Hamilton Amateur Astronomers

Event Horizon

Summer 2006 Volume 13 Issue 9

Star party at Pinery Provincial Park

by Ben Hartford

For the Canada Day weekend, my wife and I headed off to Pinery Provincial Park with 18 friends for camping. Most of these folks had never camped before because they were fairly new arrivals from China, where camping is virtually unheard of. One of my friends said that in China you either have too much pollution (light and air) to see anything beyond the moon and the brightest planets, or where skies are dark enough, people simply do not have the money or the interest to pursue astronomy.

Our first night, Friday of the Canada Day weekend, was clear, and the stars above our group campsite were awesome to behold. But everyone was tired after the long drive from Hamilton and from setting up tents; we didn't even feel like building a campfire, so everyone went to bed.

The following night was overcast after a day of intermittent showers. We wondered if we had missed our chance to use the telescope. Word had gotten out Saturday morning that I had a 'big' telescope in the trunk of my Echo (I had put the optical tube of my 8" Dobsonian in a sleeping bag to protect it, and as I carried it from my house to the car in my driveway, I wondered what neighbours might think of me carrying out an unknown object hidden in a sleeping bag, an object roughly the size of elementary school child...). So on Saturday the excitement started to build as people looked up to the gray skies and wondered if it would clear up by nighttime. I too hoped that we had not missed our chance. Alas, the cloud cover remained and all the would-be astronomers crawled into their sleeping bags disappointed.

And Sunday started out looking about the same as Saturday: the skies were overcast and threatening as we ate our bacon and eggs on picnic tables and listened to the birds. I regretted not taking advantage of Friday's breathtaking seeing conditions, but still hoped that the dreaded haze and cloud cover would dissipate. And as the afternoon progressed, the skies began to clear. All those city dwellers anticipated their opportunity to see something they had never seen before. As the afternoon remained clear but somewhat hazy, it looked like we might get our chance.

The group poses one last time for the camera Monday morning before hitting the road back to Hamilton.

On Sunday night as dusk deepened and the first quarter moon shone crisply high in the west, I set up my scope on the campsite about 20 feet from the campfire that sputtered and danced cheerfully in the increasing darkness. I aimed my finderscope at the moon and used a wide angle eyepiece. I focused it on the terminator, and invited people to take a look. I felt like an ambassador to the stars as a queue quickly formed and my Chinese friends glanced at a sight they had never seen before. They were impressed, and spoke to each other in Mandarin about what they were seeing. Our one little boy on the trip (every one else was a student or scholar at McMaster, or a spouse of the same) was lifted up by dad and somehow couldn't resist the urge to grab onto the eyepiece, thereby throwing the scope out of alignment. Finally after several attempts, little 3-year-old Tommy got his first glimpse of the cosmos close up—and left the telescope aligned for his mother to take a peek.

As the sky got increasingly darker, Jupiter was peeking conveniently through the trees, so we checked out the 4 Galilean moons lined up on one side according to their distance from the planet. Some of the campers could detect faint bands on the planet surface, while others could not, but there was an obvious sense of wonder in the camp.

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Email Reminder notice

We send email reminders before each meeting which describes the location, time and topic of the general meeting.
If you're not on the list, make sure that you receive your reminder by sending a note to:
`publicity@amateurastronomy.org`

An Offer

Thinking of buying your first telescope but wondering what kind to get? Before you buy, consider this offer from Mike Spicer: a "loaner" 5 inch telescope with electronic alt-az controls. The scopes are lightweight, easy to set up and very easy to use. Mike is offering newer members of our club one of these telescopes to try out for a month or so. Interested? You can reach Mike by email at `deBeneEsse2001@AOL.com` or by phone at (905) 388-0602.

Articles submissions

The HAA welcomes your astronomy related writings for the Event Horizon newsletter. Please send your articles, big or small, to:
`editor@amateurastronomy.org`
The submission deadline is two days before each general meeting.

HAMILTON AMATEUR ASTRONOMERS

Event Horizon is a publication of the Hamilton Amateur Astronomers (HAA).
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Then we had our campfire, playing games, singing, and telling stories until after midnight. I wondered if a tiring weekend of camping with all the activity, the late nights and fresh air would mean that no one would be up to stargazing, but after the campfire had burned down to glowing coals and the last corn on the cob had been eaten, I asked if anyone would be interested in heading down to the lake to look at the night sky with the telescope, and all around the campfire hands shot up! They were pumped and ready for a new adventure. So around 12:45 a.m., ten of us headed down to the shore of Lake Huron in the dark, following a trail through the woods and across sand dunes, some holding flashlights, some with lawn chairs or telescope parts. I carried my telescope's optical tube, stepping cautiously over the occasional tree trunk and down sandy wooden steps in the deep dark with the light of flashlights flickering in front of my feet. A few spider webs tickled my face, but I was in no position to brush them off, having my arms rather full. I was just concentrating on not tripping in the dark.

The lakeshore was quiet and serene, and the water calm. The air was still warm enough for shorts and shirt sleeves, and thankfully there were no mosquitoes—perfect for a session under the stars! The sky was not as clear as it had been on Friday, but even with some haziness, it was much darker than is possible in Hamilton. The Milky Way was obvious overhead as lawn chairs were lined up facing the lake. Everyone was eager to see more of the wonders of the summer sky. After our eyes had adjusted a bit to the dark, I helped the others find Polaris. Someone wondered what that big "W" in the sky was, so I informed them that is was the constellation Cassiopeia. I pointed out Mizar in Ursa Major and asked who could see Mizar's close companion Alcor.

We checked out Jupiter again, now low in the southwest. Most found that they could make out more details now that their night vision had kicked in. Lyra was high overhead, so we observed the ghostly smoke ring of the Ring Nebula, M57. My teaching mode (I taught English as a Second Language for 17 years) kicked in as I explained to each man or woman some of the tricks for seeing details in an object as faint as a planetary nebula. With a bit of concentration, most could finally see the darker centre, and conceded that the nebula did in fact look like a ring. Not far away and also close to the zenith was M13 in Hercules, so I swung my scope over a bit and aimed my red dot finder at that fuzzy spot. The globular cluster was the best I had seen it and many individual stars were evident. M13 had the biggest 'wow factor' of the night from my friends, as once again the queue formed for a look. We remarked how relatively few people had ever seen what we had seen tonight. In gazing at M13 and other deep sky objects, we had joined a fairly elite subset of mankind who had seen these things firsthand. Most look up occasionally at the night sky, but never have the chance to really investigate its wonders.

Finally at around 1:30 we checked out the Andromeda Galaxy, now rising in the northeast. Compared to M13, the Milky Way's closest galactic neighbour was a disappointment to look at (basically a big fuzzy white smudge!), but the Chinese were impressed by some of the facts about it, such as how far away it is.

We had an early wake up call the next morning in order to pack our tents and our gear for the drive back to Hamilton, so it was time to make our way back to the campsite. Everyone was now quite tired, but excited. What a great way to cap off a weekend of adventure at the Pinery!

Chair's Report *by Glenn Muller*

I need hardly explain to a reader of EH the advantages of a backyard observatory. Indeed, many of you have an urban observing facility, mere steps from your home, ready to go whenever there is a break in the clouds and/or the hockey game.

The first observatory Gail and I had was the simple affair of three round patio slabs, in the middle of our lawn, over which we eventually erected a Kendrick Shelterdome. I appreciated the astro-tent for it's light-blocking ability, while Gail liked the way it blocked the

chilling winter wind. Unfortunately, a breeze was about the most it could handle and its zippered vinyl security system still left much to be desired. At the time, however, it seemed like a good idea and for $450 did what it was designed to do.

Like anything else, cost equals complexity, and our initial purchase of a dob-mounted reflector was due to my bias for *simple* rather than *complicated*, and to my naturally frugal nature. Now it appears the value of that combination has spilt over into our latest observing structure. Those having to polar-align their equipment, be it a manually guided equatorial mount or a high-tech GPS system, generally require an enclosed, secure, base to eliminate the time-consuming set-up period. There should also be room for a worktable, and an observer or two. To meet those needs, a shed with a roll-off roof is a popular design. But they're not cheap.

As a dob-driver, I quickly realized that our scope only requires a firm, reasonably level surface and a small lockable outside enclosure to keep it acclimated to the current temperature. Although "walls" to block light and wind are still necessary, they could be of minimal structure since there'd be no need to support a large rolling roof.

My hunt for the perfect dob-hut ended when Canadian Tire had a 4'x3'x7' resin shed, on sale. Since I'd previously made an 8'x8' patio base for the Shelterdome all I had to do was get Home Depot to cut the wood for observing pad walls and do the assembly. Now, when the scope is on the observing pad, there is room in the shed for a 4'x3' worktable and a 4'x1' storage shelf. An outdoor extension cord provides electricity and the upper sections of the observing pad walls are hinged to reveal horizons, or block light, as needed.

Though it's our most expensive observatory to-date, totaling $750 after taxes, that amount is much less than the most modest offerings seen advertised. If your scope takes less than five minutes to set up, this configuration may provide all that you need.

Those looking for a more conventional set-up should check out the POD – Personal Observing Dome – a resin dome of 7' diameter to be released in the next few months by the makers of SkyShed. Costs are expected to be around $1200 CDN plus shipping and taxes and they'll be available in some neat night-vision colours.

It took a few weekends to put our observatory together. They were all hot and the work was tiring even when Anthony Tekatch helped out, but now that it's complete I expect we'll to do a lot more observing, year-round.

Of course, our scope's new home had to be named so, with Gail's initials being G.E.M., I've christened it *The GEM 'n I Dob-servatory.*

Clear skies!

Glenn invites your comments on these topics or any aspect of the club. He can be reached via:

chair@amateurastronomy.org

A Summer Of Enjoyment At The June Meeting

by Mike Spicer

Nearly four dozen Hamilton Amateur Astronomers gathered at the Teamster's Hall on Parkdale Avenue in Hamilton on Friday 9 June for the last meeting of the spring and to plan out a summer of enjoyment.

Glenn Muller *Photo by Sandy Maude*

Chairman Glenn Muller acted as MC for the evening, drawing our attention to activities planned for the summer. Glenn advised us to watch the Activities page for notices of observing meetings at Binbrook this summer ("you're all invited"). We plan to watch the Perseid meteor shower 11 August. Glenn identified a number of star parties to be held throughout the region this summer. He and his wife Gail act as HAA good will ambassadors at these excellent observing functions throughout Ontario, and in NE USA. He invited us to come along (see the June Event Horizon for more).

Photo by Sandy Maude

As to HAA business, installation of a stone table at the Binbrook observing site has progressed to the "costing stage". Glenn seeks input from members. Paper copies of "Observing Jupiter", 2006 summer observing project, were available for those who cannot download it from the HAA web site. Mention was made of a colourful new book on deep sky objects by Professor Doug Welch of McMaster University that will be of interest to Australians and the public in general.

Greg Emery *Photo by Sandy Maude*

Professor Greg Emery of Mohawk College was the first speaker of the evening. Greg led us through the summer sky with a very interesting AV presentation identifying a large number of telescope and binocular objects to bag before our next club meeting in September.

Glenn and Alex *Photo by Sandy Maude*

Our door prize draw was especially exciting as ticket after ticket was drawn and we strained to see just who

had won the prizes: a complete set of A.A.V.S.O. variable star charts on CD (won by Mike Jefferson) and a complete copy of the HAA web site that Anthony had downloaded onto CD.

Paul Mortfield *Photo by Sandy Maude*

Summer means photography, and photographer Paul Mortfield of Toronto was the main speaker of the evening. Paul's Toronto skies are light-and-airplane-polluted, with poor seeing and seasonal freezing conditions. He convinced us that it's possible to obtain outstandingly detailed images of faint fuzzies without having to drag your equipment to a mountaintop. His presentation on the use of narrowband filters in CCD imaging with an SBIG 10XME through 4" and 6" apo refractors mounted on a Paramount, or through his large Newtonian reflector, was both informative and very interesting. Thank you, Paul for the excellent one hour AV presentation and your handling of a lengthy question period afterward.

Photo by Sandy Maude

Mike Jefferson was the final speaker of the evening. It's refreshing to see such an experienced amateur astronomer continue to be excited in presenting the little goodies that will be available at Starfest this summer. I don't think Mike has missed a Starfest for many, many years and he invited all to accompany him to this dark sky site in late August (more details in the June Event Horizon).

The club adjourned about 10 pm and over 20 members gathered at East Side Mario's for food and drinks with our guest speaker. A little observing in clear night skies afterward was like frosting on the cake of our June meeting!

Club notes *by Glenn Muller*

At the last meeting it was suggested that interesting meeting topics for the Fall could be:

- Features of the Moon
- What's happening with the Mars Rovers
- The latest news from Cassini

If anyone would like to make a presentation of any one of these (or your own suggestion) please let me know.

Observers Notes *by Mike Spicer*

July 22: Lake, sky and invisible bears

by Ben Hartford

I got back to Hamilton Thursday night after 3 nights and 2 days at Point Farms Provincial Park on Lake Huron with my wife Barb. Our camping experience started on Monday night with a violent thunderstorm complete with a waterspout off Lake Huron, howling winds and a large broken tree branch invading our campsite, and ended on Thursday morning with another thunderstorm as I madly stashed our soaking belongings into the back of the van for the long drive home. But in between, oh, in between was something completely different and unforgettable.

Tuesday night at around 11:30 I eagerly drove down to the beach, and decided to take advantage of the dark northern skies in and around Ursa Major. Before my session was over I had seen 9 galaxies and a planetary nebula, with 8 out of 10 objects being first time observations in a telescope! I felt a sense of oneness with the universe as the waves gently lapped up on the shore nearby and the glory of the summer night sky sparkled above me.

Wednesday night I planned to see if I could stay up long enough to observe the great occultation of the Pleiades. As I began my all night vigil at midnight, the sky wasn't as dark as the night before and began to cloud up shortly after I arrived. But not to be deterred, I aimed my Dobsonian to the northeast, which at that point was the only section of the sky that was cloud-free. I was treated to my first glimpse of the Perseus double cluster. After a half hour or so, the sky had cleared up. Over the next few hours I managed to observe 14 different deep sky objects, 13 of those being first time observations.

My favourite objects so far in the Point Farms night skies were M51 (the Whirlpool Galaxy), the double cluster in Perseus (NGC 869 and 884), the two companion galaxies to M31 (Andromeda Galaxy), and Brocchi's Cluster in Vulpecula (Beautiful and bizarre! Who put that crazy star cluster up there, anyway??). I also enjoyed my first glimpse of the Lagoon Nebula in Sagittarius.

By 1:30 I was getting tired, and a little spooked. I think it was a combination of the strong breeze and the occasional unexplained night noises, the fact that this was my second night in a row being up late (I am not by nature a night hawk), and the fact that I was alone on a deserted beach at night, far beyond help should any bears be hunting for astronomers. I found myself glancing behind me every once in a while–I knew (or hoped?) there were no bears in the park. I did smell a skunk at one point and started to talk and sing outloud to ward off any impending attack of noxious spray. I soon got over my jitters, but I was starting to tire of hunting deep sky objects.

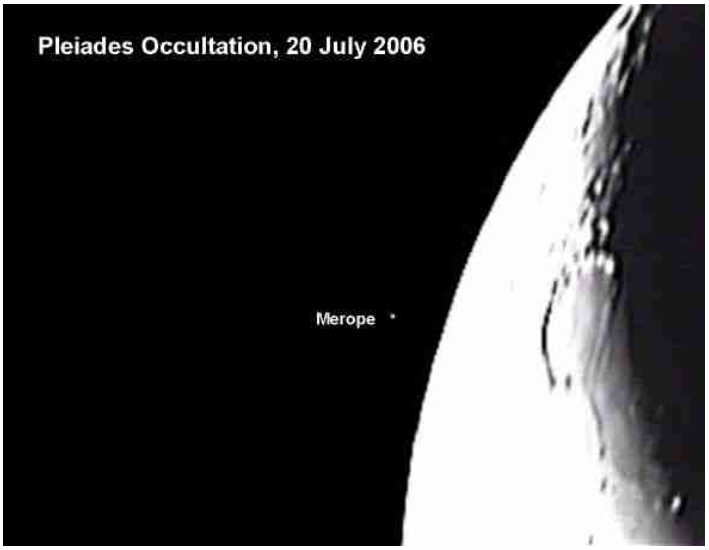
By 2 o'clock the moon was nowhere in sight, and I began to reconsider whether I could last long enough to catch an occultation. I could see Perseus clearly in the northeast, and my star maps assured me that the Pleiades were not far behind Perseus in the majestic march of the stars across the sky. After a bit of internal debating, I decided to pack up and head back to my tent. I had been quite keen on seeing the moon pass in front of the sisters, but thought more about the 3 or 4 hour drive ahead of me the next morning.

As I drove up the steep road to the campground, I was delighted to see the crescent moon appear as if from nowhere. I couldn't pass up the opportunity despite my fatigue, so I parked the van and got out my binoculars. A rustling in the grass beside the road startled me and reminded me of the invisible bears. I ignored the creature (whatever it was), and aimed my binocs at the moon, and gasped at what was revealed–the crescent moon with the Pleiades just to the left. I knew I couldn't wait another hour to see the first of the sisters getting occulted, so I just had to use my imagination to fast forward the scene in front of me. There was something awe-inspiring, something glorious, something majestic about the whole thing that stayed with me as I lay in my sleeping bag that night, and as I packed up in the rain the next morning. The sense of wonder at the beauty of the cosmos and the power of the creator keeps coming back to me as I remember that unforgettable sight.

Bring on the next clear night!

Image of Occultation by Mike Spicer

by Mike Spicer



Heather's short AVI digital movies are easy to project without additional manipulation. My VCR recording required copying short parts into AVI with videocapture and then stacking each short AVI into a JPG image. This is the first image of the series, showing the crescent Moon approaching Merope, the first bright Pleiad to be occulted on 29 July.

And the Moon danced with the stars...

by Glenn Muller

With a busy workday ahead, I hadn't planned on catching the Moon/Pleiades occultation but an unscheduled pit stop at 3:16 this morning had me looking out the kitchen window. There, in glorious view, was the crescent Moon and several bright stars.

With binoculars in hand I went out to the back deck. Transparency wasn't great but the sky was clear apart

from a thin band of cloud - which covered exactly what I wanted to look at. Anyway, as it slowly moved off it revealed a beautiful Moon with several craters in relief and plenty of detail on the dark-side thanks to Earthshine.

Through the binoculars, the departing clouds made it appear that the "Several" Sisters were draping the orb in a magical mist. It was certainly a magical combination!

July 19: Image of Pleiades occultation

by Mike Spicer

The July 20th Pleiades occultation began at 3:00 a.m. Thursday morning low in the NE with the bright crescent Moon covering Merope, then bright Alcyone, then Atlas and Pleione. The sky was beautifully clear and the air was balmy though heavy with moisture that quickly dewed up binoculars.

I set up on my patio, using an electronic eyepiece on a TAL 6" Newtonian with a very accurate clock drive. Polar alignment is very important in lunar occultations, because you see the star just before it's covered, and you want the star to be in the same position in the scope's field of view an hour later, when it reappears! My imaging was done using a VHS recorder, which permitted me to collect 2 hours of images.

Heather Neproszel set up her 6" Schmidt-newtonian on an LXD-55 go-to mount and imaged with a ToUcam Pro connected to a laptop computer. She was limited to taking 5 minutes of AVI movies at a time, but her CCD imager was a little more sensitive than mine and (a) captured fainter stars, plus (b) showed the ashen light on the Moon's dark side better than my CMOS camera did.

The very first AVI that Heather captured was spectacular. It showed the bright crescent of the Moon passing over Merope while light clouds brushed over the lunar surface. I am sure she will be presenting this and other images at a HAA meeting this fall.

July 18: Observing

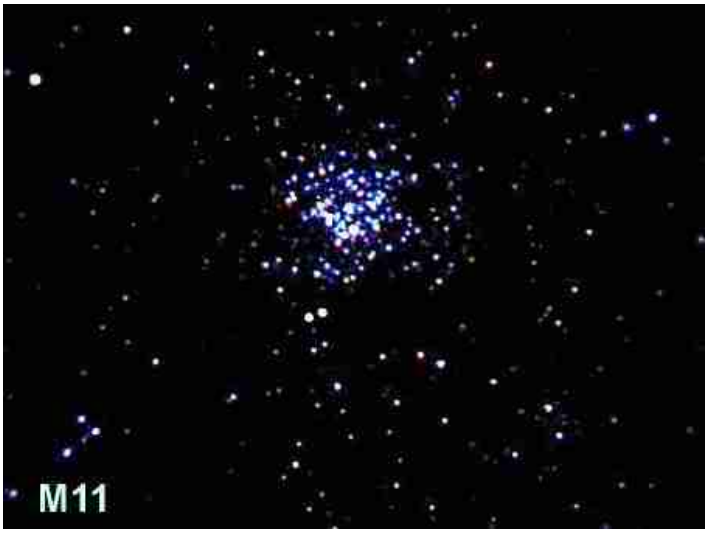
by Tim Harpur

The skies cleared - although there was a very slight shimmer when viewing Jupiter the visibility was otherwise good at the Binbrook alternate site. Only 3 of us showed - so it was a quiet night except for the occasional passing car. I did some visual observing of Jupiter before turning my attention to imaging - capturing only 2 sets - starting with a few shots of the Ring Nebula in Lyra and then turned to M8 - the Lagoon Nebula.

July 16 Observing

by Mike Spicer

Half a dozen HAA members gathered with other observers Saturday evening at the Binbrook Alternate site in very warm weather to do some summer observing. Meanwhile, other HAA members gathered on Mike Spicer's patio to test equipment, to improve imaging and autoguiding techniques and to practise capturing whole-Moon images in preparation for the occultation of the Pleiades on the 20th. The seeing wasn't excellent and the sky was grey with haze and Moonlight after midnight, but the opportunity to observe deep into Scorpius and Sagittarius couldn't be passed up!



July 8: Another Lazy, Hazy Summer Night

by Mike Spicer

Warm, clear summer evenings are the stuff of dreams. For sure we spend a lot of winter nights thinking how nice it was to observe in a summer shirt without hats, mitts and gloves.

Those summer nights are upon us, not to be wasted! Friday and Saturday evening the sky was mostly clear

but a very hazy grey colour, exacerbated by a nearly-full moon. Only the brightest stars visible with the naked eye and the Moon very close to Jupiter! What are such nights good for?

I spent them calibrating telescope equipment. The Nexstar 11 is now permanently set up for imaging at F/2 to capture deep sky objects, and focusing/blooming problems of the past have been eliminated. Saturday night was absolutely terrible for observing, nevertheless I was able to capture a passable image of M27 after making the grey sky (and nebula, alas!) darker.

June 30: Observers' Notes

by Mike Spicer

It rained at 10 pm but the sky cleared by 11:15 pm and five of us went to Binbrook after midnight. Three scopes were set up and images around NGC 891 were collected from 1:10 until 1:25 a.m. The sky over Hamilton (where 891 was) was bright grey with poor transparency, but processing may tease out images worth keeping.

After the Asteroid passed by, scopes were turned on a variety of deep space objects. Aside from the occasional cloud, the sky was beautifully clear as if the rain had washed out any impurities. We stayed until almost 4 a.m. observing in shirtsleeves with a slight breeze on a balmy July! July - the month we all think about during the winter months.

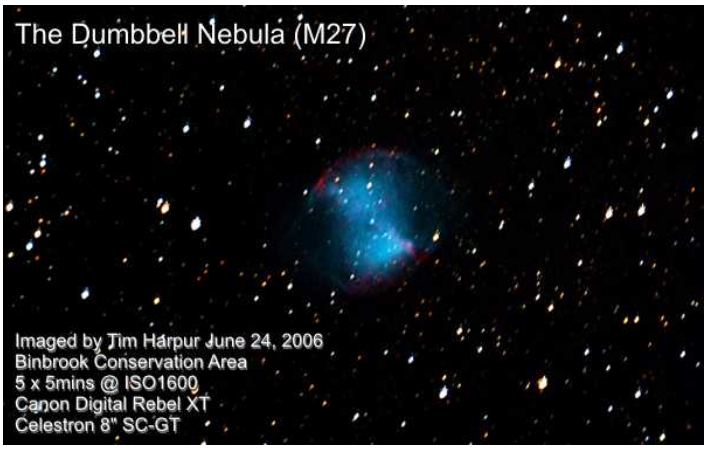


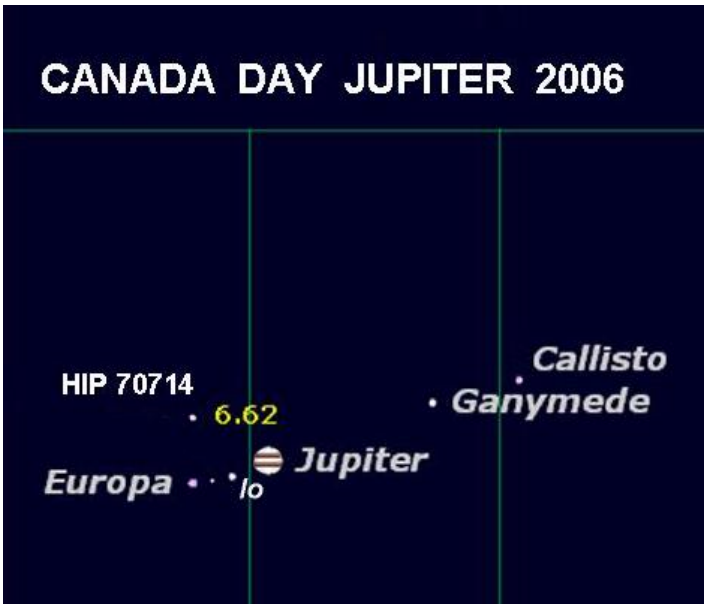
Photo by Tim Harpur

Thanks to Heather, Jackie, Tim, Andrea and Mike for coming out to show once again that HAMILTON AMATEUR ASTRONOMERS IS AN ACTIVE CLUB!

Showing The Flag On Canada Day At Sam Lawrence Park

by Mike Spicer

Alas! It rained until 8:30 pm, so the telescope event was cancelled. A couple of us went down to Sam Lawrence Park to watch the fireworks at 10:00 pm during a spell of relatively clear skies. There were about 1,000 people gathered and parking was a squeeze. It was warm, very humid, and blustery but comfortable for watching the fireworks.



The area behind the flagpoles had plenty of room on the damp grass for telescopes (maybe next year!). I looked at the nearly first quarter Moon (perfect for public viewing) and at Jupiter with its moons, showing them to whoever asked to look until the clouds returned at 10:30 and the fireworks ended.

Jupiter looked very interesting, surrounded by more than the usual number of "moons": on the E side, 5.4 magnitude Io just 1' away from the planet, 5.7 magnitude Europa twice as far away and just above Europa, 6.6 magnitude star HIP 70714 (what was described as a "fifth moon" last week by some observers); on the W side of the planet, Ganymede at 5.0 magnitude 5' from Jupiter, 6th magnitude Callisto 2' further away, so I was not surprised when people looking through the binoculars said they saw several "moons" near bright Jupiter!

Saturday Observing At Binbrook, 24 June

by Mike Spicer

We opened Binbrook Conservation Area at 9 pm for HAA members to do some summer observing. Tim Harpur, Glenn and Gail Muller, Heather Neproszel, Jackie Fulton and I observed with some of the Binbrook Conservation guys.

It was a great summer evening with Jupiter on the meridian at dusk in very steady seeing, the Big Dipper overhead and the Summer Triangle rising in the East. Jackie tried out her new Nexstar 80GT telescope, learning the alignment procedure and then finding objects Jupiter, Saturn, etc... with great excitement and pretty fair go-to accuracy.

Heather and I compared views in a 5" Mak and the new Orion 6" Mak, with and without binoviewers. Tim concentrated on five minute guided shots of M27 and M57, getting some great colours and great focus with his new Bob's knobs and two-speed focuser!

Saturn was sinking into the haze above the lake, but Jupiter was a great object, looking like it had more than 4 moons! Jackie saw a number of globular clusters in her 80mm: M3, M4, M12, M22, M71 ... and I was happy to note how clear M27 looked in her telescope using a 10mm eyepiece.

Fog rolled in about 12:30 and we packed up our equipment and drove home at 1 am. Another congenial sharing of telescope time!

New Jupiter image

by Mike Spicer

Red Spot Junior is trying to squeeze past the Great Red Spot. It has slowed down and flattened out a little (N-S flattening is making it more oval shaped), the white ring around Red Jr has changed colour, and there is a dark "bridge" that seems to be forming between Jr and the GRS. Well worth watching (and imaging too, if we had some good seeing conditions!).

June 20: It Was Clear For An Hour

by Mike Spicer

Did you happen to notice that the moons of Jupiter were spread out in order by distance from the planet: Io, Europa, Ganymede and Callisto?

I, E, G, C - in order by orbit distance!

If you were out just after sunset, the Great Red Spot was visible, with Red Spot Jr. not yet able to squeeze past it...

June 17: Binbrook Recap

by Don Pullen

With the predicted great skies and agreeing to pick up a new 6" Newtonian from Mike, I was eagerly anticipating stepping up to a new level of observing. I set up the new reflector on my manual EQ-3 mount and set up my binoculars on the camera tripod with the articulated bino boom. I was ready for an exciting night of new discoveries.

Initial setup of the new 6" Newtonian

While they were still high enough to observe, I started with Saturn and Mars in the Beehive. They were nearly in the twilight so I had difficulty making out M44. I then turned to Jupiter and observed the 4 Galilean moons. I was finding planetary details a little disappointing.

As the night deepened, I turned to look at galaxies and other deep space objects. This was a completely different picture (no pun intended). After watching where Glenn was pointing, I found M81 and M82 - my first time to see these 2 galaxies in a scope. I had tried unsuccessfully before but this time they popped into view clearly. Was it the conditions or my new 6" telescope?

Confidence boosted, I swung over to Leo before it set below the horizon to try for some galaxies I previously had been unable to find. I couldn't find M95, M96 or M105, but a little higher up I found M65 and M66. Another treat - I could see 2 galaxies in the same telescope field of view.

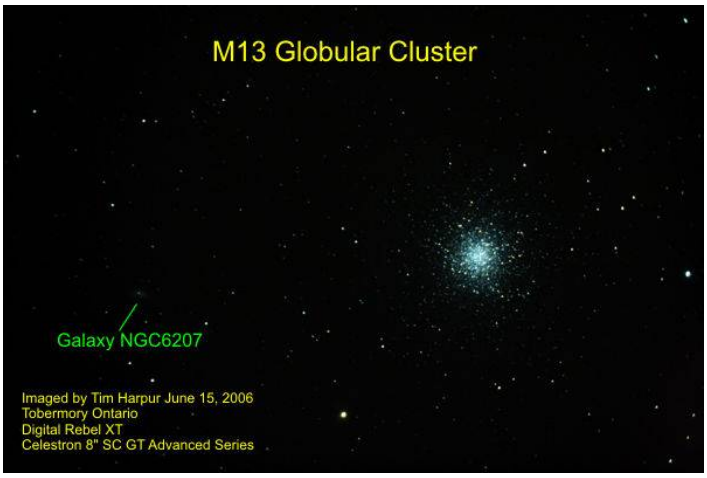
A little haze was starting to appear in the sky, but I could make out the glow of the Milky Way. The observing conditions were turning out to be a bit of a mix. M57 was very easy to find for a change (for me). I then turned south and looked into the heart of the galaxy at the wealth of DSO's available there. Between Scorpius and Sagittarius (the Teapot), I was able to locate M22, M4, M8 and M20. The globular cluster M22 and some

of the nebulas were even visible in my binoculars. While I wandered over to chat with other members, Mike located the Eagle Nebula M16 in my 6" - another visual treat.

I had not seen so many nebulas in one evening in the short time I've been with this fascinating hobby. I was fortunate to have a number of enjoyable and supportive club members with me. We were able the share the views each of us was finding. I wanted to keep looking all night but by 2am observing conditions were deteriorating to the point that faint objects weren't visible. So the last of us packed up by 3 am and headed off for some sleep and reflection on the many new (or for some - old) objects seen.

A thoroughly enjoyable night.

M13 *by Tim Harpur*



June 17: Saturday Night Observing At Binbrook *by Mike Spicer*

I was able to entice a number of members to Binbrook by 10:00 p.m. for a night of balmy shirt-sleeve observing of the centre of the galaxy from our impressive dark-sky site at Binbrook! A few, Like Don, brought both binoculars and a 6" Newtonian telescope! Gary Sutton and Jackie Fulton came out to look through my 11" SCT, Heather Neproszel's 6" Schmidt-Newtonian and Glenn and Gail's 6" reflector. Mid-June brings the opportunity to observe through many different telescopes, brought to you by the friendly astronomers of the HAA.

The Clear Sky Crock predicted excellent skies, but the sky was rather disappointing. The air was very turbulent after dark. By midnight the clear sky was so filled with murky haze that bright stars were obscured and the milky way had disappeared. Chalk up another error for the CSC:

It does not get much better than this !

"Saturn observers, tonight the Ringed Planet is only 1/2 degree from Mars," I had said. Glenn corrected me that the separation was actually slightly more than 1/2 degree - actually 35' of arc, so the two planets would not fit into the field of view of his eyepiece. Heather's 6" telescope showed Saturn and 4th magnitude Delta Cancri equidistant from Mars all in the same field of view.

Saturn's rings looked lovely - when the planet reappears in the morning sky this winter, the rings will be much less tilted. A wide field eyepiece showed Titan, Iapetus and Dione lined up on one side of Saturn; Rhea and Tethys on the other side, flanked by some bright stars: 6th mag HIP 42970, 8th mag HIP 42952 and a 9th mag star, also in a straight line... Saturn is moving quickly through the sky and will pass to the other side of these stars Sunday afternoon.

There was a lot to see before the murky air arrived. Heather was working through her list of globular clusters after observing Jupiter's moon Callisto pass just S of the planet. The seeing was so poor that the Great Red Spot was not visible, though it was there on Jupiter's limb! I stopped imaging before midnight and concentrated on wide-field low power observing with a binoviewer and got some pleasing results. It was a comfortable night to observe while seated. At low power, M objects and NGC objects looked quite good! Murky skies, but there was no dew. Bats but very few bugs.

I was not surprised that Glenn and Gail left early... he had been moving patio stones, etc.. in the 32° heat earlier in the day, to build his new observatory - very tiring work, as we well know. The rest of us stayed until almost 3 a.m. - a friendly bunch sharing telescopes and sampling the gems of the summer sky!

June 15: Binbrook report *by Mike Spicer*

The clear sky clock predicted great skies for Thursday night 15 June. We opened the park at 9:15 pm and set up five telescopes, an 11" SCT, 8" and 6" Schmidt-Newtonians, a 5" Mak and an 80mm apo refractor - lots to look through! After setup we were joined by Ben, who brought his 8" dob. A bit later, Jackie Fulton and Tim Philp joined our observing group.

Binbrook has an outstanding S horizon over grass and a W horizon over water - both are sources of slow and even heat radiation through the night permitting great seeing conditions. By 11 pm the view to the S was

stunning. You could see the entire constellation of Scorpius ("all the way to the stinger!" said Tim) and all of Sagittarius... globular clusters NGC6723 and 6541 were visible just above the horizon - I even saw the Southern Crown! M80 in Scorpius and M8 in Sagittarius were about 25° above the horizon. Observing S and W at Binbrook is unspoilt by ANY trees blocking the view - it is a great observing site!

With the jet stream over Hamilton, turbulent air caused stars to scintillate and planets to look like they were under water - poor seeing...not conducive for imaging. Saturn was sinking into the west at dusk, but we all saw a tiny Mars in the midst of the Beehive star cluster! It was a perfect night for satellite or meteor-watching: Tim remarked at the large number of naked-eye satellites (he saw three moving in tandem) and there were some spectacular meteors, one brighter than Jupiter, moving westward very slowly from Libra towards Leo and then dropping over Brantford-way.

It was a great night for low-power viewing of deep sky objects in all of the telescopes. Ben concentrated on galaxies; Heather and Jackie on globular clusters, while I observed a number of Messier objects and fainter NGC planetary nebulas. We took turns looking through each others' telescopes - HAA is a very friendly collection of astronomers!

The evening was quite pleasant for observing in a sweater, and the air was still, with very few bugs. As midnight approached, the high humidity caused a chill and dew started to drip from every object. The Schmidt-Newtonians finally succumbed to dew about 12:30 a.m. The moon rose after 1 a.m., turning the water-laden sky grey and making the park animals think dawn was coming. We finally packed up at 2 a.m. after a thoroughly enjoyable observing night. These summer nights, with the delightful gems of Scorpius and Sagittarius floating to the south, are the evenings that warm our hearts through the winter.

Don Pullen observed from home Thursday night. He writes:

I read the Observers log each day and saw that a few people got out to Binbrook last night. Usually week nights are a problem for me, but I try. And I see Tim H is back up at Tobermory. I did go out on the deck to check the conditions and noticed how clear the sky was from central east Hamilton. I could make out 5 stars of Ursa Minor - normally I can only see Polaris. To the south I had a great view of Scorpius. How I regretted not being able to head out to a good location. If conditions were this good in my backyard, then the sky must have been great at Binbrook.

Hamilton Amateur Astronomers.. great club, great observing site!

Comet - 73P Schwassmann Wachm

by Clyde Miller

June 14: "Red Sky At Night, Sailor's Delight"

by Mike Spicer

Well the sunset was blood-red Wednesday night 14 June, I hope the sailors were rejoicing. Binbrook was another matter. The weather was perfect, with warm bug-free air and a slight breeze to keep dew away (well, mostly). The evening sky was that deep blue that portends great seeing... but it was not to be. The air was unsettled and some thick clouds moved back and forth, blocking our view of some celestial objects.

Tim Philp, Heather Neproszel and I opened the park at 9 pm sharp. We set up an 11" SCT, a 6" Schmidt-Newtonian and a 5" Mak, achieved alignment with little trouble, and started observing Jupiter... the transit of Io started at 10 pm. Very comfortable observing conditions. A few fireflies kept Heather company.

If you are a Jupiter observer, Io began a transit of the planet about 10pm and the shadow followed about 50 minutes later, transiting until almost 1 am... the Great Red Spot crossed the central meridian about 2 a.m.

I collected some AVI images of Jupiter in terrible seeing conditions before switching from ToUcam to DSI. I wanted to image a few galaxies but the gibbous moon turned the sky grey before it rose at midnight, and the poor seeing led me to put the DSI on my 80mm guidescope and to image globular clusters like M3 and M5:

M3 imaged 30 sec in an 80mm short tube!

Globular M5 - 30 sec. in an 80mm guidescope!

After the imaging, Heather and I did some binoviewing with the 11" scope. Several planetary nebulae overhead were very colourful. Globular clusters filled the field of view with their beautiful star patterns. But I must say the same globulars looked pretty good in Heather's 6" S-N scope, too! All in all a good observing night.

June 11: Beehive

by Tim Harpur

I thought I'd try some wide field images last night - I shot the following using my Digital SLR mounted prime focus on my 50mm finder scope - it was just the right field of view to capture all 3 - Saturn, Mars, and the Beehive Cluster. Focusing was a bit tricky as the finder scope doesn't actually have a focuser - and probably wasn't intended for mounting a camera on.

Six images shot at ISO 200 for 1 sec ea. then stacked in RegiStax. The planets are somewhat over exposed - but it was necessary to bring out some of the Beehive. As the two planets get closer together I'll switch to one of my main scopes and get some more detailed shots.

June 10: Binbrook Saturday Night

by Mike Spicer

Binbrook's alternate site was excellent for several hours of observing in very clear skies on Saturday night. All of the members who said they'd come out, arrived with binoculars or telescopes by 10:15 and we were joined by Ben and Mike J. shortly thereafter. In a long line beside the parking lot you could look through an 11" Nexstar, an 8" Skywatcher dob, a cute silver refractor, a 6" Meade Schmidt-Newtonian, or an Celestron 8" SCT on long legs. Lounge chairs and binoculars made binocular observing comfortable.

Heather has added a short handle to her S-N OTA, an aluminum bar attached to the top of her tube rings. It enables her to lift the tube easily, helps with attaching the dovetail on her LXD-55 mount, and makes rotating the tube in RA easier when checking polar alignment. "Why doesn't Meade spend 50 cents to add a handle to their telescopes?" she asked me. I think it's a great idea.

Early on, Tim snagged digital SLR images of Saturn and Mars on opposite sides of M44 the Beehive through his 50mm finderscope (check his gallery) while many of us were fascinated by the Great Red Spot transit of Jupiter. Don used his scope to see M57 and tried for some galaxies but the full Moon hampered his view.

In the image, taken at 1:15 a.m. as Europa was about to begin its transit across the planet, N is up. You can see the Great Red Spot, now past and to the right of the Central Meridian on the SEB, with Red Spot Junior just below it and to the left. Transparency with the full moon nearby was poor, and the seeing was poor at 5-6 arc seconds.

The group observed until about 1:30 a.m., then packed up with intent to meet at Tim Horton's. The sky clouded over completely just after we packed up (what luck!) Thanks for all who came by and shared equipment. The H.A.A. sure is a great club of real observers!

June 10: To The Rescue!

by Mike Spicer

Many of the H.A.A.'s most ardent observers use Celestron telescopes. Perhaps it's their superior optics; maybe it's the almost-silent motor function, or the service provided by Celestron that weighs in favour of eschewing the products of other manufacturers. I'm not sure, but the numbers speak for themselves.

What happens when "go to" telescopes "go down"? When the expensive computerized hand controllers balk at moving the scopes? My own Nexstar 11 GPS stopped working in March... and Celestron telescopes owned by Clyde and Gary also suddenly stopped. Well, it turned out to be simple hand controller problems. Celestron sent me several boxes of their newest "flash upgradable" hand controllers on Thursday and my Nexstar 11 was up and running again in a flash!

After the June club meeting last night, Clyde set his Nexstar 11 GPS up on my newly renovated patio and it fired right up with one of the flash hand controllers. Gary promises to bring his Nexstar by later today and I am hoping we can get that one going again, too.

!All it needed was a new controller.

I had a chance to observe with Clyde's 11" Nexstar (a twin of my own scope) last night for about an hour. The go-to worked very well and the clear skies dished up M13, M27, M71 and M57 in quick succession although the seeing and transparency were not the best. Celestrons to the rescue! Now we are ready to use these great telescopes for summer observing! HAMILTON AMATEUR ASTRONOMERS - A GREAT CLUB TO BELONG TO.

June 7: Imaging Just Before Dawn

by Mike Spicer

The Clear Sky Clock predicted a clear Tuesday evening. After re-laying the observing pad and meeting Mr. Groundhog Tuesday afternoon, the evening sky was overcast so I decided to rest until about midnight. Perhaps clouds were a little slower moving out of our area than the CSC had predicted.

I overslept, awoke at 3 a.m. Wednesday morning to find the sky was clear and the Summer Triangle (Vega, Deneb and Altair) was overhead. By the patio door was a beautiful wide field TAL 6" scope and pier mount with clock drive. I'd taken a For Sale Ad photo of it yesterday to put in the June Event Horizon. I put the TAL outside again, aligned its excellent 50mm finderscope, did a quick polar alignment using a 40mm eyepiece and turned the scope to M71 and other deep sky objects. What excellent optics! What beautiful wide field views it gave of M71 and other deep sky objects!

I put the DSI imaging camera on the TAL and turned it to M57 overhead. Inside, I started capturing images about 4 a.m. but after collecting the prerequisite dark frames, dawn was catching up with me as I imaged M57... only the first two dozen images were at all dark, the subsequent images were turning grey! This is a composite image from 24 eight second shots as stacked in Registax, taken with the 6" TAL:

DSI on the excellent 6" TAL scope

Of course, had I awakened an hour earlier, I'd have 200 images instead of 24... the composite image would be much better... but that's for another night, I guess (unless someone sees the ad in EH and buys this excellent scope first!).

Venus is low in the E before dawn, not far from the Pleiades. I took a few images of the planet to show the disk about 90% illuminated, as a comparison with the crescent Venus of recent happy memory.

June 5: They come back, they come back full of Joy

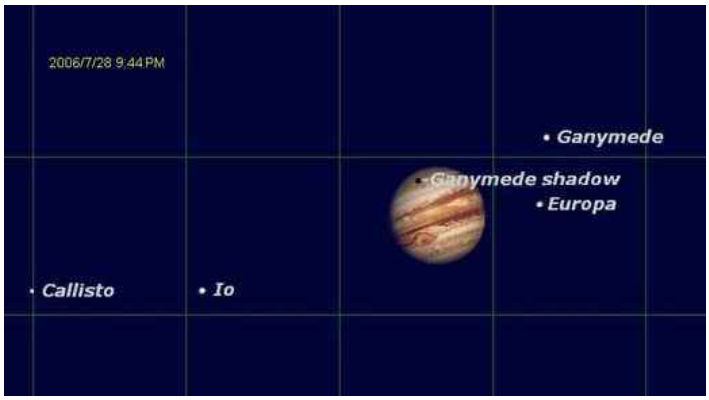
by Jackie F

While the night sky was patched with fluffs of white cloud there were still vast areas of clear sky over head. Armed with my 7x35 binoculars, my little scope, a Dollarama flashlight with red filter, and the latest updated publication by Terence Dickenson, I set out to apply some of what I had learned.

With a limited field of view, although I still have much to learn, what I observed both aided and unaided, did not diminish but only enhanced my appreciation for the night sky. I was filled with wonder for what I have yet to learn. Still so many questions. For the moment at least, I have appeased the Clear Sky Gods and I was so very glad that I had come.

Cheers!

Upcoming Events



The Hamilton Amateur Astronomers will host a public night on July 28th at the Brantford Tourism Centre. Starting at 7pm, a slide show, and question and answer period, will be followed by views of the Moon and Jupiter through member's telescopes until 11pm - weather permitting. For more information, log on to `www.amateurastronomy.org` or call 905-945-5050.

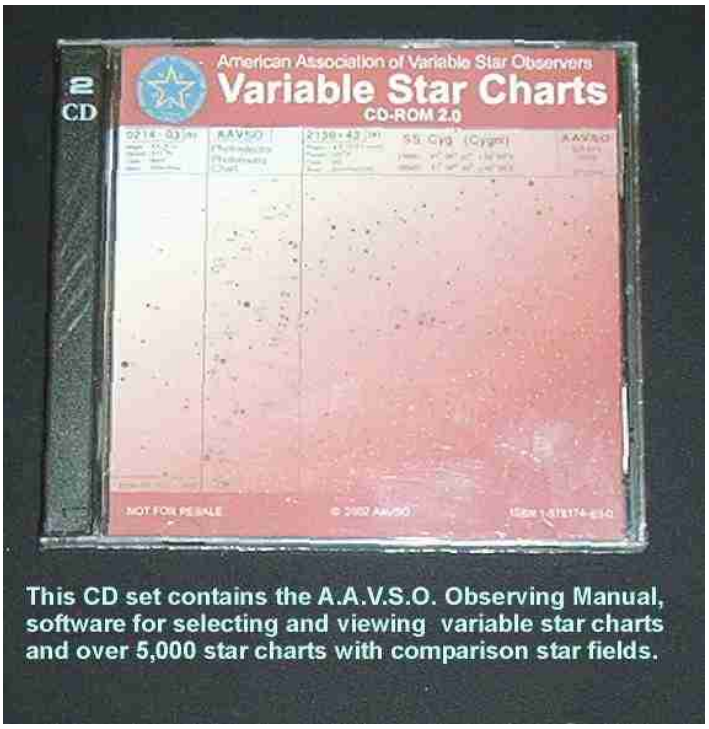
Friday, August 11th, at 9pm, the HAA will host a Public Persied Party at the Binbrook Conservation Area.

The next HAA General Meeting will be held on September 8, 2006 7:30pm. The location is unknown at this time. More details here:
`www.amateurastronomy.org`

Greg Emery will present a beginners night sky presentation for those with binoculars or small scopes.

Glenn Muller will speak on Building a Dob-servatory.

Free A.A.V.S.O. CD



Free for the Asking from Mike Spicer... a 2 CD set from the A.A.V.S.O. with 5,000 variable star charts and a complete AAVSO observer's manual. Something essential for the variable star observer. email: DeBeneEsse2001@aol.com

For Sale

Denise Neglia (416-434-0599 or 416-795-0588)

I would like to sell the telescope I had acquired a short while back. It is the LXD55 Series by MEADE with Autostar. I am looking for the best offer.

Mike Spicer `DeBeneEsse2001@aol.com`

I have a really excellent Meade 8" SCT and accurate clock drive that I have put on a steel wedge and then mounted on a 4" white TAL pier with long black feet, that I would like to sell - a great deal for someone who wants to observe visually or to take film or CCD images. It has lighted setting circles and a SUPER plug-in heated Tuthill dew shield... just a great set-up for observing from a seated position!

Oh! and I acquired a new 6" Maksutov that I will put on an LXD-55 mount with Autostar 497 - a wow! setup.

NASA's Space Place

Celebrating 40 Years of Intent Listening

By Diane K. Fisher

In nature, adjacent animals on the food chain tend to evolve together. As coyotes get sneakier, rabbits get bigger ears. Hearing impaired rabbits die young. Clumsy coyotes starve. So each species pushes the other to "improve."

The technologies pushing robotic space exploration have been like that. Improvements in the supporting communications and data processing infrastructure on the ground (the "ears" of the scientists) have allowed spacecraft to go farther, be smaller and smarter, and send increasingly faint signals back to Earth—and with a fire hose instead of a squirt gun.

Since 1960, improvements in NASA's Deep Space Network (DSN) of radio wave antennas have made possible the improvements and advances in the robotic spacecraft they support.

"In 1964, when Mariner IV flew past Mars and took a few photographs, the limitation of the communication link meant that it took eight hours to return to Earth a single photograph from the Red Planet. By 1989, when Voyager observed Neptune, the DSN capability had increased so much that almost real-time video could be received from the much more distant Planet, Neptune," writes William H. Pickering, Director of JPL from 1954 to 1976, in his Foreword to the book, *Uplink-Downlink: A History of the Deep Space Network, 1957-1997*, by Douglas J. Mudgway.

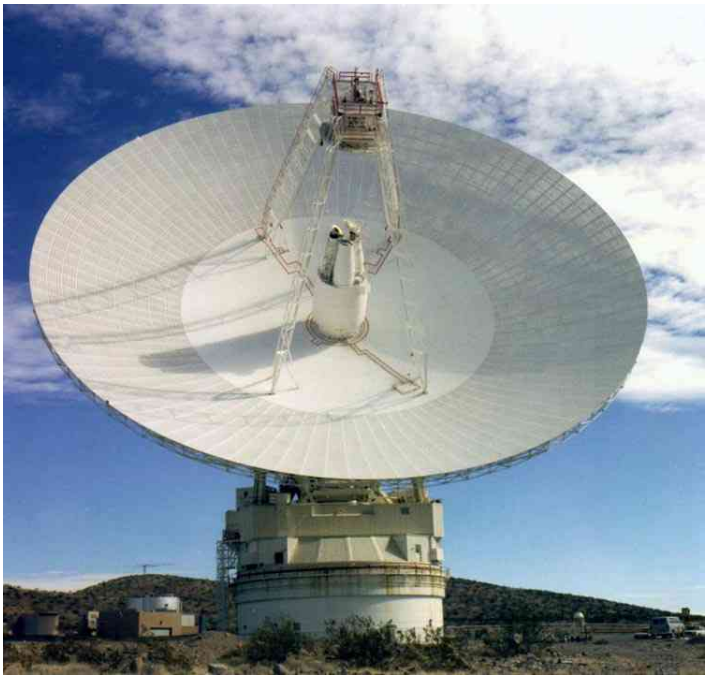
Mudgway, an engineer from Australia, was involved in the planning and construction of the first 64-m DSN antenna, which began operating in the Mojave Desert in Goldstone, California, in 1966. This antenna, dubbed "Mars," was so successful from the start, that identical 64-m antennas were constructed at the other two DSN complexes in Canberra, Australia, and Madrid, Spain.

As Mudgway noted in remarks made during the recent observance of the Mars antenna's 40 years of service, "In no time at all, the flight projects were competing with radio astronomy, radio science, radar astronomy, SETI [Search for Extra-terrestrial Intelligence], geodynamics, and VLBI [Very Long Baseline Interferometry] for time on the antenna . . . It was like a scientific gold rush."

In 1986 began an ambitious upgrade program to improve the antenna's performance even further. Engineering studies had shown that if the antenna's diameter were increased to 70 m and other improvements were made, the antenna's performance could be improved by a factor of 1.6. Thus it was that all three 64-m DSN antennas around the world became 70-m antennas. Improvements have continued throughout the years.

"This antenna has played a key role in almost every United States planetary mission since 1966 and quite a few international space missions as well. Together with its twins in Spain and Australia, it has been a key element in asserting America's pre-eminence in the scientific exploration of the solar system," remarks Mudgway.

Find out more about the DSN and the history of the Mars antenna at `deepspace.jpl.nasa.gov/dsn/features/40years.html`. Kids (and grownups) can learn how pictures are sent through space at `spaceplace.nasa.gov/en/kids/phonedrmarc/2003_august.shtml`.



For over 40 years, the "Mars" 70-m Deep Space Network antenna at Goldstone, California, has vigilantly listened for tiny signals from spacecraft that are billions of miles away.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Council meetings

All club members are welcome to attend the council meetings. Contact `info@amateurastronomy.org` for details.

Web Watch

Submitted by Glenn Muller

Relative sizes of astronomical objects
`www.rense.com/general72/size.htm`