

Scientific highlights

A clue to the origin of life

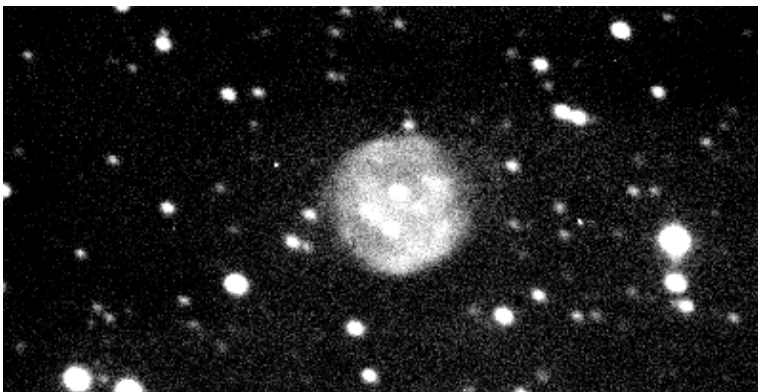
The AAT was used to produce a possible explanation for why life on earth almost exclusively uses left-handed amino acids and right-handed sugars as the building blocks of proteins and nucleic acids — a mystery that has puzzled scientists for 150 years. As a result of these novel observations, it is now believed the asymmetry was imprinted in organic molecules in interstellar space before the formation of the Solar System. These molecules then found their way onto the Earth via the impacts of comets and meteorites and provided one the starting materials for the origin of life.

The origin of the X-ray background

Observations using the LDSS instrument at the AAT have identified an obscured quasar in a sample of objects detected with the ASCA X-ray satellite. Quasars hidden at visible wavelengths have previously been proposed as a major component on the enigmatic X-ray background. The X-ray background was first discovered in 1962 and its nature is one of the longest-standing cosmological puzzles. This discovery provides direct observational evidence that obscured active galactic nuclei are present in deep X-ray samples and may be responsible for the bulk of the X-ray background.

New planetary nebulae discovered

The UK Schmidt Telescope is undertaking a major new survey of the southern sky in hydrogen-alpha (H-alpha) light. In the past year, more than one quarter of the survey has been completed. Over 300 new planetary nebulae have already been discovered from the survey. Planetary nebulae represent the phase towards the end of a star's life when it throws off its outer envelope of gas after exhausting the nuclear fuel in its core. The final survey should more than double the known number of planetary nebulae in the southern hemisphere, providing further information on how stars like our Sun will eventually die.



One of 300 planetary nebulae discovered in the UKST H-alpha survey. Planetary nebulae have nothing to do with planets, but were so named because of their resemblance to the disc shape of very faint planets.

Other highlights

The ESO/Australia Workshop

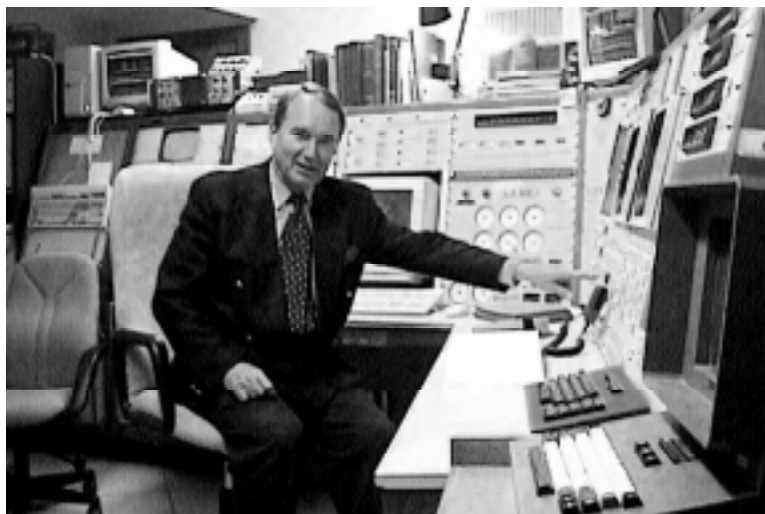
In December 1997, the AAO was one of the co-organisers of the ESO/Australia Workshop on 'Looking Deep in the Southern Sky.' Over 150 participants attended the workshop held at the State Library of NSW. Every major southern hemisphere observatory or group was represented and the workshop provided an extremely stimulating forum to discuss scientific and technical issues. Major surveys such as those undertaken with the AAT's 2dF instrument, the Parkes multibeam and the ESO imaging survey featured prominently in the topics for discussion.

Minister's visit

The Australian Minister for Science, John Moore, MP, visited the Anglo-Australian Telescope in May 1998. His visit was part of a tour of Australian astronomy facilities which included the Mount Stromlo and Siding Spring telescopes and the Paul Wild Observatory at Narrabri. He was present during a 2dF observing run for the new galaxy and quasar redshift surveys currently underway at the AAT.

'Nightskies' exhibition around the world

The British Council celebrated 50 years of presence in Australia during 1997 with program of events 'newIMAGES.' Part of this program involved the use of AAO photographs — the 'Nightskies' exhibition. This exhibition continued to tour Australia and the UK. As well, complete sets of the exhibition have been bought by several British and European museums. The exhibition also opened at the National Academy of Science in Washington DC, and a smaller version opened at a commercial gallery in New York. There has also been interest from South Africa, Korea and China.



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