

KIC 008822421

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
008822421-01	OBS	6188.01	1.645302	132.134381	1132.0	1.847	42.1	49.2	0.76	5416	2.98	667.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008822421-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008822421-01

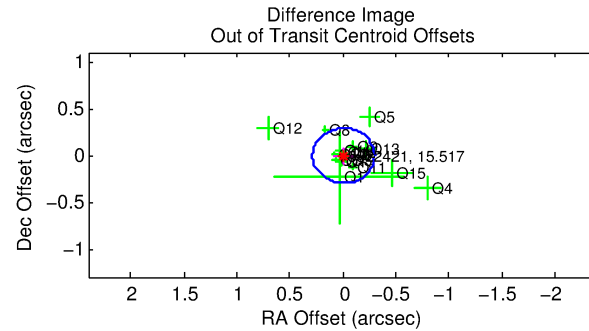
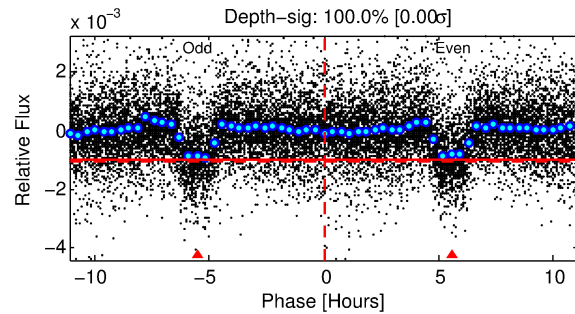
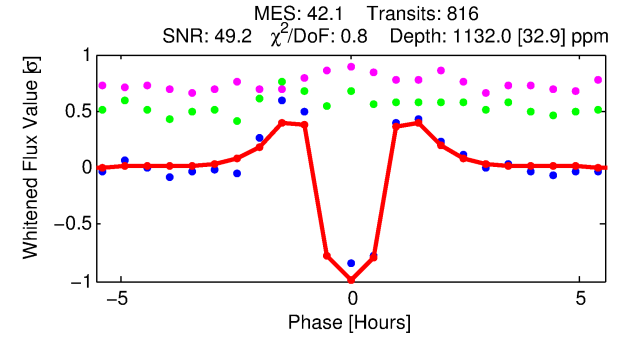
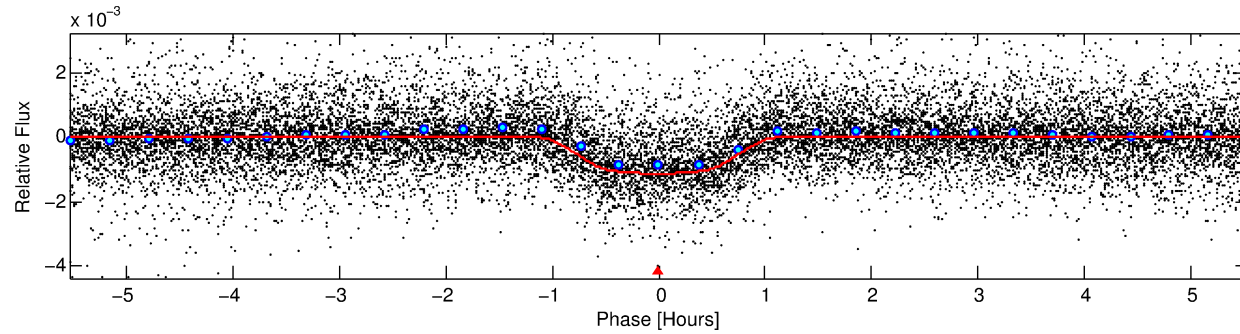
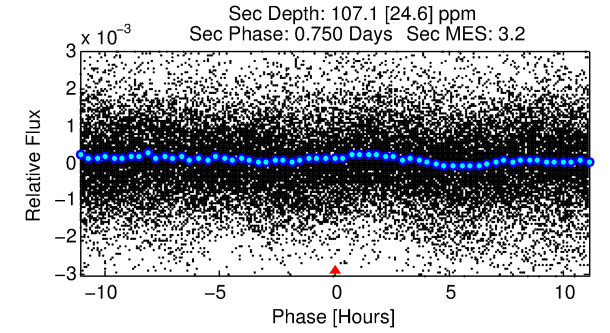
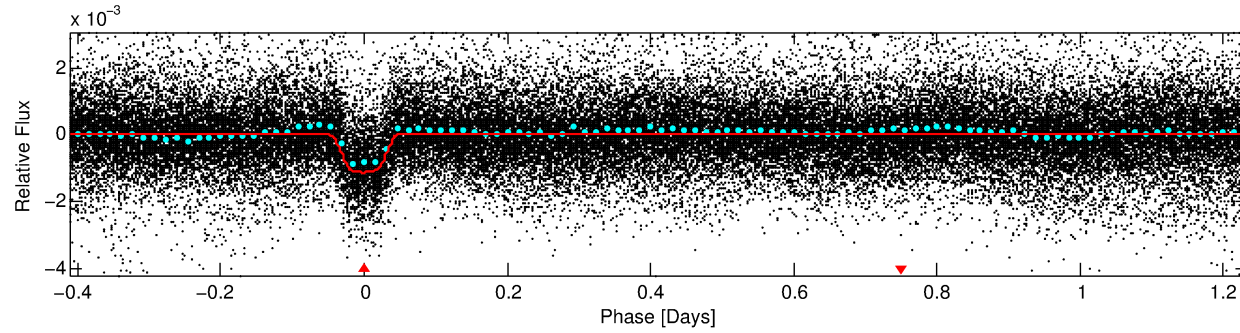
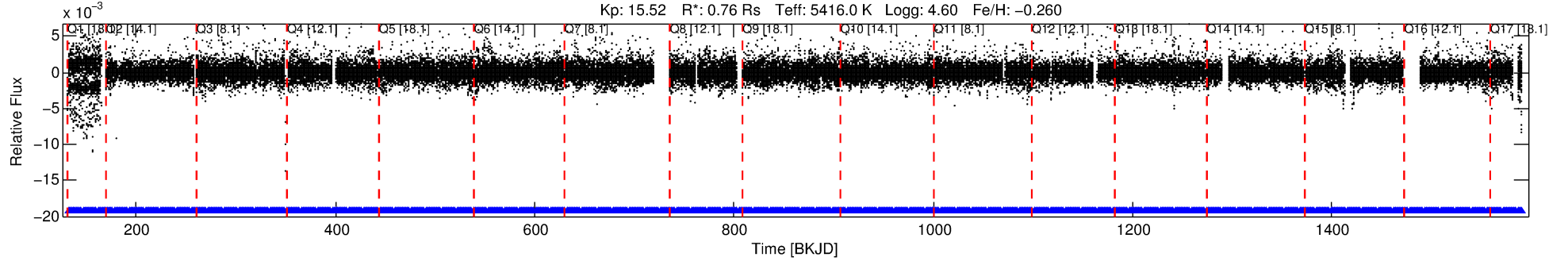
No Significant Match Found

DV One-Page Summary

KIC: 8822421 Candidate: 1 of 1 Period: 1.645 d

KOI: K06188.01 Corr: 0.955

Kp: 15.52 R*: 0.76 Rs Teff: 5416.0 K Logg: 4.60 Fe/H: -0.260



DV Fit Results:

Period = 1.64530 [0.00000] d
Epoch = 132.1344 [0.0003] BKJD
Rp/R* = 0.0361 [0.0022]
a/R* = 3.93 [0.86]
b = 0.87 [0.07]
Seff = 667.26 [160.76]
Teq = 1296 [78] K
Rp = 2.98 [0.56] Re
a = 0.0257 [0.0038] AU
Ag = 4.39 [1.46] [2.32σ]
Teffp = 2901 [207] K [7.26σ]

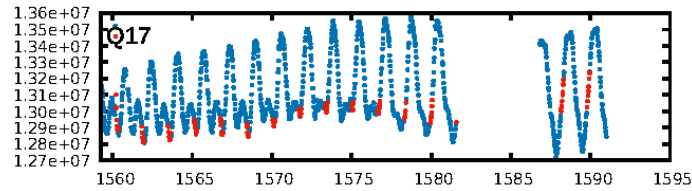
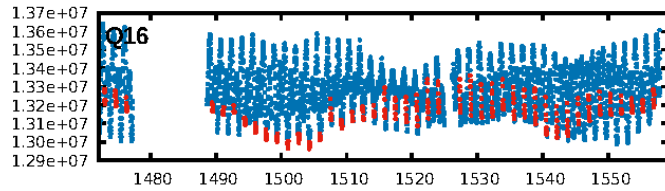
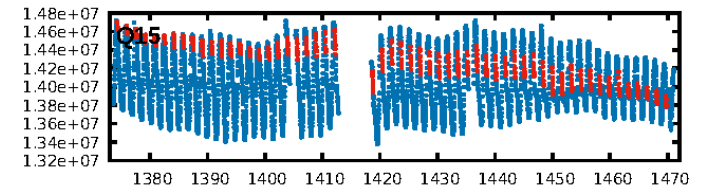
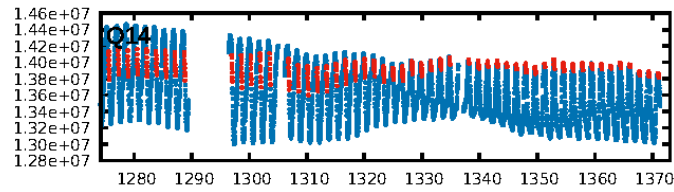
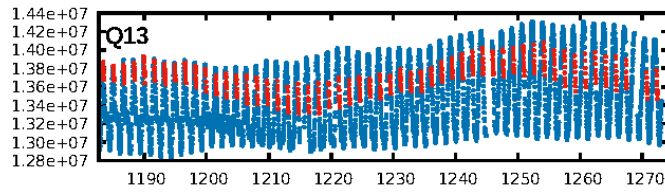
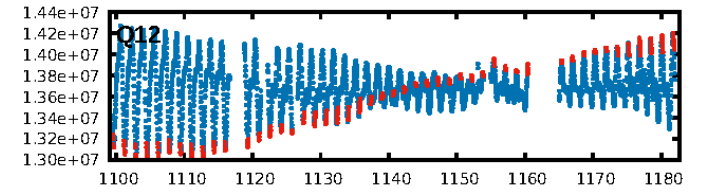
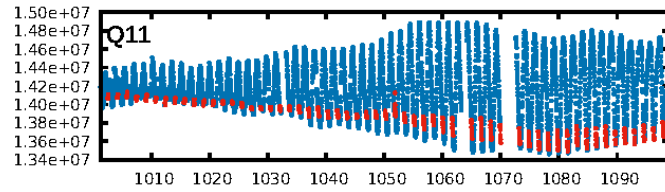
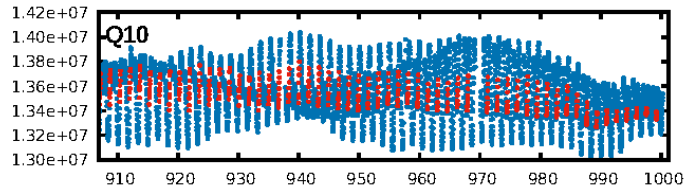
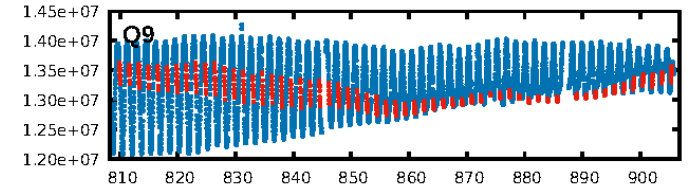
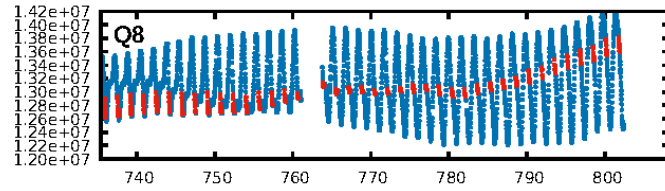
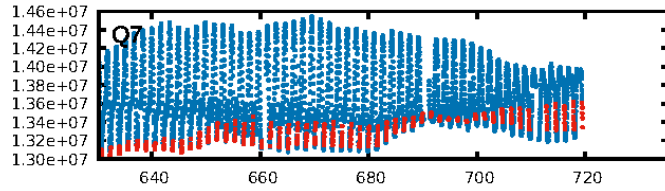
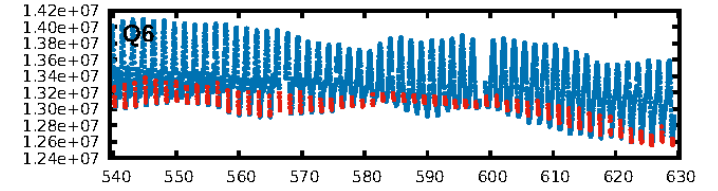
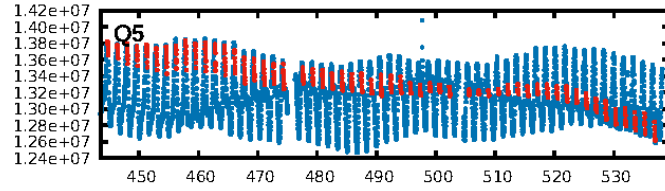
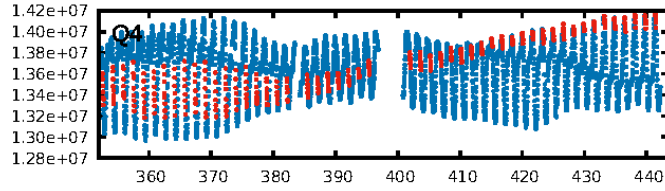
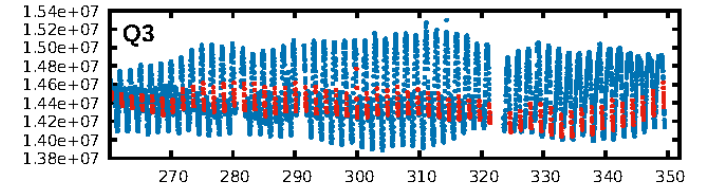
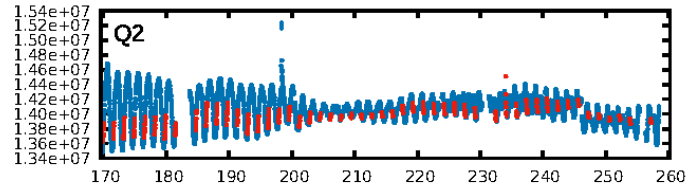
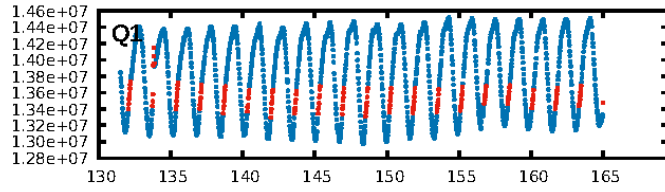
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [781/781]
GhostDiagnostic-chr: 2.33
Centroid-sig: 0.6%
Centroid-so: 0.216 arcsec [1.45σ]
OotOffset-rm: 0.010 arcsec [0.10σ]
KicOffset-rm: 0.035 arcsec [0.35σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 1.00 [17/17]

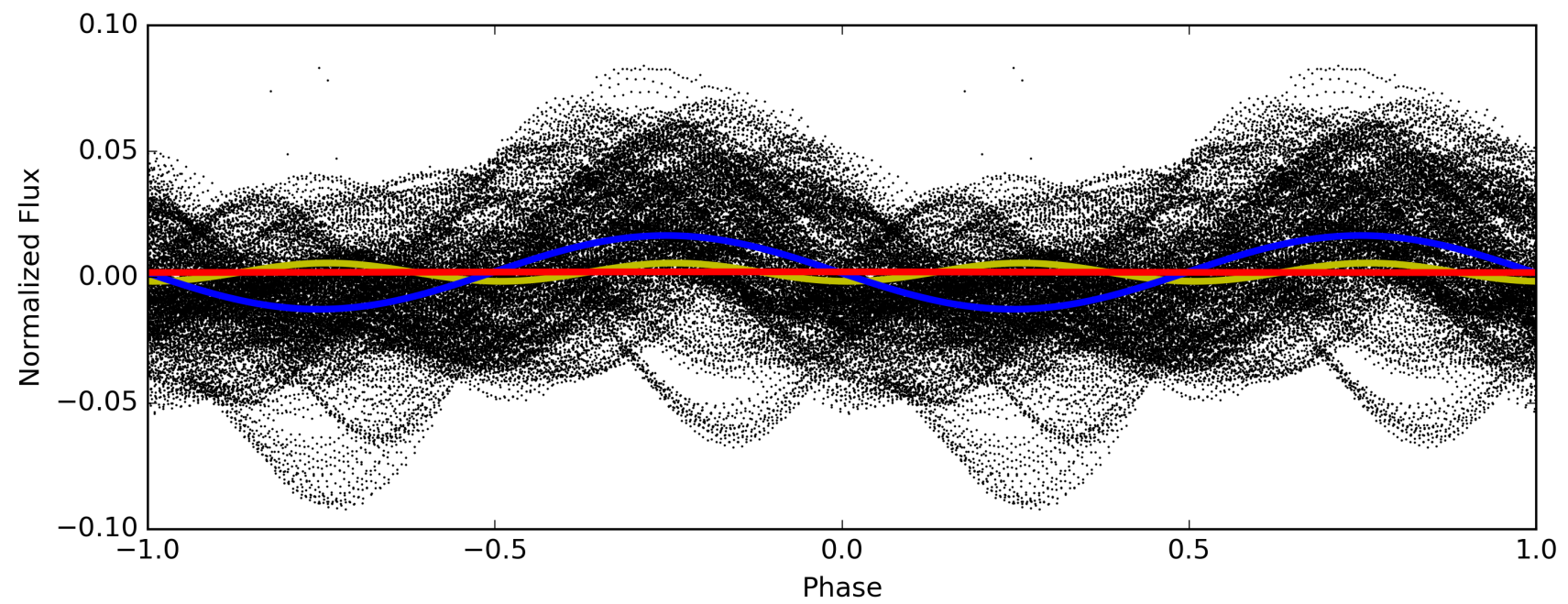
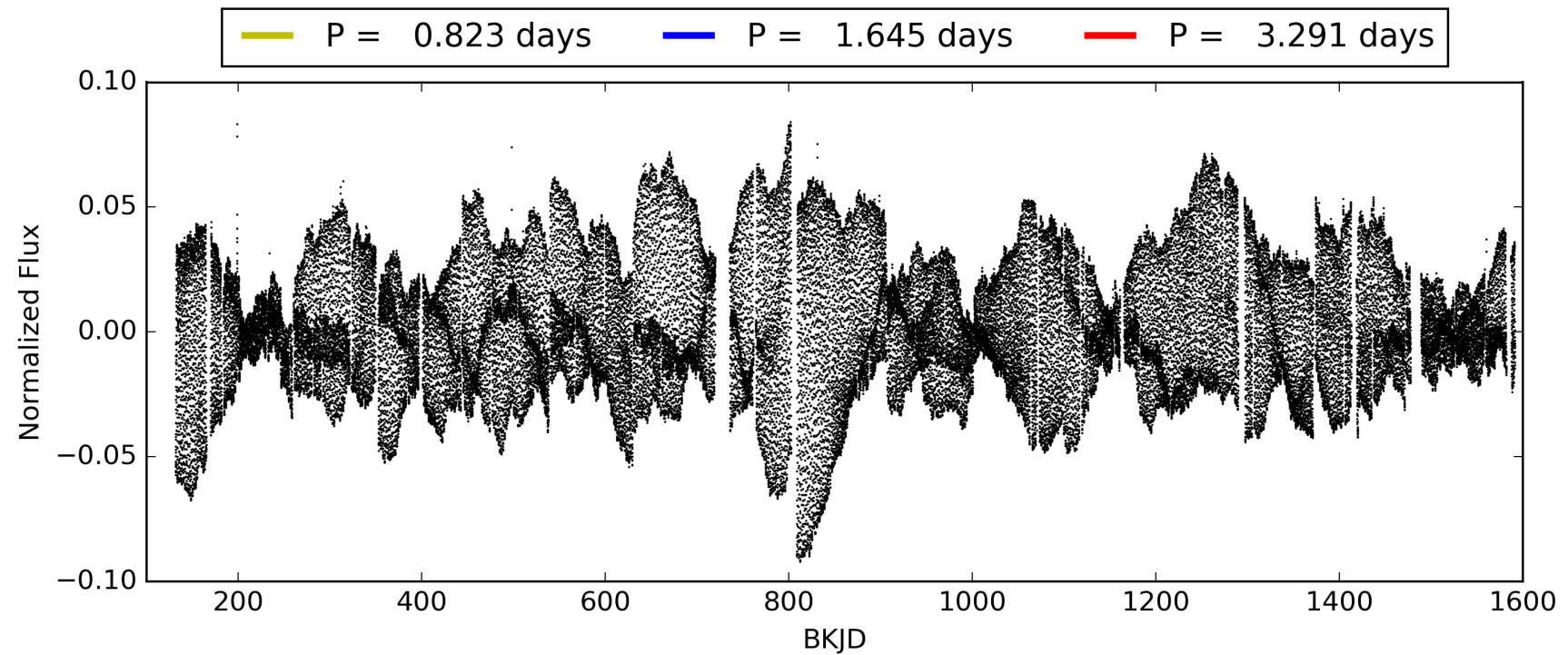
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:14:51 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008822421-01, PDC Light Curves

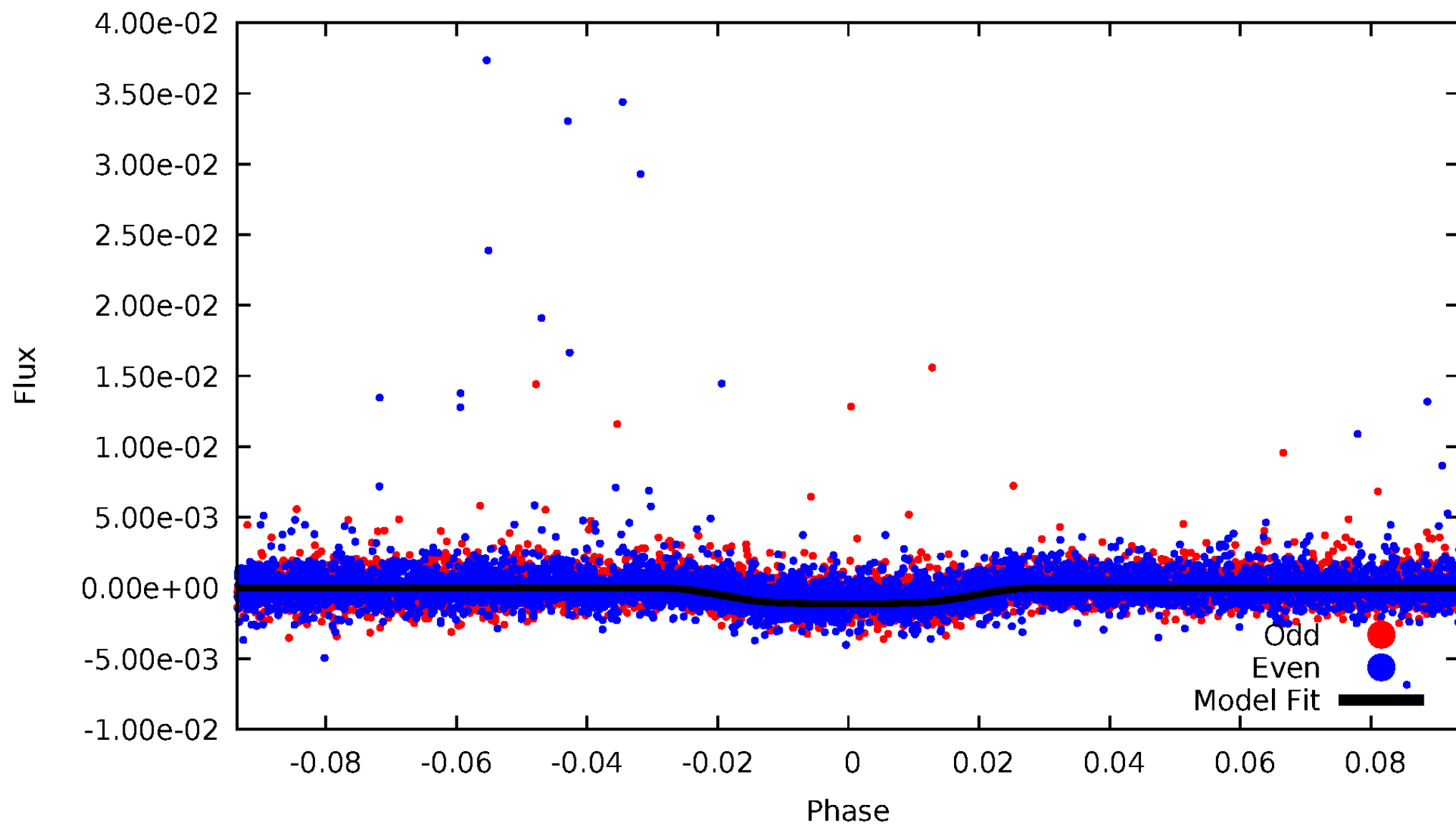


TCE 008822421-01



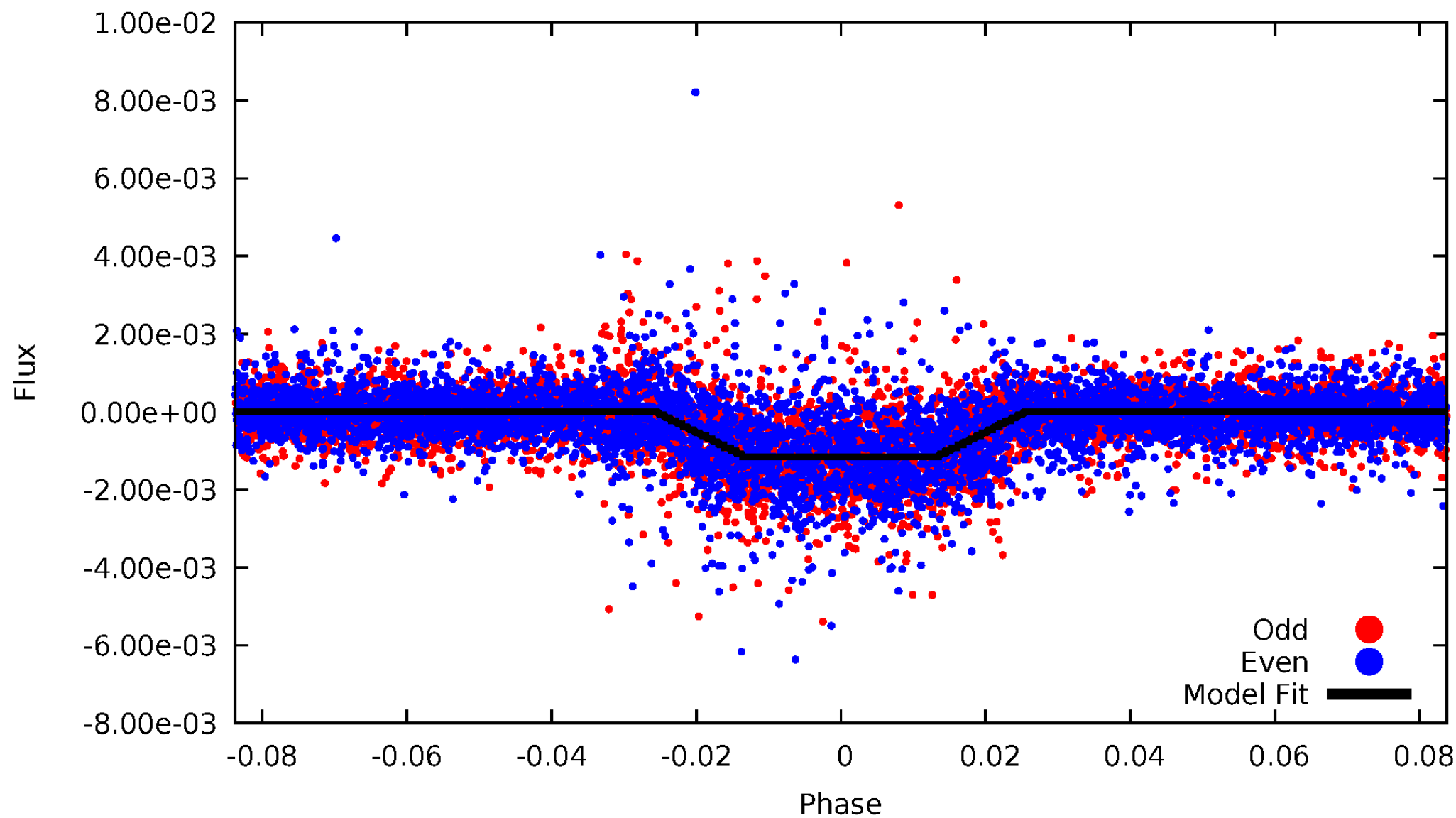
DV Odd/Even

TCE 008822421-01



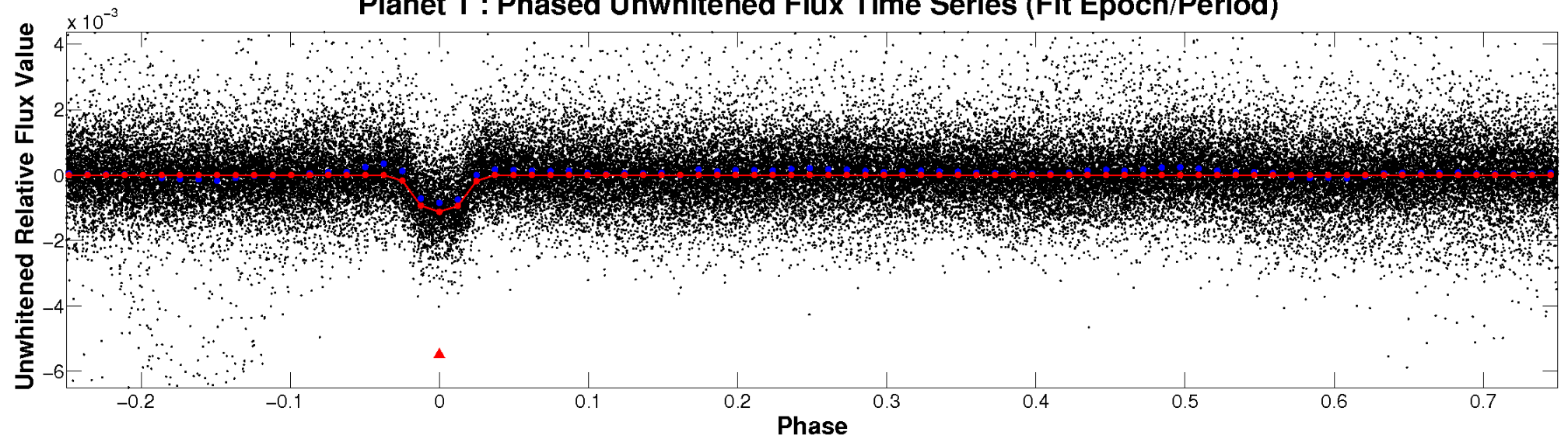
ALT Odd/Even

TCE 008822421-01

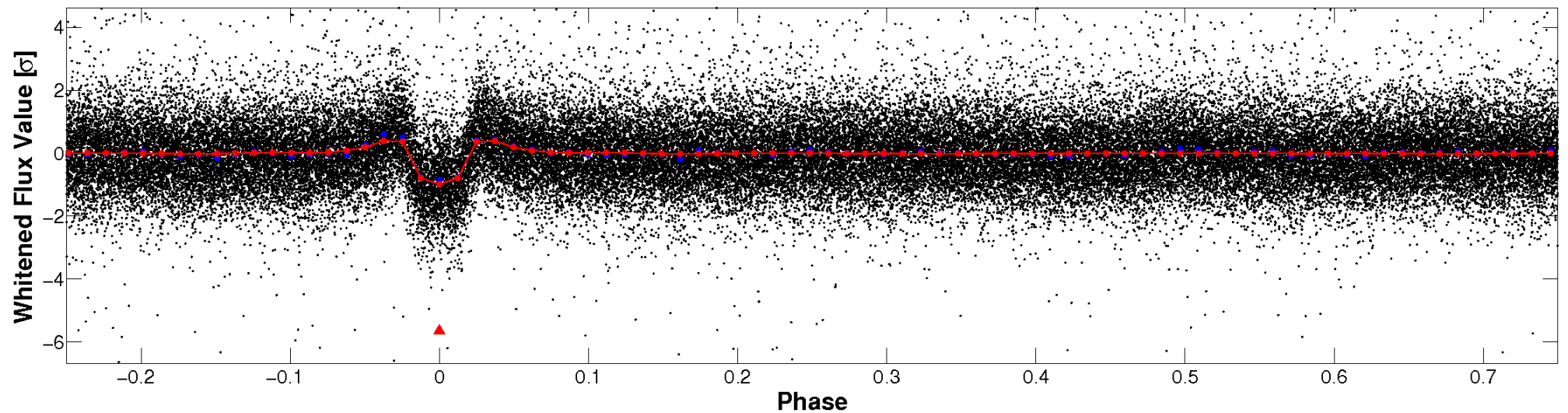


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

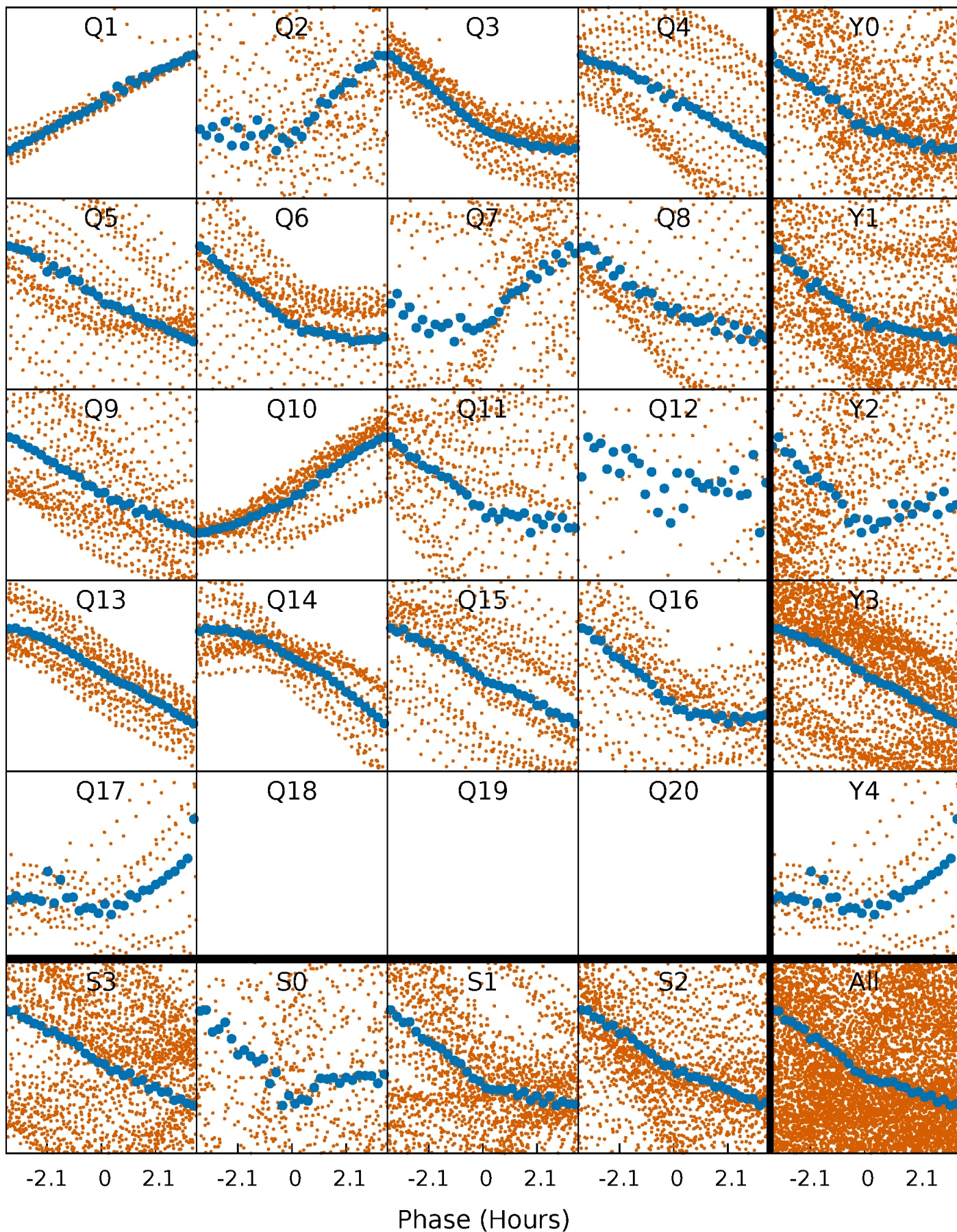


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



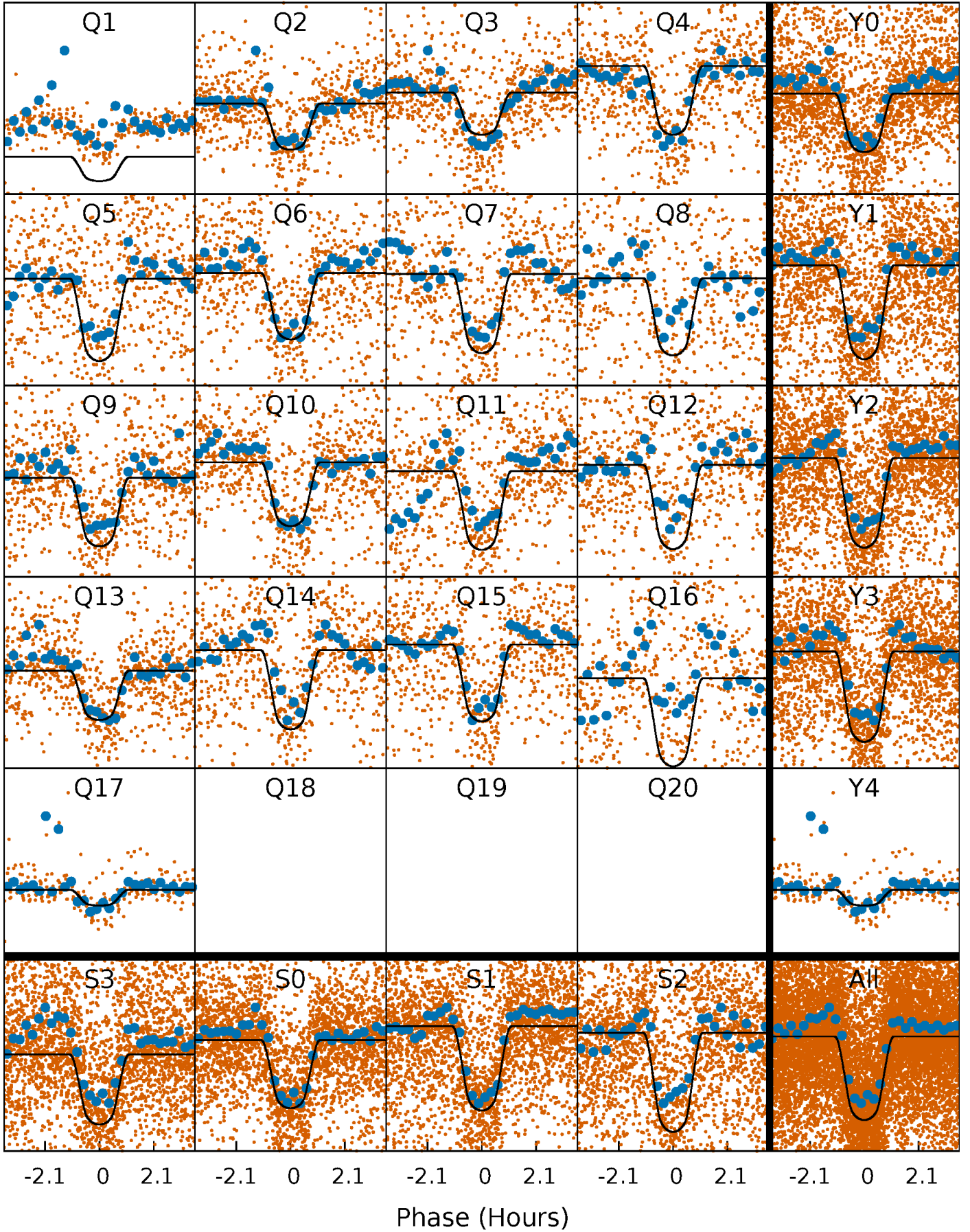
PDC Quarter-Phased Transit Curves

TCE 008822421-01 P= 1.645303 Days $T_0=132.134381$ (BKJD)



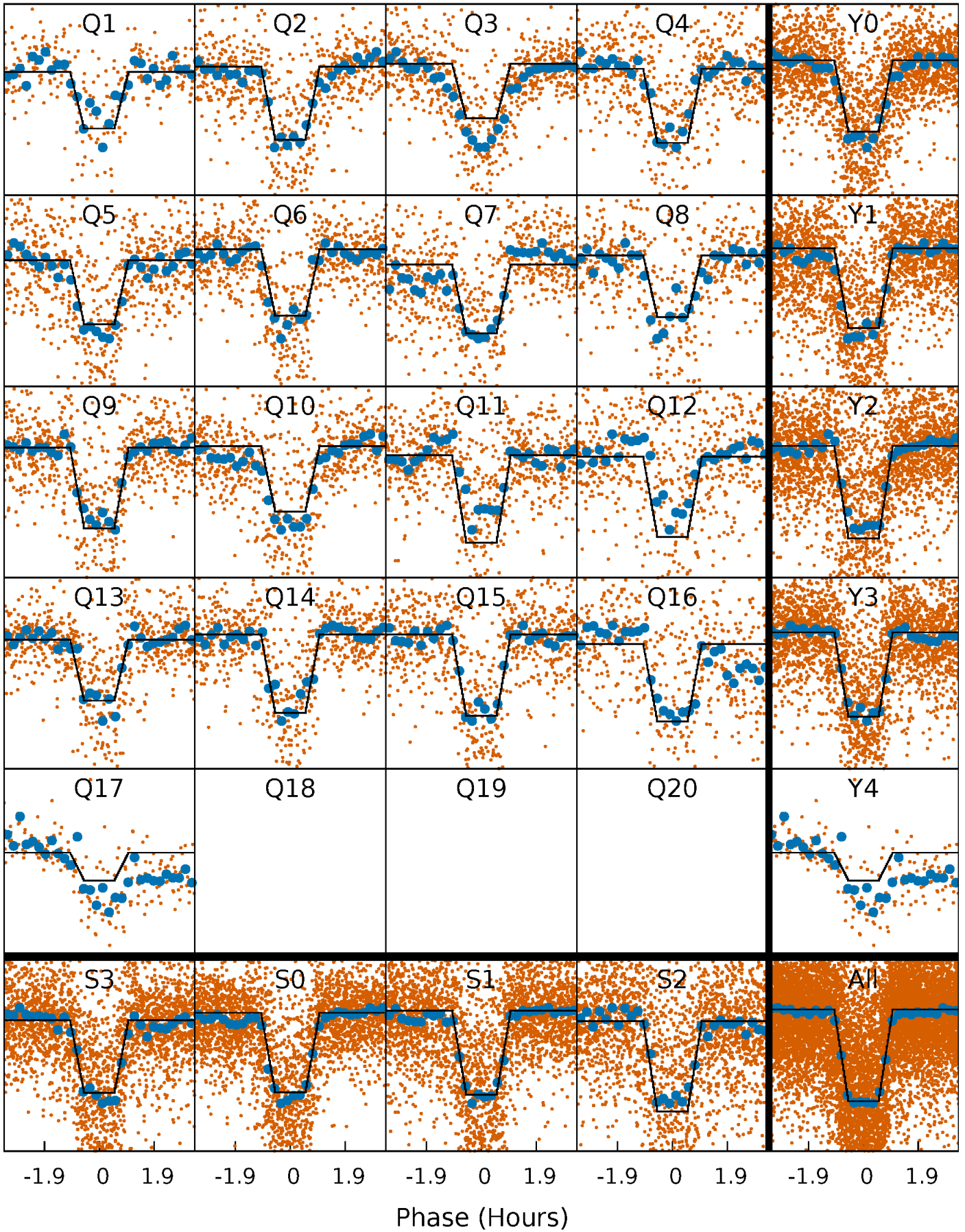
DV Quarter-Phased Transit Curves

TCE 008822421-01 P= 1.645303 Days $T_0=132.134381$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

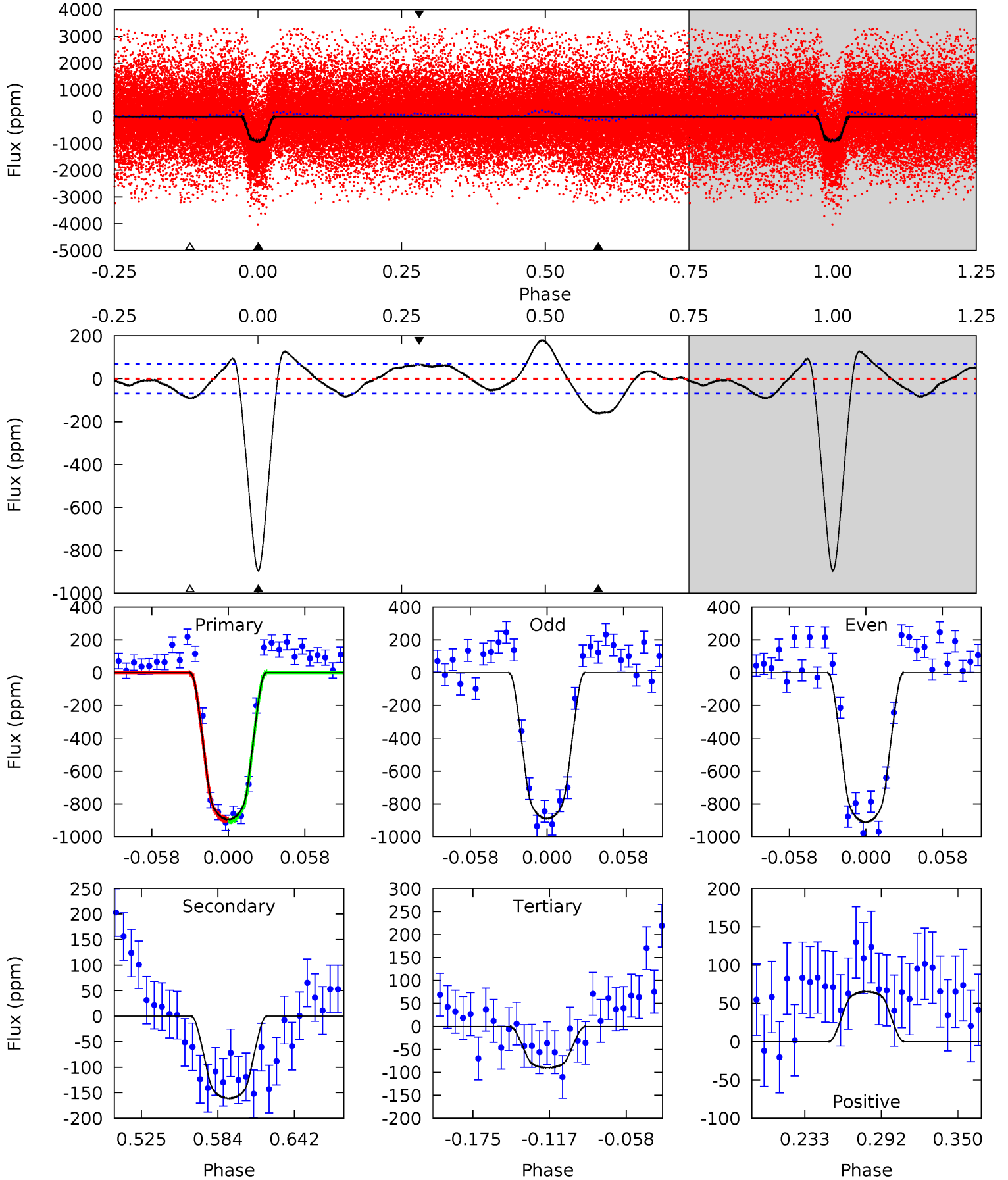
TCE 008822421-01 P= 1.645308 Days $T_0=132.133238$ (BKJD)



DV Model-Shift Uniqueness Test

008822421-01, P = 1.645303 Days, E = 130.489078 Days

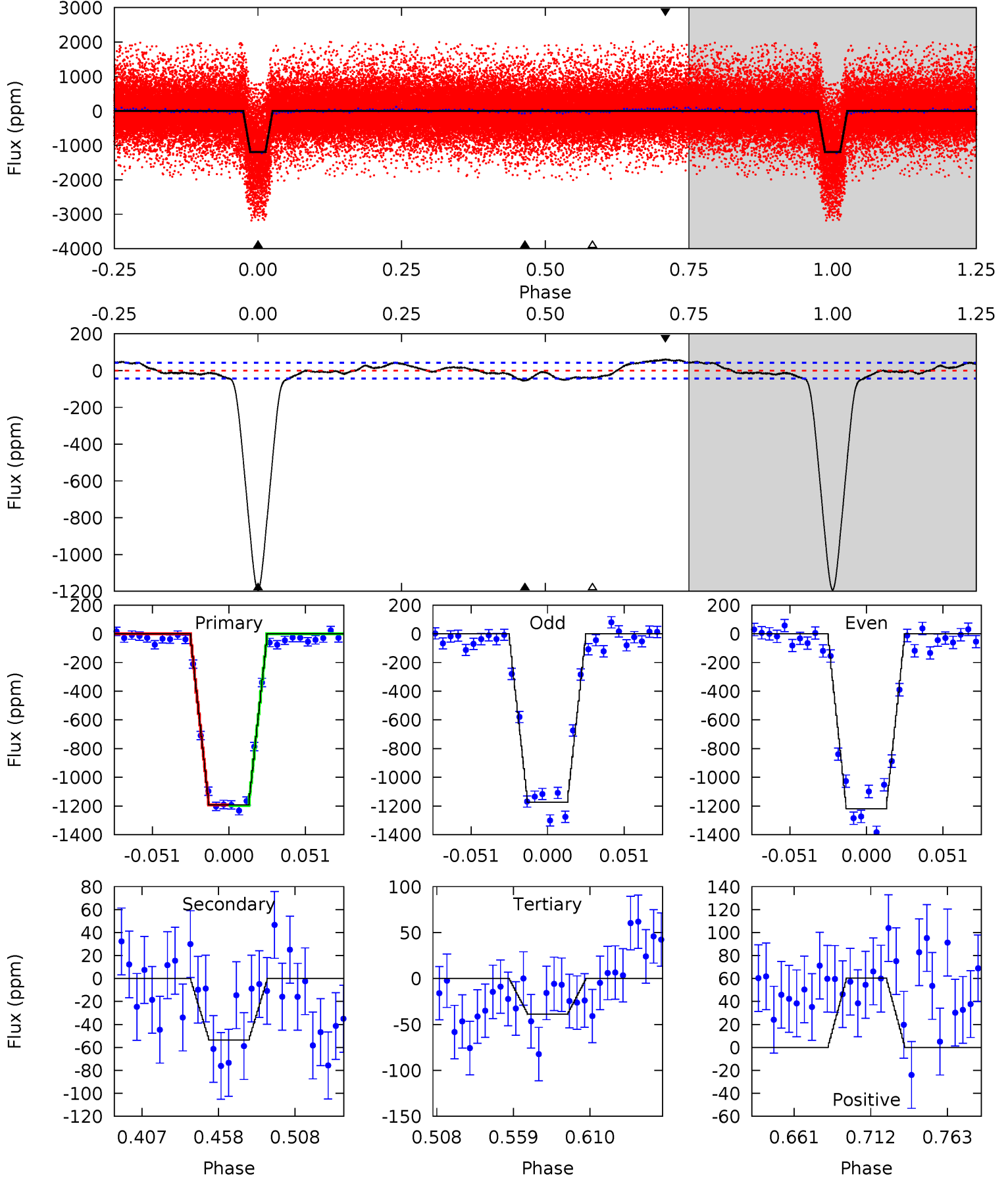
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.2	11.0	6.16	4.48	4.68	1.89	3.89	55.0	56.7	4.84	6.52	0.72	0.90	0.17	0.25



Alt Model-Shift Uniqueness Test

008822421-01, P = 1.645308 Days, E = 130.487930 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
130.8	5.87	4.26	6.60	4.70	1.95	3.18	126.5	124.2	1.61	-0.73	2.53	0.99	0.05	0.30



Stellar Parameters For KIC 008822421

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5416^{+162}_{-146}	$4.603^{+0.035}_{-0.112}$	$-0.260^{+0.300}_{-0.300}$	$0.756^{+0.135}_{-0.058}$	$0.847^{+0.080}_{-0.098}$	$2.757^{+0.513}_{-0.903}$
	+3%/-3%	+1%/-2%	+115%/-115%	+18%/-8%	+9%/-12%	+19%/-33%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008822421-01 / KOI 6188.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-161 ± 15	$3.06^{+0.34}_{-0.26}$	1833^{+86}_{-67}	3601^{+126}_{-116}	$6.188^{+1.354}_{-1.141}$
Alt.	-54 ± 9	$2.87^{+0.31}_{-0.24}$	1838^{+80}_{-65}	3062^{+118}_{-133}	$2.318^{+0.597}_{-0.556}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

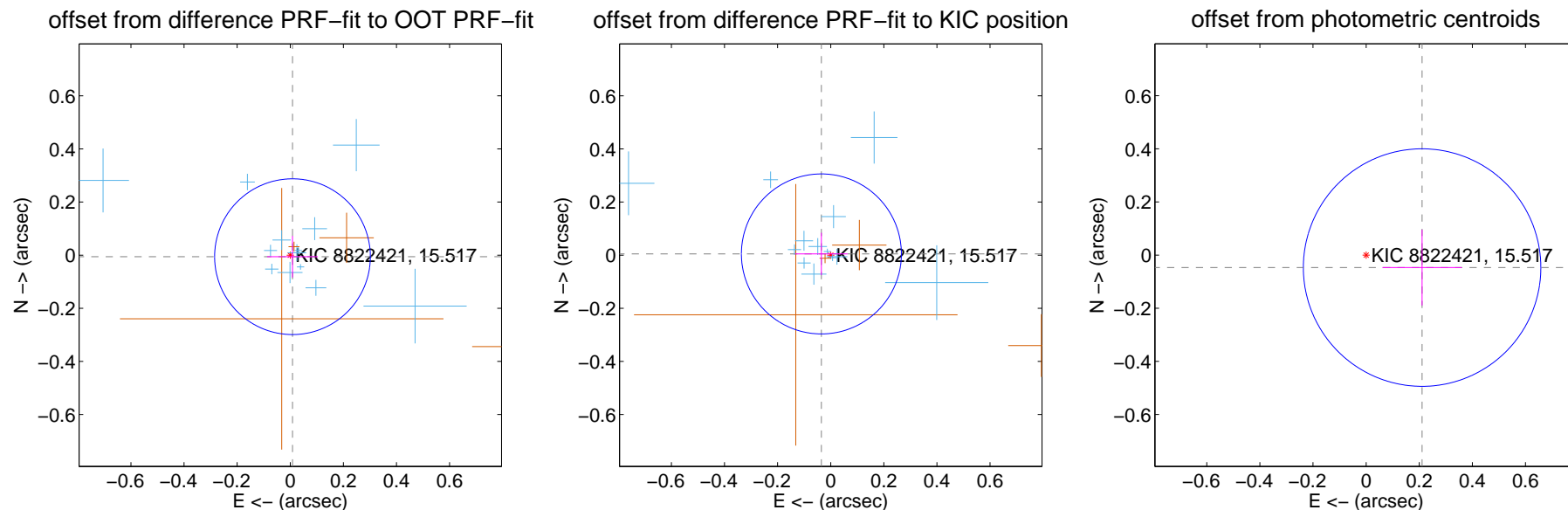
DV Centroid Data

Supplemental centroid analysis for 008822421-01. Kepler magnitude: 15.52. Transit SNR 49.20

There are 13 quarters with good PRF difference image offsets

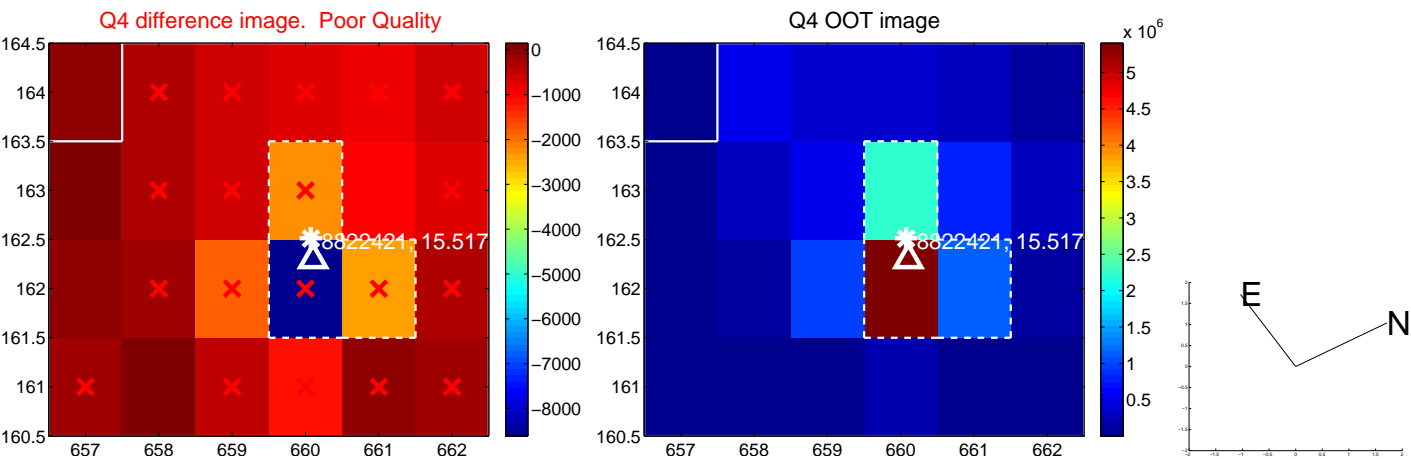
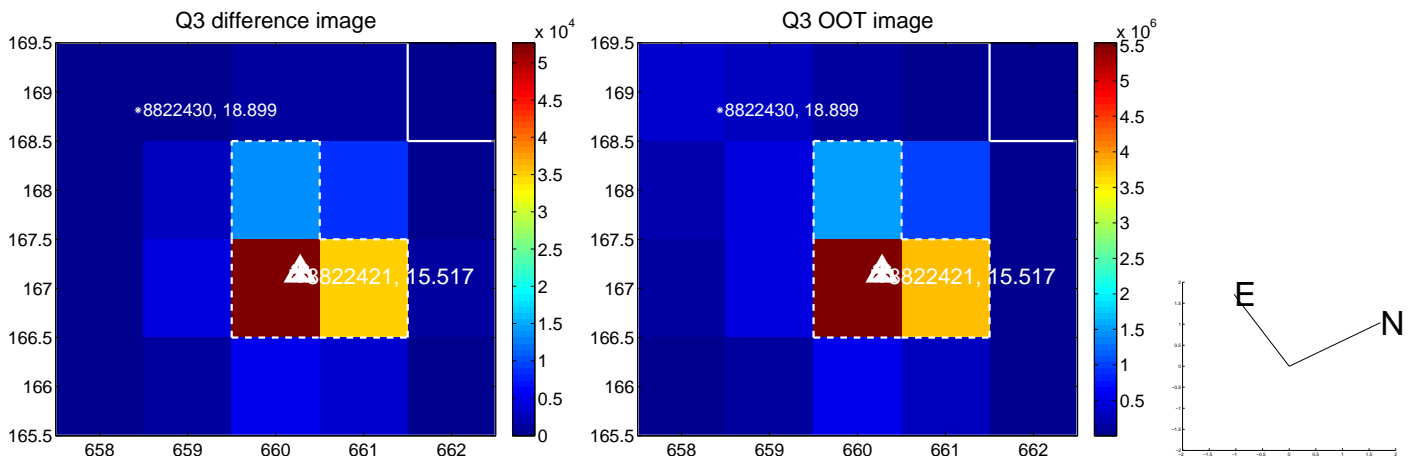
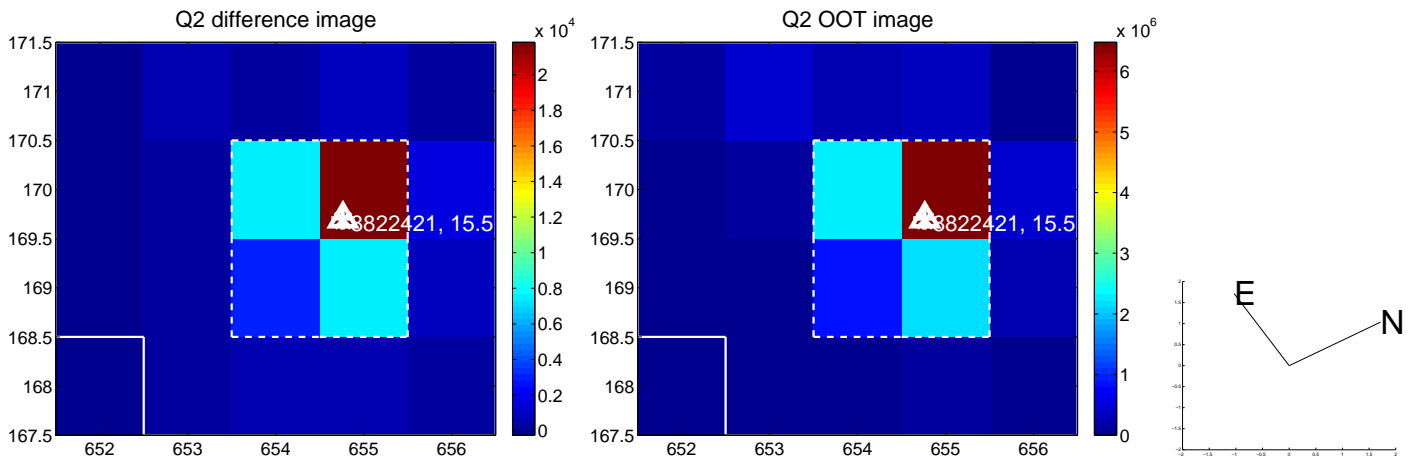
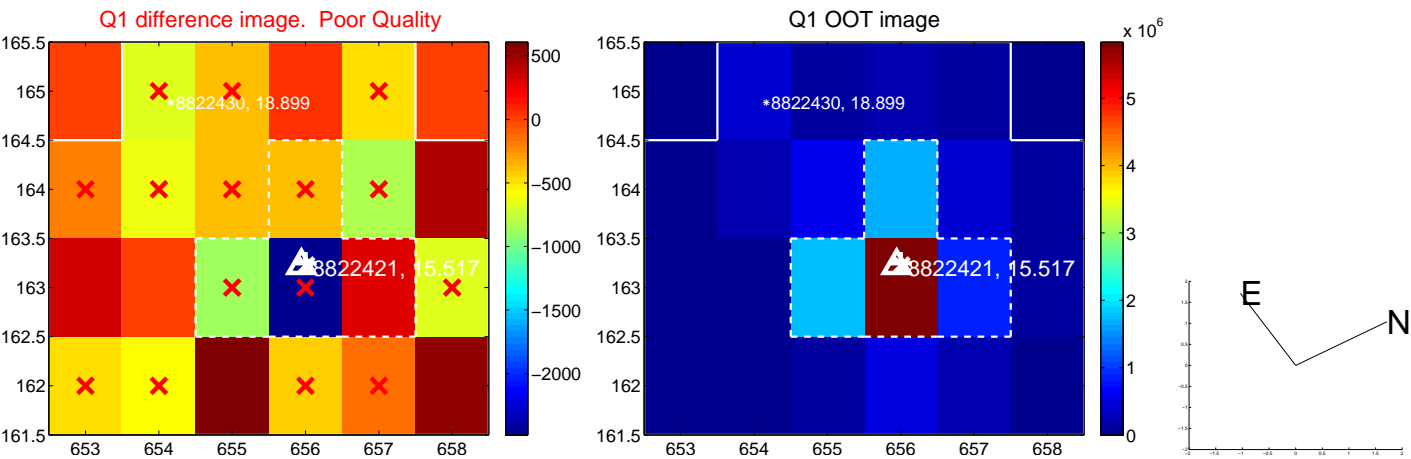
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.010 ± 0.098	0.10	-0.008 ± 0.095	-0.006 ± 0.078
PRF-fit source offset from KIC position	0.035 ± 0.100	0.35	0.035 ± 0.099	0.005 ± 0.080
photometric centroid source offset	0.22 ± 0.15	1.45	-0.21 ± 0.15	-0.05 ± 0.14

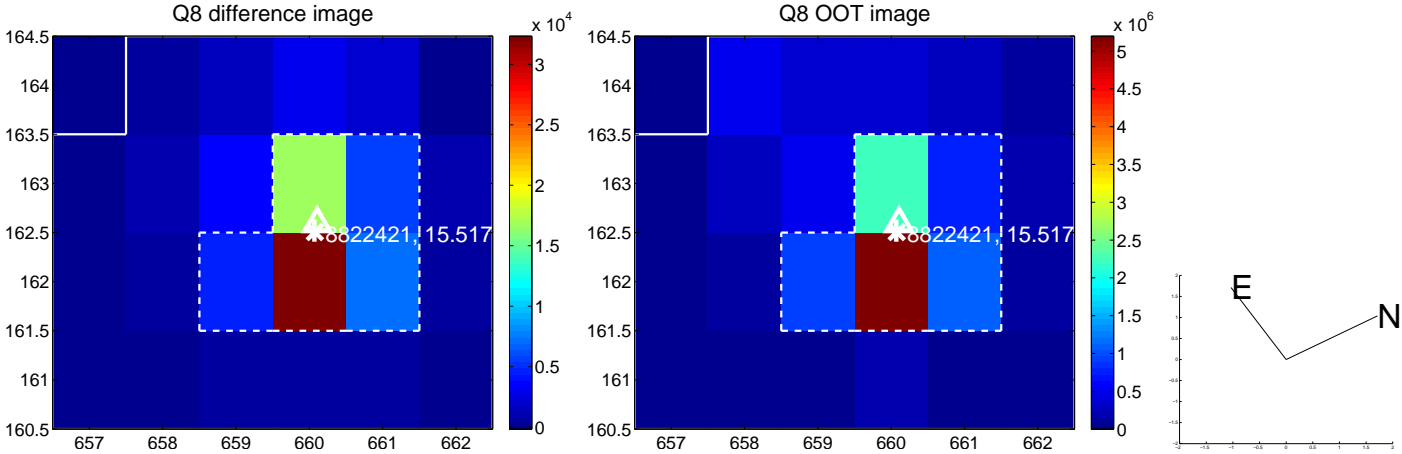
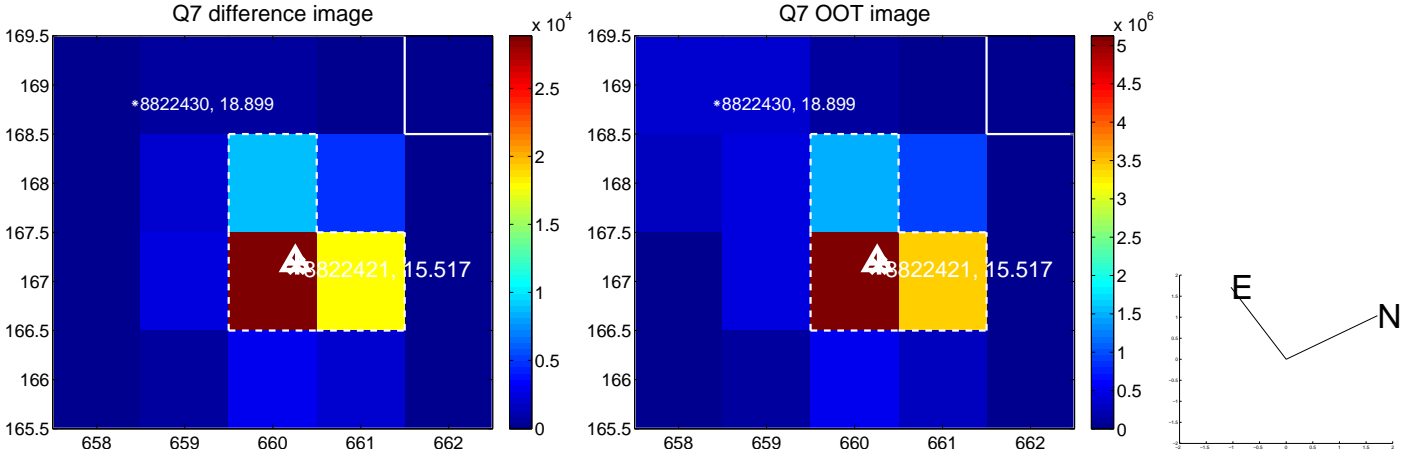
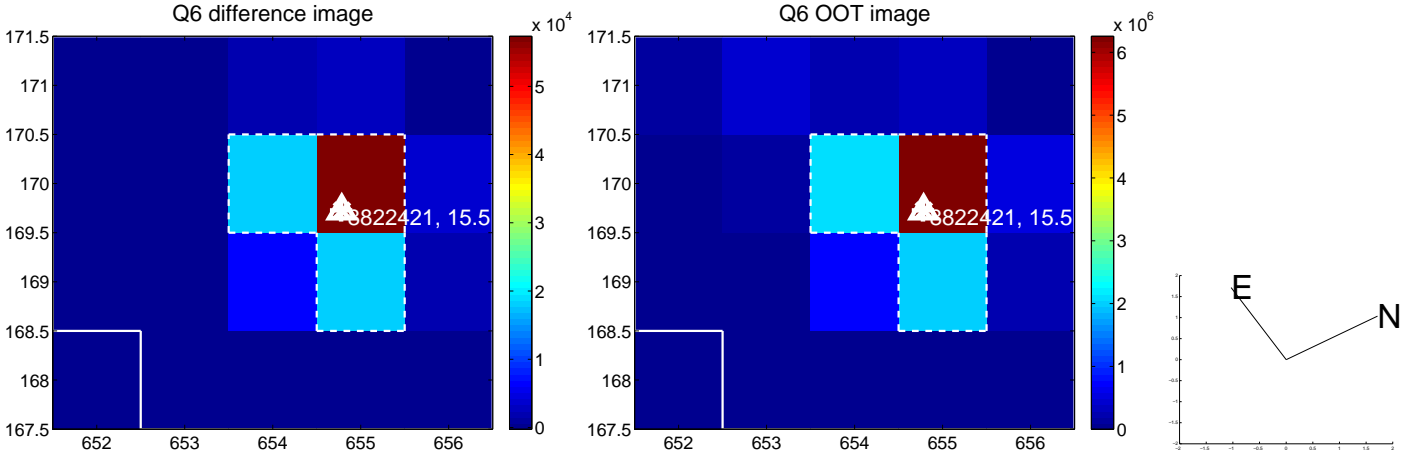
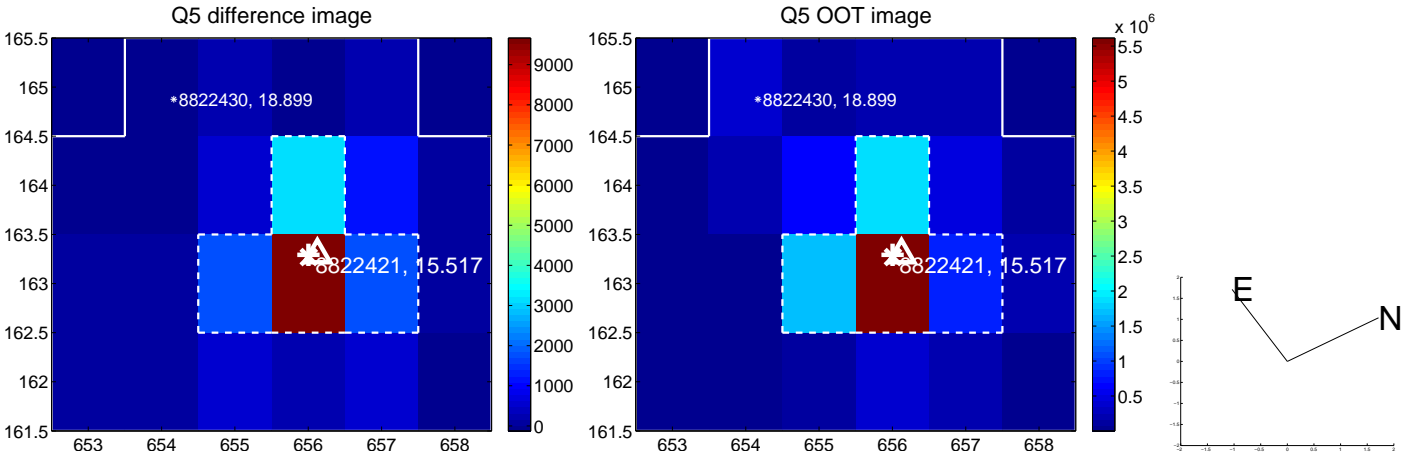


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

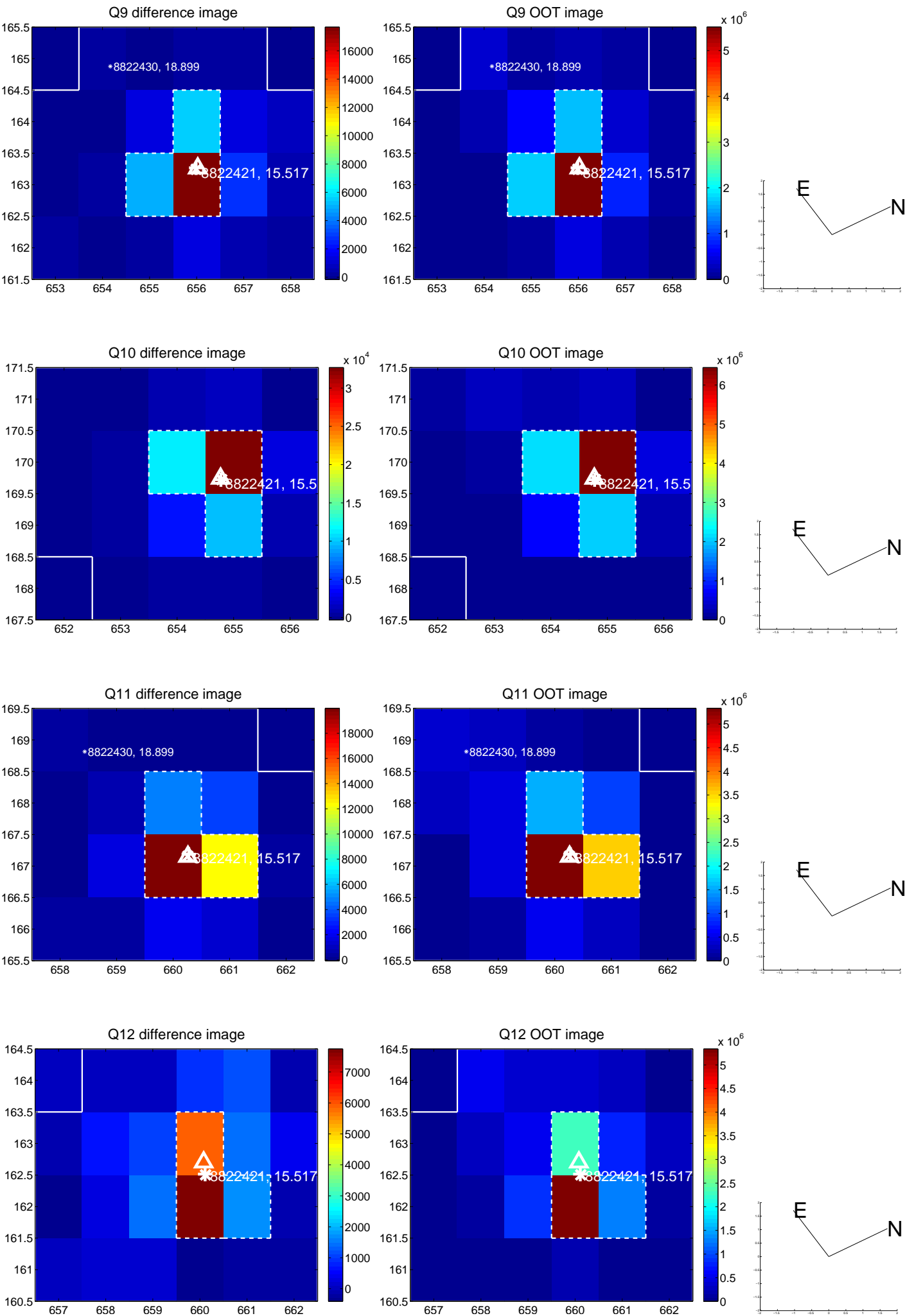
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



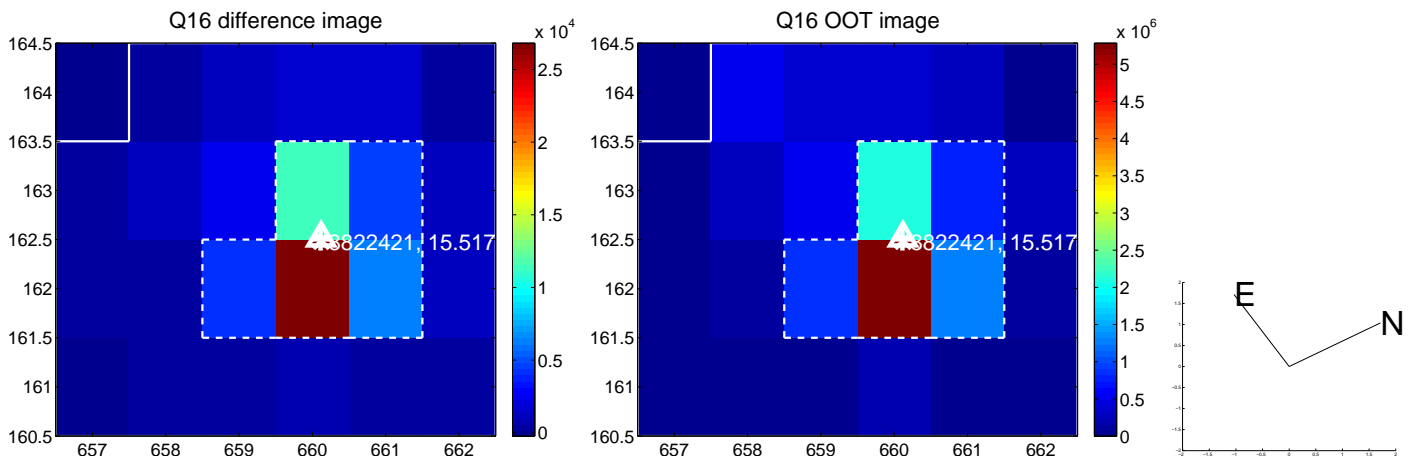
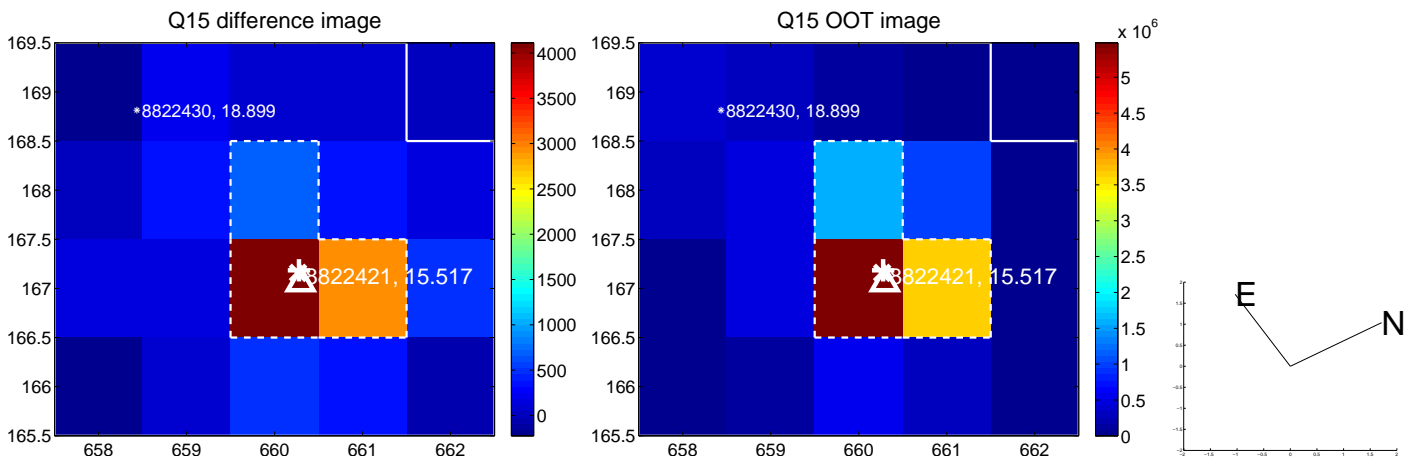
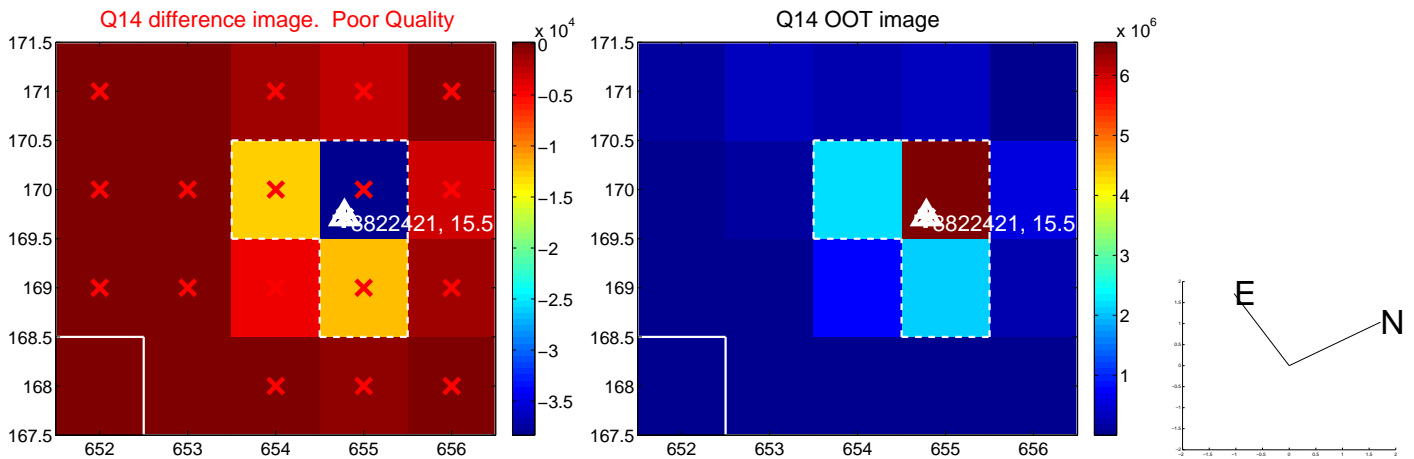
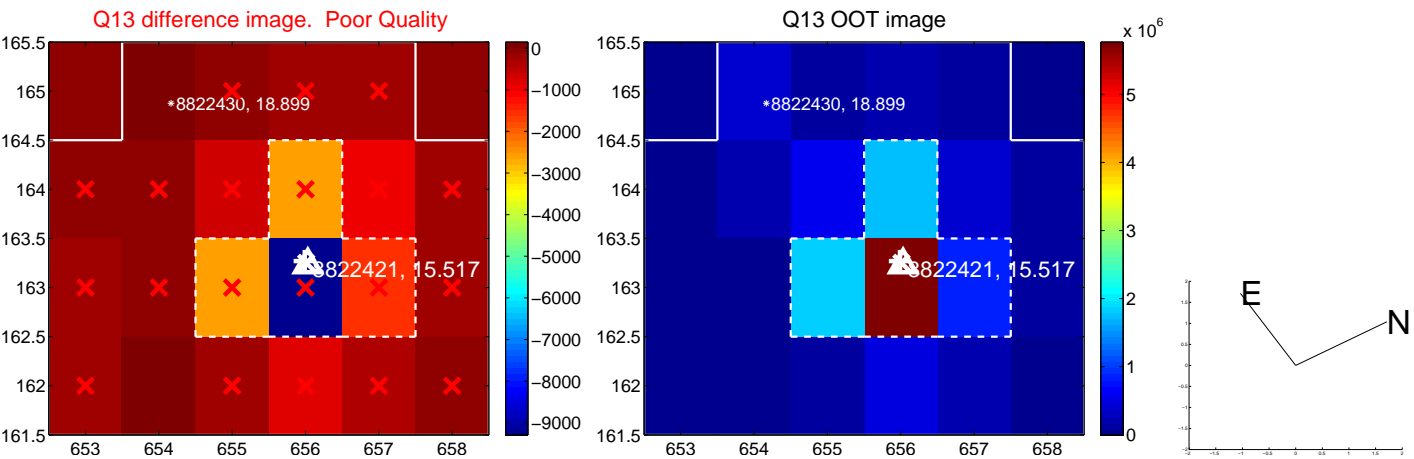
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



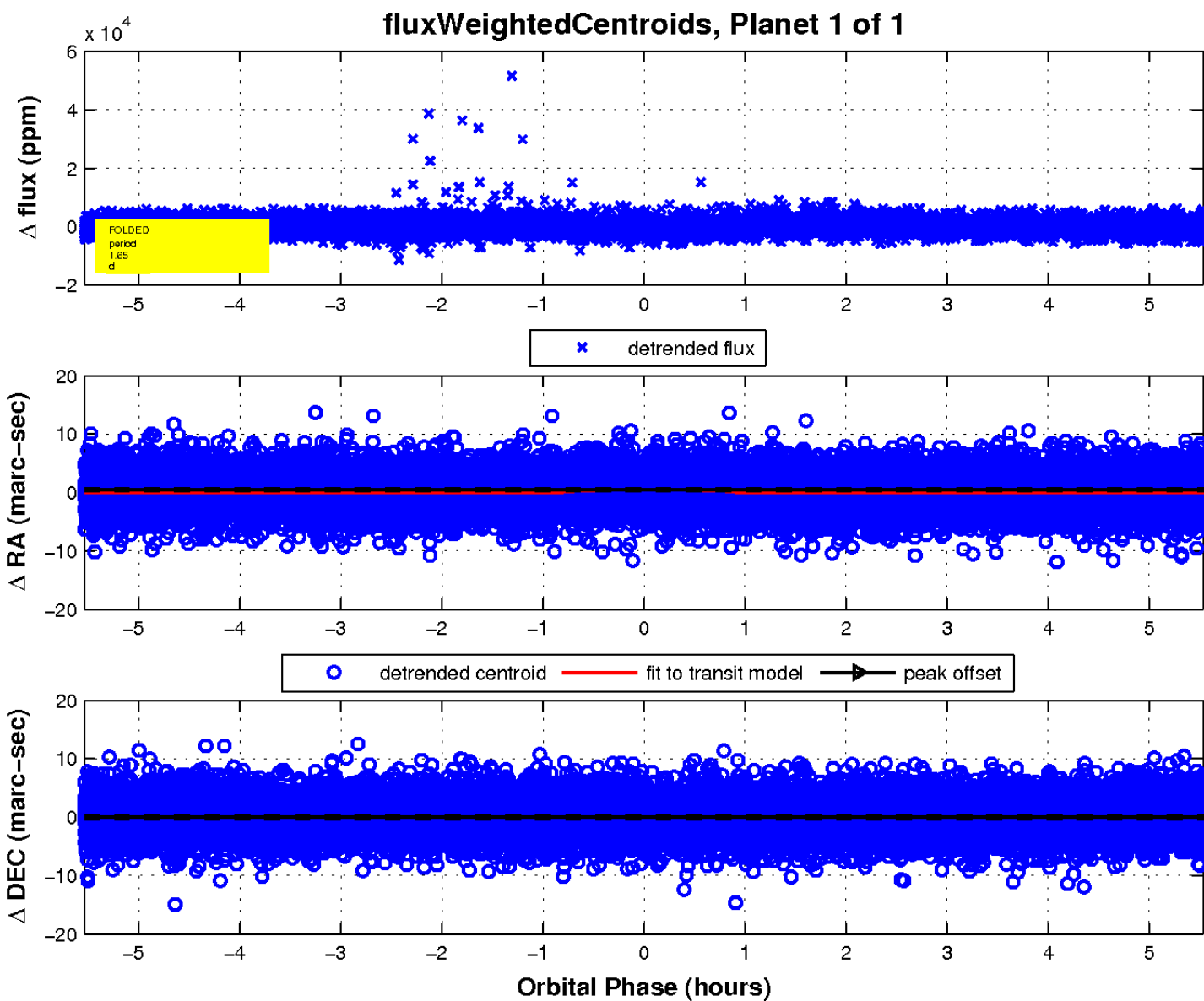
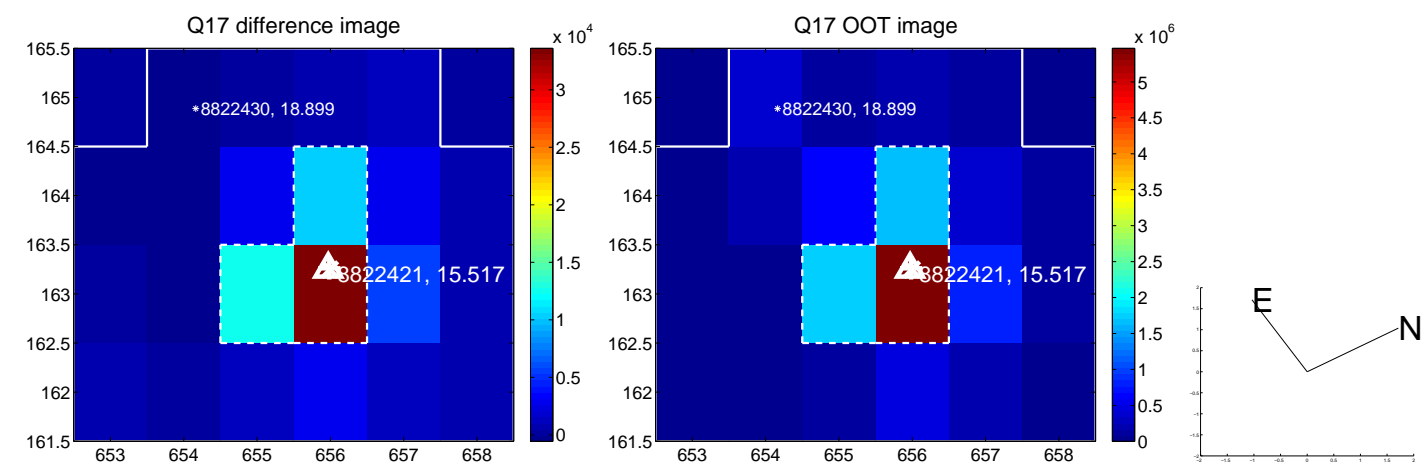
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

