

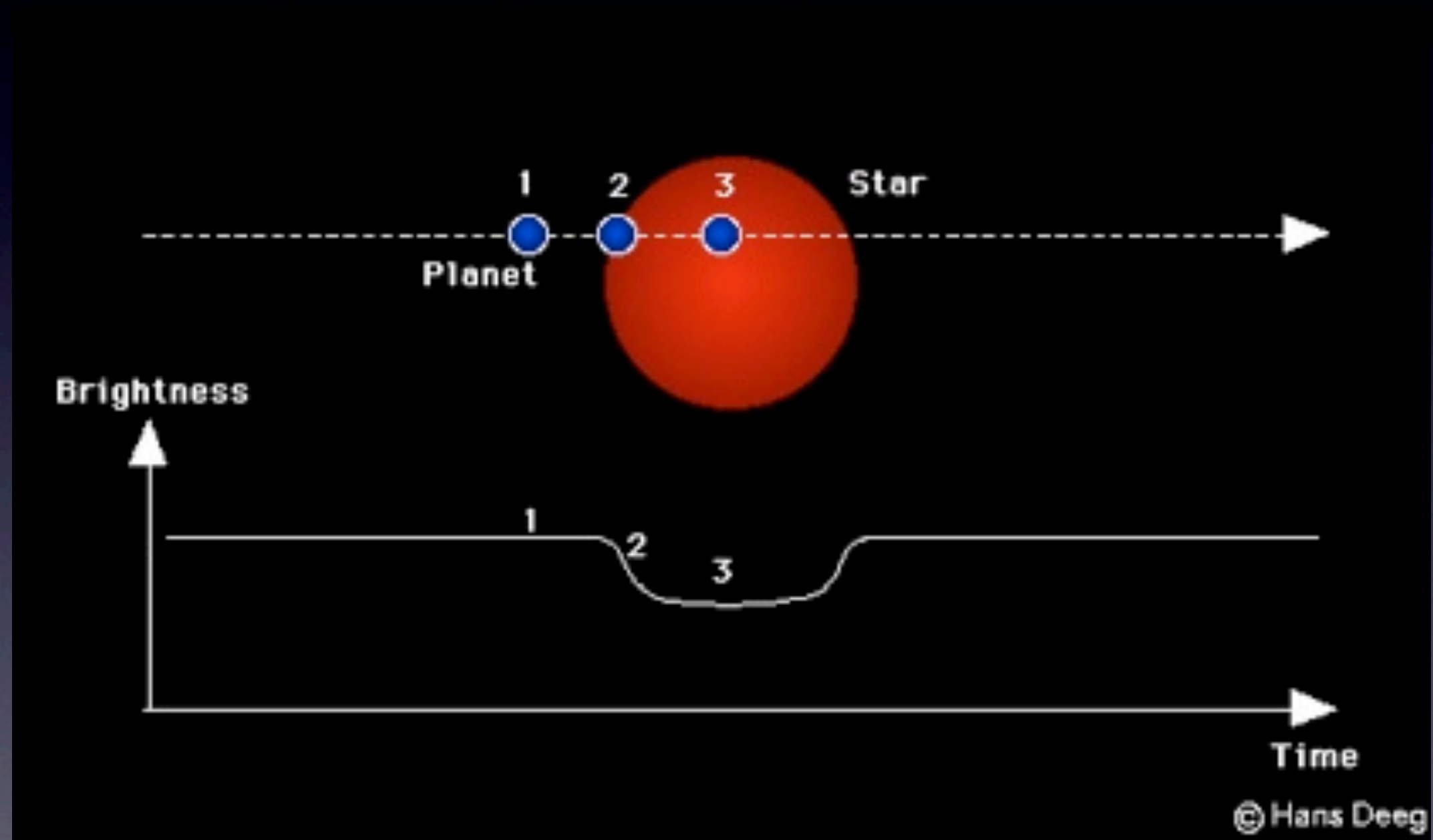
The Alsubai Project: An Automated Exoplanet Search Facility

John Smith

International Team

- Sponsored by Dr. Khalid Alsubai, Team Leader, Qatar Foundation
- Dr. A. C. Cameron, Dr. K. Horne, Dr. N. R. Parley, University of St. Andrews
- Dr. R. G. West, University of Leicester
- P. Sorensen, Nordic Optical Telescope, La Palma
- Dr. D. M. Bramich, European Southern Observatory, Chile
- Dr. D. L. Pollacco, Queen's University, Belfast
- J. C. Smith, Hidden Loft Observatory, Arizona

Measurement Concept



Hardware Components

- Wide-field System Design
- 2 - 5 Lens/Camera System
- Periodic Focusing
- Single Mount
- 1 PC per Camera
- Mac Pro for Processing
- Locally Networked

Software Requirements

- Designed for Continuous Operation
- Integrated with Weather and Site Systems
- Annual List of Specific Targets
- Target Altitude, Moon Proximity and other Constraints Considered
- Data Frames, Dark, Bias and Flat Frames for Each System, Each Night
- Interface with Existing PipeLine Processor

Tucson, Arizona

March - June, 2009

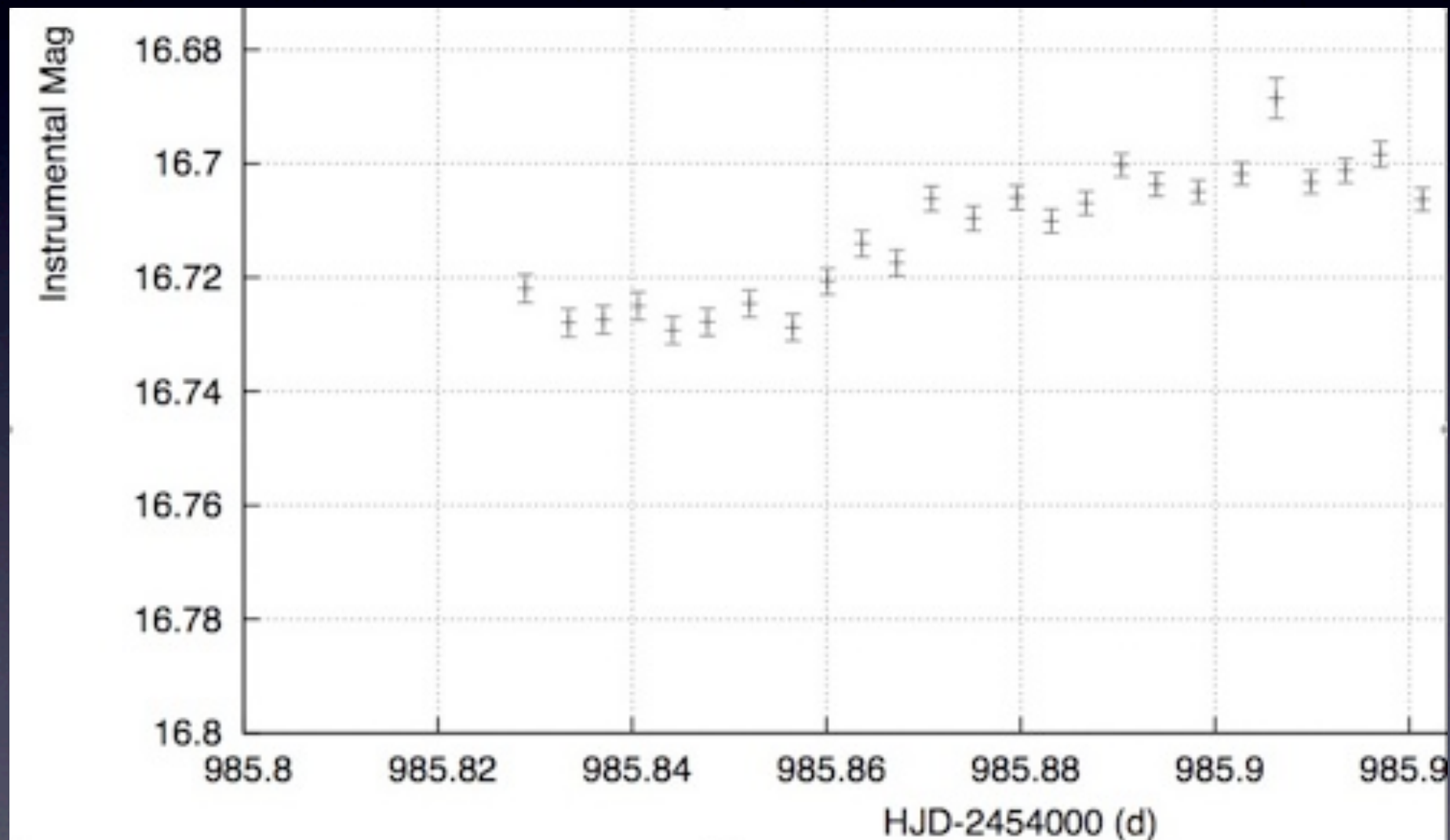
- 2 x Canon 400 mm, F/2.8 Lenses
- 2 x FLI PLI 680I Cameras
- 10° x 10° FOV (jogged)
- Paramount ME
- 2 PC's, 1 Mac Pro
- Development and Test System



Acquisition Software

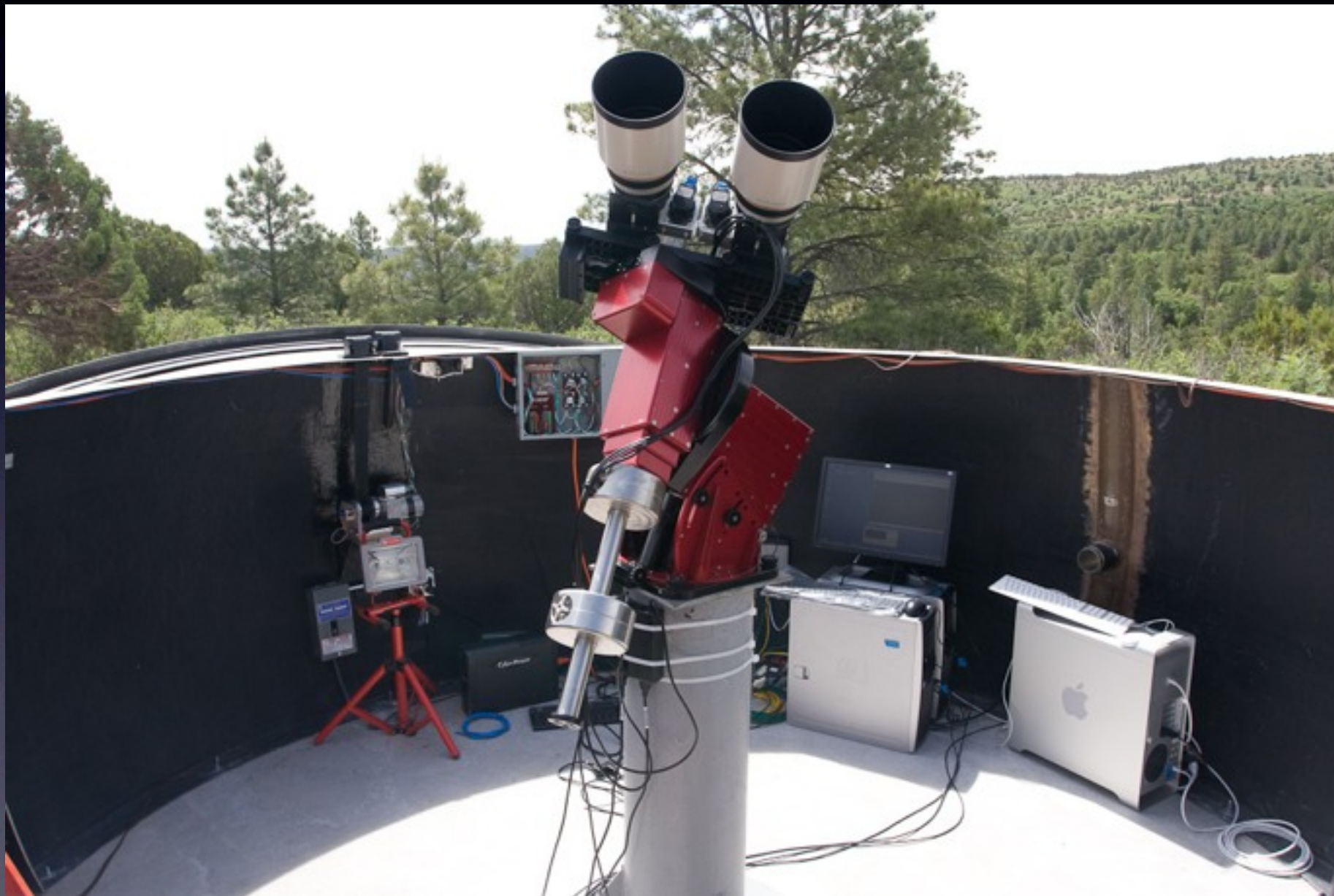
- ASCOM Platform 4.1
- CCDAutoPilot 4.x (Customized)
- DC-3 Dreams PinPoint 5
- Diffraction Ltd. MaxImDL 5
- FocusMax 3.4
- Software Bisque TheSky 6

Second Half of Wasp-2b Transit Captured



New Mexico Skies

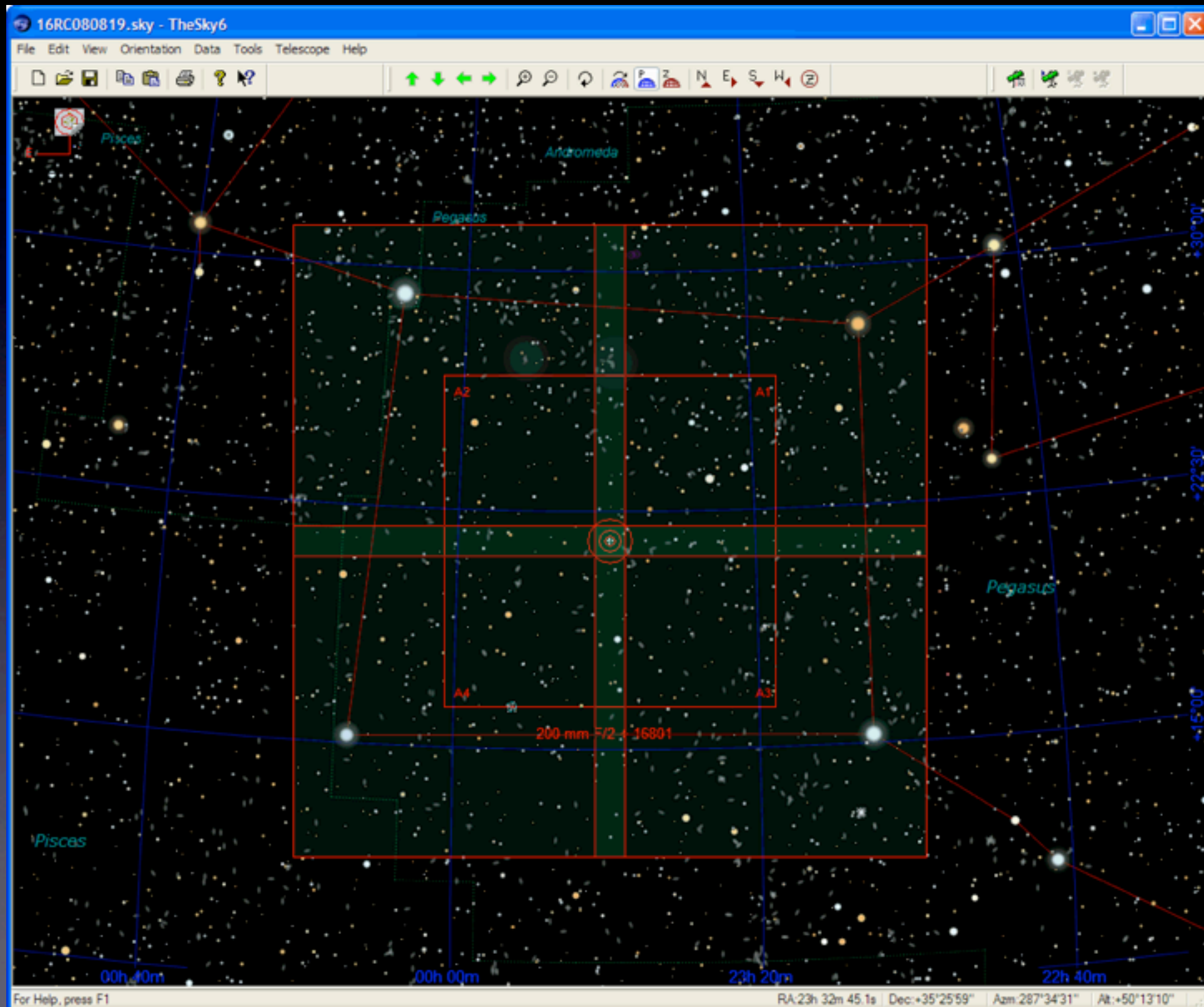
June - October, 2009



Production System

- 4 x Canon 400 mm F/2.8 + FLI PLI 6801
FOV: $5^\circ \times 5^\circ$ each
- 1 x Canon 200 mm F/2.0 + FLI PLI 6801
FOV: $10^\circ \times 10^\circ$
- Mathis Instruments MI-750 Fork Mount
- 5 dual core PC's, 1 8-core Mac Pro
- $40^\circ \times 40^\circ$ Overall FOV by jogging

How Big is $40^\circ \times 40^\circ$?



New Mexico Skies

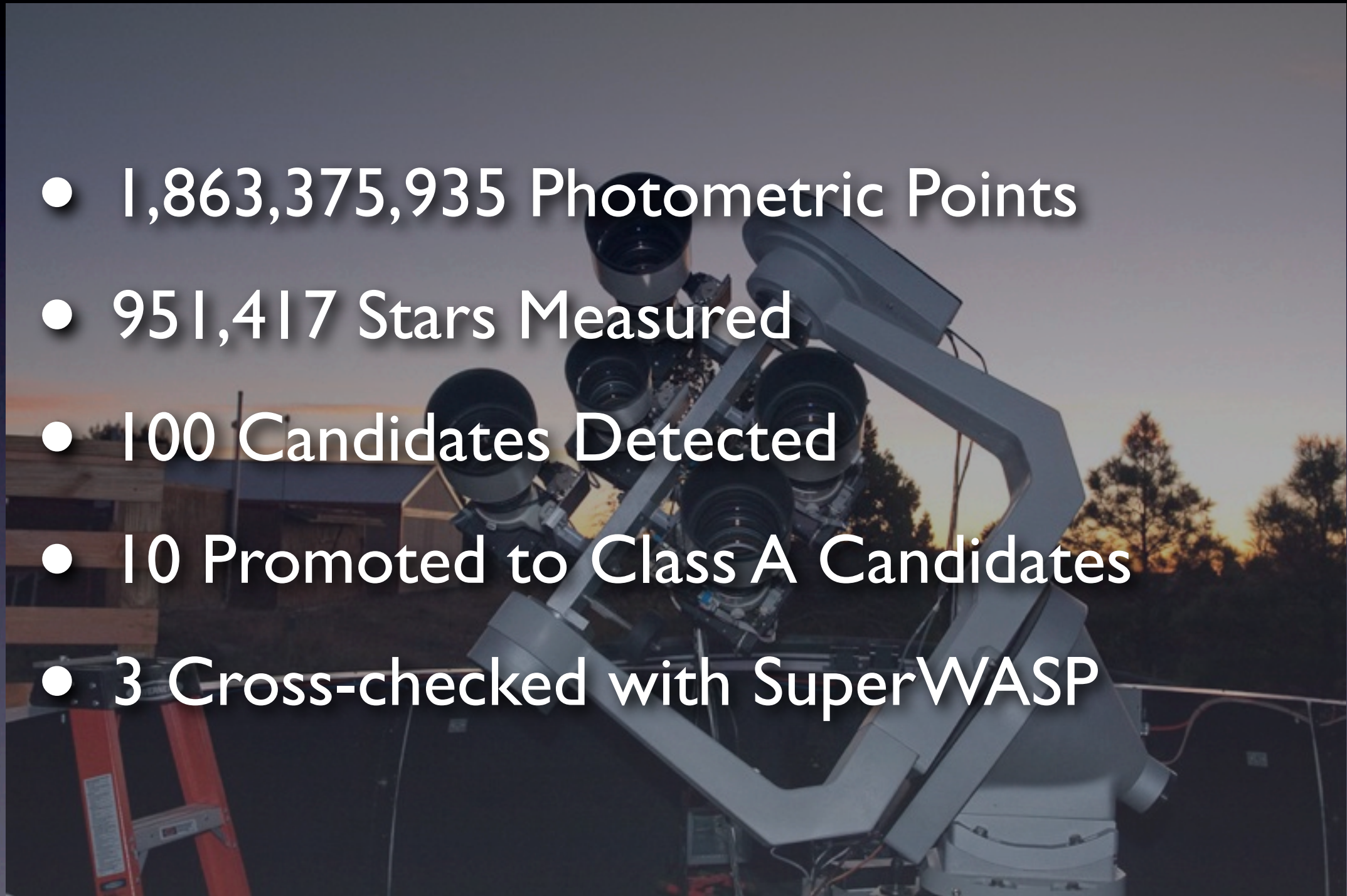
October 2009 to Present

- Over 45 GB of data per night
- Preliminary processing on-site
- On-site redundant storage
- Periodic 2 TB external drive “mail-net” to St.Andrews



Results Since October, 2009

- 1,863,375,935 Photometric Points
- 951,417 Stars Measured
- 100 Candidates Detected
- 10 Promoted to Class A Candidates
- 3 Cross-checked with SuperWASP



A Night of the Alsubai Project



Thanks for your Attention

Questions?