

KIC 008482582

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})
008482582-01	OBS	No	520.033249	452.810598	678.7	16.758	9.0	8.4	0.95	5857	2.53	0.60
008482582-02	OBS	No	424.419656	550.283632	827.8	21.505	10.1	10.9	0.95	5857	2.73	0.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008482582-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008482582-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—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.

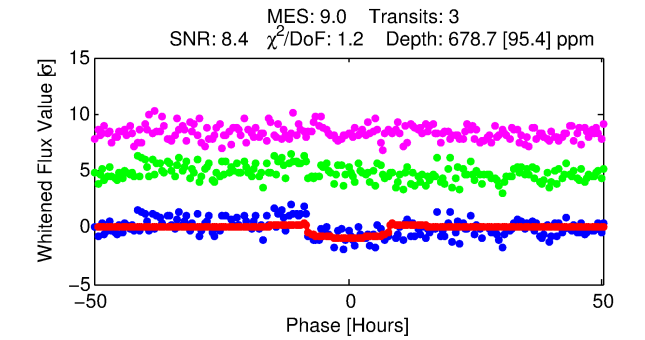
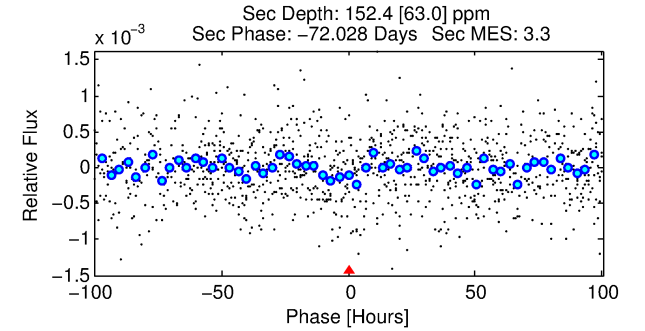
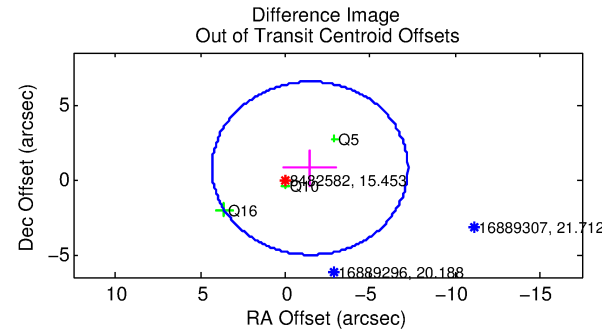
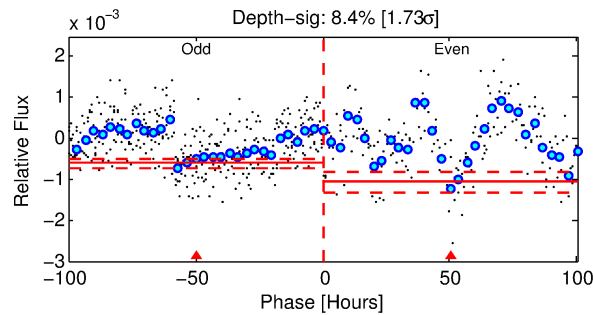
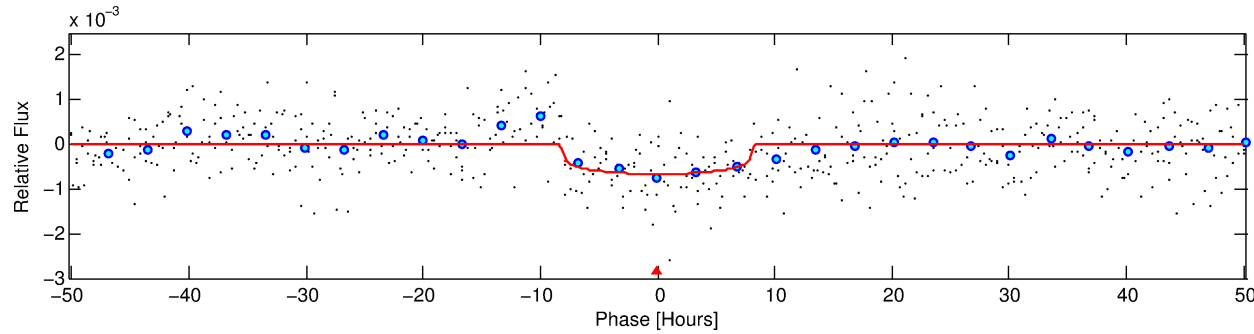
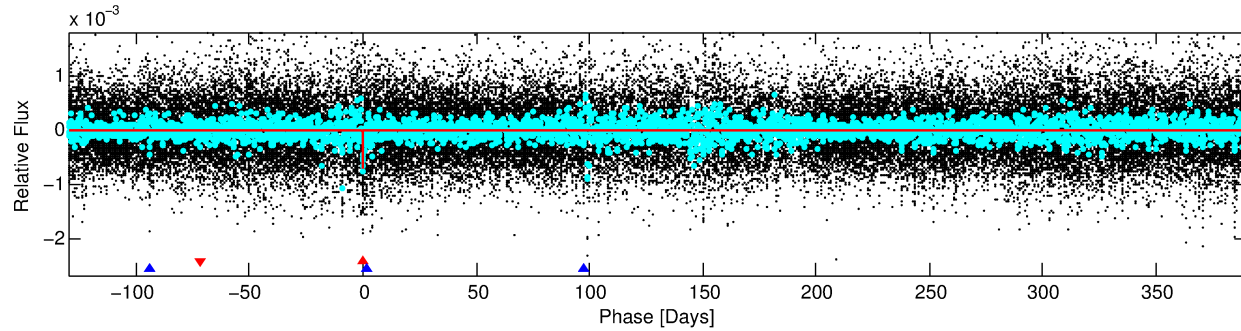
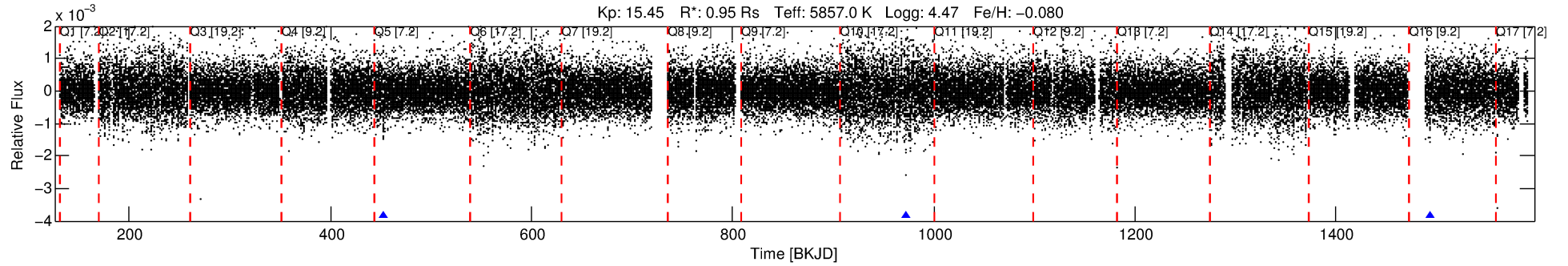
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008482582-01

No Significant Match Found

DV One-Page Summary

KIC: 8482582 Candidate: 1 of 2 Period: 520.033 d



DV Fit Results:

Period = 520.03325 [0.01802] d
Epoch = 452.8106 [0.0217] BKJD
Rp/R* = 0.0244 [0.0119]
a/R* = 214.06 [464.73]
b = 0.48 [3.46]
Seff = 0.60 [0.24]
Teq = 225 [22] K
Rp = 2.53 [1.44] Re
a = 1.2576 [0.3168] AU
Ag = 20752.45 [23277.80] [0.89 σ]
Teffp = 4168 [1112] K [3.54 σ]

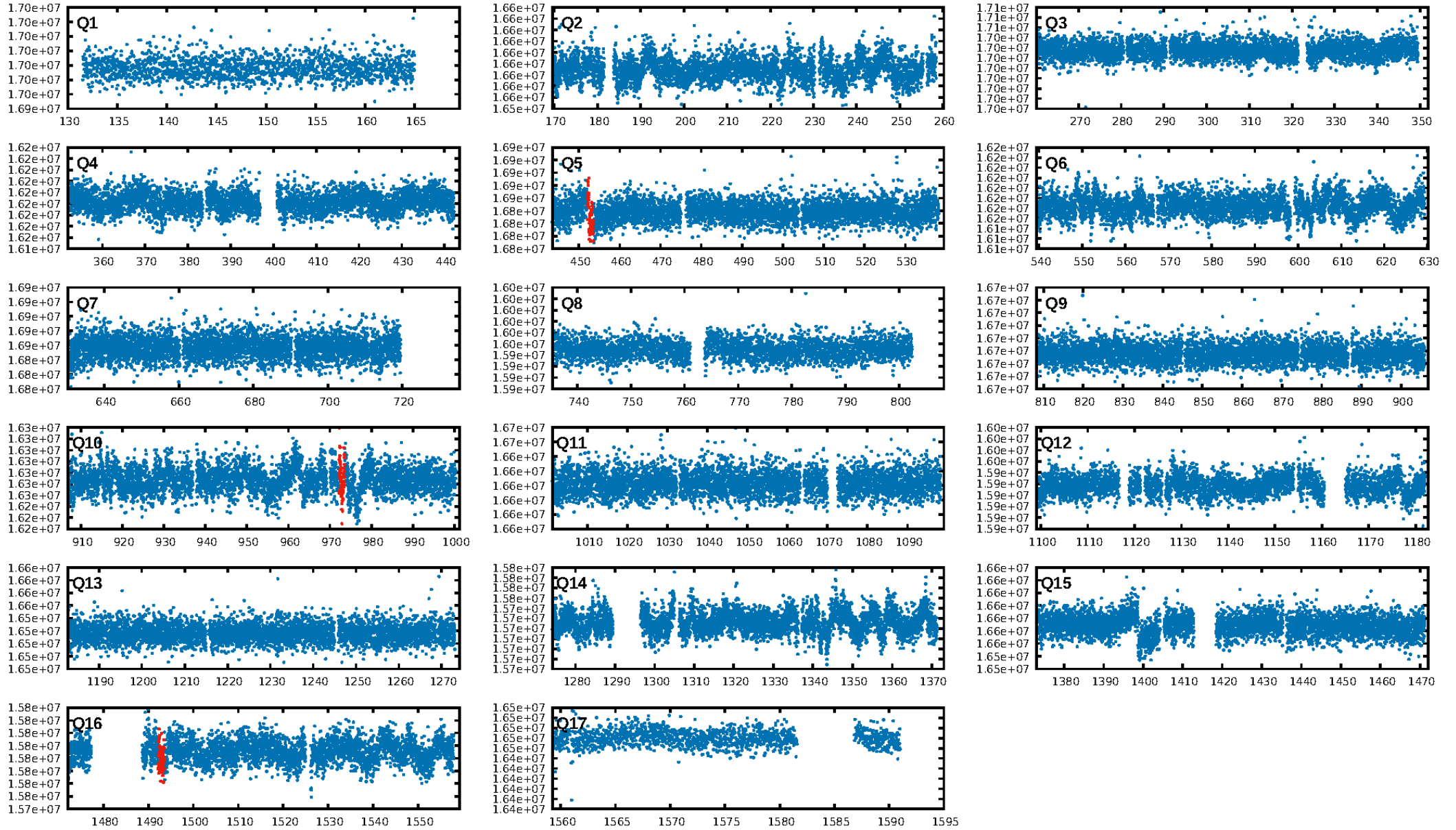
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [84.17 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 38.6%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 3.11e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 105.8
Centroid-sig: 5.5%
Centroid-so: 3.384 arcsec [1.72 σ]
OotOffset-rm: 1.651 arcsec [0.86 σ]
KicOffset-rm: 1.651 arcsec [0.82 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

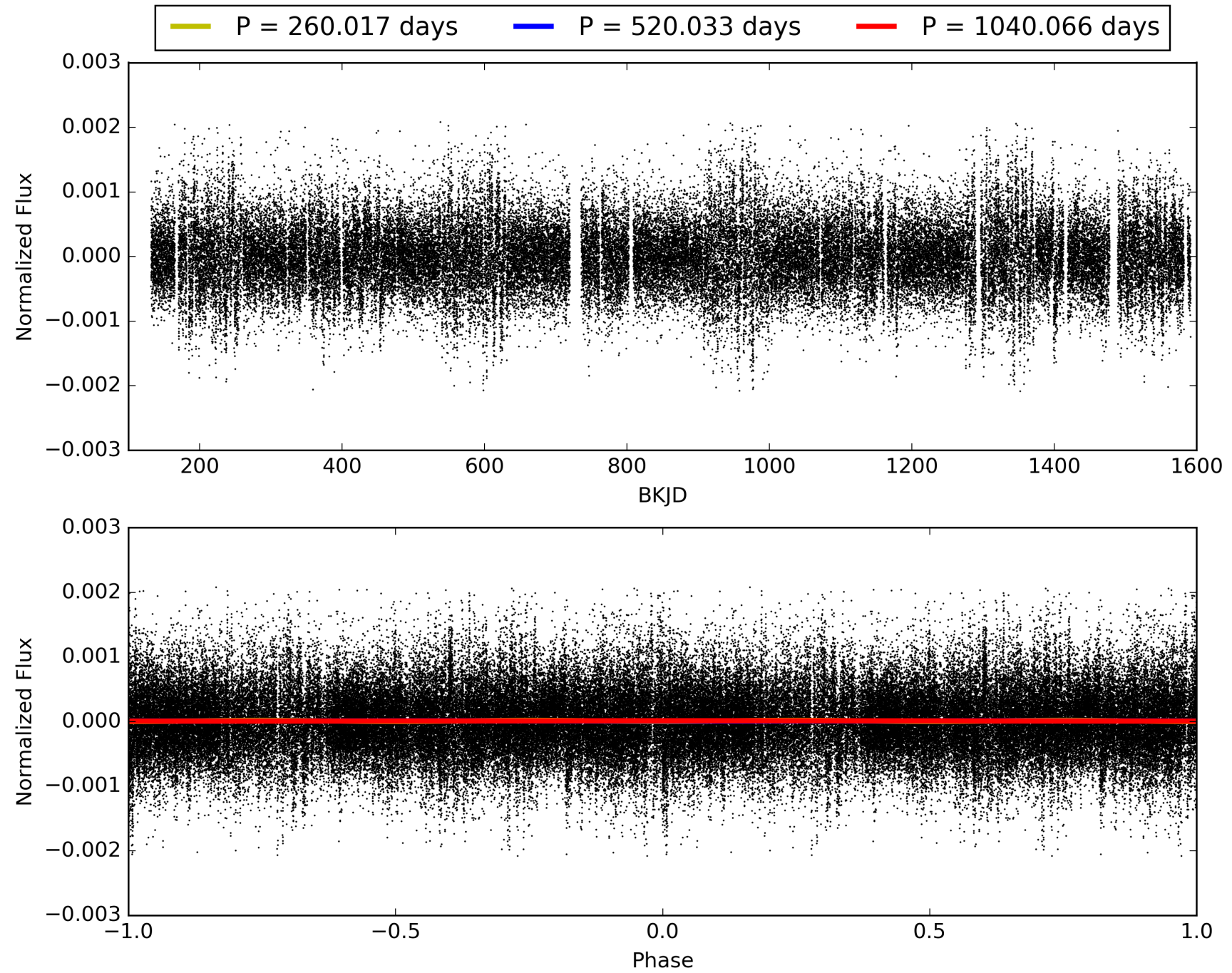
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:10:46 Z

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

TCE 008482582-01, PDC Light Curves

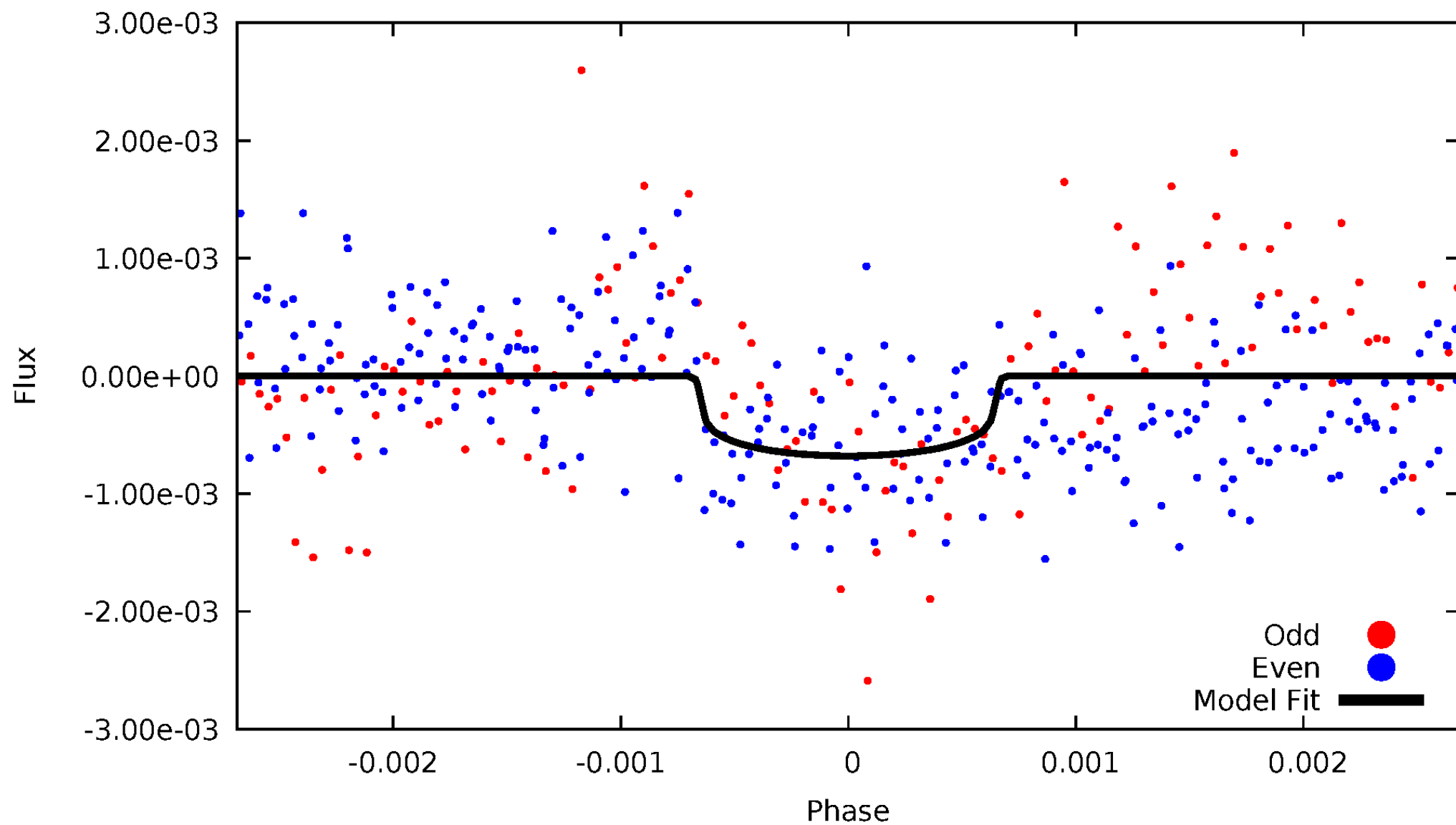


TCE 008482582-01



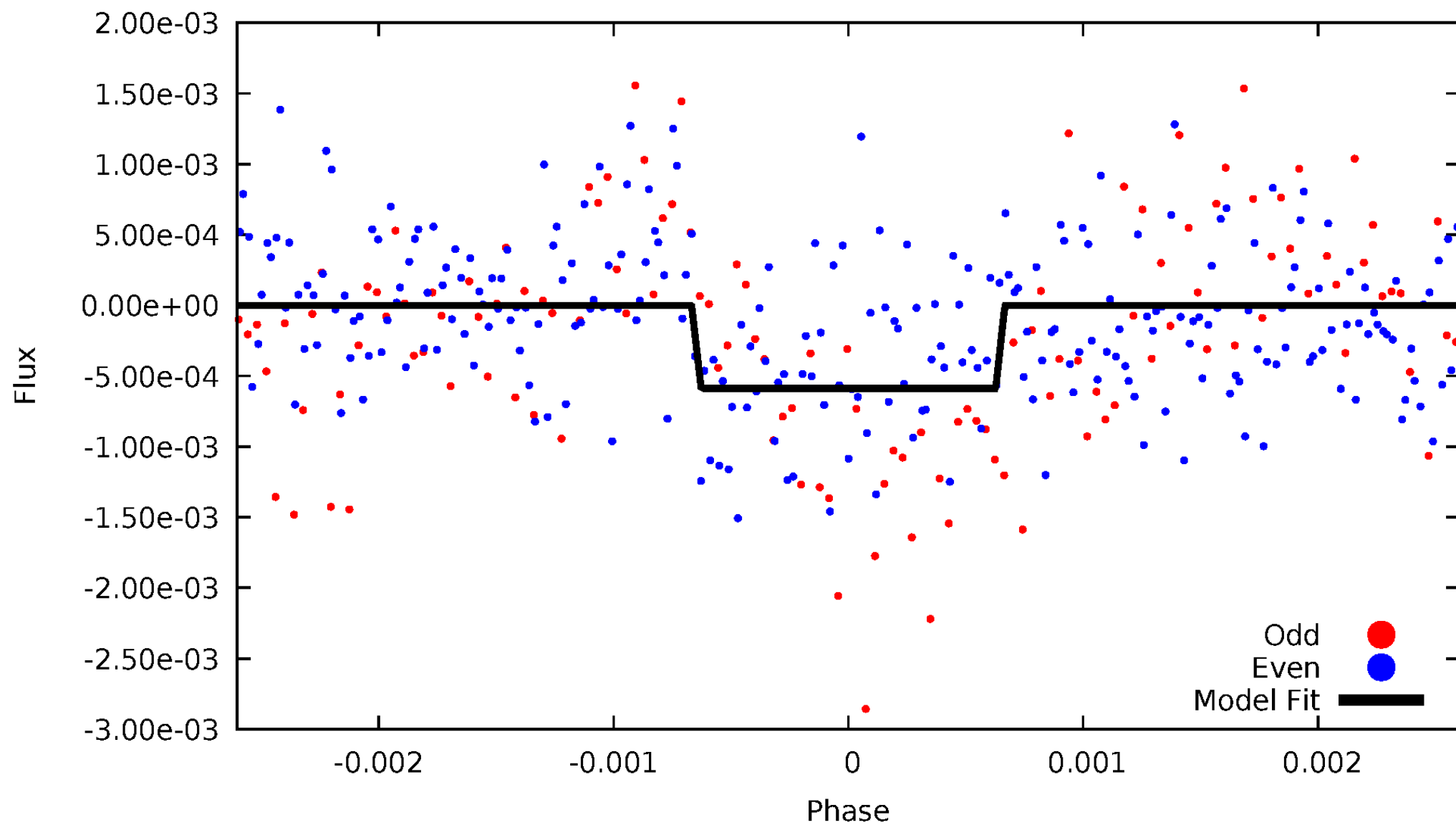
DV Odd/Even

TCE 008482582-01



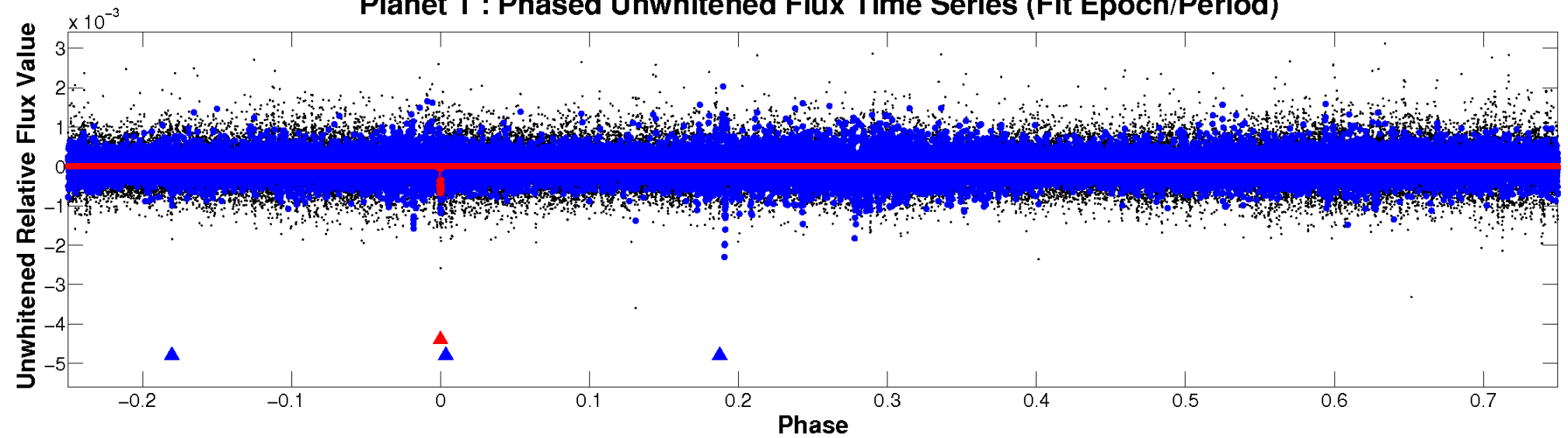
ALT Odd/Even

TCE 008482582-01

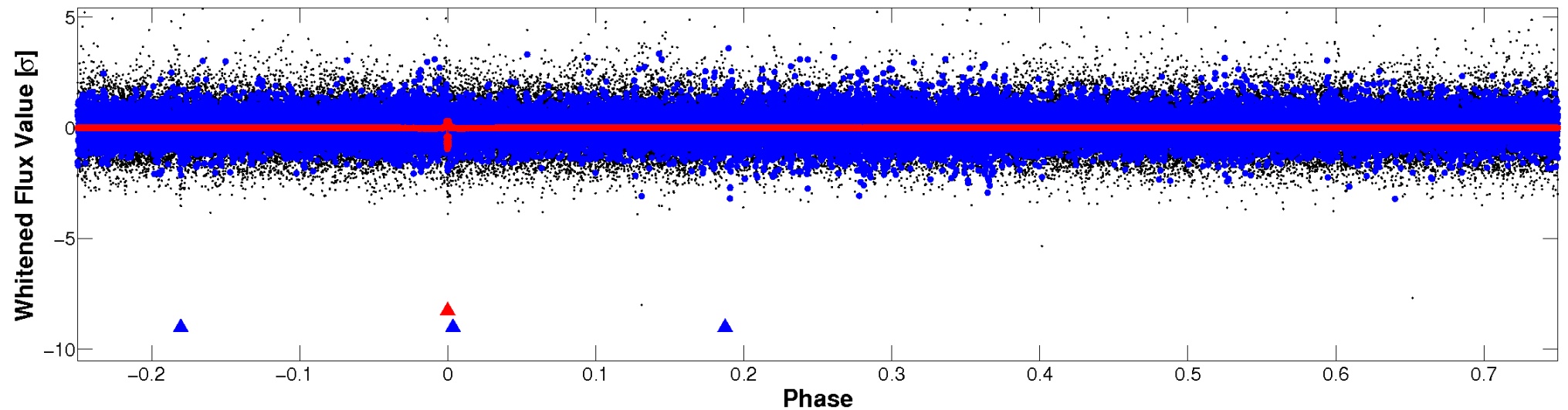


Non-Whitened Vs. Whitened Light Curve

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

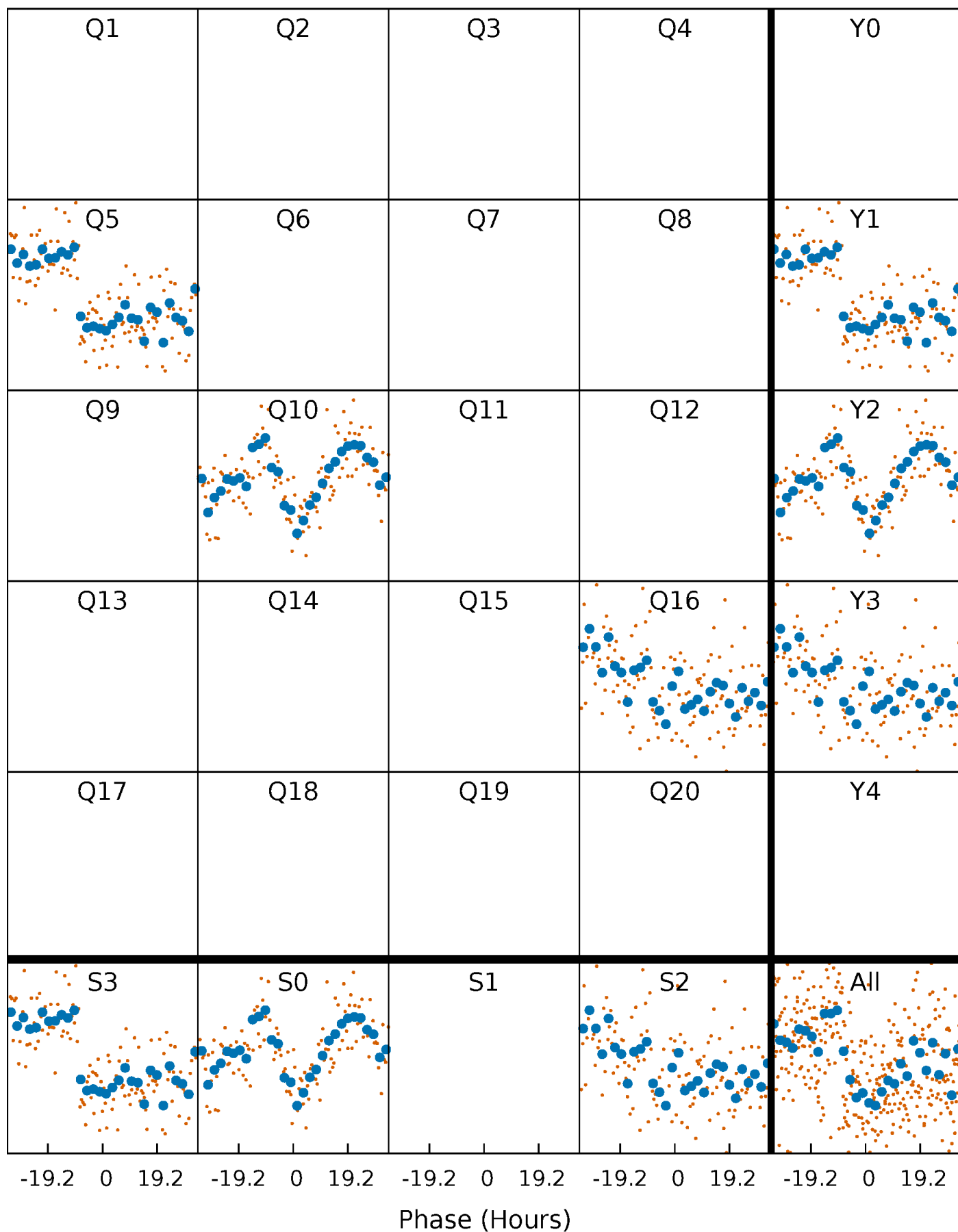


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



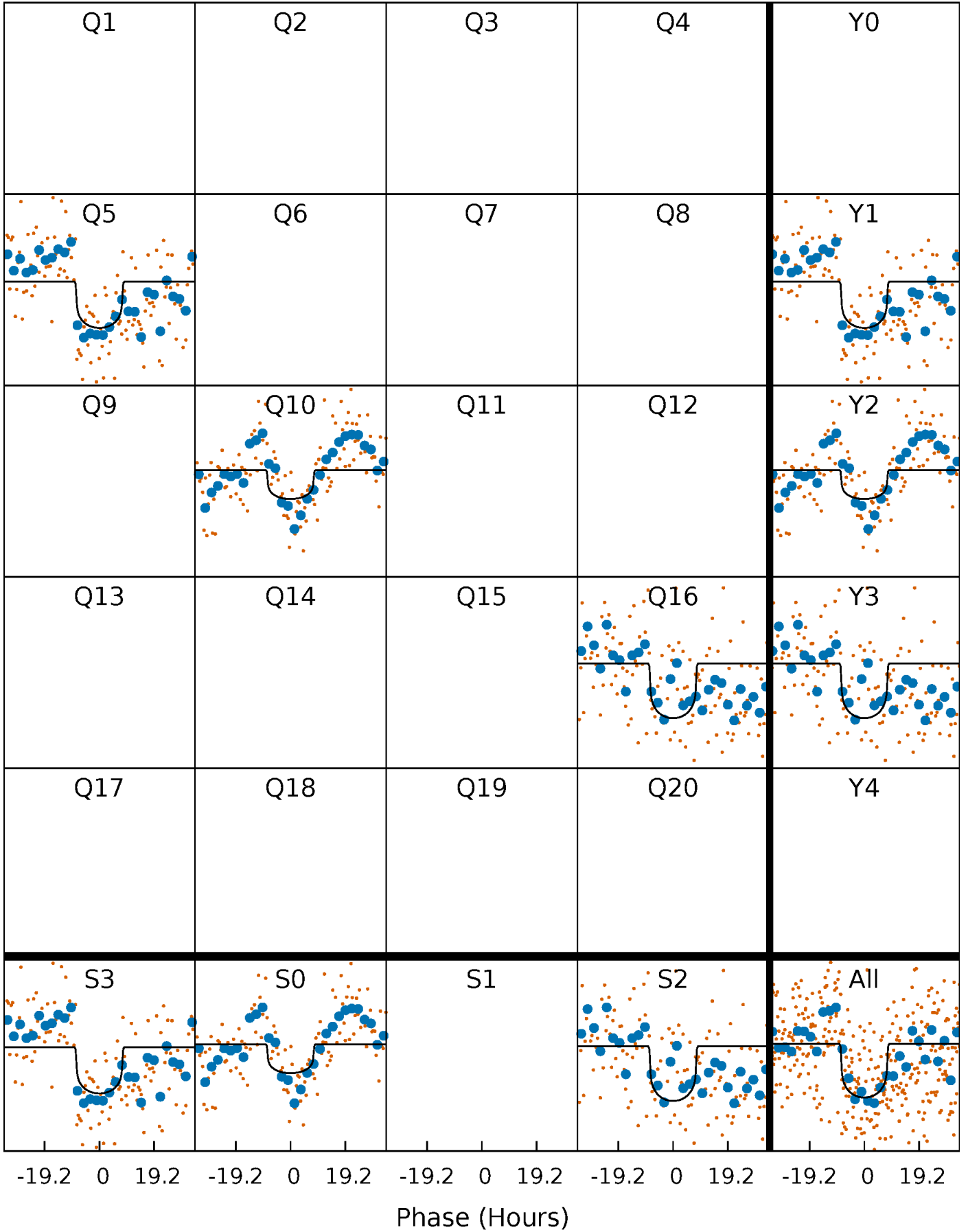
PDC Quarter-Phased Transit Curves

TCE 008482582-01 P=520.033249 Days $T_0=452.810598$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008482582-01 P=520.033249 Days $T_0=452.810598$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

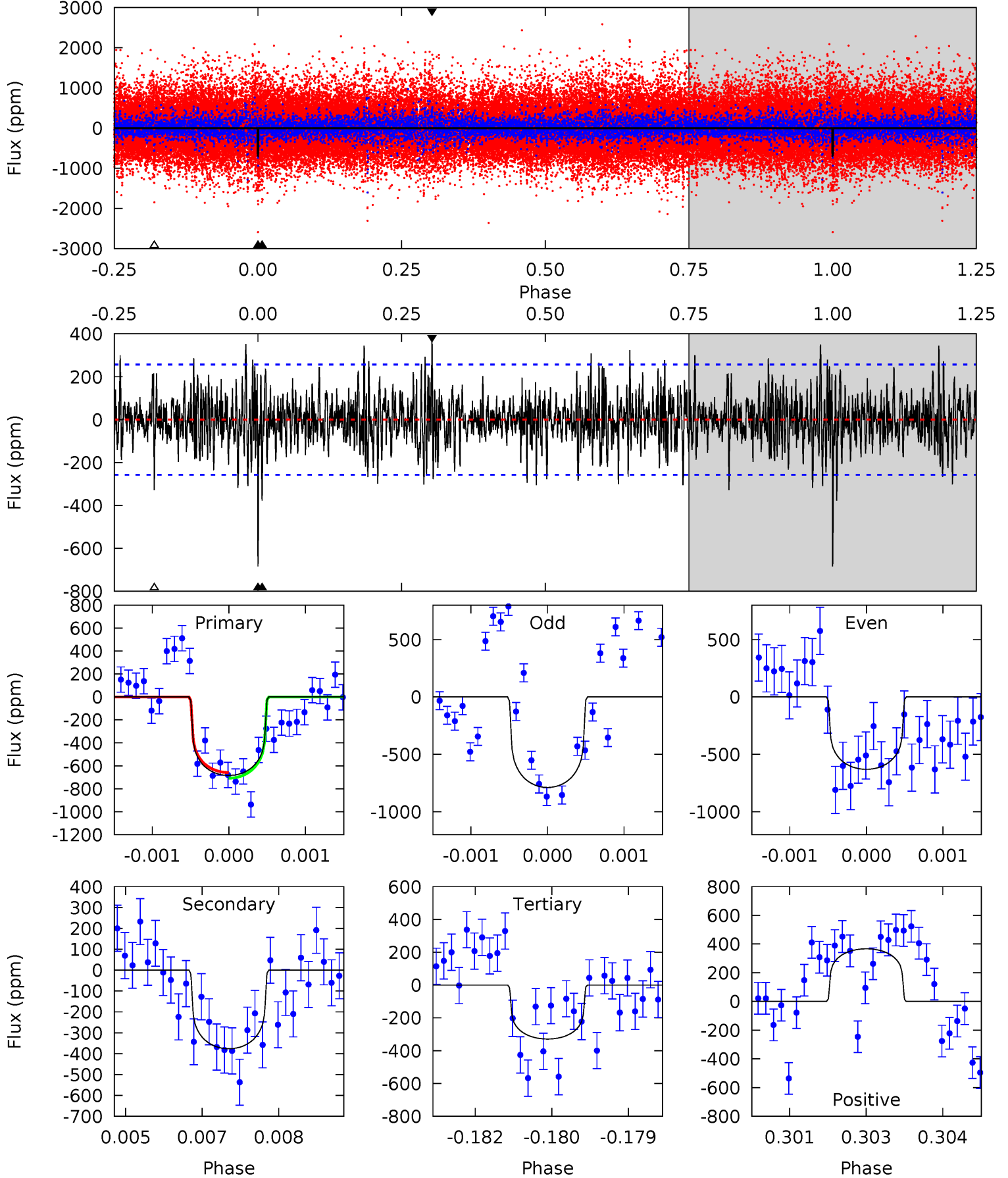
TCE 008482582-01 P=520.040913 Days $T_0=452.808227$ (BKJD)



DV Model-Shift Uniqueness Test

008482582-01, P = 520.033249 Days, E = 452.810598 Days

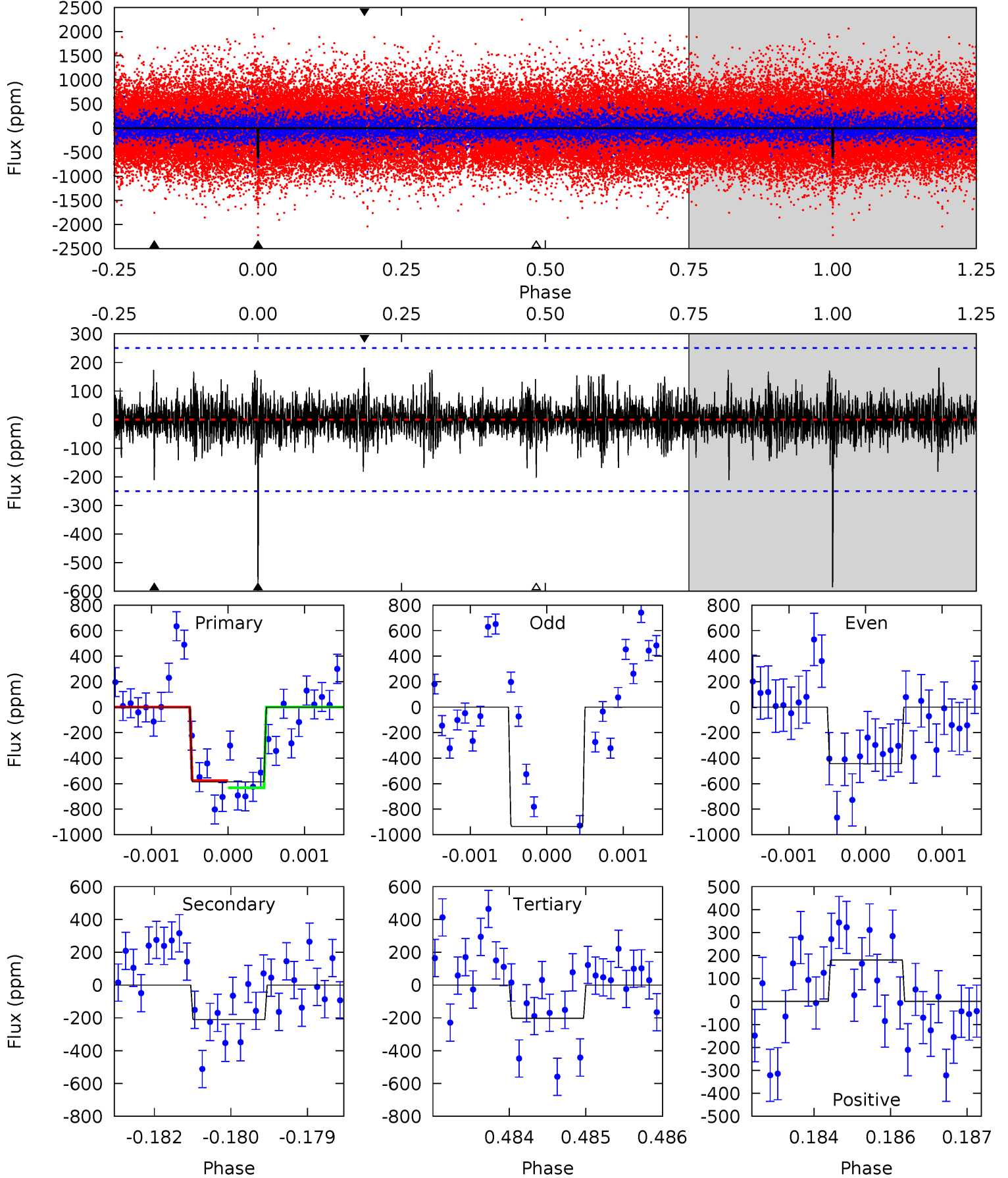
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	7.90	6.91	7.70	5.40	3.21	1.93	7.44	6.65	0.99	0.20	1.57	0.86	0.35	0.51



Alt Model-Shift Uniqueness Test

008482582-01, P = 520.040913 Days, E = 452.808227 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	4.55	4.38	3.91	5.40	3.21	0.98	8.25	8.73	0.17	0.64	5.08	0.86	0.24	0.59



Stellar Parameters For KIC 008482582

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5857^{+157}_{-192}	$4.474^{+0.067}_{-0.202}$	$-0.080^{+0.300}_{-0.300}$	$0.950^{+0.283}_{-0.121}$	$0.980^{+0.126}_{-0.113}$	$1.610^{+0.550}_{-0.795}$
	+3%/-3%	+1%/-5%	+375%/-375%	+30%/-13%	+13%/-12%	+34%/-49%
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 008482582-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-376 ± 48	$2.67^{+1.46}_{-1.27}$	320^{+22}_{-16}	5250^{+1922}_{-840}	$45297^{+120509}_{-26157}$
Alt.	-211 ± 46	$2.74^{+1.34}_{-1.37}$	320^{+22}_{-17}	4581^{+1714}_{-625}	24406^{+68784}_{-14147}

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 $A_{obs} \gg 1.0$

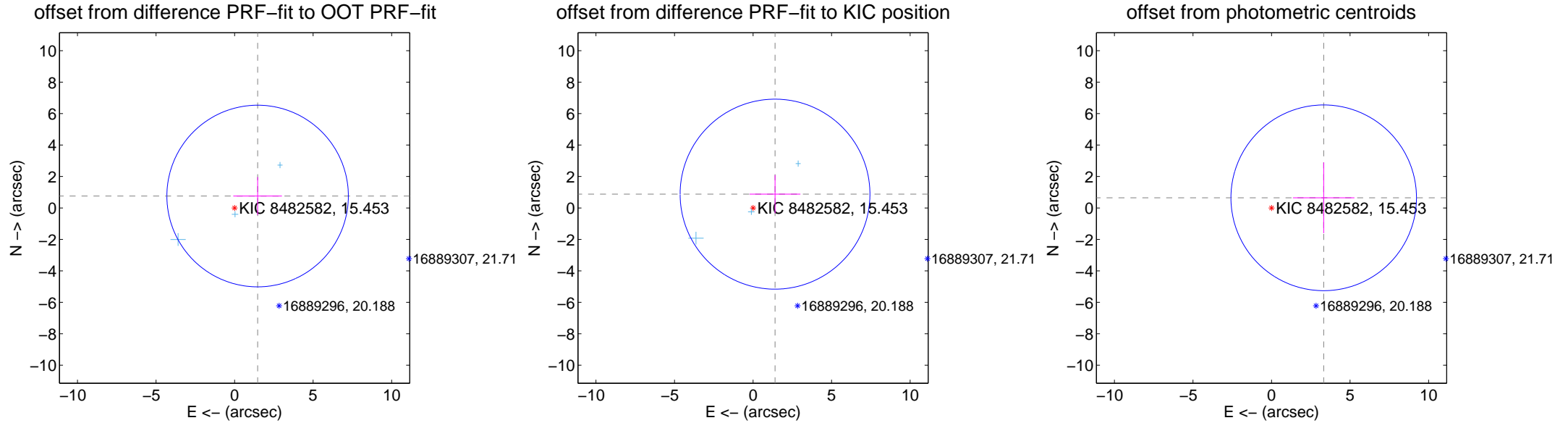
DV Centroid Data

Supplemental centroid analysis for 008482582-01. Kepler magnitude: 15.45. Transit SNR 8.39

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.651 ± 1.925	0.86	-1.467 ± 1.548	0.758 ± 1.208
PRF-fit source offset from KIC position	1.651 ± 2.014	0.82	-1.399 ± 1.618	0.877 ± 1.216
photometric centroid source offset	3.38 ± 1.97	1.72	-3.32 ± 1.96	0.64 ± 2.25

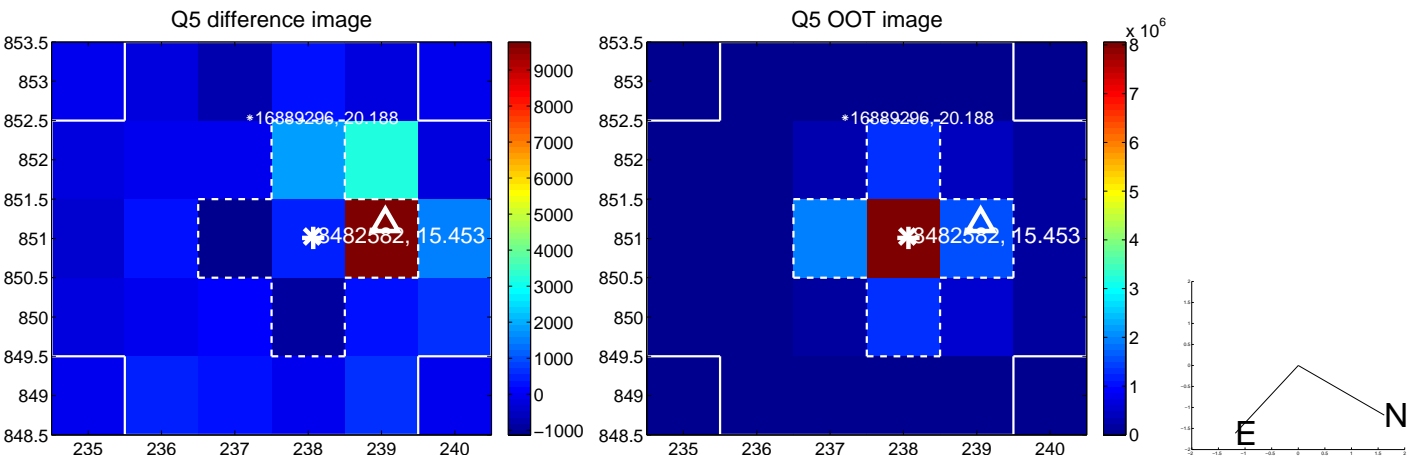


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

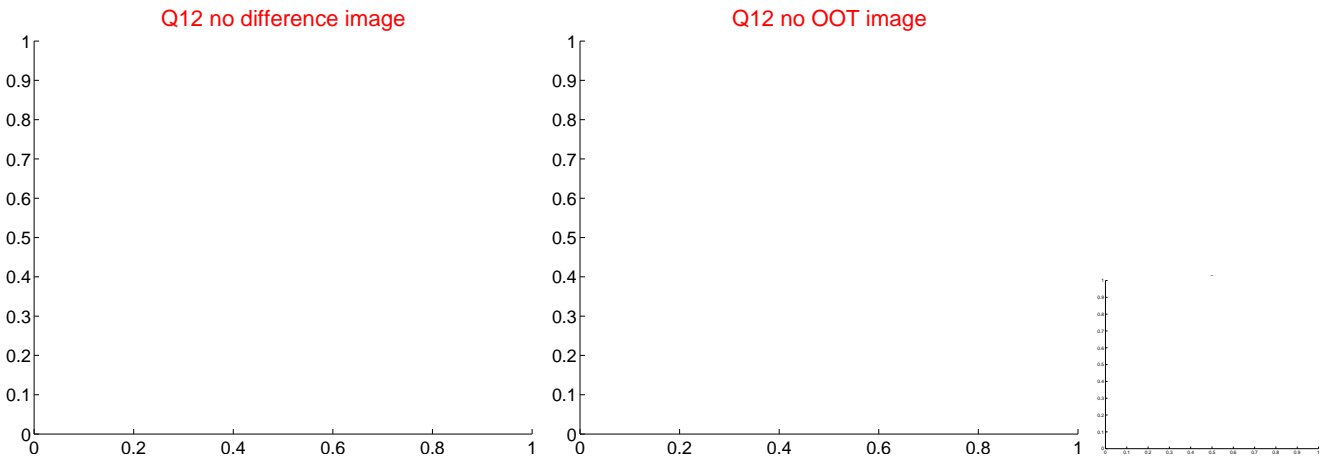
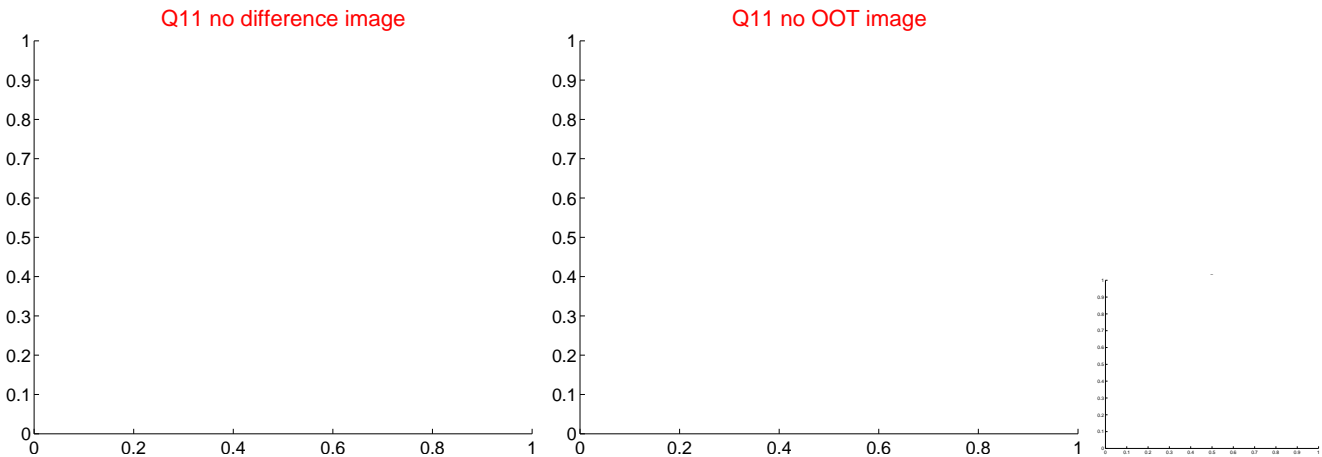
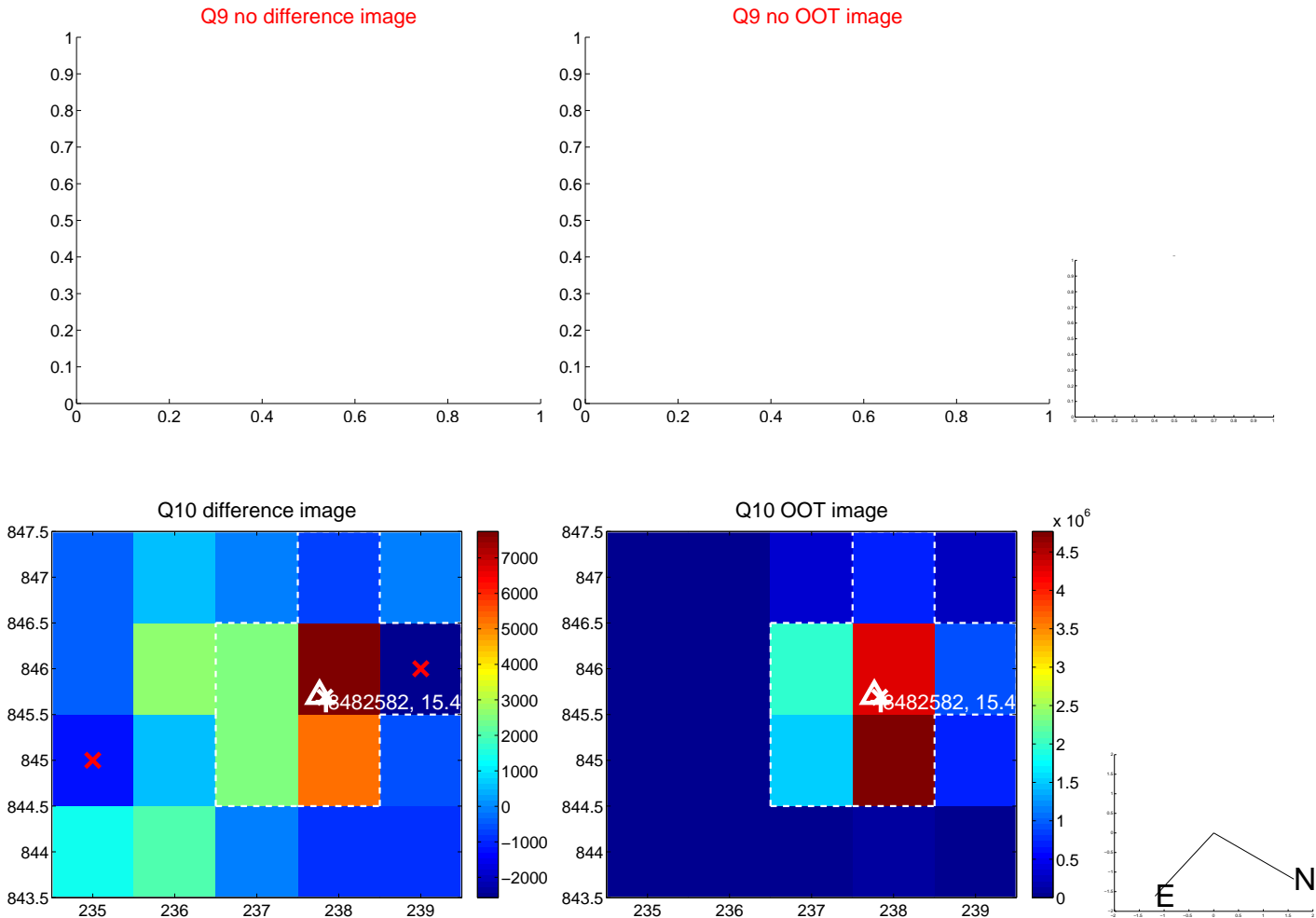
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



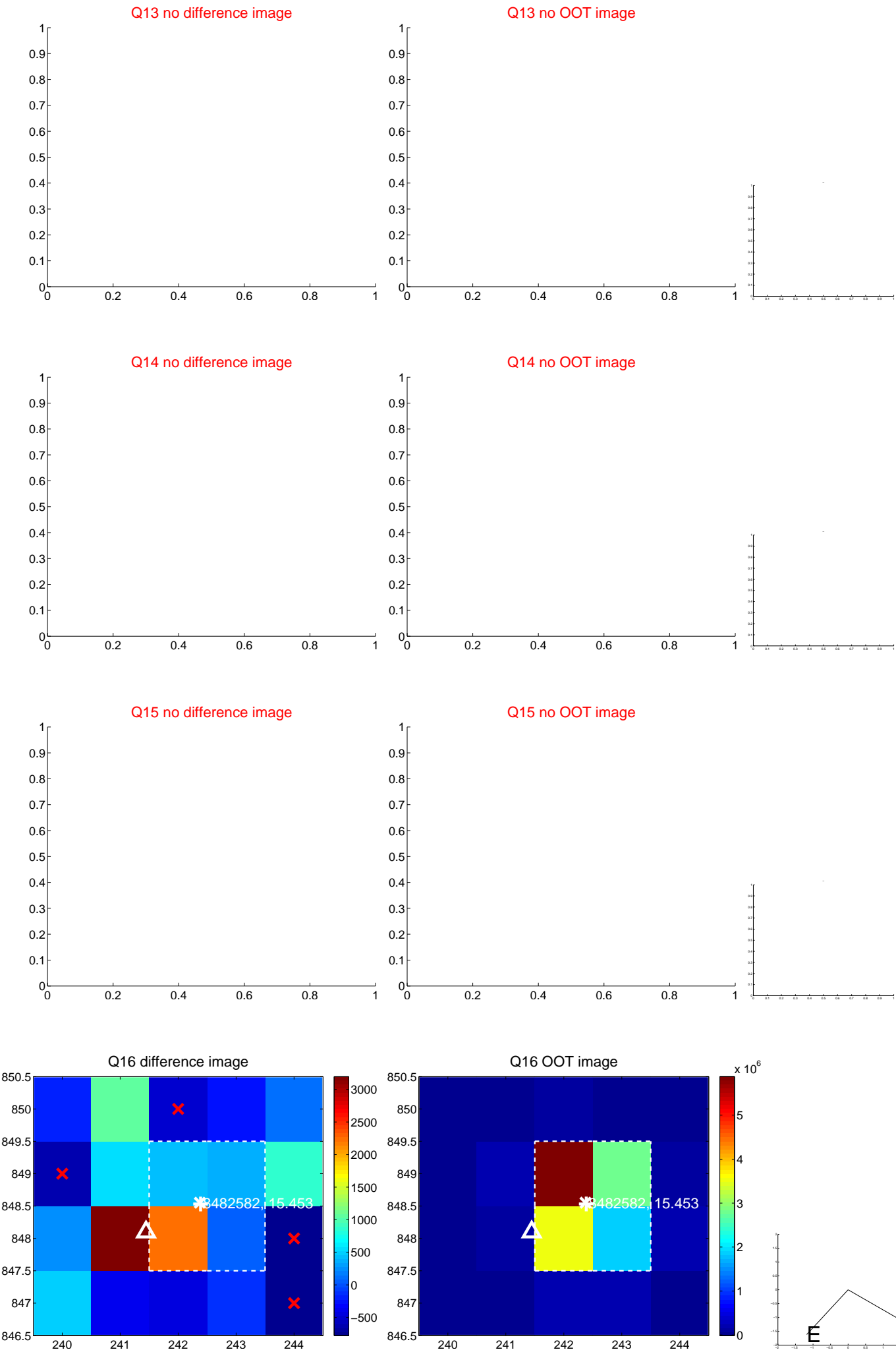
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



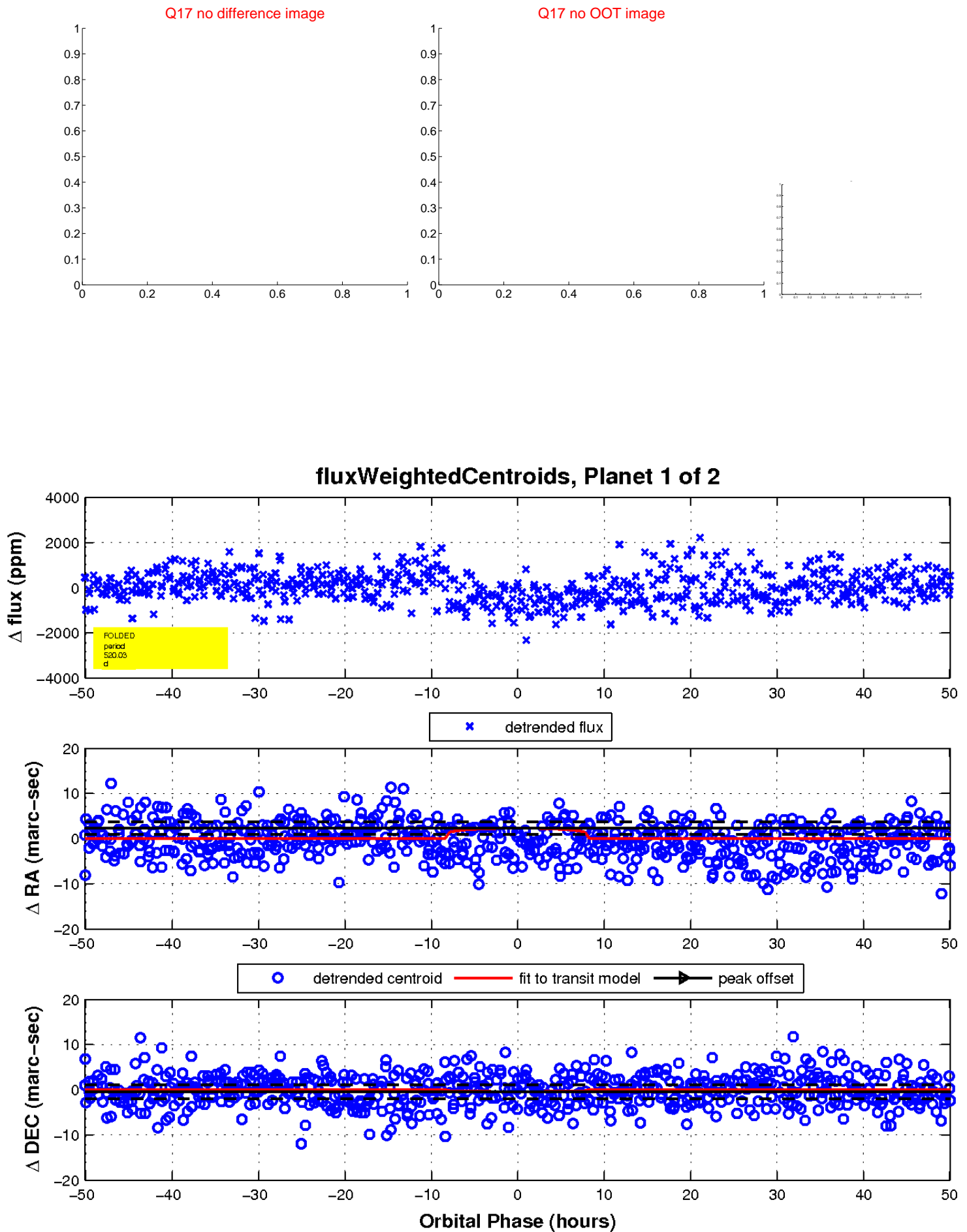
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

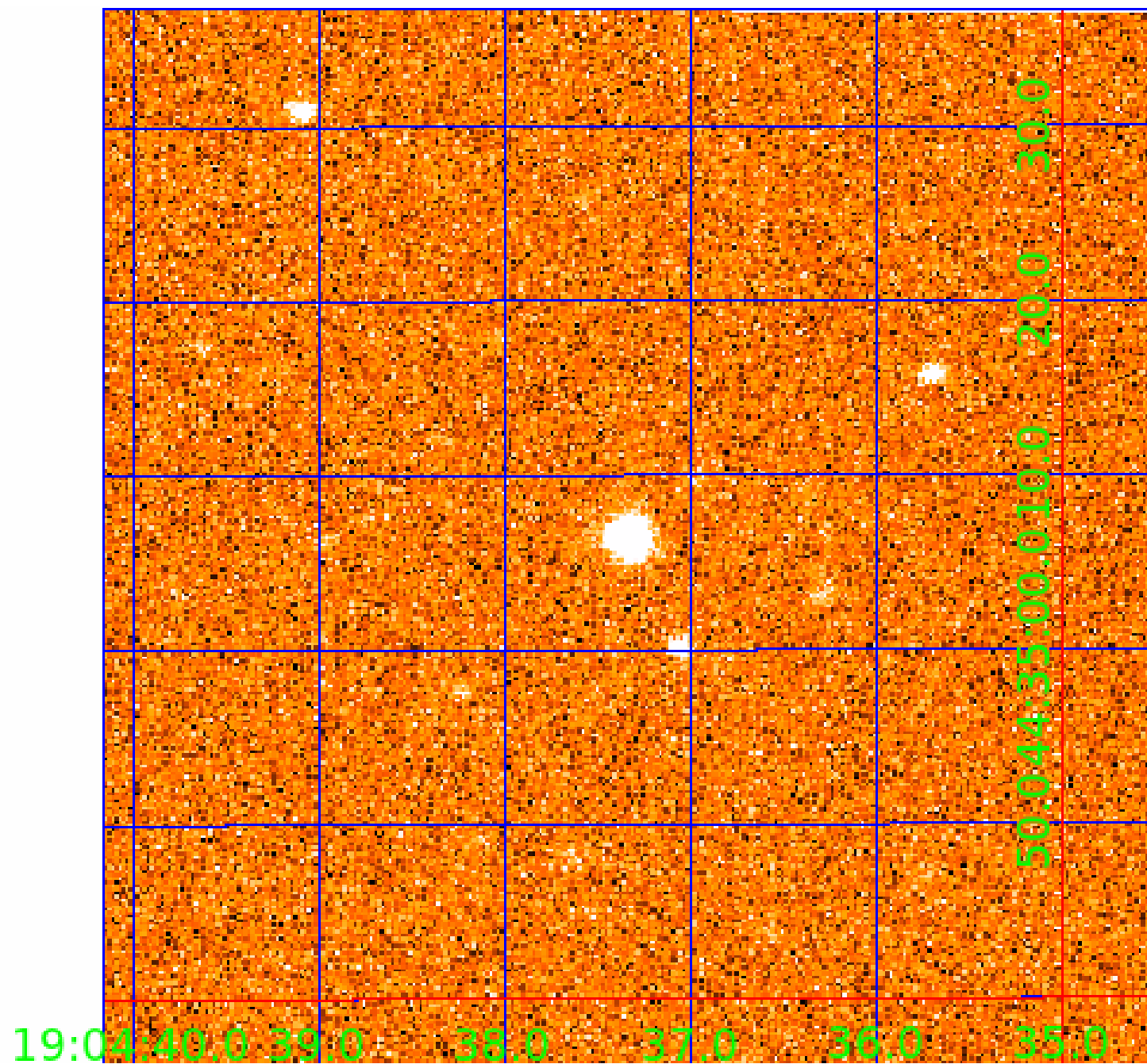


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008482582

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})
008482582-01	OBS	No	520.033249	452.810598	678.7	16.758	9.0	8.4	0.95	5857	2.53	0.60
008482582-02	OBS	No	424.419656	550.283632	827.8	21.505	10.1	10.9	0.95	5857	2.73	0.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008482582-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008482582-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—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.

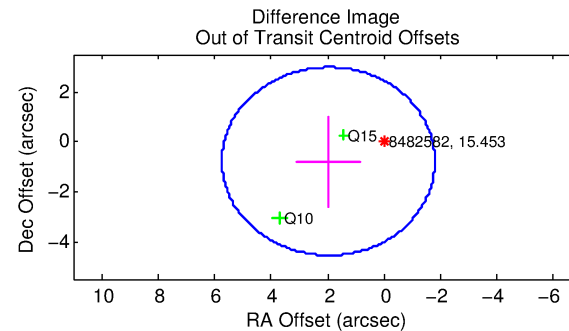
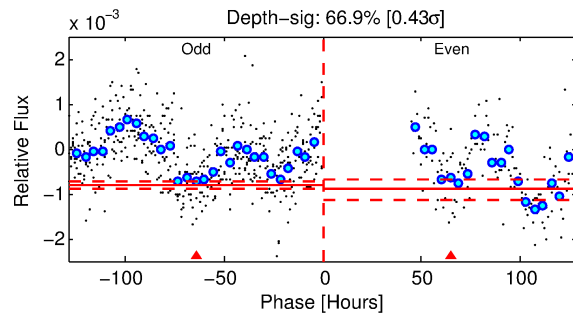
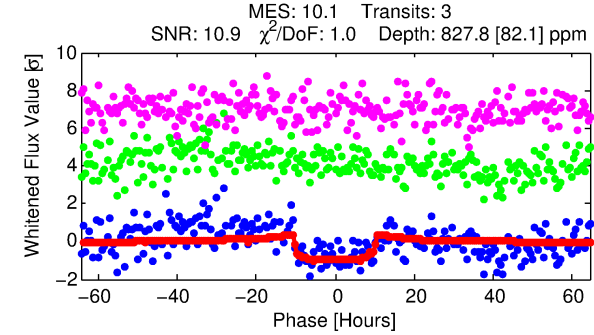
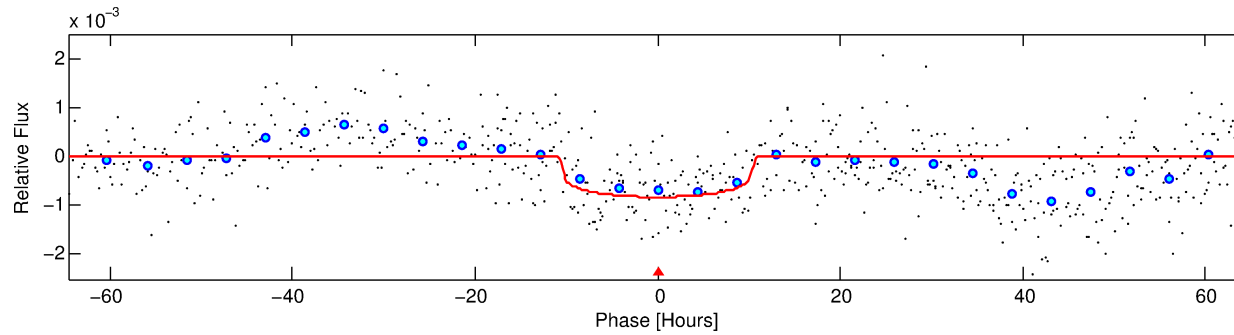
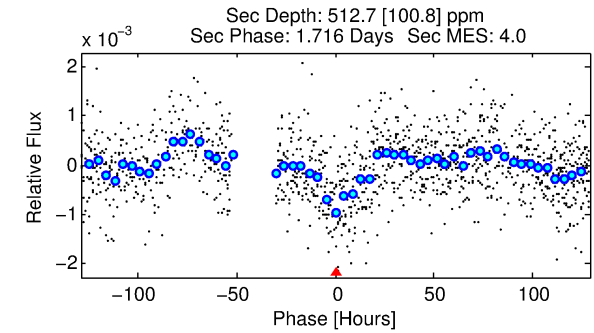
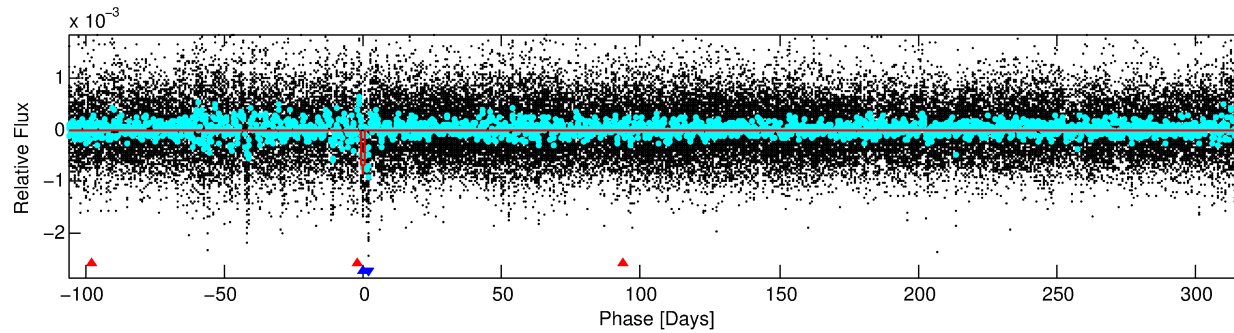
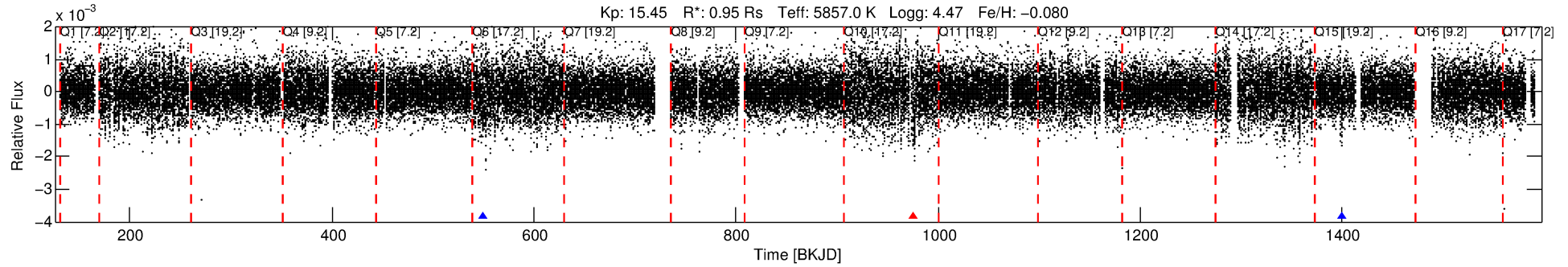
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008482582-02

No Significant Match Found

DV One-Page Summary

KIC: 8482582 Candidate: 2 of 2 Period: 424.420 d



DV Fit Results:

Period = 424.41966 [0.01485] d
Epoch = 550.2836 [0.0213] BKJD
Rp/R* = 0.0263 [0.0132]
a/R* = 150.58 [341.06]
b = 0.24 [9.11]
Seff = 0.79 [0.31]
Teq = 240 [23] K
Rp = 2.73 [1.59] Re
a = 1.0983 [0.2767] AU
Ag = 45711.91 [49787.06] [0.92σ]
Teffp = 5433 [1404] K [3.70σ]

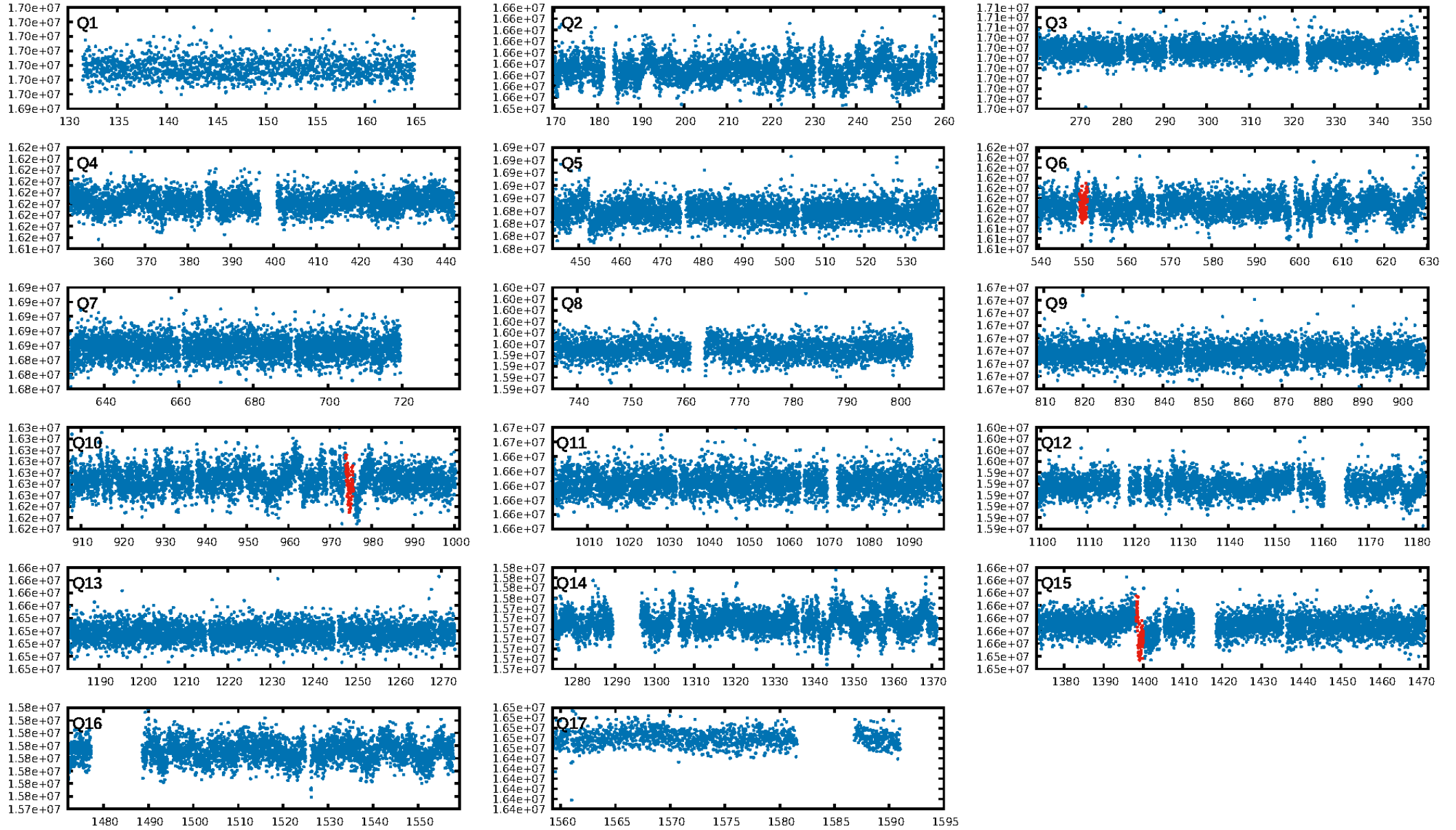
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [84.17σ]
ModelChiSquare2-sig: 19.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.18e-14
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 708.9
Centroid-sig: 25.4%
Centroid-so: 1.256 arcsec [0.91σ]
OotOffset-rm: 2.120 arcsec [1.69σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 2.071 arcsec [1.59σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

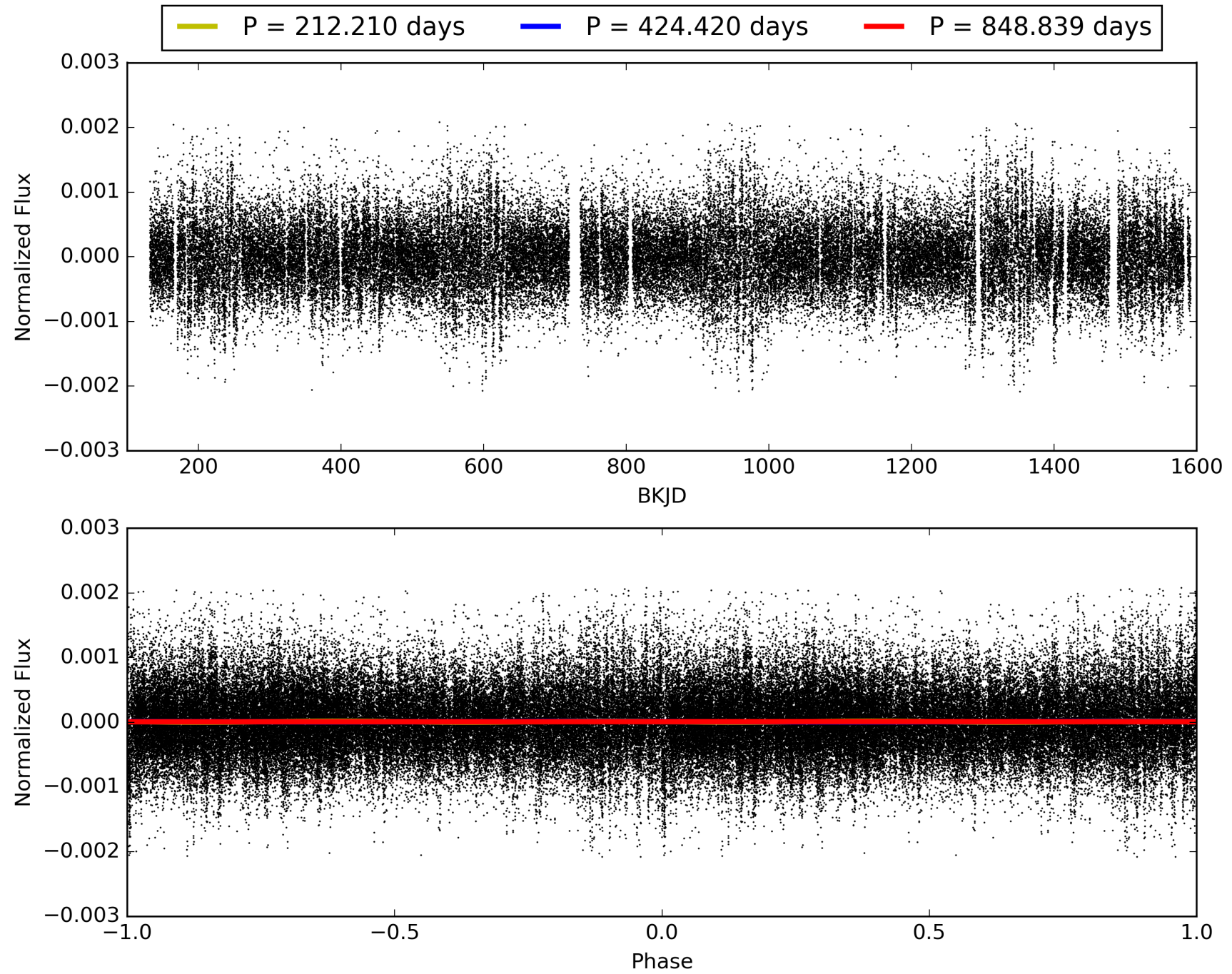
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:10:54 Z

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

TCE 008482582-02, PDC Light Curves

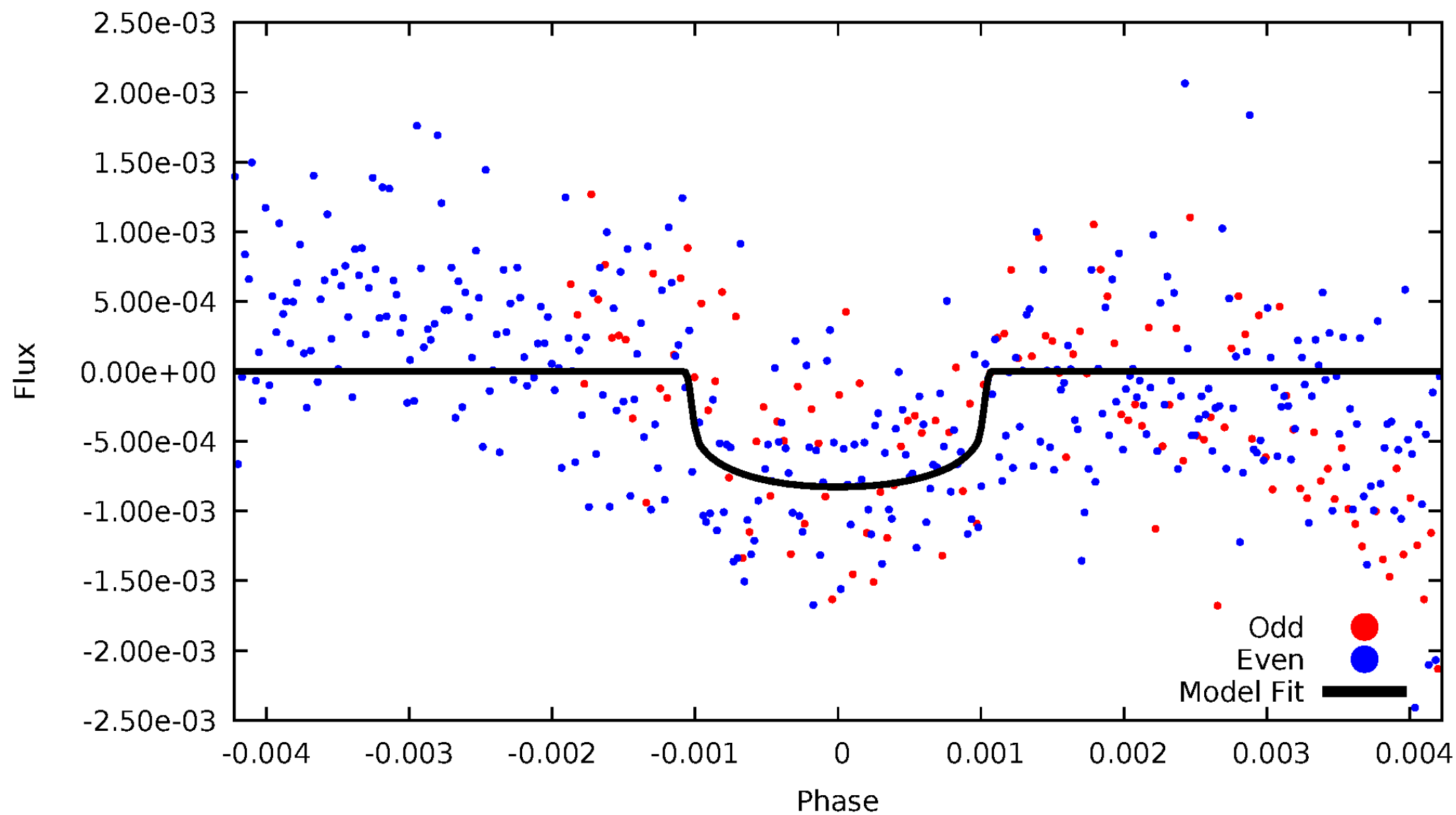


TCE 008482582-02



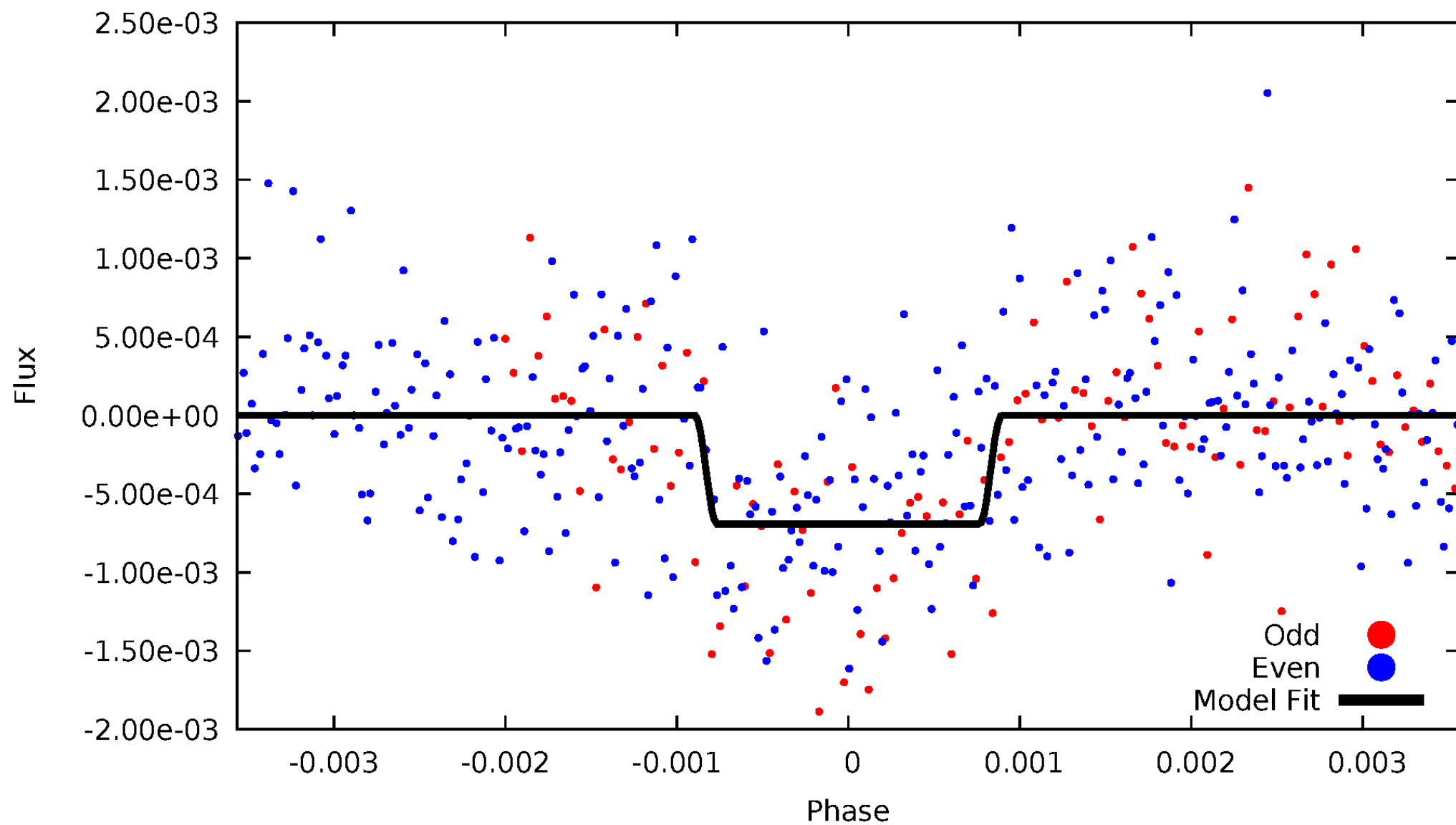
DV Odd/Even

TCE 008482582-02



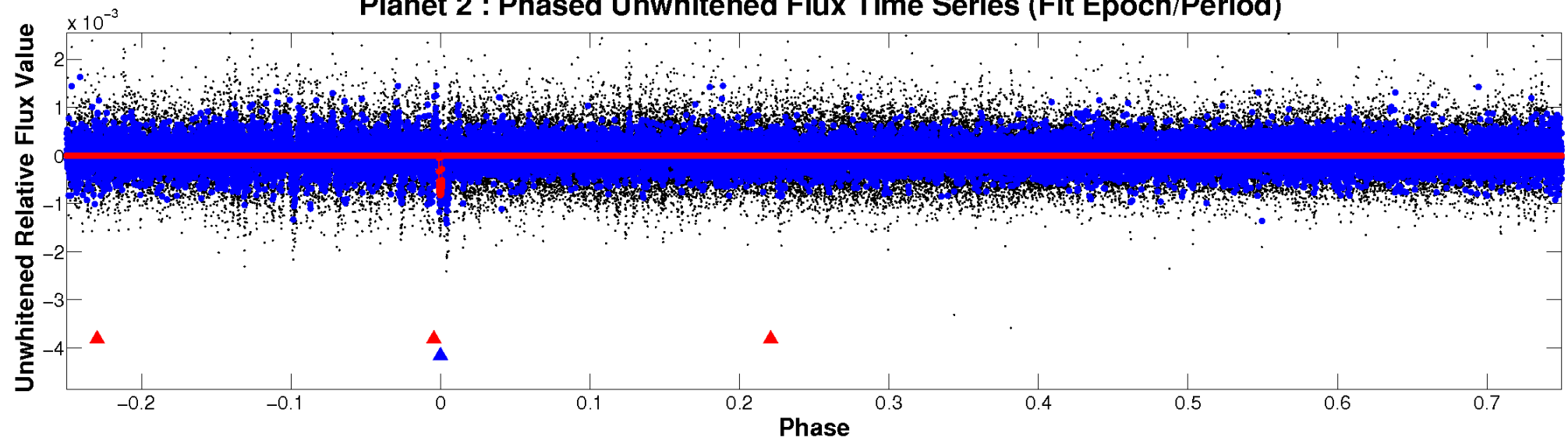
ALT Odd/Even

TCE 008482582-02

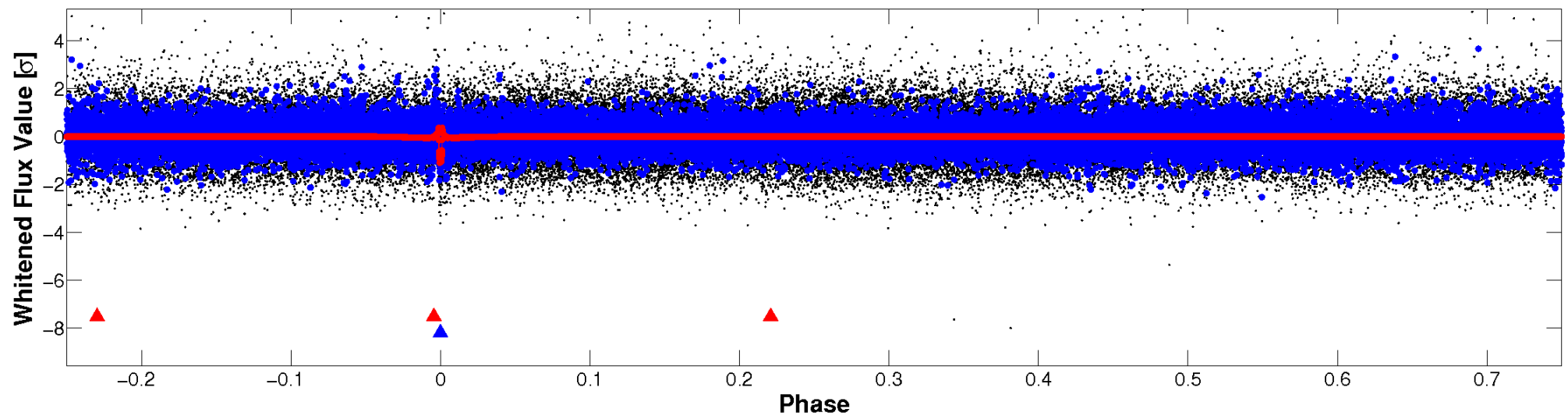


Non-Whitened Vs. Whitened Light Curve

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

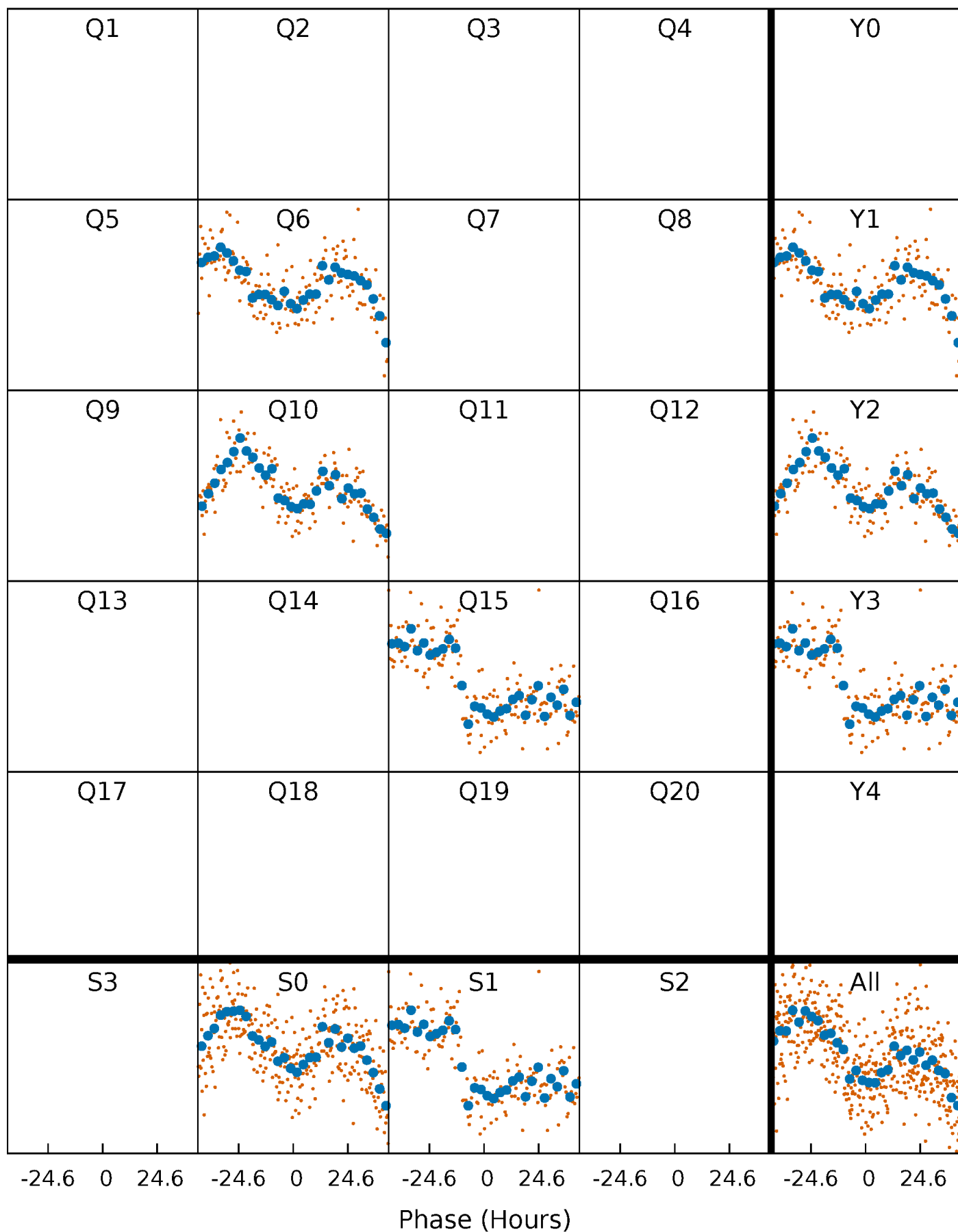


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



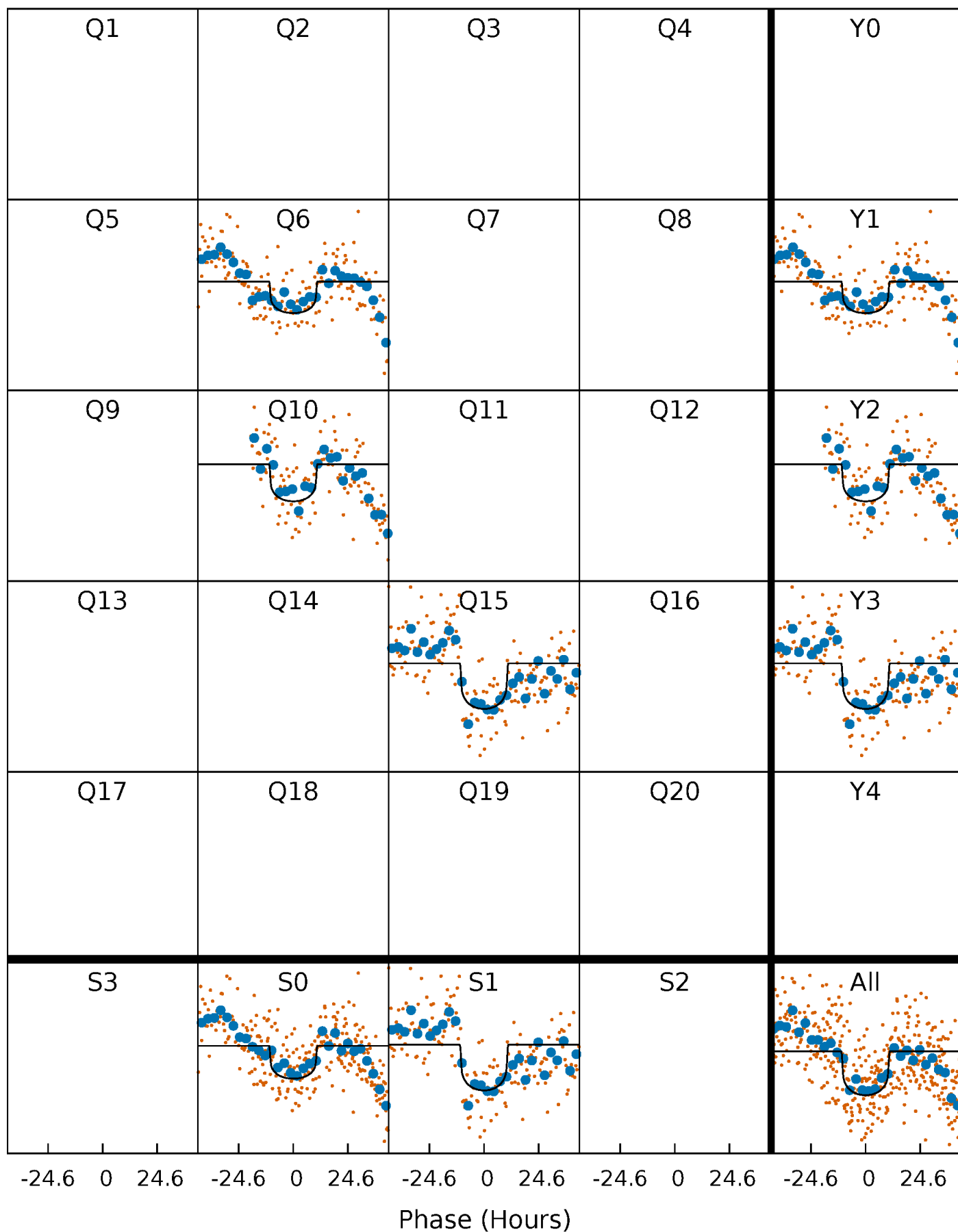
PDC Quarter-Phased Transit Curves

TCE 008482582-02 $P=424.419656$ Days $T_0=550.283632$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008482582-02 $P=424.419656$ Days $T_0=550.283632$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

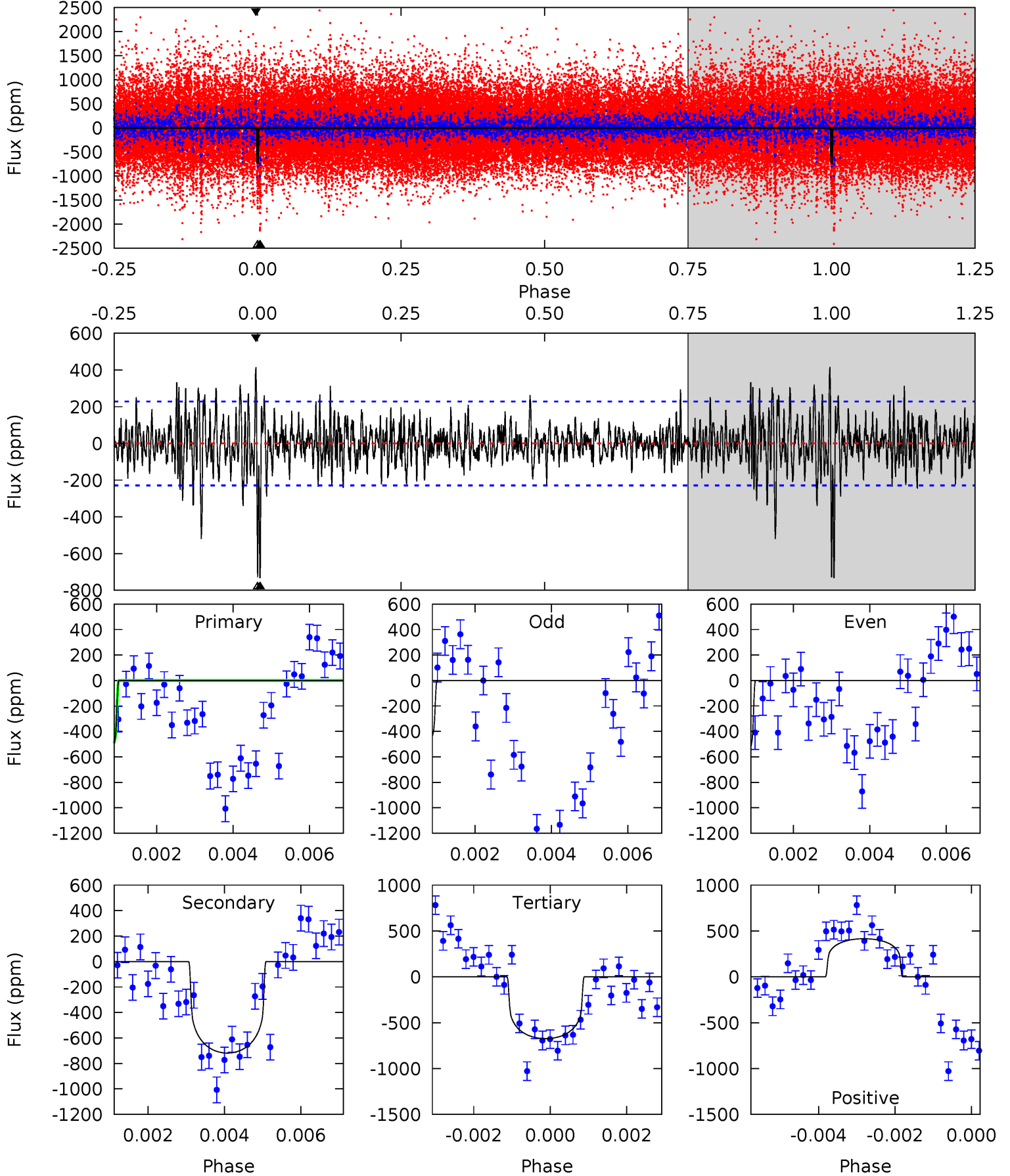
TCE 008482582-02 P=424.289251 Days $T_0=550.468888$ (BKJD)



DV Model-Shift Uniqueness Test

008482582-02, P = 424.419656 Days, E = 125.863976 Days

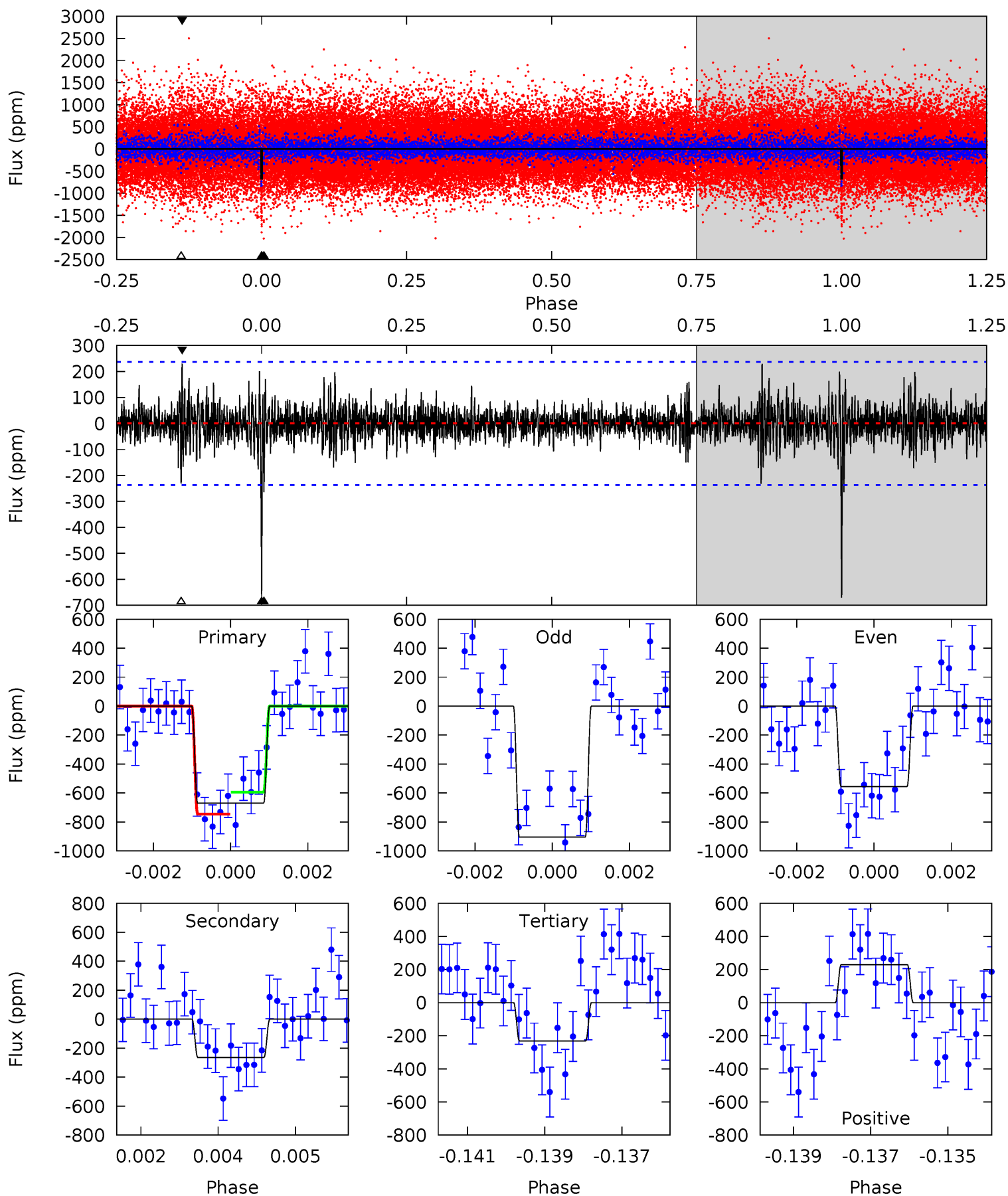
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	16.7	15.7	9.66	5.32	3.07	2.25	1.41	7.42	1.04	7.04	1.45	1.11	0.36	0.03



Alt Model-Shift Uniqueness Test

008482582-02, P = 424.289251 Days, E = 126.179637 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	5.95	5.22	5.18	5.35	3.12	1.04	9.89	9.93	0.73	0.77	3.70	0.83	0.26	1.71



Stellar Parameters For KIC 008482582

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5857^{+157}_{-192}	$4.474^{+0.067}_{-0.202}$	$-0.080^{+0.300}_{-0.300}$	$0.950^{+0.283}_{-0.121}$	$0.980^{+0.126}_{-0.113}$	$1.610^{+0.550}_{-0.795}$
	+3%/-3%	+1%/-5%	+375%/-375%	+30%/-13%	+13%/-12%	+34%/-49%
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 008482582-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-718 ± 43	$2.93^{+1.50}_{-1.36}$	340^{+24}_{-15}	5789^{+2177}_{-910}	$54412^{+126998}_{-30345}$
Alt.	-264 ± 44	$2.88^{+1.42}_{-1.33}$	341^{+24}_{-18}	4741^{+1381}_{-698}	20920^{+50905}_{-11835}

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 $A_{obs} \gg 1.0$

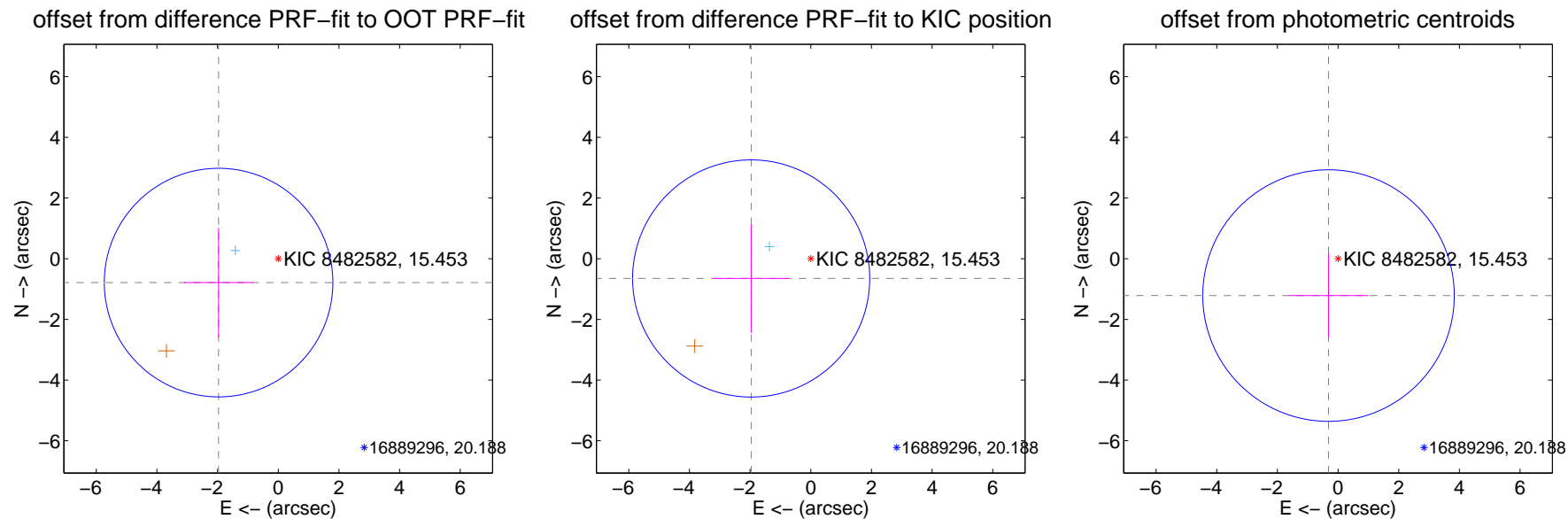
DV Centroid Data

Supplemental centroid analysis for 008482582-02. Kepler magnitude: 15.45. Transit SNR 10.90

There are 1 quarters with good PRF difference image offsets

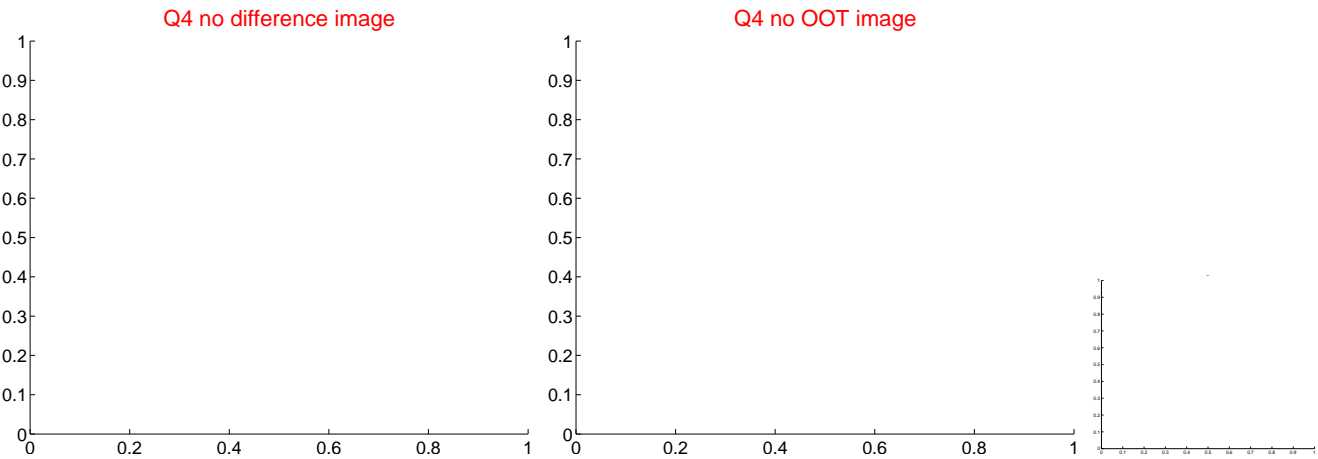
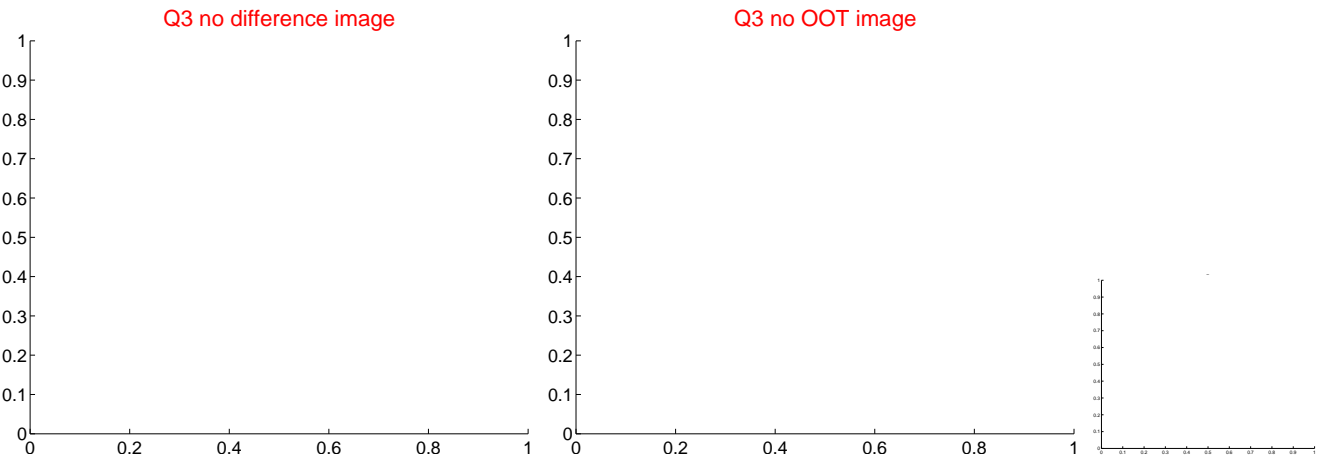
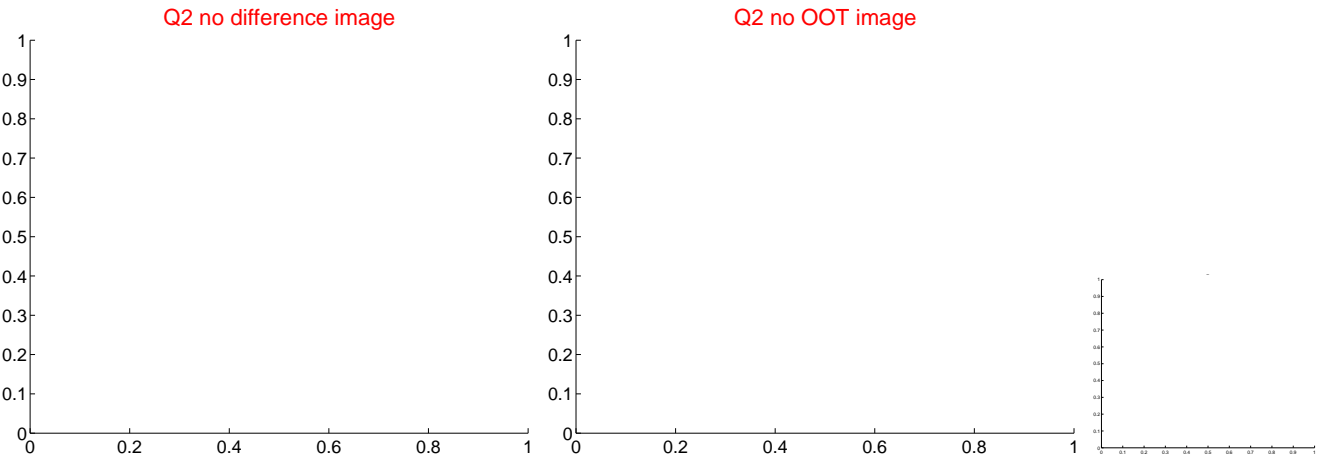
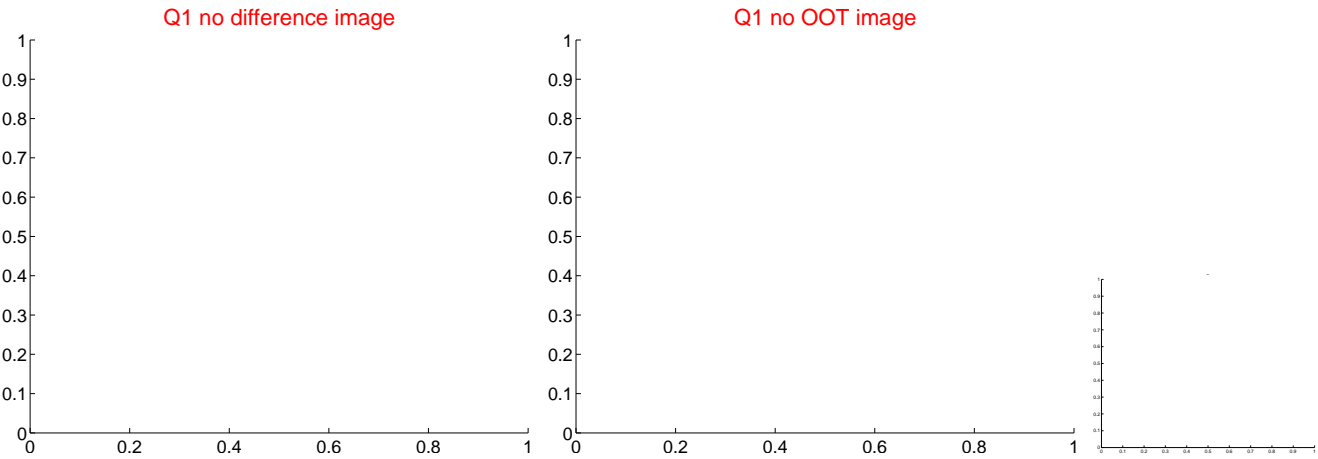
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.120 ± 1.256	1.69	1.968 ± 1.144	-0.788 ± 1.805
PRF-fit source offset from KIC position	2.071 ± 1.303	1.59	1.966 ± 1.239	-0.651 ± 1.787
photometric centroid source offset	1.26 ± 1.38	0.91	0.31 ± 1.33	-1.22 ± 1.39

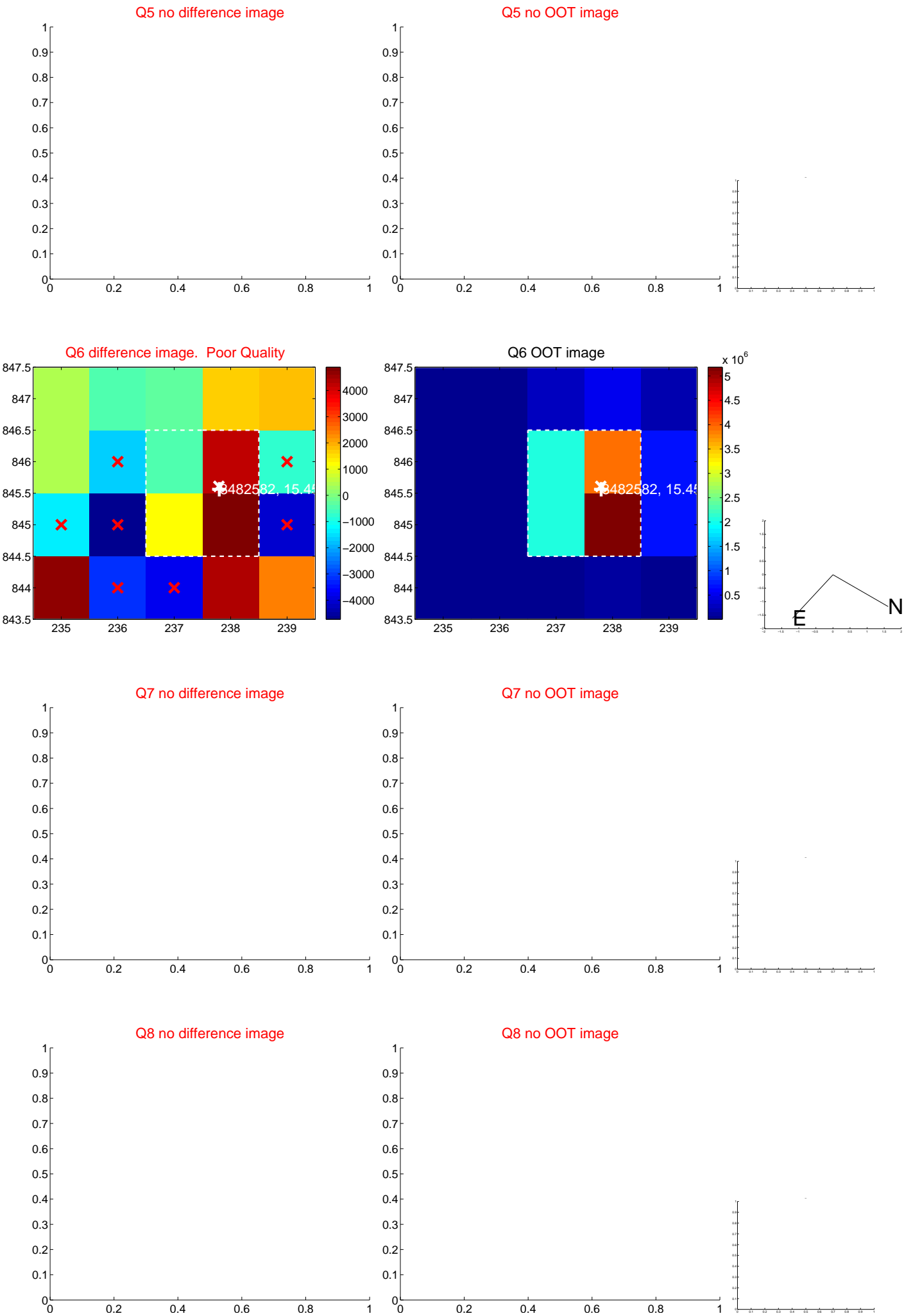


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

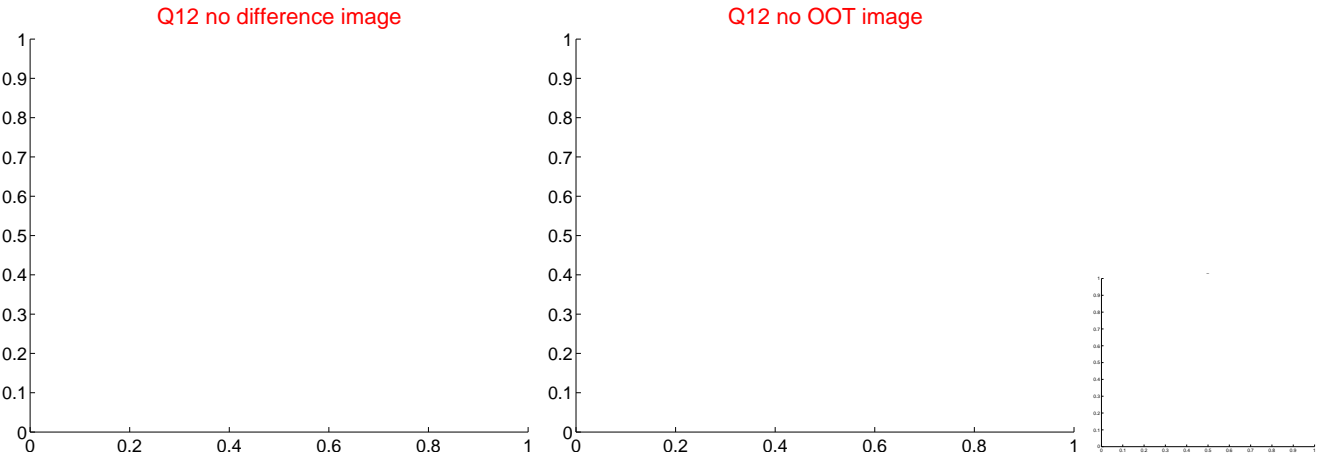
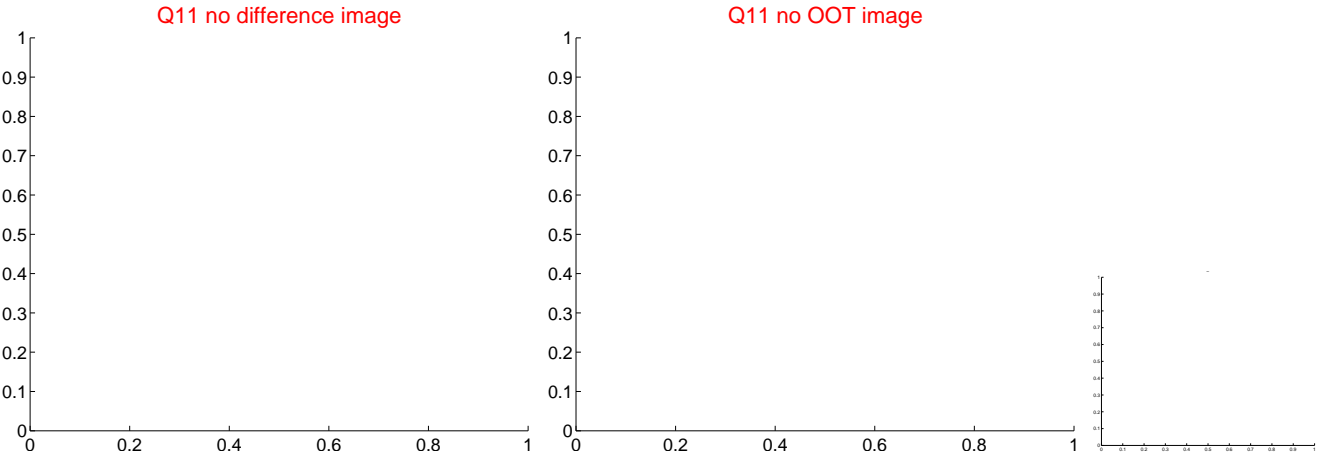
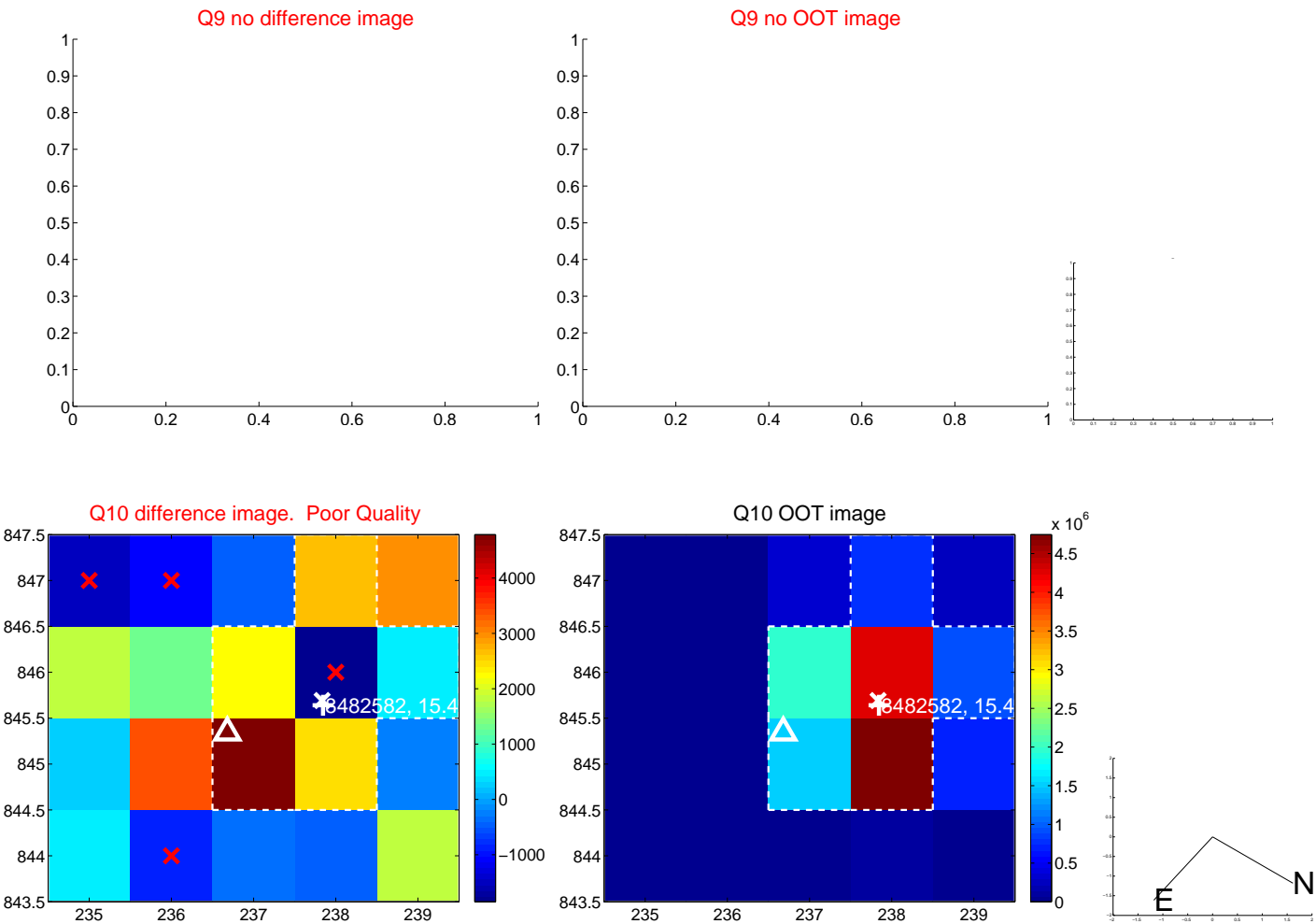
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



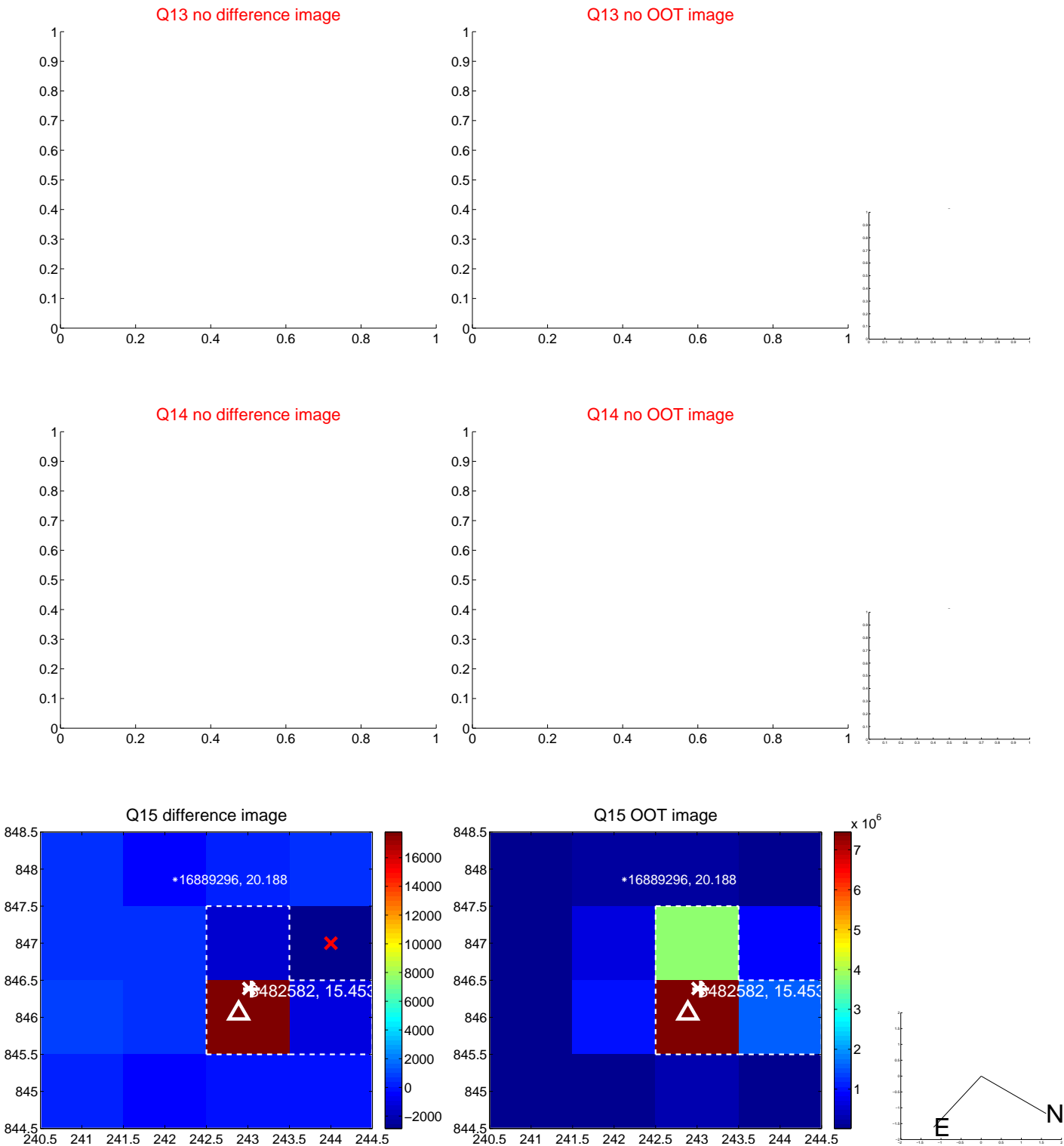
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



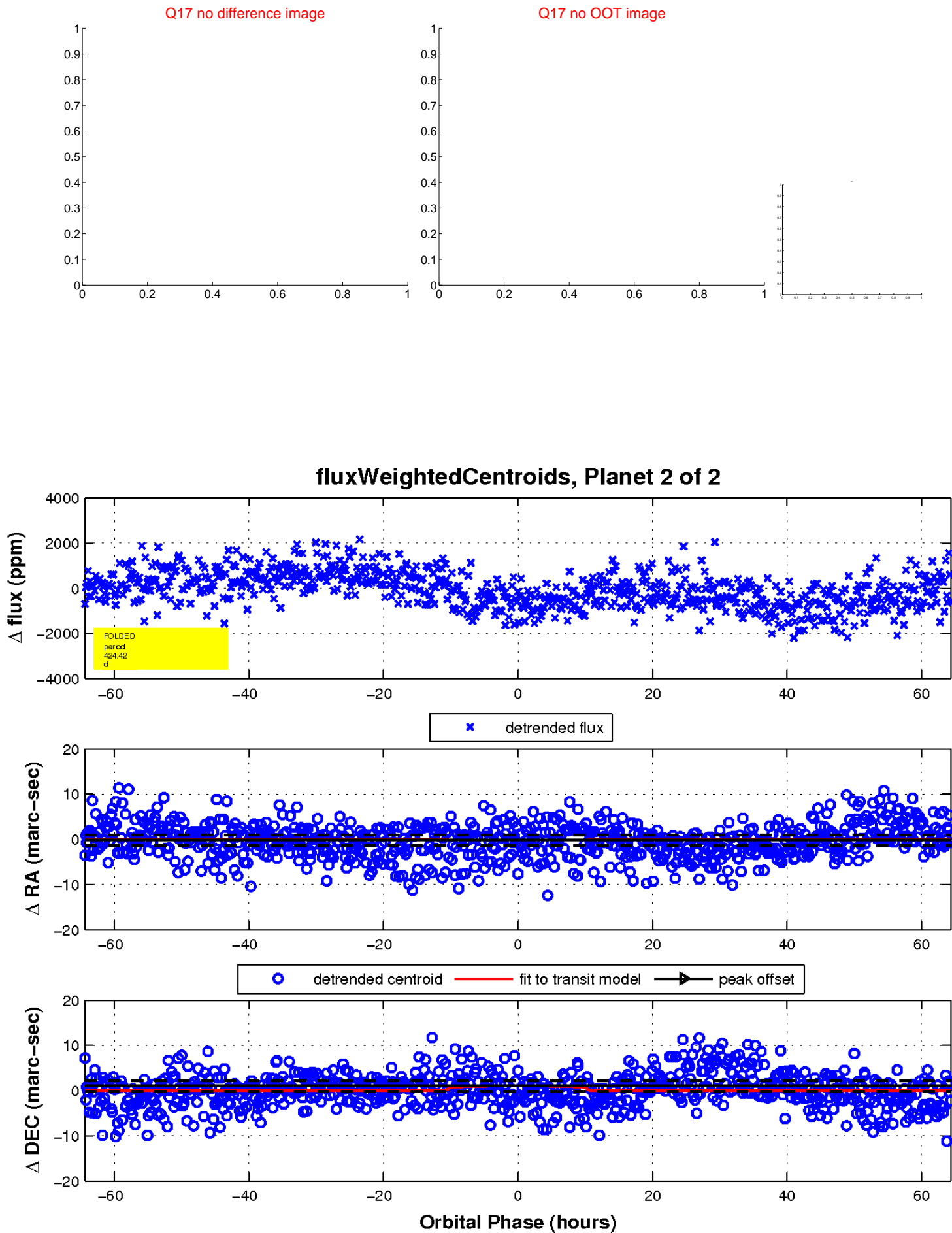
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UKIRT Image

Declination

