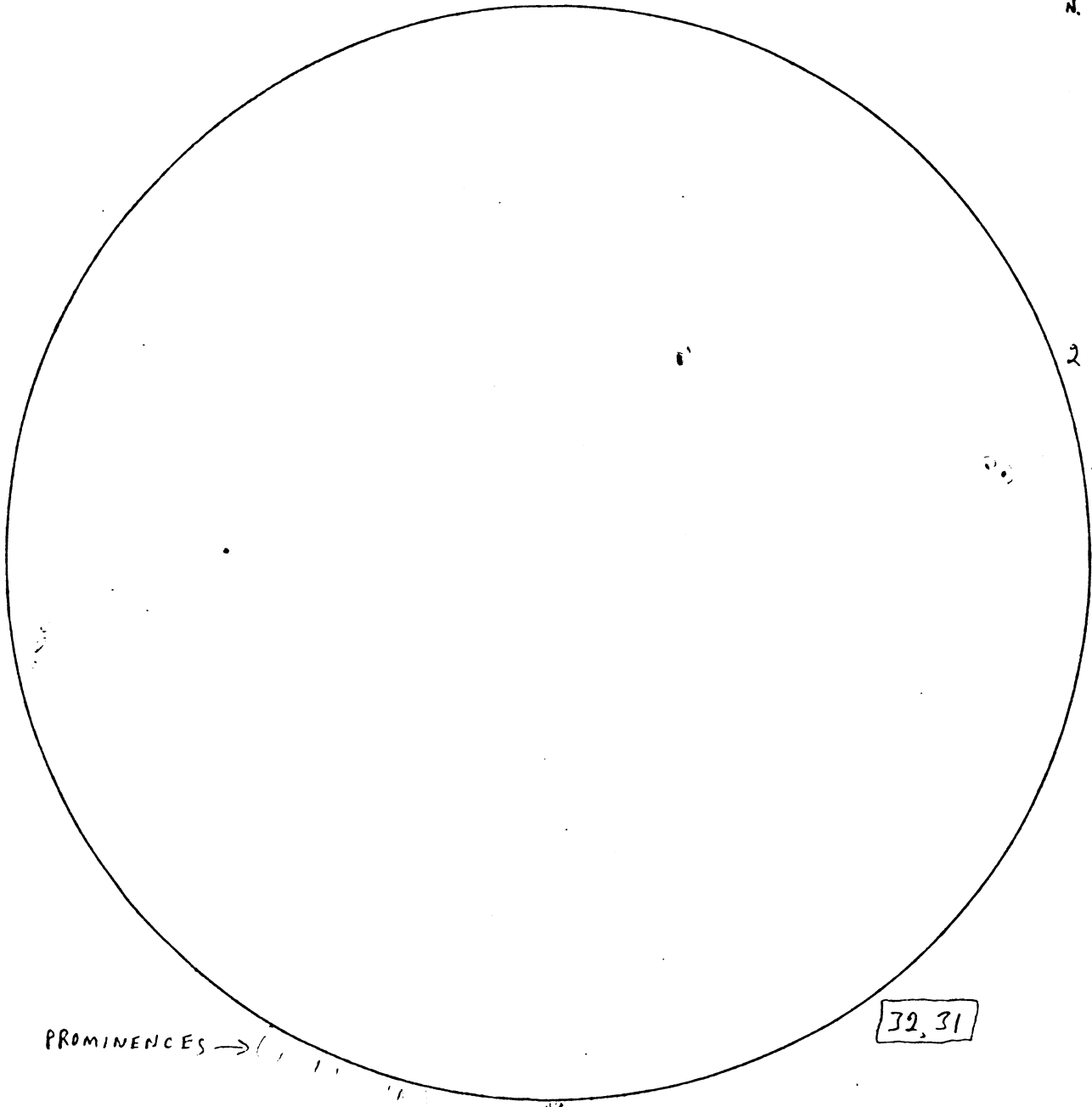
SEEING $\frac{7}{10}$, TURBULENCE.

TRANSPARANCY $\frac{8}{10}$, FACULAE EASILY SEEN.

$\frac{900 \text{ mm}}{25 \text{ mm}}$ ± 8



2-
2-
+1-
5



PROMINENCES →

32, 31

RELATIVE # OF SUNSPOTS $[(10 \times 3) + 5] = 35$

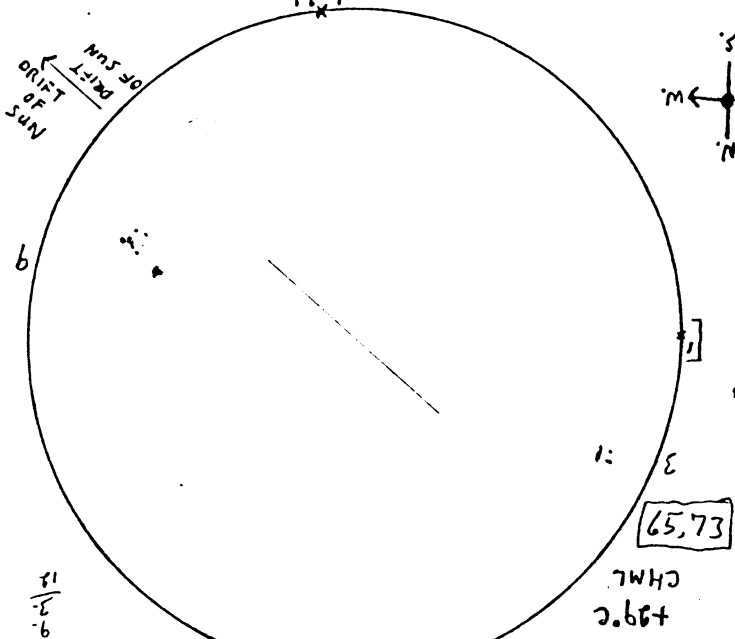
$\frac{900 \text{ mm}}{13 \text{ mm}}$, 2:18 P.M., SEEING $\frac{7}{10}$.

$\frac{540 \text{ mm}}{27 \text{ mm}}$ ± 5.4

PROMINENCES VIEWED IN GENESIS TELE-VUE REFRACTOR

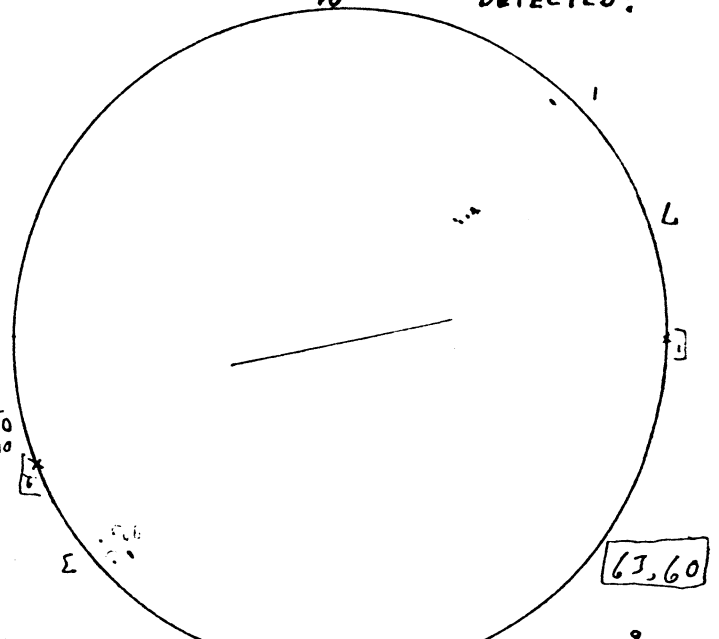
AUG. 11/93 4:56-5:15 P.M. E.D.T.
 MILKY HAZE IN SUN'S AREA.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{9}{10}$, FACULAE SEEN.

$\frac{700 \text{ mm}}{18 \text{ mm}}$



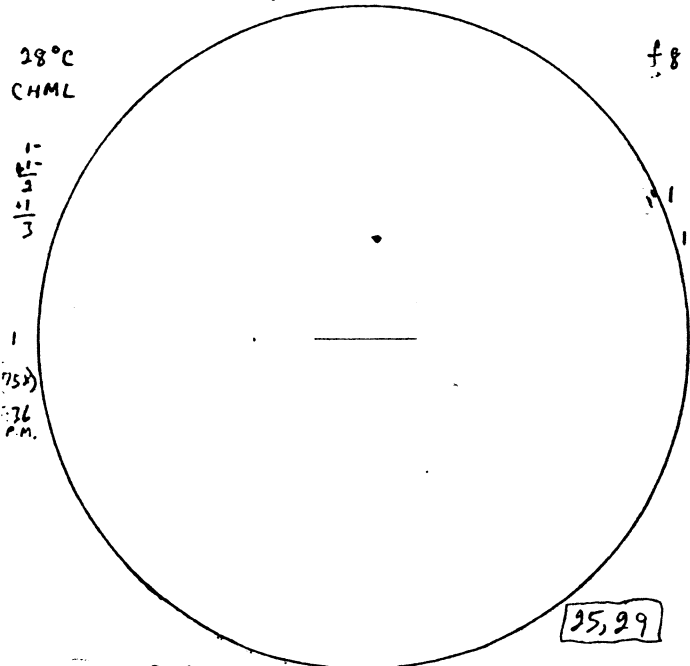
REL. # OF SUNSPOTS $[(10 \times 2) + 1] = 21$; 5:17 P.M., $\frac{700 \text{ mm}}{12 \text{ mm}}$,
 SEEING $\frac{8}{10}$.

AUG. 13 1:02-1:10 P.M. E.D.T.
 SKY CLEAR IN SUN'S AREA. CUMULUS CLOUDS DEVELOPING.
 SEEING $\frac{8}{10}$, SPOTS STEADY.
 TRANSPARENCY $\frac{9}{10}$, GRANULATION DETECTED?



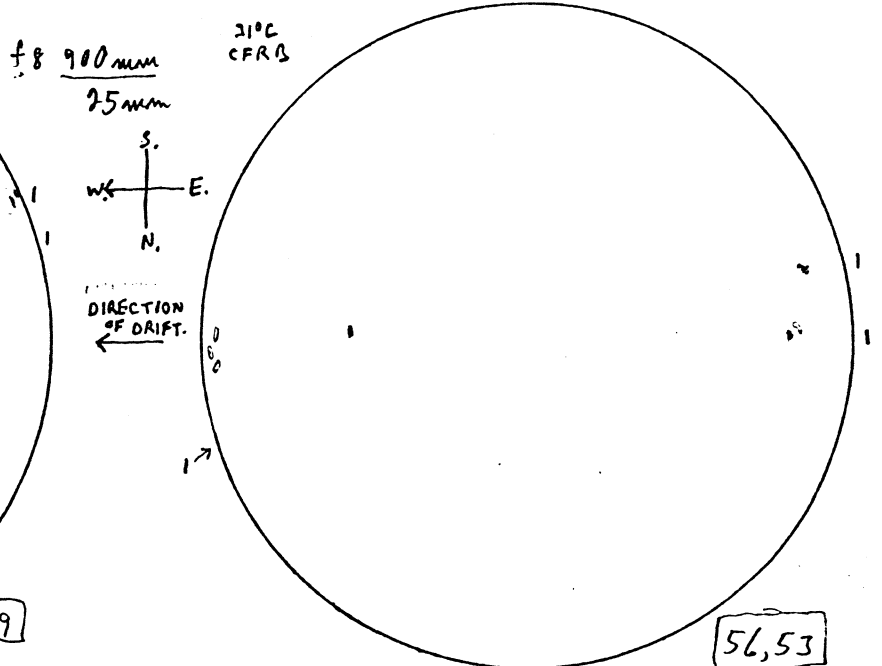
REL. # OF SUNSPOTS $[(10 \times 3) + 1] = 41$; 1:31 P.M., $\frac{700 \text{ mm}}{12 \text{ mm}}$,
 SEEING $\frac{8}{10}$.

AUG. 17 5:18-5:24 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, FUZZY? TRANSP. $\frac{8}{10}$; FAC. DETECTED.
 MIRROR (SLIGHTLY) SCRATCHED AUG. 12.



REL. # OF SUNSPOTS $[(10 \times 2) + 2] + 1 = 23$
 SEEING $> \frac{6}{10}$; $\frac{900 \text{ mm}}{13 \text{ mm}}$; 5:36 P.M.

AUG. 25 5:58-6:06 P.M. E.D.T.
 CUMULOUS CLOUDS IN 80% CLEAR SKY.
 SEEING $\frac{7}{10}$, RIPPLES.
 TRANSPARENCY $\frac{7}{10}$; FACULAE EASILY SEEN.

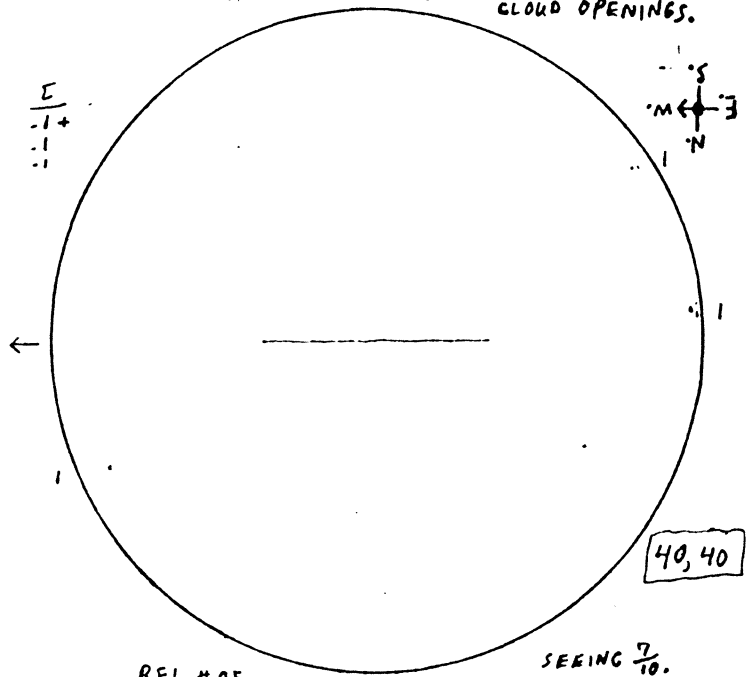


REL. # OF SUNSPOTS $[(10 \times 3) + 3] = 33$
 SEEING $\frac{6}{10}$; $\frac{900 \text{ mm}}{12 \text{ mm}}$; 6:12 P.M.

700mm / 18mm f11.6

AUG. 2/93 1:20 P.M. E.D.T.

SUN ON MERIDIAN 1:26 P.M. (OAS. HANDBOOK)
LARGE DARK CUM. CLOUDS APPROACHING FROM WEST.
SEEING; TRANSPARENCY; RIPPLES IN BETWEEN CLOUD OPENINGS.

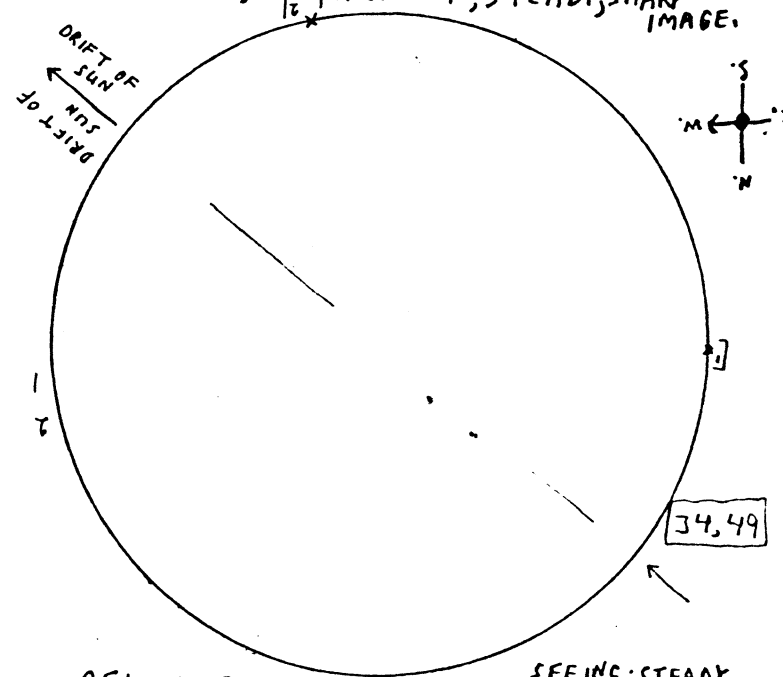


REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 23$; 1:35 P.M., $\frac{700mm}{18mm}$ SEEING $\frac{7}{10}$.

700mm / 18mm f11.6

AUG. 6 4:48 P.M. E.D.T.

FAST DRAWING; BROKEN CIRRUS-STRATUS FOLLOWED BY OVERCAST.
SEEING; TRANSPARENCY; STEADY, SHARP IMAGE.

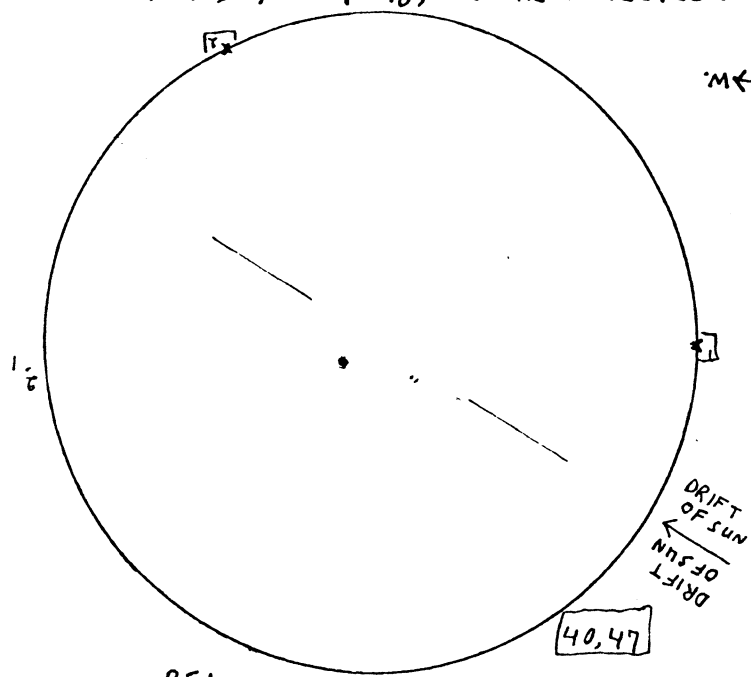


REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 23$; 4:50 P.M. SEEING; STEADY IMAGE.

AUG. 8 3:10-3:12 P.M. E.D.T.

SKY CLEAR IN SUN'S AREA.
SEEING $\frac{6}{10}$, FUZZY IMAGE.
TRANSPARENCY $\frac{7}{10}$, FACULAE DETECTED?

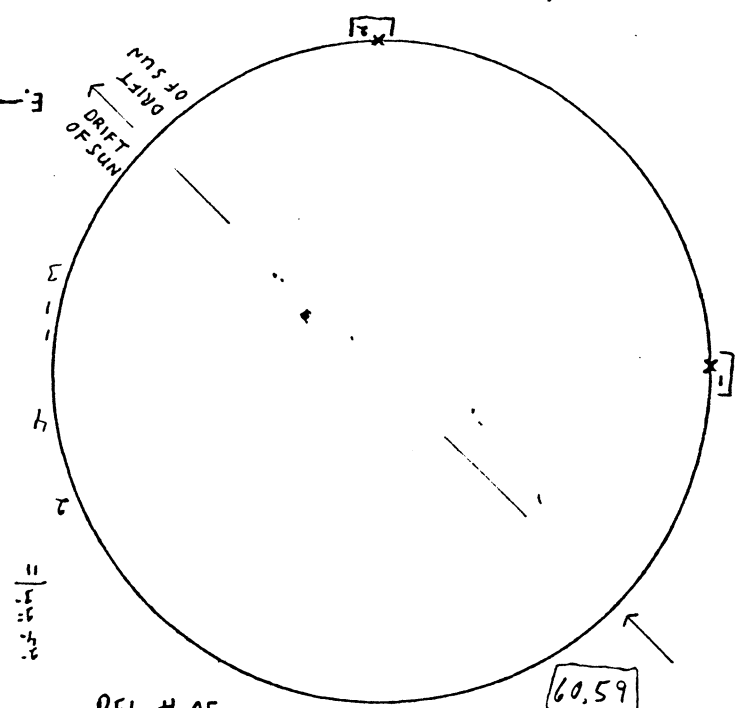
700mm / 18mm f11.6



REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 23$
3:15 P.M., $\frac{700mm}{12mm}$, SEEING $\frac{7}{10}$.

AUG. 9 5:00-5:10 P.M. E.D.T.

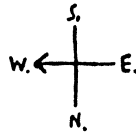
THIN HAZY CIRRUS IN SUN'S AREA.
SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{7}{10}$



REL. # OF SUNSPOTS $[(10 \times 5) + 11] = 61$
5:12 P.M., $\frac{700mm}{12mm}$, SEEING $\frac{7}{10}$.

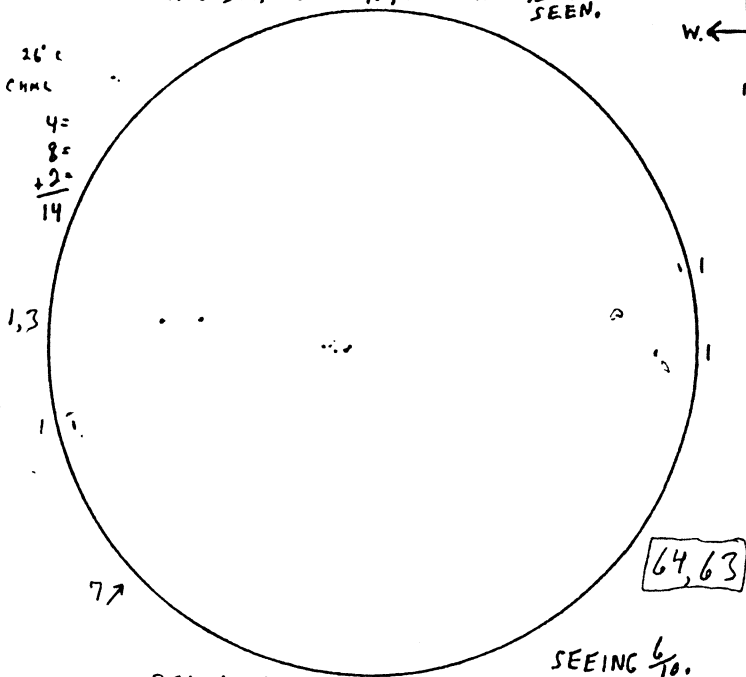
JULY 16/93 4:58-5:15 P.M. E.D.T.
 CUMULOUS CLOUD IN 70% CLEAR SKY.
 SEEING $\frac{7}{10}$, FUZZY,
 TRANSPARENCY $\frac{8}{10}$, FACULAE EASILY SEEN.

f8 $\frac{900\text{mm}}{25\text{mm}}$



26°C
CHML

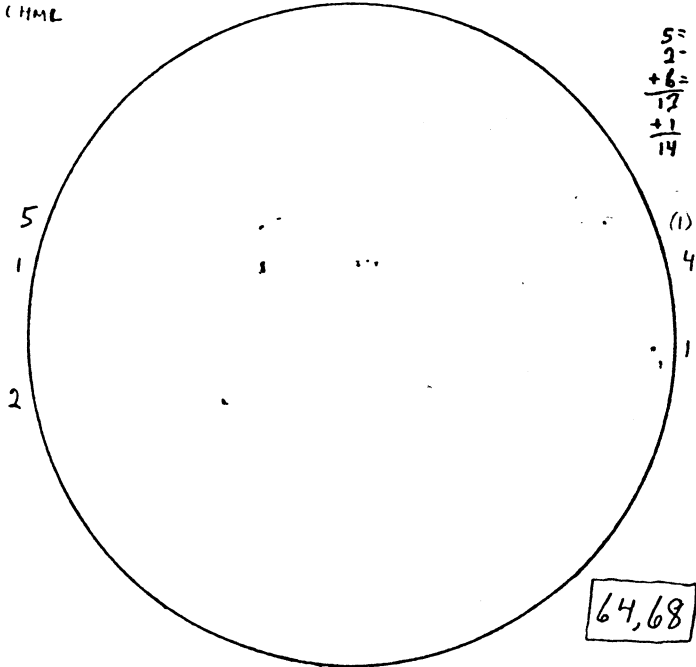
4=
8=
+2=
14



REL. # OF SUNSPOTS $[(10 \times 6) + 14] = 74$; 5:30 P.M., $\frac{900\text{mm}}{12\text{mm}}$
 SEEING $\frac{6}{10}$.

JULY 23 4:35-4:50 P.M. E.D.T.
 STRATTO-CIRRUS CLOUD IN 50% BLUE-CLEAR SKY.
 SEEING $>\frac{7}{10}$; RIPPLES ALONG SOLAR LIMB.
 TRANSP. $\frac{9}{10}$; FACULAE EASILY VISIBLE.

28°C
CHML



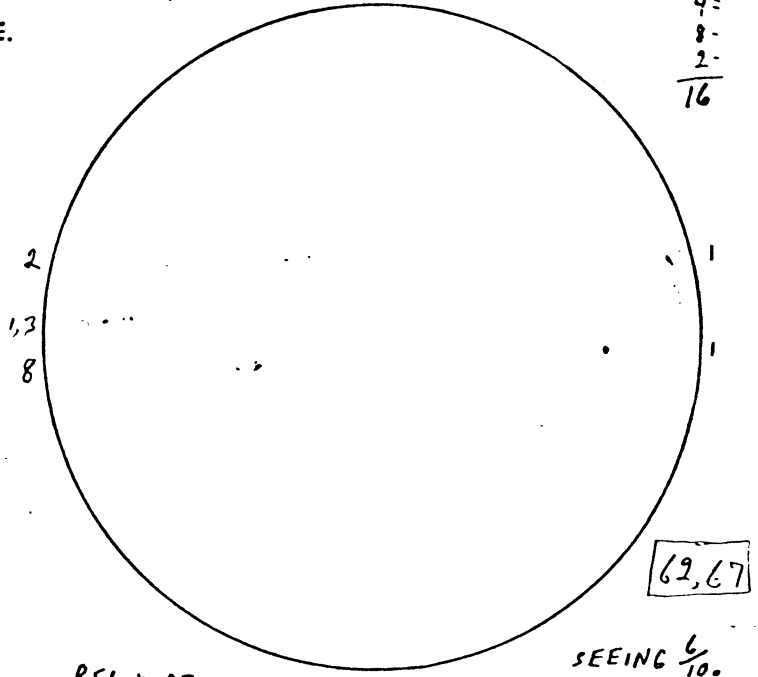
5=
2=
+6=
17
+1
14

REL. # OF SUNSPOTS $[(10 \times 5) + 14] = 64$

4:55 P.M., $\frac{900\text{mm}}{12\text{mm}}$, SEEING $\frac{7}{10}$.

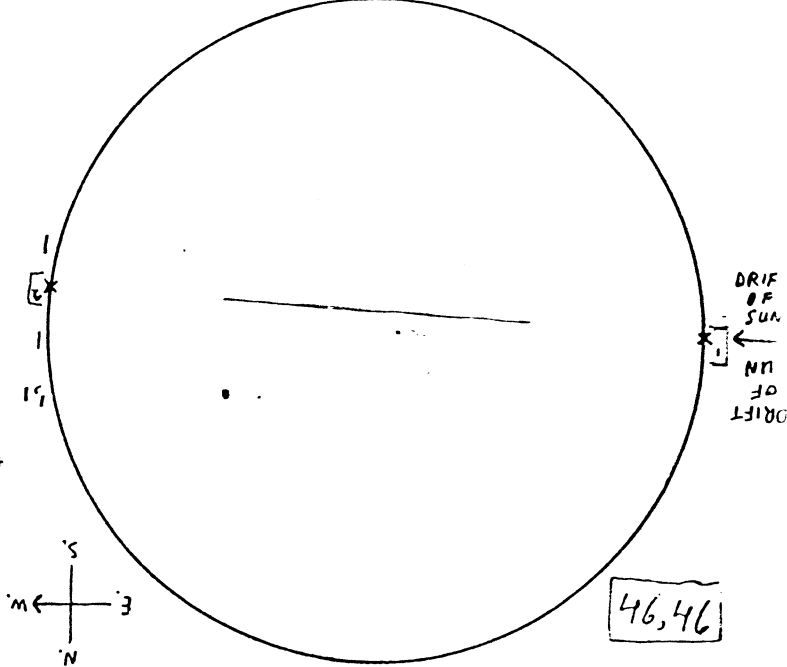
JULY 17 9:10-9:25 A.M. E.D.T.
 ST. CATHARINES; DEDICATION, KRISTEN FRENCH MEMORIAL.
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$. TRANSP. $\frac{9}{10}$, GRAIN DETECTED.

2=
4=
8=
2=
16



REL. # OF SUNSPOTS $[(10 \times 5) + 12] = 62$; $\frac{900\text{mm}}{12\text{mm}}$, 9:30 A.M.
 SEEING $\frac{6}{10}$.

JULY 31 1:50-1:58 P.M. E.D.T. $\frac{700\text{mm}}{35\text{mm}}$ f 11.6
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $>\frac{8}{10}$; STEADY.
 TRANSPARENCY $\frac{8}{10}$; FACULAE DETECTED.



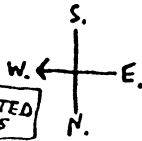
REL. # OF SUNSPOTS $[(10 \times 4) + 4] = 44$

$\frac{700\text{mm}}{12\text{mm}}$, 1:02 P.M., SEEING $\frac{7}{10}$.

142

JULY 3/93 5:35-6:10 P.M. E.D.T.
 SKETCH INTERRUPTED BY BROKEN
 BAND OF CUMULUS CLOUD.
 SEEING (WHEN CLEAR) $\frac{8}{10}$; STEADY. TRANSP.

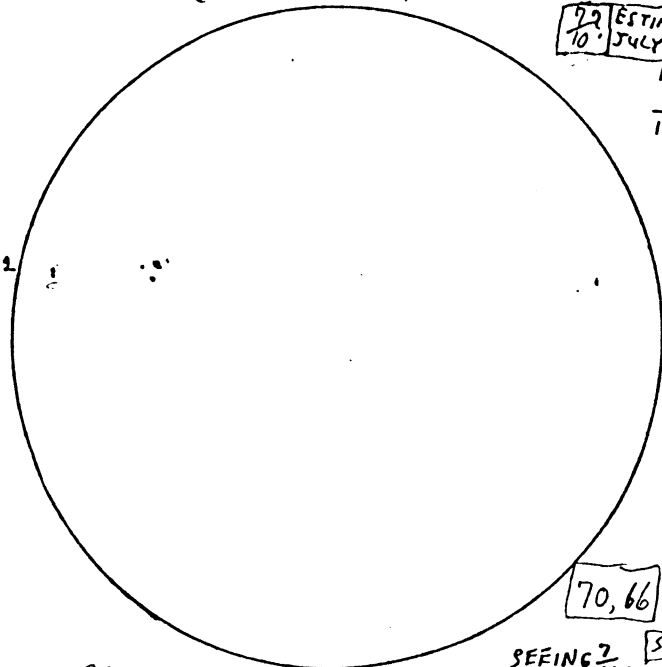
$\pm 8 \frac{900 \text{ mm}}{25 \text{ mm}}$



ESTIMATED
 10 JULY 15

12-
 3=

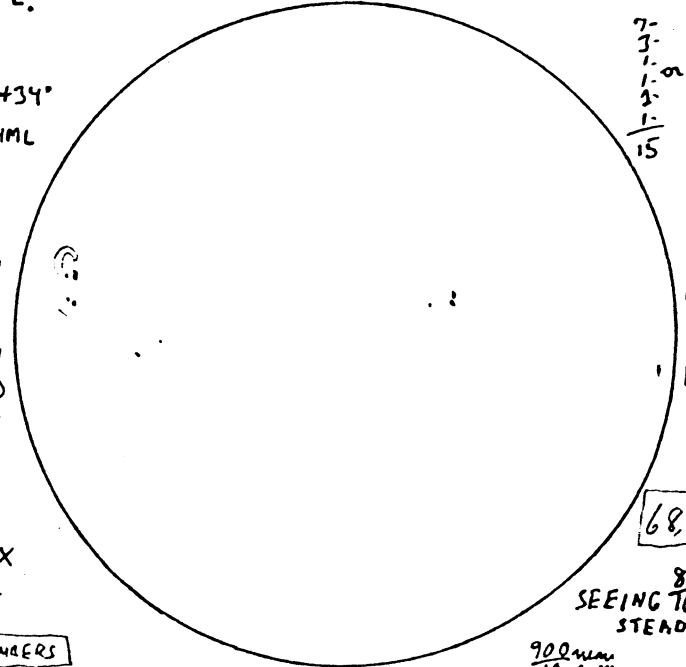
+34°
 CHML



REL. # OF
 SUNSPOTS $[(10 \times 4) + 15] = 55$; 6:10 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$,
 SEEING $\frac{7}{10}$.

JULY 5/93 5:00-5:10 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10}$! FUZZY.
 TRANSP. $\frac{8}{10}$, FACULAE EASILY VISIBLE.

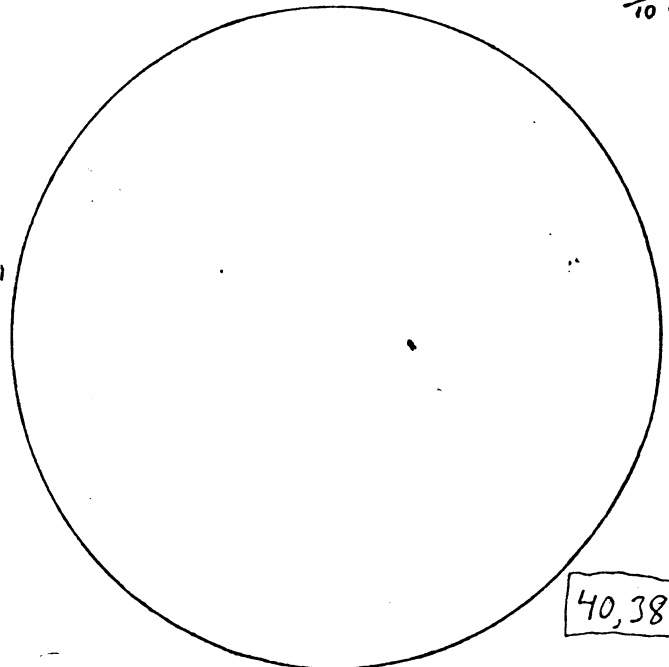
7- 7-
 3- 4-
 1- 3-
 1- 1-
 15 15



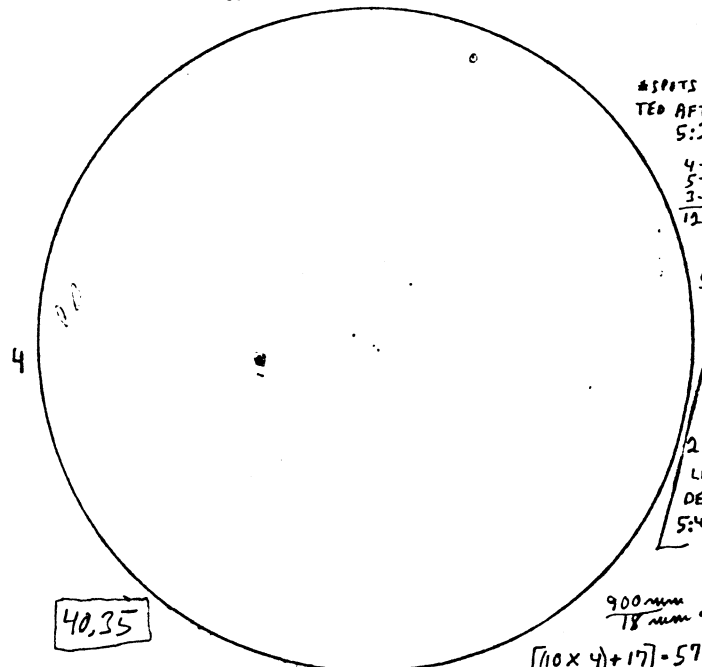
REL. # OF
 SUNSPOTS $[(10 \times 6) + 15] = 75$; or $[(10 \times 4) + 15] = 55$; 5:15 P.M.,
 SEEING $\frac{7}{10}$. SKY TEL. NUMBERS

JULY 9 6:05-6:10 P.M. E.D.T.
 SKIES CLEAR. LARGEST TREE BRANCHES MOVE
 SEEING $\frac{8}{10}$ } RESOLUTION, BECAUSE IN BREEZE.
 TRANSP. $\frac{7}{10}$ } OF JIGGLING TELESCOPE $\frac{5}{10}$.

JULY 12 5:05-5:20 P.M. E.D.T.
 CUMULUS CLOUDS IN 80% CLEAR SKY.
 SEEING $\frac{8}{10}$. STEADY IMAGE.
 TRANSP. $\frac{8}{10}$, FACULAE EASILY VISIBLE.



REL. # OF SUNSPOTS $[(10 \times 3) + 7] = 33$.
 6:15 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.



REL. # OF SUNSPOTS $[(10 \times 3) + 12] = 42$
 5:35 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.

SPOTS DETECTED AFTER 5:30.

4- 4-
 5- 5-
 3- 6-
 12 2-
 17

50X
 3- (2)
 1 (75X)
 2- (50X)
 LIMIT OF DETECTION 5:40-5:48

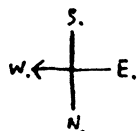
$\frac{900 \text{ mm}}{12 \text{ mm}}$
 $[(10 \times 4) + 17] = 57$.
 5:48 P.M.

(141)

JUNE 13/93 6:40-6:45 P.M. E.D.T.
 SKY TOTALLY! CLEAR.
 SEEING $\frac{7}{10}$; MAIN SPOT FUZZY OUTLINE.
 TRANSPARENCY $\frac{8}{10}$; GLIMPSES OF EXTENSIVE FACULAE.

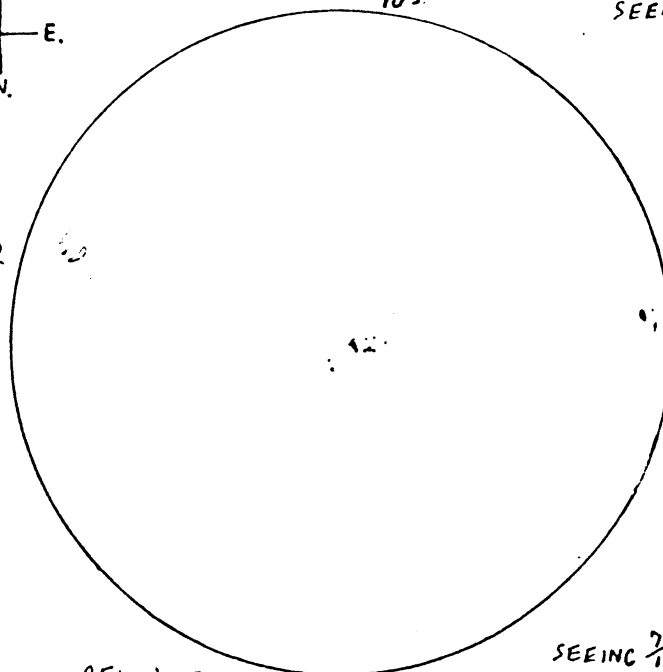
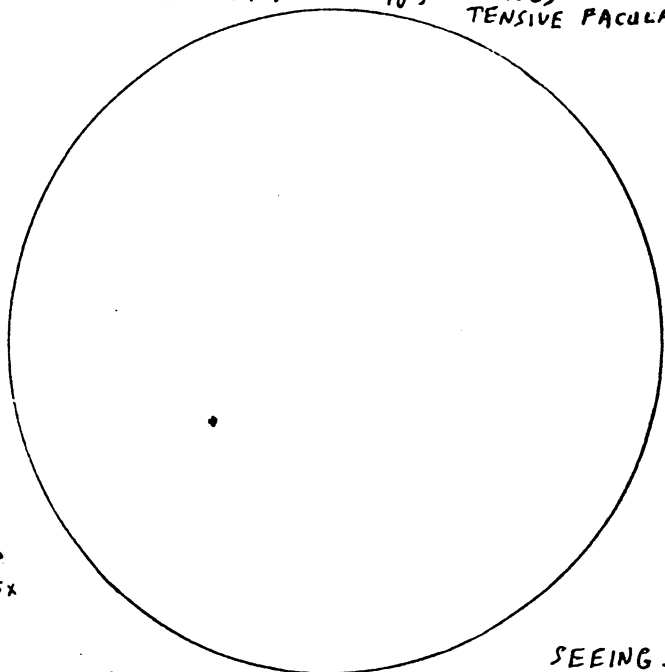
f8 $\frac{900\text{mm}}{25\text{mm}}$

JUNE 23 5:05-5:30 P.M. E.D.T.
 SKY BLUE-CLEAR. LANDSCAPE FEATURES SHARP.
 SEEING $\frac{8}{10}$, IMAGE STEADY.
 TRANSPARENCY $\frac{8}{10}$. FACULAE EASILY SEEN.



+93°C
 CHML

$\frac{2}{1}$
 $\frac{10}{3}$
 $\frac{16}{16}$



REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$; 6:48 P.M., $\frac{900\text{mm}}{12\text{mm}}$, SEEING $\frac{7}{10}$.

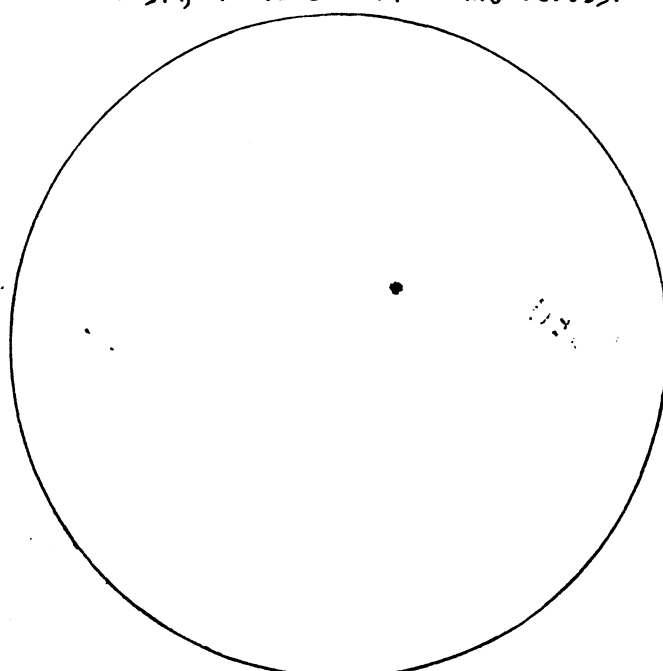
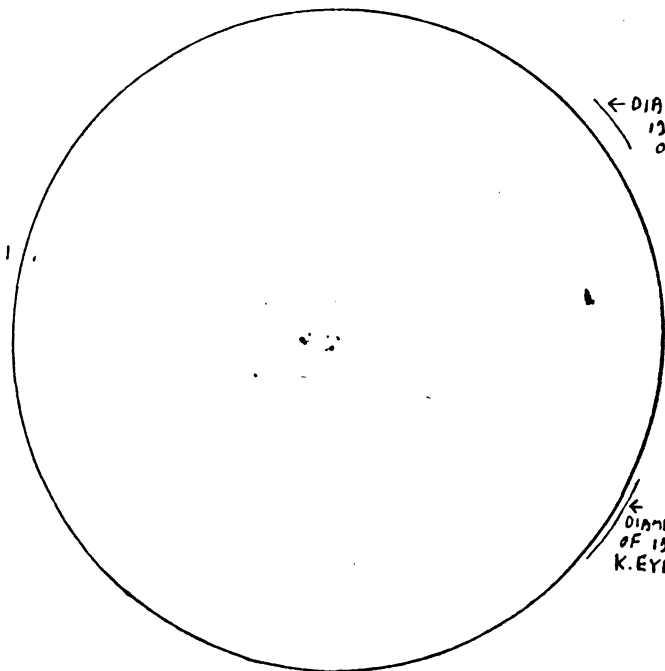
REL. # OF SUNSPOTS $[(10 \times 4) + 16] = 56$; 5:35 P.M., $\frac{900\text{mm}}{12\text{mm}}$, SEEING $\frac{7}{10}$.

JUNE 24 5:30-5:37 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{8}{10}$.

JUNE 29 3:00-3:25 E.D.T.
 FAST MOVING CLOUDS IN HAZY-CLEAR SKY.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSP. VARIABLE WITH MOVING CLOUDS.

← DIAMETER OF 12mm ORT. EYEPiece

← DIAMETER OF 12mm K. EYEPiece

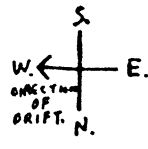
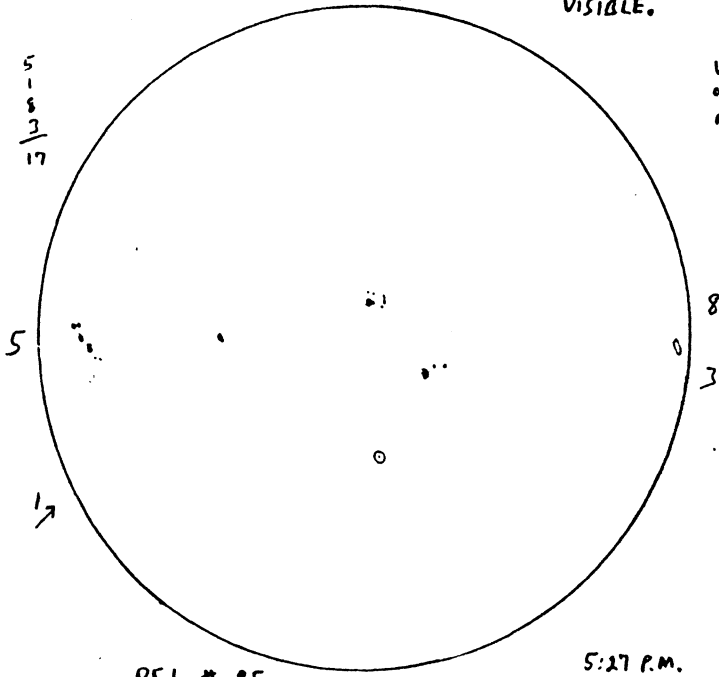


REL. # OF SUNSPOTS $[(10 \times 4) + 12] = 52$
 $\frac{900\text{mm}}{12\text{mm}}$, 5:45 P.M., SEEING $\frac{6}{10}$.

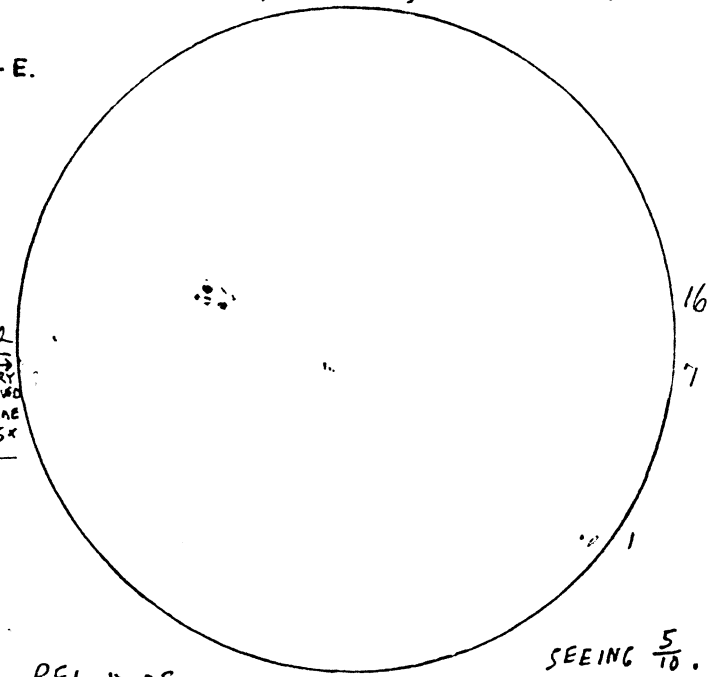
REL. # OF SUNSPOTS $10 \times 3 + 16 = 46$
 $\frac{900\text{mm}}{18\text{mm}}$!, 3:30 P.M., SEEING $\frac{5}{10}$.

f8 900mm
25mm

JUNE 4/93 5:00-5:20 E.D.T.
LIGHT CIRRUS CLOUD IN SUN'S AREA
SEEING $\frac{7}{10}$, FUZZY AT TIMES.
TRANSPARENCY $\frac{5}{10}$, FACULAE EASILY
VISIBLE.



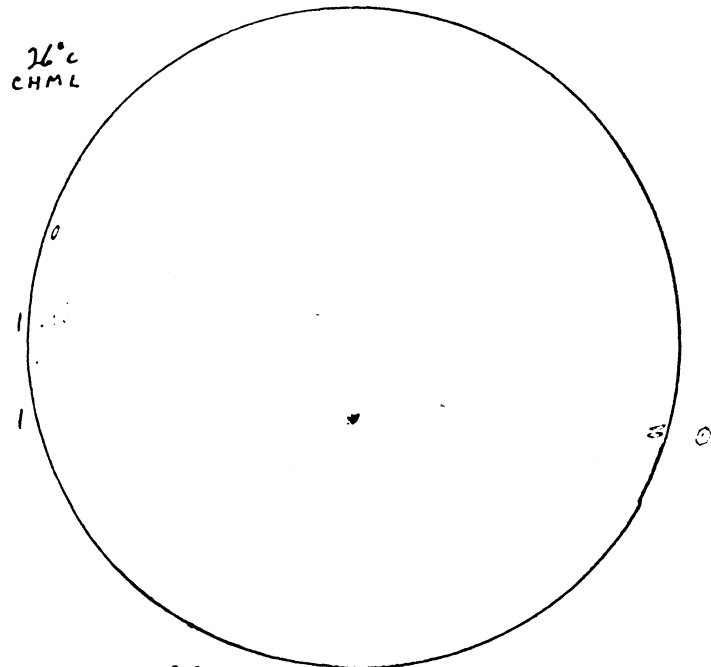
JUNE 6 6:30-6:45 P.M. E.D.T.
SKY CLEAR IN SUN'S AREA.
SEEING $\frac{7}{10}$; TRANSP. $\frac{8}{10}$.
JAYCEE PARK, ONTARIO ST., ST. CATHARINES.



REL. # OF
SUNSPOTS $[(10 \times 4) + 17] = 57$; $\frac{900mm}{12mm}$, SEEING $\frac{6}{10}$,
5:27 P.M.

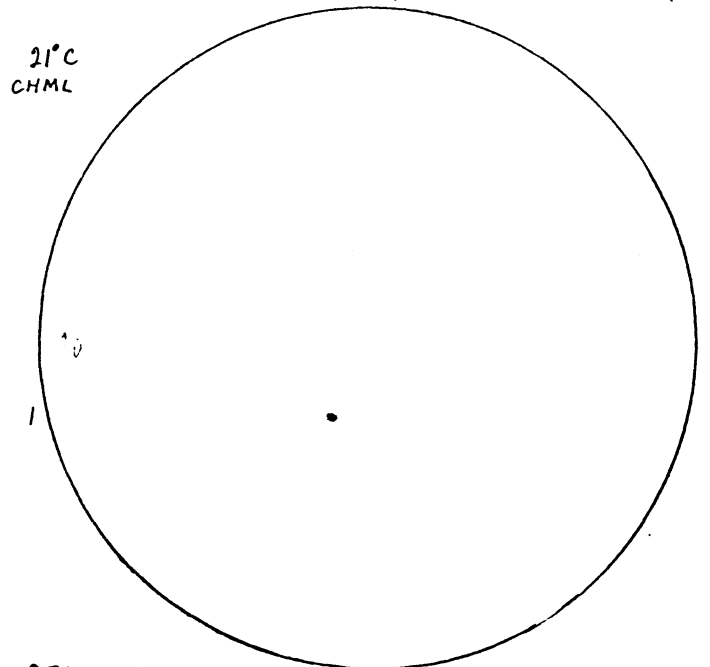
REL. # OF
SUNSPOTS $[(10 \times 4) + 26] = 66$; 6:50 P.M., $\frac{900mm}{12mm}$,
SEEING $\frac{5}{10}$.

JUNE 11 5:45-5:50 P.M. E.D.T.
LIGHT CIRRUS IN BLUE-HAZY SKY.
SEEING $\frac{7}{10}$; FUZZY, STEADY.
TRANSPARENCY $\frac{8}{10}$; HINT OF GRANULATION.



REL. #
OF SUNSPOTS $[(10 \times 2) + 2] = 22$
5:55 P.M., $\frac{900mm}{12mm}$, SEEING $\frac{7}{10}$!

JUNE 12 2:50-2:55 P.M. E.D.T.
SKY CLEAR IN SUN'S AREA.
SEEING (CONTRAST) $\frac{6}{10}$; MAIN SPOT HAD FUZZY
TRANSPARENCY $> \frac{6}{10}$; HINT OF FACULAE. OUTLINE.



REL. # OF
SUNSPOTS $[(10 \times 1) + 1] = 11$
3:07 P.M., $\frac{900mm}{12mm}$, SEEING $\frac{5}{10}$.

SPOTS ON PAPER.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

MAY 16/93 3:00-3:05 P.M. E.D.T.

BLUE SKY IN SUN'S AREA.

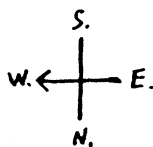
SEEING $> \frac{6}{10}$, FUZZY

TRANSP. $\frac{8}{10}$, GRANULAR STRUCTURE "DETECTED"

PENUMBRAL SHADING AT 75x

LIMB OF SUN

100x



MAY 22 6:05-6:10 P.M. E.D.T.

CLEAR SKY IN SUN'S AREA.

SEEING $\frac{8}{10}$, STEADY!!

TRANSPARENCY $\frac{8}{10}$, FAC. EASILY! VISIBLE.

REL. # OF

SUNSPOTS $[(10 \times 1) + 2] = 12$; 3:10 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{5}{10}$.

REL. # OF

SUNSPOTS $[(10 \times 1) + 1] = 11$; 6:10 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.

MAY 29 7:58-8:10 P.M. E.D.T.

THIN CIRRUS CLOUD 20° UP FROM WESTERN HORIZON.

SEEING $\frac{8}{10}$, SHARP IMAGE.

TRANSP. $\frac{7}{10}$, FACULAE DIFFICULT TO SEE.

8-
19-
3-
30

MAY 30 4:10-4:35 E.D.T.

THIN CIRRUS CLOUDS IN BLUE SKY.

SEEING $\frac{7}{10}$, FUZZY; TRANSPARENCY $\frac{8}{10}$.

8 8
13 13
3 4
1 4
25 25

REL. #

OF SUNSPOTS $[(10 \times 3) + 30] = 60$

8:10 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.

REL. #

OF SUNSPOTS $[(10 \times 4) + 25] = 65$ or $[(10 \times 3) + 25] = 55$

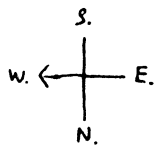
4:45 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{6}{10}$.

VISITED ST. CATH. ROWING REGATTA
9:00 A.M. - 5:00 P.M. (15x80 BINOCULARS)

138

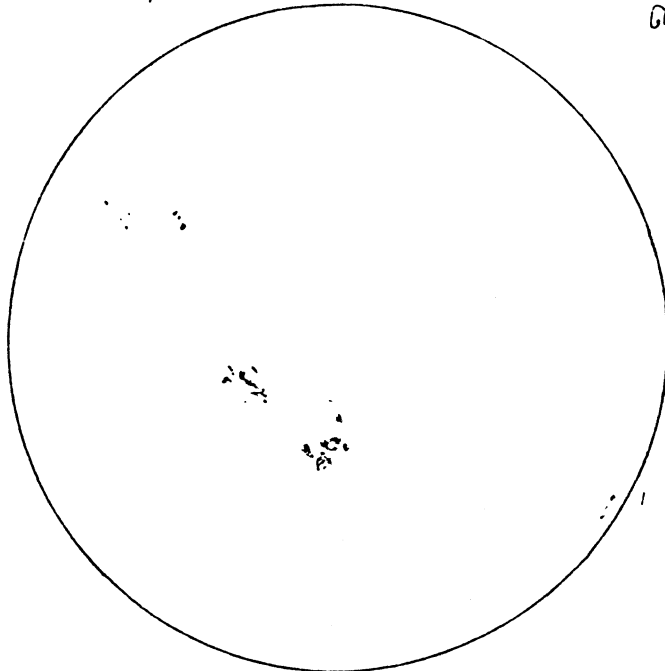
MAY 10/93 5:30-5:50 P.M. E.D.T.
 "NO" BREEZE IN MT. ALDION CONSERVATION PARKING LOT,
 SEEING $\frac{9}{10}$, STEADY, NO RIPPLES. AT STONE CHURCH RD.
 TRANSPARENCY $\frac{9}{10}$, SHARP CONTRAST BETWEEN BLACK UMBRA AND
 GREY PENUMBRA

27°C
 CHML



f 8 $\frac{900\text{mm}}{25\text{mm}}$

5, 4



AURORAL ACTIVITY
 9/5/9, 11:00 PM EDT.

AURORAL ACTIVITY
 PREDICTED AT
 RASC CLUB MEETING
 MAY 6

5-
 4-
 12-
 27-
 + 1-
 45

12

23

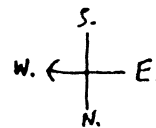
REL. # OF SUNSPOTS $[(10 \times 5) + 45] = 95$; 6:05 P.M., SEEING $\frac{7}{10}$, $\frac{900\text{mm}}{12\text{mm}}$.

MAY 10 6:30-7:30 P.M. E.D.T.

SKY TOTALLY CLEAR, NO BREEZE.

SEEING $\frac{8}{10}$!, TRANSPARENCY $\frac{8}{10}$. $\frac{900\text{mm}}{12\text{mm}}$

USED WIND-UP CLOCK DRIVE
 TO KEEP IMAGE CENTERED.



LIMB
 OF SUN

LIMB
 OF SUN

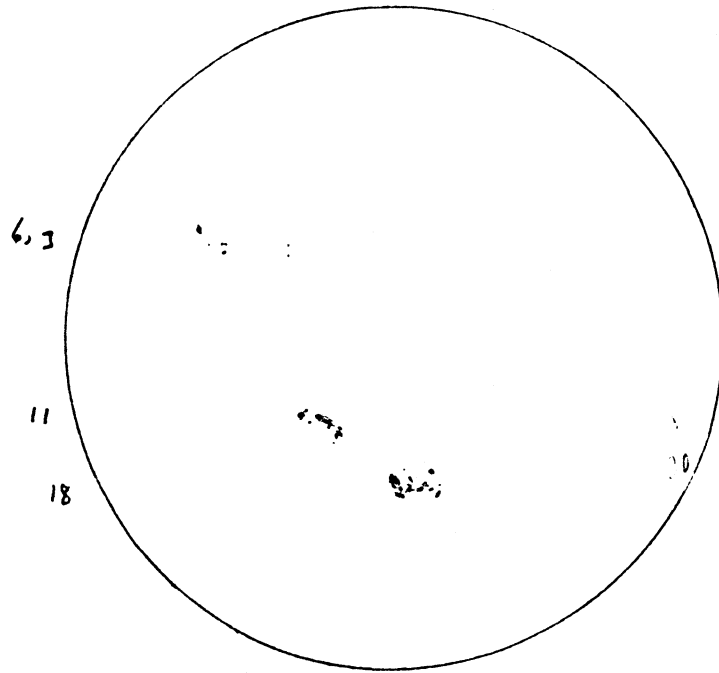
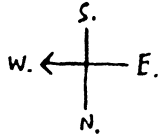
73



* SPACE IN BETWEEN UMBRA AND PENUMBRA
 - SHOULD BE WIDER IN SKETCH.

137

MAY 9/93 2:10-2:50 E.D.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{8}{10}$.

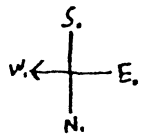


$\frac{900 \text{ mm}}{25 \text{ mm}}$

6.
 3.
 11.
 18.

 38

REL. # OF SUNSPOTS $[(10 \times 4) + 38] = 78$; $\frac{900 \text{ mm}}{12 \text{ mm}}$, 3:17 P.M.,



$\frac{900 \text{ mm}}{12 \text{ mm}}$; SEEING $\frac{7}{10}$; 3:50-4:25 P.M. E.D.T.

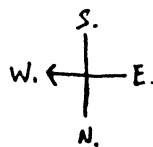
SKY TOTALLY CLEAR.

"NO" BREEZE IN OBSERVATORY PARKING LOT.

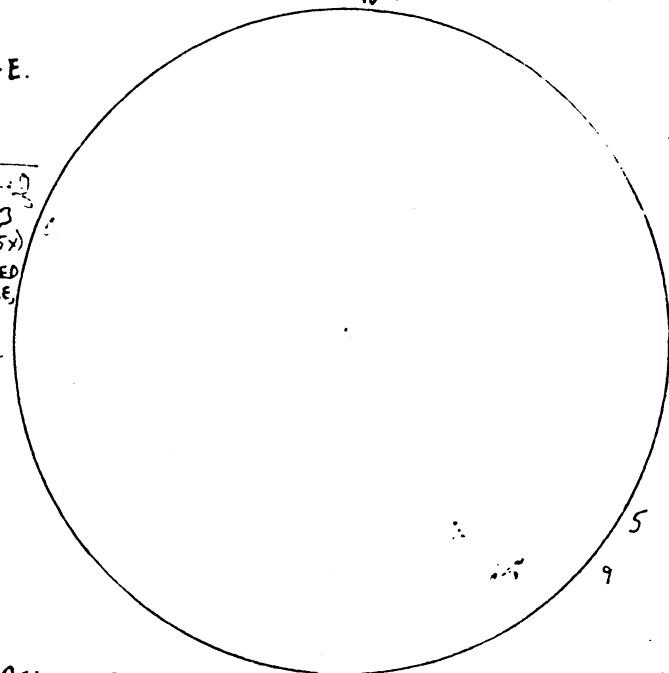
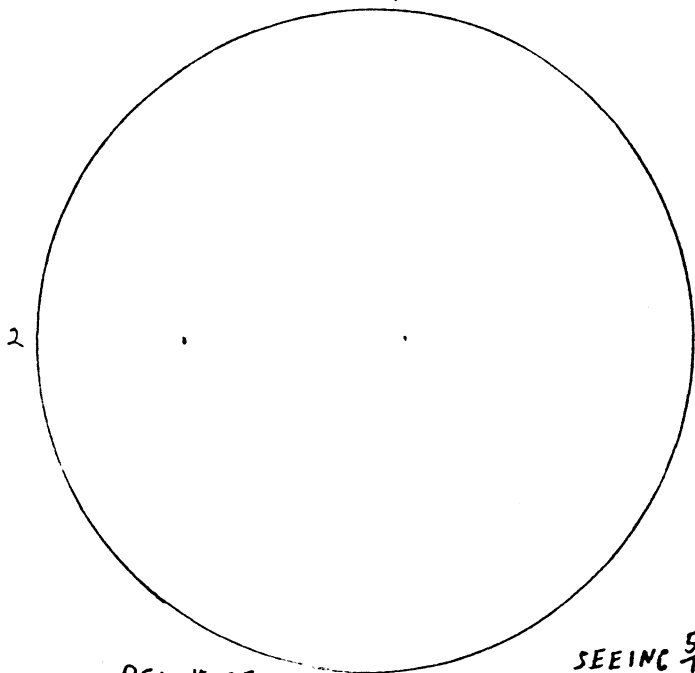
MAY 2/93 2:10-2:15 P.M. E.D.T.
 CIRRUS CLOUD (HAZE) IN SUN'S AREA.
 SEEING $\frac{4}{10}$, FUZZY.
 TRANSPARENCY, NO FACULAE SEEN.

$\frac{900\text{mm}}{25\text{mm}}$

MAY 6 5:00-5:15 P.M. E.D.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$.
 TRANSPARENCY $\frac{8}{10}$, FACULAE DETECTED.



3
 3
 (75x)
 EMBEDDED
 IN FACULAE,
 VERY
 FAINT.



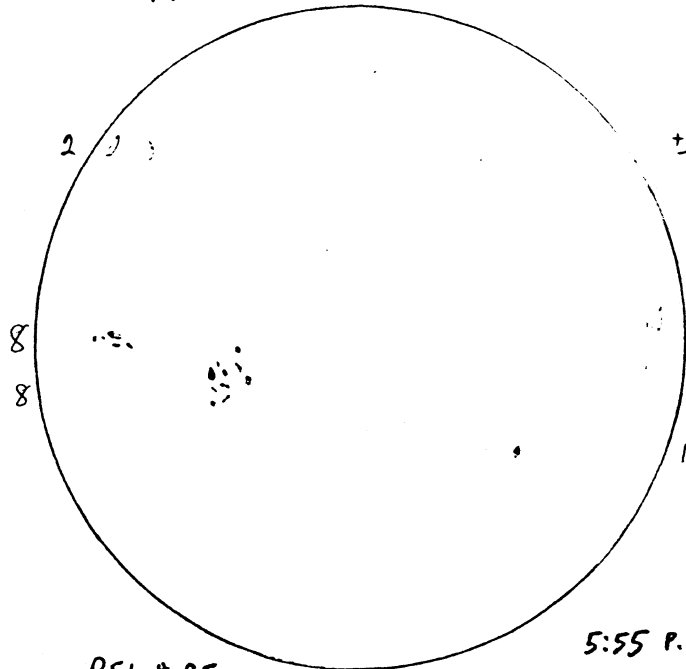
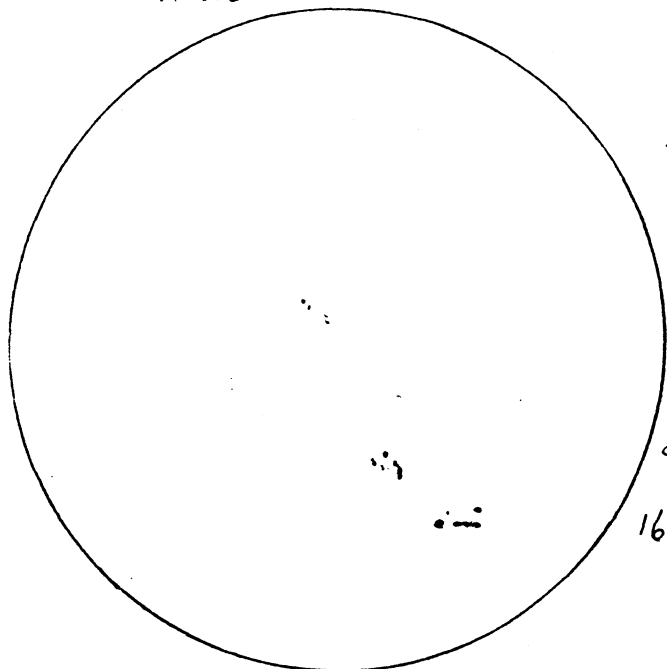
3-
 8-
 5-
 +9-
 25

REL. # OF
 SUNSPOTS $[(10 \times 2) + 4] = 24$; $\frac{900}{15\text{mm}}$, 2:25 P.M.,
 SEEING $\frac{5}{10}$.

REL # OF
 SUNSPOTS $[(10 \times 4) + 25] = 65$; 5:25 P.M., $\frac{900\text{mm}}{15\text{mm}}$, SEEING $\frac{6}{10}$.

MAY 7 5:03-5:20 P.M. E.D.T.
 SKY CLEAR! IN SUN'S AREA.
 SEEING $\frac{7}{10}$, (AT BEST);
 TRANSPARENCY $\frac{8}{10}$.

MAY 12 5:37-5:50 P.M. E.D.T.
 SKY CLEAR IN SUN'S AREA
 SMALL TO MED. TREE BRANCHES MOVE IN BREEZE.
 SEEING $\frac{7}{10}$; TRANSP. $\frac{8}{10}$, FACULAE VERY VISIBLE.

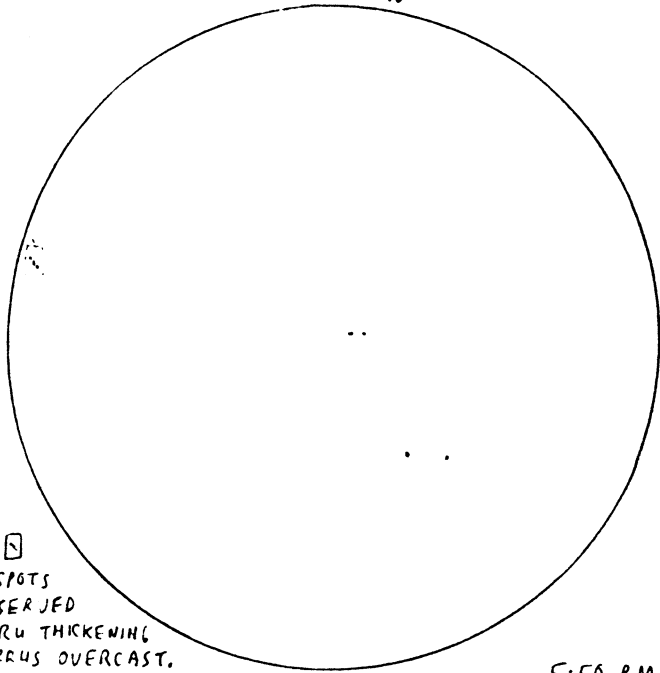


2-
 8-
 8-
 +1-
 19

RELATIVE # OF SUNSPOTS $[(10 \times 3) + 3] = 61$
 $\frac{900\text{mm}}{15\text{mm}}$, 5:25 P.M., SEEING $\frac{5}{10}$

5:55 P.M.
 REL. # OF
 SUNSPOTS $[(10 \times 4) + 19] = 59$; $\frac{900\text{mm}}{15\text{mm}}$, SEEING $\frac{5}{10}$,
 RESOLUTION $\frac{3}{10}$ BECAUSE OF BREEZE.

APR. 27/93 5:45 P.M. E.D.T.
 FAST DRAWING BECAUSE OF OVERCAST.
 SEEING $> \frac{6}{10}$, STEADY.
 TRANSPARENCY $\frac{4}{10} \rightarrow \frac{2}{10}$.



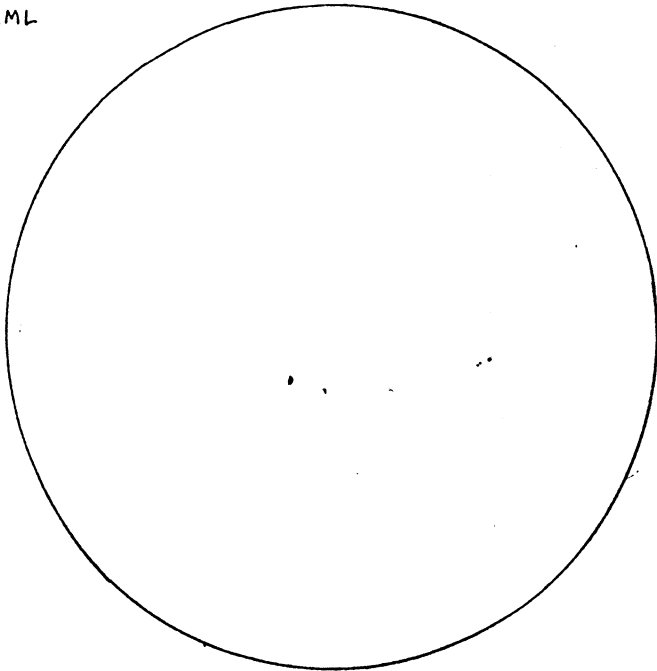
3 SPOTS
 OBSERVED
 THRU THICKENING
 CIRRUS OVERCAST.

5:56 P.M.

THICKENING OVERCAST PRECLUDES SUNSPOT COUNT.

APR. 30 5:00-5:05 P.M. E.D.T.
 LARGE CUM. CLOUDS IN 50% BLUE SKY.
 SEEING $\frac{7}{10}$; TRANSP. $> \frac{8}{10}$, SOLAR GRANULATION
 DETECTED.

21°C
 CHML

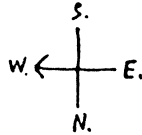


3
 1/1

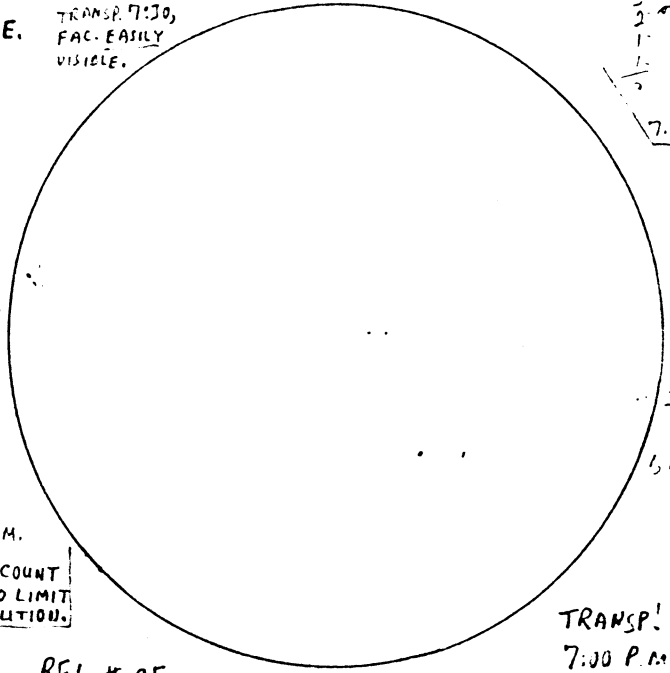
REL. # OF SUNSPOTS $[(10 \times 3) + 5] = 35$
 $\frac{900 \text{ mm}}{19 \text{ mm}}$, 5:06 P.M., SEEING $\frac{6}{10}$.

f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

APR. 27! 6:48-6:58 P.M. E.D.T.
 CIRRUS HAZE IN SUN'S AREA, (INCREASING TO
 OVERCAST $> 6:55$), DECREASED TO HAZE
 $> 7:15$.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{6}{10}$.



TRANSP. 7:30,
 FAC. EASILY
 VISIBLE.



2
 3
 2
 1
 1
 2
 7:30 P.M.

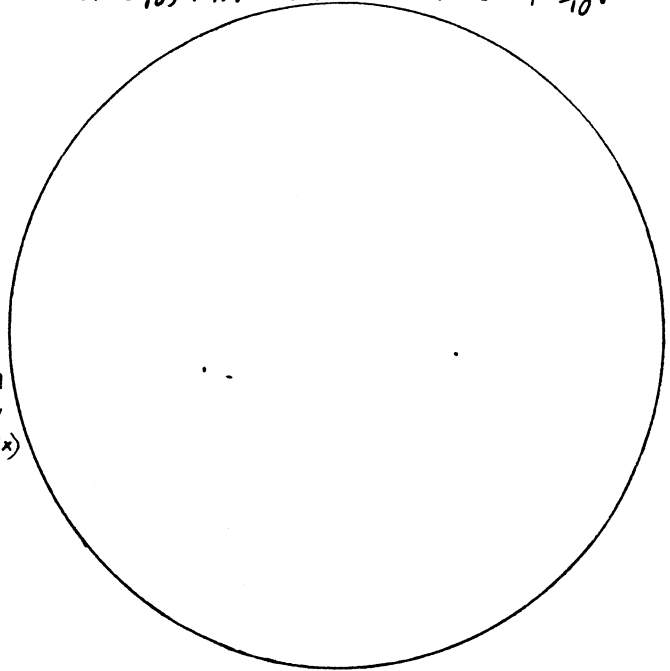
2
 (4)
 (4)
 5
 2
 1
 +1
 (13)
 7:20 P.M.

SUNSPOT COUNT
 PUSHED TO LIMIT
 OF RESOLUTION.

TRANSP! $\frac{4}{10}$
 7:30 P.M.,

REL. # OF
 SUNSPOTS $[(10 \times 5) + 9] = 59$ or $[(10 \times 4) + 9] = 49$; $\frac{900 \text{ mm}}{18, 12}$
 $(7:30 \text{ P.M.}) \frac{900 \text{ mm}}{18, 12} [(10 \times 5) + 13] = 63$, SEEING $\frac{7}{10}$.

MAY 1 12:40-12:45 P.M. E.D.T.
 CIRRUS CLOUD STREAKS IN 80% BLUE SKY.
 SEEING $\frac{6}{10}$, RIPPLES; TRANSPARENCY $\frac{8}{10}$.

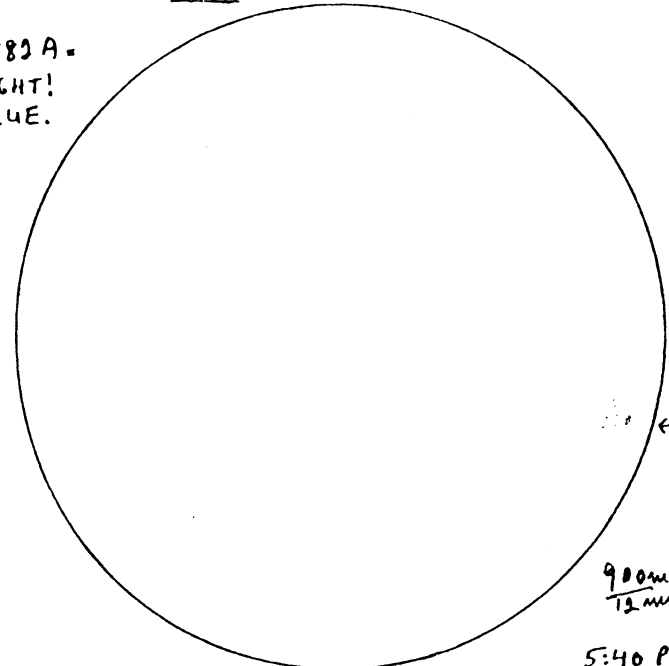


3
 1
 ↓
 (25x)

REL. # OF SUNSPOTS $[(10 \times 3) + 6] = 36$
 $\frac{900 \text{ mm}}{19 \text{ mm}}$, 12:50 P.M., SEEING $\frac{5}{10}$.

f 8 900mm
25mm
APRIL 13/93 5:15-5:30 P.M. E.D.T.
SKIES TOTALLY CLEAR.
SEEING $\frac{7}{10}$, RIPPLES; TRANSP., FACULAE
USED #82A FILTER. VISIBLE ALONG LIMB.

#82A =
LIGHT!
BLUE.

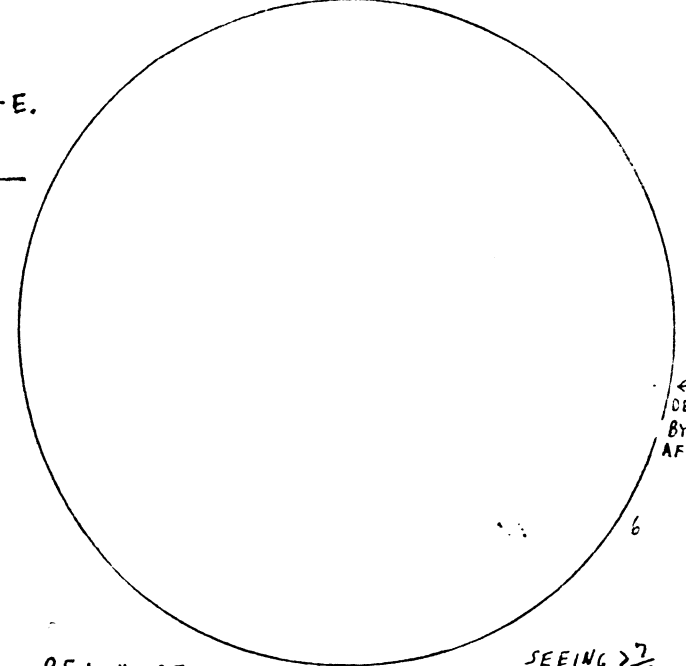


900mm
12mm.

5:40 P.M.,

REL. # OF SUNSPOTS $[(10 \times 0) + 0] = 0$; SEEING $\frac{6}{10}$, RIPPLES;

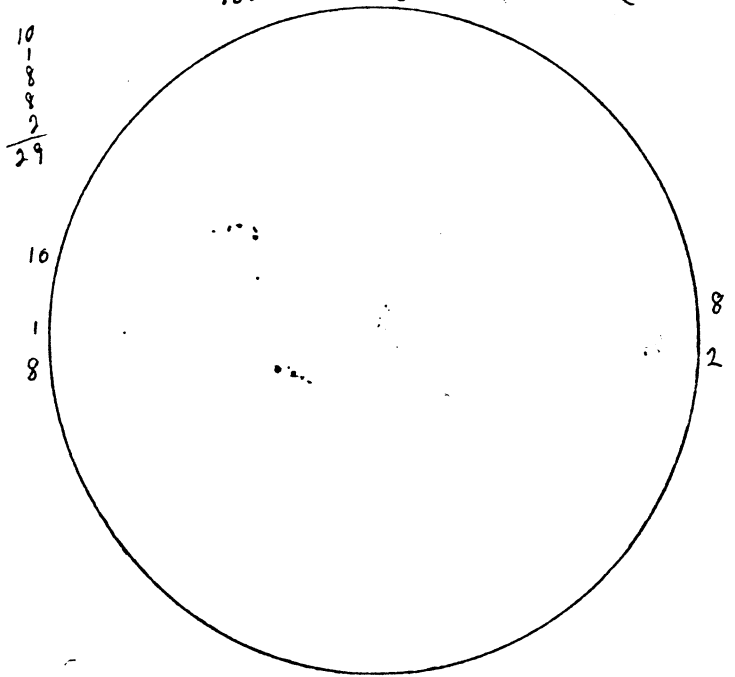
APR. 18 3:00 - 3:45 P.M. E.D.T. (VISITORS TO OBS. OBSERVED AT TIME.)
INCREASING CIRRUS HAZE.
RING AROUND SUN > 3:40 P.M.
SEEING $\frac{8}{10}$, STEADY; TRANSPARENCY $\frac{4}{10}$.



SEEING > $\frac{7}{10}$.

REL. # OF SUNSPOTS $[(10 \times 1) + 6] = 16$; 3:50 P.M.; 900mm; 12mm.

APR. 23 5:00 - 5:12 P.M. E.D.T.
SKY TOTALLY CLEAR.
SMALL & MEDIUM BRANCHES MOVE IN
SEEING $\frac{7}{10}$; TRANSP. > $\frac{7}{10}$. BREEZE. (SHELTERED)

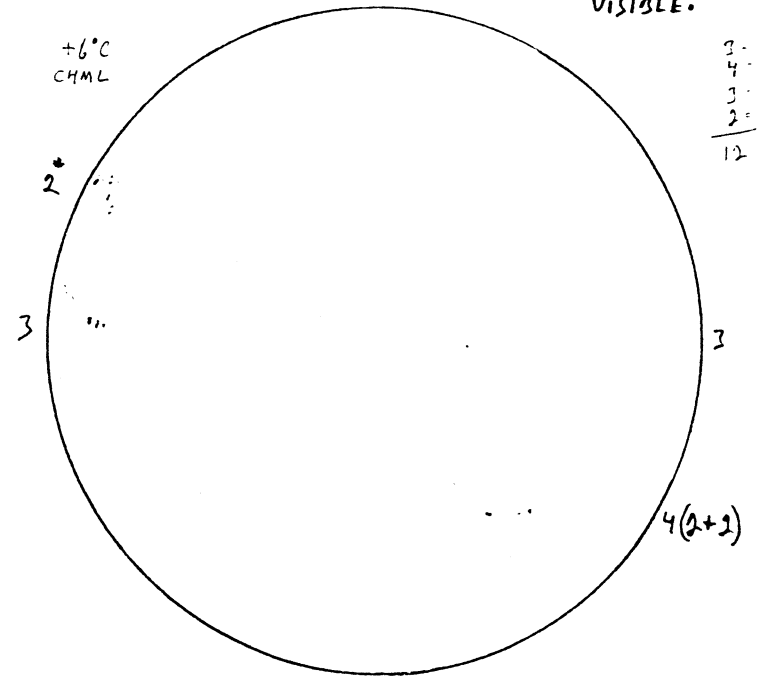


REL. # OF SUNSPOTS $[(10 \times 5) + 29] = 79$

900mm
12mm; 5:20 P.M.; SEEING > $\frac{6}{10}$. RESOLUTION $\frac{5}{10}$,
BECAUSE OF WIND.

VISITED GENEVA ST.; ST. CATH. 4/15; 5:30 P.M.

APR. 26 5:00 - 5:18 P.M. E.D.T.
CIRRUS CLOUD IN BLUE-HAZY SKY.
TELESCOPE STEADY IN LIGHT BREEZE.
SEEING $\frac{6}{10}$, RIPPLES; TRANSP. $\frac{8}{10}$, FAC. EASILY VISIBLE.



REL. # OF SUNSPOTS $[(10 \times 4) + 12] = 52$

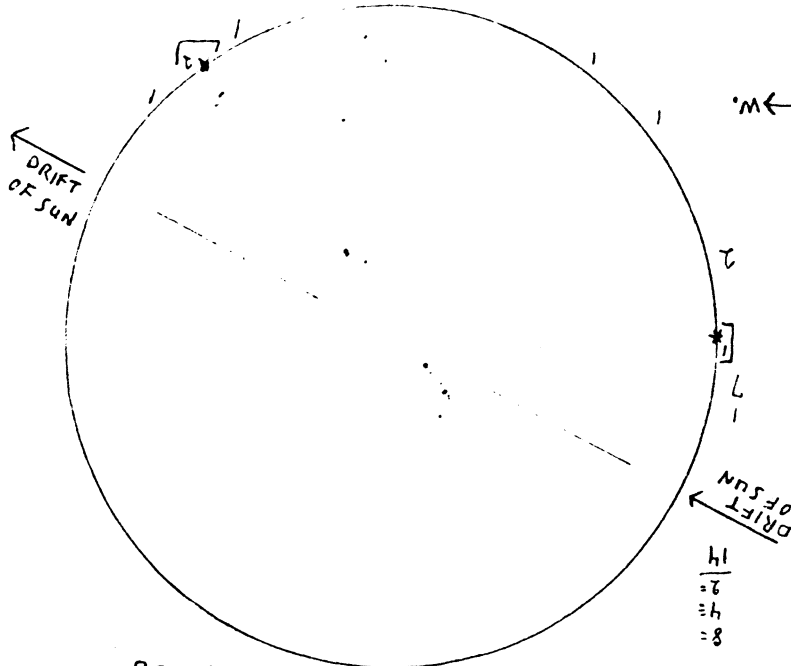
900mm
12mm; 5:30 P.M.; SEEING $\frac{6}{10}$, FUZZY.

2*) BOTH SPOTS SHOW PENUMBRA DEPRESSION.

135

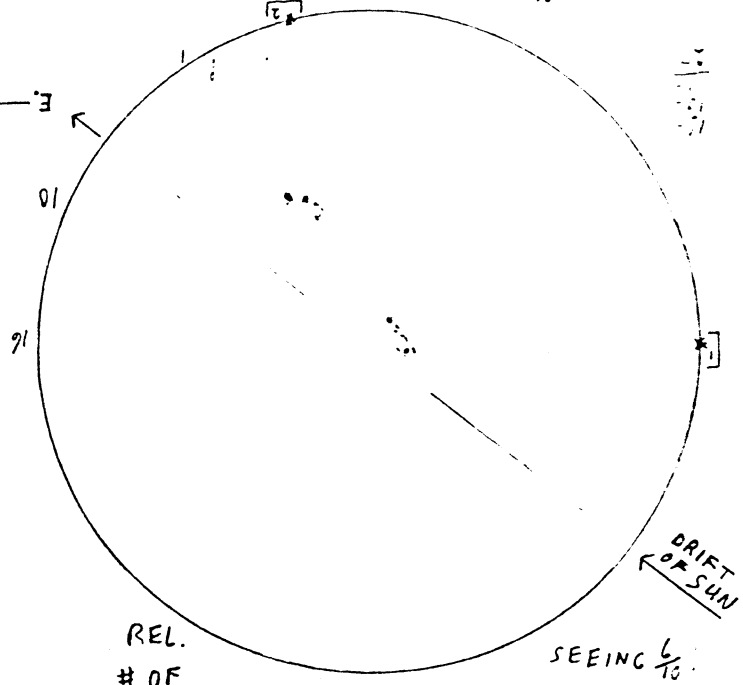
APR. 5/93 4:55-5:05 P.M. E.D.T.
 CIRRUS CLOUD (HAZE) IN SUN'S AREA.
 SEEING $\frac{6}{10}$. > SMALL BRANCHES MOVE IN BREEZE.
 TRANSP. (RESOLUTION) $\frac{7}{10}$ BECAUSE OF WIND.

$\frac{700mm}{18mm} \neq 11.6$



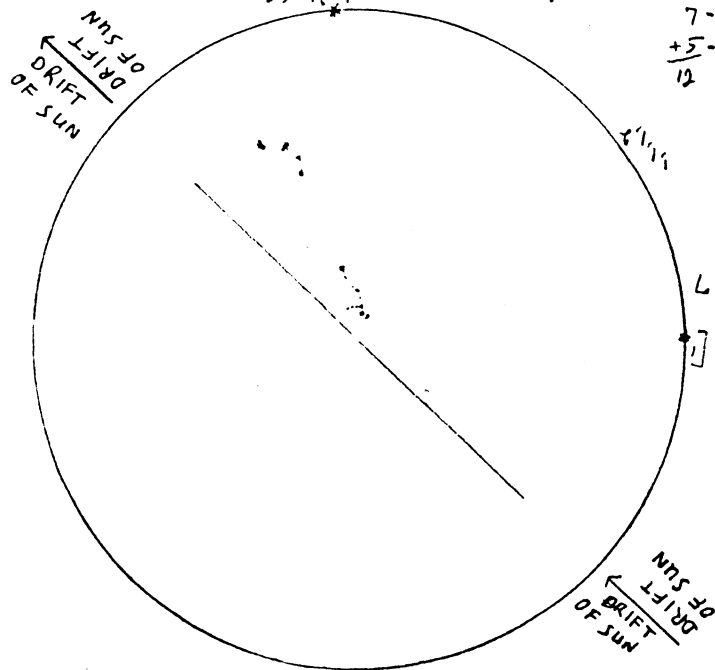
REL. # OF
 SUNSPOTS $[(10 \times 7) + 14] = 84$; 5:12 P.M.; $\frac{700mm}{19mm}$; SEEING $\frac{4}{10}$.

APR 6/93 4:58-5:13 E.P.T.
 THIN CIRRUS HAZE IN SUN'S AREA.
 > SMALL BRANCHES MOVE IN BREEZE.
 SEEING $\frac{6}{10}$, TRANSPARENCY $\frac{7}{10}$.



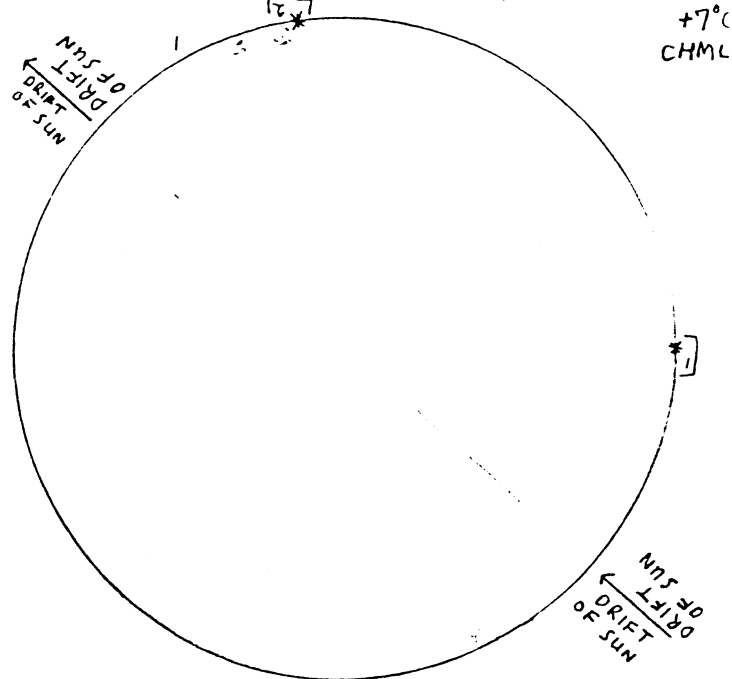
REL. # OF
 SUNSPOTS $[(10 \times 3) + 27] = 57$; $\frac{700mm}{19mm}$; 5:17 PM
 SEEING $\frac{6}{10}$.

APR. 7 5:08-5:20 P.M. E.D.T.
 CIRRUS HAZE IN SUN'S AREA.
 SMALLEST BRANCHES MOVE IN BREEZE.
 SEEING $> \frac{7}{10}$, TRANSP. $< \frac{7}{10}$.



REL. # OF SUNSPOTS
 $[(10 \times 2) + 12] = 32$ or $[(10 \times 5) + 12] = 62$
 5:23 P.M., $\frac{700mm}{12mm}$, SEEING $\frac{6}{10}$.

APRIL 11 5:08-5:13 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 SMALLEST BRANCHES BARELY MOVE IN BREEZE.
 SEEING $\frac{6}{10}$; TRANSPARENCY $\frac{8}{10}$.



REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$
 5:22 P.M.; $\frac{700mm}{12mm}$; SEEING $\frac{6}{10}$

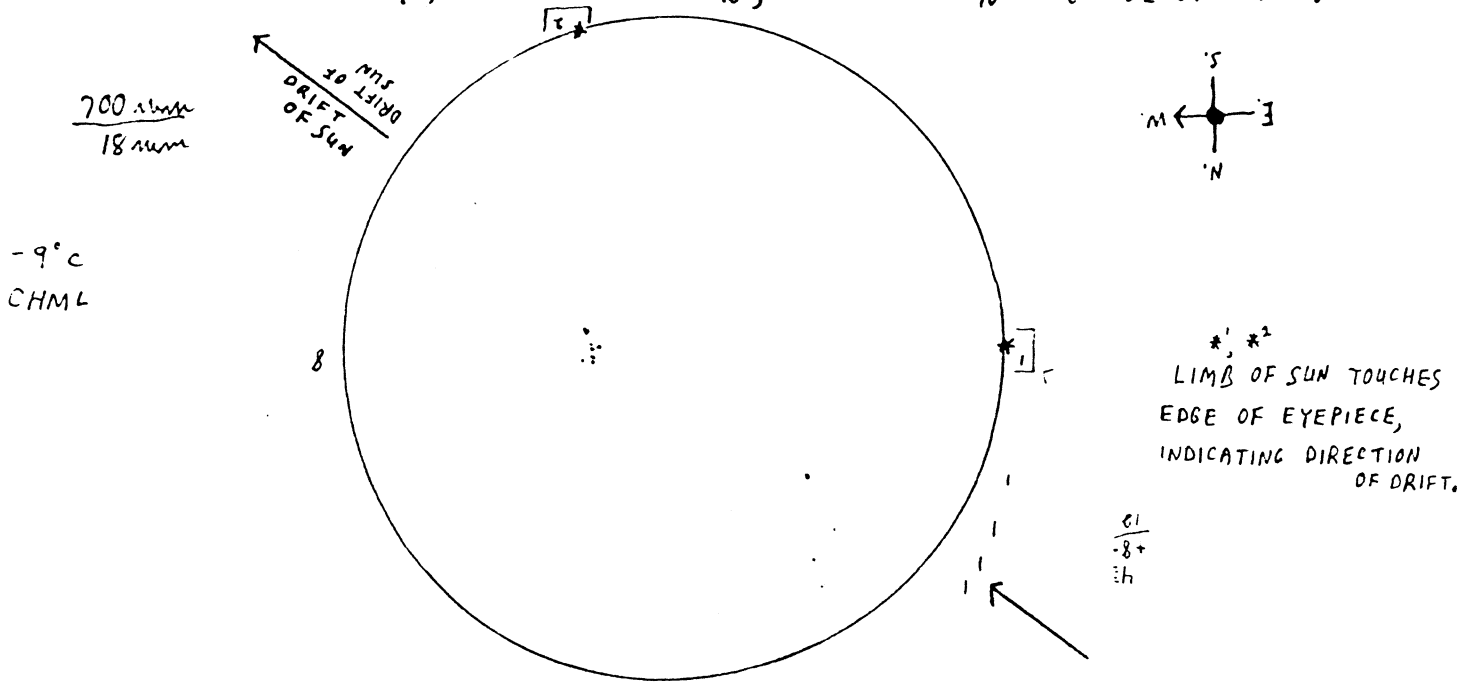
MARCH 17/93 5:00-5:10 P.M. E.S.T.

SKIES TOTALLY CLEAR. LIGHT TO GUSTY WIND

2-5-15 M.P.H.

3-8-24 KM/H

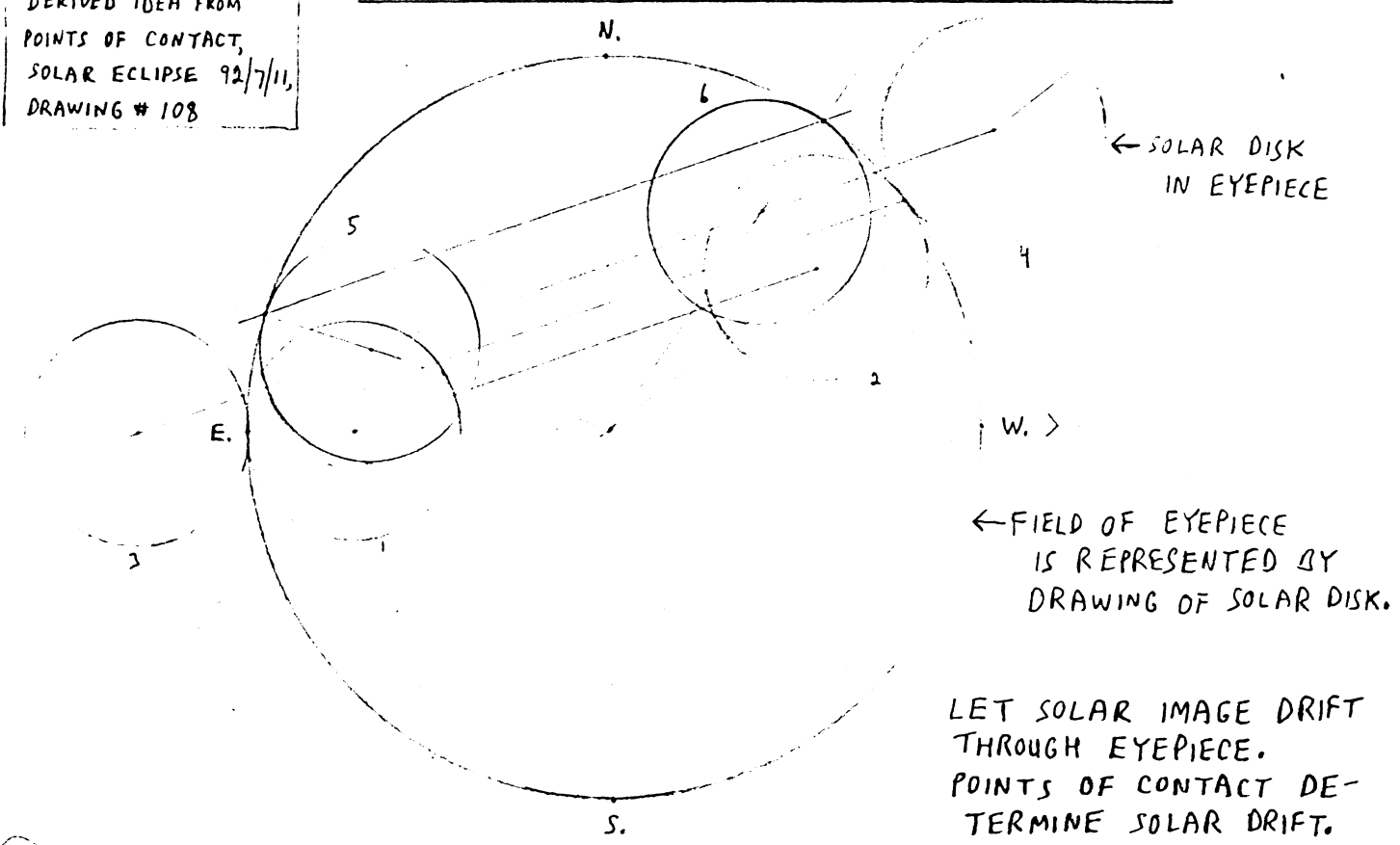
SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{8}{10}$; RESOLUTION $\frac{2}{10}$ BECAUSE OF WIND.



RELATIVE # OF SUNSPOTS $[(10 \times 5) + 12] = 62$

5:20 P.M.; SEEING $\frac{7}{10}$; RESOLUTION $\frac{2}{10}$ BECAUSE OF WIND.

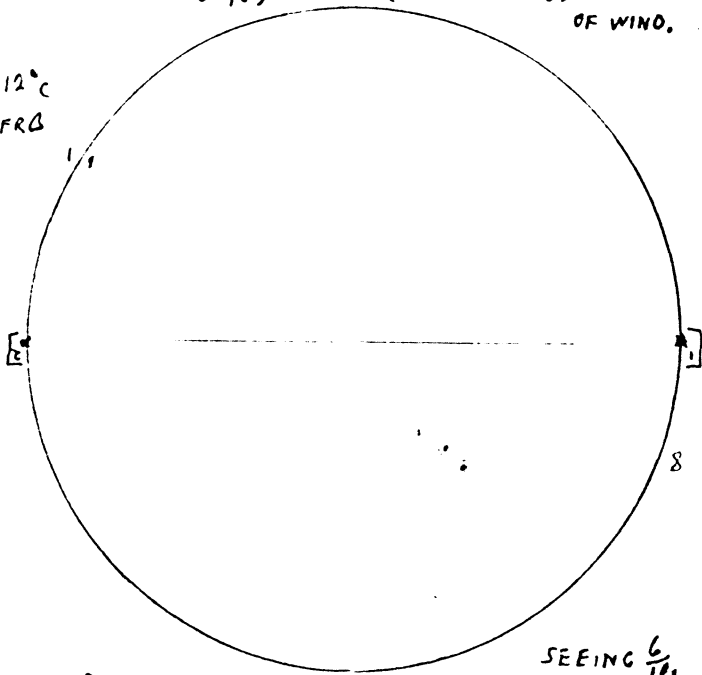
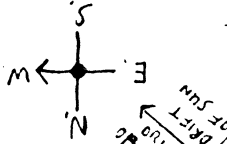
DERIVED IDEA FROM
POINTS OF CONTACT,
SOLAR ECLIPSE 92/7/11,
DRAWING # 108



700mm f11.6
18mm

MARCH 14/93 12:28-12:33 P.M. E.S.T.
CIRRUS CLOUD IN BLUE SKY.
SEEING $\frac{8}{10}$; TRANSP. (RESOLUTION) $\frac{3}{10}$, BECAUSE OF WIND.

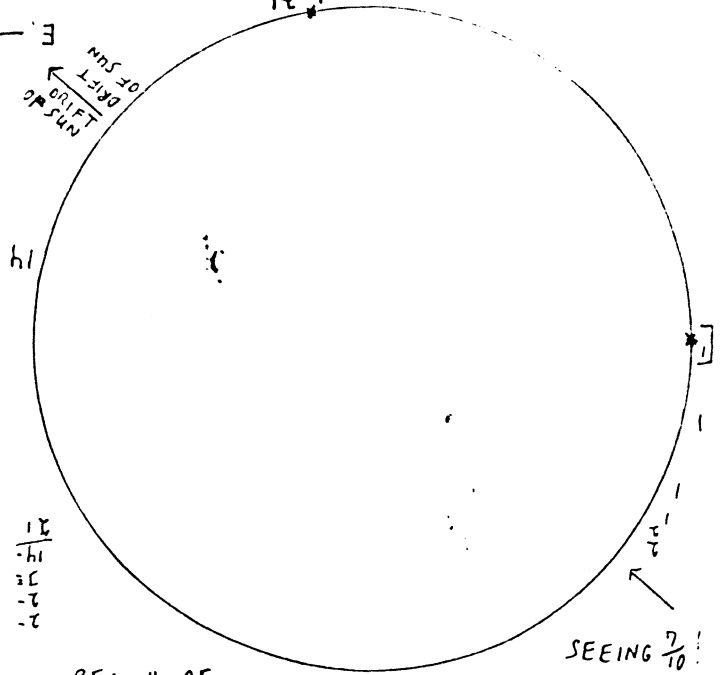
-12°C
CFRB



REL. # OF SUNSPOTS $[(10 \times 2) + 9] = 29$ 12:35 P.M., $\frac{700mm}{12mm}$

SEEING $\frac{6}{10}$.

MAR. 18 5:00 - 5:10 P.M. E.S.T.
SKIES TOTALLY CLEAR, "NO" BREEZE.
SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{7}{10}$.

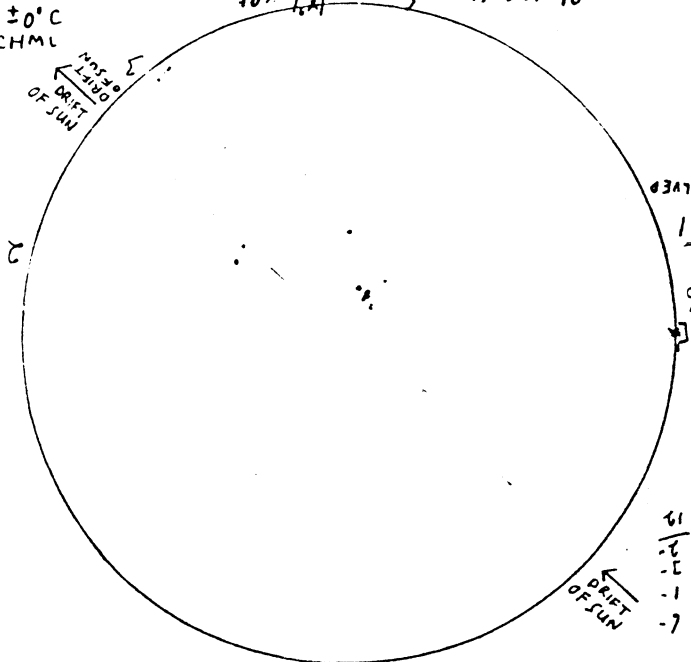


REL. # OF SUNSPOTS $[(10 \times 6) + 21] = 81$ 5:20 P.M., $\frac{700mm}{12mm}$

SEEING $\frac{7}{10}$!

MAR 22 5:12-5:25 P.M. E.S.T.
SUN SETTING IN CIRRUS HAZE.
'NO' BREEZE.
SEEING $\frac{6}{10}$; RIPPLES; TRANSP. $\frac{7}{10}$.

±0°C
CHML

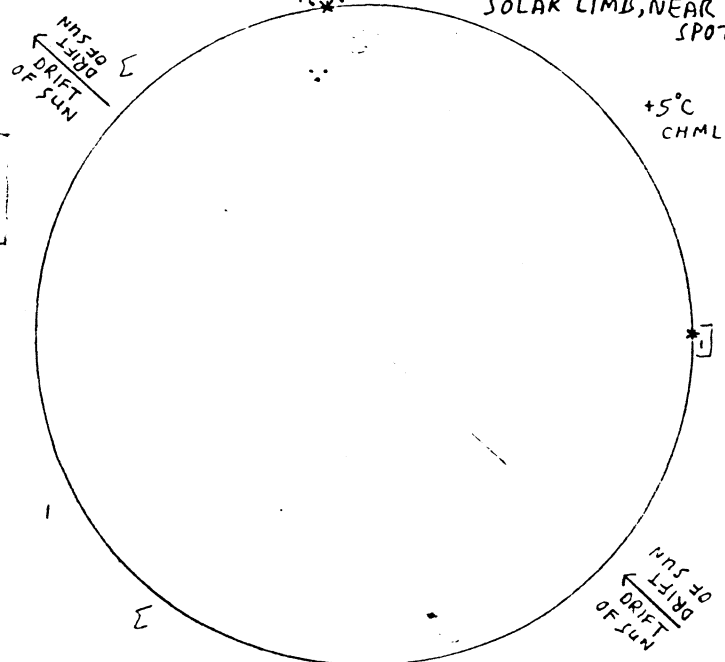


REL. # OF SUNSPOTS $[(10 \times 4) + 12] = 52$

5:30 P.M.; SEEING $\frac{6}{10}$!, TRANSP. $\frac{4}{10}$; $\frac{700mm}{12mm}$

MAR. 26 5:28-5:31 P.M. E.S.T.
SKIES TOTALLY CLEAR; TELESCOPE STEADY IMAGE.
SEEING $\frac{6}{10}$, RIPPLES.
TRANSPARENCY $\frac{8}{10}$; FACULAE VISIBLE ALONG SOLAR LIMB, NEAR SPOTS

+5°C
CHML



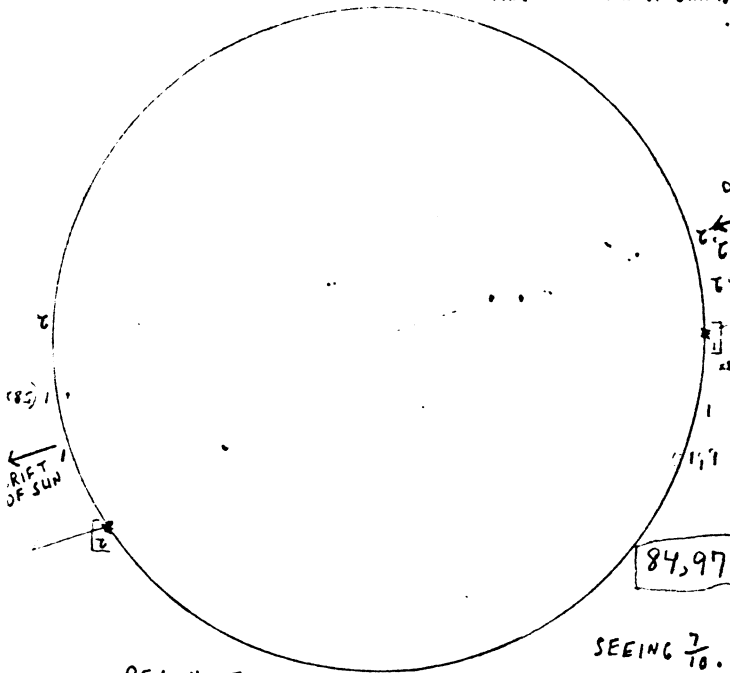
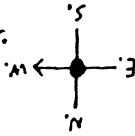
REL. # OF SUNSPOTS $[(10 \times 3) + 7] = 37$

5:35 P.M.; SEEING $\frac{14}{10}$; $\frac{700mm}{12mm}$.

f 11.6 $\frac{700 \text{ mm}}{18 \text{ mm}}$

FEB. 20/93 10:50-11:05 AM E.S.T.
 SKY CLEAR IN SUN'S AREA, "NO" BREEZE.

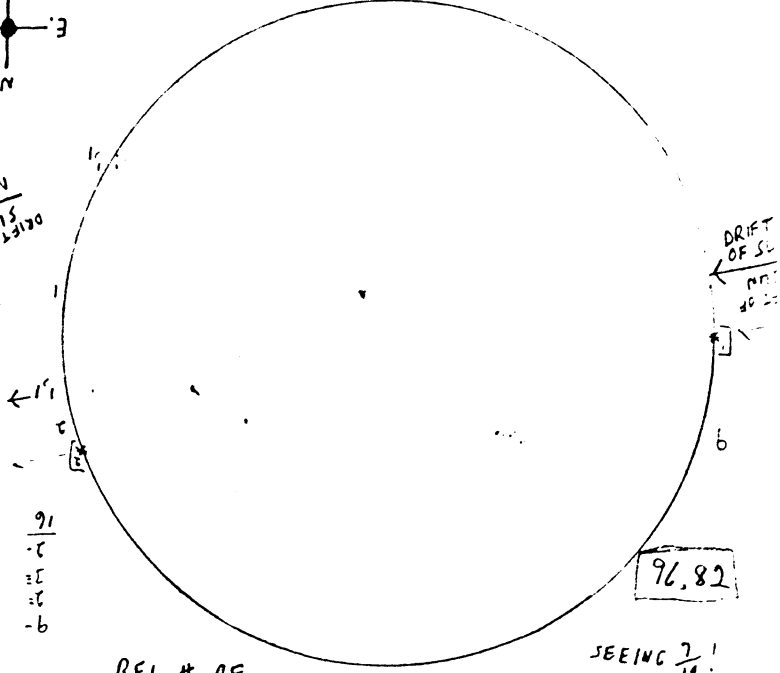
SEEING $\frac{8}{10}$. *; *' LIMS OF SUN TOUCHES
 EDGE OF EYEPIECE, INDICATING
 DIRECTION OF DRIFT.



REL. # OF
 SUNSPOTS $[(10 \times 12) + 18] = 138$; 11:10 AM, $\frac{700 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.

FEB. 28 12:07-12:21 P.M. E.S.T.
 SKY BLUE-CLEAR IN SUN'S AREA

TELESCOPE JIGGLED IN SLIGHT BREEZE (SMALLEST
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$. TREE BRANCHES MOVE,

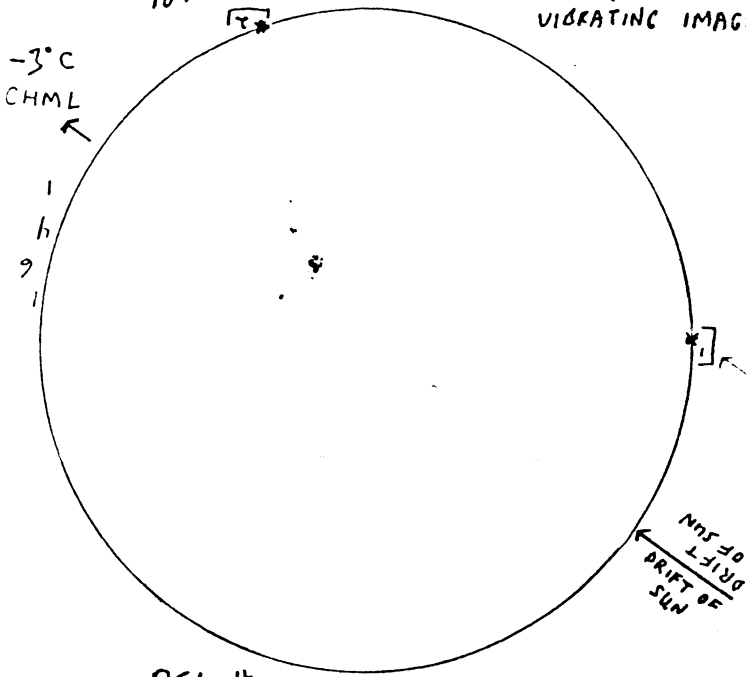


REL. # OF
 SUNSPOTS $[(10 \times 7) + 16] = 86$ 12:28 P.M., $\frac{700 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.

MAR. 9 4:55-5:00 P.M. E.S.T.

SMALL CLOUDS IN CLEAR SKY IN SUN'S AREA.
 SMALL TREE BRANCHES MOVE IN GUSTY BREEZE.

SEEING $\frac{9}{10}$, TRANSPARENCY (RESOLUTION) $\frac{2}{10}$ (BECAUSE OF
 VIBRATING IMAGE).

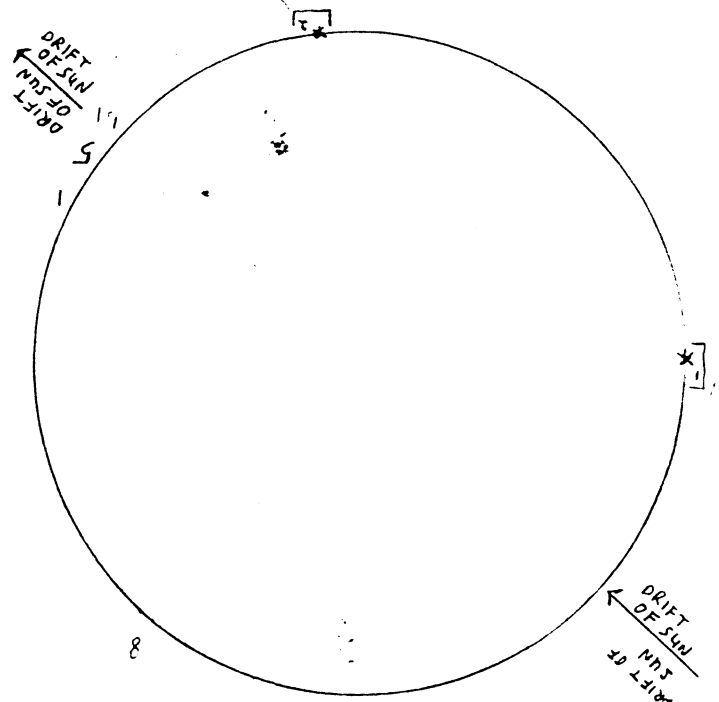


REL. #
 OF SUNSPOTS $[(10 \times 4) + 12] = 52$
 $\frac{700 \text{ mm}}{12 \text{ mm}}$, 5:05 P.M., SEEING $\frac{7}{10}$.
 COUNT IMPAIRED
 BECAUSE OF VIBRATING IMAGE.

GREEN RIBBON ARREST
 FEB 17, 6:44 PM NEWS, CHML

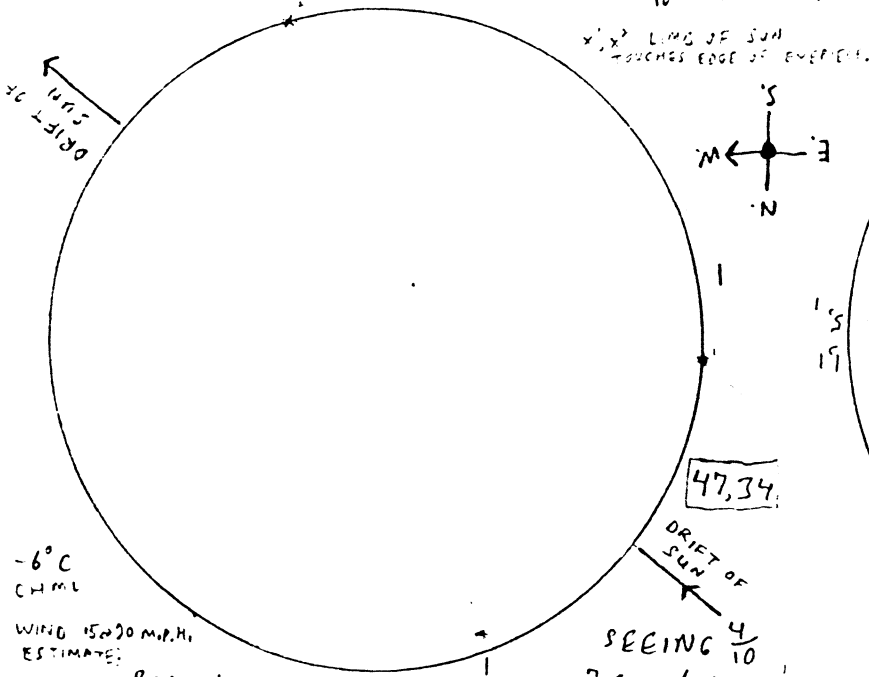
MARCH 12 5:05-5:15 P.M. E.S.T.

SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{8}{10}$.



REL. # OF
 SUNSPOTS $[(10 \times 5) + 16] = 66$
 5:20 P.M., $\frac{700 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{6}{10}$.

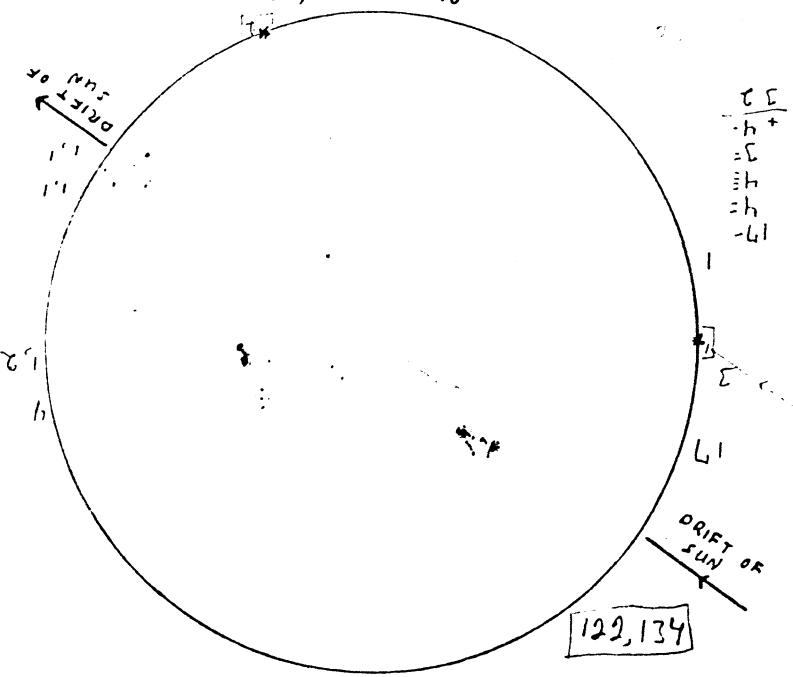
FEB. 2 | 93 5:12 P.M. E.S.T. FAST DRAWING f 11.6 $\frac{700\text{mm}}{18\text{mm}}$
 CLOUD BANK IN SUN'S AREA IN CLEAR SKY. CAR TRUNK LID VIBRATES IN BREEZE. AFTER CLOUD MOVED AWAY, TRANSP. $\frac{8}{10}$
 SEEING $\frac{4}{10}$ (TURBULENT)



REL. # OF SUNSPOTS $[(10 \times 2) + 3] = 23$ 5:12 P.M.
 SEEING $\frac{4}{10}$ 700mm/18mm!

FEB 8 4:55-5:05 P.M. E.S.T. SKIES CLEAR, SUN SETTING IN EVENING HAZE.

SEEING $\frac{8}{10}$, TRANSP. $\frac{8}{10}$

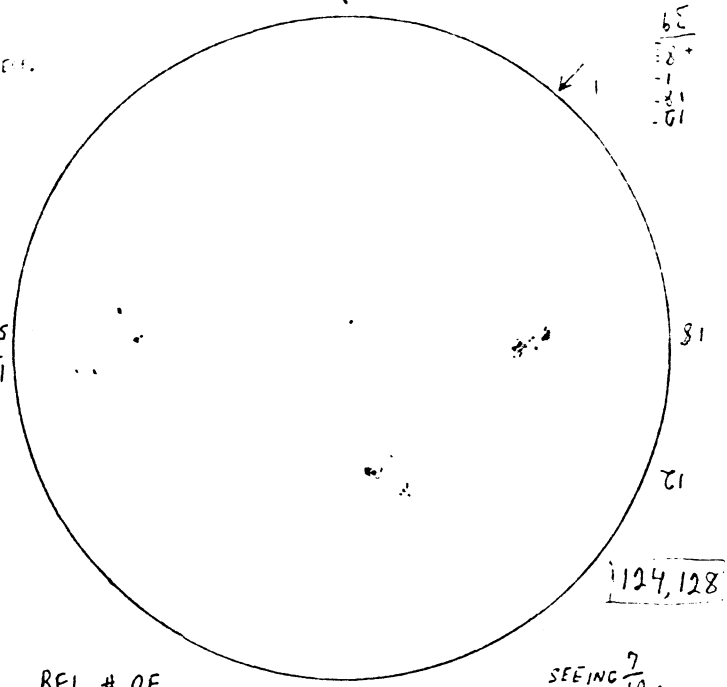


RELATIVE # OF SUNSPOTS $[(10 \times 10) + 3] = 133$

$\frac{700\text{mm}}{19\text{mm}}$, 5:10 P.M. SEEING $\frac{7}{10}$

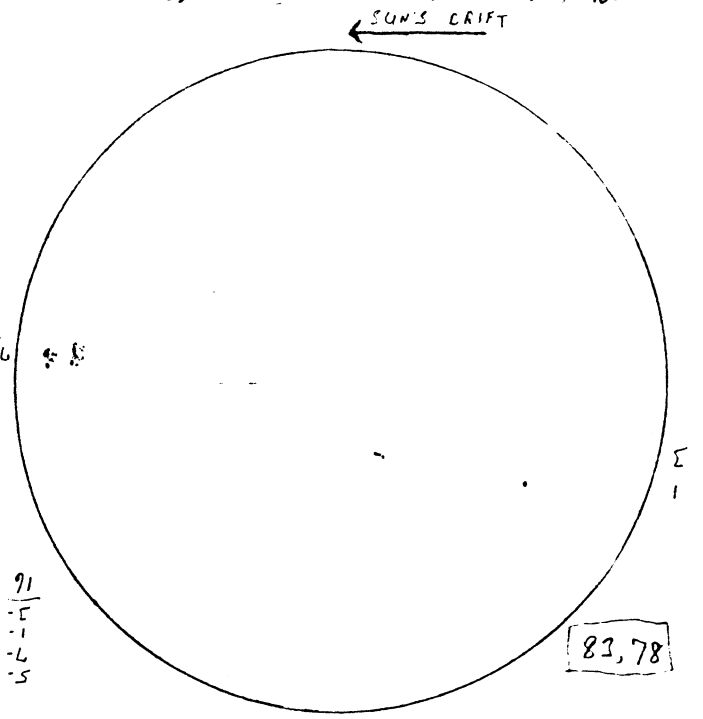
BLUE SKY THROUGH THIN! SHEEPWOOL.

FEB. 7 12:55-1:10 P.M. E.S.T. CIRROS-STRATUS CLOUD IN BLUE SKY. SEEING $\frac{8}{10}$ TRANSP. $\frac{8}{10}$ ← SUNS DRIFT -6°C CFB



REL. # OF SUNSPOTS $[(10 \times 7) + 3] = 109$; $\frac{700\text{mm}}{12\text{mm}}$, 1:15 P.M., SEEING $\frac{7}{10}$.

FEB. 14 12:02-12:25 P.M. E.S.T. DRIFTING, BROKEN, CLOUD DECK IN 50% CLEAR SKY. SEEING $\frac{7}{10}$, TRANSPARANCY (WHEN CLEAR) $\frac{8}{10}$.



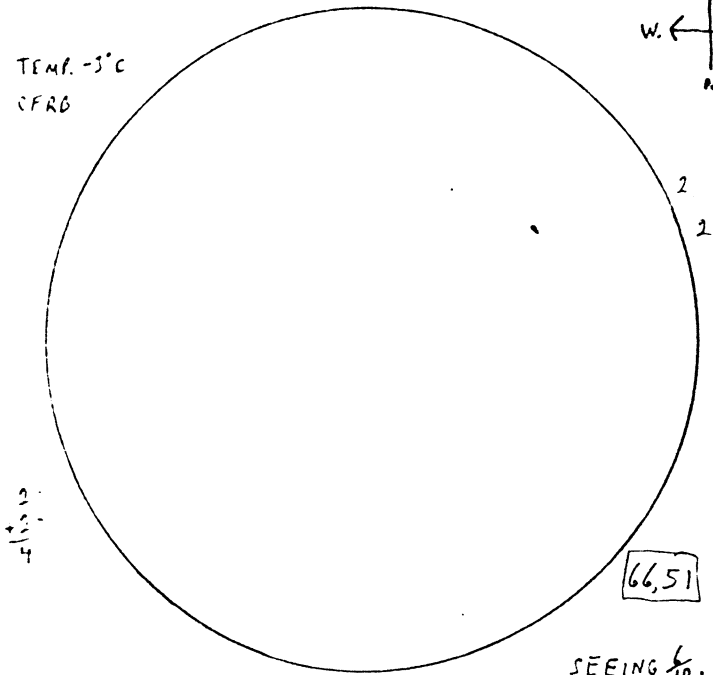
RELATIVE # OF SUNPOTS $[(10 \times 4) + 16] = 56$

$\frac{700\text{mm}}{19\text{mm}}$, 12:25', SEEING $\frac{6}{10}$

*GROUP COUNTED AS 2 GROUPS (LIMB FORESHORTENING).

DEC. 5/92 2:55-3:05 P.M. E.S.T.
 SKY CLEAR IN SUN'S AREA
 SEEING $\frac{7}{10}$.
 TRANSPARENCY $\frac{8}{10}$.

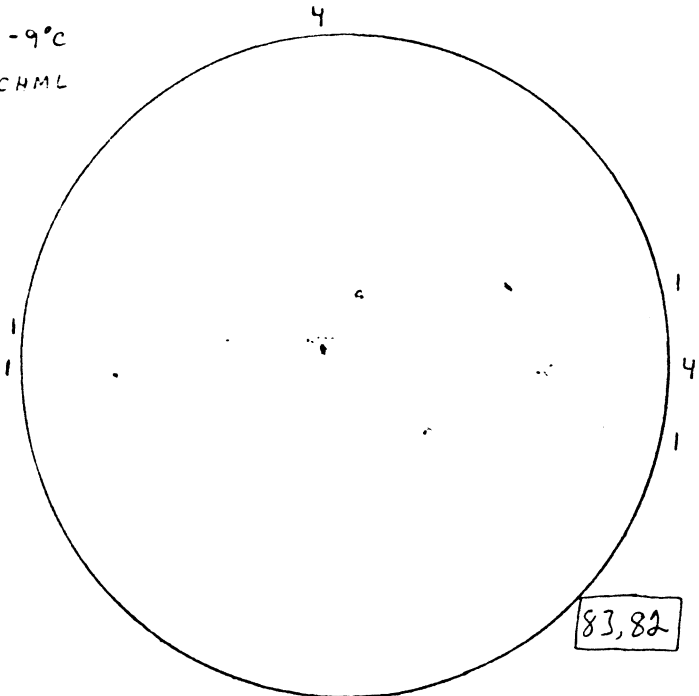
TEMP. -3°C
 CFRG



REL. # OF
 SUNSPOTS $[(10 \times 2) + 4] = 24$, $\frac{900 \text{ mm}}{12 \text{ mm}}$, 3:00 P.M.

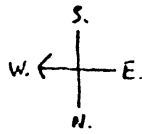
DEC. 24 12:40-12:50 P.M. E.S.T.
 SKIES TOTALLY CLEAR, NO BREEZE.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{7}{10}$.

-9°C
 CHML



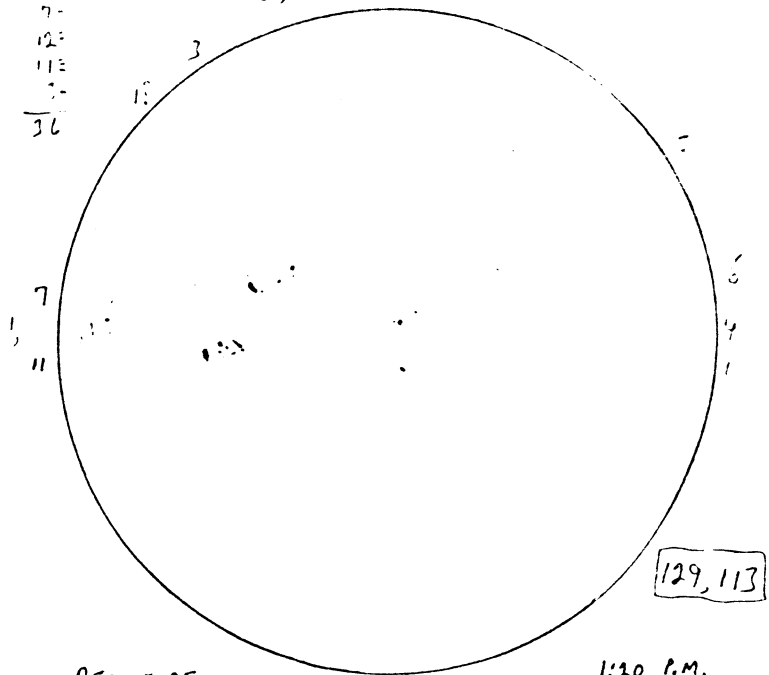
REL. # OF SUNSPOTS $[(10 \times 6) + 12] = 72$
 $\frac{900 \text{ mm}}{12 \text{ mm}}$, 1:00 P.M., SEEING $\frac{4}{10}$.

f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



3-
 7-
 12-
 11-
 3-
 36

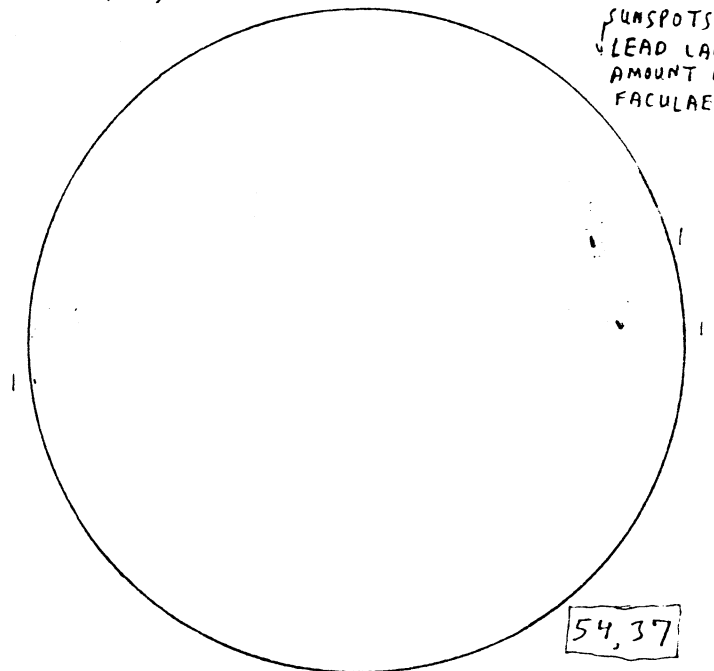
DEC. 13 12:45-1:10 P.M. E.S.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, RIPPLES ALONG SOLAR LIMB.
 TRANSP. $\frac{9}{10}$, GRANULAR STRUCTURE DETECTED!



REL. # OF
 SUNSPOTS $[(10 \times 8) + 36] = 116$; $\frac{900 \text{ mm}}{18 \text{ mm}}$, SEEING $\frac{7}{10}$.
 ADDITIONAL SMALL SPOTS, SEEMINGLY JUST PAST LIMIT OF DETECTION.

JAN. 2/93 12:05-12:25 P.M. E.S.T.
 HAZY OVERCAST IN SUN'S AREA.
 SEEING $\frac{9}{10}$!, TRANSPARENCY (RESOLUTION) $\frac{7}{10}$.

SUNSPOTS
 LEAD LARGE
 AMOUNT OF
 FACULAE.

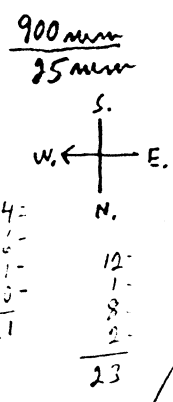


REL. # OF SUNSPOTS $[(10 \times 3) + 3] = 33$
 $\frac{900 \text{ mm}}{12 \text{ mm}}$ ORTHO., 12:35 P.M., SEEING $\frac{4}{10}$.
 INCREASING HAZE.

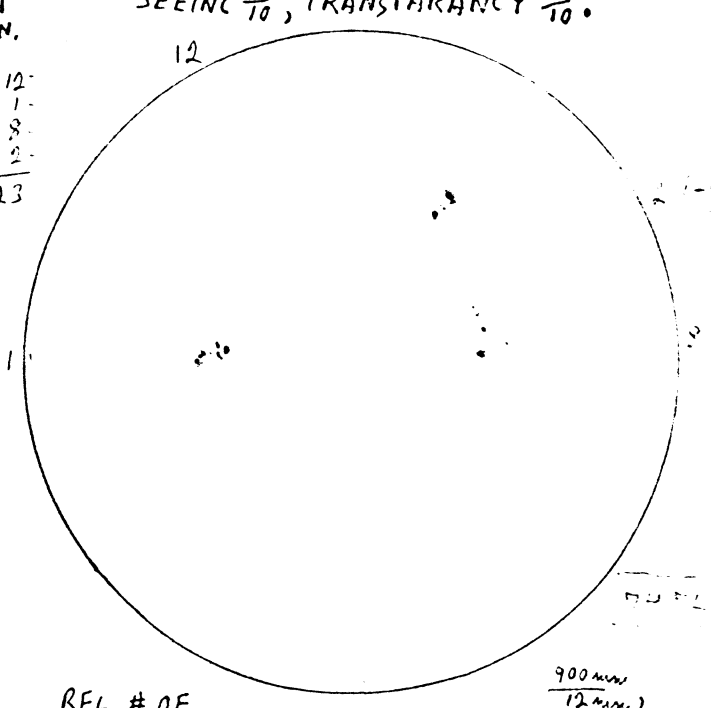
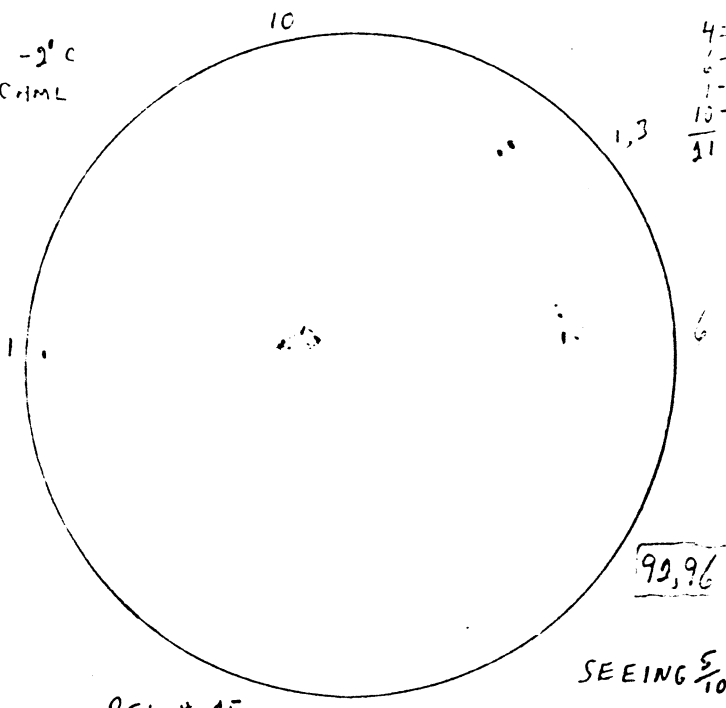
SOLAR DISK FITS 'EXACTLY' IN FIELD OF 12mm K EYEPIECE

NOV. 7/92 12:25-12:40 P.M. E.S.T.
 CUM. CLOUDS IN 80% CLEAR SKY.
 SEEING $\frac{8}{10}$.
 TRANSPARENCY $\frac{8}{10}$.

-2° C
 CHML



NOV. 8/92 3:55-4:18 P.M. E.S.T.
 SKIES TOTALLY CLEAR; 'NO' BREEZE.
 FACULAE STRUCTURE DETECTED ACROSS
 ENTIRE DISK AT LIMIT OF VISIBILITY.
 SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{9}{10}$.

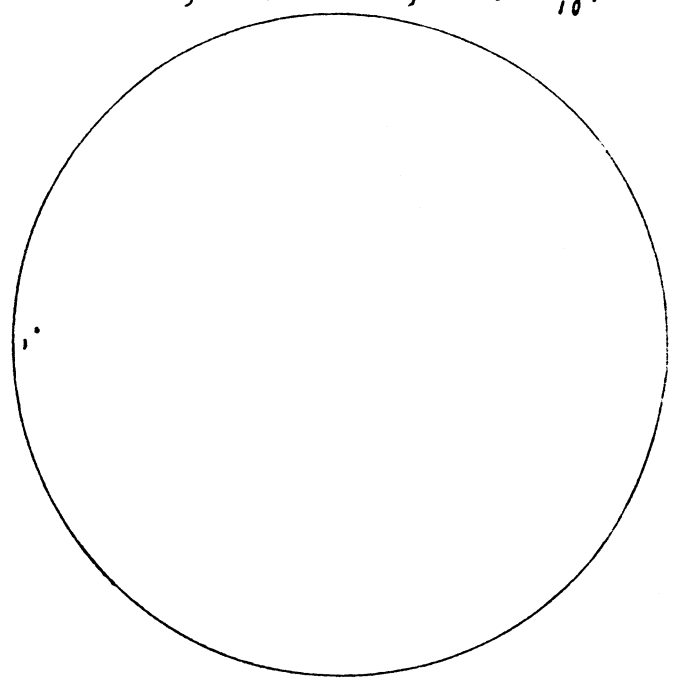
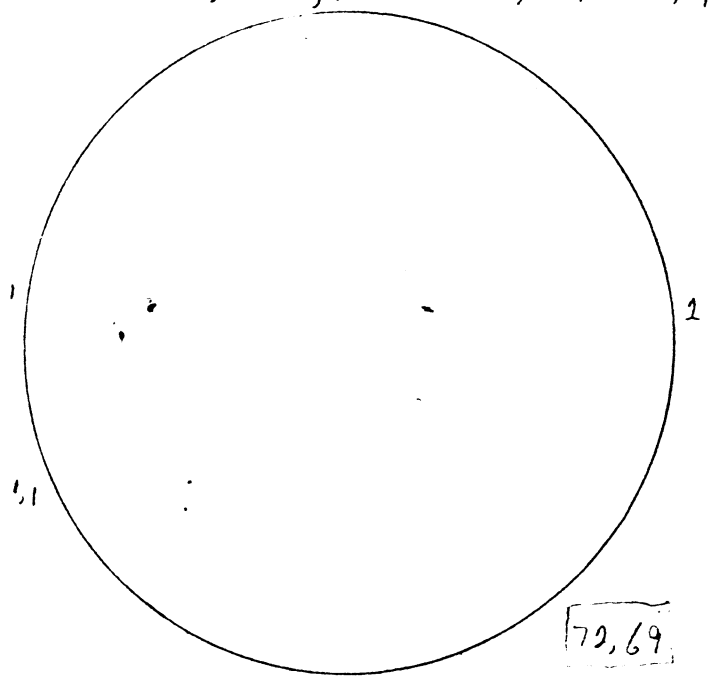


REL. # OF
 SUNSPOTS $[(10 \times 5) + 2] = 71$ 12:42 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$,
 SEEING $\frac{5}{10}$.

REL. # OF
 SUNSPOTS $[(10 \times 4) + 2] = 63$; 4:18 P.M., SEEING $\frac{5}{10}$.

NOV. 14 1:28-1:48 P.M. E.S.T.
 LARGE CUM. CLOUDS IN 90% CLEAR SKY.
 < MED. BRANCHES MOVE IN OCCASIONAL WIND.
 SEEING, TRANSP. (WITH NO WIND, CLEAR SKY) $\frac{8}{10}$.

NOV. 16 1:00 P.M. E.S.T.
 OVERCAST HAZE.
 'NO' BREEZE IN OBS. PARKING LOT.
 SEEING, 'STEADY IMAGE'; TRANSP. $\frac{2}{10}$.

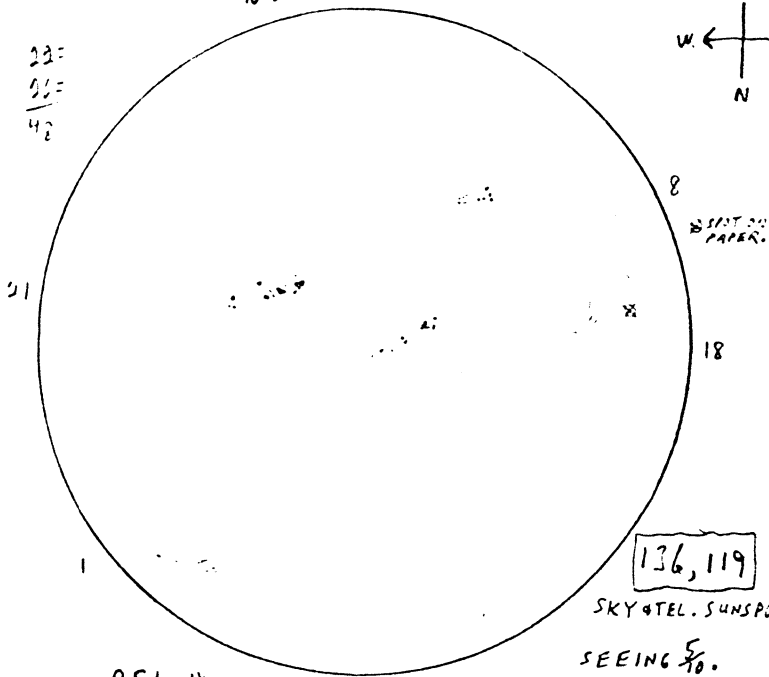
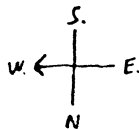


RELATIVE # OF SUNSPOTS
 $[(10 \times 5) + 6] = 56$
 1:55 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$

THICKENING OVERCAST (12:55-1:35 P.M.)
 PRECLUDED SUNSPOT COUNT.

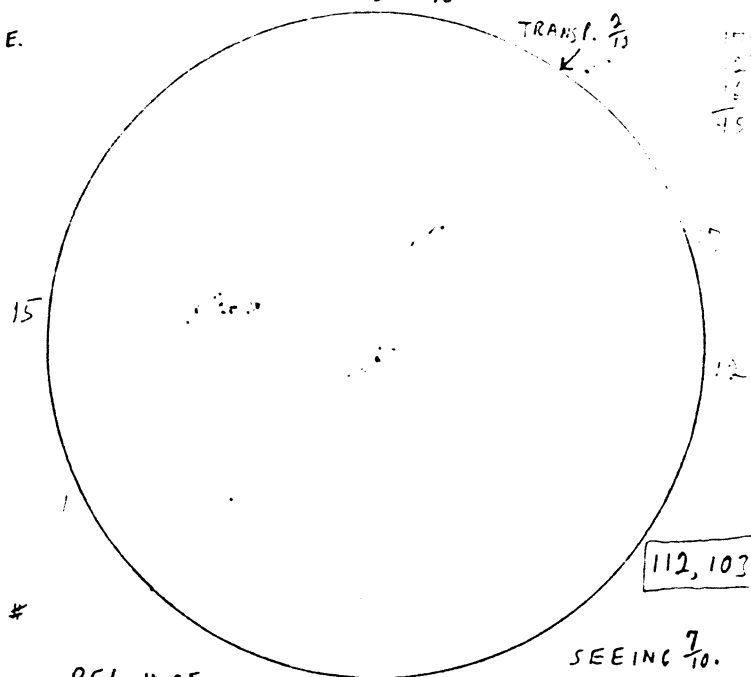
OCT. 6/92 5:00-5:30 P.M. E.D.T.
 SKY TOTALLY CLEAR; 'NO' BREEZE.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSP. $\frac{9}{10}$, FACULAE EASILY SEEN.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



REL. # OF SUNSPOTS $[(10 \times 4) + 48] = 88$; 5:35 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{5}{10}$.

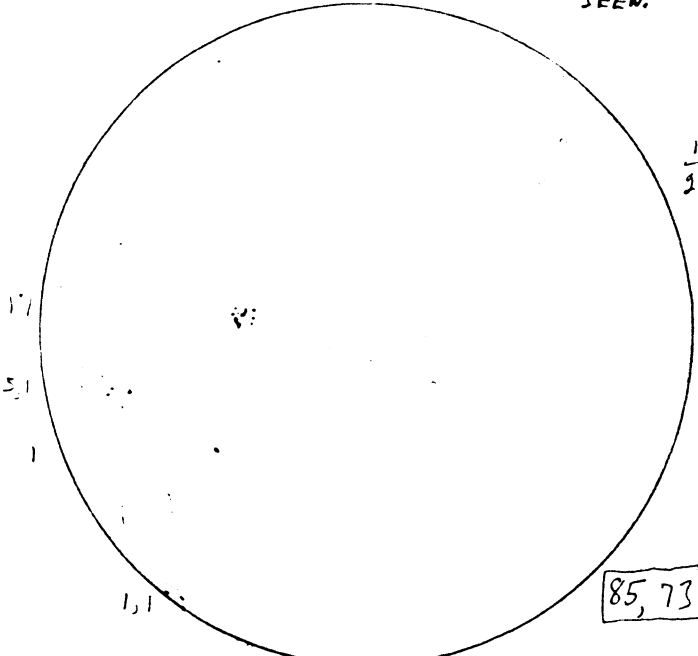
OCT. 7 5:10-5:30 P.M. E.D.T.
 SUN BEHIND THICKENING CIRRUS CLOUD.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{7}{10} \rightarrow \frac{2}{10}$.



REL. # OF SUNSPOTS $[(10 \times 4) + 45] = 85$; 5:25 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.

OCT. 10 3:00-3:30 P.M. E.D.T.
 SKY TOTALLY CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, FUZZY.
 TRANSPARENCY $\frac{9}{10}$, FACULAE EASILY SEEN.

1- 2-
 1- 1-
 1- 1-
 5- 6-
 1-
 17- 17-
 36 26

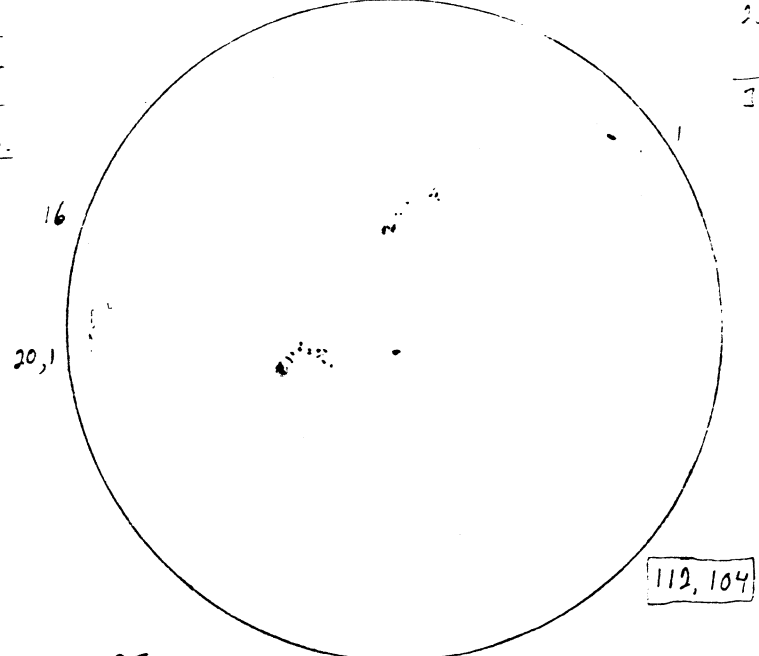


REL. # OF SUNSPOTS $[(10 \times 6) + 17] = 77$ or $[(10 \times 4) + 17] = 57$
 3:25 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.

COUNTED GROUPS ALONG LIMB AS SEPARATE GROUPS BECAUSE OF FORESHORTENING.

OCT. 22 5:15-5:30 P.M. E.D.T.
 SKY TOTALLY CLEAR, 'NO' BREEZE.
 SEEING $\frac{6}{10} \leftrightarrow \frac{7}{10}$; RIPPLES
 TRANSPARENCY $\frac{9}{10}$, VERY DARK SPOTS.

7°C
 CHML



REL. # OF SUNSPOTS $[(10 \times 4) + 38] = 78$

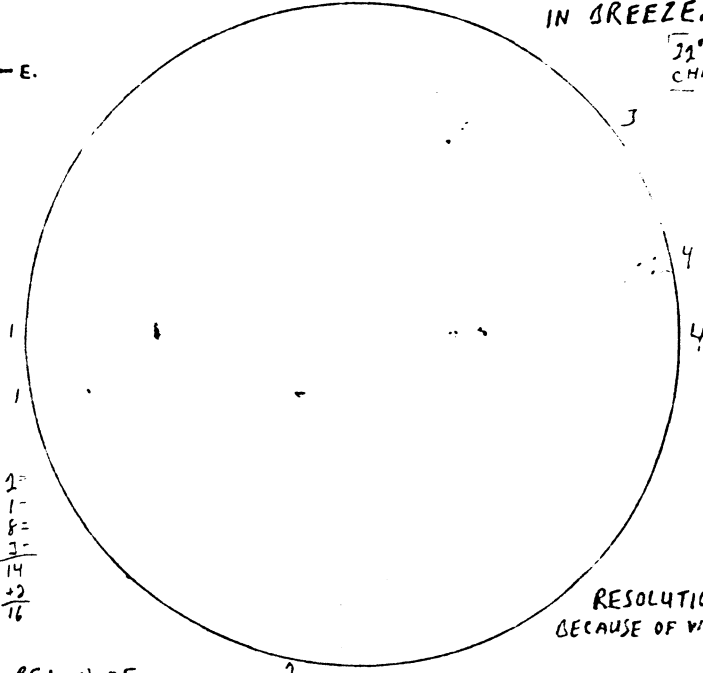
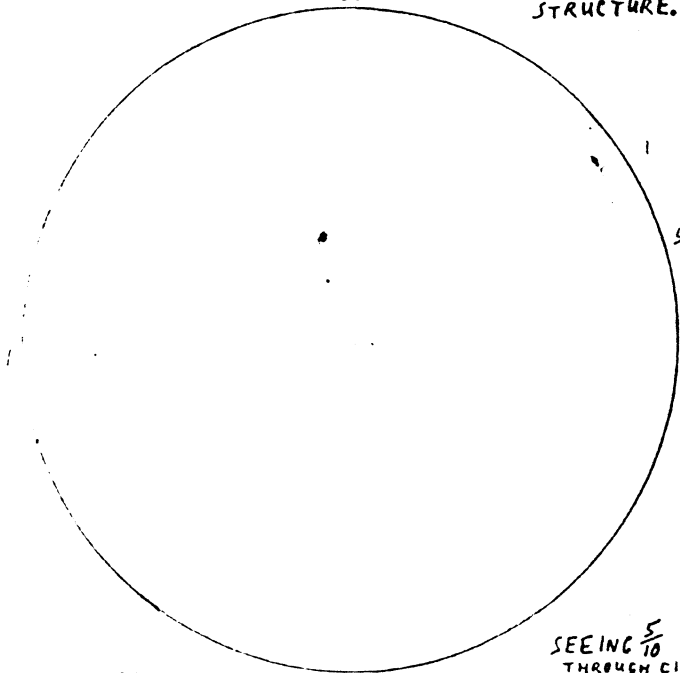
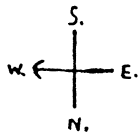
5:32 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{5}{10}$ BOILING IMAGE.

128

SEPT. 20/92 3:55 - 4:08 P.M. E.D.T.
 INCREASING, LIGHT, CIRRUS IN CLEAR SKY.
 SEEING $\frac{7}{10}$, TURBULENCE ALONG LIMB.
 TRANSPARENCY $\frac{8}{10}$, HINT? OF GRAINY
 STRUCTURE.

φ 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

OCT 2 5:10 - 5:20 P.M. E.D.T.
 SKIES TOTALLY CLEAR; HAZY BLUE,
 SEEING $\frac{9}{10}$, SHARP DETAIL. LARGE TREE
 BRANCHES MOVE IN BREEZE.
 22°C CHML

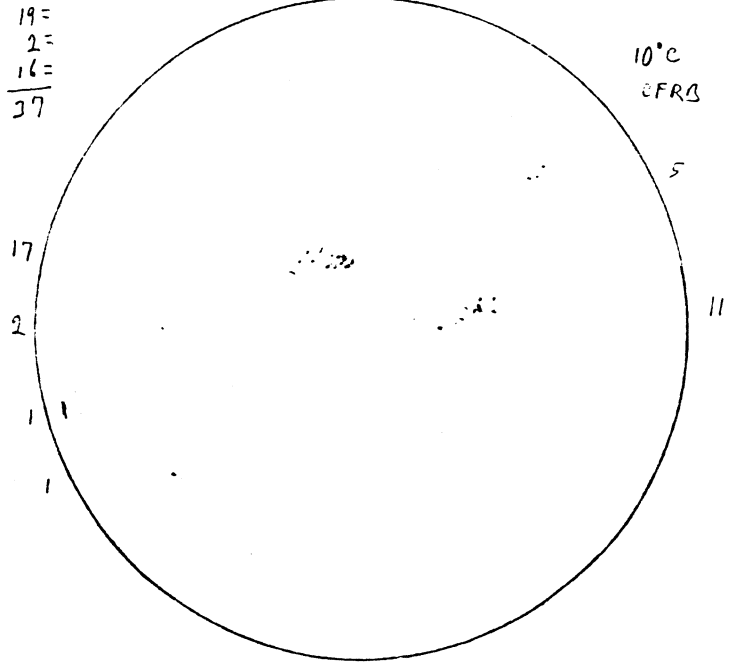
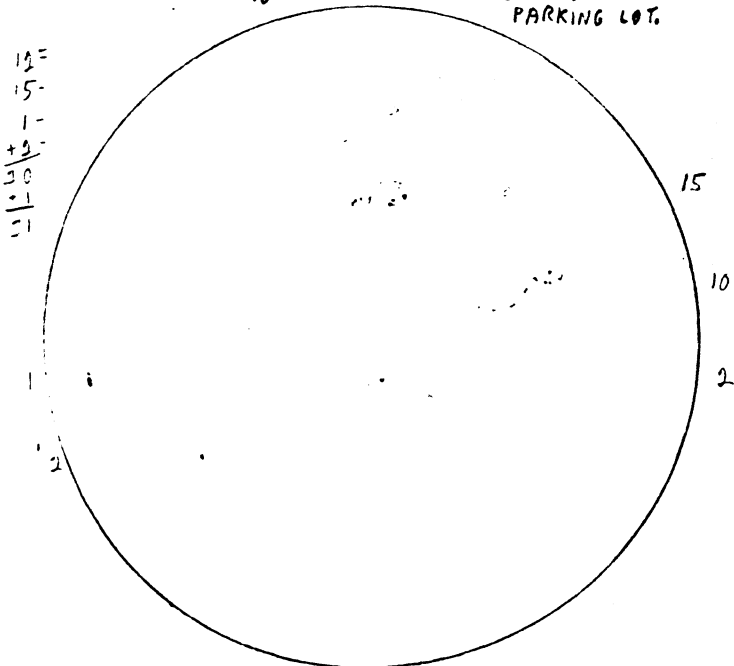


REL # OF SUNSPOTS $[(10 \times 4) + 9] = 49$; 4:22 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$,
 SEEING $\frac{5}{10}$ THROUGH CIRRUS.

REL. # OF SUNSPOTS $[(10 \times 6) + 12] = 76$; 5:35 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$.
 RESOLUTION $\frac{2}{1}$ BECAUSE OF WIND.

OCT. 4 4:25 - 5:05 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, RIPPLES ALONG SOLAR LIMB.
 TRANSP. $\frac{9}{10}$. OBSERVATORY
 PARKING LOT.

OCT. 5 5:10 - 5:35 P.M. E.D.T.
 SKIES TOTALLY CLEAR. ALIGN CONS. PART
 STONE CHURCH RD.
 SEEING $\frac{7}{10}$, RIPPLES ~ OCT 4.
 TRANSP. $\frac{9}{10}$, FACULAE EASILY VISIBLE.



REL. # OF SUNSPOTS $[(10 \times 5) + 31] = 81$

REL. # OF SUNSPOTS $[(10 \times 6) + 37] = 97$

5:10 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{6}{10}$.

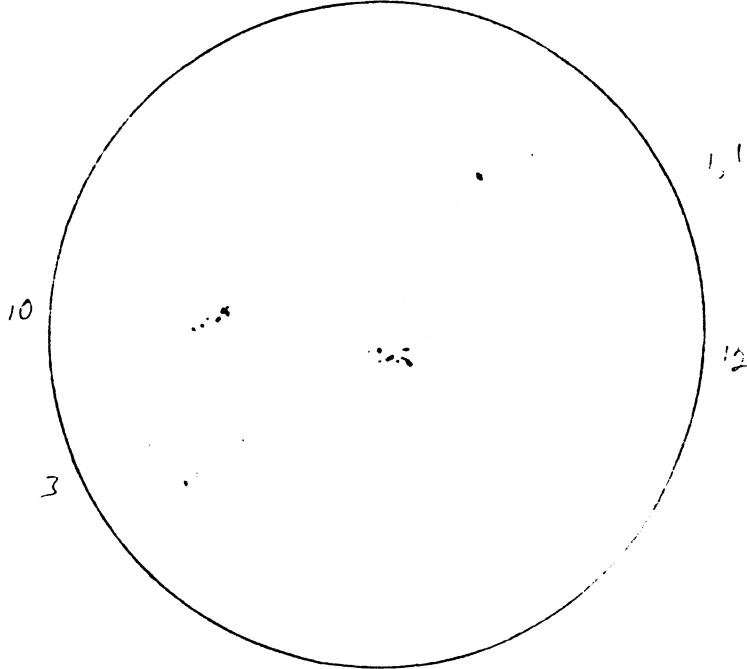
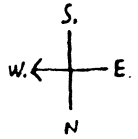
5:45 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{6}{10}$.

SUN DISAPPEARED BEHIND TREES 5:30 P.M. E.D.T.

SEPT. 13/92 2:20 - 3:05 P.M. E.D.T.
L.V.P. OBSERVATORY YARD.

LIGHT CIRRUS IN CLEAR SKY.
SEEING $\frac{7}{10}$, TRANSPARANCY $\frac{7}{10}$.

f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



27
12
7
10

27

RELATIVE # OF SUNSPOTS $[(10 \times 5) + 27] = 77$

SEEING $\frac{7}{10}$, $\frac{900 \text{ mm}}{12 \text{ mm}}$, 3:20 P.M.

LIMB OF SUN

LIMB OF SUN

LIMB OF SUN

TRANSP. $\frac{5}{10}$; CIRRUS.

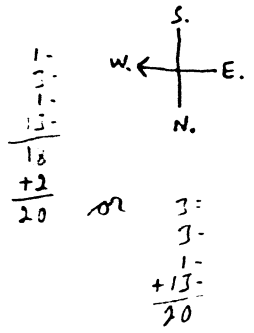
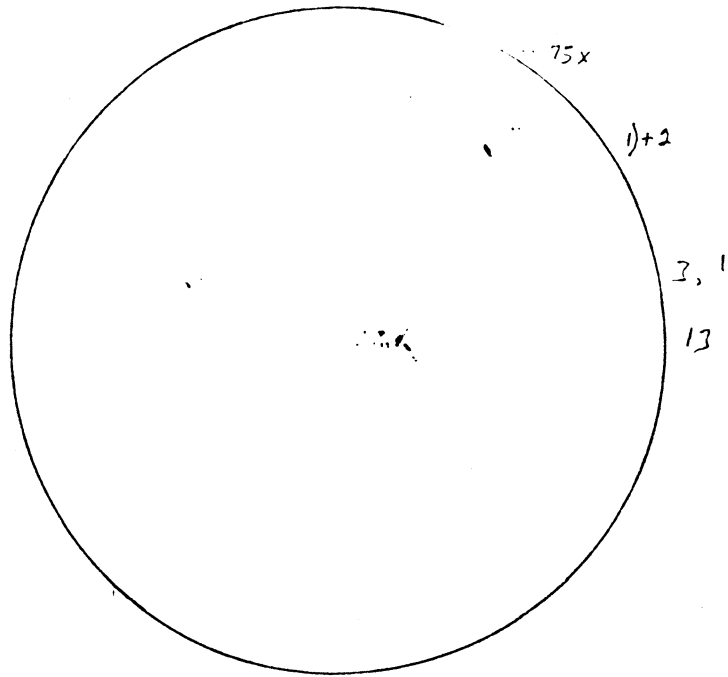
f8 $\frac{900 \text{ mm}}{9 \text{ mm}}$, 3:35 - 4:50 P.M. E.D.T., SEEING $\frac{7}{10}$

70

126

SEPT. 12/92 1:50-2:07 P.M. E.D.T.
 LIGHT CIRRUS-STRATUS CLOUD IN BLUE SKY.
 SEEING $\frac{8}{10}$, STEADY IMAGE.
 TRANSPARANCY $\frac{4}{10}$, CIRRUS HAZE.

f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

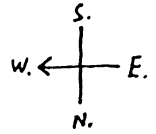
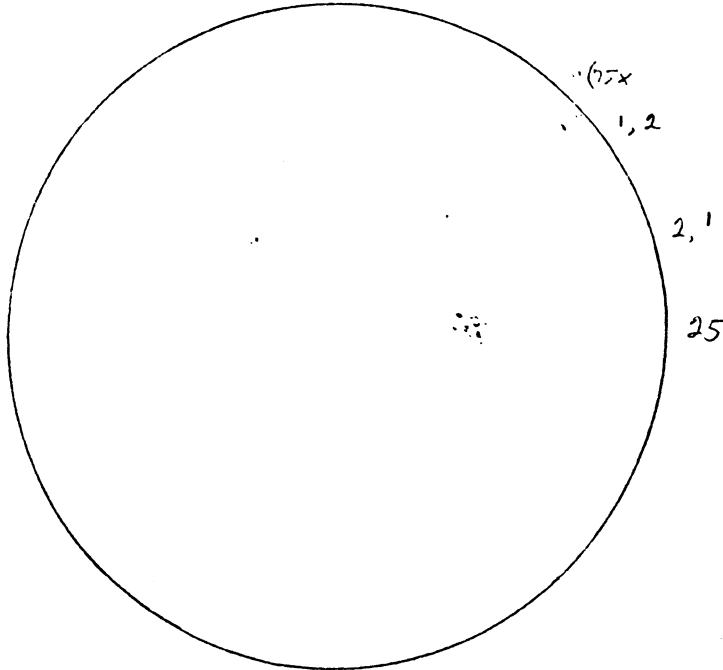


RELATIVE # OF SUNSPOTS $[(10 \times 4) + 18] + 2 = 60 \sim [(10 \times 5) + 20] = 70$
 $\frac{900 \text{ mm}}{12 \text{ mm}}$, 2:22 P.M., SEEING $\frac{7}{10}$, TRANSP. $\frac{4}{10}$; CIRRUS HAZE.

$\frac{900 \text{ mm}}{9 \text{ mm}}$, 2:40-3:05 P.M. SEEING $\frac{8}{10}$!, TRANSPARANCY $\frac{4}{10}$,
 TOO MUCH CIRRUS.

SEPT. 11/92 5:25-5:40 P.M. E.D.T.
 ISOLATED CUMULUS CLOUDS IN CLEAR SKY.
 SEEING $\frac{6}{10} \leftrightarrow \frac{7}{10}$, RIPPLES.
 TRANSPARENCY $\frac{6}{10}$, NO HINT OF GRAINY STRUCTURE.

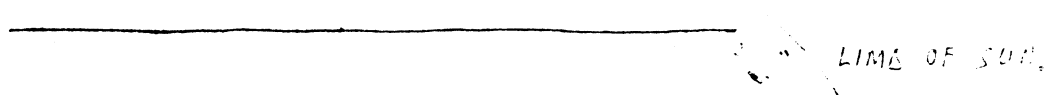
f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



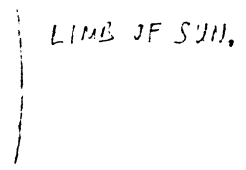
1.
2.
2.
1.
35.
31

RELATIVE # OF SUNSPOTS $[(10 \times 5) + 31] = 81$

5:50 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{5}{10}$.



LIMB OF SUN.



LIMB OF SUN.

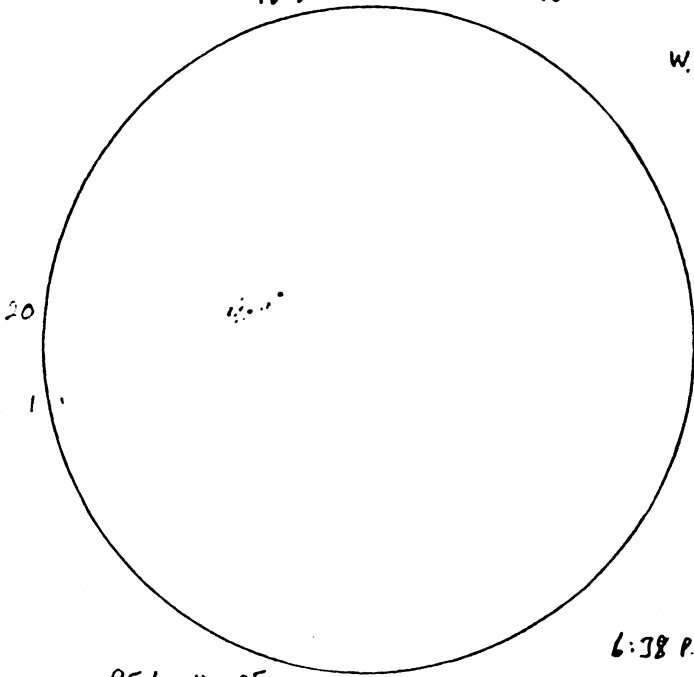
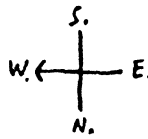
$\frac{900 \text{ mm}}{9 \text{ mm}}$, SEEING $\frac{5}{10} \leftrightarrow \frac{6}{10}$, 5:55-6:25 P.M. E.D.T.

SPOT SHOULD MORE
 SPREAD OUT ~ 9/12/92

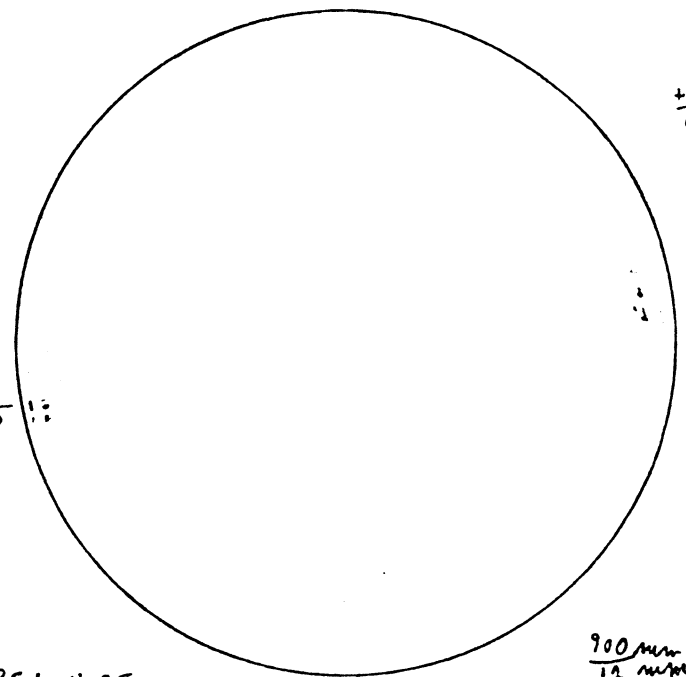
SEPT. 4/92 6:25-6:32 P.M. E.D.T.
 LIGHT CIRRUS CLOUD IN SUN'S AREA.
 SUN SETTING IN (EVENING) CIRRUS HAZE.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{7}{10}$.

f8 900mm
 25mm

SEPT. 8 5:05-5:15 P.M. E.D.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{5}{10}$!, RIPPLES.
 TRANSPARENCY $\frac{8}{10}$.



20-
+1-
21



6-
+5-
11

REL. # OF
 SUNSPOTS $[(10 \times 2) + 21] = 41$; $\frac{900}{12}$ mm. SEEING $\frac{5}{10}$.

6:38 P.M.

REL. # OF
 SUNSPOTS $[(10 \times 2) + 11] = 31$; 5:15 P.M. SEEING $\frac{5}{10}$.

$\frac{900}{12}$ mm.

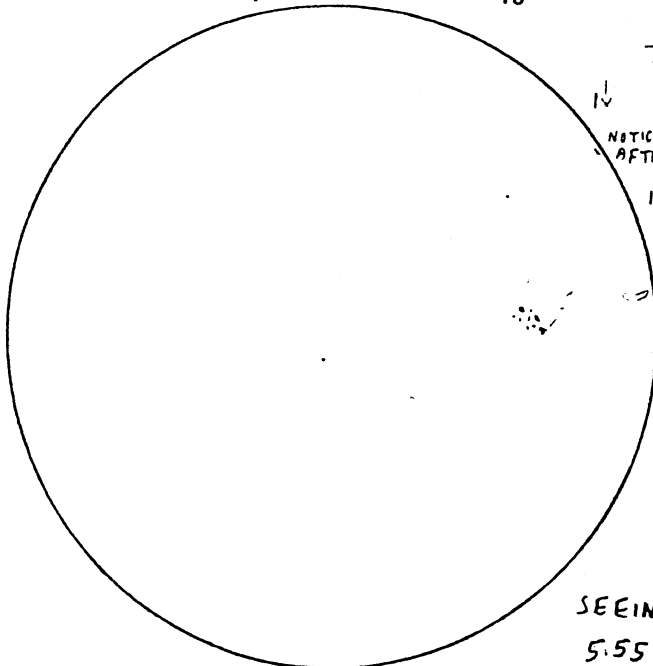
SEPT 10 5:35-5:45 P.M. E.D.T.
 SKIES TOTALLY CLEAR AFTER MORNING RAIN.
 MEDIUM TREE BRANCHES MOVE IN BREEZE.
 SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{8}{10}$.

SEPT 14 5:15-5:30 P.M. E.D.T.
 THIN CIRRUS CLOUD IN PALE-BLUE SKY.
 SEEING $\frac{7}{10}$, STEADY IMAGE.
 TRANSPARENCY $< \frac{8}{10}$, CIRRUS HAZE.

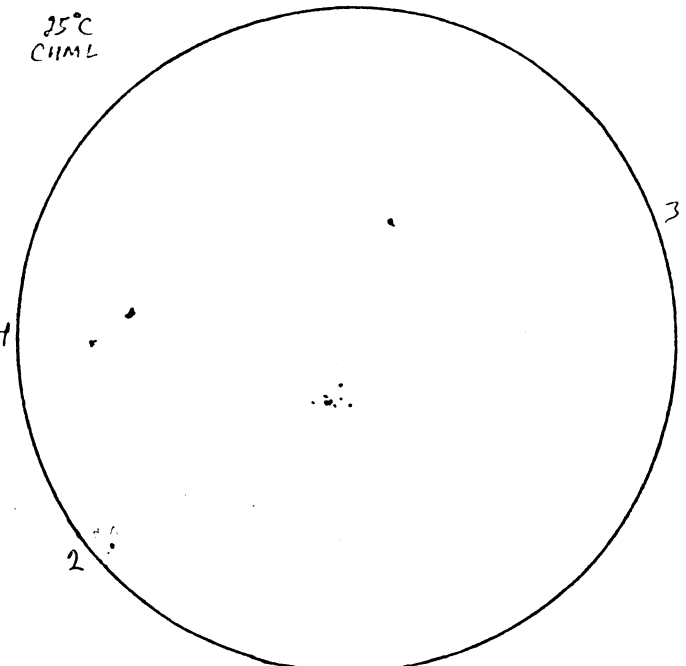
3-
15-
18

25°C
 CHML

3-
17-
2-
7-
29



NOTICED SPOT
 AFTER 5:45 P.M.



SEEING $\frac{5}{10}$.
 5:55 P.M.

REL. #
 OF SUNSPOTS $[(10 \times 4) + 18] = 58$; $\frac{900}{12}$ mm.

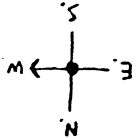
REL. # OF
 SUNSPOTS $[(10 \times 5) + 29] = 79$
 5:40 P.M., SEEING $\frac{7}{10}$, $\frac{900}{12}$ mm.

AUGUST 23/92 1:35-2:00 P.M. E.D.T.

SKY HAZY-BLUE IN SUN'S AREA.

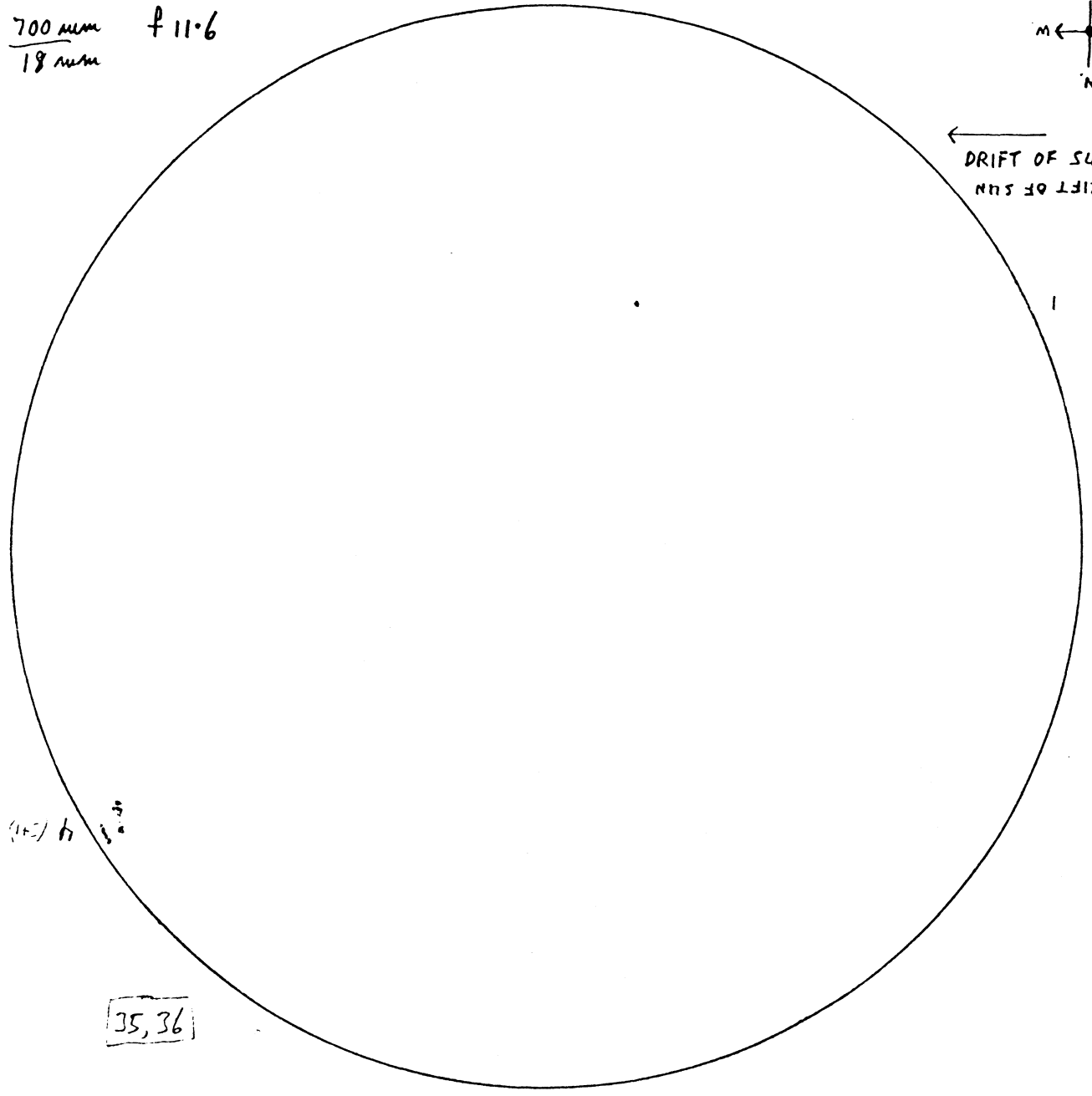
SEEING $\frac{7}{10}$, TRANSPARANCY $\frac{7}{10}$.

$\frac{700 \text{ mm}}{18 \text{ mm}}$ f 11.6



← DRIFT OF SUN
DRIFT OF SUN
NHS FO LFRS

$\frac{4-}{+1-}$
5



(15) h

35, 36

RELATIVE # OF SUNSPOTS $[(10 \times 2) + 5] = 25$

2:00 P.M. , $\frac{700 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{5}{10}$

(67)

(105)

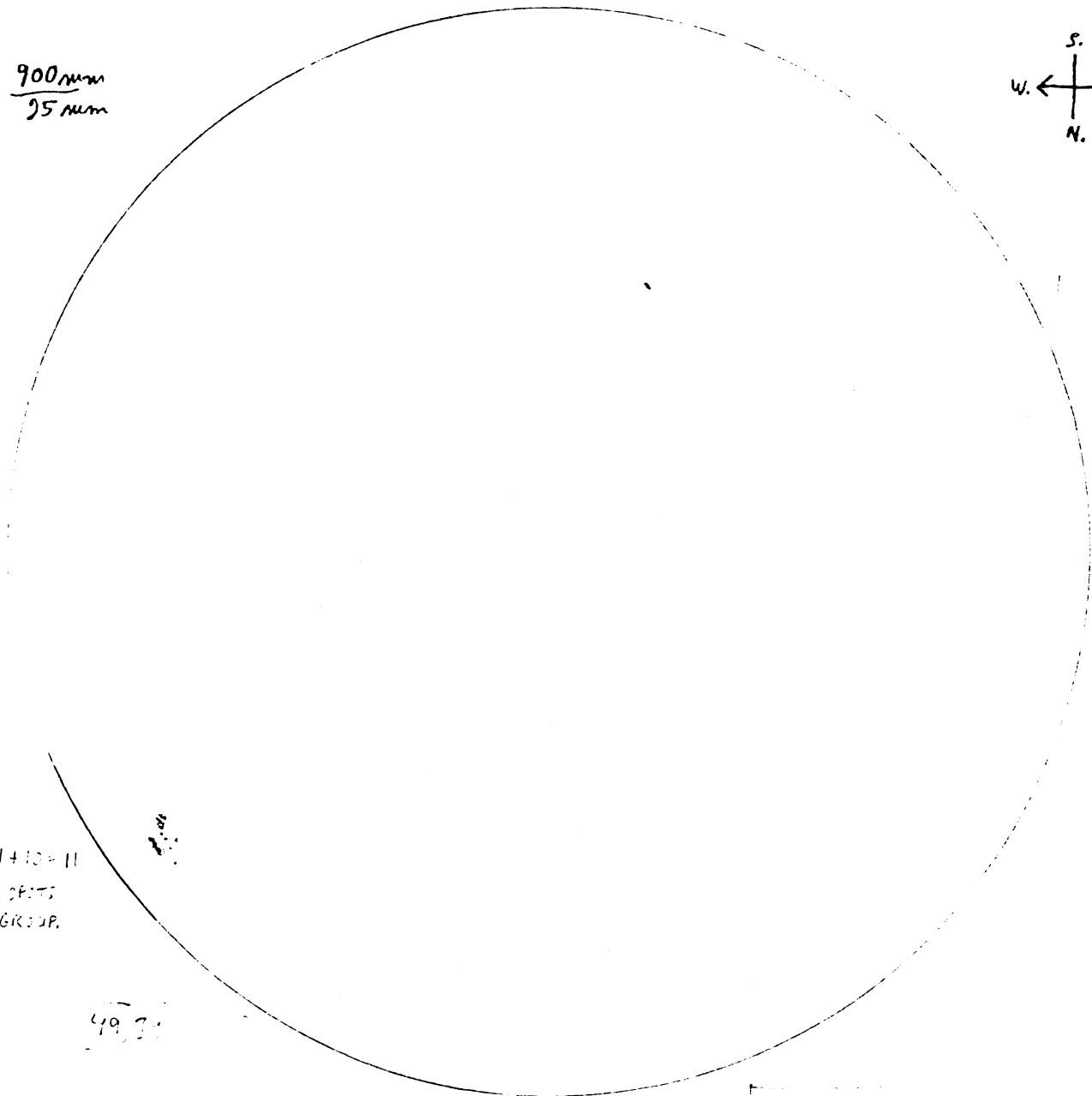
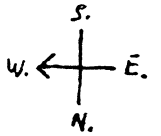
AUGUST 22/92 6:30-6:47 PM E.D.T.

CLEAR SKY, SUN SETTING IN EVENING HAZE.

SEEING $\frac{9}{10}$, STEADY IMAGE.

TRANSPARENCY $\frac{8}{10}$, FACULAE VERY EVIDENT.

f8 $\frac{900\text{mm}}{25\text{mm}}$



1-
+ 11
12

1+10=11

COUNTED SPOTS AS ONE GROUP.

493

RELATIVE # OF SUNSPOTS $[(10 \times 2) + 12] = 32$

6:50 PM, SEEING $\frac{5}{10}$, $\frac{900\text{mm}}{12\text{mm}}$

OBSERVED VENUS AND JUPITER IN 50X (18mm) EYEPIECE \approx 7:30 P.M., FIELD OF VIEW 70'

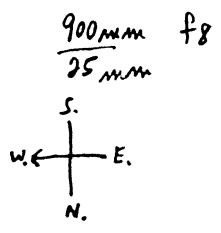
SEPARATION $\approx 0.5^\circ$

AUG. 22-23 : BRIGHT AURORAL DISPLAY. PULSING PATCHES, RAYS.

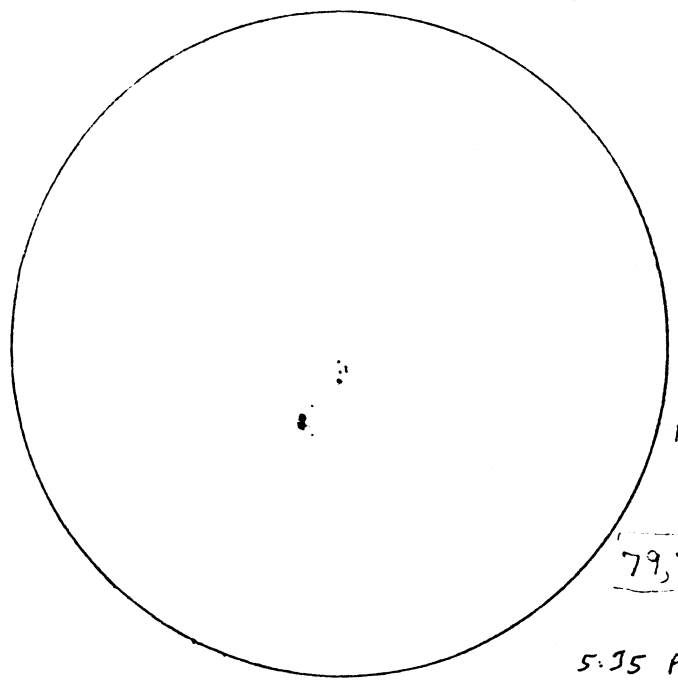
11
06

125

AUG. 18/92 5:22-5:30 P.M. E.D.T.
 RAPID SKETCH BECAUSE OF APPROACHING
 SEEING $\frac{8}{10}$. CLOUD BANK.
 TRANSPARENCY (IN BETWEEN BROKEN
 CLOUD) $\frac{5}{10}$.



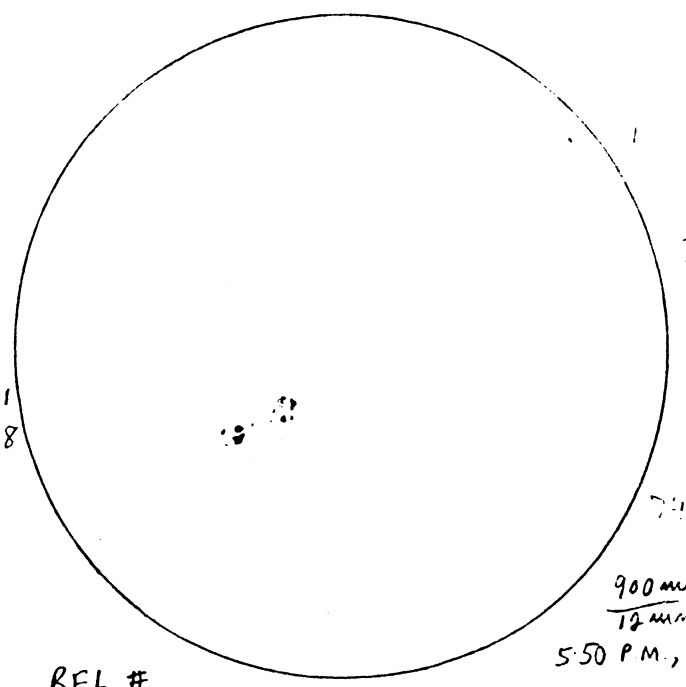
AUG. 19 5:25-5:40 E.D.T.
 CUM. CLOUDS IN 80% CLEAR SKY.
 SEEING $\frac{9}{10}$, STEADY IMAGE.
 TRANSP. $\frac{8}{10}$, GRAIN (NOT?) DETECTED.



79, 71

5:35 P.M.

RAPID SPOT COUNT; TELESCOPE JIGGLED IN BREEZE.
 $[(10 \times 2) + 19] = 39$; SEEING $\frac{7}{10}$, $\frac{900\text{mm}}{12\text{mm}}$.



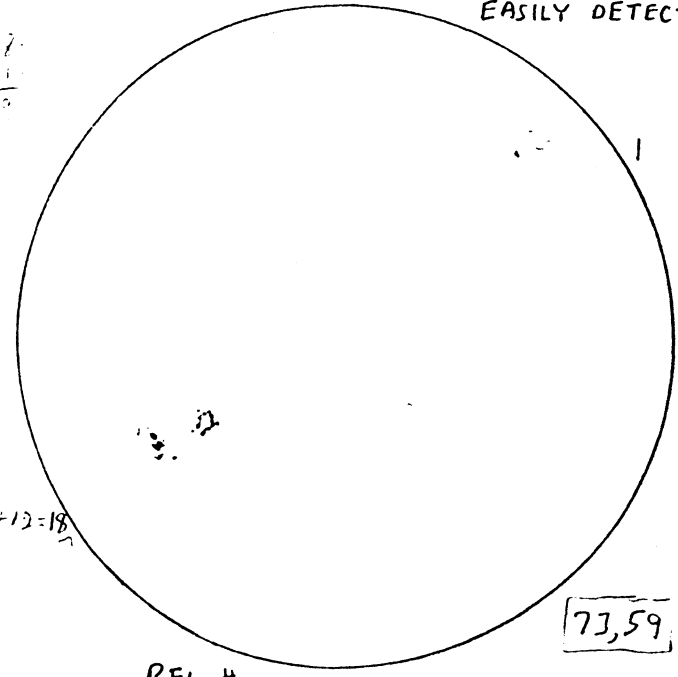
$\frac{900\text{mm}}{12\text{mm}}$

5:50 P.M.

REL. # OF SUNSPOTS $[(10 \times 3) + 20] = 50$, SEEING $\frac{7}{10}$.

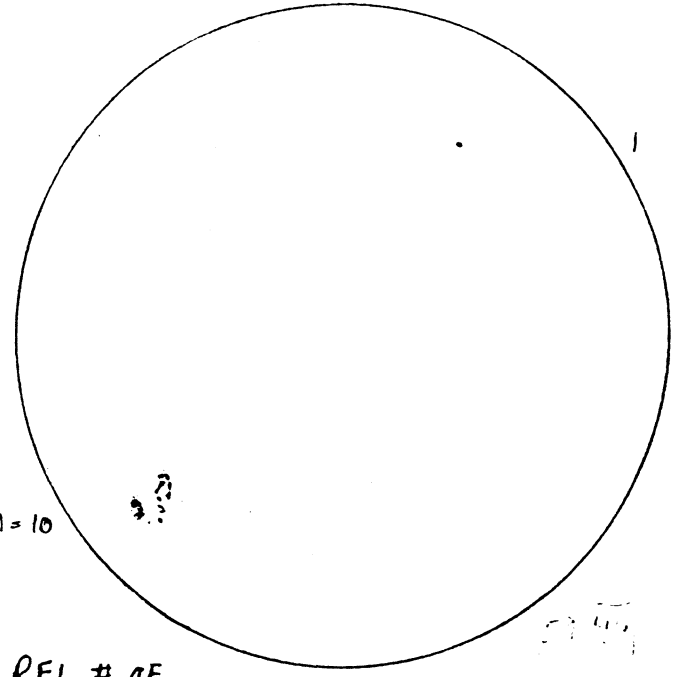
AUG. 20 5:15-5:30 P.M. E.D.T.
 SKIES CLEAR. SEEING $\frac{7}{10}$, RIPPLES
 TRANSP. $\frac{8}{10}$, FACULAE
 EASILY DETECTED.

AUG. 21 6:31-6:49 P.M. E.D.T.
 SUN MOVING INTO EVENING HAZE IN
 SEEING $\frac{9}{10}$, STEADY! CLEAR SKY.
 TRANSPARENCY $\frac{8}{10}$.



REL. # OF SPOTS $[(10 \times 2) + 19] = 39$
 5:40 P.M., SEEING $\frac{7}{10}$, $\frac{900\text{mm}}{12\text{mm}}$

6
 'PENUMBRAL PATCHES
 CONNECTS BOTH GROUPS (75X)



REL. # OF SUNSPOTS $[(10 \times 2) + 11] = 31$
 6:52 P.M., SEEING $\frac{7}{10}$, $\frac{900\text{mm}}{12\text{mm}}$

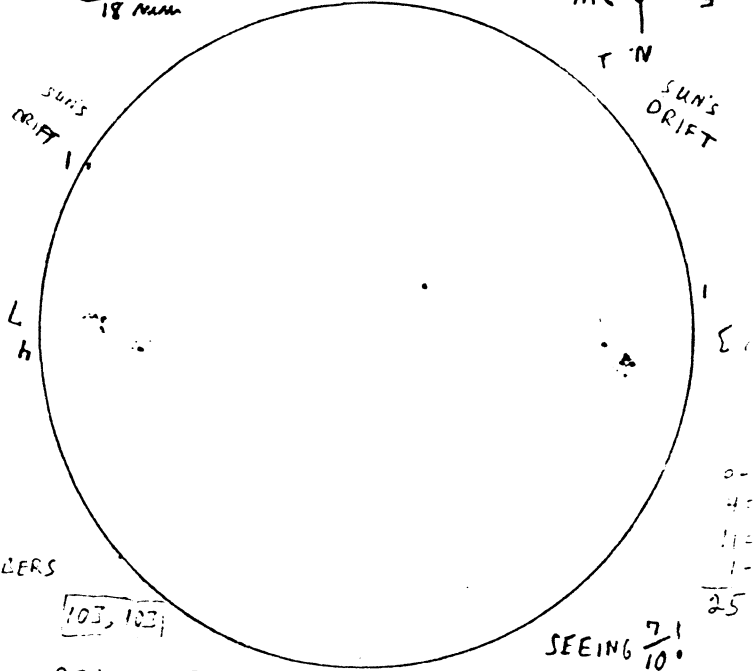
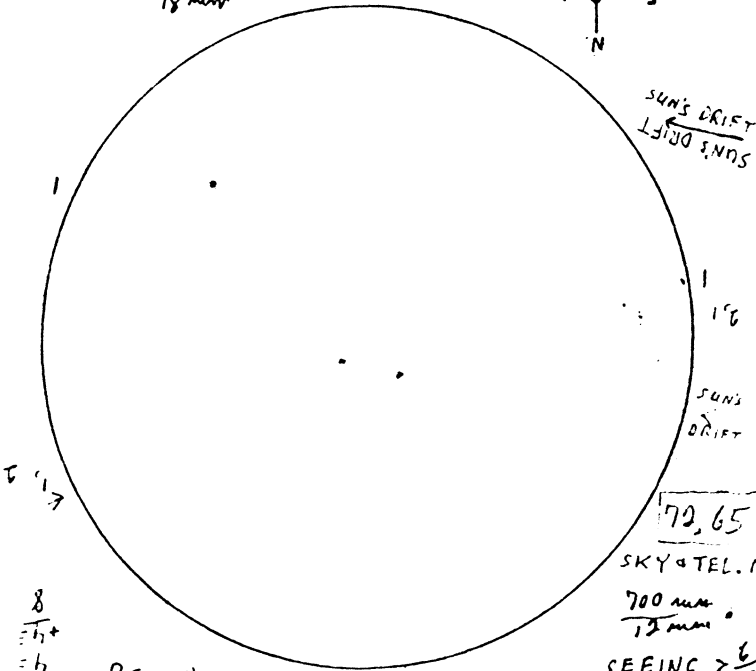
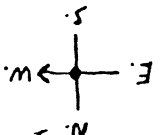
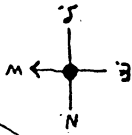
OBSERVED VENUS 8/21, 7:10 P.M.

AUG. 1/92 2:05-2:25 E.D.T.
 SKY CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$.

AUG. 4 6:55-7:20 P.M. E.D.T.
 BROKEN CLOUD BANK IN CLEAR SKY.
 SEEING $>\frac{7}{10}$, TRANSP. $\frac{7}{10}$.

700mm f 11.6
 18mm

700mm f 11.6
 18mm

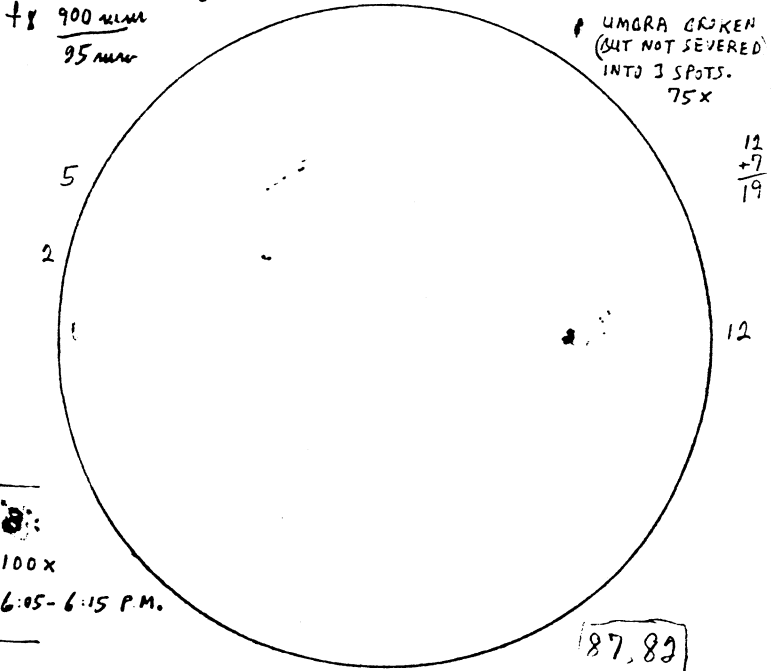
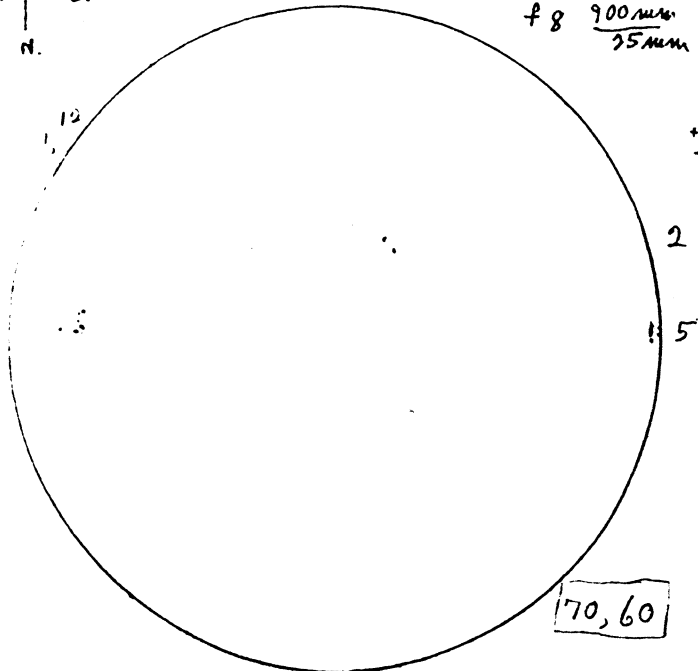
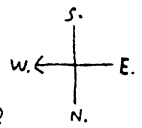
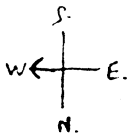


REL. # OF SUNSPOTS $[(10 \times 6) + 8] = 68$; 2:30 P.M.,
 SEEING $>\frac{6}{10}$

REL. # OF SUNSPOTS $[(10 \times 6) + 25] = 85$; 7:20 P.M.,
 SEEING $\frac{7}{10}$

AUG. 11 6:40-6:45 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $>\frac{8}{10}$, STEADY IMAGE.
 TRANSPARENCY $\frac{9}{10}$, GRAIN GLIMPSED.

AUG. 14 5:30-5:50 P.M. E.D.T.
 SKY CLEAR! IN SUN'S AREA.
 SEEING $\frac{9}{10}$, STEADY IMAGE.
 TRANSP. $>\frac{8}{10}$, GRAIN DETECTED?



REL. # OF SUNSPOTS $[(10 \times 4) + 20] = 60$
 6:50 P.M., SEEING $>\frac{7}{10}$, $\frac{900 \text{ mm}}{12 \text{ mm}}$

REL. # OF SPOTS $[(10 \times 3) + 19] = 49$
 6:00 P.M., SEEING $\frac{7}{10}$, $\frac{900 \text{ mm}}{12 \text{ mm}}$

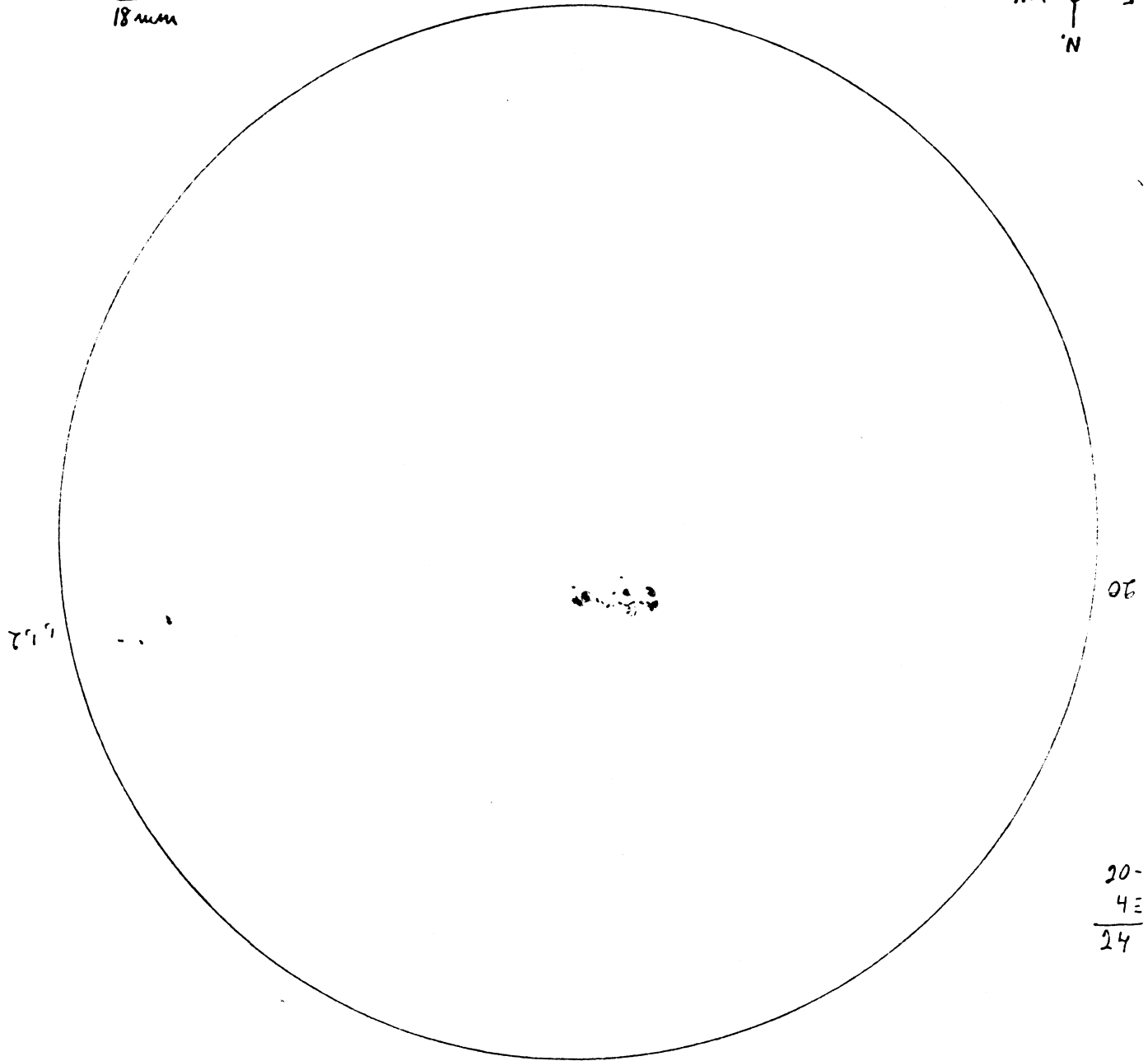
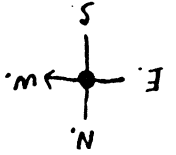
JULY 4/92 1:15-1:30 P.M. E.D.T.

LARGE CUM. CLOUDS IN BLUE SKY.

SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{9}{10}$.

$\frac{700 \text{ mm}}{18 \text{ mm}}$

f 11.5



20-
4=
16

RELATIVE # OF SUNSPOTS $[(10 \times 4) + 27] = 64$

$\frac{700 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{7}{10}$, 1:35 P.M.

(65)

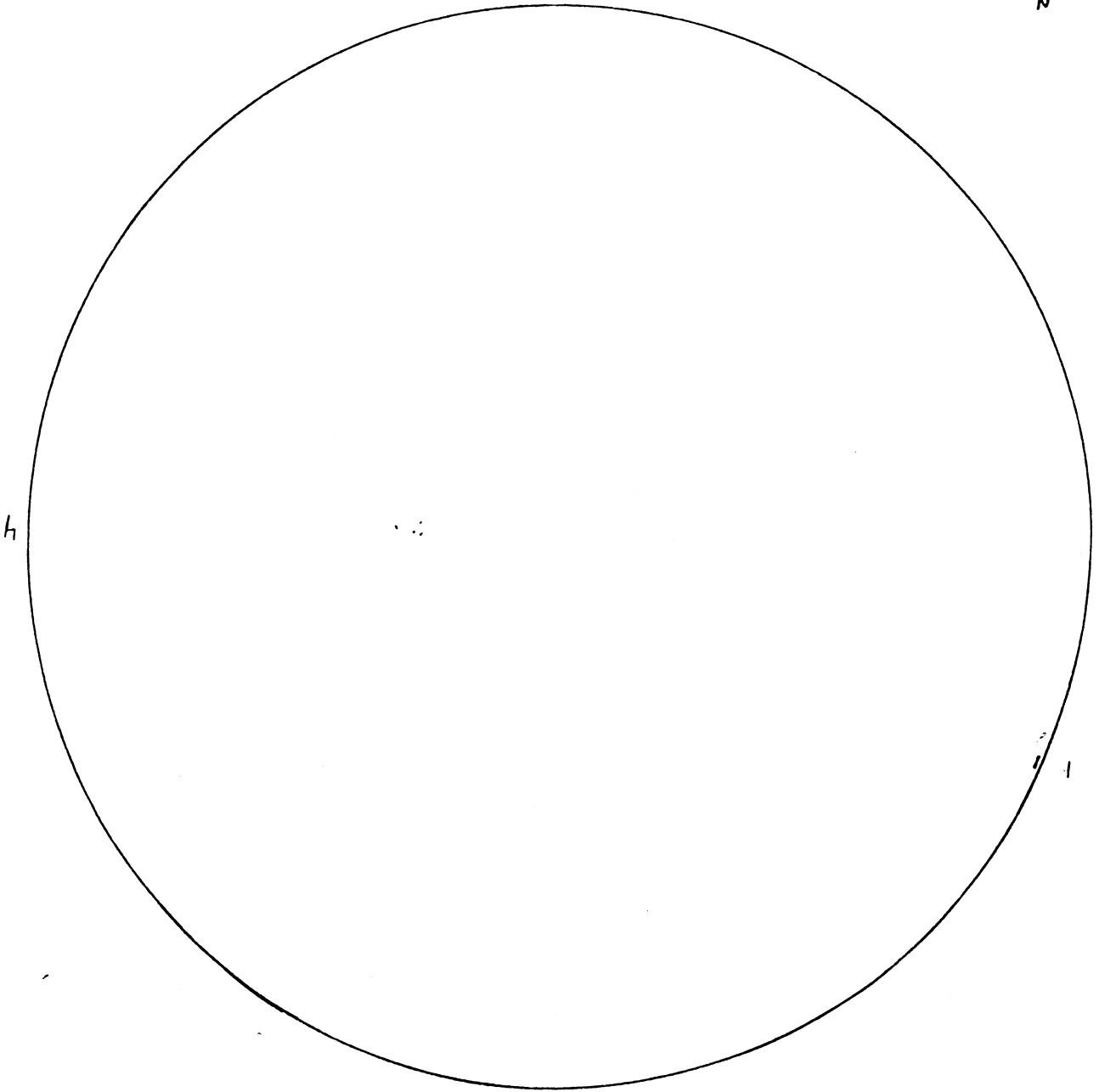
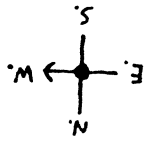
(123)

JUNE 28/92 1:40-1:50 P.M. E.D.T.

ISOLATED CUM. CLOUDS IN BLUE SKY.

SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{9}{10}$.

+ 11.5 $\frac{700 \text{ mm}}{18 \text{ mm}}$



1-
4-
5

RELATIVE # OF SUNSPOTS $[(10 \times 2) + 5] = 25$

SEEING $\frac{5}{10}$, $\frac{700 \text{ mm}}{12 \text{ mm}}$, 1:52 E.D.T.

AURORAL GLOW, WITH RAYS.
6/28 11:30 P.M. E.D.T.

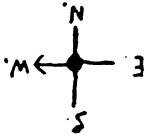
(64)

(123)

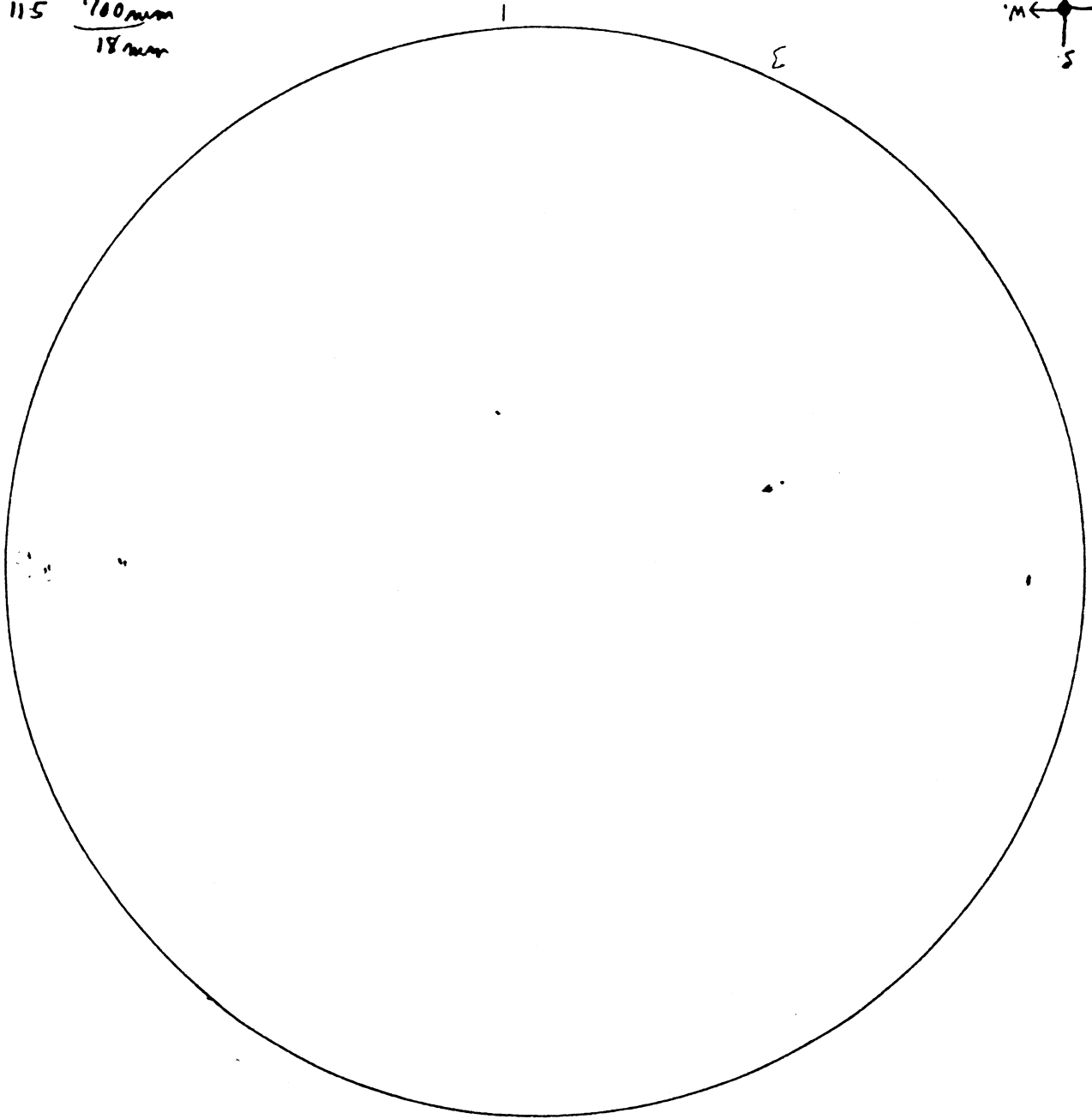
JUNE 13/92 1:30-1:45 PM E.D.T.

CLEAR HAZY-BLUE SKY IN SUN'S AREA.

SEEING $\frac{9}{10}$, TRANSPARENCY $\frac{9}{10}$.



f 115 $\frac{700mm}{18mm}$



Σ
1
Σ
1
Σ
4

OBSERVATORY
WORK PARTY.

REL # OF SUNSPOTS $[(10 \times 5) + 12] = 62$

$\frac{700mm}{12mm}$, 1:45 P.M., SEEING $\frac{6}{10}$.

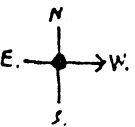
(62)

(123)

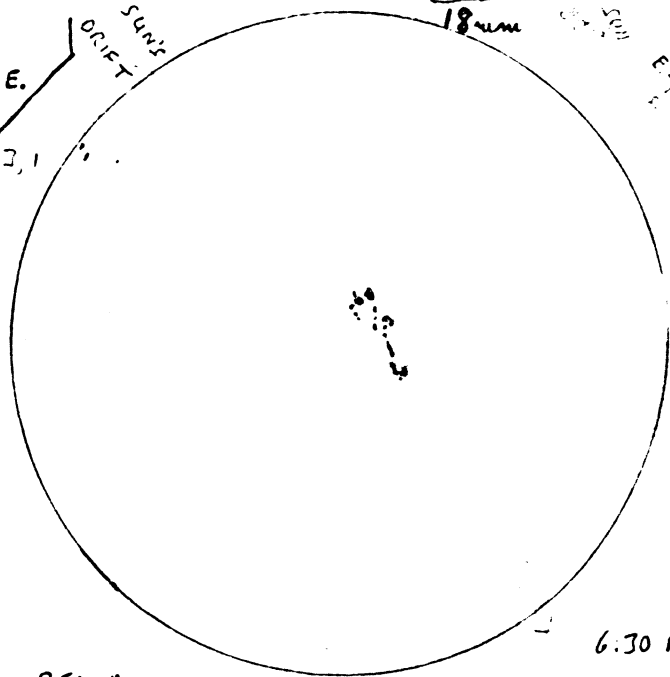
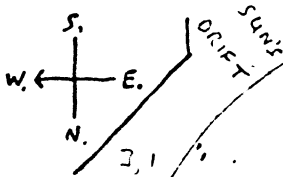
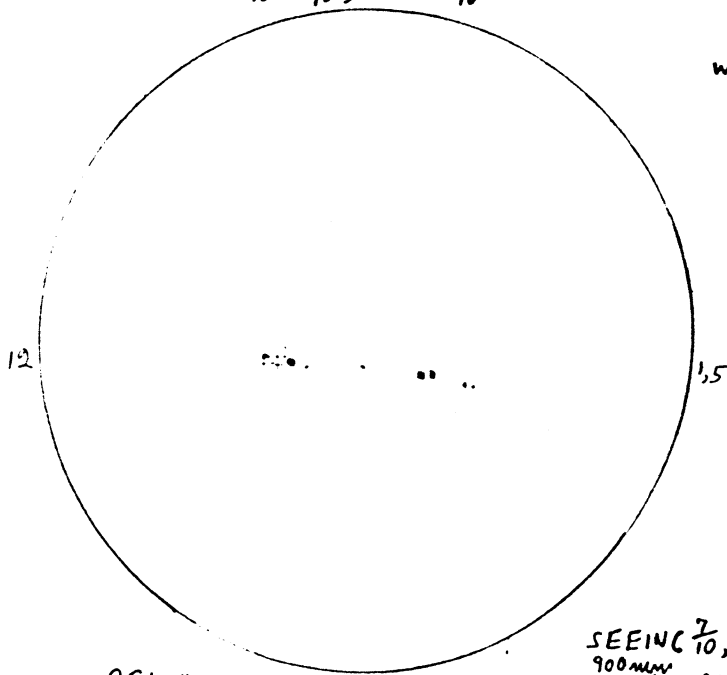
* JUNE 8/92 4:35-4:45 P.M. E.D.T.
 DEVIL'S PUNCH BOWL, STONEY CREEK.
 LIGHT CIRRUS CLOUDS PASSING IN FRONT
 OF SUN.
 SEEING $\frac{9}{10} \leftrightarrow \frac{7}{10}$, TRANSP. $\frac{5}{10}$.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

JULY 5 6:20-6:30 E.D.T.
 SKY CLEAR! IN SUN'S AREA
 SEEING $\frac{8}{10}$, TRANSP. $\frac{9}{10}$
 FAST DRAWING.



f 11.6 $\frac{700 \text{ mm}}{18 \text{ mm}}$



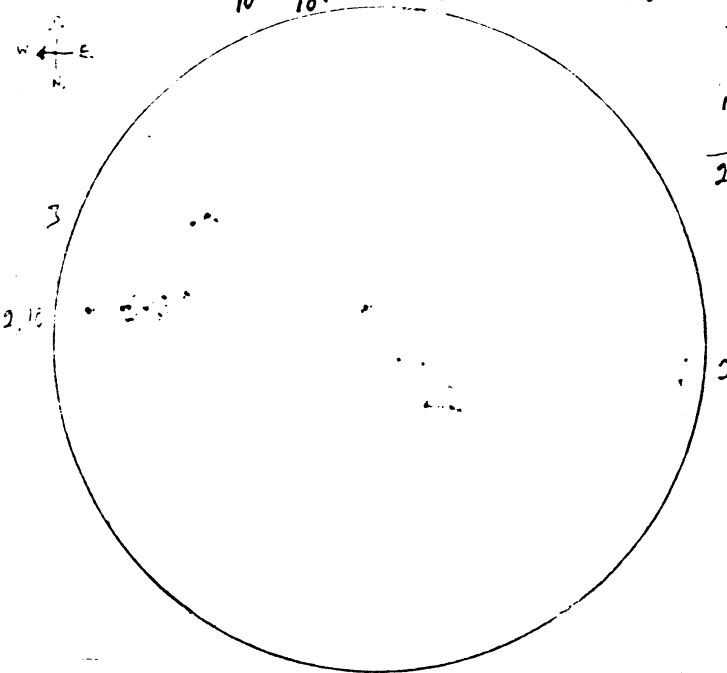
6:30 P.M.!

REL. # OF SUNSPOTS $[(10 \times 3) + 18] = 48$. 4:55 P.M.
 SEEING $\frac{7}{10}$,
 $\frac{900 \text{ mm}}{12 \text{ mm}}$ OPTIMO.

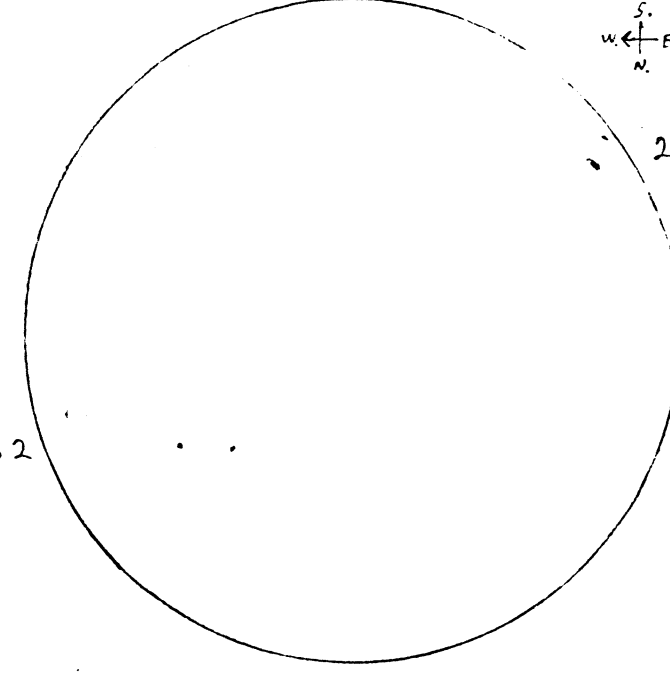
REL. # OF SUNSPOTS $[(10 \times 3) + 24] = 54$. SEEING $\frac{7}{10}$,
 $\frac{700 \text{ mm}}{12 \text{ mm}}$

JULY 15 8:10-8:28 P.M. E.D.T.
 SKY TOTALLY CLEAR AFTER DAYTIME
 TRANSPARENCY $\frac{9}{10}$. CLOUDINESS, RAIN.
 SEEING $\frac{9}{10} \rightarrow \frac{6}{10}$, EVENING TURBULENCE.

JULY 24 6:15-6:30 P.M. E.D.T.
 SKY CLEAR IN SUN'S AREA. (AFTER DAYTIME
 CLOUDCOVER.)
 SEEING $\frac{7}{10}$; TRANSP. $\frac{8}{10}$.



2-
6=
1-
12=
3-
24



2
2
1
5

REL # OF SUNSPOTS $[(10 \times 7) + 24] = 94$ or $[(10 \times 7) + 24 \times 2] = 118$
 (POOR EVENING SEEING.)
 $\frac{900 \text{ mm}}{19 \text{ mm}}$, 8:30 P.M., SEEING $\frac{4}{10}$.

REL. # OF SUNSPOTS $[(10 \times 3) + 5] = 35$
 SEEING $> \frac{6}{10}$, 6:35 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$

* JUNE 8, SUN FITTED SNUGLY ; MOON, AT PERIGEE
 INSIDE 19 mm KELNER. OVERLAPS EDGES.

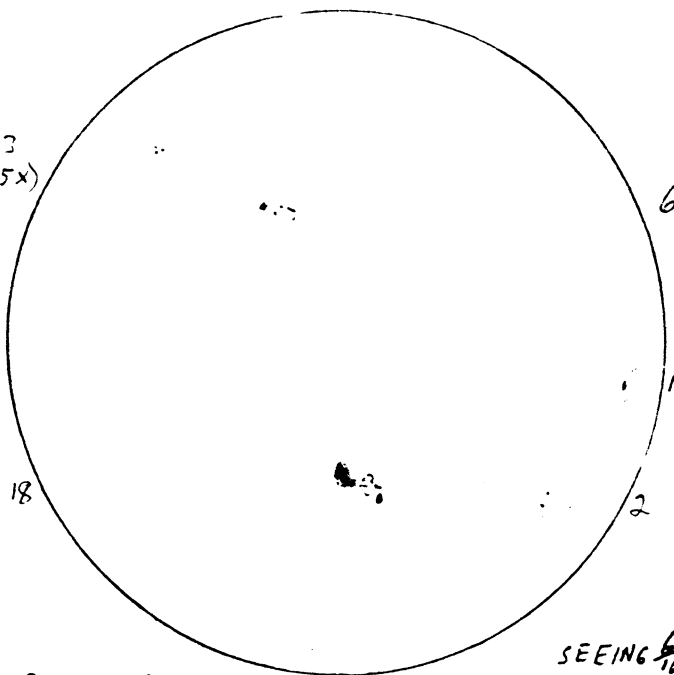
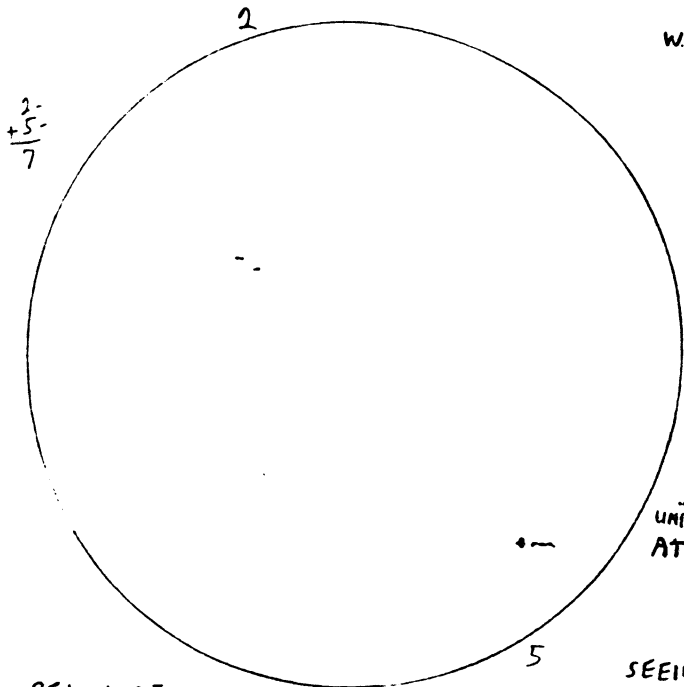
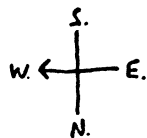
JUNE, JULY; CAR TROUBLE,
 EXCESSIVE CLOUD & RAIN.

MAY 18/92 3:40-3:50 P.M. E.D.T.
 CIRRUS CLOUD IN SUN'S AREA.
 SEEING $\frac{7}{10} \rightarrow \frac{6}{10}$; TRANSP. $\frac{7}{10}$.

f8 $\frac{900\text{mm}}{25\text{mm}}$

MAY 21 4:05-4:25 P.M. E.D.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{9}{10}$, TRANSP. $\frac{9}{10}$.

6-
3=
18-
3-
30



UNRESOLVED
AT 75x

REL. # OF
 SUNSPOTS $[(10 \times 2) + 7] = 27$, 3:55 P.M., $\frac{900\text{mm}}{12\text{mm}}$

SEEING $\frac{4}{10}$.

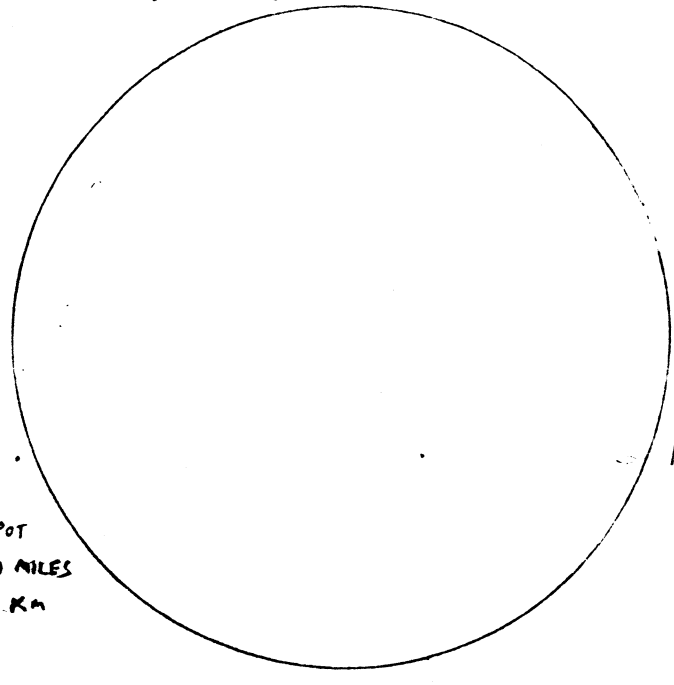
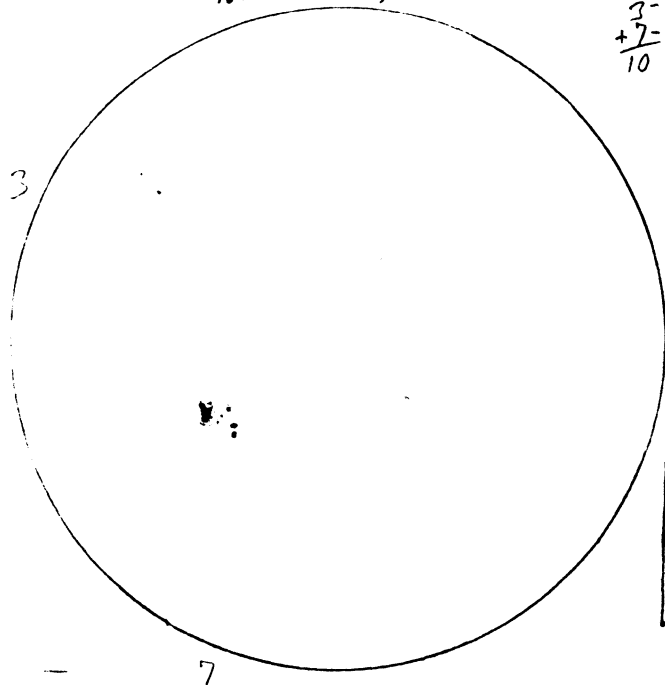
REL. # OF
 SUNSPOTS $[(10 \times 5) + 20] = 80$; 4:35 P.M., $\frac{900\text{mm}}{12\text{mm}}$

SEEING $\frac{6}{10}$

MAY 24 5:45-5:55 P.M. E.D.T.
 SKY CIFAR-BLUE IN SUN'S AREA.
 SEEING $\frac{6}{10}$, RIPPLES; TRANSP. $\frac{9}{10}$

MAY 29 4:10-4:20 P.M. E.D.T.
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $\frac{6}{10}$, RIPPLES; TRANSP. $\frac{8}{10}$.

3-
+7-
10



ESTIMATED
 WIDTH OF SPOT
 = 3" = 8440 MILES
 = 2320 KM

REL. #
 OF SUNSPOTS $[(10 \times 2) + 10] = 30$
 6:00 P.M., $\frac{900\text{mm}}{12\text{mm}}$, SEEING $\frac{6}{10}$!

REL. # OF SUNSPOTS $[(10 \times 1) + 1] = 11$
 4:15 P.M.!, $\frac{900\text{mm}}{25, 18, 12\text{mm}}$.

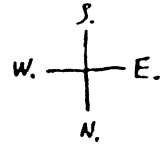
122

QUIET SUN ~ SPRING '87 (# 9, 10, 12)

MAY 7 5:30 - 5:55 P.M. E.D.T.

f 8 $\frac{900\text{mm}}{9\text{mm}}$

SKIES TOTALLY CLEAR, SUN MOVING INTO
AFTERNOON HAZE.



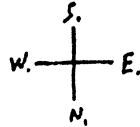
SEEING $\frac{8}{10}$, STEADY IMAGE;
TRANSPARENCY $\frac{4}{10}$, HAZY IMAGE BECAUSE OF
HIGH MAGNIFICATION.

13

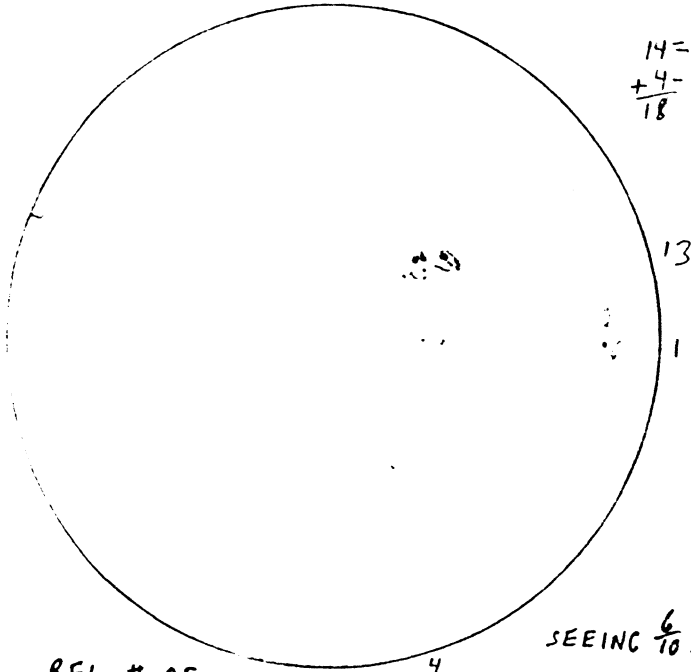
• ← SPOT BECAME APPARENT 5:55 P.M.
WITH 100X MAGNIFICATION
DIAMETER OF SUN WOULD
EQUAL 50 km.

MAY 7/92 5:00 - 5:15 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, STEADY IMAGE, TINY RIPPLES
 TRANSP. $\frac{9}{10}$, GRAIN GLIMPSED.

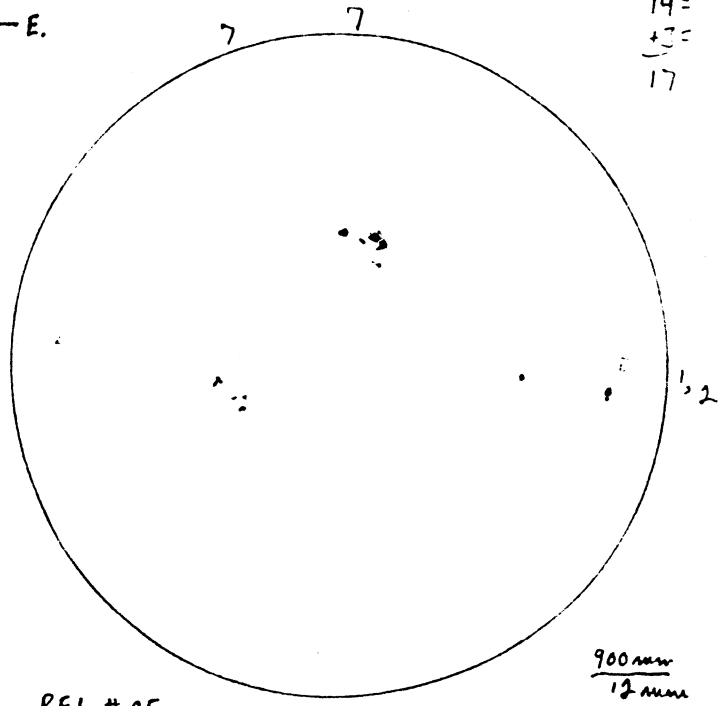
f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



MAY 9 1:20 - 1:30 P.M. E.D.T.
 FAST MOVING, WISPY CLOUDS IN SUN'S AREA
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$.



14 =
 +4 =
 18

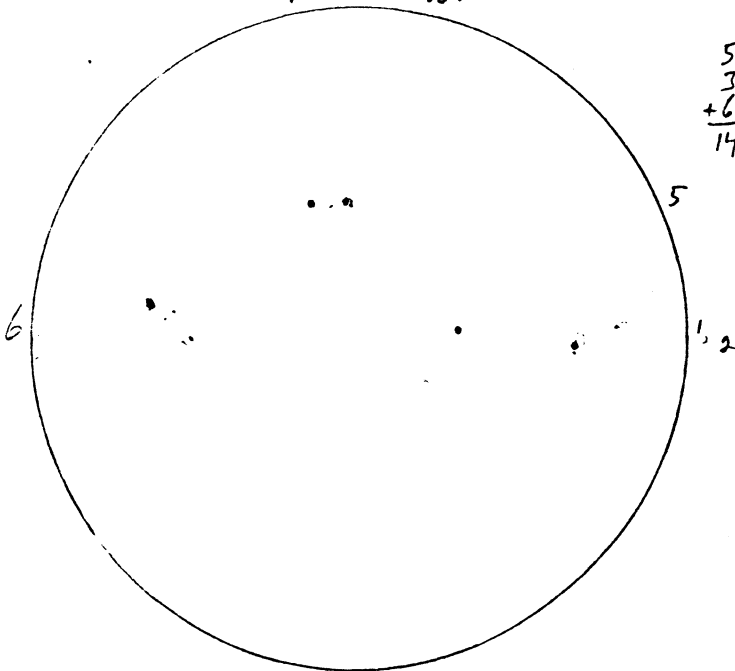


14 =
 +3 =
 17

REL. # OF SUNSPOTS $[(10 \times 3) + 18] = 48$; 5:20 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{6}{10}$.

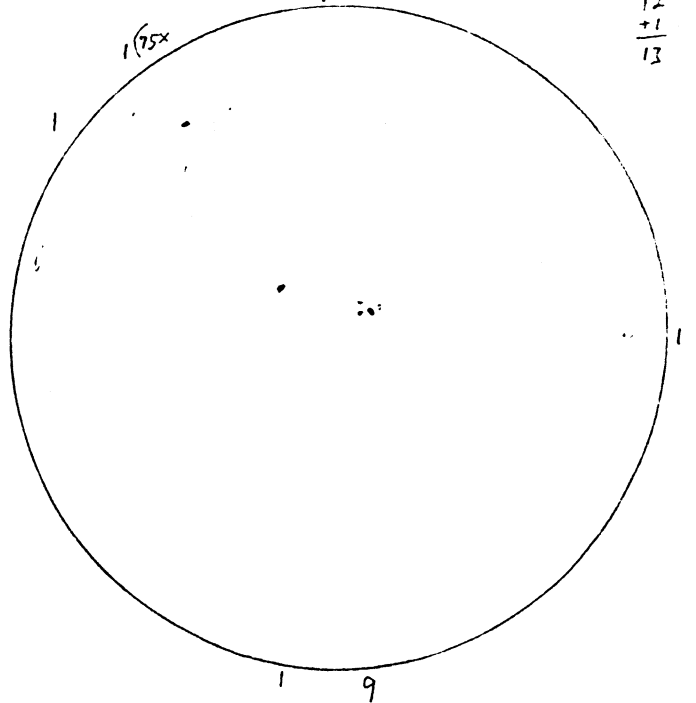
REL. # OF SUNSPOTS $[(10 \times 4) + 17] = 57$ 1:35 P.M., SEEING $\frac{5}{10}$, $\frac{900 \text{ mm}}{12 \text{ mm}}$

MAY 10 2:20 - 2:35 P.M. E.D.T.
 SKIES TOTALLY CLEAR
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$, FACULAE GLIMPSED.



5 =
 3 =
 +6 =
 14

MAY 13 3:55 - 4:05 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, RIPPLES; TRANSP. $\frac{9}{10}$.



10 =
 +2 =
 12
 +1
 13

REL. # OF SUNSPOTS $[(4 \times 10) + 14] = 54$

2:40 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{5}{10}$

REL. # OF SUNSPOTS $[(10 \times 4) + 13] = 53$

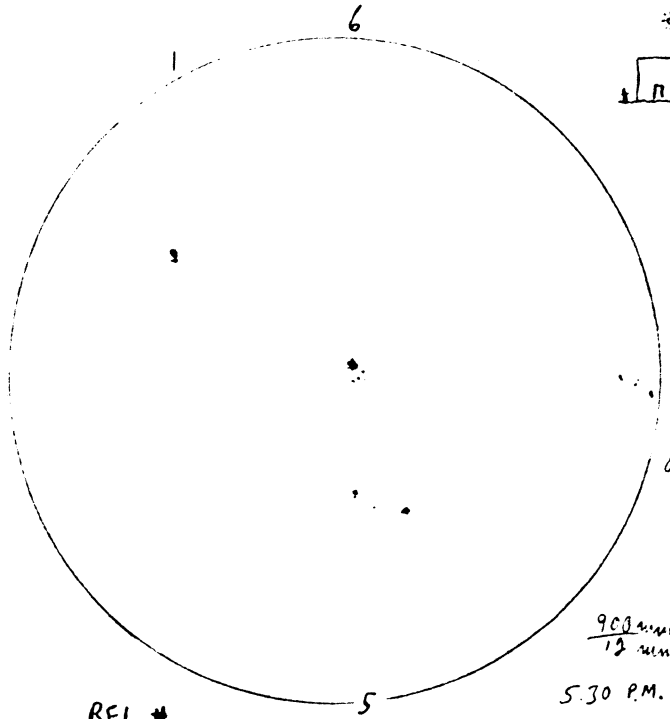
4:12 P.M., $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{6}{10}$

121

APRIL 14/91 5:00-5:08 P.M. E.D.T.
 LIGHT CIRRUS CLOUD BANDS IN BLUE SKY,
 SEEING $\frac{6}{10}$, SMALL RIPPLES; (SUN OBSERVED
 TRANSP. $\frac{7}{10}$, GRAIN GLIMPSED. OVER ARENA ROOF).

f8 $\frac{900mm}{25mm}$

APRIL 28 4:10-4:25 P.M. E.D.T.
 SKY CLEAR BLUE IN SUN'S AREA.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{8}{10}$.

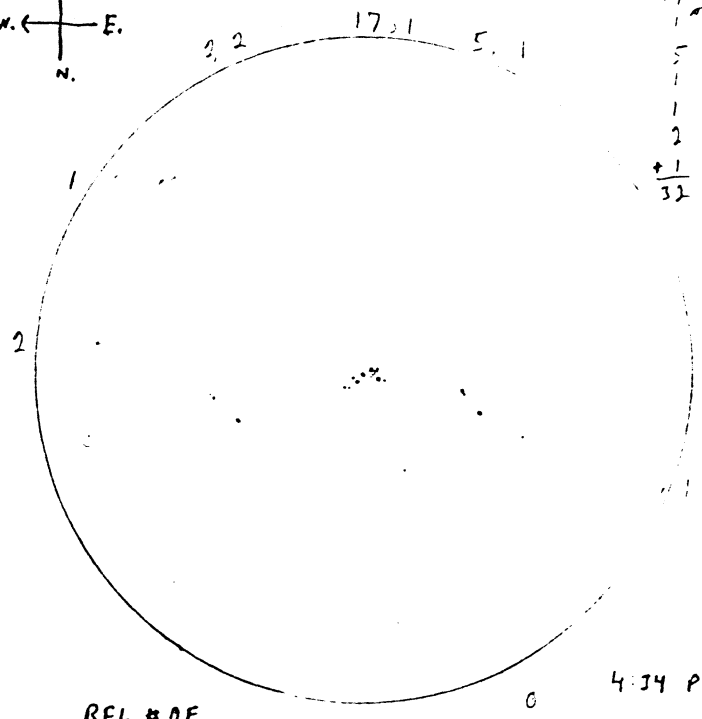


7-
7-
5-
19

$\frac{900mm}{13mm}$

5:30 P.M.

REL. # OF SUNSPOTS $[(10 \times 5) + 19] = 69$; SEEING $\frac{4}{10}$



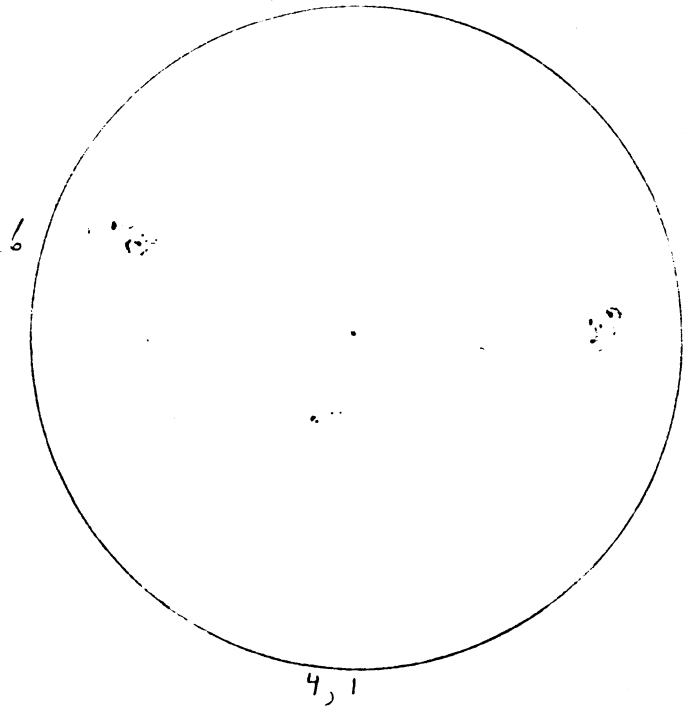
2 2
2 2
17 17
1 1
5 5
1 1
1 1
2 2
+1
32

4:34 P.M.

REL. # OF SUNSPOTS $[(10 \times 9) + 33] = 122$ SEEING $\frac{6}{10}$, $\frac{700mm}{13mm}$
 OR $[(10 \times 4) + 33] = 72$

MAY 4 12:35-12:50 P.M. E.D.T.
 SKY BLUE-CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$; TRANSP. $\frac{7}{10}$, FACULAE VERY EVIDENT.

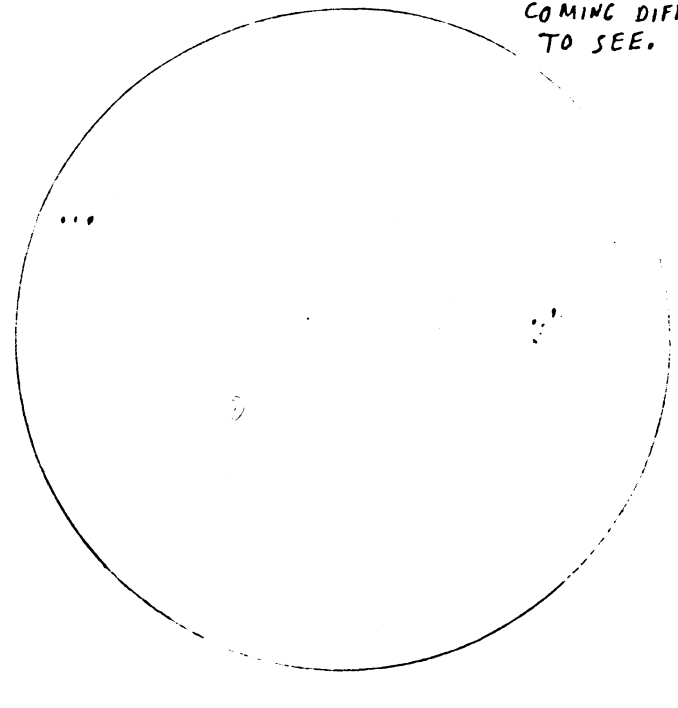
MAY 5 1:20-1:30 P.M. E.D.T.
 CIRRUS CLOUD IN SUN'S AREA.
 SEEING $\frac{7}{10}$; TRANSP. $\frac{4}{10}$, SPOT STRUCTURE BE-
 COMING DIFFICULT TO SEE.



12-
5-
6-
23

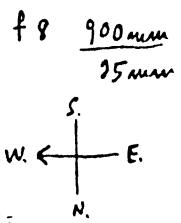
12

REL. # OF SUNSPOTS $[(10 \times 4) + 23] = 63$
 $\frac{900mm}{13mm}$, SEEING $\frac{4}{10}$, 12:55 P.M.

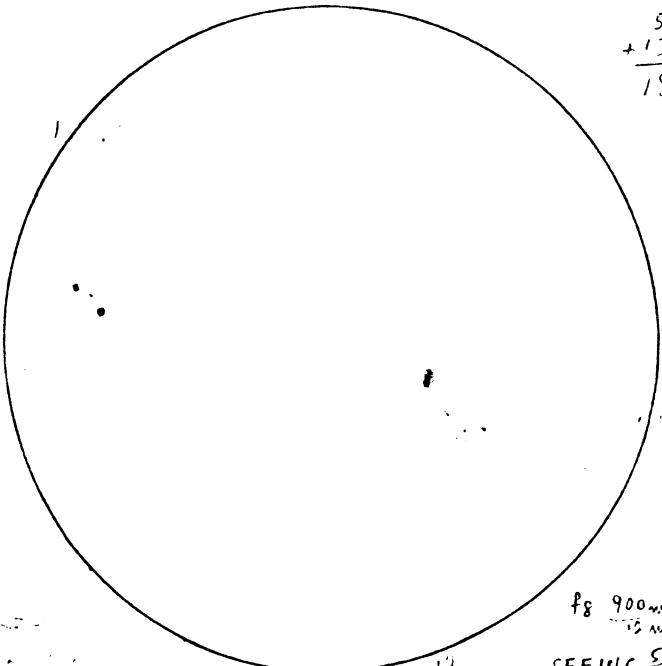


POOR TRANSPARENCY PRECLUDES
 SUNSPOT COUNT.

APRIL 5/92 2:15 - 2:35 P.M. E.D.T.
 SKIES TOTALLY CLEAR
 SEEING $\frac{6}{10}$, RIPPLES; TRANSP. $\frac{8}{10}$.

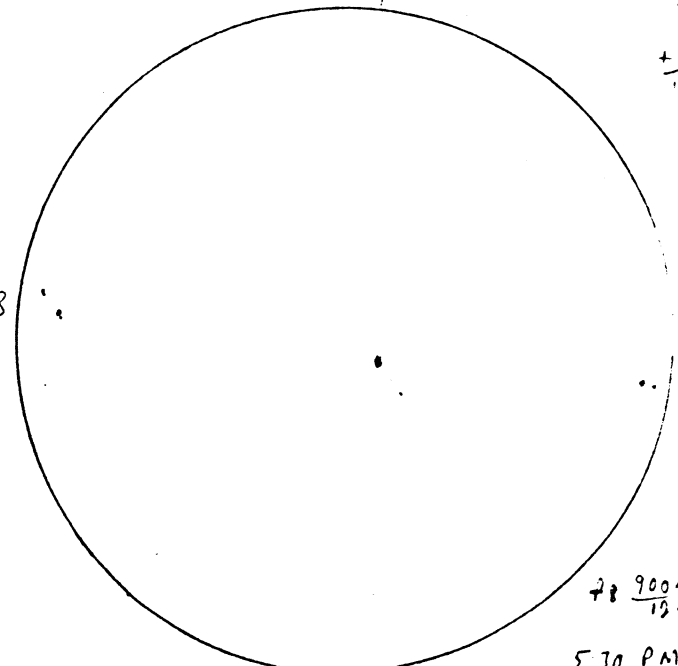


APR. 6 5:15 - 5:22 P.M. E.D.T.
 HAZY CIRRUS IN SUN'S AREA.
 BREEZE JIGGLED TELESCOPE, DEGRADING
 SEEING $\frac{7}{10}$, TRANSP. $\frac{7}{10}$. DETAIL.



$$\begin{array}{r} 5 = \\ + 13 = \\ \hline 18 \end{array}$$

REL. # OF SUNSPOTS $(10 \times 4) + 18 = 58$, 2:40 P.M.

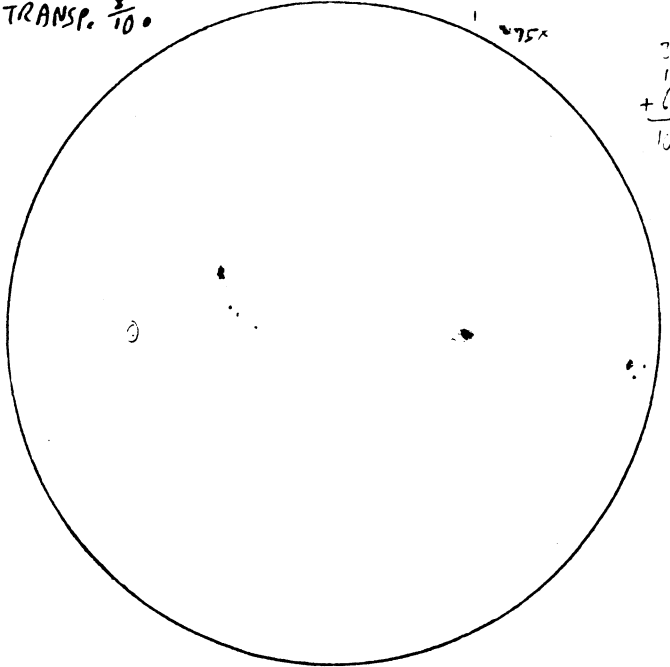


$$\begin{array}{r} 10 = \\ + 32 = \\ \hline 42 \end{array}$$

REL. # OF SUNSPOTS $(10 \times 3) + 12 = 42$ SEEING $\frac{7}{10}$

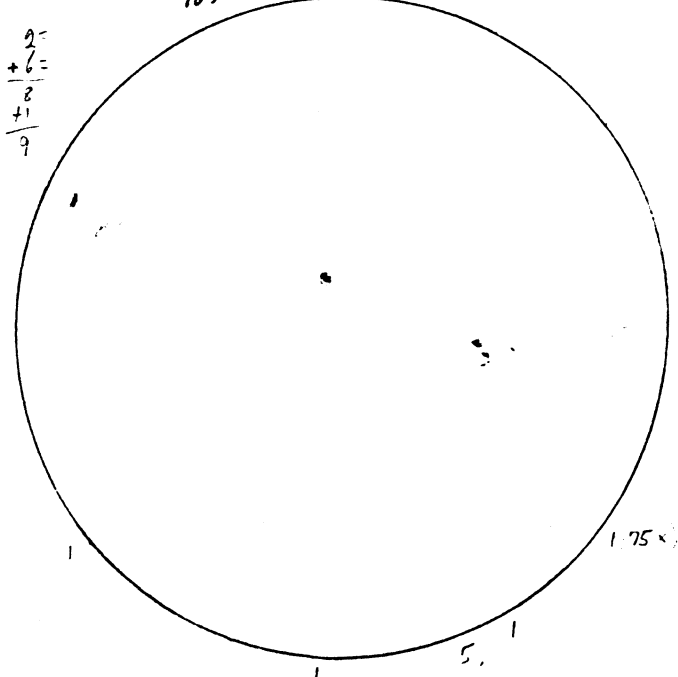
APR. 9 6:10 - 6:25 P.M. E.D.T.
 SKY TOTALLY CLEAR.
 IMAGE DEGRADED BY TELESCOPE JIGGLING
 SEEING $\frac{8}{10}$, GRANULATION DETECTED IN BREEZE.

APR. 12 3:15 - 3:40 P.M. E.D.T.
 LARGE DRIFTING CLOUDS IN BLUE SKY.
 SEEING $\frac{6}{10}$, MANY SMALL RIPPLES.
 TRANSP. $\frac{8}{10}$, GRAINY STRUCTURE EVIDENT.



$$\begin{array}{r} 3 = \\ + 6 = \\ \hline 9 \end{array}$$

REL. # OF SUNSPOTS $(10 \times 3) + 10 = 40$
 $\frac{900mm}{15mm}$, 6:30 P.M., SEEING $\frac{7}{10}$.



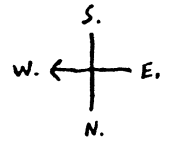
$$\begin{array}{r} 2 = \\ + 6 = \\ \hline 8 \\ + 1 = \\ \hline 9 \end{array}$$

REL. # OF SUNSPOTS $(10 \times 4) + 9 = 49$
 $\frac{900mm}{12mm}$, 3:50 P.M., SEEING $\frac{7}{10}$.

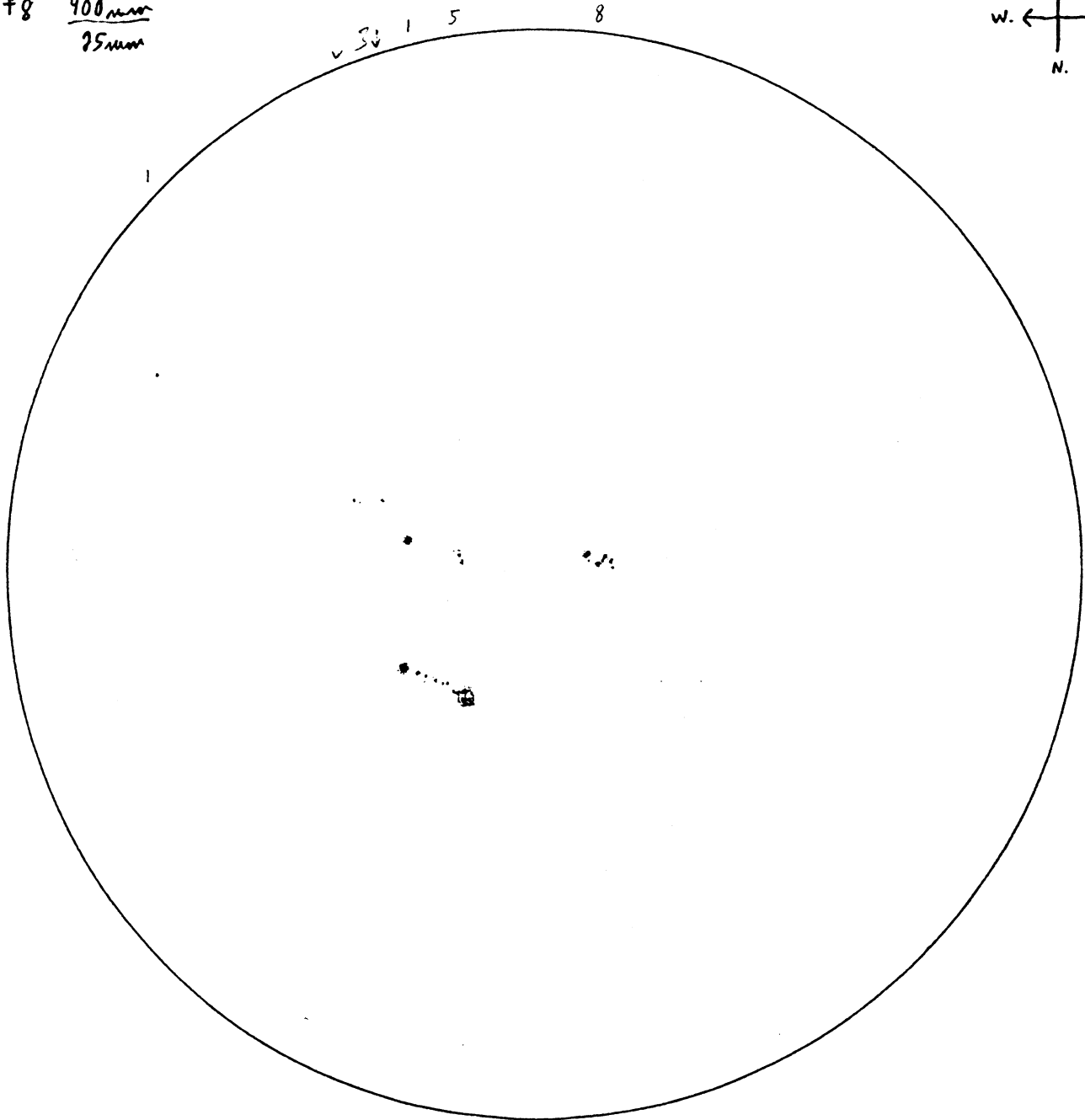
MARCH 29/92 2:05-2:30 P.M. E.S.T.

HAZY CIRRUS CLOUDS IN SUN'S AREA.

SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{7}{10}$.



f8 $\frac{900mm}{25mm}$



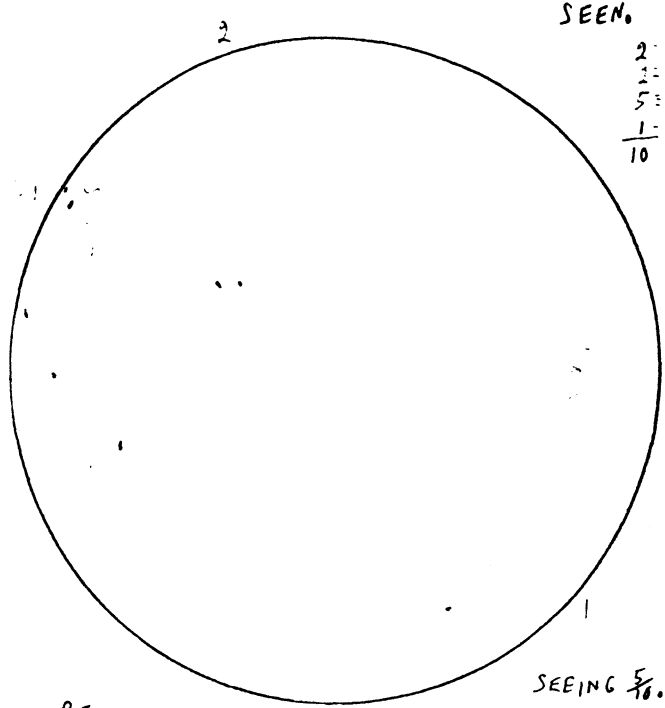
8-
6-
3-
1-
17-
35

RELATIVE # OF SUNSPOTS $[(10 \times 6) + 35] = 95$

f8 $\frac{900mm}{12mm}$, 2:40 P.M., SEEING $\frac{6}{10}$

MAR. 3/92 4:45-5:00 P.M. E.S.T.
 CIRRUS HAZE IN SUN'S AREA
 SEEING $\frac{8}{10}$; TRANSP. $\frac{7}{100}$ FACULAE EASILY SEEN.

f 8 $\frac{900\text{mm}}{25\text{mm}}$

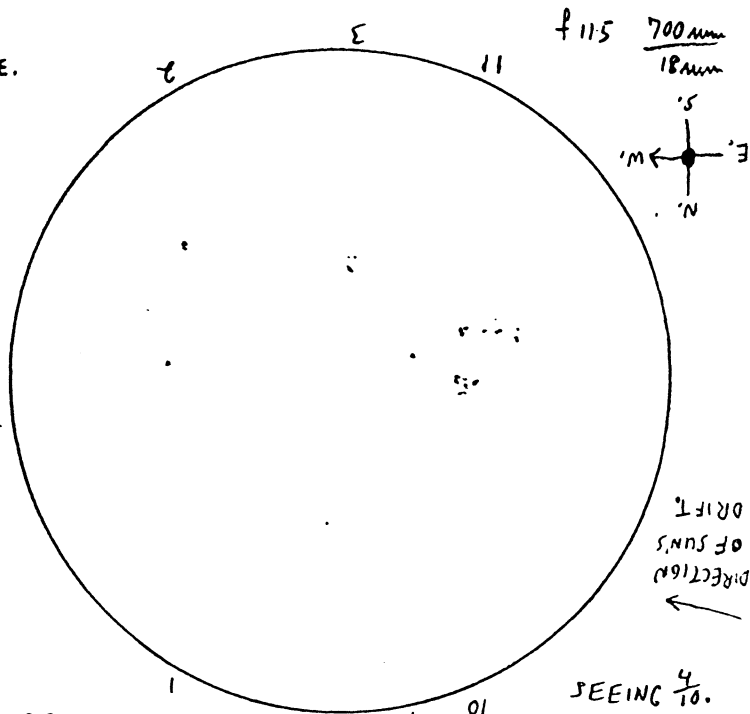


2 =
 1 =
 5 =
 1 =
 10 =

REL. # OF SUNSPOTS $[(10 \times 7) + 10] = 80$ 5:05 P.M. $\frac{900\text{mm}}{12\text{mm}}$

MAR. 14 1:20-1:50 P.M. E.S.T.
 SKIES 10% CLEAR WITH LARGE SLOW-MOVING CUM. CLOUDS.
 SEEING $\frac{6}{10}$, TRANSP. $\frac{4}{10}$.

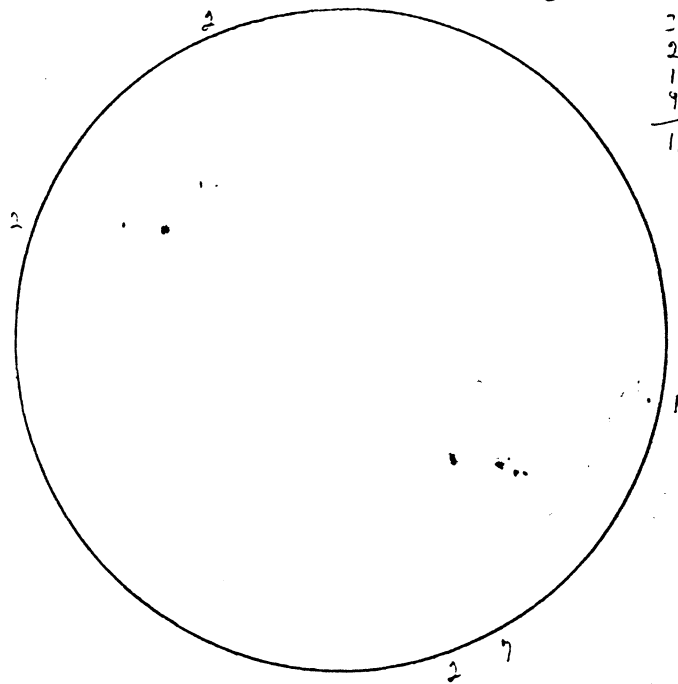
f 11.5 $\frac{700\text{mm}}{18\text{mm}}$



11 =
 5 =
 11 =
 10 =
 3 =

REL. # OF SUNSPOTS $[(10 \times 7) + 32] = 102$ 2:00 P.M. $\frac{700\text{mm}}{12\text{mm}}$

MAR. 19 5:10-5:20 P.M. E.S.T.
 SKY HAZY BLUE IN SUN'S AREA.
 SEEING $\frac{5}{10}$, RIPPLES; TRANSP. $\frac{6}{10}$.
 MAIN ST. + PARKDALE AVE.



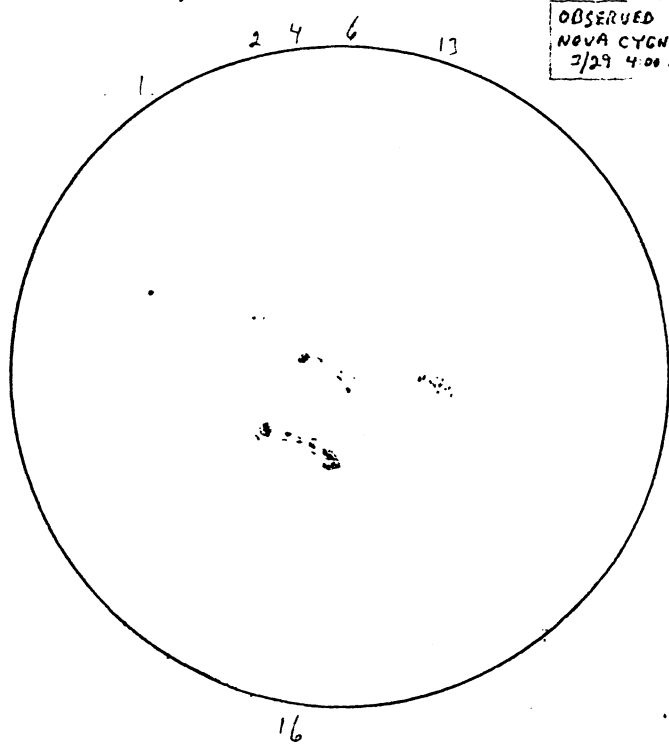
2 =
 2 =
 1 =
 9 =
 16 =

REL. # OF SUNSPOTS $[(10 \times 6) + 16] = 76$

SEEING $\frac{5}{10}$; 5:25 P.M. $\frac{900\text{mm}}{12\text{mm}}$

MAR. 28 5:25-5:35 P.M. E.S.T. L.V.P. OBSERVATORY LAWN.
 SKY TOTALLY CLEAR.
 SEEING $\frac{5}{10}$; TRANSP. $\frac{8}{10}$.

OBSERVED NOVA CYGNI, 1992
 2/29 4:00 A.M.



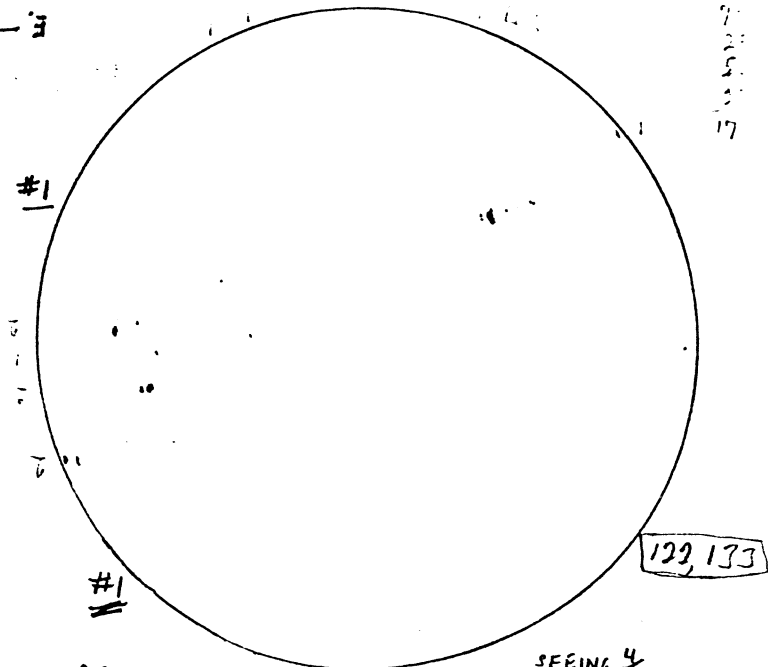
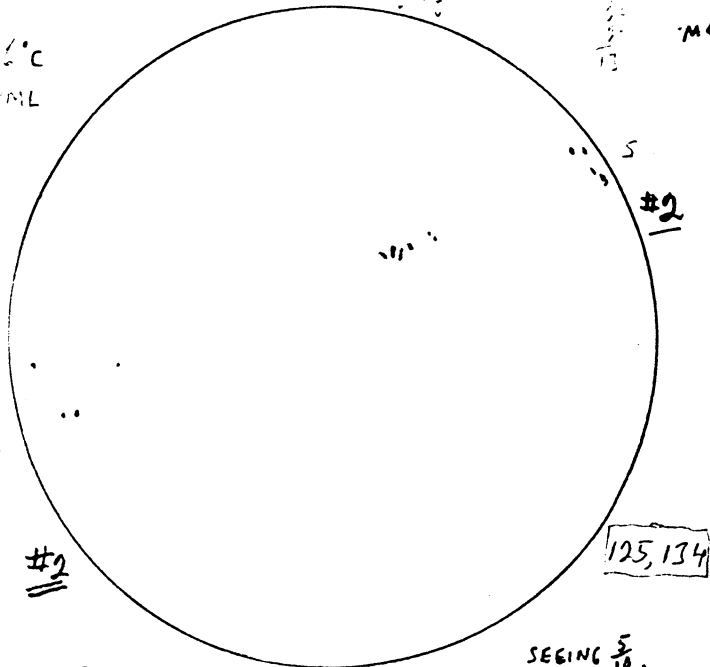
REL. # OF SUNSPOTS $[(10 \times 6) + 42] = 102$

SEEING $\frac{6}{10}$; 5:45 P.M. $\frac{900\text{mm}}{18\text{mm}}$

DEC. 19 11:50-12:00 N. E.S.T.
 SKIES TOTALLY CLEAR
 SEEING $\frac{7}{10}$, TRANSP. $\frac{7}{10}$

$\frac{700\text{mm}}{18\text{mm}} + 11.6$

DEC. 18/98 11:50-12:10 P.M. EST
 SKY HAZY BLUE
 SEEING $\frac{7}{10}$, TRANSP. $\frac{6}{10}$.
 FAST DRAWING, FAST COUNT.

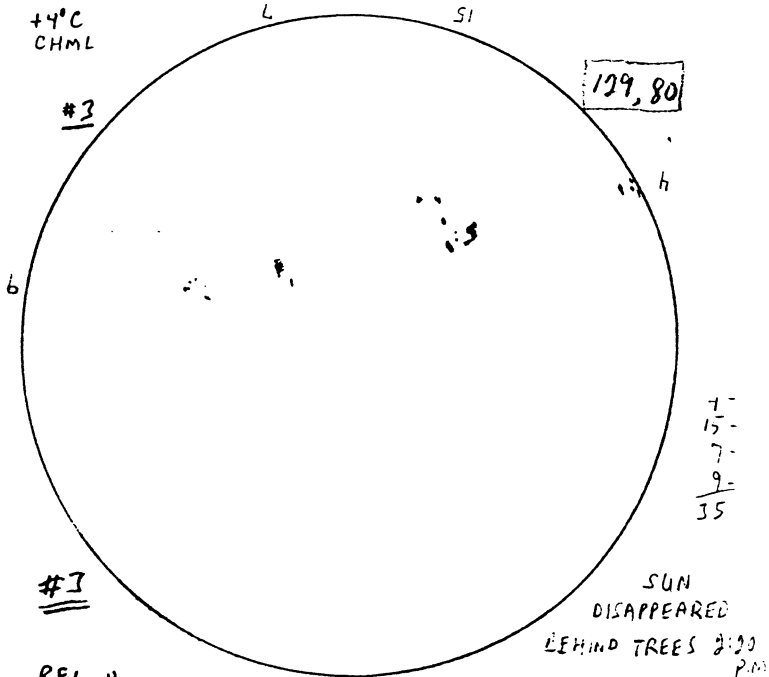
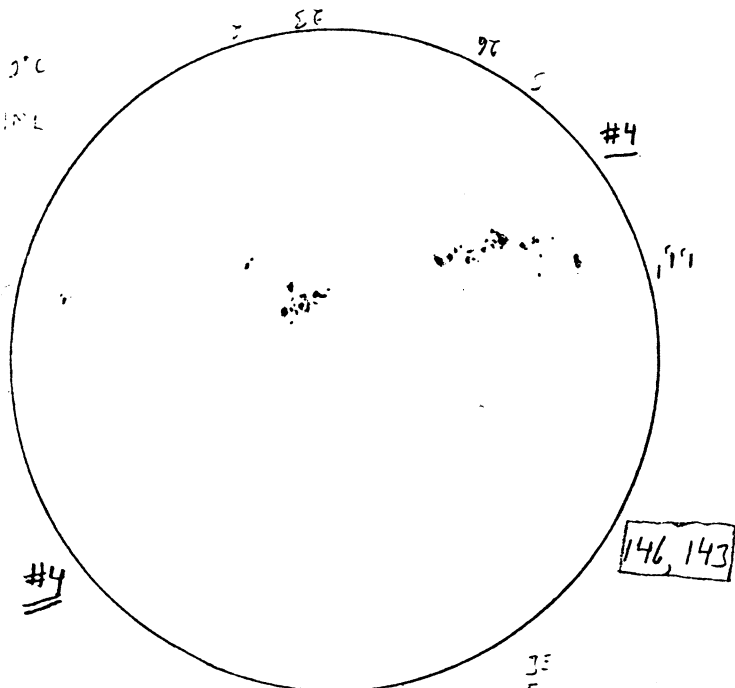


REL. # OF SUNSPOTS $[(10 \times 6) + 13] = 73$ 12:05 P.M., $\frac{700\text{mm}}{19\text{mm}}$, SEEING $\frac{5}{10}$,

REL. # OF SUNSPOTS $[(10 \times 8) + 17] = 97$ 12:10 P.M., $\frac{700\text{mm}}{19\text{mm}}$, SEEING $\frac{4}{10}$,

DEC. 25 1:05-1:25 P.M. E.S.T.
 SKY TOTALLY CLEAR, VERY LIGHT BREEZE.
 SEEING $\frac{6}{10}$ to $\frac{8}{10}$, TRANSPARENCY $\frac{9}{10}$.

DEC. 22 1:10-1:25 P.M. E.S.T.
 SKIES TOTALLY CLEAR.
 OBSERVATORY TREE-TOPS SWAY IN BREEZE.
 SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{7}{10}$.



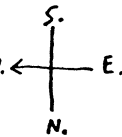
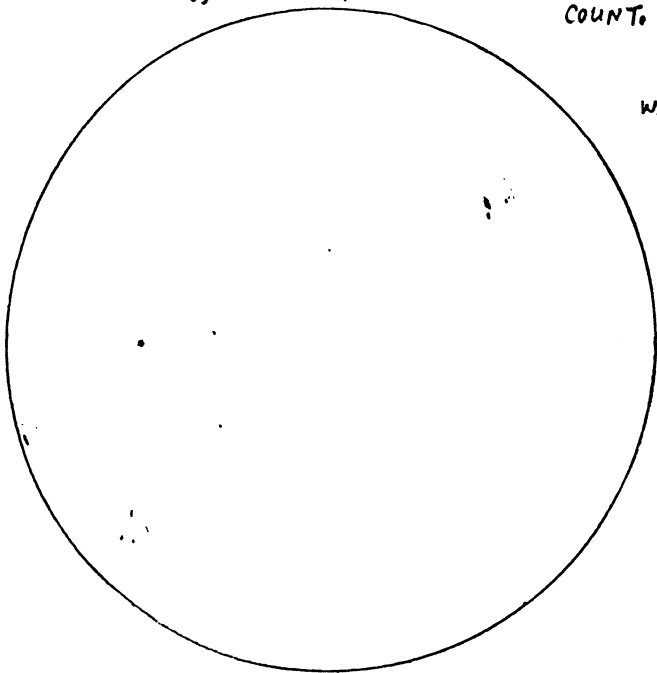
REL. # OF SUNSPOTS $[(10 \times 8) + 7] = 151$

REL. # OF SUNSPOTS $[(10 \times 4) + 35] = 75$

1:35 P.M., SEEING $\frac{7}{10}$, $\frac{700\text{mm}}{12\text{mm}}$

1:35 P.M., $\frac{700\text{mm}}{12\text{mm}}$, SEEING $\frac{5}{10}$.

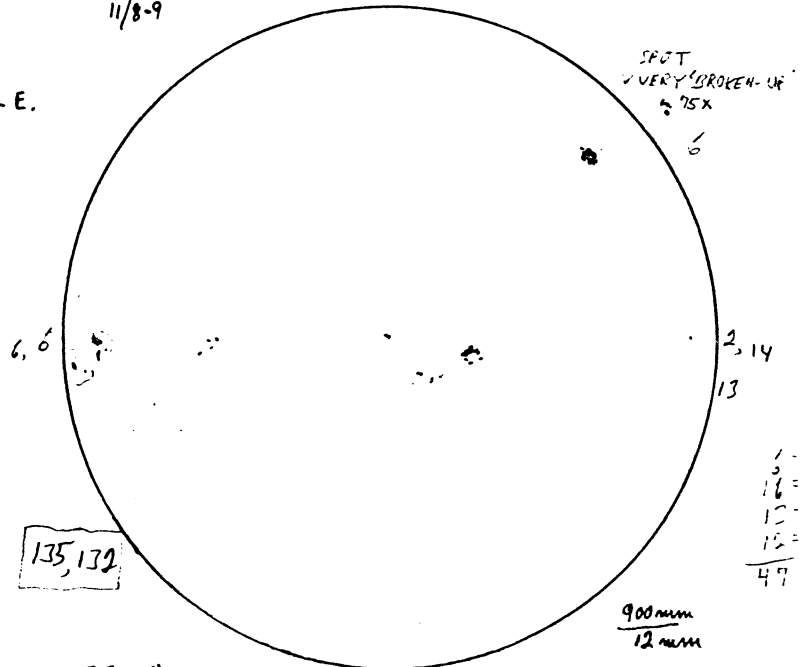
NOV. 3/91 2:38-2:51 P.M. E.S.T.
 SKIES CLEAR IN SUN'S AREA.
 MED. BRANCHES MOVE IN BREEZE,
 SEEING $\frac{7}{10}$, TRANSP. $\frac{6}{10}$. PRECLUDING SUNSPOT
 COUNT.



f8 $\frac{900mm}{25mm}$

NOV. 9 3:20-3:35 P.M. E.S.T.
 SKIES TOTALLY CLEAR, 'NO' BREEZE,
 SEEING $\frac{6}{10}$, TRANSP. $\frac{8}{10}$.

INTENSE AURORAL RAYS PAST ZENITH. +3°C CHML
 11/8-9



135, 132

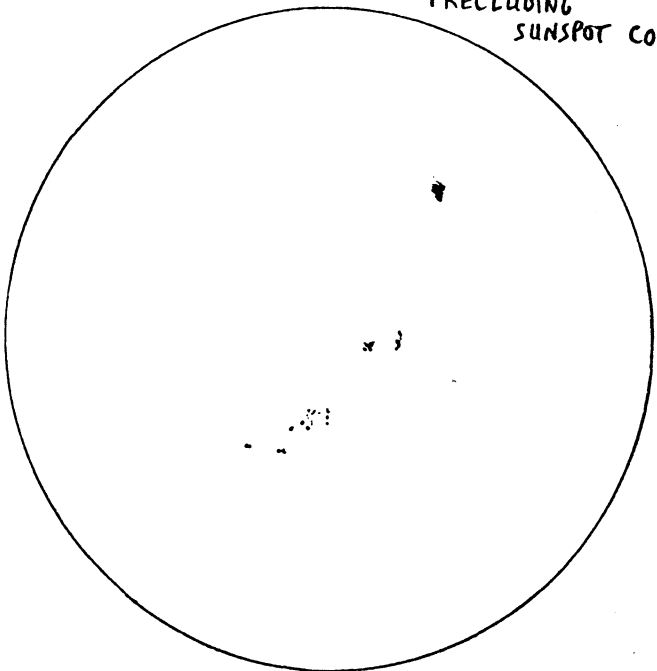
SPOT
 VERY BROKEN-UP
 75x

2, 14
 13
 1-
 16-
 12-
 15-
 47

$\frac{900mm}{12mm}$

REL. #
 OF SUNSPOTS $[(10 \times 6) + 47] = 137$ SEEING $\frac{5}{10}$, 3:45 PM

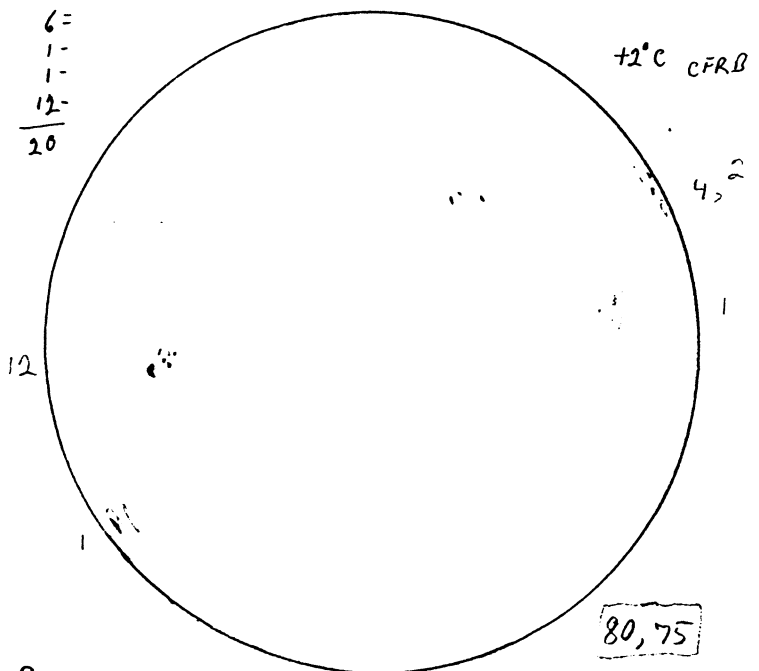
NOV. 11 3:55-4:00 P.M. E.S.T.
 DRIFTING STRATUS CLOUD OBSCURED
 SEEING $\frac{7}{10}$ SUN AT END OF
 TRANSP. $\frac{7}{10}$ DRAWING; (●);
 PRECLUDING
 SUNSPOT COUNT.



NOV. 17 1:50-2:00 P.M. E.S.T.
 SKIES TOTALLY CLEAR, 'NO' BREEZE.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{9}{10}$, FACULAE VERY
 VISIBLE.

6=
 1-
 1-
 12-
 20

+2°C CFRB



80, 75

REL. #
 OF SUNSPOTS $[(10 \times 5) + 20] = 70$

SEEING $\frac{5}{10}$, 2:05 P.M., $\frac{900mm}{12mm}$

SUN DISAPPEARED BEHIND TREE 2:45 P.M. E.S.T.

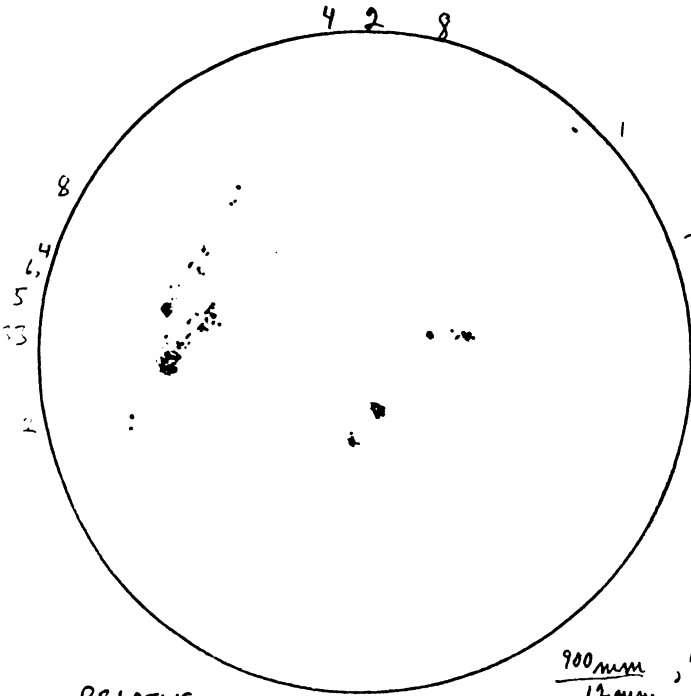
115

OCT. 3/91 4:00-4:20 P.M. E.D.T.

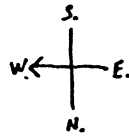
SKIES 60% CLEAR.
SEEING $\frac{8}{10}$, TRANSP. $\frac{7}{10}$.

STONE CHURCH RD
& UPPER OTTAWA
CONSERVATION AREA.

f 8 $\frac{900\text{mm}}{25\text{mm}}$



1-
14E
18E
38E
2-
73



$\frac{900\text{mm}}{12\text{mm}}$, 4:25 P.M.,

RELATIVE

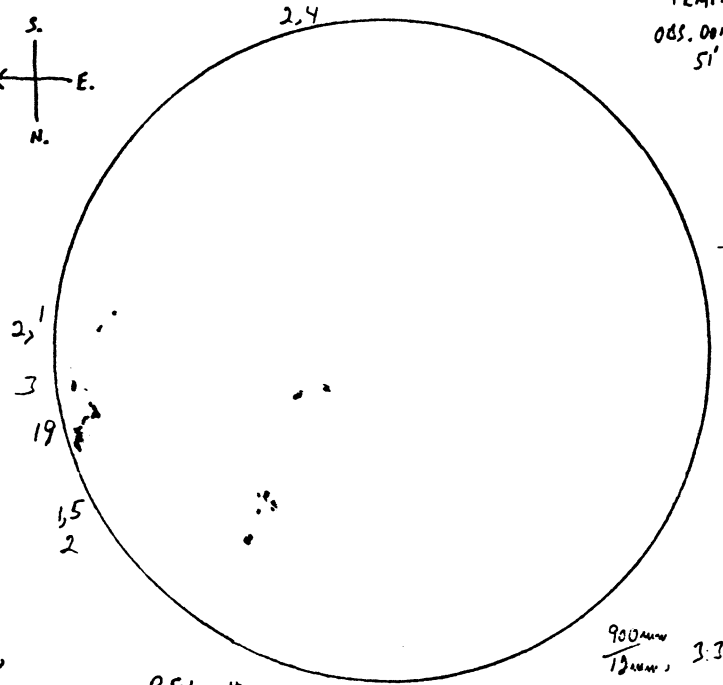
OF SUNSPOTS $[(10 \times 10) + 73] = 173$

SEEING $\frac{6}{10}$.

OCT. 6 3:00-3:25 P.M. E.D.T.

SKIES 50% CLEAR WITH LARGE CUM. CLOUDS.
SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{8}{10}$.

TEMP. IN
OBS. DOME
51°F.



6E
6E
19E
8E
39

$\frac{900\text{mm}}{12\text{mm}}$, 3:30 P.M.,

REL. #

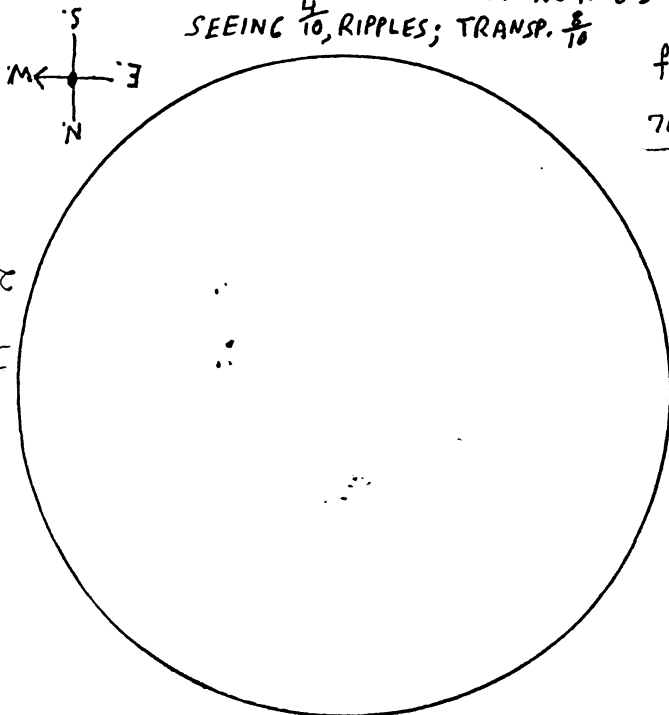
OF SUNSPOTS $[(10 \times 9) + 39] = 129$ SEEING $\frac{6}{10}$.

OCT. 20 1:25-1:40 P.M. E.D.T.

CLOUDY PATCH IN BLUE SKY, AP-
PROACHING SUN.

SEEING $\frac{4}{10}$, RIPPLES; TRANSP. $\frac{8}{10}$

f 11.6
 $\frac{700\text{mm}}{18\text{mm}}$



11
Faint
Spot
Small

REL. # OF SUNSPOTS $[(10 \times 3) + 16] = 46$

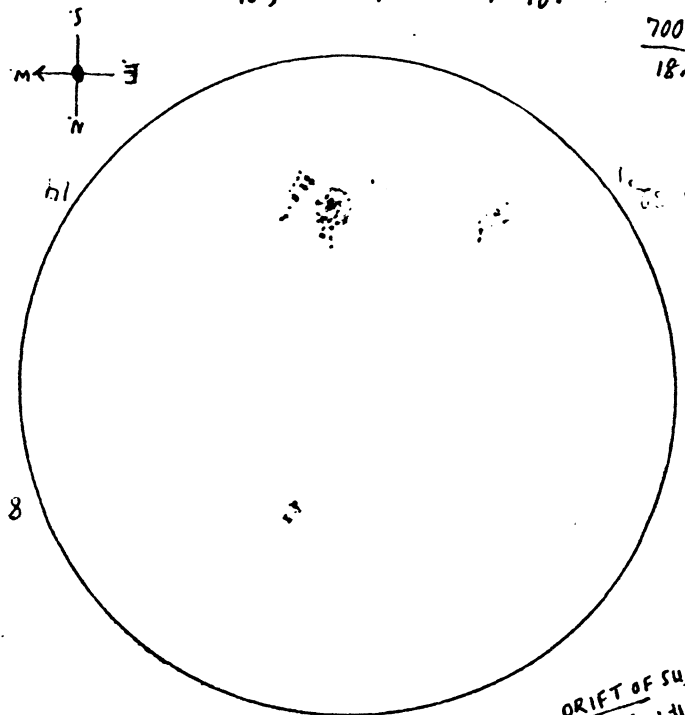
$\frac{700\text{mm}}{18\text{mm}}$!, 1:40 P.M., SEEING $\frac{4}{10}$.

CRAIGROYSTON RD. DRIVEWAY.

OCT. 26 10:50-11:40 A.M. E.D.T.

THIN DRIFTING CLOUD IN HAZY-BLUE SKY.
SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{7}{10}$.

$\frac{700\text{mm}}{18\text{mm}}$



21°C
CHML

46
-8
-14
-22
-61

← DRIFT OF SUN
MAY 20 11:20

REL. # OF SPOTS $[(10 \times 5) + 74] = 124$

$\frac{700\text{mm}}{12\text{mm}}$!, 11:40 A.M., SEEING $\frac{5}{10}$

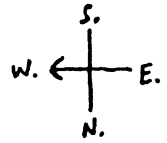
114

SEPT. 29/91 4:15 - 4:45 P.M.

SKIES TOTALLY CLEAR.

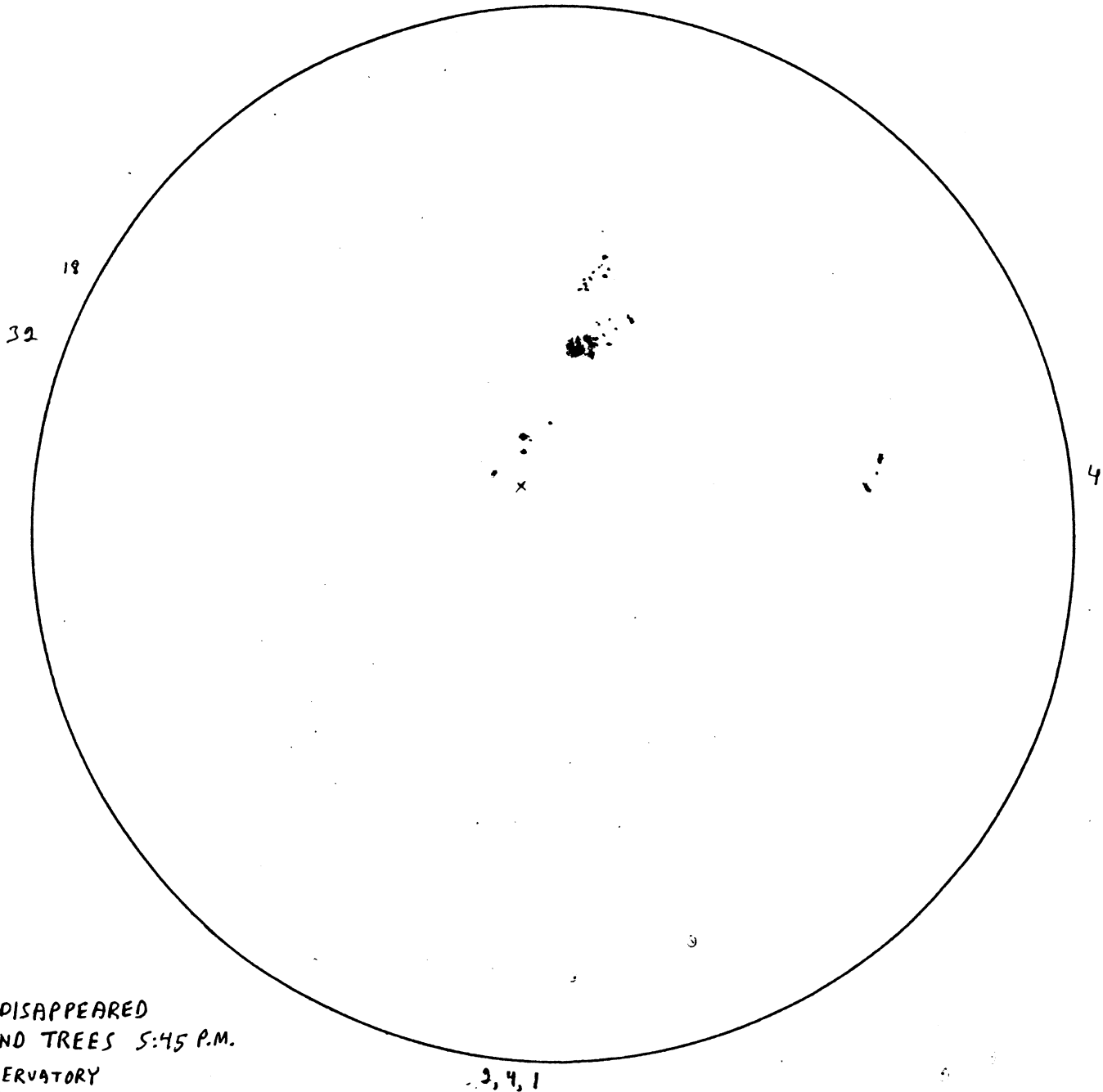
SEEING $\frac{6}{10}$; TRANSPARENCY $\frac{8}{10}$.

f 8 $\frac{900\text{mm}}{25\text{mm}}$



18-
32-
7=

4-
61



SUN DISAPPEARED
BEHIND TREES 5:45 P.M.

OBSERVATORY
PARKING LOT

RELATIVE # OF SUNSPOTS

$$[(10 \times 6) + 6] = 121$$

$\frac{900\text{mm}}{12\text{mm}}$, SEEING $\frac{4}{10}$, 5:00 P.M.

(60)

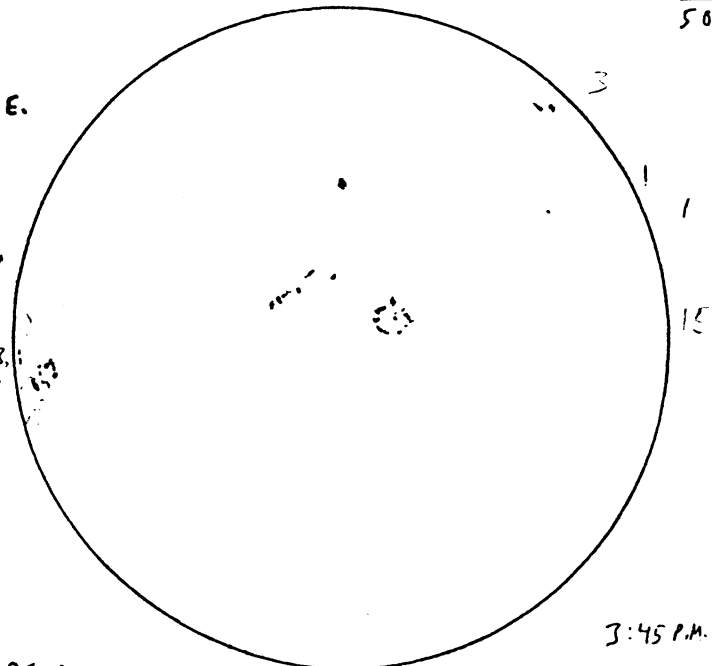
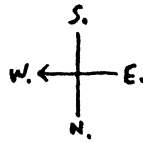
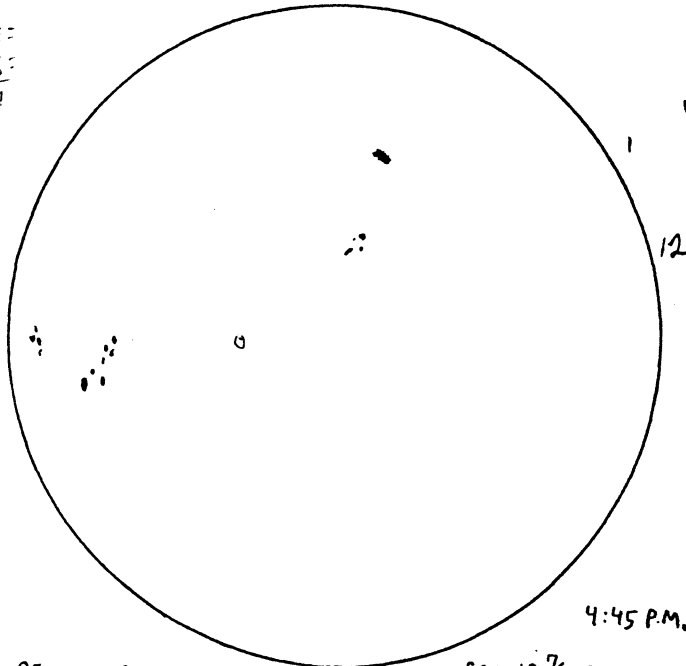
(113)

SEPT. 7/91 4:30-4:40 P.M. E.D.T.
 CLEAR PATCHES IN DRIFTING
 STRATTO-CUM. CLOUDS.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{4}{10} \leftrightarrow \frac{7}{10}$.

#8 $\frac{900mm}{25mm}$

SEPT. 8 3:15-3:25 P.M. E.D.T.
 CIRRUS HAZE IN SUN'S AREA.
 SEEING $\frac{8}{10}$, TRANSP. $\frac{5}{10}$.

14-
16=
15-
5=
50

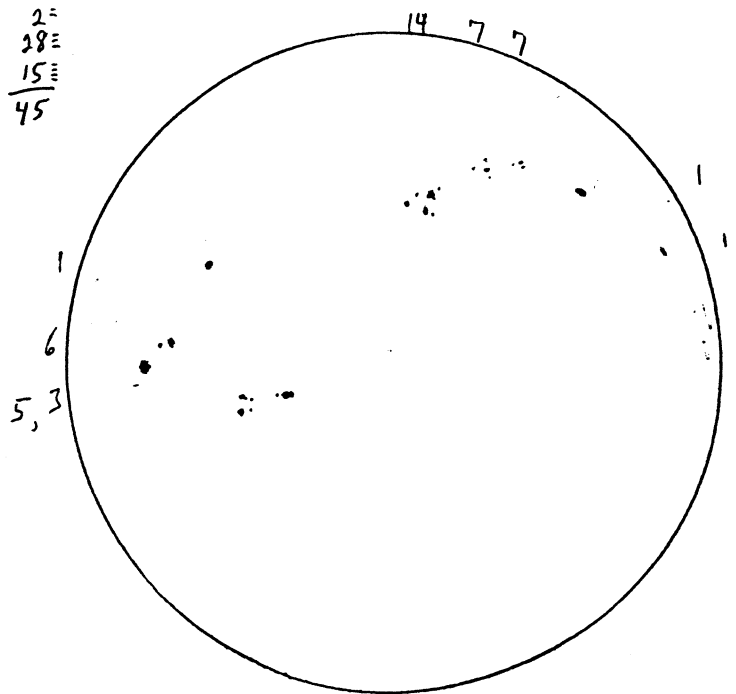
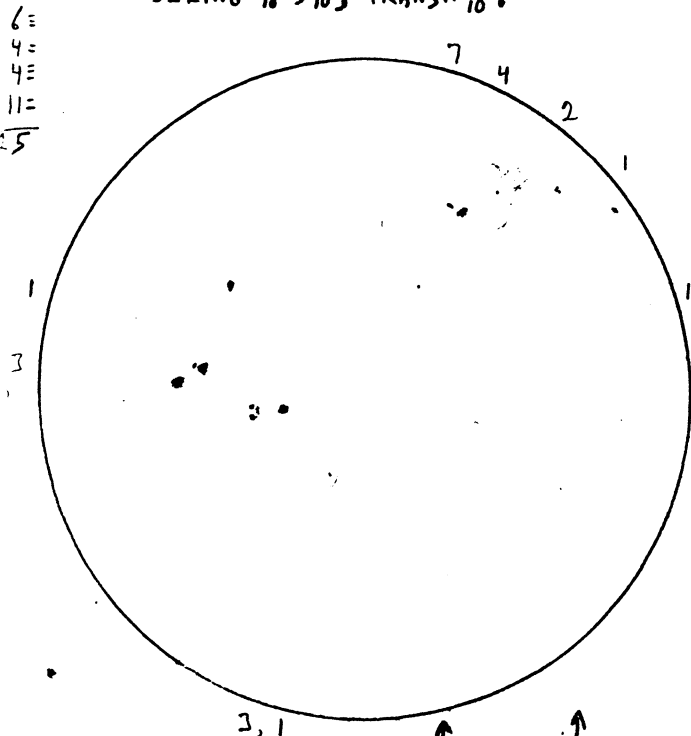


RELATIVE
 SUNSPOT # $[(10 \times 4) + 41] = 81$, $\frac{900mm}{19mm}$ SEEING $\frac{7}{10}$ BETWEEN CLOUDS.

RELATIVE
 SUNSPOT # $[(10 \times 7) + 50] = 120$ $\frac{900mm}{12}$ SEEING $\frac{6}{10}$

SEPT. 11 12:05 - 12:25 P.M. E.D.T.
 CIRRUS CLOUD (BAND) IN SUN'S AREA.
 SEEING $\frac{6}{10} \rightarrow \frac{4}{10}$; TRANSP. $\frac{5}{10}$.

SEPT. 12 9:45 - 10:05 AM. E.D.T.
 THIN CIRRUS CLOUDS IN 40% BLUE SKY.
 SEEING $\frac{8}{10}$, TRANSP. $\frac{7}{10} \leftrightarrow \frac{5}{10}$.



REL.
 # OF SUNSPOTS $[(10 \times 10) + 25] = 125$

REL. # OF SUNSPOTS $[(10 \times 9) + 45] = 135$

$\frac{900mm}{12mm}$, 12:35 P.M., SEEING $\frac{7}{10}$.

SEEING $\frac{7}{10}$, 10:10 AM, $\frac{900mm}{12mm}$

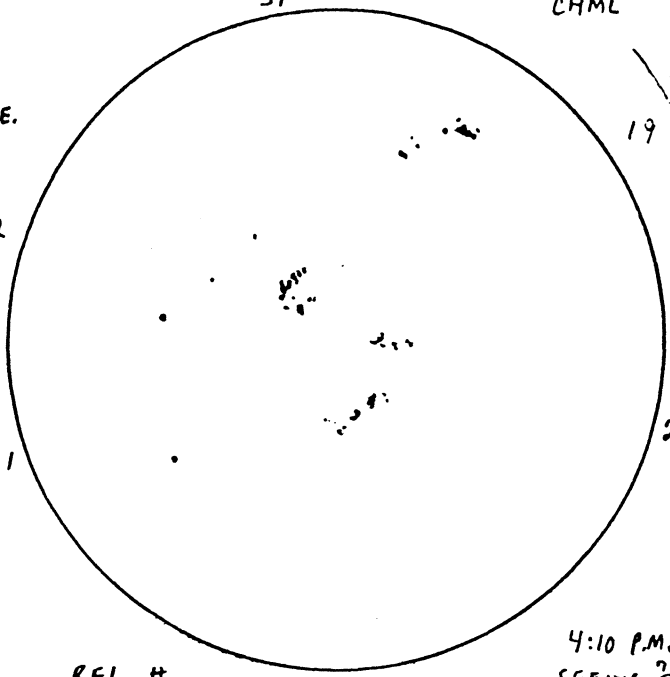
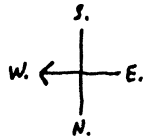
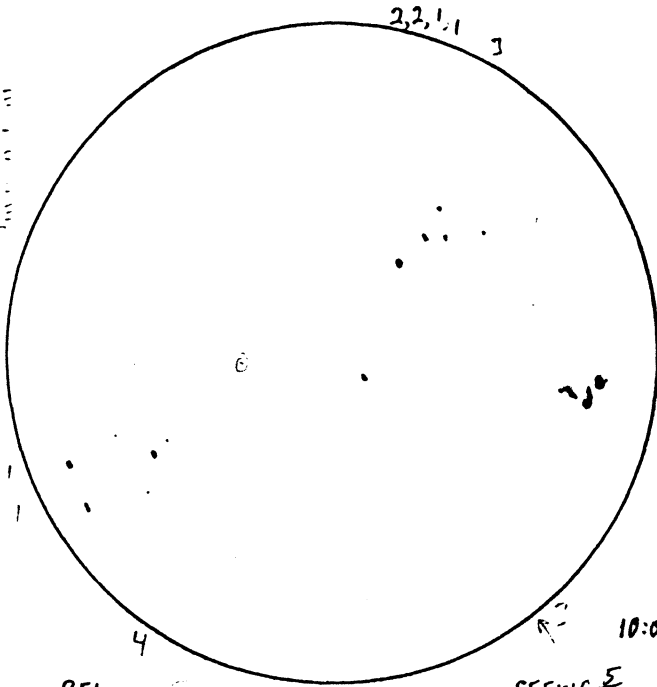
AUG. 26/91 9:45 - 9:55 A.M. E.D.T.
 SKIES CLEAR WITH SUN SHINING THROUGH HAZE.
 SEEING $\frac{7}{10}$; TRANSP. $\frac{7}{10}$.

f_8 $\frac{900 \text{ mm.}}{15 \text{ mm}}$

AUG. 30 3:45 - 4:05 P.M. E.D.T.
 SKIES CLEAR WITH HEAT HAZE.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{7}{10}$.

32°C
 CHML

21-
 19-
 14-
 29-
 5
 98



REL. #
 # OF SUNSPOTS $[(10 \times 11) + 2] = 137$

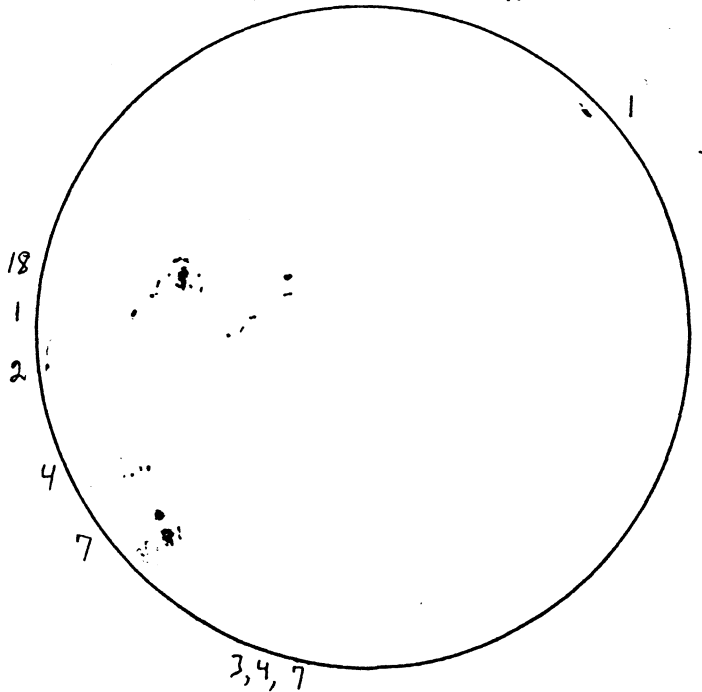
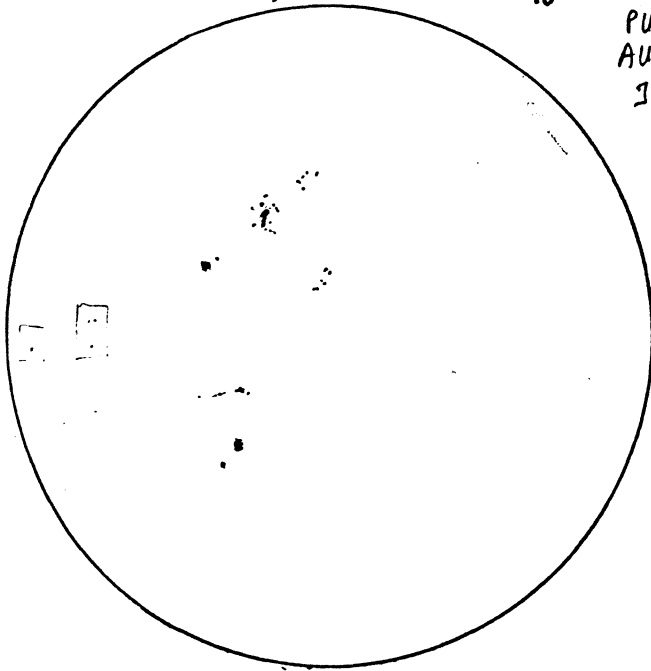
SEEING $\frac{5}{10}$, $\frac{900 \text{ mm}}{12 \text{ mm}}$,
 10:00 A.M.

REL. #
 OF SUNSPOTS $[(10 \times 8) + 9] = 188$
 4:10 P.M.
 SEEING $\frac{7}{10}$.
 $\frac{900 \text{ mm}}{12 \text{ mm}}$
 MANY SMALL DOUBLE SPOTS.

SEPT 2 7:10 - 7:20 P.M. E.D.T.
 SKIES CLEAR "NO" BREEZE.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{8}{10}$.

PULSING
 AURORAE
 1:00 A.M.
 E.D.T.

SEPT. 4 1:35 - 2:25 P.M. E.D.T.
 INCREASING CUM. CLOUDS IN 60% OF SKY.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{7}{10}$.



1-
 14=
 11=
 3=
 18-
 47

SPOTS WERE SEEN, BUT SUN SET BEHIND TREES DURING SKETCHING. OBSERVATORY FRONT LAWN.

REL. SUNSPOT # $[(10 \times 9) + 47] = 137$

$\frac{900 \text{ mm}}{13 \text{ mm}}$, 2:30 P.M., SEEING $\frac{5}{10}$.

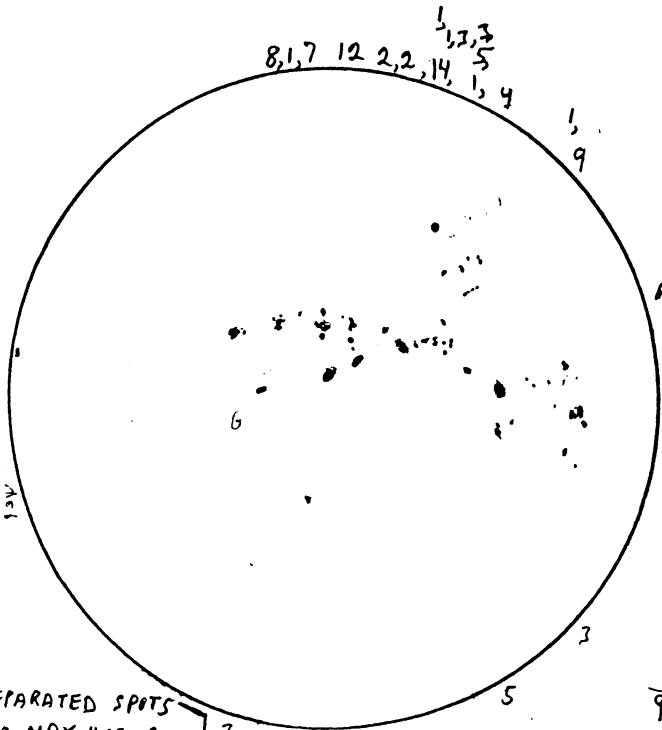
112

AUG. 18/91 4:30-4:50 P.M. E.O.T.
 CUM. CLOUDS IN 70% CLEAR SKY.
 SEEING $\frac{5}{10}$, TRANSP. $\frac{9}{10}$.

f8 900mm
 25mm

AUG. 21 7:50-8:00 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SUN SET BEHIND ESCARPMENT 8:03 P.M.
 SEEING $\frac{6}{10}$, TRANSP. $\frac{5}{10}$.

BAY ST. + STRACHAN



RANGE OF SPOT CHAIN

8=

11=

3=

16=

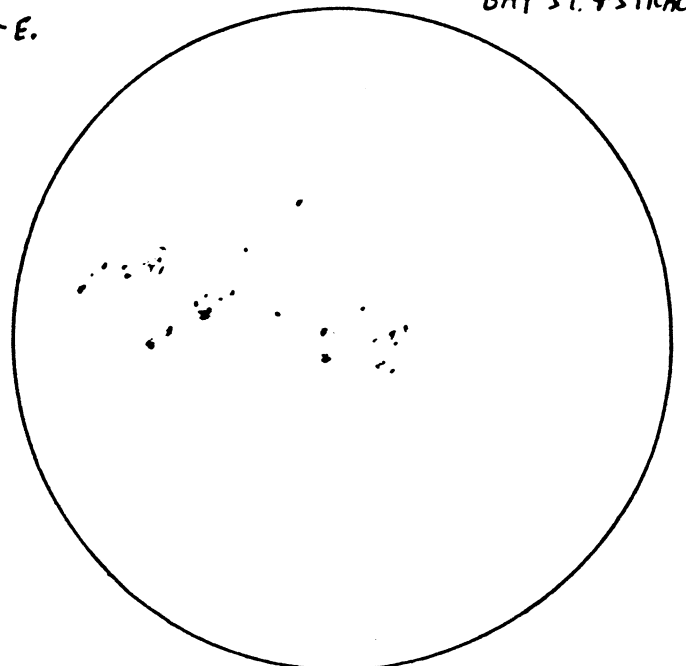
16=

19=

10=

13=

96



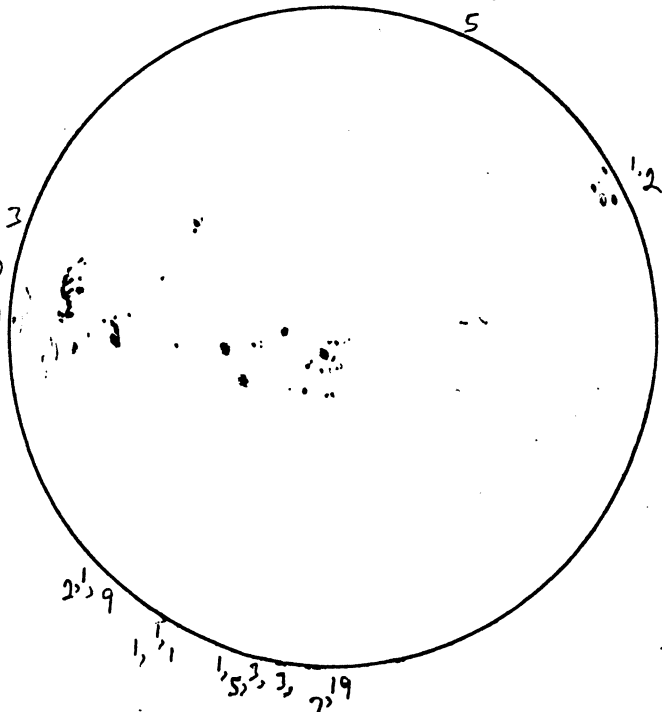
SEPARATED SPOTS TO MAX. # OF GROUPS

REL. SPOT # $[(10 \times 23) + 96] = 326$ SEEING $\frac{5}{10}$, 900mm, 5:00 P.M.

AUG. 23 5:10-5:40 P.M. E.D.T.
 SKIES CLEAR; SMALL BRANCHES MOVE IN BREEZE.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{9}{10}$.

AUG. 24 1:55-2:10 P.M. E.D.T.
 CUM. CLOUDS IN 80% CLEAR SKIES.
 SEEING $\frac{8}{10}$, TRANSP. $\frac{9}{10}$.

ERECTED GATE AT OBSERVATORY.



3=

5=

3=

22=

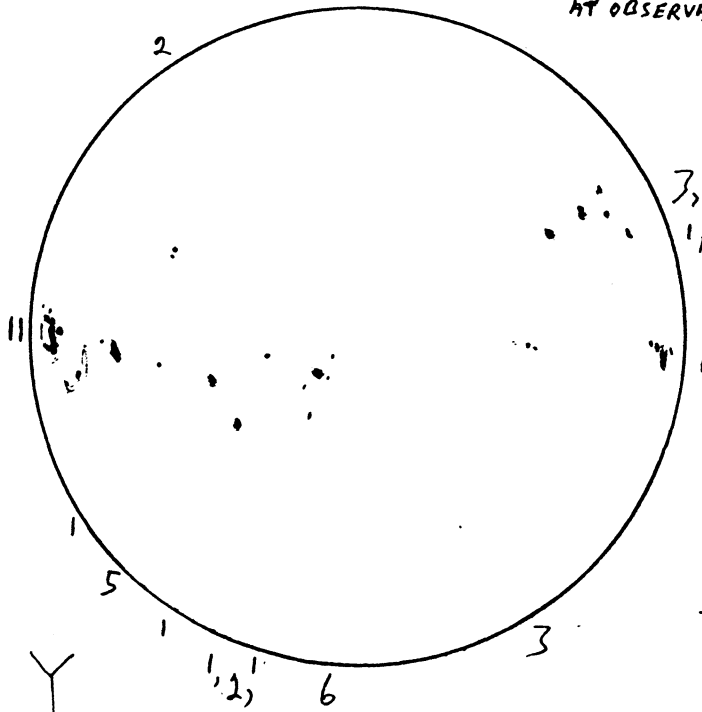
12=

7=

12=

26=

86



11=

13=

7=

4=

9=

44

REL. # OF SPOTS $[(10 \times 19) + 86] = 276$

REL. # OF SUNSPOTS $[(10 \times 14) + 44] = 188$

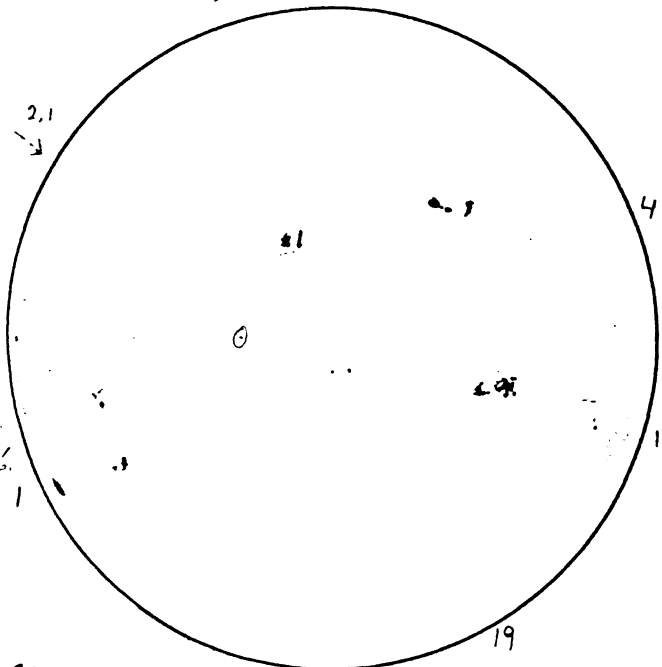
900mm, SEEING $\frac{5}{10}$, 5:50 P.M.

SEPARATED SPOTS INTO MAXIMUM # OF GROUPS.

900mm, SEEING $\frac{4}{10}$, 2:20 P.M.

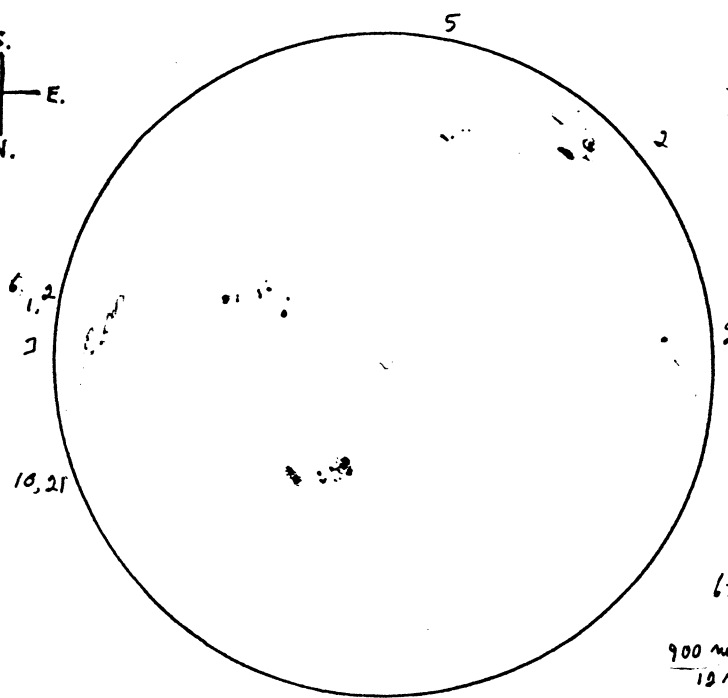
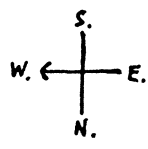
(111)

JULY 31/91 12:30-1:00 P.M. E.D.T.
 SKIES ~~80%~~ CLEAR WITH CUM. CLOUDS.
 GRAIN VISIBLE ACROSS ENTIRE SOLAR DISK.
 SMALL TO MEDIUM TREE BRANCHES MOVE
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{9}{10}$. IN BREEZE.



REL. # OF SPOTS $[(10 \times 1) + 7] = 203$ 1:15 P.M., $\frac{900 \text{ mm}}{19 \text{ mm}}$, SEEING $\frac{6}{10}$.

AUG. 4 5:30-5:55 P.M. E.D.T.
 DRIFTING CLOUD COVER IN 50% CLEAR SKY.
 SEEING $\frac{9}{10}$, STEADY; TRANSP. $\frac{8}{10}$.
 SUNSPOT COUNT INTERRUPTED BY CLOUDS



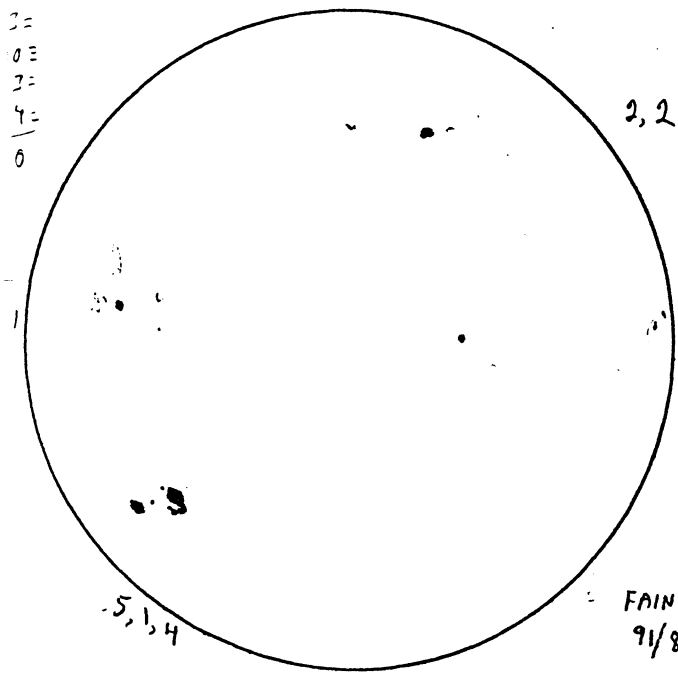
4=
5=
17=
31=
57

6:30 P.M.

$\frac{900 \text{ mm}}{19 \text{ mm}}$

RELATIVE SPOT # $[(10 \times 10) + 57] = 157$, SEEING $\frac{5}{10}$.

AUG. 6 2:55-3:15 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{8}{10}$.



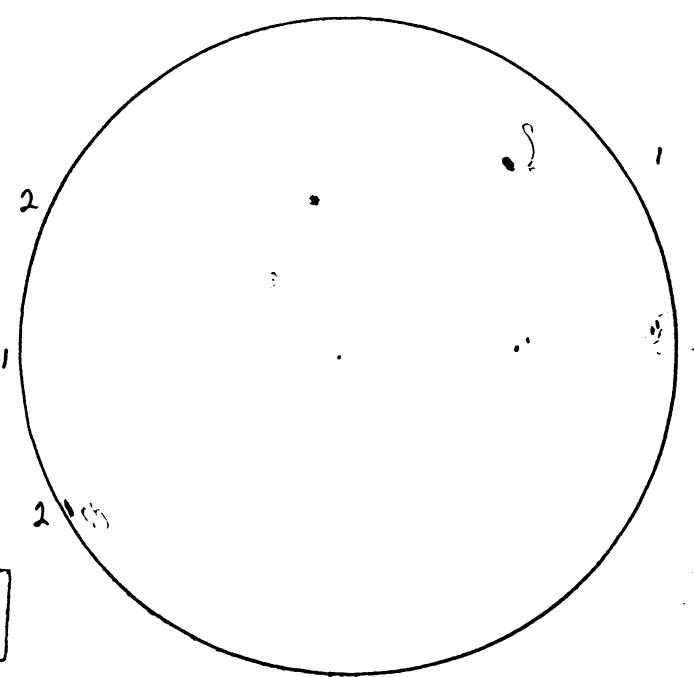
3=
0=
2=
4=
0

FAINT AURORAE
 9/8/5-6

REL. # OF SPOTS $[(10 \times 9) + 20] = 110$

$\frac{900 \text{ mm}}{12 \text{ mm}}$, 3:25 P.M., SEEING $\frac{4}{10}$

AUG. 9 3:00-3:20 P.M. E.D.T. STARFEST
 CUM. CLOUDS IN 50% CLEAR SKIES.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{7}{10}$.



6=
1=
2=
1=
2=
12

REL. # OF SPOTS $[(10 \times 6) + 12] = 72$

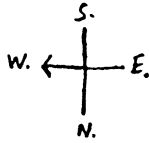
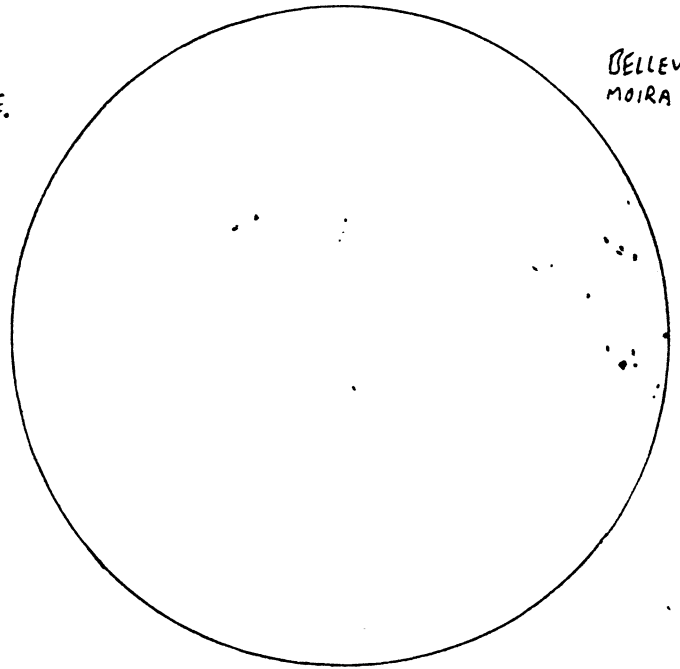
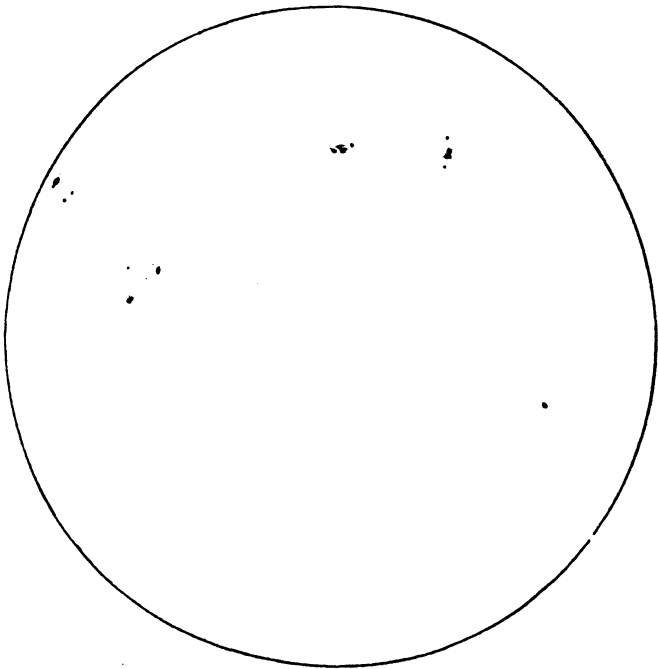
$\frac{900 \text{ mm}}{12}$, 3:40 P.M., SEEING $\frac{5}{10}$

JULY 17/91 2:35-2:45 P.M. E.D.T.
 SKIES HAZY-BLUE.
 LARGE TREE BRANCHES MOVE IN.
 SEEING $\frac{8}{10}$, TRANSP. $\frac{9}{10}$. BREEZE.

f 8 $\frac{900mm}{25mm}$

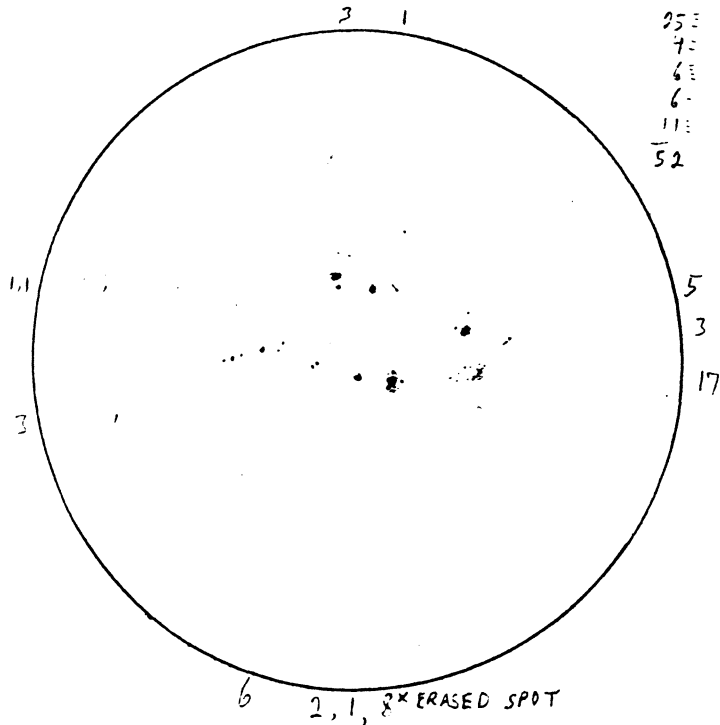
JULY 20 4:50-5:00 P.M. E.D.T.
 HEAT-HAZE IN SUN'S AREA.
 FAST SKETCH. SEEING $\frac{8}{10}$.
 TRANSPARENCY $\frac{8}{10}$.

BELLEVILLE,
 MOIRA PARK

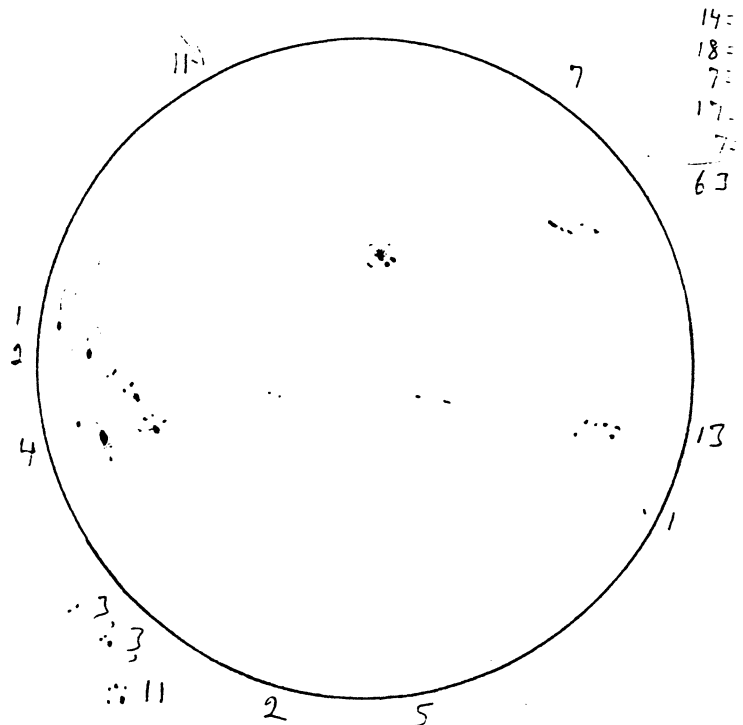


JULY 24 12:40-1:20 P.M. E.D.T.
 MED. TREE BRANCHES MOVE IN BREEZE,
 SKIES 70% CLEAR WITH FAST MOVING
 SEEING $\frac{9}{10}$, TRANSP. $\frac{9}{10}$. CUM. CLOUDS.

JULY 30 2:15-2:45 P.M.
 SKIES CLEAR WITH DEVELOPING CUM.
 SEEING $\frac{8}{10}$, TRANSP. $\frac{8}{10}$. CLOUDS.



25=
 7=
 6=
 6=
 11=
 52



14=
 18=
 7=
 17=
 7=
 63

RELATIVE # OF SUNSPOTS $[(10 \times 13) + 52] = 182$
 OR 208

1:30 P.M., $\frac{900mm}{12mm}$, SEEING $\frac{6}{10}$, WINDY.
 $[(10 \times 13) + (52 \times 1.5)] = 208$

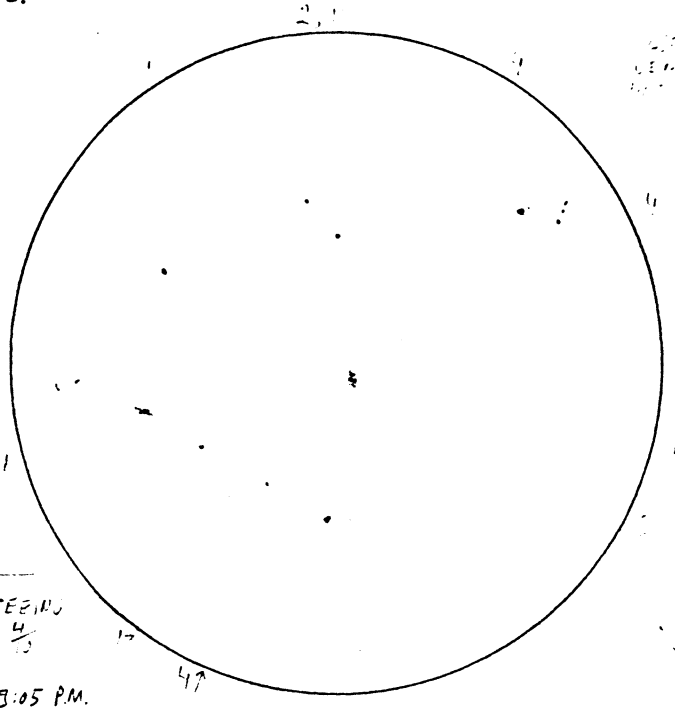
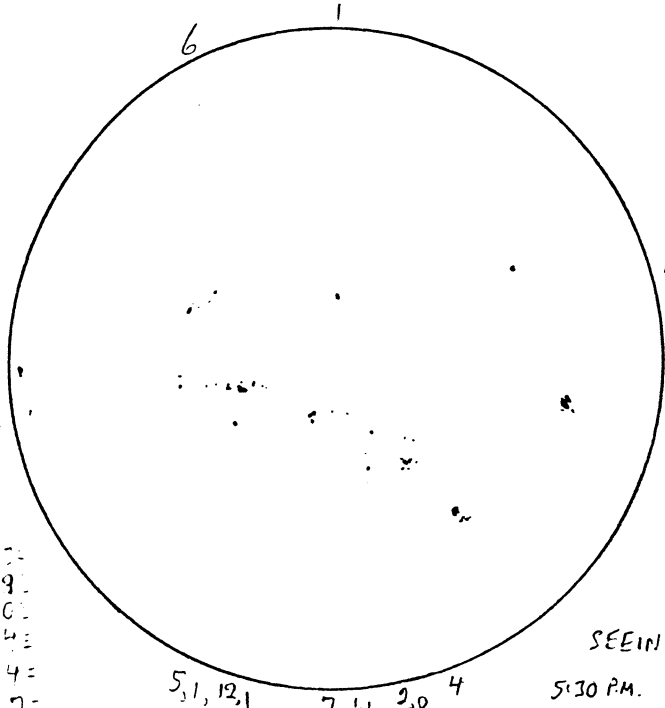
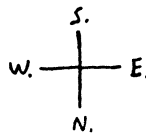
RELATIVE # OF SUNSPOTS
 $[(10 \times 12) + 63] = 183$

$\frac{900mm}{12mm}$, 2:50 P.M., SEEING $\frac{5}{10}$

JULY 5/91 5:00-5:20 P.M. EDT.
 SKIES CLEARED AFTER THUNDER-
 STORMS.
 SEEING $\frac{8}{10}$, TRANSP. $\frac{9}{10}$.

f 8 $\frac{900mm}{15mm}$

JULY 8 2:25-2:50 P.M. E.O.T.
 SKIES CLEAR WITH ISOLATED
 FAST DRIFTING CUM. CLOUDS.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{8}{10}$.



RELATIVE SUNSPOT # $[(10 \times 17) + 57] = 227$

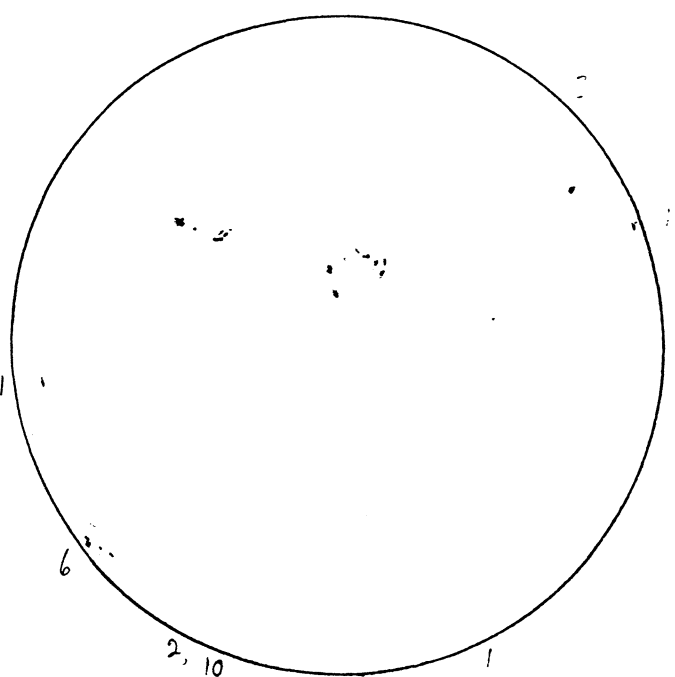
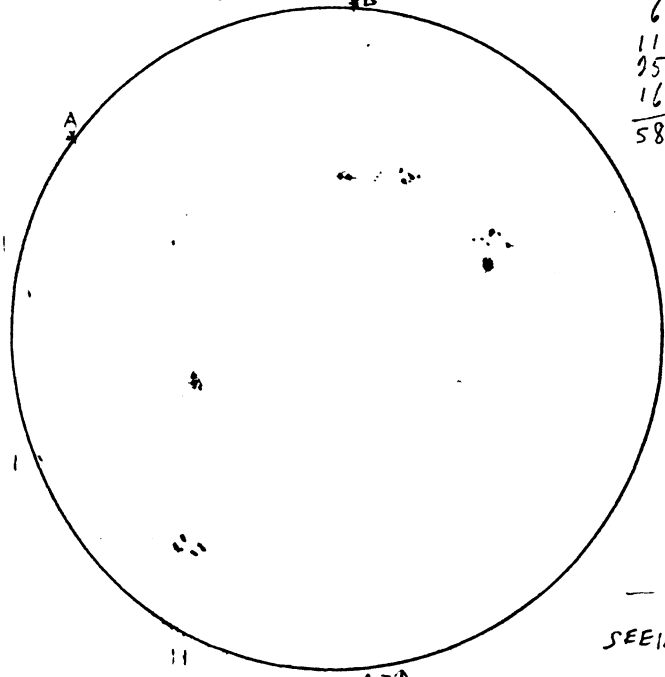
SEEING $\frac{6}{10}$ SEEING $\frac{4}{10}$
 5:30 P.M. $\frac{900mm}{12mm}$ 3:05 P.M. $\frac{900mm}{12mm}$

RELATIVE SUNSPOT # $[(10 \times 13) + 39] = 169$

JULY 11 4:25-4:50 P.M. E.D.T.
 SKIES 20% CLEAR \rightarrow 80% CLEAR WITH
 SEEING $\frac{9}{10}$, TRANSP. $\frac{8}{10}$. CUM CLOUDS.

JULY 14 3:00-3:30 P.M. E.D.T.
 SKIES CLEAR WITH ISOLATED CUM CLOUDS.
 SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{8}{10}$.

6
 11
 25
 16
 58



RELATIVE # OF SUNSPOTS
 $[(10 \times 7) + 58] = 128$

SEEING $\frac{7}{10}$
 4:55 P.M. $\frac{900mm}{12mm}$

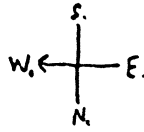
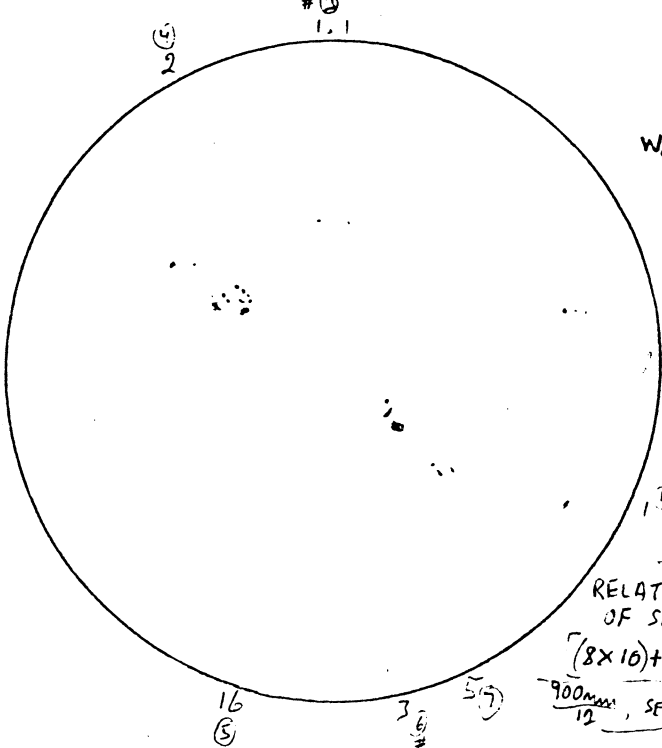
RELATIVE SPOT # $[(10 \times 9) + 36] = 126$

SOLAR ECLIPSE 3:24 P.M. E.D.T.
 *A, FIRST CONTACT; *B, LAST CONTACT.

$\frac{900mm}{12mm}$; 3:30 P.M., SEEING $\frac{11}{10}$.

JUNE 19 3:45-3:55 P.M. E.D.T.
 SKY HAZY-BLUE WITH CUM. CLOUDS
 DEVELOPING IN WEST.

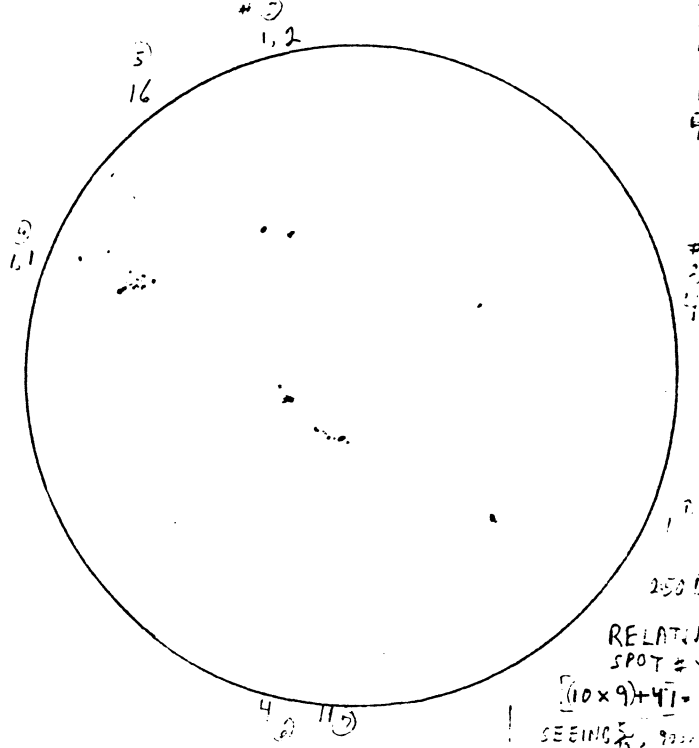
SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{6}{10}$.



4:00 PM.
 RELATIVE #
 OF SPOTS
 $(8 \times 10) + 3 = 113$
 $\frac{900 \text{ mm}}{12}$, SEEING $\frac{6}{10}$

JUNE 21 2:25-2:40 P.M. E.D.T.
 SKIES CLEAR WITH THIN CIRRUS
 STREAKS

SEEING $\frac{8}{10}$, TRANSP. $\frac{7}{10}$.



2:50 PM.
 RELATIVE
 SPOT #
 $(10 \times 9) + 47 = 131$
 SEEING $\frac{8}{10}$, TRANSP. $\frac{7}{10}$

13
16
12
41

2
11

17

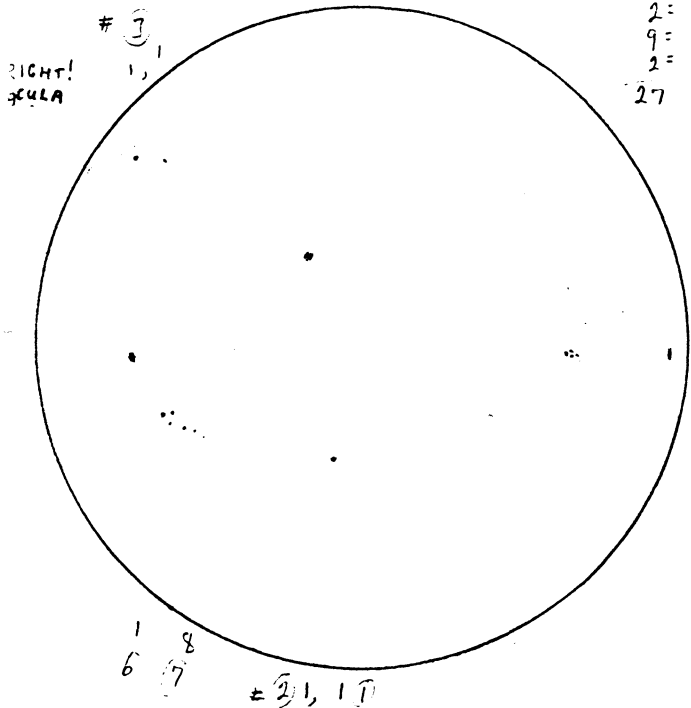
250 PM.

RELATIVE
SPOT #

$(10 \times 9) + 47 = 131$

SEEING $\frac{8}{10}$, TRANSP. $\frac{7}{10}$

JUNE 24 5:00-5:10 P.M. E.D.T.
 CIRRUS CLOUD PATCHES IN BLUE SKY.
 SEEING $< \frac{7}{10}$, TRANSP. $\frac{8}{10}$.

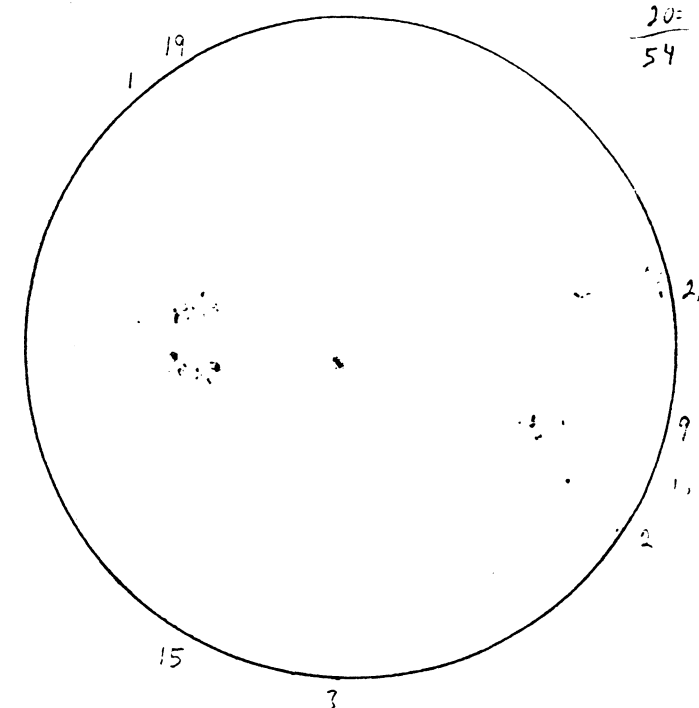


RELATIVE # OF SUNSPOTS
 $(10 \times 9) + 27 = 117$

SEEING $\frac{6}{10}$, $\frac{900 \text{ mm}}{12 \text{ mm}}$, 5:20 PM

14 =
2 =
9 =
2 =
27

JUNE 30 5:15-5:35 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{8}{10}$.



RELATIVE # OF SUNSPOTS
 $(10 \times 10) + 54 = 154$

SEEING $\frac{5}{10}$, $\frac{900 \text{ mm}}{12 \text{ mm}}$, 5:45 P.M.

13 =
18 =
20 =
54

or $(10 \times 10) + (54 \times 1.5) = 181$

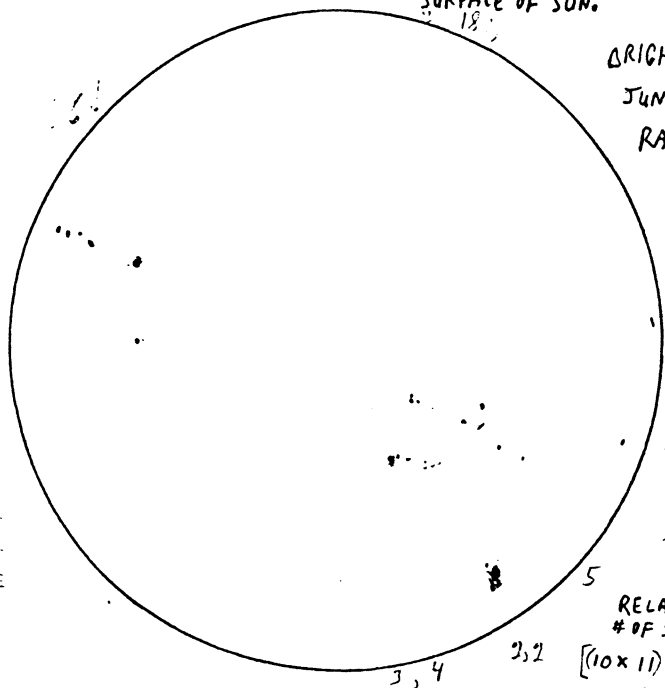
107

JUNE 4/91 10:30-11:00 A.M. E.D.T.
 DRIFTING WHITE CLOUDS IN 70% CLEAR SKY.
 SEEING $\frac{8}{10}$; TRANSP. $\frac{7}{10} \rightarrow \frac{8}{10}$, SPOTS SEEMED TO
 FLOAT ON GRAINY SURFACE OF SUN.

$\phi 8$ 900 mm
 25 mm
 S.
 W ← — — → E
 N.

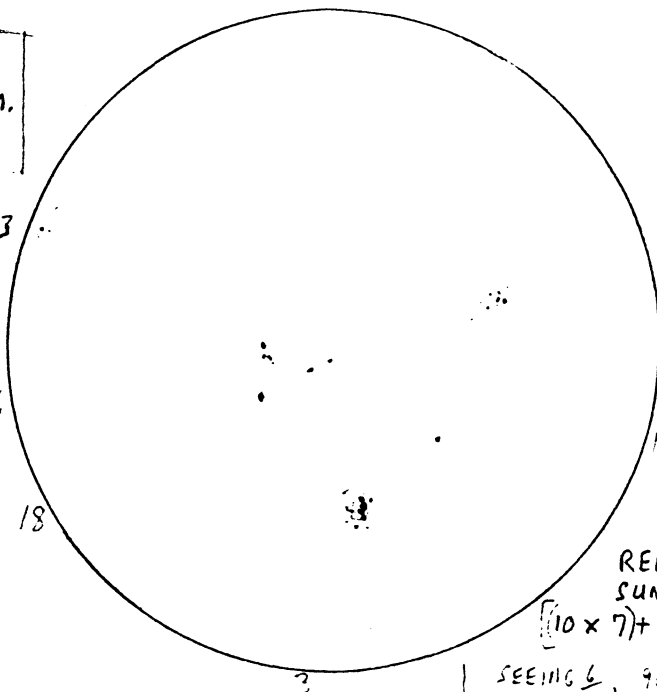
JUNE 7 4:00-4:17 P.M. E.D.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$.

BRIGHT AURORAE
 JUNE 5, 2:00 AM.
 RAYED ARCS



900 mm
 12 mm

RELATIVE
 # OF SUNSPOTS
 $[(10 \times 11) + 50] = 160$
 SEEING $\frac{8}{10}$, 11:00 A.M.



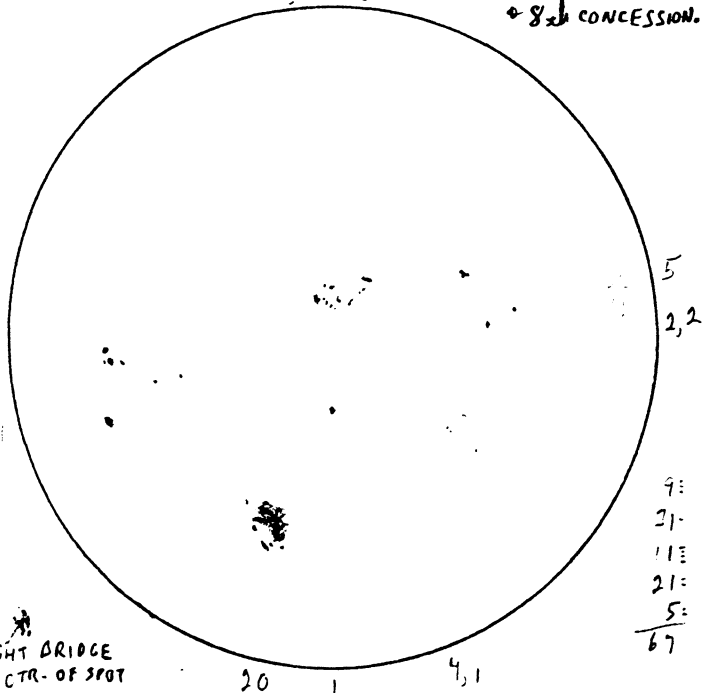
REL. #
 SUNSPOTS
 $[(10 \times 7) + 46] = 116$

SEEING $\frac{6}{10}$, 9:00 AM
 12 mm

JUNE 9, 2:10-2:30 P.M. E.D.T.
 THIN CIRRUS CLOUDS IN BLUE SKY.
 SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{8}{10}$.

CENTRE RD.
 + 8" CONCEPTION.

JUNE 14 5:30-5:45 P.M. E.D.T.
 CIRRUS CLOUDS DEVELOPING IN SUN'S AREA.
 SEEING $\frac{8}{10}$, TRANSPARENCY $\frac{5}{10}$.



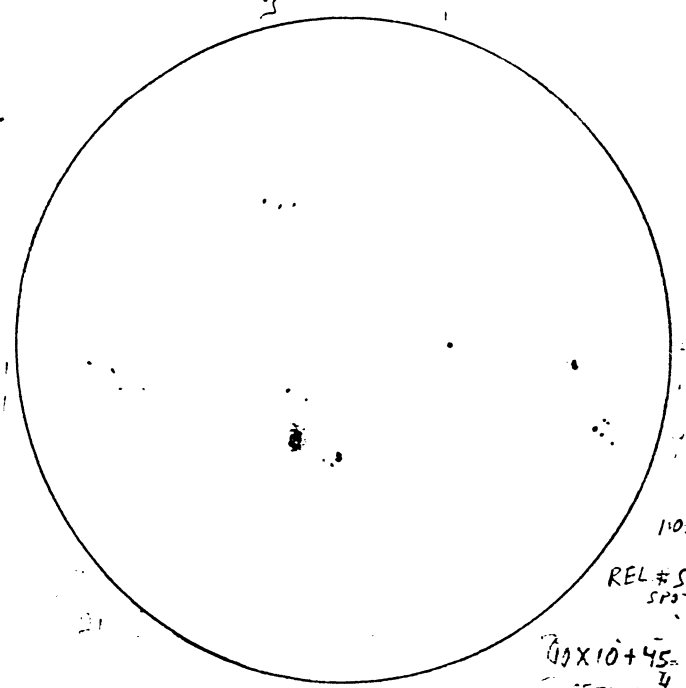
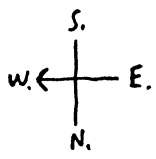
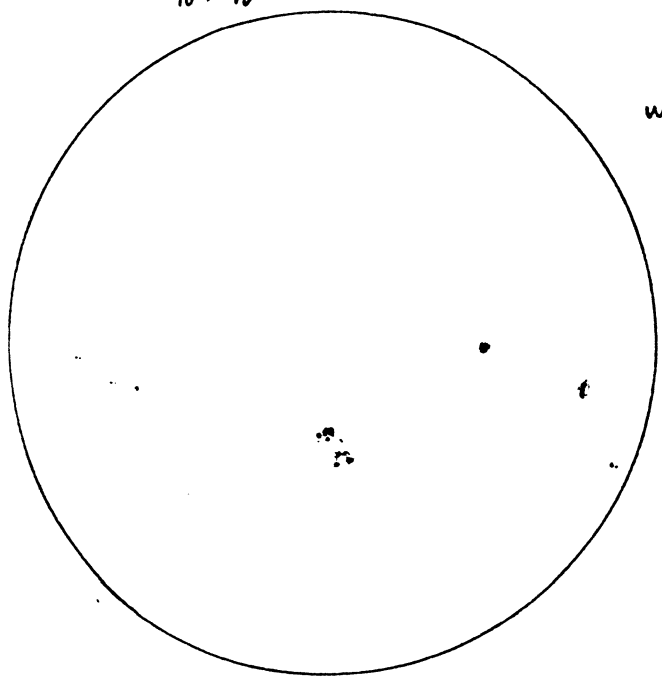
RELATIVE # OF SUNSPOTS
 $[(10 \times 12) + 67] = 187$

SEEING $\frac{7}{10}$, 2:40 P.M., 900 mm
 12 mm

MAY 27/91 3:10-3:15 P.M. E.D.T.
 FAST! SKETCH; FAST MOVING
 SEEING $\frac{4}{10}$. STRATTO-CUMULUS CLOUDS
 TRANSP. $\frac{3}{10} \rightarrow \frac{7}{10}$. IN 1% CLEAR SKY.

f8 900mm
 25mm

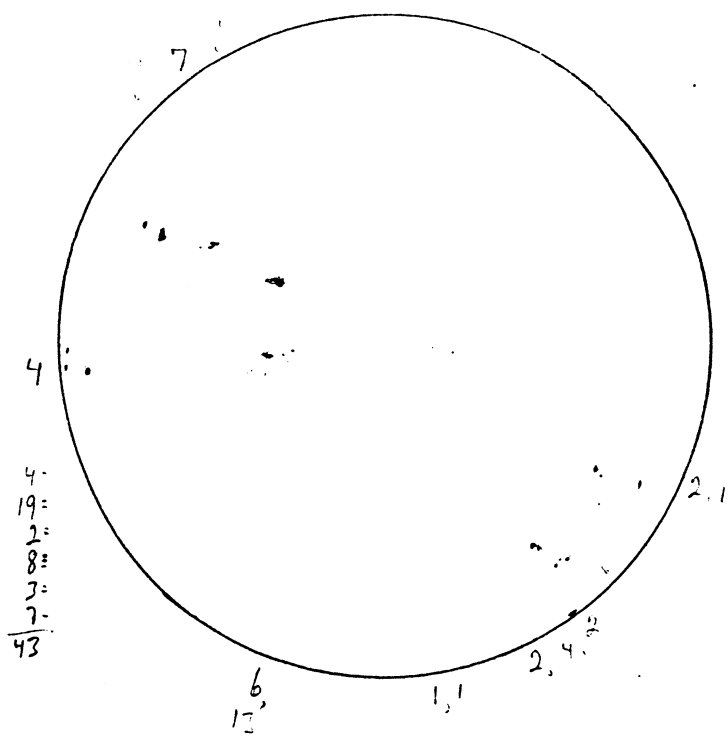
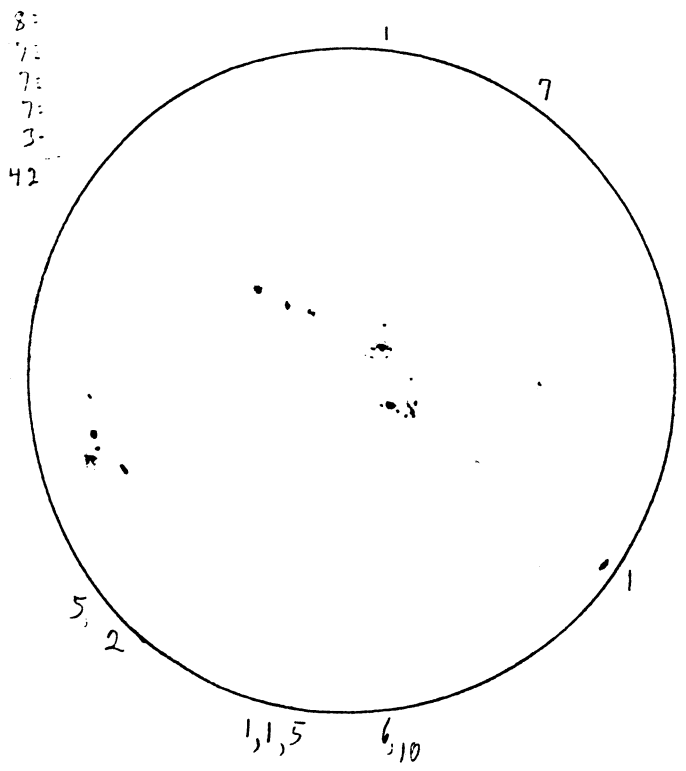
MAY 28 12:05 - 12:25 P.M. E.D.T.
 SKIES CLEAR. GRANULAR DETAIL
 SEEING $\frac{7}{10}$ ON SUN VERY EVIDENT
 TRANSP. $\frac{9}{10}$. BLACK SPOTS ON FILTER
 DEGRADE DETAIL



1100 P.M.
 REL # SUN-
 SPOTS
 $10 \times 10 + 45 = 145$
 SEEING $\frac{4}{10}$

MAY 31 5:50-6:05 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{3}{10}$, TRANSPARENCY $\frac{8}{10}$.

JUNE 2 5:15-5:35 P.M. E.D.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{6}{10}$, TRANSPARENCY $\frac{9}{10}$.
 MAIN ST. & PARKDALE AVE.



RELATIVE # OF SUNSPOTS

$[(10 \times 11) + 42] = 152$

900mm 12mm, 6:10 P.M., SEEING $\frac{6}{10}$

RELATIVE # OF SUNSPOTS

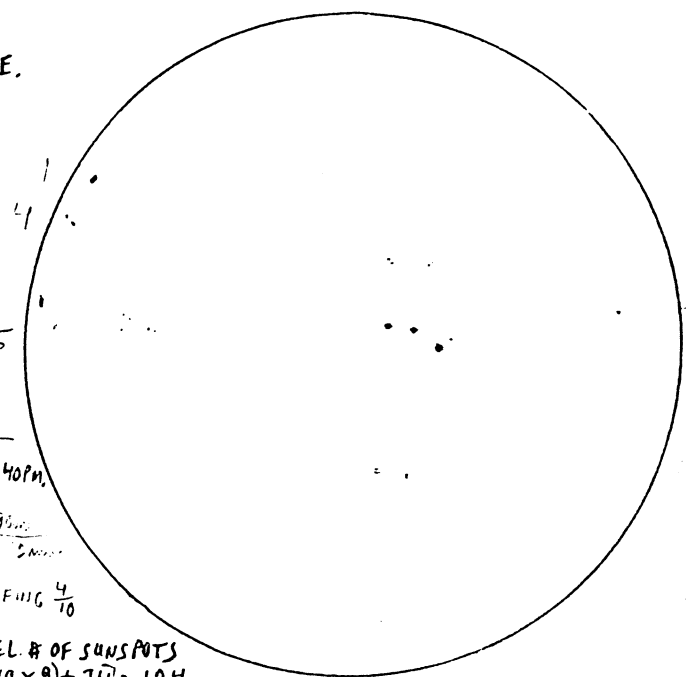
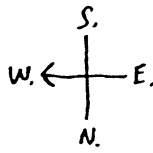
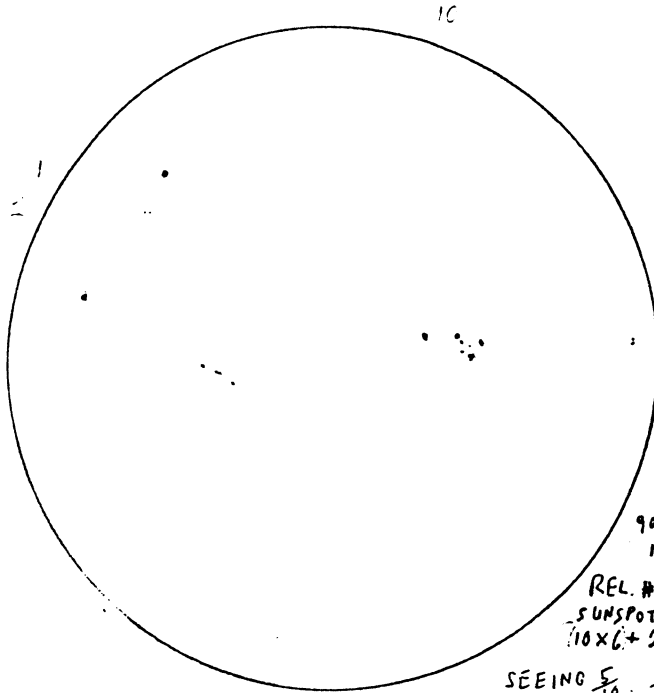
$[(10 \times 11) + 43] = 153$

900mm 12mm, 5:40 P.M., SEEING $\frac{4}{10}$

MAY 18/91 4:45-5:00 P.M. E.D.T.
 CIRRUS-HAZE CHANGED INTO BLUE SKY IN
 SEEING $\frac{6}{10}$, TRANSP $\frac{5}{10} \rightarrow \frac{7}{10}$.
 SUN'S AREA.

f8 900mm
 25mm

MAY 19 4:20-4:30 P.M. E.D.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{6}{10}$, TRANSPARENCY $\frac{8}{10}$.

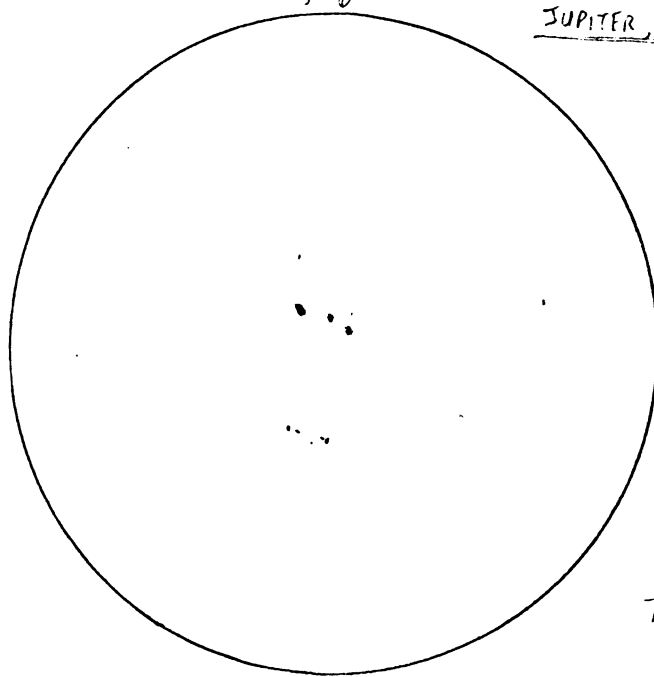


4:40 PM
 900mm
 12mm
 REL. # OF
 SUNSPOTS
 $10 \times 6 + 22 = 82$
 SEEING $\frac{5}{10}$, 5:05 PM.
 REL. # OF SUNSPOTS
 $[(10 \times 9) + 34] = 124$

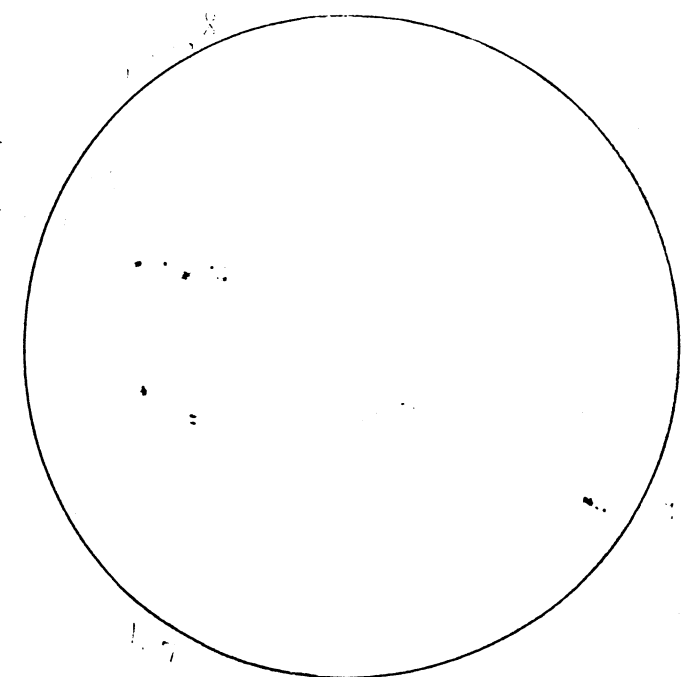
MAY 20 3:50-4:05 P.M. E.D.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{6}{10}$, TRANSP. $\frac{8}{10}$.

FOUND VENUS,
 JUPITER, 6:30 PM

MAY 23 10:40-11:00 A.M. E.D.T.
 SKIES CLEAR, WITH SHEEP-WOOL CLOUDS APPROACHING
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{9}{10} \rightarrow \frac{7}{10}$.
 SUN.



7= 3
 8= 8
 9= 9
 6= 6
 8= 8
 34



RELATIVE # OF SUNSPOTS
 $[(10 \times 5) + 16] = 66$

RELATIVE # OF SUNSPOTS
 $10 \times 9 + 34 = 124$

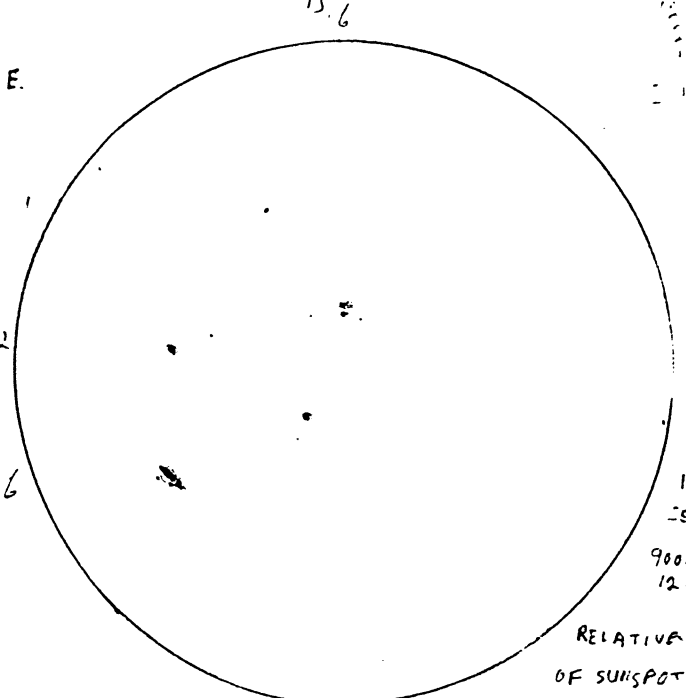
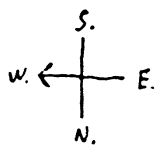
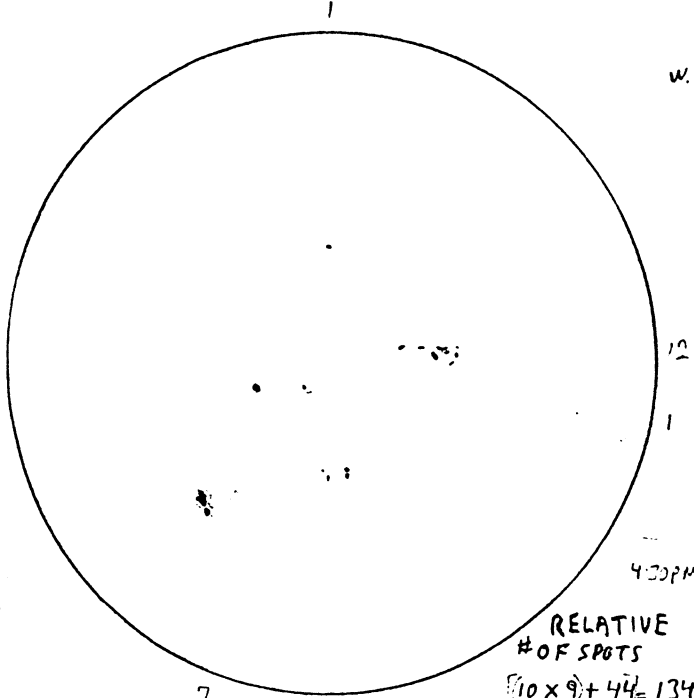
900mm
 19mm
 SEEING $\frac{4}{10}$, 4:15 P.M.

SEEING $\frac{4}{10}$, 11:10 A.M., 900mm
 12mm

MAY 12/91 3:40-4:15 P.M. E.D.T.
 LARGE DRIFTING CLOUDS IN 90% CLEAR SKY.
 SEEING $\frac{8}{10}$, TRANSP. $\frac{9}{10}$.

f8 $\frac{900\text{mm}}{25\text{mm}}$

MAY 14 12:50-1:10 P.M. E.S.T.
 LARGE CUM. CLOUDS IN 70% CLEAR SKY.
 SEEING $\frac{8}{10}$; TRANSP. $\frac{7}{10}$.

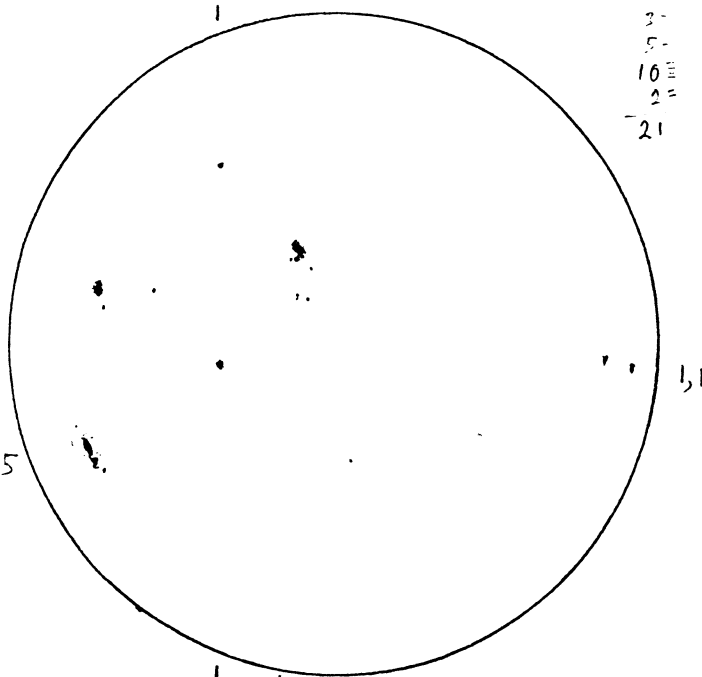


RELATIVE # OF SPOTS
 $(10 \times 9) + 44 = 134$
 900mm TRANSP. $\frac{5}{10}$
 12mm

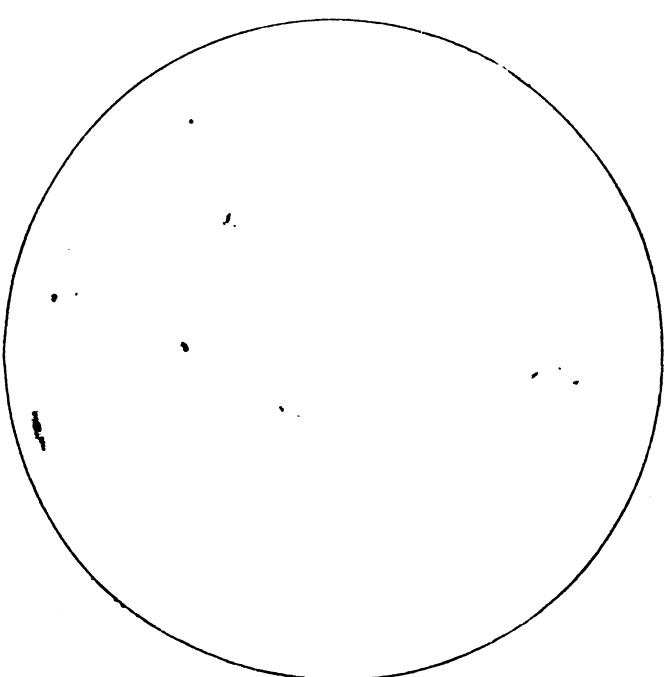
RELATIVE # OF SUNSPOTS
 $10 \times 9 + 24 = 124$
 1:20 PM
 SEEING $\frac{8}{10}$
 900mm
 12mm

MAY 15 2:30-2:45 P.M.
 SKIES TOTALLY CLEAR. E.D.T.
 SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{8}{10}$.

MAY 16 5:10 P.M. E.D.T.
 FAST!! SKETCH, CLOUDS MOVED IN.
 SEEING $\frac{8}{10}$, WHEN CLEAR,



1-
 3-
 5-
 10-
 2-
 21



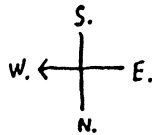
RELATIVE # OF SUNSPOTS
 $(10 \times 10) + 21 = 121$

2:50 P.M., SEEING $\frac{6}{10}$, $\frac{900\text{mm}}{12\text{mm}}$

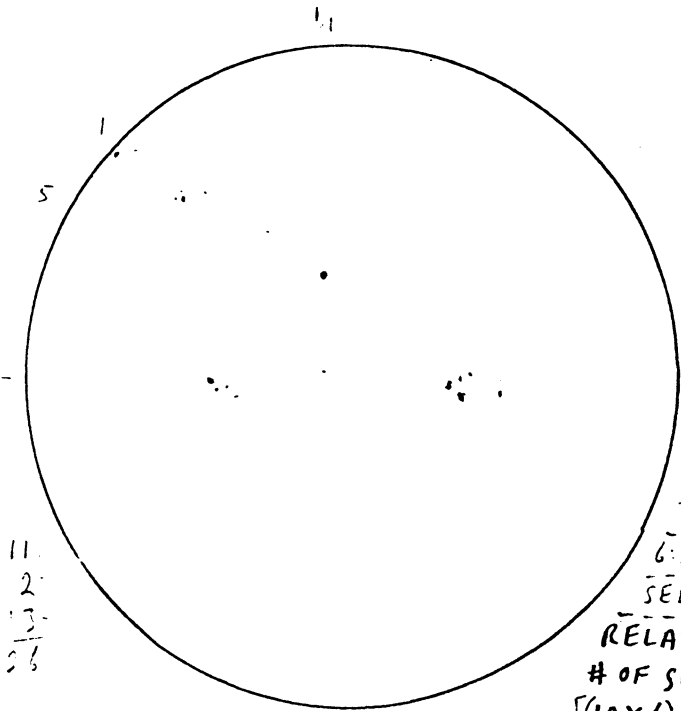
MAY 3/91 5:45-6:15 P.M.
 SKIES 10% CLEAR, DRIFTING CLOUDS.
 SEEING (WHEN CLEAR) $\frac{8}{10}$, TRANSP. $\frac{9}{10}$.

f 8 900mm
 25mm

MAY 8 12:20-12:40 P.M. E.S.T.
 (THIN) CIRRUS-HAZE IN SUN'S AREA
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{8}{10}$.

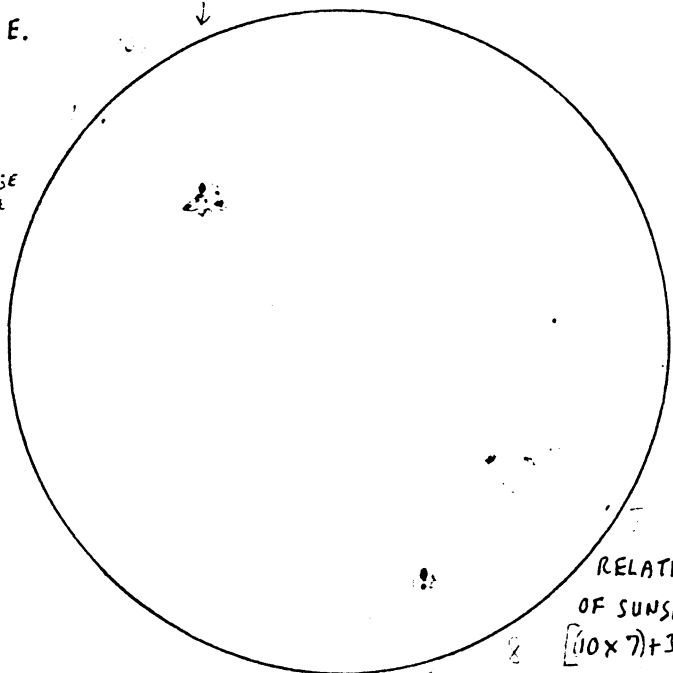


SPOT SHOULD BE
 LOCATED HERE
 →



11.
 2.
 3.
 26

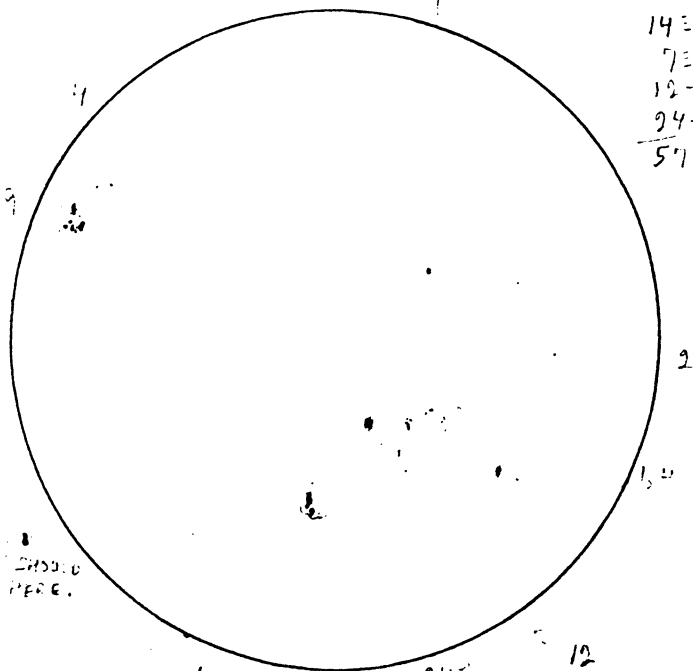
9:00 AM
 6:30 P.M.
 SEEING $\frac{10}{10}$
 RELATIVE
 # OF SUNSPOTS
 $[(10 \times 6) + 27] = 86$



SEEING
 RELATIVE #
 OF SUNSPOTS
 $[(10 \times 7) + 32] = 102$
 12:45 PM, 900mm
 12mm

MAY 10 12:25-12:45 P.M. E.D.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{9}{10}$.

MAY 11 11:45 AM.-12:10 P.M. E.D.T. OBSERVATORY.
 SKIES TOTALLY CLEAR, LIGHT HAZE IN SUN'S
 SEEING $\frac{8}{10}$, STEADY. TRANSPARENCY $\frac{9}{10} \leftrightarrow \frac{10}{10}$. AREA.
 GRAINY DETAIL VISIBLE ACROSS
 ENTIRE DISK.



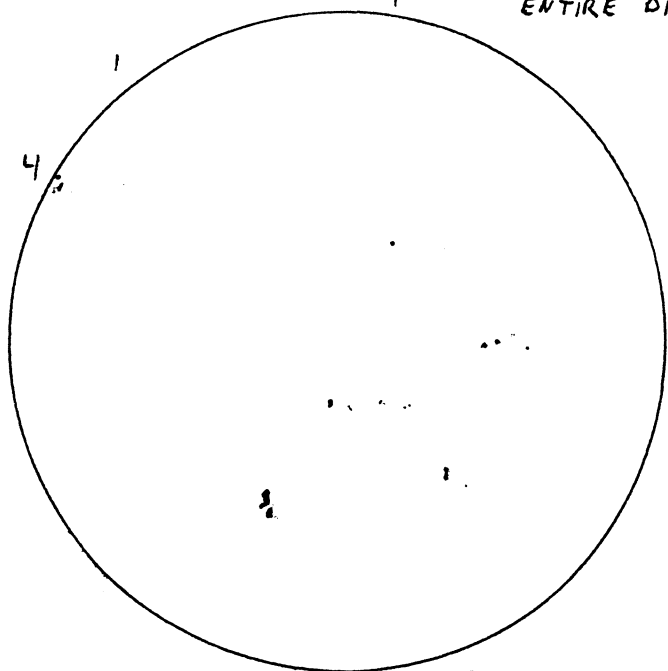
14
 7
 12
 24
 57

SHOULD
 BE HERE.

91/5/6

12:45 PM
 900mm
 25mm

RELATIVE # OF
 SUNSPOTS
 $[(10 \times 8) + 57] = 137$
 SEEING $\frac{6}{10}$, 12:45 PM, 900mm
 13mm



24
 6
 29

RELATIVE # OF SUNSPOTS
 $[(10 \times 7) + 32] = 109$

SEEING $\frac{5}{10}$, 12:20 P.M., 900mm
 12mm

102

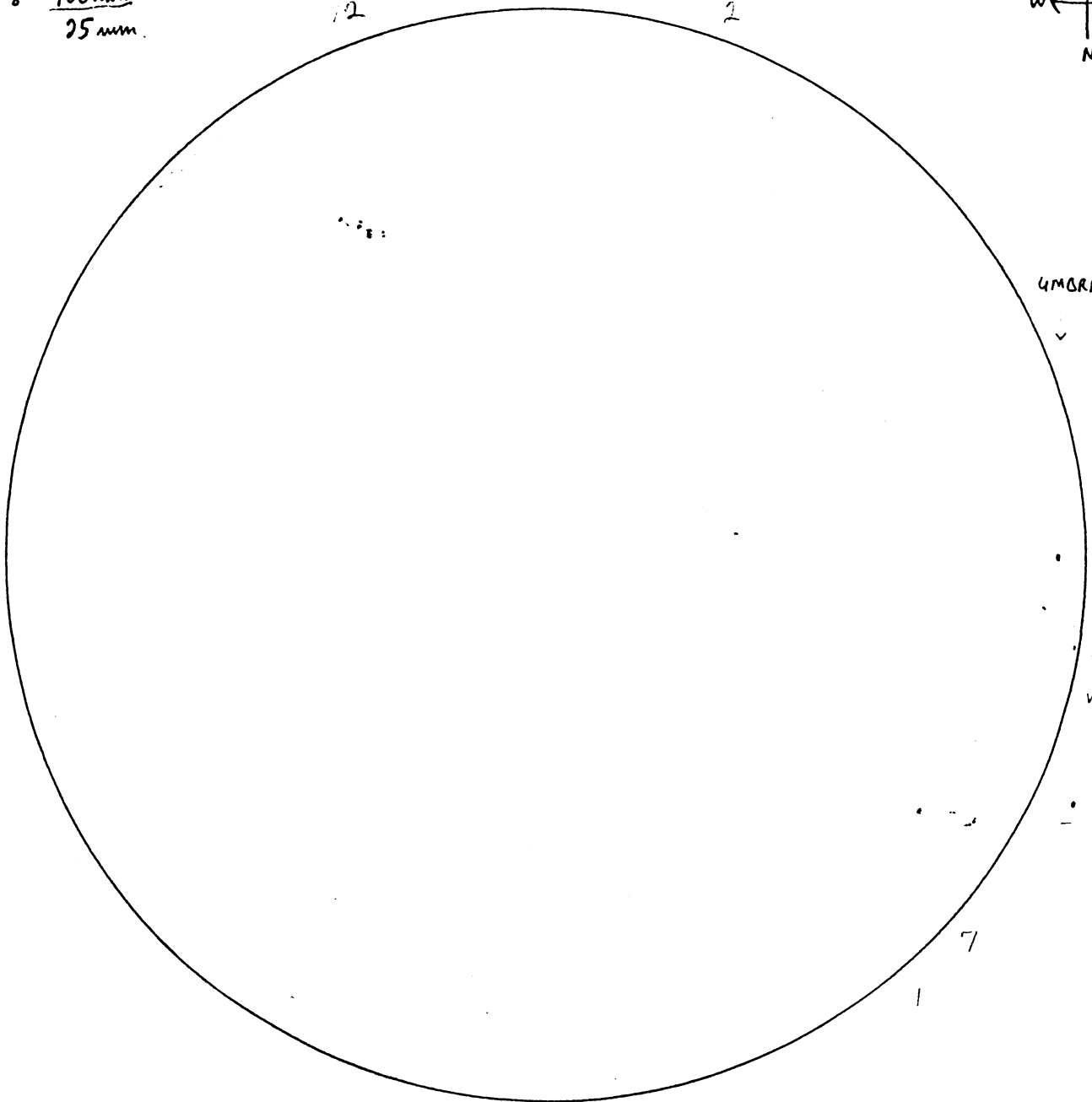
APRIL 27/91 1:50-2:10 P.M. E.D.T.

THIN CIRRUS HAZE IN BLUE SKY.

SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{5}{10}$.



f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



UMBRAL DEPRESSION

SPOTS SHOULD BE WIDER APART

14 =
3 =
2 =
15

RELATIVE # OF SUNSPOTS

$$[(10 \times 7) + 25] = 95$$

$\frac{900 \text{ mm}}{19 \text{ mm}}$, SEEING $\frac{5}{10}$, 2:00 P.M.

APRIL 23/91 12:25-12:32 P.M. E.D.T.

SKIES CLEAR.

SEEING $\frac{6}{10}$, TRANSPARENCY $\frac{8}{10}$.

RELATIVE # OF SUNSPOTS $[(10 \times 1) + 4] = 14$

$\frac{900 \text{ mm}}{12 \text{ mm}}$

12:40 P.M.

SEEING $\frac{5}{10}$

f8 900mm

25mm



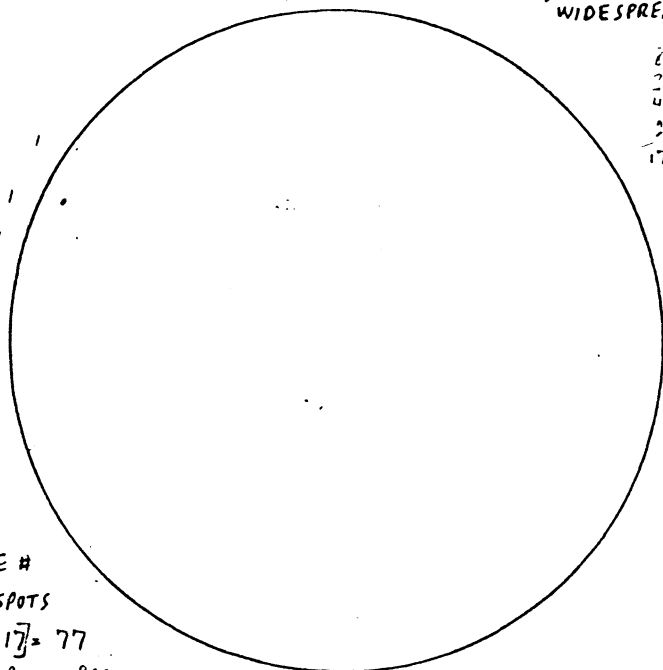
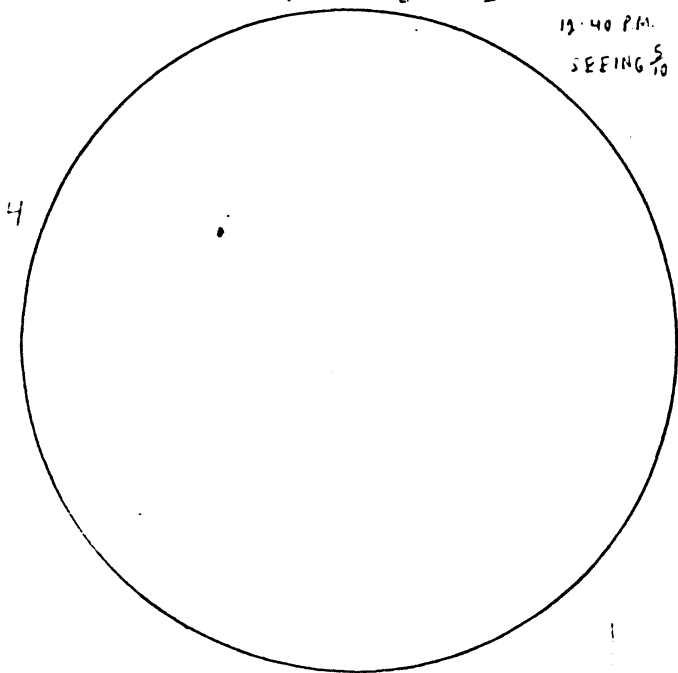
APRIL 25 12:20-12:35 P.M. E.D.T.

SKIES CLEAR, TELESCOPE STEADY.

SEEING $\frac{6}{10}$, TRANSP. $\frac{8}{10}$; FACULAE VERY

EVIDENT, VERY WIDESPREAD.

27
23
20
17



RELATIVE # OF SUNSPOTS

$[(10 \times 6) + 17] = 77$

SEEING $\frac{5}{10}$, 12:45 P.M.

$\frac{900 \text{ mm}}{12 \text{ mm}}$

APRIL 26 6:05-6:15 P.M. E.D.T.

CIRRUS-HAZE IN AFTERNOON SKY

SEEING $\frac{8}{10}$, TRANSP. $\frac{6}{10}$.

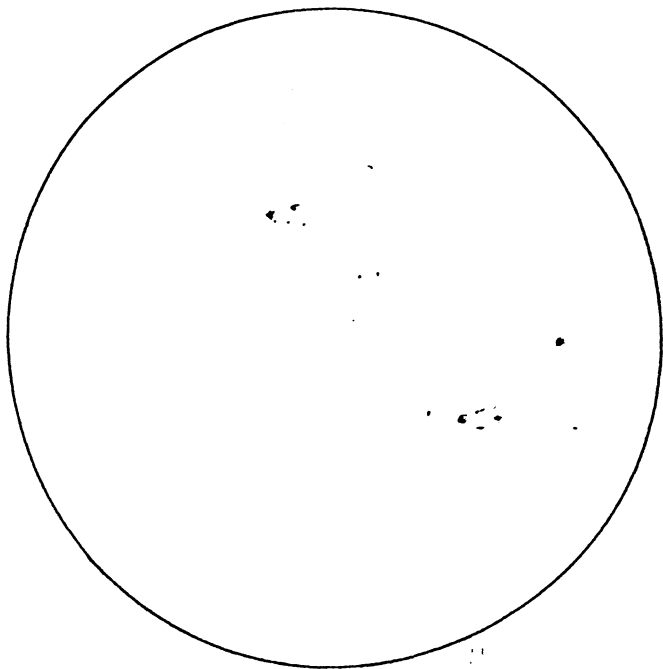
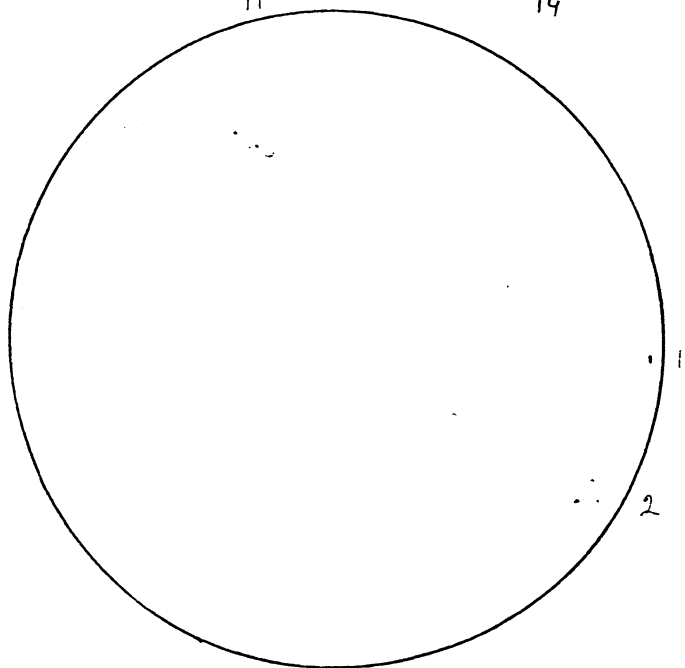
11
+3
14

APRIL 29 12:20-12:40 P.M. E.D.T.

CIRRUS HAZE TURNED OVERCAST

SEEING, STEADY; TRANSP. $\frac{5}{10} \rightarrow \frac{2}{10}$.

11
20
11
3
29



RELATIVE # OF SUNSPOTS

$[(10 \times 3) + 14] = 44$

$\frac{900 \text{ mm}}{12 \text{ mm}}$, 6:17 P.M., SEEING $\frac{6}{10}$.

RELATIVE # OF SUNSPOTS

$[(10 \times 7) + 27] = 97$

$\frac{900 \text{ mm}}{12 \text{ mm}}$, 12:40 P.M., SEEING $\frac{2}{10}$.

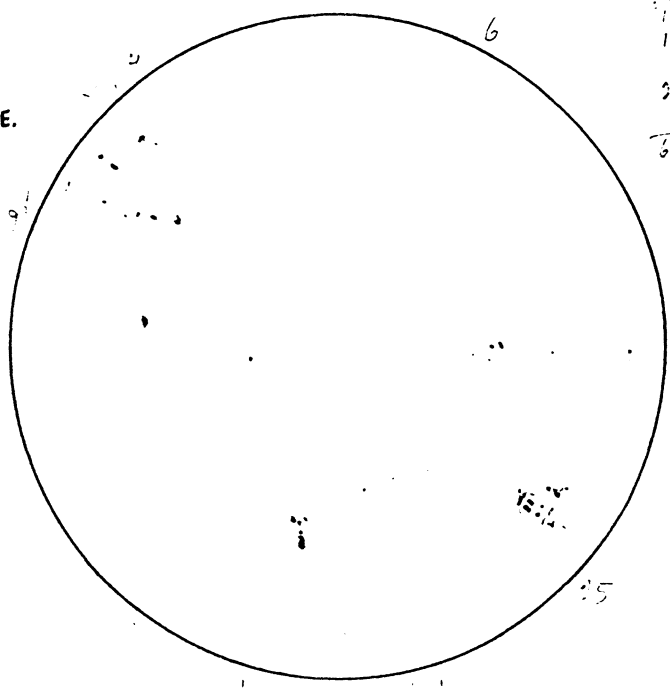
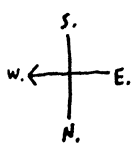
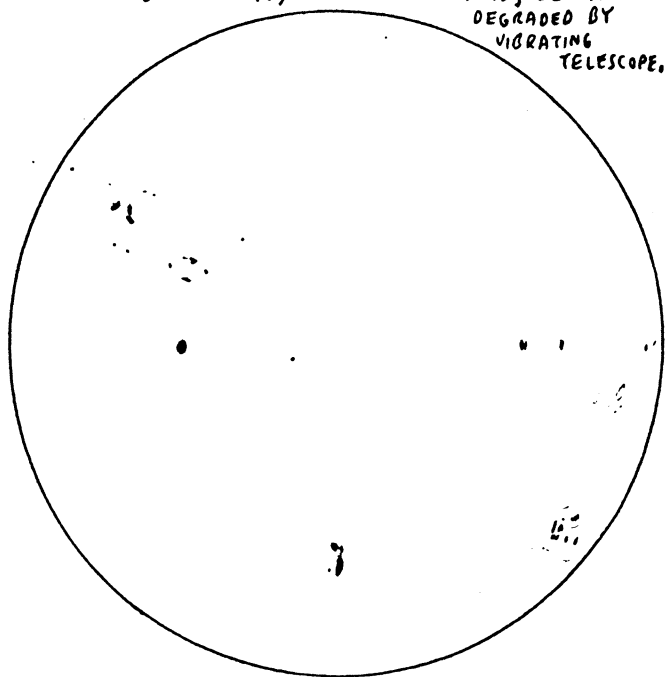
101

APRIL 11/91 12:30-12:30 P.M. E.D.T.
 SKIES BLUE-CLEAR IN SUN'S AREA.
 > SMALL BRANCHES MOVE IN BREEZE.
 SEEING 7/10, TRANSPARENCY 1/10; DETAIL
 DEGRADED BY VIBRATING TELESCOPE.

f8 900mm
 25mm

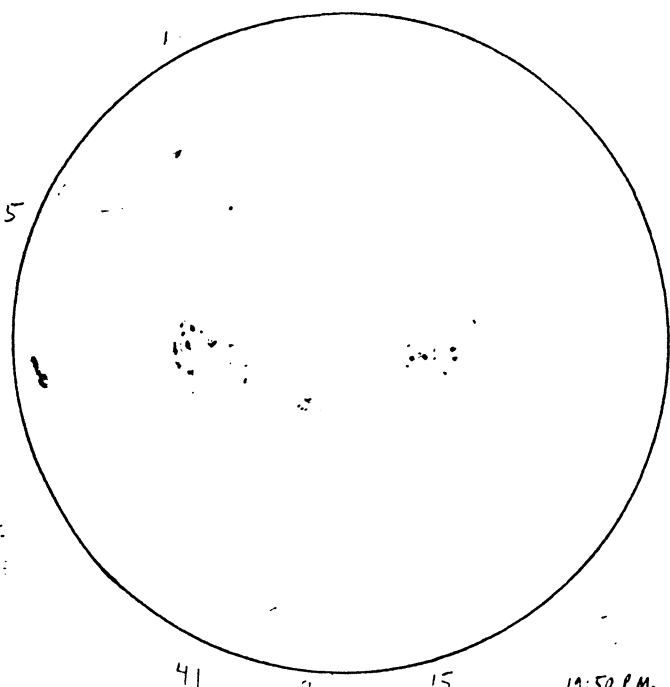
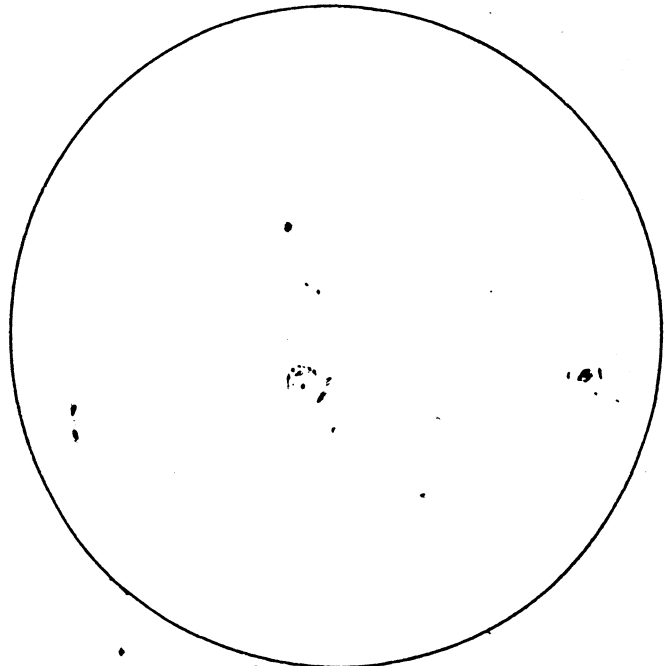
APR. 12 12:20-12:35 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA
 SEEING 7/10, TRANSPARENCY 3/10
 RELATIVE SUNSPOT # $[10 \times 14 + 66] = 206$

8
 10
 11
 4
 27
 3
 66



APR. 16 12:20-12:35 P.M. E.D.T.
 FAST MOVING, WHITE CLOUDS IN 90%
 SMALL → MED. BRANCHES CLEAR SKY.
 MOVE IN GUSTY BREEZE.

APR. 18 12:20-12:40 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING 6/10 'FUZZY'; TRANSP. 8/10.



↑
 ACTUAL POSITION
 OF SPOTS

RELATIVE # OF SUNSPOTS
 $10 \times 6 + 74 = 134$

900mm
 12mm

SEEING
 5/10

SPACE
 SHOULD BE DER.

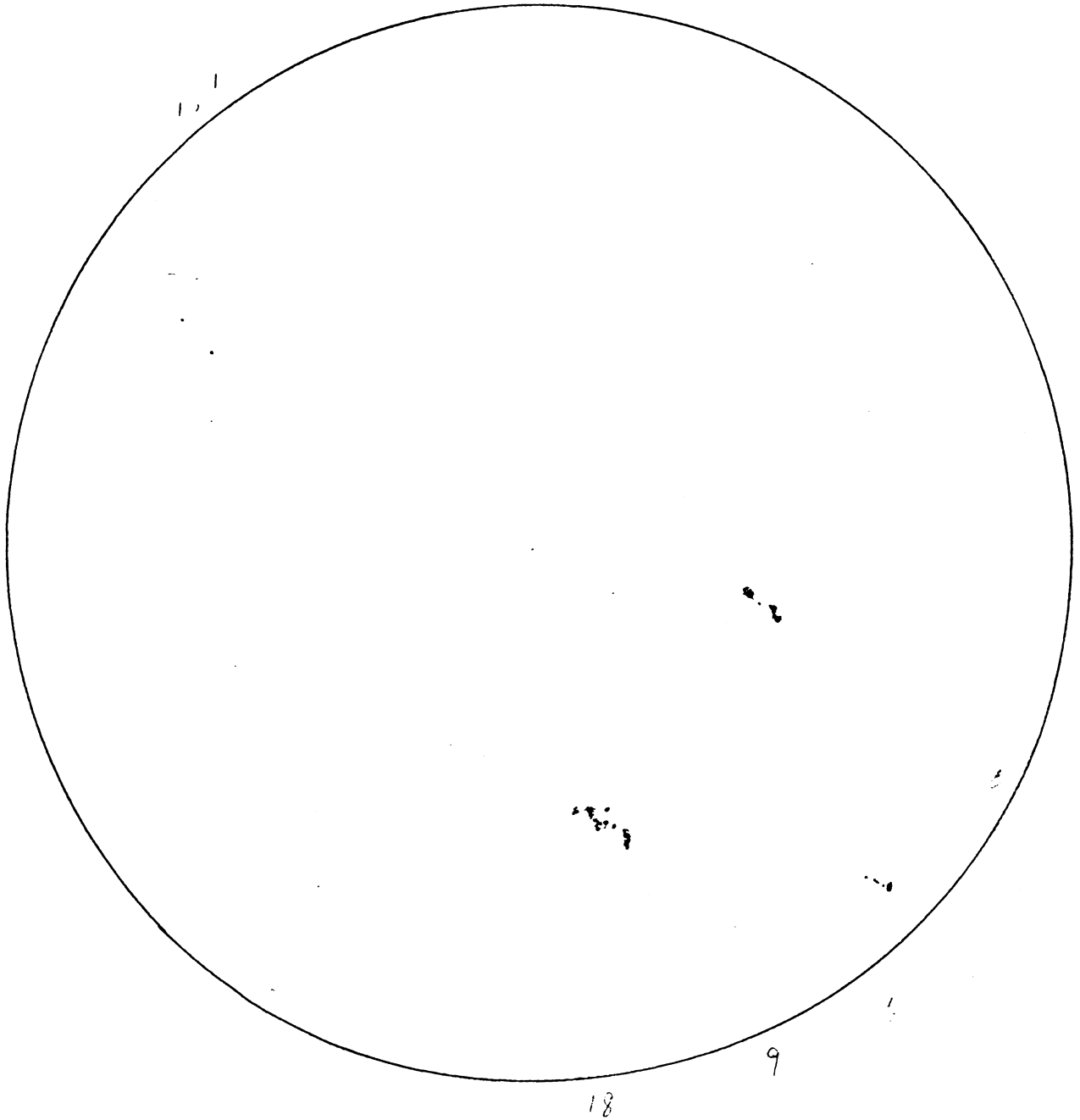
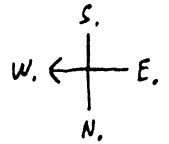
153

MAR. 31/91 1:55 - 2:10 P.M. E.S.T.

SKIES CLEAR IN SUN'S AREA

f8 $\frac{900\text{mm}}{25\text{mm}}$

SEEING $\frac{6}{10}$ FUZZY, TRANSPARENCY $\frac{7}{10}$



15
18
9
18

RELATIVE # OF SUNSPOTS

9:25 P.M.

$$[(10 \times 5) + 35] = 85$$

$\frac{900\text{mm}}{12\text{mm}}$

SEEING $\frac{4}{10}$

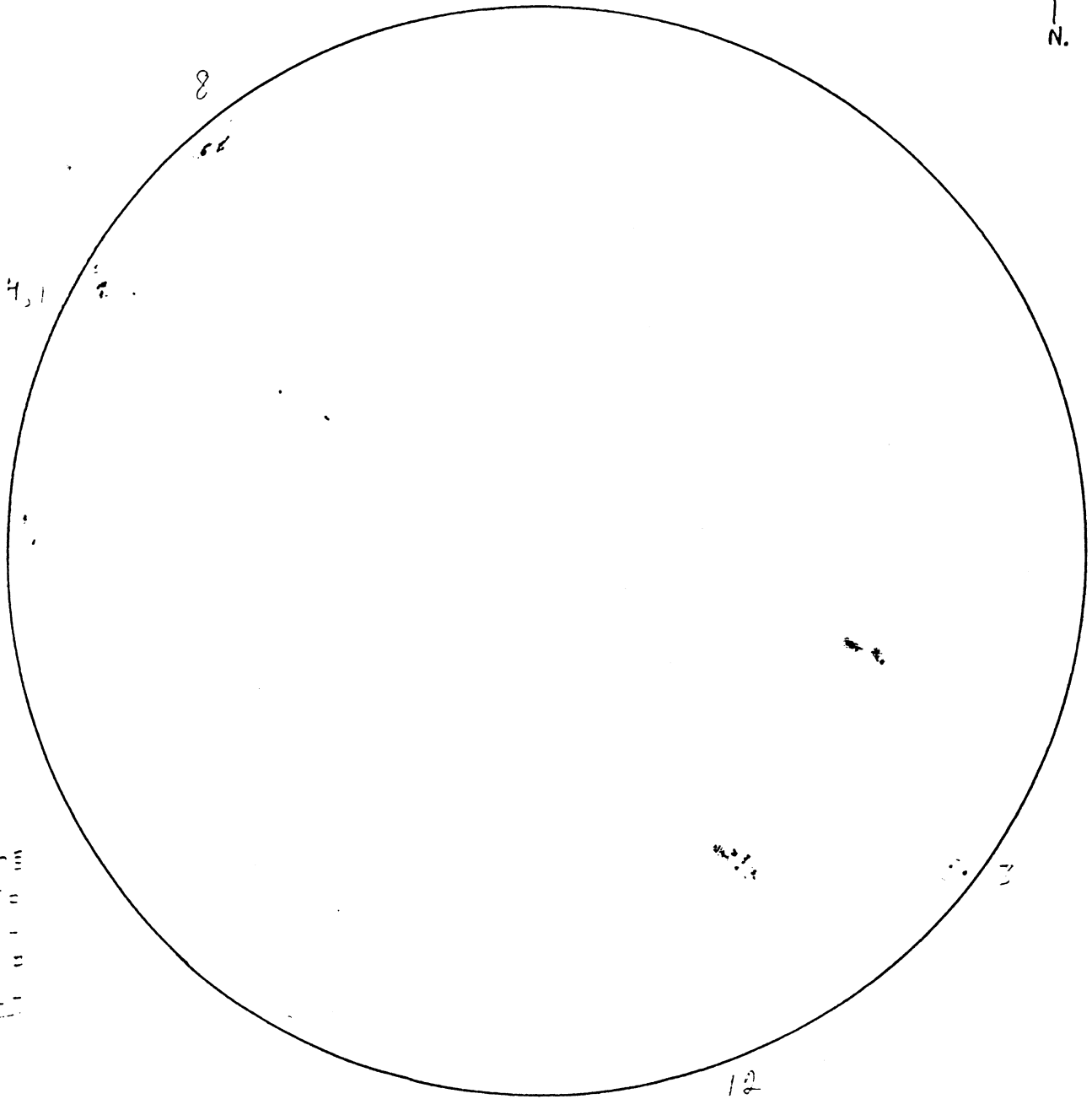
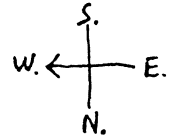
58

99

MAR. 30/91 3:00 - 3:15 P.M.
 WHITE CLOUDS IN 95% CLEAR SKY.
 SEEING $\frac{6}{10}$ RIPPLES; TRANSPARENCY $\frac{9}{10}$
 FACULAE VERY BRIGHT, VERY EVIDENT.

f 8 $\frac{900\text{mm}}{25\text{mm}}$

ELECTRIC CLOCK DRIVE PERFORMED GOOD.



5 =
 5 =
 8 -
 11 =
 12 -
 41

RELATIVE # OF SUNSPOTS
 $[(10 \times 10) + 4] = 141$

3:20 P.M.

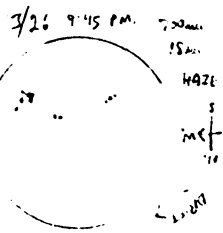
$\frac{900\text{mm}}{12\text{mm}}$

SEEING $\frac{4}{10}$

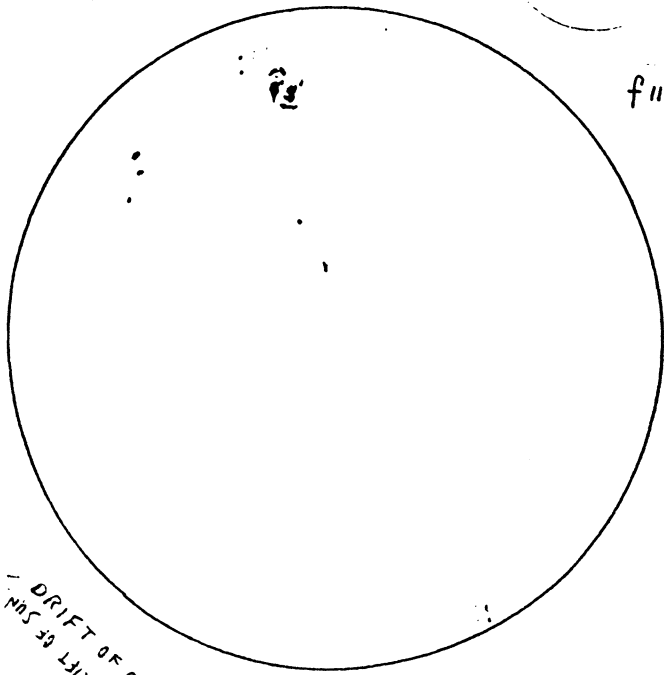
57

99

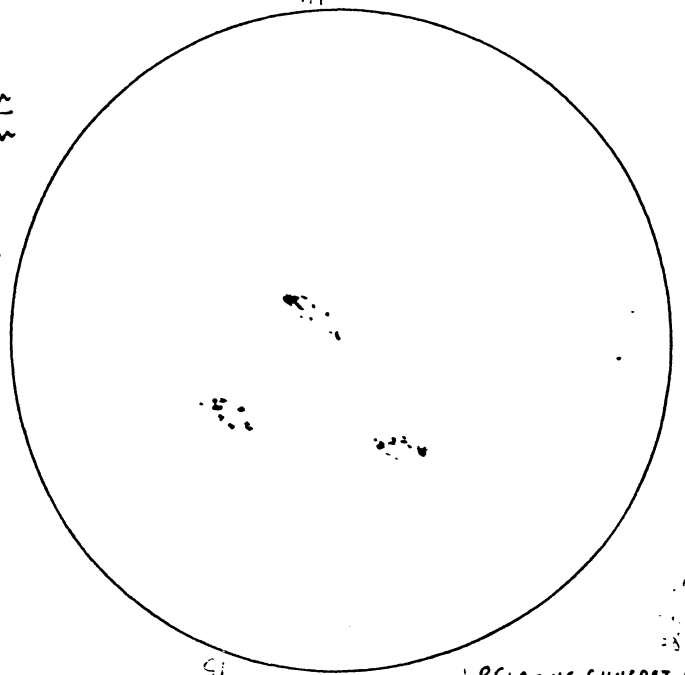
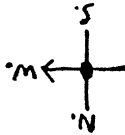
MAR. 28/91 5:50 - 6:00 P.M. EST.
 SKIES CLEARED AFTER 5:00 P.M.
 TELESCOPE VIBRATED IN BREEZE.
 TRANSP. - FACULAE VERY VISIBLE.



APRIL 3: 12:25 - 12:40 P.M. E.S.T.
 SKIES TOTALLY CLEAR; TELESCOPE STEADY.
 SEEING $\frac{6}{10}$, RIPPLES; TRANSPARENCY $\frac{8}{10}$.



f11.6 $\frac{700\text{mm}}{18\text{mm}}$



RELATIVE SUNSPOT #
 $(10 \times 5) + 47 = 97$

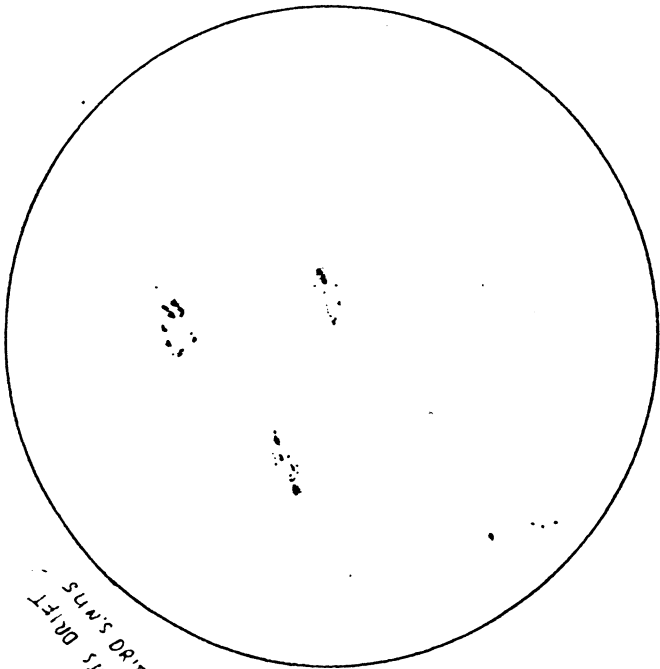
DRIPT OF SUN
 DRIPT OF SUN

APRIL 3. 5:20 - 5:35 P.M. EST.
 SUN SETTING INTO THIN CIRRUS
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$. HAZE.

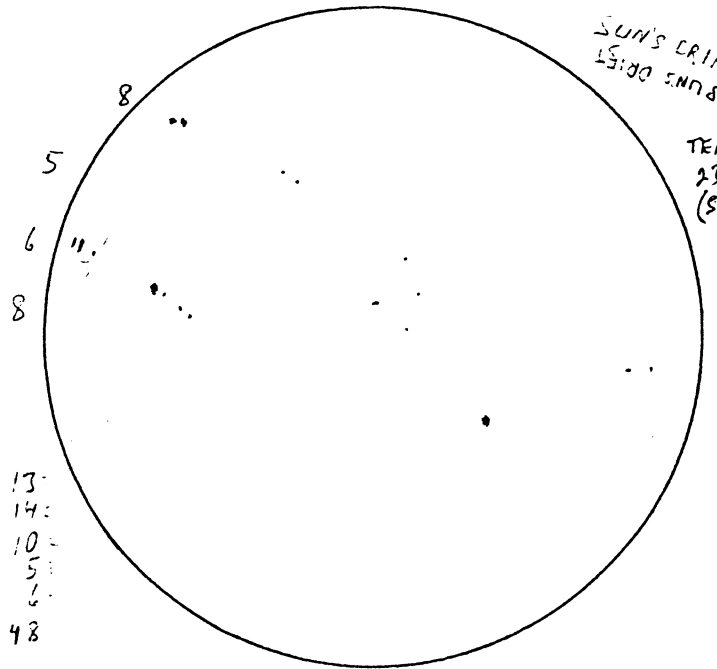
APRIL 7 2:05 - 2:25 P.M. E.D.T.
 SKIES HAZY BLUE.
 SEEING $\frac{6}{10}$, TRANSPARENCY $\frac{6}{10}$.

$\frac{700\text{mm}}{12\text{mm}}$ SEEING: $\frac{5}{10}$

f11.6 $\frac{700\text{mm}}{18\text{mm}}$



SUN'S DRIPT
 SUN'S DRIPT



SUN'S DRIPT
 SUN'S DRIPT
 TEMP. 23°C (SHADE)

RELATIVE # OF SUNSPOTS
 $[(10 \times 10) + 48] = 148$

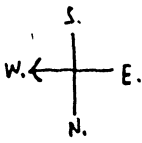
2:50 P.M. f8 $\frac{900\text{mm}}{12\text{mm}}$ SEEING: $\frac{5}{10}$

MARCH 16/91 2:10-2:55 P.M. E.S.T.

SKIES TOTALLY CLEAR.

CALM TO LIGHT BREEZE IN OBS. LOT.

SEEING 70, TRANSP. 90. FACULAE VERY EASILY VISIBLE.



f 8 $\frac{900\text{mm.}}{25\text{mm.}}$

SPOTS SHOULD BE LOCATED HERE

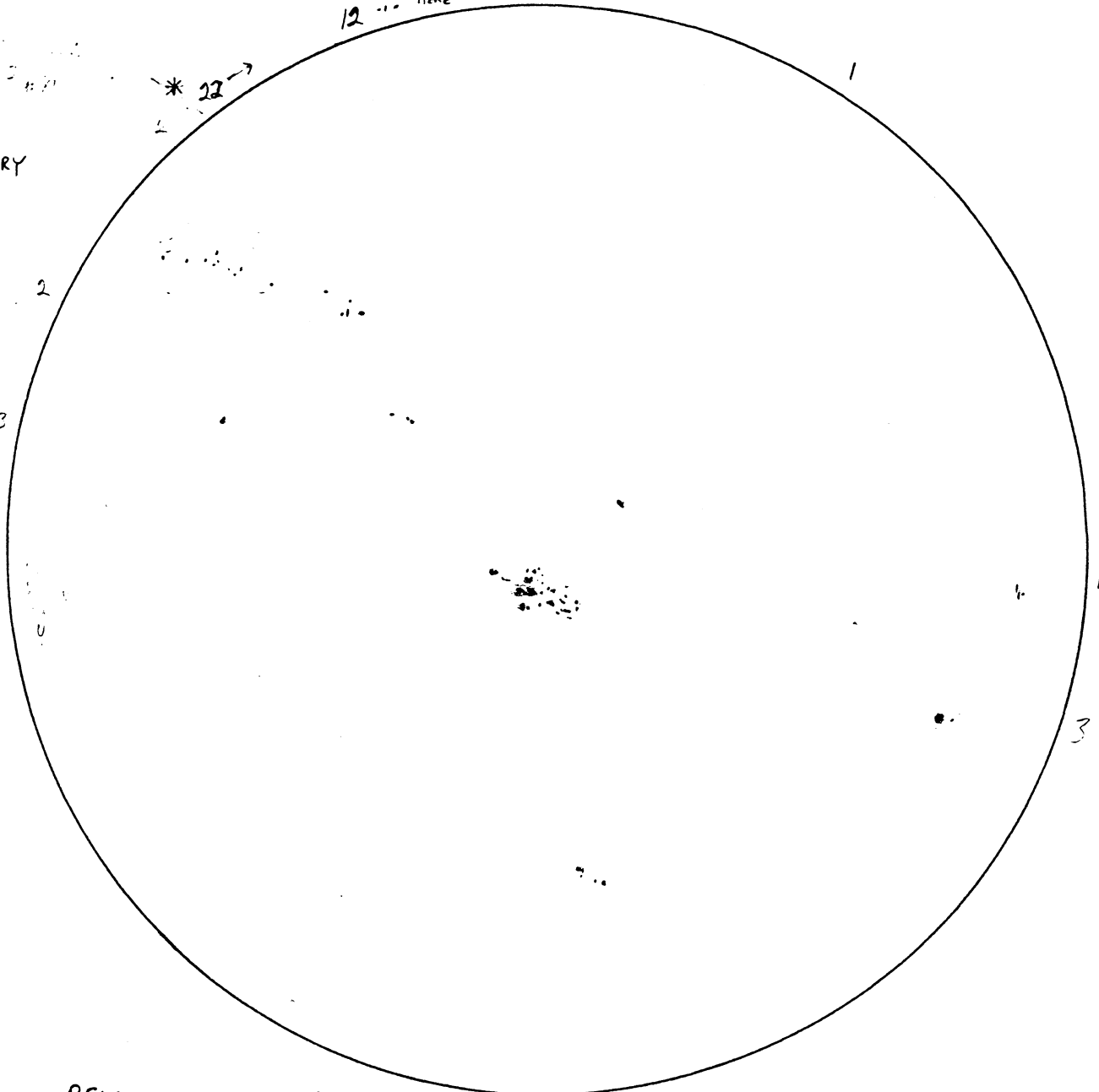
2

12

1

* 22 →

+7°C
IN
OBSERVATORY
LOT



6 =
34 =
3 =
7 =
54 =
104

RELATIVE # OF SUNSPOTS

48 6

$$[(10 \times 11) + 104] = 214$$

3:15 P.M. , $\frac{900\text{mm.}}{12\text{mm.}}$, SEEING 70

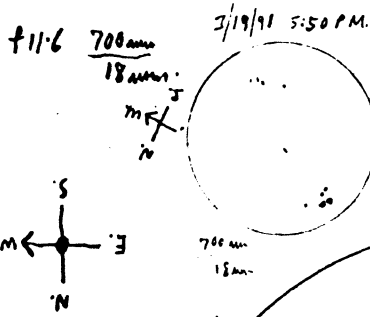
SPOTS SHOULD
*
LINE UP

COUNTED SPOTS DOWN TO VISUAL DETECTION

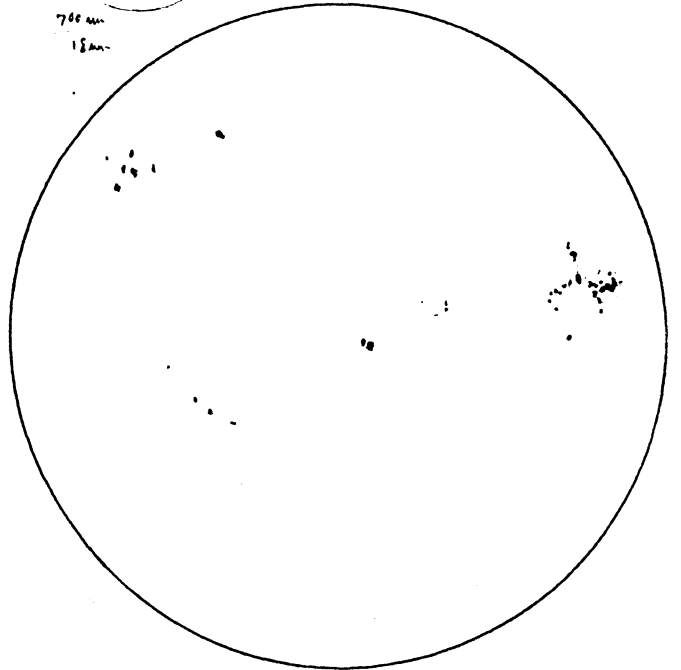
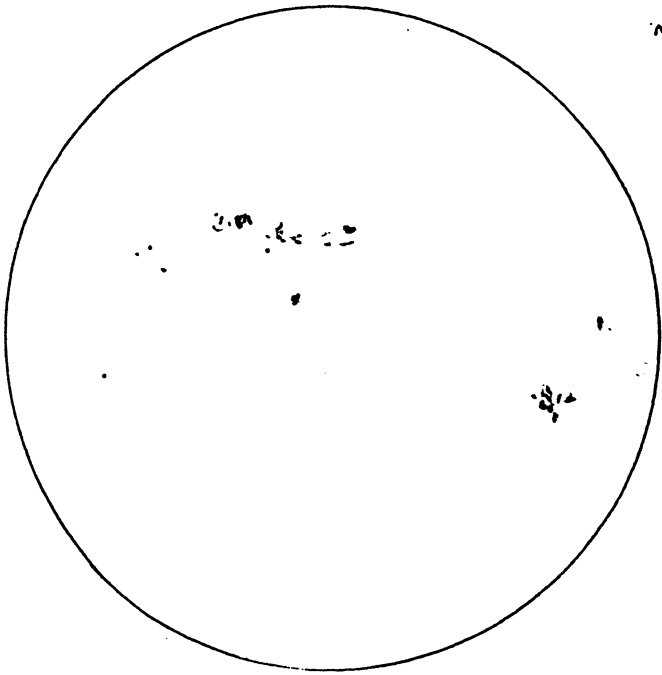
56

98

MAR. 13/91 12:30-12:45 P.M. E.S.T.
 CIRRUS CLOUD BANK IN SOUTH SKY
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$. SMALL BRANCHES MOVE
 IN BREEZE.

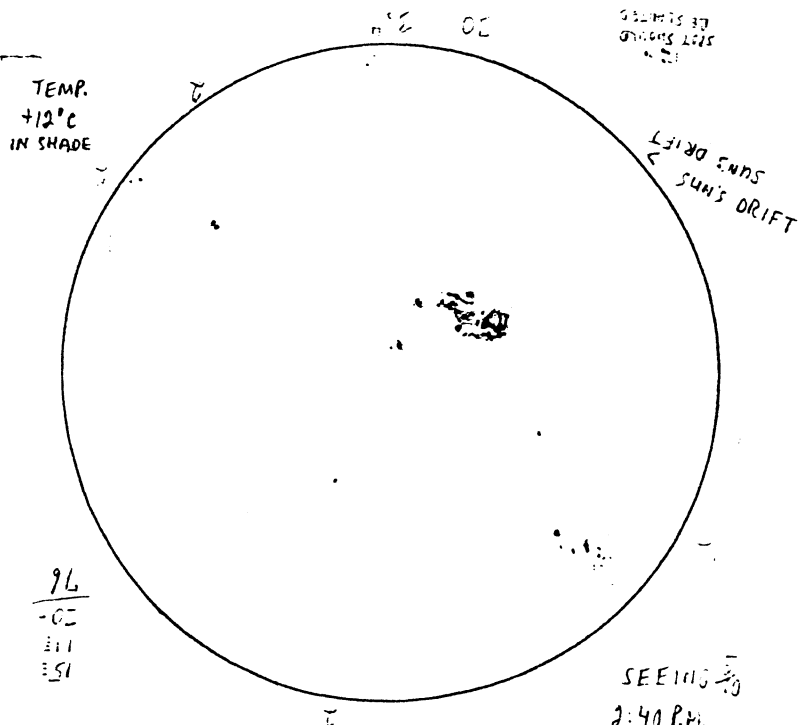
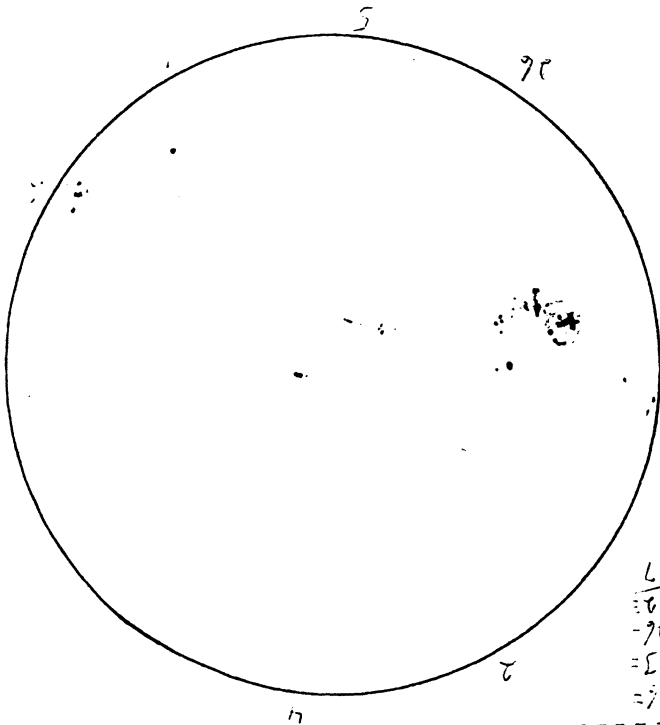


MAR. 20 12:25-12:40 P.M. E.S.T.
 SKIES 10% CLEAR.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$



MAR. 21 12:15-12:30 P.M. E.S.T.
 SKIES HAZY, GRADUALLY CLEARING.
 SEEING $\frac{8}{10}$, TRANSP. $> \frac{6}{10}$.

MAR. 23 2:00 - 2:30 P.M. E.S.T.
 SKIES CLEARED AFTER 1:00 P.M.
 SEEING $\frac{7}{10}$, TRANSPARENCY $> \frac{8}{10}$
 VISIBLE FACULAE VERY BRIGHT



RELATIVE # OF SUNSPOTS

$$[(10 \times 8) + 47] = 127$$

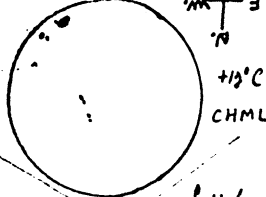
SEEING $\frac{8}{10}$
 12:40 P.M.
 700mm
 9mm

RELATIVE # OF SUNSPOTS

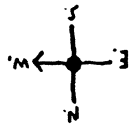
$$[(10 \times 8) + 76] = 156$$

MAR 5/91 12:15-12:25 P.M. EST.
 SKIES CLEAR
 SEEING $\frac{7}{10}$, TRANSP. $\frac{5}{10}$

3/1/91 3:00 P.M.
 700mm/18mm



9.11
 700mm
 18mm



700mm
 12mm

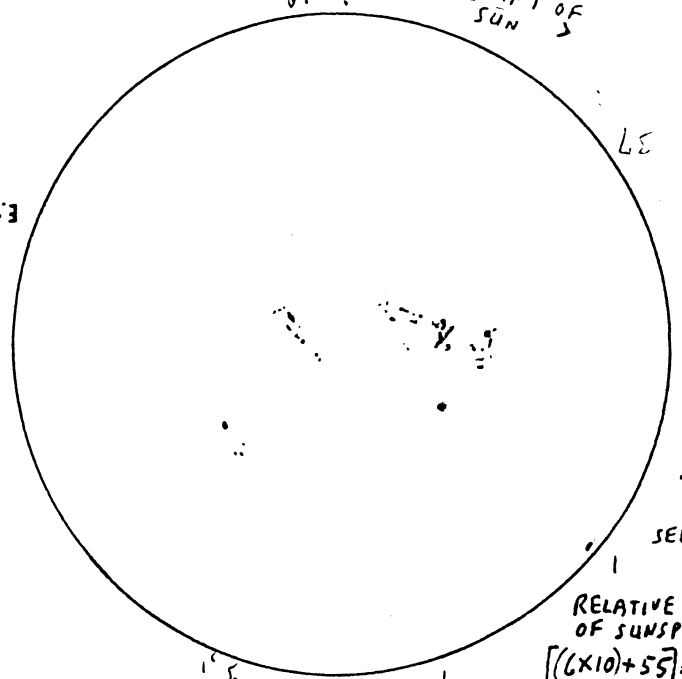
REL. # OF SUNSPOTS
 $[(5 \times 10) + 7] = 57$

MAR. 10 2:10-2:25 P.M. EDT.
 SKIES CLEAR. NO BREEZE IN OBS. LOT.
 SEEING $\frac{6}{10}$, TRANSPARENCY $\frac{7}{10}$.

DISK SHOULD BE IN CENTRE OF

61

DRIFT OF SUN

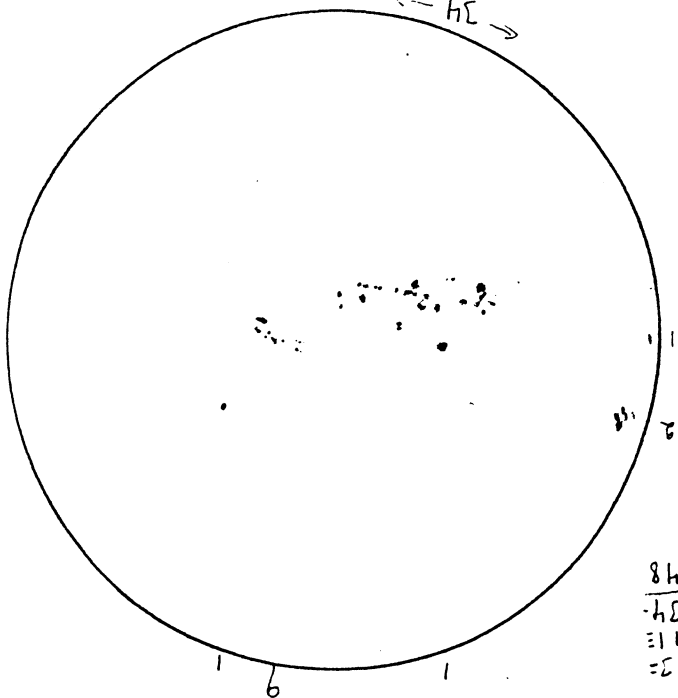


$\frac{700}{12}$
 SEEING $\frac{4}{10}$

RELATIVE # OF SUNSPOTS
 $[(6 \times 10) + 55] = 115$

MAR. 11 12:25-12:40 P.M. EST.
 SKIES CLEAR.
 SEEING $\frac{4}{10}$, TRASP. $\frac{7}{10}$.

← HE →



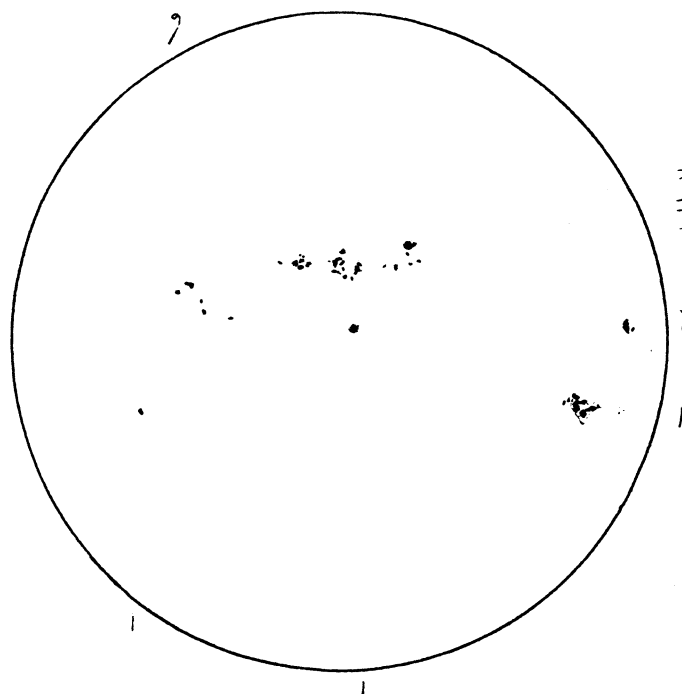
RELATIVE # OF SUNSPOTS
 $[(6 \times 10) + 48] = 108$

700mm
 12mm

$\frac{84}{48}$
 $\frac{48}{11}$
 $\frac{11}{5}$

MAR. 12 12:25-12:40 P.M. EST.
 SKIES CLEAR. TELESCOPE STEADY.
 SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{8}{10}$

← IE →



RELATIVE # OF SUNSPOTS
 $[(10 \times 6) + 52] = 112$

700mm
 12mm
 SEEING $\frac{4}{10}$

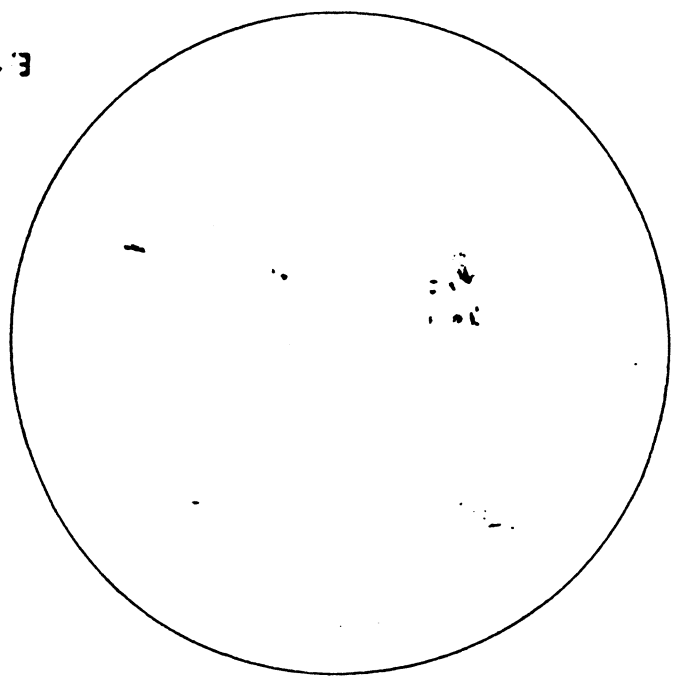
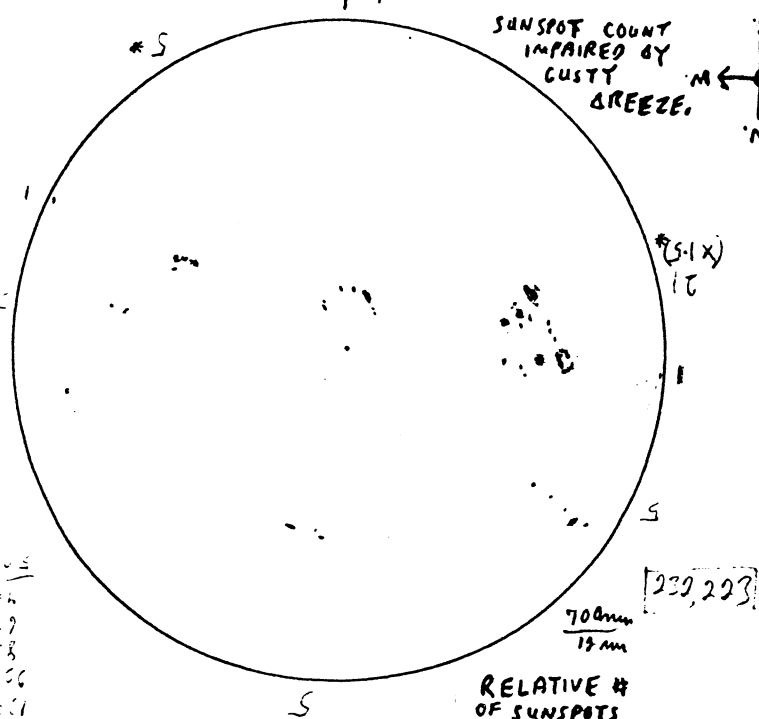
CS
 = 6E
 = 7
 = 11

CS
 = 10
 = 11

FEB. 21/91 12:35-12:45 P.M. E.S.T.
 SKIES CLEAR SMALL BRANCHES SWAY
 SEEING $\frac{7}{10}$, TRANSP. $\frac{9}{10}$ IN BREEZE.

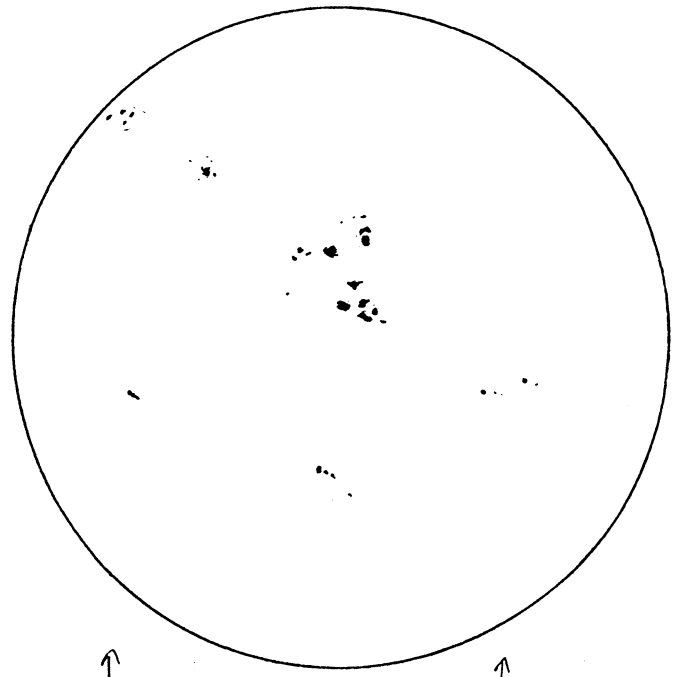
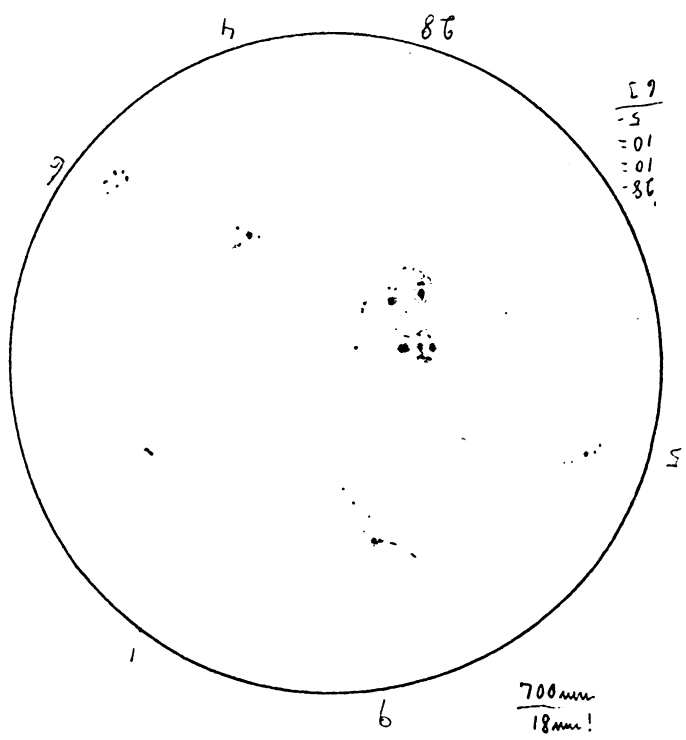
f 11.6 $\frac{700mm}{18mm}$

FEB. 22 12:15-12:30 P.M.
 CUM. CLOUDS IN 60% CLEAR SKY.
 SMALL-MED. BRANCHES MOVE IN BREEZE.
 TRANSP. $\frac{8}{10}$. FAST DRAWING



FEB. 23 1:30-1:40 P.M. EST.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$.

FEB. 24 1:30-1:50 P.M. EST.
 SKIES HAZY-BLUE CHANGED TO 95% CLOUDS.
 SEEING $\frac{8}{10}$. TRANSP. $\frac{4}{10}$ DETERIORATED TO $\frac{3}{10}$.

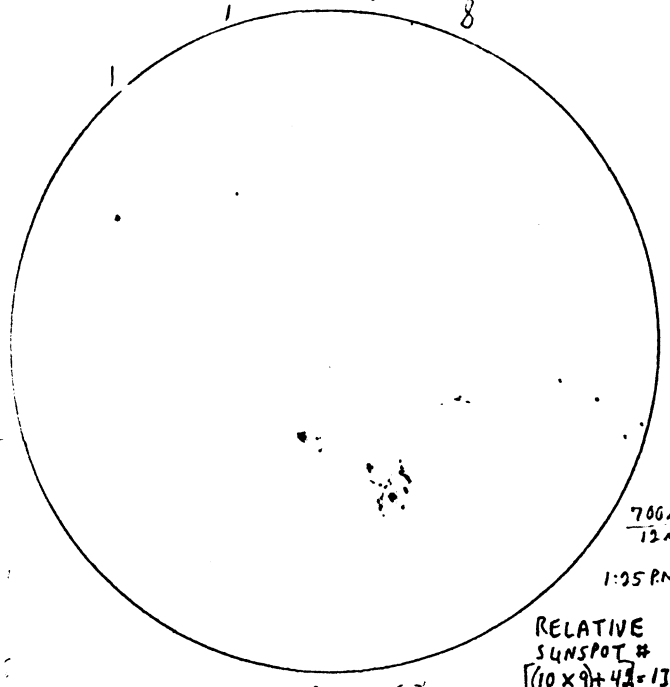
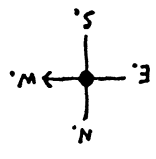


RELATIVE SUNSPOT #
 $[(10 \times 6) + 6] = 123$
 $[(10 \times 6) + (3 \times 1.5)] = 155$

RELATIVE # OF SUNSPOTS
 $[(10 \times 10) + 50] = 150$
 $*167$

FEB. 9/91 1:10-1:25 P.M. EST.
 SKIES CLEAR IN SUN'S AREA.
 NO WIND IN OBSERVATORY PARKING LOT.
 SEEING $\frac{7}{10}$; TRANSP. $\frac{8}{10}$.

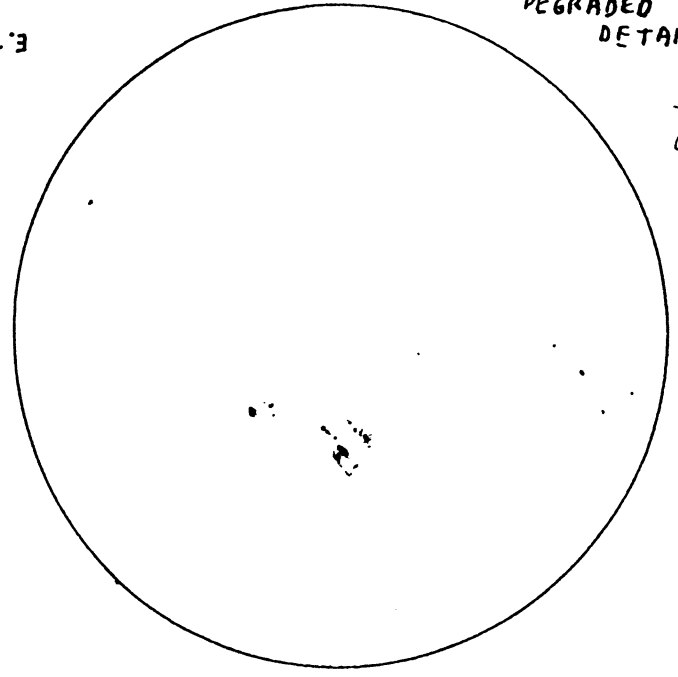
f 11.6 $\frac{700\text{mm}}{18\text{mm}}$



RELATIVE SUNSPOT #
 $[(10 \times 9) + 4] = 134$
 140, 134

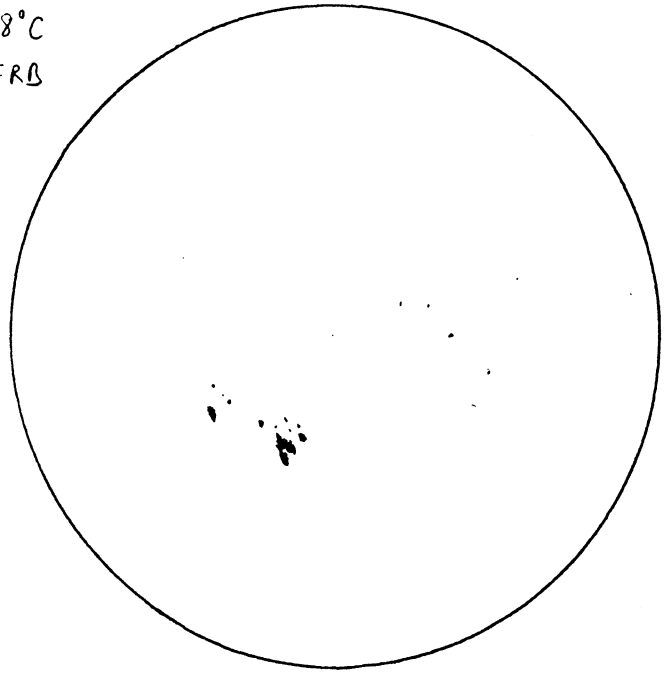
FEB. 10 1:00-1:20 P.M. EST.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$. VIBRATING
 PARKDALE + MAIN ST. TELESCOPE
 DEGRADED
 DETAIL.

-0°C
 CHML



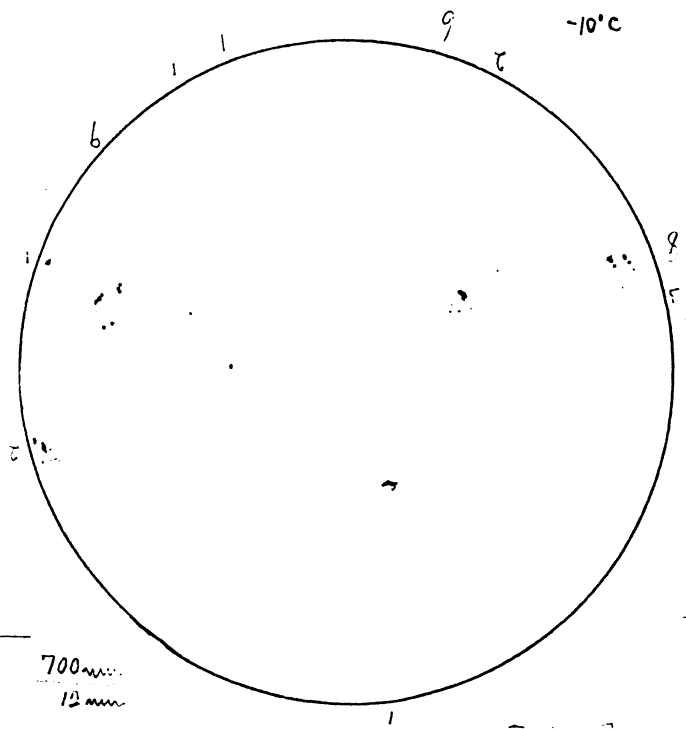
FEB. 11 12:15-12:30 P.M. EST.
 60% CLEAR SKIES. SMALL BRANCHES
 SEEING & TRANSP. $\frac{7}{10}$. MOVE IN BREEZE.
 VIBRATING TELESCOPE DEGRADED DETAIL.

8°C
 RB



FEB. 16 11:35-12:00 N. EST.
 SKIES CLEAR. TELESCOPE STEADY IN OBSERVATORY LOT.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{9}{10}$; FACULAE VERY EVIDENT.

-10°C



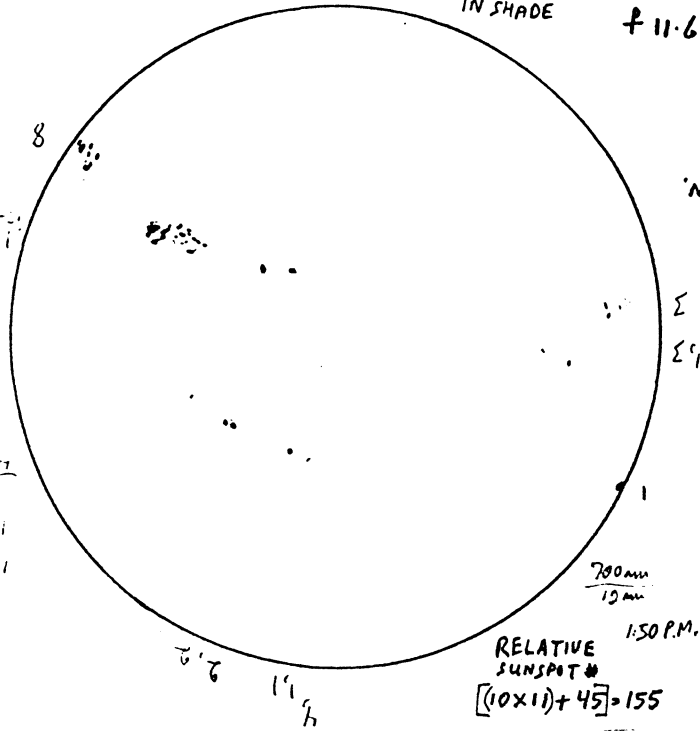
700mm
 12mm
 12:10 P.M.

RELATIVE # OF SUNSPOTS
 $[(10 \times 9) + 3] = 121$

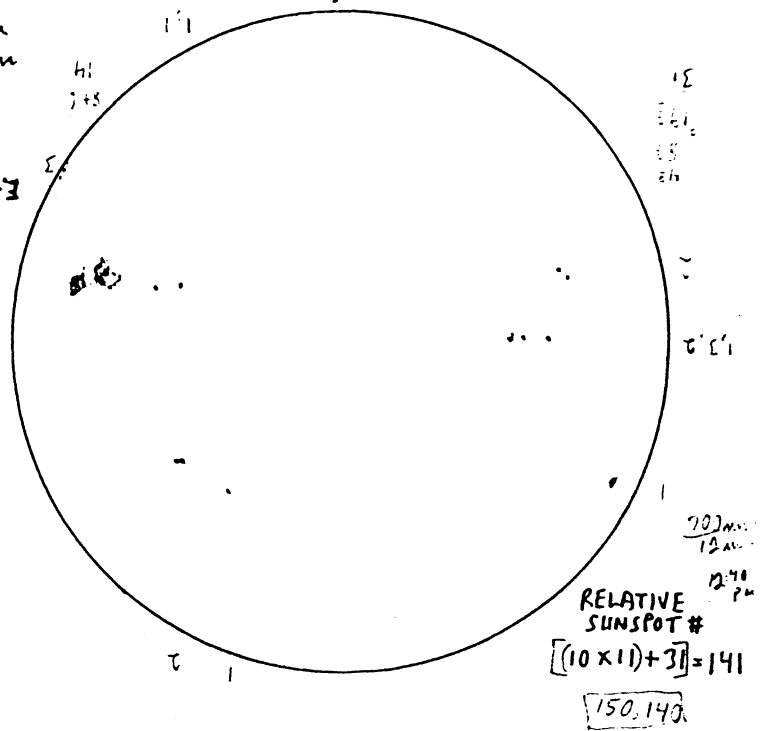
169, 159

10
 -1
 -5
 -6
 -7
 -8
 -9

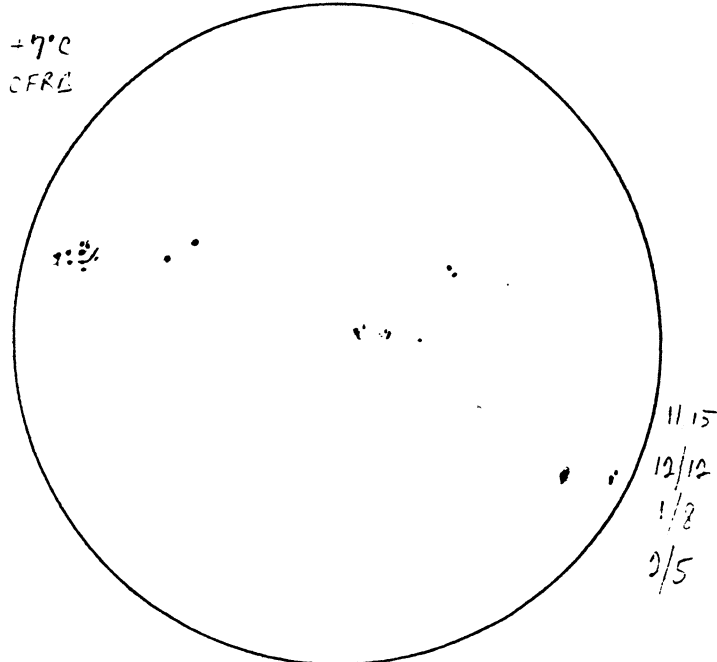
FEB. 3/91 1:20-1:35 P.M. E.S.T.
 SKIES TOTALLY CLEAR; WIND BLOCKED
 SEEING $\frac{8}{10}$ BY OBS. TREES.
 TRANSPARENCY $\frac{9}{10}$. TEMP +4°C
 IN SHADE



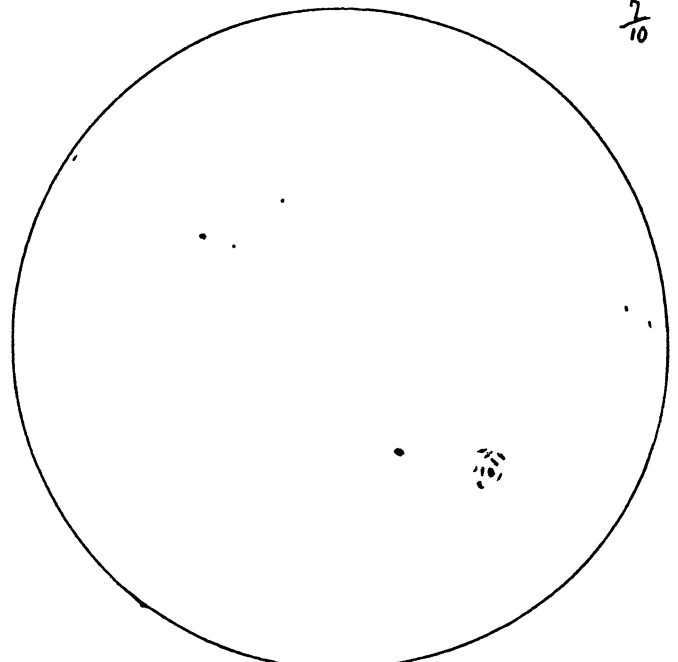
FEB. 4 12:15-12:35 P.M. E.S.T.
 LIGHT CIRRUS CLOUDS IN BLUE SKY.
 VIBRATING TELESCOPE DEGRADED FINE DETAIL.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{7}{10}$



FEB. 5 12:15-12:35 P.M. E.S.T.
 HAZY DRIFTING CLOUDS,
 SEEING $\frac{8}{10}$ STEADY; TRANSP. $\frac{7}{10}$.



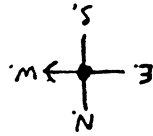
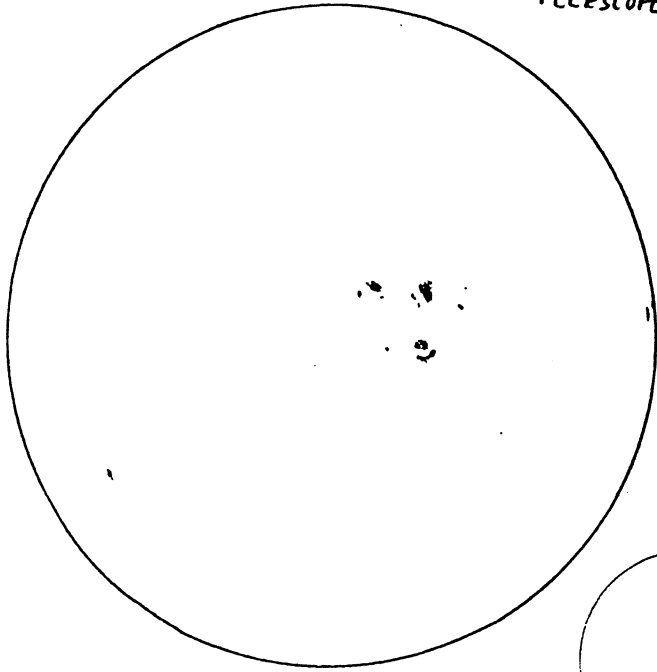
FEB. 8 12:15-12:35 P.M. E.S.T.
 SKIES CLEAR IN SUN'S AREA.
 VIBRATING TELESCOPE DEGRADED DETAIL,
 <MED. BRANCHES MOVE IN BREEZE. TRANSP. $\frac{7}{10}$



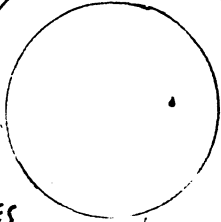
JAN. 25 12:25-35 P.M. E.S.T.

SKIES CLEAR. SMALL-MEDIUM BRANCHES
TRANSPARENCY $\frac{7}{10}$.
MOVE IN BREEZE.

DETAIL DEGRADED BY VIBRATING
TELESCOPE.

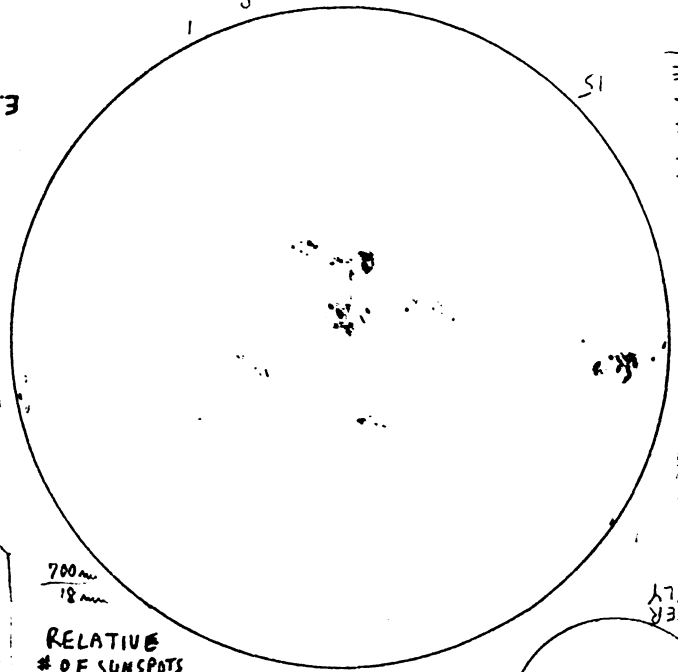


700mm
18mm
X1
FILTER ONLY



JAN 27 1:15-1:50 P.M. E.S.T.

FAST DRIFTING, LIGHT CIRRUS CLOUDS IN SUN'S
SEEING $\frac{8}{10}$, TRANSP. $\frac{6}{10}$ - $\frac{8}{10}$ AREA

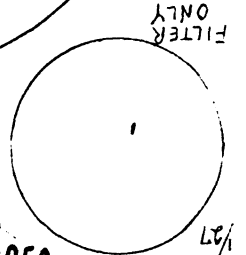


86
801
8
141
51
51
11
1

215
220

700mm
18mm

RELATIVE
OF SUNSPOTS
[(10x10)+72=172] 1:50 P.M.

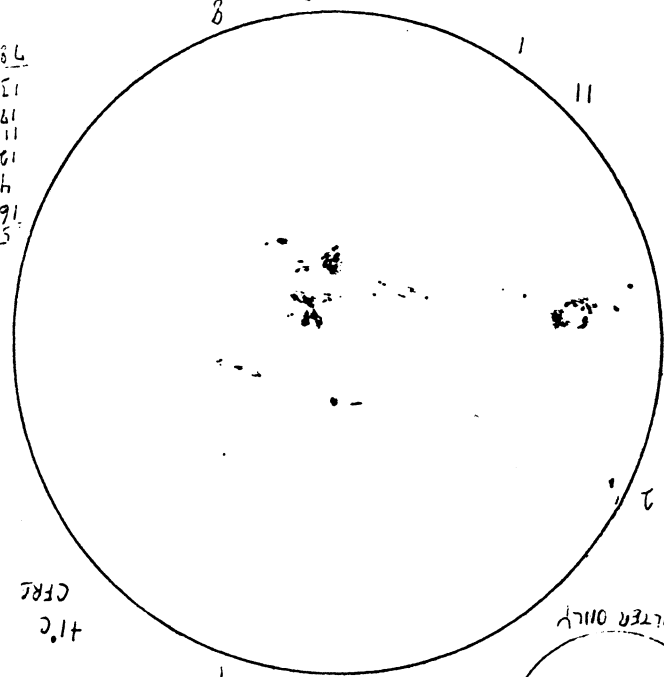


FILTER ONLY

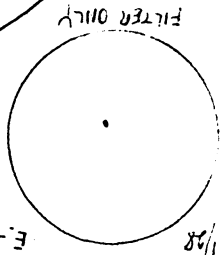
JAN. 28 12:20-12:40 E.S.T.

SKIES CLEAR, < MED. BRANCHES
SEEING $\frac{7}{10}$.
TRANSP. $\frac{8}{10}$.
MOVE IN GUSTY BREEZE.

SEEING $\frac{7}{10}$.
TRANSP. $\frac{8}{10}$.



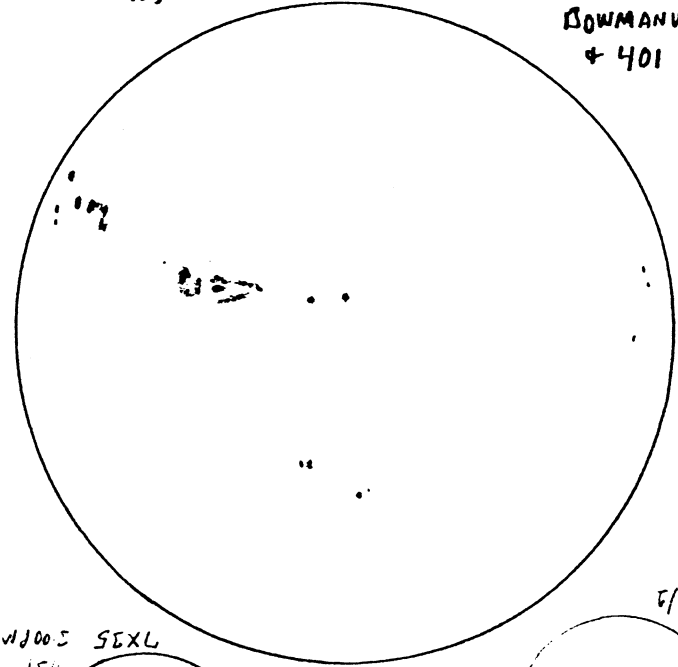
86
81
81
81
76
91
5



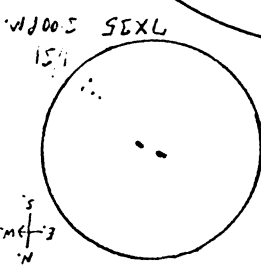
FILTER ONLY

FEB. 2 12:40-12:55 E.S.T.

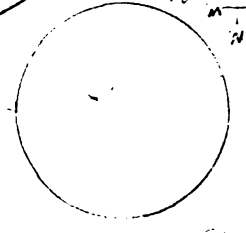
SKIES TOTALLY CLEAR
VIBRATING TELESCOPE DEGRADED
SEEING $\frac{8}{10}$, TRANSP. $\frac{8}{10}$ FINE DETAL



BOWMANVILLE
& 401 HWY.



7X35 500FM
1:51



FILTER ONLY

RELATIVE # OF
SUNSPOTS
[(10x12)+78]=198

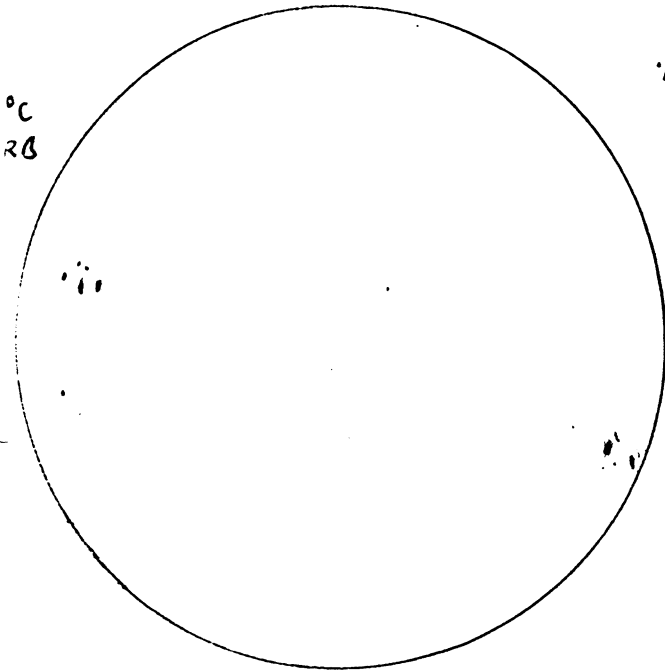
238, 237



93

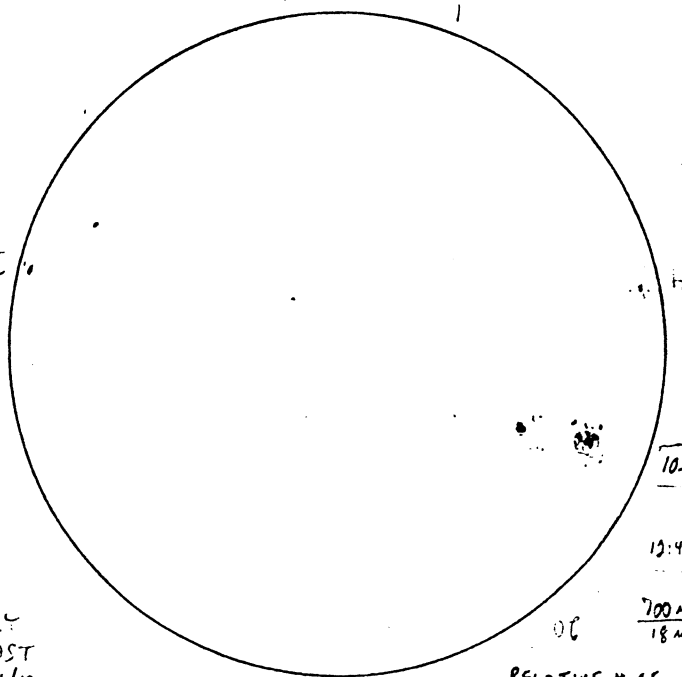
JAN. 8/91 12:15-12:35 P.M. E.S.T. ± 11.6 $\frac{700mm}{18mm}$
 SKIES CLEAR IN SUN'S AREA
 TELESCOPE VIBRATED IN GUSTY BREEZE.
 SEEING $\frac{1}{10}$; TRANSP. $\frac{8}{10}$. (SMALL BRANCHES MOVE)

JAN. 10 12:35-12:40 P.M. E.S.T.
 HAZY-BLUE SKIES, SMALLEST BRANCHES
 SEEING $\frac{6}{10}$, TRANSP. $\frac{5}{10}$. MOVE IN BREEZE



11/15
 12/12
 1/8
 2/5

MOSTLY
 OVERCAST
 1/10 - 1/19



$\frac{0.5}{17}$
 $= 46$

$\frac{103}{97}$

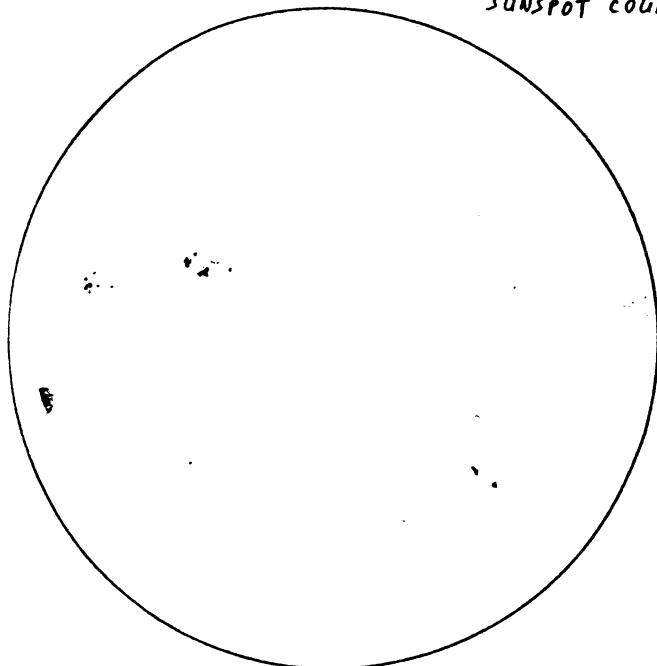
12:45 P.M.

$\frac{700mm}{18mm}$

RELATIVE # OF
 SPOTS $[(10 \times 6) + 30] = 90$

JAN. 19 1:10 - 1:30 P.M. E.S.T.
 SKIES CLEAR, FAST MOVING ISOLATED
 TRANSPARENCY $\frac{8}{10}$. WHITE CLOUDS.
 SEEING $\frac{5}{10}$. CONSTANT RIPPLES PRECLUDED
 SUNSPOT COUNT.

JAN. 22 12:55-1:05 P.M. E.S.T.
 SKIES CLEAR IN SUN'S AREA.
 SMALL BRANCHES MOVE IN BREEZE.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$.



-9°C
 CFRB

$\frac{7.5}{101}$
 $= 6$
 $= 6$
 $= 6$

1:10 P.M.

$\frac{700mm}{12mm}$

SEEING $\frac{5}{10}$

RELATIVE # OF SUNSPOTS
 $[(6 \times 10) + 26] = 86$

$\frac{99}{106}$

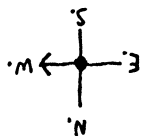
92

JAN. 7 12:25-12:40 P.M. E.S.T.
 SKIES CLEAR.
 SEEING $\frac{6}{10}$, TRANSPARENCY $\frac{8}{10}$.

#4

-9°C
 CFRB

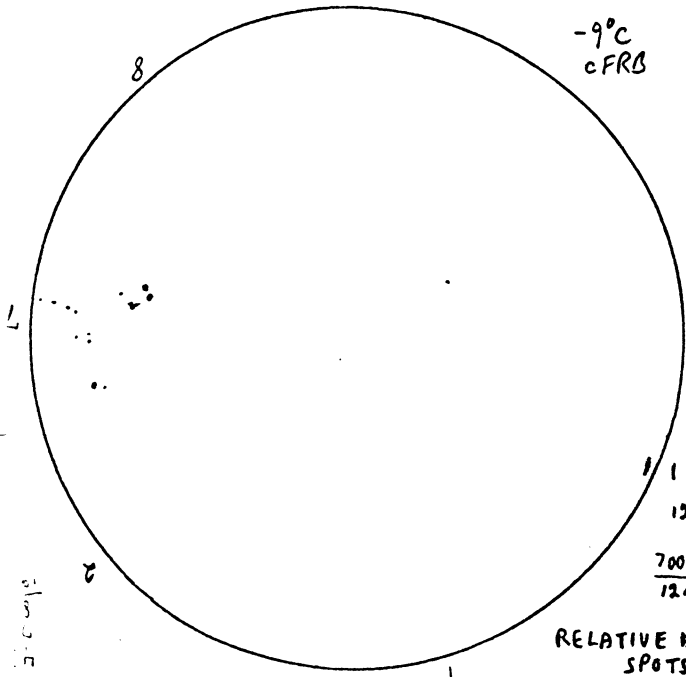
f 11.6 $\frac{700mm}{20mm}$



JAN. 4 13:25-13:35 P.M. EST.
 VIBRATING TELESCOPE DEGRADED DETAIL.
 SKIES TOTALLY CLEAR.
 > SMALL BRANCHES SWAY IN GUSTY BREEZE.

#3

-5°C
 CFRB



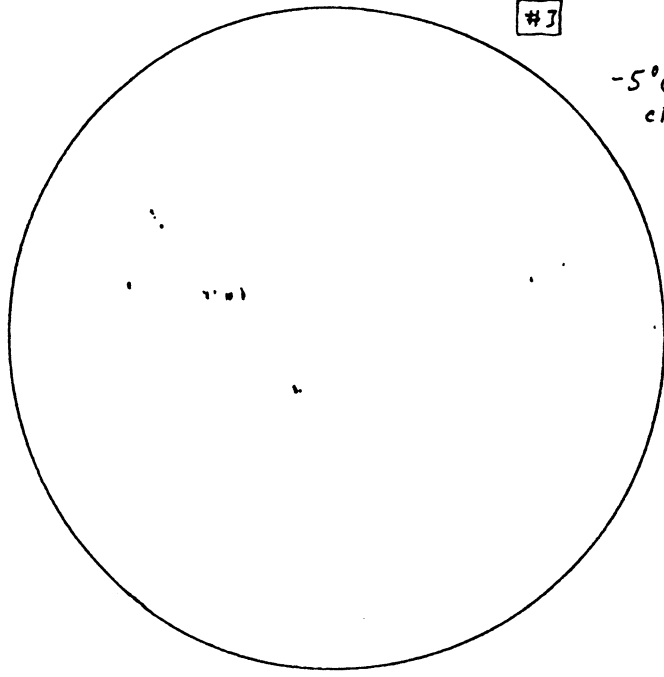
123, 105

13:40 PM

$\frac{700mm}{12mm}$

RELATIVE # OF SPOTS

$[(10 \times 5) + 19] = 69$



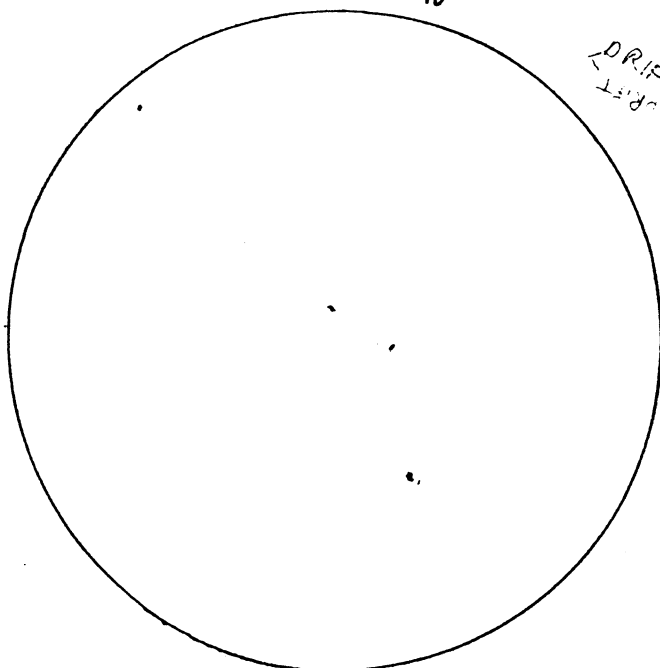
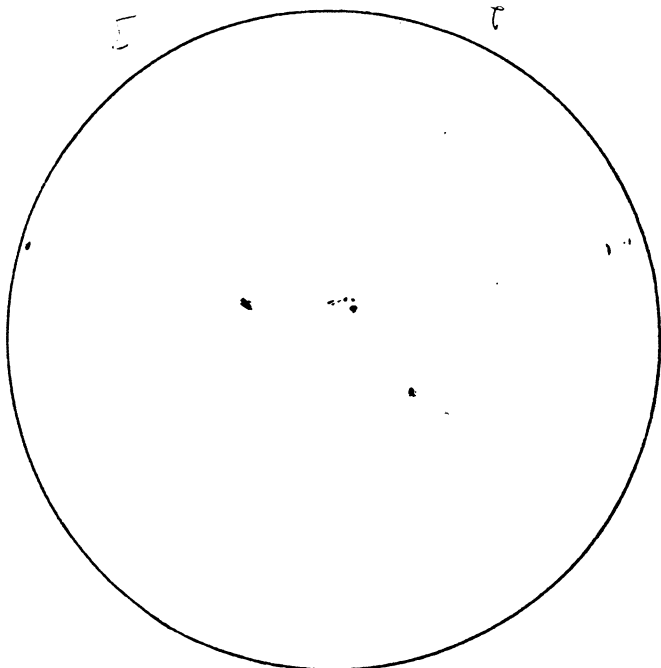
JAN. 2 12:30-12:35 P.M. E.S.T.
 DRIFTING STRATTO-CUM. CLOUDS
 IN 5% CLEAR SKY

TRANSP. $\frac{7}{10}$

#2

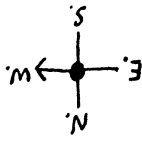
JAN. 1/91 4:15 P.M. EST.
 SKIES CLEARED AFTER OVERCAST
 VERY FAST SKETCH.
 SEEING, TRANSP, $\frac{5}{10}$

#1

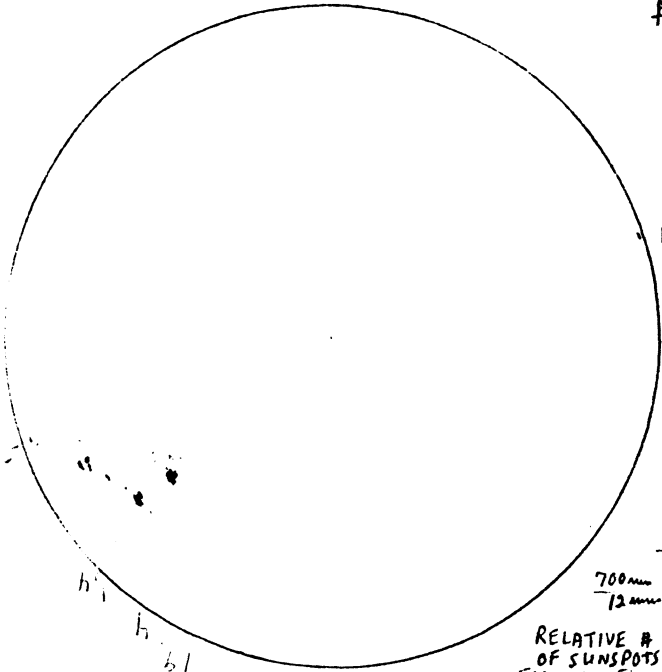


DRIFT
 LEFT

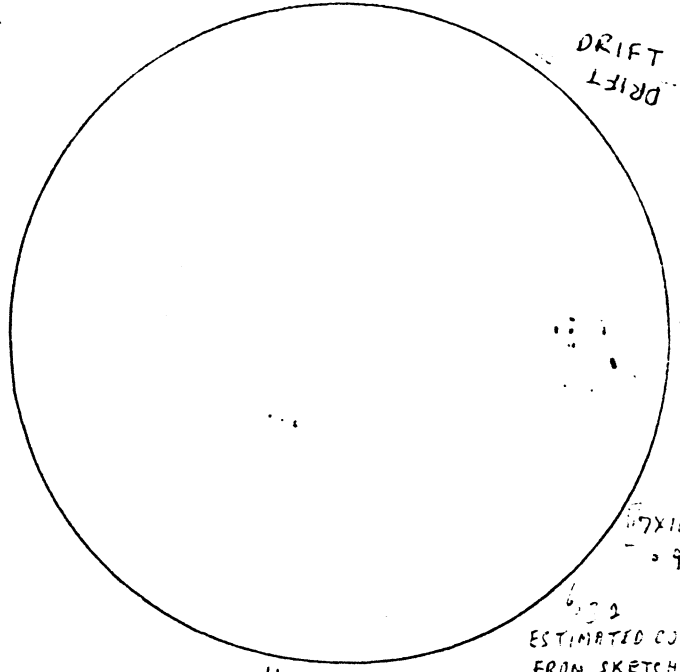
DEC. 20/90 12:16-12:25 E.S.T.
 CIRRUS-BLUE SKY IN SUN'S AREA.
 TELESCOPE VIBRATED CONTINUOUSLY
 IN BREEZE.



DEC. 24 3:05-3:13 E.S.T. (COFFE CREEK)
 SKY CLEAR IN SUN'S AREA
 FAST SKETCH, TELESCOPE VIBRATED ~ 12/20



f 11.6 $\frac{700\text{mm}}{20\text{mm}}$

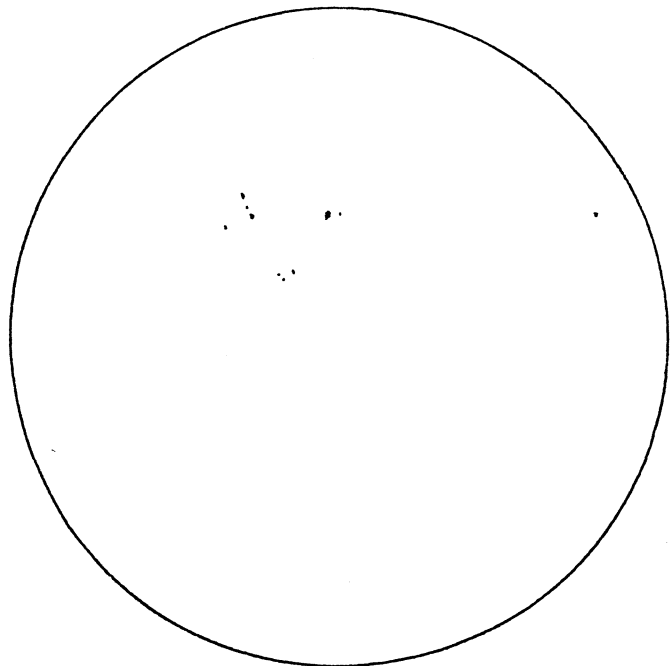
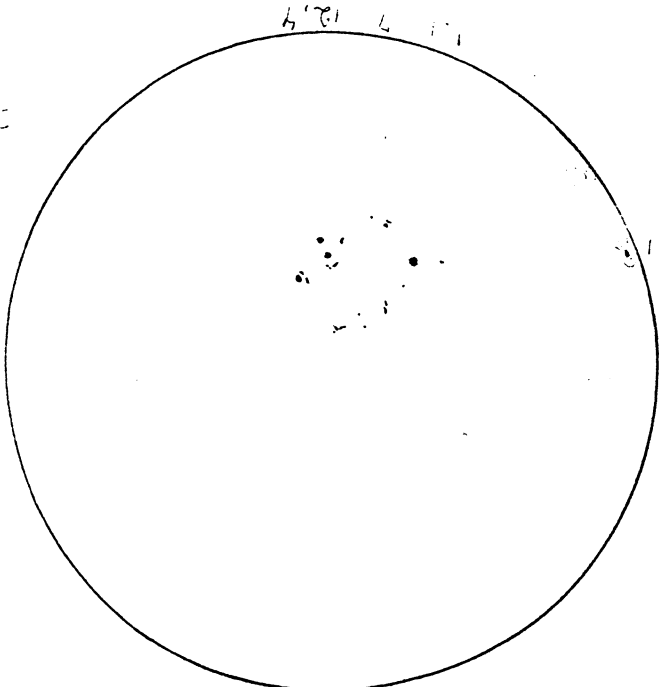


$17 \times 10 + 23 = 90$
 ESTIMATED COUNT FROM SKETCH

$\frac{700\text{mm}}{12\text{mm}}$
 RELATIVE # OF SUNSPOTS
 $[6 \times 10] + 31 = 91$
 SPLIT GROUP INTO INDIVIDUAL GROUPS

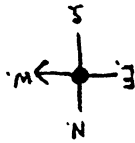
DEC. 26 11:45 AM-12 N. E.S.T.
 CUM CLOUDS IN 80% CLEAR SKY.
 SEEING $\frac{5}{10}$, MANY RIPPLES INSIDE OBS. DOME.

DEC. 27 12:30 P.M. E.S.T.
 SLOWLY DRIFTING CIRRUS CLOUD IN SOUTH SKY.
 TRANSPARENCY $\frac{7}{10}$.

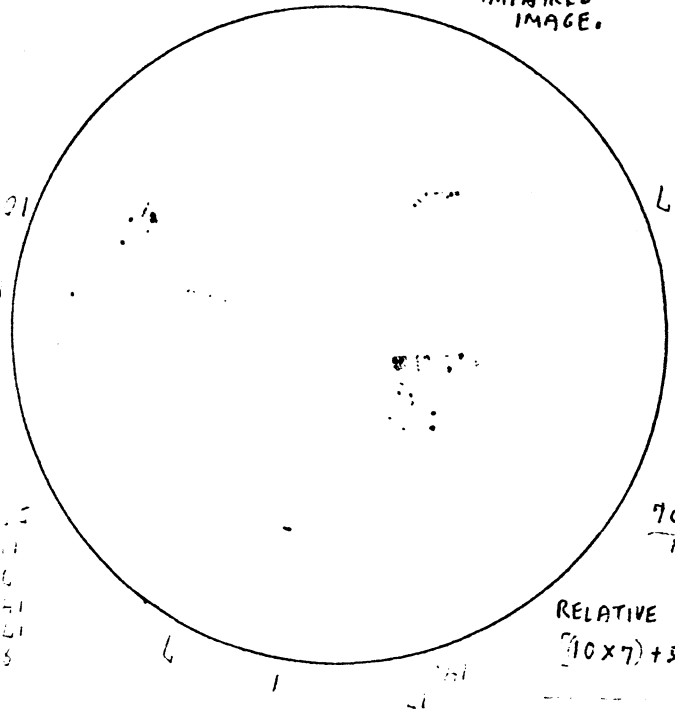


RELATIVE # OF SUNSPOTS
 $[10 \times 10] + 37 = 137$
 $\frac{700\text{mm}}{13\text{mm}}$
 SEEING $\frac{7}{10}$
 12:05 P.M.

DEC. 7 12:15-12:35 P.M. E.S.T.
 SKIES CLEAR IN SUN'S AREA
 TRANSP. $\frac{5}{10}$, SMALL BRANCHES SWAY IN
 BREEZE; JIGGLING TELESCOPE
 IMPAIRED IMAGE.

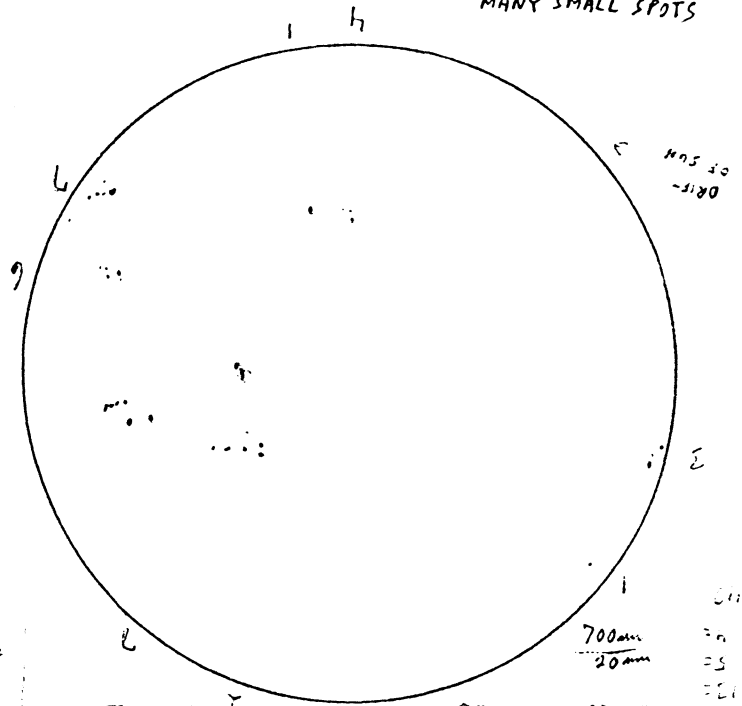


DEC. 9/90 2:40-2:50 P.M. E.S.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{4}{10}$ MANY RIPPLES, TRANSPARENCY $\frac{3}{10}$
 MANY SMALL SPOTS



700mm
 13mm
 9.11 f

RELATIVE SUNSPOT #
 $(10 \times 7) + 57 = 127$

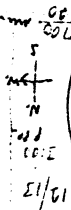


700mm
 13mm

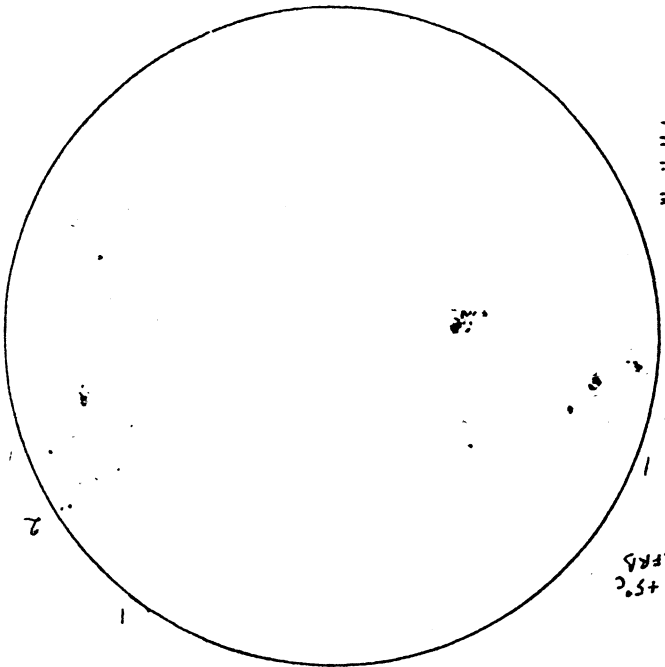
700mm
 20mm

RELATIVE SPOT #
 $9 \times 10 + 40 = 130$

DEC. 12 12:25-12:45 P.M. E.S.T.
 HAZY BLUE SKIES, CALM TO VERY LIGHT
 BREEZE.
 SEEING $\frac{5}{10}$; TRANSP. $\frac{7}{10}$.



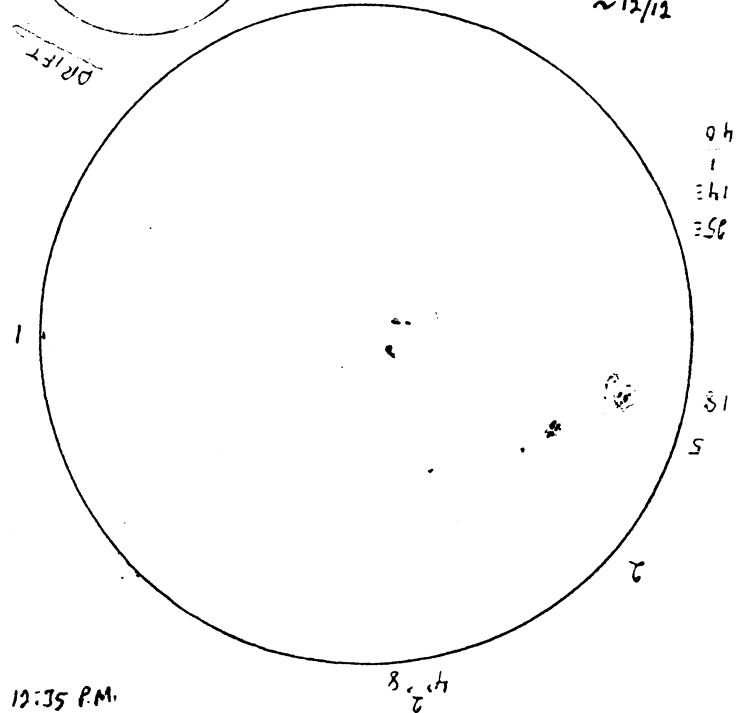
DEC. 14 12:15-12:25 P.M. E.S.T.
 WHITE CUM CLOUDS IN 50% CLEAR
 SKIES
 SEEING $\frac{7}{10}$, TRANSP. $\frac{8}{10}$, CALM
 ~12/12



1E
 -1
 =7
 =2
 =18

RELATIVE # OF SUNSPOTS
 $(8 \times 10) + 31 = 111$

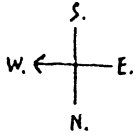
12:50 P.M.
 700mm
 12mm



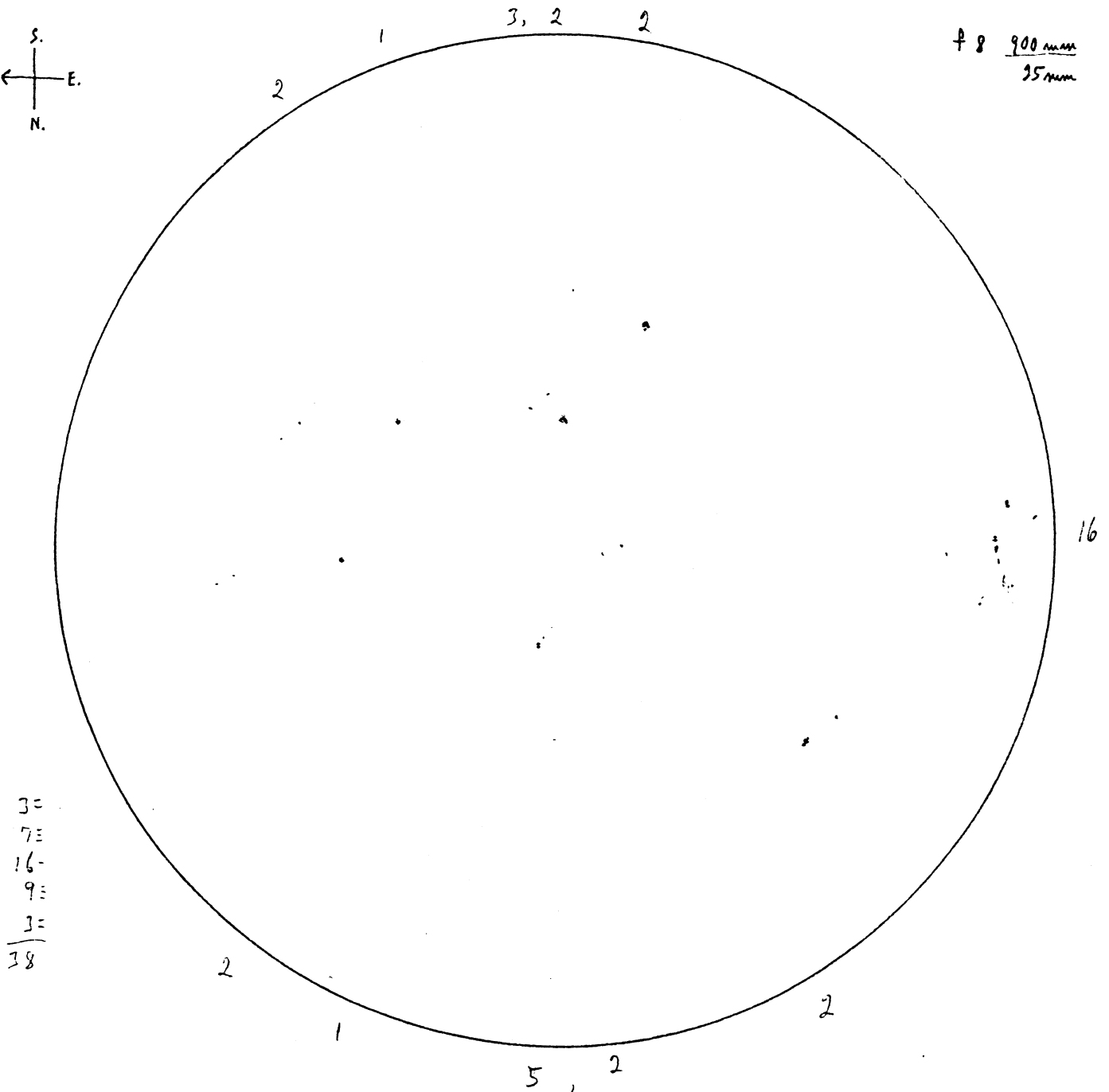
12:35 P.M.
 700mm
 9mm
 SEEING
 $\frac{6}{10}$

RELATIVE # OF SUNSPOTS
 $(7 \times 10) + 40 = 110$

DEC. 2/90 1:20 - 1:50 P.M. E.S.T.
 SKIES CLEAR.
 SEEING $\frac{6}{10}$, RIPPLES; TRANSPARENCY $> \frac{8}{10}$, FACULAE FAINTLY VISIBLE
 ACROSS ENTIRE DISK.



f 8 $\frac{900 \text{ mm}}{35 \text{ mm}}$



3=
 7=
 16=
 9=
 3=

 38

RELATIVE # OF SPOTS

$(11 \times 10) + 38 = 148$

f 8 $\frac{900 \text{ mm}}{12 \text{ mm}}$

2:00 P.M.

SEEING $\frac{5}{10}$

55

72

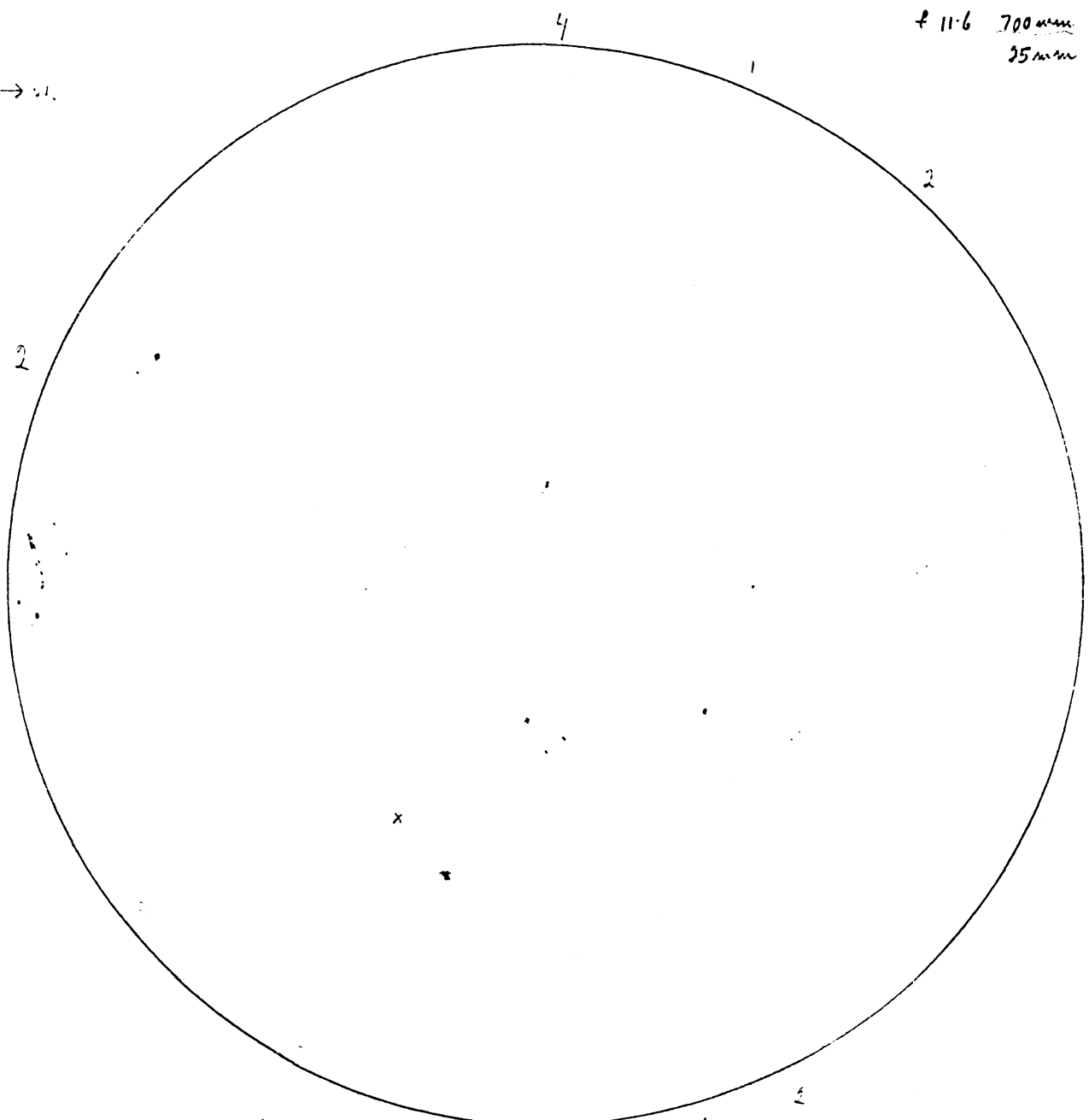
DEC. 2/90 12:30 - 13:55 P.M. EST.
 SKIES CLEAR.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{8}{10}$.

FULL-APERTURE FILTER.

f 11.6 700mm
 35mm



+3°C
 HML



14

16 =
 7 =
 7 =
 30

x
 SPOT
 SHOULD BE LOCATED
 HERE.

f 11.6 700mm
 9mm

RELATIVE # OF SPOTS

$$[9 \times 10 + 30] = 120$$

1:05 P.M.

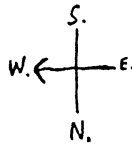
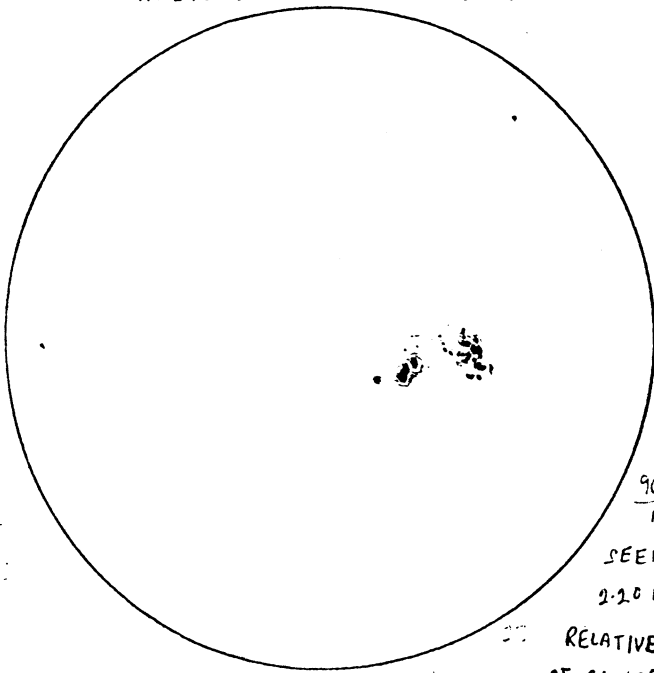
SEEING $\frac{5}{10}$

54

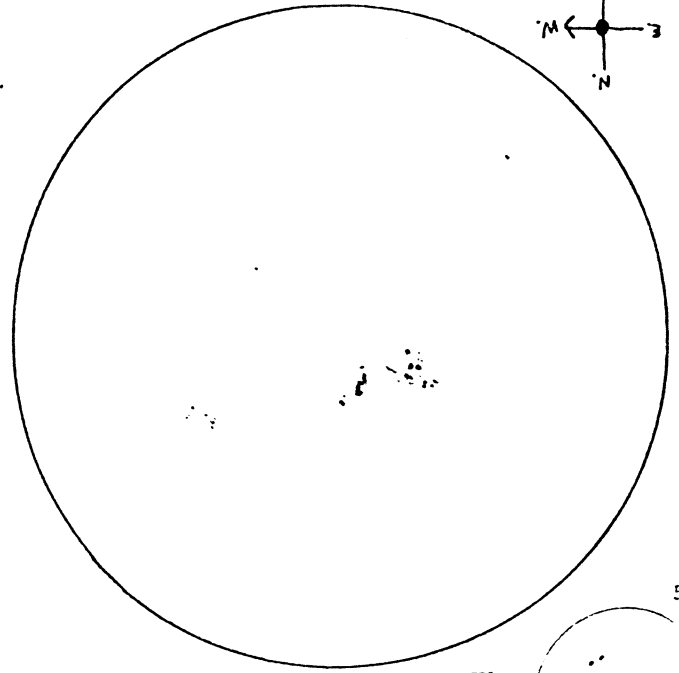
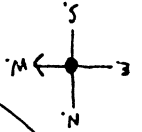
22

NOV. 18/90 1:25-2:15 P.M. E.S.T.
 SKIES CLEAR IN SUN'S AREA
 SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{9}{10}$
 IAN STUART LIBRARY DEDICATED.

f8 $\frac{900mm}{25mm}$



NOV. 19 12:25-12:50 P.M. EST. f11.6 $\frac{700mm}{25mm}$
 DRIFTING CLOUDS IN BLUE SKY.
 SEEING $\frac{6}{10}$, TRANSP. $\frac{8}{10}$

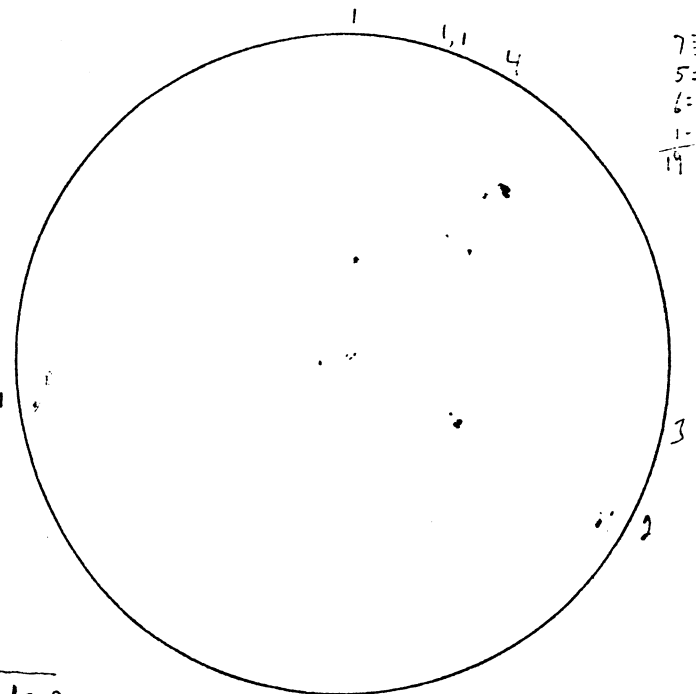
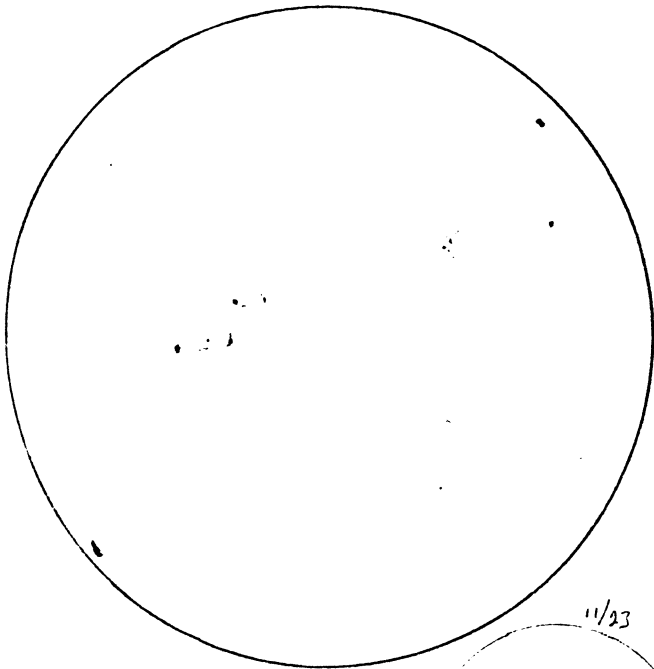
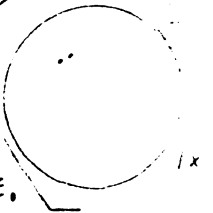


$\frac{900mm}{12mm}$
 SEEING $\frac{7}{10}$
 2:20 P.M.

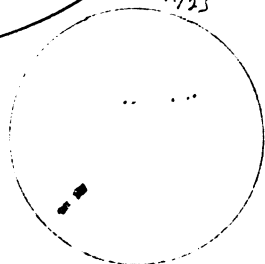
RELATIVE #
 OF SUNSPOTS
 $[10 \times 4 + 37] = 77$

NOV. 26 12:25-12:35 P.M. E.S.T.
 CIRRUS CLOUDS IN 60% CLEAR SKY.
 SEEING $\frac{5}{10}$, TRANSP $\frac{7}{10}$.

NOV 30 12:25-12:35 P.M. E.S.T.
 SKIES CLEAR. MED. BRANCHES
 SWAY IN BREEZE.
 SEEING $\frac{6}{10}$; TRANSPARENCY $\frac{8}{10}$.



7:
 5:
 6:
 1:
 14



f8 $\frac{900mm}{25mm}$

f8 $\frac{900mm}{12mm}$

12:40 P.M. RELATIVE # OF SUNSPOTS
 $[(9 \times 10) + 19] = 109$

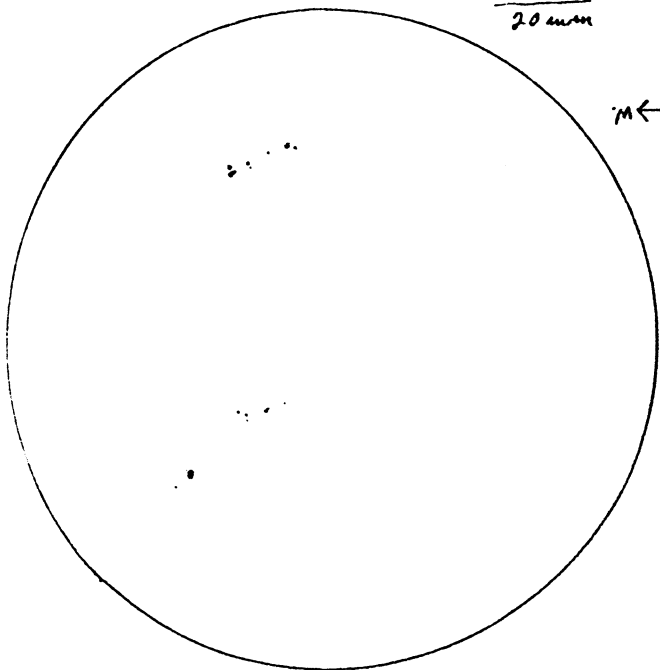
GUSTY BREEZE JIGGLED TELESCOPE.

88

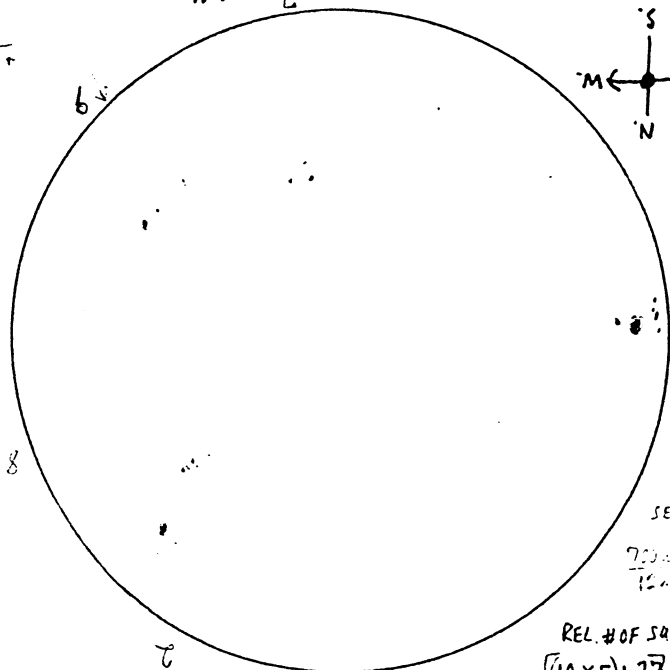
NOV. 12/90 12:35-12:50 P.M. EST.
 5% CLEAR. FAST MOVING LARGE CLOUDS.
 SKY BRIEF, LIGHT SNOWFLURRY.

MAIN ST.
 ← + PARKDALE →

NOV. 14 12:00-12:15 P.M. EST.
 CIRRUS CLOUD STREAKS IN BLUE SKY.
 SMALL BRANCHES MOVE IN GUSTY BREEZE.
 SEEING $> \frac{6}{10}$.



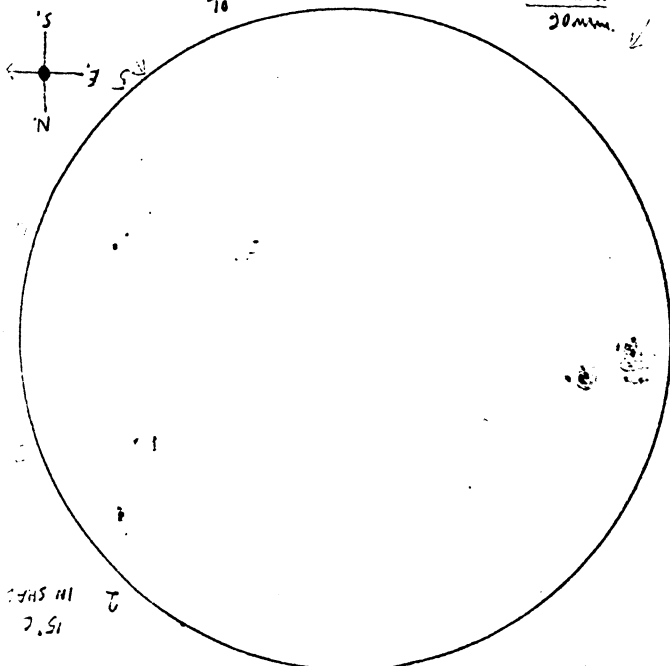
700mm f11.6
 20mm
 S
 N
 E
 W
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11



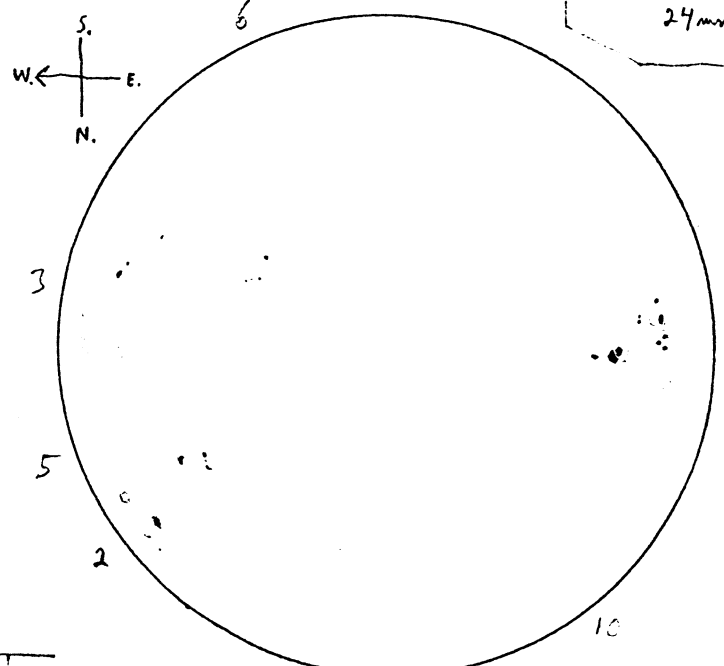
REL. # OF SUNSPOTS
 $[(10 \times 5) + 37] = 87$
 SPOT COUNT
 COMPARABLE TO
 5" MARSH-CHILTON
 5" f15
 24mm
 SEEING $\frac{2}{10}$
 700mm 15mm

NOV. 15: 12:30-12:55 P.M. EST.
 SKIES CLEAR; TREE-TOPS SWAY IN BREEZE
 SEEING $\frac{6}{10}$
 TRANSP. $\frac{8}{10}$
 LIGHT BREEZE IN OBSERVATORY YARD.

NOV. 15: 1:35-2:00 P.M. EST.
 SKIES CLEAR
 SEEING $\frac{7}{10}$; TRANSP. $\frac{8}{10}$



700mm f11.6
 30mm
 S
 N
 E
 W
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11



REL. # OF SUNSPOTS
 $[(10 \times 6) + 41] = 101$
 SPOT COUNT
 COMPARABLE TO
 5" MARSH-CHILTON
 5" f15
 24mm
 SEEING $\frac{7}{10}$

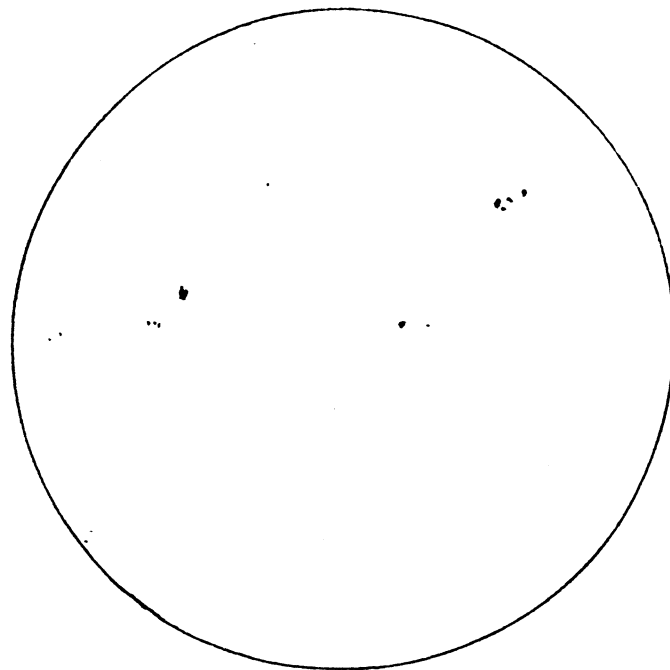
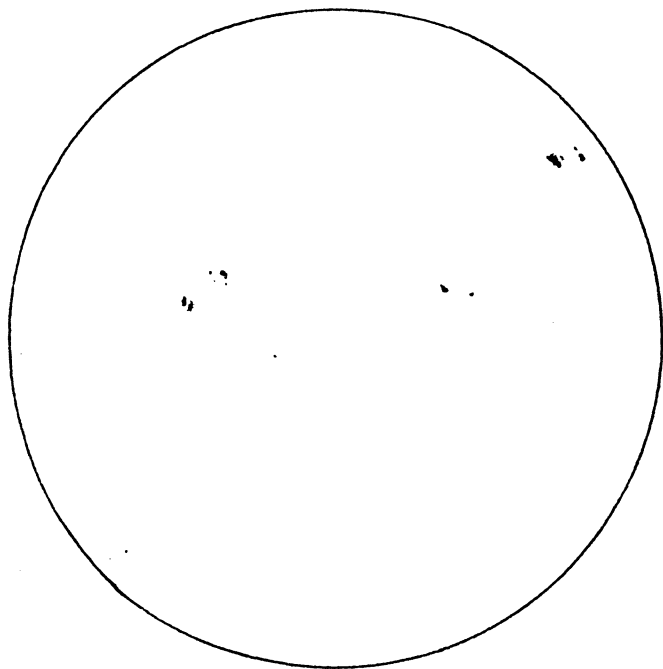
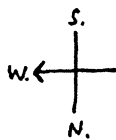
RELATIVE # OF SUNSPOTS
 $[(10 \times 6) + 27] = 87$
 1:10 P.M.
 SEEING $\frac{5}{10}$

RELATIVE # OF SUNSPOTS
 $[(10 \times 6) + 41] = 101$
 2:05 P.M.
 SEEING $\frac{7}{10}$

OCT 29/90 12:30-12:45 P.M. E.S.T.
SKIES CLEAR IN SUN'S AREA.
SEEING $\frac{5}{10}$; FUZZY, RIPPLES.
TRANSPARENCY $\frac{7}{10}$.

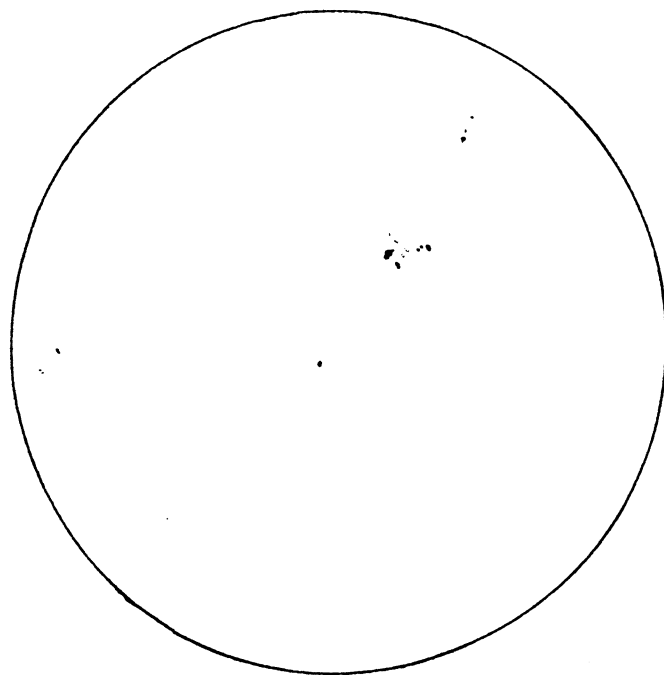
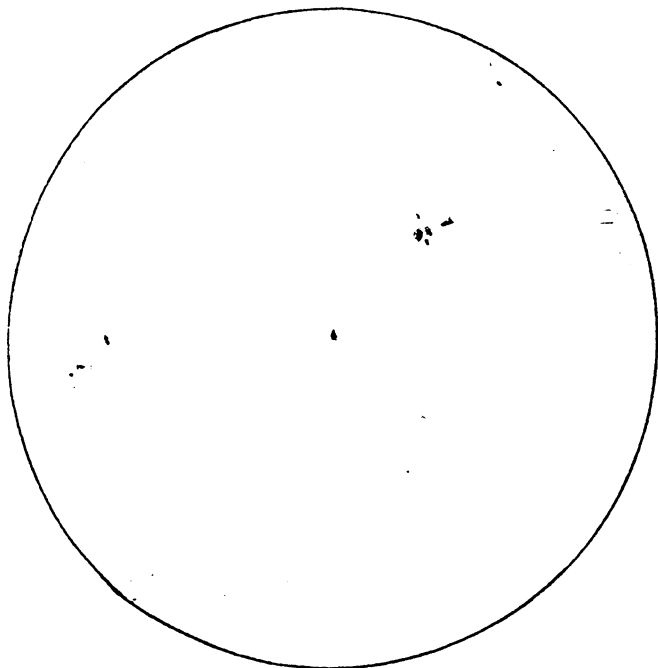
f 8 $\frac{900\text{mm}}{25\text{mm}}$

OCT. 30 12:35-12:45 P.M. E.S.T.
THIN CIRRUS CLOUDS.
SEEING $\frac{5}{10}$; FUZZY.
TRANSPARENCY $\frac{5}{10}$.

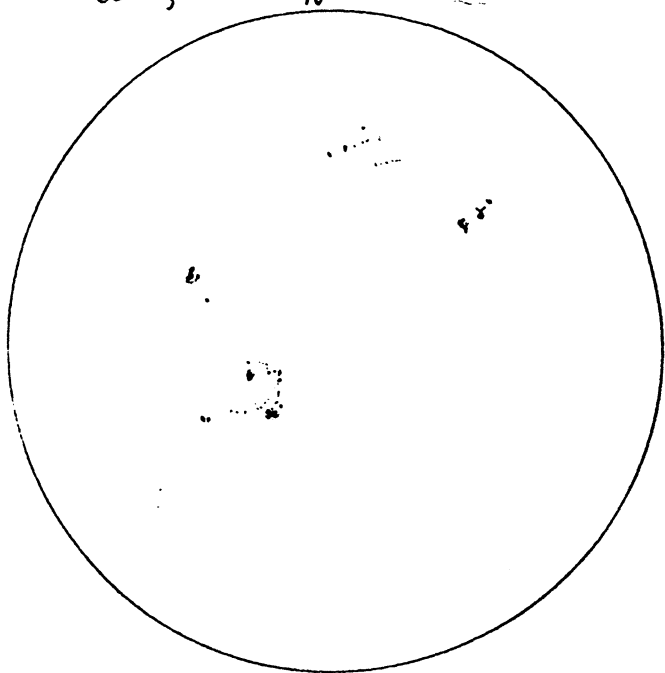


OCT. 31 12:30-12:40 P.M. E.S.T.
LIGHT CIRRUS HAZE IN SUN'S AREA.
SEEING $\frac{7}{10}$.
TRANSPARENCY $\frac{6}{10}$.

NOV. 1 12:35-12:48 P.M. E.S.T.
SKIES BLUE WITH LIGHT AUTUMN HAZE
SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{8}{10}$

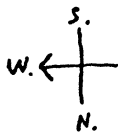
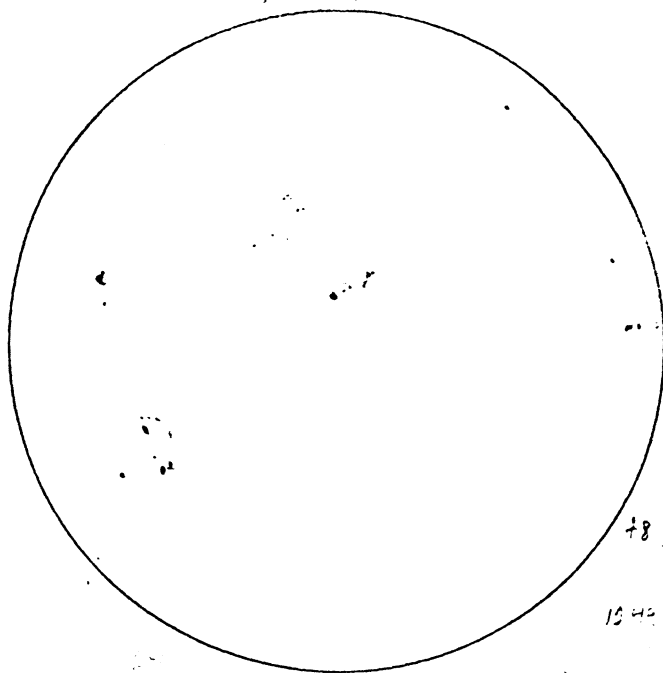


OCT. 15/90 5:20-5:35 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA
 FAST SKETCH; < MEDIUM TREE BRANCHES
 SEEING, TRANSP. $\frac{7}{10}$ SWAY IN BREEZE.



+8 900mm
 25mm

OCT. 17 12:15-12:30 P.M. E.D.T.
 SKIES BLUE-HAZY. > SMALL BRANCHES
 SEEING, TRANSPARENCY $\frac{7}{10}$. MOVE IN BREEZE.



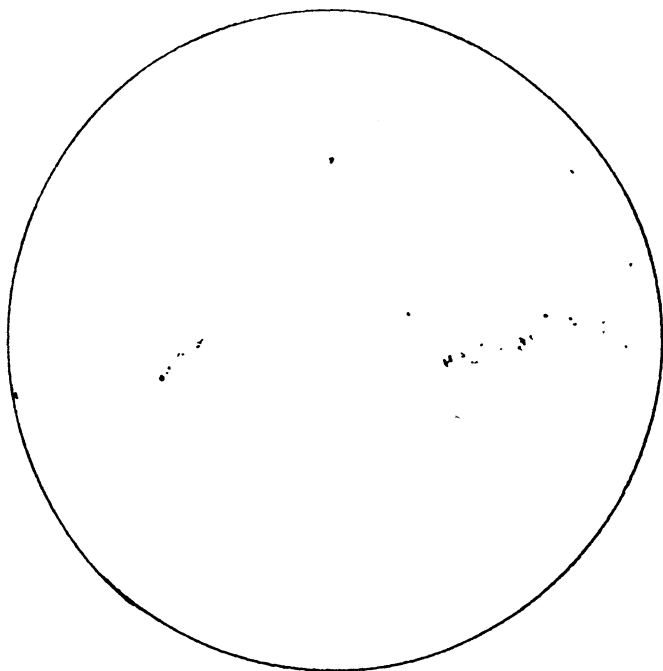
2

+8 900mm
 25mm

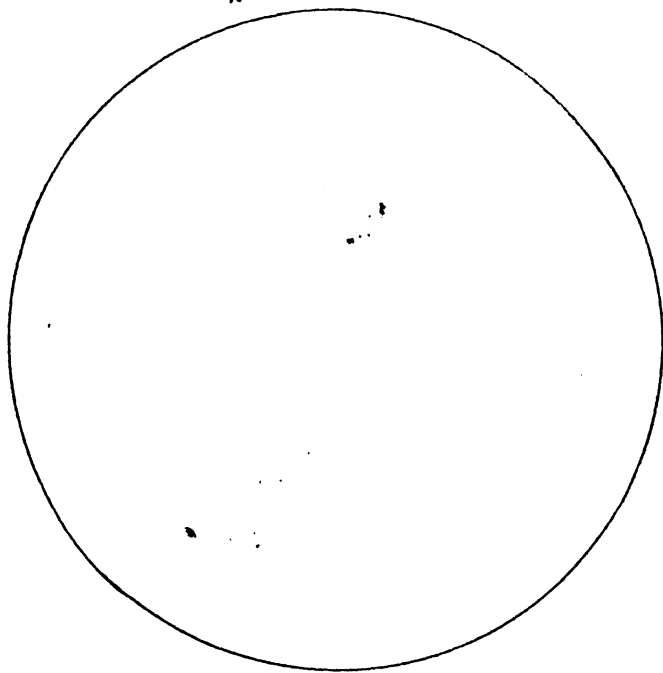
12:45 P.M.

RELATIVE # OF SUNSPOTS (10X8)+58=138

OCT. 20 5:30 - 5:50 P.M. E.D.T.
 SUN SETTING INTO LIGHT CIRRUS CLOUDS.
 SEEING: RIPPLES ALONG LIMB, STEADY IMAGE.
 TRANSPARENCY: FACULAE EASILY VISIBLE.

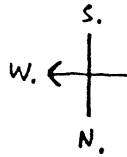
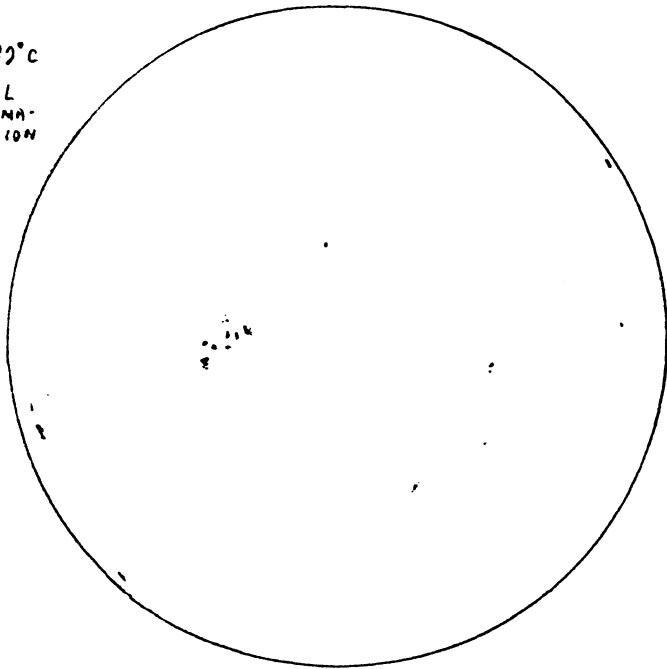


OCT. 26 12:30-12:45 P.M. E.D.T.
 SKIES 50% CLEAR WITH CUM. CLOUD BANKS.
 SEEING $\frac{4}{10}$ (FUZZY). TRANSP. (LIGHT CLOUDS).



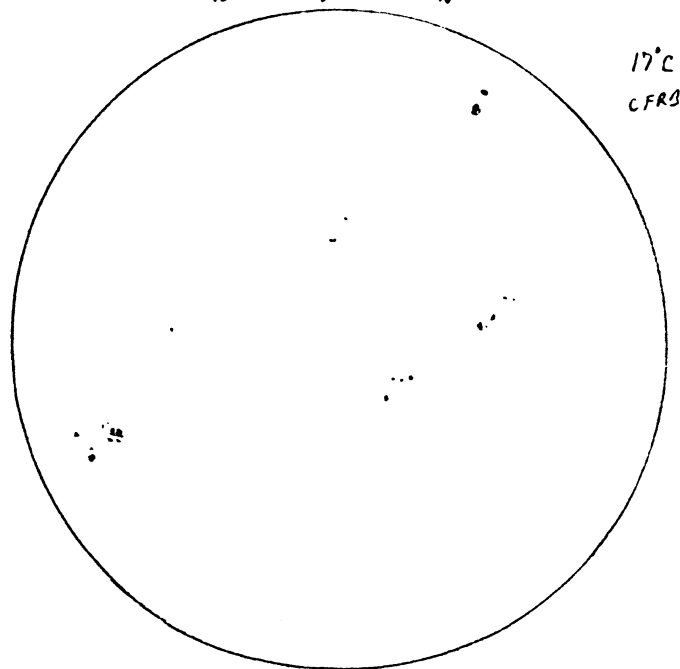
OCT. 3/90 12:40-12:50 P.M. E.D.T. $f8 \frac{900mm}{25mm}$
 SKIES CLEAR IN SUN'S AREA
 SEEING $\frac{6}{10}$; TRANSPARENCY $\frac{8}{10}$

22°C
 1 ML
 KMA-
 710N



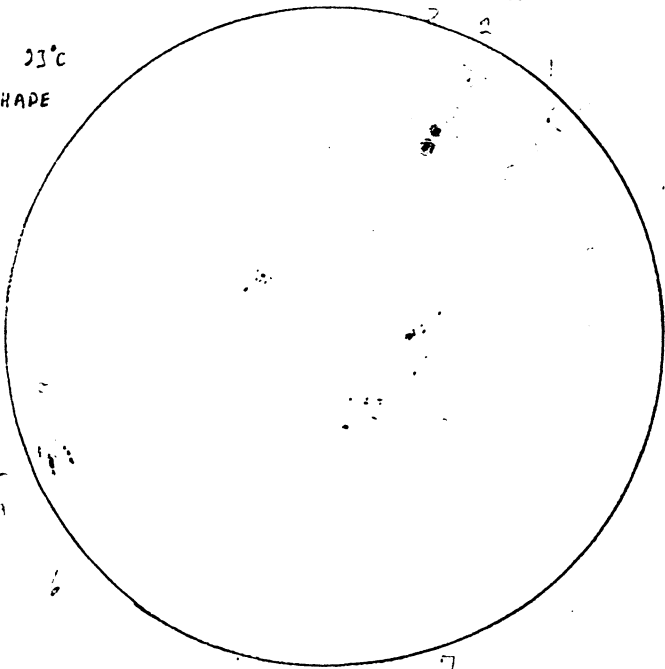
OCT. 5 12:30-12:45 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 < MEDIUM BRANCHES MOVE IN BREEZE.
 SEEING $\frac{6}{10}$ FUZZY; TRANSP. $\frac{8}{10}$, FACULAE SHARP

17°C
 CFR3



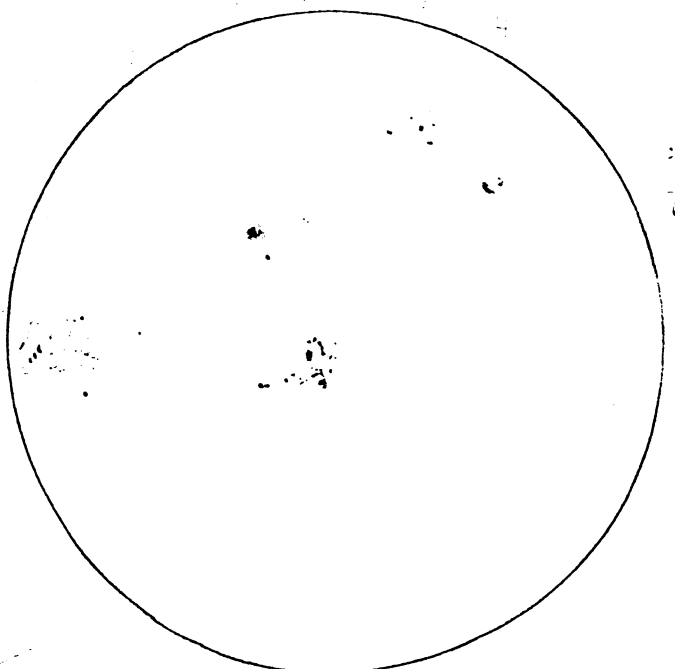
OCT. 6 3:05-3:30 P.M. E.D.T.
 SKIES DEEP BLUE WITH ISOLATED WISPY CLOUDS.
 EVERGREEN TREES SWAY IN OBSERVATORY LOT.
 SEEING $\frac{5}{10}$, RIPPLES, FUZZY. TRANSP. $\frac{8}{10}$ WHEN TELESCOPE STEADY.

23°C
 SHAPE



OCT. 14 2:05-2:45 P.M. E.D.T.
 SKIES 90% CLEAR WITH FAST MOVING WHITE CLOUDS.
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{8}{10}$.

4-
 9-
 5-
 1-
 9-
 40-
 68



RELATIVE # OF SUNSPOTS
 $[(7 \times 10) + 36] = 106$
 OR
 $[(11 \times 10) + 36] = 146$

2:45 P.M.

$f8 \frac{900mm}{12}$
 SEEING $\frac{5}{10}$

2:55 P.M.

$f8 \frac{900mm}{12mm}$
 SEEING $\frac{6}{10}$

RELATIVE # OF SUNSPOTS
 $[(10 \times 10) + 68] = 168$

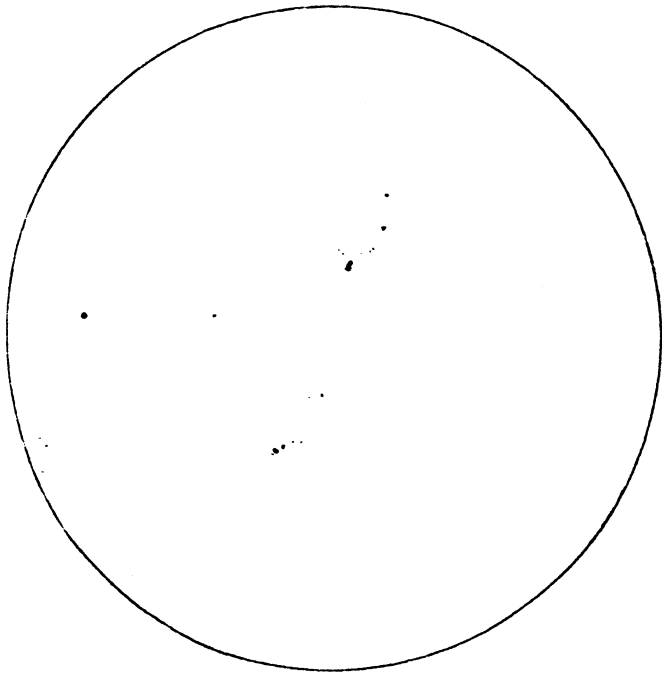
XL

SEPT. 27/90 12:20-12:35 P.M. E.D.T.

SKIES CLEAR

SEEING } $\frac{7}{10}$
TRANSPARENCY }

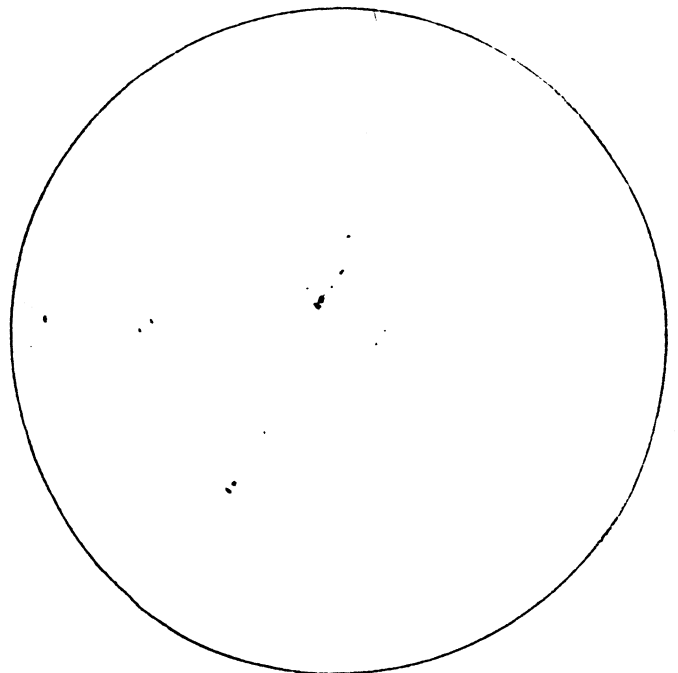
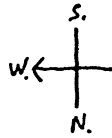
f 8 $\frac{900 \text{ mm}}{35 \text{ mm}}$



SEPT. 28 12:25-12:40 P.M. E.D.T.

SKIES CLEAR.

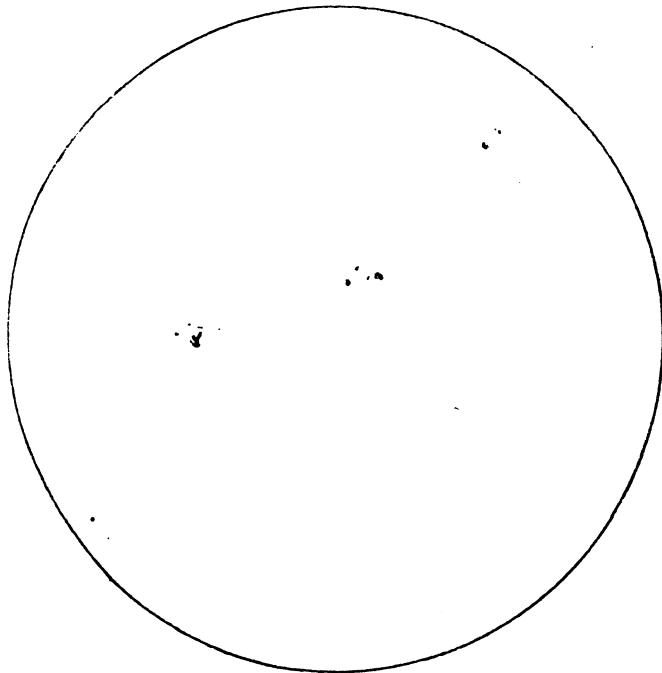
SEEING $\frac{6}{10}$; TRANSPARENCY $\frac{8}{10}$



SEPT. 30 5:55, 6:05-6:15 P.M. E.D.T.

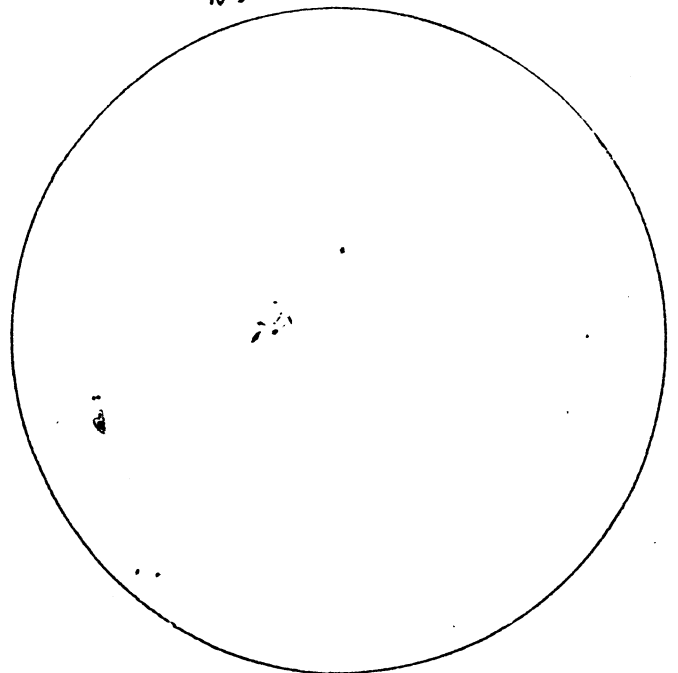
FAST SKETCH OF SHORT GLIMPSES
THROUGH CLOUDS.

TRANS. $\frac{7}{10}$



OCT. 2 12:30-12:50 P.M. E.D.T.

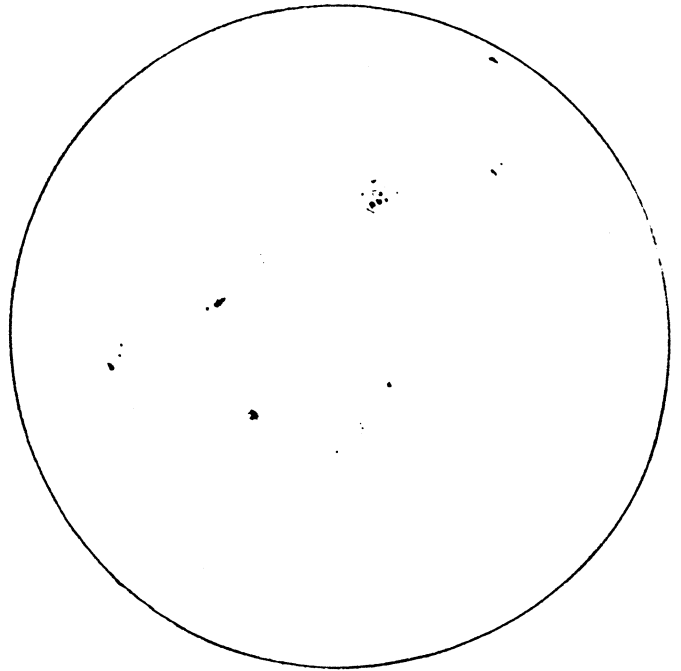
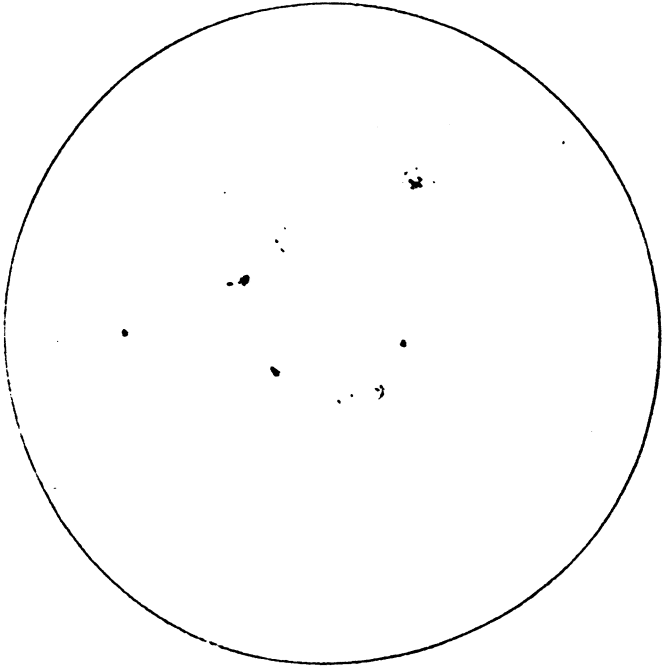
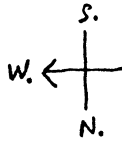
FAST MOVING WHITE CLOUDS IN 80% CLEAR
MED. TREE BRANCHES MOVE IN BREEZE. SKY.
SEEING $\frac{5}{10}$, TRANSP. $\frac{7}{10}$.



SEPT 17/90 5:35 - 5:50 P.M. E.D.T.
 SKIES CLEAR, SMALL TREE BRANCHES
 SEEING $\frac{8}{10}$, RIPPLES. MOVE IN BREEZE.
 TRANSP. $\frac{8}{10}$

f8 $\frac{900mm}{25mm}$

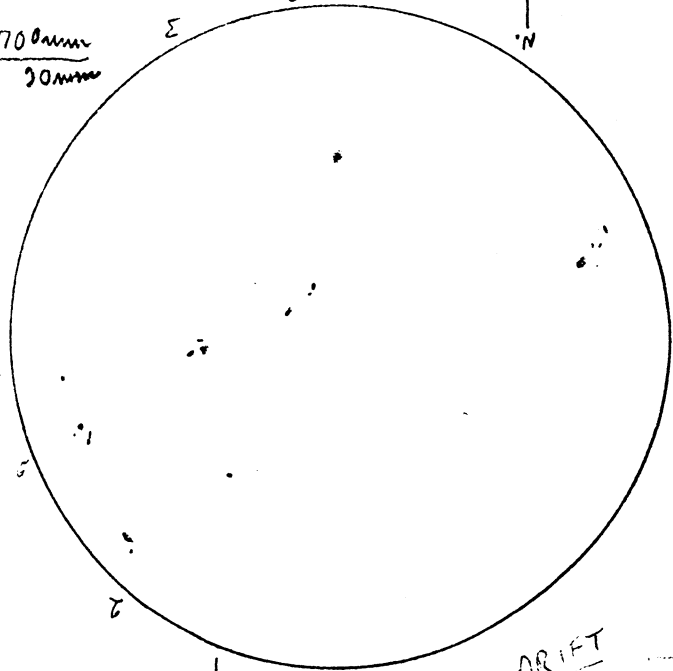
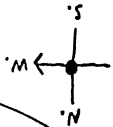
SEPT. 18 12:50 - 1:10 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA.
 SEEING $\frac{7}{10}$; TRANSP. $> \frac{8}{10}$



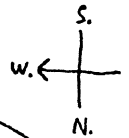
SEPT. 21 19:40 - 19:50 E.D.T.
 CIRRUS HAZE
 TRANSP. $\frac{4}{10}$

11-6

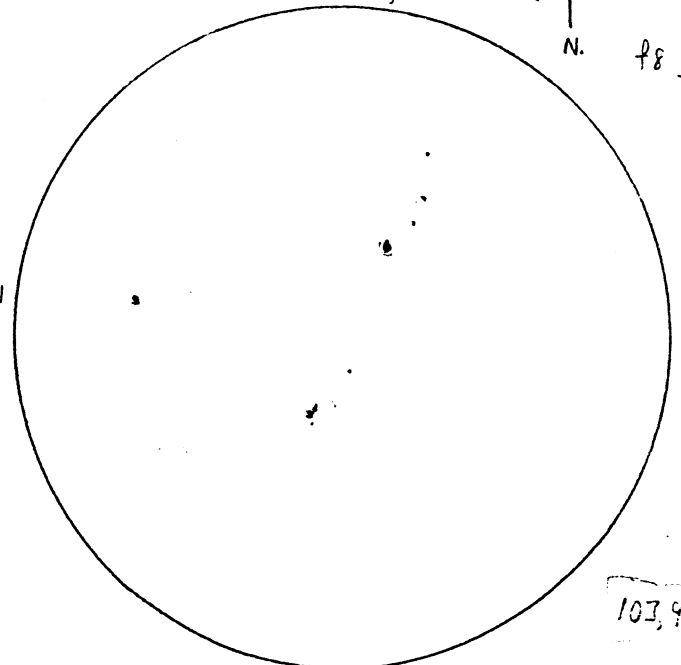
$\frac{700mm}{20mm}$



SEPT. 26 12:20 - 12:40 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA
 SEEING $\frac{2}{10}$
 TRANSP. $\frac{2}{10}$



f8 $\frac{900mm}{25mm}$



6
14
21

DRIFT
DRIFT

172, 139

f 11-6

RELATIVE # OF SUNSPOTS

$$[(10 \times 8) + 17] = 97$$

$\frac{700mm}{20mm}$

RELATIVE # OF SUNSPOTS

$$[(10 \times 5) + 2] = 52$$

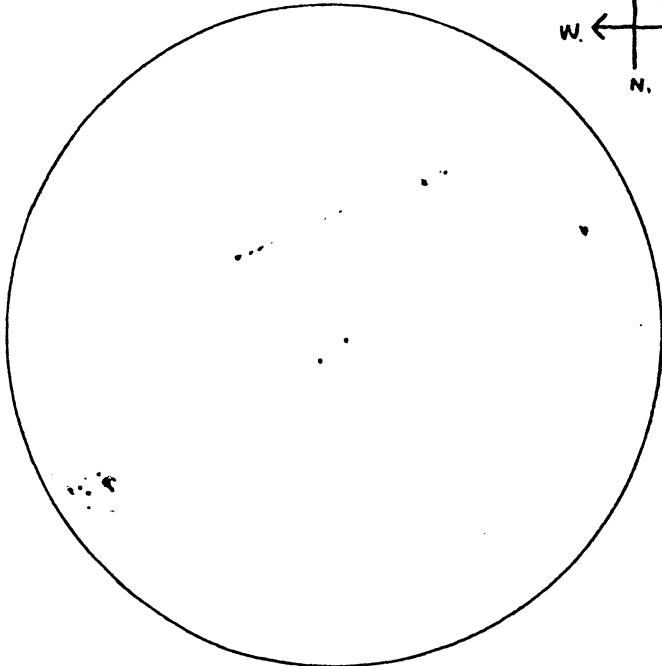
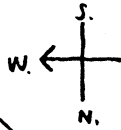
f8 $\frac{900mm}{12mm}$

103, 93

10

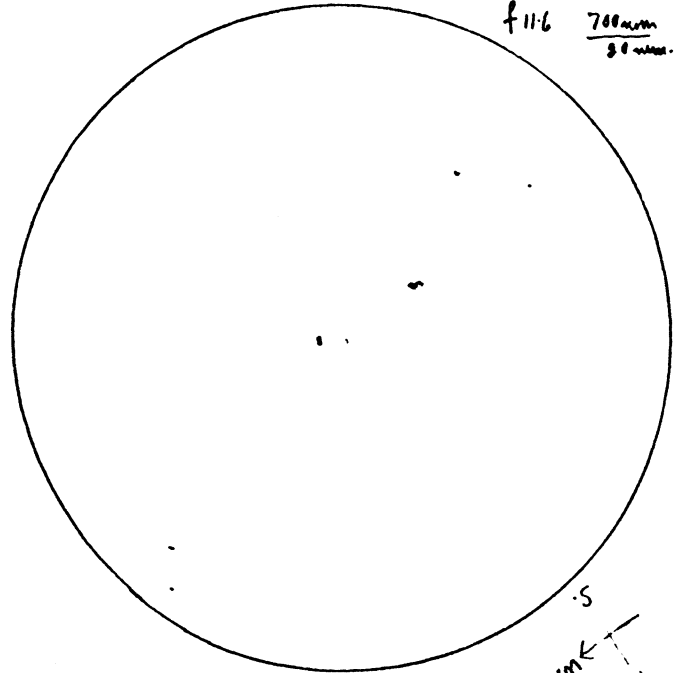
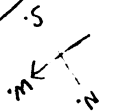
SEPT 3/90 2:25-2:50 P.M. E.D.T.
 SKIES CLEAR
 SEEING $\frac{5}{10}$ 'FUZZY'; TRANSP $\frac{8}{10}$

f8 $\frac{900mm}{25mm}$

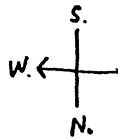


SEPT. 8 11:50-12:00 E.D.T.
 SKIES CLEAR
 SMALL BRANCHES MOVE IN BREEZE

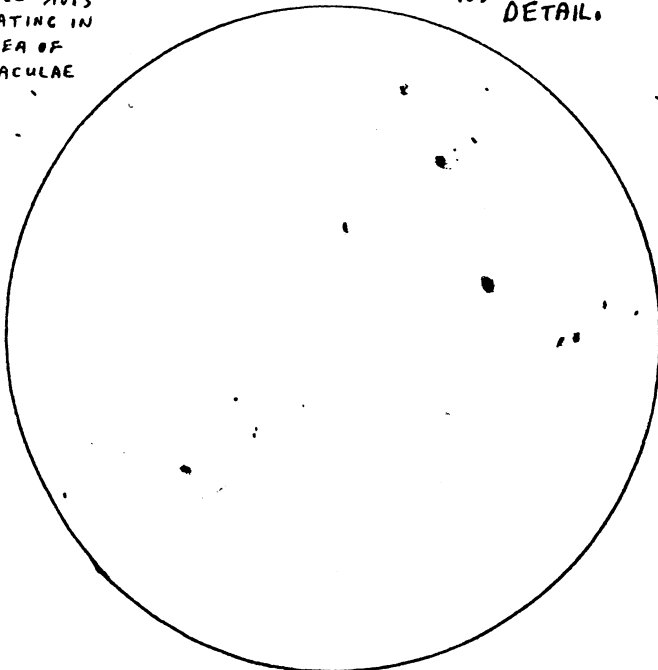
f116 $\frac{700mm}{28mm}$



SEPT. 13 6:10-6:35 P.M. E.D.T.
 SKIES CLEAR.
 SEEING $\frac{8}{10}$, STEADY;
 TRANSP. $\frac{8}{10}$, SHARP
 DETAIL.



SMALL SPOTS
 LOCATING IN
 SEA OF
 FACULAE



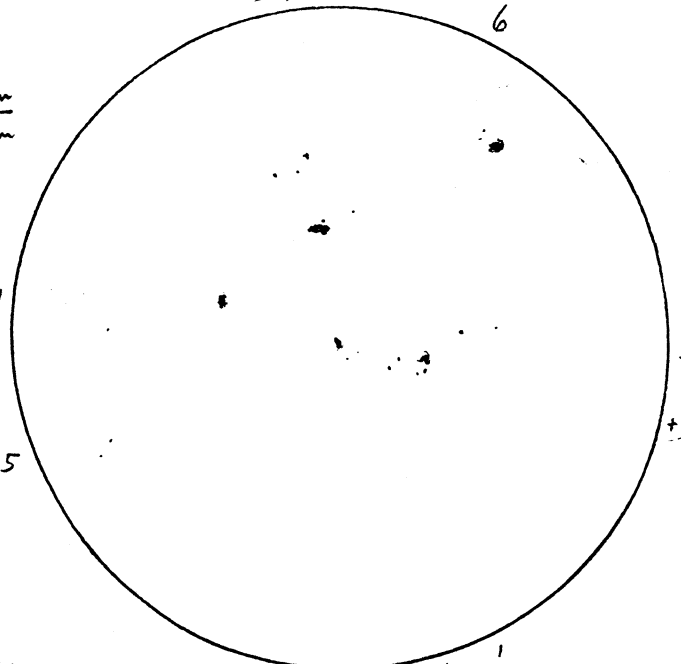
SEPT. 16 4:40-5:00 P.M. E.D.T.
 SKIES CLEAR.
 SEEING $< \frac{7}{10}$; TRANSP. $\frac{9}{10}$, FACULAE VERY EVIDENT

3, 6.2

6

f8 $\frac{900mm}{25mm}$

4
1
5



5-
5-
3-
8-
6-
2-
6-
+ 2-
28
+ 14-
178

5:10 P.M.

f8 $\frac{900mm}{19mm}$

SEEING $\frac{5}{10}$

1, 1, 4, 1, 1
2

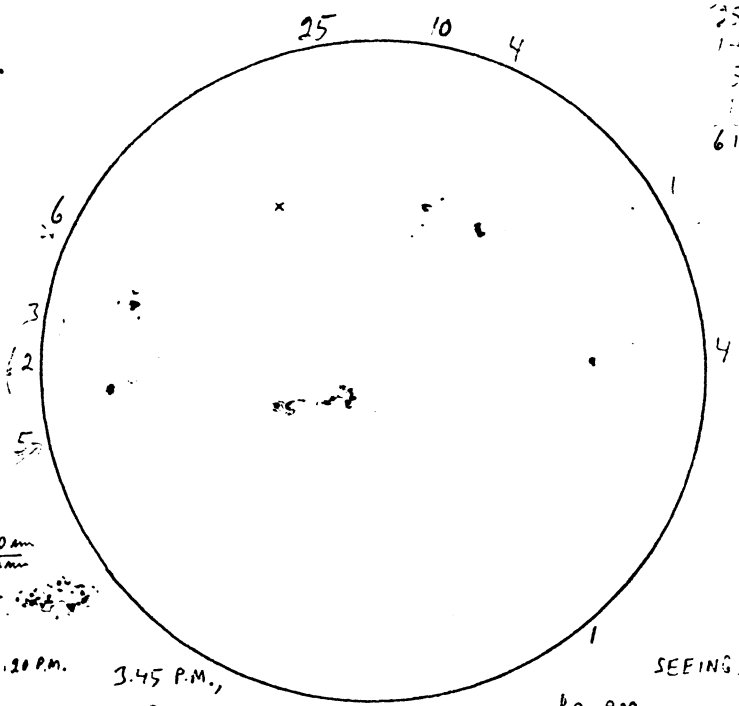
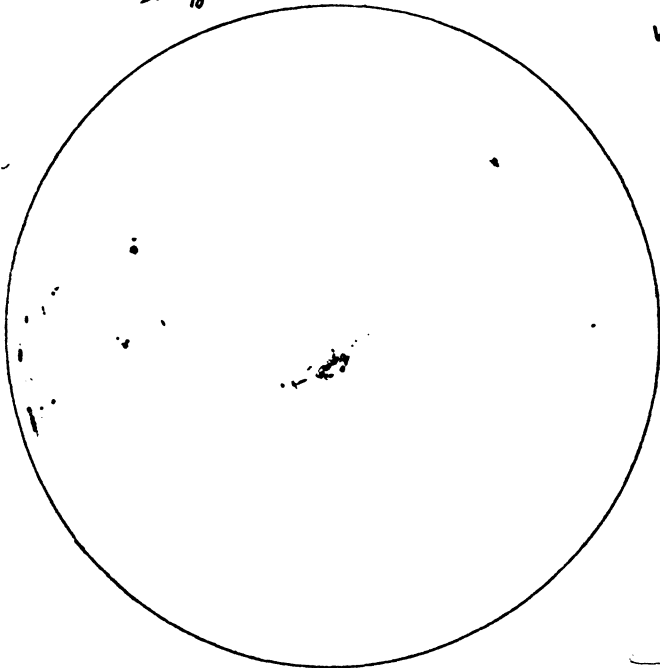
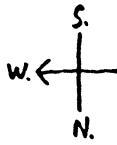
RELATIVE # OF SUNSPOTS

$[(10 \times 14) + 38] = 178$

AUG. 29/90 12:20-12:50
 THICKENING CUM. CLOUDS IN
 SEEING $\frac{6}{10}$ 40% CLEAR SKY
 TRANSP. $\frac{8}{10}$

f8 $\frac{900mm}{25mm}$

AUG. 30 3:05-3:35 P.M. E.D.T.
 OBSERVATORY YARD
 CLEAR SKIES
 SEEING $\frac{5}{10}$, FUZZY; TRANSP. $\frac{8}{10}$



f8 $\frac{900mm}{13mm}$

4:05-4:20 P.M.

3:45 P.M.,

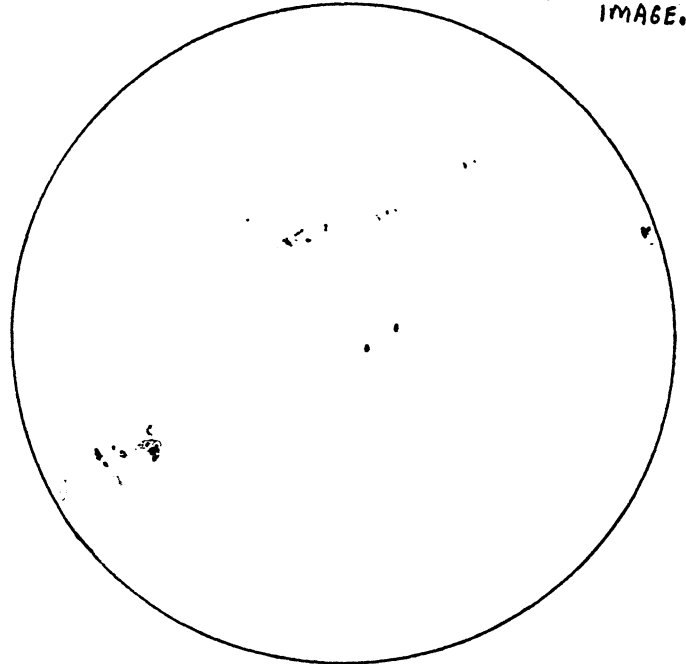
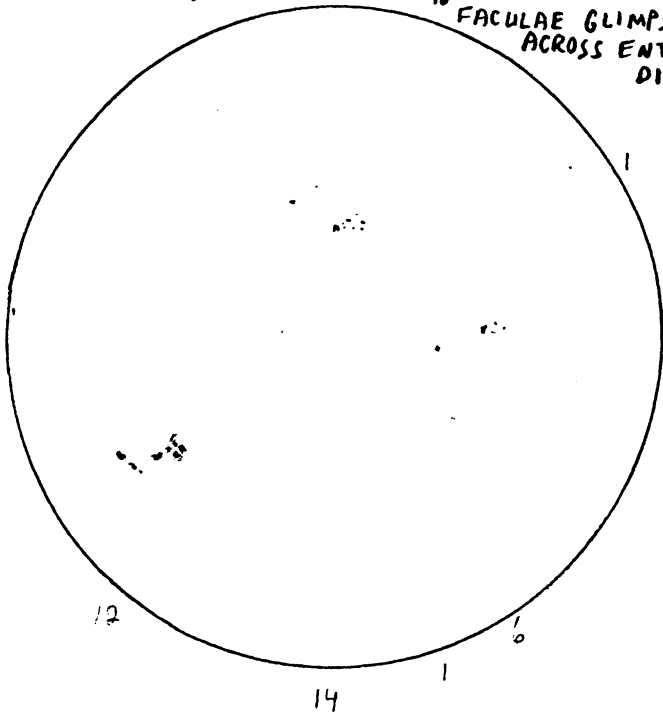
RELATIVE # OF SUNSPOTS, f8 $\frac{900mm}{9mm}$
 $10 \times 10 + 61 = 161$

SEEING $\frac{4}{10}$

SEPT. 1 4:55-5:15 P.M. E.D.T.
 DRAYTON PARK; USUAL BREEZE,
 CLEAR SKY. SMALL → MED. BRANCHES
 SEEING $\frac{7}{10}$; TRANSPARENCY $\frac{9}{10}$. MOVE IN BREEZE.

SEPT. 2 2:30-3:05 P.M. E.D.T.
 EXPANDING CUM. CLOUDS IN BLUE SKY,
 SEEING $\frac{6}{10}$ FUZZY; TRANSPARENCY $\frac{8}{10}$ DETAILED
 IMAGE.

FACULAE GLIMPSED
 ACROSS ENTIRE
 DISK.

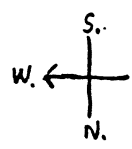


RELATIVE # OF SUNSPOTS
 $[10 \times 6] + 35 = 95$

5:25 P.M., $\frac{900mm}{13mm}$, TELESCOPE
 VIBRATED IN BREEZE.

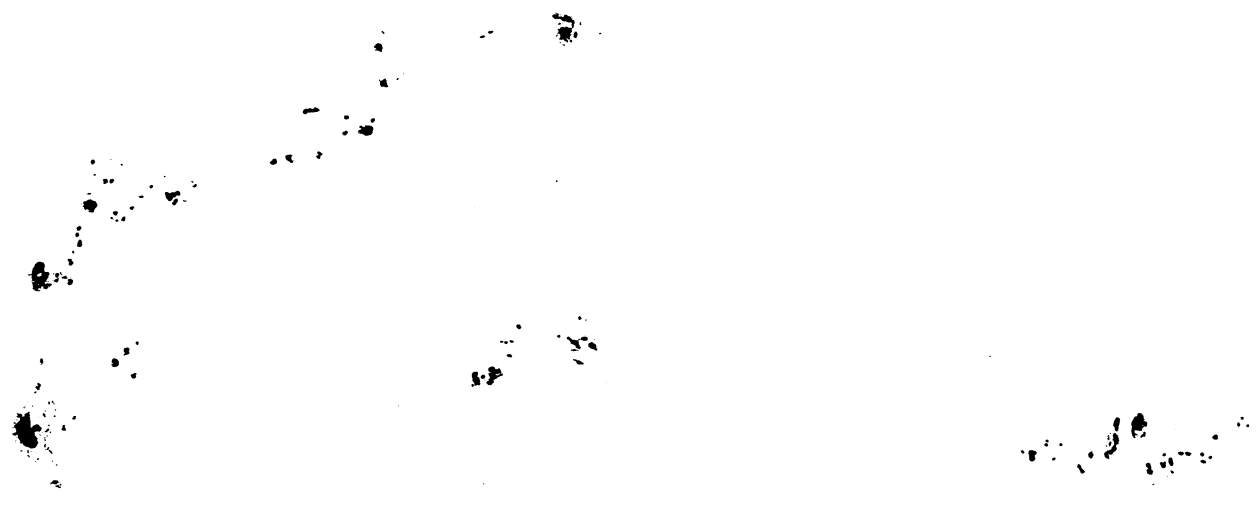
AUG. 26/90 4:00 - 6:00 P.M. E.D.T.

f 8 $\frac{900 \text{ mm}}{9 \text{ mm}}$



LARGE CUMULUS CLOUDS IN 50% CLEAR SKY.

STEADY IMAGE.

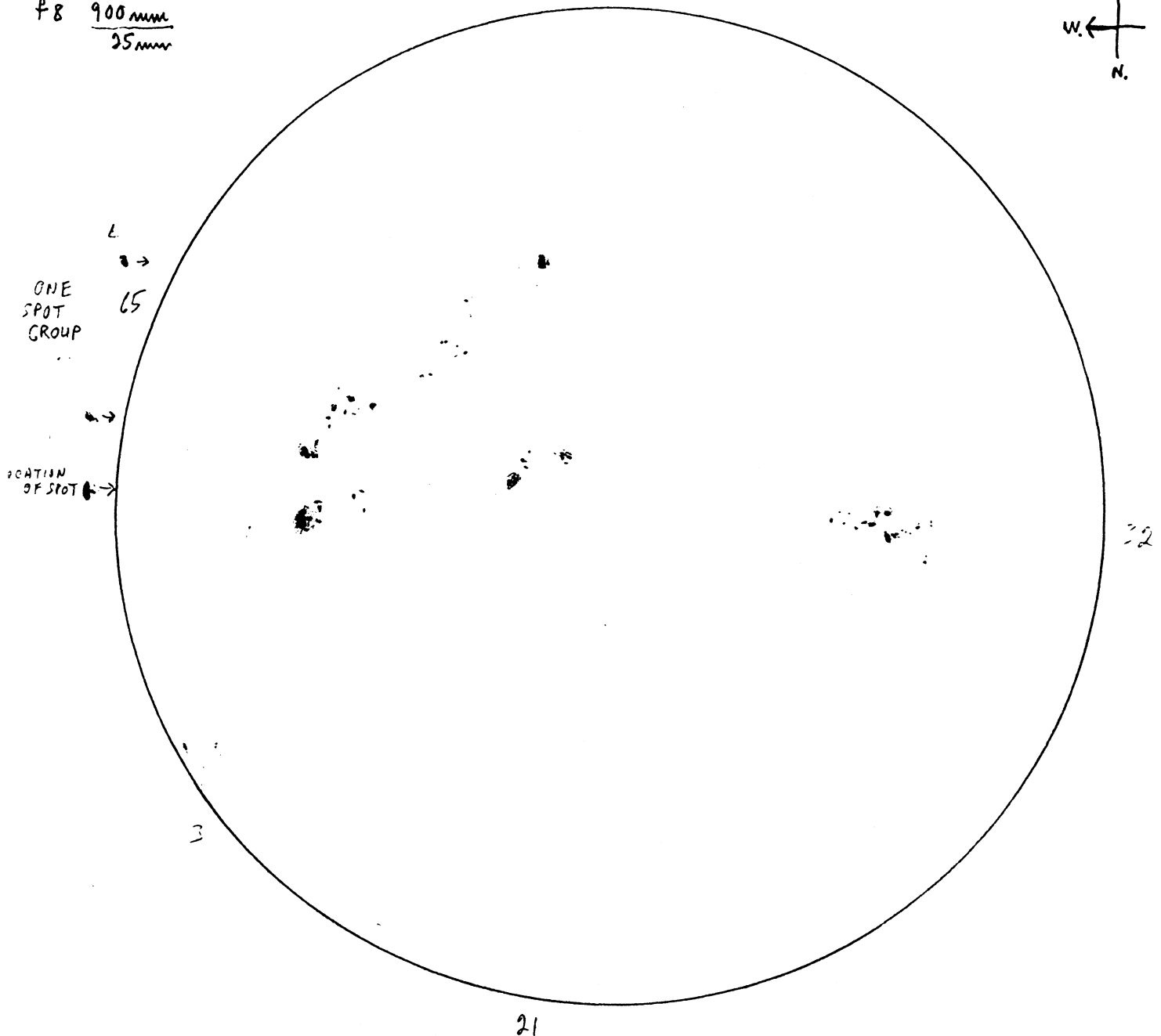
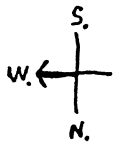


AUG. 26 1:50-2:15, 2:35-3:30 P.M. E.D.T.

WHITE CUMULUS CLOUDS IN 60% CLEAR SKY.

SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{9}{10}$.

f8 $\frac{900\text{mm}}{25\text{mm}}$



RELATIVE # OF SPOTS

$$[10 \times 4 + 12] = 161$$

3:40 P.M. E.D.T.; SEEING "STEADY IMAGE"; f8 $\frac{900\text{mm}}{9\text{mm}}$

52

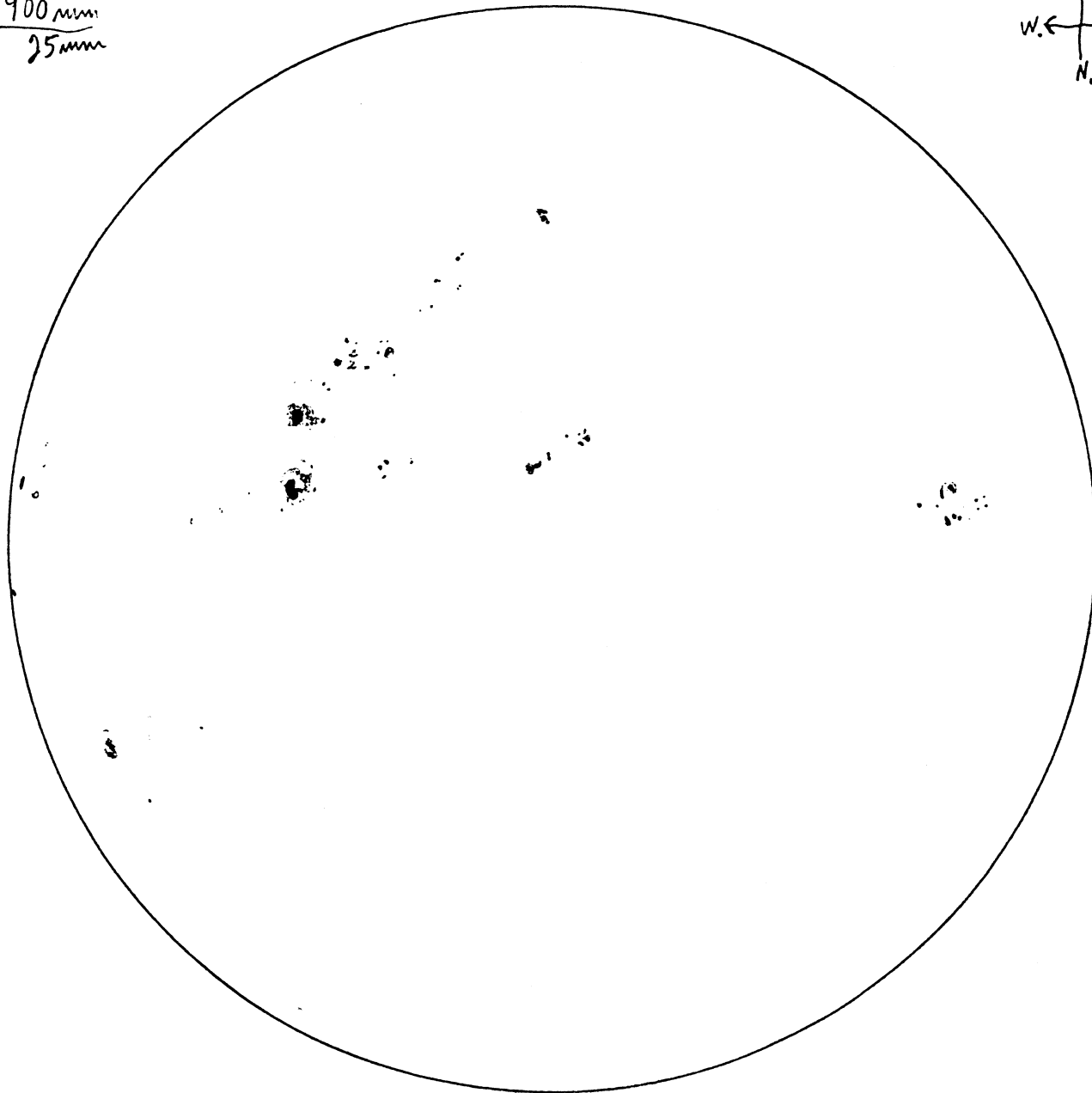
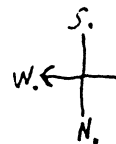
77

AUG. 25/90 4:45 - 6:00 P.M. E.D.T.

WHITE CUM. CLOUDS IN 90% CLEAR SKY.

SEEING $\frac{9}{10}$, TRANS. $\frac{8}{10}$ HAZE.

f 8 $\frac{900\text{mm}}{25\text{mm}}$



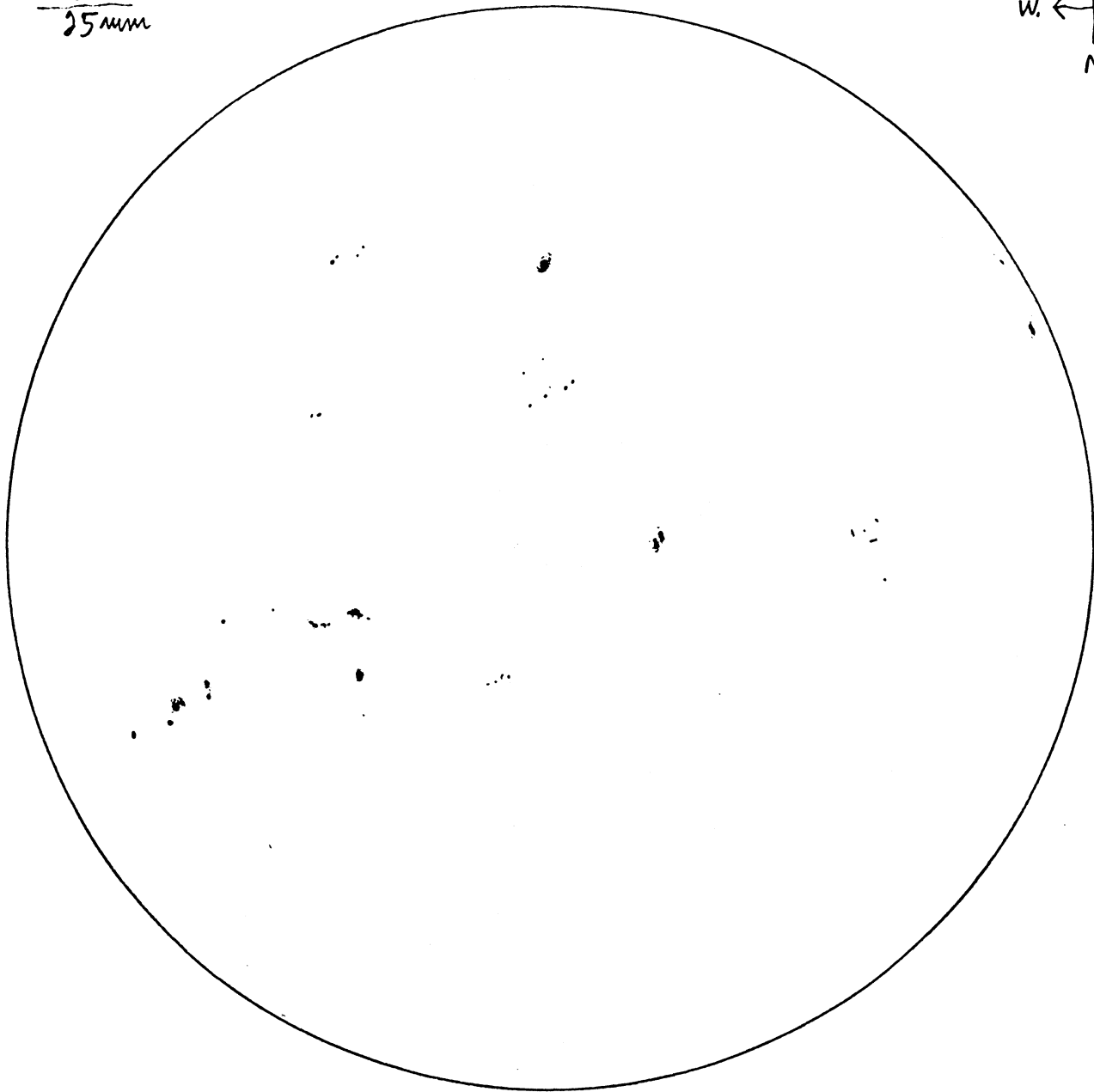
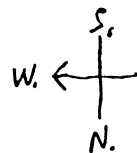
AUG. 18/90 3:20 - 3:30 P.M. E.D.T.

STARFEST

FAST DRAWING; CUM. CLOUDS IN 20% CLEAR SKY → OVERCAST
SEEING $\frac{8}{10}$, STEADY IMAGE

TRANSP. $\frac{7}{10}$, FACULAE VERY EVIDENT

f8 $\frac{900\text{mm}}{25\text{mm}}$



50

79

AUG. 17/90 5:30-6:10 P.M. E.D.T.

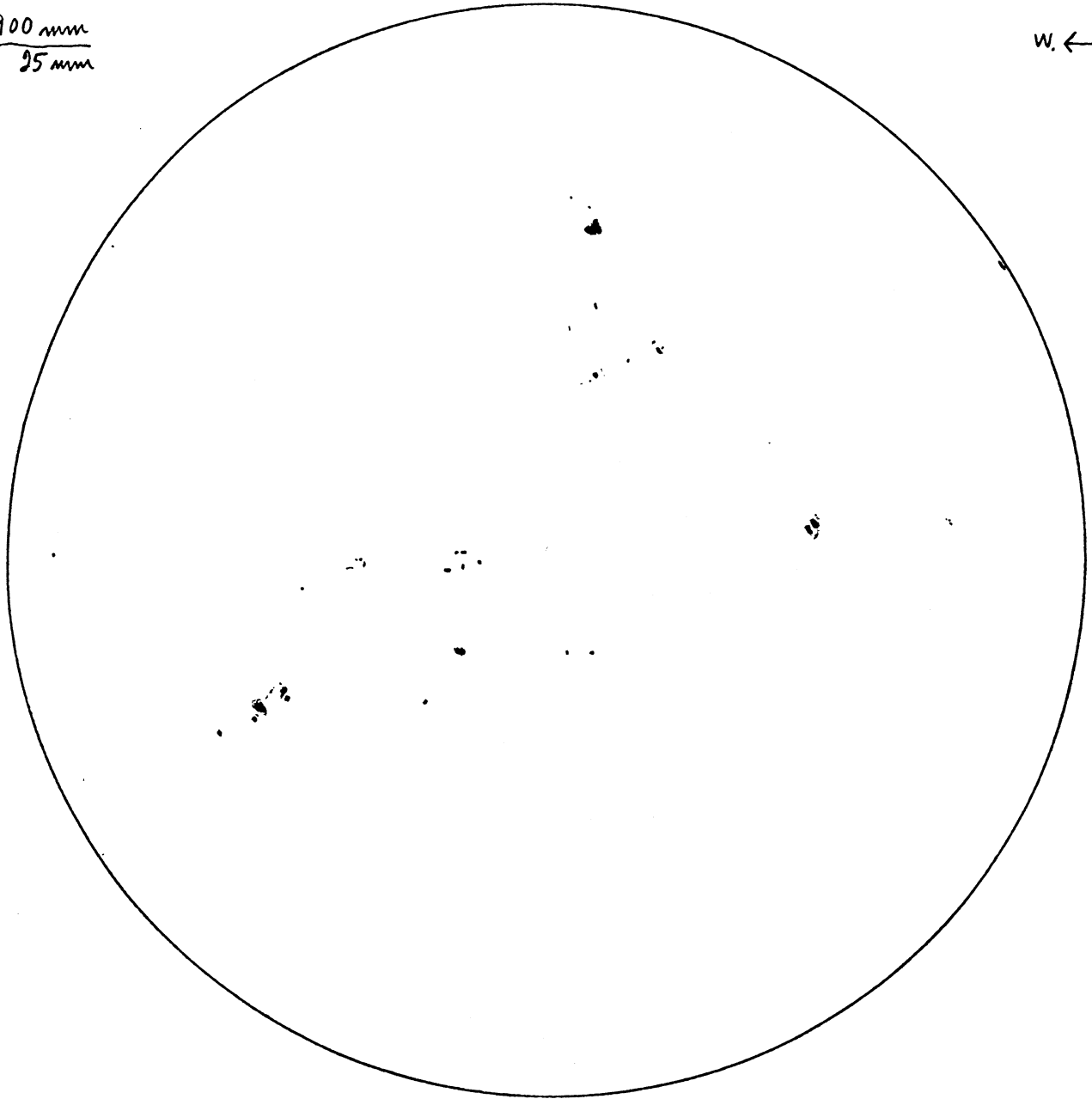
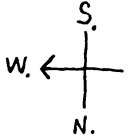
STARFEST

HAZY CLEAR SKIES

SEEING $\frac{8}{10}$ STEADY IMAGE

TRANSPARENCY $\frac{6}{10}$ HAZY

f8 $\frac{900\text{mm}}{25\text{mm}}$



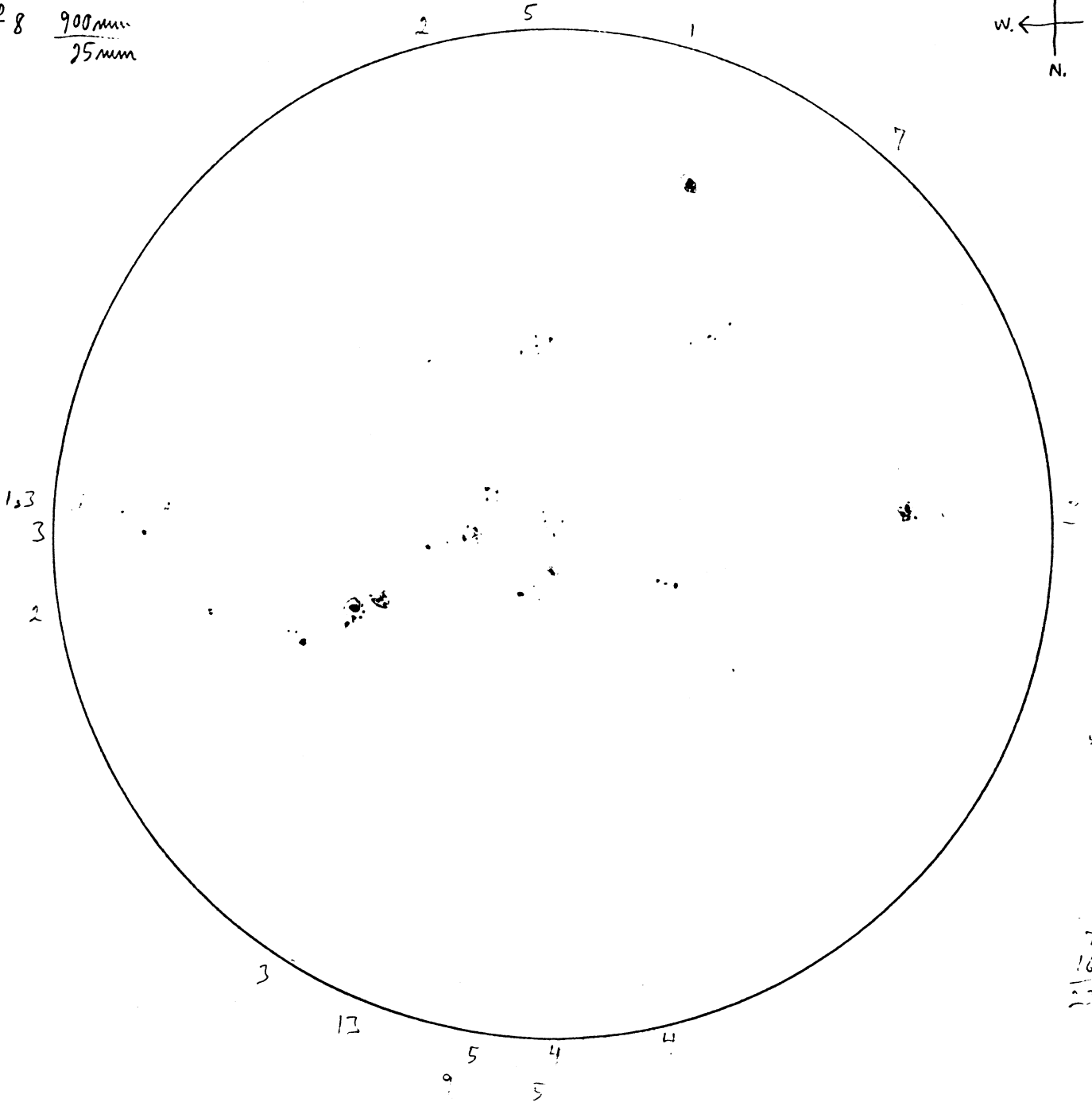
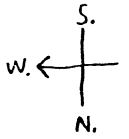
AUG. 16/90 4:30-5:25 P.M. E.D.T.

CUMULUS CLOUDS IN 50% CLEAR SKIES.

SEEING $\frac{8}{10}$ STEADY IMAGE.

TRANPARENCY $\frac{7}{10}$ FACULAE EASILY SEEN

f 8 $\frac{900mm}{25mm}$



RELATIVE # OF SUNSPOTS

$$[(16 \times 10) + 70] = 230$$

48

f 8 $\frac{900mm}{12mm}$, SEEING $\frac{4}{10}$,

5:50 P.M. E.D.T.

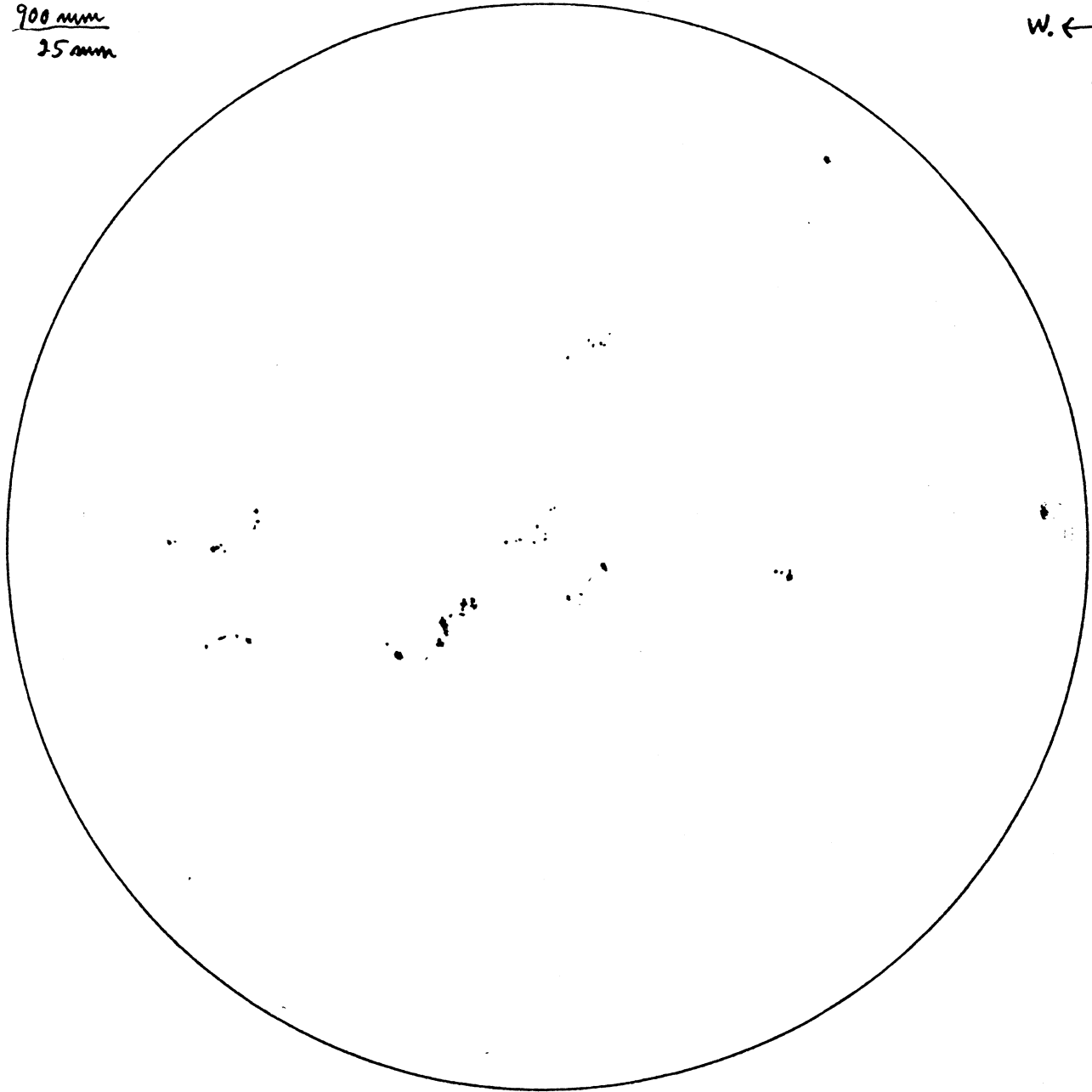
79

AUG. 15/90 2:35 - 3:15 P.M. E.D.T.

CLEAR SKY → 20% CLEAR SKY WITH CIRRUS LAYER AND CUM. LAYER
OF CLOUDS → CLEAR SKY.

SEEING $\frac{8}{10}$, STEADY IMAGE; TRANSPARANCY $\frac{7}{10}$, HAZE.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

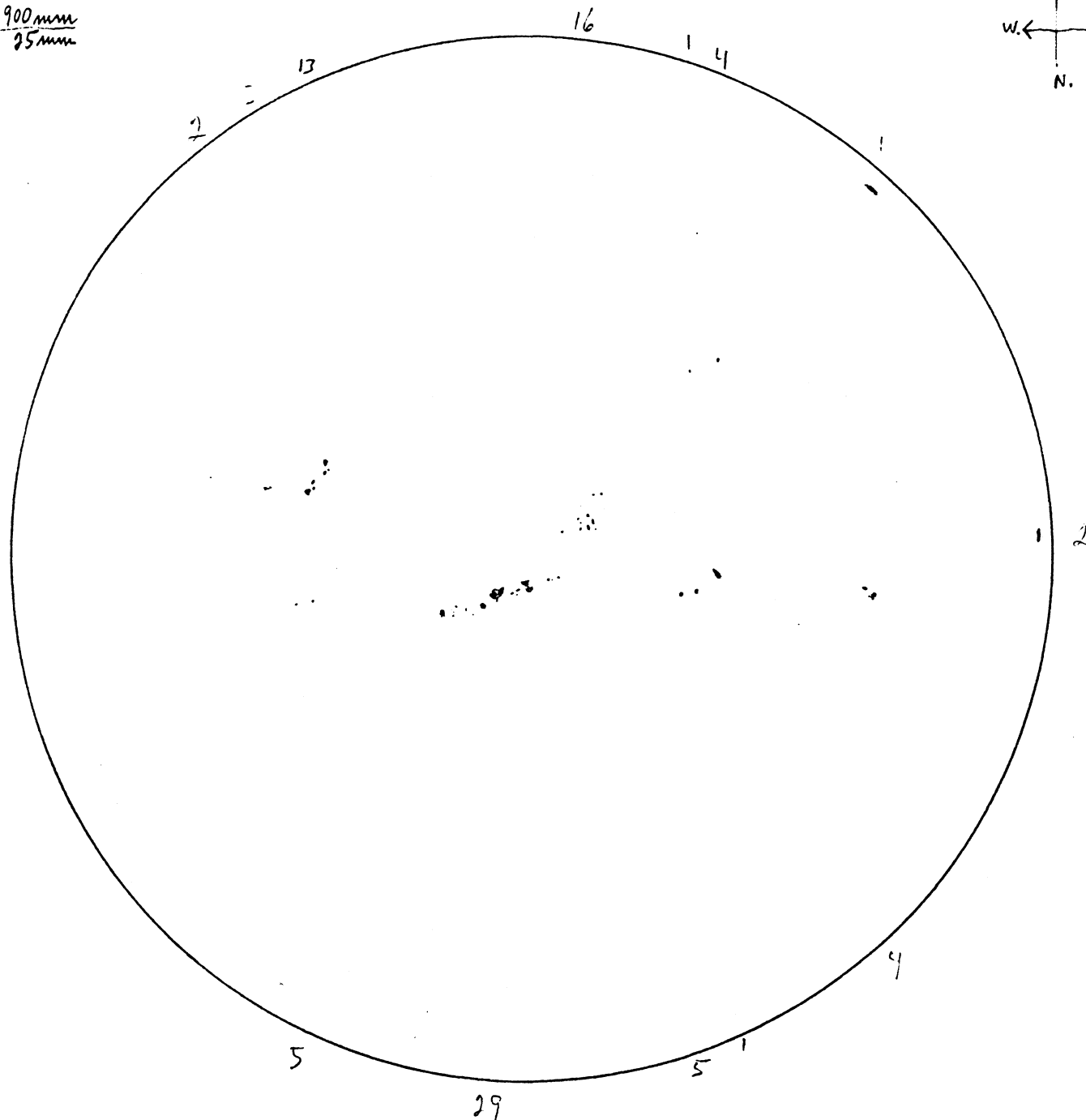
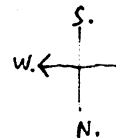


AUG. 14/90 4:56-5:15 P.M. E.D.T.

DRIFTING CUMULUS CLOUDS IN 80% CLEAR SKY.

SEEING $\frac{8}{10}$, STEADY IMAGE; TRANSPARANCY $\frac{5}{10}$, HAZE.

f8 $\frac{900mm}{25mm}$



RELATIVE # OF SUNSPOTS

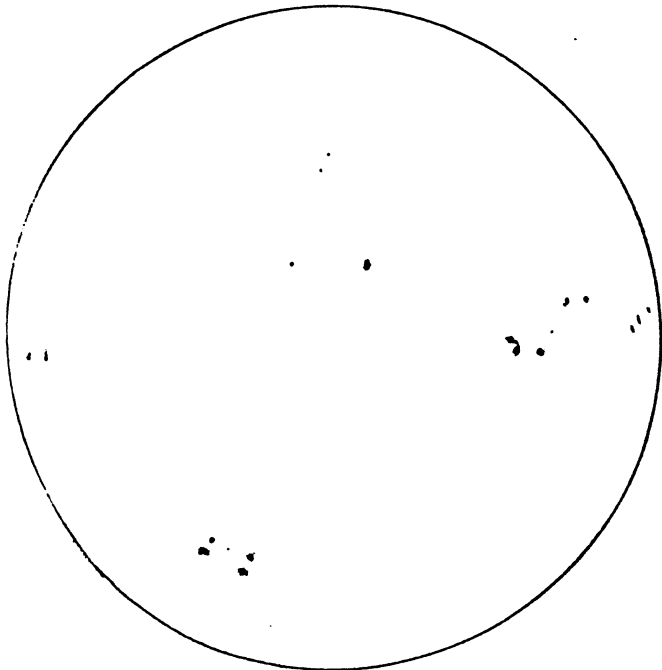
$$[(13 \times 10) + 86] = 216$$

f8 $\frac{900mm}{12mm}$, SEEING $\frac{5}{10}$, 5:30 P.M.

46

79

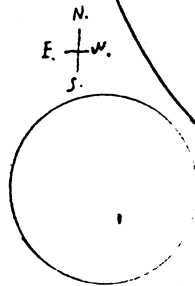
AUG. 10/90 12:25-12:40 P.M. E.O.T.
 LARGE CUM. BANKS IN HAZY SKIES.
 SEEING, STEADY IMAGE.
 TRANSP. $\frac{6}{10}$, HAZE.



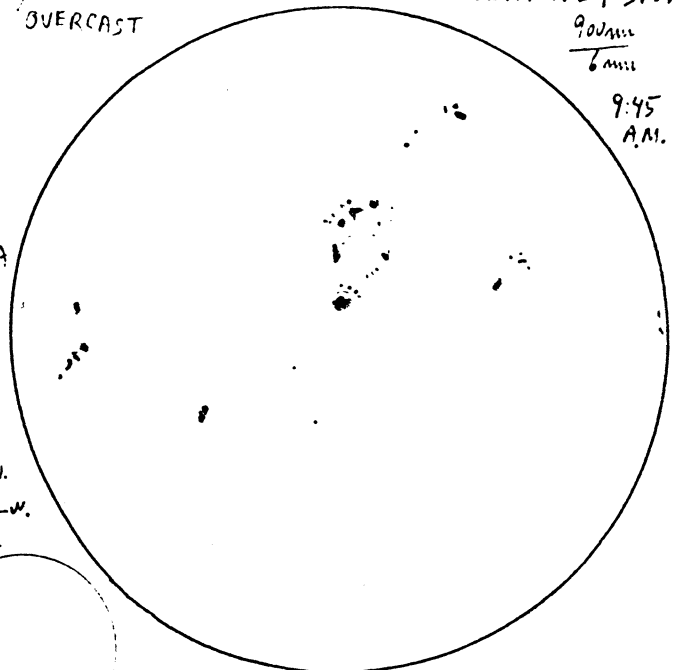
f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

8/19-22
 OVERCAST

MISSED
 BRIGHT
 AURORA
 8/20



AUG. 23 12:25-12:45 P.M. E.O.T.
 SKIES CLEAR, SLIGHT BREEZE.
 SEEING $\frac{7}{10}$, SMALL RIPPLES ALONG LIMS.
 TRANSP. $> \frac{8}{10}$

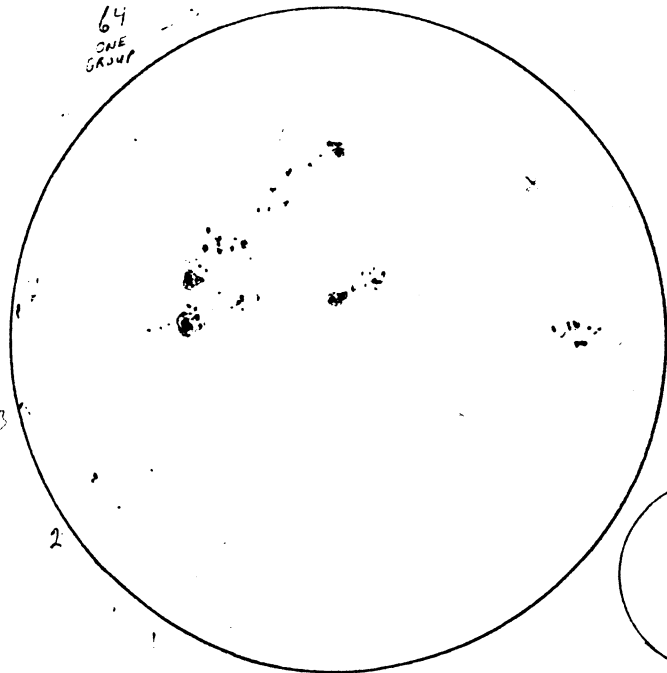


VERY FAST SPOT COUNT

9:00 AM	1
9:15 AM	18
9:30 AM	2
9:45 AM	1
	8
	3
	55
	2
	2
	17

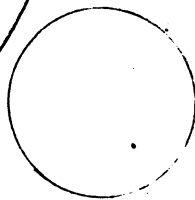
RELATIVE # OF SPOTS $[(10 \times 9) + 98] = 188$

AUG. 25 2:40-3:50 P.M. E.O.T.
 WHITE CUM. CLOUDS IN 90% CLEAR SKY
 SEEING $\frac{9}{10}$
 TRANSP. $\frac{9}{10}$



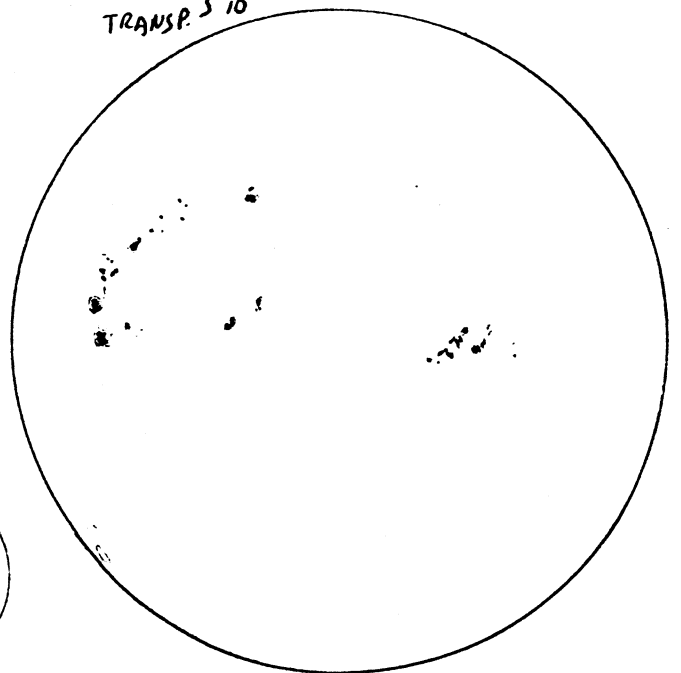
64
 ONE
 GROUP

1 X SPOT



1 X SPOT
 (NAKED-EYE)

AUG. 27 12:30-12:45 P.M. E.O.T.
 ISOLATED SMALL CUM. CLOUDS IN CLEAR SKY.
 SEEING $\frac{8}{10}$
 TRANSP. $\frac{8}{10}$



RELATIVE # OF SUNSPOTS

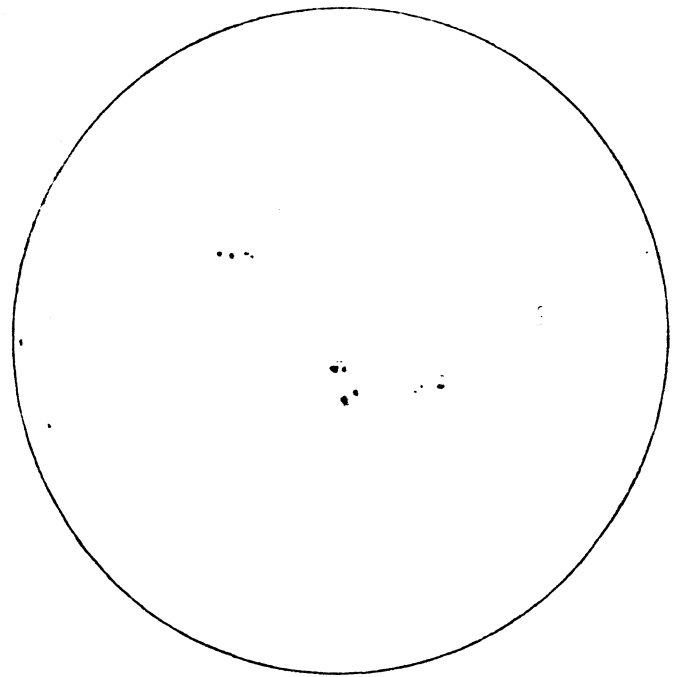
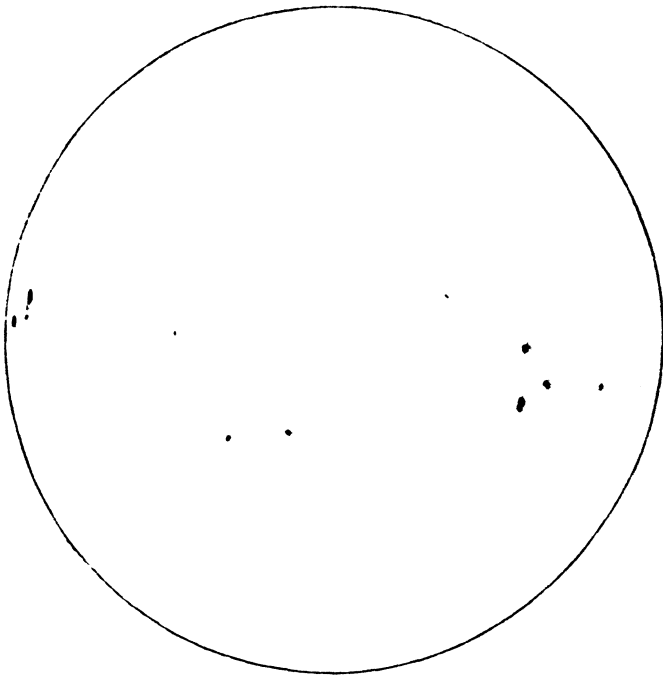
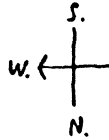
$[(10 \times 8) + 106] = 186$ f8 $\frac{900 \text{ mm}}{12 \text{ mm}}$

4:10 P.M., E.O.T.

AUG. 3/90 12:30-12:45 PM E.D.T.
CIRRUS CLOUDS IN SUN'S AREA.
SEEING $\frac{7}{10}$; TRANSP. $> \frac{5}{10}$.

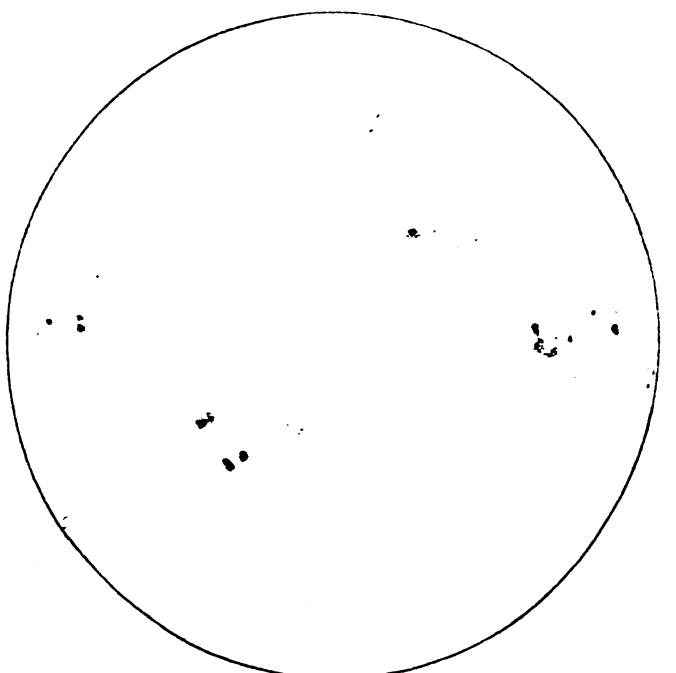
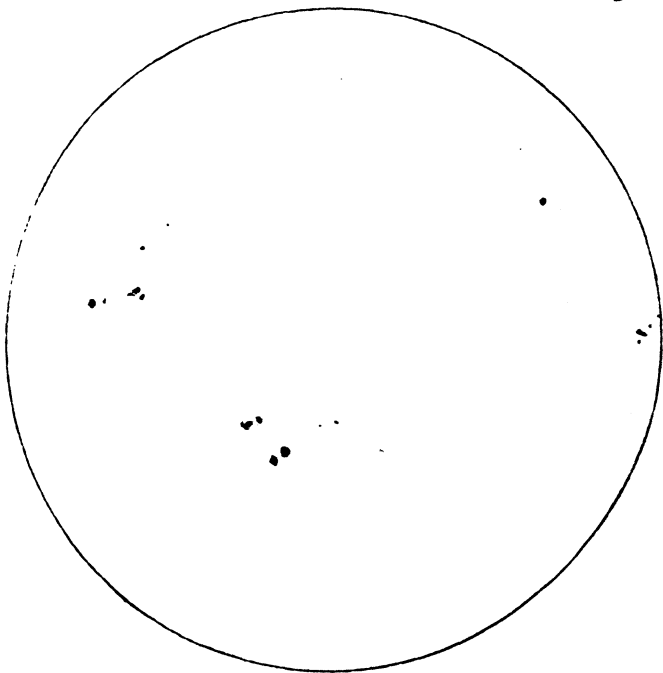
f8 $\frac{900 \text{ mm}}$
 $\frac{25 \text{ mm}}$

AUG. 6 3:30-4:40 PM E.S.T.
LARGE CUM CLOUDS IN 30% CLEAR SKY
SEEING $\frac{5}{10}$, RIPPLES; TRANSP. $\frac{7}{10}$



AUG. 8 12:35-12:45 PM E.D.T.
SEEING, SLIGHT RIPPLES.
TRANSP. $\frac{8}{10}$. CUM. CLOUDS IN 30%
CLEAR SKIES.

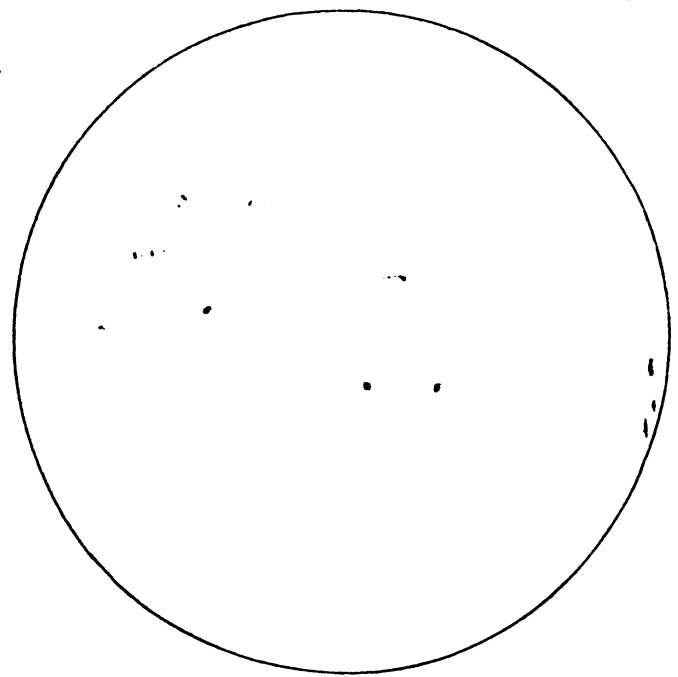
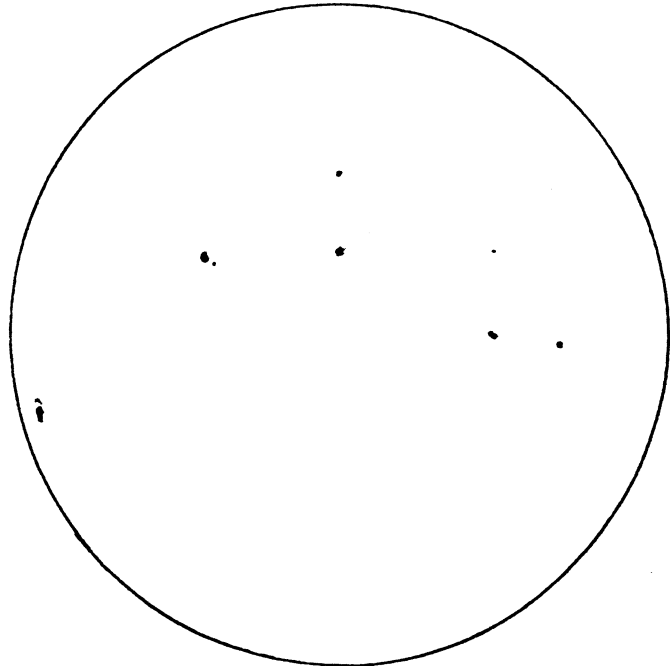
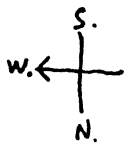
AUG. 9 5:40-6:30 PM E.D.T.
SEEING $\frac{6}{10}$, TRANSP. $\frac{8}{10}$.
SKIES CLEAR.



JULY 29/90 2:30-2:45 P.M. E.D.T.
 CUM. CLOUDS IN 30% CLEAR SKY
 SEEING $\frac{5}{10}$, RIPPLES
 TRANSP. $\frac{7}{10}$

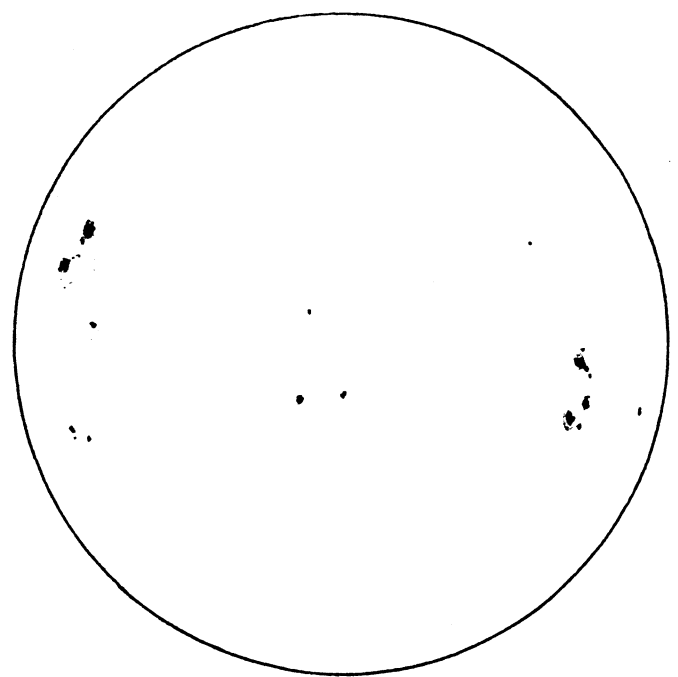
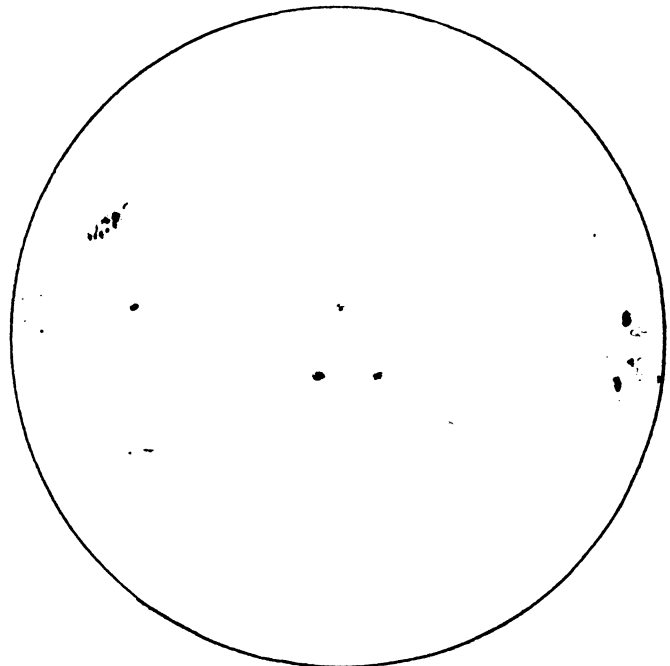
f8 $\frac{900mm}{25mm}$

JULY 31 12:35-12:40 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA,
 SEEING $\frac{5}{10}$; TRANSP. $\frac{8}{10}$, GRAINY STRUCTURE
 VISIBLE.



AUG. 1 12:35-12:50 P.M. E.D.T.
 SKIES CLEAR, SMALL ISOLATED CUM. CLOUDS
 SEEING $\frac{6}{10}$ (FUZZY); TRANSP. $\frac{8}{10}$. \ IN WEST SKIES.
 GRAINY STRUCTURE VERY EVIDENT.

AUG. 2 12:30-12:55 P.M. E.D.T.
 SKIES TOTALLY CLEAR.
 SEEING $\frac{7}{10}$, TRANSP. $\frac{9}{10}$.
 GRAIN VERY EVIDENT.

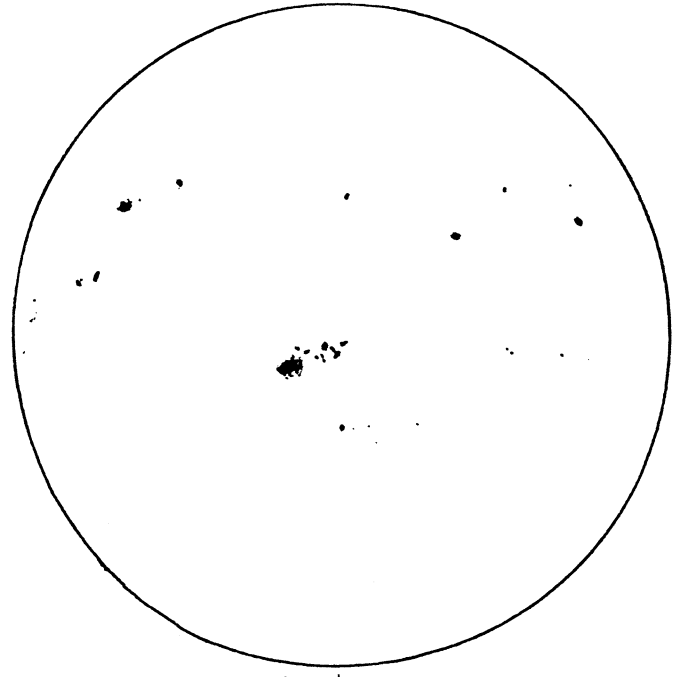
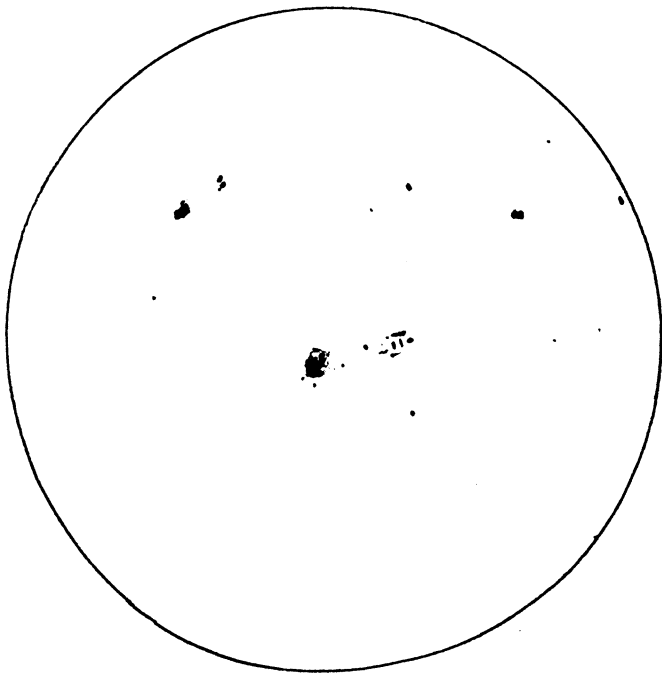
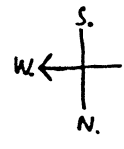


SEEING
 12:35
 12:50
 12:30
 12:55
 12:35
 12:50
 12:30
 12:55

JULY 24, 1990 12:35-12:45 P.M. E.D.T.
 SKIES HAZY-BLUE → BLUE
 SEEING $\frac{8}{10}$
 TRANSP. $\frac{7}{10}$, DETAIL VERY SHARP.
 GRAINY STRUCTURE VERY EVIDENT.

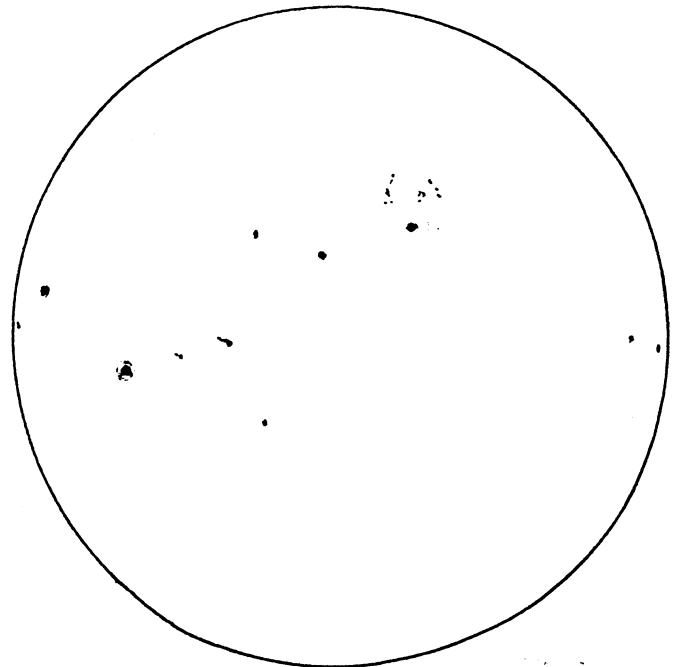
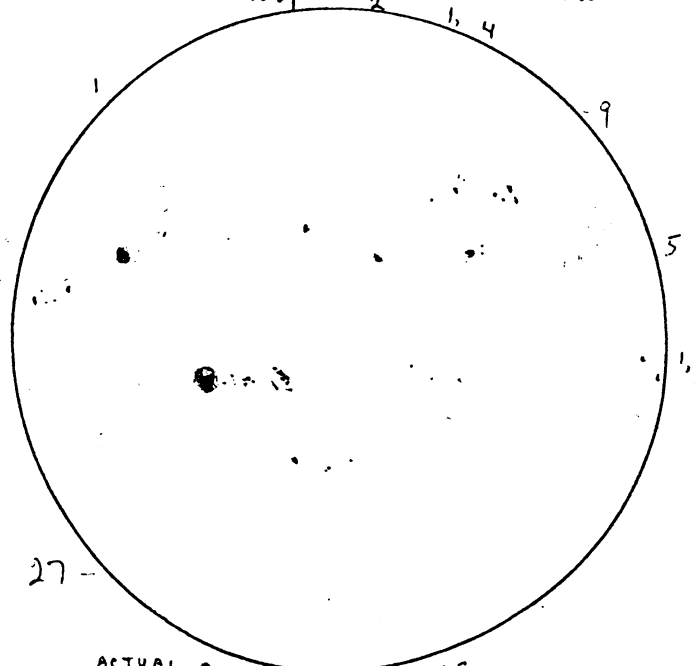
f 8 $\frac{900mm}{25mm}$

JULY 25 12:30-12:50
 SKIES CLEAR
 SEEING } ~ JULY 24
 TRANSP. }



JULY 26 5:32-6:00 P.M. E.D.T.
 SKIES TOTALLY CLEAR
 SEEING $\frac{8}{10}$, SLIGHT FUZZINESS
 TRANSP. $\frac{9}{10}$, VERY HIGH CONTRAST

JULY 27 12:35-12:50 P.M. E.D.T.
 SKIES BLUE-HAZY IN SUN'S AREA



ACTUAL SIZE OF SPOT



RELATIVE # OF SUNSPOTS, $\frac{900mm}{9mm}$ 6:30 P.M.
 $[(10 \times 17) + 70] = 240$

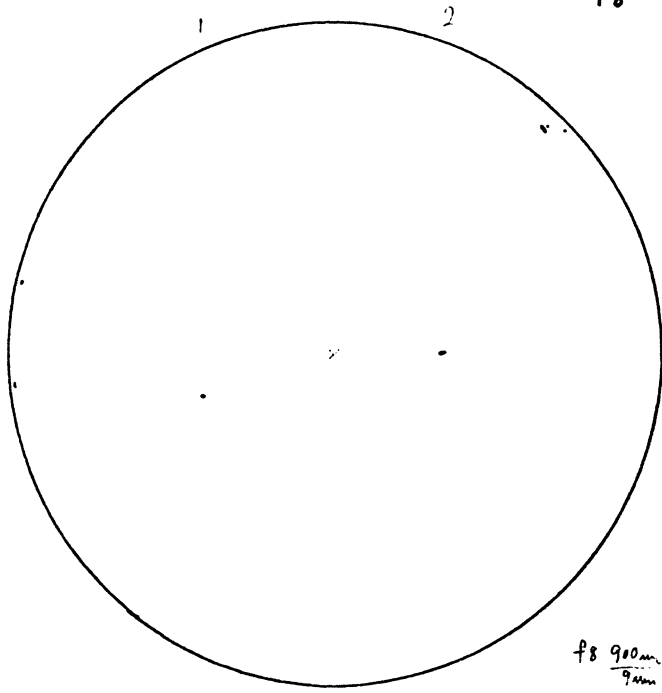
f 8 $\frac{900mm}{9mm}$ 6:10-6:25 SEEING $\frac{4}{10}$

HISLY ACTIVE AURORAE 7/28-29
 RAYS - PULSATIONS

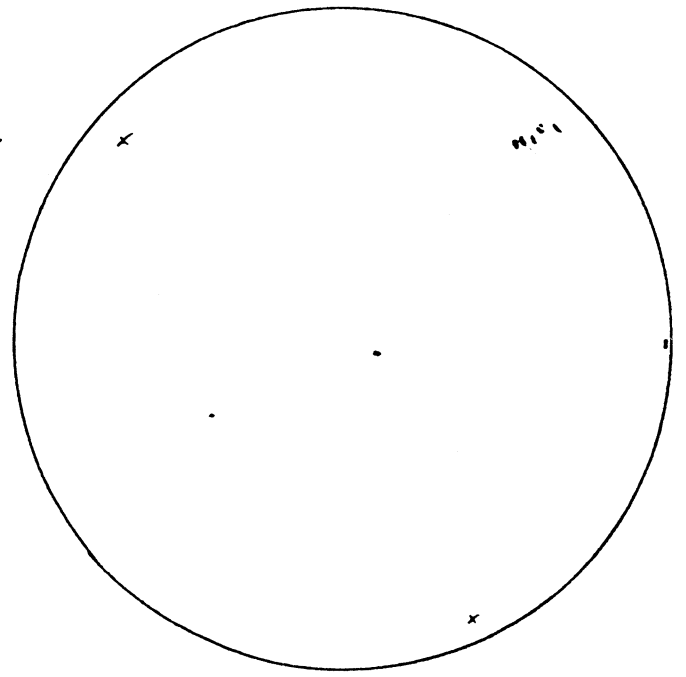
76

COUNTED SUSPECTED SPOTS
 COUNTED INDIVIDUAL SMALL SPOTS AS GROUPS

JULY 17 12:25-12:30 P.M. E.D.T.
 FAST MOVING CUM. CLOUDS INTERFERED WITH DRAWING OF FACULAE.
 TRANSP. WHEN CLEAR $\frac{7}{10}$.

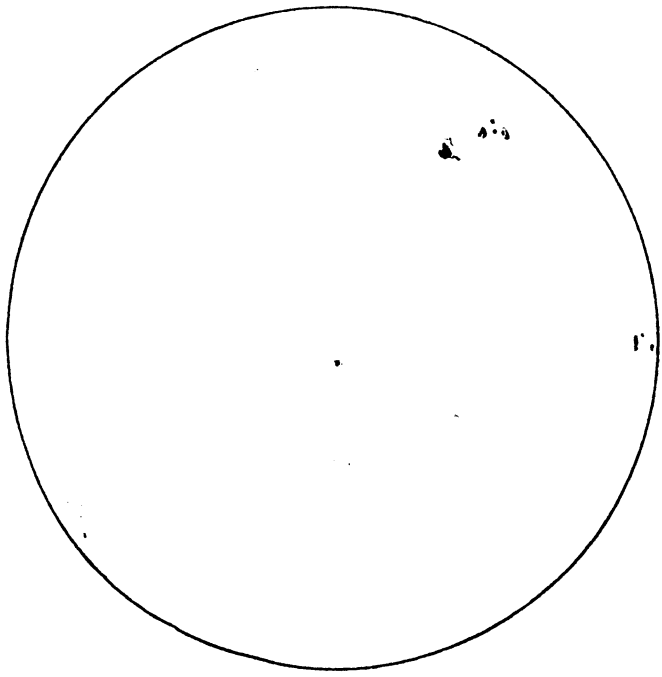


JULY 18 12:20-12:30 P.M. E.D.T.
 FAST MOVING CUM. CLOUDS IN HAZY BLUE SKIES.
 GRAINY STRUCTURE APPARENT ACROSS ENTIRE SOLAR DISK.

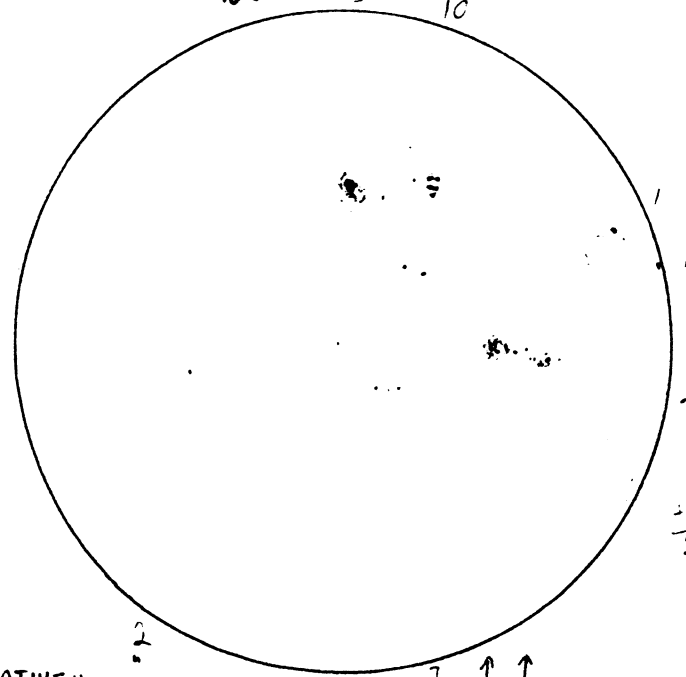


RELATIVE # OF SUNSPOTS $[(10 \times 5) + 8] = 58$

JULY 19/90 12:30-12:40 P.M. E.D.T.
 CUM. CLOUDS IN HAZY SKY
 TRANSPARENCY $\frac{5}{10}$



JULY 21 5:20-6:00 P.M. E.D.T.
 CLEAR SKIES IN SUN'S AREA.
 SEEING $\frac{8}{10}$ } STEADY, VERY CLEAR IMAGE.
 TRANSP. $\frac{9}{10}$ }



RELATIVE # OF SUNSPOTS
 $[(9 \times 10) + 5] = 141$
 OR
 $[(11 \times 10) + 5] = 161$

SPOTS SHOULD BE SMALLER AND MORE SPREAD OUT

20
 2
 3
 24
 27

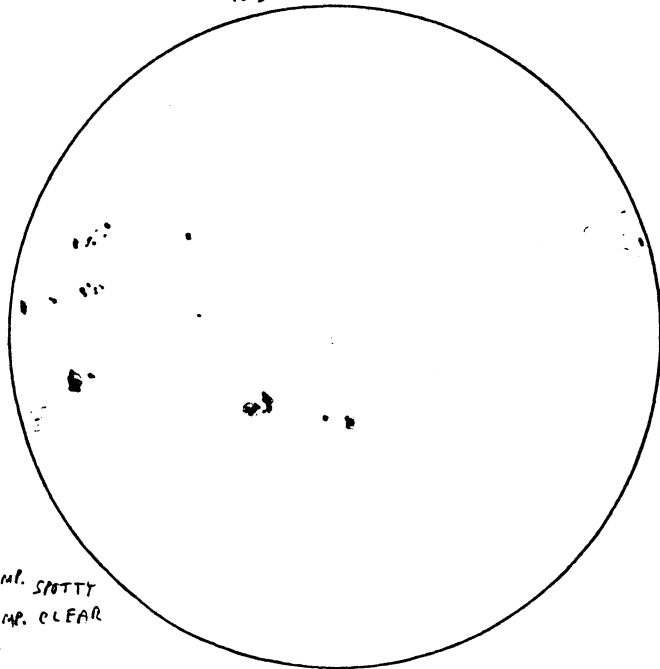
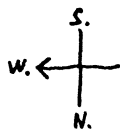
JULY 6/90 12:20-12:45 P.M. E.P.T.

SKIES CLEAR IN SUN'S AREA

SEEING $\frac{1}{10}$, 'FUZZY' AT TIMES

TRANSP. $\frac{9}{10}$, VERY DETAILED IMAGE

f8 $\frac{900mm}{35mm}$

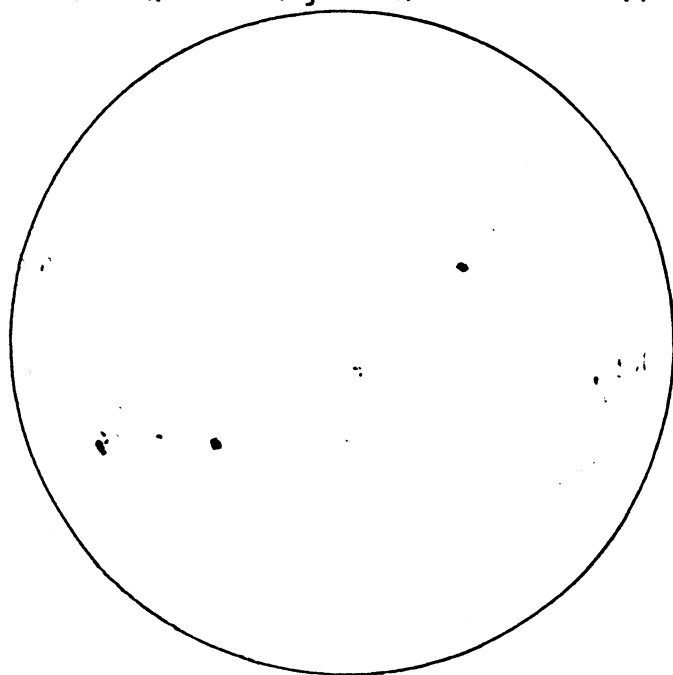


HEMP. SPOTTY
HEMP. CLEAR

JULY 9 12:30-12:45 P.M. E.O.T.

SKIES CLEAR, CLOUD BANK RETREATING ALONG SOUTH HORIZON.
SEEING $\frac{1}{10}$, 'FUZZY'.

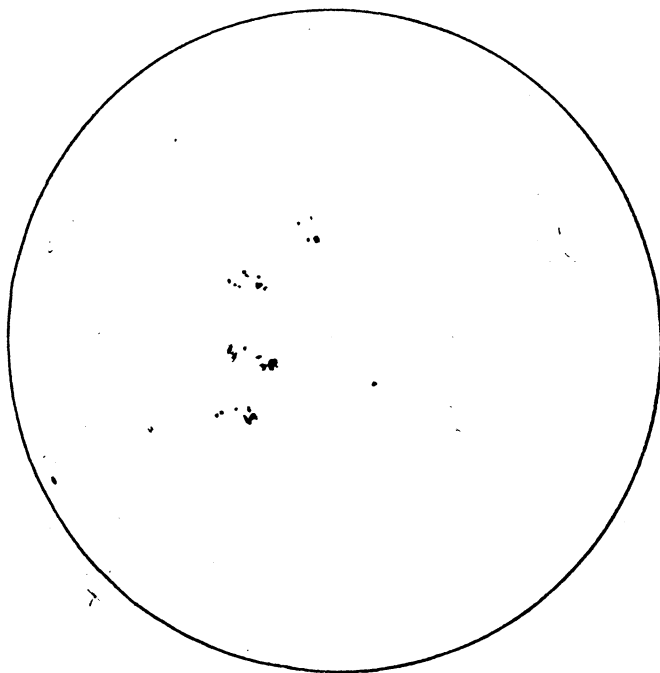
TRANSPARENCY $\frac{8}{10}$, FACULAE VERY EVIDENT.



JULY 12 5:20-5:35 P.M. E.O.T.

CIRRUS STRATUS CLOUDS IN 30% CLEAR SKY.

TRANSP. $\frac{4}{10} \rightarrow \frac{7}{10}$

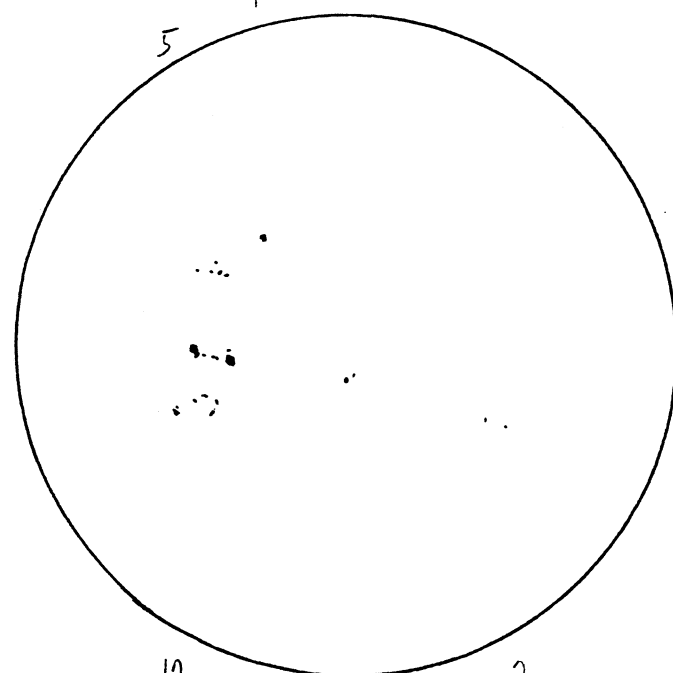


CLUSTER OF SPOTS,
THE FIRST TIME I HAVE
NOTICED THIS PHENOMENA

JULY 13 12:20-12:39 P.M. E.O.T.

CIRRUS CLOUDS IN SUN'S AREA

TRANSP. $\frac{6}{10}$



6=
11=
12=
5=
34

RELATIVE # OF SUNSPOTS

$[(10 \times 6) + 34] = 94$

f8 $\frac{900mm}{12mm}$

CIRRUS CLOUDS.

74

JULY 2/90 3:25 - 4:55 P.M. E.D.T. (-20 MINUTES CLOUD INTERRUPTIONS)

CUM. CLOUDS IN 40% CLEAR SKIES

SEEING $\frac{7}{10}$
 TRANSP. $\frac{9}{10}$

22-16

6 3 1

11

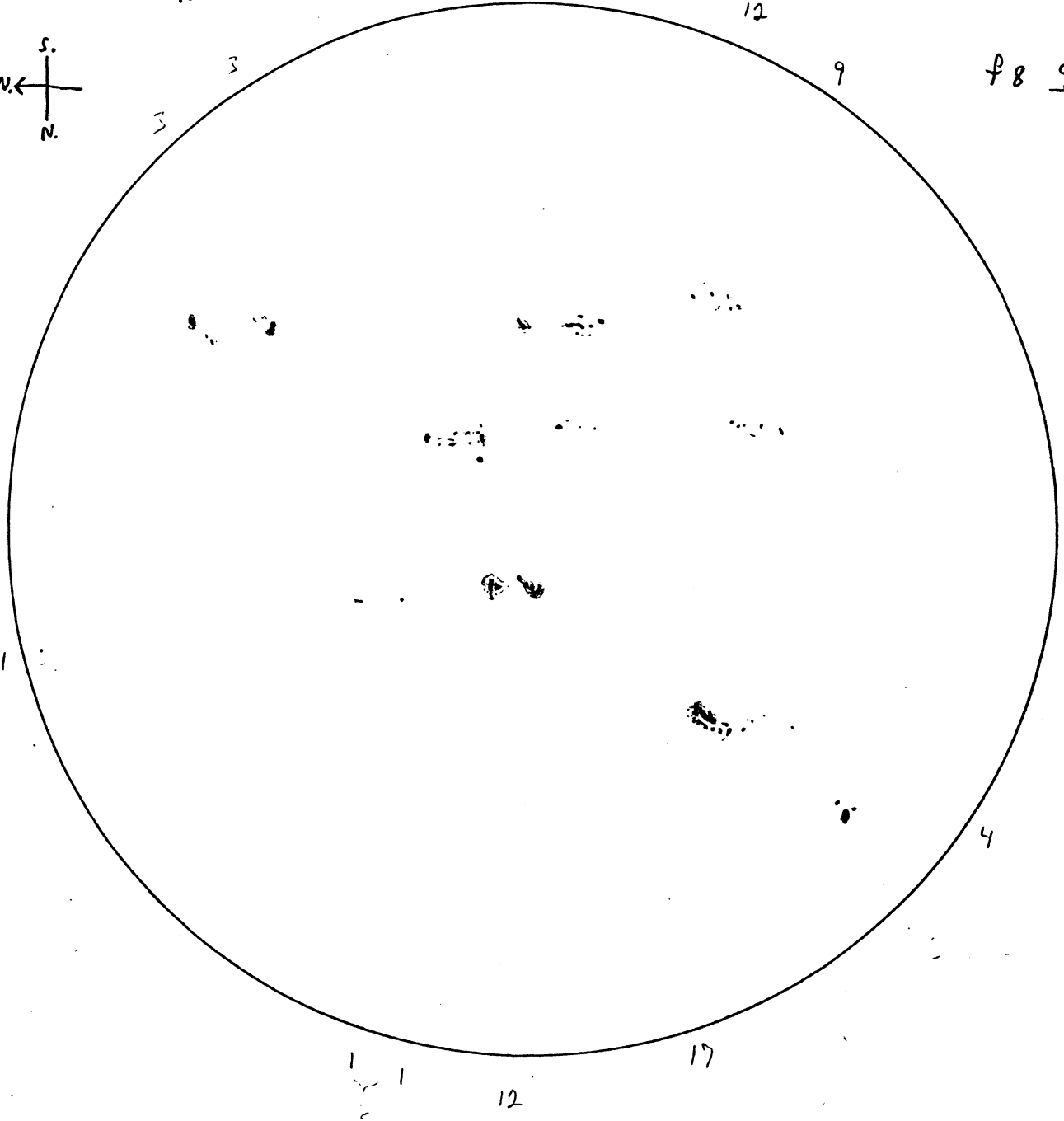
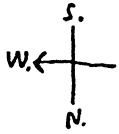
12

9

f 8 $\frac{900mm}{25mm}$

6--
 11--
 11--
 16--
 12--
 9--
 4--
 17--
 10--
 3--

 101



5:00-5:10 P.M., RELATIVE # OF SUNSPOTS,

f 8 $\frac{900mm}{12mm}$, SEEING $\frac{5}{10}$

$$[(15 \times 10) + 10] = 251$$

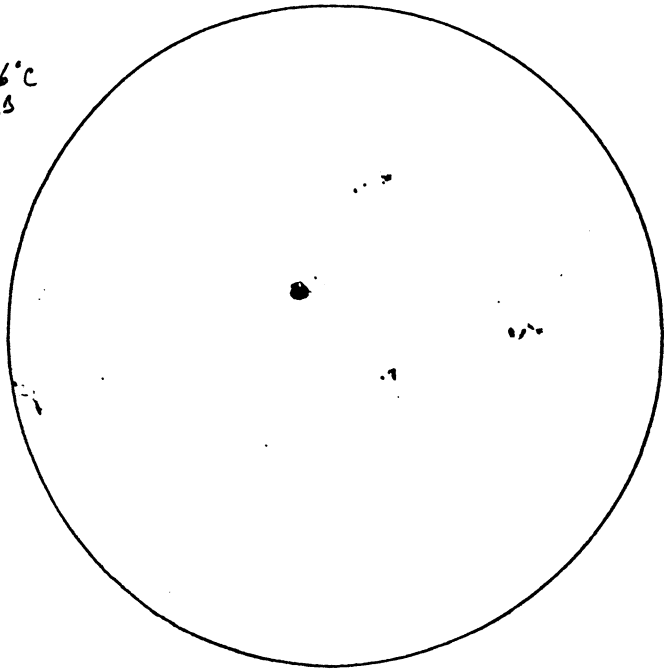
$$[(11 \times 10) + 10] = 211$$

(45)

(73)

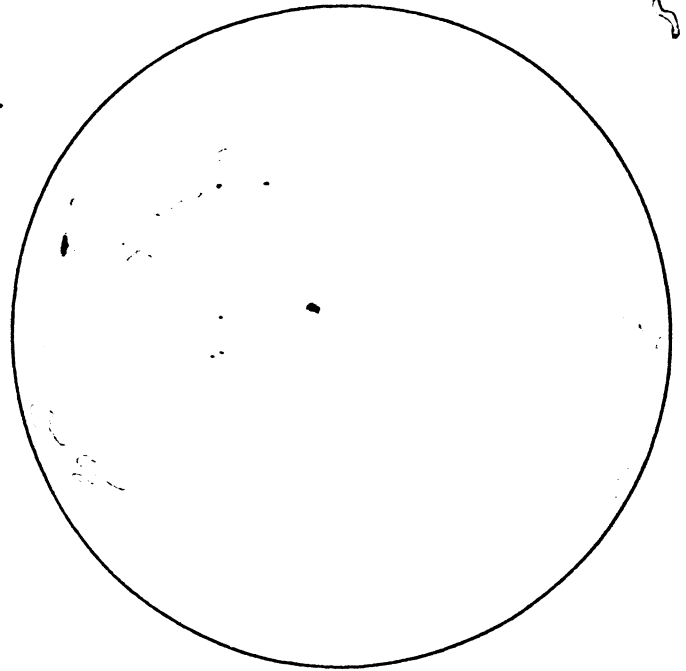
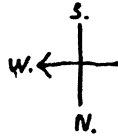
JUNE 15/90 12:25 - 12:45 P.M. E.D.T.
 SKIES CLEAR.
 SEEING, RIPPLE ALONG LIMB
 TRANSP. GRAINY STRUCTURE GLIMPSED.

+26°C
 CFRB

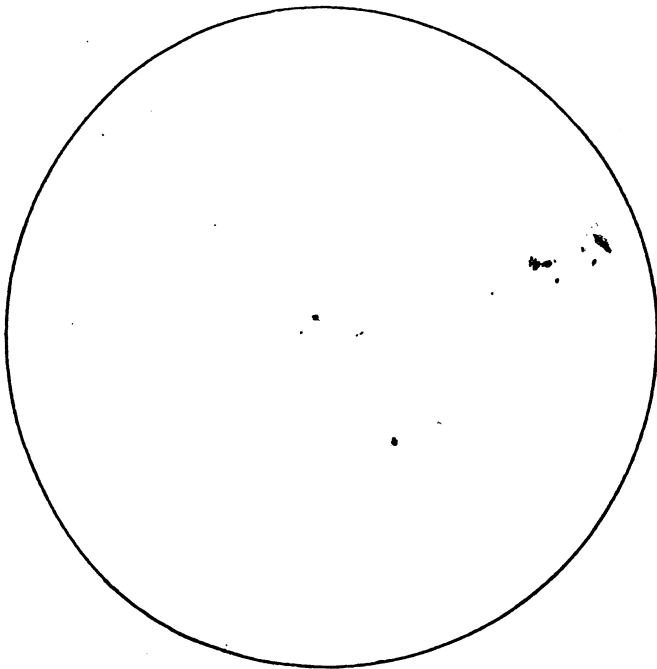


f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

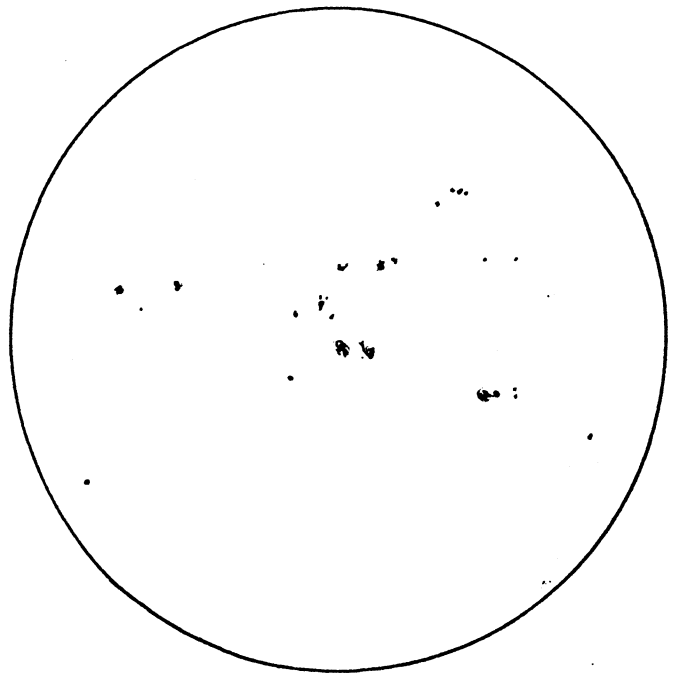
JUNE 19 6:40 - 6:48 P.M. E.D.T.
 SKIES CLEAR
 SEEING $\frac{7}{10}$, RIPPLES ALONG LIMB
 TRANSP. $\frac{9}{10}$, FACULAE HAD APPEARANCE
 OF FLAMES.



JUNE 25 12:20 - 12:25 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA
 SEEING $\frac{8}{10}$; TRANSPARENCY $\frac{9}{10}$



JULY 1/90 8:40 P.M. E.D.T.
 VERY FAST DRAWING
 SKIES CLEAR; SEEING, TRANSP. $\frac{7}{10}$

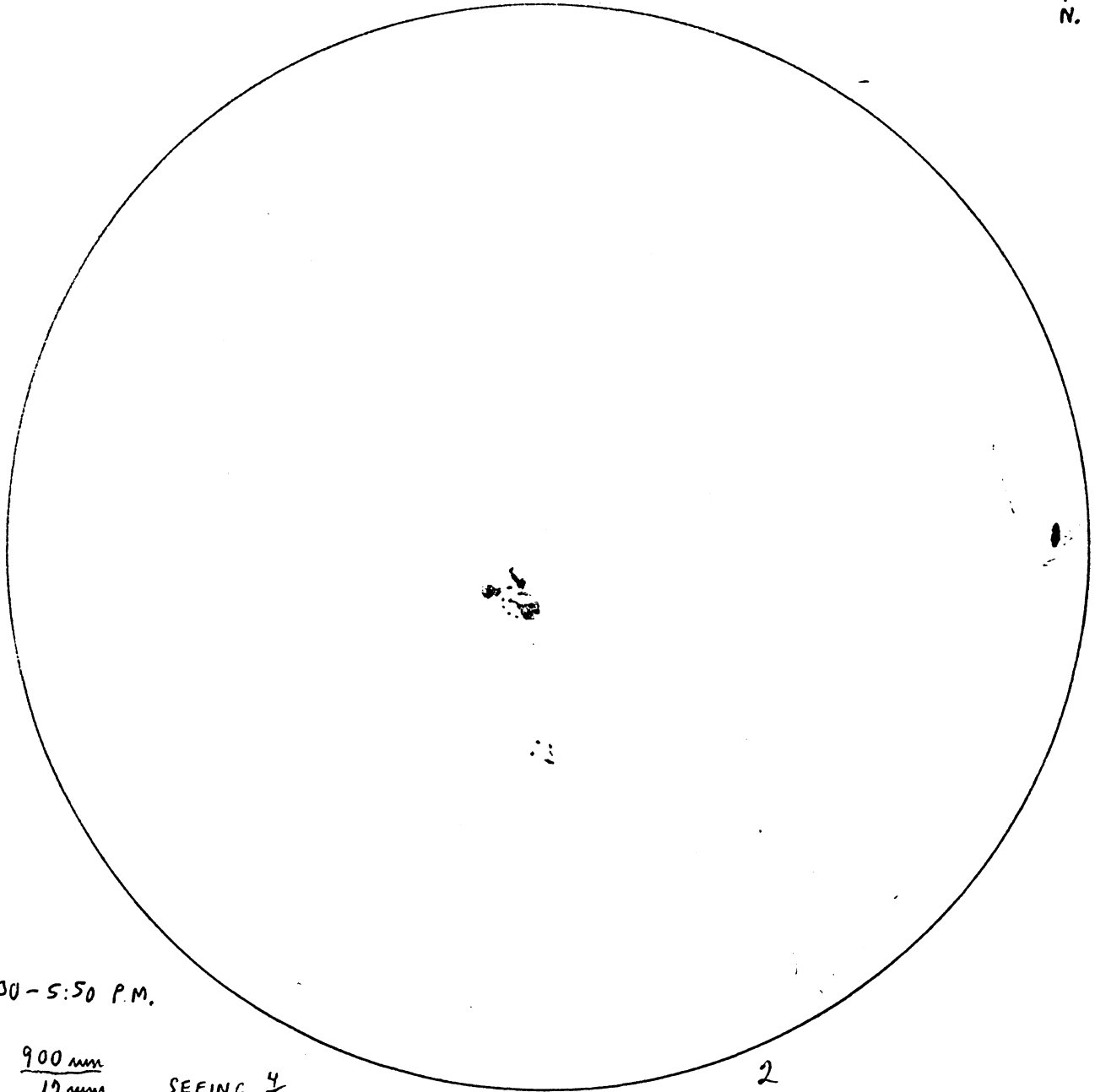
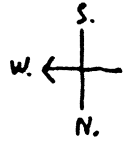


JUNE 9/90 5:00-5:20 P.M. E.D.T.

SKIES CLEAR ; SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{8}{10}$

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

24



5:30-5:50 P.M.

f 8 $\frac{900 \text{ mm}}{12 \text{ mm}}$, SEEING $\frac{4}{10}$

8



RELATIVE # OF SUNSPOTS

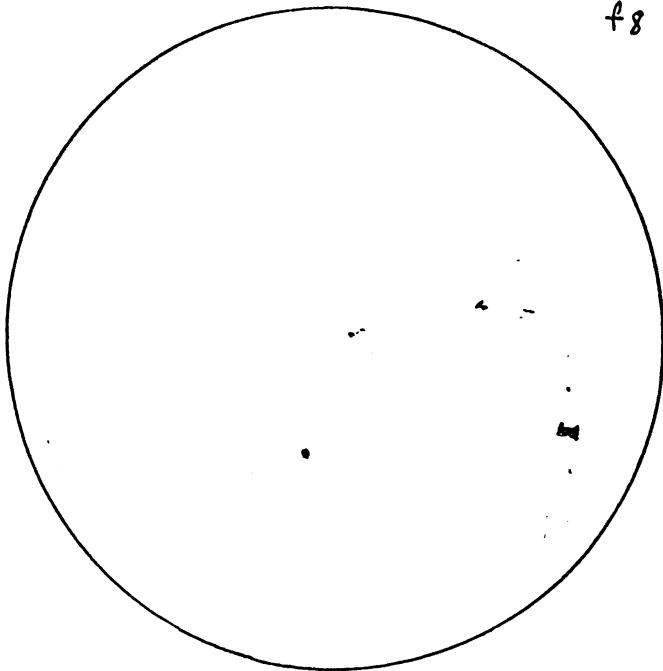
$$[(10 \times 4) + 35] = 75$$

$\frac{900 \text{ mm}}{12 \text{ mm}}$

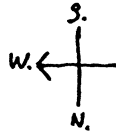
44

72

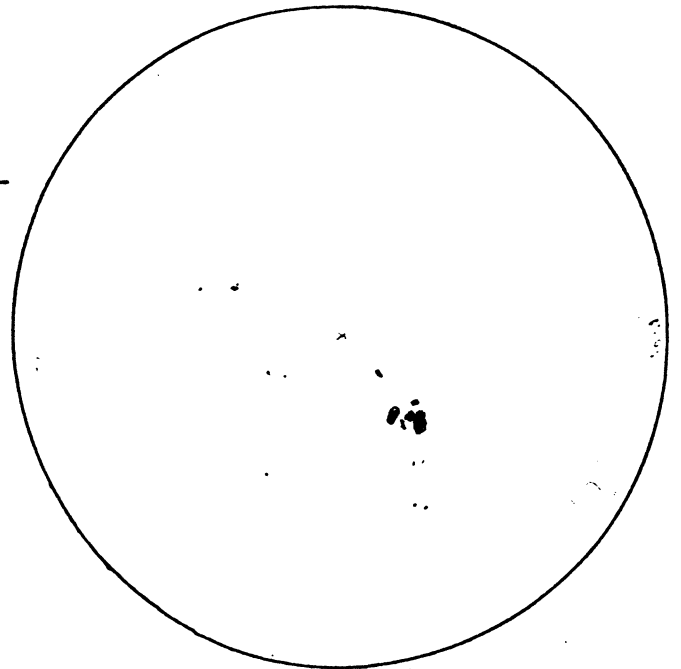
JUNE 5/90 12:25-12:40 P.M. E.D.T.
 SKIES CLEAR.
 GRAIN GLIMPSED ACROSS ENTIRE DISC



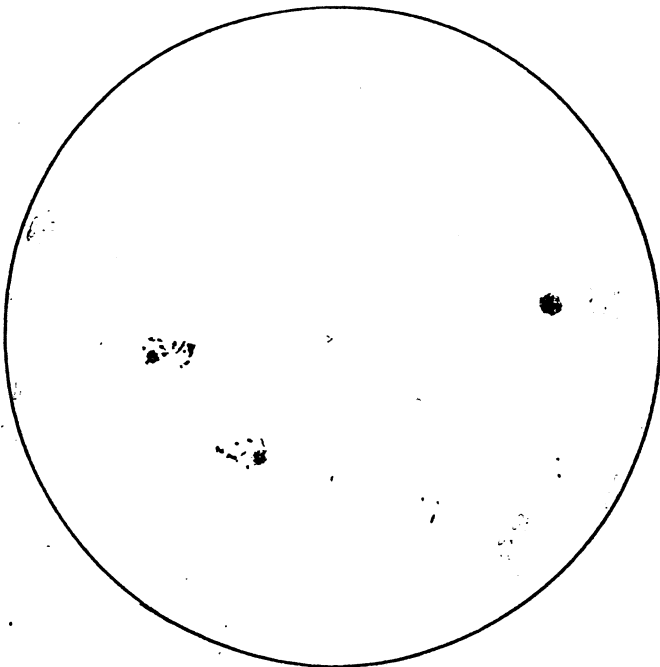
f8 $\frac{900\text{mm}}{25\text{mm}}$



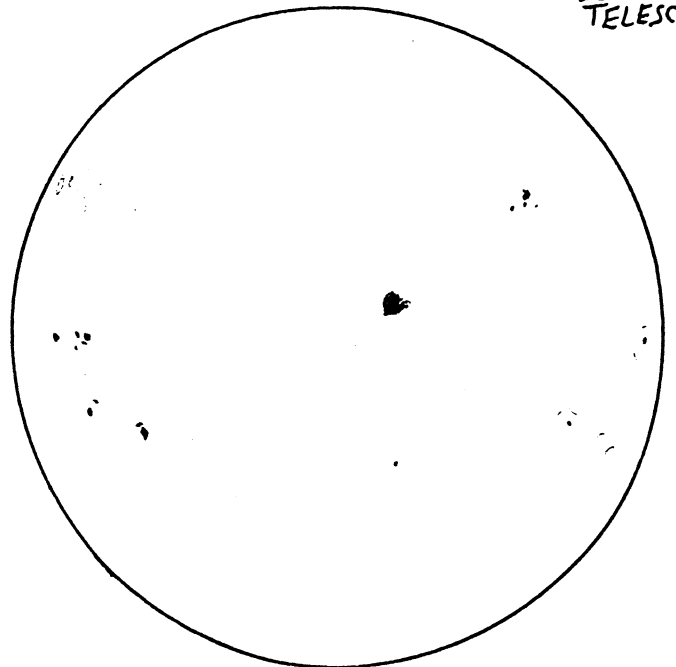
JUNE 7 12:25-12:40 P.M. EDT.
 SKIES CLEAR; >SMALL BRANCHES MOVE
 FAC. EASILY SEEN.
 RIPPLES ALONG LIMB IN BREEZE



JUNE 11 12:20-12:40 EDT.
 SKIES CLEAR IN SUN'S AREA
 SEEING $\frac{7}{10}$, TRANSP. $\frac{7}{10}$



JUNE 13 12:40-12:50 P.M. EDT.
 WHITE STRATUS CLOUDS IN 20%
 CLEAR SKY.
 TRANSP. $\frac{4}{10} \rightarrow \frac{7}{10}$. BREEZE JIGGLED
 TELESCOPE.



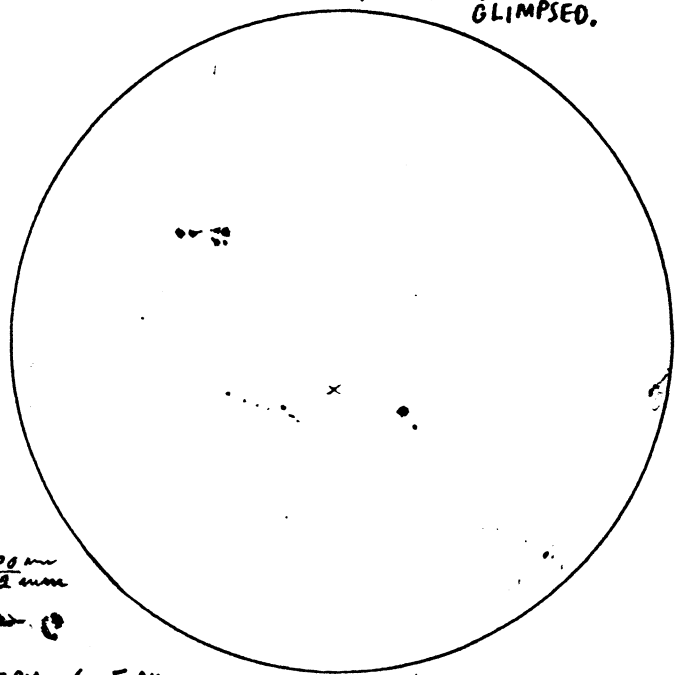
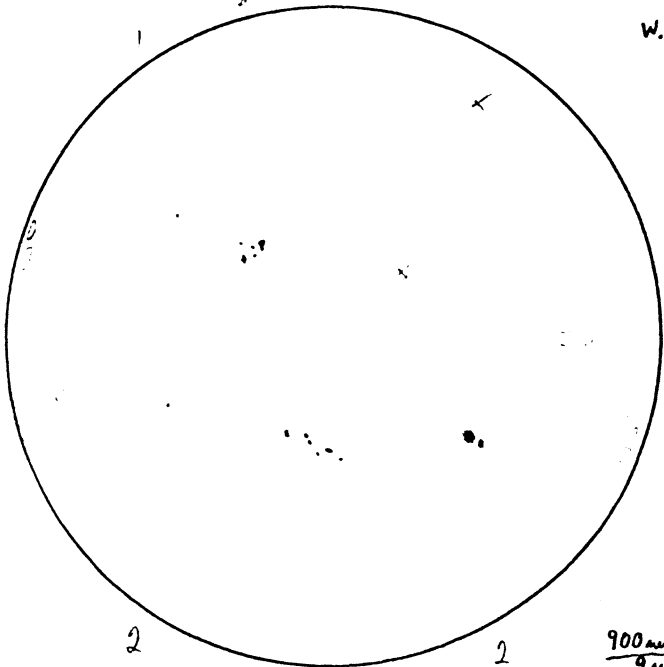
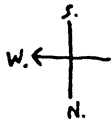
POOR SEEING PRECLUDES
 SUNSPOT COUNT

$\frac{900\text{mm}}{19\text{mm}}$

MAY 30/90 12:30-12:40 P.M. E.D.T.
 SKIES TOTALLY CLEAR.
 TRANSPARANCY, SEEING $\frac{7}{10}$.

f 8 $\frac{900 \text{ mm}}{35 \text{ mm}}$

MAY 31 5:30-5:55 P.M. E.D.T.
 SKIES CLEAR, TELESCOPE VIBRATED IN
 SEEING $< \frac{7}{10}$ BREEZE (SMALL BRANCHES
 MOVE. TRANSPARANCY $> \frac{8}{10}$. GRAINY STRUCTURE
 GLIMPSED.



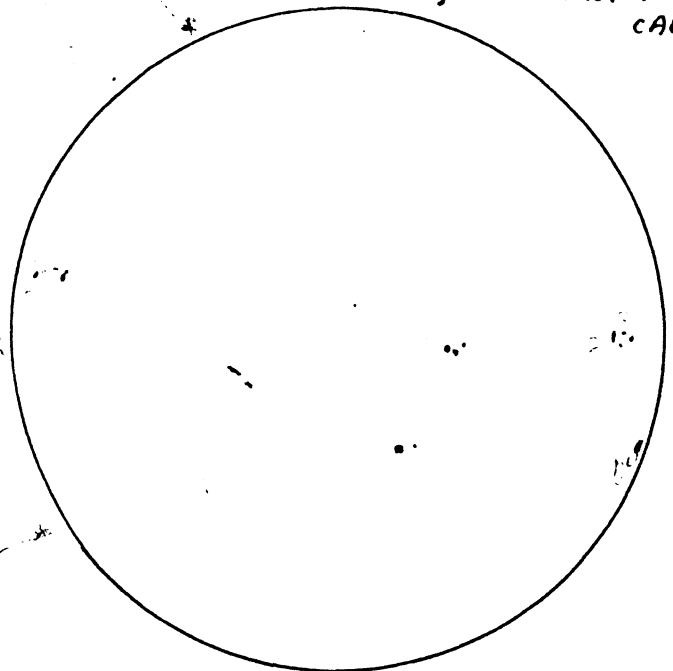
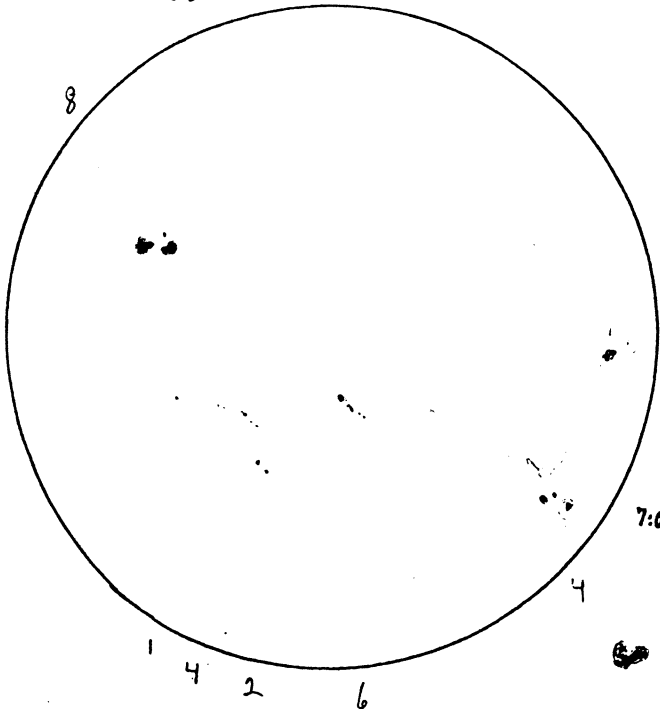
$\frac{900 \text{ mm}}{9 \text{ mm}}$

5:55 P.M. - 6:05 P.M.

RELATIVE # OF SUNSPOTS $[(6 \times 10) + 20] = 80$

JUNE 1 6:30-6:45 P.M. E.D.T.
 SKIES TOTALLY CLEAR
 SEEING $\frac{7}{10}$, TRANSPARANCY $\frac{9}{10}$

JUNE 3 2:00-2:25 P.M. E.D.T.
 SKIES CLEAR; LARGE BRANCHES MOVE
 IN WIND, OBSERVATORY YARD
 CALM.



7:00-7:10

$\frac{900 \text{ mm}}{12 \text{ mm}}$

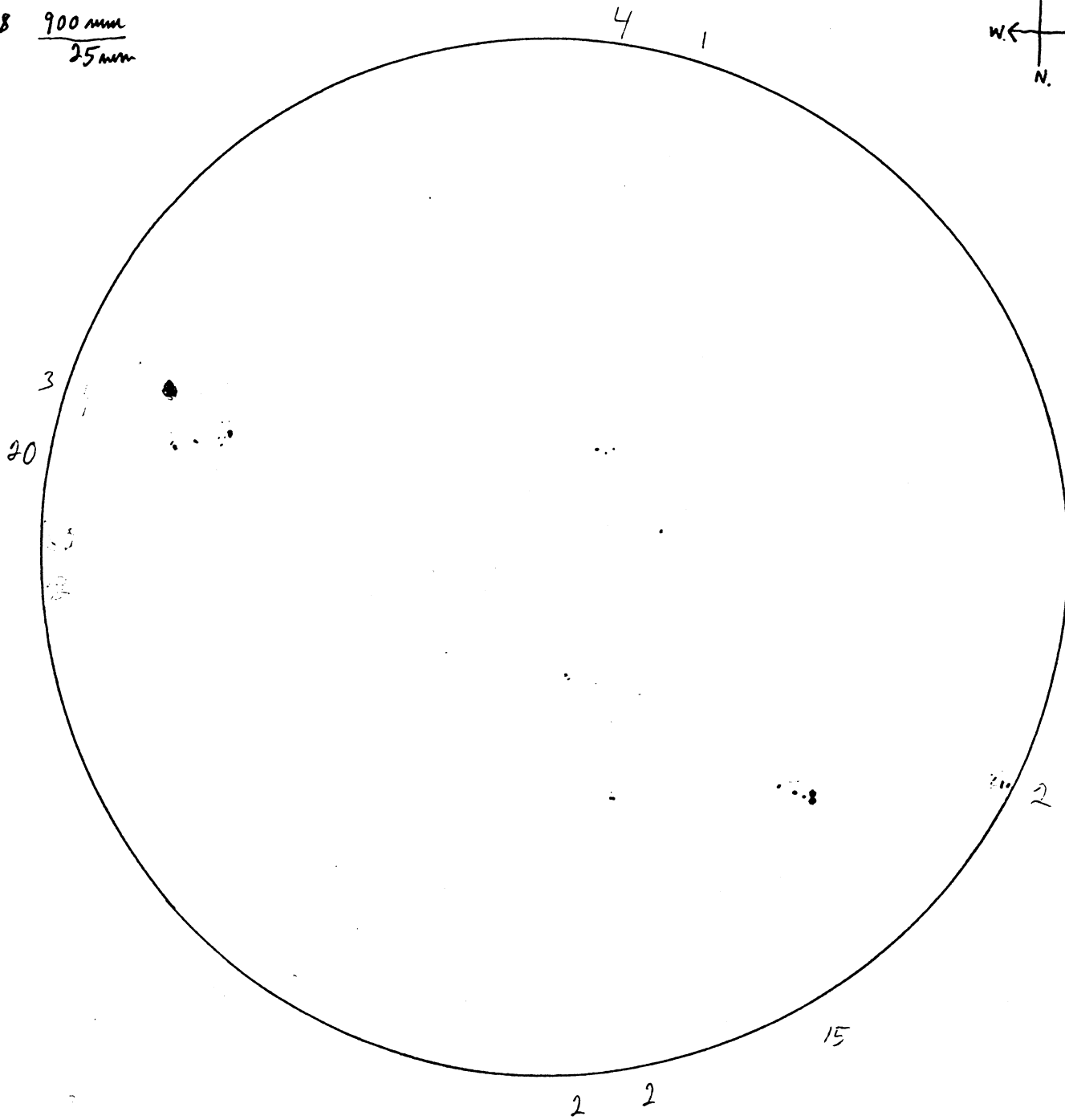
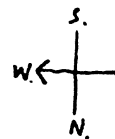
RELATIVE # OF SUNSPOTS
 $[(7 \times 10) + 27] = 97$ $\frac{900 \text{ mm}}{12 \text{ mm}}$ SEEING $\frac{5}{10}$

MAY 27/90 1:00 - 1:30 P.M. E.D.T.

SKIES CLEAR IN SUN'S AREA

SEEING $\frac{7}{10}$, TRANSPARENCY $\frac{8}{10}$

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



RELATIVE # OF SUNSPOTS

$$[(10 \times 8) + 49] = 129$$

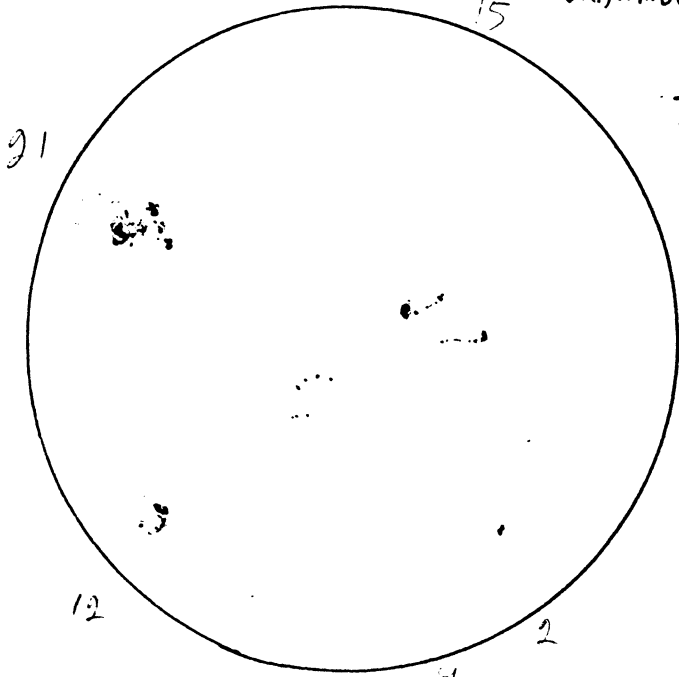
$$\frac{900 \text{ mm}}{9 \text{ mm}} \rightarrow \text{SEEING } \frac{4}{10}$$

(43)

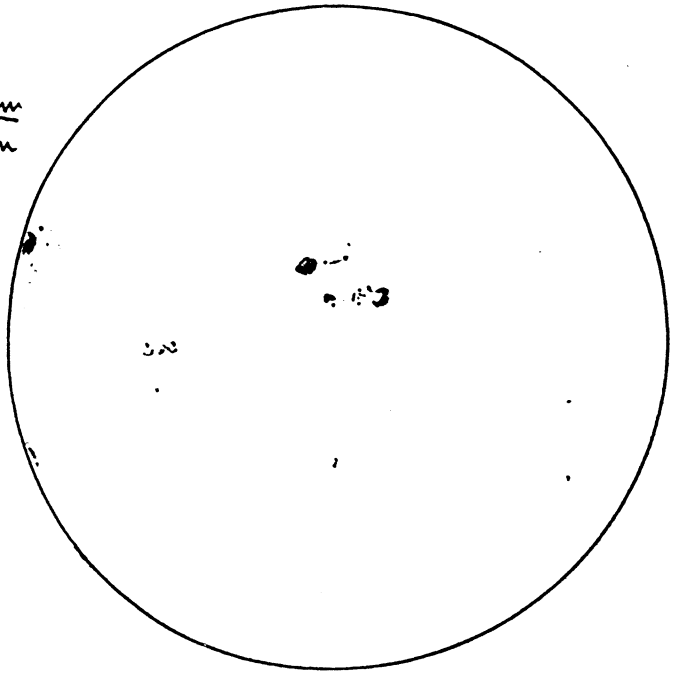
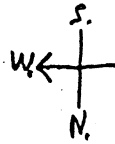
(70)

MAY 22/90 12:35-12:55 P.M. E.D.T.
 LIGHT CIRRUS CLOUDS IN CLEAR SKY.
 TRANSP. $\frac{7}{10}$, SEEING $\frac{8}{10}$
 FAST DRAWING.

MAY 24 12:30-12:50 P.M. E.D.T.
 SKIES CLEAR IN SUN'S AREA
 SEEING, TRANSPARENCY $\frac{8}{10}$ FAST DRAWING



+8 $\frac{900\text{mm}}{25\text{mm}}$

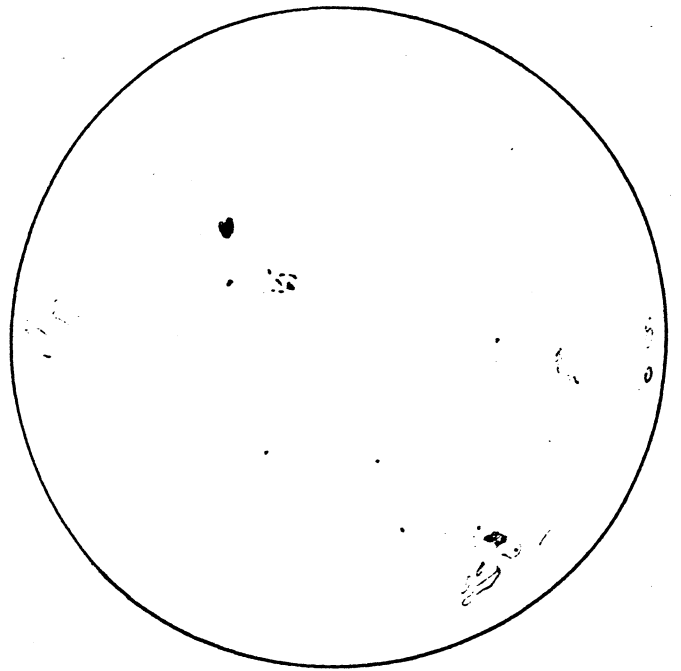
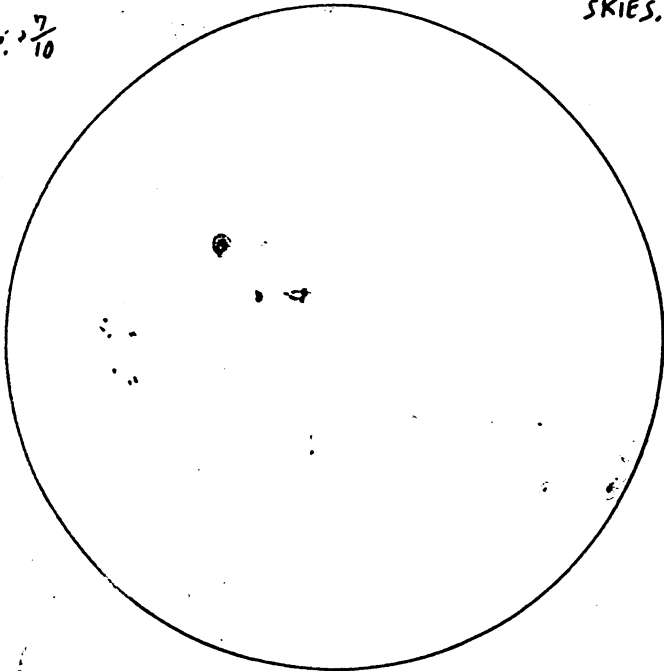


SUNSPOT
 COUNT $[(7 \times 10) + 75] = 145$ $\frac{900\text{mm}}{12\text{mm}}$

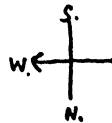
MAY 25 12:35-12:50 P.M. E.D.T.
 VERY THIN CIRRUS CLOUDS IN CLEAR SKIES.

MAY 26 2:50-3:15 P.M. E.D.T.
 LIGHT CIRRUS IN BLUE-CLEAR SKIES.
 SEEING $\frac{4}{10}$, RIPPLES; TRANSP. $\frac{6}{10}$.

SEEING $\frac{7}{10}$
 TRANSP. $\frac{7}{10}$

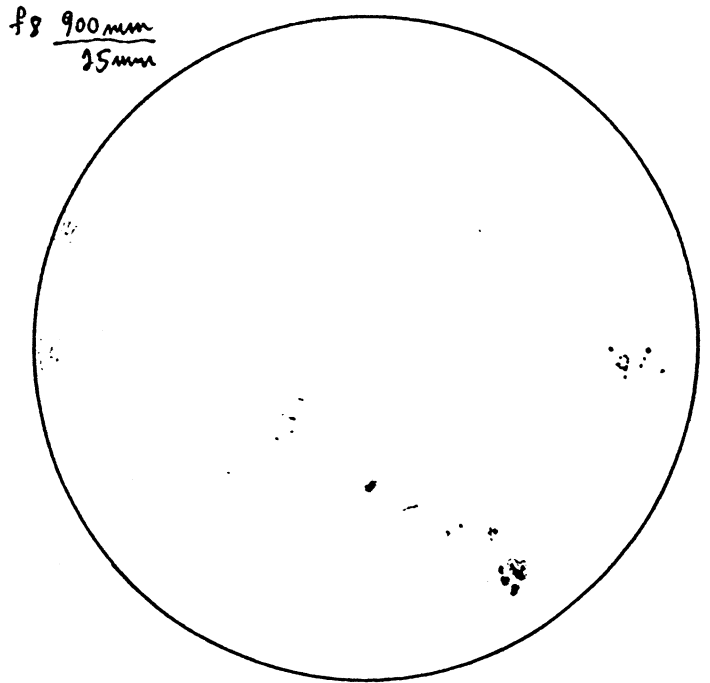
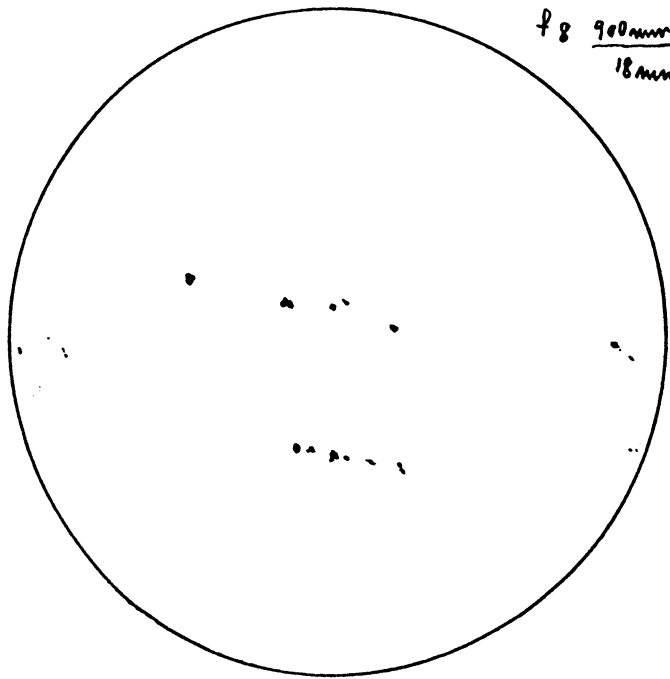


MAY 8/90 12:25-12:40 P.M. E.D.T.
 SKIES CLEAR, SLIGHT DREEZE.
 SEEING $\frac{5}{10}$; FACULAE VERY EVIDENT.



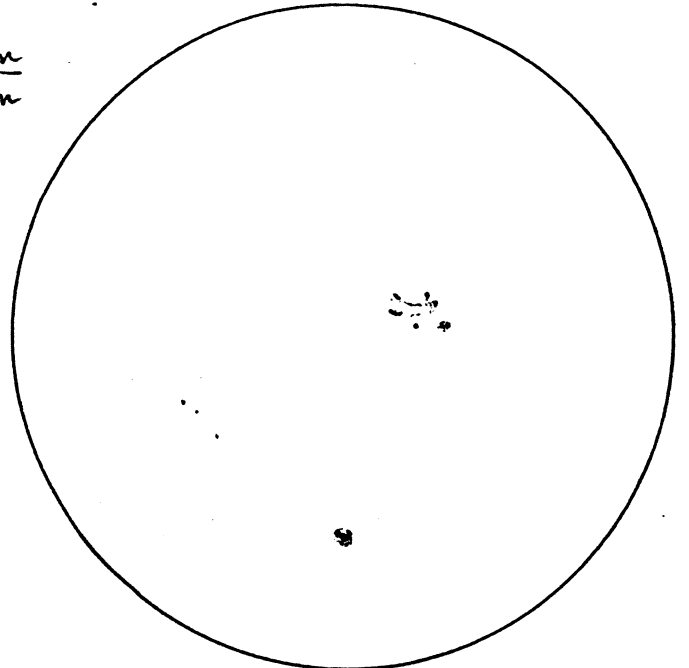
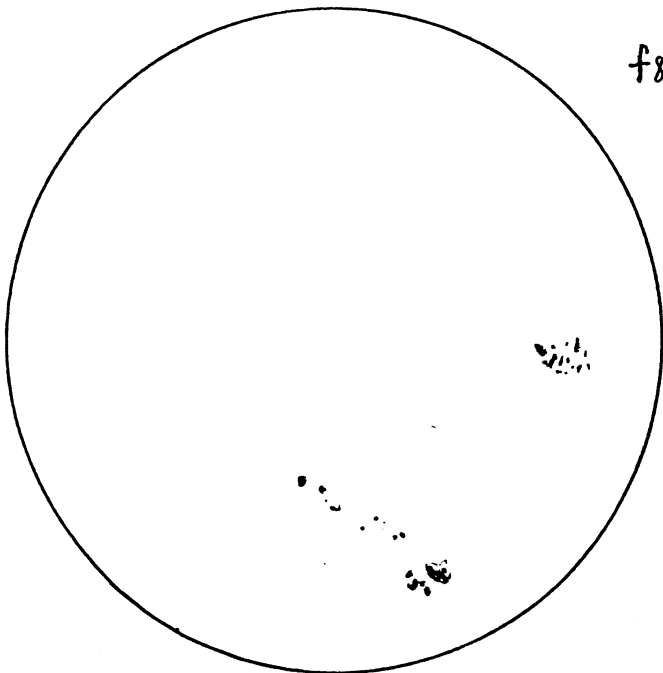
MAY 14 12:25-12:40 P.M. E.D.T.
 SKIES CLEAR, EXCEPTIONAL SHARP DETAIL.
 SEEING, $\frac{7}{10}$; TRANSPARENCY $\frac{7}{10}$ FACULAE
 VERY EVIDENT.

WITH CROSS-HAIRS

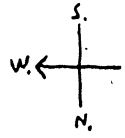


MAY 15 12:25-12:50 P.M. E.D.T.
 CUM. CLOUDS IN HAZY-BLUE SKIES.
 TRANSP. $\frac{7}{10}$. FAST DRAWING

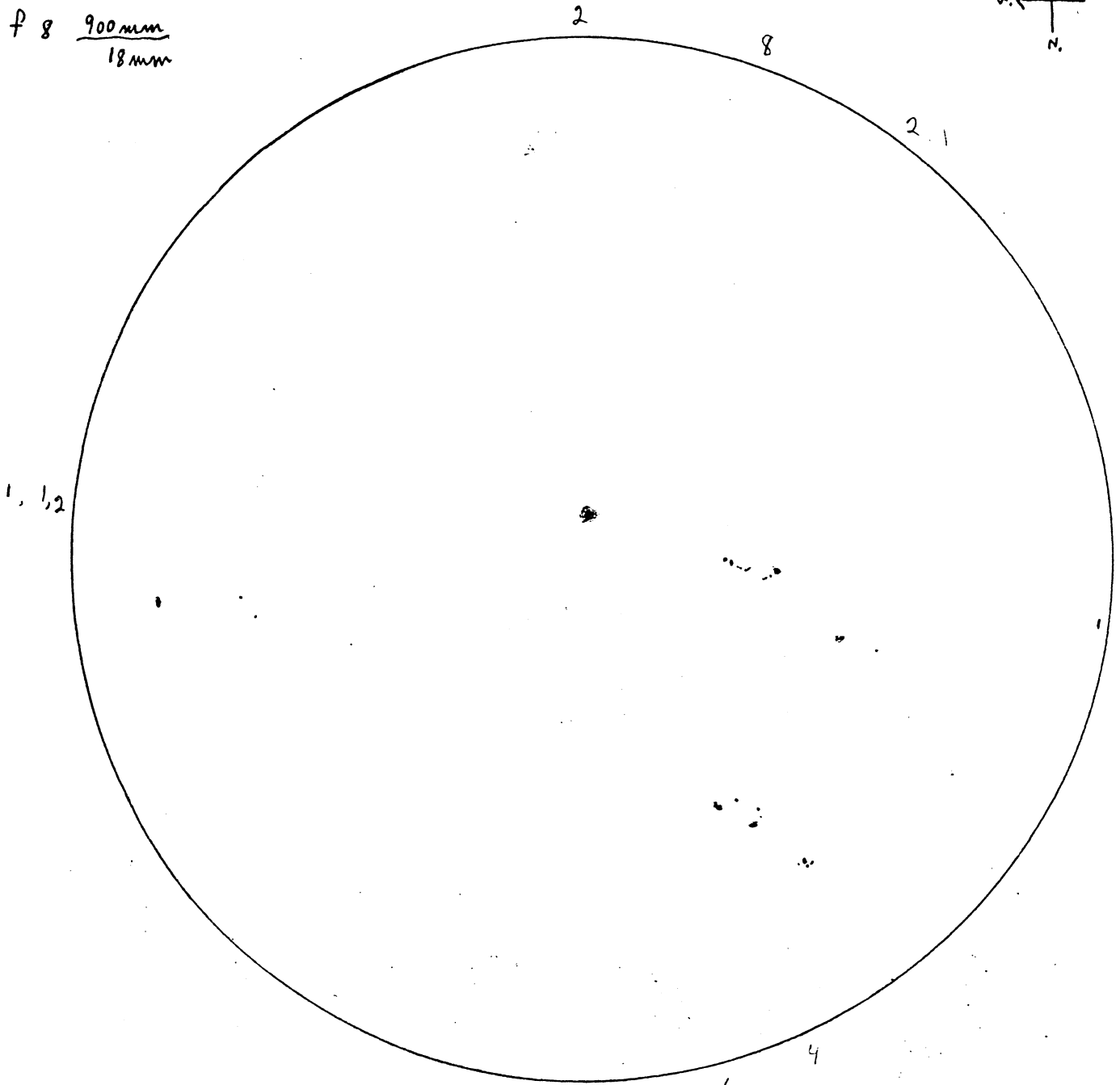
MAY 17 7:45 P.M. E.D.T.
 VERY FAST SKETCH IN BETWEEN SHOWERS
 TRANSP. WHEN CLEAR, $\frac{9}{10}$
 MAIN SPOT SKETCHED VERY PRIMITIVE



MAY 6/90 4:30 - 5:00 P.M. E.D.T.
 CUM. CLOUDS IN FRONT OF CIRRUS CLOUDS
 TRANSPARANCY $\frac{4}{10} - \frac{6}{10}$



f 8 $\frac{900\text{mm}}{18\text{mm}}$



5:10 P.M.

RELATIVE # OF SUNSPOTS

$$[(10 \times 10) + 28] = 128$$

f 8 $\frac{900\text{mm}}{12\text{mm}}$, TRANSPARANCY , CIRRUS CLOUDS $\frac{4}{10}$

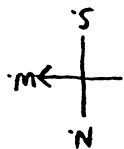
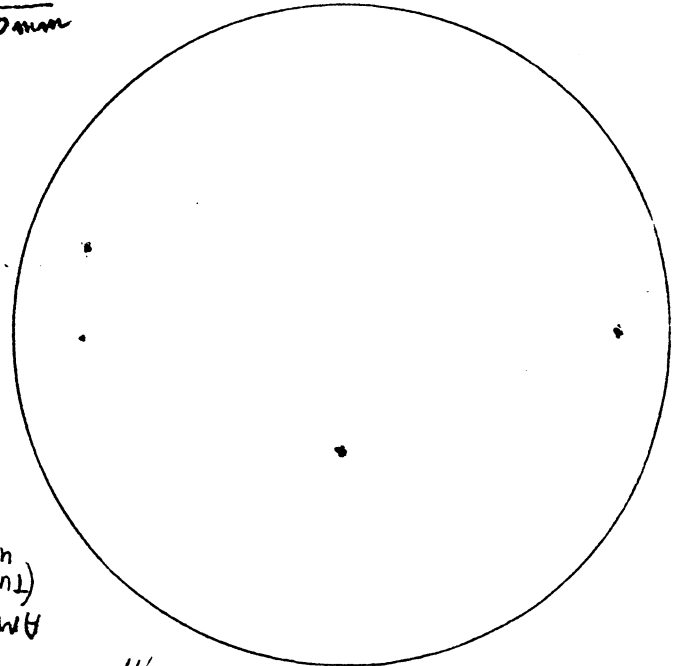
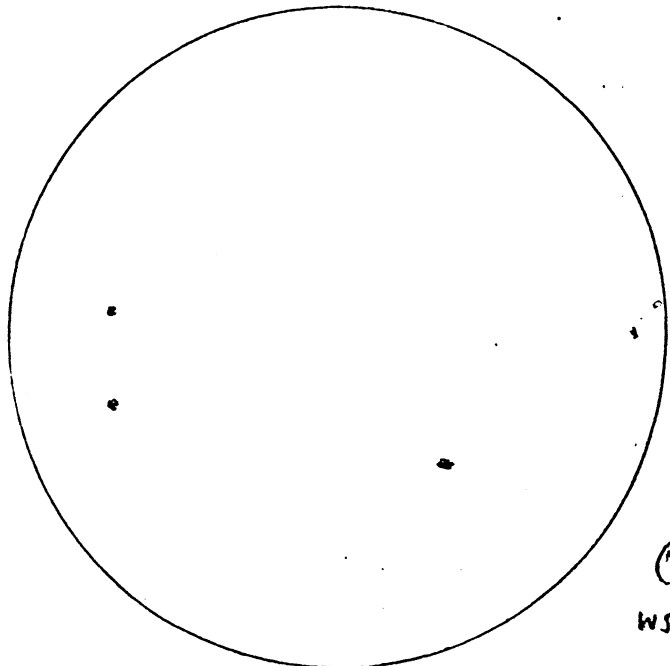
42

68

MAY 1/90 12:20-12:30 P.M. EDT.
THIN CIRRUS CLOUDS IN CLEAR SKY.

MAY 2 12:15-12:20 P.M. E.O.T.
CUM. CLOUDS IN 70% CLEAR SKY.
NO SMALL SPOTS SEEN WITH
VIBRATING TELESCOPE.

f 11.6 $\frac{700 \text{ mm}}{20 \text{ mm}}$



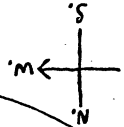
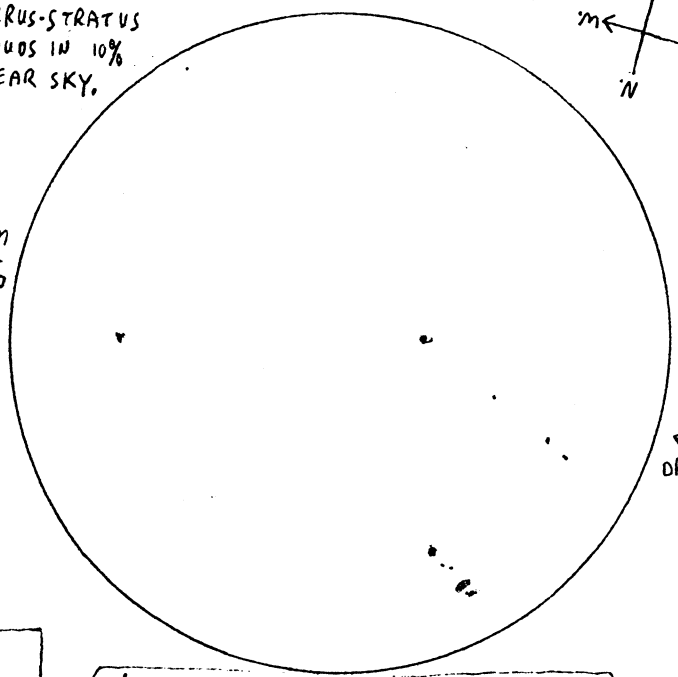
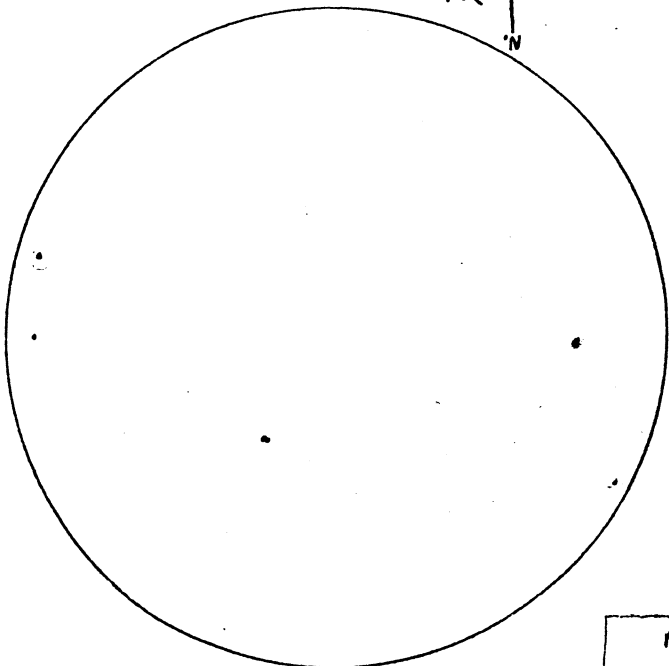
AMICI PRISM
(TURN PAPER
UPSIDE-DOWN)

$\frac{4}{2}$
(ESTIMATED) RELATIVE SUNSPOT #
 $[(10 \times 4) + 4] = 44$

MAY 3 12:15 P.M. E.D.T.
RAPID DRAWING; TRANSP. $\frac{4}{10}$
LIGHT OVERCAST

f 11.6 $\frac{700 \text{ mm}}{20 \text{ mm}}$

MAY 5/90 3:00 - 3:27 P.M. E.D.T.
FAST DRAWING INTERRUPTED BY CLOUDS.



CIRRUS-STRATUS
CLOUDS IN 10%
CLEAR SKY.

W. DRIFT

W. DRIFT

ESTIMATED REL. SUNSPOT #
 $[(10 \times 5) + 5] = 55$

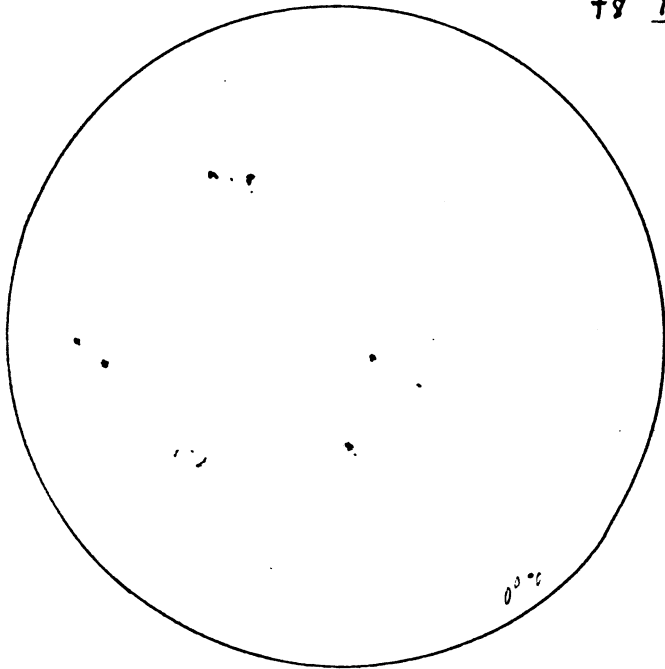
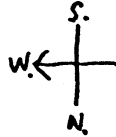
MAY 4
OVERCAST, RAIN
~APRIL 20

5/5 4:00 P.M.
RELATIVE SUNSPOT #
 $[(10 \times 9) + 15] = 105$

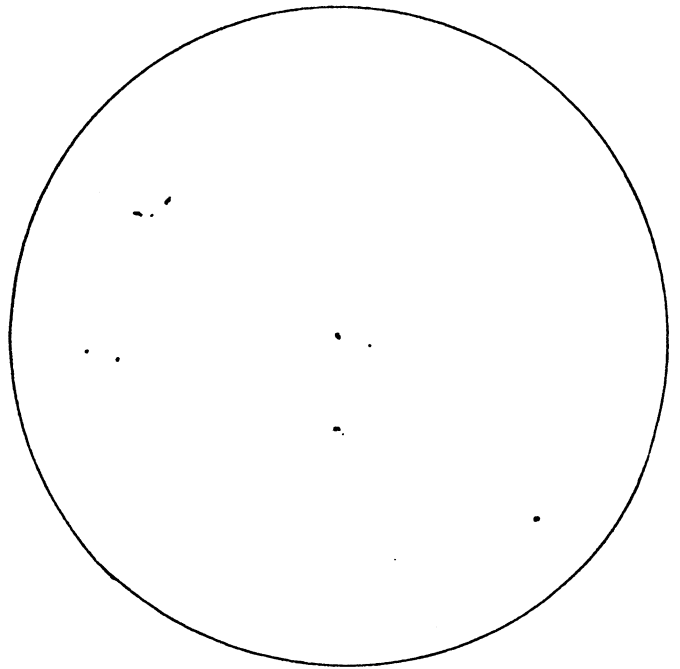
f 8 $\frac{900 \text{ mm}}{12 \text{ mm}}$
SEEING $\frac{4}{10}$

APRIL 27/90 7:30-7:40 P.M. E.D.T.
SKIES TOTALLY CLEAR
SEEING $\frac{6}{10}$; TRANSP. $\frac{8}{10}$

f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

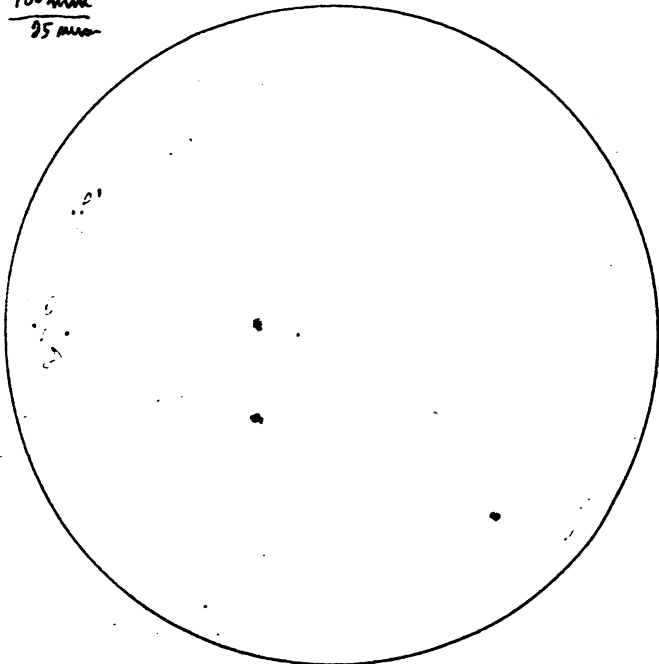


APRIL 28 12:50 P.M. E.D.T.
RAPID DRAWING
SKIES CLEAR
SEEING, TRANSPARENCY $\frac{7}{10}$



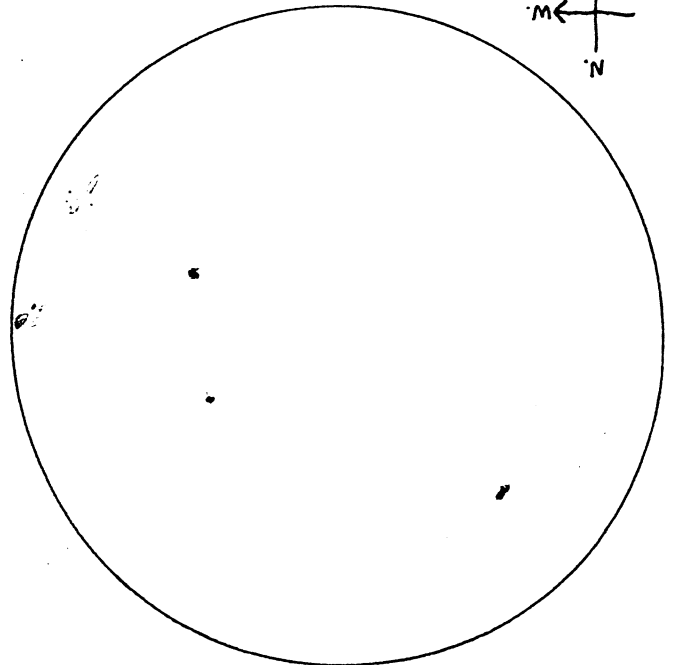
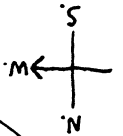
APRIL 29 12:05-12:15 P.M. E.D.T.
THIN CIRRUS OVERCAST
SEEING $\frac{9}{10}$, TRANSPARENCY $\frac{4}{10}$

f8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

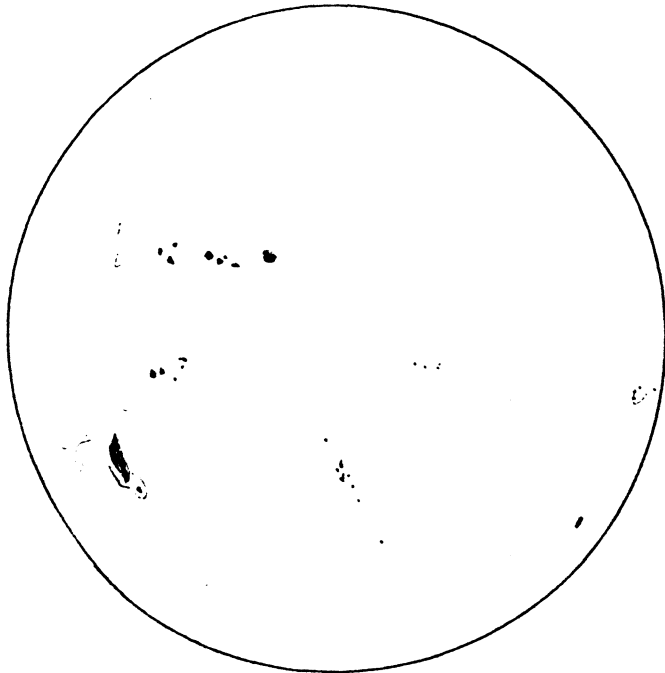


APRIL 30 12:10-12:20 E.D.T.
CUM. CLOUDS IN 15% CLEAR SKY

f 11.6 $\frac{700 \text{ mm}}{20 \text{ mm}}$ AMICI PRISM

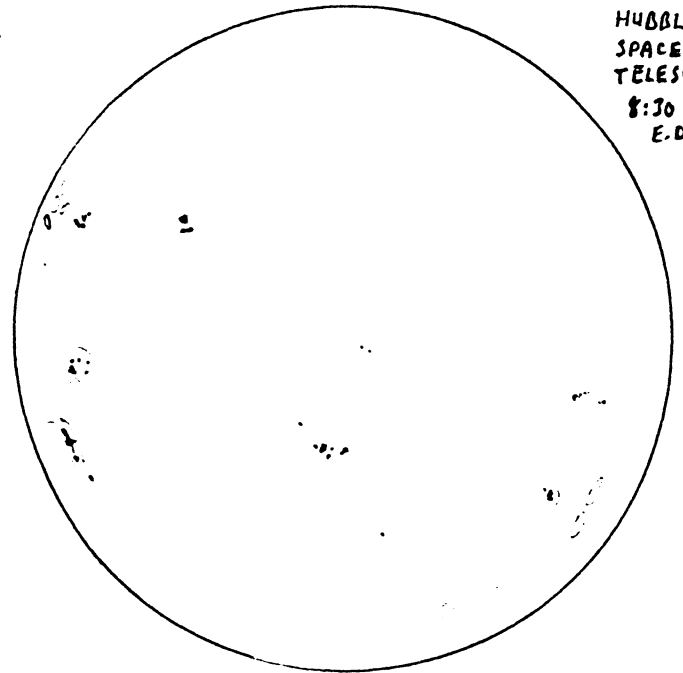
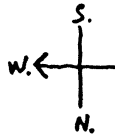


APRIL 23/90 12:30-12:45 P.M. E.D.T.
 SKIES CLEAR.
 SMALL SPOTS, FACULAE VERY EVIDENT.



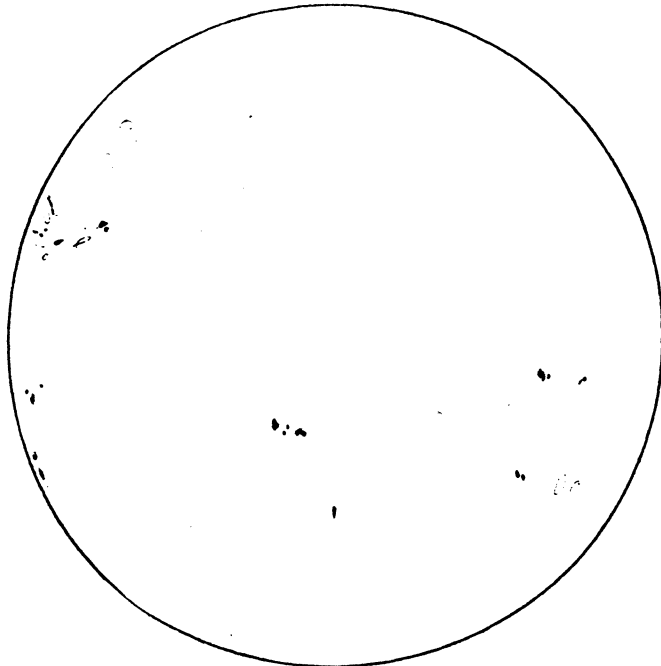
f8 $\frac{900\text{mm}}{25\text{mm}}$

APRIL 24 12:30-12:48 P.M. E.D.T.
 THIN CIRRUS HAZE IN SUN'S AREA.
 SEEING $\frac{6}{10}$; TRANSP. $\frac{8}{10}$.
 FACULAE, SMALL SPOTS VERY EVIDENT.



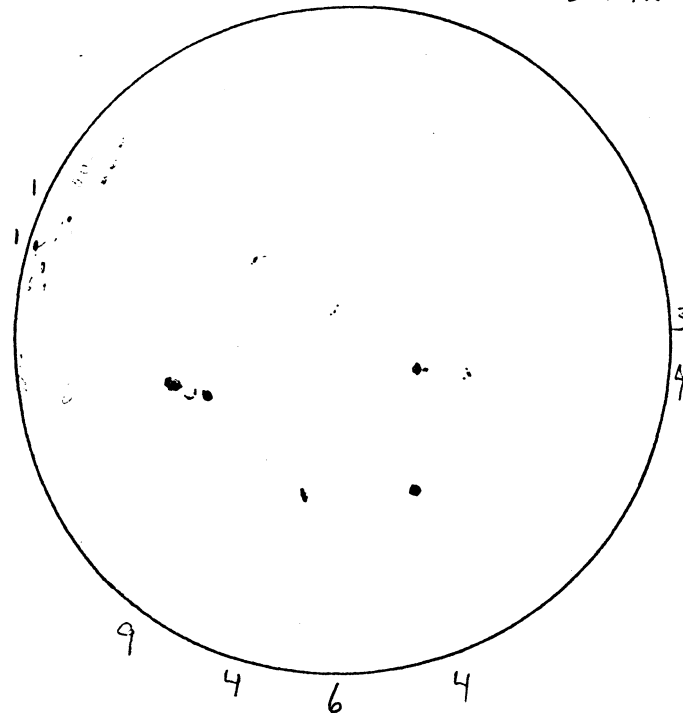
HUBBLE
 SPACE
 TELESCOPE
 8:30 A.M.
 E.D.T.

APRIL 25 12:30-12:35 P.M. E.D.T.
 CUM. CLOUDS IN 60% CLEAR SKIES.
 SEEING $\frac{5}{10}$; TRANSPARENCY $\frac{6}{10}$.
 LIGHT TO GUSTY BREEZE.



APRIL 26 12:30-12:35 P.M. E.D.T.
 SKIES CLEAR, GUSTY BREEZE.
 SEEING $\frac{6}{10}$; TRANSP. $\frac{8}{10}$.

NO CROSS-HAIR



RELATIVE # OF 5
 SUNSPOTS $(9 \times 10) + 27 = 127$; 12:40 P.M.

f8 $\frac{900\text{mm}}{9\text{mm}}$; SEEING $\frac{4}{10}$

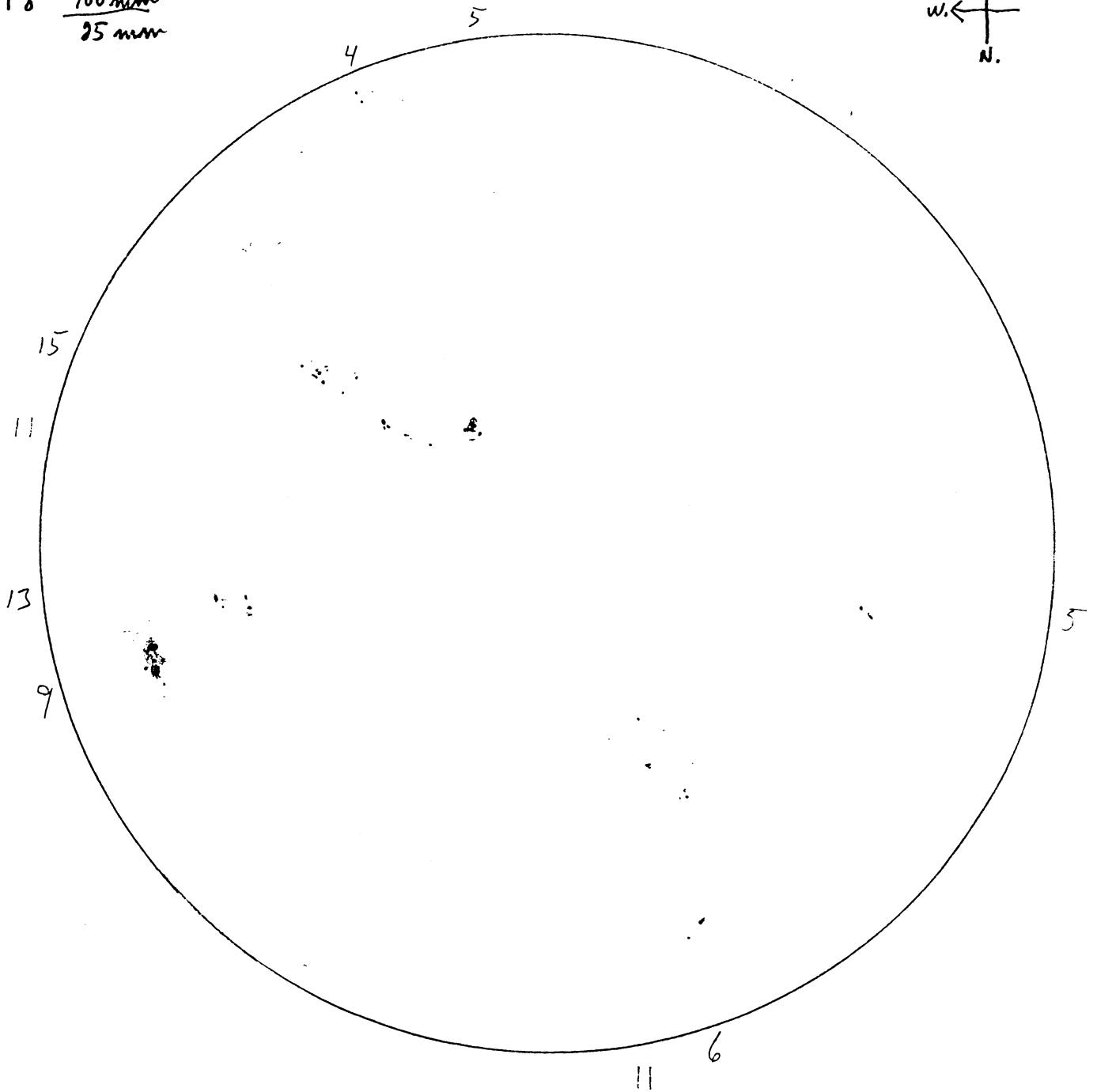
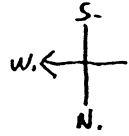
66

APRIL 22/90 2:25-3:00 P.M. E.D.T.

OBSERVATORY

SKIES CLEAR. SEEING $\frac{7}{10}$; TRANSP. $\frac{8}{10}$

f8 $\frac{900\text{mm}}{25\text{mm}}$



RELATIVE # OF SUNSPOTS

$$[(9 \times 10) + 79] = 169$$

f8 $\frac{900\text{mm}}{9\text{mm}}$

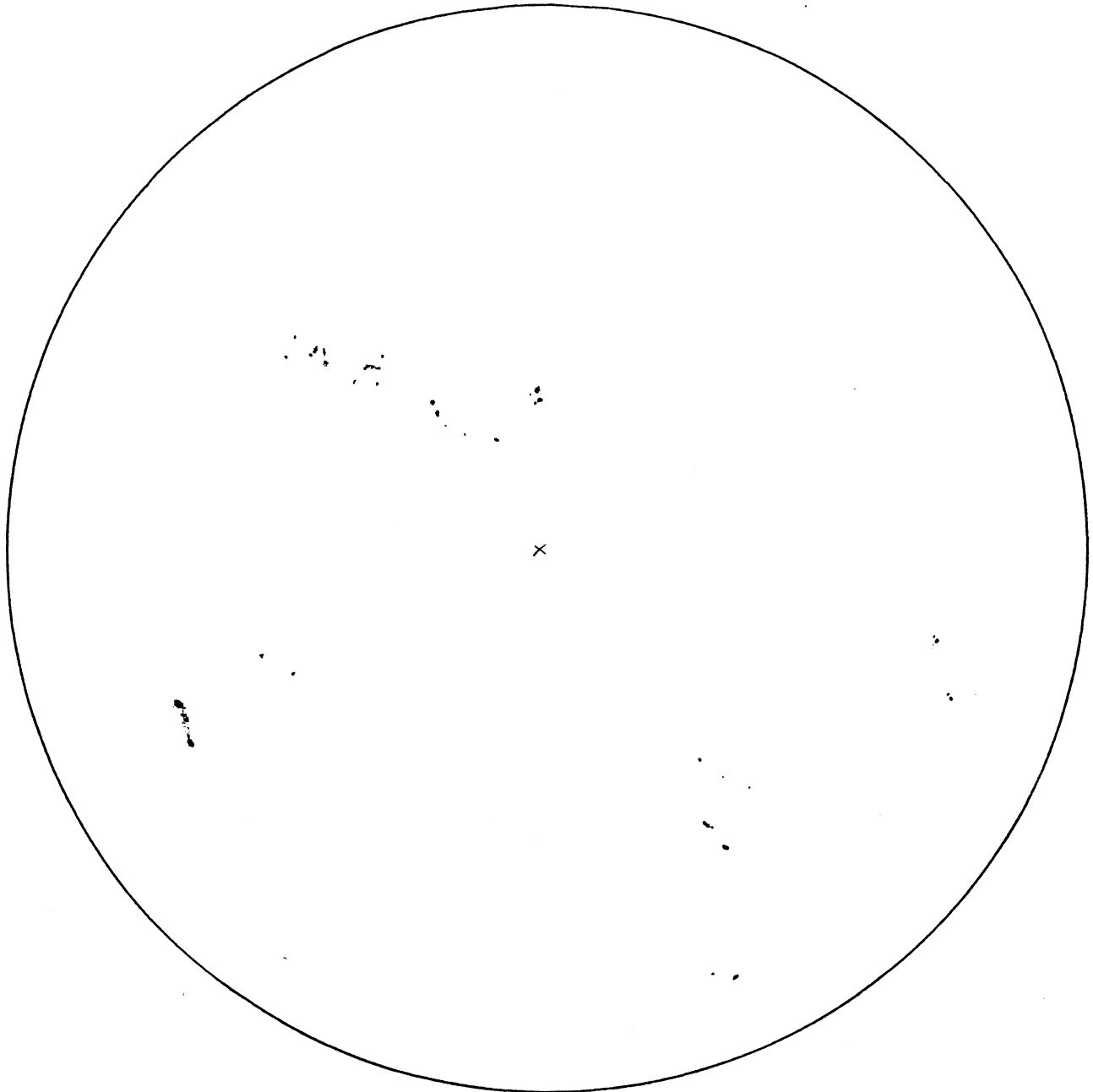
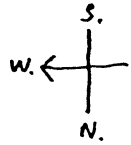
3:50 P.M.

(41)

(65)

APRIL 21/90 7:10-7:35 P.M. E.D.T.
SKIES CLEAR; EVENING HAZE AND TURBULENCE.
SEEING $\frac{5}{10}$; TRANSPARANCY $\frac{5}{10}$.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



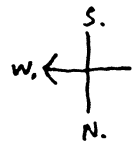
SKETCHED ON OBSERVATORY LAWN

(40)

(65)

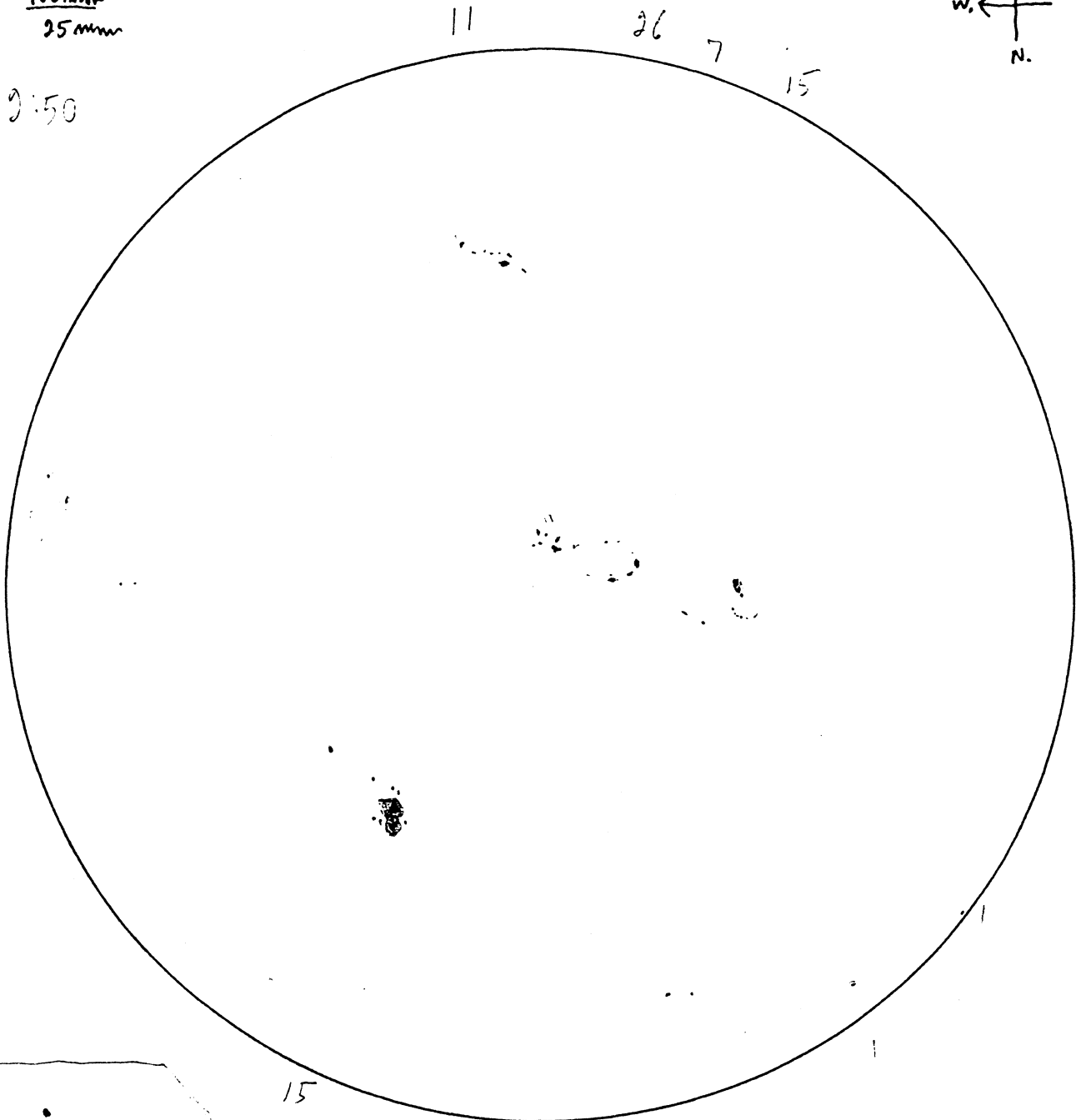
APRIL 19/90 2:15-2:50 P.M. E.D.T.
SMITHFIELD.

SKIES CLEAR, SLIGHT BREEZE.
SEEING $\frac{6}{10}$, RIPPLES; TRANSPARENCY $\frac{8}{10}$

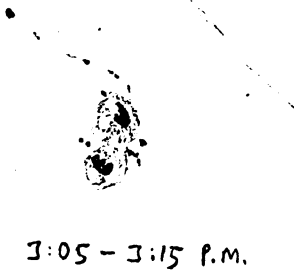


f8 $\frac{900\text{mm}}{25\text{mm}}$

2:15-2:50



(39)



3:05-3:15 P.M.

4/19

f8 $\frac{900\text{mm}}{12\text{mm}}$

RELATIVE # OF SUNSPOTS

$$[(10 \times 10) + 85] = 185$$

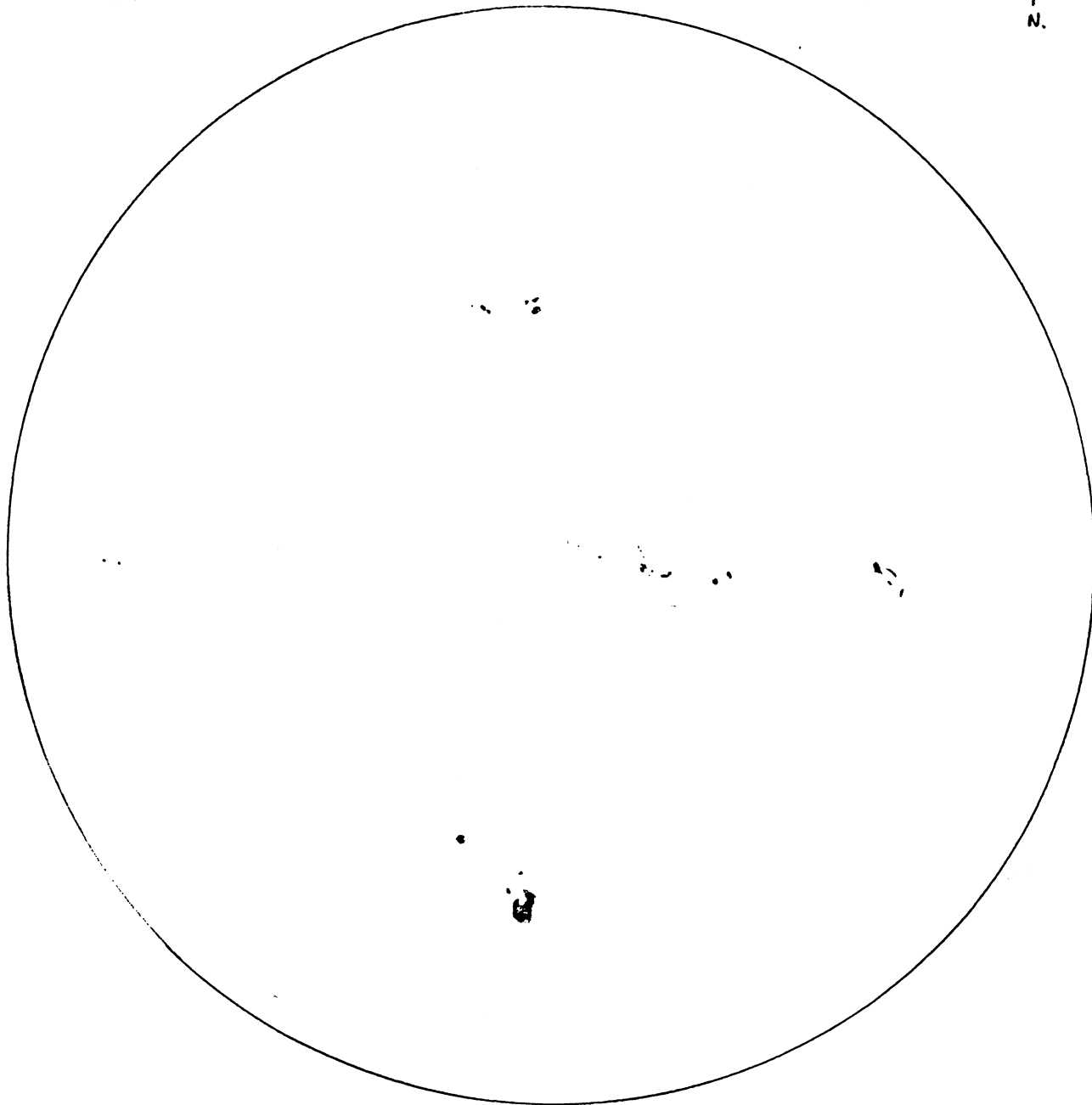
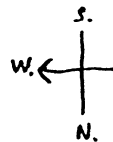
f8 $\frac{900\text{mm}}{12\text{mm}}$

3:20 P.M.

(65)

APRIL 18/90 12:25-12:50 P.M. E.D.T.
THICKENING CIRRUS CLOUDS.
SEEING $\frac{7}{10}$, 'FUZZY'; TRANSPARENCY $\frac{4}{10}$
HARWOOD

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

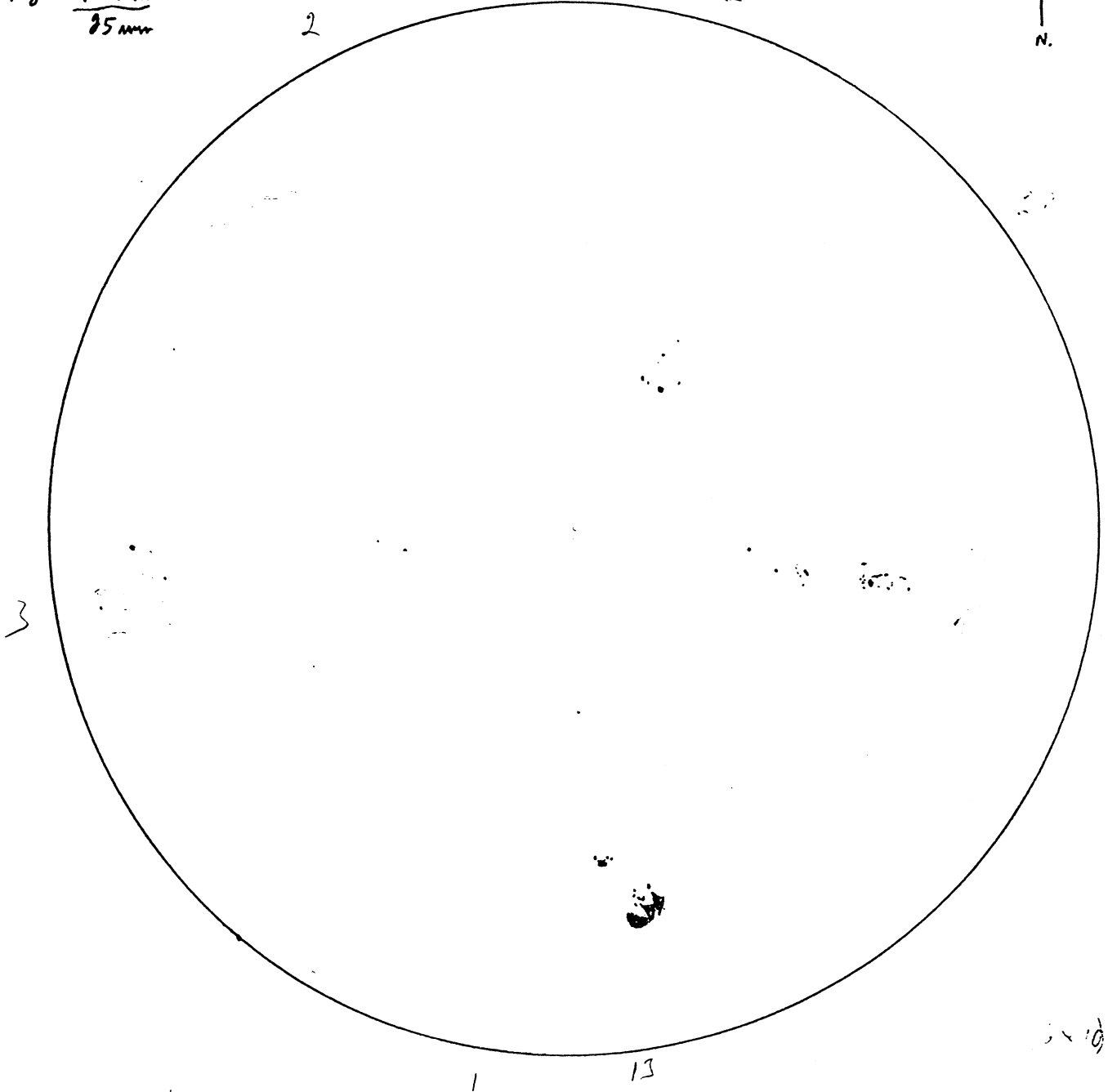
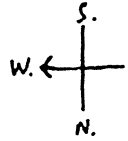


(38)

(65)

APRIL 16/90 12:15-12:50 EDT.
SKIES CLEAR; SLIGHT BREEZE, TOPS OF EVERGREENS MOVE.
SEEING $\frac{4}{10}$ (FUZZY); TRANSPARENCY $\frac{8}{10}$.

f 8 $\frac{900\text{mm}}{25\text{mm}}$



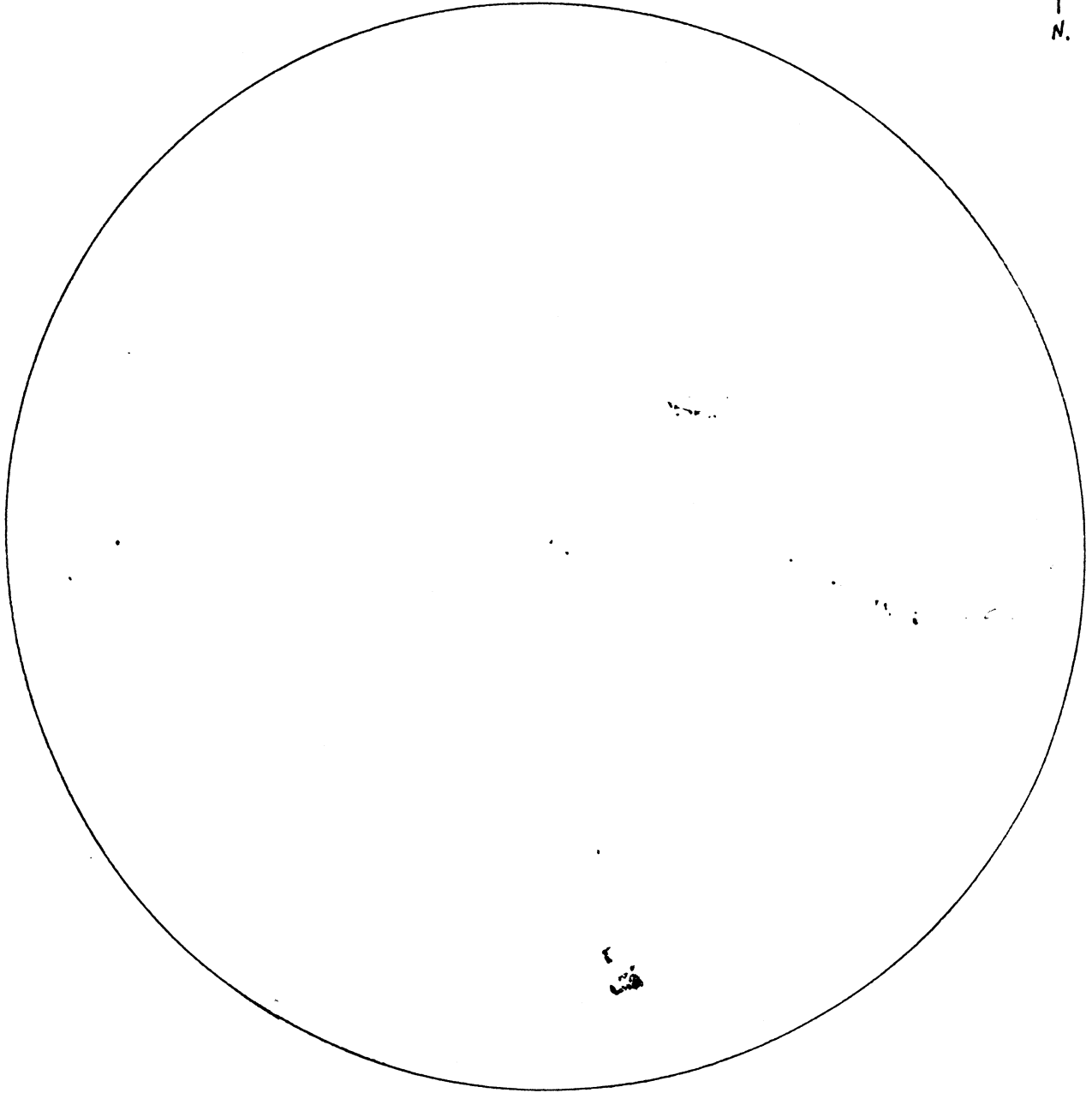
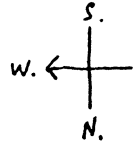
5 x 10 + 59

RELATIVE # OF SUNSPOTS

$$[(6 \times 10) + 59] = 119$$

APRIL 15/90 5:50 - 6:10 P.M. E.O.T.
FAST SKETCH IN BETWEEN DRIFTING CLOUD COVER.
SMALL TO MEDIUM TREE BRANCHES MOVE IN BREEZE.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$



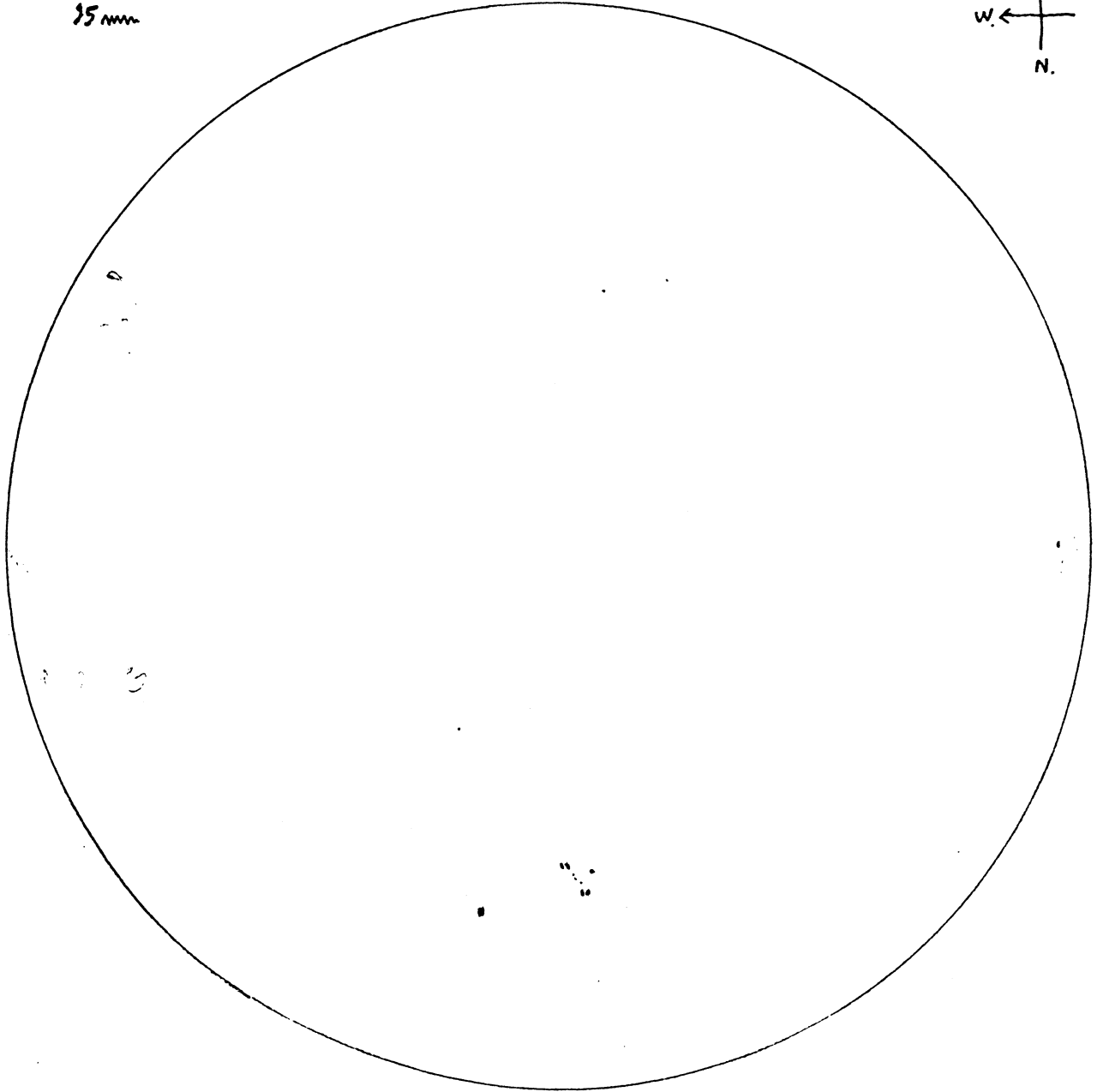
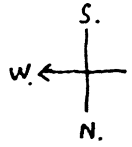
(36)

(65)

APRIL 11/90 12:55-1:35 E.D.T.
INCREASING CUM. CLOUDS IN 50% → 30% CLEAR SKIES.
LIGHT TO GUSTY BREEZE.
TRANSPARENCY $\frac{8}{10}$, FACULAE VERY EVIDENT. SEEING $\frac{5}{10}$.

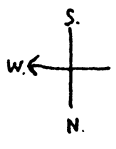
PARKDALE + MAIN ST.

f 8 $\frac{900 \text{ mm.}}{35 \text{ mm}}$



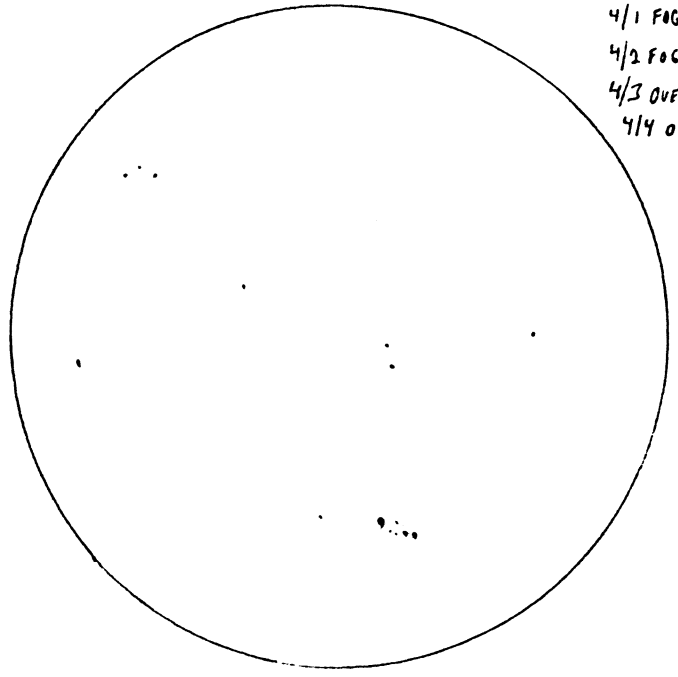
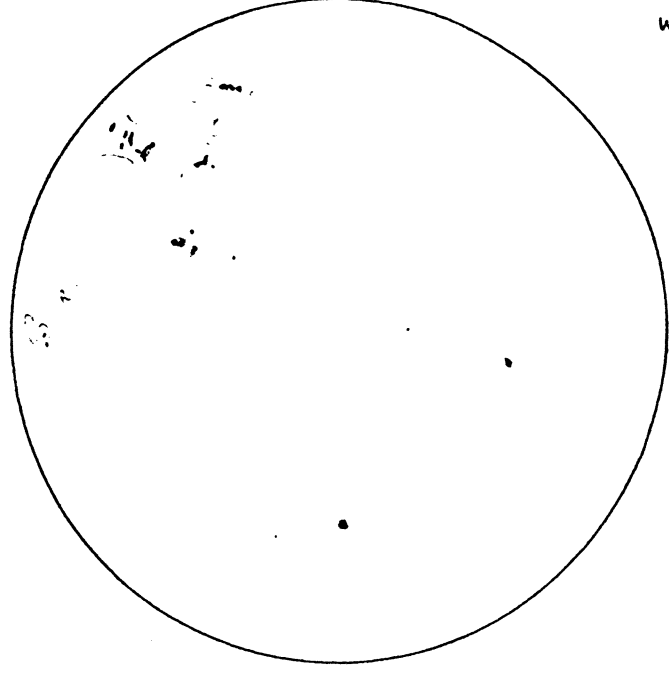
MAR. 28/90 12:30-12:45 P.M. E.S.T.
 SKIES CLEAR IN SUN'S AREA
 SEEING $\frac{6}{10}$ 'TURBULENT ATMOSPHERE'
 TRANSPARENCY $\frac{9}{10}$ 'NEEDLE-SHARP' IMAGE

f 8 $\frac{900 \text{ mm.}}{95 \text{ mm.}}$



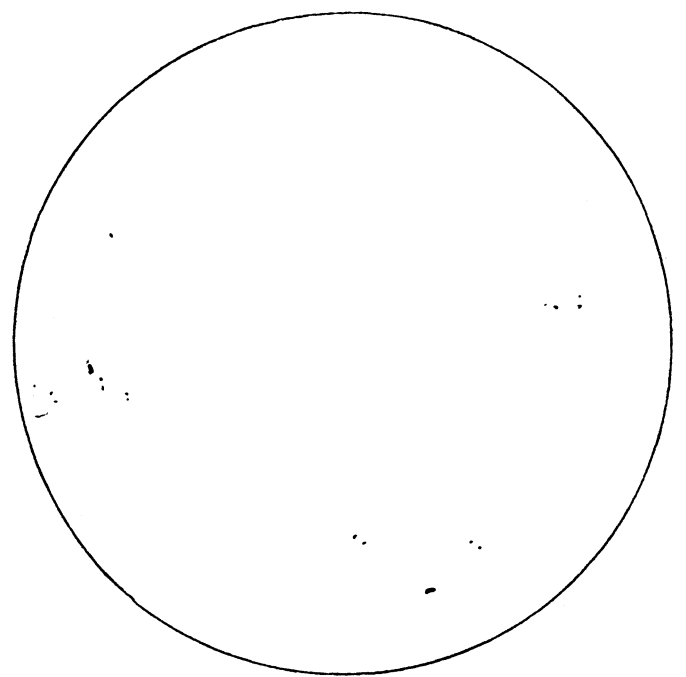
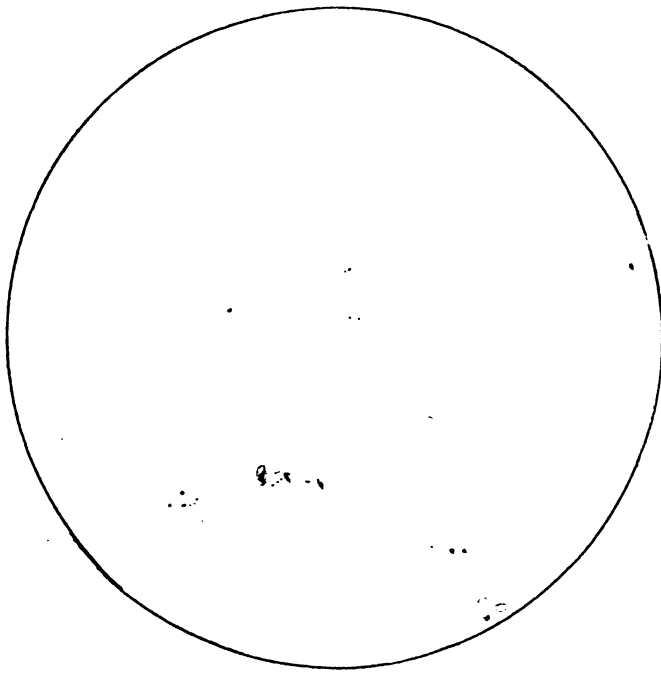
APRIL 2/90 5:30 P.M. E.D.T.
 VERY RAPID DRAWING.
 SKIES CLEAR FOR $\frac{1}{2}$ HOUR, DURING SOLID OVERCAST.
 TRANSP. $\frac{8}{10}$; SEEING, MANY RIPPLES.

3/31 FOG
 4/1 FOG
 4/2 FOG, RAIN
 4/3 OVERCAST
 4/4 OVERCAST.



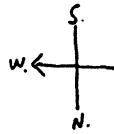
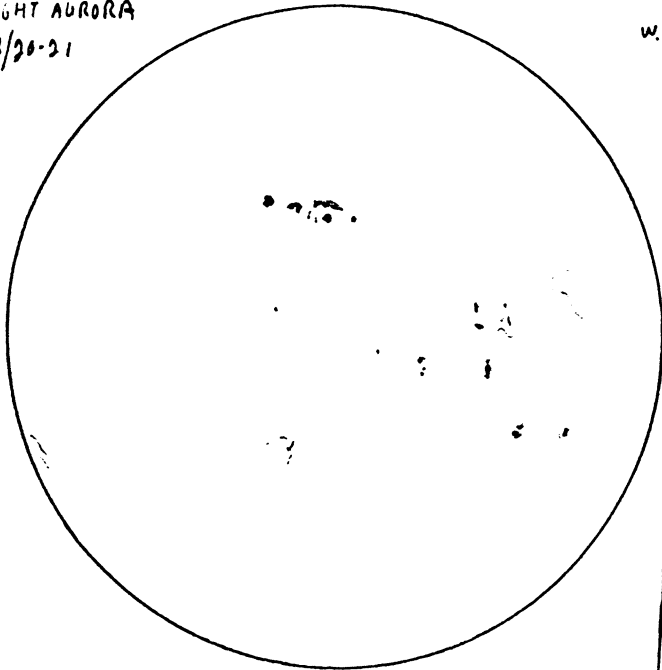
APRIL 6 12:25-12:45 E.D.T.
 CUM. CLOUDS IN 50% CLEAR SKY
 PERIODIC GUSTY DREEZE
 TRANSP. $\frac{8}{10}$

APRIL 8 3:15-3:35 P.M. E.D.T.
 FAST DRIFTING CUM. CLOUDS IN 80% CLEAR SKIES
 SEEING $\frac{6}{10}$, RIPPLES; TRANSP. $\frac{9}{10}$ FAC. VERY VISIBLE



MAR. 21/90 11:50-12:10 P.M. E.S.T.
 SKIES CLEAR; SLIGHT BREEZE.
 TRANSP. $\frac{9}{10}$; SEEING $\frac{1}{10}$, SLIGHT PERIODIC FUZINESS.

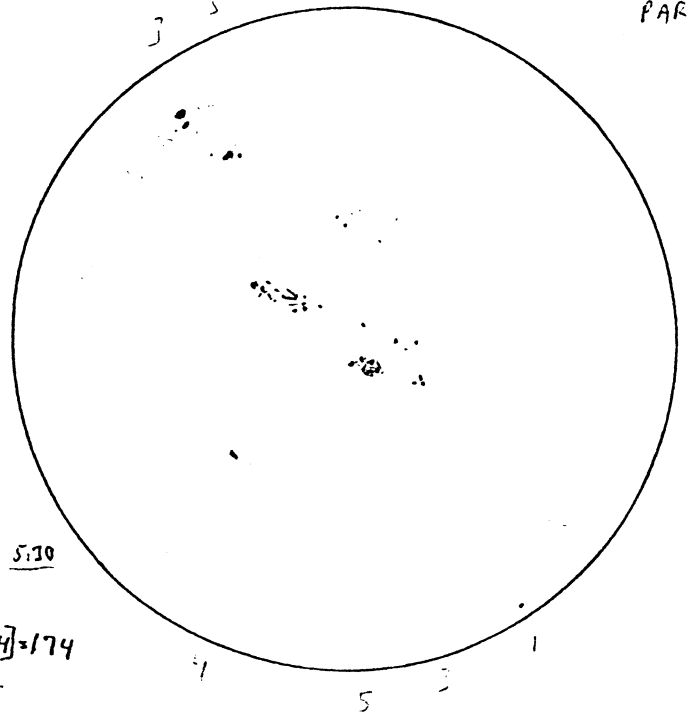
RIGHT AURORA
 3/20-21



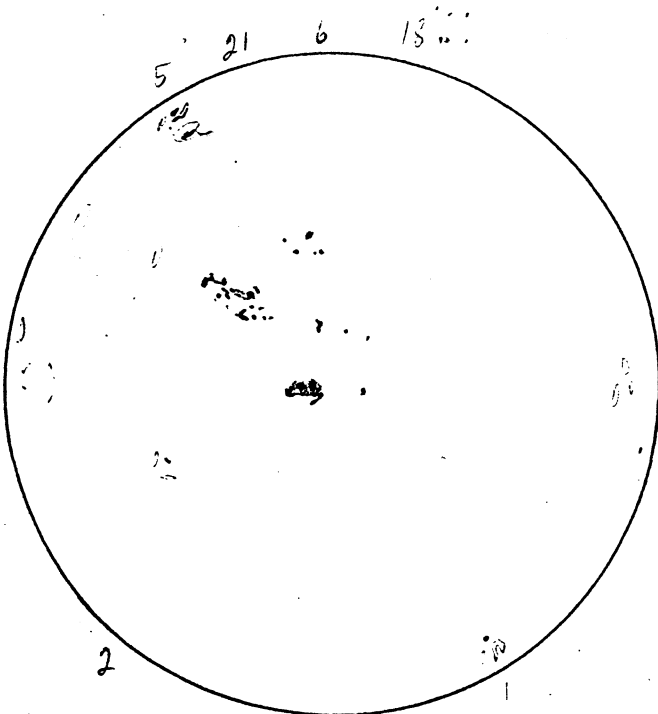
SUNSPOT
 COUNT
 SEEING $\frac{4}{10}$ 5:10
 $\frac{900mm}{12mm}$
 $[(10 \times 11) + 64] = 174$

3/24 SKIES CLEARED 3:00 P.M.
 SUNSPOTS 4:35-5:00; FACULAE 5:00-5:30 P.M. E.S.T.
 CUM. CLOUDS IN 40% CLEAR SKIES IN SUN'S AREA.
 SEEING $\frac{8}{10}$; TRANSP. $\frac{7}{10}$ - $\frac{8}{10}$

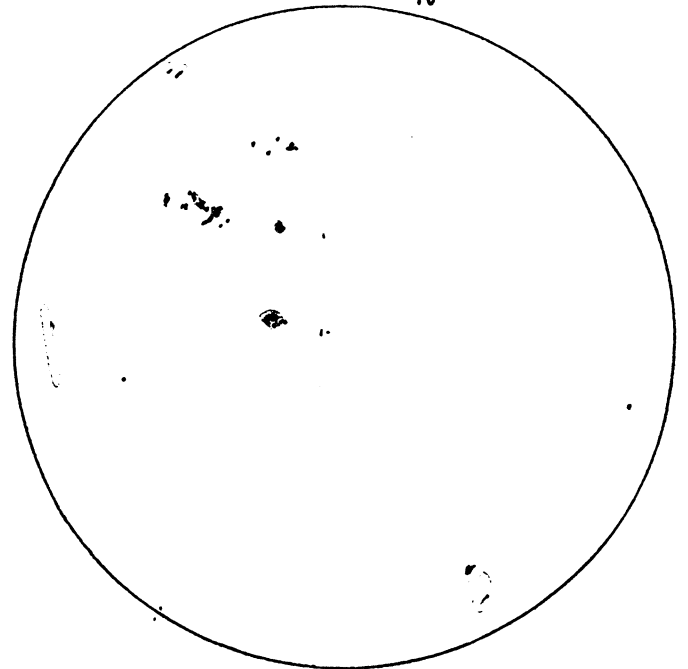
DUNDURN
 PARK



MAR. 25 2:40-3:10 P.M. E.S.T.
 FAST MOVING CLOUDS IN 50% CLEAR SKY.
 TRANSP. $\frac{9}{10}$; SEEING $\frac{8}{10}$



MAR 26 12:25-12:35 P.M. E.S.T.
 SKIES CLEAR; SMALL BRANCHES MOVE
 IN GUSTY BREEZE.
 TRANSP. $\frac{8}{10}$; SEEING $\frac{5}{10}$



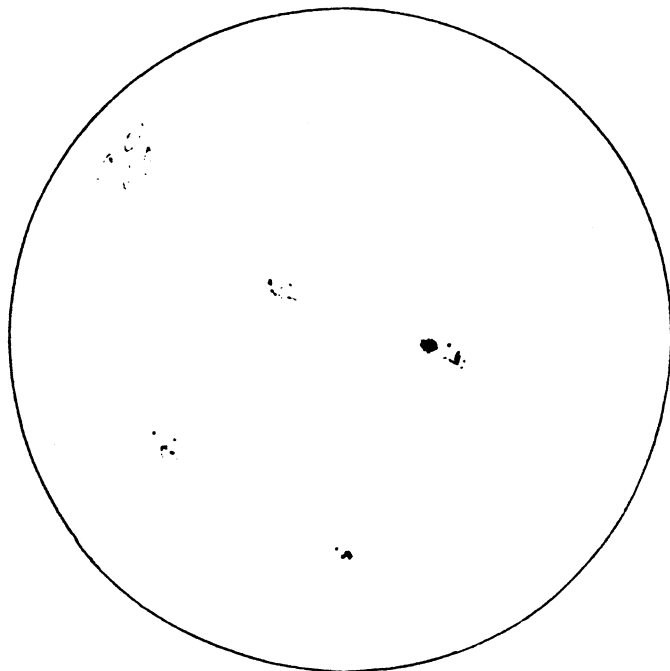
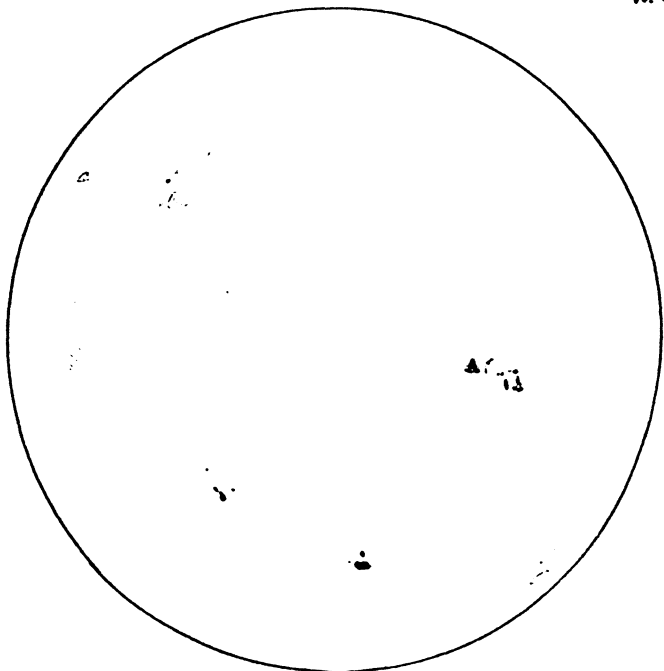
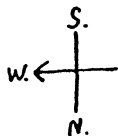
SUNSPOT COUNT $\frac{900mm}{12mm}$ f8
 3:30 P.M.; SEEING $\frac{4}{10}$

$[(10 \times 9) + 54] = 144$

MAR. 5/90 12:30 - 12:50 P.M. EST.
 SKIES 50% CLEAR. SLIGHT BREEZE
 TRANSP. $\frac{7}{10}$

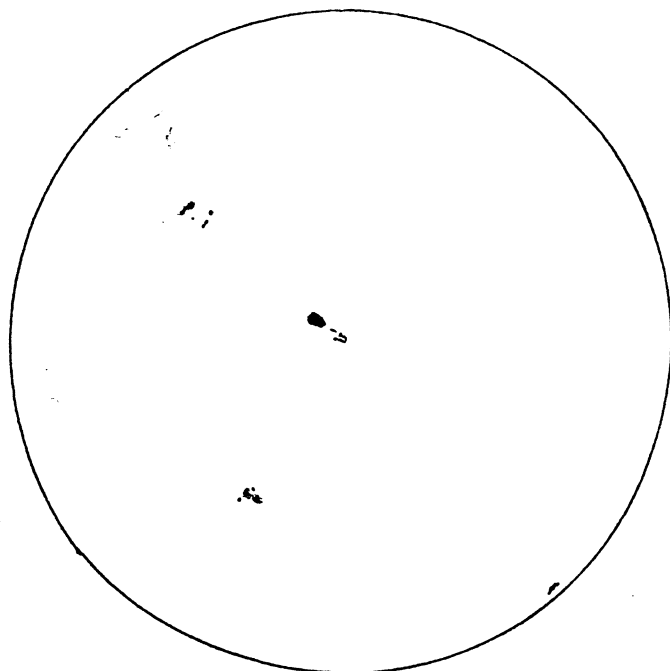
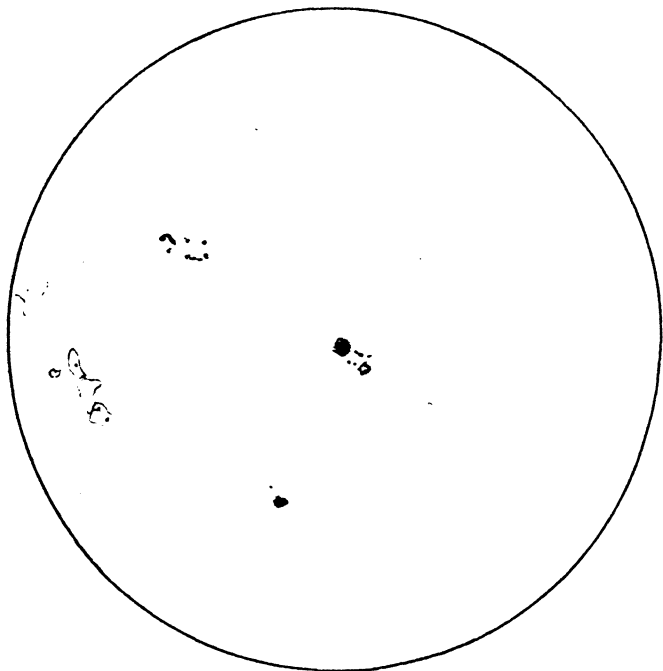
f8 $\frac{900 \text{ mm}}{85 \text{ mm}}$

MAR. 6 12:30 - 12:30 P.M.
 SKIES CLEAR
 SMALL TO MED. BRANCHES MOVE W BREEZE



MAR. 7 12:25 - 12:40 P.M. E.S.T.
 SKIES CLEAR, SLIGHT BREEZE
 TRANSPARENCY $\frac{8}{10}$;

MAR. 8 12:30 - 12:50 P.M. E.S.T.
 HIGH CIRRUS CLOUDS IN SOUTHERN
 HALF OF SKY.
 TRANSPARENCY $\frac{7}{10}$.



63
 34
 3
 100

33
 x2
 66

41-95

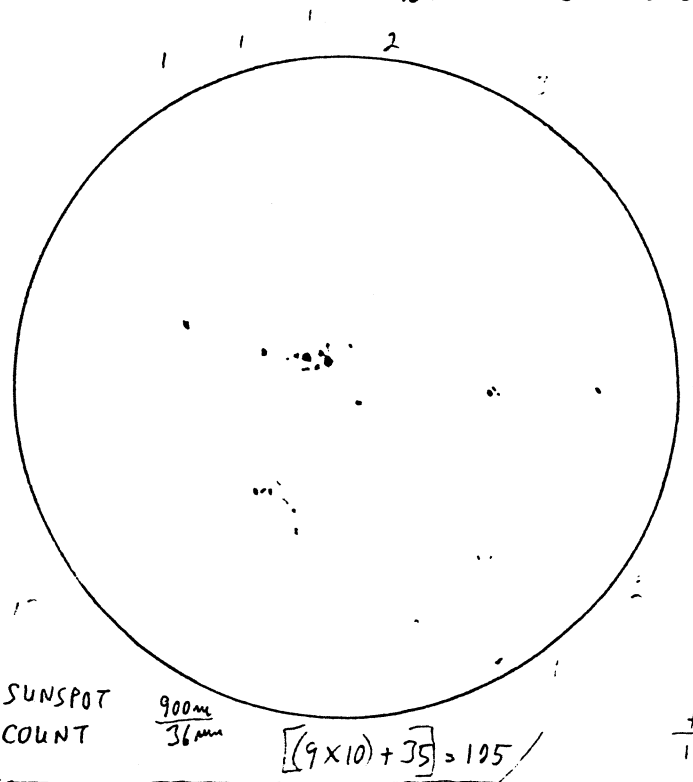
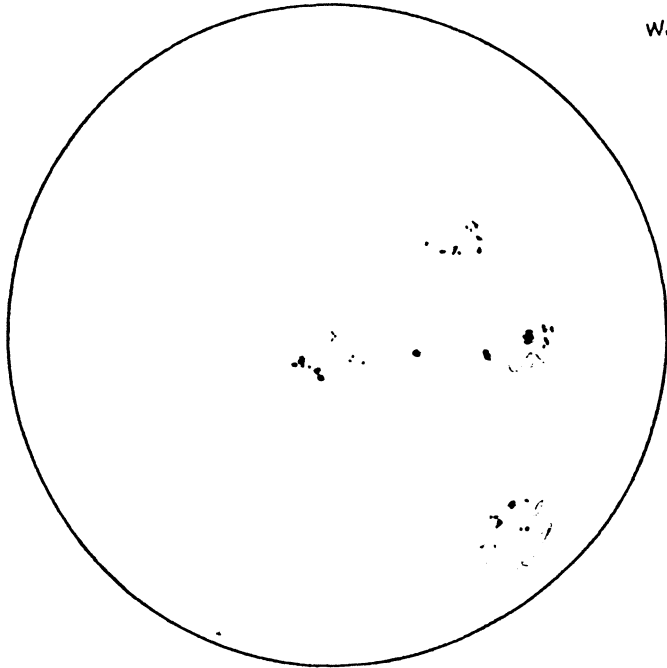
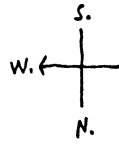
63

WED.!!

FEB. 21/90 12:30-12:50 P.M. E.S.T.
SKIES CLEAR, SLIGHT BREEZE.
TRANSP. $\frac{7}{10}$ GRAINY STRUCTURE GLIMPSED.
SEEING $\frac{8}{10}$ NO RIPPLES OBSERVED AT 36X.

f 8 $\frac{900 \text{ mm}}{25 \text{ mm}}$

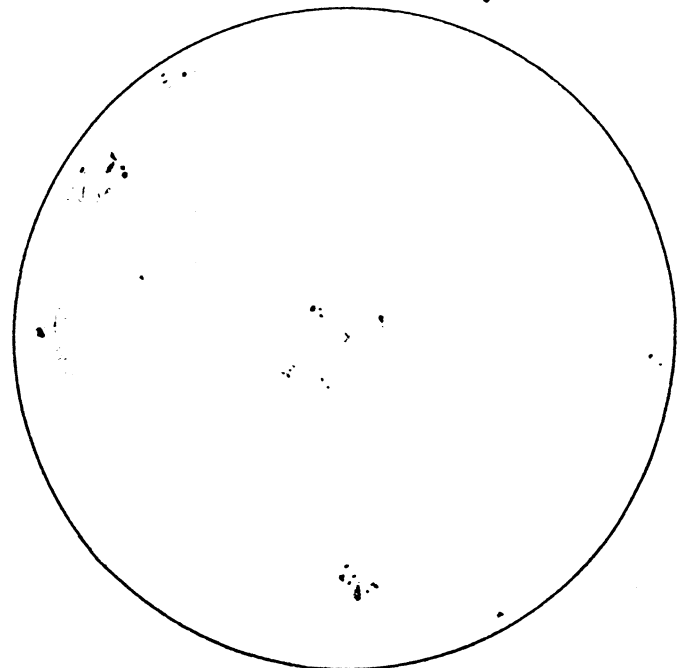
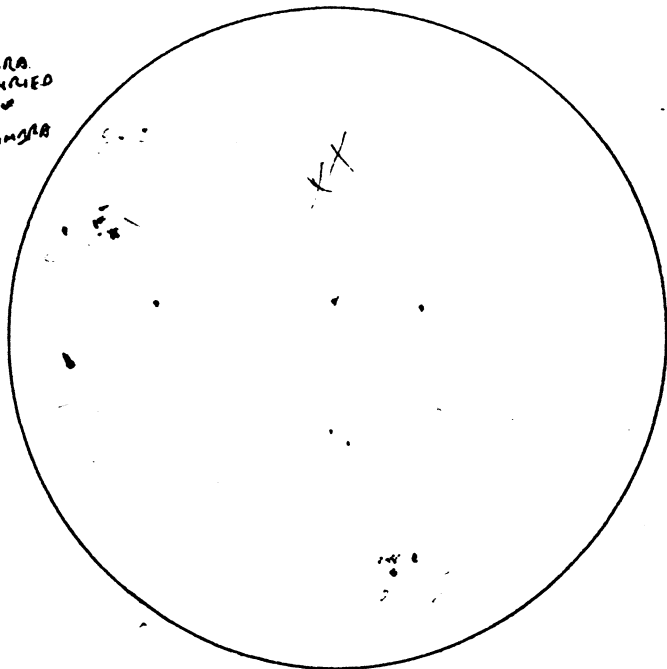
FEB. 26 12:30-12:45 P.M. E.S.T.
SKIES 70% CLEAR, CUMULUS CLOUDS
SEEING $\frac{5}{16}$, FUZZY; TRANSPARANCY
 $\frac{7}{10}$, FACULAE VISIBLE



MAR 1/90 12:30-12:45 P.M. E.S.T.
SKIES CLEAR; TRANSPARANCY $\frac{7}{10}$
MEDIUM TREE BRANCHES MOVE IN BREEZE

MAR 2 12:50-1:05 P.M. E.S.T.
SMALL TO MEDIUM TREE BRANCHES MOVE IN BREEZE.
SKIES CLEAR. TRANSPARANCY $\frac{7}{10}$

UMBRA
BURNED
IN
PENUMBRA



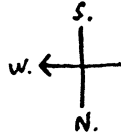
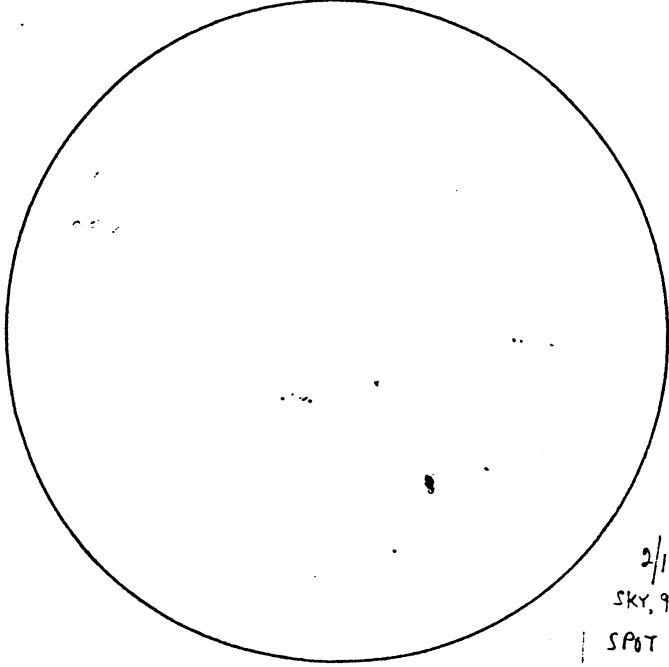
FEB. 11/90 3:15 - 3:45 P.M. E.S.T.
 CUM. CLOUDS IN 50% CLEAR SKY
 IMAGE STEADY, SHARP; WHEN SKIES CLEAR

SUN DISAPPEARED BEHIND TREES 4:00 P.M. EST

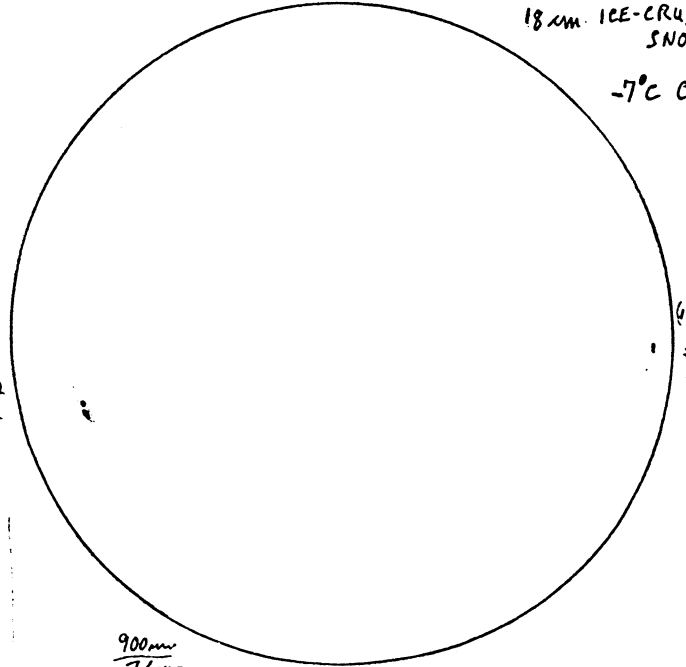
f 8 $\frac{900mm}{25mm}$

FEB. 17/90 12:50 - 1:00 P.M. E.S.T.
 VALENS RD. CONSERVATION AREA.
 TOTALLY CLEAR SKIES, SLIGHT BREEZE,
 FACULAE VERY EVIDENT.
 SEEING $\frac{4}{10}$, IMAGE FUZZY.

18 km. ICE-CRUSTED SNOW
 -7°C CHAM



(10x) 12
 512



(40x) 11
 1511

2/12 12:30 P.M.
 SKY, 98% CLOUDS.
 SPOT APPEARED
 SLIGHTLY CHANGED
 FROM 2/11. CLEAR
 DEMARCATION LINE.
 SAME SIZE, SAME SHAPE

$\frac{900mm}{36mm}$

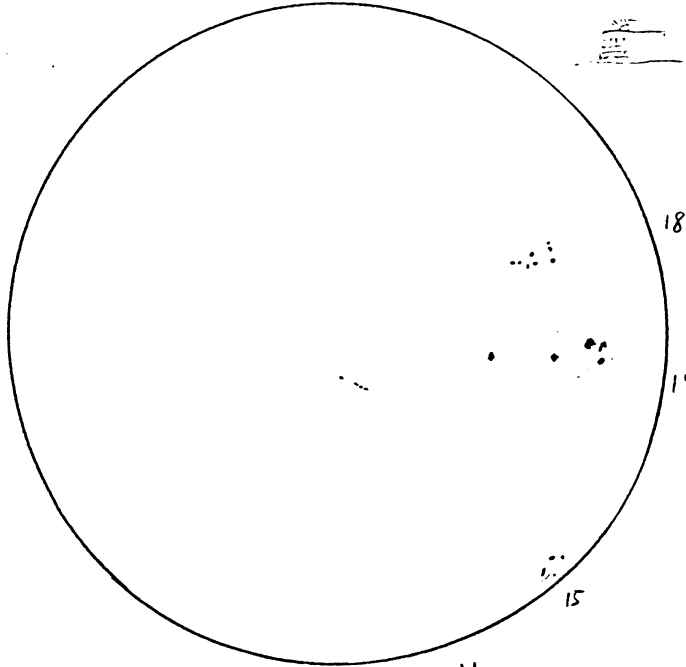
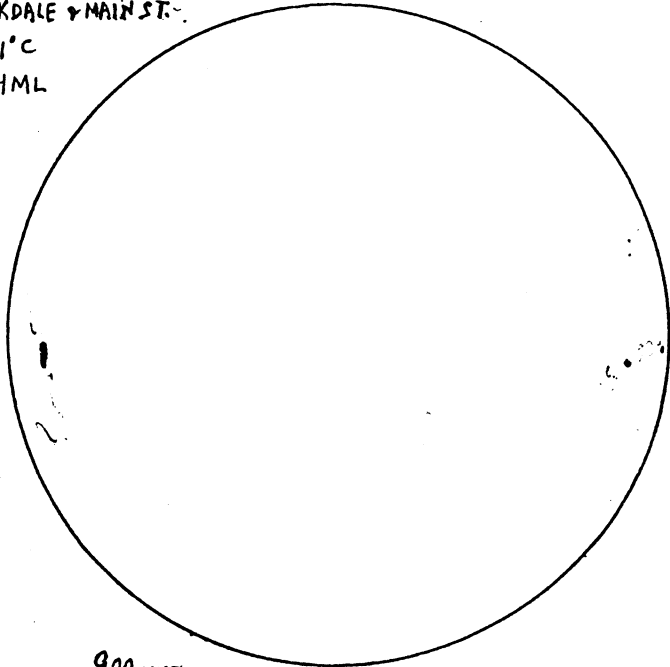
SUNSPOT COUNT $[(10 \times 2) + 3] = 23$

FEB. 18 3:30 - 3:40 P.M. E.S.T

SKIES CLEAR.
 SMALL TREE BRANCHES MOVE IN.
 GUSTY BREEZE

FEB 20 5:20 - 5:35 P.M. E.S.T.
 SKIES CLEAR, SLIGHT BREEZE.
 TRANSP. $\frac{8}{10}$, SEEING $\frac{4}{10}$ HORIZON TURBULENCE
 SUN DISAPPEARED BEHIND BLOC. 5:38 P.M.

PARKDALE & MAIN ST.
 -1°C
 CHML



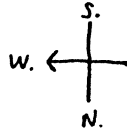
$\frac{900mm}{36mm}$
 SUNSPOT COUNT $[(10 \times 3) + 6] = 36$

ESTIMATED # OF SUNSPOTS FROM SKETCH

$[(10 \times 5) + 26] = 76$

FEB. 4/90 2:40 - 3:00 P.M. E.S.T.
 SKIES CLEAR
 IMAGE; SLIGHTLY FUZZY, STEADY
 SUNSPOT COUNT $[(10 \times 4) + 33] = 72$

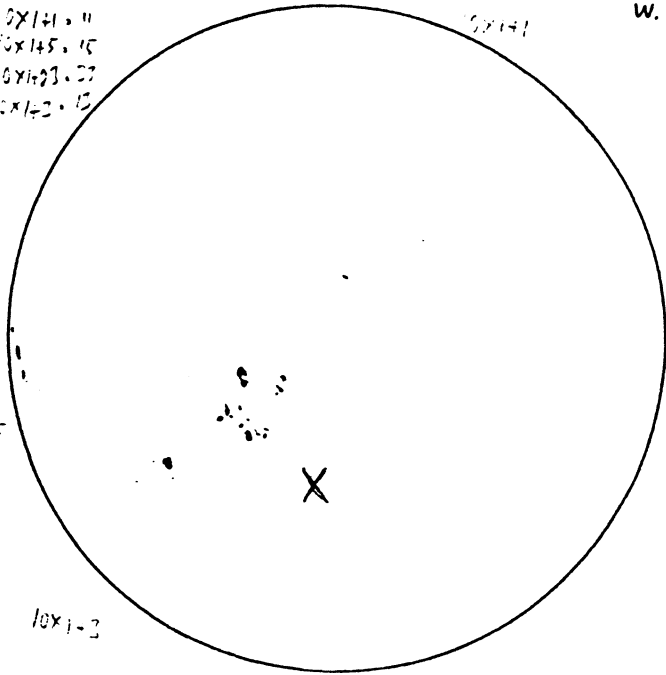
$\phi 8$ $\frac{900 \text{ mm}}{25 \text{ mm}}$



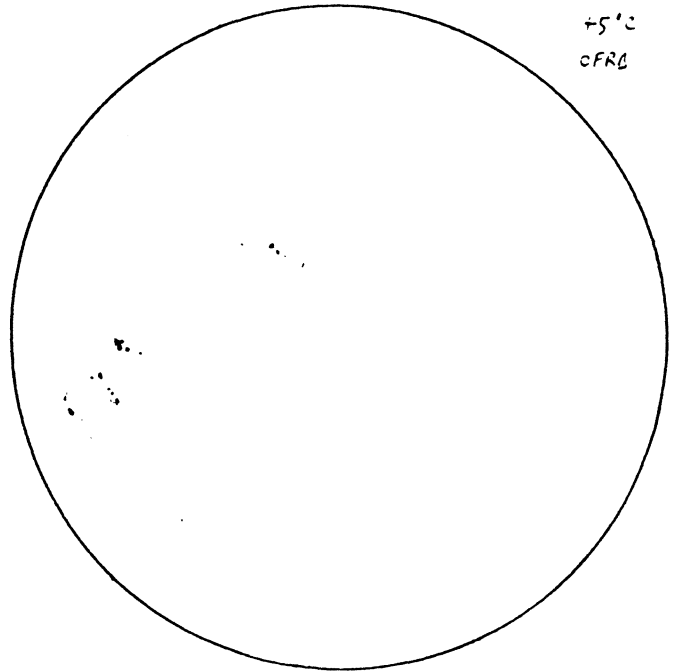
FEB. 6/90 12:30 - 12:42 E.S.T.
 SKIES CLEAR, IMAGE STEADY
 SLIGHT BREEZE

10x141 = 11
 10x145 = 15
 10x143 = 27
 10x142 = 19

10x141



+5°C
 CFRB



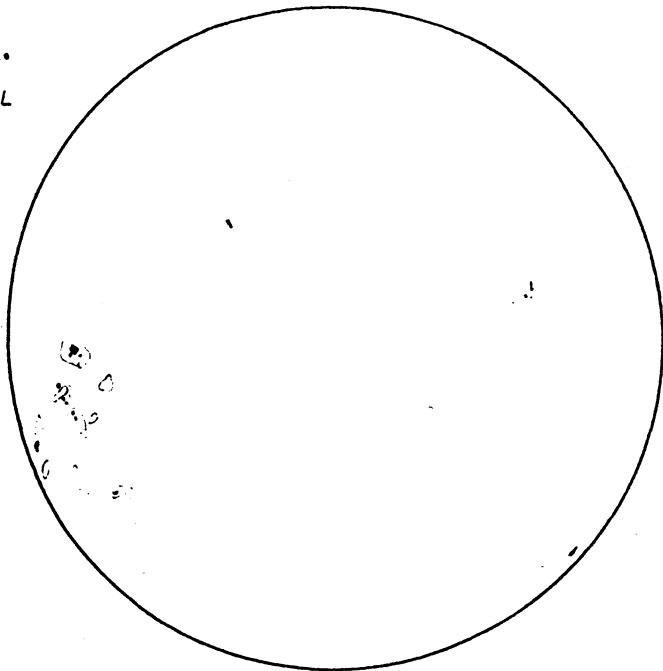
10x142

10x142

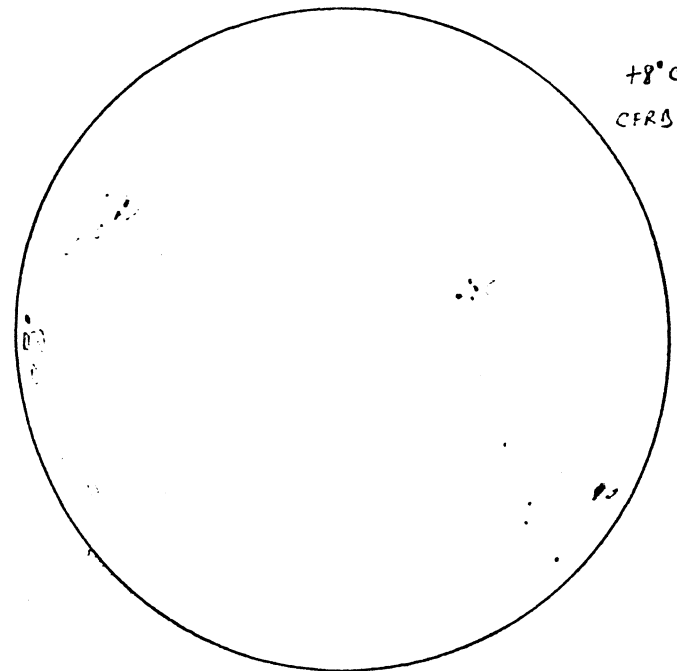
FEB. 7 12:25 - 12:45 P.M. E.S.T.
 SLIGHT HAZE IN CLEAR SKY.
 IMAGE STEADY; FACULAE VERY EVIDENT.

FEB. 8 12:50 - 1:05 P.M. E.S.T.
 SMALL TREE BRANCHES MOVE IN BREEZE
 CIRRUS CLOUD-STREAKS IN CLEAR SKIES

+5°C
 CHML



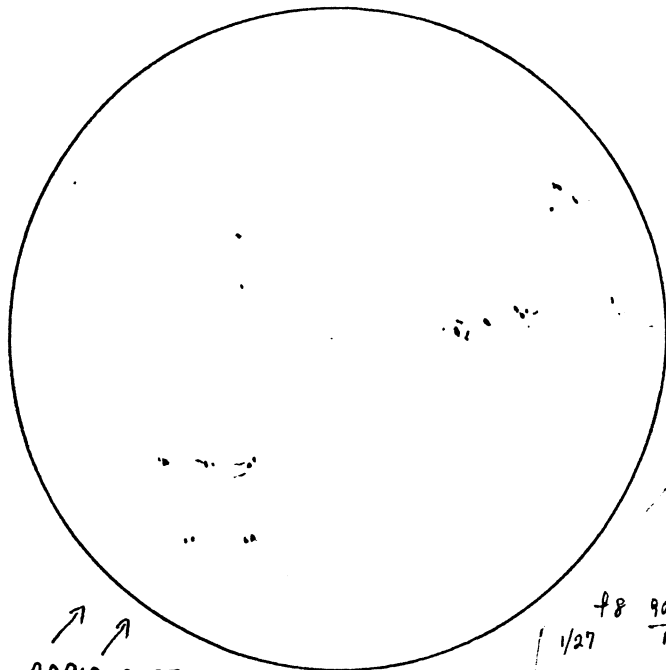
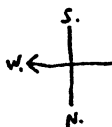
+8°C.
 CFRB



JAN. 19/90 12:20-45 P.M. EST.
 DRIFTING CLOUDS IN 20% CLEAR SKIES.
 IMAGE STEADY.

FACULAE VERY EVIDENT WHEN SKIES CLEAR,

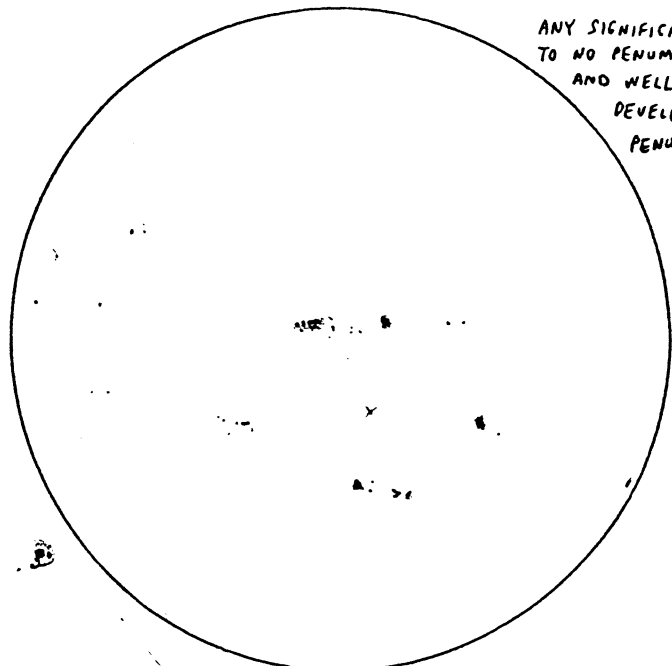
f8 $\frac{900mm}{75mm}$



↑ ↑
 RAPID SKETCH

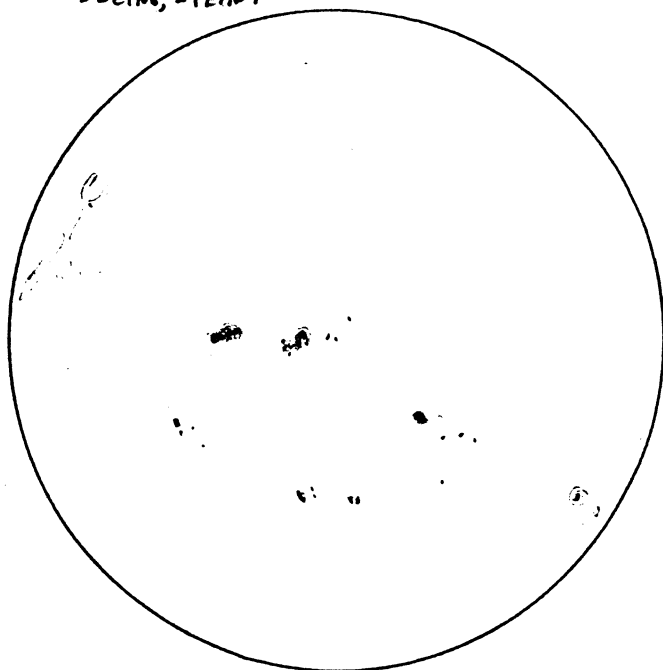
JAN. 27 12:15 - 12:45 E.S.T.
 SEEING $\frac{4}{10}$ RIPPLES
 TRANSP. $\frac{8}{10}$ IN 95% CLEAR SKY
 FACULAE SEEN EASILY ALONG LIMB,
 SEEN INDISTINCTLY ACROSS ENTIRE DISK

ANY SIGNIFICANCE
 TO NO PENUMBRA
 AND WELL-
 DEVELOPED
 PENUMBRA?

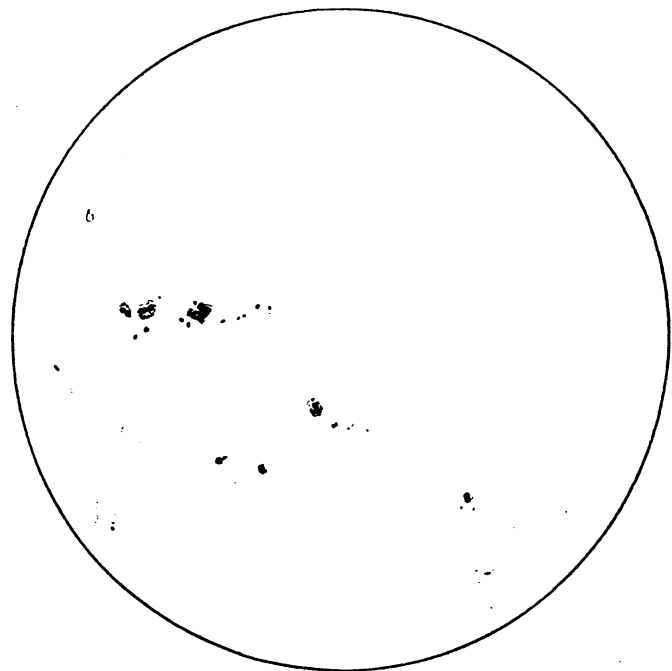


f8 $\frac{900mm}{75mm}$
 1/27
 12:15 - 1:35 E.S.T.
 SEEING $\frac{3}{10}$ ↔ $\frac{4}{10}$

JAN. 28 3:15 - 3:40 P.M. EST.
 DRIFTING TRANSPARENT CLOUD COVER
 TRANSPARENCY $\frac{7}{10}$ - $\frac{6}{10}$
 SEEING, STEADY



JAN. 30 12:25 - 12:40 E.S.T.
 SKIES CLEAR IN SUN'S AREA.
 IMAGE, STEADY.
 TRANSP.; FACULAE VERY EVIDENT
 ALONG LIMB.



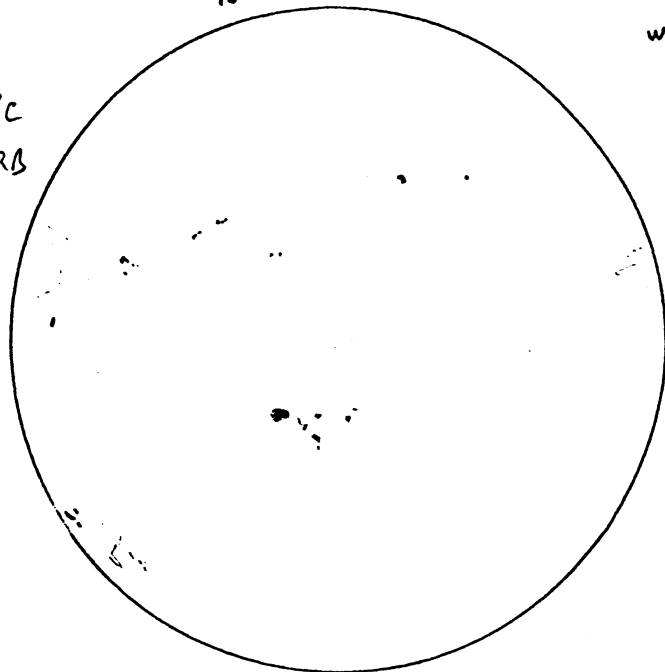
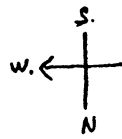
SUNSET IN CLEAR SKY
 (DISAPPEARING CLOUD BANK S.E. HORIZON)
 5:30 P.M. 1/28

FACULAE MORE
 DETAILED THAN DRAWN

35-16 89/1/22

JAN. 3/90 12:30-12:45 P.M. EST.
 SKIES CLEAR, SMALL BRANCHES
 SEEING $\frac{7}{10}$ MOVE IN BREEZE.
 TRANSP. $\frac{8}{10}$

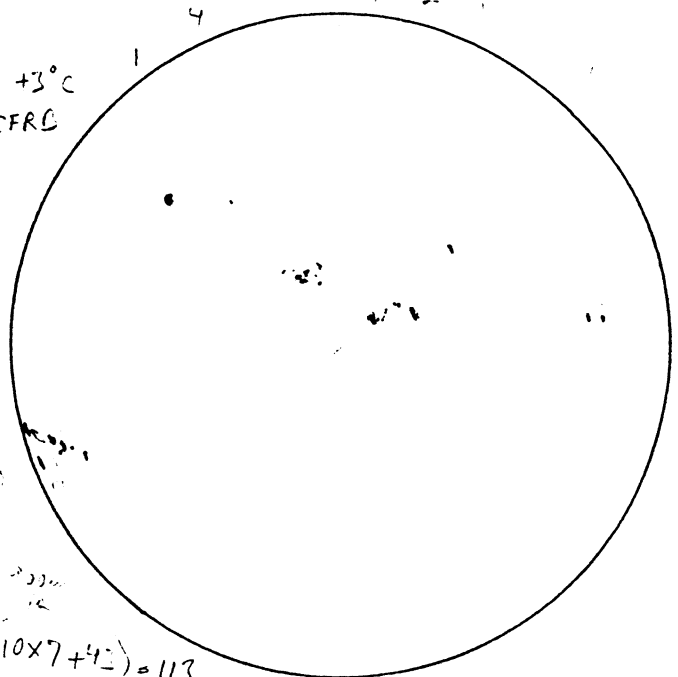
+4°C
 CFRB



JAN. 8/90 12:30-12:47 P.M. EST.
 SKIES TOTALLY CLEAR, SLIGHT BREEZE
 SEEING $\frac{8}{10}$ TRANSP. $\frac{8}{10}$

f 8 $\frac{900mm}{25mm}$

+3°C
 CFRB

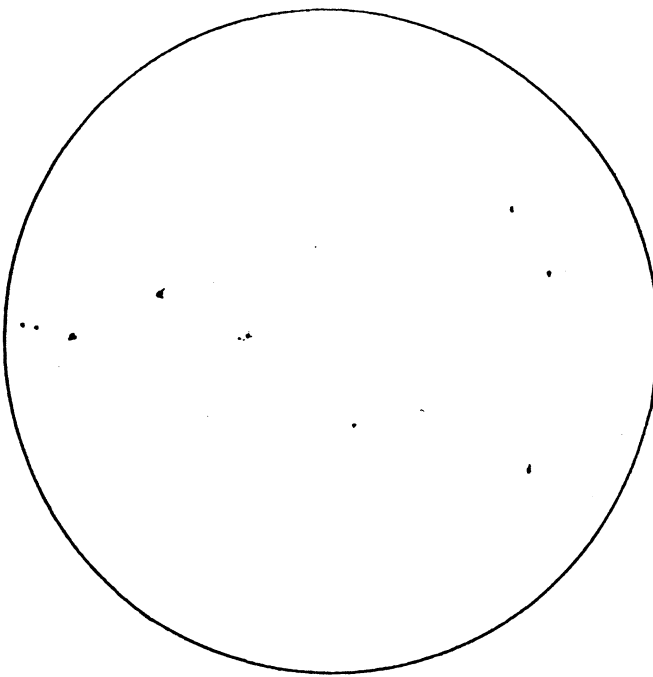


FAST COUNT
 $10 \times 7 + 42 = 113$

132, 138

JAN. 13 1:30-1:40 P.M. EST.
 OBSERVED SUN THRU FAST MOVING LIGHT
 CLOUD PATCHES
 TRANSP. $\frac{9}{10}$ SEENI, STEADY

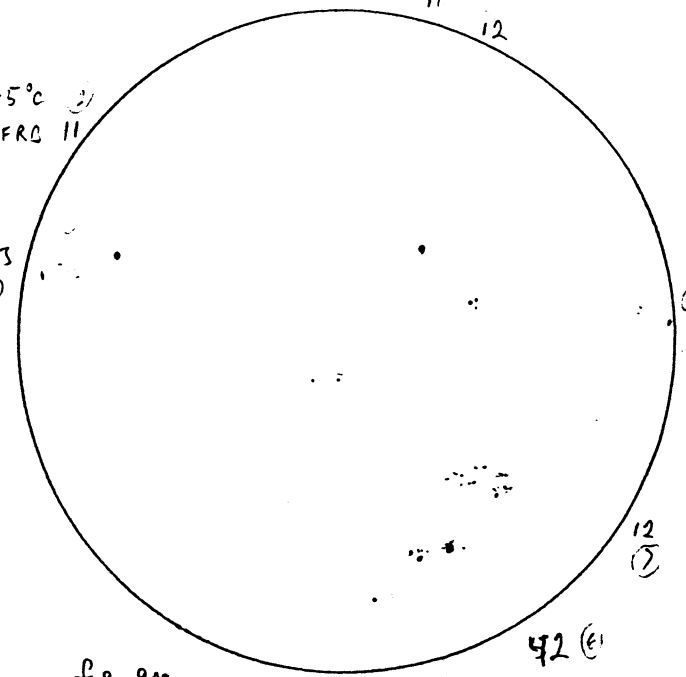
$\frac{2}{10}$



JAN. 15/90 12:35-12:45 P.M. EST.
 SKIES CLEAR; SMALL BRANCHES MOVE
 IN BREEZE.
 SEEING $\frac{8}{10}$
 TRANSP. $\frac{8}{10}$

+5°C
 CFRB 11

13



(10x1)+3
 10x1)+1
 10x1)+1
 10x1)+2
 10x1)+1
 10x1)+33
 10x1)+2
 10x1)+10
 10x1)+5

f 8 $\frac{900mm}{13mm}$

12:55 P.M.

$(10 \times 9) + 57 = 147$ RELATIVE SPOT #

164 157

58

