

# New telescope to map our sky for the first time

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A new hi-tech [telescope](#) called the SkyMapper is to be built by ANU in order to produce the first comprehensive digital map of the Southern sky. The fully automated \$11 million telescope will map the sky faster than any other telescope in the world, implementing a unique design devised jointly by the research team at the University's Mt Stromlo Observatory and Queanbeyan company, Electro Optic Systems Pty Ltd. ANU has commissioned Electro Optic Systems to build the 1.3 metre SkyMapper, while staff at Mt Stromlo will build a 320 million pixel digital camera to capture a wealth of detail from the distant Universe. The fully automated SkyMapper will be controlled from Mt Stromlo, but sited at the ANU Siding Spring Observatory near Coonabarabran in northern New South Wales.

The Director of the ANU Research School of Astronomy and Astrophysics, Professor Penny Sackett said the new telescope was a vital step forward in replacing research capacity lost at Mt Stromlo as a result of bushfires in 2003.

“This is a great moment for the ANU astronomy program and for Australian research. The SkyMapper is scheduled to be operational by late 2006, allowing us to complete a landmark research project, the Southern Sky Survey, which will deliver the world's first comprehensive digital map of the Southern sky,” Professor Sackett said.

Professor Brian Schmidt, who has led the team designing the new telescope and will lead the Southern Sky Survey, said the SkyMapper

would record a huge amount of information very quickly.

“Every minute it operates, the SkyMapper will be able to image a patch of sky five square degrees in area — 25 times the size of the full moon — at a depth 1 million times fainter than the human eye can attain,” Professor Schmidt said.

“This rate of data collection is five times faster than any current existing large telescope. In the three years it takes to complete the Stromlo Southern Sky Survey, the SkyMapper will produce a complete digital map of the Southern sky in six colours. By 2009 we will have collected 75,000 gigabytes of data – enough to fill more than 100,000 CDs.”

The survey will be used by astronomers across Australia and around the world to assist in a wide range of astronomy projects including:

- Identifying the most distant objects known in the Universe — quasars believed to have been formed when the Universe was three per cent of its current age;
- Spotting nearby asteroids which could potentially collide with the Earth;
- Discovering new planets like Pluto in the outer Solar System;
- Identifying the temperature, composition, size and location of more than one billion objects in the Southern sky; and
- Pinpointing the first stars to have formed in our galaxy.

The SkyMapper is a replacement for the Great Melbourne Telescope, which was destroyed by fire on 18 January 2003 and is an important step forward in restoring research capacity to the mountain.

“Even though the telescope is not physically located on Mt Stromlo, it will be controlled from this site, restoring important research capacity for our astronomers, who rank among the world’s best,” Professor Sackett said.

“By linking the phenomenal sky charting capabilities of SkyMapper at the University’s dark sky observatory near Coonabarabran with the computing and analysis facilities available to our top researchers at Mt Stromlo, we will create a dataset that will be a worldwide legacy in astronomy for decades to come.”

For further information go to: [www.mso.anu.edu.au/skymapper/](http://www.mso.anu.edu.au/skymapper/)

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