

KIC 008557246

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})
008557246-01	OBS	No	374.623803	132.157340	1504.4	66.855	10.6	16.8	0.96	6168	4.92	1.13
008557246-02	OBS	7895.01	246.865333	220.367622	428.5	9.658	7.9	6.4	0.96	6168	2.21	1.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008557246-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—EPHEM_MATCH
008557246-02	OBS	FP	0.04	1	0	0	0	LPP_DV—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.

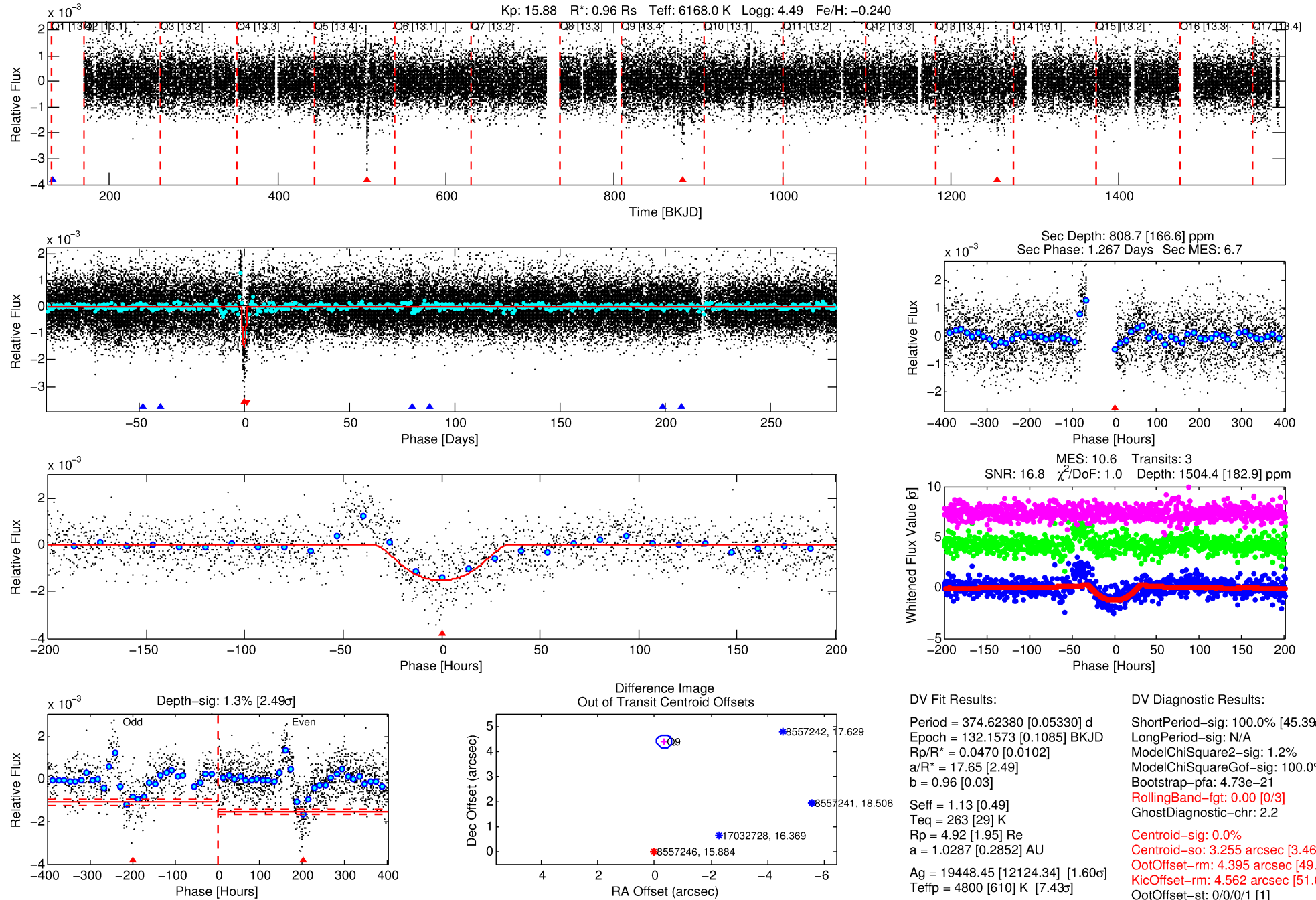
Ephemeris Match Information For 008557246-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008557246-01	8557246	008818552-01	8818552	1:1	2774.9	697	3	15.96	15.88	1.95	Col-Anomaly	1	0.38	0.60

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

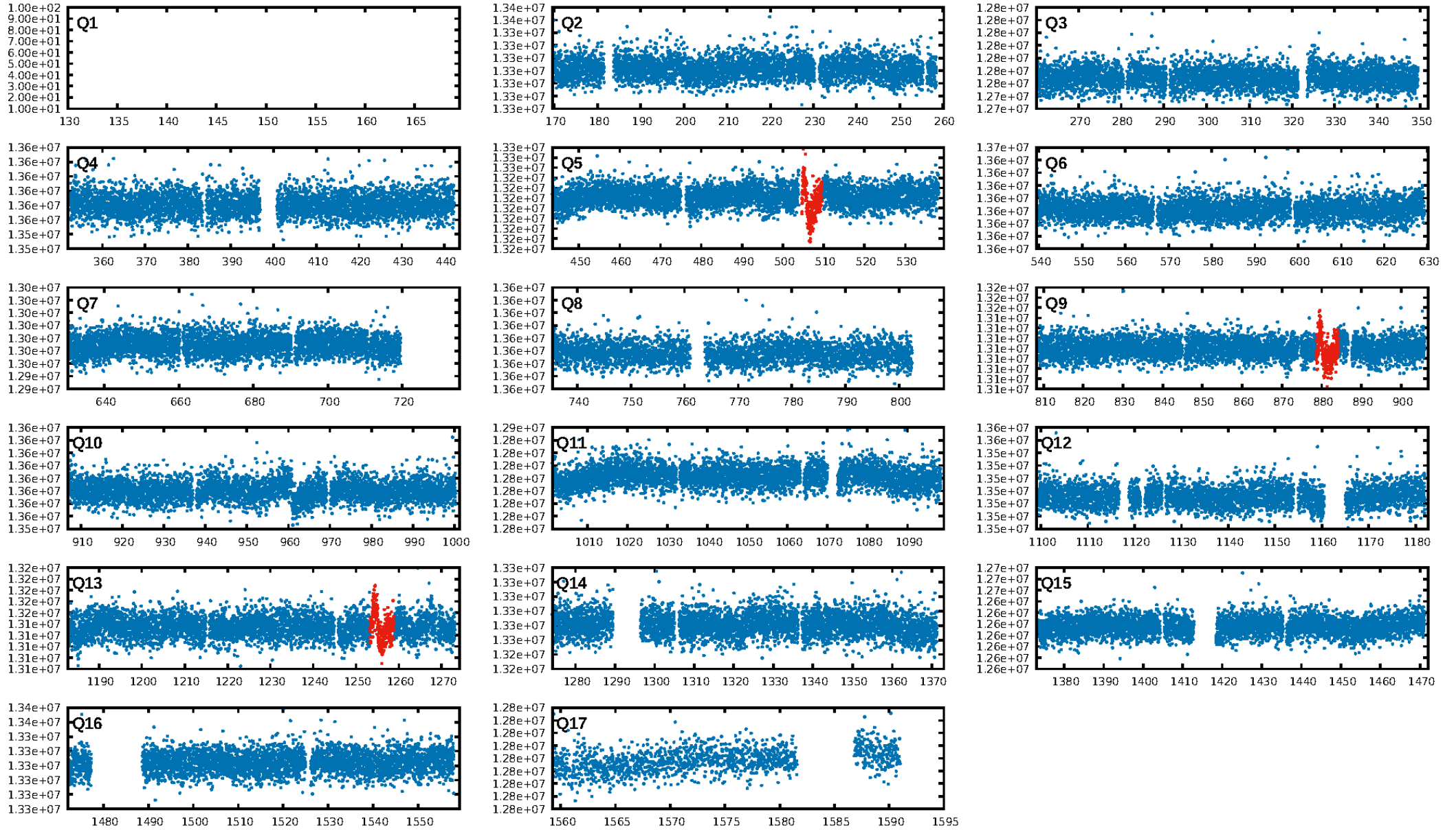
KIC: 8557246 Candidate: 1 of 2 Period: 374.624 d



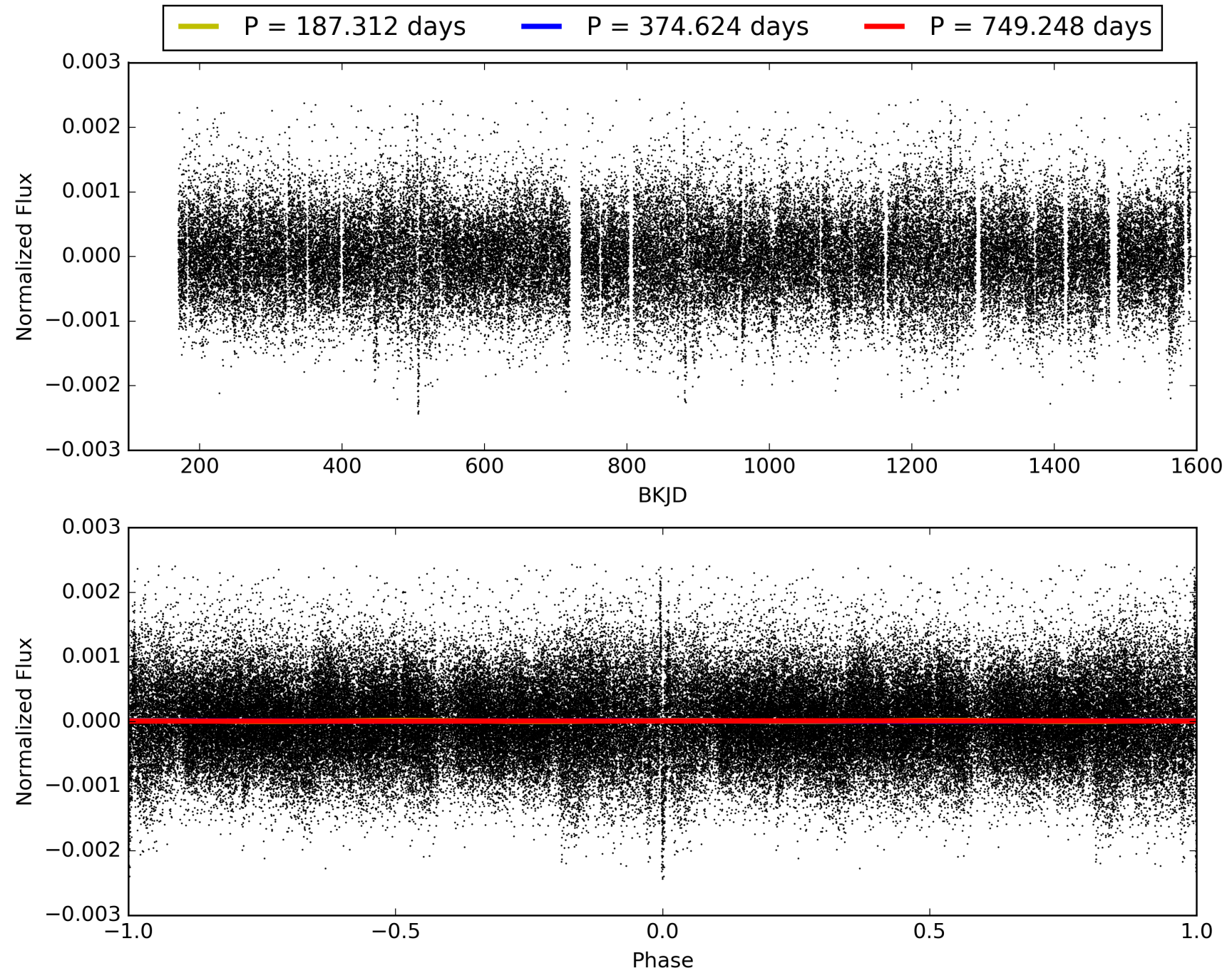
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:11:57 Z

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

TCE 008557246-01, PDC Light Curves

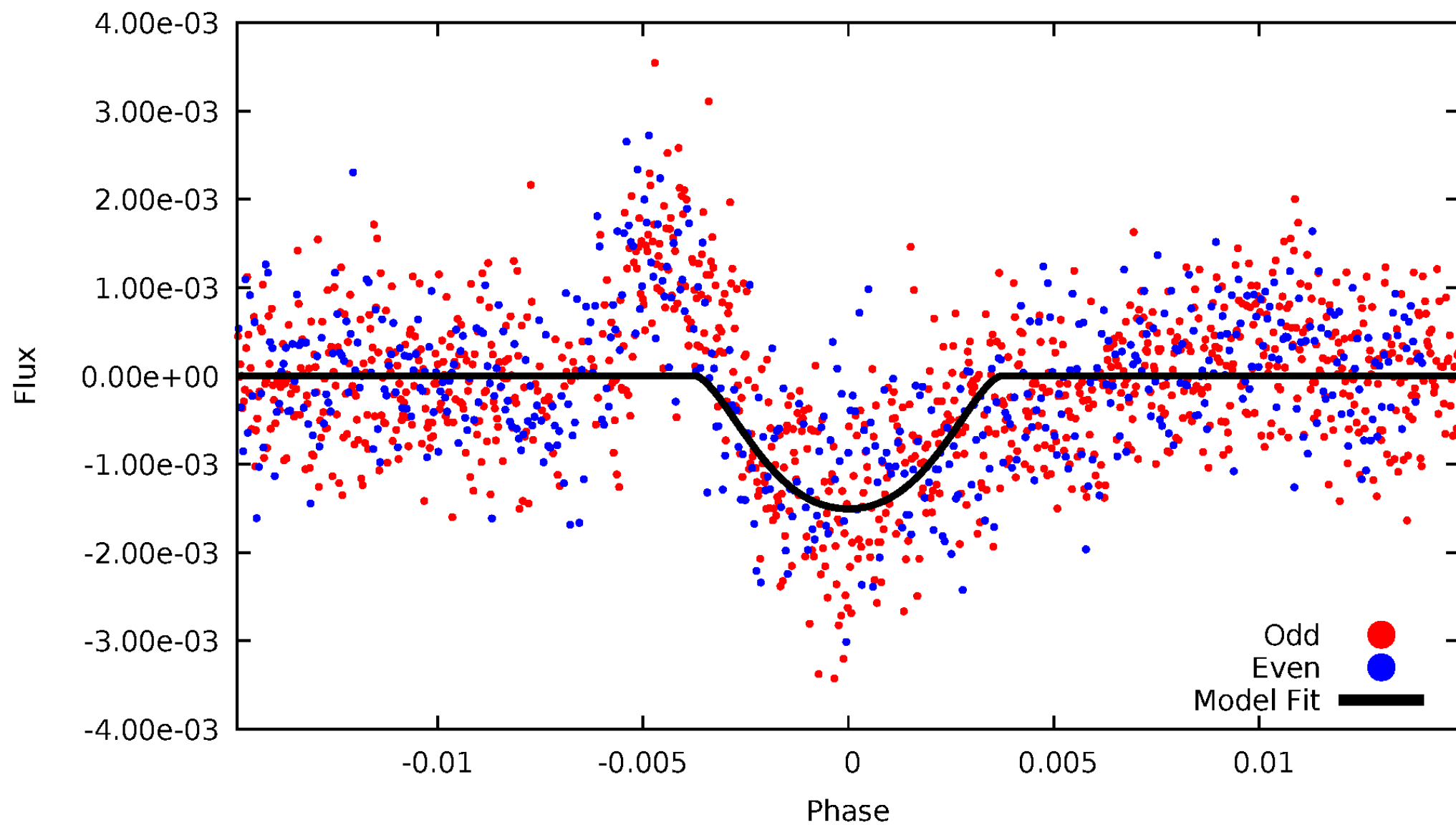


TCE 008557246-01



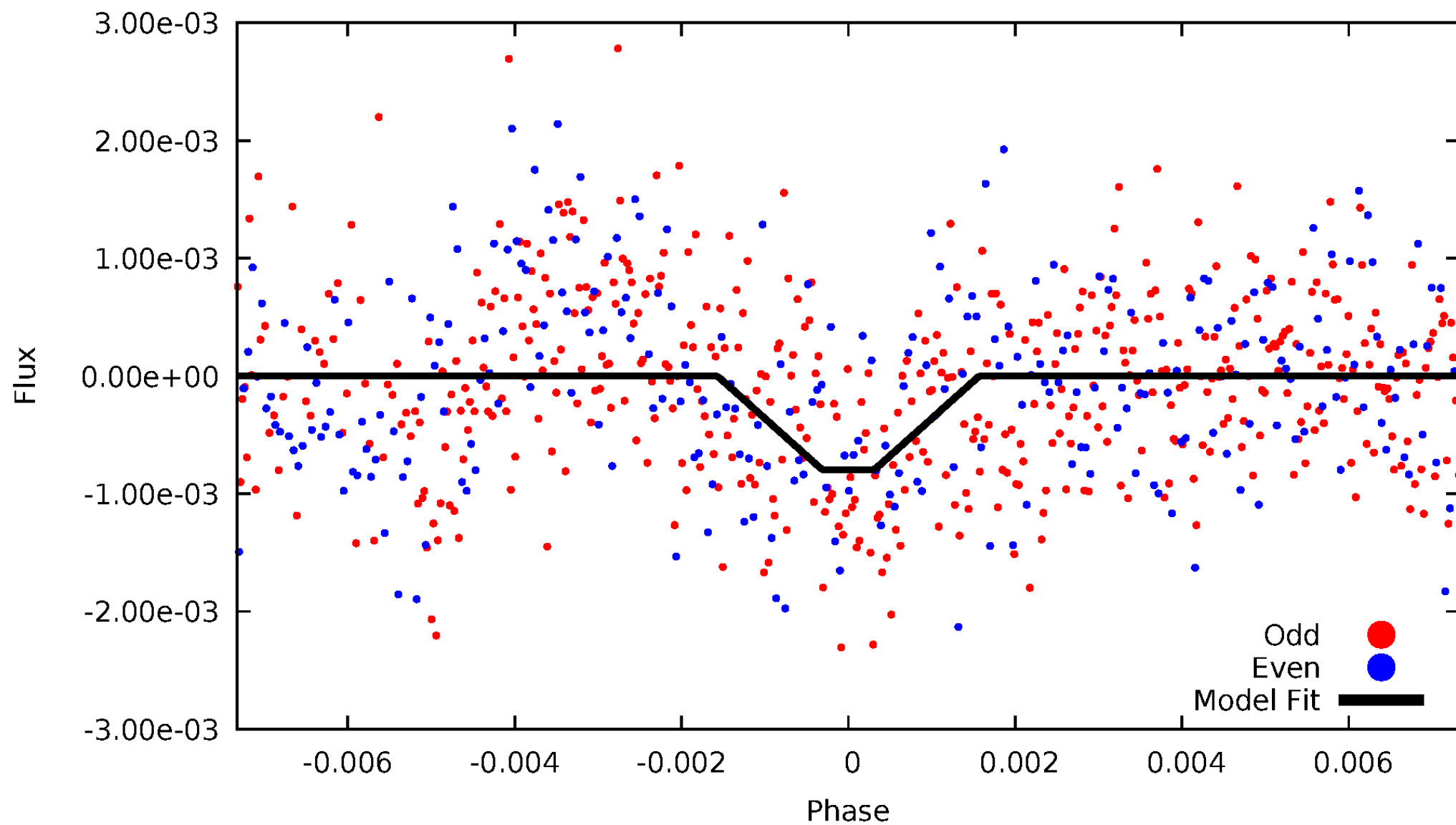
DV Odd/Even

TCE 008557246-01

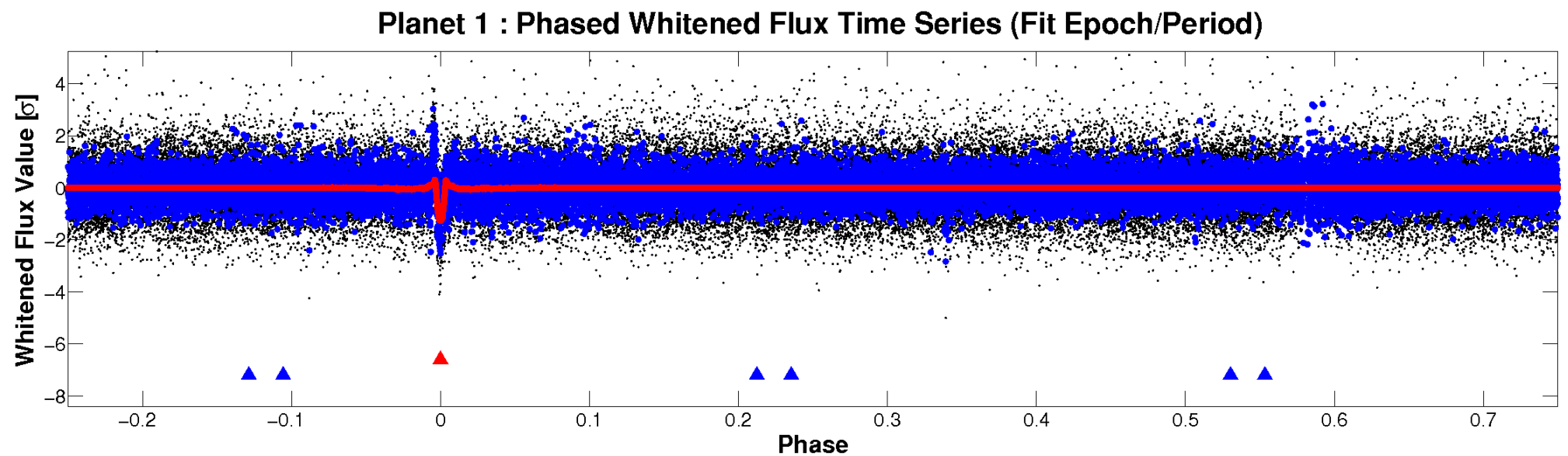
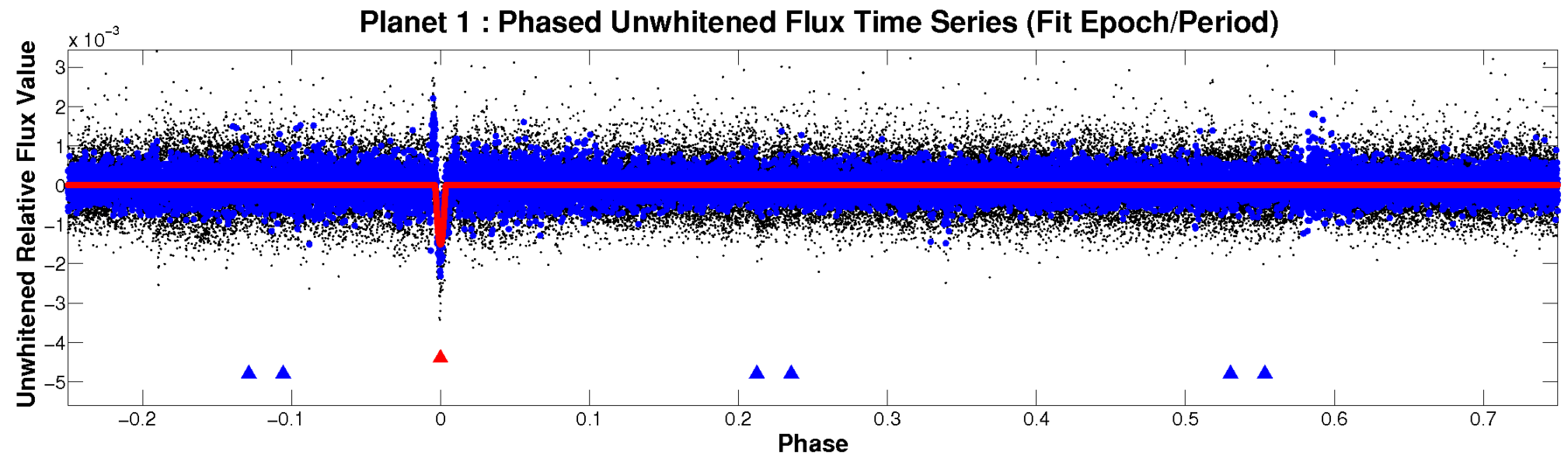


ALT Odd/Even

TCE 008557246-01

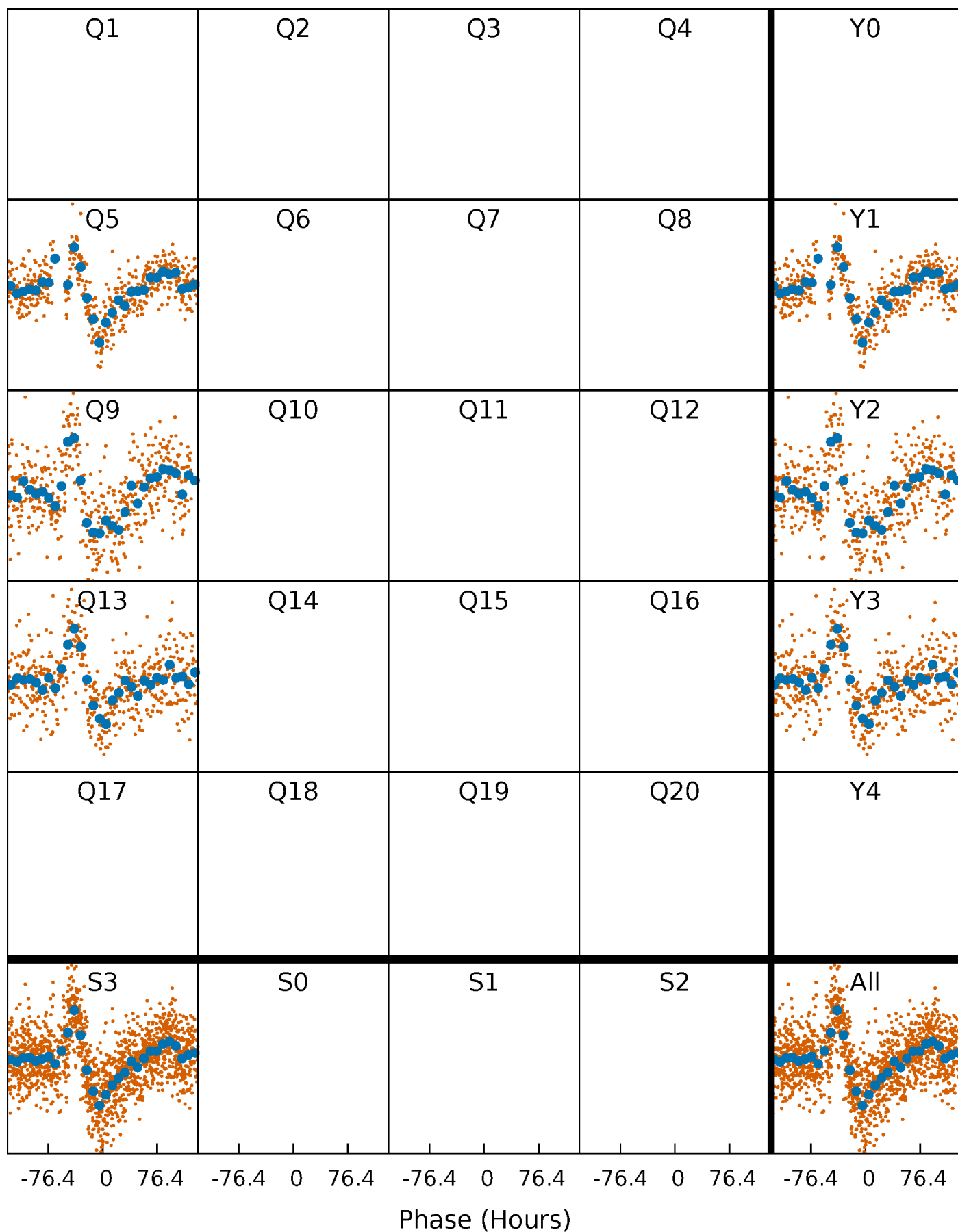


Non-Whitened Vs. Whitened Light Curve



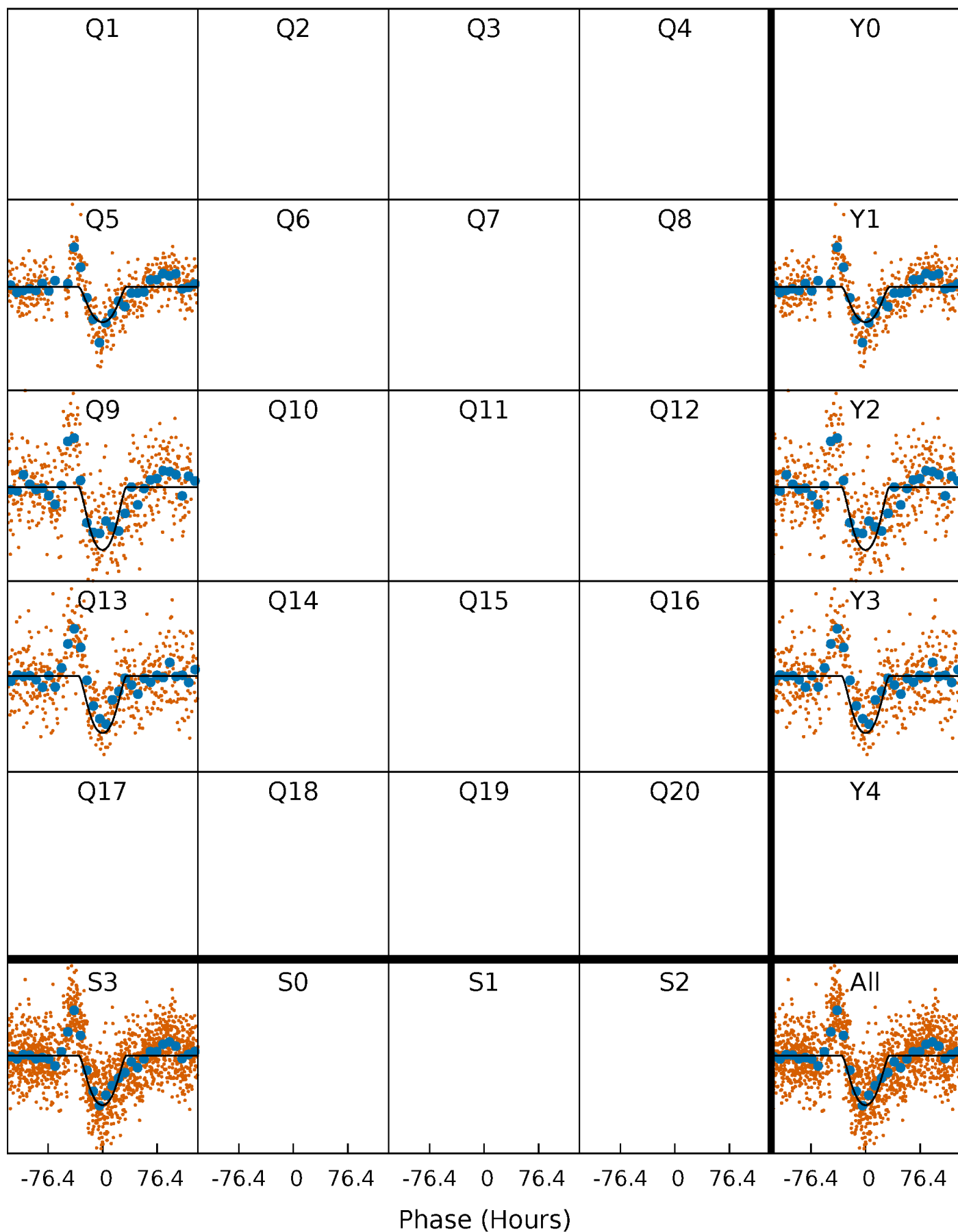
PDC Quarter-Phased Transit Curves

TCE 008557246-01 P=374.623803 Days $T_0=132.157340$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008557246-01 $P=374.623803$ Days $T_0=132.157340$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

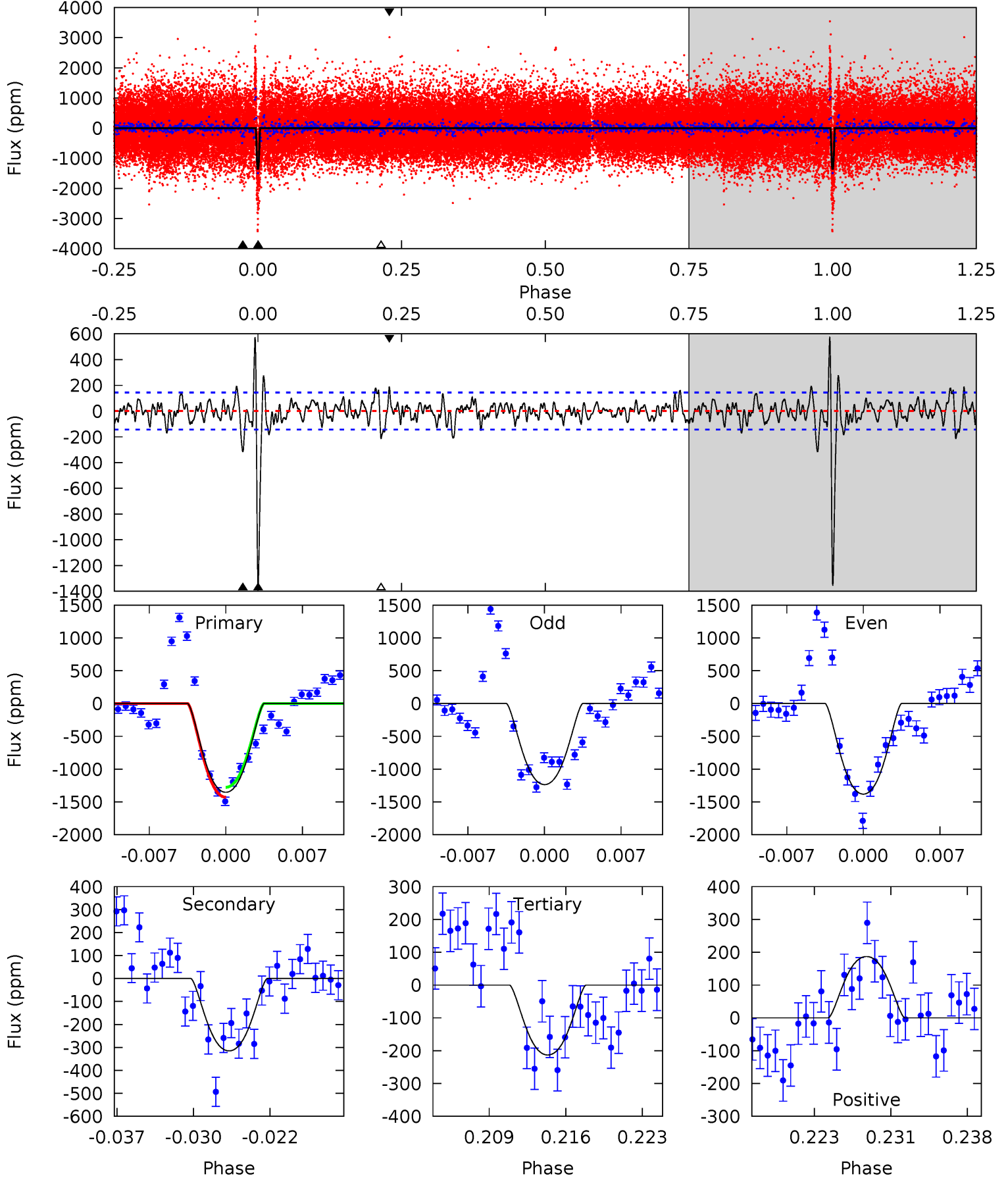
TCE 008557246-01 P=374.349630 Days $T_0=132.192121$ (BKJD)



DV Model-Shift Uniqueness Test

008557246-01, P = 374.623803 Days, E = 132.157340 Days

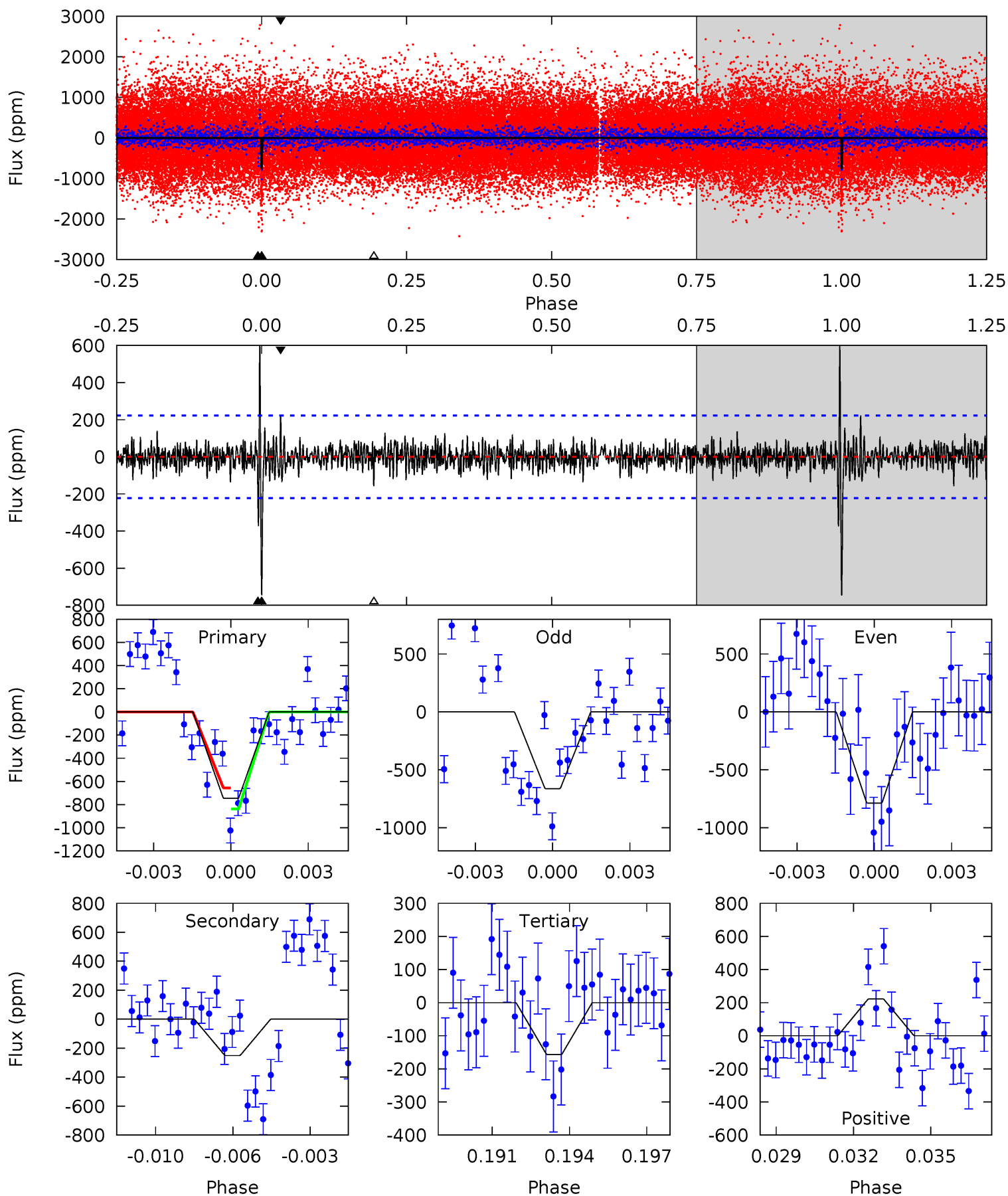
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.8	11.1	7.53	6.60	5.08	2.68	2.19	40.3	41.2	3.60	4.53	2.44	1.08	0.30	2.66



Alt Model-Shift Uniqueness Test

008557246-01, P = 374.349630 Days, E = 132.192121 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	5.91	3.69	5.24	5.24	2.95	1.06	13.9	12.3	2.22	0.67	1.38	1.13	0.45	2.15



Stellar Parameters For KIC 008557246

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6168^{+219}_{-263}	$4.488^{+0.054}_{-0.216}$	$-0.240^{+0.250}_{-0.350}$	$0.960^{+0.320}_{-0.107}$	$1.034^{+0.144}_{-0.144}$	$1.644^{+0.482}_{-0.929}$
	+4%/-4%	+1%/-5%	+104%/-146%	+33%/-11%	+14%/-14%	+29%/-57%
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 008557246-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-315 ± 28	$5.19^{+1.37}_{-1.14}$	375^{+28}_{-20}	4081^{+393}_{-303}	6696^{+4699}_{-2536}
Alt.	-251 ± 42	$3.04^{+1.29}_{-1.09}$	375^{+29}_{-19}	4762^{+1126}_{-589}	15545^{+21929}_{-7945}

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

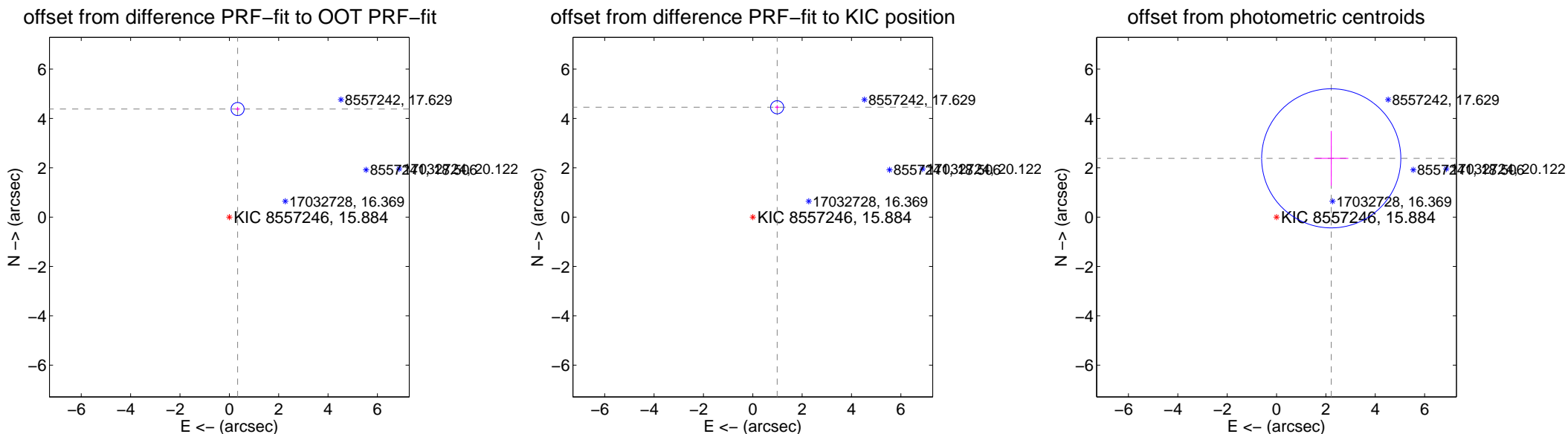
DV Centroid Data

Supplemental centroid analysis for 008557246-01. Kepler magnitude: 15.88. Transit SNR 16.81

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.66 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.395 \pm 0.088	49.81	-0.336 \pm 0.090	4.382 \pm 0.088
PRF-fit source offset from KIC position	4.562 \pm 0.088	51.65	-0.987 \pm 0.090	4.454 \pm 0.088
photometric centroid source offset	3.25 \pm 0.94	3.46	-2.22 \pm 0.69	2.38 \pm 1.11



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.

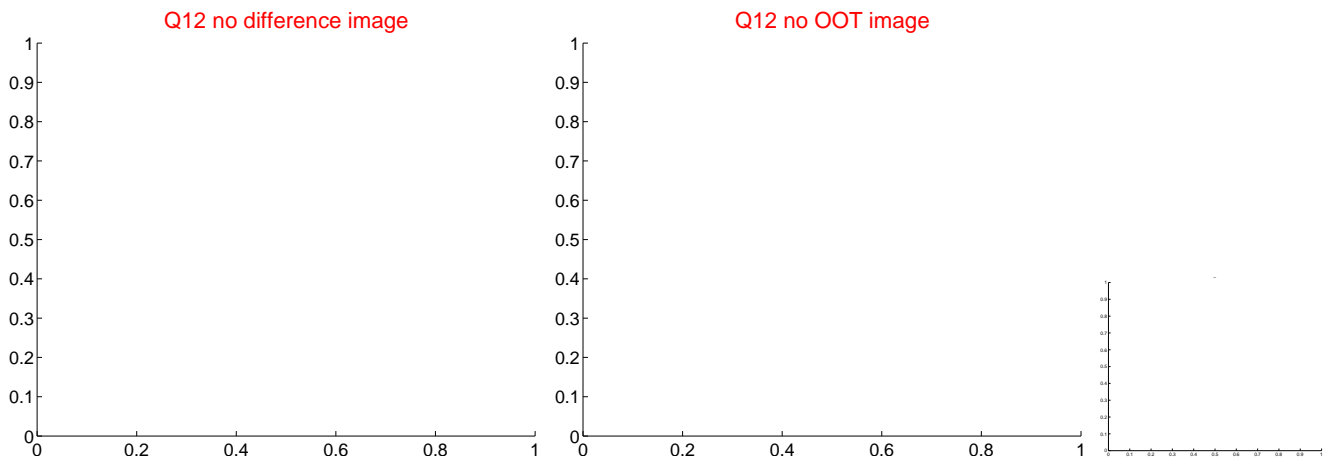
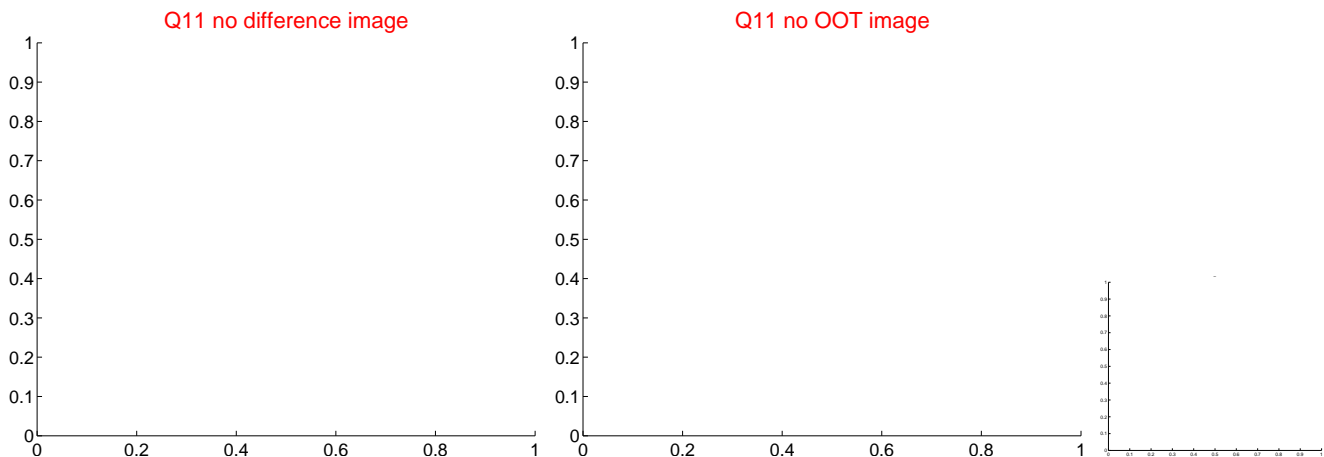
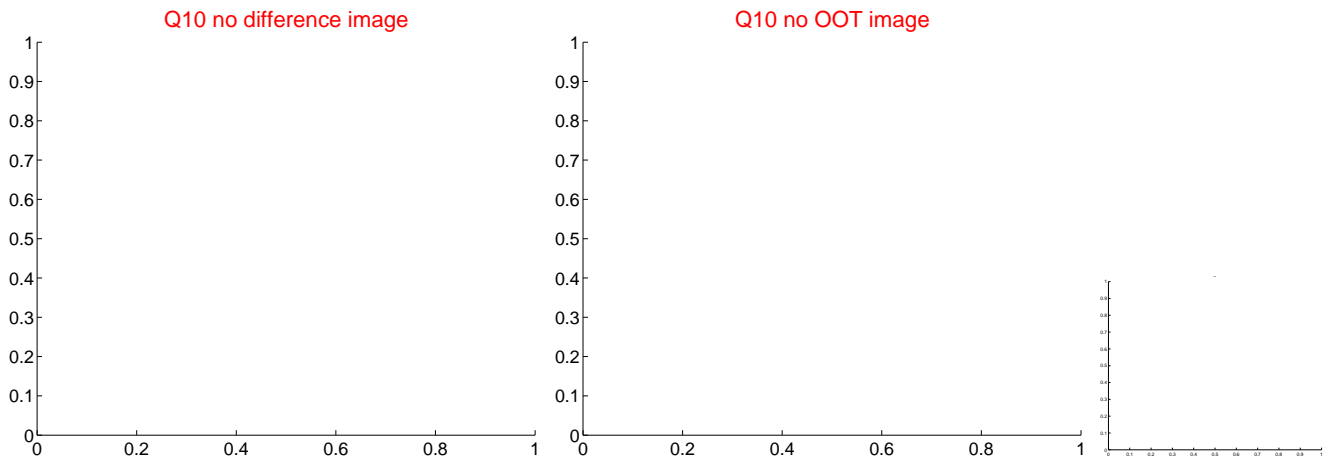
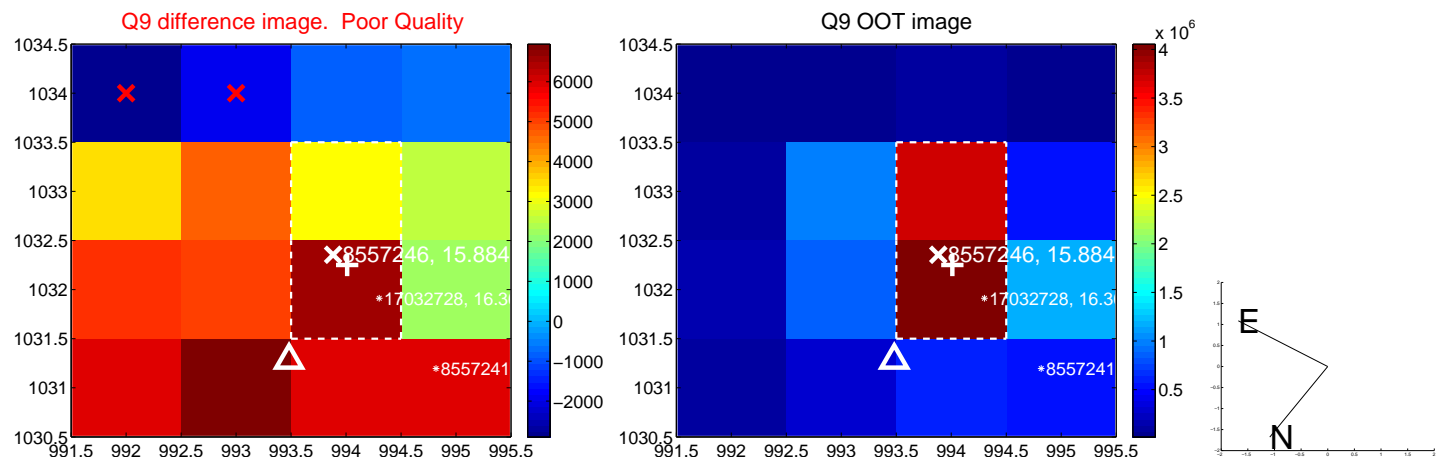
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



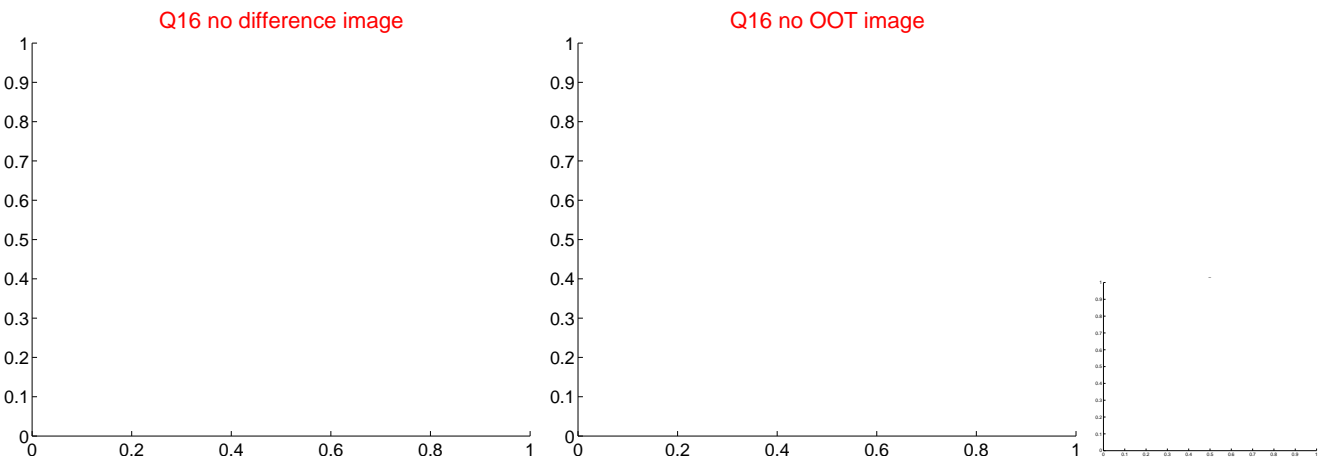
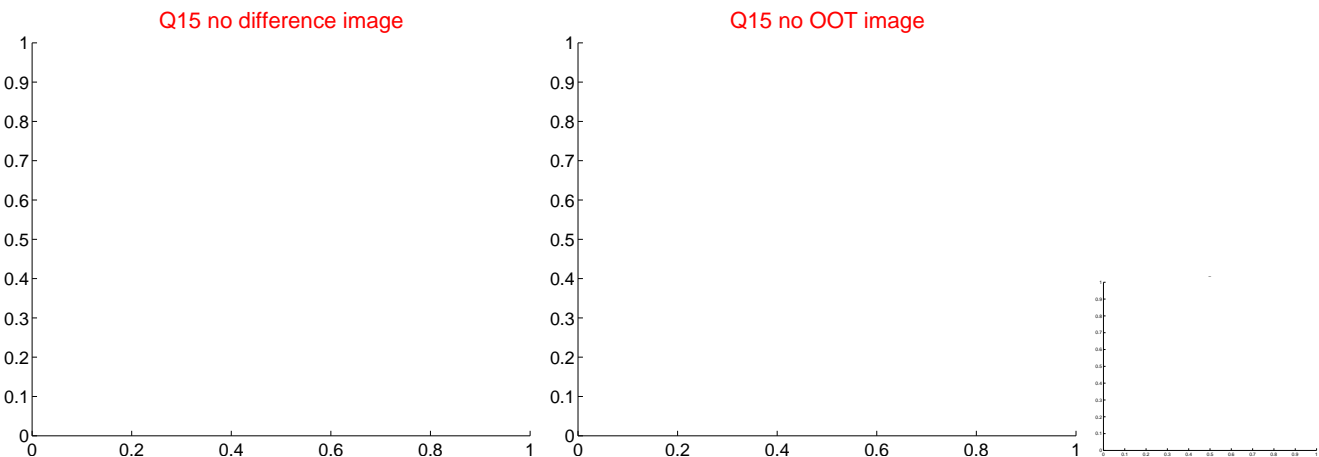
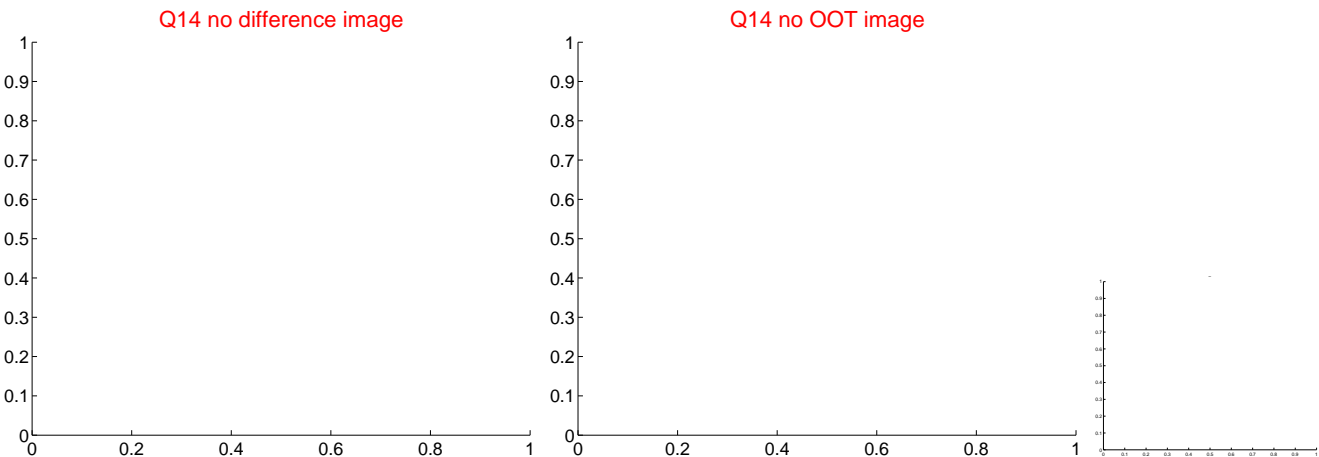
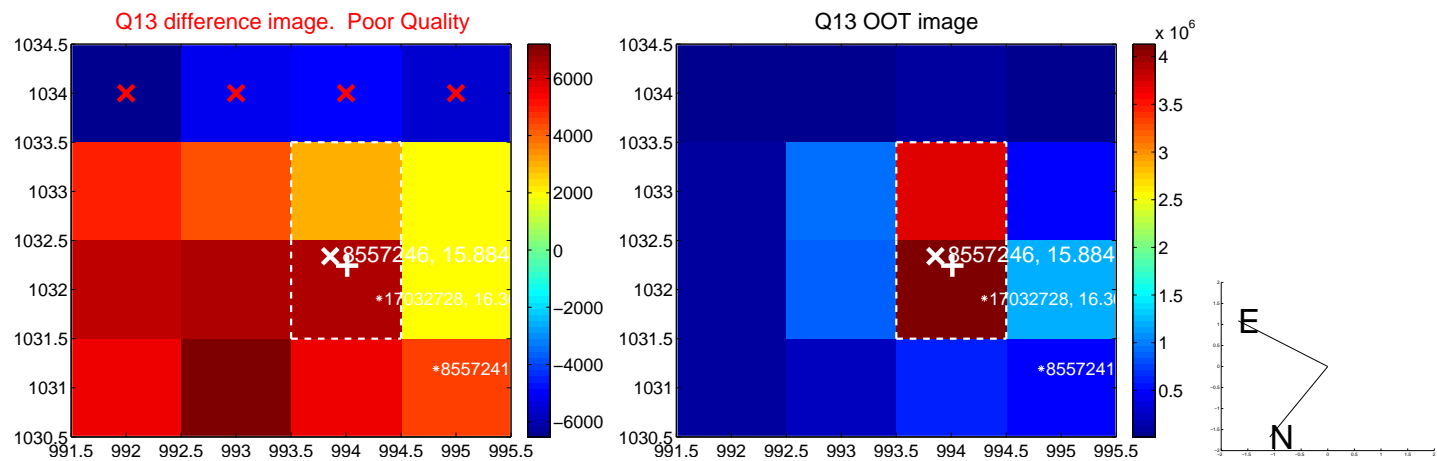
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



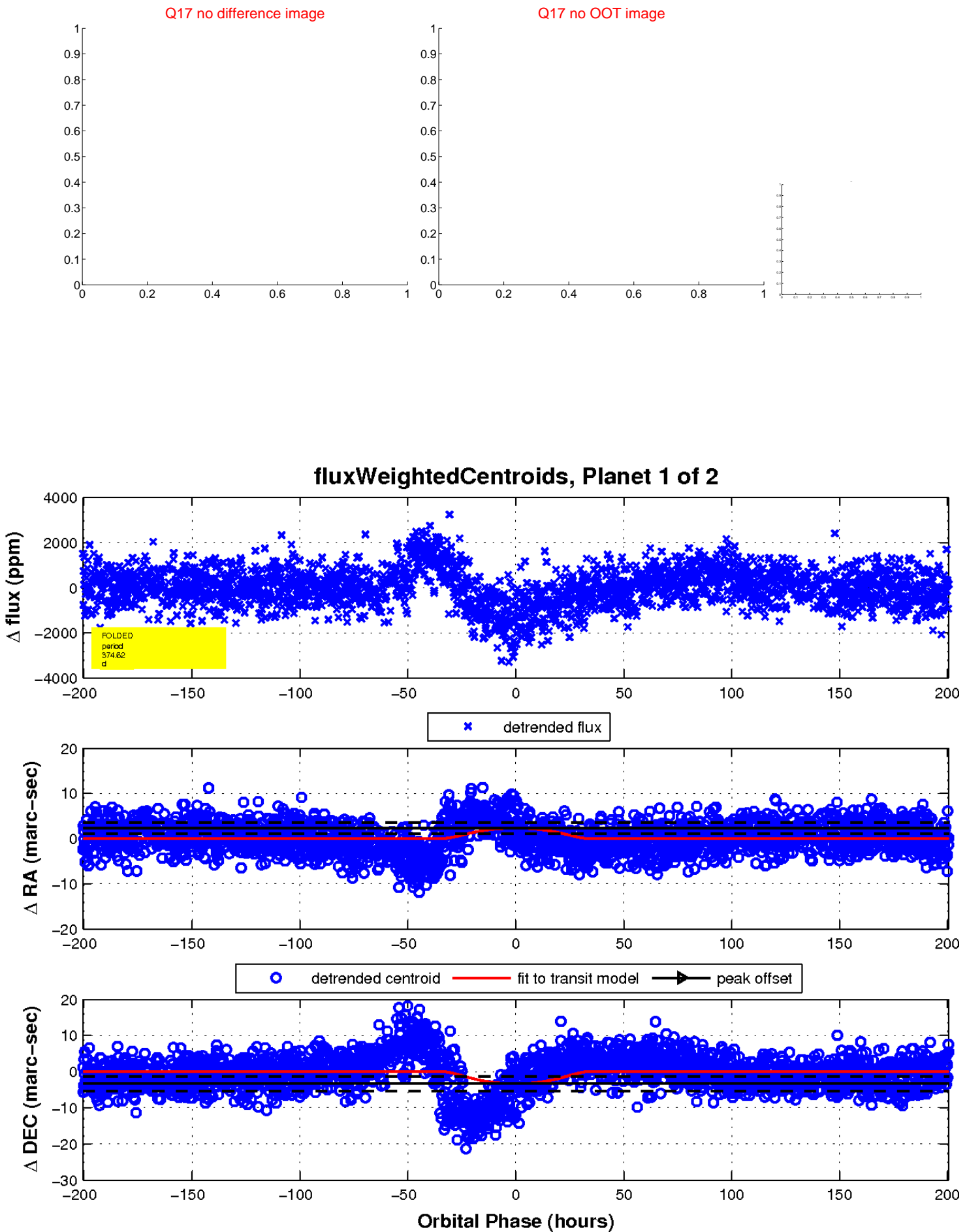
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

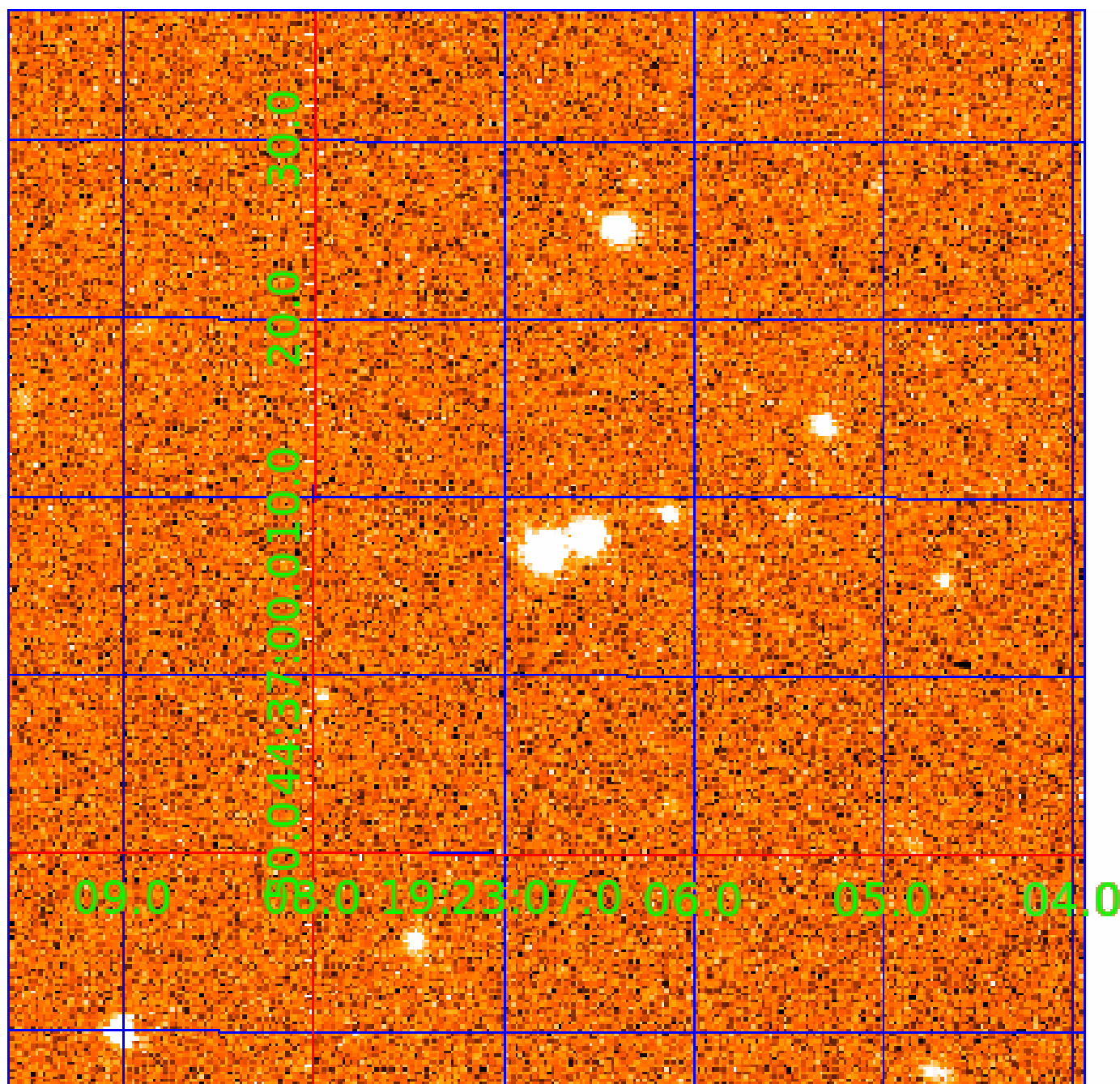


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008557246

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})
008557246-01	OBS	No	374.623803	132.157340	1504.4	66.855	10.6	16.8	0.96	6168	4.92	1.13
008557246-02	OBS	7895.01	246.865333	220.367622	428.5	9.658	7.9	6.4	0.96	6168	2.21	1.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008557246-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—EPHEM_MATCH
008557246-02	OBS	FP	0.04	1	0	0	0	LPP_DV—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.

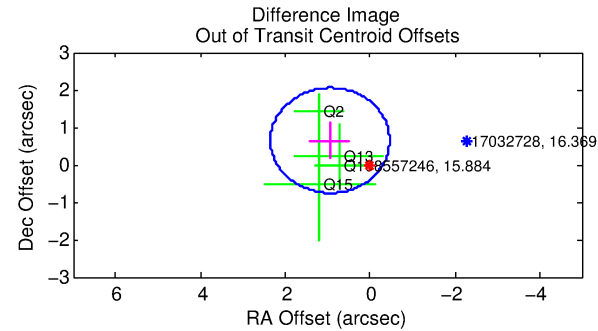
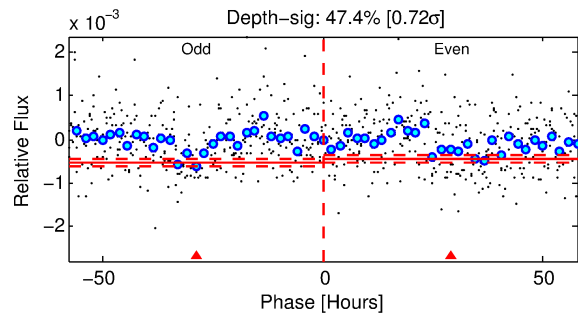
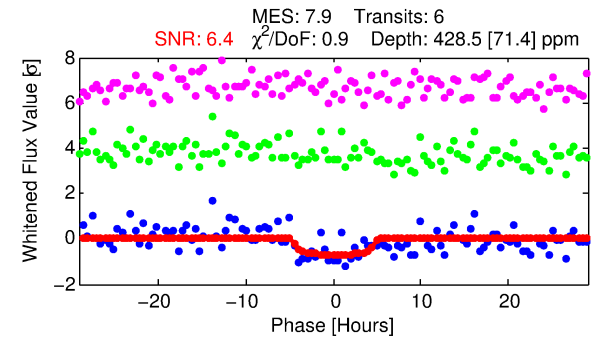
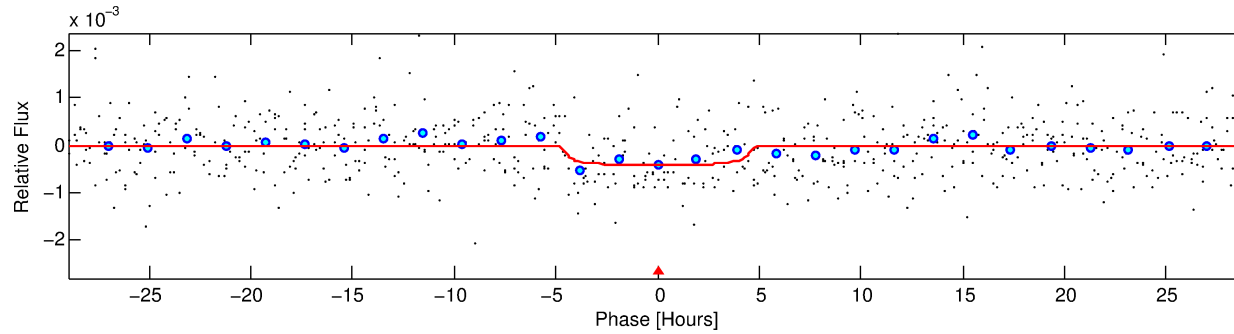
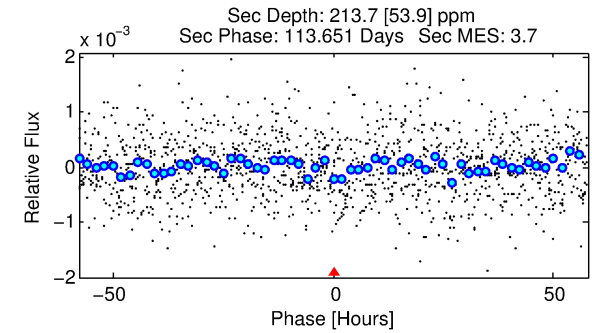
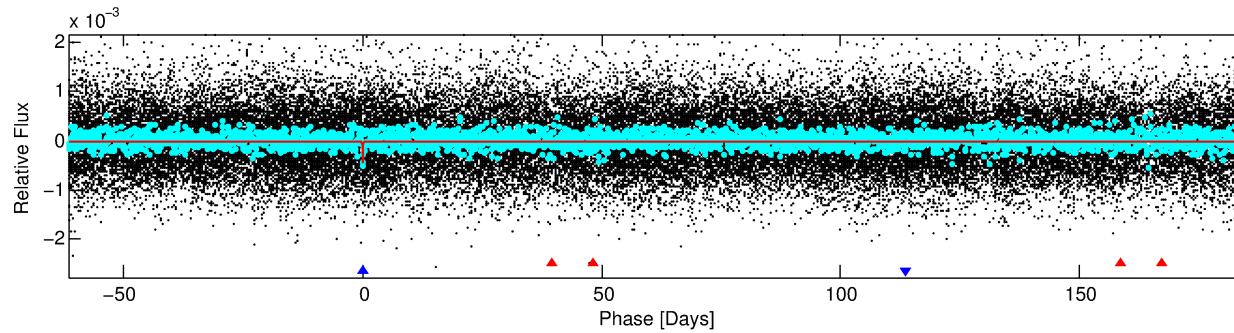
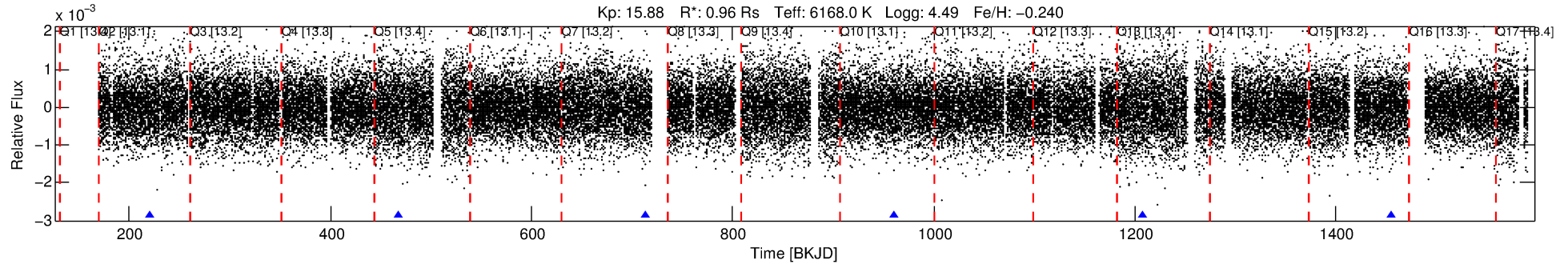
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008557246-02

No Significant Match Found

DV One-Page Summary

KIC: 8557246 Candidate: 2 of 2 Period: 246.865 d



DV Fit Results:

Period = 246.86533 [0.00836] d
Epoch = 220.3676 [0.0254] BKJD
Rp/R* = 0.0210 [0.0094]
a/R* = 121.92 [276.42]
b = 0.81 [0.98]
Seff = 1.97 [0.85]
Teq = 302 [33] K
Rp = 2.20 [1.23] Re
a = 0.7790 [0.2160] AU
Ag = 14674.34 [14867.91] [0.99σ]
Teffp = 5140 [1217] K [3.98σ]

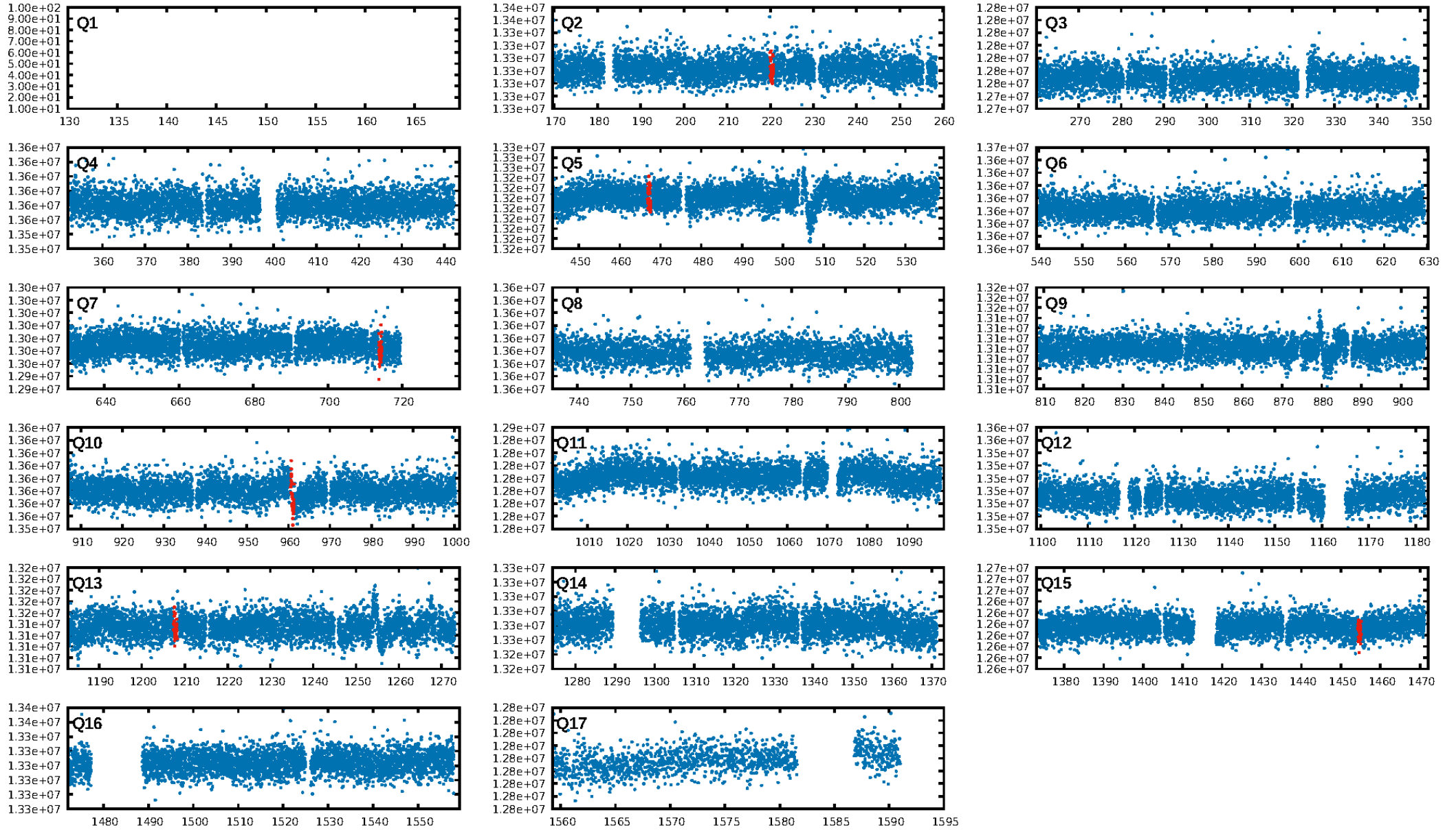
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [45.39σ]
ModelChiSquare2-sig: 1.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.16e-13
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -2.71
Centroid-sig: 28.6%
Centroid-so: 2.527 arcsec [1.20σ]
OotOffset-rm: 1.143 arcsec [2.44σ]
OotOffset-st: 2/1/0/1 [4]
KicOffset-rm: 0.708 arcsec [1.51σ]
KicOffset-st: 2/1/0/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [5/5]

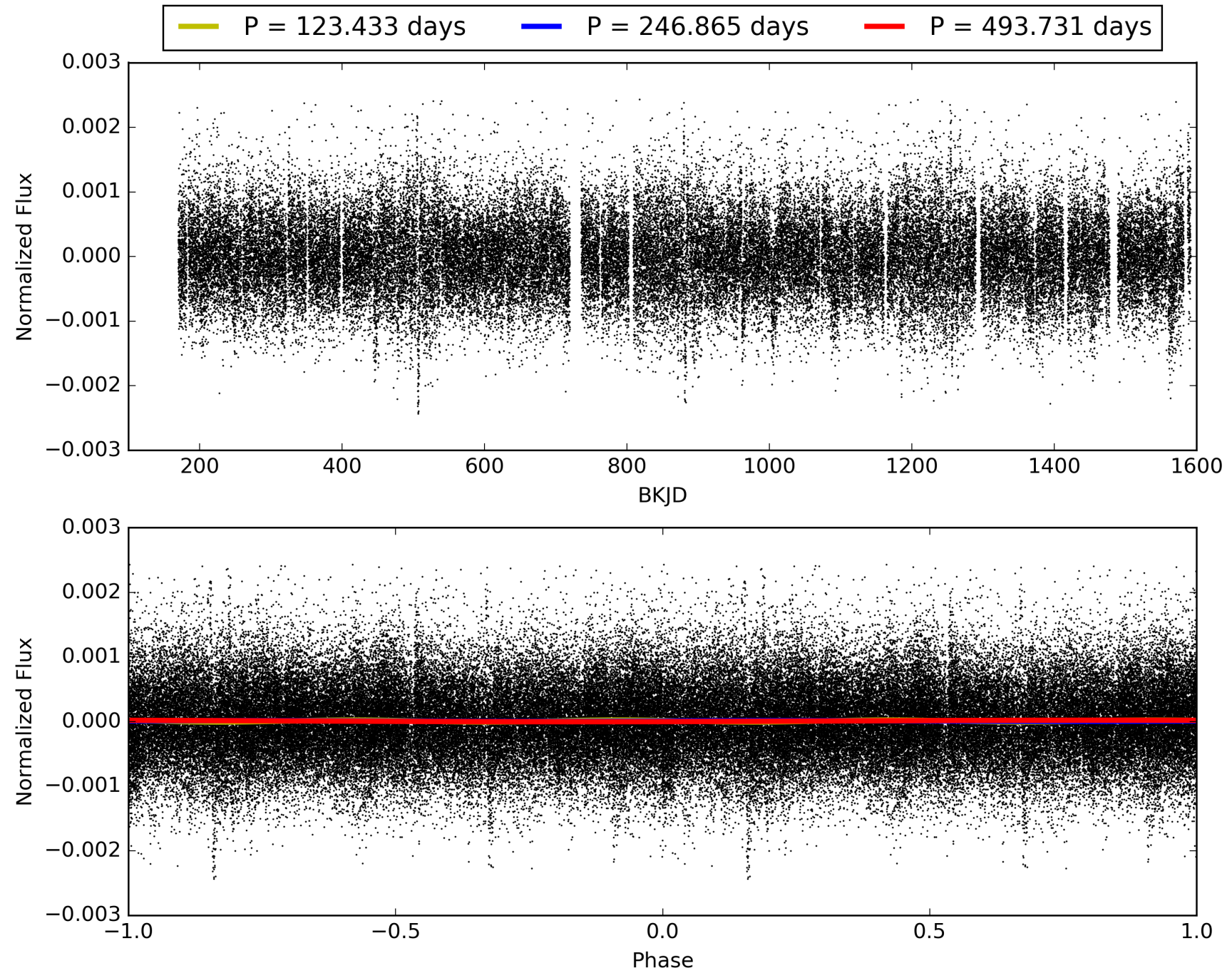
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:12:05 Z

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

TCE 008557246-02, PDC Light Curves

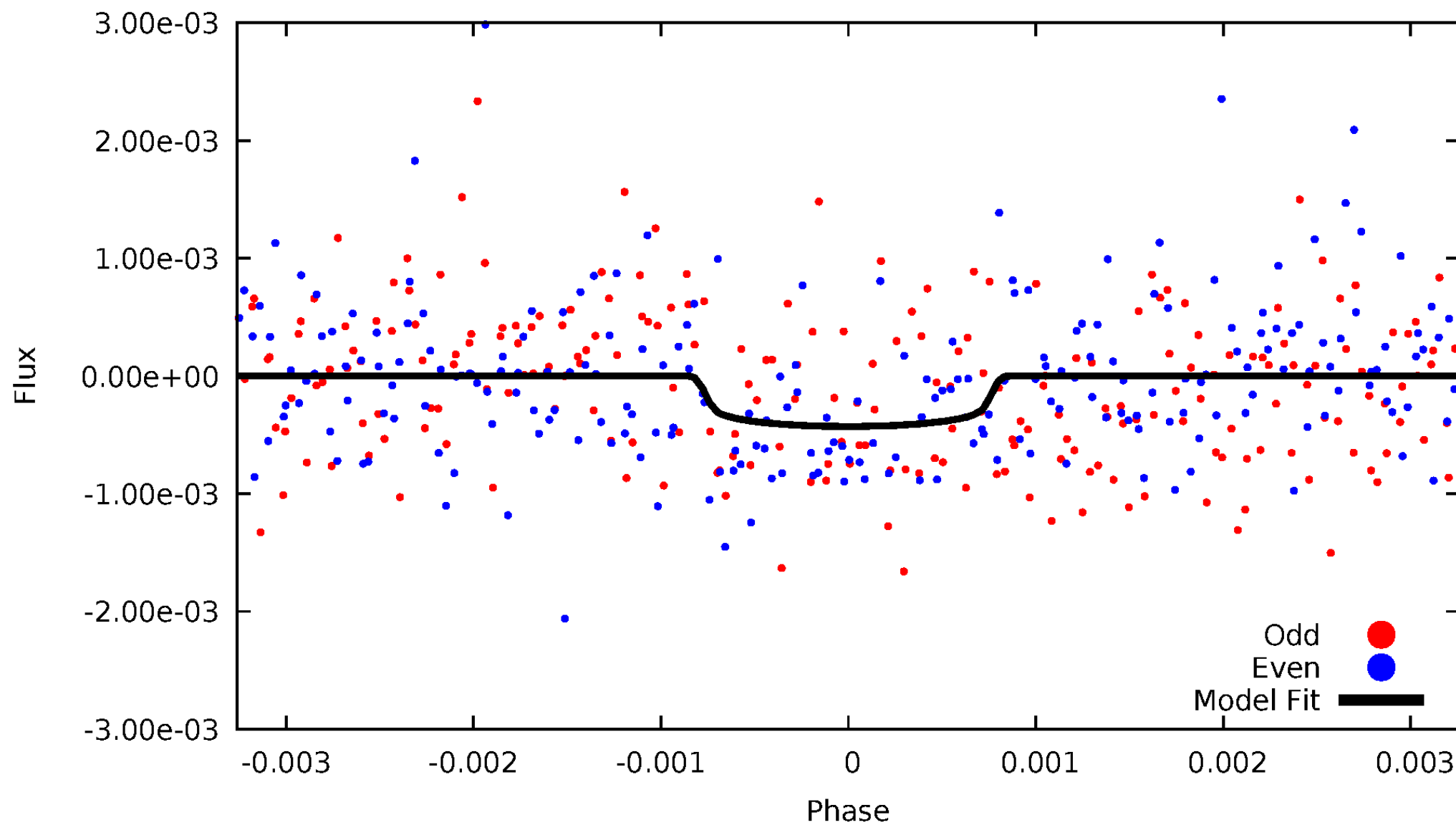


TCE 008557246-02



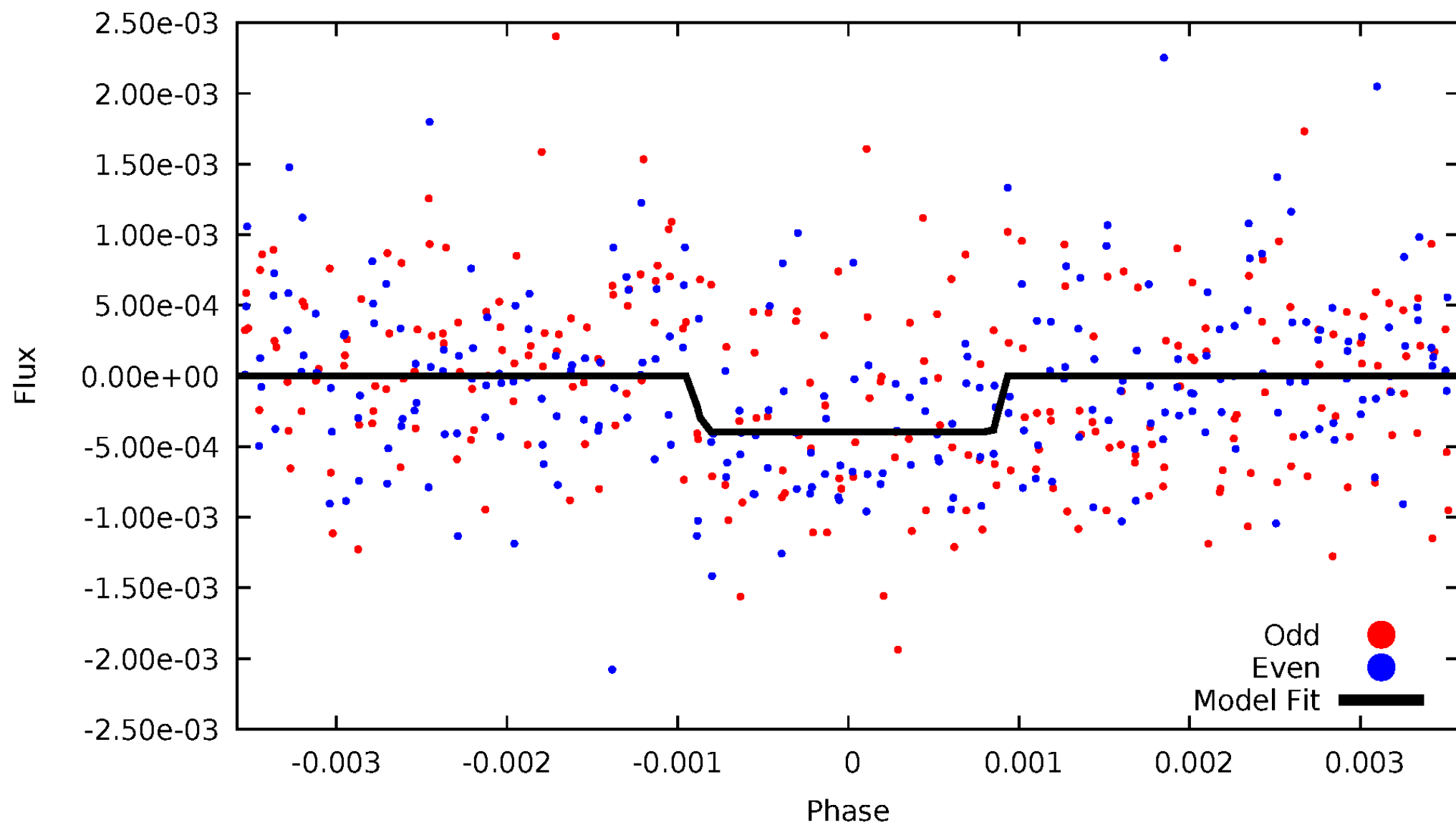
DV Odd/Even

TCE 008557246-02



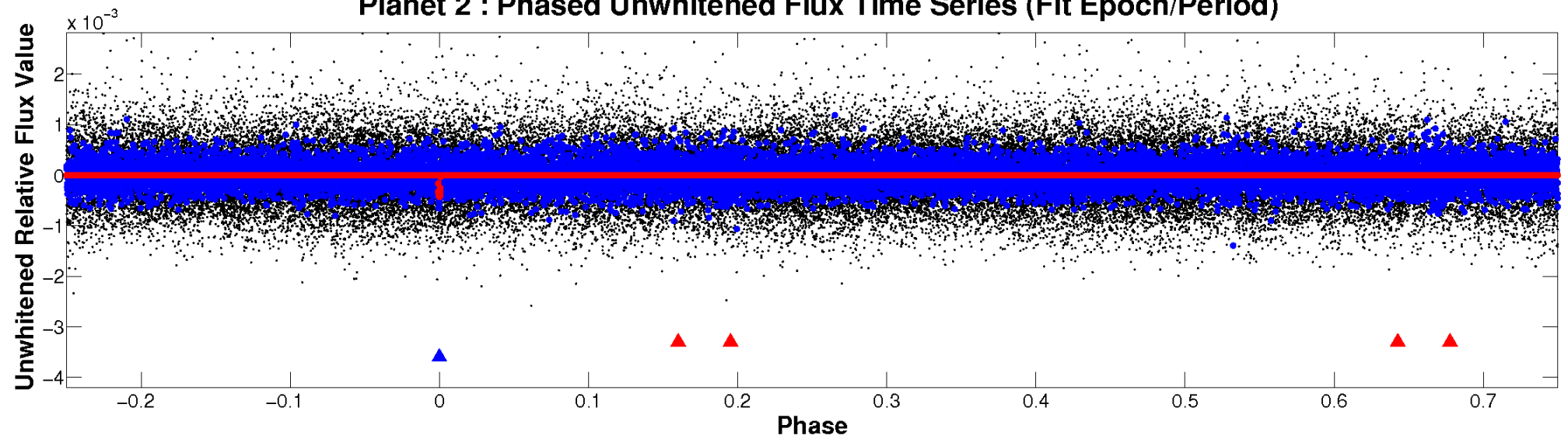
ALT Odd/Even

TCE 008557246-02

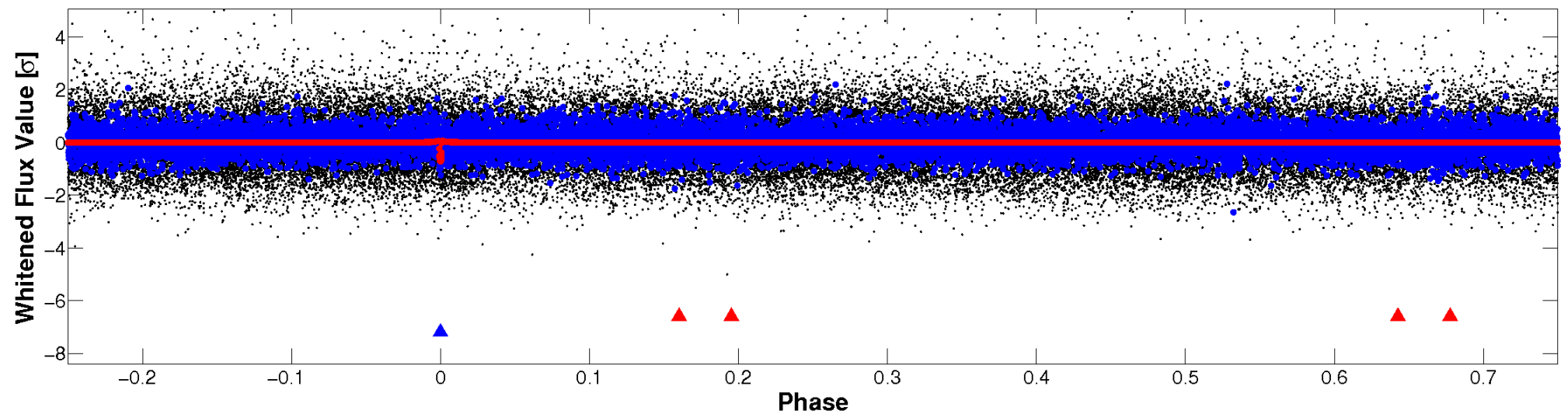


Non-Whitened Vs. Whitened Light Curve

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

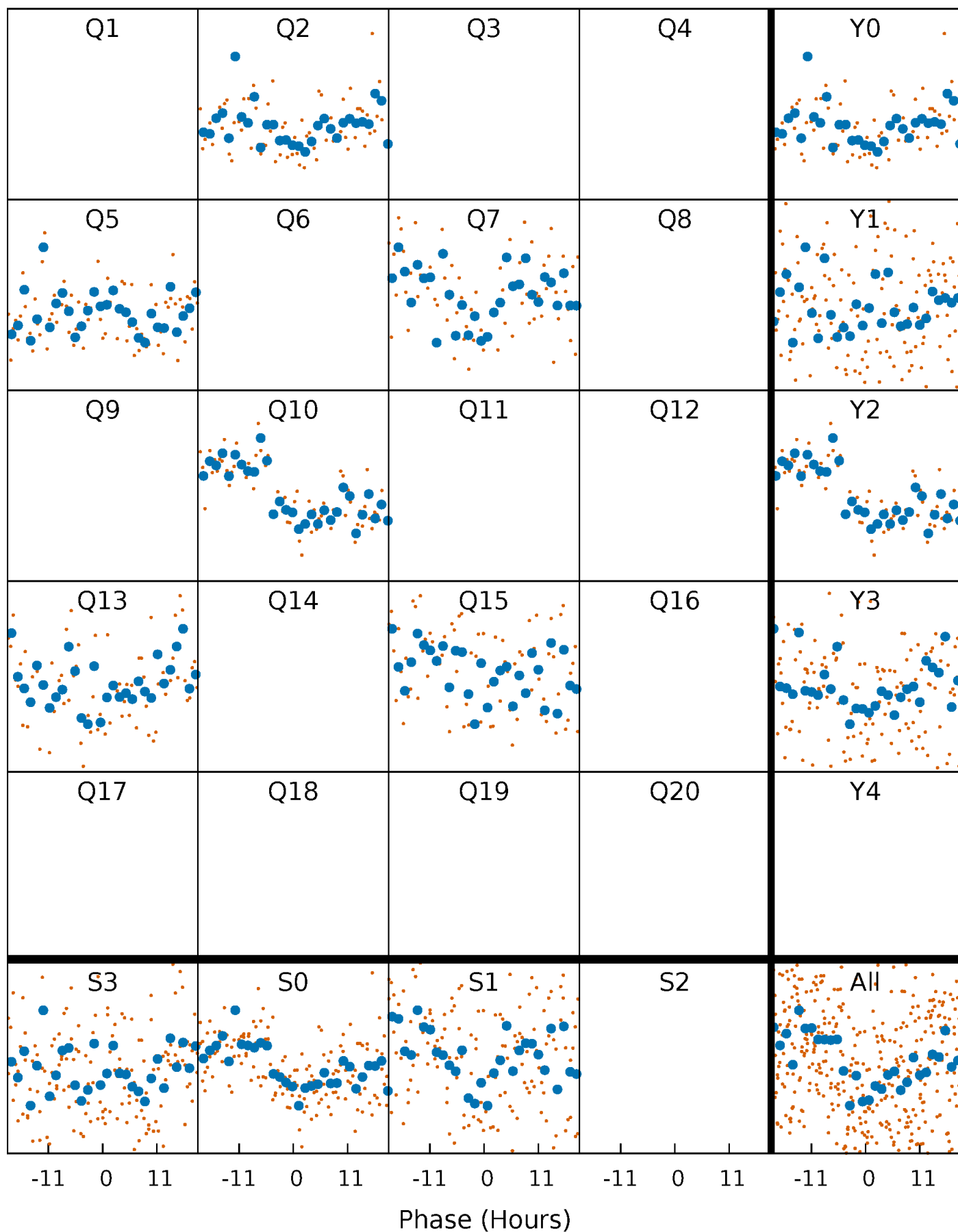


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



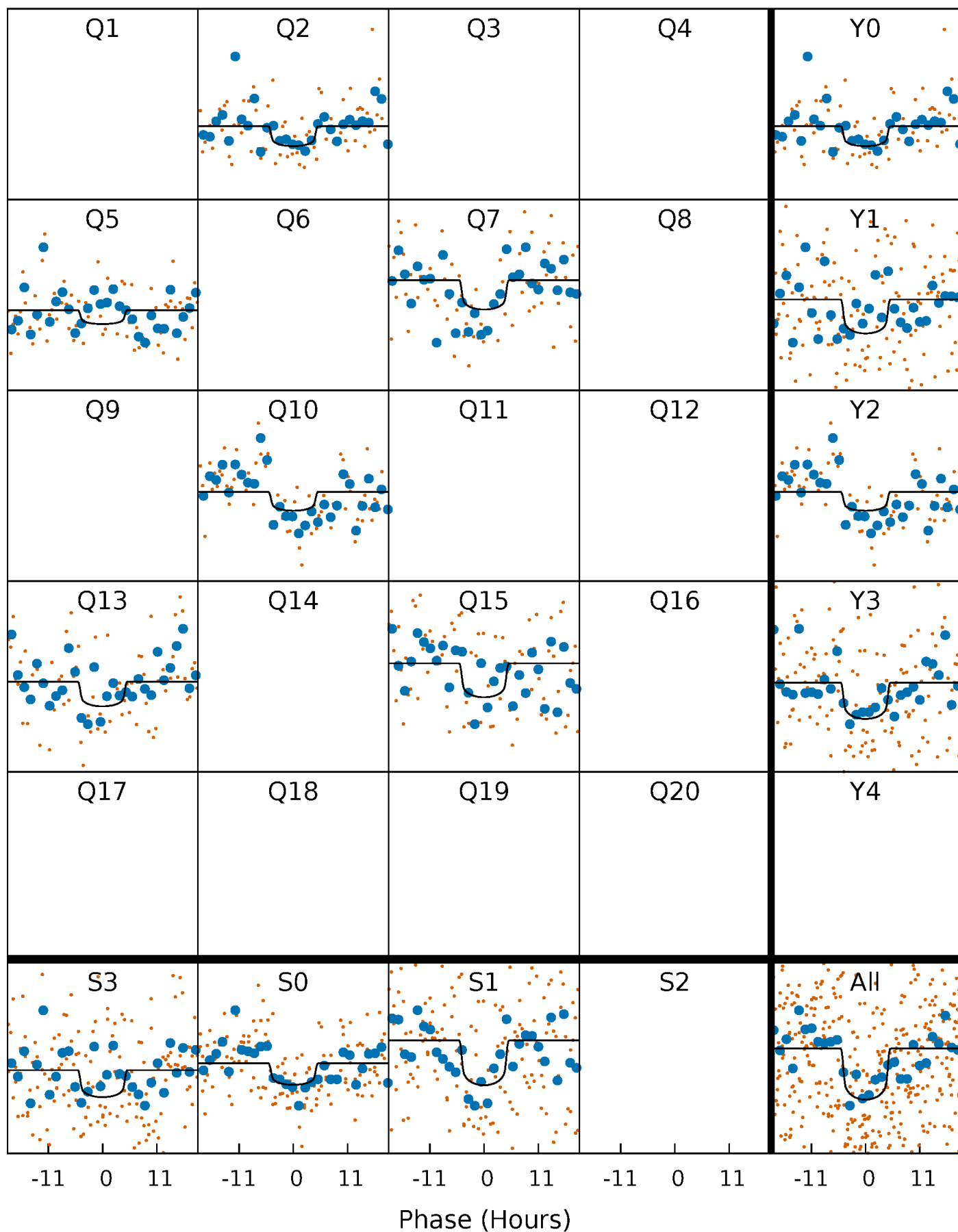
PDC Quarter-Phased Transit Curves

TCE 008557246-02 $P=246.865333$ Days $T_0=220.367622$ (BKJD)



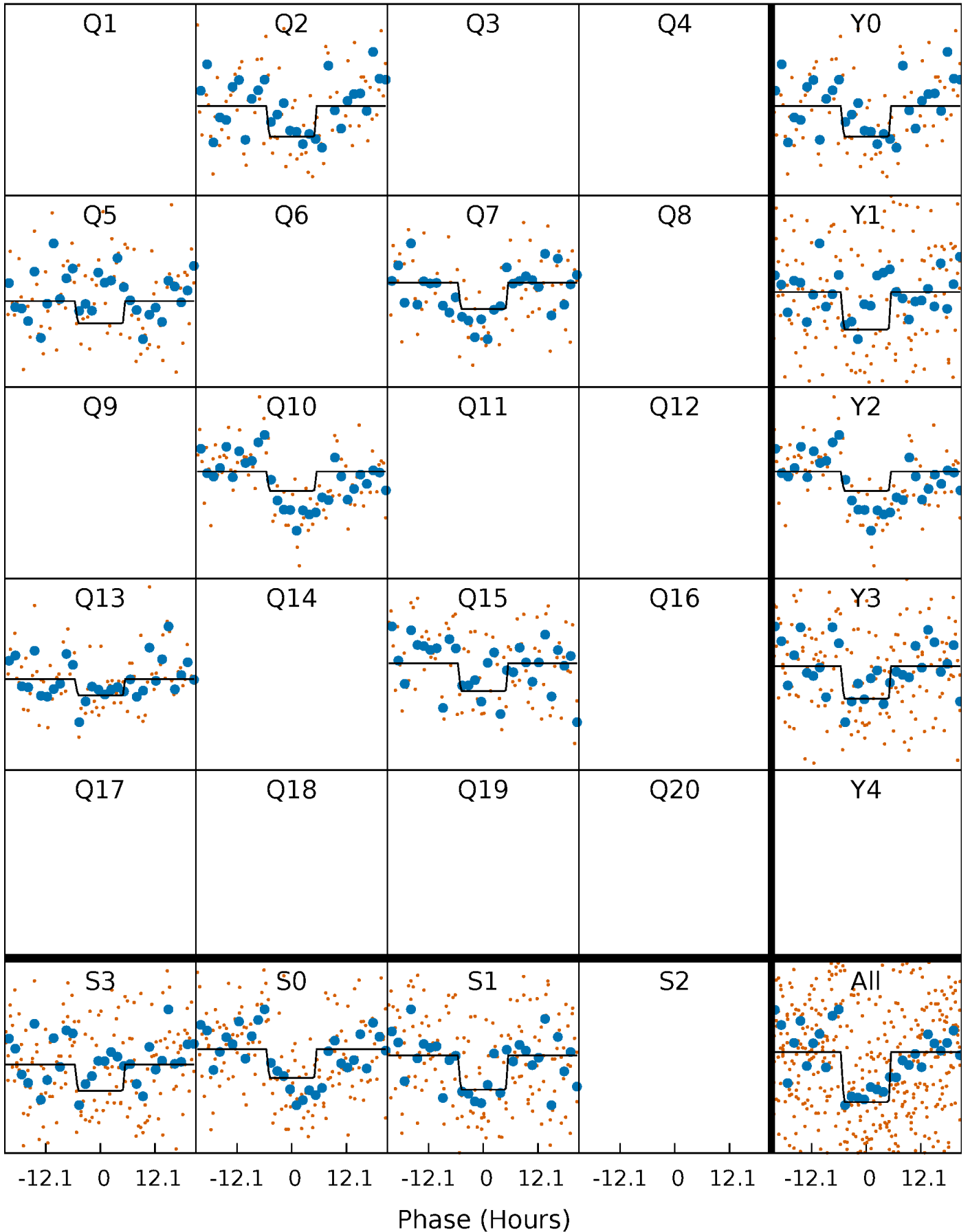
DV Quarter-Phased Transit Curves

TCE 008557246-02 $P=246.865333$ Days $T_0=220.367622$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

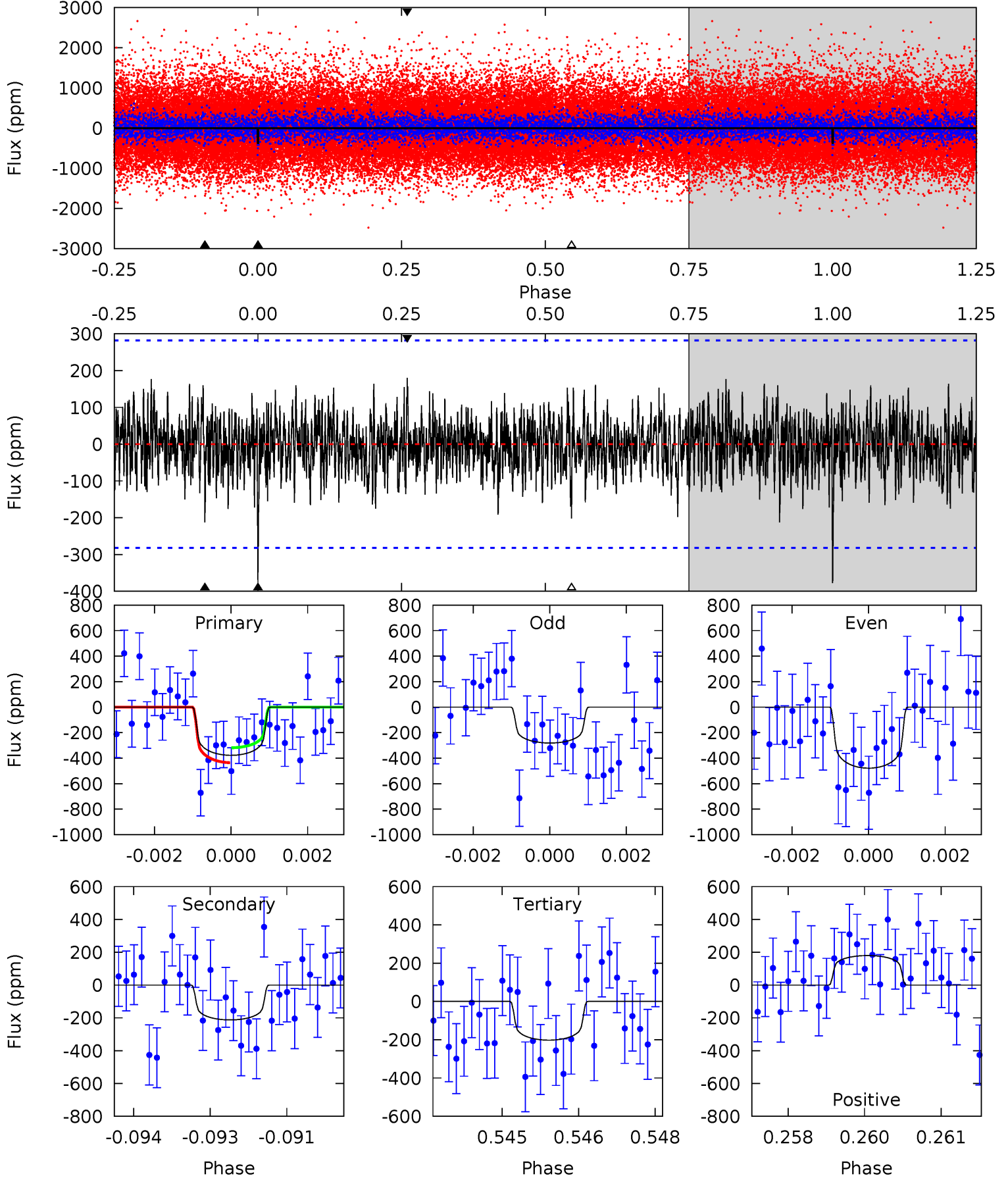
TCE 008557246-02 $P=246.898706$ Days $T_0=220.269022$ (BKJD)



DV Model-Shift Uniqueness Test

008557246-02, $P = 246.865333$ Days, $E = 220.367622$ Days

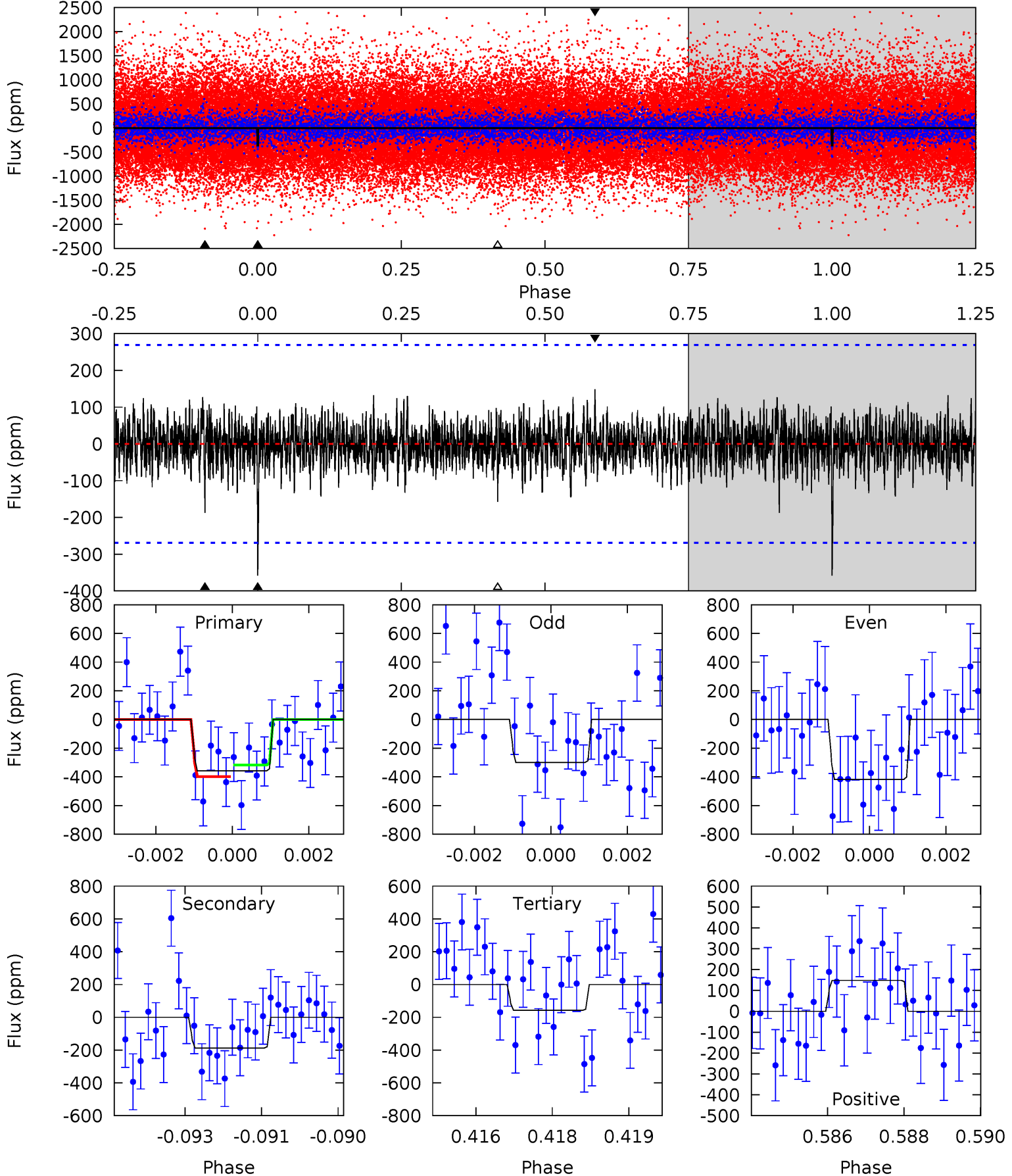
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.18	4.04	3.84	3.42	5.36	3.14	1.11	3.34	3.76	0.20	0.62	1.88	0.92	0.32	1.11



Alt Model-Shift Uniqueness Test

008557246-02, P = 246.898706 Days, E = 220.269022 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.12	3.72	3.13	2.95	5.35	3.13	0.85	3.99	4.17	0.59	0.78	1.18	1.04	0.29	0.79



Stellar Parameters For KIC 008557246

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6168^{+219}_{-263}	$4.488^{+0.054}_{-0.216}$	$-0.240^{+0.250}_{-0.350}$	$0.960^{+0.320}_{-0.107}$	$1.034^{+0.144}_{-0.144}$	$1.644^{+0.482}_{-0.929}$
	+4%/-4%	+1%/-5%	+104%/-146%	+33%/-11%	+14%/-14%	+29%/-57%
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 008557246-02 / KOI 7895.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-213 ± 53	$2.28^{+1.20}_{-1.00}$	431^{+30}_{-23}	5165^{+1771}_{-807}	12744^{+30157}_{-7351}
Alt.	-187 ± 50	$2.17^{+1.04}_{-1.06}$	431^{+33}_{-24}	5118^{+2123}_{-784}	12332^{+37931}_{-7028}

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 $A_{obs} \gg 1.0$

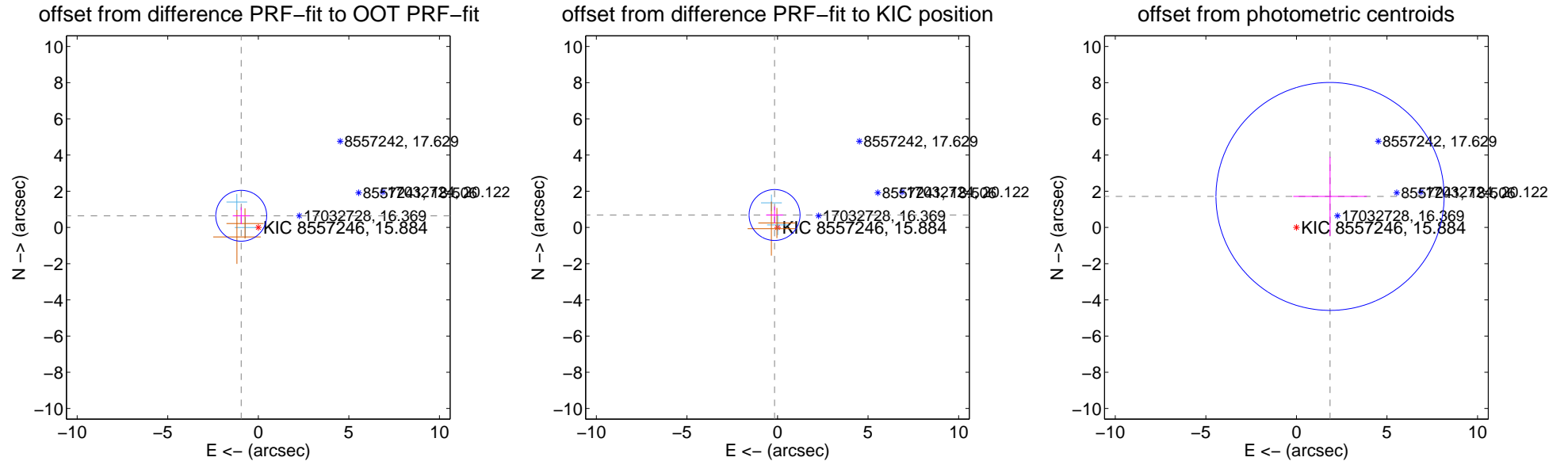
DV Centroid Data

Supplemental centroid analysis for 008557246-02. Kepler magnitude: 15.88. Transit SNR 6.36

There are 2 quarters with good PRF difference image offsets

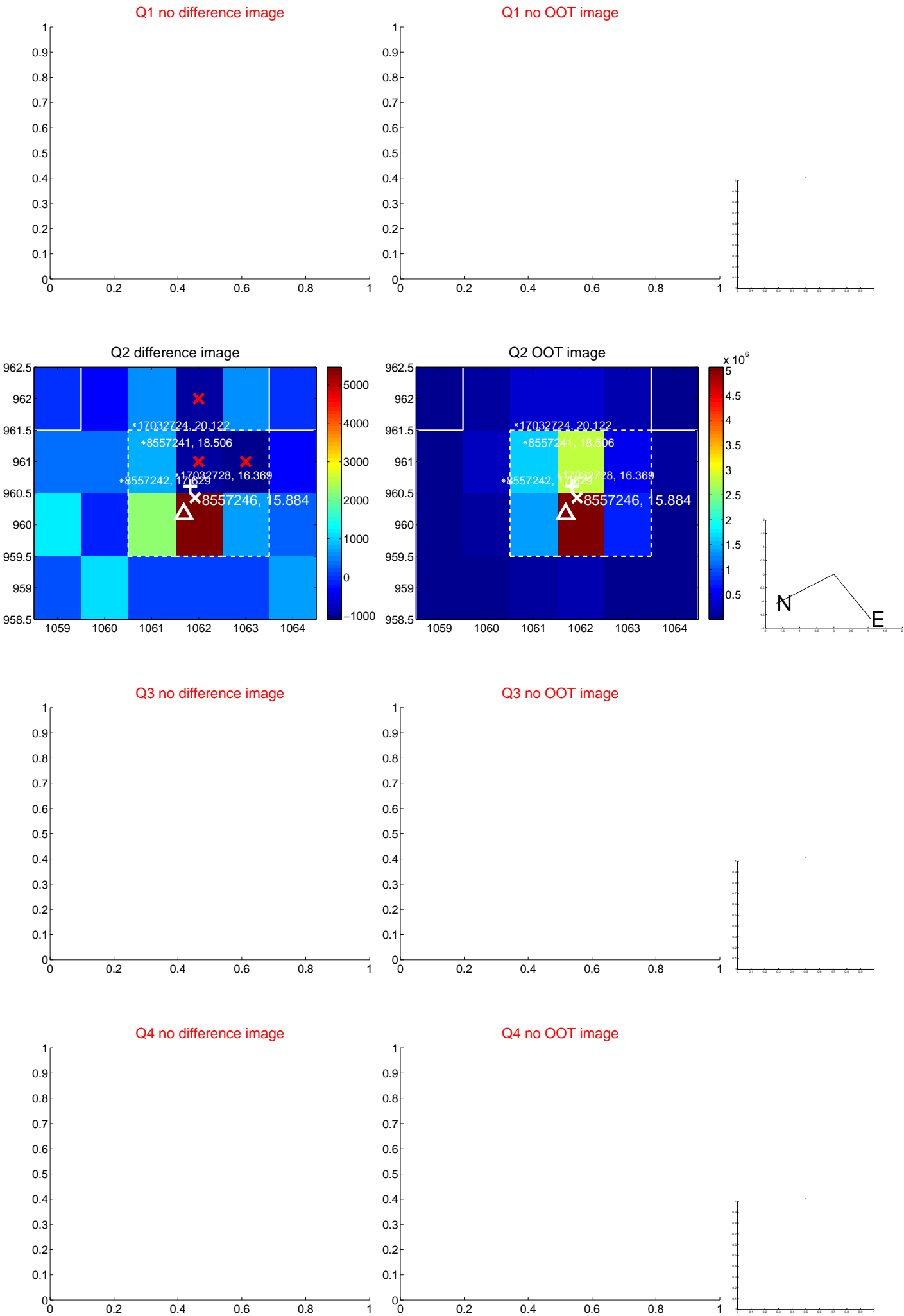
The direct PRF centroid is offset from the target star catalog position by about 0.95 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.143 ± 0.468	2.44	0.942 ± 0.468	0.646 ± 0.469
PRF-fit source offset from KIC position	0.708 ± 0.469	1.51	0.162 ± 0.468	0.689 ± 0.469
photometric centroid source offset	2.53 ± 2.10	1.20	-1.86 ± 2.03	1.72 ± 2.18

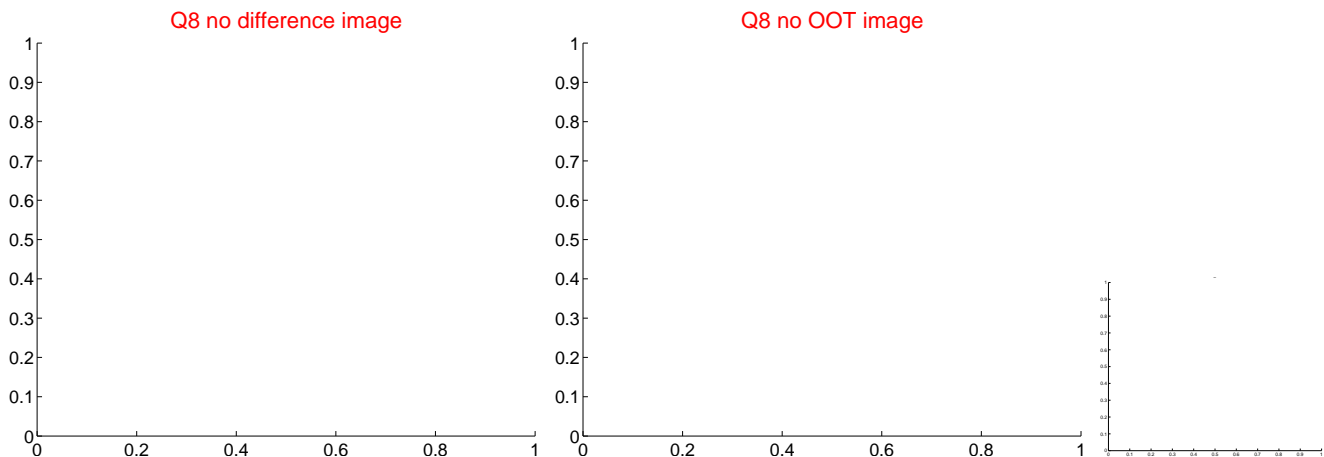
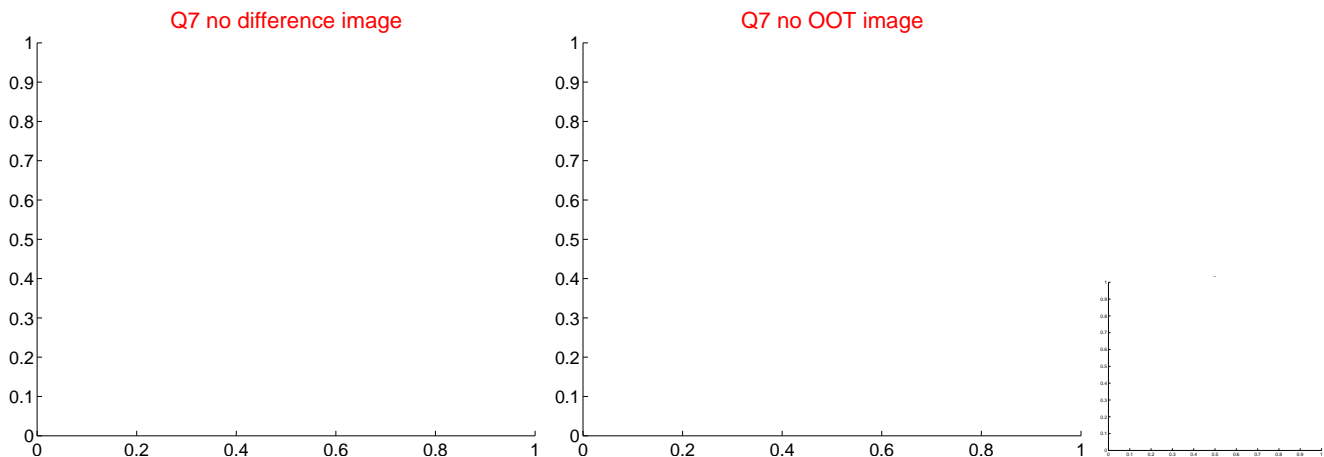
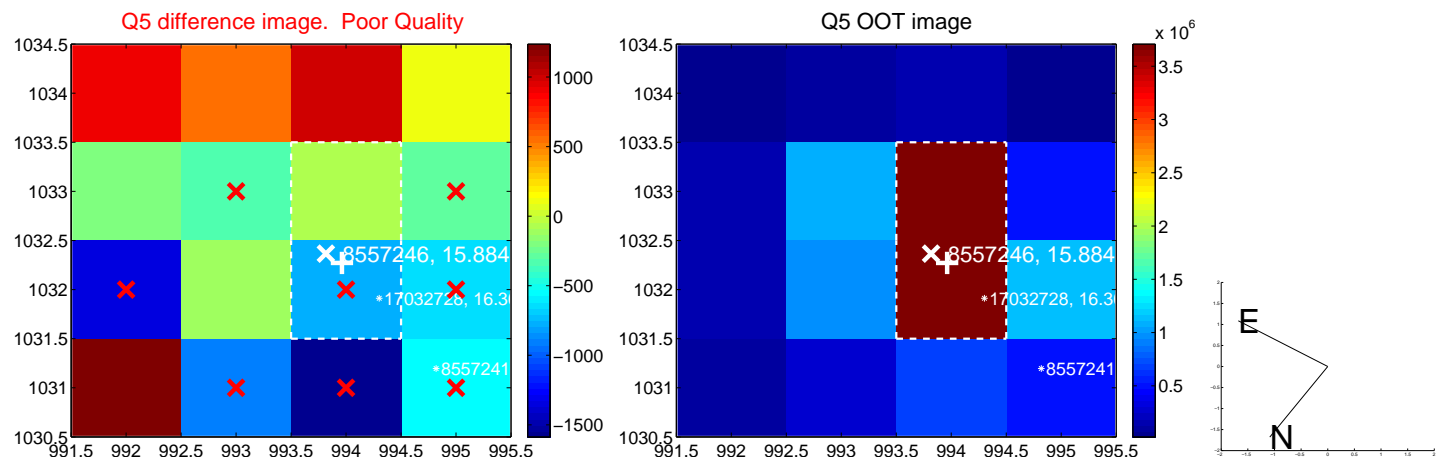


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

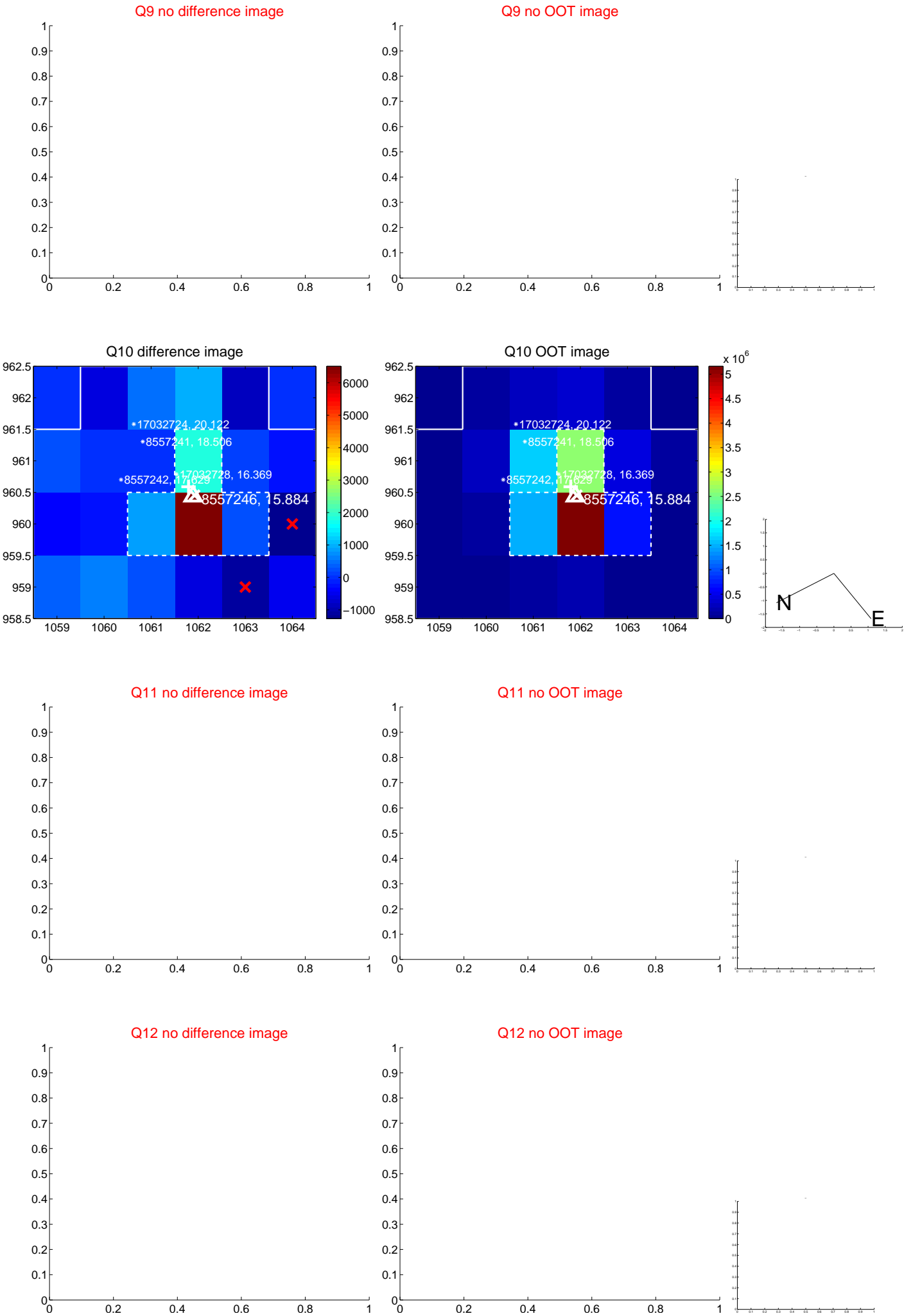
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



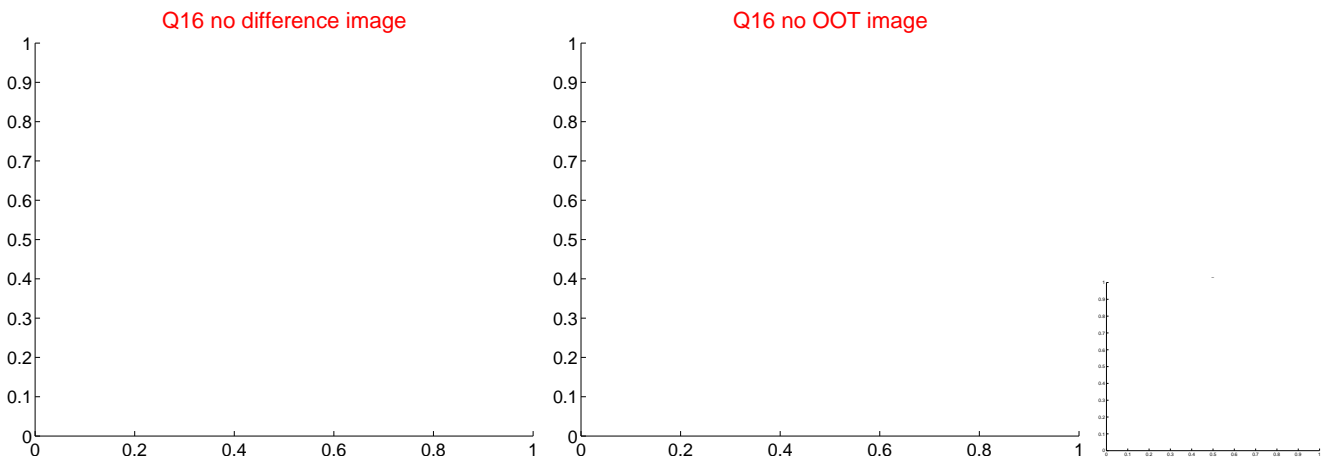
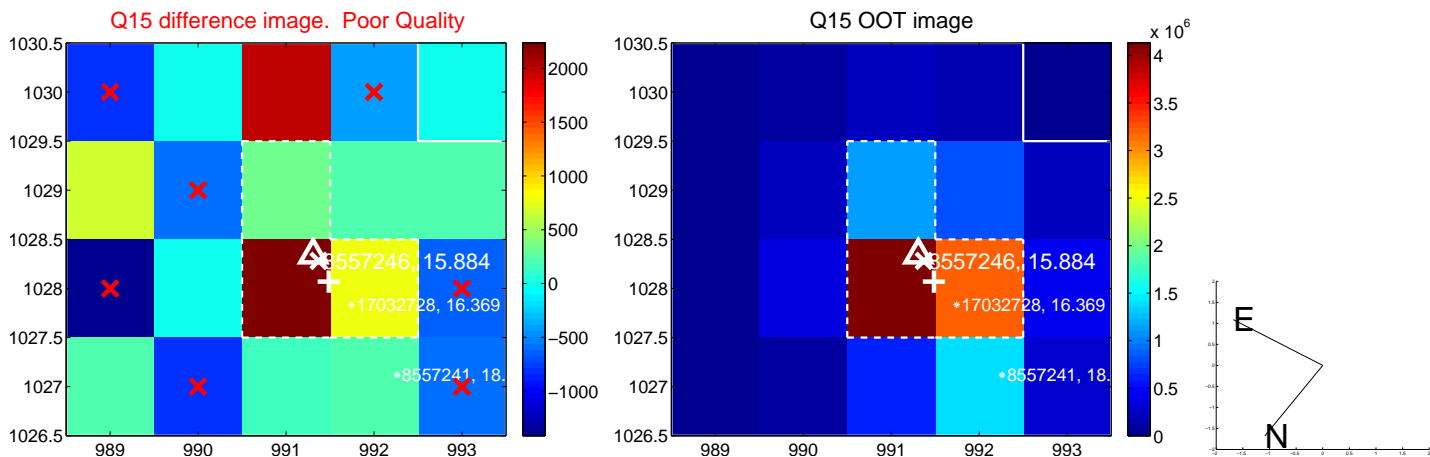
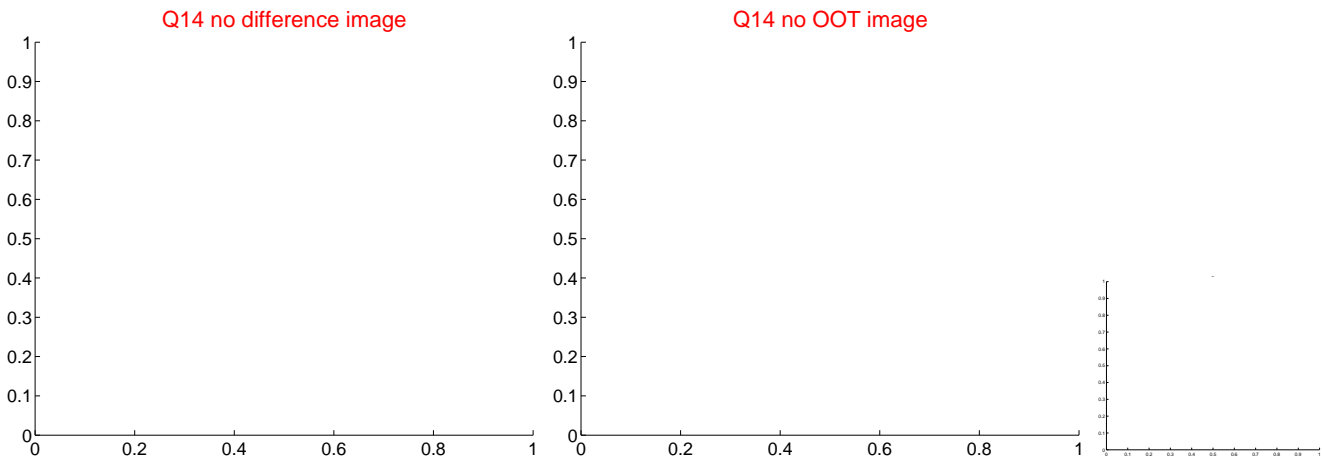
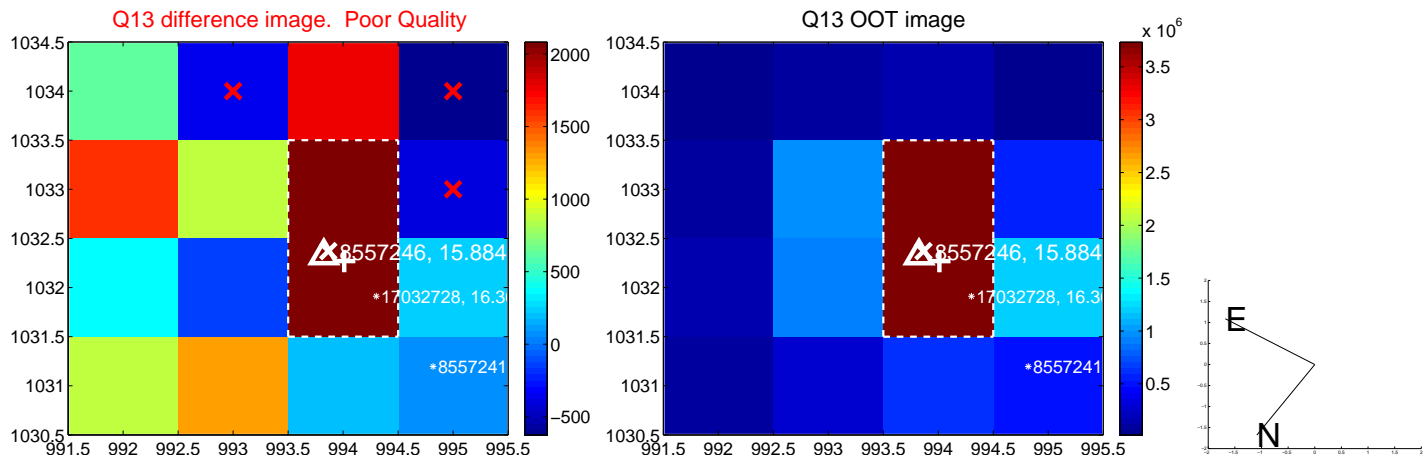
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



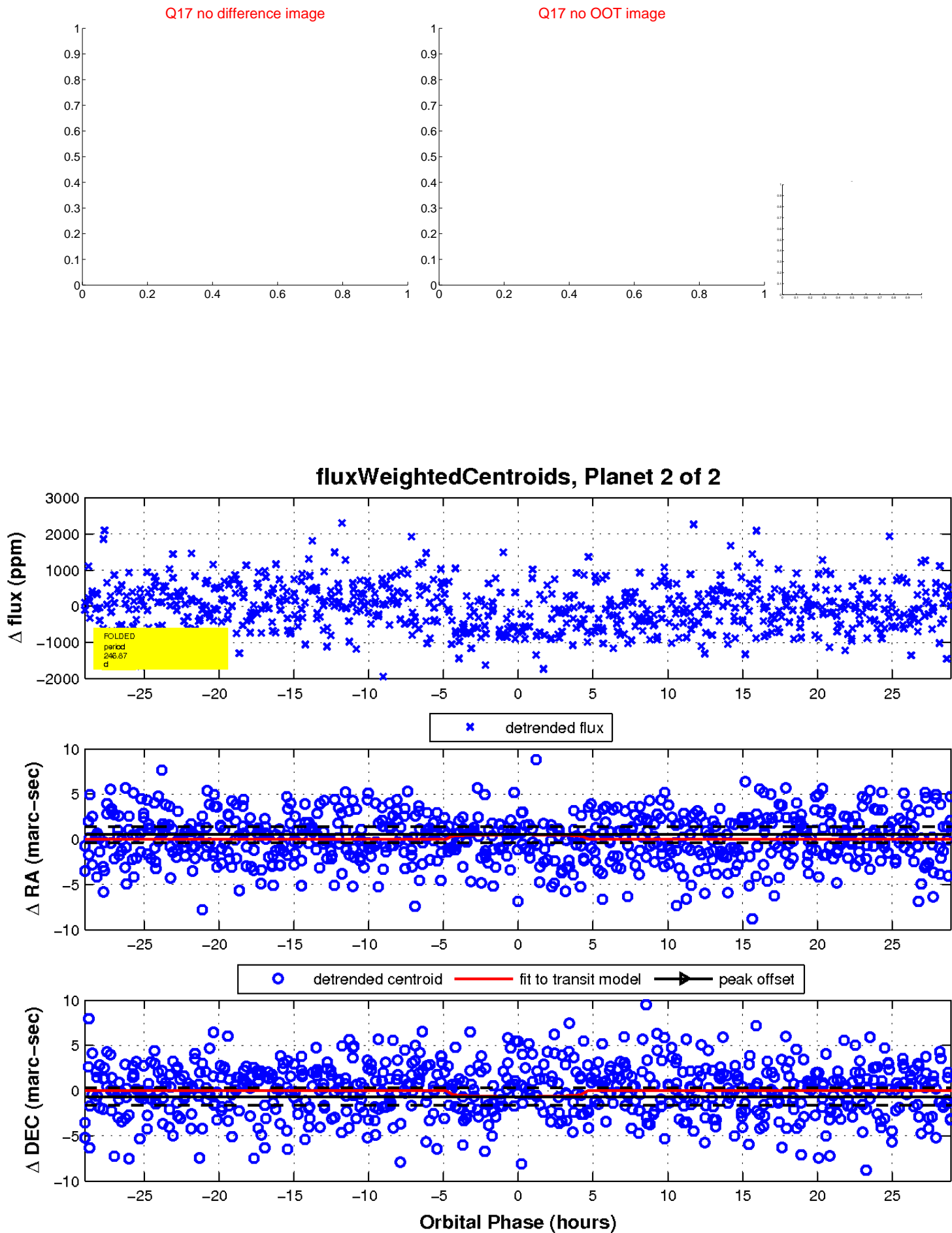
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

