

KIC 012557540

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})
012557540-01	OBS	No	389.114306	316.419989	168.1	18.150	7.3	6.9	1.19	6289	1.78	1.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012557540-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

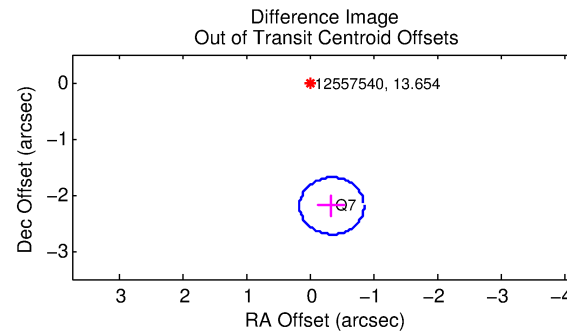
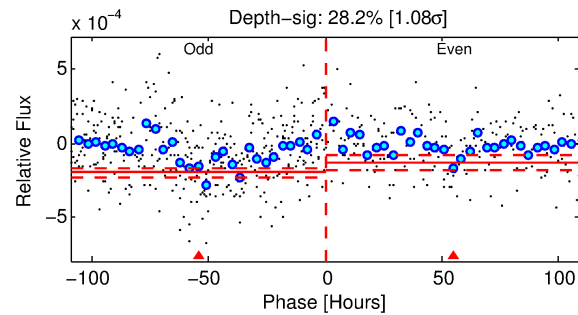
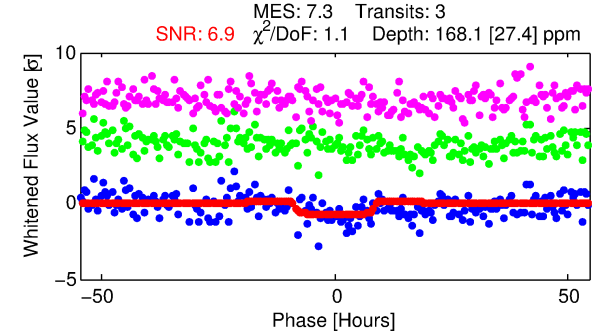
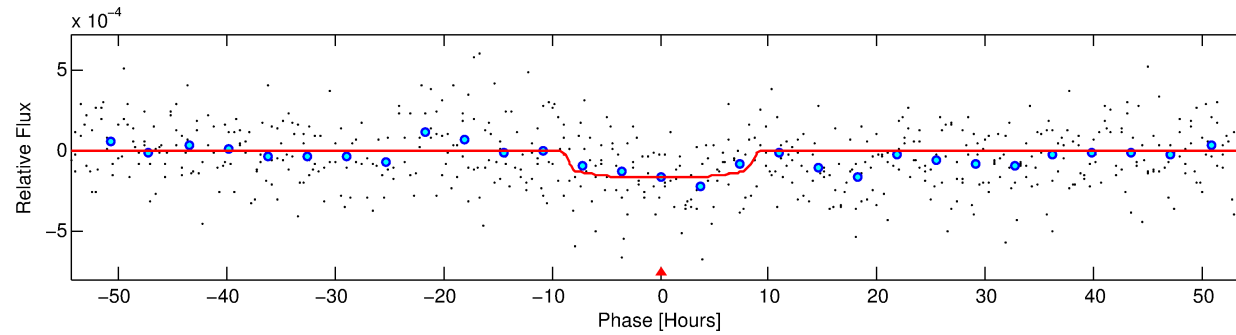
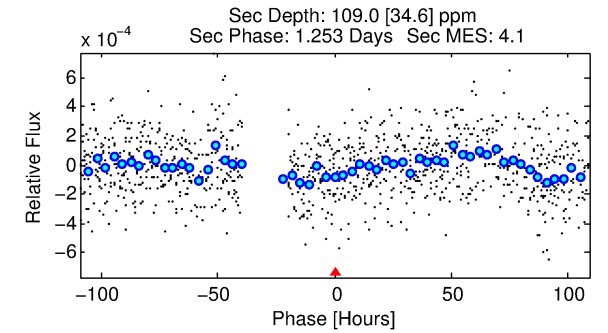
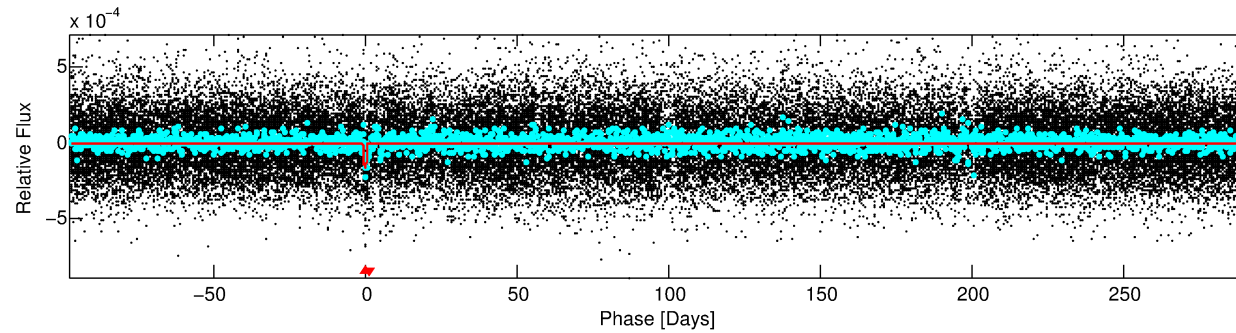
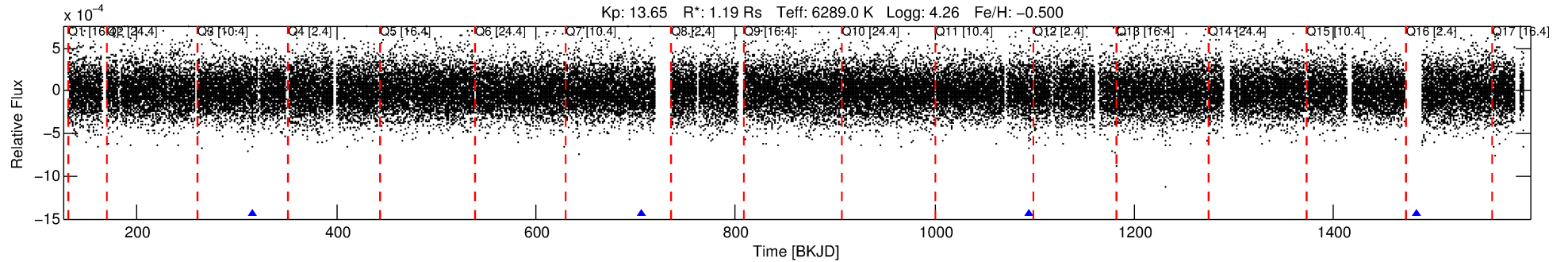
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012557540-01

No Significant Match Found

DV One-Page Summary

KIC: 12557540 Candidate: 1 of 1 Period: 389.114 d



DV Fit Results:

Period = 389.11431 [0.02573] d
Epoch = 316.4200 [0.0331] BKJD
Rp/R* = 0.0137 [0.0026]
a/R* = 82.50 [78.23]
b = 0.88 [0.25]
Seff = 1.90 [0.69]
Teq = 299 [27] K
Rp = 1.78 [0.58] Re
a = 1.0247 [0.2352] AU
Ag = 19885.93 [11948.72] [1.66σ]
Teffp = 5494 [699] K [7.42σ]

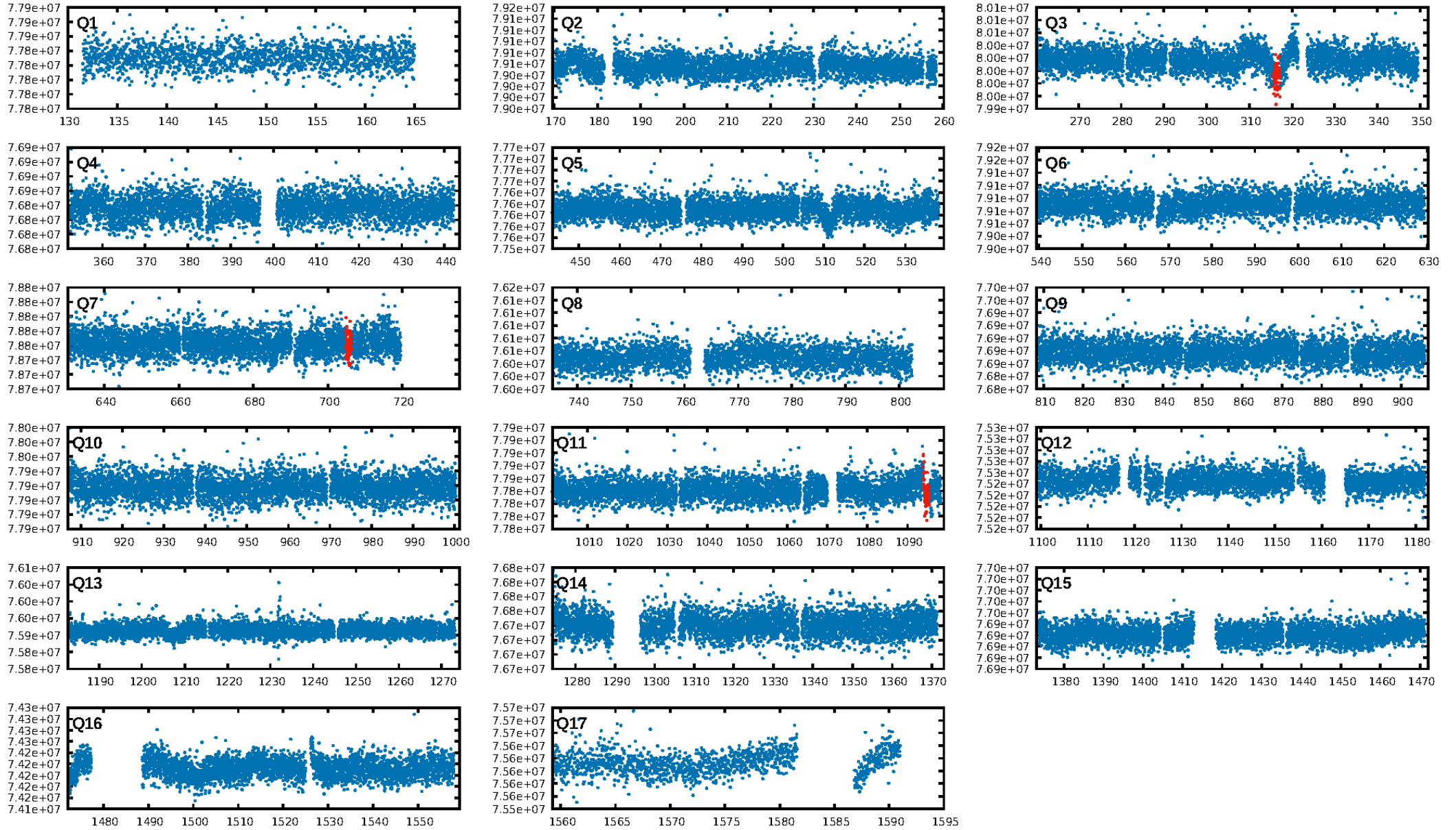
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.1%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 2.16e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.7612
Centroid-sig: 60.0%
Centroid-so: 1.517 arcsec [0.86σ]
OotOffset-rm: 2.225 arcsec [13.17σ]
KicOffset-rm: 2.313 arcsec [13.62σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

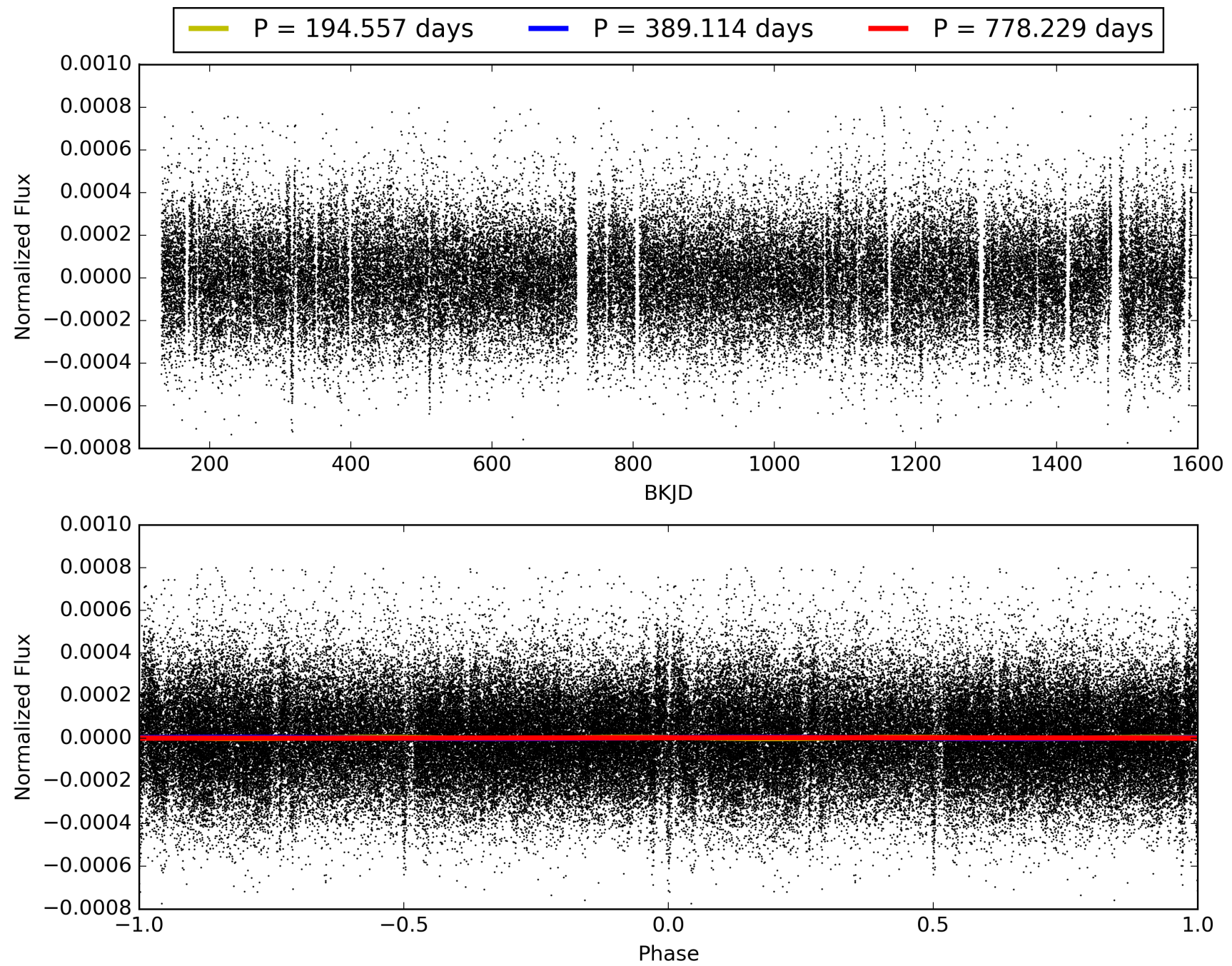
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:50:25 Z

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

TCE 012557540-01, PDC Light Curves

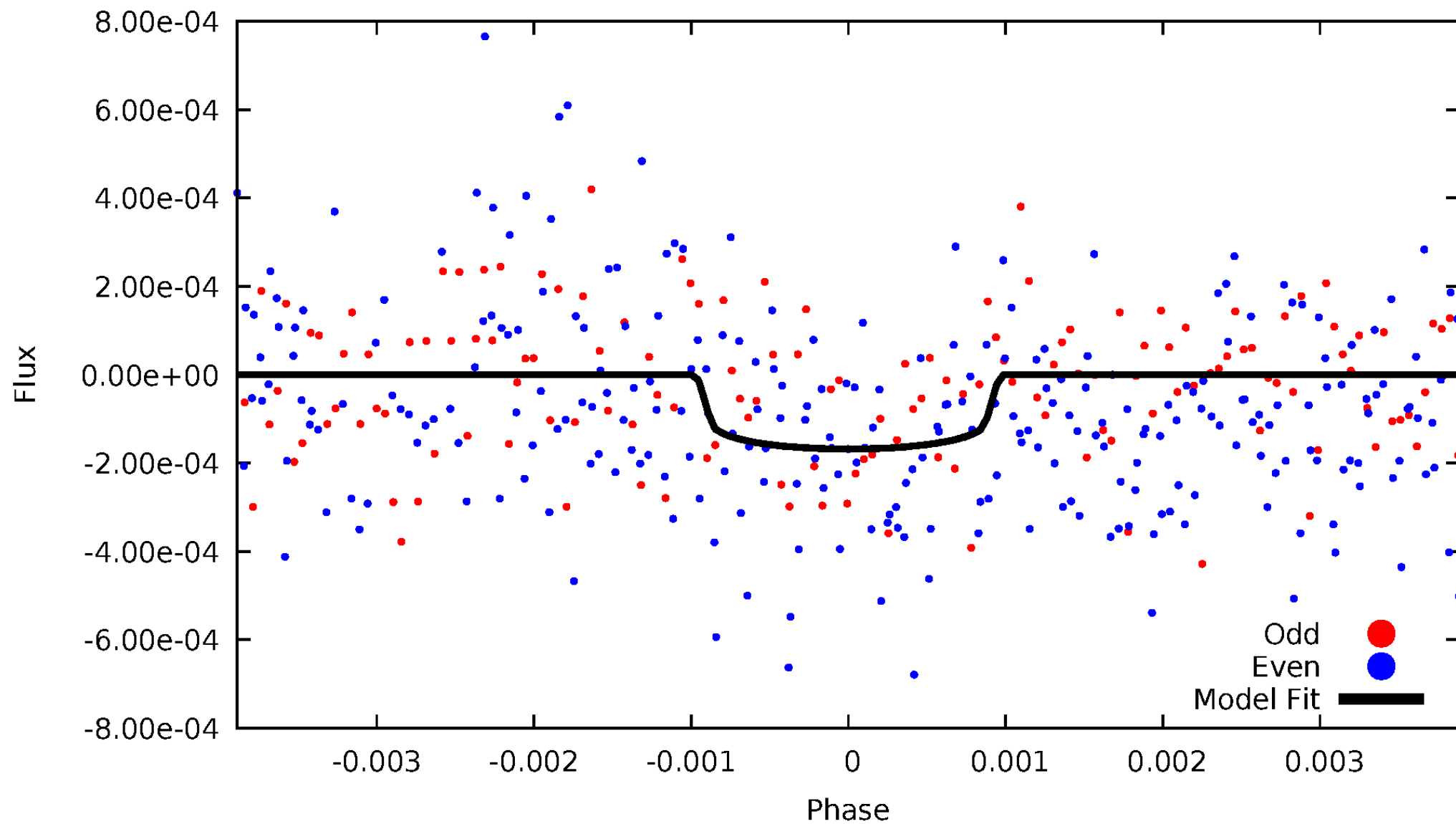


TCE 012557540-01



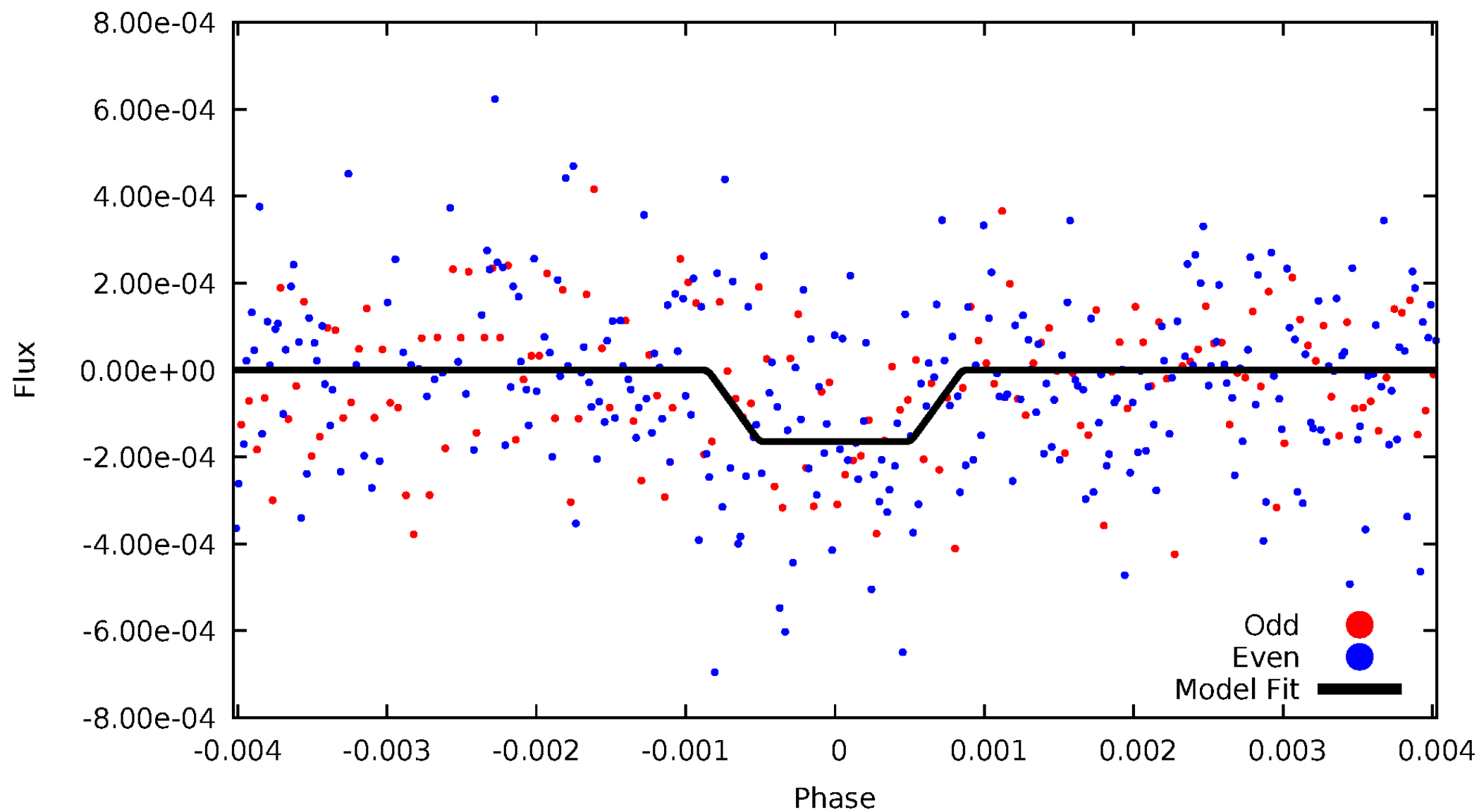
DV Odd/Even

TCE 012557540-01



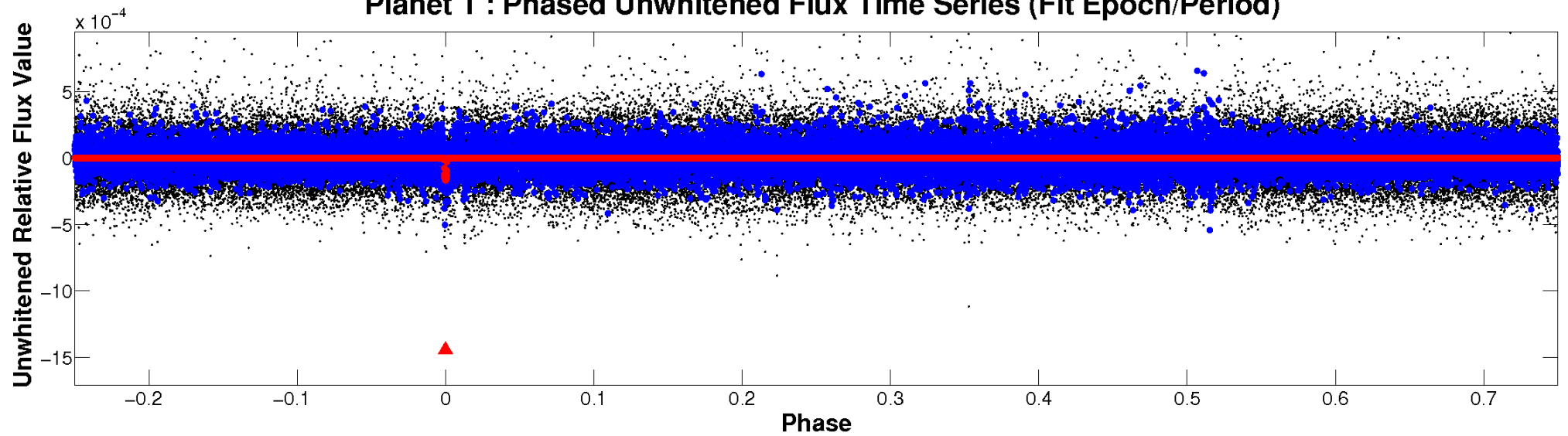
ALT Odd/Even

TCE 012557540-01

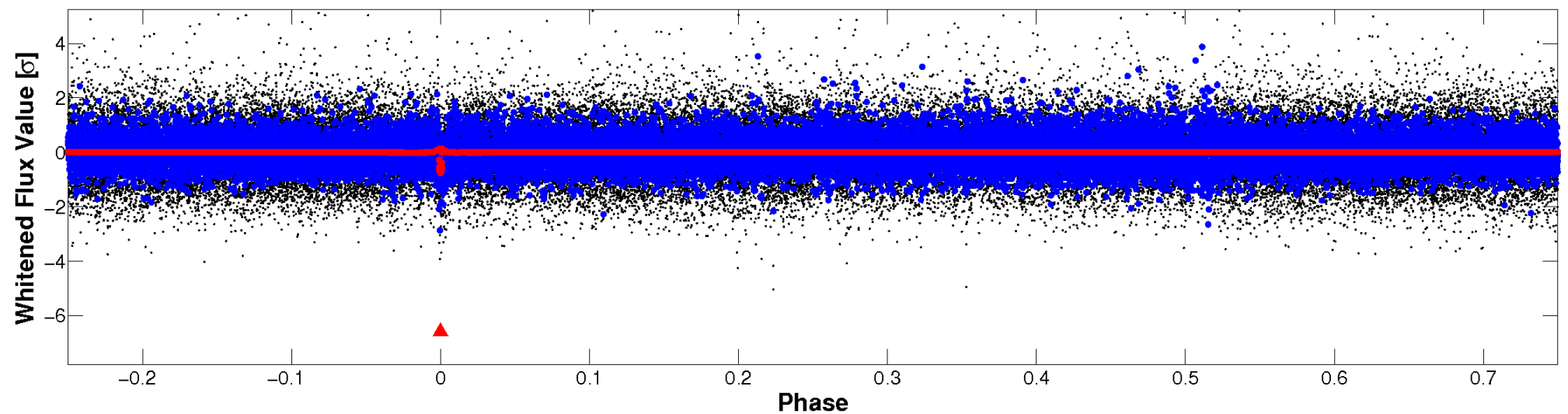


Non-Whitened Vs. Whitened Light Curve

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

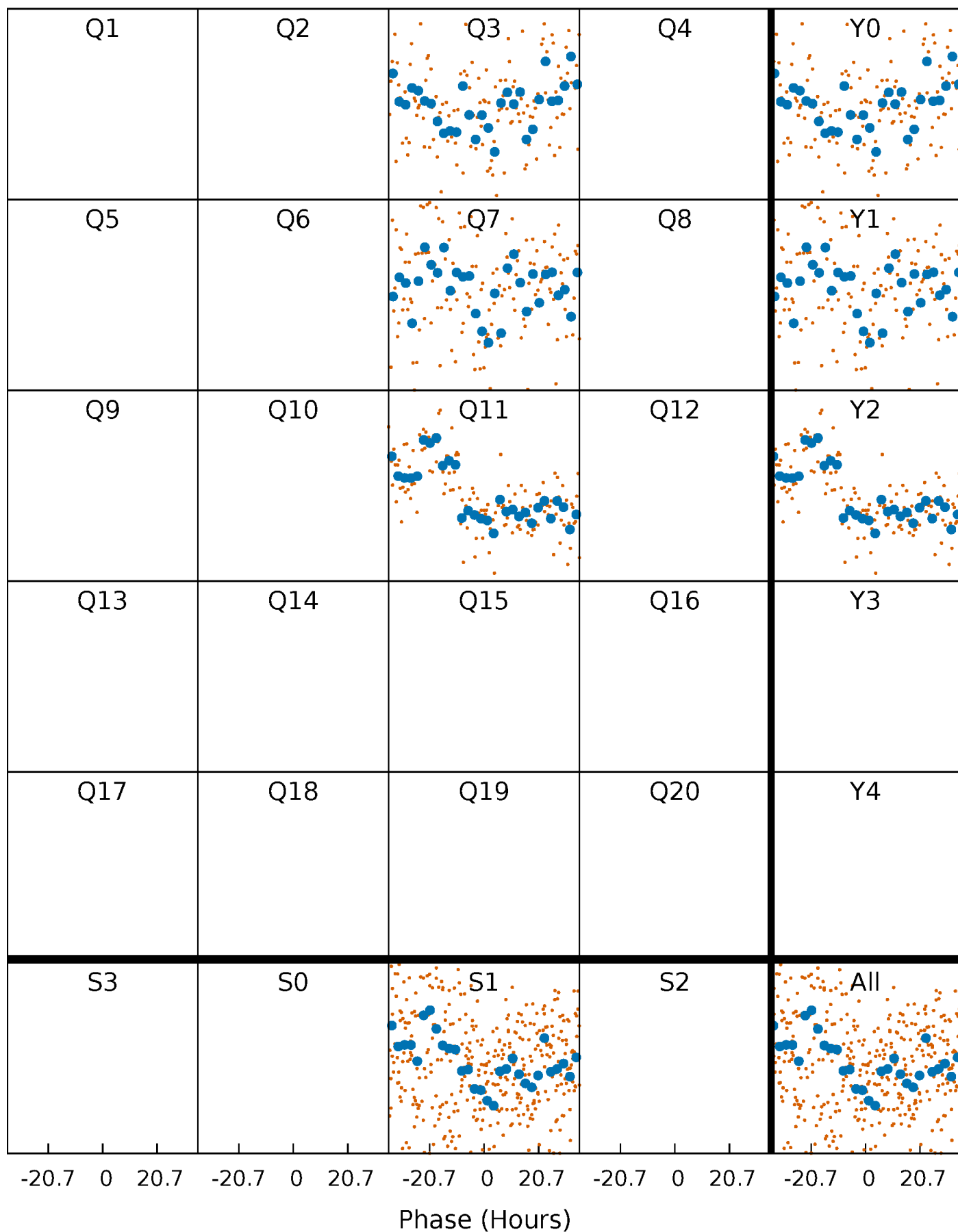


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 012557540-01 P=389.114306 Days $T_0=316.419989$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 012557540-01 P=389.114306 Days $T_0=316.419989$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

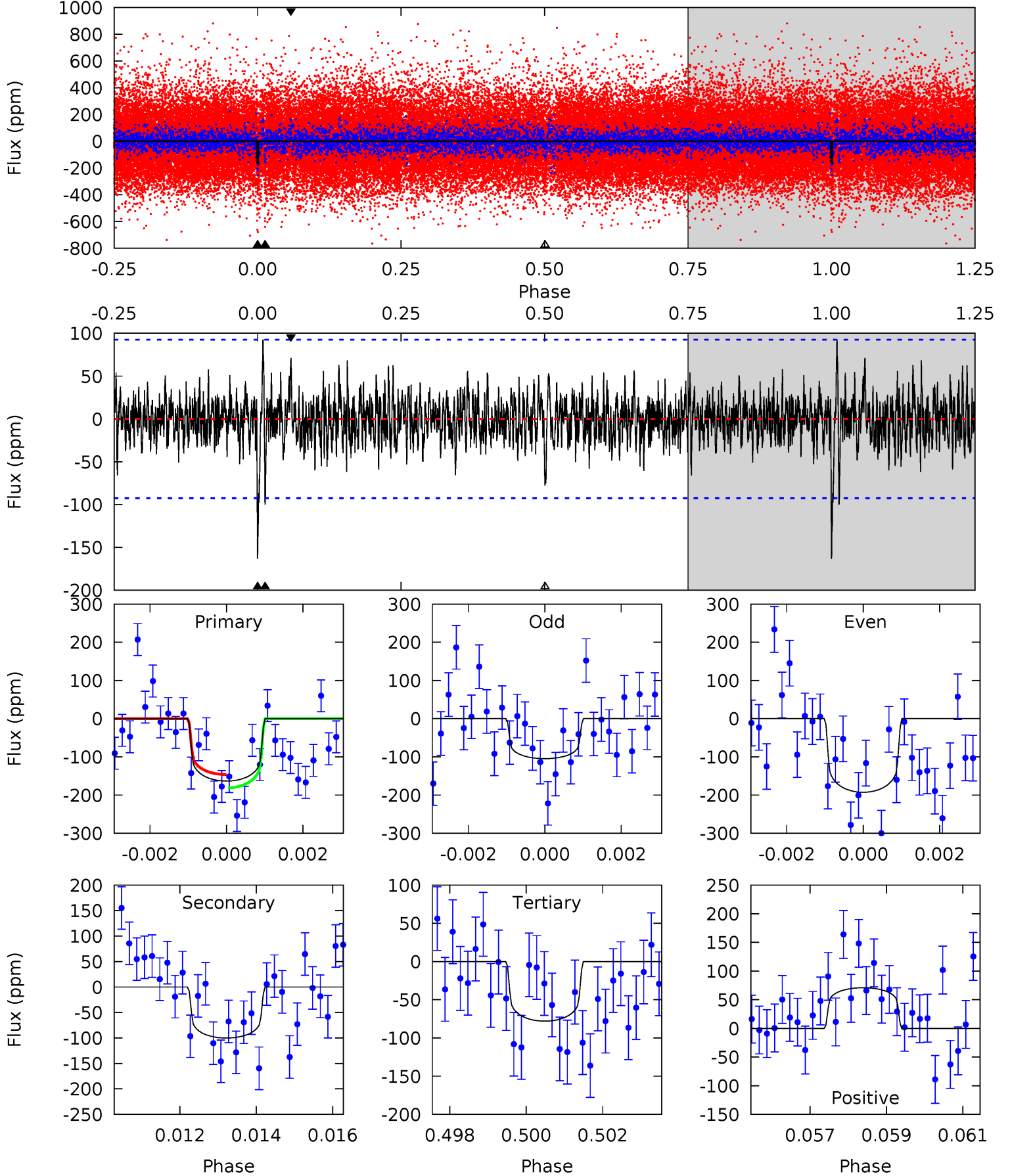
TCE 012557540-01 P=389.109472 Days $T_0=316.416288$ (BKJD)



DV Model-Shift Uniqueness Test

012557540-01, P = 389.114306 Days, E = 316.419989 Days

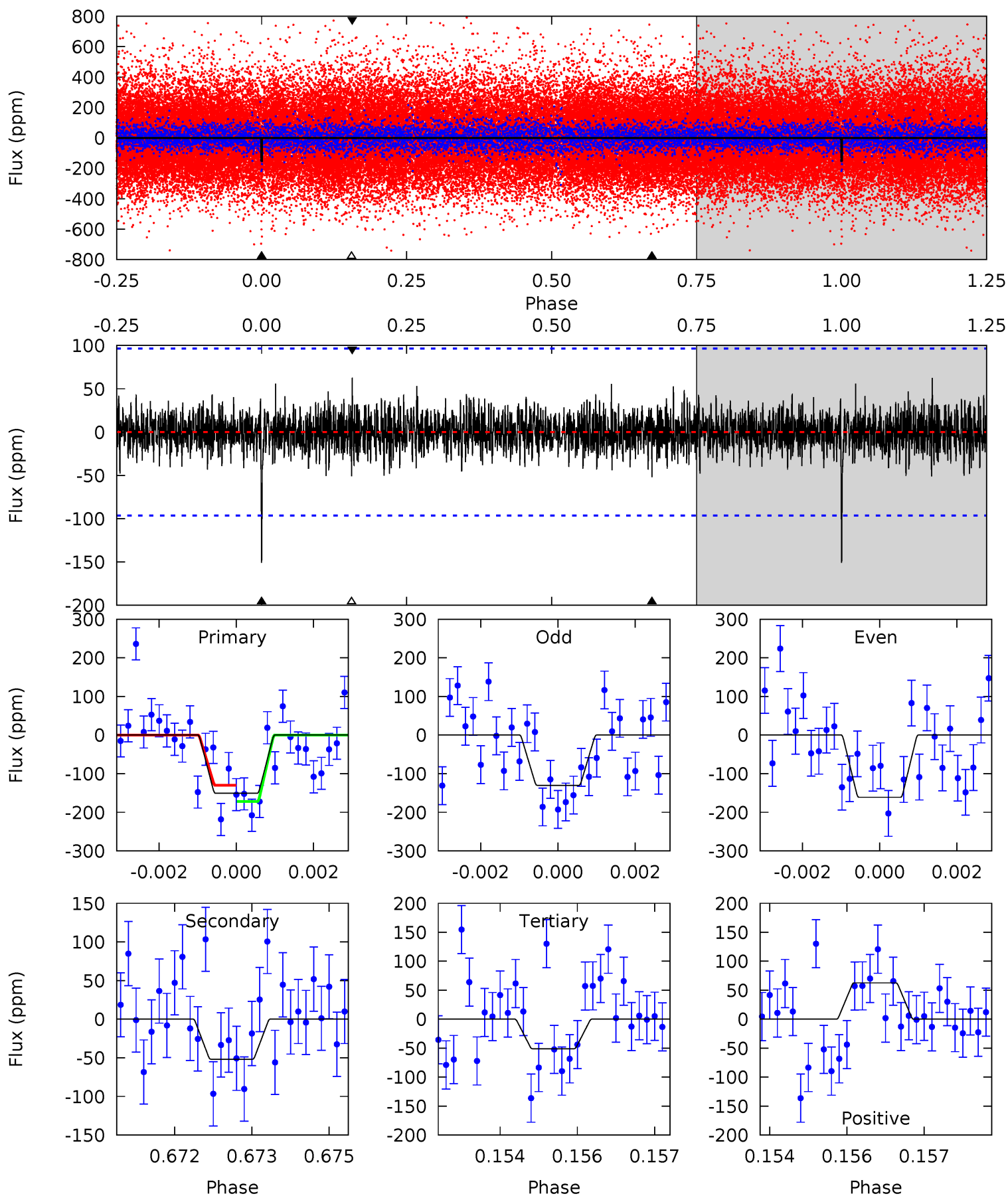
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.41	5.77	4.50	4.09	5.33	3.10	1.20	4.92	5.32	1.28	1.68	2.42	1.17	0.36	1.01



Alt Model-Shift Uniqueness Test

012557540-01, P = 389.109472 Days, E = 316.416288 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.36	2.87	2.82	3.47	5.35	3.13	0.89	5.54	4.89	0.05	-0.60	0.82	1.16	0.29	1.16



Stellar Parameters For KIC 012557540

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6289^{+171}_{-190}	$4.262^{+0.190}_{-0.171}$	$-0.500^{+0.300}_{-0.300}$	$1.192^{+0.317}_{-0.260}$	$0.948^{+0.134}_{-0.097}$	$0.788^{+0.841}_{-0.378}$
	+3%/-3%	+4%/-4%	+60%/-60%	+27%/-22%	+14%/-10%	+107%/-48%
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 012557540-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-100 ± 17	$1.78^{+0.42}_{-0.41}$	418^{+30}_{-27}	5401^{+631}_{-466}	18329^{+13009}_{-6978}
Alt.	-52 ± 18	$1.67^{+0.44}_{-0.38}$	416^{+33}_{-28}	4821^{+602}_{-553}	10575^{+9174}_{-5183}

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

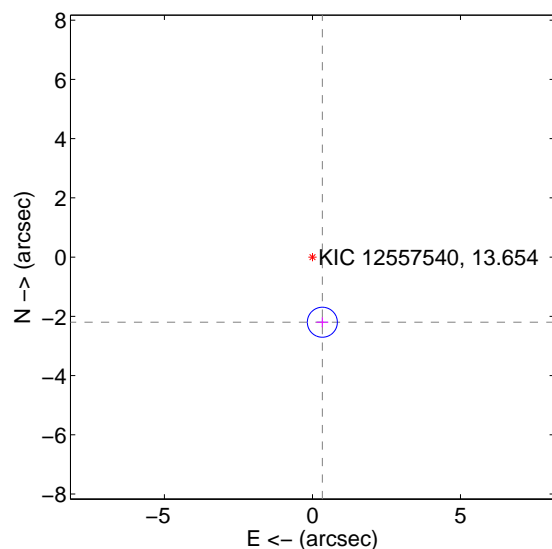
Supplemental centroid analysis for 012557540-01. Kepler magnitude: 13.65. Transit SNR 6.91

There are 1 quarters with good PRF difference image offsets

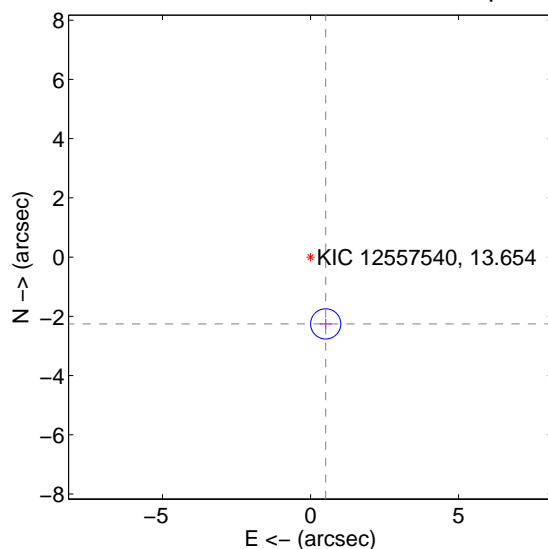
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.225 ± 0.169	13.17	-0.335 ± 0.202	-2.200 ± 0.168
PRF-fit source offset from KIC position	2.313 ± 0.170	13.62	-0.513 ± 0.202	-2.256 ± 0.168
photometric centroid source offset	1.52 ± 1.76	0.86	1.44 ± 1.74	0.48 ± 1.95

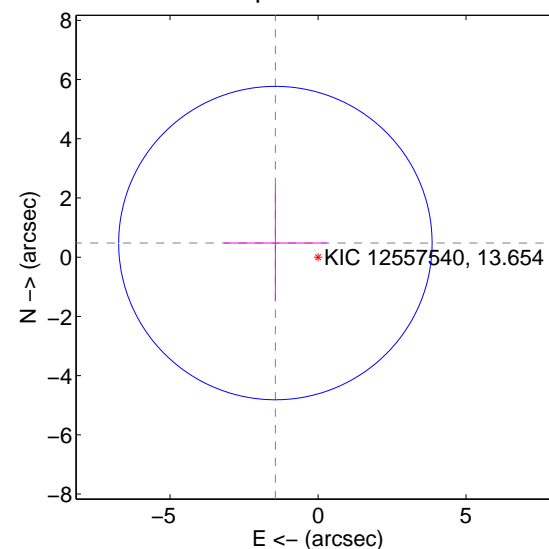
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

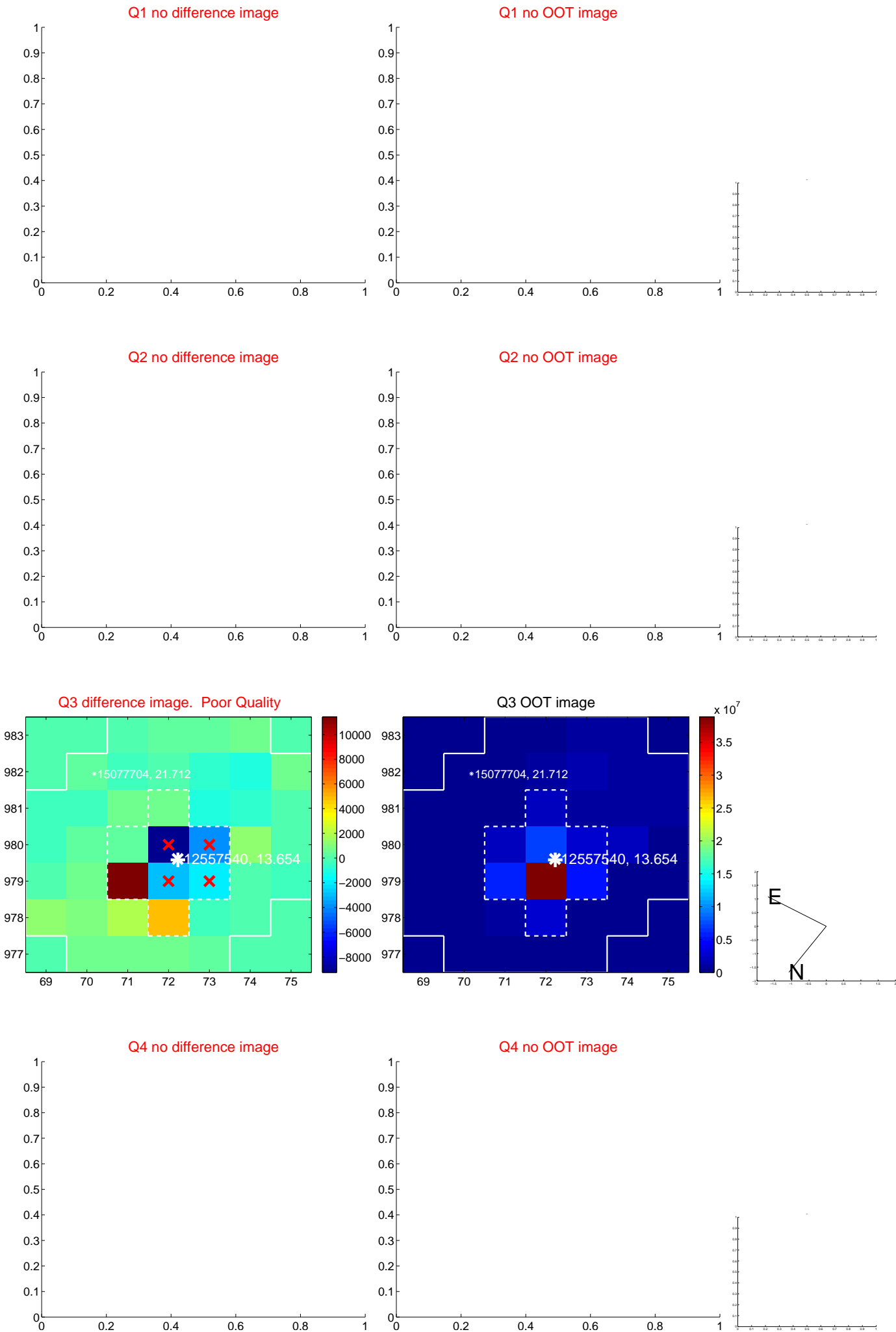


offset from photometric centroids

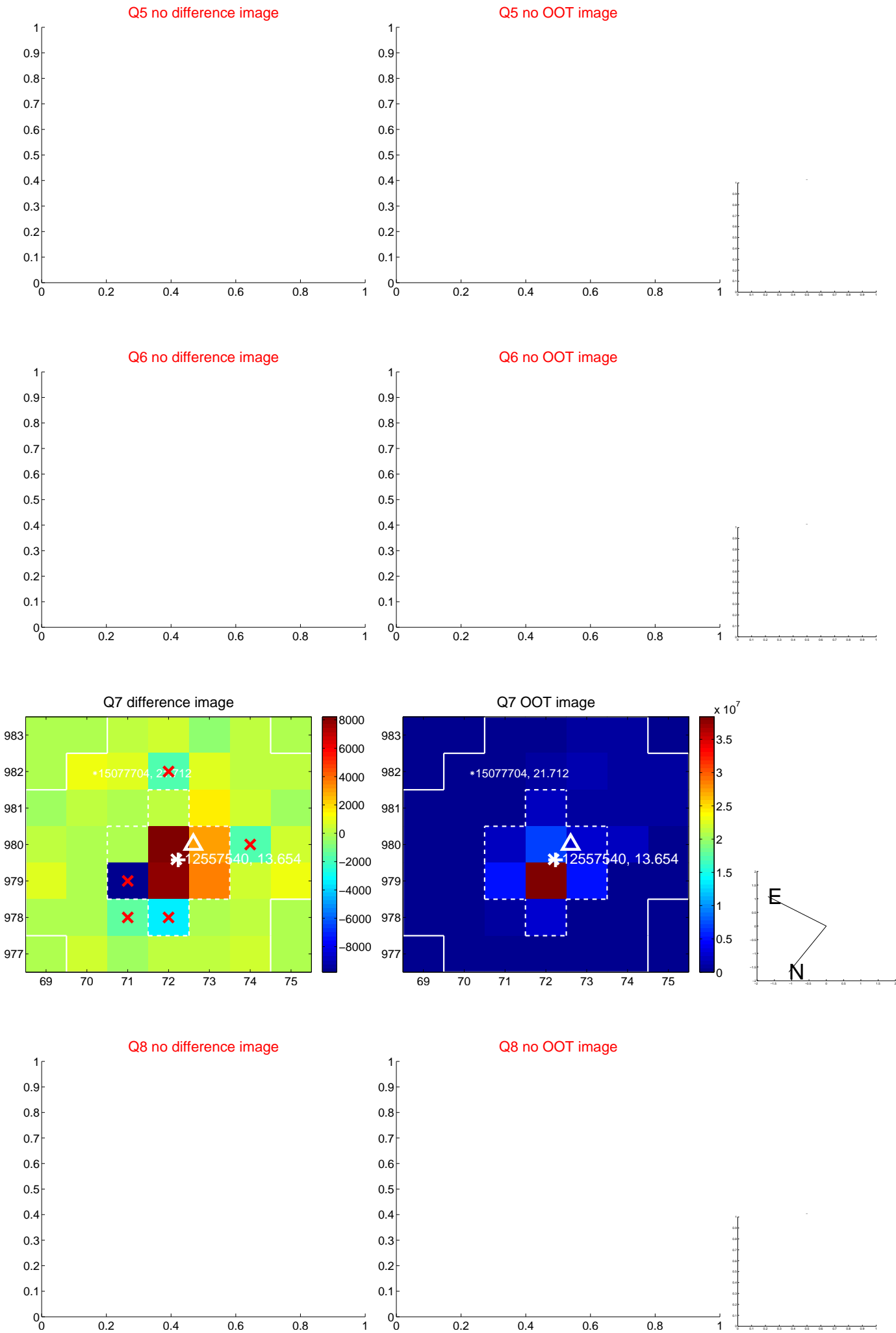


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

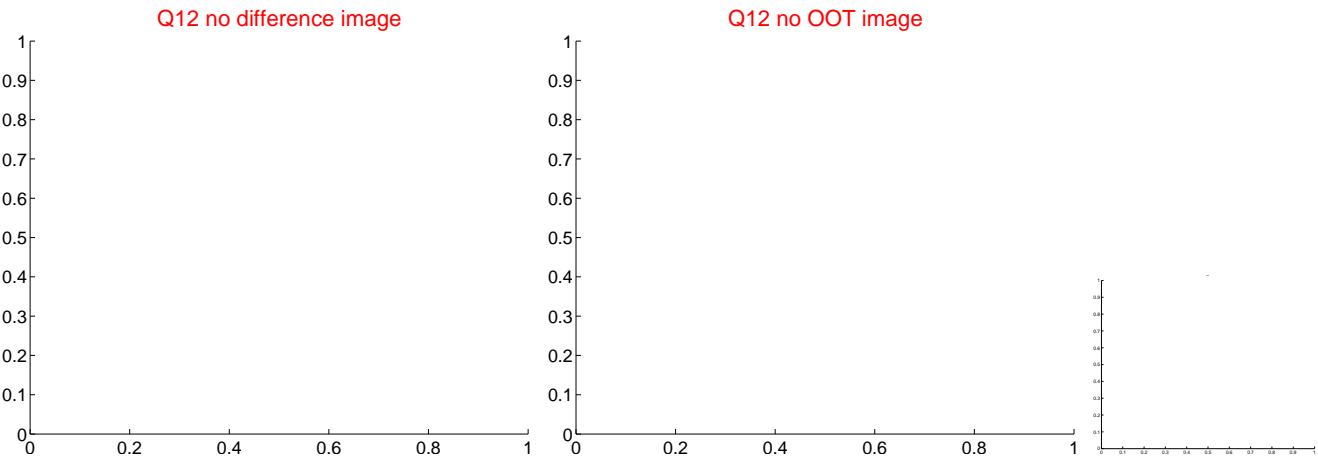
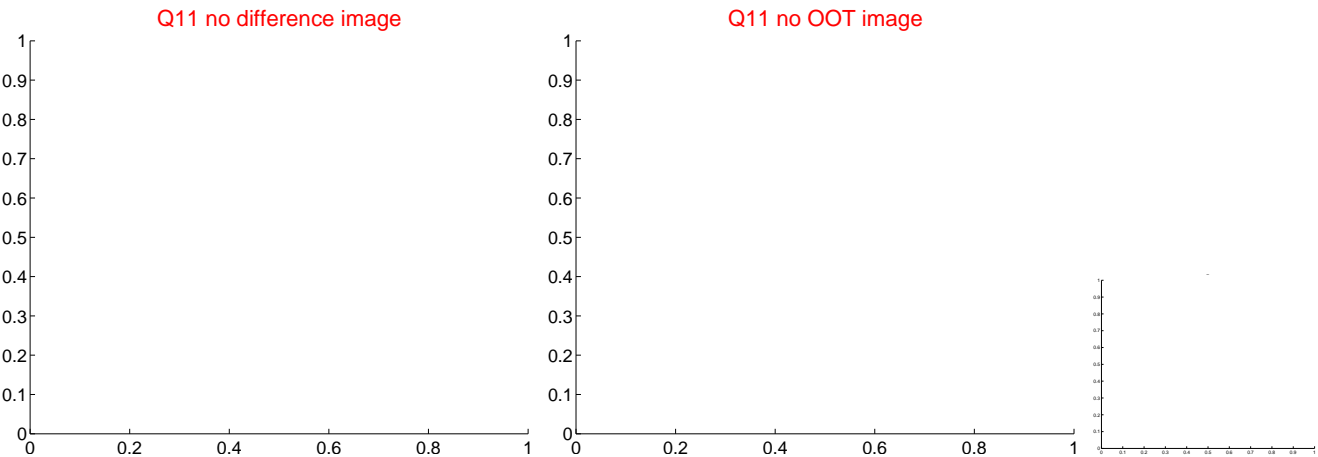
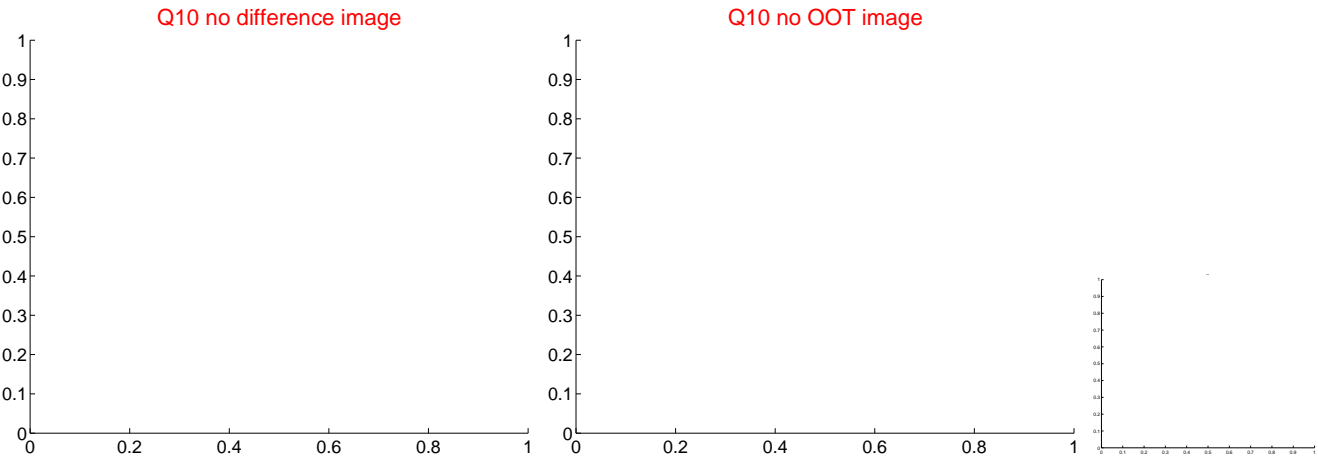
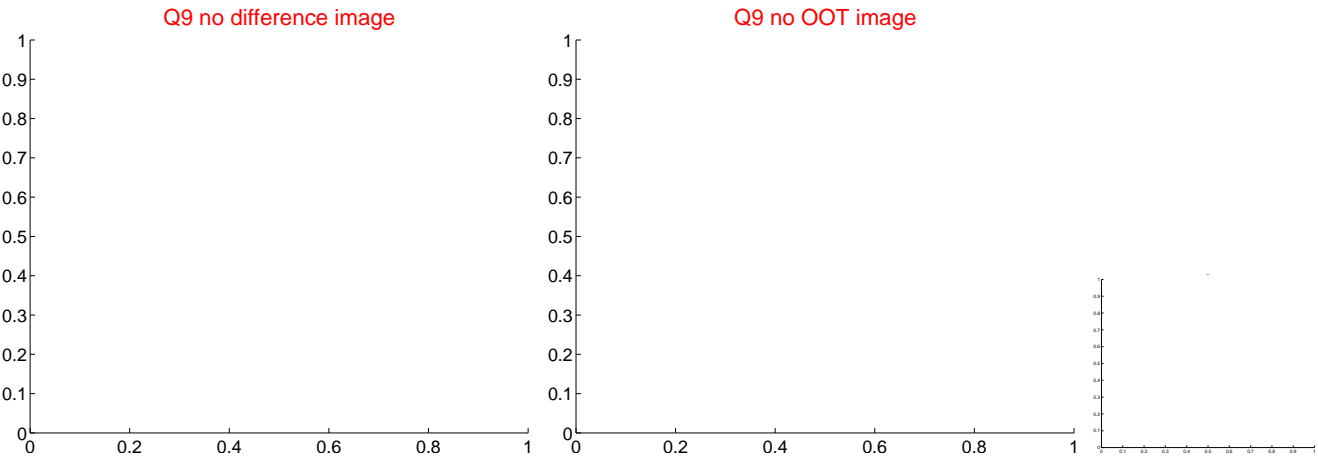
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



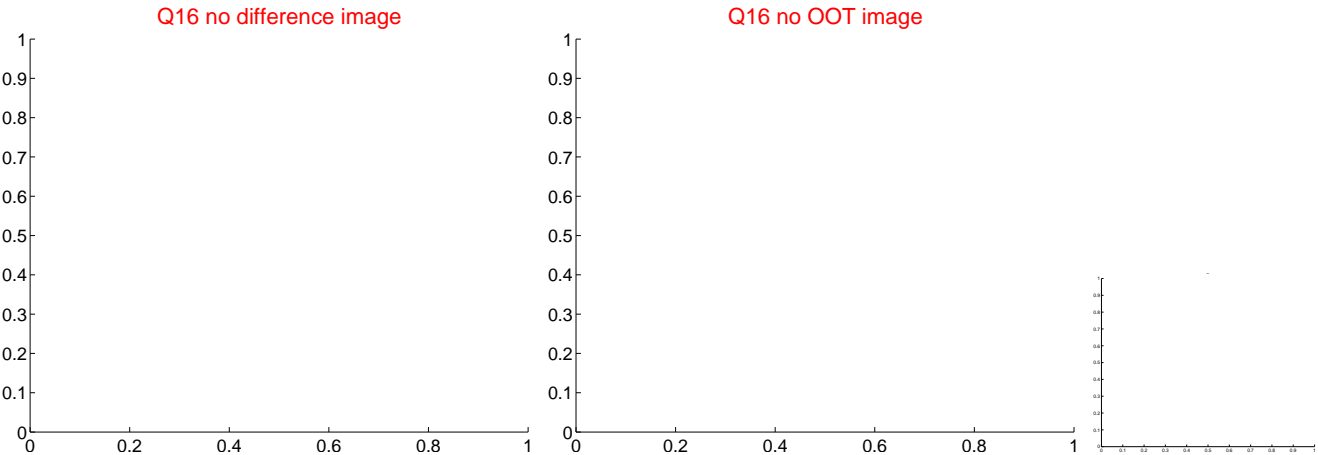
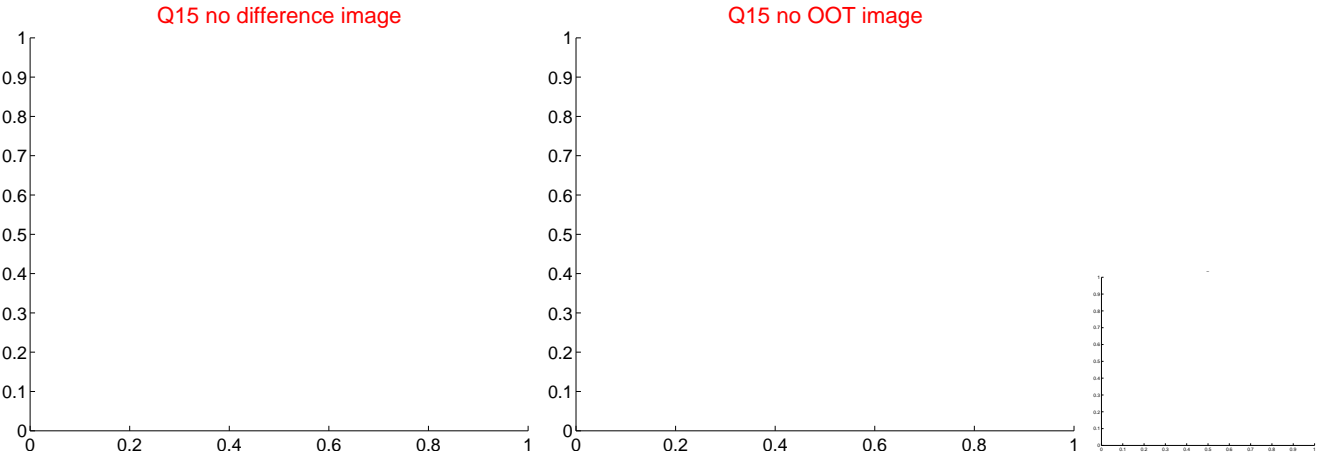
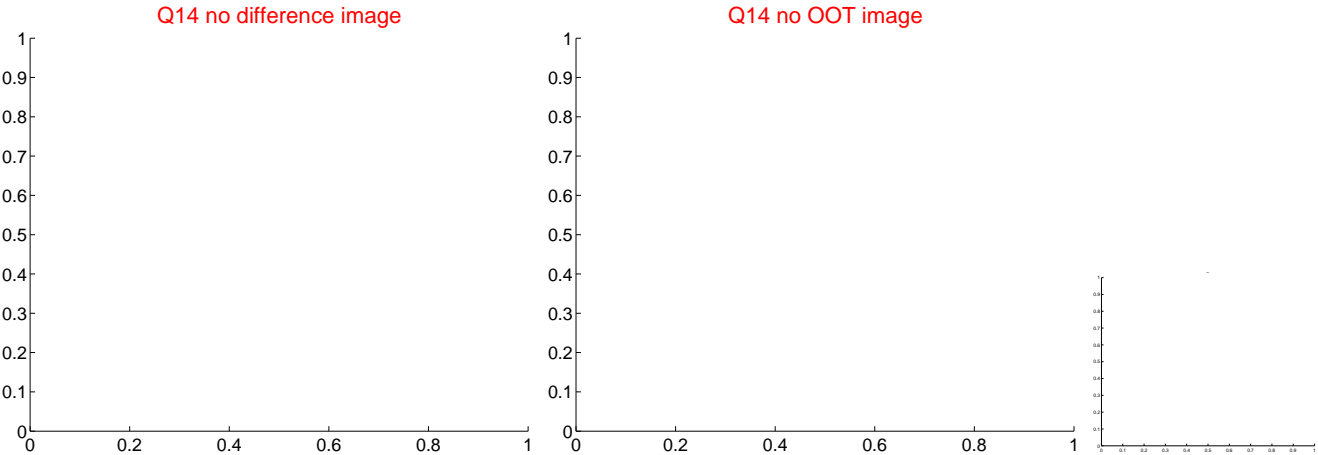
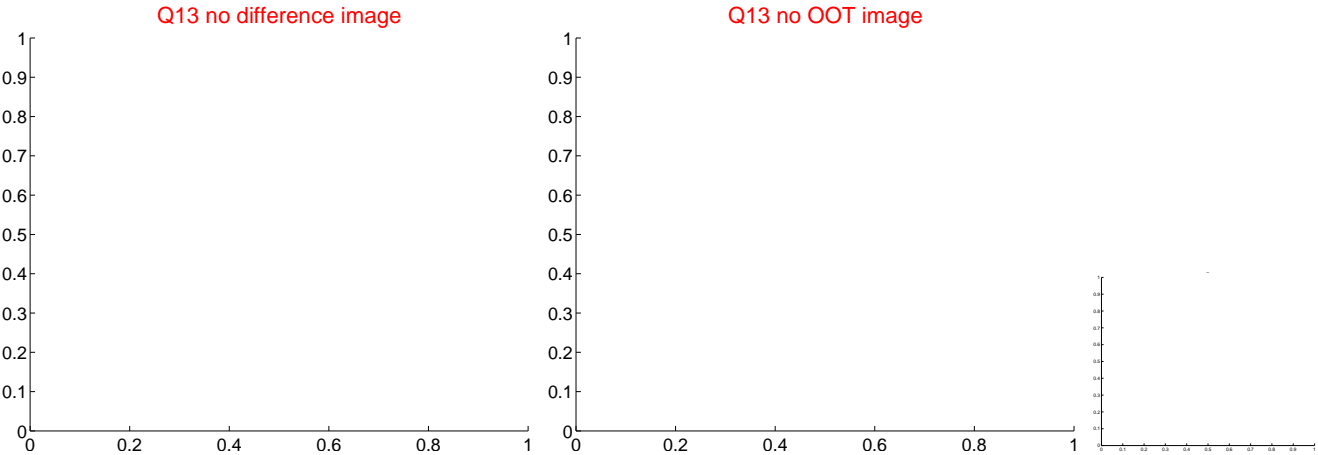
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



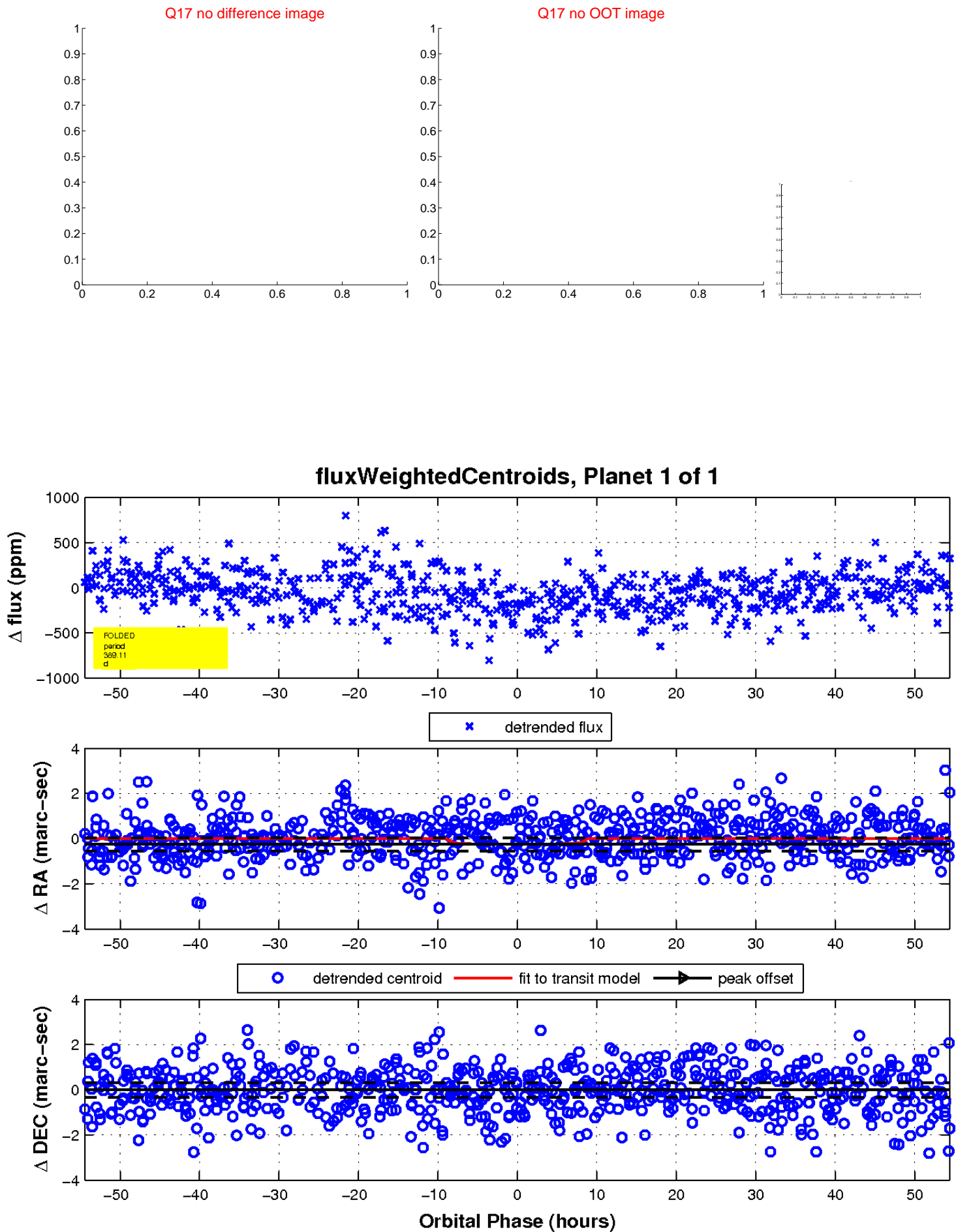
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UKIRT Image

Declination

