

KIC 008421188

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})
008421188-01	OBS	No	405.958111	445.913099	228.1	18.006	10.1	9.9	0.77	5585	1.24	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008421188-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

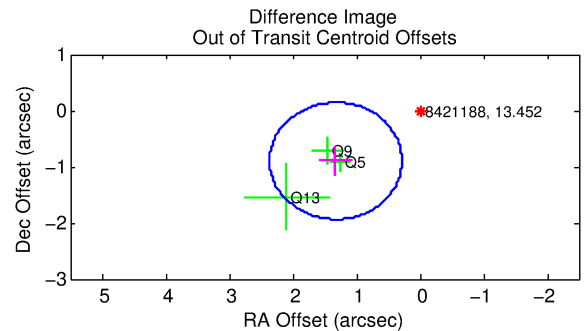
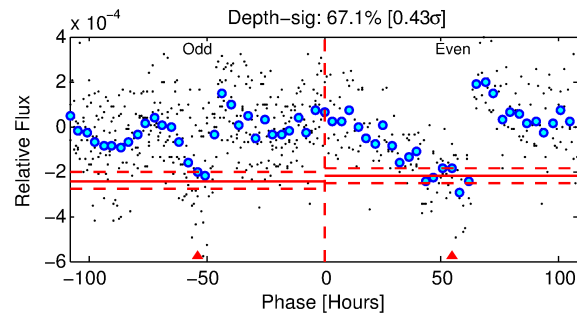
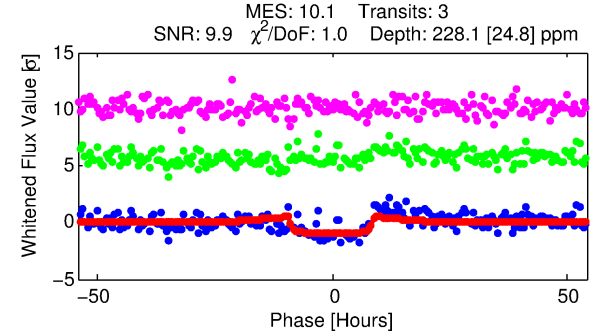
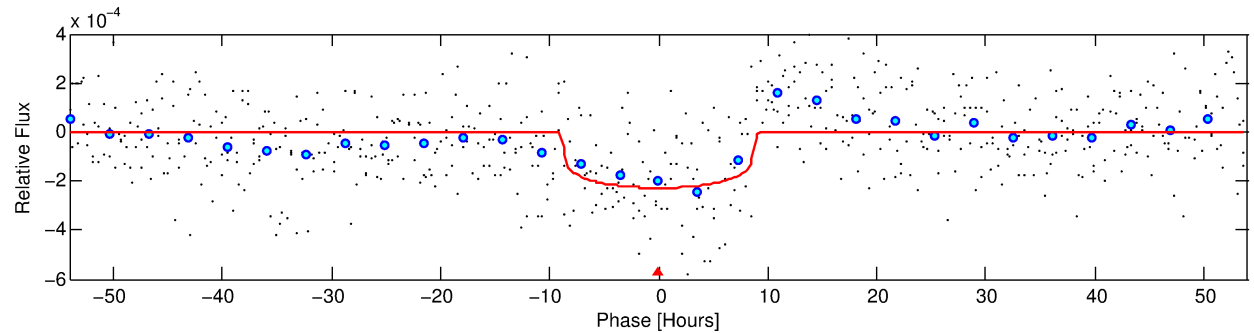
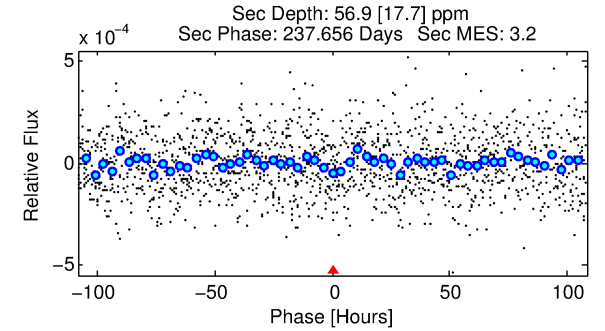
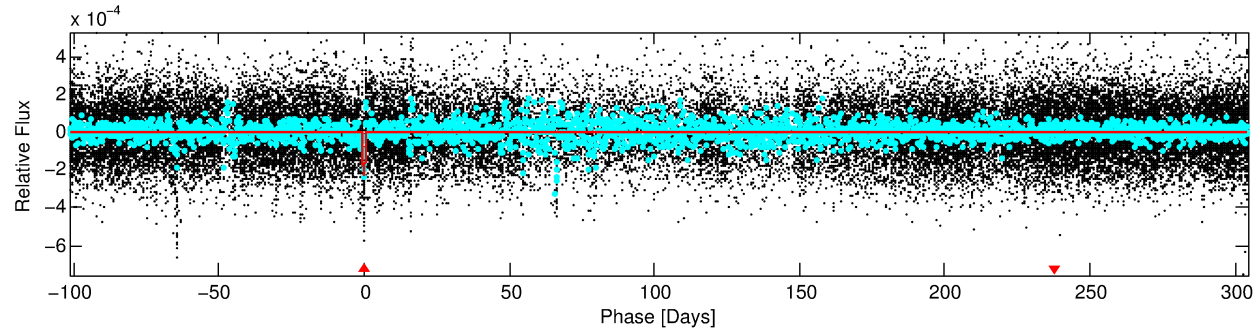
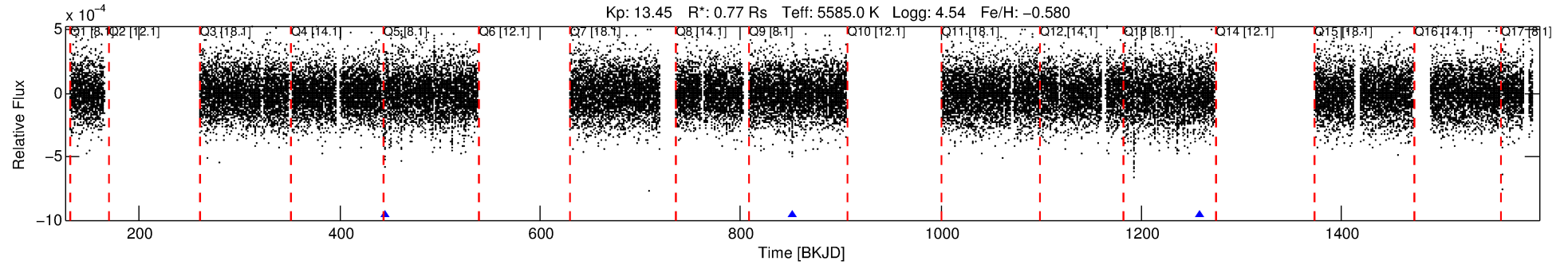
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008421188-01

No Significant Match Found

DV One-Page Summary

KIC: 8421188 Candidate: 1 of 1 Period: 405.958 d



DV Fit Results:

Period = 405.95811 [0.01346] d
Epoch = 445.9131 [0.0175] BKJD
Rp/R* = 0.0149 [0.0042]
a/R* = 123.56 [157.90]
b = 0.72 [0.87]
Seff = 0.54 [0.12]
Teq = 218 [13] K
Rp = 1.24 [0.41] Re
a = 0.9755 [0.1384] AU
Ag = 19270.70 [13013.70] [1.48σ]
Teffp = 3980 [653] K [5.76σ]

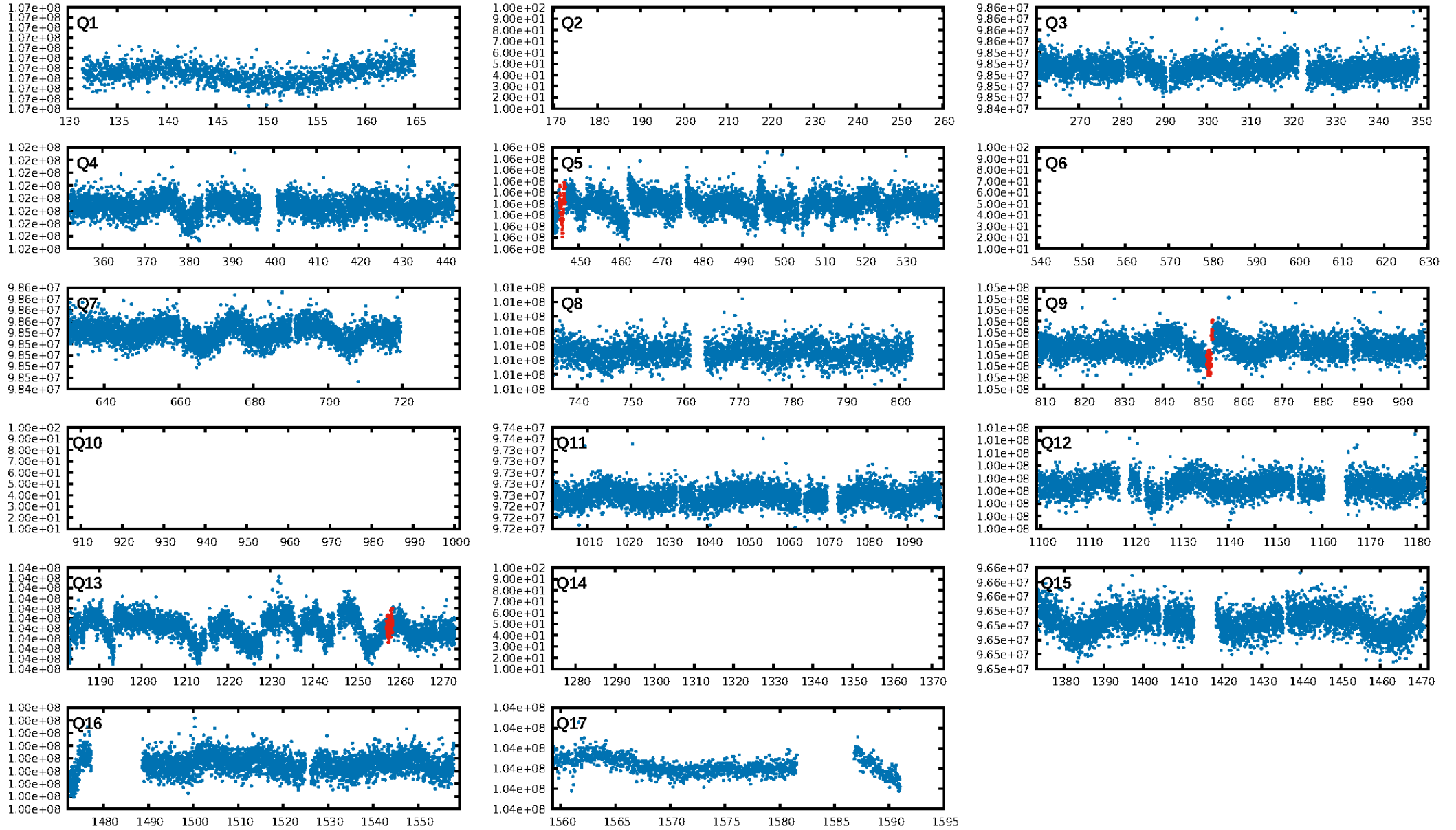
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.9%
ModelChiSquareGof-sig: 96.6%
Bootstrap-pfa: 1.96e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.715
Centroid-sig: 0.8%
Centroid-so: 1.909 arcsec [1.63σ]
OotOffset-rm: 1.602 arcsec [4.62σ]
KicOffset-rm: 1.508 arcsec [5.95σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

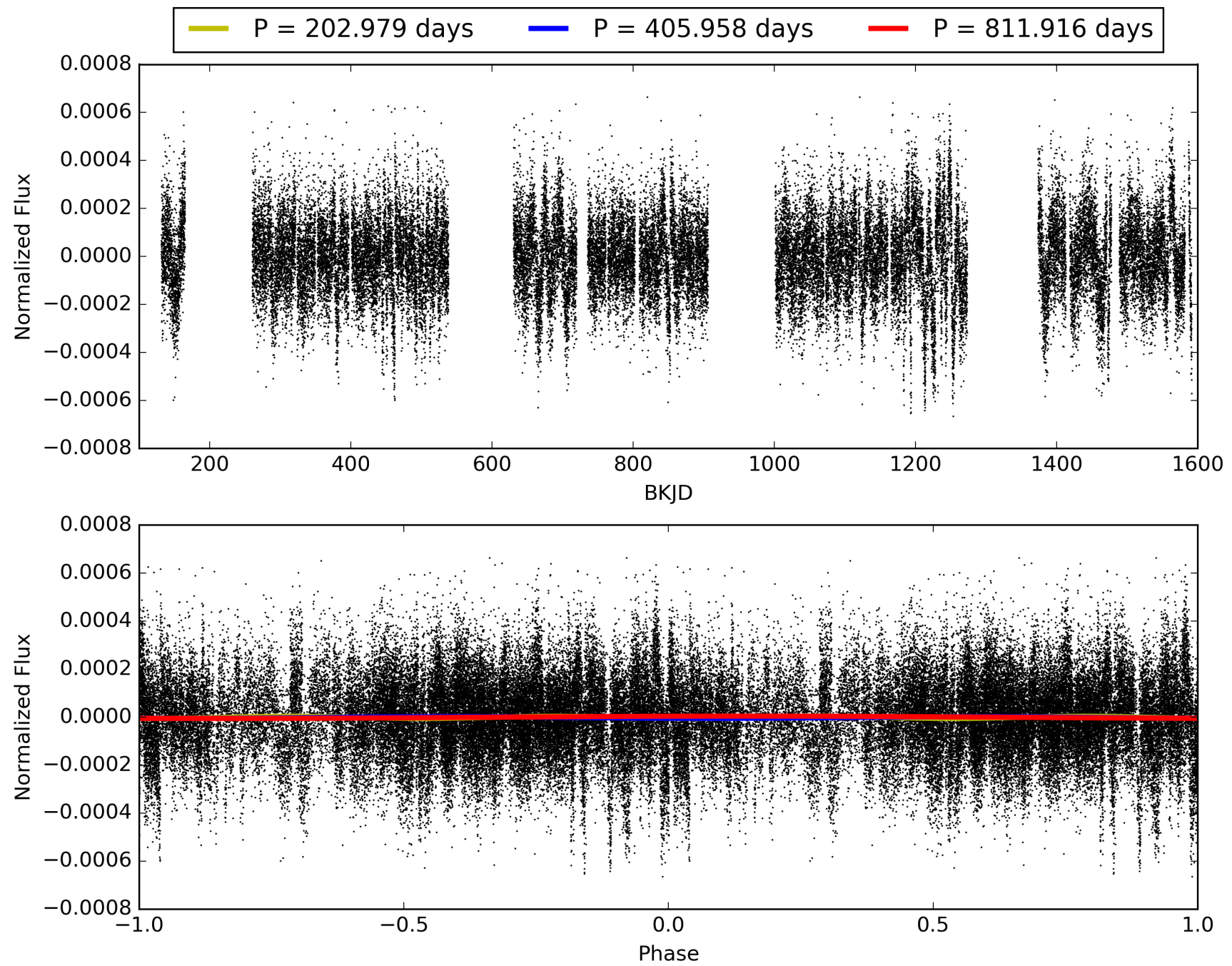
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:14:24 Z

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

TCE 008421188-01, PDC Light Curves

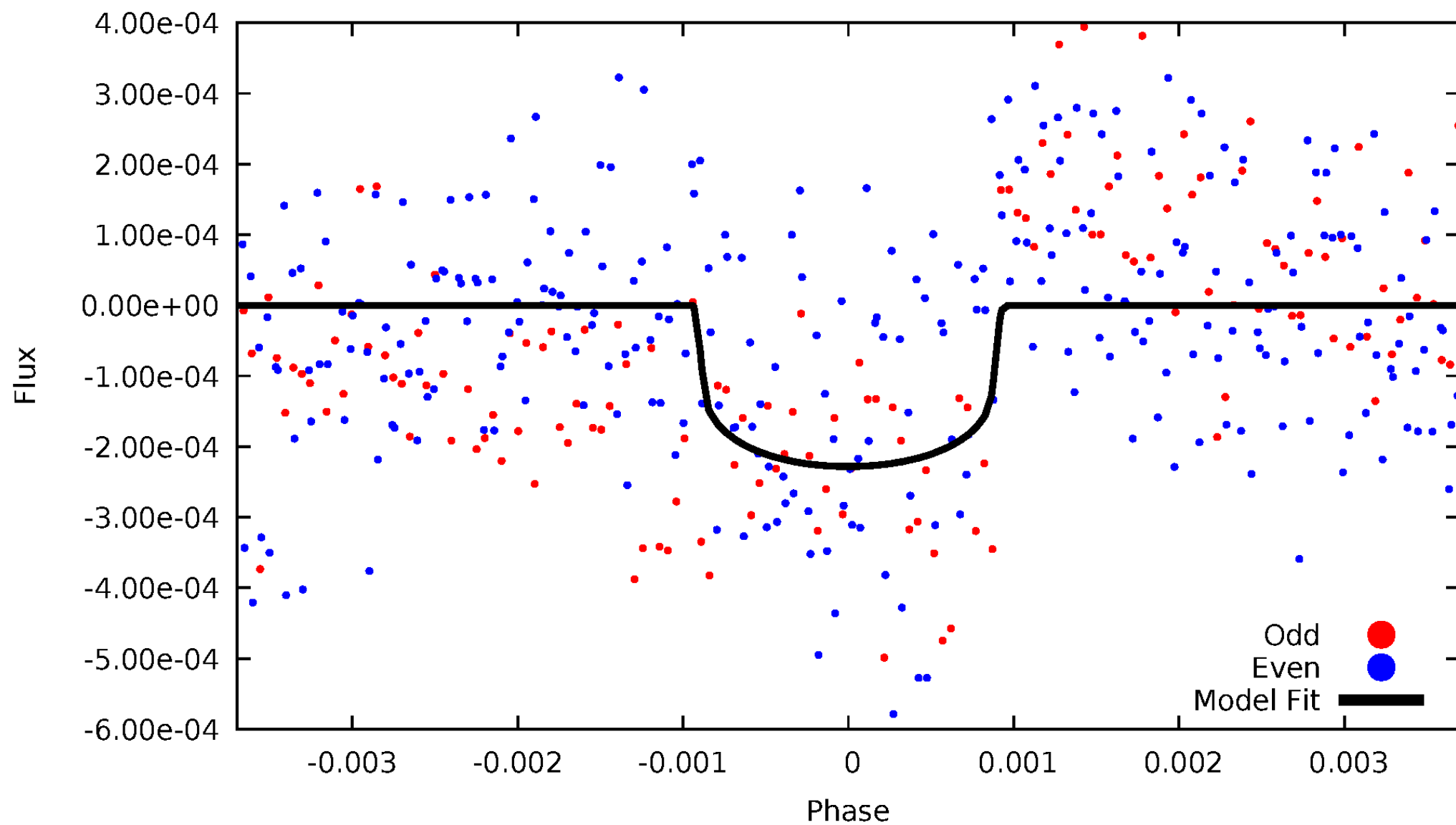


TCE 008421188-01



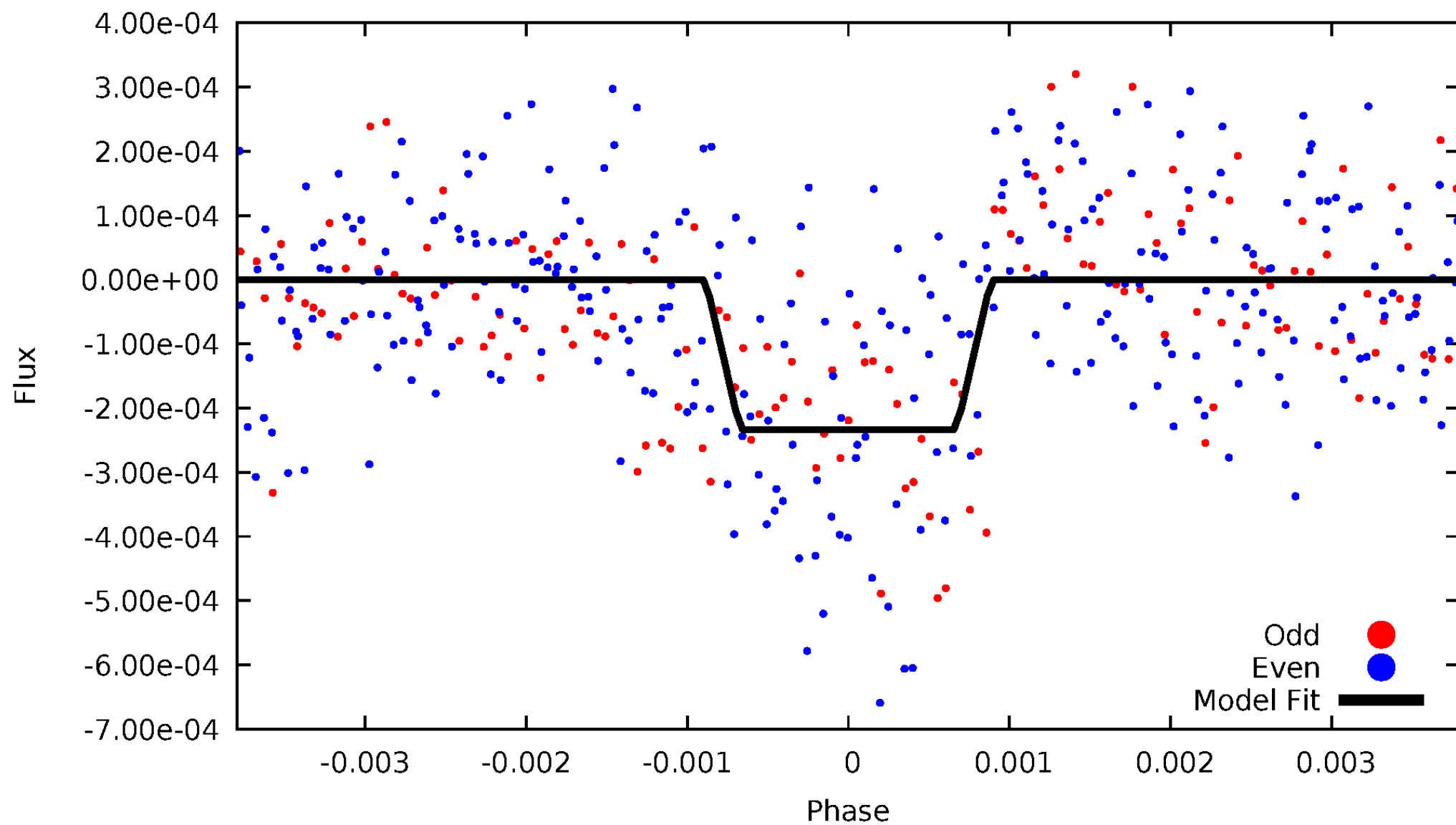
DV Odd/Even

TCE 008421188-01

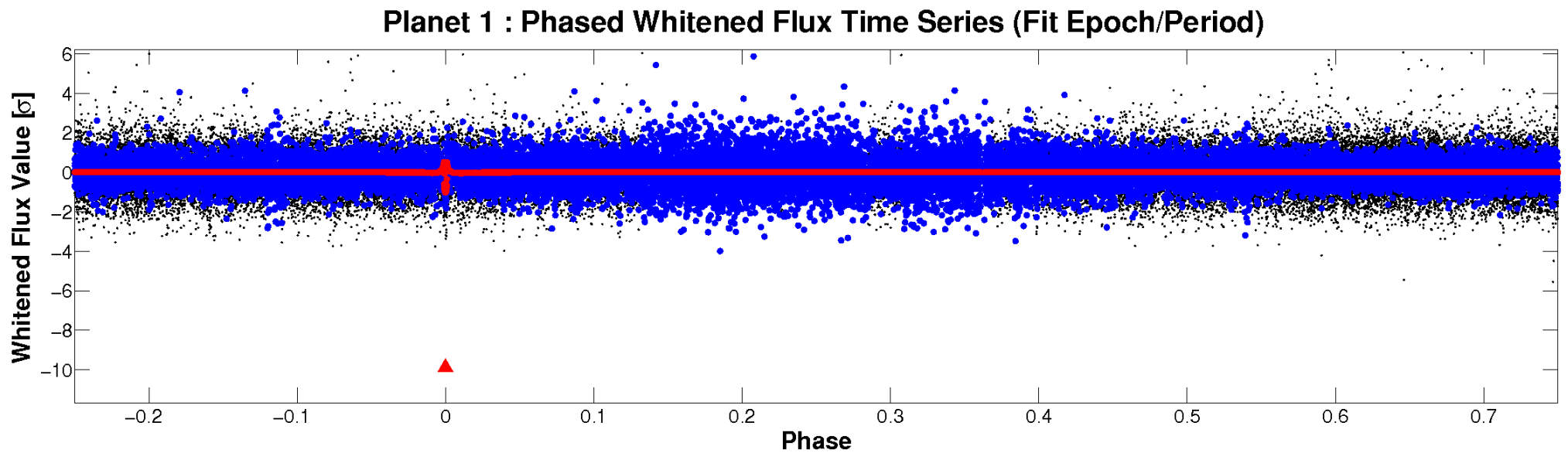
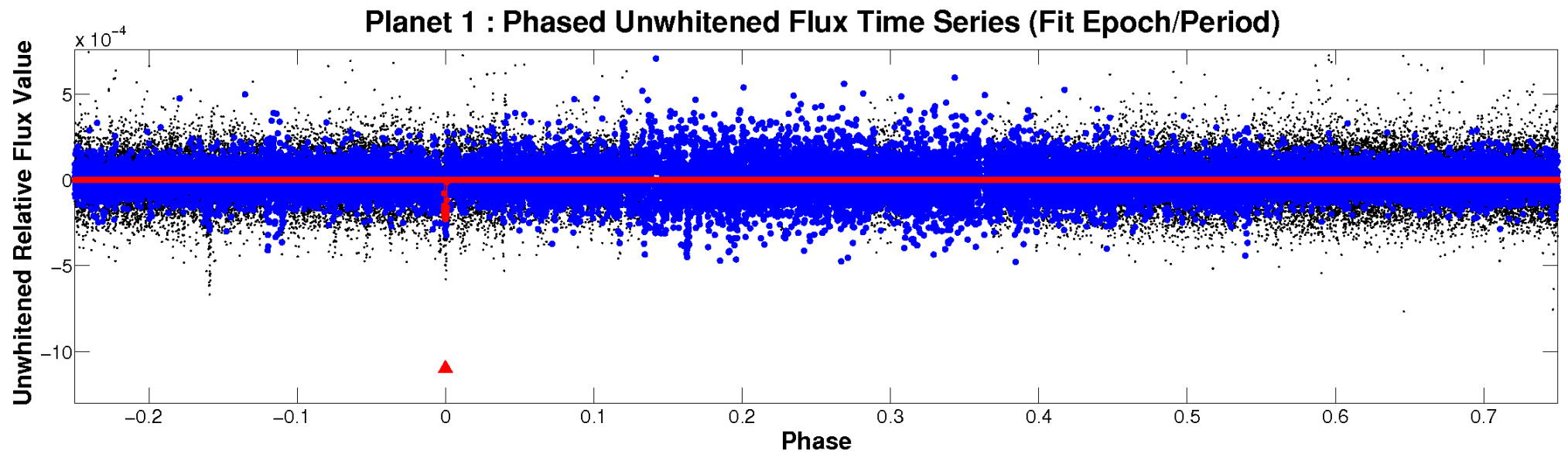


ALT Odd/Even

TCE 008421188-01

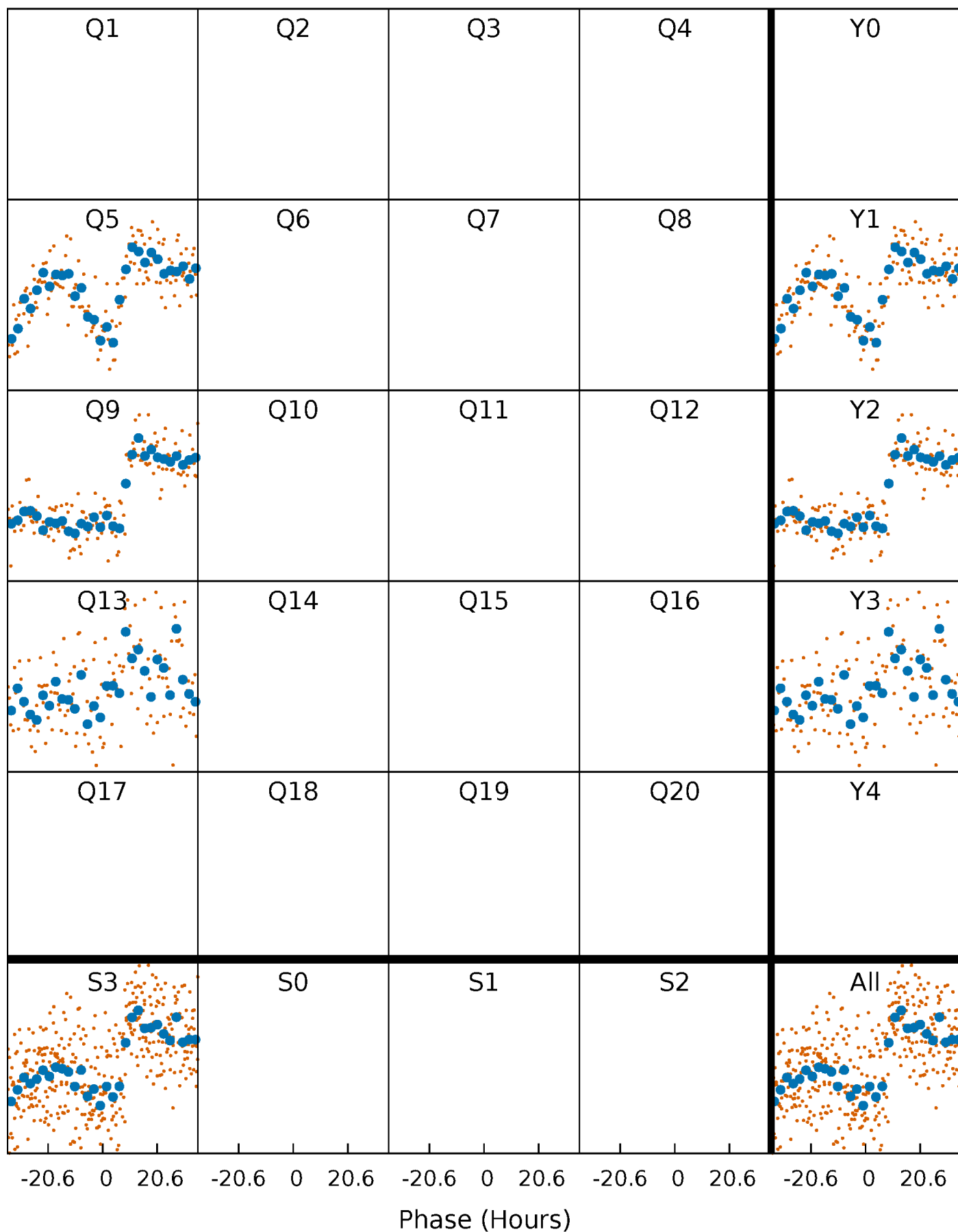


Non-Whitened Vs. Whitened Light Curve



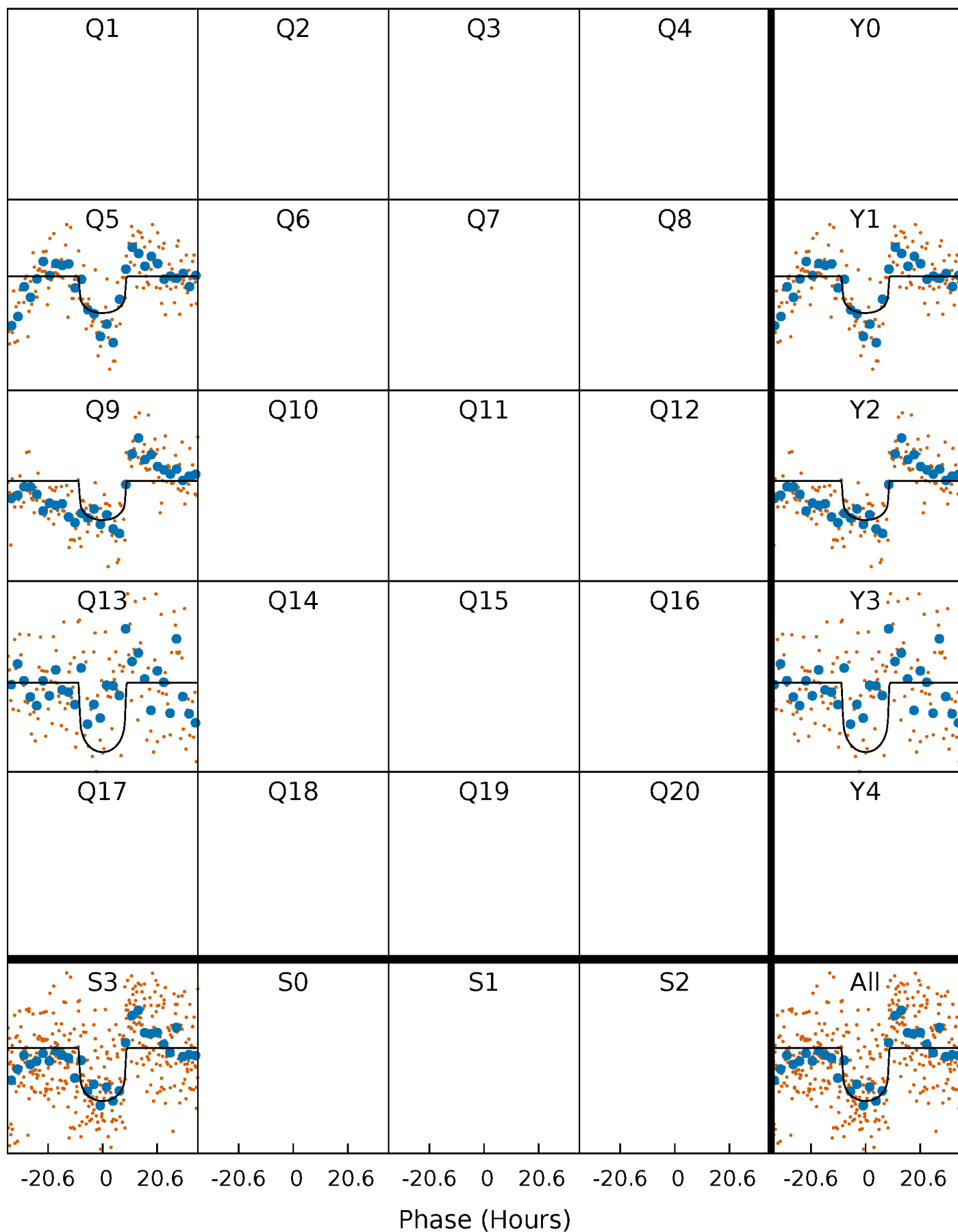
PDC Quarter-Phased Transit Curves

TCE 008421188-01 $P=405.958111$ Days $T_0=445.913099$ (BKJD)



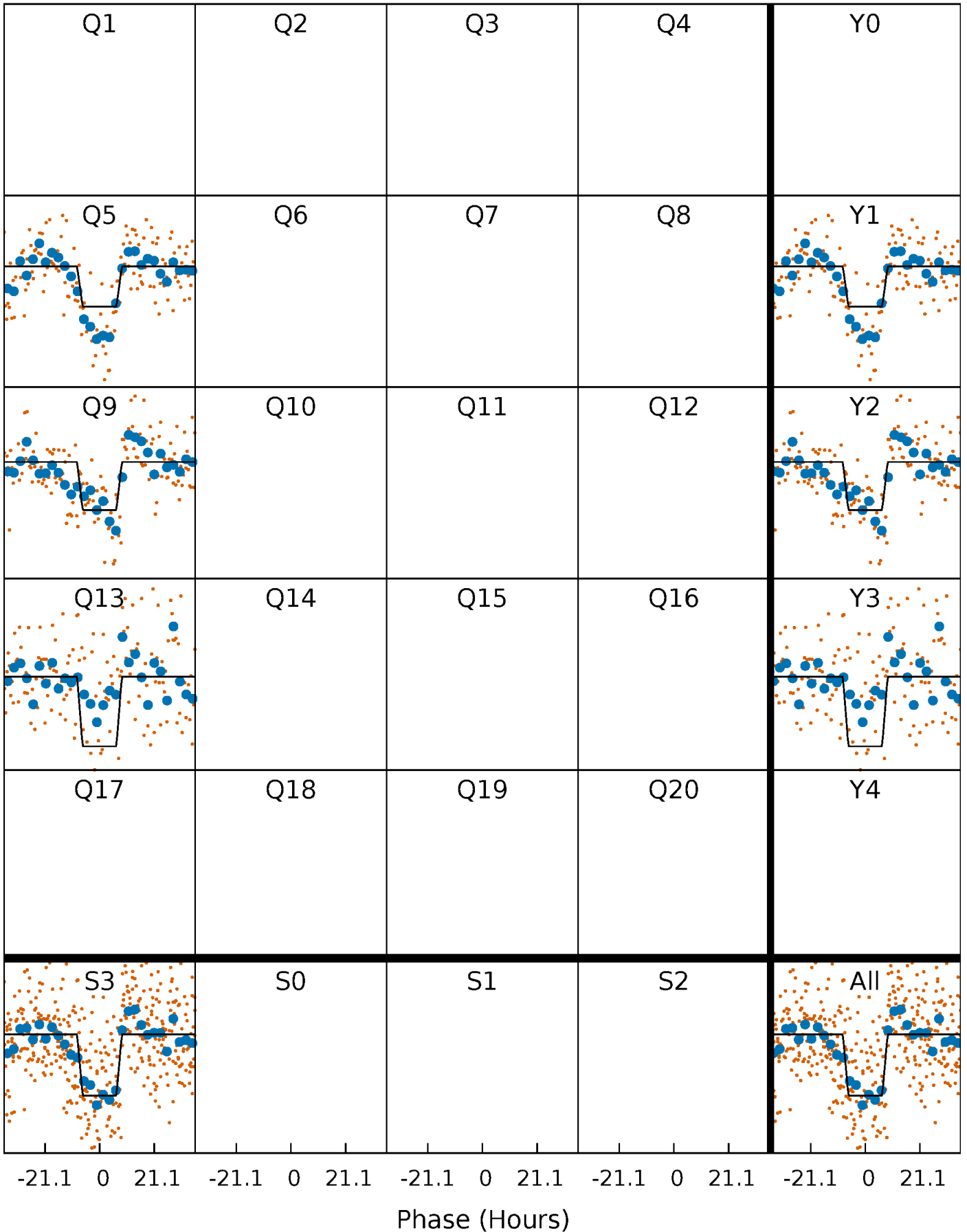
DV Quarter-Phased Transit Curves

TCE 008421188-01 $P=405.958111$ Days $T_0=445.913099$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

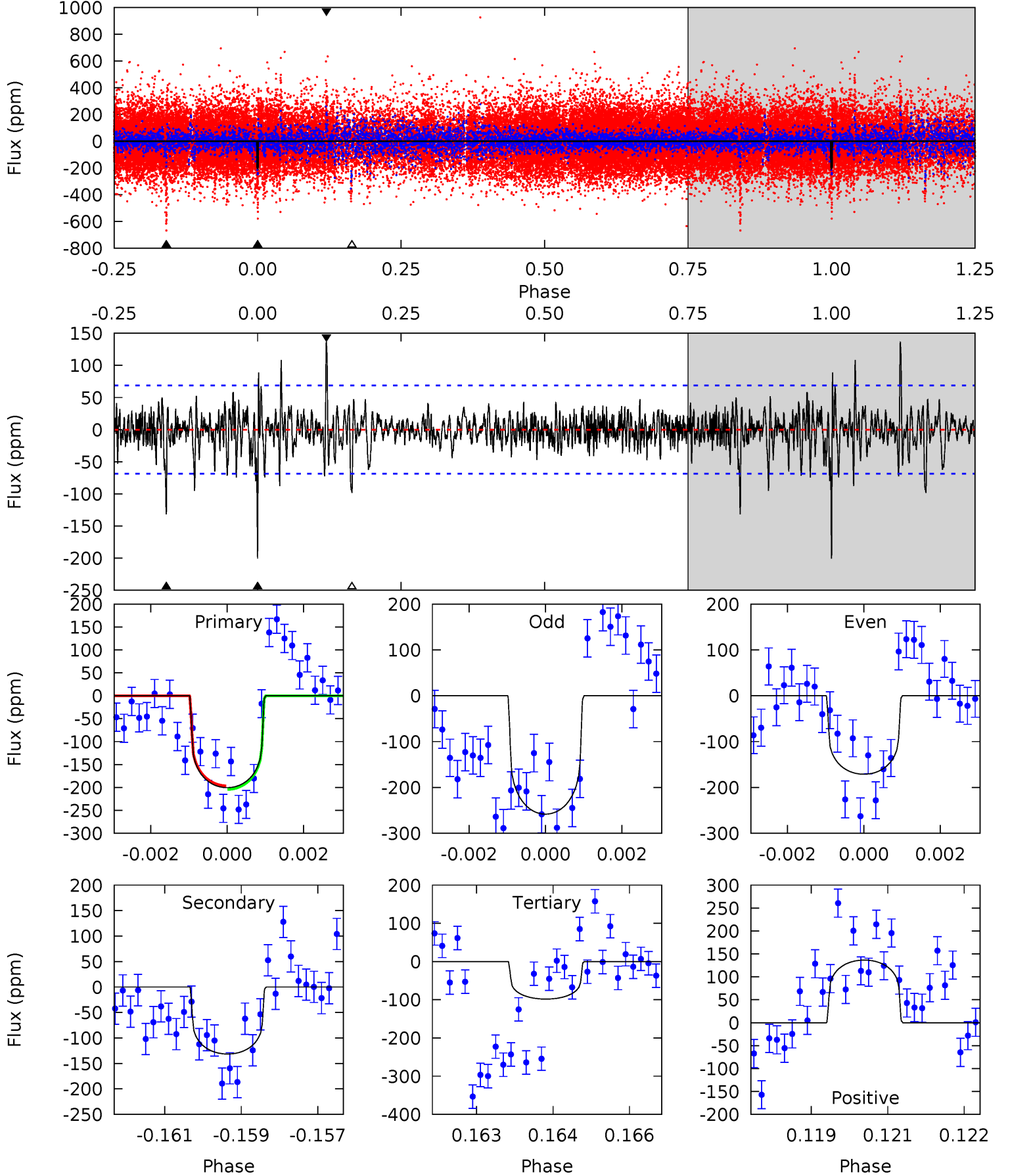
TCE 008421188-01 $P=405.933103$ Days $T_0=445.944095$ (BKJD)



DV Model-Shift Uniqueness Test

008421188-01, $P = 405.958111$ Days, $E = 39.954988$ Days

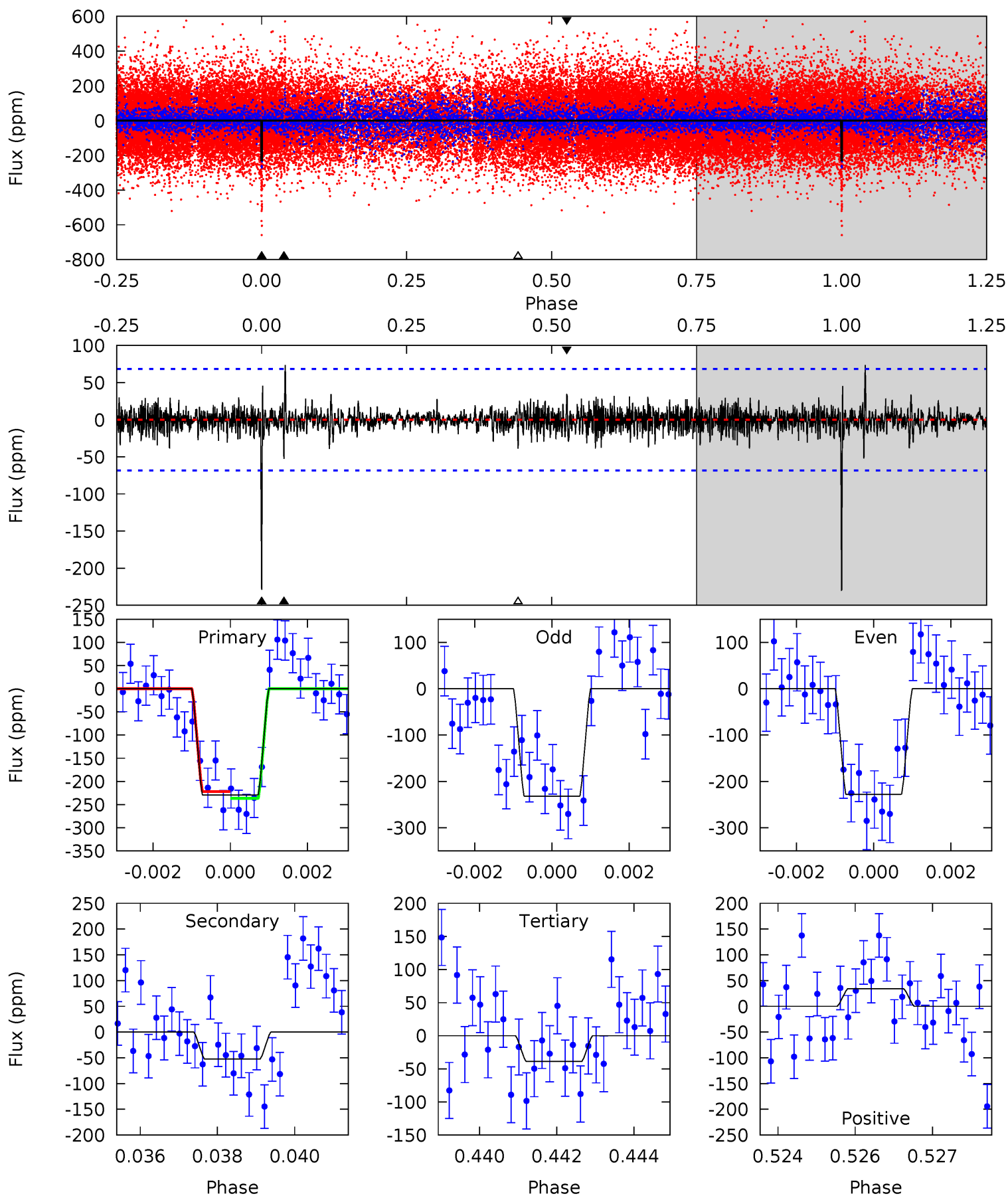
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	10.2	7.64	10.6	5.33	3.10	1.64	7.94	4.97	2.58	-0.39	3.25	0.77	0.41	0.29



Alt Model-Shift Uniqueness Test

008421188-01, P = 405.933103 Days, E = 40.010992 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	4.09	3.03	2.68	5.34	3.12	0.84	14.9	15.2	1.06	1.41	0.15	0.98	0.24	0.58



Stellar Parameters For KIC 008421188

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5585^{+167}_{-151}	$4.544^{+0.076}_{-0.104}$	$-0.580^{+0.350}_{-0.300}$	$0.767^{+0.135}_{-0.083}$	$0.751^{+0.091}_{-0.049}$	$2.343^{+0.812}_{-0.764}$
	+3%/-3%	+2%/-2%	+60%/-52%	+18%/-11%	+12%/-7%	+35%/-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 008421188-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-132 ± 13	$1.26^{+0.38}_{-0.34}$	308^{+15}_{-14}	4998^{+780}_{-523}	42983^{+40409}_{-17214}
Alt.	-52 ± 13	$1.30^{+0.34}_{-0.36}$	307^{+14}_{-13}	4099^{+551}_{-397}	15724^{+16190}_{-6706}

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

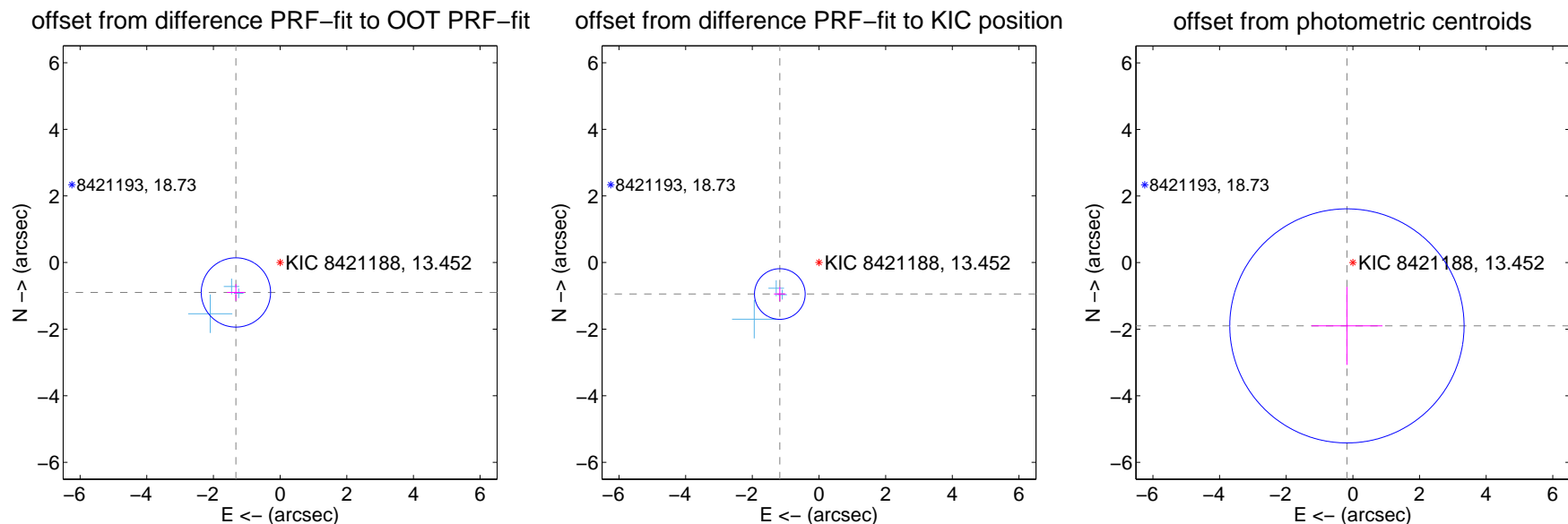
DV Centroid Data

Supplemental centroid analysis for 008421188-01. Kepler magnitude: 13.45. Transit SNR 9.91

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.602 ± 0.347	4.62	1.326 ± 0.261	-0.899 ± 0.250
PRF-fit source offset from KIC position	1.508 ± 0.254	5.95	1.175 ± 0.176	-0.946 ± 0.214
photometric centroid source offset	1.91 ± 1.17	1.63	0.18 ± 1.07	-1.90 ± 1.17

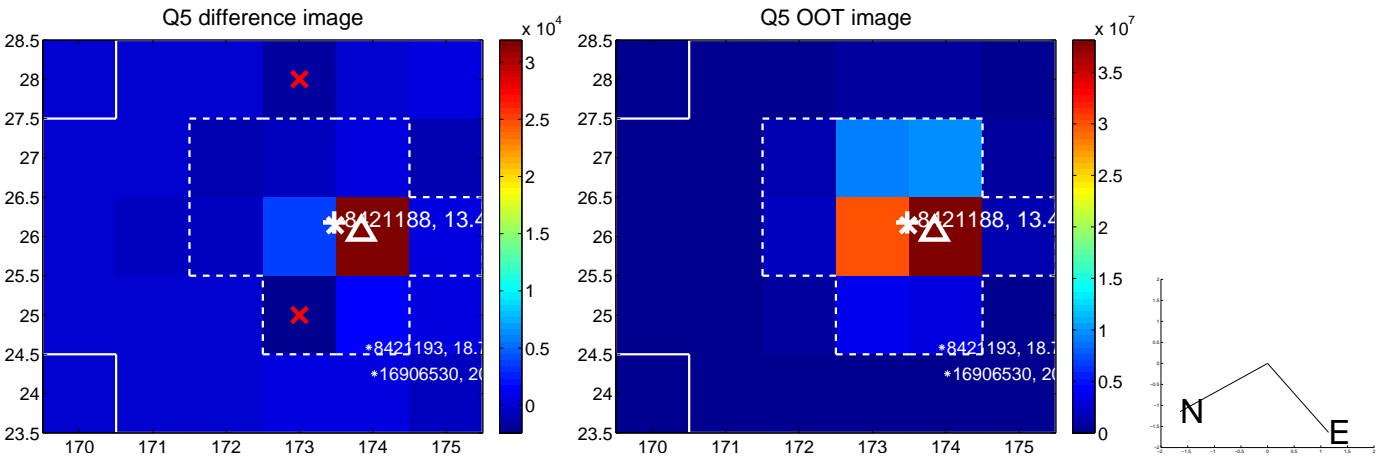


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

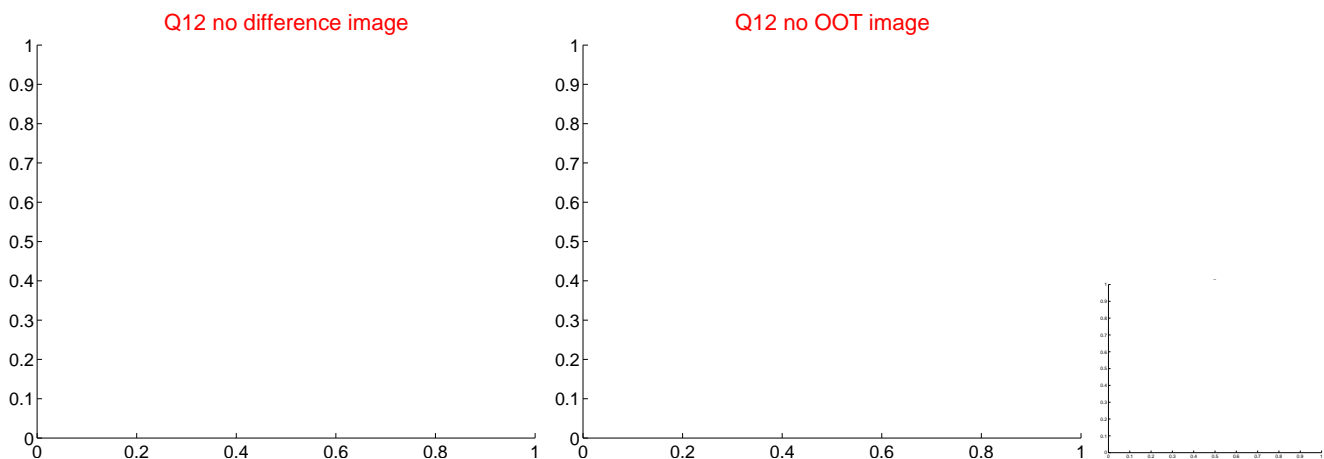
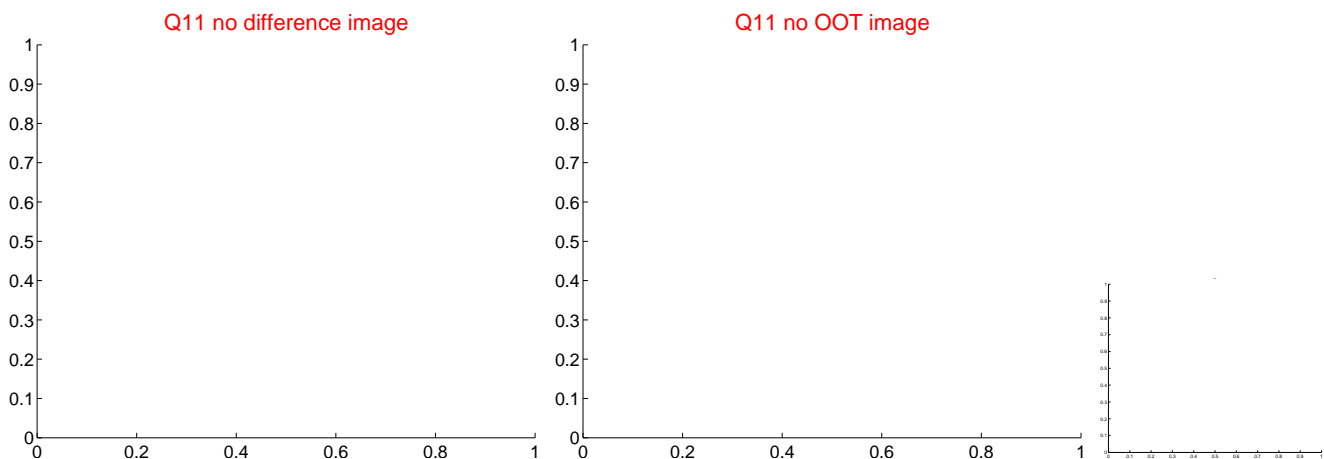
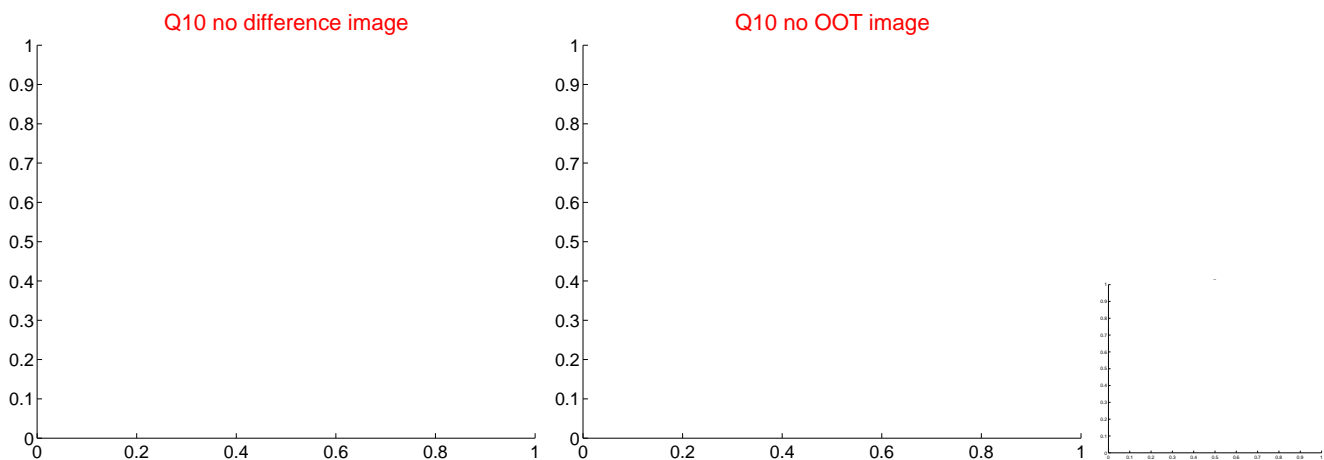
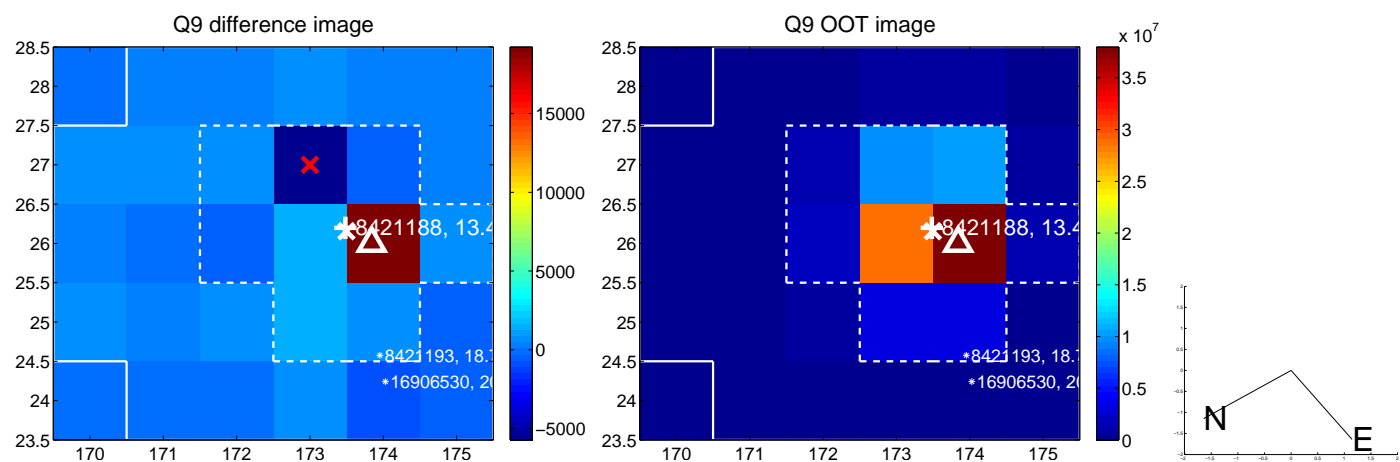
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



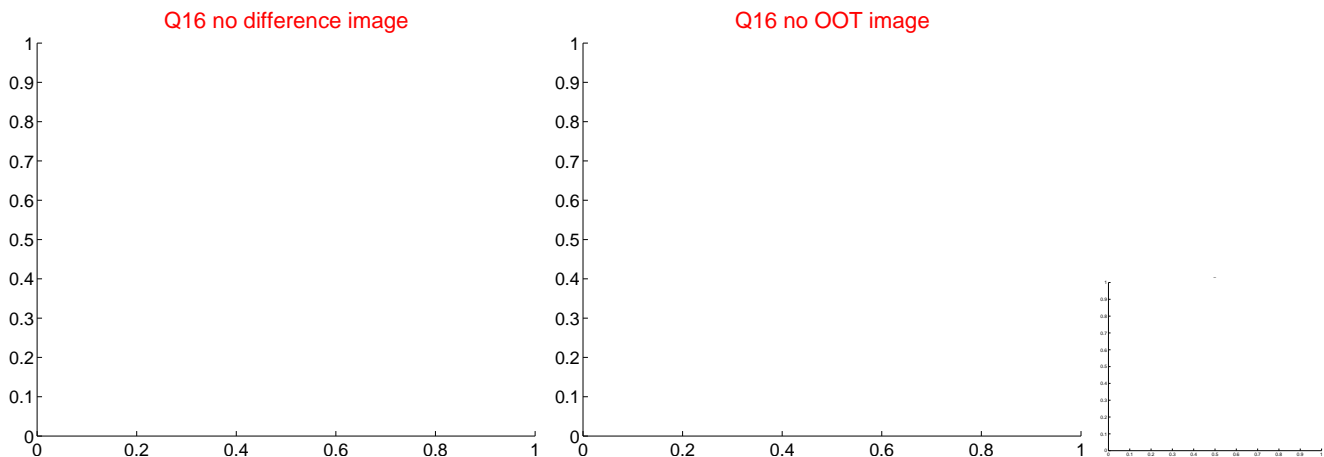
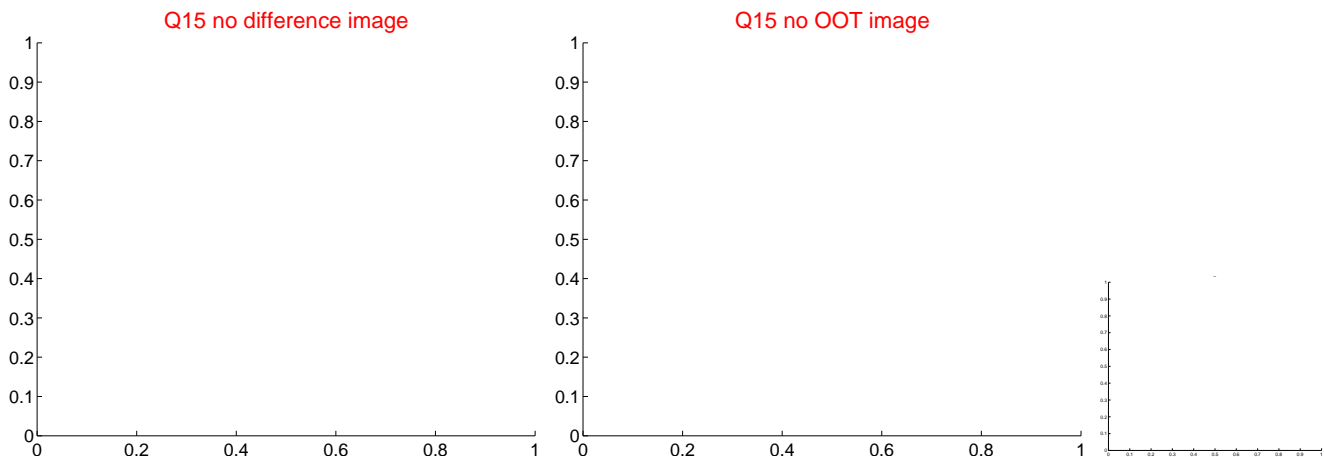
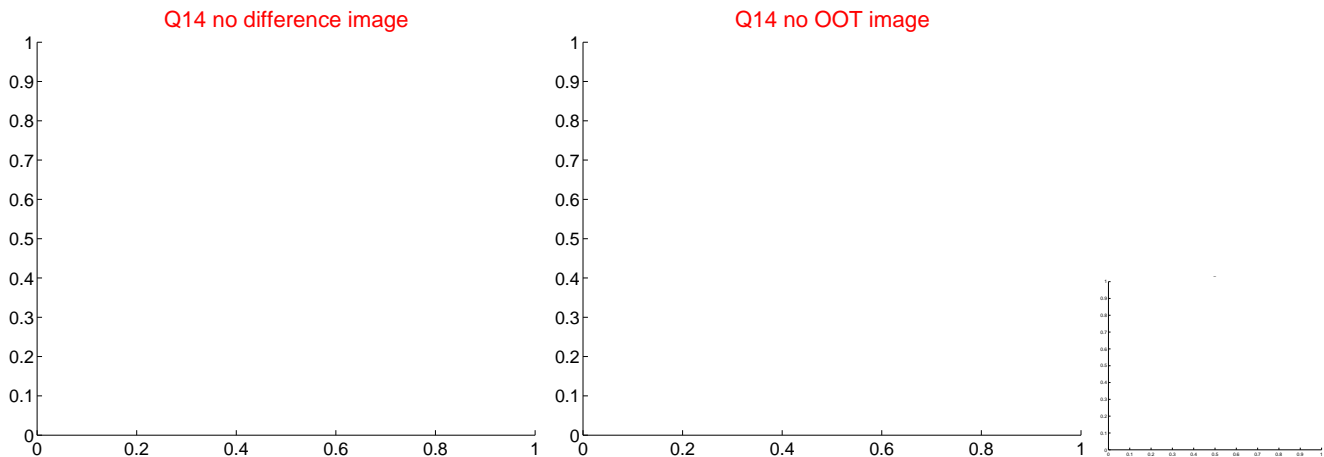
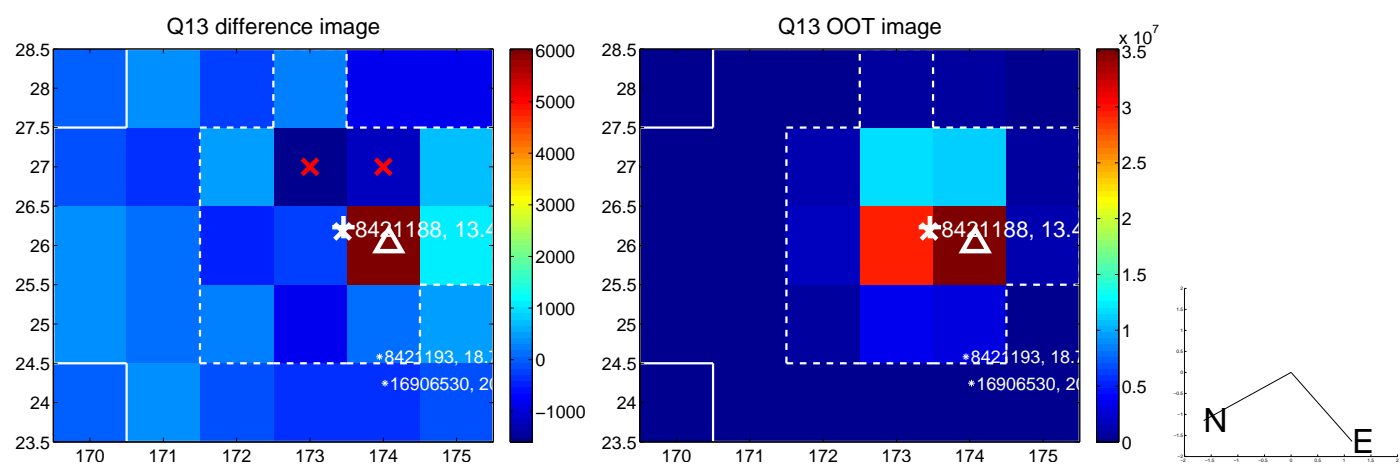
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



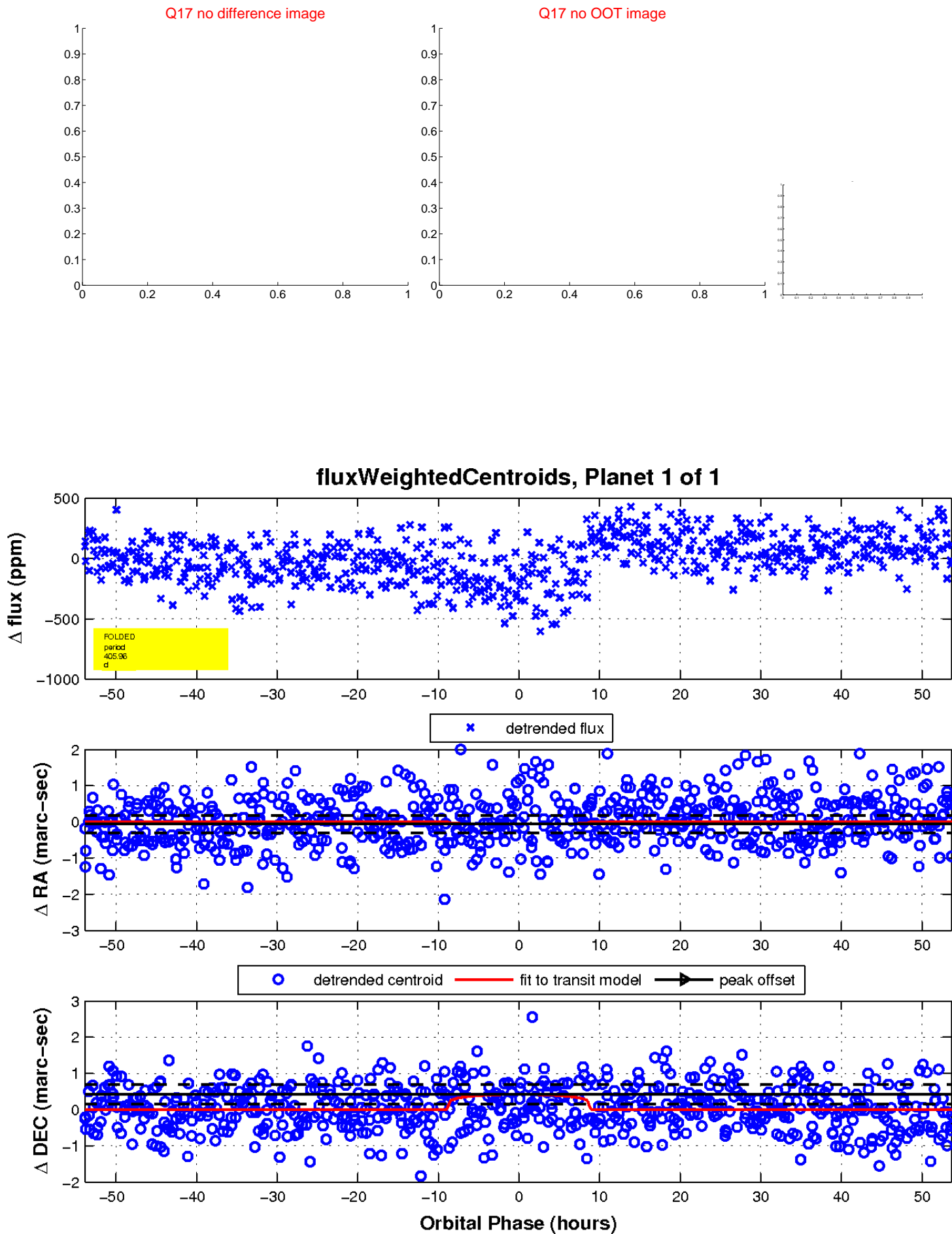
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image

Declination

