

KIC 009818462

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})
009818462-01	OBS	1521.01	25.942081	156.190211	565.9	4.552	24.8	26.8	0.80	5167	2.35	14.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009818462-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

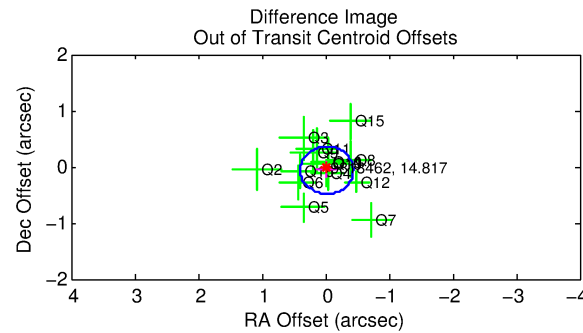
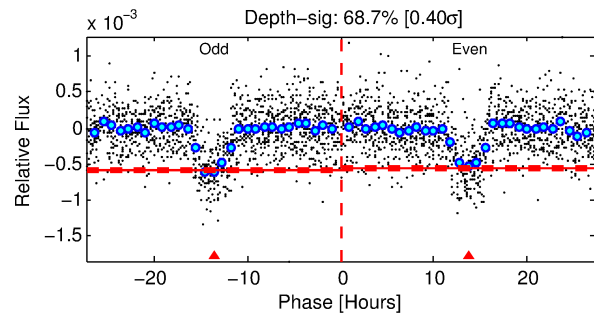
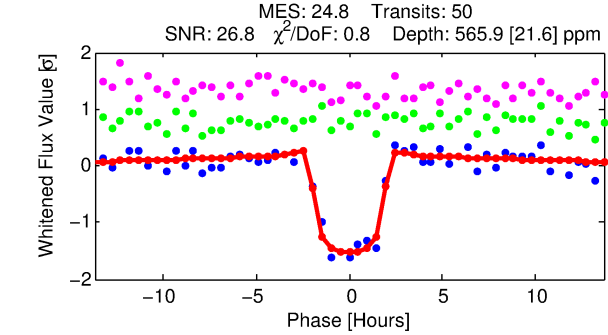
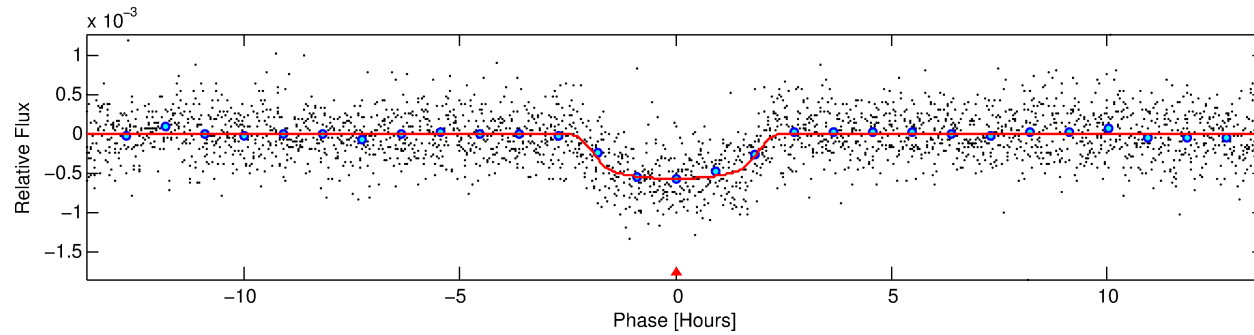
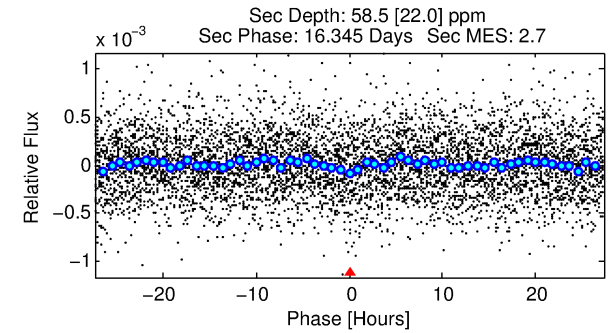
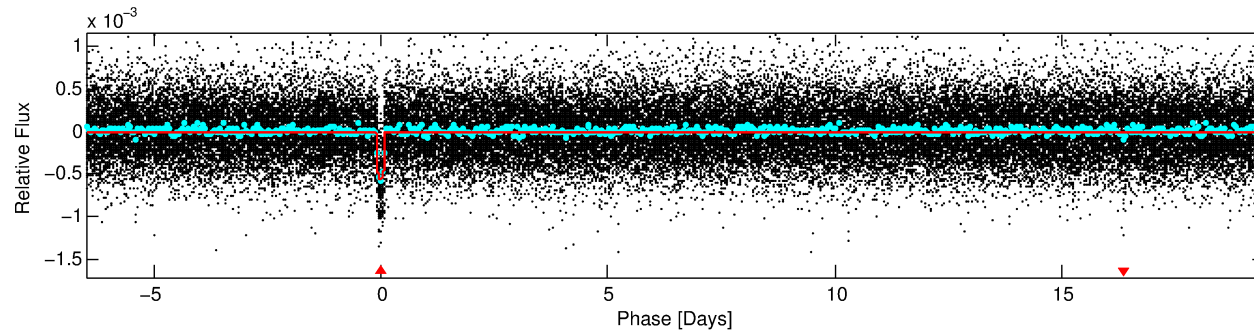
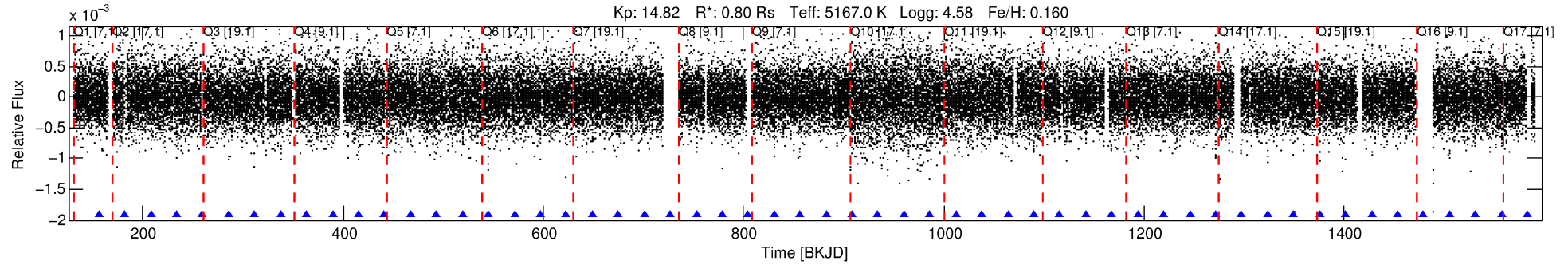
Ephemeris Match Information For 009818462-01

No Significant Match Found

DV One-Page Summary

KIC: 9818462 Candidate: 1 of 1 Period: 25.942 d

KOI: K01521.01 Corr: 0.943



DV Fit Results:

Period = 25.94208 [0.00010] d
Epoch = 156.1902 [0.0033] BKJD
Rp/R* = 0.0271 [0.0015]
a/R* = 20.05 [4.11]
b = 0.92 [0.04]
Seff = 14.87 [2.23]
Teff = 501 [19] K
Rp = 2.35 [0.24] Re
a = 0.1649 [0.0137] AU
Ag = 158.14 [65.82] [2.39 σ]
Teffp = 2746 [273] K [8.19 σ]

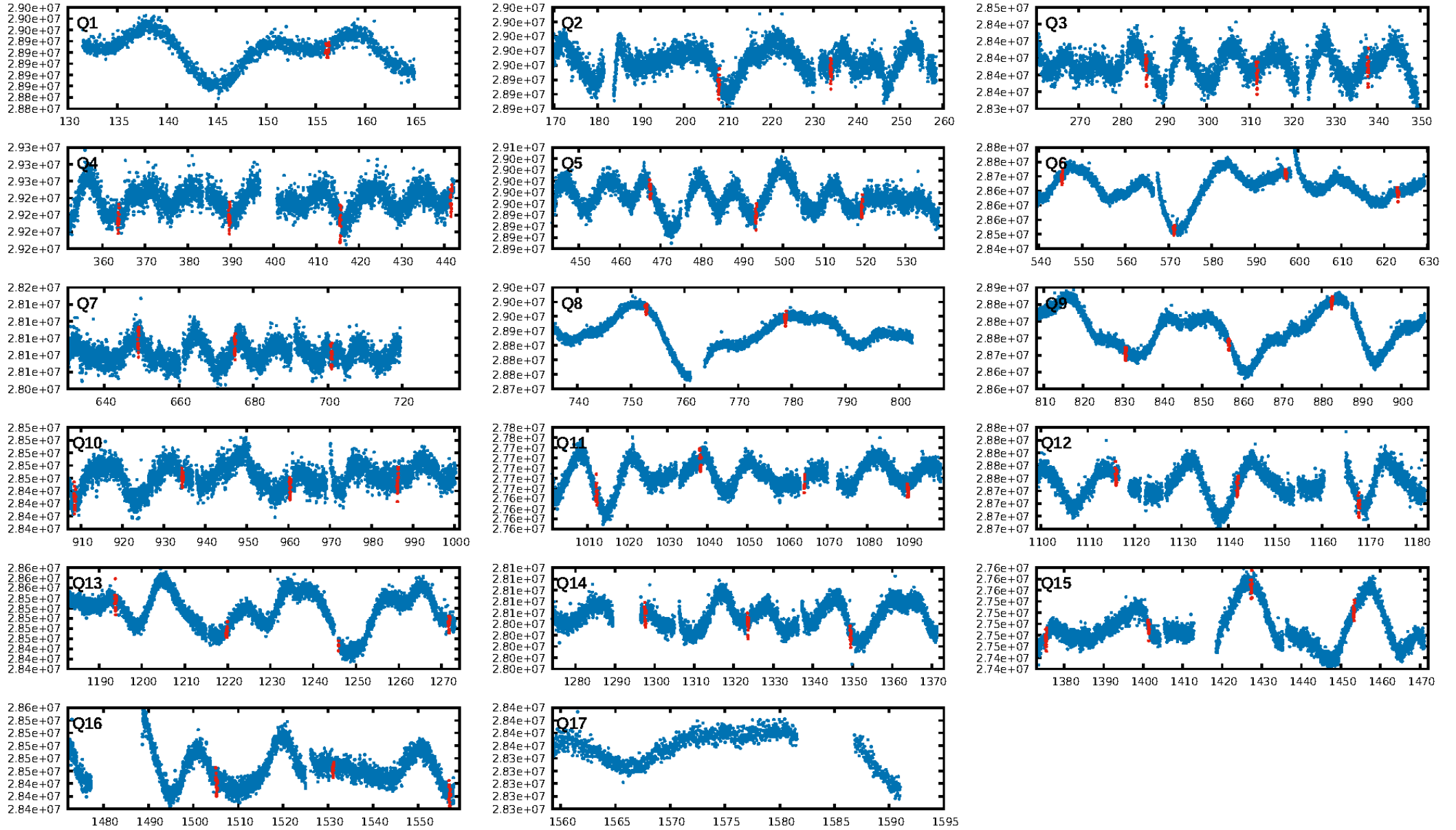
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.07e-130
RollingBand-fgt: 1.00 [49/49]
GhostDiagnostic-chr: 3.051
Centroid-sig: 35.0%
Centroid-so: 0.151 arcsec [0.37 σ]
OotOffset-rm: 0.066 arcsec [0.47 σ]
KicOffset-rm: 0.155 arcsec [1.14 σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [16/16]

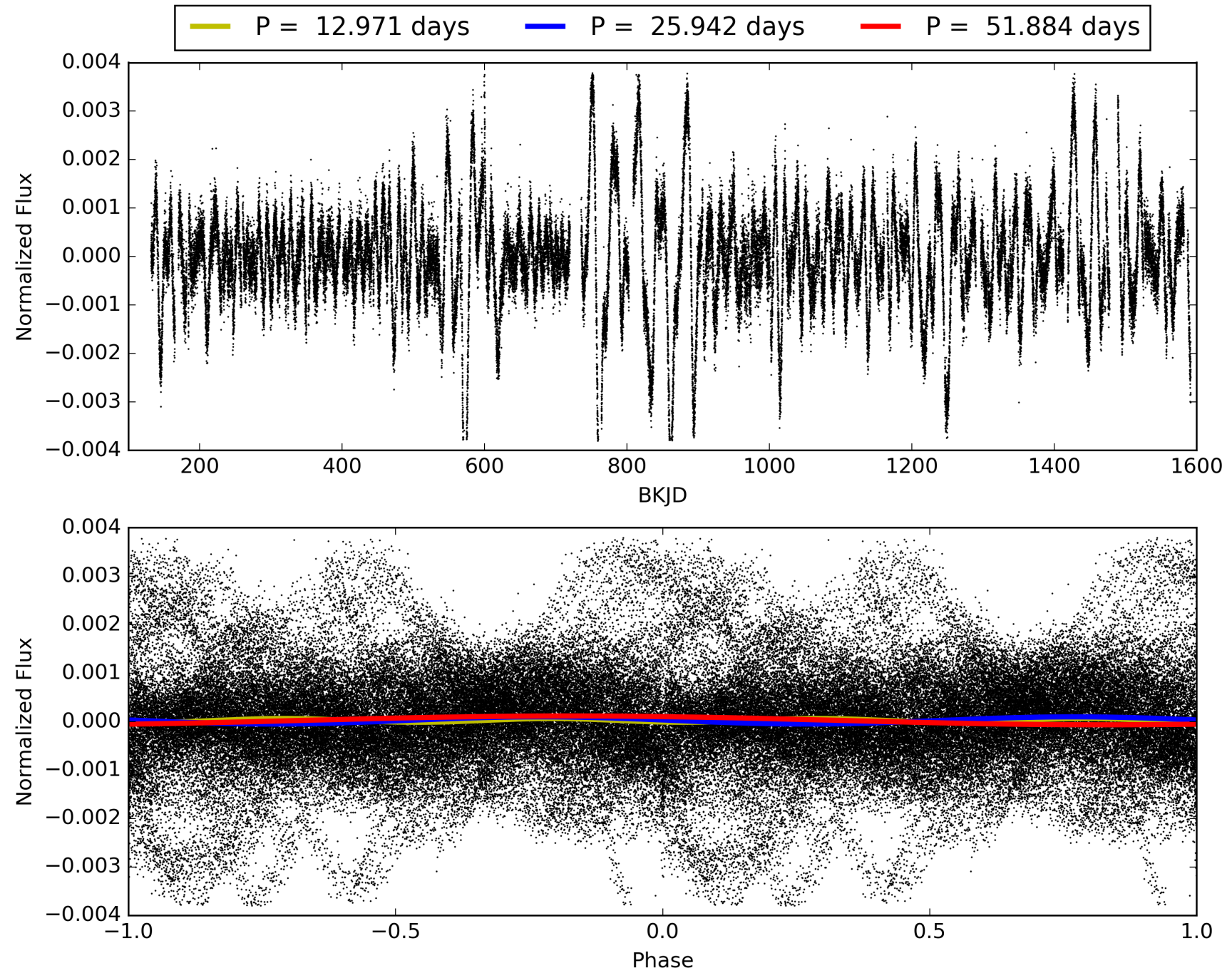
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:58:04 Z

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

TCE 009818462-01, PDC Light Curves

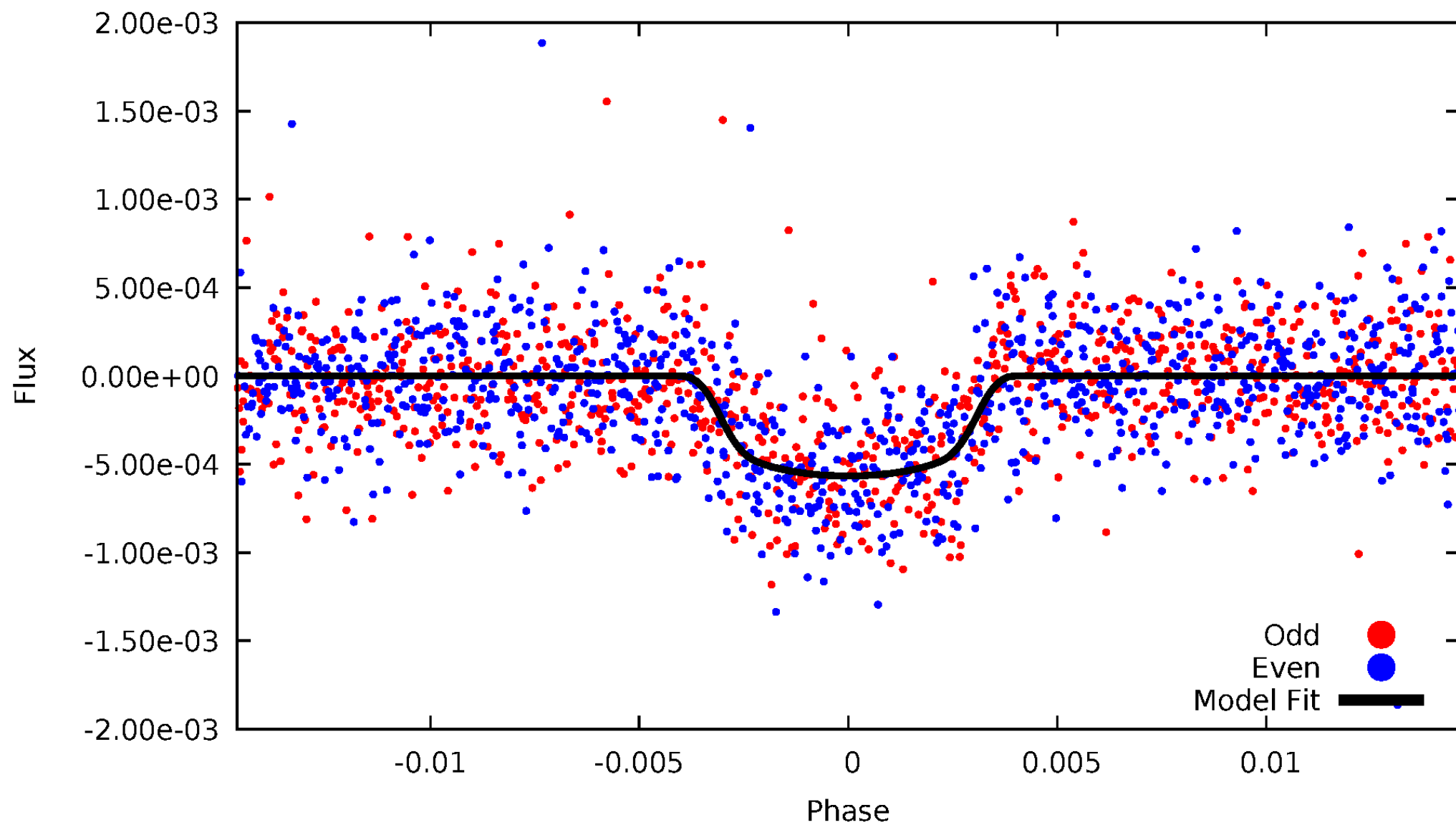


TCE 009818462-01



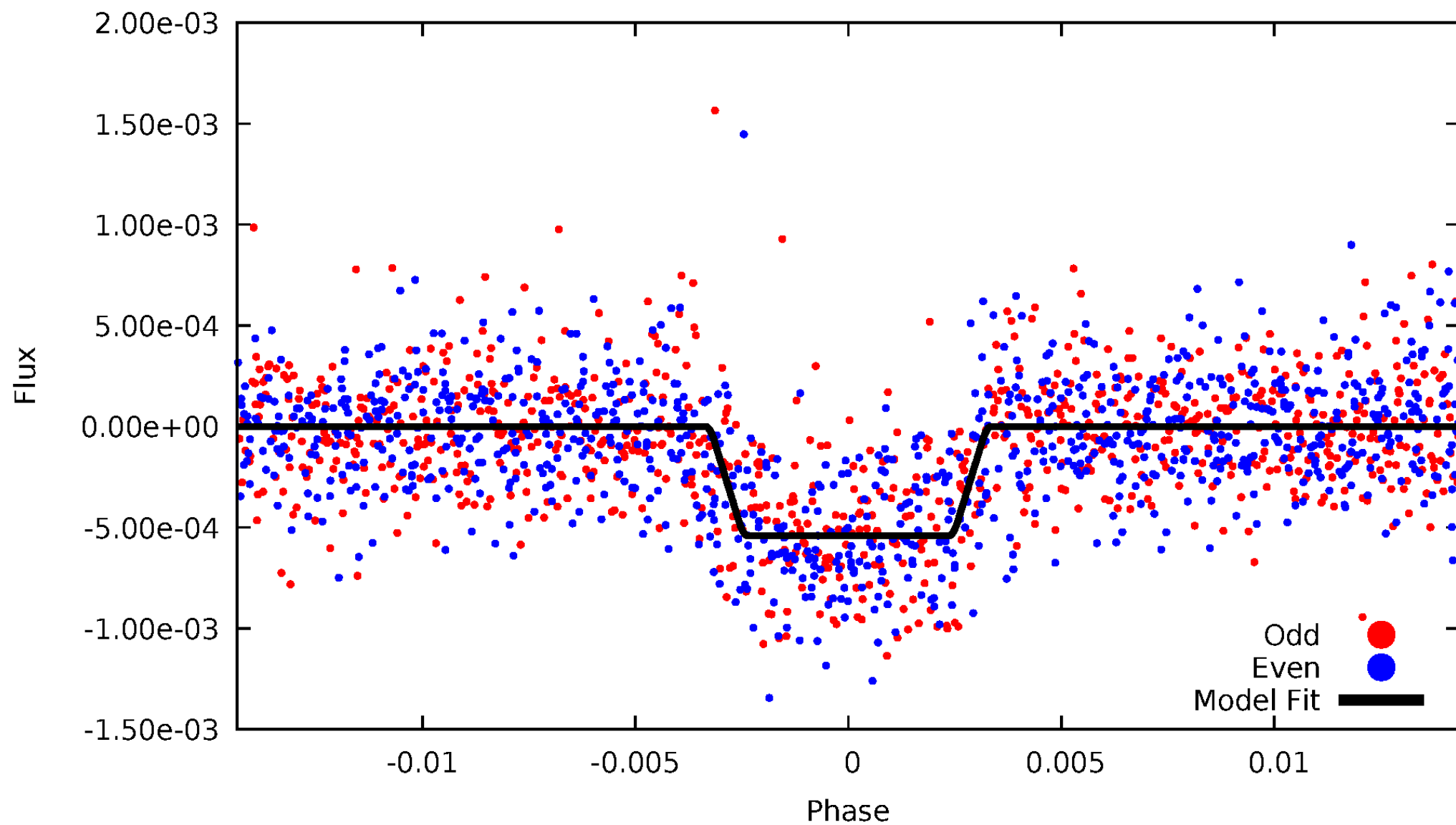
DV Odd/Even

TCE 009818462-01



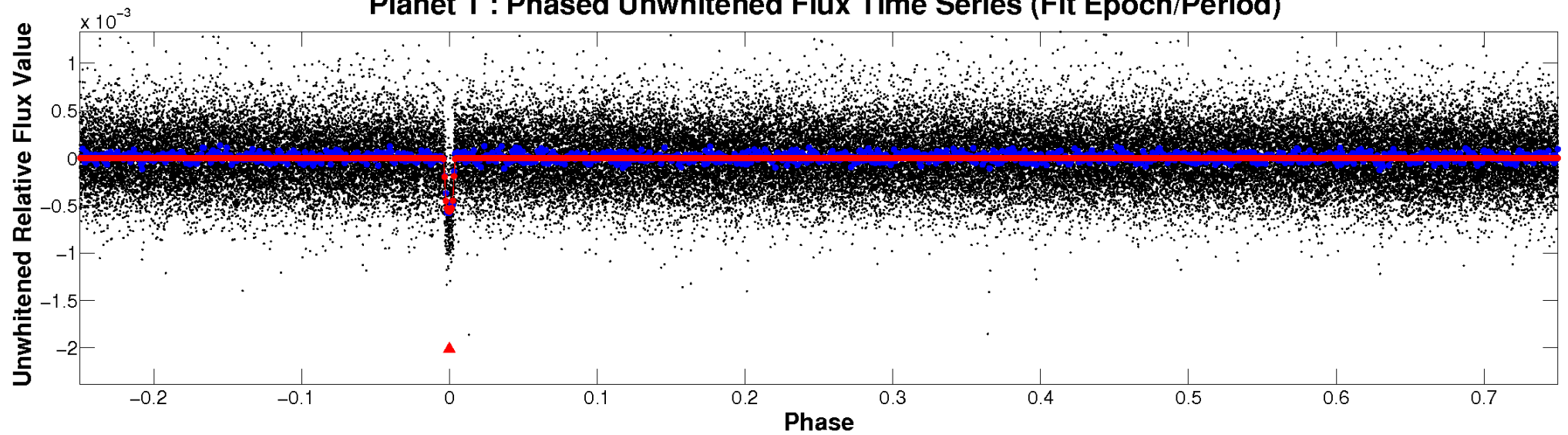
ALT Odd/Even

TCE 009818462-01

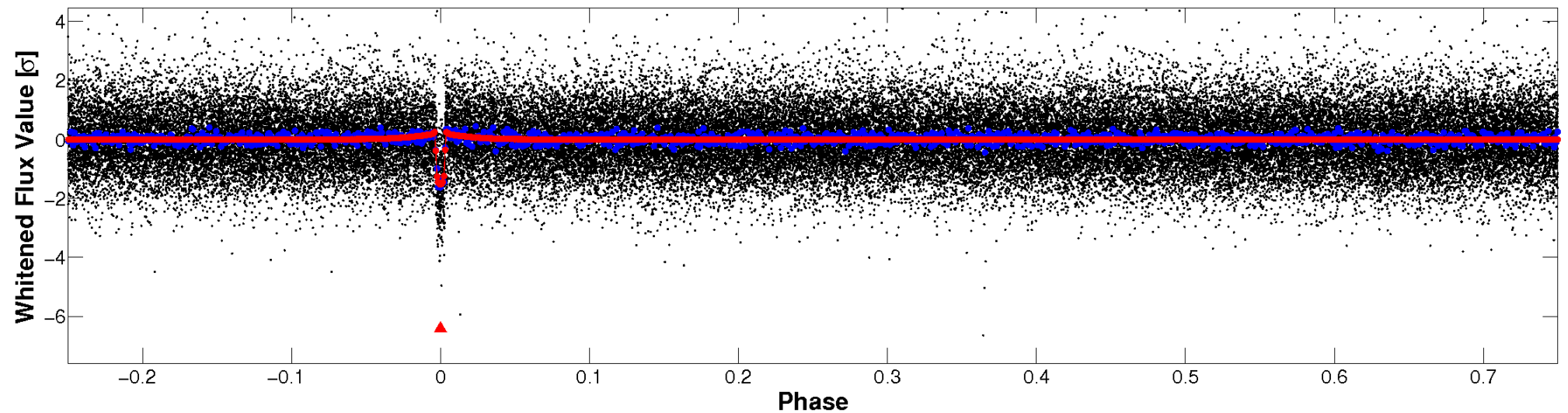


Non-Whitened Vs. Whitened Light Curve

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

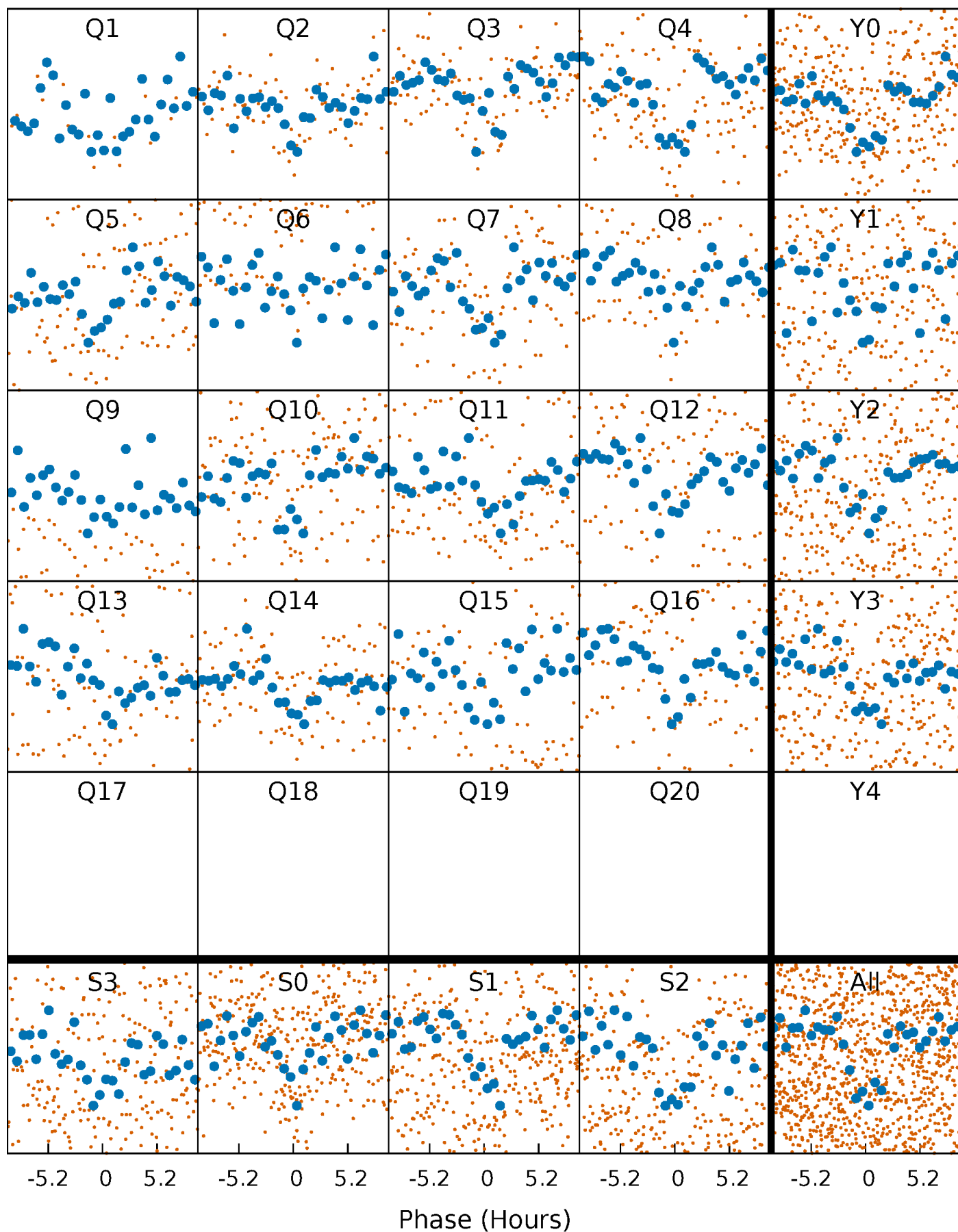


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



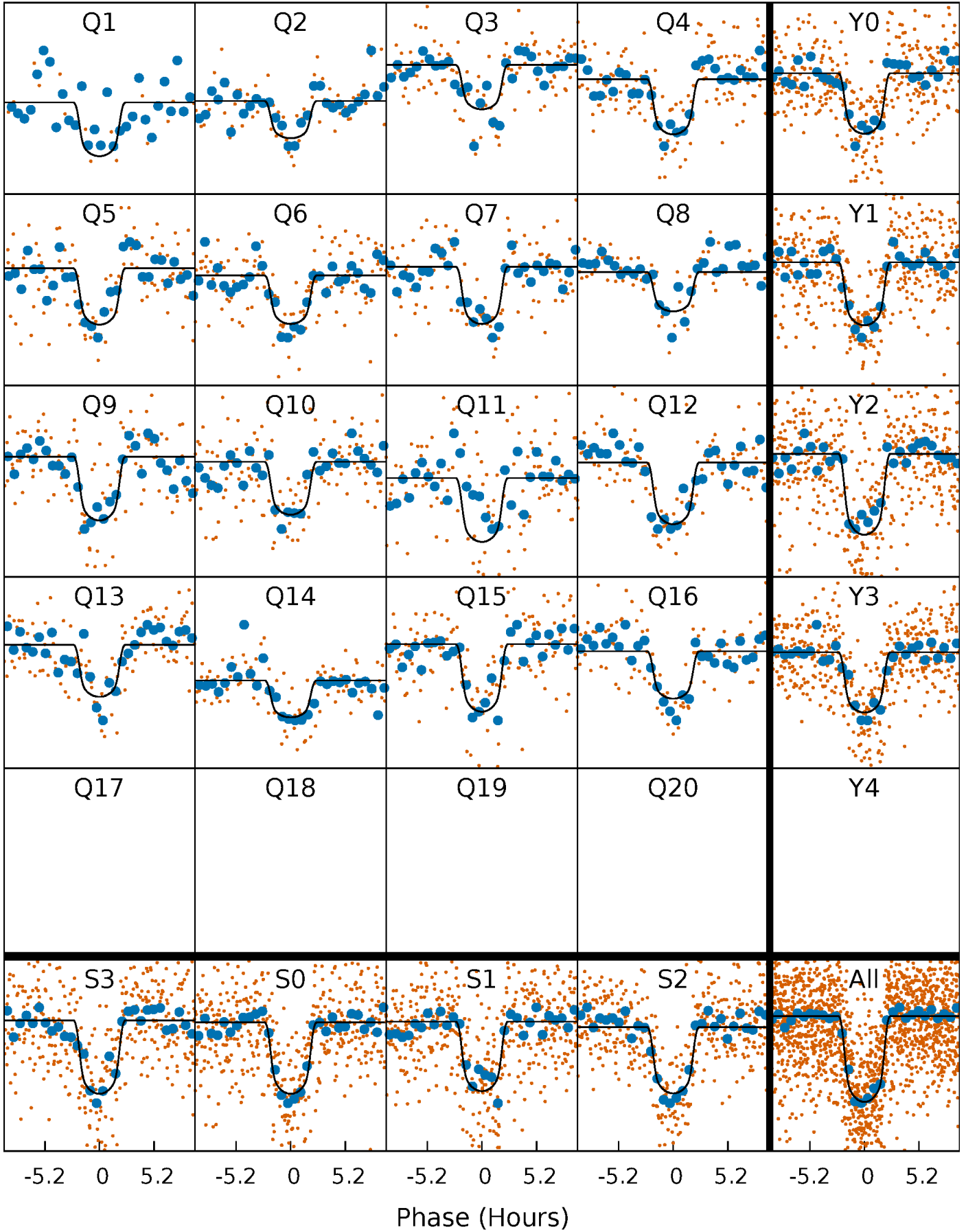
PDC Quarter-Phased Transit Curves

TCE 009818462-01 P= 25.942081 Days $T_0=156.190211$ (BKJD)



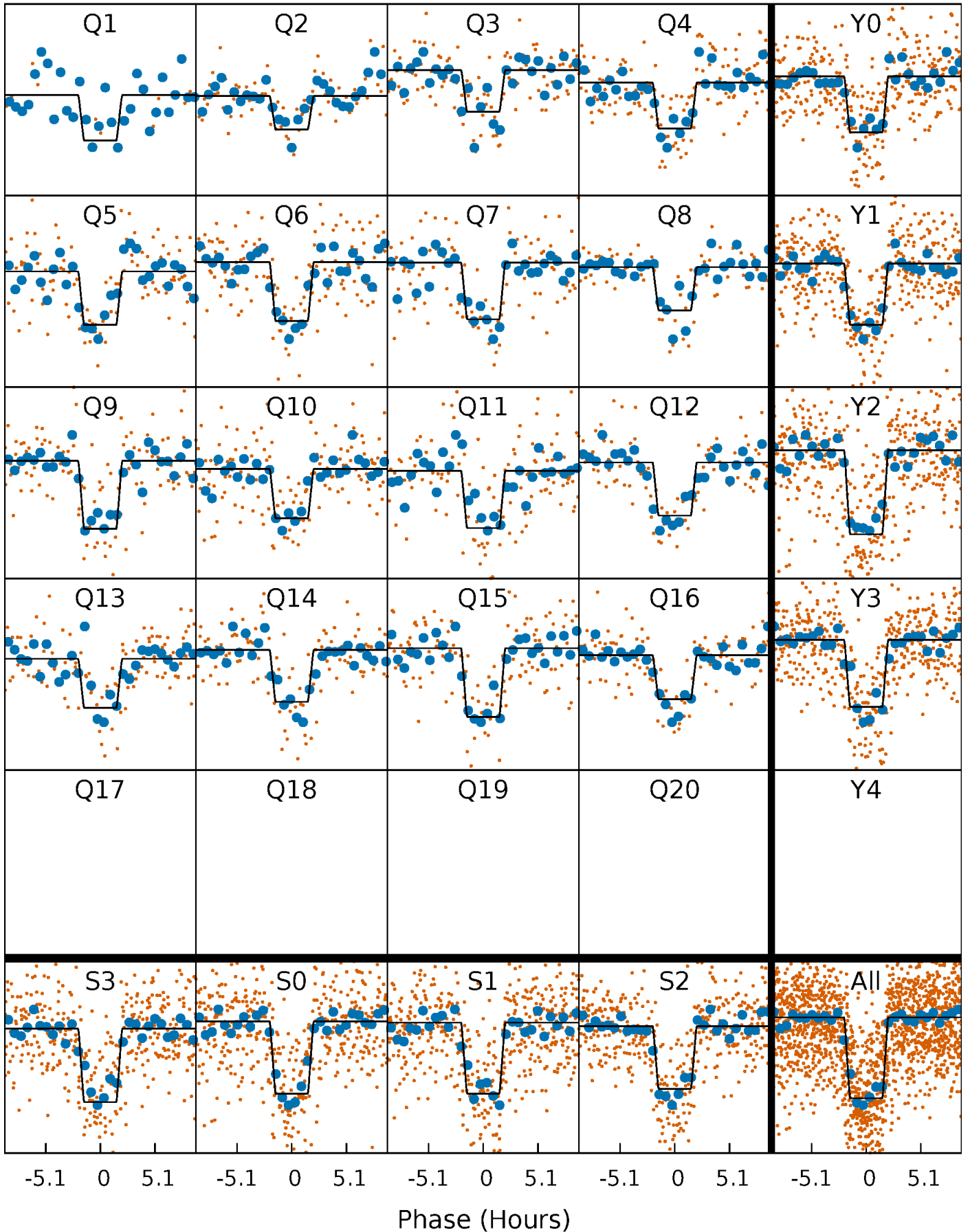
DV Quarter-Phased Transit Curves

TCE 009818462-01 P= 25.942081 Days $T_0=156.190211$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

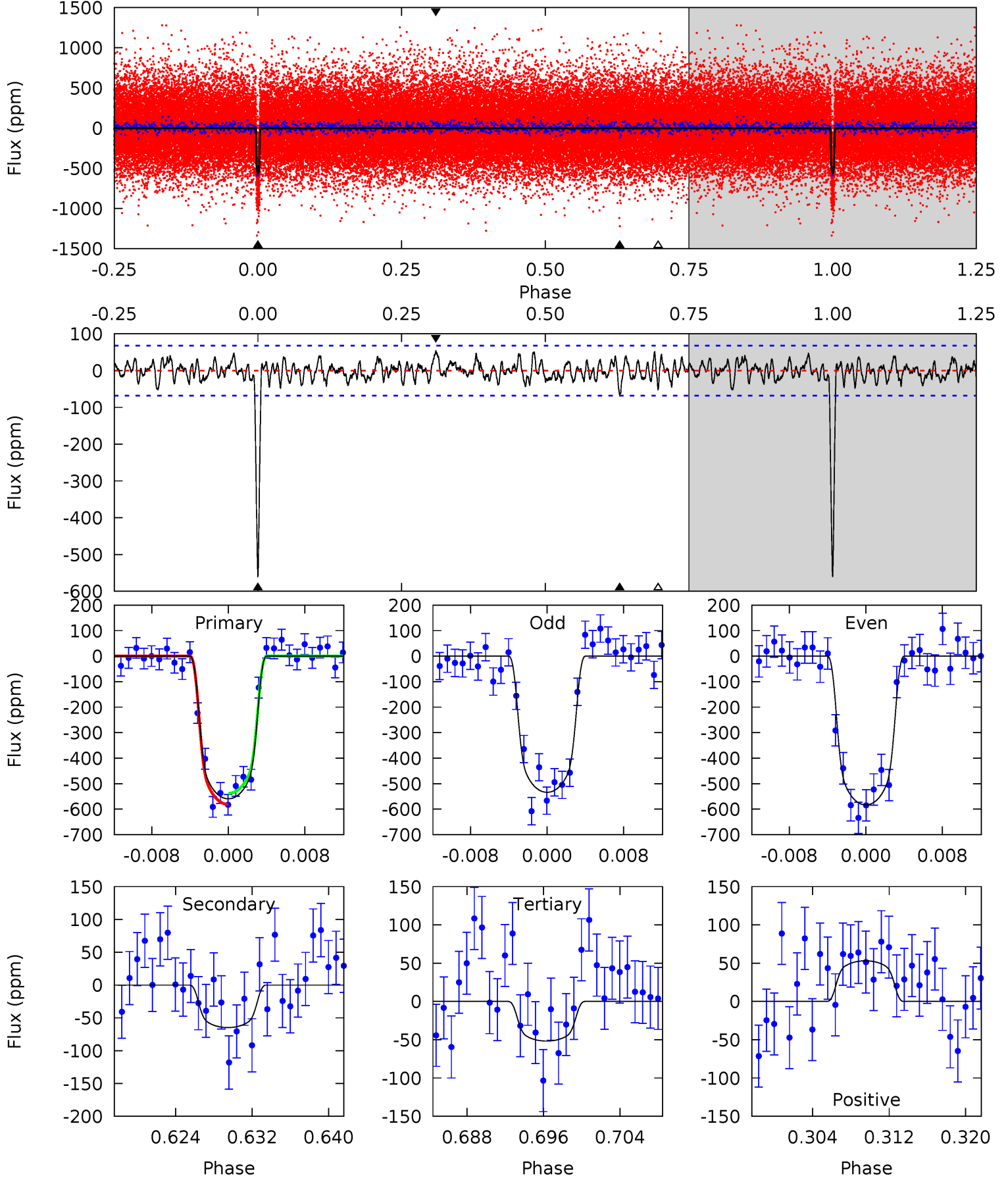
TCE 009818462-01 P= 25.942042 Days $T_0=156.194684$ (BKJD)



DV Model-Shift Uniqueness Test

009818462-01, P = 25.942081 Days, E = 130.248130 Days

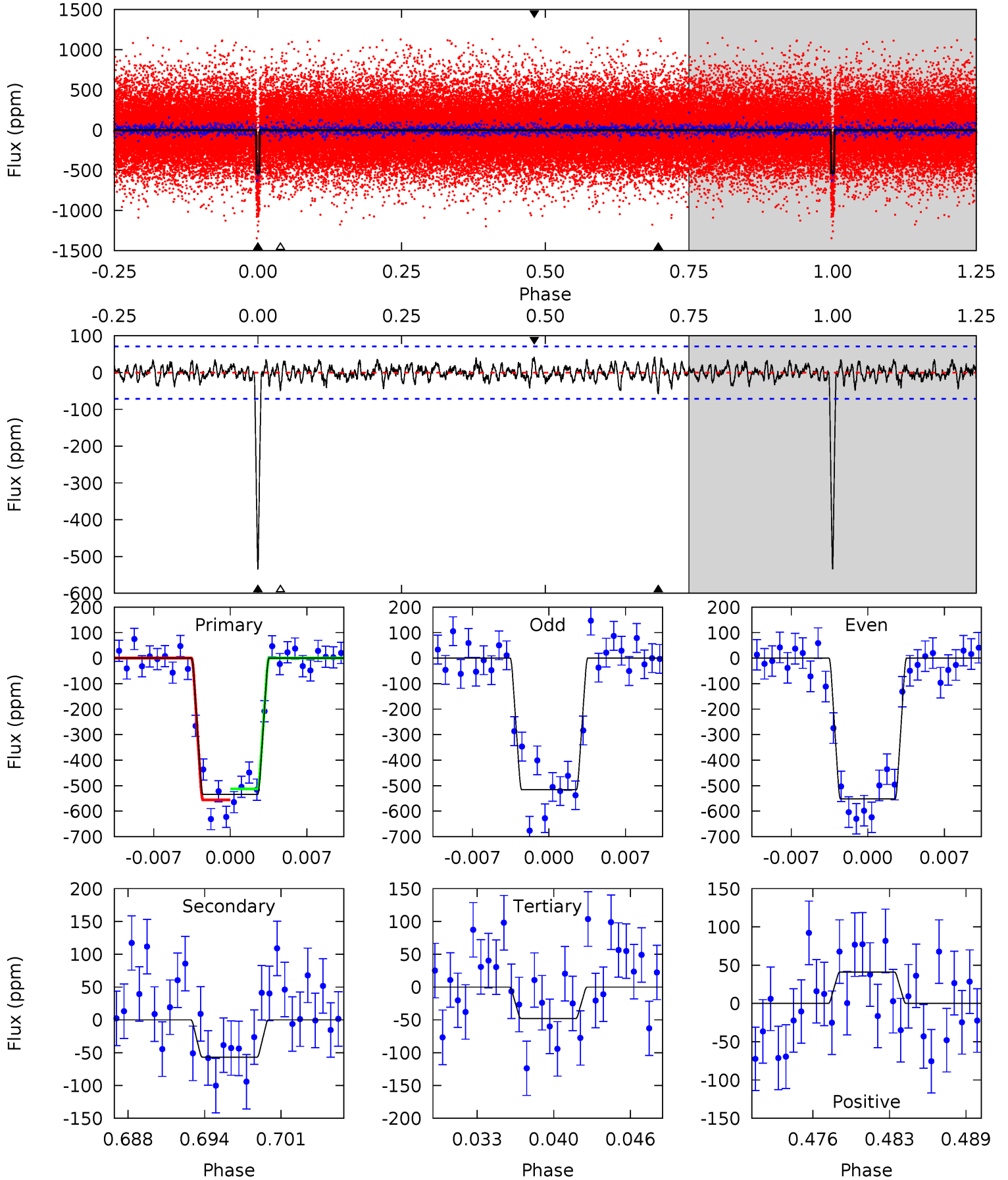
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.6	4.82	3.85	3.95	5.07	2.65	1.44	37.8	37.7	0.97	0.87	1.83	1.00	0.09	1.62



Alt Model-Shift Uniqueness Test

009818462-01, P = 25.942042 Days, E = 130.252642 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.2	4.07	3.44	2.93	5.11	2.72	1.07	34.8	35.3	0.63	1.14	1.28	0.98	0.07	1.54



Stellar Parameters For KIC 009818462

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5167^{+82}_{-82}	$4.585^{+0.013}_{-0.081}$	$0.160^{+0.150}_{-0.150}$	$0.796^{+0.066}_{-0.028}$	$0.891^{+0.027}_{-0.064}$	$2.484^{+0.166}_{-0.598}$
	+2%/-2%	+0%/-2%	+94%/-94%	+8%/-4%	+3%/-7%	+7%/-24%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 009818462-01 / KOI 1521.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-65 ± 13	$2.39^{+0.18}_{-0.16}$	708^{+19}_{-15}	3340^{+107}_{-132}	167^{+42}_{-36}
Alt.	-57 ± 14	$2.05^{+0.17}_{-0.14}$	708^{+19}_{-15}	3428^{+140}_{-170}	201^{+57}_{-58}

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 $A_{\text{obs}} \gg 1.0$

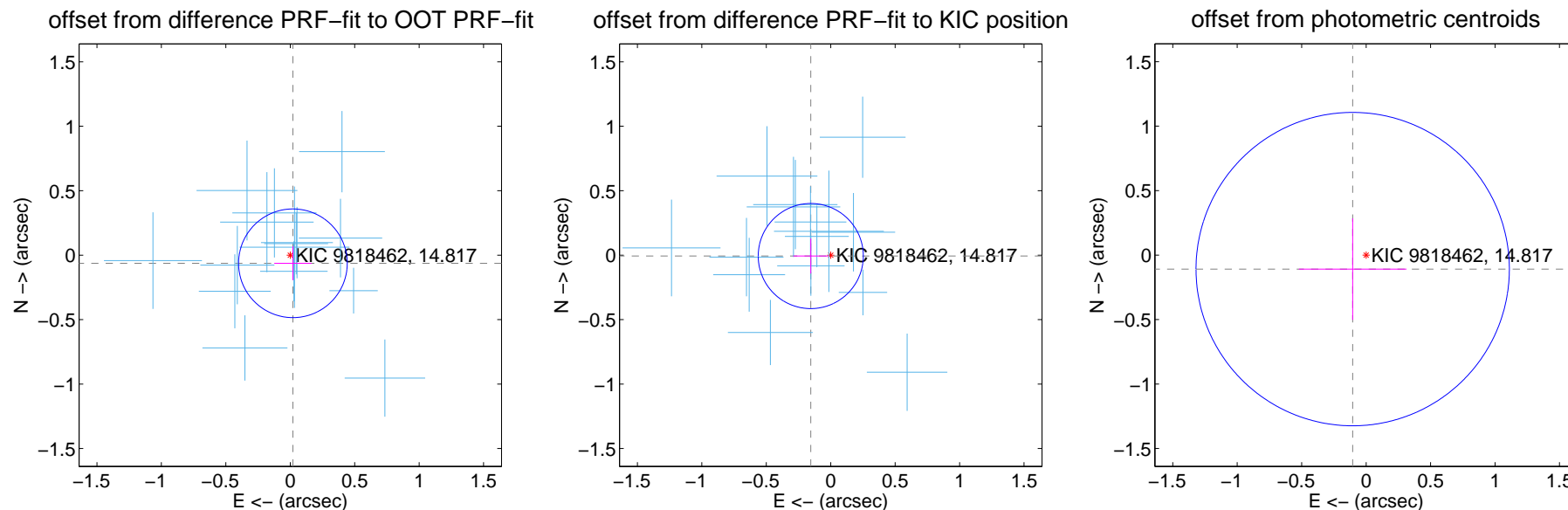
DV Centroid Data

Supplemental centroid analysis for 009818462-01. Kepler magnitude: 14.82. Transit SNR 26.82

There are 15 quarters with good PRF difference image offsets

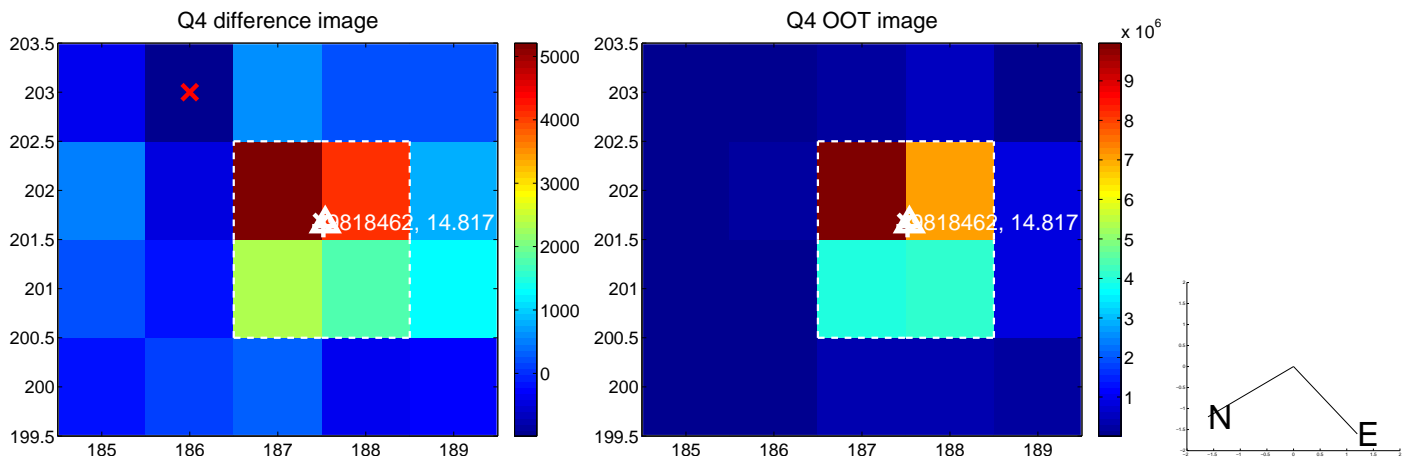
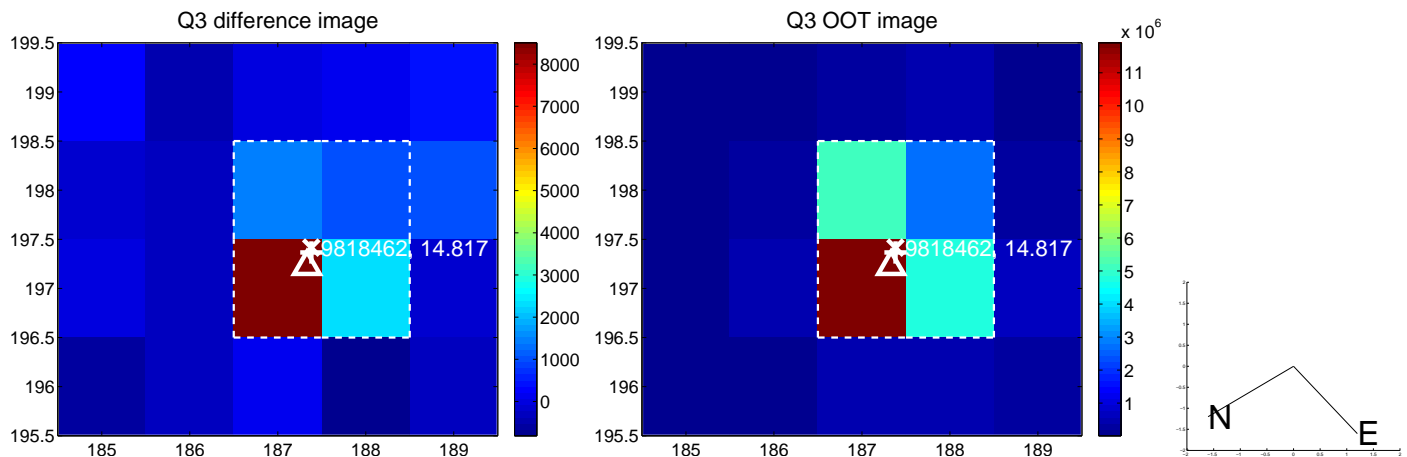
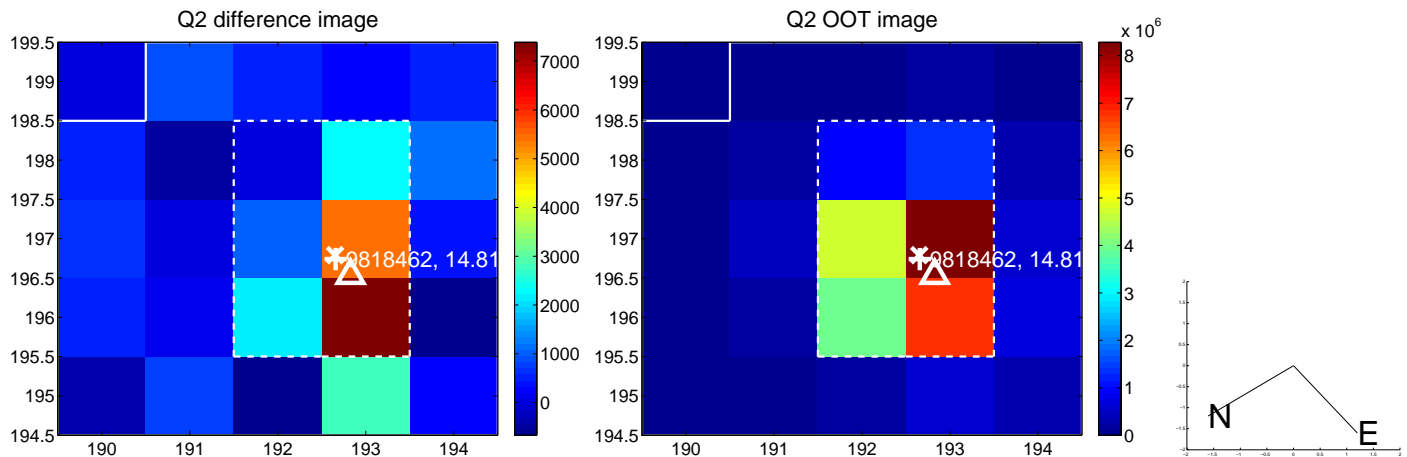
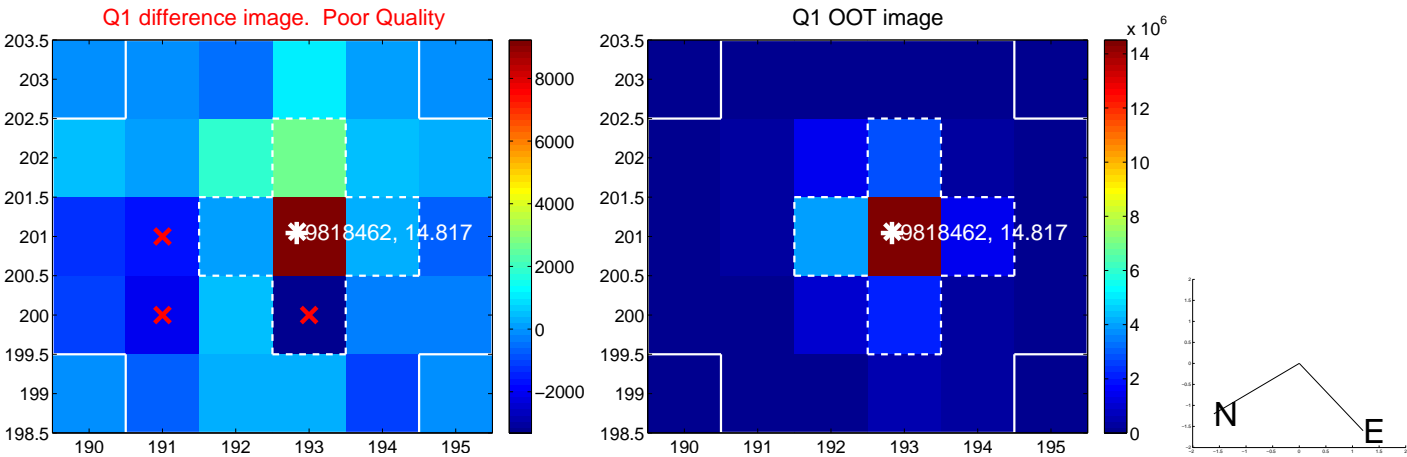
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.066 ± 0.141	0.47	-0.021 ± 0.145	-0.063 ± 0.132
PRF-fit source offset from KIC position	0.155 ± 0.136	1.14	0.155 ± 0.136	-0.007 ± 0.136
photometric centroid source offset	0.15 ± 0.41	0.37	0.10 ± 0.42	-0.11 ± 0.39

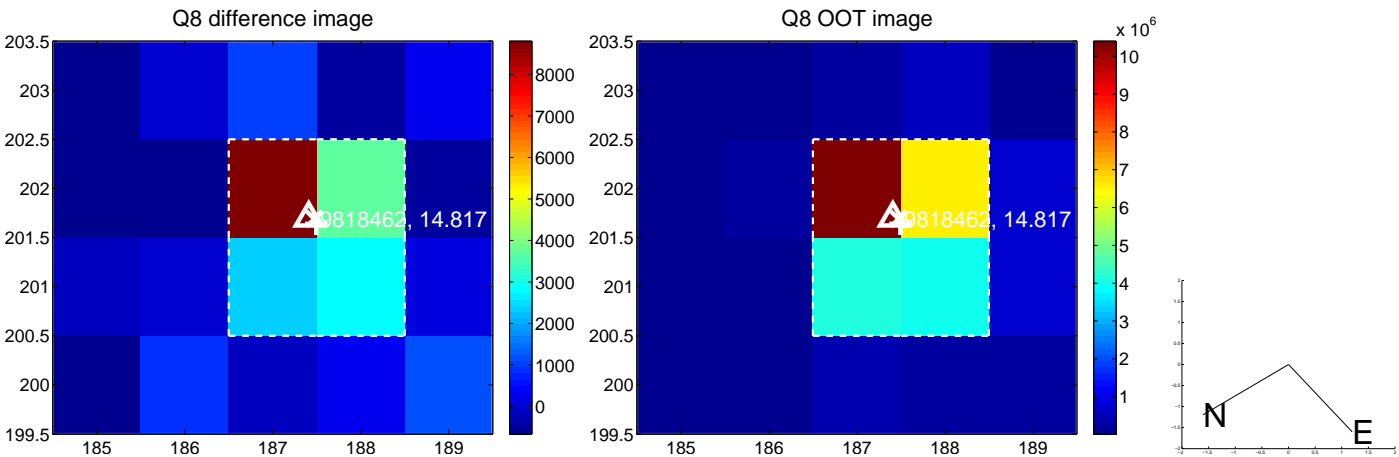
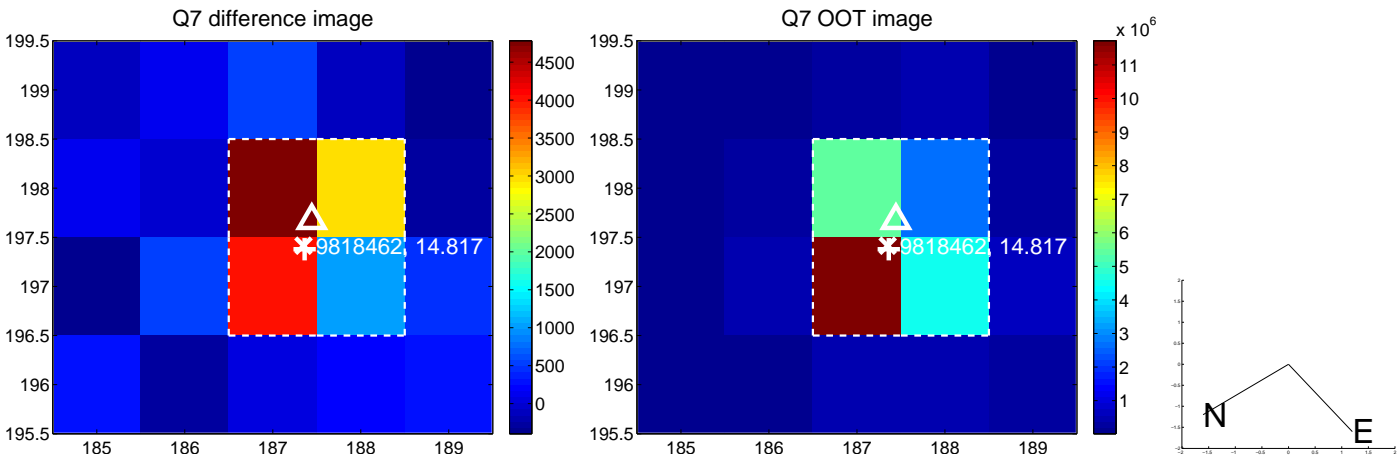
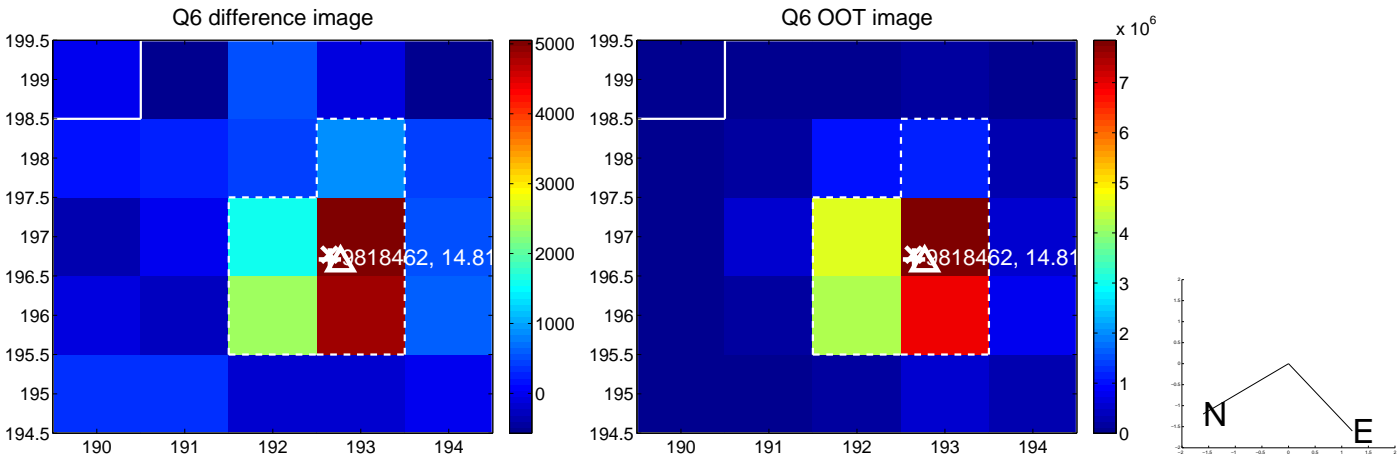
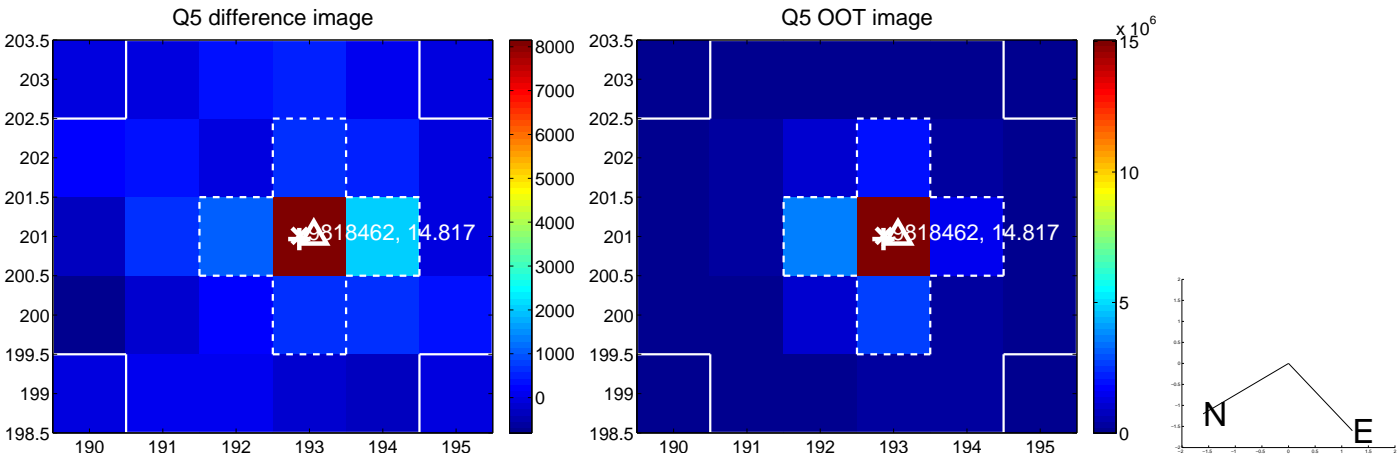


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

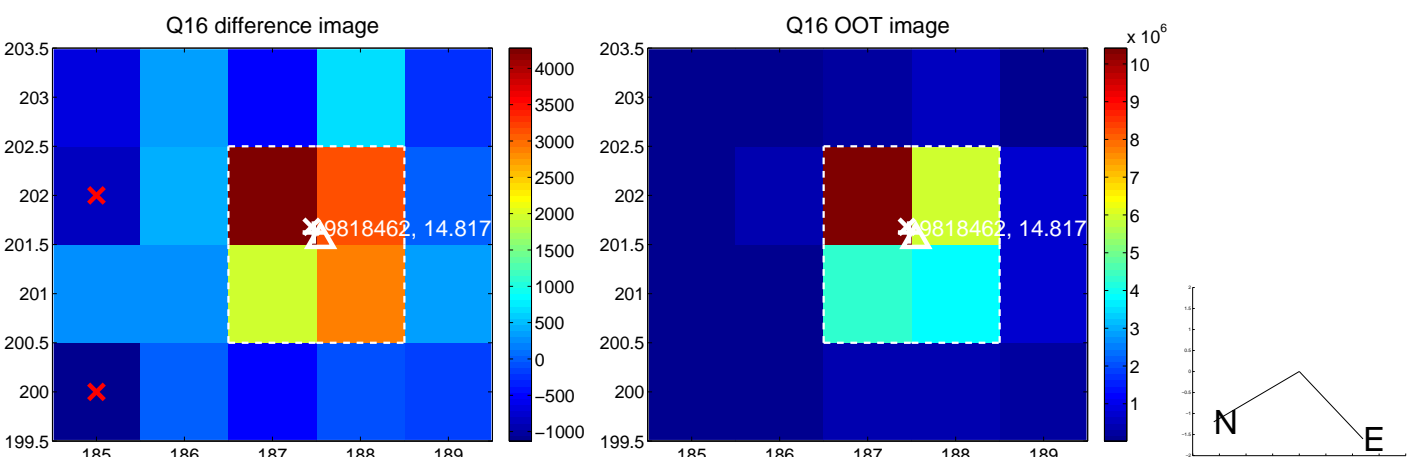
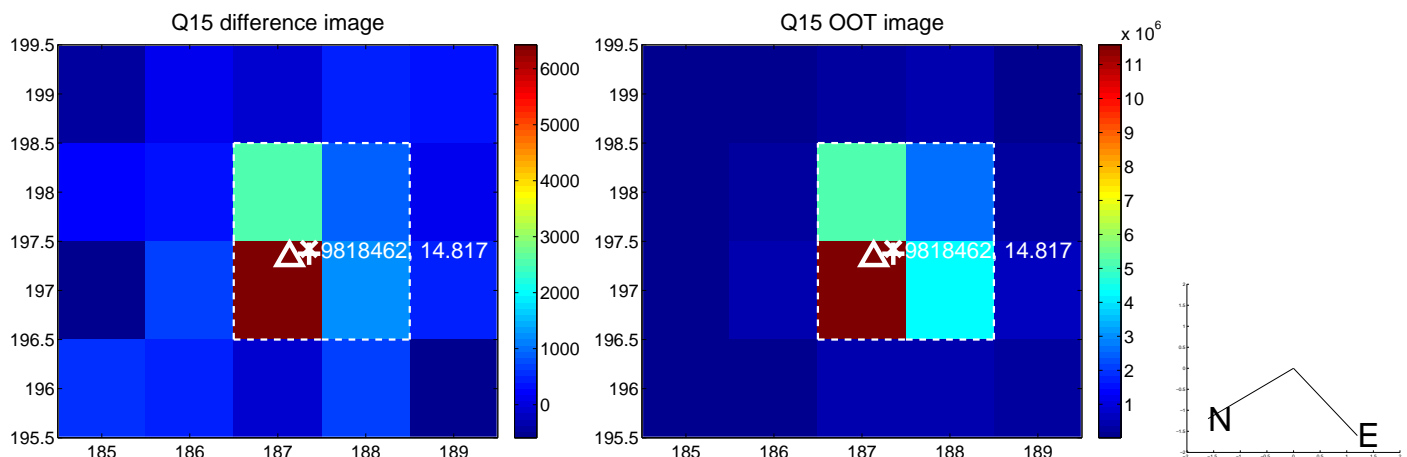
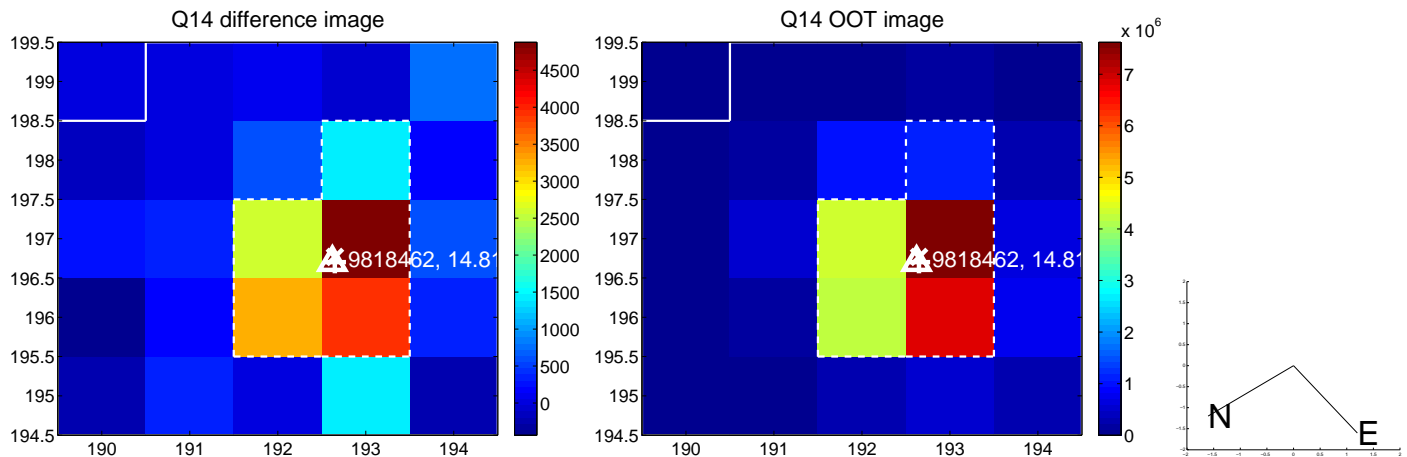
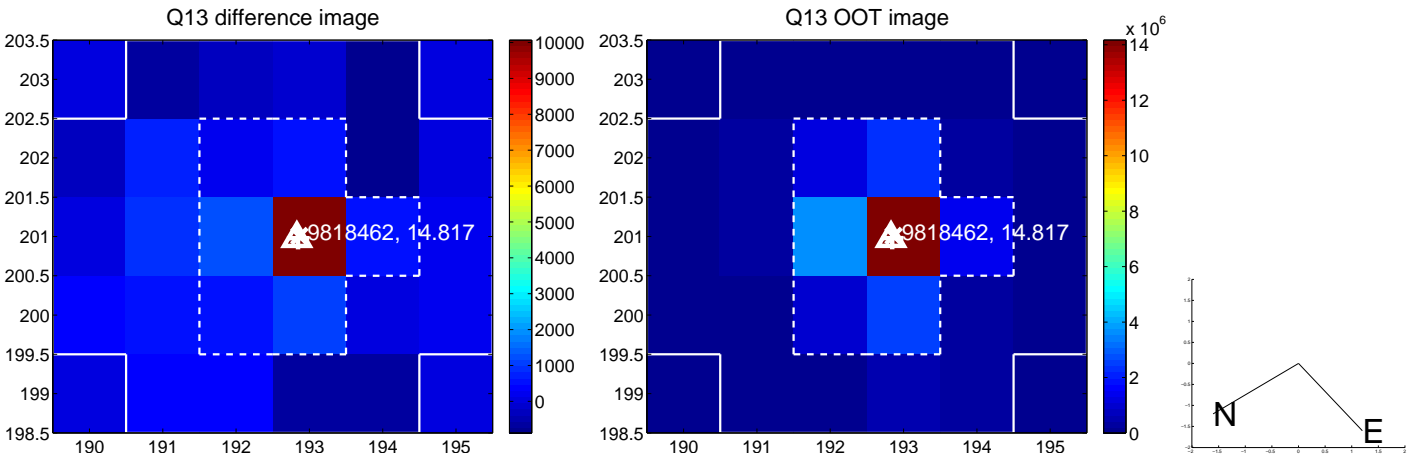
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



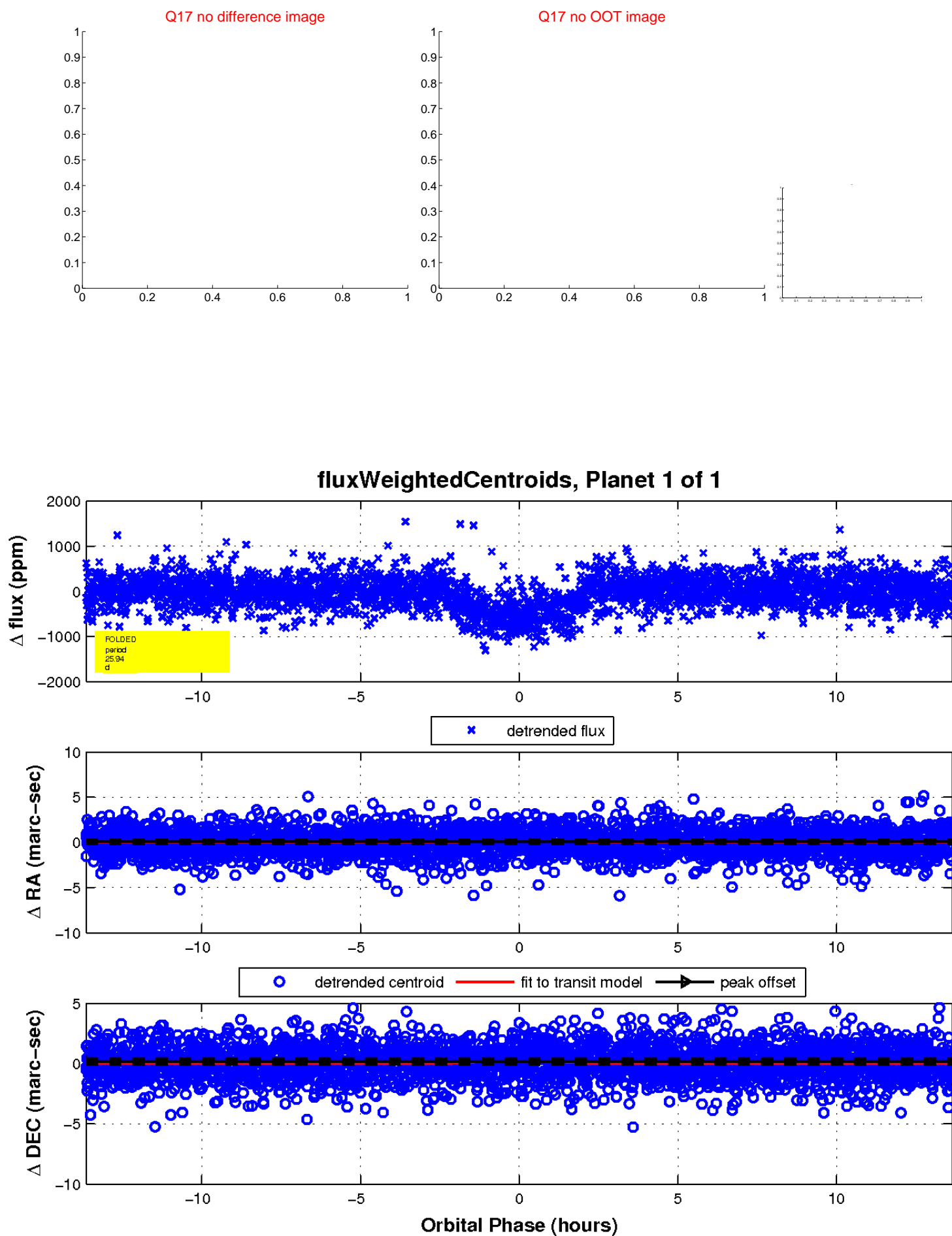
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

