

Volume  
**19**

March 15, 2002  
to  
September 7, 2002

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19.

**Hilroy**



- Heavyweight paper
- Papier épais

*Leo Enright*

*Observing March 15, 2002 - Sept. 7, 2002*

**80**

Pages

26.7x20.3cm

**MATHS/SCIENCES**



13220



## Observing Log

Code:

Year Day Date Time Place Sky Conditions  
 S=Seeing T=Transparency Instrument(s)

Time:

UT = Universal Time

n = night  
 m = morning  
 f = forenoon  
 a = afternoon  
 e = evening

Places:

oo = Oso Observatory  
 nd = north deck  
 sh = shoreline of lake  
 ss = solar station  
 t = table at solar station  
 in = indoors  
 r = roof of house  
 ice = ice on lake  
 sd = south deck  
 y = yard - la: laneway  
 FL = Florida: - by = backyard  
                   - at = condo  
                   - pl = swimming pool

Sky Conditions:

S = Seeing  
 T = Transparency  
 0-10 scale: 0 = nil or extremely poor  
 10 = absolutely superb.  
 cml = crescent moonlight  
 gml = gibbous moonlight  
 fml = full moonlight

Instruments:

C-14 = Celestron 14-35.5cm SCT  
 C-8 = Celestron 8-20cm SCT  
 Ast = Astroscan 2001-10.5cm RFT  
 12½" = Denise's 32cm Meade Dobsonian  
 20x100b = 20x100 binoculars  
 11x 80b = 11x80 binoculars  
 9x63b = 9x63 binoculars  
 7x35b = 7x35 binoculars  
 18x50ISb = 18x50 IMAGE STABILIZED binoculars

EG = "Easy Guider"  
 EGf = "Easy Guider," lens forward  
 EGb = "Easy Guider," lens back

32 = 32mm ocular  
 32-2 = 32mm 2" ocular  
 k = Kellner  
 o = orthoscopic  
 ko = König  
 WA = Wide Angle  
 P = Plössl  
 ph = photography  
 p/b = piggy back  
 o/a = off axis  
 Ba = Barlow  
 A.P.F. = Astro-Physics Solar Filter  
 T.O.F. = Thousand Oaks Solar Filter

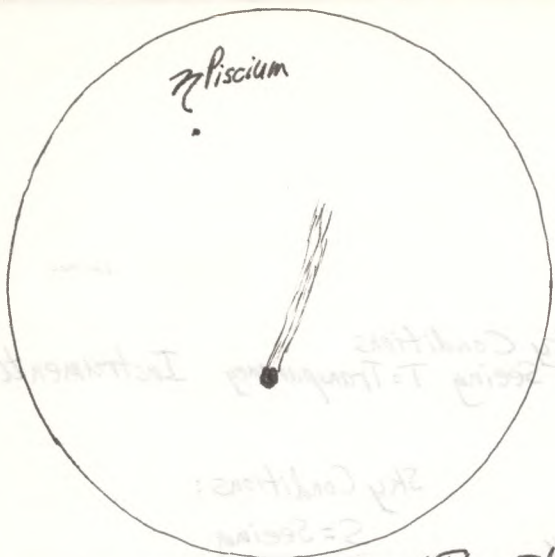
Objects:

PN = Planetary Nebula  
 GC = Globular Cluster  
 OC = Open Cluster  
 SG = Spiral Galaxy  
 EG = Elliptical Galaxy  
 D = Double Star  
 LPV = Long Period Variable

Atlases:

U = Uranometria 2000.0  
 U210 = Uranometria 2000.0 Chart 210  
 AAUSO = AAUSA Variable Star Atlas  
 Cam = Cambridge Star Atlas 2000.0  
 MSA = Millennium Star Atlas





Mar. 15-16 01:10 UT Comet Ikey-Zhang  
view in 10x25 binoculars

Year Day Date Time Place

Time  
UT = Universal Time  
M = night  
A = morning

Places:  
00 = 0m base  
10 = 10m base  
20 = 20m base  
30 = 30m base  
40 = 40m base  
50 = 50m base  
60 = 60m base  
70 = 70m base  
80 = 80m base  
90 = 90m base  
100 = 100m base

Instruments:  
C-14 = Celestron 14-32 SCT  
C-8 = Celestron 8-90cm SCT  
A-1 = Astroscan 2001-10.2cm RFT  
12.5" = Denix 32cm Meade Dobsonian  
60x100 = 60x100 binoculars  
11x80 = 11x80 binoculars  
9x32 = 9x32 binoculars  
7x32 = 7x32 binoculars  
18x50 = 18x50 WASSERSTABILIZED binoculars

32 = 32mm ocular  
32-5 = 32mm 5° ocular  
K = Kellner  
O = orthoscopic  
K = Koenig  
WA = Wide Angle  
P = Plössl  
PH = photography  
PB = piggy back  
O/A = off axis  
Ba = Barlow  
APF = Astro-Physics solar filter  
TOF = Thousand Oaks solar filter

Objects:  
PN = Planetary Nebula  
OC = Open Cluster  
SG = Spiral Galaxy  
EG = Elliptical Galaxy  
D = Double Star  
LNV = Long Period Variable

Filters:  
M = Chromatic 2000.0  
M10 = Messier 10 2000.0 Chart 210  
AAV20 = AAUSA Variable Star Atlas  
Cam = Cambridge Star Atlas 2000.0  
MSA = Millennium Star Atlas

10 = 10m base  
20 = 20m base  
30 = 30m base  
40 = 40m base  
50 = 50m base  
60 = 60m base  
70 = 70m base  
80 = 80m base  
90 = 90m base  
100 = 100m base

EG = Easy Guide  
EG17 = "Easy Guide", low power  
EG18 = "Easy Guide", low power

Objects:  
PN = Planetary Nebula  
OC = Open Cluster  
SG = Spiral Galaxy  
EG = Elliptical Galaxy  
D = Double Star  
LNV = Long Period Variable

Filters:  
M = Chromatic 2000.0  
M10 = Messier 10 2000.0 Chart 210  
AAV20 = AAUSA Variable Star Atlas  
Cam = Cambridge Star Atlas 2000.0  
MSA = Millennium Star Atlas



2002 F: Mar. 15-16

23:30-00:30 UT FL: Barefoot Beach mainly twl ne; 10x25b

ne: Denise and I went to the beach before sunset, and waited for the moon and stars to appear. I spotted Venus in binoculars about 5 min. after the sun set, i.e., at 23:41 UT, after the sun had set at 23:36 UT. I then saw the crescent moon, slightly less than 2 days old, about  $30^\circ$  above the W. horizon. Later I saw Jupiter, Saturn, and Aldebaran, Mars, and the stars of Orion, and Canopus.

10x25b: Before seeing them ne, I saw Venus, Crescent Moon, Mars, stars of Aries, Jupiter, Saturn and the Hyades.

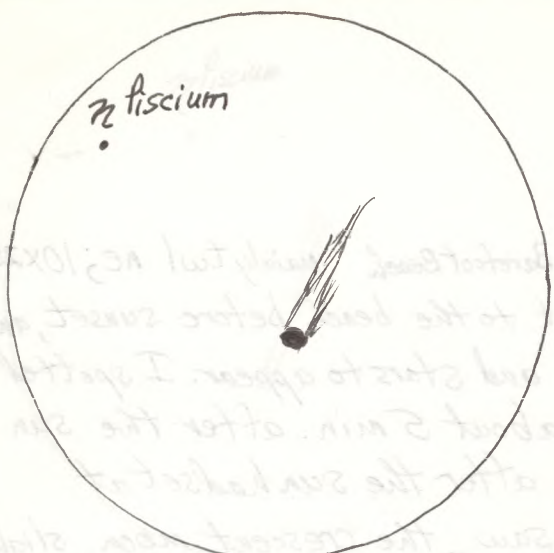
01:05-01:15 UT FL: <sup>a beach in Naples</sup> Lowdermilk Park, 58EJT47 ne; 10x25b

ne: After a park patrol asked us to leave because the beach (Barefoot Beach) was closed, and the car might be towed away by police, we left and drove to Naples and found a beach access. That park was also closed, but we used it anyway. Clouds and fog had moved into the western sky over the Gulf of Mexico. However, we could see some of the stars, and in a few minutes we could see even more, but large areas of sky remained clouded. We saw Orion, stars of Taurus, Jupiter, Saturn, Mars and Aries.

10x25b: Though there was some haze and the view was not perfect, I could see Comet Ikeya-Zhang and its tail which stretched upward about 1.5 degrees. The comet was noticeably past the star in Pisces that had been covered by the tail of the comet the previous night - or the star near which the tail was the previous night. (See diagram.)

Comet Ikeya-Zhang  
(4)





♂ piscium

Mar. 16-17 01:15 UT Comet Ikeya-Zhang  
view in 10X25 binoculars

the tail was the previous night. (see diagram)  
 tail of the comet the previous night - or rather near which  
 noticeably past the star, but had been covered by the  
 which stretched upward about 1.5 degrees. The comet in  
 perfect, I could see Comet Ikeya-Zhang as a tail  
 . First: Though there was some haze and the view wasn't  
 stars of Tau, Jupiter, Saturn, Mars and Air  
 areas of sky remained clouded. Messier Orion  
 minutes we could see even more, but large  
 we could see some of the stars, and in a few

Western sky over the Gulf of Mexico. However  
 roadway. Clouds and fog had penetrated the  
 That park was also closed, but we used it  
 and drove to lights and found a dark access  
 car might be found around by police, we left  
 the park (for foot park) was closed, and the  
 us: After a guard patrol asked us to leave because  
 01:05-01:15 UT

Saturn and the Hyades.  
 Crescent Moon, Mars, stars of Arcturus, Jupiter  
 10X25: Before seeing them we, I saw Venus,  
 Mars, and the stars of Orion, and Capricorn.

later I saw  
 less than 2 days  
 23:30 UT. I then saw the comet for a slightly  
 i.e., at 23:41 UT, after the sunset  
 Venus in binoculars about 5 min. after the sun set  
 waited for the sun and stars to appear. I spent  
 us: Denise and I went to the bank for sunset and  
 23:30-00:30 UT

Mar 15-16 2002



2002 <sup>Sa.-Su</sup> Mar. 16-17 00:00-01:35 UT FL: Lowermilk Park <sup>in Naples</sup> twl; SPT 5-7-4 <sup>clouds</sup> ne; 10x25b  
ne.: Denise and I drove to Lowermilk Park and although there was considerable fog 20° up from the horizon, from N through W to S, we saw stars of winter high in the S. and Canopus in the S., and Jupiter, Saturn, and Mars, and Aries in the W. Comet Ikeya-Zhang (C/2002C1) was not seen naked-eye though it was about 20° above the W. horizon at the end of astronomical twilight below Aries.

Comet Ikeya-Zhang (5) 10x25b: Saturn and the Hyades, Mars, Aries, Comet Ikeya-Zhang (C/2002C1), though the fog and haze in the W. made it faint and ill-defined.

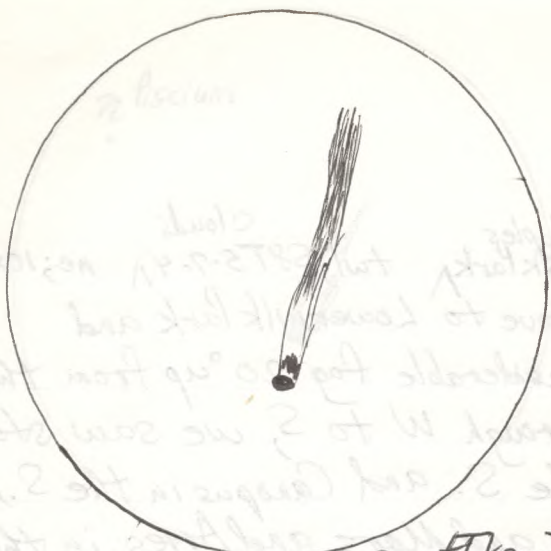
ph: -photographed area of comet with 50mm f/1.2 lens and 35-105mm f/3.5 lens at 105mm.

S.-M. Mar. 17-18 01:20-01:30 UT FL: end of street <sup>Village View Blvd.</sup> 58(?) T 5-7 <sup>moonlight</sup> ne; 10x25b

ne.: Denise and I walked on the street and near the tennis court hoping to see Comet Ikeya-Zhang, but did not see it. We saw Jupiter, Saturn, Mars, and the stars of winter on a clear night  
10x25b: I searched the sky in the W. below Mars, but did not see the comet. It may have been lower than where I was looking and behind trees or obstructions.

T.-W. Mar. 19-20 01:00-01:10 UT FL: end of street <sup>Village View Blvd.</sup> 58(?) T 5-8 <sup>some cloud, civil</sup> ne; 10x25b  
ne.: stars of winter, Jupiter, Saturn, Mars.  
10x25b: looked in W. in area below the stars of Aries, but did not knowingly see Comet Ikeya-Zhang (C/2002C1)





Mar. 20-21 01:00 UT Comet Ikey-Zhang  
view in 10x25 binoculars

2002  
Mar 16-17  
00:00-01:00 UT  
no. Denise and I  
although there was  
horizon, from W to E,  
of winter night, the  
and Jupiter, 2nd  
W. Comet Ikey-Zhang

the W. horizon  
below Aris.  
10x25: return and  
Ikey-Zhang (Ikey-Zhang)  
in the W. made it faint and ill-defined.  
pl. - photographed area of comet with 50mm f/1.2  
lens and 35-405 mm f/5.6 lens of 105mm.

2-M. Mar 17-18 01:20-01:30 UT  
no. Denise and I  
travis court trying to see Comet Ikey-Zhang,  
but did not see it. W. saw Jupiter return

Mar. and the stars of winter on a clear night  
next: I searched the sky in the W. below  
Mars, but did not see the comet. It may  
have been lower than where I was looking  
and behind trees or obstructions.

T. W. March 20 01:00-01:10 UT  
no. stars of winter, Jupiter, Saturn, Mars.  
presb. looked in W in area below the stars of  
Aris, but did not knowingly see Comet  
Ikey-Zhang (Ikey-Zhang)



W-Th. Mar. 20-21 00:55-01:05 UT FL: end of street  $\nearrow$  Village View Blvd.  $\nearrow$  cml 58? T6-7  $\nearrow$  ne; 10x25b  
ne.: stars of winter, Jupiter, Saturn, Mars, Aries.

10x25b: Jupiter, Saturn and Hyades, Mars, Aries.  
Comet Ikeya-Zhang (C/2002 C<sub>1</sub>) in W. at about mag. 3.5, found almost in a line down and to the right from Mars through  $\beta$  And  $\gamma$  Arietis to the comet. Tail of the comet was clearly visible in binoculars. (See diagram.) Nice comet, considering the light pollution and the moonlight!

Comet Ikeya-Zhang  
(6)

Mo-T. Apr. 1-2 00:15-01:00 UT near Medical Centre Sharbot Lake Beach  $\nearrow$  twl ne; 18x50 15b  
ne.: stars of winter in S. and SW, Venus low in W.

- looked for Comet Ikeya-Zhang in W and to the right of Venus, but did not see it naked-eye.

Comet Ikeya-Zhang  
(7)

18x50 15b: - Venus low in W. Comet Ikeya-Zhang which appeared spectacular in the binoculars with its tail about 5° long. The winds off the lake were very cold.

03:20-03:35 UT  $\nearrow$  58(?) T8-9 ne

ne.: observed stars of late winter and spring, Saturn in NW, Jupiter in W.

ph.: photographed 5 areas of the sky.

W-Th. Apr. 3-4 00:00-01:45 UT at Silver Lake MTC picnic area  $\nearrow$  twl; 58 T9.5!  $\nearrow$  18x50 15b ne;  $\nearrow$

Comet Ikeya-Zhang  
(8)

ne.: stars of winter sky, Jupiter, Saturn, Mars and Venus - all in the W. sky. Comet Ikeya-Zhang

(C/2002 C<sub>1</sub>) was seen fairly easily ne. It was only about 1 degree from M31, low in the NW, up about 15° at the end of astronomical twilight (about 01:15 UT). Hints of a tail about 2° long were there.

18x50 15b: Comet and its tail were impressive and were



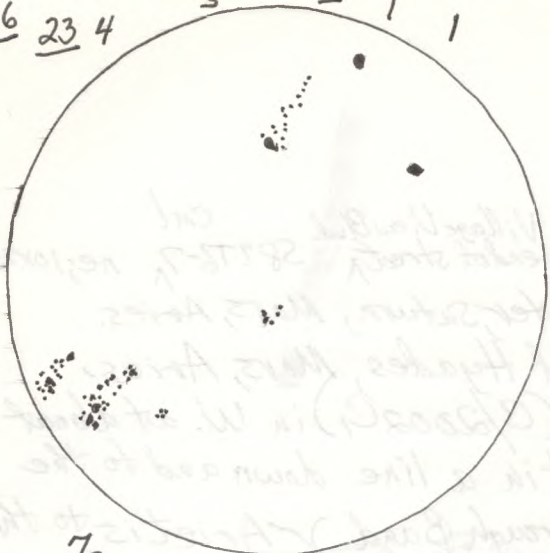
16 23 4

5

16

1

1



7g  
665  
RSN136

Apr. 6  
17:35-17:40 UT

W-TR Mar 20-21 10:22-01:02 UT  
 no: stars of winter  
 looked for Comet Ikeyu-Zhang in W and to the  
 right of Venus but did not see it naked eye.  
 right of Venus but did not see it naked eye.  
 Venus - all in the W sky. Comet Ikeyu-Zhang  
 (C/2002 G1) was seen fairly easily as it  
 was only about 1 degree from M31 low in the  
 NW, up about 15° at the end of astronomical  
 twilight (about 01:15 UT). Hints of a tail but  
 2° long were there.  
 Observed: Comet and its tail were impressive and were

W-TR Mar 20-21 10:22-01:02 UT  
 no: stars of winter  
 looked for Comet Ikeyu-Zhang in W and to the  
 right of Venus but did not see it naked eye.  
 right of Venus but did not see it naked eye.  
 Venus - all in the W sky. Comet Ikeyu-Zhang  
 (C/2002 G1) was seen fairly easily as it  
 was only about 1 degree from M31 low in the  
 NW, up about 15° at the end of astronomical  
 twilight (about 01:15 UT). Hints of a tail but  
 2° long were there.  
 Observed: Comet and its tail were impressive and were

W-TR Apr 1-5 00:00-01:00 UT  
 no: stars of winter in 2 and SW Venus low in W.  
 looked for Comet Ikeyu-Zhang in W and to the  
 right of Venus but did not see it naked eye.  
 right of Venus but did not see it naked eye.  
 Venus - all in the W sky. Comet Ikeyu-Zhang  
 (C/2002 G1) was seen fairly easily as it  
 was only about 1 degree from M31 low in the  
 NW, up about 15° at the end of astronomical  
 twilight (about 01:15 UT). Hints of a tail but  
 2° long were there.  
 Observed: Comet and its tail were impressive and were

W-TR Apr 1-5 00:00-01:00 UT  
 no: stars of winter in 2 and SW Venus low in W.  
 looked for Comet Ikeyu-Zhang in W and to the  
 right of Venus but did not see it naked eye.  
 right of Venus but did not see it naked eye.  
 Venus - all in the W sky. Comet Ikeyu-Zhang  
 (C/2002 G1) was seen fairly easily as it  
 was only about 1 degree from M31 low in the  
 NW, up about 15° at the end of astronomical  
 twilight (about 01:15 UT). Hints of a tail but  
 2° long were there.  
 Observed: Comet and its tail were impressive and were

W-TR Apr 3-4 00:00-01:00 UT  
 no: stars of winter sky, Jupiter, Saturn, Mars and  
 Venus - all in the W sky. Comet Ikeyu-Zhang  
 (C/2002 G1) was seen fairly easily as it  
 was only about 1 degree from M31 low in the  
 NW, up about 15° at the end of astronomical  
 twilight (about 01:15 UT). Hints of a tail but  
 2° long were there.  
 Observed: Comet and its tail were impressive and were

W-TR Apr 3-4 00:00-01:00 UT  
 no: stars of winter sky, Jupiter, Saturn, Mars and  
 Venus - all in the W sky. Comet Ikeyu-Zhang  
 (C/2002 G1) was seen fairly easily as it  
 was only about 1 degree from M31 low in the  
 NW, up about 15° at the end of astronomical  
 twilight (about 01:15 UT). Hints of a tail but  
 2° long were there.  
 Observed: Comet and its tail were impressive and were



2002

quite near M31, the tail being about  $3^\circ$  long in the binoculars.

ph: photographed the comet and area near it.

Th.-F. Apr. 4-5 00:00-01:30 UT <sup>Silver Lake</sup> MTC stop at <sub>N</sub> twl; some cloud ne; <sup>18X5015b</sup>

Comet Ikeya-Zhang  
(9)

ne: planets in W. evening sky, Comet Ikeya-Zhang (C/2002 C1) seen easily naked-eye beginning before the end of astronomical twilight which was at about 01:18 UT; one loagn meteor was seen in the N. sky. Tail of the comet was about  $3^\circ$  long. Zodiacal Light was bright and prominent up to the Pleiades

18X5015b: Venus, some stars of And. near  $\beta$  And., M31, Comet Ikeya-Zhang (C/2002 C1) only about  $1^\circ$  from M31, Tail of the comet about  $3^\circ$  in length.

Sa. Apr. 6 17:35-17:40 UT ss - t C-8,32  
sun Tg 66 s RSN 136

Sa.-Su. Apr. 6-7 00:05 - 01:40 UT <sup>Silver Lake</sup> MTC stop at <sub>N</sub> twl; SPT89 ne; <sup>18X5015b</sup>

Comet Ikeya-Zhang  
(10)

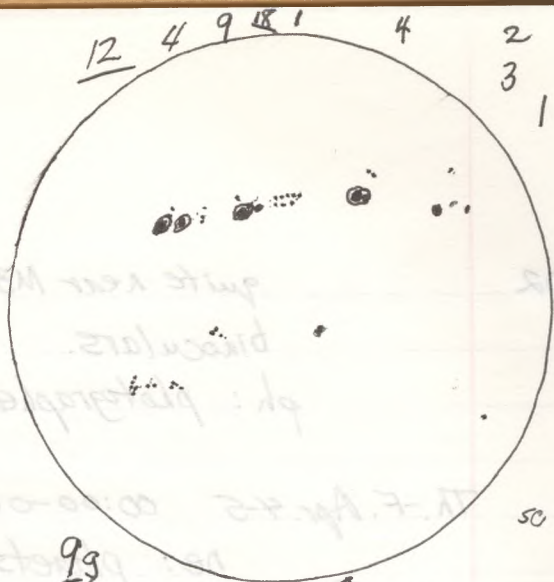
ne: array of 4 planets in twl, from Venus about  $10^\circ$  above the horizon to Jupiter up about  $60^\circ$ ; with Mars and Saturn in between - Mars near the Pleiades and Saturn near the Hyades. Comet Ikeya-Zhang was seen naked-eye about  $15^\circ$  to  $10^\circ$  above the horizon and only about  $2^\circ$  from M31. The Zodiacal Light was quite clear and distinct and up at least as far as the Pleiades.

18X5015b: Venus, some stars in Andromeda, M31,





Apr. 6-7 01:30 UT Comet Ikeya-Zhang  
view in 18X50LS binoculars



9g  
5 1/2  
RSN 144

Apr. 10  
14:40-14:45 UT

about 01:18 UT; one fragment was seen in the  
N. sky. Tail of the comet was about 3° long.  
Zodiacal light was bright and prominent up to the  
Pleades  
18X50LS: Venus some stars of And. near Pleades,  
M31, Comet Ikeya-Zhang (close) only  
about 1° from M31, tail of the comet  
about 3° in length.

2a Apr. 6 17:35-17:40 UT  
Sun to be RSN 132

2a-2b Apr. 6-7 00:02-01:40 UT  
NG: array of planets in tail from Venus  
about 10° above the horizon to 2° up above  
60° with Mars and Saturn in between.  
Mars near the Pleades and Saturn near the Hyades.  
Comet Ikeya-Zhang was seen at about 15° above  
15° to 10° above the horizon and only  
about 2° from M31. The Zodiacal light was  
quite clear and distinct and up about 20°  
as the Pleades.  
18X50LS: Venus some stars in Andromeda, M31

Comet Ikeya-Zhang (10)



2002

Comet Ikeya-Zhang (C/2002 C<sub>1</sub>) with its tail about 3° or more, very distinctly seen in the binoculars, not far from M31.

W. Apr. 10 14:40-14:45 UT ss-t

C8, 32

sun 9g 54s RSN144

W.-Th. Apr. 10-11 00:15-01:45 UT <sup>Silver Lake</sup> MTC stop at twl; S8T9 ne; 18x5015b

ne: 4 planets in W. from Jupiter to Saturn to Mars, to Venus, winter stars setting in W. or low in SW.

Comet Ikeya-Zhang  
(11)

Comet Ikeya-Zhang (C/2002 C<sub>1</sub>) in NNW below the star  $\alpha$  Cas and about 15° above the horizon, Zodiacal Light quite bright after the end of astronomical twilight which was at about 01:28 UT  
18x5015b: Venus low in WNW during twilight, Comet Ikeya-Zhang and its tail of about 2° in length. - ph: area of Venus and of the comet.

02:20-03:00 UT 00 ne; C-14, 19

ne: Jupiter and the bright stars of spring, but frustrated by a bright outdoor light from across the road - from below the deck on the east side of the house.

C-14: Jupiter and 4 Galilean moons, with the bands of the planet quite clear; Alcor, and a well-split and very bright Mizar, along with Sidus Ludovicii and another star near it.

Just after the light was turned off at about 03:00 UT, the sky became quite overcast.

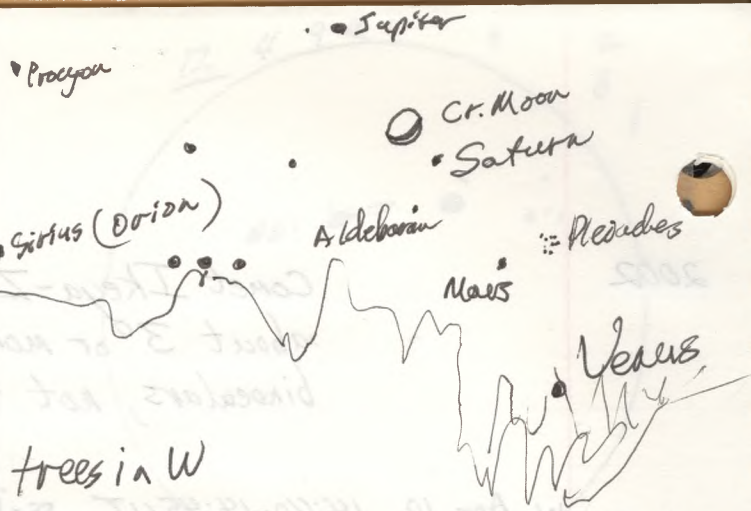
Th.-F. Apr. 11-12 00:45-02:00 UT <sup>at Driscoll's place</sup> across road at shore, twl; S8T9 ne; 18x5015b  
ne: stars of winter in W., beautiful array of 4 planets in W.





109  
615  
RSN161

Apr 12  
14:50-15:00 UT



trees in W

W Apr. 16-17 - 01:00 UT NW  
View of 4 bright Planets and Cr. Moon  
in W. sky



2002

Jupiter in Gemini, Saturn in Taurus, Mars near Pleiades and Venus within 10 degrees of the horizon. I looked to see if Comet Ikeya-Zhang could be seen naked eye, but was not quite sure that it could be, though it was probably very close to being naked-eye. For a good part of the session clouds were near or just below where the comet was, and made it difficult to see for a while, though most of the sky was cloud-free.

18x5015b: Pleiades, areas of Cassiopeia, Comet Ikeya-Zhang  
Comet Ikeya-Zhang (C/2002 C1) with a tail about  $5^\circ$  in length.  
(12) ph: - area of Venus in the WNW and area of the comet in the NNW, below the constellation Cassiopeia

02:10 - 04:40 UT 00 and nd 5879 ne; C-14, 40-2; 18x5015b  
ne: stars of spring, Jupiter, Saturn, one fairly bright meteor.

C-14: Jupiter and 2 moons seen through the camera lens when eyepiece projection photography of Jupiter, M51 - outstandingly beautiful!, one of the galaxies near the star  $\theta$  Leonis - possibly NGC 3593

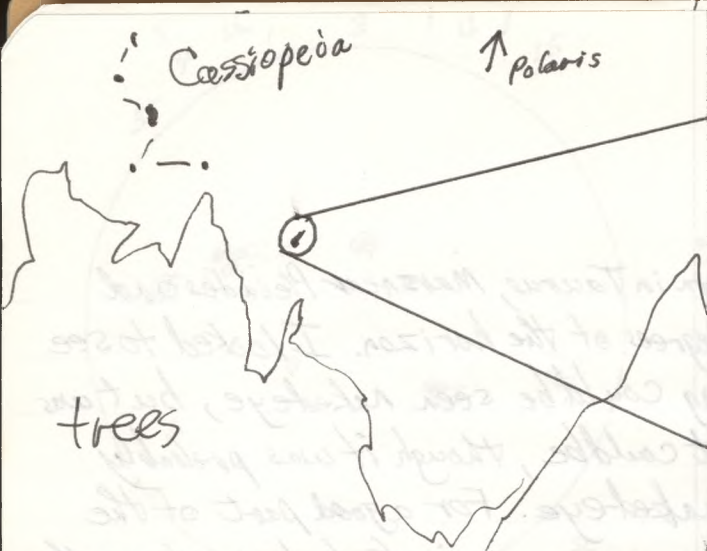
18x5015b: At the north deck, I viewed Comet Ikeya-Zhang approximately at its lower culmination as it was seen "below Polaris."

ph: In the observatory I

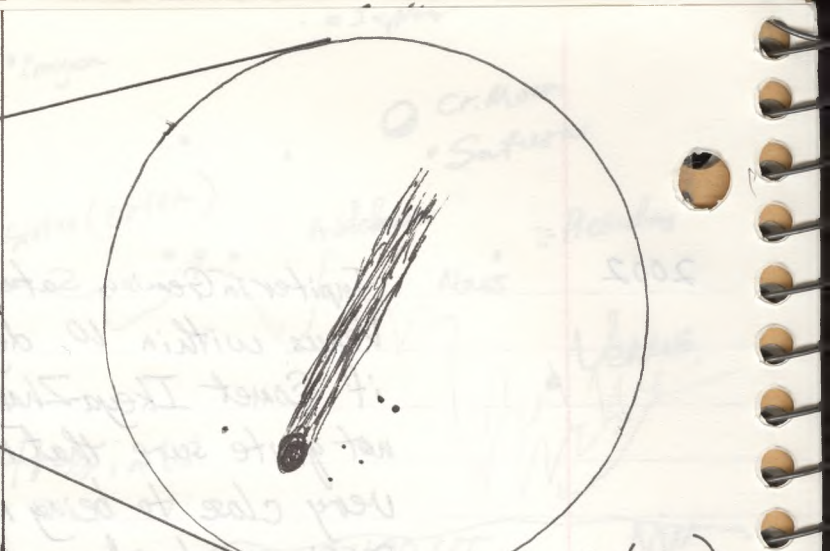
F. Apr. 12 14:50-15:00 UT ss-t C-8, 32  
sun 10g 615 RSN 161

T.-W. Apr. 16-17 00:32-02:00 UT y twl; <sup>5879</sup>(crnl.) ne; 18x5015b  
ne: array of 4 planets in W sky - Jupiter, Saturn below cr. moon, Mars near Pleiades, Venus - about  $10^\circ$ - $15^\circ$  above the WNW horizon (See diagram.)

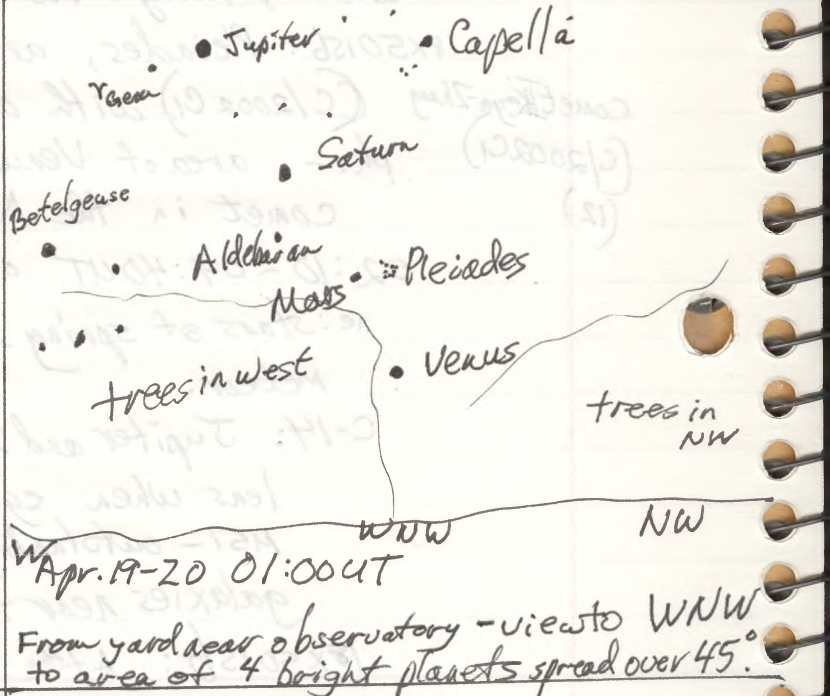
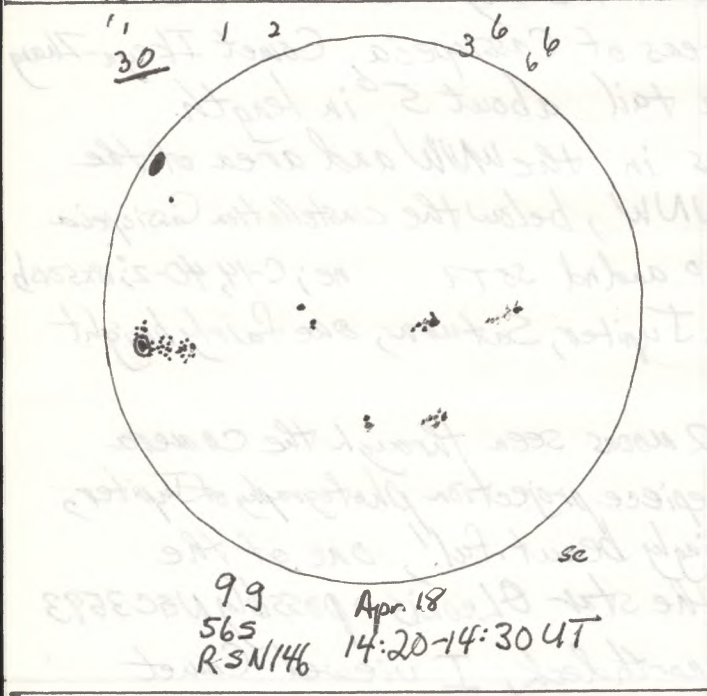




Apr. 16-17 01:30 UT N  
 From yard near observatory - view to the N  
 to area of the Comet not seen ne.



View of Comet Ikeya-Zhang (C/2002A) seen near Cas.-Cep border in 18x50 ISB.



Apr. 19-20 01:00 UT  
 From yard near observatory - view to WNW  
 to area of 4 bright planets spread over 45°



2002

Comet Ikeya-Zhang  
(C/2002C1)

18x50 ISb: Pleiades; searched for Mercury low in the WNW sky, but did not see it; Comet Ikeya-Zhang easily seen about  $12^\circ$  above the horizon and  $10^\circ$  to the left from the due N. point on the horizon. The tail appeared about  $4^\circ$  long in the binoculars. The comet was not seen naked-eye, though the cr. moonlight was bright. (See diagram.)

Th. Apr. 18 14:20-14:30 UT ss-t

C-8-32

sun 9g 565 RSN146

Th.-F. Apr. 18-19 01:50-01:55 UT and nd cml.

ne

- bright stars of N. and W.; Saturn, up and to the right from Aldebaran in WNW; bright waxing cr. moon about  $1^\circ$  to  $1.5^\circ$  above Jupiter in Gemini in WNW. Some lightning was seen in the N. during the second session.

F.-S. Apr. 19-20 00:50-01:35 UT nd twl; fgm.

ne; 18x50 ISb

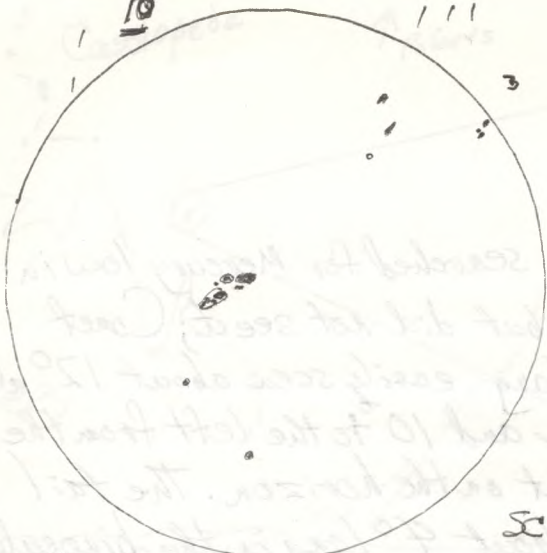
ne: winter stars setting in W; array of four planets in WNW spread over about  $45^\circ$  from Venus about  $15^\circ$  above the WNW horizon to Mars, Saturn, and Jupiter in Gemini. An Auroral glow and arc spread across the N. sky from NW to NE and up about  $20^\circ$  above the horizon. It was about  $10^\circ$  wide. There may have been hints of Auroral red above it.

Aurora

Comet Ikeya-Zhang  
(C/2002C1)

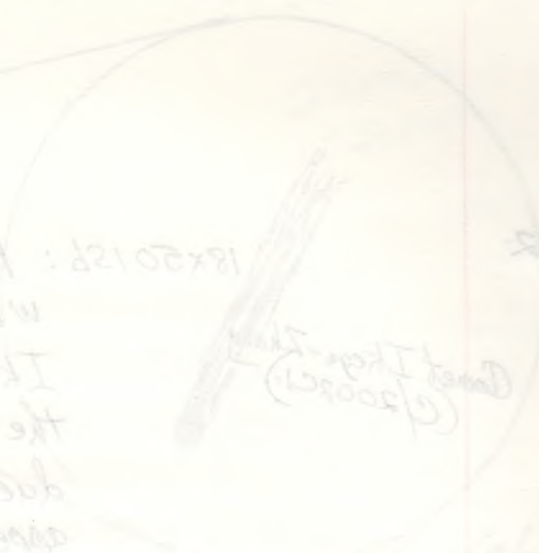
18x50 ISb: Venus, Mars, Jupiter, Saturn, Pleiades, Comet Ikeya-Zhang (C/2002C1) at about mag. 6, but the tail seen in the binoculars was probably less than  $1^\circ$  because of the glow of moonlight and Aurora.





79  
185  
RSN 88

Apr. 21  
18:45-18:55 UT



the tail seen in the direction was probably less than 1° because of the angle of visibility and because of the spread across the sky from NW to the east. It was about 20° above the horizon. As Auroral glow and aurora spread across the sky from NW to the east. As Auroral glow and aurora spread across the sky from NW to the east. As Auroral glow and aurora spread across the sky from NW to the east.

Roots  
Ikey-Zheng (C/2009C1) at about 10° but the tail seen in the direction was probably less than 1° because of the angle of visibility and because of the spread across the sky from NW to the east. It was about 20° above the horizon. As Auroral glow and aurora spread across the sky from NW to the east.



2002

Su. Apr. 21 18:45-18:55 UT ss-t

C-8, 32

Sun 7g 18s RSN 88

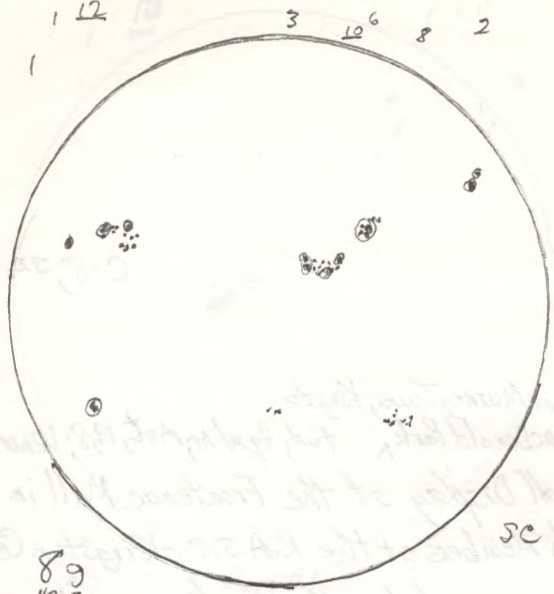
Sa.-Su. Apr. 20-21 00:00-02:30 UT <sup>near Murney Tower, Kingston</sup> MacDonald Park, twl; fgd 1g; Ast, 13, 8; Venor 24"

First Light  
for Venor 24"  
Telescope

ne: After a very good Moon Display at the Frontenac Mall in Kingston, I ate with members of the R.A.S.C.-Kingston Centre at Harvey's, and we went to the park near Murney Tower for an observing session. I took my Astroscan and 18X50 ISB. It was the "first light" event for the newly completed 24" Robert Venor Telescope. It had been named after the late Robert Venor of the Montréal Centre, from whose estate the mirror had been donated. The construction project had been completed by the Amateur Telescope Makers Group within the Kingston Centre. Doug Angle and President Laura Gagné made short speeches and a long line-up of members of the public as well as of the Centre formed to look through the enormous instrument. It was aimed at the first quarter moon and later at Jupiter. Near the end of the session I lined up to see Jupiter and three of its moons. There were many background stars! Though there were certainly some clouds in the area many people in the crowd had a chance to see lunar craters, Jupiter and Saturn at different telescopes.

Ast: I observed and showed quite a number of people lunar craters and Jupiter and three of its moons, and for a short while Saturn, but when I tried to observe Saturn, there was some cloud in the area, and so I went back to the moon and Jupiter. Some people seemed quite impressed by





89  
435  
RSN 123

Apr. 23  
15:15-15:20UT

Jupiter

Betelgeuse

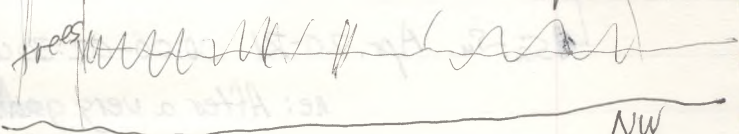
Saturn

Aldebaran Mars

Venus

Mercury trees

Rigel



W Apr. 23-24 01:00UT  
-from across road at Driscoll's place - view to  
WNW to area of 5 planets!

find light  
for view  
telescope

I had to see Jupiter and this of its moon. There were many background stars. I thought there were certainly some clouds in the area. I had a chance to see four of different telescopes. I observed one star and Jupiter and this of its moon. I tried to observe Saturn, but when I look at the area, I was back to the moon and Jupiter. The people around didn't appear to be interested.



2002

the crisp sharpness of the views of the moon and its craters.

Venor 24" - Jupiter and 3 of its moons and many background stars!

M.-T. Apr. 22-23 ~ 02:05-02:40 UT rd gml; some cloud ne; 18X5015b

ne: some stars of the W. and N. sky

Comet Ikeya-Zhang (C/2002 C1) 18X5015b: Jupiter; Comet Ikeya-Zhang (C/2002 C1) in N about  $15^\circ$  above the horizon, very clear in the binoculars but the tail was not very distinct, probably because of the bright moonlight

Tu. Apr. 23 15:15-15:20 UT ss-t

C-8, 32

sun 8g 43s RSN/123

T.-W. Apr. 23-24 00:40-01:15 UT across road at shore at Driscoll's place twilgml ne; 18X5015b

ne: In the twilight, beginning about 00:40 UT (about 38 minutes after sunset at about 00:02 UT)

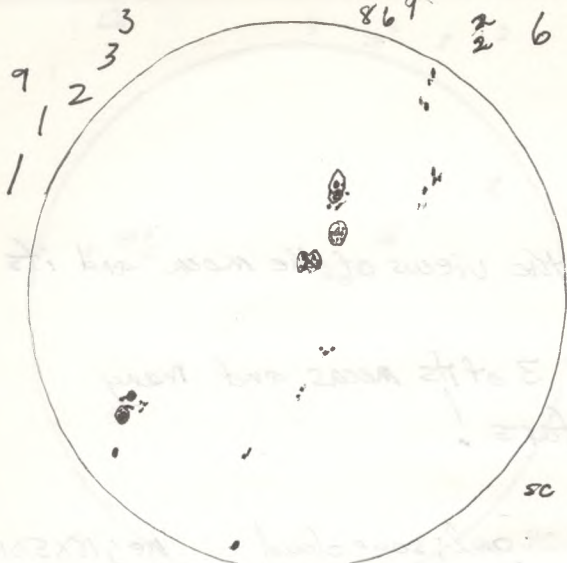
All 5 Classical Planets Within About  $40^\circ$

I observed a splendid array of planets! It was the closest array of the 5 classical naked-eye planets that I had ever seen! Venus and Jupiter were easily visible when I started observing. Saturn and Aldebaran then became visible. Then Mercury was seen first with the 18X5015b and then naked-eye. Then Mars was seen. The 5 planets were within about  $40^\circ$ . (See diagram.)

photography: In the "landscape arrangement" I was able to photograph the area of sky containing all 5 naked-eye planets using the 28mm lens.

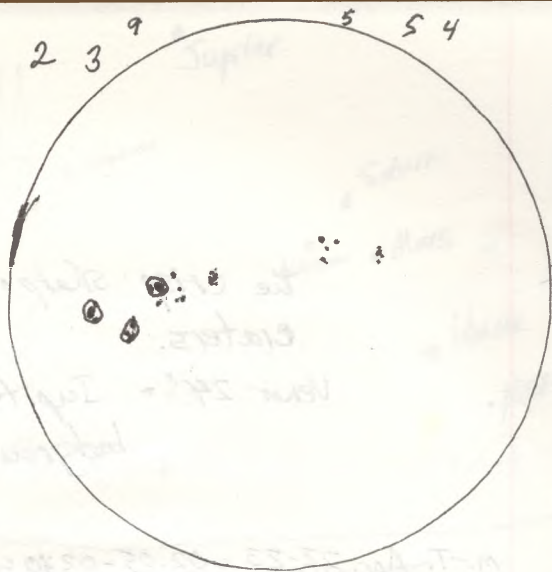
18X5015b: Pleiades above Venus, Venus, Mercury





12g  
525  
RSN172  
Apr. 24  
19:40-19:50UT

SC



6g  
385  
RSN88

Apr. 27  
15:55-16:00UT

SC



2002

01:20-01:50 UT ad twl; gmb. ne; 18X5015b

ne: stars of the western and northern sky; the 4 planets - Venus, Mars, Saturn and Jupiter, after Mercury had set.

Comet Ikeya-Zhang  
(C/2002 C1)

18X5015b: Comet Ikeya-Zhang clearly seen and quite bright, but tail was not very distinct because of sky brightness because of the bright moonlight

W. Apr. 24 19:40-19:50 UT ss-t

C-8, 32

sun 12g 52s RSN 172

W.-Th. Apr. 24-25 00:45-01:20 UT <sup>at Driscoll's place</sup> across road at shore, twl; gmb. ne

5 Planet Array!

ne: During twilight on a beautiful evening, (beginning about 40 minutes after sunset, I observed the splendid array of planets, very similar to the one seen the previous night. Venus and Jupiter were brilliantly visible when I began observing; then Saturn, Mercury and Mars became visible.

(See diagram on previous page.)

photography: I photographed the array of planets  
01:30-02:00 UT ad twl; gmb. ne; 18X5015b

ne: stars of the W. and N. sky

Comet Ikeya-Zhang  
(C/2002 C1)

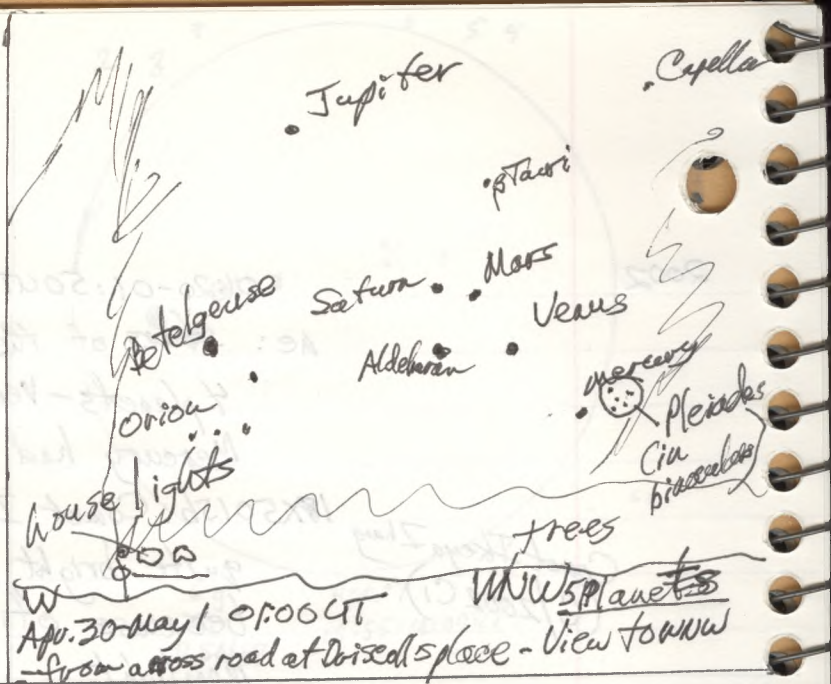
18X5015b: areas of Taurus, M36, M37, M38, though there was some uncertainty about the last one, since the sky was quite bright with moonlight; Comet Ikeya-Zhang, quite clear and distinct, but the tail was not very clear, since the sky was so bright

Sa. Apr. 27 15:55-16:00 UT

C-8, 32

sun 6g 28s RSN 88





Orion  
 Betelgeuse  
 Rigel  
 house lights  
 trees

W Apr. 30 May 1 01:00 UT  
 View to NW  
 from across road at bridge place - View to NW

Orion  
 Betelgeuse  
 Rigel  
 house lights  
 trees

W Apr. 30 May 1 01:00 UT  
 View to NW  
 from across road at bridge place - View to NW



2002 T.-W. Apr 30-May 1 00:45-01:45 <sup>at Driscoll's place</sup> across road at shore, twl ne: 18x50 15b

Great  
"5-planet"  
array!

ne: In twilight, beginning at about 00:45 (about 35 minutes after sunset at about 00:10 UT), I observed first Venus and Jupiter in the western sky and within a few minutes the 3 other naked-eye planets appeared - first Mercury (at about 00:56 UT) and then Saturn and Mars appeared about 5 or 6 minutes later. The shape of the "Saturn-Aldebaran-Mars triangle, above and slightly to the left from Venus, had changed considerably in shape from the time I had observed and photographed the "5-planet array" the last time, namely on the evening of April 23-24, 6 days ago. The "5-planet array, again, was magnificent! The clouds that had been in that part of the sky early in the session soon disappeared and the sky was crystal-clear until Mercury went behind the trees near the WNW horizon. Even though the twilight would not end for about another 20 minutes or so, at the end of the session, the Zodiacal Light seemed to be evident above the twilight glow near the horizon.

ph: - photographed the array of 5 planets, from Mercury up to Jupiter, and the reflection on the water of the planet Venus. Some ~~photographs included the lights from a house at the west end of the little bay north of the Driscoll's house.~~

18x50 15b: Pleiades, seen in the binoculars, but not ne, just to the right of the planet Mercury. (See the diagram.)





Jupiter

Capella

Beta

Saturn

Mars

Venus

Aldebaran

Mercury-in-Clouds binoculars

May 1-2 01:30 UT WNW view to WNW  
- from across the road at Driscoll's place

Faint, mostly illegible handwritten notes in the bottom-left quadrant, possibly describing the observation setup or conditions.

Faint, mostly illegible handwritten notes in the bottom-left quadrant, continuing the observational record.

Faint, mostly illegible handwritten notes in the bottom-right quadrant, possibly describing the observation setup or conditions.

Faint, mostly illegible handwritten notes in the bottom-right quadrant, continuing the observational record.



2002

Comet Ikeya-Zhang  
(C/2002C1)

01:50-02:00 UT y twl 18X5015b

- the Comet Ikeya-Zhang, easily seen in the binoculars, to the right from the star  $\alpha$  Cephei.

04:15-04:25 UT y, nd 589079 18X5015b

- areas of eastern sky in Cygnus, Draco, and Lyra; Comet Ikeya-Zhang (C/2002C1) and tail of at least  $1^\circ$  in length, comet appearing large and bright in the binoculars.

W-Th. May 1-2 01:10-01:45 UT <sup>at Driscoll's place</sup> across road at shore, twl ne; 18X5015b

ne: In twilight I observed 4 of the naked-eye planets in an increasingly compact array. Venus and Jupiter were bright and in view for a while before I went to <sup>for sure, observe.</sup> Saturn and Mars came into view, and though I looked for Mercury, I was unsure of seeing it naked-eye, because of the clouds in the lower part of the sky throughout all, or almost all, of the session. (See diagram.)

4-planet array; Mercury not seen because of clouds

18X5015b: Venus, Mars, Saturn, Jupiter; Mercury seen quite a few times during the session and quite easily, though clouds made it difficult to see, <sup>+</sup>ae.

ph: area of the array of planets; reflection of Venus on the water

01:50-02:10 UT nd and y twl ae; 18X5015b

ne: stars in the N. part of the sky; some hints of Aurora; but I was not perfectly sure of Aurora

Comet Ikeya-Zhang  
(C/2002C1)

18X5015b: areas of Cepheus; Comet Ikeya-Zhang (C/2002C1) quite bright and about  $\frac{1}{2}$ -way between  $\alpha$  Cephei and the "head of Draco, with slight tail seen in the binoculars; some areas of Cepheus. Some clouds were in







2002

F.-S. May 3-4

01:00 - 01:50 UT <sup>a Driscoll's place</sup> across road at shore

twl

ne

5-planet array!

re: In twilight I observed the magnificent 5-planet array, now more compact than before. Mercury was very close to its moment of Greatest Eastern Elongation, the time being listed as May 4, 4<sup>h</sup> UT (21° from the sun). Venus and Jupiter were visible quite a while before I started observing. Within a few minutes Mercury, Saturn, and Mars became visible. Along with Capella,  $\beta$  Tauri, Aldebaran, Castor and Pollux, Procyon, and Betelgeuse, they provided a magnificent display.

ph: photographed the array of planets and the reflection of Venus in the lake.

01:55 - 02:20 ad aady twl

ne; 18x5015b

ne: stars of the N. sky; hints of a slightly reddish Aurora in NNE and W, but they did not seem to develop later.

18x5015b: areas of Draco and surrounding areas; Comet Ikeya-Zhang (C/2002G1) quite bright still.

Comet Ikeya-Zhang (C/2002G1)

↓  
ne!

04:00 - 06:40 UT 00 S8T9-9.5(!) ne; 18x5015b; 20x100b; N

C-14,55

ne; stars of spring and early summer; a short bright meteor near the zenith; Comet Ikeya-Zhang, seen fairly easily, near the 3 stars in a row 39, 45, and 46 Draconis and almost 1/3 of the distance along a line between 45 Dra and  $\beta$  Dra - with the tail going toward  $\beta$  Draconis. It is "approaching the 'Head of Draco'".

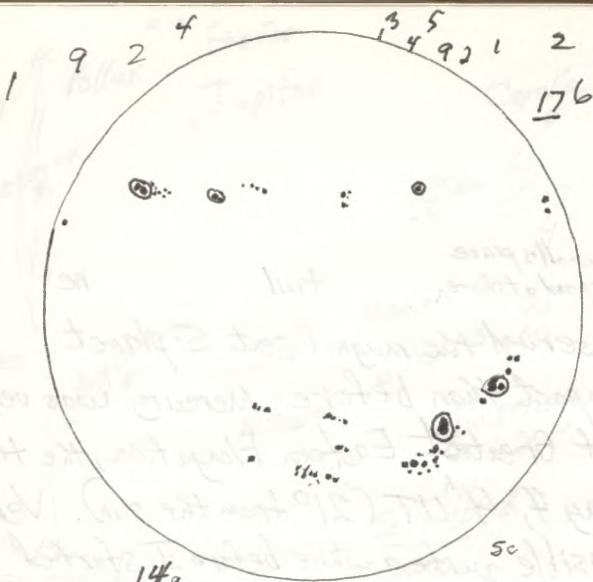
18x5015b: the comet, areas near it, areas in Serpens Caput

20x100b: the comet, beautiful, with tail more than 3 1/2° long

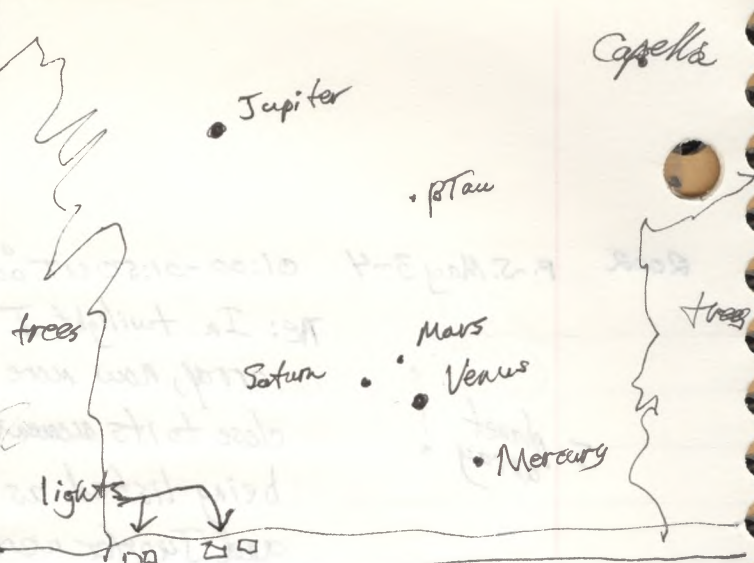
C-14,55: The comet, magnificent with the tail well defined and thin (in the leading part of the tail).

ph: photographed the comet and other areas of the sky piggyback and using old (but preciously frozen) Aglachrome 1000 film.





149  
665  
REN206  
May 4  
15:45-15:50UT



May 4-5 01:30UT  
View from across road at Drisoll's place

*[Faint, mostly illegible handwritten notes, possibly bleed-through from the reverse side of the page.]*

*[Faint, mostly illegible handwritten notes, possibly bleed-through from the reverse side of the page.]*

*[Faint, mostly illegible handwritten notes, possibly bleed-through from the reverse side of the page.]*

*[Faint, mostly illegible handwritten notes, possibly bleed-through from the reverse side of the page.]*



2002 Sa. May 4 15:45-15:50 UT SS-t

C-8,32

Sun 14g 66s RSN206

Sa.-Su. May 4-5 01:15-01:50 UT at Driscoll's place across road at shore, twl ne.

5-planet array  
In twilight I observed the very beautiful and increasingly compact array of 5 planets in the WNW sky. Mercury just hours past its Greatest Eastern Elongation was still very bright and well above the horizon at the beginning of the session (G.E.E. was listed as May 4, 4h UT, about 21 hours ~~ago~~ before.)  
(See diagram.)

ph: photographed the 5-planet array using the 28mm lens, and also using the 50mm lens. At the time of this grouping it was the first time that I had tried successfully to get all the 5 planets in the field of the 50mm frame, even though to get all 5 in, I had to turn the camera at an angle of about  $40^\circ$  to the horizon. I also photographed the 4-planet array without Jupiter.

01:55-02:05 nd aady twl ne

Comet Ikeya-Zhang (C/2002 C<sub>1</sub>)  
- northern stars and constellations; Comet Ikeya-Zhang (C/2002 C<sub>1</sub>) which was quite easily seen ne even in twilight; hints of reddish Aurora, but it did not seem to develop later into a better display

04:20-06:00 UT 00 SB(PT)9 (later some haze) ne; 18x5015b; C-14,55

ne: Spring stars and early summer stars; Comet Ikeya-Zhang (C/2002 C<sub>1</sub>) forming an almost equilateral triangle with the stars  $\beta$  Draconis and  $\xi$  Draconis, "below" or "outside" the "head of Draco"

18x5015b: the comet with its tail ~~had~~ trailing off in the direction of the "head of Draco".



Jupiter

trees

Saturn

? Mars  
Venus

(NOT SEEN  
with certainty)

trees

? Mercury  
Not

clouds seen

lights ↓

00, 00

WNW

W

May 5-6 01:30 UT

View from across road at Driscoll's place

Jupiter

trees

Procyon

Mars

Venus

trees

Saturn

Mercury

Betelgeuse

WNW

W

May 7-8 01:30 UT

View from across road at Driscoll's place



2002

C-14,55: various star fields in the area of the "head of Draco"

ph.: photographed the area of Comet Ikeya-Zhang (C/2002 C1) and the area of some of the brightest stars of Corona Borealis - that may have included the area of T Coronae Borealis.

S.-M. May 5-6 01:10-01:50 UT <sup>at Driscoll's place</sup> across road at shore, twl ne

3 planets  
of the  
5-planet array

In twilight I tried to observe the 5-planet array, but clouds and haze prevented my certain seeing of two of the planets. Venus and Jupiter were very obvious and Saturn was easily seen at times, but seen with some difficulty at other times because of the clouds. Perhaps I saw Mars briefly, but I was not sure of seeing it for anything more than a possible glimpse. Because of the clouds and/or haze in the lower part of the sky, I did not see Mercury with any certainty. (See diagram)

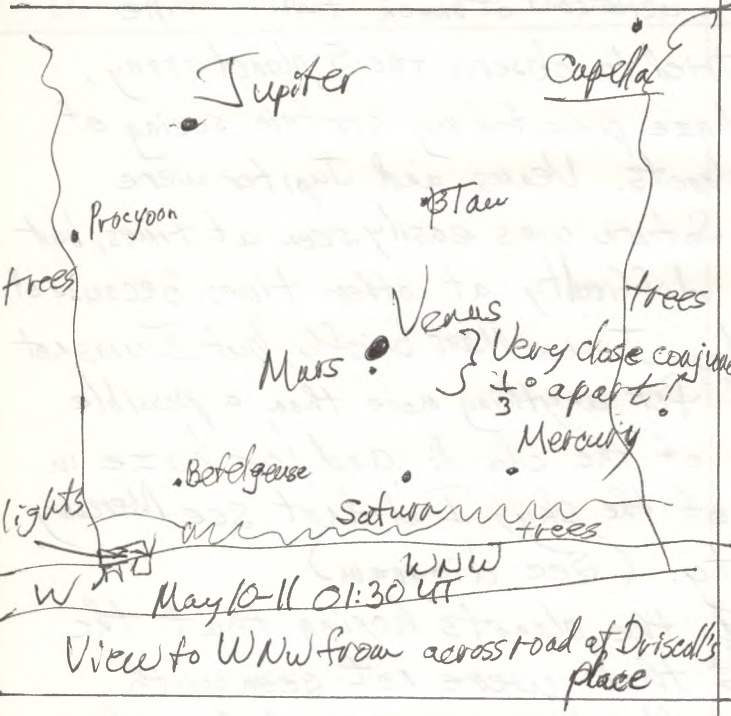
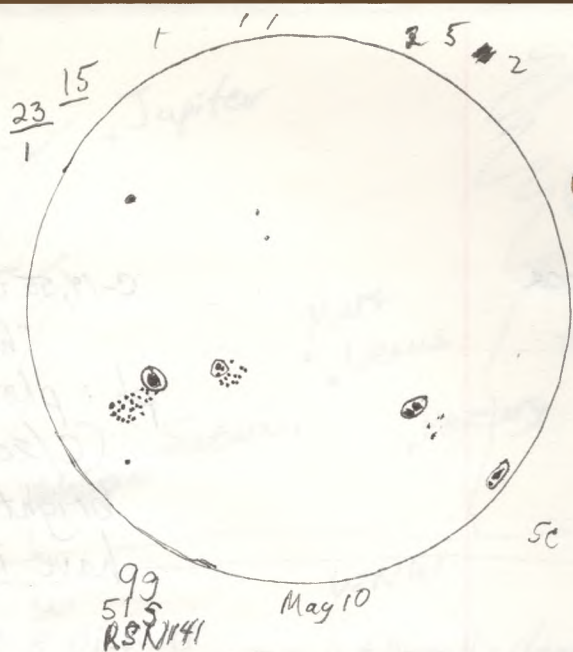
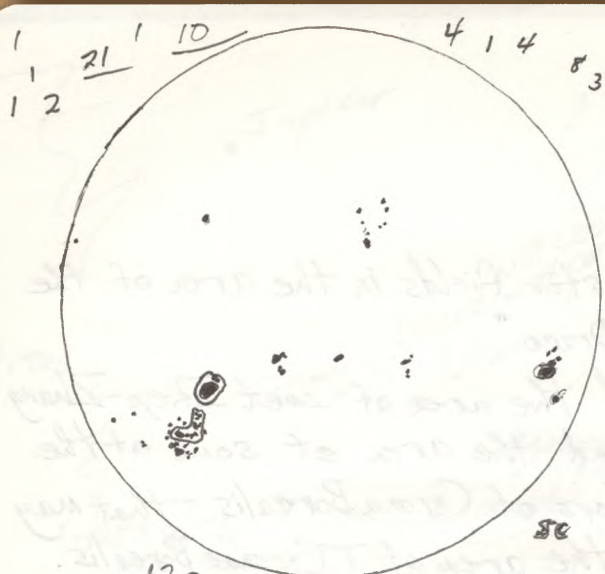
ph.: I photographed the planets hoping that the two planets that were not seen with certainty would show up on the photographs.

T.-W. May 7-8 01:15-01:45 UT <sup>at Driscoll's place</sup> across road at shore, twl ne

5-planet  
array

In twilight I observed all 5 planets in the 5-planet array in the WNW sky, but at times various ones of the five planets were hidden because of the scattered clouds that persisted in that part of the sky. In the latter part of the session, Mercury was hidden by a "solid" bank of clouds. At times, Saturn and Mars were hidden and at other times Venus and Jupiter also were hidden. (See diagram.)





At times, Saturn and Mars were hidden and later  
 Venus and Jupiter also were hidden. (See  
 diagram.)  
 because of the scattered clouds that prevented  
 in that part of the sky. In the latter part of the  
 season, Mercury was hidden by a solid bank of clouds.  
 2-plane  
 May 7-8 01:15-01:30 UT  
 I thought I missed all planets in the  
 2-plane area in the WNW sky, but at times  
 various ones of the five planets were hidden.



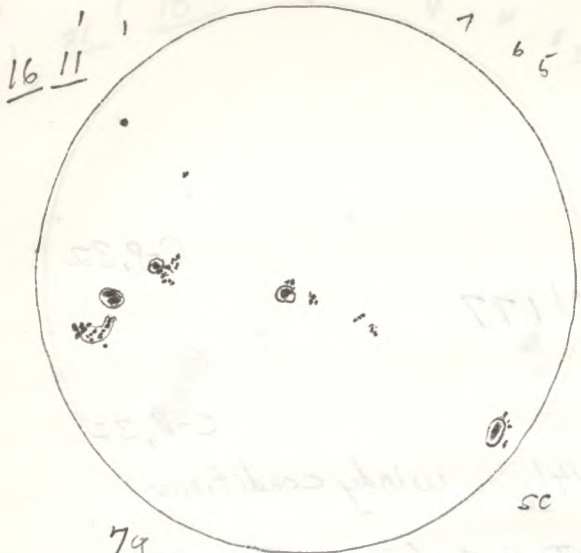
2002 W. May 8 16:10-16:15 UT ss-t C-8, 32  
sun 12g 57S RSN 177

F. May 10 14:25-14:30 UT ss-t C-8, 32  
sun 9g 51S RSN 141 windy conditions

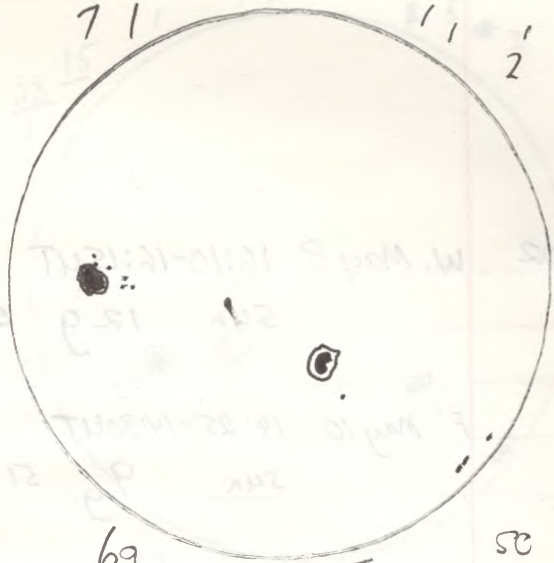
F.-Sa. May 10-11 01:15-02:00 UT <sup>at Driscoll's place</sup> across road at shore, twl ne; 18x50 ISB  
ne: In twilight I observed all 5 planets aligned in the  
WNW sky. They seemed slightly more compact than  
when previously seen. Mars and Venus were extremely  
close, having had a conjunction at  $21''$  with Venus  
 $0.3''$  N. of Mars. They were now about  $\frac{1}{3}^\circ$  to  $\frac{1}{2}^\circ$  apart  
"with Venus now above", whereas previously Venus  
had been "below Mars. Saturn had moved "down  
toward the horizon from the time of the previous  
sighting and Mercury was "closer to the horizon" also.  
(See diagram.) Mercury set behind trees before the end of session.  
02:05-03:05 UT  $\gamma$  S-8(?) JT 8.5-9.0 ne; 18x50 ISB  
ne: stars of spring and early summer.

Comet Ikeya-Zhang (in fact, both the comet and M92 fit within  
(C/2002 C1) one field in the binoculars, and so they must have  
been about  $3.5''$  apart, since the binocular field of  
view is  $3.7''$ . The comet seemed to have a less  
distinct tail than previously, and it may have been  
about  $2^\circ$  long in the binoculars. The comet was NW  
from M92. I thought I might have glanced the  
comet ne, briefly, but could not be absolutely sure  
of it. - also, star fields in Draco, Hercules, Serpens Caput,  
Ophiuchus, Corona Borealis, Virgo, Libra, Corvus





79  
475  
RSN117  
May 11  
14:10-14-20UT



69  
135  
RSN73  
May 15  
14:20-14:25UT

Jupiter Capella

Earthshine  
on  
Cr. Moon



Venus  
• Beta  
• Mars

? [Saturn and Mercury  
NOT seen  
for sure.]

W  
May 15-16 01:30UT WNW  
View to WNW from MTC picnic area  
at Silver Lake



2002 Sa. May 11 14:10-14:20 UT ss-t  
Sun 7 g 475 RSN117

C-8,32  
T.O.F.

Tu. May 14 15:55-16:02 UT 00 (70) very cloudy; rain NOT OBSERVING  
David Levy and I looked at the mirror of the C-14 and talked about the problem of the small grease stain on it.

It was an excellent session, even though clouds and drizzle still remain. Thank you so for opening your home + observatory for me.

David H. Levy  
May 14, 2002.

W. May 15 14:20-14:25 UT ss-t  
Sun 6g 135 RSN73

C-8,32

W-Th. May 15-16 01:00-02:10 UT MTC picnic area<sub>at Silver Lake</sub> twl ne

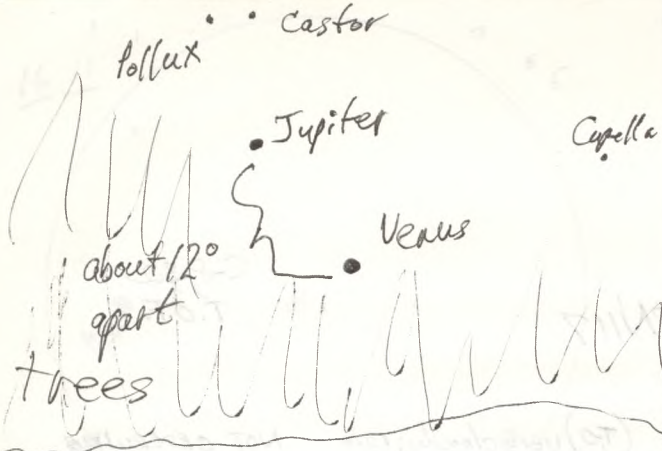
-3 of the  
5 bright  
planets seen

- Hoping to be able still to see the 5-planet array and to photograph it, I went to Silver Lake to the MTC picnic area about half-way along the lake and observed the NW sky. Venus and Jupiter were easily visible before I arrived there and started to observe. The 3.6 day old crescent moon was very obvious also about half-way between Venus and Jupiter. I tried to see both Saturn and Mercury, but was not sure of seeing either one. Later Mars was seen about  $2^\circ$  below Venus. I continued to look for Saturn and Mercury, but was surprised at not being able to see Saturn, especially. (See diagram.) - photographed the cr. moon and planets

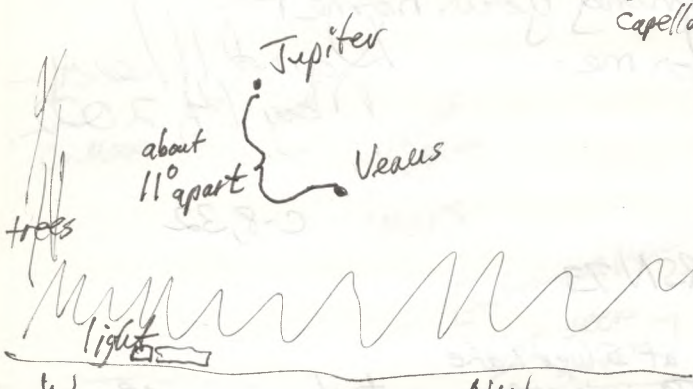
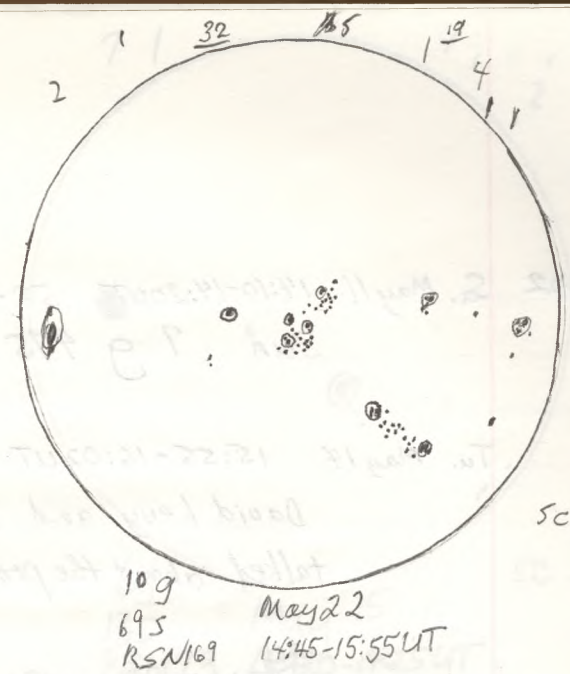
Comet Ikeya-Zhang  
(C/2002 C1)

03:50-03:55 UT rd S-8(?) H 7 (some haze on cloud) 18x50 15b  
stars in Hercules, Comet Ikeya-Zhang, quite bright

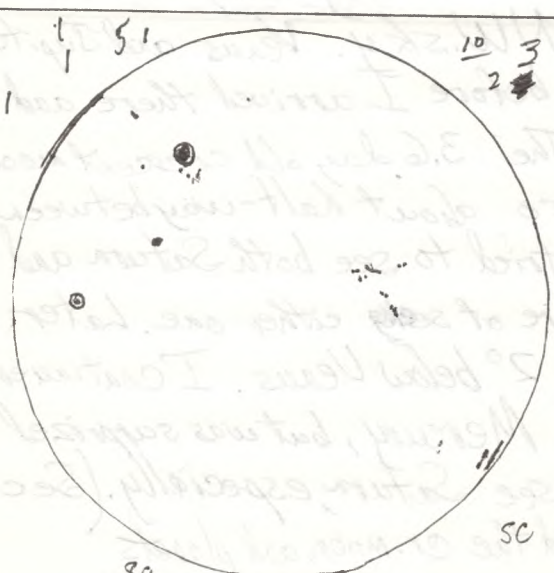
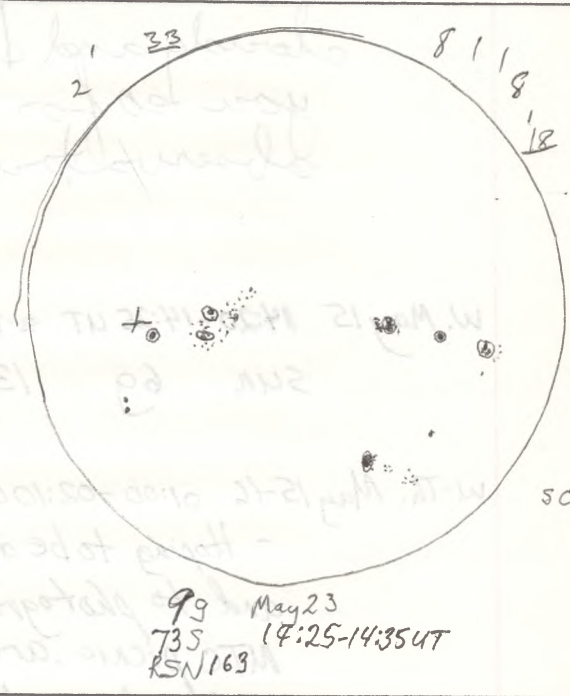




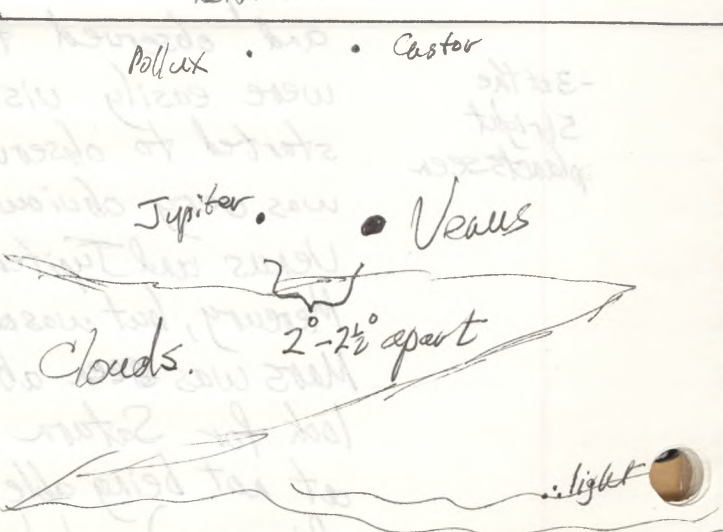
W NW  
May 21-22 02:10 UT  
View to WNW from north deck



W NW  
May 22-23 02:10 UT  
View to WNW from across road at Driscoll's place



89 245 RSN 104  
May 28  
14:25-14:30 UT



May 31-June 1 N  
02:00 UT  
-view from MTC stop at Silver Lake



2002

probably at about mag. 6, and only about  $2^\circ$  NNW from M13 in Hercules. Very little of the comet's tail was visible, but its size was considerably larger in appearance than nearby M13.

Tu.-W. May 21-22 02:10-02:15 UT ad+y twil; gml ne  
- observed bright stars in N. part of the sky, and in NW the planets Jupiter, which was in Gemini, and Venus. (See diagram.)

W. May 22 14:45-14:55 UT t C-8, 32  
sun 10g 69s RSN 169 T.O.F.

W.-Th. May 22-23 02:05-02:20 UT <sup>at Driscoll's place</sup> across road at shore twil; gml ne  
In twilight and with bright gibbous moon, I observed the planets Jupiter and Venus about  $11^\circ$  apart in the WNW. Mars was not knowingly seen naked-eye. (See diagram.)  
ph: - photographed the two planets in the WNW.

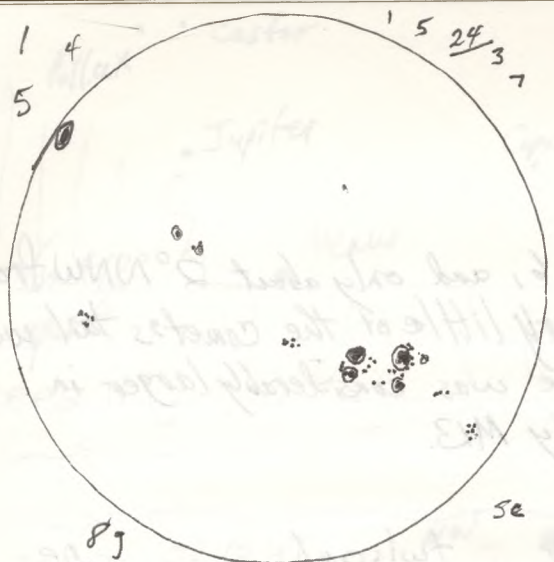
02:25-02:40 UT nd twil; gml. ne  
- observed Jupiter and Venus in the WNW and bright stars and constellations in the N. part of the sky.

Th. May 23 14:25-14:35 UT t C-8, 32  
sun 9g 73s RSN 163 T.O.F.

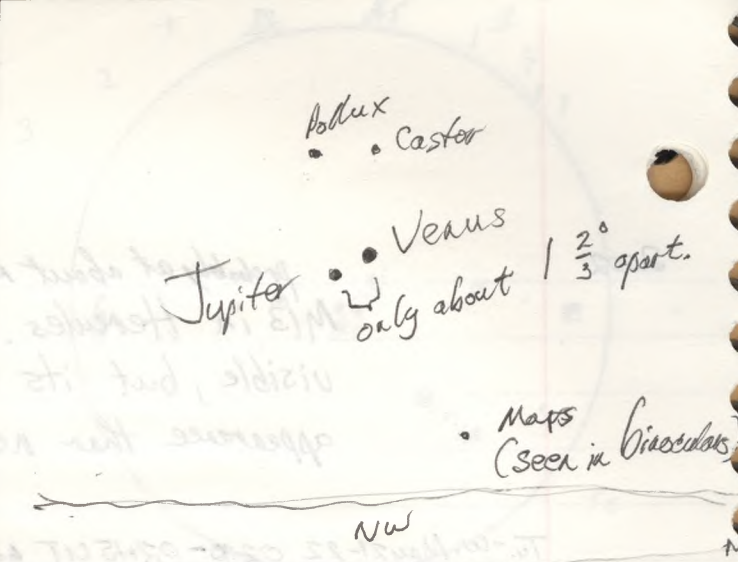
Tu. May 28 14:25-14:30 UT t C-8, 32  
sun 8g 24s RSN 104 T.O.F.

F.-S. May 31-June 1 01:10-02:40 UT <sup>at Silver Lake</sup> MTC stop  $\wedge$  twil ne; 18X50 ISB  
ne: I observed Venus and Jupiter below Castor and Pollux in NW sky during twilight. They were about  $2^\circ$  to  $2\frac{1}{2}^\circ$





June 1  
14:40-14:50 UT



June 2-3 02:00 UT  
- View to NW from across road at Driscoll's place

(faint, mostly illegible handwritten notes)

(faint, mostly illegible handwritten notes)

(faint, mostly illegible handwritten notes)

(faint, mostly illegible handwritten notes)



2002

apart. I looked for Mars below Venus, but did not see Mars.

18x5015b: Venus, Jupiter, Castor and Pollux and other stars in the area.

ph: photographed the area of the sky with Venus and Jupiter

Sa. June 1 14:40-14:50 UT t

C-8, 32

sun 89 50S RSN130

Sa. M. June 2-3 01:50-02:50 UT <sup>at Driscoll's place</sup> across road at shore twl ne; 18x5015b

nc: observed the beautiful Jupiter-Venus conjunction in the NW until almost the time when the west behind the trees. They were only about  $1\frac{2}{3}^{\circ}$  apart, listed as being  $1^{\circ}38'$  apart at closest approach at 22:35 UT <sup>on June 3</sup> - about <sup>20</sup> hours later ~~earlier~~. (See diagram.)

18x5015b: Jupiter, Venus, Castor and Pollux, and Mars. Mars was not seen, knowingly naked-eye. With the binoculars it could be seen for perhaps 20 minutes or more before being hidden by trees.

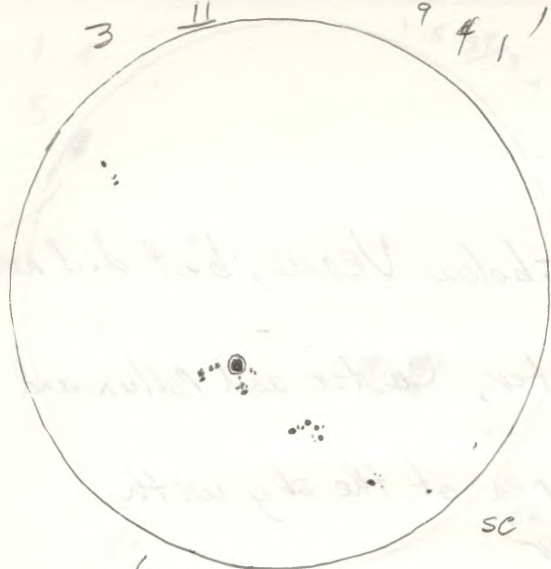
ph: photographed Jupiter-Venus conjunction

03:00-05:10 UT 00 5-8 T9-95! 20x100b; C-14, <sup>28</sup>13

20x100b: area of Ptolemy in Ophiuchus (U 292), M8, M20, M21, M16, M17, M18, M24, M23, M25, M22, M28, M4, M80.

C-14: searched in Ophiuchus for Pluto, but was not sure of seeing it. I used the map on page in the O.H. and the map on page in the June 2002 issue of Astronomy magazine

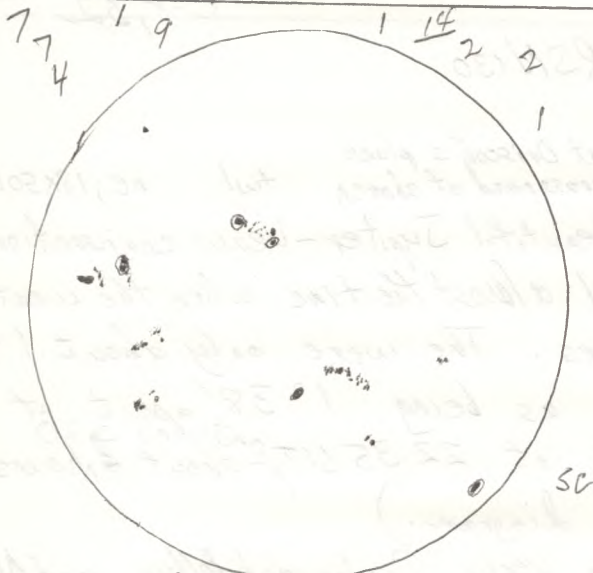




69  
293  
RSN 89 June 3  
15:15-15:20 UT

Pollux • • Castor  
Venus •  
Jupiter • } only about  $1\frac{2}{3}^\circ$  apart

NW N  
June 3-4 02:30 UT  
-view to NW from across road at Driscoll's place



109  
485  
RSN 148 June 7  
15:00-15:10 UT



2002 M. June 3 15:15-15:20 UT

C-8, 32  
T.O.F.

Sun 6g 29s RSN89 slightly ~~to~~ cloudy conditions

M.-T. June 3-4 02:10-02:50 UT <sup>at Driscoll's place</sup> across road at shore twl ne; 18X50ISb

ne: Jupiter, Venus, Castor and Pollux, other bright stars of spring and summer. Mars was not seen; it may have set or been behind trees at beginning of session. (See diagram)

18X50ISb: Jupiter, Venus

ph: photographed Jupiter and Venus and Castor and Pollux in NW sky

03:10-04:20 UT y 58-9 T 9-9.5(!) ne; 18X50ISb

ne: stars of late spring and summer.

18X50ISb: M10, M12, IC4665, Barnard's Star and area, M16, M17, M18, M24, areas of Lyra and Cygnus, area near where Pluto is to be found in Ophiuchus.

F. June 7 15:00-15:10 UT t

C-8, 32  
T.O.F.

Sun 10g 48s RSN148

F.-S. June 7-8 01:30-04:00 UT 00 5-8(!) T 5-8 (varied) ne; 18X50ISb

ne: Venus in NW among trees in early part of the session, stars of late spring and summer.

18X50ISb: R Cor Bor, T Cor Bor, various areas in Ophiuchus, Serpens Caput, Corona Borealis. The transparency seemed to deteriorate amid increasingly hazy conditions, but after the end of the session, the sky seemed to be much more transparent - after the roof had been closed! I had hoped to attempt to see Pluto, but the conditions did not seem to warrant an attempt - because of the haze and less than ideal transparency.







2002 <sup>Su.</sup> Jun. 9 16:25-16:35 UT t  
SUN 8y 29S RSN 109 C-8, 32  
T.O.F.

S.-M. Jun. 9-10 01:50-05:20 UT 00 58T4-9 (varied-haze at times <sup>20x100b; C-14, 32</sup> ne; 18X501sb;

ISS and  
SS attached

ne: stars of late spring and summer; Venus and Jupiter in NW early in session; passage of International Space Station with the Space Shuttle attached from about 02:18 to 02:22 UT from NW to SE and through the Big Dipper and almost through the zenith. It was very bright - magnitude -4 to -5!

Comet Ikeya-Zhang

18X501sb: T Cor Bor area, M16, M17, M18, M24, M23, M25, areas of Cygnus; Comet Ikeya-Zhang at about mag. 6.5

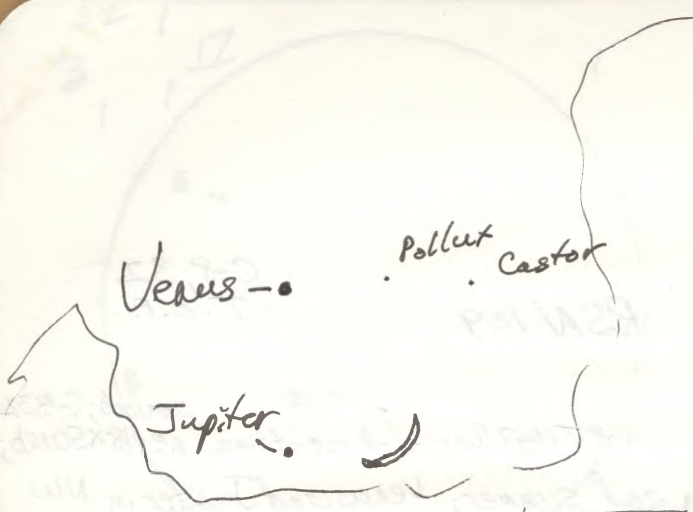
20X100b: T Cor Bor area, M16, M17, M18, M24, M23, M25, areas of Ophiuchus, including the area near where Pluto was; ~~to~~ Comet Ikeya-Zhang in Serpens Caput

C-14: briefly looked in approximate area where Pluto was to be found, but was hindered by clouds in the area. Clouds moved in and caused me to end the observing session.

M.-T. June 10-11 00:00-00:54 UT <sup>at point of land on shore</sup> Silver Lake Prov. Park, before sunset ne

I went to Silver Lake, hoping to see and photograph the small partial solar eclipse that might have been possible to see if the sky had been clear. Elsewhere it was an annular solar eclipse with the path of annularity crossing the Pacific Ocean and ending near Puerto Vallarta, Mexico. It was expected to begin about 00:33 UT (8:33 pm. E.D.T.) here and end about 00:54 UT (8:54 pm. E.D.T.), with about 9% or 10% of the sun's disk covered by the moon. After arriving at the point of land near the eastern end of Silver Lake, I





June 12-13 02:15 UT  
 - view to NW from across road at  
 Driscoll's place

*[Faint, mostly illegible handwritten notes, possibly describing the observation conditions or the appearance of the objects.]*

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2002

Partial  
Sunset Solar  
Eclipse  
Clouded out.

set up my C-8 telescope on the tripod, with the camera attached. I waited on the picnic table. Briefly I caught glimpses of parts of the sun peeking through the heavy clouds that were in most of the northwestern sky. Later the sun did not even peek through the clouds. Heavy clouds covered most of the sky. I took two terrestrial photographs with the C-8 - the distant sign at the motel and a distant house further to the west along Hwy. #7. The clouds persisted. At about 00:54 UT, on the time when the sun should have set in eclipse, I left the site and carried my equipment back to my vehicle.

W-Th June 12-13 02:05 - 02:20 UT at Driscoll's place across road at shore twl ne

- I observed the 2-day-old crescent moon about 2° from Jupiter and below brilliant Venus - a beautiful sight in the NW sky. (See diagram.)

ph • photographed the view of Jupiter, crescent moon, and Venus

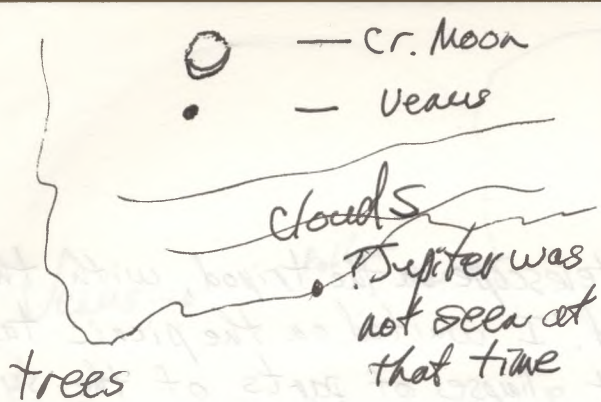
02:50 - 03:05 UT 00 twl 20x100b  
M4, M80

04:20 - 05:20 UT 00 SFT 9 (later cloud) 20x100b; C-14  
20x100b: M8, M20, M21, M23, M24, M25, M16, M17, M18, M22, M28, M11 and R Scuti area.

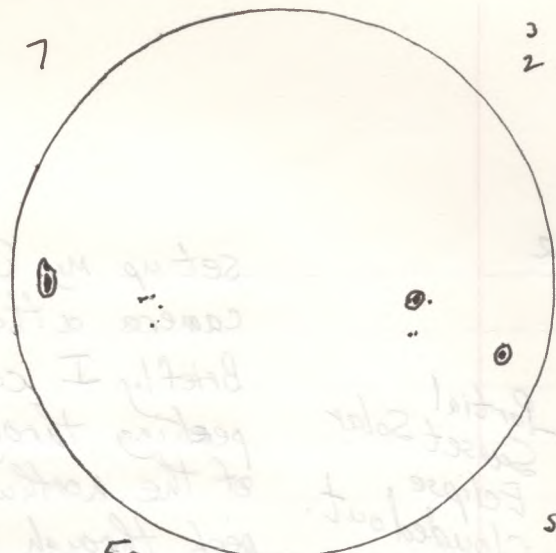
C-14: M13 and nearby galaxy; began looking on Observer's Handbook map and one from July 2002 Sky and Telescope in order to have a good idea about where Pluto might be found, but by the <sup>time</sup> I was ready to do some serious observing, the ~~clouds~~ <sup>clouds</sup> moved in and made observing difficult and then impossible

- Pluto search  
ended by clouds





2 7



5g  
15s  
RSN65

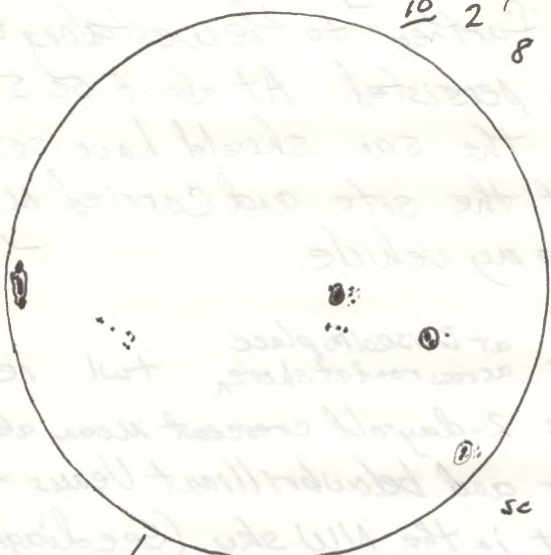
June 18  
14:00-14:05 UT

~~Th-F June 13-14 (about 01:00 UT?)~~

View from <sup>Kitchen</sup> window of crescent moon and Venus

3 7

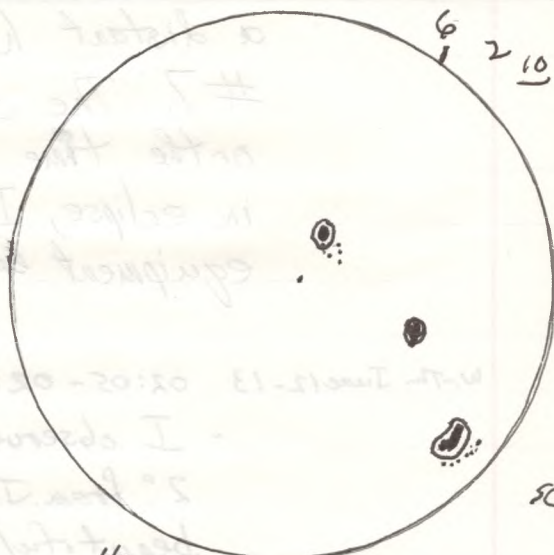
10 2 1  
8



6g  
31s  
RSN91

June 19  
14:45-14:55 UT

6 2 10  
1



4g  
19s  
RSN59

June 20  
14:00-14:05 UT

Photo record  
sketch by clouds



2002 Th.-F. June 13-14 02:15-02:30 <sup>at Driscoll's place</sup> across road at shore, twl; partly cloudy ne

I went over to Driscoll's place hoping to see the conjunction of the crescent moon and Venus, but I was clouded out. I could briefly see a brightness among the clouds in the NW indicating where the moon was, but the sky in the NW was generally very cloudy and the clouds were generally quite dense in that direction. I did not get to see or photograph the conjunction at that time, although I had seen the crescent moon and Venus earlier in the evening. (See diagram.)

Tu. June 18 14:00-14:05 UT t

sun 5g 15s RSN65

C-8,32  
T.O.F.

w. June 19 14:45-14:55 UT t

sun 6g 31s RSN91

C-8,32  
T.O.F.

Th. June 20 14:00-14:05 UT

sun 4g 19s RSN 59

C-8,32  
T.O.F.

F.-S. June 28-29 03:25-04:40 UT 00 S-6-7T78 ne; 18x501sb

ne: After opening the roof before sunset, I was able to observe starting at about the time of the end of astronomical twilight. (I had opened the roof while Fred Barrett was visiting in order to pick up some slides to include in his talk planned for two weeks hence. I wanted to show him how the roof operated.)

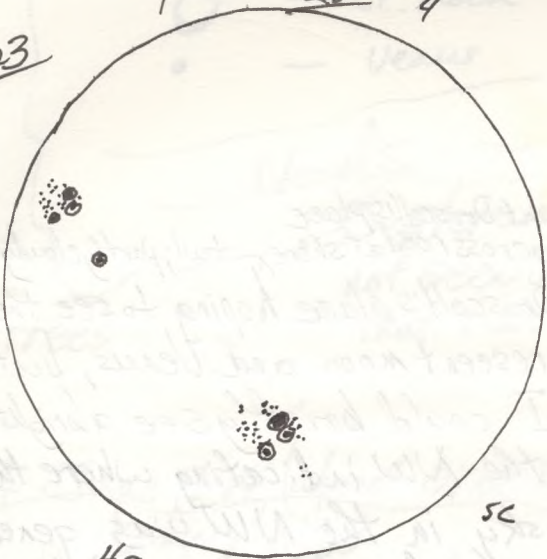
I observed the bright stars of early summer.

18x501sb: M16, M17, M18, M23, M24, M25, M8, M20, M21, M22, M28, T Car Bor, R Car Bor, M5; looked for Comet Ikeya-Zhang near M5 but was not sure of



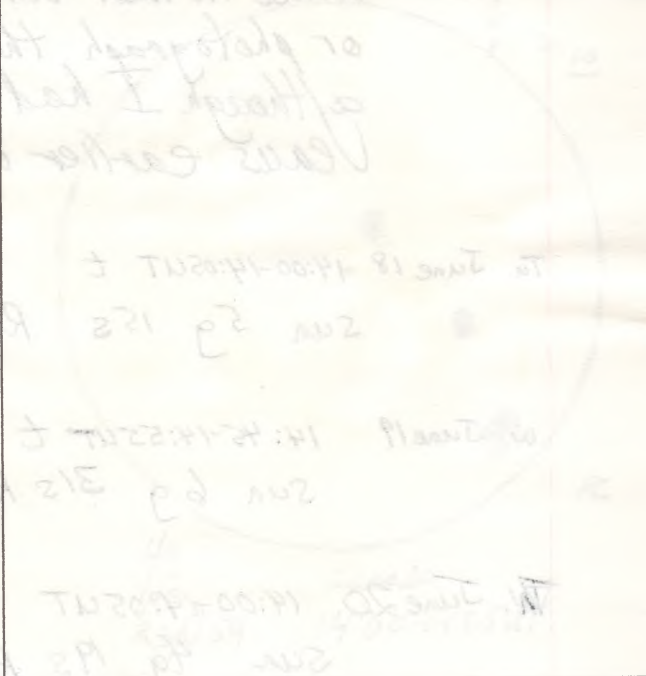
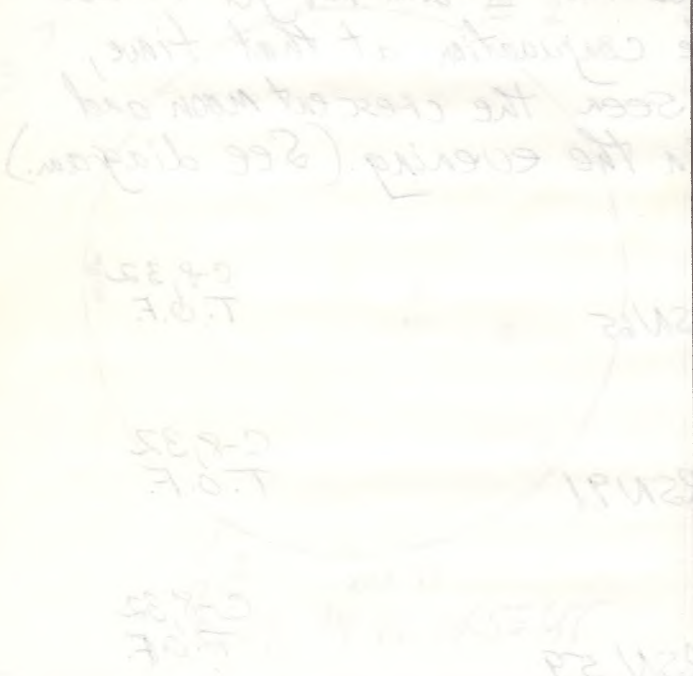
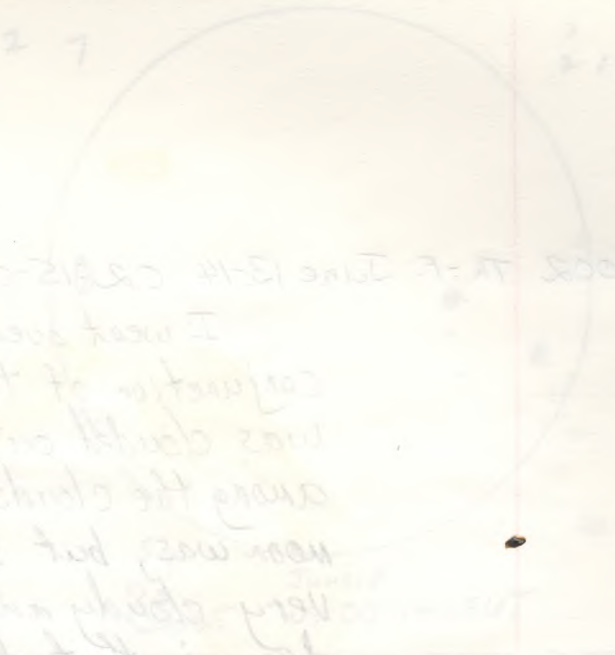
23

1 28 4



49  
56/96  
RSN/96  
July 3  
15:05-15:10UT

5c



After opening the roof before sunset, I was able to observe starting at about the time of the end of astronomical twilight. (I had opened the roof while the aircraft was waiting in order to pick up some slides to replace in his talk hand for two weeks hence. I wanted to establish how the roof operated.) I observed the light stars of early summer.

Mr. M17, Mrs. M23, Mrs. M24, Mrs. M25, Mrs. M26, Mrs. M27, Mrs. M28, Mrs. M29, Mrs. M30, Mrs. M31, Mrs. M32, Mrs. M33, Mrs. M34, Mrs. M35, Mrs. M36, Mrs. M37, Mrs. M38, Mrs. M39, Mrs. M40, Mrs. M41, Mrs. M42, Mrs. M43, Mrs. M44, Mrs. M45, Mrs. M46, Mrs. M47, Mrs. M48, Mrs. M49, Mrs. M50, Mrs. M51, Mrs. M52, Mrs. M53, Mrs. M54, Mrs. M55, Mrs. M56, Mrs. M57, Mrs. M58, Mrs. M59, Mrs. M60, Mrs. M61, Mrs. M62, Mrs. M63, Mrs. M64, Mrs. M65, Mrs. M66, Mrs. M67, Mrs. M68, Mrs. M69, Mrs. M70, Mrs. M71, Mrs. M72, Mrs. M73, Mrs. M74, Mrs. M75, Mrs. M76, Mrs. M77, Mrs. M78, Mrs. M79, Mrs. M80, Mrs. M81, Mrs. M82, Mrs. M83, Mrs. M84, Mrs. M85, Mrs. M86, Mrs. M87, Mrs. M88, Mrs. M89, Mrs. M90, Mrs. M91, Mrs. M92, Mrs. M93, Mrs. M94, Mrs. M95, Mrs. M96, Mrs. M97, Mrs. M98, Mrs. M99, Mrs. M100.

June 28-29 03:25-04:40 UT 00 2-2-778 NE 135000  
June 29 14:00-15:00 UT 1 2-2-778 NE 135000  
June 30 14:00-15:00 UT 1 2-2-778 NE 135000  
June 31 14:00-15:00 UT 1 2-2-778 NE 135000



2002

seeing it.

S.-M. June 30-July 1 02:30-03:30 UT y 5-? T 3-5 (cloud, haze), twl ne  
- observed some bright stars and a few summer constellations  
in spite of some clouds and considerable haze. There  
were some lights in the area and there were some  
"Canada Day fireworks" in the area also.

T.-W. July 2-3 02:30-06 UT 00 5-8 T 7-8 (some haze) ne; 20x100b; C-14, <sup>32</sup>

ne: In spite of the fact that the day had been very hot  
and very humid with temperatures above 30°C, the  
sky was very clear and fairly transparent, although  
there was a little haze at lower altitudes.

I observed summer stars and saw one or two  
meteors that might have been Perseids.

20x100b: M4, M80, M5, M10, M12, M14, M8, M20, M21, M16,  
M17, M18, M23, M24, M25, M22, M28, M11 and R Scuti,

22 Messier objects

NGC 6366 - GC, SW from M14 (see U248.) - see a better  
by averted vision; just E of star 47 Oph; M107  
a couple of satellites, M15, NGC 7789, M6, M7

C-14, <sup>32</sup>: M57; M13; looked for a while for Pluto, but  
was not sure of seeing it.

W. July 3 15:05-15:10 UT t

sun 4g 565 RSN/96

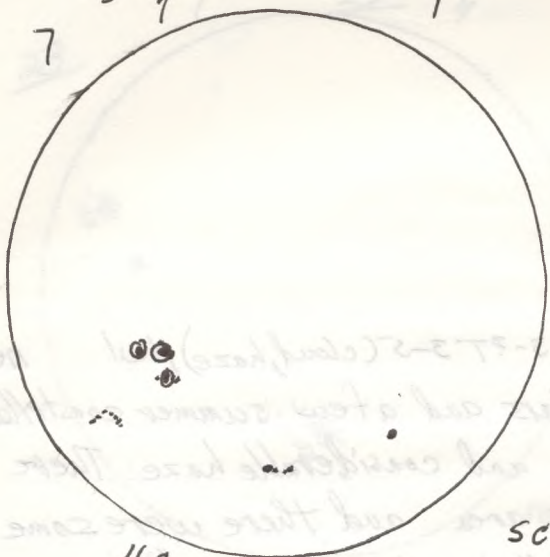
C8, <sup>32</sup>  
T.O.F.

Th.-F. July 4-5 03:00-05:40 UT 00 58(?) T 9.5 (!) ne; 20x100b

ne: On a night of exceptionally good transparency,  
though some wind, I observed many stars of summer and  
other objects.

20x100b: M4, M80, M5, M10, M12, M14, M16, M17, M18, M23,





4g  
175  
RSN 57 July 7  
16:40-16:50 UT

sc

seeing it.

8007

2-8-78 (Sunday) ne; sox; C14  
ne: In spite of the fact that the day had been very hot  
and very humid with temperatures above 30°C, the  
sky was very clear and fairly transparent, although  
there was a little haze at lower altitudes.  
I observed summer stars and saw one or two  
meteors that might have been Perseids.  
sox:op: M1, M80, M2, M10, M12, M14, M18, M20, M21, M16,  
M17, M18, M23, M24, M25, M28, M33, M38, M41, and K20.  
M32 - GC, SW from M14 (see 1248) - see later  
by evening vision; just E of star #7 Op; M17  
a couple of satellites, M15, M32, M14, M17

CH 35: M27, M13; looked for a while for Pluto, but  
was not sure of seeing it.  
W. July 3 12:00-12:10 UT  
sur pt 25 RSN 57  
11-7 July 4-2 03:00-02:40 NT  
ne: On a night of exceptionally good transparency,  
though some wind, I observed many stars of summer and  
other objects.  
sox:op: M4, M80, M2, M10, M12, M14, M16, M17, M18, M23

T.M. July 3 02:30-02:00 NT  
ne: In spite of the fact that the day had been very hot  
and very humid with temperatures above 30°C, the  
sky was very clear and fairly transparent, although  
there was a little haze at lower altitudes.  
I observed summer stars and saw one or two  
meteors that might have been Perseids.  
sox:op: M1, M80, M2, M10, M12, M14, M18, M20, M21, M16,  
M17, M18, M23, M24, M25, M28, M33, M38, M41, and K20.  
M32 - GC, SW from M14 (see 1248) - see later  
by evening vision; just E of star #7 Op; M17  
a couple of satellites, M15, M32, M14, M17

CH 35: M27, M13; looked for a while for Pluto, but  
was not sure of seeing it.  
W. July 3 12:00-12:10 UT  
sur pt 25 RSN 57  
11-7 July 4-2 03:00-02:40 NT  
ne: On a night of exceptionally good transparency,  
though some wind, I observed many stars of summer and  
other objects.  
sox:op: M4, M80, M2, M10, M12, M14, M16, M17, M18, M23



2002

M24, M25, M8, M20, M21, M22, M28, M15, M11 and R Scuti,  
NGC 7189, Uranus, Neptune.

ph: photographed areas of the Milky Way in the S. sky,  
and areas of Uranus and Neptune.

F.-S. July 5-6 02:00-03:45 UT y and oo 58(?) T9 ne; 20x100b; C-14, 32

ne: After working on the dock and eating, Peter and I  
observed summer stars appear in the darkening  
twilight.

20x100b: M8, M20, M21, M23; looked for Neptune in  
Cap., but was not sure of seeing it.

C-14, 32, 19: M13, M57,  $\beta$  Cyg,  $\epsilon$  Lyrae.

possible  
Aurora After closing the observatory roof, we sat for about  
a minute on the north deck and observed a fairly  
bright glow in the N, a glow which I thought was  
likely Aurora.

Sa. July 7 16:40-16:50 UT t

Sun 4g 17s RSN 57

C8, 32  
T.O.F.

S.-M. July 7-8 03:45-04:30 UT y 5-8(?) T9. ne; 18x5015b

ne: bright summer stars

18x5015b: M6, M7, M4, M8, M20, M21, M22, M16, M17, M18,  
M23, M24, M25, M15, M11 and R Scuti; Barnard's  
Star and area, M107, M14, U and EU Del.

T.-W. July 9-10 03:15-04:20 UT y 58(?) T9 ne; 18x5015b

ne: stars of summer

18x5015b: M4, M8, M20, M21, M22, ~~M28~~, M16, M17, M18, M23,  
M24, M25, M11 and R Scuti, M15, M10, M12, M14,  
M5, ~~M57~~, M13, area of Uranus, Area of Neptune.







2002

There may have been, possibly, a slight Auroral glow in the N.

W.-Th. July 10-11 03:20-04:35 UT ~~4~~ 58(?) T9-9.5! ne; 18x50 ISB  
ne: stars of summer; one fast meteor that almost  
certainly was a Perseid. Venus had been seen earlier  
Perseid  
18x50 ISB: M4, M8, M20, M21, M11 and R Scuti, M16, M17,  
22 Messier objects M18, M23, M24, M25, M22, M28, M10, M12, M14,  
M5, M15, NGC 7189, area of  $\mu$  Cep, M27, M71  
T Cor Bor, R Cor Bor, Barnard's Star and its  
area including V566 Oph, M10, M107.  
- possible slight glow that may have been Auroral

Th.-F. July 11-12 03:00-06:15 UT 00 5-8(?) T9 (some dew) ne; 20x100b; C-14, 32  
ne: stars of summer; one bright but short meteor  
near the zenith; another meteor that may have been  
a Perseid; one extremely bright satellite moving  
in a polar orbit.

20x100b: M4, M80, M10, M12, M14, M107, M5, M15, M16,  
M17, M18, M23, M24, M25, M8, M20, M21, M22,  
M28, Barnard's Star and area, T Cor Bor, R Cor Bor,  
Uranus area, Neptune area, M31, M32, M110,  
M33, NGC 7189,  $\alpha$  CVn (split), M57.

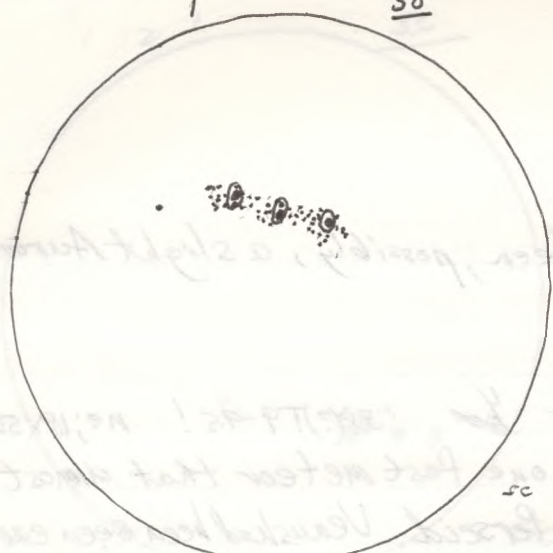
C-14: M13, M57

ph: photographed Milky Way areas in the southern  
sky and the areas of Uranus and Neptune.

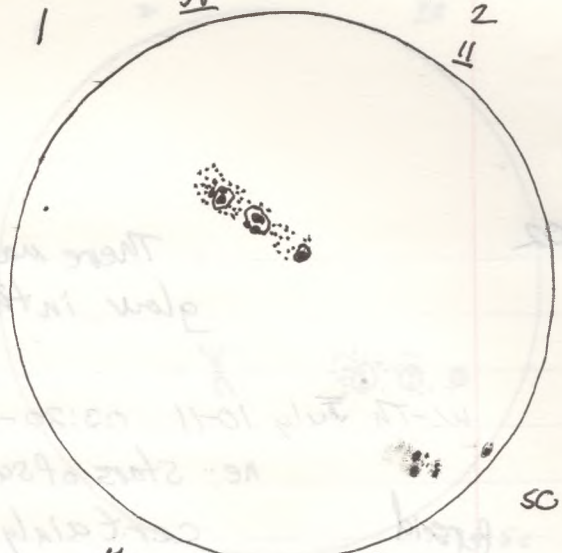
F. July 12 14:20-14:25 UT t C8, 32  
Sun 4g 40s RSN 80 T.O.F.

Sa. July 13 15:15-15:20 UT t C-8, 32  
Sun 3g 43s RSN 73 T.O.F.





29 July 15  
57.5 RSN 71 16:00-16:05 UT



58 July 16  
725 RSN 112 14:05-14:10 UT

There may have been a slight change in the position of the stars in the cluster. The stars are very faint and the cluster is very compact. The stars are very faint and the cluster is very compact. The stars are very faint and the cluster is very compact.

There may have been a slight change in the position of the stars in the cluster. The stars are very faint and the cluster is very compact. The stars are very faint and the cluster is very compact. The stars are very faint and the cluster is very compact.

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There may have been a slight change in the position of the stars in the cluster. The stars are very faint and the cluster is very compact. The stars are very faint and the cluster is very compact. The stars are very faint and the cluster is very compact.



2002 S-S. July 13-14 03:35-04:45 UT 00 S-8T8.5-9 ne; 18X50ISb  
ne: stars of summer; Cr. Moon and Venus nearby had been  
seen earlier in the NW. They were about  $5^\circ$  apart  
18X50ISb: M4, M80, M10, M13, M14, M11 and RScuti, M16,  
M17, M18, M23, M24, M25, M22, M28, M8, M20, M21,  
M5, M13, M15, area of Uranus, area of Neptune.  
TCorBor, RCorBor, Barnard's Star and area including  
V566.

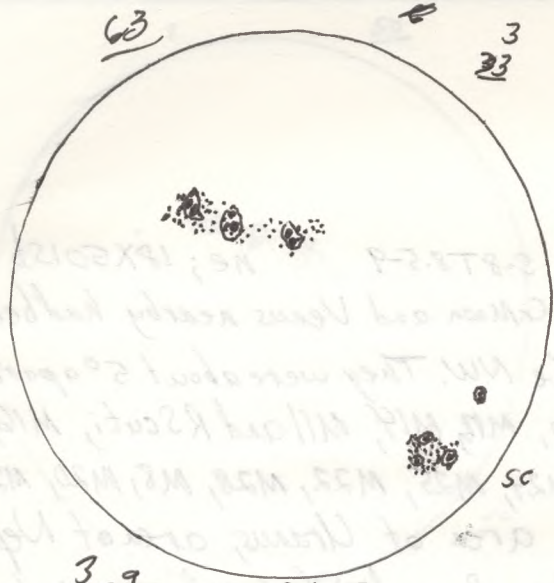
S-M. July 14-15 02:50-03:35 UT 00 S-8(?)T1-5 ne  
Having opened the observatory's roof earlier, I found  
when I went to observe that the sky had become  
very cloudy. Gradually it changed from 90%  
overcast, or thereabouts, to about 40% overcast.  
However, I decided to close the roof without any  
very serious observing, because of the persistence of  
the cloudy conditions.

M. July 15 16:00-16:05 UT t C-8, 32  
sun 29 515 RSN 71 T.O.F.

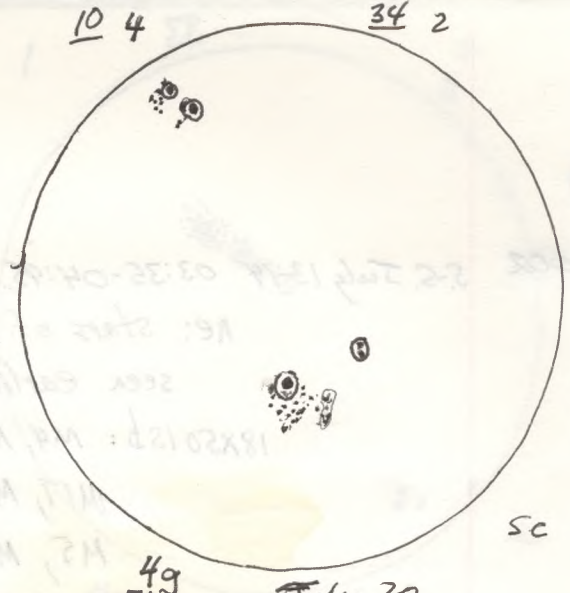
M-T. July 15-16 04:20-05:10 UT y S-8(?)T 9-9.5(!) ne; 18X50ISb  
ne: stars of summer; one short, fast meteor in Pegasus  
perhaps a Perseid  
18X50ISb: M22, M28, M16, M17, M18, M23, M24, M25,  
M11 and RScuti, M10, M12, M14, Uranus area,  
Neptune area, M15, Barnard's Star and  
area, RCorBor, TCorBor, M2.

Tu. July 16 14:05-14:10 UT t C-8, 32  
sun 49 725 RSN 112 T.O.F.

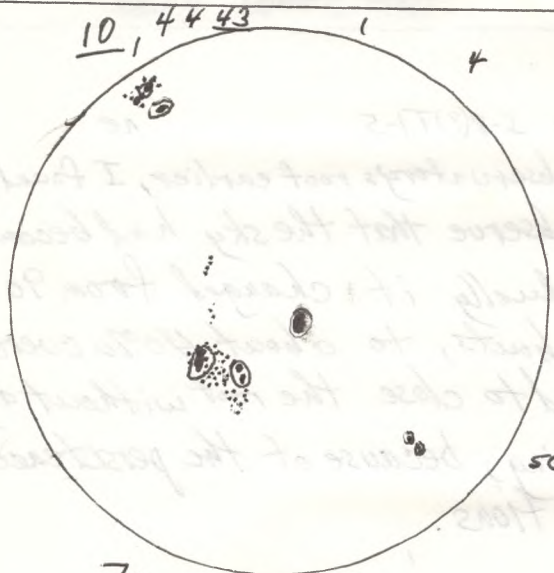




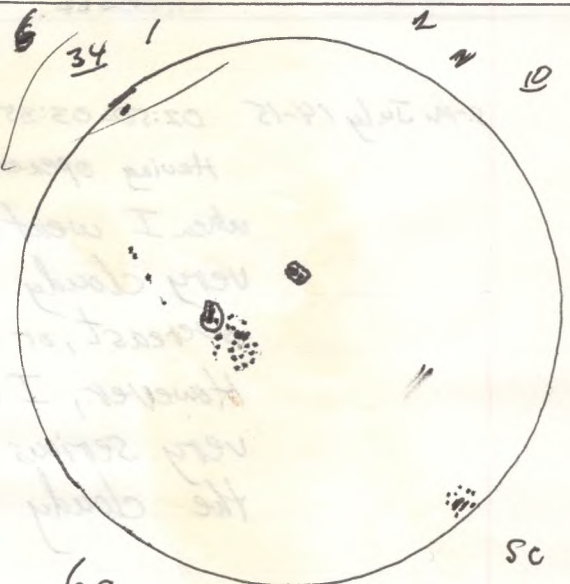
3  
79g  
RSN 129 July 17  
16:20-16:25 UT



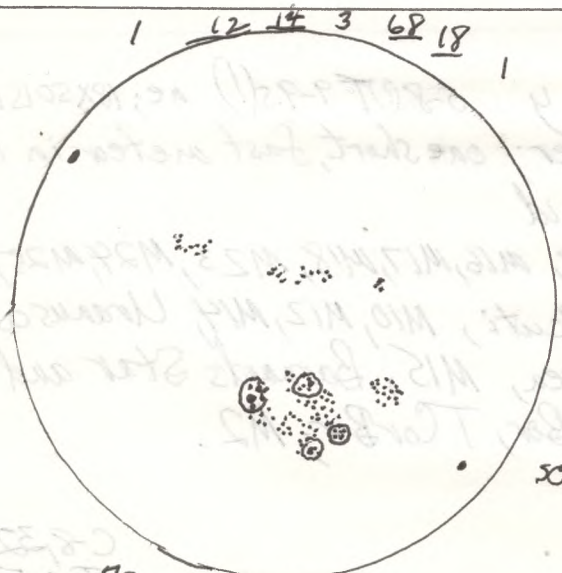
4g  
59s  
RSN 90 July 20  
14:40-14:45 UT



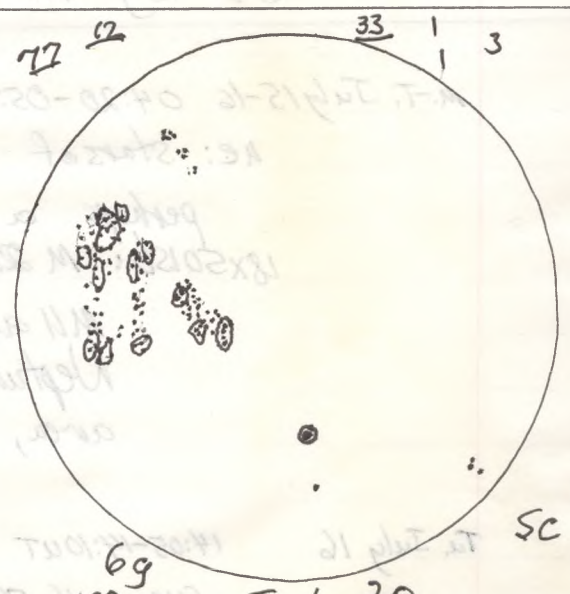
7g  
67s  
RSN 137 July 21  
14:35-14:40 UT



6g  
55s  
RSN 115 July 22  
15:00-15:05



7g  
117s  
RSN 187 July 27  
16:35-16:40 UT



6g  
127s  
RSN 187 July 30  
14:20-14:30 UT



2002 W July 17 16:20-16:25 UT t C-8,32  
Sun 3g 99S RSN 129 T.O.F.

F.-S. July 19-20 03:20-04:20 UT y s8p(T)5-2 (gml.; <sup>increasing</sup> cloud) ne  
- observed the bright stars of summer under the gibbous moonlight. Clouds started to move in and hindered views of the sky

Sa. July 20 14:40-14:45 UT t C-8,32  
Sun 4g 50S RSN 90 T.O.F.

S.-S. July 20-21 03:00-03:35 UT y aadad gml. ne  
- With a very bright gibbous moon, I observed some of the bright stars of summer

Su. July 21 14:35-14:40 UT t C-8,32  
Sun 7g 67S RSN 137 T.O.F.

M. July 22 15:00-15:05 UT C-8,32  
Sun 6g 55S RSN 115 T.O.F.

T.-W. July 23-24 03:20-03:50 UT ndandy s-8p(T)3 fml. ne  
- observed the very bright stars of summer amid very bright light from a full moon.

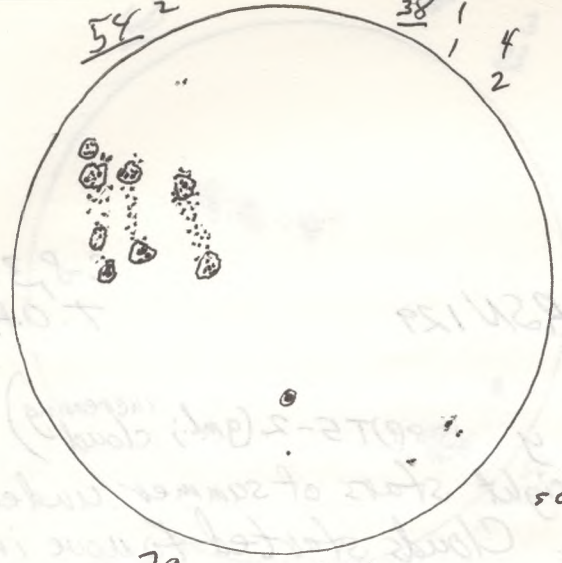
Sa. July 28 16:35-16:40 UT t C-8,32  
Sun 7g 117S RSN 187 T.O.F.

Tu. July 30 14:20-14:30 UT t C-8,32  
Sun 6g 127S RSN 187 T.O.F.



54<sup>2</sup>

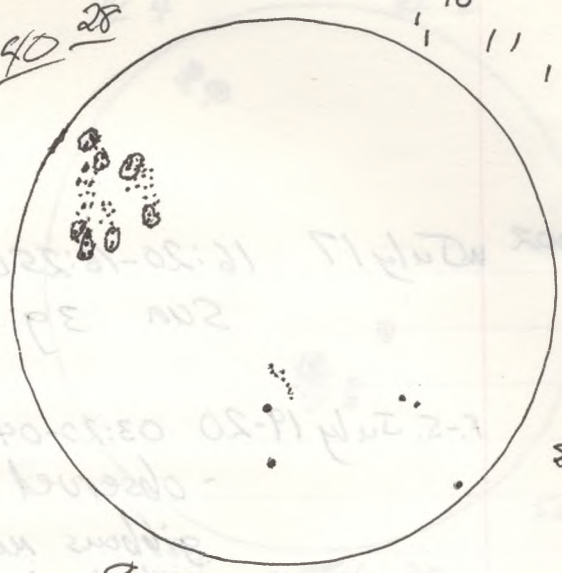
38 1  
1 4  
2



79  
lens  
RSN 172  
July 31  
13:55-14:05 UT

40<sup>28</sup>

10  
1 1 1 1



89  
83 5  
RSN 163  
Aug. 1  
14:25-14:35 UT

sc

sc



2002. T.-W. July 30-31 02:00-04:00 UT 00 S8(?) T 9.5(!) ne; 20x100b; ph  
ne: bright stars of summer; a very bright satellite temporarily shining at mag. -4 when passing near  $\beta$  Lyrae at about 02:23:30 UT; one Perseid meteor.

20x100b: M22, M28, M16, M17, M18, M23, M24, M25, M11 and R Scuti; M5, Uranus and area in Cap., Neptune and area in Cap.

ph: photographed areas of the Milky Way and photographed, or tried to photograph a passage of the International Space Station at about 02:54 UT - going from NW to E and passing fairly low (about altitude  $35^\circ$ ) in the N.

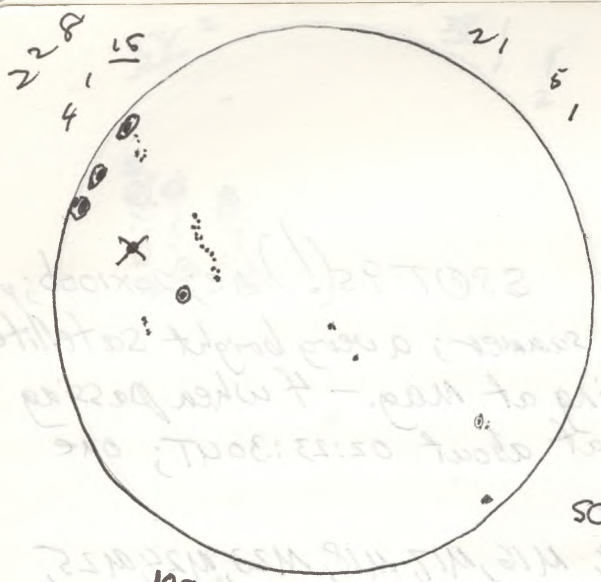
W. July 31 13:55-14:05 UT t C-8, 32  
Sun 7g 1025 RSN 172

W.-Th. July 31-Aug. 1 03:45-04:20 UT y S8(?) T 8-9 ne  
stars of summer; one Perseid meteor of about mag. 3

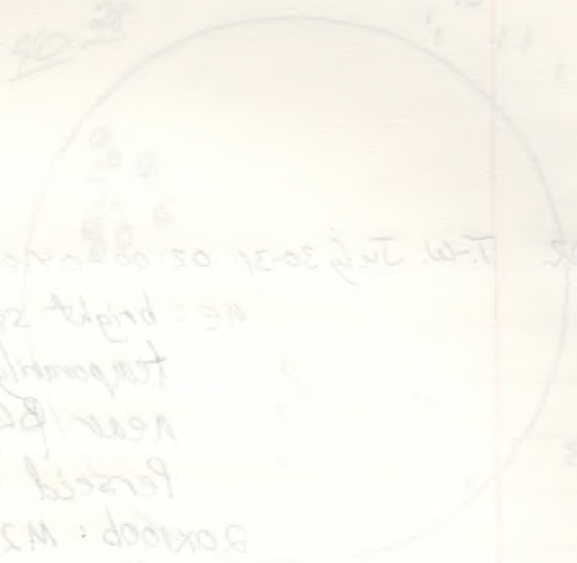
Th. Aug. 1 14:25-14:35 UT t C-8, 32  
Sun 8g 835 RSN 163 T.O.F.

Th.-F. Aug. 1-2 01:00-03:00 UT 00 S8(?) T 0-2 (clouds) ne  
- After opening the roof of the observatory, I waited for two hours hoping to be able to observe and to be able to see the newly-announced Comet but clouds soon moved in and I waited for about 2 hours without seeing very much astronomically except for a few stars among the clouds. At about 02:55 UT a very light rain started to fall.





log  
45  
RSN 141  
Aug. 3  
14:40-14:50 UT



the International Space Station at about  
02:24 UT - going from NW to E and passing  
fairly low (about altitude 32°) in front.  
C-8, 32  
one period meter of about mag. 3

W. July 31 13:22-14:02 UT  
Sun 7<sup>th</sup> 1972 RSN 152  
W. July 31 02:45-04:20 UT  
After of summer

about 2 hours without seeing very much astronomy  
except for a few stars among the clouds. At  
about 02:22 UT a very bright star started to fall.  
but clouds soon moved in and I waited for  
able to see the newly-arrived comet  
for two hours hoping to be able to observe and to be  
After opening the roof of the observatory I waited  
T. F. Aug 1-5 01:00-03:00 UT

T. F. Aug 1 14:22-14:32 UT  
Sun 8<sup>th</sup> 1972 RSN 163  
T. F. Aug 1-5 01:00-03:00 UT



2002 F.-S. Aug. 2-3 02:40-04:40 UT 00 S-8(?) T 9-9.5 (?) ne; Ast, 19, 15.5, 8, 7  
ne: bright stars of summer, possible slight glow in N that may have been Auroral

Ast.: M13, M22, M57,  $\alpha$  CVn, M33, Alcor and Mizar, one of the GC in Ophiuchus - either M10 or M12, M8, M16, M17, M18, M24, M20, M21.

20x100b:  $\delta$  Cephei and area near it, Comet Hoenig (C/2002 04) which was about mag. 10 (I had received an "Alert" e-mail from Sky and Telescope concerning the discovery of this comet. It appeared quite amorphous and there appeared to be little evidence of a tail. It appeared slightly N of where I expected it to be, from the position given for Aug. 3 at Oh UT. It was moving fairly quickly - also M31, M32, M10, M33, M2, M15

Comet Hoenig  
(C/2002 04)  
 $\alpha: 23^h 05^m 53^s + 53^\circ 21'$   
U 58 (in Cassiopeia)

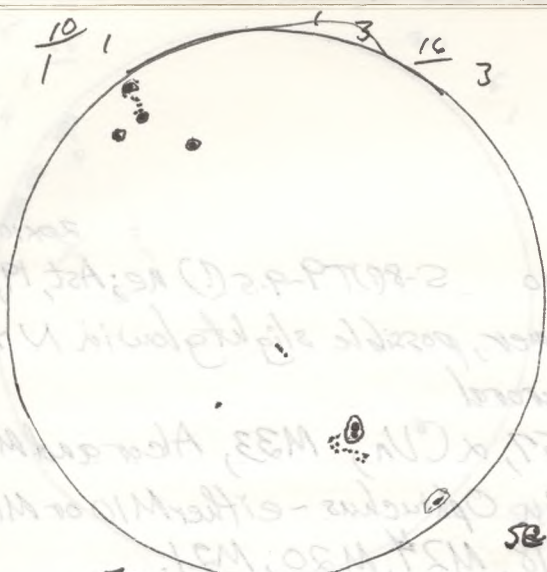
Sa. Aug. 3 14:40-14:50 UT  $\epsilon$  c-8, 32  
sun 10g 415 RSN 141 T.O.F

Sa.-Su. Aug. 3-4 02:30-03:30 UT Black Lake Beach in Sharbot Lake Prov. Park S 8? T 8 28, 19, 8  
ne; Ast, 1

ne: After delivering a talk about my astronomical interests to a crowd of about 60 to 70 campers at the Black Lake Beach in Sharbot Lake Provincial Park, I observed and pointed out the prominent constellations to a group of about perhaps 8 or 10 campers. Some of them saw a number of meteors.

Ast: We observed  $\beta$  Cyg, Alcor and Mizar, M13,  $\rho$  Her which was difficult to split, Cr 399, and M31, which I found to be less impressive than I had expected, perhaps because of





79 Aug 6.  
355 RSN105 14:05-14:10 UT

2008 F. 2 Aug 2-3

one of the GC in the cluster - either M1 or M12  
 Act: M13, M22, M27, M33, M39, M42, M45, M54, M57, M63, M67, M72, M78, M81, M82, M84, M87, M92, M99, M101, M102, M104, M105, M106, M107, M108, M109, M110, M111, M112, M113, M114, M115, M116, M117, M118, M119, M120, M121, M122, M123, M124, M125, M126, M127, M128, M129, M130, M131, M132, M133, M134, M135, M136, M137, M138, M139, M140, M141, M142, M143, M144, M145, M146, M147, M148, M149, M150, M151, M152, M153, M154, M155, M156, M157, M158, M159, M160, M161, M162, M163, M164, M165, M166, M167, M168, M169, M170, M171, M172, M173, M174, M175, M176, M177, M178, M179, M180, M181, M182, M183, M184, M185, M186, M187, M188, M189, M190, M191, M192, M193, M194, M195, M196, M197, M198, M199, M200

Comp. Hoopid (M105)  
 (C/2007 H4)  
 4:23:02.8 (+22.1)  
 N58 (in Cassiopeia)

0-2, 3, 5  
 T.O.F.

2 Aug 3 14:40-14:50 UT  
 2nd 10g H12 RSN141

2 Aug 3 02:30-03:00 UT  
 Act: After delivering a talk about my astronomical interests to a group of about 20 to 30 campers at the Black Lake Beach in Great Lakes Provincial Park, I observed and pointed out the prominent constellations to a group of about perhaps 8 or 10 campers. Some of them saw a number of meteors.  
 Act: We observed 8 Cyg, Altair and Mizar, M13, 6 Her which was difficult to split, C399, and M31, which I found to be less impressive than I had expected, perhaps because of



2002

some haze and perhaps some Auroral glow.  
ne: After I returned home, I thought I saw  
some Auroral glow in the N

M.-T. Aug. 5-6 03:40-04:40 UT y S-6-T2-7 (clouds, then <sup>partial clearing</sup>) ne; 18x50 ISB  
ne: summer stars, one Perseid (mag. 3) at about 03:50 UT

18x50 ISB: M33, M31, M32, M105, Double Cluster, area of  
 $\delta$  Cep including  $\omega$  Cep (See 458) Comet Hoenig  
(C/2002 O4) at about R.A.:  $22^h 51.5^m$ ,  
Dec.:  $+59^\circ 52'$ , not far from  $\delta$  Cep. It  
appeared somewhat smaller and, of course, not  
as bright as when seen previously in the  
20x100 binoculars, about 3 days ago. It  
was listed as being at mag. 9.8.

Comet Hoenig  
(C/2002 O4)  
in Cepheus.

While observing I noticed a fairly large glow  
in the N; it may have been an Auroral glow.

Tu. Aug. 6 14:05-14:10 UT t  
sun 7g 35s RSN 105

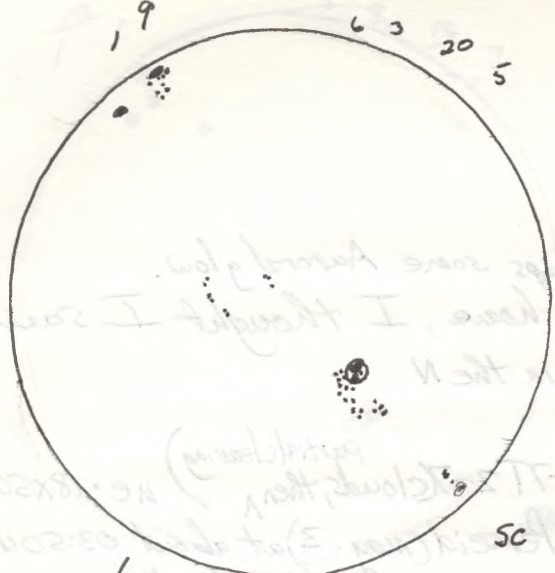
C-8, 32  
T.O.F.

T.-W. Aug. 6-7 03:40-04:30 UT y S-8-T9-9.5 (!) ne; 18x50 ISB  
ne: stars of summer; 2 Perseid meteors; a glow in the N  
that was probably Auroral

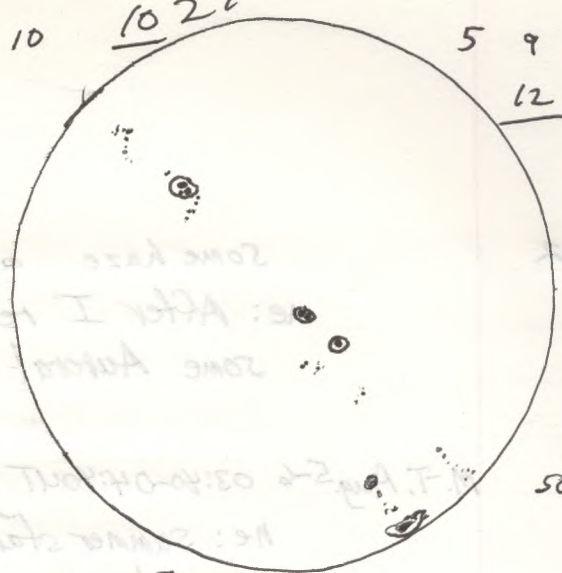
18x50 ISB: Uranus and Neptune in Cap., M16, M17, M18,  
M20, M21, M22, M28, M23, M24, M25, M2, M15,  
M13, M92, ~~R~~ Cor Bor, T Cor Bor, Barnard's Star,  
M31, M32, M110, M33, Double Cluster in Per, Stock 2  
near the Double Cluster, Comet Hoenig (C/2002 O4)  
at about R.A.:  $22^h 45^m$ . Dec.:  $+62^\circ 03'$ , still moving  
almost due North

Comet Hoenig  
(C/2002 O4)  
moving ~~to~~ to the N.





69  
44  
RSK104 Aug. 7  
14:45-14:50 UT



73  
55  
RSN125 Aug. 11  
14:55-15:00 UT

at about RA: 22:25  
Dec: +29 22, not far from 8 cap. It  
appeared somewhat smaller and of course not  
as bright as interstellar phenomenon in the  
Sagittarius, about 3 days ago. It  
was listed as bright mag. 9.8.  
While observing I noticed a fairly large glow  
in the N; it may have been an Auroral glow.

0-8-83  
T.O.F.

Correct Hecay (Class of) in Capens.

Tu. Aug 6 14:55-15:00 UT ±  
see 79 32 2 RSN102

T-W. Aug 6-1 03:40-04:30 UT (2-879-25) ne; 182012P  
nc: state of summer; 2 fuzzy meteors; a glow in the N  
that was probably Auroral  
182012P: Names of Neptune in Cap, M10, M17, M18,  
M20, M21, M22, M23, M24, M25, M26, M27, M28,  
M13, M14, R Carinae, T Carinae, Gamma 2 Car  
M1, M2, M10, M11, M12, M13, M14, M15, M16, M17, M18,  
near the Double Cluster (Class of) Correct Hecay (Class of)  
at about RA: 22 hrs. Dec: +29 03, still main  
almost due North

Correct Hecay (Class of) pointing into the N.



2002 W. Aug. 7. 14:45-14:50 UT t

sun by 445 RSN 104

C-8, 32  
T.O.F.

Th.-F. Aug. 8-9 01:20-03:00 UT 00 58(?) T 6-9 (some cloud) ne; 20x100b  
ne: stars of summer

20x100b: M5, M10, M12, M14, M11 and R Scuti, M16, M17, M18,  
M8, M20, M21, M22, M23, M24, M25, Neptune and  
area in Cap., Comet Aoenig (C/2002 04) in  
Cepheus not far from i Cep at mag. 9.6  
 $\alpha: 22^{\text{h}} 28^{\text{m}} 6; \delta +66^{\circ} 24'$  at 0<sup>h</sup> UT (See  
U 34)

Sa.-Su. Aug. 10-11 02:00-03:00 UT y 5-8(?) T 9-9.5(?) ne; 18x50 15b <sup>with</sup> Denise

ne: a small number of Perseid meteors - at a time that  
was less than 48 hours before the given  
absolute maximum; Denise saw more of them  
than I did; International Space Station  
(almost certainly) although the time of the appearance  
about 02:23 UT was about 26 min. later than the  
predicted time that I had - 01:57 UT

18x50 15b: Comet Aoenig (C/2002 04) in Cepheus near  
 $\beta$  Cep and about mag. 9.5; M31, M2, M15.

Su. Aug. 11 14:55-15:00 UT t

sun 7y 55s RSN 125

C-8, 32 with  
Denise

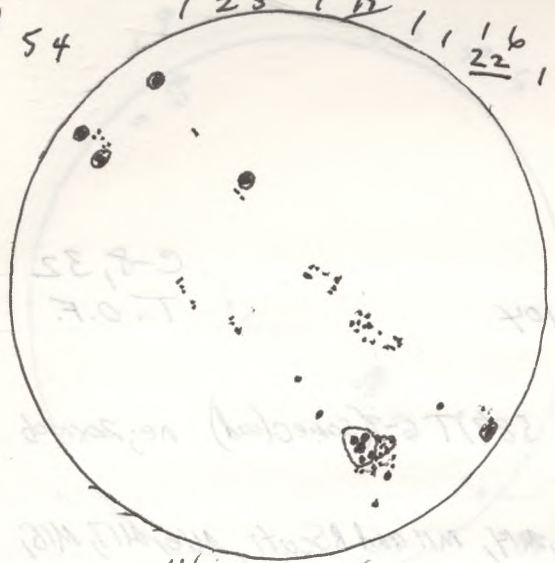
M.-T. Aug. 12-13 01:00-04:40 UT 00 58(?) T 4-5 <sup>cloud</sup> haze; <sup>20x100b.</sup> same ne; C-14, 32-2; 1

ne: On the night of the peak of the Perseid Meteor Shower  
I opened the roof because Mareel Giroux had phoned  
when I was out at church and had said the a  
grandson, Ty, was visiting and the 11-year-old boy



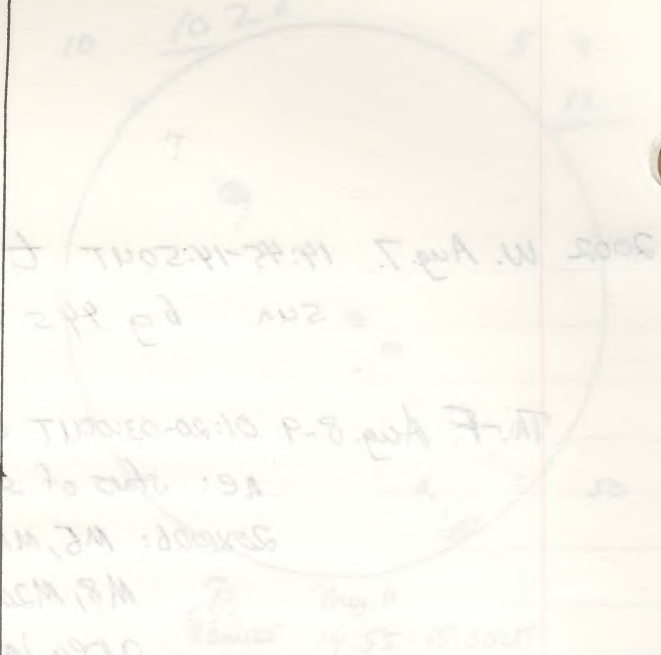
7 54

1 2 3 7 15 11 16 22 1



SC

14 g Aug. 14  
76.5  
RSN 216 14:10-14:15 UT



with  
 RE: a small number of forest meteor - at a time that  
 was less than 48 hours before the given  
 absolute maximum; Dense saw more of them  
 than I did; International Space Station  
 (almost certainly) although the time of the appearance  
 about 02:30 was about 25 min. later than the  
 predicted time that I had - 01:27 UT

2-20 Aug 10:11 02:00-03:00 UT y 2-20T 9-12) AC; recorded dense  
 RE: a small number of forest meteor - at a time that  
 was less than 48 hours before the given  
 absolute maximum; Dense saw more of them  
 than I did; International Space Station  
 (almost certainly) although the time of the appearance  
 about 02:30 was about 25 min. later than the  
 predicted time that I had - 01:27 UT

with  
 RE: a small number of forest meteor - at a time that  
 was less than 48 hours before the given  
 absolute maximum; Dense saw more of them  
 than I did; International Space Station  
 (almost certainly) although the time of the appearance  
 about 02:30 was about 25 min. later than the  
 predicted time that I had - 01:27 UT

2-20 Aug 11:14:52-15:00 UT  
 RE: a small number of forest meteor - at a time that  
 was less than 48 hours before the given  
 absolute maximum; Dense saw more of them  
 than I did; International Space Station  
 (almost certainly) although the time of the appearance  
 about 02:30 was about 25 min. later than the  
 predicted time that I had - 01:27 UT



2002

Hazy conditions  
for the maximum  
of the Perseid  
Meteor Shower

would like to see the observatory. Marcel, Pam,  
and Ty arrived and we watched a sky that was  
quite hazy after I explained some of the  
things in the observatory. The sky was not  
quite so hazy near the zenith. We saw a few  
very bright Perseids, but almost no faint  
ones because of the haze. I did not do an  
official hour-long count. The hazy conditions  
continued throughout the session.

C-14:32-2": M13, BCyg - shown to Marcel, Pam and Ty.  
20x100b: M31, the Andromeda Galaxy; M33, which  
I showed to Marcel and Pam, but Marcel  
had difficulty in seeing M33.

Marcel, Pam and Ty left at about 04<sup>h</sup> UT,  
but I continued to observe for about 40  
minutes and saw a few Perseids, but the  
number was not great.

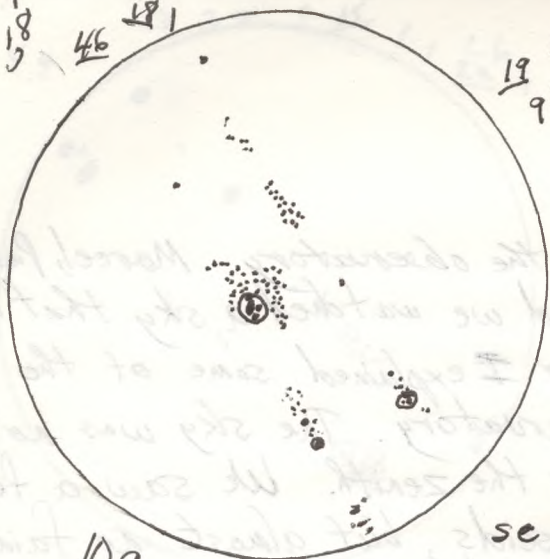
T.-W. Aug. 13-14 03:40-04:00 UT y S-8(?)T4-5 (haze) ne  
- observed a hazy sky fairly similar to the one of the  
previous night, although it may have been  
slightly clearer in the NE. - saw 3 fairly  
bright meteors, two of which were Perseids,  
and the third of which may have been a  
Perseid. The hazy conditions again may  
have prevented the sighting of fainter Perseids.

3 bright meteors

W. Aug. 14 14:10-14:15 UT t C-8, 32  
Sun 14g T6s RSN 216 T.O.F.

Th.-F. Aug. 15-16 03:35-04:05 UT nd S8(?)T6 (some haze, cloud) ne; 18x50sb  
ne: bright stars, one bright but short Perseid





109  
1105  
RSN 210  
Aug 17  
14:55-15:00 UT

Very bright  
because  
of the  
meteor shower  
for the  
maximum  
hourly  
rate

continued throughout the session  
C-1902: M13, BCG - stars to Mars, for only 1/2  
hour: M13, the Antennae Galaxy, M33, which  
I started to Marsel and for, but Marsel  
had difficulty in seeing M33.  
Marsel for and T left at about 04:15 UT,  
but I continued to observe for about 40  
minutes and saw a few meteors but the  
number was not great.

3 bright meteors

observed a very faint meteor to the one of the

3 bright meteors

previous night, although it may have been  
slightly closer in the NE - can't tell  
bright meteors, two of which were bright  
and the third of which may have been a  
meteor. The heavy conditions again may  
have prevented the sighting of fainter meteors.

3 bright meteors

08:32  
T.O.F.

RSN 210

Aug 14 14:10-14:15 UT

Tr. F. Aug. 12-16 03:32-04:02 UT  
No. bright stars; one bright but star  
and

3 bright meteors



2002

which appeared to "explode" in the constellation Andromeda  
18X5015b: area near  $\kappa$  Cep hoping to see Comet Hoenig  
(C/2002 04) but was not sure of seeing it; M31.

F.-S. Aug 16-17 02:-03:30 UT beach at Silver Lake Prov. Park 5-8(?) T 6-7  
(gml; some cloud) ne; Ast, P, 215<sup>28</sup>  
ne: After giving a talk at Silver Lake Provincial Park, I pointed  
out a good number of constellations and bright stars  
including the Summer Triangle and  $\delta$  Cephei  
Ast: I showed the people on the beach a number  
of objects: M31,  $\beta$  Cyg, Alcor and Mizar.

Sa. Aug. 17 14:55-15:00 UT t C-8, 32  
Sun 10g 110S RSN 210 T.O.F.

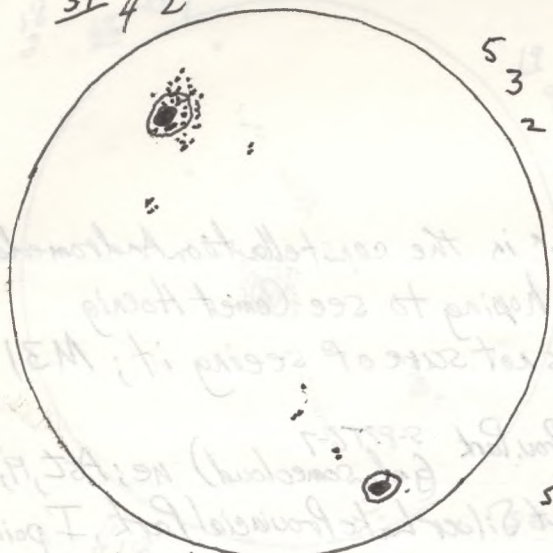
Sa.-Su Aug. 17-18 03:00-03:20 UT y 5-8(?) T 5-6 (gml; some<sup>cloud</sup>) ne; 18X5015b  
ne: bright stars, one meteor - not a Perseid.  
18X5015b: area near  $\beta$  Lyrae through which the  
asteroid 2002 NY40 was scheduled to be passing  
at about that time. This asteroid which was  
predicted to be at about mag. 9 or 10 had been  
detected on July 14 with the 1m. LINEAR  
telescope in New Mexico. I was not certain of  
seeing it, though it is possible I may have seen it.  
Tonight at its closest approach in the current  
pass near the earth it was predicted to be 527,000  
kilometres from earth. Its size was estimated at  
being 500 metres across.

- Saw area of  
Asteroid 2002 NY40  
near time of its  
closest approach in  
the current flyby.

Tu.-W. Aug. 20-21 03:12-03:45 UT. nd 5-8(?) T 5-6 (gml) ne  
- observed the brighter stars in the N. part of  
the sky and a very good Aurora in the N-

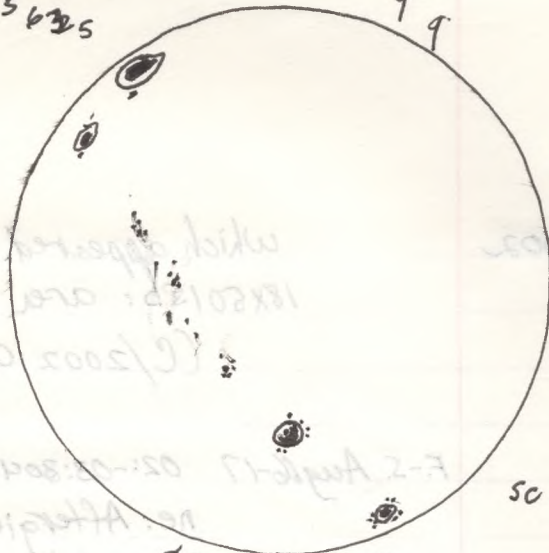


34 42



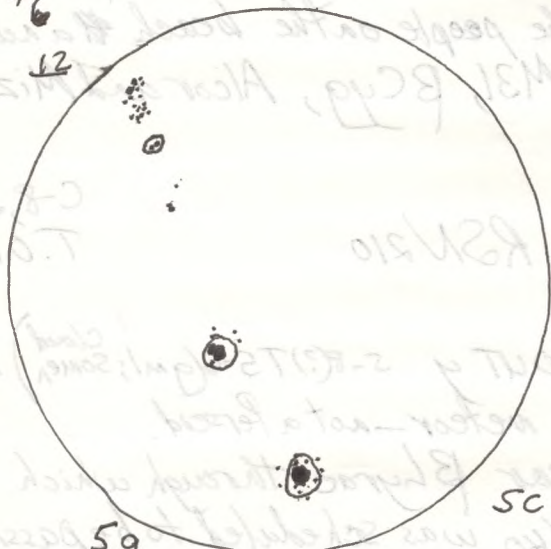
69 Aug 21  
50 RSN 110 14:05-14:15 UT

23 5635



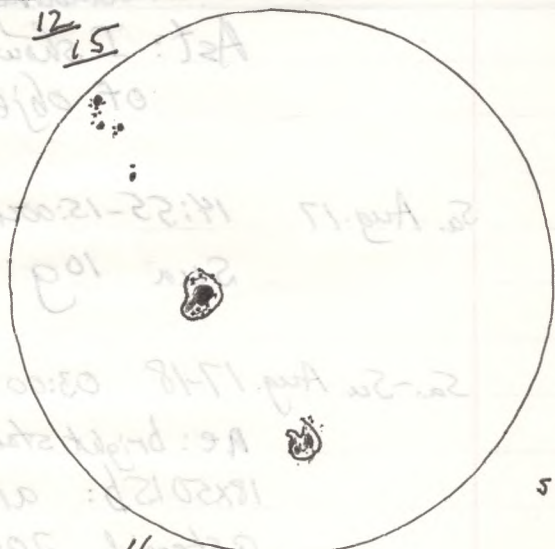
89 Aug 23  
425 RSN 122 15:00-15:10 UT

17/2 46



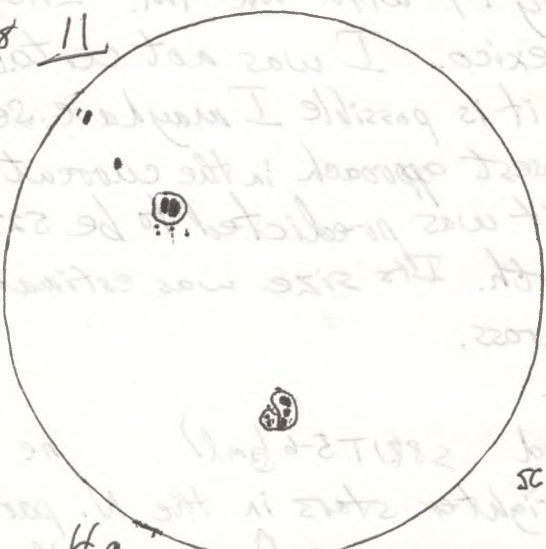
59 Aug 25  
45 RSN 91 14:40-14:50 UT

12/2 12/15



49 Aug 26  
415 RSN 81 15:35-15:40 UT

2 1 8 11



49 Aug 27  
225 RSN 62 14:10-14:15 UT



- good  
Aurora.

from the N.W. to a slight bit E. of the N. point on the horizon. The Aurora was a glow at first, and then beginning about 03:20 UT it became intense in spots and produced vertical spikes and bands. There was some pulsation. The Aurora extended up to about  $20^\circ$  in general, but by times there were spikes up to the level of Polaris or greater, i.e., up to  $45^\circ$  or  $50^\circ$ . There was not much colour, with the Aurora being generally whitish, but with occasional hints of red or green, but these hints were certainly not intense.

W. Aug. 21 14:05-14:15 UT t C-8,32  
Sun 6g 50s RSN 110 T.O.F.

F. Aug. 23 15:00-15:10 UT t C-8,32  
Sun 8g 42s RSN 122 T.O.F.

Su. Aug. 25 14:40-14:50 UT t C-8,32  
Sun 5g 41 s RSN 91 T.O.F.

S.-M Aug. 25-26 02:15-03:15 y 58(?) T 6 (gml.) ne  
- bright stars of summer.

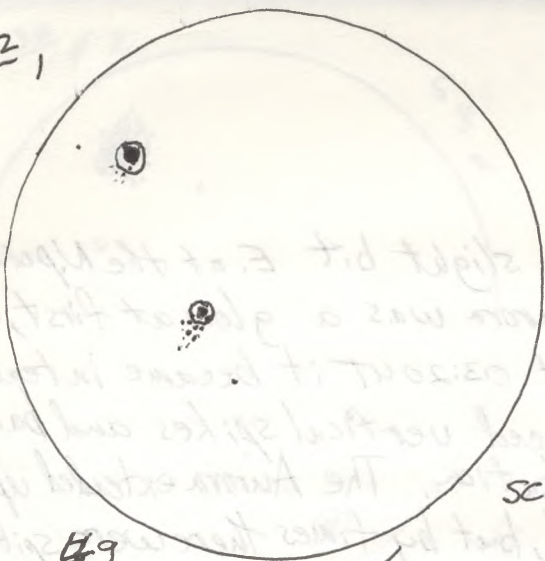
M. Aug. 26 15:35-15:40 UT t C-8,32  
Sun 4g 5 RSN T.O.F.

M.-T. Aug. 26-27 02:10-03:20 UT y 58(?) T 45 (gml.; clouds) ne  
- bright stars of summer.

Tu. Aug. 27 14:10-14:15 UT t C-8,32  
Sun 4g 22s RSN 62 T.O.F.



17  
121



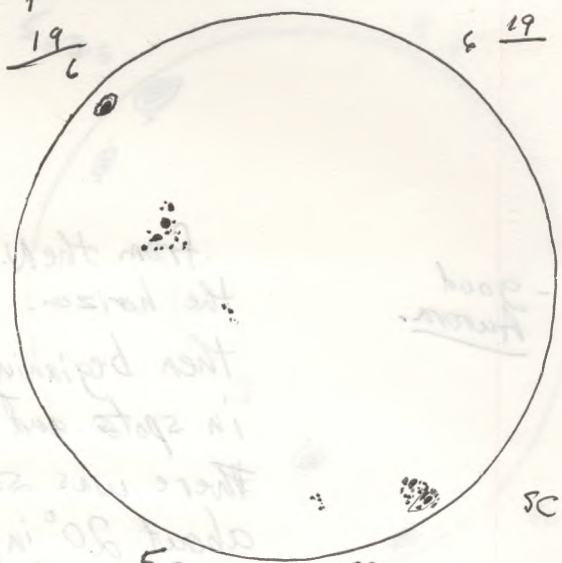
SC

49  
215  
RSN 61

Aug. 28  
14:52-14:57 UT

1  
19  
c

19



SC

59  
515  
RSN 101

Aug. 30  
15:20-15:25 UT

being generally whitish, but with occasional bits of red or green, but these bits were certainly not

in spots and produced vertical spikes and marks. The Aurora extended up to 30° in general, but below the level of 40° there were

C-835  
T.O.F.

RSN 110

W. Aug. 31 14:02-14:12 UT  
200 60 200

C-835  
T.O.F.

RSN 125

F. Aug. 31 12:00-12:10 UT  
200 80 200

C-835  
T.O.F.

RSN 125

W. Aug. 31 14:00-14:20 UT  
200 40 200

C-835  
T.O.F.

RSN 125

W. Aug. 31 12:25-12:45 UT  
200 40 200

nc

(bright stars of summer)

W. Aug. 31 02:10-03:00 UT  
- bright stars of summer.

C-835  
T.O.F.

+

Tu. Aug. 31 14:10-14:15 UT  
200 40 200



2002 Tu-W. Aug. 27-28 01:40-02:30 UT y S7(?) T9-9.5-before moonrise, ne; 18x50sb  
at 02:09 UT

ne: bright and fainter stars of summer

18x50sb: areas of Uranus and Neptune in Capricornus, M22, M28, M16, M17, M18, M8, M20, M21, M23, M24, M25, M11 and R Scuti, M27, M10, M12, M14, T Cor Bor and R Cor Bor, M5, Barnard's Star, M2, U and EU Del.

W. Aug. 28 14:52-14:57 UT t

C-8, 32  
T.O.F.

sun 4g 215 RSN 61

W-Th. Aug. 28-29 01:55-02:35 UT y S(?) T2 (very cloudy) ne

-Very few, if any stars other than the Summer Triangle and Arcturus were visible for very long, because of the persistent clouds over all, or almost all, the sky.

Th.-F. Aug. 29-30 02:15-03:30 UT y S-8(?) T3-4 (mainly cloudy) ne; 18x50sb

ne: brightest stars, or a few of them, amid clouds

18x50sb: Neptune in Cap., area of Uranus in Cap., M15, a few areas of stars amid clouds.

F. Aug. 30 15:20-15:25 UT t

C-8, 32  
T.O.F.

sun 5g 515 RSN 101

Sa.-Su. Aug. 31-Sept 1 02:05-03:50 UT y S-8(?) T9

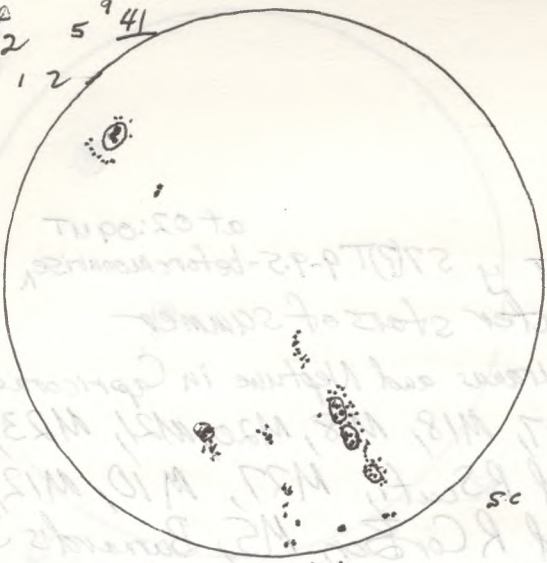
ne; 18x50sb

ne: stars of summer

18x50sb: area of Uranus, Neptune, M8, M20, M21, M22, M28, M16, M17, M18, M23, M24, M25, M11 and R Scuti, Col 299, M15, M31, M32, M33, M110, Double Cluster, NGC 7789, R Cor Bor, T Cor Bor, Barnard's Star, Alcor and Mizar.



41 5 2  
56 1 2



99  
855  
RSN 175  
Sept. 1  
14:45-14:04T

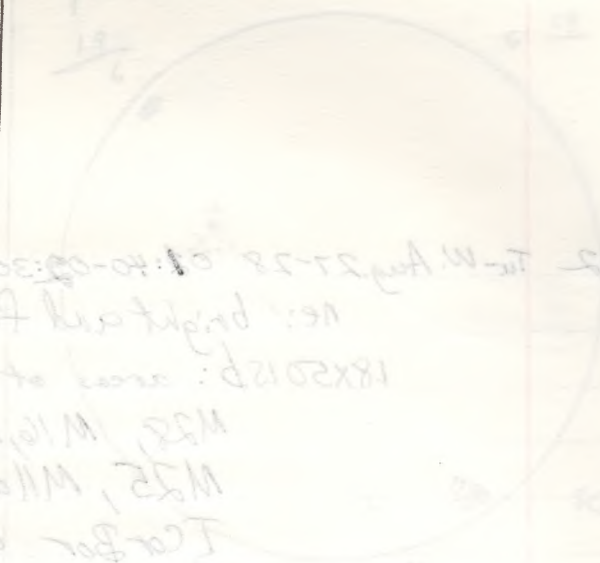
0-8:32  
T.O.F.

W. Aug 28 19:25-19:27 UT  
2m 49  
RSN 61

Th. F. Aug 29-30 03:15-03:30 UT  
1  
RSN 101

08:32  
T.O.F.

W. Aug 28 19:25-19:27 UT  
2m 49  
RSN 61



W. Aug 28 19:25-19:27 UT  
2m 49  
RSN 61

Th. F. Aug 29-30 03:15-03:30 UT  
1  
RSN 101

F. Aug 30 15:20-15:22 UT  
2m 59  
RSN 101

W. Aug 28 19:25-19:27 UT  
2m 49  
RSN 61



2002 Sun. Sept. 1 14:45-14:50 UT t  
sun 9g 855 RSN 175

C-8, 32  
T.O.F.

Su.-M. Sept. 1-2 01:45-04:40 UT 00 S8T9.5 ne; 20x100b; C-14, 40  
ne: stars of summer and autumn, one bright meteor - about  
mag. -1.

20x100b: Uranus, Neptune, M20, M21, M8, M16, M17, M18,  
M24, M25, M22, M28, M11 and RScuti, M2, M15,  
M31, M32, M10, M33, Double Cluster, NGC 7789,  
Barnard's Star, M10, M12, M14, TCor Bor, RCor Bor,  
area of SS Oph (near M10), but star not seen  
(listed in Burhan as LPV. - Mag 7.8 - 14.5: may  
have been near minimum.)

C-14, 40: M57, Veil Nebula, or part of it.

Mo.-T. Sept. 2-3 02:20-03:05 UT y S8T7 (some cloud, haze) ne; 18x50LSb  
ne: bright stars in some areas of the sky; one  
meteor

18x50LSb: Uranus, Neptune, M15, M11 and RScuti, M31,  
M32, M10, M33.

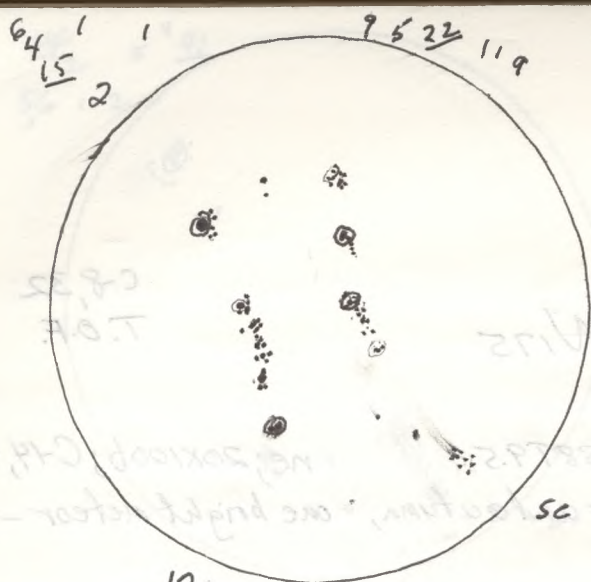
T.-W Sept. 3-4 02:20-03:15 UT y S-8T8.5-9 ne; 18x50LSb  
ne: stars of summer, Auroral glow in N.

18x50LSb: Uranus, Neptune, M22, M24, M25, M11 and RScuti,  
Barnard's Star, TCor Bor, RCor Bor, M31, M32, M10,  
M33, M2, M15, NGC 7789.

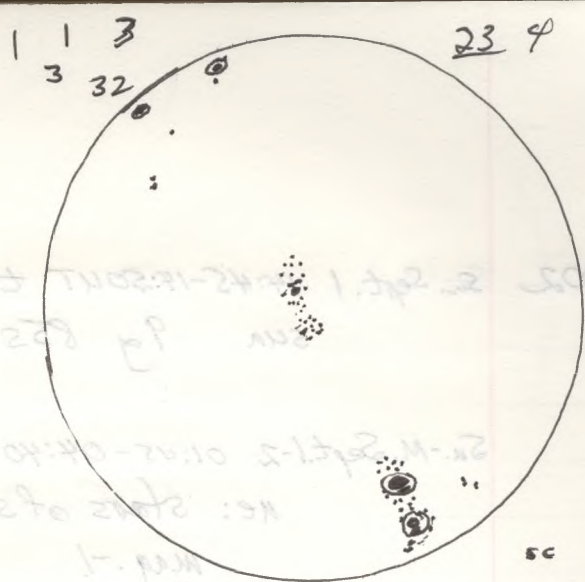
03:20-03:45 UT  
photographed Aurora in N.

Excellent Aurora! - 05:30-06:30 UT y and nd ne; camera lens  
- observed and photographed an excellent Aurora! From  
a glow in the N., it spread to the WNW and the

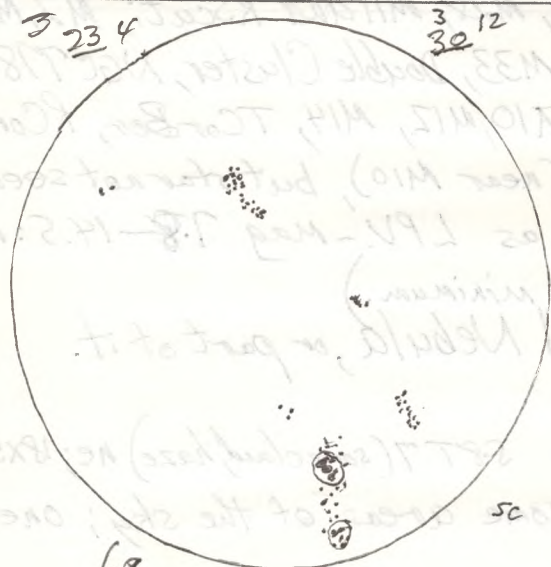




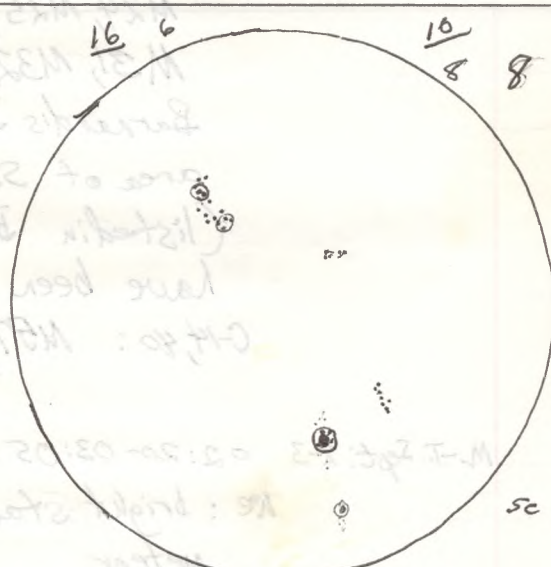
12g  
76s  
RSN196 Sept 5  
15:00-16:00UT



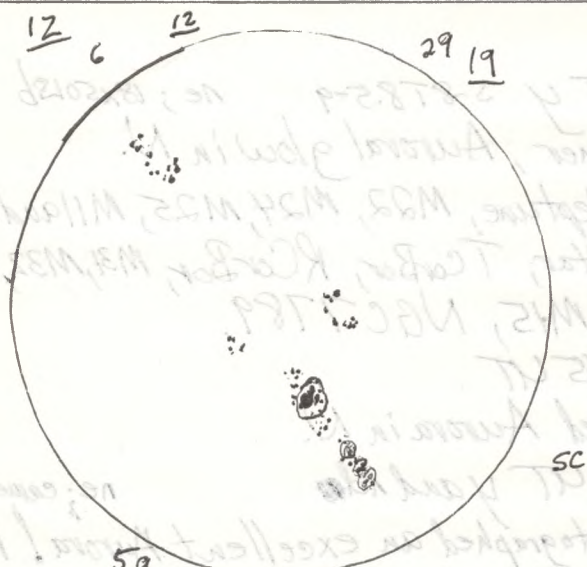
7g  
67s  
RSN137 Sept 9  
14:45-14:50UT



6g  
75s  
RSN135 Sept. 10  
15:10-15:15UT



5g  
48s  
RSN98 Sept. 11  
15:55-16:05 UT



5g  
78s  
RSN128 Sept 12  
17:55-18:00UT



7g  
44s  
RSN114 Sept. 16  
14:40-14:45UT



2002

ENE to cover almost the whole northern half of the sky, and up to the zenith and beyond. There was not much reddish colour but hints of pink colour and some greenish and yellowish hues. It was very active with considerable rapid flaring and pulsation.

Th. Sept. 5 15:00-15:10 UT t C-8, 32  
Sun 12g 76S RSN 196 T.O.F.

Th.-F. Sept. 5-6 02:40-03:50 UT y 58(178 $\frac{1}{2}$ -9 (some haze) ne; 18X50LSb  
ne: stars of summer; two bright meteors about mag. 1  
18X50LSb: Uranus, Neptune, M2, M15, M11 and R. Scuti,  
Barnard's Star,  $\tau$  Cor Bor, R Cor Bor, M31, M32, M10,  
M33, Double Cluster in Perseus,  $\mu$  Cep,  $\delta$  Cep area.

F.-S. Sept. 6-7 02:00-03:45 UT Huronia Star Party 5-8 UT 8-8.5 ne; 18" f/4.5  
ne- observed under clear skies with Milky Way clearly visible, though light pollution from Toronto was present up about 30° in SE and from Barrie up about 20° in NE.

18": Viewed with a group of 3 or 4 men who were members of the South Simcoe Amateur Astronomers and saw M27, M57, M92 and the Veil Nebula. Using the binocular viewer on the telescope made the views impressive because of the 3-D effect.

09:25-09:30 UT H.S.P. twil ne

In morning twilight I observed the spectacular view to the E with Orion and Procyon and Sirius up and Jupiter near M44 and Saturn in Taurus. It was a spectacular sight.







## Relative Sunspot Numbers

| Date    | My<br>Observation |             |
|---------|-------------------|-------------|
| Apr. 6  | 136               | Aug. 11 125 |
| 2068 10 | 144               | 14 216      |
| 12      | 161               | 17 210      |
| 18      | 146               | 21 110      |
| 2070 21 | 88                | 23 122      |
| 23      | 123               | 25 91       |
| 24      | 172               | 26 81       |
| 27      | 88                | 27 62       |
| May 4   | 206               | 28 61       |
| 8       | 177               | 30 101      |
| 10      | 141               | Sept. 1 175 |
| 11      | 117               | 5 196       |
| 15      | 73                |             |
| 22      | 169               |             |
| 23      | 163               |             |
| 28      | 104               |             |
| June 1  | 130               |             |
| 3       | 89                |             |
| 7       | 148               |             |
| 9       | 109               |             |
| 18      | 65                |             |
| 19      | 91                |             |
| 20      | 59                |             |
| July 3  | 96                |             |
| 7       | 57                |             |
| 12      | 80                |             |
| 13      | 73                |             |
| 15      | 71                |             |
| 16      | 112               |             |
| 17      | 129               |             |
| 20      | 90                |             |
| 21      | 137               |             |
| 22      | 115               |             |
| 28      | 187               |             |
| 30      | 187               |             |
| 31      | 172               |             |
| Aug 1   | 163               |             |
| 3       | 141               |             |
| 6       | 105               |             |
| 7       | 104               |             |



