

NOVA NOTES



Halifax Centre



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1991 Halifax Centre Executive

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Notice of Meetings

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Date: **Friday, August 30th - Monday September 2nd**
Place: Fundy National Park, New Brunswick
Topic: **NOVA EAST '91** The usual information and maps can be found inside the May-June issue.

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Date: **Friday, September 20th: 8:00 P.M.** for the main speakers.
Place: Nova Scotia Museum, Summer Street, Halifax. Access from the side entrance. Meeting to be held in the lower theatre.
Topic: There will be several speakers who will be giving reports on the following summer activities: Vancouver General Assembly; Stellafane; NOVA EAST; and the Solar Eclipse Expedition.

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Date: **Friday, October 18th: 8:00 P.M.** for the main speakers.
Place: Nova Scotia Museum, Summer Street, Halifax. Access from the side entrance. Meeting to be held in the lower theatre.
Topic: The main speaker for the evening will be **Patrick Kelly** who will be talking about "The Lost Oceans of Venus".

Halifax Planetarium Public Shows

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All shows are on the current night sky. The Halifax Planetarium is located in the Dunn Science Building on the campus of Dalhousie University.

Thursday, September 12th:	7:00 P.M.
Thursday, September 26th:	7:00 P.M.
Thursday, October 10th:	7:00 P.M.
Thursday, October 24th:	7:00 P.M.

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Note: The above list is tentative and subject to change.
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About the cover:

The cover is of the eclipsed Sun as viewed from Baja California. The photo was taken by Dave Lane, who was one of the Halifax Centre members to go to Mexico to view the eclipse. His account of the trip appears in this issue.

The 1991 Vancouver G.A.

Mary Lou Whitehorne

I almost didn't have to write this report; I could just refer you to the Editor's Report of the May-June issue of Nova Notes!

Firstly, I want to say what a pleasure and an honour it was to act as the Halifax Centre Representative at the Vancouver G.A. It was a wonderful trip and I enjoyed everything immensely. Thank you!

I stopped in Winnipeg for three days on the way to Vancouver. This was my half of the Speaker Exchange between our two Centres. The folks in the Winnipeg Centre are a keen bunch of fun-loving observers. Their Centre is not as large as ours but most of their members take a very active role in Centre activities. I gave them a talk about my Be Star observing project; showed them a pile of spectra and line profiles and tried to explain what it all meant. Believe it or not, they were very interested; maybe because their own Chris Brown had them very well primed by telling them about his photometric part of the project! With any luck, Chris will visit us in Halifax this fall and give us a talk too. The '91 G.A. was held over the May 24th long weekend at U.B.C. It was an action packed three days; most G.A.'s these days run for four days and squeezing it into three was no small task. National Council almost missed lunch a few times!

There was plenty of business going on: fees will not go up this year but most likely will next year. Calgary is hosting the 1992 G.A. while Halifax will host the 1993 G.A. at Mount Saint Vincent University (arrangements are already underway!). The 1994 G.A. will be hosted by the St. John's Centre and that will be a G.A. we will all have to attend! There was a lot of highly entertaining discussion about an amendment to the new constitution because it contained the word "chairperson" instead of "chairman". In the end "chairperson" won the vote. There was also a lot of heated debate about the proposed Project Gemini and what, if anything, the R.A.S.C. should do about supporting (or not supporting) such a project. Since the professional community was very divided on the issue it was decided that the Society should do nothing until the professionals reached a consensus. The government has since "pulled the plug" on Project Gemini so the problem has gone away for the time being at least. The Publications Committee will be looking into the future direction(s) of our various publications. Progress is being made on the "mini-handbook". There is a new national committee: the Anti-Light Pollution Committee, of which I am a member, that will be looking for ways to help the R.A.S.C. in the important struggle to reclaim our skies.

The paper sessions ran on Saturday and there wasn't quite enough time to fit them all in comfortably. They were interesting and covered a wide range of topics from computer simulated 3-D images of Mars (Jim Naiden, Seattle) to the history of the R.A.S.C. (Peter Broughton) to medicine wheels (Don Hladiuk) to observing sunspots (Leo Enright) to Be stars (Chris Brown and yours truly).

There were plenty of social activities too. We were treated to a tour of MacDonalD Dettwiler, leaders in the satellite imaging business. We visited U.B.C.'s TRIUMF facility which houses the world's largest cyclotron. The banquet was a very enjoyable occasion (delicious!) with the Ruth Northcott Lecture given by Bjarni Tryggvason (one of Canada's astronauts) on the past, present and future of space flight. We visited the H. R. McMillan Planetarium and watched an excellent show titled "China Stars". There we also enjoyed the salmon BBQ, a look at the Gordon Southam Observatory, and the thigh-slapping, rib-cracking, hilarious Murphy Slide Show - Song Contest. This G.A. saw the debut of a National R.A.S.C. Choir: six of us from Halifax, Winnipeg and Toronto joined forces to sing the blues. We received a thunderous round of applause and a demand for an encore which we delivered right away, having had one prepared in advance. The Song Contest was won handily by the talented Gertrude Bishop and her two equally talented daughters. Of course they had an unfair advantage over the rest of us - they could sing! The Vancouver Centre are to be congratulated for hosting such a successful GA. We have a tough act to follow in 1993. Ω

Greetings from MassLand

Greg Roberts

Pat, you can edit out any or all of this for NOVA NOTES, I just figure you're the editor, so edit 'er.

A quick note to fill all of you in on what's been happening here in MassLand, besides the airplanes. Had a nice lunch with Jay Pasachoff last month before he went off to view the eclipse. He invited me along, as he had room for two more, but I had to pass this one up. I said perhaps the next and he just laughed. Don't know why.

As I look out into the sky, it's dark, and finally clear, I note that the moon is 4 days 18 hours and 45 minutes old (just a guess), and a ballpark estimate is about 376,734 km distant, give or take a km. (You following all this Dick?)

Thanks Pat, for the mention in the Editor's Report, and thanks as well to Wesley Howie for the mention in the Astronomy Day report. Contrary to popular opinion, my computer is faster

than Ben Johnson, and no, my computer doesn't use steroids. It uses them little silicon diox-oids.

How did the banquet go? I hear that Dickie and Dave were the entertainment. That would have been worth the twenty five bucks alone! That's what you would pay to see Howie Mandel or Rosanne Barr.

Now that I live in MassLand (not to be confused with Maryland, it's just that I can't spell Massachusetts), I have come to conclude just one thing. Other than everyone loves a good Ted Kennedy joke, Pat can't spell my street name. I live on Marshall Street, Pat has me living above the Tai Kwon Do or Tai Chi store, on Martial Street. But he did get the number and the town right. I suppose two out of three isn't bad.

But back to astronomy stuff. There isn't much here, other than JP's (Jay Pasachoff) six or seven C8's and a few other nice beasts. One of the techs I work with is into astronomy in a big way. He has a C8 with all the latest goodies on it.

There is no organized group here. All the people sort of do they're own thing, and no one talks about it much. JP asked if I would be willing to try to start some sort of informal group just for regular observing sessions. That will get started in September I suspect.

Living here in the middle of the Berkshire Mountains is interesting. The best observing site is about five miles away at the top of the mountain that leads into town. The lights of the town are below, and you can faintly see the lights of Albany, New York about 35 miles away, on the western horizon. The top of this hill, is about 3600 feet up. Looking north-east, there is a bright blue light, which is the Yankee Rowe Nuclear Power Plant. Just kidding about the blue. Actually, they are trying to close the plant due to reactor embrittlement, so perhaps the lights will go out in about 10,000 years :-). (Still keeping up with me, Dickie?)

I tried to get some nice pictures of the planets when they were at their closest last month, but my trusty Nikon of 10 years decided to bite the bullet and had a hardware failure. No camera store in this area. I guess I will have to wait until I get somewhere where they know what "film" is.

Well, I guess this is about all for now. I will keep the posts on the comets, asteroids, earth crossers and whatever coming. (Dick, you still awake?) I trust I will see some of y'all at Cellophane in August. I plan on being there myself. I will try to have my camera fixed, or at least spayed. Doug, don't do anything I wouldn't do. That leaves a lot to the imagination. Have a good Nova East this year guys! Ω

Eratosthenes and the Circumference of the Earth

David Fleming

Eratosthenes was born in Cyrene, on the south coast of the Mediterranean Sea in the year 284 B.C. He was a pupil of Callimachus and attended Plato's school in Athens. At the age of forty, Eratosthenes was summoned by Ptolemy III of Egypt to tutor his son and direct the Alexandrian library. A frequent correspondent and friend of Archimedes, Eratosthenes was the consummate "new Greek scholar", applying his ideas for practical gains. Once, while reading through a scroll in the library, Eratosthenes learned that there was an Egyptian outpost known as Syene (near present day Aswan) at which no shadows were cast at noon on the day of the summer solstice. The Sun was directly overhead, a fact confirmed by its reflection at the bottom of a deep narrow water well. Eratosthenes realized that this was not the case everywhere. Reasoning that this fact might provide a clue as to the nature of our planet, Eratosthenes was led towards his most famous accomplishment: an accurate estimate of the Earth's circumference.

The classical account of Eratosthenes' circumference estimate is related by Cleomedes. This version is perhaps not without its inaccuracies, but provides a general framework of how Eratosthenes made his deduction. Alexandria was determined to lie nearly directly north of Syene. Holding a stick perpendicular to the ground in Alexandria at noon on the day of the summer solstice, Eratosthenes found a small but perceptible shadow. This procedure may actually have been performed with the gnomon, or vertical component of a bowl sundial or skaphe.

By calculating the angle between the tip of the gnomon and the line connecting this tip with the end of the shadow, an estimate for the difference in latitude between Alexandria and Syene could be arrived at. By imagining the Alexandrian stick extended to the center of the Earth and connected to the similarly extended stick from Syene, it is possible to envisage a gigantic letter "Z". Assuming the Sun's rays to be parallel, the aforementioned angle would then equal the angular difference between the two cities. This would follow from the alternate angle postulate of the transversal of parallel lines theorem and the fact that the angle at Syene would be zero.

The angle in Alexandria was measured to be about 7.2 degrees. Reasoning that a spherical Earth was causing the angle variances, Eratosthenes figured that the distance between the two cities was $7.2/360$ ($=1/50$ th) of the distance around the planet. The distance from Alexandria to Syene was determined by

Eratosthenes in one of two manners. The first method commonly mentioned is simply that a man was hired to pace it out. A figure of 800 km is associated with this somewhat laborious task. The more frequently noted, and more likely method of distance estimation involves the observation of the time required for a camel train trip between the two cities. The trains travelled approximately 100 stadia per day and required fifty days to complete the trip. A standard stadia was measured at 157 metres, giving a total distance of 785 km between Alexandria and Syene. Using either of these values yields an excellent approximation for the circumference of the Earth: 39,250 km or 40,000 km. The true polar circumference is, in fact, 39, 940 km.

It has become evident, however, that Eratosthenes perhaps arrived at his value without actually performing an experiment. The values used in his calculations are obviously rounded off, and it has been suggested that his figures were derived, not from direct observation, but in fact, from common knowledge of the time. Nonetheless, the ability to piece the information together is an impressive feat. Goldstein argues that Cleomedes mistook references to a geometric figure used in calculations for a skaphe used in an experiment, and similarly misunderstood other steps used in the determination of the circumference. The belief that Eratosthenes made his estimate of the circumference of the Earth through manipulation of, and adjustment to known figures, rather than through direct experimentation, rests upon a number of assumptions. The rounding strategies and mathematical techniques of the ancients are uncertain. In general, however, the argument is consistent and casts some doubts upon the traditional tale of Eratosthenes' discovery.

The method described by Cleomedes is still a valuable way of estimating the distance around the world. In an effort to reproduce this calculation, I decided to re-enact the experiment, substituting Sackville, New Brunswick for Alexandria and Lunenburg for Syene. The approximate distance between these Maritime communities of roughly equal longitude is 174 km. Owing to the sad lack of Bay of Fundy camel trains, this value was determined from an atlas.

Equipment used at both locations included a stick about five feet long, a plumb bob, a floor level, a tape measure, chalk, and a time piece coordinated to Atlantic Standard Time. Assistance was provided by Christiana MacDougall in Lunenburg and my family in Sackville. The procedure was carried out, not during the summer solstice, but on Sunday, March 31st, 1991. This fact, coupled with the locations on the globe created a shadow-to-stick ratio of much more than 1:8. The readings were taken at ten minute intervals from 11:30 A.M. to 12:30 P.M. to reduce the ratio as much as possible. Due to a late arrival time, readings were

taken in Lunenburg from only 11:50 until 12:30, with one set of data being eliminated due to inconsistencies with its plot point. It was felt that the sine curve resulting from the Sun's apparent motion could be better approximated with one point eliminated. The remaining four data sets yielded an average angle difference of 2.01 degrees, with the Sackville angles being larger than expected. This value gives a circumference of $(360/2.01 \times 174 \text{ km}) = 31160 \text{ km}$. The percentage error here is 22%. While this error value is fairly high, the results illustrate that the method of Eratosthenes is quite reproducible.

We noted from the data that the Sun appeared to peak in the sky at about 12:15 P.M. Sackville's co-ordinates are $+45^\circ 57'$, $64^\circ 22' \text{ W}$, while Lunenburg's are $+44^\circ 23'$, $64^\circ 19' \text{ W}$. While the actual difference in latitude is 1.57 degrees, our two best data sets give differences of 1.51° and 1.53° . Consistence, however, was an obvious problem. Sources of error for the procedure included the slight tilts of our driveway and the parking lot of the Lunenburg Bowling Centre, difficulties with placing the stick at a perfect right angle to the ground, measurement errors due to the fuzziness of the stick's shadow and slight difference in times and longitudes of observations. A suggestion made for improvement was to suspend the bob a known distance from the ground and measure the distance to its shadow. On a calm day, this could greatly ameliorate results.

The work of Eratosthenes, and the Alexandrians in general, boosted our geographical knowledge tremendously. Building on the efforts of Anaximander and Hacataeus, Eratosthenes constructed maps of the known world and published *Geography*, in which he outlined some of the methods and results of his other works. Not surprisingly, his prediction of a round globe with a finite circumference sparked great interest in exploration. In the first century A.D., Alexandrian geographer Strabo noted:

Eratosthenes says that if the extent of the Atlantic Ocean were not an obstacle, we might easily pass by sea from Iberia to India. It is quite possible that in the temperate zone there may be one or two inhabitable earths.

It is interesting to note the foresight of these speculations when compared to the common Medieval European belief of a flat Earth centered on Jerusalem.

After going blind in his old age, Eratosthenes took his own life by starvation. The year was 192 B.C. In the field of mathematics alone, Eratosthenes will be remembered for his work on the duplication of the cube, and the creation of a prime number sieve, mean finder and practical calendar system. Without a doubt, though, Eratosthenes will be known forever as the man who first measured the Earth. Ω

The Universe According to Voyager

Joe Yurchesyn

Voyager, an astronomy program by Carina Software, first appeared in the autumn of 1988, and is a most impressive program for anyone interested in astronomy and computers. *Voyager* runs on the Apple Macintosh line of computers and has become **the** astronomy program that all others are compared to. My recent acquisition of a Macintosh computer has allowed me to experiment with this program.

Voyager contains a database of over 9,000 stars (to magnitude 6.5), 3,000 deep sky objects to about magnitude 14.5, 1600 binary stars, and 160 variable stars; as well as constellations and solar system objects. Four user definable orbital objects are also supported.

Voyager offers several types of views. A Sky Chart view mimics a star atlas, such as Norton's, which has a magnitude limit of 6.6. The Sky Chart view is also available for various solar system locations. Parallax, from simultaneous observations from different locations, appears to be catered for.

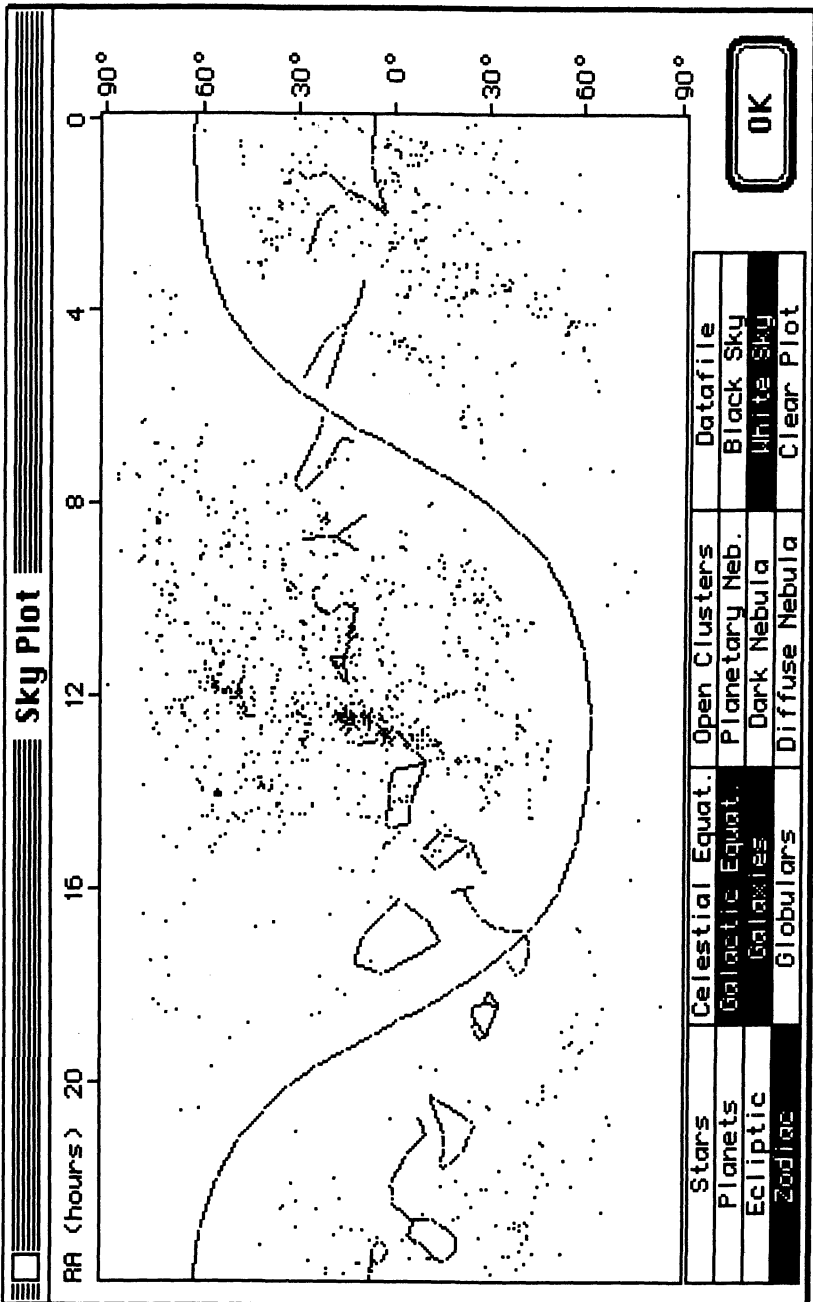
A Local View simulates one's view under the real sky, and allows various solar system objects to be correctly oriented according to the horizon.

A Solar System view provides a vantage point up to 100 A.U. distant, looking toward the sun. A Sky Plot view shows the entire sky in a Mercator type of projection similar the monthly planetary chart shown in *Sky & Telescope* magazine.

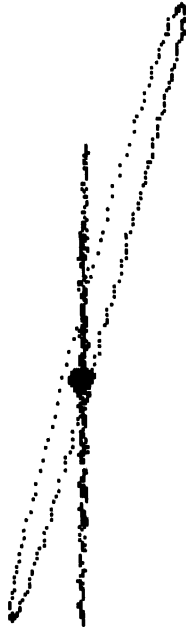
The capabilities of *Voyager* are too numerous to fully describe briefly. One important comment is that it is both very easy to use and fast, especially on my Macintosh IIfx. All illustrations with this article were created after using *Voyager* for less than an hour. Screen dump images were imported into SuperPaint and then suitably combined.

Several other IBM programs which are familiar to me, are either too slow, or have a user interface which is too clumsy; and none is as full featured, or as easy to use as *Voyager*. I suspect that *Voyager* may not be highly accurate, and this is what gives it its speed. However, for the majority of simulations run on *Voyager*, it is more then accurate enough.

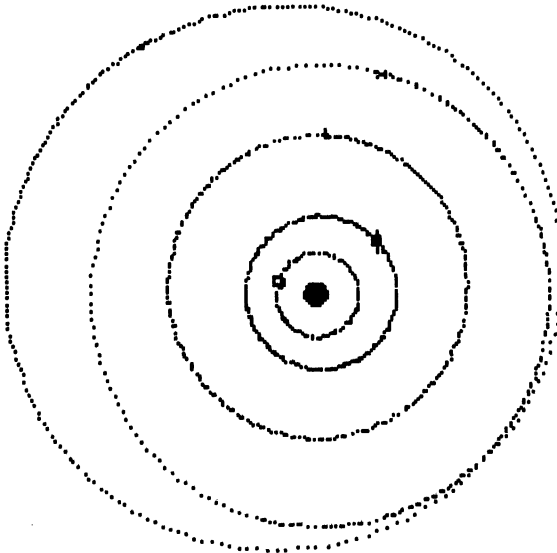
Another review of *Voyager*, by Roy Bishop, appears in the October 89, Vol. 83, No. 5, issue of the *R.A.S.C. Journal*, pp. 331-333. It can be obtained from an American mail order software house for \$87 U.S..Ω



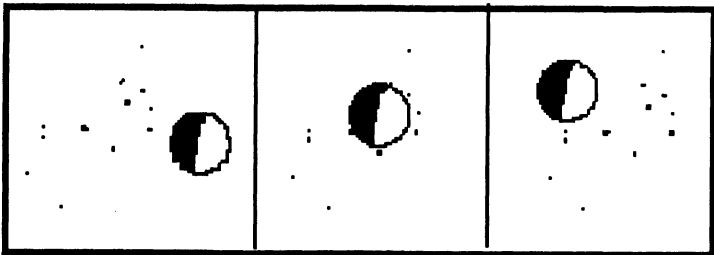
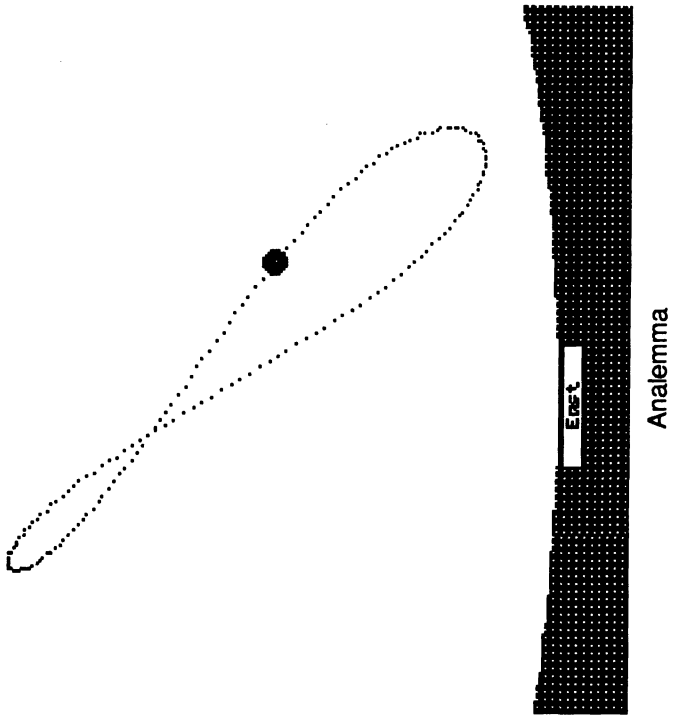
Location of External Galaxies is away from the Galactic Equator.
 Note that many other types of objects can be displayed either singly
 or in combination.



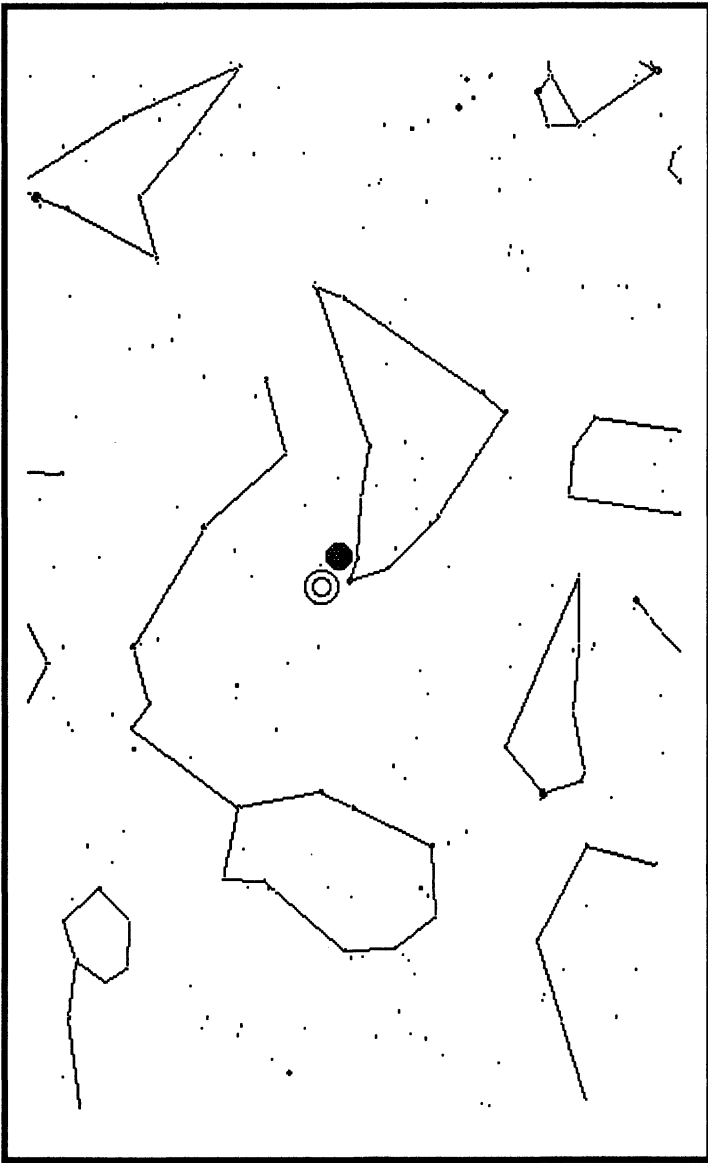
Side View of Outer Solar System



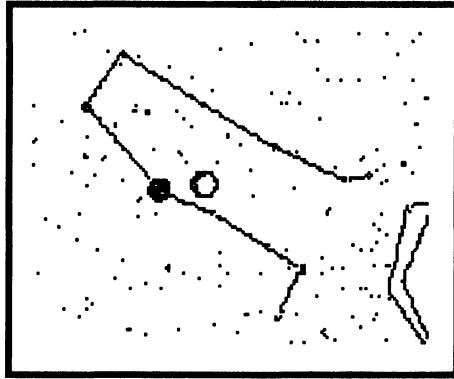
Polar View of Outer Solar System



Occultation of Pleiades — August 14th, 1990



Total Lunar Eclipse — August 16th, 1989



Total Solar Eclipse July 11,1991 as viewed from La Paz Mexico



Total Solar Eclipse July 11,1991 as viewed from Halifax, N.S.

Halifax Members Travel 5000 km to be in the Dark

Dave Lane

It seems like an odd thing to do when our normal dark sky site is only thirty minutes out of metro, but nevertheless, eight members of the Halifax Centre did, in fact, travel to Baja California, Mexico to be in the dark for the longest total solar eclipse until the year 2132.

The eight lucky members (myself, Bill Thurlow, Dan and Michael Falk, Roy Bishop, Sherman Williams, Murray Cunningham and Paul Harrington) left Halifax on Tuesday, July 9th on various flights to eventually rendezvous at the Toronto Airport for an early Wednesday morning departure to Mexico. I should point out that the expedition, which had about 165 members, was organized by the National R.A.S.C. under the direction of veteran eclipse chaser Michael Watson.

We travelled from Toronto to Puerto Vallarta, on the Mexican mainland, aboard our Mexican charter airline, La Tur (which I was told means "the plane" in Spanish). The plane was a new one (which relieved many of us!), but because of the large number of seats which were crammed into the aircraft, the flight was very uncomfortable. (Is there such a thing as fourth class?)

We landed in the early afternoon. We first had to go through customs. No one knew how difficult that was going to be, but it turned out to be easier than getting into a bar in downtown Halifax. We were bused to our hotel, checked in, and spent the rest of the afternoon dipping in the pool, eating, enjoying the scenery and patronizing the nearby shops. Some of us, including myself, tried a dip in the ocean, even though the DANGER signs were up. Michael Falk had a thermometer and measured the ocean temperature to be 33 degrees! Bill and I went shopping, but all we could do was window shop because it was about 3:00 P.M. and most of the stores were closed due to the daily afternoon siesta. We had to look twice at the prices because everything cost thousands (of pesos, that is).

In the evening we had an information meeting which featured various speakers including the organizing committee and a welcome from our National President, Damien Lemay. Each speaker focused on a different aspect of the eclipse. Topics included the details of this specific eclipse, photographing the eclipse, etc., as well as the itinerary for the next day.

The evening was completed (for Bill and I) by a nice meal in a Cajun restaurant with the company of Damien Lemay, Mary Gray (she says that Randall is doing fine) and Randy Dodge from the St. John's Centre.

The eclipse day started vary early. The wake-up call was 3:00 A.M.! A quick buffet breakfast was followed by a bus trip to the airport for our short flight across to the Baja peninsula. There were **lots** of clouds along the way, but the sky seemed to be clearing as we approached Baja. We landed at San Jose del Cabo which is on the southern tip of the peninsula. Again we boarded buses to travel to our observing site, which was 41 km north of the airport. Our site was in the town of Santiago (population 2 000) and located in a fenced in soccer field. Well, I wouldn't call it a field since there was no grass.

We were greeted by about a dozen fully equipped foot soldiers carrying machine guns. Apparently they were provided by the Mexican government to guard our site! They were very effective at keeping our equipment safe and restraining the local villagers from wandering into our site. They were not completely successful, however, since a barnyard pig did get through their defences and wandered across the field!

By the time we reached our site the skies were clear. What a relief! Our site was a very good one, since there was plenty of room for people to set up their equipment and excellent views of all the horizons. Also on hand were a set of bleachers which were sheltered from the Sun. A free bagged lunch was also provided plus water, beer and pop all day.

We all began to pick out our own individual sites. Several of us selected a site near the center of the field. Roy, Paul and Sherman were to the west. Bill and I had brought telescopes with which to view and photograph the eclipse. The others brought their eyes and a set of binoculars each.

The first contact (the point when the Moon first starts to cover the photosphere of the Sun) began at about 10:30 Local time. The partial phases occurred very slowly, allowing plenty of time to observe sunspots becoming covered by the Moon and to take some photographs. At around 11:30 things started to get interesting. The temperature had dropped to a comfortable 32° (it had been 40°). The light level had also begun dropping rapidly, but there were now clouds over us! They didn't appear to be moving, only getting thicker.

As totality approached, the clouds thinly covered most of the sky over our heads, leaving clear sky all around us. Did we ask for this? Most of those around me, including myself, had our heads low in disbelief, as we were preparing ourselves for the high probability that after travelling so far, we would see no totality!

At a few minutes before totality, things started getting very interesting. I lost complete touch with those around me, so I can't say what they were doing at all. I had my left eye glued to the eyepiece of my Genesis telescope. I had been looking with the solar filter but then, when there was only a thin sliver of the

photosphere left, off came the filter. I was watching intensely as the remaining sliver broke forming two Bailey's beads. The sliver broke again, and again and again! I estimate that there were about twenty of them before, one by one, they started to disappear behind the Moon.

During this process, I briefly looked up at the sky. The sky brightness seemed to be dropping exponentially! The sky in the west was particularly dark, since the shadow of the Moon was approaching from this direction. Back at the telescope, I watched the last dot disappear. At that moment totality was upon us. It was just as if the sky had fallen. Unless you have witnessed it, you cannot imagine the difference in brightness between the smallest part of the photosphere being visible and totality.

The Sun completely disappeared! I got up off my knees and went over to talk to Bill. We were both grumbling about our bad luck, when the crowd around us started to liven up. The Sun was beginning to appear between a hole in the clouds! I went right back to the telescope to soak up the photons. A few seconds later the corona appeared. The sound from the crowd (I assume it was the crowd, but I know that I definitely contributed to it) must have went up by thirty decibels with cheers and screams! The Sun showed incredible detail in the corona; more than will show in any photograph. To the surprise of all, two large prominences appeared on either side of the Sun. They were incredibly red and just as visible as the corona. After about a minute or so, the Sun went briefly behind a cloud and then returned for a second time.

Before travelling to the eclipse, I had a lot of time planning my astrophotography of the event. With a nearly seven minute long totality, I had planned to divide the time about equally between observing a photographing the event. But with the onset of the clouds all my well thought out plans went out the window. After the Sun disappeared for a second time, I decided that I had better prepare to take some photographs if the Sun cleared the clouds one more time.

It was total mass confusion. I grabbed for a camera and attached it to the telescope. It fell off and hit the ground. I picked it up and attached it again. The Sun appeared. I focussed on the edge of the Moon and began taking exposures. I used the entire range from 1/1000th of a second to 1/2 second to maximize the possibilities of obtaining something printable.

The Sun was still visible when the photosphere began peeking through marking the end of the total phase. The diamond ring effect was spectacular. After a couple of seconds the Sun became too bright to look at, so I immediately went back to the camera to take a few quick shots to see if I could capture the diamond ring. I was successful! As the Sun began to return from behind the Moon, many noticed that the clouds were also starting

to disappear. It immediately occurred to me that we had nearly been done in by a phenomenon actually caused by the eclipse itself. I walked over to where Roy was standing and asked him if that is what he thought too. He said, "Well, of course." It was settled.

When the eclipse ended, several of us were discussing what we had observed. Dan Falk had videotaped the reactions of Bill and I! We broke for lunch, then observed the final phase of the eclipse which ended with the fourth contact terminating the event. Our equipment was disassembled, packed for air transport and the buses were loaded. After a quick tour of the town of Santiago we were on our way back south toward the resort town of Cabo San Lucas where we could shop before enjoying a harbour dinner cruise. On the way we stopped to view a large rock which marked the Tropic of Cancer. It served to remind us just how much further south of Canada we were.

The dinner cruise was most enjoyable, especially as sunset approached and the sky darkened. Bill, having travelled to the Southern Hemisphere before, was able to point out some of the southern constellations. It was especially nice to see Sagittarius so high in the sky. We were also able to observe the five brightest planets (Mercury, Venus, Mars, Jupiter and Saturn) all at the same time, which, I understand, is quite rare.

Before too long the harbour cruise ended. We were then bused to the airport for our overnight flight back to Toronto. The trip was very tiring. After arriving in Toronto, I immediately went to my hotel room and slept for twenty hours! Before returning to Halifax, I visited the local telescope stores and was treated to a couple of planetarium shows.

Overall, the trip was very enjoyable and worth every bit of the money that it cost. It was planned and executed perfectly due to the efforts of Michael Watson. My photographic efforts were not award winning, but were not disappointing given the conditions. They will make a permanent record of this great event. I am sure that before the decade is out you will see me go again, as I am told that these trips are addictive and the lure to be in the dark is very strong indeed. Ω



The Little Scope That Could

Brian Segal

DISCLAIMER: The characters and situations described in this article are fictional and any resemblance to persons, living or dead, is purely coincidental!

Once upon a time there was a little telescope named Castor. Castor was always being ridiculed by his fellow scopes because he was only ever pointed at "easy" things like the Moon, the Sun, and the planets. His owner, a planetary observing fanatic named Drivel simply shunned the challenge of deep sky observing.

It was sad. "Solar" Max, a big "Dob", would chuckle at Castor and taunt him with lines like, "What's the matter, little fellah, afraid to look beyond your dew cap?" and, "Hey kid, try a little nebula gazing, it'll be a nice change from that kid's stuff what with the Moon and all!"

Castor hated the big guys. All they ever talked about was galaxy hunting, diffuse nebulæ and "difficult" NGC objects. No one wanted to hear about the latest close double that he split last week, the latest eruption on Jupiter's South Equatorial Belt, and ESPECIALLY about that boring cloud enshrouded globe so ironically named Venus!

Castor's owner, a well meaning but rather unimaginative astronomer, would have nothing to do with deep sky observing. His imagination was already pressed to the limit trying to sketch an image of the details on Jupiter. He simply couldn't imagine observing objects that would look like a smudge on the lens.

And so it went. Night after night, star party after star party, little Castor plugged away at the planets and double stars, stared at the Moon, and even spent the occasional lazy afternoon gazing at the Sun. His optics were often asked to perform little miracles, but none of the other scopes seemed to care a whit!

One day, one of Drivel's friends, Keener, asked Drivel if he was going to the Messier Marathon that was being organized by the local astronomy club. "Naw", said Drivel, "that's just a place for the deep sky nerds to show off their scopes and try to one-up each other. I think I'll just stay home and read the Observer's Handbook section on planetary observing for the two thousandth time...."

Keener had a bright idea. "Say, Drivel, old chap, since you're not doing any observing that night, how about lending me your telescope? It would be great to have two scopes on the go!"

Drivel shrugged. "What do you want that thing for?? It's great for the kind of observing I do, but it's hardly a light bucket!!"

Keener wasn't to be put off. "Look, Drivel, I've always wanted to try to get some of the fainter Messiers in a small scope.

Anyway, what's the difference?? You know I'll take good care of your scope!"

"Fine", Drivel sighed, "but you won't be so keen after a few minutes of staring into nothing through that small scope! Sure, what the heck, have a ball!"

Thanking Drivel profusely, Keener scooped up Castor and accessories and headed to his van. All the way home all he could think of was how he was going to snare the Messiers with a small scope while all of his pals lumbered around the sky with their huge "Dobs". He was tempted to leave the 13.5" at home, but decided to take it just in case things didn't work out.

Keener was full of anticipation the afternoon of the Messier Hunt. He got to the observing spot early. It was a cold March afternoon and the weather forecast was very encouraging. He picked his spot and unloaded the big "Dob". Almost as an after thought he took the little 4" Newtonian from the van and set it down. Castor shivered with the cold.

Carefully Keener took the big mirror from the van. It was all wrapped in foam and a blanket. He handled it lovingly, cradling it in his arms as he walked over to his spot. Slowly he unwrapped it and just as he was about to slide it into place Bob Bucketman drove up right behind him and blasted his horn.

Crash! Startled beyond sanity Keener let go of the mirror. It must have hit the only rock in the field. It was shattered. Ruined. Kaput!!! "Bucketman, you imbecile!!! Look at what you made me do! And on Messier Day, nonetheless! Man, are you ever going to pay for this!! Why, I ought to drive right over that oversized hunk of junk that you call a scope!"

"Wow, Keener," an abjectly apologetic Bucketman whined. "I'll buy you one for sure. Gosh, I AM an idiot!! Well, look, why not stick around and use the little Newtonian?"

"Well, if you must know, I WAS planning on using the little guy just for the fun of it, but now I have NO CHOICE thanks to you!!

Little Castor was mortified. The very thought of hunting for nebulae and galaxies made his mirror wiggle. He wasn't designed for this. He was just the tiny kid on the block!! He thought he was only along for the ride... now he was to be the star attraction! It was going to be a bad night.

Castor found himself set up beside "Solar Max". Max chuckled quietly, "Hi, kid, gonna make the big time, eh??"

"Bug off, Max," Castor whined, "this is tough enough without your smug remarks. You have a big aperture in more ways than one!!"

Max, temporarily swung away as his owner played around with him, decided to teach the kid a thing or two. "Ok, ya little runt," he sneered, "how about a little wager!! I'll bet you that you

can't get even half of the Messiers!!" Loser gets his mirror fingerprinted!"

Castor felt his knobs tighten. "All right, you loud mouthed schnook, let's go for it!! And don't lose your cleaning fluid, 'cause I'm gonna get ALL of the Messiers!!"

That's all it took. As dusk settled in, the scopes were put to work. Side by side they searched for those faint fuzzies so dearly pursued by their owners. They ran neck and neck, Messier after Messier falling to their optics. What they didn't realize was that while they were bickering their owners had made a similar bet, only for higher stakes. Their scopes!! Needless to say Keener had a lot to gain, his scope now mirrorless!

As the night wore on the tension heated up. They strained, they peered, they squinted, they searched. By the end of it, you guessed... a tie! They had both found them all. Castor was the proud winner. He was a renewed telescope. Keener couldn't believe it. What a night. He couldn't wait to tell Drivel!

The next day Keener showed up a Drivel's place. He had decided to play it cool. "Hi, Drivel, you missed an interesting night!" Drivel yawned. He'd been up half the night looking for plotting errors in the Uranometria 2000. "So, how'd it go?" He feigned interest, "I guess the little scope spent the night in the van, eh?"

"Actually," Keener drawled, "the little scope found them all."

Drivel snapped to attention, for a second not believing what he had heard. "Oh, sure, and they're selling Questars at Sears for \$14.95 on alternate Thursdays! Very cute!"

Keener couldn't contain himself any longer. He told Drivel the whole story, detail by detail. Drivel was enthralled, amazed. He looked at little Castor with a new found respect.

"And if you don't believe me, call Bob Bucketman," Keener concluded, "and about five others also. It's the absolute truth!"

Drivel was astounded. He was incredulous, He was KEEN!! A new fire raged in his eyes. He had a deep sky scope!! He'd never considered trying. He'd spent too much time listening to those guys down at the club who were continually railing against the bucket crowd. The guys who had a passion for planets and double stars. The VENUS MOB!!!! Not any more!!!!

"Hey, Keener, when's the next deep sky observing session?? Think I'll come out for some galaxy and Nebula hunting!"

"I'll give you a call, Drivel," Keener said as he got up to leave, "it'll be great to have you and the little guy along."

After Keener left Drivel walked over to the scope, picked it up and looked at it with wonder and anticipation in his eyes. He hugged it.

"Who'd a thought it?" he said aloud.

Castor felt so warm all over that his secondary fogged. Ω

Ask GAZER

GAZER

Well, my last column certainly seems to have stirred up a bit of a response. Our Editor seemed to have been a bit concerned that he would not have enough material for this issue. It is nice to see that I have contributed in my own way.

Dear GAZER;

You and that so-called Solar System Observing Fanatic had best be careful what you go around accusing people of. A plot by the deep sky observers to take over the R.A.S.C.? Buffalo chips!

Firstly, examine the habits of our Editor. While it is true that he has a 10" Dob, which is an ideal deep-sky scope, to what use does he put it? Why, searching for 13th magnitude asteroids and 15th magnitude comets, of course! Now, if those aren't solar system objects, what in Callisto are they?

And our esteemed President; what about her? She does have a scope that is geared for photography but you must admit that it has seen a fair bit of solar system photography in the form of H-alpha pictures of Sol. You can't get more SOLAR system than that, can you?

Now consider the case of Dr. Brooks. He claims he only showed up at the site in Beavercreek because he was ordered to by the President. That excuse neatly covers up the fact that he had to collimate the mirror of the 16" at S.M.U. and needed to know what real star images looked like to do it!

As for Dr. Bishop, he seems innocent enough (that makes him suspicious right away) but we should allow him the benefit of the doubt for the time being since he did spend quite a few of his own bucks to chase the recent eclipse. But I will allow for the fact that he may have gone just to see if he could pick out any naked eye galaxies during totality...

How can you point a finger at Dr. Tindall when we know that he never observes anything, except possibly his dodecahedron? Are dodecahedrons deep-sky objects? I think not!

Now we all know that Raymond Auclair has his peculiarities (he is, after all, unattached) but we must remember his obsession with observing Saturn's occultation of that obscure star in Sagittarius during

the summer of '89.

Our Observing Chairman even did penance for his Venus error by showing the way to Pluto across the star-strewn reaches of Serpens!

So you see, you have constructed a scenario that is plausible at first glance, but it doesn't withstand any scrutiny at all. There will be no civil war within the Society (sorry to disappoint you) but it would be nice to move National Office to Halifax. We shall have to conspire to see what can be done in that direction!

Not So Deep(sky)ly Concerned

P.S. Tell us, do you own a quality refractor or a cheap large aperture reflector.

Maybe, maybe. It has been said that you can only prove that a conspiracy exists. It is almost impossible to prove that one does not exist as one can simply say that the conspiracy is too well-kept. However, I am willing to listen to reasonable arguments. Only time will tell. I am glad, though that someone appears to be taking the initiative to get National Office moved down here.

As for which type of telescopes I own and/or what my observing preferences are, I would prefer to reserve judgements on those areas. I find that my anonymity gives me a certain "free hand" in writing this column that would probably not be possible if my identity were revealed. The current editor has been very kind in keeping my true persona hidden and I would prefer if it stayed like that.

To GAZER, Nova Notes, Earth

We have followed your feeble arguments of deep-sky relevance. All telescopes under 10 inches are irrelevant. All solar system objects are irrelevant. All photographic systems are irrelevant. Toronto is irrelevant. Brooks, Tindall, Whitehorne, Kelly and Auclair are irrelevant. Bishop is almost irrelevant. Your eyes will serve to enhance the real universe as you are assimilated into oneness with the swarm of retinal activated photons.

Clunicus of Borg

What can I say that would add to that? When I volunteered to write this column I was expecting to take a little flak, but I had not thought, even in my wildest imaginings, that I would be faced with the possibility of being captured by the Borg! Fortunately, the Borg will not reach Earth until sometime in the 24th century, so I am probably getting upset for no good reason and that we really have nothing to worry about... yet.

Ah, at last, a question! This one was written in May and would have reached me sooner, but the Editor filed it in his Bulletin briefcase by mistake, and so it has just come to my attention.

Dear GAZER:

I have gotten into the habit of checking the sky conditions by covering the solar disk with a finger and seeing how bright the sky near the Sun is. I noticed Roy Bishop doing this at an earlier Nova East. On a clear day, recently, while doing this, I noticed a tiny halo around the Sun approximately 2-3° in diameter. Is this real or just an illusion? A very clear sky is required.

Sun Struck in Fog City

Very interesting... I had never heard of this type of observation until now. There is a phenomenon called "corona" (not to be confused with the Sun's outer atmosphere) in which very thin cloud can have alternating bluish and reddish circles centered on the Sun and extending up to 10° out. Normally the glare from the Sun prevents them from being seen directly and they are best observed by either blocking the Sun's direct light (with a hand or finger) or looking at the Sun's reflection in water where the glare is lessened. However, since this occurs in a very clear sky, I'm not sure if this is what you are seeing. Any other readers have an explanation?Ω

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NOVA NOTES INDEX

July-August 1991

Volume 22, Number 4

1991 Halifax Centre Executive.....	Halifax Centre	57
Notice of Meetings	Halifax Centre	58
The 1991 Vancouver G.A. ...	Mary Lou Whitehorne	59
Greetings from Massland	Greg Roberts	60
Eratosthenes and the Circumference of the Earth.....	David Fleming	62
The Universe According to Voyager	Joe Yurchesyn	65
Halifax Members Travel 5000 km to be in the Dark.....	Dave Lane	71
Cartoon	Meddick	74
Ask GAZER.....	GAZER	78
Astro Ads	Halifax Centre	80

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HALIFAX CENTRE - R. A. S. C.
1991 CALENDAR OF EVENTS

July

S	M	T	W	T	F	S
	1	2	3	4	<u>5</u>	6
<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>
21	22	23	24	25	26	27
28	29	30	31			

August

S	M	T	W	T	F	S
				1	2	<u>3</u>
<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>
18	19	20	21	22	23	24
25	26	27	28	29	30	31

September

S	M	T	W	T	F	S
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>
<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>
22	23	24	25	26	27	28
<u>29</u>	<u>30</u>					

October

S	M	T	W	T	F	S
			1	2	3	4
			<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>
23	24	25	26	27	28	29
30	31					

Key to calendar:

Regular Meetings: **bold and shadowed**

Special days: **bold** (On dates marked with an asterisk, the event occurs on the **morning** of the date given. Check your Observer's Handbook for details)

Possible observing sessions: underlined

Special Days:

- July 28 - South Delta Aquarid meteor shower
- August 11 - Perseid meteor shower
- Aug. 30-Sept 2 - NOVA EAST '91

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