

KIC 004554781

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})
004554781-01	OBS	No	566.430642	189.070428	637.6	19.492	9.9	8.8	0.67	4254	1.69	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004554781-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

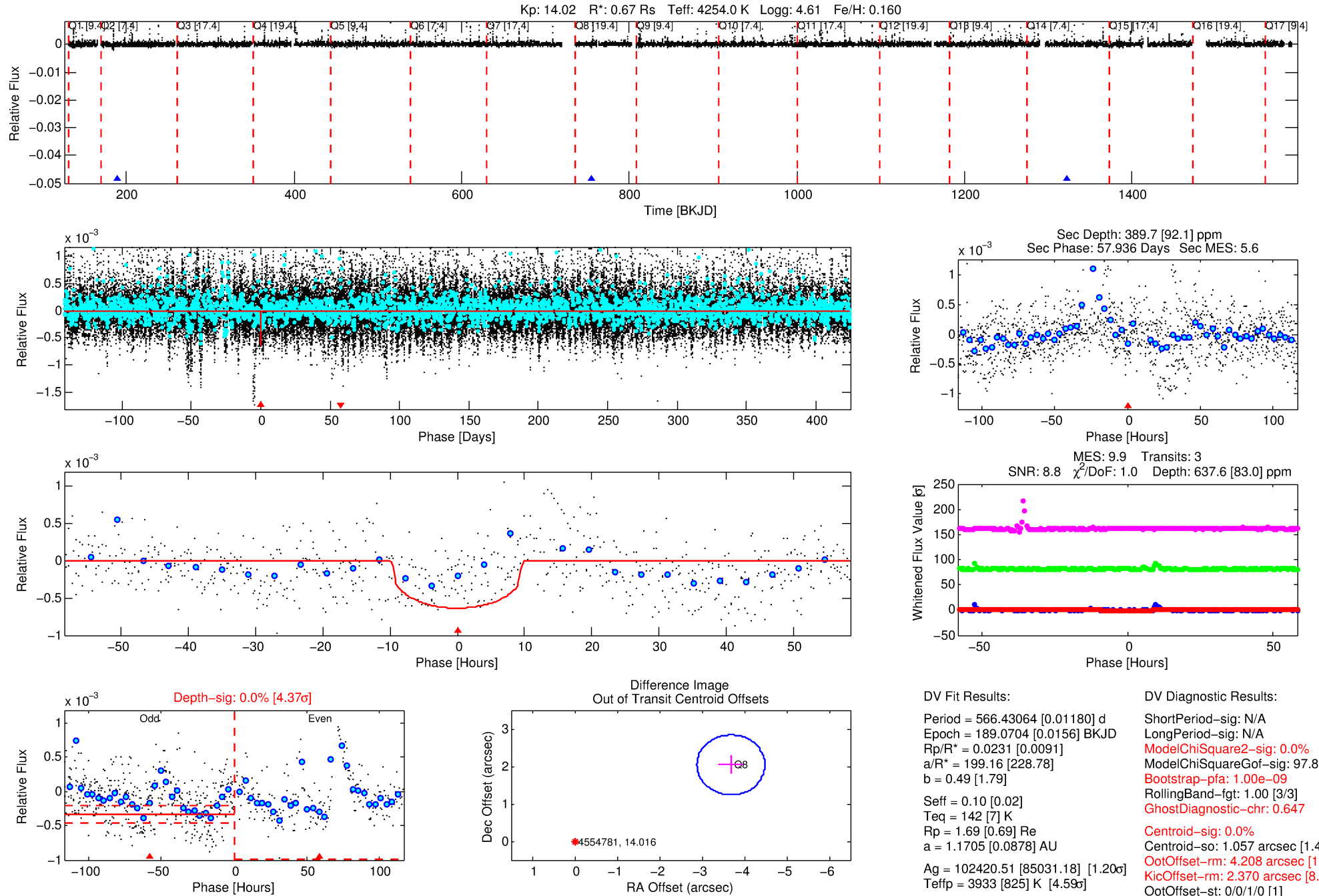
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004554781-01

No Significant Match Found

DV One-Page Summary

KIC: 4554781 Candidate: 1 of 1 Period: 566.431 d



DV Fit Results:

Period = 566.43064 [0.01180] d
Epoch = 189.0704 [0.0156] BKJD
Rp/R* = 0.0231 [0.0091]
a/R* = 199.16 [228.78]
b = 0.49 [1.79]
Seff = 0.10 [0.02]
Teq = 142 [7] K
Rp = 1.69 [0.69] Re
a = 1.1705 [0.0878] AU
Ag = 102420.51 [85031.18] [1.20 σ]
Teffp = 3933 [825] K [4.59 σ]

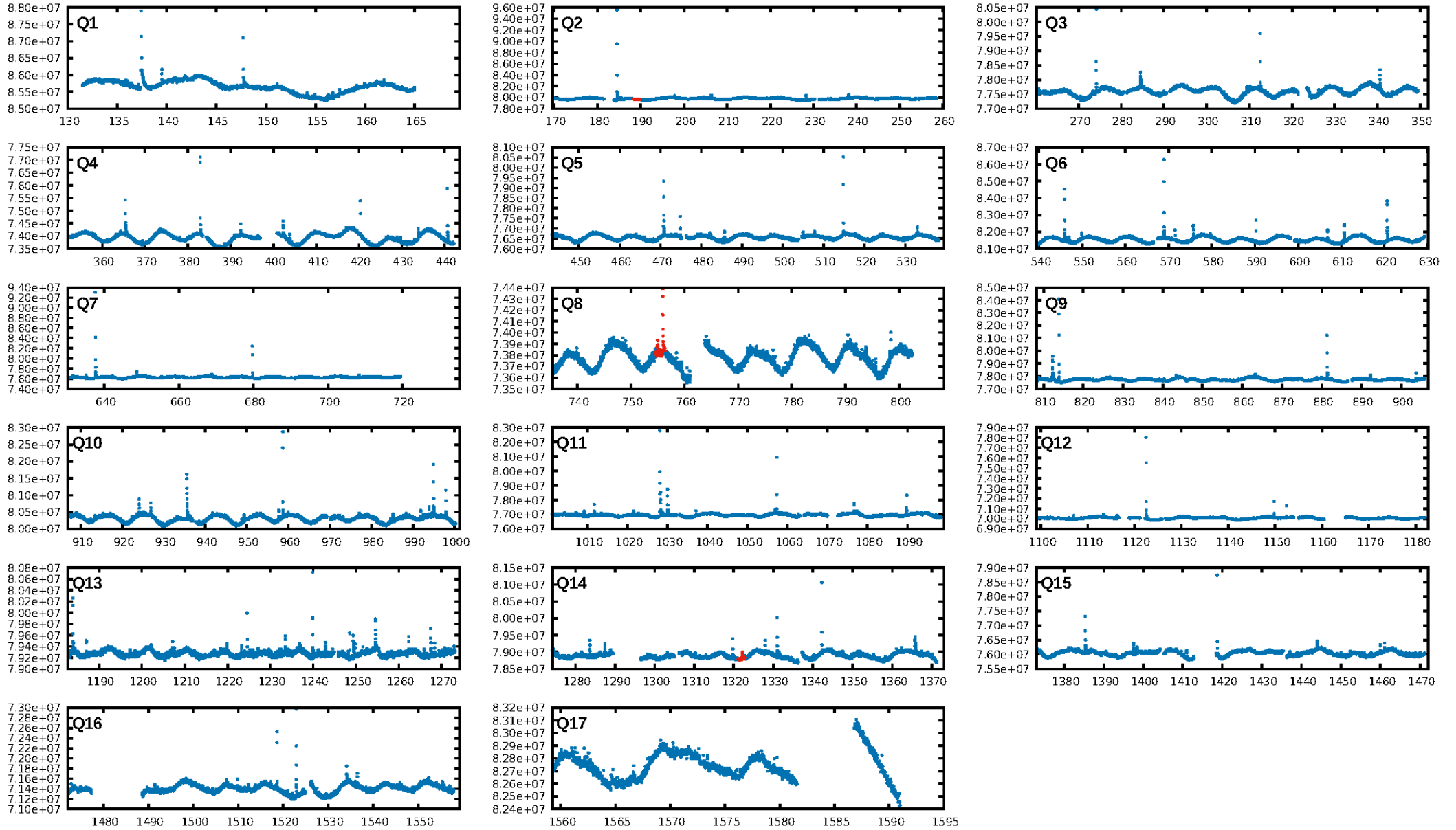
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 97.8%
Bootstrap-pfa: 1.00e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.647
Centroid-sig: 0.0%
Centroid-so: 1.057 arcsec [1.43 σ]
OotOffset-rm: 4.208 arcsec [15.76 σ]
KicOffset-rm: 2.370 arcsec [8.62 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

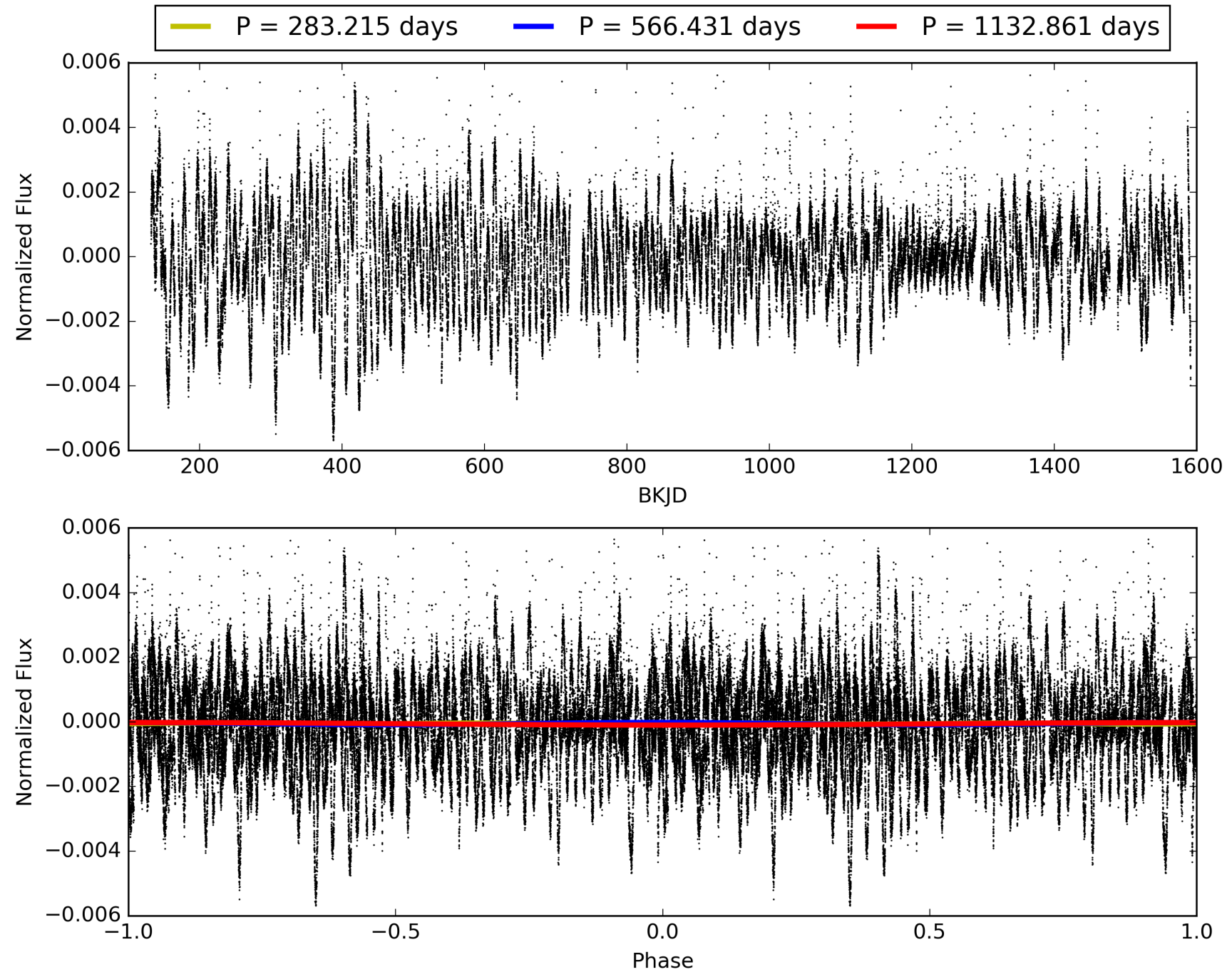
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:21:25 Z

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

TCE 004554781-01, PDC Light Curves

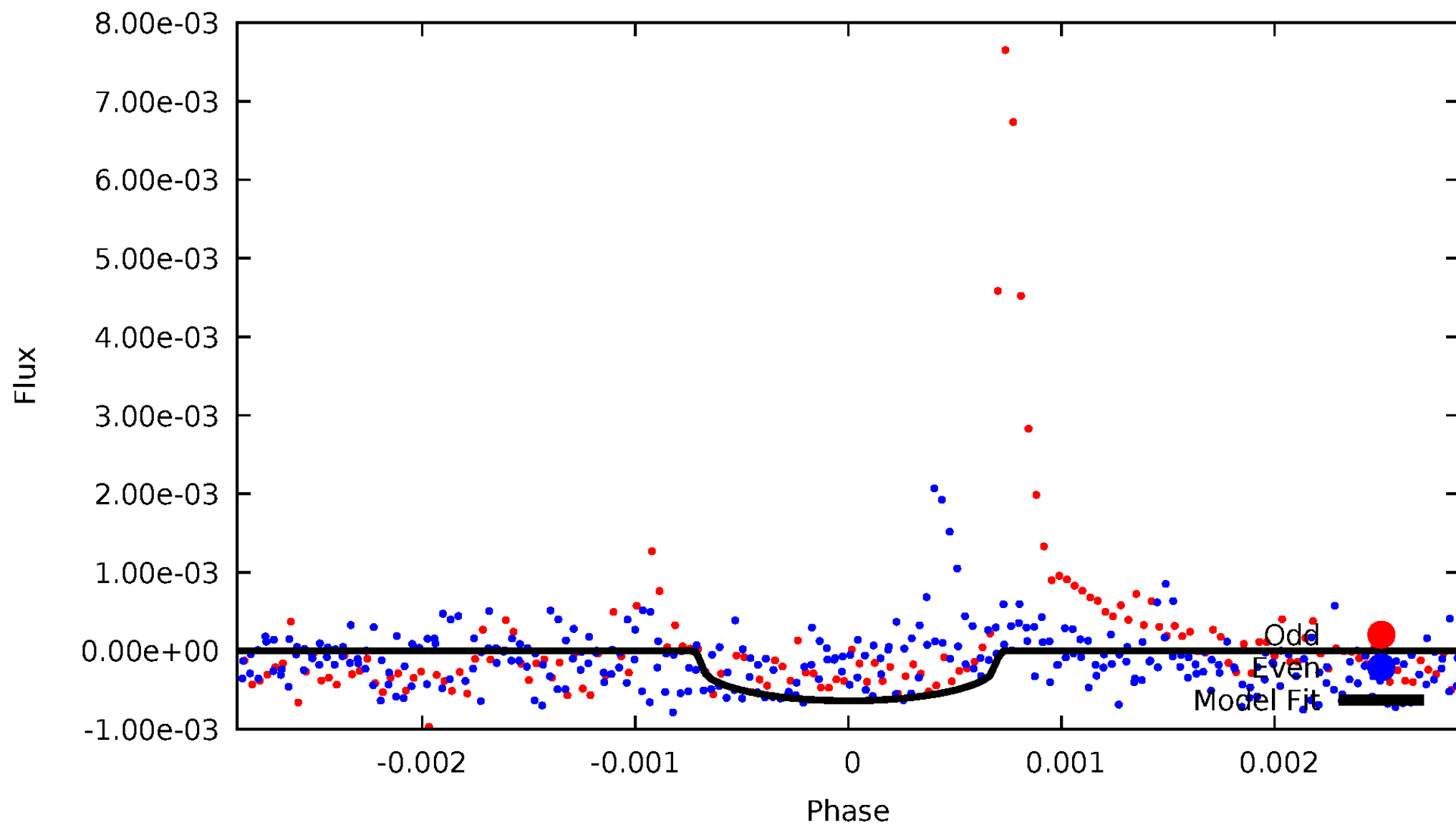


TCE 004554781-01



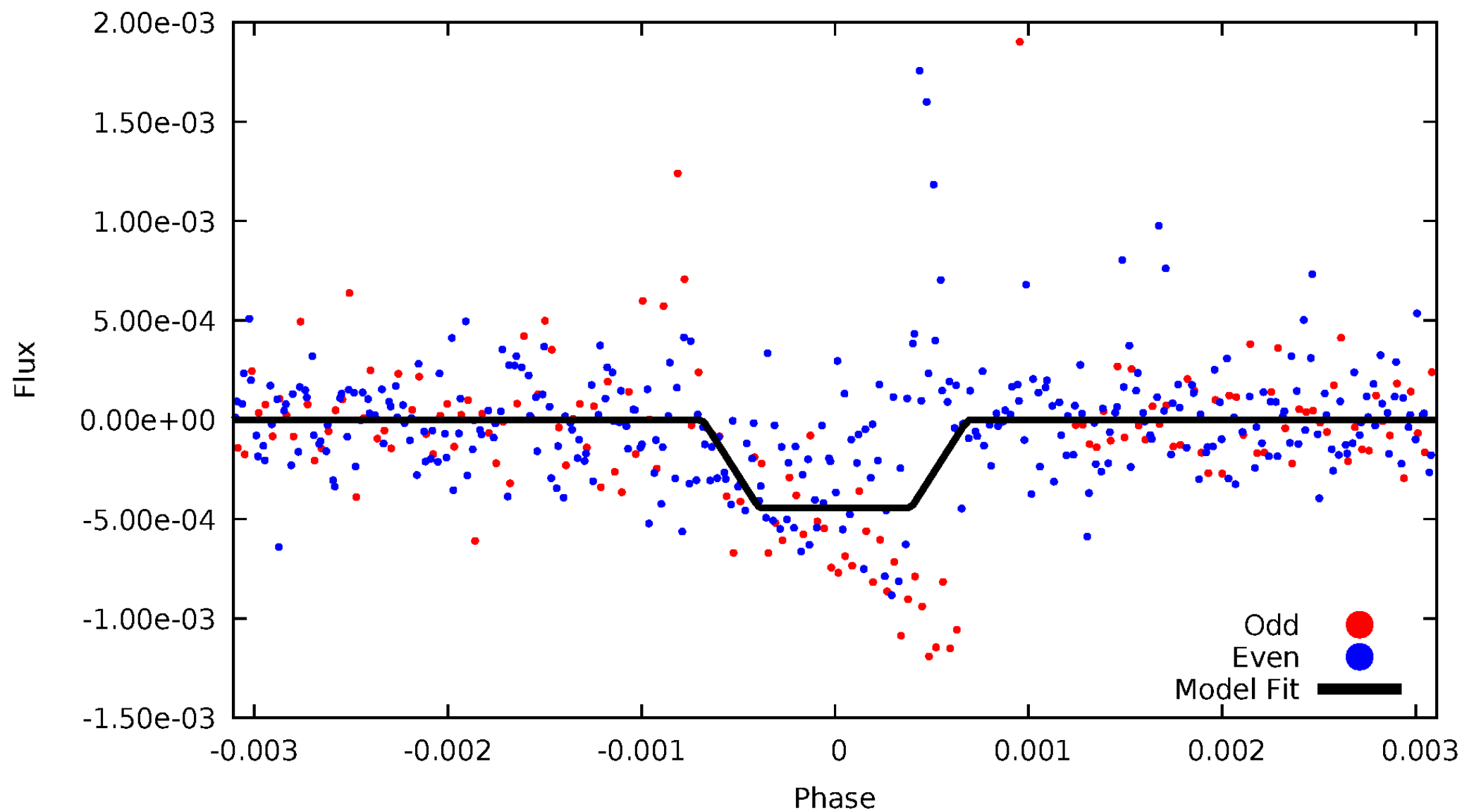
DV Odd/Even

TCE 004554781-01



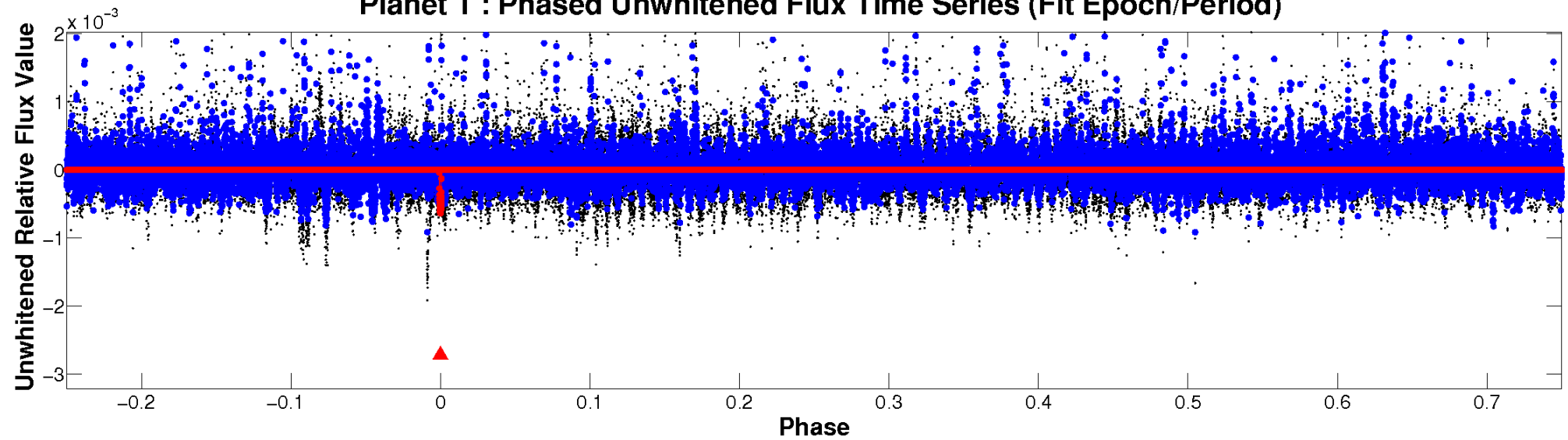
ALT Odd/Even

TCE 004554781-01

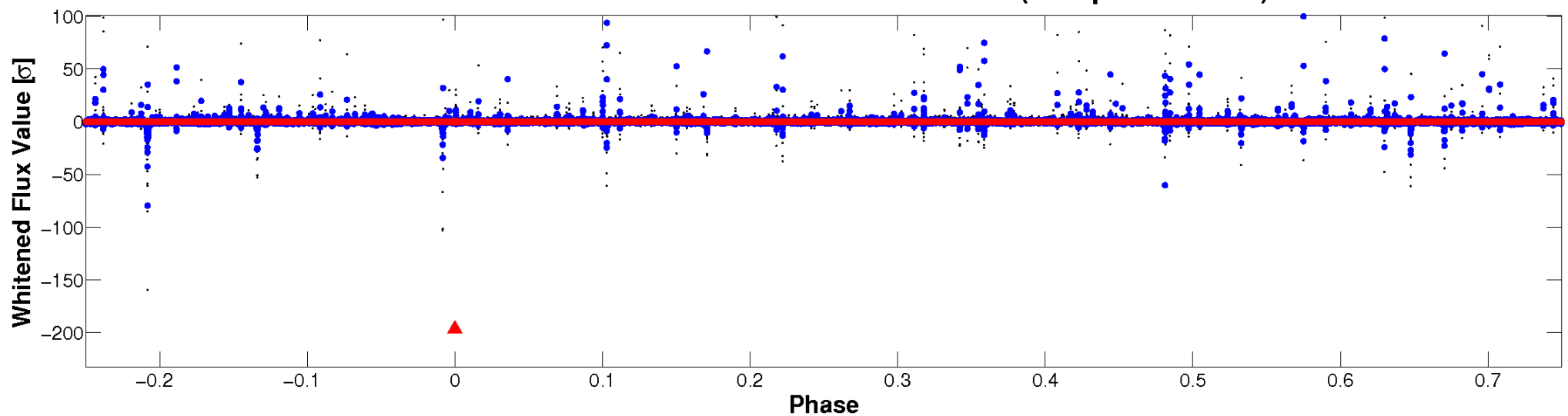


Non-Whitened Vs. Whitened Light Curve

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

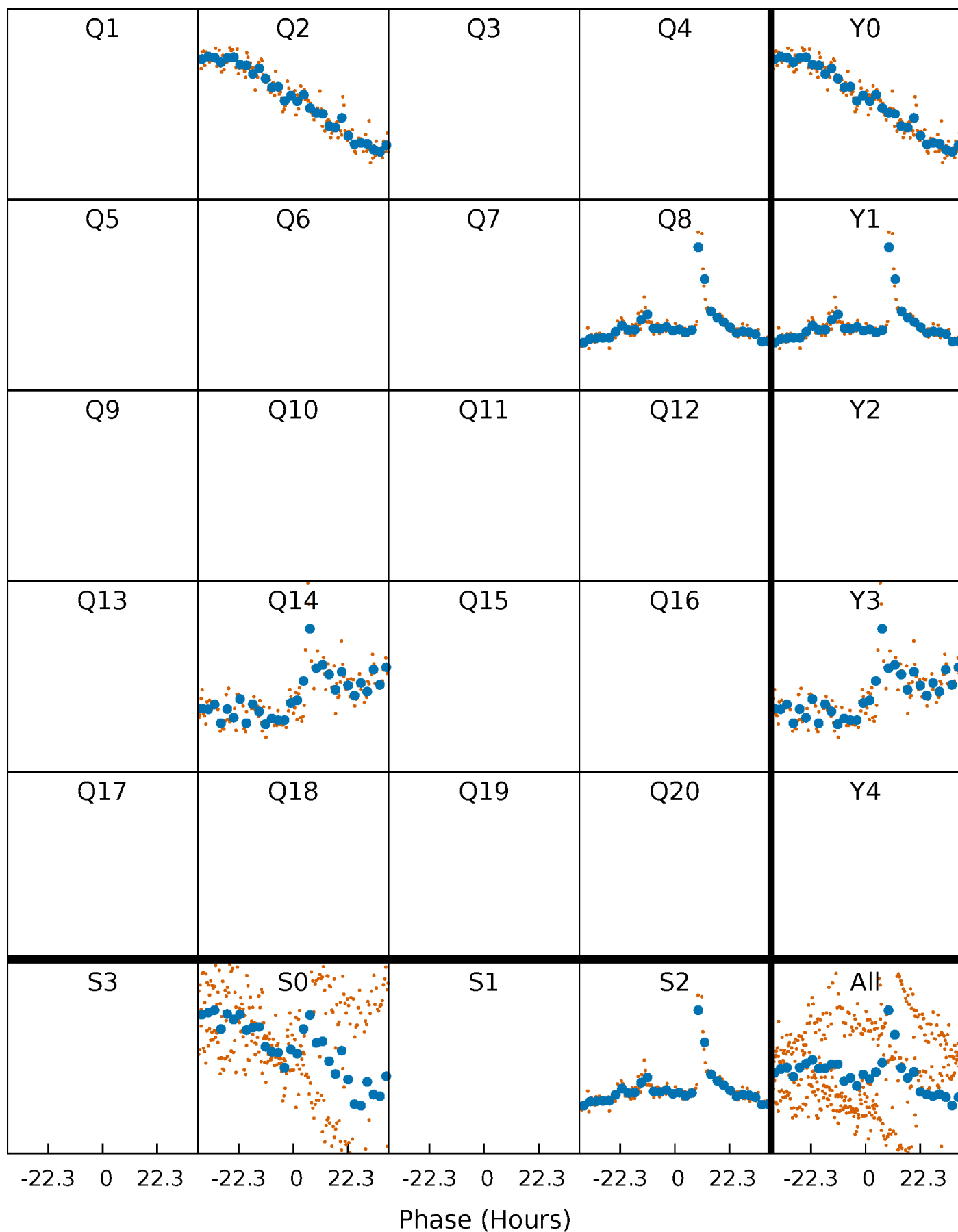


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



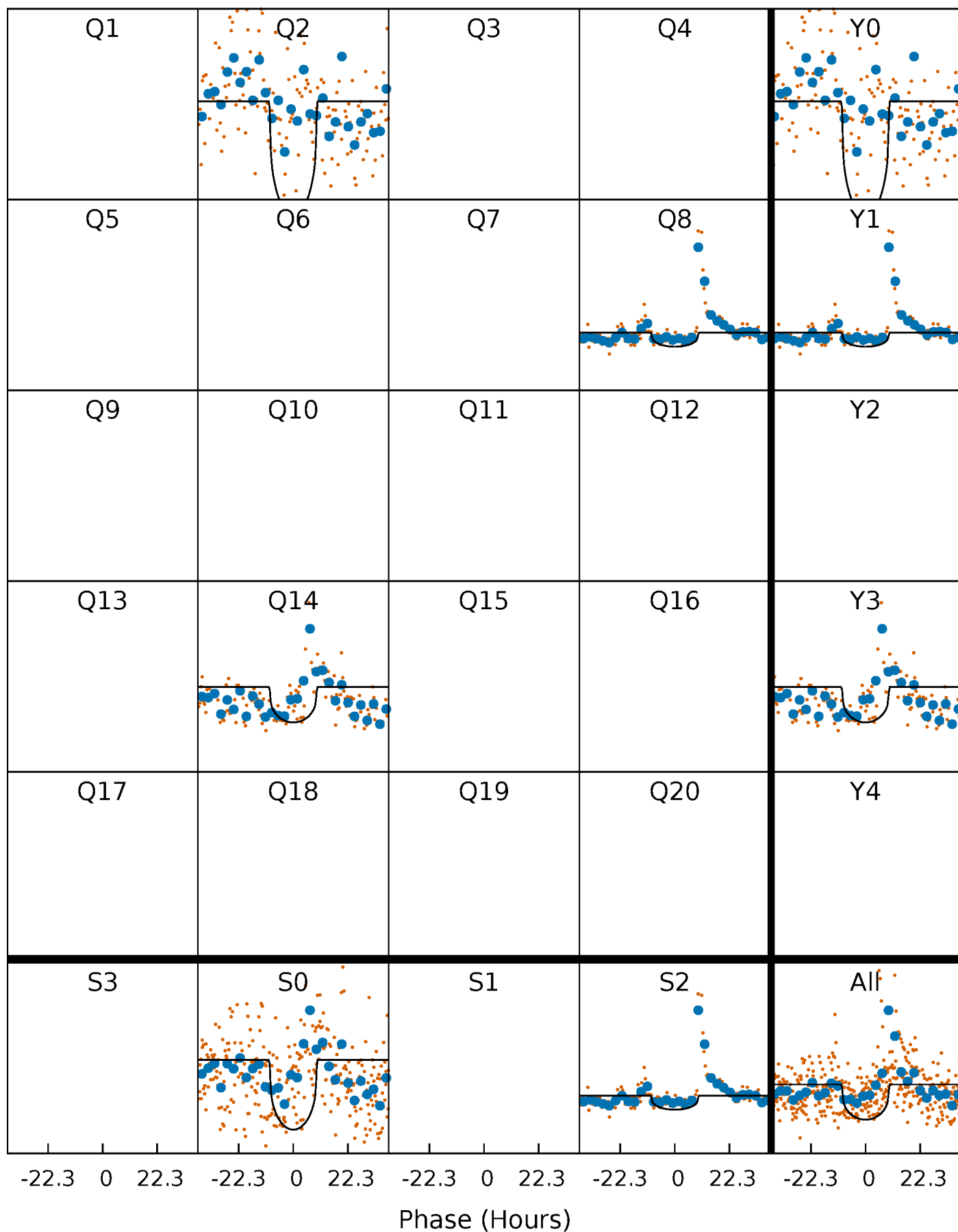
PDC Quarter-Phased Transit Curves

TCE 004554781-01 P=566.430642 Days $T_0=189.070428$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004554781-01 P=566.430642 Days $T_0=189.070428$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

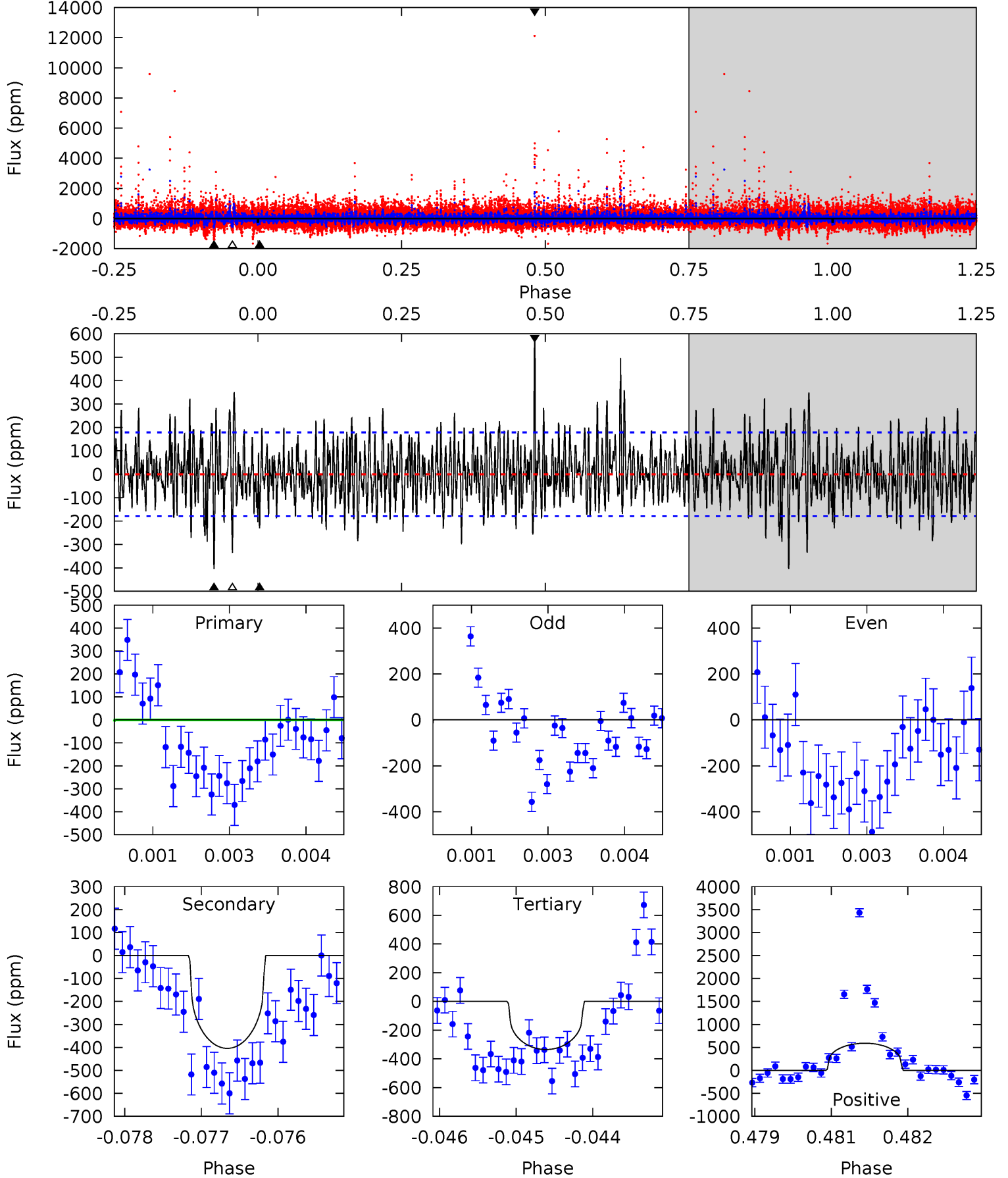
TCE 004554781-01 $P=566.472773$ Days $T_0=188.966574$ (BKJD)



DV Model-Shift Uniqueness Test

004554781-01, P = 566.430642 Days, E = 189.070428 Days

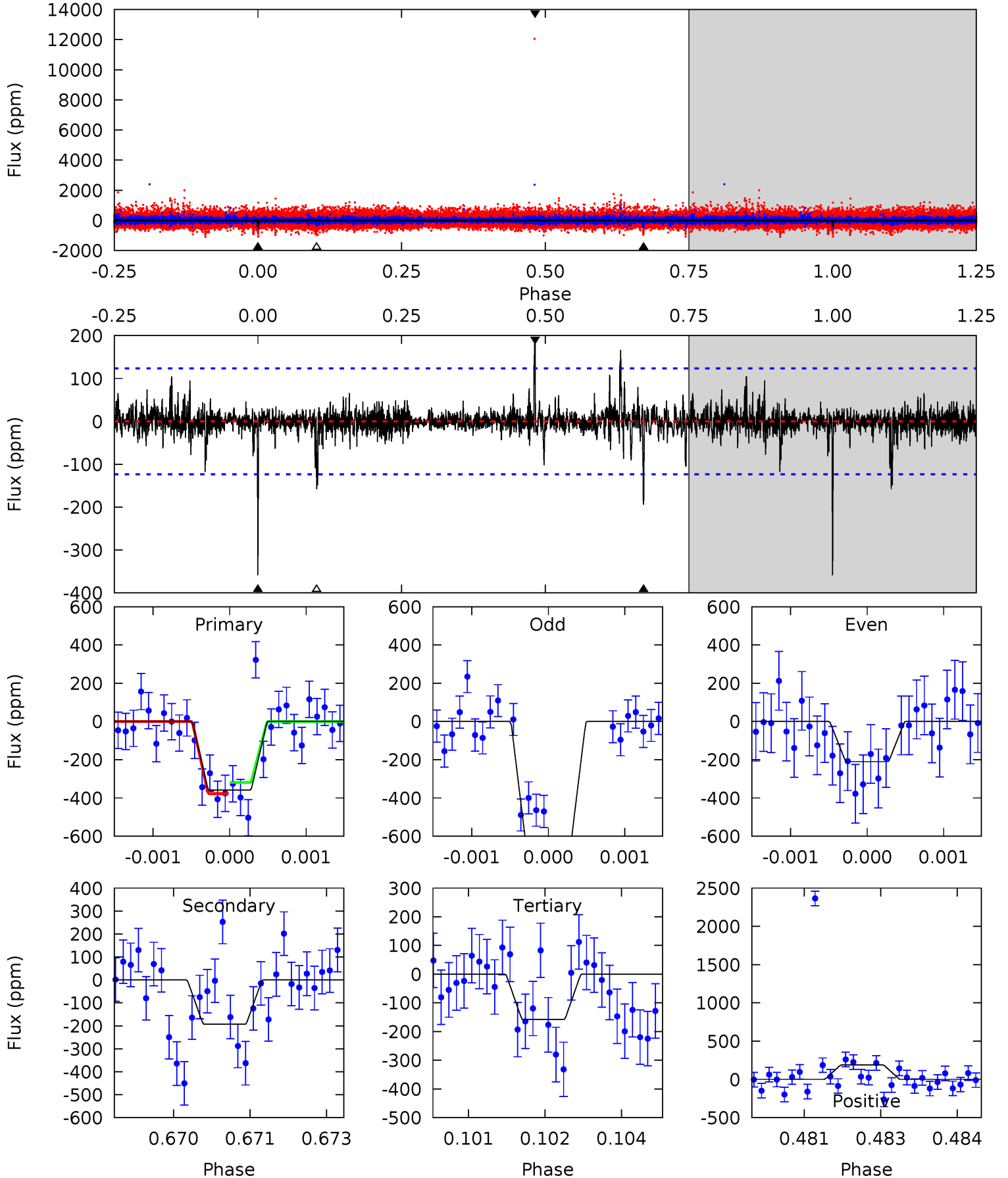
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.92	12.2	10.1	17.8	5.38	3.18	3.15	-3.15	-10.8	2.09	-5.61	0.78	1.29	0.59	2.90



Alt Model-Shift Uniqueness Test

004554781-01, P = 566.472773 Days, E = 188.966574 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	8.43	6.89	8.24	5.39	3.19	0.98	8.75	7.40	1.54	0.18	8.41	1.24	0.35	1.25



Stellar Parameters For KIC 004554781

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4254^{+155}_{-172}	$4.607^{+0.056}_{-0.020}$	$0.160^{+0.250}_{-0.300}$	$0.672^{+0.033}_{-0.062}$	$0.666^{+0.053}_{-0.059}$	$3.092^{+0.786}_{-0.286}$
	+4%/-4%	+1%/-0%	+156%/-188%	+5%/-9%	+8%/-9%	+25%/-9%
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 004554781-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-404 ± 33	$1.65^{+0.68}_{-0.68}$	198^{+8}_{-9}	4064^{+924}_{-471}	$113694^{+202654}_{-58083}$
Alt.	-193 ± 23	$1.56^{+0.60}_{-0.66}$	197^{+8}_{-8}	3657^{+805}_{-393}	$60625^{+127547}_{-30113}$

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

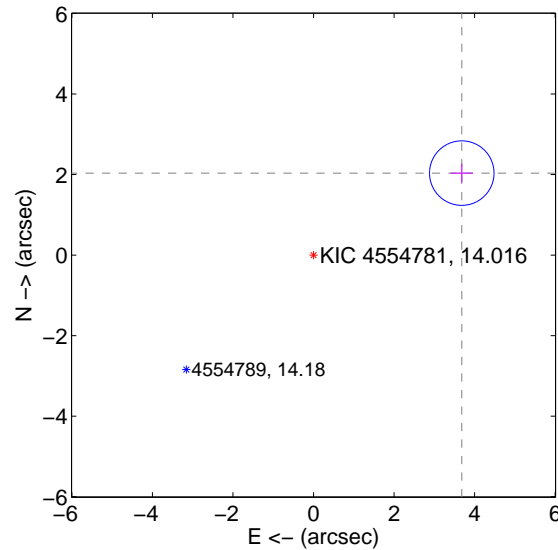
Supplemental centroid analysis for 004554781-01. Kepler magnitude: 14.02. Transit SNR 8.81

There are 1 quarters with good PRF difference image offsets

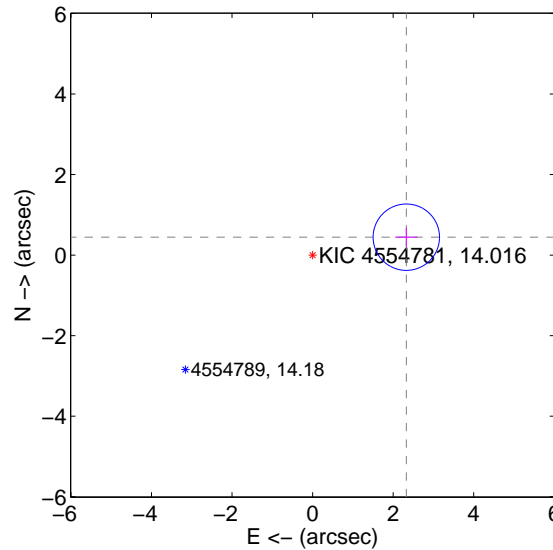
The OOT PRF centroid is offset from the target star catalog position by about 2.09 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.208 ± 0.267	15.76	-3.682 ± 0.276	2.036 ± 0.235
PRF-fit source offset from KIC position	2.370 ± 0.275	8.62	-2.328 ± 0.276	0.445 ± 0.235
photometric centroid source offset	1.06 ± 0.74	1.43	-0.83 ± 0.87	-0.66 ± 0.46

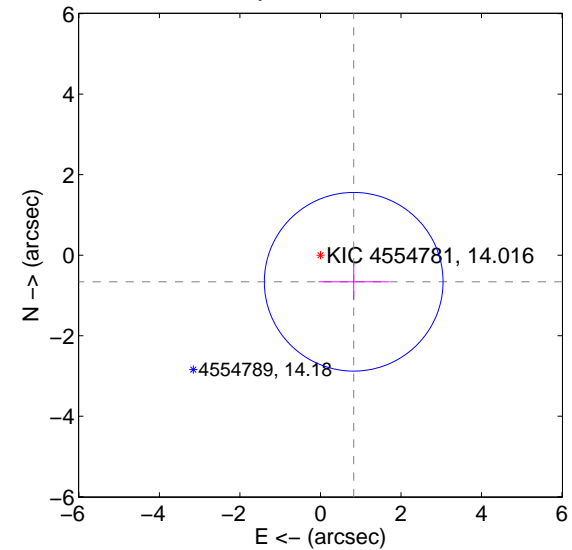
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

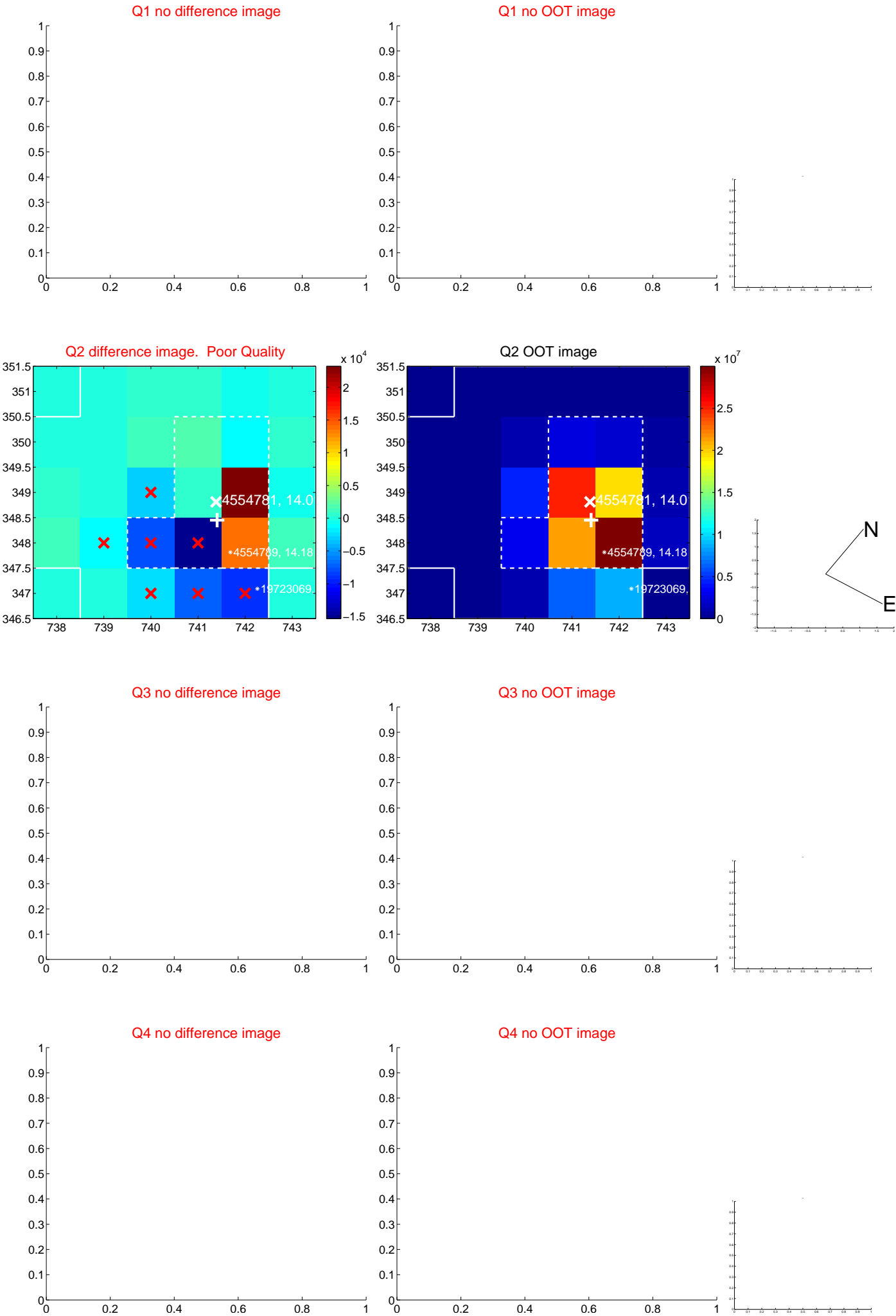


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



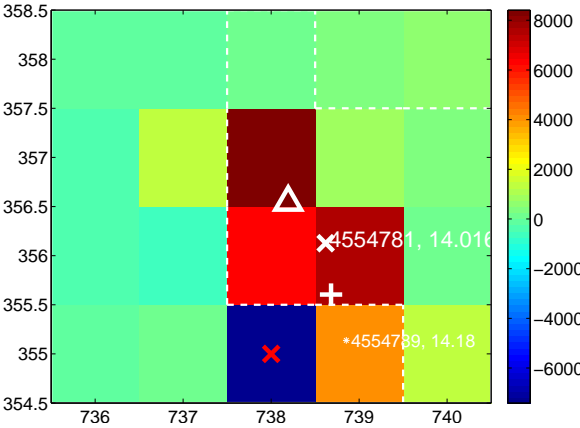
Q7 no difference image



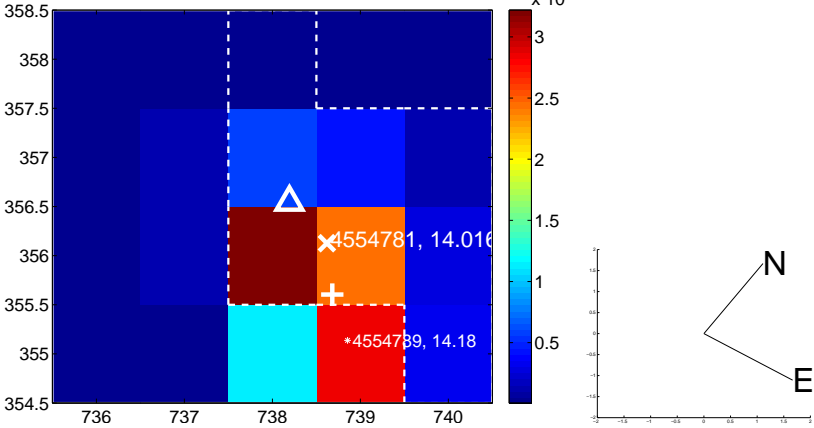
Q7 no OOT image



Q8 difference image



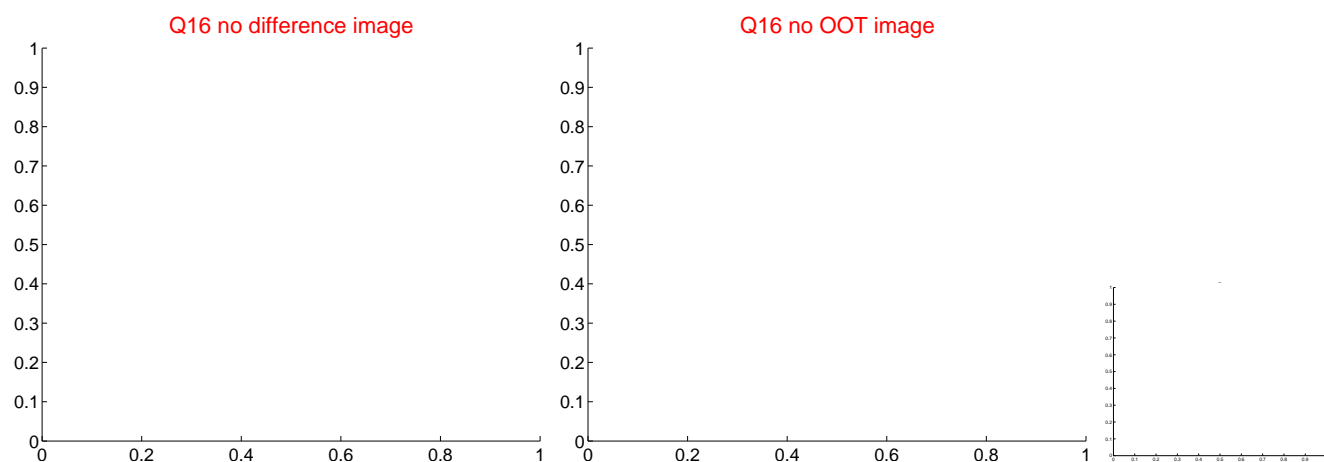
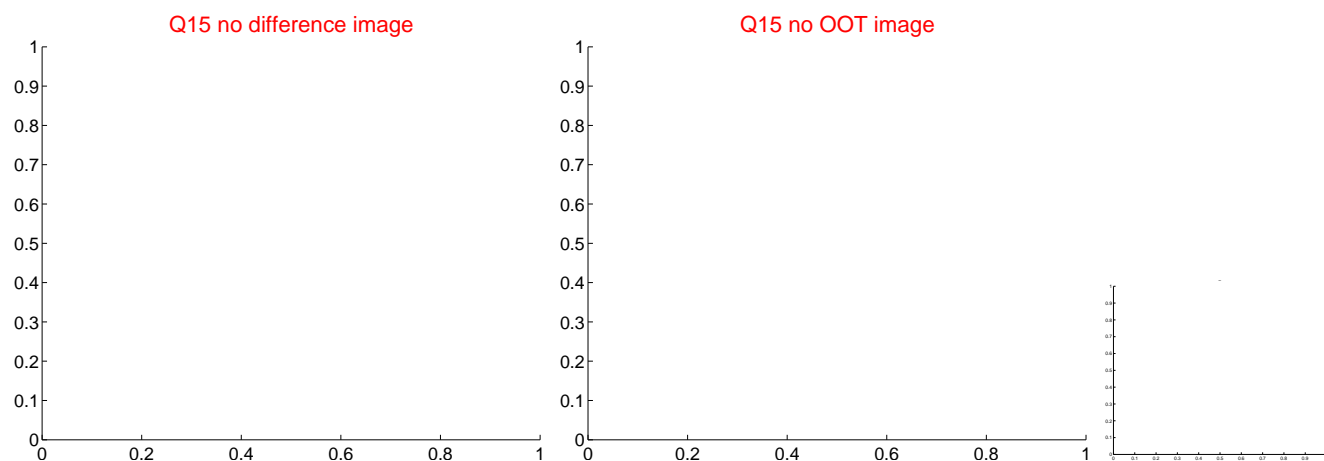
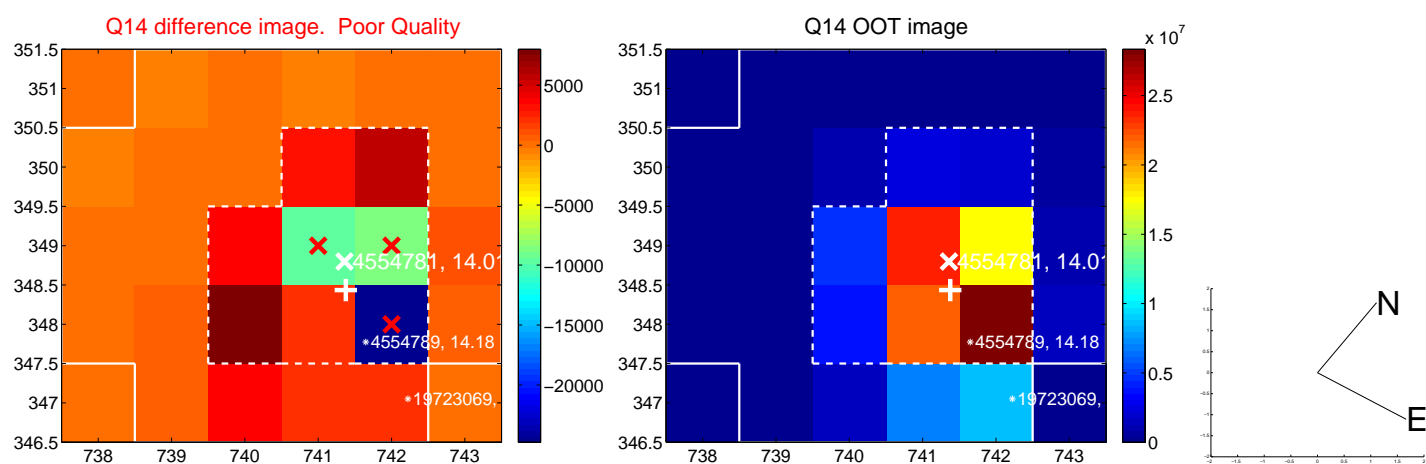
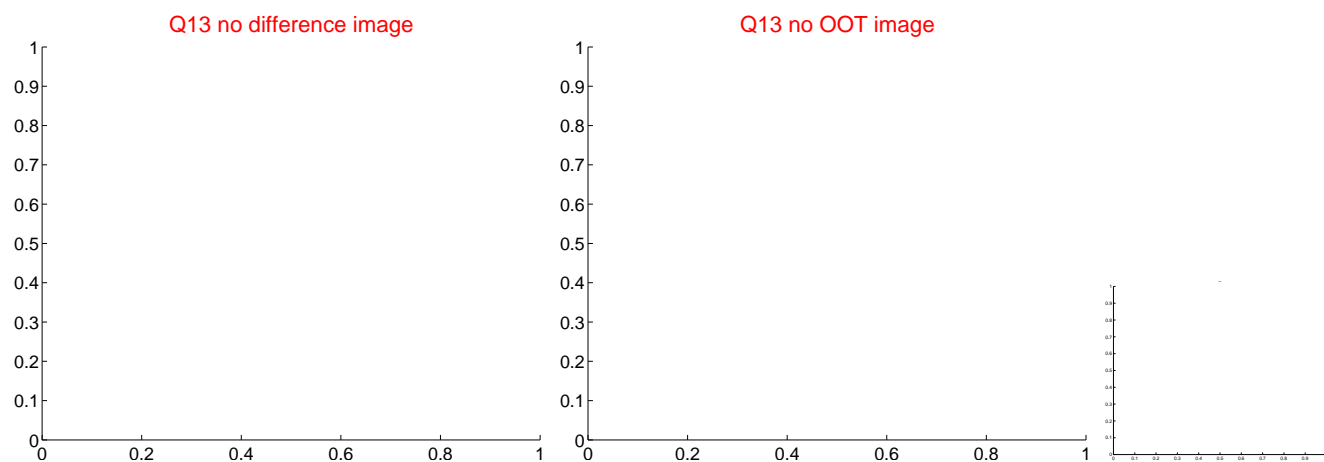
Q8 OOT image



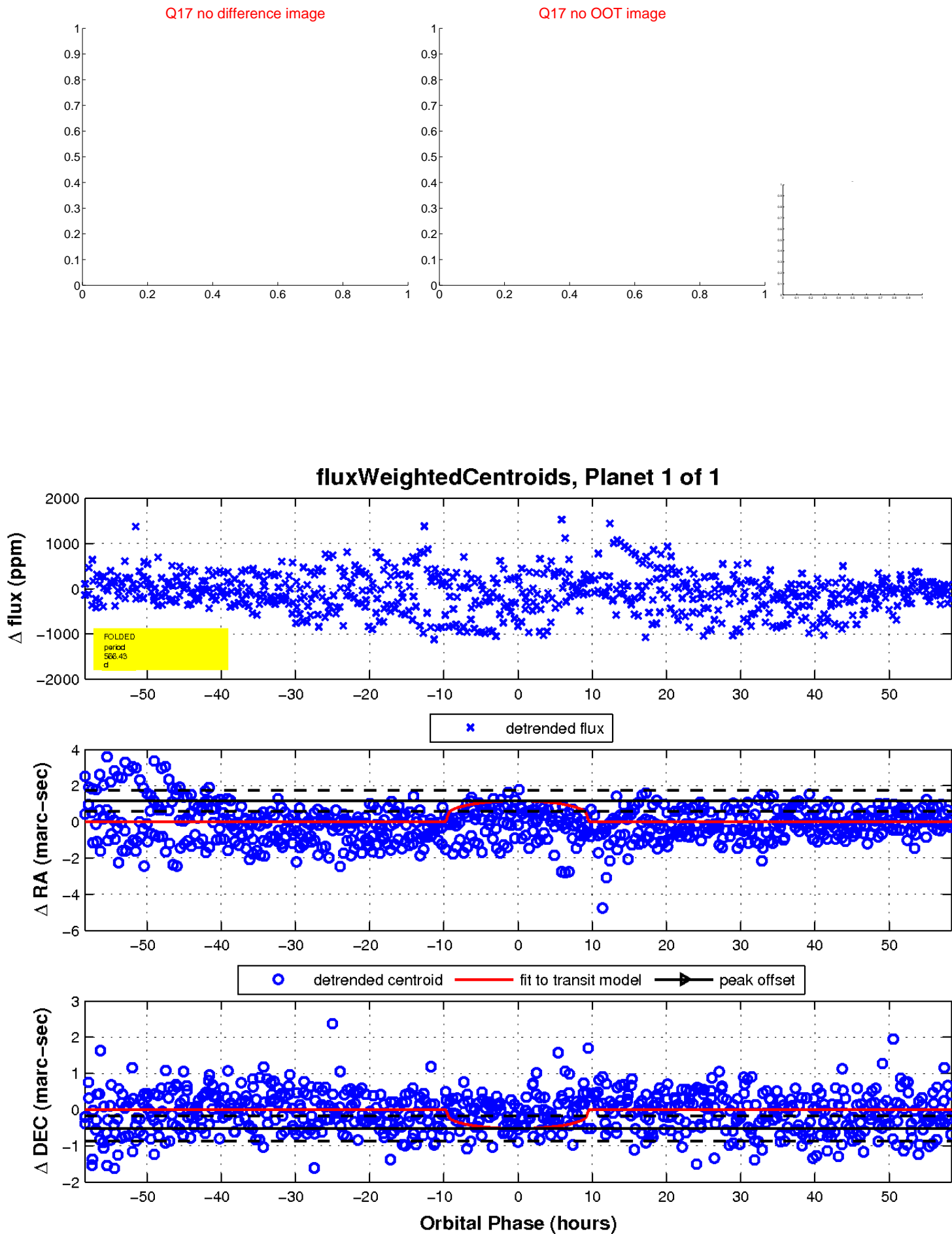
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

