



Southern Skies

A Digital Science Partnership
for
Remote and Robotic Astronomy



Developed and Operated by
University of Louisville
University of Southern Queensland

Summary

- Telescopes in Australia and Kentucky
- Linked by Internet2
- Hands-on discovery and exploration
- Formal classes and informal education
- Trial use with grades 5 to 8 Spring 2007
- Continued development Fall 2007

People

Louisville

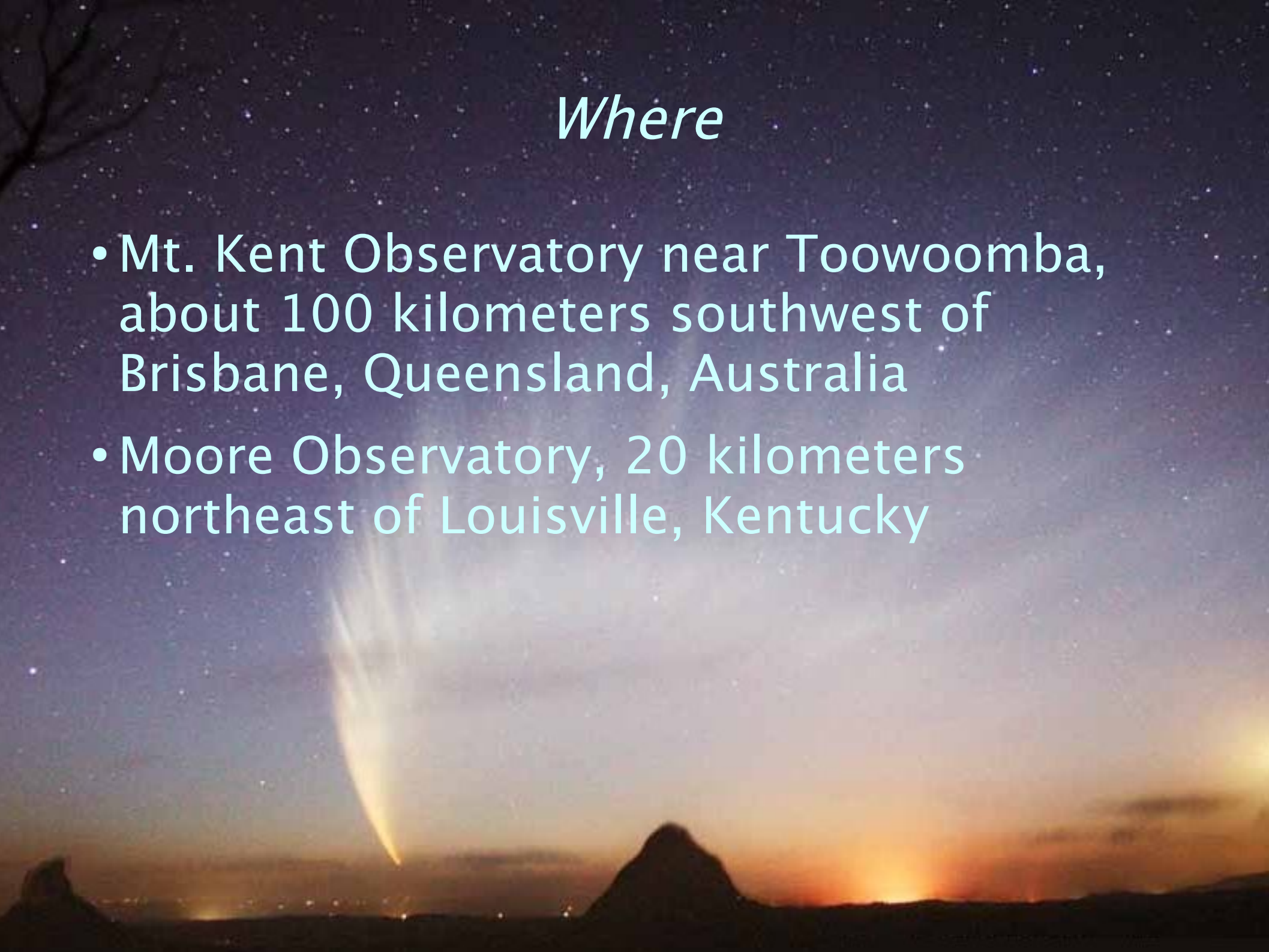
- John Kielkopf
- Drew Foster
- Rachel Connolly
- Tom Tretter

Toowoomba

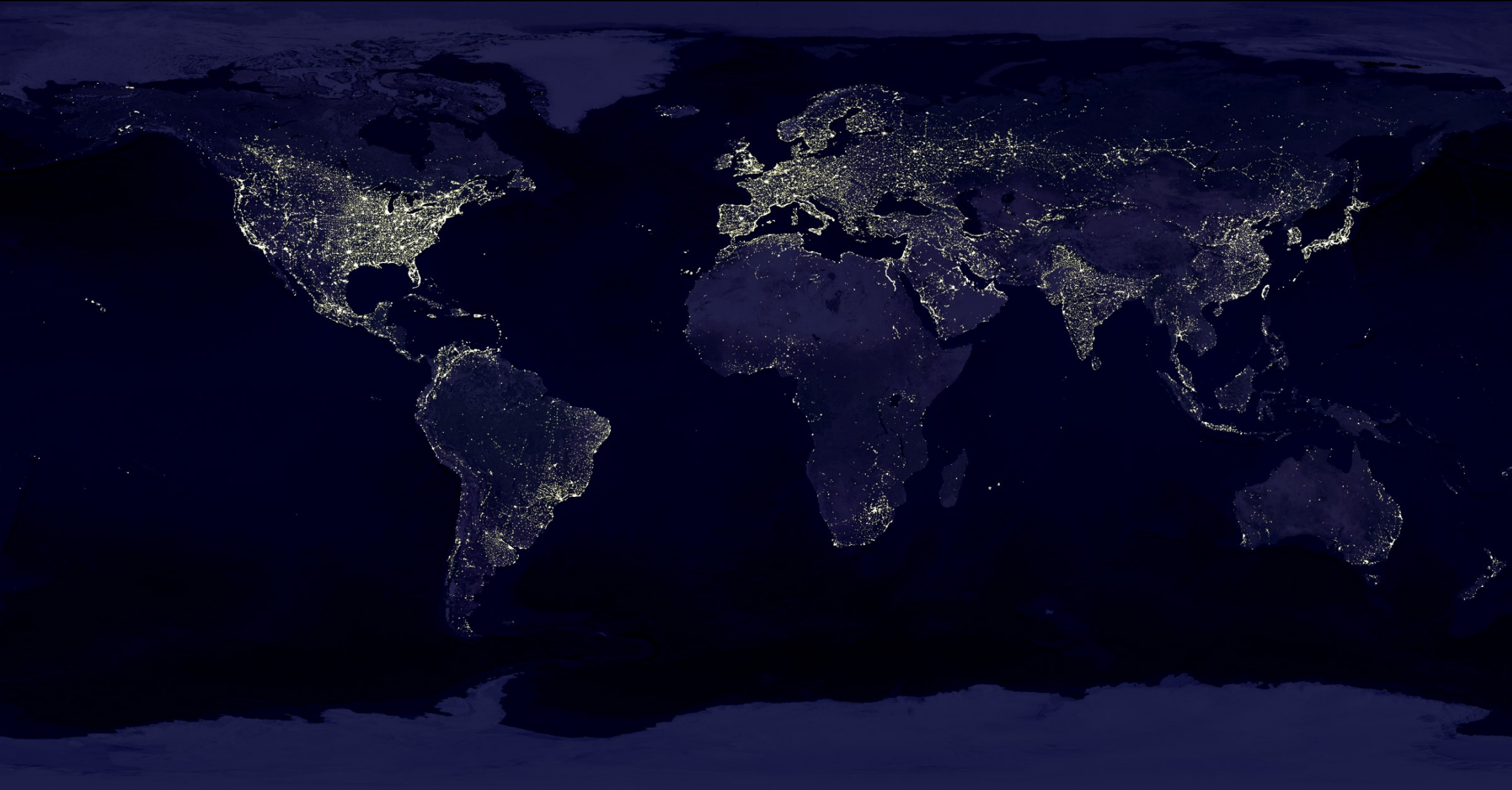
- Brad Carter
- Rhodes Hart
- Carolyn Brown
- Ian Waite

Where

- Mt. Kent Observatory near Toowoomba, about 100 kilometers southwest of Brisbane, Queensland, Australia
- Moore Observatory, 20 kilometers northeast of Louisville, Kentucky



Why?



Why?



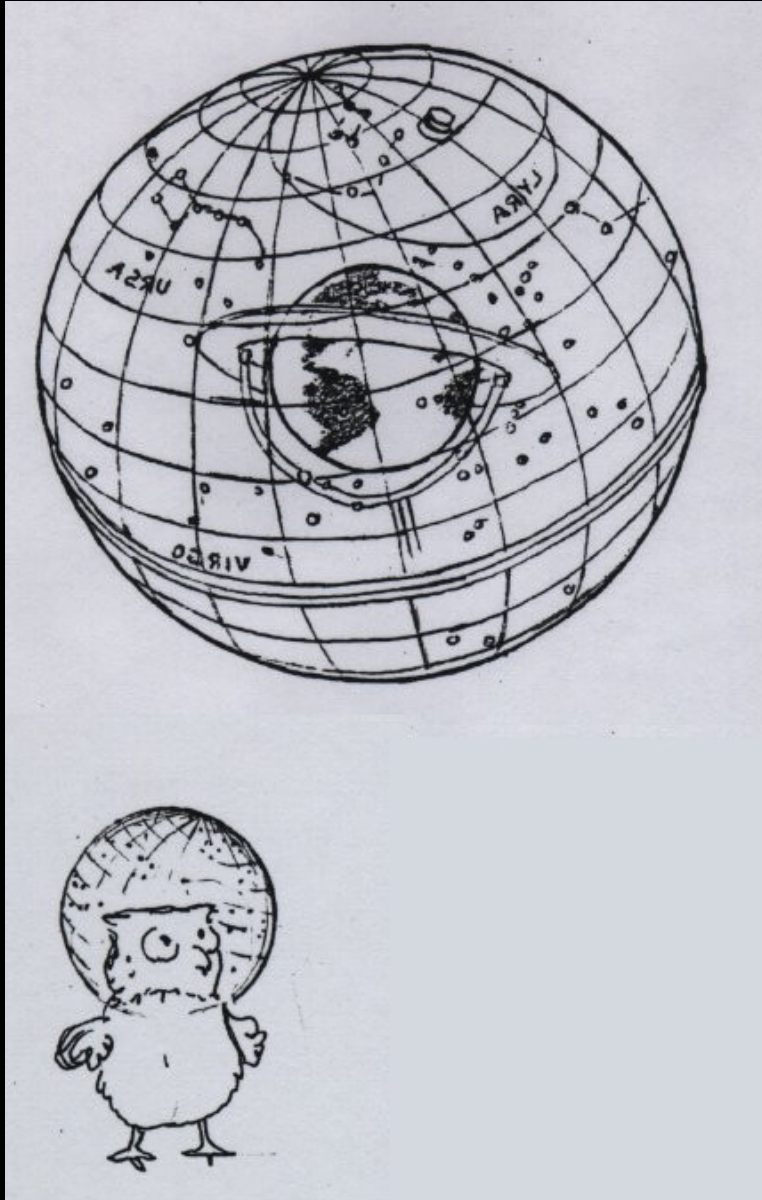
Australia is dark!

Why?



Night sky in Australia during our day.

Why?



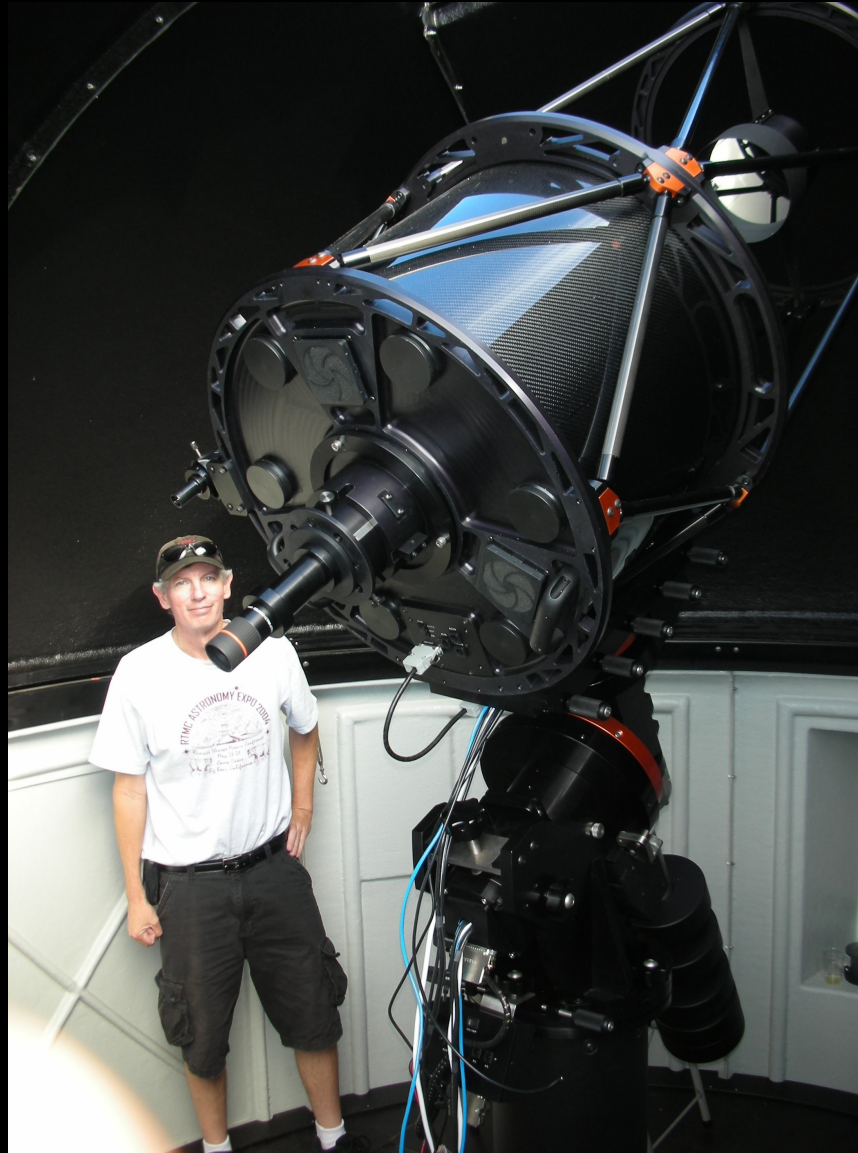
*Hands-on
experience
stimulates skills
for critical
thinking*

Why?



Our own galaxy is best seen from the southern hemisphere.

Mt. Kent Telescope



Eta Carinae



Jupiter's Red Spot



Dumbbell Nebula

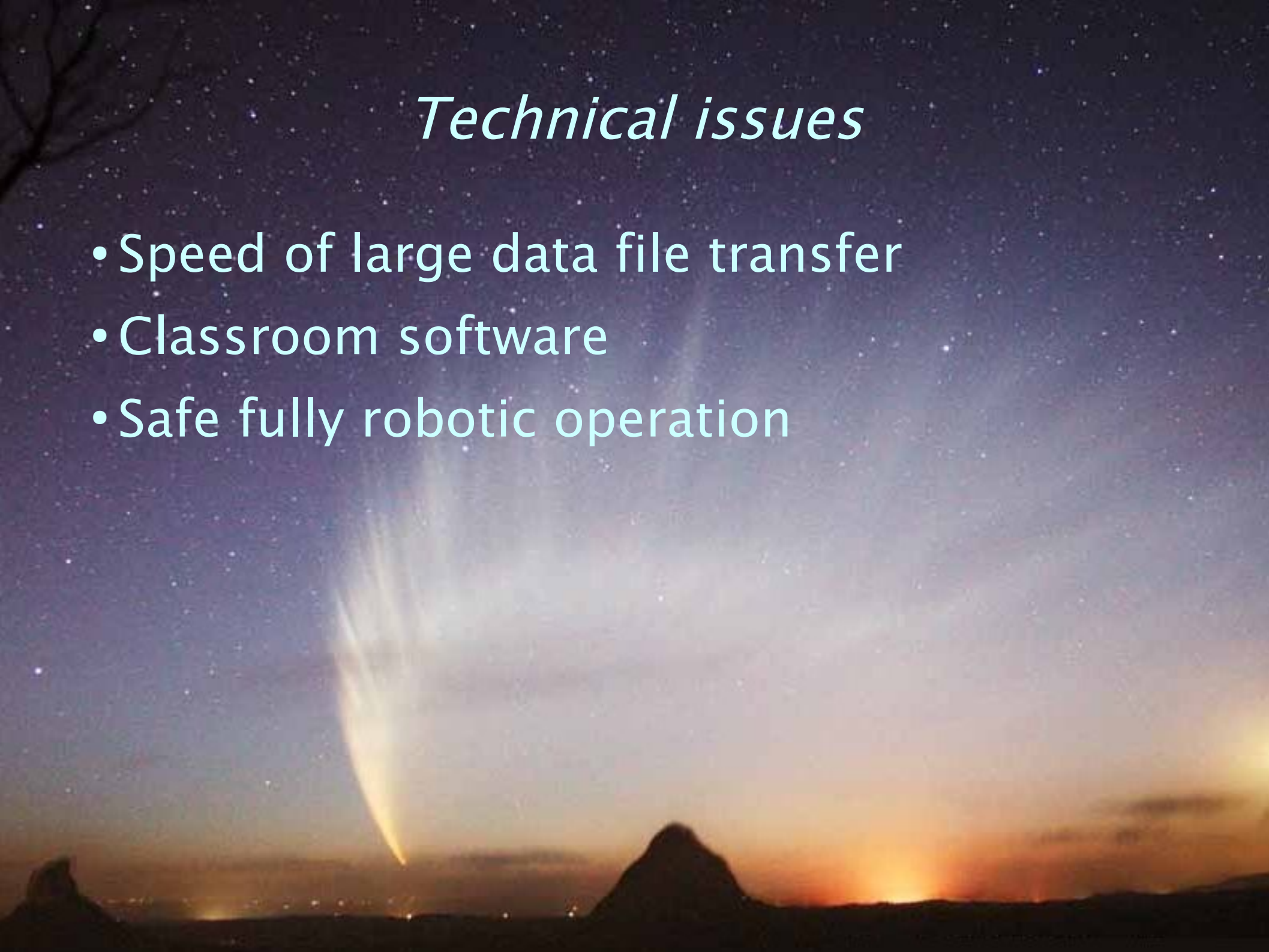


Where we are now

- Remotely operable telescopes and domes
- Polycom and Tandberg conferencing
- Weather stations
- Site and dome interior cameras
- Fisheye night sky cameras
- Web site and data servers

Technical issues

- Speed of large data file transfer
- Classroom software
- Safe fully robotic operation



Fall 2007 plans

- Integration with Kentucky curriculum
- Integration with international curricula
- Classroom trials with multiple 12 visits
- Subsequent planetarium visits
- Coordination with other robotic telescopes
- Access to Virtual Observatory
- Use by university undergraduate classes

Longer range goals

- Reliable robotic operation without on-site presence
- Access both as a remote instrument and fully robotic operation
- Close association with other networks supporting fast access and rich educational content for astronomy
- Use by university distance education students

New instrumentation coming

- Additional telescope at Charleville in the Australian desert – reliable clear weather
- Spectrograph – research tool for high school and college students
- Small wide field hands-on network telescope linked to the image database

Support and Collaboration

NASA

U of L

USQ

NKU

KDE



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- Hands On Universe