

KIC 011957224

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})
011957224-01	OBS	No	557.722597	446.513966	431.1	12.676	7.7	7.0	1.03	5805	2.26	0.60
011957224-02	OBS	No	333.175604	341.981763	359.6	11.186	7.4	6.7	1.03	5805	2.10	1.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011957224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
011957224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

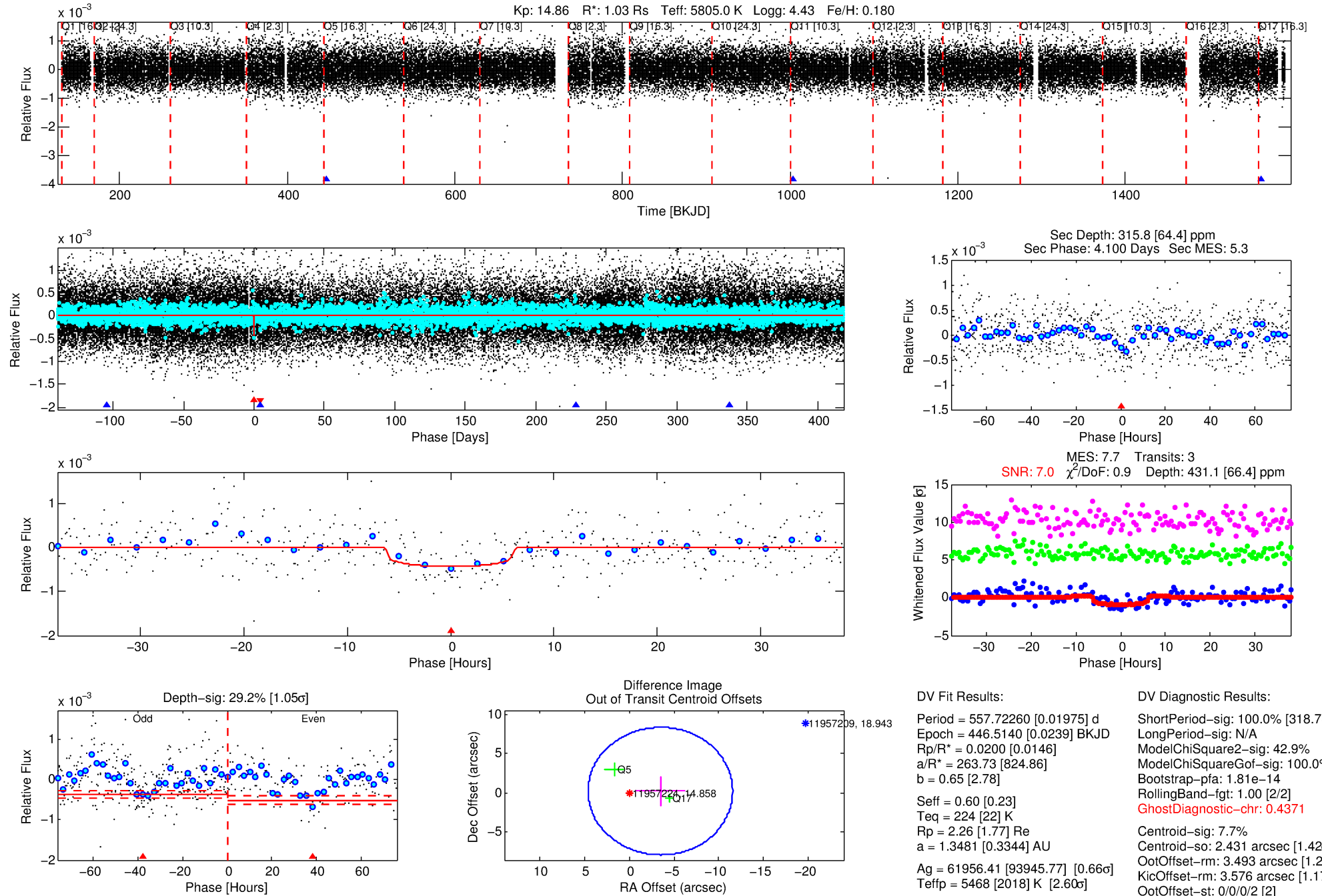
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011957224-01

No Significant Match Found

DV One-Page Summary

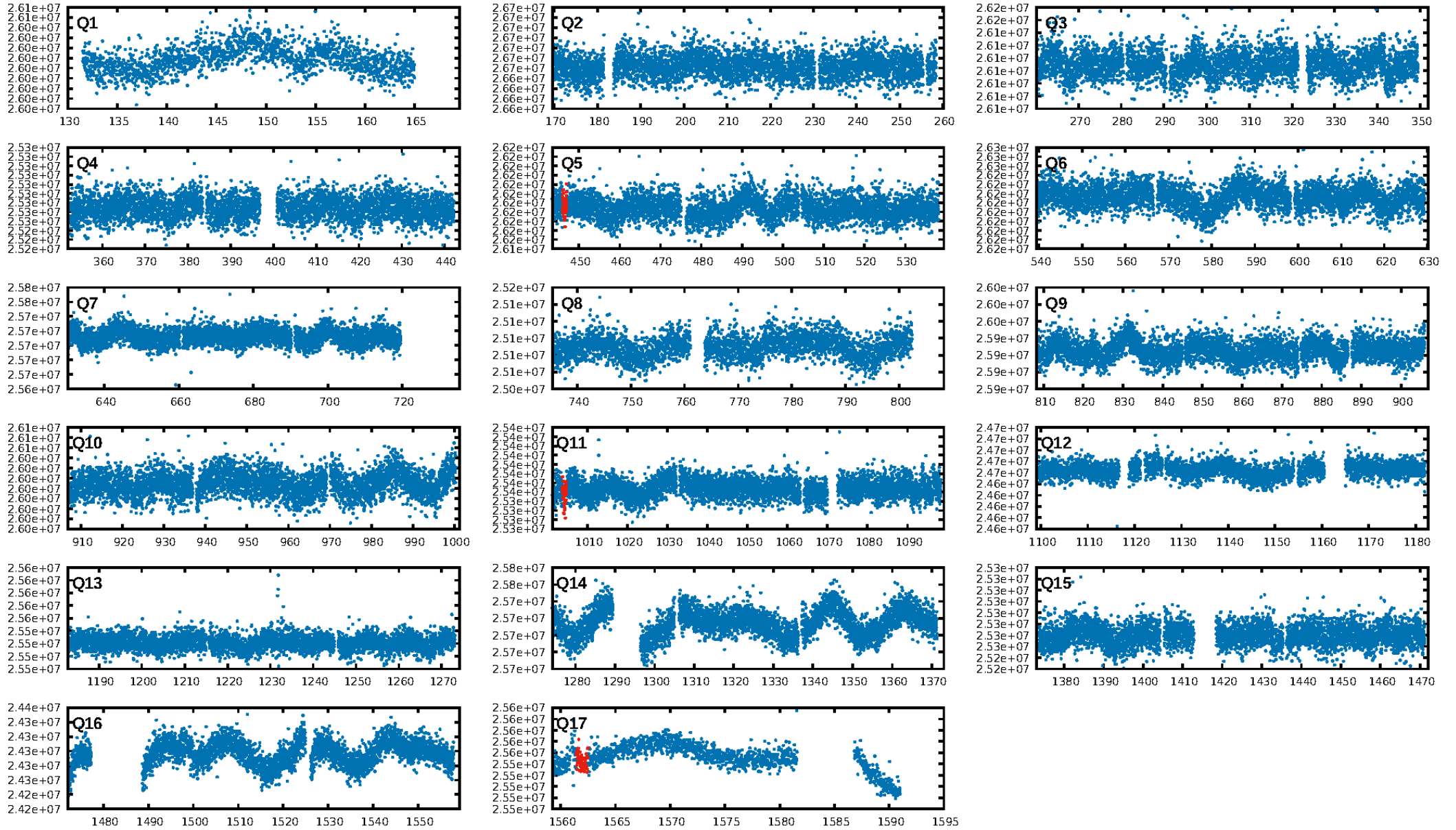
KIC: 11957224 Candidate: 1 of 2 Period: 557.723 d



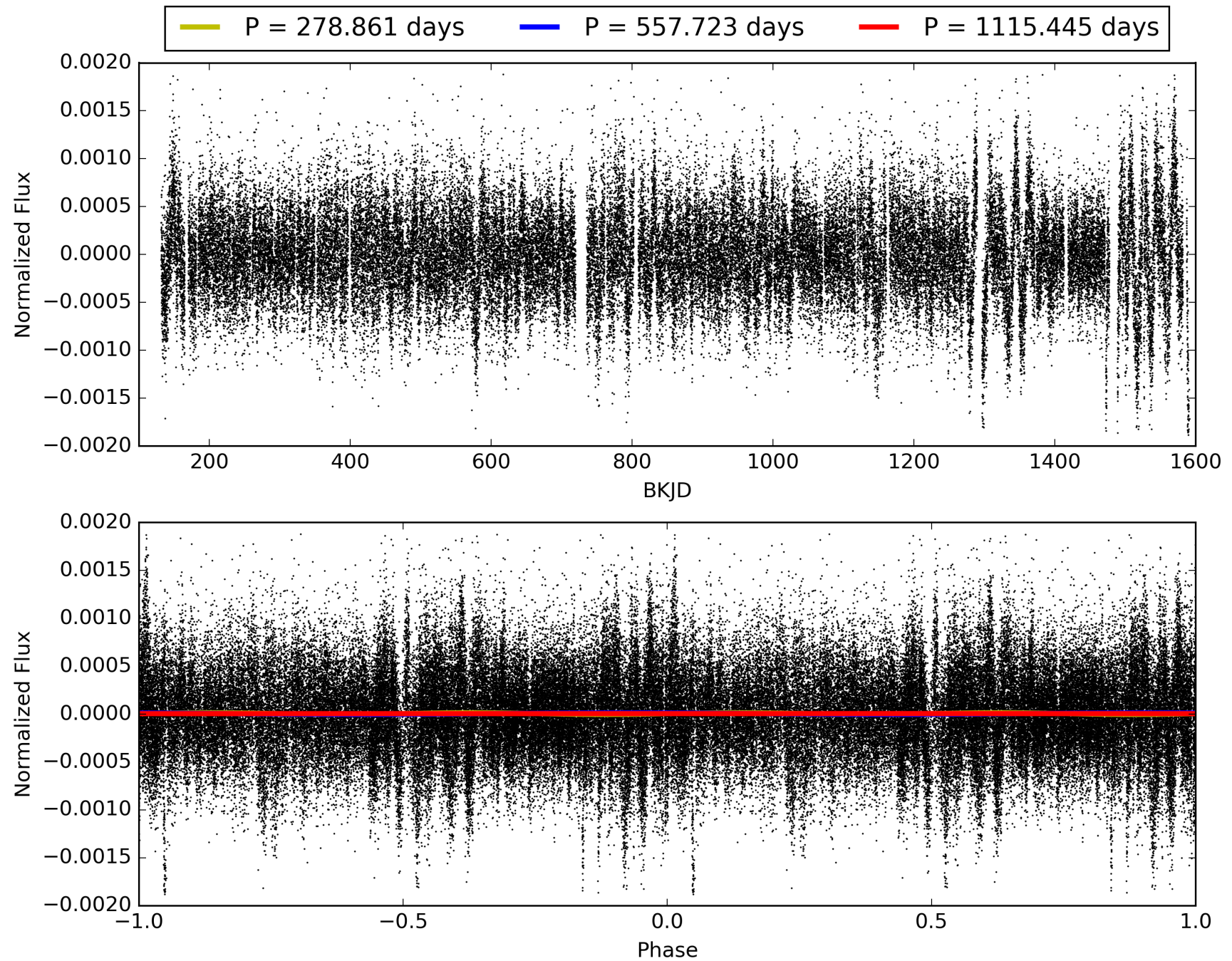
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:16:42 Z

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

TCE 011957224-01, PDC Light Curves

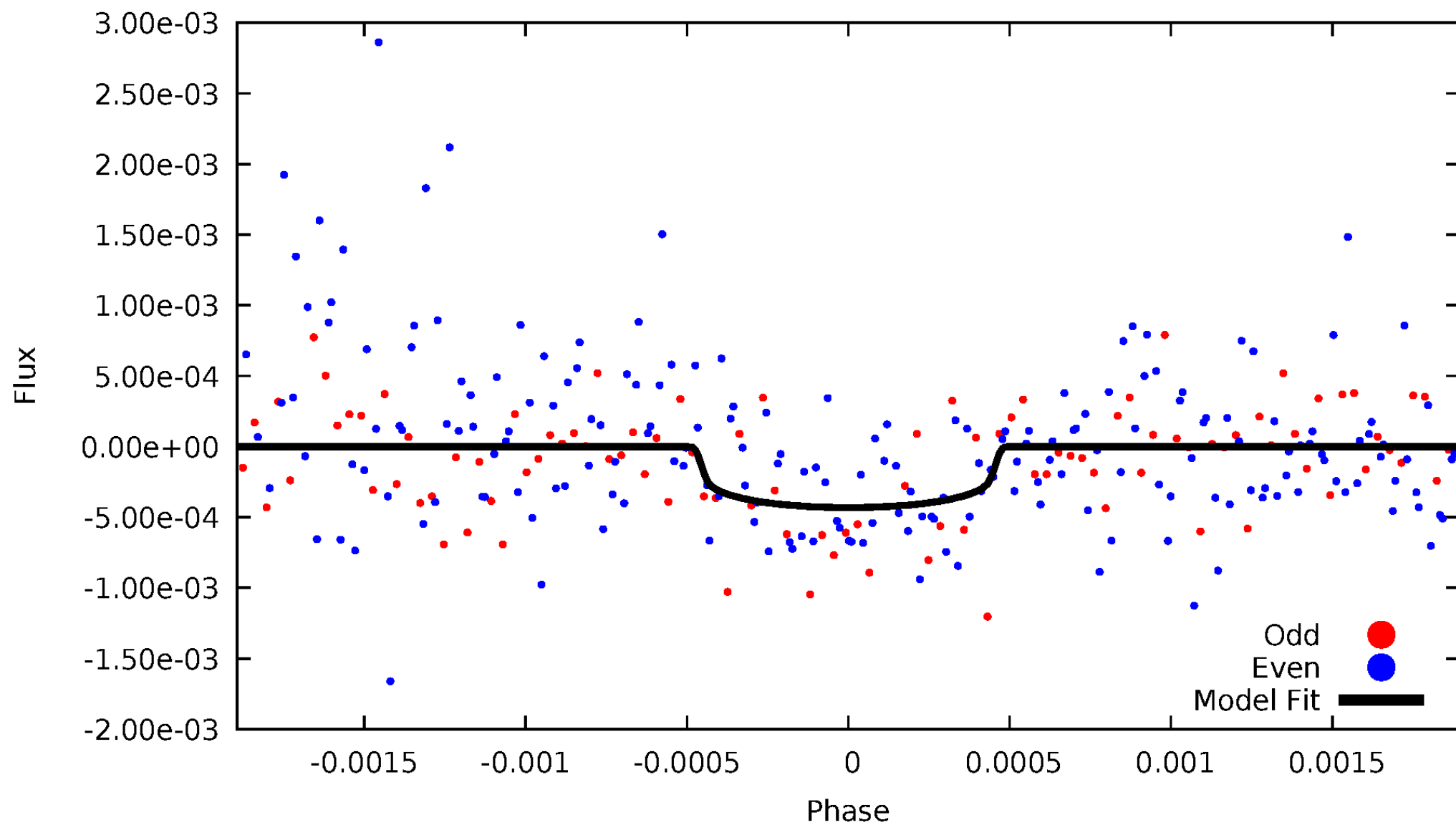


TCE 011957224-01



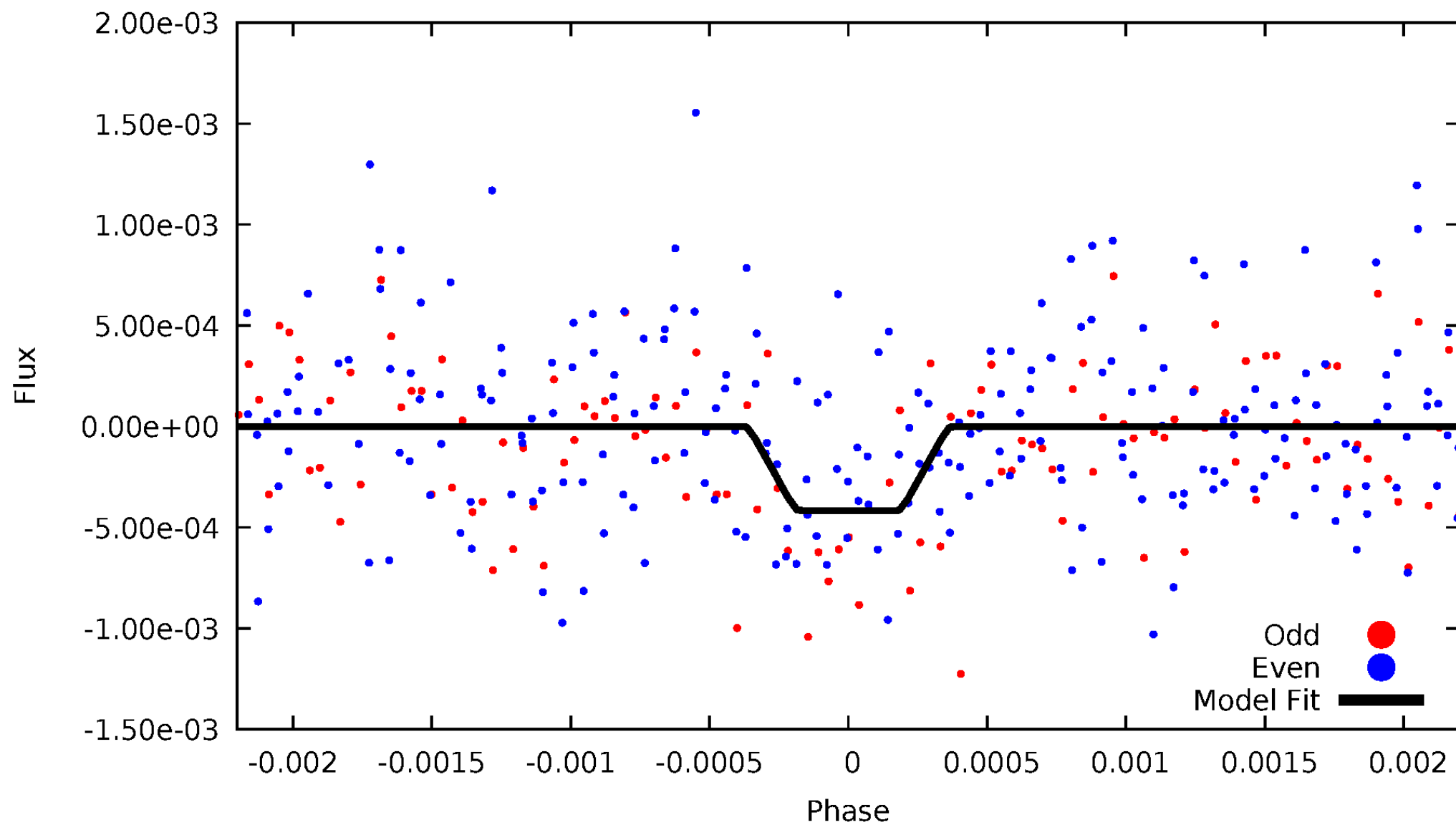
DV Odd/Even

TCE 011957224-01



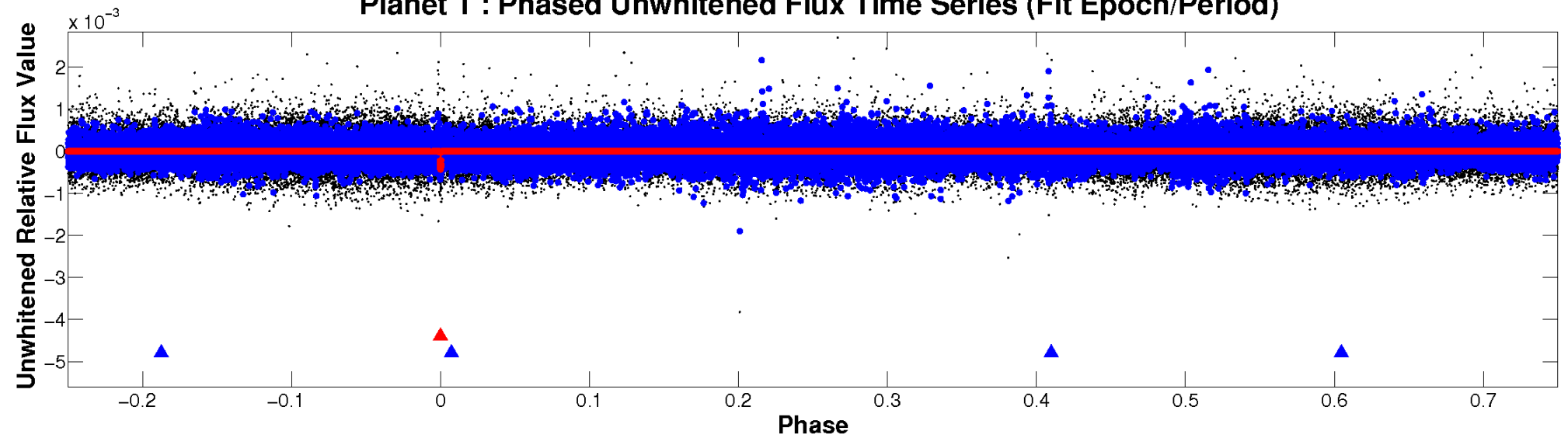
ALT Odd/Even

TCE 011957224-01

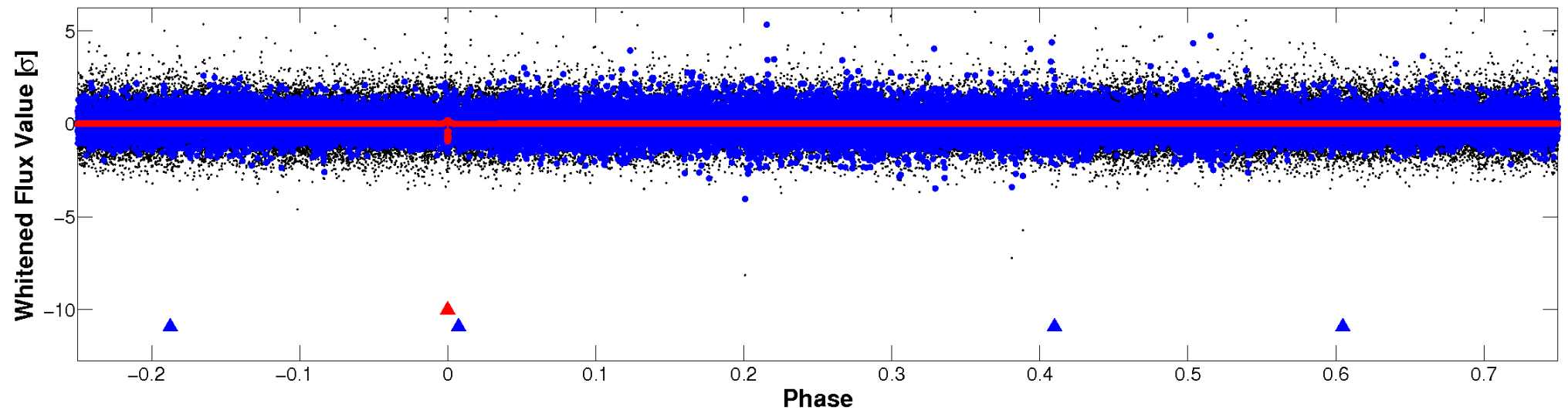


Non-Whitened Vs. Whitened Light Curve

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 011957224-01 P=557.722597 Days $T_0=446.513966$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011957224-01 P=557.722597 Days $T_0=446.513966$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

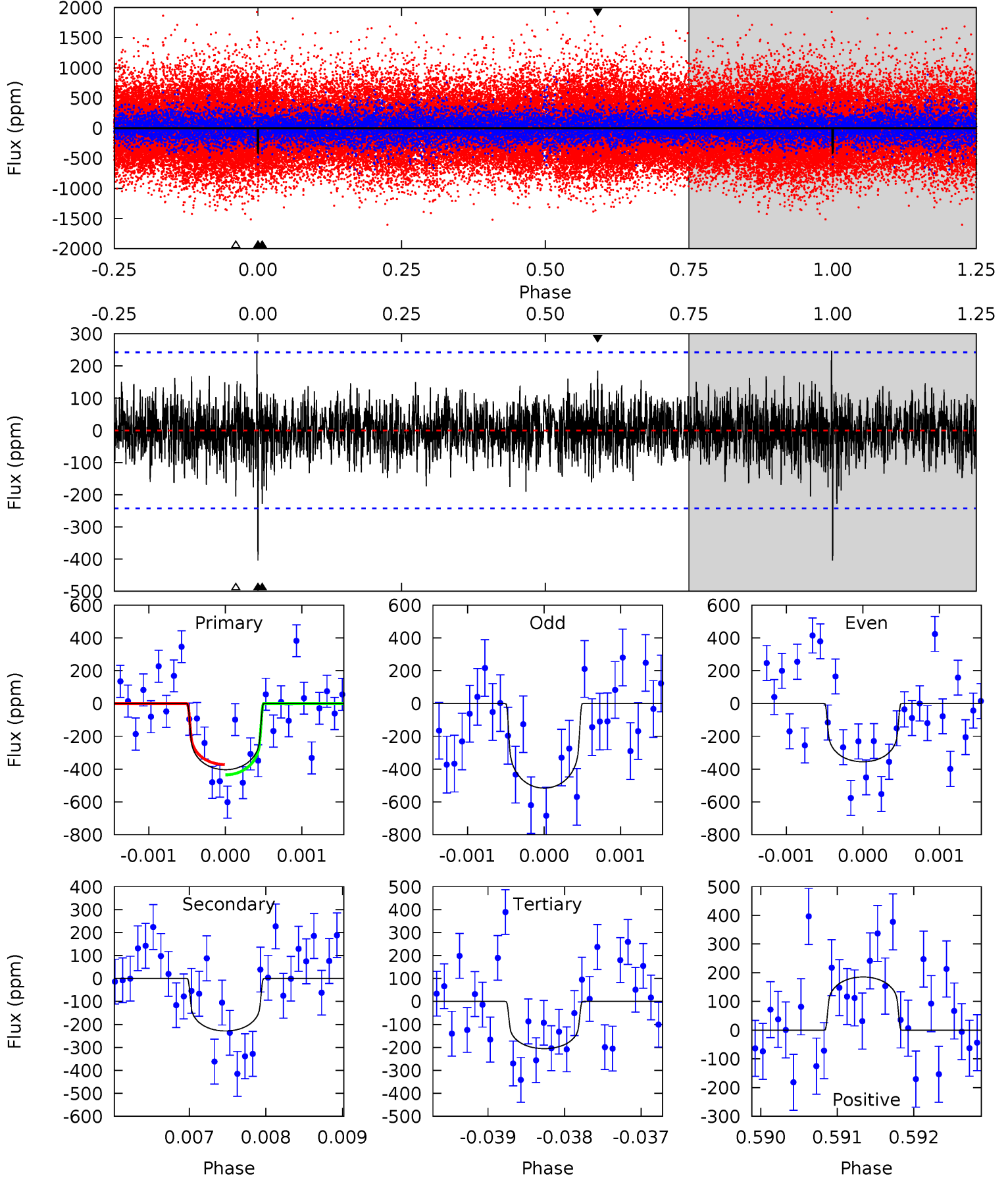
TCE 011957224-01 $P=557.693153$ Days $T_0=446.558133$ (BKJD)



DV Model-Shift Uniqueness Test

011957224-01, P = 557.722597 Days, E = 446.513966 Days

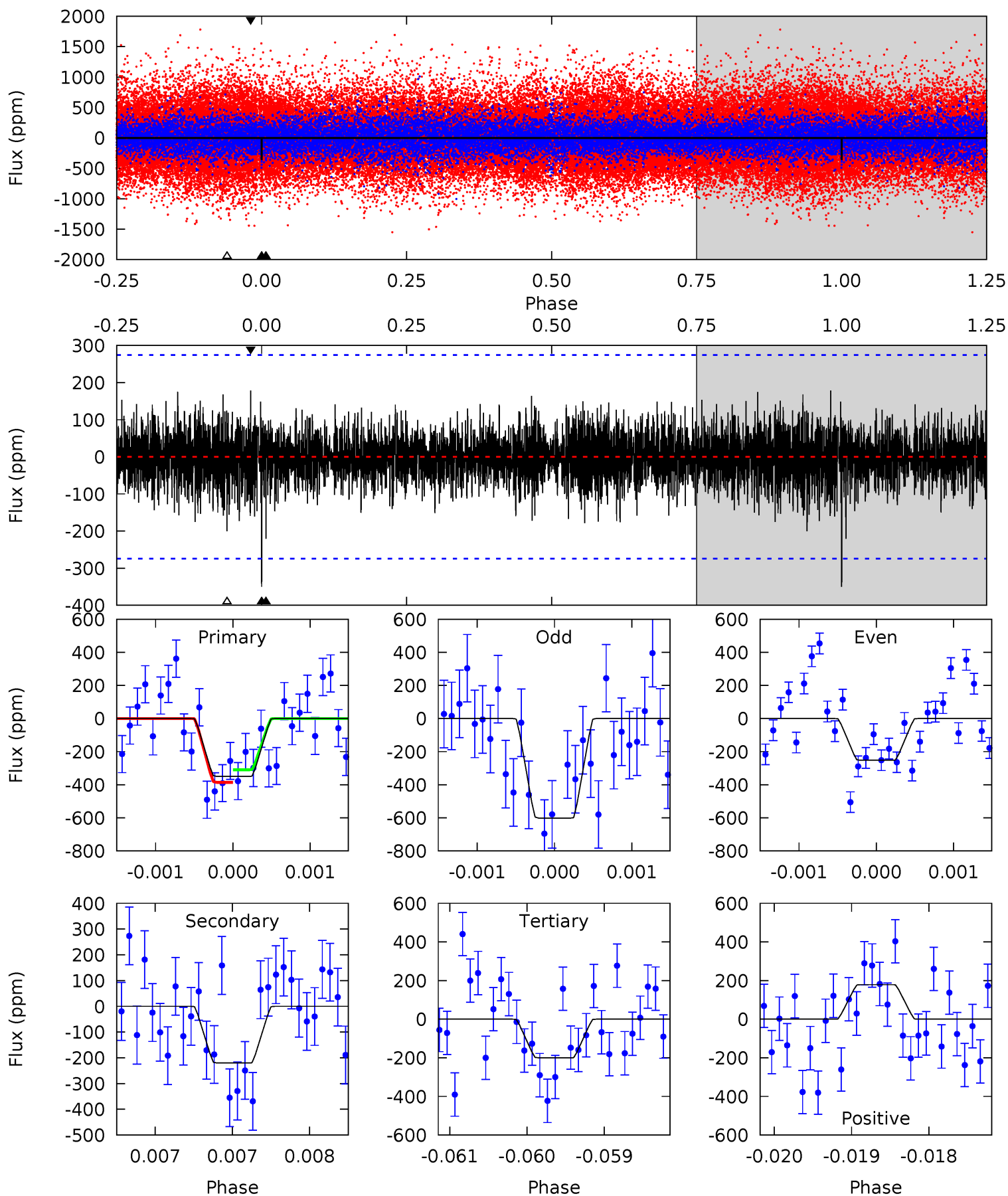
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.08	5.14	4.62	4.17	5.45	3.30	1.23	4.46	4.91	0.52	0.97	1.65	1.14	0.38	0.71



Alt Model-Shift Uniqueness Test

011957224-01, P = 557.693153 Days, E = 446.558133 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.03	4.42	4.02	3.59	5.50	3.37	1.06	3.01	3.44	0.40	0.83	3.17	0.77	0.34	0.76



Stellar Parameters For KIC 011957224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5805^{+156}_{-174}	$4.431^{+0.067}_{-0.202}$	$0.180^{+0.200}_{-0.300}$	$1.033^{+0.300}_{-0.129}$	$1.050^{+0.113}_{-0.125}$	$1.340^{+0.484}_{-0.692}$
	+3%/-3%	+2%/-5%	+111%/-167%	+29%/-12%	+11%/-12%	+36%/-52%
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 011957224-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-229±44	$2.55^{+1.59}_{-1.39}$	319^{+24}_{-15}	4932^{+2336}_{-896}	$34124^{+134460}_{-21758}$
Alt.	-220±50	$2.65^{+1.63}_{-1.48}$	319^{+23}_{-16}	4814^{+2306}_{-831}	$30802^{+121484}_{-19964}$

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

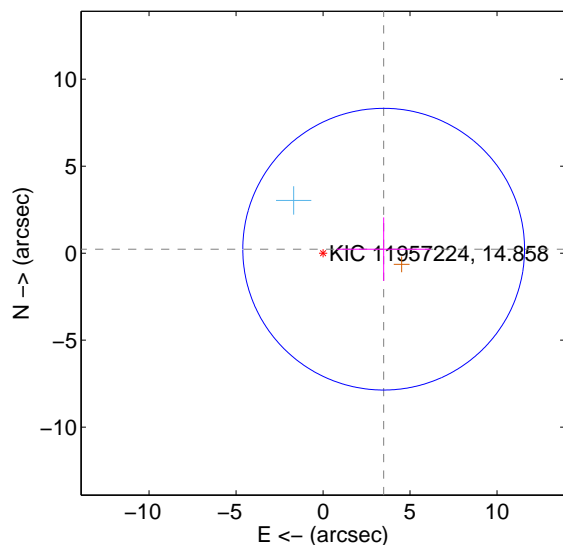
Supplemental centroid analysis for 011957224-01. Kepler magnitude: 14.86. Transit SNR 6.95

There are 1 quarters with good PRF difference image offsets

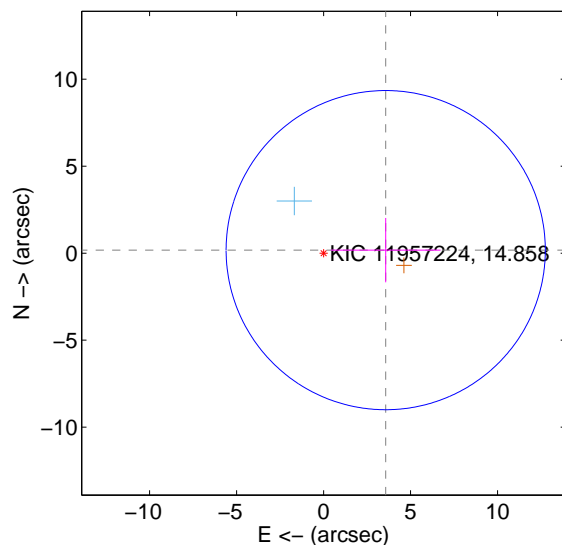
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.493 ± 2.699	1.29	-3.486 ± 2.702	0.230 ± 1.825
PRF-fit source offset from KIC position	3.576 ± 3.058	1.17	-3.572 ± 3.152	0.175 ± 1.849
photometric centroid source offset	2.43 ± 1.72	1.42	0.32 ± 1.69	2.41 ± 1.72

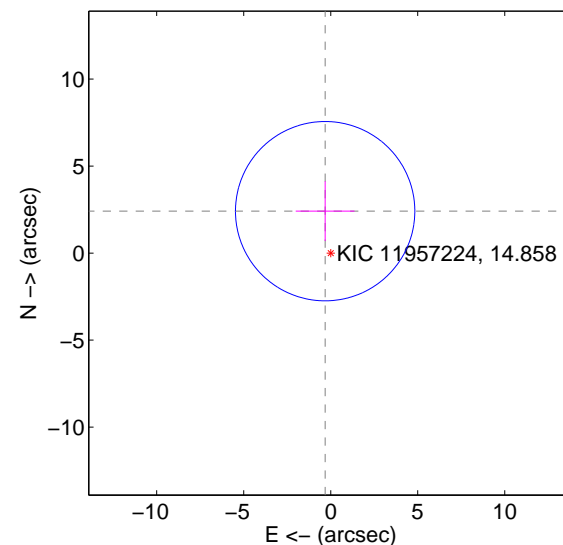
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

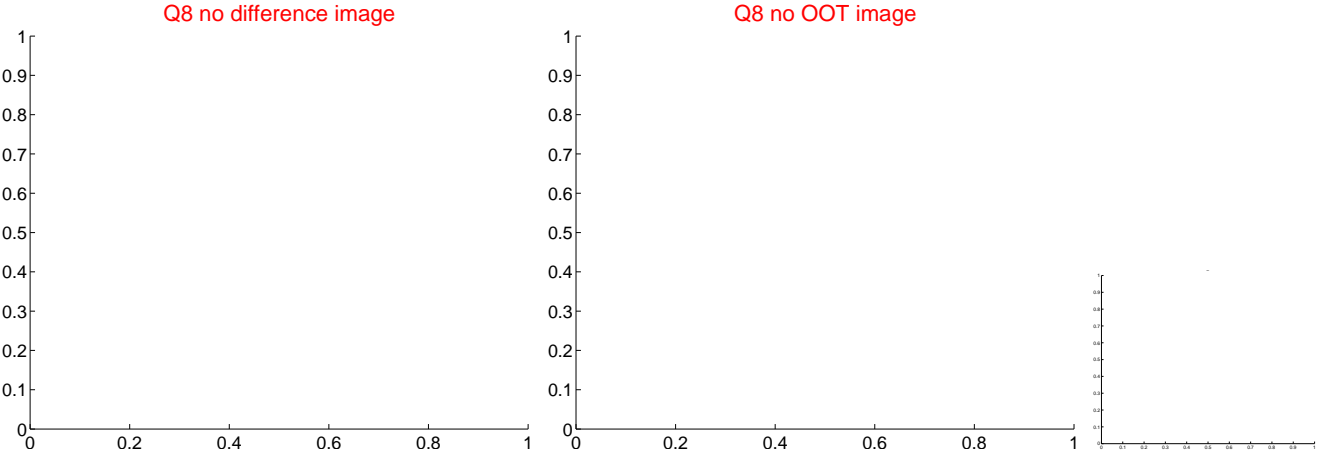
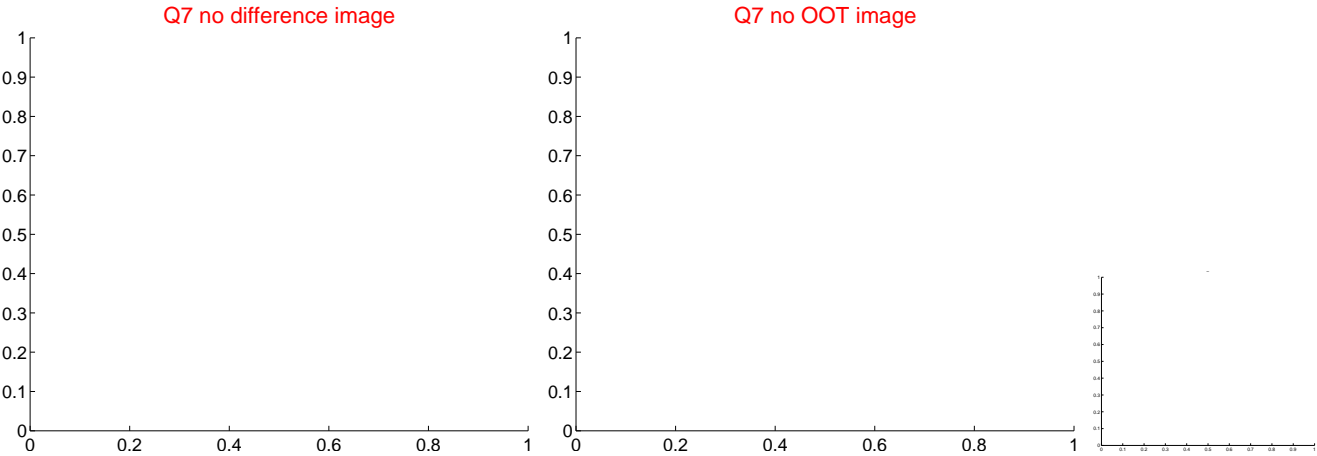
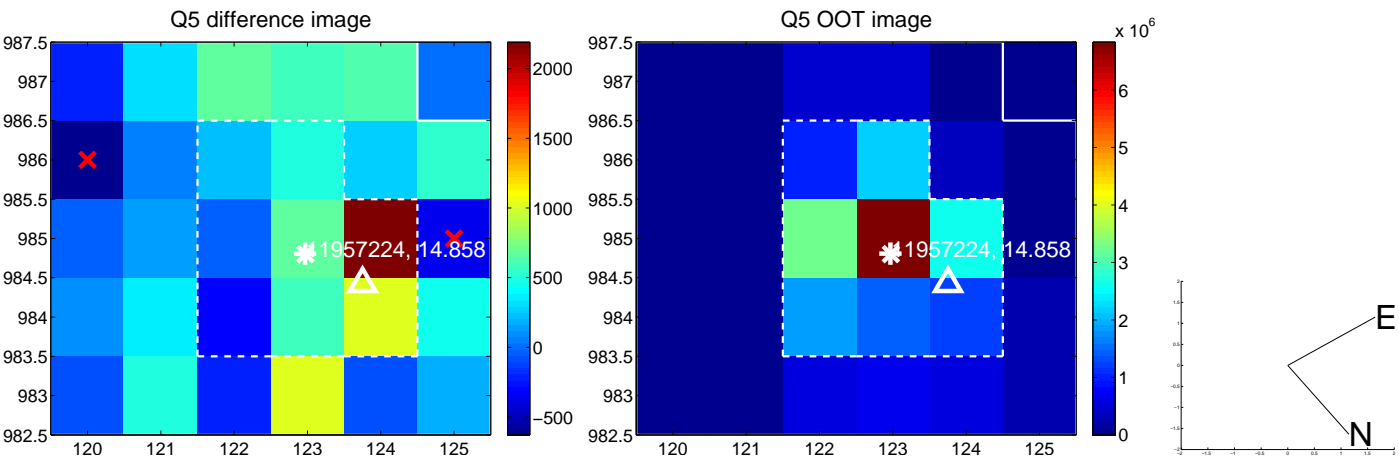


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



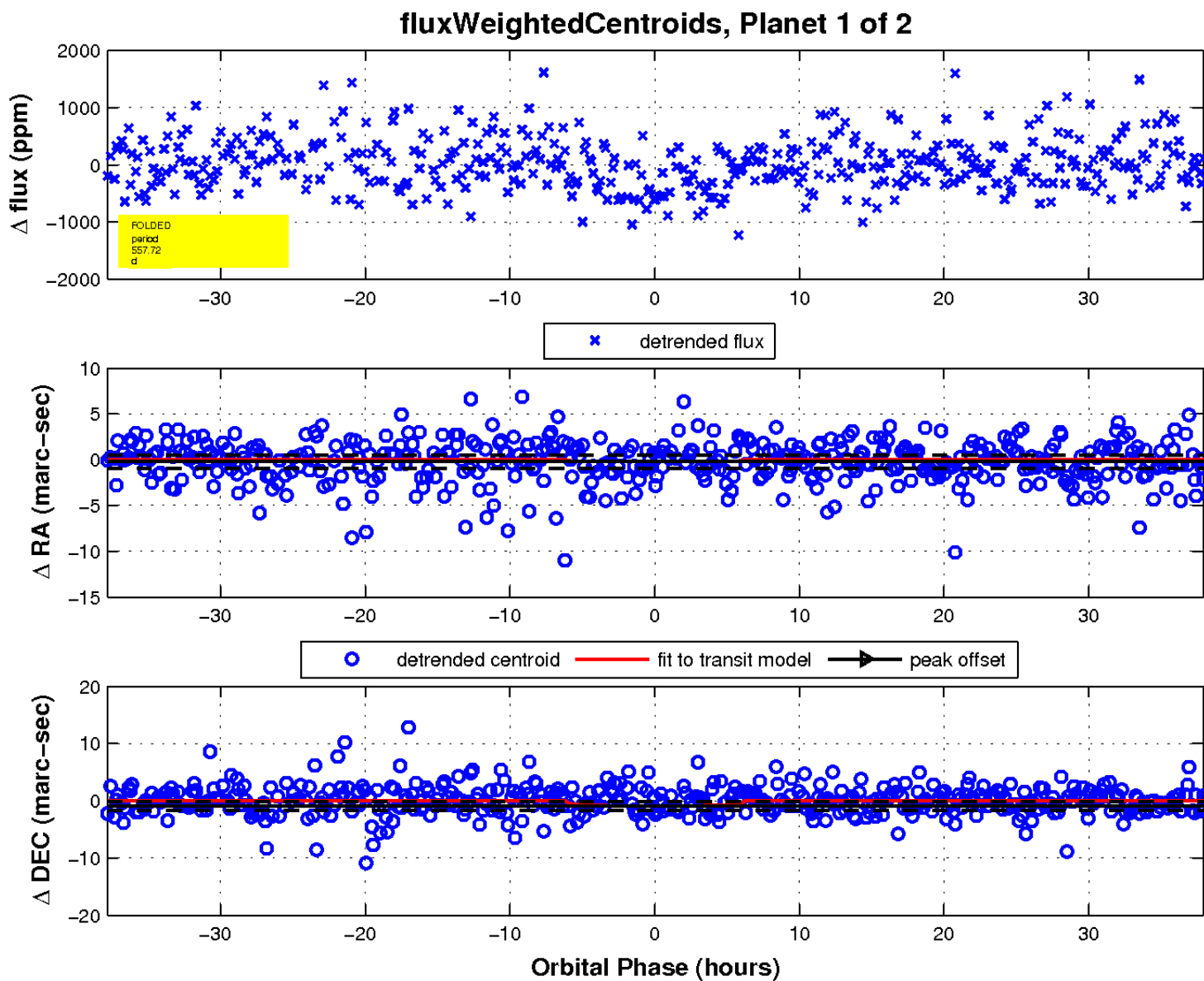
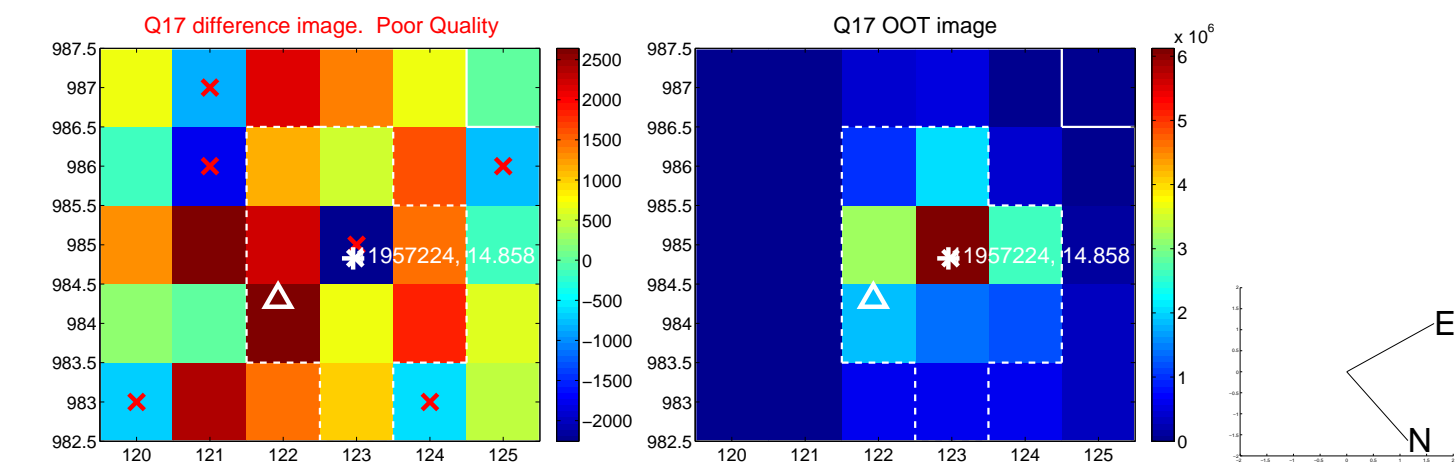
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

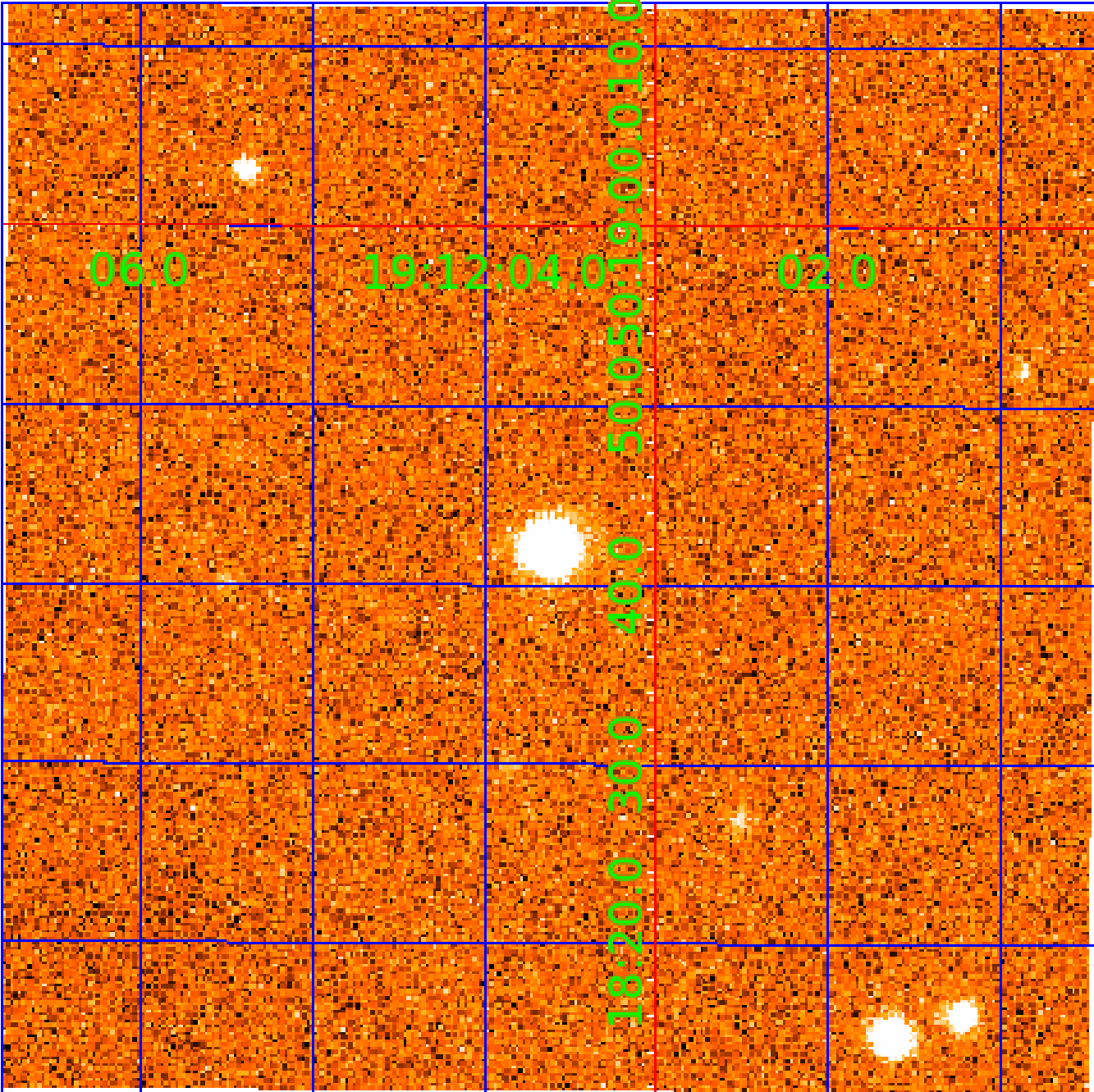


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011957224

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})
011957224-01	OBS	No	557.722597	446.513966	431.1	12.676	7.7	7.0	1.03	5805	2.26	0.60
011957224-02	OBS	No	333.175604	341.981763	359.6	11.186	7.4	6.7	1.03	5805	2.10	1.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011957224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
011957224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—CENT_FEW_DIFFS

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

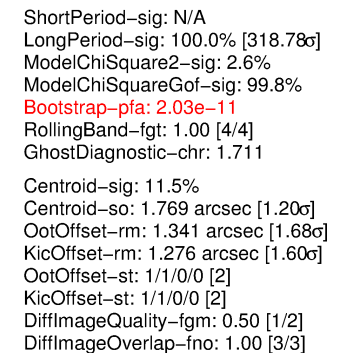
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

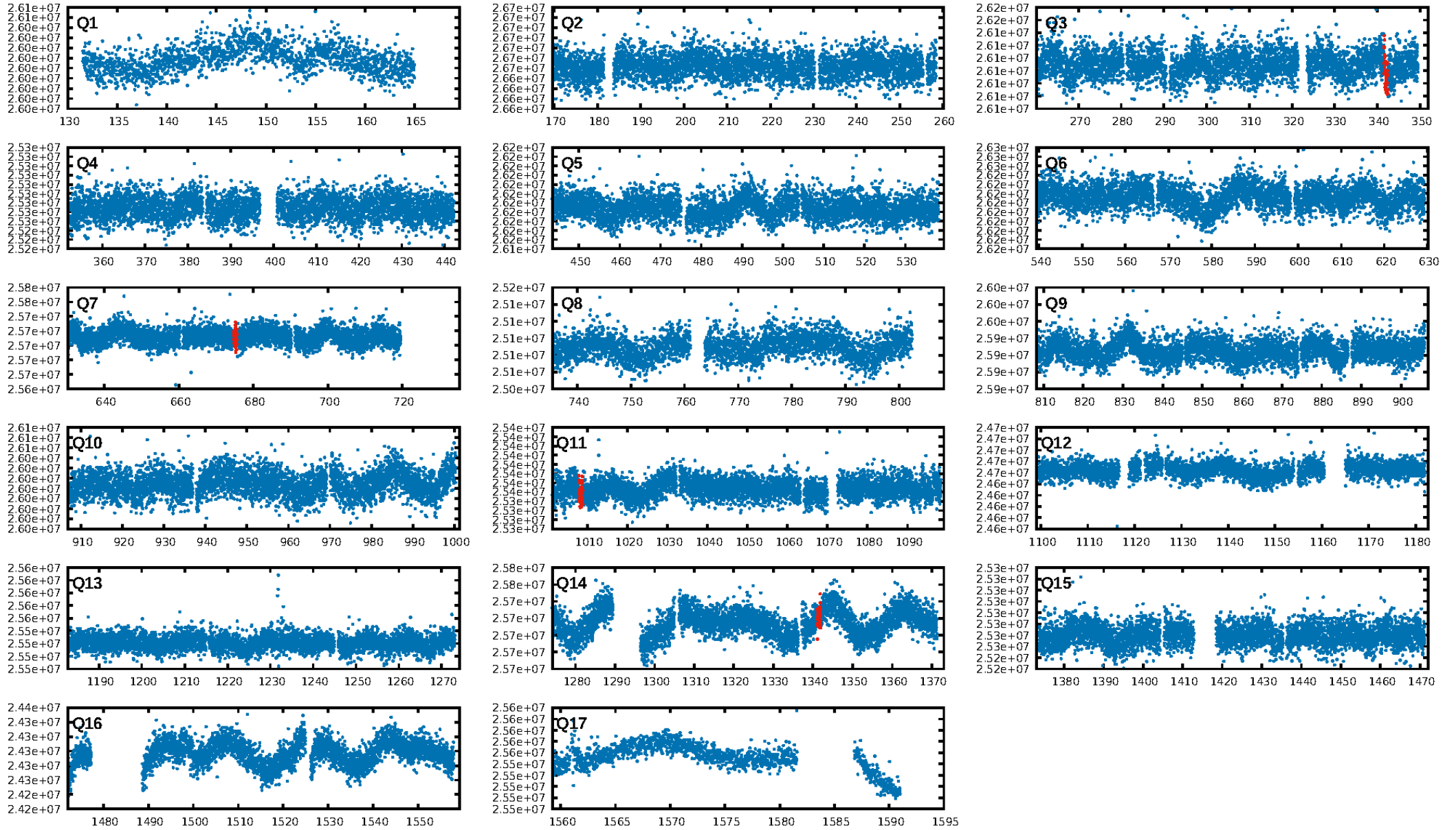
Ephemeris Match Information For 011957224-02

No Significant Match Found

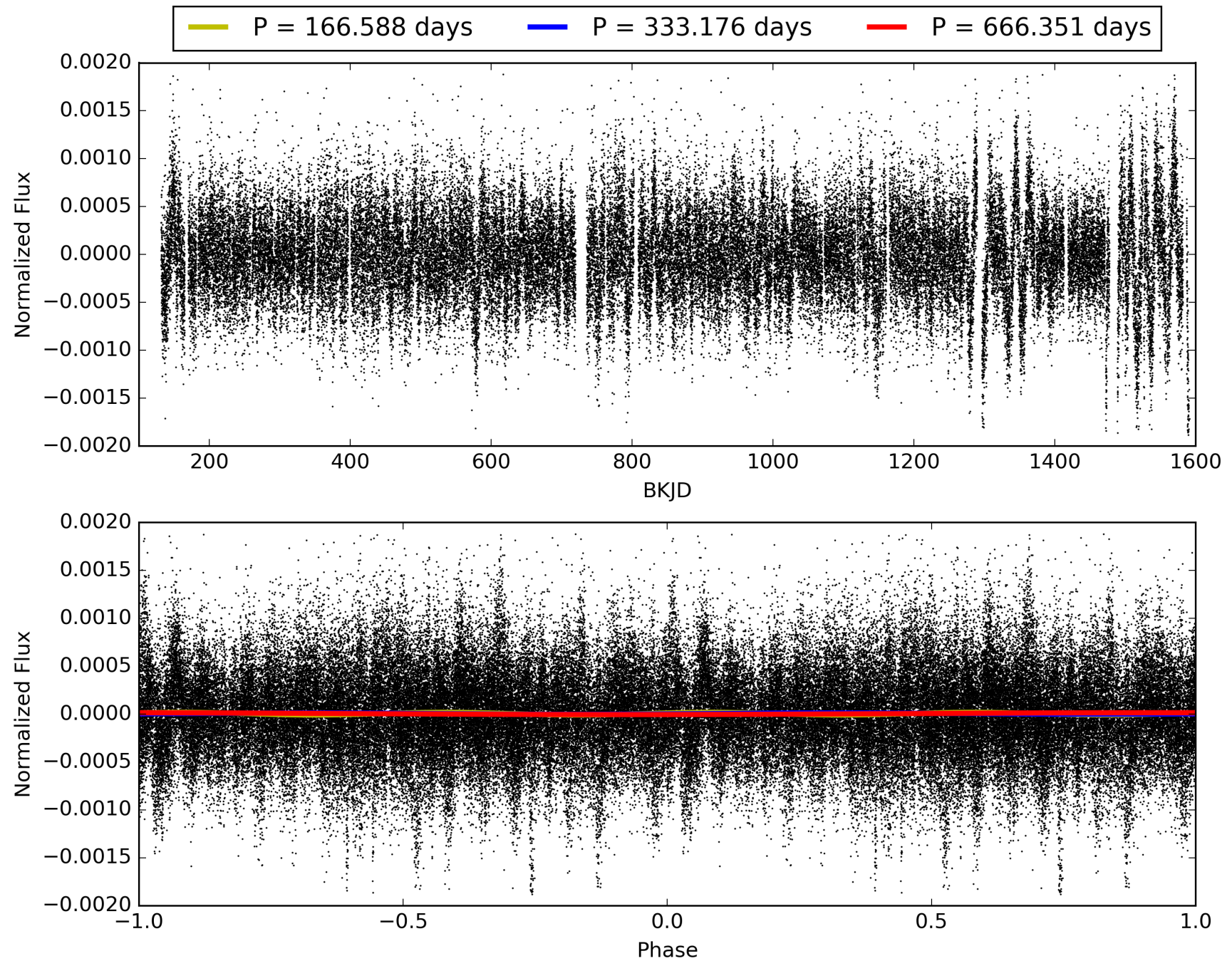
KIC: 11957224 Candidate: 2 of 2 Period: 333.176 d



TCE 011957224-02, PDC Light Curves

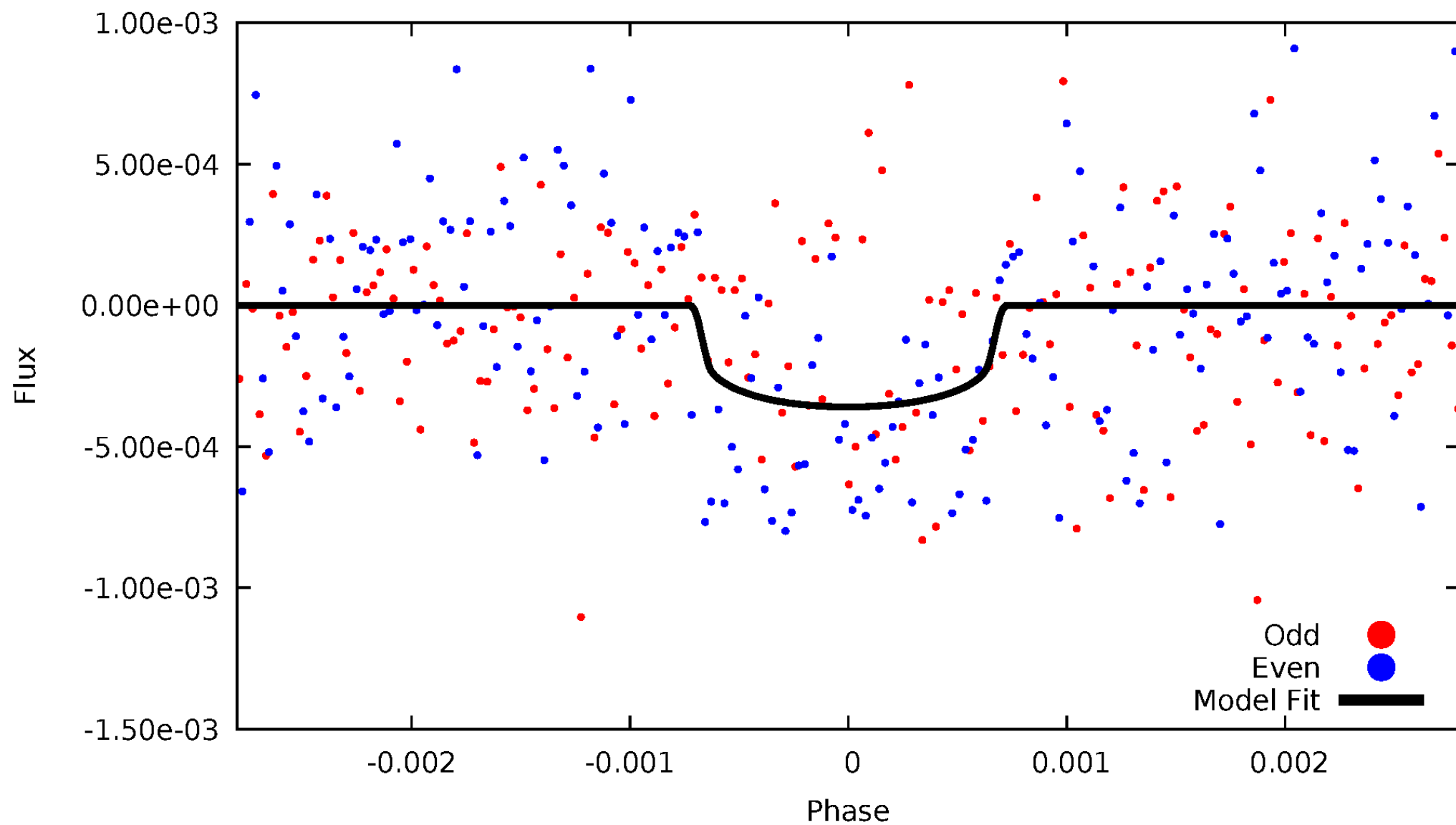


TCE 011957224-02



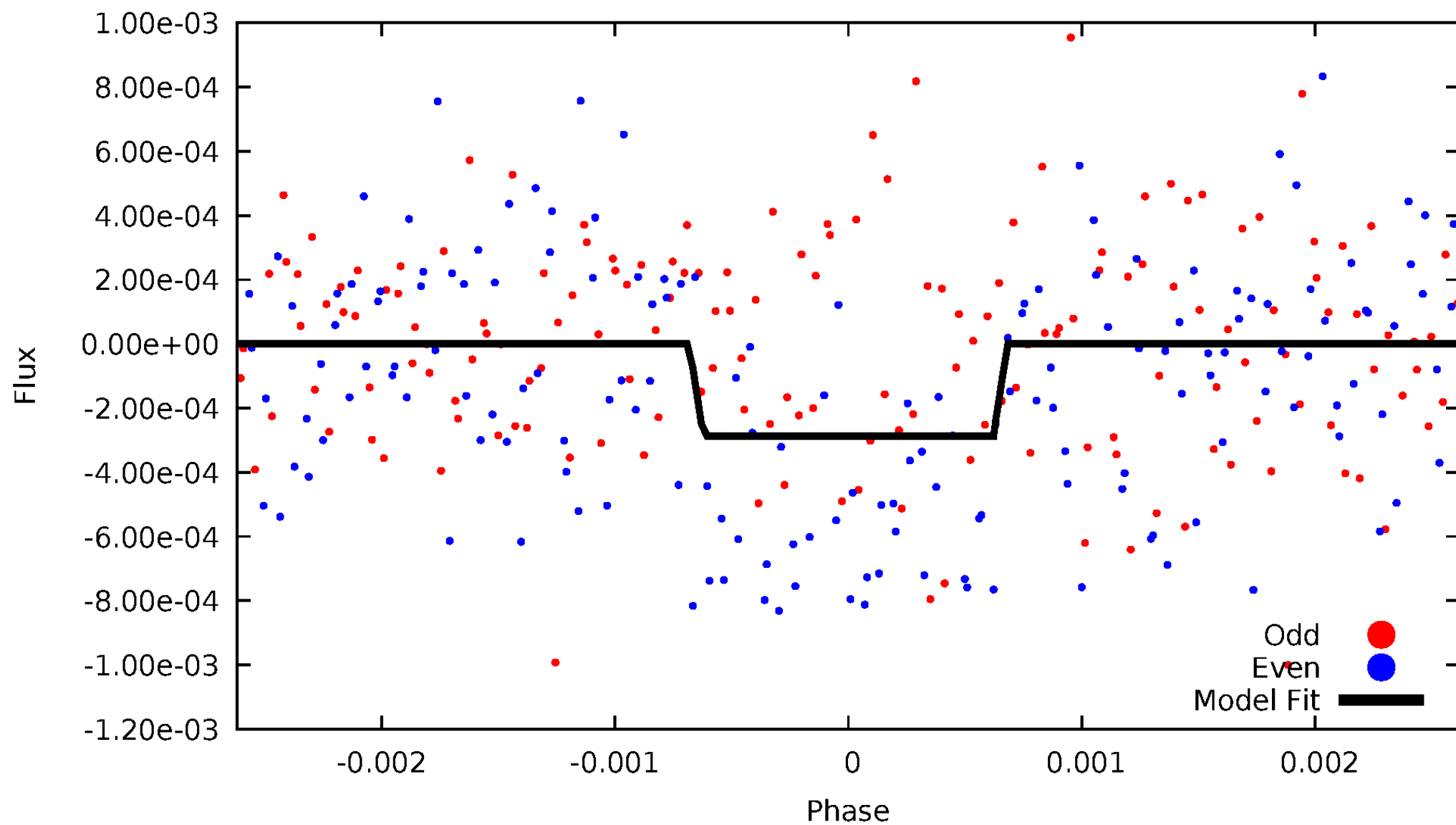
DV Odd/Even

TCE 011957224-02



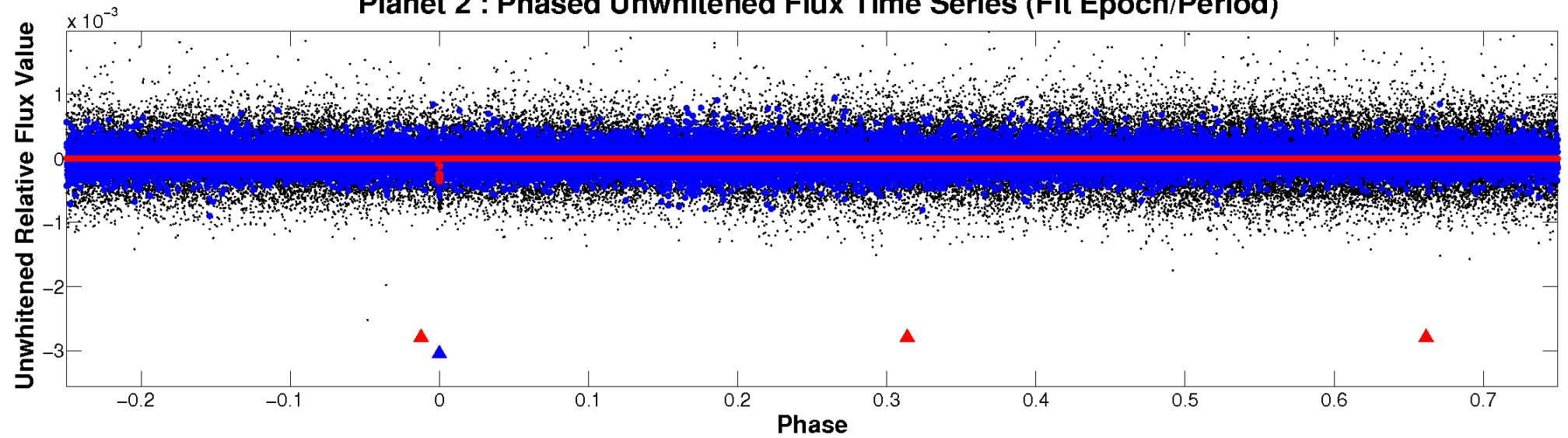
ALT Odd/Even

TCE 011957224-02

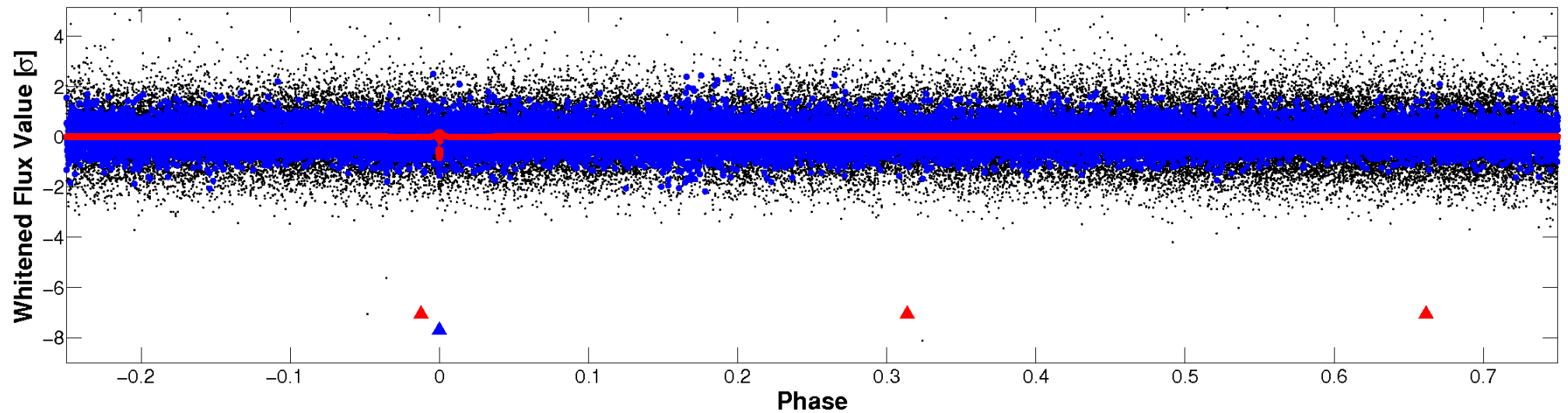


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

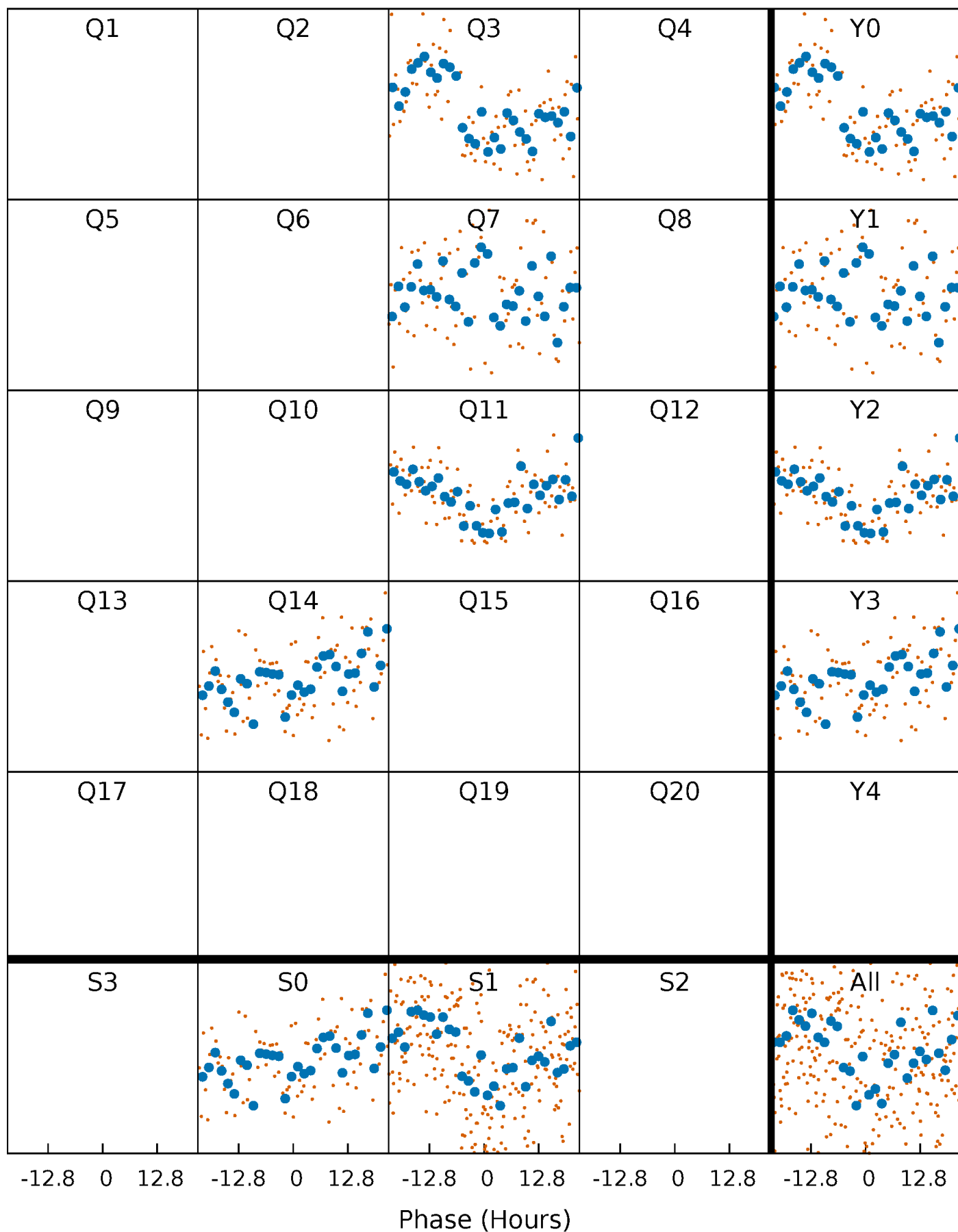


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



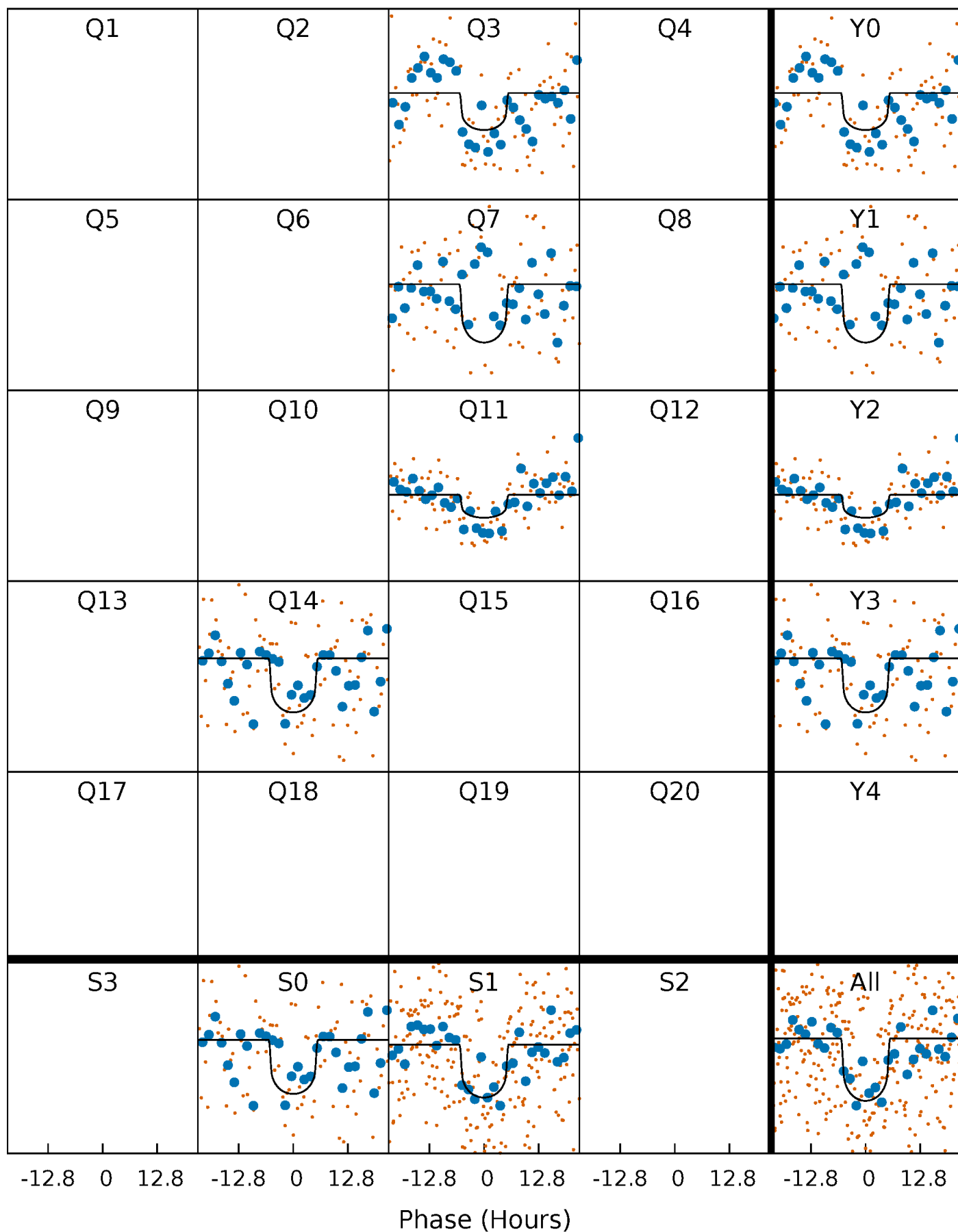
PDC Quarter-Phased Transit Curves

TCE 011957224-02 $P=333.175604$ Days $T_0=341.981763$ (BKJD)



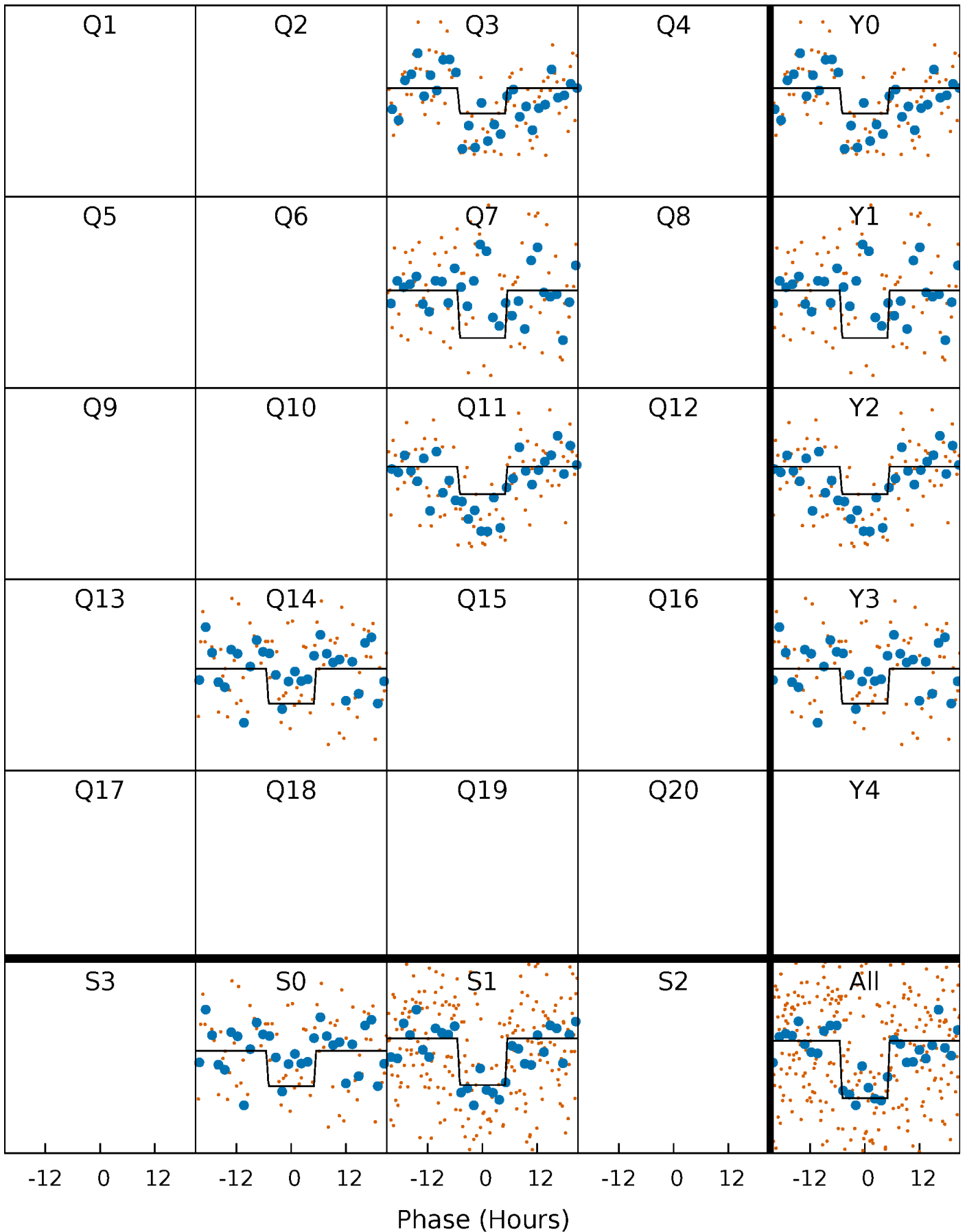
DV Quarter-Phased Transit Curves

TCE 011957224-02 $P=333.175604$ Days $T_0=341.981763$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

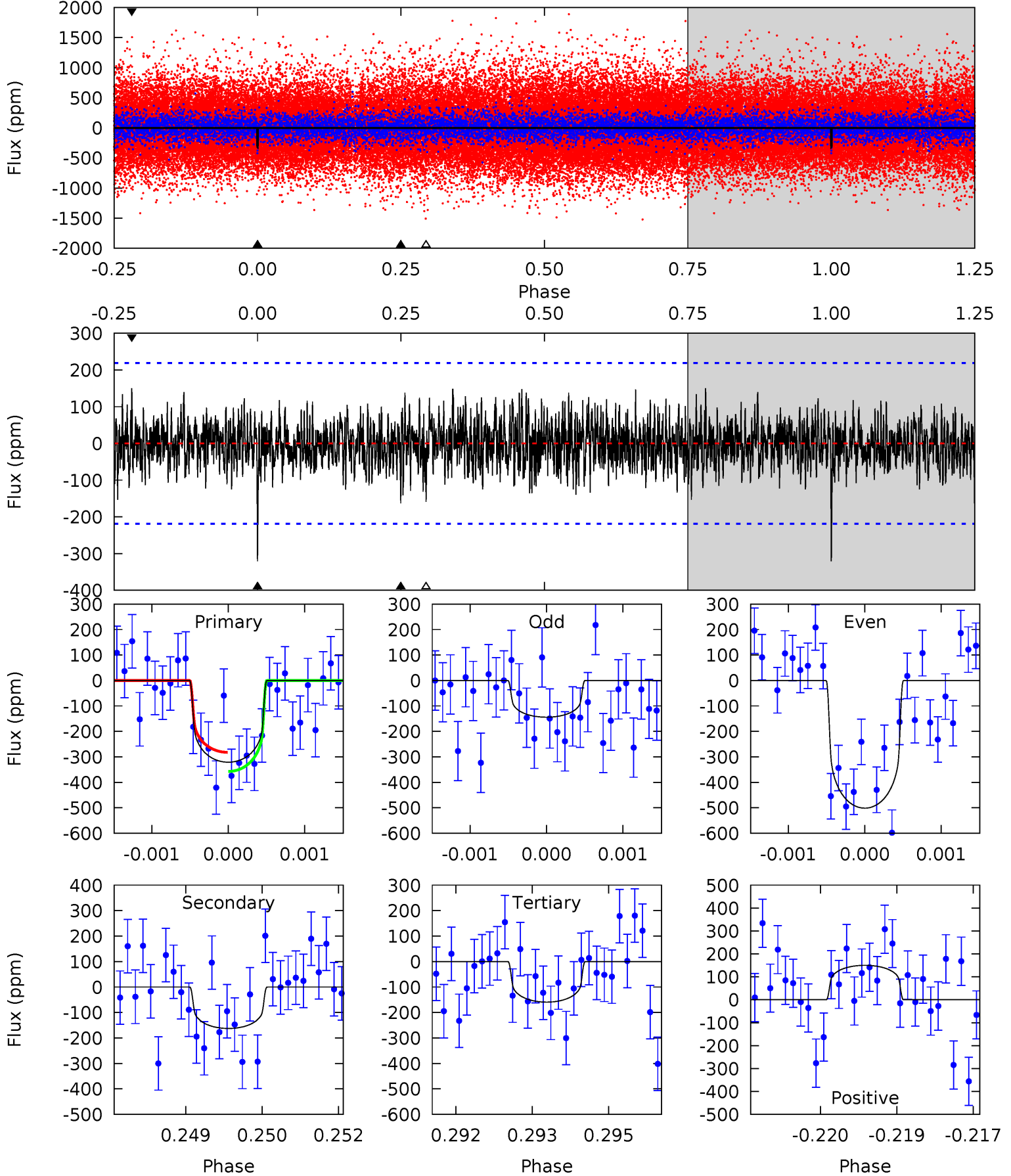
TCE 011957224-02 P=333.182818 Days $T_0=341.970531$ (BKJD)



DV Model-Shift Uniqueness Test

011957224-02, P = 333.175604 Days, E = 8.806159 Days

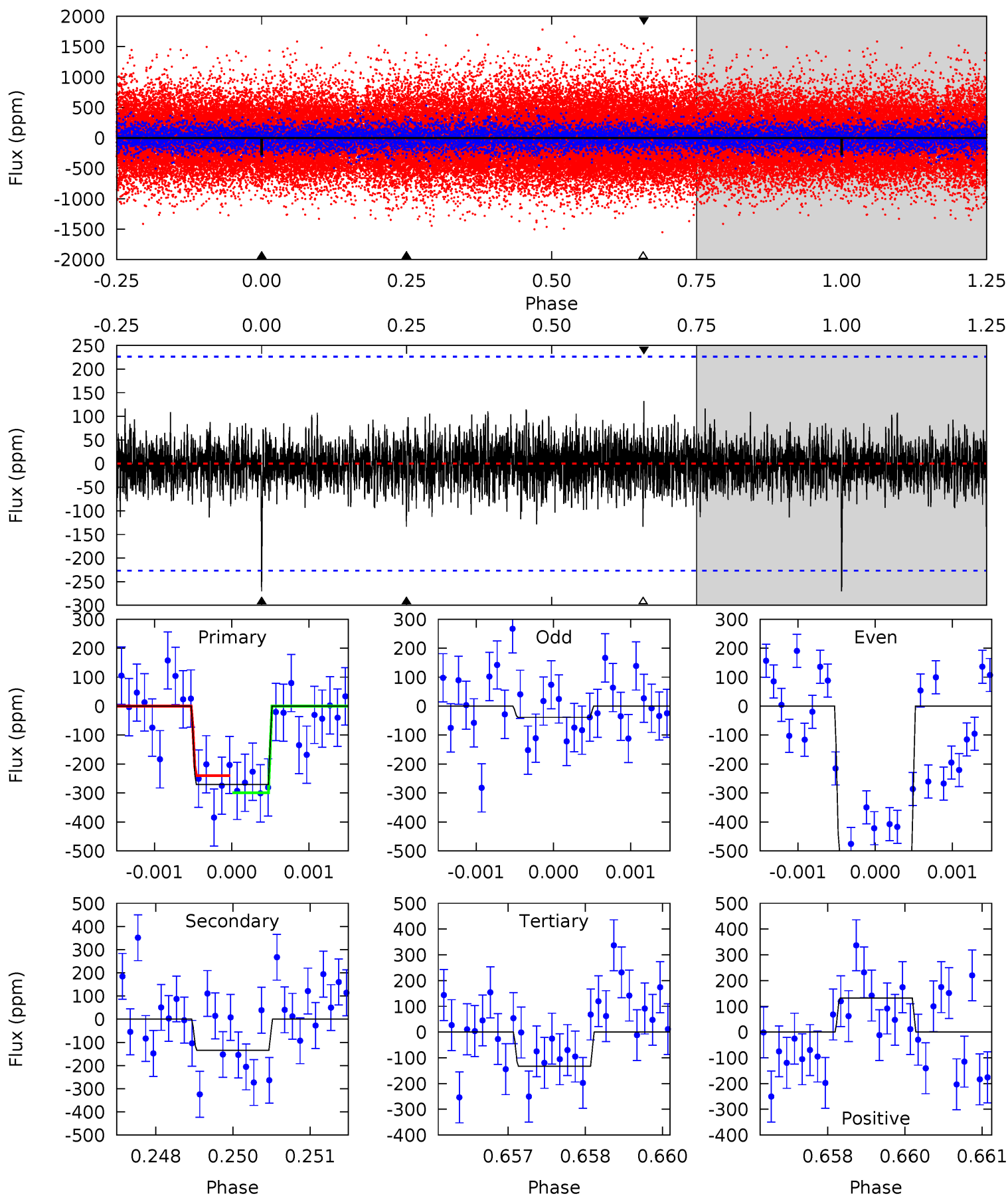
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.89	4.00	3.91	3.69	5.39	3.19	1.20	3.97	4.20	0.08	0.31	4.42	0.89	0.32	0.92



Alt Model-Shift Uniqueness Test

011957224-02, P = 333.182818 Days, E = 8.787713 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.45	3.19	3.17	3.16	5.40	3.21	0.82	3.28	3.29	0.02	0.03	5.61	0.98	0.33	0.71



Stellar Parameters For KIC 011957224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5805^{+156}_{-174}	$4.431^{+0.067}_{-0.202}$	$0.180^{+0.200}_{-0.300}$	$1.033^{+0.300}_{-0.129}$	$1.050^{+0.113}_{-0.125}$	$1.340^{+0.484}_{-0.692}$
	+3%/-3%	+2%/-5%	+111%/-167%	+29%/-12%	+11%/-12%	+36%/-52%
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 011957224-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-163±41	$2.34^{+1.39}_{-1.30}$	379^{+27}_{-20}	4801^{+2195}_{-807}	15451^{+60198}_{-9784}
Alt.	-134±42	$2.15^{+1.36}_{-1.27}$	379^{+24}_{-19}	4749^{+2681}_{-909}	14384^{+79491}_{-9643}

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

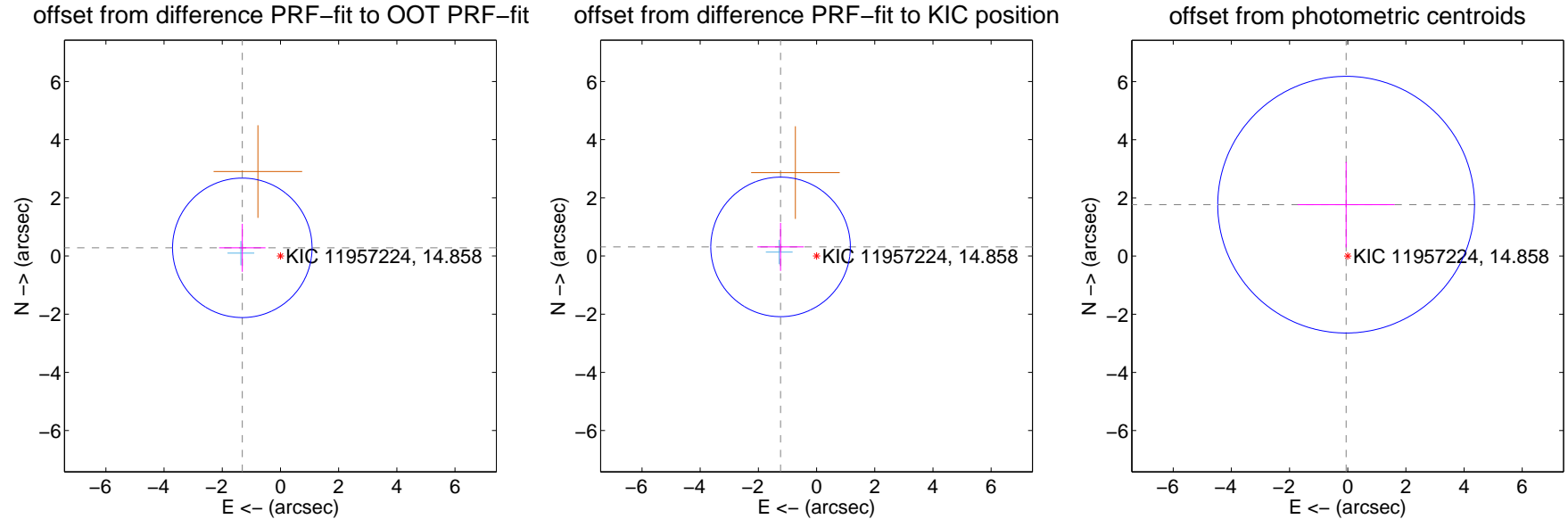
DV Centroid Data

Supplemental centroid analysis for 011957224-02. Kepler magnitude: 14.86. Transit SNR 6.75

There are 1 quarters with good PRF difference image offsets

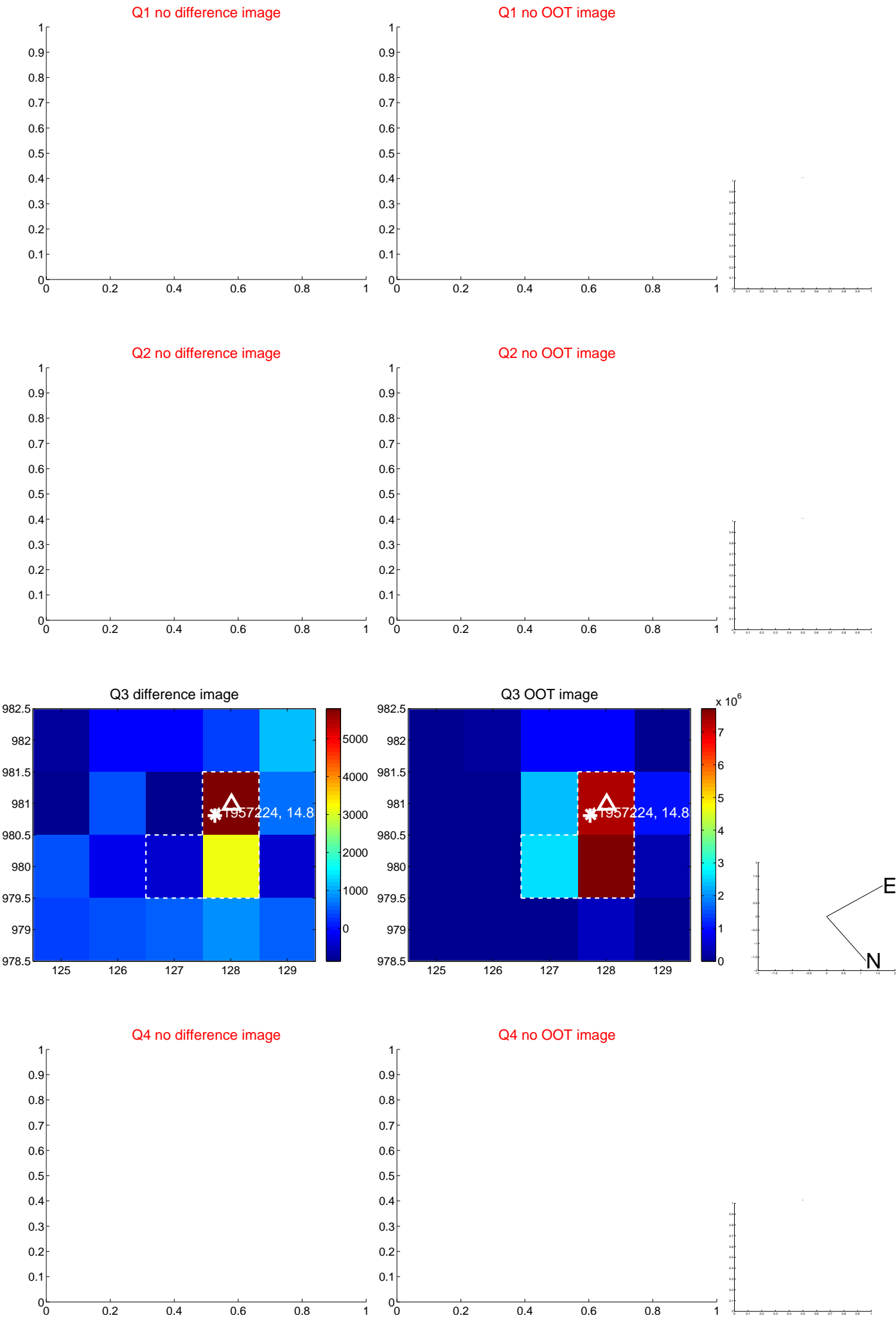
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.341 ± 0.799	1.68	1.311 ± 0.798	0.282 ± 0.826
PRF-fit source offset from KIC position	1.276 ± 0.800	1.60	1.237 ± 0.798	0.314 ± 0.826
photometric centroid source offset	1.77 ± 1.47	1.20	0.05 ± 1.67	1.77 ± 1.47

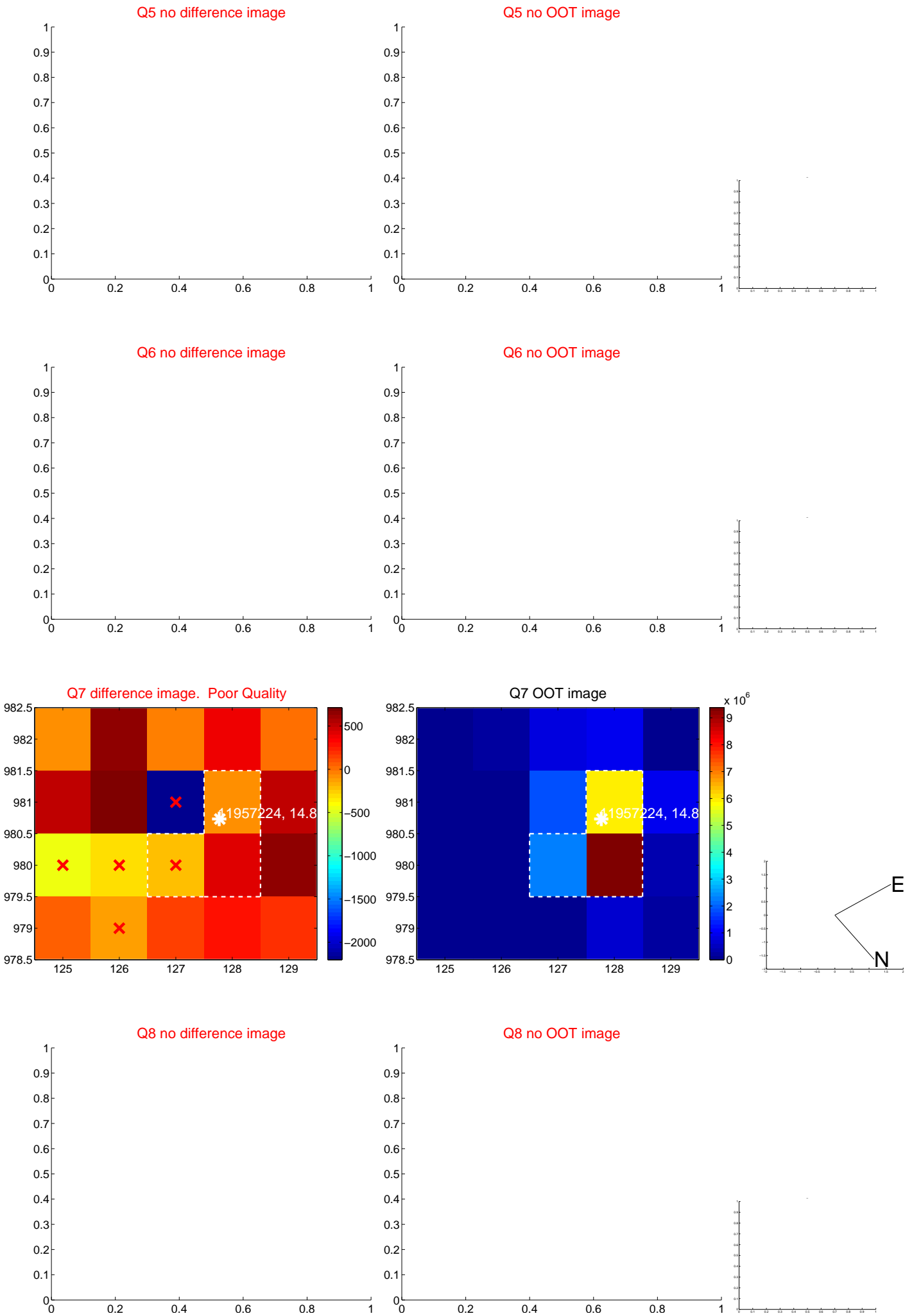


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

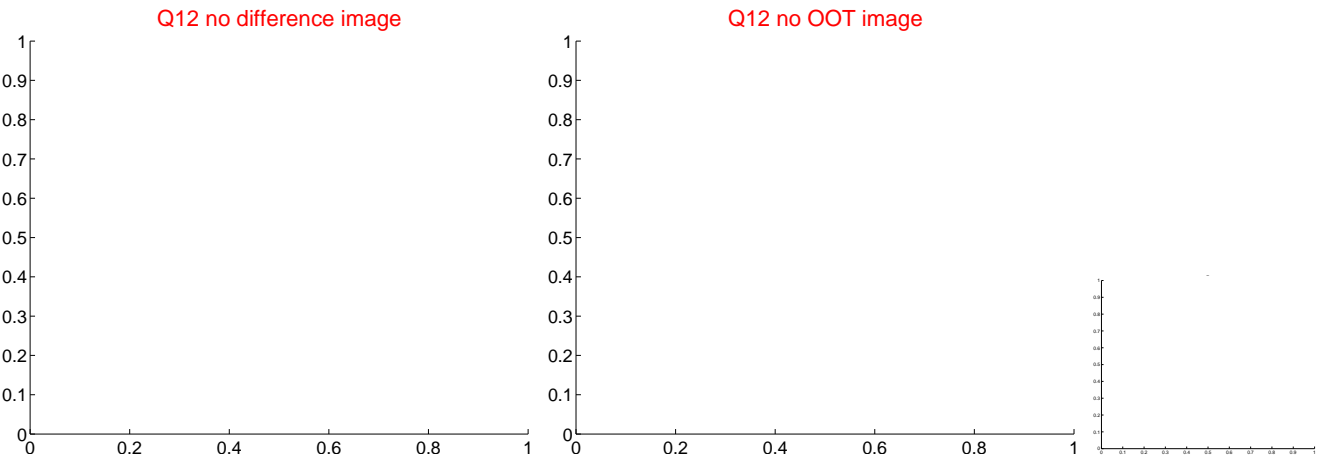
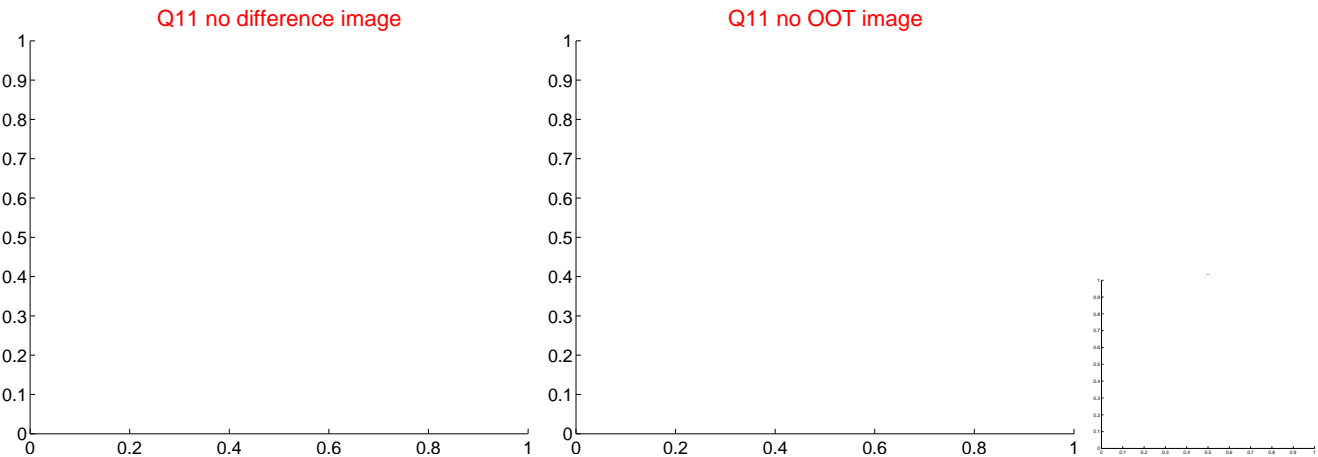
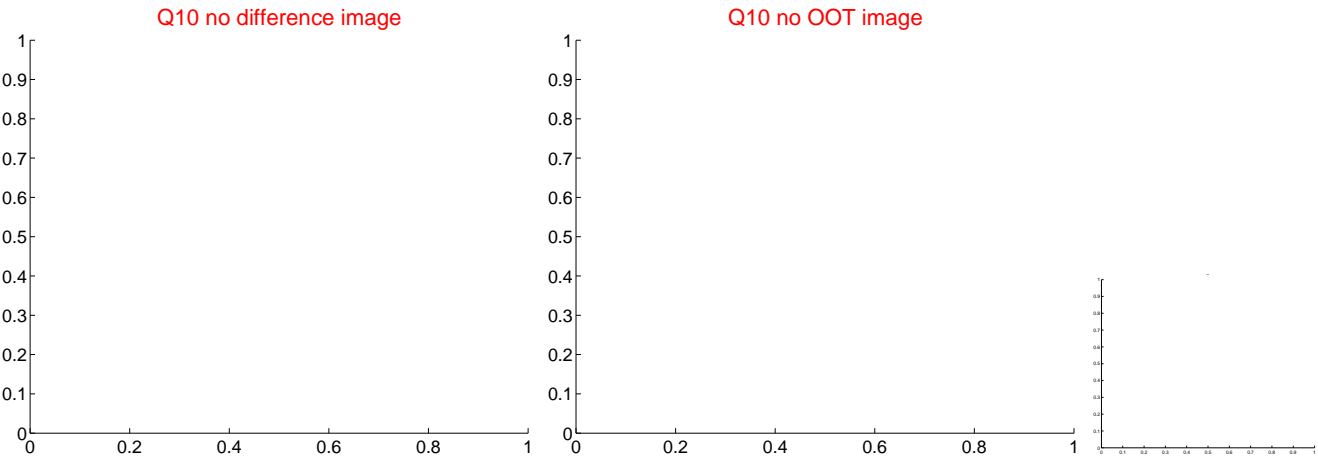
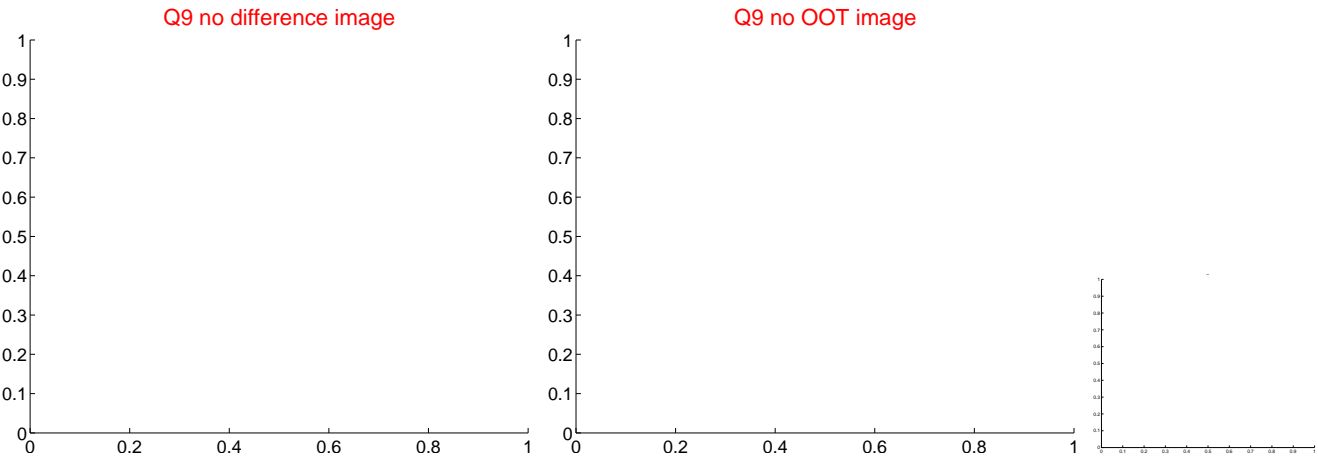
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



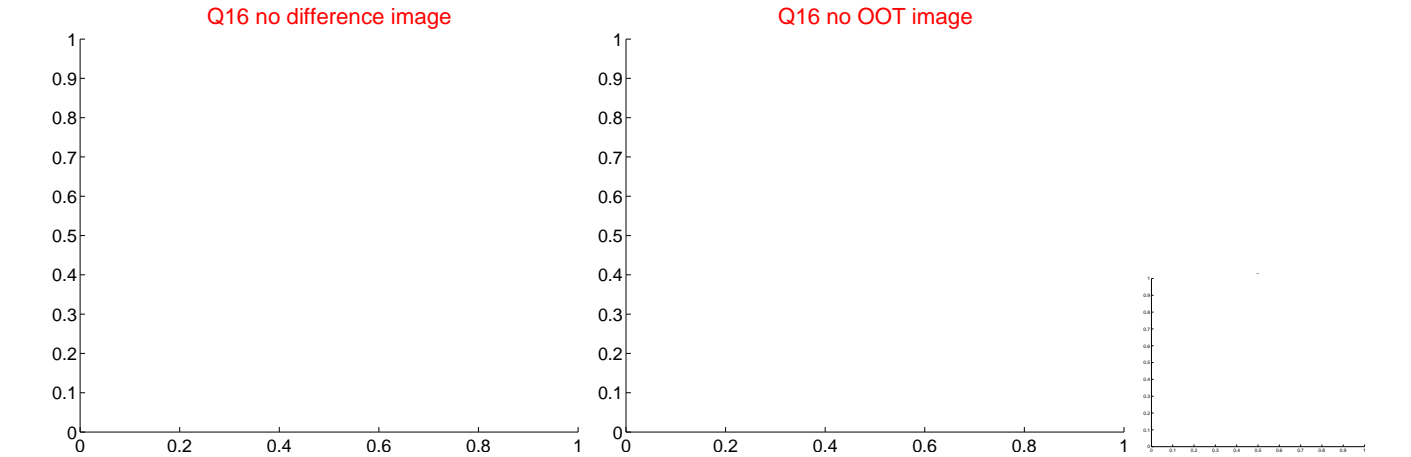
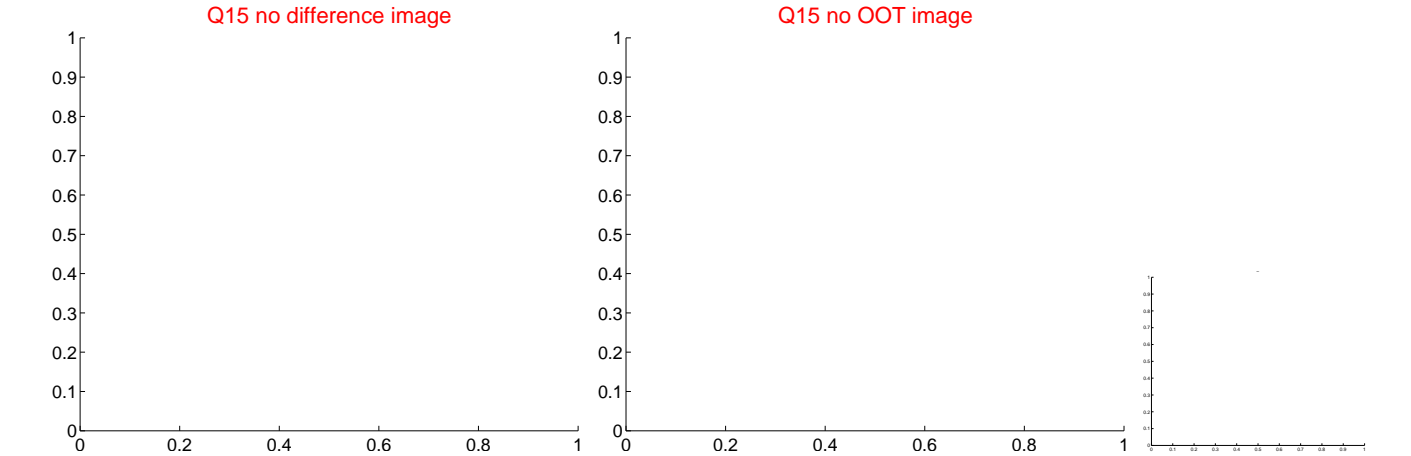
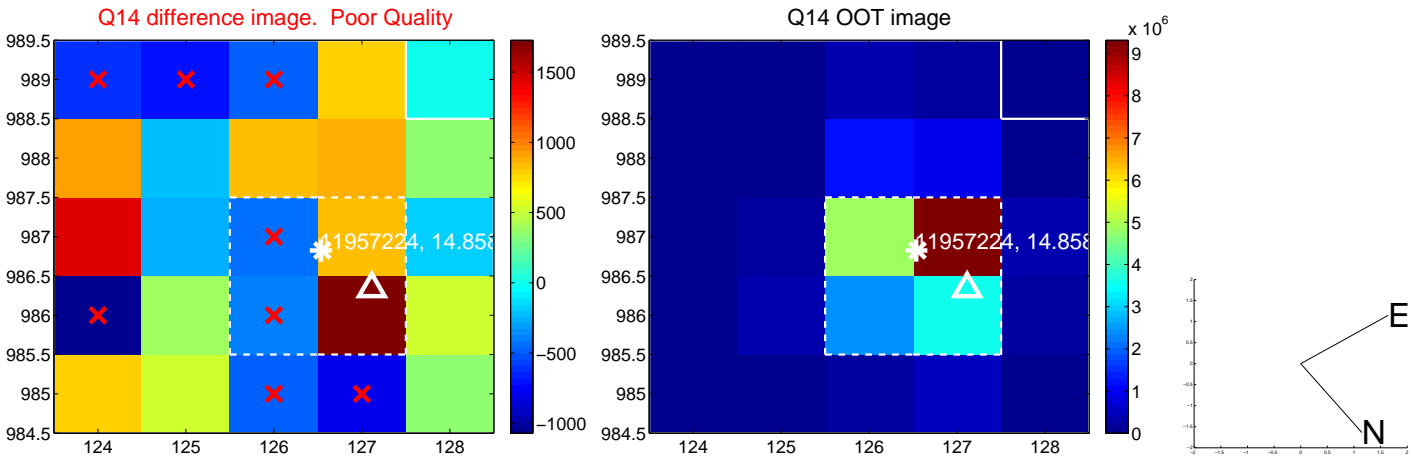
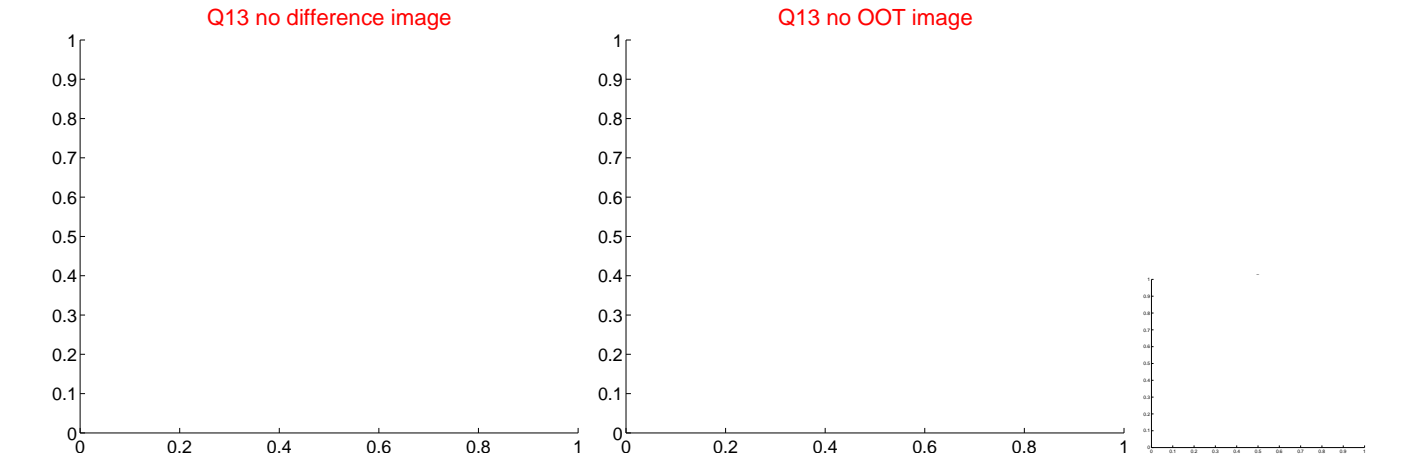
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



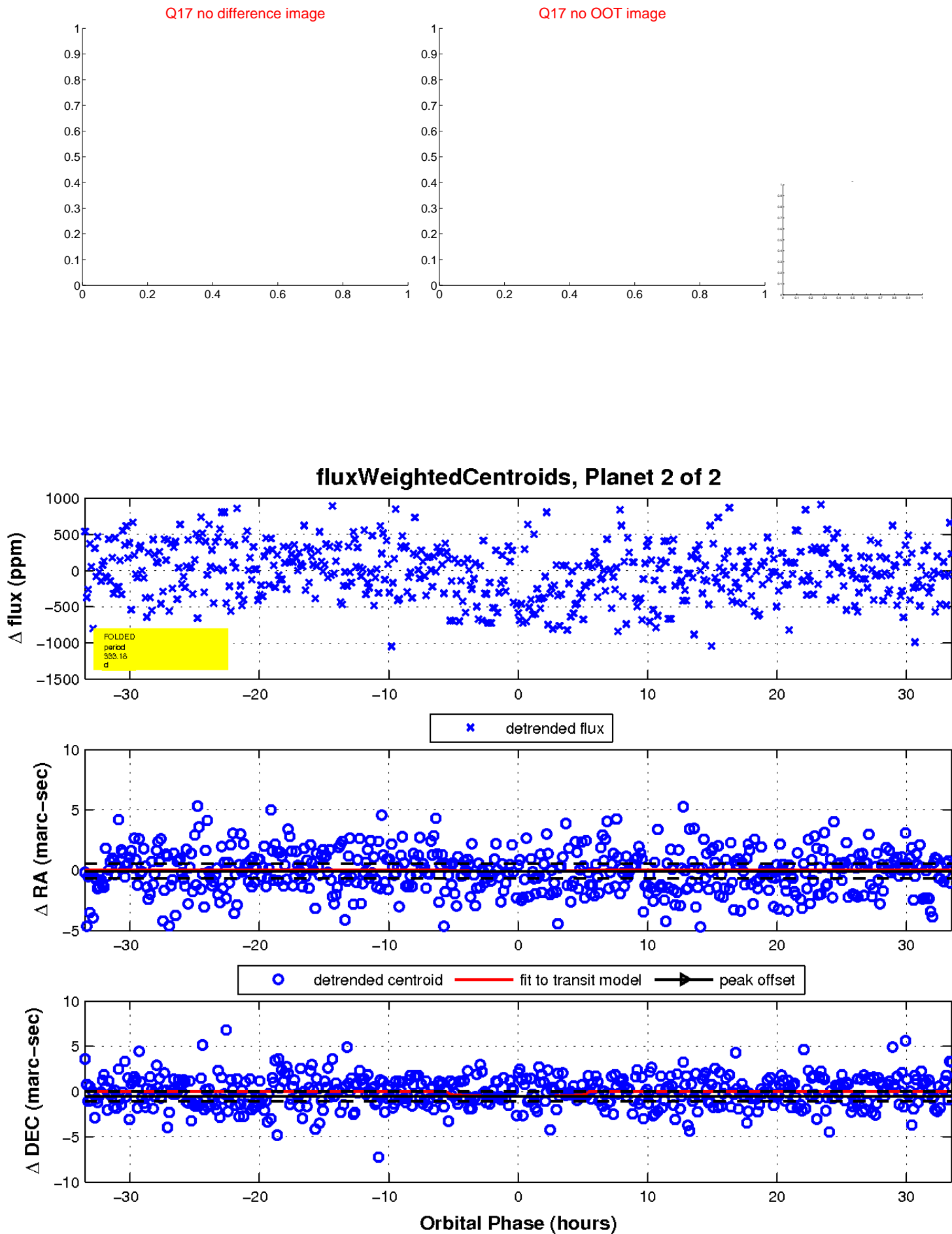
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

