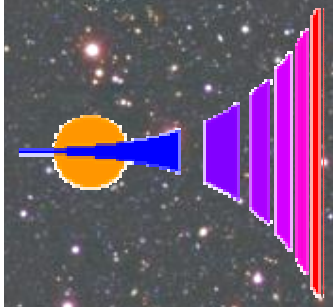
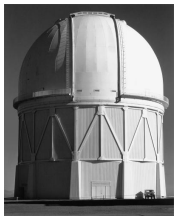


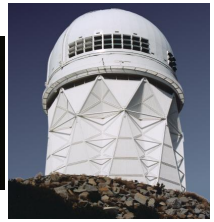
The NOAO Deep Wide-Field Survey

- Large Scale Structure Formation and Evolution from redshift 5 to 0.5
- Galaxy Formation and Evolution as a function of environment and time
- Enable Complementary Science via public access

Survey Co-PIs: Buell T. Jannuzi and Arjun Dey

Requires :





- Large Area
- Deep
- Multi-wavelength
- Portion observable North & South
- X-ray and Far-IR not precluded

The Choices We Made:

- Two Fields, total 18 °
- Optical and IR imaging
- Existing VLA FIRST Data
- Low Neutral Column
- Low IR Cirrus
- Free of Very Bright Stars

Status: All Data Obtained. Data Reduction to be Completed End 2004
Released Data Available through NOAO Science Archive

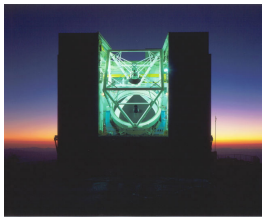
Extensive Follow-up By Community in Progess or Completed

Chandra

Galex

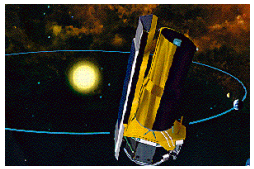
Gemini Observatory

MMT+Hectospec



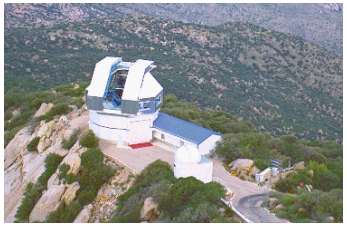
VLA

Spitzer



W. M. Keck Observatory

WIYN

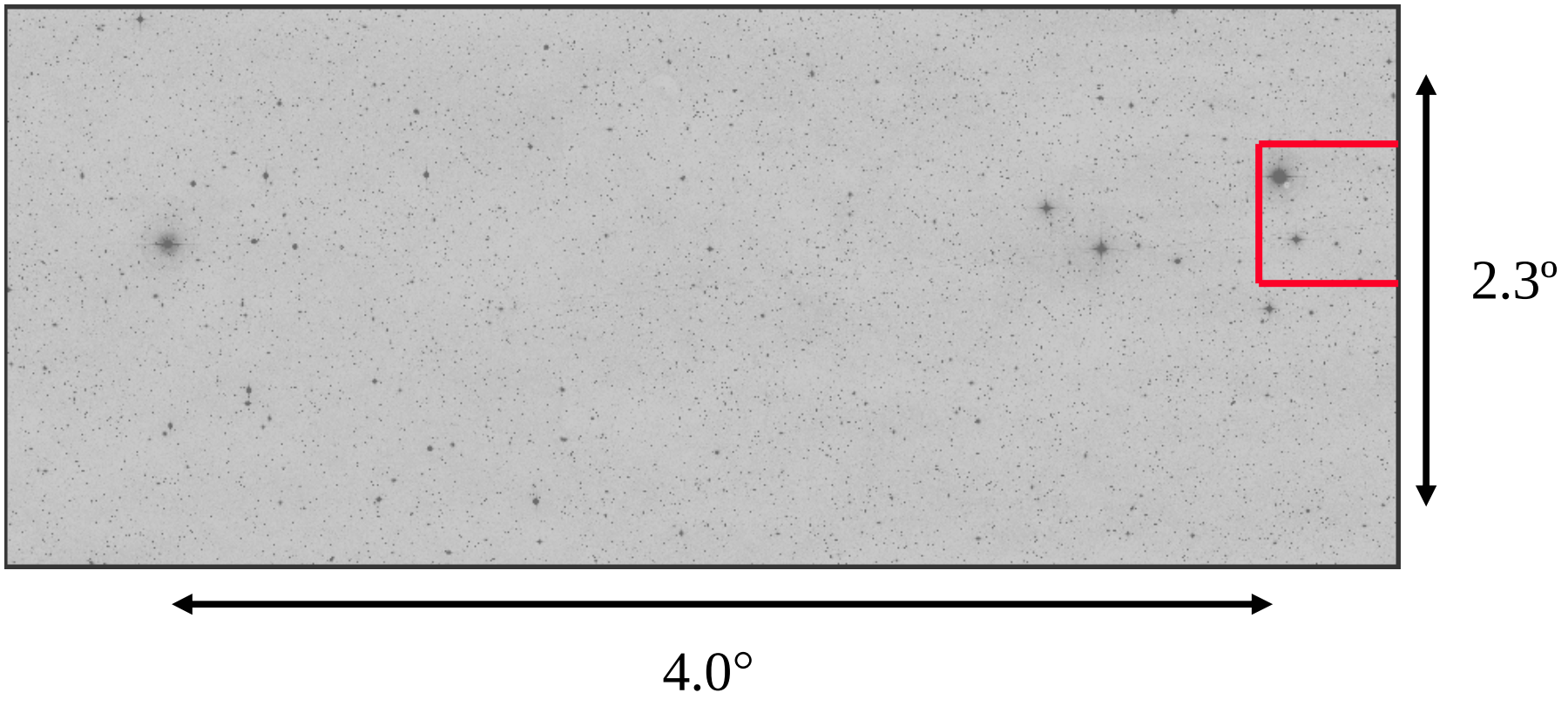


Westerbork

Planned Final Survey Depth by Band

	5-σ Detection Limit in 2 arcsecond Aperture		*1-σ Surface Brightness Limit per square arcsecond*	
Band	**AB mag.**	**Vega mag.**	**AB mag.**	**Vega mag.**
B_W	26.6	26.6	29.0	29.0
R	26.0	25.8	28.4	28.2
I	26.0	25.5	28.4	27.9
J	21.0	20.2	23.4	22.6
H	21.0	19.6	23.4	22.0
K	21.4	19.5	23.8	21.9

NDWFS Cetus Field

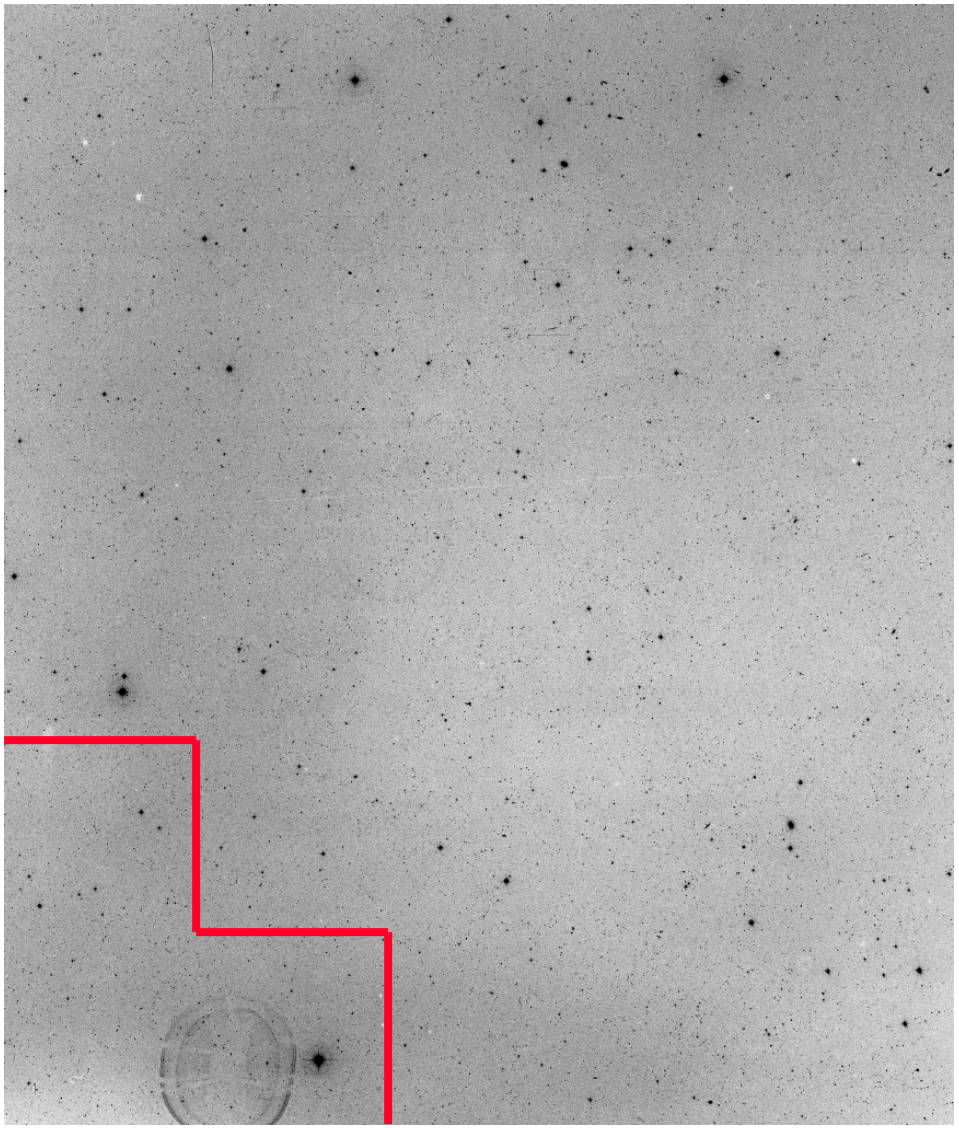


RA = 02:07:19.2 DEC = –04:44:08.2 (B1950)

RA = 02:10:00.0 DEC = –04:30:00.0 (J 2000)

Galactic Coordinates *l* = 166.0 *b* = – 60.6

NDWFS Boötes Field



RA = 14:30:00.0
DEC = +34:30:00.0
(B1950)

RA = 14:32:05.7
DEC = +34:16:47.5
(J2000)

Galactic Coordinates
l **= 57.4** ***b*** **= + 67.3**

Optical Observations are being made with NOAO's MOSAIC Cameras

Mosaic-I on KPNO Mayall 4m
Project Scientists: Taft Armandroff, George Jacoby, Todd Boroson

Engineering: Rich Reed, David Vaughnn, Roger Smith, Gary Muller

Software: Steve Heathcote, DougTody, Frank Valdes, Dave Mills and the NOAO IRAF Group

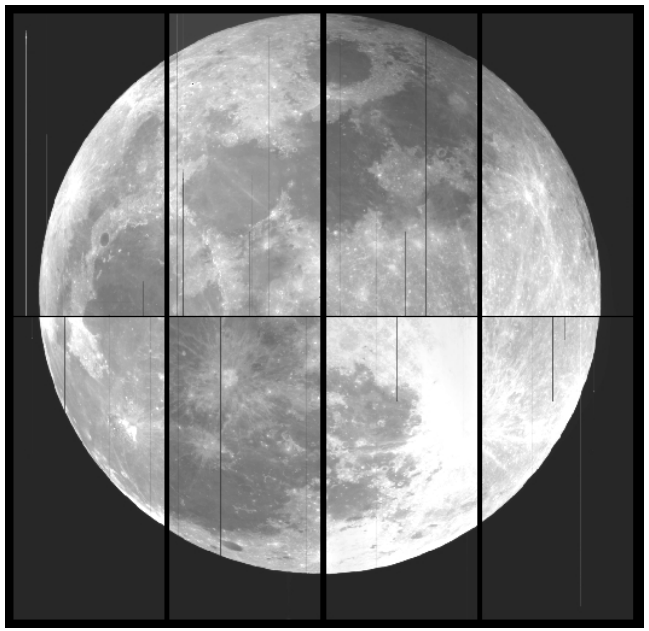


Image: Boroson and Jacoby

Mosaic-II on CTIO Blanco 4m
Project Scientists: Taft Armandroff, Robert Schommer, Alistair Walker

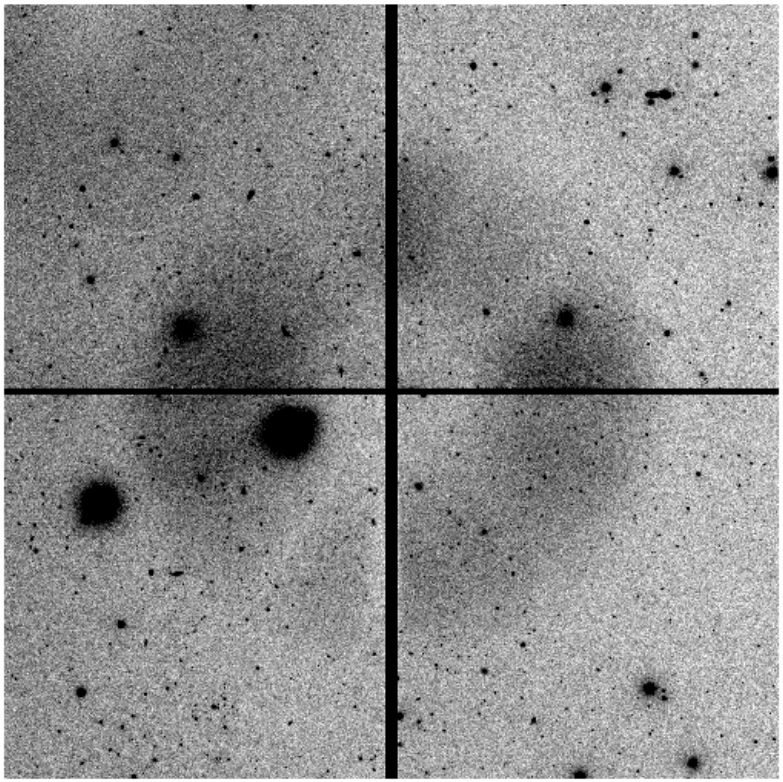
Engineering: Rich Reed, David Vaughnn, Roger Smith, Gary Muller, Gabriel Perez

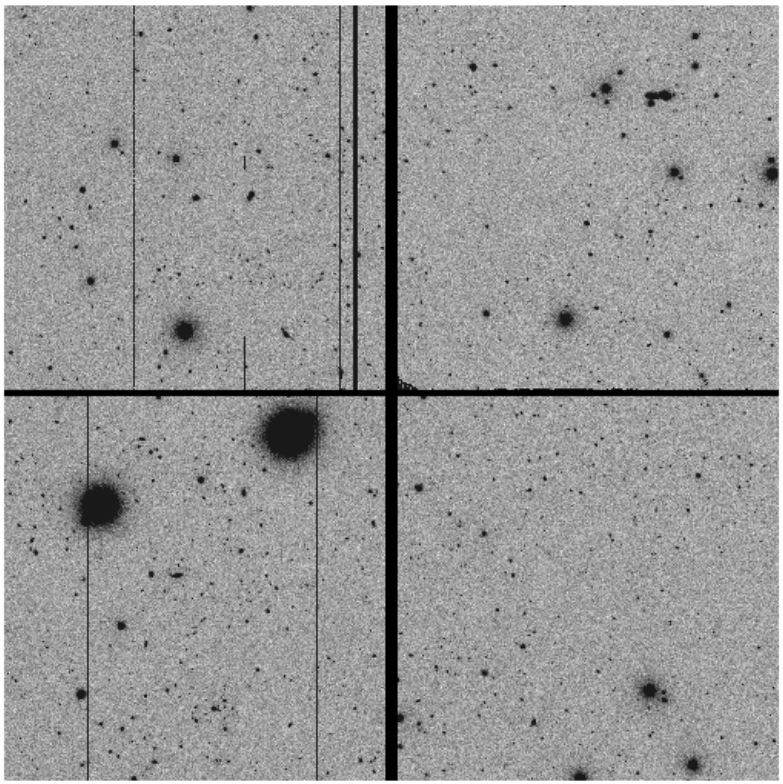
Software: Steve Heathcote, Doug Tody, Mike Fitzpatrick, and the NOAO IRAF Group

FOV 36´ x 36´
0.258´´ per 15 micron pixel
8 x 2048 x 4096 SITe CCDs
Read-noise ~ 6 electrons
Read-out Time 2:30

Product of New MSCRED

In latest version of mscred by Frank Valdes
Tested by Jenna Claver
Faster Pupil Ghost & Fringe Subtraction, Better FF





6% of Survey 1.1x1.1º

http://www.noao.edu/noao/noaodeep/

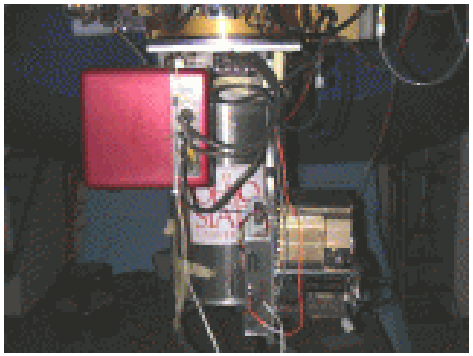
Buell Jannuzi


Buell Jannuzi


Buell Jannuzi

IR Observations :

ONIS: Ohio State University-NOAO Infrared Imaging Spectrograph



Darren DePoy PI (was supported at NOAO by Merrill and Joyce)
Detector InSb 512 x 1024
FOV 2.9′x 5.8′, 0.34′′ per 27 micron pixel
Filters J, H, K Still in use at MDM

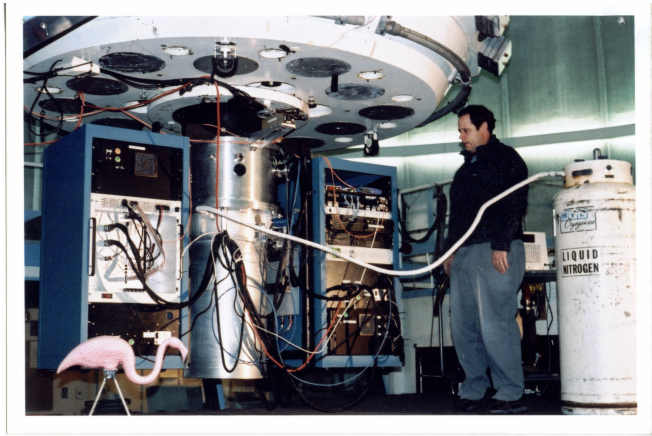
SQIID: Simultaneous Quad Infrared Imaging Device

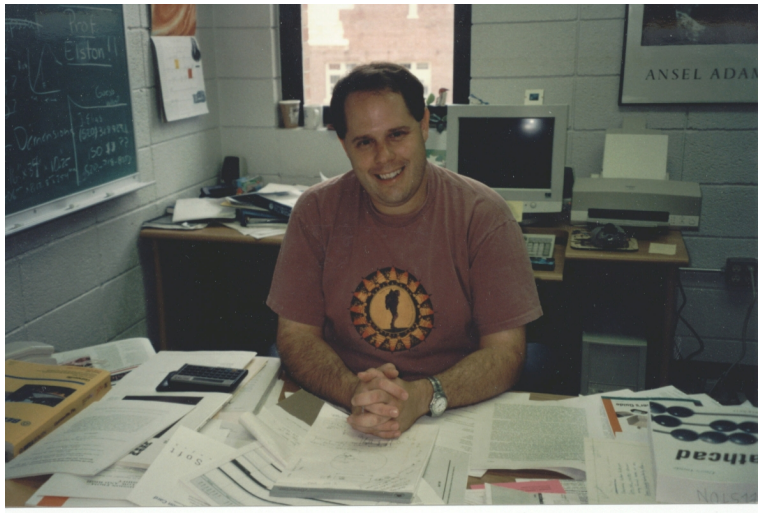
Mike Merrill, Andy Peters, Nick Buchholz, Paul Schmitt, & Duane Miller
Detectors 512 x 512 quadrants of four partially working InSb arrays
FOV, four 5.8′ diameter circular fields with 0.68′′ per pixel,
Simultaneously images in J, H, K, and L.

FLAMINGOS: Florida Near-IR Multi-object Imaging Near-IR Grism Observational Spectrometer

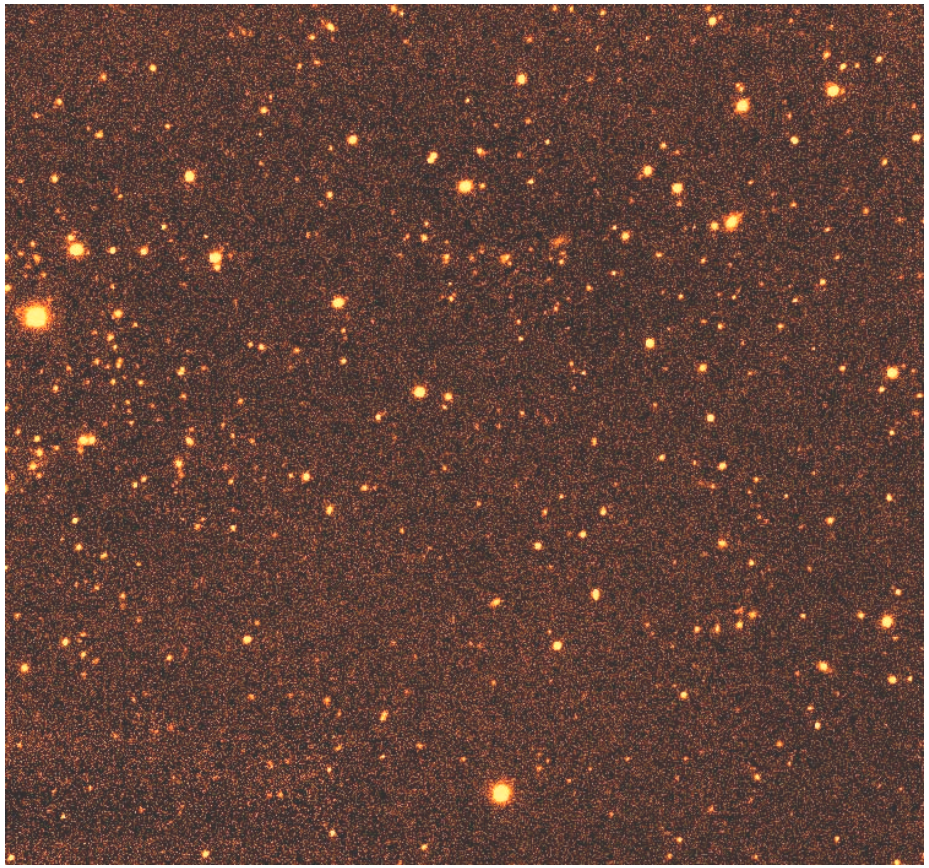
Richard Elston PI, Available at KPNO 4m, 2.1m, and previously at Gemini-South and MMT
FOV 10′, 20′, and 2.5′ We used Ks and J
Thank you Nick Raines and rest of Team Flamingos

FLAMINGOS: Florida Near-IR Multi-object Imaging
Near-IR Grism Observational Spectrometer





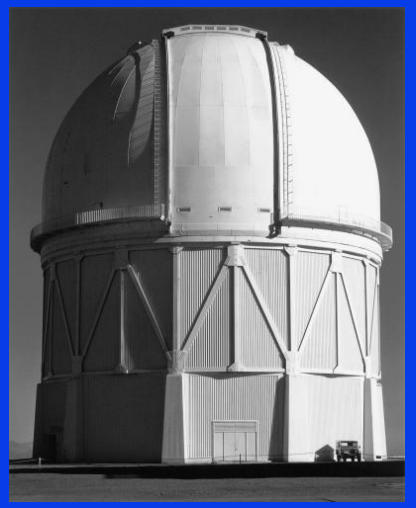
Professor Richard J. Elston
1960–2004



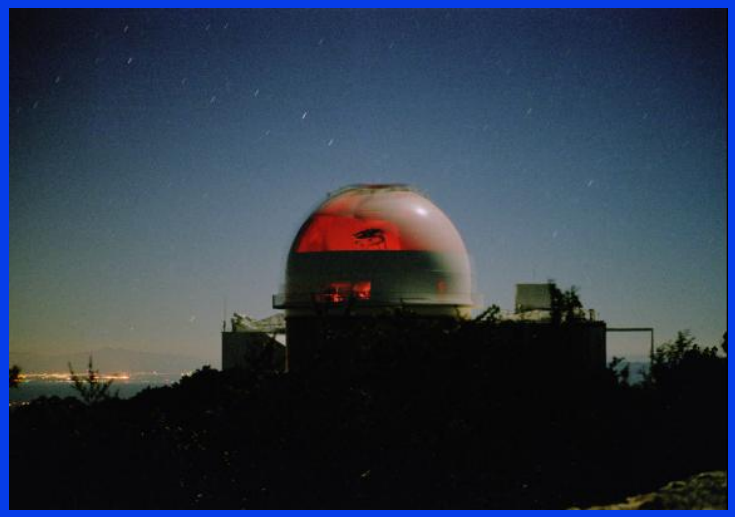
Thank you KPNO, CTIO, NOAO, and TACs

86 Nights

54 sub-fields
Each Observed
Bw 140 minutes
R 100 minutes
I 200 minutes



41 Nights



249 Nights
(136+96+17)

J, H, K, and Ks

Status of Data Reduction:

Optical: 10% Released

60% Reduced through stacked sub-fields

+20% Currently being stacked + 20% TBD

Boötes Field completely reduced through initial catalogues

(thank you Alyson Ford and Lissa Miller)

Will Release Images and Catalogues

no later than October 22, 2004

Goal to release additional data products at the same time.

Cetus Field in progress, goal to complete by December 2004

IR: 100% ONIS reduced through astrometry & initial photometry

100% (*all* Boötes ONIS data) through to final stacks

Final Photometry Comparison to 2MASS

(Thank you Erin Ryan)

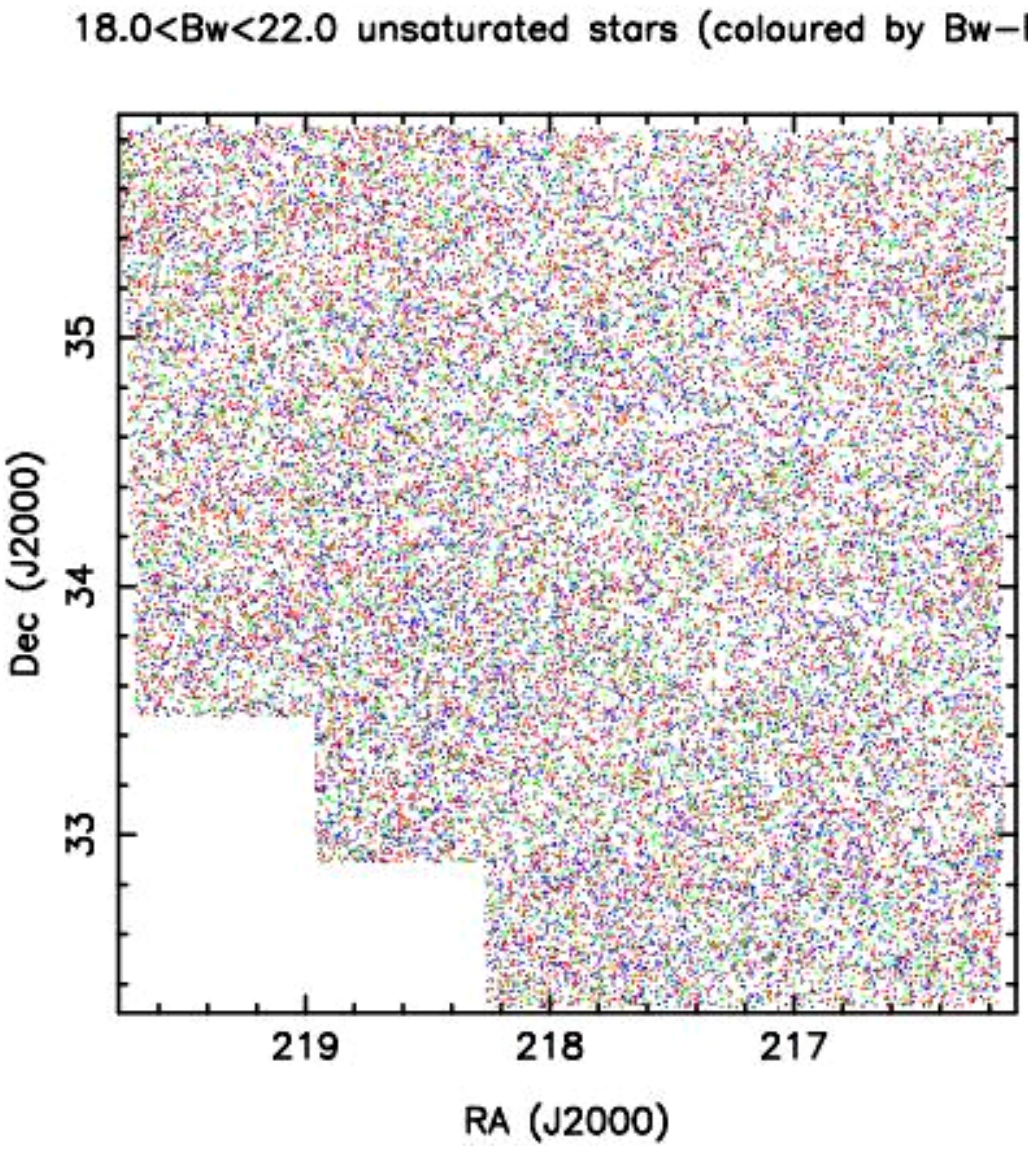
0% SQIID data – TBD (about 1/3 of data set)

100% Flamingos data – Reduced through Stacks

(about 1/3 of total data set)

(Thank you Emma Hogan)

Boötes Field data to be released by October 22, 2004



Initial Catalogues Generated

Archive:
Going Through NOAO Science Archive

Optical and IR Boötes images and catalogues available by October 22, 2004

Data Products:

Available Via Archive

Fully Reduced Optical Images (36´x36´) 8.5Kx8.5K,
Stacked by Sub-field (54 subfields; 27 in Boötes)

Fully Reduced Matching K-band IR Images

Catalogues for all four bands

Matched/Merged Catalogues Generated for Publications
(and ancillary data products from other bands)

Redshift Clearing House

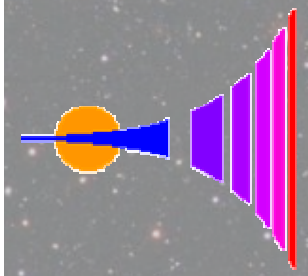
Descriptive Data Papers: Jannuzi et al. 2004; Dey et al. 2004

Eventually Available

Reduced through Projection Individual Optical Images

Reduced through Flat Fielding Individual Optical Images

Calibration Frames



The NOAO Deep Wide-Field Survey

Buell T. Jannuzi & Arjun Dey Co-PIs

Core Team: Michael Brown & Glenn Tiede

Data Reduction Specialists: Alyson Ford and Lissa Miller

Survey Contributors and Co-Investigators Include: Taft Armandroff, Ed Ajhar, Bob Blum, Todd Boroson, Kate Brand, Chuck Claver, Jenna Claver, Lindsey Davis, Ian Dell'Antonio, Mark Dickinson, Richard Elston, Richard Green, Pat Hall, Emma Hogan, George Jacoby, Dick Joyce, Tod Lauer, Roger Lynds, Sangeeta Malhotra, Mike Merrill, Joan Najita, Earl O'Neil, Marc Postman, Ron Probst, Travis Rector, James Rhoads, Robert Schommer, Nigel Sharp, Malcolm Smith, Paul S. Smith, Frank Valdes, Jeff Valenti, Ted von Hippel, Alistair Walker, & Sidney Wolff

Students Involved –current or past: Valerie Mikles, Erin Ryan, Chris Greer, Daniel Wik, Felicia Tam, Michael Cooper, and Bryan Henderson

Thank you Jim DeVeny.
We will miss you.

Over 30 years of service to Kitt Peak National Observatory. Jim passed away this past Sunday.