REGULUS

NOVEMBER-DECEMBER 1990

NEWSLETTER OF THE KINGSTON CENTRE
OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

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ASTRONOMY DAY COORDINATORS.....	Stan Manna	(000) 000-0000
	Denise Sabatini	(000) 000-0000
	Peggy Torney	(000) 000-0000

UPCOMING MEETINGS

Regular meetings of the **Kingston Centre** are held on the **second Friday** of each month at **8 p.m.**, in **Room D-216, MacIntosh-Cory Hall, Queen's University.** Non-members are welcome. Executive meetings are one-half hour before regular meetings.

November 9 LEO ENRIGHT "The Holleford Meteorite Crater"

December 14 **ANNUAL MEETING AND ELECTION OF OFFICERS**
RUTH HICKS "Stonehenge"
STANLEY HANNA Review of the book FIRST LIGHT by Richard Preston (story of the 200" Hale Telescope on Mount Palomar).

DECEMBER 22 **D A V I D L E V Y**

Mac-Corry Hall, D-216
8 p.m.

SPECIAL MEETING AND PUBLIC LECTURE. COME OUT AND MEET OUR FAMOUS DISCOVERER OF SIX COMETS!

IN THIS ISSUE

REPORT THE NATIONAL COUNCIL MEETING OF SEPTEMBER 29, 1990

The National Council of our Society held its annual fall meeting in Toronto on Saturday, September 29, 1990, with the national president, M. Damien Lemay, presiding and thirteen of the twenty-two Centres represented. The agenda included reports from the officers and the standing and special committees of the Society, and several important announcements were made and significant decisions were adopted.

The committee organized at the June Council Meeting in order to assess Special Projects Grant applications and made up of the National Treasurer and two others chosen by him, submitted a report after studying the recent application from the Montreal Centre, and recommended that that Centre should rewrite its submission giving more details, and the matter would be considered again at the January 1991 Council meeting. The treasurer's budget statement, which was approved by Council, again projects a small deficit for the current year.

Mr. Patrick Kelly, the incoming editor of the **National Newsletter - Bulletin**, announced that the changeover in editors was going smoothly, that the August and October issues would be mailed together, and that a new larger-page format and a type of recycled paper would be used with the new volume starting next year. The report from the **Observer's Handbook** editor, stated that the 1991 issue had been delivered to the printer, that 14,000 copies with 236 pages each would be printed, and that it would have a plastic-laminated cover with a CFHT photograph of M5 on the front. The Publications Committee, after exploring ways in which the publications of the Society could be produced more economically, recommended that the April issue of the **National Newsletter - Bulletin** include the Annual Report of the Society; this important proposal was adopted by Council.

There were important announcements from several of the committees of the Society. The Nominating Committee chairman announced that there was a vacancy on the list of Honorary Members of the Society, and nominations were invited in order to fill the position. The chairman of the Constitution Committee reported that there would be a delay in the presentation of the second draft of the model set of Centre By-laws; it would be presesented at the Council Meeting in January, 1991. The chairman of the society-sponsored 1991 Solar Eclipse Expedition reported that most aspects of the planning for the trip to the Baja in Mexico were proceeding very well. The report from the Seal Committee contained proposed guidelines for the sale within the Society of products with crests embodying the Seal of the Society; the report and the guidelines are to be studied, so that they may be approved or rejected at the time of the next Council meeting. Council endorsed a report from the "Mini-Handbook" Committee, giving approval to Leo Enright to proceed with the editorship and production of a beginner's version of the **Observer's Handbook.** An Astronomy Day Committee was established under the chairmanship of Mr. Steve Dodson, who announced that the next Astronomy Day would be Saturday, April 20, 1991.

Upcoming General Assemblies were discussed, including the 1991 event already approved for the weekend of May 17 to 20 in Vancouver, and the 1992 General Assembly in Calgary, which will take place at the time of the Canada Day Holiday. Looking further into the future, tentative unapproved invitations were received from Halifax and Toronto for the 1993 General Assebly, from Edmonton for the 1994 event, and from Windsor for 1995.

Our National Council, on behalf of all the members of the Society, was clearly able to accomplish a great deal over the summer, thanks to the hard word done by its officers and committees, as described in the well-organized reports received at this meeting.

Complete details regarding all the items discussed at this meeting may be found in the minutes of the meeting which will be distributed to our Centre President and National Council Representative.

Leo Enright
(National Council Representative)

DUES FOR 1991

REGULAR MEMBERSHIP...	$37.00	LIFE MEMBERSHIP.....	$640.00
STUDENT MEMBERSHIP...	$23.00	ASSOCIATE MEMBERSHIP...	$ 9.25

PLEASE NOTE THAT DUES MUST BE PAID BEFORE DECEMBER 31, 1990

WHAT IS HEAVEN? A PERSONAL PERSPECTiVE

By Louie Bernstein

(Reprinted from SKYWARD, the Newsletter of the
Montreal Centre for March 1990.)

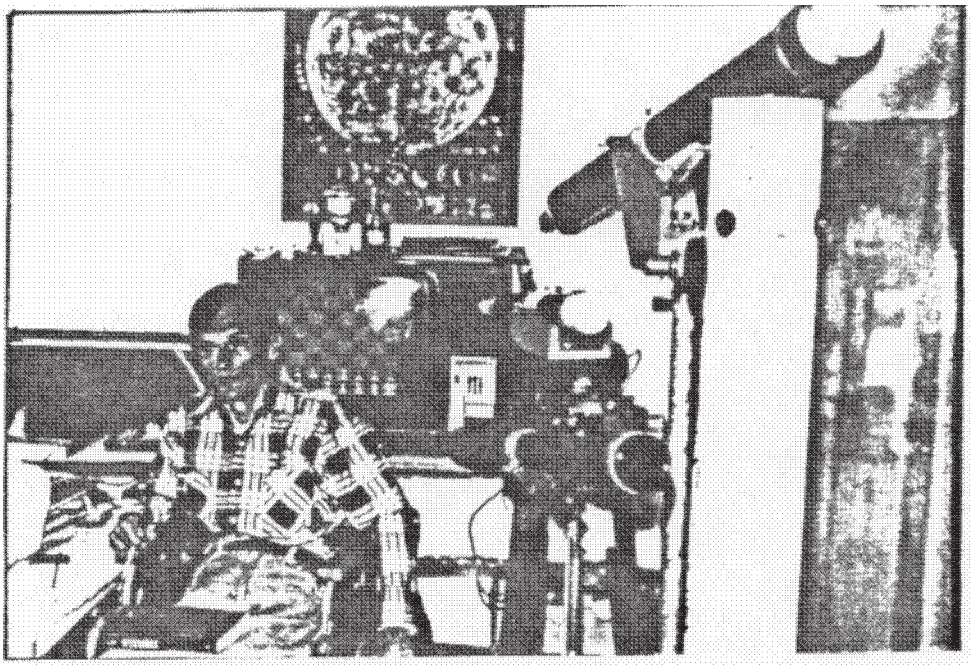
Some time ago the Montreal Gazette asked me, along with several other people from various walks of life, to write an essay on Heaven. The idea was to feature a number of personal perspectives in an article. The contributors were to consist of a child, a reverend, an amateur astronomer, a salesman, a banker etc. Unfortunately the article was never published because of a lack of participation. I was one of the few people to submit anything. Here is my essay.

In the western culture we traditionally imagine Heaven as a peaceful place in the clouds; God's luminous domain where angels play and good good souls come to rest. Alas, this wonderfully naive concept does not stand up to scrutiny. We have transcended the clouds and have landed on the moon. We have spanned the reaches of our solar system using robot explorers. We have peered over a billion light years into space-time and have probed the nuclear heart of matter down to the quarks. We have discovered that there are billions of galaxies like ours, each containing billions of stars like our sun. Today we know that the universe is expanding and that it probably rose spontaneously, like universes do, some 15 billion years ago, from a shimmering "singularity" of unimaginable density and energy.

Though the Universe itself is evidence of a creative force, it is unreasonable to attribute to this force the characteristics which traditionally personify God. The concepts of Heaven and God must be redefined, using knowledge and reason, if they are to make any sense and be of benefit to mankind.

Personally, I experience Heaven when I look up at the sky and see thousands of stars glittering in the cosmic depths. For me, Heaven is existence. It is being alive and knowing the infinite variety and beauty of the Universe. Heaven is basking in the warm glow of the sun or feeling the cold sting of a winter's night. It is the Garden of Eden we call the planet earth. Heaven is everywhere right now. It is all around us--we are a part of it. Heaven is not our reward in death. It is our reward in life. All we have to do is to learn to feel it.

And what about God? It is said that God created man in His own image, but it appears to me that it is we who have created God in our image. The vision of a wise old man, The Creator, who answers our prayers and sometimes vents His wrath, is an artifact from an earlier stage in the development of the human psyche. I firmly believe that God exists, but as a force, not as a supreme being. This force flows through each of us as the potential for understanding, compassion and love. It is knowing the difference between right and wrong, good and bad, and having the vision to act upon that knowledge. God is the blueprint for humanity's evolution. It is learning to live in peace and harmony with nature. I believe that as we continue to evolve, this force will express itself increasingly within each of us, putting an end to our meaningless differences. For without it humanity has no future.



C Q, C Q, YUGOSLAVIA CALLING!

Zeljko Kunej is a tetreplegic who lives in a hospital in Yugoslavia. Injured at age 14, he has been hospitalized for 35 years. His hobbies are **astronomy** and **telescope-making**--he has constructed both refractors and reflectors. He is also fond of **chess**, **amateur radio**, **computers** and **programming** (see photo above). As well, he speaks and writes English. He woulk like to make contact with anyone else like himself who has similar interests. Also, he would like to know the price in America (or Canada) for a good **achromatic object lens** of 90 mm diameter, 1200 mm focal length, and where it might be bought. Can anyone out there help him? His address is: **Zeljko Kunej, XXXXXXXXXX XXXXXXX, 00000 XXXXXXXXXX, Yugoslavia.**

BACK ISSUES OF SKY & TELESCOPE FOR SALE

Because I have **duplicate** copies (and in some cases **triplicate** copies) of many of the back issues of **SKY & TELESCOPE**, I am offering the following issues for sale:

197Z: Feb., Mar., Apr., May, June, July (2), Sept. (2), Oct. (2), Dec. (2)
1973: Jan. (2), Feb. (2), Apr., May, June
1974: Mar. (2)
1982: Apr., June, Aug., Oct., Nov.
1983: All months except June, Sept., and Dec.
1984: All months except Mar. and July
1985: All months except Aug.
1986: All months (2 for November and 3 for December)
1967: Atl months except January
1988: All months except April
1989: All months
1990: Jan., Feb., Mar.

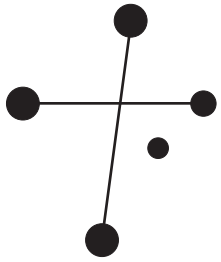
PRICES: BEFORE 1985 - $1.00 per issue
1985 AND AFTER - $2.00 per issue

CONTACT: **LEO ENRIGHT** - (000) 000-0000

THE SKY FROM "DOWN UNDER", OR

ASTRONOMY AT 40,000 FEET

By Bill Broderick



Southern Cross

In this age of jet travel, many of us on occasion get to travel thousands of miles in a few hours. Whether for business or pleasure, we are afforded an opportunity to experience at first-hand, and in a short time, some interesting astronomical phenomenae associated with the development of time-keeping and the principles of navigation.

The most obvious of these, of course, is the manner in which the sky changes as we move about on the surface of our spherical world, particularly in a north-south direction. Northern hemisphere dwellers from the middle and higher latitudes, for example, never see the **Large** and **Small Magellanic Clouds**, the **Southern Cross**, or those two beacons of the southern sky **Alpha** and **Beta Centauri**. Conversely, dwellers in New Zealand or South Africa may never see the **Big Dipper** or the **Pole Star, Polaris**. A few hours travel, north or south, however, brings hitherto hidden portions of the sky into view.

East-west travel also produces some curious phenomenae where time and the apparent motion of the sun (and other objects) and sky is concerned. For example, travelling east, the periods of daylight and darkness are **compressed**. After take-off at dusk from Toronto, we have time to sip a drink, eat supper, watch a movie, and maybe catch a short nap, before we see the sun rise--well before landing at London, Paris or Frankfurt. This is because our plane's velocity--**added** to that of the earth's spin--brings us to the **sunrise point** hours **before** we would otherwise arrive there.

The reverse holds true when we travel west. Then we find that the hours of day-light and darkness are curiously **extended**. Truly the day--or night--seems to drag. During westward travel, our plane's velocity **subtracted** from the earth's spin, brings us to the **sunrise** or **sunset point** much **more slowly** than if we had stayed at home.

Both of these phenomenae were well-illustrated during our recent trip to Australia and New Zealand. We left Toronto at approximately 9 p.m. DST on September 14th and arrived in Honolulu about 10 hours later. Our watches showed 7 a.m. Toronto time, September 15th, but local clocks showed 11 p.m.! And although we had been flying for some 10 hours, the date here was still September 14th! We left Honolulu shortly after midnight, around 12:20 a.m. local time, September 15th (8:20 a.m. Toronto time) and arrived in Sydney nearly 10 hours later, 8 a.m. local time (6 p.m. Toronto time). The date was now September 16th. Twenty-four hours had to be **added** when we crossed the **International Date Line** going west.

By the way, we had the odd experience of seeing the sun come up in the **late afternoon** of the day following our departure from Toronto.

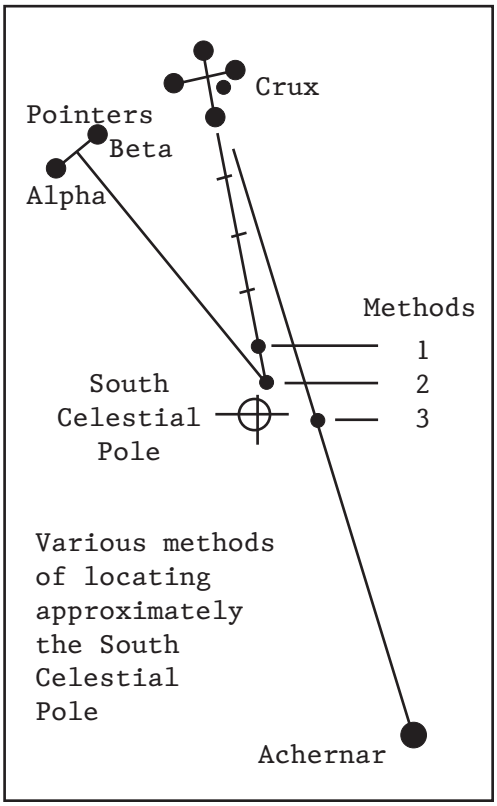
The return trip was just as eventful. We left Aukland, N.Z., shortly after noon on October 9th, arriving in Honolulu some 10 hours later. Although our watches showed 10:25 p.m. Aukland time, the time in Honolulu was 11:25 p.m.--on the **previous date**--October 8th! Travelling east, when you cross the **International**

(Continued on page 6.)

Date Line, you have to **subtract** 24 hours. We left Honolulu at 1:50 a.m. local time on October 9th, our watches showing 12:50 a.m. Aukland time, arriving in Toronto about eight-and-a-half hours later. Our watches, still on Aukland time, showed 9:20 a.m. on October 10th, but the time locally in Toronto was 4:20 p.m. October 9th. We had been enroute for 21 hours, but solar time for us had advanced only four hours!

Incidentally, we watched the sun set around 6:30 p.m. Aukland time, somewhere around the time we were flying over the equator enroute to Honolulu, and saw it rise again around 4:45 a.m. Aukland time, an hour or so before reaching North America. The duration from first brightening in the east to actual sunrise, as far as I could determine from my seat by the aisle, was about 45 minutes! That was **one fast sunrise.**

I must say that the **southern hemisphere skies** are a virtual delight. As you turn your eyes heavenward, you're likely to be dazzled by the profusion of bright stars and thoroughly confused by the many unfamiliar star patterns. The confusion doesn't last too long, however. Your eyes soon pick out some familiar constellations--although you certainly see them in an **unfamiliar aspect--** like upside down. If you've taken along a star chart, however, your orientation is soon complete. It doesn't take you long at all to learn that **Alpha** and **Beta Centauri,** two of the brightest stars in the southern sky--and incidentally the two closest stars to our sun--are **pointers** directing your eyes to the **Southern Cross** which in turn directs them to the **South Celestial Pole.** The **Pole** is located almost exactly midway between the **Southern Cross** and another bright star **Achernar.** The **Large** and **Small Megallenic Clouds,** satellite galaxies of the Milky Way, like detatched wisps of the Milky Way itself, are each located within 20° of the Pole and wheel around it as the Big Dipper, Cassiopeia, etc. wheel around **Polaris** or more properly, the **North Celestial Pole,** in the northern sky.



Various methods of locating approximately the South Celestial Pole

Omega Centauri, the greatest globular cluster in sight of earth, can be picked up even in binoculars, and of course, the **heart** of our Milky Way Galaxy in Sagittarius has to be one of the **grandest sights** visible to human eyes.

I suspect that the great majority of air travellers never give these matters any thought or attention. Only the astronomically-minded are likely to savour the treats of the heavens--or even suspect that they are there.

One such treat I remember with particular delight. We were returning from a trip to Germany at the end of October 1988. Our plane was over the North Atlantic a few hundred miles east of Greenland at approximately 65° north latitude, height about 40,000 feet. The time was late afternoon and the sun must have been almost dead ahead of the plane and just a few degrees above the horizon. The moon--in **Third Quarter phase**--floated just above the **northern horizon!**

(Continued on page 7.)

THE SKY FROM DOWN UNDER (Continued

Just think about that for a moment. How often do we, at our latitude of about 44°10', see the moon in Third Quarter on the **northern horizon**? The answer, of course, is **never.** A day or so later, however, I did see almost the same moon on my way to work--but overhead and in the **morning sky**--where we at our latitude would normally expect to see it. Amazing the difference that 20° or so of latitude can make!

Such are the joys of astronomy at 40,000 feet!

IMPORTANT NOTICE

Are you receiving your copy of **REGULUS?** Do we have your correct address? If not, please--let us know. If our address label is incorrect or incomplete, please send us the correct information so that we can update our mailing list. Send to the editor **Bill Broderick, XXXXXX, XXXXXXXXXXXX, Ontario XXX XXX**--or phone (000) 000-0000.

YOUR CONTRIBUTIONS WANTED

Articles, notes on your observations, anything on astronomy or related topics are invited. Please sent to the editor of REGULUS: **Bill Broderick, XXXXXX, XXXXXXXXXXXX, Ontario XXX XXX.** P.S.: Poetry also welcome!

OBSERVING CALENDAR

MERCURY is approaching **greatest elongation east** during November, reaching it on December 6 -- 21°. However, it will be difficult to see as it is south of the ecliptic, therefore low in the southwestern twilight. The planet passes 1.3° south of Uranus on December 9-10, and 0.6° north of Uranus on December 18, then 1.4° north of Venus a few hours later. Reaches **inferior conjunction** on December 24.

VENUS is in superior conjunction on November 1, and too close to the sun throughout November and December for easy observation.

MARS is very well-placed for observation during November and December. A brilliant reddish object in Taurus, it rises about sunset at the beginning of November. The angular size is 17.1" at November 1, growing to 17.8" on November 27 when it is at **opposition.** It continues to be a fine telescopic sight throughout December.

JUPITER, in Cancer, rises before midnight. It is high in the southern sky, past the meridian, by sunrise. During December, it is approaching opposition in January 1991.

SATURN, in Sagittarius, is past the meridian at sunset in early November, setting about 4 hours after the sun; and about 2.5 hours after by the end of December. It is approaching **conjunction** with the sun in January 1991.

LUNAR PHASES

November		December	
2	FULL MOON *	2	FULL MOON
9	LAST QUARTER	9	LAST QUARTER
!&	NEW MOON	17	NEW MOON
25	FIRST QUARTER	@!	FIRST QUARTER

* NOTE: Hunter's Noon

OTHER ITEMS OF INTEREST

DECEMBER 22: WINTER SOLSTICE

A WORD OF WELCOME...

TO OUR ADVERTISERS, WHO BY THEIR SUPPORT AND ENCOURAGEMENT WE HOPE TO MAKE REGULUS A BETTER AND MORE INFORMATIVE PUBLICATION. WE VERY MUCH APPRECIATE HAVING THEM WITH US, AND ASK THAT YOU KEEP THEM IN MIND WHEN CONSIDERING THE ACQUISITION OF ASTRONOMICAL PRODUCTS.

ASTRO JUMBLE

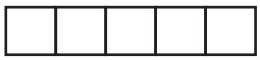
Unscramble the letters (see clue), then use the **circled letters** to solve the puzzle. Answer in next issue. Good luck!

CLUE: NAMES OF LUNAR CRATERS

L O P A T

C H A M S I D E E R

C H O Y T



(This is a bonus. Is not required to solve puzzle.)

V A U S C I L

C O R I N U C E P S

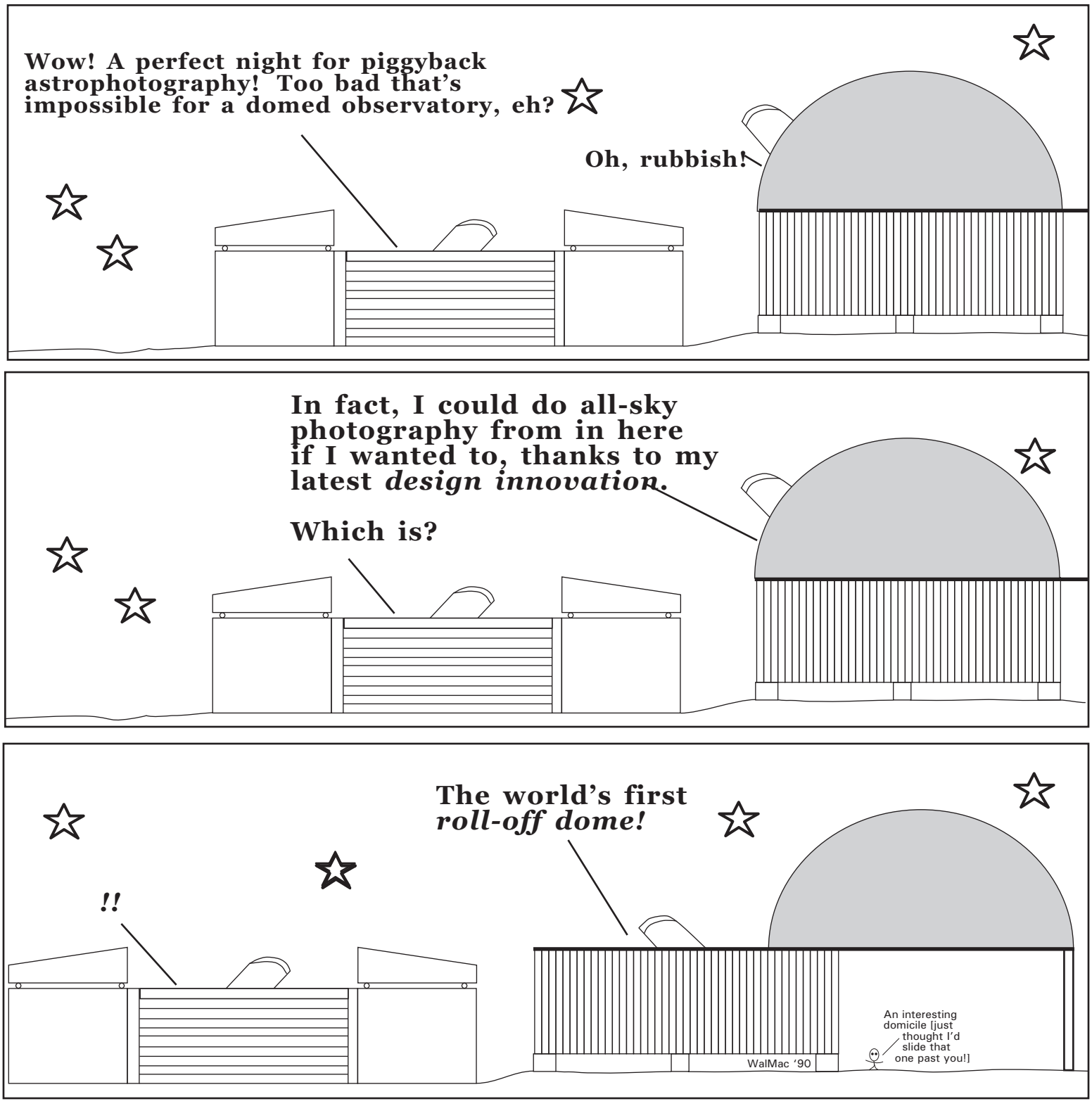
OTHER PROMINENT FEATURES ON THE MOON ARE...

THE  **OR** 

Answer from last issue:

MIZAR, ALDEBARAN, RIGEL, ANTARES, SIRIUS

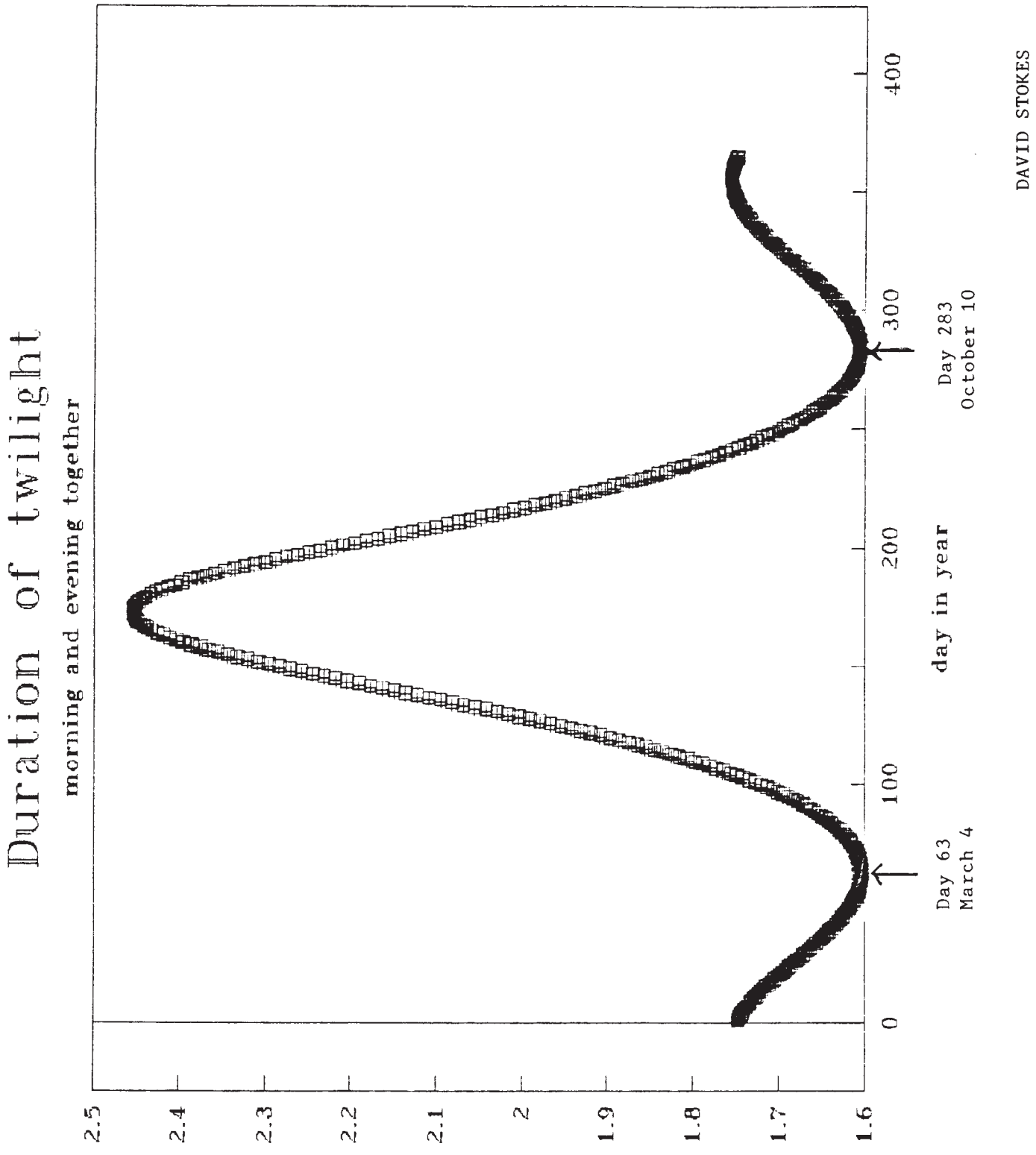
What an astronomer is: **A STAR GAZER.**



Merry Christmas

and best wishes for a

Happy New Year



DR. SIDNEY VAN DEN BERGH
WILL SPEAK ON
" D I N O S A U R S A N D A S T E R O I D S "
1:30 P.M., WEDNESDAY, NOVEMBER 7
QUEEN'S UNIVERSITY