

CFHTLS: Release T0004

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Release T0004

- More sky coverage
- More ugriz / gri fields
- W4 field included
- Deep: 2x (D1+D2+D3+D4) stacks with: (per filter)
 - 25% best seeing data
 - 85% best seeing data
- Astrometry done with 2MASS as reference catalogue
- Astrometry done globally for each wide field (see Emmanuel's talk)

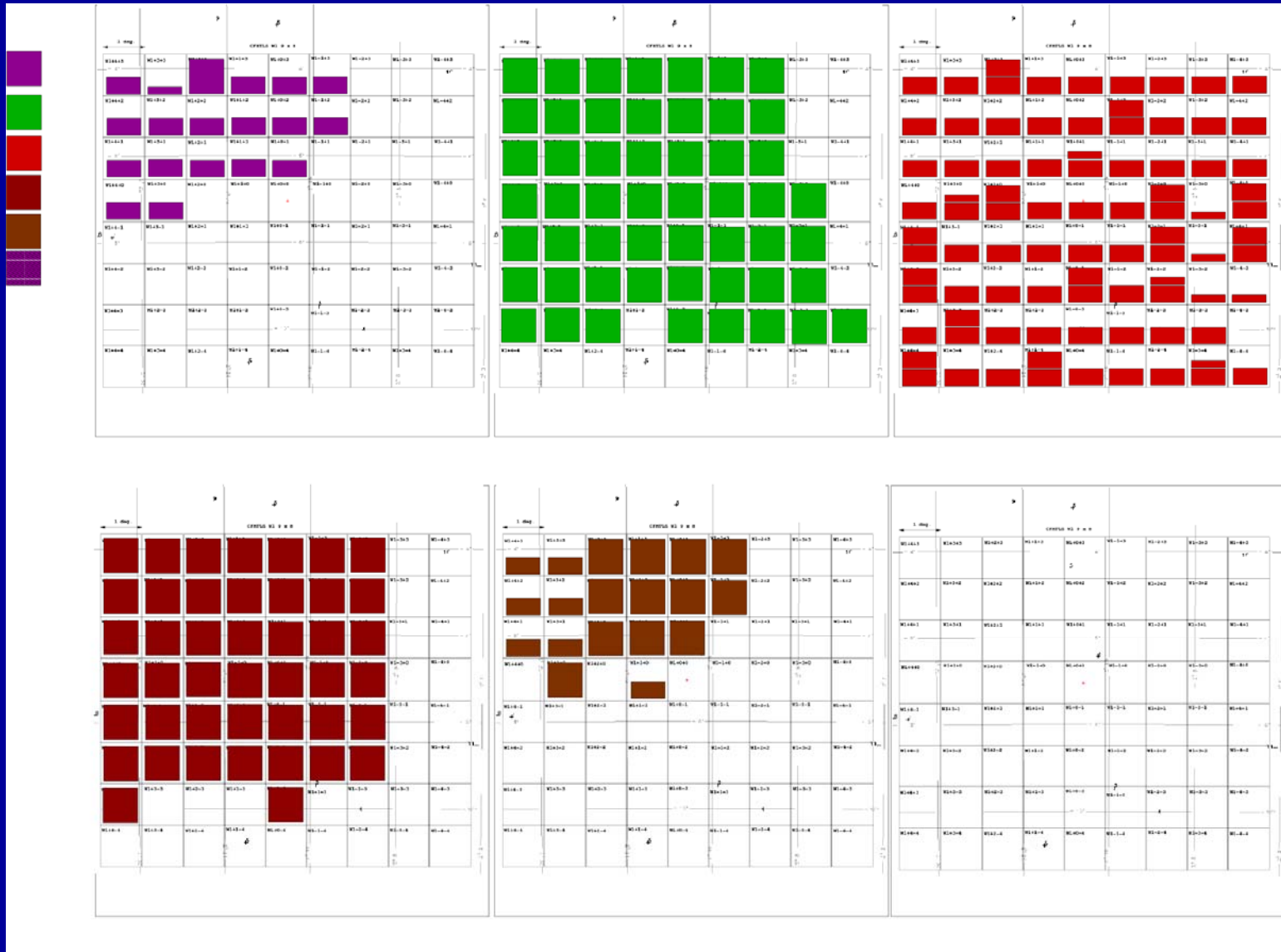
Release T0004

- 559 stacks:
 - Selection criteria:
 - Data from June 1 2003 to Oct. 24 2006
 - Exp. Time > 180 s.
 - Seeing < 1.3 "
 - Airmass < 1.7
 - Terapix grade A+B
 - 40 Deep : 20-25% + 20-85% best seeing
 - 208 W1 : 19 u, 54 g, 71 r, 44 i, 20 z (19 ugriz)
 - 93 W2 : 0 u, 20 g, 39 r, 33 i, 1 z
 - 151 W3 : 5 u, 43 g, 46 r, 44 i, 13 z (4 ugriz)
 - 67 W4 : 11 u, 16 g, 12 r, 16 i, 12 z (7 ugriz)

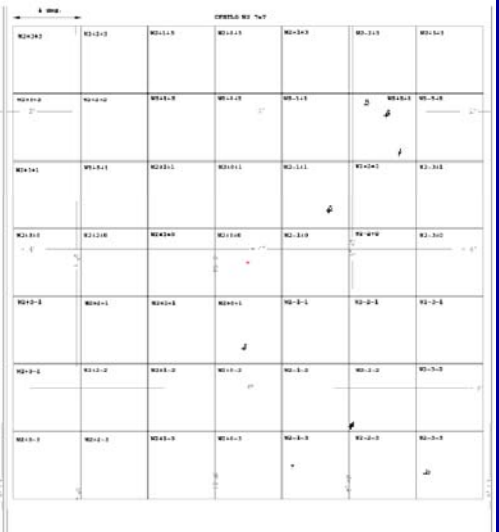
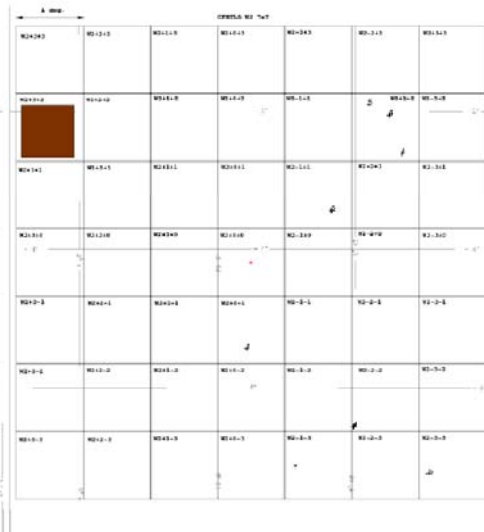
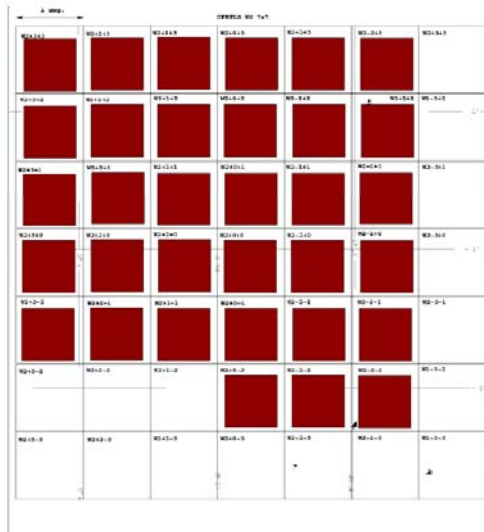
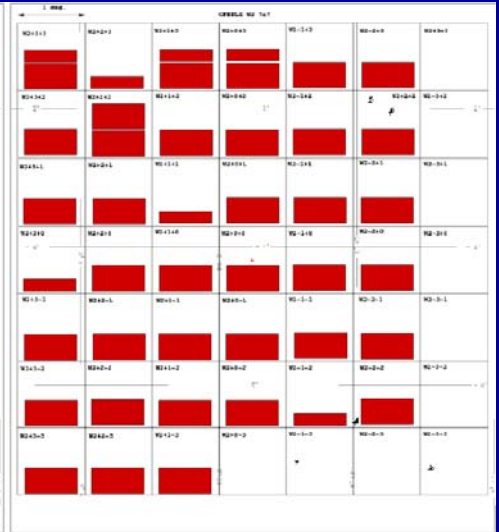
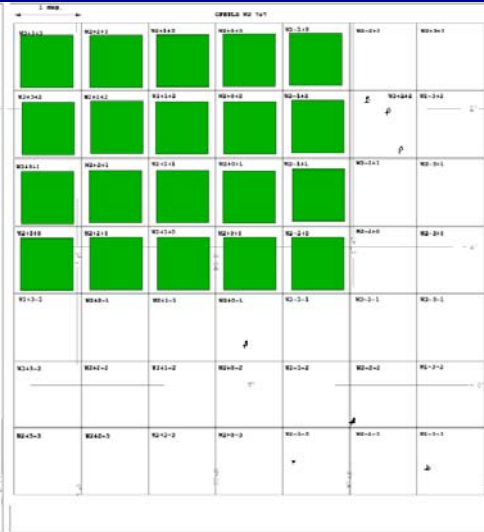
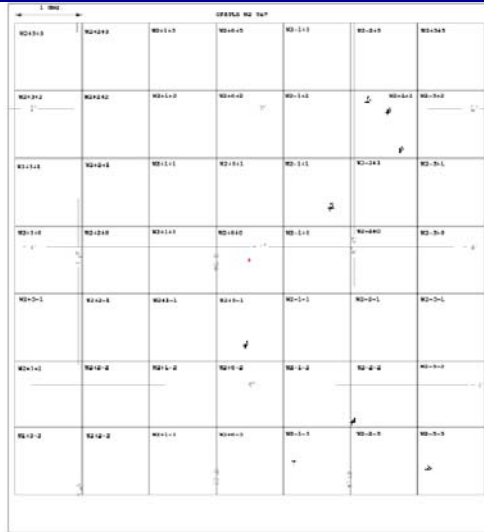
Release T0004

- 559 stacks: **status processing (done)** May 9, 6:00
 - D1 : **ugriz 25%**, ugriz 85%
 - D2 : ugriz 25%, ugriz 85%
 - D3 : ugriz 25%, ugriz 85%
 - D4 : ugriz 25%, ugriz 85%
 - 208 W1 : **19 u, 54 g, 71 r, 44 i, 20 z**
 - 93 W2 : **0 u, 20 g, 39 r, 33 i, 1 z**
 - 151 W3 : 5 u, 43 g, 46 r, 44 i, 13 z (**85/151 done**)
 - 67 W4 : **11 u, 16 g, 12 r, 16 i, 12 z**

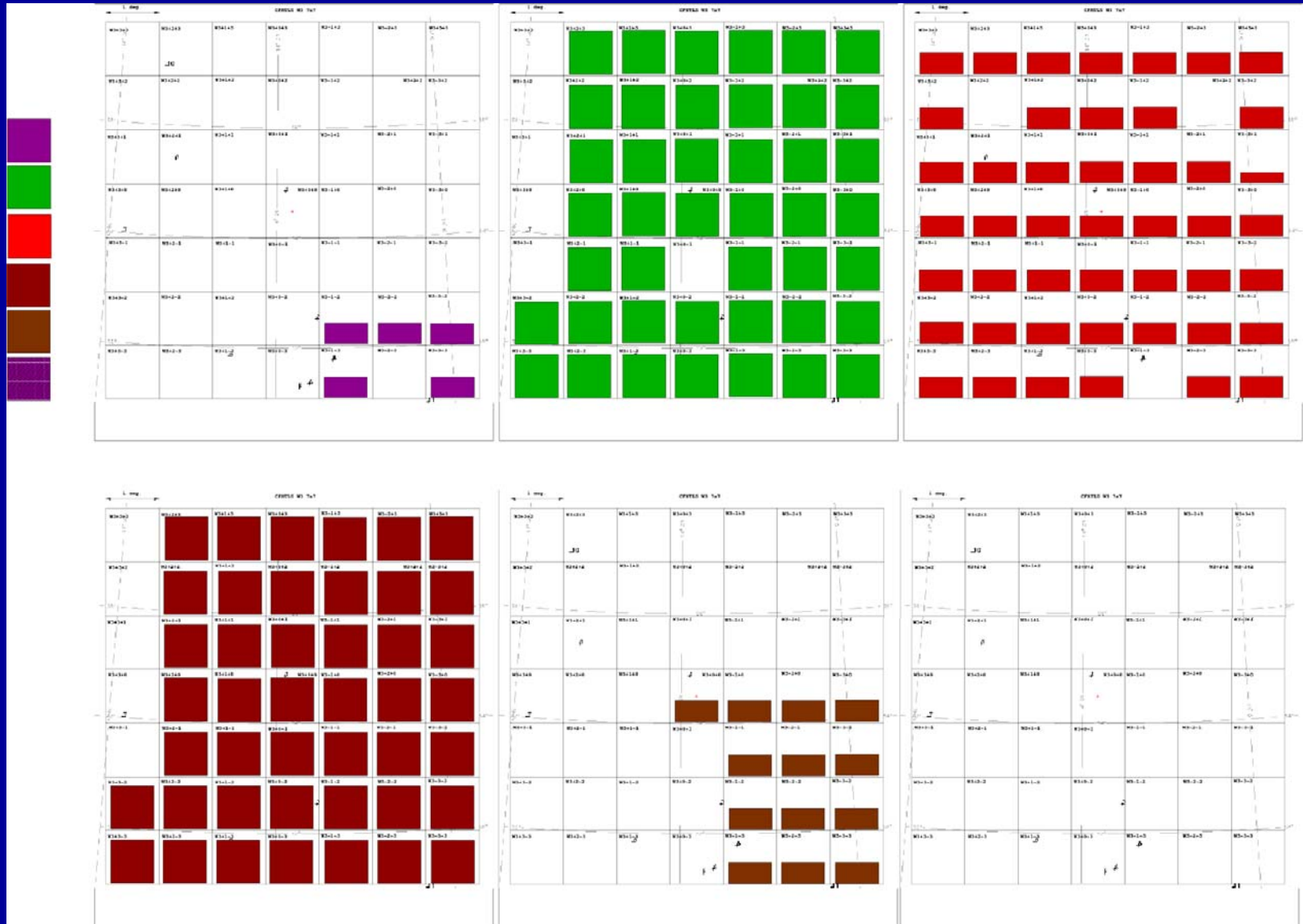
Release T0004: W1



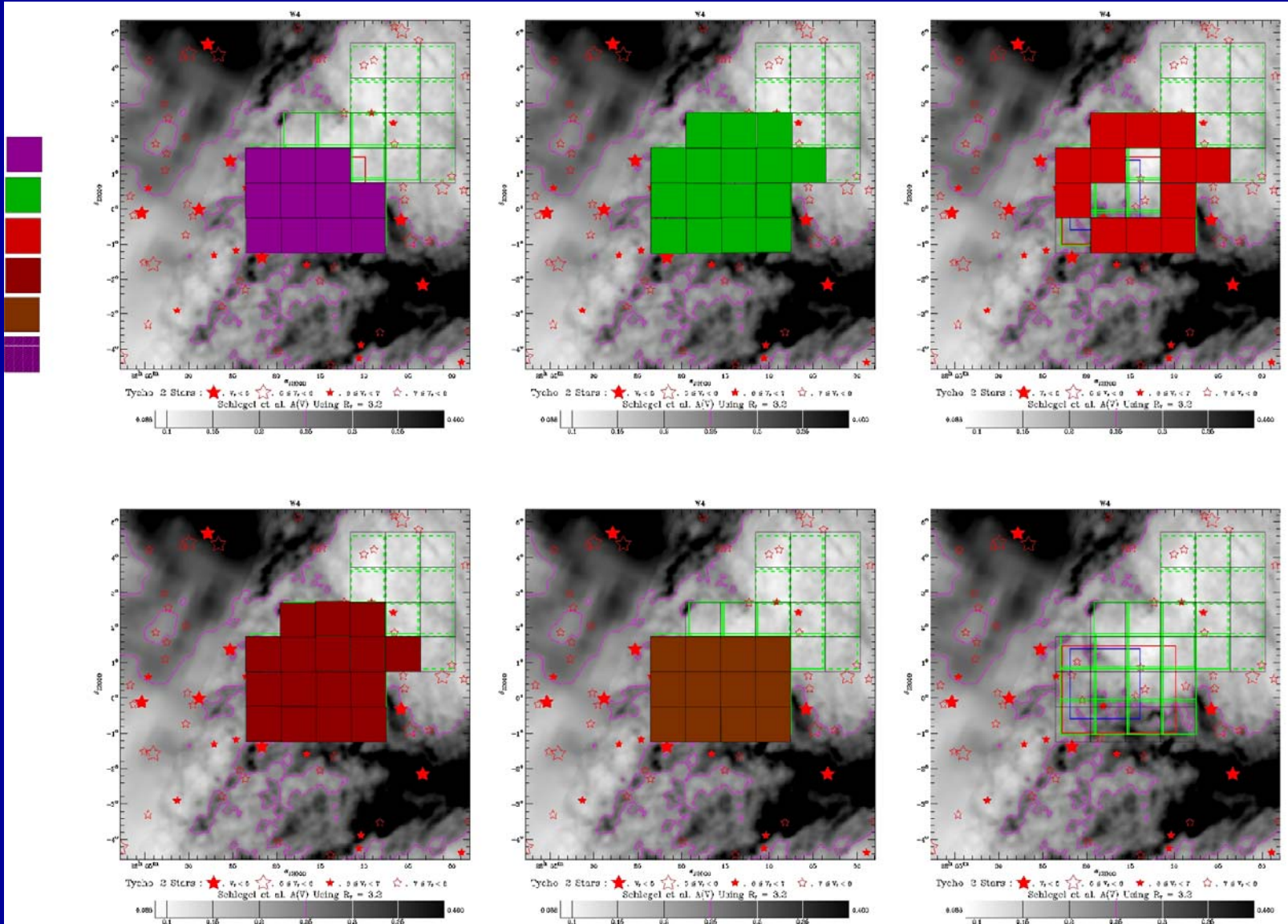
Release T0004: W2



Release T0004: W3



Release T0004: W4



Release T0004: astrometry

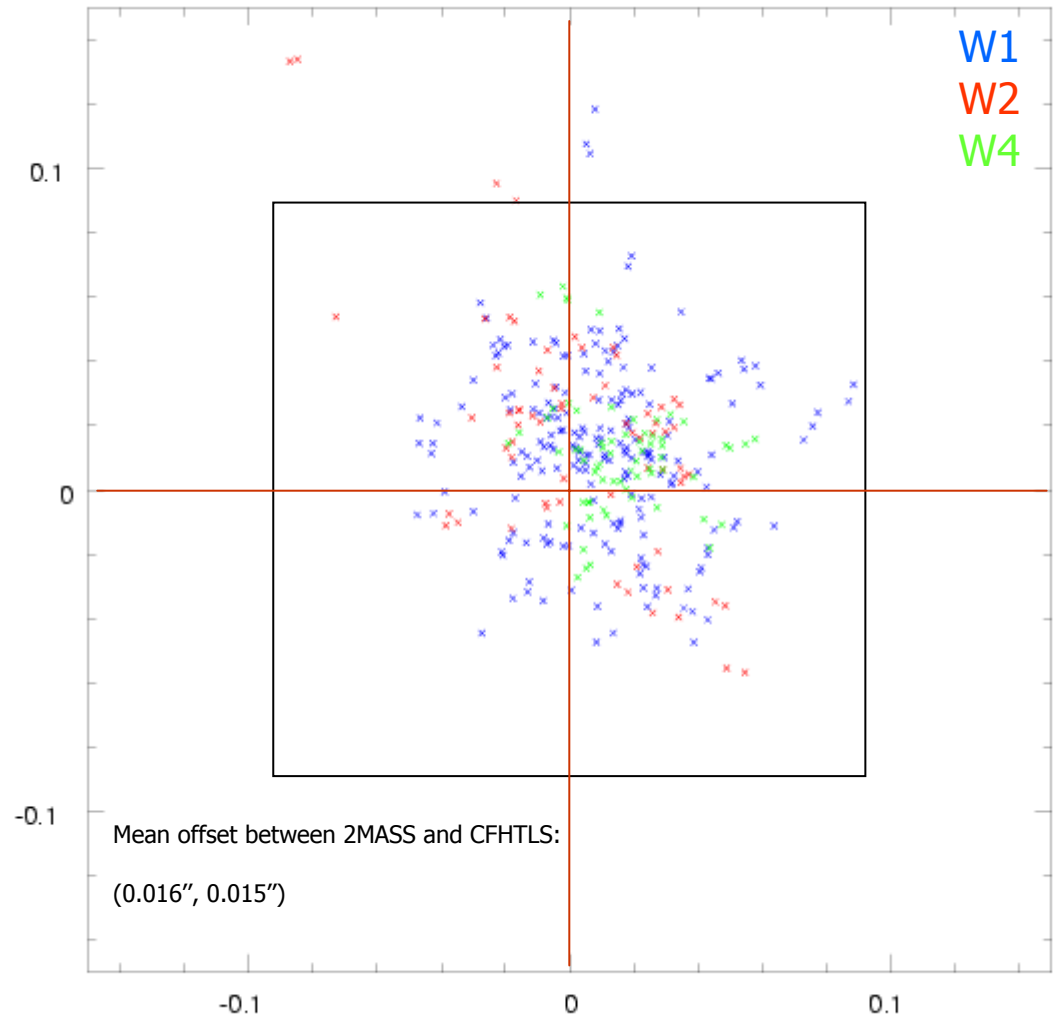
rms dispersion and offset residual between 2MASS and CFHTLS wide positions (external error)

- rms_x W1: 0.25"
- rms_y W1: 0.24"

- rms_x W2: 0.21"
- rms_y W2: 0.21"

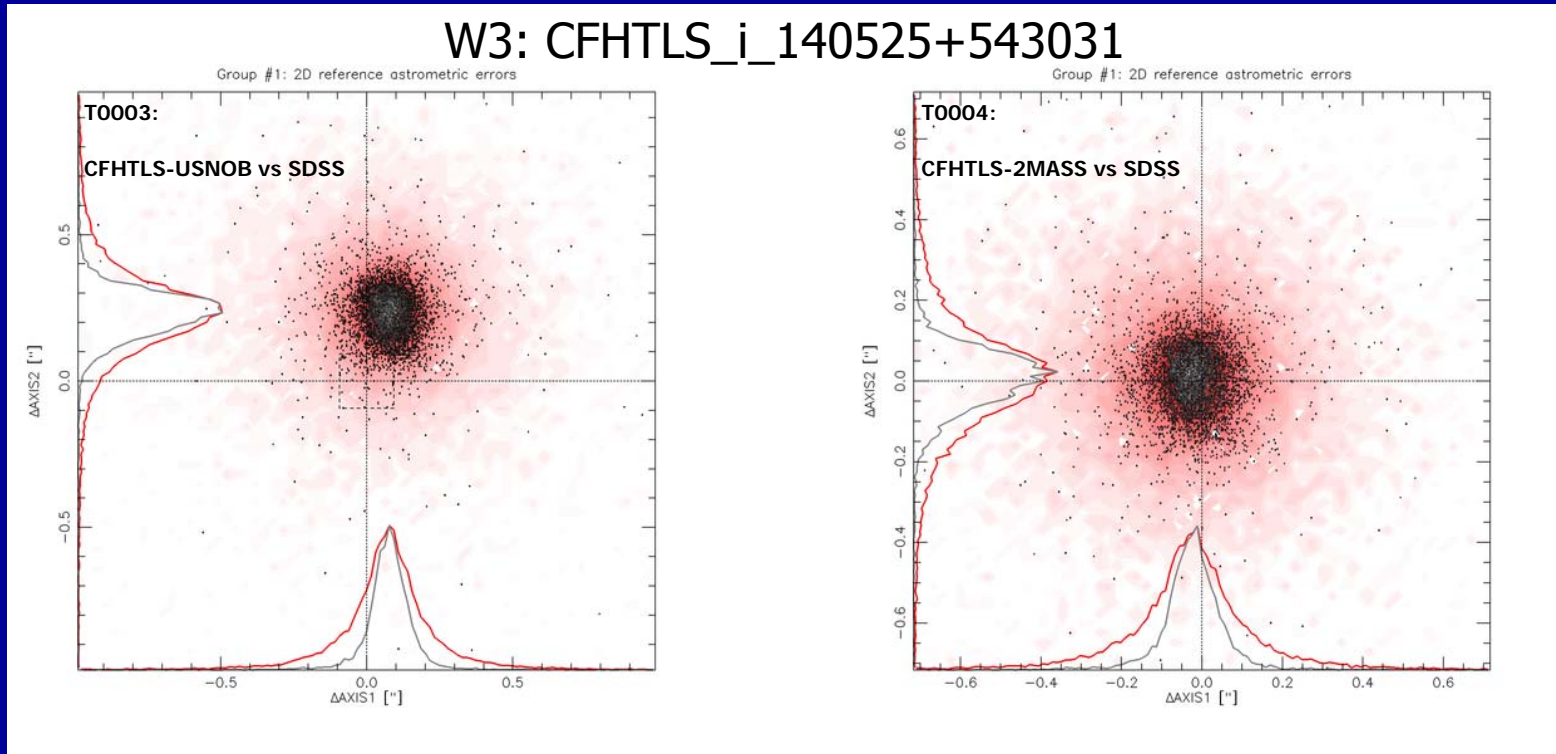
- rms_x W4: 0.21"
- rms_y W4: 0.20"

- rms_x W3: $\sim 0.26''$
- rms_y W3: $\sim 0.25''$



Release T0004: astrometry

CFHTLS vs SDSS astrometry



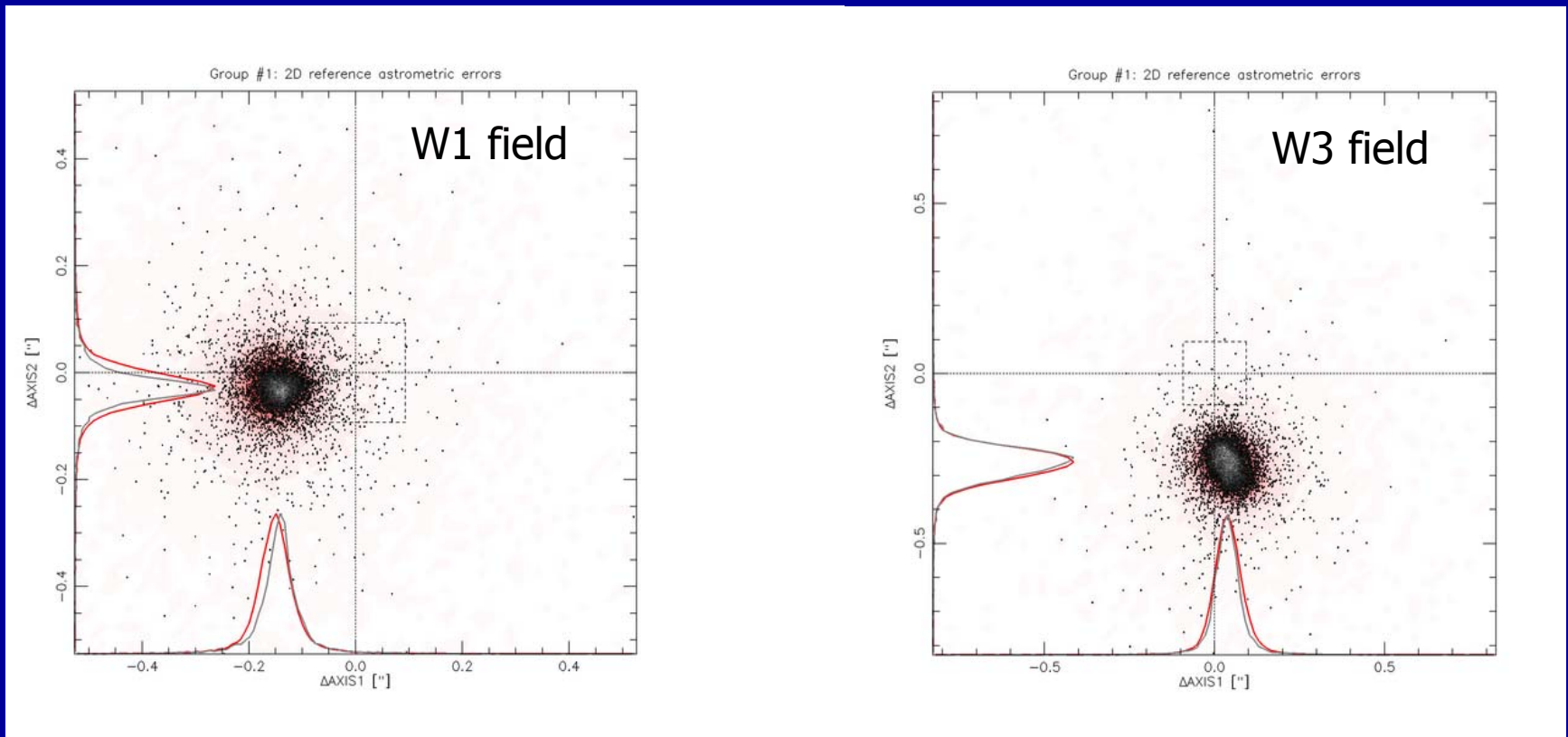
CFHTLS-W4 2MASS and SDDS: mean difference (14 fields):

- $\Delta(\text{RA}) = 0.0223''$; $\Delta(\text{DEC}) = -0.0282''$
- $rms(\text{RA}) \sim 0.20''$; $rms(\text{DEC}) \sim 0.20''$

Release T0004: astrometry

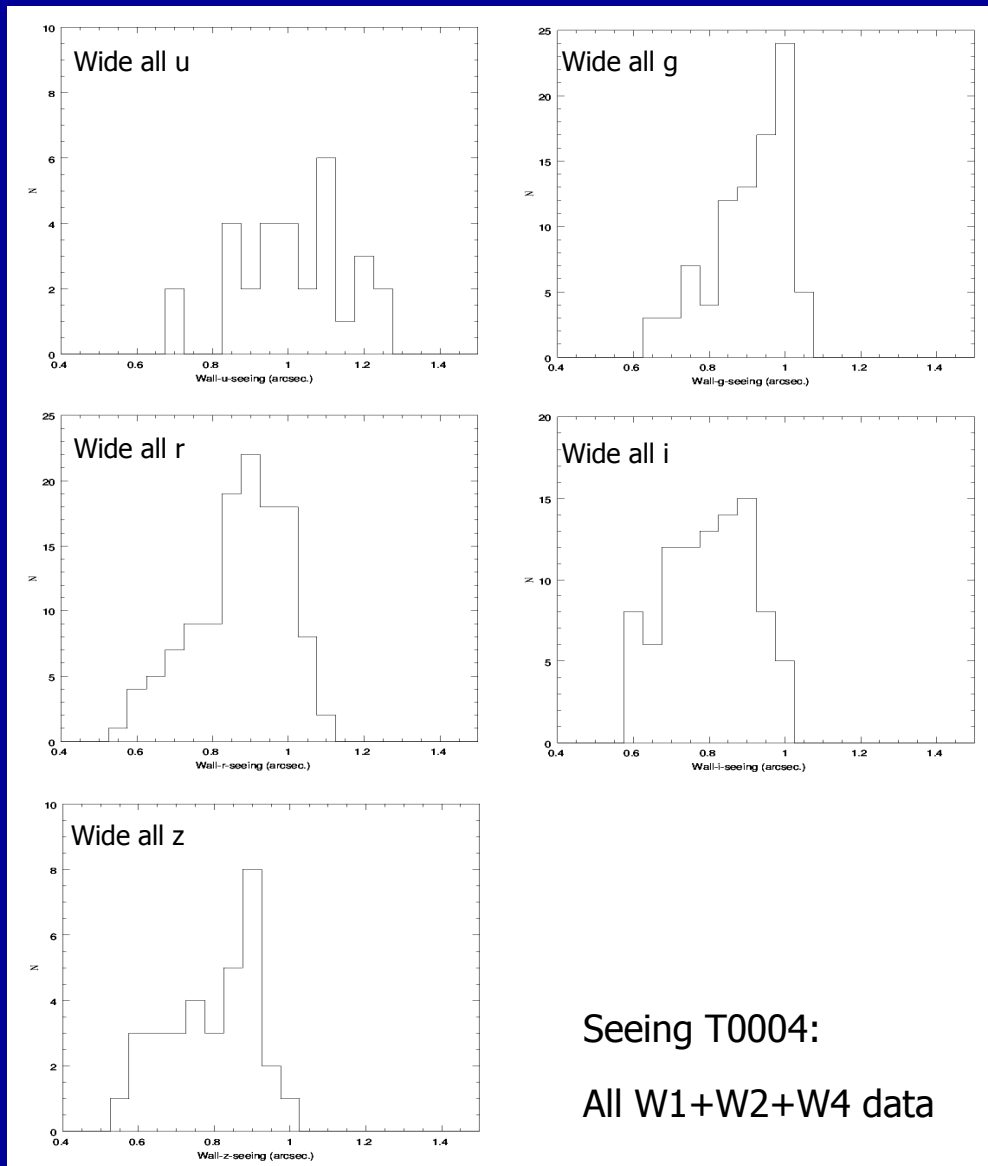
T0003 vs T0004 object positions

Offset between USNO-B- and 2MASS-calibrated catalogues



Release T0004: seeing

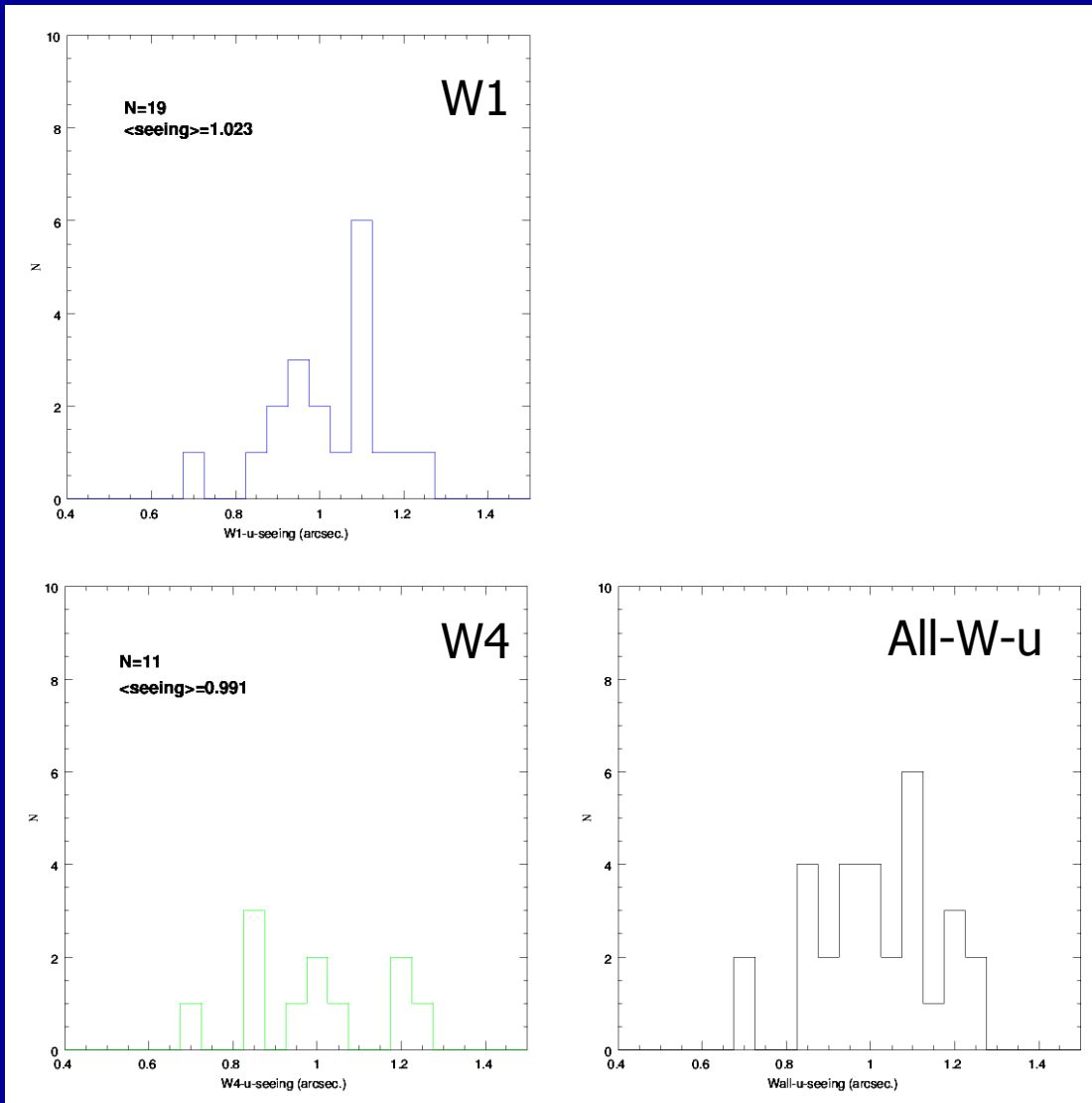
All wide fields, all filters



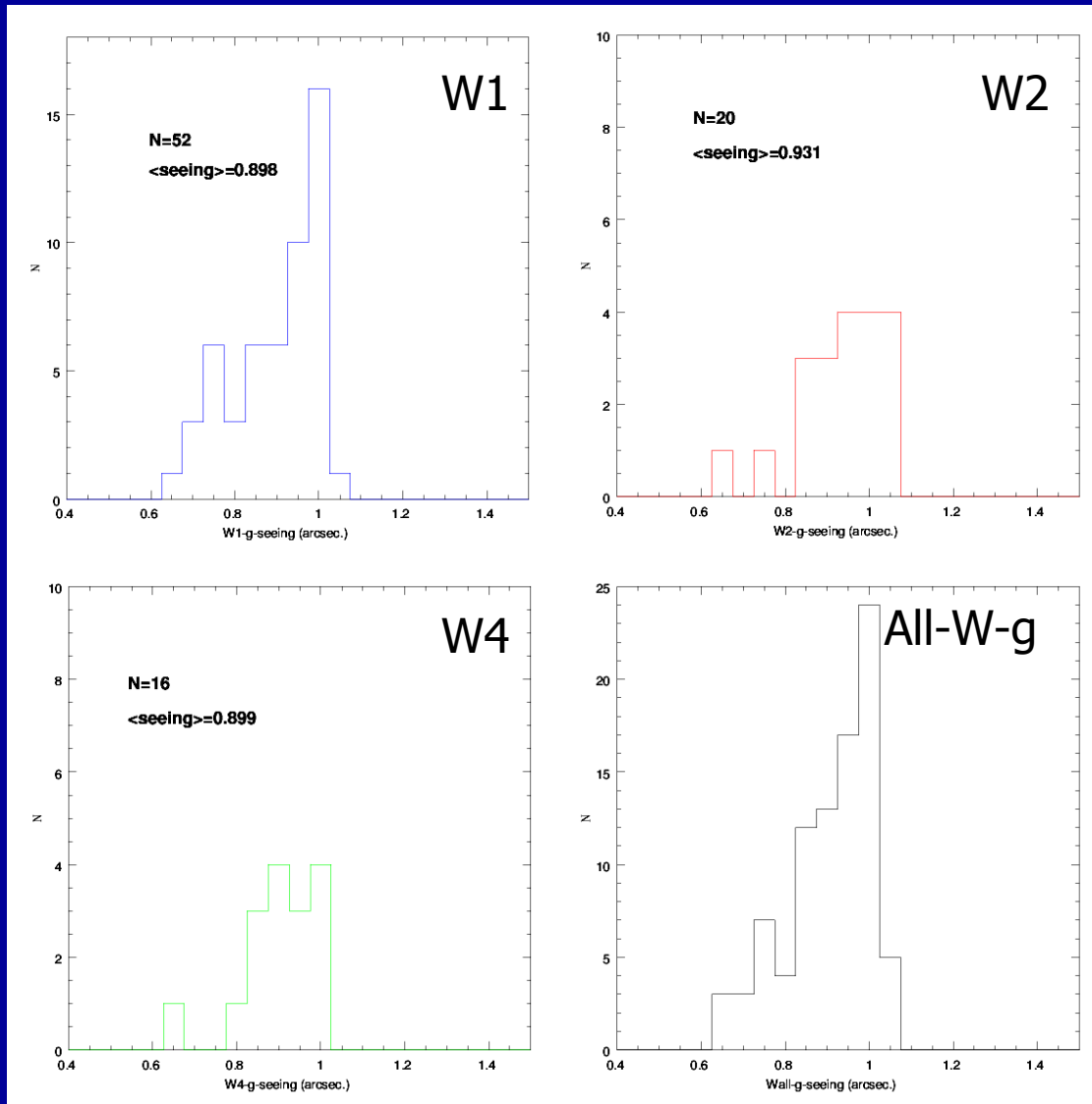
Seeing T0004:

All W1+W2+W4 data

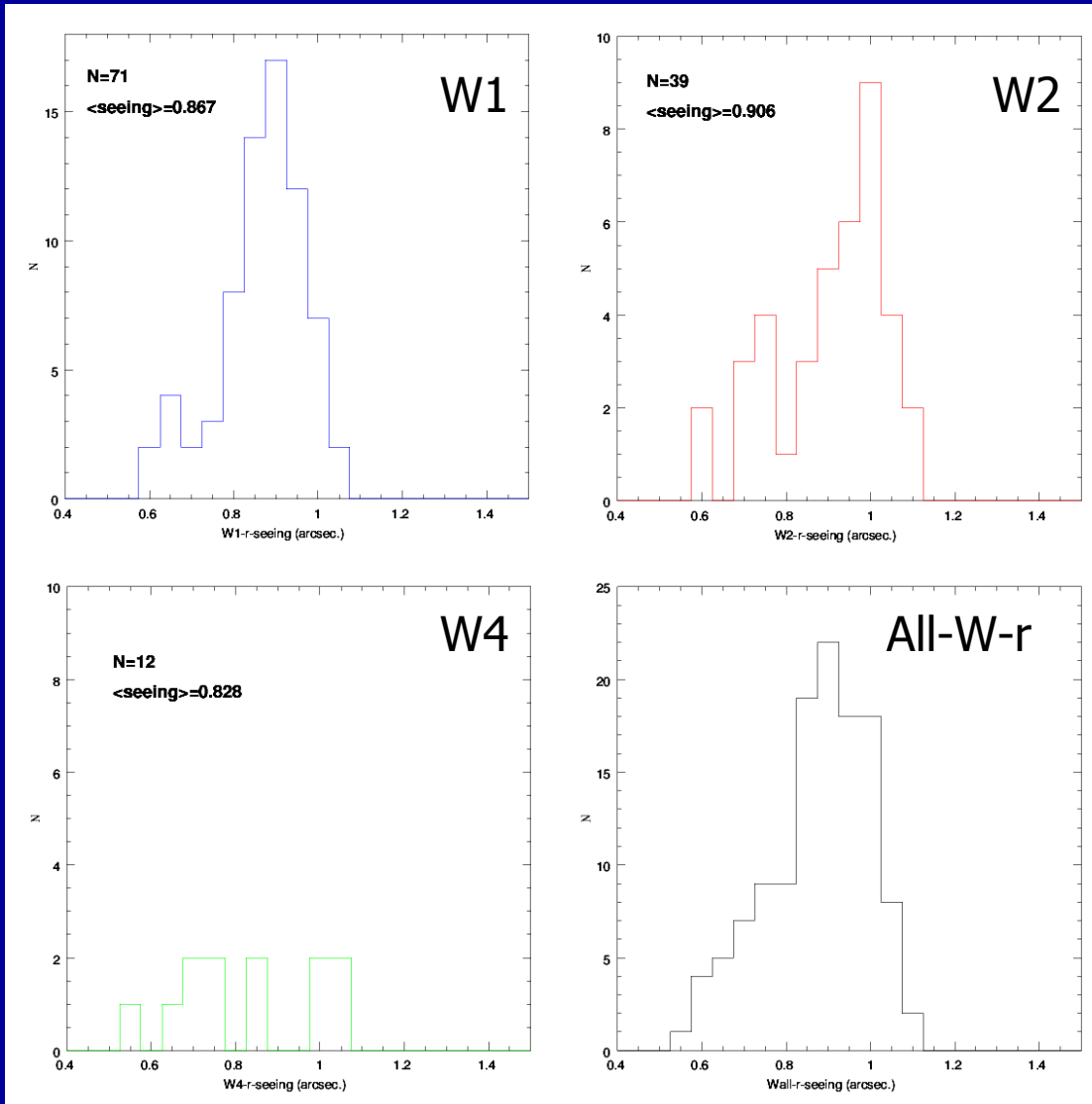
Release T0004: seeing u-band



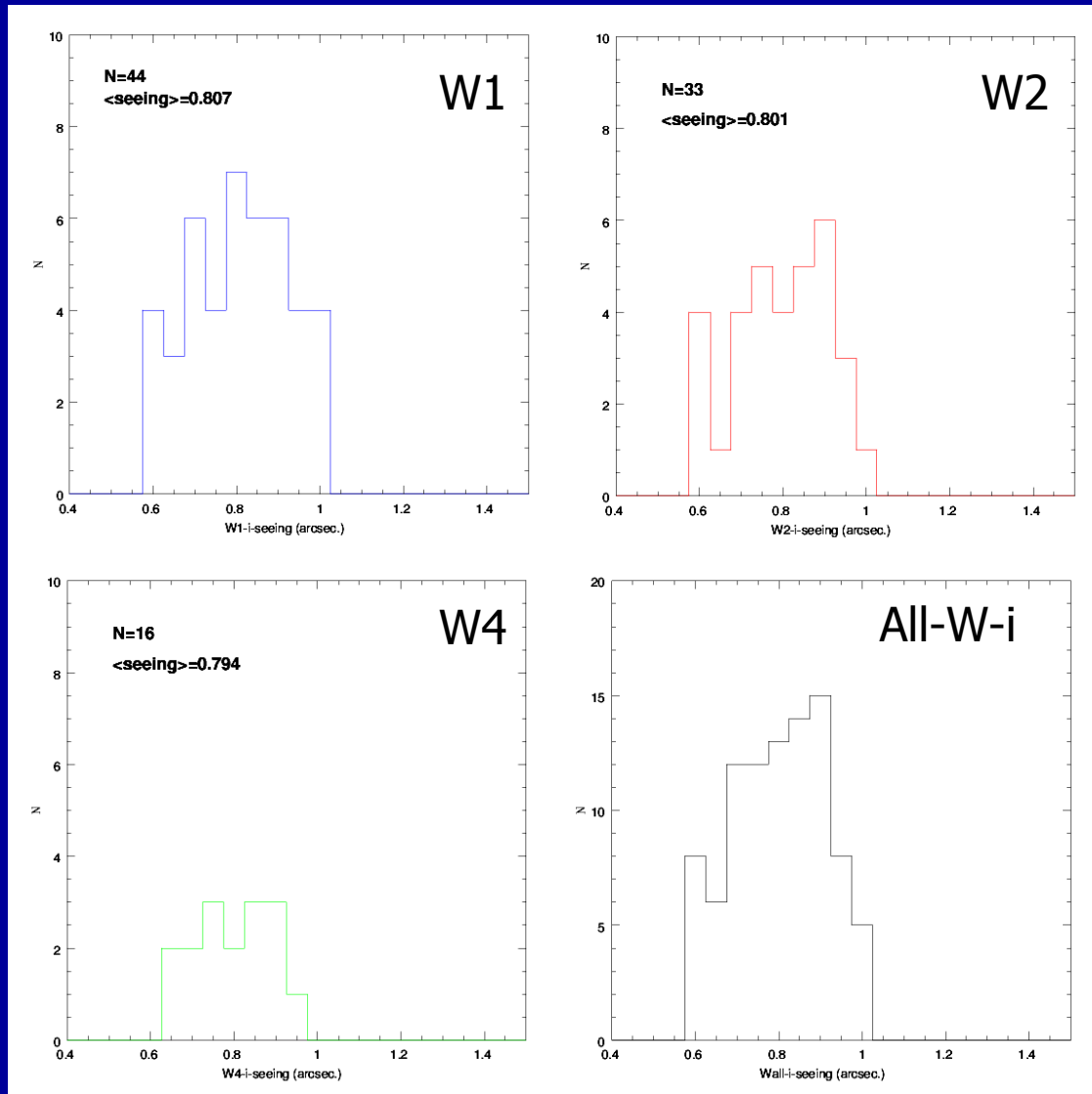
Release T0004: seeing g-band



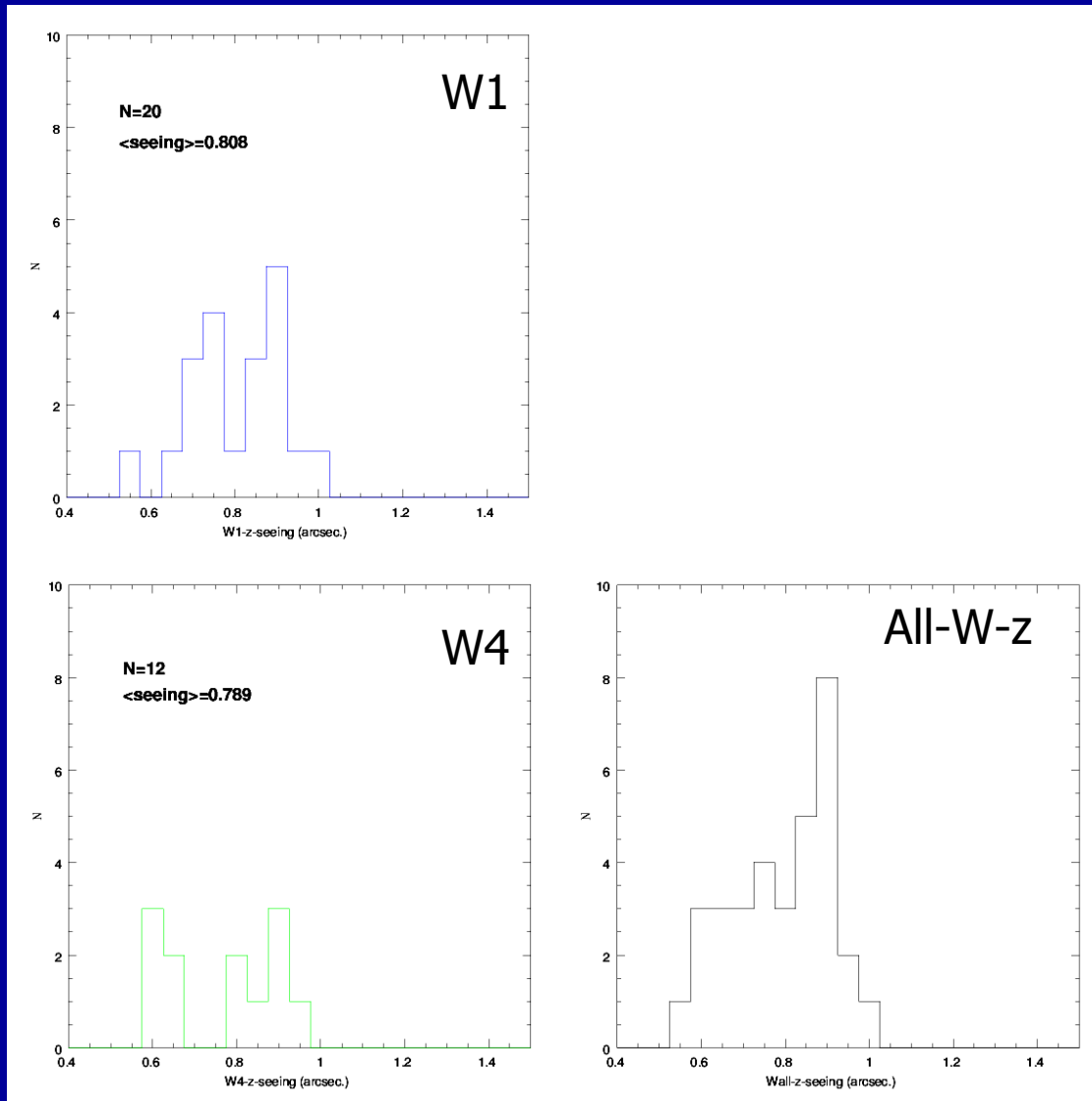
Release T0004: seeing r-band



Release T0004: seeing i-band



Release T0004: seeing z-band

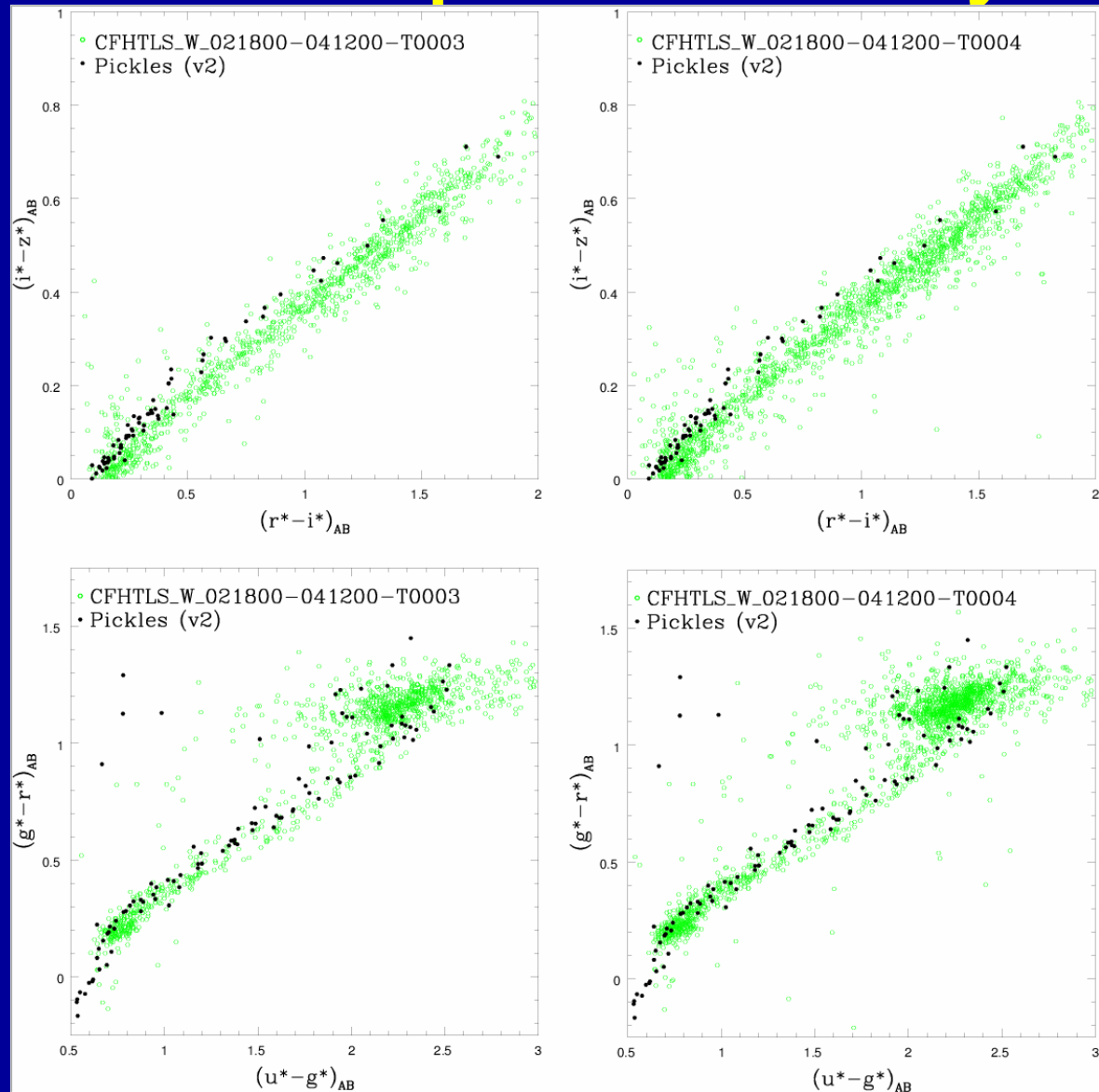


Release T0004: photometry

Comparison: T0003/T0004

11 W1 fields common to T0003 and T0004 with ugriz data:

Stellar ($I < 21$) color-color plots identical for all

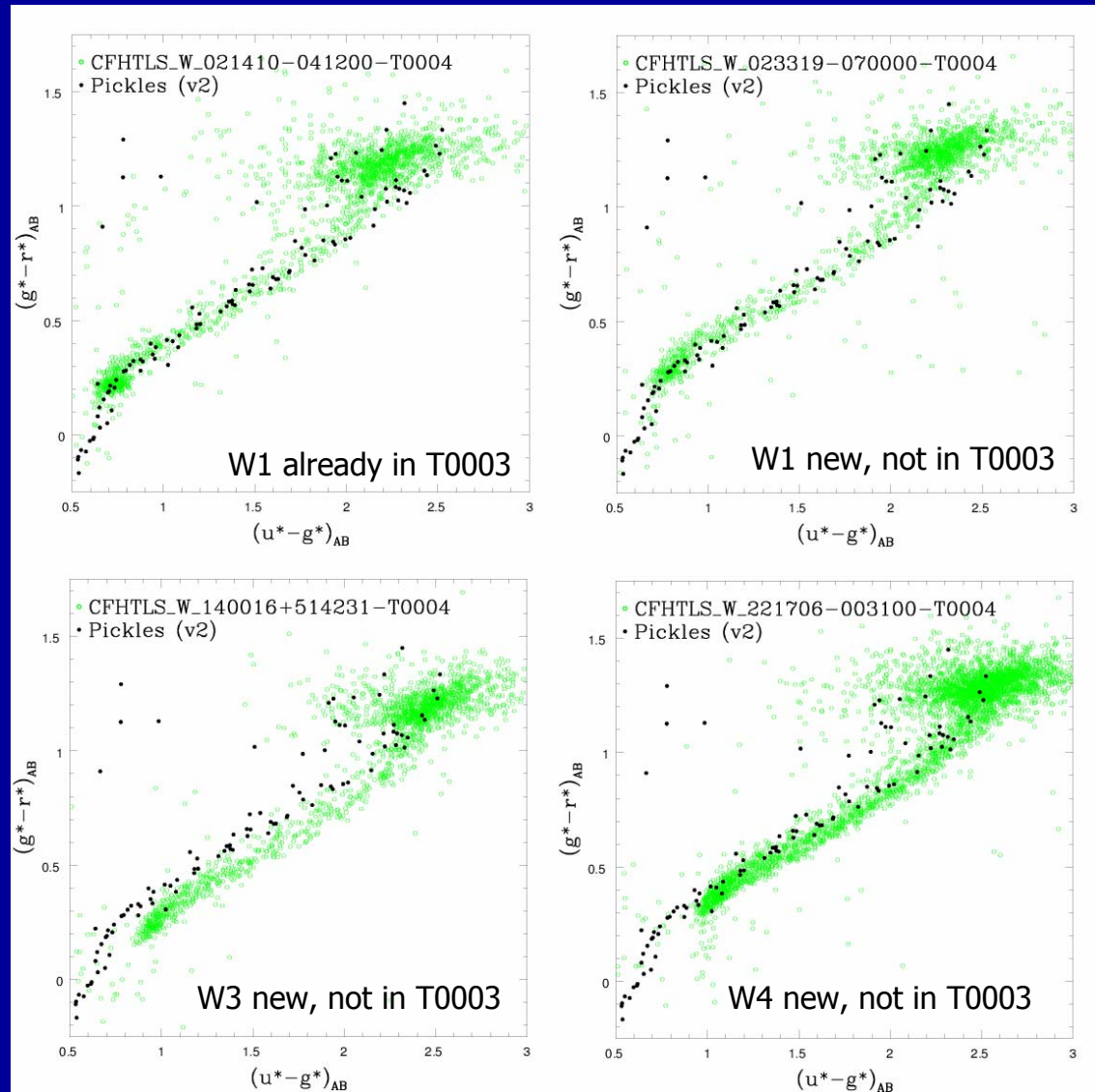


Release T0004: photometry

u-band

W1 : new and old : ok

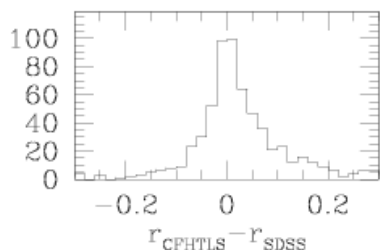
W3 and W4 : offset



Release T0004: photometry

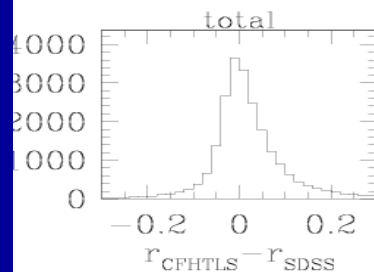
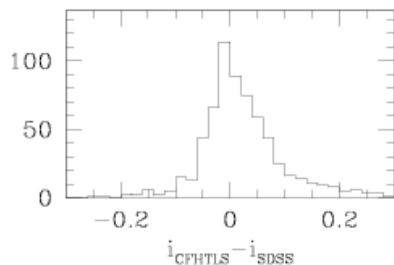
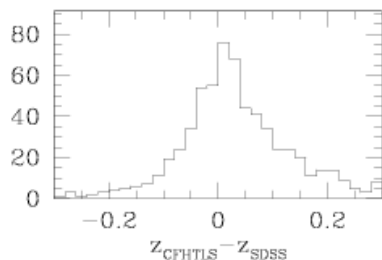
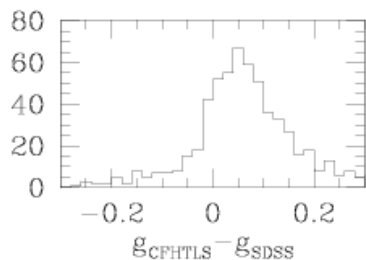
SDSS vs CFHTLS photometry:

W4: $\langle u \rangle = 0.21$, $\langle g \rangle = 0.01$, $\langle r \rangle = -0.01$, $\langle i \rangle = 0.01$, $\langle z \rangle = -0.03$



W1: 1 field

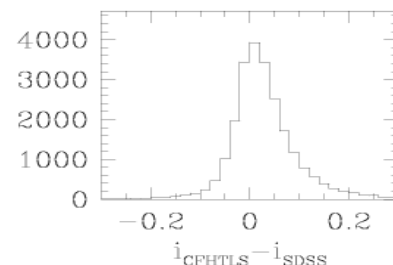
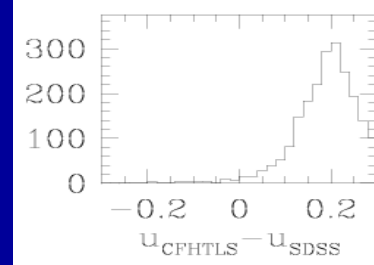
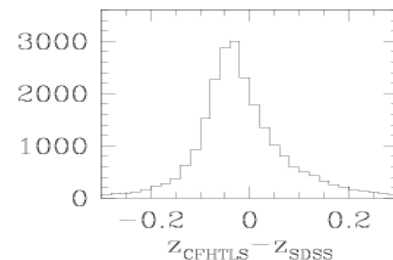
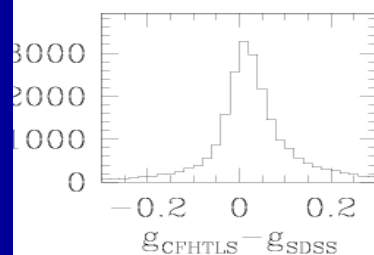
data from Janv. 2006



W4: 7 fields

data

from Aug. – Oct. 2006



Release T0004: photometry

- SDSS vs CFHTLS photometry:

W4 (7 fields):

$\langle u \rangle = 0.21$, $\langle g \rangle = 0.01$, $\langle r \rangle = -0.01$, $\langle i \rangle = 0.01$, $\langle z \rangle = -0.03$

W1: (1 field):

$\langle u \rangle = 0.07$, $\langle g \rangle = 0.05$, $\langle r \rangle = -0.01$, $\langle i \rangle = -0.01$, $\langle z \rangle = 0.01$

- Color-color plots:

W3 and W4: u-band data obtained after June 2006: offset 0.2 mag.

W1: u-band data obtained before February 2006 : no offset

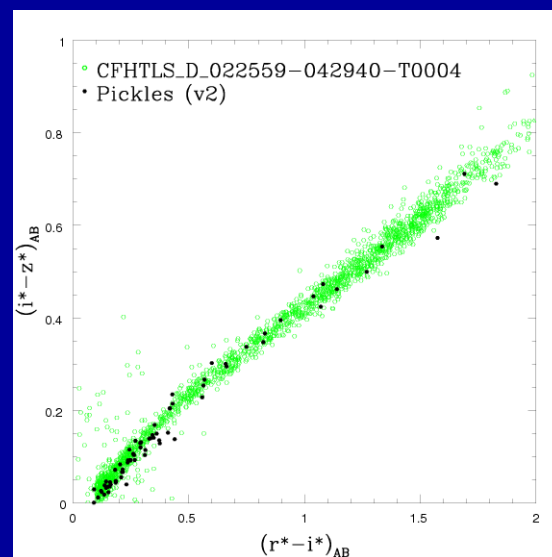
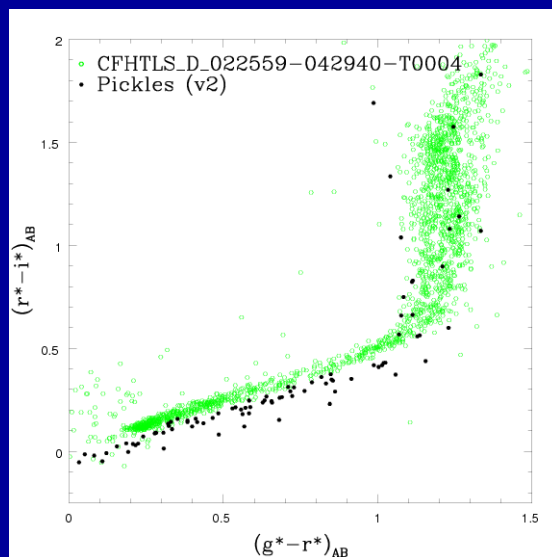
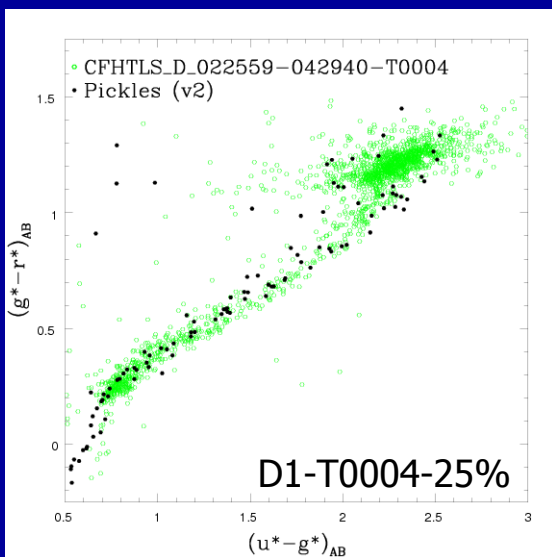
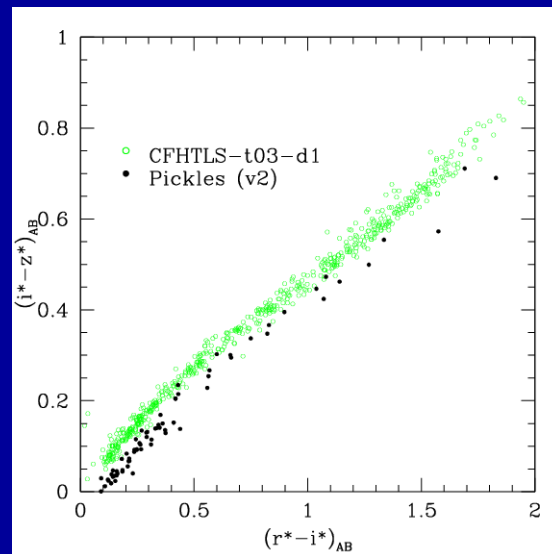
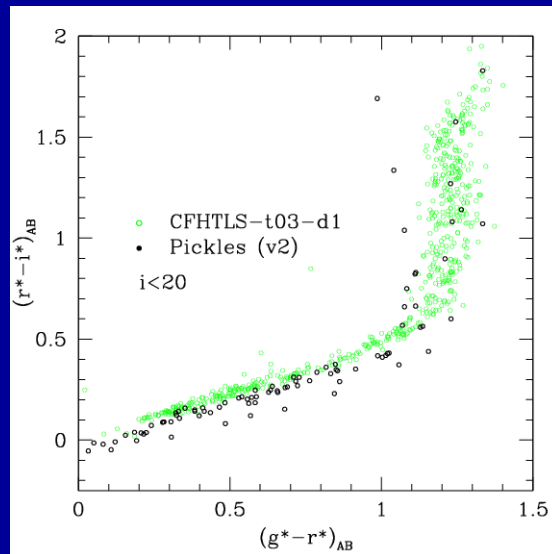
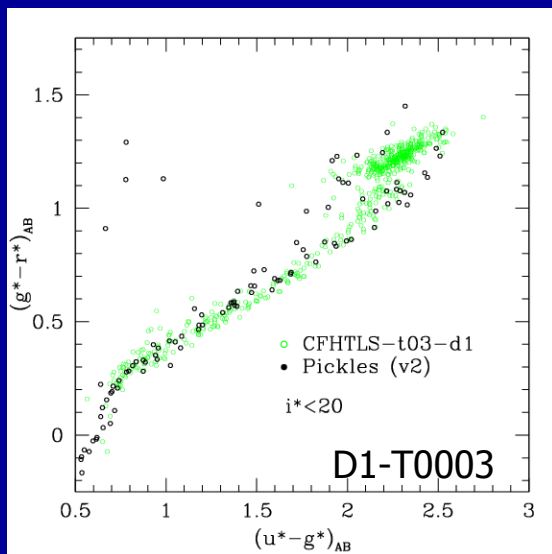
- Calibration problem unexplained:

Several independent data show it is not a problem in the Terapix processing

Release T0004: D1-25%

- u25 : 9900 sec. , seeing 0.93", n= 15
- g25 : 9900 sec. , seeing 0.80", n=45
- r25 : 26000 sec. , seeing 0.75", n=84
- i25 : 54000 sec. , seeing 0.74", n=111
- z25 : 26000 sec. , seeing 0.71", n=72

Release T0004: D1-25%



Next release

- T0004 delivery to CADDC: May 20
- T0005: February 2008
- Needs for the legacy value:
 - Needs for better photometric calibration (u-band): reliability of ZPs and catalogues
 - Homogeneity: FILL the gaps : 5 bands in every fields where at least one band is obtained already within specs.: seeing, depth
 - Quality assessments provided: plots, numbers
 - Documentation (Terapix tasks : details of selection/processing)

A bit of cosmic shear with T0003

Last cosmic shear paper:
Benjamin et al 2006

On going CSLS :

W1: T0003

Comparison of weak
lensing signal from the
Canadian (HH) and the
Paris (LF) analyses. 16
W1 fields, only common
objects to HH and LF
catalogues

See Fu et al poster

