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The magazine cover features a dramatic space scene. A large, bright orange and red planet, likely Jupiter, occupies the right side of the frame. On the left, a comet with a glowing orange nucleus and a long, dark, wispy tail is shown in motion. The background is a deep black space filled with small white stars. The entire cover is framed by a thick red border.

**TIME**

**COSMIC  
CRASH**

A shattered comet is about to hit  
Jupiter, creating the biggest explosion  
ever witnessed in the solar system.  
Could it happen here on Earth? Yes ...





JARNAC OBSERVATORY

Log Twenty-Five

begun March 3, 2013.

Jarnac Observatory

@

$110^{\circ}43'10''$  W.

$31^{\circ}58'35''$  N.

03-2013 13

17084S. Monday March 4/1645-1700/10-3/Jarnac/Caster,  
Cordelia SS2: 4, 3, 13, 15.

17085EM2 1945 to 0200 int/10-7m/Jarnac/CN3e  
test of Hyperion (expressed the test + can now use Hyper-  
ion on my own) CN3e TVCw.  
CMP-1 - RHO LEONID METEOR WATCH. 1 meter<sup>21SS</sup>

17086EM Tues March 5/2000 to 0100 int/Joshua Cole/  
SS3, Sirius, with Wendee.

17087S. Wednesday March 6/1715-1730/10/Jarnac 4/Caster,  
Cordelia SS2: 2, 7, 25.

17088EM2 1945-0055 int/10/Jarnac SS, JI/Minerva/  
CNB 0.1<sup>h</sup>W. CMP-1 Bright (m=1), very long  
lasting meteor. Coming out of the north, the meteor  
lasted ~ 20 seconds, the longest since the one I  
saw during the summer of 1965. That one I saw with  
Colleen Myers + the ASC Astronomy group. This was  
quite the meteor!

\*17089M3 0250-0725/10/Jarnac/Jarnac 1, 3/  
CMP-1, CN3, CN5 CN3d 1<sup>h</sup>E. CN3efhllkll2ll  
40m gill r u a.

17090EM Thursday, 7 March/2040 to 0125 int/3-2/Jarnac/  
CN3e TVCw. CN3 0.1<sup>h</sup>N, E with Minerva.

17091EM2 9 March Saturday/1955-0135 int/2-1/  
Jarnac/CMP-1, 1m<sup>h</sup> from east, CN3h, CN3g/  
development.



0925. Sunday March 10/1630-1700 int/10/Jarnae/  
SS2) Castor, Cordelia Joshua Cole/  
SS2: 3:19, 30. Failure to find Comet Panstarrs  
on its day of perihelion in daylight.

093 E2 1820 to 2000 int/10/Jarnae/Joshua  
Cole, Muriel / CN3s. No view of Comet Pan-  
STARRS also CN3 0, 1, 10.

1709443 0250 to 0650/10/Jarnae/CN3 1, 2<sup>h</sup> E  
CN3e F h h 11 k 11 L 11 40m gl. For the  
first time, 3 new cameras: Canon on Flare;  
Starlight X press on Potus, and the DS13 on  
Shakespeare. The images are great - the  
best taken by me so far I think.

70955. Monday March 11/1645-1715/10/Jarnae/  
SS2 with Castor + Cordelia 6.27, 36.

17096 E2 1845 to 0100 int/10/Jarnae/Wendee/  
CN3s. Second try to spot Comet PanSTARRS  
was successful. I saw it first through  
binoculars, then with Joshua Cole + finally  
through Gbadiah. I even got 3 good  
images of the comet setting over Kitt Peak.  
This session dedicated to the memory of  
Aunt Belle. She died this morning during  
the night.

7097E Tuesday March 12/1845-2100/9-10/W+DLO  
- Vail Ast. Unclub/Wendee/SS3 - CN3s.  
Comet Panstarrs. 1142, Nisan, Denelola.



03-2013

17098M2 0255 to 0650/10, a slight breeze/Jamaica/  
CN3 1, 3 to E. CMP-1; 2 meteors. CN-1, CN5,  
CN3 e F (but data accidently deleted) h hll kll  
Lll 40m gl r a, d.

17099S. Wednesday March 13/10/Jamaica/Caster, Cordelia/  
SS2, 7:41, 33.

17100EM2 1940-0010 int/10/Jamaica/failed to sight  
Comet PanSTARRS. CN3n alignment

17101M3 0135 to 0635/10, some breeze/Jamaica/CN1,  
CMP-1, 4 meteoric meteors, CN-1, CN5, CN3 to E  
2.2 h with Gemini, Miranda + Minerva.

17102S. Thursday P. Day March 3.14 at 159. /10, very warm,  
SS2 with Caster + Cordelia. SS2: 6:32, 19.

17103E2 1900-midnight int/10/Jamaica/Failed on PanSTARRS.  
Successful in aligning Shakespeare.

17104S. Saturday, March 16/1600-1815/10/Jamaica/  
Caster, Cordelia SS2. 6:31, 17.

17105EM2 2200-0145/10/Jamaica/CMP-1  
CAMELOPARDALID METEOR WATCH.  
One possible Camelopardalid meteor.

17106SE Sunday March 17/1805 to 2330/17m/  
Jamaica/ ~~SE~~ CN3e, CN3 40m alignment  
of Flare. /Scott Tucker, Wendee, Scott  
Roberts, Joe Napolitano. Interview.



~~17107~~ MS2 0250 to 0745/10/Jamaica/CMP-1, 2 meters.  
BETA LEONID METEOR WATCH. 2.  
CN-1, CN-5. CN3eFKK11K11L11 40m gll rad.  
CN3d 1.2h with Miranda + Munera.

17108S. Monday March 18/1800-1915/3/Jamaica/Cordelia  
Castor/SS2 through clouds 1,2,6.

17109EM2. 1940-0100 int/13/Jamaica/CN30, battery  
checkin?

17110EM. Tuesday, March 19/1930-0200int/3/Jamaica/  
CN3cUrio C/Panatarua. Sequence of  
images of M42.

17111S. Wednesday March 20/1645-1715/3/Jamaica/  
Cordelia, Castor/SS2 3,11,6. Also reglued my  
old child's breakfast chair.

17112S. Sunday March 24/1800-1830/10/Jamaica/  
Cordelia, Castor/SS2: 2,4,35m so.

17113EM2. Tuesday 2145-0055int/7m/5/CMP-1. SN in  
SSE in Centaurus? Probably a plane which  
appeared stationary then faded.

17114S. Wednesday March 27, (Daddy's birthday)  
1730-1750/2/Jamaica/Castor + Cordelia/  
Clear enough where the Sun is SS2 0,6.  
Thurs Mar 28.

17115EM2. 2000-0110 int/13/Jamaica/CMP-1/  
Joshua Cole. M42. Sirius, Moon.



04-2013

- 17116S Friday, March 29/1715-1730/3/Jarnac/  
Castor, Cordelia/SS 2 4:16, 6.
- 17117EM2 2100-0115 int/2/Jarnac
- 17118S Shabat, March 30/1600-1800/3/Jarnac/Caster,  
Cordelia/SS 2 4:12, 5.
- 17119EM2 2130 to 0130 int/3m/Jarnac/CMP-1.  
Moon through Joshua Cole
- 17120S Sunday, March 31/1715-1730/3/Jarnac/Caster, Cordelia/  
SS 2 4:16, 5.
- 17121EM2 2100-0050 int/7m/Jarnac/CMP-1.  
Lunar Occultation Egress with a star, probably in Scorpius.
- 17122S Monday, Apr. April 1/1640-1655/3/Jarnac/  
Cordelia, Castor/SS 2 1:2, 4 through clouds.
- 17123EM2 2005 to 0200 int/3/Jarnac/CN3 updates,  
CMP-1.
- 17124S Tuesday, April 2/1755-1810/3/Jarnac/Cordelia,  
Castor/SS 2 4:17, 9.
- 17125EM2 1930 to 0115 int/10/Jarnac/CN3s  
0.1h K&W. CMP-1
- 17126S Wed Apr 3/1715-1730/10/Jarnac/Cordelia, Castor/  
SS 2 4:32, 17.
- 17127EM2 2205- int/7/Jarnac/CMP-1 breezy.



- 17127E. Thurs April 4/1900-0205 int/1-2/W4/D19  
 Journal/SS3! Cloudy Vail Ast. Unlabeled  
 meeting; 10-15 people. Sirius & Jupiter barely  
 visible - Daved.
- 17128S. Friday April 5/1700-1715/10/Journal/Cordelia/Caster/  
 SSR 4:19, 12.
- 17129EM Sat Sunday, April 6/2355-0020/10/Journal/  
 CMP-1.
- 17130EAS. Sun April 7/1715-1730/10/Journal/Caster,  
 Cordelia/SS2 5.45, 22.
- 17131M ~~2~~ 0030-0100/10 3/Journal/CMP-1/meteoric  
 meteor from N-S but faint. DELTADRACONID MTRWATCH.
- 17132S. Monday, Apr 8/1630-1650/10 but very windy/  
 Cordelia, Caster/SS2 5.44, 17.
- 17133EM2 1920-0115 int/10/Journal/very windy/  
 Apollo/CN3b 0.1<sup>h</sup> W. CMP-1.
- 17133M. Tuesday, April 9/0100-0120/8/Saw pass  
 Resort, Jacksonville/CMP-1, beautiful  
 evening with Corvus, 2 + B Gem, Saturn,  
 no telescope.
- 17134E Wednesday April 10/1930 to 2/45/8-8 1/2/Saw  
~~first~~ hotel beach/Astron. Soc of Northern Florida  
 Star Party with Dr. McKel + Dr. Daved. Miser  
 gave a talk and quoted Hopkins's Comet poem.



04-2013

17136M2. 0000-0015 EDT / 7 1/2 / ~~Sundust~~ ~~Saugnans~~ ~~Perseid~~ / CMP-1.

17137EM Friday, April 12 / 1955-0125 int / 3 / Jarnac / CMP-1.

17138S. Saturday, Apr 13 / 1535-1815 / 10 / Jarnac /  
Caster, Cordelia / SS2 4:30, ~15.

17139EM. 2315 to 0500 / 3 / Jarnac / CMP-1  
LYRID METEOR WATCH. 1 MAGNIFICENT  
BOLIDE, heading towards E. horizon at  $M_r = -9$ .  
CN3, 0.4<sup>h</sup> E. Comet Panstarrs with CN3F.

17140S. Sunday Apr 14 / 1715-1730 / 10 / Jarnac / breezy /  
Cordelia, Caster / SS2 3:15, 15.

17141M2. 0130 to 0545 / 10 / Jarnac / CN3s Comet Panstarrs.  
CN3d 1.7<sup>h</sup> E. CN3e f h k l l k l l 40mg // ratd.  
CMP-1, 5 meteors. GAMMA VIRGID METEOR WATCH.

17142S. Monday, Taxday / 1815-1830 / 10 / Jarnac / windy /  
SS2: 6:51, 44. quite an increase.

17143EM2 2035-0005 int / 10 / Jarnac / CMP-1.

17144S. Tuesday, April 15 / 1800-1815 / 10, windy / Jarnac /  
SS2 with ~~Tarn~~ Caster + Cordelia / 4:34, 17.

17145EM2 2150-0050 / 10 7 / Jarnac / CMP-1.

17146M3 0225-0550 / 10 / Jarnac / CN3b / 1<sup>h</sup> E with  
Gemini + MINERVA. CMP-1, CN3e f h k l l k l l 40mg //  
CN-1, CN5.

~~17147S. Friday, April~~



17147S. ~~17147S~~ Wednesday, April 17 / 1800-1815 / 10 / Jarnae /  
Cordelia Caster, 1 SS2 3:8, 15. breezy, much  
cooler.

17148EM2 1950-2030 / 7m / Jarnae / CMP-1, CN3j, CN3e

17149EM3 ~~02~~ 0145 to 0515 / 10 / Jarnae / CN1, CN5  
CN3d 1.3h E. CN3e FHLK 112 1140mg 11

17150EM ~~Friday~~ Thursday April 18 / 1930-2005 / 10 - Jarnae /  
CN3j, CN3e.

17151EM2 2200-0110 <sup>7m</sup> int / 10 / Jarnae / CMP-1.

17152S. Friday, Apr 19 / 181750-1805 / 10 / Jarnae /  
Caster, Cordelia / SS2 2:15, 12.

17153EM2 2130-0110 int / 7m / Jarnae / CMP-1.

\*17154SAN. Saturday, April 20 / 2:00<sup>pm</sup> - 0530<sup>am</sup> /  
3-7-10 / University of Arizona, Jarnae /  
STAR NIGHT! 17<sup>th</sup> annual Starlight.  
Twenty telescopes. Sun in the afternoon.  
Moon, Jupiter, Saturn, M35 with Seitz  
brand new 6" refractor from Explore Scientific.  
With Joshua Cole - I told his story on the Pt  
tonight to the crowd - I saw Moon & Saturn.  
Later, a break til 1:45. Then CN3d 1.3h E.  
with Miranda & Minerva. CN3e FHLK 112 1140mg 11.  
r.a.d. Very productive session.



7m - 04-2013

17155M. Sunday April 21/0240 to 0555/10/Jarman/  
CN3FKill Kill 40mgll. No problems with the  
telescopes.

17156S. Monday Apr 22/1800-1825/13/Jarman/ SS2 with  
Cordelia + Castor/SS2 3:30, 13.

17157MP2 0100-0110/7m/Jarman/ CMP-1.

17158S Tuesday April 23/1730-1745/3/Jarman/ Castor, Cor-  
delia/SS2 2.23m, 12m.

17159EM2 2215-0115 int/3/Jarman/ CMP-1.

17160EM Wednesday Apr 24/2200-0125 int/2/Jarman/  
Full Moon.

17161S Thursday April 25/1730-1750/10/Jarman/  
Castor, Cordelia/SS2 3:21, 12m.

17162EM2 2215-0100 int/7m/Jarman/ CMP-1

17163S Friday April 26/1800-1830/10/Jarman/  
SS2 with Castor and Cordelia, 3:31, 22.

17164EM2 2230-0135 int/7m/Jarman/ CMP-1  
unsuccessful attempt to see Vanguard 2 satellite,  
which was launched in 1958 when I was in  
Rosllyn school when I was at Roslyn School.  
That summer at Turn Lake Camp.



171655. Saturday April 27/1600-1830/10/Jarnac/  
SS2: 3, 4, 27, ~31.

17166EM2 2215-0130 int / 7m/Jarnac/CMP-1. Failed  
to spot Vanguard 2.

171675. Sunday, April 28/1800-1815/10/Jarnac/  
Cordelia, Castor (C<sup>2</sup>). SS2 5, 64, 23. Num-  
bers are climbing rapidly.

17168EM2 2200 to 0140 int / 10-7m/Jarnac/  
CMP-1. Third failure to spot Vanguard 2.

171695. Monday, April 29/1845-1900/10/Jarnac/  
Cordelia, Castor / SS2. 4, 29, 2 near sunset so  
fading of fainter spots and prominences.

17170EM2. 2130 to 0130 int / 10-7m/Jarnac/CMP-1  
with Miranda. Successfully spotted the  
Vanguard 2 satellite. Exactly on time, exactly  
where it was supposed to be. Faint object a bit  
brighter than 10<sup>th</sup> magnitude. I followed it for about  
ten minutes, and it brought me back more than  
fifty years to its launch in February 1958  
when I was in 4<sup>th</sup> grade. That summer was my  
3<sup>rd</sup> summer at Winkake Camp. I caught  
while gazing at this relic still orbiting the  
Earth. I wandered back in time to its birth  
and the dawn of my own passion for the sky.

171715. Tues, April 30/1815-1830/10/Jarnac/  
SS2 w/ C<sup>2</sup> 5, 62, 17.



05-2013

17172EM2 2225-0135int/10-7m/Jamaica/CMP-1.

17173S. Wednesday, May Day, May 1/1820-1835/10/  
Jamaica/C<sup>2</sup>/SS2 5:41<sup>h</sup>, 15<sup>m</sup>.

17174EM2 2350-0140int/10-7m/Jamaica/CMP-1.

17175S Thursday, May 2/1730-1800/10/Jamaica/C<sup>2</sup>/  
SS2.

17176EM2 2210-0145int/9-6-haze/Jamaica/CMP-1.

17177M Friday, May 3/1550-155-0135-0150/2/Jamaica/  
CMP-1.

17178S. Saturday, May 4/1550-1830/3/Jamaica/SS2withC<sup>2</sup>.  
6:~44, ~7.

17179EM2 2130-0120int/2-1/Jamaica/CMP-1.

17180S. Sun May 5/17-18/3/Jamaica/C<sup>2</sup>/SS2 6:26, 13.

17181EM2 215-0050int/1-3/Jamaica/CMP-1. 1/10 "rain."

17182M3 0105-0515/10, 7m/Jamaica/CMP-1

2 SCORPIO METEOR WATCH.

ETA LYRID METEOR WATCH.

~~ETA~~ AQUARIUS METEOR WATCH

26 meteors altogether.

CN1, CN5 CN3e Fh h || k || 2 || 40 mg ||.

17183S. Monday, May 6/1800-220/3/Jamaica/C<sup>2</sup>/SS2



7184S Tuesday, May 7/8/1630-1740/3/Jarnac/C2/ SS2 5:26, 11. 1719

7185EM2 2120-0119 int/2/Jarnac/CMP-1. unsuccessful search for Comet Pansterra. 1719

7186M3 2140-06540/10/Jarnac/CN3h||L||U. CN3 0.1h, indep. discovery of Comet Lemmon. 1719

7187S Wed. May 8/9/1630-1740/3/Jarnac/C2/ SS2 2:9, 8 with passing clouds. 1719

7188EM2 1950-0130 int/3/Jarnac/CMP-1. 1719

7189S Thur May 9/10/1600-1730/3/Jarnac/C2/ SS2: 4:19, 2. 172

7190AN 192030-0530 int/3/Jarnac/early in W+DLQ SS3. Sharing the Sky with the Neil Armstrong Unclub with Voyager (formerly called Orb Gray) Jupiter Saturn, M13. Dice lecture about the foundation. Later, checkin'. Later still, CN3 1h E. CN3FH||K||L||40mg/1rad CMP-1. 5 meteoric meteors. \*1720

7191S. Fri May 10/11/Jarnac/1630-1730. 1720

7192EM2 2115-0130 int/CMP-1. 1720

7193S Sat May 11/16(555 + 1730/3/Jarnac/SS2 with C2 24:29, 11. 1720

7194AN 1930-0530 int/3-10/Jarnac/CMP-1. CN1, CN5, CN3. FH||K||L||40mg||b. CN36/3h E. CMP-1 2 meteoric meteors. 1720



17184S Tuesday May 7/8/1630-1740/3 | Jarnac (C2)  
SS2 5:26, 11.

17185EM2 2120-0119 int | 2 | Jarnac | CMP-1. unsuccessful search for Comet Panstarrs.

17186M3 0240-06540/10 | Jarnac | CN3hk11211v. CN3 0.1h; indep. discovery of Comet Lemmon.

17187S Wed. May 8/9/ 1630-1740/3 | Jarnac | C2  
SS2 2:9, 8 with passing clouds.

17188EM2 1950-0130 int | 3 | Jarnac | CMP-1.

17189S Thur May 9/10/ 1600-1730/3 | Jarnac | C2  
SS2 4:19, 2.

17190AN 192030-0530 int | 3 | Jarnac | early W+DLQ  
SS3. Sharing the Sky with the Galilean moons  
Unclub with Voyager (formerly called the  
Gray) Jupiter, Saturn, M13. Rice lecture  
about the foundation. Later, checkin'.  
Later still, CN3 1h E. CN3 Fh11K1121140mg (rad  
CMP-1. 5 meteoric meteors.

17191S Fri May 10/11 | Jarnac | 1630-1730.

17192EM2 2115 - 0130 int | CMP-1.

17193S Sat May 11/16 (555 + 1730) | 3 | Jarnac | SS2 with  
C2 24: 219, 11.

17194AN 1930 - 0530 int | 3-10 | Jarnac | CMP-1.  
CN1, CN5, CN3. Fh11K1121140mg || 6. CN36/3h E  
CMP-1 2 meteoric meteors



Summer of 2013  
06-2013

172325 Tuesday June 18, 1962 / no / 1830-1900 / 10 /  
Jarnac, Cordelia, Castor / SS2: 8, 62, 16.

172335 2 2100-2345 int / 7 / Jarnac / CMP-1.

17234 M3 0120-0450 / 7-10 / Jarnac / CMP-1  
Tau Herculis METEOR WATCH. 3m 4m 5m  
one of which was probably a TAU HERCULID.  
CN-1, CN5 CN3 1.5hr CN3FH || R|| 40mg/ra  
rad. TAU HERCULID METEOR WATCH

172355 Wed June 19 / 1815-1835 / 10 / Jarnac / SS2 with  
Cordelia and Castor. / SS2 8:46, 23.

172365 Thurs June 20 / 1700 - 1740 / 10 / Jarnac /  
Castor, Cordelia / SS2: 8:38, 15.

\* 17237 E2 2015- 2345 int / 7m / Jarnac /  
VANGUARD / SATELLITE  
successfully spotted through Miranda!

SUMMER of 2013  
begins

17238 M3 0000 to 0435 / 7-10 / Jarnac / First  
observing session of the Summer of 2013 /  
CN1, CN5, CMP-1. CN3FH || R|| 40mg/ra  
and all. Successfully spotted  
TIROS 2 passing between Algol &  
of nearby star, at 03:30 am. Plus a flare.  
It was the Hubble Space Telescope.



18684S Wednesday, July 22 / 1130-1150 / 3 / parking lot of Quality Inn / Neptune / SS2 1:2. Difficult to see. Last session before long 2-day journey to Az begins.

18685S Friday, July 24 / 0845-0908 / 3 / Jarnac / Mintaka / SS2 1:2, 14. Home at last.

18686EPR 2340-2345 / 2 / Jarnac. mostly cloudy

18687S Shabat July 25 / 0720-0830 / 3 / Jarnac / SS2 / 1:13, 5! Nice breeze ride 75 miles since resumption.

18688EM2 2200-0110 int / 3 / Jarnac / CMP1.

18689M3 0200-0430 / 3 / Jarnac / ~~Am~~ Cladiak Hyperion, Flare, Cyb, Esther / CN3 0.5<sup>h</sup>E. CN3F, ~~4~~ 40m, n, o.

18690S Sunday, July 26 / 1100-1115 / 2 / Jarnac / Mintaka / SS2 1:13.

18691S2 1215-1230 / 3 / Jarnac / Mintaka / SS2 1:13, 5.

18692EM3 2230 to 0200 int / 3 / Jarnac / CMP-1.

18693S Monday, July 27 / 1800-1910 / 3 / Jarnac / SS2 0:2 but haze + sun low. Earlier, worked up Esther in observatory.

\* 18694AN2 2000 to 0430 int / 2 - Jarnac / This night began as a very cloudy night with just a little clearing low in the west. By 2200 the clouds were thinning & the gibbous Moon shone brightly almost overhead to the south.

The sky was much better by 1:30 and I got CN3F, R11, 40m, n, o. (Hyperion out again.)

Then I finished with CN3 1<sup>h</sup>E and SE.

Also CMP1, DELTA AQUARIID METEORWATCH 2 meteors through Miranda, 1 in Redeye = 3. Two were Delta Aquariids.

18695S. Last session in Vol. 25. Tuesday, July 28 / 1130-1230 / 2 / Jarnac / SS2 with Mintaka 1:17, 6.



05-2013

7195S. Sunday, May 12 | 1805-1830 | 3 | Jarnac | C<sup>2</sup> | SS2 542, 23.

7196E12 230-0110 int / 10-3 | Jarnac | CMP-1.

7197S. Monday, May 13 | 1810-1830 | 3 | Jarnac | C<sup>2</sup> |  
SS2 5.60, 7, 1 probable flare!

7198E12 2005-0110 int | 3 | CN 3e TV Cw-19.7.  
CMP-1.

7199A13 0145-0530 | 3 | Jarnac | CMP-1, 2 meteorite rocks.  
CN-1, CN5, CN3Fh h11 h112 1140 mgill, d. CN3 96<sup>h</sup>E.  
Comets Panstovs and Lemmon.

7200S. Tuesday, May 14 | 1830-1850 | 3 | Jarnac | SS2, C<sup>2</sup>  
5.32, 7, 1 possible flare.

7201E12 2005-0130 int | 3 | Jarnac | CN3s - VANGUARD  
I rocket ship spotted 56 years after its launch as  
it soared past the horizon. I followed it for  
a minute or so before it disappeared behind  
clouds.

7202S. Saturday, May 18 | ~~1600~~ 1650 to 1900 | 7 | Chateau  
Vaudreuil, W. of Montreal. Mon's 95<sup>th</sup> birth-  
day celebration. ≠ Some photos of the Moon with my  
Canon 20 camera.

7203S. Monday, May 20 | 11:30-12:30 | 1, 2 | Parc Jean  
Drapeau, Montreal St St Nelson et St Notre Dame.

7204S. Tuesday, May 21 | 1400 to 1630 | 3 | Quebec City | Wendy  
Philippe Moussette / wonderful walk through old city  
- City Hall - Chateau Frontenac.



205E ~~M~~ Friday May 24/25 / 2030-0030 / 7m / Jarnae / 17215  
Saras. Lunar Eclipse. Penumbra. As expected  
saw no darkening as almost nothing of Moon was  
covered by Earth's penumbra.

206S Saturday May 25 / 0925 to 0945 / 10 / Jarnae /  
SS2 with Mintaka / SS2 3:36, 15. #17216

207SEM2. 1555-0100 / 10-3 / Jarnae / SS3, CN2,  
CMP-1 Sharing the Sky Thank you Star  
Night Party Moon, Saturn, Conjunction  
of Venus, Jupiter, Mercury. #17217

208S Sunday May 26 / 1805-1820 / 3 / Jarnae / Castor,  
Cordelia / SS2 3:12, 8.

209EM2 1915-0130 int / LPO-1, Conj, Mercury,  
Venus, + Jupiter.

210S Monday May 27 / 1645-1710 / Jarnae / SS2 with  
Castor and Cordelia / SS2 3:12, 2. 17218

211EM2. 2005-0130 int / 10-7m / Jarnae / CN36 0.140.  
with Apollo. 1721

212S ~~Tues May 28~~ Wednesday May 29 / 1745-1800 / 10 /  
Jarnae / Cordelia + Castor / SS2: 2:4, 17. 1722

213EM2 2130-2030 int / 10-7m / Jarnae / CMP-1.

214E Friday May 31 / 2200-2300 / 1 / Helen Sawyer Hogg  
observatory, Ottawa / 15-inch refractor. Cloudy.



06-2013

- 17215E. Sunday, June 2/2030-2345/3-1/Carl's place/  
CMP-1 = International Space Station made a  
beautiful pass at 23:17, emerging from the Earth's  
shadow of Vega + moving toward the East.  
Very nice session; pointed the ISS, Vega + Saturn  
to a good portion of the inhabitants of Carl's complex.
- 17216SEM. ~~Fri~~ Monday, June 3/0030-0055/7/King st/1  
- No ISS; watched the stay after my success-  
ful lecture to the Kingston Center.
- 17217SEM. Tuesday, June 4/2130 to 0100/10, 3rd times/  
The Kennex E-Addington Dark Sky Viewing Area/  
Susan Gagnon, Torrey Dickinson, 15" reflector,  
ETX "Baby", and Binoculars / M51, M81, M82,  
CMP-1 2 meteoric meteors, one both through  
Cygnus, first bright, 2nd faint. A  
spectacular night. Possibly from same shower:  
GAMMA DELPHINID METEOR SHOWER.
- 17218SEM ~~Saturday~~ Sunday, June 9/1800 to 2355 to 0130/4,3/  
railway bridge near Peter's home / Peter / watched as  
an eastbound train went by.
- 17219SEM Sunday, June 9/1800 to 0045/10/1/  
Observatory / watched a westbound train go by.
- 17220M Monday, June 10/11/0350-0435/11/Peter's  
house / Attempt to observe possible outburst of  
Gamma Delphinids failed due to clouds, but  
apparently there was no shower.



Summer of 2013.

- 17239S Friday, June 21<sup>st</sup> / 17-1730 / 3 / Jarnac /  
SS2 with Cordelia + Caster : 6:44, ~8.
- 17240S Saturday, June 22 / 1815-1835 / 3 / Jarnac  
SS2 with Caster + Cordelia, 4:30, ~4.
- 17241EM2 2315-0250 int / 3m Perigee Full Moon /  
CMP-1. collection of CN3 data.
- 17242S Sunday, June 23 / 1810-1830 / 3 / Jarnac  
~~SS~~ Cordelia + Caster / SS2 4:43, 15.
- 17243EM2 2040-0215 int / 3m / Jarnac /  
CMP-1. Bright perigee Full Moon. ISS  
very bright.
- 17244S Monday, June 24 / 1745-1800 / 3 / Jarnac /  
Caster, Cordelia / C<sup>2</sup> / SS2 3:8, 11.
- 17245EM2 2130-0240 int / 3 / Jarnac, Winkler  
CMP-1. SS3. ISS spotted climbing  
the Western sky until it faded + vanished  
as it entered @ shadowline.
- 17246S Tues, June 25 / 1800-1830 / 10 / Jarnac / Caster,  
Cordelia / SS2.
- 17247M2 0045-0430 / 3 here, 10 in Chile / Levy -  
Blanchard observatory, Atacama desert,  
Chile / CN3w11-CM1. Full set. First  
light for this part of the program.



Summer 07-2013

Jarnac / 17248 Wed June 26 / 1815-1900 / 10 / Jarnac / Cordelia / SS2.

3 / Jarnac / 17249 EM2 2315-0300 / 3 here, 10 in Chile / CN1 no images. — see 17247 for data.

Moore / 17250 EM1 Thurs June 27, / 2200-0315 / 3 here, 10 in CN3W II, CN1 no images see above.

Jarnac / 17251 EM1 Friday, June 28 / 2320-0255 / 2 here Chile / Jarnac Levy - Blanchard Observatory. Great 2nd night of data. All images have been transferred.

Jarnac / 17252 S Saturday Shabat / 1830-1845 / 2 / Jarnac / Cordelia - Castor / G.S. 2, 1/3, 4, 0 through

Jarnac / 17253 M2 0115-0300 / clear in Chile / CN3W

Wendel / 17254 M2 0045-0255 / 0-3 here, 10 in the Atacama Jarnac, Levy - Blanchard Observatory / Third night of data. Images went down South declination.

17255 S Tuesday, July the 2 / 1745-1800 / 3 / Jarnac / SS2 with CORDELIA, CASTOR / 1:11, 2

17256 M2 0000-0240 / 1-3, 10 in Chile / Jarnac, Atacama desert; Levy - Blanchard observ / CN3W II - CN1.

17257 S Wednesday July 3 / 1810-1830 / 3 / SS2 with Cordelia, Castor / SS2: 2:16,

17258 M2 2330-0200 int / 1-2 / Jarnac / Atacama / CN3W II - no imaging.



259 ~~EM~~ Thursday July 4/5 / ~~0200-0230~~ 230-0230 /  
2 here, 3 in the Atacama / CN3w || - CN1 full  
imaging despite some clouds there.

260 ANS Friday, July 5 / 2000 - 0655 int / 1-3 / For-  
near AND the Atacama / CN3w || - CN1. CNBFH ||  
K112 || 40m n g || r tuwll. CN3 1.1<sup>h</sup> E.  
Int. from 2000 to 2330, then solid after that for  
prep + observing.

261 SE. Saturday, July 6 / 1930 - 2000 / 2 / Jarnac /  
Casta, Cordelia / Wendee / SS2 1st, D. Refitter.

262 AN2 2035 - 0500 (int until 2000 or so) / 2-10-3 /  
Jarnac, Atacama / CN1, CN5, CN3 1.1<sup>h</sup> E!  
CN3Fh || K112 || 40m || n g || ull wll. CMP 3rd  
row.

263 ~~EM~~ Sunday July 7 / 2330 - 0155 / 3 here,  
better in Chile / CN3w set.

264 SE. Monday July 8 / 1730 - 2130 int / 0 here  
3 in Chile / CN3e attempt with Centaurus.

265 S Tues July 9 / 1700 - 1230 / 1-3 / Jarnac  
Atacama / SS2 5.49, 5. CN3e TVGw /  
19.1. with Centaurus after reinitializing it.

266 M Wed July 10  
0140 to 0315 / Jarnac and the Atacama /  
CN3w (0 in Chile.)

267 S. Thurs July 11 / 1700 to 1715 / 2 / Jarnac / Casta + Cor-  
delia / SS2 0.2 through clouds.



- 172785EM Saturday, July 20/1600-0150/0-1/Jarnac/
- 17279S Sunday, July 21/1700-1715/3/Jarnac/  
Cordelia, Caster/SS2: 2:10, 9.
- 17280EM 22305-0200int/2 here, 10 in Chile/CN3w.
- 17281EM Thursday, July 25/2310 to 0200/3-2 here, 1  
in Chile/.
- 17282EM Friday, July 26/2015-0330int/1-3 here, 3  
in Chile/CMP1, CN1, CN5, CN3n, CN3w11.
- 17283S Shabat, July 27/1600-1800/0 to 2/Jarnac/  
Cordelia, Caster, Coffee/SS2: 4; 23.8.
- 17284EM 2215-0330int/3 here, 3 in the Atampa/Jarnac/  
Cordelia, Ulysses, Esther, and Centaurus/CN3h,  
CN3n, CN3w11.-CN1. Scope successfully repaired  
using Sky Solve.
- 17285E Sunday, July 28/1800-1815/4 3/Jarnac/SS2
- 17286EM 2320-0330int/2 here, 3 in Chile/CN3h, n, w11.
- 17287S Monday, July 29/1745-1805/3/Jarnac/SS2.
- 17288EM 2030-0150int/3/Jarnac/CN3h+n.  
One of the best nights I've ever seen here.
- 17289M Tuesday, July 30/0100-0200/The Atwood  
Astronomy Retreat/Wanderer-1/SS3, CMP-1, SS1
- 17289a) DELTA AQUARI METEOR WATCH. Smoke  
monitors



Summer of 2013  
08-2013

17290EM Wednesday July 31/2100 to 0100/3/The Adirondack  
Astronomy Retreat/Wendee, the Scattolin family/CMP-1  
DELTA APPARID METEOR WATCH. 6 meteoric  
meteors. Sky was clear on-and-off. When clear  
was beautiful. Interesting discussion with the 3  
Scattolin children about Messiers.

17291EM Thursday August 1/2000-0130/0-1/The  
Adirondack Astronomy Retreat/Rain & heavy cloud,  
Great Conversation. The tenth AAR has begun!

17292EM Friday August 2/1940-0100/10-3-2/2/  
The Adirondack Astronomy Retreat/CMP-1, 6 meteor  
meteors. KAPPA CYGNID METEOR WATCH.  
CN3s 1.6 hours covered West + South + NW.  
Clouds came later and covered the sky.

17293AM Saturday August 3/2200-0430/3-0-2-3  
The Adirondack Astronomy Retreat. Peter  
the group. CN3b 2\* hours W, S, & E.  
Nice surprise ISS pass. with Herschel.  
CMP-1 14 meteors.

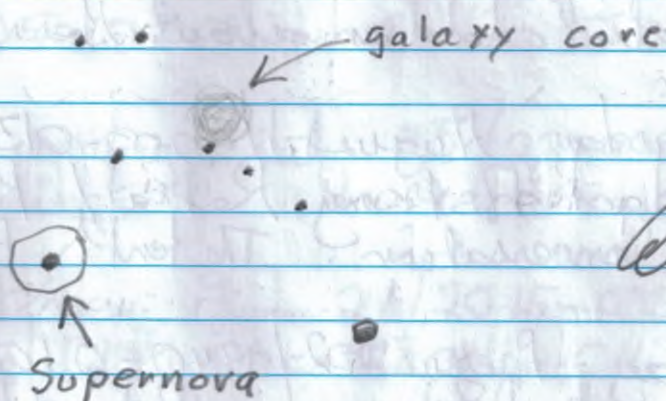
17294M Sunday, August 4/0115-0400/Suddenly  
The Adirondack Astronomy Retreat.  
Herschel the 16". CN3b NE. Beautiful  
ISS overhead pass. CMP-1 9 meteors.

17295M Monday August 5/1215-1230/10/The  
Adirondack Astronomy Retreat/SS2 with a pair of  
Solar Telescopes. SS2 3:10, 9.



Supernova M74

1729



Al Borealis

1730

296 AN2

1950-0440/10-3/ The Adirondack Rondack  
 Ronomy Retreat / dozens of telescopes including  
 Minerva, Narcissus's red mount, and  
 Hart the 14-inch, & a new set of binoculars,  
 M31, M32, M110-NGC 205. M74 with supernova  
 CMP-1 PERSEID METEOR WATCH  
 meters bright. Hart worked well.  
 CN3 4h W, N, E.

1730

1730

1730

2975

Tuesday, 6 August / 1310-1330 / 3 / The Adirondack  
 Rondack Ronomy Retreat / a pair of solar  
 telescopes belonging to Willy Lee / SS2  
 3:10, 43.

1730

298 AN2

2015 to 0340/10 plus then 3, finally 2/  
 The Adirondack Rondack Ronomy Retreat /  
 Minerva, Narcissus's new mount other telescopes,  
 16 Comet fanscans. CN3w Centaurus in Chel.  
 CMP-1 14? meters. CN3 2.5h.

1730



- 06EM2 2355-0310/3/Jornae! / CMP-1 31 meteoric 17312S  
 meteors. PERSEID METEOR WATCH.  
 CN30, CN3w partial sets til clouds + fatigue  
 came.
- 07S Thursday, August 15/1630-1650/3/Jornae 17313M  
 SS2 Cordelia, Castor) SS2 4:32, 17. 17314S.
- 08EM9 Shabat, August 16/17/2330 to 0500/ 17315E  
 3 J, Jornae / CMP-1 2 meteors, one through  
 the telescope (Gemini) and one just naked eye  
 sporadic. I accidentally damaged the south  
 wall by starting to open the roof before lifting it.  
 But instead of disaster, I calmly found the long  
 screw driver forced the west spot open a fraction  
 of an inch, and it was fixed. The rest of  
 the session was great. CN5, CN-1, CN3bl.1<sup>3</sup>  
 with Gemini + Minerva. CN3F, h, k11, k11, d11, 17316S  
 40m, n, CN3oll-CN1, CN3w11-CN1.
- 9EM Aug 17/18/2300-0215/3 here, better in Chib/ 17317  
 Centaurus / CN3w. Testing for Narcissus
- 10EM August 21/22/2050-0230 int / 3/Jornae/ 17318  
 J fell against Ulysses' mount + it fell + J  
 fell + now its dec motor is out! Worked also  
 on Narcissus.
- 11E August 24, Saturday Shabat/20. 1917- 17319  
 2100/1-0/ The famous Joyful Hearts retreat  
 aka Yoga on the Lemmon/Wendee Ken Shaw,  
 ~40 to hear my short lecture. No observing; clouds



Summer of 2013  
09-2013

- 7312S. Sunday August 25/1645-1700/3/Jarnac/  
actually 1500-1700/10-3/Cantor, Cordelia.  
SS2: 2:6, 12.
- 7313M2 <sup>Aug 26</sup> Mon 0045-0115/2/Jarnac/CMP-1.
- 7314S. ~~Mon~~ Tuesday, Aout 27/1735-1750/3/Jarnac
- 7315EM2 1905-0100 int int/3/Wendee G David Levy  
Observatory, Yant Astronomy Unclub, Wendee  
stayed home after her busy today / first meeting  
of the new semester. / Voyager + several other tele-  
scopes. Saturn, M51 because HST pictures  
of M51 were being distributed, Alcor, NOVA  
DELPHINI 2013, and M17. SS3, CMP-1.  
Later, at Jarnac.
- 7316S. Satin Saturday ~~August~~ <sup>Aug 31</sup> September 1/1615-1630/  
3/Jarnac/SS2 with Cordelia + Cantor/SS2 2:  
17, 11 or so.
- 7317S <sup>AN2</sup> probably / 2000-0530 int/3-10/Jarnac/  
CMP-1 ALPHA AURIGID METEOR WATCH  
- 1 meteor, 3 total. CN-1, CN-5, CN3 FHAD  
R11 2 11 40m 11w 11. CN3 1.4h E
- 7318S. Sunday Sept. 21/1815-1830/3/Jar-  
nac/SS2 2:14, 45 with Cordelia + Cantor.
- 7319EM2 2315-0530/3/Jarnac/  
CMP-1, 1 meteor. CN1, CN5, CN3 1h E  
with Gemini. CN3 FHAD 11 40m w 11.



510670 70mm  
5108-90  
17320m Monday, Sept 2 / 2345 - 0125 int / 3-2 / Jarnac / CMP-1.

17321S. Wednesday September 4 / 1730-1745 / 3, almost 10 / Jarnac / Cordelia, Castor / SS2: 2, 12, 14.

17322AMZ Tues, Sept 3.  
1940 - 0600 int / 10 - / Jarnac / CMP-1, CN-1, CN-5, CN-3F h h l l R l l L l l. 40m g l l r u l l w l l a d, CN3 1, 1<sup>h</sup> E.

SEPTEMBER 24 NOCID METEOR WATCH.  
17323S. Wed Thursday Sept 5 / 1630-1645 / 3 / Jarnac / SS2 with Castor & Cordelia, 2: 11, 12<sup>h</sup>.

17324E2 1840-2015 / 2 / W + DL observatory / Veil Astronomy Unclub / SS3.

17325M3 0010-0610 / 3 / Jarnac / CMP-1, CN-1, CN-5, CN3F h h l l l l 40m g l l u l l w l l. CN3 1<sup>h</sup> E with Miranda + Minsing. EPSILON PERSEID METEOR WATCH.

17326S Saturday, September 7 / 10-E 3-2 / Jarnac / Cordelia + Castor / SS2: 0, 14.

17327S Monday, Sept 9 / 1800-1815 / 2 / Jarnac / Castor, Cordelia / SS2, 0, 9.

17328S Tuesday, Sept 10 / 1145 - noon / 3 / Jarnac / Min-fara / SS2: 0, 21<sup>h</sup>

17329AMZ 2000-0615 int / 3 / Jarnac / CMP-1 5 meteors. CN1, CN5, CN3 1<sup>h</sup> E. CN3F h h l l g l l o l l w l l. -CM. Scattered light clouds, very nice session.



Summer of 20  
09-2013

17320S Thursday, September 12/1250-1330/3/Jarnac  
Mintaka/ SS2 1, 2, 15<sup>n</sup>.

17331EM2 2100-0130 int/3-10/Jarnac/CMP-1.

17322S Friday, Sept. 13 Friday the 13<sup>th</sup>/1520-1540  
3/Jarnac/ SS2 with Mintaka 1, 2, 15<sup>n</sup>.

17333EM2 2300-0030 int/3 1/Jarnac/CMP-1.

17324E <sup>AW</sup> Sat to Sunday, September 15/2300 to 0000  
1-0/aboard the MV Norwegian Pearl/Aurora-

17325E Monday, September 16/2300-0000 int  
3-2/aboard Norwegian Pearl/Aurora-1, negative  
Used Ophelia to study 2 Aur, Coatt + 3 kids,  
4 small tries, all neg.

17326LEM Tuesday, September 17/2150 - 0100 int  
Aurora-1. aboard Norwegian Pearl in lower  
Gunnear, Alaska!

17327E Wed September 18/2300-0000 int/0-1/Aurora-

17328E Thuro Sept 19/~~2200~~<sup>1200</sup> to 0000 int/0-1/Aurora-1  
Magnificent views of glaciers + Glacier Bay National Park

17329EM Friday, September 20/2000-0100 int/1,7  
Aboard Norwegian Pearl heading south coast  
canceling Ketchikan, Alaska due to bad weather  
Sky clear at first, mostly cloudy later.  
Aurora-1 negative.



5105-90  
5105-90  
17340EM Saturday, September 21/2330-0035/ Victoria  
for Canada/ Helping clear moorings + pushing  
out + heading to Seattle.

17341S Sunday September 22/1620-1635/3/ Jarmac  
Cordelia, Custer/ SS 2 4, 7, 15.

17342M 0015-0030/ 7m/ Jarmac/ CMP-1, Aurora-1.

17343S. Monday September 23/1715-1830/10/ Jarmac  
SS 2 with Custer + Cordelia/ SS 2 3, 9, 15.

17344EM 2045-0230 int/ 10-7/ Jarmac/ Aurora-1/  
CMP-1, CN3 all testing other lens.

17345S. Tues Sept 24/ 1630-1800/ 10/ Jarmac/  
Cordelia, Custer/ SS 2 # 2, 15, 24.

17346EM 2000-0130 int/ 10-7/ Jarmac/ CMP1, Aurora 1,

17347S. Wednesday, Sept. 25/ 1700-1715/ 10/ Jarmac/  
Cordelia, Custer/ SS 2 3: ~~22~~, 15, 22.

17348E Thursday, September 26/ 1930-2010/ 3/  
Granite trap, earlier Rancho Hidalgo/ Bob  
Masterson, Gene Turner others/ David  
Cygus area through lobby the big  
Newtonian telescope.

17349E Friday September 27/ 2045-2145/ 10/  
Starry Nights Festival/ Joshua Cole/  
M31, D5 Cl. / Tim Hunter/ SS 3.



10 09/2013

173505 Saturday September 28/1500-1530/ Starry Nights Festival/ 2 Solar Telescopes/ SS2, SS3 Five filaments, one of which is huge - almost 200,000 miles long.

17351E2 1950 to 2115/10/ Starry Nights Festival/ lots of telescopes, Aurore telescope/ Joshua Cole/ Tim Hunter, many others/ SS3: NGC 269, 284, M31.

17352S Sunday, September 29/1735-1750/10/ Jarnac/ Cordelia, Castor/ SS2 0, 5.

17353EM2 A 0010-0130 int/10/ Jarnac/ CMP-1.

17354S Monday, September 30/1600-1615/10/ Jarnac/ Castor + Cordelia/ SS2 1, 2, 5.

17355EM2 2300-0145 int/10/ Jarnac/ CMP-1.

17356S Tuesday, OCTOBER 1/ ~~11:00-12:00~~ 11:00-11:15/10/ Jarnac/ Mintaka/ SS2: 3, 15, 8.

17357EM2 2330-0115 int/10/ Jarnac/ CMP-1.

17358M3 0500-0525/10/ Jarnac/ CMP-1, 1 meteor. CN35 unsuccessful search for Comet ISON. CN30 0.1" K.

17359S Wednesday, October 2/1145-1210/10/ Jarnac/ Mintaka/ SS2: 4, 20, 3, plus 3 filamentary filaments.



17360E12 2350-0115 int/10 | Jarnac. | CMP-1.  
Two meteors from different directions appeared within  
a minute of each other. Seven watched some more  
after.

17361M3 0400 to 0515 | 10 | Jarnac | CN3d. O, 2<sup>h</sup>E.  
Successful spotting of Comet C/2012 S1 ISON.  
 $M_1 = 11.4$  Fat comet, 2 x 4 arcmin. in PA  
310° elongation of the elongation. I  
posted this to the comets mailing list & promptly  
heard from Mr. Novachinok.

17362S Oct 3 | 1215-1235 | 10 | Jarnac | Muntaka  
SS2 5:35, 5 v.

17363EM 2300-0215 int/10 | Jarnac | CMP-1

17364S. Friday, Oct 4 | 1000-1015 | 10 | Jarnac |  
Muntaka | SS2 5:30, ~10, 2 filaments.

17365M2 0215-0230 | 10 | Jarnac | CMP-1 | mtr.

17366S. Saturday Shabaz, October 5 | 1145-1205 | 10 |  
Jarnac | Muntaka | SS2 2:6, 15.

17367S2 1535-1800 | 10 | Jarnac | Castor, Cordelia |  
SS2. 2:3, 16.

\* 17368S. MONDAY, OCTOBER 7 | 1:20-3:00<sup>pm</sup> | DENVER  
COLORADO | NO SS2. Picture taking near hotel &  
on the way to the airport.



17369EM2 2350-0130 int / 10 / Jarnac / CMP-1,

17370S. Tuesday October 8 / 1300-1315 / 10 / Jarnac  
SS2 with Mintaka 5.

17371EM2 2315-0130 int / 10 / Jarnac / CMP-1, + prep.

17372M3 0150-0600 / 10 / Jarnac / CN3b 1.1<sup>h</sup> E with  
Gemini and Miranda, CN3a to CN3FHKllKl  
211 40m and will in Chile.

17373S Wednesday Oct. 9, 1946 / <sup>1530-1630</sup> ~~1945-2100~~ / 10-3 /  
Jarnac - / Mintaka / SS2: 4; 15, 10 prominences.

17374E2 1945-2100 / 10-3 / Jarnac / CMP-1 OCTOBER  
DRACONID (GIACOBINID) METEOR WATCH.  
2 possible meteoric meteors. 1 4<sup>th</sup> mag forw. (Camelopardalid), 1 5<sup>th</sup> mag Draconid, plus  
3 doubtful faint ones.

17375M3 0010-0200 int / 3 / Jarnac / CMP-1.

17376S Thursday Oct. 10 / 1620-1700 / 3-2 / Jarnac /  
Casta + Cordelia (C<sup>2</sup>). / SS2 5; 32, 8.

17377EM2 2330-0130 int / 10 / Jarnac / CMP-1

17378EM. Friday, Oct 11 / 2215-0130 int / 7m / Jarnac /  
CMP-1,

ETA CETID, METEOR WATCH.

\* 17379M2 0230-0600 / 10 / Jarnac / CMP-1. 5 meteors, incl.  
- 9 bo. h. CN1, CN5, CN3, 1.4<sup>h</sup> E. CN3FHKllKl 211 40m, will  
M<sup>2</sup> now probably an Eta Cetid. (p 119).



- 17380MS. Saturday, Shabat, October 12/1530-1815/  
10/Jamaica/ SS2 ~5:36<sup>~</sup>, ~8.
- 17381M2 0115-0535/10/Jamaica/CMP-1  
CN1, CN5, CN3d 2<sup>h</sup>E. CN3FhKllKllLll40m will
- 17382M, Sunday, October 13/0015-0550/3/Jamaica  
A tropical storm provided clouds to the S and  
E, but still enough good sky for me to do an  
effective + enjoyable session. CMP-1 5  
meteoric meteors. CN1, CN5, CN3 2.1<sup>h</sup> with  
Miranda + Munira. CN3FhKllKllj 2ll 40m will
- 17383S. Monday, October 14, Columbus Day / Muntaka  
Jamaica / Bert + Andrea / SS2 4:18, 9.
- 17384EM2 2350-0130<sup>int</sup>/7m/Jamaica/CMP-1.
- 17385S Tuesday, October 15/1700-1715/10/Jamaica/  
SS2 5:16, 12 via Cordelia + Castor.
- 17386EM2 Tuesday, October 15/1945-2130/7m/Jamaica/  
David + Pam Rossatter, Wendee / SS3, LPO-1.  
Mars, Aldebaran, M'45, D6-Cl,
- 17387S Wednesday, October 16/1245-1300/10/Jamaica/  
SS2 with Muntaka / 5:31, 26~.
- 17388EM2 2315-0035<sup>int</sup> / CMP-1.
- 17389S. Thursday, October 17/1615-1730/10/Jamaica/  
Cordelia, Castor / SS2 4:25, 15; 4 filaments,



- 15/ 17390#2 <sup>S</sup> Friday, October 18/1610-1635/10/Jarnac/Castro,  
Cordoba | SS2 6:20, 3; 2 filaments.
- 17391S2 1700-1725/10/ Eclips preparation and sunset.
- 40m wll
- 17392E3 # 1740-2000/7m/Jarnac/Saros-1.  
Penumbral lunar Eclipse No. 87. Wendee and  
Scuy it using binoculars. As the Moon rose we  
it from the fence at the front of our driveway.  
noticed the shading on the south side of the Moon  
just as I had read. Then I noticed it clearly.  
A very dramatic eclipse session; fine exper
- 5/Jarnac  
Scarf  
to Jarnac  
1 5  
with  
40m wll
- Mintaka) 17393EM4 2100-0200int/7m/Jarnac/CMP-1.
- 17394SE Shabat. <sup>Oct. 19</sup> /1530 1815/10/Jarnac/Castro + Cor  
SS2,
- Jarnac) 17395EM2 1930-0200int/7/Jarnac/CMP-1.
- 17396S Sunday, October 20/1615-1735/10/Jarnac/C  
+ Cordoba | SS2: 5:44, 2.
- Jarnac)  
0-1.
- 17397EM2 2145-0200 int/7m/Jarnac/CMP-1.
- 17398S Monday, October 21/1630-1645/10/Jarnac/C  
Cordoba: SS2 5:35, 13.
- 17399EM2 1940 to 0215int/CN3s failure to see 9 lines  
2012X1/
- Jarnac  
aments,
- 17400S Tues. Oct. 22/1200-1245/10/Mintaka/SS2 5.



HEM. 2000 to 0045 int / CMP-1 ORION 10 MTR WATCH

17409M4

2S. Wednesday 23 October / 0935-0950 / 10 / Jarnac /  
Muntaka / SS 2 5.64, 13r.

17410E

BE2 20 19:50-20:10 PDT / 7 / landing in Vancouver /  
Aurora - 1 negative. Saw UMa + 2 Aur in N.

17411M2

4E. Thursday 24 Oct / 190-2300 2330 / 7-10+9 /  
Way from Edmonton to Jasper National Park,  
then Jasper Park Lodge / Aur 1, Negadore,  
CMP-1, 1 meteoric meteor.

17412S.

5EN. Friday, Vendredi 25 October / 2330 to 0030 /  
10-13 / Lake Annette?, on the Fairmont Jasper Park  
Lodge grounds. Canon camera for possible  
meteor photographs and Ophelia the binoculars.  
B Cygni + other sights. CMP-1 2 meteoric meteors.  
Aurora - 1 doubtful faint auroral glow but almost  
certainly moonlight glow instead.

17414S

17415EM2

S Sunday Dimanche, 27 October / 1530-1700 /  
1 / Jasper Park Lodge / Walk around Lac Beauvert  
with Ophelia took ~ 1.5 hrs. Saw Mount Edith  
Cowell. Very pleasant exercise despite cold  
weather.

17417S

17418M2

E2. 2130-2245 int / 1 / Jasper Park Lodge / cloudy.

17419S

BM3 0430-0445 / 9 / Jasper Park Lodge / Aurora /  
negative. Look at M42 with Ophelia.

17420EM

17421S.



- ATCA  
rmae)
- 17409M4 0635-0710/9/ Jasper Park Lodge/ Aurora - /  
negatore.
- 17410E Monday, 28 October / 2 1800-1840<sup>CDT</sup> int / airplane over  
Dallas at twilight / Venus.
- 17411M2 0100-0115 / 17-3 / Jarmac / CMP-1.
- 17412S. Tues 29 October / 1600-1615 / 10 / Cordoba and Cast  
SS2: 3:48, 13.
- 17413EM2 2010 to 0230 int / 10 / Jarmac / CMP-1.
- 17414S Wednesday, 30 October / 1300-1320 / 10 / Jarmac / Mintak  
SS2 4:39, 22.
- 17415EM2 2035-0200 int / 10 / Jarmac / CN3nbll. CMP-1  
EPSILON GEMINID METEOR WATCH. 8 mtrs
- 17416S. Thursday, 31 October / 1600-1630 / 10 / Jarmac / Castor,  
Cordoba / SS2 3:35, 4 in a giant complex.
- 17417 see overleaf.
- 17418M2 0200-0600 / 10 / Jarmac / CMP-1 TAURID MTR WATCH  
9 meteoric meteors. CN1, CN5, CN3nbll, F, Hll, nbll.  
Orionids too.
- 17419S Friday, 1 November / 1420-1435 / 10 / Jarmac / Mintak  
SS2 3:28, 18.
- 17420EM2 2115-0315 int / 10 / Jarmac / CMP-1. ANNUAL ANDR  
DID MTR WATCH. Taurids. 23 meters. CN3nbll.
- 17421S. Shabat, 2 November / 1230-1300 / 10 / Jarmac / Mintak  
SS2 3:13, 2.



17417EM2 Betw 416 + 418 overleaf numbering) / 2000-0200 int  
2-1/ Jarnac. CMP-1.

17422S. Sunday, 3 November / 1530-1450 / 10 / Jarnac  
Caster, Cordelia / SS2 5:60, 2.

17423AEM2. 1930-0045 int / 3 / Jarnac / CMP-1. CN3 nbll.

17424M3. 0135-0700 / 10-3 / Jarnac / CN36 l. 1<sup>h</sup>E  
with Gemini/Geminorum and Minervakins. CN3F ll  
kll 2ll 40m nbll ullwll. CMP-1. ALPHA MONOCEROTID  
METEOR WATCH. TAURIDS. ~20 meteoric meteors

17425S. Comet ISON  
Monday 4 November / 1630-1645 / 3 / Jarnac  
Caster, Cordelia (SS2 7:42, 3; 1 long filament)

17426EM2 1950-0200 int / 2-3 / Jarnac / CMP-1.

17427S. Tuesday, 5 November / 16:30-16:55 / 10 / Jarnac  
Cordelia, Caster / SS2: 7:84, 6; 1 curly filament

17428EM2 2015-0130 int / 10 / Jarnac / CMP-1; CN3 nbll

17429M3 0250-0610 / 10 / Jarnac / CN3 l. 3<sup>h</sup>E with  
Miranda and Minerva. (CMP-1-4 meteoric meteors,  
CN-1, CN5, CN3e F kll 2ll 40m nbll ullwll.  
Comet ISON.

17430EM. Wednesday, 6 November / 1950-0220 int / 10, strong  
E wind. CMP-1.

17431BEM Thurs, 7 Nov / 2030-0200 int / 10, windy from E /  
CMP-1.



-020 int 17432S Friday 8 November / 1515-1535 / 10 / Jarnac  
Mintaka / SSR 5:48, 7.

Jarnac 17433EM2 2000-0050 int / ~~10~~ / Jarnac / CMP-1.  
7m-10.

17434M3 0310 to 0650 / 3 / Jarnac / CMP-1 LE  
METEOR WATCH meteoric meteors, CN1, CN  
CN3nbll. F hll kll 2ll 40m r ull will (Chile), a d. CN3  
As I closed up at the end, the roof shattered  
correctly, but again, I was very upset. But  
I told Wendy, her voice was calm and  
wring that I felt much much better very quiet  
It was so good, I saved this experience.

17435S Shabat, 9 November / 1415-1435 / 10 / Jarnac  
Mintaka / SSR 3:48, 2.

17436SR 1602-1830 / 10 / Jarnac / late afternoon  
Jarnac / Reptures. Both the hyperstart & the camera  
filament the accident this morning.

17437EM3 2000-0115 int / Jarnac / CMP-1.

17438S. Sunday, 10 November / 15:55-1610 / 3 / Jarnac  
Costa Cordelia / SSR: 5:48, 16.

17439EM2 1930-0230 int / 3-7m-10 / Jarnac / C.

17440S. Monday 11 November / - / 10 / Jarnac  
Cordelia / SSR.

17441EM2 2000-0130 int / 7m / Jarnac / CMP-1.



7442M3 0255-0620/10 | very mild breeze | ~~SS~~ CMP | 6 gates  
CN1, CN5, CN3e Fklt; kll 2 ll 4 on wide field, vll,  
CN3 hR. Comet TSON.

7443S Tuesday, 12 November / 1600-1630/3 | Jarnac  
Cordelia, Caster / SS2 7:49, 35.

7444EM 1700 to 0200 / 2 | Jarnac / CMP-1.

7445S Wednesday, 13 November / 1615-1630/10 |  
Jarnac / SS2 with Caster + Cordelia / 8:76, 20.

7446EM 2000 to 0410 int / 7-10 | Jarnac / (still windy)  
CMP-1 CN3h, CN3w, CN3s. attempt at  
Comet Neovski SUCCESSFUL!

7447S Thursday, 14 November / 1045-11:00/10 | Jarnac  
Mintakel / SS2: 58 64, 8.

7448E2 1920-2145 / 7m | Jarnac / working in J1 as usual.

7449E3 2250-2330 / 7m | Jarnac / ECHO!! / Jupiter.  
SS3, LPO-1, Beautiful view of Jupiter  
and 3 moons. Very successful. Wendie  
came out and we observed Jupiter + the Moon  
together. Then I added M42 to the salad.  
Very nice!

7450M4 0010-0200 int / 7m | Jarnac / CMP-1.

7451E Friday, 15 November / 1800-1915 / 7m | Tangwe leude Skol  
SS3. CN2.



7452EM2 2250-0130 int / 7m / Jarnac / CMP-1  
LEONID METEOR WATCH. | Leonid.

7453S before 52. Sat 16 November / 11:45 - Noon /  
SS2 6:7, 41.

7454E2 ~~Sunday~~ Sat. 16 November / 1930 to 215 / 3m /  
Downtown Tucson outdoor rest / Moon / Scott Roberts to

7455S Sunday 17 November / 1030 - 1045 / 10 / Jarnac /  
SS2 with Mintaka / 7:52, 22 one giant spot.

7456S2 1510-1530 / 3 / Tucson Convention Center / SS2:  
several great big prominences.

7457EM3 2310-0153 int / 3-2 / Jarnac / CMP-1.

7458S Monday, 18 November, fifty years since I left the  
asthma home. / Echo / SS2 3:41, 22.

7459EM2 ~~Friday~~ Thursday, 21 November.  
2345-0130 int / 2-1 / Jarnac / LPO-1,  
SS3. Echo, 60p. / Capella.

7460S Friday 22 November / Half a century since Ken's  
death / 1125-1140 / 1, 2 / Jarnac / Echo, 60p /  
SS2; 2:4, 4.

7461M2 0000 - 0215 int / Zero / Jarnac / brief visit  
to Jarnac / announcement of asteroid 1989  
Scattolin, named for the Scattolin family.



462S, Sunday November 24 / 1640-1655 / 2 / Jarnac / Echo 60p / SS2 12:4, 5. 17470E

463EM2 2315-0208 int / 24<sup>3-7m</sup> Jarnac / Echo, 60p / SS3, CMP1. M45, M42, M31. Jupiter. 17471S

464S Monday November 25 / 1107-11:20 / 10 / Jarnac / Echo 60p / SS2 13, 4. 17472E

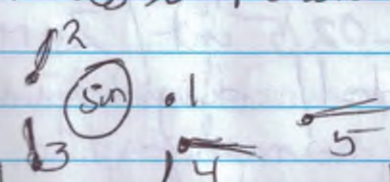
465EM2 1810-0215 int / 10, 7m / Jarnac / CMP1, SS3, CN3 all test with web-cam images. M45, M42. 17473S

466M3 after 17460 / 0530-0615 / 7m / Jarnac / Miranda, Clyde, Echo / CN3s. Comet ISON. Nice photograph. Very nice comet! 10 second exposure was perfect. 17474E

467S. Tuesday November 26 / 1050-1105 / 10 / Jarnac / Echo 60p / SS2 13, 6, 7. 17475S

468EM2 1820-0115 int / 10 + 7m / Jarnac / Echo, 60p / Jupiter. SS3. 17476E

469S Thursday November 28 / 12:15 to 15:30 / ~~Jarnac~~ / Mark + Nunners Cabaners house, H. Buquergue / SS2 Cupid / SS2: 6, 31. During the session I have doubtful sightings of Comet ISON as it rounded the Sun. 17477E



But I have five such doubtful sightings. 17478E



- 17470EP Friday, November 29/1730-1740/The Vigils, the  
Walstrans / Venus in a pt. cloudy sky.
- 17471S Saturday, November 30/12:30, -14:35/ Park near the  
Vigil house / Matthew plays basketball,  
also Summer and Sammers. Later, at their place/  
SS2 with Cupid; 5?; 48?
- 17472EM Sunday, December 1/2300 - 0100 int / CMP-1/3.
- 17473EAS Monday, December 2/1100 - 1120 / Echo, 60p/  
SS2 1:3, 4.
- 17474EM2 2100 - 0115 int / 2-2 / CN3g 11 test of Nikon + Canon.
- 17475M3 0230 to 0630 / 2-3 / Jarnac / Clyde, Miranda/  
CN3e, CN3g 11, CN3d 0.4<sup>h</sup> E. No ISON.
- 17476S Tuesday, December 3/1320-1400 / 3 / Jarnac/  
Echo - 60p / SS2 4:28, 8.
- 17477EM2 2100 - 0130 int / 3 / Jarnac.
- 17478S Wednesday, December 4/1540-1600 / 3 / Jarnac/  
Echo, 60p / SS2 3:14, 0.
- 17479EM2 2155 - 0150 / 2 / Jarnac.
- 17480S Thursday, December 5/1730-1745 / Sunset ~~3~~ - green  
blush at departing storm.
- 17481EM2 2130 - 0130 int / 2-9 / Jarnac / CMP-1, CN3 11.



17482S. Friday, December 6/ 1500-1530 / 2 / Jarnac /  
SS2 Echo, 60p / SS2 4:18

17483AN2 Friday, December 6/7/ 1715 to 0625 /  
7-10 / Ventana Canyon Resort - views of the  
Moon, then Jarnac / CMP-1, GEMWID  
METEORIC METEOR SHOWER / 13 meteors  
including one - 2 fireball. SS3  
Comet ISON party! We did not see Comet  
ISON, but we did spot Comets Neowise &  
Comet Lovejoy. There were about 60  
people here including Scott, Thy Dao  
& others. Dan Mules stayed & observed  
with me until 4:30. Session ended  
with dawn after 6. CN3 & FH all killed  
in all s all will. even used mighty Centaur-  
us.

7483S Shabat, December 7/ 1555-1640 / 10 / Jarnac /  
Echo, 60p / SS2 4:20, 13.

7485EN2 2100-0135 int / 10 / Jarnac / Echo, 60p /  
M42.

7486S Sunday, December 8, 1500-1530 / ~~10~~ 3 / Jarnac /  
Echo, 60p / SS2.

187S Monday, December 9 / 110 / Jarnac /  
Echo, 60p / SS2.

7488EN2 1800-0155 int / 3 / Jarnac / CMP-1  
BIEWID - ANDROMEDID Meteor Shower + 6 meteors  
plus some passibles - all faint.  
ANDROMEDID-BIEWID METEOR SHOWER.



17489E Tuesday, December 10/2100-2200<sup>CST</sup> int / 7m / plane  
between Chicago + Montreal / Moon.

17490E Wednesday, December 11/2120-2020 int / 3-co<sup>2</sup> /  
Montreal, betw. 3577 + Quality Hotel / Moon.

17491S Monday, December 16/1700-1715/3/ Jarnac / SS 2

17492MEX2 1930-2345 int / 3/ Jarnac / Echo.

17493S Tuesday, December 17/1230-1300/3/ Jarnac /  
SS 2.

17494EM2 1830-0210 int / 3/ Jarnac / \$ CN 3s / CN 3  
48<sup>th</sup> anniversary. At 2150 MST I celebrated  
the time when CN 3 began on December 17, 1965.

17495S Wednesday, Dec 18/1230-1300 / 3/ Jarnac /  
SS 2 5:25, 5.

17496EM2 2135-0135 int / 3/ Jarnac / Echo, 6Op / Moon, 72.

17497S Thursday, December 19/1040-1100/10/ Jarnac /  
Echo, 6Op / SS 2 6:24, 2.

17498EM2 1930-0150 int / 3-2/ Jarnac / Echo, 6Op /  
Moon.

17499S Friday, December 20/1545-1600 / 3/ Jarnac /  
Echo, 6Op / SS 2 9:36, 6

17500EM2 2305-0225 int / 1-0/ Jarnac / Moon briefly in  
clouds.



17501S Shabat Shalom. / 1200-1215 / 5 Jarmac /

17502EM2 2305-0100 int / ~~10~~<sup>3</sup> / Jarmac /

17503S Sunday, December 22 / 22

17504EM2 1750-0120 int / 10-7 / Jarmac /  
Wendee, Sonya, + Rob / CMP-1 URSID  
METEOR WATCH / CMP-13 meteoric meteors.

17505S Monday, December 23 / 1615-1645 / 10 / Jarmac /  
some wind from E / Echo, 60p / SS2 6, 32, 4.

17506EM2 2150-0130 int / 10-7 / Jarmac / CMP-1.

17507S Tuesday, December 24 / 1420-1440 / 10 / Jarmac /  
Echo, 60p / SS2 5: 39, 5.

17508EM2 2310-0130 int / 10-7 / Jarmac / CMP-1. Echo, 60p /  
Jupiter; one moon above + 3 moons below. Moon.

17509S Wednesday, Christmas Day, December 25 /  
1420-1440 / 10 / Jarmac / Echo, 60p / SS2 5: 19, 7.

17510EM2 2030- int / 10-7 / Jarmac / CMP-1. Echo, 60p /  
Jupiter, Moon

17511S ~~Wed~~ Thursday, Boxing Day, December 26 /  
1440-1500 / 10 / Jarmac / Echo, 60p / SS2 4: 24, 8.  
Windy.

17512EM2 2045-0115 int / CMP-1.







2014.

- 17524 S. January 1 / 1500-1530 / 10 / Jarmac / Echo, 6Op / SS2. 17537
- 17525 EM2 2130 - 0200 int / 10 / Jarmac. CMP-1. 17538
- 17526 S Thursday, January the two. / 14:40-14:55 / 10 / Jarmac / Echo, 6Op / SS2 454, 12. 17539
- 17527 EM2 1930 - 0145 / int / 10 / Jarmac / windy / CMP-1, 17540
- 17528 N3 0400 - 0610 / 10 / Jarmac / breezy / CMP-1 and Nikon camera / QUADRANTID METEOR WATCH 49 meteors. 17541
- 17529 S Friday, 3 January / 1425-1440 / 10 / Jarmac / Echo, 6Op / SS2: 3: 54, 12. 17542
- 17530 SAE Saturday 4 / Sunday, 5 January / 1540-1800 / 3 / Jarmac / SS2 17543
- 17531 S Sunday, 5 January / 1400-1415 / 3 / Jarmac / SS2 17544
- 17532 EM2 2000 - 0130 / 3 / Jarmac. 17545
- 17533 SEM. Monday, 6<sup>th</sup> January / 2200-0230 int / 1. 17546
- 17534 S. Tuesday, 7 January / 13:15-13:30 / 10 / Jarmac / SS2 with Echo, 6Op; 5:96, 5. 17547
- 17535 EM2 2350-0100 int / 2. 17548
- 17536 S Wednesday, 8 Jan / 1400-1415 / 3 / Jarmac / Echo, 6Op / SS2 4.74, 10. 17549



01-14

- 7537EM2 2350-0150 int / 1 / Jarmac
- 7538S. Thursday, 9 January / 1545-1750 / 3 / Jarmac / Castor, Cordelia / SS2 5, 7, 14.
- 7539EM2 2000-0140 int / 7m / Jarmac / CMP-1.
- 7540M3 0300 to 0645 / 10 / Jarmac / CN3e TVCw-16.3, CN3e Fh11k11211, CN3d, a - 1, 2h E. Ind. discovery of Comets Lincoln + Lovejoy, CMP-1. 4 meteors.
- 7541S Friday, 10 January / 1600-1615 / 10 / Jarmac / Castor, Cordelia / SS2: 5, 6, 7, 10. ←
- 7542EM2 2100-0150 int / 7m / Jarmac / CMP-1.
- 7543M3 0350-0635 / 10 / Jarmac / CMP-1 3 meteors  
 CN1, Aurora-1, CN-5, CN3e TVCw-16.3, CN3e Fh11k11211, CN3da 1.1h E. Independent discovery of Comet Lovejoy with A
- 7544SE Shabat, 11 January / 15:45-1800 / 10 / Jarmac / Castor, Cordelia / SS2 5, 30, 8.
- 7545EM2 2300-0240 int / 7m / Jarmac / CMP-1.
- 7546S Sunday, 12 Jan / 1600-1730 / 10 / Jarmac / Cupid, Cordelia / SS2. 5, 39, 6.
- 7547EM2 2000-0200 int / 7m / Jarmac / CMP-1.
- 7548S. Monday 13 Jan / 1600-1630 / 10 / Jarmac / Cupid + Cordelia / SS2.



17549EM2 2100-0200/7m/Jarnac/CMP-1. 1756L

17550S 14 Jan/1200-1330/10/Jarnac/built on Cordelia!

17551S2 Tuesday January 14/1200-1700/10/Jarnac |  
SS2 5:29, 0. 1751

17552E3 1900-1930/7m/Jarnac/CMP-1. 175

17553E4 1945-2100/7m/Jarnac/CMP-1, 1 meteor in S,  
coming from East. Possible ISONID meteor! 1756

17554EM5 2300-0230int/11m/Jarnac/CMP-1, engineering  
on Patrus/Uyasa. 175

17555S, 1300 to 1730/10/Jarnac/Successful  
rest of Patrus's main camera. Reading  
and writing. SS2 with Cupid and Cordelia  
4:29, 10. 1756

17556E2 1930-2045/7/Jarnac/Apollo from Camp  
Ninnewbrook. CN3 0.140. 175

17557S Friday  
Thursday, January 17/1715-1800/10/Jarnac  
Cupid, Cordelia | SS2 3, 11, 8. 1756

17558EM2 1930-0150int/07m/Jarnac/Apollo, Echo, top  
\$CN3 0.140.

17559S Saturday  
Friday, Jan 18/1620-1730/3/Jarnac  
Cupid, Cordelia/SS2. 175

17560EM2 1945-0200int/10-7m/Jarnac/CN3 60.140  
with Apollo, later the moon through Echo, +  
with 1, endee. 1757



01-14

175619 Sunday 19 Jan / 1700-1740 / 3 / Jarmac / Cordelia  
Cupid / SS2 5:25, 2.

17562EM2 1930-0210 int / 10-3 / Jarmac / CN3b 0.1  
CMP-1.

175635 Monday 20 January / 1615-1740 / 10 / Jarmac / Cupid  
Cordelia / SS2.

17564EM2 1950-0202 int / 10-3 / Jarmac / CN3b 0.1 West. C

175655 Tues 21 Jan / 1545-1745 / 3 / Jarmac / Cupid, Cordelia  
SS2 4:38, 4.

17566EM2 2320-0215 int / 3 / Jarmac / CMP-1.

175675 Wednesday 22 January / 4:40-5:40pm / 3 - nice  
large lenticular cloud. / Jarmac / Cupid, Cordelia  
SS2: 3:35, 2.

17568EM2 1900-0210 int / 10-7m / Jarmac / CN3b 0.1 H & W

17569EM Thursday 23 January / 1800-1902 int / 2-11  
at David Levy Observatory / SS3. Faint ref  
views of 2 + Orion. Later at Jarmac I set up  
Cunning illumination.

17570S Sharbat, 25 January / 1550-1755 / 2 / Jarmac /  
Cordelia. SS2 1:2, 10 through cloud. / ~~W~~

17571EM2 S. 2230-0210 int / 2-1 / Jarmac /

17572S Sunday 26 Jan / 1608-1700 / 3 / Jarmac / Cupid  
Cordelia / SS2. Warm sparkling.



- 17573EM2 at 1930-0220 int / 3-1 / Jarnac / Apollo / CN36 0.1<sup>h</sup> West. Cloudy later.
- 17574S. Monday January 27 / 1600-1730 / 10 / Jarnac / 10 / Jarnac / CN36 0.1<sup>h</sup> West. CN38 SN 2014J in M82. with Wendee.
- 17575EM2. 1930-0230 int / 10-3 / Jarnac / SS CN36 0.1<sup>h</sup> West. CMP-1. CN38. Messier 82 and SN 2014J.
- 17576S. Tuesday, January 28 / 1550-18:00 / 10 / Jarnac / Cupid, Cordelia / SS2. 4:69, 5, 1 filamentary filament
- 17577EM2 2000-0105 int / 10 / Jarnac / CN36 0.1<sup>h</sup> West with papers. Then CMP-1. CN38. The lovely SN in M82.
- 17578M3 0335-0720 / 10-1 / Jarnac / CN36 with Gremont and Mureya 1.1<sup>h</sup> E. CN36 h k l l n g l l.
- 17579S Wednesday, oh! Wednesday. January 29 / 1605-1620 / 10-3 / Jarnac / Cupid, Cordelia / SS2 5:5:25, 13.
- 17580M Thursday, January 30 / 0020-0100 / 1 / Jarnac.
- 17581M Friday, Jan 31 / 000-0130 /
- 17582EM Sunday February 3 / 1935-0140 int / 2-10,
- 17583S Monday, February 4 / 1615-1630 / 10 / Jarnac / Cordelia Cupid / SS2. 4: 98, 20.
- 17584EM2 Tues 5/2 230-0315 int / 15-3-1 / Jarnac.
- 17585S Wed 6 / 1715-1730 / 10 / Jarnac / Cordelia, Cupid / SS2 5:46, 9.
- 17586EM 2100-2240 / 7m / Jarnac / Lis Anhadada, Sirius, <sup>amy</sup> ~~Procy~~ SS3. Sirius LCM, M42, M82 + SN 2014J. Moon, M45. D, cl. Scanned to here.
- 17587M3. 0340-0400 / 2 / Jarnac / clouds. closed up
- 17588M Thursday 7 / 0130-0315 int / CMP-1. / 3-0



17589E. Friday, 7 February / 1900 to 1955 / 3 / U of scanning the sky before & after bright talk to TR. Partly cloudy sky both before & after.

17590M2 0000-0015 / 3 / Jarnae / CMP-1. / increasing high clouds.

17591AE. Shabat, 8 February / 2030-0000 int / 7m / 3 CN3hll - Gemini fields. Went well; better than thought.

17592M2 0315-0630 / 10 / Jarnae / CN7, CMP-1, CN5, and CN3e F hll K / 2ll n g ll, r, a, d. CN3ll 1^E (int)

17593S Sunday, 9 February 1986 - perihelion of Comet Halley 1550-1800 / 10 / Jarnae / <sup>Cupid</sup> Comet / SS2: 6:57,

17594E2 1900-0000 int / 3m / Jarnae / CMP-1.

17595M3 0305-0620 / 3 / Jarnae / CN3e, F, h, n, g ll, r, a, d. CN3d 1^k with Miranda then I thought about Wende, who is terrified right even though her cancer markers are way down. After the session she told me about her strange about Roch Haploma, her first husband, he there, & her pet baby elephant (CN3d ll didn't but the rest wasn't too bad).

17596S Monday, 10 February / 1655-1800 / 3 / Jarnae / Cupid / Cordelia / SS2: 8:43, 8.

17597EM2 2255-0215 int / 7m - 3 / Jarnae / CMP-1

17598S Tuesday, 11 February / 1600-1800 / 10-3 / Cordelia, SS2: 8:88, 2.

17599EM2 2245-0215 int / 7m / Jarnae / CMP-1

17600S Wednesday, 12 February / 1530-1630 / 10 / Jarnae / Cordelia / Cupid / SS2 10:104, 6.

17601EM2 2315-0140 int / 7m / Jarnae / CMP-1.

17602S Thursday, 13 February / 1630-1800 / 10 / Jarnae / Cordelia, Cupid / SS2: 10:125, 15. Many, many spots.



17589E. Friday, 7 February / 1900 to 1955 / 3 / U of scanning the sky before & after brief talk to TR. Partly cloudy sky both before & after.

17590M2 0000-0015 / 3 / Jarnac / CMP-1. / increasing high clouds.

17591HE. Shabat, 8 February / 2030-0000 int / 7m / 3 CN3HII - Gemini fields. Went well; better than thought.

17592M2 0315-0630 / 10 / Jarnac / CN7, CMP-1, CN5, and CN3e F hllrll / 2ll ngl, r, a, d. CN3L1HE (int)

17593S Sunday, 9 February 1986 - perihelion of Comet Halley 1550-1800 / 10 / Jarnac / <sup>Cupid</sup> Cordelia / SS2: 6:57,

17594E2 1900-0000 int / 3m / Jarnac / CMP-1.

17595M3 0305-0620 / 3 / Jarnac / CN3e, F, h, n, g, ll, r, a, d. CN3d 6.1' with Miranda then I thought about Wanda, who is terrified right even though her cancer markers are way down. After the session she told me about her story about Rash Haslana, her first husband, he there, & her pet baby elephant CN3d 11 didn't but the rest wasn't too bad.

17596S Monday, 10 February / 1655-1800 / 3 / Jarnac / Cupid Cordelia / SS2: 8; 43, 8.

17597EM2 2255-0215 int / 7m - 3 / Jarnac / CMP-1

17598S Tuesday, 11 February / 1600-1800 / 10-3 / Cordelia, SS2: 8; 88, 2.

17599EM2 2245-0215 int / 7m / Jarnac / CMP-1

17600S Wednesday, 12 February / 1530-1630 / 10 / Jarnac / Cordelia Cupid / SS2 10:104, 6.

17601EM2 2315-0140 int / 7m / Jarnac / CMP-1.

17602S Thursday, 13 February / 1630-1800 / 10 / Jarnac / Cordelia, Cupid / SS2: 10:125, 15. Many, many spots.



- 17603 EM2 2000-0230 int / 7m / Jarnac / CMP1.
- 17604 S. Shabat 15 February 2014 / 1545-1800 / 10 / Jarnac / 10 / Jarnac / & Cordelia, Cupid / SS2: 6, 7, 10.
- 17605 EM2 2115-0215 int / 3m Jarnac / CN3F11-CN1, & / B Gem fields. Clouds across sky later.
- 17606 E. Sunday 16 February / 2000-2145 / 3-2m / PCOD Ranch in Oracle, the Yoga Retreat. / Wendee, Thom + Turila, ~ 30-50 other participants. / Echo + Cupid / Jupiter, Moon, M42, Sirius, Pleiades. Very nice session.
- 17607 S. Monday, 17 February / 1600-1635 / 10 / Jarnac / SS2 with Cordelia + Cupid / SS2.
- 17608 EM2 2030-0215 / 2-2m / Jarnac / CN3F11.
- 17609 EM Tuesday 18 February 2014, 24th anniversary of discovery of Pluto / Sharing the Sky, Vail Ast. Unobsd / W + D observatory / M31, M42, Jupiter, later Jarnac / CN3n, CN3F11 / 1845-0230 int. AURIGID MTR WICH.
- 17610 S Wednesday, February 19 / 1720-1750 / 3 / Jarnac / Cordelia, Cupid / SS2: 5, 7, 6, 3.
- 17611 EM2 1930-0230 int / 3 / Jarnac / CMP1, CN3F, Gemini fields. CN3n b11, CN3h.
- 17612 SE9 Thursday, February 20, 1962 / 1615-1830 / 3 / Jarnac / SS2 with Cordelia, Cupid / SS2 5:50, 18.
- 17613 EM Friday February 21 / 2355-0300 / 3 / Jarnac / CN3h CN3n b11 both worked well. CMP-1.
- 17614 S Shabat, February 22 / 1545-1815 / 3 / Jarnac / SS2 with Cordelia and ~~two~~ Cupid ~~4/6/3~~, 2.
- 17615 EM2 <sup>CN3e</sup> 2330-0130 / 10 / 3 / Jarnac / <sup>Chile</sup> 8 CMP1, CN3w.
- 17616 EM Sunday Feb 23 / 2315-0245 int / CMP1, CN3w.
- 17617 EM2 ~~1800-1830~~ <sup>CN3e</sup> Feb 24 / 2345-1940-0230 int / 3 / CMP1, CN3F11, CN3w, <sup>SS2: 5, 6, 2, 17</sup>
- 17619 S Tue Feb 24 / 1700-1615 / R / Jarnac / Cupid, Cordelia / SS2 5:6, 2, 17
- 17620 EM2 2250-0200 int / 10 / 1-2 Jarnac / CN3F11, CN3w Chile.



176219, Wednesday, February 26 / 1200-1230 / 3 / Jarnae / Minkaka / SS2: 5, 57, 17.

17622EM2 1930-0245 int / 3-10 / Jarnae / Echo, 60p. Wenda practised finding Sirius with the telrad. CMP-1, CN-1, CN5, CN3e FI w/1-Chile

17623S Thursday, February 27 / 1625-1810 / 3 / Jarnae / Cupid, Cordelia SS 2: 6, 63, 6

17624EM2 2130-0300 int / 3 / Jarnae / CMP1, CN1, CN5, CN3e, CN30, 1^40.

17625EM2 Friday, February 28 / 2220-0230 int / CN-1, CN5, CN3 w/1.

17626AN Saturday, March 1 / 1945-0530 int / 0-3 / Jarnae / Heavy rain. I found out while preparing CN for int that I am now banned from using Centaurus forever. Andy has sold the building telescope; no warning. Why I had an AN session between rain + partial obs. Very upset. CN-1, CN3w-co, CN3e FI in Ulysses.

17627S Sunday March 2 / 1600-1615 / 3-2 / Jarnae / Cupid, Cordelia SS2: 4, 26, 0. through clouds.

17628EM2 1900-0100 int / 2-1 / Jarnae

17629S Monday March 3 / 0925-0940 / 3 / Jarnae / Minkaka / SS2 5, 59, 20.

\*17630AN. Tuesday March 4 / March for thykes Joan 2030-0530 / 9 / Iceland Air from NY to Reykjavik - / AURORA 1 positive report of Aurora glow in N. Glow grew later, knitted, then appeared as homogeneous arc; greenish and faint. Beautiful session over Long Island, Nova Scotia incl. Wolfville, and the Atlantic ocean.

\*17631E. Thursday March 5 / 2010-2300 / 3-2 / Lake Ho South Island / Possible Aurora in NW. Glow fairly strong. Aurora-1.



17632 M2. 0330 to 0430 / 3-2 / Laki Hotel / Aurora - 1 positive  
for probable auroral glow.

17633 F. 8. Friday, March 7 / 2200-2330 / 1 / Laki / Aurora  
two probable brighter glow in NW.

17634 M2 0340-0630 / 10-3-2-1 / Laki Hotel, Southeast  
Iceland city village of Kirkjubæjarklaustur.  
Photographic session Aurora-1, probable HA  
or bright glow in NW, with fainter HA above it.  
Beautiful but then clouded over. Sky in for N probably  
stayed clear as Aurora persisted.

17635 F. Saturday, March 8 / 2215-2235 / stop on road  
just S of Reykjavik, with possible glow again in  
NW.

17636 EM Sunday, March the 9 / 2100 to 0100 / 0 to 3 / - /  
Site (A) near a church by the beach, then walking to the  
beach / Site (B) Rocky's Wonderful Aurora site  
near the old Reykjavik airport. Site Gamma:  
Near VIGAR. At Site (A) Rocky suspected  
green by the clouds to the N. Never confirmed.  
At Site (B) Rocky again suspected Aurora &  
this time he was right. There was a portion of  
a pulsating rayed arc, very nice! Site Gamma  
I photographed a greenish glow in the North.  
Home at the end - very nice session!

17637 F. <sup>Wed</sup> Tuesday, March 17 / 2300-0000 / int / 3 / Jarnae / CMP /

17638 EM <sup>Thu</sup> Wed, Mar 12 / 2300-0030 / int / 3 / Jarnae / CMP /

17639 S Friday, March 14 / 1745-1800 / 40 / 3 / Jarnae / Cupid  
Cordelia SS 2, 5, 38, 8, 3 filamentary filaments.

17640 EM Shabat, Mar 15 / 2100-0115 / int / 7m / Jarnae / CMP /

17641 S Sunday, Mar 16 / 0955-1215 / 0 / Jarnae /  
Muntaker SS 2: 3, 24, 17.



03-14.

- 17642EM2 2315-0115int/3/Jarnac/CMP-1. Joshua Cole, Moon,  
17643S Monday, 17 March; St Patrick's Day/1630-1645/10/  
Jarnac/Cordelia, Cupid/SS 2 3.19, 13.  
17644EM2 1920-0130int/3-3m/Jarnac/CN3b 0.1<sup>h</sup>W. SS3  
6 pictures of Orion region.  
Came out very well.
- 17645S Tuesday, Wednesday, 19 March. 110-Jarnac  
Cordelia, Cupid/SS 2.
- 17646EM2 1950-0115int/10-7m/Jarnac/Wendee/SS 3 -  
attempt to view occultation of Regulus - none seen.  
Earlier, CN3 0.1<sup>h</sup>W with Pegasus.
- 17647EM Thursday, 20 March/2315-0130int/3m/Jarnac/CMP-1.
- 17648S Fri 21 March/4.30-6pm/Jarnac/Caster, Cordelia/SS 2 5.27, 7<sup>n</sup>.
- 17649EM2 1915-0130int/10-3m/Jarnac/CN3 0.1<sup>h</sup>W  
with Pegasus. CN3e TVCw 15.1. **OUTBURST!**  
Very nice. This is the fourth time this little star  
went into outburst near the anniversary of its  
first one, on 1931 March 23. This <sup>one</sup> has given me an  
unbelievable amount of joy to observe.
- 17650S Shabat, 22 March/1655-1820/3/Jarnac/SS 2 with  
Cordelia + Cupid 5.41, 7.
- 17651EM2 2100-0130int/10-3m/Jarnac/CN3e TVCw - in outburst  
CN3 0.1<sup>h</sup>W. Also CN3e TVCw + CN3e 40m  
Camera test successful.
- 17652EM Sunday, 23 March/1945-0145int/10-7m/Jarnac/  
Wendee/117<sup>th</sup> anniversary session #CN3e TVCw  
still in outburst. CN3 0.1<sup>h</sup>W. CN3s Comet C/2014E2  
Jacques. visual + photograph.
- 17653S Monday 24 March/1800-1835/10-3/Jarnac/Ray Bishop  
Cordelia, Cupid/SS 2 5.43, 10. ~
- 17654EM2 2115-0115int/10-7m/Jarnac/CN3b with Apollo 0.1<sup>h</sup>W.  
\* ~~SS~~ CN3e TVCw still in outburst. CMP-1.



55 Tuesday March 25 / 1555-1800 / 3 / Jarnac /  
Cerbera / Cupid / SS2 4:42, 9.

88  
58EM2 1915-0100 int / 0-3-10-3 / 5 / W-DL  
Observatory / SS3 Vail Ast. Unclerk looking at  
Voyager, Joshua Cole, Leo, and Joan + other  
unnamed telescopes.

56EM Wednesday, March 26 / 2300-0045 int / 3 / Jarnac /

65S Thursday, March 27, Daddy's 105<sup>th</sup> birth day  
21205-1230 / 3 / Jarnac / Mintaka / SS2-3, 25, 12

58EM2 1945-0245 int / 10 / Jarnac / SS3, CN30, MV  
with Pegasus, CN3e TVCw rising again

59S Friday, March 28 / 1200-1245 / 10 / Jarnac / Mintaka /  
SS2 2:17, 16.

60EM2 2340-0230 int / 10 / Jarnac / CN3e TVCw climb-  
ing again

61S Sunday, Mar 30 / 1820-1835 / 2 / Jarnac / SS2 with  
Cerbera + Cupid sky / SS2 3:6, 8 Sunbeam backup by Jarnac

62EM2 2335-0615 (int at first) / 10 / Jarnac / CN3e,  
CN3F, CN3d / 1 E with Miranda + Minerva

63S Monday, March 31 / 1800-1815 / 10 / Jarnac /  
Cerbera, Cupid / SS2 4:29, 7, plus 5 filamentary  
structures plus a possible low intensity flare

64EM2 2300-0150 int / 10 / Jarnac / CN3e TVCw  
CMP-1

65S Tuesday April Fool's Day / 1755-1835 / 10 /  
Jarnac / Cerbera + Cupid / SS2 4:47, 6.

66EM2 2130-0200 int / 10 / Jarnac / CMP-1, CN3e

67S Friday, April 3 / 1200-1800 int / 10-3 / Jarnac /  
Mintaka / SS2 6:88, 3.



168

- 17689 EM2 Thurs 1800-1815/10/Jarnac/SS2
- 17690 S Friday, April 4/1805-1820/3/Jarnac/Cordelia
- 17691 Cupid/SS2: 5, 86, 7 ~
- 17692 EM2 2 1900-0300 int/3-2/Steward Observatory,  
Then Jarnac/CMP-1, CN3e TV Cw's
- 17693 S Shabat, April 5/1200-1215/10-3/Jarnac
- 17694 Muntaka/SS2: 8: 43, 21.
- 17695 EM2. 1400 to 0255 int/2-3-10/University of Arizona Mall, later - Jarnac/STAR NIGHT  
Loudly event. "He's totally famous!" some UA students said about Jarnac. Not many visitors perhaps 200 at most throughout the aft. + eve.
- 17696 S Sunday April 6/1700-1730/10/Jarnac/windy/  
Cordelia + Cupid/SS2 5: 17, 13 ~
- 17697 EM2 2300-0130 int/10/Jarnac/CMP-1 Implex.
- 17698 S Monday April 7/1200-1230/10/Jarnac/Muntaka/SS2 5: 13, 9
- 17699 EM2 2115-0520 int/7m-10/Jarnac/CMP-1, CN-3
- 17700 S CN3F h 41 L 11 40m n p 11 n b 11 g 11. CN3 1^E
- 17701 S Tuesday, April 8/1200-1220/10/Jarnac/Muntaka/  
-/SS2: 5, 21, 9
- 17702 EM2 2220-0215, int/7m/Jarnac/CMP-1/107m/Jarnac
- 17703 S Wed April 9/2100-0230 int/7-3m/Jarnac
- 17704 S Thu April 10/1700-1800/3/Jarnac/Cordelia ON  
FORMER MOUNT, Cupid/SS2: 3: 6, 17.
- 17705 S Friday, April 11/1700-1715/3/Jarnac/  
Cordelia, Cupid/SS2: 3, 7, 17 ~
- 17706 EM2 2300-0135 int/0-1/Jarnac
- 17707 S Sat. Apr. 12/2300-0230 int/CMP-1
- 17708 S Sun Apr. 13/1000-1135/10/Jarnac/Muntaka/  
SS2: 5, 19, 9.
- 17709 EM2 2130-0200 int/7m/Jarnac/CMP-1
- 17710 S Monday, April 14/2100-1705/10/Jarnac/Cordelia/  
Cupid/SS2: 5, 19, 2.



- 17688E2 1940-2015/7m/Jarnac.
- 17689EM3 2100-0315 int | 7m to 10/Jarnac/CN3F.  
 Saras-1. TOTAL ECLIPSE of the Moon.  
 Photography, I did CN3F during the truly  
 dark stay of totality. Beautiful night.  
 Saras-1 Eclipse 83. CN3F - lovely set.  
 during totality.
- 17690S Tuesday Apr 15/1700-1730/10/3/Jarnac/Cordelia  
 Cupid/SS2 6:103, 8.
- 17691EM2 2200-0145/7m/Jarnac/CMP-1
- 17692S Wednesday, April 16/0900-0930/10/Jarnac/  
 Mintaka/SS2.
- 17693EM2 1950-0245 int | 10-9-7m/Jarnac/CMP-1  
 Thurs. April 17/1749-1730/10/Jarnac/Cordelia Cupid/SS2 12:11, 21
- 17694EM2 Thursday, April 17/2200-0250 int | 1-2/Jarnac,
- 17698S Friday April 18/1700-1730/3-2/Jarnac/Cordelia  
 Cupid/SS2: 12, 83, 7.
- 17696EM2 2150-0230 int | 3/Jarnac
- 17698S Shabat April 19, Joyce's birthday/  
 1600-1800 | 3/10/Jarnac/Cordelia Cupid/SS2 6:23, 7,
- 17699EM2 \$ 1900-0200 int | 3/Jarnac/CMP-1, One  
 gopher snake.
- 17700S Sunday, April 20/1740-1800/10/Jarnac/  
 Cordelia Cupid/SS2: 12, 6, 17
- 17701EM2 2130-0230 int | 10/Jarnac/SS2/CMP-1
- 17702S Monday, April 21/1700-1730/3/Jarnac/  
 SS2/Cupid/Cordelia
- 17703EM2 2200-0310 int | 10, 7m/Jarnac/LIBRID  
 METEOR WATCH. CMP 15 meteors, 1 probable  
 Lyrid. CMP 1 LYRID METEOR WATCH 5 mtes
- 17704S Tues Apr 22/5-5:30 pm/3/Jarnac/Cordelia Cupid/  
 SS2
- 17705EM2 2300-0315 int | 10/Jarnac/CMP 1 LYRID  
 METEOR WATCH. /CMP 1 9 meteors.



- 17706S. Wednesday Wednesday / 1800-1820 / 3 / Jarnae / SS2. Cordelia, Cupid / SS2.
- 17707EM2 2015-0145 int / 10 / Jarnae-cooker / CMP-1, placing Narcissus atop Miranda successfully. Wendee now has the white telescope that used to bother. SS3 - ISS; earlier flare of Grideum Satellite.
- 17708S Thursday 24 April / 1600-1650 / 10 / 3 / Jarnae / Cordelia Cupid / SS2
- 17709EM2 1820-0130 int / 10-3 / Jarnae / Voyager SS3. CMP-1. / Veil Ast. Unobel / Jupiter, M1, Mars.
- 17710EM Fri 25 April / 2200-0200 int / CMP-1 / Jarnae.
- 17711S Sat 26 April / 1700-1845 / 0-3 / Jarnae / Marnie Ogg + the Australian group. Rain stopped, came out. SS3, SS2. Cordelia, Cupid. 3, 11, 1.
- 17712S Sun 27 April / 1800-1815 / 3 / Jarnae / SS2 3:12, 7. Cupid + Cordelia
- 17713EM2 2300-0240 int / 10 / Jarnae / CMP-1 photos.
- 17714S Monday 28 April / 4-4:30 pm / 10 / Jarnae / Cupid Cordelia / SS2 6:45r, 17 plus 7 filament and fossil flare
- 17715EM2 2315-0500 int / 10 / Jarnae / CMP-1, 1 bright meteoric meteor in SW, either a late Lyrid or an early  $\eta$  Aquarid. Probably the former. CN1, CN5, CN3 F n LII 40m. CN3b with Gemini Geminorum, 0.8<sup>h</sup> E, and Minerva & Nike
- 17716S Wed. 30 April / 1700-1715 / SS2.
- 17717EM2 2230-200215 / 10 / Jarnae / CMP-1
- 17718S Thu 1 May / 17:30-1745 / 10 / Jarnae / SS2 5:42 Cordelia + Cupid
- 17719AN2 1915- int / 10 / Jarnae / CMP-1. CN-1, CN5, CN3
- 17720S. Fri 2 May / 1800-1815 / 8 / Jarnae / 13 / Cordelia + Cupid SS2: 6, 66, 9.



- 17721S Sunday, May 4/1815-1830/3/Jarnae/Cordelia, Cupid/  
SS2: 5, 59, 9
- 17722EMR 2330-0530/int/3-10/Jarnae/  
CN3FH/L11 40m. CMP-1 Eta Aquarids  
ETA AQUARID METEOR WATCH. 11 meteors
- 17723EM Monday, May 5/2350-0030/int/43/Jarnae/  
CMP-1
- 17724EM Tuesday, May 6/2340-0515/3-10/Jarnae/  
CN3d 1, 2h E with Miranda, Munira, Flare Jr,  
Narcissus. CMP-1. 2 meteors One  
was bright, possibly a precursor to the  
shower to come. CN1, CN5. CN3FH/L11  
40m n.g.l. r.e.d.
- 17725EM Wed, May 7/2345-0115/int/CMP-1.
- 17726S Thurs May 8/2230-0255/int/CMP-1.
- 17727EM Fri May 9/1815-1830/3/Jarnae/Cupid, Cordelia/  
SS2 6:36, 25.
- 17728E Sunday, May 11/2300-0020/int/7m/CMP-1.
- 17729EM Monday, May 12/2100-2205/int/9-11 e.
- 17730S Tues May 13/2300-0100/int/CMP-1
- 17731S Wed May 14/1800-1830/10/Jarnae/Cordelia, Cupid/  
SS2: 8, 6, 7.
- 17732EMR Thursday, May 15/1800-1800/10/Jarnae/  
Cupid, Cordelia/ SS2: 7, 59, 9
- 17733EM 2030-0215/int/1m/Jarnae/Cupid, -/CMP-1.  
LPO-1 Saturn close to opposition. Rings  
very prominent.
- 17734EMR Friday, May 16/2300-0200/int/3/Jarnae/  
CMP-1 LPO-1 Saturn with Pegasus.
- 17735S Saturday May 17/2345-0200/int/11-m/Jarnae/  
CMP-1, LPO-1. Saturn through Echoteleson
- 17735S (before 17734)/May 17/1830-1830/3/Jarnae/Cupid, Cordelia/  
Cupid/ SS2 6: 46, 17.



- 7737S Monday May 19/ 1800-1815/ 3/ Jarnac/ SS2
- 7738EM2 2215-0215int/ Jarnac/ CMP-1
- 7739S Tues May 20/ 1730-1755/ 3/ Jarnac/ GS2w/ Cordelia  
Cupid/ 4:17, 7.
- 7740EM2 2100-0215int/ 3/ Jarnac/ CMP-1
- 7741S Wed. May 21/ 1655-1715/ 3/ Jarnac/ Cupid,  
Cordelia/ SS2: 5:27:5.
- 7742EM2 2350-0200int/ 3/ Jarnac/ CMP-1
- 7743S Thursday May 22, my 66<sup>th</sup> birthday!/ 1650-1835/ 3/  
Jarnac/ Cupid Cordelia/ SS2: 4:19, 10.
- 7744EM2 2215-0100int/ 2/ Jarnac/ CMP-1
- 7745EM. Friday, May 23/ 2140-0200/ 9/ Big Bear  
Resort, California, Starlight Festival.  
CAMELO PARADISO METEORIC METEOR SH  
Also called "Sky & Telescope Memorial Meteor Show  
or as Tim suggested, the "No Seams Meteor Show"  
I counted three meteors. One possible bolide  
the pole, a bright -1 into the SW, and a 4<sup>+</sup>  
magn. sporadic possible. So really, 1 mag
- 7746S Saturday, May 24/ 1500-1600/ 3/ Starlight  
Festival.
- 7747EM 2040-2215/ 2-9/ Big Bear Resort, Starlight  
Festival. Set up through one of the many  
telescopes there.
- 7748EM Sunday, May 25/ 2345-0200int/ CMP-1
- 7749S Monday, May 26/ 1715-1730/ 3/ Jarnac/  
Cupid, Cordelia, SS2 1:2, 9.
- 7750EM2 2030-0200int/ 10-3/ Jarnac/ CNB g/ 11  
CN3-40m - 11.
- 7751S Tuesday, May 27/ 1830-1845/ 3/ Jarnac/  
Cupid, Cordelia/ SS2 1:4, 9.

elia, Cupid/  
ae/  
arily  
meteoric  
3/ Jarnac/  
/ Jarnac/  
Flavie Jr.,  
ne  
the  
11/2 11  
Cordelia/  
m/ CMP-1,  
11 e.  
oblia, Cupid/  
arnac/  
/ CMP-1,  
Rings  
3/ Jarnac/  
gasess.  
Jarnac  
telescope  
Cordelia



- 7737S Monday May 19/ 1800-1815/ 3/ Jarnac/ SS2
- 7738EM2 2215-0215int/ Jarnac/ CMP-1
- 7739S Tues May 20/ 1730-1755/ 3/ Jarnac/ G S2 w/ Cordelia  
Cupid/ 4:17, 7.
- 7740EM2 2100-0215int/ 3/ Jarnac/ CMP-1
- 7741S Wed. May 21/ 1655-1715/ 3/ Jarnac/ Cupid,  
Cordelia/ SS2: 4:27:5.
- 7742EM2 2350-0200int/ 3/ Jarnac/ CMP-1
- 7743S Thursday May 22, my 66<sup>th</sup> birthday!/ 1650-1835/ 3/  
Jarnac/ Cupid Cordelia/ SS2: 4:19, 10.
- 7744EM2 2215-0100int/ 2/ Jarnac/ CMP-1
- 7745EM Friday, May 23/ 2140-0208/ 9/ Big Bear  
Resort, California, Starlight Festival.  
CAMELO PARDAID METEORIC METEOR SH  
Also called "Sky & Telescope Memorial Meteor Show  
or as Tim suggested, the "No Securus Meteor Show"  
I counted three meteors. One possible bol  
the pole, a bright -1 into the SW, and a 4<sup>th</sup>  
magn. sporadic possible. So really, 1 mag
- 7746S Saturday, May 24/ 1500-1600/ 3/ Starlight  
Festival.
- 7747EM 2040-2215/ 2-9/ Big Bear Resort, Starlight  
Festival. Saturn through one of the many  
telescopes there.
- 7748EM Sunday, May 25/ 2345-0200int/ CMP-1
- 7749S Monday, May 26/ 1715-1730/ 3/ Jarnac/  
Cupid, Cordelia, SS2 1:2, 9.
- 7750EM2 2030-0200int/ 10-3/ Jarnac/ CNB & 11  
CN3-40m - noll
- 7751S Tuesday, May 27/ 1830-1845/ 3/ Jarnac/  
Cupid, Cordelia/ SS2 1:14, 9.

Cordelia/  
m/ CMP-1,  
11 @.  
Cordelia, Cupid/  
Jarnac/  
/ CMP-1,  
Rings  
3/ Jarnac  
telescope  
Cordelia



- 17752 EM2 1945-0155 int / 3-1 / Jarnac / CN3, b 11  
with Flavie + Joshua Cole.
- 17753S. Thursday May 29 / 1820-1835 / 3 / Jarnac /  
SS2 with Cupid, Cordelia / SS2 1:4, 4
- 17754 EM2 2350-0115 int / 10 / Jarnac / CMP-1
- 17755S Friday, May 30 / 1215-1830 / ~~10~~ 3 / Jarnac )  
SS2 / Cupid, Cordelia / 2:14, 13 ~
- 17756 EM2 2300-0445 int / 3 / Jarnac / CMP-1.  
CN3F, h, hll, kll, 2ll, n, pl, gll, CN3 0.7 h E.
- 1775 Unsuccessful search for 209P/Linear.
- 17757S Sat May 31 / 1230-1250 / 3 / Jarnac /  
SS2 with Mintaka.
- 17758 EM2 2350-0145 int / ~~10~~ 3 / Jarnac / CMP / CN3  
unsuccessful search for 209P/Linear.
- 17759S Sunday, June 1 / 1200-1215 / 3 / Jarnac (HOT.)  
Mintaka / SS2. R: 13 ~
- 17760 EM2 2315-0435 int / 10 / Jarnac / CMP-1  
CN3F. h, hll, kll, 2ll, n, pl, gll, CN3 dbra - 1.1 h E,  
Saw a  $\delta$  - 1 Jirdum flavie next to Venus -  
as it faded it passed just a couple arc minutes  
e. of Venus. SCORPIO METEORIC METEOR SHOWER
- 17761S Monday, June 2 / 1200-1235 / 3 / Jarnac  
Mintaka / SS2 1:4, 5 ~
- 17762 AM2 210-0445 int / 3m (Jarnac) / CMP-  
ISS pass. Later, CN3PH hll, kll, 2ll, n, r, a. CN3 1 h E  
2 small flares. Wendee saw a meteor during the ISS  
appearance.
- 17763S Tues June 3 / 1230-1245 / ~~10~~ 3 / Jarnac /  
Mintaka / SS2 3:8, 12 ~
- 17764 EM2 2350-0140 int / ~~10~~ 3 / Jarnac / CMP-1.
- 17765S Wednesday, June 4, Billy's birth day /  
1215-1235 / 10 / Jarnac /



17766AM2 2045-0445 int/10-3/Jarnac/ We saw and photographed a -6 flare this evening. Then CMP-1, CN1, CN5, CN3 FK H11K11211n, CN3 O, 8<sup>th</sup> E.

The other flares didn't happen, however.

17767S. Thursday, June 5/1100-11:25/10/Jarnac/ SS2 with Mintaka 4, 28, 15.

17768AM2 2030 ~~+~~ int/10/Jarnac. One flare seen but not photographed. CN1, CN5, CMP1, CN3 FK H11K11211n. CN3 1.1<sup>st</sup> E with Miranda, Mimas, + Narcissus.

17769S Friday June 6 - 50 year anniversary of Gerry's & Mitz's visit. 12:15-12:35/10/Jarnac/ SS2 6, 43, 10.

17770EM2 200-0130 int/7-10/Jarnac/CMP-1

17771S. Saturday, June 7/1045-1105/10/Jarnac/Mintaka SS2 8, 56, 17.

17772EM2 1925-0200 int/7m/Jarnac/LPO I Saturn N. Mercury. CMP-1.

17773S. Sunday, June 8/1110-1130/10/Jarnac/Mintaka SS2 6, 70, 10.

17774ER. 1930-2050/7m/Jarnac/LPO-1/Obag Mercury! 0139 int found the Mercury using the Wanda method. Used Ophelic binoculars then Obadiah - finally saw 4 in the gathering twilight, then went to Mercury. We also saw Saturn, Jupiter, + Mars.

17775S. Monday, June 9/1050-1125/10/Mintaka <sup>later CMP-1</sup> SS2 6, 80, 14.

17776EM2 2 1950-0205 int/7m/Jarnac/LPO-1. Mercury must be seen tonight with enough power to see it as a thick crescent. Later, CMP-1.

17777S. Tuesday, June 10/10:30-1045/3/Jarnac/Mintaka/ SS2: 7, 82, 4.



- 7778EM2 1925-0130 int / 7m / Jarnac / WPO-1 Jupiter  
but NO MERCURY. CMP-1. 17795S
- 7779S Wednesday, June 11/
- 7780EM2 2030-0135 int / CMP-1.
- 7781S Thursday, June 12 / 1100-1115 / 3 / Jarnac  
Mintaka / SS2 6:48, 17. 17796E
- 7782EM2 2300-0130 int / CMP-1.
- 7783S Friday, the thirteenth / 1045-1100 / 3 / Jarnac  
Mintaka / SS2: 10:68, 11. 17797S
- 7784EM2 1930-0100 int / 3m / Jarnac / CMP-1.
- 7785S Saturday, June 14 / 0945-1015 / 3 / Jarnac  
SS2 with Mintaka, # 5:40, 10. 17798E
- 7786EM2 2300-0100 int / 7m / CMP-1. 17799E
- 7787S Sunday, June 15 / 0815-0930 / 10 / Jarnac  
Mintaka / 4:40, 210. 17800E
- 7788EM2 2015-0130 int / 7-3 / Jarnac / CMP-1,  
CN3 40m.
- 7789S Monday, June 16 / 1100-1120 / 10 / Jarnac  
Mintaka / SS2 4:15<sup>n</sup>, 10<sup>n</sup>.
- 7790EM2 2015-0230 int / 10-3m / Jarnac / CMP-1,  
CN3 40m. 17801A
- 7791S Tuesday, June 17 / 1050-1110 / 3 / Jarnac  
Mintaka, Cordelia 2 / SS2: 3:19, 13.
- 7792EM2 2000-0150 int / 7-3-m / Jarnac / CMP-1  
CN3-40m, nb 11, 211. 17802S
- 7793S Wednesday, June 18 federal election 1967 /  
1100-1115 / 3 / Jarnac / Mintaka + Cordelia 2 /  
SS2: 5:27, 11, plus 2 long filamentary filaments. 17803E
- 7794EM2 1900-0215 int / 10-3m / Jarnac / SS3 Green  
flash. CN3 40m. Scott Tucker collimated  
Flare and polar-aligned it. CN3-40m, 17804  
CN3L 11, CN3nb 11. 1780



1 Jupiter

177955 Thursday, June 19, the day after Prime Minister enbaker loses his majority but wins a minority government in 1962 / 1050-1105 / 3 / Jarmac Mintaka + Cordelia / SS2 4:13, 8.

Jarmac

17796EM2 2030-0200 int / 10-9m / Jarmac CMP-1, CN340m, CN3n on Flare!

Jarmac

177975 Friday, June 20 / 0950-1005 / 10 / Jarmac Cordelia 2 / SS2 3:14, ~10

CMP-1  
3 / Jarmac

17798E2 1930-2015 / 7 / Steriyona / The Celestion graph. May I have one!

Jarmac

17799EM3 2115-0215 int / 10-3 / Jarmac / CMP-1 CN3n II, LII.

CMP-1

17800ES The Summer of 2014  
25 Years after 1989  
50 Years after 1964

Jarmac

Shabat, June 21 / 1055-1130 / 10 / Jarmac / Flare! / repair + rest part of ACP. SS2: 3.

CMP-1

17801AN2 2035 to 0425 / 10 / Jarmac / First beauty  
The Summer of 2014 / CN-1, CN-5, CMP-1, C  
R11, L11, 40m, n11, nb11, g11, r, a, b. C11  
Beautiful Summer night; not a cloud!

Jarmac

Flare / CMP-1

17802S Sunday, June 22 / 1050-1110 / 10 / Jarmac Cordelia SS2 3:9, 13

Flare 1962 /  
defier 2 /  
y filaments

17803EM2 to 2010 to 0200 int / 10 / Jarmac / CMP-1

3 Green

17804S Monday, June 23 / 1050-1105 / 10 / Jarmac / M  
SS2 11: 4, 2. pretty quiet on the O today

illuminated  
3-40m

17805AN2 0950 to 0445 / 10 / Jarmac / magnificent  
night with C + Venus + M45 (pisc). CMP-1  
CN3d 1.1<sup>k</sup>; CN3F h k l l k l l 2 l l 40 m



- 7806A15 Tuesday June 24/1135-1210/3/Jarnac/  
Mintaka, SS2 2:6, 12. Rebalancing of  
Miranda also.
- 7807E12 1950-0210 int/10/Jarnac/ Mr Narcissus, Miranda)  
CMP1
- 7808S. Wednesday & Wednesday June 25/1100-1120/  
10/Jarnac/ Mintaka, Narcissus final balancing  
and lockup/ SS2 4:16, 4, 1 ~~long~~ filament
- 7809A12 2 1955 to 0440/10/Jarnac/ # CMP1, 5 meteoric  
meteors, 2 of them bright. CN-1, CN5, CN3 2h  
NW, E. CN3e fh ll k ll Lll 40m n ll n ll g ll  
rad. Beautiful night. Such joy I get in these  
summer observing sessions.
- 7810S Thursday, June 26/1215-1235 int/13/  
Jarnac/ CMP1. SS2 with Mintaka/SS2:2:4, 4,
- 7811E12 2155-0155 int/13/Jarnac/CMP1
- 7812S Friday, June 27-Gerry's birthday/1105-1120)  
10/Jarnac/ Mintaka/ SS2: 2:4, 10.
- 7813A12 1955 to 0445 110/Jarnac/CMP1,  
JULY PEGASUS METEOR 100% FH ll k ll 40m n ll n ll g ll  
CN-1, CN5, CN3e fh ll k ll 40m n ll n ll g ll  
rad. CN3 2h East 5 meteors.
- 7814S Shabat June 28/1130-1145/10/Jarnac/Mintaka  
SS2 2:4, 13.
- 7815E12 2 1955-0210 int/10/Jarnac/CMP1.
- 7816S Sunday, June 29/1035- -/10/Jarnac/  
Mintaka/ SS2 2:5, 10.
- 7817A12 1935 to 0445/10/Jarnac/CMP1. CN1, CN5,  
CN3e fh ll k ll Lll 40m n ll n ll g ll rad.  
Beautiful night. Clouds just to southeast.  
CN3 1.5h NW to East 7 was a very doubtful one  
NE.
- 7818S Monday, June 30/1100-1115/10/Jarnac/  
Mintaka/ SS2 5:59, 7.



17819EM 2220-0230 int/10/Jarman/CMP-1, CN3nll.

17820S Tuesday, July 1, Canada Day/1045-1100/10/Jarman/Mintaka/SS2 6:56, 12.

17821SAN2 1930 to 0455/10/Jarman/J 3 telescopes  
Munira, Miranda, Pegasus Flare, Obadiah  
Clyde, Esther, and Kynosurus (CMP, C11, C12)  
Aurora - negative (darker than the glow from the  
night) CN3 2.4 hours NW, E. CN3 2.4 hours NW, E. CN3 2.4 hours NW, E.  
40m n all nll gll rad. These six nights have  
gorgeous.

17822S Wednesday, July 2/1015-1030/3/Jarman/Mintaka/SS2: 9:75, 2.

17823EM Friday, July 4/9 Independence Day/2100-0100/1/Jarman/Wendee fireworks, taken out in

17824S Saturday, July 5/1055-1115/3/Jarman/Wendee/SS2 9:136, 10.

17825EM 2355 to 0130 int/17/Jarman/CMP-1 - a few

17826S Sunday, July 6/10:30-11:00/3/Jarman/SS2 6:113, 10.

17827EM2 1940-0145 int/3/Jarman/CMP-1. Δ of S  
briefly

17828S Monday, July 7/1015-1030/3/Jarman/Mintaka/S

17829AN2 2030-0445 int/1-2/Jarman/hedgehog ca  
regrow and replanting. CMP-1. Sky clear  
~2:45, so CN3 rd 0:5 E. Glow below  
the glow in 17817AN2 opposite was almost certainly  
auroral glow. Another explanation.

17830S Tuesday, July 8/1050-1105/3/Jarman/Mintaka/SS2 9:115, 3.

17831EM2 2108-0145 int/1-2/Jarman/CMP-1

17832S Wed July 9/10-1035/3/Jarman/Mintaka/SS2 10:98



- 17833EM2 2130-0145 int / 1-3 / Jarnac / transplant of large hedgehog cactus plant / CMP-1
- 17834S Thursday, July 10 / 12:25 to 12:45 / 3 / Jarnac / SS2 with Mintaka 9, 90, 6.
- 17835EM2 Fri 2130-0215 int / 2 / Jarnac / CMP-1
- 17836S Friday, July 11 / 1045-1130 / 3 / Jarnac / Wended Mintaka / SS2 9, 66, 10. Photo of me with Gemini.
- 17837EM2 2030-0130 int / 1 / Jarnac / CMP-1
- 17838S Saturday / July 12 / 1000-1015 / ~~3~~ / Jarnac / Mintaka / SS2 6, 39, 13.
- 17839EM2 2100-0130 int / 2 / Jarnac / CMP-1
- 17840S Sunday, July 13 / 1200-1230 / 3 / Jarnac / SS2.
- 17841EM2 1950-0120 int / 3 / Jarnac / CMP-1
- 17842S. Monday, July 14, Bastille Day / 1040-1055 / 6 / Jarnac / Mintaka / SS2 2, 6, 4.
- 17843EM2 2130-0155 int / 1 / Jarnac / CMP-1
- 17844S Tuesday, July 15 / 1300-1315 / 3 / Jarnac / SS2 w/ Mintaka Zero: 6, 12.
- 17845SS2 Wed. 1700-1830 / 3 / Jarnac 4 / First use of the rebooted Cordelia. + SS Cupid. SS2: 0, 6, then 12.
- 17846EM2 2100-0240 int / 3 / Jarnac / successful alignment of CN3nb11 on M31.
- 17847S Thursday July 17 / 1200-1400 int / working on CN3 2.
- 17848SS2. 1720-1735 / 7 / Jarnac / Cupid, now Cordelia / SS2: 0, 6.
- 17849EM3. 2000-0225 int / 10-3 / Jarnac / CMP-1, CN3e, CN3n, CN3L11, CN3nb11.
- 17850S Friday, July 18 / 1100-1115 / 10 / Jarnac / Mintaka / SS2 1, 6, 9.



07-14

- 17851EM2 2000-0200int / 2-1 / Jarmac / CMP-1
- 17852S Shabat, July 19 / 1115-1130 / 10 / Jarmac / Mintaka / SS2: 0, 12.
- 17853AN2 2000-0500 / 10-3m / Jarmac / CN3b 1, 3h w  
 Gemini CN3e fh hll kll dll 40mg nll nll gll.  
 Beautiful summer night until clouds arrived ~  
 CMP-1 3 meteors. JULY PEGASID MTR WATCH  
 Psi CASSIOPEID METEOR WATCH.
- 17854S Sunday, July 20. 20<sup>th</sup> anniversary of G  
 impact S+h 9 / Jupiter; 45<sup>th</sup> anniversary of  
 first moon walk - Apollo 11.
- 17855E2 2000 to 2015 / 3 / Jarmac / Funlight.
- 17856EM3 2115-0145int / 11 / totally cloudy
- 17857S Monday, July 21 / 1115-1130 / 10-3 / Jarmac  
 Mintaka / SS2 2, 6, 12 ~
- 17858EM2 2000-0150int / 7-1-20 / Jarmac / CN3c  
 completely cloudy later, mainly cloudy; some c  
 in N. by 1045. Clouds + drizzle
- 17859S Tuesday, July 22 / 1055-1110 / 3 / Jarmac  
 Mintaka / SS2: 2, 4, 12.
- 17860EM2 2100-0150int / CMP-1.
- 17861S Wed July 23 / 1130-1150 / 3 / Jarmac / SS2
- 17862AN2 2000-0000int, then 0000-0445 / 3 / Jarmac /  
 CMP-1. CN-1, CN5, CN3 fh hll kll dll 40mg nll ra  
 CN3d 1, 1h E. earlier 0, 1h W.
- 17863S Thurs July 24 / 1145-1200 / 3 / Jarmac / SS2
- 17864E 1140-0200int / 3-2 + 3 later 10 / CMP-1. CN3d 11, c
- 17865AN Friday, July 25 / 2000-2330int then 2330-045  
 Jarmac / CMP-1. DELTA AQUARIID METEOR WAT  
 KIA PPACYGND METEOR WATCH. OMIKRON DRP  
 METEOR WATCH. / 21 meteoric meteors. CN-1, c  
 CN3 fh hll kll dll 40mg nll rad. CN3 1, 2 h E.



- 17866S. Shabat, July 26/10 30-1050/10<sup>-3-</sup> Jarnac / Mintaka /  
SS2. 2:17, 11.
- 17867EM2 2200-0215 int / 1 / Jarnac.
- 17868S. Sunday, July 27/1215-1230/3 / Jarnac / Mintaka /  
SS2 4:32<sup>n</sup>, 13<sup>n</sup>.
- 17869EM2 1950-0115 int / 3-2-0 / Jarnac.
- 17870S. Monday, July 28/190-1915/3 / Jarnac / Cupid,  
Cordoba. SS2) 0 (some cloud over Sun), 3.
- 17871AN2. 2040-0450 (fairpoint-int.) / 3-19-3 / Jarnac /  
CN3 1.5" E with Miranda, Munira freshly cleaned &  
Processing. CMP-1. 3 meteoric meteors. first  
recorded on my new Nikon camera, one that stopped  
off & then came in for a second time. CN3 F h h 11 d  
LH 40, m 11, n 11, g 1, a, d.
- 17872S. Tues July 29/1200-1230-1245/3 / Jarnac / Mintaka /  
SS2. 6:35<sup>n</sup>, 7<sup>n</sup>
- 17873EM2 2300-0135 int / 3-1-2 / Jarnac / CMP-1
- 17874EM Wednesday, July 30/2300-0145 int / J/K/M
- 17875S Wed Thursday, July 31/1310-1330/2-3 / Jarnac  
Mintaka / SS2 P' 5:52, 3
- 17876EM2 2100-0200 int / 3-2-1 / Jarnac / CMP-1
- 17877S. Friday August 4 (ONTARIO BANK HOLIDAY.)  
1430-1445/3 / Jarnac / Mintaka / SS2: 4, 5, 1, 3  
faint, with prominent prominences.
- 17878MS. Saturday / noon-1200 int / 3-0 / Jarnac / SS2; j  
then listening to A Prairie Home Companion  
during which (5:08) 0.1" rain fell
- 17879S Sunday, August 3 / noon to 1215/3 / Jarnac /  
Mintaka / 7:66, 11.
- 17880EM2 2025-0255 / 1-3-10-3 / Jarnac / CMP-1  
14 meteoric meteors. Caught 1 with Nikon
- 17881S. Monday, Aug 4 / 12:05-12:25/3 / Jarnac / Mintaka /  
SS2.



/ Mintaka

17882A2. 2025-0540/7, then 3/Jarmac/CN30.1 h F  
CN-1, CN5 CN3PK hll Rll Lll 40m noll nll gll

mac/Mintaka

17883S. Monday, August 4/1200-1220/10/Jarmac/Mu

17884EM2 03 2300-0105 int/10-3/Jarmac/CMP-

of Cupid,  
3.

17885S. Tuesday, August 5/0945-1015/10/Jarmac/Mu  
SS2 5:56, 11.

Jarmac/  
cleaned it  
first  
Hunt stopped  
3F h h 11 11

17886EM2 2355-0110 int/7-10/Jarmac/CMP-1.

17887S. Wednesday, Aout 6/1015-1035/3/Jarm

17888S2 ~~0300-0500~~ 1500-1700/3/Jarmac, then G  
Observatory / SS3 with Tim Hunter. Ve  
town here at Jarmac, then of Grasslands

mac/Mintaka

17889A23 1935-0455/3-2-3 then mostly 10/J  
CMP-1. PERSEID METEOR SHOWER.

MP-1  
int/JSKMP)  
2-3/Jarmac)

meteors, including one -3 that appear  
my camera!! Very nice and happy see  
Also CN3 Lll, noll, hll, i, gll. Domin  
cancelled so I could concentrate on meteors  
deared. Clouds from E thickened and con  
to west, then broke up slowly.

MP-1

17890S Thursday, Aout 7/1 (3/Jarmac

HOLIDAY.)

Mintaka / SS2

SS2: 4, 5, 1, 3

17891EM2 2200-0115 int/7m/Jarmac/C

ic/SS2 j

17892S Friday, Aout 8/1300-015/SS2

pension

17893EM2 2115-0100 int/3-2/Jarmac/C

Jarmac/

17894S Shabat, Aout 8/1130-1145/3/Jarmac/Min  
SS2 3:24 14.

of CMP-1  
Viken

17895M2 0000-0215 int/1-2/Jarmac/Super Ma  
clast to perigee at full phase for next 2

Mintaka/  
SS2.

17896S Sunday, Aout 9/1115-1135/3/Jarmac  
SS2

17897E2 1945-0215 int/road home! Tucson - Jarmac. A



- 17898EM Tuesday, Aout 12/13/ 2100-0220 int/ 0-1/ Jarnac
- 17899EM Wednesday 13/14 Aout/ 2030-02<sup>15</sup> int/ 3-2-3 Jarnac/CMP
- 17900M Thursday 14/15 Aout/ 0115-0130 | 2 | Jarnac  
Snow White / Moon. -
- 17901S. Friday 15 Aout/ 1430-1445/ 3/ Jarnac  
Muntaka / SSR 4: 28, 13
- 17902EM 2.S 2135-0130 int/ 3-2 | Jarnac/
- 17903S Saturday 16 Aout/ 1130-1145  
Muntaka / SSR 4: 3: 24, 14.
- 17904EM 2 2000-0125 int int/ 0 to 3/ Mt Lemmon,  
then Jarnac / Yagg on the Lemmon Retreat.
- 17905S. Sunday, August 17/ 1230-1245/ 3/ Jarnac/ Muntaka / SSR 5: 37, 20
- 17906M 2 0030-0130 int/ 2 | Jarnac.
- 17907S Monday, August 18/ Leundi, 18 Aout. /  
1815-1830 | 3/ Jarnac / Muntaka / SSR 5: 36, 2
- 17908EM 2 2300-0130 int/ 2 | Jarnac.
- 17909S Tuesday, August 19/ 1700-1730/ 3/ Jarnac/ Muntaka / SSR 5: 25, 10~
- 17910EM 2 1925- 0130 int/ 0-2/ Jarnac. First  
Sharing the Sky evening rainout.
- 17911S. Wednesday August 20/ 1115-1135/ 4.3/ Jarnac  
Muntaka / SSR 6: 42, 13~
- 17912EM 2 2100-0130 int/ 3/ Jarnac / CMP-1  
late perseid Meteoric Meteor
- 17913EM Thursday August 21/ 1840-0100 int int/ 0-3/ Jarnac / CMP1
- 17914EM. Saturday August 23/ 2045-0230/ 10-3/ The Adirondack Astronomy Retreat. Muntaka / CMP1, 3  
CMP1 1 meteor. Aurora negative.



08-14

7915 AM.

Sunday August 24, 1935 to 0530 / Ten /  
 The Adirondack Astronomy Retreat. / Minerva /  
 about 35 people. / CMP-1. Loudly meteors  
 several. Two mighty fireballs. One - 4  
 was from (probably) the Alpha Aurigid stream.  
 So, ALPHA AURIGID METEOR WATCH.  
 Aurora-1: possible faint glow in North;  
 enhanced by a faint spot visible for just  
 below the pole star. CN-3: 5.5 hours  
 using Minerva + Hart. W, NW, N, NE, E.  
 Orion beautiful in the predawn sky.

This was a wonderful observing session.  
 I love the place and I love these people.

7916 AM.

Monday August 25 / 1930 to 0430 / 10+ / The  
 Adirondack Astronomy Retreat. / Minerva, Hart,  
 David the 12" telescope, and other telescopes.  
 CMP-1. 8 meteoric meteors. Aurora-1 negative.  
 CN3 4.5h W, NW, N, NE, E, SE with Minerva  
 and with Hart. Even though Hart's electronics  
 are not working. The optics are good & I used it  
 for 2 hours on the last 2 nights.

I decided to add IC 4756 to the CN3 catalogue.  
 The policy is that only unique, or unusual objects  
 can get added to the list. IC 4756 is  
 big, ~ a degree across, & consists of scattered  
 bright stars glued together with many a good  
 much fainter stars. This was a beautiful  
 gorgeous night.

7917 AM.

Tuesday August 27 / 1930-0200 / 10, then 3 / AAR / Aurora  
 negative, then CMP-1 several meteors, then CN3 2.1h  
 Smoothly operating Minerva. Saw NEPTUNE  
 with David Rosseter's Fritz telescope. And Comet  
 Sweaves through David.



17918M. Wednesday, August 27/28/0100-0200/3-2/  
The Adirondack Astronomy Retreat/CMP-1.  
Discussion with Peter.

17919AM Thursday, August 28/2030-0455/1-3-10-3/  
The Adirondack Astronomy Retreat/CMP-1  
~4 meters. Aurora. Doubtful but possible  
faint auroral glow in North. Sky cloudy till  
11. Then sudden clearing as clouds dis-  
ipated, CN3 ~~3.1~~ 3.2<sup>h</sup> North, East, with  
Herschel and with Murena.

Little Bear (Carl's telescope) showed M33.  
Saw several double stars, including  $\Sigma 2816 + 2819$ .

17920PM Friday, August 29/1930-0210/10-3/ The  
Adirondack Astronomy Retreat. Aurora -  
negative although Clara Scatolin suspected  
one. Murena, Herschel, Little Bear, Altair,  
Neptune, Voyager, Gemini, Pisces / Carl,  
Peter, and the superb folks of the AAR, AND  
Wendee, Joan, Guil, and Cindy. / CMP-1.  
CN3 2.5<sup>h</sup> W, N, and East.

17921S. Stabat; Samedi, 30 Aout 2014/1130-1210/  
Lovely AAR group picture. SS / Little Bear, Voyager  
SS2 3:13.

17922EM2 2000 to 0155/3/30 Adirondack Astronomy  
Retreat / final session. Comet Jacques CN3 0.1<sup>h</sup> West. Carl  
Pete, Ed, + Patrice + Clara, Miket, Stephanie.

17923S. Sunday, 31 Aout 2014/1250-1305/0-1/ St. George  
& Murena / Carl revisited the famous Comet West  
session from 199-1976. A good opportunity  
to recall our arguably robust session  
we had in early March 1976.



17923E? Monday September 1 / Labour Day / 2115-2220  
original Jarnac / Carl / Voyager, Altair /  
Aurora - I negative, CNP1. CN3 0.1<sup>h</sup>, W.  
Almost first quarter Moon. Great session  
wonderful return to the original Jarnac!  
Also saw Comet Jacques w/ Voyager, M31, etc

17924E Wednesdays September 3 / 202330-0015 / 1  
JARNAC / Setup of Miravira begins - HOME!

17925S Thursday September 4 / 1050-1120 / 3 / Jarnac  
Mintaka / SS2 4: 36<sup>m</sup> ~ 17. Also con  
Miravira setup after the AAR, plus connectivity  
Miranda's radio

17927E/S. Friday September 5 / 1100-1115 / B / Jarnac / M  
SS2 6:43, 10.

17928E/M2. 20 1945-0210 int / 3 / Jarnac / LPO-1. Moo  
Saw w/ Carl and deeper if you sit on the observ  
floor. Works perfectly using Miranda's  
So I found a good telescope for the AAR being

17929S Sunday September 7 / 1055-1840 int / 3 / J  
Mintaka / SS2 4: ~ 41, ~ 4. Later, pictures  
of the telescopes.

17930E/M2 2135-0200 int / 1-0 / Jarnac /

17931S Monday September 8, Richard's birthday / 1755  
3 / Jarnac / Cupid, Cordelia / SS2: 5: 67<sup>m</sup>,  
better J1 picture - MUCH BETTER - than yo

17932E/M2 1945-0215 int / 3 / Jarnac / Echo tel  
Miranda / Saturn, Mars, + Antares w/ Echo  
with Miranda's binoviewer.

17933S Tuesday September 9 / 1050-1105 / 3 / Jarnac  
Mintaka / SS2 9: 13, 13.

17934E/M2 1845-0155 int / 3 / Jarnac / LPO-  
Moon - Wendy + Jenny eyed seeing Moon 4<sup>h</sup>: bin  
CN3 0.1<sup>h</sup> W. Apollo. Trying to connect Sphinx



79255. Wednesday, Sept. 10. / 0935 to 0950 / 3 / Jarnac / Mintaka / SS2. 179485

7926EM2 2000-0200 int / 3 / Jarnac.

7927S. Thurs, Sept. 11 / 1100-1115 / 3 / Jarnac / Mintaka / SS2.

7928EM2 2100-0150 int / 3 / Jarnac. 17949E

7929S. Fri Sept 12 / 1130-1145 / 3 / Jarnac / Mintaka / SS2.

7930EM2 2015-0150 int / 3 / Jarnac.

7931S Sat Sept. 13 / 1100-1115 / 3 / Jarnac / Mintaka / SS2. 17950S

7932EM2 2000-0200 int / 3 / Jarnac.

7933S Sun Sept 14 / 1130-1145 / 3 / Jarnac / Mintaka / SS2. 17951E

7934EM2 1945-0200 int / 10-3 / Jarnac / 32, T / Apollo /

CN3 0.11W.

7935 Monday 15 September / 1135-1150 / Mintaka / 17952

SS2: 3:20, 4. Hurricane Odie approaching from

South during session. 1795

7936EM Thursday, 18 September / 1150-0115 / 10" Dot 17950

East Jordan, Michigan, then Bryan's lovely home.

A Beautiful Aurora! J. Aurora - 17955

POSITIVE! HA with darkness beneath; 17951

Then a magnificent RA with secondary RA

beneath it! We saw more when we cont 1795

inued the session at Bryan's home. What 1795

a magnificent night. 1795

7937E Friday, 19 September (Mom + Dad's 75th 1795

Wedding Anniversary.) / 2000-0000 / 2-3-6 /

After my successful Rightwatchman's Journey

before we saw the CATSEYE nebula.

It was fun to see this interesting nebula

NGC 6543. It is 8.1 - bright! 1795

Discovered by William Herschel on 1796

15 February 1788. 330 Light years away

Also we saw M27 through a lovely 15" Dob.



Summer of 2014 ends.

09-14

Headlands Intl, Dark Sky Park

17948E Saturday, 20 September / 2100-2200 / 3 / Meteora  
Site on the north end of the peninsula / lots of people leaving  
after lecture, but Bryan observed with me. Aurora  
possible glow in North. clouds scattered about.

17949E Sunday, 21 Sept / 2030-2200 / 1 / Wilderup Obser-  
vatory, Boyne City, Michigan / new Hubble antique  
telescope, 9-inch plus a bit, Celestron.

17950S Tuesday, 23 September / 1130-1145 / 3 / Jarnac/  
Muntaka / SS2 5:43, 2.

17951EM2 2000-0200 int / 3-10 / Jarnac / CMP-1,  
5 meteors, one captured with w/ my lovely  
brand new Maui lens.

17952S Wednesday, 24 September / 10:15-10:30 / 10 /  
Jarnac / Muntaka / SS2 4:41, 1, 1 long filament

17953EM2 2000-0205 int / 3-10 / Jarnac / CMP-1, Aur

17954S ROSH HASHANA / 0900-0920 / 10 / Jarnac / Muntaka /  
SS2 / 6:87, 2.

17955EM2 2130-0100 int / 3 / Jarnac / Narcissey / CMP-1,  
Aurora-1

17956E Friday, Sept 26 / 2000-2045 / 3 / Jean's house,  
Yucca Valley, CA / CMP-1.

17957S Saturday, September 27 / 1240-1300 / 10 / Starry  
Nights Festival / two telescopes, a Leica H&T  
white-light filtered binoculars. SS2: 6, 46, 2,  
2 filaments - long filaments.

17958E2 2000-2200 / 9 / Starry Nights festival. ~50  
people, Tim, + Jean. Several photographs of  
Peg / And region.

17959E3 2330-2345 / 7 / Joshua Tree hotel, Yucca Valley /  
CMP-1.

17960E Sunday September 28 / 1945-0215 int / 10 / Jarnac  
CMP-1, Aurora-1.



17966 Monday, September 29 / 1230-1245 / 3 / Jarnac /  
SS2 with Mintaka / SS2 6:78,6

17962EM 2030-0200 int / 7m / Jarnac / CN3 with  
Narcissus / CN3 0.1^W. CMP-1. Index in S

17963S Tuesday, Sept 30 / 103

17964EM 2000-0200 int / 7m / Jarnac / CN3 0.1^W.  
with Narcissus / CMP-1.

17965EM Thursday, October 2, 1959 / 2220-0110 int /  
Jarnac / Aurora-1, negative; CMP-1.

17966S Friday, Oct 3 / Kol Nidre / 1040-1055 /  
10 / Jarnac / Aur. Mintaka / SS2 3:24,13.

17967EM 2130-0200 int / Kol Nidre / Jarnac, after a very  
little service / Aurora-1 negative CMP-1

17968S Saturday, Oct 4 / Jan Kipper / 1140-noon /  
Jarnac / Mintaka / SS2

17969EM 2000 to 0200 int / 7m / Jarnac / Aur-1, CMP-1

17970S Sunday, October 5 / 1115-1135 / 10-3 / Jarnac /  
Mintaka / SS2 3:27,23.

17971EM 1900-0100 int / 3 / Jarnac / Echg / LPO-1

17972S Monday, Oct 6 / 2000-1120-11<sup>35</sup> int / 2 / Jarnac.  
Mintaka / SS2 1:6,3.

17973EM 2000-0100 int / 2 / Jarnac 1.

17974S Tuesday, October 7 / 1045-1100 / 3-2 / Jarnac /  
Mintaka / SS2 3:9,10.

17975EM 2 2330-0100 int / 0 (rain), then 1. / Jarnac  
Lunar Eclipse. So far unobserved I did not  
see the C, but I did photograph it  
somehow! So does this get a # or a  
letter? A number.

17976M 0000-0120 int / 7m / Jarnac / CMP-1, Aur-1



- 17977E Friday, Oct 10/210-2200 int/3/ flight 60 DFW-MIA,  
Moonrise. Very nice, picture taken. 10-14
- 17978SE <sup>Sunday</sup> Friday, October 10/1800-2300/3/ Miami Beach, near  
Hilton Cabana hotel/ many people / David Co  
Ashby's wedding/ Vega, Altair, Deneb viewed through  
passing clouds.
- 17979E Monday, October 13/2130-2230/3/ Aboard SS. Norwegian  
Sky/ Wanda/ CMP-1 Summer A. Lovely night but bright  
hazy Ophelia binoculars.
- 17980E Tuesday, October 14/2115-2230/3/ Aboard SS.  
Norwegian Sky/ Wanda/ CMP-1. Summer A  
Very comfortable session using Ophelia binoculars
- 17981E Wednesday, October 15/2150-2230/3/ Aboard SS  
Norwegian Sky/ Wanda/ CMP-1. Summer A.  
Regorvus, Fomalhaut, + groups of 4's south of  
M15. Wanda saw a meteorite meteor going  
SE in Peepsu from NW. Good Ophelia.
- 17982EM2 02345-0030 same night/3/ Aboard SS. Norwegian Sky  
reading + relaxing. CMP-1. Ac former. Ophelia used
- 17983E Thursday, October 16/2130-2155/3/ Aboard SS.  
Norwegian Sky just north of Great Stirrup Cay. / Wanda  
CMP-1.
- 17984M2 October 16/17/ 0510-0610/3/ Aboard SS. Norwe  
gian Sky/ CMP-1. watched Orion etc. and the ship  
pull into the Miami harbor + dock at port.  
We passed Norwegian Pearl on the way.
- 17985S. October 17/ 1715-1730/3/ Jarnac/ Cepheid, Cora  
SS2.
- 17986E2 2130-2300 int/ 3/ Jarnac/ CMP-1
- 17987SE Oct. 18, Saturday/ ~~1600-1800~~ <sup>1600-1800</sup> /3/ Jarnac/ SS2  
with Mintaka.
- 17988E2 2100-2355 int/ 3/ F/ CMP-1. failed to see C/Si.
- 17989S Sun Oct 19/ 1045-1100/3/ Mintaka/ SS2 3.56, 23
- 17990EM2 2200-0115 int/ CM 3/ Jarnac/ CMP-1.



Fri Monday October 20/1100-1115/3/Jarnac/  
Mintaka/1 SS2. 3: 65, 17. Biggest spot in years

2 1900- int/2-3/Jarnac/CMP-/  
ORIONIDS METEORIC METEOR SHOWER 26  
meteors seen. CN3 attempt to see C/Siding Spring  
? Fat Fuzzy blob glimpsed. So maybe.  
AURORA-1 possible glow in N. earlier

18000EM

18005

18002EM2

Tuesday, October 21/1300-1320/3/Jarnac/  
Mintaka/ SS2 4: ~119, ~17, at bay fore flare in  
the most active region. + at least 2 filamentary filaments

1800-2045/3/Wendee & David Key Observatory  
Corona Foothills M.S. / Many, many students. I  
gave the "Story Musgrave Line" but have no weaknesses.  
The sky cleared enough that I got a fair view of  
Comet Siding Spring at last huddled among  
the field stars. Two or three students also saw  
it before it clouded over again. CN3s. Comet  
Siding Spring. CMP1. One meteor. probably an  
Orionid. This was the best session I've  
ever had with the local Astronomy Club.

18003EM

18004E

3 0020-0245/10/Jarnac/CMP1 9 meteors  
seen. None photographed.

18005E

5 Wednesday Wednesday October 22/1115-1130/  
10/Jarnac/Mintaka/SS2 4: 112, 21.

18006S

42 E2 0015-0204/10/Jarnac/CMP1 CN3/  
1900-2000  
unsuccessful attempt to confirm C/Sid Spring

3 M3 0015-0145/10/Jarnac/CMP1 8 meteors

5 Thursday October 23/1400-1700/10/Jarnac/  
SS2, 5: 120, 21. Partial eclipse of the Sun  
which covered at maximum.

18007EM2

18008

later 4: 112, 21 later still 4: 121, 7. with Capricorn Corbula



The eclipse, unlike the lunar 2 weeks ago, took place in a perfect sky. It was rather a fun to watch. But somehow the lunar was more exciting.

18000EM. 1805 to 0045 int/10/Jamaica/ CMP-1. CN35 glimpsed possibly Comet Seiding. A nice evening.

180015. Friday, October 24/ 0915-0930/10/Jamaica/ SS2. 4:12, 11.

18002EM2 2300-0300 CST Heart of America Star Party, S. of Kansas City/9/8 CMP 4 meters, Orionids. CN3. 2h S, overhauling using Andromeda, Lario's beautiful Meade Maksutov.

18003EM Saturday, October 25/ 1915-0300/10/Heart of America Star Party. Lots of people, esp. Lario, Joe, Terry, Tim. Father people. Pegasus, Andromeda. Lario's 2 telescopes, the 20" Dob + the 7" Meade CN3b. 5.1h W. with Andromeda then Pegasus. nice session. Red letter session. It was nice to use the newly named telescopes for comet hunting.

18004E Sunday, October 26/ 1930-1945/3/ Liberty, near Kansas/ Crescent Moon.

18005E Monday, October 27/ 2100-2145/11/ University of Missouri at Kansas City/ 16" + 14" telescopes. lecture celebration. Then we returned to the house.

18006S Tuesday, October 28/ 1630-1645/10/Jamaica/ SS2 4:6, 3, 8, 1 flare filament.

18007EM2 1900-0130 int/10/Jamaica/ Obadiah testing.

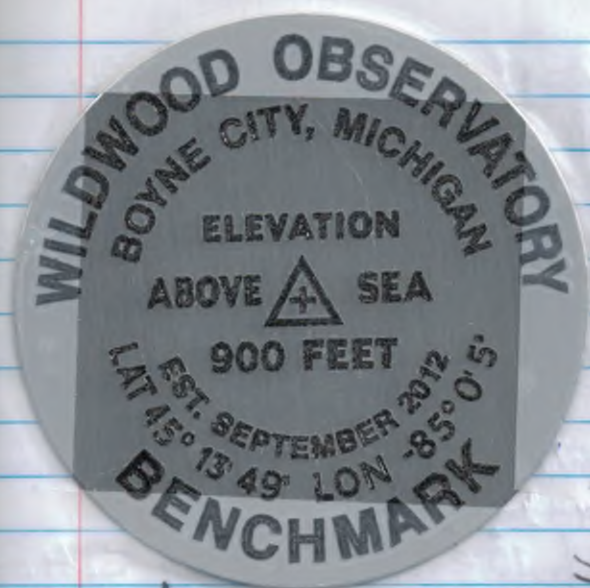
18008S Wednesday, October 29/ 1140-1155/10/Jamaica/ SS2 with Mintaka 5:27, 16.

in years  
26  
Spring  
nac/  
Lario's  
Lario's 11 camera  
observatory  
mts. of  
weakness  
w/ry  
cymony  
Lario saw  
Comet  
trably in  
g'up  
club.  
tears  
115-1136  
N3/  
Spring  
tears  
Jamaica/  
Sun  
2, 21.  
H. Coulter



- 18009 ~~HR~~ 1930-0136 int / 7m / Jarnac / CN3F Oba stah  
 18010 S. Thursday 30 October / 10:10-1045 / 10 / Jarnac /  
 J3-31 / Mintaka / SS2 3: 2: 3, 17~
- 18011 EM2 2100-0100 int / 3m / Jarnac / CMP-1  
 18012 S. Friday, 31 October / 1220-1235 / 3 / Jarnac /  
 Mintaka / SS2 2: 8, 16.
- 18013 EM2 2130 to 0135 int / 3 / Jarnac / CMP-1  
 18014 S. Saturday, November 1 / 1100-1120 / 3 / Jarnac /  
 Mintaka / SS2. 4: 21, 17~
- 18015 EM2 2000-0140 int / 3m / Jarnac / Echo Telescope /  
 LPO-1, The Moon. CMP-1.
- 18016 EM Sunday, Nov 2 / 2145-0145 int / Jarnac /  
 CMP-1.
- 18017 S. Mon, November 3 / 1050-1105 / 10 / Jarnac / Mintaka /  
 SS2 5: 29, 17.
- 18018 S2 1330-1415 / 3 / Jarnac / tour for Robert Reeves  
 Saw all buildings, all telescopes
- 18019 EM3 1955-0130 int / 3m / Jarnac / CMP-1.  
 18020 S. Tues Nov 4 /
- 18021 EM2. 1830 to 0200 int / 7m / Jarnac / CMP-1, Taurids  
 LPO I Moon with Echo CMP-1 Taurids - Omicrons
- 18022 S. Wednesday, November 5 / 1715-1730 / 10 / Jarnac /  
 Cupid, Cordelia / SS2 4: 24, 8. ~
- 18023 EM2 1835-0200 int / 7m / Jarnac / CMP-1 Taurids  
 18024 EM Thursday, November 6 / 1755- int / 7m /  
 van. Stars Pass Resort, then Stars Pass Resort  
 then Jarnac / beautiful big Mopar in  
 the east. Then a dinner meal with Gary  
 Clark + Y Chapman, + Wendee under the  
 rising Moon. Later at Jarnac, CMP-1
- 18025 S. Friday, November 7 / 1145-noon / 10 / Jarnac / Mintaka / SS2  
 18026 S2. 1700-1715 / 10 / Jarnac / Cupid, Cordelia / SS2 3: 48, 17. ~





11/14  
 \* 18027 EM3 1900-0115 int /  
 Tim / Jarnac / CMP-1  
 18028 SF. Saturday November 10 /  
 1555-1800 / 10 / Jarnac /  
 Calypso + Coroblia / SS2  
 2:28:15, 1 possible flare and  
 lovely filament.

\* 18029 EM2 / 1055- int / 7m /  
 Jarnac / Joan / CMP-1. Orion,  
 Sirius. Finally home from Bat Mitzva-  
 ah of Rebecca Friend. Very busy, tiring, but happy day

CMP-1: Saw / Unaid below Peloris!

18030S Sunday November 9 / 1135-1150 / 10 / Jarnac /  
 SS2. ~ 2:25r, 17~

18030S2 1540-1630 / 10 / Jarnac / Coroblia, Calypso / SS2  
 3:25r, 17~

18031EM3 1930-0100 int / ~~10~~ 7m<sup>then 3!</sup> / Jarnac / Gael  
 later Wendee, Joan / CMP-1. Orion - Betelgeuse,  
 Rigel, Bellatrix, + (bottom), Saiph

18033S Monday, November 10 / 0900-0915 / 10 / Jarnac / Muntida /  
 SS2 3:31, 17 plus saw the Moon, warning of below phase.

18034EP Wednesday, November 12 / # 1850-1900 ~ GMT / Univer-  
 sity of Sussex, Brighton, England / Gillian, Daw and her  
 friend. Cassiopeia almost overhead

\* 18034S. Friday, November 14 / # 0915-0945 / 2 / Bochum  
 Germany, Courtyard by Marriott Hotel / Trees  
 Sun through clouds

18035S Saturday, November 15 / 1400-1500 / 1 / Bochum,  
 Sharpespeare Conference site / pictures of  
 Christ Synagogue juxtaposed with domed Pinder  
 Linn. One person told me he really enjoyed my  
 lovely talk late this morning.



- 18037EM Sunday, 16 November / 2345-0005 / 10 / Jarnac at  
last / Aurora - CMP-1 Home at last
- 18038S Monday, 17 Nov / 1630-1645 / 10 / Jarnac / Cupid  
Cordelia / SS2 2: 25, 5, large spots + prominences
- 18039EM 2200-0130 int / 10 / Jarnac / CMP-1  
Leonid Meteor Watch. One possible meteor  
(Leonid).
- 18040S Tuesday, 18 November / 1125-1140 / 10 / Jarnac /  
EN SS2 w / Minitaka 2: 2:36, 3
- 18041EM 2230-0115 int / 10-3 / Jarnac / CMP-1  
LEONID METEOR WATCH. 5 meteors, 3 of which  
were possible faint Leonids
- 18042S Wednesday, 19 November / 1315-1330 / 10-3  
Jarnac / Minitaka / 3: 35, 6
- 18043EM 1835-0130 int / 10 / Jarnac / Aur-1, CMP-1,  
CN3 F, 40m, n bl, d ll. Finally resuming the  
electronic comet hunting!
- 18044S Thursday, 20 November / 110 / Jarnac /  
Minitaka / SS2 3:
- 18045EM 1945-0115 int / 3 / Jarnac / Aur-1, CMP-1
- 18046EM Friday, 21 November / 1930- int / 3 / Jarnac  
clearing sky after a cloudy day. CMP-1.
- 18047S Saturday, 22 November, 1963 /  
10-3 / Jarnac / Minitaka / SS2.
- 18048S 1555-1800 / 3 / Jarnac / Aur-1, CMP-1
- 18049EM 2000-0100 int / 3-10 / Jarnac / CMP-1, Aurora /
- 18050S Sunday, 23 November / 1115-1135 / 10 / Jarnac /  
Minitaka + "new" eyepiece / SS2 4: 66, 13~
- 18051EM 1830-0150 int / 10 / Jarnac / CMP-1, Aur-1  
CN3 40m, L ll, n bl, F
- 18052S Monday, 24 November / 1140-1155 / 10 / Jarnac / Minitaka  
SS2 4: 66, 13~
- 18053E Tues 25 Nov / 2255-2315 / 7 / ABC Quality Hotel / CMP-1.



- 8054EP Wed, 26 Nov / 1915-1920 / 7 / Darnette's home / CMP-1, 12/14
- 8055E2 Wednesday, 26 Nov / 2305-2320 / 7 / Quality Hotel, Albuquerque / CMP-1.
- 8056E Thursday 27 Nov / 1930-2330 int / CMP-1
- 8057E Friday 28 Nov / 2305-2320 / 7 / Quality Hotel, Albuquerque / CMP-1.
- 8058S Saturday 29 November / 1655-1715 / 10 / Jarnac / Cupid, Cordelia SS2 7, 6, 13.
- 8059EM2 2300-0220 int / 7m-10 / Jarnac / Miranda, Orestes, Flare! CN3-40m, CN3F. CN3F Gemini fields.
- 80608E Sunday, 30 November
- ~~8061EM2~~ 30 Nov / Dec / 2000 to 0150 int / 10 / Jarnac / CMP-1, 6 meteoric meteors; 3 of which could be from the purported Phoenicid meteor outburst.
- 8062EM 1 December / 2300-0115 int / 3-2 / Jarnac / CMP-1. Aurora-1 negative.
- 8063EM Tuesday, 2 December / 1830-0115 int / 1-0 / Jarnac
- 8064S ~~Wednesday, 3 December~~ 4 December / 1350-1405 / 2 / Jarnac / SS2 with Minkara 3.20. No H $\alpha$  view today before we left. <sup>to watch</sup> Interstellar.
- 8065EM2 1845-0215 int / 7m / Jarnac / CMP-1, Aurora-1.
- 8066EM Wed, 3 December / before 64 / 1855-0100 int
- 8067S Friday 5 December / 1230-1245 / 3 / Jarnac / Mka. SS2: 3, 33, 5, 7~
- 8068EM2 Saturday 6 December / 2300-0205 int. Clear. CMP-1, Aurora-1.
- 8069S Sunday 7 December / 1200-1800 int / 3 / Jarnac / Minkara SS2: 7, 19, 5~
- 8070EM2 2355-0235 int / 3-2 / Jarnac / CMP-1, Aurora-1.
- 8071EM Monday 8 December / 2355-0215 int / 7m / Jarnac / CMP-1, Aurora-1.
- 8072S Tues 8 Dec / 1100 to 1335 / 3m / Jarnac / Minkara / SS2 3, 33, 11. also obs. clearing with help from the Greens
- 8073EM2 2015-0200 int / 10-7m-3 / Jarnac / CN3 0.1W with Apollo. CMP-1, Aurora-1.



180745 Wednesday, December 10/1200-1215/10-3/Jarnac/  
Muntaka/SS2 4:68, 9.

18075E2. 1915-2150/10 plus Grasslands Observatory  
Tim/CMP3 with Cupid 1<sup>h</sup>W. During the  
hour I saw Tim though he saw it first.  
But when he was inside I saw a much  
brighter star rising. That was Adernay.  
We watched it rise, culminate, + set in about  
an hour and a half. Lovely session. CMP 5 stars.

18076EM3 2350-0130 int/Tim/Jarnac/CMP-1.

18076S. Thurs Dec 11/1700-1715/3/Jarnac/Cupid,  
Cordelia/SS2 6:20, 2 but clouds did interrupt

18077EM2 2000-0150 int/Jarnac/2/CMP-1

18078EM Friday, December 12/2200-0200 int/1/Jarnac.

\*18079S. Saturday, December 13/2200-0045/10-3/  
EM2. Jarnac/CMP-1. GEMINID METEOR WATCH.

49 meteoric meteors, 2 caught on camera  
pointing near the radiant at Castor + Pollux.

18080SE Sat Dec 13 before above session/1745-1800/  
0-3-2/Jarnac/SS2. Cordelia + Cupid.

18081S. Sunday, December 14/1200-1215/3/Jarnac/  
Muntaka/SS2.

+18082EM2. 2330-0155/10-3/Jarnac/CMP-1  
18082 GEMINORUM GEMINID METEORIC METEOR  
WATCH. 35 meteors seen, Two caught on  
camera!

18083S. Monday, December 15/1200-1220/13/Jarnac/  
Muntaka/8 SS2: 11.

18084EM2 1850-0200 int/2/Jarnac

18085S. Tuesday, December 16/1230-1730 int/  
3/Jarnac/Cupid, Cordelia/SS2: 8, 11, 7.



12/14

- 18087EM2. 1830-0215 int / ~~10~~3-1 / Jarnac / CN3F, CMP-1.
- 18088S. 1300-1315 / 2 / Jarnac / Mintaka / SS2 9:88, 13.
- 18089EM2 1945-2100 int / 0 - rain.
- 18090S. ~~Thurs~~ Wednesday, December 17 / ~~noon-1220~~ 1700-1720 / 2 / Jarnac / SS2 Cupid, Cordelia / SS2.
- 18091EM2. 1830-0230 int / 0-3-1-3 / Jarnac / CN3 49th anniversary. CN3F11. CMP-1 Ursid Meteor Watch: 0.
- 18092S. Thursday, December 18 / 1200-1220 / 3 / Jarnac / SS2 with Mintaka. CN3S - Comet Finlay.
- 18093EM2 1845-0230 int / 3-10 / Jarnac / CMP-1, CN3F11.
- 18094S. Friday, Dec 19 / 1200-1230 / 10 / Jarnac / Mintaka / SS2: 7, 95, ~6.
- 18095EM2 1815-0200 int / 0 / Jarnac / CMP-1, Aurora-1, CN3F11, CN3H11, CN3n. CN3s look #2 at Comet Finlay. Wendat 9 both saw the comet with its beagbe tail. CMP-1 Ursids - zero.
- 18096S. Shabat Dec 20 / 1200-1230 / 3 / Jarnac / SS2.
- 18097EM2 1900-0200 int / 3 / Jarnac.
- 18098S. Sun. Dec. 21, first day of winter, / noon-12:15 / SS2.
- 18099EM2 2300-0215 int / mostly cloudy.
- 18100S. Mon. Dec 22 / 1600-1640 / 10 / Jarnac / Cupid, Cordelia / SS2 6:68, 6.
- 18101EM2 1830-0245 int / 10 / Jarnac / CMP-1, CN3F. Aurora-1 negatone. CN3e. TVGru.
- 18102MP3 0530-0535 / 0 with power / dark sky! Did I see M81 naked eye? Perhaps.
- 18103S. Tuesday, Dec 23 / 1140-1300 / 10 / Jarnac / Mintaka / SS2 7:23, 6~.
- 18104RM2 200-0200 int / 10 / Jarnac / CMP-1 URSID METEOR WATCH. CN3F11.
- 18105S. Wed Dec 24 / noon-12:15 / Jarnac / 10 / SS2 3~ 19.
- 18106EM2 Th 1830-025 int / 1 / Jarnac



18107S. Merry Christmas day, December 25, Thursday |  
surprising clearing, SS2, Mintaka 5:17, 17~

18108EM2. 2330-0200 int/0-1/ Jarnac.

18109S Boxing Day December 26/1145-noon/ (Ab Jarnac)  
Mintaka / SS2 3:25, 7.

18110EM2. 2130-0327 int/10, very cold/CN3 F11,  
arcos 57171. CMP-1, MONOCEROTID METEOR  
WATCH / CN3 = TV Cam.

18111S. December 27.

18112EM2 2100-0200 int/

18113S December 28/

18114EM2 2000- int/

18115S December 29/

18116EM2. 2000- int/

18117S Dec 30/

18118EM2 2000-0230 int/2-1/ Jarnac Meer

18119EM2 2300-0500 int/0-3-7/ Jarnac | Pictured / snow on  
Jarnac backyard.

18120S. 2015!

January /

12:20-1235/10/ Jarnac / Mintaka AND Home  
chem observatory to start the new year! 6:45, 23

18121EM2 2200-0200 int/3m/ Jarnac, CMP-1 ?

18122S Friday, January 2. 1300-1315/3/ Jarnac / SS26.42

18123EM2 1230-0215 int/1/ Jarnac.

18124S Saturday, January 3/1140-1210/2/ Jarnac / SS2

18125EM2 2300-0140 int/0-3

18126S Sunday, January 4/ 1140-1200?/10/ Jarnac/

Mintaka / SS2 8:58:20 ?

\*\*18127EM2 after 18123/0445-0645/10/ Jarnac / CMP-1/  
QUADRANTID METEOR WATCH. 8 seen aphytegig  
DECEMBER CEPHEID METEOR WATCH. 2 of a b...  
DC's



01/15

- 181295 2102-0202 int / 3 / Jarnac / CMP-1  
Monday, Jan 5 / 1710-1725? / Jarnac 4? /  
Cupid, Cordelia? / SS2 4.45, 5?
- 18130EM2 1830-0202 / 3m / Jarnac / CMP-1.
- 18131S Tuesday, January 6 / 1215-1230? / 3 / Jarnac / SS2
- 18132EM2 1830-0202 int / 3 / Jarnac / CMP-1. CN3 0.1<sup>h</sup>W.
- 18133S Wednesday, January 7 / 1145-1205 / 3 / Jarnac / SS2.
- 18134EM2 1830-0125<sup>50</sup> int / 1 / Jarnac.
- 18135EM Thursday, January 8 / 2215-0230 int / 3 / Jarnac /  
CMP-1.
- 18136S Friday, January 9 / 1105-1120 / 3 / Jarnac 54 /  
Cupid, Cordelia / SS2 5:48, 4
- 18137EM2 1810-0230 int / 3m / Jarnac / CN3s  
with Wanda. Comet L. very quite bright in Mi-  
anda.
- 18138S Skybat. January 10 / 12:00-1230 / 3 / Jarnac /  
walk with Wednesday - SS2 with Mintaka 5:79, 23.
- 18139EM2 1845-0208 int / 3<sup>m</sup> / Jarnac / CMP-1.
- 18140S Sunday, January 11 / 1230-1245 / 3 / Jarnac / SS2.
- 18141EM2 1955-~~0200~~ 0100 int / Jarnac 3 / CMP-1
- 18142S Monday, January 12 / 1215-1230 / 3 / Jarnac / Mintaka /  
SS2 but shadow prevented a reading.
- 18143EM2 1830-0100 int / GM 1-3 / Jarnac / EMP-1.
- 18144M3 04 0240-0300 / 3 / Jarnac / CMP-1. Also reading my  
first folio, Shakespeare. Trip Sleepers night!
- 18145M4 0320 to 0530 / 3 / Jarnac / CMP-1. CN3e TVCw  
15.6. CN3d 0.5<sup>h</sup>E. First serious comet search  
after 50<sup>th</sup> year.
- 18146EP Tuesday, January 13 / 1800-1810 / 7 / Montreal Int.  
Airport / Trudeau airport Venus but couldn't  
find nearby Mercury.



18147E. Wednesday, 14 January / 2010-2045 / 7 but "snow-  
flaky" in the sky. / Scatter in home / Patricia, Laura,  
Clara, Sophie, Marc, and Wednesday / 12-inch ref-  
lector telescope / CN3s / Comet Lovejoy through both  
10x ~? binoculars and the 12-inch, nice view, Earle,  
view of Jupiter but view was not great. Comet had  
a hint of a tail.

18148E. Saturday, 17 January / 1840-1900 Central Time /  
aboard AA plane from Dallas to Tucson, about to  
take off from DFW. Venus and Mercury, LPO-1.

18149EM2. 2100-0015 int / 10 / Jarnac / Comet Lovejoy  
w/ naked eye, shown to Wendee. CN3s.

18150S. Sunday, 18 Jan. / 10.00-12 noon / 3-10 / Jarnac /  
Mintaka / SS2 /

18151EM2. 1850-0200 int / 10 / Jarnac / CN3s Comet Lovejoy,  
Naked eye and Obadiah. CN3F, 56/71. CN3e.

18152S. Monday, 19 Jan / 1120-1140 / 10 / Jarnac / SS2 with Mintaka  
3:34, 19.

18153EM2. 1950-0210 int / 10-3 / Jarnac / CN3s Comet  
Lovejoy via Pegasus! CN3F CN3e. Clyde's star  
Area 56 + 71.

18154S. Tuesday, 20 January / 1115-1135 / 10 / Jarnac / Mintaka  
SS2 2:14, 22.

18155EM2. 1825-0150 int / 9-10 / Wendee + David Kuyper,  
Vail / Vail Astronomy Club. / SS3, CN3s.  
Comet Lovejoy through Voyager! / ~~SS~~ CMP-1, 2  
meteors. Carole after at Jarnac, Comet Lovejoy via Pegasus

18156S. Wednesday, 21 January / 1210-1225 / Mintaka /  
SS2: 28/28.

18157EM2. 1850-0150 int / 3 / Jarnac / CMP-1.

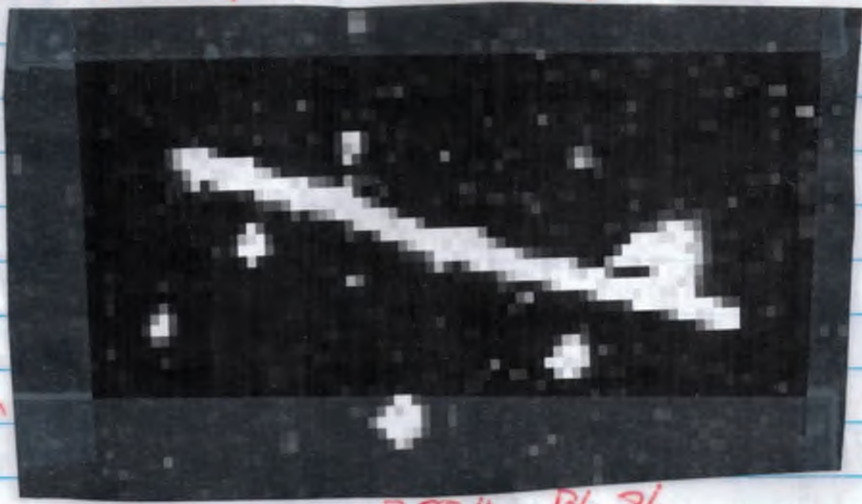


01/15

- 18158S. Thursday January 22/1230-1245/SS2 3:23, 13.  
 18159EM2 2000-0230 int/10/Jarnac/CMP-1 LPO-1, Venus  
 18160S. Friday January 23/1225-1245/3/Jarnac/Mintaka/SS2  
 18161EM2 2100-0150 int/3-2/Jarnac/Aurora-1, CMP-1.  
 18162S Shabat, January 24/1550-1800/3/Jarnac/Mintaka/  
 Cupid Cordelia - finally got the telescope right/SS2:2:21, 4.  
 18163EM2 1815-0200 int/3-2/Jarnac/LPO-1. Moon.  
 18164EM Sunday, January 25/1815- int/1/Jarnac/  
 occasional view of the Moon through clouds.

18165EM. Monday, January 26/1830-0230 int/1-3/  
 Jarnac/CN3e, CN3F, Obadiah. I saw  
 tonight Asteroid 2004 BL86 glide through a group of  
 stars. The asteroid's movement was a thrill  
 to watch.

It was  
 a near perfect  
 evening despite  
 a slow comp-  
 uter at first.  
 On the third day  
 I got Obadiah  
 to be stable  
 and I really



enjoyed both the pictures and especially watching  
 the big guy swing across the telescope field.

2004 BL86

- 18166EM Tues January 27/1830-0230 int/3/Jarnac/  
 CMP-1. CN3F. 56/71.  
 18167S. Wednesday January 28/1315-1335/3/Jarnac/  
 Mintaka & SS2:2:28, 8.  
 18168EM2. 2230-0200 int/32/Jarnac/CN3-2/BGem/CMP-1  
 18169EM Thursday January 29/0100-01200/Jarnac/study  
 of instruments  
 18170S. 1620-1645/11/Jarnac/maintenance on front doors SS2.



- 18175E Sat, Jan 31/1545-1805/0-1/Jamaica.
- 18175S. Sunday, February 1/2/1305-1330/3/Jamaica/ 18186  
SS2 w/ Mintaka 2, 23, 22~.
- 18173EM2 2215-0215 int/ 7m/Jamaica/CMP-1, CN3e. 18187  
TV Cw.
- 18174S Monday, February 2/1055-1110/10/Jamaica/Mintaka/ 18188S  
SS2: 3:52, 17.
- 18175EM2 1840-0215 int/ 7m/Jamaica/CMP-1, CN3e. 18189E
- 18176S. Tuesday, February 3/1110-1125/10/Jamaica/Min- 18190S  
taka/ SS2: 3, 34, 7.
- 18177EM2 1210-0220 int/ 7m/Jamaica/CMP-1, CN3e TV Cw.
- 18178S. Wednesday, February 4/ Happy birthday Clyde/ 18191E  
1115+1130/10/Jamaica/Mintaka/ SS2: 5:55, 24.
- 18179EM2 1230-0215 int/ 7m/Jamaica/ full Moon + 1/ CMP-1,  
CN3e, Clyde's star.
- 18180S Thursday, Feb. 5/1115-1130/10/Jamaica/ Min- 18192S  
taka/ Green family + Mary/ SS2 - 5:~52, ~25.
- 18181EM2 1210-0255 int/ 7m/Jamaica/ Flaire! working 18193E  
again at last! CN3e Clyde's star. CMP-1. 18194  
Oladiah better got a pos but usual usable read-  
ing on S & TV Cw but Flaire's camera didn't  
work after all! 18195
- 18182S. Friday, Feb. 6/ 105-1120/10/Jamaica/Mintaka/ 18196S  
SS2 - 5:52, 28.
- 18183EM2 2100-0230 int/ 8-7m/Jamaica/CMP-1.  
CN3e TV Cw - Flaire still off. Oladiah fine  
Earlier, Orion etc from Steward Observatory  
open area.
- 18184S Shabat February 7, the day after my lecture at DAA/ 18197E  
1150-1210/10/Jamaica/Mintaka/ SS2: 3:50, 20. 18198S
- 18185EM2 1846 1550-0150 int/ 10-7m/Jamaica/outside 18199E  
with APHC show on NPR, guest host. Later Flaire! 2200.  
CN3e TV Cw - C14.9.



02/15

- 8196S Sunday February 8/1035-1050/10/Jarnac/Mintaka/  
SS2 4, 47, 12 + 2 filamentary filaments.
- 8197EM2 1920-0220 int/10, 7m/Jarnac/SS2. CN30.14  
CMP-1, Aurora-1.
- 8198S Monday 9 February 1986/1105-1120/Mintaka/  
SS2: 4, 50, 8.
- 8199EM2 1920-0215 int/10-7m/Jarnac/Obediah, Flaire/  
CMP-1, CN3e, f, 40m, 21, n11. Flaire working well.
- 8190S Tuesday 10 February/1110-1130/10+3/Jarnac/  
Mintaka/SS2 3: 26, 7.
- 8191EM2 1845-0210 int/3, windy/Corona Foothills  
School, Wendee + David Jay observatory/Sharing  
the Sky, Vail Astronomy Unclib. CN3s. Comet  
Lovejoy, with Voyager. SS3 - Comet Stein
- 8192S Weds Friday 13 February 2015/1100-1130/10/  
Jarnac/Mintaka/SS2 3: 13, 16, 2 filaments.
- 8193EM2 1950-0215 int/2/Jarnac. CMP1
- 8194S Monday, 16 February/1105-1125/3/Jarnac/  
Mintaka/SS2: 3, 13, 10.
- 8195EM2 1810-0550 int/3-10 then 3/Jarnac/  
Bryan Shumacher's telescope, Flaire, Clyde, Oba-  
diah, Esther, Bryan <sup>Shumacher</sup>/CN3f, CN3f11, CN3e, R11, 21, n11.  
CN3s. ~~Or~~ Grimpig, Comet Borasov several times.  
The comet is faint, diffuse, barely there. But I be-  
lieve I saw it. Then: CN3d 1, 6<sup>h</sup> W, E, SE.
- 8196S. Tuesday, 17 February/1210-12:30/10/Jarnac/  
Mintaka/SS2 3, 19, plus bicycle ride
- 8197EM2 2100-0255 int/3-2/Jarnac/CMP-1, CN3e, f11.
- 8198S Wednesday, 18 February/1140-1205/10/Jarnac/SS2.
- 8199EM2 2100-0300 int/3-2/Jarnac
- 8200S Thursday 19 February/1105-1140/10/Jarnac/Mintaka/  
SS2-1: 1, 11.



- 18201EM2 2000-0300 int / 2-3 / Jarnac / Bryan Shumaker / Bryan's telescope, Oradiah, Esther, Clyde / CN3e Fil.
- 18202EM2 Friday, February 20, 1962 of John Glenn's Mercury Flight / 2300-0300 int / 2 / Jarnac / nothing.
- 18203S 1300-1330 / 3 / Jarnac / Mintaka / SS2 0, 3.
- 18204EM2 2100-0100 int / 3-2-1 / Jarnac.
- 18205EM2 Sat. Feb 20 / 2200-0225 int / 2.
- 18206S (before 18205) 1200-1215 / 3 / Jarnac / Mintaka / SS2 0, 3.
- 18207S Sun Feb 22 / 2330-1215 / 3 / Jarnac / " / SS2 0, 5.
- 18207EM2 ~~22~~ 1945-0119 int / 2-1 / Jarnac.
- 18208S Monday Feb 23 / 1715-1730 / 10 / Jarnac / Cupid, Cordelia / SS2 0, 2.
- 18209EM2 1930-0215 int / 7m-10+ 3 / Jarnac / CN3 Fil. - Bryan took nine pics of M65 + band 97.
- 18210S Tuesday, 24 Feb. / 1700-1715 / 3 / Jarnac / SS2 with Cupid + Cordelia. SS2: 2, 4, 6.
- 18211EM2 2230-07 int / 10 / Jarnac / CN3e.
- 18212S Wednesday, 25 February / 1040-1115 / 3 / Jarnac / bike ride plus Mintaka / SS2: 1, 3, 5 plus one filamentary filament.
- 18213EM2 1850-0915 int / 7m - Jarnac / attempt to find Comet S010. No luck. Later, with Bryan Shumaker to UBe, CN3 Fil. CMP-1 - ~10 meteors including 1 bright one that should have been recorded but it wasn't.
- 18214S Thursday, 26 February / 1215-1300 / 3 / Jarnac / Mintaka / SS2 1, 4, 8.
- 18215EM2 1900-0220 int / 3 / Jarnac / Pegasus, Miranda / CN3j - failed to find Comet S010.
- 18216S Friday, 27 February / 1045-1130 int: bicycled ride / Mintaka / Jarnac / SS2: 2, 4, 6, 11.



02/15-03/15

18218EM2. 1840-0230 int/3m/Jarnac/CMP/CN3e.

18219S. Shabat, 28 February/1105-1145/Mintaka/SS2 1:21,5.

18220EM2 1930-0215 int/3-2/Jarnac/CMP-1/CN3e.

18221S. Sun 1 March/1130-1230/3/Jarnac/Mintaka/SS2 2:25,5

18222EM2 1930-0200 int/2/Jarnac/CMP-1

18223SK before 18220) / Sat 28 Feb / 2/Jarnac/outdoor reading + listening to A Prairie Home Companion on KUAT-FM.

18224S. Monday, 2 March/1100-1145/3-2/Jarnac/Mintaka/SS2 2:15, 11.

18225EM2 2320-0150 int/1/Jarnac.

18226S. Tues 3 March/1050 to 1145/3/Jarnac/Mintaka/SS2 2:24,6

18227EM2 2015-0215 int/10/Jarnac/3

18228S Wed 4<sup>th</sup> March/1105-1130/3/Jarnac/Mintaka/SS2: 1:24, 24.

18229EM2 #2245- int/7m/Jarnac/CMP-1, CN3e.

18230S. Th. Thu 5 March/1730-1745/10/Jarnac 4/Cypriol, Cordelia/SS2 0:26.

18231E2 2235-0120 int/7m/Jarnac/CMP-1.

18232S. Friday, 6 March/1100-1115/10/Jarnac/wind/very windy too/Mintaka/SS2: 0, 25, 6 filamentary filaments.

18233EM2 1915-0250 int/10-7m/Jarnac/Mintaka/CN3

0.1 NW. At the correct position I detected a slight brightening in the sky covering ~ 2 fields. It might have been what's left of Comet SOHO's tail. Checkin' again tomorrow.

18234S. Shabat, 7 March/1100-1155/3-2/Jarnac/Mintaka/SS2 1:22,9.

18235EM2 1930-0215 int/3m/Jarnac/cloud prevented confirmation of Comet SOHO.

18236S Sunday, 8 March/1115-noon/10/Jarnac/SS2: 1:24, 19.

18237EM2 1940-0200 int/10-7m/Jarnac/CN3 0.1 NW. 3 faint. CMP-1. CN3s tail of Comet SOHO.



- 18201EM2 2000-0300 int / 2-3 / Jarnac / Bryan  
Shumaker / Bryan's telescope, Orndorff, Foster,  
Clyde / CN3e fil. 1821
- 18202EM2 Friday, February 20, 1962 of John Glenn's Mercury  
Flight / 2300-0300 int / 2 / Jarnac / nothing 182  
18203S 1300-1330 / 3 / Jarnac / Mintaka / SS2 0, 3 182
- 18204EM2 2100-0100 int / 3-2-1 / Jarnac 182
- 18205EM2 Sat. Feb 20 / 2200-0225 int / 2. / 182
- 18206S (before 18205) 1200-1215 / 3 / Jarnac / Mintaka / SS2 0, 3 182
- 18207S Sun Feb 22 / 2330-1215 / 3 / Jarnac / " / SS2 0, 5 182
- 18207EM2 ~~22~~ 1945-0119 int / 2-1 / Jarnac 182
- 18208S Monday Feb 23 / 1715-1730 / 10 / Jarnac /  
Cupid, Cordelia / SS2 0, 2. 182
- 18209EM2 1930-0215 int / 7m-10+ 3 / Jarnac /  
CN3 Fil. - Bryan took nine pics of M65 + band 9. 182
- 18210S Tuesday, 24 Feb. / 1700-1715 / 3 / Jarnac /  
SS2 with Cupid + Cordelia. SS2: 2, 4, 6. 182
- 18211EM2 2230-7 int / 10 / Jarnac / CN3e. 182
- 18212S Wednesday, 25 February / 1040-1115 / 3 /  
Jarnac bike ride plus Orndorff / SS2: 1, 3, 5 plus  
one filamentary filament. 1823
- 18213EM2 1850-0415 int / 7m - Jarnac / attempt to  
find Comet S0110. No luck. Later, with Bryan  
Shumaker to UBe, CN3 Fil. CMP-1 - ~10  
meters including 1 bright one that should've  
been recorded but it wasn't. 1823
- 18214S Thursday, 26 February / 1215-1300 / 3 / Jarnac /  
Mintaka / SS2 1, 4, 8. 1823
- 18215EM2 1900-0220 int / 3 / Jarnac / Pegasus, Miranda /  
CN3j - failed to find Comet S0110. 1823
- 18216S Friday, 27 February / 1045-1130 incl. bicycle ride  
Mintaka / Jarnac / SS2: 2, 4, 6, 11 1823



- 18218EM2. 1840-0230 int/3m/Jarnac/CMP/CN3e.
- 18219S. Shabat, 28 February/1105-1145/Mintaka/S
- 18220EM2 1930-0215 int/3-2/Jarnac/CMP-1/CN3e.
- 18221S. Sun 1 March/1130-1230/3/Jarnac/Mintaka/S
- 18222EM2 1930-0202 int/2/Jarnac/CMP-1
- 18223SK before 18220) /Sat 28 Feb) /2/Jarnac/outd  
ing + listening to A Prairie Home Companion on KU
- 18224S. Monday, 2 March/1100-1145/3-2/Jarnac/Mintaka/S  
2:15, 11.
- 18225EM2 2320-0150 int/1/Jarnac.
- 18226S. Tues 3 March/1050 to 1145/3/Jarnac/Mintaka/S
- 18227EM2 2015-0215 int/10/Jarnac/3
- 18228S Wed 4<sup>th</sup> 1105-1130/3/Jarnac/Mintaka/SS2: 1:24, 2
- 18229EM2 #2245- int/7m/Jarnac/CMP-1, CN
- 18230S. #. Thu. #5 March/1730-1745/10/Jarnac 4/C  
Cordelia/SS2 0:26.
- 18231EZ 2235-0120 int/7m/Jarnac/CMP-1.
- 18232S. Friday, 6 March/1100-1115/10/Jarnac/wind/ier  
Mintaka/SS2: 0, 25, 6 filamentary filaments.
- 18233EM2 1915-0250 int/10-7m/Jarnac/Miranda  
0.1<sup>W</sup>. At the correct position I detected a  
slight brightening in the sky covering ~ 2<sup>o</sup> field.  
It might have been what's left of Comet S  
(Chegerin) again tomorrow.
- 18234S. Shabat, 7 March/1100-1155/3-2/Jarnac/Mintaka  
SS2 1:22, 9.
- 18235EM2 1930-0215 int/3m/Jarnac/cloud prevents  
confirming Comet S040.
- 18236S Sunday 8 March/1115-noon/10/Jarnac/SS
- 18237EM2 1940-0200 int/10-7m/Jarnac/CN3 0.1<sup>W</sup>  
CMP-1. CN3s tail of Comet S040.

Brycon  
ch, Esther,  
n/c Mercury  
SS2 0:3,  
ka/SS2: 0, 3,  
SS2 0:5  
Jarnac/  
Jarnac/  
5th bound 97,  
Jarnac/  
4, 6.  
3e.  
115/3/  
: 1, 3, 5 plus  
Attempt to  
with Brycon  
- ~ 10  
It should be  
00/3/Jarnac/  
Miranda/  
bicycle ride/



- SS 2: ts
- 18238 S Monday March 9 / 1105 - noon / 10 / Jarmac / Mintaka ↑ 18256
- 18239 EM2 1920 - ' int / 10 - 7m / Jarmac / Myanga, Obadiah 18257
- CN3d, s. F. Confirmed sighting of tail of Comet  
SOHO after 3 tries at least! CN3d 0.1 W.
- 18240 S. Tuesday, March 10 / 11:10 - noon / 10 / Jarmac / Mintaka 18258
- SS2.
- 18241 EM2 1935 - 0130 int / 10 - 7m - 3m / Jarmac / CN3s view 18259
- of Scholz tail? (barely). § CMP-1, 15 meteors. CN3d 0.1 W.  
Aurora - 1 negative. CN3e. 1826
- 18242 S Thursday, March 12 / ~~1700~~<sup>1630</sup> - 1845 / 3 / Jarmac / 1826
- SS2.
- 18243 EM2 2330 - 0130 int / 3 / Jarmac / CN3e, CMP-1. 1826
- 18243 S Friday, March 13 / 1645 - 1800 / 3 / Jarmac / SS2.
- 18244 EM2 2115 - 0145 int / 3 - 3m / Jarmac / CN3e, CMP-1.
- 18245 S Saturday Shabot, March 14 / 1140 - 1155 / 3 / Jarmac 1826
- to Mintaka / SS2, 1822, 9.
- 18246 E2 1830 - 1930 / 3 / Tin's 3 Towers Observatory / 14 inch 1826
- Jupiter SS3.
- 18247 EM3 2350 - 0155 int / 3 / Jarmac / CMP-1, 1826
- CN3e.
- 18248 S. Sunday, Atho 1st of March. / 1700 - 1715 / 10 / 1826
- Jarmac / ~~Mintaka~~ / SS2 1826, 7 / Cordelia,  
Cupid. 1826
- 18249 EM2 1908 - 0310 int / 10 - 7m / Jarmac / 1826
- CMP-1, CN3e TVGw.
- 18250 S Monday, 16 March / 1650 - 1705 / ~~10~~ 3 / Jarmac / 1826
- SS2 1826, 3.
- 18250 EM2 2030 - 0215 int / ~~10~~ 3 / Jarmac / CMP-1, CN3e.
- 18251 EM. Tuesday 17 March / 0100 - 0200 - int / 2 - 1.
- 18252 S. Wednesday Thursday 19 March / 114150 / Jarmac / 3 / 1826
- Mintaka / SS2 - 181, 26.
- 18253 EM2 2200 - 0200 int / 3 / Jarmac. / 2 / CMP-1, CN3e TVGw.



182709

Friday, March 27. Would be Daddy's 106<sup>th</sup> birthday. 11045-1105/10/Jarnac/Mintaka.

18271E2

→ 2230 - midnight / 7m / Jarnac / CMP-1. Tryth on Consequencias, N. Mex. Charles Motel & Spa

18272EP

Sunday, March 29 / 2300-2310 / 2 / ABP

18273S

Monday, March 30 / 1030-1315 / 3 / Golf course in St. ABP. Summer's golf tournament.

18274E2

2220-2235 / 3 / Hotel, Albuquerque Walk with Wendee. Jupiter, C, & CMa

18275S

~~Thursday~~ <sup>Wednesday</sup> March 31 / 1700-1805 / 3 / Jarnac / Cupid, Cordelia / SS2 1:6, 15. Big pot.

18276EM2

1900-0215 int / 7m / Jarnac / EN 3e couldn't find TVCw due to excessive moonlight. CMP-1.

18277S

Thursday, April 2 / 1115-1130, then int to 12:20 / 3 / Jarnac / SS2 1:7, 8

18278EM2

1015-0215 int / 3 / Jarnac / CMP-1, only

18279S

Vendredi, Apr 3 / 1150-1205 / 3 / Jarnac / SS2 - 0:6. with Mintaka.

18280EM2

2300-02 int / 2-3 / Jarnac / CMP-1, Saras 7. TOTAL ECLIPSE of the Moon.

Every eclipse has something to teach, & this one showed the motion of the shadow across the Moon. Because totality was so short, the partial phase was very long & near totality I followed the bright ring start to swing around. Took some good pictures.

18281S

Saturday, Shabat, April 4 / 1255-1310 / 3 / Jarnac / Mintaka / SS2 1:7, 6.

18282S2

1550-1810 / 3 / Jarnac.

18283EM3

2245 - int / 3 / CMP-1. light baffie installed.



182845 Sunday April 5 / 1100-noon / 3 / Jarnae / Mintaka  
SS2 1:7, 8.

18285EM2 2215-0230int / 3m / Jarnae / CMP-1  
18286S Monday, April 7 / 1100-1145 / 3 B10-1 / Jarnae / A  
SS2 3:20, 5.

18287EM2 1930-0230int / 3m / Jarnae / CMP-1  
London. CN3e. still didn't get field

18288S Tuesday, April 8 / ~~1945~~ int / 1110-noon / 1  
Jarnae / SS2 with Mintaka 3:25, 24.

18289EM2 1945- int / 10-7m / Jarnae / CN3 0, 1, 4  
CN3e, CN3 off, -CN1, CN3F, F11, K11, 40m, J11, ab

18290S Wednesday, April 9 / 11:55-12:35 / 10 / Jarnae  
ven / Mintaka / SS2 2:20, 30. Lots of proms

18291EM2 1955- 0210 int / 10-1 / Jarnae / CN3  
CN3e, F, K11, 011 - CN1.

18292S Thursday April 10 / 1100-1145 / 10-3 / Jarnae /  
SS2: 2:20, 7m.

18293EM2 1955 to 0200int / 10 + 3 7m / Jarnae / CN3 0.  
CN3e F, F11, K11, 011 - CN1. CMP-1, Aurora - 1 reg

18294S Shabat, April 11 / 1100-noon / 3 / Jarnae / Min  
SS2 2:30, 20

18295EM2 2130-0230int / 11 / Jarnae. Big clouds.  
18296EM Sunday April 12 / 1900-0215int / 3 / Jarnae /

18297S Monday, April 13 / 11:15-noon / 10 / Jarnae / A  
SS2 4:45, 15.

18298EM2 1950-0150int / 10 / Jarnae / A. CN3  
CMP-1, Aurora / CN3F, F11 - CN-1.

18299S Tues Apr 14 / 1700-1715 / 3 / Jarnae / Cupid,  
SS2 5:39, 12h.

18300EM2 2230- int / 3 / Jarnae + kuko-route  
CMP-1.

18301S Wed Apr 15 /

th  
aka.  
P-1,  
Motel & Spa  
of course  
ent.  
Walk  
Cupid,  
couldn't  
ht  
12:20/  
only  
SS2-  
CMP-1,  
he Moon,  
each, &  
shadow  
by way  
honey  
nd.  
10/3/  
stalled



- 18300EM2 1930-0230 int/10/Jarnae/CMP-1  
 18303S Thursday 16 April  
~~18304EM2~~ ~~ANR~~ 18304ANR / 1900-2145, 2145- int  
 then to /10-Jarnae/CN3 0.1<sup>W</sup>-CN1,  
 CN3e, Chyde's \*17.9. CN3F, F11.  
 Miranda M5, Omega Cen, Cen A,  
 Pegasus M65 M66. LPO-1 Jupiter  
 Doug Paulson
- 18305S Friday 17 April / 250-1305/10/J/SS2 <sup>Mintaka</sup> 6:57, 12-  
 18306EM2 1950-0230 int/10/Jarnae/CMP1  
 Auror-1, CN3 0.1<sup>W</sup>, CN3e, F, F11, k11, ul1, 40m,  
 L11, nb11.
- 18307S Shabati 18 April / 11:10 to 12:30 / 10 / Jarnae/  
 Mintaka / SS2 6:56, ~ 10<sup>W</sup>, mounting benchmark
- 18308EM2 1935-0200 int/10/Jarnae/CMP-1, Aur-1-  
 CN3 0.1<sup>W</sup>, CN3 40m, L11, nb11.
- 18309S Sunday, Joyce's birthday / 11:20-12:10/  
 10/Jarnae / Mintaka (SS2: 6:57, 5. bicycle broke
- 18310SEM2 1855- int/10/Jarnae/CN3 0.1<sup>W</sup>  
 CN3 40m, L11, nb11. Aurora-1 neg. CMP-1.
- 18311S Monday, Apr 20 / 1115-noon / 10/Jarnae/SS2 4:36, 7  
 18312EM2 1935-0208 int/10/Jarnae/GCMP1,  
 SS CN3s possible glimpse of Comet
- 18313/13 04~~15~~-0520 / 10/Jarnae/CN3 missed  
 Comet Masterson.
- 18314S Tues Apr 21 / 1115-1135 / 10 / Jarnae / Mintaka  
 SS2.
- 18315EM2 1940-0200 int / 3 / Jarnae / no comet  
 Susan-King-ming
- 18316S Wed Apr 22 / 1030-1045 / 10 / Jarnae / SS2  
 8:49, 7. with Mintaka.



04/15

18317EM2 2000-



int/10/Jarnac  
 CN3s. Proba  
 confirmatory  
 of Comet Search  
 Later, CMP1  
 LYRID METEOR  
 WATCH, 1300  
 mostly faint

5- int  
- CN1,

by  
5:57, 12-  
P1,  
40m

18318S

18319E2

Thursday April  
 0945-10/10/Jarnac  
 Muntaka/SS2 5:2  
 1920-2110/7m/

near/  
benchmark  
Aur-1-ug

Corona Foothills School. Wt. DLO. Vail Act  
 Unclub. Voyager. Mean, Sirius. ~ 35h

18320M2. Midnight to 110-3/Jarnac/C  
 nbill. CMP-1 LYRID METEOR WATCH. 2  
 Meteors. Also, a surprise: ETA Ap  
 METEOR WATCH. 1 very bright meteor  
 captured by camera.

-12:10/  
cycle broke  
1^4

18321S. Friday, April 24/1250-1305/#3/Ja  
 Muntaka/SS2: 6:57, 12.

CMP-1.  
SS2 4:367  
& CMP-1,  
at  
missed

18322EM2. 2015-0230 int/7m-10/Jarnac/C  
 O, 1^W. CN3-40m, L1, nbill. CMP-1 Lyrid  
 LYRID METEOR WATCH.

c/Muntaka

18323S. ~~Sunday~~ Saturday, Apr 25/11:15-noon/3/  
 Muntaka/SS2: 5:22, 13

comet

18324EM2. 2000-0200 int/1-0/Jarnac

18325S. Sunday, Apr 24/1050-1105/3/"/Muntaka/SS2

/SS2

\*18326SE2. 1445-2115/3/ Brandi Fenton Burk/SS3 Spn.  
 lecture, table, observing, visiting.

18327EM3. 2200- int/7m-10/Jarnac/CMP-1, Aurora



18328S Monday April 27, 1225-1240/10/Jarnac (Mintaka)  
SS2: 3, 8, 16. 1. elament.

18329EM2 2000-0200 int/7m/Jarnac/CMP-1.

18330S Tuesday April 28/1120-1135/10/Jarnac/  
Mintaka/SS2: 2, 10

18331EM2 2000-0150 int/7m/Jarnac/CMP-1.

18332S Wednesday April 29, 196<sup>1040</sup>/<sub>1045</sub>/Bar Mitzvah  
+ 54 years. 1. Mintaka/SS2 0, 8

18333EM2 2100-0300 int/7m/Jarnac/CMP-1. in  
memory of Lenny Baker. May she rest in  
peace.

18334S Thursday April 30/0945-1000/10/Jarnac/  
Mintaka/SS2 0, 8.

18335EM2 2100-0150 int/7m/Jarnac/CMP-1

18336S Friday, May 1/1808-1815/3/Jarnac/Cupid, Cordelia/  
SS2 coming back 2:26, 17.

18337EM2 2150-0230 int/7m/Jarnac/CMP-1. Aurora-1

18338S Shabat, May 2/1145-noon/3/Jarnac/Mintaka/  
SS2 2:28, 9.

18339EM2 2100-0230 int/7m/Jarnac/CMP-1. Aurora-1.

18340S Sunday, May 3/1250-1310/3/Jarnac/SS2  
with Mintaka 2:30, 4.

18341EM2 2130-0230 int/3m/Jarnac/CMP-1.

18342S Monday, May fourth/1115-1130/3/Jarnac/Mintaka/  
SS2: 3:54, 13

18343EM2 2000-0210 int/3-0/Jarnac/CMP-1.

18343S Tuesday, Cinco de Mayo/1745-1800/3/Jarnac/  
SS2: ~~2:22~~ 4:51, 7.

18344EM 2015-0215 int/3/Jarnac/CMP-1

✓ 18345S Wednesday, May 4/1630-1650/3/Jarnac/  
Cupid, Cordelia/SS2: 6:10, 17!

18346EM2 2000-0300 int/107m/Jarnac/CMP-1, CN3e, CN3a, 1AW  
CN3 40m, 21, 1611, CN3F 11!



05/15

18348 Thursday May 7/1120-1130/3/Jarnac/Mintaka  
SS2 9:10, 16. Three fat groups, some smaller groups

2000-0235 int/10-7m/Jarnac/CMP-1, CN-1,  
18349 EM2. Fil, 2ll, 40m, nbll, vll-CM. CN3 0.1W, M38.

18350S Friday, May 8/1755-1815/10, windy/Jarnac  
Cupid and Cordelia / -1 SS2 6:103, 6. barely over 10 spots.

18351 EM2. 2020-0232 int/10-7m/Jarnac/CMP-1, A  
CN-1, CN3 0.1W, M37. CN3F 11 40m 2ll nbll-

18352S Shabat May 9/1100-1115/10/Jarnac/Mintaka  
SS2 5:88, 5.

18353 EM2 2015-0200 int/10-7m/Jarnac/CMP-1, A  
CN3 0.1W, Fil 40m 2ll nbll.

18354S Sunday, May 10/1130-1200/10/Jarnac/Blin +  
SS2 7:108, 20.

18355 EM2. 2000-0375 int/10-7m/Jarnac/CMP-1, CN  
CN3 0.1W, CN3F, 2ll, 40m, nbll.

18356S Monday, May 11/1150-1205/3/Jarnac/SS2

18357 EM2 2000-0300 int/10-3/Jarnac/CN3 0.1  
CN3F, 2ll, 40m, nbll.

18358S Tuesday, May 12/1725-1740/2/Jarnac/Cupid  
Cordelia/SS2 2, 10, 14.

18359 EM2 1915-0215 int/2-3/W+DLO, STS, Vail As  
Amalab/Speech, view of Venus through 8" refl

18360S Wednesday May 13/1025-1055/3, 2/Jarnac  
Mintaka/SS2 8:9, 17, +1 filament

18361 EM2 1915-0230 int/2-1/Jarnac/CMP-1, A

18362S Thursday, May 14/1130-1145/2/Jarnac/Mintaka  
SS2 6:49, 14.

18363 EM2 2200-0310 int/2-1/Jarnac

18364S Friday, May 15/1:20-1:35pm/3/Jarnac/Mintaka  
SS2: 7:54, 12.

3.0.1W  
3F 11



- 18365EM2, 2115-0200 int / 10-3-1-0-2 / Jarnac /  
CMP.
- 18366S Shearwater May 16 / 1230-1245 / 3 / Jarnac /  
Mintaka / SS2: 7:36, 14.
- \*18367EM2 1900-0300 int / 3-11 / Kite Park, then  
Jarnac / SS3. Michigan Telescopes,  
Jupiter, Ghost of Jupiter PN, M51, +M5 /  
w/ the bigger telescope. Then CMP / at home
- 18368S. Sunday, May 17 / 1130-1145 / 3 / Jarnac / Mintaka /  
SS2 6:24, 18.
- 18369EM2 2130-0300 int / Jarnac / CMP, work w/  
Scotty on Esther successful!
- 18370S. Monday, May 18 / 1130-1150 / 4 / 3 / Jarnac /  
SS2 w/ Mintaka 4:6, 10.
- 18371EM2 1950-0250 int / 2-3 / Jarnac / CN3 h,  
CN3 ill.
- 18372S. Tuesday, May 19 / 1130-1145 / 10 / Jarnac /  
Mintaka / SS2 1:2, ~15.
- 18373EM2 2015 to 0300 int / 10 / Jarnac / ~~Mintaka~~ ~~Mintaka~~  
Obadiah Flare!, Esther / CN3 0.1<sup>h</sup> W,  
CN3 Fll, Lll, 40m, nll, yll, h.
- 18374S. Wednesday, May 20 / 11:40-noon / 3 /  
Jarnac / Mintaka / SS2 1:3, ~21.
- 18375EM2 2050-0250 int / 2-3 / Jarnac / CMP,
- 18376S Thursday, May 21 / 1115-1130 / 2 / Jarnac / Mintaka  
SS2 1:2, 10.
- 18577EM2 2000-0250 int / 10 / Jarnac /  
CN3 Fll, h, h all, 40m, Lll, 4bll.
- 18578S. Friday, May 22 / 1110-1130 / 7 / 3 / Jarnac /  
Mintaka / SS2 2:11, 10.
- 18579EM2 1955-0300 / 10 / Jarnac / CN3 h, nll.



05/15

mac) 18580S Shabat, May 23 / 1150-1210 / 10 / Jarnac / Muntaka  
SS2 4:26, 23.

Jarnac) 18581EM2 2000-0300 int / 10- / Jarnac / CN3s, N  
comet, Master. CN3F11, 40m, 211, n011, h,

hen 18582S Sunday, May 24 / 1155-1210 / 3 / Jarnac / Muntaka  
SS2 2:11, ~15 or so.

o) 18583EM2 2000-0320 int / 3 / Jarnac / CN3s N comet  
+M5 /  
at home  
Muntaka) CN3F11, 40m CN3h n11.

ork w/  
nce) New project letters are assigned as follows  
CN3e CN3F11 CN3h C13j CN3k11 CN3L11 CN  
CN3n11 = CN3o. CN3nb11 = CN3i. CN3o = xyz.  
CN3p = MA CN3r CN3s CN3t CN3u CN3  
CN3w CN3x = 0811 CN3y CN3z.

18584S Monday, May 25 / 1130-1250 / 10 / Jarnac / Muntaka  
CN3h, 18585EM2 2045-0200 int / 7m / Jarnac / CN3h Esthe

18586S Tuesday, May 26 / 1755-1810 / 10 / Jarnac / Cordelia  
Cupid / SS2 1:2, 13.

18587EM2 2050-0205 int / 7m / Jarnac / CN3 40m, F11  
CN3L11, CN3i, CN3n.

18588S Wednesday, May 27 / 1100-1115 / 3 / Jarnac /  
Muntaka / SS2 0, 7

3) 18589EM3 2240 to int / 7m / Jarnac / check to  
2) if I could get rid of any telescopes. Could re-  
CMP- / Muntaka) any to donate or sell, though Potust Es  
possibilities.

18590S Thursday, May 28 / 1130-1145 / 10 / Jarnac /  
SS2 w/ Muntaka 0:15.

18591EM2 2030-0305 int / 7m / Jarnac / CMP-1

Jarnac) 18592S Vendredi, May 29 / 1120-1135 / 10 / Jarnac / Muntaka  
SS2 1:4, 11.

18593EM2 2100-0205 int / 7m / Jarnac / CMP-1  
18594S Saturday, May 30 / 1115-1130 / 10 / Muntaka / SS2 1:



Jamaica)

185805 Shabat, May 23 / 1150-1210 / 10 / Jamaica / Muntaka  
SS2 4:26, 23.

Jamaica)

18581EM2 2000-0300 int / 10- / Jamaica / CN3s, comet, Master. CN3F11, 40m, 211, n011, h

then

18582S Sunday, May 24 / 1155-1210 / 3 / Jamaica / Muntaka  
SS2 2:11, ~15 or so.

at home  
Muntaka)

18583EM2 2000-0320 int / 3 / Jamaica / CN3s No comet  
CN3F11, 40m CN3h, 11.

at home

New project letters are assigned as follows:  
CN3e CN3F11 CN3h Ch3; CN3k11 CN3L11 C  
CN3,11 = CN30. CN3nb11 = CN3i. CN3o = xyz.  
CN3p = MA CN3r CN3s CN3t CN3u CN3v  
CN3w CN3x = 0111 CN3y CN3z.

Jamaica)

18584S Monday, May 25 / 1130-1250 / 10 / Jamaica / Muntaka

CN3h,

18585EM2 2045-0200 int / 7m / Jamaica / CN3h Esth

Jamaica)

18586S Tuesday, May 26 / 1755-1810 / 10 / Jamaica / Cordelia  
Cupid / SS2 1:2, 13.

Muntaka)

18587EM2 2050-0205 int / 7m / Jamaica / CN3 40m, F1  
CN3L11, CN3i, CN3n.

Jamaica)

18588S Wednesday, May 27 / 1100-1115 / 3 / Jamaica  
Muntaka / SS2 0, 7.

CMP-1  
Muntaka)

18589EM3 2240 to int / 7m / Jamaica / check to  
if I could get rid of any telescopes. Could re  
army to donation hall, though Potust Es  
possibilities.

Jamaica)

18590S Thursday, May 28 / 1130-1145 / 10 / Jamaica  
SS2 w/ Muntaka 0:15.

Jamaica)

18591EM2 2030-0305 int / 7m / Jamaica / CMP-1

Jamaica)

18592S Vendredi, May 29 / 1120-1135 / 10 / Jamaica / Muntaka  
SS2 1:4, 11.

Jamaica)

18593EM2 2100-0205 int / 7m / Jamaica / CMP-1

18594S Saturday, May 30 / 1115-1130 / 10 / Muntaka / SS2 1:



- 21/20
- 18595EM2 2245-0230 int/3m/Jarnae/CMP-1.  
Lots of high clouds, esp. in the north.  
This session is in memory of Lonny Baker.  
May she rest in peace.
- 18596S Sunday May 31/1110-1125/12-3/Jarnae/  
Mintaka/SS2 1:4, 20.
- 18597E2 2100-2130/7m/Jarnae/Echo/Wendee/  
The Moon, <sup>SS3</sup> specifically Tycho and Copernicus.
- 18598EM3 22:22 30-0220 int/7m/Jarnae/CMP-1
- 18599S Monday, Mom's 97<sup>th</sup> birthday/1120-1135/10/  
Jarnae/Mintaka/SS2 2:26, 26<sup>r</sup>.
- 18600EM2 1930-0250 int/7m/Jarnae/full Moon CMP
- 18601S Tuesday June 2/1150-1210/10/hot, over 100°F/  
Jarnae/Mintaka/SS2 2:9, 16. replaced large cla  
battery out there.
- 18602EM2 2030-0230 int/7m/Jarnae/  
CN3d 0.1<sup>h</sup> W. No Comet MASTER(son).  
CN3-40m, CN3#01, Joshua Cole.
- 18603S 1030-1045/10-6/Jarnae/Mintaka/  
SS2 2:16, 5. Wednesday June 3.
- 18604EM2 Fri Thru June 4/210-0230/0-1
- 18605S Fri June 5/1220-1240/2/Jarnae/  
Wendee, Joshua the cement man/Mintaka  
SS2 4:29, 5 tiny prominences
- 18606EM2 2208-0308 int/3-2-3/Jarnae.
- 18607S Shabat June 6/1000-1015/3/Jarnae/  
Mintaka/SS2 5:61, 6
- 18608EM2 2015-0300 int/10-3/Jarnae/CN-3F  
40m, n, and 011. Possible glimpse of Comet  
MASTER(son).
- 18609S Sunday June 7/1100-noon/10-3/Jarnae/  
Mintaka/SS2 5:57, 23.



18610<sup>S</sup>ER. 1908-2230/10-3/KPNO/Michael Ma  
Astronomy Camp / Best Bok 90-inch / M  
Possibly the best view of M5 / I've had, esp  
Especially the loosely spiral arm.

18611S Wednesday June 10 / 1130-1230 / 3 /  
Mintaka / SSR 4:29, 12

18612EM2 2000-0300 int / 10-3 / Jarnac / CN3s, CN3F, C  
CN3n.

18613S Thursday June 11 / 1115-noon / 3 / Jarnac / M  
SS2 5:47, 17.

18614EM2 2225-0230 int / 10 / Jarnac / CMP-1, Aur

18615S Friday June 12 / 1045-1130 / 10, hot / Jarnac  
Mintaka / SS2 7:49, 4

18616EM2 2015-0230 int / 10 / Jarnac / CMP1, Aurora  
CN CN3F 11

18617S Sat June 13 / 1115-noon / 10 / Jarnac / Mintaka / SSR 5:36, 36,

18618EM2 Sat. June 13 / 2015-0150 int / 10 / CN30.1h no con

18619S Sun June 14 / 11:00-11:45 / 10 / Jarnac / Mintaka  
5:47, 10

\*18620EM2 1945-0155 int / 10 / Jarnac / CMP-1  
Aurora possible glow in NE.

18621S Mon June 15 / 1115-noon / 10 / Jarnac / Min  
SS2 3:23, 9. two of which are very bright

18622EM2 2030- int / 2 / Jarnac / APO.  
CN3 0.1h W. Planning for the future  
morning sessions when the summer

18623S Tuesday, June 16 / 0830-0915 / 3 / Jarnac  
Mintaka / SS2 5:43, 15.

\*18624EM2 2030- int / 10-3 / Jarnac /  
SS2, Jupiter electronically. CN

\*18625S Wednesday June 17 / 1710-1730 / 10 / Jarnac  
34 / Supid Cordelia / SS2 4:10, 26.



18626EM2. 2030-0200 int. / 10 / Jarnac / on  
CN3FI. Et SS3 Saturn seen on  
on the lovely TV-set.

18627S 0840-0855 / 10 / Jarnac / Mintaka  
SS2 4: 89, 15.

18628EM2 2030-0200 / 10 / Jarnac / Obadiah / U  
SS3-Skywatcher 2 Moon (TV). CN3FI - C

18629S Friday, June 19 / 10:30-11:20 / 10 / Jarnac  
Mintaka / SS2 4: 103, 16.

18630EM2 2000- int / 6 / Jarnac  
SS3 + Skywatcher 2. Alexing &  
CN3 0.1" w. CN3FI; CN1. Aug 1

18631S. Shabat, June 20 / 1045-11:45 / 10, 10  
Jarnac / Mintaka / SS2 3: 100, 16.

18632E2 2015-0100, int / 7m - 10 / Jarnac  
CMP-1, Aug 1 / Wende / Venus &  
Moon electronically

18633S Sunday, June 21 / 0915-0735 / 10 / J  
Mintaka / SS2 5: 67, 9. Fewer because  
low altitude.

18634E2 2300-2330 EST / 7 / Athens, Oh  
Space University / Saturn & Scorpius  
session of the Summer 2015

18635E Monday, June 22 / 2215-2230 / 10  
Litt Space University / Moon

18636E Tuesday, June 23 / 2030-2045 / 7  
Moon, Venus, & Jupiter

18637S Wednesday, June 24 / 1050-1105 / 7  
SS2 w/ Mintaka 3: 55, 3.

18638EM2 2030-0210 int / 1-2 / Jarnac / 1

18639S Thursday, June 25 / 1050-1130 / 3 /  
Mintaka / SS2 2: 44, 23.



8640EM2 2030-0200 int | 3-1 / Jarnae / Moon  
8641S Friday, June 26 | 1510-1525 | 3 / Jarnae / Mintaka /  
SS2. 3:22, 13

8642EM2 2030-0200 int | 2-1 / Jarnae.  
8643S. Saturday, Shabat, June 27 | 1100-1140 | 3 / Jarnae /  
Mintaka / SS2 2:17, 23

8644EM 2245-0215 int | 1-2 / Jarnae.  
8645S Sunday, June 28 | 1050-1130 | 3 / Jarnae /  
Mintaka / SS2 1:15, 25.

8646AM2. 2030-0445 int | 2-10 / Jarnae / CN1, CN5, Aur-,  
CMP1. CN3 1<sup>st</sup>E. CN3 Fh, R11, L11, 40m, n, r, v, d.  
First AN session of the Summer of 2015.

8647S Monday, June 29 | 1025-1110 | 3 / Jarnae / Mintaka /  
SS2 - 3:15, 25.

8648EM2 2000-0200 int | 2-3 / Jarnae / SS3, Moon  
w/ long camera eyepiece. Clouds in E at end; heavy  
rain after session

8649S Tuesday, June 30 | 1045-1130 | 3 / Jarnae / Mintaka /  
SS2 3:24, 22

8650AM2 0000-0200 int | 2-1 / Jarnae / Crabbow / Moon  
after hail storm.

8651S Wednesday, July 1, Canada Day | 1115-noon /  
3 / Jarnae / Mintaka / SS2 3:27, 13

8652E2 2000 to 2115 / 7m / Jarnae / LPO-1, Venus &  
Jupiter conjunction. Pictures w/ Nikon, viewed  
through Dinerug. Wendee enjoyed it too.

8653EM3 2345-0200 int / 7m / Jarnae / bright Moon  
8654S Thursday, July 2 | 1050-1130 | 3 / Jarnae / Mintaka /  
SS2 4:27, 13.

8655EM2 2000-0220 int / 2-1 / Jarnae / LPO-1  
w/ Narcissus some pictures of Venus

8656S Friday, July 2 | noon-12:30-12:50 (mid earlier)  
3- Jarnae / SS2 w Mintaka / 7:42, 15.



18657EM Sunday July 5/1995-0200 int 3m/Moon  
18658S Monday, July 6/1045-1100/3/Jarnac/Mintaka  
SS2 7:53,5

18659EM2 2000-0200 int / 3/Jarnac / ~~Munera~~ <sup>Apollo</sup> / CN30,1

18660S Tuesday July 7/1045-1125/3/Jarnac/Mintaka  
SS2 5:46,10 after bicycle cycle ride.

18661EM2 2050-0300 int / 3/Jarnac / CN3 with  
Apollo 0.1<sup>h</sup>W, CMP-1, Aurora-1, -ve

18662S Wednesday July 8/1040-1130/3/Ja  
Mintaka / SS2 5:49,14

18663EM2 2050-~~2120~~ 0020 int / 3 in / Jarnac /  
Apollo / SS CN34, 0.1<sup>h</sup>W. Jupiter. And  
CN3e TV Gr C16,3.

18664~~EM~~ ~~Friday~~ ~~July~~ Thursday, July 9/0215-  
0230 / A diamond Science Camp / 3 / Moon  
and some stars.

18665AN Friday July 10/11/2130-0330/10 plus  
then 3, then 2 / A diamond Science Camp /  
Munera / Wende, Luke a report of first  
then just me / Aurora-1 probable faint glow  
in North. CMP-1 4 meteors including one  
very bright Delta Aquarid. My attention  
was caught by the bolide, then I saw the trail  
for about a minute  
CN3, 4 hours West, N, and E +abit S.  
Beautiful, magnificent night. Clouded over  
just before dawn.

18666EM Saturday July 11/12/2000 to 0100/9-6  
2 / The ~~Hot~~ diamond Science Camp / Munera  
CN3 1.7<sup>h</sup> West / worked til the sky degre-  
erated. CMP-1. Aurora 1 negative.



18667EM. Sunday July 12/13/2000-0100 /1-2-3-4.

The Adirondack Astronomy Retreat / First session,  
first night / ~~at~~ Minerva / Enterprise.

This was Enterprise's first night, Jupiter  
being unavailable, Saturn became the first  
light object. It was fun. 0.2<sup>h</sup> W.

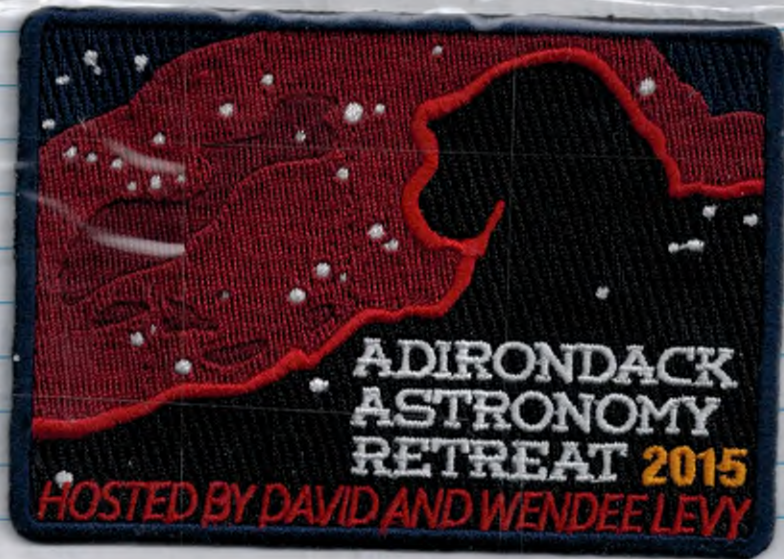
Then came CN3s: ~~to~~ 7<sup>h</sup> West. Stopped  
when the sky became too hazy to continue.

18668AM Monday July 13/14/2000-0400 /6-9-6

The Adirondack Astronomy Retreat. Photo day  
is tomorrow at 7:30 a.m. or so. It is also

Bastille Day. CMP-1 some meteors. Aurora-1

PROBABLY FAINT GLOW in N. Just ~ midnight.  
CN3s. 4.1<sup>h</sup> W. N. E. Used Minerva, Heart, Enterprise.





18669S, BASTILLE DAY. July 14 2015 / 11:30-

12:30 / 3 / breezy, cooler, fibril / AAR first session in honor of New Horizons.

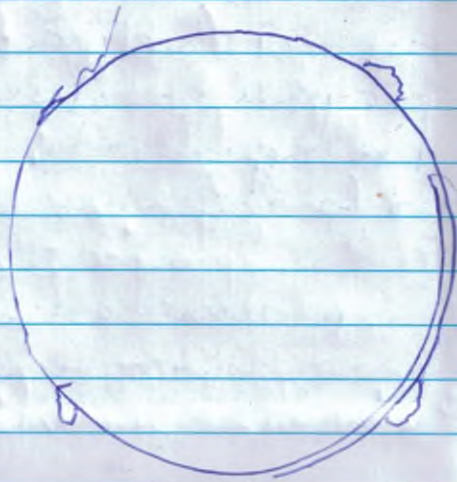
Then AAR first session photo in honor of our new telescope, Enterprise.

New Horizons has done superb work. Imagine Pluto and its system doing its thing, minding its own business, when suddenly a little visitor laden with cameras & antennas plows through, for a day or so grabbing pictures of what may be the strangest world in the solar system.

186705Z,

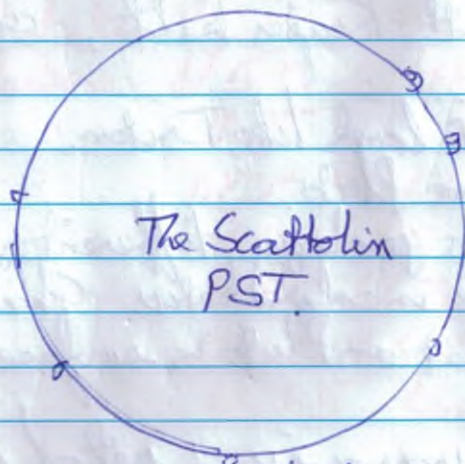
1250-1330 / 3-2 / Adirondack Astronomical Retreat / The Scallops / SS 2 3 prominences.

difficult view through cloudy day





30-  
rest 18671EMZ. 210-0030/1-0/Adirondack Ast. Retreat / d  
23k + clouds.  
morning 18672S. 1245-1605/10/Adirondack Astronomy Retreat



The Scattolin's / little lovely PST telescope  
SS2 8 prominences. Small, but lovely,  
prominences.  
Also tried to repair Ast. Not successful  
but ART works beautifully as a optical  
instrument with your new tripod. It can  
view Saturn - Wanda's favorite planet.  
Then we enjoyed seeing the Sun with  
the lovely Scattolin PST.

It is a good small telescope capable  
showing sunspot spots. Solar activity

Meantime New Horizons press conference  
going on. A significant exchange of tidal  
energy betw. Pluto & Charon.



hydrodynamic escape. This process operated in early world, including the  $\Phi$ . It lost its poisonous air that way.

smooth flowing plains  
11 000 ft. Ice mountains on Pluto. like lava tubes  
Edgeworth-Kuiper belt could be a game  
changes.

Does not look like Triton. Triton very different from Pluto.

Plutonian geology different. So much diversity difference in color belts. Charon's Plate. Color contrast on Pluto's surface.

Above was a set of notes and things I obtained from the first press conference held after the visit to Pluto by New Horizons. It is a rich complex world, with high ice mountains and deep ravines.

The Tombaugh Regio (now Stern bears pride of right) is a wonderfully complex pattern of activity that helps to define this world. It also helped bring back memory of a man I loved & respected.

It was cloudy last night so we did not do any real observing. It gave us a chance to enjoy each other as friends. We will always have that, on the cloudy nights.

But today, by sunset the sky was clearing beautifully. Soooo



8673AN2. July 15/ 2108-0400/ 3 then TEN/ A in  
and ack Astronomy Retreat. 1 Minerva, Hart  
Enterprise, Herschel. Other telescopes  
C.N. 5s: 5<sup>h</sup> E, A, W, N, E. Suspects in  
West + in N; turned out to be probable gala

M-13. Saturn

Globular NGC 5896  
clusters. NGC 6144

M5

NGC 5466

M28 ~~A~~

NGC 6638

NGC 6642

M15 beautiful!

Peter, Marty, Wendee, Al &

International Space Station  
at 03:38

Blot Bright - 8 Flare  
Probable sighting of A Lovell  
Satellite near Saturn.

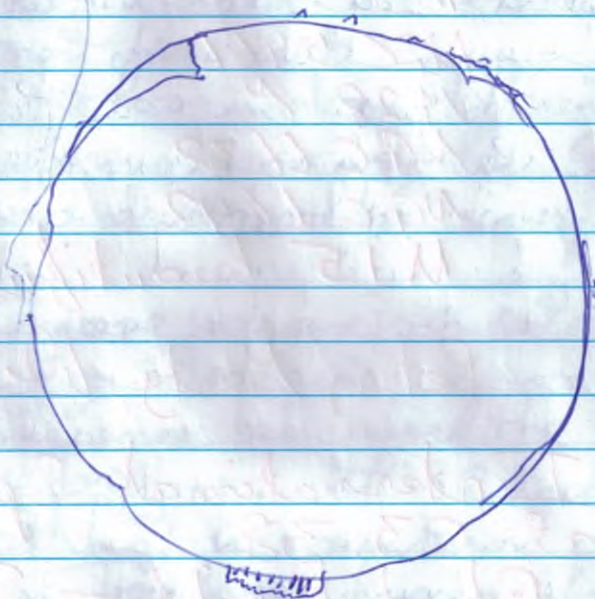
Used 25mm. Explore Scientific  
eyep





186749. This day 16 July / 12:15-12:45 / 10 / AAR /  
Patrice's Sun Telescope set up for  
Calcium. Didn't see a thing

1867552. 1510-1120 / 10 / AAR / Patrice's Sun Te-  
lescope / SS2: 4:27, then with higher pow-  
er 4:44, 18. Success with Calcium, a bit, later  
then H $\alpha$ .



The retreat is going extremely well  
I am happy to see that we're even doing  
observing. That is fully a part of the  
Genius so much. There seems to be  
prominential prominences that it isn't  
rising that we're seeing possible aurora  
that. But we're getting some  
good nights here to do it.

New Horizons' visit to Pluto is adding  
spice to this retreat. What a world  
turning out to be.



Red Letter session!

18676AM3 2000 to 0415/10/The Adirondack Astronomy Retreat / Ed Guenther, Wendy G, Wendee, Gail, Joan and ~ 40 others - 35 other people.

CN3s 4h W, N, E. Pretty much confirmed that suspect #2 from last night is a low surface brightness galactic galaxy.

Meteoroids: ~~KAPPA CYGNID METEOR WATCH~~ ~~OR DELTA AQUARIIDS~~

Ed Guenther reported seeing 30 meteoric meteors over a 1 or 2 hour period before midnight.

I was noticing meteors almost every time I lifted my eye from the eyepiece. My total was 5 - 3 Kappa Cygnids and 2 Delta Aquarids.

This afternoon I reported it as a possible Kappa Cygnid outburst. Normally a weak minor shower, it seemed pretty active tonight.

Partial list: Saturn

$\Sigma$  2816,  $\Sigma$  2819 Triplet dbl.

Owl Cluster

18677MS Friday, 17 July / 1500-1600 / 1. / AAR.

18678EM2 1915 ~~300~~ - 0115 / 0 / Adirondack Astronomy Retreat / Drizzle and rain. Walked Peter and back to his Cabin II.  
see next page please.

These 2 sessions are repeated there! Tonight is a rainy night. Funny how this weather in 1964 led to major asthma attacks that sent me home twice, and again once in 1965.

But there is no asthma at all now, and I am enjoying the experience as much as ever, especially in our brand new cabin.



186775 Friday July 17/12:30-1730/1/AAR.  
Cloudy. See also prev. page

18678E12 1915 to 0115, 11/Ashtenjack A stormy  
Retreat. No observing, instead a double  $\delta$  Sct.  
See also previous page.  
See notes 2 pages hence.

We didn't expect the retreat to be as good  
it's turning out to be. We had 2 good nights, one  
just prior to the 1<sup>st</sup> session, another during the  
first session, and it is looking as though the  
interim night and the first night of the 2<sup>nd</sup>  
session were <sup>very</sup> good to excellent too.

The "Kappa Cygnid" outburst got a lot  
of response on the web but one smart person  
suggested that it was an "Orionid Draconid"  
outburst instead since the two radiant are  
close. He said  $6^\circ$  apart. I don't think that  
that close but the idea is intriguing. I  
think the experience added to the good  
flavor of the retreat.

Al Boudreau fell on the steps of Lab 4  
during tonight's rain, and Carl accidentally  
knocked over a telescope with his car. But  
the damage was slight.  $\rightarrow$  Bradley Feldman's  
scope). So, everything ended well however.  
It's a long retreat. ten nights all together. In  
sense I'm glad it's over soon but I love it -  
the site and the people, Pluto and meteors  
and 50 years of comet hunting.



26799. Shabat, July 18/ H48 1325-1345/3/  
The Adirondack Astronomy Retreat / Conversation  
outdoors with Marty Rice of the AAR.

"Dark Matter" and "Dark Energy"  
by  
Matthew Farkas-Dyck.

Our cosmos is homogeneous & isotropic.  
(do I agree?)

There is recession.

Four fundamental forces in the U.  
Weak or strong nuclear force  
Electromagnetic  
Gravity.

Expansion, according to the  
Friedmann equation, cosmological order  
Dark matter = Electromagnetically  
noninteracting.

George Wald's 4 requirements for life:

- ① Ice floats
- ② The atom is electrically neutral.
- ③
- ④ The night sky is dark. (Others' probes)



18690 ~~12~~ Th ~~Friday~~ Sat, July 18/19/2030 to 0100/2-6/  
Jamaic Airondark Astronomy Retreat / AARce  
pers / CMP-1, a few meters. Aurora-1 now  
Interesting conversation going on re Pluto, politics  
astronomy.

18681 S. Monday, July 20/1245-1300/7/ MONTREAL  
Quality Hotel. Neptune: / SS.2 2:2  
Wendee + Carl.



18682 ~~KS2~~ 1410-1600 1-7/ Montreal - 3577/Wen  
sitting outside at Mem's house. It is a  
beautiful day with lovely breeze, clear  
day, just very very nice to be outside.  
The world finally seems to be going our  
way  
I love Wendee very much.



## Spectrum Demos and Projects, Mary Lou West, NJAG, July 18, 2015

- History of investigation of light, how astronomy became astrophysics
- Spectrum of hot gas, spectrum of a star, Doppler shift
- Equipment
- Projects: Solar system
  - Earth's aurora borealis
  - Asteroids; carbonaceous are farther out
  - Atmosphere of Jupiter, Saturn
  - Velocities of the rings of Saturn; calculate the mass of Saturn itself
  - Comets, as tails change with time, see molecules as well as atoms
- Projects: Stars
  - Examples of spectral types of stars (OBAFGKM)
  - "Be" stars, Wolf-Rayet stars, emission lines of dense hot gas thrown out. Clumpy? Periodic?
  - Binaries, colliding wind binaries, especially at periastron, symbiotics, micro-quasars
  - Stars eclipsed by stars, disks, clouds,...
  - Young T Tauri stars, formation of planets
  - Stars with variable lines, (Alioth, eps UMa, and Alnilam in Orion's belt)
  - Modeling with synthetic spectra
  - Stars with unusual elements, technetium, europium
  - Stars doing thermal pulses
  - Planetary nebulae, novae, supernovae
- Projects: Galactic, extragalactic
  - Gaseous nebulae
  - Different types of galaxies
  - Velocity dispersion by line broadening
  - Rotation curves of galaxies
  - Quasars, red shift (3C 273, 16%)
- References
  - Tom Field, Spectroscopy for Everyone, Sky and Telescope, Aug 2011, p 68
  - Jan Hattenbach, Deciphering Starlight, Sky and Telescope, Sep 2013, p 30
  - Sheila Kannappan, Daniel Fabricant, Getting the Most from a CCD Spectrograph, Sky and Telescope, July 2000, p 125
  - Barry Malpas, Observing the Winter Spectral G, The Practical Observer, 1997, Vol 7, Issue 4, p4
  - Ken Harrison, Astronomical Spectroscopy for Amateurs, 2011
  - Jeffrey Hopkins, Using Commercial Amateur Astronomical spectrographs, 2014
  - James Kaler, Stars and Their Spectra, 1997
  - Stephen Tonkin, Practical Amateur Spectroscopy, 2002



18683E. Tuesday July 21, 2015/2000 to 2215/  
0-31 Tonight I gave the lecture "They Call  
Me Pluto" at the Montreal Centre of the Royal  
Astronomical Society of Canada, ~~July~~.  
There were almost ~~seventy~~ people in the audience.  
There were 11 people from the AAR, almost  
25% of the people from the retreat. Wendee  
said I was one of my best talks since pre-astro.  
"You were right tonight." she said.  
We viewed Saturn through Bellevue tonight.

Dined  
at  
120  
Cory St.





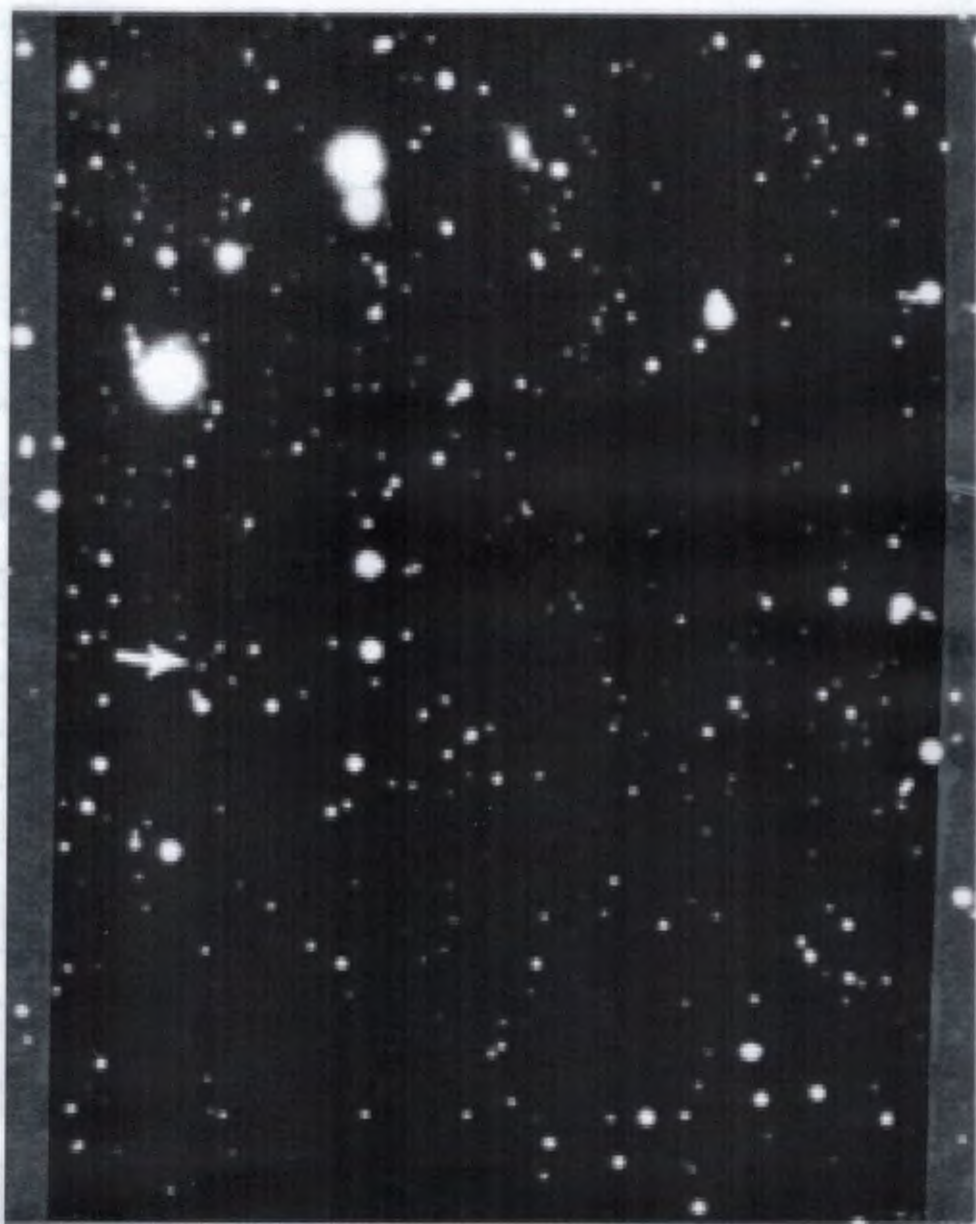


older picture of Milky Way



Two pictures of the discovery of Pluto, taken by

## DISCOVERY OF TI



January 23, 1930



Clyde + examined by him at 4pm February 18, 1930  
at 4pm.

## THE PLANET PLUTO

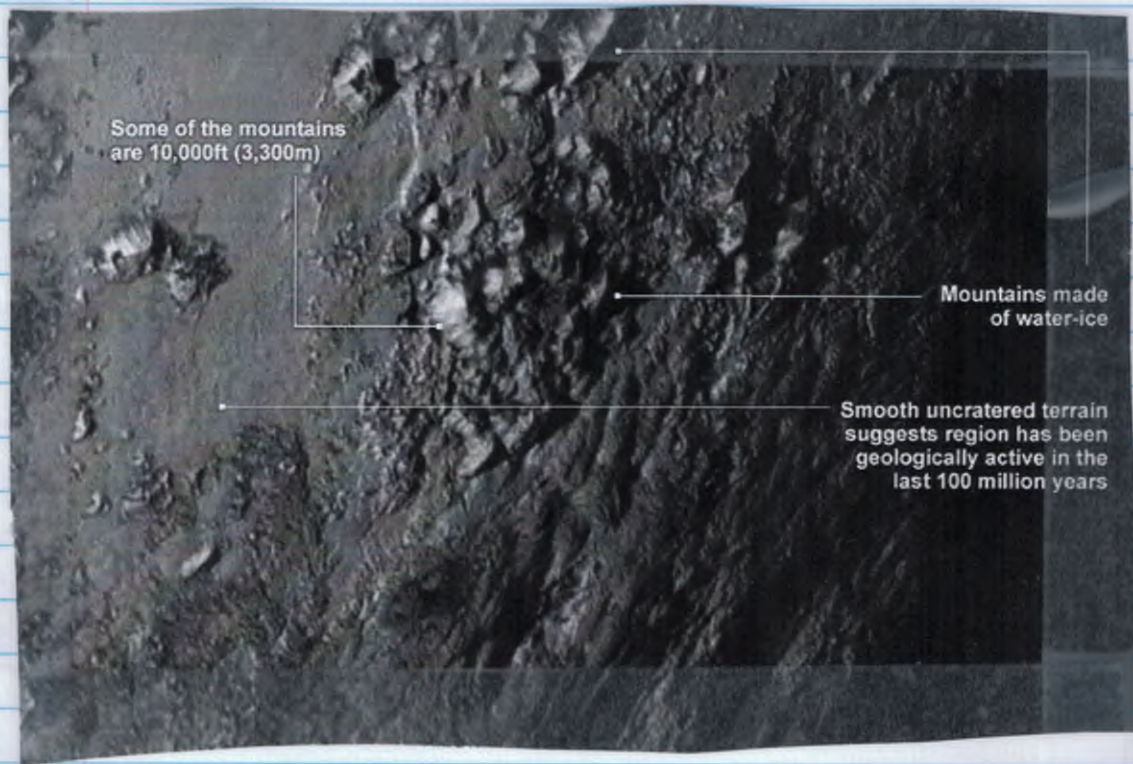


January 29, 1930



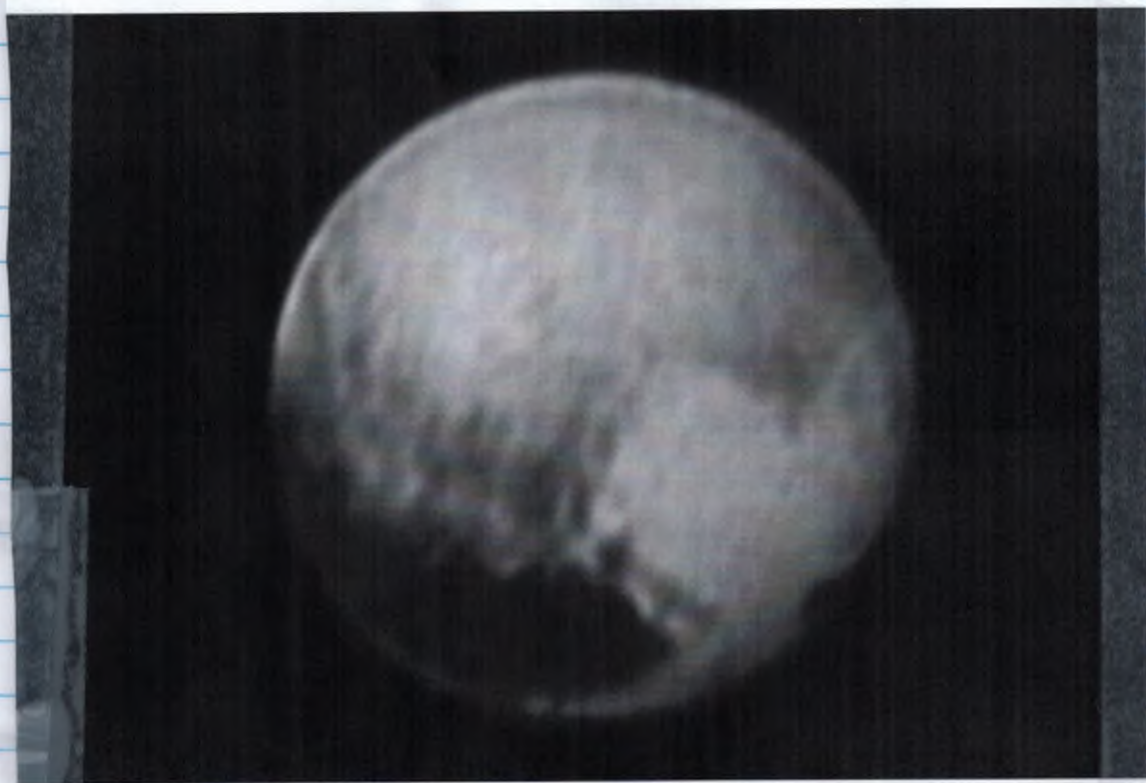
New Horizons images, very high ice mountains can be seen in this image on encounter day by the passing spacecraft. One of the ice mountains could be as high as ten thousand feet. There is a lot of smooth land there indicating that the region has been geologically active on a time scale of a 100 million years.

All this happened as the spacecraft tore past Pluto, Charon + Nix, Hydra, + Kerberos on July 20, the third day of our retreat. On the next day, some people suggested that Wendee + I arrange for a movie





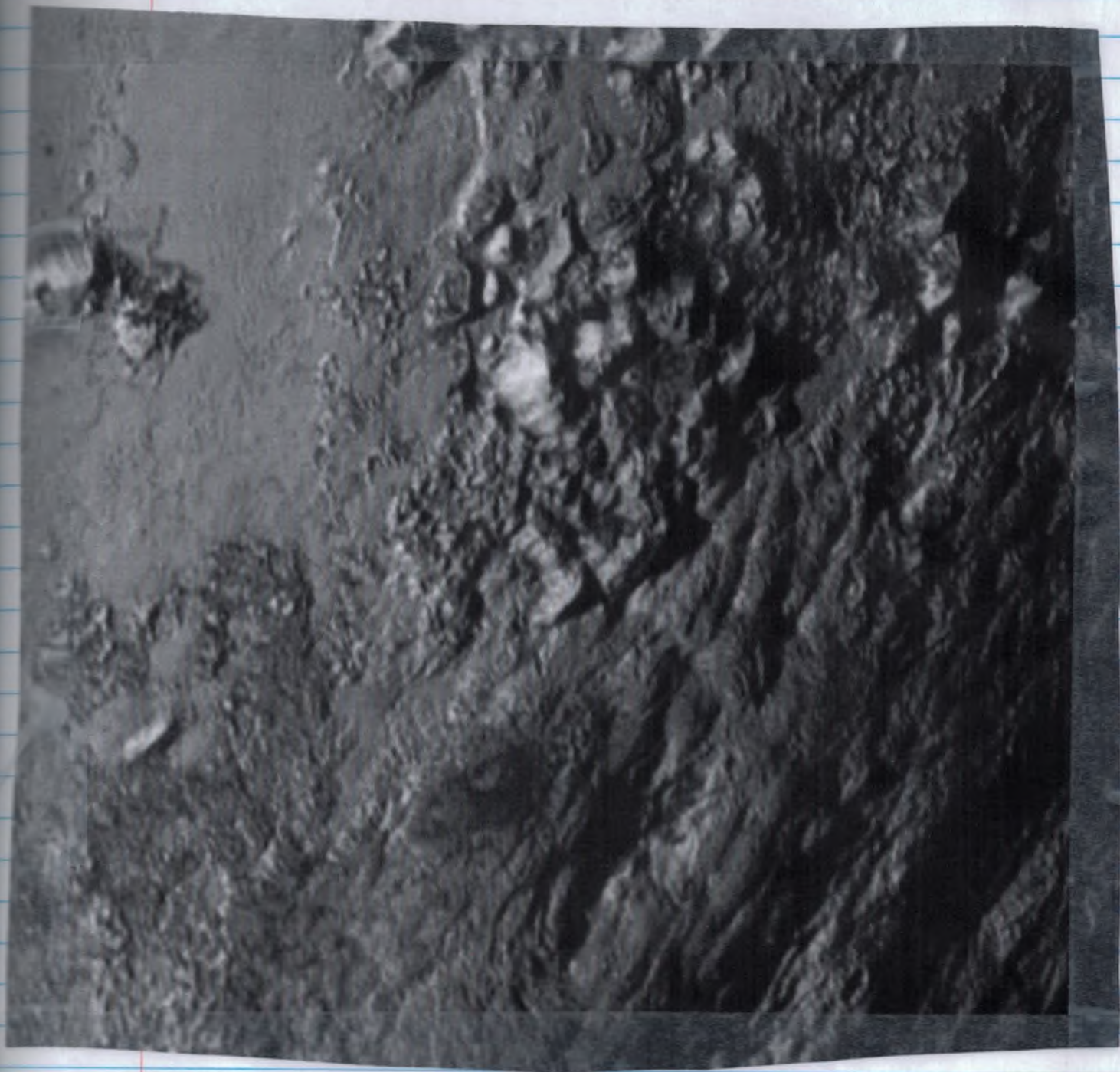
to be made about Clyde's life, which is  
really fascinating. We explained that we're  
not cine magraphers.



Pluto and the Tombaugh regio.  
July 14, 2015.

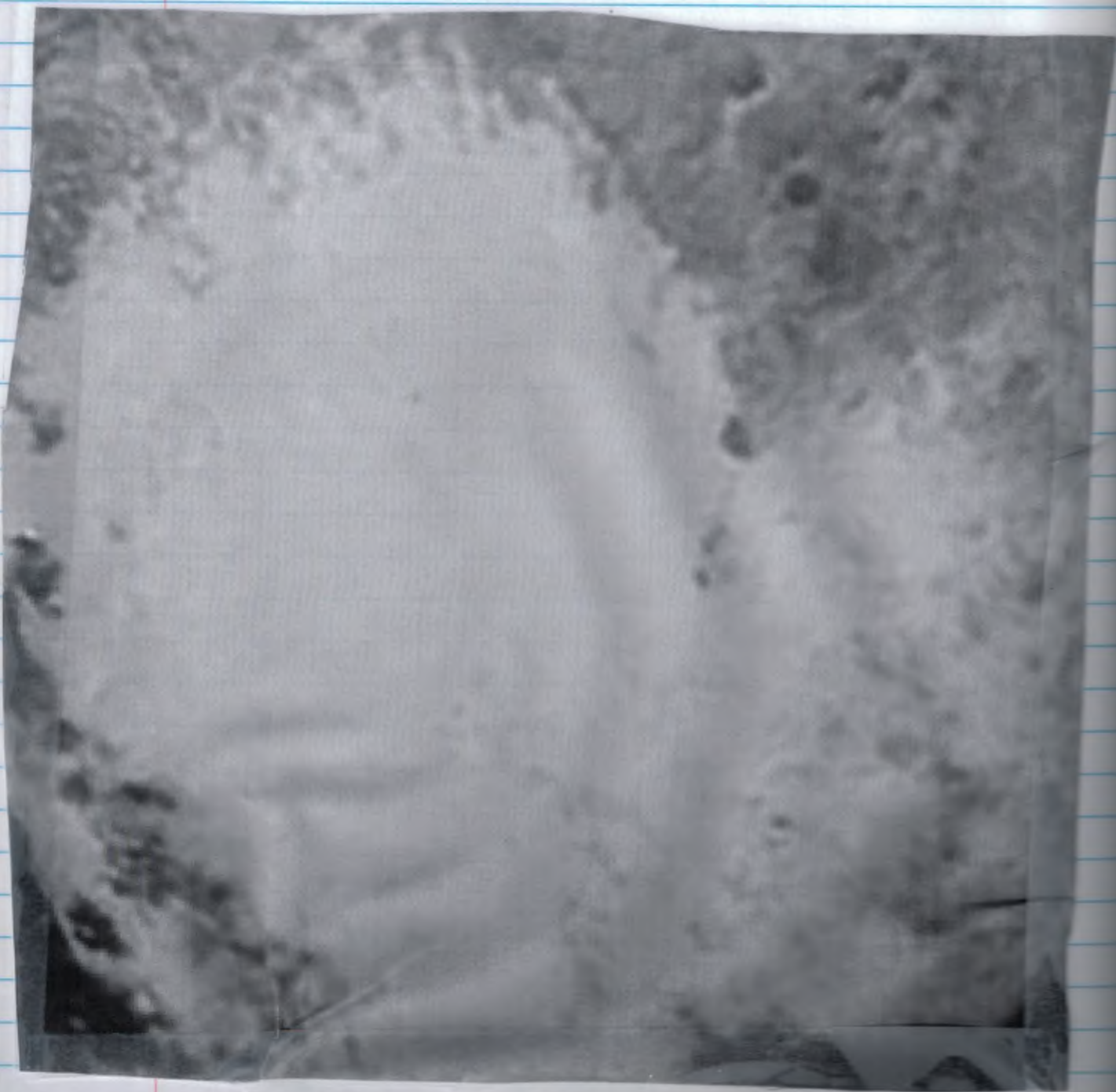


detail of Plutoscape



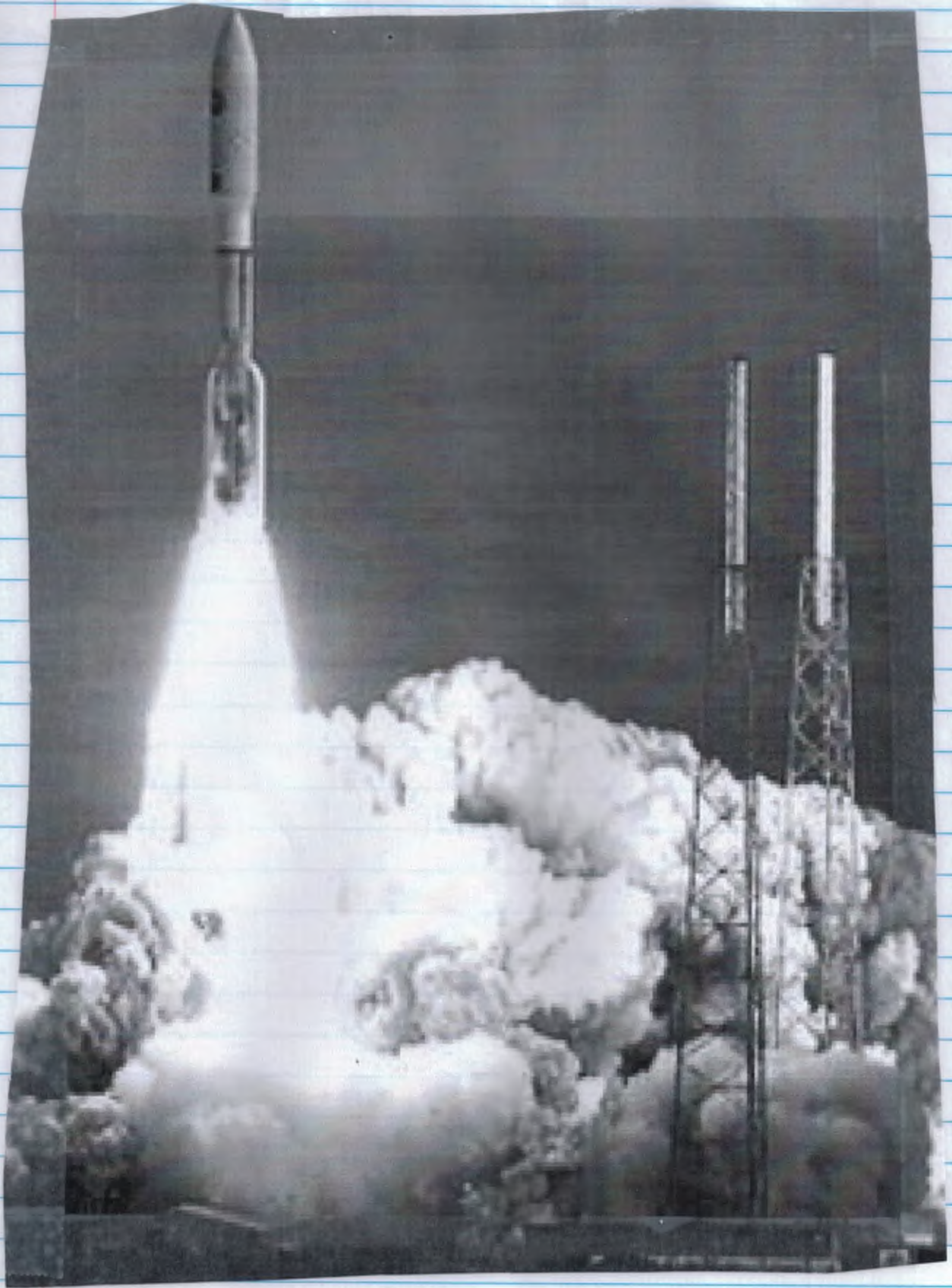


Tombaugh Regio.





Launched New Horizons on January 19, 2006.









# Clyde Tombaugh observing log, circa 1928.

928

$11.15 = 450$  seconds of arc = 12 minutes of arc.  
 The error of the equatorial = 72 minutes of arc southward  
 (that is the S disappears first) every 33 minutes of time  
 (polar axis not steep enough)

I travelled  
 344,000 miles in 21 days

W      III      I      II      IV      E

Oct. 24, 9:00 PM N  
 Seeing 1-3  
 (rather poor)  
 windy, hazy, partially cloudy

Same belts app. as on Oct. 22.  
 S markings lost in fogging, not  
 traceable, N. Tropical Dark Area  
 conspicuous and dark, with black spots  
 under the fringes.

III      II      I      IV      E

In eclipse?      Seeing = 4

Oct. 27, 10:30 PM.  
 Jupiter rather mottled, many white  
 spots, Southern hemisphere markings  
 very faint; N dark, conspicuous.



OCT. 23, 1928

Seeing 3-4

11.15

$50 = \frac{1}{2}$   
 $480 = \frac{1}{2} \times$   
 $50 \times = 480$   
 $480 = 120$   
 $57 = 12 \times 27$

$$8 \times \frac{6}{5} = \frac{48}{5} = 9 \frac{3}{5}$$

$10,000$   
 $97$   
 $794000$   
 $21600$   
 $825000$



# Clyde Tombaugh observing log, circa 1928.

928

$15 \times 15 = 450$  seconds of arc = 12 minutes of arc.  
 The error of the equatorial =  $7\frac{1}{2}$  minutes of arc southward  
 (that is the S disappears first) every 33 minutes of time  
 (polar axis not steep enough)

I travelled  
 344,000 miles in 2 1/2 hrs

W      II      III      I      II      III      E

Oct 24, 9:00 PM N  
 seeing 1-3  
 (rather poor)  
 windy, hazy, partially cloudy

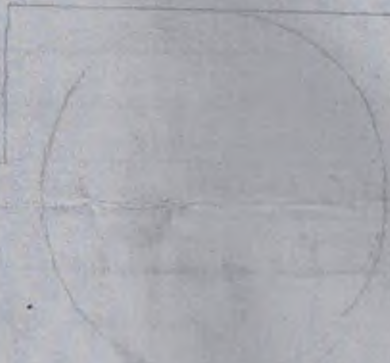
Same belts app. as on Oct. 22.  
 3 markings lost in poor seeing, not  
 traceable, N. tropical dark area  
 conspicuous and dark, with black spots  
 under the fringes.

III      II?



I in eclipse?  
 Oct. 27, 10:30 PM.

seeing = 4  
 Jupiter rather washed, many white  
 spots. Southern hemisphere markings  
 very faint; N. dark, conspicuous.



Oct. 23, 1928

seeing 3-4

11/15

$50 = \frac{1}{2}$   
 $40 = \frac{1}{3}$   
 $30 = \frac{1}{4}$   
 $20 = \frac{1}{5}$   
 $x = 2\frac{1}{2}$

$8 \times \frac{1}{5} = \frac{4E}{5} = 9\frac{2}{5}$

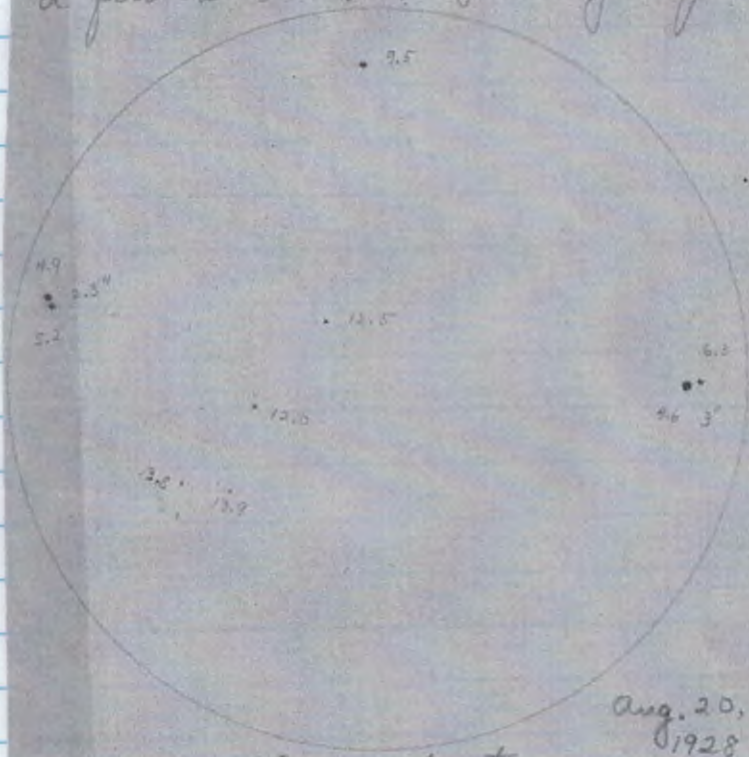
76,000  
 774,000  
 51,600  
 625,600

Flare  
 500,000  
 51,600



log p. 2, circa 1928

The two stars of mags. 12.0 and 12.5 were easily seen and steady. By averted vision I could see the two fainter stars: mags. 13.8 and 13.9 at intervals for a few seconds I could glimpse them directly.



no trace of the 15th mag. star could be glimpsed, which is really far beyond the range of a 9 inch. I dare say it would be a good test for a 15 inch aperture.

The globular star-cluster (13M) of Hercules was well seen. The outlying part was resolved into many stars with the  $\frac{1}{2}$  inch eyepiece (400 X), but not the central part.

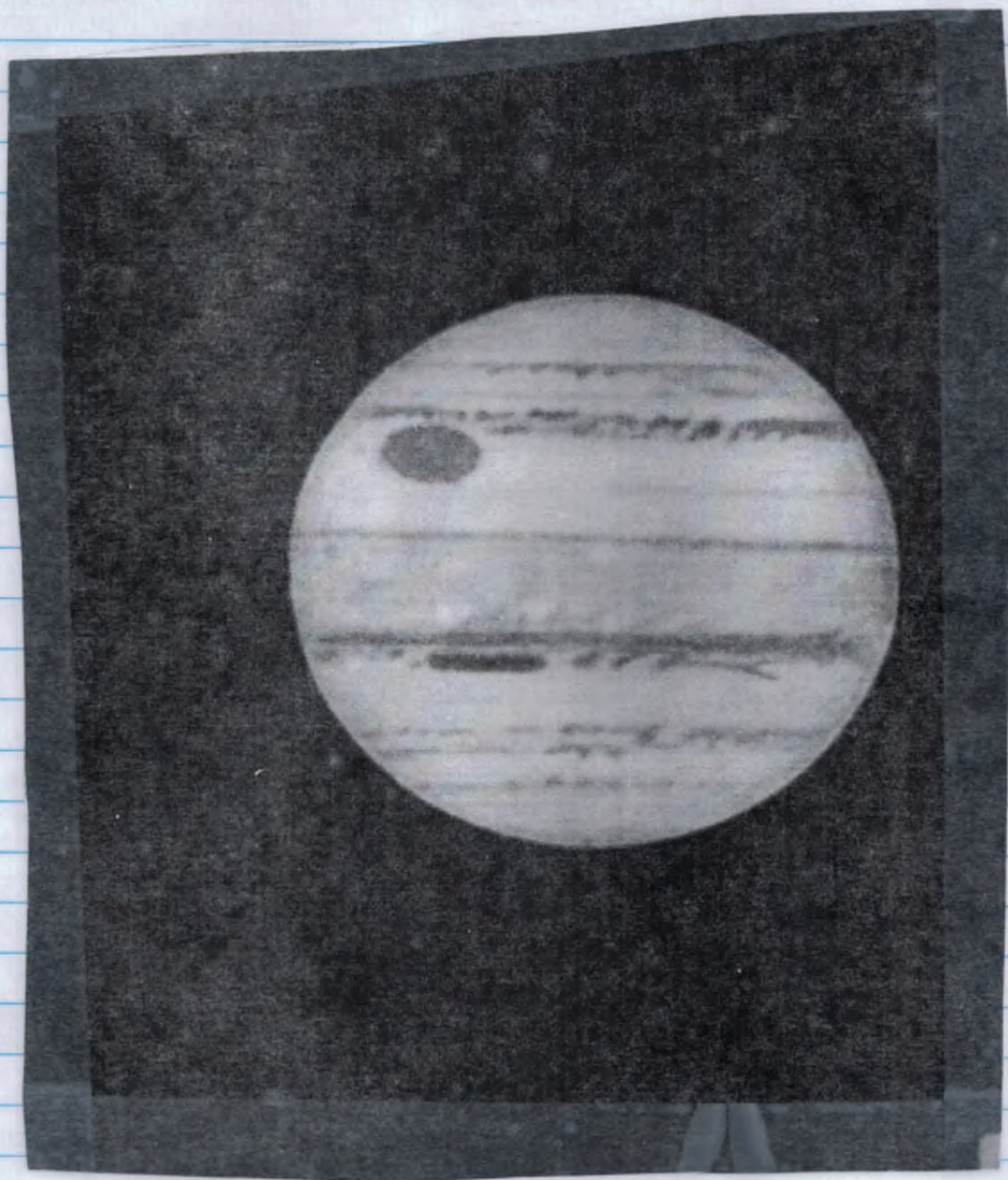
Aug. 20, 1928  
Epsilon Lyrae System  
seen thru my 9 inch Newtonian; 396 X.

I believe a power of at least 1000 with a 20-inch aperture would be needed to resolve the central part of the cluster into stars.

On the morning of Oct. 3, 1928; the seeing was very good. Oct. 2 PM + Oct. 3 AM, I stayed up all night looking thru my reflector. On this morning I divided  $\alpha$  Orionis nicely. Mags. 4, 5; and 1.2" are apart between centres. Here is the way I saw it:  $\rightarrow$   
I used the  $\frac{1}{2}$  inch eyepiece, power 396 diameters.  $\alpha$  Orionis  
Oct. 3, 1928

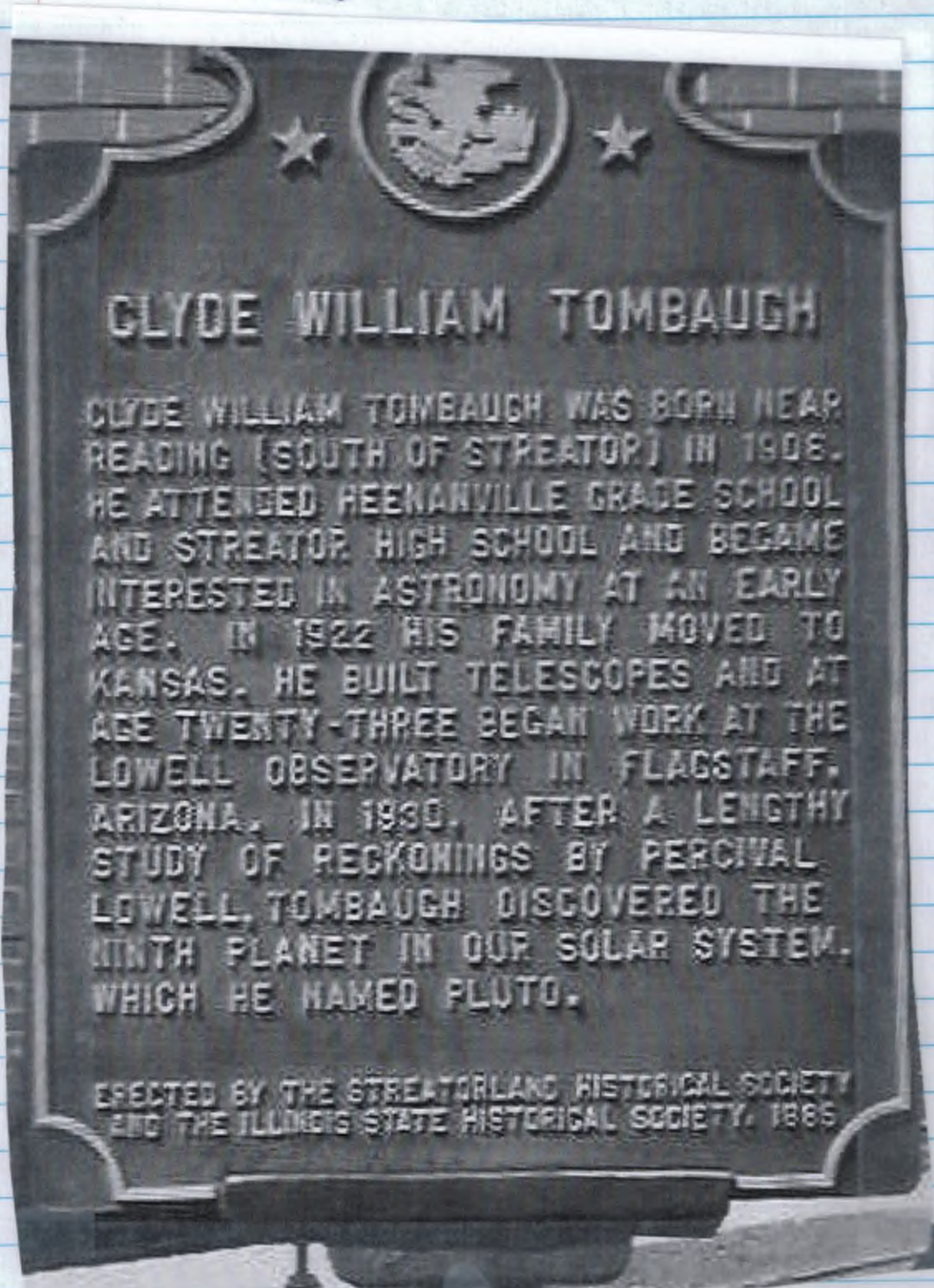


Clyde Tombaugh's  
Jupiter, circa 1936.





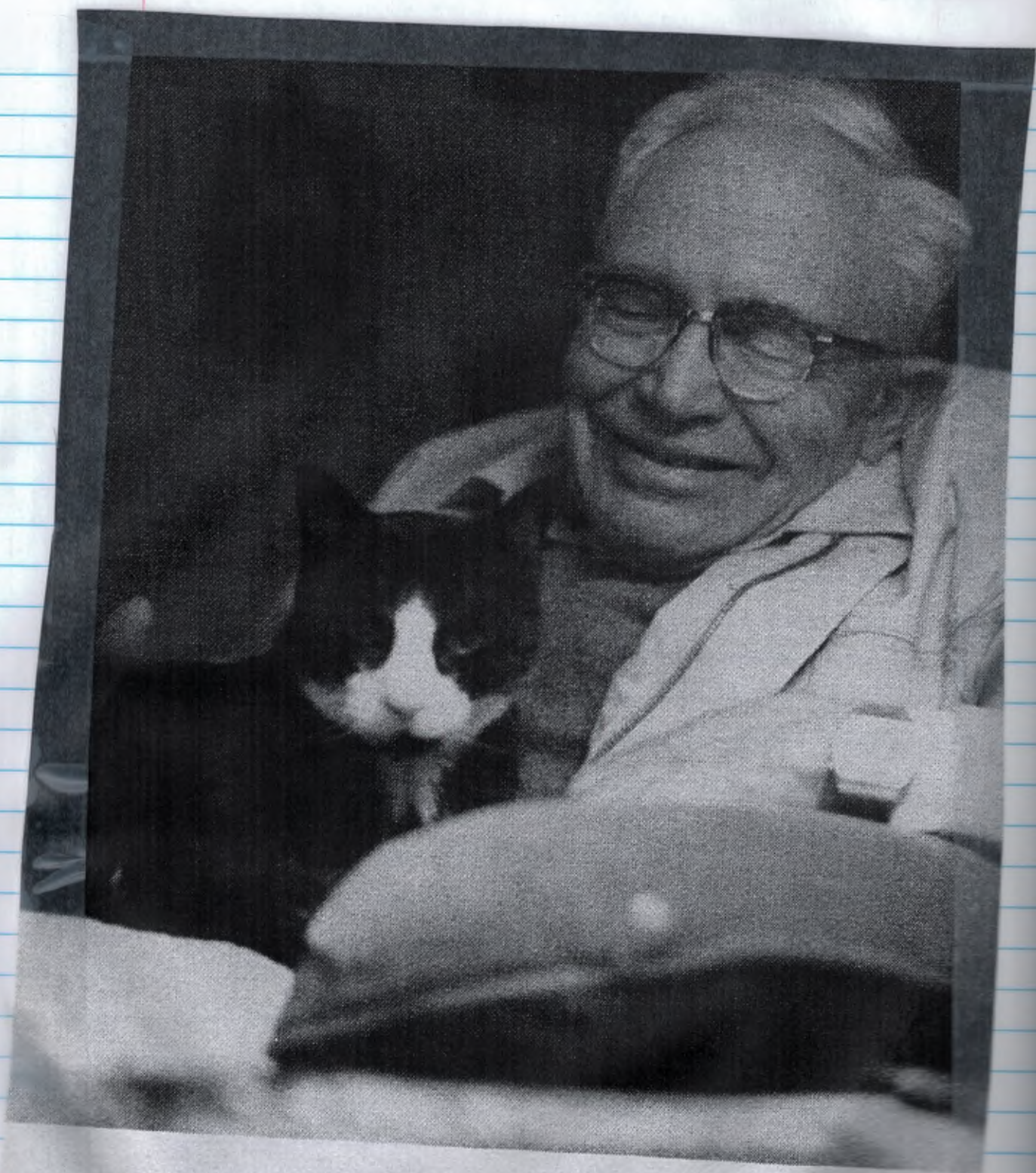
*of planet Pluto*  
Streator, Illinois  
Proof Pluto is a planet!





AGE TWENTY-THREE BEG  
LOWELL OBSERVATORY  
ARIZONA. IN 1930, AF  
STUDY OF RECKONINGS  
LOWELL, TOMBAUGH DIS  
NINTH PLANET IN OUR  
WHICH HE NAMED PLUTO





*Clyde Tombaugh with cat Pluto, 1990.*

PHOTO BY THE AUTHOR.



# MEDICAL TERMINOLOGY

For the Layman

- Artery - The study of fine paintings.
- Barium - What you do when CPR fails.
- Cesarean Section - A district in Rome.
- Colic - A sheep dog.
- Coma - A punctuation mark.
- Congenital - Friendly.
- Dilate - To live long.
- Fester - Quicker.
- G.I. Series - Baseball games between teams of soldiers.
- Grippe - A suitcase.
- Hangnail - A coat hook.
- Medical Staff - A doctor's cane.
- Minor Operation - Coal digging.
- Morbid - A higher offer.
- Nitrate - Lower than the day rate.
- Node - Was aware of.
- Organic - Musical.
- Outpatient - A person who has fainted.
- Post-operative - A letter carrier.
- Protein - In favor of young people.
- Secretion - Hiding anything.
- Serology - Study of English knighthood.
- Tablet - A small table.
- Tumor - An extra pair.
- Urine - Opposite of you're out.
- Varicose Veins - Veins which are very close together.

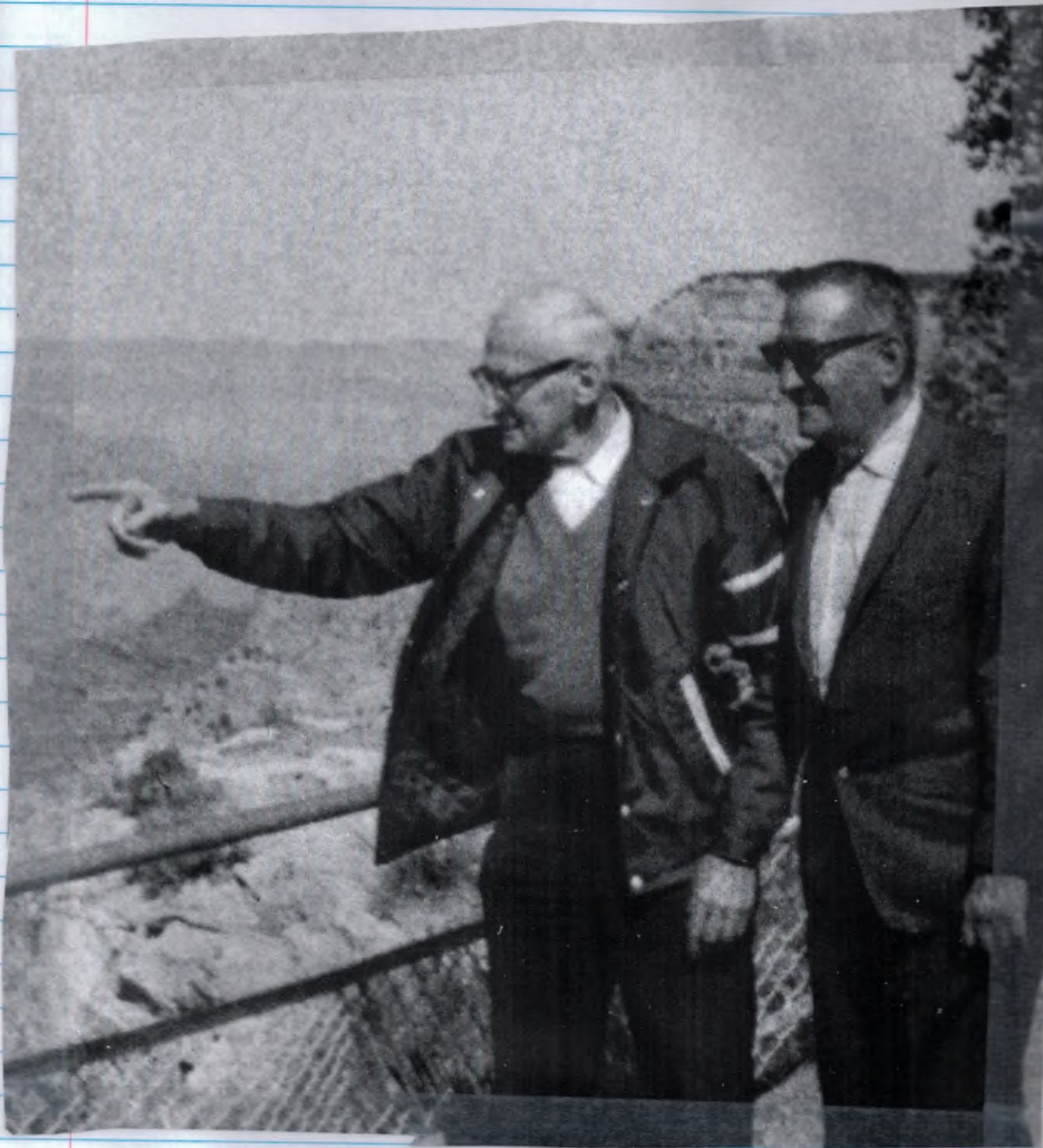


# TWIN LAKE CAMP FOR BOYS



Twin Lake Camp Bunk B 1956.  
↑ me.

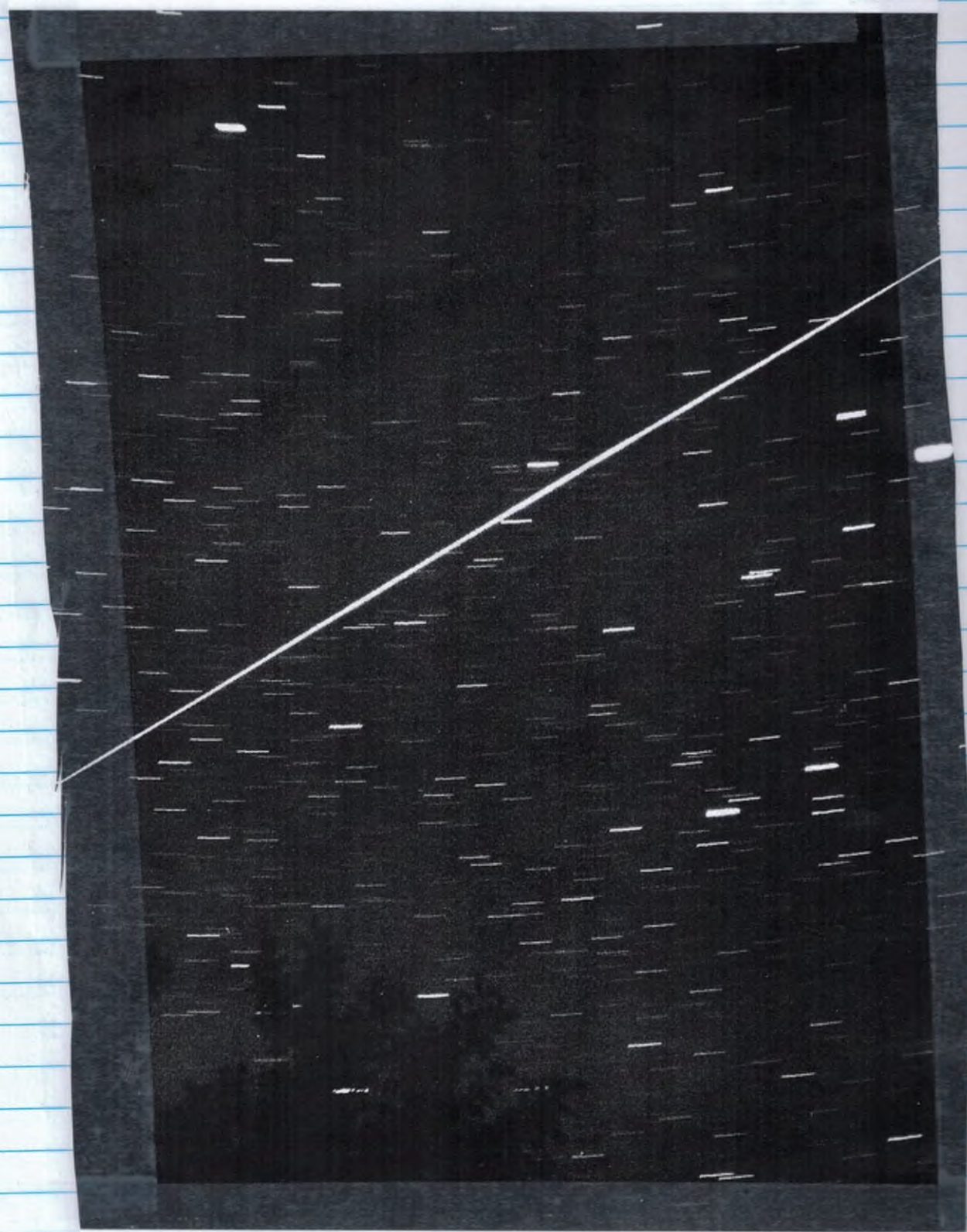




Grandpas Willie & Maurice, 1967  
at Grand Canyon.



Echo 1, photo by Tim Hunter.





Dave & Dad  
JNHAC 1962

FOR A CHILD'S SAKE  
3401-47 W 19<sup>th</sup> AVE.







SEASON'S GREETINGS

With Love, The Vigil Family  
Mark, Nanette, Summer, Matthew & Rocco





**WARKOCZEWSKI PUBLIC OBSERVATORY  
40TH ANNIVERSARY  
Oct. 27, 2014**

**DAVID H. LEVY, PH.D.**

**"A Night Watchman's Journey:  
My Adventures as a Comet  
Discoverer and Skywatcher"**

David is co-discoverer of Comet Shoemaker-Levy 9 and discoverer of 23 other comets, the author of over 36 books and an Emmy winner for "Three Minutes to Impact." He also hosted the popular radio show "Let's Talk Stars" and is the founder of the Sharing the Sky Foundation. David is the first person to discover a comet by all three methods: visually, photographically and digitally.

David will be sharing his life's experiences as an astronomer and inspiring us to keep looking up at the sky.

