AAS 207th Meeting, 8-12 January 2006
Session 66 Undergraduate Astronomy
Poster, Tuesday, 9:20am-6:30pm, January 10, 2006, Exhibit Hall

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[66.07] A Digital Science Partnership for Southern Skies in the Classroom

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A collaboration between the University of Louisville, the University of Southern Queensland, and Northern Kentucky University is developing remotely and robotically operated astronomical facilities for teaching, educational outreach, and research. Our site in Australia is at Mt. Kent Observatory, near Toowoomba in Queensland. It is linked to U.S. university campuses primarily by Internet2, and has a longitude difference that enables students to study the night sky above Australia in daytime classes. The southern latitude of the site also offers views of the center of the Milky Way, the Magellanic Clouds, and transient events not visible from mid-latitudes in the northern hemisphere.

The project is developing two similar facilities for southern and northern hemisphere operation. Both will use corrected Dall-Kirkham f/6.8 half-meter telescopes designed and manufactured for us by Celestron International. The optical system provides a flat 27'x18' field of view with 0.54" pixels when coupled with a Kodak KAF-6303E CCD. Open source software and locally engineered hardware provide weather and site monitors, and remote operation of the telescope, cameras, and dome. The southern telescope in Australia will be used primarily from the *Stellar Command Center* in the Gheens Science Hall and Rauch Planetarium at the University of Louisville in an outreach educational program to local schools, and to support undergraduate astronomy programs and graduate student research. The northern telescope at our Moore Observatory allows engineering and software development, provides hands-on experience for our students, and may be operated remotely by students and collaborators in Australia as well.

We expect to install the telescopes in December 2005. This presentation describes our work to develop the hardware and open source software, an initial analysis of telescope performance, and the anticipated impact of remote network facilities on astronomy education.

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The author(s) of this abstract have provided an email address for comments about the abstract: kielkopf@louisville.edu

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