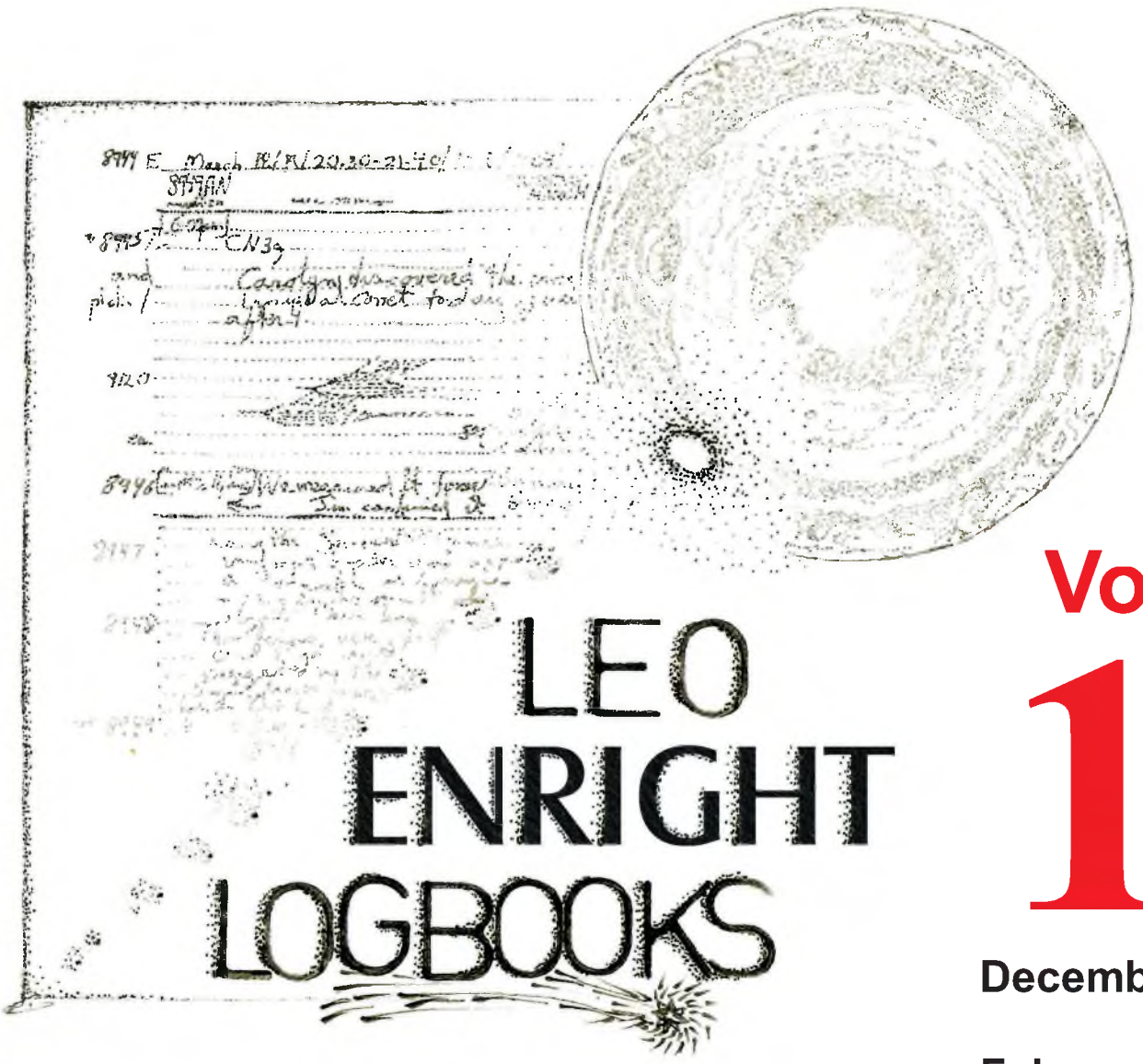


LEO ENRIGHT LOGBOOKS

Volume 12

December 2, 1995
to
February 23, 1997

12.

Fanco

cahier SCIENCE book

PAPIER ÉPAIS — HEAVYWEIGHT PAPER — 100 PAGES

name • nom Leo Enright Observing

subject • sujet: Dec. 2, 1995 - Feb. 23, 1997

Fanco
606 DE COURCELLE
MONTREAL H4C 3L5
49-1092

WHERE FACILITIES EXIST

LÀ OÙ LES INSTALLATIONS NÉCESSAIRES EXISTENT

0 55206 91092 9

11" x 8 3/8" • 279 mm x 212 mm


ROYAL BANK
1996
JULY
S M T W T F S
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31
AUGUST
S M T W T F S
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31
SEPTEMBER
S M T W T F S
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30
OCTOBER
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31
NOVEMBER
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
DECEMBER
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

Observing Log

Code:

Year Day Date Time Place — Sky Conditions S = Seeing T = Transparency — Instruments

objects observed

e.g.:

1995 Sa Dec. 2. 18:30-18:35 UT SS — — C-8, 32, 28, 20, 15.5

sun lg 1s RSN11

Time

UT = Universal Time
n = night
m = morning
f = forenoon
a = afternoon
e = evening

Place

OO = Oso Observatory
nd = north deck
sh = shoreline of lake
SS = solar station
t = table at solar station
in = indoors
r = on roof of house
ice = on ice on lake
sd = South deck
y = yard
EG = Easy Guider
EGlf = Easy Guider, leas forward
EGlb = Easy Guider, leas back

Sky Conditions:

S = seeing
T = transparency
0-10 scale: 0 = nil or extremely poor
10 = absolutely Super D
cml = crescent moonlight
gml = gibbous moonlight
fml = full moonlight

Instruments:

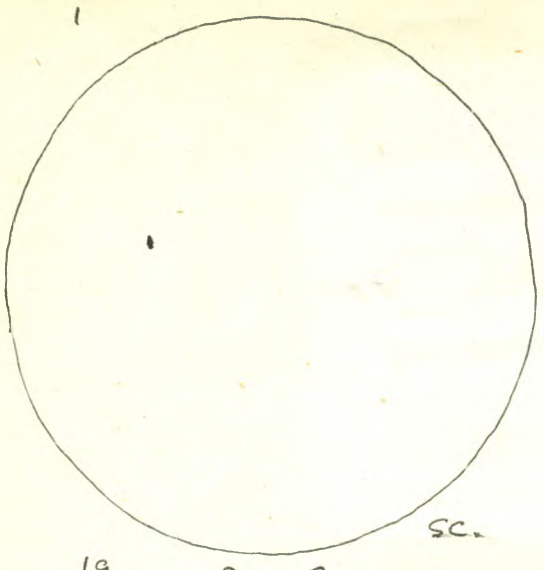
C-14 = Celestron 14
C-8 = Celestron 8
Ast = Astroscan
20x100b = 20x100 binoculars
11x80b = 11x80 binoculars
9x63b = 9x63 binoculars
7x35b = 7x35 binoculars
32 = 32mm ocular
32-2 = 32mm 2" ocular
K = Kellner
O = Orthoscopic
Ko = König
WA = Wide Angle
P = Plössl
ph = photography
p/b = piggyback
o/a = off-axis
Ba = Barlow lens
A.P.F. = Astro-Physics Solar Filter.
T.O.F. = Thousand Oaks Solar Filter.

Objects:

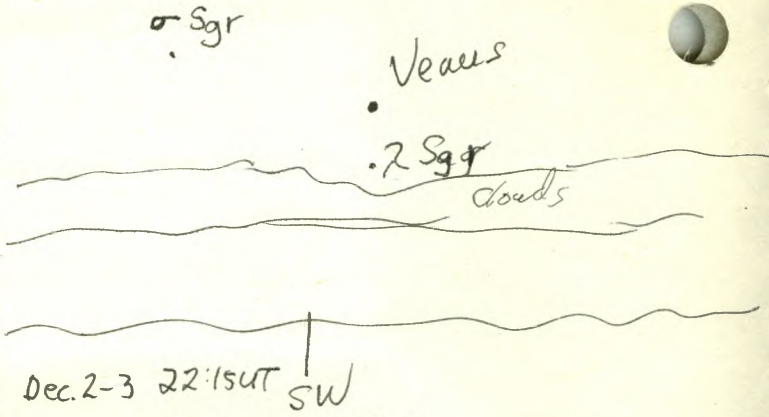
PN = planetary nebula
GC = globular cluster
OC = open cluster
SC = spiral galaxy
EG = elliptical galaxy
D = double star
LPV = long period variable

Atlases:

U = Uranometria
U2lO = Uranometria Chart 2lO
AAVSO = AAVSO Variable Star Atlas

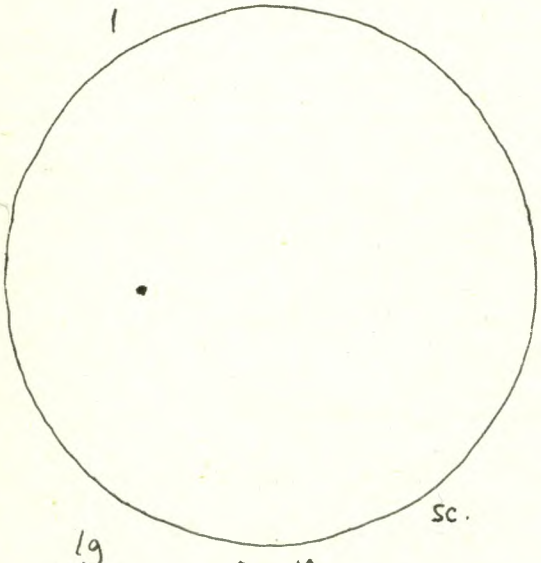


lg
ls
RSN11 Dec. 2
18:30-18:35UT

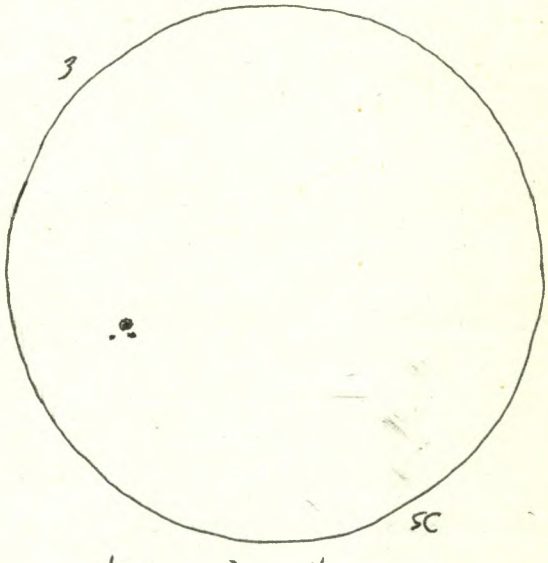


Dec. 2-3 22:15UT

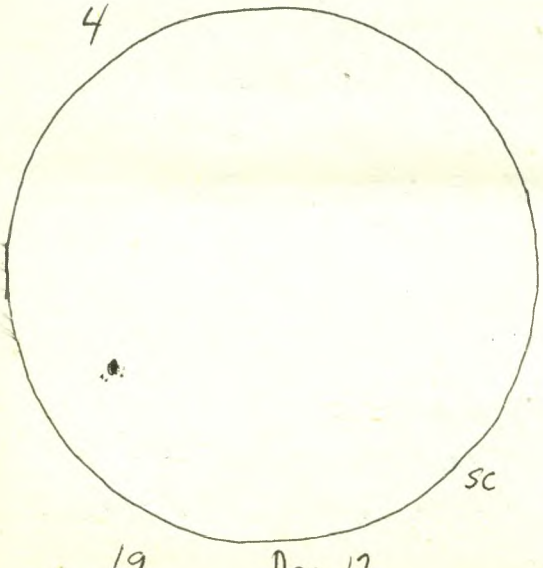
Veaus in constellation Sagittarius as seen in binoculars



lg
ls
RSN11 Dec. 10
18:25-18:30UT



lg
3s
RSN13 Dec. 11
20:25-20:30UT



lg
4s
RSN14 Dec. 12
20:30-20:35 UT

1995

Sa. Dec. 2 18:30-18:35UT SS C-8,32,28,20,15.5
sun 1g 1s RSN11

Sa.-Su. Dec. 2-3 22:15-22:25UT ice twl 9x63b
Venus low in SW (with Mars below it - Mars not visible naked-eye) On checking diagram in Sky and Telescope, Dec. 1995, p. 65, I concluded that it was not Mars, but the star λ Sgr which was seen in binoculars below Venus. Mars may have been behind the clouds. The star σ Sgr was also seen in binoculars to the left from Venus.

Su. Dec. 10 18:25-18:30UT SS C-8,32,(28,20,15.5)
sun 1g 1s RSN11 First test for new Astrophysics Solar Filter
Though the sun was low in the sky, the image appeared sharper than in the Thousand Oaks Filter.

M. Dec. 11 20:25-20:30UT sd C-8,32,28,20,15.5
sun 1g 3s RSN13

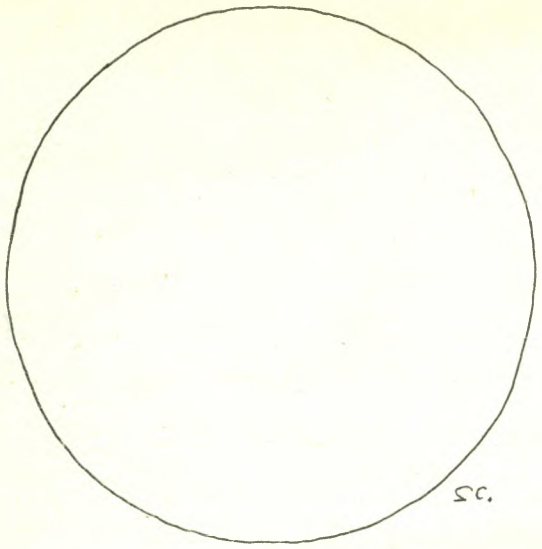
M-T. Dec. 11-12 01:15-01:45UT y S-9 T8-9 before moonrise ne
looked for possible early Geminids for ½ hour. - very cold. saw only 2 - one about mag. 4 near Aldebaran and one about mag. 1 near Polaris - both quite short.

T.-W. Dec. 12-13 01:50-02:20UT y S-8T7 ne
For ½ hour I tried to observe Geminid Meteors but was not sure of seeing any though I saw one in Gemini which was not a Geminid. Sky conditions were not good, with haze and cloud throughout the time I was observing.

Tu. Dec. 12 20:30-20:35UT sd C-8,32,28,20,15.5.
sun 1g 4s RSN14

W.-th. Dec. 13-14 02:50-03:30UT y s-8(?)T9.5! ne
- saw about 16 Geminid Meteors in various parts of

16 Geminids



09 Dec. 25
05
RSNO 18:30-18:35 UT
quite hazy - poor view.

1995

the sky - some bright, some faint.

M.-T. Dec. 18-19 01:45 - 02:45 UT y S-8(?) T9 20x100b

M42, M43, R Lep - very faint - about mag. 11, R Eri (?) RX Eri, Saturn, 51 Peg - star discovered to have Jupiter-like planet around it, Gliese 229 in Lepus - the star recently discovered to have a brown dwarf in orbit around it; M36, M37, M38; the asteroid 29 Amphitrite near M37 (See S.+T. Dec. 1995. page 70, and U98). The asteroid was near the star SAO 58665 that it is scheduled to on Dec 21 at about 7:08 - 7:15 UT

51 Peg.

Gl 229

29 Amphitrite

W.-Th. Dec. 20-21 06:50 - 07:45 UT y S-8(?) T9 20x100b

M36, M37, M38; tried to observe occultation of the star SAO by the asteroid 29 Amphitrite (as predicted in S.+T. Dec. 1995, p. 70) - was not sure, but thought there may have been about a 4 second dip in brightness about 07:10:19 UT, a dip of about 1 mag. M41, M45, M42, M43, Gliese 229, area of Thyxidis, R Leonis which was up to about mag. 7.5, area of R Lep which was very faint - barely detectable, if at all.

29 Amphitrite (poss. occultation)

R Leonis

R Lep.

Th.-F. Dec. 21-22 01:20 - 03:20 UT y S-8(?) T9-9.5 20x100b

M36, M37, M38, 29 Amphitrite - not far from M37, M35 and nearby cluster, Gliese 229, R Lep - very faint but visible in the binoculars - about mag. 10.5 - 11., RX Eri, M42, M43, M78, Rosette nebula and NGC 2244, S Mon and NGC 2264, M41, o Ceti (Mira) - very faint - at about mag. 9, M44, M81, M82

ne: 1 Meteor which was probably an Ursid

29 Amphitrite

R Lep.

Mira.

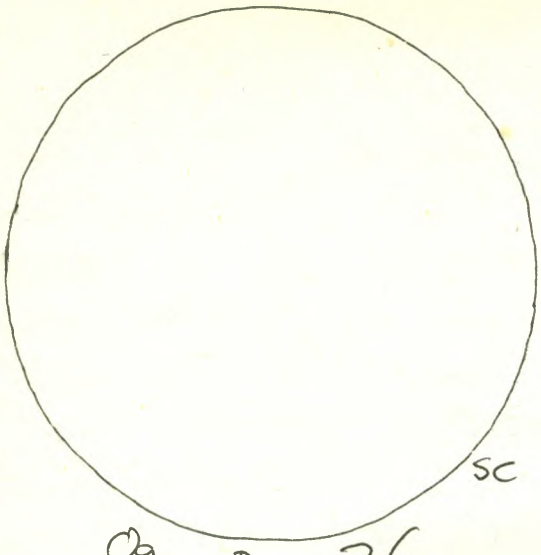
1 Ursid?

S-M. Dec. 24-25 23:00 UT s.d late in twl ne

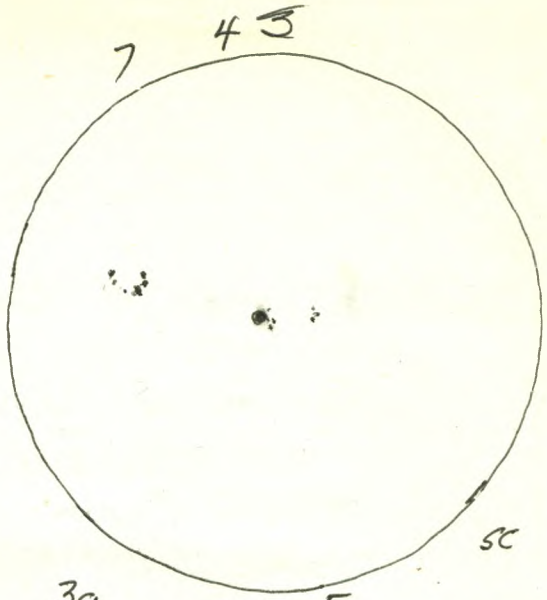
crescent moon and Venus in WSW - moon about 8°-10° above

M. Dec 25 18:30 - 18:35 UT SS C-8, 32, 28, 20, 15.5

sun 090 5 RSN 0 quite hazy - poor view (Thous. Oaks Filter)



Dec. 26
18:25-18:30UT



Jan 5
19:15-19:20UT

1995 Tue Dec. 26 18:25-18:30 UT ss C-8,32,28,20,15.5.
sun Og Os RSNO (Astro-Physics Filter)

T.-W. Dec. 26-27 03:10-03:20 UT y S-8? T8.5 ne
Winter constellations

Th. Dec. 28 17:50-17:55 UT ss C-8,32,28,20,15.5
sun Og Os RSNO (Thousand Oaks Filter)

1996 W.-Th. Jan. 3-4 4:37-5:37 UT y fml ne
tried to observe the Quadrantid Meteor Shower, but saw none for sure that were members of the shower. It was only about 1 day before the Full Moon; the sky was very bright though clear. The weather was very cold - probably -18°--20°C. There was one "point meteor" - probably not a Quadrantid and possibly a couple other faint meteors but none that appeared to be Quadrantids for sure.

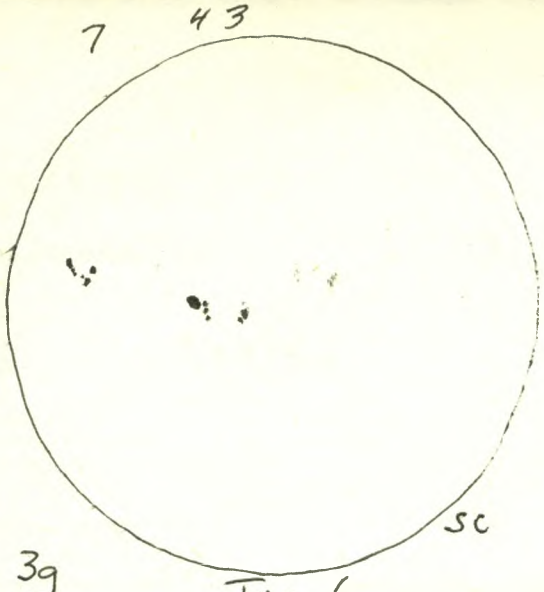
Quadrantids fml

Th. Jan. 4 19:55-20:00 UT ss and t C-8,32
- tried to observe the sun but it was too hazy and cloudy to record observations

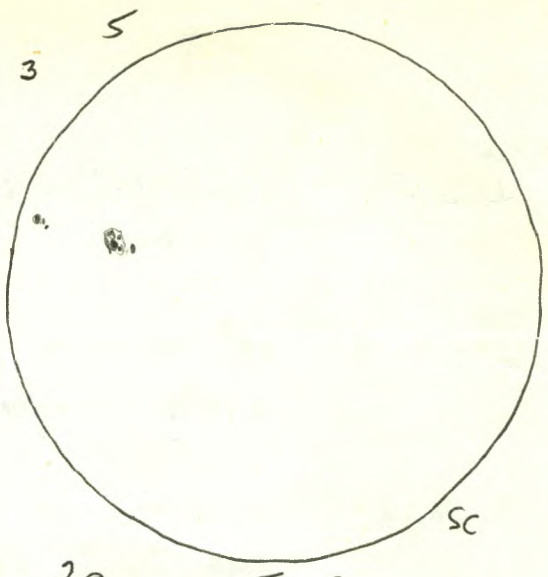
Th.-F. m. Jan. 4-5 11:20 in twl ne
- beautiful Full Moon setting in NW - seen from in the bathroom. It was about 3/4 hr before moonset.

F. Jan. 5 19:15-19:20 UT ss C-8,32,28,20,15.5
sun 3g 14S RSN44 Thousand Oaks Filter.

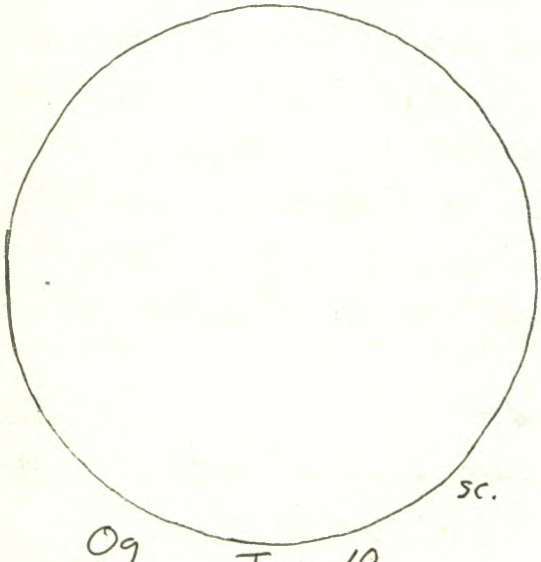
F.-S. e. Jan. 5-6 21:20-21:50 ice early twl ne
observed appearance and increased size of earth's shadow in E and ENE. - skies spectacularly clear.
22:08-22:15 ice twl ne
observed moon rising through trees in ENE - seen about 9 min. after moonrise; Venus in W - very clear - heralding very cold night.



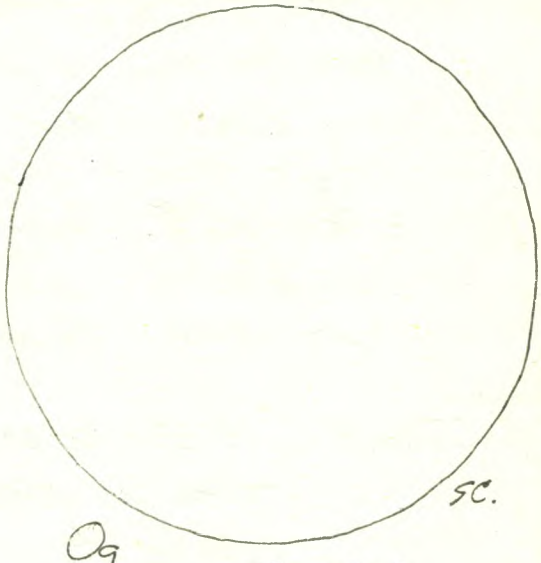
3g
14S
RSN44
Jan. 6
18:20-18:25



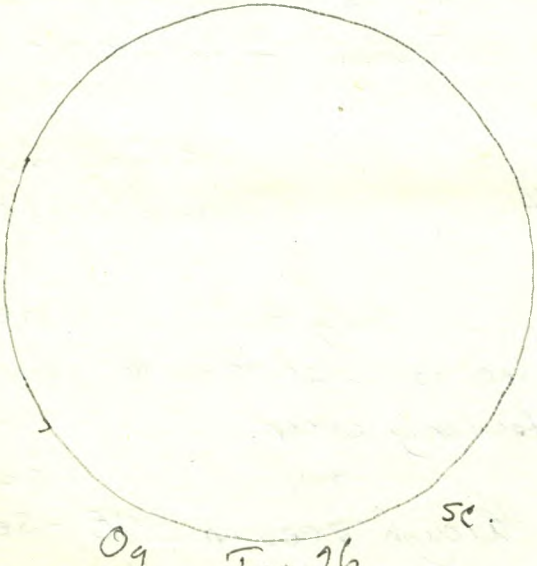
2g
8S
RSN~~28~~
Jan. 7
17:55-18:00UT



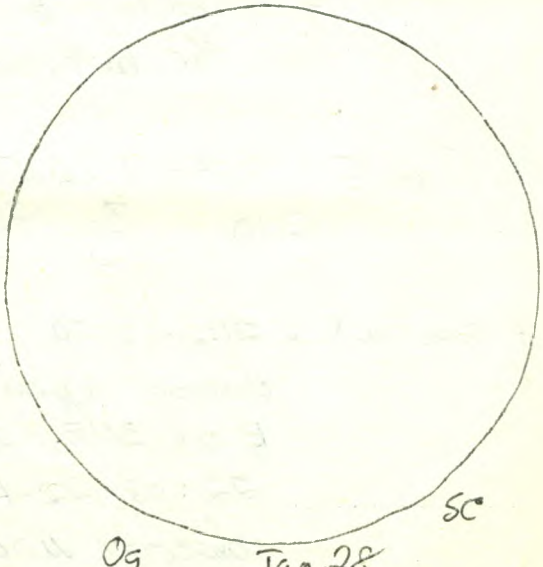
0g
0s
RSN0
Jan. 10



0g
0s
RSN0
Jan. 25
18:30-18:35 UT



0g
0s
RSN0
Jan. 26
20:58-21:03UT



0g
0s
RSN0
Jan. 28
19:15-19:18 UT.

1996 Sa. Jan. 6 18:20-18:25 UT ss. C-8,32,28,20,15.5
sun 3g 14s RSN 44 (Astrophysics Filter)

Su. Jan. 7 17:55-18:00 UT ss C-8,32,28,20,15.5
sun 2g 8s RSN 28 some cloud (Astro-Physics Filter)

W. Jan. 10 20:25-20:30 UT ss C-8,32
sun 0g 0s RSN 0 (Thousand Oaks Filter)

W.-Th. Jan. 10-11 23:40 UT nd T-9 ne
Z.L. Zodiacal light - easily seen in W. about 60 min. after the end of astronomical twilight.

Th. Jan. 25 18:30-18:35 UT ss C-8,32,28,20,15.5
sun 0g 0s RSN 0

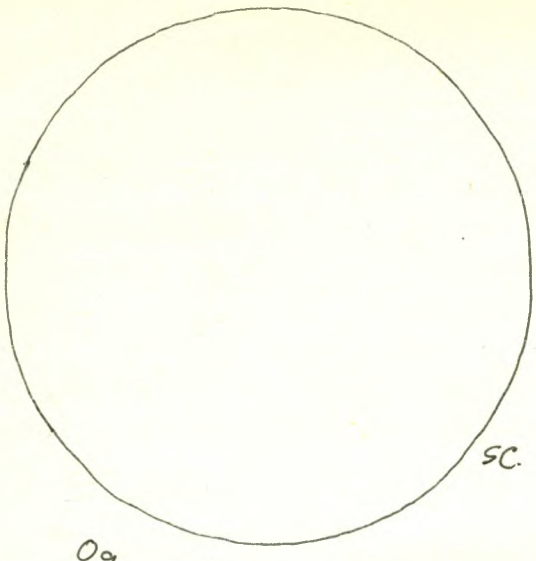
Fr. Jan. 26 20:58-21:03 UT sd C-8,32,28,20,15.5
sun 0g 0s RSN 0

Su. Jan. 28 19:15-19:18 UT ss C-8,32,28,20,15.5
sun 0g 0s RSN 0

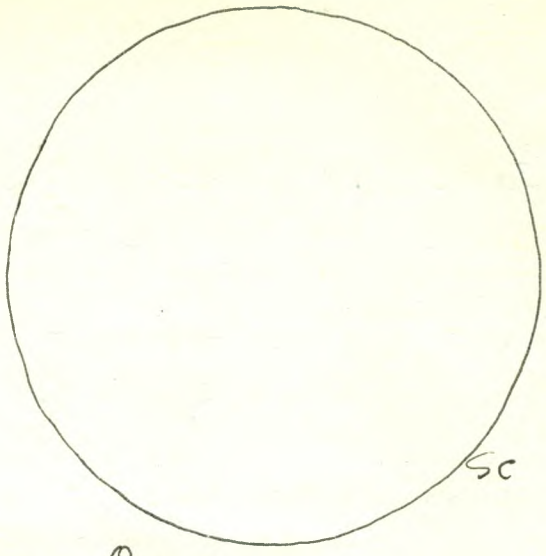
Tu. Jan. 30 20:40-20:45 UT ss C-8,32,28,20,15.5
sun 0g 0s RSN 0 Thousand Oaks Filter

W. Jan. 31 18:00-18:05 t C-8,32,28,20,15.5
sun 0g 0s RSN 0 Thousand Oaks Filter.

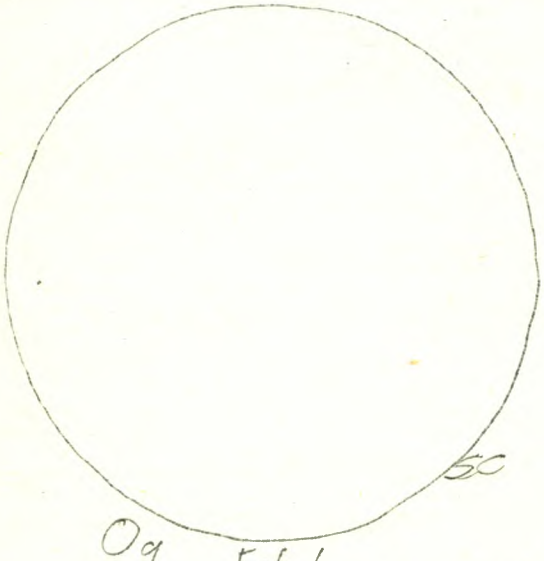
W.-Th. Jan. 31-Feb 1 00:15 UT nd gml 10x25b.
Venus and Saturn - about $1\frac{1}{2}^\circ$ apart in the W. sky, about 10° above the horizon. Their conjunction time is given in O.H. as Feb. 3 at 2h UT - 1.3 apart. Their closest approach is given in The Astronomical Calendar as Feb. 2 at 15h UT - 1.1 apart and at mag -4.3 and 1.3 - a difference of 5.4 magnitudes or $2.51189^{5.4} = 144.5$ times.



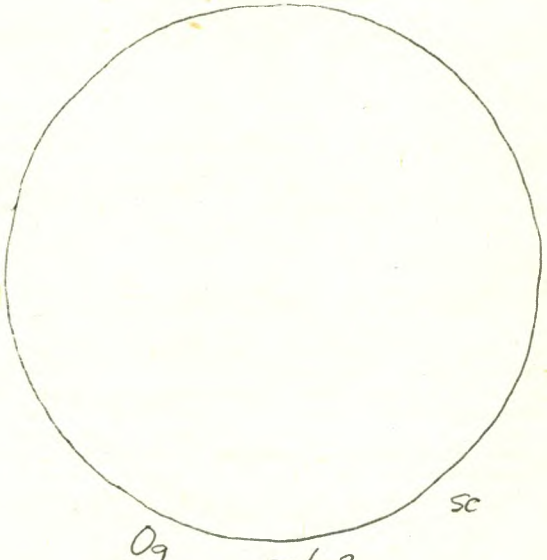
Og
Os
RSNO Jan. 30
20:40-20:45



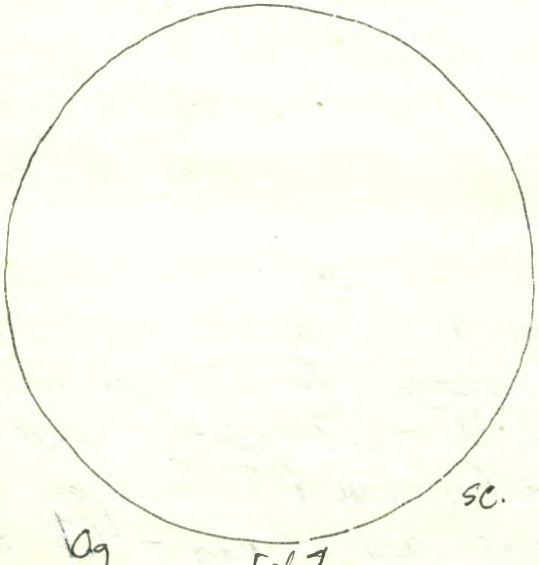
Og
Os
RSNO Jan. 31
18:00-18:05



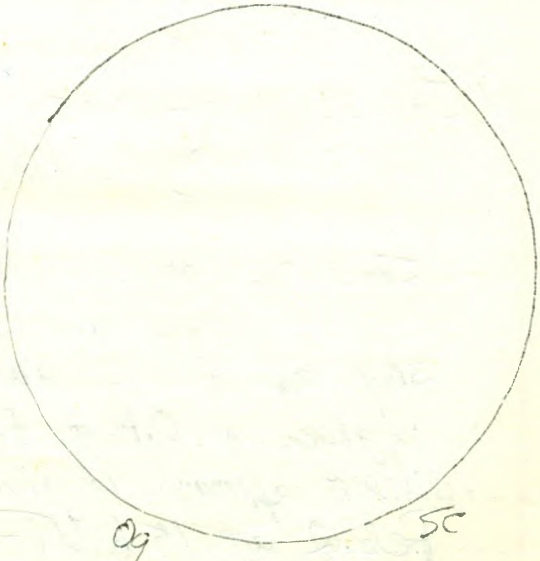
Og
Os
RSNO Feb. 1
19:25-19:30 UT



Og
Os
RSNO Feb. 2
20:40-20:45



Og
Os
RSNO Feb. 3
18:40-18:45 UT



Og
Os
RSNO Feb 6
20:10-20:15 UT

1996

Th. Feb. 1 19:25-19:30 UT t — C-8, 32, 28, 20, 15.5
sun Og Os RSNO (Thousand Oaks Filter)

F. Feb. 2 20:40-20:45 UT t — C-8, 32, 28, 20, 15.5
sun Og Os RSNO (Thousand Oaks Filter)

Feb 3 Missout on Jupiter in SE

Sa. Feb. 3. 18:40-18:45 UT ss — C-8, 32, 28, 20, 15.5
sun Og Os RSNO (Astro-Physics Filter)

Sa.-Su. Feb. 3-4 00:30 UT nd cody — fair — 10 x 25 b
Venus and Saturn about 1° below Venus. Saturn - not seen without the binoculars.

Su.-M. Feb. 4-5 00:07 nd — fair — 10 x 25 b
Venus and Saturn about 2° below Venus. Saturn - not seen without the binoculars.

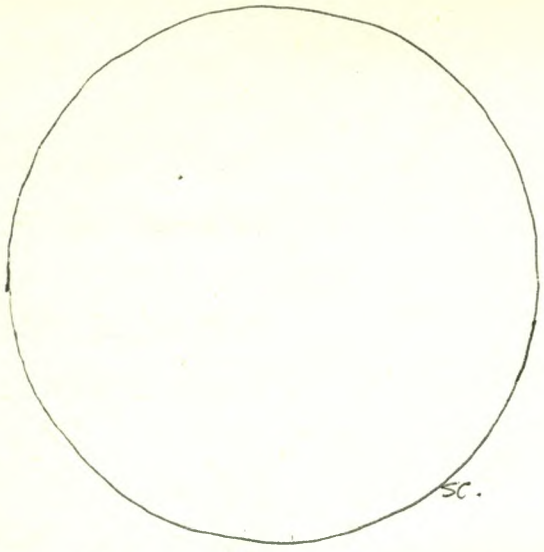
Tu. Feb. 6 20:10-20:15 UT t — C-8, 32, 28, 20, 15.5
sun Og Os RSNO (Thousand Oaks Filter)

M.-Tu. Feb. 12-13 03:15-03:40 UT y — s-8(?) T 8.5-9 — 20x100 b.
M42, M43, M41, area of T Pyxidis - though some of the area was "among the trees, Comet Shoemaski (?) discovered in late January by a member of the Houston Astronomical Society - photographically in a 100 mm telescope when near M101 - has since "crossed the handle of the Big Dipper and is in Canes Venatici - seen at about mag. 8.5 (?) at R.A.: 12h 52m. Dec.: +48.5 (See U75), just E. of the star 11 CnV

Comet Shoemaski (?)

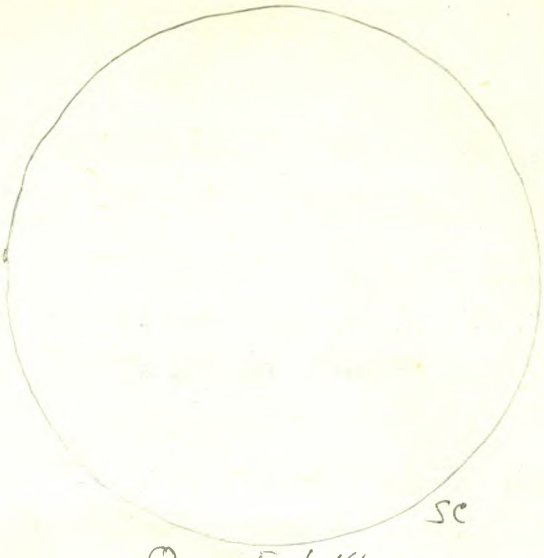
Tu. Feb. 13 21:00-21:05 UT — C-8, 32, 28, 20, 15.5
sun Og Os RSNO (Thousand Oaks Filter)

W. Feb. 14 21:40-21:45 UT — C-8, 32'
sun Og Os RSNO (Thousand Oaks Filter)



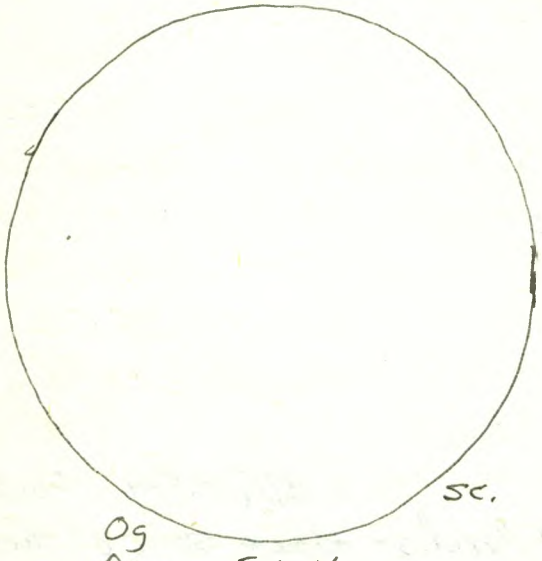
Og
Os
RSNO

Feb. 13.
20:00-20:05 UT



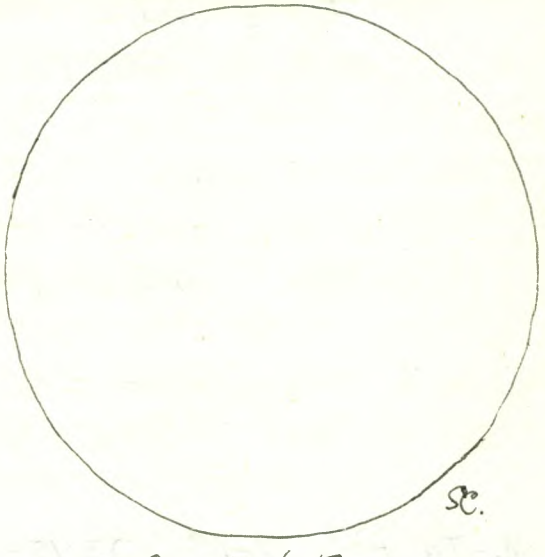
Og
Os
RSNO

Feb. 14
21:40-21:45



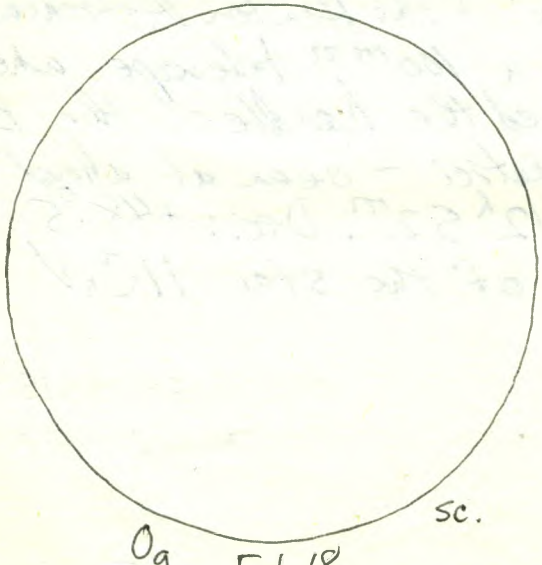
Og
Os
RSNO

Feb. 16
20:35-20:40 UT



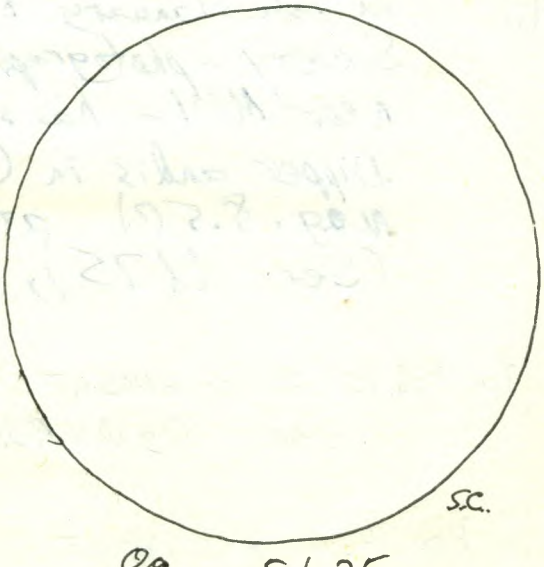
Og
Os
RSNO

Feb. 17
19:30-19:35 UT



Og
Os
RSNO

Feb. 18
19:45-19:50 UT



Og
Os
RSNO

Feb. 25
19:10-19:15 UT

1996

F. Feb. 16 20:35-20:40 UT ss C-8, 32, 28, 20, 15.5
sun Og Os RSNO (Thousand Oaks Filter)

F.-S. Feb. 16-17 03:30-04:20 UT y S7 T9 20x100 b
area of R Lep, but star not seen - very faint; area of RX Eri, but star not seen; M42, M43, Bright Nebula NGC 1973 N. of M42 and other nebulosity around nearby stars; NGC 2024 near ζ Orionis - difficult because of the brightness of the "Belt Star" ζ Orionis; NGC 2539 oc (U275) near, or including, the star 19 Pup, M46, M47, NGC 2194 oc - faint open cluster NW of Rosette Nebula (U182), NGC 2169 oc - open cluster of bright stars N.W of Rosette Nebula (U182); area of T Pyxidis, but the star was not seen.

1973, E/RN
2024 EN
2539 oc
2194 oc
2169 oc
T Pyx.

08:10 - 09:10 UT S-7 T9 20x100 b
- After sleeping for about 3 hours, I rose to observe again, particularly to see the comet which is predicted to get quite bright next month. - saw Comet Hyakutake, in Libra at about R.A. 14^h44^m Dec. $-24.^\circ5$ (U333), E of the star σ Librae, - at about Mag. 8.; also M4 in Oph, IC4665, area of η Vir including SS Vir

Comet Hyakutake

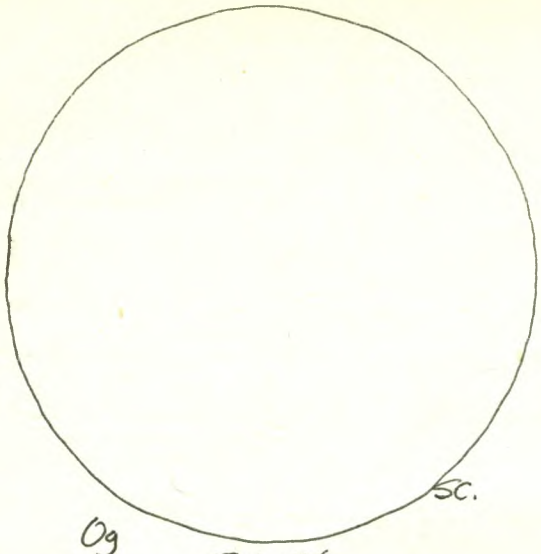
Sa. Feb 17 19:30-19:35 UT ± C-8, 32, 28, 20, 15.5
sun Og Os RSNO (T.O. Filter)

Su. Feb. 18 19:45-19:50 UT ss C-8, 32, 28, 20, 15.5
Sun Og Os RSNO (A.P.F.)

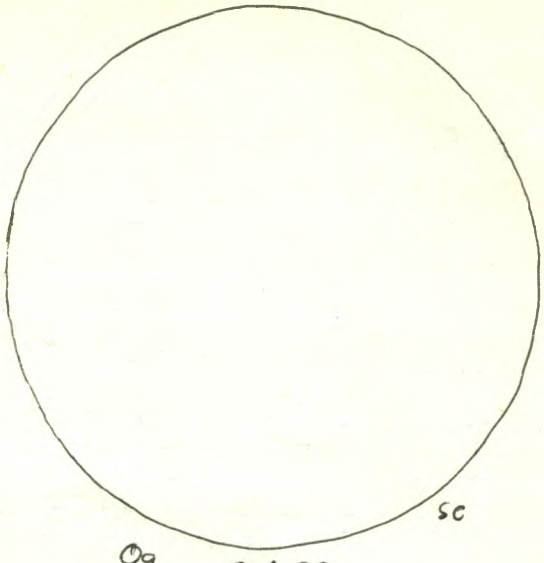
Su. Feb. 25 19:10-19:15 UT ss C-8, 32, 28, 20, 15.5
sun Og Os RSNO (A.P.F.)

M. Feb. 26 20:45-20:50 UT ss C-8, 32, 28, 20, 15.5
sun Og Os RSNO (T.O.F.)

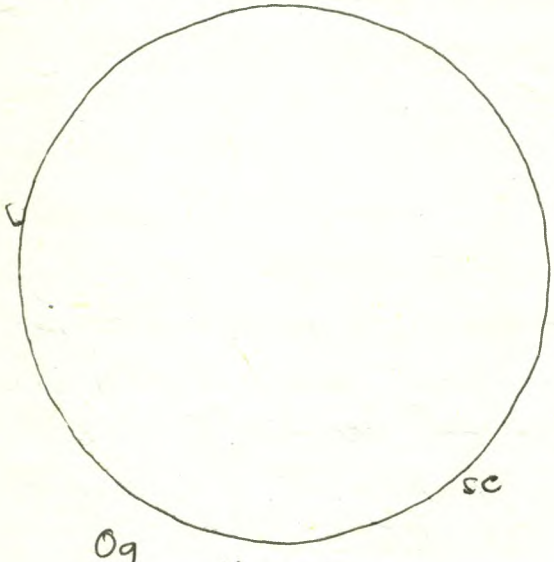
M.-T. Feb. 26-27 00:15-00:20 UT nd fgal me
winter constellations, Venus - very brilliant. Actually



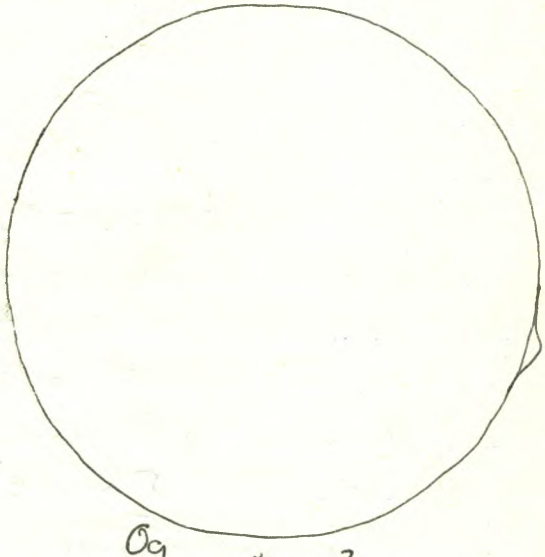
Og
Os
RSNO Feb. 26
20:45-20:50 UT



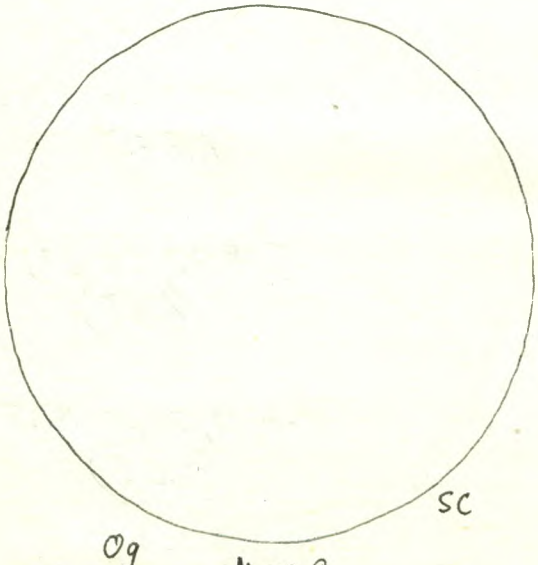
Og
Os
RSNO Feb. 29
20:45-20:50 UT



Og
Os
RSNO Mar. 2
21:10-21:15 UT



Og
Os
RSNO Mar. 3
20:30-20:35 UT



Og
Os
RSNO Mar. 9
19:50-19:55 UT

1996.

Denise and I had tried to see Venus high in the west about 15 min before sunset. Denise had seen it ne. after finding it with 10x25 binoculars. I did not see it ne. at ~~that~~ that time, but saw it in the binoculars at about: 17:25 E.S.T. Sunset time: 17:47 E.S.T. The sky conditions were very clear.

Th. Feb. 29 20:45-20:50UT ss — C-8, 32, 28, 20, 15.5 (T.O.F.)
sun Og Os RSNO

Sa. Mar. 2 21:10-21:15UT t — C-8, 32, 28, 20, 15.5 (T.O.F.)
sun Og Os RSNO

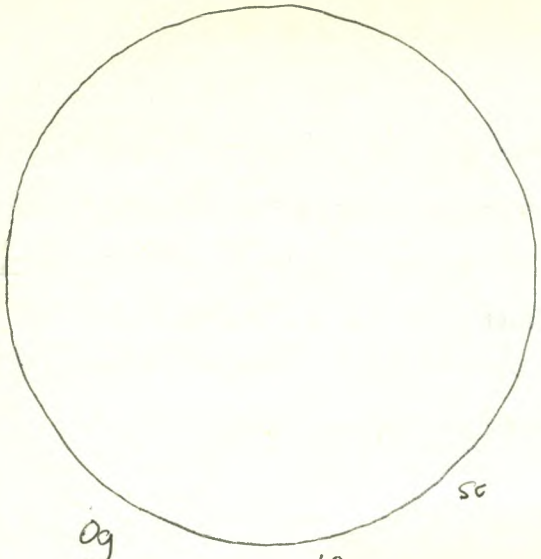
Su. Mar 3 20:30-20:35 UT t — C-8, 32, 28, 20, 15.5 (T.O.F.)
sun Og Os RSNO

Th.-F. Mar. 7-8 00-35-00-40 UT y — S-9(?)T9 ne
Z.L. Venus in W., Zodiacal Light - very bright in W. - brighter than the Winter Milky Way > up higher than the Pleiades

01:15-01:45UT y — S9(?)T9 ne; 20x100b
ne: testing new glasses which I acquired on Mar. 5 - 2 days before - make the stars much sharper
20x100b: M41, M42, M43, M78, Rosette Nebula, NGC2244, S Mon, R Leonis - very bright - about mag. 6, Alcor and Mizar, M57 and NGC5195, M101, M45, some stars in constellation Pyxis, but area of T Pyxidis was among the trees, area of R Lep - very faint - not seen for sure because of its faintness, RX Eri seen; Gliese 229 - the star in Lepus discovered to have a brown dwarf orbitting it.
R Leonis
Gliese 229

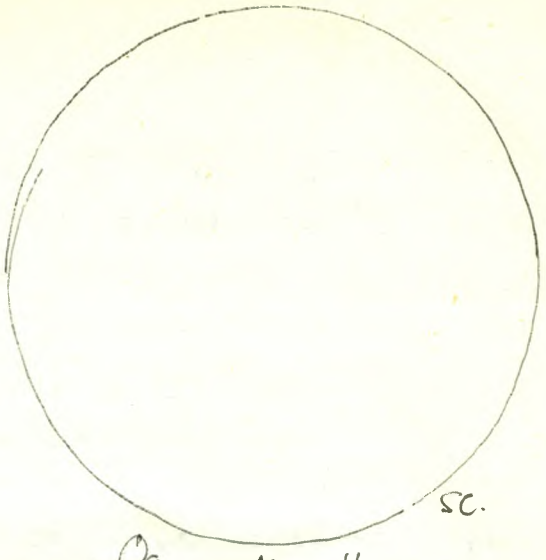
Sa. Mar. 9 19:50-19:55UT ss. — C-8, 32, 28, 20, 15.5 (A.P.F.)
sun Og Os RSNO

Sa.-Su. Mar. 9-10 02:24-04:00 UT y — S-8(?)T9.5 20x100b
M42, M43, area of T Pyxidis, but star not seen,



Og
Os
RSNO

Mar. 10
17:35-17:40UT



Og
Os
RSNO

Mar. 11
17:25-17:30UT

1996

M46, M47, tried for NGC 2359 - EN in CMa, but was not sure of seeing it, NGC 2539 OC in Pup - E. from M46 and M47; NGC 1931 - faint E/RN in Aur. - seen better by averted vision; NGC 1788, RN in Ori - also seen better perhaps with averted vision; M36, M37, M38 - Zodiacal Light at beginning of observing session.

2539

1931

1788

Su. Mar. 10 17:35-17:40 UT SS C-8, 32, 28, 20, 15.5
Sun 0g 0s RSNO T.O.F.

11x80b
S.-M. Mar. 10-11 00:30 - 05:00 UT 00 S-8-9(?) T 8-9(varied) C-14, 32, 12, 40; ^

C-14: From about 01:30 to 02:30 - observed with Doreen Ostrichuk and her two grandchildren, Luke and Rachel, and showed them Venus and the Trapezium in M42, constellations, and the Zodiacal Light

2022

NGC 2022 near φ Ori (U18) PN at 05h 42.m1 dec +9° 05' at mag. 12.4 - quite small and faint, but appearing round; NGC 2841, G-Sb in UMa at 9 22.0 +51, not far from 8 UMa (U44) - bright central area, quite elongated; NGC 3079, G-Sb in UMa at 10 02.2 +56, not far from 8 UMa (U45) - very slim and elongated. - tried to view IC 289 PN in Cas but was not sure of it.

2841

3079

11x80b in y: Comet Hyakutake low in SE near α Lib, very large, probably at about mag. 4.5 - not sure of seeing it as he probably because of light pollution, some clouds in the area, and moonlight from the moon that would rise within a half-hour; M13.

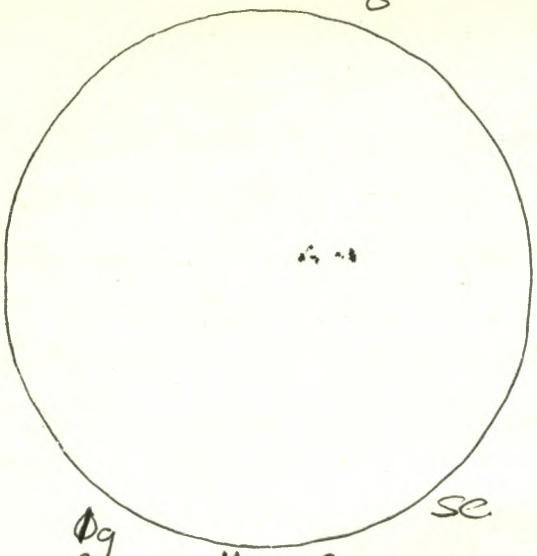
Comet Hyakutake

- Aurora seen for about 2 hours during the session - 02h UT to 05h UT - bright glow from NW to NNE up about 25° - occasionally higher, occasional hints of spikes and of reddishness in colour.

Aurora

M. Mar. 11 17:25-17:30 UT C-8, 32, 28, 20, 15.5
Sun 0g 0s RSNO T.O.F.

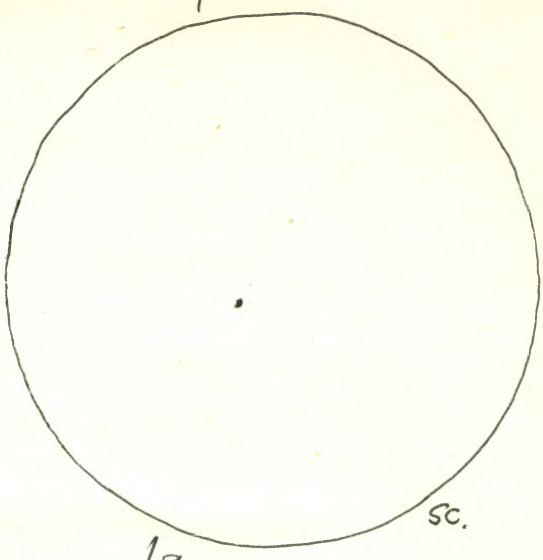
8



Dg
OS
RSN18

Mar. 12
19:15-19:20UT

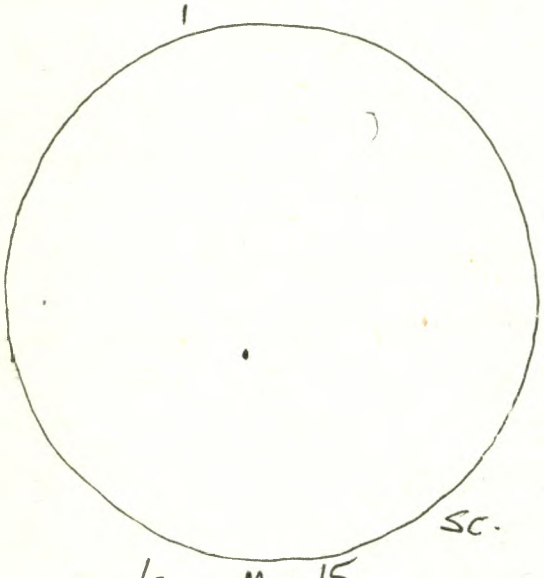
1



lg
ls
RSN11

Mar. 14
21:35 - 21:40UT

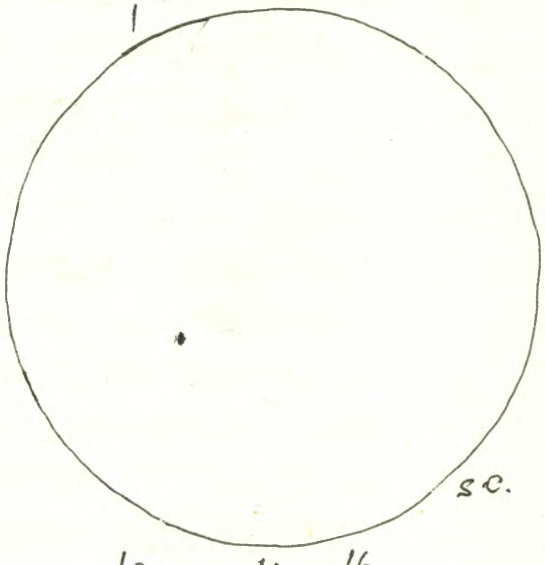
1



lg
ls
RSN11

Mar. 15
19:20-19:25UT

1



lg
ls
RSN11

Mar. 16
17:20-17:25UT

1996. M.-T. Mar. 11-12 01:00-05:15UT 00 S-8-9(?) T9-9.5 C-14, 40; 11x80b.

C-14: area of NGC 1535 Eri PN, but not sure of seeing it; area of NGC 1514 Tau PN, but not sure of seeing it; area of NGC 1931 Aur E/RN, but not sure of seeing it; NGC 1788 Ori RN (U225) - distinct glow; NGC 2359 CMa EN (U274), "odd-shaped glow"; NGC 2440 Pup PN (U319) - S. from M46 "medium-sized planetary nebula, easily detected in the C-14"; NGC ~~2451~~ 3184 UMa G-Sc (U72) - "quite large, and easy to find near μ UMa"; NGC 4762 Vir G-SBO (U194), "W. from ε Vir; extremely flat, with NGC 4754 in the same low-power field"; NGC 4526 Vir G (U194) "SW from ε Vir, very interesting sight with a distinct, almost edge-on galaxy between two stars of about Mag. 7 - all seen in the same low-power field"; NGC 4535 Vir G-Sc (U194), "just north of NGC 4526 mentioned above," NGC 4567/8 Vir G-Sc (U194) "interesting pair; not very bright; W. from ε Vir; and also NGC 4564 to the N. in the same low-power field

1788- 2359- 2440- 3184- 4762- 4526- 4535- 4567/8

Comet Hyakutake

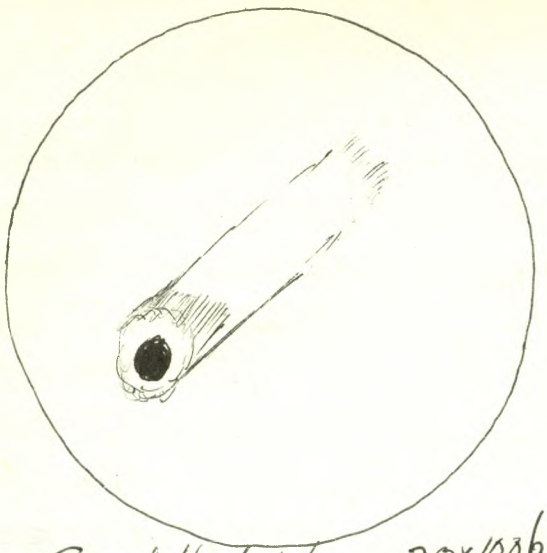
11x80b: Comet Hyakutake - low in SE, seen about 4:30UT, near α Librae, about Mag. 5. - large and diffuse in the binoculars.

Tu. Mar. 12 19:15-19:20UT ss. C-8, 32, 28, 20, 15.5.
Sun lg 8s RSN18 T.O.F.

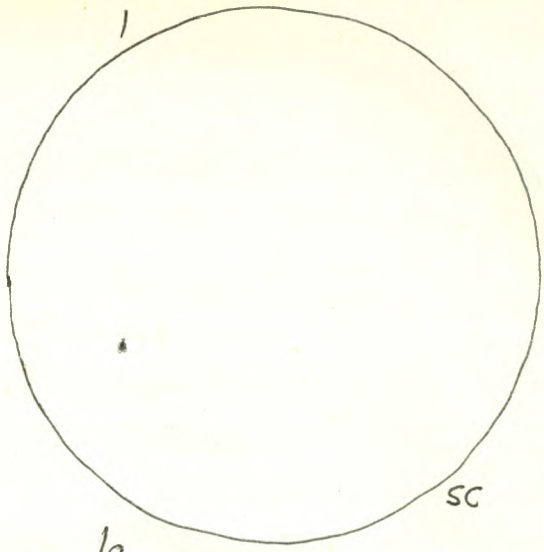
Th. Mar. 14 21:35-21:40UT ε C-8, 32, 28, 20, 15.5
sun lg ls RSN11 T.O.F.

F. Mar. 15 19:20-19:25UT ss C-8, 32, 28, 20, 15.5.
Sun lg ls RSN11 A.P.F.

Sa. Mar. 16 17:20-17:25UT ss C-8, 32, 28, 20, 15.5.
sun lg ls RSN11 T. O.F.



Comet Hyakutake 20x100b.
4:00 UT Mar. 17-18, 1996 bright-mag. 3.5
2° tail.



lg
ls
RSN11

Mar. 17
17:45 - 17:50 UT

1996

Sa.-Su. Mar. 16-17. 01:30-05:10 UT 00 S-8(?) T 9 C-14, 32; 20x100b.

C-14: NGC 2403 - very large galaxy - located by star-hopping
2403 from σ UMa (See U 22.) to π' and π² UMa and then
to the galaxy (See U 21.) which is in Camelopardalis;
4361 NGC 4361 PN in Crv (SW from δ Crv on U328) -
larger than expected; saw central star with
4699 averted vision; NGC 4699 - G-Sa in Vir - star-
hopping from θ Vir (See U284.) - fairly bright with
6503 a bright central area; NGC 6503 G-Sb in Dra -
hopping from χ Dra and φ Dra (U30) - bright
with a distinctive shape - star of about mag. 8
6543 nearby; NGC 6543 - PN in Dra - star hopping, as
above, from χ Dra and φ Dra (U30) - larger than
expected - very near the North Ecliptic Pole.

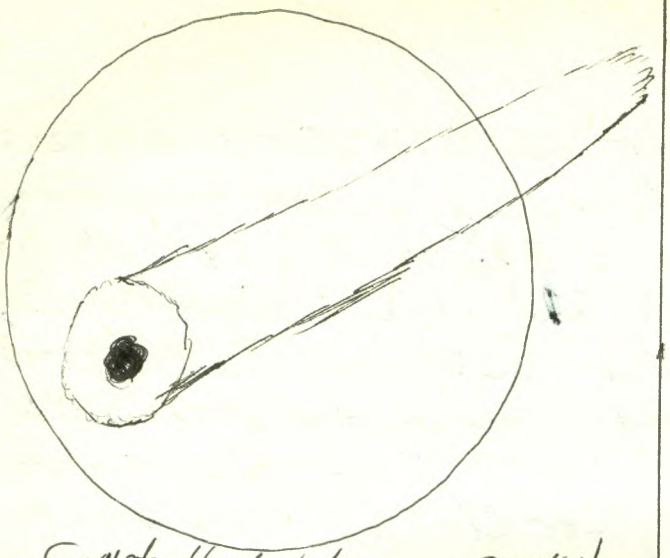
Comet Hyakutake 20x100b: M42, M43; Comet Hyakutake in Libra - noticeably
further N. than the previous night - at about
mag. 3.5 - also easily seen ne. - tail in the
binoculars 2° long and pointing to NW. - very
bright but very diffuse; area of T Pyxidis
ne.: 2 meteors of about mag. 2 - one in Orion and
one below Leo.

Su. Mar. 17 17:45 - 17:50 UT ss C-8, 32, 28, 20, 15.5
Sun lg ls RSN 11 T.D.F.

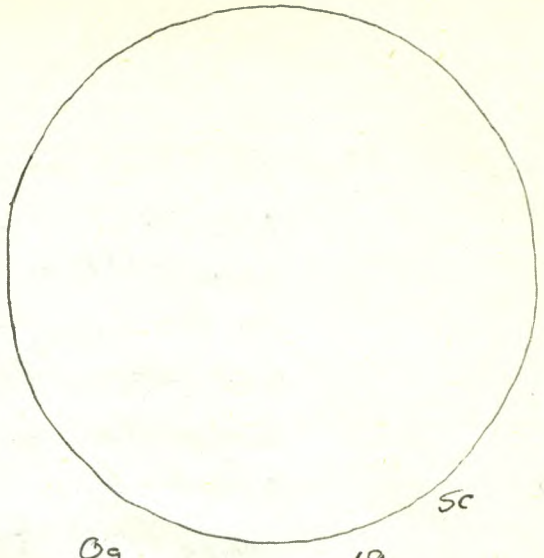
S.-M. Mar. 17-18 02:00 - 07:00 UT 00 s-9? T 8.5-9.5 some cloud for part of session C-14, 32; 20x100b

1501 C-14: NGC 1501 Planetary Nebula in Cam (See U18) -
larger than expected - faint but distinct in the
3344 telescope; NGC 3344 G-Sc in Leo Minor (See U145),
found by star-hopping from γ Leonis to 54 Leonis
and then Westward, 2 stars "very close" to the galaxy,
and a pattern of 3 9th-mag. stars to the NE of
the galaxy.

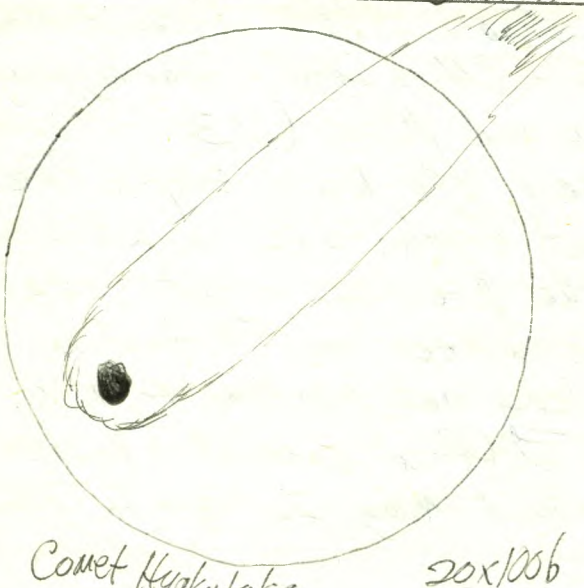
20x100b: area of T Pyxidis, M42, M43, M46, M47, NGC2423
near M47, R Leonis - very bright - about mag. 6; Comet
Comet Hyakutake



Comet Hyakutake 20x100b.
6:00 UT Mar. 17-18, 1996 Mag. 3.
3° tail.



Og
Os Mar. 18
RSNO 19:45-19:50UT

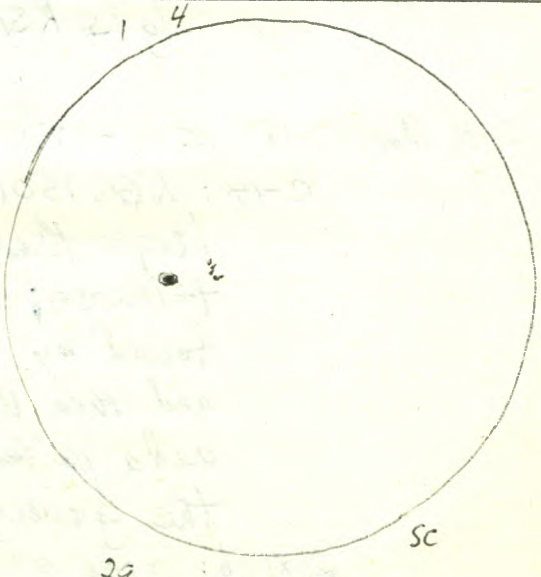


Comet Hyakutake 20x100b
5:00UT Mar. 18-19, 1996 Mag. 3

Og
Os Mar. 19
RSNO 19:55-20:00 UT

Comet Hyakutake
about mag. 0.
Very prominent.

17e
30°-35° tail
from near γ Boo to
near ε Vir.



2g
5s Mar. 24
RSNS 19:15-19:20 UT.

1996

Hyakutake - near Libra-Virgo border, very easily seen naked-eye at about mag 3. - long clearly seen (in binoculars) tail stretching NW about 3°.

M.
Mar. 18 19:45-19:50 UT ss C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

M-T.
Mar. 18-19 03:30-06:00 UT y s-9(?) T 8.5-9 20x100b
Kemble's Cascade, NGC 1502 nearby, BD Cam and BK Cam, Tr 3 - OC in Cam., area of NGC 1501 (See U 18 for all of these objects; M35 and NGC 2158 nearby, M36, M37, M38, Comet Hyakutake in Virgo at mag. 3 with 3° tail seen in binoculars - very easily seen as large "snowball" naked-eye, - photographed the comet unguided (50 mm) and guided (200 mm).

comet Hyakutake

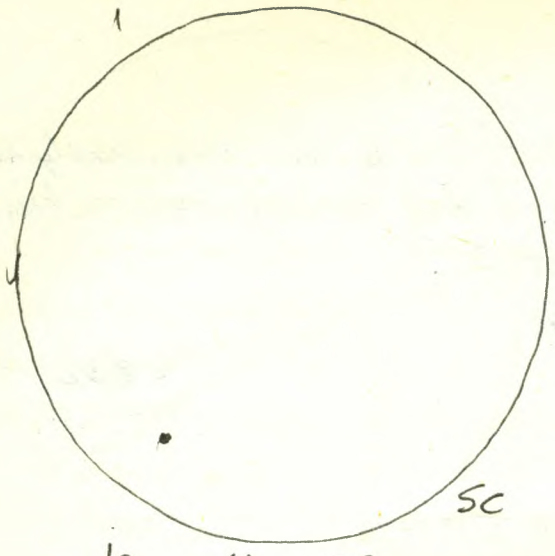
Tu.
Mar. 19 19:55-20:00 UT ss. C-8, 32, 28, 20, 15.5
sun Og Os RSNO

S.-S.
Mar. 23-24 04:20-07:10 UT 00 ne and C-14, GEG, 55
ne: stars, constellations and the comet observed after returning from RASC National Council Meeting in Toronto
Comet Hyakutake - about mag. 0 (!) - very prominent with large coma and 30°-35° tail visible naked-eye - white in colour - near end of session - near the zenith - comet near ρ Boo - tail reaching to area of ε Vir. - They are about 35° apart.
- photographed the comet.

ne: Comet Hyakutake with 30° tail.

C-14, GEG, 55 mm: nucleus and area of the coma of the comet.
Coma - huge, white; nucleus small - solid white.
- distance of the comet: Mar. 24 (0h UT) - 0.111 AU !
(currently near its closest approach to earth - about 15 million km.
Mar. 25 (0h UT) - 0.102 AU !
Mar. 26 (0h UT) - 0.104 AU !

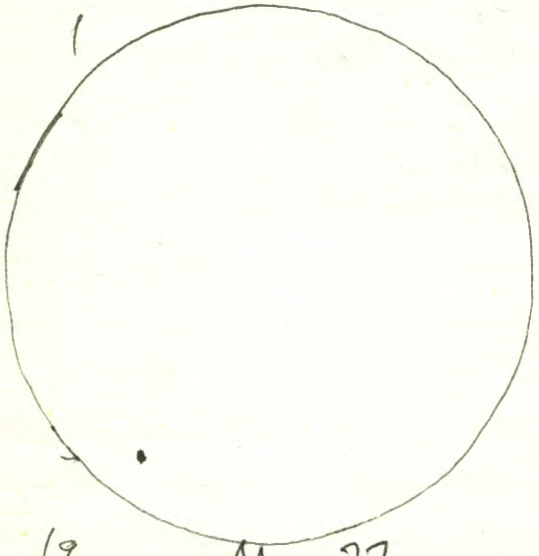
Su. Mar. 24 19:15-19:20 UT ss. C-8, 32, 28, 20, 15.5.
sun 2g 5s RSN 25



lg
ls
RSN11

Mar. 26
21:07 UT

Comet Hyakutake - about 4° from Polaris and tail through the Big Dipper.



lg
ls
RSN11

Mar. 27
21:50 - 21:55 UT

1996

M.-T. Mar. 25-26 04:15-04:20 UT nd bg, m/ ne

Comet Hyakutake

Comet Hyakutake at about mag. 0. in NNE, amid the clouds on a very blustery night that had a vicious rainstorm and thunderstorm, briefly, and only a very few clear spots for a brief while. Because of the moonlight very little of the comet's tail could be seen - perhaps no more than 2°. The weather has been somewhat frustrating while the comet has been at its best.

T. Mar. 26 21:07 UT t. C-8, 32

sun lg ls RSN11 - observed amid clouds and blustery T.O.F. weather

T.-W Mar. 26-27 06:50-8:10 UT y s-9(1) T9 ne; 9x63b; camera

Comet Hyakutake

- After observing Comet Hyakutake several times i.a.w. evening, I decided to set the alarm for 1:40 a.m. E.S.T., 1 min. after Moonset to observe and photograph the comet, Comet Hyakutake, which at 8h UT was at +86° - 40° from the N.C.P. It was about at mag. 0.5 with about a 35° tail extending from the comet, near Polaris, through the side of the cup of the Big Dipper, near the star Megrez. The tail was very clearly visible ne. and quite spectacular. I observed and photographed the comet for about 1 hour. - photographed comet with 50mm + 28mm lenses

W. Mar. 27 21:50-21:51 UT t C-8, 32, 28, 20, 15.5

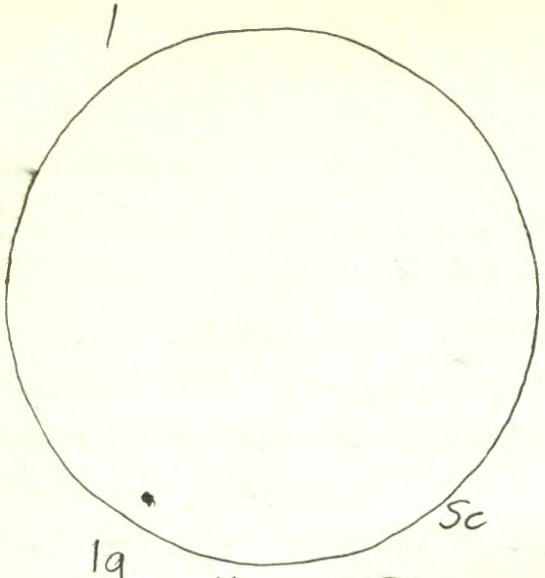
sun lg ls RSN01

W.-Th. Mar. 27-28 07:30-08:30 UT y 9x63b; camera

Comet Hyakutake

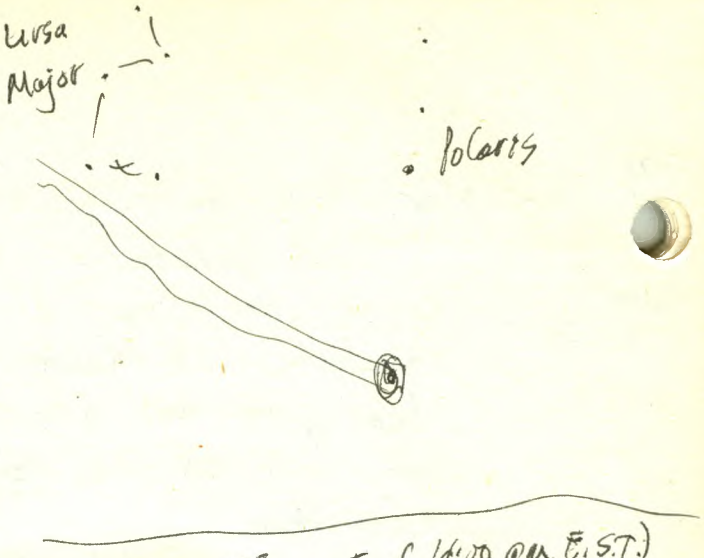
After observing the comet in the evening several times, I set alarm clock and observed it from about 2:30-3:30 a.m. E.S.T. It was about 10° below Polaris with tail extending about 30° to area of Dubhe and Merak. - about mag. 1. photographed the comet.

1



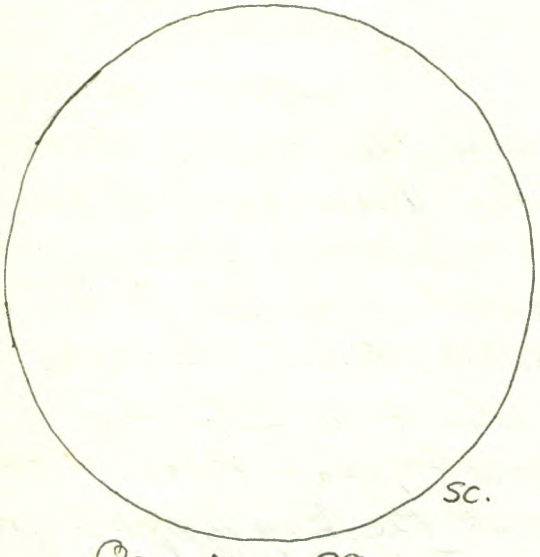
Ig
IS
RSN 11

Mar. 28
20:45 - 20:50 UT



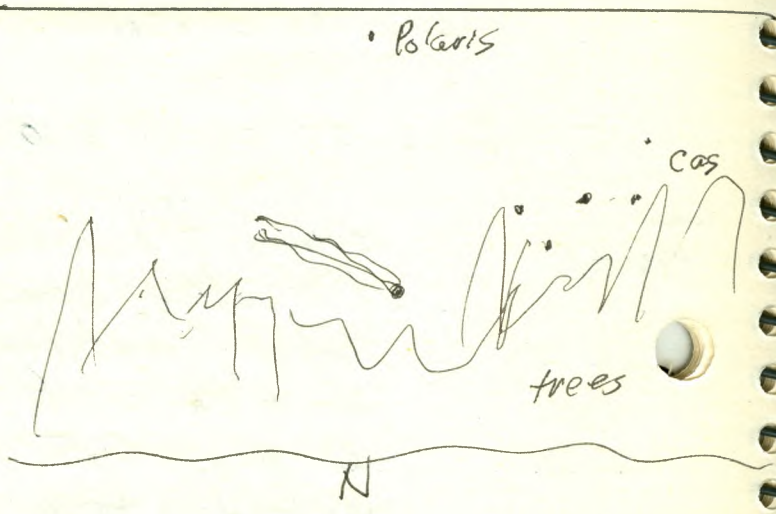
04:00 UT (4:00 a.m. E.S.T.)

Mar. 28-29 Comet Hyakutake ne.



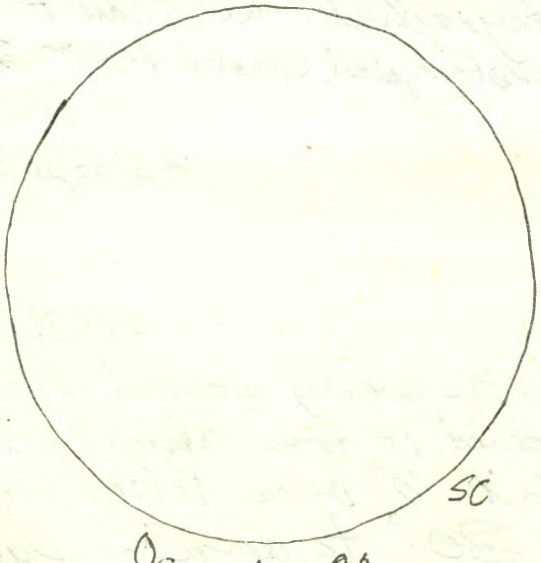
Og
Os
RSNO

Mar. 29
20:20 - 20:25 UT



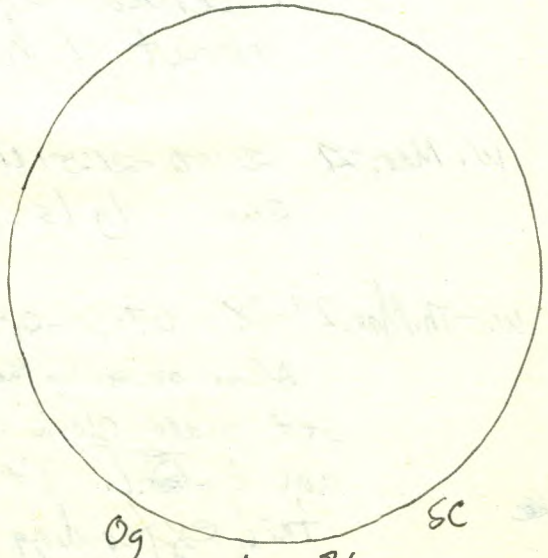
09:00 UT (4:00 a.m. E.S.T.)

Mar. 29-30 Comet Hyakutake ne



Og
Os
RSNO

Mar. 30
19:10 - 19:15 UT



Og
Os
RSNO

Mar. 31
19:00 - 19:05 UT

1996

Th. Mar. 28 20:45-20:50 UT t C-8,32,28,20,15.5
sun 1g 1S RSN11 T.O.F.

Th.-F. Mar. 28-29 08:00-09:20 UT y S-8(?)T9 me; camera
C.H. After observing Comet Hyakutake under gibbous moonlight in the evening and before midnight and seeing the coma easily at mag. 1, I got up at 2:50 a.m. E.S.T. to observe and photograph the comet. The tail was about 25° long and visible to the naked eye. The comet was about 15° from Polaris and the coma was very large, and during the session about directly below Polaris with the tail directed toward a point near the Big Dipper. - about 4 meteors that may have come from the area of Ursa Major - one a point meteor.

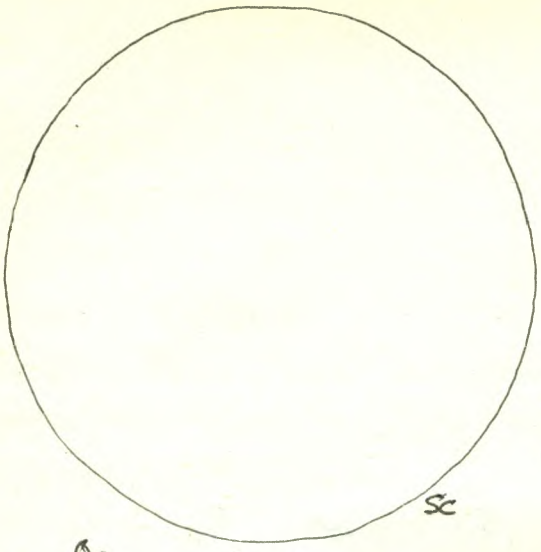
F. Mar. 29 20:20-20:25 UT t C-8,32,28,20,15.5.
sun 0g 0s RSN0 T.O.F.

F.-S. Mar. 29-30 09:00-09:30 UT y S-8?T9 me, 9x63b.
C.H. Comet Hyakutake in N. about 20° from Polaris and almost directly below Polaris at mag. 1.5 with a large coma still. It was about 10° to the left of Cassiopeia (10° from the most easterly - "most to the left" - of the bright stars of Cassiopeia. - photographed the comet - saw three meteors that may have come from the area of Ursa Major - again

Sa. Mar. 30 19:10-19:15 UT ss C-8,32,28,20,15.5
sun 0g 0s RSN0 A.P.F.

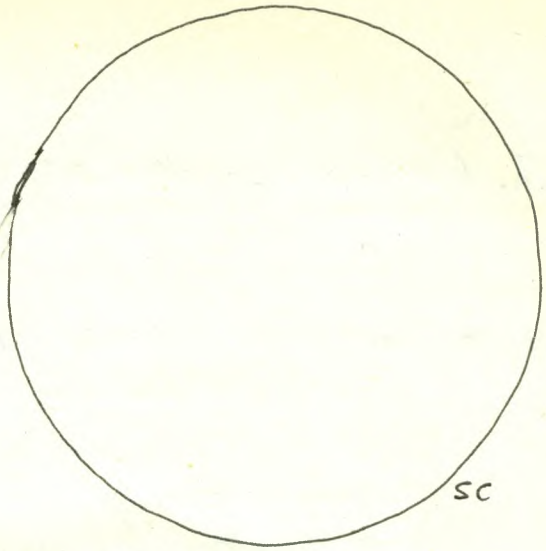
Su. Mar. 31 19:00-19:05 UT ss C-8,32,28,20,15.5
Sun 0g 0s RSN0 A.P.F.

S.-M. Mar. 31-Apr. 1 01:45-01:50 UT y gml, some cloud 7x35b
C.H. - Venus about 2° below Pleiades in WNW; Comet Hyakutake in NNW, about half-way between Venus and Polaris, tail about 3° long in the binoculars - about mag. 2 - difficult or impossible for



Og
Os
RSNO

Apr. 2
20:40-20:45 UT



Og
OS
RSNO

Apr. 3
21:00 -21:05 UT

1996

me to see naked-eye because of the bright moonlight, or the clouds or both.

M.-T. Apr. 1-2 00:45-00:50 UT nd gml ne; 10x25b
comet Hyakutake constellations; Comet Hyakutake in NW with 3° tail seen in binoculars - mag. 2.5; not easily seen ne, if at all because of the bright moonlight.

Tu. Apr. 2 20:40-20:45 UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

W. Apr. 3 21:00-21:05 UT t C-8, 32, 28, 20, 15.5.
sun Og Os RSNO T.O.F.

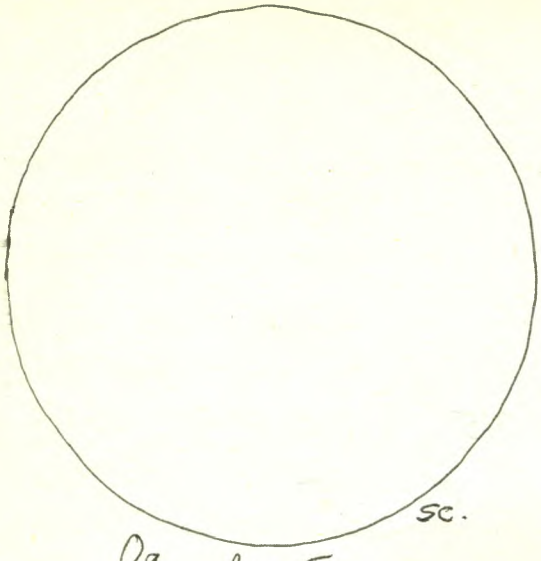
W.-Th. Apr. 3-4 23:15-02:20 UT sh near dock 20x100b; ne
- observed and photographed the total lunar eclipse. The weather was excellent. The eclipse was in progress before the moon rose. I first saw the very dark moon at 23:56 UT - later than I had expected, probably because the moon was so dark. It appeared near the tree-tops across the lake. Rising azimuth had been 99°.

Times:

	UT	
Moonrise	23:33	- 6:33 p.m. E.S.T
Sunset	23:35	- 6:35 p.m. E.S.T.
Mid-Eclipse	00:10	- 7:10 p.m. E.S.T
U3	00:53	- 7:53
E.A.T.	01:15	- 8:15
U4	01:59	- 8:59
P4	03:03	- 10:03

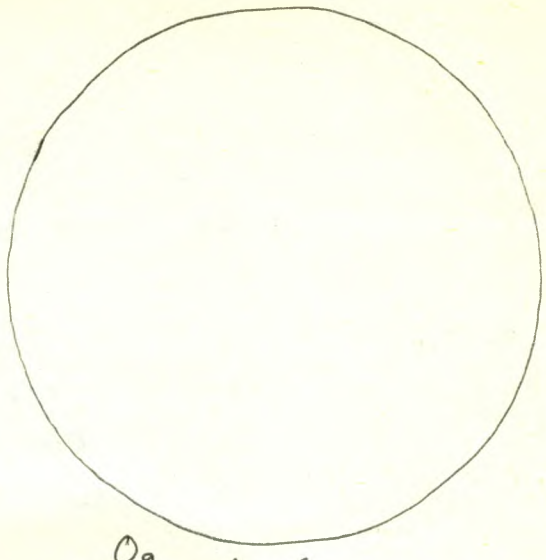
At first the moon appeared very dark near the N. Pole area and reddish-orange in the southern hemisphere. Later in the total phase it appeared orangish except near the S. Pole area which appeared yellowish. The moon appeared generally very dark.
- also seen: - Venus extremely close to the Pleiades. The Pleiades could be seen in binoculars.

C.H. 00:50-02:20 UT - Comet Hyakutake in the central part of Perseus
- slight tail visible to naked eye; 5° tail visible in binoculars.
mag. 2.5



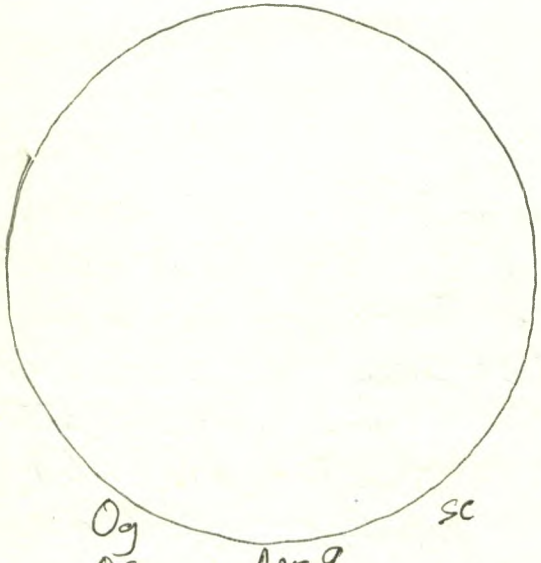
Og
Os
RSNO

Apr. 5
18:40-18:45 UT



Og
Os
RSNO

Apr. 6
20:35-20:40 UT



Og
Os
RSNO

Apr. 9
20:00-20:10 UT

Og
Os
RSNO

Apr. 12
19:40-19:45 UT

1996 F. Apr. 5 18:40-18:45 UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F

F.-S. Apr. 5-6 01:30-01:47 UT y S-8?T9.5! 9x63b
Comet Hyakutake Comet Hyakutake easily seen ne - about 3° from Algol with tail pointed upward - 1° ne, 5° in binoculars - comet at about mag. 2.8.; M41, M42, M46, M47, area of Rhesus and of τ Pyxidis; Venus about 1° from Pleiades Moon rose at 01:47, and I quit observing because of the very considerable brightness in the eastern sky

Sa. Apr. 6 20:35-20:40 UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

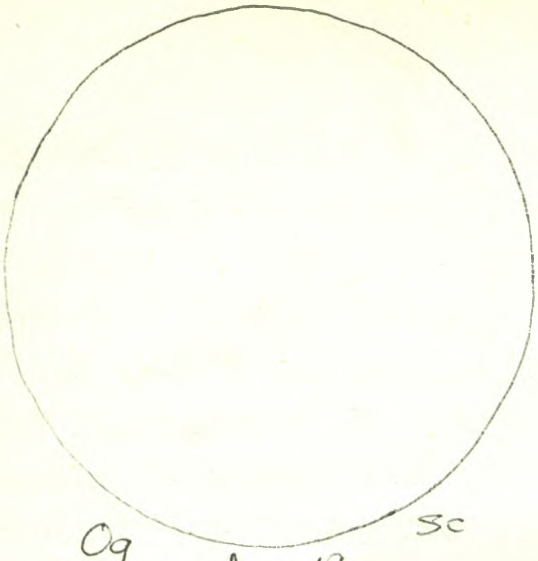
Tu. Apr. 9 20:00-20:10 UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F

T.-W. Apr. 9-10 02:40-02:50 UT y S-8(?)T9.5! 9x35b
Comet Hyakutake Comet Hyakutake - seen near Algol ne. - about mag. 3.5 with 1° tail pointing upward; - with binoculars - about 4°-5° tail - very distinct - still a very beautiful object.

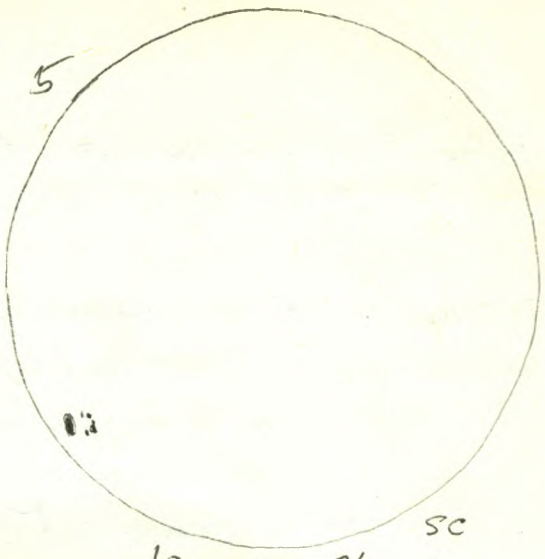
W.-Th. Apr. 10-11 01:18-01:22 and 02:45-02:50 UT y S-8T9 7x35b
M42, M41, area of Rhesus, Comet Hyakutake in Perseus about 1° from Algol with tail of about 5° going right over the star Algol - mag. about 2.8-3.0 - tail of about 1°-2° visible naked-eye
Comet Hyakutake

F. Apr. 12 ~~19~~ 19:40-19:45 UT t. C-8, 32, 28, 20, 15.5
sun Og Os RSNO

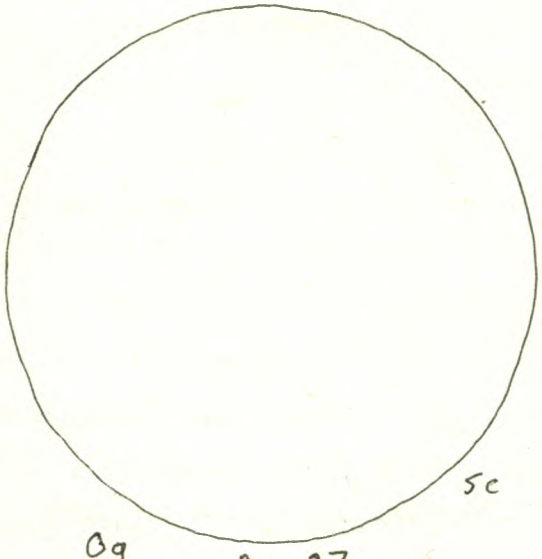
S.-M. Apr. 14-15 01:45-02:30 UT ss, y S-8(?)T9.5 ne; 9x63b; Ast, 32, 28, 20, 15.5
9x63b: Comet Hyakutake with ~~6~~ 6°-~~8~~ tail in the binoculars and easily seen ne at about mag. 2.5 and about



Og
Os
RSNO Apr. 19
20:15-20:20UT



1g
5s
RSNIS Apr. 21
19:00-19:05UT



Og
Os
RSNO Apr. 27
20:35-20:40UT

5° SW of Algol with the tail going upward through ε Per and ω Per
Ast: Comet Hyakutake with tail easily seen about 2½ fields or about 8° to 10°, M35, two of the clusters in Auriga, Venus showing crescent phase
Aa Aurora - a glow - was seen in the N. The Zodiacal Light was very bright.

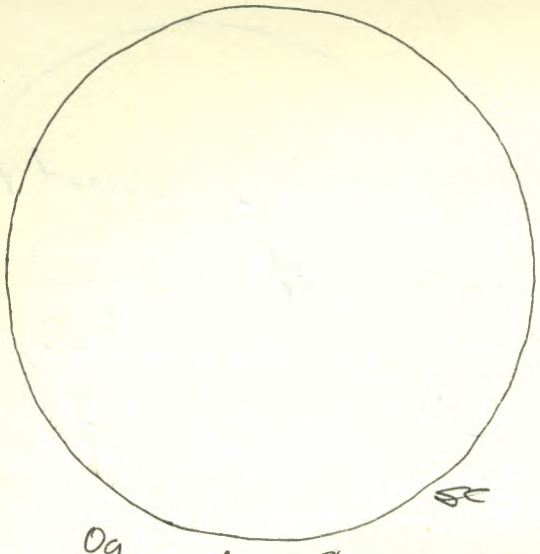
F. Apr. 19 20:15-20:20UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO

F.-S. Apr. 19-20 01:25-01:45UT y before e.a.t; soave cloud 9x63b
Crescent Moon low in WNW; Comet Hyakutake in NW below Algol in Perseus - about Mag. 2 but in haze and cloud and low and with tail in binoculars of about 3°; M35, M36, M37, M38, Venus.
Comet Hyakutake

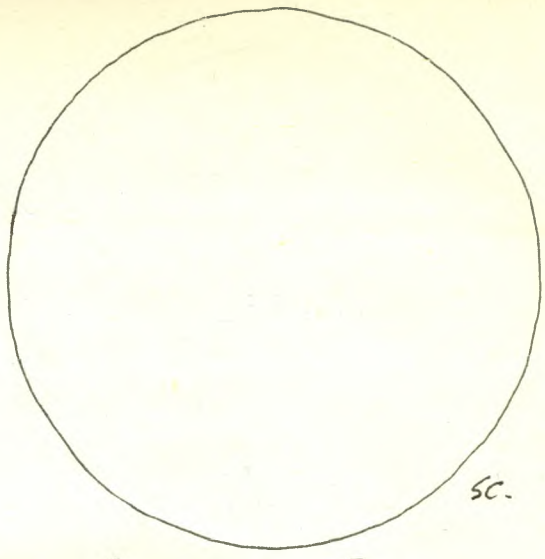
Su. Apr. 21 19:00-19:05UT ss C-8, 32, 28, 20, 15.5
Sun/g 5s RSN15

S.-M. Apr. 21-22 01:00-02:45UT y during twl. + after, Cml ne, 9x63b
ne: Constellations and several meteors, including Lyrids, one of which, at 02:10UT was very bright - about mag. -1; Venus, cr. Moon and earthshine
9x63b - M35, Mercury - first seen when up about 10° in WNW. Comet Hyakutake - at about mag. 2.5 but not too easy to see ne. because of the moonlight in the soave area of the sky; tail about 3° and extending upward - comet about 12° to right and slightly up from Mercury
Mercury
Comet Hyakutake
cr. Moon and earthshine, Venus, M13, Alcor and Mizar. (Denise and Cathy Hall also observed)

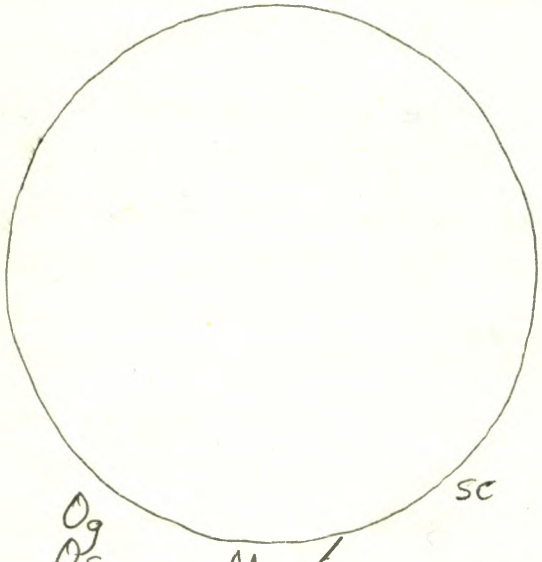
Su. Apr. 27 20:35-20:40UT ss C-8, 32, 28, 20, 15.5
sun Og Os RSNO



Og
Os
RSNO
Apr. 28
18:50-18:55UT

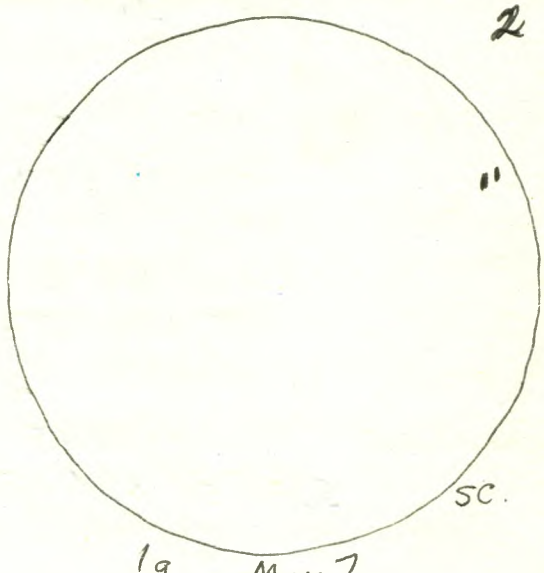


Og
Os
RSNO
May 5
18:05-18:10UT

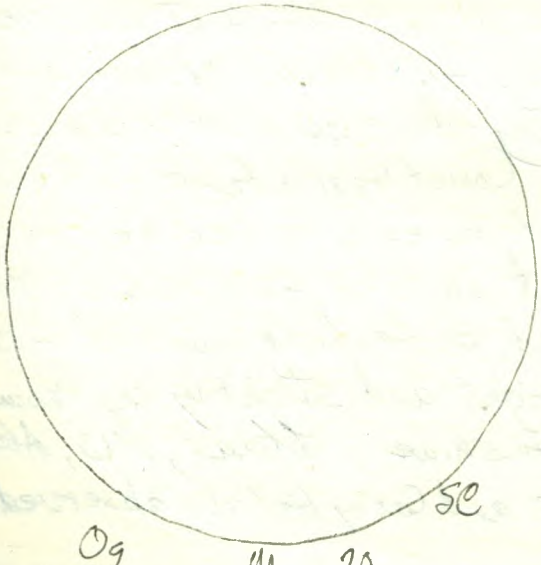


Og
Os
RSNO
May 6
20:50-20:55UT

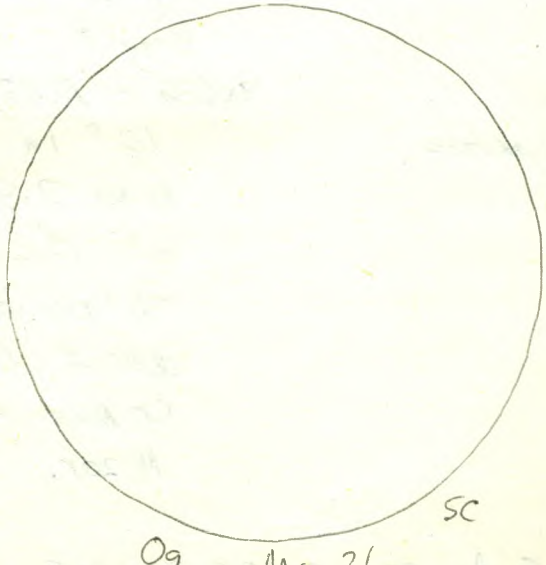
2



1g
2s
RSN12
May 7
20:40-20:45UT



Og
Os
RSNO
May 20
18:25-18:30UT



Og
OS
RSNO
May 21
20:15-20:20UT

1996 (4:40 - 5:00 @ M.E.S.T)

S.-S. Apr. 27-28 08:40 - 09:00 UT y twl 20x100b

I thought I might be able to see Comet Hale-Bopp, but could not because of twilight which was too bright by the time I had found the area in Sagittarius. Comet Kopff was in the same area, but also not seen for sure (See Sky and Telescope, May 1996, page 25.) I saw Jupiter and 3 of its moons. It also was in Sagittarius near the "Teaspoon."

Su. Apr. 28 18:50 - 18:55 UT ss C-8, 32, 28, 20, 15.5

sun Og Os RSNO

Su. May 5 18:05 - 18:10 UT ss C-8, 32, 28, 20, 15.5 T.O.F.

sun Og Os RSNO

M. May 6 20:50 - 20:55 UT ss C-8, 32, 28, 20, 15.5. T.O.F.

sun Og Os RSNO

Tu. May 7 20:40 - 20:45 UT ss C-8, 32, 28, 20, 15.5

sun 1g 2s RSN12

S.-M. May 12-13 01:00 - 01:10 UT t twl C-8, 28, 15.5

Venus. Venus - a slim crescent with the possibility of having seen some "ashen light" in the dark part of the disk. - my first use of a telescope following cataract surgery on the left eye and the implanting of an intra-ocular lens.

M. May 20 18:25 - 18:30 UT t C-8, 32, 28, 20, 15.5. (T.O.F)

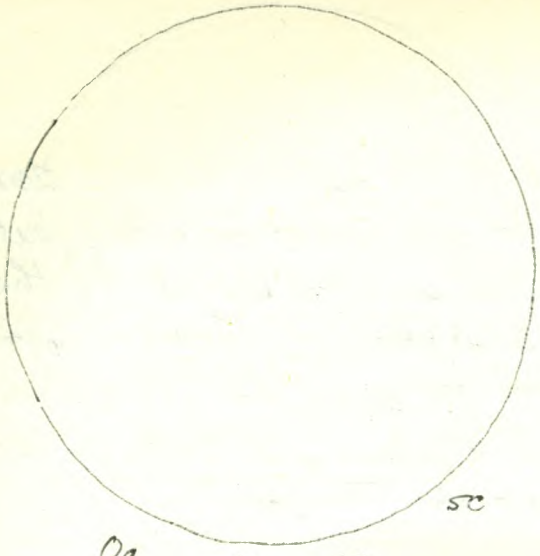
sun Og Os RSNO.

T. May 21 20:15 - 20:20 UT t C-8, 32, 28, 20, 15.5 T.O.F.

sun Og Os RSNO

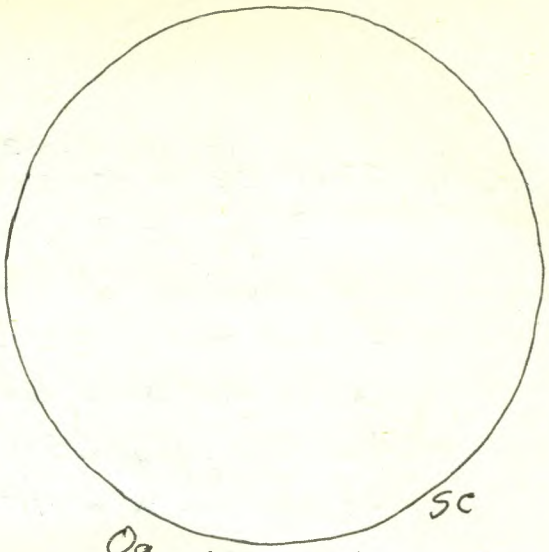
T.-W May 21-22 04:15 - 04:20 UT y S-9(?) T 8.5-9 ME

Spring constellations



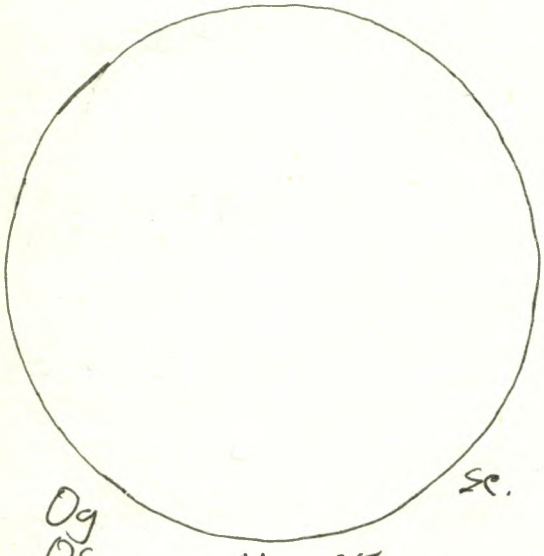
Og
Os
RSNO

May 22
20:00-20:05 UT



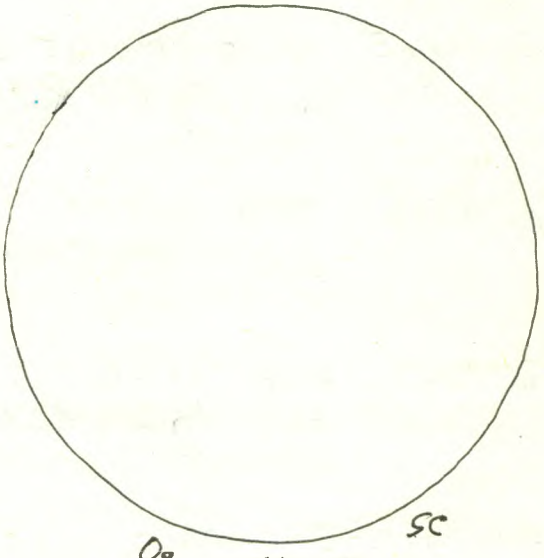
Og
Os
RSNO

May 24
19:10-19:15 UT



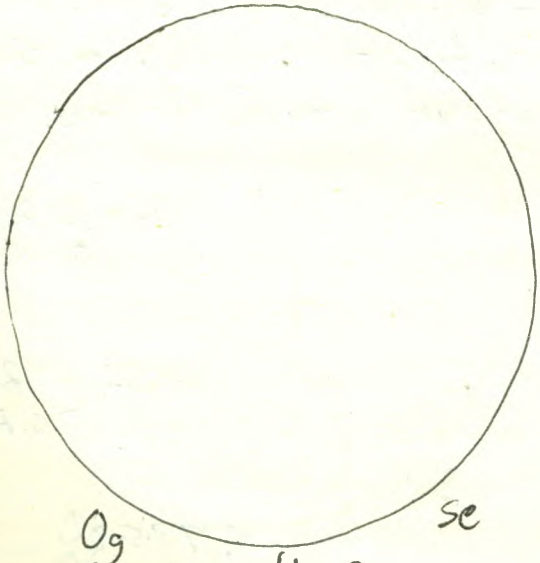
Og
Os
RSNO

May 25
18:35-18:40 UT



Og
Os
RSNO

May 30
19:50-19:55 UT



Og
Os
RSNO

May 31
20:25-20:30 UT

1996

W. May 22 20:00-20:05 UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

F. May 24 19:10-19:15 UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO. T.O.F.

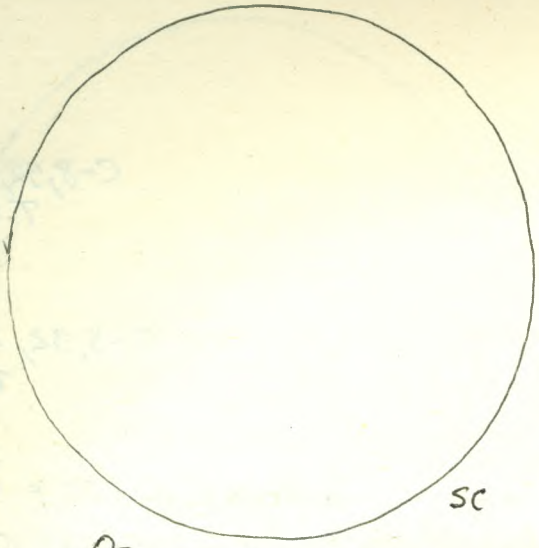
F.-S. May 24-25 06:30-06:30 UT 00 afterms. S-8?T9 20x100b C-14, 22,
- observed only periodically before moonset at 05:30 UT
re:- spring and summer constellations
20x100 6: M4, M80, M16, M17, M18, M24, M11,
comets 2 comets: Comet Kopff (R.A.: 19h 01m, Dec.-15.8°)
very diffuse and about mag. 8, appreatly fainter than predicted in Sky and Telescope,
and no hint of a tail. (See U296.)
Comet Hale-Bopp (R.A. 19h 33m, Dec.-15.3°)
small, more defined and probably brighter than
predicted, perhaps at mag. 6.5 (See Sky and Telescope
May 1996, pages 24 and 25) (See U247.)
Jupiter, M22
C-14: M57, Jupiter and 4 moons, Comet Hale-Bopp.

Sa. May 25 18:35-18:40 UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

Th. May 30 19:50-19:55 UT SS C-8, 32, 28, 20, 15.5
sun Og Os RSNO A.P.F.

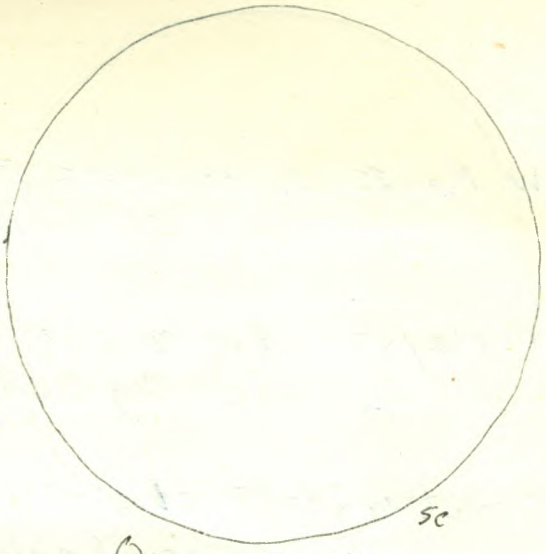
F. May 31 20:25-20:30 UT SS C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

F.-S. May 31-June 1 01:20-01:30 UT y two and four one
- looked among trees low in NW to try to observe Venus
which had gotten very low, but did not see it.
Venus. The previous night at about the same time I had seen
Venus about 4° above the N.W horizon at about
01:30 UT (9:30 p.m. E.D.T)



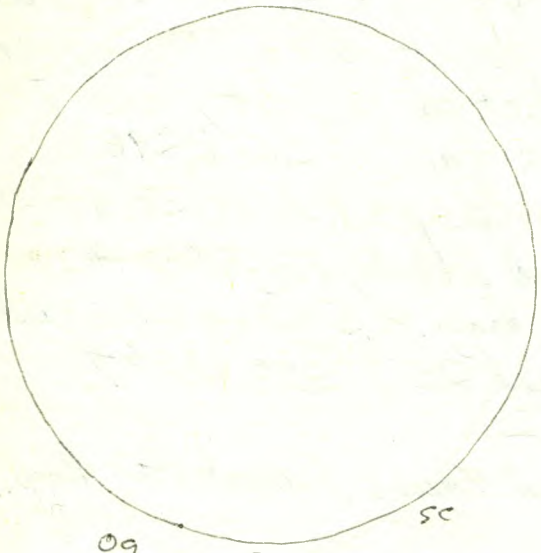
Og
Os
RSNO

June 2
18:40-18:45 UT



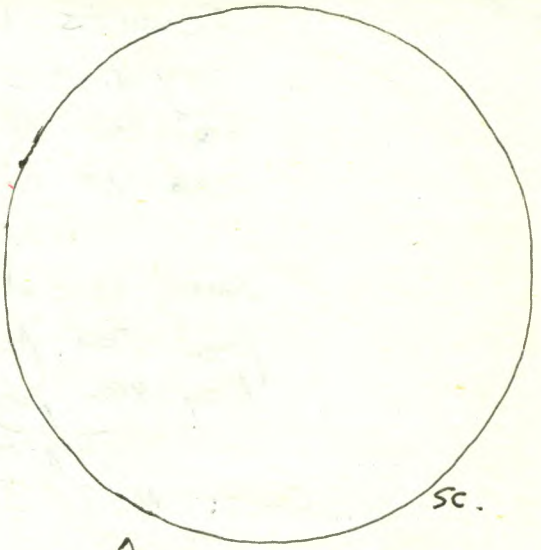
Og
Os
RSNO

June 10
20:35-20:40 UT



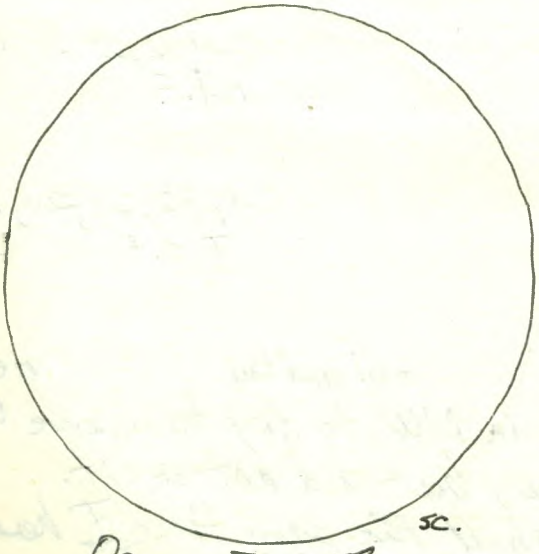
Og
Os
RSNO

June 11
19:55-20:00 UT



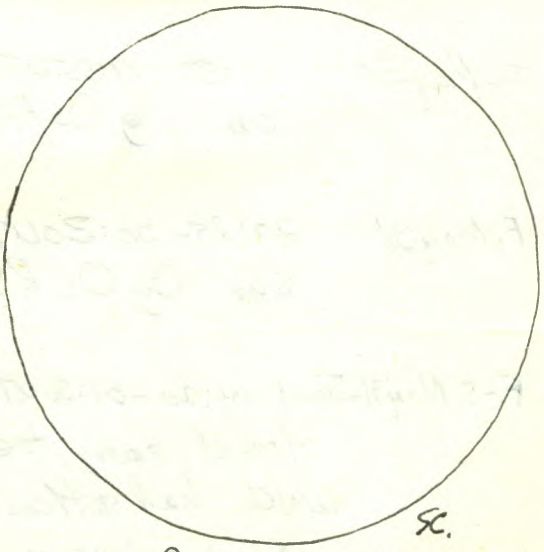
Og
Os
RSNO

June 12
19:40-19:45.



Og
Os
RSNO

June 15
18:10-18:20 UT



Og
Os
RSNO

June 16
19:50-19:55 UT

1996 Sa. June 2 18:40-18:45 UT t — C-8, 32, 28, 20, 15.5
Sun Og Os RSNO

M. June 10 20:35-20:40 UT t — C-8, 32, 28, 20, 15.5 T.O.F.
Sun Og Os RSNO

T. June 11 19:55-20:00 UT t — C-8, 32, 28, 20, 15.5 T.O.F
Sun Og Os RSNO

W. June 12 19:40-19:45 UT t — C-8, 32, 28, 20, 15.5 T.O.F.
Sun Og Os RSNO

Sa. June 15 18:10-18:15 UT t — C-8, 32, 28, 20, 15.5 T.O.F
Sun Og Os RSNO

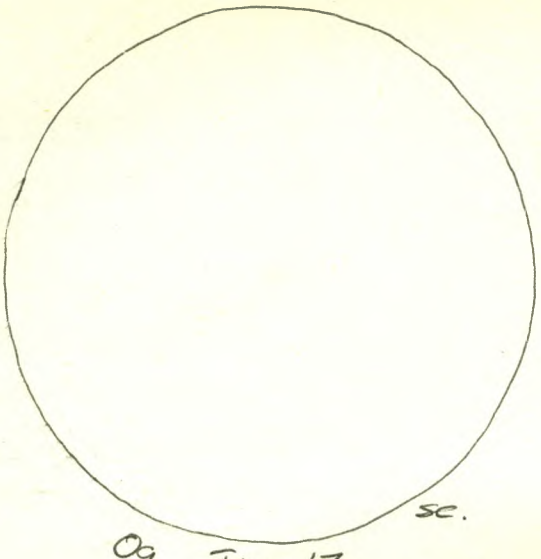
S.-S. June 15-16 02:00-05:00 UT 00 — S-8, T9.0-9.5. ne; 20x1006.
n.e.: Both before and after the end of astronomical twilight which was at 03:17 UT, I observed constellations, both "ne" and with the glasses with the newly replaced "left lens" which seemed to have only a slight correction.
20x1006: M4, M80, M20, M21, M8, M22, M16, M17, M18, M24, Comet Hale-Bopp which was bright at about mag. 6, and in northern Sagittarius and at about R.A.: 19h15m, Dec.: −13°.5 (See U296.) M11 and R Scuti area, Jupiter and 3 moons.

Comet

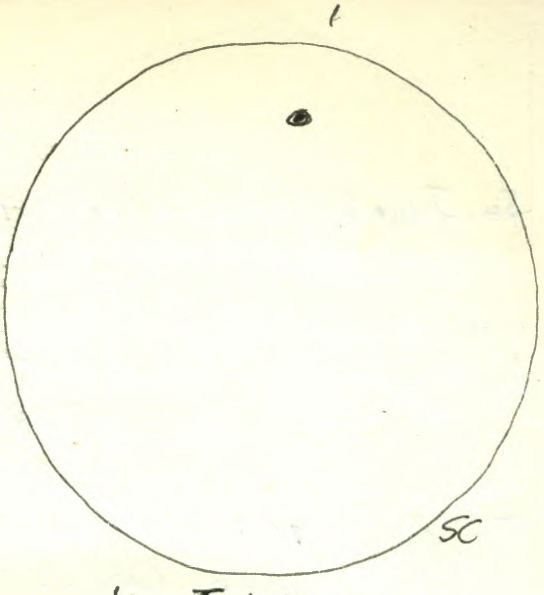
Su. June 16 19:50-19:55 UT t — C-8, 32, 28, 20, 15.5 T.O.F.
Sun Og Os RSNO

M. June 17 21:35-21:40 UT t — C-8, 32, 28, 20, 15.5 T.O.F.
Sun Og Os RSNO

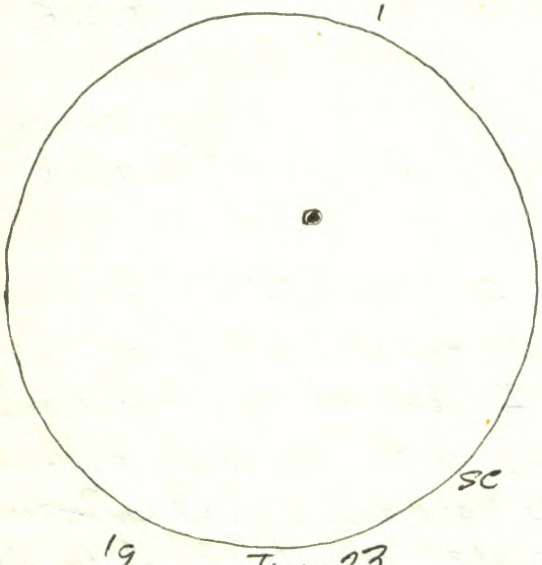
F. June 21 19:50-19:55 UT t — C-8, 32, 28, 20, 15.5 T.O.F.
Sun Og Os RSNO



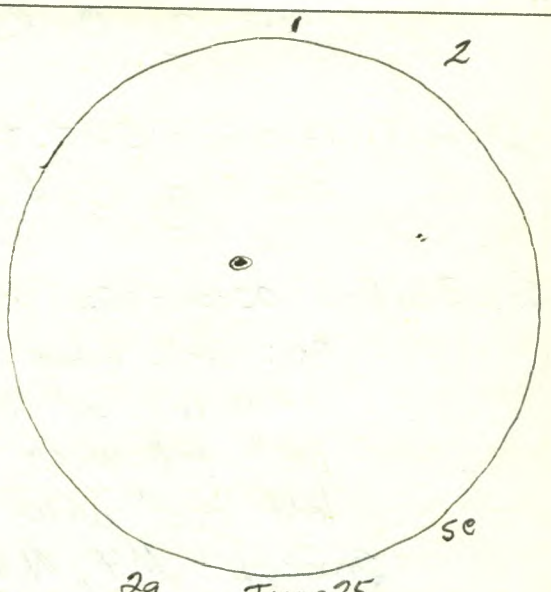
Og June 17
Os
RSN0 21:35 - 21:40 UT



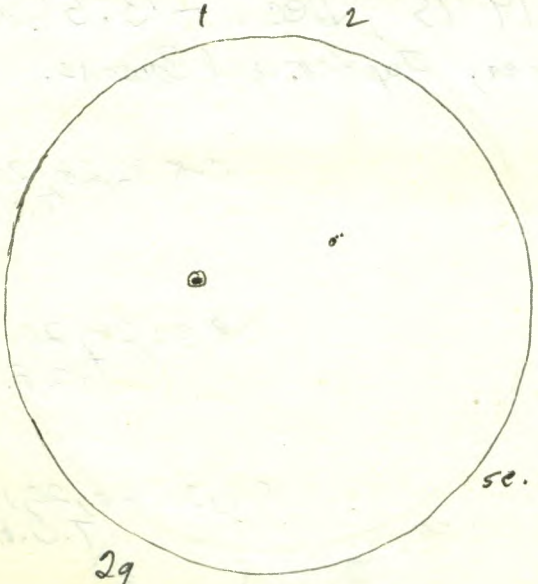
1g June 21
1s 19:50-19:55 UT
RSN11



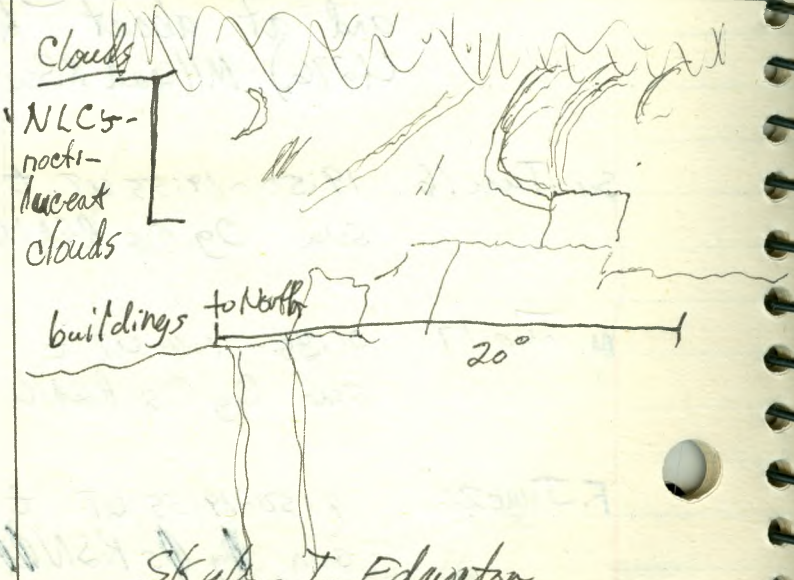
1g June 23
1s 20:00 - 20:05 UT
RSN11



2g June 25
3s 19:40-19:45 UT
RSN23



2g June 26
3s 20:50 - 20:55 UT
RSN23



Skyline In Edmonton
Sa-Su. June 29-30 06:30-07:00 UT
12:30-1:00 am MDT.

1996

S.-S. June 22-23 05:40 - 05:50 UT y s8(?) T8 (some cloud, 650) 7x35b
Jupiter, M22, M8, M16, M17, M24 (star cloud)
M11, Alcor and Mizar.

Su. June 23 20:00-20:05 UT ss C-8, 32, 28, 20, 15.5
sun 1g 1s RSN11 T.O.F

Tu. June 25 19:40-19:45 UT ss. C-8, 32, 28, 20, 15.5
sun 2g 3s RSN23 T.O.F.

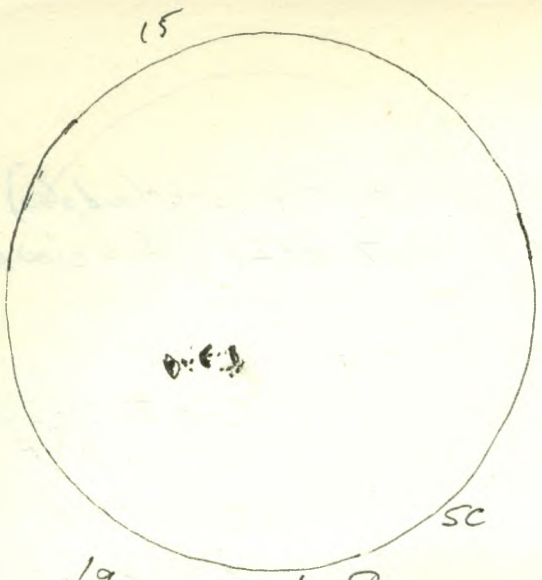
W. June 26 20:50-20:55 UT ss C-8, 32, 28, 20, 15.5
sun 2g 3s RSN23 T.O.F.

12:30 - 1:00 M.D.T Kelsey Hall
Sa.-Su. June 29-30 06:30 - 07:00 UT at G.A. in Edmonton twl ne

NLC's

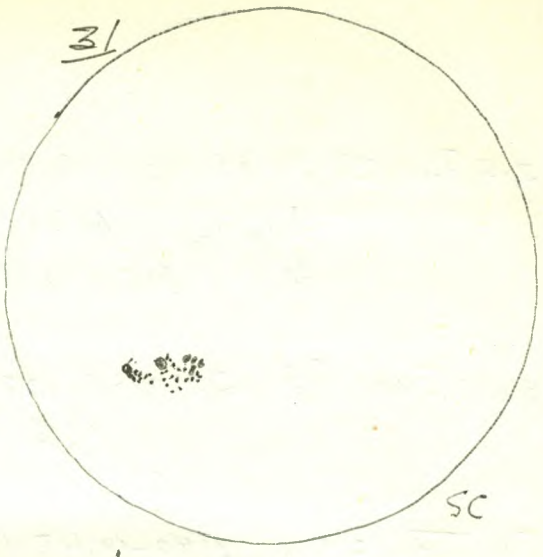
During the General Assembly at the University of Alberta in Edmonton, several of us saw a display of noctilucent clouds in the north about a half hour after midnight. We had been on the fourth floor of Kelsey Hall Residence when someone announced that they could be seen. We went up to the laundry room on the tenth floor. Looking north we saw one or two C-shaped glowing clouds about 2 or 3 degrees above the horizon. The glow was distinctly white. Gradually they became apparent further to the left until they were 15° to 20° wide. A "diagonal cloud" and a "reverse-C" became part of the sight. (See diagram.) It was perhaps my first sighting of noctilucent clouds. In a paper presented that day Mark Zalcik had explained that they were best seen when the sun was 6° to 16° below the horizon. At this time of year the sun from Edmonton is not seen below 18° below the horizon, and so there is what is called "perpetual twilight."

Th.-F. July 4-5 02:00-03:40 UT oo twl and gml 20x100b; C-14, 19
20x100b: M4, M80, M20, M21, M16, M17, M18, M24, M22,



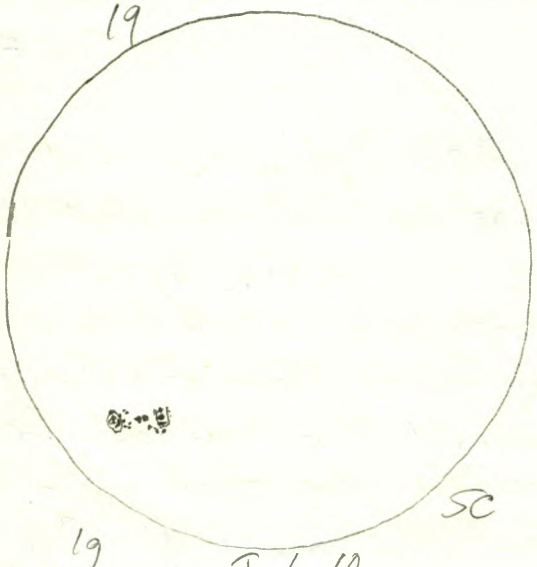
19
15S
RSN 25

July 8
19:00-19:05 UT



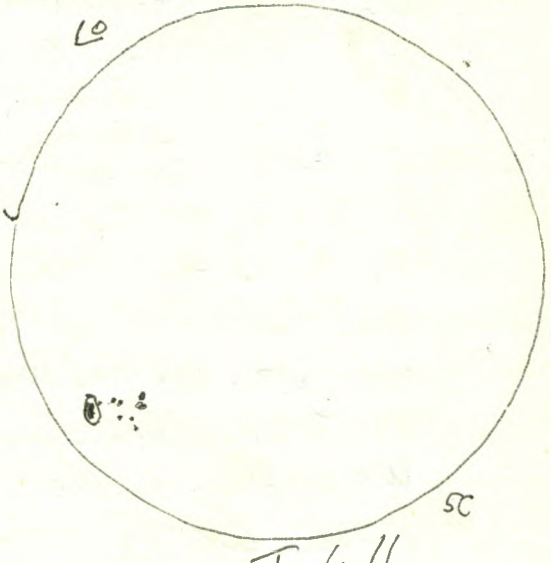
19
31S
RSN 41

July 9
1910-19:15 UT



19
19S
RSN 29

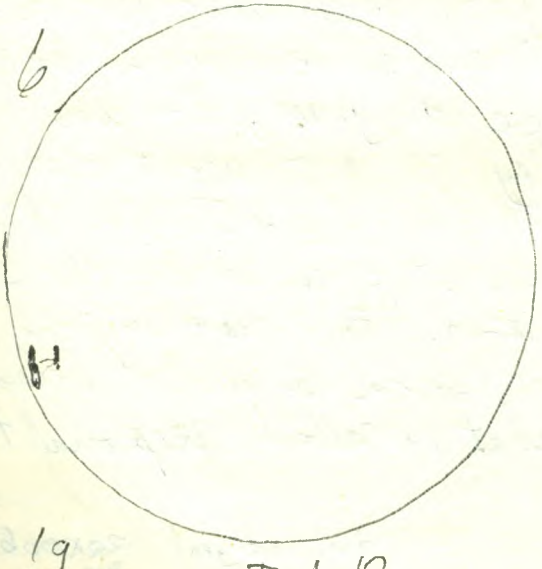
July 10
19:45-19:50 UT



July 11

19
10S
RSN 20

17:35-17:40 UT



19
6S
RSN 16

July 12
18:35-18:40 UT

1996

M11, M26, Comet Hale-Bopp in Scutum about 2°-3° SE of M26 and about mag. 6 - quite large and distinct, but little evidence of a tail in the binoculars; Jupiter and 3 of 4 moons (?) in the binoculars.
C-14: Jupiter and 4 moons; M57.
Session was short since moonrise interfered with observing.

Comet.

M. July 8 19:00-19:05 UT SS — C-8, 32, 28, 20, 15.5 (T.O.F.)
Sun lg 15s RSN 25

T. July 9 19:10-19:15 UT SS — C-8, 32, 28, 20, 15.5 (T.O.F.)
Sun lg 31s RSN 41

W. July 10 19:45-19:50 UT SS — C-8, 32 T.O.F
Sun lg 19s RSN 29 Clouds moved in.

W.-Th. July 10-11 02:45-05:00 UT 00 S-9(?) T 9.5! — C-14, 32, 20x100 6; 20x100 6; C-14 - M57

20x100 6: M28, M22, Jupiter and 4 moons, M16, M17, M18, M24, M11 and R Scuti, M26, Comet Hale-Bopp about 2° SSW of M26 - about mag 6 and large and diffuse, M8, M20, M21, M10, M12.
Comet.
1e: 3 Perseid Meteors, 2 of them quite bright - about mag. 2
Photographed: - areas of the Summer Milky Way including area of Comet Hale-Bopp in Scutum

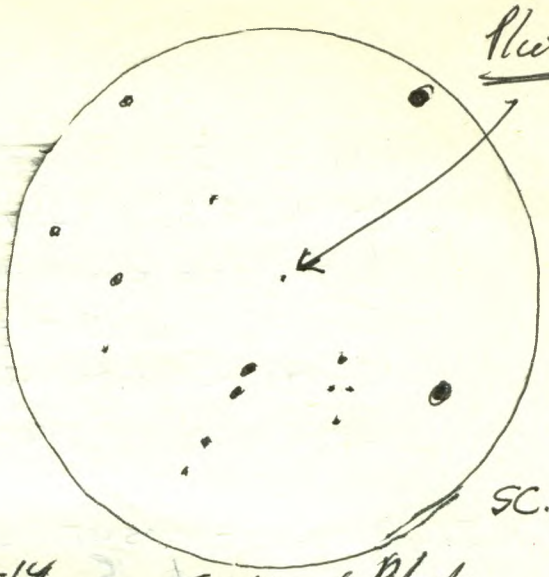
Th. July 11 17:35-17:40 UT SS — C-8, 32, 28, 20, 15.5 T.O.F.
Sun lg 10s RSN 20

Th.-F. July 11-12 03:00-04:40 UT y S-8-9(?) T 7 cirrus cloud 20x100 6.
M11, (M16)(M17)?, M26, Comet Hale Bopp - not well seen because of cloud, NGC 7789, area around γ UMa.
Comet.

F. July 12 18:35-18:40 UT SS — C-8, 32, 28, 20, 15.5.
Sun lg 6s RSN 16

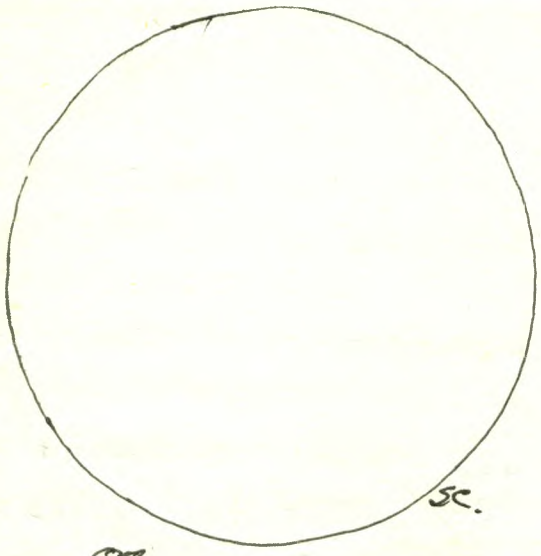
Og
Os
RSNO

July 14
19:25-19:30 UT



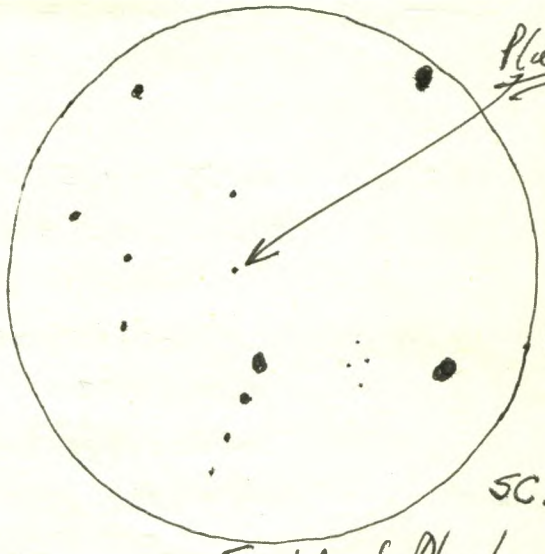
C-14
32mm ocular
122.2 X

Field of Pluto
July 16-17 :04h:08m UT



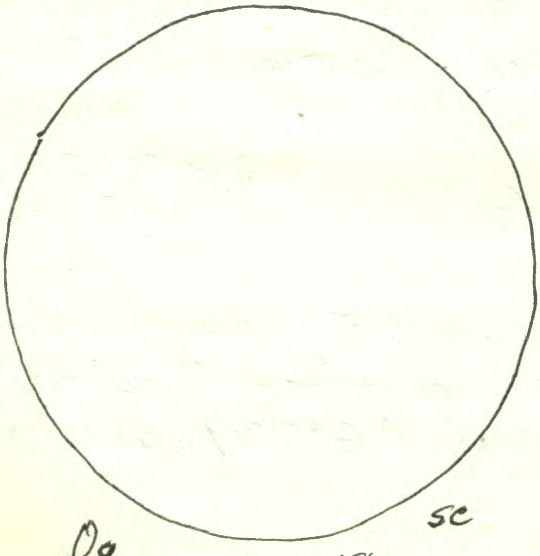
Og
Os
RSNO

July 17
17:55-18:00 UT



C-14
32mm ocular
122.2 X

Field of Pluto
July 17-18 :04:00:00 UT



Og
Os
RSNO

July 18
19:55-20:00 UT.

1996

Su. July 14 19:25-19:30 UT 5S C-8, 32, 28, 20, 15.5
sun Og Os RSN O

T.-W. July 16-17 02:30-06:15 UT S-8-9 T9 20x100b; C-14, 32, 19, 12
20x100b: Comet Hale-Bopp, M28, M11, and R Scuti, M26 area of Barnard's Star, Jupiter, M4, M80
The comet was at about mag. 6. or a bit brighter, just possibly naked-eye, but I was not certain of seeing it naked-eye.

Comet Hale-Bopp. C-14: M57, Comet Hale-Bopp with a tail that was very wide and short - forming an angle of about 75°
The comet seemed to be surrounded by a bright glow.

Pluto Pluto - in Ophiuchus about 3° SW from ε Oph near the border with Libra and Scorpius (See map in April 1996 Sky and Telescope and U 290.) It was about at R.A. (6h 6m, Dec.: 7°30'. It was difficult to spot at about mag. 14.

Photographed: various areas of the summer sky.

W. July 17 17:55-18:00 UT C-8, 32, 28, 20, 15.5.
sun Og Os RSN

W.-Th. July 17-18 02:00-05:15 UT 00 S-9 T9.5! 20x100b; C-14, 32, 19
20x100b: M8, M21, M20, M16, M17, M18, M24, M22, M28, M11 and R Scuti area, M15, M4, M80, Jupiter and 4 moons, Comet Hale-Bopp, NGC4449 NNW of βCnV

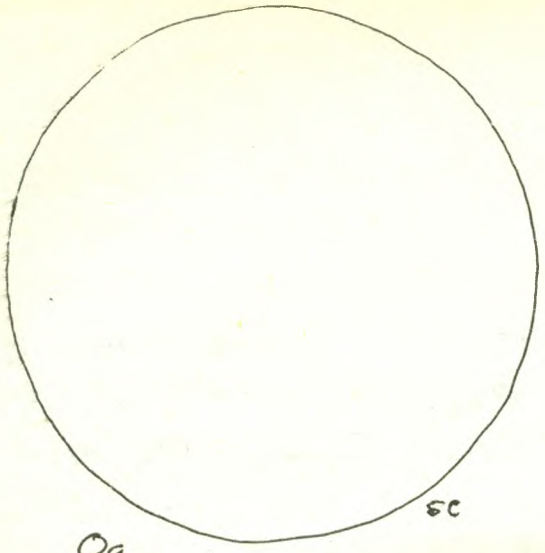
Comet Hale-Bopp
4449

C-14: Comet Hale-Bopp - about mag. 5.8 - may also have been possible to see it ne; bright but short fanning tail on the comet, as it moves through Scutum. Pluto on the second consecutive night, perhaps a little more easily seen. (See diagram); M57

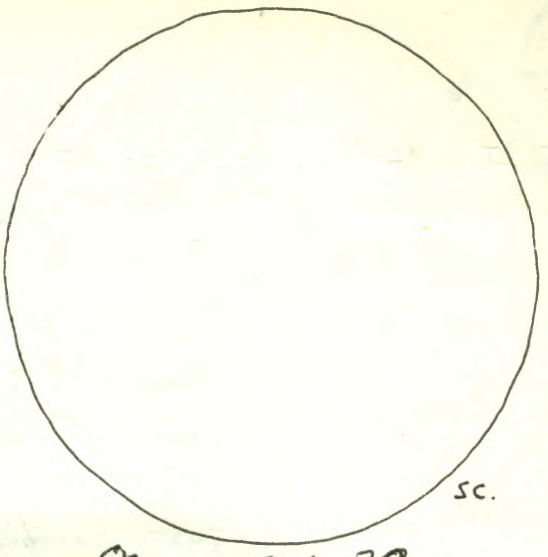
Pluto

Photographed: various areas of the summer sky.

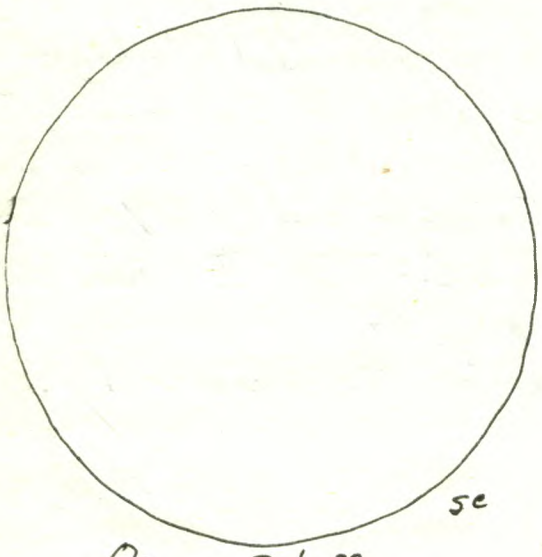
Th. July 18 19:55-20:00 UT 5S. C-8, 32, 28, 20, 15.5
sun Og Os RSNO



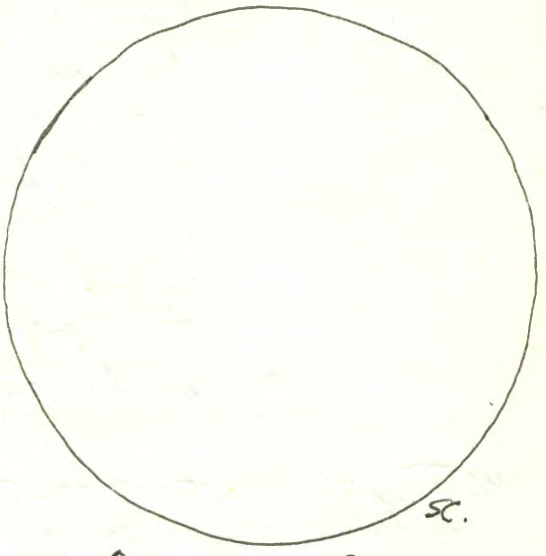
Og
Os
RSNO July 20
18:55-19:00UT



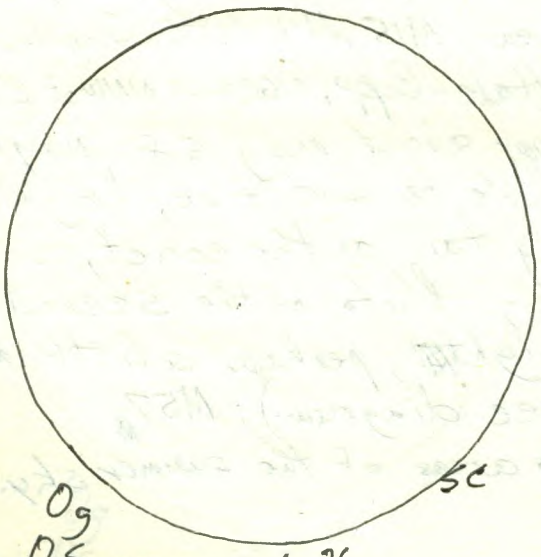
Og
Os
RSNO July 22
19:15-19:20UT



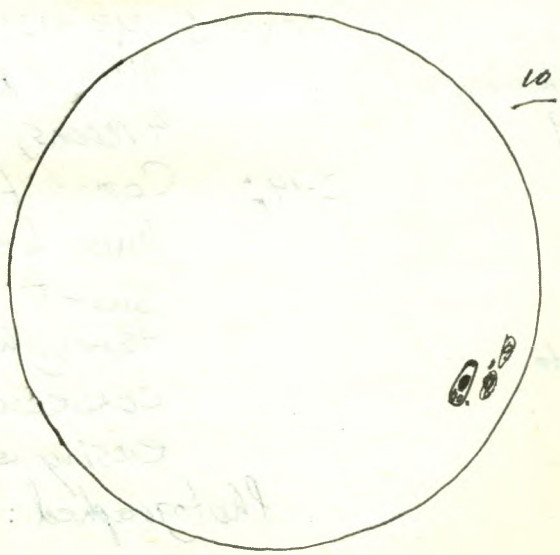
Og
Os
RSNO July 23
~~20~~:10-~~20~~:15UT



Og
Os
RSNO July 24
19:00-19:05UT



Og
Os
RSNO July 26
18:40-18:45UT



Ig
Ios
RSN20 July 27
18:25-18:30UT

1996

Sa. July 20 18:55-19:00UT t C-8, 32, 28, 20, 15.5.
Sun Og Os RSNO T.O.F.

Sa.-Su. July 20-21 03:00-04:15 UT y and t S-8? T9. 20x100b; Ast. 28, 15.5
20x100b: Comet Hale-Bopp in Scutum about mag. 6, M8, M20, M21
M16, M17, M18, M24, M22, M28, Jupiter and 4 moons,
M11 and R Scuti, M26, M31
Peter and David who were here to work on replacing the
garden shed also observed with me and saw all or
most of the above objects.
Ast.: Comet Hale Bopp, M11, M26, M8, M20, M21, M22

M. July 22 19:15-19:20 UT t C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F.

M.-T. July 22-23 03:00-03:45 UT y cml ne; 20x100b
ne: summer constellations; one Perseid Meteor
20x100b: Comet Hale-Bopp; Jupiter, M28, M22, M16,
M17, M18, M24, M11, M26, M31, M15.

Tu. July 23 21:10-21:15 UT t C-8, 32, 28, 20, 15.5
Sun Og Os RSNO

Tu.-W. July 23-24 03:20-03:45 UT y ne
- summer constellations; One or two Perseids

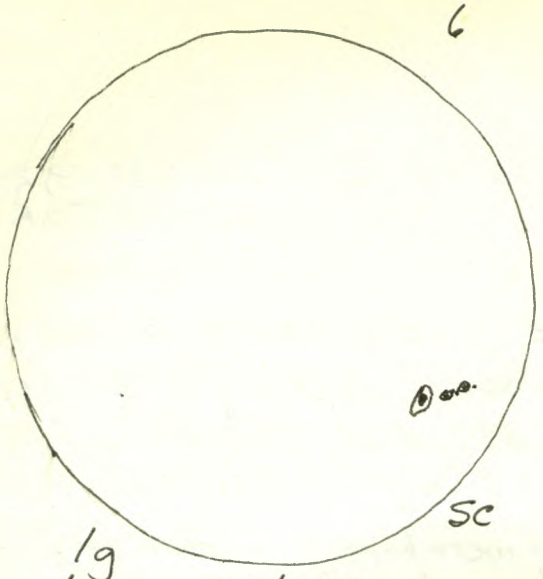
W. July 24 19:00-19:05 UT t C-8, 32, 28, 20, 15.5.
Sun Og Os RSNO

F. July 26 18:40-18:45 UT t C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F

F.-S. July 26-27 03:30-03:40 UT y gml ne
summer constellations

S. July 27 18:25-18:30 UT ss C-8, 32, 28, 20, 15.5
Ig IOS RSN 20 T.O.F.

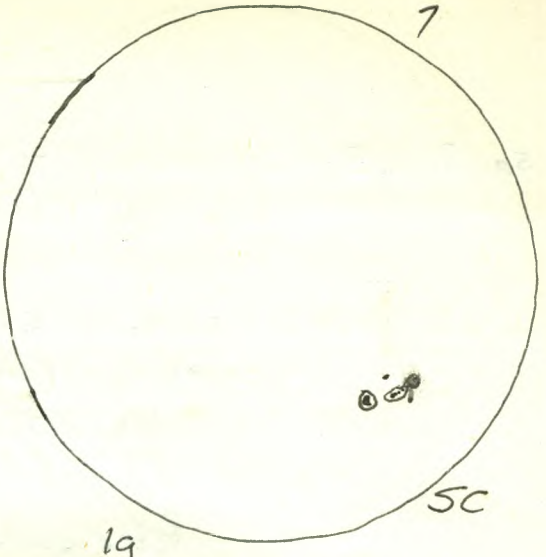
6



lg
6s
RSN16

July 28
19:45-19:50UT

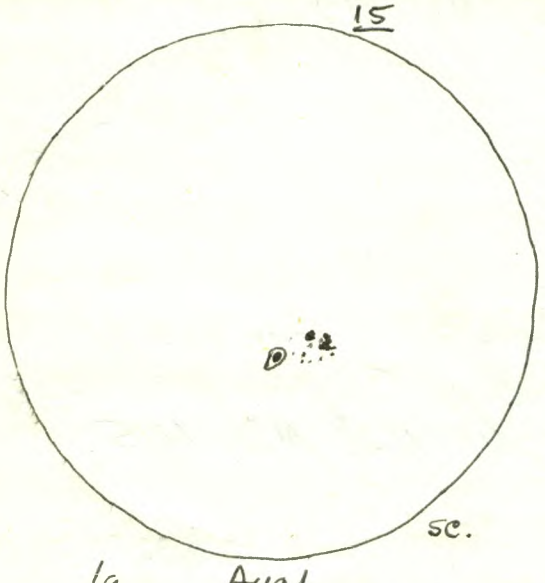
7



lg
7s
RSN17

July 29
19:25-19:30UT

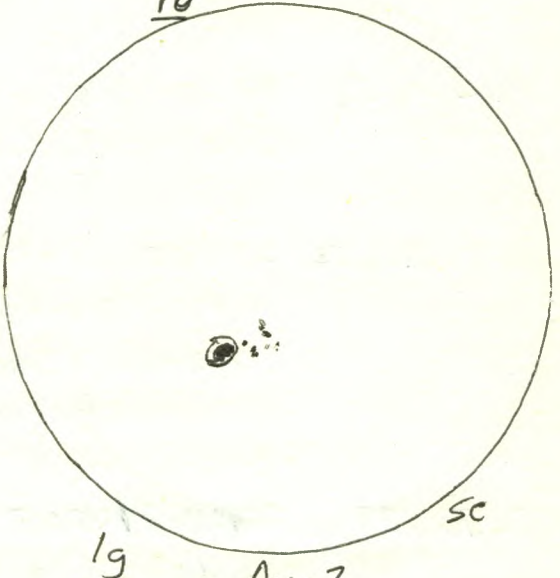
15



lg
16s
RSN25

Aug 1.
21:35-21:40UT

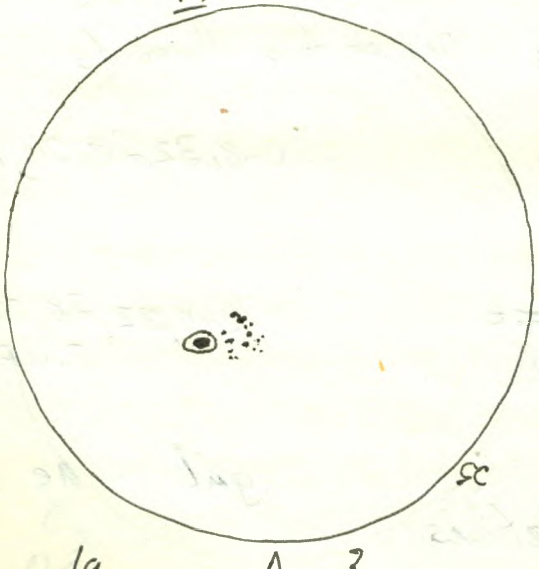
10



lg
10s
RSN20

Aug. 2
17:45-17:50UT

17



lg
17s
RSN27

Aug. 3
19:30-19:35 UT

1996 Su. July 28 19:45-19:50UT ss C-8, 32, 28, 20, 15.5
Sun lg 6s RSN16 T.O.F.

S.-M. July 28-29 01:30-03:00UT oo gml C-14, 32, 19, 12.
Jupiter and 4 moons, M57, ρ Her, β Cyg.
(A man named Ben and his nephew Richard from near Manchester, England and visiting his uncle on Bob's Lake, came to observe with me. Ben had asked permission to bring his nephew over to see the observatory. They enjoyed the chance to observe with us.

M. July 29 19:25-19:30 uT ss C-8, 32, 28, 20, 15.5
Sun lg 7s RSN17. T.O.F.

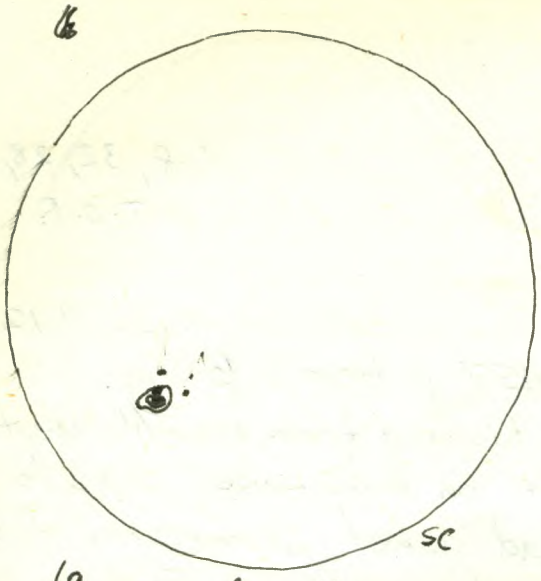
Th Aug. 1 21:35-21:40UT ss. C-8, 32, 28, 20, 15.5
Sun lg 15s RSN25 T. O. F.

Th.-F. Aug. 1-2 02:45-04:00UT y gml ne; 9x63b
ne: summer constellations
9x63b: areas in Summer Milky Way, M11, M22, M8, Jupiter, Comet Hale-Bopp, α Her - fainter than usual
Comet Hale-Bopp

F. Aug. 2 17:45-17:50UT ss C-8, 32, 28, 20, 15.5
Sun lg 10s RSN20 T.O.F.

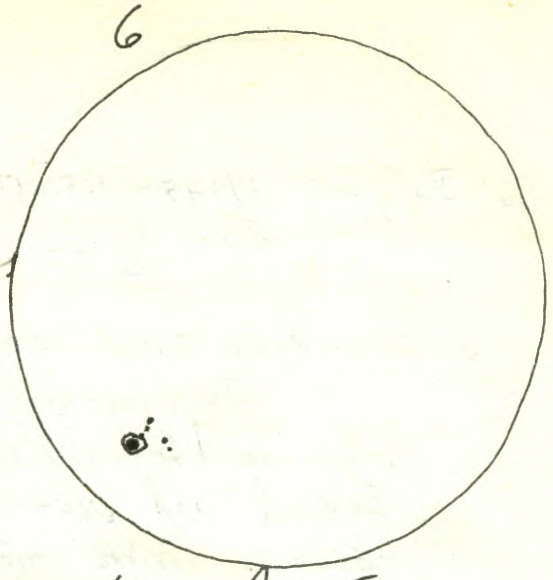
F.-S. Aug. 2-3 02:20-03:25 uT y gml ne; 9x63b.
ne: summer constellations
9x63b: M11 and R Scuti, Comet Hale-Bopp, M13, area of Barnards Star, α Her - in fairly faint part of its cycle, M13, M22, area of α and β Capricorni, areas of Cygnus and Lyra.
Comet Hale-Bopp.

Sa. Aug. 3 19:30-19:35 UT ss C-8, 32, 28, 20, 15.5
Sun lg 17s RSN27



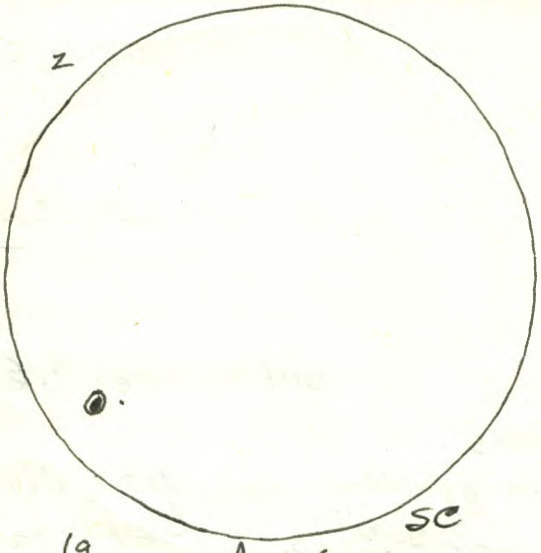
19
65
RSN16

Aug. 4
14:45-14:50 UT



19
65
RSN16

Aug 5
21:15-21:20 UT



19
25
RSN12

Aug. 6
19:~~35~~-19:40 UT

1996

Sa.-Su. Aug. 3-4 02:40-03:50UT y s-8(?)T9.5/until moonrise ne; 20x100b

ne: constellations

20x100b: Comet Hale-Bopp - at mag. 5.5, large and diffuse with short wide-angled tail; M16, M17, M18, M24, M25, M11, M26, M22, Uranus, area of Neptune, Barnard's Star.

Su. Aug. 4 14:45-14:50UT ss C-8, 32, 28, 20, 15.5

sun lg 6s RSN16

Su.-M. Aug. 4-5 01:45-03:15UT home of Henry Beissel, Ayorama, & Arlette Fauciere s-8T9 20x100b

- observed with Denise, Arlette, and Henry.
- M22, M28, M23, M8, M20, M21, M24, M16, M17, M18, M11 and R Scuti, Comet Hale-Bopp at mag. 5.5 with short, wide tail; Jupiter and 4 moons, T CorBor, Alcor and Mizar, M4, M15

M. Aug. 5 21:15-21:20UT ss C-8, 32, 28, 20, 15.5 T.O.F.

sun lg 6s RSN16

T. Aug. 6 19:35-19:40UT ss C-8, 32, 28, 20, 15.5 T.O.F.

sun lg 2s RSN12

T.-W. Aug. 6-7 03:00-04:30 UT y s-8(?)T7.5(haze) ne

summer constellations; two fairly bright Perseid Meteors.

W.-Th. Aug. 7-8 03:00-04:15 UT y s-8(?)T7(haze) ne; 9x63b

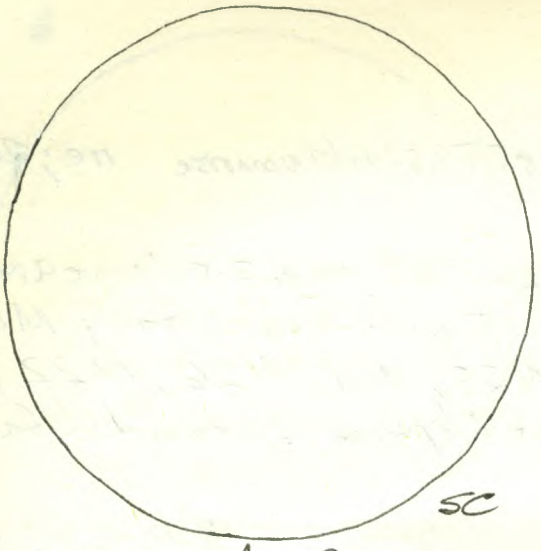
ne: Summer constellations; 2 bright meteors - not Perseids

9x63b: Comet Hale-Bopp, barely seen because of the haze; M13, M11, Jupiter

Th.-F. Aug. 8-9 03:00-04:30UT y s-8(?)/T9-9.5 ne; 9x63b

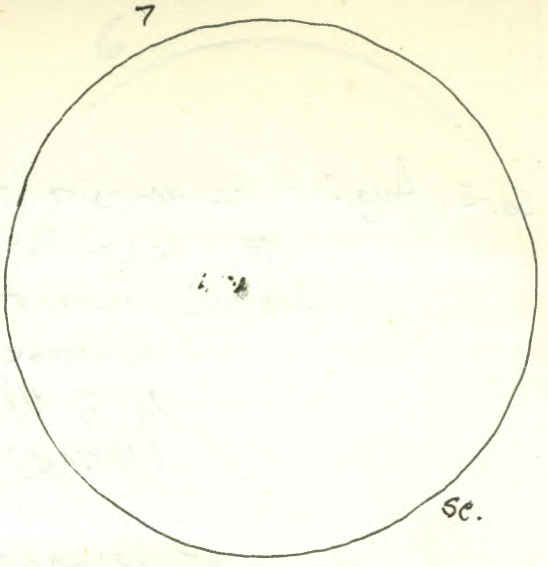
ne: constellations; several meteors including Perseids

9x63b: Comet Hale-Bopp, Jupiter, M22, M31, M33, M11 and R Scuti, μ Cep, NGC 7789, 51 Peg, Uranus



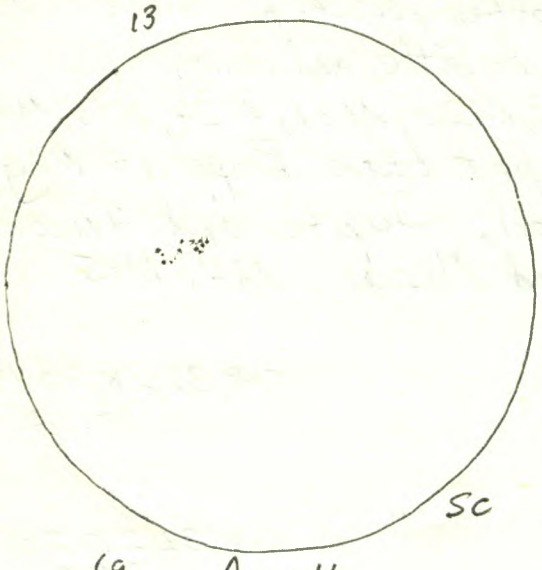
0g
0s
RSN0

Aug. 9
19:~~35~~-19:40 UT



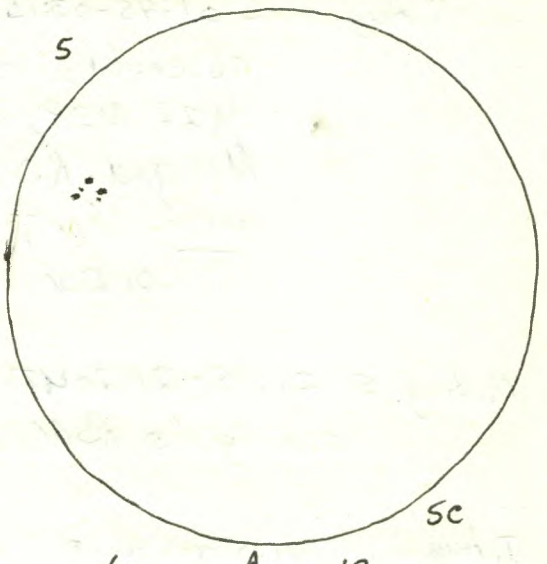
1g
7s
RSN17

Aug. 10.
18:40-18:45 UT



1g
13s
RSN23

Aug 11
19:30-19:35 UT



1g
5s
RSN15

Aug. 12
21:40-21:45 UT

1996

F. Aug. 9 19:35 - 19:40 UT SS C-8, 32, 28, 20, 15.5
sun 0g 0s RSN0 T.O.F.

F. - S. Aug. 9-10. 01:30 - 04:00 UT y intermittent cloud ne
constellations; 1 Perseid Meteor; Jupiter amid a considerable amount of intermittent cloud.

Sa. Aug. 10 18:40 - 18:45 UT SS C-8, 32, 28, 20, 15.5
sun 1g 7s RSN17 T.O.F

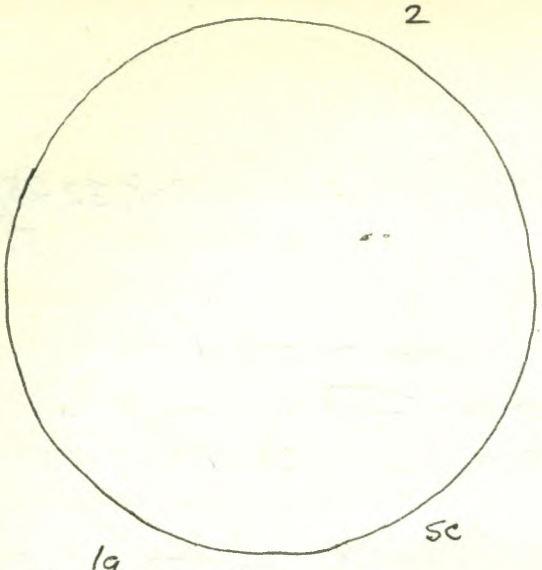
Sa. - Su. Aug. 10-11 01:30 - 06:00 UT y S-8? T 9.5! ne; 20x100b
ne: constellations; Perseid Meteor Shower, about 1 day before maximum - Excellent! Both bright and faint shower members were seen frequently - perhaps a couple dozen were seen
20x100b: Jupiter and 4 moons, Comet Hale-Bopp - about mag. 5.5 with faint but wide tail about ½° wide, M22, M28, M8, M20, M21, M25, M24 M16, M17, M18, M11, Uranus, Double Cluster, M31, M32, M110, M33, NGC 7789.

Su. Aug. 11, 19:30 - 19:35 UT SS C-8, 32, 28, 20, 15.5
Sun 1g 13s RSN23 T.O.F.

Su. - M. Aug. 11-12 01:30 - 08:30 UT y S-8(?) T 8-9 occasional cloud ne
Denise and I stayed out all night observing Perseids on the peak night for the shower. We used an air mattress. I slept occasionally. By times they were numerous. At other times they were sparse. All together Denise regarded 119, but we agreed it was only "average" for a Perseid peak. One in the north was about mag. -2. Occasionally they seemed to come in clusters of 2 or 3.

M. Aug. 12 21:40 - 21:45 UT SS Some haze C-8, 32, 28, 20, 15.5
sun 1g 5s RSN15

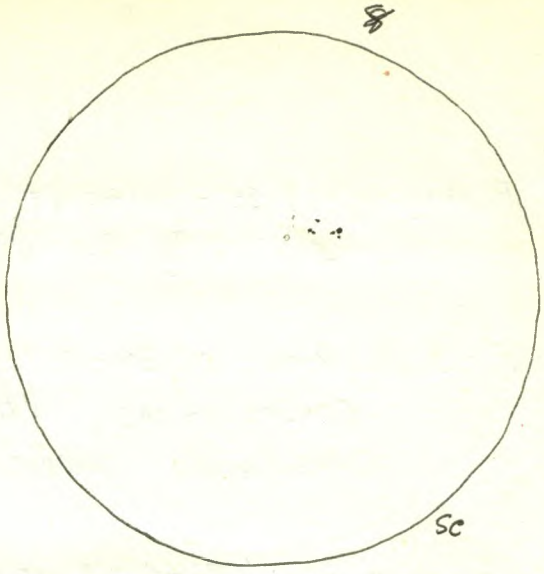
2



1g
2s
RSN12

Aug. 14
18:30-18:35 UT

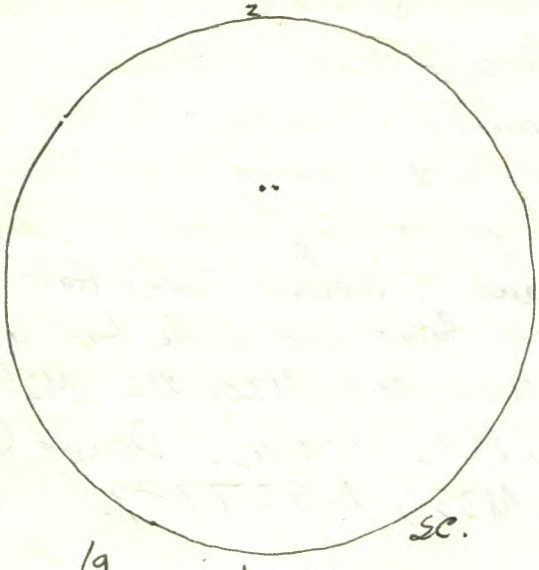
8



1g
8s
RSN18

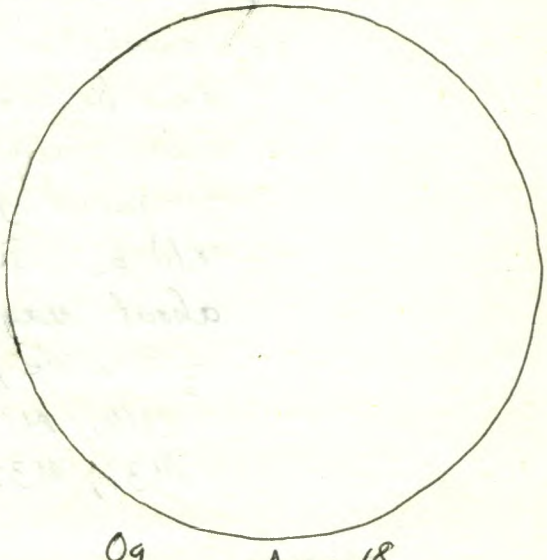
Aug. 15.
19:25-19:30 UT

3



1g
2s
RSN12

Aug. 16
17:00-17:05 UT



0g
0s
RSN0

Aug. 18
19:45-19:50 UT

1996

M.-T. Aug. 12-13 02:30 - 04:20 UT y S-9(?) T6-7 (cloud) ne
- tried to observe Perseids, but saw only 1 or 2 because of cloudiness

T.-W. Aug. 13-14 02:00 - 06:50 UT oo S-8? T9.5! 20x1006; C-14, 32
20x1006: Comet Hale-Bopp, M11, M16, M17, M18, M26 M23, M24, M25, Pleiades, M22
C-14: M57, M13, Comet Hale-Bopp, with a short nebulous, wide tail - mag. 5.5, M2, Saturn, Titan and one other moon
- photographed a number of areas of the sky.
- saw several fairly bright Perseid Meteors.

W. Aug. 14 18:30 - 18:35 UT ss C-8, 32, 28, 20, 15.5
sun lg 2s RSN12 T.O.F.

W.-Th. Aug. 14-15 01:30 - 05:30 UT y S-8? T9!-9.5! ne; 20x1006.
- observed with Peter, Janice, and Jonathon for 1½ hr.
ne: constellations; Perseids - several bright ones - perhaps 12 - 15 seen
20x1006: Comet Hale-Bopp; Jupiter and 2 moons, Uranus, Barnard's Star, M31, M11, M16, M17, M18 M24, M23, M25

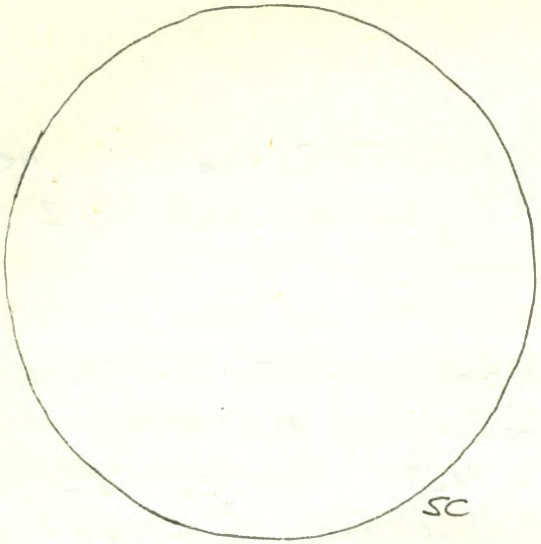
Th. Aug. 15, 19:25 - 19:30 UT C-8, 32, 28, 20, 15.5
sun lg 6 s RSN18 T.O.F.

F. Aug. 16 17:00 - 17:05 UT C-8, 32, 28, 20, 15.5
sun lg 2 s RSN12 T.O.F.

F.-S Aug. 16-17 S.A.S Summer Seminar
02:00 - 03:30 UT Vesper, N.Y. S-? T8-9 16" Cave
Jupiter and Comet Hale-Bopp.

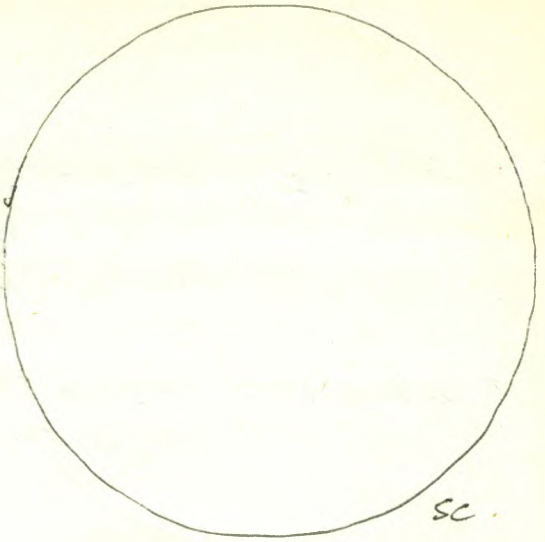
S.-S. Aug. 17-18 SAS Summer Seminar
02:30 - 03:30 UT Vesper, N.Y. S-? T8-9 16" Cave
Jupiter and M22 - also Jupiter in 2 other telescopes

Su. Aug. 18 19:45 - 19:50 UT ss C-8, 32, 28, 20, 15.5
sun 09 0s RSN0 T.O.F.



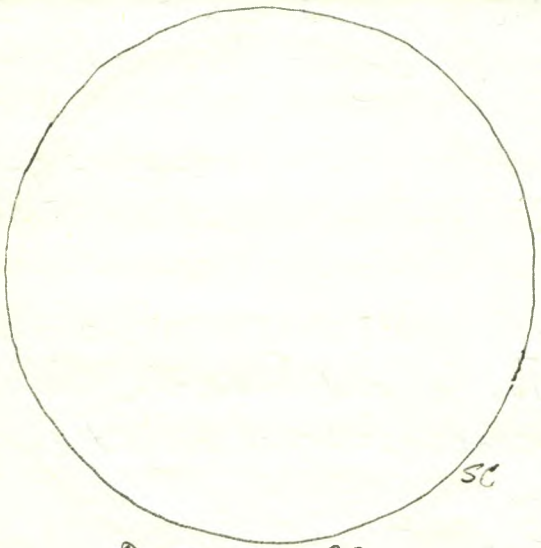
Og
OS
RSNO

Aug. 19
19:35-19:40UT



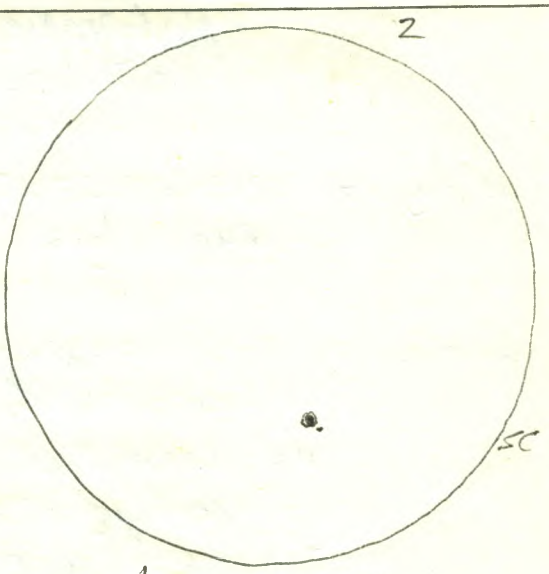
Og
OS
RSNO

Aug. 21
19:45-19:50UT



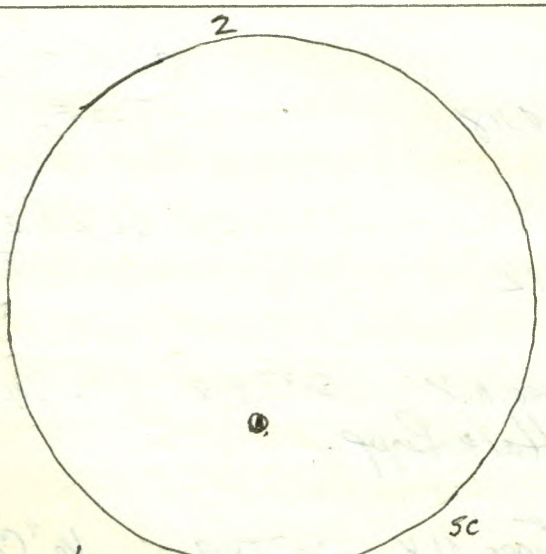
Og
OS
RSNO

Aug. 22
21:00-21:05UT



1g
2S
RSN12

Aug. 27
20:35-20:40UT



1g
2S
RSN12

Aug. 28
19:40-19:45UT

1996

Su.-M. Aug. 18-19 02:45 - 05:55 UT 00 S-8(?) T 9.5! C-14, 32 ; 20x100b ; ue
c-14: M57 ; Comet Hale-Bopp
- photographed area of Comet Hale-Bopp and various areas of the Summer Milky Way
20x100b: M11 and R Scuti area, M33, M31, M32, M110, Pleiades
ne:- several bright Perseid Meteors
"Dewing" was a severe problem.

M. Aug. 19 19:35 - 19:40 UT SS C-8, 32, 28, 20, 15.5
Sun Og Os RSNO A.P.F.

M.-T. Aug. 19-20 02:40 - 03:40 UT y S-8? T7 (cloud) 9x63b
areas in Cygnus, Cassiopeia and Cepheus.

W. Aug. 21 19:45 - 19:50 UT C-8, 32, 28, 20, 15.5
sun Og Os RSNO A.P.F

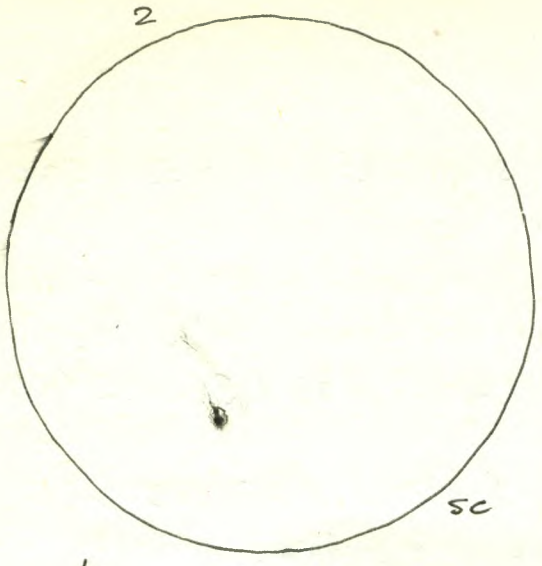
W.-Th. Aug. 21-22 02:40 - 04:50 UT y S-8(?) T6-8 cloud 9x63b
Comet Hale-Bopp, M11 and R Scuti area, Jupiter, Saturn, Brauns area, Polaris area, Cepheus areas, M92 area, M13, Cygnus areas.

Th. Aug. 22 21:00 - 21:05 UT t C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F.

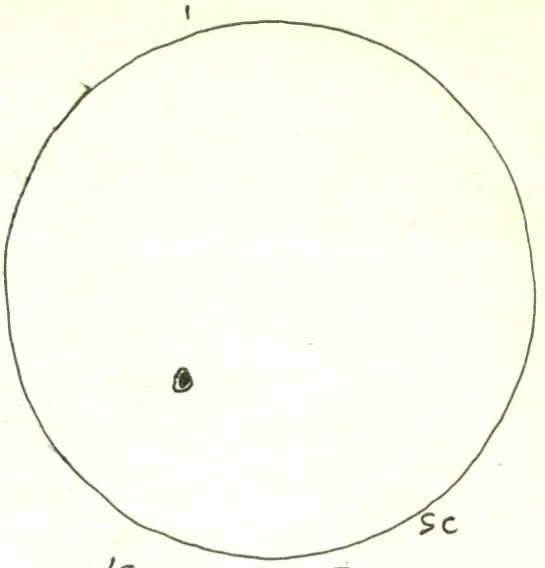
Su.-M. Aug. 25-26 02:00 - 02:30 UT y T-C - cloudy gm! ne
summer constellations, moon, Jupiter.

Tu. Aug. 27 20:35 - 20:40 UT SS C-8, 32, 28, 20, 15.5
Sun lg 2s RSN12 T.O.F.

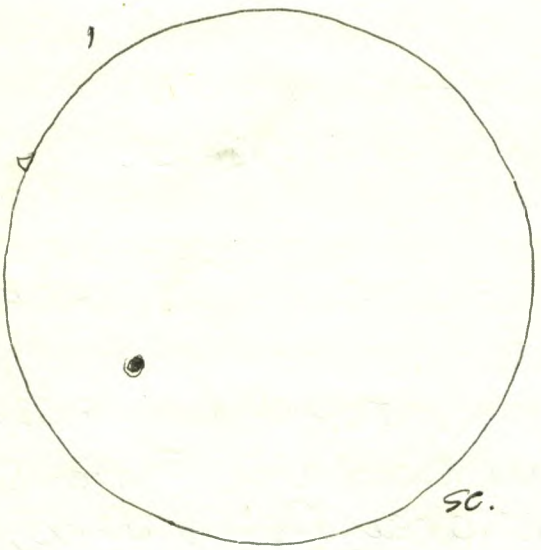
W. Aug. 28 19:40 - 19:45 UT SS C-8, 32, 28, 20 15.5
sun lg 2s RSN12. T.O.F.



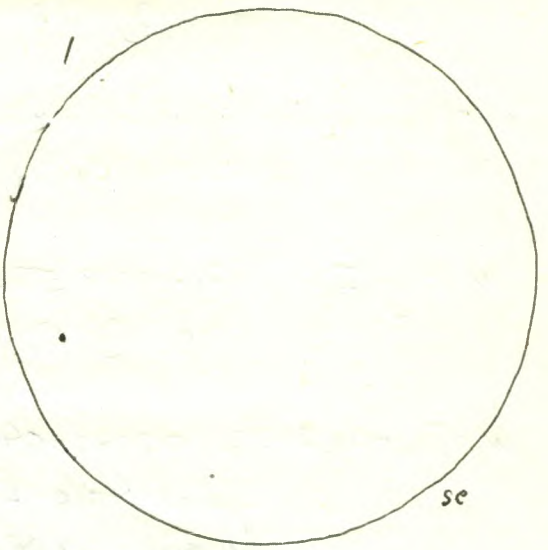
lg
25
RSN12 Aug. 29
20:20-20:25 UT



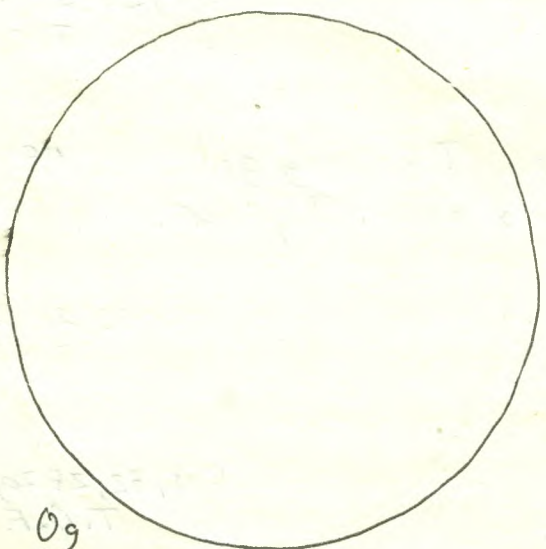
lg
15
RSN11 Aug. 30
19:15-19:20 UT



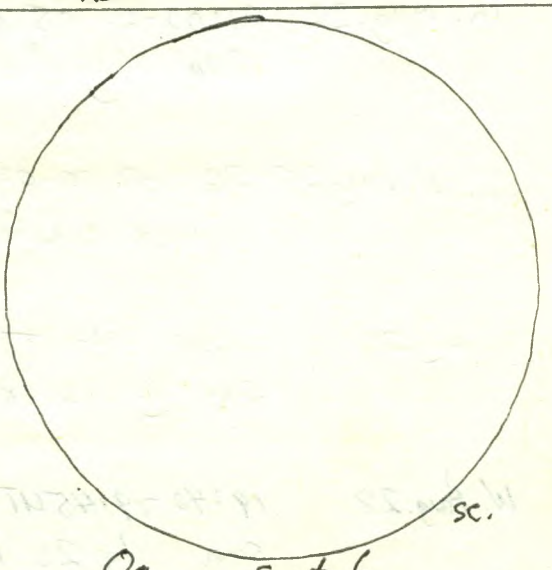
lg
15
RSN11 Sept. 1
18:40-18:45 UT



lg
15
RSN11 Sept. 2
15:15-15:20 UT



Og
OS
RSNO Sept. 5
20:45-20:50 UT



Og
OS
RSNO Sept. 6
20:55-21:00 UT

1996

Th. Aug. 29 20:20-20:25 UT SS C-8, 32, 28, 20, 15.5.
Sun lg 2s RSN 12. T.O.F.

F. Aug. 30 19:15-19:20 UT SS C-8, 32, 28, 20, 15.5.
Sun lg 1s RSN 11

Sa.-Su. Aug. 31-Sept. 1 02:15-02:30 y S-8? T6-7 gml ne; 9x63b
ne: Saturn, Jupiter, constellations
9x63b: M11 and R Scuti area, area of Uranus, Comet Hale-Bopp at mag. 5 in Oph., areas in Cygnus, Saturn, Jupiter.

Su. Sept. 1 18:40-18:45 UT SS C-8, 32, 28, 20, 15.5
Sun lg 1s RSN 11 T.O.F.

M. Sept. 2 15:15-15:20 UT SS C-8, 32, 28, 20, 15.5.
Sun lg 1s RSN 11 T.O.F.

M-T. Sept. 2-3 02:00-03:20 UT y, t S-8? T9. 20x1006; C-8, 55, 32
20x1006: Comet Hale Bopp in Oph. at about mag. 5.5 with thick wide tail about ½° to 1° long; Jupiter, M22, Saturn, M22, M11, M31, area of Uranus.
C-8: Comet Hale-Bopp, Jupiter.

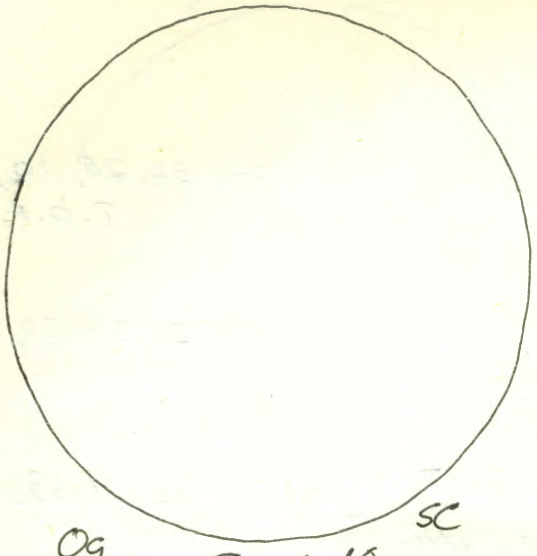
Comet Hale-Bopp

Th. Sept. 5 20:45-20:50 UT SS C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F.

F. Sept. 6 20:55-21:00 UT SS C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F.

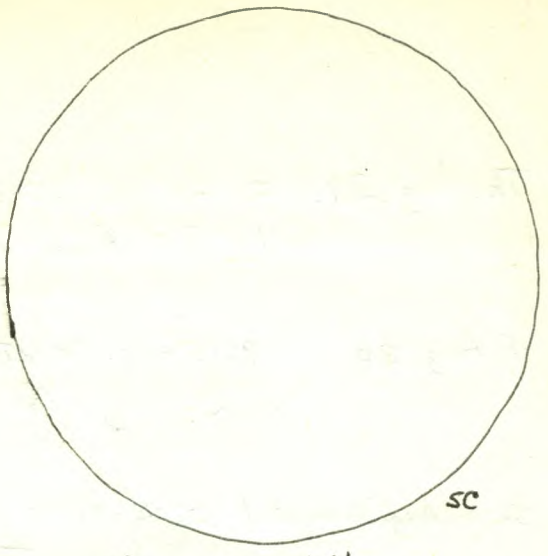
Tu. Sept. 10 19:45-19:50 UT C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F.

W Sept. 11 20:25-20:30 UT SS C-8, 32, 28
Sun Og Os RSNO T.O.F.



Og
Os
RSNO

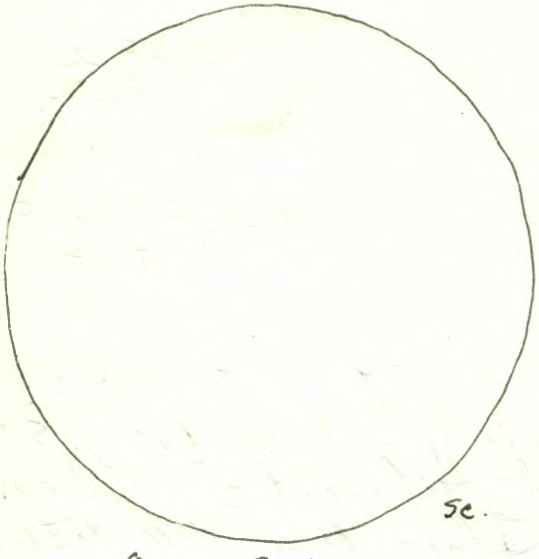
Sept. 10
19:45-19:50 UT



Og
Os
RSNO

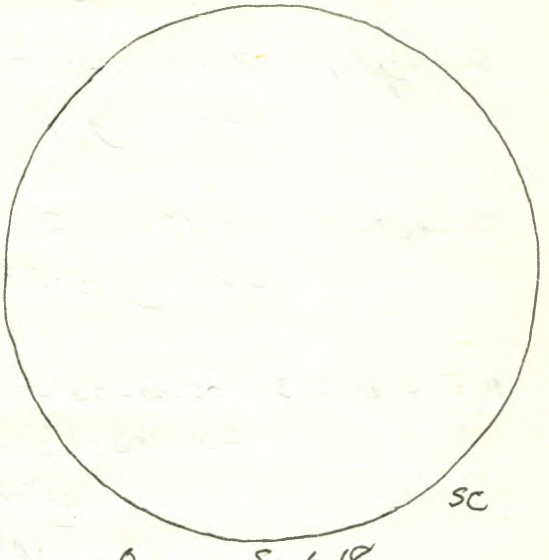
Sept. 11
20:25-20:30 UT

4



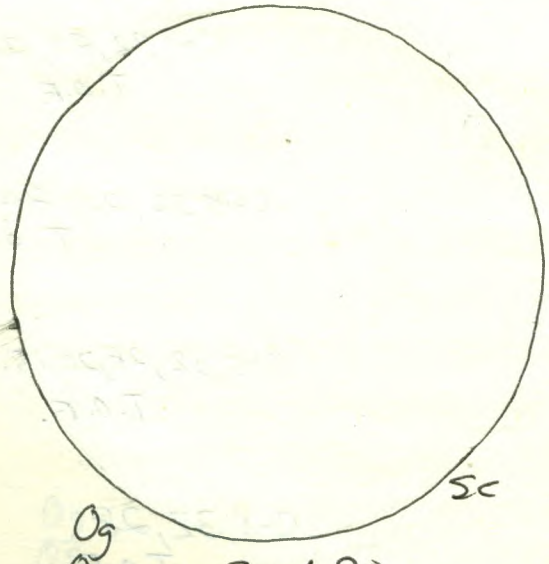
Og
Os
RSNO

Sept. 12
20:20-20:25 UT



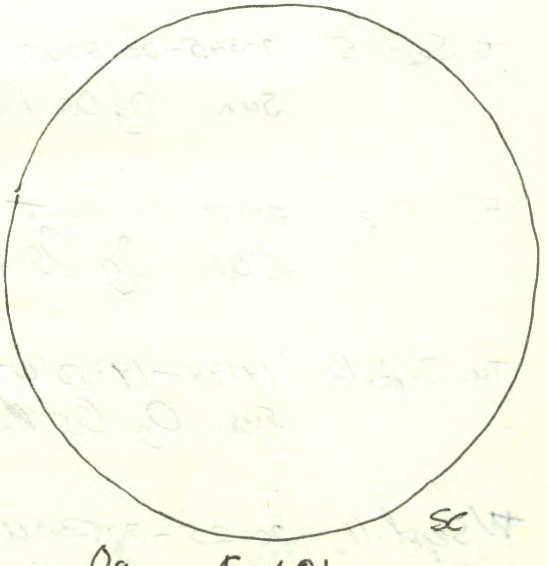
Og
Os
RSNO

Sept. 18
20:20-20:25 UT



Og
Os
RSNO

Sept 20
20:30-20:35 UT



Og
Os
RSNO

Sept. 21
15:55-16:00 UT

1996 Th. Sept. 12 20:20-20:25 UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

W. Sept. 18 20:20-20:25 UT SS C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

F. Sept. 20 20:30-20:35 UT SS C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

F.-S. Sept. 20-21 m 9:15-9:40 UT y twl 20x1006; ne

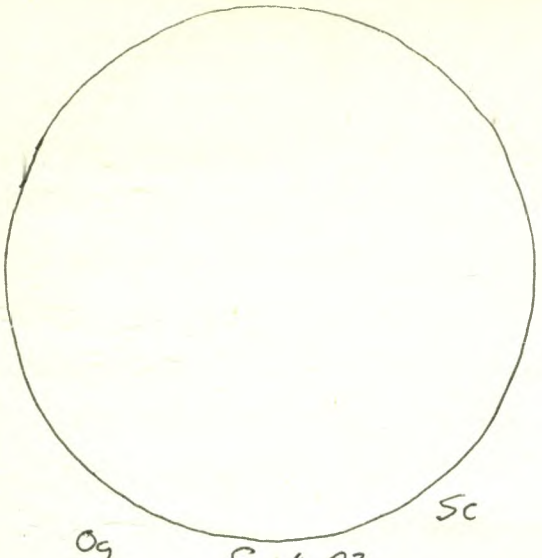
Comet Tabor 20x1006: Comet Tabor in Orion at about R.A 6h 4m 30s Dec +14° 00' SW of the star 67 Orionis (U181) at about mag. 7.0 - easily seen, slightly diffuse, but no tail easily seen in the binoculars, though some might have been seen in truly dark conditions. I was observing shortly after the beginning of astronomical twilight which started about 09:13 UT.. M41, M42, M43, M44 (with Mars "within" the Beehive Cluster
ne: Constellations "of winter", Venus and Mars in S.E.

Sun Sept. 21 15:55-16:00 UT SS C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

M. Sept. 23 20:15-20:20 UT SS C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F

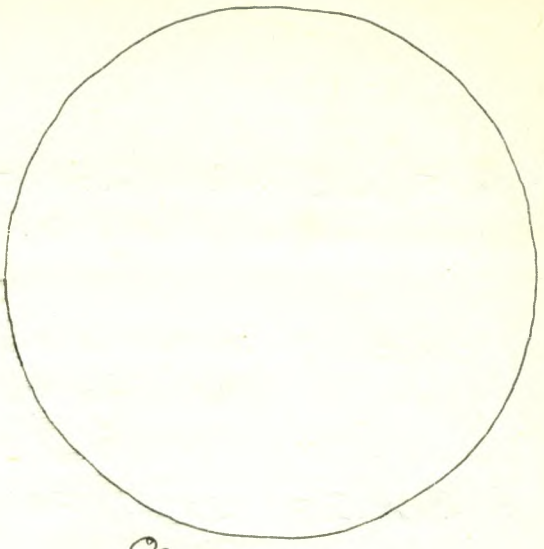
Th.-F. Sept. 26-27 00:30-04:00 UT 00, y T-7 to 3 ne; 9x63 ~~FITE~~

ne: Lunar Eclipse, but conditions were not good because of clouds. It was possible to see darkening on Eastern Limb about 20 min before U1 (First Umbral Contact), i.e. at about 00:53, 20 min. before U1 at 01:12 UT. The E. Limb of the moon appeared quite dark around the time of First Umbral Contact. Clouds



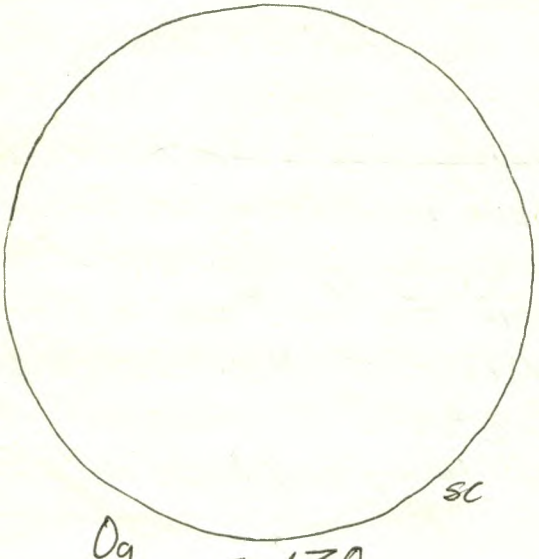
Og
Os
RSNO

~~Sept~~. 23
20:15-20:20 UT



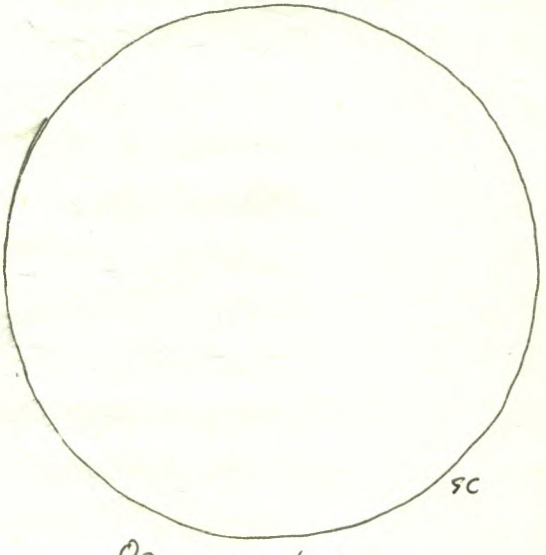
Og
Os
RSNO

Sept. 29
19:15-19:20 UT



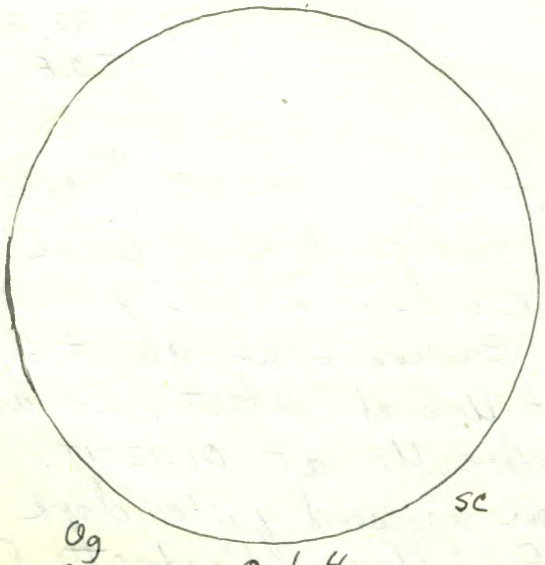
Og
Os
RSNO

Sept. 30
20:15-20:20 UT



Og
Os
RSNO

Oct. 1
20:55-21:00 UT



Og
Os
RSNO

Oct. 4
20:10-20:15 UT

became quite heavy about 5 to 10 minutes after that time and remained so for the rest of the session. During the Total Phase the Moon could not be seen n.e. because of the clouds. After Third Contact 03:29 UT the Moon could be seen n.e.

9x63b: During the Total Phase, the Moon could be seen occasionally with the binoculars. After Third Contact it could be easily seen, but clouds prevented it from being seen very clearly. I did not photograph although I had intended to do so. The clouds were simply too heavy. The weather made it frustrating.

Su. Sept. 29 19:15-19:20UT ss C-8, 32, 28, 20, 15.5
Sun Og Os RSNO

M. Sept. 30 20:15-20:20UT ss C-8, 32, 28, 20, 15.5.
sun Og Os RSNO

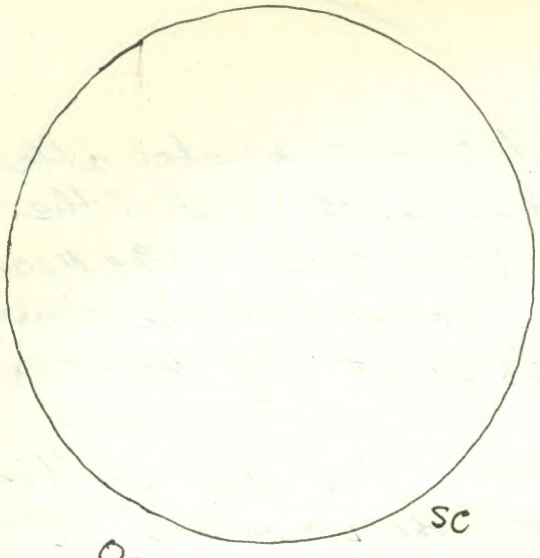
Tu. Oct. 1 20:55-21:00UT t C-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F.

W.-Th. Oct. 2-3 23:20-23:30UT t C-8, 32
Jupiter and 4 moons. Then clouds moved in.

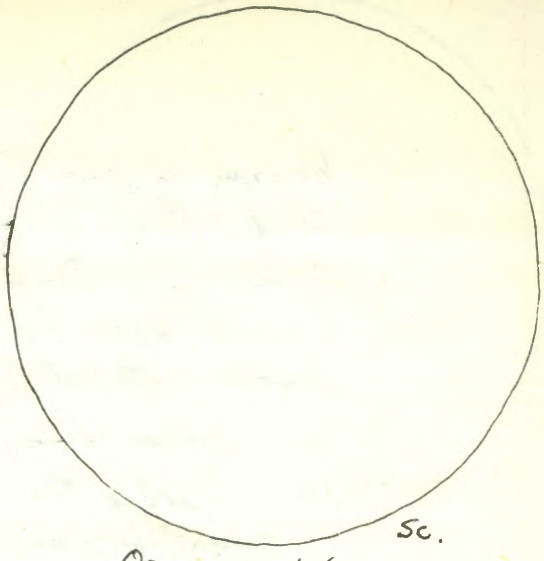
F. Oct. 4 20:10-20:15UT c-8, 32, 28, 20, 15.5
sun Og Os RSNO T.O.F

F.-S. Oct. 4-5 01:30-03:15UT y, t 5-9T9-9.5 20x100b; C8, 15.5
20x100b: Comet Hale-Bopp in Oph at about mag. 5.5 with tail of about 1-1½°, M14 and NGC6366 two globular clusters nearby; Jupiter, Saturn and Titan, M11 and R Scuti area,

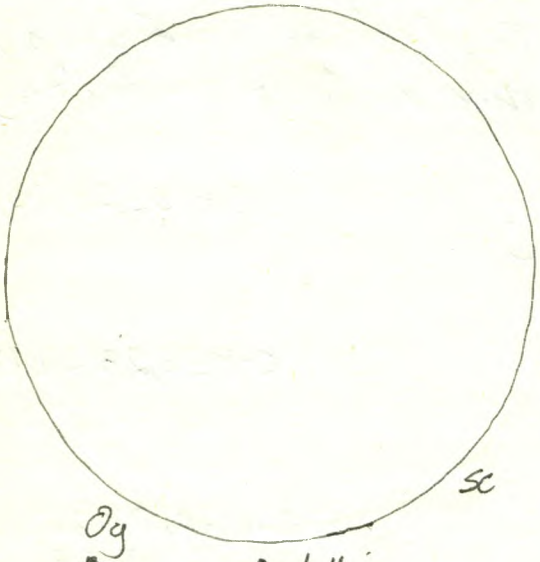
Comet Hale-Bopp



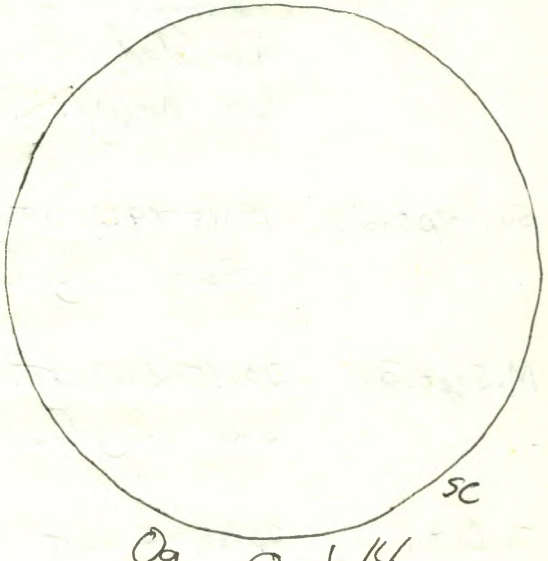
Og
Os
RSNO Oct. 5
19:10-19:15UT



Og
Os
RSNO Oct. 6
20:00-20:05UT



Og
Os
RSNO Oct. 11
19:55-20:00UT



Og
Os
RSNO Oct. 14
17:20-17:25UT

1996

area of α and β Cap; M31, M32, M110, M33, M45
C-8: Saturn and Titan.
With 20x100b, I also observed a number of variable stars: AE Cap (est. 8.1) (near β Cap U298); Tu Cap (9.9-est) near β Cap - U298); R Cap (near β Cap - U298) (est 7.11 - not easily seen or not seen); RR Ari (est. 5.5) (near α Ari - U129) (See Burnham, p. 247); RX Ari (est. 8.1) (near α Ari - U129) (Burnham: 9.4-9.7; See p. 247); R Ari (est. 10.0) (near α Ari - U129); VV Ari (est. 7.4) (near β Ari - U129)

7 variables

Sa. Oct. 5 19:10-19:15 UT ss — C-8, 32, 28, 20, 15.5 A.P.F
Sun Og Os RSNO

Sa.-Su. Oct. 5-6 00:30-01:30 UT y — S-8(?)T8 wafts clouds moved in — 20x100b
Comet Hale Bopp - in Ophiuchus, about mag. 5.5, with tail about 1° long in the binoculars; M33; Jupiter; Saturn; Double Cluster; areas of stars in Perseus and Aries and Capricornus. Clouds moved in to end the observing session.

Comet Hale Bopp

Su Oct. 6 20:00-20:05 UT t — C-8, 32, 28, 20, 15.5 T.O.F
Sun Og Os RSNO

F. Oct. 11 19:55-20:00 UT ss — C-8, 32, 28, 20, 15.5 T.O.F.
Sun Og Os RSNO

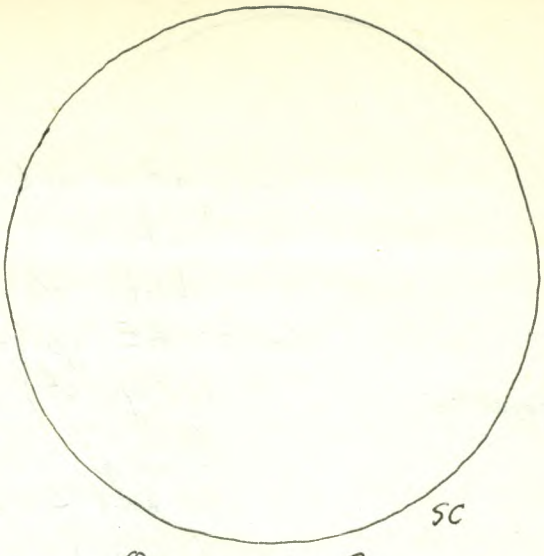
M. Oct. 14 17:20-17:25 UT ss — C-8, 32, 28, 20, 15.5 A.P.F.
Sun Og Os RSNO

M.-T. Oct. 14-15 00:00-01:00 UT y, t — S-9(?)T9. — 20x100b; C-8, 32 Ko
20x100b: Comet Hale-Bopp at about mag. 5.2 R.A 17h32m Dec.: -4°.3 wide (40°) tail about 1° long.
also, Comet Tabur, amazingly bright at mag 5.2
also, in bowl of the Big Dipper at R.A 12h1m,

2 Comets

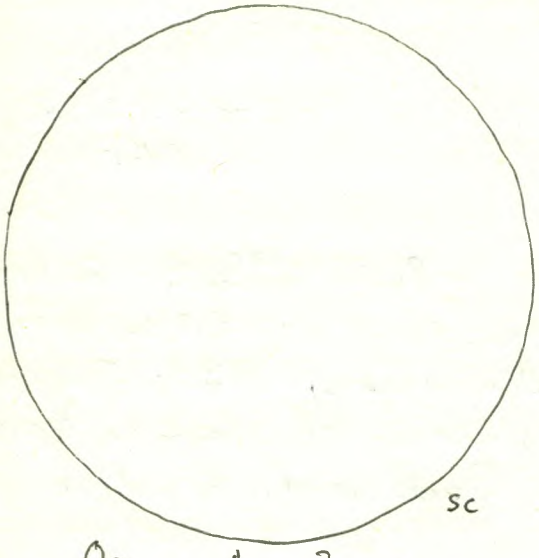
Og
Os
RSNO

Oct 25
19:45-19:50UT



Og
OS
RSNO

Nov. 2
19:10-19:15UT



Og
OS
RSNO

Nov. 3
19:25-19:30UT

1996

Dec +55°.5, but with little tail visible, though I thought I may have seen a very short one.— my first view of this comet since it was in the Constellation Orion.— perhaps a little more diffuse than the other comet. Double Cluster, M31, M32, M110, M33, Jupiter and 3 moons, M11 and R Scuti area, M26, M22, M14.

C-8: Comet Hale Bopp - the 1° tail beautifully distinct and wide; Comet Tabur with little or no tail, though I may have seen a very tiny bit of one; Jupiter and 3 moons

W.-Th. Oct. 16-17 00:45-01:00 UT y S-8(?) T9 ne; 9x63b

ne Constellations, one meteor

9x63b: Comets Hale-Bopp in Ophiuchus - about mag. 5.2, short tail visible; Comet Tabur near ε UMa about mag. 5.2 - no tail visible; Jupiter, M22

2 comets

Th.-F. Oct. 17-18 02:45-02:50 UT y ne

Aurora

Auroral arc low in N., up about 20° and extending from NW to NE., fairly distinct but not overwhelmingly bright.

F. Oct. 25 19:45-19:50 UT ~~ss~~ SS C-8, 32, 28, 20, 15.5

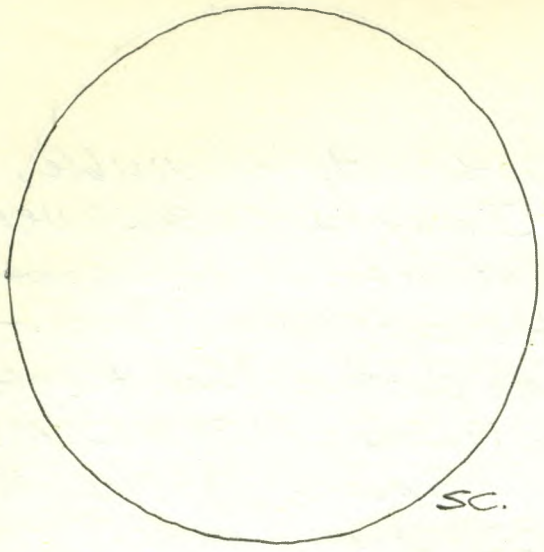
Sun Og Os RSNO T.O.F

Sa Nov. 2 19:10-19:15 UT ss C-8, 32, 28, 20, 15.5

Sun Og Os RSNO T.O.F.

Su. Nov. 3 19:25-19:30 UT ss C-8, 32, 28, 20, 15.5

Sun Og Os RSNO A.P.F.



Og
OS
RSNO

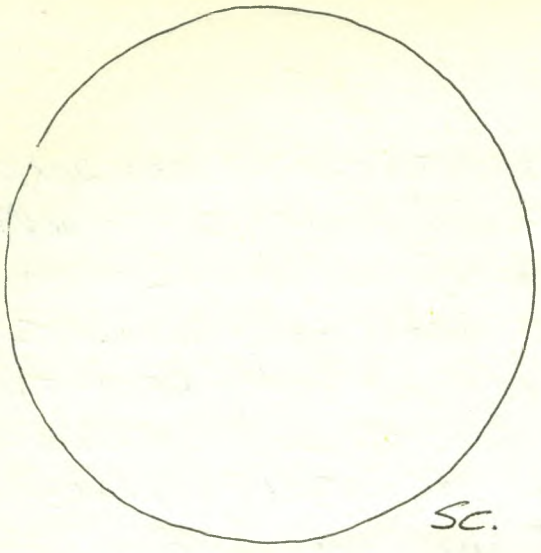
Nov. 13
20:10-20:20 UT

1996 T.-W Nov. 12-13 04:30-05:30 UT y S-S(?) TQ.5-10!! ne; 20x100b,
ne: constellations, N. Taurid Meteors - near peak which was at 18 h UT on Nov. 12 - saw 5 or 6 that were definitely members - most short (10° or so) and fairly bright;
- One very spectacular fireball which was not seen directly - at 05:03 UT (12:03 a.m. E.S.T.) While I was looking downward and standing near the solar, I was shocked as the snow-covered ground and surrounding area became very bright - far brighter than the brightness of a Full Moon, between that of a Full Moon and the noonday sun, of magnitude between -15 and -18. The surroundings were brilliantly white for 1 second and brilliantly green for 1 second. Following that I was in a stunned state of shock for about 2 seconds. When I looked up toward the zenith, I did not see the object at all. It must have been near the zenith since I did not recall seeing any shadow at all. At first I thought that some brightness in Taurus was a train from the fireball, but later I thought that it was the Gegenschein which was in Taurus, upper Orion, and Gemini. I reported the sighting to Terence Dickinson the next day. He stated that similarly Peter Geravolo had been looking down at his equipment when it had occurred. I wish I had been looking up.

fireball: mag. -15-18 mag. probably a N. Taurid

20x100b: M42, M43, RLep - quite faint at about mag. 8.5, RX Eri, NGC 2224 and part of Rosette Nebula, M35 and nearby cluster, M81, M82

W. Nov. 13 20:10-20:20 UT t. C-8, 32, 28, 20, 15.5
Sun Cg Os RBNO T.O.F.

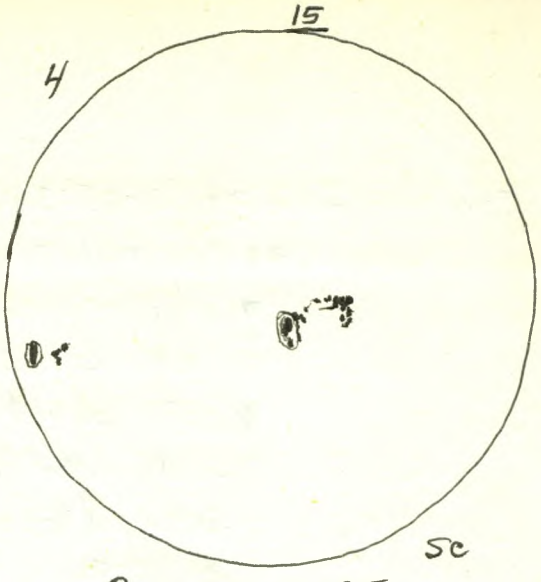


Og
Os
RSNO

Nov. 16
18:40-18:45UT

15

4



2g
19S
RSN39

Nov. 25
20:10-20:15UT

1996 Sa. Nov. 16 18:40-18:45UT t C-8, 32, 28, 20, 15.5
sun 0g 0s RSNO T.O.F.

Sa.-Su. Nov. 16-17 04:55-05:00UT y S-8, T 9.5 ne
- in 5-min. period - one very bright Leonid going through the Big Dipper - about 30° long and mag. -3.

08:30-10:30UT y S-8(?) T 9.5 ne
- in 2-hour period - many Leonids - an excellent show!
- in first 18 min - about 18 Leonids! - many of them quite bright - some leaving trains.

Leonid Meteor Shower superb

I photographed also from about 9:00-10:30UT.
In general, it was a superb display, much better than might have been expected.

M. Nov. 25 20:10-20:15UT sd C-8, 32
sun 2g 19s RSN39

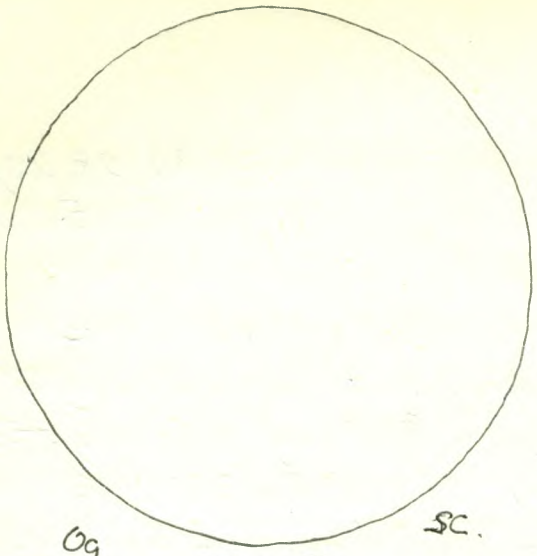
Su. Dec. 21 to M. Dec. 30 (about 5:40 p.m. E.S.T.) about 22:40UT Naples, Florida ne

On about 8 of the 9 evening when we were on holidays in Naples, Florida, Denise and I went to the beach or beach area to see the sunset over the Gulf of Mexico, hoping to see the green flash. We did not manage to see it, perhaps because of haze or clouds. There were often clouds and/or haze near the horizon.

On many of the nights I also observed the winter constellations, especially in the East and Northeast and Southeast and south. Of course, Orion was quite high. We were about at Lat. 26°.2 Long. 81°.7

1997 Tu.-W. Jan. 7-8 00:35-00:50UT y S-8(?) T 9-9.5 ne.

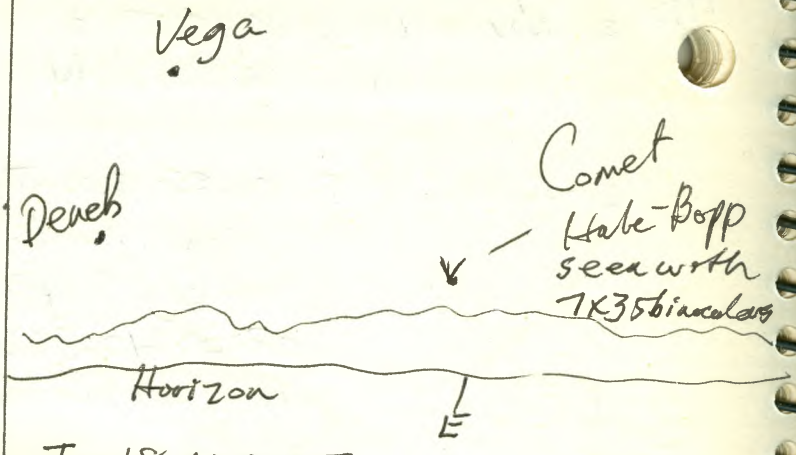
At last, a clear night! I observed winter constellations, the Great Winter Hexagon around Betelgeuse, and Sirius twinkling in the southeast. I had received a telephone call from Jamie Piat and Marc Giroux about a twinkling object in the southeast which was Sirius rising.



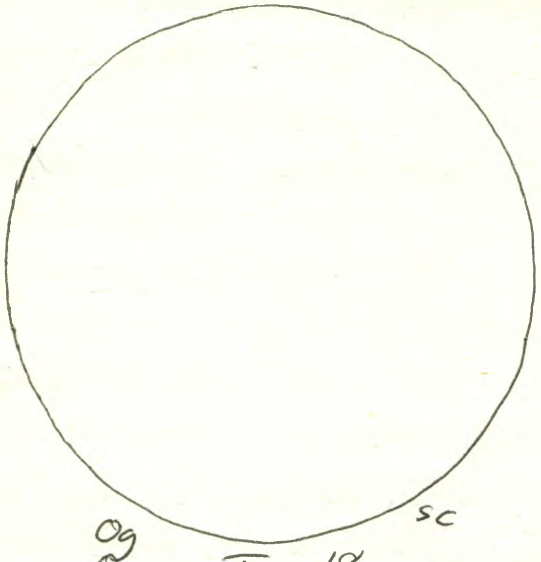
SC.

Og
Os
RSNO

Jan. 8
20:25-20:30 UT.



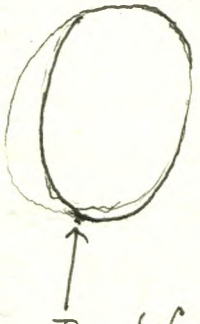
Jan 18 10:30 UT



SC

Og
Os
RSNO

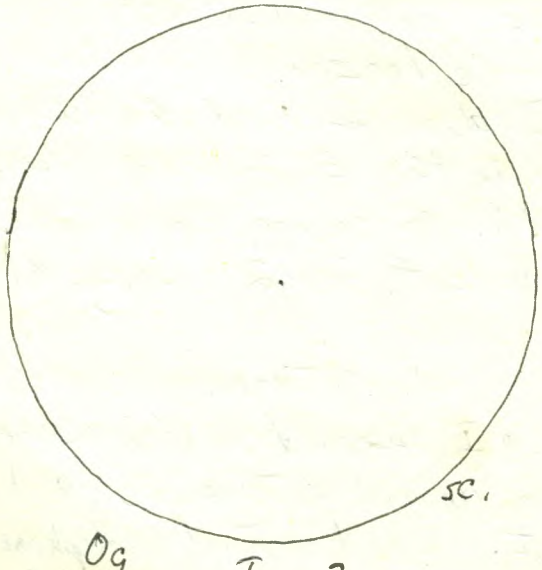
Jan. 18
18:20-18:25 UT



Occultation
of Aldebaran

αTau before disappearance
at 1:38:52 UT

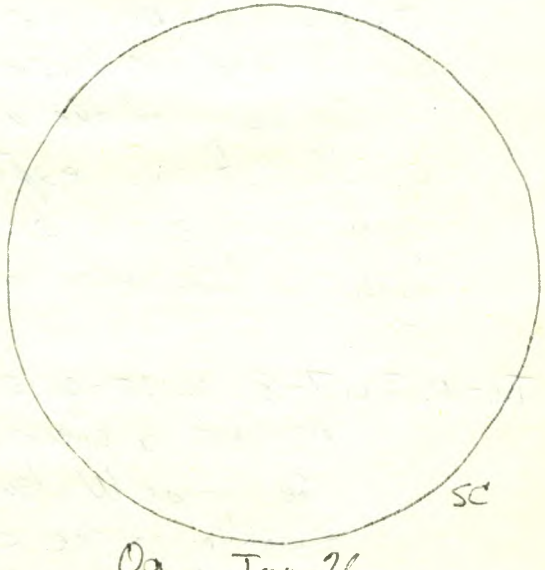
Jan. 19.



SC.

Og
Os
RSNO

Jan. 3
18:40-18:45 UT.



SC

Og
Os
RSNO

Jan. 26
19:15-19:20 UT

1997 W. Jan. 8. 20:25-20:30 UT sd C-8, 32, 28, 20, 15.5
Sun Og Os RSNO

W.-Th. Jan 8-9 00:40-01:00 UT y S-8(?) T9-9.5 ne
- observed winter constellations and photographed startrails.
A second consecutive clear night!

(5:17 - 5:35 a.m. E.S.T.) ice
F.-S. Jan. 17-18 m 10:17-10:35 UT y and S-8(?) T8-9 ne; 7x35b
- constellations, Mars "between Leo and Virgo"
comet Hale-Bopp Comet Hale-Bopp low in E, scarcely seen, if at all, naked-eye because of the cloud in the E, but easily seen with the binoculars. It was quite bright, reported to be around mag. 2.7, with a tail 1°-2° long and very wide

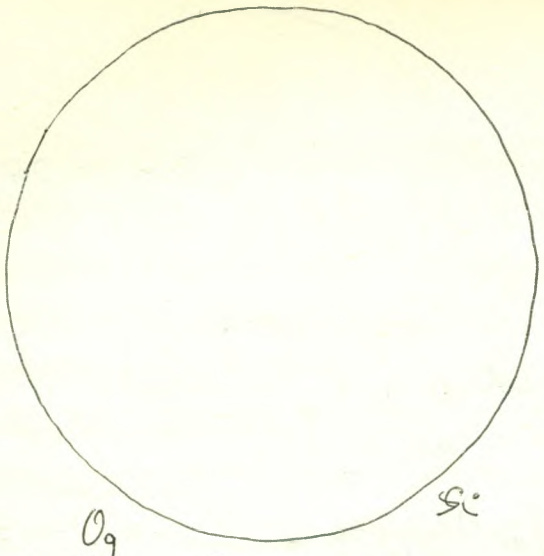
Sa. Jan. 18 18:20-18:25 UT C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F.

(129X)
Sa.-Su. Jan. 18-19 01:00-02:00 UT (off and on) ss gml; some cloud C-8, 15.5
occultation of α Tau. With the clock-drive working on the C-8, I observed the "occultation of Aldebaran". The moon approached the star, which could be easily seen because of its brightness and it disappeared at 6:38:52 UT (1:38:52 a.m. E.S.T.) I did not see the reappearance because by 7:08 UT the moon was behind the roof of the observatory and the sky had become very cloudy. I observed "off and on" because it was very cold.

Th. Jan. 23 18:40-18:45 UT C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F.

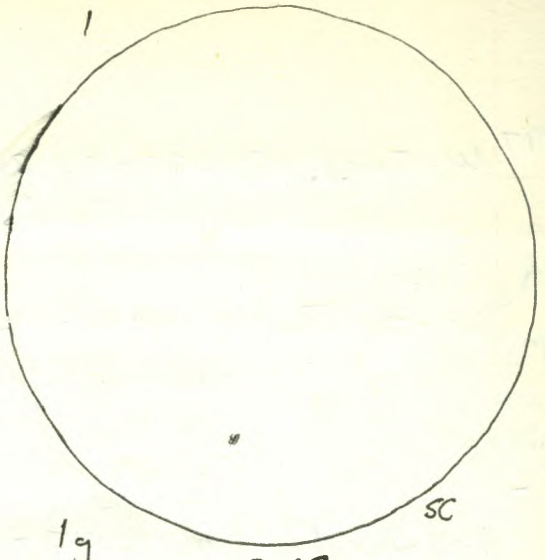
Su. Jan. 26 19:15-19:20 UT t
Sun Og Os RSNO C-8, 32, 28, 20, 15.5
(Later in the day Steve Manders phoned and said he had seen 1 small T.O.F. spot.)

Tu. Jan. 28 20:10-20:15 UT t C-8, 32, 28, 20, 15.5
Sun Og Os RSNO T.O.F.



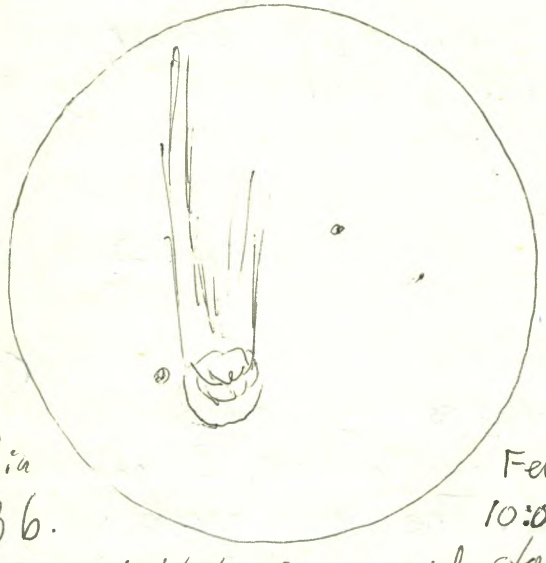
Og
Os
RSNO

Jan. 28
20:10-20:15 UT



Ig
Is
RSNII

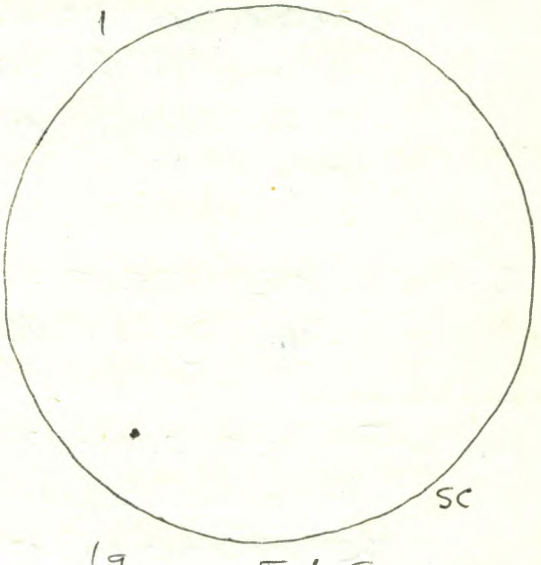
Feb. 7
20:35-20:40 UT



Field in
9x63b.

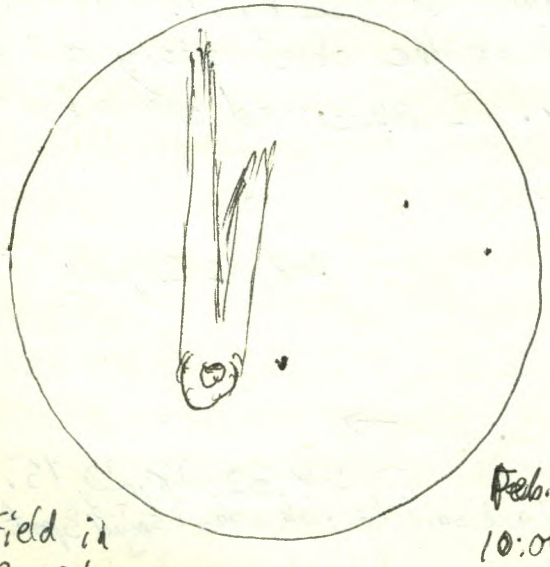
Feb. 8
10:00 UT

Comet Hale-Bopp amid stars of constellation Sagitta



Ig
Is
RSNII

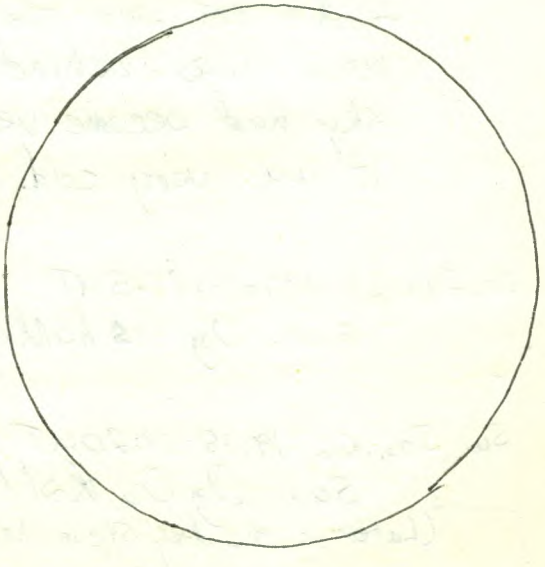
Feb. 8
20:10-20:15 UT



Field in
9x63b

Feb. 9
10:00 UT

Comet Hale-Bopp amid stars of constellation Sagitta



1997 T.-W. Jan. 28-29 01:45-02:00UT y S-8(?) T-9 ne
winter constellations.

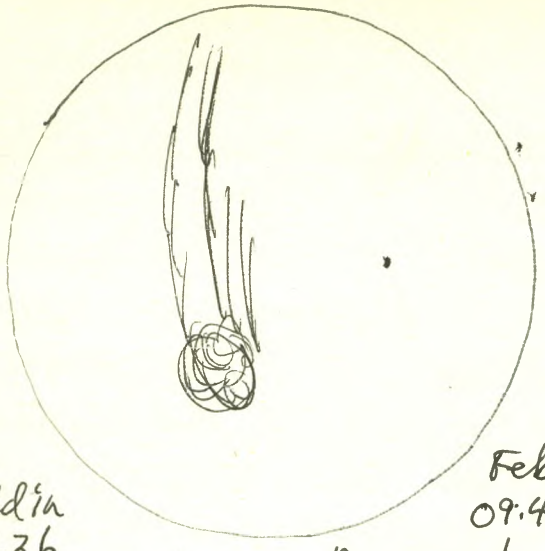
Sa.-Su. Feb. 1-2 02:15-02:20UT y S-8(?) T-9 ne
winter constellations, oCeti (Mira) was extremely bright-
oCeti about mag. 2.7. Report on Skyline was that it was at
about this magnitude, i.e., brighter than its usual predicted
maximum of mag. 3.4.

F. Feb. 7 20:35-20:40UT t C-8, 32, 28, 20, 15.5
Sun lg ls RSN11 T.O.F

F.-S. Feb. 7-8 01:25-01:30UT y S-9T9 ne
Zodiacal light - excellent. oCeti (Mira) very bright -
about mag. 2.6
winter constellations.
m. 10:00-10:40UT y S-9T9-9.5! ne; 9x636.
Comet Hale-Bopp - about mag 2.0 in Constellation
Comet Hale-Bopp Sagitta near star γ Sagittae and N.of the
star Altair. Only about 1° or so of wide tail
could be seen ne above the head of the comet
which appeared about ¼° wide. In 9x63
binoculars the tail appeared 3°-4° long and
more defined on the left side. It was about
20° above the E. Horizon. - photographed the comet
- also observed Mars in Virgo and other constellations

Sa. Feb. 9 20:10-20:15 UT C-8, 32, 28, 20, 15.5
Sun lg ls RSN11 A.P.F

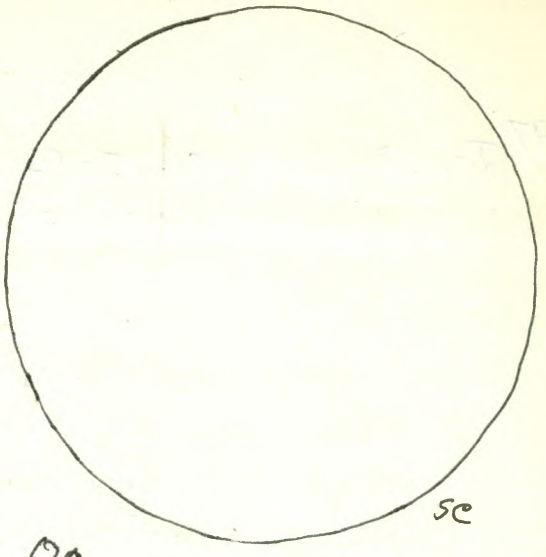
Sa.-Su. Feb. 9-10 02:10-02:30UT y S-8-9 T9.5! ne; 9x636
ne: winter constellations
9x636: M44, M41, M42, M35, M36, M37, M38, M31, M33, star
fields in Columba, area of R Lep, R Leonis, areas
of Orion; oCeti (Mira) - very bright at about
Mira - very bright mag. 2.5 (?)



Feb. 13
09:45UT

field in
9x63b

Comet Hale-Bopp and
stars of Sagitta



SC

Og
Os
RSNO

Feb 13
20:25-20:30UT

1997

(4:50 a.m. – 5:30 a.m. E.S.T.)

m 09:50 – 10:30 UT ice and y S-8-9 T9.5! ne; 9x63b

ne: morning constellations

9x63b: Comet Hale-Bopp – about mag. 1.9 – very large and bright! – coma about ¼° wide. Not the star γ Sagittae – tail about ½° to 1° ne; about 3°-4° in binoculars.

– photographed the comet

Su. Feb. 9 19:45 – 19:50 UT ss C-8, 32, 28, 20, 15.5 A.P.F.

sun Og Os RSNO

S.-M. Feb. 9-10 02:50 – 03:05 UT y S-9 T9-9.5 (some cirrus) ne; 10x25b

ne: constellations

10x25b: M41, M42, M45, M31, Double Cluster, Alcor and Mizar, area of Rhep

4:54 – 5:00 a.m. E.S.T.

W.-Th. Feb. 12-13 m 09:45 – 10:00 UT y S-8, T9 ne; 9x63b.

ne: morning constellations; bright meteor "going down in NE.

9x63b: Comet Hale-Bopp in Sagitta area at about mag. 1.8, with tail about 5° or more in b.; and about 1° or more naked-eye; Coma of comet large and prominent.

– photographed area of the comet.

Comet Hale-Bopp.

Th. Feb. 13 20:25 – 20:30 UT t C-8, 32, 28, 20, 15.5 T.O.F.

sun Og Os RSNO

S.-M. Feb. 16-17 m 10:30 – 10:33 UT y S 8(?) T 8-9(?) ne

C.H.B Comet Hale-Bopp in ENE below Cygnus at mag. about 1.5 with tail about ½° pointing upward – visible ne.

Sa.-Su. Feb. 22-23 m 10:00 – 10:05 UT y fm/ ne; 9x63b

C.H.B Comet Hale-Bopp in ENE at about mag. 1.0, almost as bright as Deneb, below Cygnus, little tail evident ne., because of moonlight

Relative Sunspot Numbers

Date 1995	My Observation	AAVSO	SIDC Brussels
Dec. 2	11	11	14
10	11	20	17
11	13	17	18
12	14	11	11
25	0	3	12
26	0	12	21
28	0	17	17
1996			
Jan. 5	44	40	48
6	44	37	47
7	28	29	41
10	0	5	11
25	0	9	9
26	0	9	9
28	0	10	10
30	0	17	16
31	0	13	11
Feb. 1	0	11	9
2	0	10	9
3	0	0	7
6	0	0	0
13	0	0	0
14	0	0	0
16	0	3	0
17	0	0	0
1378			
18	0	0	0
25	0	16	13
26	0	13	8
29	0	14	9
Mar. 2	0	0	
3	0	0	
9	0	0	
10	0	0	
11	0	12	16
12	18	16	16
14	11	11	13
15	11	9	12
1390			
16	11	8	10
17	11	8	9
18	0	8	9
19	0	6	8

Date	My Observation	AAVSO	SIDC Brussels
Mar. 24	25	11	14
26	11	19	13
27	11	20	21
28	11	14	18
29	0	11	10
1400			
30	0	0	0
31	0	0	0
Apr. 2	0	11	10
3	0	11	11
5	0	0	0
6	0	0	0
9	0	0	0
12	0	8	9
19	0	16	11
21	15	15	12
27	0	0	0
28	0	6	9
May 5	0	0	0
6	0	15	11
7	12	13	12
20	0	0	8
21	0	0	0
22	0	1	0
24	0	0	0
25	0	0	0
1420			
30	0	0	0
31	0	0	0
June 2	0	8	8
10	0	13	12
11	0	8	9
12	0	7	9
15	0	0	0
16	0	0	0
17	0	0	0
21	11	10	8
23	11	13	17
25	23	19	17
26	23	20	18
July 8	25	23	26
9	41	28	27
10	29	25	26
11	20	20	20

Date	My Observation	AAVSO	SIDC Brussels
July 12	16	13	13
14	0	0	0
17	0	0	0
18	0	0	0
20	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0
26	0	8	8
27	20	9	9
29	17	16	15
Aug. 1	25	19	19
2	20	21	23
3	27	20	23
1450			
4	16	19	21
5	16	13	14
6	12	10	10
9	0	14	14
10	17	17	15
11	23	20	19
12	15	14	17
14	12	20	21
15	18	14	19
16	12	9	10
18	0	8	9
19	0	9	11
21	0	8	10
22	0	9	9
27	12	10	11
28	12	10	11
29	12	10	9
30	11	12	14
Sept. 1	11	7	11
2	11	8	9
5	0	0	0
6	0	0	0
10	0	0	0
11	0	0	0
12	0	7	8
18	0	0	0
20	0	0	0

	C-14	C-8	Astroscan 2000
FL	3910 mm	2000 mm	445 mm
D	354 mm	200 mm	105 mm
f/	f/11	f/10	f/4.24

Date	My Observation	AAVSO	SIDE Brussels
Sept. 21	0	0	0
23	0	0	0
29	0	0	0
30	0	0	0
Oct. 1	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
11	0	0	0
14	0	0	0
25	0	8	9
Nov. 2	0	0	0
3	0	0	0
13	0	9	11
16	0	31	40
25	39	50	57
Jan. 8	0	0	0
18	0	12	14
26	0	7	8
28	0	8	9
Feb. 7	11	22	15
8	11	8	8
9	0	7	8
13	0	0	0

1490 - 1500

TELESCOPE MAGNIFICATION

OCULAR in	C-14(3910^{m}FL)	C-8(2000^{m}FL)	ASTROSCAN(445^{m}FL)
55mm	71 X	36.4 X	
40	97.8	50	11.1 X
36	108.6	55.6	12.4
32	122.2	62.5	13.9
28	139.6	71.4	15.9
26	150.4	76.9	17.1
25	156.4	80	17.8
21.5	181.9	93	20.7
20	195.5	100	22.3
19	205.8	105.3	23.4
18	217.2	111.1	24.7
17	230	117.6	26.2
15.5	252.3	129	28.7
15	260.7	133.3	29.7
13	300.8	153.8	34.2
12.7	307.9	157.5	35
12.5	312.8	160	35.6
12	325.8	166.7	37.1
9	434.4	222.2	49.4
8	488.8	250	55.6
7.4	528.4	270.3	60.1
7	558.6	285.7	63.6
5	782	400	89
4	977.5	500	111.3

USEFUL MAGNIFICATION (0.2D to 2D)

354 mm	200 mm	105 mm
71X - 708X	40X - 400X	21X - 210X

STELLAR MAGNITUDES FOR COMPARISON PURPOSES

0 Capella, Vega
1 Aldebaran
1.5 Castor
2 Polaris, Alpha Andromedae
2.5 Alpha Pegasi
3 Zeta Tauri, Gamma Ursae Minoris
3.5 Alpha Trianguli
4 Mu Andromedae
4.5 Nu Andromedae, Delta Ursae Minoris
5 Chi Cassiopeiae

Local Mean Sidereal Time

For 1997:

$$L.M.S.T. = 6.^{h}646551984 + 0.^{h}0657098244d + 1.^{h}00273790934t - 5.^{h}11123737$$

Longitude: W. $76^{\circ}\ 40'\ 06.''818$
$76.^{\circ}66856055$
$5.^{h}11123737$
$5^{h}\ 06^{m}\ 40.^{s}454532$

Latitude: N. $44^{\circ}\ 45'\ 32''$
$44.^{\circ}758$