Orbit

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Editorial

We've had a few nice comets the past few months with Swan and McNaught and it looks like there is a new one or two coming into the morning view. I've enjoyed viewing these by myself and with my son. I hope you've all had a chance to see some of them. If not, the internet contains images by many amateurs and pros, including some in our club.

Please send articles to the editor (harry.pulley(at)gmail(dot)com) as this newsletter is for the members and by the members.

Harry Pulley, Editor

From the President

Over the past month the Board of Directors has grown once again. This time I would like to welcome Kevin Hobbs to the Board. Kevin, who has been an active member for years now, will be an incredible asset to the Board with his technological knowledge. Also, with the Trillium Scope set up and ready-to-go in the roll-off building, I would like to get some observing projects underway. If you have any interest in participating or running an astronomical project please contact either myself or any other Director. Some observing projects being considered right now include Supernova hunts, sky surveys, and based on Doug Welch's talk in early February; a light echo survey looking for reflected light from supernovas of long ago. This is by no means a complete list of projects we can pursue. The sky's the limit.

John Williamson,President

James (Jim) A. Winger

Jim Winger passed away on February 13, 2007 after a brief illness in hospital. He was 84.

Jim was a long time member of Hamilton Centre and the Hamilton Amateur Astronomers. He had always been interested in science and astronomy. After coming out of the armed forces at the end of the Second World War, some event in the sky (Jim couldn't recall what it was) prompted a conversation with a coworker who suggested to Jim that he check out the Royal Astronomical Society of Canada Hamilton Centre meeting at McMaster. Jim went to the very next meeting and was immediately hooked. Not long

after that first meeting, a group of Hamilton Centre members were discussing how nice it would be to have regular amateur telescope making meetings. No one offered to organize anything, so Jim volunteered to have the ATM meetings at his home in Burlington. His association with telescope making began! Over the years, Jim made himself a couple of small refractors as well as a 6" reflector. No one will ever know how many telescopes he's helped others build.

Jim served as President of the RASC Hamilton Centre three or four times - including the year that Hamiton hosted the national RASC annual meeting. He also served as National Rep. for Hamilton Centre on at least one occasion. When Bill McCallion was establishing the planetarium at McMaster, Jim Winger was involved in helping to set up first a parachute and then a cardboard dome to be used with the Spitz projector. In 1984, Jim was awarded the RASC Service Award.

In 1990, the old telescope maker's group was revived and, once again, Jim volunteered to host the meetings. About a dozen of us eager glass grinders trekked out to Jim's garage in Caledonia weekly for months to make our own optics. It was a great experience and I still can't get over how easy it is to make your own mirror! Jim's wife, Lucille, made us feel extra welcome by supplying goodies and coffee. The energy from those treats helped us all participate in the annual ATM Group ritual of pushing Jim's house trailer into the backyard for the winter.

One of Jim's favourite observing memories was of joining the group that trekked to Quebec for a solar eclipse many years ago. He preferred planetary observing to deep sky observing, but his main interest is in astronomical theories and science.

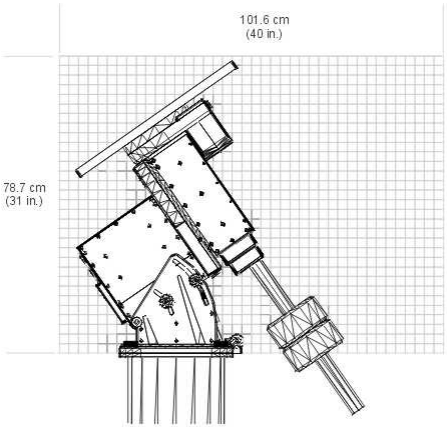
Jim and Lucille have two daughters: Roberta and Naomi; as well as two grandchildren: Natasha and Colin.

We will all miss him.

Ann Tekatch

Software Bisque Paramount ME (PME) – Upgrade

by Kevin Hobbs. Special thanks to Colin Haig for all his help.



Introduction:

Anyone who has spent any time behind a scope knows that one of the biggest hassles can be the ever growing mess of cables dangling from around your OTA and eventually getting tangled as your computerized mount goes through homing sequences, meridian flips, and just plain slewing between multiple objects. From dew heaters, to imaging cameras, to guide scopes … there is a better way to avoid this nuisance!

With the Powis dome in need of serious repair (replacement or conversion to a roll-off roof), the Trillium Scope (16" OGS RC and PME) was to be relocated to the Chilton building. In preparation, a number of individuals all pitched in to set up a suitable pier. This provided the perfect opportunity to finally take advantage of a key attribute of the PME … through the mount wiring. Having done this a few years prior to my Paramount, I knew that this wasn't a ten minute job to be completed on a dark (but cloudy) cold night in a poorly equipped outbuilding! The PME needed to spend a few days in my shop to permit fabrication and installation of all the required custom components.

As with any good club project (I love clubs), the first step was to compile all the unsolicited advice, recommendations, and requirements from the rest of the experts. Once done, the second step was to simply proceed based on the premise that the one doing the work gets the only real vote.

The following is the short list of supported features to be accommodated on the "Versa Plate":

1) Scope Fan Power
2) Scope Focuser Control
3) Visual Finder Scope Illuminated Reticle Power
4) USB 2.0 Hub
5) ST-11000 Camera (Power, USB, Guider)
6) CAT5 – Ethernet (future)
7) Electronic Finder Scope (CCD Camera, Video, Power)

8) Misc (including DSLR Control)
9) DC Power (Dew Heaters, Accessories, etc)

Out with the Old:

The picture below shows the "Instrument Panel" which is located on the underside of the "Versa Plate" at the rear.

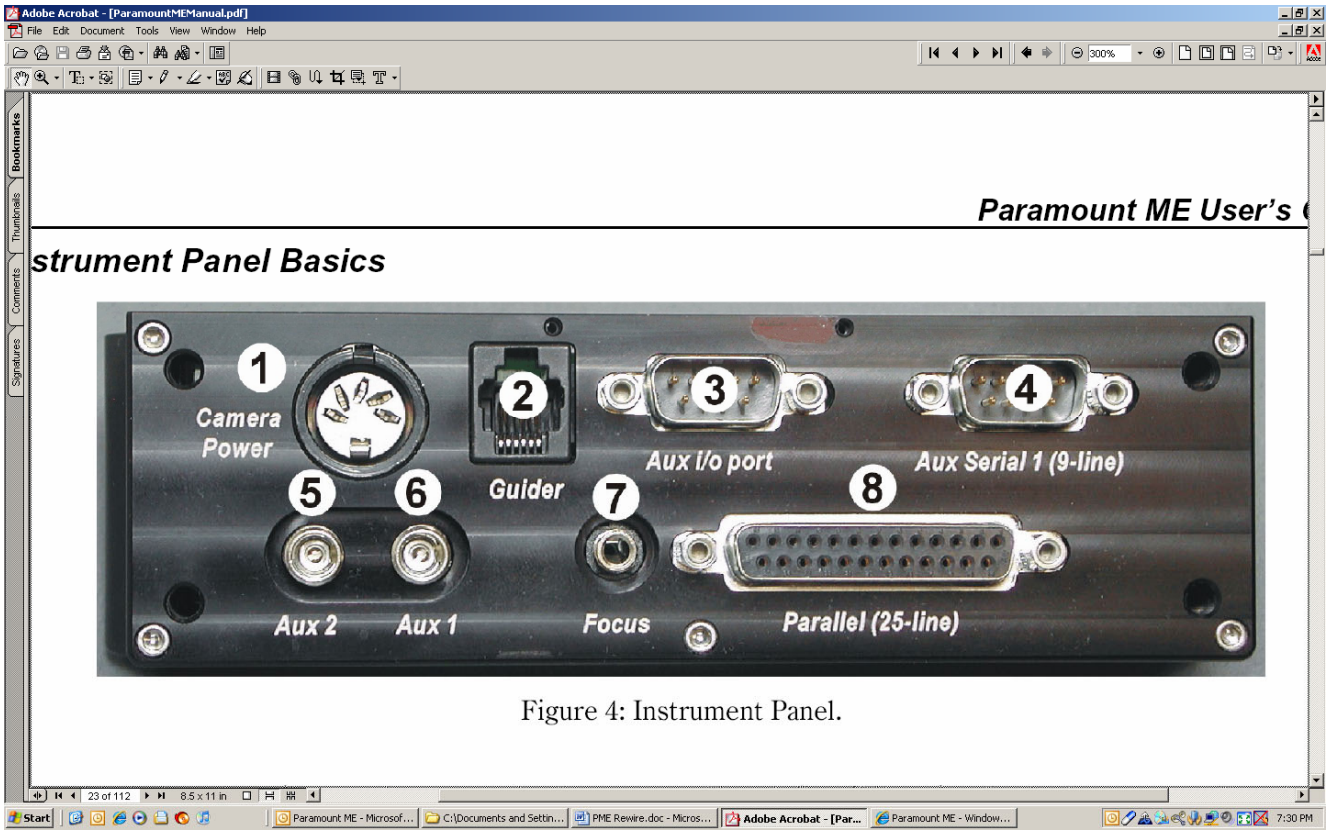


Figure 4: Instrument Panel.

I got my Paramount ME back in May of 2004, and even back then it was painfully obvious that even though this mount was far and away the best mount going, it hit the market with an obsolete set of internally wired features:

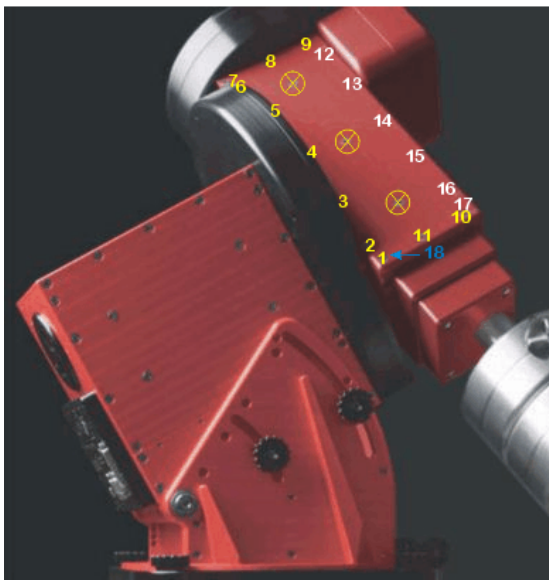
- Connector 1 (5 pin DIN) and Connector 8 (DB-25S) were both intended for older SBIG cameras. Newer cameras used different connectors, and require far more current carrying capacity than could be supplied through the internal wiring.
- Ports 3 & 4 were also essentially useless as USB was well on its way to replacing legacy serial ports, especially for devices like cameras.
- Ports 5 & 6 had the right idea for supplying auxiliary power, but unfortunately the mating connectors were difficult to source (really should have been supplied with an instrument of this caliber and price tag), and the current carrying capacity of the connectors and interconnect wire was inadequate.
- The two stock internal cables running between the "Adaptor Panel" and the "Instrument Panel", multi-conductor ribbon and multi-conductor cable, took up a

lot of valuable wire-way room and really weren't the best choice for any of today's common needs.

Conclusion … the "Instrument Panel" and stock thru mount wiring had to go to make room for more desirable features and the associated cabling.

Rewiring:

1) Unbolt the "Instrument Panel" from the "Versa Plate"
2) Remove the side panel to permit access to the internal wire routing.



3) Remove the Adaptor Panel

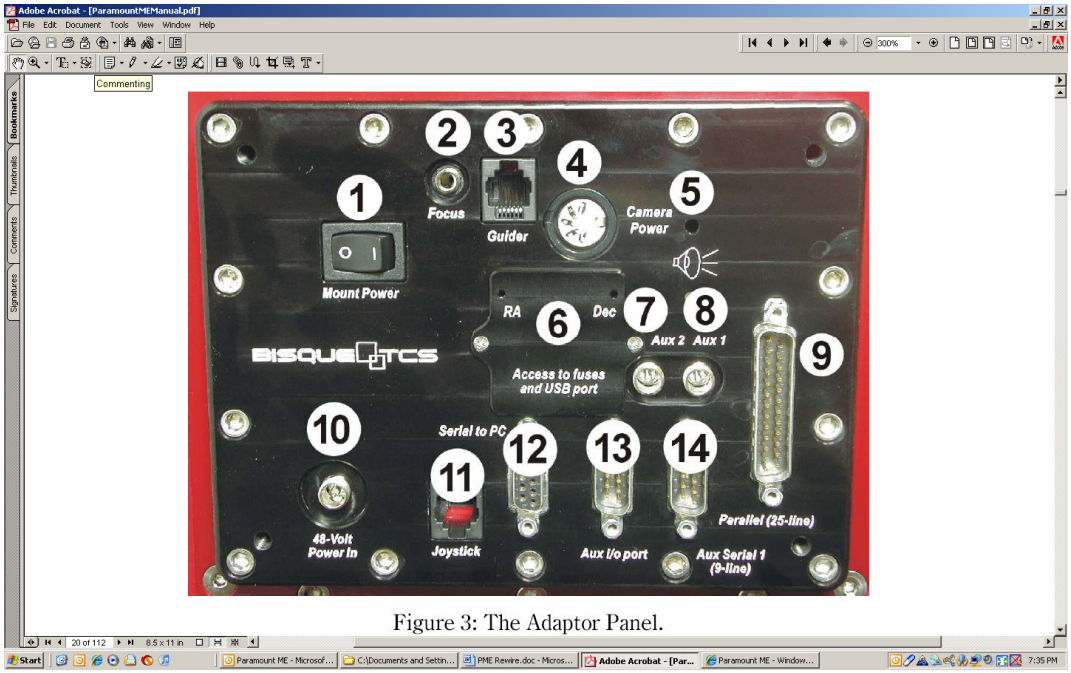
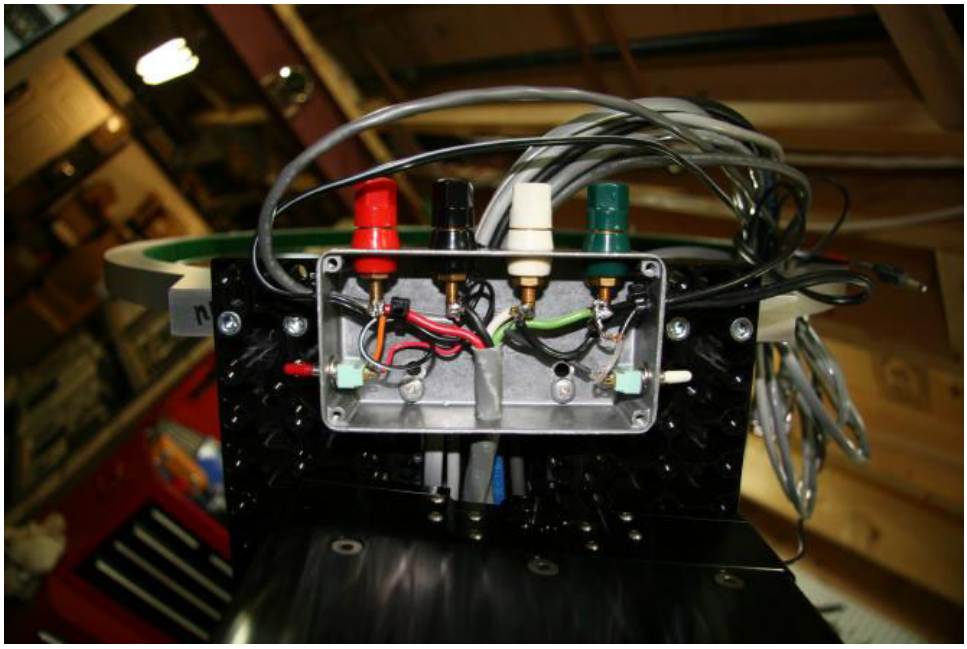
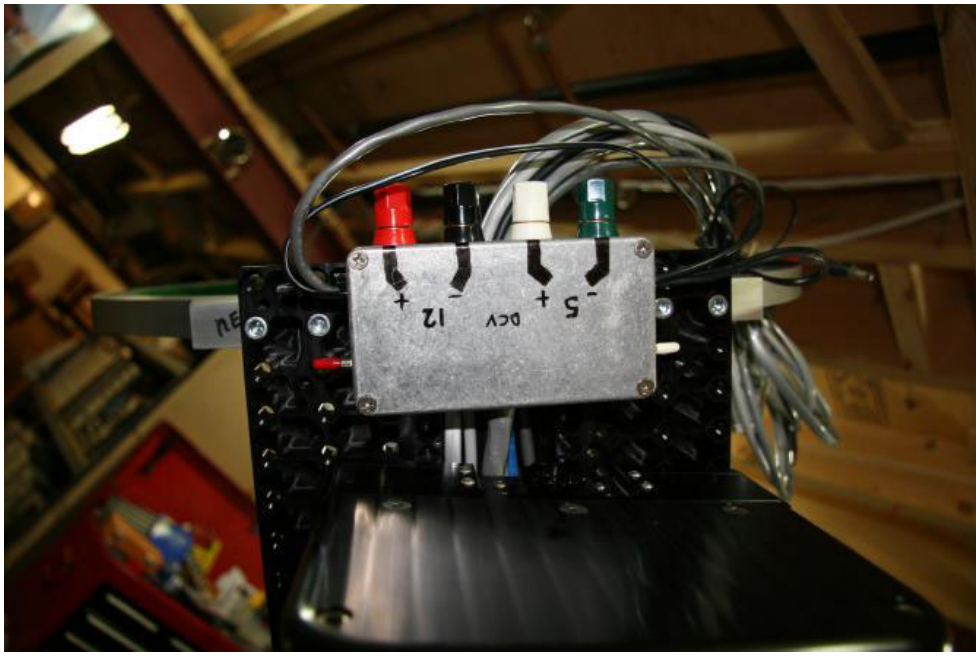


Figure 3: The Adaptor Panel.

4) Disconnect the ribbon cable connector and multi-conductor cable Molex connector from the "Adaptor Panel".
5) Carefully pull these two cables up thru the mount and out the hole in the top of the Dec plate. Store all this obsolete junk just in case we ever want to ever want to go back.
6) Re-install the "Adaptor Panel".
7) Modify surplus PC power supply for miscellaneous DC Power requirements (cheap).
8) Route all new cables thru the mount (refer to schematic).
9) Fabricate and install the new "Breakout Box" (mounted in place of the stock "Adaptor Panel").
    - 12 VDC Banana Posts
    - 5 VDC Banana Posts
    - Switch (red bat) for Scope Fan Power
    - Switch (white bat) for Illuminated Reticle Power (diode string to reduce 5VDC to 3VDC)
    - Internal connections for all 5VDC and 12 VDC devices

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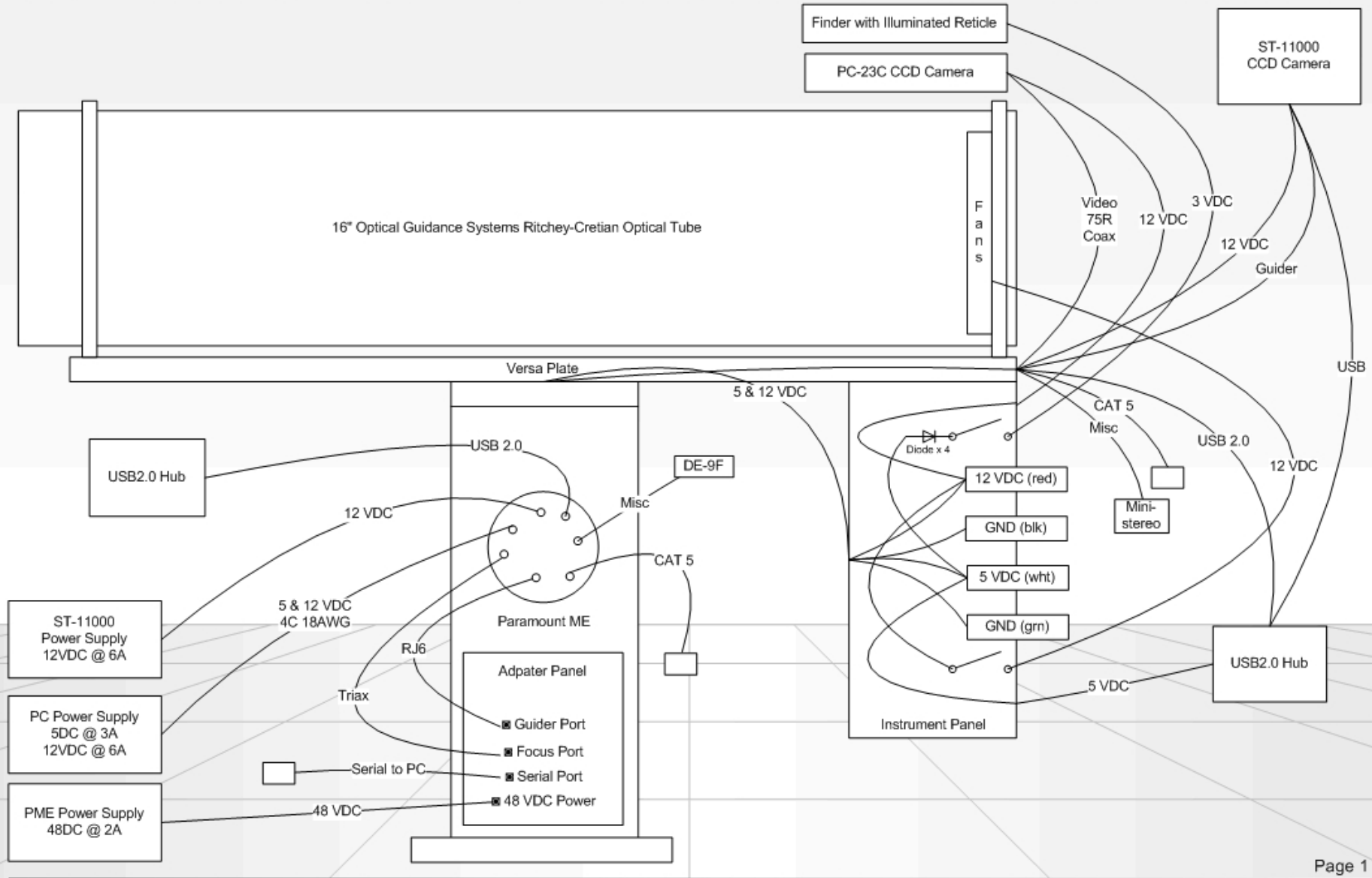
Hamilton RASC Paramount ME Rewiring

Hobbs 6 Jan 2007



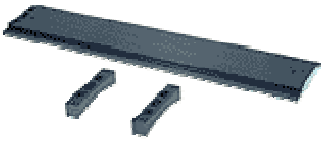
10) Strain relief the cables at the entry port in the base of the mount to ensure that sufficient slack stays in the mount. Rotate the mount manually thru all RA and DEC travel to ensure that cables rotate freely.

11) Re-install the PME side cover.
12) Note that the guide cable and focus cable coming down from the versa plate must be plugged in the corresponding jacks on the adaptor panel.

More Features:

Everyone has always talked about putting a retractor on top the big scope to permit wide field viewing or astrophotography. This seemed like the right time to install something to make that possible.

I had an extra Losmandy DC14 dovetail plate for my C14. I had a friend mill it to the required length to permit installation between the OGS RC Rings. A little bit of custom drilling and tapping and it fit like a charm. Many club members have Losmandy rings and accessories that are compatible with this dovetail system permitting many possible additions in the future.



In the picture below, you can see the Losmandy dovetail plate and the PC23C CCD camera in a modified TAL finder bracket. I later added a nice fast C-mount Zoom lens to the camera. You can also see the DC Power Supply and cables all tied up ready to go back to the observatory for a simple one piece installation.

The extra "misc" cable was added to permit thru wiring of additional miscellaneous functions. Current wiring assignments are as follows:

DE-9S Pin & Wire Color	Function
1 – N/C	
2 – Orange	spare
3 – Red	spare
4 – Blue	Mini-stereo Plug Ring - DSLR Remote Control
5 – Green	spare
6 - Yellow	spare
7 – Black	Mini-stereo Plug Sleeve - DSLR Remote Control
8 – Brown	Mini-stereo Plug Tip - DSLR Remote Control
9 – N/C	

Summary:

Hopefully these upgrades achieve the goal of making our great club equipment more usable and functional. I am expecting to see some long overdue awesome images from you all! Enjoy!

Dark Sky Adventures on Manitoulin Island

by David Gilbank

I just joined the Hamilton Centre last November, along with several of my friends from Mississauga. All of us are very active observers and this is the story of one of our recent trips.

Last July, myself and two observing buddies and our families headed up to Gordon's Park on Manitoulin Island for 3 nights of stargazing at their Dark Sky Sanctuary. I'd gone along to their Thanksgiving "Last Chance" Star Party the previous year and had raved ever since about the great skies and the friendly people there. We'd planned a larger crowd of people originally, but due to various commitments, not everyone could make it. Oscar and myself and our families stayed in the Gordon's Park bed & breakfast, whilst Tony camped out in their dark sky campground.

On the first night, the Friday, it was pretty much overcast the whole time. We saw a couple of bright objects (including Jupiter and the Blinking Planetary Nebula, NGC6826) through fairly heavy haze but the sky got worse and worse and we gave up at ~2am. For the Saturday, the Clear Sky Clock (CSC) was predicting the sky to clear at around midnight but with terrible transparency (actually, the CSC was about as much use as a chocolate fireguard for the whole trip). Terry Gordon, using his incredible expertise with the local weather, told us it would clear up at 2am. So, we set off for the observing site just before dark. We met up with a couple of other astronomers, Tim and Mike from Cleveland, Ohio, and sat talking with them in their cabin, checking the weather periodically. A couple of tiny gaps in the clouds opened up around 1am -- just enough to merit getting the binoculars out and Mike's Celestron Comet Catcher (a scope I'd been wanting to look through for a long time). Then, as Terry predicted, lots of clear sky appeared around 2am! We had to dodge some clouds for the rest of the night, but there was always a good-sized region of the sky clear. This was actually a lot of fun, working out what was visible in each brief gap and taking a look before it disappeared. This is how I normally observe for the first hour or two at a new site -- I like to quickly knock off 10 or 20 objects to get an idea of what the sky will allow, and then go back and properly observe a few of the best objects or new objects which caught my attention.

The Helix Nebula is something I use as a test object. In my homemade 8" Dobsonian it appeared bright and showed quite a nice amount of detail; not as much as I'd once seen from the top of the Chilean Andes in my old

homemade 3.5" reflector, but not far off. I'm lucky enough to observe regularly from several truly dark sites and I know that I'd always trade any amount of aperture for a slightly darker sky. Gordon's Park isn't quite truly dark, but it's not far off. It's certainly the darkest place within a moderate drive (around 6 hours, or significantly less if you drive at Tony's speed) and boasts a lot darker than the skies at Starfest. For the last night, the weather looked good and we were all set up together well before twilight ended. We'd just been out to dinner at an expensive restaurant, where the size of the portions seemed to be inversely proportional to the price of the food (it wasn't a patch on the great restaurant we'd been to every other night, just down the road from the park). I was starving! Luckily Tony saved me by offering to cook up his remaining supply of hot dogs on his camp stove, and that set me up for the night.

The sky was beautifully clear. The Milky Way was stunning -- easily visible horizon to horizon, showing distinct widening and dust lanes around the Galactic bulge. Scanning along the Milky Way simply filled the eyepiece with stars! M33 was bright and easy with the naked eye. In a small telescope it readily showed mottling and probably would have shown spiral structure if I'd decided to observe it for longer, but I already had other targets in mind. The Dumbbell Nebula has always been one of my favourites. I used to observe it frequently from the dark skies of my parents' home in England, but I hadn't seen it properly in a long time, certainly not from the light-polluted GTA, and I wanted to see how much detail I could bring out under dark skies with a nebula filter (see sketch 1).

The Veil Nebula is another favourite of mine. It was fairly obvious in a low power eyepiece and unmistakable once I turned my filter wheel to flip in an OIII filter. Seeing it like this, sprawling across several degrees, but limited to the one degree field of my 1-1/4" eyepiece, I instantly decided that if I could work out a way to add a 2" focuser on to my lightweight scope, I must! [Incidentally I just did this over Christmas.] I preferred the view in my narrowband filter over that of the OIII, as it didn't change the contrast of the nebula too much, but allowed the surrounding stars to shine through more brightly. So this is the filter I chose to make my sketch.

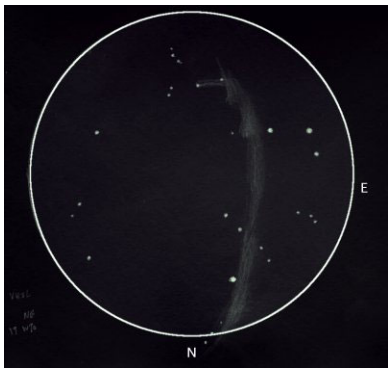
By the time I'd drawn most of the basic shape of the Eastern Veil (sketch 2), I'd noticed there seemed to be less detail visible than I'd seen initially. Unfortunately, the incredibly clear sky also meant a large drop in temperature and a vast amount of dew, neither of which we were properly prepared for. The temperature had been up in the 30s during the day and I'd not put much extra clothing on for the night, so it came as a shock when it got down below 7C! I was also surprised to see a puddle of water

collecting in my eyepiece. The irony was that I'd built dew heaters the previous winter, but hadn't brought them with me to Manitoulin. In the end we packed up at 2am, shivering under a clear sky.

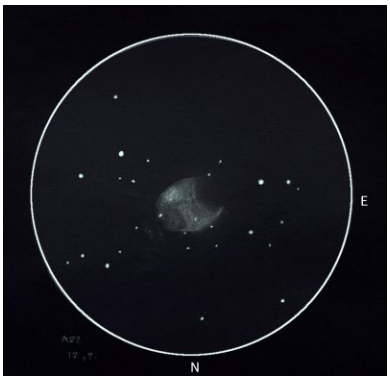
The Highlights of the trip for me were the Veil and Helix nebulae, the M81 group and, of course, Tony's hot dogs. It was also nice to be able to make a sketch whilst my recently-completed equatorial platform kept the object centred. Another added bonus I hadn't spotted was that Manitoulin is at a latitude of pretty much 45 degrees, which is the latitude for which I built my platform (for simplicity). This meant I didn't have to tilt it in order to align it, as I do in Mississauga.

So, overall, not a bad trip -- I think all who went would agree. It wasn't quite as dark as the previous autumn, due to the large amounts of water vapour in the atmosphere, but I'm looking forward to the next visit.

Sketch 1. The Dumbbell Nebula, M27. 8" Newtonian. Combination of views at 100x and 133x.



Sketch 2. Veil Nebula, eastern segment, NGC6992 (main section) and NGC6995 (upper portion). 63x with narrowband (H-Beta+OIII) filter. 8" Newtonian.



Monthly meetings:

The Hamilton Steam Museum located at **106 Parkwood Crescent, Hamilton, ON L8V 4Z7**, *hosts our General Meeting on the* **1st Thursday** *of each month at* **8:00pm**.

Please visit our website! It is found http://www.hamiltonrasc.ca

Send an email to Mark Kaye (see the director's list below) to join the centre mailing list. See http://www.rasc.ca/computer/rasclist.htm for the national list.

THE HAMILTON CENTRE OBSERVATORY:

From Highway 6 North of Hamilton.

Take Concession 7 East eastbound, cross Centre Road.
Continue on 7E, keep going past railroad tracks, to near end.
Observatory driveway is on the right just before the stop sign.

From Mississauga or Milton.

Britannia Road past Highway 25, Guelph Line, Cedar Springs Road to End. South
1 Block on Milborough Townline to Concession 7 East.
Our gate is on the south side of the last lot (south west).
The observatory phone number is (905) 689-0266.

Observatory Keys

If you are a key holder, please make sure you get your new key from Andy Blanchard. If you are interested in becoming a key holder you must be a member in good standing for one year, sign a release form and attend a short observatory orientation meeting. Please ask a board member if you have any questions.

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