

UW Telescope Provides Critical Wide-Field Images

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A low-powered amateur telescope is helping student researchers at the University of Wyoming to provide data essential to understanding fundamental properties of stellar objects. They reported their work at the recent American Astronomical Society meetings in Seattle, Wash.

In a poster session at the AAS, UW students Dave Allen and Eric Hausel of Laramie and Mike MacDonald, an Estrella Mountain Community College (Arizona) student who studied at UW last summer, reported on "The Red Buttes Observatory's Wide-Field Telescope ZAMs Project."

The poster explains how the students use an electronic camera (CCD) to take photos through a small (8-inch) telescope strapped onto the much larger Red Buttes Observatory (RBO) telescope (0.6 meters). This provides stability and the ability to use the RBO tracking and pointing capabilities. The CCD camera provides images that span a much wider field of view than can be obtained with large research telescopes.

The wider field of view is important because it incorporates nearby clusters of stars covering a large area, says UW Astronomy Professor Ron Canterna.

"Knowing a stellar object's relative position to the nearby star clusters allows us to determine colors to measure temperature and brightness functions of the stars," Canterna says. "This is significant in determining what astronomers call the 'zero age main sequence,' or ZAMS. With the large telescopes, these cameras overexpose the nearby objects, they are

so bright that you can't measure them."

ZAMS is a line calculated by computer models of where a star will be when it begins hydrogen fusion; its brightness and surface temperature typically increase from this point with age. Stars usually enter and leave the main sequence from about when they are born or when they are starting to die.

According to the poster, the color-magnitude data are useful in obtaining "evolutionary lifetimes of star clusters and their influence on cosmological problems in general."

"You can tell when a star becomes a star, this is the foundation of modern astronomy," says Canterna.

Other faculty authors in addition to Canterna are Mike Pierce and C.T. Rodgers. Canterna says other UW undergraduate students have acquired time at the RBO to continue the wide-field project observations.

Source: University of Wyoming

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