R E G U L U S

THE NEWSLETTER OF THE

ROYAL ASTRONOMICAL SOCIETY OF CANADA - KINGSTON CENTRE

JUNE, JULY, 1981

ASTRONOMY DAY, 1981 -- A PLEASANTLY SUCCESSFUL EVENT IN KINGSTON

Astronomy Day, 1981, on Saturday, May 9th, was a fine success for members of the Kingston Centre. Both the Mall Display at the Frontenac Shopping Mall and the Public Star Night at MacDonald Park gave members of our centre a chance to display their telescopes and talk to the public about their interest in astronomy.

It was very heartening to realize that there is such a wide interest in astronomy, for many of our amateurs were kept busy for hours talking about or answering questions on our photographic displays, projects, telescopes and binoculars. Dozens of people had a chance, many for the first time, to look through a telescope and most were very pleasantly surprised at what the instruments could do. (Maybe the little fellow who tried to "chin" himself on the 10" was surprised at what the 'scope would not do.) Conversation at the displays often centred around viewing experiences since there was a group of photos from the April 11th-12th Auroral display and many passers-by wanted to share some experience they had had in viewing the night sky. Information was provided about our Society and our centre through handout materials and a number of people were eager to join.

The Star Night at MacDonald Park proved to be as pleasantly successful as the Mall Display. Even though the Clouds presented us with an "off-again, on-again" situation, there were a great many people who eagerly awaited the setting up of the telescopes and were very happy and grateful to catch a glimpse of lunar craters, and Saturn and Jupiter and their moons. An extra treat for some of the people was a chance to observe an occultation disappearance of one of the Jovian satellites. The surprising success of the evening, in spite of the kind of weather that made many centres cancel observing sessions, encouraged us to plan further such opportunities for the public. Their enthusiasm and eagerness to observe, we decided, simply must not go unnoticed.

As midnight approached many of us left the park feeling it had been a full and rewarding day. Our new membership list and the attendance lists for subsequent meetings show that the event was very rewarding for our centre; we can be reminded of what a full day it was by the photograph that shows one of our very active members briefly asleep beside his telescope. From about nine o'clock in the morning until almost midnight, it had been a long and eventful day.

Our president, Angelika, also wishes to add a few words about May 9th. Here they are:

Congratulations to all our enthusiastic members for making Astronomy Day 1981 such a success! I would like to thank everyone for his or her contribution and time. The huge sign which John Mason had made was certainly very effective in calling people's attention to our exhibit. There were colourful posters and charts from John Hansen and our centre's library, Leslie Roberts' excellent photographs of deep sky objects, as well as a very interesting serial photo of the Holleford Crater, which Mr. Covington had put together with an explanatory write-up. Mr. Stokes had his Celestron 8 on display at the mall, and Leo came equipped with binoculars, tripods, eclipse photos, posters, accounts and photographs of recent observations, and a camera to capture all the activities. Our Centre's 10" telescope was also on display--quite a contrast to my little 60mm refractor! Peter Bradley added some useful objects: tables and chairs, without which we would have had some difficulty displaying everything. Jeff Fret's project on Stellar Spectrosoopy which had won him first prize in the recent Kingston and District Science Pair was also an important addition to the exhibit. In the evening, those with much patience were rewarded with some good

..2

observing through breaks in the clouds, and I'm sure that Leo, Jeff, David Stokes, and John Hansen would agree that sharing our enthusiasm for the night sky with people just beginning to become interested in this hobby is quite a rewarding experience. Great work, Kingston Centre!

Angelika.

NEWS FROM EUROPE

Perhaps some members of our centre do not know that our newsletter regularly finds its way to Europe as well as to several parts of the United States. The person who reads "Regulus" in Baden, West Germany is Lieutenant-Colonel William J. Anderson who is with the Canadian Armed Forces. On several occasions, Mr. Anderson has written to me about his interest in astronomy and his desire to do more observing than he has been able to manage under the conditions with which he must operate. A recent letter arrived with a donation to our centre which we deeply appreciate and I am very pleased to reprint part of that letter here:

> Baden-Solingen,
> West Germany,
> May 11th, 1981.
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> Dear Mr. Enright:
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> I am tremendously impressed by the newsletter because not only is it informative from an astronomical standpoint, but it keeps me in touch with the general tenor of activity in your area, and to an extent, Canada.
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> As I may have mentioned to you a number of months ago, even though I am keenly interested in observational astronomy, a combination of fairly grubby European weather and unusual hours team up to keep me away from the eyepiece. However, my wife was back in Canada recently and bought me an Astroscan, and because it is so easy to set up, it has allowed me to do some observing whereas before I did almost none. I have a C-8 with me, an excellent instrument, as you're probably aware, but unfortunately set-up time such as I used to have in Canada is not always available here. I certainly intend to take the Astroscan with me on holidays, especially if we go to the Alps.
>
> Best regards to you and the members of the Kingston Centre.
>
> Yours truly,
>
> W. J. Anderson.
>
> Mr. Anderson: Thank you for the letter and for the comments about "Regulus".
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> Best of luck with the Astroscan. If you venture high into the Alps you just may get some beautiful, dark, clear skies that may at least partially recompense you for the usual conditions at Baden.
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> Finally, I have also found the C-8 to be a very fine instrument but as many members of our centre know I have not found set-up time to be much of a problem over the past year or so! We look forward to hearing from Europe again before too long.

..3

FOR YOUR COMPENDIUM OF ESOTERIC FACTS

Did you know that the great twentieth century astronomer and cosmologist, Alan Sandage, once described, with a great deal of truth, his whole life's work as a search for two numbers." He was referring to the two numbers that for cosmologists hold the secrets to the universe, the one being the rate at which the universe is expanding or the Hubble constant, and the other being the deceleration parameter or the degree to which the expansion is slowing down.

We can gain some appreciation for the contribution of Sandage in the quest for these numbers if we realize that in large measure he was responsible for "the ten-told change" that occurred in one of those over a period of less than three decades. In the late 1940's when Sandage entered the field of "astronomical cosmology", the Hubble constant was generally accepted as 100 miles per second per million light-years whereas by the mid-1970's, the work of Sandage had revised the figure to 10 miles second per million light-years -- a ten-fold decrease, after a large part of a lifetime spent in search of "two numbers".

REPORTS AND OTHER ITEMS

1. We congratulate Mr. David Stokes on being the first person in our centre (and maybe in this part of the country) to see the planet Venus in the evening sky -- over a month ago. At that time the planet was still very low in the west shortly after sunset. By now, of course, it is well up in the north-western sky and will be a bright evening object for the rest of the year. Look for it to climb magnificantly into prominence until the time of greatest elongation in November and greatest brilliancy in December.

2. Mercury was a relatively easy object to observe for several weeks in late May and early June. I was fortunate in having a good horizon at the right spot and relatively good weather and was able to observe it on thirteen separate dates between May 17th and June 7th. After June 4th Mercury became almost impossible to spot with the naked eye. By June 7th it was very low and relatively faint in comparison to the bright twilight -- a combination that made detection very "tricky". On three occasions after June 7th I searched hard for the elusive planet but cannot claim to have succeeded in locating it. However, seeing it over a dozen times at one elongation passage does give some satisfaction.

3. There are some very interesting things to observe over the next couple of months:

   (1) In the month of July we enter the second eclipse season of 1981. It brings two eclipses one of which is visible from this area, weather permitting. On the night of July 16-17th, the full moon enters the earth's shadow giving a partial lunar eclipse. At mid-eclipse, the southern half of the moon is within the earth's shadow. You should look for interesting colour patterns as the moon moves through the umbra. Try also to photograph this event if possible. The other eclipse, which may not be seen from here, is the long-awaited trans-Siberian solar eclipse on July 31st. Be prepared in the coming months to view in the magazines some spectacular photographs brought back by our "eclipse chasers" from Lake Baykal in central Siberia.

   (2) Three major meteor showers appear in July and August -- the Delta Aquarids on July 26th, the Capricornids on July 30th, and of course, the Perseids on August 12th. For the Perseids, be sure to start watching several days before the stated date of maximum. On the date of the shower's peak, July 12th, the bright moon, near full, does not set until about 2:00 a.m. and that may seriously hinder the number that may be seen in the early evening. Just be patient, and wait until moonset!

..4

(3) Around July 14th or 15th it may be possible for keen observers to spot both Mercury and Mars rising before the sun in the east-north-east. Mercury is at greatest western elongation on July 14th but it is not a particulary favorable elongation.

(4) Three planets and the young moon will make an interesting configuration in the early evening sky in the first couple of days in August and in the last couple of days of August. On both occasions watch the moon as it goes by Venus, Jupiter, and Saturn.

(5) Watch for Jupiter to move eastward in the sky in the month of July and to pass by Saturn. Conjunction is on July 30th -- in fact, this is the third part of a triple conjunction, the first two parts of which occurred on January 14th and February 19th. Jupiter now begins to move eastward through the sky leaving the ringed planet behind, and it is almost twenty years before these great giant planets are again in conjunction.

(6) Two solar system events also occur in July -- events which are not observation events but which are noteworthy nonetheless. The earth passes aphelion on July 3rd which means that it is then at its farthest point from the sun and it then receives 7% less sunlight than it did at the time of perihelion which occurred in early January. Jupiter also passes aphelion on July 29th. Of course, this event occurs much less frequently for Jupiter only once every 11.86 years (the sidereal period of Jupiter), and the distance variation between perihelion and aphelion is much more dramatic. Jupiter is now over 75,000,000 km. further from the sun than it was at the time of perihelion about six years ago.

(7) Back to observable events -- in the evening sky of August 27th, be sure to try to observe the conjunction of Venus and Jupiter. At 9:00 p.m. E.D.T., these two bright planets are less than a degree apart; in fact, Venus passes a rare 53′ south of Jupiter. Be prepared for a spectacular view in the eyepiece. The magnitudes are -3.5 and -1.3 respectively.

4. An upcoming event to look forward to is the Voyager II spacecraft's arrival in the region of Saturn in August. The closest approach to the ringed planet is scheduled for August 25th or 26th. Thence the craft journeys on to Uranus in 1986 and Neptune in 1989.

5. The big event in Canadian amateur astronomy in June is the G.A. in Victoria from June 26th to June 29th. It is hoped that we can have a report from this event at one of our regular meetings in July.

6. At the same time as our G.A., there is the Eleventh Annual Summer Seminar sponsored by the Syracuse Astronomical Society. Once again, they would be glad to have some guests from this area.

7. Our regular meetings continue in July and August and we hope to have some special treats such as reports from the G.A. and David Levy from Tucson in attendance. Please plan to attend. The dates are as follows: June 26th, July 10th, July 24th, August 14th, August 28th, September 11th, September 25th.
The place as usual is Ellis Hall, Room 222, and the time is 8:00 p.m. See you there! Come and bring a friend.

Clear Skies!
Good Observing!
Leo Enright.