

Volume
21
February 6, 2003
to
March 18, 2004

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TOP FLIGHT



Total Lunar Eclipse
2003, November 8-9

HIGH TECH MICRO PERFORATION

Leo Enright
Observing Log Feb. 6, 2003 - Mar. 18, 2004

STANDARDS

1 SUBJECT
College Rule
70 Sheets 10 1/2" x 8"
notebook

www.topflightpaper.com
Made in USA

Calendar for 2003

JANUARY							FEBRUARY							MARCH							APRIL							MAY							JUNE												
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S						
	1	2	3	4								1								1						1	2	3	4	5								1	2	3	1	2	3	4	5	6	7
5	6	7	8	9	10	11	2	3	4	5	6	7	8	2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14						
12	13	14	15	16	17	18	9	10	11	12	13	14	15	9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21						

2003, D

LMS

2003, L

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2003, D

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2003, L

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2004, L

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2004, L

L



AAVSO

AAVSO, 25 Birch Street, Cambridge, MA 02138, U.S.A.
 Tel: 617-354-0484 ☆ Fax: 617-354-0665
 e-mail: aavso@aavso.org
 http://www.aavso.org



2003

JULIAN DAY CALENDAR

2,450,000 plus the value given under each date

JANUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
●	☾	○				
2	10	18	1	2	3	4
			2641	2642	2643	2644
5	6	7	8	9	10	11
2645	2646	2647	2648	2649	2650	2651
12	13	14	15	16	17	18
2652	2653	2654	2655	2656	2657	2658
19	20	21	22	23	24	25
2659	2660	2661	2662	2663	2664	2665
26	27	28	29	30	31	☾
2666	2667	2668	2669	2670	2671	25

FEBRUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
●	☾	○	☾			
1	9	16	23			1
						2672
2	3	4	5	6	7	8
2673	2674	2675	2676	2677	2678	2679
9	10	11	12	13	14	15
2680	2681	2682	2683	2684	2685	2686
16	17	18	19	20	21	22
2687	2688	2689	2690	2691	2692	2693
23	24	25	26	27	28	
2694	2695	2696	2697	2698	2699	

MARCH

Sun	Mon	Tue	Wed	Thu	Fri	Sat
●	☾	○	☾			
3	11	18	25			1
						2700
2	3	4	5	6	7	8
2701	2702	2703	2704	2705	2706	2707
9	10	11	12	13	14	15
2708	2709	2710	2711	2712	2713	2714
16	17	18	19	20	21	22
2715	2716	2717	2718	2719	2720	2721
23	24	25	26	27	28	29
2722	2723	2724	2725	2726	2727	2728
30	31					
2729	2730					

APRIL

Sun	Mon	Tue	Wed	Thu	Fri	Sat
●	☾					
1	9	1	2	3	4	5
		2731	2732	2733	2734	2735
6	7	8	9	10	11	12
2736	2737	2738	2739	2740	2741	2742
13	14	15	16	17	18	19
2743	2744	2745	2746	2747	2748	2749
20	21	22	23	24	25	26
2750	2751	2752	2753	2754	2755	2756
27	28	29	30		○	☾
2757	2758	2759	2760		16	23

Observing Log

Nov, 2000

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

Time:

UT = Universal Time

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

Places:

oo = Oso Observatory
 nd = north deck
 sd = south deck
 sh = shoreline of lake
 ss = solar station
 t = table at solar station
 in = indoors
 r = roof of house
 ice = ice on lake
 y = yard
 la = laneway
 FL = Florida: by = backyard
 at = 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
 l/p = light pollution

Instruments:

C-14 = Celestron 14-35.5cm SCT

EG = "Easy Guider"

C-8 = Celestron 8-20cm SCT

EG1F = "Easy Guider," lens forward

Ast = Astroscan 2001-10.5cm RFT

EG1b = "Easy Guider," lens back

17 1/2" = Denise's 32cm Meade Dobsonian

20x100b = 20x100 binoculars

11x80b = 11x80 binoculars

9x63b = 9x63 binoculars

7x35b = 7x35 binoculars

18x501sb = 18x50 IMAGE STABILIZED binoculars

32 = 32mm ocular

32-2 = 32mm 2" ocular

K = Kellner

O = Orthoscopic

Ko = König

WA = Wide Angle

ph = photography

P/B = piggy back

ola = off axis

Ba = Barlow

APF = 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:

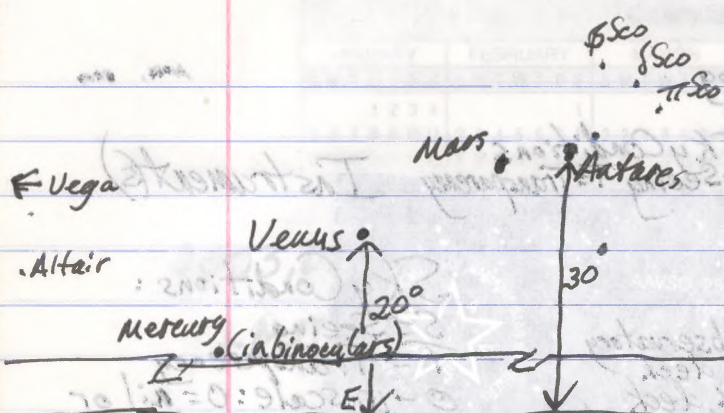
U = Uranometria 2000.0

U210 = Uranometria 2000.0 Chart 210

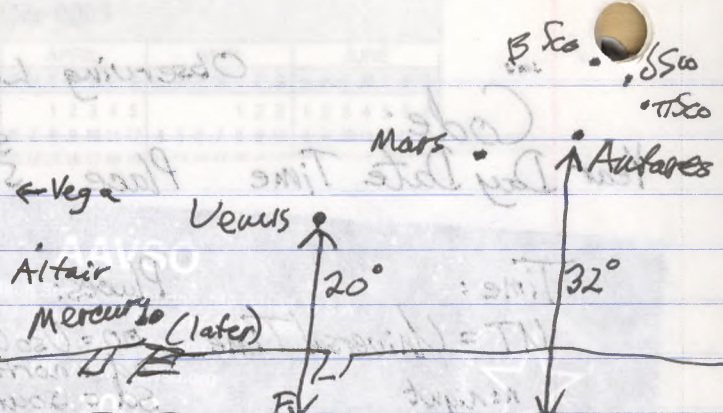
AAUSO = AAUSO Variable Star Atlas

Cam = Cambridge Star Atlas (2000.0)

MSA = Millennium Star Atlas



2003, Feb. 7, 11:00 UT View to E. Mars and Antares are about 6° apart.



2003, Feb. 11, 10:50 UT - View to E. Mercury was seen naked-eye and in binoculars at 11:20 UT

Objects:
 PV = Planetary Nebula
 GC = Globular Cluster
 GC = Open Cluster
 SG = Spiral Galaxy
 EG = Elliptical Galaxy
 D = Double Star
 FV = Long Period Variable
 Atlas:
 U = Uranometria 2000.0
 N10 = Uranometria 2000.0 Chart 10
 AA20 = AA20 Variable Star Atlas
 Cam = Cambridge Star Atlas (2000.0)
 MSA = Millennium Star Atlas
 APF = Astro-Physics Star Filter
 T.O.F. = Thousand Oaks Solar Filter

FEBRUARY
 Sun Mon Tue Wed Thu Fri Sat
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
 Instruments:
 G-14 = Celestron 14" 32.5cm SCT
 G-8 = Celestron 8" 20cm SCT
 A-4 = Astro-Physics 4" 10.2cm RFT
 1K = Bresser 32cm Makelap Dobsonian
 30x100 = 30x100 binoculars
 11x80 = 11x80 binoculars
 9x63 = 9x63 binoculars
 7x35 = 7x35 binoculars
 12x50 = 12x50 binoculars
 32 = 32mm ocular
 32.2 = 32mm 2" ocular
 K = Kellner
 O = Orthoscopic
 Ke = Keap
 WP = Wide Angle
 W = Wied
 P = P
 P = Photography
 P = P
 P = P
 P = P
 P = P
 P = P
 P = P

2003

Th-F. Feb. 6-7 5:35 - 6:05 a.m. E.S.T. 10:35 - 11:05 UT FL: by SBT 5-6 (1/p; some haze) ne; 18x50 ISB.
ne: Venus, Mars, some stars of Scorpius, Summer Triangle in the NE, Big Dipper, Jupiter in the W, Arcturus near the zenith, Alphecca.

18x50 ISB: Mars, Venus, stars of upper part of Scorpius, some stars of Corona Borealis, Hercules, Lyra, and Cygnus, Mercury seen just above the roof of a house across the pond.

Sa-Su. Feb. 8-9 5:35 - 5:45 a.m. E.S.T. 10:35 - 10:45 UT FL: by SBT 4-5 (1/p; considerable cloud) ne; 18x50 ISB
ne: Venus in E. among the clouds, Arcturus near zenith, Vega in the NE.

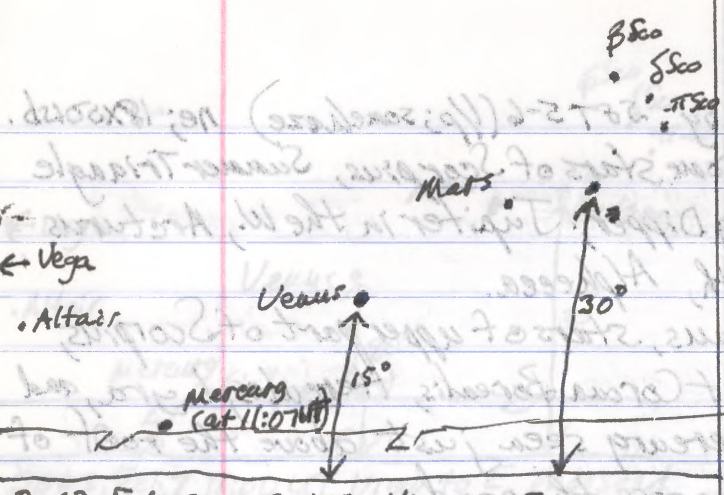
18x50 ISB: Venus, Mars, Antares and other bright stars in upper part of Scorpius, bright stars of Lyra.

S-M. Feb. 9-10 7:25 - 7:45 p.m. E.S.T. 00:25 - 00:45 UT FL: end of street SBT 7 (1/p; some light cloud) ne; 18x50 ISB
ne: stars of winter high in the S., Saturn, Jupiter.

18x50 ISB: looked for Comet NEAT (C/2002 V1) low in the W., but was not sure of seeing it; Pleiades near the zenith and near the first quarter moon, M31, M41, M42 and M43, craters on the first quarter moon.

M-T. Feb. 10-11 m. 5:50 - 6:00 a.m. E.S.T. 10:50 - 11:00 UT FL: by SBT 7 (just after a e. at.; 1/p) ne; 18x50 ISB
ne: Venus, Mars, Summer Triangle well up in NE, Arcturus and Alphecca near the zenith, bright stars of Scorpius, Big Dipper, Polaris, Kochab, & UMi. (See the diagram) Later at 11:20 UT Mercury was seen.

18x50 ISB: some stars of Scorpius, Venus, Mars, M4, M13, M42, M8 and area of M20 with M8 only about 5° from Venus, bright stars of Lyra. Later at 11:20 UT Mercury was also seen.



2003, Feb 12, 10:35 UT - View to E.
 Mercury was seen over a roof at 11:07 UT

18x2012b: Venus Mars Antares and other bright stars in upper part of Scorpis bright stars of Vega in the NE.

2-M Feb 9-10 00:25-00:45 UT Feb 11:00-11:15 UT
 re: stars of winter in the 2, Jovian, Jupiter.

18x2012b: looked for Comet NEAT (2001V) low in the W. but was not sure of seeing it; Pleiades near the zenith and near the first quarter moon.

18x2012b: some stars of Scorpis, Venus Mars and Alpha Centauri near the zenith bright stars of Scorpis brighter than that of Mr. (see diagram) later at 11:07 UT Mercury was seen.

18x2012b: Mars and area of M30 with Mr. only about 2° from Venus, bright stars of Lyra. Later at 11:30 UT Mercury was also seen.

18x2012b: Venus Mars Antares and other bright stars in upper part of Scorpis bright stars of Vega in the NE.

2-M Feb 9-10 00:25-00:45 UT Feb 11:00-11:15 UT
 re: stars of winter in the 2, Jovian, Jupiter.

18x2012b: looked for Comet NEAT (2001V) low in the W. but was not sure of seeing it; Pleiades near the zenith and near the first quarter moon.

18x2012b: some stars of Scorpis, Venus Mars and Alpha Centauri near the zenith bright stars of Scorpis brighter than that of Mr. (see diagram) later at 11:07 UT Mercury was seen.

18x2012b: Mars and area of M30 with Mr. only about 2° from Venus, bright stars of Lyra. Later at 11:30 UT Mercury was also seen.

7:10 - 8:00 p.m. E.S.T.

2003

T-W. Feb. 11-12. 00:10-01:00 UT FL: Bonita Beach S8-9(?) T6-7 (gal) ne; 18x50sb

ne: Hoping to see Comet NEAT (C/2002 V1) which was predicted to be at mag. 1.8, Denise and I drove to Bonita Beach on the Gulf of Mexico. We saw the stars of winter high in the SE, Jupiter, Saturn, a bright meteor in the west - mag. 4, and I also saw a fainter one in Orion.

18x50sb: I repeatedly scanned the area of the W. sky below the star α Pegasi which was about 15° above the W. horizon, hoping to see Comet NEAT (C/2002 V1), but was not sure of seeing it. I expected to see it down and to the right from the 'trapezium' formed by the 4 stars δ , ϵ , ζ , and η Pegasi. I also observed M41, M42, M43, and M31. I was disappointed at not seeing the comet which had been predicted to be at mag. 1.8. There seemed to be some haze low over the Gulf of Mexico. If the comet were too low, the haze may have prevented seeing it. This may have been the reason it was not seen with certainty.

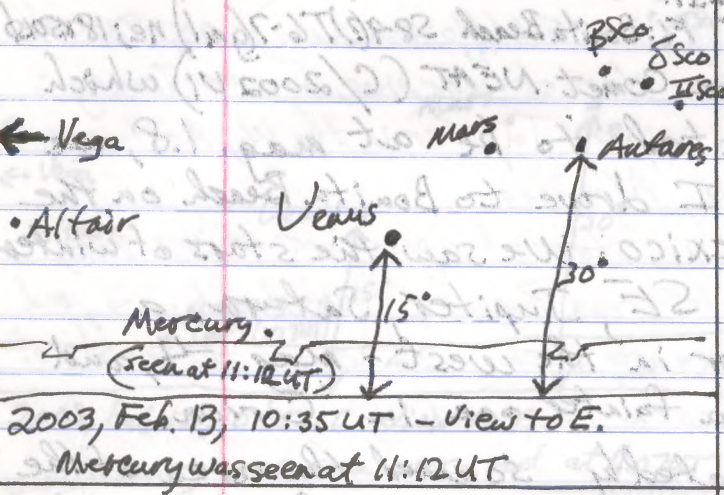
looked for
Comet NEAT
(C/2002 V1)

ph: I took several photographs over the Gulf, thinking I might be able to photograph the comet.

5:35-6:10 a.m. E.S.T.
m. 10:35-11:10 UT FL: by S8 T6-7 ne; 18x50sb

ne: Venus, Mars, and then Mercury which appeared above a roof at 11:07 UT, the Summer Triangle well up in the NE, Arcturus and Alphecca near the zenith, the bright stars of Scorpius, Big Dipper and 3 stars of the Little Dipper. (See diagram.)

18x50sb: bright stars of Scorpius, of Lyra and some of the stars of Cygnus, Venus, Mars, Mercury, M4,



W. sky below the star of Regulus which was about 12° above the horizon. I tried to see Comet NEAT (C/2002 V1) but was not sure of seeing it. I expected to see it clear and to the right from the 'transverse' form by the 4 stars 25, 27, 28 and 29 Regis. I also observed M4, M5, M3, M2, M1. I was disappointed at not seeing the comet which had been predicted to be at mag. 1.8. There seemed to be some haze toward the Gulf of Mexico. If the comet were too low, the haze may have prevented seeing it. This may have been the reason it was not seen with certainty.

pr. I took several photographs over the Gulf, thinking I might be able to photograph the Comet.
 10:32-11:10 UT Feb 13
 28 Feb 13
 06:18x2012p

18x2012p: I expected to see the comet which was about 12° above the horizon. I tried to see Comet NEAT (C/2002 V1) but was not sure of seeing it. I expected to see it clear and to the right from the 'transverse' form by the 4 stars 25, 27, 28 and 29 Regis. I also observed M4, M5, M3, M2, M1. I was disappointed at not seeing the comet which had been predicted to be at mag. 1.8. There seemed to be some haze toward the Gulf of Mexico. If the comet were too low, the haze may have prevented seeing it. This may have been the reason it was not seen with certainty.

pr. I took several photographs over the Gulf, thinking I might be able to photograph the Comet.
 10:32-11:10 UT Feb 13
 28 Feb 13
 06:18x2012p

18x2012p: bright star of Regis, 25, 27, 28 and 29 of the stars of Regis, Venus, Mars, Mercury, M4, M5, M3, M2, M1, Mars and the Moon which appeared above a roof at 11:07 UT. The Summer Triangle well up in the NE, Antares and Alhena nearby, the bright star of Regis, Big Dipper and 3 stars of the Little Dipper (see diagram).
 18x2012p: bright star of Regis, 25, 27, 28 and 29 of the stars of Regis, Venus, Mars, Mercury, M4, M5, M3, M2, M1, Mars and the Moon which appeared above a roof at 11:07 UT. The Summer Triangle well up in the NE, Antares and Alhena nearby, the bright star of Regis, Big Dipper and 3 stars of the Little Dipper (see diagram).

Comet NEAT (C/2002 V1)
 looked for

2003,

M13, M92, area of Barnard's Star, M8, area of M20
ph: photographed some areas of the morning sky

7:00 - 7:45 p.m. E.S.T.
W.-Th, Feb, 12-13 00:00-00:45 UT FL: Bonita Beach 58-9T6(gml) ne; 18x50 15b

ne: Hoping again to see Comet NEAT (C/2002VI) which should have been at about mag. 1.2 went to Bonita Beach on the Gulf of Mexico. I saw the stars of winter high in the SE with Canopus lower in the SE. The waxing gibbous moon was now about 12° from Saturn which was near the zenith. There was some cloud low in the W about 10° to 15° from the horizon.

looked for
Comet NEAT
(C/2002VI)

18x50 15b: We scanned the sky below the "trapezium" of stars, 55, 57, 58 and 59 Pegasi which were about 20° above the W horizon, but did not see Comet NEAT (C/2002 VI). I observed some lunar craters, the Pleiades, M42 and M43, and the Pleiades

ph: photographed the shoreline to the south along the Gulf of Mexico and the skyline showing the star

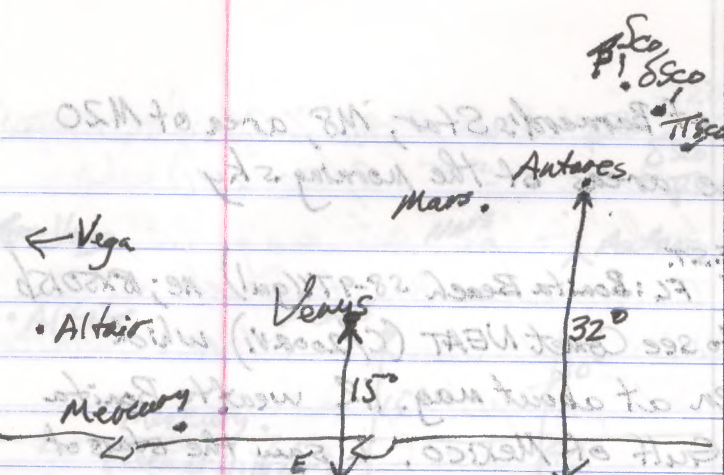
Canopus.
5:35 - 5:50 a.m. E.S.T.
M. 10:35 - 10:50 UT FL: by 58T6-7 (1/p) ne; 18x50 15b

ne: Venus, Mars, the Summer Triangle in the NE, Arcturus and Alphecca near the Zenith, Jupiter in the W., bright stars of Scorpius, Big Dipper, 3 stars of the Little Dipper. Mercury was seen later, at 11:12 UT. (See diagram)

18x50 15b: bright stars of Scorpius, of Lyra and some of the stars of Cygnus, M4, M13, M92, some stars of Corona Borealis. Mercury was seen at 11:12 UT, as Mars and Venus had been seen earlier.

10:00 - 10:10 p.m. E.S.T.
Th.-F. Feb. 13-14 03:00-03:10 UT FL: la 58T5-6 (1/p; gml) ne

Very bright, "almost full" gibbous moon almost exactly in the zenith with brilliant Jupiter about 15° to the E.



2003, Feb. 15, 10:35 UT: View to E.
Mercury - seen in binoculars at 11:15 UT

18:20 UT: Venus Mars, the summer triangle in the NE. Antares and Alpha Centauri (Rigel, Betelgeuse, Proxima) were visible. Jupiter in the W. bright stars of Scorpion, Big Dipper, 3 stars of the Little Dipper. Mercury was seen later at 11:15 UT. (see diagram)

18:20 UT: bright stars of Scorpion, at L-shaped some of the stars of Cygnus, M1 M13 M2, some stars of Cassiopeia. Mercury was seen at 11:15 UT as Mars and Venus had been seen earlier.

18:20 UT: We scanned the sky below the "horizon" of stars, 25, 21, 28 and 29 degrees which were about 30° above the horizon, but did not see Comet NEAT (C/2002 V1). I observed some lunar craters, the Pleiades, M43 and M42, and the Pleiades. I photographed the starline to the south along the Gulf of Mexico and the skyline showing the star

18:20 UT: Venus Mars, the summer triangle in the NE. Antares and Alpha Centauri (Rigel, Betelgeuse, Proxima) were visible. Jupiter in the W. bright stars of Scorpion, Big Dipper, 3 stars of the Little Dipper. Mercury was seen later at 11:15 UT. (see diagram)

18:20 UT: bright stars of Scorpion, at L-shaped some of the stars of Cygnus, M1 M13 M2, some stars of Cassiopeia. Mercury was seen at 11:15 UT as Mars and Venus had been seen earlier.

18:20 UT: Venus Mars, the summer triangle in the NE. Antares and Alpha Centauri (Rigel, Betelgeuse, Proxima) were visible. Jupiter in the W. bright stars of Scorpion, Big Dipper, 3 stars of the Little Dipper. Mercury was seen later at 11:15 UT. (see diagram)

18:20 UT: bright stars of Scorpion, at L-shaped some of the stars of Cygnus, M1 M13 M2, some stars of Cassiopeia. Mercury was seen at 11:15 UT as Mars and Venus had been seen earlier.

18:20 UT: Venus Mars, the summer triangle in the NE. Antares and Alpha Centauri (Rigel, Betelgeuse, Proxima) were visible. Jupiter in the W. bright stars of Scorpion, Big Dipper, 3 stars of the Little Dipper. Mercury was seen later at 11:15 UT. (see diagram)

18:20 UT: bright stars of Scorpion, at L-shaped some of the stars of Cygnus, M1 M13 M2, some stars of Cassiopeia. Mercury was seen at 11:15 UT as Mars and Venus had been seen earlier.

18:20 UT: Venus Mars, the summer triangle in the NE. Antares and Alpha Centauri (Rigel, Betelgeuse, Proxima) were visible. Jupiter in the W. bright stars of Scorpion, Big Dipper, 3 stars of the Little Dipper. Mercury was seen later at 11:15 UT. (see diagram)

18:20 UT: bright stars of Scorpion, at L-shaped some of the stars of Cygnus, M1 M13 M2, some stars of Cassiopeia. Mercury was seen at 11:15 UT as Mars and Venus had been seen earlier.

2003

and Saturn about 20° to the W., the bright stars of Orion and other winter constellations high in the SE, and the star Canopus about 10° above the SE horizon.

5:30 - 5:45 a.m. E.S.T.
-m. 10:30 - 10:45 UT FL: by S8T3-4 (scattered cloud; 1/p) ne; 18X50ISb

ne: Venus, Summer Triangle in NE, Big Dipper high in N, Arcturus near the zenith.

18X50ISb: Venus, stars of Lyra.

- later, about 11:15 UT, observed Mercury in the binoculars, about a degree or so above the roof of a house across the pond.

9:40 - 9:45 p.m. E.S.T.

F.-S. Feb. 14-15 02:40 - 02:45 UT FL: la S-8T4-5 (1/p; gnh) ne

- bright stars of winter high in the SE with Castor and Pollux near the zenith and the very bright gibbous moon about 8° E. of Pollux and Jupiter about 8° E. of the moon. Canopus was about 10° above the S.E. horizon.

5:35 - 5:50 a.m. E.S.T.
m. 10:35 - 10:50 UT FL: by S8T5 (gnh; 1/p) ne; 18X50ISb

ne: Venus, Mars, bright stars of Scorpius, Summer Triangle in NE, Big Dipper, Arcturus and Alphecca near the zenith, "almost-Full" gibbous moon 10° above the W. horizon (See diagram.)

18X50ISb: Venus, Mars, bright stars of Scorpius, M4, M13, M92; Also Mercury was seen in the binoculars in twilight at 11:15 UT.

10:00 - 10:10 p.m. E.S.T.

S.-S. Feb. 15-16 03:00 - 03:10 UT FL: la S8T6 (Full/p) ne

- Orion and the Great Winter Hexagon of stars high in the SSE, Canopus about 10° above the SE horizon, and Gemini in the zenith with Jupiter about 20° E of the zenith and Saturn about 20° W. of the zenith with the near Full Moon about 5° ENE of Jupiter.

2063

5:55 - 6:00 a.m. E.S.T.
M. 10:55 - 11:00 UT FL: by S?T-1 (95% cloudy) ne; 18x50 ISb

ne: Venus about 20° above E. horizon; Full Moon about 20° above W. horizon

18x50 ISb: Venus, the Full Moon in the W. sky.

5:55 - 6:00 a.m. E.S.T.
S-M. Feb. 16-17 10:55 - 11:00 UT FL: by S?T-1 ne

- Very cloudy situation - overcast - hoped to see planets

5:45 - 5:55 a.m. E.S.T.
M.-T. Feb. 17-18 10:45 - 10:55 UT FL: by S?T-5-6 (1/p; bright gml) ne; 18x50 ISb

ne: Big Dipper in N., Summer Triangle in NE, Venus, Mars, Antares and some bright stars of Scorpius, very bright gibbous moon in W., Arcturus and Alphecca near the zenith. Mercury was seen coming above a roof at about 11:10 UT (See diagram.)

18x50 ISb: Venus, Mars, bright stars of Scorpius and of Lyra, some stars of Hercules, M4 seen faintly, M13, some stars in the area of Venus. Mercury was seen after it appeared at about 11:10 UT.

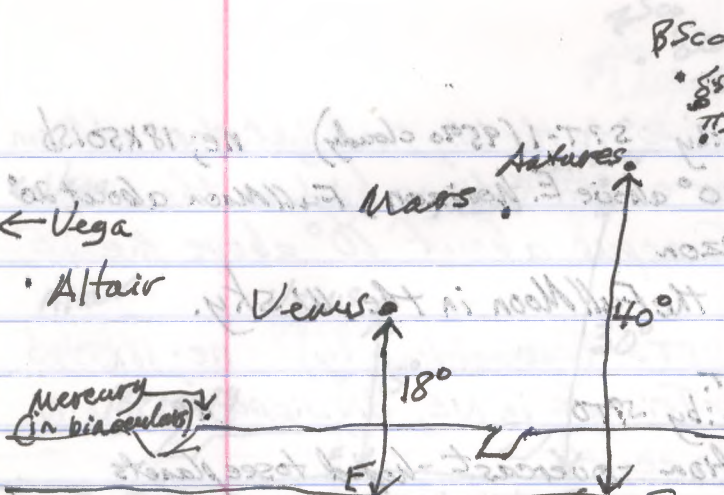
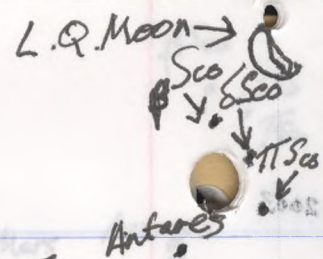
5:45 - 5:55 a.m. E.S.T.
T.-W. Feb. 18-19 10:45 - 10:55 UT FL: by S?T-4-5 (1/p; scattered cloud; ^{bright gibbous moon}) ne; 18x50 ISb

ne: Venus; Mars; bright stars of Scorpius; Summer Triangle; bright gibbous moon about 30° W. of the zenith; Arcturus near the zenith; most, or some, of the stars of the Big Dipper. (See diagram.)

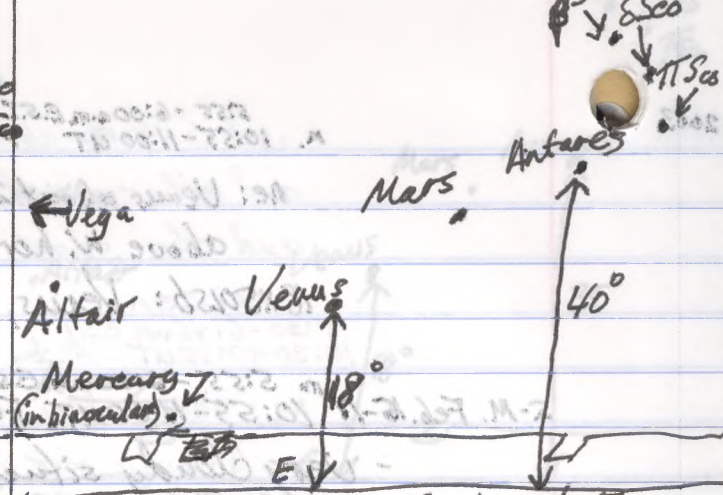
18x50 ISb: Mars, Venus, bright stars of Scorpius and of Lyra. Mercury was seen at 11:15 UT

6:25 - 6:35 a.m. E.S.T.
W.-Th. Feb. 19-20 11:25 - 11:35 UT FL: by S(?)T-1 (some cloud; well) ^{into twilight} ne; 18x50 ISb

ne: Because the alarm was not set and I was late waking up, I did not see very much in the sky which was quite bright with morning twilight. Venus was very bright in the E., about 30° above the horizon. There was evidence



2003, Feb. 22, 10:40 UT - View to E.
 Mercury was seen in binoculars at about 11:25 UT.



2003, Feb. 23, 10:50 UT view to E.
 Last Quarter Moon was about 90° from S Sco.
 Mercury was seen in binoculars at 11:25 UT.

Mercury was seen after it appeared at about 11:10 UT. (See diagram.)
 Venus was bright star of Scorpio and of L. Dipper, some stars of Hercules, M12, M13, some stars in the area of Venus.

Mercury was seen after it appeared at about 11:10 UT.
 Venus was bright star of Scorpio and of L. Dipper, some stars of Hercules, M12, M13, some stars in the area of Venus.

Mercury was seen at 11:25 UT.
 Venus was bright star of Scorpio and of L. Dipper. (See diagram.)
 Antares was the zenith; rest of stars of the Big Dipper. (See diagram.)
 Venus was bright star of Scorpio and of L. Dipper. Mercury was seen at 11:25 UT.

Mercury was seen at 11:25 UT.
 Venus was bright star of Scorpio and of L. Dipper. (See diagram.)
 Antares was the zenith; rest of stars of the Big Dipper. (See diagram.)
 Venus was bright star of Scorpio and of L. Dipper. Mercury was seen at 11:25 UT.

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of a bright moon behind some clouds W. of the zenith.
18X50ISb: Venus was seen in the binoculars, but it seemed to be too bright to see other objects, except the moon which was behind some cloud.

8:35-8:40 p.m. E.S.T.
Th.-F. Feb. 20-21 01:35-01:40 UT FL: la S-8T6 (1/p) ne

- Orion and the stars of winter high in the SSE; Canopus about 12° above the SE horizon, Jupiter very bright and high in the E and Saturn in Taurus W. of the zenith.

5:40-5:50 a.m. E.S.T.
F.-S. Feb. 21-22 10:40-10:50 UT FL: by S8T6 (1/p; 1/2 ml) ne; 18X50ISb

ne: Venus, Mars, Summer Triangle in NE, bright stars of Scorpius, Big Dipper, Last Quarter moon high in SE, Arcturus near the zenith. (See diagram.)

18X50ISb: Venus, Mars, bright stars of Scorpius and of Lyra, craters on the Last Quarter Moon.

Mercury

Mercury was seen in the binoculars at about 11:25 UT during twilight.

5:50-6:00 a.m. E.S.T. ^{beginning twilight}
Sa.-Su. Feb. 22-23 10:50-11:00 UT FL: by S8T5-6 (1/p; 1/2 ml) ne; 18X50ISb

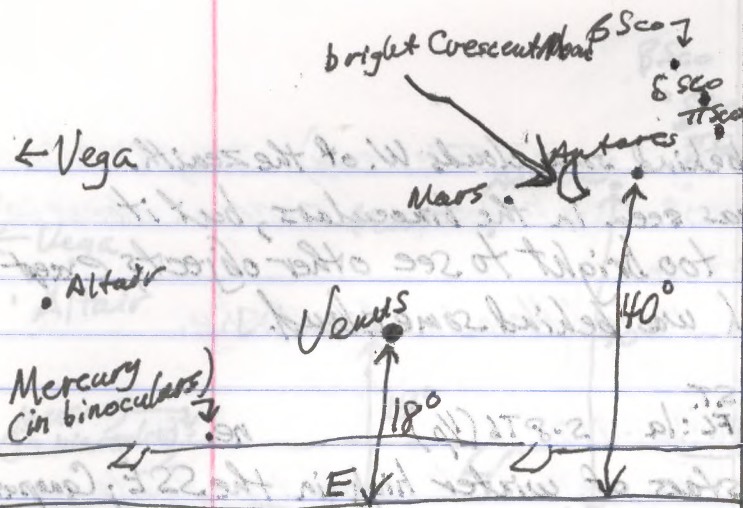
ne: Venus, Mars, Summer Triangle in NE, Big Dipper, bright stars of Scorpius except the "claw stars" which were difficult or impossible to see because the Last Quarter Moon was nearby, Arcturus near the zenith. (See diagram.)

18X50ISb: Venus, Mars, bright stars of Scorpius near the moon, bright stars of Lyra and some of the bright stars of Cygnus. Mercury was seen in the binoculars at 11:25 UT.

Mercury

9:40-9:45 p.m. E.S.T.
Su.-M. Feb. 23-24 02:40-02:45 UT FL: la S-8T7 (1/p) ne

- bright stars of winter high in S.; Canopus 10° above SE horizon, Jupiter very bright about mid-way between Pollux and Regulus,



2003, Feb. 24, 10:45 UT - view to E.
 Mercury was seen in binoculars at 11:30 UT

Mercury was seen in the binoculars at about 11:30 UT during twilight.
 Venus was bright star of 2 magnitude near the horizon. (see diagram)
 Mars was bright star of 2 magnitude near the horizon. (see diagram)
 Altair was bright star of 3 magnitude near the horizon. (see diagram)
 Mercury was bright star of 2 magnitude near the horizon. (see diagram)

Mercury was seen in the binoculars at 11:30 UT.
 The moon, bright star of 1.5 magnitude and some of the bright stars of Cygnus. Mercury was seen in the binoculars at 11:30 UT.
 Venus was bright star of 2 magnitude near the horizon. (see diagram)
 Mars was bright star of 2 magnitude near the horizon. (see diagram)
 Altair was bright star of 3 magnitude near the horizon. (see diagram)
 Mercury was bright star of 2 magnitude near the horizon. (see diagram)

Mercury was seen in the binoculars at 11:30 UT.
 The moon, bright star of 1.5 magnitude and some of the bright stars of Cygnus. Mercury was seen in the binoculars at 11:30 UT.
 Venus was bright star of 2 magnitude near the horizon. (see diagram)
 Mars was bright star of 2 magnitude near the horizon. (see diagram)
 Altair was bright star of 3 magnitude near the horizon. (see diagram)
 Mercury was bright star of 2 magnitude near the horizon. (see diagram)

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and about 20° E. of the zenith; Saturn in Taurus about 25° W. of the zenith.

^{5:45-5:50 a.m. E.S.T.}
M. 10:45-10:50 UT FL: by S8T6-7 (1/p/crnl.) ne; 18x50 15b

ne: Venus, Mars, bright Crescent Moon, Big Dipper in N., Summer Triangle in NE, bright stars of Scorpius, Arcturus and Alphecca near zenith. (See diagram.)

18x50 15b: Venus, Mars, lunar craters on the bright Crescent Moon, bright stars of Scorpius, Lyra, and

Mercury

15° Cygnus, M4 (quite faint), M13, M92. Mercury was seen in binoculars at 11:30 UT.

^{9:05-9:10 p.m. E.S.T.}

M.-T. Feb. 24-25 ^{02:05-02:10 UT} FL: 1a S8T6 (1/p) ne

- Bright stars of winter high in the S., with Canopus about 12° above the SE horizon and Jupiter about 25° E. of the zenith and Saturn about 15° W. of the

zenith

^{5:35-5:40 a.m. E.S.T.}
M. 10:35-10:40 UT FL: by S8T3-4 (some cloud; 1/p) ue; 18x50 15b

ue: Amid the clouds I saw the Crescent Moon about 5° below Mars, Venus, ^{and} the Summer Triangle in the NE.

18x50 15b: Venus, Mars, craters on the Crescent Moon, & the bright stars of Lyra.

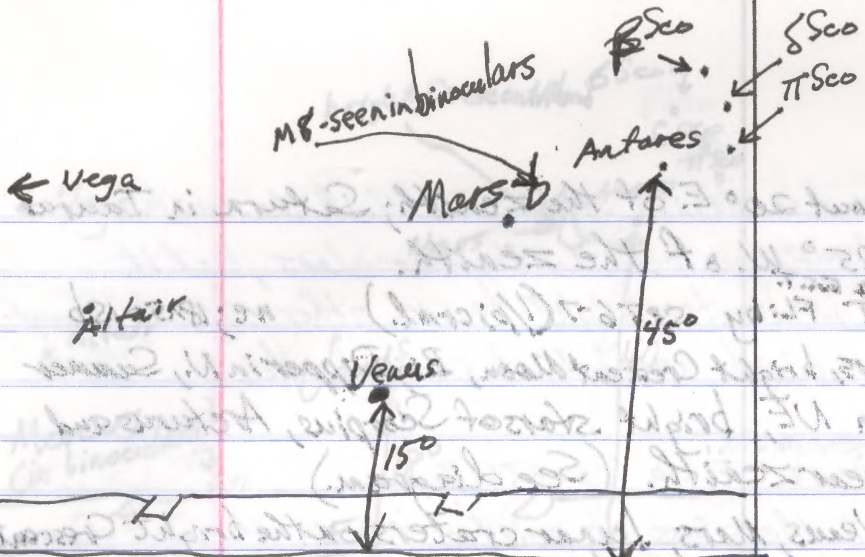
^{9:15-9:25 p.m. E.S.T.}

T.-W. Feb. 25-26 ^{02:15-02:25 UT} FL: 1a S8T6 (1/p) ne

- Bright stars of winter high in the S., with Canopus about 12° above the SE horizon, and Jupiter about mid-way between Pollux and Regulus, and about 25° E. of the zenith, very bright and dominating that part of the sky, and Saturn in Taurus, about 15° W. of the zenith

^{5:50-6:00 a.m. E.S.T.}
M. 10:50-11:00 UT FL: by S8T2 (1/p/fog) ne; 18x50 15b

In spite of fairly heavy fog, I observed several objects: the crescent moon up about 25° in the ESE,



2003, Mar. 3, 10:30 UT - view to E.

was seen in binoculars at 11:30 UT.
 M.T. Feb 24-25 03:15-03:18 UT. File: 2876 (lp)
 - Bright stars of winter high in the 2. with Capricorn
 about 12° above the SE horizon and Jupiter about
 32° E. of the zenith and Saturn about 12° W. of the
 zenith.
 M. 19:37-10:00 UT. File: 2873 (some cloudy) (lp) M. 19:35:30
 19: Antares the clouds I saw the crescent moon about
 2° below Mars, Venus, the Summer Triangle in the
 NE.
 M. 19:30:15-19:30:18 UT. File: 2872 (lp) M. 19:30:15
 19:30:15-19:30:18 UT. File: 2872 (lp) M. 19:30:15
 the bright stars of Libra.
 T.V. Feb 22-23 03:15-03:18 UT. File: 2876 (lp) M. 19:30:15
 - Bright stars of winter high in the 2. with Capricorn
 about 12° above the SE horizon and Jupiter
 about mid way between Pollux and Regulus and
 about 32° E. of the zenith, Vega high and
 dominating that part of the sky and Saturn
 in Libra about 12° W. of the zenith.
 M. 19:30:15-19:30:18 UT. File: 2873 (lp) M. 19:30:15
 In spite of high humidity I observed several
 objects: the crescent moon up about 32° in the ESE.

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Arcturus about 15° W. of the zenith, Vega high in the NE, and Venus for a brief period in the fog.
18X50 ISb: Venus, the crescent moon, Vega and some bright stars of Lyra

W.-Th. Feb. 26-27 ^{c. 9:20 - 9:30 p.m. E.S.T.} 02:20-02:30 UT FL: 1a SBT 5-6 (1/p; some scattered clouds) ne
- bright stars of Winter high in the S., Jupiter about 25° E. of the zenith and Saturn about 15° W. of the zenith, Canopus about 10° above the S.E. horizon.

Th.-F. Feb. 27-28 ^{5:50 - 6:00 a.m. E.S.T.} m. 10:50 - 11:00 UT FL: by SBT 1 (quite cloudy) ne; 18X50 ISb
ne: At first it was overcast, but later there were openings in the clouds and I was able to see Venus and a few other stars.

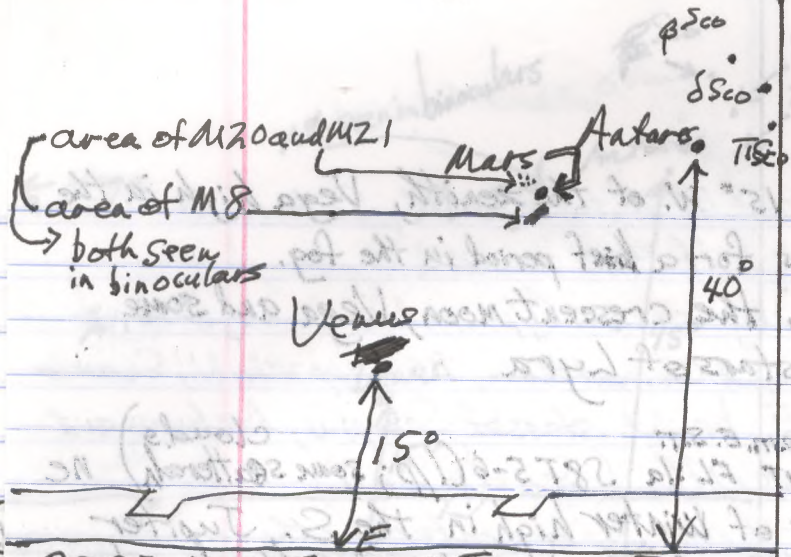
18X50 ISb: Venus and one or two other stars.

F.-S. Feb. 28-Mar. 1 ^{9:35 - 9:45 p.m. E.S.T.} 02:35 - 02:45 UT FL: 1a SBT 6 (1/p; light scattered clouds) ne
- Orion and bright stars of winter high in the S., with Jupiter about mid-way between Pollux and Regulus and about 15° E. of the zenith and Saturn in Taurus and about 25° W. of the zenith, and Canopus about 12° above the SE horizon.

M. ^{5:40 - 5:50 a.m. E.S.T.} 10:40 - 10:50 UT FL: by SBT 1 (very cloudy) ne; 18X50 ISb
ne: With very cloudy conditions, I saw Arcturus about 10° W. of the zenith and Vega high in the NE.

18X50 ISb: Arcturus and a couple of nearby stars and Vega and some of the bright stars in Lyra.

S.-M. Mar. 2-3 ^{5:30 - 5:35 a.m. E.S.T.} m. 10:30 - 10:35 UT FL: by SBT 6 (1/p; some scattered clouds) ne; 18X50 ISb
ne: Venus, Mars, bright stars of Scorpius in E., Summer Triangle in the NE, Big Dipper very high in the NNW, Arcturus about 15° W. of the zenith. (See diagram.)



2003, Mar 5 10:55 UT view to E.
 Mars was almost between M8 and M20 as
 seen in binoculars.

At first it was overcast, but later there were openings in
 the clouds and I was able to see Venus and a few
 other stars.
 Venus and one or two other stars.

Orion and bright stars of winter high in the sky with
 Jupiter about mid-way between Polaris and Rigel
 and about 15° E of the zenith and Saturn in Taurus
 and about 25° W of the zenith, and Capricorn
 about 15° above the SE horizon.

With very cloudy conditions I saw Antares about 10° W
 of the zenith and Vega high in the NE.
 Antares and a couple of nearby stars and
 Vega and one of the bright stars in Lyr.

Venus Mars
 bright stars of Zodiac in E. Summer Triangle
 Big Dipper very high in the NW Antares
 about 12° W of the zenith. (See diagram.)

Antares about 12° W of the zenith. Venus, the crescent moon, and some bright stars of Lyr.
 Venus, the crescent moon, and some bright stars of Lyr.
 about 25° E of the zenith.
 the SE horizon.

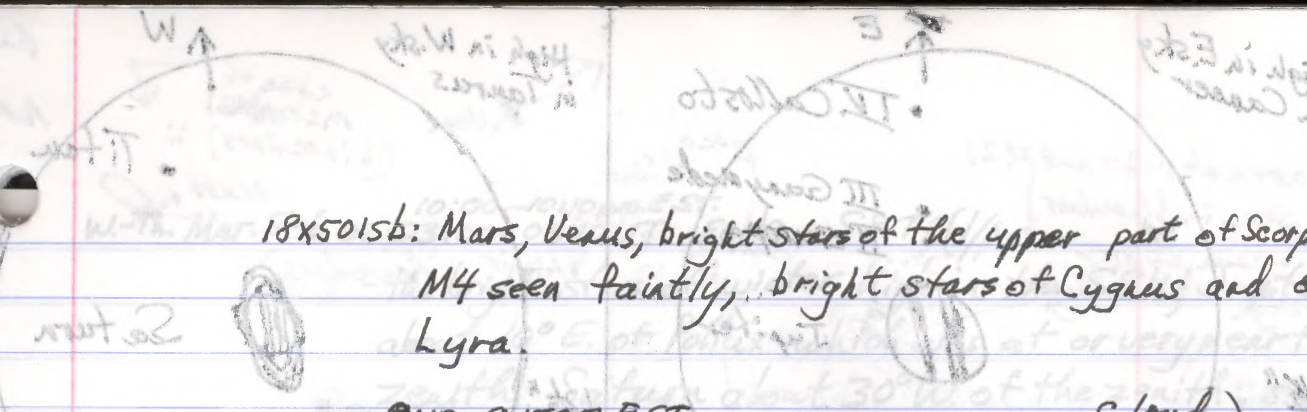
At first it was overcast, but later there were openings in the clouds and I was able to see Venus and a few other stars.
 Venus and one or two other stars.

Orion and bright stars of winter high in the sky with Jupiter about mid-way between Polaris and Rigel and about 15° E of the zenith and Saturn in Taurus and about 25° W of the zenith, and Capricorn about 15° above the SE horizon.

With very cloudy conditions I saw Antares about 10° W of the zenith and Vega high in the NE. Antares and a couple of nearby stars and Vega and one of the bright stars in Lyr.

Venus Mars bright stars of Zodiac in E. Summer Triangle Big Dipper very high in the NW Antares about 12° W of the zenith. (See diagram.)

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18X5015b: Mars, Venus, bright stars of the upper part of Scorpius, M4 seen faintly, bright stars of Cygnus and of Lyra.

9:10 - 9:15 p.m. E.S.T.
 M.-T. Mar. 3-4 @ 02:10 - 02:15 UT FL: la S8T6 (1/p; some scattered ^{cloud}) ne; ~~18X5015b~~
 ne: bright stars of winter high in the S., with Jupiter about 20° E. of the zenith and with Saturn about 15° W. of the zenith.

5:40 - 5:45 a.m. E.S.T.
 M. 10:40 - 10:45 UT FL: by S8T4 (1/p; scattered ^{cloud}) ne; 18X5015b
 ne: Among the scattered clouds, I saw Venus about 12° above the E. horizon and also Mars, and well up in NE the Summer Triangle.

18X5015b: Venus; Mars which was seen close to M8, the Lagoon Nebula; the bright stars of Lyra.

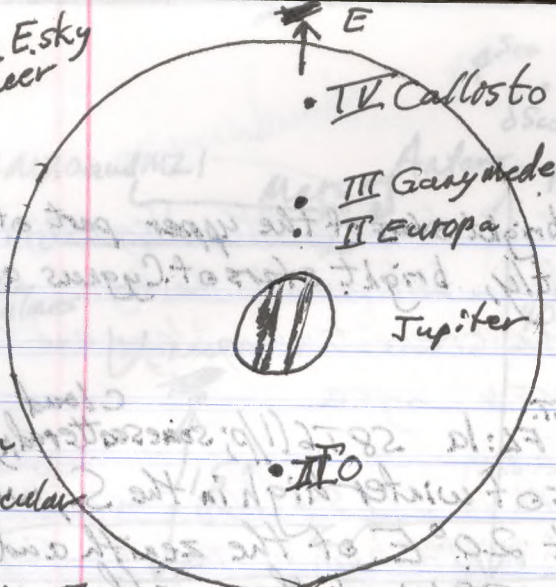
10:00 - 10:10 p.m. E.S.T.
 T.-W. Mar. 4-5 e. 03:00 - 03:10 UT FL: la S89T6-7 (1/p) ne
 - bright stars of winter high in the S.; Jupiter about 10° E. of Pollux which appeared to be in, or very close to, the zenith; Saturn which was about 30° W. of the zenith; the Pleiades in

the W. sky.
 5:55 - 6:00 a.m. E.S.T.
 M. 10:55 - 11:00 UT FL: by S8T5 (1/p; twl beginning) ne; 18X5015b
 ne: Venus, Mars, bright stars of the claws of Scorpius area, the Summer Triangle well up in the NE; some stars of the Big Dipper in the NNW, Arcturus about 20° W. of the zenith. (See diagram.)

18X5015b: Venus, Mars almost midway between M8, the Lagoon Nebula and the stars that mark the area of M20 and M21, stars of the upper part of Scorpius, of Lyra, and of Cygnus.

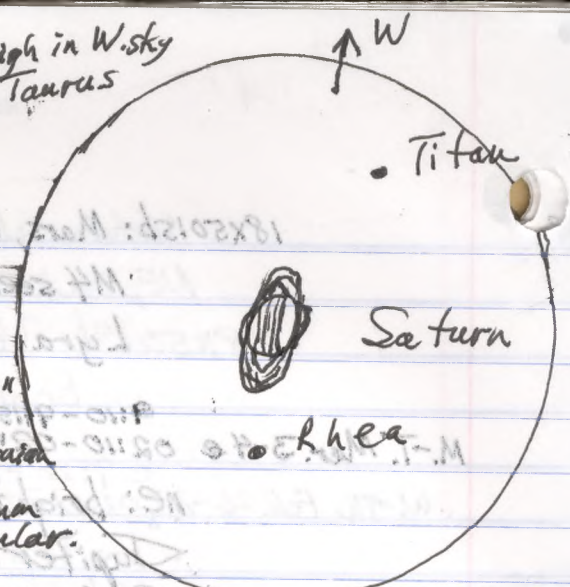
ne: Venus, Mars, bright stars of Scorpius, Summer Triangle, well up in the NE, Arcturus about 20°

- High in E. sky
in Cancer



12 1/2"
Dobsonian
25mm ocular

High in W. sky
in Taurus



12 1/2"
Dobsonian
25mm ocular

2003, Mar. 7; 01:20 UT View of Jupiter
and 4 Galilean moons just after EcR. of III Ganymede

2003, Mar. 7, 01:30 UT View of Saturn
and two moons. Excellent periodic seeing.

MR, the Lagoon Nebula; the bright stars
of Lyr.

about 12° above the E. horizon and also Mars
and well up in NE the Summer Triangle.

about 10° E. of Polaris which appeared to be in
or very close to the zenith; Saturn which was
about 30° W. of the zenith; the Pleiades in
the W. sky.

MR, the Lagoon Nebula and the stars that mark
the corner of M33 and M41, stars of the upper
part of Cassiopeia, of Lyr, and of Capricorn.

the Summer Triangle well up in the NE; some stars of
the bright stars of the class of 2 corinae are
M. 10:27-11:00 UT Feb. 28 (Tues) (19)

MR; Venus (see diagram) (see diagram)

MR, the Lagoon Nebula and the stars that mark
the corner of M33 and M41, stars of the upper
part of Cassiopeia, of Lyr, and of Capricorn.

MR, the Lagoon Nebula; the bright stars
of Lyr.

about 12° above the E. horizon and also Mars
and well up in NE the Summer Triangle.

MR, the Lagoon Nebula; the bright stars
of Lyr.

about 10° E. of Polaris which appeared to be in
or very close to the zenith; Saturn which was
about 30° W. of the zenith; the Pleiades in
the W. sky.

MR, the Lagoon Nebula and the stars that mark
the corner of M33 and M41, stars of the upper
part of Cassiopeia, of Lyr, and of Capricorn.

the Summer Triangle well up in the NE; some stars of
the bright stars of the class of 2 corinae are
M. 10:27-11:00 UT Feb. 28 (Tues) (19)

MR; Venus (see diagram) (see diagram)

MR, the Lagoon Nebula and the stars that mark
the corner of M33 and M41, stars of the upper
part of Cassiopeia, of Lyr, and of Capricorn.

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W.-Th. Mar. 5-6 e. 10:00-10:10 p.m. E.S.T. 03:00-03:10 UT FL:1a S8T6 (1/p) ne

- the bright stars of winter high in the SSW; Jupiter about 10° E. of Pollux which was at or very near the zenith; Saturn about 30° W. of the zenith; some of the stars of the Big Dipper in the NNE.

6:16-6:21 a.m. E.S.T. m. 11:16-11:21 UT FL: by twl ne; 18x5015b

ne: After rising a little later than usual, I observed the E. sky during twilight and saw Venus up about 20° . Other objects were not readily visible in the morning twilight which was fairly bright.

18x5015b: Venus, Mars, Vega.

Th.-F. Mar. 6-7 e. 8:10-9:00 p.m. E.S.T. 01:10-02:00 UT FL: 1a S8T6-7 (1/p; some scattered cloud) ne; $12\frac{1}{2}''$

ne: bright stars of winter high in the SSW with Jupiter in Cancer about 10° E. of Pollux which was at or near the zenith and Saturn about 30° W. of the zenith; Canopus about 12° above the SE horizon; the 4-day-old crescent moon about 20° above the W. horizon

$12\frac{1}{2}''$: Using the 32mm Bressl, the MA25mm, the 12mm Radian, and the MA9mm oculars I observed Jupiter and 4 Galilean moons (after the E.C.R. of II Europa at 01:17 UT), and Saturn and the moons Titan and Ithra. I also observed lunar craters with one of the oculars and the open cluster M41 in Canis Major with one of the oculars (the MA25mm ocular). Many of the views were excellent, especially with the 32mm and the 25mm oculars. (See diagram)

5:25-5:40 a.m. E.S.T. m. 10:25-10:40 UT FL: by S8T6 (1/p) ne; 18x5015b

ne: Venus, Mars, bright stars of Scorpius, Summer Triangle well up in the NE, Arcturus about 20°

- High in Ecliptic
in Cancer

- area of M20 and M21
Seen in binoculars

- area of M8
seen in binoculars

← Vega

• Altair

Venus

10°

Antares

35°

• Altair

Venus

E

area of
M20 and M21
(binoculars) ...

M8
(binoculars)

Mars

β Sco
δ Sco
Antares
γ Sco

40°

SE

2003, Mar. 7, 10:25 UT View to E.

Areas of M8, M20, M21 near Mars seen in binoculars.

2003, Mar. 9, 10:40 UT View to East

SE. M8 and area of M20, and M21
seen in binoculars

12x: Using the 32mm Apol the M25 in the
12x: Using the 32mm Apol the M25 in the
observed Jupiter and the Galilean moons
(after the Ecl. of II Europa at 01:17 UT)
and Saturn and the moons Titan and Iapetus
I also observed lunar craters with one
of the oculars and the spectrometer M11 in
Cass Major with one of the oculars (the
M25 in ocular. Many of the views were
excellent, especially with the 32mm and the
32mm oculars. (See diagram)
M. 10:22-10:40 UT 28 Feb (1/2) no: 18x2025
no: Venus, Mars, bright stars of Scorpio, 3mm
Triangle well up in the NE, Antares about 50°

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W. of the zenith, (See diagram.)
 18X50 ISB: Venus, Mars, M8, and area of M20 and M21 near Mars, bright stars in upper part of Scorpius, bright stars in Lyra and in Cygnus, M13, M92.

10:00 - 10:10 AM. E.S.T. clouds
 F.-S. Mar. 7-8. 03:00 - 03:10 UT FL: 1a S8T6 (1/p; few scattered) ne.

- Orion and the bright stars of winter high in the SSW, Jupiter about 10° E. of Pollux which was near the zenith, Saturn about 25° W. of the zenith.

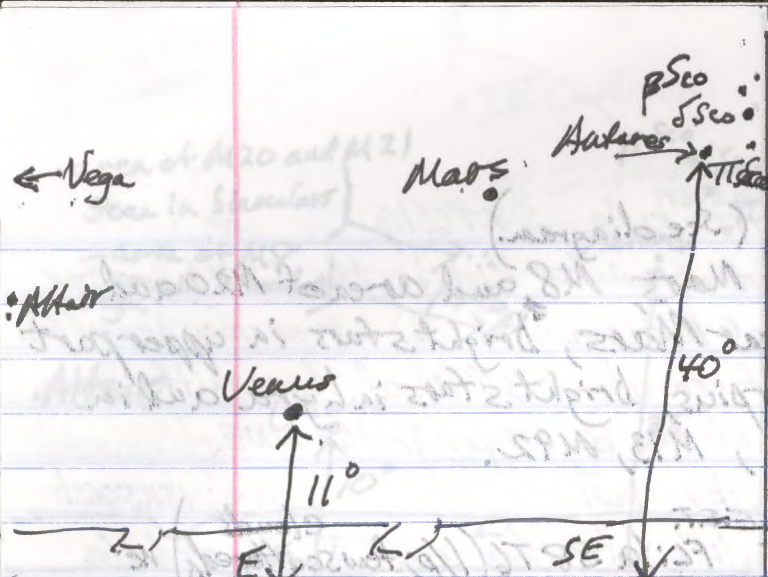
5:30 - 5:35 A.M. E.S.T.
 M. 10:30 - 10:35 UT FL: 1b S8T2 (1/p; very foggy) ne; 18X50 ISB
 ne: Vega high in NE; Arcturus about 20° W. of the zenith
 18X50 ISB: bright stars of Lyra high in NE; Mars up about 40° in the E.

11:00 - 11:05 PM. E.S.T.
 Sa.-Su. Mar. 8-9. 04:00 - 04:05 UT FL: 1a S8T6 (1/p) ne

- Orion and the bright stars of winter descending into the SW sky, with Jupiter in, or very close to, the zenith with Pollux about 12° to the west of Jupiter and Saturn about 30° W. of Pollux the Big Dipper very high in the NNE and Arcturus well up in the NE and Spica about 25° from the E. horizon, Sirius was about 30° above the S. horizon.

5:35 - 5:45 A.M. E.S.T.
 M. 10:35 - 10:45 UT FL: 1b S8T6 (1/p; slight cirrus cloud) ne; 18X50 ISB
 ne: Venus, Mars, bright stars of Scorpius in SE, Summer Triangle high in the NE, Arcturus about 20° W. of the zenith. (See diagram.)

18X50 ISB: Venus, Mars, bright stars of upper part of Scorpius, M8 and area of M20 and M21 near Mars, bright stars of Lyra.



2003, Mar 7, 10:40 UT - view to E and SE

near the south, Saturn about 25° W. of the
 Venus is
 10:30-10:45 UT
 2:30-2:45 AM EST
 NE: Venus high in NE; Antares about 20° W. of the south
 (Antares: bright stars of Lyr right in NE; plus up
 about 40° in the E.
 11:00-11:15 AM EST
 2:20-2:35 AM EST
 NE: Venus and the bright stars of water descending
 into the SW sky, with Jupiter in, or very close to
 the south with Polaris about 15° to the west of
 Jupiter and Saturn about 30° W. of Polaris the
 Big Dipper vertical in the NE and Antares well
 up in the NE and Spica about 25° from the
 E. horizon. Sirius was about 30° above the
 2. horizon
 2:35-2:45 AM EST
 10:30-10:45 UT
 NE: Venus, Mars, bright stars of Scorpius NE, Gamma
 Triangle high in the NE. Antares about 20° W.
 of the south. (See diagram.)
 10:45-11:00 AM EST
 NE: Venus, Mars, bright stars of upper part of
 Scorpius, M8 and core of M20 and M21
 NE: Venus, Mars, bright stars of Lyr.

← Vega
 Mars
 Antares
 5 Sco
 β Sco
 Venus
 11°
 40°
 E SE W
 2003, Mar 7, 10:40 UT - view to E and SE
 near the south, Saturn about 25° W. of the
 Venus is
 10:30-10:45 UT
 2:30-2:45 AM EST
 NE: Venus high in NE; Antares about 20° W. of the south
 (Antares: bright stars of Lyr right in NE; plus up
 about 40° in the E.
 11:00-11:15 AM EST
 2:20-2:35 AM EST
 NE: Venus and the bright stars of water descending
 into the SW sky, with Jupiter in, or very close to
 the south with Polaris about 15° to the west of
 Jupiter and Saturn about 30° W. of Polaris the
 Big Dipper vertical in the NE and Antares well
 up in the NE and Spica about 25° from the
 E. horizon. Sirius was about 30° above the
 2. horizon
 2:35-2:45 AM EST
 10:30-10:45 UT
 NE: Venus, Mars, bright stars of Scorpius NE, Gamma
 Triangle high in the NE. Antares about 20° W.
 of the south. (See diagram.)
 10:45-11:00 AM EST
 NE: Venus, Mars, bright stars of upper part of
 Scorpius, M8 and core of M20 and M21
 NE: Venus, Mars, bright stars of Lyr.

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M.-T. Mar. 10-11e. 10:00 - 10:10 p.m. E.S.T. 03:00 - 03:10 UT FL: 1a SRT 3-4 (1/p; ^{scirrus; fogal} some haze) ne

- Jupiter about 12° E. of Pollux which was about 5° W. of the zenith; with Saturn about 40° W of Pollux. Because of the moonlight and cirrus clouds and some haze, many of the stars of Orion could not be seen. Sirius, Procyon, Regulus, Castor and Pollux, were easily seen, but Betelgeuse and Rigel were seen faintly and temporarily. Capella was also easily seen. The First Quarter Moon was up in the W. about 40° above the horizon and about 5° below Saturn. (The moon was to be in conjunction with Saturn 9 hours later, at 12 h UT on March 11.) (The moment given for First Quarter was about 4 hours later, at 7h 15m UT on March 11. (See diagram))

M. 5:35 - 5:40 a.m. E.S.T. 10:35 - 10:40 UT FL: by SRT 1 (1/p; mainly cloudy) ne; 18X50ISB

ne: - very cloudy, but I was able to see Vega and Altair in the NE.

18X50ISB: some of the bright stars of Lyra.

W.-Th. Mar. 12-13e. 10:20 - 10:25 p.m. E.S.T. 03:20 - 03:25 UT FL: 1a SRT 2-3 (1/p; ^{some cloud} gml; n) ne

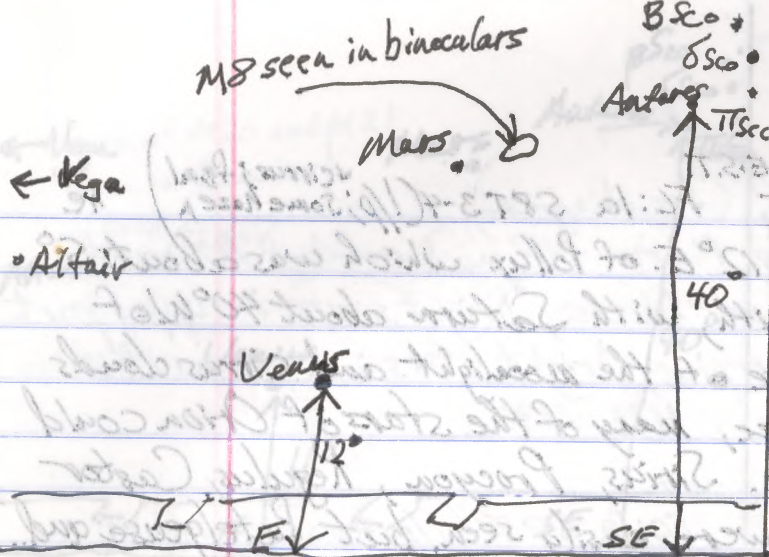
- Amid many clouds I saw Jupiter very bright and at, or very near, the zenith, the bright gibbous moon about 20° W. of the zenith and Saturn about 20° W. of the Moon. Other stars that were seen were Capella and Aldebaran in the W., and Sirius in the S and Rigel in the SW.

M. 5:40 - 5:45 a.m. E.S.T. 10:40 - 10:45 UT FL: by SRT 6-7 (1/p; some tw) ne; 18X50ISB

ne: Venus, Mars, bright stars of upper part of Scorpius, Arcturus about 30° W. of the zenith, the Summer Triangle high in the NE. (See diagram)

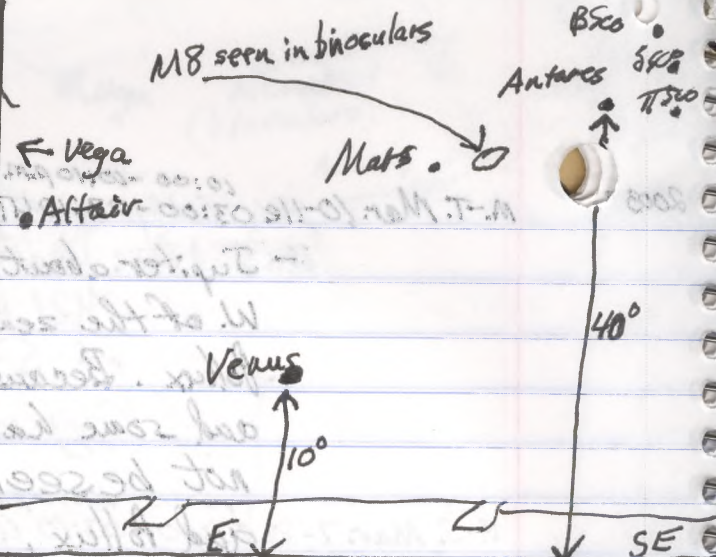
18X50ISB: Venus, Mars and M8 near Mars and the

M8 seen in binoculars



2003, Mar. 14, 10:35 UT - view to E and SE.

M8 seen in binoculars



2003, Mar. 15, 10:35 UT - view to E and SE.

at 17h UT or March 11. (The nearest place for First Quarter was about 4 hours later at 21h UT or March 11.)
 be in conjunction with Saturn 9 hours later, and about 2° below Saturn. (The next was to was up in the W about 40° above the horizon and about 2° below Saturn.)
 M. 10:35-10:40 UT. Fr. by 28T (10:35-10:40) ac: 182012D
 Altair in the NE.
 182012D: some of the bright stars of Jupiter.

at 17h UT or March 11. (The nearest place for First Quarter was about 4 hours later at 21h UT or March 11.)
 be in conjunction with Saturn 9 hours later, and about 2° below Saturn. (The next was to was up in the W about 40° above the horizon and about 2° below Saturn.)
 M. 10:35-10:40 UT. Fr. by 28T (10:35-10:40) ac: 182012D
 Altair in the NE.
 182012D: some of the bright stars of Jupiter.

the W, and Sirius in the S and Rigel in the W. were seen. were Capella and Altair in about 30° W of the Moon. Other stars that were about 30° W of the south, the bright ribbon of or very near the south, the bright ribbon - All very dark I saw Jupiter very bright and

the W, and Sirius in the S and Rigel in the W. were seen. were Capella and Altair in about 30° W of the Moon. Other stars that were about 30° W of the south, the bright ribbon of or very near the south, the bright ribbon - All very dark I saw Jupiter very bright and

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stars near M20 and M21, the brighter stars in the upper part of Scorpius and in Lyra.

9:00 - 9:05 pm. E.S.T.
Th.-F. Mar. 13-14 e. 02:00 - 02:05 UT FL: 1a S8T6 (1/p; gml; some clouds) ne

- bright gibbous moon very near the zenith and about 2° from Pollux and approximately in a line from Castor to Pollux and extended on to the moon; Jupiter very bright and about 10° E. of the moon; Saturn about 30° W. of the moon; the bright stars of Orion high in the SSW; Sirius in the S. and Procyon also; Capella in the W.

5:35 - 5:45 a.m. E.S.T.
M. 10:35 - 10:45 UT FL: by S8T5-6 (1/p; some cloud) ne; 18X50 ISB

ne: Venus, Mars, Antares and bright stars of upper part of Scorpius, Summer Triangle in the NE, Arcturus about 25° W. of the zenith. (See diagram)

18X50 ISB: Venus, Mars and in the area just to the right of Mars - M8 and the stars of the area of M20 and M21, bright stars of the upper part of Scorpius, and of Lyra, M4 near Antares.

9:00 - 9:10 pm. E.S.T.
F.-S. Mar. 14-15 e. 02:00 - 02:05 UT FL: 1a S(PT)1 (1/p; very cloudy) ne

- In spite of the fact that the sky was very cloudy and almost totally overcast, I saw the gibbous moon about 5° E. of the zenith. Jupiter was about 4° S. of the moon. The time given for the conjunction was 0^h UT, two hours prior to the time of my observation.

5:35 - 5:40 a.m. E.S.T.
M. 10:35 - 10:40 UT FL: by S8T6-7 (1/p) ne; 18X50 ISB

ne: Venus, Mars, bright stars of Scorpius in SE, Summer Triangle well up in the NE, Arcturus 20° or more W. of the zenith. (See diagram)

18X50 ISB: Venus, Mars and to its right M8 and the

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stars of the area of M20 and M21, bright stars of the upper part of Scorpius, and of Lyra.

S.-S. Mar. 15-16 e. 03:00-03:05 UT FL: la S8T6 (1/p; ^{slight cloud} gulf) ne

- Jupiter very bright and very near the zenith, very bright gibbous moon about 3 days and 7 1/2 hours from Full Moon located about 12° E. of Jupiter with Regulus about 12° further E. of the moon; Saturn about 40° W. of Jupiter; Pollux about 12° W. of Jupiter; the bright stars of Orion "going down" in the SW sky with Sirius and Procyon high in the S; Aldebaran in the W and Capella in the WNW.

m. 11:00-11:05 UT FL: by twl ne; 18X50LSb

ne: Well into twilight I observed the brightening E. sky and saw Venus very clearly.

18X50LSb: Venus, Mars, Antares in the SE, Vega well up in the NE.

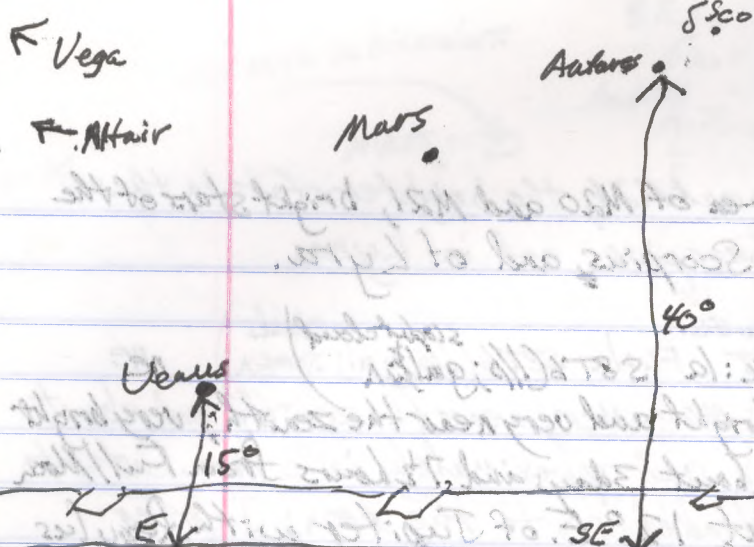
5:45-5:50 a.m. E.S.T.
S.-M. Mar. 16-17 m. 10:45-10:50 UT FL: by S?T<1 (1/p; clouds) ne; 18X50LSb

ne: Though the sky was almost totally overcast, I saw Arcturus about 20° W. of the zenith, Vega very high in the NE and Venus up about 12° in the E.

18X50LSb: Vega and Venus.

9:00-9:05 p.m. E.S.T.
M.-T. Mar. 17-18 e. 02:00-02:05 UT FL: la S8T3 (ful; 1/p; clouds) ne

- Amid the clouds I saw the Full Moon up 45° in the E. It was about 8^h 30^m before the instant of Full Moon which was listed as being at 10^h 34^m UT. - also Procyon and Sirius high in the S. and Jupiter almost in the zenith and Castor and Pollux about 10° or so W. of Jupiter, Saturn in



2003 Mar. 18 10:50 UT - view to E and SE in twilight. Full Moon was in the W.

Vega well up in the NE. Mars, Altair, and Venus in the SE. Jupiter in the bright stars of Orion. The bright stars of Orion were very high in the SW sky with Sirius and Procyon high in the SE. Altair in the W and Capella in the WNW.

2-M. Mar 17-18 02:00-03:00 UT Feb 17 22T (11:00) NE: (18:00) NE: The sky was almost totally overcast. I saw Arcturus about 20° W. of the zenith. Vega very high in the NE and Venus up about 12° in the E. Vega and Venus.

M-T. Mar 17-18 02:00-03:00 UT Feb 17 22T (11:00) NE: (18:00) NE: - And the clouds I saw the Full Moon up 45° in the E. It was about 8" 30" before the instant of Full Moon which was listed as being at 10" 34". NT - also Procyon and Sirius high in the SE. and Jupiter almost in the zenith and Castor and Pollux about 10° or 20° W. of Jupiter. Saturn in

stars of the area of Mars and Altair bright stars of the upper part of Scorpio and of Lyra.

2-M. Mar 17-18 02:00-03:00 UT Feb 17 22T (11:00) NE: (18:00) NE: - Jupiter very high and very near the zenith. Very bright. Altair was about 30° W. of the zenith. Full Moon located about 15° W. of the zenith. Venus in the W. about 12° W. of the zenith. Arcturus in the W. about 40° W. of the zenith. Altair in the W. about 20° W. of the zenith. Vega in the NE. Mars, Altair, and Venus in the SE. Jupiter in the bright stars of Orion. The bright stars of Orion were very high in the SW sky with Sirius and Procyon high in the SE. Altair in the W and Capella in the WNW.

M. Mar 17-18 02:00-03:00 UT Feb 17 22T (11:00) NE: (18:00) NE: The sky was almost totally overcast. I saw Arcturus about 20° W. of the zenith. Vega very high in the NE and Venus up about 12° in the E. Vega and Venus.

M-T. Mar 17-18 02:00-03:00 UT Feb 17 22T (11:00) NE: (18:00) NE: - And the clouds I saw the Full Moon up 45° in the E. It was about 8" 30" before the instant of Full Moon which was listed as being at 10" 34". NT - also Procyon and Sirius high in the SE. and Jupiter almost in the zenith and Castor and Pollux about 10° or 20° W. of Jupiter. Saturn in

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the W. and Rigel and the belt stars of Orion in the SW.
m. 10:50-10:55 UT FL: by SBT4 (twl; ful; l/p) ne; 18x50lsb

ne: Venus up 15° in the E. Antares up 40° in the SE, the very bright Full Moon up 15° in the W., just 20 min. after the instant of Full Moon given as 10:34 UT; the Summer Triangle high in the NE; Mars in the ESE. (See diagram.)

18x50lsb: Venus, Mars, bright stars of the upper part of Scorpius and of Lyra.

T.-W. Mar. 18-19. 9:50-9:55 p.m. EST. 02:50-02:55 UT FL: la SBT5-6 (l/p; ful; some^{cloud}) ne
- very bright Full Moon up 35° above the E. horizon about 18^h 20^m after the instant of Full Moon;

Jupiter at mag. -2.5 very near the zenith, Castor and Pollux high in the sky with Pollux about 12° W. of Jupiter; Sirius and Procyon high in the S. and Saturn in the W. sky; Capella easily seen in the W. also. Among the stars of Orion, Betelgeuse and Rigel could be easily seen.

m. 10:45-10:50 UT FL: by SBT L1 (almost completely^{overcast}) ne; 18x50lsb

ne: Among the clouds that made the sky almost completely overcast, I saw the star Vega.

18x50lsb: Vega and some of the bright stars of the constellation Lyra.

W.-Th. Mar. 19-20. 9:00-9:05 p.m. EST. 02:00-02:05 UT FL: la SBT6 (l/p; ful) ne

- Castor and Pollux very near the zenith with a very bright Jupiter about 12° E. of Pollux and Saturn about 30° W. of Pollux in Taurus; Procyon and Sirius well up in the S. and the bright stars of Orion in the SW; Capella in the WNW; a very bright moon, just past Full Moon, up about 10° in the E.

← Vega

Axares

Axares

• Antares

Mars

Mars

Venus

Venus

10°

15°

40°

40°

E

SE

E

SE

2003, Mar. 20, 10:35 UT - view to E and SE in early twilight. Full Moon high in S.

2003, Mar. 21, 10:45 UT - view to E and SE in twilight. Gibbous Moon in S.

completely covered I saw the star Vega. Vega and some of the bright stars of the constellation Lyra.

W. of the 2. and Saturn in the W. sky. Capella in the 2. and Saturn in the W. sky. Capella about 15° W. of Jupiter; Sirius and Procyon high in the 2. and Saturn in the W. sky. Capella about 18° 20" after the instant of Full Moon; very bright Full Moon up 32° above the E. horizon.

W. of the 2. and Saturn in the W. sky. Capella about 15° W. of Jupiter; Sirius and Procyon high in the 2. and Saturn in the W. sky. Capella about 18° 20" after the instant of Full Moon; very bright Full Moon up 32° above the E. horizon.

W. of the 2. and Saturn in the W. sky. Capella about 15° W. of Jupiter; Sirius and Procyon high in the 2. and Saturn in the W. sky. Capella about 18° 20" after the instant of Full Moon; very bright Full Moon up 32° above the E. horizon.

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5:35-5:40 a.m. E.S.T.
 M. 10:35-10:40 UT FL: by S8T6 (1/p; gml; twln) ^{beginning} ne; 18X50SB

m: Venus up 10° in the E; Antares up 40° in the SE, very bright gibbous moon very high in the S; Arcturus about 25° W. of the zenith; Summer Triangle high in the NE; ^{Mars.} (Sec diagram)

18X50SB: Venus, Mars, area of upper part of Scorpius, bright stars of Lyra.

9:00-9:05 a.m. E.S.T.
 Th.-F. Mar. 20-21 e. 02:00-02:05 UT FL: la S8T6 (1/p) ne

- Castor and Pollux very near the zenith with Jupiter very bright and about 12° E. of Pollux, and Saturn about 30° W. of Pollux, and the bright stars of the constellation Leo high in the E, Sirius and the bright stars of Canis Major well up in the S. and Procyon high in the S, and Orion's bright stars in the SW. and Aldebaran in the W and Capella in the WNW.

5:45-5:50 a.m. E.S.T.
 M. 10:45-10:50 UT FL: by S8T4 (1/p; gml; twl) ne; 18X50SB

ne: Venus up about 15° in the E; Mars; Antares up about 40° in the SSE; the Summer Triangle high in the NE; Arcturus about 30° W. of the zenith; bright gibbous moon high in the S. (Sec diagram)

18X50SB: Venus, Mars, bright stars of the upper part of Scorpius, bright stars of Lyra.

11:00-11:05 p.m. E.S.T.
 F.-S. Mar. 21-22 04:00-04:05 UT FL: la S8T2 (1/p; haze; cloud) ne

- Jupiter very bright and about 15° W. of the zenith; Castor and Pollux with Pollux about 12° W. of Jupiter; Regulus E. of Jupiter; Sirius and Procyon visible in a subdued way in the S.

The hazy cloudy conditions meant that few other stars could be seen.

5:30-5:35 a.m. E.S.T.
 M. 10:30-10:35 UT FL: by S8T1 (almost completely N) ^{overcast} ne; 18X50SB

ne: Vega amid the clouds.

18:30 - 19:30 UT Fri. 28 Feb. (1973) NE: Vega and the clouds.

The heavy cloudy conditions meant that few other stars could be seen.
Procyon visible in a subdued way in the S.
Jupiter; Regulus E. of Jupiter; Sirius and Castor and Pollux with A. Pollux about 12° W. of Jupiter very bright and about 12° W. of the center.
E-2 Mar 21-22:00-04:00 UT Fri. 28 Feb. (1973) NE

18:30 - 19:30 UT Fri. 28 Feb. (1973) NE: Venus, Mars, bright stars of the upper part of Scorpius, bright stars of L. Vir.

NE: Venus up about 12° in the E; Mars; Antares up about 40° in the S-E; the Summer Triangle high in the NE. Antares about 30° W. of the center.

18:30 - 19:30 UT Fri. 28 Feb. (1973) NE: Venus, Mars, area of upper part of Scorpius, bright stars of L. Vir.

18:30 - 19:30 UT Fri. 28 Feb. (1973) NE: Venus up 10° in the E; Antares up 40° in the S-E; very bright dipole moon very high in the S; Antares about 25° W. of the center; Summer Triangle high in the NE. (See diagram)

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18x50 ISb: Vega, ϵ Lyrae, one other nearby star in Lyra,
two other stars in the ENE. The sky was almost
totally overcast.

11:00-11:05 p.m. E.S.T. haze
Sa-Su. Mar. 22-23 e. 04:00-04:05 UT FL: 1a S8(?) T2 (1/p; clouds; λ) ne
- Regulus just a few degrees E. of the zenith and
 γ Leo is seen nearby, with a very bright Jupiter
about 15° W. of Regulus and Castor and Pollux
discernible further W. with Pollux about 12°
W. of Jupiter. Sirius and Procyon were high
in the S. Arcturus was very bright and high in
the NE. Otherwise, there were large areas of
the sky that were hazy or cloudy.

5:25-5:30 a.m. E.S.T.
M. 10:25-10:30 UT FL: by S(?) T<1 (1/p; very cloudy) ne; 18x50 ISb
ne: Amid the hazy clouds, and through the cloud I
saw the waning gibbous moon. Otherwise the
sky was cloudy. The moon was up about 40° in the SE
18x50 ISb: features on the waning gibbous moon.

5:50-6:00 a.m. E.S.T.
Su-M. Mar. 23-24 M 10:50-11:00 UT FL: service station S8(?) T5 (gal; 1/p) ne
While Denise and I waited at the Pilot Service Station
near Interstate 95 east of Fort Myers, I saw Venus
which was very bright in the E., and Mars which
was higher in the ESE and the bright
gibbous moon which was about 1 day from Last
Quarter and slightly higher in the ESE. I
was waiting for the Amtrak bus to go to Orlando.
The bus left slightly after 11:00 UT (6:00 a.m. E.S.T.)

9:15-9:20 p.m. E.S.T. across road
W-Th. Mar. 26-27 e. 02:15-02:20 UT y S8(?) T8-9 (light λ) ne
About 4 hours after returning to Sharbot Lafre
from Florida, I observed under a very clear, very
transparent sky, with the house light from across

2003

Th-F Apr 10-11

the road being the main distraction. Jupiter was high in the south and Saturn was in the W. Orion was sinking into the trees in the W. Previously while I had been briefly observing, in the yard also, I had seen a brightness in the N. and assumed that it might have been an Auroral glow, but since I did not see it on this occasion, I thought that the previous apparent viewing might have been something else.

S.-M. Mar. 30-31 01:44-01:46 UT y 58CIT9

ne

-I observed briefly under very clear skies seeing Jupiter very bright and high in the S. and Saturn in Taurus in the W.

M.-T. Mar. 31-Apr. 1 02:02-02:22 UT y Barb Driscoll's

place

ne

Aurora

- I noticed an Auroral glow in the N and a spike going up about 40° near Polaris. I went over and spoke to some people who were visiting with Barb Driscoll and her son and daughter and they came out to see the Aurora. It was mainly concentrated near the area of sky below Cassiopeia in the NNW. It was generally white and not too active. We watched it for a short while, but it seemed not to develop as much as I thought it might.

04:24-04:41 UT nd and y 58T9

ne

I observed the stars of the spring sky with a bright Jupiter up about 45° in the W and Saturn up about 10° in the NW. There seemed to be a slight Auroral glow still in the N up about 20° from the horizon and to the right from Cassiopeia which by now was almost directly below the North Star.

the road being the main direction. Jupiter was high in the south and Saturn was in the W. Orion was sinking into the trees in the W. Generally while I had been briefly observing in the yard also I had seen brightness in the N. and assumed that it might have been an Auroral glow but since I did not see it on this occasion, I thought that the previous apparent viewing might have been something else.

2-M. Mar 30-31 01:44-02:42 NT v 28617A
 I observed briefly under very clear skies 2000 Jupiter very bright and high in the S. and Saturn in Taurus in the W.

M.T. Mar 31-Apr 1 02:05-03:22 NT v 28617A
 I retraced an Auroral glow in the N and a spike going up about 45° over Taurus. I went over and spoke to some people who were visiting with Bob Johnson and his son and daughter and they came out to see the Auroras. It was mainly concentrated near the area of sky below Cassiopeia in the NW.

04:24-04:41 NT v 2879A
 I observed the stars of the Spring sky with a bright Jupiter up about 45° in the W and Saturn up about 10° in the NW. There seemed to be a slight Auroral glow still in the N up about 30° for the horizon and to the right from Cassiopeia which by now was almost directly below the North Star.

It was generally white and not too active. We watched it for a short while but it seemed not to develop as much as I thought it might.

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Th.-F. Apr. 10-11 02:32-02:37 UT nd S-8T6 (Sgm) ne

- stars of spring with Jupiter about mid-way between Pollux and Regulus and high in the SW sky and with Saturn in the W about 35° above the horizon. The First Quarter Moon was about 4° N of the moon. The time of the conjunction was listed as 8^h UT, about 5½ hours later.

S.-M. Apr. 20-21 01:55-02:25 UT y S8T7 (for a while) ne; 18x50 ISB

ne: stars of spring; Jupiter in Cancer; Saturn in Taurus

18x50 ISB: Jupiter and 4 Galilean moons, 2 on each side of the planet, all of them quite near M44, area of M65 and M66 SSE of θ Leonis, area of R Leonis, areas of Draco, Ursa Minor, and Ursa Major. The sky conditions deteriorated rather quickly as thicker clouds moved in.

Th.-F. Apr. 24-25 02:00-03:10 UT y S7T8.5-9 ne; 18x50 ISB

ne: stars of spring; Jupiter in Cancer high in the W; Saturn in Taurus fairly low in WNW. There seemed to be a slight glow in the N. that might have been auroral.

18x50 ISB: Jupiter and 3 Galilean moons; Saturn, M35, M36, M37, M38, M44, M67, M13, M92, M65, M66, area of R Leonis (the star being very faint, barely seen in the binoculars, at perhaps mag. 9.5) area of R Corvi (the star being probably beyond the range of the binoculars, and so probably fainter than mag. 10) δ Virginis (the star at about mag. 8.), T Cor Bor (at mag. 10.5) R Cor Bor (the star at about mag. 7.) It was

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good observing session, with a bon on the lake providing some background sounds. The sky was very good, though not superb.

Sa. May 27 18:05-18:10 UT t

sun 5g 60s RSN 110

C-8, 32

T.O.F.

F.-S. May 2-3 03:06-04:06 UT y 57T7 (slight haze) ne; 18X50ISB

ne: Jupiter, Saturn, stars of spring

18X50ISB: R Leonis (barely seen; very faint, probably about mag. 10.5, M65, M66, areas of Virgo, Libra, Scorpius, Ophiuchus, Lyra, and Cassiopeia, M5, M92, M13, M81, M82, areas of Ursa Major, M44, Jupiter and 2 of its moons.

Sa. May 3 13:40-13:50 UT t

sun 6g 59s RSN 119

C-8, 32

T.O.F.

Sa.-Su. May 3-4 01:30-03:50 UT 00 58T-9 (varied) ne; C-14, 19

ne: Jupiter, Saturn, stars of spring, some glow in the N. that may have been Auroras.

C14: After having the C-14 delivered earlier in the day by Guy Nason, I was eager to try the "cleaned optics". The optics seemed to be fine, but there was a problem in that the drive system did not seem to work properly since it would not "drive" in the normal way, but had to be continually "steered". The steering motors were working very well. Barb Driscoll's son came over to observe with me after my inviting him right after I had opened the roof. We observed Jupiter, M13 and the galaxy NGC 6207. Before Mr. Driscoll arrived I had observed the Transit

2003

Ingress of the Jovian moon Io. We also observed the 3 other Galilean moons.

Sa. May 4 16:45 - 16:50 UT t. C-8, 32
sun 5g 68s RSN 118 T.O.F.

S.-M. May 4-5 02:45 - 03:50 UT y 57 T 7-8 (varied) ne; 18x50 ISB
ne: Saturn, Jupiter, stars of spring; one fairly bright meteor, possibly a slight glow in the N.

18x50 ISB: Jupiter and 3 Galilean moons, Saturn, areas of the sky in Virgo, Coma, Leo, areas of Rhenis and of R Corvi but both were very faint and not seen well or maybe not at all in the binoculars, Barnard's Star and area around it in Ophiuchus, M81 and M82, M65 and M66, δ Cephei and area, μ Cephei and area.

W.-Th. May 7-8 05:00 - 06:30 UT y 57-8 T 7-8 (water vapour) ne

- Morning Transit of Mercury "clouded out"

- After being clouded out in the morning for the sunrise Transit of Mercury and after attending David Levy's talk in Kingston about eclipses mentioned in Shakespeare and introducing David, I observed with David who stayed here overnight. We sat in lawn chairs beside the observatory and observed the stars of the southern and eastern sky. We hoped to see some Eta Aquarid meteors. David was quite sure that we saw a number of meteors emanating from a radiant near the border between Hercules and Corona Borealis, perhaps near δ Herculis. We noted that the sky was good, but I felt that, because of water vapour, it

- observing with David Levy

Predicted Times For The Total Lunar Eclipse of 2003, May 15-16

~~P1~~ MR 00:11 UT (8:11 pm E.D.T.)

SS 00:24 UT (8:24 pm E.D.T.)

P1 01:05 UT (9:05 p.m. E.D.T.)

U1 02:03 UT (10:03 pm E.D.T.)

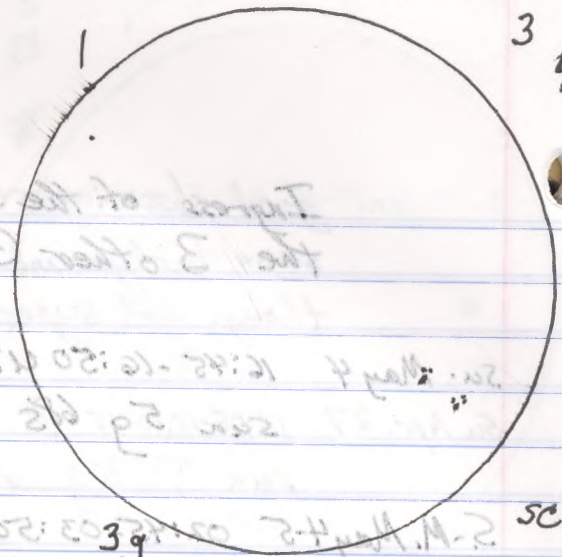
U2 03:14 UT (11:14 pm E.D.T.)

Mid-eclipse 03:40 UT (11:40 pm E.D.T.)

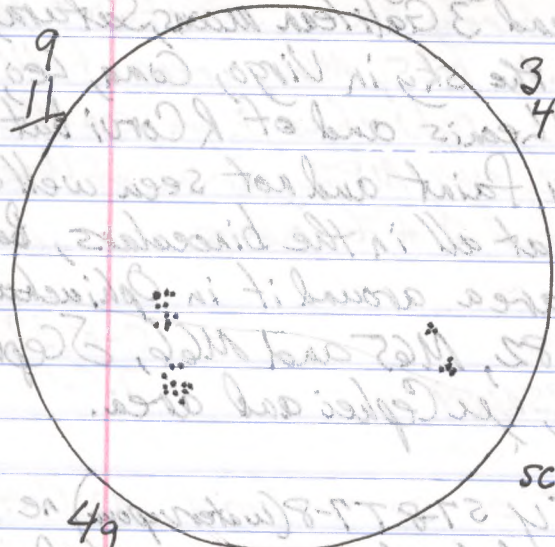
U3 04:06 UT (12:06 a.m. E.D.T.)

U4 05:17 UT (01:17 a.m. E.D.T.)

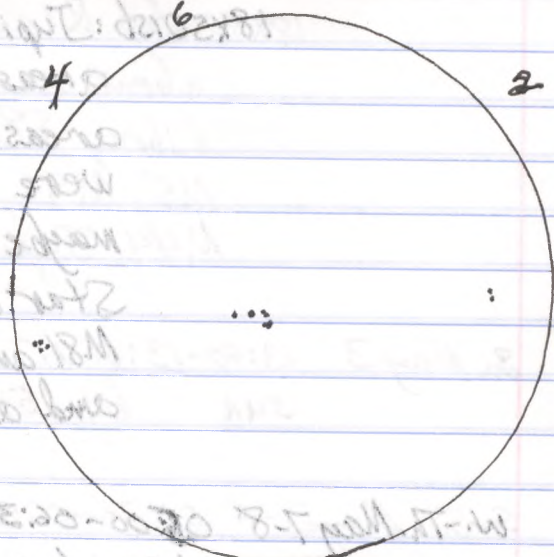
P4 06:15 UT (02:15 a.m. E.D.T.)



3g
8s May 18
RSN 38 15:15-15:20 UT



4g
27s
RSN 67 May 19
14:25-14:30 UT



3g
12s
RSN 42 May 21
16:35-16:40 UT

observing with David Levy
the southern and eastern sky. We had to
the observatory and observed the stars of
overnight. We set in lawn chairs beside
I observed with David who stayed here
mentioned in Lakeshore and introduced David
David Levy took in Kingston about 20 miles
date sure that we saw a number of meteors
emanating from a radiant near the border
between Hercules and Corona Borealis. Perhaps
near 2 hours. He noted that the sky was good
but I felt that because of water vapor, it

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W-Th May 2 not as transparent that I hoped it would be. The "Northern Coal Sack" north of Deneb did not seem to be as dark as I had seen it previously.

Th.-F. May 15-16 01:55-03:45 UT 00 SOTO ne

Total Lunar Eclipse "clouded out"

After checking periodically to see if the moon was visible, in spite of considerable cloudiness and finding that it was not well seen because of cloudiness in the SE sky at about 01:20 and about 01:30 UT I began observing in the observatory with a hope that I might see a part of the Total Lunar Eclipse. However, the clouds persisted and became even denser and "heavier". Though for a while after 02:00 UT, it was possible to see the outline approximately of the moon behind the clouds, later on the outline of the moon could not be seen. It was disappointing that the event had been "clouded out".

Sa. May 18 15:15-15:20 UT t

C-8,32 T.O.F.

Sun 3g 85 RSN 38

Su.-M May 18-19 01:50-02:00 UT 00 ~~S-8, 18.9~~ Sky ~~Neuro~~ ne

- Jupiter in the NW, and the bright stars of Spring with constellations Leo and Virgo in the South.

Th. May 19 14:25-14:30 UT t

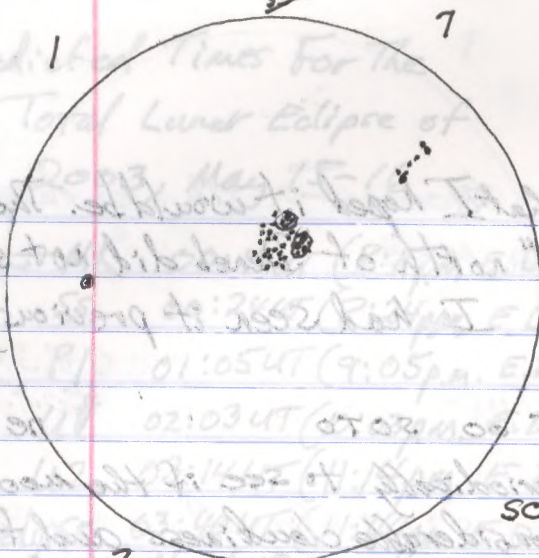
C-8,32 T.O.F.

Sun 4g 275 RSN 67

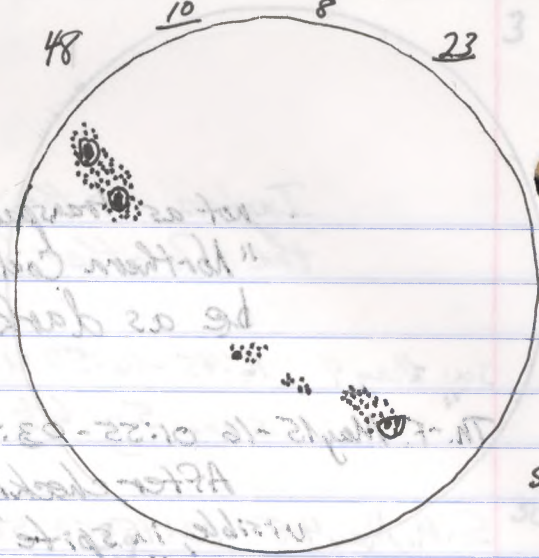
W. May 21 16:35-16:40 UT t

C-8,32 T.O.F.

Sun 3g 125 RSN 42



39
48
RSN 71
June 6
17:05-17:10 UT



48
8
23
49
89
RSN 129
June 10
14:40-14:45 UT

the event had been "clouded out". It was disappointing that moon could not be seen. I was disappointed that moon behind the clouds, later on the outline of the "darker". Though for a while after 03:00 UT it the clouds parted and became even denser and "clouded out" right see a part of the Total Lunar Eclipse. However began observing in the observatory with hope that I

the event had been "clouded out". It was disappointing that moon could not be seen. I was disappointed that moon behind the clouds, later on the outline of the "darker". Though for a while after 03:00 UT it the clouds parted and became even denser and "clouded out" right see a part of the Total Lunar Eclipse. However began observing in the observatory with hope that I

W. May 19 14:32-14:30 UT
RSN 129
2004-11-55-16:31
12:20-12:15:30 UT
RSN 38
14:45-14:41
RSN 71
08:35
T.O.F.

W. May 21 16:32-16:30 UT
RSN 129
2004-11-55-16:31
12:20-12:15:30 UT
RSN 38
14:45-14:41
RSN 71
08:35
T.O.F.

2003

C-14,19

W-Th. May 21-22 02:30-04:00 UT y and 00 S-8T7-9 (Aurora) ne; RSN 50156
 ne: Jupiter and stars of spring; Aurora which was a
 Aurora glow in the Nat first and then became active
 for a while. There was an arc in the N. and
 then vertical bands and spikes in the N. to NW.
 There was not very much colour - mainly whites
 and some faint yellow. The vertical bands were
 up about 45° to 50°.

RSN 50156: areas of Virgo, and Leo and Cygnus and
 Lyra, M4, M80, M65 and M66, M57,
 M27, RCygn, areas of Cepheus. RCor Bor,
 TCor Bor, RLeonis very faint - not seen
 in the binoculars.

C-14,19: Jupiter and 4 Galilean moons - 2 on each
 side of the planet. The clock drive
 was working very well.

ph: photographed the Aurora, using the 28mm
 lens.

T-W. May 27-28 03:45-03:50 UT nd S8T8.5 ne

stars of spring, Aurora glow in N and NNW up to about 40°
 Aurora glow by times, but perhaps more generally up to about 30°;
 fairly steady in bright but not extremely bright

S-M. June 1-2 02:55-03:10 UT y twl ne

- Jupiter in W., stars of spring, two satellites near
 the zenith.

F. June 6 17:05-17:10 UT t

sun 3g 41s RSN 71

C-8,32
 T.O.F.

Tu. June 10 14:40-14:45 UT t

sun 4g 89s RSN 129

C-8,32
 T.O.F.

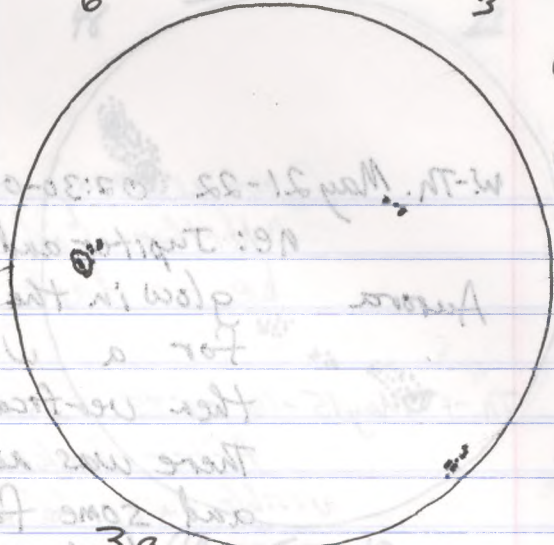
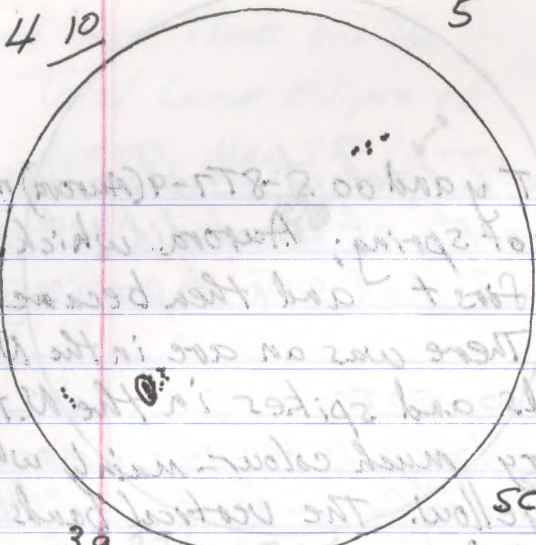
4 10

5

6

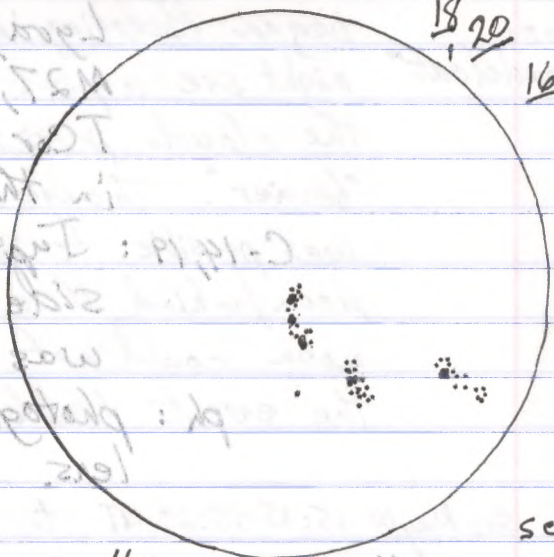
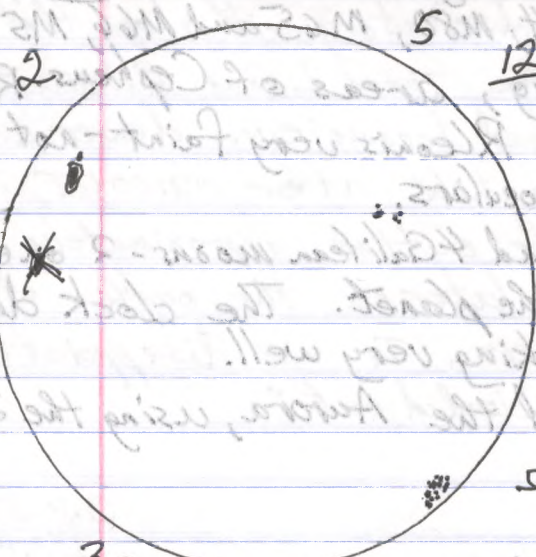
3

6



39
195
RSN 49
June 15
16:25-16:30 UT

39
155
RSN 45
June 16
14:05-14:10 UT



39
195
RSN 49
June 17
15:15-15:20 UT

49
555
RSN 95
June 20
14:15-14:20 UT

10.7

10.7

RSN 11

RSN 13

RSN 39

RSN 45

2003

Su. June 15 16:25-16:30 UT t
Sun 3g 19s RSN 49

C-8, 32
T.O.F.

M. June 16 14:05-14:10 UT t
Sun 3g 15s RSN 45

C-8, 32
T.O.F.

Tu. June 17 15:15-15:20 UT t
Sun 3g 19s RSN 49

C-8, 32
T.O.F.

T-W. June 17-18 02:15-04:15 UT 00 S8T 7-8 (some cirrus) ne; 18x50LSB; C-14, 19

Auroral glow.

ne: stars of spring and summer, Jupiter in W.; Auroral glow in N. which was more intense at the end of the session than it had been earlier. At the end of the session it was moderately intense and up only about to 10° or 12° in the N.

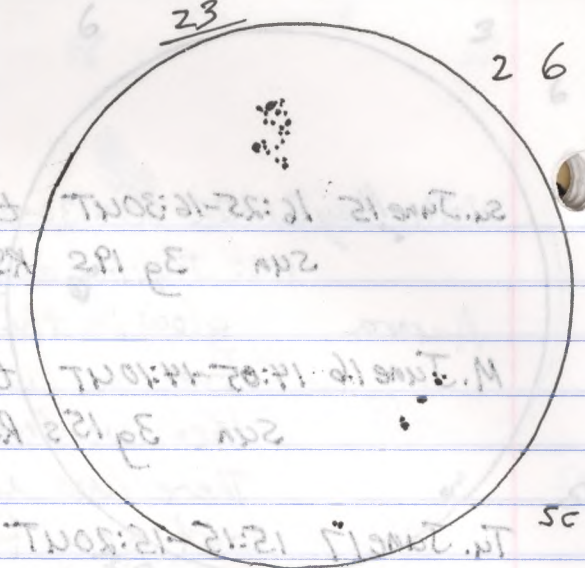
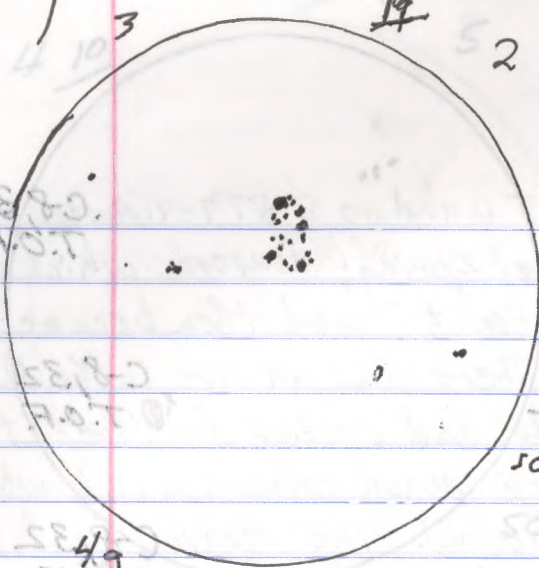
18x50LSB: areas of Ophiuchus and Serpens Caput, M14, areas of Cygnus, M39, areas of Cepheus; μ Cephei, area of δ Cephei, areas of Ursa Major, M81 and M82, Alcor and Mizar, β Cygni.

C-14: Jupiter and 3 Galilean moons all on the W. side of the planet (Europa probably being in occultation or eclipse, since it had had an occultation disappearance at 22:09 UT and was to have an eclipse + reappearance at 3:02 UT. M57, M13.

F. June 20 14:15-14:20 UT t
Sun 4g 55s RSN 95

C-8, 32

Sa-Su. June 21-22 03:45-05:10 UT 00 S8T 8.5 ne; 18x50LSB; C-14, 19
ne: stars of spring and summer sky; 2 bright meteors of about mag. -2, one going northward and one



4/9
255
KSN 65 June 24
14:30-16:25 UT

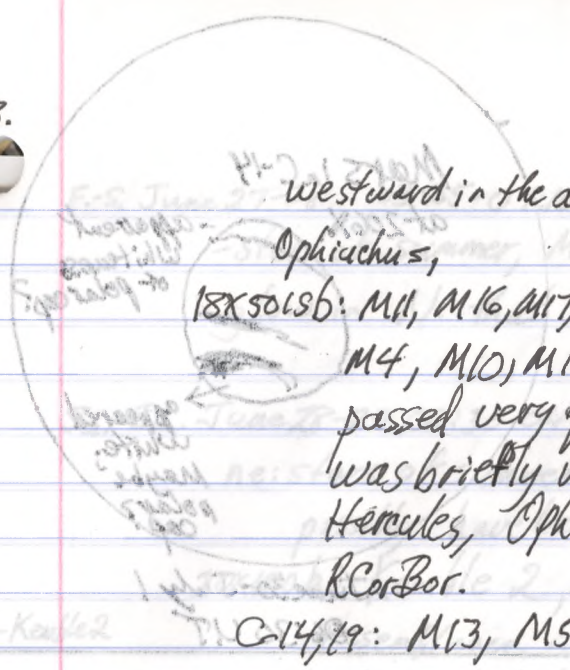
39
315/61 June 26
13:42-13:47 UT

avoid plow
 only about to 10° or 15° in the N.
 of the station it was moderately interesting
 the station that it had been earlier. At the end
 of the station it was moderately interesting
 of Jupiter and Saturn. M14
 areas of Jupiter M31, areas of Saturn
 M14, M31, M32, M33, M34, M35, M36, M37, M38, M39, M40, M41, M42, M43, M44, M45, M46, M47, M48, M49, M50, M51, M52, M53, M54, M55, M56, M57, M58, M59, M60, M61, M62, M63, M64, M65, M66, M67, M68, M69, M70, M71, M72, M73, M74, M75, M76, M77, M78, M79, M80, M81, M82, M83, M84, M85, M86, M87, M88, M89, M90, M91, M92, M93, M94, M95, M96, M97, M98, M99, M100, M101, M102, M103, 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, M201, M202, M203, M204, M205, M206, M207, M208, M209, M210, M211, M212, M213, M214, M215, M216, M217, M218, M219, M220, M221, M222, M223, M224, M225, M226, M227, M228, M229, M230, M231, M232, M233, M234, M235, M236, M237, M238, M239, M240, M241, M242, M243, M244, M245, M246, M247, M248, M249, M250, M251, M252, M253, M254, M255, M256, M257, M258, M259, M260, M261, M262, M263, M264, M265, M266, M267, M268, M269, M270, M271, M272, M273, M274, M275, M276, M277, M278, M279, M280, M281, M282, M283, M284, M285, M286, M287, M288, M289, M290, M291, M292, M293, M294, M295, M296, M297, M298, M299, M300, M301, M302, M303, M304, M305, M306, M307, M308, M309, M310, M311, M312, M313, M314, M315, M316, M317, M318, M319, M320, M321, M322, M323, M324, M325, M326, M327, M328, M329, M330, M331, M332, M333, M334, M335, M336, M337, M338, M339, M340, M341, M342, M343, M344, M345, M346, M347, M348, M349, M350, M351, M352, M353, M354, M355, M356, M357, M358, M359, M360, M361, M362, M363, M364, M365, M366, M367, M368, M369, M370, M371, M372, M373, 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was to have an eclipse appearance at 3:00
 occultation of 63:00 UT and
 occultation of edge, since it had had an
 side of the planet (Superior planet being in
 M27 M13.
 F: June 20 14:12-14:30 UT
 Hg-222
 20-24 June 21-22 03:42-05:00 UT
 2818.2
 20-24 June 21-22 03:42-05:00 UT
 2818.2
 20-24 June 21-22 03:42-05:00 UT
 2818.2
 20-24 June 21-22 03:42-05:00 UT
 2818.2

2003.

P1 S 5 11



westward in the area of the constellations Hercules and Ophiuchus,

18x50lsb: M11, M16, M17, M18, M20, M8, M21, M22, M23, M24, M25, M4, M10, M12, M13, M92, M5, very bright meteor that passed very quickly through the field leaving a train that was briefly visible in the binoculars, M39, star fields in Hercules, Ophiuchus, Cygnus, NGC 7789, β Cyg, T Cor Bor, R Cor Bor.

C-14, 19: M13, M57, M27.

M.-T. June 23-24 04:05-04:10 UT y S8(?) T9 ne
- stars of late spring and summer; the summer Milky Way in the E. part of the sky and quite distinct.

Tu. June 24 16:30-16:35 UT t C-8, 32
sun 4g 25S RSN 65 T.O.F.

T.-W. June 24-25 02:50-04:50 UT 00 S8(?) T8-9 ne; 18x50lsb; C-14, 32
ne: stars of summer; very bright object at about 03:12:40 UT in the area near Coma Berenices - Bootes - Canes Venatici border, perhaps mag. -6 to -8, perhaps an "almost-pair" meteor or possibly an "Iridium flash", also slightly later an apparent meteor that seemed to flash intermittently, as if skipping above the upper atmosphere as it travelled from W. to E. over about 40° of sky, very high near the zenith.

-very bright meteor

-second "possibly skipping" meteor.

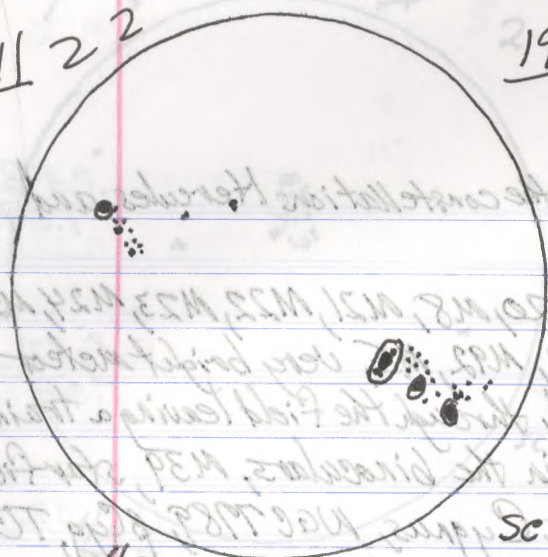
18x50lsb: M6, M8, M20, M21, M22, M23, M24, M25, M11 and R Scuti, M16, M17, M18, M4, M80, Barnard's Star and area, R Cor Bor, T Cor Bor and area.

C-14, 32: M57, M13, δ Herculis - beautiful split Veil Nebula.

Th. June 26 13:42-13:47 UT t C-8, 32
sun 3g 31S RSN 61 T.O.F.

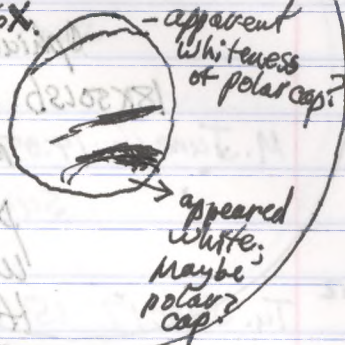
1122

19



49
345
RSN74 June 30
10:45-10:50 UT

Mars in C-14
at 206x



- apparent
whiteness
of polar cap?
appeared
white;
maybe
polar cap?

June 30 - July 1
06:30 UT

M.F. June 23-24 04:00-04:10 UT
stars of late spring and summer; the 2 main Milky
Way in the E. part of the sky and quite distinct.

T.W. June 24-25 02:20-04:20 UT
stars of summer; very bright object at about 03:15:00 UT
in the area near Comae Berenice - Bootes - Cassiopeia
border, perhaps mag. 6 to 8, perhaps an "almost-pair"
meteor or possibly an "Iridium flash" also possible
later an apparent meteor that seemed to flash
intermittently as if skipping above the upper atmosphere
as if traveling from W. to E. over about 10° of sky
Very red near the zenith.

RSN74 June 30
10:45-10:50 UT

T.W. June 24-25 02:20-04:20 UT
stars of summer; very bright
meteor

RSN74 June 30
10:45-10:50 UT

RSN74 June 30
10:45-10:50 UT

2003

F.-S. June 27-28 03:35-04:10 UT y S-8(278-9) ne
 -stars of summer, Milky Way in E. sky fairly well defined
 glow in N. that may have been auroral.

Sa.-Su. June 28-29 02:30-04:30 UT 00 SPT8-9.5 (varied) ne; 20x100b
 ne: stars of summer; possibly a slight glow in the N., that may
 possibly have been auroral.

-Keble 2
 20x100b: Keble 2, an asterism in Draco, one that has a
 resemblance in shape to the bright stars of Cassiopeia,
 and one that was written about by Father Lucian
 Keble. (See Sky and Telescope, July 2003, page 89.),
 the stars in the area of β Cas - δ Cas, ϵ Cas and
 τ Cas - near NGC 7789, M8, M20, M21, M22, M28,
 M16, M17, M18, M23, M24, M25, M11 and R Scat 1,
 δ Cephei and nearby stars, ϵ Cep, ζ Cep, μ Cep, ν Cep
 and α Cep.

M. June 30 14:45-14:50 UT t

sun 4g 34s RSN 74

C-8, 32
 T.O.F.

M.-T. June 30-July 1 03:00-06:45 UT 00 SPT 9.5! ne; C-14, 32, 19, 7.5
 ne: Under very good conditions, I observed the stars of
 summer and spent a long while photographing many objects.
 For about $\frac{1}{2}$ hour I photographed at the shore, in fact,
 on the dock, at about 03:30 to 04:00 UT.

While there I noticed that Mars, now very bright
 had risen above the trees in the E.

ph: - photographed various areas of the summer sky
 and also the area of Mars in Aquarius.

C-14: - observed Mars with the 32mm ocular at 122X,
 with the 19mm ocular at 206X and with the
 7.5mm ocular at 528X. It seemed best at
 about 206X with both polar caps apparently
 visible. (See diagram)

2003

T.W. July 1-2 01:00-05:15 UT 00 S8T9.5(!) ne; 20x100b

ne: I was in the observatory preparing to observe Uranus and Neptune by finding their locations from maps in the Observer's Handbook, during twilight and I saw bright displays of fireworks to mark Canada Day - fireworks that were mainly in the N.W. near where the crescent moon was about 5° to 10° above the horizon. Later I observed the stars of summer and near the end of the session saw Mars amid the trees in the S.W. There was probably a slight glow that may have been auroral - in the N. *

20x100b: M4, M80, M20, M21, M8, M23, M24, M25, M16, M17, M18, M11 and RScuti, M22, M28, Barnard's Star and area, M10, M12, M5, M15, M81, M82, M101, Neptune in Capricornus. Superb conditions for observing! (**)

-2, possibly 3
"early Perseids"

* ne: 3 meteors were seen also; two of which were probably early Perseids, since they were fast ones coming from the NE, and the third one may have been a Perseid also, though it seemed to come a bit more from the E.

(**) T Cor Bor, R Cor Bor, Kemble 2 - the "little Queen" asterism in Draco near χ Draconis, M6, M7.

W. July 2 16:05-16:10 UT t

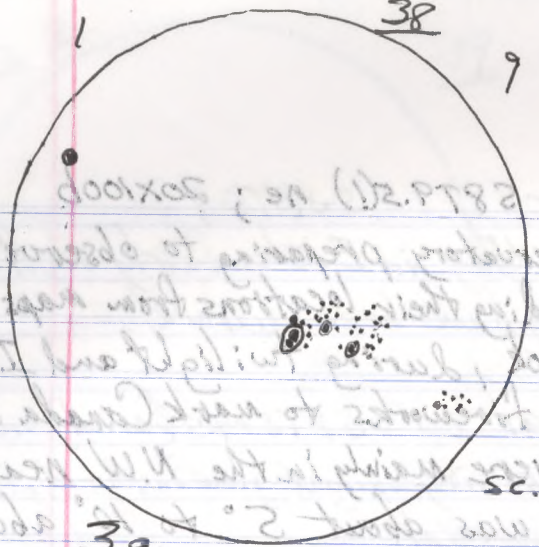
C-8, 32

Sun 39 48s RSN 78 (drawing - next page) T.O.F.

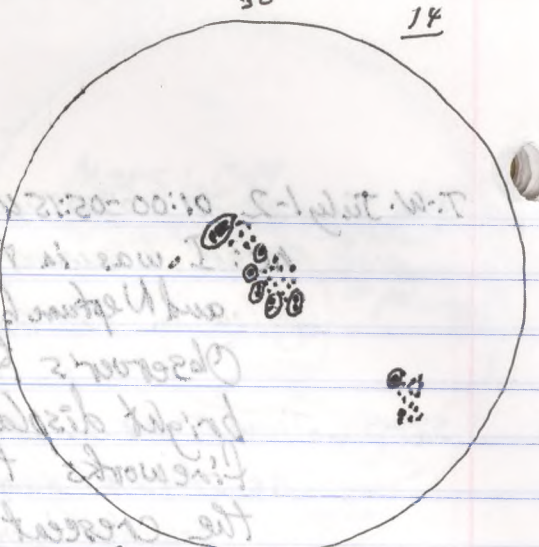
W.-Th. July 2-3 03:30-04:10 UT y audad S8T6-8 (clouds, hazy) ne

- stars of summer, amid a sky that provided less than excellent transparency. There was one very bright meteor that went from S to MNW and almost overhead, but seemed to be very close in the atmosphere. It was very fast and bright - about mag. -4 or -5. It may have been too early to have been a member of the Delta Aquarid Meteor Shower.

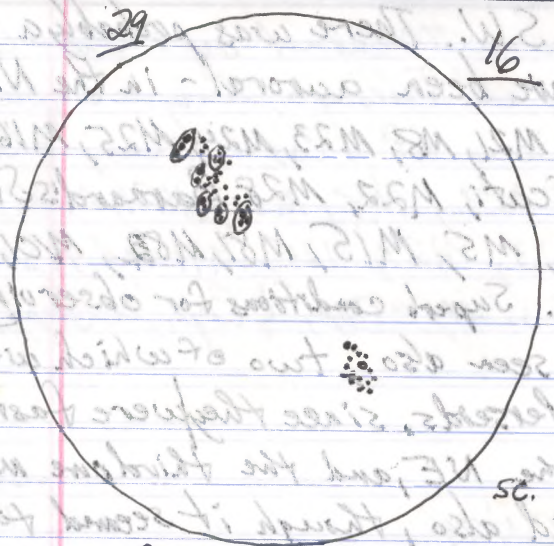
bright
meteor!



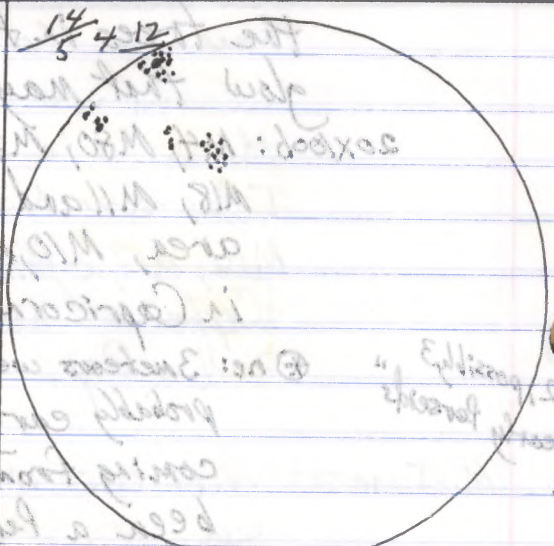
39
48's
RSN 78
July 2
16:05-16:10 UT



29
44's
RSN 64
July 5
14:10-14:15 UT



29
45's
RSN 65
July 6
14:35-14:40 UT



49
35's
RSN 75
July 9
14:30-14:35 UT

W. July 2 16:02-16:10 UT
Sun 3d 48's RSN 78 (drawing - not used)
T. 07
W. July 3 03:30-04:10 UT (drawing - not used)
stars of summer, and a sky that provided less than
excellent transparency. There was one very bright meteor
that went from 2 to MW and almost overhead, but
seemed to be very close in the atmosphere. It was very
fast and bright - about mag - 2. It may have been too
early to have been a member of the Delta Aurigid Meteor
Shower.

2003

F.-S. July 4-5 02:45-03:45 UT 00 S8T6-8 (haze, some cloud) ne; 20x100b
 ne: stars of summer, amid skies that were not as transparent as I had hoped for; Conditions gradually deteriorated especially in the lower part of the sky.
 20x100b: M10, M12, M20, M28, M8, M20, M21, M23, M24, M25, M16, M17, M18, areas of Cygnus and of Cepheus.

Sa. July 5 14:40-14:15 UT t C-8, 32
 Sun 2g 44s RSN64 T.O.F.

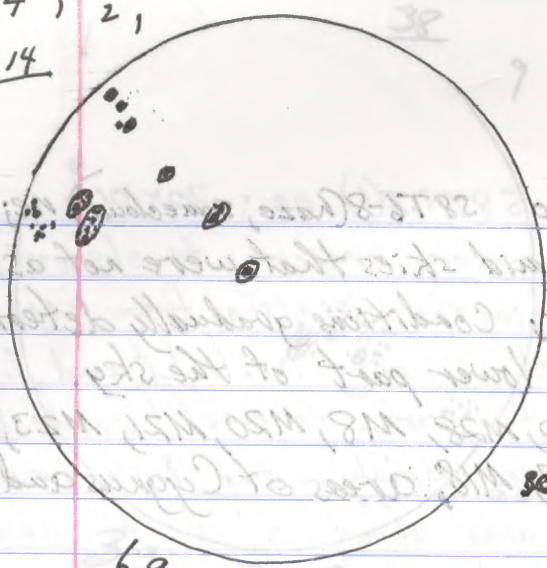
Sa.-Su. July 5-6 03:55-04:50 UT y S8T9 ne; 18x501sb
 ne: stars of summer, very bright (mag. -4.5 to -5)
 * meteor with train only about 10° in Delphinus going E. toward Pegasus; also another very bright object that for a while seemed like a "point meteor" but may have been a ~~meteor~~ ~~that~~ satellite that was moving slowly, but also was situated to allow it to reflect a maximum amount of sunlight.
 18x501sb: M8, M20, M21, M22, M28, M23, M24, M25, M11 and R. Scuti, M16, M17, M18, M15, Neptune and its area in Cap, Barnard's Star and its area.

- very bright meteor

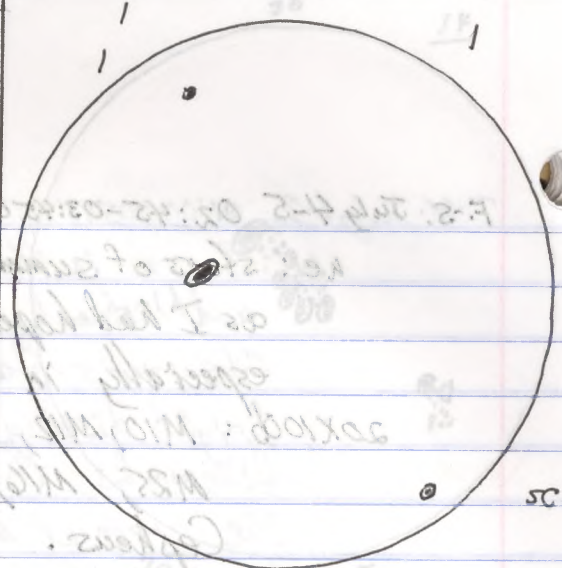
Su. July 6 14:35-14:40 UT t C-8, 32
 Sun 2g 45s RSN65 T.O.F.

W. July 9 14:30-14:35 UT t C-8, 32
 Sun 4g 35s RSN 75 T.O.F.

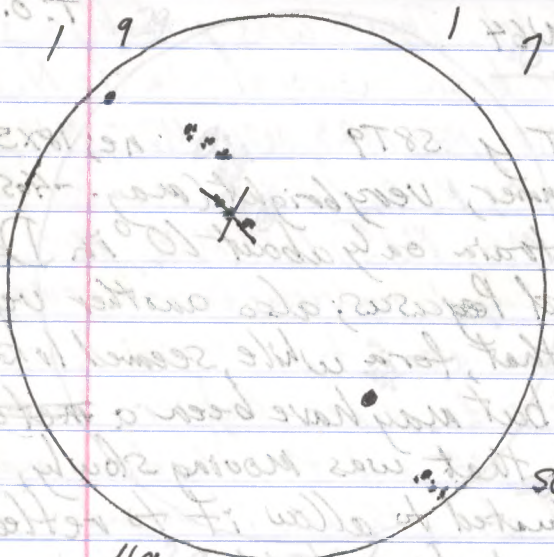
F.-S. July 18-19 03:30-04:00 UT adxy S-8T9-9.5 ne; 18x501sb.
 ne: bright stars of summer; glow in the N. up about



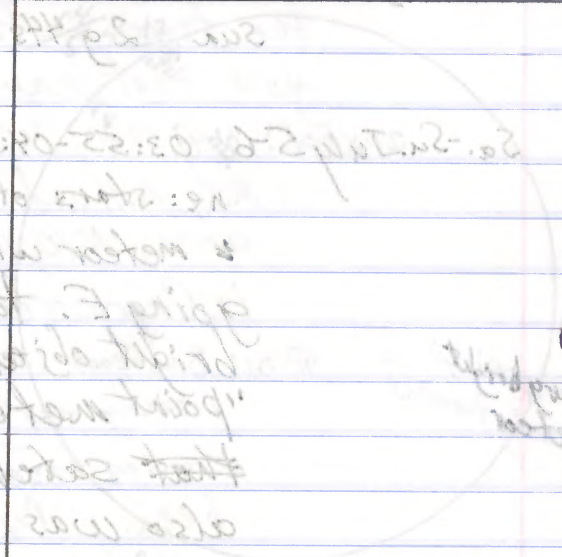
69
305
RSN 90 July 23
16:00-16:05 UT



39
35
RSN 33 July 25
14:40-14:45 UT



49
185
RSN 58 July 28
13:35-13:40 UT



49
185
RSN 32 July 29
14:30-14:35 UT

rs: bright stars of summer; glow in the N up about
F: 2 July 18-19 03:30-04:00 UT RSN 12
W: 2 July 14:30-14:35 UT RSN 32
2: 2 July 14:32-14:40 UT RSN 33

2003

July 29 20° and probably Auroral.

18X50ISB: M8, M20, M21, M4, M80, M16, M17, M18, M22, M28, M23, M24, M25, M15, M31, RCorBor, TCorBor, areas of Cygnus and Lyra, M13, M92, NGC7789 and nearby stars.

Sa. Su. July 19-20 03:50-04:45 UT y 58 T9-9.5(!) ne; 18X50ISB

ne: stars of summer; Mars in Aquarius and very bright (Mag. -1.9!); slight glow in N., perhaps Auroral.

18X50ISB: M22, M28, M8, M20, M21, M23, M24, M25, M11 and RScuti, M16, M17, M18, RCorBor, TCorBor, Barnard's Star, M15, NGC7789 and stars nearby, Mars in Aquarius and nearby stars, U and EU Del; stars in area of Delta Cephei

W. July 23 16:00-16:05 UT t

Sun 6g 30s RSN90

C-8, 32
T.O.F.

F. July 25 14:40-14:45 UT t

Sun 3g 3s RSN33

C-8, 32
T.O.F.

M. July 28 13:35-13:40 UT t

Sun 4g 18s RSN58

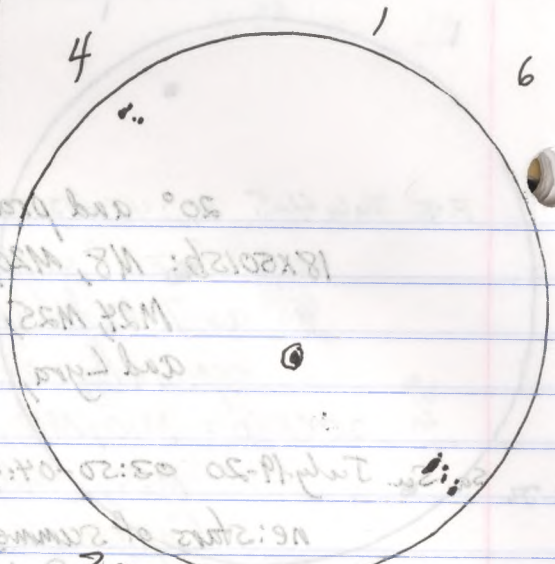
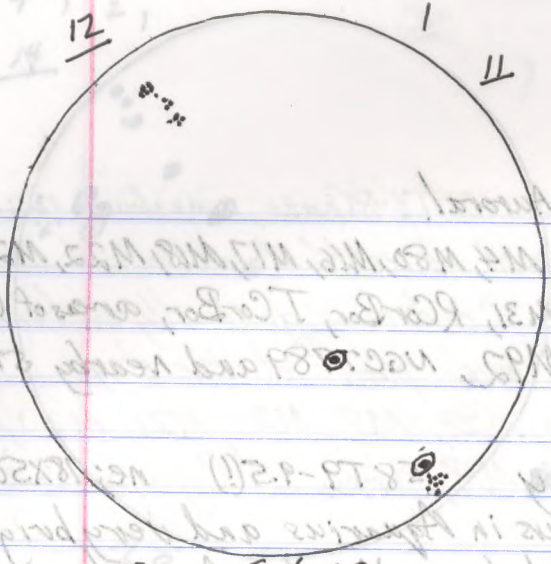
C-8, 32
T.O.F.

M.-T. July 28-29 01:30-04:40 UT 00 S-8 T7-9 (some cloud) ^{at times} ne; 20X100b; C-14, 19

ne: stars of summer, Mars in SE after about 03:30 UT when it appeared amid the trees

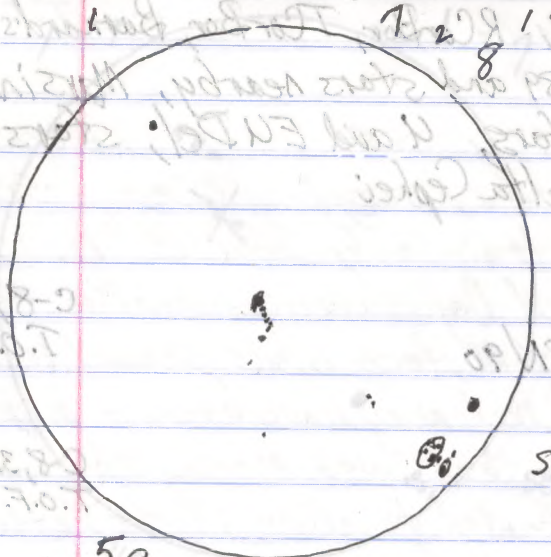
20X100b: M8, M20, M21, M22, M28, M11 and RScuti, M16, M17, M18, M15, M14, M23, M24, M25, M4, RCorBor, TCorBor, Neptune in Capricornus;

C-14: Mars, in latter part of the session, but there was a "boiling effect", probably because of the fairly low altitude of the planet; also, near the end of the session a large cloud covered the area of Aquarius in which Mars was located.

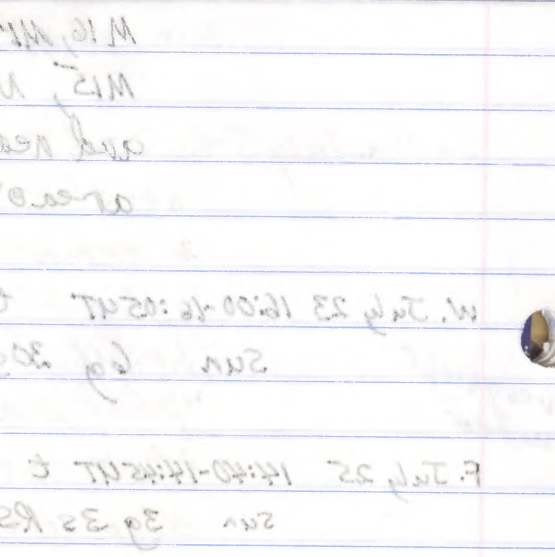


39
195
RSN 54
July 29
15:05-15:10 UT

39
115
RSN 41
July 30



59
195
RSN 69
Aug. 2
14:30-14:35 UT



1
2
3
4
July 28
13:55-14:00 UT

M.F. July 28-29 01:30-04:40 NT 00 28 TT-P (some cloud) no; saw; cloud
no: stars of summer, Mars in SE after about 03:00 NT
when it appeared amid the trees
boxtop: MR, MSO, MSJ, MSZ, MSR, MLL, MSW, RSW, RST
MLO, MLD, MR, MIF, MIF, MS3, MS4, MS5, MF
R Carbar, T Carbar, Neptune in Capricorn;
CH: Mars in latter part of the session but there
was a "falling effect" probably because of the
fairly low altitude of the planet; also, near the
end of the session a large cloud covered the area
of Aquarius in which Mars was located.

2003

Th. July 29 15:05-15:10 UT t
Sun 3g 245 RSN 54

C-8, 32
T.O.F

W. July 30 15:25-15:30 UT t
Sun 3g 115 RSN 41

C-8, 32
T.O.F.

W.-Th. July 30-31 03:10-04:50 UT y 58(1)T9-9.5(!) ne; 18x5015b
ne: stars of summer, Mars - very bright in Aquarius
in the SE at the beginning of its retrograde motion
(the time of Mars being stationary listed as
); slight glow in N. that may have been
Auroral.

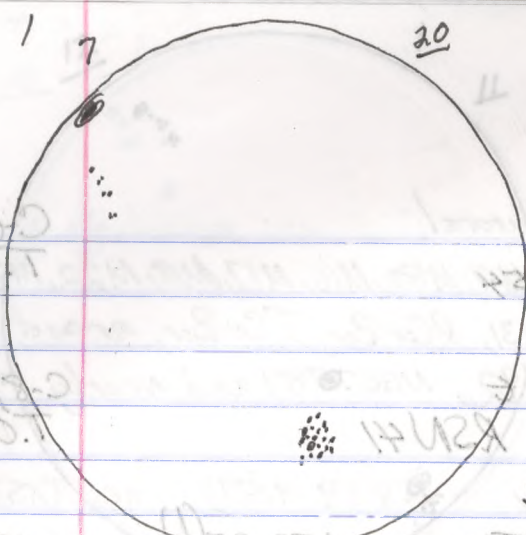
18x5015b: M31, NGC 7789 and area, areas in Cygnus,
M16, M17, M18, M1 and R Scuti, M8, M20, M21, M22,
M28, M23, M24, M25, Barnard's Star and area,
M10, M12, R Cor Bor, T Cor Bor, M13, areas of
Hercules, Neptune in Capricornus.
ph: area of Mars in Aquarius.

Sa. Aug. 2 14:30-14:35 UT t
Sun 5g 195 RSN 69

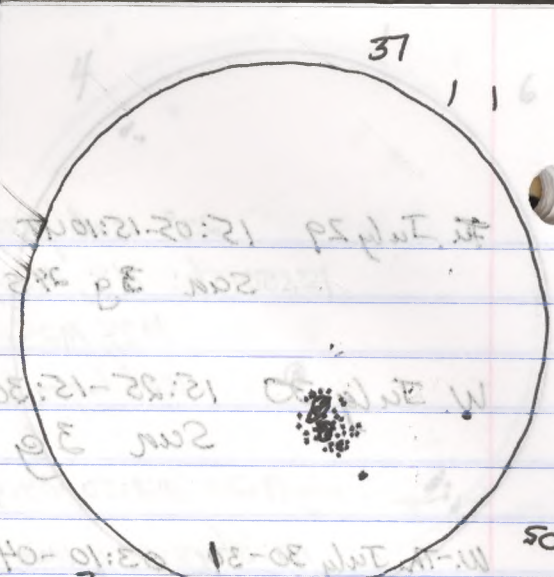
C-8, 32
T.O.F.

T.-W. Aug. 12-13 04:00-05:30 UT y 58(1)T6 (Pul.) ne

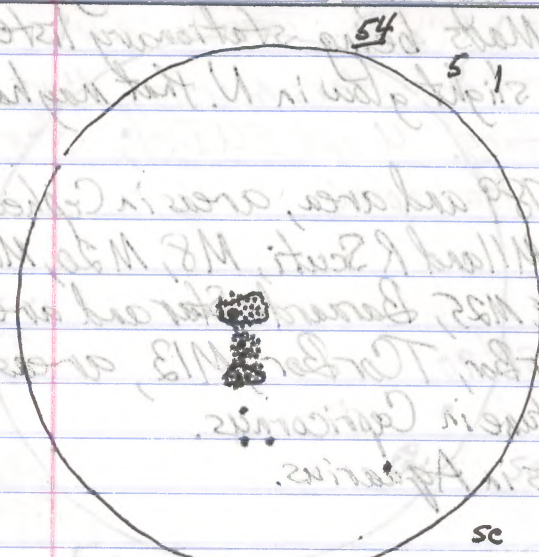
- looked for Perseid Meteors at the peak time given for
the shower, but because of the Full Moon I
saw very few, possibly two or three. There
was one bright one - near the radiant, probably in
Perseus and possibly magnitude -1, and one
faint one in the NNW sky. Generally, I faced
toward the NNW with the bright Full Moon
behind me and Mars. Very bright and about 5°
to the left of the moon.



39
285
RSN 58
Aug 13
15:05-15:10 UT
sc



37
39
39C
RSN 69
Aug. 14
16:30-16:35 UT
sc



54
39
60S
RSN 90
Aug. 15
14:45-14:50 UT
sc

2003

W. Aug. 13 15:05-15:10 UT t

C-8, 32

Sun 3g 28s RSN 58

with Aug. 13-14 03:50-05:00 UT ndandy S-8(T)5 (full) ne

- looked for Perseids in another bright sky with the Full Moon in the southern sky. The moment of Full Moon had been 4:48 UT on Aug. 12, about 48 hours before. Mars was now seen on the other side of the Moon from where it was the previous night, being now about 7° to the left of Mars, whereas the previous night it had been about 5° to the right of Mars. There was one bright Perseid of about mag. -1, and with a train about 10° in length, very near the star Polaris. There was possibly another Perseid, but I was not sure of it

- looked for Perseids on another moonlit night

Th. Aug. 14 16:30-16:35 UT t

C-8, 32

Sun 3g 39s RSN 69

T.O.F.

Th.-F. Aug. 14-15 01:15-02:30 UT ndandy S-8(T)6-9 (varied; moonrise some cloud) ne; 18x50sb

ne: observed stars of summer before during and after moonrise; one Perseid Meteor near Altair - about mag. 2.

18x50sb: M22, M28, M8, M20, M21, M23, M24, M25, M1 and R Scuti, M16, M17, M18, M5, R Cor Bor, area of T Cor Bor, M13, M92.

Light Pollution was not a problem since it was the night of a very widespread power outage.

F. Aug. 15 14:45-14:50 UT t

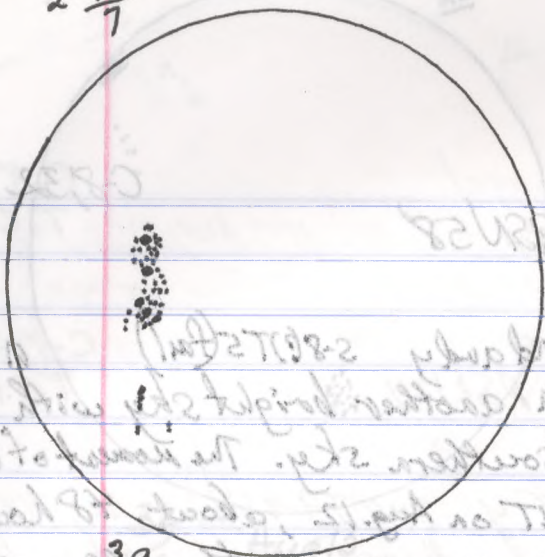
C-8, 32

Sun 3g 60s RSN 90

T.O.F.

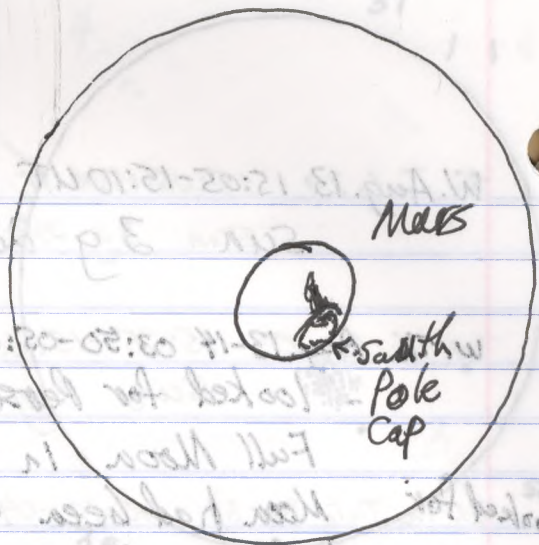
F.-S. Aug. 15-16 02:45-04:30 UT nd & y S-8(T)5 (haze some clouds) ne
- bright stars of summer in the upper parts of the sky,

2 $\frac{43}{7}$

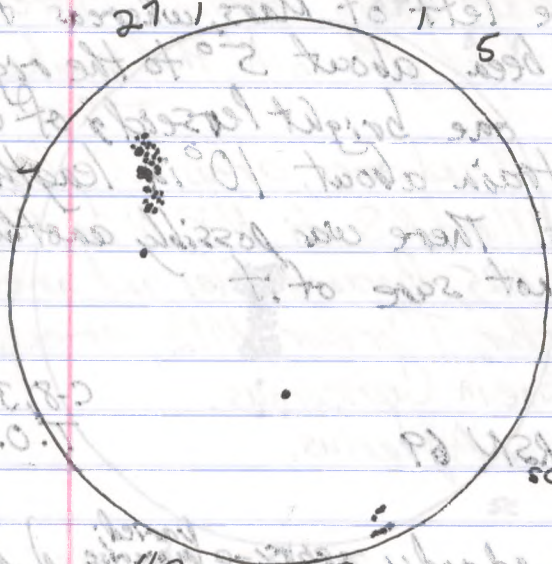


39
525
RSN82

Aug. 16
13:45-13:50 UT



Mars in C-14 with 19 mm
ocular - 205.8 X



49
345
RSN74

Aug. 17
14:40-14:45 UT

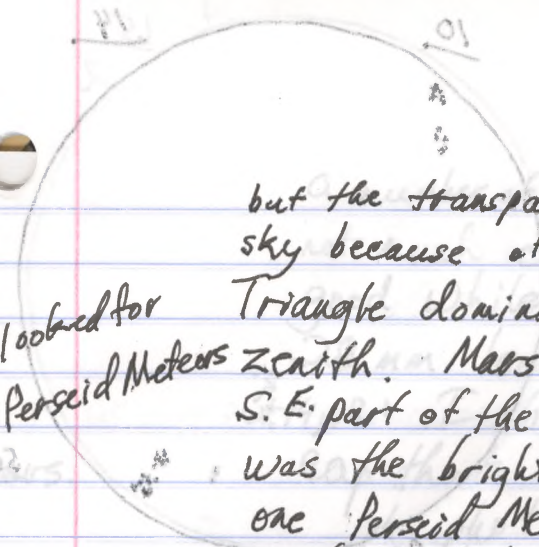
C-8.35
T.O.F.

F. Aug 12 13:45-14:50 UT
SC 3d 60x R2190

F-2 Aug 12 08:45-09:30 UT
bright stars of summer in the upper parts of the sky

2003

-looked for
Perseid Meteors



but the transparency was not good in the lower part of the sky because of haze and some clouds. The Summer Triangle dominated the part of the sky S. of the zenith. Mars at about mag. -2.7 dominated the S.E. part of the sky and about 25° to the left of Mars was the bright gibbous moon. There was possibly one Perseid Meteor, but, even if it was really a meteor, it did not appear bright. The Perseids did not appear to be very active at this time.

Sa. Aug. 16 13:45-13:50 UT t

C-8, 32
T.O.F.

Sun 3g 525 RSN 82

Sa-Su Aug. 16-17 02:20-04:30 UT 00 S-8 (T 6-9.5!) (r.s before moonrise) ne, 20x100b; C-14, 19

ne: bright stars of summer, Mars at mag -2.7 dominating the S.E. sky, gibbous moon rising at about 02:28 UT and dominating the sky with its brightness after rising; bright meteor, not a Perseid, in the NW at about mag. -2.

20x100b: M15, M16, M17, M18, M 23, M24, M25, M27, M28, M8, M20, M21.

C-14, 19: M57, Mars with its S. pole clearly seen (See diagram.)

Sa. Aug. 17 14:40-14:45 UT t

C-8, 32
T.O.F.

Sun 4g 345 RSN 74

Su-M. Aug. 17-18 02:20-04:45 UT y + 00 S-8 (T 9.5-7A) ne; C-14, 19 (gnl; some cloud)

ne: stars of summer, gibbous moon after it rose; Mars extremely bright in the SE. Throughout the session a fairly good Aurora was seen in the N. to NW and up to about 40° with a glow at first and then a large arc and then

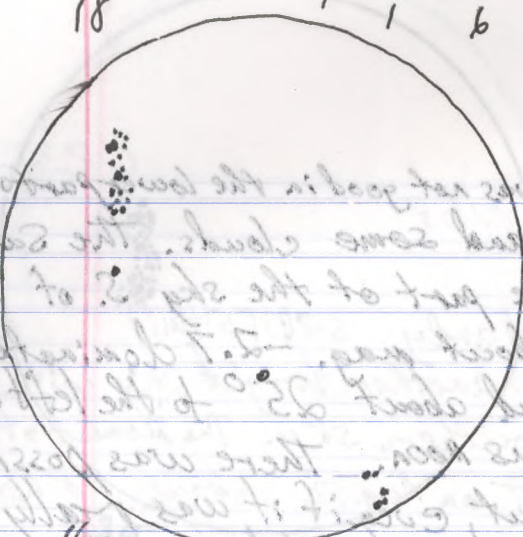
Aurora

18

1

1

6

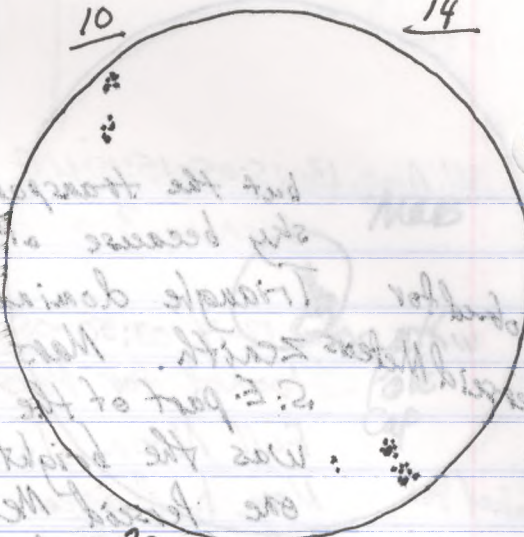


49
265
RSN 66

Aug. 18
13:35-13:40 UT

10

14



29
245
RSN 44

Aug. 19
16:45-16:50 UT

5c

C-8-32
T.O.F.

RSN 88

Aug. 16 13:42-13:50 UT

Aug. 16-17 05:30-04:30 UT
 No: bright stars of summer, Mars at end - 2.1 dominating
 the S.E. sky, gibbons moon rising at about 02:00
 and dominating the S.W. with its brighter stars
 rising; bright meteor, not a paroid, in the NW
 at about mag. 2.
 BROXOP: W12, W10, W11, W18, W23, W34, W35, W37, W38
 W39, W40, W41, W42, W43, W44, W45, W46, W47, W48, W49, W50, W51, W52, W53, W54, W55, W56, W57, W58, W59, W60, W61, W62, W63, W64, W65, W66, W67, W68, W69, W70, W71, W72, W73, W74, W75, W76, W77, W78, W79, W80, W81, W82, W83, W84, W85, W86, W87, W88, W89, W90, W91, W92, W93, W94, W95, W96, W97, W98, W99, W100

C-14-19: M2, Mars with 2.1ok cloud seen
 (see diagram.)

C-8-32
T.O.F.

RSN 74

Aug. 17 14:10-14:20 UT

Aug. 17-18 02:30-04:45 UT
 No: stars of summer, gibbons moon at first rose;
 Mars extremely bright in the S.E. throughout the
 session, a fairly good Aurorae was seen in the
 N. to NW end up to about 40° with a few
 at first and then a large one and then

Aurora

a number of spikes and vertical bands. There was not much colour, but it remained active for a good while. I photographed it with the 28 mm lens

Mars.

C-14, 19: I observed Mars and saw the South Pole cap that seemed to be quite clear.
ph: photographed Mars

M. Aug. 18: 13:35 - 13:40 UT C-8, 32
Sun 4g 26s RSN 66 T.O.F.

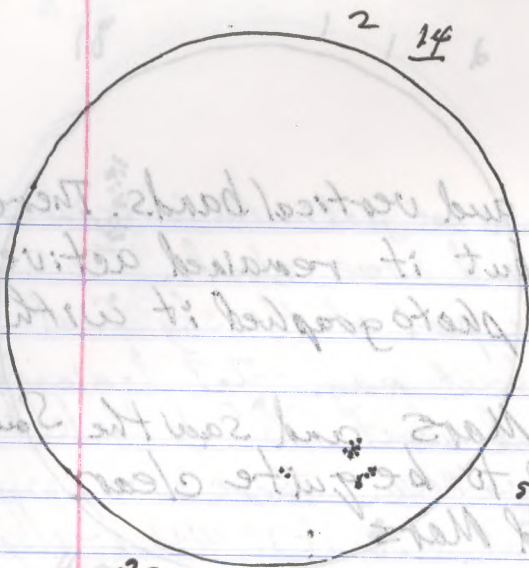
Aurora
M.-T. Aug. 18-19 02:55-04:00 UT nd+y 58(?) T8-9.5 (Aurora) ne
• looked for Perseids or other meteors but saw little or nothing in the way of meteors, but saw again a fairly good Aurora with glow about 30° along the horizon from N to NNW and up about 25° with spikes and vertical bands going upward occasionally. At one point early in the observing session the glow became extremely bright at a point just above the N point on the horizon. Mars dominated the southern sky with its intense red glow.

Tu. Aug. 19 16:45 - 16:50 UT t C-8, 32
Sun 2g 24s RSN 44 T.O.F.

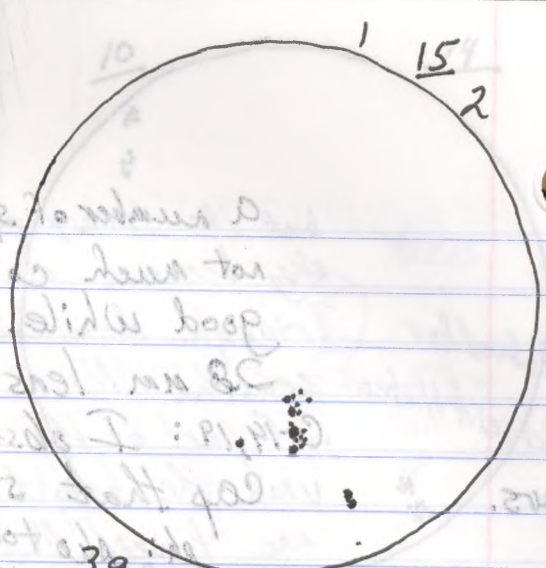
Tu.-W. Aug. 19-20 02:20-05:00 UT 00 58(?) T 6-8.5 (aftern) ne; 20x100b; 299
ne: stars of summer; Mars extremely bright in the SW;
one meteor of about mag. 3.

F.-S. Aug. 22 20x100b: M15, M16, M17, M18, M19, M20, M21, M22, M23, M24, M25.

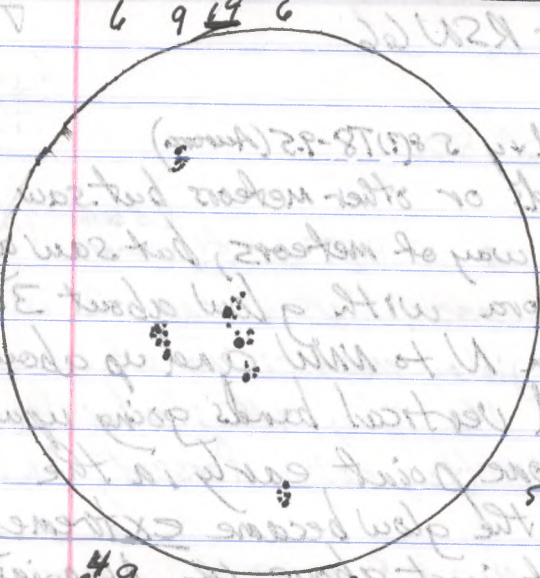
Mars.
C-14: I set up the camera with eyepiece projection to photograph Mars and viewed it through the



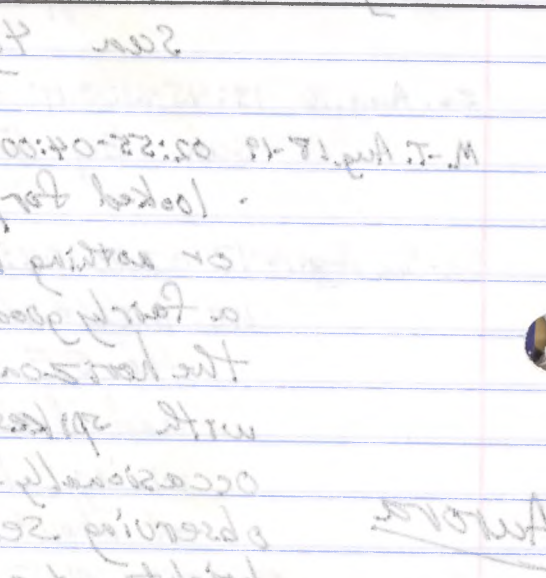
29
168
RSN 36
Aug. 20
14:05-14:10 UT



39
185
RSN 48
Aug. 21
14:55-14:57



49
35
RSN 75
Aug. 22
15:40-15:45



49
35
RSN 75
Aug. 22
15:40-15:45

2003

Camera viewfinder. The South Pole Cap was quite easily visible. Mars was amazingly bright, approaching nearest approach in about one week.

W. Aug. 20 14:05-14:10 UT t

C-8, 32
T.O.F.

sun 29 16s RSN 36

W.-Th. Aug. 20-21 02:20-04:40 UT 00 58(?) T 9-9.5 ne; 20x100b; C-8, 17

ne: stars of summer; Mars very bright in the SE

Auroral glow in the N. to NNW up to about 20°.

20x100b: M1 and R Senti, M16, M17, M18, M23, M24, M25, M22, M28, M8, M20, M21, M54, Uranus, Neptune, area of Mars in Aquarius.

C-14: observed Mars with the 17mm ocular at 230x without the diagonal. The South Pole Cap was very evident.

ph.: photographed Mars with eyepiece projection and the 17mm ocular.

On checking later through the window I saw that the Auroral glow had become an active, more widespread Aurora with some "flaming" or pulsation in the North to Northwest, easily seen in spite of the Last Quarter Moonlight.

Th. Aug. 21 14:55-14:57 UT t

C-8, 32
T.O.F.

sun 39 18s RSN 48

F. Aug. 22 15:40-15:45 UT t

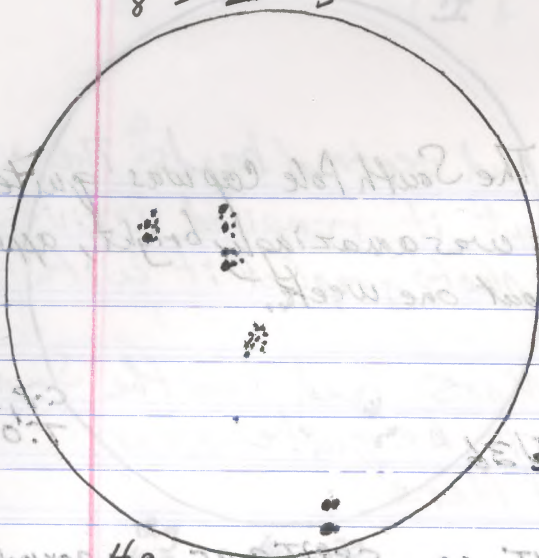
C-8, 32

sun 15 35s RSN 75

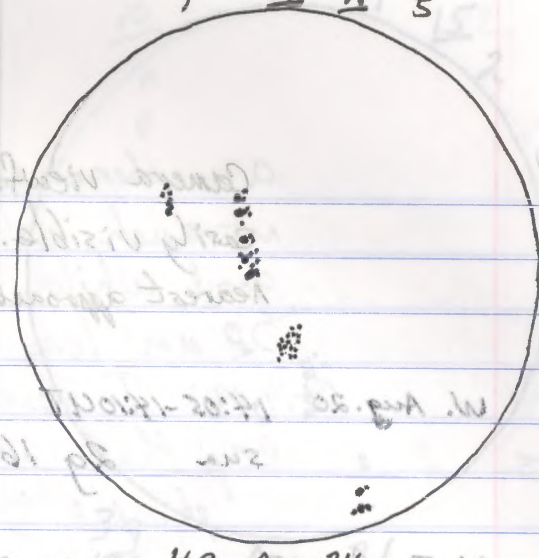
F.-S. Aug. 22-23 02:30-05:00 UT 00 58(?) T 9.5! ne; 20x100b; C-14, 155

ne: stars of summer, one meteor about mag. 3, perhaps a slight glow in N, possibly Auroral; M31 seen fairly readily as a naked-eye object.

8 15 12 5



7 20 18 5



49
70s
RSN 80
Aug. 23
14:40-14:45 UT

49
50s
RSN 90
Aug. 24
15:05-15:10 UT

Northwest, easily seen in site of the last quarter moonlight.
 Answer with some "flaring" or pulsation in the light to
 answer glow had been an active one undisturbed.
 On checking later through the window I saw that the
 projection and the 17mm ocular.
 pt.: photographed Mars with eyepiece
 South Pole Cap was very evident.
 at 230x without the diagonal. The
 C-14: observed Mars with the 17mm ocular
 Neptune area of Mars in Aquarius.
 MRS. MRS. M8, M20, M31, M24, planets,
 M10, M11, M12, M13, M14, M15,
 M16, M17, M18, M19, M20, M21, M22, M23, M24, M25, M26, M27, M28, M29, M30, M31, M32, M33, M34, M35, M36, M37, M38, M39, M40, M41, M42, M43, M44, M45, M46, M47, M48, M49, M50, M51, M52, M53, M54, M55, M56, M57, M58, M59, M60, M61, M62, M63, M64, M65, M66, M67, M68, M69, M70, M71, M72, M73, M74, M75, M76, M77, M78, M79, M80, M81, M82, M83, M84, M85, M86, M87, M88, M89, M90, M91, M92, M93, M94, M95, M96, M97, M98, M99, M100.

Answer glow in the N. to NW up to about 50°
 M10, M11, M12, M13, M14, M15, M16, M17, M18, M19, M20, M21, M22, M23, M24, M25, M26, M27, M28, M29, M30, M31, M32, M33, M34, M35, M36, M37, M38, M39, M40, M41, M42, M43, M44, M45, M46, M47, M48, M49, M50, M51, M52, M53, M54, M55, M56, M57, M58, M59, M60, M61, M62, M63, M64, M65, M66, M67, M68, M69, M70, M71, M72, M73, M74, M75, M76, M77, M78, M79, M80, M81, M82, M83, M84, M85, M86, M87, M88, M89, M90, M91, M92, M93, M94, M95, M96, M97, M98, M99, M100.

G-8-32
T.O.F.

Tr. Aug. 21 19:25-19:32 UT
2m 3d 18s RSN 48

G-8-32

F. Aug. 22 12:40-12:42 UT
2m 3s RSN 72

Ne: stars of summer, one meteor about mag 3, perhaps a
 slight glow in N. possible Auroral; M31 seen fairly
 readily as a naked-eye object.
 F-2 Aug. 23-23 05:30-05:32 UT 00 28.6 UT 2.2! Ne; 200x; G-14 122

Ne: stars of summer, one meteor about mag 3, perhaps a
 slight glow in N. possible Auroral; M31 seen fairly
 readily as a naked-eye object.
 F-2 Aug. 23-23 05:30-05:32 UT 00 28.6 UT 2.2! Ne; 200x; G-14 122

2003

20x100b: Uranus, Neptune, M15, M11, M16, M17, M18, M25,
M22, T Cor Bor, R Cor Bor, Mars and area.

C-14, 15.5: Mars.

ph: photographed Mars using eyepiece
projection with the 15.5 mm eyepiece.

Sa. Aug. 23 14:40-14:45 UT C-8, 32
sun 4g 40s RSN80 T.O.F.

Sa-Su Aug. 23-24 02:22-05:30 UT 00 58(?) T9.5! ne; 20x100b; ^{C-14, 12}

ne: stars of summer, Mars extremely bright in
Aquarius, one meteor of about mag. 3 that
may have been a Perseid, one meteor in the NW of
about mag. -1.5, perhaps a slight glow in the
N. that may have been Aurora.

20x100b: area of M31, Uranus, Neptune, M11 and
R Scuti, M16, M17, M18, M24, M25, M22,
M28, Barnard's Star and area, M10, M12,
M14, M13, M92, R Cor Bor, T Cor Bor,
Areas in Cassiopeia including NGC 7789.

C-14, ¹²~~13~~: Mars with the S. polar cap quite
visible

ph: - photographed the area of Mars using
50 mm lens and 85 mm lens.

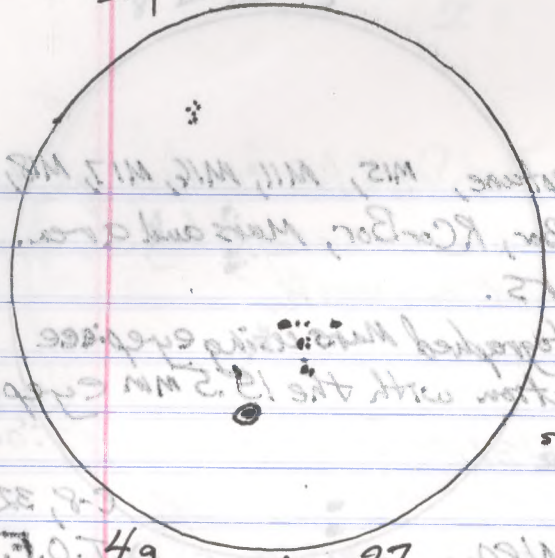
- photographed Mars using eyepiece projection
with the 12 mm ocular

Su. Aug. 24 15:05-15:10 UT t C-8, 32
Sun 4g 50s RSN90 T.O.F.

M.-T. Aug. 25-26 02:50-05:20 UT 00 5-8(?) T8-9 ^{slight} ne; 18x50b; ^{C-14, 17}

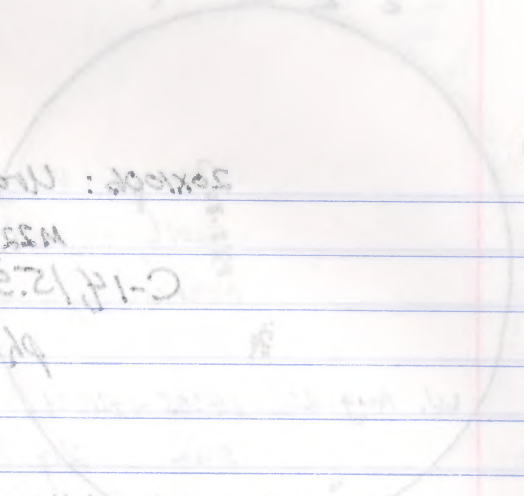
ne: stars of summer, Mars very bright - mag. -2.9 or
brighter and about 34 hours before its closest

6 2 1 20



Wrote: Mars with the 2. polar cap white
C-14/12.5: Mars
pl: photographed Mars using episcopic projection
with the 12mm ocular

Aug. 27
14:50-14:55 UT
RSN 59



Wrote: Mars with the 2. polar cap white
C-14/12.5: Mars
pl: photographed Mars using episcopic projection
with the 12mm ocular

Aug. 27
14:50-14:55 UT

Wrote: Mars with the 2. polar cap white
C-14/12.5: Mars
pl: photographed Mars using episcopic projection
with the 12mm ocular

Aug. 27
14:50-14:55 UT

Wrote: Mars with the 2. polar cap white
C-14/12.5: Mars
pl: photographed Mars using episcopic projection
with the 12mm ocular

Aug. 27
14:50-14:55 UT

Wrote: Mars with the 2. polar cap white
C-14/12.5: Mars
pl: photographed Mars using episcopic projection
with the 12mm ocular

Aug. 27
14:50-14:55 UT

Wrote: Mars with the 2. polar cap white
C-14/12.5: Mars
pl: photographed Mars using episcopic projection
with the 12mm ocular

Aug. 27
14:50-14:55 UT

2003

approach during the current opposition period.

18x50LSb: M15, area of Uranus, Neptune, M11 and R Scuti, M16, M17, M25.

C-14: Mars with the polar cap quite distinct.

ph: photographed the area of Mars with a 50mm lens and an 85mm lens, and photographed Mars with the

C-14 and eyepiece projection using the 17mm ocular.

T-W. Aug. 26-27 02:50-05:50 UT 00 S8(?) T9 ne; 18x50LSb; C-14, 17, 9, 7.4

Mars - "very near"

ne: stars of summer, Mars absolutely brilliant at about mag. -3.0 and by the end of the session it was only about 4 hours from the time listed as the nearest approach of Mars in approximately 60,000 years. The time for the nearest approach was listed as 9:52 UT

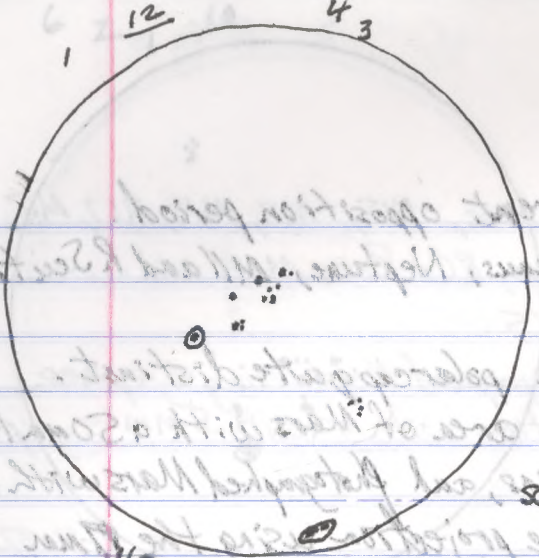
18x50LSb: M15, Uranus, Neptune, M11 and R Scuti, M16, M17 or part of it since it may have been partly behind a tree or the leaves of a tree, T Cor Bor, R Cor Bor, Alcor and Mizar. β Persei noted to be not at its maximum and it was indeed discovered to be at less than its maximum brightness.

C-14, 17, 9, 7.4: Mars which revealed one of the polar ice caps.

ph: photographed the area of Mars with the 85mm lens and the 50mm lens.

W. Aug. 27 14:50-14:55 UT t Sun 4g 19S RSN59 C-8, 32 T.O.F.

W.-Th. Aug 27-28 02:00-05:40 UT 00 S8(?) T9.5! ne; 18x50LSb; C-14, 15.5
ne: stars of summer; Mars very brilliant in SE and completely clouded over by 04:15 UT. I decided to put observing



49
205
RSN 60
Aug. 28
15:00-15:05 UT

18x202p: MIS, areas of Venus, Neptune, Uranus, Mars
C-14: Mars with the polar opposite distant.
pr: photographed the area of Mars with a 200mm lens and an 82mm lens, and photographed Mars with the G-14 and exposure projectors.

W. Aug. 28 02:00-02:20 UT 00 28(1)P.2! 18x202p:1
W. Aug. 27 14:20-14:25 NT 5
C-14: Mars which revealed one of the
pr: photographed the area of Mars with the
82mm lens and the 200mm lens.

18x202p: MIS, Venus, Neptune, Uranus, Mars
Mars - very low
time listed as the nearest approach of Mars in
approximate 60,000 years. The time for the
session it was only about 4 hours from the
about May - 3.0 and up to the end of the
Mars - very low

W. Aug. 28 02:00-02:20 UT 00 28(1)P.2! 18x202p:1
W. Aug. 27 14:20-14:25 NT 5
C-14: Mars which revealed one of the
pr: photographed the area of Mars with the
82mm lens and the 200mm lens.

2003

Mars!

meteors

Aurora.

just hours after the time listed as that of closest approach to earth in almost 60,000 years, the time listed as 09:52 UT on Aug. 27, i.e., about 16 hours before the beginning of the session. Mars was at about mag. -3.0; about 4 meteors, two of which may possibly have been Perseids; Aurora/glow up about 10° in the N and extending toward the NW, and fairly pronounced near and at the end of the session

18X5015b: M15, Uranus, Neptune, M11 and R Scuti, T Cor Bor, R Cor Bor, M13 and M92, M71

C-14, 15.5: Mars with the S. Polar Cap very pronounced and hints, at least, of other features I used a red filter and it seemed to improve the image. I tried to see one or both of the moons of Mars - by putting the planet just beyond the edge of the field, but was not sure of seeing either of the moons.

ph: I photographed various areas of the sky, since the conditions were very good. I also photographed the areas of Mars, since it was still possible to take advantage of the rare close approach.

Th. Aug. 28 15:00-15:05 UT to
sun 4g 20s RSN60

C-8, 32
T.O.F.

Th.-F. Aug. 28-29 02:15-04:15 UT 00 S-80(T 6-8 (cloud, haze) ne; 18X5015b
ne: stars of summer, Mars extremely bright in SE.

18X5015b: Uranus, Neptune, M8, M20, M23, M24, M25, M22, M28
The sky was somewhat cloudy at first, but then cleared up. Later, at about 04:00 UT it clouded up again and was almost completely clouded over by 04:15 UT. I decided to quit observing.

2003

F.-S. Aug. 29-30 02:20-04:20 UT 00 S(R) T1-7 (clouds) ne

I began to observe with the expectation that the weather might clear but the clouds persisted for a while with only slight breaks for short periods of time. As time passed the breaks grew larger and more frequent. Later at about 04:00 UT a large part of the sky had cleared, but even yet there was cloud in the South where Mars had cloud interfering with a good view of its brilliant light. I decided to end the observing session though there was some hope that the sky would eventually be completely clear. There seemed to be a slight glow in the N. that might have been Auroral.

Sa. Aug. 30 17:52-17:57 UT

Sun 4g 21S RSN 61

C-8, 32
T.O.F.

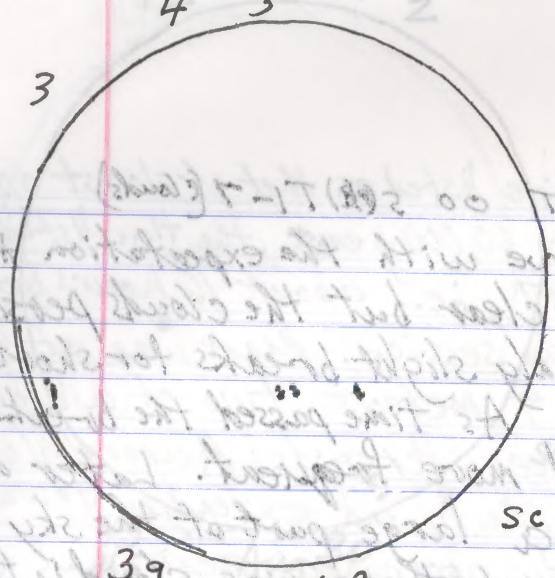
Sa.-Su. Aug. 30-30 02:00-05:55 UT 00 S(R) T 9.5! ne; 18x5015b; C-14, 17

ne: stars of summer, Mars extremely bright in S.E.; an extremely bright meteor which lit up the yard at about 04:30 UT, appearing in the W or WNW as I was in the yard outside the observatory and looking to the E toward the Pleiades which I was going to photograph (in the opposite direction from the fireball). When I looked around I saw an extremely bright "ball of light" that was somewhat greenish in colour. It was probably magnitude -10 or brighter and perhaps had been brighter - maybe -12 or -15 when it had lit up the yard; a glow in the N. to the NW that probably was Auroral.

-extremely bright meteor (fireball of magnitude -10 to -15).

4 3 2

3



39
RSN 40

Sept. 2
18:35-18:40 UT

sc

Aug. 29-30 02:00-02:30 UT 00 268(T-1) (cont)

I began to observe with the expectation that the weather might clear but the clouds persisted for a while with only slight breaks for short periods of time. As time passed the breaks grew larger and more frequent. Later at about 04:00 UT I looked out of the sky had cleared, but even yet there was a hazy atmosphere.

With a good view of its brilliant light I decided to end the observing session though there was some hope that the sky would eventually be completely clear. There seemed to be a slight glow in the N that might have been Mars.

C-8.35
T.O.F.

RSN 61

Aug. 30 17:25-17:30 UT

sun
40 812

Aug. 30-31 02:00-02:30 UT 00 268(T-2) (cont)

2.5. an extremely bright meteor which lit up the yard at about 04:30 UT, appearing in the W or NW as I was in the yard outside the observatory and looking to the E towards the flashes which I was going to photograph. (in the opposite direction from the flashes). When I looked around I saw an extremely bright "ball of light" that was somewhat greenish in color. It was probably magnitude 10 or brighter and perhaps had been brighter - magnitude -12 or -13 when it lit up the yard; a glow in the N to the NW that probably was Mars.

extremely bright meteor (first half of magnitude -10 to -12)

2003

18x50156: M15, Uranus, Neptune, M11 and R Scuti,
M15, M92.

C-14 - observed Mars using the
17mm eyepiece (230x), and also
using the 5mm eyepiece (782x) and
the 9mm Nagler eyepiece (434.4x)
The polar cap was very distinct at
a range of powers.

(ph.): photographed areas of the sky with
Mars in them using the ~~75~~⁵⁰mm and the
85mm lenses.

photographed Mars using eyepiece
projection and the 17mm eyepiece

S.-M. Aug. 31-Sept. 1 01:21-03:06 UT 00 S(?)T1 (clouds) ne

Hoping to observe and photograph Mars I opened
the roof of the observatory, but found that the
conditions remained cloudy. Among the clouds I
could see the stars of the Summer Triangle for
much of the observing session and the planet
Mars for part of the session and sometimes
other stars, but the sky remained generally
quite cloudy, and I eventually ended the
observing session.

Tu. Sept. 2 18:35-18:40 UT 00 C-8, 32
sun 3g 10s RSN 40 T.O.F.

T.-W. Sept. 2-3 02:20-05:50 UT 00 S(?)T1 (clouds) ne

Hoping to observe and photograph Mars, I observed for
over two hours, but the weather was generally
cloudy. Among the clouds I periodically saw Mars, and the
Summer Triangle of stars and a number of other stars,

2003

but the generally cloudy conditions persisted, and I did not even ~~try~~ try to observe with binoculars or with the telescope or to photograph Mars.

Th. Sept. 4 15:15-15:20 UT t. C-8, 32
sun 4g 17s RSN 57 T.O.F.

F.-S. Sept. 5-6 14:00-14:05 UT 00 S8PT ~~C-8, 32~~ ne

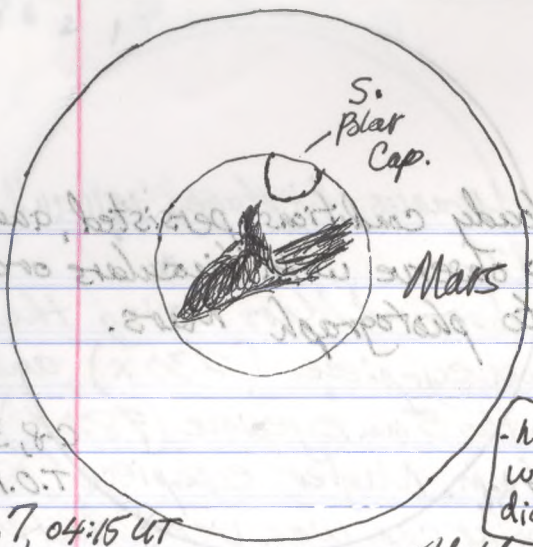
~~sun 4g 17s RSN 57~~ With clearing skies I ~~T.O.F.~~ decided to observe and possibly photograph Mars. The sky was quite clear, but the gibbous moon, being quite bright in the SSW sky made observing some objects difficult in the southern part of the sky. While waiting for the planet Mars to reach a point near its culmination, I came into the house briefly and while I was in the washroom the power went out. I was able to find a flashlight. I continued to observe for some time. The power had gone off at 04:18 UT (12:18 a.m.). With no power for the clock drive of the C-14, I decided not to use it to observe or photograph Mars. A fairly noticeable Auroral glow could be seen in the N, up probably 30° or more. The power remained off until 14:14 UT (10:14 a.m.), that is, for 9 hours 56 minutes — almost 10 hours!

- power outage for almost 10 hours

Auroral glow.

Sa. Sept. 6 14:00-14:05 UT t. C-8, 32
sun 5g 13s RSN 63 T.O.F.

Sa.-Su. Sept. 6-7 01:30-04:30 UT 00 S8PT 6 (g.m.l.) ne; C-14, 15.5, 19
ne: I observed the bright stars and the gibbous moon and Mars. John Vandesande came over and observed with me. I also saw one meteor



S. Polar Cap.

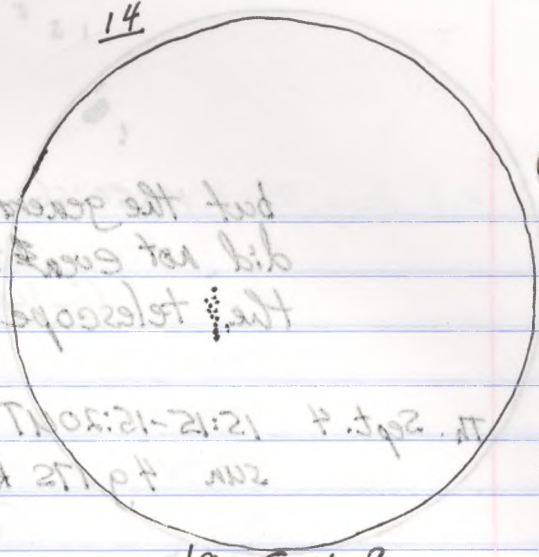
Mars

-not with diagonal

Sept. 7, 04:15 UT

C-14 View of Mars with the 19mm ocular at 205.8X

14

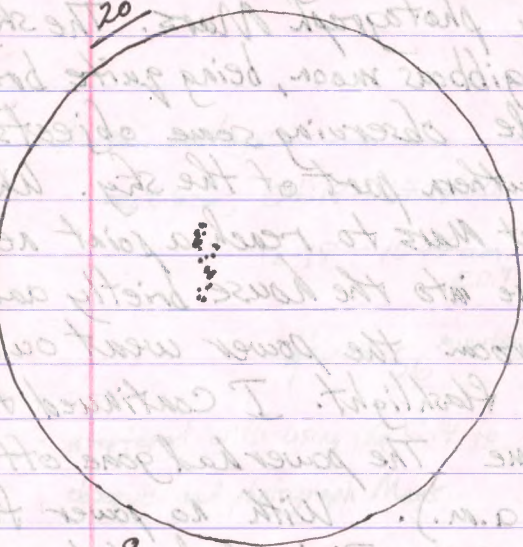


12:12-12:30 UT

19 Sept. 9
14:35-14:40 UT
RSN24

SC

20

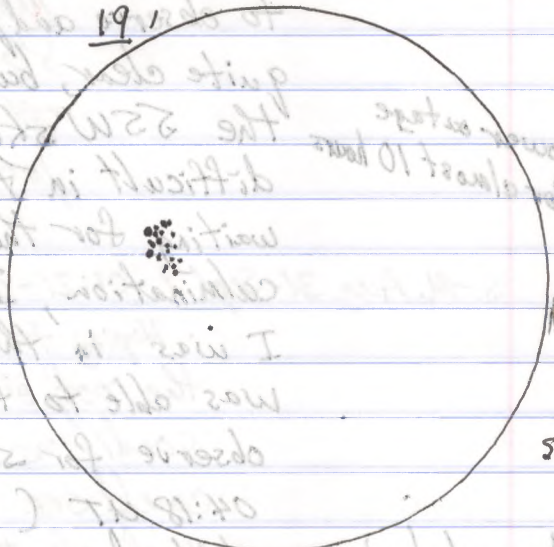


9
RSN

Sept. 10
14:30-14:35 UT

SC

19

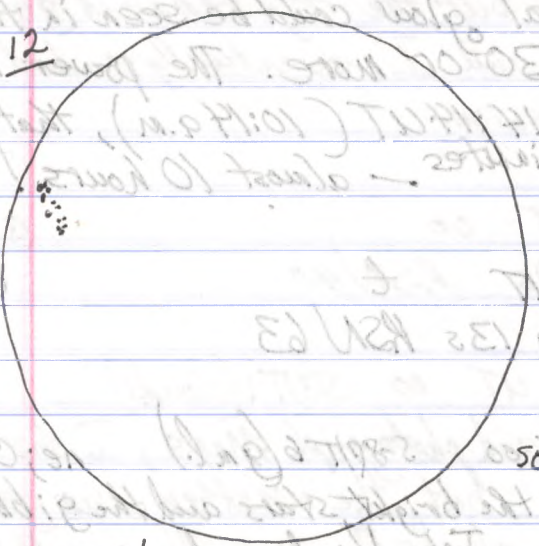


29
205
RSN40

Sept. 11
15:55-16:00 UT

SC

12

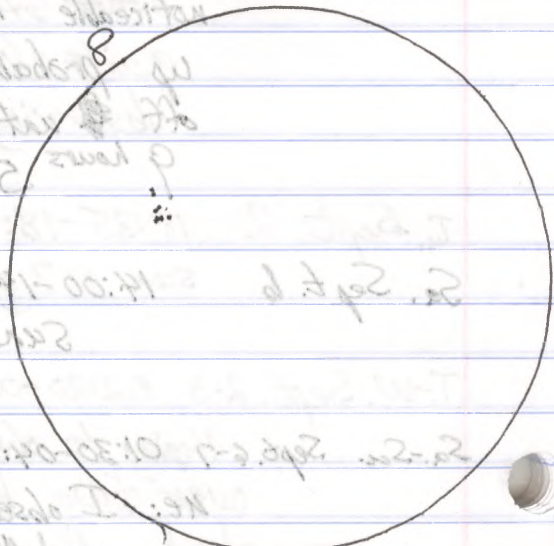


19
125
RSN22

Sept. 13
16:25-16:30 UT

SC

8



19
85
RSN18

Sept. 16
14:00-14:05 UT

SC

2008

of about mag. 3 near Polaris
C-14, 15.5 and 19mm: Mars and lunar craters.
(See drawing of Mars).

ph. photographed lunar craters and Mars using
eyepiece projection photography.

Tu. Sept. 9 14:35-14:40 UT t C-8, 32
sun 1g 14s RSN24 T.O.F.

W. Sept. 10 14:30-14:35 UT t C-8, 32
sun 1g 20s RSN30 T.O.F.

Th. Sept. 11 15:55-16:00 UT t C-8, 32
sun 2g 20s RSN40 T.O.F.

Sa. Sept. 13 16:25-16:30 UT t C-8, 32
sun 1g 12s RSN22 T.O.F.

Tu. Sept. 16 14:00-14:05 UT t C-8, 32
sun 1g 8s RSN18 T.O.F.

T.-W. Sept. 16-17 02:00-04:20 UT 00 S8CJT 6-9 (L.O. moon rose) ne; 18x50kb

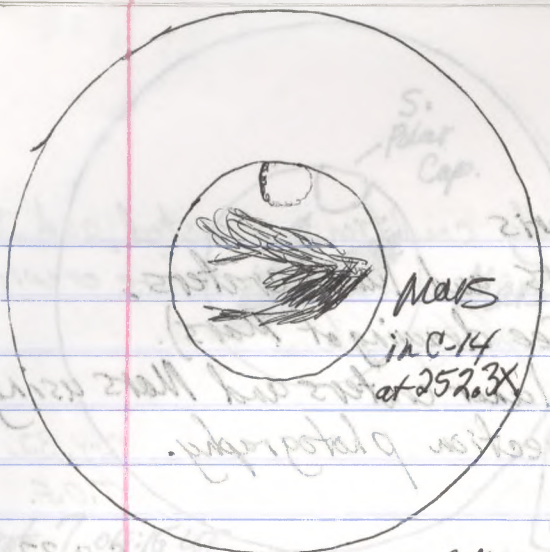
ne: stars of autumn with the Mars still very bright in the
SE and gibbous moon, less than 2 days before
Last Quarter, rising in the E; steady glow

Auroral
glow

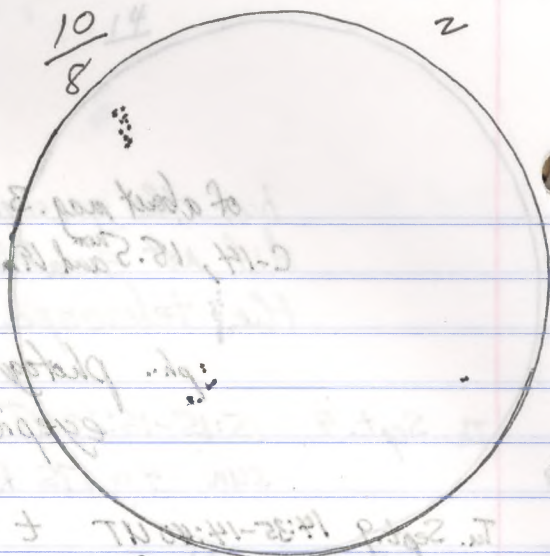
of a fairly bright Aurora throughout the session
from NW to N with the strongest arc in the
N. up about 20°, and at times, faint hints
of some Auroral bands or spikes extending up
to the area of Polaris.

18x50kb: areas of Uranus and Neptune

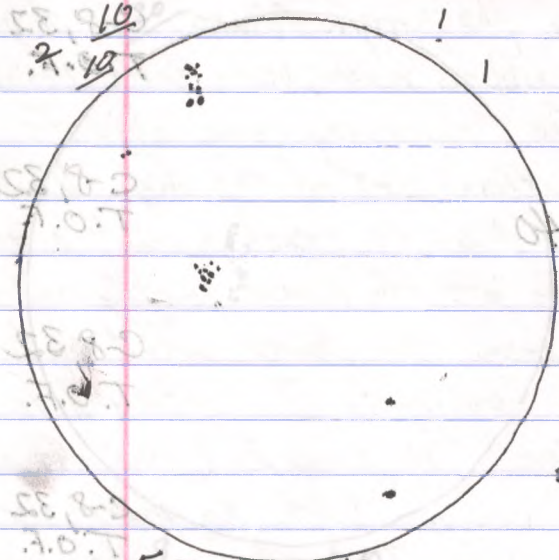
C-14: Mars with the polar cap and one or several
features visible. The features seemed



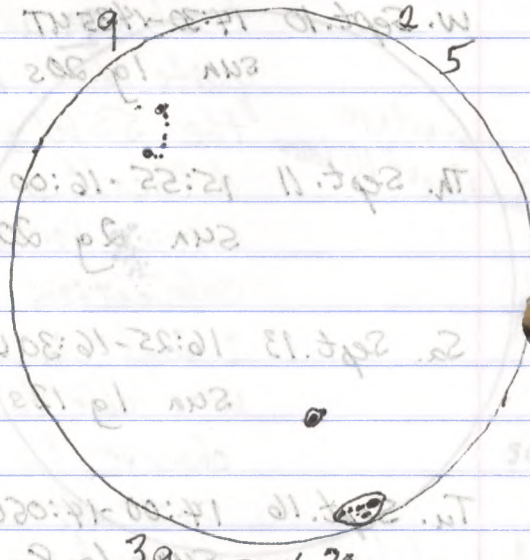
Sept. 16-17 03:00 UT View of Mars in the C-14 using 15.5 mm ocular for 252.3X



Sept. 17 14:55-15:00 UT
3g
20 S
RSN 50



Sept. 18 14:25-14:30 UT
5g
24 S
RSN 74



Sept. 20 14:05-14:10 UT
3g
16 S
RSN 46

T.W. Sept. 16-17 03:00-04:00 UT
 no: start of contact with the Mars still very bright in the
 SE and dipole moon, laster sharp before
 last contact, rising in the E; steady glow
 from NW to W with the strongest in the
 of some Auroral bands or spikes extending up
 to the horizon of polaris.
 18:00:00: cross of Uranus and Neptune
 C-14: Mars with the polar cap and one or several
 features visible. The features seemed

2003

to be as clear^{as} or clearer than they had been in a fair white (See diagram.)

ph: photographed area of Mars in Aquarius with the 85mm and the 50mm lenses, and with the C-14 using the 15.5mm ocular for "eyepiece projection."

W. Sept. 17 14:55-15:00 UT t C8, 32
Sun 3g 20s RSN 50 T.O.F.

W.-Th. Sept. 17-18 02:45-04:25 UT nd and y s 8PT 68 (gml.) ne; 18x50 15b
Auroral glow ne: stars of autumn; Mars very bright in SE; some Auroral glow in N. though earlier I had seen a vertical band in the NNW; gibbous moon rising in the E.

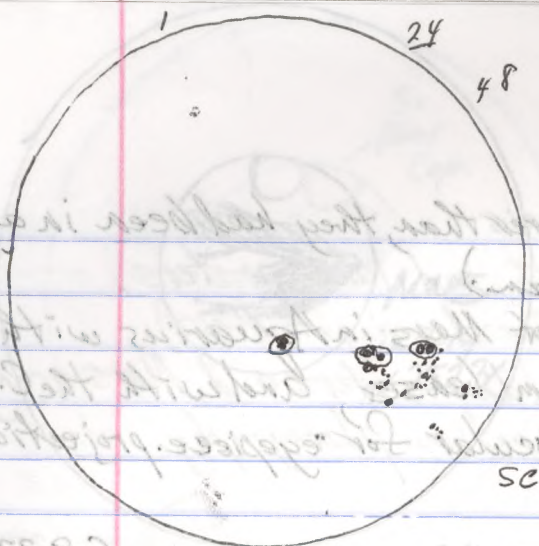
18x50 15b: areas of Uranus and Neptune, M31, M15.

ph: photographed area of Mars in Aquarius; photographed the area of the Auroral glow.

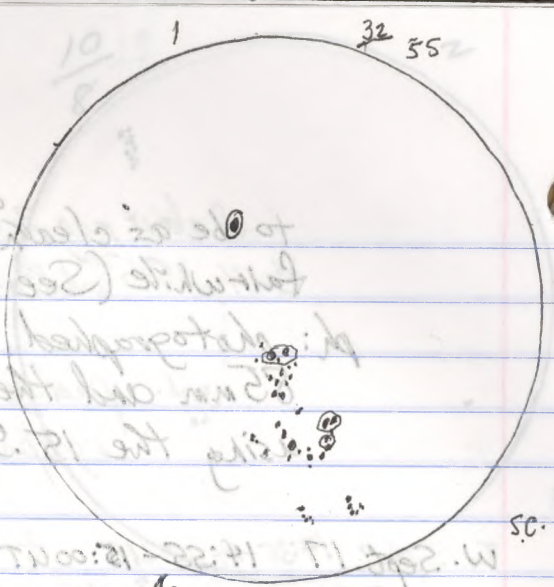
Th. Sept. 18 14:25-14:30 UT t C8, 32
Sun 5g 27s RSN 74 T.O.F.

Sa. Sept. 20 14:05-14:10 UT t C8, 32
Sun 3g 16s RSN 46 T.O.F.

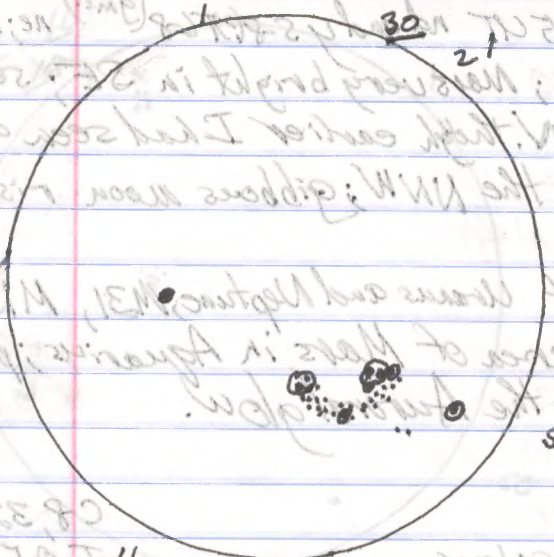
Sa.-Su. Sept. 20-21 03:00-03:10 UT 00 S-T0 (clouds) ne
- Having opened the roof of the observatory a couple of hours before, I went out to observe hoping that the skies would be clear. (It had been a day with clear skies, though there was some cloud, and in all, a beautiful day for the football game I had attended in Kingston.) However, it was very cloudy with only a few hints of stars and the planet Venus to be seen among the thick clouds. After I closed the roof, an area



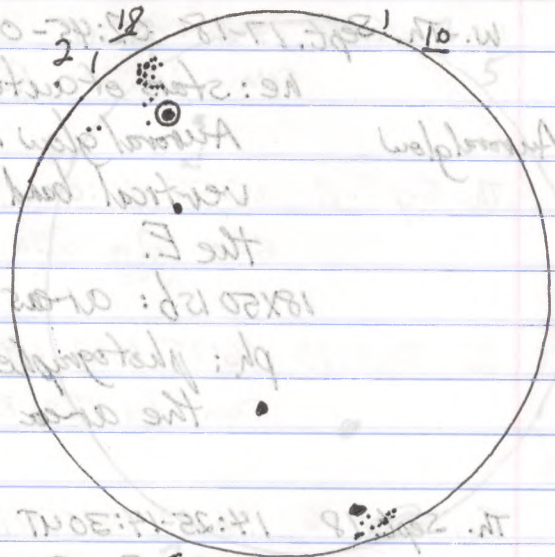
49 Sept. 23
375 18:55-19:00 UT
RSN77



49 Sept. 24
135 14:30-14:35 UT
RSN83



49 Sept. 25
375 16:50-16:55 UT
RSN74



59 Sept. 30
225 15:35-15:40 UT
RSN82

At the Huronia Star Party:
 1) F.S. Sept. 26-27 02:00-03:00 UT
 at basketball court / intermittent cloud.
 some autumn stars, Mars through
 a telescope (? Takahashi reflector. 7.1")
 2) S.S. Sept. 28-29 02:00-03:00 UT
 at basketball court / intermittent cloud.
 autumn ~~stars~~ stars amid the
 clouds. Mars in the Takahashi
 telescope (7.1" reflector)

2003

of clear skies opened up in the lower part of the western sky.

Tu. Sept. 23: 18:55-19:00 UT t

Sun 4937S RSN 77

C-8, 32
T.O.F.

T.-W. Sept. 23-24 03:10-04:35 UT ndandy S-8(?)T9 (until clouded over) ne

observed the stars of late summer and autumn, saw one meteor high in the sky, observed a fairly strong Auroral glow in the N. up about 15°, with a vertical band in the NW for a period of time; observed Mars in the S still retrograding and moving farther to the right from δ Aquarii and closer to γ Capricorni
Auroral glow ph: photographed the Auroral glow and the area of Mars in the Southern sky.

W. Sept. 24 14:30-14:35 UT t

Sun 4g 43S RSN 83

C-8, 32
T.O.F.

Th. Sept. 25 16:50-16:55 UT t

Sun 4g 34s RSN 74

C-8, 32
T.O.F.

M.-T. Sept 29-30 03:15-04:30 UT y S-8(?)T9 ne

stars of autumn, Mars very bright in the S., one meteor of about mag. 3 in the S.

ph: photographed the area of Mars, and also the area of Perseus and the Pleiades, Taurus, and Auriga.

Tu. Sept. 30 15:35-15:40 UT t

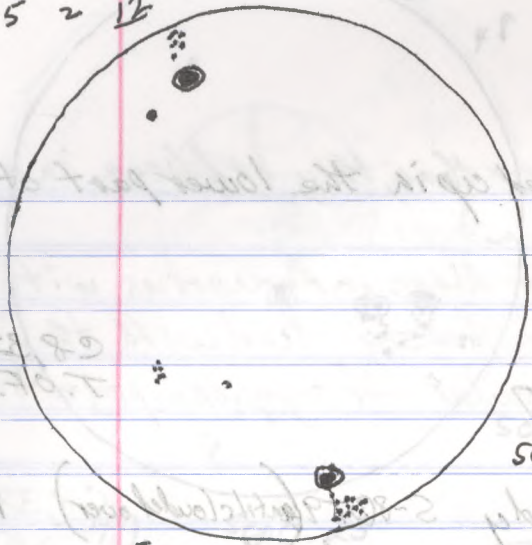
Sun 5g 32s RSN 82

C-8, 32
T.O.F.

T.-W. Sept. 30-Oct. 1 03:00-04:00 UT y S-8(?)T 5-8 (some clouds, ins. esp.) ne

stars of autumn, Mars very bright in the S, especially

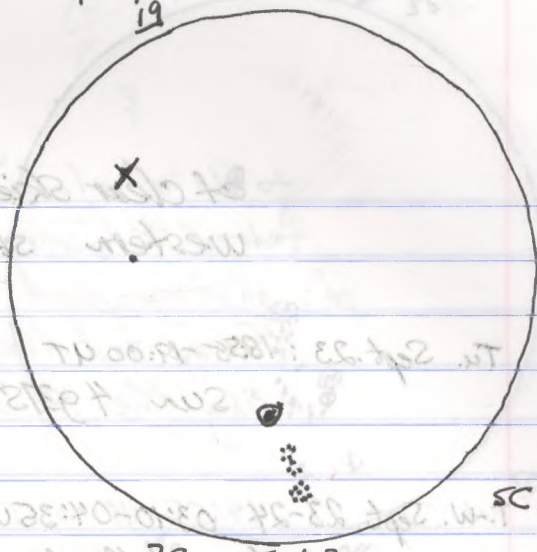
1 5 2 12



59 Oct. 1
215
RSN 77 14:20-14:25 UT

sc

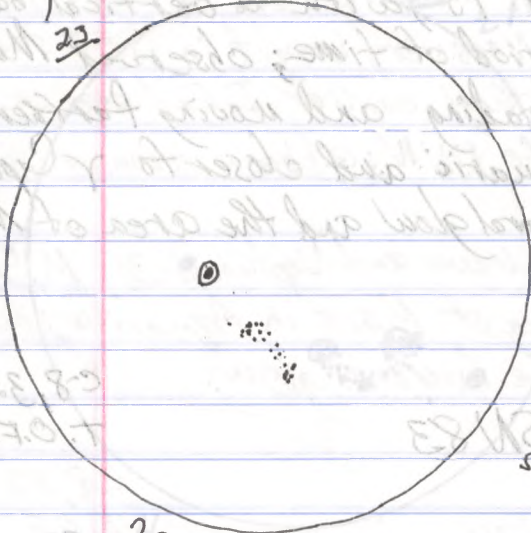
1 19



39 Oct. 3
215
RSN 51 14:45-14:50 UT

sc.

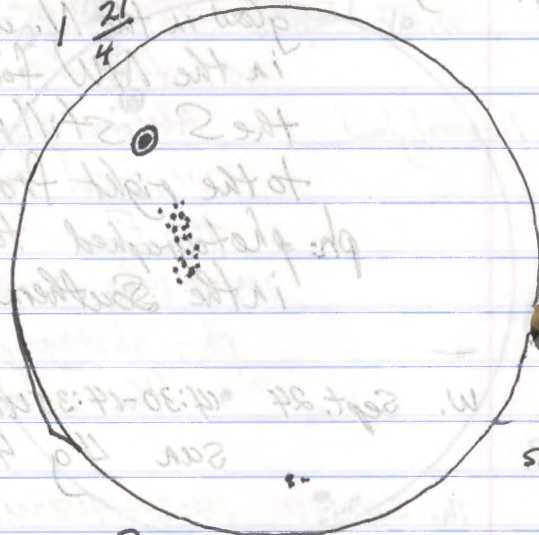
1 23



29 Oct. 6
215
RSN 44 15:15-15:20 UT

sc

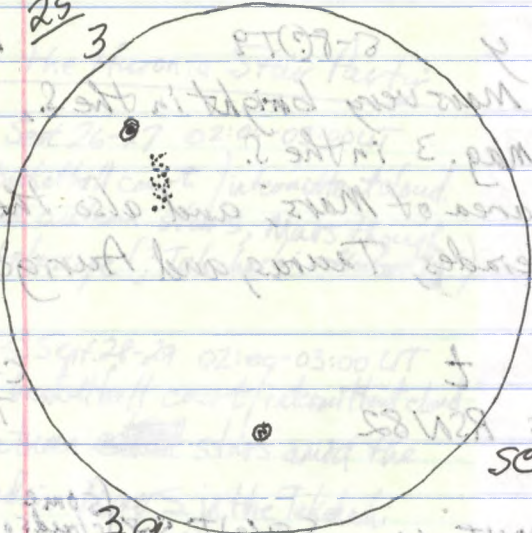
1 21
4



39 Oct. 8
265
RSN 56 15:15-15:20 UT

sc

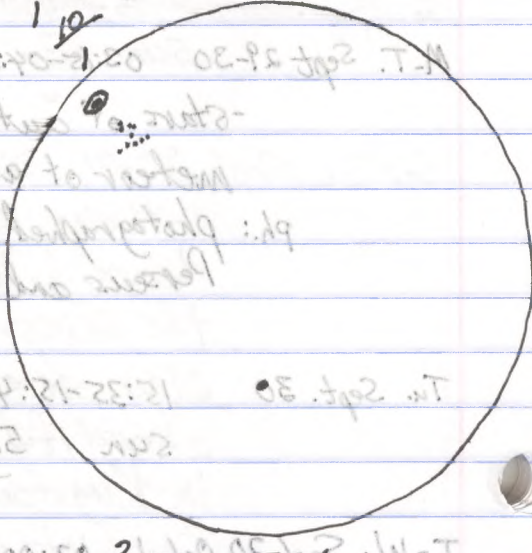
1 25
3



39 Oct. 9
215
RSN 59 17:00-17:05 UT

sc

1 10



39 Oct. 10
125
RSN 42 16:15-16:20 UT

sc

2003

in the first part of the observing session.
 ph: photographed the area of Mars which had
 been stationary the day before, and had
 begun forward (or eastward) motion again.

W. Oct. 1 14:20-14:25 UT t C-8,32
 sun 5g 27s RSN 77 T.O.F.

F. Oct. 3 14:45-14:50 UT t C-8,32
 sun 3g 21s RSN 51 T.O.F.

M. Oct. 6 15:15-15:20 UT t C-8,32
 sun 2g 24s RSN 44 T.O.F.

W. Oct. 8 15:15-15:20 UT t C-8,32
 sun 3g 26s RSN 56 T.O.F.

Th. Oct. 9 17:00-17:05 UT t C-8,32
 sun 3g 29s RSN 59 T.O.F.

F. Oct. 10 16:15-16:20 UT t C-8,32
 sun 3g 12s RSN 42 T.O.F.

Sa. Oct. 11 16:10-16:15 UT t C-8,32
 sun 3g 10s RSN 40 T.O.F.

Su. Oct. 12 16:30-16:35 UT t C-8,32
 sun 1g 2s RSN 12 T.O.F.

M.-T. Oct. 13-14 01:25-01:30 UT y and S-6-T5-6 (gml) ne
 - After the moon had risen (and it was just a
 few hours less than 4 days after Full Moon) I
 observed Mars, very bright still in the

52
3

2

In the first part of the observing session
ph: photographed the area of Mars which had
been stationary the day before and had
begin to move for eastward motion again.

39
105
RSN 40
Oct. 11
16:10-16:15 UT

19
25
RSN 12
Oct. 12
16:30-16:35 UT

46

36

29
825
RSN 102
Oct. 24
17:40-17:45 UT



CS 8
T.O.F.

C-8-35
T.O.F.

M-T Oct. 13-14 01:25-01:30 UT Mars 2.1-2.3 (mag)
After the hour had risen (and it was just a
few hours less than there after Fall Moon) I
observed Mars very bright still in the
RSN 42

2003

Southern sky and the Summer Triangle West of the Zenith.

W.-Th. Oct. 15-16 02:55-03:00 UT nd S-8(?)T7 (g.m.l) ne

With the moon in the E. part of the sky I observed the stars of autumn with Mars at about mag. -1.8 in the S. and the Summer Triangle W. of the zenith.

There was a glow in the N., up to about 20° above the horizon, a glow that was almost certainly Auroral.

probable
Auroral
glow.

F. Oct. 24 17:40-17:45 UT t

Sen 2g 82S RSN102

C-8,32

T.O.F.

Th.-F. Oct. 29-30 02:00-03:10 UT nd and y S-8(?)T6-7 (aurora) ne

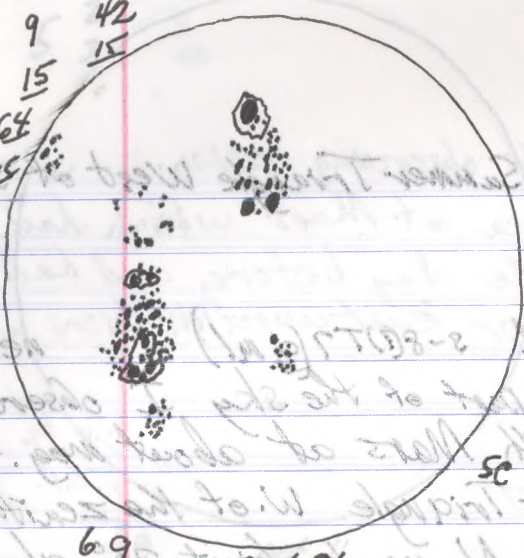
Prior to the observing session I had seen a fairly intense aurora at about 23:40 UT. It was quite red and in the East and seen about at the end of evening astronomical twilight. I again noticed the aurora as being quite intense and red in the East or Northeast while I was driving to church and later at church at about 23:50 UT.

During the observing session the aurora was less dramatic and not very active at all generally.

It was a generalized glow or brightness in most of the Northern half of the sky. At times it was seen in the southern half of the sky, appearing for a while as reddish in the Southwest in the area of Mars which was in Aquarius. Briefly, there was an increase in intensity in the form of a spike or vertical band in the NW. At times also there was some increased intensity in the East and Northeast. There was relatively little colour in the aurora

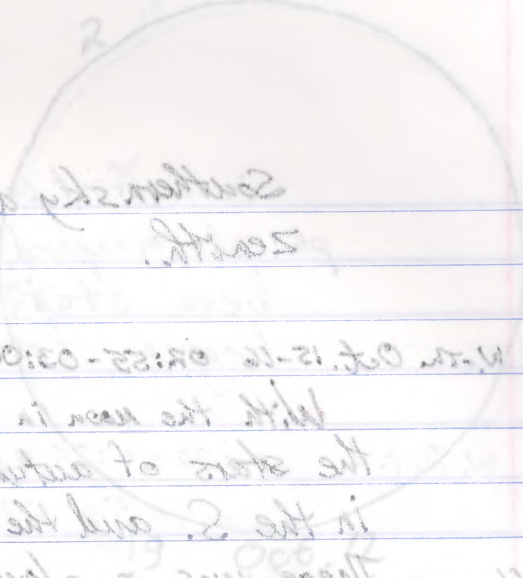
Aurora:

9 42
15 15
64 15



69
160s
RSN 220
Oct. 31
16:20-16:25UT

2



Answer
Answer
Answer

C-832
T.O.F.

Oct 31 17:00-17:45UT
San Diego RSN 102

U.F. Oct. 28-30 02:00-03:10 UT about 2-8(T) (Answer) 115

Prior to the observing session I had seen a fairly intense aurora of about 23:40UT. It was quite bright and seen about at the end of evening astronomical twilight. I again noticed the aurora as being quite intense and red in the east or west while I was driving to church and later at church at about 03:20 UT.

During the observing session the aurora was less dramatic and not very active at all generally. It was a generalized glow or brightness in most of the northern half of the sky. At times it was seen in the southern half of the sky, appearing for a while as a red in the southwest in the orange-red area which was in Aquarius. Briefly there was an increase in intensity in the form of a spike or vertical bar in the NW. At times also there was some increased intensity in the East and Northwest. There was relatively little color in the aurora.

Answer

2009

F. Nov. 7

during most of the session.
 There had been several ^{soft} flares and coronal mass ejections of solar particles over the last 3 days and there had been displays of aurora over the past two nights, but because of cloudy weather I had seen little of them, though on one occasion the previous night I had noticed that the sky appeared bright where the aurora could be noticed in spite of the fairly general cloudiness of the sky.

06:35-06:40 UT in NE

Active Aurora

I looked out through the bathroom window and was pleasantly surprised to see that the clouds seemed to have disappeared in the N. and the aurora had become active with a considerable amount of: flaming apparently throughout the N. half of the sky. The pulsating flames were fairly rapid and went from low to high in the N. and NW and NE. There was still not much colour evident.

06:50-07:35 UT. nd only NE

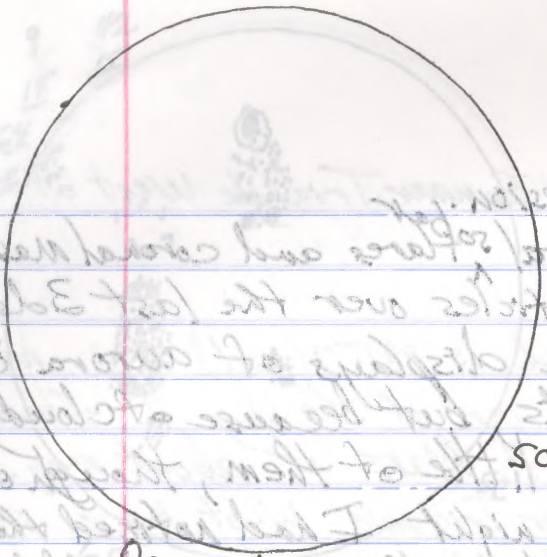
observed and photographed the aurora in the northern part of the sky. The display became less active, it seemed, after I began trying to photograph it. It also faded somewhat and seemed to be confined to smaller area lower in the N. part of the sky. I decided that the display had probably run its course.

ph.: photographed the aurora using the 28mm f/2 lens.

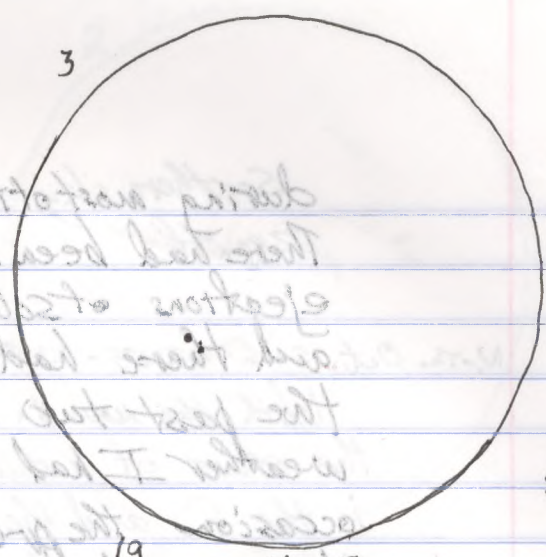
F. Oct. 31 16:20-16:25 UT t

sun by 1609 RSN220

C8, 32.
T.O.F.



09
05
RSNO Nov. 7
15:50-15:55 UT



19
35
RSN13 Nov. 8
15:10-15:15 UT

Predicted times for Total/Lunar Eclipse
of Nov. 8-9, 2003 EST

- P1 22:15 UT 5:15 pm
- First Noticed darkness? 22:56 UT 5:56 pm
- U1 23:32 UT 6:32 pm
- U2 1:06 UT 8:06 pm
- Mid-eclipse 1:19 UT 8:19 p.m.
- U3 1:31 UT 8:31 pm.
- U4 3:04 UT 10:04 pm.
- Last Noticed darkness? 10:45 pm.
- P4 4:22 UT 11:22 p.m.

about Nov. 9 01:20 UT

Dark Reddish Brown

Lighter brick reddish color

Reddish-orange tending to a slightly yellow hue

Fairly bright yellowish colour

Danzon Number: 2.6 to 3.5

Appearance of Lunar Disk at Mid-Eclipse
of Total Lunar Eclipse Nov 8-9, 2003.

08:32
T.O.F.

RSN132
16:50:45 UT
15:00

2003

F. Nov. 7 15:50 - 15:55 UT t
Sun Og Os RSN0

C-8, 32
T.O.F.

S. Nov. 8 15:10 - 15:15 UT t
Sun lg 3s RSN13

C8, 32
T.O.F.

4:46 - 5:15 p.m. E.S.T.

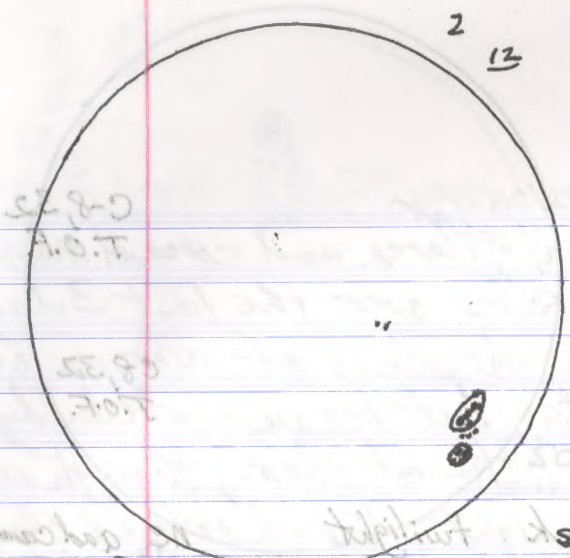
S-S. Nov. 8-9 20:16 - 21:15 UT Sh and dock twilight ne and camera

observed and photographed the earth's shadow rising in the NE and ENE and the Full Moon rising also in the ENE. The Moonrise time was given as 20:41 (4:41 p.m. E.S.T.) and the sunset time was given as 20:47 (4:47 p.m. E.S.T.). I photographed the earth's shadow approximately every minute until 21:03 (5:03 p.m.) The moon appeared among the trees at about 20:52 (4:52 p.m.)

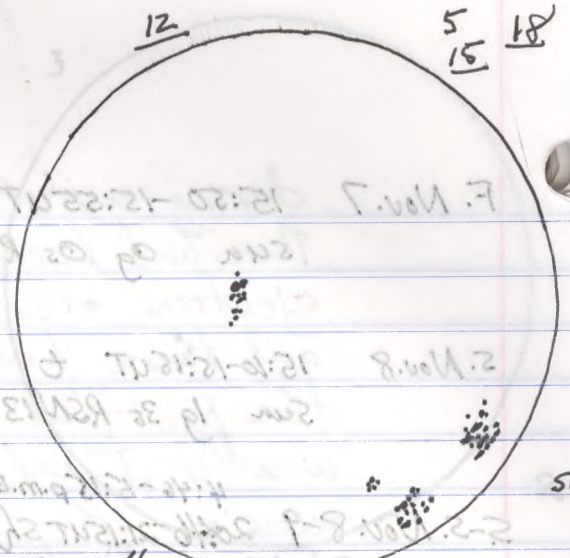
21:45 - 22:25 UT with some breaks y and oo Excellent Conditions ne; 18x50sb

ne: - Extremely subtle changes in brightness occurred on the "left side" of the moon in the 10 minutes after 21:50 UT (i.e., after 5:50 p.m., and from then until until 22:00 UT (or 6:00 p.m.) when there seemed to be "less glare" there than was evident on the "right side" of the moon. The darkening was very pronounced before and after UT when the edge of the earth's umbra was very defined. The sky was very clear and transparent. It

*Reddish and bright eclipse with superb weather conditions became clear that it was going to be a fairly reddish and bright eclipse. During the 24 1/2 minutes of totality (01:06:16 UT to 01:30:48 UT) there was a wide range of brightness and of colours from top to bottom on the lunar disk with colours listed on the diagram to the left. The Danjon range was about 2.6 to 3.5 top to bottom. The south pole area, being very close



29
145
RSN 34
Nov. 15
15:35-15:40 UT



49
50
RSN 90
Nov. 20
15:30-15:35 UT

The Moon's time was placed at 20:44 (4:14 p.m. E.S.T.) and the sunset time was placed at 20:47 (4:17 p.m. E.S.T.). I photographed the corona about every minute with 21:03 (5:03 p.m.) as the main exposure. The trees at sunset were very dark. The corona was very dark. The sky was very clear and transparent. It became clear that it was going to be a fairly bright eclipse and bright corona. During the 2 1/2 minutes of totality (01:02:16 UT to 01:30:48 UT) there was a wide range of brightness and of colors from top to bottom on the lunar disk with colors listed in the diagram to the left. The duration was about 2.6 to 3.2 top to bottom. The south pole area, being very close to the left side of the moon in the 10 minutes after 21:20 UT (4:20 after 5:20 p.m. and 4:20 until 4:20) there was a "bar" there that was colored orange.

The Moon's time was placed at 20:44 (4:14 p.m. E.S.T.) and the sunset time was placed at 20:47 (4:17 p.m. E.S.T.). I photographed the corona about every minute with 21:03 (5:03 p.m.) as the main exposure. The trees at sunset were very dark. The corona was very dark. The sky was very clear and transparent. It became clear that it was going to be a fairly bright eclipse and bright corona. During the 2 1/2 minutes of totality (01:02:16 UT to 01:30:48 UT) there was a wide range of brightness and of colors from top to bottom on the lunar disk with colors listed in the diagram to the left. The duration was about 2.6 to 3.2 top to bottom. The south pole area, being very close to the left side of the moon in the 10 minutes after 21:20 UT (4:20 after 5:20 p.m. and 4:20 until 4:20) there was a "bar" there that was colored orange.

"Right side" of the moon. The darkening was very prominent before and after UT when the edge of the corona's umbra was very defined. The sky was very clear and transparent. It became clear that it was going to be a fairly bright eclipse and bright corona. During the 2 1/2 minutes of totality (01:02:16 UT to 01:30:48 UT) there was a wide range of brightness and of colors from top to bottom on the lunar disk with colors listed in the diagram to the left. The duration was about 2.6 to 3.2 top to bottom. The south pole area, being very close to the left side of the moon in the 10 minutes after 21:20 UT (4:20 after 5:20 p.m. and 4:20 until 4:20) there was a "bar" there that was colored orange.

"Right side" of the moon. The darkening was very prominent before and after UT when the edge of the corona's umbra was very defined. The sky was very clear and transparent. It became clear that it was going to be a fairly bright eclipse and bright corona. During the 2 1/2 minutes of totality (01:02:16 UT to 01:30:48 UT) there was a wide range of brightness and of colors from top to bottom on the lunar disk with colors listed in the diagram to the left. The duration was about 2.6 to 3.2 top to bottom. The south pole area, being very close to the left side of the moon in the 10 minutes after 21:20 UT (4:20 after 5:20 p.m. and 4:20 until 4:20) there was a "bar" there that was colored orange.

2003

to the southern edge of the umbra, was quite bright and very light - a bright yellow ranging almost to white.

18X50 ISb: the moon at various stages of the eclipse; Pleiades; Hyades.

ph: a few photographs of the moon during initial partial phase and totality using the C-8, and with a second camera, the Canon AT-1, some photographs of the area of the sky using a 50mm lens - taken near the end of totality and after the end of totality.

Sa. Nov. 15 15:35-15:40 UT t C-8, 32
sun 2g 1 1/2 S RSN 34 T.O.F.

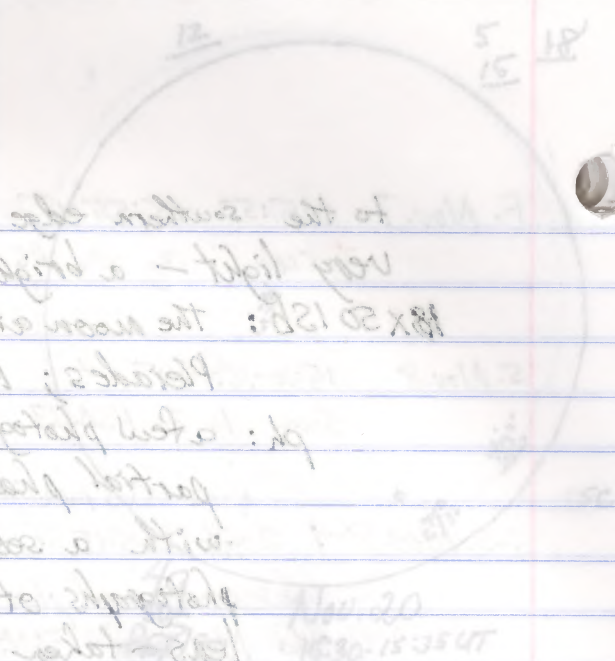
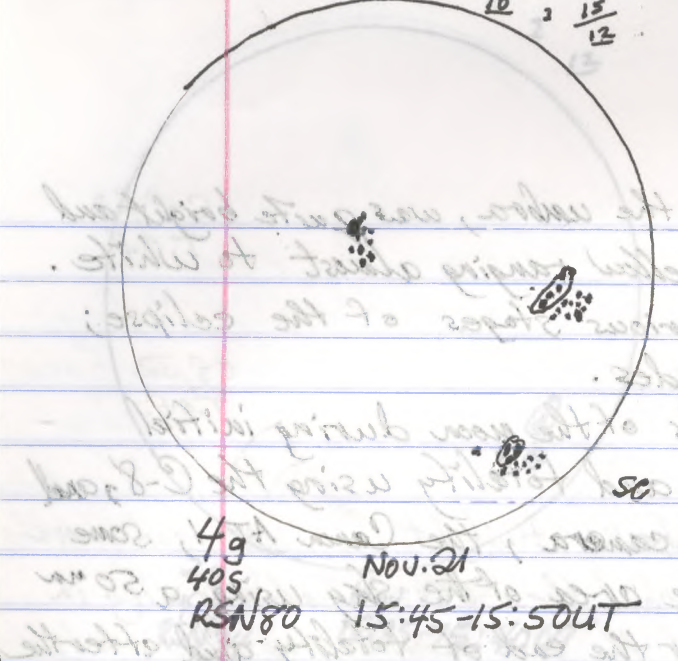
M.-T. Nov. 17-18 03:30-04:35 UT y S-78 T6-7 (haze) ne; 18X50 ISb
ne: stars of autumn; Mars in W; Saturn in Gemini;
3 meteors: a very fast one in the Gem.-Ori. border area about mag. ^{3.5} 2; a slow one in the Lep.-Eri. border area about mag. 4; a fast one in the Aur.-Per. border area about mag. 1.

18X50 ISb: M35, M36, M37, M38, M42, M43, M31, M33, Saturn, area of R Lep., Saturn

W.-Th. Nov. 19-20 5:25-5:35 a.m. EST. in S-8? T8-9(?) ne
10:25-10:35 UT

Aurora!

Looking out the bathroom window for about a 10- to 12 minute period (with a break of a minute or two), I saw a very good Aurora in the N. and NW. It was very large and quite active. By times there were large sheets that were a bright red in colour. The vertical bands and spikes went up 50 or 60 degrees or more. There were half-second pulsations and displays of flaring. The vertical bands moved from left to right. It was and intense display.



2. Nov 12 12:32-12:40 UT
 2nd RSN 34
 T.O.F. C8.35
 M.T. Nov 15-16 03:30-04:30 UT
 3 meters: a very fast one in the Gem. Ori. border area
 about mag. 3; a slow one in the Lep. Ori. border area
 about mag. 4; a fast one in the Aur. border area
 about mag. 1.
 19:20:20: M32, M37, M38, M42, M43, M31, M33
 20th, area of R. Lep., 20th

2. Nov 12 12:32-12:40 UT
 2nd RSN 34
 T.O.F. C8.35
 M.T. Nov 15-16 03:30-04:30 UT
 3 meters: a very fast one in the Gem. Ori. border area
 about mag. 3; a slow one in the Lep. Ori. border area
 about mag. 4; a fast one in the Aur. border area
 about mag. 1.
 19:20:20: M32, M37, M38, M42, M43, M31, M33
 20th, area of R. Lep., 20th

W-TA Nov 19-20 10:22-10:32 UT
 2:2 - 2:30 UT
 28789 (1)
 NS
 looking out the bottom window for about a 10-15 minute
 period (with a break of a minute or two). I saw a
 very good shower in the N. and NW. I saw very large
 and quite active. By times there were large streaks that
 were a bright red in colour. The vertical bands and
 spikes went up 20 or 30 degrees or more. There were
 half-second pulsations and displays of flaring. The vertical
 bands moved from left to right. It was a very intense display.

W-TA Nov 19-20 10:22-10:32 UT
 2:2 - 2:30 UT
 28789 (1)
 NS
 looking out the bottom window for about a 10-15 minute
 period (with a break of a minute or two). I saw a
 very good shower in the N. and NW. I saw very large
 and quite active. By times there were large streaks that
 were a bright red in colour. The vertical bands and
 spikes went up 20 or 30 degrees or more. There were
 half-second pulsations and displays of flaring. The vertical
 bands moved from left to right. It was a very intense display.

2003

Th. Nov. 20 15:30 - 15:35 UT t

C-8, 32

Sun 4g 50g RSN90 (Diagram on previous 2 pages.)

T.O.F.

7:30pm - 1:55am EST

Th.-F. Nov. 20-21 00:30 - 06:55 UT y and 00 S3 (few!) T7-9 ne; C-14, 32, 19, 9, 55Aurora!

ne: After noticing Auroral activity in the N about 23:00UT and phoning a few people about it, I started observing for a regular session at about 00:30UT. The Aurora seemed less colourful (less red) than the earlier indications seemed to suggest. Also, it generally appeared less active than the Aurora seen that morning (a little more than 12 hours earlier, but it was very widespread throughout the northern hemisphere of the sky - with large vertical bands and many, many spikes which frequently moved from left to right. At about 01:30UT, ^{8:30pm EST} Ken Kingdon arrived and we observed together both in the observatory with the C-14 and outside where we generally faced north to observe the Aurora. The Auroral intensity varied a great deal. By times one, two, or three arcs in the north could be seen. By times there was an intensity about the edges of the Auroral activity in the E. and in the W. The predominant colours were yellow, green, and white in the intense glow from the arcs and the vertical bands and spikes. By times the "almost black" colour of the background sky between the vertical bands was dramatic. Overall, it was a dramatic and remarkable display, if not as colourful as some other displays. We also saw a small number of meteors.

C-14, 32, 19, 9, 55: With a variety of eyepieces we observed a number of objects: M35, M36, M37, M38, M42 and M43, the area of the Horsehead Nebula, NGC 2244 and the Rosette Nebula, Mars, Saturn, area of α Orionis, the

2003

Pleiades. Dewing was a considerable problem throughout the session, because of the very high water vapour content in the air.

F. Nov. 21. 15:45 - 15:50 UT ϵ
Sun 4g 40s RSN 80 (Diagram on previous 2 pages) C-8, 32
T.O.F.

F-S. Nov. 21-22 00:00 - 00:40 UT 00 51878 ES. 111 ne; 20x100b

ne stars of autumn, Mars, Saturn,

Dobsonian
12" ball-type

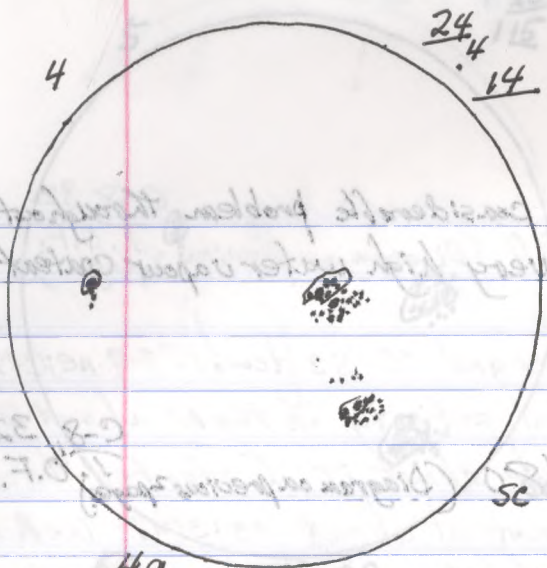
20x100b: M15, areas in Aquarius.

7:45pm - 3:30am EST
00:45 - 08:30 UT γ S5-TT4-8 (later haze + cloud) water vapour, Ken Kingdon's

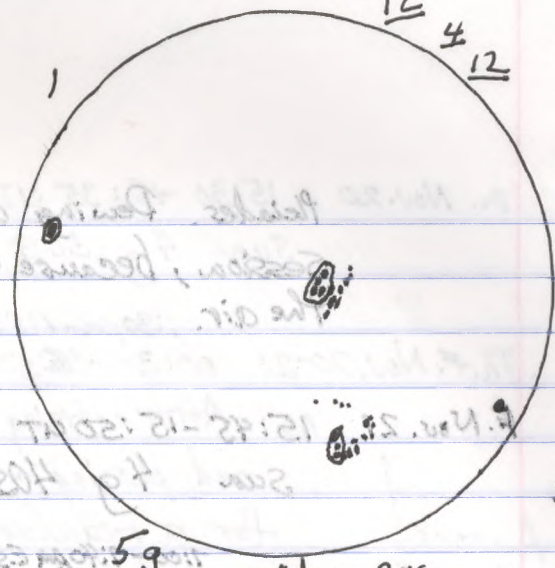
12": Ken Kingdon and I had a good and long observing session for about 7 1/2 hours - from about 00:45 UT (7:45pm E.S.T.) until about 08:30 UT (3:30 a.m. E.S.T.). Under quite clear skies, that were nonetheless skies with less than ideal seeing and transparency, especially at certain times we enjoyed seeing many objects - using his 12" "ball-type" Dobsonian telescope.

We used several eyepieces including the 27mm TeleVue Paraflex which gave sensational low power views. Some of the objects viewed were M38, M35 and nearby NGC cluster, M42, M43, NGC 2244 and the Rosette Nebula, Saturn, Jupiter, R Leonis, the Eskimo Nebula, The Blinking Nebula, M46, M47, a planetary nebula called "Thor's Helmet", M41, M51, M65, M66, and nearby NGC galaxy, M81, M82, Hickson's group of galaxies, γ Arietis, the galaxies NGC 247 and NGC 253, NGC 7789. It was a very good observing session. We also saw several meteors, and I thought I saw the gegenschein in Taurus and Gemini as well as a bit of Aurora.

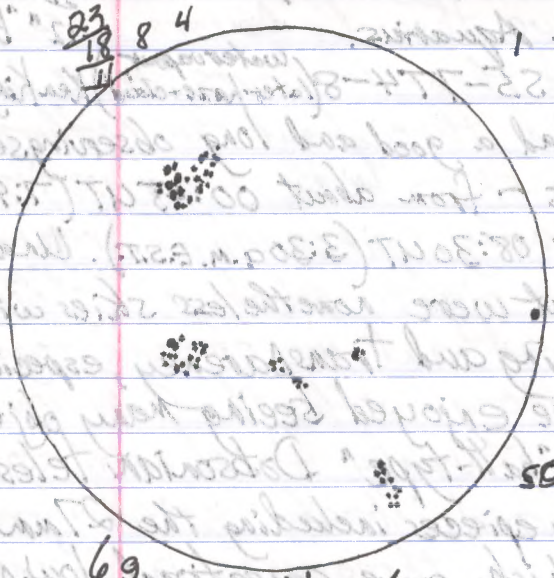
Sa. Nov. 22 16:40 - 16:45 UT ϵ
Sun 5g 42s RSN 92 C-8, 32
T.O.F.



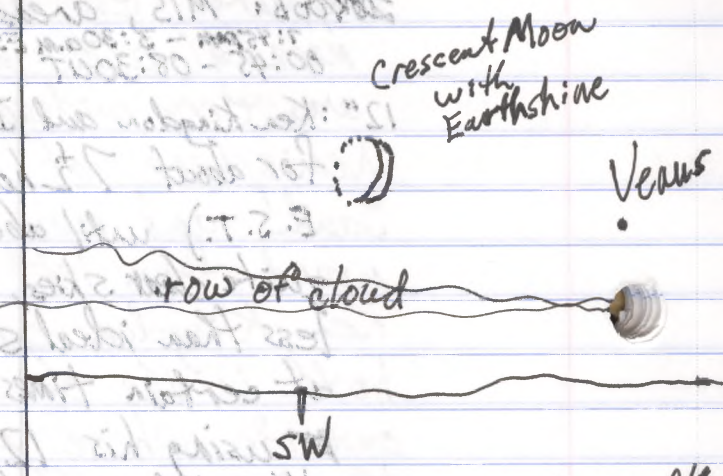
4g
463
RSN 86
Nov. 23
15:55-16:00UT



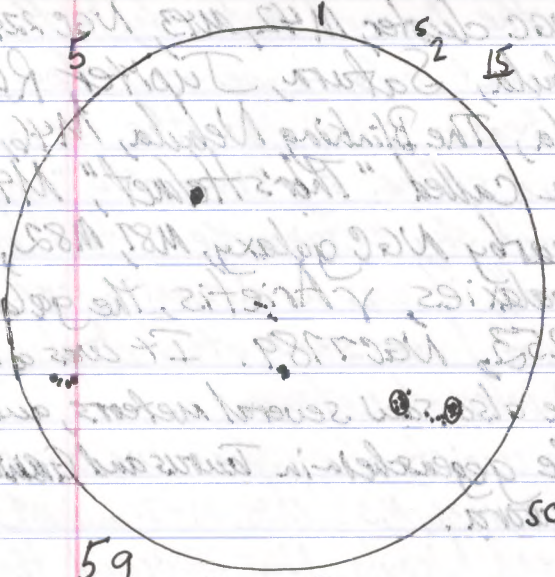
5g
305
RSN 80
Nov. 24
16:00-16:05UT



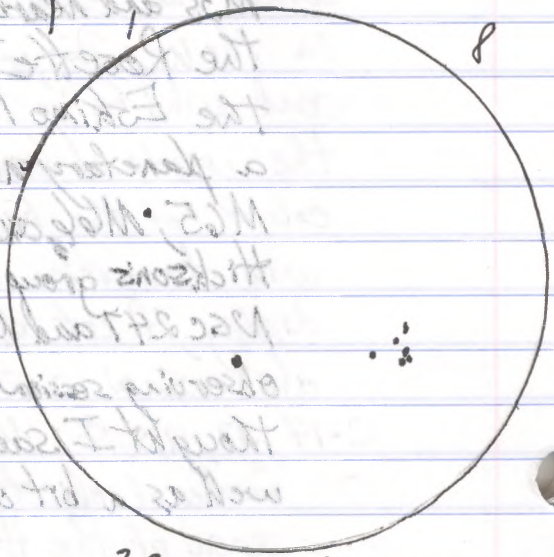
6g
655
RSN 125
Nov. 26
17:35-17:40UT



Nov. 26-27 22:05UT Moon and Venus
View from dock to SW.



5g
335
RSN 83
Dec. 3
16:20-16:25UT



3g
105
RSN 40
Dec. 4
18:55-19:00UT

2003

Su. Nov. 23 15:55-16:00 UT t

Sun 4g 46s RSN86

C-8, 32

T.O.F.

M. Nov. 24 16:00-16:05 UT t

Sun 5g 30s RSN80

C-8, 32

T.O.F.

W. Nov. 26 17:35-17:40 UT t

Sun 6g 65s RSN125

C-8, 32

T.O.F.

W-Th. Nov. 26-27 5:05-5:10p.m.E.S.T 22:05-22:10 UT dock twl ne

Toward the SW, I saw a beautiful crescent moon, which was about 3 days old, and Venus about 15° to its right and down slightly. The moon, in fact, was about 50 minutes less than 3 days old since New Moon had been at 22^h59^m on Nov. 23. (See diagram.)

W. Dec. 3 16:20-16:25 UT t

Sun 5g 33s RSN83

C-8, 32

T.O.F.

Th. Dec. 4 18:55-19:00 UT t

Sun 3g 10s RSN40

(-poor seeing)

C-8, 32

T.O.F.

F. Dec. 5 15:50-15:55 UT t

Sun 3g 15s RSN45

C-8, 32

T.O.F.

Su. Dec. 7 17:35-17:40 UT t

Sun 3g 10s RSN40

C-8, 32

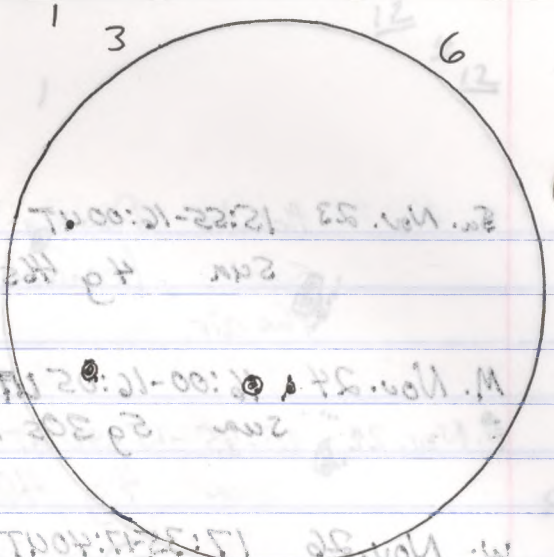
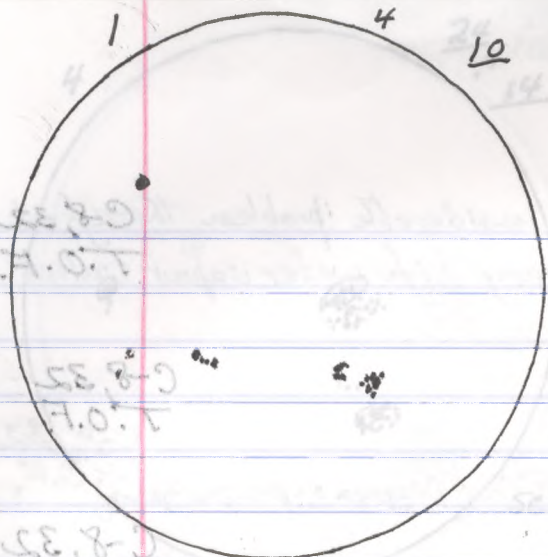
T.O.F.

M. Dec. 8 18:45-18:50 UT t

Sun 2g 2s RSN22

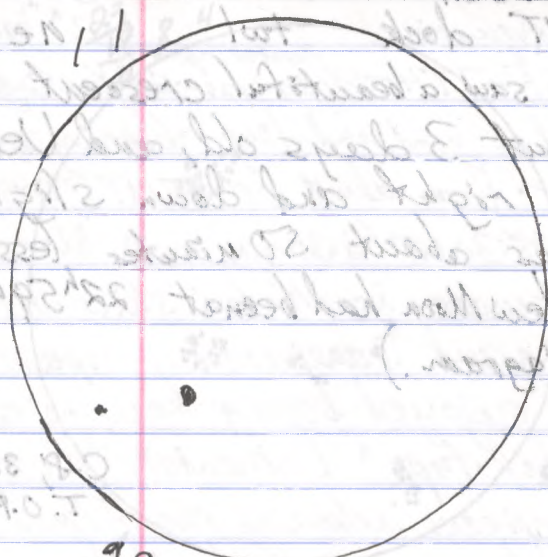
C-8, 32

T.O.F.

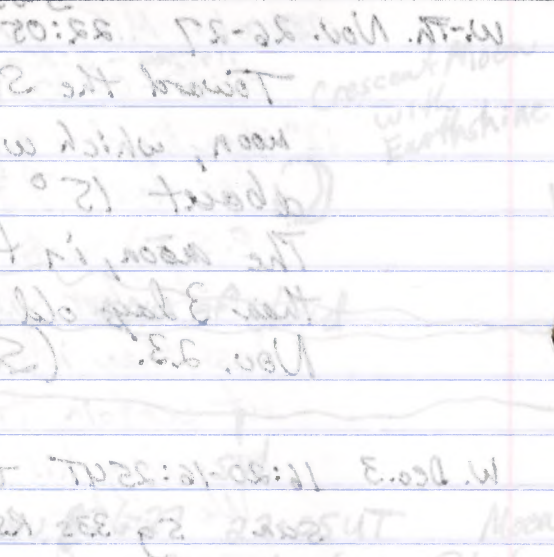


39 Dec. 5
155 19:50-15:55 UT
RSN45

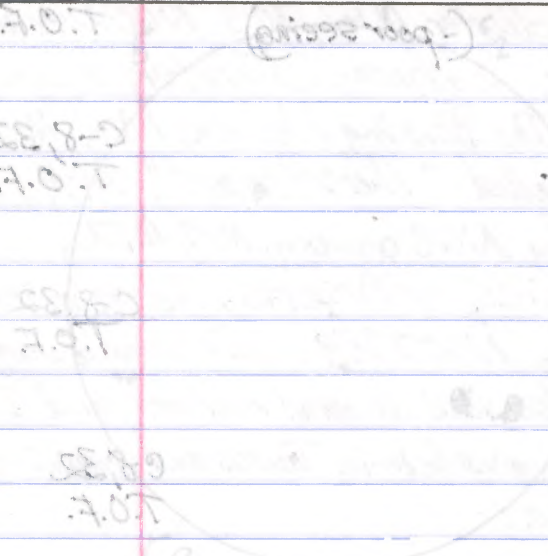
39 Dec. 7
105 17:35-17:40 UT
RSN40



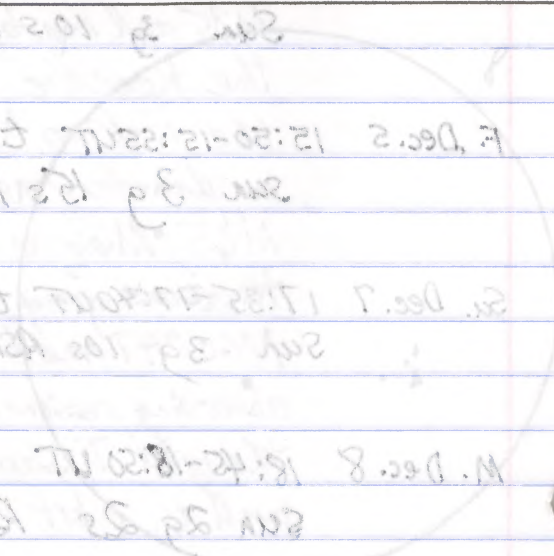
29 Dec. 8
25 18:45-15:50 UT
RSN22



W. Dec. 3 16:30-16:32 UT
RSN23



39 Dec. 3
105 16:20-16:25 UT
RSN22



W. Dec. 8 16:42-18:20 UT
RSN22

sc.

sc.

with Earthshine

Venus

2003

Sa-Su Dec. 13-14 03:35-03:40 UT FL:1a SPT 6-8 (some cloud) ne

- After returning from a hockey game at Teco Arena, Denise and I briefly checked the sky in front of the condominium to see if we would see any Geminid Meteors, since it was the night of the predicted peak of the Geminids. In fact, they were predicted to reach their peak at 4h UT. We did not see any Geminids, but we did see Orion, Sirius, Castor and Pollux, some stars of Auriga including Capella, Procyon, and two planets, Mars and Saturn.

some winter stars, Mars, and Saturn.

M.-T. Dec. 15-16 02:15-03:40 UT FL:1a SPT 6-7 (1/p) ne; 12 1/2"

ne: Mars, Saturn in Gemini, Orion, Auriga, Aries, some other stars, but light pollution washed out much of the western sky

12 1/2": Using Denise's 12 1/2" Dobsonian, I observed Saturn with the 32mm Plössl, the MA 25mm, the 12mm Televue Radian, and the MA 9mm oculars, but the best views were with the 32mm and 25mm eyepieces. With the 32mm ocular I also observed the Pleiades, M42 and M43, the area near zeta Orionis, one of the 3 Auriga clusters - M36, M37, or M38, as well as M78 in Orion and the area near M42

W.-Th. Dec. 17-18 03:30-03:35 UT FL:1a SPT 6-7 (1/p) ne

- Mars, Saturn in Gemini, bright stars of Orion, Sirius, Procyon, Castor, Pollux, Capella, Aldebaran.

Th.-F. Dec. 18-19 00:15-00:20 UT FL:1a SPT 6-7 (1/p) ne

- Venus - very brilliant about 10° above W. horizon; Mars high in S. below the Square of Pegasus; Orion partly seen - rising in the E., Pleiades very high in E.; constellations Perseus and Cassiopeia high in the NNE; the Winter Triangle in the W.

Deach

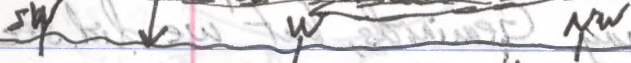
Altair

Venus

Vega

20°

area of clouds over gulf



2003, Dec. 21-22 23:30 UT View of W.
sky over the Gulf of Mexico at Boca Vista Beach.

M.T. Dec. 15-16 02:12-03:40 UT File: 28T-7 (lp) N: 13.5"
 re: Mars, Saturn, Orion, Auriga, Arcturus some other stars but
 light pollution washed out much of the western sky
 12.5": Using Dornier 12.5" Dobsonian, I observed Saturn
 with the 3mm filter, the MASS, the 12mm
 Teleskop, and the MA 9mm ocular, but the
 best views were with the 35mm and 52mm
 eyepieces. With the 35mm ocular I also observed
 the Pleiades, M42 and M43, the green star
 set Orion, one of the 13 Auriga clusters - M37
 M37, or M38, as well as M78 in Orion and the
 area near M42

W.T. Dec 17-18 03:30-03:35 UT File: 28T-7 (lp) N:
 - Mars, Saturn in Gemini; bright stars of Orion, Auriga,
 Procyon, Castor, Pollux, Capella, Aldebaran.

W.F. Dec 18-19 00:12-00:20 UT File: 28T-7 (lp) N:
 - Venus - very bright about 10° above W. horizon. Mars high
 in 2. Below the square of Pegasus; Orion partly seen - rising
 in the E. Pleiades very high in E.; constellation Perseus and
 Cassiopeia high in the NW; the Winter Triangle in the W.

M.T. Dec. 15-16 02:12-03:40 UT File: 28T-7 (lp) N: 13.5"
 re: Mars, Saturn, Orion, Auriga, Arcturus some other stars but
 light pollution washed out much of the western sky
 12.5": Using Dornier 12.5" Dobsonian, I observed Saturn
 with the 3mm filter, the MASS, the 12mm
 Teleskop, and the MA 9mm ocular, but the
 best views were with the 35mm and 52mm
 eyepieces. With the 35mm ocular I also observed
 the Pleiades, M42 and M43, the green star
 set Orion, one of the 13 Auriga clusters - M37
 M37, or M38, as well as M78 in Orion and the
 area near M42

W.T. Dec 17-18 03:30-03:35 UT File: 28T-7 (lp) N:
 - Mars, Saturn in Gemini; bright stars of Orion, Auriga,
 Procyon, Castor, Pollux, Capella, Aldebaran.

W.F. Dec 18-19 00:12-00:20 UT File: 28T-7 (lp) N:
 - Venus - very bright about 10° above W. horizon. Mars high
 in 2. Below the square of Pegasus; Orion partly seen - rising
 in the E. Pleiades very high in E.; constellation Perseus and
 Cassiopeia high in the NW; the Winter Triangle in the W.

2003

S.-M. Dec. 21-22 e. 23:05-23:50 UT FL: ^{at Bonita Beach} Gulf of Mexico, twl ne; 18X5015b

ne: Denise and I went to Bonita Beach to have a very good horizon in order to hope to see Mercury below and to the right from Venus in the western sky. We saw Venus very easily even before getting to the beach but did not see Mercury, perhaps because of clouds low in the W. The clouds were up about 10° from the horizon. Most of the remainder of the sky was clear. The Summer Triangle of stars came into view and Mars was easily seen high in the southern sky. Fomalhaut and α and β Crvis were prominent in the SSW sky. Sunset had been at 17:40 UT (5:40 p.m. E.S.T.) and the End of Astronomical Twilight would be at 19:02 UT (7:02 p.m. E.S.T.). I observed until 18:50 UT (6:50 p.m. E.S.T.)

Mars

18X5015b: Venus and area about 20° above the WSW horizon, area above clouds in the W., area of the Summer Triangle. -ph: photographed area of Venus.

m. 11:04-11:05 UT FL: la twl ne

Saturn
Jupiter

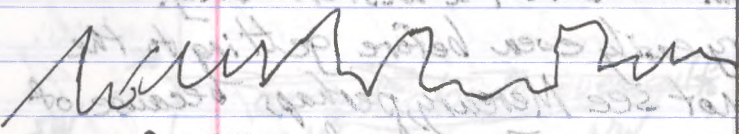
- I observed the 'spring constellations very high and prominent in the morning sky with Saturn in Gemini and Procyon in the W; Jupiter in Leo very high near the zenith, the Big Dipper and Arcturus in Bootes and Spica in Virgo in the Eastern part of the sky. The Beginning of Astronomical Twilight had been at 10:48 UT, about 16 minutes earlier; sunrise would be at 12:11 UT. The December Solstice had been at 7:04 UT, 4 hours before.

Th.-F. Dec. 25-26 00:10-00:15 UT FL: ^{at Wilshire Lakes near Naples} at Cadee and Joe's place, twl ne

After eating Christmas dinner at the home of Denise's cousin Cadee and her husband Joe and along with

2-M. Dec 25-26 00:10 UT W
2-M. Dec 25-26 00:10 UT W

Crescent Moon → Venus



2003, Dec. 25-26 00:10 UT W

View to West from Wilshire Lakes
Development near Naples Florida

stars came into view and Mars was easily seen high in the southern sky. Tombaunt and β stars were prominent in the SW sky. Sunset had been at 17:40 UT (2:40 pm E.S.T.) and the End of Astronomical Twilight would be at 19:05 UT (7:05 pm E.S.T.). I observed until 18:30 UT (2:30 pm E.S.T.) Venus and Mars were about 30° above the horizon, or a above clouds in the W. west of the Summer Triangle. In photographical area of Venus

11:07-11:02 UT Florida
I observed the spring constellations very high and prominent in the morning sky with Saturn in Gemini and Procyon in the W. Jupiter in Leo very high near the zenith, the Big Dipper and Antares in Bootes and Spica in Virgo in the Eastern part of the sky. The beginning of Astronomical Twilight had been at 10:48 UT, about 16 minutes earlier; sunrise would be at 12:11 UT. The December Solstice had been at 7:04 UT, 4 hours before.

Jupiter

After eating Christmas dinner at the home of Denise, Cousin Carlos and her husband Joe and along with

11:07-11:02 UT Florida
11:07-11:02 UT Florida

2003

cr. moon - Venus
conjunction
on
Christmas Day

their friends Bob and Janice and five other people, I was able to observe the conjunction of the crescent moon and Venus in the W. sky. They were about 3° apart and about 15° above the horizon. It was a beautiful sight. Later there were clouds in that area of the sky and the ~~two~~ objects could not be seen for a while. Later, however, the crescent moon could be detected in spite of some clouds. (phi. was able to take a photograph of the conjunction)

F.-S. Dec. 26-27 00:55-01:00 UT FL:la S-BT6-7(1/p) ne
- Crescent moon about 15° above the SW horizon with some earthshine, bright stars of Orion, Sirius, stars of Auriga, Saturn, Mars

Sa.-Su. Dec. 27-28 03:10-04:20 UT FL:la S8(1)T6-7(1/p) ne; $12\frac{1}{2}''$
ne: Orion, bright stars of Auriga, Gemini, Sirius, Procyon, Aldebaran, Pleiades Mars in W. Saturn in Gemini, part of Constellation Leo rising, star Canopus in SE.

$12\frac{1}{2}''$: Using the 32mm Plössl, the MA25mm and MA12mm and the 12mm Televue Radian eyepieces I observed Saturn and Titan about 1 ring-diameter away from it; also mainly with the 32mm eyepiece of the objects: M41, M42, M43, area of the bright stars in Orion's Belt, 2 of the clusters in Auriga, most likely M36 and M37, also the planet Mars in the west.

T.-W. Dec. 30-31 03:35-03:40 UT FL:la S8T5-6(1/p; some clouds) ne
- Mars in SW with the moon about 1 day after First Quarter about 8° E. of Mars, Orion, Sirius, Procyon, Castor and Pollux with Saturn in Gemini, Aldebaran, Pleiades near the zenith.

their friends Robert James and five other people,
 I was able to observe the conjunction of the
 Crescent moon and Venus in the W. sky. They
 were about 3° apart and about 12° above the
 horizon. It was a beautiful sight. Later there were
 clouds in that area of the sky and the objects
 could not be seen for a while. Later however, the
 crescent moon could be detected in spite of some
 clouds. (phi - was able to take a photograph of the conjunction)

Common
 conjunction
 at
 Christmas Day

Dec 26-27 00:45-01:00 UT File: 2-87E-71(l/p) no
 - Crescent moon about 12° above the SW horizon
 with some constellations, bright stars of Orion,
 Sirius, stars of Auriga, Saturn, Mars

Dec 27-28 03:00-04:00 UT File: 2887E-71(l/p) no: 12
 ne: Orion, bright stars of Auriga, Gemini, Sirius, Procyon,
 Aldebaran, Pleiades, Mars in W. Saturn in Gemini.
 part of constellation Leo rising. star conjunction SE.
 12 1/2": Using the 35mm f/1.8, the M42 and M43 and
 the 12mm Takahara color eyepiece I observed

Saturn and Titan about 1 ring-diameter away
 from it; also mainly with the 35mm eyepiece
 other objects: M41, M42, M43, area of the
 bright stars in Orion's Belt, 5 of the cluster
 in Auriga next to M43 and M42 also the
 planet Mars in the west.

T-W Dec 30-31 03:30-04:00 UT File: 2925E-71(l/p; some clouds) no
 - Mars in SW with the moon about 1/2 way after first
 Quarter about 8° E. of Mars, Orion, Sirius,
 Procyon, Castor and Pollux with Saturn in Gemini,
 Aldebaran, Pleiades near the zenith.

2003-2004

2003, Dec. 31-2004 Jan. 1 00:00-00:05 UT FL: la S8(?) T5-6 (gml; 1/p) ne

Venus. - Venus very bright, about 18° above SW horizon, Mars very high near the zenith and the gibbous moon about 18° E. of Mars, Orion rising in the E. over the roof of the condominium, bright stars of Auriga in the NE, and of Perseus in the NNE, and of Cassiopeia (at least four of its bright stars!) in the N.

S-S. Jan. 3-4 01:30-03:45 UT FL: la S8 T5 (gml; 1/p) ne; 12 1/2" (guests)

ne: Mars in SW, Saturn in Gem, Orion, bright stars of C Ma, C Mi, Gem, Aur.

12 1/2: With the 32mm, 25mm, 12mm, and 9mm oculars, we observed lunar craters on the gibbous moon, and with the first 2 of those eyepieces we observed Saturn, Titan, and for Venice 2 other Saturnian moons, probably Dione and Tethys.

Guests: - Scott Milligan - Ben Milligan
- Graham Milligan
Stephanie Miller

06:00-07:00 UT FL: la and in lanai S8 T5 (gml; 1/p) ne

- I spent an hour looking for Quadrantid Meteors in spite of the bright gibbous moonlight. They were predicted to peak between 6h and 8h UT. I was disappointed at not seeing with certainty any Quadrantids, though I thought several times that I may have seen faint, "almost subliminal" trails, one above the roof of a condominium across the pond.

-no Quadrantids

S-M Jan. 4-5 01:30-03:30 UT FL: la S8(?) T5-6 (gml; 1/p) ne; 12 1/2"

ne- After having observed the Crescent Moon with Scott Milligan and sons Ben and Graham, I was easily able to see Venus, Mars, Saturn, the bright

2-2 Jan. 2008 01:30-02:15 UT Fl: la 2875 (amp; 1/2) ve: 15.5" (weak)

NE: end of focus in the NNE part of Carisima (at least four of its bright stars!) in the N.

18° E. of Mars, Orion rising in the E. over the roof

Very high near the zenith and the gibbous moon about

- Venus very bright, about 18° above SW horizon, Mars

2008 Dec 31-2009 Jan 1 00:00-00:15 UT Fl: la 2875 (amp; 1/2) ve: 15.5" (weak)

2-2 Jan. 2008 01:30-02:15 UT Fl: la 2875 (amp; 1/2) ve: 15.5" (weak)

NE: Mars in SW, 2 stars in Cen, Orion, bright stars of

CMR, CM, GM, Aur.

12: With the 32 mm, 25 mm, 18 mm and 12 mm eyepieces we

observed that centers on the gibbous moon,

and with the first 2 of those eyepieces we observed

return, Titan, and for Venus 2 other stations

Guests: - Ben Milligan

2008 Dec 31-2009 Jan 1 00:00-01:00 UT Fl: la 2875 (amp; 1/2) ve: 15.5" (weak)

- I spent an hour looking for Quadrantids. Most were

in spite of the bright gibbous moonlight. They were

predicted to peak between 01:00 and 02:00 UT. I

was disappointed at not seeing with certainty

any Quadrantids, though I thought several

times that I may have seen faint,

"almost spherical" trails, one about the

roof of a carbonium near the pond.

2-M Jan. 2008 01:30-02:30 UT Fl: la 2875 (amp; 1/2) ve: 15.5"

NE: After having observed the second moon with 200 mm

Milligan and Ben and Gordon, I was

early at the house Venus, Mars, Saturn, the bright

2008 Dec 31-2009 Jan 1 00:00-01:00 UT Fl: la 2875 (amp; 1/2) ve: 15.5" (weak)

2004

stars of Orion, Auriga, Gemini, and Sirius, Castor, Procyon, Aldebaran

12 1/2": With guests, Scott, Ben, and Graham Milligan observed lunar craters and Saturn and Titan using mainly the 12mm Radian ocular for 127.1X. Scott and I also observed Mars and the Trapezium and M42 and M43. The performance of the telescope continued to appear to be less

M.-T. Jan. 5-6 00:20-00:25 UT FL:la SPT5 (gml; 1/p) 18x50SB

- Venus in SW about 15° above the horizon; very bright gibbous moon about 1 1/2 days before Full Moon.

T.-W. Jan. 6-7 23:40-23:45 UT FL:la twl ne

- Venus very brilliant about 25° above the SW horizon, Mars very near the zenith, the bright stars of Orion, Aldebaran, Capella, the Full Moon in Gemini about 5° from Saturn. The Moon ~~had been~~ would be in conjunction with Saturn within minutes, the event being listed to occur at 0h on Jan. 7, and it would be a Full Moon at 15h 40m on Jan. 7.

W.-Th. Jan. 7-8 02:20-02:25 UT FL:la SPT5 (fml; 1/p) ne

- Mars high in the SW; bright stars of Orion, Saturn in Gemini with the Full Moon about 12° from Saturn, Sirius, Procyon, Capella, Aldebaran

Th.-F. Jan. 8-9 01:20-01:25 UT FL:la S(?)T5 (fml; 1/p) ne

- Mars very high in SW; Saturn high in ENE with the very bright Moon about 33 hours 40 minutes after Full Moon about 30° from Saturn; bright stars of Orion; Aldebaran; Sirius; Procyon; Capella.

M-F. Jan. 8. 01:20-01:52 UT. Filo 2(1)T2 (Filo 1/1) NS
 - Mars very high in SW; Saturn high in ENE with the very
 bright Moon about 33 hours 40 minutes after Full Moon
 about 30° from Saturn; bright stars of Orion; Aldebaran;
 Sirius; Procyon; Capella.

M-F. Jan. 7. 8. 03:20-03:52 UT. Filo 2(1)T2 (Filo 1/1) NS
 - Mars high in the SW; bright stars of Orion; Saturn in
 Gemini with the Full Moon about 15° from Saturn,
 Sirius, Procyon, Capella, Aldebaran.

T-W. Jan. 6. 7. 23:40-23:52 UT. Filo 1/1 NS
 - Venus very brilliant about 22° above the SW horizon,
 Mars very near the zenith, the bright stars of Orion,
 Aldebaran, Capella, the Full Moon in Gemini about
 2° from Saturn. The Moon further would be in
 conjunction with Saturn within minutes the event
 being listed to occur at 0h on Jan. 7, and it
 would be a Full Moon at 12h on Jan. 7.

M-F. Jan. 5. 2. 00:20-00:52 UT. Filo 2(1)T2 (Filo 1/1) 185258
 - Venus in SW about 15° above the horizon; Very
 bright gibbous moon about 1 1/2 days before Full
 Moon.

stars of Orion, Procyon, Aldebaran
 127° with great
 lunar crescent and Saturn and Titan visible
 the 12mm Refractor ocular for 127.1X. Footprint I
 also observed Mars and the Transjovian planets
 and M43. The performance of the telescope continued
 to appear to be less

2004

S.-M. Jan. 11-12 m. 11:20-11:21 FL:la S(?)T5 (gmls 1/p) ^{early twl} ne

- Very bright gibbous moon about 30° WSW of the zenith with Jupiter in conjunction with it about 3° to the S. The actual time of the conjunction was listed as 11 hours UT. - also Regulus which was further to the W, Arcturus which was E. of the zenith, Spica, and the stars of the Big Dipper NE of the zenith.

T.-W. Jan. 13-14 00:45-00:50 UT FL:la S(?)T5-6 (1/p) ne

- Venus very bright about 12° above the SW horizon, Mars about 20° W. of the zenith, Saturn in Gemini high in the ENE, the bright stars of Orion, Sirius, Procyon, Capella, Aldebaran.

W.-Th. Jan. 14-15 m 11:30-11:35 UT FL:la twl ne

- Waning Crescent Moon very high in the SE in Virgo about 5° from Spica and about 30° E from Jupiter which was very bright, also Regulus in the W., and also Arcturus and four of the bright stars of the Big Dipper.

F.-S Jan. 16-17 02:00-02:05 UT FL:la S(?)T5-6 (1/p) ne

- Mars high in the WSW, bright stars of Orion, Castor and Pollux, Capella, Aldebaran very high and near the zenith, Saturn in Gemini, Procyon, Sirius.

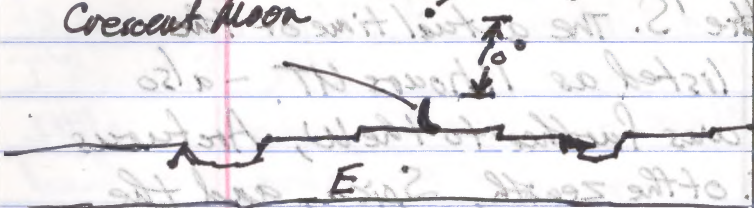
S.-S. Jan. 17-18 05:05-05:20 UT FL:la S(?)T5-6 (1/p) ne

- bright stars of Orion high in the S., Aldebaran, Pleiades, Sirius, α and β Leporis, Sirius, Procyon, Saturn in Gemini, Castor and Pollux, γ and ϵ Gemisoram, Capella and β Tauri, Regulus high in the E., and Jupiter in the constellation Leo.

but ph...

Very bright diplo... about 30° WSW of the zenith with... Mercury (in binoculars)

Crescent Moon



2004, Jan. 20 11:50 UT View to E.
Old Crescent Moon and Mercury rising.

Very very bright... about 12° above the SW horizon... Mars about 20° W of the zenith... the bright stars of Orion... Procyon, Capella, Aldebaran.

Waning Crescent Moon very high in the SE in... from 2° from Spica and about 30° E... from Jupiter which was very bright, also... Regulus in the W. and also Antares and... four of the bright stars of the Big Dipper.

Mars high in the WSW, bright stars of Orion, Castor and Pollux, Capella, Aldebaran very high and near the zenith, Saturn in Gemini, Procyon, Sirius.

Bright stars of Orion higher than... Aldebaran, Procyon, Sirius, and Pollux, Castor and Pollux, Regulus, Capella and Antares, Regulus high in the E, and Jupiter in the constellation Leo.

2-M. Jan 11-12 M. 11:20-11:21 Ft. la

Very bright diplo... about 3° to the S. The... Capricorn was listed as... Regulus which was E. of the... which was E. of the... stars of the Big Dipper.

7-M. Jan 13-14 00:22-00:23 UT Ft. la

Very very bright... about 12° above the SW horizon... Mars about 20° W of the zenith... the bright stars of Orion... Procyon, Capella, Aldebaran.

W-14. Jan 14-15 M 11:30-11:32 UT Ft. la

Waning Crescent Moon very high in the SE in... from 2° from Spica and about 30° E... from Jupiter which was very bright, also... Regulus in the W. and also Antares and... four of the bright stars of the Big Dipper.

7-2. Jan 16-17 02:00-02:02 UT Ft. la

Mars high in the WSW, bright stars of Orion, Castor and Pollux, Capella, Aldebaran very high and near the zenith, Saturn in Gemini, Procyon, Sirius.

2-2. Jan 17-18 02:02-02:04 UT Ft. la

Bright stars of Orion higher than... Aldebaran, Procyon, Sirius, and Pollux, Castor and Pollux, Regulus, Capella and Antares, Regulus high in the E, and Jupiter in the constellation Leo.

2004



S.-M. Jan. 18-19 03:25-04:35 UT S(?)T 2-6 (scattered clouds; 1/p) ne; 18x50 ISb
 ne: Mars in W. Saturn in Gemini, stars of winter
 18x50 ISb: Mars, Saturn, M35, M41, M42, M43, area of R Lep, star fields in Orion, Pleiades, Hyades.

6:35 - 6:55 a.m. E.S.T.

M.-T. Jan. 19-20 m. 11:35 - 11:55 UT FL: lanai and by ne; 18x50 ISb
 ne: Knowing that the moon was to have risen at 11:16 UT and sunrise would be at 12:16 UT, I hoped to see the slender crescent moon rise above a building across the pond. I spotted it naked-eye easily at about 11:45 UT as it had just partly risen above the roof of a building. It was a beautiful sight. It would have been about 33 hours and 20 minutes before New Moon whose time was given as Jan. 21, 21:05 UT. I was able to watch it for another 10 minutes or so, but I left to get the camera ready to photograph it.

Old Crescent Moon seen naked-eye.



18x50 ISb: Slim crescent moon and Mercury well above it (possibly 10 degrees above it). Sky and telescope had shown the crescent as visible on the morning of Jan. 19th, the previous morning, to the right of Mercury, but it did not show the crescent as even being visible this morning. Of course their diagrams (see Jan. 2004 issue, on the fold-out page) is designed for viewers at about latitude 40°. (See diagram.)

ph.: photographed the crescent moon rising using the zoom lens at focal length 105mm and f/11.

T.-W. Jan. 20-21 04:05-04:10 UT FL: la S?T 6 (1/p) ne
 - bright stars of Orion, Aldebaran, Sirius, Canopus low in SE,



2004

Sirius, Procyon, Castor and Pollux, Capella, Saturn ~~in~~ Gemini very near the zenith, Regulus in the E, Jupiter very bright about 25° above the ENE horizon.

W-Th. Jan. 21-22 02:40-04:00 UT SPT6 (1/p) ne; 18X50ISB

ne: stars of winter in S., Mars in W. Saturn high and 10° to 5° E. of the zenith, at the end of the session Jupiter in the E, Canopus in SE.

18X50ISB: M35, M36, M37, M38, M41, M42, M43, M44 (the Beehive), M45 (the Pleiades), the Hyades, R Lep and area, star fields in Orion, NGC 2244 and area of the Rosette Nebula though the Rosette Nebula was not seen distinctly, Saturn, Mars, Jupiter, R Lep and area

Th-F. Jan. 22-23 04:00-04:05 UT FL:1a SPT6-7 (1/p) ne

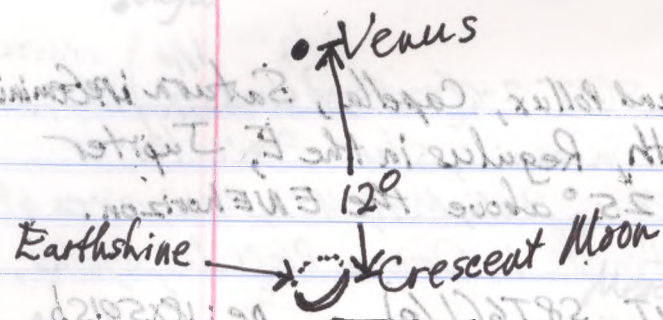
-After returning from Edison College where I had given a short talk on the topic of transits, especially the transit of Venus, I briefly observed under very clear skies, seeing Mars in the W. about 15° above the horizon, Jupiter in the E about 25° above the horizon, Saturn very near the zenith, Orion and the bright stars of winter in the S. and Canopus low in the SE.

m. 11:20-11:25 UT FL:1a:1a:1 twl ne

Mercury With very clear skies and morning twilight visible in the E, I observed Mercury which was easily seen about 8° above the E. horizon. Vega was also seen high in the NE and Deneb much lower. (See diagram.)

F-S. Jan. 23-24 00:15-00:20 FL:1a twl ne and Camera

-observed the planet Venus and the young Crescent

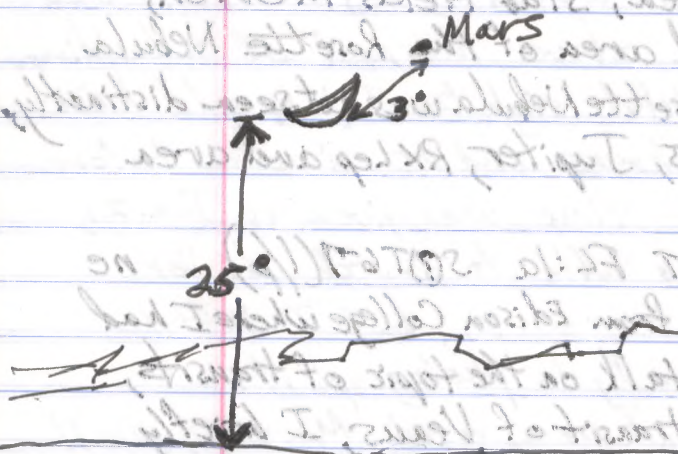


Venus

SW W SW W

2004, Jan. 24 00:25 UT View to WSW to the Crescent Moon and brilliant Venus.

2004, Jan. 25 01:10 UT View to WSW to Crescent Moon and Venus.



2004, Jan. 28 03:00 UT View to WSW to Crescent moon and Mars.

With very clear skies and near twilight visible in the E, I observed Mercury which was easily seen about 8° above the E horizon. Vega was also seen high in the NE and I used my telescope (see diagram).

11:20-11:30 UT Ft. Lane, Cal. - observed the planet Venus and the young crescent in the NE and used my telescope (see diagram).

2004

moon about 2d 3 hours old. The Earthshine was clearly visible. I photographed it with the 50 mm lens

00:25 - 00:30 UT FL:la ne: camera

Again I observed the planet Venus and the Crescent Moon and photographed them with the zoom lens at about 75 mm focal length. (See diagram.)

S.-S. Jan. 24-25 01:10 - 01:20 UT S-80T6 (1/p) ne; 18x50 ISB

ne: winter stars, Venus, Crescent Moon, Saturn with Moon near Venus (See diagram.)

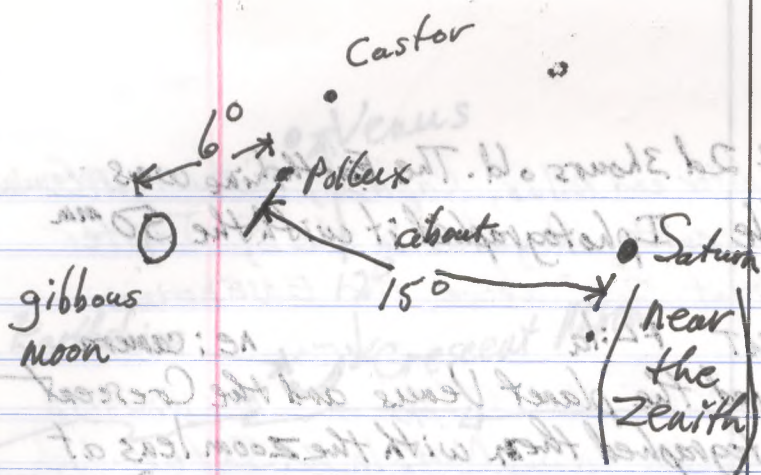
18x50 ISB: Crescent Moon, with numerous craters, and Venus.

T.-W. Jan. 27-28 02:55 - 03:00 UT FL:la S(?)T6 (1/p) ne

- stars of winter in the S and SE, Canopus low in the SE, waxing crescent moon about 3° from Mars (Time of conjunction was listed in the Observer's Handbook, in fact as 3^h on Jan. 28) about 25° above the WSW horizon (See diagram), Saturn just a bit E of the zenith and in Gemini, Jupiter very bright, about mag. -2.4 in the constellation Leo and about 12° above the E. horizon. The Crescent Moon was about ~~and~~ 6 days and 6 hours old, since New Moon had been on Feb 21 at $21^h 05^m$.

W.-Th. Jan. 28-29 04:20 - 04:25 UT FL:la S(?)T6 (1/p) ne

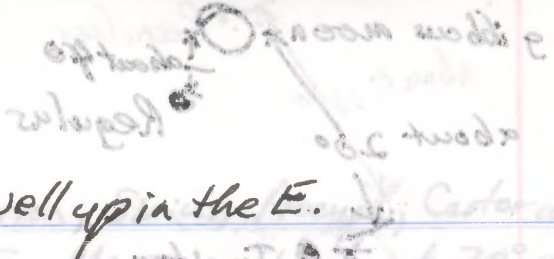
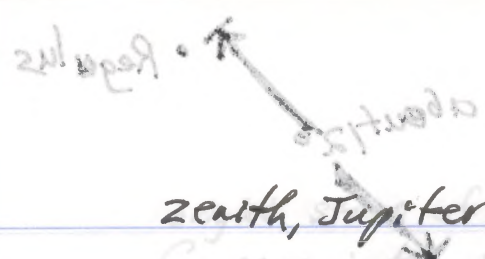
- stars of winter in the S., Canopus in the SE, the moon in the WSW about 20° above the horizon and less than 2 hours from First Quarter which was listed in the Observer's Handbook as being at $6^h 03^m$ UT, Saturn very near the



Area of the sky including the constellation Gemini and gibbous moon
 2004, Feb. 5, 03:00 UT

had been on Feb 21 at 21:02^m.
 and 6 hours old, since New Moon
 E. horizon. The Crescent Moon was about
 in the constellation Leo and about 15° above the
 Gemini. Jupiter very bright, about mag. 2.4.
 Saturn just abt E. of the zenith and in
 above the W horizon (see diagram).
 Handbook in fact as 3:00 on Jan. 28) about 22°
 (Time of conjunction was listed in the
 SE, waxing crescent moon about 3° from Mars
 - stars of winter in the 2 and 25 Capricorn in the
 W. Jan. 28-29 04:30-04:22 UT (19)
 had been on Feb 21 at 21:02^m.
 and 6 hours old, since New Moon
 E. horizon. The Crescent Moon was about
 in the constellation Leo and about 15° above the
 Gemini. Jupiter very bright, about mag. 2.4.
 Saturn just abt E. of the zenith and in
 above the W horizon (see diagram).
 Handbook in fact as 3:00 on Jan. 28) about 22°
 (Time of conjunction was listed in the
 SE, waxing crescent moon about 3° from Mars
 - stars of winter in the 2 and 25 Capricorn in the
 W. Jan. 28-29 04:30-04:22 UT (19)

2004



zenith, Jupiter well up in the E.

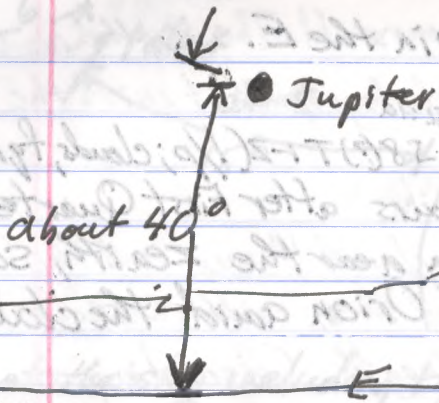
Th.-F. Jan. 29-30 02:35-02:40 UT ^{FL:la} S8(1)T1-2 (1/p; clouds, fog, ml) ne
 - Moon about 3 1/2 hours after First Quarter high in the W. sky, Saturn near the zenith, some of the bright stars of Orion amid the clouds, Sirius, Procyon.

M.-T. Feb. 2-3 02:25-02:30 UT ^{FL:la} S8(1)T5-6 (1/p; gml) ne
 - bright stars of Orion high in the SSW, Sirius, Procyon, Castor and Pollux, the bright gibbous moon and Saturn only about 4° apart and near the zenith (The time of the conjunction, with them 4° apart, was listed in the Observer's Handbook as 4:47 UT, about 1.5 hours later, Mars in the WSW about 40° above the horizon, Jupiter in the E. about 15° above the horizon.

T.-W. Feb. 3-4 03:45-03:50 UT FL:la S8(1)T5 (1/p; gml) ne
 - very bright gibbous moon in Gemini. Very near the zenith and about 10° E. of Saturn and about 4° W. of Pollux, bright stars of Orion high in the SSE, Sirius, Procyon, Rigel, Capella, Mars in the W ^{SW} about 15° above the horizon, Jupiter in the E about 30° above the horizon in the constellation Leo in which the stars Regulus and Algieba were also seen. Canopus was also visible in the SE.

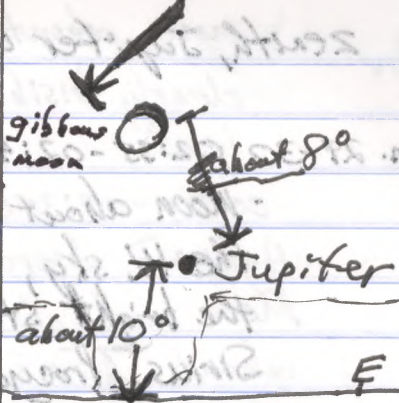
W.-Th. Feb. ~~4-5~~ ⁴⁻⁵ 03:00-03:05 UT FL:la S8(1)T5 (1/p; gml) ne
 - Saturn in Gemini near the zenith, very bright gibbous moon only about 30 hours before the listed time of Full Moon (Feb. 6, 8:47 UT) (See diagram),

gibbous moon \nearrow about 40°
 about 20° \bullet Regulus



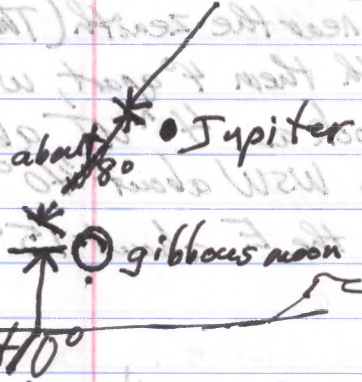
2004, Feb 7, 4:00 UT View to E. showing Jupiter, Regulus and the gibbous moon.

about 12° \bullet Regulus
 gibbous moon \searrow about 8°



2004, Feb. 8, 2:00 UT View to E. showing Jupiter, Moon and the gibbous moon

about 18° \nearrow Regulus



2004, Feb. 9, 2:30 UT View to E. showing Jupiter, Regulus and gibbous moon.

2004

bright stars of Orion, Sirius, Procyon, Castor and Pollux, Canopus in the S.E., Mars in W. about 30° above the horizon, Jupiter very bright in the E. about 30° above the horizon.

F.-S. Feb. 6-7 04:00-04:05 UT FL:1a S(?)T 2-3 (1/p; gml; scattered ^{cloud}) ne
- some of the stars of winter high in the southern sky, though some could not be seen or seen for very long, because of the scattered clouds, Sirius, Procyon, Jupiter very bright and up about 40° in the E, the very bright gibbous moon up about 20° from Jupiter and about 4° from Regulus. The gibbous moon was about 19 hours after the time of Full Moon, which was listed as occurring on Feb. 6 at 8h 47m UT. $\frac{3}{4}$
(See diagram.)

S.-S. Feb. 7-8 01:55-02:00 UT FL:1a S(?)T 5-6 (1/p; gml; a few ^{clouds}) ne
- bright stars of Orion in the SSW, Sirius, Procyon, Castor and Pollux, Saturn in Gemini about 5° ^{or so} E. of the zenith, Mars high in the WSW, Jupiter up about 10° in the E, the very bright gibbous moon in the constellation Leo about 12° from the star Regulus. (See diagram.)

S.-M. Feb. 8-9 02:30-02:35 UT FL:1a S(?)T 6 (1/p; gml; a few ^{clouds}) ne
- bright stars of Orion high in the SSE, Sirius, Procyon, Castor and Pollux, Saturn in Gemini and near the zenith, Mars fairly high in the WSW, bright waning gibbous moon in the E below Jupiter. (See diagram.)

M.-T. Feb. 9-10 02:00-02:05 UT FL:1a S?T 5 (1/p; some clouds) ne
- bright stars of Orion, Sirius and the bright stars of Canis Major, Procyon, Saturn in Gemini and

Regulus
about 18°

Jupiter

about 22°

gibbous moon

50°

2004, Feb. 10, 03:05 UT View to E
showing rising gibbous moon, Jupiter, Regulus

Regulus
about 22°

2004

The gibbous moon was about 19 hours after the time of Full Moon, which was listed as occurring on Feb. 8 at 8:44 AM UT. (See diagram.)

2:2 Feb 7-8 01:52-02:00 UT File: 287T (1/1; ant.; star) ne
- bright stars of Orion in the SW, Sirius Procyon, Castor and Pollux, Saturn in Gemini about 2° E of the zenith. Mars high in the WSW, Jupiter about 10° in the E. The very bright gibbous moon in the constellation Leo about 15° from Jupiter (see diagram.)

2-M Feb 8-9 03:30-03:35 UT File: 287T (1/1; ant.; star) ne
- bright stars of Orion high in the SE, Sirius Procyon, Castor and Pollux, Saturn in Gemini and near the zenith. Mars high in the WSW, bright waning gibbous moon in the E below Jupiter (see diagram.)

M-T Feb 9-10 03:00-03:05 UT File: 287T (1/1; same as above) ne
- bright stars of Orion, Sirius and the bright stars of Cassiopeia, Procyon, Saturn in Gemini and

in the E, the very bright gibbous moon was up about 20° from Jupiter and about 7° from Regulus. Jupiter very bright and up about 40°

2:2 Feb 7-8 01:52-02:00 UT File: 287T (1/1; ant.; star) ne
- bright stars of Orion in the SW, Sirius Procyon, Castor and Pollux, Saturn in Gemini about 2° E of the zenith. Mars high in the WSW, Jupiter about 10° in the E. The very bright gibbous moon in the constellation Leo about 15° from Jupiter (see diagram.)

2-M Feb 8-9 03:30-03:35 UT File: 287T (1/1; ant.; star) ne
- bright stars of Orion high in the SE, Sirius Procyon, Castor and Pollux, Saturn in Gemini and near the zenith. Mars high in the WSW, bright waning gibbous moon in the E below Jupiter (see diagram.)

M-T Feb 9-10 03:00-03:05 UT File: 287T (1/1; same as above) ne
- bright stars of Orion, Sirius and the bright stars of Cassiopeia, Procyon, Saturn in Gemini and

2004

near the zenith, Aldebaran, Mars high in the WSW, Canopus low in the SE.

03:05 - 03:06 UT FL: land and by S?T6 (1/p) gal) ne
- rising gibbous moon, Jupiter, Regulus (See diagram); also Castor, Pollux and Saturn near the zenith

T-W. Feb. 10-11 03:00 - 03:05 UT FL: la S?T6 (1/p) ne
- bright stars of winter in the S., Sirius, Procyon, Canopus in the SE, Mars in the WSW about 25° above the horizon, Jupiter in the E. about 30° above the horizon, Saturn in Gemini near the zenith.

W-Th. Feb. 11-12 00:55 - 02:40 UT FL: la S?T6 (1/p; a few clouds) ne; 12 1/2"
ne: Venus very bright in the W. sky in first part of the session, Mars well up in the W., Saturn in Gemini near the zenith, Jupiter in the E. in the latter part of the session, stars of winter in the S.

12 1/2": Venus which appeared near dichotomy observed with the 32mm, 25mm, 12mm, and 9mm oculars; Mars; M42 and M43 ~~with~~ a long with the Trapezium which were very good, observed with the 32mm ocular; also M41; area of the Hyades; the Pleiades which were good and were observed carefully, the cluster NGC 2244; area of M46 and M49 E. of Sirius; Saturn and Titan. Denise arrived home from a meeting and observed Saturn and Titan and saw another moon which seems hard to identify from its position - roughly in the same direction as Titan - but may possibly have been Enceladus. (See chart of Saturn's Satellites in the Observer's Handbook 2004, page 208.

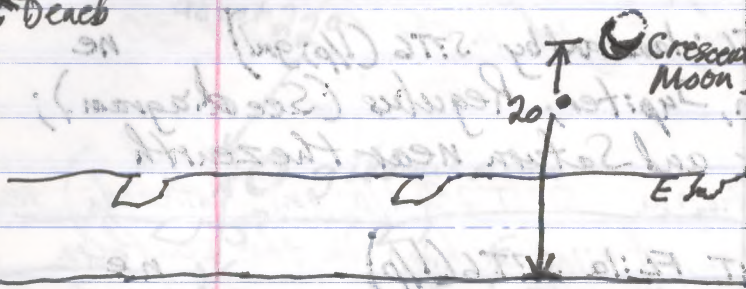
Saturn and Titan

6:05 - 6:10 a.m. E.S.T.
S-M. Feb. 15-16 11:05 - 11:10 UT FL: lanai twl ne: 18X50 ISB
ne: Vega, Deneb, Altair in the NE and the

vega

Altair

Deceb



2004, Feb 16, 11:05 UT. View to the NE and E showing Crescent Moon and the Summer Triangle

W-V. Feb 12 00:22-02:20 UT. H.L. 21.5 (1/2; a hand-drawn) 12.5. No. Venus very bright in the W sky in first part of the session. Mars well up in the W. Saturn in Gemini near the horizon. Jupiter in the E. in the latter part of the session. stars of winter in the 2. 12.5. Venus which appeared near horizon observed with the 35mm, 52mm, 12mm, and 4mm oculars. Mars, M42 and M43 were also seen with the 35mm which were very good observed with the 35mm ocular. also M44, one of the Hyades. The Pleiades which were good and were observed carefully. the cluster M42, one of the Hyades and M43 E. of Sirius; Saturn and Titan. Debris carried from Titan a meeting and observed Saturn and Titan and saw another moon which seems hard to identify from its position - very up in the same direction as Titan - but may possibly have been Enceladus. (see chart of Saturn's satellites in the Observer's Handbook book page 208.

2-M. Feb 12-16 11:05 UT. No. Vega, Deneb, Altair in the NE and the

Saturn and Titan

2004

crescent moon 20° above the E. horizon. (See diagram.)
18X50ISb: Vega, Deneb, Altair areas and the crescent moon

W-Th. Feb. 18-19 01:40-04:00 UT FL: la S8PT6 (1/p) ne; 18X50ISb

ne: stars of winter in the S; Venus very bright in the W in the first part of the session; Saturn near the zenith in the latter part of the session

18X50ISb: M42 and M43, area of λ Orionis, area of the asteroid Ceres though I was not absolutely sure of the asteroid though I had checked with map in Sky News, Jan./Feb. 2004 page 21; M35; NGC 2169, an OC in Orion (See Sky and Telescope, Feb. 2004, p. 96-97), though I was not sure of seeing the nearby OC NGC 2194; M46, M47, and I was fairly sure of seeing the nearby OC NGC 2423 (See Sky and Telescope, Mar. 2004, p. 96), though not absolutely positive, R X Lep, area of R Lep, κ Orionis and its surrounding area.

Th.-F. Feb. 19-20 02:45-04:10 UT FL: la S8PT6 (1/p) ne; 18X50ISb

ne: stars of winter in the S; Saturn near the zenith; Canopus in the SE, Jupiter in the E.

18X50ISb: M42, M43, M46, M47, M35, κ Orionis and area, ω Orionis and area, NGC 2244, M44, M67, NGC 2169-oc in Orion

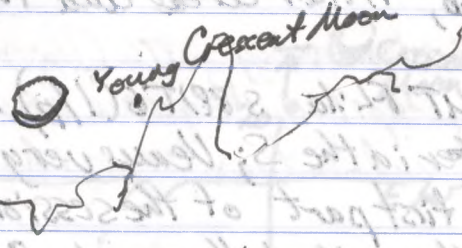
F.-S. Feb. 20-21 04:10-05:00 UT FL: la S8T1 to 6 (1/p; cloudy ^{by times}) ne; 18X50ISb

ne: stars of winter in the S; Saturn in Gemini near the zenith. Clouds were very prevalent in the first 10 minutes of the session and again in the last 10 minutes.

18X50ISb: area of Saturn in Gemini, area of

vega

Crescent moon 20° above the horizon (see diagram)
 After crescent and the crescent moon
 18x20lp: Vega, Deneb
 W-TR Feb R-19 01:40-02:00 UT (1/19) (1/19)
 MS: stars of winter in the 2nd Saturn in Gemini
 the W in the first part of the session
 near the south in the latter part of the session



2004, Feb. 22, 00:15 UT View to W.
 of young (about 37.4 hours old) and Venus

the asteroid (though I had checked
 with map in SkyView, Jan. Feb. root pages);
 MS: NGC 2219, or OC in Orion (see sky and
 Telescope Feb. root p. 9-17), though I was not
 sure of seeing the nearby OC NGC 2219;
 M4, M47 and I was faint sure of seeing the
 nearby OC NGC 2219 (see SKY and Telescope
 Mar. root p. 16), though not absolutely positive
 RX Leg, area of R Leg, CK Orionis and
 its surrounding area.

TR-F Feb R-20 03:42-04:10 UT File: 287T (1/19) MS: 18x20lp

MS: stars of winter in Feb. 2nd Saturn near the
 south; Capdore in the 2nd Jupiter in the E.
 18x20lp: M42, M43, M44, M47, M48, CK Orionis
 and area, W Orionis and area,
 NGC 2219, M44, M47, NGC 2219-OC in Orion

F-2 Feb R-21 04:10-05:00 UT File: 287T (1/19) (1/19) MS: 18x20lp

MS: stars of winter in the 2nd Saturn in Gemini
 near the south. Clouds were very prevalent
 in the first 10 minutes of the session and
 again in the last 10 minutes.
 18x20lp: area of Saturn in Gemini, area of

2004

CK Orionis, M47, area of Regulus, M44, area of
Sirius.

Si-S. Feb. 21-22 23:50-00:30 UT FL: ^{place near Naples.} at Bob + Janet Lomicka's, ne

ne- observed the slim crescent moon about 37.4 hours
old at about 15° above the horizon at first and
later only about 3° above the horizon as it
disappeared behind some trees. Brilliant
Venus was about 15° to 20° above the crescent
moon. (See diagram)

18x50 ISb: - Venus, crescent moon with Earthshine
clearly visible; looked for but did not
knowingly see, Comet C/2002 T7 LINEAR
which was supposed to be near the Square
of Pegasus in the W. sky.

03:45-05:00 UT FL: la SBT 4-5 (1/p; some haze) ne; 18x50 ISb

ne: stars of winter, Saturn in Gemini near the zenith.

18x50 ISb: area of Saturn, area of CK Orionis, M44,
area of Regulus, M47 and area, NGC 2244; looked
in Gemini for the asteroids 1 Ceres and 6 Hebe (See
maps on page 63 of the Astronomical Calendar 2004.)

but was not sure of seeing them. The
haze seemed to be a problem since there seemed to be
a bit more of it than on nights I regarded as having
good, or better, transparency.

Si-M. Feb. 22-23 03:50-04:30 UT FL: la SBT 6 (1/p) ne; 18x50 ISb

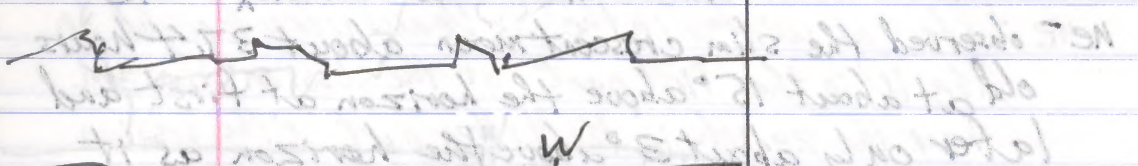
ne: stars of winter in the S.; Saturn in Gemini near the
zenith; Jupiter high in the E.

18x50 ISb: M41, M42, M43, M46, M47, NGC 2244, CK Orionis
and area, Saturn and area, Jupiter and area,
M44, Hyades.

Mars

250

Cr. Moon Venus



2004, Feb. 24, 01:15 UT View to W. showing the

18X202P: Venus, crescent moon with Earthshine
 clearly visible; looked for but did not
 knowingly see, Comet C/2002 T7 LINEAR
 which was supposed to be near the square
 of Pegasus in the W. sky.
 03:42-02:00 NT: (a) 202 T7 (1p); (b) 2002 T7 (1p); (c) 2002 T7 (1p); (d) 2002 T7 (1p)
 NE: stars of winter, Saturn in Capricorn near the south
 18X202P: area of Saturn, area of GK Orion, M47
 area of Regulus, M47 and area, NGC 2297; looked
 in Gemini for the asteroids Icarus and Lutea (see
 maps or pages 63 of the Astronomical Calendar 2004).
 but was not sure of seeing them. The
 have seemed to be a problem since there seemed to be
 a bit more of it than on nights I found as having
 good, or better, transparency.

2-M. Feb 23-23 03:20-04:30 UT: (a) 202 T7 (1p) as 18X202P
 NE: stars of winter in the 2; Saturn in Gemini near the
 south; Jupiter high in the E.
 18X202P: M47, M47, M47, M47, NGC 2297, GK Orion
 and area, Saturn and area, Jupiter and area,
 M47, Phaedra.

2004

M.-T. Feb. 23-24 00:10-01:15 UT FL:la S(?) T5-6 (1/p) ne
- stars of winter in the S.; Crescent moon and Venus in the W. sky; Saturn near the zenith; Mars about 25° above the moon and Venus in the W. sky. (See diagram.)

01:50-02:00 UT FL:la ne; camera lenses
- observed and photographed the moon and Venus very low and above the roofs of the houses across the street, using Kodak Elite Chrome Extra Color 100-24 film.

T.-W. Feb. 24-25 02:35-04:00 UT FL:la S(?) T5-6 (1/p) ^{Sarawiki} ne; 18x50sb
ne: stars of winter in the S.; Mars in the W.; crescent moon low in the W. (Venus had been seen earlier below the moon); Saturn near the zenith; Jupiter in the E.

18x50sb: area of Mars, area of Saturn, Hyades, M42, M43, M41, M46, M47, area of R Lep., CK Orionis and area, NGC 2244

S.-S. Feb. 28-29 01:55-02:00 UT FL:la S? T6 (1/p; 1/2) ne
- Stars of winter in the S.; brilliant Venus about 10° above the W. horizon, Mars about 35° above the W. horizon, Saturn in Gemini and near the zenith; the moon just past First Quarter about 15° W. of Saturn (First Quarter was listed as occurring about 22.5 hours earlier, i.e., at 3h 24m on the 28th) Jupiter about 30° above the E. horizon and in the constellation Leo.

H planets:
Venus
Mars
Saturn
Jupiter
and
Moon.

M.-T. Mar. 1-2 01:30-02:00 UT FL:la S(?) T3 (1/p; 1/2) ^{also clouds} ne
- In spite of considerable cloud cover, I saw 4 planets and the very bright gibbous moon. Brilliant

2004

4 planets:
Venus
Mars
Saturn
Jupiter
and
Moon.

Venus was evident in the W. about 20° above the horizon, with Mars about 25° above Venus. The gibbous moon was near the zenith with Saturn about 8° W. of it. Bright Jupiter was well up in the E.

W.-Th. Mar. 3-4 02:35-04:30 UT FL:la S?T4(1/p;gm) ne

- bright stars of winter in the SE; a very bright gibbous moon near the zenith and about 12° E of Castor; Saturn in Gemini; Jupiter was high in the E.

F.-S. Mar. 5-6 03:00-05:40 UT FL:la S?T5(1/p;gm) ne; $12\frac{1}{2}''$

ne: After spending most of the afternoon at Barefoot Beach with Denise and her friend Rita Romano, and Rita's daughter Marissa and Marissa's friend Christine, I observed for a while with all of those people and later with with Richard and his wife who were staying in the Condominium upstairs. Besides showing most of them the bright planets and some of the bright stars, I showed them several objects in the $12\frac{1}{2}''$ telescope. The bright stars of winter were visible in the S, and Saturn in Gemini and Jupiter in the constellation Leo were visible.

Io: OcD

$12\frac{1}{2}''$: With the 32 mm, the 25 mm and the 12 mm oculars, we observed Jupiter and ^{all} of the Galilean moons until the Occultation/Disappearance of Io occurred at 4:31 UT. After that 3 of the Galilean moons were seen. Also Saturn and part of M42 with the Trapezium were seen. Lunar craters were also observed.

Sa.-Su. Mar. 13-14 04:00-04:05 UT FL:la S?T6(1/p) ne

- Orion going down in the SW; Sirius and Procyon in the S;

2004

Auriga in the W; Castor and Pollux higher in the W;
Saturn below Castor and Pollux; bright stars of the
constellation Leo very high with Regulus about 10°
ESE of the zenith and the planet Jupiter about
 20° ESE of the zenith; Arcturus and Spica
easily seen well up in the E; the bright stars of
the Big Dipper seen well up in the NNE.

FL: Villages of Bonita development

M.-T. Mar. 15-16 03:00-03:15 UT, S?T6 (1/p) ne

- While going for a walk with Denise and Bill and
Marylou Rice, I observed a number of areas of
the moonless sky on a fairly mild evening.
In the N. and E. the Big Dipper was visible
along with Arcturus and Spica and Polaris and
Kochab. The bright stars of Orion were easily seen
in the SW along with Sirius, Procyon, Aldebaran
and more to the W, the stars of Auriga. West of
the zenith Saturn was seen in Gemini; Mars
was down in the W, and Jupiter was well up
in the E. in the constellation Leo.

W.-Th. Mar. 17-18 02:50-04:00 FL: 1a S?T6-6.5 (1/p) ne; $12\frac{1}{2}''$

ne: Jupiter high in the E; Saturn in Gemini; Mars had been
seen in the W. earlier; bright stars of winter in the S
and W.

$12\frac{1}{2}''$: Using the 32mm, 25mm, and 12mm oculars, I
observed Jupiter and the 4 Galilean moons with
Callisto and Io on one side, and Europa and Ganymede
very close to each other on the other side; also Saturn
and Titan, and NGC 2244 and M41, and
M42 along with the Trapezium.

M-F Mar 15-16 03:00-03:15 (1/2 hr)
 Ft. Village of Banta development
 the Big Dipper seen well up in the NE.
 easily seen well up in the E; the bright stars of
 20° EZE of the South; Arcturus and Spica
 EZE of the South and the planet Jupiter about
 Castor below Castor and Pollux; bright stars of the
 Auriga in the W; Castor and Pollux; the W.

- While going for a walk with Denise and Roland
 the weather sky on a fairly mild evening.
 In the W and E the Big Dipper was visible
 along with Arcturus and Spica and Pollux and
 Kochab. The bright stars of Orion were easily seen
 in the SW along with Sirius, Procyon, Aldebaran
 and rose to the W; the stars of Auriga. West of
 the South Castor was seen in Gemini; Mars
 was down in the W, and Jupiter was well up
 in the E. in the constellation Leo.

W-Th Mar 17-18 03:15-03:30 (1/2 hr) (1/2 hr)
 VE: Jupiter high in the E; Castor in Gemini; Mars below
 seen in the W; Auriga; bright stars of winter in the S
 and W.
 12 1/2": Using the 3 1/2" 25mm lens, and 1/2 hr on each I
 observed Jupiter and the H-Galilean moons with
 Callisto and Io on one side and Europa and Ganymede
 visible to each other on the other side; also Saturn
 and Titan and HD 203149 and M4 and
 M2 along with the Trapezium.

Relative Sunspot Numbers

Date: My
2003 Observation:

2152 Apr. 27 110
May 3 119
4 118
18 ~~38~~
19 67
21 42

June 6 71

10 129

2160 15 49

16 45

17 49

20 95

24 65

26 61

30 74

July 2 78

5 64

6 65

9 75

23 90

25 33

28 58

29 54

30 41

Aug. 2 69

13 58

14 69

15 90

2180 16 82

17 74

18 66

~~19 44~~

20 36

21 48

22 75

23 80

24 90

27 59

28 60

30 61

Sept. 2 40

4 57

~~8 63~~

9 24

10 30

11 40

13 22

16 18

2200 17 50

18 74

20 46

23 77

24 83

25 74

30 82

Oct. 1 77

3 51

6 44

8 56

9 59

10 42

11 40

12 12

24 102

31 220

Nov 7 0

8 13.

15 34

20 90

2220 21 80

22 92

23 86

24 80

26 125

Dec. 3 83

4 40

5 45

7 40

8 22

