Gemini



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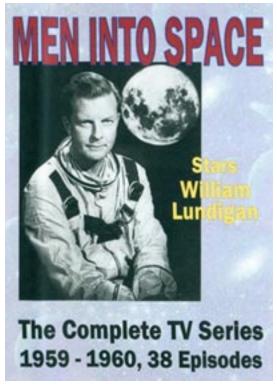
We have born into the world at a time of great discovery and scientific advancement. We stand at the threshold of a great, unfolding mystery with worldwide repercussions.

How thrilling it must have been for the youngsters of the early 1900s, when the Wright brothers took to the air in the first successful flying machines, opening up the era of human flight. And those same excited kids with soaring imaginations would, as grown men and women scientists and engineers, transform the world of flight in the coming decades — the product of their childhood curiosity and excitement.

I was lucky enough to arrive in the world at the advent of the next great challenge. It started for me at a very young age. As adults we often forget how impressionable young children are, even as toddlers, and how much these early experiences become manifested in their actions and behavior as adults. I must have been around three years old, possibly younger. My parents were driving home late one night from an outing at a relative's. My older sister and younger brother and I were dozing off during the ride. Upon arriving home, my father hoisted me in his strong arms to carry me into the house. It must have been close to midnight when I stirred from my slumber. The night was moonless and very quiet and the sky was exceptionally clear. I remember looking up, my eyes opening wider as I beheld a vast array of twinkling lights against a velvety black that held me absolutely spellbound.

Stories Wanted: Gemini is written entirely by our members, for our members! Gemini needs your stories... how you first became interested in astronomy, how your interest has evolved over the years, equipment you use, star parties and events you've attended here and elsewhere, how you've encouraged others — especially young people — to get involved in this fascinating hobby. Submit your stories to: brownreveugene66@gmail.com

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The early television astronaut character, Col. McCauley, from the late 1950s series, "Men Into Space." Of my earliest toddler memories, that one stands out. From that night forward I always wanted to look at the night sky, and I began asking questions that would never stop about all those lights and about the Moon. Thus the kernel of a lifelong interest in astronomy began to grow and take root. As my childhood years went by, that curiosity would extend not only to astronomy but to space travel, and finally to the search for extraterrestrial intelligence.

In my pre-teen years, the United States stood at the dawn of space exploration. In the late 1950s I was buying up all the literature and picture books on astronomy and early space exploration that were in my affordable grasp. My family and friends thought I was little overboard with all this, but it was like a craving I couldn't control. I would read comics about space adventures and get up at 6:30 a.m. on Saturdays to watch the next episode of Flash Gordon. I checked out science-fiction books from the local library that were often over my head. Black-and-white television had made its way into most homes, and there was always some hype about space travel and getting the first man into space. I remember a weekly series that started airing called "Men into Space" featuring astronaut character Col. McCauley. I never missed a show unless pre-empted by a parent (darn, I hated that). The show depicted, with some accuracy, how the first humans would interact in space and move about on the Moon. I was thrilled.

Then things started heating up. In early 1961 the Russians sent up the first man to enter space. I was excited but somewhat disappointed that the U.S. hadn't gotten there first. But in the early '60s a man came to power on the U.S. political scene who would prioritize the U.S. space program, eventually pushing us way ahead of the Russians. When John Kennedy took office as president in 1961, he vowed that the U.S. would not only have a vigorous space program but that we would beat the Russians to the Moon within the next ten years. Yes! This was my man. This was confirmation that I had definitely been born at the right time. I ate up every scrap of news I could possibly get about developments in the space program. My reading on astronomy took a back seat to space exploration but was still there in the background.

It all culminated one bright, fantastic morning — May 5, 1961. I could hardly sleep the night before. I got up extra early and was the only one up. I had this all to myself — it was going to be the televised launch of the first U.S. man in space. I was ten years old and in the fifth grade. It was a school day but I didn't care. I wasn't going to miss this. I was up early enough to watch all the pre-launch stuff with news correspondent Walter Cronkite at the helm. The countdown was coming and all systems were Go. The house, the living room, the noisy hum of the refrigerator, everything near me faded away to nothing as I heard 543210. Lift off! I damn near peed my pajamas. A bright ball of flame majestically elevated the rumbling Redstone rocket with Alan Shepard on board toward the heavens. I let out a shriek and clapped my hands together as I jumped up off the floor. I hardly noticed my mother behind me in her robe and slippers trying to hush me. "Look at this, look at this," I kept telling her. I went to school that day but my mind sure wasn't on schoolwork. After seeing that launch I was hooked forever. I never missed a single manned space event after that morning.



The author teaching the Cosmic Search course for Saint Paul Community Education, 1993 to 1995.

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Henceforth I melded space exploration with astronomy. My attention turned toward the night sky with but one objective — to get a telescope as soon as I could. But as the reality of scarce family money set in, I knew this wasn't going to happen soon. The next few years were tough on my folks, with the arrival of two new siblings and their goal of getting us all into a bigger home. I had to content myself with spending those years reading library books on astronomy and browsing current and back issues of *Sky & Telescope* magazine. I coupled this with learning the constellations and trying to identify stars and planets with the unaided eye.



Liftoff of the Mercury Redstone Freedom 7 with Alan Shepard aboard on May 5, 1961.

But 1963 was to be the golden year. That Christmas I got my wish — a brand new 3" Newtonian reflector. It was a beauty. My folks had gone out on a limb, and they made me aware of it. That was to be my only gift, and they were stern about my taking good care of it. It was a solid instrument for a youngster of that day and age. It had a sturdy, black tube with white end rings and came with a guide scope and rack-and-pinion lens holder. Its mount was a steel ball-clamp (manually maneuvered, of course) on an all-metal tripod. It even came with a solar-projection eyepiece. It disassembled for transport to fit into a reinforced vinyl carrying case. I guarded that scope with my life. No one was allowed to touch it but me. On the first evening I set it up, my father accompanied me. I was ecstatic when I could see the craters on the Moon with great clarity. My father was equally impressed.

So, as the first astronauts were beginning their trek into space, I was beginning my journey with astronomy. And as if that wasn't

enough to keep me busy, a new twist on all this was about to take shape. My space plate was going to become full to overflowing. I was about to enter junior high school. In that first year, a science teacher introduced a handful of interested students, myself included, to what most of us had never heard of before and also thought at the outset to be a rather dubious possibility. We were all curious about whether intelligent life forms exist beyond earth. Our teacher introduced us to the study of UFOs, or so-called flying saucers. We knew that some scientists had come forward and publicly admitted that extraterrestrial intelligence may be a strong possibility in light of the vastness of the universe. The Drake Equation would soon make its way to the forefront, but UFO proponents postulated the double leap to "not only are there intelligent species in the universe, but they are already here." Whoa, I thought. Come on, really?



An ad for vintage kids' telescopes from the 1960s.

Our science teacher was testing us. On the one hand he acted like he believed all of it, including the really wild stories, but then he would suddenly play the devil's advocate, arguing against some of the scenarios. He plied us with a problem, gave us information from both sides, and then said, "You decide." I was definitely excited about all this, so I jumped in. For the next three years or so I immersed myself in all aspects of the UFO mystery. I embarked on a whirlwind of activity that included reading countless books and magazine articles and joining dozens of UFO organizations that published newsletters. I wrote letters to the heads of the Air Force Project Blue Book, to serious lay researchers, to scientists, and even to people claiming to have met extraterrestrial visitors. Later I bought a rotary mimeograph press and wrote and published my own newsletter, which netted about 50 subscribers nationally (I didn't have a lot of funds for advertising). Through it all, I remember one thing that our teacher said that has always stuck with me. He said that this phenomenon could be scientifically studied but with some modification to the scientific method and with the right kind of scientists doing the work. This actually happened but not until years later.)

As I was heading into my senior year of high school, I began to curtail a lot of these activities. It wasn't until many years later, after earning a degree in graphic communications and being employed in the printing and publishing fields, that I picked up on my space interests on a fresher and more empowering level. This resulted in my acquisition of a 13" reflector telescope and my teaching evening classes in community education in a three-tiered course encompassing astronomy, SETI and UFOs. I continued this for a couple of years (1993-1995) until both family life and more work responsibilities began to restrict my time.



The author with his 13" reflector.

Today I am happily and busily retired from my career. I have been a member of MAS for about a year and have plans to get more involved in observational astronomy and possibly community education programs again. It has been a journey like no other, and I'm getting excited about it all over again. See you at twilight.

Meteoric Bust and the Virgo Venture

by Jerry Jones

On the evening of May 24, MAS members were provided with another ISON-ic experience: the potential of a new and powerful meteor shower caused by debris from the comet 209P/LINEAR. *Sky and Telescope* did a full-spread article on it in the May issue. The hype was that there was a potential of 100 to 400 meteors per hour, with the possibility of storm-level outbursts. As we now know, the Camelopardalids (as they are called) was an ISON-ic bust, garnering—for most of us—fewer meteors than are found on a usual night of observing. It did, however, give us a few bolides of multiple colors.

Every MAS observation site—Eagle Lake, LLCC, CGO and Casby—had MAS members on the lookout for meteors. All shared the same story: one or two bright ones but generally fewer than usual. A number of us traveled to Crex Meadow (Rigel Overlook) just north of Grantsburg, WI, where the horizons are clear to the ground and the skies are generally pretty dark. Our experience was similar. Despite the high cirrus clouds, the camaraderie was wonderful and we were treated to a very clear shadow-transit of Jupiter's moon Europa as well as a great view

of Saturn's Cassini Division. All of us were pleased to just be out among the stars. Perhaps Bill Kocken is right: Comets and meteors are just like cats. They have tails and are unpredictable.

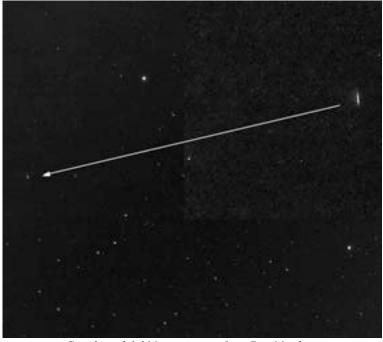
A week later was the scheduled Virgo Venture, held at Cherry Grove. About 10-15 people showed up, as did the galaxies in Virgo. The point of the Virgo Venture is to tackle the challenge of observing and logging 25 of the brighter galaxies in the Virgo Cluster. The skies were generally clear, allowing many to try their hand at this adventure. Dick Jacobsen, Rick Heins and Clayton Lindsay completed the challenge, observing and logging all 25.

May was a good month for our MAS star parties. Check the website for the dates of upcoming star-party events. They occur at regular intervals at all MAS sites. Crex Meadow in Wisconsin is used by many of our members, even though it is not an official MAS observing site. If you are planning to attend a star party, consider posting your intentions either on the Star Party discussion forum or the Observing SIG discussion forum. Who knows? You might generate some interest and encourage others to join you.

Here's to clear skies for the rest of our observing season.



Some of those attending the meteor shower at Crex Meadows



Camelopardalid Meteor as seen from Crex Meadows

by Roxanne Kuerschner, secretary

May

Observatory Passport Program: Mark Job presented a rough copy of the observer passport program. He has stamps ready for each of the places. There were slight changes made to make the list clearer. Mark will make the changes and be ready to roll it out at the June meeting. **Celestron Cosmos First Scopes**: Merle was given authorization to order five scopes as prizes. Repair of Celestron CPC800: Merle was given authorization to fix the Celestron. Then it will be posted as a selling item on the forums. Purchase of Sky and Telescope Disc Set: Clayton will purchase a replacement set for the one that was misplaced. Lunar **Rocks**: There is a safe at Eagle Lake Observatory for the rocks. We will have the safe inspected to make sure it is in working condition. All requirements for the rocks will be in place before they arrive. **Spring Astronomy Day**: Around 40 people attended. The weather was not conducive to good viewing. **Insurance**: The value of the picture needs to be determined to send to insurance. Wayne will contact our agent and take care of this. Sky Tools: Clayton requested to be MAS representative for a group purchase of Sky Tools. This was approved. Building Permit for CGO **fence**: Vic is doing the paperwork to get the fence built at Cherry Grove. **Open Forum Website**: The website seems to be fully functional; the board has authorized it to be fully active. Although there may be bugs, it seems to be in working condition.

June

Sidewalks at ELO: Estimates have come in. The main section from Casby to the classroom is \$13,800, while the driveway to Casby is \$5,500. Merle has been given the go-ahead to get things started. The piers were estimated to be \$1,500, but the size is not quite what Merle wanted, so a new bid has been asked for. **Observatory Passport Program**: Dave talked to Mark; it should be done by September. Celestron Cosmos First Scopes: Wayne will follow up with Chris and Merle to see if they have been ordered. If not, Wayne will take care of ordering five scopes. Repair of Celestron CPC 800: The board needs an update on the repair of the telescope. Authorization has been given to get it repaired. Lunar Rocks: All things are in order to get the rocks. Merle will pick up the lunar rocks. They will be at Eagle Lake for the public night and Camping with the Stars. Details are needed for the setup with the rocks: where they will be set up, who will be watching them, etc. They will be here July 18 through August 3. Roxanne will send out an email to the news stations by July 4th weekend regarding the lunar rocks. Maintenance: Greg will create a spreadsheet of maintenance items for all the observatories. J.J. Casby Work: The damaged diagonal has been replaced. The doorjamb will be replaced, as there was water damage. The building will be repainted. Cherry Grove: Vic wants to make sure that when the fence is put up it is not on the neighbor's property. A surveyor will be needed to mark the property line. The 14" is mounted on the 12" tripod and is working. Damaged Loaner Scope: Steve has been in contact with insurance, and it is all taken care of. The new scope has been ordered and will be in place within a week.

MAS Patron Members

Patron memberships are available to those who wish to contribute a little extra to support MAS activities. Patron memberships are established by constitution at 2-1/2 times the Regular membership rate—currently \$65 annually for a patron membership. The \$39 additional contribution is tax deductible. Patron memberships help fund equipment acquisitions, facility improvements, outreach activities and more. We would like to thank the following patron members as of June 29, 2014.

Hytham Abu-Safieh
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Directions to the Star Party Locations

For maps and further details about the sites, please go to our website at www.mnastro.org/facilities.

Baylor Regional Park and Eagle Lake Observatory

To reach Baylor Regional Park, head west on Minnesota Highway 5, through Chanhassen and Waconia, to the town of Norwood-Young America. Turn right onto Carver County Road 33 and continue approximately two miles north. Baylor Regional Park is on the right side of the road, marked with a prominent sign. When entering the park, stay to the right and follow the road approx 1/4 mile.

When visiting the Baylor Regional Park, MAS members are requested NOT TO PARK OR DRIVE on the grass. There is a drive up to the observatory which can be used for loading or unloading or handicapped parking only.

For an alternate route from the southern suburbs, take U.S. Highway 212 west to Norwood-Young America. Turn right at the second traffic light onto Carver County Road 33. Continue two miles north to the park entrance.

Cherry Grove

Cherry Grove is located south of the Twin Cities, in Goodhue County, about 20 miles south of Cannon Falls. To reach Cherry Grove, head south on Highway 52. On 52 about six miles south of Cannon Falls, and just past the Edgewood Inn, is a large green highway sign for Goodhue County Rd. 1 "WEST". Turn right, and follow County 1 straight south for about sixteen miles until you arrive at a "T" intersection with County A. The observatory is immediately at your right, nestled in the shoulder of the "T". Parking is permitted on the site, or along the road, preferably County A.

Metcalf

Head east from St. Paul along Hwy. 94. Exit at Manning Avenue (exit #253) Turn south (right turn) and then almost immediately turn left onto the frontage road (Hudson Road S). Continue east on the frontage road for about 1.5 miles. Turn right onto Indian Trail, checking the odometer as you turn. Follow Indian Trail south for just about 1.1 miles, where you'll see an unmarked chain-link gate on the right, opening onto a dirt driveway with slight up-slope. This is the entrance to Metcalf.

Belwin / Joseph J Casby Observatory

Head east from St. Paul along Hwy. 94. Exit at Manning Avenue (exit #253). Turn south (right turn) and then almost immediately turn left onto the frontage road (Hudson Road S). Continue east on the frontage road about 3.4 miles until Stagecoach Trail South, then turn right onto Stagecoach Trail and go east about 2 miles until reaching Belwin Conservancy on your left at 1553 Stagecoach Trail South. From the Belwin driveway entrance, y travel about 500 feet and turn left at the gate. Travel about 1/4 mile through the woods until you emerge at the parking area near the classroom building and the Joseph Casby Observatory.

Long Lake Conservation Center

From Western Twin cities

Take I-94 west to Rogers/MN 101. Go north/right on MN 101 through Elk River, where MN 101 becomes USA 169. Continue north on US 169 approximately 90 miles to Aitkin. At stoplight in Aitkin, turn east/right onto US 169/MN 210 and go out of town eight miles. Then turn east/right, following MN 210 toward Duluth. Proceed seven miles. A large green highway sign marks the turn off 210 to Long Lake Conservation Center. Turn north/left on County Rd. 5. After three miles, turn east/right on gravel County Rd. 88. It is approximately one mile to the LLCC gate. Follow signs to parking and unloading areas.

From Eastern Twin cities

Go north on I-35 to Finlayson/Exit 195. Turn west/left and go one mile to County Rd. 61 and MN 18. At stop sign turn right/north and go two miles. Follow MN 18 west/left and continue 19 miles to MN 65. Turn north/right on MN 65 and proceed 30 miles to McGregor. Intersect with MN 210 and follow 210 west/left (through McGregor) for seven miles. A large green highway sign marks the turn off MN 210 to Long Lake Conservation Center. Turn north/right on County Rd. 5. After three miles, turn east/right on gravel County Rd. 88. It is approximately one mile to the LLCC gate. Follow signs to parking and unloading areas.

Camping with the Stars – August 1-3, 2014

By Merle Hiltner, Eagle Lake Observatory chair

WOW. In a word, that is how I'd describe this year's Camping with the Stars. No rain, no hail, no strong winds or storms in the middle of the night as we've had in the recent past. We had a great group of guests, clear skies for the most part, fantastic speaker presentations, a fabulous potluck picnic, and a 3.3 billion-year-old lunar rock on display. Who could ask for anything more? The total number of visitors for the three-day event was over 400. There were 154 registered campers and single-day visitors. Raffle-ticket sales were impressive as well; we sold all but 30 tickets for the Saturday-night drawing.

Friday-night festivities opened with Bob Kerr giving an encore presentation on the moon and the Apollo program. Bob is the MAS member who first suggested that a proposal be sent to NASA for the lunar sample to commemorate the 45th anniversary of the Apollo 11 lunar landing. Many thanks to Bob and his son-in-law Mark,

who designed and set up the photos and descriptions for the display boards that vastly complemented the lunar-rock sample.

The late-afternoon clouds gave way to clearing skies as sunset approached. We had great views of Saturn, Mars, the Moon, M13, M51, M57, M27, double-star Alberio, the Wild Duck cluster, Neptune, Mu Cephei (Herschel's Garnet Star), the carbon star T Lyrae, and much more. We had the observatory open until the last guest left at about 1:00 a.m.

Saturday started clear, so we were able to view the Sun with many sunspots and prominences, one that was quite large. We also got views of Venus and Mercury. The first presentation of the day was given by Jonathan Poppele, who spoke about "What is the Best Time to Observe the Night Sky?" Jonathan also announced his Kickstarter program for the lunar-phase playing cards he developed.

At 3:00 Lindsay Emert gave a presentation on Planispheres and instructed the class in making and using these year-round star charts. At 4:00 Bill Arden taught us "Astronomy 101," highlighting









Continued on page 7.

Minnesota Astronomical Society 2014 Star Party Schedule									
Friday Date	Sun-set:	Twilight	Totally dark from	Totally' dark to	Moon % Illuminated	Onan Public Night (Sat.)	Cherry Grove	LLCC Weekend	Notes
Aug 22	8:06p	8:37p	9:53p	4:34a	9%		X	X	
Aug 29	7:54p	8:24p	9:42p	4:48a	18%	Aug 30	X	X	NNSF at LLCC Aug 28,29,30,31
	7:26p	7:56p	9:05p	10:18p	70%	Sep 13			
Sep 26	7:01p	7:31p	8:38p	5:28a	8%	Sep 27	X	*	Mini Messier Marathon CGO and LLCC
	6:46p	7:16p	3:47a	5:38a	84%	Oct 04			Fall Astronomy Day
Oct 17	6:23p	6:52p	8:00p	2:16a	29%	Oct 18	X	*	
	6:13p	6:43p	7:51p	6:01a	0%	Thurs			
Oct 23									Partial Solar Eclipse; canceled if cloudy
Oct 24	6:11p	6:41p	7:50p	6:02a	2%		X	*	
	5:59p	6:30p	2:44a	6:11a	72%	Nov 01			
	4:42p	5:14p	6:25p	1:00a	37%	Nov 15			

This schedule is subject to change. Please check the MAS online calendar at www.mnastro.org for a complete schedule of all MAS events. Cherry Grove star parties are held on Friday nights, with Saturday reserved as the backup night if Friday is cloudy. LLCC star parties are held on both Friday and Saturday nights. Eagle Lake public nights are held on Saturday nights only.

The Casby Observatory at Belwin is available to MAS members who have completed the Belwin orientation and training to use at any time. We do not have scheduled star parties at Casby. To reserve the observatory for yourself, please post your request on the Casby Observatory Keyholders discussion forum.

The Metcalf Observing Site is available to MAS members at any time. We do not have organized, scheduled star parties at Metcalf. Feel free to head out there whenever you wish.

The Eagle Lake Observatory holds regularly scheduled pubic nights. You are welcome and encouraged to bring your own observing equipment to these events. All other nights the observatory is available for trained members' use. To reserve the observatory, go to the Onan reservation calendar at http://www.mnastro.org.onankey/reservations/reserve.php Before heading out, please check the Onan reservation calendar to verify that there is no outreach event scheduled. In 2014, daylight saving time begins March 9 and ends on November 2.

Continued from page 6.

essential information for understanding astronomy basics and how things work.

Next was the B-SIG (Beginners Special Interest Group) annual potluck picnic. Great burgers and hotdogs were provided for registered campers and MAS members. Huge thanks to Ric and Wayne for taking the lead on this and making sure there was plenty for all. Ric's four-alarm jalapeno baked beans were an unexpected treat. Thanks to everyone who brought a dish and to those who did the grilling to keep us fed.

At 7:00 Ron Schmit gave his "This Is Big!" presentation, a tour of the biggest thing ever, the universe, in just one hour. After Ron's presentation we moved things outside the HotSpot Classroom for the door prize and raffle drawings. This year's prizes were MAS merchandise, astronomy books, DVDs, and two Celestron tabletop telescopes. The winners of the telescopes were Ravi Khandelwal from Eagan and Angie Minor from Farmington. The raffle prizes included MAS merchandise, astronomy books, autographed books by MAS president Dave Falkner and Jonathan Poppele, DVDs, Celestron 15x70 binoculars and an 8" Orion Dobsonian telescope. The binoculars were won by Thomas Potter of Fort Ripley, and the grand-prize winner of the 8" telescope was Renee Brasuhn of Columbus, who was so happy to win the telescope that she started dancing on the plaza as her name was announced. Thanks to all who participated in the drawings and congratulations to the prizewinners.

The final presentation of the evening was scheduled to be the laser constellation tour given by Ron Schmit. Clouds prevented the

live tour from the plaza, so a virtual tour was presented in the HotSpot Classroom. The skies did begin to clear by 10:30 or 11:00 p.m., enough to get some observing in for those who had stayed around, confident the skies would eventually clear. While not the most perfect viewing conditions, guests were treated to views of the Moon, Saturn, and many of the summer's best deep-sky objects—M13, M57, M27, M16, etc. There was also a very bright ISS pass (-3.4 magnitude) and, in the words of Ron Schmit, "a supersweet Perseid fireball." Once again it was past 1:00 a.m. before we closed the observatory for the night.

Sunday morning arrived quickly. I had a 7:00 a.m. wakeup call to prepare for the continental breakfast and daytime solar viewing. Coffee, juice and assorted morning pastries were served for the 40-or-so campers and guests who attended. I spoke briefly about how we ended up having a lunar rock lent to us for display. The clear morning sky gave us views of the Sun, Venus, and Mercury, as well as several brighter stars—Betelgeuse, Rigel, Capella and Aldebaran. The final campers left the ball field by noon. Ric and I did our best to clean things up before calling it a day.

I can't thank everyone enough for the great job done over the weekend. Thanks to our speakers for their incredible presentations and to the many keyholders who manned the telescopes, as well as everyone who worked to clean up and prepare the site. We have a great site, great equipment and equally great volunteer keyholders and members. We should all be proud of what this event has grown into.

Photographs by Father Brown.











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