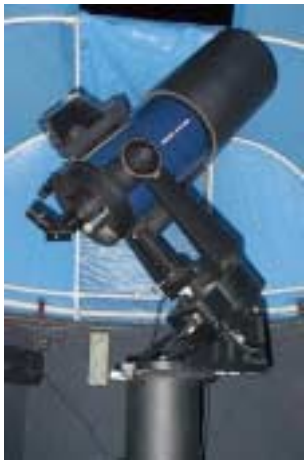
Observatory Log – Baetsen Observatory

Location:



October 1, 2002 to present

4094 Squair Rd., Orono, ON
Lat: 43.9518 °N, Long: 78.6170 °W

December 1999 to October 1, 2002

371 Zion Line, Millbrook, ON
Lat: 44.1261 °N, Long: 78.4910 °W

Equipment:

Main Telescope:

- 8”-f/10 Meade LX-10 mounted on metal pier (April 2002 – present)
- 8”-f/7.5 homemade Dobsonian (July 1995 – April 2002)

Other Scopes:

- 6”-f/8 homemade Dobsonian (1999 – present)
- Burgess 20x80 binoculars (2003- present)

Eyepieces:

- 9 mm Naglar (type 1)
- 10 mm Plőssl - Royal Optics (a.k.a. Sirius)
- 17 mm Plőssl - Royal Optics (a.k.a. Sirius)
- 25 mm Plőssl - Sirius
- 2x Televue Barlow
- 12 mm Meade illuminated eyepiece

Other Equipment:

- Lumicon O-III filter
- Eyepiece projection camera adapter (Orion)
- Off-axis radial guider (Celestron)
- Olympus OM1 camera.
- Piggyback mount on LX-10
- Antares 90° erect-image 8X50 finder
- Telrad finder

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Magnification Table for Meade 8”-f/10:

f (mm)	F (mm)	Power	Limiting Mag*	Power (x2)	Limiting Mag*
25	2000	80	14.1	160	14.8
17	2000	118	14.5	235	15.1
12	2000	167	14.8	333	15.3
10	2000	200	15.0	400	15.4
9	2000	222	15.1	444	15.5

Magnification Table for 6”-f/8:

f (mm)	F (mm)	Power	Limiting Mag*	Power (x2)	Limiting Mag*
25	1220	49	13.3	98	14.2
17	1220	72	13.8	144	14.6
12	1220	102	14.3	203	14.9
10	1220	122	14.4	244	15.0
9	1220	136	14.5	271	15.1

Limiting Magnitude for Binoculars:

Binocular	Power	Limiting Mag*
20x80	20	10.8
7x50	7	9.5

**Limiting magnitude is based on magnitude 5 skies.*

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November 11, 2001	• Arrived at 7:45 pm with Will Juodvalkis • Re-installed 8" f/7.5 in dome • Observed the Double Cluster, Muscle Man cluster, M57, M27, M45 and Saturn • Mars was too low to see from Observatory • Jupiter was just coming up when clouds started to roll in from NW • Need to charge battery – low charge light is lit. • Left at 9:30 pm
November 18, 2001	• Arrived at observatory at about 3:40 AM to watch the Leonid Storm. Quite spectacular almost 1 per second, probably more. • Alex and Patti watched with me for a while then went to bed. Ed stayed up with me till dawn broke. • We really lucked out – perfected clear skies, low lying fog which blocked out some light pollution from Peterborough and Toronto making it that much darker. • Meteors were quick and bright. Occasionally some exploded and left nice ion trails, some lasting a minute or two. • Also spotted the Zodiacal light as morning approached. It stretched up to Regulus. • Saw Venus about an hour before sunrise. Nice and bright as usual. • Jupiter stood out like a jewel in the night sky in Gemini. • Took a roll of 800 ASA film. Each exposure was 5 minutes. Pointed at different spots in the sky. If all goes well, I should have a few nice shots with meteors in them. Unfortunately the battery died. Probably need to buy a car battery and charger, as the gel cell seems to be near the end of its life.
December 9, 2001	• Came out at 9:00 PM to look at Comet Linear (2000WM1). It looked quite large in the 8" f/7.5 with a 25 mm eyepiece. • Jupiter looks like a jewel in the middle of Gemini • Looked at M42, Saturn and M35. Tried to find the nearby nebula but couldn't find it. • Nice night – very good transparency and steadiness. T=-4°C. We have had no snow yet.

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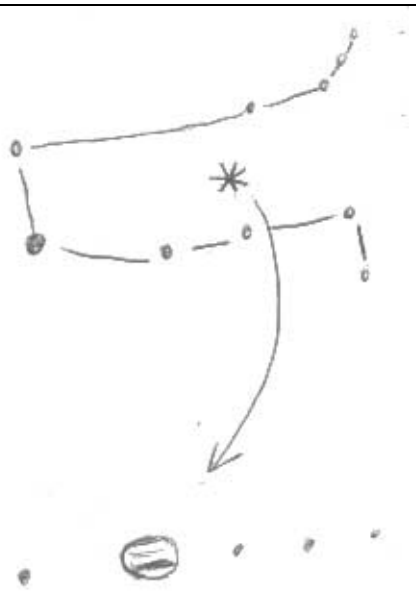
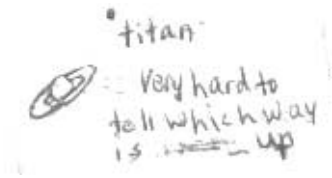
	 **Jupiter**  **Saturn**
March 28, 2002	• Installed new power supply and solar panel to keep it charged.  **Solar Panel Installed**

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	 **New Power Supply**
April 10, 2002	• Will and Charles Observing tonight • Clear skies and about 3°C • Charles polar aligned his new scope while I took some pictures with the camera • Jupiter and Saturn appear to be the best that I have seen • Great Scope Charles. *- Will* • Photographed Jupiter with digital camera (HP 315) and with OM-1 at prime focus through my new 8"/f10 Meade LX10 • Tried to photograph M35 through LX-10 as well. • Also looked at Venus, Saturn, Jupiter, M104, M65, M66, NGC3628 nearby, M1 and Eskimo nebula *- Charles*
April 11, 2002	• Clear for a second night in a row (rare in this part of the country)! • Sketched various objects (see observing log) • Used setting circles on LX-10 for first time
May 5-6, 2002	• Great night out under the stars • ETX 3.5" to 8" wonders – planets, comets, galaxies, Nebula, stars. It doesn't get any better than this (Nice triangle too). *- Rick Stankiewicz* • Looked at the planetary alignment – Venus, Mars and Saturn formed an equilateral triangle. Took some photos of it and Comet Ikeya-Zhang. Rick took digital photos with his Nikon Coolpics through the LX-10. *- Charles*
May 11, 2002	• Started pouring cement for pier base.
May 14, 2002	• Finished installing new pier for 8"-f/10 SCT (LX10)

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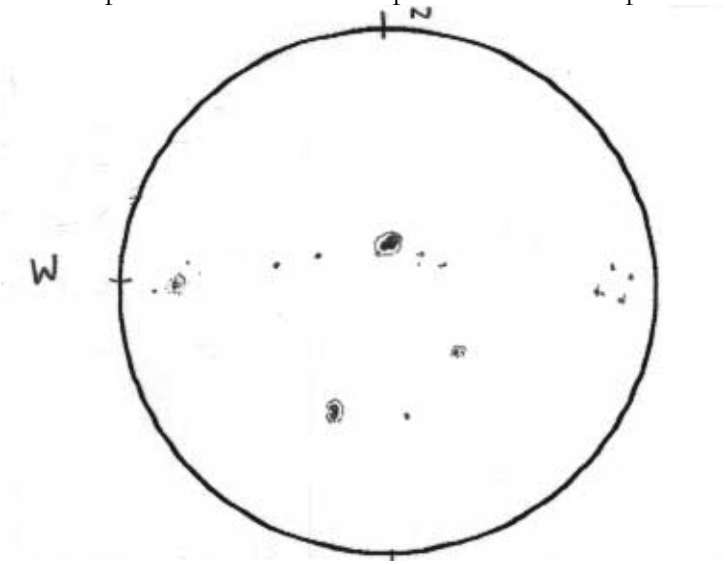
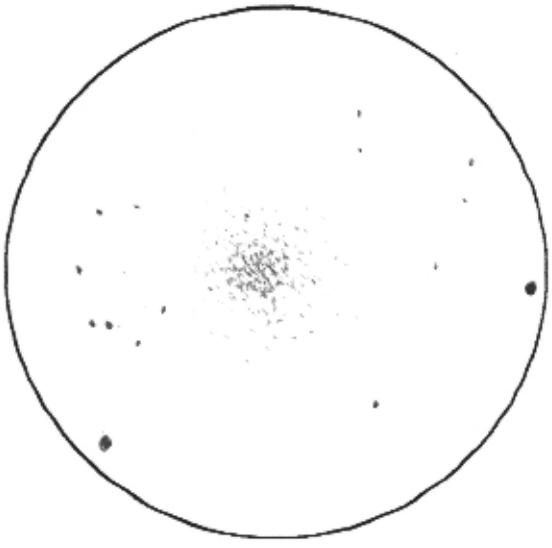
May 21, 2002	• Tested LX-10 on new mount made by Will. Polar aligned azimuth a few nights ago, but still have to do altitude adjustment. Can't be far off as I found the sun close to where it should be in setting circles. Attempted to find Jupiter and Venus in daytime • Venus: 6h32m RA, 24° 56' DEC • Jupiter: 7h07.5m RA, 22° 46' DEC – very faint in eyepiece. • Looked at sun. One large naked eye sunspot visible in #14 welders glass. Several other spots were visible in scope – sketched sunspots.  **The Sun in LX-10 with 25 mm eyepiece**
July 2, 2002 10:30PM – 12:00 AM EDT	• Observed M13, M11, M8, M17 in LX-10 • Very humid night, but sky was not too bad. T=25°C – sticky and uncomfortable.  **M13 10:45 EDT in LX-10 with 25mm eyepiece**

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July 4, 2002 9:30PM – 1 AM	• Extremely clear, but windy. Observed M8, M6, M7, M13, M22 and Veil Nebula. Milky Way was beautiful. • T=15°C.
July 5, 2002 9:00-12:00 AM	• Clear at first, but then cloud rolled in around 11:30. Observed with Peter Shewchuk. Looked at M22, M13, M16 (with O-III filter), M8, M27, M57, M20 and M17 • T=17°C
August 10, 2002	• Photographed the following on 800ASA prime focus 8"/f10 • M17 – 15 min at (11:05 EDT) • M17 – 20 min – more stable (11:25 EDT) • M8 – 8 min (11:50 EDT) • M22 – 20 min (12:20 EDT)
October 10, 2002	• First time using the observatory since it was moved to our new home. Poured pier foundation a week ago last Saturday. Spent last Saturday setting up observatory. Finally got a clear night tonight. • Spent an hour polar aligning the scope. I didn't do such a good job getting the base close to north as I would like (forgot to change coordinates in Starry night pro when I was determining the position of the sun to line up the pier north) – it seems to be off by 10 ° to the west of the pole. Nevertheless I could still polar align it. • Looked at Saturn, M57 and M45. • Aligned finder. Telrad seemed ok, as it did not need aligning. • New modifications to the dome flap seem to work well, but I have to find away to roll it up when open so it doesn't hit solar panel when rotating dome. • Earlier I tried polar aligning the scope using the Tuthill Polar Aligner from John Crossen, but looks like a lens is lose and has to be fixed. Also have a tree occulting Polaris. Can't wait till Ed and Bob come down cut down those trees so I can see south as well.
November 18/19, 2002 9:00-10:00 EST	• Susan Ebata and her children (Jessica and Nicholas) came out to observe the Leonid shower. The sky was very poor and there was lots of moonlight. No meteors were seen, but despite that, they still enjoyed themselves as they got a look at the moon and Saturn through the LX10. They were very impressed with Saturn.
November 27, 2002	• This was the first really clear night in over a month. • Observed Saturn in the 9mm Naglar through the LX10. I was the best I have ever seen. The Cassini Division was easily visible as was detail on the planet itself. • Looked at M57 with the Naglar and it looked very good as well. • Also looked at M1 (very faint) and M45. • The biggest problem with cold nights is frosting over of eyepieces and the finder scope. • Waited to observe M42 to clear the house and observed it briefly. It was

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	not that crisp, possibly because of the low altitude. • Packed up equipment at about 9:30, but came out again to see if Jupiter was up at around 11:00 EST. It was but not high enough to observe with the telescope.
January 6-7, 2003 9:00 – 10:00 PM, 6:10 – 7:00 AM	• Finally a clear night after at least a month and a half of almost solid overcast. • Looked at Saturn, Jupiter and M42 with 9 mm Naglar • Very cold (-10°C) and windy. • Some kind of dew/frost settled on the inside of the corrector plate. Not sure what caused this. • Got up in the morning around 6:10 AM to look for Comet Kudo-Fujikama, but without success. It must not be all that bright as they predicted.
January 25, 2003	• Disaster struck – strong winds tore into the top of the dome. I had to cover the entire dome with a tarp until I have time to fix the damage. In the meantime, I removed the scope.
February 26, 2003	• Purchased 20x80 Burgess Binoculars from Kendrick • Used them this evening – very nice. • Looked at M42, Jupiter, Saturn, M45, M44, and M31
February 28, 2003	• Woke up early (5:00 AM) to view the morning sky • Used new 20x 80s to view Dumbbell, Lagoon, Trifid and various clusters in the Milky Way. • Venus was up, but very low in the sky (compared to a few months ago).
March 1, 2003	• Repaired Dome with Walter and his son Peter. Re-installed LX-10. Noticed that pier had shifted a few degrees from vertical. Surprised to see this since things haven't thawed out yet. • Attempted to show Walter and Peter the sun, but cloud cover was too thick to see anything.
March 5, 2003	• Hypatia's Brownie pack were supposed to come over tonight for Astronomy badges, but they cancelled out because of the storm (we got 25 cm of snow) we got last night and this morning. Unfortunately for them, it cleared off in the early evening and it looks like it will be a nice night. • 7:30 PM - Took 20x80's out to look at the crescent moon, M42, M44, Jupiter, Pleiades and M31.
March 15, 2003	• Imaged sun using Pulnix-Waxman VS-79 B&W security camera attached to LX-10. Used snappy card to capture pictures from camera. Results were poor.
March 18 2003	• Came back from DRAA meeting. Imaged moon, Jupiter and Saturn with VS-79. Hooked camera up to VCR and C-64 monitor. The monitor worked well. I could easily see Saturn and Jupiter, and even the Galilean moons on the screen. Recorded images directly to VHS tape and then captured select images with ATI TV card in the P-200. Much better results than using the snappy. Captured images of Saturn and Jupiter were dim.

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March 19, 2003	• Imaged the sun in same way as last night. Not too bad, but images are dim when captured.
March 21, 2003	• Leveled pier. Pier shifted about 5 degrees from vertical over the winter. Also drilled drain hole in bottom of pier to drain accumulated water (from roof leaks). Made hole in floor square to facilitate removal of pier, without having to take building apart.
March 25, 2003	• Set up 20x80 binoculars to look at the sky with Hypatia. Looked at M81/M82 in UMa, looked at M42, Pleiades, Jupiter (and M44). Sky transparency was poor and wispy clouds came in. Eventually whole sky was overcast.
March 26, 2003 8:30-11:00 PM EST	• Nice evening -excellent transparency and good seeing. Observed some auroral arc low in the north around 8:00 PM, but they seemed to have disappeared by 9:00. • Will came over and we recorded some images of Jupiter and Saturn using the VS-79 on videotape. The images seemed much brighter than they did the last time I was trying this. Seeing is everything! We also tried taking some images using the 2x-Barlow lens with the VS-79. This worked quite well. The images were 2x larger, but fainter. We also hooked up Will's Pentax digital camera to the video monitor and used eyepiece projection to get some images. See attached photos. Overall the setup worked quite well. • Also viewed M13, Jupiter, and M44 with 20x80 binoculars. Weather was a bit cold (~1°C) and breezy.
April 12, 2003	• Will and I created brackets to mount our digital cameras to an eyepiece in order to do some digital astrophotography.  • I test photographed the Moon (~6:30pm) in daylight to see if setup worked – looks ok.

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April 26, 2003	• Will and I photographed Saturn, Jupiter and attempted M13 with our digital cameras. Saturn was overexposed on my camera, but looked well on Will's. Jupiter looked ok on both, although Will was able to zoom in and see the banding. M13 did not show up at all. • Really need to polar align scope – it needs lots of corrections in both axes.
May 4, 2003	• In preparation for the upcoming transit of Mercury, I attempted to polar align the scope. Spent over 3 hours using star drift method! Thought I had the star sitting on the crosshairs for 5 minutes, but when I re-tested it, it drifted again in the opposite direction. There seemed to be a bit of hysteresis when trying to get the azimuth setup properly (perhaps it was something related to the star crossing the meridian). After 2 hours of frustration, I tried to try and setup the latitude and discovered that I was set at 35°N instead of 44°N, which probably accounts for a lot of strange things. After roughly setting up scope to 44°N, I retried azimuth alignment. This worked much better. Went back to latitude adjustment and got it close. • Need to offset the threaded hole on my crossbar as runs through the center, which means the latitude adjustment rod strikes the cover of the AA battery pack (which deforms quite easily). • Briefly looked at M57 and M4 before heading to bed at 1 am. • Nice crescent moon earlier – near Saturn.
May 7, 2003 6:00-7:00 am	• Transit of Mercury – thwarted by low laying cumulus clouds near the horizon. Caught the last few moments of the transit, which ended at about 6:35 EDT. Lots of turbulence in the atmosphere. • Corrector plate dewed over enough to prevent me from getting any video of the event. It was also hard to see any image on the screen (hence focusing was impossible) because of the daylight. • Had to mount scope on tripod, as the sun was not visible from the observatory at that time.
May 8/9, 2003 10:30 pm-3:30 am	• Despite moon being almost 1st quarter, there was an amazing amount of stars out. The transparency was excellent. • Checked polar alignment after re-installing scope. Only had to do a minor

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<table>
<tr><td></td><td>adjustment in azimuth, none in latitude.
• Checked out orthogonality of axes. Set setting circles and dialed in a few objects. May need to adjust forks slightly.
• Took digital pictures of the moon (this was the best I had taken to date), Jupiter, Alberio, Vega, the double double in Lyra, and M13. M13 did not turn out at all.

 

• After moon went down – looked at M13, M17, M11, M8, and M16.
• Summer Milky Way looked very nice from my new backyard. I am pleased.
• Scope fogged over in the INSIDE of the corrector plate. There was some small amount of water in the tube a few days ago, and it must have condensed out on the optics. Used my ceramic heater to heat up tube a bit to remove dew. I need to find a way to get rid of the H_2O in the tube. Perhaps hanging a silica gel pack in the scope when not in use will help.
• Viewed Mars though tube currents, and it's low altitude made it very mushy.
• Packed it in around 3:30 am – What a great night!</td></tr>
<tr><td>May 10, 2003</td><td>• Started work on new observatory dome. Cut out 12 sections to form the lower part of the base of the dome.</td></tr>
</table>

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May 11, 2003	• Finished bottom ring for new dome. • Also installed central slit 

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May 14, 2003	• Installed re-enforcement for main slit • Installed first four ribs and quarter ribs to support main slit 

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May 16, 2003	• Installed remaining ribs. Now the dome takes shape. 
May 18, 2003	• Created slit doors and prepared dome for painting. • Patricia and Alex gave the frame a coat of primer.

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May 20, 2003	• Gave dome frame coat of Glossy White on portions that will be covered by Masonite. This is to ensure that if water gets through, the underlying structure is still protected. I want this thing to last a lifetime (mine)!
May 21, 2003	• Gave same portions another coat of Glossy White. • Installed new piggyback mount on Meade LX-10.
May 24, 2003	• Walter and his son Peter came down in the after noon to help me trace out the panels for the gords. I installed two of them before he left.
May 27, 2003	• Managed to cut and install the remaining gords. One near the back had to be re-cut, as it did not fit to well when I re-installed the central ribs. I also had to widen the slit covers, as they did not fit to well anymore.
May 28, 2003	• Installed plastic quarter-round to cover where gords join up. Then caulked the assembly. This covered a multitude of sins and also provided an easy way to caulk the seams.
June 1, 2003 10:20 pm-1:00 am EDT	• First clear night in a couple of weeks, but even then it was hazy. Went to DRAACO for the first time to check out the DRAA observing site. Len Benshop, Gil Tennant and Matt were there already. • I brought my 20x80s and they all had their SCT's to do various things. • At around 10:40 pm EDT, a nice meteor was seen in the north about 20 degrees above the horizon. It was extremely bright (-6) and slow moving. Occasionally some pieces broke off. It moved only a short distance in the sky (about 5 degrees), but it lasted for 10-15 seconds. • Saw ISS pass over around 10:45pm EDT. We tried to follow it in the scope. • Looked at M13, "sail boat", "broken engagement ring" and another asterism.

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	• We tried hunting for the small galaxy (the hard one) beside M13 without success. • The haze thickened as the night went on. All the clear days in the past three weeks seemed to have been troubled by this haze.
June 4, 2003	• Put final coat of paint on the dome. Now all that is required is to place it on the old building and install the skirt (in-situ). 
June 7, 2003	• Installed new dome on the old building. 

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	▪ Thanks to Walter Bek, Will Juodvalkis and Ed Bobee for helping to install it. ▪ Later in the evening, Don McDonald and Rene Bowes came down, in hopes of doing some observing from my place, but we got fogged out. I showed them the new observatory and we chatted for a couple of hours before they left. Maybe next time.
June 14, 2003	▪ First really clear night in about a month. Too bad it is the night of the full moon. ▪ Briefly observed Jupiter with Will's 40 mm Celestron eyepiece
June 16, 2003 11:00 pm –12:00 am EDT	▪ Viewed M11, M27, M57, M8, and M4 in the LX-10 with Will's 40 mm Celestron eyepiece. ▪ Also scanned the sky with my 20x80 binoculars. M27, M4 and M11 show up well in these. Could not see NGC7000, as there is too much skyglow. ▪ Saw an Iridium flare in Virgo at around 11:50 PM. It moved very slowly from the SW to W and brightened to about –4 or -5 (near Zeta-Vir). It didn't stay visible for that long. Turned out to be Iridium 3. ▪ Also observed some slight auroral activity in the north, north-east (spikes) ▪ Moon came up and was visible above the horizon by midnight. ▪ Generally not a great night despite it being reasonably clear in the daytime.
June 21, 2003 11:15 pm – 2:00 am EDT	▪ Used new piggy-back mount with OM-1 for first time ▪ Photographed NGC7000, 2 exposures – 10 minutes guided, with a 270 mm – f/5.6 lens ▪ Photographed Veil Nebula, 15 minutes guided, with a 270 mm – f/5.6 lens ▪ Viewed Alouette 1 (Canada's first satellite) in 20x80 binoculars at 1:13 EDT near the star ε-Peg. It brightened and then faded (like it was tumbling in orbit). Caught it a few more times, but then lost it. ▪ Attempted to spot the oldest man-made thing in space – Vanguard 1. Tried to catch it as it crossed near κ-Aql at 1:37:15, but there were some hazy patches in the sky and there was a lot of skyglow.
June 29, 2003 1:00 am-1:30 am	▪ Attempted to view some objects from my Off the Beaten path list. Saw NGC6210 in Hercules before clouds rolled in. It was not that impressive being a small planetary nebula. Sketched object in my Observing Log. ▪ Sky conditions were fair at best with a thin layer of cloud or haze present. The Milky Way was barely visible.
June 30, 2003 5:00 am – 6:00 am	▪ Mars was still visible in the south, so I decided to open up the dome and take a look. It was fantastic. This is the best I have ever seen it (mainly because it was ~17" in diameter). Central Meridian was 282° according to S&T. The seeing was reasonable, and there were moments of stability where I could see more detail. The polar cap and Syrtis Major were easily visible and some detail was obvious. Sketched object in my Observing log.
July 15, 2003	▪ Installed carpet (Astroturf) in the observatory and painted the base of the observatory white to cut down on the heating of the inside, which should help with the seeing.

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July 18, 2003 10:00 pm – 1:00 am	▪ Put second coat of white paint on outside of observatory base. ▪ Will came down to do some observing from the "new" observatory. ▪ Observed M8, M20, M27, M11, M12, M22, M4 and various other objects with the LX-10. ▪ Also scanned the Milky Way with 20x80 binoculars and Will's 11x50's ▪ It was one of the clearer skies of this year. The Milky Way was nice and bright (at least for this area) and we did a lot of naked eye observing as well. ▪ Briefly viewed Mars, though it was low in the muck. ▪ Will attempted some photographs with his digital camera.
July 20 4:00 am – 5:15 am	▪ Woke up to view Mars at a more favorable altitude. Patti came as well to view the red planet. It was very nice and large. The polar cap was easily seen as well as some darkening on the surface. ▪ Took some photos with my digital camera. They looked overexposed. ▪ Hooked up the B&W security camera to videotape Mars. This looks quite good. Videotaped Mars straight through and with the 2x Televue Barlow. ▪ Also videotaped the moon, which was at last quarter. ▪ Will try and snap some shot from the tape later.
July 22 10:30 pm - 11:30 pm	▪ Patti and I did some casual observing in the observatory. ▪ Looked at M22, M17, and M8. ▪ Accidentally came across M71 in Sagitta when looking for M27. I almost forgot this was there. ▪ Looked at M31 over the house.
August 22, 2003	▪ *Starfest 2003* ▪ Observed various Messier objects with Trish Marsh. Glad to see that she is back into astronomy and doing well. ▪ Observed M11, M13, M22, M17, double cluster, Andromeda Galaxy ▪ Did some scanning of the Milky Way with my 20x80s ▪ Purchased a correct view 90-degree diagonal and 8x50 correct viewfinder. They work quite nicely. ▪ Excellent night – very clear, except in the extreme north. ▪ A few auroral spike were observed in the north ▪ Observed until moon rose around 2:00 pm. Also observed Orion in the early morning when I got up to use washroom. ▪ Viewed Mars through various scopes including Ann Tekatch's 7"-Starfire ▪ Need to get an orange and red filter. ▪ Observed Mars through Stewart Attlesey's 20" obsession with a blue filter.
August 23, 2003	▪ *Starfest 2003* ▪ Another wonderful night at Mount Forest. Not as good as last night, but the scum eventually cleared off. ▪ Got a look through Attila's (Danko?) night vision scope. I cannot believe what you can see with it. Even the stars were brighter. Apparently it goes down to 8th magnitude. The Milky Way could not be seen with it however (not enough blue sensitivity). ▪ Woke up around 3:30 to see a pretty moon with Saturn in Gemini.

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August 26, 2003 10:00-11:00 EDT	▪ Mars's closest approach in 60 000+ years. ▪ Briefly observed Mars with Patti. The seeing was not all that good.
August 27, 2003 9:30-11:15 pm EDT	▪ Observed Mars. Seeing was real poor at first when the planet was low in the horizon. The seeing improved enough to get a drawing around 11:00. ▪ Discovered that 10 mm Plossl is better than 9 mm Naglar for viewing Mars. It had fewer reflections. ▪ Also briefly observed M31 with 10 mm eyepiece.  **Mars at 11:10 pm EDT (north is up)**
August 30, 2003 9:30 pm – 2:00am EDT	▪ Purchased Logitech Quickcam 4000 for imaging Mars. ▪ Took various AVI files of Mars using Quickcam and 2x Barlow. ▪ Found that I had to adjust position of image in both X and Y directions => polar alignment must be off. ▪ Polar aligned scope. It needed tweaking in both altitude and azimuth.  **Mars at 12:22 am EDT Aug 31, 2003 (composite image)**

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Sep 5th, 2003	▪ Took more Mars images (this time at 640 x480) ▪ Could clearly see Sirtis Major both visually and in the images captured  **Mars Sept 6 at 1:30 am**
Sept 6, 2003 9:30 pm – 12:00 am EDT	▪ Took still more images of Mars ▪ Haven't processed images yet, but will do so soon. ▪ Also attempted to image the moon with the web cam, but the moon is almost full so there is not interesting features to image at this time.
Sept 8, 2003 9:00 pm – 11:30 pm EDT	▪ Imaged Mars again. Still need to process images
Sept 20, 2003 9:45 pm – 11:45 pm EDT	▪ Hurricane Isabel came through yesterday and cleaned out some of the humidity etc. so tonight is not too bad. ▪ During the day, I re-organized the observatory after installing electricity to building. ▪ Also began to construct a housing for the Logitech Quickcam 4000 guts, so I will not break it. ▪ Attempted to image Mars but ran into some bizarre problems. 1.) Slave HD seems to have no partition (I assume it is toast), 2.) When imaging with K3CCDTools, the preview mode is not working during the capture process. I will look into this stuff tomorrow ▪ Captured a few AVIs of Mars to process later. ▪ Took some piggy back astrophotos of the following objects: o Andromeda Galaxy (5 min, 10 min) o Pleiades (5 min, 10 min) ▪ All of the above were taken with the OM-1 and a 135 mm lens at f/4.

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Sept 21, 2003 9:00 pm – 11:30 pm EDT	▪ During the day, I finished making my case/holder for the web cam. I also had to remove the D: drive from the PC since it seams to have died. Now I only have about 800 Mbytes available for imaging on my C: drive only. ▪ Will came over to check out my web cam setup. ▪ Imaged Mars. Found out that PC is dropping 84% of frames for no apparent reason. Rebooted PC and now I get it down to 45% dropped. ▪ Tried imaging Mars with two 2x Barlows stacked. Now that I have mounted the Quickcam in a proper case, it is easier to find Mars with it. ▪ Photographed M31 and M45 using the 2x teleconverter and 135 mm lens on my OM-1. Each exposure was at f/8 (270 mm) and 10 minutes in duration. ▪ Overall a very good night. The Milky Way was a bit more visible than it was the night before.
Sept 30, 2003 5:30-6:30 am EDT	▪ Woke up at 5:25 am to imaging Saturn. Temperature outside was 2.5 °C. Frost will be coming soon. ▪ Setup scope and took a peek at M42, an old friend that I haven't since last winter. It looks kind of strange in the correct image diagonal, as I am not used to seeing it "right side up", which of course looks upside down to me since I have only known it as an inverted image. ▪ Imaged Saturn at prime focus. Captured four 1-minute AVI files. ▪ Jupiter got up high enough to try imaging. I captured two 1-minute AVI files of Jupiter using the 2-inch Barlow lens. ▪ It is amazing how quickly twilight comes. When I went out at 5:30 is was completely dark, and then around 6:00 is all of a sudden got much brighter. ▪ I like this time of year for observing, because the length of twilight is so short, not like in the summer where it lasts for hours. ▪ I think I will have to invest in a Kendrick dew remover as most of my lenses and the corrector plate had some dew on them. I need also to better seal in the cracks on the west and north side of the observatory base as water is still making its way in and soaking the carpet.
October 30, 2003 6:30 EST	▪ Saw the best auroral display ever! ▪ Noticed red auroral curtains directly east in the twilight! Normally I rarely see red in aurora, but this time it was very obvious even in twilight. As it got darker, it got better. ▪ Called or emailed everyone I could think of. ▪ Got of a few pictures with the digital camera and the OM-1. ▪ Aurora peaked around 7:00 pm. By 8:00 it was only bright in the east with a greens glow. ▪ Drove to DRAACO at about 8:30 pm. There was only one other person there. Stayed until 11:20 pm. The aurora brightened and had some nice rays just before 11:00 pm, but there was no red.
November 8th	▪ Lunar Eclipse. Was out with Patti on "date", so I only briefly looked at stages of eclipse. Saw moonrise in Whitby, and I have never seen such a distorted. It was quite red and beautiful. Later, we could see the first "bite" being taken out. When moon was in mid eclipse, it was a rather

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	bright pale red. ▪ Dragged the kids out briefly to have a view.
November 13, 2003 4:30 AM	▪ Sever wind storm. Gusts exceeding 110 km/hr ▪ Minor damage to side of dome caused by top shutter blowing off. ▪ Fortunately it was not raining at the time so everything inside was fine. ▪ Tied down top shutter with rope. ▪ Need to provide latching system for top shutter.
November 16, 2003	▪ Replaced ropes with chains on shutter. Added turnbuckle latches to upper shutter. This should hold much better than before.  ▪ Patched crack on dome with PC7 epoxy. ▪ Also vacuumed out Asian ladybugs. These were infested inside every nook and cranny, including inside the chart holder and battery case. In the spring I must seal up all the cracks and put screening over gap around pier.
November 20, 2003	▪ This was the first real clear night in awhile. Unfortunately because of all the rain lately, fog formed after nightfall. The air is quite humid so the transparency is not as good as it was at sunset. Still it was good for imaging Mars. Captured some more AVIs, incorporating some what I learned from Len's talk last week. Played around with the gain and exposure times to max out pixel intensity range. ▪ Mars is quite smaller than the last time I looked. It is also quite obviously now a gibbous phase. ▪ Noticed some low auroral activity in the north. The forecast was for more active stuff as two large sunspots are now facing us. One of them being the same one that caused last month's aurora. ▪ T=0°C

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November 21, 2003 7:30 pm – 9:30 pm EST	▪ Better night than the previous, except that there was some cirrus clouds in the west. Fortunately they stayed there throughout the observing session. ▪ Took two photographs of the Pleiades. The last one was cut short due to a jet crossing the path. ▪ Briefly observed M45, M1 and M42. ▪ Closed up dome, and set clock for 4:00 in morning, however at that time all was overcast. ▪ T=4°C
December 13, 2003	▪ Polar Aligned Scope
January 20, 2004	▪ Gazed at Venus in the evening sky. ▪ Later opened up observatory and observed M42 & M45. ▪ Looked at Saturn. It was quite stunning as the seeing was excellent ▪ Also looked at Mars. It is quite small now. ▪ T=-23°C in observatory. The 12V battery is near dead so I brought it in for charging. ▪ Tested out green laser pointer. Need to buy more AAA batteries.
February 2, 2004 6:30 -8:00 pm EST	▪ Had the 1st Orono Beavers & Cubs over for Astronomy night. The sky was hazy, but it was clear enough to show them M42 in binoculars & Saturn in the 8". They all seamed to enjoy it.
February 8, 2004 6:00 -7:00 pm EST	▪ Briefly observed M42, M43, Venus, & Saturn with Patricia. Quite windy. Still the temperature was not bad at about -5°C.
February 15, 2004 7:30 – 9:00 pm EST	▪ Excellent sunset. Extremely clear. This was the most transparent sky I've seen since the summer. Cold (T=-17°C), but no wind. ▪ Observed M42, M43. This looked incredibly detailed tonight. I could easily see detail in the wisps of the nebula. Even noticed the "hole" around the trapezium where the central stars have blasted material way after turning on. I cannot remember noticing this before. ▪ Since M42 looked so good and bright, I decided to look at the Crab Nebula (M1). I discovered that if one simply moves the scope in declination only from M42 towards ζ-Tau, M1 will appear in the field of view without much hunting. It did not look as bright as I would of expected, though it was still not too bad to look at without a filter. ▪ Also took a brief look at Saturn. The sky was not as steady as it had been on some other (not so clear) nights, but the ringed planet still looked impressive. ▪ Went in for a half hour to warm up and eat dinner, and then went out to look for R-Leonis and Jupiter. ▪ Found R- Leonis (around 20:30 EST) with the AAVSO charts and estimated it's brightness at approximately 9.5. This is the first variable star I have looked for in years. ▪ By the end of the observing session, Jupiter had risen well over the roof of the house. It was still bubbling, but I could see the moons and some

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	details on the surface of the planet. Did a quick sketch (to show moon positions only). See sketch log book.