DARK ENERGY
SURVEY

Results from the April CTIO-1m DECam 2k x 2k Observing Run

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Sahar Allam
Huan Lin

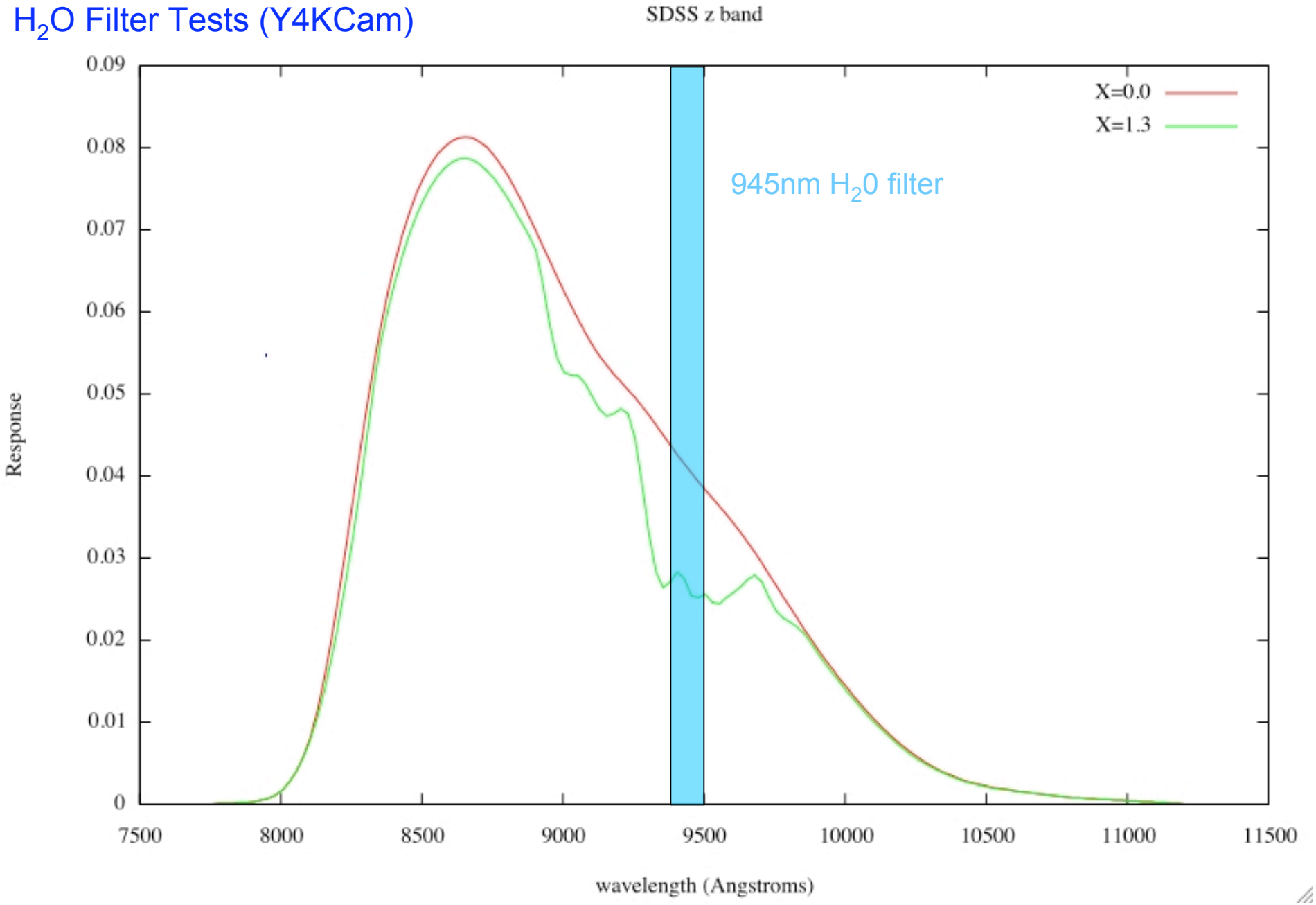
DARK ENERGY SURVEY

April Observing Run: Summary

Night	Date (UT)	Directory†	CCD	Conditions
night 1	10 April 2008	n1	DECam 2kx2k	clear
night 2	11 April 2008	----	DECam 2kx2k	no observations
night 3	12 April 2008	----	DECam 2kx2k	no observations
night 4	13 April 2008	*n3*	DECam 2kx2k	started with cirrus, then clear
night 5	14 April 2008	*n4*	DECam 2kx2k	clear
night 6	15 April 2008	*n5*	Y4KCam	clear
night 7	16 April 2008	*n6*	Y4KCam	cirrussy until after midnight, then clear

†Data are on des03.fnal.gov:/data/des03.a/data/dtucker/Data/DES/DECam2kx2k/

H_2O Filter Tests (Y4KCam)



Wavelength (Angstroms)

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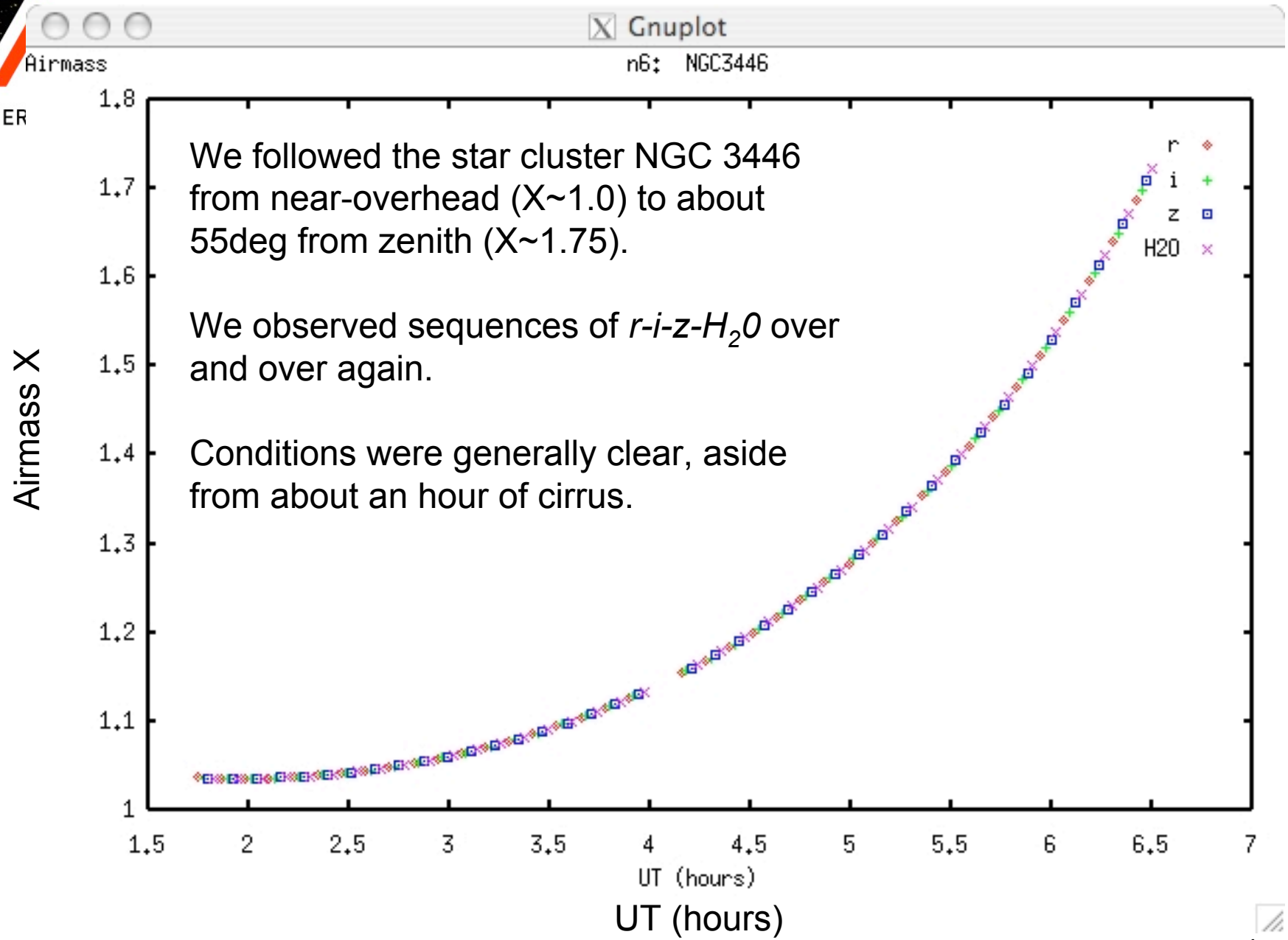
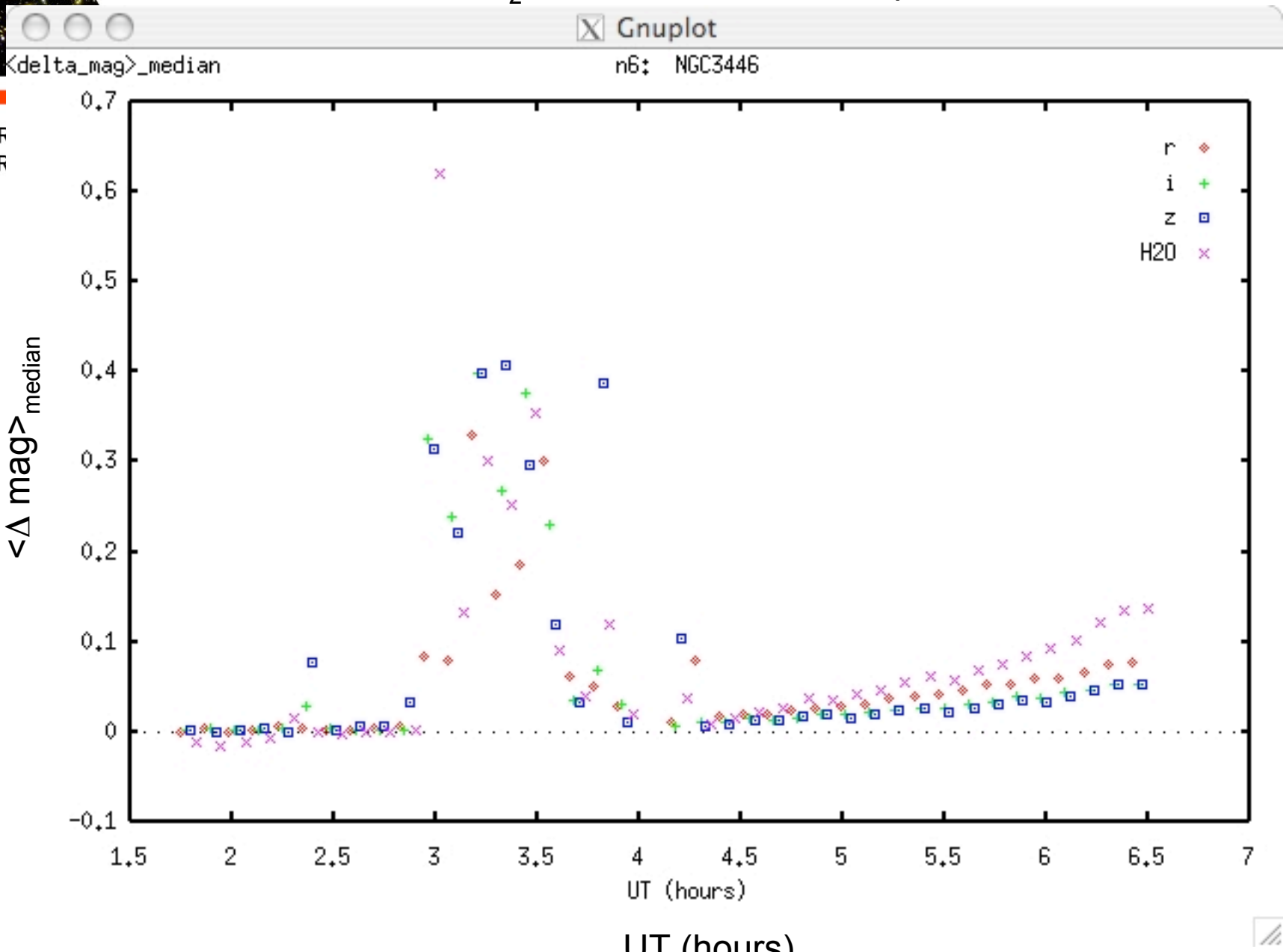
H_2O Filter Test 3: 2008 April 16 UT



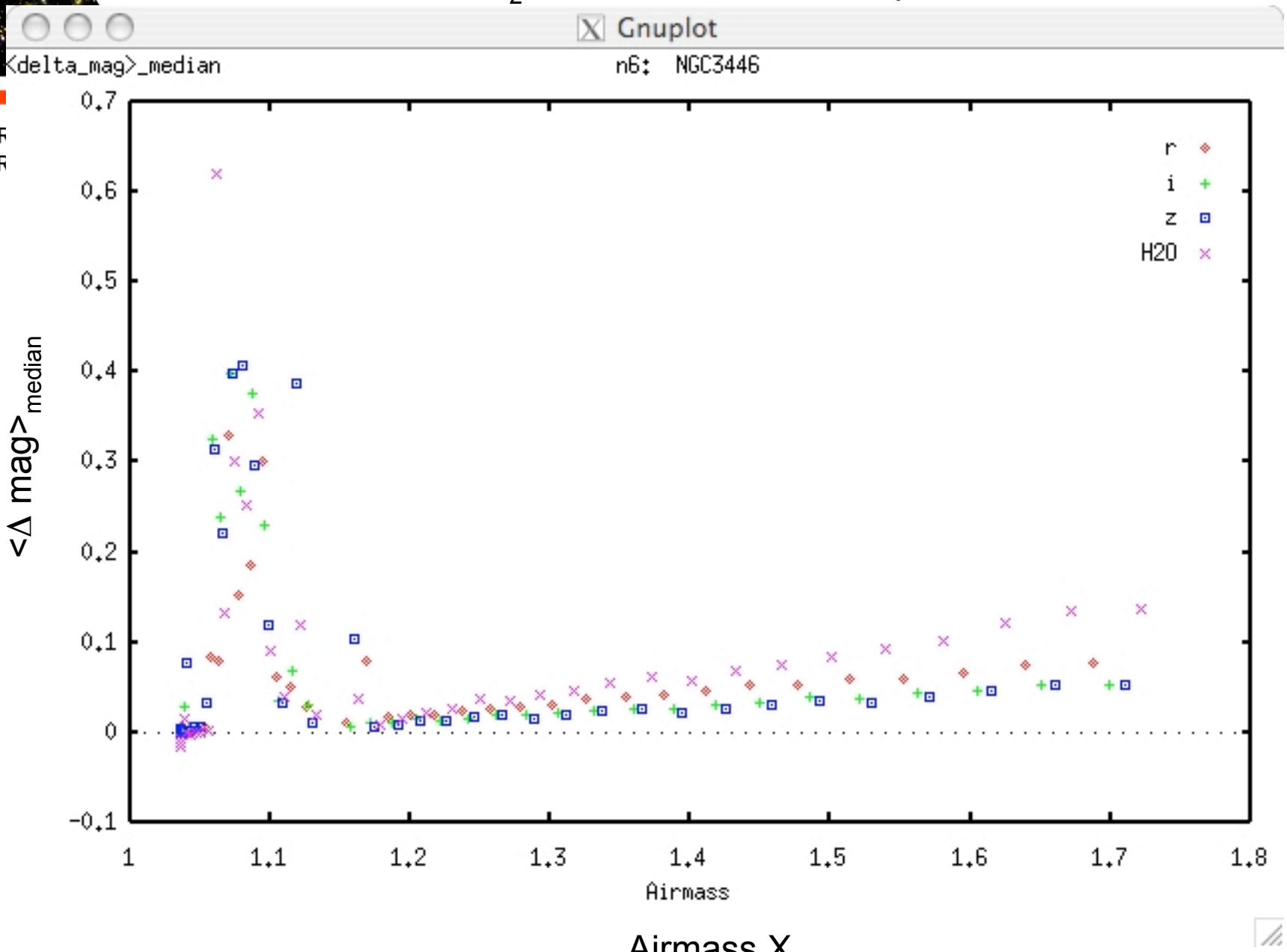
H_2O Filter Test 3: 2008 April 16 UT



<Δ mag>$_{median}$

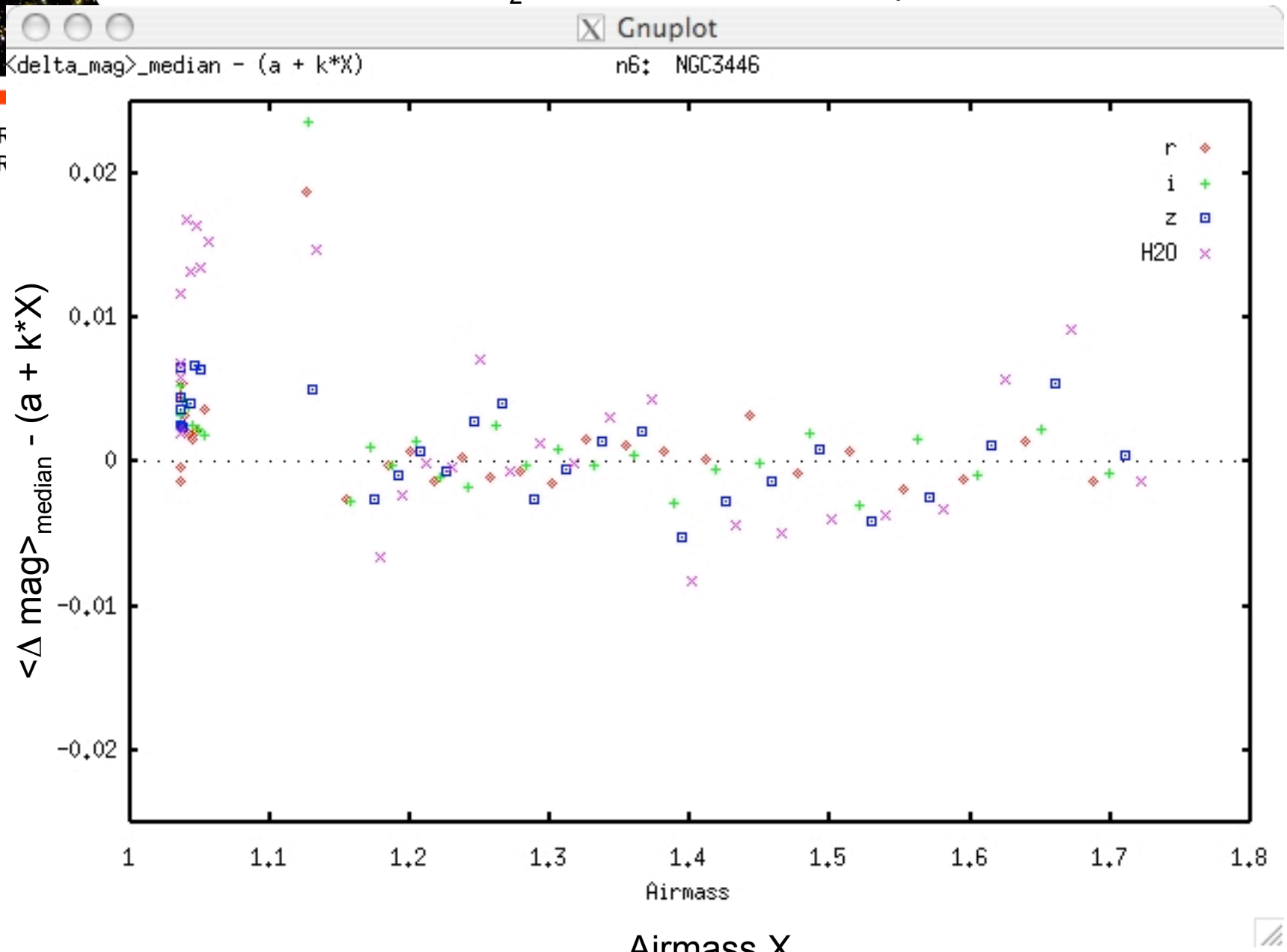
UT (hours)

H_2O Filter Test 3: 2008 April 16 UT



Airmass X

H_2O Filter Test 3: 2008 April 16 UT



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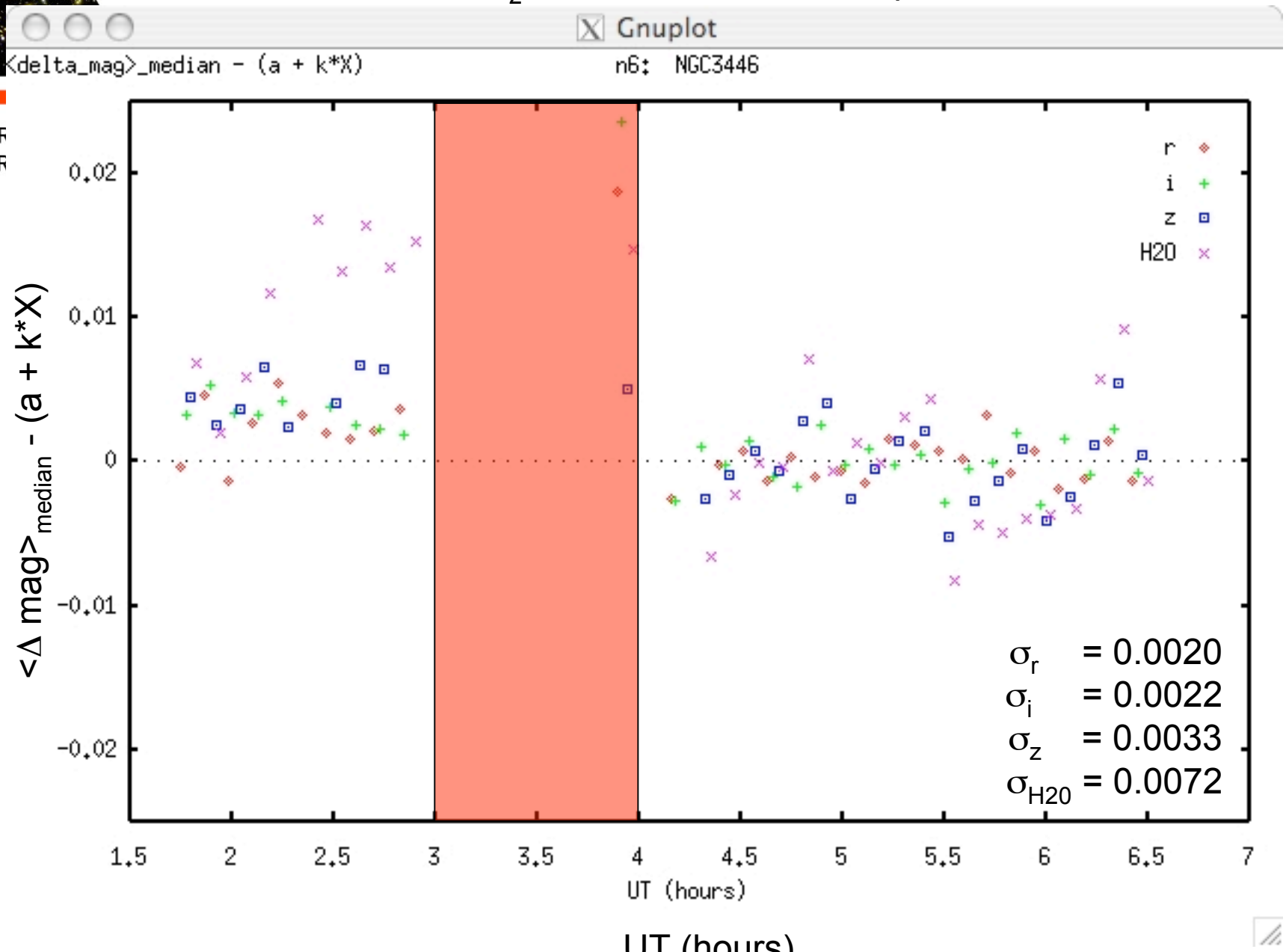
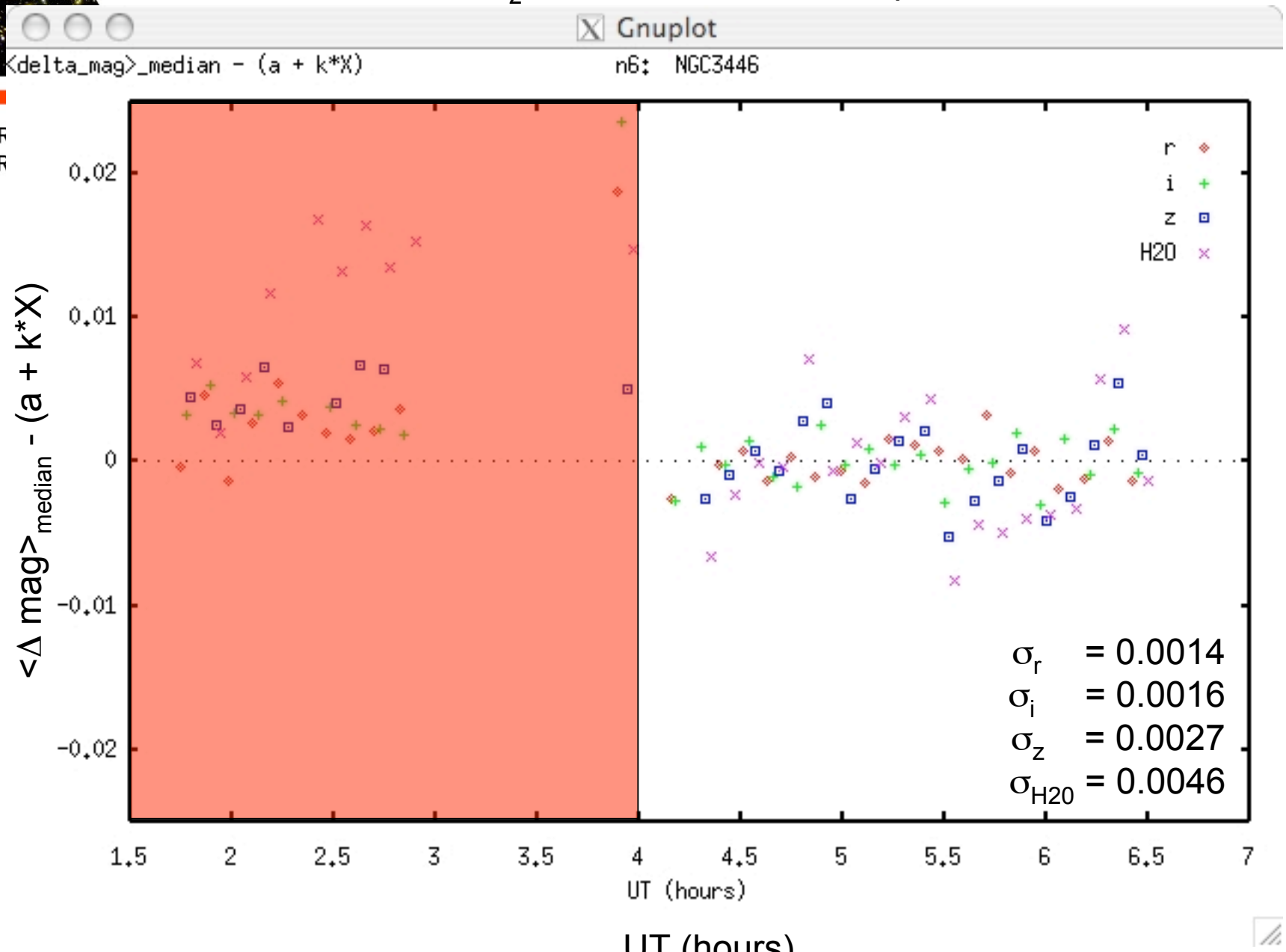


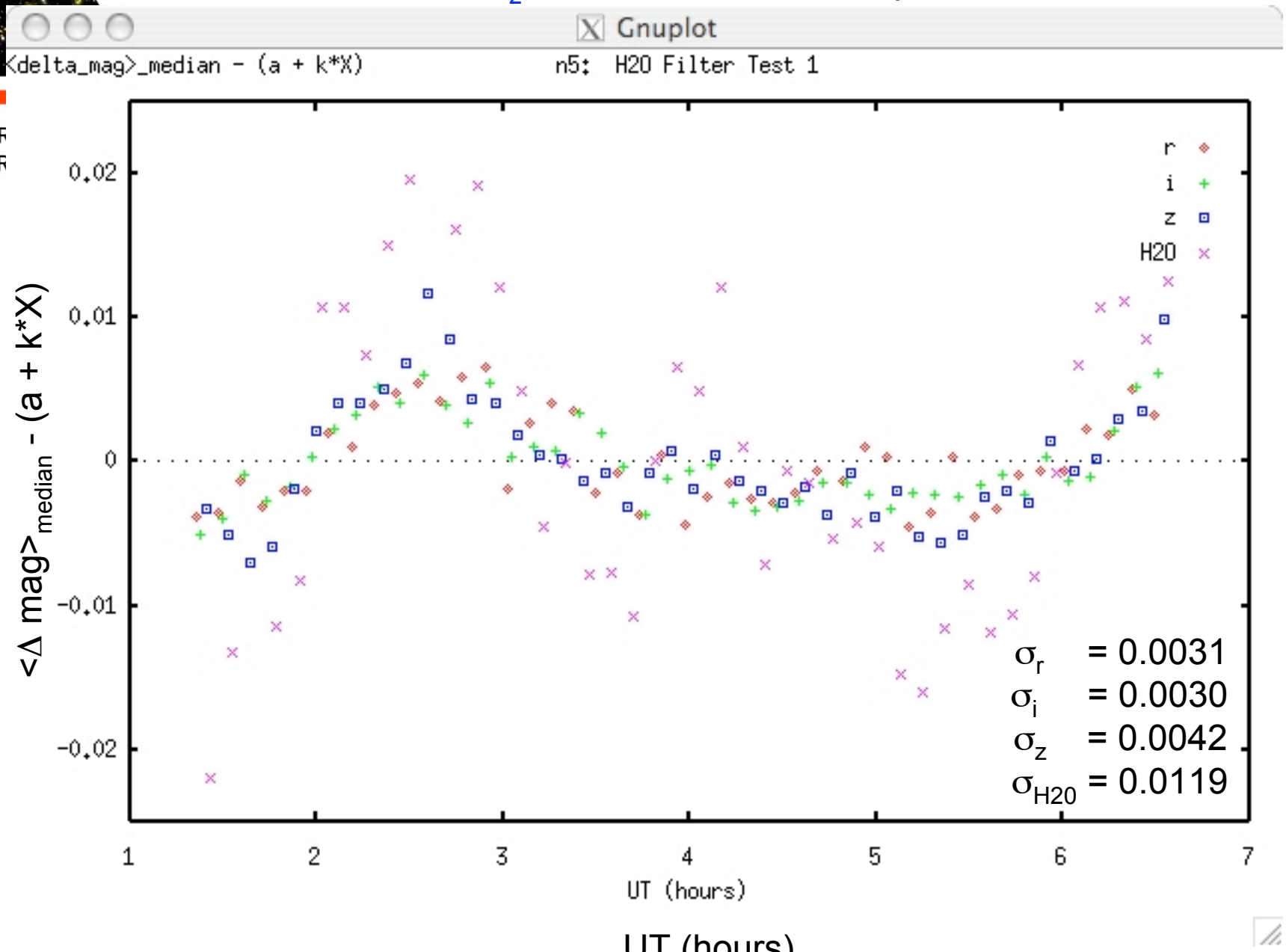
UT (hours)

H_2O Filter Test 3: 2008 April 16 UT



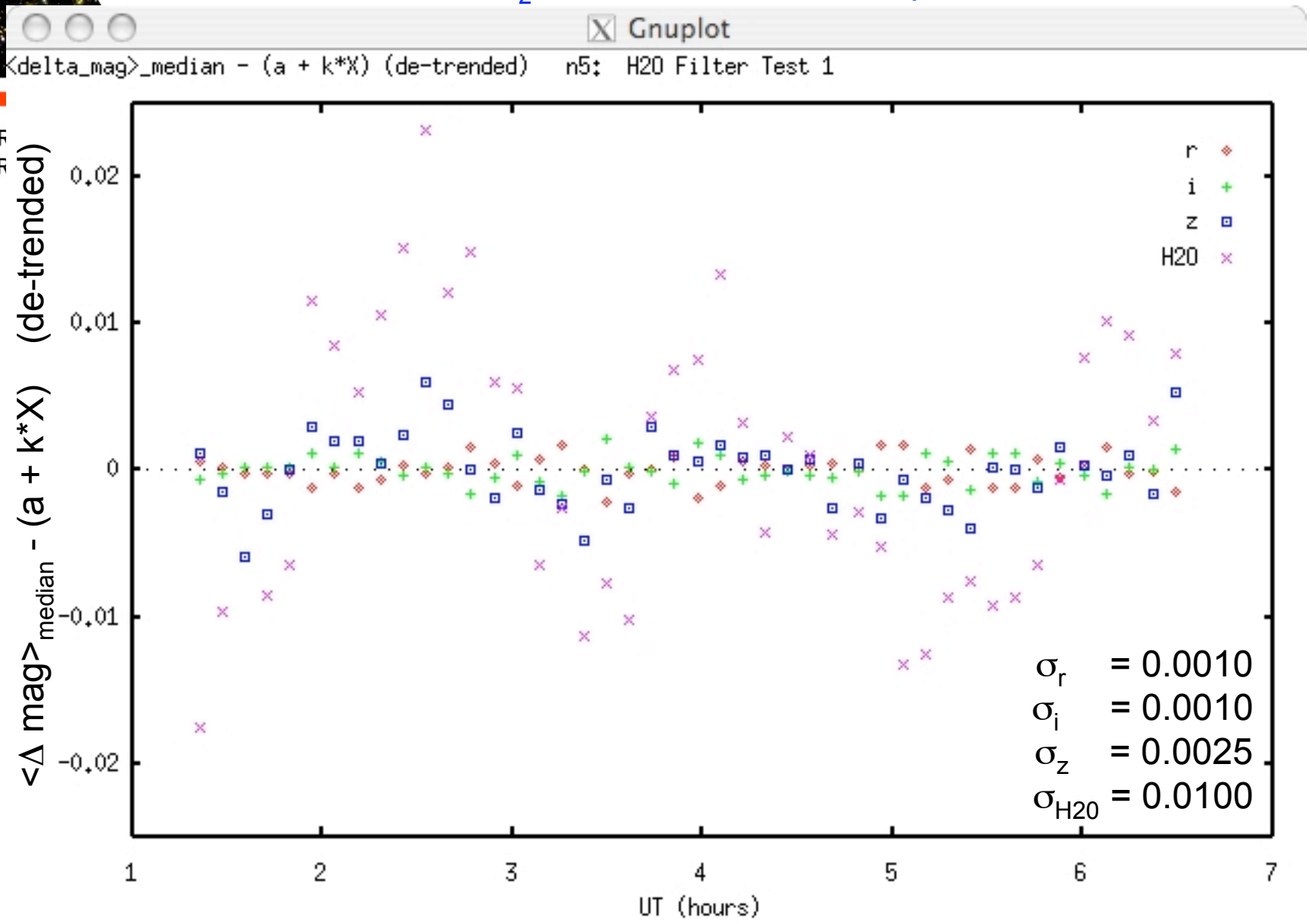
UT (hours)

H_2O Filter Test 1: 2008 April 15 UT



UT (hours)

H_2O Filter Test 1: 2008 April 15 UT



Via suggestion from David Burke

UT (hours)

Astrometry with DECam Chip

(Night 4, NGC 5617)

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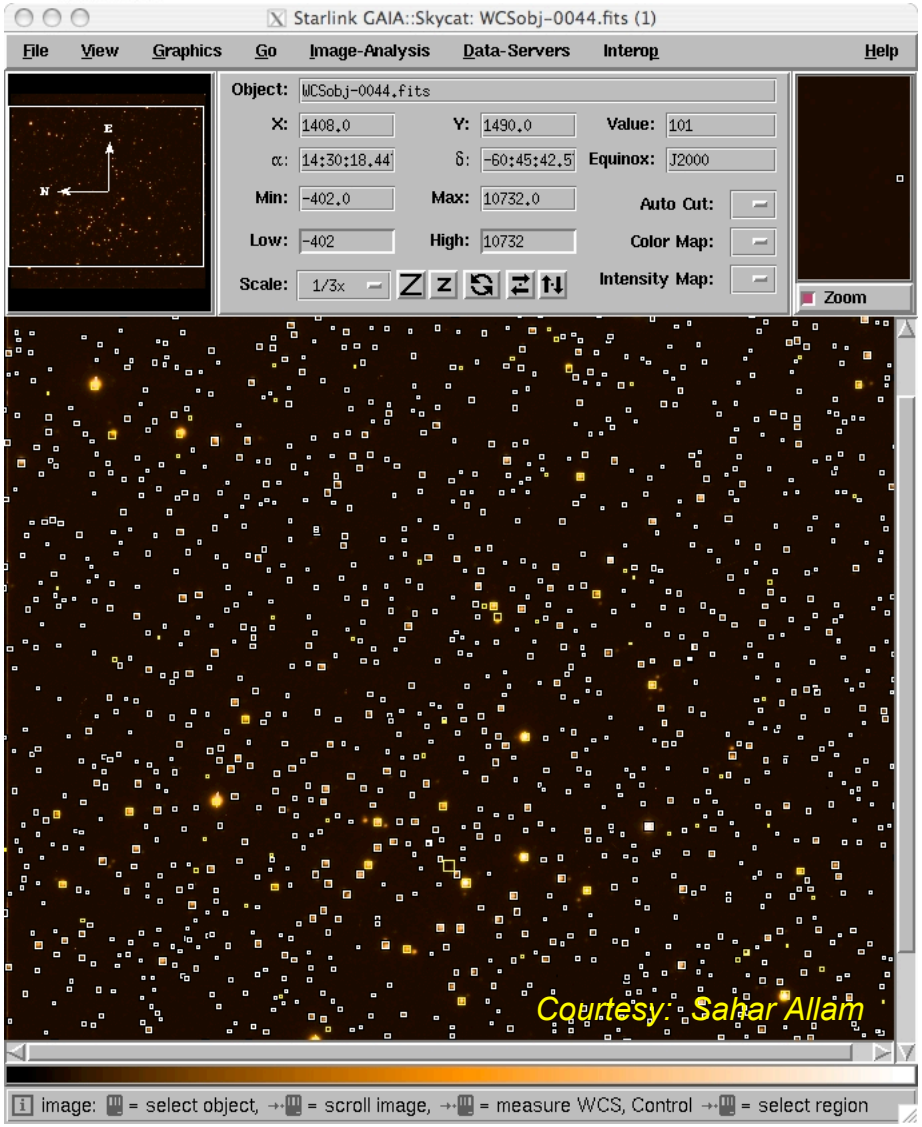

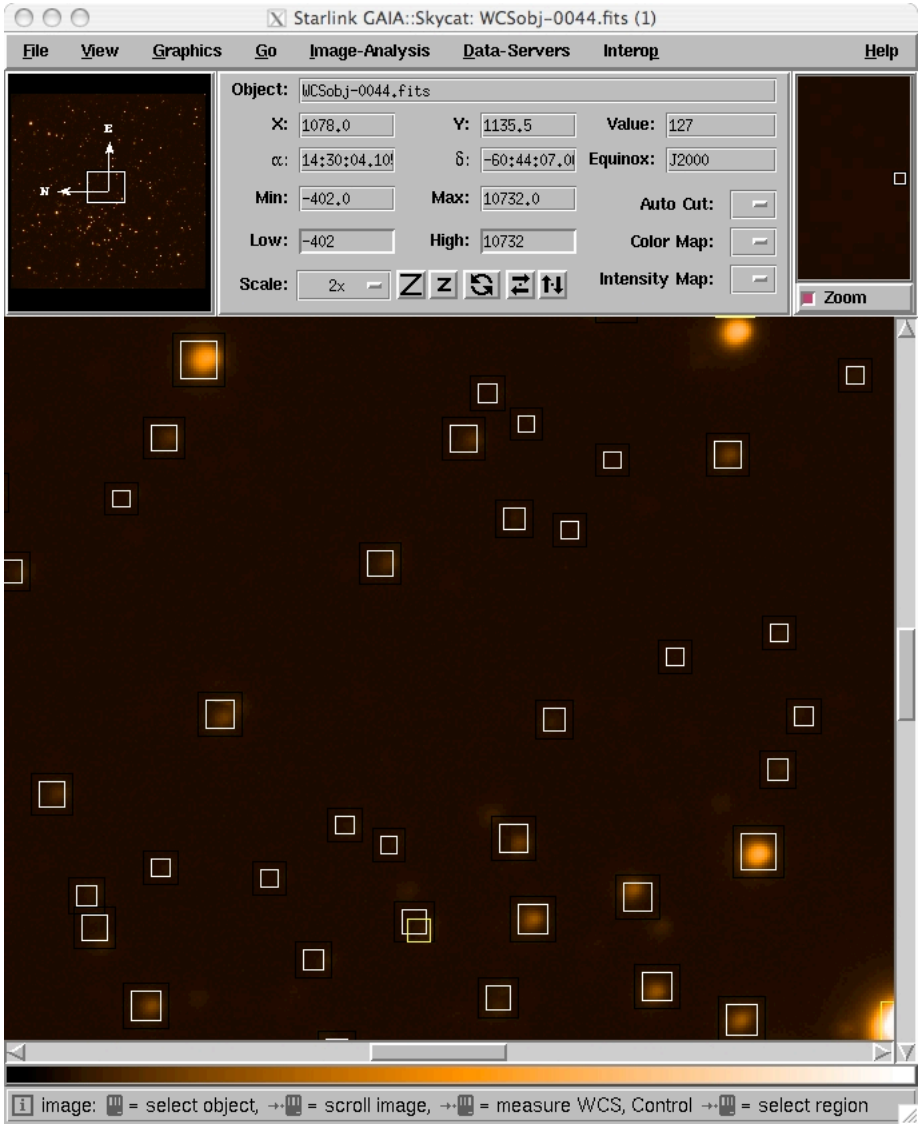

Astrometry with DECam Chip
(Night 4, NGC 5617)

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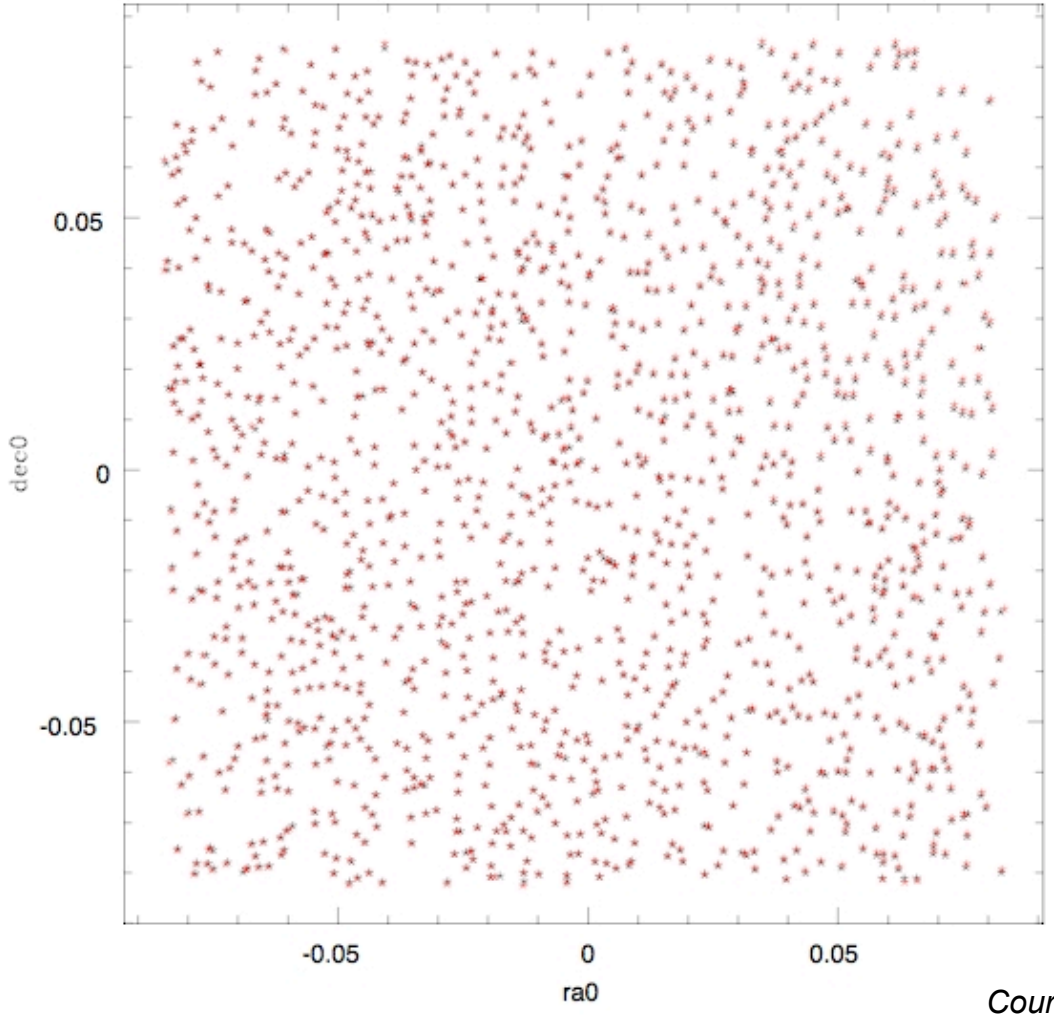

Courtesy: Sahar Allam

Photometry with DECam Chip?
(Night 4, NGC 5617)

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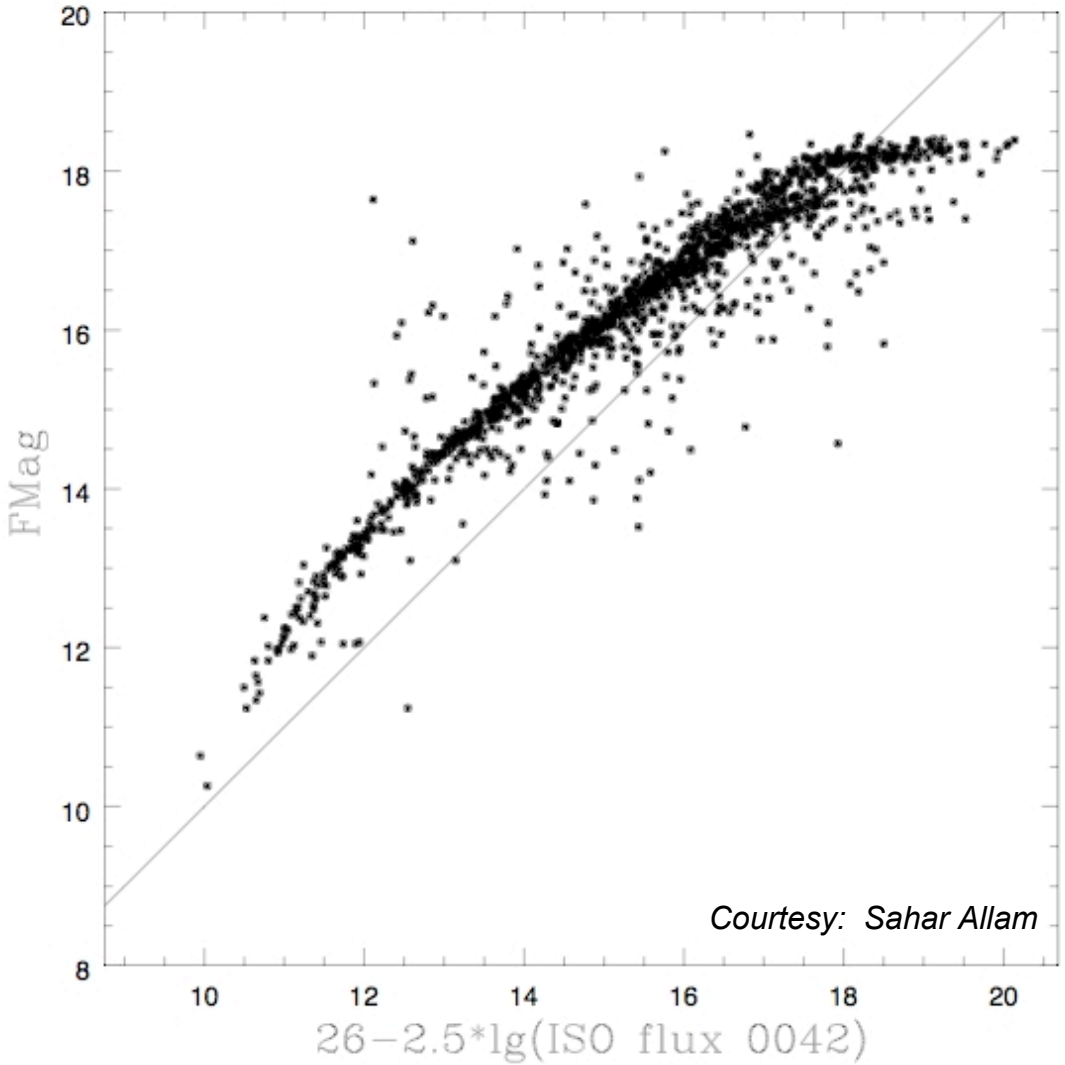

- Problems with the electronics
- E6 standard star field observed on same night yielded bizarre values for system throughput (2%-10%, depending on brightness of standard star)
- Here is a plot of photographic plate *F* magnitudes (red) against uncalibrated DECam chip *r* band magnitudes for GSC-2 stars within the NGC 5617 field
  - Broadly “OK” (bright stars are bright, faint stars are faint)
  - Slope < 1
  - Generally best not to do photometric calibration with GSC-2 stars, but definitely useful for getting a rough idea of what is going on

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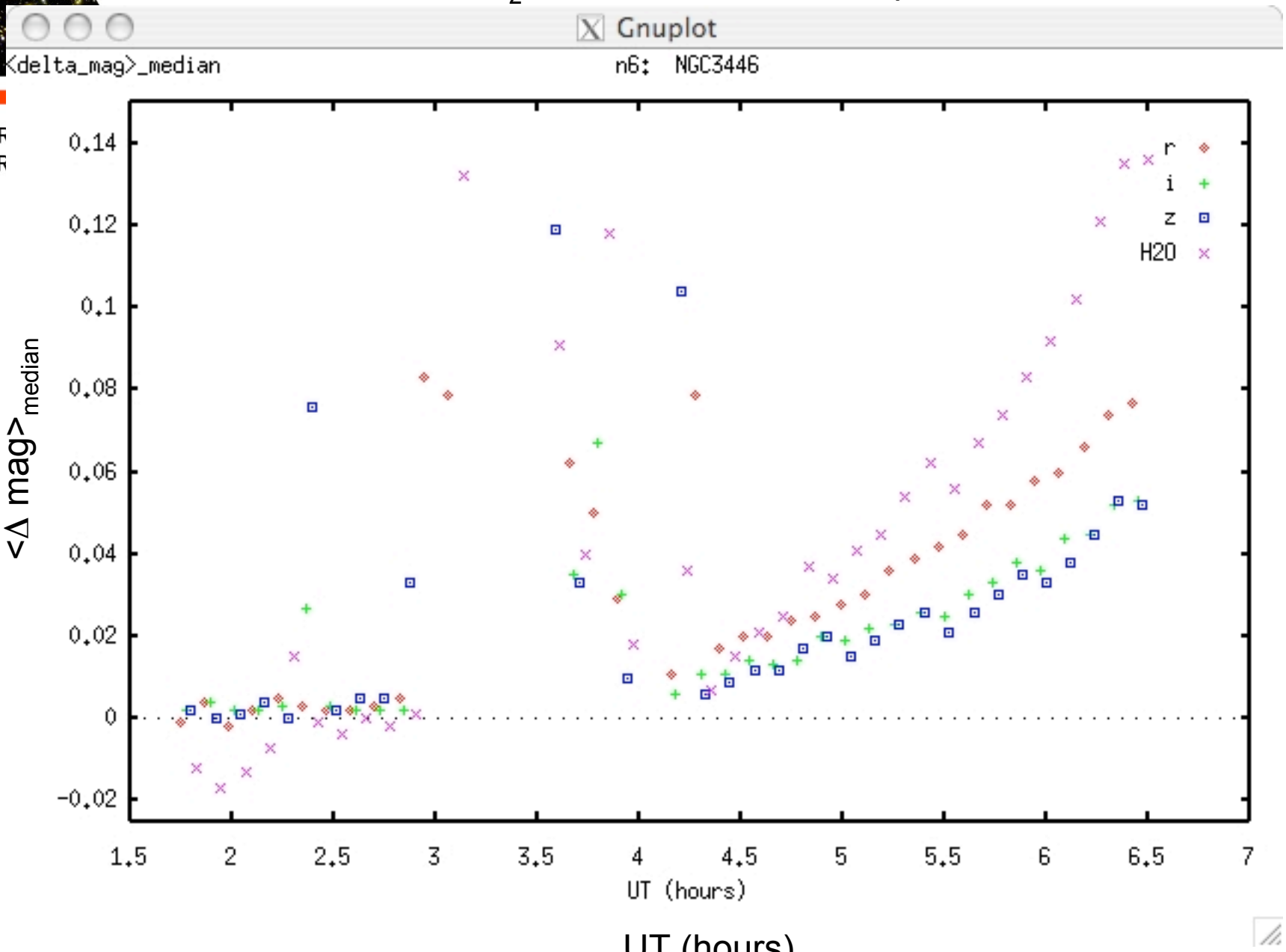
Extra Slides

H_2O Filter Test 3: 2008 April 16 UT



UT (hours)

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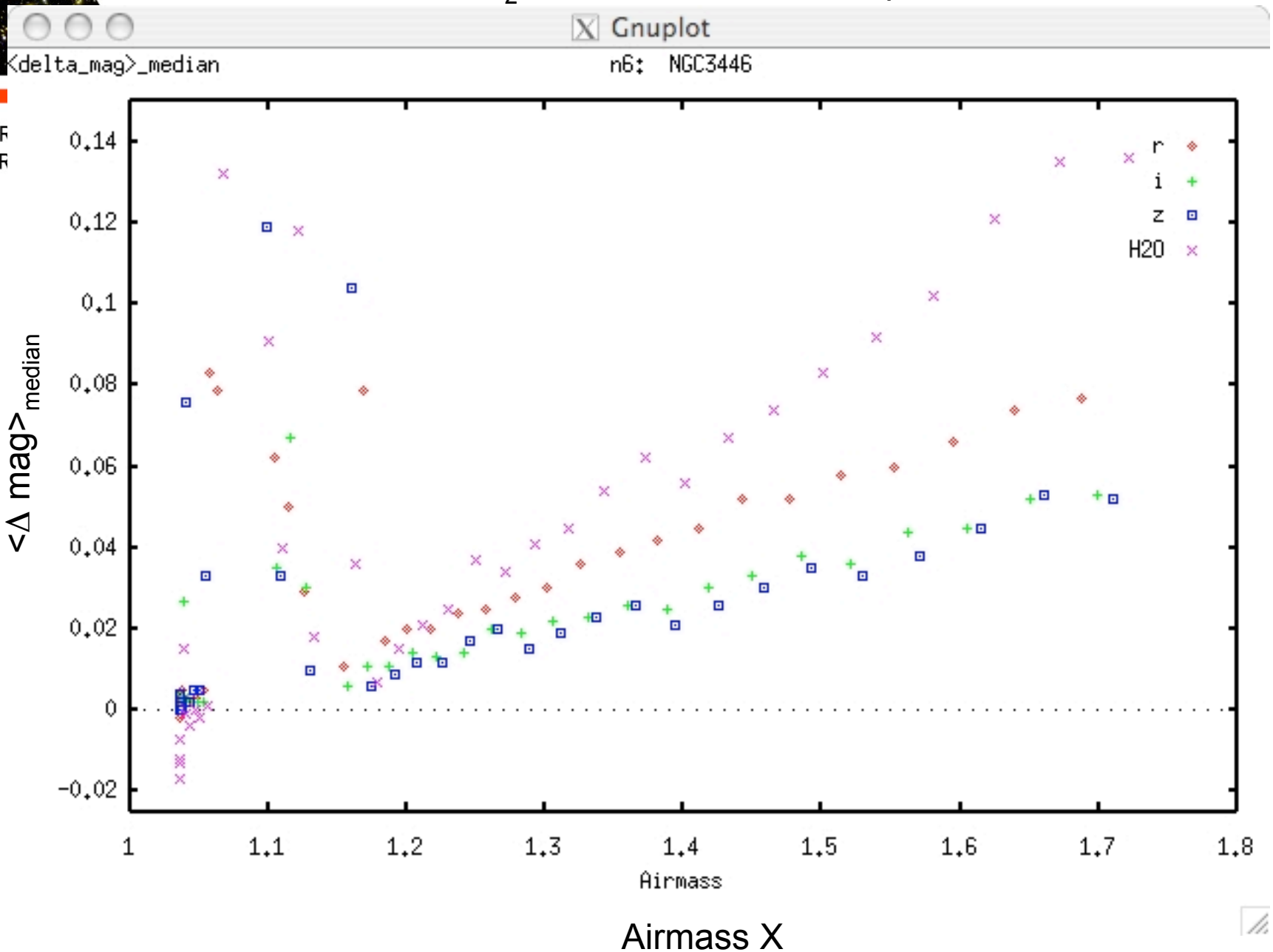

Airmass X

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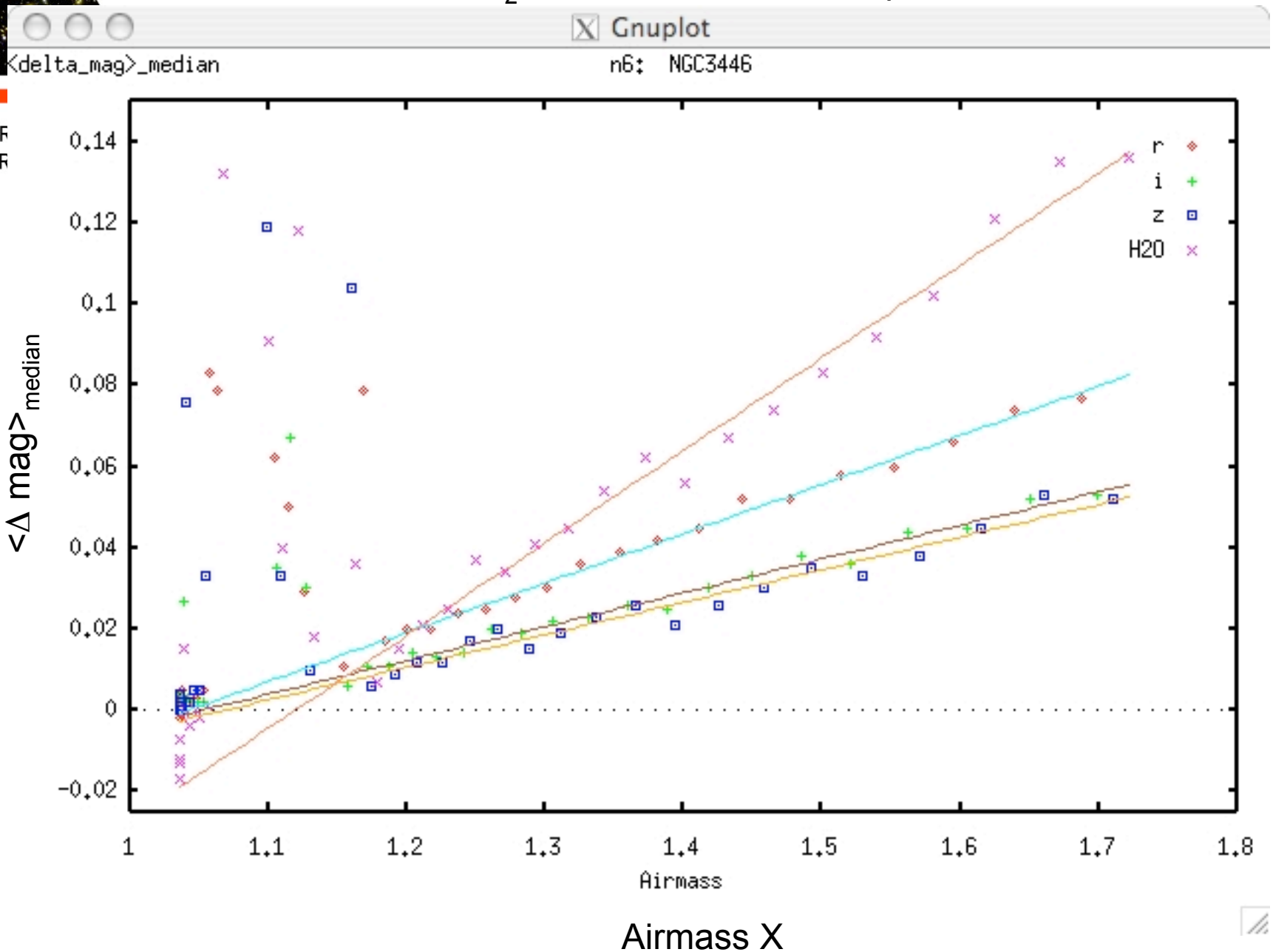

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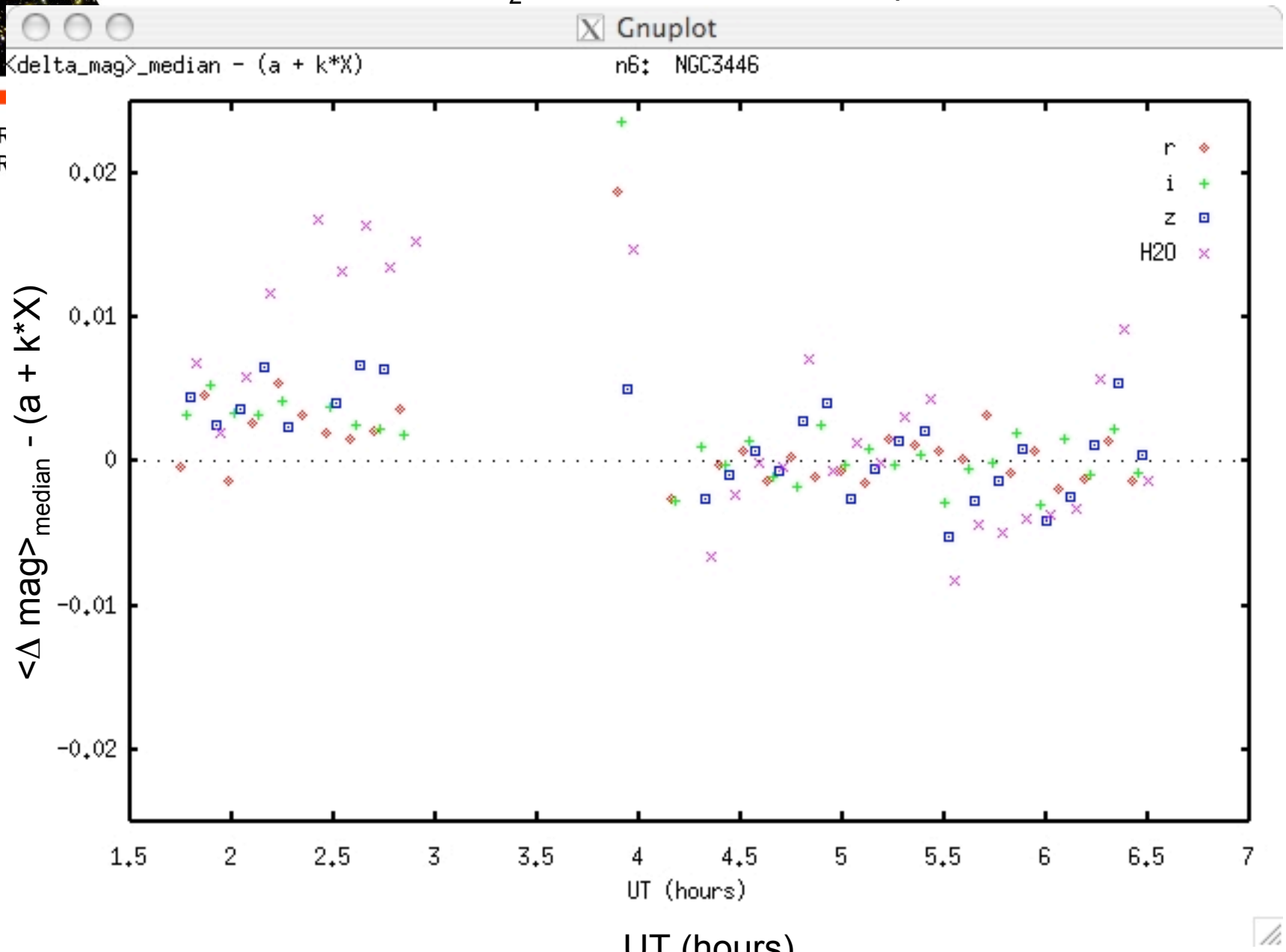

UT (hours)

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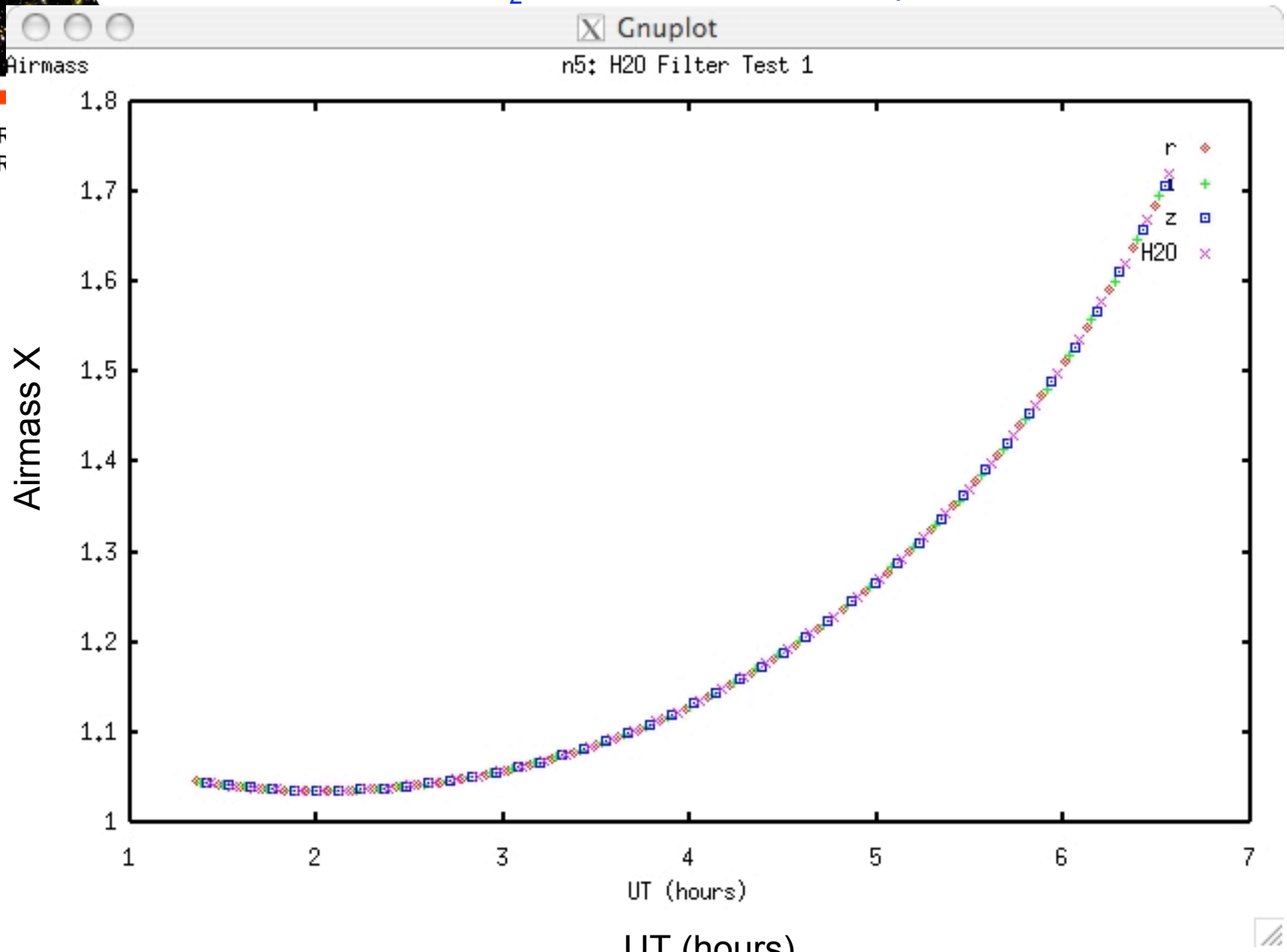

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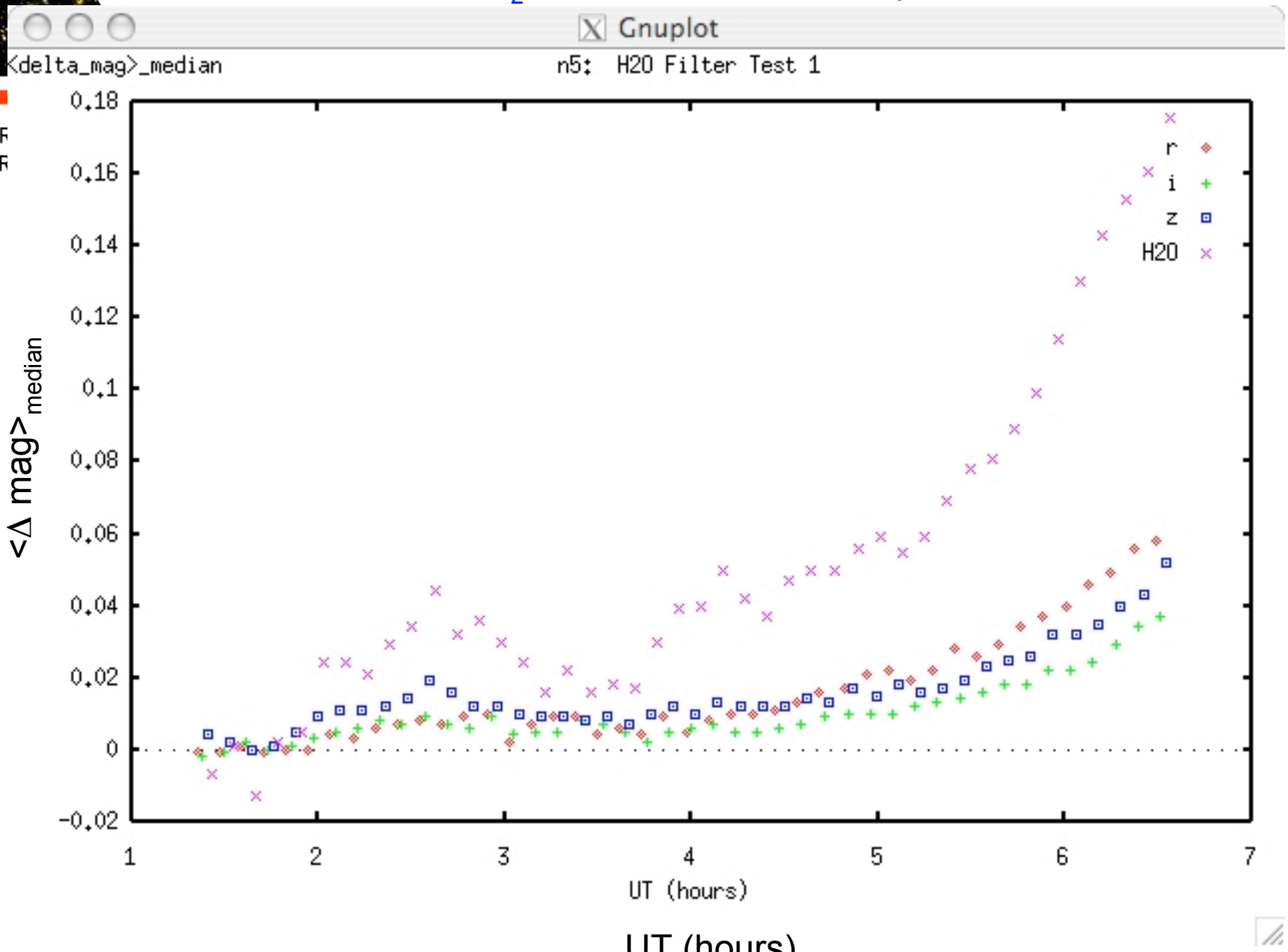

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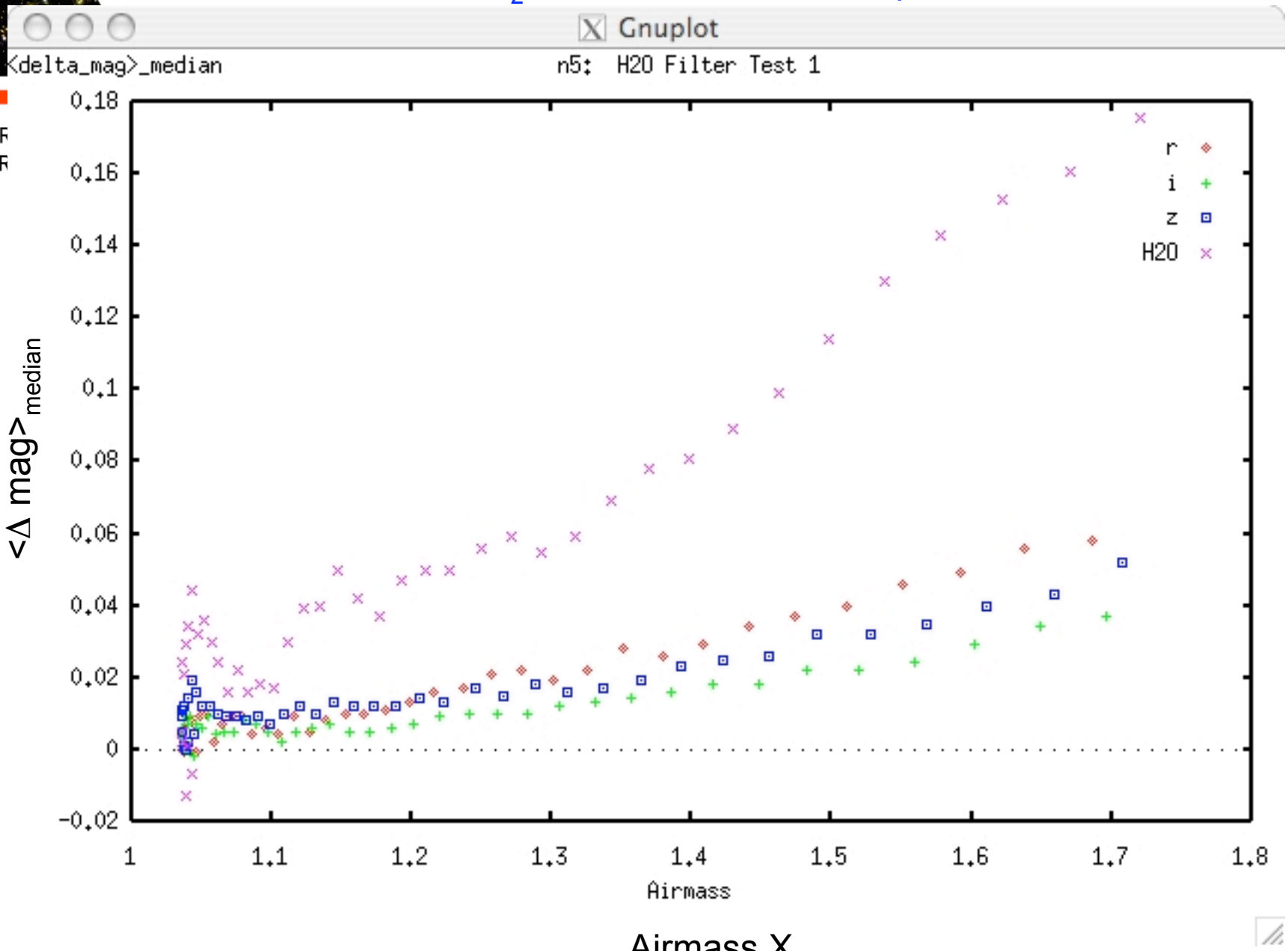

Airmass X

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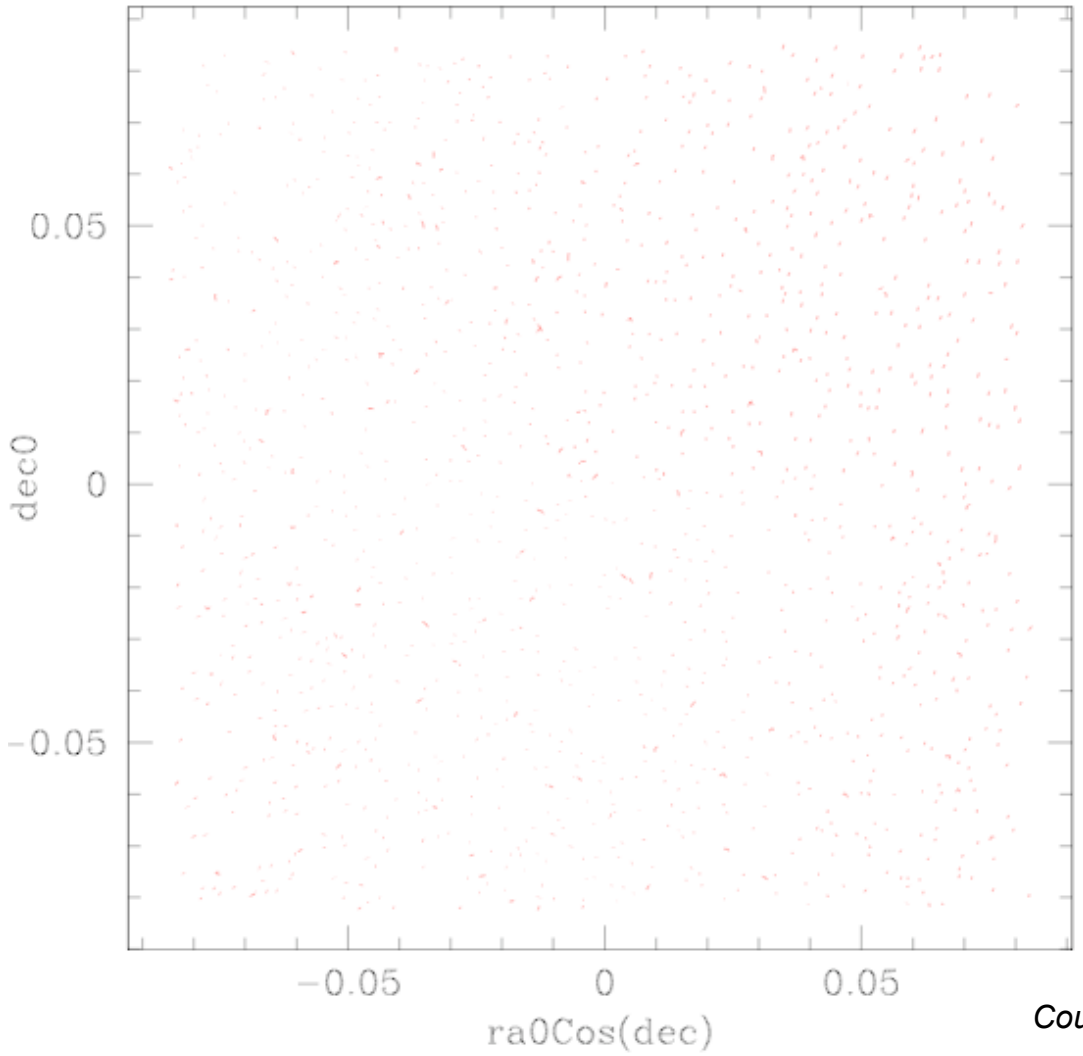
Astrometry with DECam Chip
(Night 4, NGC 5617)



Courtesy: Sahar Allam

Photometry with DECam Chip?
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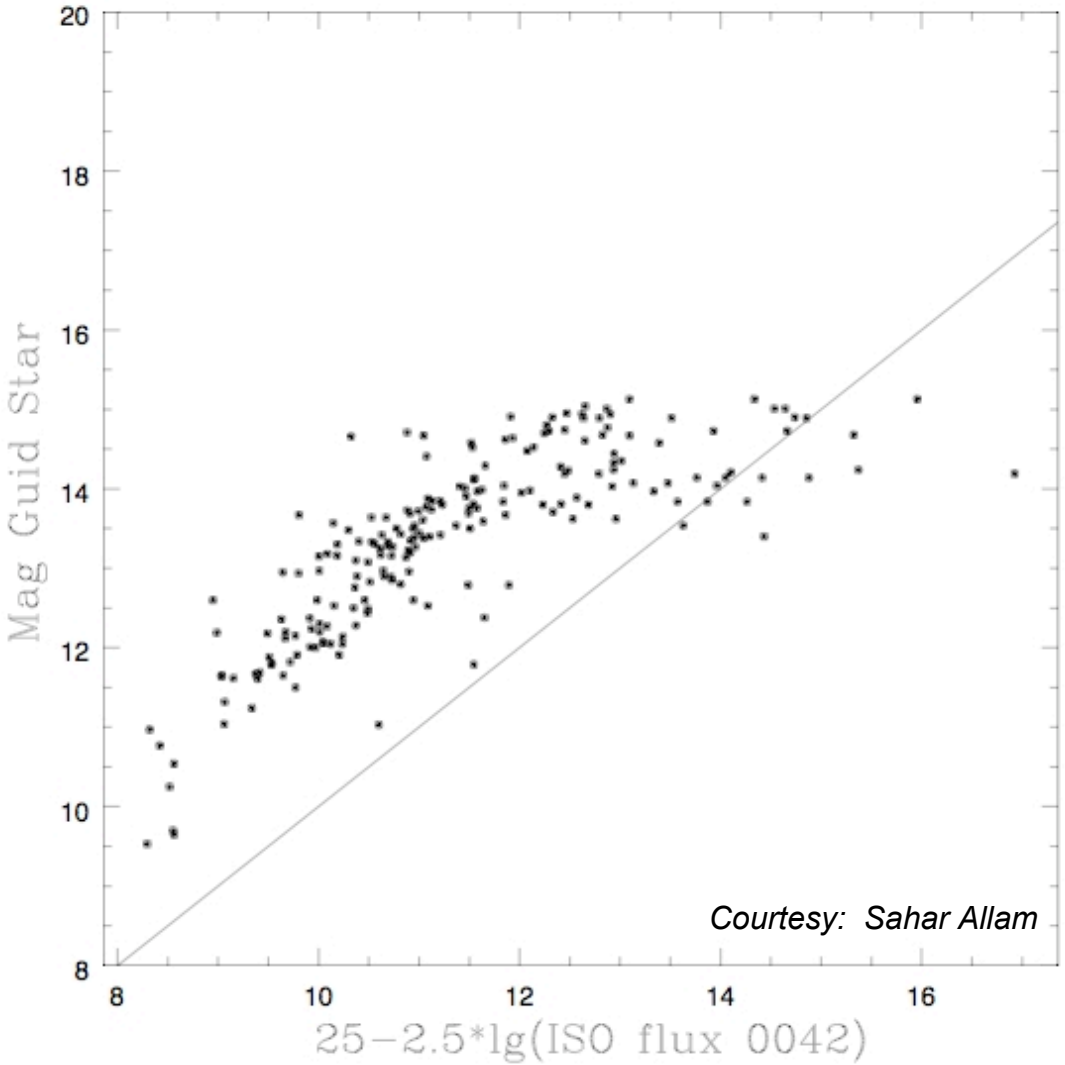

- Here is a plot of photographic plate magnitudes against uncalibrated DECam chip *r* band magnitudes for GSC-1 stars within the NGC 5617 field
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