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ROYAL ASTRONOMICAL SOCIETY OF CANADA

EDMONTON CENTRE

SEP 71

## THE EDITOR'S MESSAGE

As this is the first issue of STARDUST for the 1971-72 season it will be quite short.

I would like to extend special thanks to Dr. Hube for contributing the article on Sirius B and I would like to apologize to Mr. Dostal who also contributed an article but which was lost by myself.

As I will be unable to continue editing STARDUST any longer due to lack of time I would like to thank everyone who contributed during the past year.

Submissions for the October issue can be sent to me at my new address of 14331 - 47 Avenue and I will forward them to your next STARDUST Editor.

Brian Dowling

NOTE- Brian will be entering the University of Alberta this session with the ultimate objective being a career in engineering. Good Luck! You did a good job for us and I'm sure you'll do the same at university.

Phantom Editor

### OBSERVING EXTRAVAGANZA

Friday, September 17

Mars at its best in a quarter-century, Jupiter and its four dazzling moons, your first view of Neptune, a scenario of satellites, the ringed-beauty and more! Our Centre's red-blooded observers will be in for a real treat if they make their way to the University of Alberta Devon Observatory. Where?- West on Highway 16, turn south at the Devon turnoff for 10½ miles and then left into the observatory grounds. Experts in all observing fields will gladly reveal (at no cost whatsoever) the secrets of their ancient trade!

Anyway our September meeting promises to be an interesting sendoff for the new astronomical year. Bring along your telescope or binoculars and you'll be shown how you can get more use out of it.

After disposing of a short business session at 7:00 p.m. the serious observing should begin. If you require a ride out to the observatory please call early in the week.

### APOLLO 15 TELECAST

The August lunar landing of the Apollo 15 crew proved to be a real television treat. The Rover tour of the Hadley Rille area and the Appenine Mountains' front range gave us the most fascinating coverage of lunar exploration yet. Who can forget that scene when the feather and wrench hit the lunar surface at the same time in the absence of any lunar atmosphere?

Of special interest to RASC'ers on the CBC network was the appearance, on two occasions, of Ken Chilton of the Hamilton Centre. His knowledge of the lunar surface was a valuable contribution to the program.

### JULY 10 TOTAL SOLAR ECLIPSE

The opportunities to observe one of nature's most exciting sky shows are few and far between and so when the event is fairly close at hand the key to observing success is to be prepared for all eventualities. At our September Observing Extravaganza we hope that a formal committee will be struck to examine the various observing sites in the Northwest Territories and consider an offer from the Calgary Centre to plan a joint expedition to see the total eclipse next year.

ANOTHER SUCCESSFUL GRAZE! On August 12th, with the hour hand poised at three in the morning(!), seven observers from the Centre gathered along a lonely gravel road with their telescopes pointed moonward. For the previous two hours the moon had been dodging clouds rather unsuccessfully and the prospect for good timings of the 6.5 magnitude star moving past a lunar mountain range looked rather bleak. As luck would have it the clouds parted long enough for Paul Deans, our Librarian, David Parker, Gary Stasiuk from the Planetarium staff with his fiancé Ann Curtis, Dr. Hube and his father visiting from Ontario and your President Franklin Loehde to see a fascinating set of disappearances and re-appearances of the star.

The results turned out to be most puzzling to say the least. The lunar profile, supplied by John Howell in Calgary, indicated that the edge of the moon to be 'skirted' by the star had two very small mountain peaks close together separated from a larger mountain mass. The timings confirmed the two small peaks however the larger mountain turned out to be much more complex and of a lower elevation than originally thought. A fascinating graze in any case!

Even at the ungodly hour of 4:00 a.m. the team indicated their eagerness to try the next one. What about you?

SIRIUS B The June issue of STARDUST contained an article entitled The Companion of Sirius which had been taken from the newsletter of the Saskatoon Centre of the R.A.S.C. In that article it is stated that this double star is "too close for observation" even with a large telescope. Actually, although it is difficult to resolve Sirius A and B it is not impossible to do so, even with amateur instruments. At the present time, the separation of the two components is near its maximum (11 arc seconds) and the white dwarf, Sirius B, is detectable, in principle, even with a telescope of aperture 12 inches or less. This writer had the opportunity to see Sirius B at the entrance slit of the coude spectrograph of the 74-inch Radcliffe reflector about 5 years ago. It was a fairly easy object then, even though the separation was less than at its present value.

As is the case with many other celestial objects and phenomena, Sirius is occasionally referred to in some of the philosophical and literary works of the past. One particularly interesting example of this is found in Voltaire's philosophical story Micromegas. Briefly, Micromegas was an inhabitant of a planet which revolves around Sirius. A "young man of much wit", he had a height of "one-hundred and twenty thousand feet" and at the age of four hundred and fifty, when his childhood was past he wrote a book about the insects which inhabited his planet. This book became a matter of much controversy, particularly in regard to the question of whether the bodies of Sirian fleas were made of the same substance as the bodies of Sirian slugs! At any rate, the book was "condemned by some jurists who had not read it" and Micromegas was banished for eight hundred years.

To pass the time Micromegas set out on a trip which- Gary Finley and the Energetic Limitations of Interstellar Space Travel notwithstanding- eventually took him to our Solar System and the planet Saturn. Here he met and entered into a philosophical discourse with a native Saturnian. In the course of this conversation, Micromegas poses the following question to the Saturnian:

"Of what colour does your sun prove to be if you examine it closely?"

"Of a very yellowish-white", said the Saturnian, "and when we split up one of its rays we find it contains seven colours."

SIRIUS B (Continued)

"Our sun", remarked the Sirian, "is reddish, and we have thirty-nine primary colours."

Every astronomer, professional and amateur alike, knows that Sirius is not "reddish". It is, in fact, a classic example of a white star. It is difficult to believe that Voltaire could have made such a glaring error. Or did he make an error? Was Sirius actually reddish in colour some 300 years ago?

Sirius A is a white, main sequence, dwarf with no outstanding peculiarities, and on the basis of spectrographic and kinematical studies, it appears to be relatively young (about 500 million years old), and evolving in a normal manner. On the other hand, Sirius B is a white dwarf, and presumably has reached its present state after evolving from the top of the main sequence and through the red giant region of the HR-diagram. In other words, at some time in the past Sirius B was probably very red and much brighter ( $10^3$ X) than it is now. It would, in fact, have been the brighter component of the binary system. But, did this bright red phase occur only 300 years ago? The subsequent rapid evolution which is implied is difficult to accept, particularly since there is no evidence for a recent nova or supernova explosion in the system. Perhaps Voltaire did make a careless error, or perhaps we know less about the details of stellar evolution than we care to admit!

Incidentally, Voltaire's Micromegas contains a reference to the two satellites of Mars which is similar to the reference in Swift's Gulliver's Travels. Both of these works were written long before the telescopic discovery of the satellites.

Dr. D.P. Hube

[Redacted]

SIRIUS B (COMPARISON) ...

"Our end" ...

Place: University of Alberta's Devon Observatory

Topic: OBSERVING EXTRAVAGANZA

Meeting: Friday, September 17, 1971

Edmonton Centre ...

ROYAL ASTRONOMICAL SOCIETY OF CANADA

S T A R D U S T

Travels ...

Dr. D.P. Hays