# Carcinogen exposure rockets up

Waterloo (CUP) The cancer mortality rate is on the rise and we must accept that there is no safe level of exposure to chemical carcinogens, says Dr. Samuel Epstein, author of the Politics of Cancer and a professor at the University of Illinois.

Speaking at the University of Waterloo, Epstein said the mortality rate will increase as the level of production of synthetic organic chemicals increases. The most affected people, he said, are those who work in the chemical industry and those who live in the immediate vicinity, although no one is exempt from the risks.

This fact should be of particular concern to residents of Alberta, said Epstein, since the province is on the verge of becoming the greatest petro-chemical center in the world.

If Alberta is to prevent itself from becoming another Louisiana, the chief petro-chemical area in the US where the mortality rate has risen dramatically in the past few years, the government must act quickly. Epstein said Alberta must ensure that effective safety measures are introduced into the designs of planned industrial complexes.

Epstein criticized the chemical industry for downplaying the health risks posed by carcinogens in the environment and said it has also been reluctant to accept its share of the blame for the growth of cancer.

He stated that Monsanto, a producer of plastic bottles for Coca-Cola, had a bottle on the market before carcinogenicity tests were completed. The bottles were subsequently found to be highly carcinogenic, releasing 15 to 20 parts per billion of vinyl nitrite into the soft drinks.

The chemical industry also often suppresses information which proves the cancer causing effects of industrial carcinogens, said Epstein.

"Obviously they're not going to present data which will undermine the marketability of their product."

Epstein accused the industry of conspiracy, distortion and manipulation of information. "They are a substantial number of executives in industry who should be accused of manslaughter."

Cost estimates for cleaning up the workplace have been so distorted that it seems to be fiscal suicide, said Epstein. However, he said, these estimates ignore the costs incurred if the clean up is not done ($35 billion a year is spent on cancer treatment in the U.S.). Industrial efficiency and stimulation of new industry are two economic advantages also ignored by the chemical industry, according to Epstein.

The fastest growing industry in the U.S. today is involved with developing pollution clean up hardware, he said.

Epstein also said the role of smoking in the development of lung cancer has been "massively exaggerated by industry to divert attention."

Twenty thousand people who have never smoked die each year in the U.S. from lung cancer. The mortality rate for non-smokers said Epstein, has doubled since 1959.



YORKSCIENCE

# Physics and philosophy

**Richard Dubinsky**

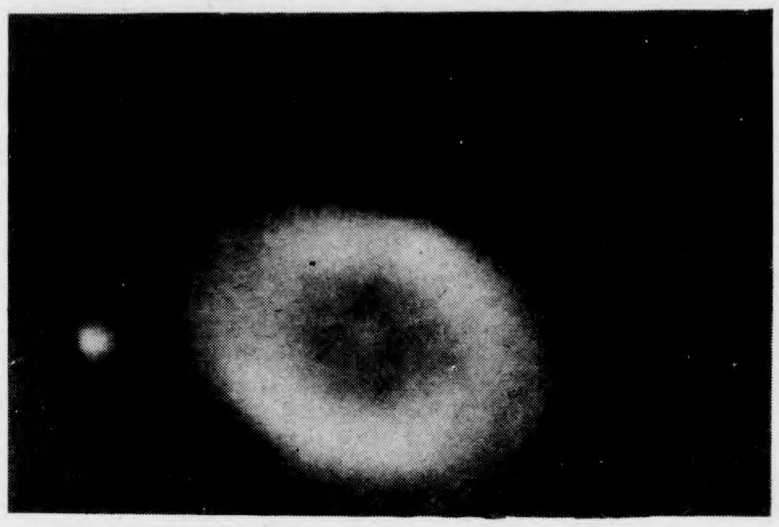
The interests of York's Stan Jeffers range from problems in astrophysics to questions surrounding the very nature of science. In both areas, his work has been important and insightful.

Dr. Jeffers, along with Graduate Student Bill Weller, has been helping telescopes see better in the dark through the development of image intensifiers. While similar devices are often used in night surveillence, the pair is putting them to work viewing dim and distant stellar bodies like galaxies, globular clusters and the Ring Nebula.

One such instrument is the Silicon Vidicon, a highly sophisticated television camera. The camera, cooled down to —65 degrees centrigrade to reduce its inherent background interference, scans the object repeatedly. The information it gathers is then fed into a computer which subtracts background light and enhances the images, creating clearer photographs of more distant images.

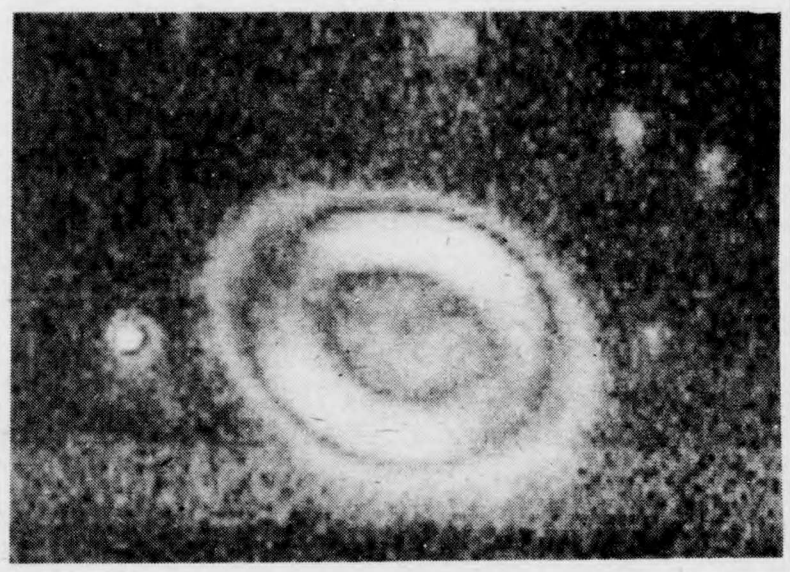
Jeffers and Weller have been using the Silicon Vidicon to study the Wolf-Rayet stars, which emit highly unusual energy.

While in most cases stars emit a spectrum of mainly visible light with numerous dark bands due to absorption, this is not the case with Wolf-Rayet stars. They emit the complete visible spectrum plus additional very intense and wide emission lines: the reverse of 'normal' stars. Current theory indicates that the star has a dense envelope around it, the atmosphere, which glows like a huge neon tube.



**(Above) Unprocessed image of Ring Nebula in Lyra.**

**(Below) Computer enhanced image with instrument background subtracted.**



But in addition to his work with physical theory, Jeffers is also concerned with philosophical theory—in particular, questions in the philosophy of science.

Jeffers is quick to identify himself as a dialectical materialist, a position he feels that science corroborates.

One of the tenets of Jeffer's philosophy is that "all things are dynamic." For him, this means that static models can never adequately describe the physical world—they might be useful as approximations, but they will always be less accurate than models which reflect the universe's intrinsic dynamic nature.

Jeffers also believes that there is not enough debate and discussion regarding science. To progress, he feels, ideas must be exchanged and permitted to grow. The scientists must be a responsible person looking beyond his laboratory and instruments.

To this end, Jeffers is in the process of organizing the Science and Philosophy Discussion Group, involving students and faculty from the faculty of science and the department of philosophy.

The group will meet for noon hour talks, with their first scheduled for November 26 in Curtis 110. Graduate Student Michael Haynes will speak on "Evoluation in the Theory of Rationality."

Those interested in learning more about the group can contact Dr. Stan Jeffers in room 322 Petrie, or call him at 667-3851.