

SMU telescope gateway to heavens

by Firdaus Bhathena

Space is said to be the final frontier. Infinite in size and holding a wealth of information, Man has been intrigued by outer space since the beginning of time, mapping the objects he saw in the night sky.

The constellations helped navigate ships to the new world. Since the 1800s, visionaries have been building large telescopes to get a closer look at the cosmos.

In 1972, Saint Mary's University was fortunate enough to have the 40cm EALING telescope built on top of the Loyola residence. This would be Halifax's gateway to the universe.

At the time, St. Mary's had no way to view the stars. The donor specified that the telescope was to be used for research and to teach undergraduates. So although no breathtaking discoveries have been made, students get to use it every evening as the operational cost is low.

One obstacle that limits the capability of the telescope is its location. Near the piers and street lights of downtown Halifax, it is difficult to obtain ideal conditions for stellar observation. City lights reflect off the water and moisture in the air blankets the darkness. However, technology has a solution for this barrier.

David Lane, the observatory's operator, showed us the most sensitive light detector available on the market, called the Charged-Coupled-Device (CCD). The CCD is a silicon chip containing over one hundred thousand pixels that efficiently record light and can transfer information onto a computer seconds later. The CCD can also eliminate background light caused by thermal

radiation emitted from the earth's surface. CCD images show details that a conventional camera hides. One key to its operations is the fact that it operates at 50 degrees below ambient temperature — the lower the temperature, the lower the amount of radiation that affects the photo. Resolution doubles with every

8 degrees difference in temperature, so winter images are sharper than summer ones.

Spectrographs are important tools for astronomers as they allow them to determine the composition of stars. Consisting of a slit, lenses and a prism, a spectrograph breaks up light from a source into its spectrum. Peaks

and dips in the spectrum can indicate whether a star or planet contains iron, nitrogen, methane or any other element.

Inclement weather conditions kept the telescope from gazing to the heavens the night we were present. Dave Lane and Dr. D. Tindall, professor of physics at Dal, kept us entertained by explaining all the functions of the devices. This telescope

mainly views the visible spectrum. It is blind to radio, ultraviolet and most of the infrared.

It would be great if another telescope could be built outside the vicinity of Halifax, but until then the EALING should suit the needs of students and the visiting public. Special thanks must be given to the donor of the telescope.



David Lane gives Colin Mac Donald the grand tour of SMU's observatory.

PHOTO: FIRDAUS BHATHENA

POINTLESS PONDERABLES

ANSWER:

You have to read a bit into this question. The hint to assume constant skill was the clue. Assume the throws follow a normal statistical distribution. If that's the case then there are only two combinations out of six that have the third dart being furthest away. That means four combinations out of six have the dart in a closer position. $4/6$ is equal to $2/3$ which is 66.7%. You have a 66.7% chance of getting closer and a 33.3% chance of getting further. A correct answer was sent in this week by Alok Ummat of Dal who said there was a 33.3% chance of doing worse.

QUESTION:

Here's a puzzle that could get a lot of answers, at least from those people with a patience or a computer. Using a 3×3 grid arrange the digits 1 to 9 in it so it has the property that the second row is twice the first row and the third row is three times the first row. There are four possible answers. Here's one of them to indicate how it works.

1 9 2	
3 8 4	$2 \times 192 = 384$
5 7 6	$3 \times 192 = 576$

Please send answers c/o the Gazette, Room 312, SUB or by email to GAZETTE@AC.DAL.CA. Entries must be received by Monday at 4 pm.



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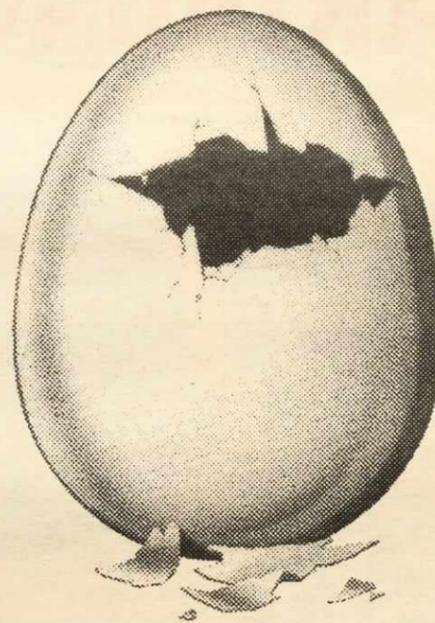
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