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805 e 2002-04-30/31 20:40-22:20 EDT Oriole E yard 6 28cm r1 25cm r1  
Saturn in trees at dusk

Jupiter

20:40 EDT Obs. com. 300x bino 28cm r1 S=3-1 RS close to limb

- 96 20:42 Dc praj Sedge NEB (Hegrey)  
97 20:51 Df praj Sedge NEB NTr2 appears quite yellowish.  
98 21:10 Dp barge NEBn Io's shadow on CM  
99 (21:22) Dc barge NEBn (late!)  
100 21:27 Dp dusky shading SEBZ  
101 21:29 Df barge NEBn

21:30 Obs. disc. poor seeing

~~I~~ Io was only seen a minute or two before transit ended. For part of session, I compared 28cm r1  $\bar{c}$  25cm Meade Dob 230x vs 228x. Meade should have hints of detail that was obvious in Starmaster.

Deep sky: comparisons mostly  $\bar{c}$  22m in SM (63x) + 16m Meade (71x):

M35: fainter stars more easily visible in SM

Eskimo: about the same in both

Castor: easy in both

M65 + M66 visible  $\bar{c}$  direct vision in both - better in SM  
 $\bar{c}$  16mm (86x) MGC 3628 suspected  $\bar{c}$  averted vision in both

Conclusions SM way ahead on planets, but quite close on deep sky, at least in the city.

806 k 2002-04-30/31 00:30-00:40 EDT Oriole yard 6 15x79b

Comet Ikeya-Zhang: still easy in binoculars  $\sim$  6 mag. Also  
M13

807e 2002-05-04/05 20:30-23:00 EDT Marc Garneau C.I. 6 28cm r1

RASC public star party ~150 visitors

Venus, Jupiter, Saturn, Mars, Mercury.

808e 2002-05-05/06 20:15-20:40 EDT Oriole, E yard 20cm r1

Testing Sky Mentor 20cm f/4 Newtonian OTA

Venus, Jupiter 32x-200x (tried 40mm = 20x, but central obs'd really obvious) Seems OK up to ~100x, then get image shift from focuser & what looks like astigmatism. Will have to try star test later.

→ 21:00-21:15 EDT 4

Jupiter best ~90x - two belts vaguely visible - really had to focus @ higher powers because of astigmatism

Capella - star test @ 200x (4mm Ration) - diffraction patterns are identical inside & outside focus for spherical aberration, but are oval @ 90° to each other ⇒ astigmatism.

Earlier today I took pressure off cell & took off metal back plate. I wonder whether the problem is the diagonal?

Coma is very severe in 22mm Nagler, but Paracorr cleans it up very nicely.

→ 22:05-22:15 EDT 4-3

Astigmatism still marked, preventing magnifications over ~100x. Conclusions: half a telescope? should be OK for wide field low power observing, better with Paracorr. Useless for lunar, planetary, double star, observation.

This is a heavy OTA, supposedly 8kg = 17.6lb, but feels like more. I had to use both counterweights on GPDx at end of dec axis, just as with MN61, so I suspect it really

weighs around 20 lb. 8x50 finder is excellent. A lot of play in focuser. The only substantive changes from "Premier" (=Lin) 20cm f/4 is improved mirror cell & thicker mirror but this does not produce much improvement in view. Disappointing!

2002-05-06

Installed 7x50 Celestron finder permanently on Starmaster. This makes it front-heavy, but I've bought some 1-lb wrist weights to add to the mirror box. I find I just couldn't stand the Rigel QuickFinder - can't see the rings in twilight, & can't see stars through it when it's dark.

809e 2002-05-07/08 21:00-24:00 EDT Forks of the Credit 8 28cm (10x50b)  
NGC 2419 "Intergalactic Wanderer" ~ 22:00 escaped globular cluster. Quite easy to see in both my 28cm and Leonard Cukesenberg's 20cm. Tiny unresolved, more like a planet, 157x

Most of the evening was spent revisiting old friends with the new telescope: Jupiter, Mars, Saturn, Eskimo Nebula, M35, M65, M66, NGC 3628, M104\*, NGC 4038-4039 (the Antennae - only a vague smudge here, as opposed to a definite "vee" at the CAO), M13 (glorious!), M57 (big & bright), Comet Ikeya-Zhang (no tail, slight pseudonucleus, still big & bright). Most of evening was spent capturing views in 11" and Leonard's 8", and "sharing the view" with Guy Mason and some new members.  
\*also saw asteroids "Stargate" and "Jaws"

810e 2002-05-09/10 21:15-23:00 EDT Oriole E yard 6 28cm r1 10x50b

Jupiter:

21:15 EDT Obs. cam 28cm r1 x 300 bino S: 3

21:30 EDT Obs disc, seeing: 1-0

γ Vir split @ 300x bino 21:50

↳ Cnc wide blue & yellow @ 196x bino

Also Castor, γ Leo, θ Leo, α UMa, Mizar

Jupiter

22:10 EDT Obs cam 300x bino S: 4

102

22:10 Wc RSH SEBs (probably 2-3 minutes late)

22:16 Jupiter in trees Obs disc

Deep sky: M104: hint of dust lane @ 157x

M3: beautiful @ 230x, though not as well resolved as M13 the other night at Forks of the Credit

M44: tried 40mm & 22mm without Paracorr - surprisingly good. Some coma at very edge of 22mm field, but none of the tick curvature I noted with 10" f/4.5 Meade. With 40mm, & to some extent 22mm, my astigmatism predominates. It does not seem as bad @ 22mm & Paracorr, perhaps because exit pupil is 15% smaller.

Site

2002-05-10/11<sup>2</sup> 21:00-23:25 EDT Oriole E yard 5-6 13cm mcX2, 28cm r1 Grey

Jupiter: image really good in 13cm mc up to 175x - breaks down above that, i.e. at 208x. Image @ 10cm Antares SuperPlossl is also excellent.

21:05 EDT Obs. cam 28cm r1 x 300 bino S: 3-4 <sup>Doris</sup> ~~Callisto~~ many onto SPR.

103

21:57 Dp barge NEBn (1st of two)

22:03 Callisto visible as dark spot on SPR

104 22:06 De berge NEBn  
22:10 Callisto visible as dark spot in 13cm @ 175x

105 22:15 DF berge NEBn  
22:16 Obs disc Jupiter in trees.

Seeing was much better tonight than last night, much more detail visible, especially in NEBn. As Jupiter neared trees, I could see ripples in it, more like the Moon, from distant turbulence. 13cm mc performed very well for its size - I'd forgotten how good it is. ~~Good~~ Good contrast in belts. Could clearly see NTrZ separating NTB from NNTB - no matching STrZ visible in either scope. Callisto merged with limb a few minutes earlier in 13cm vs 28cm, and became visible as dark spot on SPR a bit later, but it did clearly show Callisto as a dark dot.

Denis Grey arrived just as Jupiter was setting with his 13cm Orion Apex, and we compared them on Castor, γ Virginis, & Arcturus (star test). His seems to have a bit more spherical aberration than mine, but both are very good. γ Virginis "looked like a peanut" in Denis' scope through 13cm mc, but was cleanly split in 28cm rl. We ended up by looking at M3 in 28cm.

2002-05-23

Equatorial Platform for Starmaster arrived from Tam Osypowski.

812e 2002-05-26/27 20:50-21:31 EDT Oriole E yard 6 28cmrl

Zumbi I got the Equatorial Platform reversed N-S and couldn't figure out why Jupiter was always moving S in field! The wide end points North, dummy!

21:10 Obs com 200x B Si: 2-3-0

106 21:13 Dc RS SEBs slightly pink

107 21:29 Df RS SEBs very uncertain due to poor seeing

21:31 Obs disc - in trees

Disk is getting noticeably smaller & very hard to see detail because of low altitude. Not much left of this opposition. Next clear night I will try from front yard perhaps.

→ 22:10 ~~23:25~~ EDT Oriole driveway 20cm r1 (SkyMantar f/4) } 6-5  
E yard 28cm r1 10x50b

Continued testing of SkyMantar 20cm f/4 OTA. This afternoon I loosened clip on secondary mirror after reading on SkyQuest Yahoo group that this had fixed astigmatism. It worked! After re-collimation c laser, star test was now perfect - beautiful diffraction rings on both sides of focus! Split ε Boo very cleanly @ 200x

Comet Ikeya-Zhang Could not see it at all with binoculars. Finally located it with 22mm Nagler/Peacorr/28cm r1 @ 23:15. Very faint & diffuse in full moonlight - no structure visible. 63x I'd say it is now at least 1 mag fainter than M13.

M13 best @ 157x in 28cm r1 - beautifully resolved, even with Full Moon in sky.

The Equatorial Platform works like a charm once it's pointed the right way. It tracked perfectly all evening.

813e 2002-05-28/29 20:45-21:25 EDT Oriole Eyed 6 20cm r1 15cm mn

Testing Sk, Mantar 20cm f/4 OTA

Jupiter: as expected, <sup>from star test</sup> performance on Jupiter is quite good, though not as good as 15cm mn! Seeing very poor 0-1, maybe 2 at best. Jupiter picked up @ 20:45, set in tree @ 21:25 - no transit detail visible in either scope. NTB could be plainly seen in 20cm r1 when seeing good & hints of detail within SEB & NEB. I had both scopes mounted on their own Vixen dovetails, so I could easily move back & forth.

5-3

→ 22:10-23:35 EDT Oriole Eyed 15cm r1 10x50 ne

Doubles

22:16 8 Corvi 102x

22:44 24 Com 102x a "mini-Albireo"

23:00 38 Lyncis 225x tight pair; white primary, yellow secondary

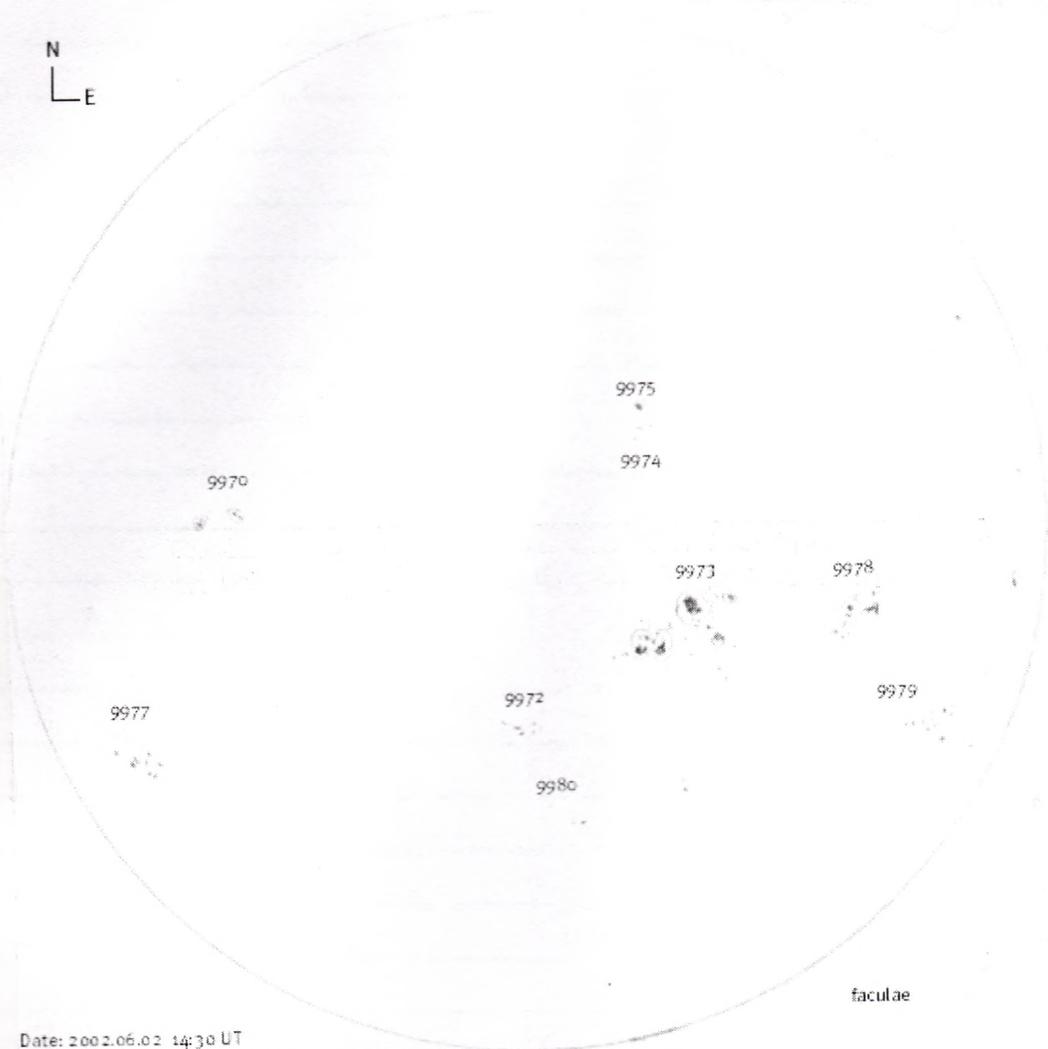
23:17 54 Leonis 102x blue & white

Spent a little time watching the northern sky, since there was an aurora warning, but there were high banks of cloud coming through. I was repeatedly harassed by a young raccoon, who touched my hand while I was sitting on the chaise longue observing with binoculars, and rumbled through my eyepiece box, carrying the 88mm about 2 feet away & getting muddy pawprints all over it and my 24.5cm SWA.

814e 2002-05-31/32 20:45-21:30 EDT Oriole Eyed 5 12cm rr 28cm r1

Jupiter - double shadow transit. I first tried to observe it @ 12cm rr @ 163x B - could see smudge in Sprac. quadrant, SEB & NEB, but that was all because of poor seeing. Smudge was combined

N  
E



faculae

Date: 2002.06.02 14:30 UT  
Conditions: 74F, wind=lg1, seeing=1-2, clouds=10%  
Telescope: Celestron C102-AZ 4" f/10 refractor, Alt-Az, undriven  
Filter: Kendrick Baader white-light solar filter  
Eyepiece: 17mm Plossl (59x)  
Observer: Susan Delaney, Fairfield, CT USA  
Groups=12 Umbrae=98 Penumbrae=13  
Ng=3, Ns=12, Sg=9, Ss=86

3

shedans + RS region. I got out 28cm r1 & started @ 21:00 EDT, but seeing was still very poor, & I could see no more detail than  $\bar{c}$  12cm r1. Followed until Jupiter set behind roof of our house @ 21:30, with no improvement. 22:10 EDT - can see 3 stars Vega, Arcturus, & Regulus due to haze.

815d 2002-06-02 15:15-15:35 EDT Oriole driveway 7 12cm r1 13cm mc ne  
Sun: 12cm r1 @ Chromacor @ 41x, 114x, 167x  
13cm mc @ 63x, 175x

- both pre-mounted on GP-DX dewdetail plates to facilitate switching back & forth, used same Kendrick filters on both
- started  $\bar{c}$  12cm, then 13cm, then back to 12cm
- resolution was clearly better in 12cm @ 167x than in 13cm @ 175x
- able to see more and smaller spots & faculae
- situation might be different if 13cm had more time to cool down (or warm up? garage cooler than outside).
- 13cm wins on portability, but 12cm has nicer images.
- main sunspot group visible naked eye.

816e 2002-06-06/07 22:15-23:55 EDT Oriole N yard 5 28cm r1 1ax5ab  
Double stars: E Boo, E Lyrae  
Deep sky: M13, M57. Observed M57  $\bar{c}$  &  $\bar{5}$  Ultrablack at up to 345x. Structure is quite evident, just as clear  $\bar{5}$  filter as  $\bar{c}$  filter.

[Pluto]: practised starhop to Pluto, hard because of murky haze. Could clearly see 12.9m star  $\bar{c}$  direct vision, but Pluto eluded me (13.8m)

It's a delight to be able to let go of the scope, consult a chart, & then return to exactly the same field!

817d 2002-06-07 13:40-14:05 EDT Oriole driveway 7 12cm rr 13cm mc  
Sun: ~~exp~~ I just received 2 filter cells from Al Misiek at Sirius Optics to increase Chromacorr spacing in 12cm rr. One cell, from a Meade filter, was too big to work, both male & female threads! The other cell, a Sirius one, seems OK at the male end, but a bit tight at the female end, so the Chromacorr only goes on by a couple of turns, yet seems solid enough. There's still a bit of lateral color on the Sun but not much. Seeing was not as good as last time, but the 12cm rr seemed sharper & more contrasty than the 13cm mc.

818e 2002-06-08/09 21:30-23:00 EDT Carr Observatory, 2 40cm ~~sc~~ 20cm sc  
Open house at Carr. I received the Andrew Elvins Award for promoting the centre and astronomy. I gave the same Urban Observing presentation as in Montreal at the GA  
Venus glimpsed through heavy clouds in 40cm sc & Andy Schub's 20cm Meade LX200 GPS - seeing terrible!  
ISS had a brief glimpse through clouds on the way home at 23:15 EDT from county road 2 between Victoria Camers & Ravenna. Eric Briggs was my passenger.

819e 2002-06-09/10 22:00-23:40 EDT Oriole driveway 6-5 12cm rr  
Star test on Arcturus  $\bar{c}$  &  $\bar{s}$  & Chromacorr Spherical aberration noticeably improved  $\bar{c}$  Chr., as is contrast. 250x + green filter. I'm now using the cell from the MVI filter as a spacer, and have put the filter in the cell Al sent me (which has no started female thread. I also tried splitting  $\bar{s}$  Lea &  $\bar{c}$  Rao  $\bar{c}$  &  $\bar{s}$  Chr. - clearer image & smaller diffraction pattern  $\bar{c}$  Chr.  
Double stars: in addition to these two, I split  $\beta$  Sco

and  $\gg$  Sco., in turn splitting  $\gg_2$  cleanly but not  $\gg_{in}$ . Also  
(0.19")  
couldn't split  $\mu$  Boo (0.8"). E Lyra really clean & easy  
 $\bar{z}$  8.8mm WWA (114x).

D50: M57 beautiful @ 114x. M81 visible, but not M82. Contrast  
seems better  $\bar{z}$  Chr. — again best @ 114x.

820d 2002-06-13 12:05-12:40 EDT Avonlea alt, school 3 13cm mc  
Sun: solar observing @ 62x with ~10 grade 9 students  
from Avonlea Alternative School. Teacher Adey is from  
Ibadan & studied at University there for 3 years. Earlier  
I gave a talk & slide show.

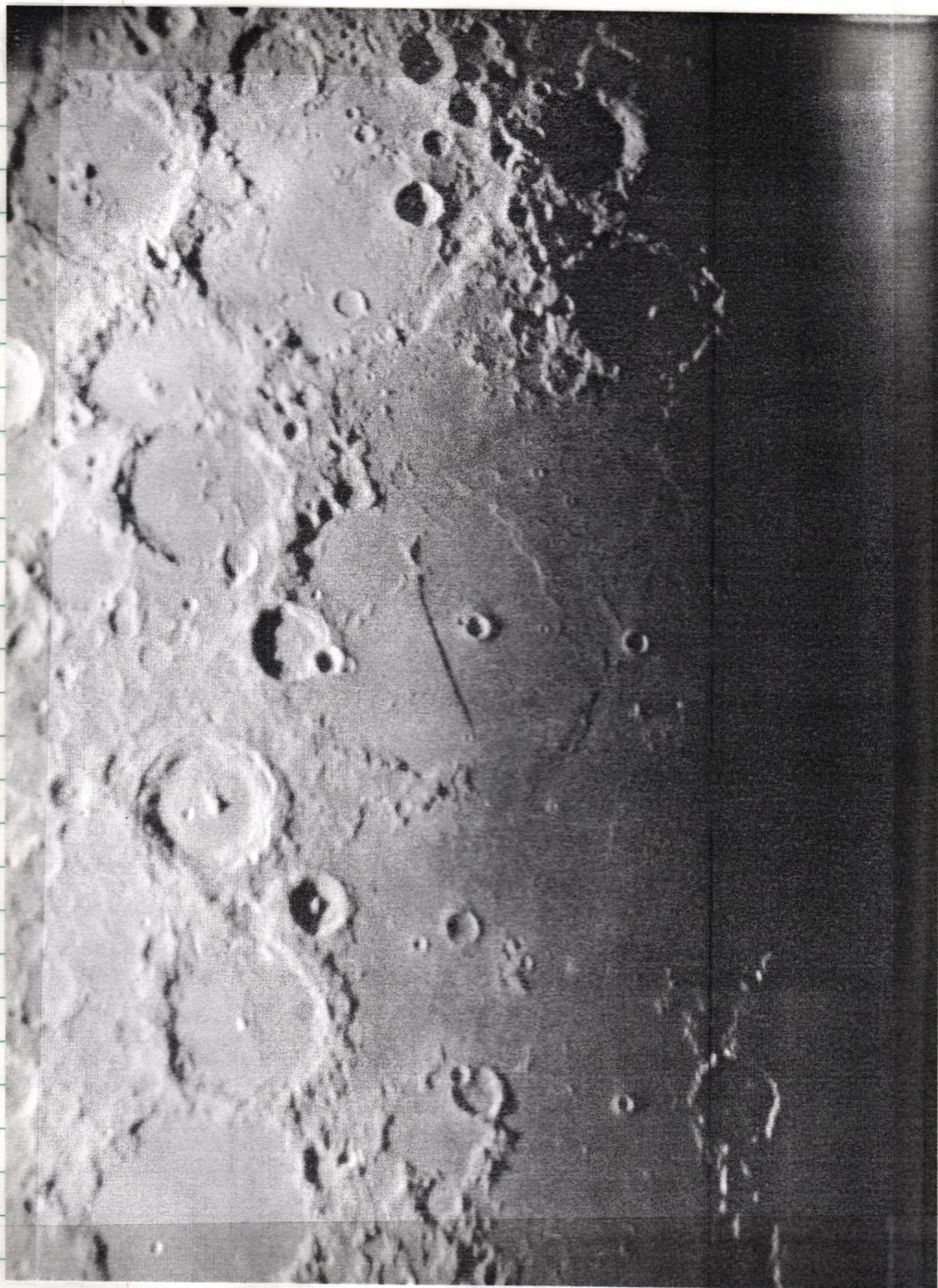
821e 2002-06-16/17 22:00-23:15 EDT Oriole Eyed 6-2 13cm mc  
Moon: Theophilus, Cyrillus, Catarrus, Descartes (? rille inside?)  
Aino ~~Hephaestus~~ Ariadneus, Posidonius, Hercules, Atlas 200x (10mm  
Antares Super Plossls in binoviewer  $\bar{z}$  Barlow).

~~10mm Antares~~  
E Baütte's: split @ 200x  $\bar{z}$  10mm  $\bar{z}$  bino

[~~the Sco~~] not split

Star test on Arcturus  $\Rightarrow$   $\sim 1/4$  waves s.a. 200x  
10mm Antares Super Plossls bought second one for bino  
yesterday — seem to work well — sharp & contrasty  
across field. Field  $\bar{z}$  bino  $\sim 33\%$  wider  $\Rightarrow$  of. l.  
 $\sim 2000$   $\mu$ m. Image seemed sharper in binoviewer than  
without — strange.

822e 2002-06-17/18 21:15-22:40 EDT Oriole N yard 6 28cm pl  
Moon: Just amazing @ 480x (10mm Antares Super Plossls). Could not see  
S:34 rina in Vallis Alpes. Ring Fresnel (Rina Valley in shadow), Rina  
Hyginus, Rina Arenhaeus, Rina Triesharder, Rina Appolzer, Rina



Photograph of the lunar surface showing numerous craters and a dark shadowed region on the right side.

Reumar, Hipparchus, Müller, "Catena Müller", Albatagnius, Klein, rubble floor of Blanchinus, classic terraces of Werner, Aliacens, LaCaille, Walter (sunrise), Heraclitus. Later sun rising over rim of Ptolemaeus casting striped shadows across the floor.  
Double stars: Antares @ 480x, & Lyra @ 480x (buddy fit in field).

M57 @ 196x in binoviewer!

10m Antares Super Plossls seem to work better in binoviewer than 12.5mm Pocomo orthoscopes: more comfortable & larger flatter field. Focusing very difficult @ 480x. At some point I'll need to upgrade focuser, perhaps to JMI DX-1, or add Moto Focus.

~~See~~

83e 2002-06-18/19 21:00-23:00 EDT Oriole S yard 5 28cm r1 Louise  
Si4-5 Moon: mostly @ 480x in binoviewer. Still could not see rima in Alpine Valley. Rima Plato, R. Fresnel, R. Hadley, R. Bradley, Flammarion, Herschel, Ptolemaeus, Albatagnius, Klein, Alphonsus, R. Alphonsus, Davy, Catena Davy, Arzachel, R. Arzachel, Purbach, Rupes Recta, Birt, R. Birt, Walter, Deslandres (Catena), Lexell, Orontius, Tycho; Sasserides + Sasserides At Pictor E all showed nicely pockmarked floors - debris from Tycho?; Street, Manginivus, Clavius (99% in shadow), Marctus, Curtius (rima in flow on F side?)  
Double stars of Virginis: very close @ 480x, & Bootes, & Lyrae  
Three nights in a row observing - AMAZING! As with 15cm, the most amazing thing on the Moon is texture - in this case the "flat" floors of walled plains resolve into karstification of tiny craterlets. Rilles seem etched in place.

824d 2002-06-20 14:50-15:10 EDT Oriole driveway 7 12 cm rr (Konus)  
Testing Konusuper 120; 120 mm f/8.3 achromat on EQ-3 mount &  
tubular steel tripod legs - otherwise standard Synta, except 17 mm  
Plossl instead of 25 mm (59x) plus 10 mm Plossl (100x)

Sun: Image is better  $\bar{c}$  TV 2" diagonal than 1.25" Synta. Chromatic  
aberration obvious in umbrae, which appear purplish. MV2  
cleans up a lot of the purple and adds a yellow-brown taw.  
Chromacor gives by far the best view: higher contrast, finer  
detail & almost complete absence of color. Umbra appears  
dead black, penumbra reddish brown. Mount seems to be  
about as steady as SVD (still on loan to MOST). Motor  
drives (included in package) work well, but I worry about  
unprotected connectors on PC boards. All in all, this seems  
to be a nice package, but needs star testing &  
side by side comparison  $\bar{c}$  Antares 120. Temperature  
around 29°C - tripod legs left ~~deep~~ holes in asphalt  
of driveway! Best views were  $\bar{c}$  8.8 mm UWA &  
Chroma corr (114x).

825e 2002-06-20/21 20:50-23:20 EDT Oriole NE yard 6 2x12 cm rr 28 cm rl  
Testing Konusuper 120

Moon: concentrated on comparisons between Konus 120 & Antares  
120,  $\bar{c}$  &  $\bar{s}$  Chromacor. Main test area was Hippalus Ring.  
Images  $\bar{s}$  Chromacor both had chromatic aberration with  
Konus being slightly worse. Resolution of lunar detail with  
both was excellent, even  $\bar{c}$  "stupid high" powers (500x  
4 mm Radian + Ultra Berlin). Adding Chromacor cleaned up  
the images in both, & increased contrast.

Star test: Vega.  $\bar{s}$  Chr. both showed haze/halo: blue in Antares,  
purple in Konus. Star test @ 500x  $\bar{c}$  green filter: Antares had

much clearer diffraction patterns, both showed bright outer ring inside focus & dark outer ring inside focus  
⇒ 1/4 wave under corrected. Both still show some undercorrection with Chr. in place.

Double stars: Elyrae: both scopes have around both pairs of Chromacors. Adding Chr. killed haze & cleaned up contrast. I tried to see which what was minimum mag each could resolve &

162x 6 m Radian both clearly separate

114x 8.8 m VWA both clearly separate

100x 10 m Antares Plossl getting difficult, better in Antares & Chromacor

80x 12.5 m Pacano ortho peanut shapes - just barely resolved  
in Chromacor & Antares

62x 16mm Super Plossl. not resolved

62x 16mm Nagler 2 not resolved

Deep sky: M57 - about equally clear @ 114x in both scopes.

Chromacor in Antares increased contrast. Central hole not visible (probably because of light from gibbous Moon).

In 28cm! @ 157x, central hole easily visible, & nebula bright against background (natch!)

Comparisons: optically, the Kows is excellent, close to Antares and I think better than 150mm f/8, as far as I can recall.

Certainly chromatic aberration much less obtrusive than in 150mm. Even in tubular legs, there is a lot of vibration in mount, making focusing difficult. Slow motion motor in dec has a lot of backlash, but RA ~~does~~ is much better, maybe because RA is direct drive while Dec is through nylon & brass spur gears (in clutch). I think EQ-3 is too light for scope in this torque, not as good as SVD.

Star images in & out of focus are ~~much~~ <sup>and tighter</sup> cleaner in Antares with more snap, but Konus does very well. Once again my reservations are mainly around the mount and tripod. I may try some experiments - mix & match of EQ3 & GPDX (pier, tripod, mount). I tightened bolts where legs attach to head, but these fittings are plastic (again!)

200206-25/26 21:00-22:40 EDT Oriole E yard 4 2x12 cm rr  
Continuing comparison of Konus & Antares. Because I noticed a lot of vibration in the Konus the other night, I did a "heart transplant": mounted GP-DX head on Konus tripod & Konus EQ3 head on 1/2 pier & GP-DX legs @ minimum extension.

Venus: much more vibration in Konus legs & GPDX than with GPDX legs & Konus head  $\Rightarrow$  legs are problem. Vibration packs improved both setups.

I switched back to Konus/Konus and GP DX/GPDX configuration. Without packs, damping time of Konus @ 200x = 10 seconds, with packs " " " " " " = 5 seconds

Vega: ~~was~~ obviously much cleaner in Antares

Elyrae: split cleanly in 10 m pliss supplied in Konus

Deep sky: couldn't see M57 with either scope, so packed it in.

Conclusions: Konus is a nice package, except that mount & tripod are weak for an OTA of this size & weight. Tubular steel tripod seemed sturdier than aluminum but still major source of vibrations (plastic fittings). Tripod tray is ridiculously small. OTA is an excellent performer. Better resolution than 142mm, but much lighter & more compact than 150mm with much less chromatic aberration. 6x30 fiber OK but 9x5a would be better. Odd eyepiece f.l. 17mm & 10mm (59x & 100x) - would prefer longer f.l. lower esp for wider field of

shorter short e.g. for more magnification, since scope can easily handle 250x

827e 2002-06-28/29 23:00-00:30 EDT Carheil 3-8 28cm r 10x50b

A lot of high haze & thin clouds hampered observing. Not a great sky, but good enough in patches.

M81 & 82: mottling visible in M82 @ 157x - M81 appears smooth

M101: dim large glow, no spiral structure

M5 & Comet Ikeya-Zhang in same low power field (63x)

I-Z is now quite dim, no sign of antitail that has been reported lately, even @ 157x M5 gorgeous, sparkling @ 230x

Plute visible in averted vision @ 157x & 230x

Back to M5 to hunt down faint galaxies near 110 Vir

\* NGC 5813: quite bright, near 2 field stars 63x & 157x 23:55

\* NGC 5838: elongated, bright 157x 00:00

\* NGC 5846: quite large & bright 157x 00:04

\* NGC 5858: equally large, but very dim 157x 00:04

\* NGC 5921: bright S-shaped 157x

Spent the rest of the evening "sight seeing"; M27, both halves of Veil Nebula (best in UltraBlack @ 63x),

M80 Then Moon rose & it became obvious how much cloud was in the sky.

828e 2002-06-30/07-01 22:15-00:25 EDT Carheil 8-3 (hazy) 28cm r 10x50b

Another hazy night, but better than last night, which was very smoggy. Comet Ikeya-Zhang: very faint, much harder to see than 2 nights ago, but transparency poor.

[NGC 6118] not visible @ 63x or 157x

\* NGC 6309 Box Nebula 157x starlike, tiny, needed UltraBlack to distinguish 23:23 EDT

\*? IC 4665 63x brilliant open cluster 00:100

⊙ [NGC 6426] not visible @ 63x or 157x

\* Collinder 350 coarse open cluster 63x 00:05  
Photo; seen in averted vision @ ~~157x~~ 23:33 230x

[NGC 6144] not visible, between M4 & Antares

Since it was obvious transparency would not allow observation of new objects, did some sight seeing: M ~~28~~ 11, M27, M57,

\* M51, [M10], M81, M82 NGC 3077 00:22 63x medium brights,  
forms isosceles triangle in M81 & M82, M10, M12

Very frustrating - like observing in the city: stars are visible but DSOs are not! Also, mosquitoes really ferocious

829e 2002-07-01/02 20:15-20:30 EDT Oriole driveway, 6 12cmrr (Kovs)  
E Lyrae split @ 190x } testing vibration on asphalt: again  
M57 59x, 100x easily visible } damping time halved in Celestron pads

830e 2002-07-02/03 22:00-00:00 EDT Mt. Albert Lion's Club 8 28cmrr 10x50ft  
E Lyrae M57, M27, M5, M4, M9 Bob Chapman & 3 other RASCals

\* NGC 6144 22:50 EDT 157x faint sprinkling of stars Sco

\* NGC 6426 23:12 EDT 157x faint glow with averted vision Oph

\* NGC 6356 23:30 EDT 63x quite bright, almost as bright as M9

\* NGC 6342 23:37 EDT 157x smaller & dimmer than 6356 & M9 "

Comet Ikeya-Zhang: very faint, just suspected in averted vision  
Equatorial platform came apart, possibly because it was at far end of travel.

831e 2002-07-04/05 21:30-23:30 EDT Oriole mid yard 7 11cmrr 28cmr 10x50ft  
I celebrated the 45th anniversary of first light with the 11cmrr  
by having a good long observing session; Venus, <sup>Vega</sup> E Lyrae, M57, Antares  
M27, M11, Coathanger, mostly in 24.5mm (42x), E Lyrae resolved

@ 173x, Star test shows clean rings outside focus & bright outer ring, & mush inside focus.  $\Rightarrow$  overcorrected s.a.  
Also testing new Tele Vue Bino Vue purchased yesterday from Khan. No vignetting, brighter image than LOMO binoviewer. Used it to observe M5, M11, M57, M27,  $\epsilon$  Lyrae, Albireo, Mizaf/Alcor, Polaris, M81, M82, M5. I observed ~~from~~ at 98x, 192x, 240x. Absolutely breath taking, sparkling with tiny stars, even in the city. Compare TV BV @ 240x & Loma @ 225x - comparable, but no vignetting in TV, & background seemed brighter (more light throughput). TV seems to be less straining to look through - more comfortable, easier to fuse images.

832e 2002-07-10/11 22:00-00:50 EDT Focus of the Credit 8-3 28cm r1  
Comet Ikeya-Zhang: Just barely visible & averted vision

@ 157x ~ 11 mag

Pluto: Seen with averted vision ~ 60% of the time - better

@ 157x than @ 230x

$\epsilon$  Lyrae: hard to split as mirror not stable 157x

M57, M27, M5, M8, M20, both halves of veil nebula, M9, M51, M81, M82, M-C 3077

833e 2002-07-12/13 21:00-23:30 EDT David Dunlap Observatory, 7 28cm r1  
Public viewing @ the DDO. Moon, Venus,  $\epsilon$  Lyrae, Albireo, M57, M27, M5, M11.

834e 2002-07-12/13 00:15-00:20 EDT Onole yard 7 ne  
Conditions were no worse, & perhaps a bit better in my back yard than @ the DDO!

835e 2002-07-14/15 21:05-22:20 EDT Oriole E yard 6-3 15 cm m n  
Moon: ~~to~~ mostly  $\approx$  BV @ 180x Sun rising over Pisdanius, just lighting features on floor. Rima G. Bond, Cauchy, Rupes Cauchy, Rima Cauchy (just visible), Messier, Messier A, Rima Gutenberg, Isidorus, Capella, Daguerre (bright spot near W rim), Fracastorius, Vallis Rhaita, Janssen, Rima Janssen  
Doubles  $\epsilon$  Lyrae - ~~easy~~ Just split @ 73x, wide @ 180x  
 $\beta$  Sco - easy @ 73x  
 $\gamma$  Sco -  $\gamma$ , bilobed @ 180x,  $\gamma_2$  clearly split  
M57 - best @ 73x  
Bino Vix I tried using Celestron Ultima Barlow instead of BV transfer lens - works a lot of in-travel, gives ~~too~~ too high magnification  $\approx$  12.5m @ 10m, about same as 10m ~~to~~ with just TV lens when used  $\approx$  24.5m

836e 2002-07-15/16 20:30-23:10 EDT Ont. Sci. Centre Slot 3-4 28cm m n l  
Moon: 230x & 276x Catherina, Cyrillus, Theophilus  
 $\epsilon$  Lyra, M57, Albirca,  $\beta$  Sco - M57 was very successful, bright enough in 28cm to be readily seen by most people @ 157x  
Public star party hosted by O.S.C. & RASC Toronto Centre

837e 2002-07-16/17 20:30-21:53 EDT Oriole S yard 5 28cm m n l  
Moon: Began a new project: observing all the features named in Rühl's Atlas. Used photocopies of "facing" pages as check lists. Completed charts 13, 23, 34, 45, 56, 66, 74. Chart 5 complete except for Rima Sheepshanks (not visible), & Nansen & Petermann (unfavourable libration), 117 objects in all. Hot & humid, & plagued by mosquitoes.  
40mm MK70 vignettes in Paracon, even  $\approx$  long barrel

838e 2002-07-17/18 21:18-22:28 EDT Oriole Syard 4-3 28cm r1  
Moon: Rikl charts 4, 12, 23, 33, 44, 55, 65, 73 240x bino vne  
Got most of major features, but high haze and very poor  
seeing prevented observation of most rilles. 127 features logged.  
Again really hot & humid, & buggy.

839e 2002-07-19/20 21:00-22:45 EDT Oriole obs, 5 28cm r1 8cm rr  
Moon: Rikl: charts 3, 4, 2, 10, 20, ~~23~~ 31, 42, 53, 63, 72. 240x  
bino. Seeing very poor, Moon very low, had to see small  
features. 86 features logged.  
Also testing Sky Mentor 80mm f/6 refractor. Colour is reasonable  
on Moon. Star test on Vega  $\Rightarrow$  pinched optics - will  
have to work on objective. Altazimuth mount is  
way too loose, very hard to use above  $\sim 40^\circ$  altitude  
 $\leftarrow$  Lyr <sup>just</sup> split @ 107x (9mm + Barlow), better @ 130x (7.4mm +  
Barlow). Also observed Moon @ 152x (6.3mm + Barlow) - very  
grainy. ~~After~~ After working on loosening objective, will need  
to mount on Vp swing or GPDX for testing.

840e 2002-07-30/31 22:00-00:40 EDT Corbeil 9 28cm r1 10x50b 15x70b ne  
Deep sky: [B64] - mostly 63x  
22:36 NGC 6287 GC  
22:37 NGC 6284 GC  
22:38 M19 GC (reobservation)  
22:39 NGC 6293 GC  
22:42 " 6355 GC very faint  
22:49 " 6401 GC faint  
22:52 " 6369 PN 157x (reobservation)  
23:00 " 6235 GC  
23:10 " 6316 GC

23:11 NGC 6304 GC oph.  
 23:32 M8 DN/OC (reobserved) UltraBlack Sgr  
 23:33 NGC 6526 DN UltraBlack (faint)  
 — M20 DN UltraBlack  
 — NGC 6960  
 — NGC 6992  
   " 6995 } Veil Nebula UltraBlack  
                   } reobserved  
IC 1340  
 23:52 M13 GC reobserved Hercules  
 23:52 NGC 6207 GAL [~~6196~~, 6197, 6194] Hercules  
 00:04 NGC 6544 GC  
 00:05 " 6553 GC  
 00:08 " 6568 OC  
 00:09 " 6583 GC  
 00:10 M22 GC reobserved  
 00:11 NGC 6642 GC  
 00:17 " 6629 PN 157x  
 00:18 " 6638 GC  
 00:19 M29 GC reobserved

Also observed M16 & M17 = UltraBlack — M17 particularly pretty.  
 M31, 32, 110. Binocular @ 98x: M13, M11. Also M27, M6, M7  
 Moon rose @ 00:18, but still too low to observe @ 00:40  
 (mirror flipping forward)

Dark Nebulae: I'm having a lot of trouble seeing these! I think  
 the ~~#13~~ 28cm r1 is too powerful, pulling in faint stars behind  
 nebulae. Probably 15x70b or 15cm mm will be better: wider  
 field of view & less light grasp. For now I'm taking the  
 30mnds off my list.

Meteors: Saw 3 bright meteors in Ophiuchus ~ 00:30 as I was  
 picking up. 2 were S-S-Aquarids & 1 a Perseid, all between mag 1 & 2

2002-08-01

Louise & I visited Brent Crater today. There is an observation tower on the ~~SE~~<sup>SE</sup> rim which looks across the central peak to the <sup>N</sup>W rim. We could see a little bit of Tecumseh lake on the E half of the floor. Gilmore lake, on the W half, is hidden by the central peak. The lay of the land reminded me of the way the lunar terrain looked to the astronauts. The crater is 4 km in diameter, filled w/ sedimentary deposits. It's thought to have been created by a 150 m meteoroid 450,000,000 years ago, a 250 megaton explosion.

8gle 2002-08-02/03 22:00-00:40 EDT Corbett 9 28cm r1 70x50 b ne

Deep sky: started @ 22m/63x

22:19 NGC 6830 Starhop from M27

OC Vul

22:22 NGC 6823 " " " [6820 = Ultrablack]

OC Vul

Showered Louise & Patrick Schijns various DSOs M27, M8, M11, M22, Abell

M31 (M32 & 110 in same f.o.v. @ 63x ~~but~~ but right on edge)

23:03 NGC 6528

} nice pair of small globules

GC Sgr

23:03 NGC 6522

GC Sgr

23:06 NGC 6540

GC Sgr

23:08 NGC 6520

reobserved

OC Sgr

23:08 B 86

my first dark nebula! "Ink Spot"

DN Sgr

23:10 E456-Sc38

very large & faint globules, though faint <sup>stars</sup>

GC Sgr

23:12 B90

my second dark nebula!

DN Sgr

23:16 NGC 6569

GC Sgr

23:18 NGC 6624

GC Sgr

Switched to 16mm because 22mm dived up 86x

8118

23:26 NGC 6118

very faint, but visible @ direct vision

GXY Ser

23:43 NGC 6517

GC Oph

23:44 NGC 6539

GC Ser



«»

inside outside in focus

NGC 664

23:49 NGC 664 bright OC ~~M26~~ M26 OC Sct

23:59 NGC 6751 157x UltraBlack nice little planetary PN Aq1

00:06 B93 In M24 30x (40m  $\bar{3}$  paracorr) DN Sgr

00:06 B92 In M24 30x ( " " " ) DN Sgr

00:11 NGC 6603 faint sprinkling of mag stars in M24 137x\* OC Sgr

00:17 NGC 6645 At the W end of a string of stars 30x OC Sgr

M24 was wonderful @ 30x - dark nebulae became easy.

\* 8.8m  $\bar{3}$  paracorr

→ IC 4703 emission nebula visible @ 22mm ~~63~~

Examined M8, M20, M16, M17 @ 22mm & ~~D~~ UltraBlack  
End of evening @ M33 @ 63x - no real spiral structure seen.

Meteors: ~~see~~ ~ 8 bright meteors seen, mostly S & Aquarids,  
some sporadics, mag 2 to mag 0.

I measured my eye's pupil @ 5mm using metric Allen keys.

542e

2002-08-05/06 21:45-22:45 EDT Oriole N yard 5 8cmrr 10x50b

Testing ~~to~~ Sky Mentor 80mm f/6 refractor. Remounted on  
GP-DX as altazimuth mount won't hold position in altitude

Earlier I disassembled objective cell because of  
anomalous diffraction pattern noted last time - was surprised  
to find objective is a cemented doublet, not air spaced  
Star test on Altair, green filter & 4mm Radian (150x).

diffraction pattern looks normal inside focus, but has a  
bi-label & diffuse appearance outside focus. In focus,  
rings are all on one side of Airy disk.

DSOs: M8: almost no nebulosity visible - better in 10x50b!

M11 very faint, M27 quite nice @ 24x, 6 Lyra clearly  
split @ 120x Albireo pretty @ 24x Overall impression is  
that everything looks dim.

120x (4m Radius)

B43m

2002-08-05/06 04:40-05:40 EDT Oriole NW<sup>yard</sup> 6 8cmrr 12cmrr 10x50b  
Saturn: 8cmrr ~~120x~~ no sign of Cassini division, image is smeared  
12cmrr 250x binaj; absolutely exquisite. No false colors,  
dish yellowish, belt & cap greenish, Cassini easy all  
around. Without Chromacor, contrast slightly degraded, e.g.  
no band on globe, image doesn't snap into focus quite as  
well, out of focus image is purple-blue. With  
Chromacor, everything is tighter & more contrasty, out of  
focus image is yellowish beige, just as in focus. Detail  
of belt & cap on globe jumps out, Cassini's division is  
etched. Just beautiful, especially @ 10m in bino vne (200x)

M45 viewed in 80cmrr @ ~~22x (40m)~~ 15x (40m) & 12x (40m)  
& 22x (22m ~~Nagler~~) - better @ 22x.

[Comet 2002 06] - ~~not seen~~ I thought I saw it in 10x50b  
but could not see it in 80m because sky brightening  
with dawn.

B44e

2002-08-08/09 22:00-00:30 EDT Starfest 9 28cmr1 10x50b 15x70b vne

DSO: 63x mostly

22:07 M45 reobserved 6522, 6528, 6540, 6520, B86 Sgr OC

22:13 B111 ~~10x50b~~

Set DN

22:20 NGC 6704

Set OC

Comet Hoenig 22:40 diffuse glow, no sign of tail or  
nucleus - slightly oval or elongated, in Cygnus

DSO: ~~63x~~

23:19 NGC 6760

GC Aq1

23:30 NGC 6741 276x tiny, bright

PN Aq1

23:40 NGC 6755 nice pair of OCs ~~reobserve?~~

OC Aq1

23:40 NGC 6756 " " " "

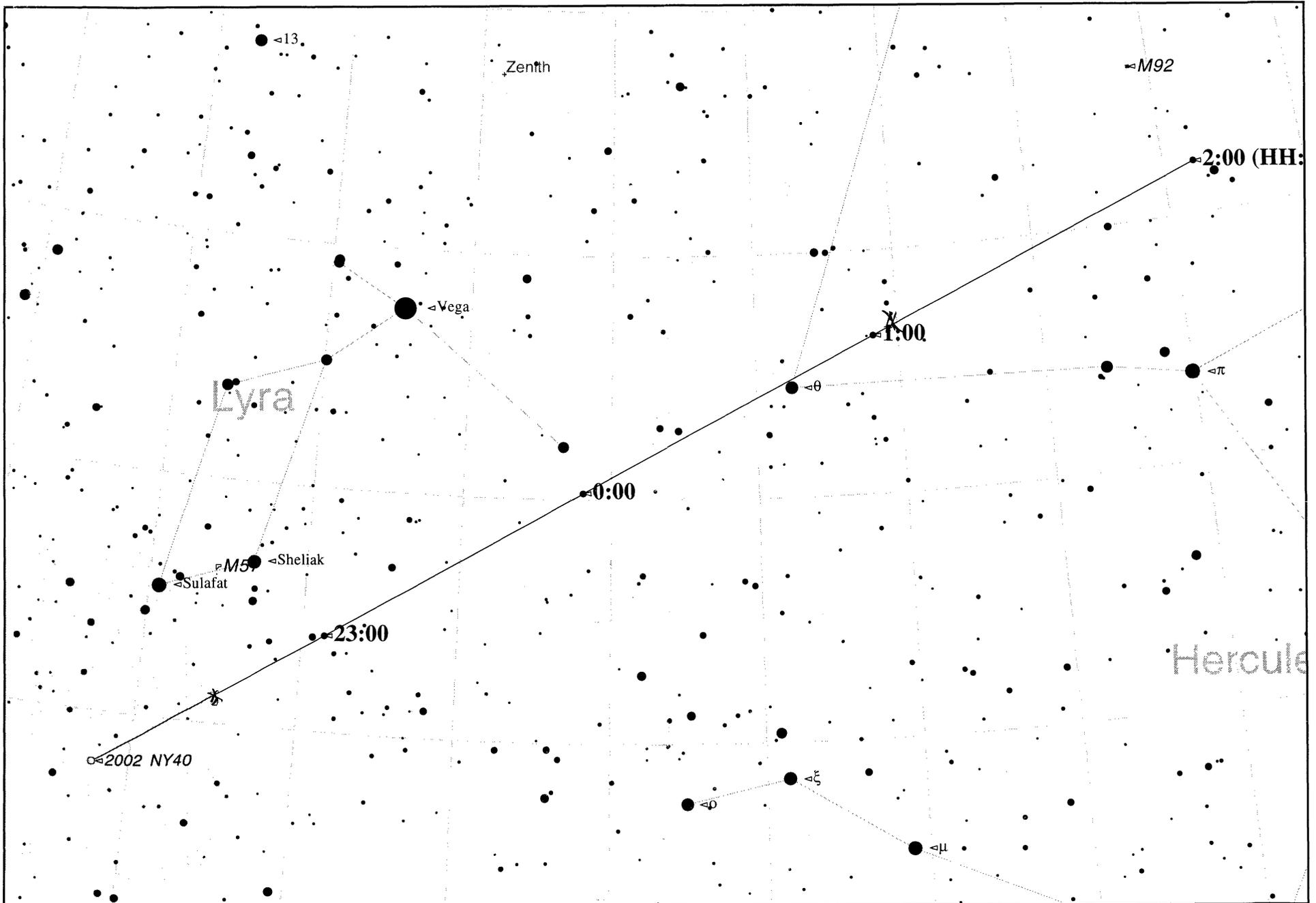
OC Aq1

23:47 B142+143 near X Aq1 10x50b

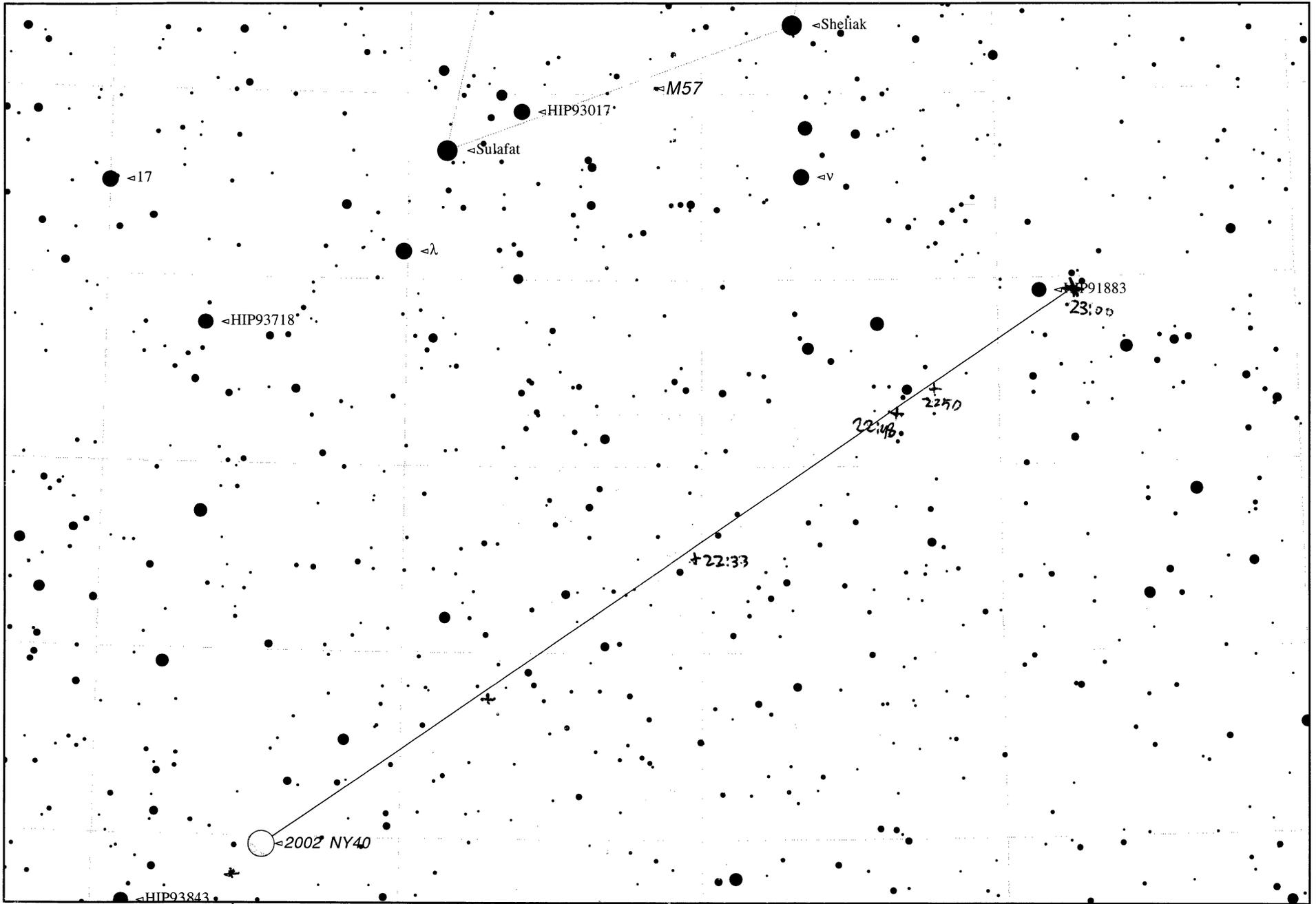
DN Aq1

00:02 NGC 6891 157x UltraBlack PN Aq1  
 00:12 NGC 6934 nice & bright, grainy @ ~~157x~~ 230x GC Del  
 Ended with another look @ Comet Hoenic. I also observed a  
 number of objects in BinoVue @ 98x: M13 & NGC galaxy, M8, M22.  
 Also observed M31, 32, 110 in UltraBlack - all very bright,  
 some mottling in M31. Without UltraBlack, I could  
 see two dark bands in M31. M31, & M33, etc. in  
 15x70b.

245a 2002-08-09/10 22:00-00:45 EDT StarFast 9 28 cm r1 10x50b  
DSO: 63x mostly  
 22:16 NGC 6910 Y shaped OC Cyg  
 22:18 ~~NGC~~ IC 1311 sparse OC Cyg  
 22:26 NGC 6866 small & rich OC Cyg  
 22:34 NGC 6882 rich OC Vul  
 22:37 NGC 6885 faint five stars 157x OC Vul  
 22:48 NGC 6905 157x miniature ring nebula better PN Del  
     5 UltraBlack  
 22:59 NGC 6979 much fainter than main parts DN Cyg  
     of Veil Neb. UltraBlack  
 23:18 NGC 7044 157x very faint, very sparse OC Cyg.  
     M39  
 23:24 NGC 7082 OC Cyg  
 23:30 NGC 7062 small & rich OC Cyg  
 23:48 NGC 6229 small & bright GC Her  
 23:57 NGC 7217 small & bright Gal Peg  
 00:07 NGC 7332 thin streak Gal Peg  
 00:08 NGC 7339 faint, oval, averted vision Gal Peg  
 00:12 NGC 7331 reobs bright & easy Gal Peg  
 00:14 [Stephan's Quintet] - hint of one galaxy Gal Peg



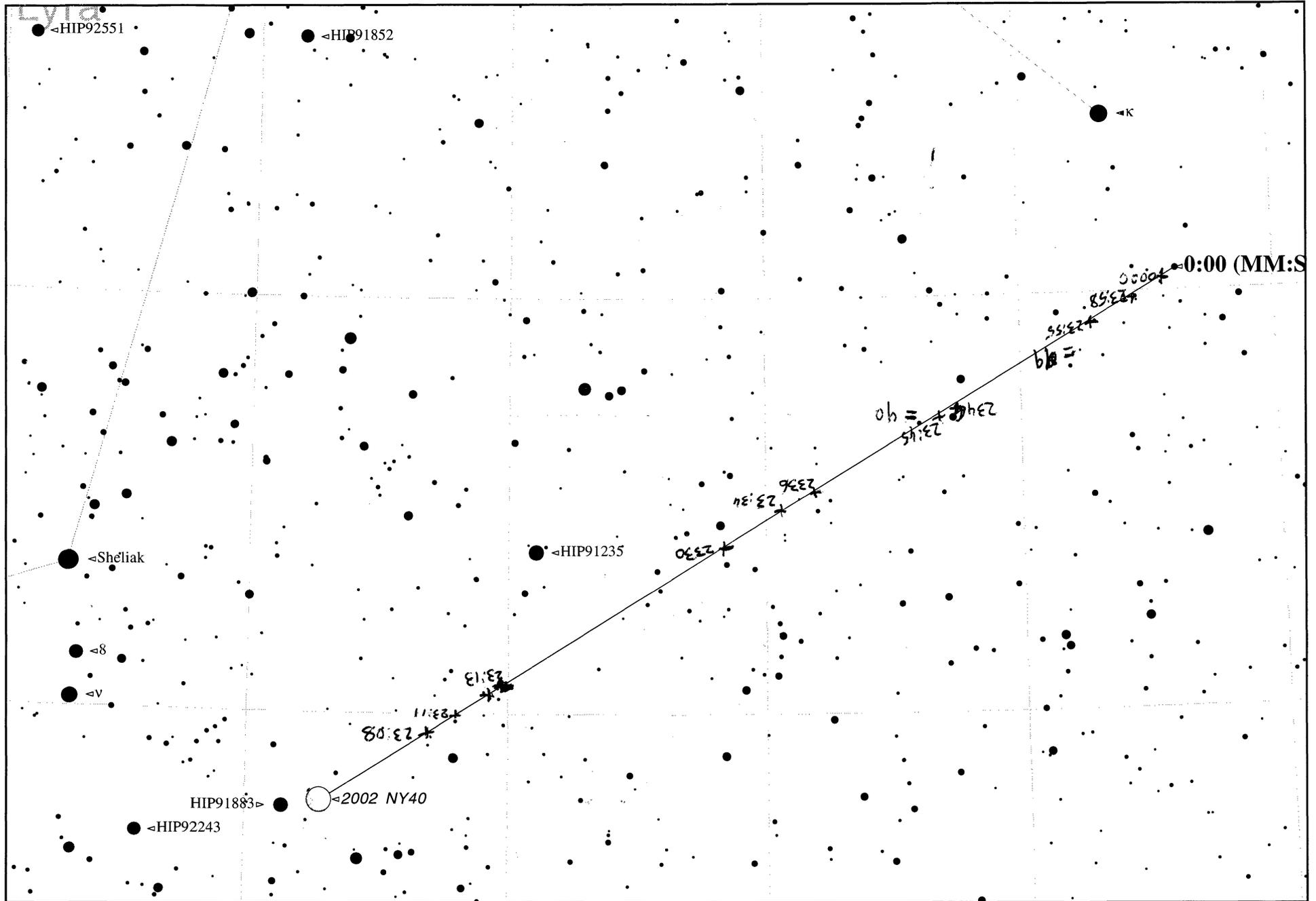
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 2002/8/18 02:00:00 UT (UT)  
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 Limiting Magnitude: 7.8



Viewing from Toronto, Canada  
 2002/8/17 22:00:00 pp (Local)  
 2002/8/18 02:00:00 UT (UT)  
 FOV: 7.0°  
 Limiting Magnitude: 10.3

22:00  
 22:17  
 equinox @ 22:00 63x

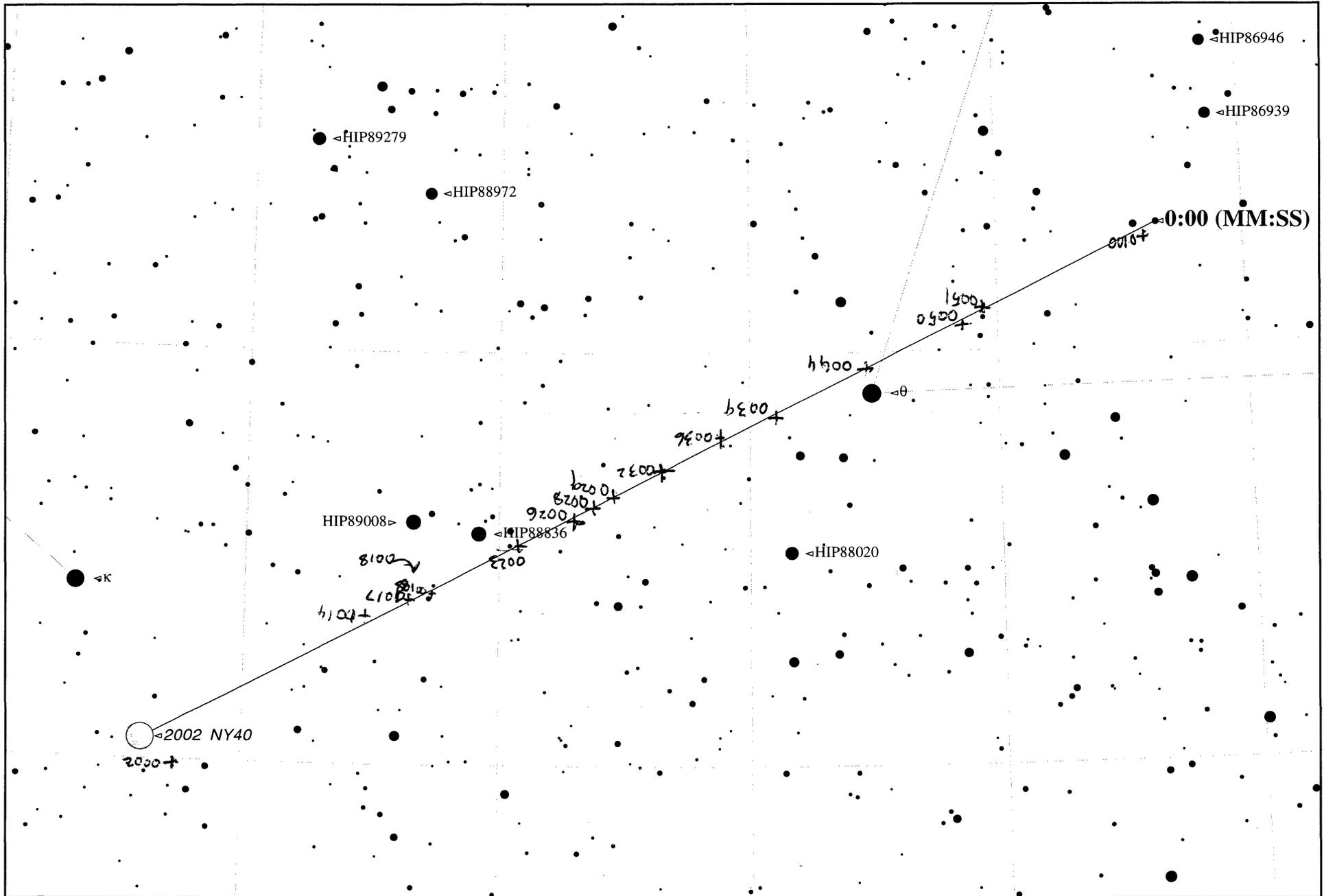
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23:00

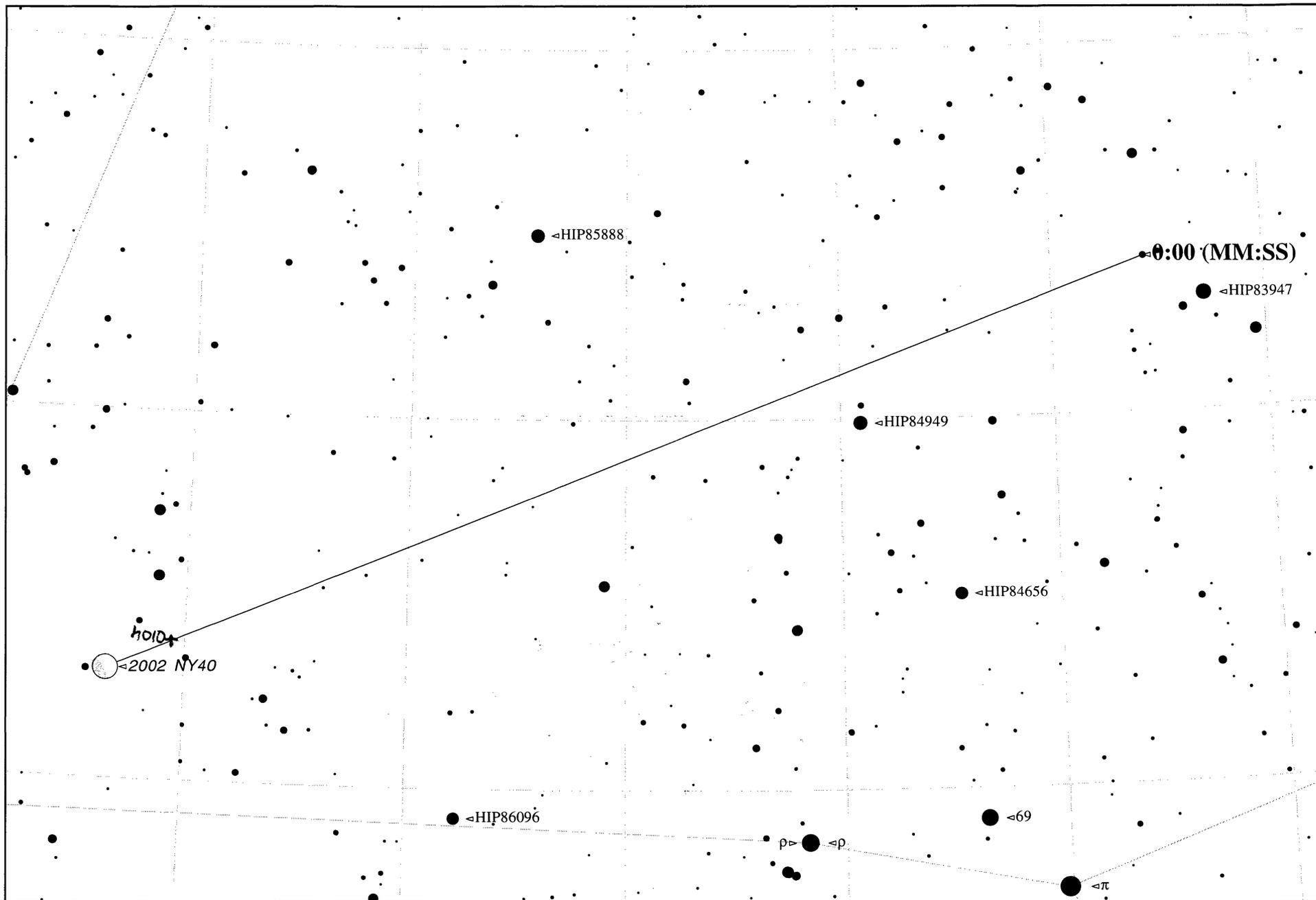
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Viewing from Toronto, Canada  
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 2002/8/18 04:00:00 UT (UT)  
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 Limiting Magnitude: 10.1

01:00

00:00



Viewing from Toronto, Canada  
 2002/8/18 01:00:00 pp (Local)  
 2002/8/18 05:00:00 UT (UT)  
 FOV: 8.8°  
 Limiting Magnitude: 9.9

02:00

01:00

00:29 7006 157x small & faint G11A Del  
 00:39 7479 large, diffuse & faint Gal Peg  
 00:44 7448 small & faint Gal Peg

846e 2002-08-10/11 22:00-00:30 EDT Starfest & ne Klaus Brasch  
 "Social astronomy"! Many meteors.

847e 2002-08-12/13 20:30-23:00 EDT OSC Sparking lot 4-0 28cm r1  
 RASC/OSC Star Party: Moon &  $\epsilon$  Lyrae. Over 1000 visitors,  
 I had the longest line, 75 feet long.

848e 2002-08-17/18 21:00-01:10 EDT Orr Lake, ON 2-8 28cm r1  
Moon: 157x M57: 63x  
Asteroid 2002 NY40: tracked for 3 hr 5 min across Lyra & Hercules,  
 mostly @ 63x. Made many timings of ~~position~~ position. NEA  
M31, 32, 110 63x

849e 2002-08-18/19 20:30-20:55 EDT Oriole Observatory 6 28cm r1  
Moon: mainly to test pair of Tele Vue 8mm Plössls which  
 I bought yesterday at Perceptor, in Bino Vue. Images  
 merge just fine & eye relief is actually slightly longer  
 than for Antares 10mm Plössls. Seeing was very poor,  
 Sun just hitting the outer wall of Cassendi, Four  
 domes noted between Copernicus & terminator.

850d 2002-08-20 10:20-10:30 EDT Oriole driveway 7 12cm r1 ne  
Sun: Huge sunspot with many complex features surrounding it.  
 41x & 114x (best) - image breaks down @ 167x. Easily visible  
 $\bar{\epsilon}$  n.e.

851m 2002-08-20/21 04:00-04:45 EDT Oriole W yard 3-5 28cmx1

Saturn: Bino Vuc @ 192x, 240 + 300x. Very poor seeing 0-1, despite BSK predictions. Star wages boiling, Saturn tearing. Identified Titan, Rhea, Iapetus, Tethys, & Dione. 12.5m have less eye relief than either 10m or 8m - eyelashes brushing against housing.

852m 2002-08-27/28 03:05-05:10 EDT Oriole N yard 7 15cmxn

Moon: 225x bino vuc

Saturn: best @ 225x, tried stupid high powers 360x not bad, 450x too high!

DSO

88 04:21 Cr 70 22x Belt of Orion - just fits in 3<sup>rd</sup> field - many faint stars 88th "new" object for 2002 - personal best!

89 04:24 Cr 69 22x  $\lambda$  Orionis cluster - sparse (~8 stars) but very bright

M42 - only 4 stars in Trapezium @ 225x bino ~~in~~ M45 in 4cm  
Rigel - flashing bright - companion widely separated @ 225x

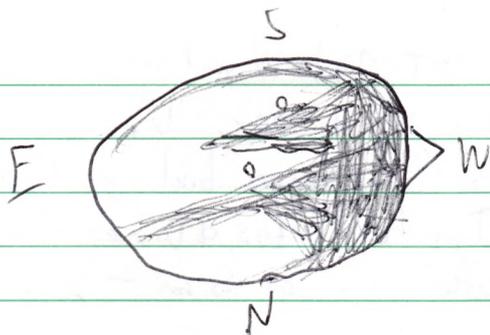
853m 2002-08-29/30 04:30-06:15 EDT Oriole N yard ~~7~~ 6 28cmx1

Moon: 240x & 300x bino; 4 craterlets in Plato, Walter sunset ray (cont. below)

Saturn: 300x crepe ring visible

Trapezium: 300x E & F flashing in start  $\bar{c}$  seeing

Moon (cont.) at least 40 craters & craterlets inside Clavius, Archimedes rilles well placed. Rilles in Pitatus. Straight Wall Face illuminated, Rima Birt. Ukert looks like mouth of Muppet. Stadiums & catam to NW, Deslamps looks like a vast rubble field. Crater near W rim of Walter casts jagged shadows 2/3 of way across to peak "crown"



Alt = ~~20~~ 19.7°

854m 2002-08-30/31 04:40-06:20 EDT Oriole W yard 6 28cm r1  
Moon: 240x & 300x bino Plato: shadow of peak on W rim cast  
right across floor, passing just N of central craterlet. Secondary  
peak to N casting another long shadow, just ~~N of~~ N of S  
craterlet. Both craterlets very strongly marked, esp. S one.  
N double crater covered by shadow of main peak.  
Crater N of Clavius: (#72) Scheiner, Blancanus, Klaproth,  
Casatus, Garricus filled & shadow, Wurzelbauer  
Looks like a baked piecrust!

Saturn 240x

Jupiter: first observations of 2002-2003 apparition

05:53 Obs. cam 240x S: 0-1

SEB & NEB about equal in intensity. It looks as  
if NEB has faded, more orange than red, and  
SEB has become darker. Both NEB & SEB are  
broad, NTB visible as thin line. RS appears  
to be just coming around f limb. There seem  
to be a couple of barges in the NEB, but  
seeing too poor to time transits.

06:19 obs disc. Seeing deteriorating, sky getting light.

855e 2002-09-03/04 21:00-00:00 EDT Forks of the Creek 8 28cm r1 lxxx<sup>b</sup>  
RASC deep sky whsp: John Bohdenpawite & 3 others  
Comet Hoenig 63x & 157x - looks like elliptical galaxy

Deep sky 63x

q0 21:35 NGC 6834 ~~is~~ "reverse dipper" in front of faint stars OC Cyg

q1 22:01 NGC 7008 strange shape, bilobed, off centre double in foreground PN Cyg  
~~22:01~~ 157x UB

q2 22:27 NGC 7160 about 6 bright stars plus 6 dim ones OC Cap

q3 22:44 NGC 7086 large number of faint stars OC Cyg

94 23:02 NGC 7127 small faint cluster with a few bright stars OC Cyg  
 95 23:05 NGC 7128 small circle of stars 157x OC Cyg  
 Also M31, M32, M110, Double Cluster, M34, & And  
Uranus best @ 276x small blue-green disk

856e 2002-09-07/08 21:00 - 02:00 EDT Mew Lake 8 28cm r1 10x50 b 15x70 b  
 Comet Hoernig, <sup>63x</sup>Uranus, Neptune (276x) - bright Aurora all night,  
~~DS~~  $\bar{c}$  arcs down to Sagittarius & Capricornus - rapid moving  
 flashes. DSO Because of aurora & public viewing, I concentrated  
 on open clusters: 63x except where noted

- ✓ 23:05 IC 1396 large & sparse OC (nobusby, not seen) 10x50 b OC Cep
- ✓ 23:22 NGC 7790 large  $\bar{c}$  a few faint stars OC Cas
- 23:24 7788 OC Cas
- ✓ 23:33 136 very faint scattering OC Cas
- ✓ 23:36 225 16 stars equally bright OC Cas
- ✓ 23:39 381 Arrow shaped OC Cas
- ✓ 23:43 436 8-10 medium stars OC Cas
- ✓ 23:47 659 Small, few bright stars OC Cas
- ✓ 23:50 654 Small but rich OC Cas
- ✓ 00:40 559 Small scattering of faint stars OC Cas
- ✓ 00:37 637 Irregular, bright OC Cas
- 00:49 Stock 2 Huge sparse collection OC Cas
- 00:51 Mrk 6 OC Cas
- ✓ 00:52 IC 1805/Mel 15 Sparse OC Cas
- 110 ✓ 00:54 ~~Stock 2~~ NGC 1027 Sparse OC Cas

857e 2002-09-16/17 19:50-21:15 EDT Oriole N yard 3-4 2x 20cm r1  
Testing Korus 20cm f/5 Newtonian & comparing to 20cm Cave.  
I started by mounting the Cave on the GPDX using the  
extra 10lb weight & the 2 stacked 8.2 pound weights, which  
were a little on the light side. The mount was reasonably  
steady; Celestron vibration gals under the feet, at least  
as good as the old Coast master mount. I made an adapter  
from aluminum channel stock to mate the Cave rotating  
rings to ~~the~~ a Vixen dovetail plate. I think the GPDX  
will serve for the rare occasions when I use the Cave,  
so I may sell the Losmady G-11. After observing the  
Moon for a while with the Cave I removed it, moved the  
mount from the N yard to the "observatory" pad, and  
mounted the Korus 20cm f/5 on it. I continued observing  
the Moon, which showed less detail & contrast, though  
this may have been due to passing clouds. I then  
did a star test on Altair  $\Rightarrow$  seriously overcorrected  
spherical aberration (bright outer ring outside focus).  $\leftarrow$   
Lyra split @ 125x, but not clearly. Finally, switched back  
to Cave to further study Moon: dome field W of Capricorn  
well placed: Heracles & Mitichius dunes look just like  
they did in a drawing I made in 1959! Capricorn dunes  
also visible. So far Korus (= Synta) seems much  
poorer optically than ~~Green~~ Sky Master (Evan Shang)  
20cm f/4. Air was quite turbulent, and thin banks  
of cirrus covered Moon from time to time  $\rightarrow$  altitude  
only  $\approx 22^\circ$ .

858e 2002-09-17/18 20:20-21:43 EDT Oriole Nycad 5-3 12 cm r\*

Moon: spent over an hour with the Antares refractor, Coronacor and Bino Vixen mostly @ 8 mm Plössls = 250x. The image at high powers is completely color free, "reflector-like". The only color was noticeable @ 24.5 mm in Bino Vixen (82x) where limb has green fringe all around (similar effect seen on Sun). No yellow highlights, no purple or blue shadows. I wish it were possible to compare 12 cm r side-by-side @ 15 cm m, but can't do that until I get the SVD mount back from MAST project.

Gassendi well placed, "doughnut" visible. The texture on the floor of J. Herschel is well shown tonight, looking like a massive rubble heap. Proclus makes a brilliant ring on the edge of the Mare Crisium. Rim of Theophilus also shows very bright at this phase.

Darbles @ Lyra - well split @ 167x (6 mm Radian)

Fried stupid high powers @ 2x Ultima Barlow @ 6 mm (333x) 5 mm (400x) @ 4 mm (500x) on Moon - image held up well, but lots of flares & spots from dust & oil on eye lenses. Radians very sensitive to dirt on eye lens. This was mostly a night of relaxed lunar sight seeing @ no agenda - enjoying good refractor - seeing was very poor at first, but improved. Although observing @ a refractor is next, with a real 19th century feel, I'm really a reflector guy. Viewing @ a digger is a pain!

859 m 2002-09-18/19 03:35-05:18 EDT Oriole N & NW yard 4 28cm r1

Saturni occultation of 10th mag. star by rings.

03:35 300x binoc star not visible, very muggy & hazy

03:53 345x (4m Rediant Procor) → best contrast. Can now see  
Tethys & Dione, glimpses of Enceladus & star, Encke  
Minima visible in both ansae. S: 7-8

04:03 Switched to 300x binoc. Seeing very steady 7-8. Star  
glimpsed ~ 4:00 as brightening on edge of A ring

Motor drive failed, possibly due to high humidity (98%  
@ 20°C)

Jupiter

04:58 Obs cam 240x binoc, 300x binoc

05:18 Obs. disc very faded, no traceable detail visible.

860e 2002-09-21/22 20:00-22:25 EDT Oriole NW yard 5 15cm mm 10x50b

Nova Sagittarius 02#3 1855-22

5 N Sgr 20:20 EDT mag. 5.9 comp 59 61 chart s/b/02 10x50b

Variables

6 T Cas 21:50 EDT mag. 8.3 comp 82 86 chart s/b/94 41x ~~15cm mm~~

7 R And 22:11 EDT mag < 11.0 comp. 110 chart s/d/99 ~~102x~~ 15cm mm

861e 2002-09-23/24 20:00-20:20 EDT Oriole Obs. 4-2 10x50b

Nova Sagittarius 02#3

20:10 EDT mag. 6.3 comp 59 61 69 PB2002 observed between  
passing clouds.

→ 21:20-22:50 EDT Oriole NW yard 5 28cm r1 10x50b

ISS transit of Moon predicted by Kevin Filler on RASCALS list  
for 21:35:40 EDT. Observed @ 63x from 21:32-21:45 but  
saw no ISS, just lots of birds. Moon very low ~ 11°

## Variable stars

TCAS 22:04 EDT 8.5 mag Comp: 82 86 D63x279

R AND 22:15 EDT 11.4 mag Comp: 110 116 118 D 157x279

T CEP 22:35 EDT 6.6 mag Comp 65 67 A 10x50b

862e 2002-09-24/25 20:00-22:20 EDT Oriole obs. 7 15 cm mm 10x50b  
Neva Sgr 02#3 6.6 mag  $\bar{c}$  10x50b 20:15 Could not see object  
Eric Briggs imaged last night.

## Variable stars

V Cyg 20:30 7.2 mag 7172 SA1997 10x50b

SS Cyg 21:10 <12.3 mag 118 123 SD1993 15 cm mm 102x

R Vul 21:55 9.4 94 97 88 SB1956 15 cm 102x

T Cep 22:15 6.5 65 67 SA1997 10x50b

863e 2002-09-25/26 20:40-22:50 EDT Oriole N York 3-6 28 cm ~~mm~~ 10x50b  
Clouds earlier prevented observing Neva Sgr #3

## Variable stars all $\bar{c}$ 28 cm r1

SS Cyg 20:45 EDT 12.3 mag 123 118 SD1993 230x

R And 21:10 EDT 11.2 mag 110 116 118 SD1999 157x

R Vul 21:35 9.4 88 94 97 SB1956 63x

R Peg 22:20 11.1 109 116 SD1986 157x

RX And 22:45 <12.8 121 128 PE1996 157x Moon

864d 2002-09-28 10:00-14:00 EDT Boythorn PS. Thornhill, 7 15 cm mm  
Sun, Solar observing at school "fun fair" 56x Probably  
several hundred viewers. Learned not to use Mak-Nap  
for these events, as solar filter is way too accessible  
to little fingers. Will use 12 cm r1 in future!

865a 2002-09-28/29 20:00-22:05 EDT Oriole N yard 6 15x70b 10x50b 28cm r

Variable stars

V4743 Sgr 20:10 EDT 7.4m 69 78 PB2002 15x70b (Main 02#3)

S Cep 20:25 4.2m 36 42 SA1997 10x50b

M Cep 20:32 4.9m 36 42 SA1997 10x50b

SS Cyg 21:00 12.0m 118 123 SD1993 157x28cm r

V Cas 21:13 11.0m 109 112 SD1994 63x 28cm r

X And 21:32 12.9m 120 125 129 SD1992 157x28cm

RX And 21:50 < 12.7m 127 121 SD1993 157x28cm

R Peg 22:04 10.9 109 113 SB1986 63x28cm

May have misidentified field for V Cyg the other night.

866e 2002-10-03/04 20:00-20:30 EDT Oriole N yard 5-2 15x70b 28cm r

Variables

V CYG 20:20 EDT 8.6m comp 78 92 SD1993 28cm 63x passing clark

V4743 SGR 20:25 < 7.8 78 PB2002 15x70b

Confirmed that I misidentified field on ~~09-24/25~~ observation of V CYG, and that observation should be thrown out. What happened was that I was observing at too low a power (10x50b) and didn't separate V from 78 comp star, reporting their combined light as 7.2m.

867e 2002-10-05/06 19:35-22:20 EDT Oriole N yard 3-6 10x50b 28cm r

Variables:

V4743 19:45 8.6m B 78 88 PB2002 Twilight 28cm 63x

SS CYG 20:00 8.4m V 80 85 SD1993 Passing clark 28 63

R VUL 20:15 8.9m 88 94 97 SD1956 28 63

TCAS 20:32 8.7m 86 90 SB1994 28 63

T CEP 20:47 6.8m 67 71 SB1994 28 63

R AND 21:18 9.7m 95 97 98 SD1999 28 63

1:10	obs cam	01:13
1:14	clouds & shadows	01:17
1:18	transit	01:21
1:20	clear	01:23

RX, AND 21:33 11.1 109 113 SD 1996 28cm 157x  
 R AQR 02:00 8.2 76 81 82 SB 1965 28 63  
 S PER 02:15 11.4 113 118 SD 1952 28 157

868d 2002-10-07 ~~at~~ 13:10-13:25 EDT Oriole driveway, 3-0-3 15cm mm  
 Transit of TRS satellite across Sun predicted by Kevin Fetter  
 @ 13:13 Obs. comm 56x large n.e. sunspot on rim plus 4 other  
 groups  
 13:17 Clouds over sun - shower began  
 13:21 Predicted time of transit  
 13:23 Clouds passed, obs. discontinued

869e 2002-10-07/08 19:50-22:25 EDT Oriole N yard 6-2-6 28cm v1 10x50b

Obs #	Name	Date	Time	Magnitude	Comment Codes	Comp 1	Comp 2	Comp 3	Charts	Com Expl
1	V4743 <del>SR</del>	2002-10-07	<del>23:53</del> 19:53	8.8		88			PB 2002	
2	R SGT	2002-10-08	00:12	6.3		61	63	67	SA 1986	
3	R DRA	"	00:40	12.7		125	127		SD 1933	
4	SS CYG		00:53	8.4		80	85		SB 1993	
5	V CAS		01:02	10.5		103	105	109	SB 1994	
6	RX AND		01:33	12.0		118	121		SD 1993	
7	X AND		01:55	13.1		125	129	134	SE 1938	
8	R PEG		02:10	10.0		98	101		SB 1986	
9	V CYG		02:20	7.9		78	84		SB 1997	

870e 2002-10-10/11 19:00-21:00 EDT Keele St P.S. 0 28cm v1  
 Star party at Keele St Public School (Keele/Bloor): E Lyra

Obs #	Name	Date	Time	Magnitude	Comment Codes	Comp 1	Comp 2	Comp 3	Charts	Comments Explained	Qty	Aperture	Mag
1	V4743 SGR	2002-10-07	<del>23:53</del> 19:53	8.8		88			PB 2002		6	28cm	63x
2	R S.CT	2002-10-08	09:12	6.3		61	63	67	SA 1986		6	6cm	10x
3	R DRA	"	00:40	12.7		125	127		SD 1933		6	28cm	157x
4	SS CYG		00:53	8.4		80	85		SB 1993		6	28cm	63x
5	V CAS		01:02	10.5		103	105	109	SB 1994		6	28cm	63x
6	RX AND		01:33	12.0		118	121		SD 1993		6	28cm	147x
7	X AND		01:55	13.1		125	129	134	SE 1938		6	28	157x
8	R PEG		02:10	10.0		98	101		SB 1986		6	28	63
9	V CYG		02:20	7.9		78	84		SB 1997		6	28	63

871 n 2002-10-30/31 01:45-03:20 EST Oriole S yard 4-3 28cmr  
First hour was a write-off because mirror hadn't reached ambient temperature. #  
Jupiter 240x & 300x bino Red Spot out of view by time image stabilized.  
Saturn 240x & 300x Endke's minima cleared in f ansae.  
Crepes Ring?  
Moon: Sunset over Gassendi & Sinus Iridum.  
Clouds moved in, looking like aurora.

872 e 2002-10-01/02 21:00-22:20 EST Oriole N yard 6-0 28cmr  
Variables  
1 RX AND 21:23 EST 13.1m 12, 131 SD 1996 157x  
I next moved on to SS Cygni, but clouds moved in. I had a bit of excitement as I thought for a few minutes I had a nova, but it turned out that I had the field reversed and my "nova" was ♀ CYG!

873 d 2002-11-08 12:25-12:40 EST Oriole driveway 6 12cmr  
Sun: counted 69 spots @ 62x

874 e 2002-11-12/13 18:00-22:00 EST Ontario Sci Cent entrance 0-1 28cmr  
Star party at O.S.C. - cleared for ~20 minutes → Moon @ 48x.

875 e 2002-11-15/16 20:09-20:54 EST Oriole N yard 5-3 28cmr  
Variables: RX AND & SS CYG - sky getting very hazy  
Moon 300x b, Gassendi, Plato

8762 2002-11-18/19 23:22-00:00 EST Back yard 1-4 ne.

**Subject:** [RASC Toronto List] Clouds 1 Leonids 0

**Date:** Tue, 19 Nov 2002 00:20:26 -0500

**From:** Geoff Gaherty <geoff@gaherty.ca>

**Reply-To:** [rasctoronto@yahoogroups.com](mailto:rasctoronto@yahoogroups.com)

**Organization:** Computer Communications

**To:** [RASCals Discussion List <RASCALS@ap.stmarys.ca>](mailto:RASCALS@ap.stmarys.ca),

[RASC Toronto <rasctoronto@yahoogroups.com>](mailto:rasctoronto@yahoogroups.com),

[Starrynights <starrynights@yahoogroups.com>](mailto:starrynights@yahoogroups.com)

I'm just in from trying to observe the Leonids from my back yard in Toronto. I observed from 23:22 to 24:00 EST and saw not a single meteor. There was a high haze for the entire time, and high passing clouds covering most of the sky for most of the time. Most of the time, all I could see were Saturn and Capella, though in the last few minutes the clouds cleared away and I was able to see stars as faint as the belt stars in Orion. I'm going to sleep for a few hours and try again around 05:00, just before the main peak is predicted, though the forecast calls for it to be totally overcast by then. Unlike last year, when the clouds were low and fast moving, the clouds tonight are really high, so must be covering wide areas, and above the clouds, the transparency is very poor. I hope others are having better luck!

--  
Geoff Gaherty  
Toronto Centre RASC  
[geoff@gaherty.ca](mailto:geoff@gaherty.ca)

877m 2002-11-18/19 05:14-05:55 EST Oriole yard 1-0 ne

**Subject:** [RASC Toronto List] Clouds 2 Leonids 0

**Date:** Tue, 19 Nov 2002 06:13:18 -0500

**From:** Geoff Gaherty <geoff@gaherty.ca>

**Reply-To:** [rasctoronto@yahoogroups.com](mailto:rasctoronto@yahoogroups.com)

**Organization:** Computer Communications

**To:** [RASCals Discussion List <RASCALS@ap.stmarys.ca>](mailto:RASCALS@ap.stmarys.ca),

[RASC Toronto <rasctoronto@yahoogroups.com>](mailto:rasctoronto@yahoogroups.com),

[Starrynights <starrynights@yahoogroups.com>](mailto:starrynights@yahoogroups.com)

I'm just in from my attempt to view the second peak of the Leonids. When I woke up at 4:30 a.m. EST the sky was completely overcast. Checking the satellite images on the internet showed a large sucker hole over southwestern Ontario. When I checked again at 04:59, Jupiter was visible, so I had a little breakfast and dressed up warmly again. By 05:14 I was in place in my yard. Jupiter was still visible off and on for about 15 minutes, until the sucker hole passed and the sky became a solid deck of cloud again. I continued my watch until 05:55, but never even saw Jupiter again.

The sucker hole may have been better timed for people to the east of me, though even at its best, the limiting magnitude was about 0, since I never saw Regulus in the whole time Jupiter was visible.

--  
Geoff Gaherty  
Toronto Centre RASC  
[geoff@gaherty.ca](mailto:geoff@gaherty.ca)

878e 2002-11-19/20 20:30-20:53 EST Oriole driveway 1 ne

Penumbral eclipse of Moon. Very hard to observe because of small densely-packed clouds. At times I suspected a very slight shading on the N limb, but probably wouldn't have noticed if I hadn't been looking for it.

879m 2002-11-19/20 23:05-23:30 Est Oriole driveway 4-5 12cmrr

Saturni 204x → 250x = bino. Very nice view, with NEB clearly visible, but colours nicely shown, but lacks the impact of the 28cmr

Mooni 114x (not bino) - hint of craterlet in Plato, Meritain peak

beyond Grimaldi

I was able to set up 12cm in about 5 minutes, but the views just don't satisfy after the 28cm Starmaster!

880e 2002-11-25/26 20:35-21:45 Oriole yard 6-2 ne 10x50b 28cm r1  
Variables: OMI CET & SS CYG  
M45 @ 22m Nagler C & S Paracorr - coma very obvious S, image very clean C,  
Cloudy @ 20:00 - clear @ 20:35 - clouded over again @ 21:30  
- small sucker hole visible on satellite IR image over W 1/4 of L. Ontario

881m 2002-11-25/26 05:15-06:20 Oriole driveway & obs. 6-7 28cm r1  
Jupiter: 240x b seeing mostly very poor (mirror not cool?) - little detail visible  
Moon: 240x b strong libration of flimb (~~S~~W) revealing Mare Orientalis, Grimaldi, ~~Lohman~~ Crüger, Lacus Aestatis, Montes Cordillera, Lacus Autumni, Lacus Verus, Mare Orientalis (huge broad basin & mountains at either end, and beyond).  
Mars: tiny disk, suspected N polar cap  
Venus: huge thin crescent.  
Mars, Venus, & Spica form nice triangle in E, while Jupiter, Moon, & Regulus form another overhead.  
Saturn 240x b

882e 2002-11-27/28 19:10-20:50 EST Oriole N yard 6-2 28cm r1 10x50b  
Variables: RX AND, R TRI, SS CYG, TARI - clouds stopped observations

883e 2002-11-29/30 20:50-21:10 EST Oriole Nyard 3-2 13cm  
Testing Kenus 130mm f/15.4 Mak-Cass. In the dark I mistook saddle dovetail lock for destination lock, and scope fell to ground, landing on focusing knob & bending shaft. I bent it back enough that I could focus, but collimation may be knocked off. This scope is a disaster waiting to happen: heavy OTA & heavy counterweight on flimsy EQ-2 mount. Mirror has crystalline deposit on it. Eyepieces are plastic junk: 17mm (118x) & 10mm (200x) - f.o.v. of 17mm is about 26'! Rog Khan thinks this is made by Synta, but I doubt it. Mount is somewhat different design, Finder is 10x50 & different dovetail. Back of scope is plastic & sloppy flip mirror & glass covers over both parts. Lens caps, packaging motor drive etc etc, are different from Synta. This is suspiciously like Galileak-aymale 90mm Mak Cass I tested a couple of years ago. I think this is the product of a Synta wannabe.

884n 2002-12-3/4 01:00-01:20 EST Tmnt  
Watched solar eclipse live from Chambe, Botswana via the internet - very short totality - smooth and small corona. Unable to connect for live coverage of Australian portion

885e 2002-12-04/05 19:30-20:20 EST Oriole Nyard 6-4 28cmr | 10x50b  
Variables: 55 Cygni RX And  
Doubles: 8 Lacertai: wide pair, yellow & blue, 63x  
65 Piscium: close equal pair 157x  
Sky getting milky, high clouds.

886e 2002-12-05/06 19:30-19:55 EST Oriole NW yard 2 113mm r1  
Preliminary test of Orion Starblast 113mm f/4 Newtonian on  
semi-Dob mount (one arm). Mount is very smooth, mirror  
has no obvious aberrations. Nice little package that should make  
a good little travel scope (tube 18" long, fits in carry-on)  
Viewed Saturn & Capella & supplied 17mm & 6mm Explorers II (Kellner)  
eyepieces (26x & 75x) & Pleiades & 17mm & 24.5mm SWA  
26x & 18x, Pleiades just fit in 17mm field (1053')

887e 2002-12-09/10 20:10-22:55 EST Oriole NE yard 5-6 28cm r1 10x50b  
Variables SS Cyg, U Cyg, T Cep, V Cas, U Ori, SU Tau, T Cas,  
R And, RX And  
M42-43 Whole swad in f.o.v. @ 63x, E & F visible in  
    ▽ trapezium @ 276x  
Rigel nicely split @ 276x  
First good night in over two months! Temp - 5C,  
wind chill - 12C

888e 2002-12-10/11 19:30-21:30 EST Oriole E yard 5 28cm r1 10x50b  
Variables R PEG, R AQR, S PER, SS CYG, X CAM

#125 DSO for 2002! ⇒

891e

2002-12-25/26 18:25-19:30 EST Carpel 8 28cm x 1 (x50b)

Deep sky: S horizon hazy, so couldn't tackle southern tier, -11°C

NGC 777 Galaxy Peg 18:44 63x Faint smudge

7454 Galaxy Peg 18:55 157x Faint smudge - stars p galaxy

7619 " Peg 19:05 157x Two brighter glows against mottled

7626 " Peg background

7541 " Psc 19:15 157x Faint glow.

[Comet Kudo-Fujikawa] 19:20 - not seen @ 10x50b

Saturn & M1 in same 63x field - really neat, M1 is huge compared to Saturn.

→ 20:00 - 21:15 EST → 9 28cm x 1

Deep Sky 1055

NGC ~~2023~~ Galaxy Cet 20:23 157x Dim glow

1087 " Cet 20:27 157x Glow brighter towards centre

1022 " Cet 20:34 63x Quite bright & small

1052 " Cet 20:38 63x Small, bright.

1084 " Eri 20:40 63x Small, bright

584 } " Cet }

596 } " Cet } 20:50 63x 3 small bright galaxies around

615 } " Cet } triangle of stars

720 " Cet 20:56 63x Bright elliptical

779 " Cet 21:01 63x Small, moderately bright

890e 2003-01-17/18 19:10-20:00 EST

890e 2003-01-17/18 19:10-20:00 EST Oriole driveway 6 28cm x 1 (x50b)

Double stars:

19:26 55 Eridani close equal 28cm x 1 63x

19:30 32 Eridani unequal " "

19:42 B Monocerotis " "

19:45  $\epsilon = 8$  Menacatis Companion very red 28cmrl 63x

19:50  $\gamma$  Leporis faint companion to N 10x50b Nyrd

Also: Orion doubles  $\lambda, \beta, \delta, \sigma, \iota, \theta$ ,  $\sigma$  is like a birds eye view of a solar system, ~~but~~ Maybe saw E in  $\theta$ , @ 157x, seeing poor, unable to see Rigel's companion @ 63x

I need to get into backyard to see 1 Com, 12 & 19 Lyn

Bitterly cold:  $-16^{\circ}\text{C}$ , windchill ~~was~~  $-24^{\circ}\text{C}$

891e 2003-01-20/21 19:25-2030 EST Oriole driveway 6-3 28cmrl 40x50b

Variable stars: Omi Cet 8.3, U Ori 7.1, SU Tau 9.9. Also tried to find T Ari, but high altitude & cold did me in!

Saturn - failed to see M1 @ 63x

Temp  $-14^{\circ}\text{C}$  - 18  $\bar{e}$  wind chill

892e 2003-02-07/08 19:05-20:50 EST Oriole driveway 6-3-6 28cmrl 10x50b

Moon: 300xb Rinoo Plinius - dark stain on surface of Mars

Saturn 300xb - better @ 240xb - extra "moon" S of Titan

(9th magnitude star)

Variable stars: U ORI, SOTAU, X MON, SCM1

Observations discontinued due to better cold:  $-9^{\circ}\text{C}$  -  $-15^{\circ}\text{C}$  wind chill

Deep sky: M42, Trapezium,  $\sigma$  Ori, Rigel

Double Stars

2003-02-12

Received Dobsonian mount from Discovery to remount Cave 8" as a Dob. Preliminary measurements indicate it should work.

893d 2003-02-21 11:10-11:15 Oriole driveway 4 11cm r1  
Sun: observed in hazy sky @ 113m f/4 Orion StarBlast reflector, Baader filter, & 17mm & 10mm Explore eyepieces. Hard to judge scope because of haze.

894d 2003-02-28 12:25-12:35 EST Oriole garage 5 15cm mn  
Sun: first attempt at imaging with my new Nikon Coolpix 4500 digital camera @ Scoptronic Digit-T mount & Sirius 25mm Plössl. Images (raw) show sunspots & faculae.

895e 2003-03-05/06 20:50-21:15 EST Oriole driveway 6-4 20cm r1 11cm r1  
Jupiter 158x & 232x. Testing Cave on new Discovery Dob mount. Back heavy, needed 1lb wt sling under finder. Probably need to mount sliding counterweight opposite finder & focuser. NEB & SEB were main features visible, RS just slipping off p limb, only detectable by colour. Lack of temperate belts really

~~Dubious~~ striking.

Checked  $\gamma$  Leonis and Castor - latter just barely split in poor seeing

Jupiter: Quick look @ 113m Orion StarBlast @ 18x & 112x. Haze getting very thick, easily able to see SEB & NEB @ 112x

This was a typical night in the winter of 2002/3. Started out promising, set up scope, haze moved in so that nothing but Jupiter visible after 20 minutes!

Discovery Dob mount: azimuth mtv stiff, altitude too loose quite a bit of vibration @ high power. But: set up took 30 seconds, as opposed to a 20 minutes for G-11.

896e 2003-03-15/16 19:20-21:35 EST Oriole driveway G 28cm r1 10x50b  
First good clear night in many months & reasonable temperature +1°C  
Saturni 240x b images & Nikon CoolPix 4500  
Jupiter: 240x b images " " "  
M44 (close to Jupiter)  
~~Saturni~~ Doubles:  $\zeta$  Cancri  
Variables: CD GEM, VV GEM UZ GEM SGEM  
Moon: 240x b images & Nikon CoolPix 4500 - those come out really well

897e 2003-03-16/17 19:30-21:35 EST Oriole driveway 5-3 28cm r1 10x50b  
Variables  $\gamma$  ORI,  $\beta$ K ORI,  $\zeta$  TAU, RV TAU, ST MAJ, RS MAJ  
Jupiter  
21:15 obs com 240x B S: 3-4 Tr: 4 (Enright) 2 (ALPO)  
21:16 Dp proj Sedge NEP  
21:28 Obs disc poor seeing

~~Jupiter~~

Moon: 240x B quick look at almost full Moon

Increasing haze & high clouds put an end to a pleasant session - Temp  $\approx 6^\circ$

mGP-Dx &

898e 2003-03-25/26 19:00-2000 EST Oriole obs. 7-4 8cm r1 10x50b  
Testing Denis Grey's 80mm f/6 ~~William~~ William Megrez refractor  
Jupiter & M44: in same  $4^\circ$  field (40mm Evan Sheng Plossl)  
Jupiter @ 120x (9mm Radian) shows 2 main belts & hint of STB, some mottling in belts, lots of colour & haze.  
MVI filter gets rid of haze but doesn't improve contrast.

Saturni Cassini visible @ 120x, lots of colour & haze

Motion of Crawford focuser is too loose, won't hold focus &

Radian eyepiece still drifts & lock on. Increasing haze.

ECMa & k Pup. impossible to get from observatory this late in the winter because of trees — will have to try at Forks of the Credit.

20cm sc

899 e 2003-03-26/27 20:30-22:30 EST Forks of the Credit 8-2 20cm r/l, 10x50b

Double stars 1 Cam, 12 Lyn, 19 Lyn, k Pup. Just missed E CMa as it was gobbled up by clouds low on horizon as I was setting up.

Vesta 10x50 b.

DSO M44, M58, M87, M92, ~~M94~~ M76, M95, M96

Jupiter excellent view  $\approx$  Dennis Greg's Ultima 8, RS faint, RSH clear, much mottling in NEB & SEB, SEB clearly split. View  $\approx$  my 8.8" <sup>227x</sup> in Ultima was comparable  $\approx$  view in my Cera  $\approx$  6" (232x)

Carve on Discman Dab mount has a lot of balance problems which I think will be fixed  $\approx$  sliding counterweight opposite focuser & finder. I also think I'll re mount the bearings to bring finder closer to R side of scope, making it & focuser more accessible.

900 e 2003-03-31/32 18:45-20:00 EST Hollycrest PS Etobicoke 7 20cm r/l

School star party  $\sim$  150 grade 6 & parents

Jupiter & Saturn @ 158x

901 e 2003-04-09/10 19:15-19:20 EDT Orrole Driveway 7 12cm rr

Testing Burgess 102mm f/6 prototype

Moon: quick look  $\approx$  Explorer eyepieces 17mm 35x & 6mm 100x

8cmrr

19:55-21:30 EDT Oriole driveway SE yard 7 10cmrr +  
Continuing test of Burgess 102mm f/6 + Denis Gray's 80cm f/6 Meqrez.

Both scopes alternating on GPDx

Moon, Jupiter (both),  $\epsilon$  CMa, Sirius, Jupiter + M44, Castor, & Leda  
(102mm only) + low altitude

$\epsilon$  CMa: difficult because of glare from primary, but  
I consistently saw something at what later proved  
to be the correct p.a. ~~9:00~~ 21:00 EDT 150x

Y Leo & Castor were both very easy @ 150x because of  
nearly equal magnitudes, even though much closer.

I didn't do formal star tests because of poor seeing &  
cold. Jupiter & M44 lovely together in 24.5m

(24x). 102mm seems to tap out @ 150x on all objects.

I tried 6m + UHina Barlow (200x) but it was too  
much, even on Moon. Image started to break down.

Chromatic aberration obvious on bright objects (Moon,  
Jupiter, Sirius,  $\epsilon$  CMa) but controlled well by MV1  
Filter.

Long Meqrez showed more contrast & snap, less  
chromatic aberration, on Moon & Jupiter.

902e 2003-04-12/13 20:15-22:45 EDT Oriole SE yard 6 28cmrr 10x50b

21:30-22:45 EDT Oriole observatory 6 10cmrr 8cmrr

28cmrr Jupiter: 240x - 300x bino S: 3-5

00:23 Obs comm

2 00:24 Dp sect STB

3 00:27 Dc proj S edge NEB

4 00:52 Dp proj S edge NEB

5 00:59 Dc proj S edge NEB

6 01:08 Df proj S edge NEB

Ed Grafton

Jupiter



CM1 232

CM2 071

CM3 271

C 14 @ f/27 taken with a ST5 CCD from Houston Texas on April 13th 2003 at 01:13 UT

- 7 01:29 Wp RSH Sedge SEB  
 8 01:31 Dp RS Sedge SEB  
 9 01:47 Dc RS Sedge SEB  
 10 01:47 Wc RSH Sedge SEB  
 01:50 Jupiter in trees

### Double star

E C Ma 192x binoculars. tiny speck below A ~~02~~ 20139  
 Castor ~~not~~ nice @ 192x

Moon: Cassini perfectly placed - tons of detail within & around it, Nice done just W of Kepler, Mons Gruithuisen looks like a melted marshmallow & S looks like Caspar the Friendly Ghost, J. Herschel right on terminator, 2 craters in Plato

### Testing 102mm f/6 Burgess achronat 4mm Redia

Jupiter: RSH clearly visible @ 150x - image breaks down @ 200x (6mm Barlow) - chromatic aberration not strong

Saturn: Cassini division @ 150x, no detail on planet.

Castor: clean split @ 100x (6mm Redia)

Polaris star test, #56 filter & 4mm Redia (150x), Rings well defined inside focus & bright outer ring, Rings blurred outside focus, one broad dark ring obvious.  $\Rightarrow$   $\approx$  1/4 wave undercorrected spherical aberration.

### Testing 80mm f/6 ~~by~~ William Megrec

Jupiter 120x 2 belts, no RSH, purple glow (worse than 102mm)

Saturn 120x no Cassini

Castor split @ 120x

Polaris star test reverse at 102mm  $\Rightarrow$  1/4 wave overcorrected s.a.

$$\phi = 15^\circ \mp \cos \delta$$

$$\delta = 5^\circ 13'$$

$$\phi = 14.938^\circ$$

903e 2003-04-13/14 20:00-21:00 EDT Oriole driveway 5 10<sup>cm</sup> ~~10cm~~ 12cm rr  
Further testing of Burgess 102mm f/6, comparisons c 113mm StarBlast  
Nent & 120mm Antares refractor c Chromacor

Moon: Burgess could handle 250x tonight, but starting to lose resolution, 113mm StarBlast wasn't in the running; this is really an RFT, Antares blew Burgess away, easily taking 250x; Chromatic aberration in Burgess well controlled.

Jupiter: Antares easily beat Burgess, revealing much finer detail within belts @ 250x - this is a real telescope.

Chromacor: I attempted to test Chromacor in Burgess, but there was so much play in Burgess focuses that it was impossible to achieve collimation.

I'd forgotten just how nice the Antares is with the Chromacor in place.

I think I've done all the testing I want to do on the Burgess & will send it on to Mark Visser in Chatham. I'm really looking forward to side-by-side testing at 127mm f/8 Burgess & 120mm Antares.

904e 2003-04-19/20 <sup>20</sup> 20:28 - 21:42 EDT Oriole SE yard 3 28cm r1

Jupiter

20:28 Obs. comen. To just of plumb & shadow just p.c.m. S-2-3

21:42 Obs disc due to par seen 1-0

Tested f.o.v. of Guan Shang 2" Plössls by timing drift of Pracyan:

	<u>time</u>	<u>♠ axial</u>	<u>f.o.v. approx</u>	<u>Calc. from field stop</u>	
40mm	6m 23s	95.35'	54.9°	60.2	1.097
32mm	5m 53s	87.88'	63.3°	68.0	1.074
26mm	4m 30s	62.22'	59.5°	61.7	1.037
		mean	59.2°	63.3°	1.069

905e 2003-04-23/24 21:00-23:30 EDT Fairs of the Credit 8 28cmrl 15cmrl 10x50b 8 cm rr  
Saturn 345x

Jupiter 276x

Mars 10x50b & n.e. d NGC

DSO M42, M44, M81, M82, M51, M101, M65, M66, NGC, M95

M96, M105, NGC (Ghost of Jupiter), M13

Double stars N Hydrae in trees from my 28cmrl, so I borrowed  
Guy Nason's 15cmrl @ 63x to observe the last of the Al 100  
double stars @ 22:50 EDT.

Denis Gray arrived late & we put Megrez 80 on his EP mount  
& observed Jupiter & M44 & M13.

906e 2003-04-26/27 21:00-00:05 EDT Onok NE yard 6 28cmrl 10x50b ne  
Jupiter: 240xb Io in transit (not visible), Io's shadow in transit, seeing  
poor

Saturn: 240xb Iapetus just p 11th mag. star, Pleiades, &  
Deneb in tight triangle. Enceladus glimpsed from time to time

Variables X CAM, SS AUR, SCM1, S FEM TEEM, U FEM

Doubles:  $\delta$  Leo 240xb,  $\delta$  Vir 300xb, just split

Jupiter:

03:20 Obs. cam 28cmrl 240xb S13

11 03:30 Wc RSH SEB5 RS very pale

12 03:46 Wf RSH

13 03:50 Dp berge NEBn

14 03:56 Dc berge NEBn

15 04:03 Df berge NEBn

04:07 Obs disc - poor seeing

Teles: 30mm Wide Scan III (84° f.o.v) & 14mm Pentax SMC for George  
Panchar. ~~30mm~~ 30mm gives very bright background on 28cmrl,  
prefer 22mm. 14mm doesn't have the good edge performance

as a Radian, but I like the eyecop. Both will probably work better on scope a larger f.c. like Georges 8" SET. I want to test them at longer focal ratio, say an 120mm f/8.3.

907d 2003-05-03/04 09:00-11:00 EDT Oriole driveway 7 12cmrr ne  
Sun: Set up 12cmrr in driveway during Louise's Fabric & book sale, 62x. One large dark n.e. spot & several achydays. George stopped by to pick up eyepieces

908e 2003-05-03/04 21:00-23:48 EDT Oriole NE yard 6 28cmrr 10x50b  
Variables V. ORI, R CRV, RV VIR, UVIR, RVIR, SVIR, ALMI, RLEO  
Saturn: Jupiter seen @ 24x. Globe yellow cream vs white at rings  
Jupiter: 23:43 EDT Io seen from time to time as grey smudge in E2. Its shadow very intense & tiny. Not much colour in RS. 240x & 300x B

909m 2003-05-06/07 05:30-06:50 EDT Cathedral Bluffs Park, 3-6 13cmrr  
Transit of Mercury 13cmrr @ 63x Heavy clouds on horizon, Sun clear & 06:10, Mercury visible close to limb. Large sunspot near centre of Sun's disk. Clouds obscured third & fourth contacts, Sun clear of clouds ~ 06:40, Mercury gone. Observed from S tip of Cathedral Bluff, Guy Mason, Eric Briggs, Andy Schuh, Tim Low, Katrina & several other RASCals & dog walkers. Mounted 13cmrr on Manfrotto heavy duty tripod. This was a good day run for the Transit of Venus, taking place exactly one year, one month, and one day from now.

910 d 2003-05-09 10:00-14:00 EDT Ontario Science Centre Solar Patio Q-7 120mm rr  
Sun: observing at the Science Centre for Astronomy Week with Garry  
Nason, Sara Poirier, and Maria (Co-op student) and the public.  
I alternated between direct filtered observation, mostly @  
36x (28mm Edmund "Kellner") and projection, so that kids  
could plot sunspots.

911 d 2003-05-10 11:00-14:00 EDT OSC Solar Patio 7-0 120cm rr  
Sun: Astronomy Day observing, mostly @ 62x. Attendance was down  
because of SARS epidemic.

912 e 2003-05-10/11 20:00-22:00 EDT OSC Spoking lot 5-0 11cm r1  
Moon & Jupiter: public star party for Astronomy Day. After 2  
days of solar observing, I was exhausted & brought my smallest,  
lightest, cheapest scope, my Orion StarBlast 113mm f/4 Newtonian.  
This proved quite popular, despite being sandwiched between  
Andy Schuch's 10" LX 200 & John Fink's Traveler! A review  
appears in the latest STT, so the members were all interested,  
while the public were impressed by its fine views, and  
user friendly design & price. I just used the supplied  
"Explorer II" eyepieces: 17mm (26x) & 6mm (75x).

913 e 2003-05-22/23 21:30-23:40 EDT Oriole NE yard 6 28cm r1 10x50b  
Jupiter: right over my chimney → boiling image, best @ 192x b  
Variable stars R UMA, Z UMA, T UMA, S UMA, R Boo, R CRB  
R SER, R DRA

914 e 2003-05-31/32 21:00-23:10 EDT Carr Obs. 3 40cm SC, 25cm r1, 10cm rr  
Open House at CAO. I received the Tophan award as observer  
of the year.

915e 2003-06-01/02 21:18-23:12 EDT Oriole NE yard 6 28cm r1 10x50p  
Jupiter: 240x b S-4-5 Obs. com 21:18 Europa's shadow in transit  
& Europa just emerging from transit. STB leading edge just  
past CM. Disk small but detail sharp. ~~no~~ - no transitable features  
approaching CM.  
Variables: S VIR, R LEO, U HER, AS HER

916e 2003-06-02/03 20:45-23:00 EDT Bayview Village Park 4 various  
Toronto Centre city observing workshop. I brought my  
eyepiece case only. Looked through a 8" f/6 Sky Watcher,  
8" f/6 Sky Mantar, & two TV76 - just able to split  $\epsilon$   
Lyrae @ 120x (4mm Radian)

25cm r1 28cm r1 10x50p  
917e 2003-06-09/10 20:45-22:45 EDT Oriole NE yard 7 Jim Low  
Testing Jim Low's new 250mm f/5 Newtonian "Sky Mantar" by  
Guan Sheng. Image on Jupiter at starting,  $\bar{c}$  Red Spot clearly  
visible  $\bar{c}$  colour on p part of SEB. Star test shows some  
astigmatism (diagonal?) & spherical aberration. Could just  
split  $\epsilon$  Boo @ 300x - much easier & clearer in 28cm r1  
@ 276x. Also viewed the Moon,  $\gamma$  Leonis, M13. Jupiter  
was much better @ 230x in 28cm than @ 251x in 25  
cm, but 25cm was quite respectable, though  $\bar{c}$  lower  
contrast. I must try to reduce distortion of secondary  
causing astigmatism. Also need to replace azimuth  
bearings  $\bar{c}$  magic sliders & central bolt  $\bar{c}$  larger one  $\bar{c}$  lock  
washer, as bolt keeps unscrewing.

918e 2003-06-14/15 21:10-21:25 EDT Oriole NE yard 6 28cm r1  
Jupiter! 240x b Seeing very poor - nothing much beyond NEB &  
SEB.

— 22:15-23:59 EDT Oriole NE yard 6 28cm r1 10x50b  
Variables: R UMA, ZUMA, T UMA, S UMA, R CVN,  
R CRB, SS HER, R Boo, V Boo

DSO: M 57 @ 63x

Satellite observed moving northward up meridian @ 23:14 EDT

919d 2003-06-15 09:30-09:45 EDT Oriole driveway, 6 12cm r1

Sun: @ 36x (Edmund Plössl), 59x (Orion Explorer), & 167x (Orion Explorer) — best @ 59x. One large group & one spot very close to limb. Very complex faculae close to limb spot. First observation on used Super Polaris I brought from Khan earlier this week. Very smooth, but a lot of vibration @ 167x.

920e 2003-06-15/16 22:00-23:55 EDT Oriole S yard 7 28cm r1 10x50b

Variables: R VIR, U VIR, W HER

— moved scope from SE corner to mid yard

R OPH, R CYG, AF CYG, U CYG, CH1 CYG\*, T CEP

\* CH1 CYG was the first variable I observed, on 1961-09-19

921a 2003-06-16/17 21:30-22:50 EDT Oriole NE yard 6-7 28cm r1 10x50b

Jupiter ~~21:30~~ — Only able to see detail in SEB as mottling. Occasional pink flashes from the RS, but no detail. Into trees @ 22:02. 240xb 300xb

Variables: R LEO (between horses), U HER, RS HER

————— 00:10-01:30 EDT Oriole N yard 6 28cm r1 10x50b

Variables: R SCT (binoculars), R SGR, RX SGR, T SGR, SS CYG

— 03:00-03-11 EDT Oriole N yard 6 28cmrl

Mars: 240x b poor seeing, bailing image. SPC prominent, some shedding N of it.

922e 2003-06-21/22 21:00-23:30 EDT Dark Dome Obs. 6 25cmrl

Public viewing using Jim Low's 25cmrl. Jupiter,  $\epsilon$  Lyra, M37, M13, Car Caroli, Albireo. This is such a pleasant scope to use!

923e 2003-06-23/24 21:20-23:56 EDT Oriole E yard 7 12cmrr 28cmrl 10x50b

Jupiter 12cmrr 200x-250x RSH clearly seen, hints of RS within it  
Variables: RU, R,  $\delta$ U VIR all in tree at dusk

Observed S VIR, S SER, R SER, R CRB, AH HER, T HER.

924e 2003-06-27/28 22:15-23:58 EDT Oriole NE yard 6 28cmrl 10x50b

Variables: R UMA, Z UMA, T UMA, S UMA, R CVN, S BOO, V BOO, R BOO, R DRA.

925e 2003-06-30/31 22:10-~~00:10~~ 00:10 EDT Oriole NE yard 6 28cmrl 10x50b

Variables: R CRB, W HER, V HER, S HER, R OPH, R SER, U DRA, R SCT

Deep sky: M13  $\epsilon$  Perseus Darkmeier bin viewer & OCS + 24.5mm DWA = 61x - bright satellite passed through f.o.v. @ 22:27 and flared (n.e.) a few seconds later - couldn't identify it in Heavens Above or Starry Night.

926m 2003-07-01/02 02:38-04:11 EDT Oriole N yard 5 28cmrl

Mars: 240x b SPC bright  $\epsilon$  dark rim ~~on~~ f CM. Syrtis Major coming onto disk. Drawing at 03:35, 240° CM. Compared TV + Darkmeier  $\epsilon$  OCS, both ~190x. Darkmeier was more contrasty, markings easier to see (but may have been TV8PIs in Dark as

20

2:25

45  
3:30

opposed to Pecano arthes in TV).

927m 2003-07-04/05 04:25-05:25 EDT Oriole NE yard 4-3 28cm r1  
Mars: Drawing @ 05:03 CM = 2330, 240x & 300x  $\bar{c}$  Bino. Experimented  
 $\bar{c}$  Filters, 25 & 47 very dim, 21 gives best contrast, 80A gives  
"monochrome" effect. Area S of Syrtis Major where dust  
storm is developing, is too close to limb to be sure of;  
seemed slightly brighter than rest of Hellas. Visited by  
three baby shunks!

928e 2003-07-05/06 20:50-21:10 EDT Oriole driveway 5-3 11cm r1  
Moon: celebrated my 46th anniversary of telescope observation  
one day late by observing the Moon  $\bar{c}$  my Edmund 4 1/2" Palomar  
Tr Newtonian @ 37x, 61x & 173x

22:30-00:55 EDT Oriole W yard 5-6 28cm r1 10x50b  
Variables: R CRB, AF CYG, R CYG, V CYG, R SGR, RX SGR, SS CYG,  
R VUL, DY VUL. Wasted a lot of time trying to find T SGR,  
and ended up losing it in the trees. I got really excited by  
DY VUL, since it was 2 magnitudes brighter than its  
published range, but on checking AAUSO reads, it seems to  
always be 7.0-8.0, rather than 9.0-9.7.

02:30-03:15 EDT Oriole W yard 5, 28cm r1  
Mass: Tried Denkmeir  $\bar{c}$  ACS in high power configuration, It  
wouldn't reach focus  $\bar{c}$  just SCT tube & S unit, so used  
SCT, C, & S units. This gave ~3-35x magnification & didn't  
seem as sharp as TV bino v. I don't like the really long  
tube which projects into light path of primary.  
Drawing @ 03:05 240x b,

1255mm barlow.

25mm 50x 100x

10.5mm 120x 239x

9mm 139x 279x

bins

2510mm

10mm 251x

8mm 314x

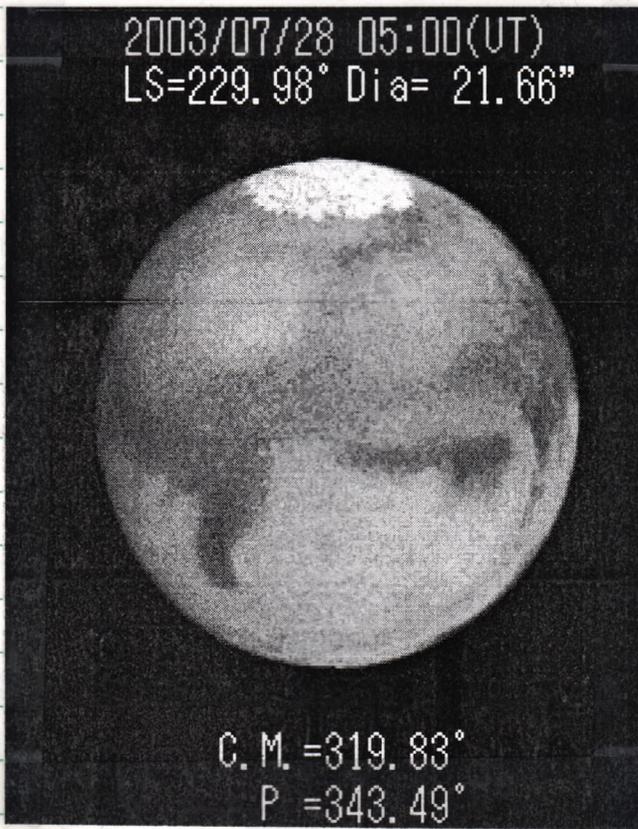
Harassed by mother & 4 baby raccoons!

929e 2003-07-06/07 20:20-21:40 EDT Oriole driveway & N yard 6-3 25cm r1  
This afternoon I removed the diagonal from its cell in Tim Low's Sky Mentor 25cm r1 & sanded the inside of the cell to relieve the pressure flat was causing astigmatism.  
Moon: Observed at all powers, 10.5m & 9m give almost identical magnification! Moon was observed at length @ 314x  $\bar{c}$  binoculars. Resolution superb. Surface shows pumice texture.  
Star test Arcturus 239x Astigmatism still slightly present, but much reduced. Clean diffraction rings outside focus, blurred inside focus  $\Rightarrow$   $\sim$  1/4 wave over correction, some surface roughness.  
I removed tension springs as these are unnecessary  $\bar{c}$  Tim's optics.

930e 2003-07-07/08 21:05-22:35 EDT Oriole SE yard 5 28cm r1  
Moon: mostly 300x binoculars. Hadley region, Catena Dugg, 1 craterlet in Plato, Alpine rim not seen. Experimental  $\bar{c}$  stupid high powers  $\bar{c}$  Ultima Barlow. Best view was  $\bar{c}$  8.8m VWA 273x - actually seemed sharper & more contrasty than 300x in binoculars. Then I tried the Radians: 6m 401x, 5m 481x, 4m 601x. 480x was OK, but 601x was too much. Also tried 4.8m Nagler 501x, also a bit high.  
Doubles  $\bar{c}$  Lyra @ 98x bino  
MSO: M57 @ 98x bino  
Star test: 300x bino - seeing poor, - 2nd mag stars

931e 2003-07-14/15 22:10-00:40 EDT Oriole NE yard 5-6-5 28cm r1 10x 50b  
Variables: R CRB, S SER, R SER, AH HER, THER, CHI CYG, SSCYB, T CEP  
MSO: M57, 56, 27, Blinking Plan, Cr 399  
Doubles:  $\bar{c}$  Lyr,  $\bar{c}$  Lyr,  $\bar{c}$  Lyr,  $\bar{c}$  Lyr,  $\bar{c}$  Cyg,  $\bar{c}$  Cyg, 16 Cyg, 61 Cyg, Y Del  
Moon

6



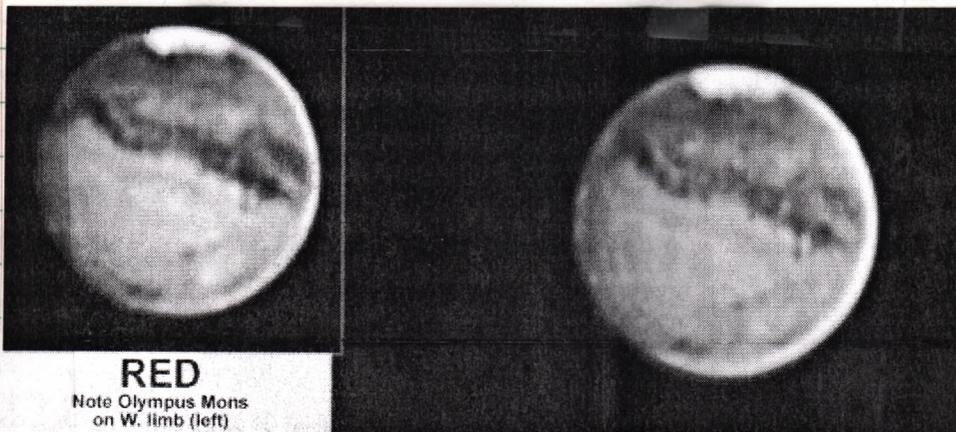
932e 2003/07/16/17 22:10-22:40 EDT Ont. Science Centre, parking lot 7 25cm  
Testing Paul Markov's ~~25~~ 25cm Sky-Watcher. Slight astigmatism,  
clean diffraction rings. Arcturus @ 240x. Also M57, M13,  
Albireo. Optics may be slightly better than Jim's 25cm  
Sky Master.

933e 2003/07/18-19 21:50-01:30 EDT Oriole SE yard & driveway 6-7 28cm 110x50  
Variables: 15 estimates: R CRB, R UMA, ZUMA, TUMA, S UMA, S BOO,  
V HER, SS HER, W HER, R OPH, RS HER, R SCT, SS, CYG, R DRA, U DRA  
Mars: moved scope to driveway, drawing @ 95:20 UT @ 300x binos.

934e 2003-07-19/20 21:00-24:00 EDT Dark Dunlop Obs 6 28cm 110x50  
Public observing at DDO. M57,  $\epsilon$  Lyr, M13, M27, M11, M8,  
ISS. Tried Paul D'Anelia's 14mm Pentax SMC eyepiece:  
very well corrected over full field.

935e 2003-07-25/26 21:50-00:10 EDT Oriole NE yard 6-3 28cm 110x50  
Variables: 10 estimates: R CRB, R CVN, V BOO, R BOO, S CRB, T SGR  
R SGR, R X SGR, R CYG, SS CYG

936e 2003-07-27/28 21:40-01:15 EDT Oriole SE yard & drive 6-3 28cm 110x50  
Variables: R CRB, S SER, R SER, AH HER, Z CAM, T HER, AF CYG,  
V CYG, CAI CYG, R VUL, SS CYG, V CAS, T CAS <sup>NGC 7510</sup>  
Mars: 00:45-01:15 No drawing. Experimented @ 6.3m Plossl & 6mm  
"Explorer" in binoviewer for ~390x Focus & focal lengths  
close enough to merge reality. Also experimented @ Ultra  
Barlow & Gmy 5m, & 4m Radians. Did not seem as sharp  
as @ binoviewer & 6mm  $\Rightarrow$  Ultra not as sharp as TV  
2x amplifier. 400x worked fine, 480x OK, 600x  
too much, but Mars was still low



**RED**

Note Olympus Mons  
on W. limb (left)

MARS - August 14, 2003 - 06:35 UT

CM=189.6, Dia=24.3"

P. Clay Sherrod / ASO

S=5/9 fair, T=1/6 heavy fog

0.41m SCT w/Toucam @ f/35 / 1000 images - double IR block

937e 2003-07-29/30 21:45-00:30 EDT Oriole SE yard 5-6 28cm 10x5ab  
Variables: R CRB, U HER, SS HER, W HER, R UMA, CH UMA,  
Z UMA, T UMA, S UMA, SBOO, RS HER, ROPH, EMCXG,  
SS CXG, R SET.

938n 2003-08-13/14 02:35-03:45 EDT Oriole E yard 5 28cm 1

Mars 02:35-03:35 EDT = 08-14 06:35-07:35 UT

- seeing too poor to use my new 6m orthoscopics much (400x in bino), but they seem fine
- experimenting w/ Sirius Mars 2003 filter which I received yesterday. I like this much better than any of the colour filters because it retains somewhat natural colour = magenta shift. Works best on f. speice, c no filter on left: colours remain natural but dark markings are enhanced slightly and clouds along f & N limbs glow brightly.

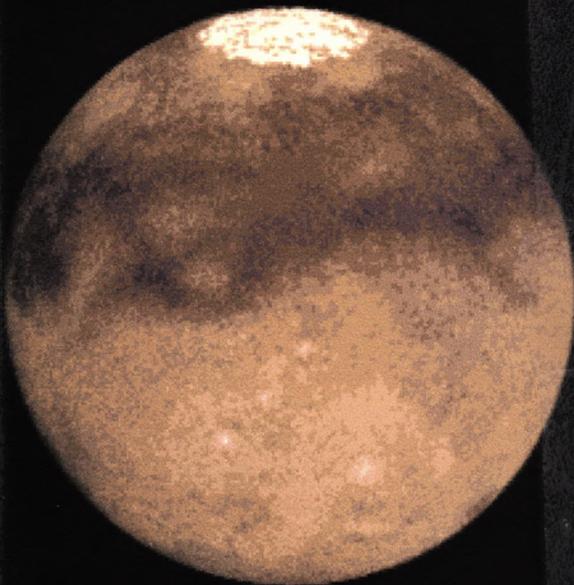
Moon: 2 days past full. Mare Crisium & Petavius both spectacular @ 300x & 400x. Also spent time scanning the whole disk @ 100x (24.5m) I rarely look at the full Moon & usually am unaware of its albedo features, eg. brilliant spot in highlands just N of Aristarchus.

939e 2003-08-14/15 ~~10:00-12~~ 22:00-00:30 EDT Oriole mid yard 8 28cm 10x5ab  
- blackout all over Ontario, New York & beyond - this is the first time in 40 years I've seen the Milky Way in the city!

- Veil Nebula @ V UltraBlack, M27, M51 to capon only, but not M101

- Variables: R CVN, V BAO, R BOO, S CAB

2003/08/18 04:00(UT)  
LS=243.21° Dia= 24.72"



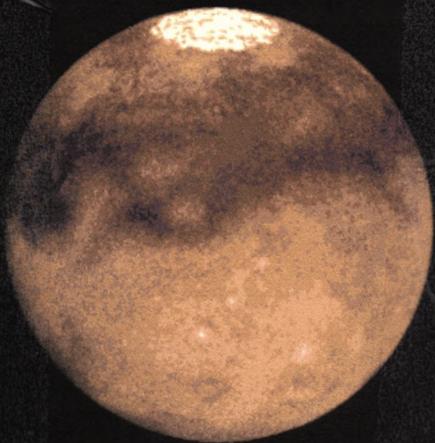
C. M. = 116.49°  
P = 344.79°

03:45 114°



04:45 129°

2003/08/19 04:00(UT)  
LS=243.84° Dia= 24.80"



C. M. = 107.62°  
P = 344.92°

03:50 106°

03:53 107°



04:22 114°

Mars: 00:00-00:30 240x comparison of Pedro's Dark  
bin  $\bar{c}$  6m orthos to my TV 5 10m Ultimas  
Dark requires a lot of in travel & projects  
into light path - collimation considerably off.

~~7402~~  
940 e

2003-08-16/17 21:05-21:50 EDT Oriole N yard 6-3 28cm 10x50b  
Variables: R CRB, SS CYG. High cirrus prevented further  
observation.

941 e

2003-08-17/18 21:30-00:50 EDT Oriole NW yard 5-7-6 28cm 10x50b  
Variables: Y CRV (cosb\*), R CRB, R CYG, DF CYG, VII54 CYG, Z CYG,  
BU CYG, var? SW, SS CYG, AH HER, R DRA, U DRA, RW PEG, RPER  
Mars: first attempts at imaging  $\bar{c}$  N, 6m Cool Pix 4500, 25um  
Plossl, Ultima Barlow, 28cm 1. 1/60 sec, max. zoom. One  
set at 11 images  $\approx$  03:45 UT, second set of 8 images  $\approx$  04:45.

942 e

2003-08-18/19 21:40-00:30 EDT Oriole N yard 5-7 28cm 10x50b  
Variables: R CRB, S SER, R SER, AF CYG, EM CYG, CH1 CYG, U CYG,  
WX CYG, VAR NW, SS CYG  
Mars: shot 35 sec movies  $\bar{c}$  CP4500 @ 03:50 (1/60 sec) 03:53 (1/125  
sec) & 04:22 (1/125 sec). Despite fixed setting, images  
are overexposed at beginning & then get fainter. There  
seem to be more usable frames at 1/60 sec.

943 e

2003-08-22/23 22:00-00:40 EDT Starfest 8 28cm 10x50b  
Mars ~~DSOs~~ DSOs: M8, M20, M16, M17, M31, M32, M110, M33, M81, ~~M82~~  
M82, M101, M33, M51, NGC 5195, M27, M15, Double  
Cluster, M11, M109  
Mars: Seeing poor

DSO (near):

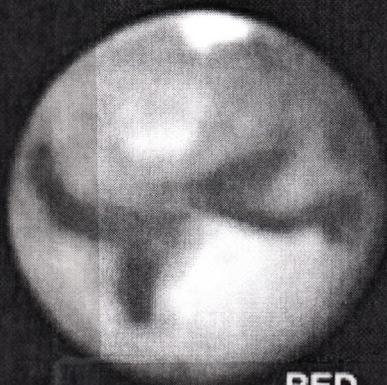
- 4102 galaxy UMa 23:07 Smaller than M109, bright 63x  
4036 galaxy UMa 23:19 Nice little pair 157x  
4041 galaxy UMa 23:19 " " " 157x  
4125 galaxy Dra 23:23 Nice & bright 63x  
5301 galaxy CVn 23:39 Faint glow & averted vision 157x

- 944e 2003-08-23/24 22:05-09:05 EDT Starfest 3 28cm r1  
Transparency too poor for serious DSO hunting, M51 barely visible. Had visits from Eric Briggs, Andy Beaton, and several others looking at objects in suckerholes: M13, M57, Double Cluster, & Mars. Seeing quite good on Mars, but chilly (10°C) & very damp.
- 945e 2003-08-26/27 21:00-01:20 EDT David Dunlap Observatory 5 28cm r1 10x50ab  
Public observing of Mars, & at least 300 people. Initially I set up on M11, then switched to Mars when it cleared the trees. Had to move scope north (without disassembling OTA) to clear second set of trees. Orange filter @ 157x most of the time due to poor seeing. Most people could see polar cap, S. Meridiani & Margaritifer S. Many commented my scope gave best view, including 94".
- 946e 2003-08-27/28 21:00-01:20 EDT Ontario Science Centre 6 28cm r1  
Public observing of Mars, & 4000-6000 people. Largest star party in my life. Mars @ 157x & later 230x @ orange 21 filter under seeing ~7. Hundreds viewed through my scope, nearly all saw SPC, Sinus Meridiani, Mare Erythraeum.

SPC, Red



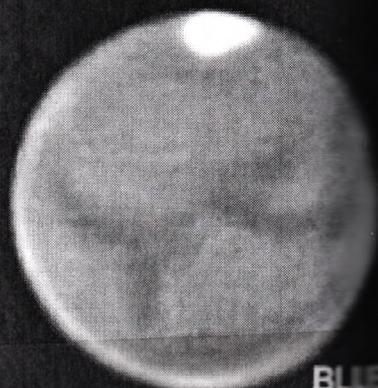
MARS - Sept 6, 2003 - 04:10 U.T. / CM = 310.7  
Seeing 2/9 very poor; Trans = 5/6  
P. Clay Sherrod, Arkansas Sky Observatory  
0.41m SCT @ f/35 w/Toucam, 1,400 images  
Double IR Block



RED



GREEN



BLUE

947e 2003-08-30/31 21:15-22:15 EDT Sloan's (Brimley Rd) 7 11 cm r1  
Observing  $\bar{c}$  Louise & Tom & Varona Sloan. There are significantly  
more stars visible in their back yard than on Oriole Hwy.  
Mars, Albeico, Mizar & Alcor,  $\delta$  Del, &  $\beta$  Cap, M27, M31,  
ET cluster, Cal 399. Checked out Cathedral Bluffs Park  
on way home. Lots of light on N edge, pretty dark  
towards lake.

948e 2003-09-02/03 21:05-21:25 EDT Oriole NE yard 5-3 28 cm r1  
Variables: S Boo, R CRB clouds rolled in from S

949e 2003-09-03/04 20:29-20:49 EDT Oriole E yard 5-2 28 cm r1  
Moon 20 minutes before clouds rolled in again. Unable to see  
Alpine Valley rille, but Moon very low & seeing poor.

950e 2003-09-05/06 20:30-23:40 EDT Oriole SE yard 6 28 cm r1 11 cm r1 10x50b  
Variables: R CRB, ~~R~~ UMA, Z UMA, T UMA, S UMA, R SCT, N SCT 03,  
SS CVG, R VUL, T CEP

Moon brief looks through gaps in trees, seeing poor

Mars - observed from 02:50-03:40 UT. Seeing poor - very rapid  
fluctuations. Syrtis Major appears narrow. Unable to see  
Mountains of Mitchell. Clay's image ( $\leftrightarrow$ ) close to what I  
could see. Tried all my filters (except yellow & green); Mars  
2007 & orange 21 give best contrast.

951e 2003-09-06/07 20:15-23:08 EDT Oriole NE yard 6 30 cm r1 10x50b  
Testing Sky-Mantar (Guan Sheng) 30 cm r1.

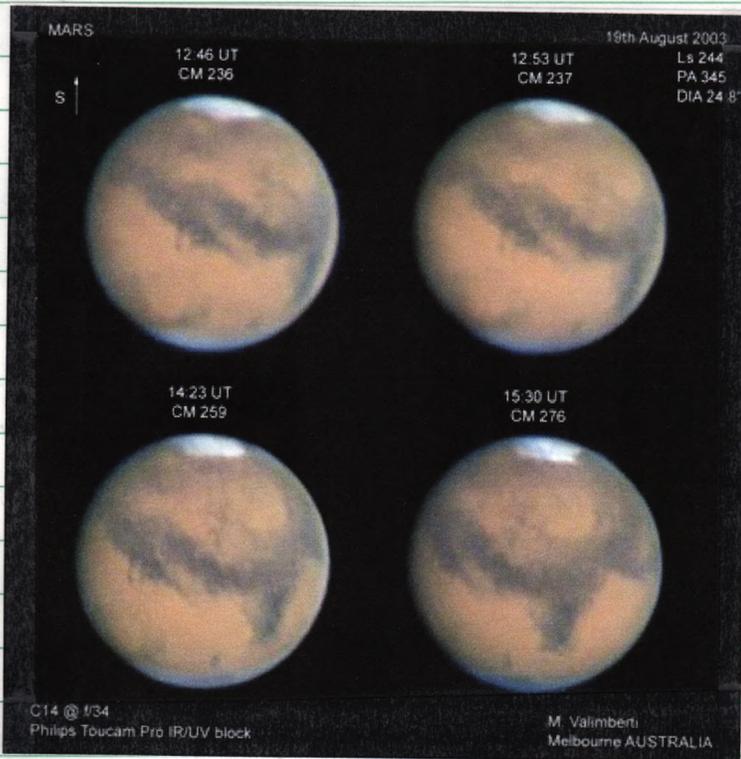
Moon: seeing poor

Starts Arcturus & Polaris. Seeing poor but optics look good - no  
astigmatism (or very slight)

Handwritten mark resembling a stylized 'H' or '4'.

2nd & 3rd  
images very  
similar to  
view on 09/08,  
but polar cap  
smaller

Handwritten arrow pointing right.



Handwritten arrow pointing left and a checkmark.

Handwritten arrow pointing up.

Doubles: Polaris,  $\epsilon$  Lyra,  $\epsilon$  Boo, Albireo,  $\gamma$  Del

DSL: M27, M13 (nicely resolved @ 170x)

Variables: R CRB, W HER, U HER, AH HER, RS HER, T HER, SS CXG  
bright moonlight interfering. Lin mag = 12.1

Mars: SPC, Syrtis Major, Hellas. Seeing mostly poor. Tried  
binoviewers @ 12.5 mm orthos (240x), 6 mm 5 mm & 4 mm Radians  
(250x, 300x, 375x) - last was too high, orange  
& Mars 2003 filters. Image was fairly close to Starlink  
last night.

Telescope: serious problem @ roller bearings in azimuth  
axis: scope moves in quantum jumps of about 1 degree  
very hard to adjust even at 6.8x I think it needs  
to be replaced @ std Teflon bearings.

Mirror cell open at back (no plate), mirror centre marked,  
collimation at secondary fine, primary needs small adjustment  
32mm Plössl @ 63° field is nice, 9mm Plössl OK. Some  
balance problems even @ springs in place, esp. @ binoviewer  
2" to 1.25" adapter has nice compression ring, but no T-thread  
& point suspension in mirror cell

952e 2003-09-07/08 20:30-23:00 EDT Oniole NW yard 4 12cmrr 15cmma 30cmrl  
Had a private Moon Fest/Mars Fest as the sky was too murky to  
observe variables. On the Moon 15cmma seemed to beat 12cmrr easily,  
for example on rille just W of Gassendi which was really obvious in  
mn but tough in rr. On Mars, both gave absolutely superb  
images @ 8mm TV Plössls in binoviewer: 225x in mn, 250x in rr  
Most comparable view in 30cmrl was @ 12.5 mm orthos imbia  
(244x). Contrast seemed lower & image brighter & whiter. Detail  
much easier to see in mn & rr. Hesperia (breach between Mare  
Cimmerium & Mare Tyrrhenum) was obvious in both mn & rr. Today

2003/09/12 03:00(01)  
LS=259.05° Dia= 24.00"



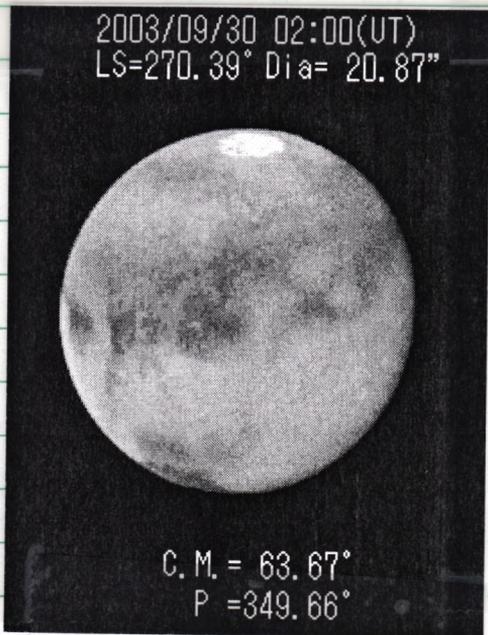
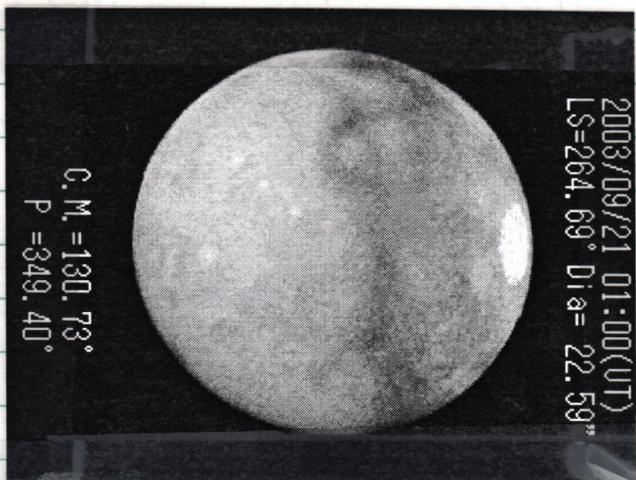
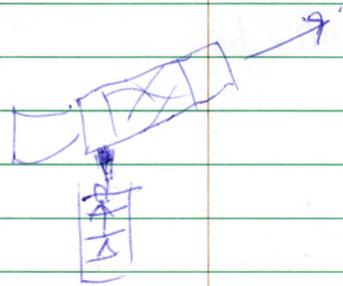
C. M. =240.61°  
P =348.55°

I replaced roller bearing in 30cmrl with Teflon pads. Motion is stiffer but smoother. Roller bearing plate was shipped sandwiched between ground board & bottom of rocker box, & ~~made~~ rollers make indentations in both boards → jerky movements  
Tried to star test 30cmrl on Palais but seeing still too poor,

953e 2003-09-08/09 20:20-23:40 EDT Oriole NE yard 6-7 28cmrl 10x50b <sup>11cmrl</sup>  
Variables: RCRB, R CVM, VBOO, RBOO, SCRIB, SS CYG rising Moon  
Moon: just short of full, 240x ε bino maximum <sup>Attempted N SCT 03 but</sup>  
Mars: seeing poor ~ same detail as last night 240x bino sees <sup>bright</sup>  
best.

954e 2003-09-09/10 21:40-22:00 EDT Oriole yard 5 15x70b n.e.  
Checking fields of ZUMA & RCT for possible VS dome tomorrow night at TC mtg. Could just barely see ZUMA in haze & moonlight but RCT was fine. Also observed full Moon ε 15x70s & n.e.. With n.e. can see Mare Crisium, Copernicus, Tycho.

955e 2003-09-11/12 00:25-03:15 EDT Oriole NW yard ~~28~~ 28cmrl 30cmrl  
Variables: RCRB, SS CYG  
Side-by-side comparison of 11" Stormaster & 12" Sky Mentor  
Star test: virtually the same: clean rings out sid focus, broken rings in motion inside focus  
Mars: Roughly same level of detail in both. 11" has greater contrast & color saturation, snaps into focus more cleanly. Hesperia clear in both scopes. Also Symbalios Lacus  
Moon: 12" better than 11" on Plato craterlets (4 vs 3)  
ε Tyra: 11" clearer & tighter



956e 2003-09-16/17 20:10-23:45 EDT Oriole NW yard 6-7 28cm r | 10x50b  
Variables: R CRB, DF CYG, V1154 CYG, SS CYG, AH HER, RU PEG,  
R PEG, V CAS, DX AND, X AND, T CAS, R AND, RX AND  
Mars

957e 2003-09-17/18 20:15-22:50 EDT Oriole SE yard 5-6 28cm r | 10x50b  
Variables: R CRB, N SCT 03, SS CYG, EM CYG, CH1 CYG, R DRA,  
V DRA  
Mars to Uranus 276x

958e 2003-09-20/21 ~ 20:00 EDT David Dullop Obs. 6 188cm r |  
Mars view @ ~400x in 74" reflector. Poor seeing made it a  
mess in polar cap barely visible, plus some dark shading  
S at right because of odd position of eye piece!

959e 2003-09-21/22 20:40-23:11 EDT Oriole NE yard 6-3 28cm r | 10x50b  
Variables: R CRB, SS CYG, AH HER, U HER, W HER, R S HER, T HER,  
RU PEG, Wasn't able to see R SER or DX AND,  
but couldn't be sure of limiting magnitude  
Mars 240x binocular - quick look

960e 2003-09-23/24 ~ 20:00 EDT Oriole yard 3, ne.  
ISS: nice passage through cloudy filled sky

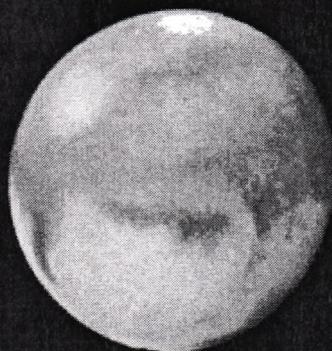
961e 2003-09-29/30 20:00-22:00 EDT Oriole SE yard 6 28cm r | 10x50b  
Variables: R CRB, R UMA, [Z UMA - too bright], T UMA, S UMA, S BOG,  
SS CYG, R Sct NSct 03 (= V475 Sct), RU Peg  
Mars: 21:45-22:00 240x & 300x (400x too high), best in Mars 2003  
on L, W21 on R, Solis Lacus nice on F side of disk,  
SPC small but very bright - contrast seemed normal

2003/10/07 00:00(UT)  
LS=274.73° Dia= 19.49"



C. M. =330.12°  
P =349.39°

2003/10/07 01:30(UT)  
LS=274.77° Dia= 19.48"



C. M. =352.04°  
P =349.39°

962d 2003-10-04 10:00-14:00 EDT Baythorn P.S., Thomhill 3 Bcmmc  
Solar viewing @ school Fair @ Leslie, Ennio & Jim LaFrance  
- intermittent clouds but >40 sunspots visible @ 63x.

963e 2003-10-06/07 19:40-21:35 EDT Oriole N yard 4-3 28cm r 10x50b  
Mars & Moon seeing very poor @ 240x b. Syrtis Major on limb  
Variables: SS CYG, R CRB, R VUL, T CEP  
Mars: 240x b Sinus Meridiani well placed & visible. Polar caps small  
& bright.  
Moon: Fossedi rilles well placed. Wedge of Mare Humorum  
between rilles looks like stucco! 400x b Gröuthuisen domes  
very prominent.

964e 2003-10-07/08 19:30-22:20 EDT Oriole NE yard 5-6 28cm r 10x50b  
Variables: R CRB, R BOO, V BOO, R SER, SS CYG, S CRB, AH HER, AF CYG,  
R CYG, V CYG  
ISS: ~20:36' Noticed ISS white looking for S CRB. Tracked  
@ 63x with 28cm r. Appeared oval & white at first, then  
became orange & elongated as it faded out.  
Mars: seeing fairly good, Sinus Meridiani on CM. Tried  
red, orange, Mars 8003, & Minus Violet filters. Orange  
enhanced albedo features the best, 300x b  
Moon: ~2 days from full. Aristarchus particularly attractive.  
300x b best.

965e 2003-10-09/10 19:50-21:05 EDT Oriole E yard, 5-3 28cm r 10x50b  
Variables: AG DRA (in outburst), SS CYG, R CRB, U HER, W  
HER, R5 HER, T HER  
Not bad: 7 varstar estimates despite full Moon & much  
high cirrus cloud.

Nov 8 lecture to AGM at Mountair Centre on Vabam  
Astronomy 11<sup>10</sup><sub>am</sub> - 12<sup>15</sup><sub>pm</sub>

966e

2003-10-11/12 19:50-23:10 EDT Oriole W yard 6-7 28cm r1 10x50b, <sup>8cm r1</sup>  
Variables: R CRB, AG DRA, R DRA, U DRA, SS CYG, R AQR, RU PEG,  
 R PEG, V CAS, T CAS, X AND, R AND, RX AND, S PER

Mars & Moon quick looks @ 157x, seeing poor

Test of Sky Watcher 76mm f4 Newtonian (Infinity 76 = Orion Fun Scope). Nice view of Moon just past Full @ 30x Mars a tiny disk @ 30x, stars sharp. Very hard to point because there is no finder, and fat OTA has nothing to sight along. However, I doubt if many kids will do serious starhopping with it!

967e

2003-10-28/29 23:00 EST Oriole 3 ne

First view of Saturn & Orion - quite a shock how much the sky seems to move when we come off Daylight Saving Time!

968e

2003-10-30/31 19:00-22:00 EST Oriole NE yard B-6 ne 28cm r1 10x50b

Aurora: 19:00: N half of sky overcast c cirrus, pink aurora in zenith & S. Later, green ray & glow in N, & some red.

Variables: W HER, T HER, AG DRA, R DRA, RU PEG, R AQR, EM CYG, CHI CYG, AF CYG, R CYG, SS CYG.

Compared SS CYG field in 88mm UWA & Jim Low's Speers-WALER 10mm/82" field. Latter seemed to have a bit more contrast easier to see faint stars. Quite a bit of kidney beaming, though. Noticeably lighter in weight than UWA.

969e

2003-11-7/8 20:30-20:45 ~~EST~~ AST U de Mactin Obs Moncton 740 case 15x70b <sup>ne</sup>

Lunar eclipse ~60% - 90% covered, very cold & windy

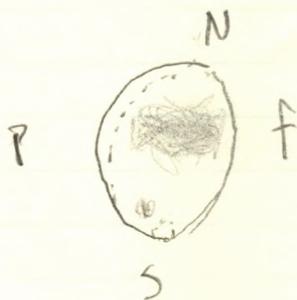
970e

2003-11-7/8 11:10 AST Adrian Bondage's Saint John 7 ne.

Lunar eclipse ~5% covered, cold & windy

Lap 03:55"

Step 29.94" @ 23:01 UT



971e 2003-11-20/21 20:00-22:30 EST Oriole NE yard 5-6 28arrl 11arrl 10x50b

Mars: getting very small, seeing very poor 157x

Deep Sky: M57,  $\epsilon$  Lyrae, couldn't find M27!

Variables: DF CYG, VII54 CYG, BU CYG, VAR? SW, U CYG, SS CYG, R VUL  
OMI CET, R TRI, TARI

Deep sky: M45 - obs. without Paracorr  $\bar{e}$  40mm & 22mm  
eyepieces - image OK with glasses on - cone not  
bothersome

Saturn: First view of opposition - in trees

972e 2003-11-26/27 20:30-22:15 EST Oriole E yard 5 28arrl 10x50b

Variables: AF CYG, R CYG, SS CYG, T CEP, V CAS, T CAS, S PER

Saturn: 276x - pretty steady seeing, first good view of year  
Castor split @ 276x

973e 2003-12-7/8 16:30-18:10 EST Oriole driveway 5-3 28arrl 10x50b

Asteroid occultation: HIP 384 occulted by Portlandia 757, T-mid  
 $\bar{e}$  tape recorder & stopwatch: reduced results

	Tape	Stopwatch
1st contact	23:00:30.13	23:00:30.06
2nd contact	23:00:33.51	23:00:33.61

63x

2003-12-12 Burgess 127mm f/8 achromat arrived today

2003-12-15 Orion 80mm f/7.5 apochromat arrived

974e 2003-12-18/19 19:30-19:55 EST Oriole driveway 3 127mm Burgess rr

Mars: 250x orange filter.  $\odot$  PC visible as tiny speck. Dark speck  
p & N of it, diffuse dark area covering N half, bright limb p & N  
contrast best when covered by thin cloud. Slight purplish haze @ 250x,  
not visible @ 200x

— 20:30; 21:15 EST Oriole driveway 7 127m Burgess rr  
Star test on Rigel: seeing poor, rings in motion, some signs of  
pinching. Companion clear @ 114x

Pleiades 25x

~~M42~~ M42: Trapezium 200x 250x not visible  
E visible, but not F F x ←

E visible

— 21:45-22:35 EST Oriole driveway 7-3 80m Orion apo 127m Burgess rr  
Saturn - absolutely exquisite @ 150x (4mm Radian) - tack sharp,  
Cassini visible all around, at least 4 moons visible as tiny specks  
Star test on Procyon → not quite symmetrical, rings blurry on  
one side of focus

- in 127m, view not anywhere near as crisp, even @ 167x, though  
MVI improved image a lot. 200x ok, 250x seemed too high

- I also tried the Radians in the Celestron Ultima Berle, but they just didn't seem as "clean" as the unBerle'd views. At 150x, it looked like I could easily go higher in power.

- while performance of Burgess is impressive, especially on Mars, the Orion is absolutely astounding! The sky behind Saturn was jet black, with the moons like tiny specks. Background in Burgess was more washed out though sky had started to cloud up. The Orion reminds me of the TV102 and the MN61.

David + Diane Sch

975e 2003-12-26/27 21:15-22:15 EST Mont Tremblant 8 cmrr Louise  
Orion 80 ED under dark skies. Saturn, M42-43, M45, Double Cluster  
Trapezium,  $\gamma$  And, M31, Rigel (companion not seen)  
    ↓ E suspected  
- using 24-8 mm G+S zoom (25x-75x) ~ needed more power  
  for double stars

976e 2003-12-28/29 21:15-22:00 EST Oriole driveway 7-0-7-0 etc. 12cmrr 13cmrr  
Attempted side-by-side comparison of Antares 120mm f/8.3 & Burgess  
127mm f/7.8 achromats. Frustrated by constant alternation of  
totally clear & totally overcast skies. Seeing poor: Saturn  
~~blurry~~ & diffraction rings on Procyon boiling. Impossible  
to settle down and do a careful comparison of anything.  
Antares on ~~SP~~ SP = semi pier & wood legs (lots of vibration)  
& Burgess on G-P D X = HAL tripod. I think I'll remain  
SP on Vixen tall pier as tripod is too low & vibrates.  
I'm afraid the Orion 80 ED has spoiled me. The images in both  
refractors of Saturn seemed hazy & hairy, lacking the  
crisp snap of the 80 ED. I hope it's just the seeing tonight.

977e 2003-12-31/32 19:30-21:20 EST Oriole driveway 6-2 12cmrr 13cmrr 8cmrr  
Side-by-side test of Burgess 127mm f/7.8 & Antares 120mm f/8.3

↓ on G-P D X + HAL      ↓ on SP on tall pier

Mars 200x & 250x NPH & Mace Cimmerium visible, gibbous phase. There  
appeared to be less colour around the image in the Burgess, but the  
image in the Antares was noticeably sharper, more contrasty, &  
snapped into focus

Moon: Burgess: Highland yellow, shadows purple  
Antares: Highland lime, shadows bluish

Deslandres interior center chains & rilles much denser in Antares. Rima Birt

Invisible in both. → 250x, green filter, no diagonal  
Star test on Rigel: Burgess very blurry inside focus, bright outer ring outside focus. Antares almost identical inside & out.  
In focus, image of Rigel A much tighter, Rigel B well separated in Antares; more irregular flaring around A in Burgess  
So, Antares wins clearly in all three tests.

~~Saturn in Orion~~

Orion 8am ED - repeated same tests: Mars tiny @ 150x, but gibbous phase & Mare Cimmerium visible. Moon highlands white, shadows black, some detail visible in Dorsal areas @ 150x

Rigel star test symmetrical, B a tiny speck next to A  
Saturn: magnificent @ 150x (opposition tonight), Titan, Rhea, Iapetus, Tethys & Dione all visible. Cassini almost all the way round, except in front of planet. Beautiful shading on ball & rings. I tried 6m radian in UHine Below (200x): image dim but still sharp.

978e 2004-01-18/19 18:15-18:55 EST Oriole driveway 5 15cmmc  
Testing Konus 150mm f/12 Mak - Cass  $\bar{c}$  25m (72x) & 10m (180x)  
Plossls in  $-8^{\circ}\text{C}$ ,  $-18^{\circ}\text{C}$  wind chill. Grease in mount, turned to glue, impossible to align finder because of tiny field (33') & cold, motors make noises but don't seem to move anything  
M42 very dim (but transparency good) - 4 stars in Trapezium @ 180x

~~989d~~  
980d 2004-01-24 13:10-13:20 EST Oriole driveway 7 10x50b, ne., Demrr  
Venus:  $\sim 4^{\circ}$  above crescent Moon. Found first  $\bar{c}$  10x50b, then spotted  $\bar{c}$  naked eye, finally  $\bar{c}$  20m ED & zoom ep. @ 75x. Tested motors

979e 2004-01-20/21 20:15-20:55 EST Oriole driveway 6 15cm mc  
Testing Komus 150 mm f/12 Mak Cass.  $-13^{\circ}\text{C}$ ,  $-21^{\circ}\text{C}$  wind chill  
Yesterday I aligned the finder in daylight, which required loosening  
the screws which attach it to the tube & applying torque to  
dovetail foot while tightening - tonight the finder was way off again.  
Declination slow motion (or dovetail on OTA) mounted backwards, so  
that handle points away from eyepiece. Mount feels like it's  
greased in molasses. Slow motion motors make noise but don't  
move scope. Slow motion parkie controls weird: get silvered  
rate in theory by pressing E button at slowest speed. Star  
test on Procyon  $\rightarrow$  trilateral  $\rightarrow$  pinched optics. Saturni  
can't see Cassini division @ 180x. Trapezium barely resolved  
Rigel in focus shows ragged diffraction pattern, no sign of  
secondary. ~~A~~ Perhaps all this is due to extreme cold, but  
this is one of the worst scopes I've ever tested!

980d see previous page. Cart. i... on Komus 150 mount - seem to  
be moving a  $-18^{\circ}\text{C}$ . Discard yesterday that EW buttons control  
Dec motor & NS motors control RA motor!

981e 2004-01-24/25 19:30-19:50 EST Oriole driveway, ~~15~~ 6 15cm mc  $-16^{\circ}\text{C}$   
Testing Komus 150. Motors work for a few minutes &  
then seize up, or rather the "grease" gives too much friction  
Image of Saturn @ 180x no sharper than before, Cassini  
not visible. Telescope simply does not work in this climate

982e 2004-01-24/25 22:15-22:33 EST Oriole driveway 7 8cm rr  
Saturn & Jupiter showed no detail. Trapezium 4 stars.  $\delta$  Leonis split.  
@ 150x. A2-3 mount drifts up in altitude, needs a ~~lot~~ bolt tightened

983e 2004-02-07/08 <sup>18:30-18:45</sup> ~~6:30-6:45~~ EST Bonfield 8 ne  
Mithy Way just visible, limiting mag ~5, some haze near horizon  
20

~~8:30-8:45~~ 20:30-20:40 EST Bonfield 8-3 ne.  
Moon has risen, close to Jupiter, Venus is setting. Some haze &  
light clouds.

984e 2004-02-22/23 21:30-22:55 EST Oriole driveway 7 15cm m & 8cm r  
Testing Keovs 150mm f/12 Maksutov-Cassegrain under mild  
weather conditions. I gave up on the motor drives & just  
used the manual slow motion. Jupiter  $\bar{c}$  8.8mm OWA (205x)  
bands barely visible, no sign of Red Spot, moons V-shaped  
3 2 2  $\Rightarrow$  pinched optics. Finder cannot be aligned  
because bracket not attached properly. Yuchh!  
For a reality check, I looked at Jupiter  $\bar{c}$  Orion 80 ED.  
Moons were little round disks  $\bar{c}$  diffraction rings, Red Spot  
clearly visible @ 150x. Experimented with new 2.5x  
Power mate. Best  $\bar{c}$  8.8mm (170x), but still pretty sharp  
 $\bar{c}$  6mm (250x), 4mm definitely fog much (375x)!  $\delta$  Leo  
@ 154x; perfect split; round Aias disks  $\bar{c}$  crisp  
diffraction rings around. Jupiter simply exquisite!  
Temp = -4°C

985e 2004-02-26/27 21:25-22:15 EST Oriole driveway 5 28cm r | 8cm r  
Jupiter: Europa about to begin transit 240x bino in 28cm r, 170x  
& 250x in 80cm r. Shadow preceded Europa onto disk.  
Europa still visible @ 22:01 in both scopes, due to being  
projected against dark NEB. Detail in 80mm amazing,  
even @ 250x, but better @ 170x

480 mm Megez

600 mm Orion

80mm f/6 triplet Fluoride

80mm f/7.5 ED doublet

40mm	12x 6.7m	5° 50' <del>24x</del>	15x 5.3m	4° 40'
22mm	22x 3.7m	3° 46' <del>4x</del>	27x 2.9m	3° 00'
16mm	30x 2.7m	2° 44' <del>75x</del>	38x 2.1m	2° 11' 94x
8.8mm	55x 1.5m	1° 32' <del>136x</del>	68x 1.2m	1° 14' 170x
6mm	80x 1.0m	45' <del>200x</del>	120x 0.8m	36' 250x
5mm	96x 0.8m	38' 240x	120x 0.7m	30' 300x
4mm	120x 0.7m	30' 300x	150x 0.5m	24' 375x

12.5	38.4x 96x	↗	48x 120x
10	48x 120x	↖	60x 150x
8	60x 150x	↖	75x 188x

→ 23:15-23:25 EST Oriole driving 5 28cm r1

Jupiter; Europa's shadow just past CM, Europa not visible at 240x or 300x.

→ 00:25-00:52 EST Oriole driving 5 28cm r1

Jupiter; Europa moving off as Io & Io's shadow moving on Red Spot on f limb rotating into view. Small spot p RS in S Tr 2. Mostly 240x bino & 300x & 400x briefly. Except for local turbulence from neighbour's chimney, ~~the~~ sky was very steady, affording a beautiful view of moons & shadow against cloud heads filled with intricate detail. Jupiter looked translucent, almost opalescent. How lucky I am to have a Zambuto mirror! Thanks Carl!

986e 2004-02-28/29 @ 19:55-20:55, 21:10-21:45 EST Oriole driving 7 80cm r x 2  
Testing William Megrez 80mm APO triplet refractor on loan from Geoff Ogden in BC, & comparing c Orion 80mm ED refractor. Megrez on EP-Dx c Rigel Quikfinder & 2" TV diagonal, Orion on SVD c 1.25" TV diagonal. Mostly used 5mm Radian in Orion & 4mm Radian in Megrez → 120x native, 300x c 2.5x Powermate.

Saturn: Dione easier to see in Orion

Moon: more color @ 300x in Orion

Jupiter: Io's shadow in transit, 300x impossible in both scopes

~~My overall impression~~ M42: in Megrez c 8.8m (55x); much lost due to moonlight

My overall impression is that the Orion has slightly better contrast but slightly more chromatic aberration visible @ 300x. Both produce absolutely pure images @ 120x. Megrez is much better mechanically.

987e 2004-<sup>03</sup>~~03~~-10/11 20:00-22:15 EST Oriole driveway 7-6 28cm r/l 10x54b  
Variables: V QRI, SV TAU, S CMI, S GEM, T GEM, V GEM (in  
outburst!)

Jupiter 2004-03-11 UT

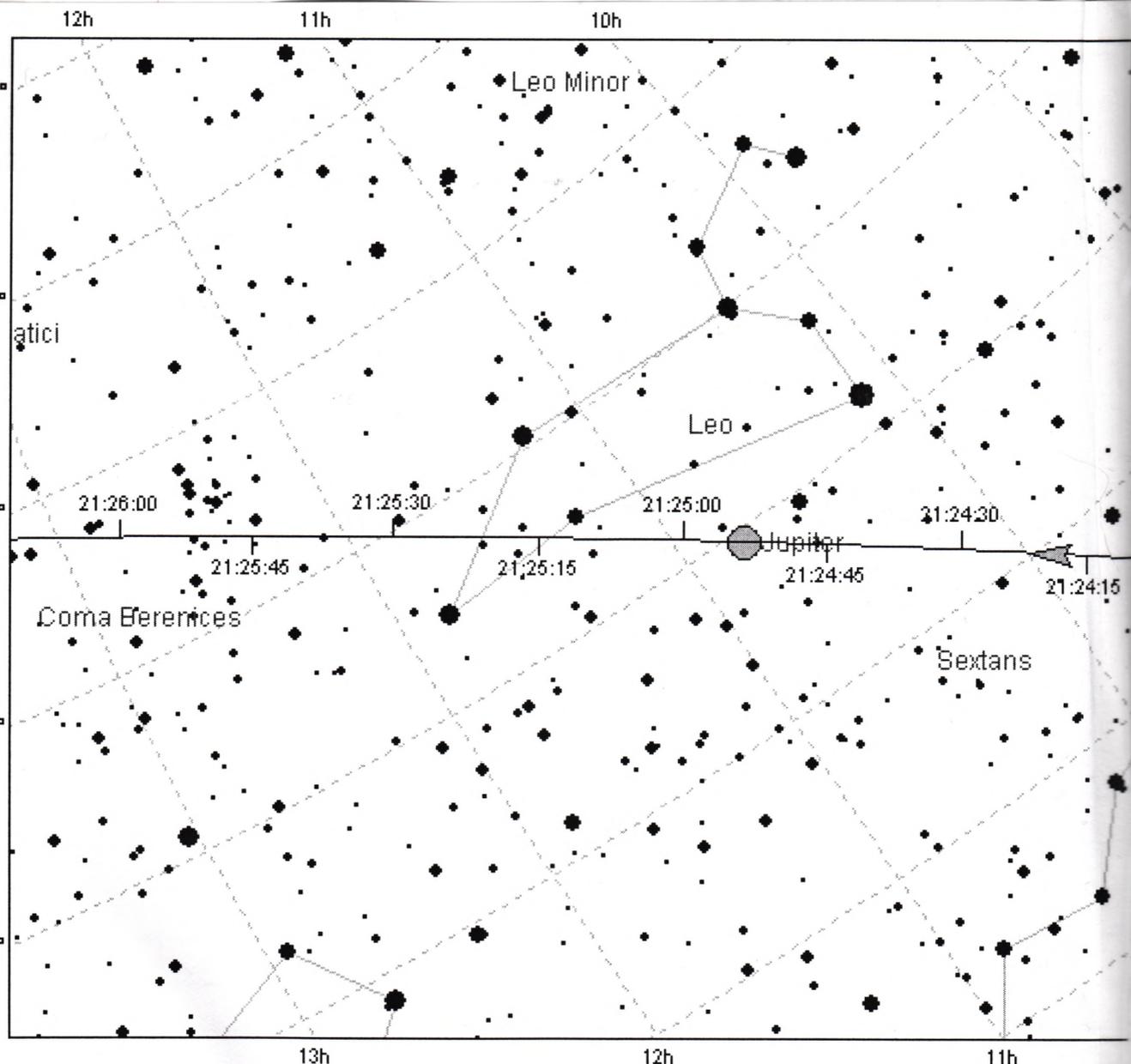
				<u>I</u>	<u>II</u>	<u>III</u>
-	02:25 UT	Obs cam	S:4 T:4 240xb			
1	02:29	Dp RS	S edge SEB	258	76	5
2	02:35	Dc praj	S edge NEB	262	80	9
3	02:48	Wc oval	S edge NEB	270	88	17
4	02:50	Dc RS	S edge SEB	271	89	18
5	03:13	DF RS	S edge SEB	285	103	32
	03:15	Obs disc				

Saturn: 240xb + 300xb - 240x better. Glabe lemon yellow.  
Observed Titan, Rhea, Dione, Tethys & Iapetus, but couldn't  
see Enceladus.

First good solid observing night of the year 0°C,  
Hopefully I'll be able to observe from the yard next  
time - the snow is almost gone.

988e 2004-03-21/22 18:50-19:00 EST Oriole 7 ne 10x50b  
Observed all five ~~planet~~ naked eye planets with naked eye. Used  
binoculars to confirm Mercury. Bitterly cold & windy

989n 2004-03-27/28 21:00-03:30 EST Les Cedres QC ~~38~~ 38cm r/l ne  
Observing @ Montreal Centre members from Chris Navah's home in  
Les Cedres. Mostly I observed with Mark Brattin's 15"  
Tectron Dob, occasionally @ Stephanie's 12.5" Lite Box Dob  
Mainly we were observing Jupiter triple shadow transit, but  
also Saturn, M65, M66, M81, M82, M13.



Star mags.	0 ●	1 ●	2 ●	3 ●	4 ●	5 ●	6 ●
Satellite:							
Date:				Lacrosse 3			Centre of chart:
Time offset from UTC:				10 Apr, 2004			R.A. 11h16m, Dec. +14°
				-4:00			Az. 132° (SE), Elev. 5°
							Field of view: 60° width

9902 2004-04-5/6 20:30-00:00 EDT Oriole NE yard 7 8cmrr x2, 28cm r1  
32cm r1 Ostop Mastiuk brought his 12.5" Starmaster & 8cm  
f/6 Stellarvue AP0 & I used my 11" Starmaster & Geoff Ogden's  
80mm f/6 William Megrez AP0. -1°C

Ostop & I did various comparisons of the two refractors &  
the two Starmasters; Jupiter, Saturn, Castor, & Leonis  
Full Moon. Io & Europa were extremely close (blended  
in refractors @ 96x, barely resolved @ 120x. The two  
refractors were just about even — Ostop says Markus  
Ludes told him that both use objectives of  
identical objectives from a source in Russia.

I actually preferred the view of Jupiter in my 11" over  
Ostop's 12.5" — seemed crisper, more contrasty, snapped  
into focus better.

Before Ostop came, I observed Mars & Venus in 28cm r1  
@ 300x. Mars very tiny. Saw Encke division (or  
minima?) in Saturn's ring.

991e 2004-04-09/10 20:50-22:05 EDT Oriole N yard 7-3 28cm r1  
Variables: R LEO, SU UMA, R UMA, Z UMA, ~~U UMA~~ interrupted by clouds

23:15-23:35 EDT

5-3

Variables: T UMA — clouded out before I could get S UMA

992e 2004-04-10/11 21:20-21:30 EDT Oriole observatory 5-4 ne  
Satellite Lacrosse 3 almost occulted Jupiter, same brightness  
as Leo triangle stars.

1m May 14.9

13.6

Starmaster

Intes

Starmaster

279m f/4.3

152mm f/5.9

279m f/4.3

1382m (Para)900mm1202m (no Para)

40mm MK-70 35x 8.1m 2°02' 22x 6.8m 3°07' 30x 9.3m 2°20'

22mm Nagler 63x 4.4m 1°18' 41x 3.7m 2°00' 55x 5.1m 1°30'

16mm Nagler 86x 3.2m 57' 56x 2.7m 1°27' 75x 3.7m 1°06'

82mm UWA 157x 1.8m 32' 102x 1.5m 47' 137x 2.0m 37'

6mm Radian 230x 1.2m 16' 150x 1.0m 24' 200x 1.4m 18'

5mm Radian 276x 1.0m 13' 180x 0.8m 20' 240x 1.2m 15'

4mm Radian 345x 0.8m 10' 225x 0.7m 16' 300x 0.9m 12'

Binoviewer <sup>2403m</sup>  
(4807m)<sup>1800</sup>  
(3600mm)

→ 98x 2.8m 41' 73x 2.1m 55'

24.5mm SWA ~~196x 1.4m 20'~~ ~~147x 1.0m 27'~~16mm Plossl ~~300x 0.9m 10'~~ ~~225x 0.7m 13'~~

→ 192x 1.5m 14' 144x 1.1m 19'

12.5mm Orthen ~~386x 0.7m 06'~~ ~~288x 0.5m 08'~~

10.0mm Antares 240x 1.2m 13' 180x 0.8m 17'

8.0mm TV Plossl 300x 0.9m 10' 225x 0.7m 13'

- 1) Number of observing session
- 2) Time of day or night: e n m d
- 3) Date YYYY-MM-DD/DD
- 4) Time: (start & end) & zone
- 5) Location
- 6) Sky conditions: 0 = almost totally overcast  
1 = very cloudy  
2 = mainly cloudy  
3 = partly cloudy  
4 = city: very hazy/murky  
5 = city: hazy/murky  
6 = city: slightly hazy/murky  
7 = city: acceptably clear  
8 = dark: quite clear  
9 = dark: very clear  
10 = absolutely fantastic

- 7) Instrument used: ne b rl rr sc un, ~~q~~. 10x50b, 28cmr)
- 8) Others present