

KIC 008313532

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})
008313532-01	OBS	No	429.433586	532.471898	495.1	15.901	10.3	9.3	2.42	5180	6.60	2.58
008313532-02	OBS	No	507.164911	529.083456	461.0	15.814	10.2	8.7	2.42	5180	5.31	2.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008313532-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008313532-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

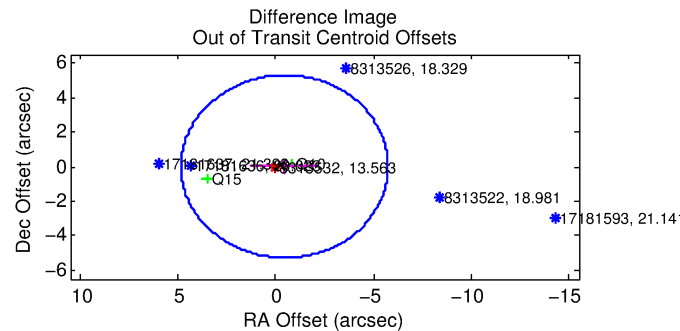
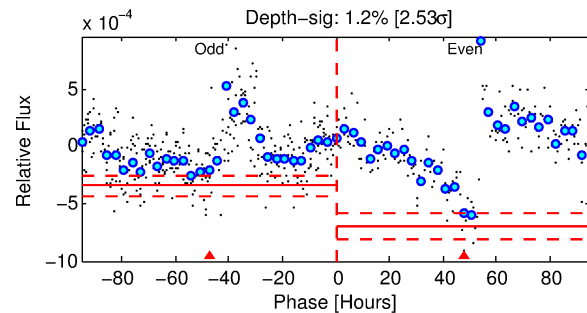
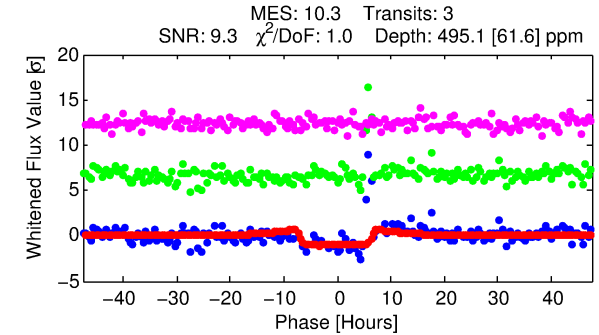
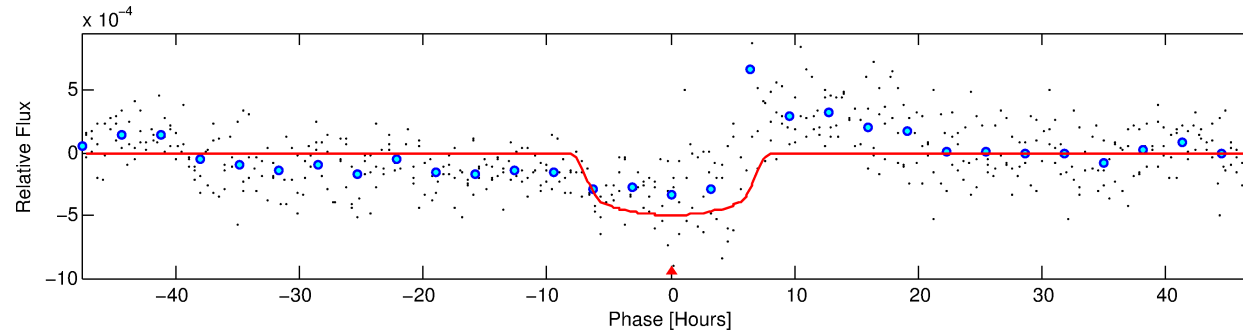
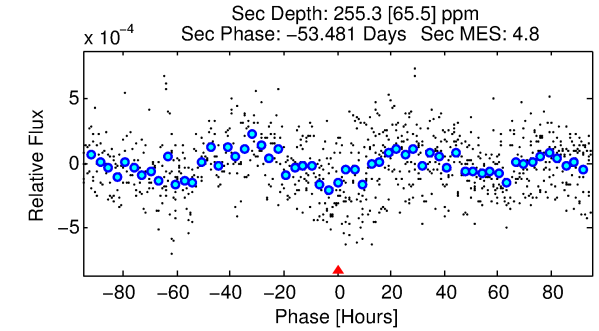
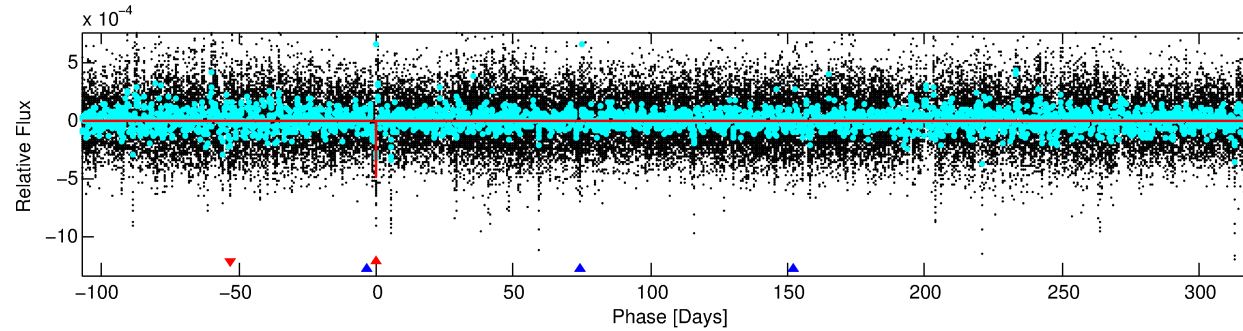
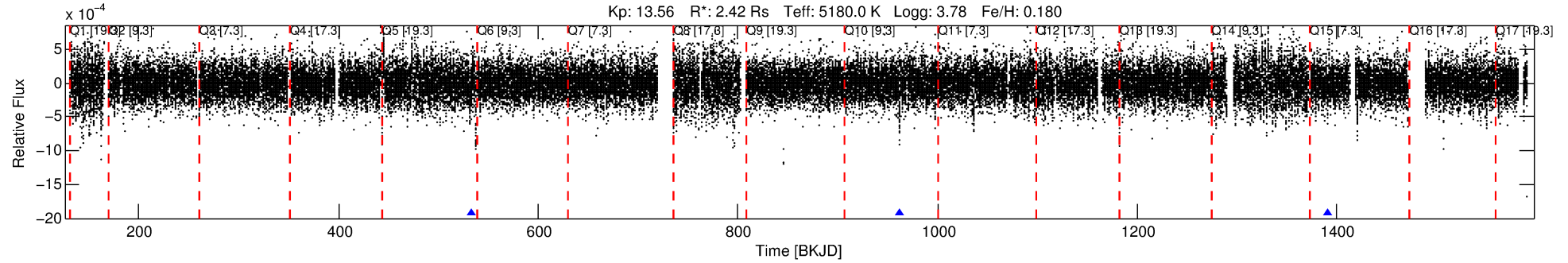
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008313532-01

No Significant Match Found

DV One-Page Summary

KIC: 8313532 Candidate: 1 of 2 Period: 429.434 d



DV Fit Results:

Period = 429.43359 [0.01461] d
Epoch = 532.4719 [0.0201] BKJD
Rp/R* = 0.0250 [0.0023]
a/R* = 97.07 [25.58]
b = 0.91 [0.05]
Seff = 2.59 [3.14]
Teq = 323 [98] K
Rp = 6.60 [4.28] Re
a = 1.2073 [0.8546] AU
Ag = 4694.27 [5857.28] [0.80σ]
Teffp = 4138 [359] K [10.24σ]

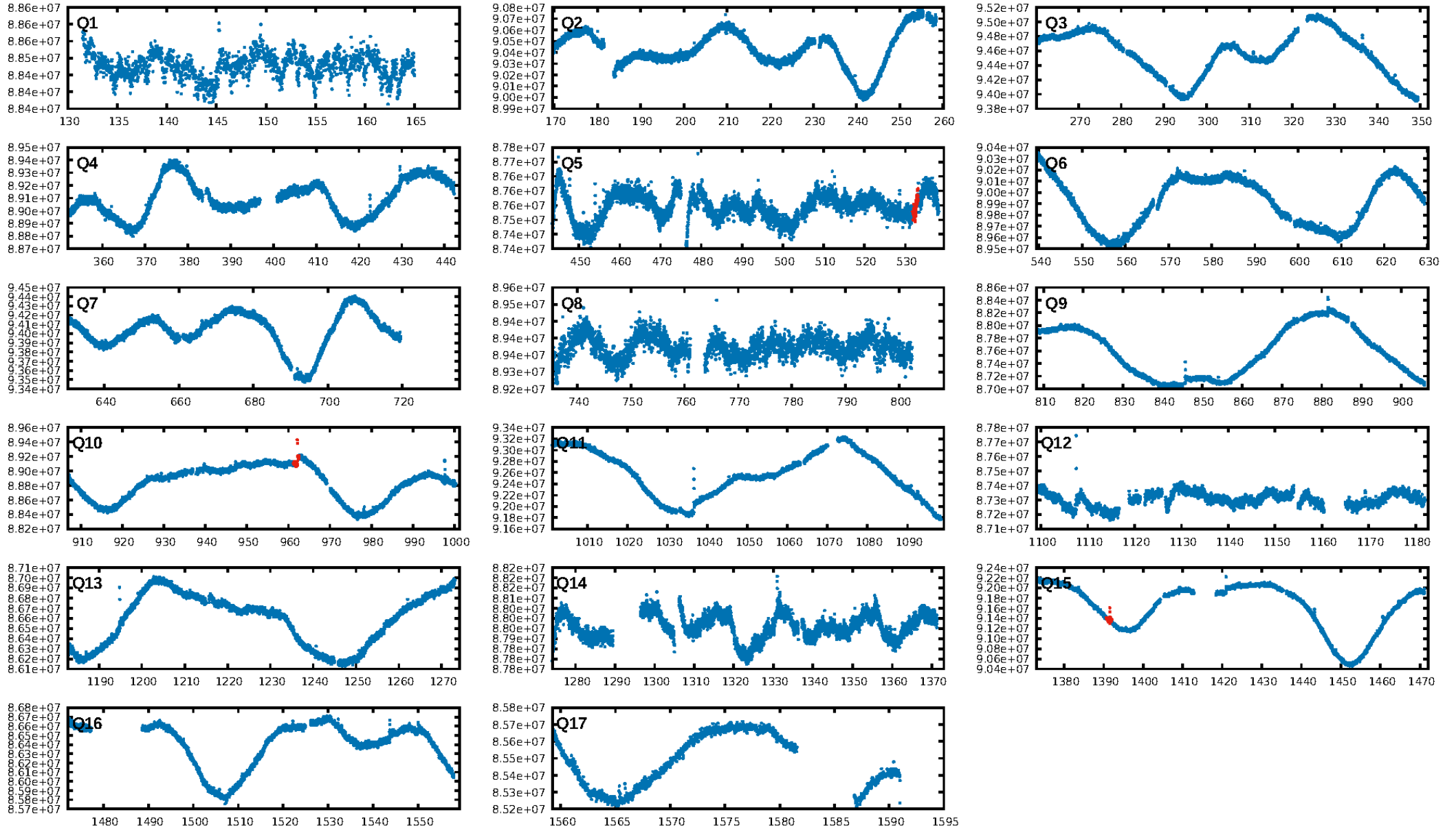
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [83.19σ]
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.16e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.888
Centroid-sig: 0.5%
Centroid-so: 1.184 arcsec [2.46σ]
OotOffset-rm: 0.448 arcsec [0.25σ]
KicOffset-rm: 0.491 arcsec [0.28σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

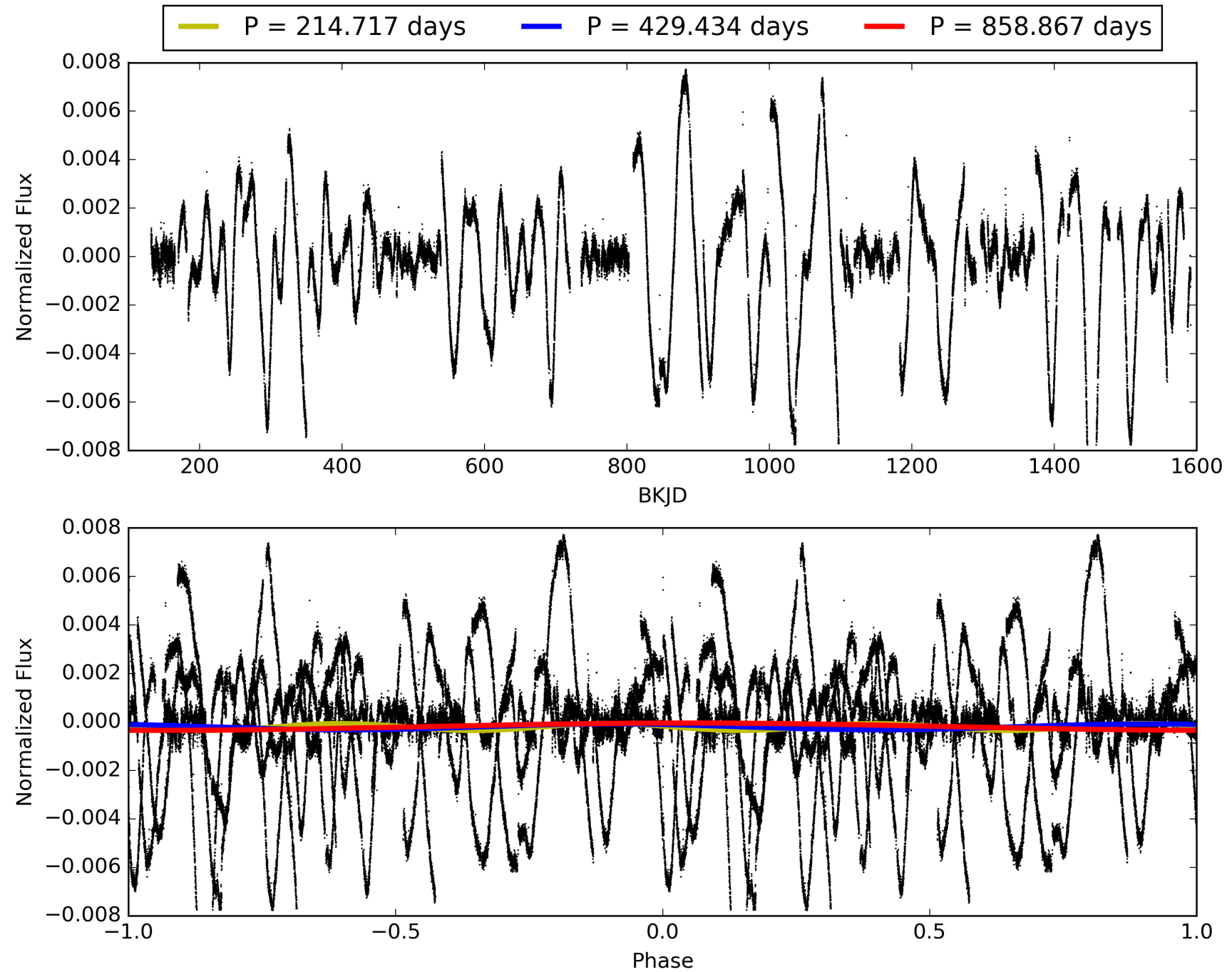
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:39:29 Z

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

TCE 008313532-01, PDC Light Curves

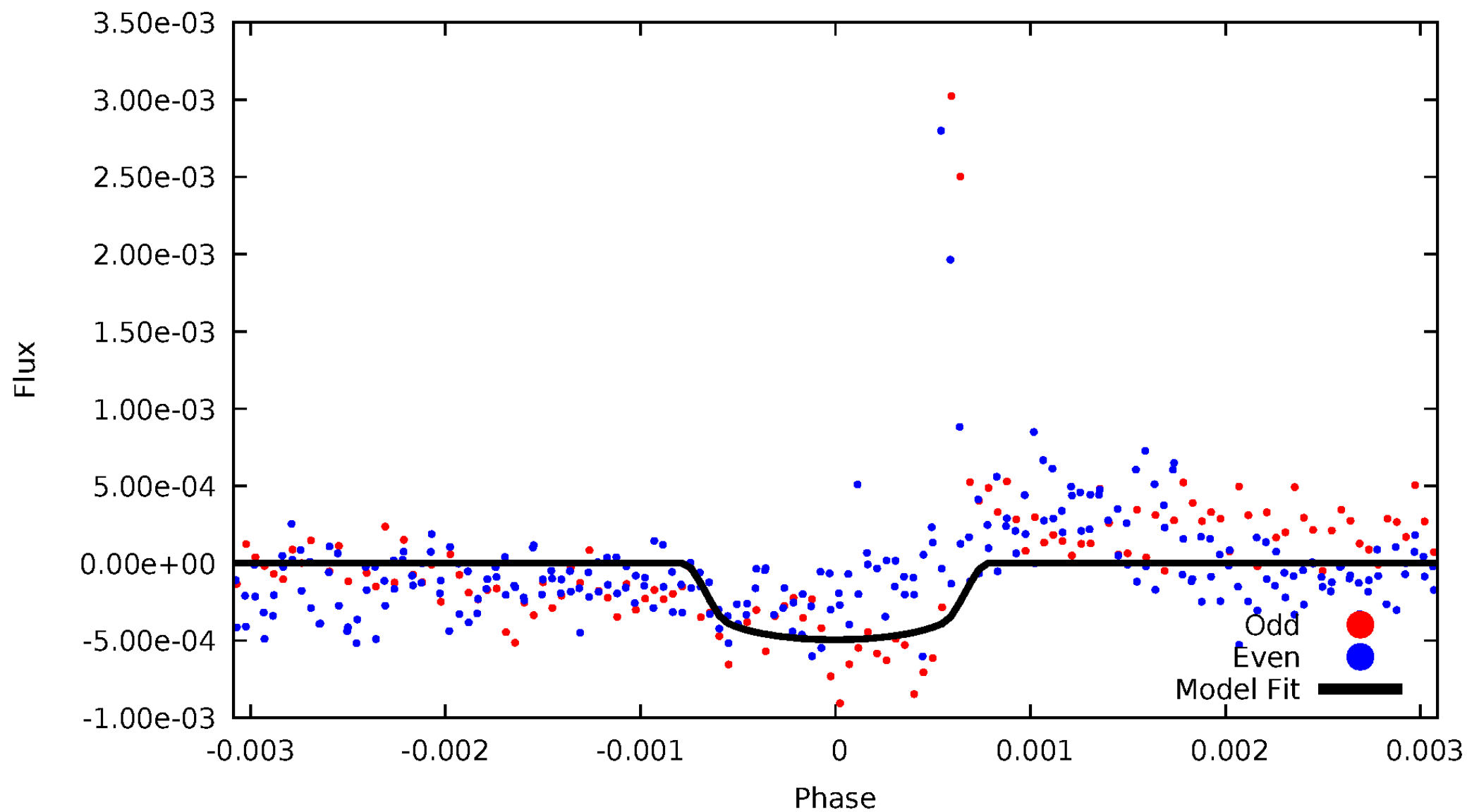


TCE 008313532-01



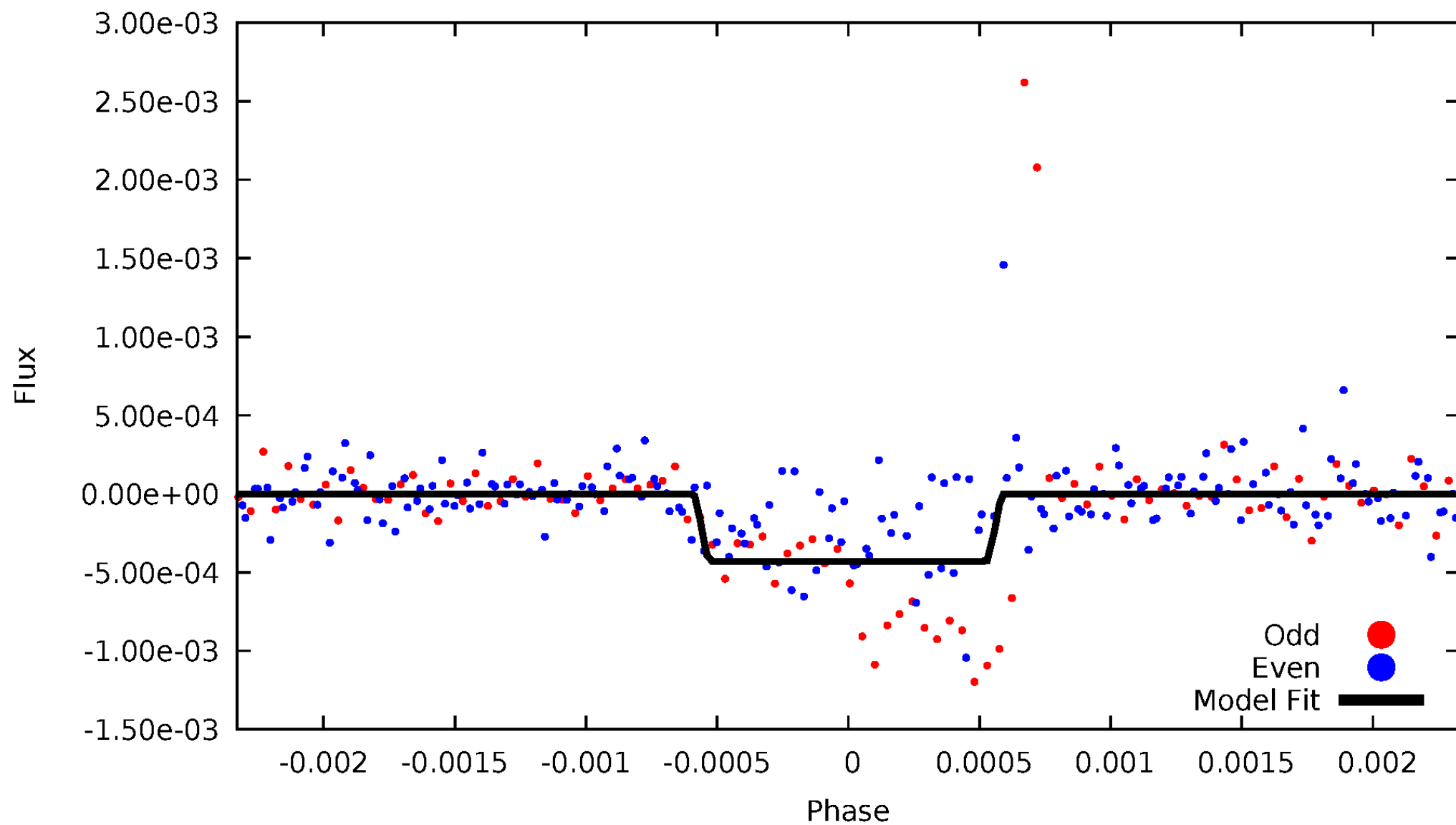
DV Odd/Even

TCE 008313532-01

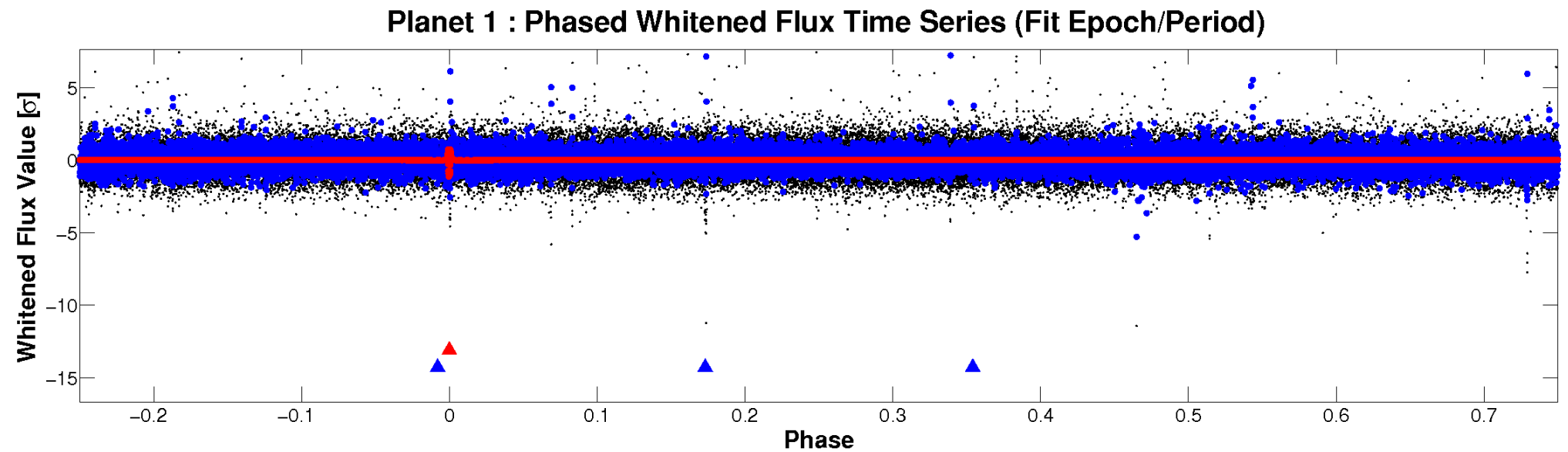
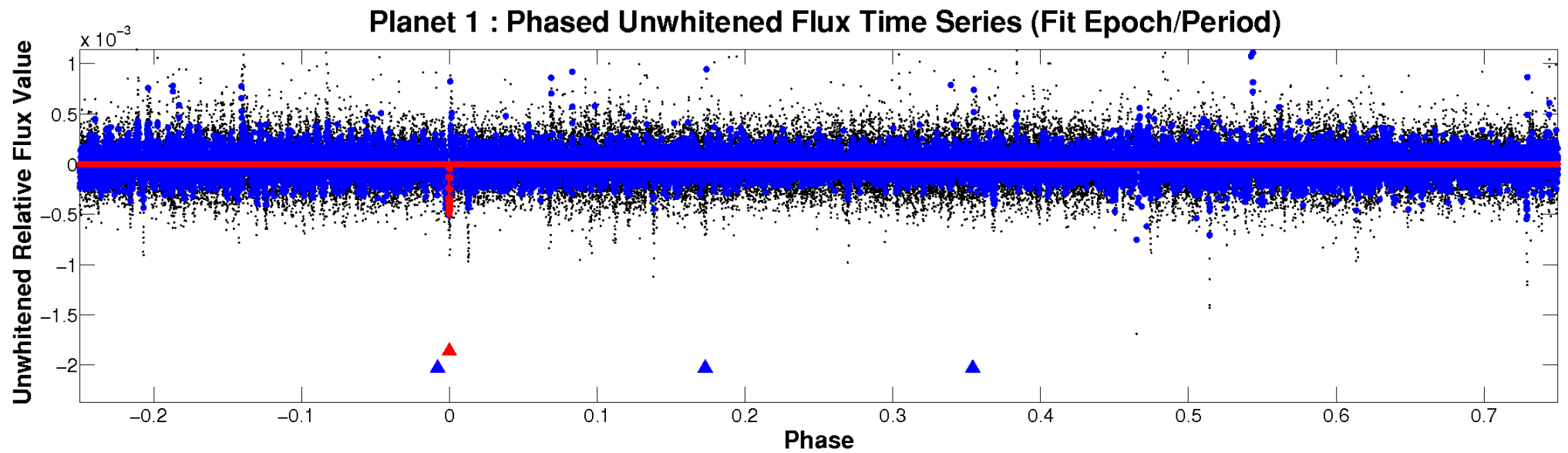


ALT Odd/Even

TCE 008313532-01



Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 008313532-01 $P=429.433585$ Days $T_0=532.471898$ (BKJD)



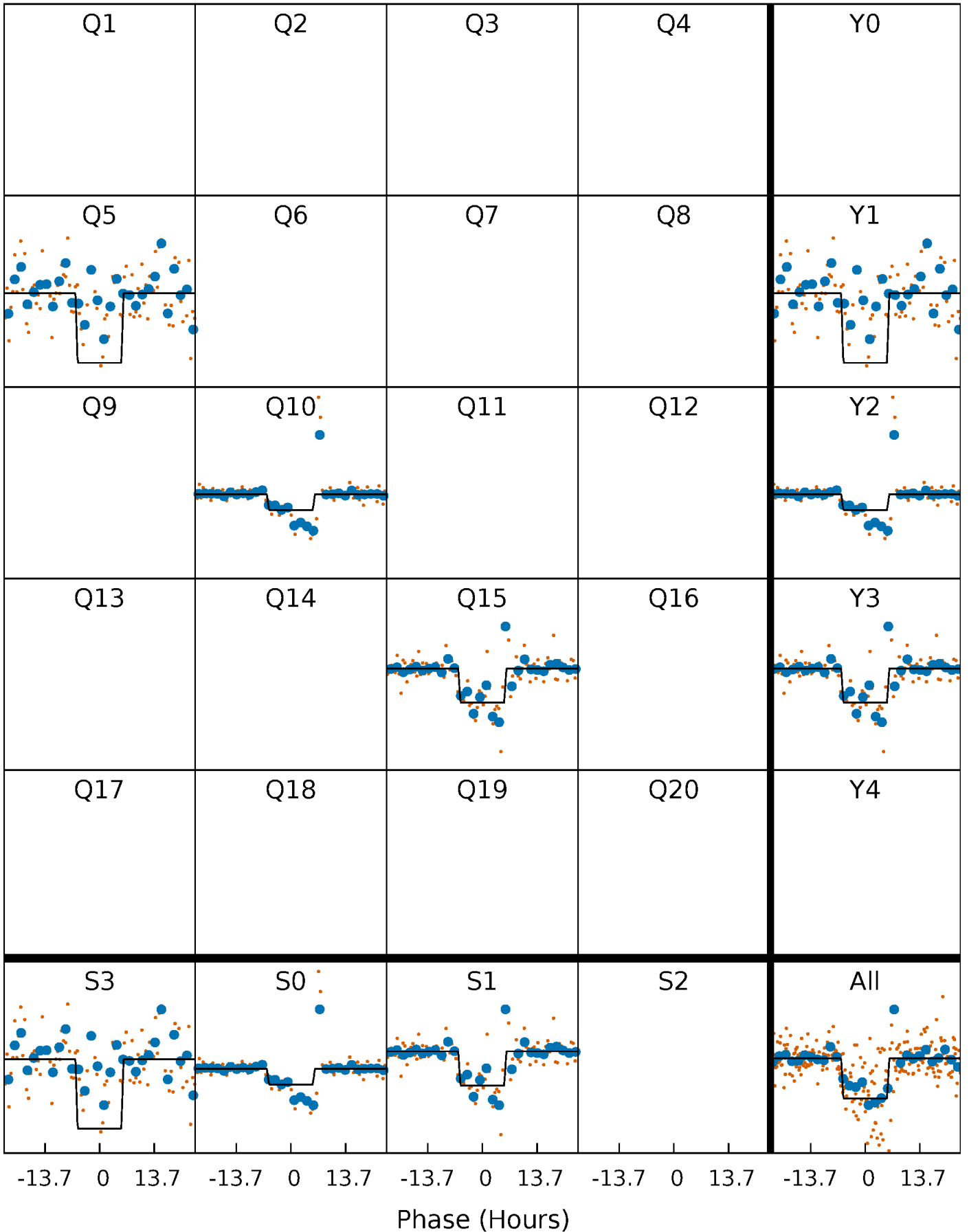
DV Quarter-Phased Transit Curves

TCE 008313532-01 $P=429.433585$ Days $T_0=532.471898$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

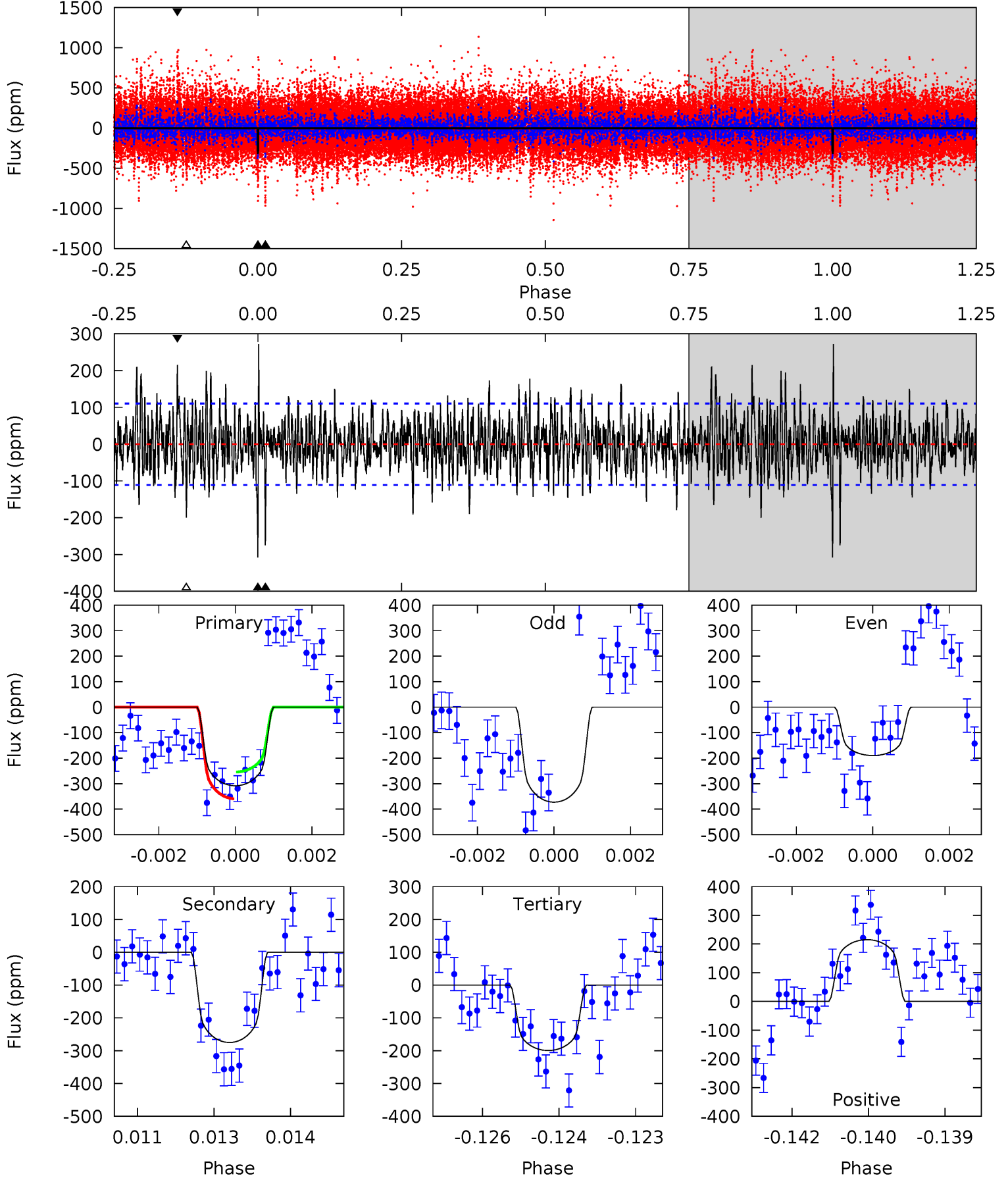
TCE 008313532-01 P=429.465753 Days $T_0=532.406395$ (BKJD)



DV Model-Shift Uniqueness Test

008313532-01, P = 429.433585 Days, E = 103.038313 Days

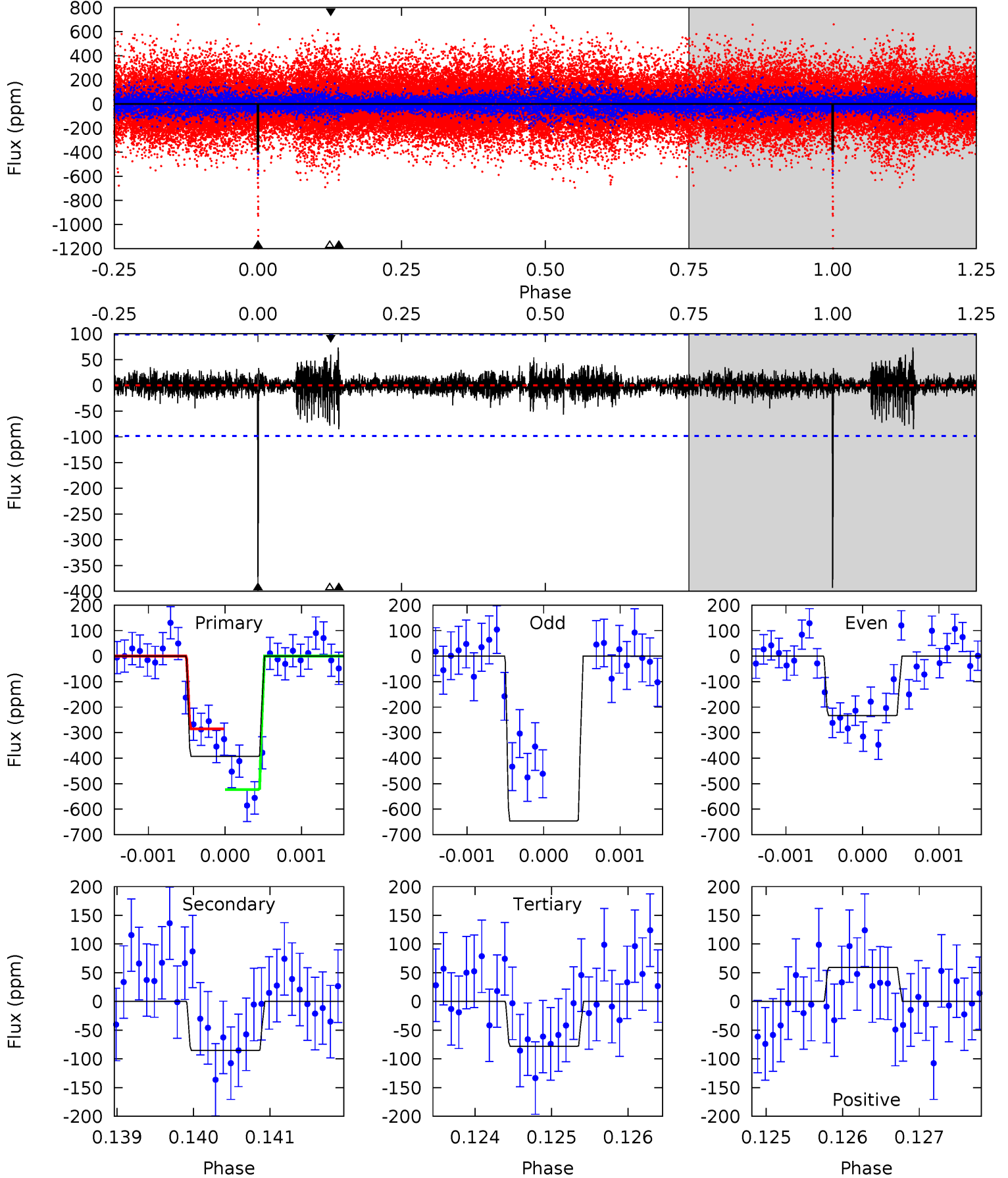
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	13.3	9.68	10.4	5.37	3.16	2.81	5.27	4.50	3.66	2.89	4.20	0.87	0.47	2.54



Alt Model-Shift Uniqueness Test

008313532-01, P = 429.465753 Days, E = 102.940642 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	4.70	4.30	3.28	5.42	3.25	0.68	17.4	18.4	0.41	1.43	11.2	0.93	0.16	6.43



Stellar Parameters For KIC 008313532

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5180^{+181}_{-145}	$3.776^{+0.735}_{-0.245}$	$0.180^{+0.250}_{-0.250}$	$2.417^{+0.835}_{-1.550}$	$1.271^{+0.172}_{-0.429}$	$0.127^{+1.729}_{-0.073}$
	+3%/-3%	+19%/-6%	+139%/-139%	+35%/-64%	+14%/-34%	+1362%/-58%
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 008313532-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-275 ± 21	$6.33^{+1.72}_{-2.18}$	449^{+46}_{-81}	4378^{+227}_{-193}	5391^{+6437}_{-2066}
Alt.	-85 ± 18	$5.17^{+1.54}_{-1.74}$	447^{+50}_{-82}	3806^{+226}_{-235}	2465^{+2931}_{-1067}

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 $A_{obs} \gg 1.0$

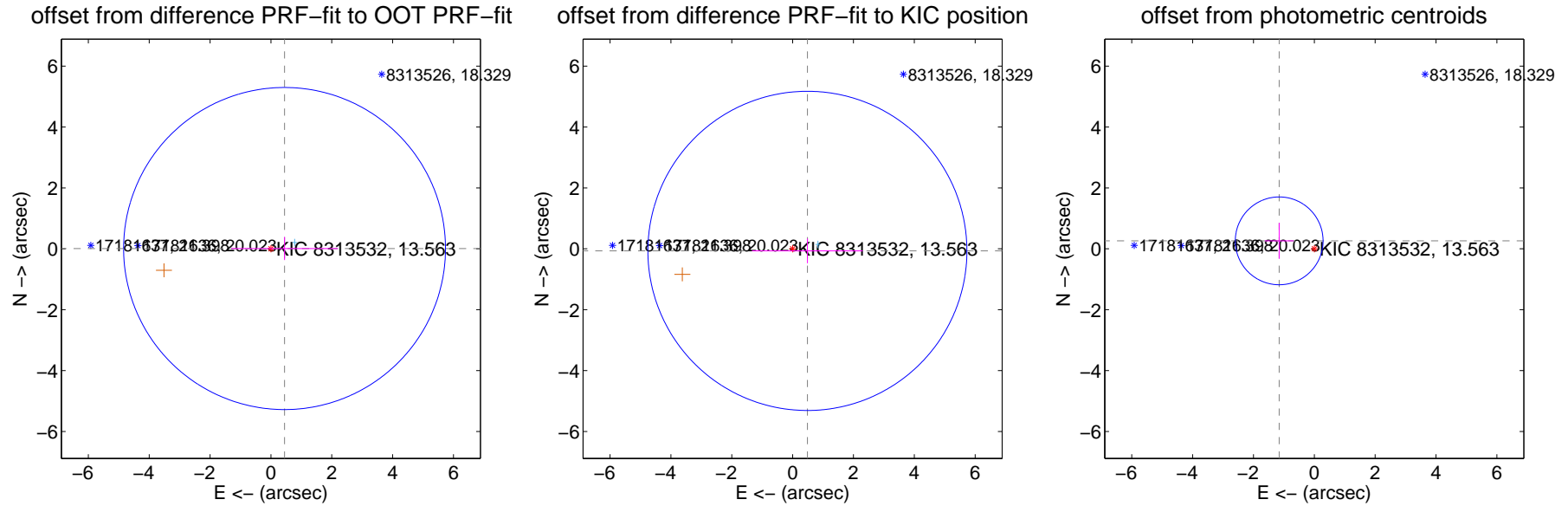
DV Centroid Data

Supplemental centroid analysis for 008313532-01. Kepler magnitude: 13.56. Transit SNR 9.26

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.448 ± 1.763	0.25	-0.448 ± 1.755	0.009 ± 0.379
PRF-fit source offset from KIC position	0.491 ± 1.747	0.28	-0.486 ± 1.820	-0.068 ± 0.407
photometric centroid source offset	1.18 ± 0.48	2.46	1.15 ± 0.47	0.26 ± 0.59

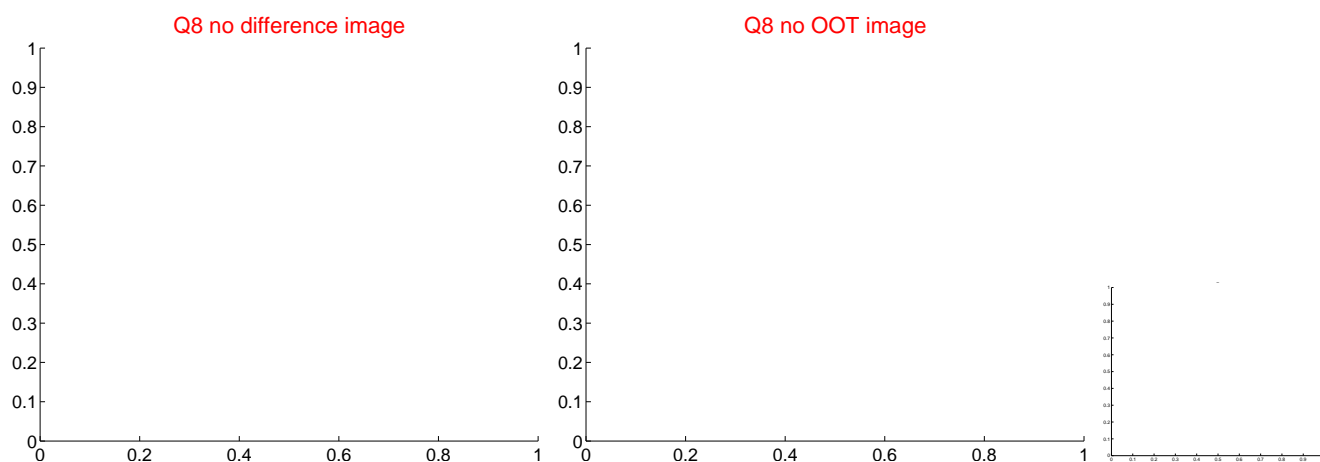
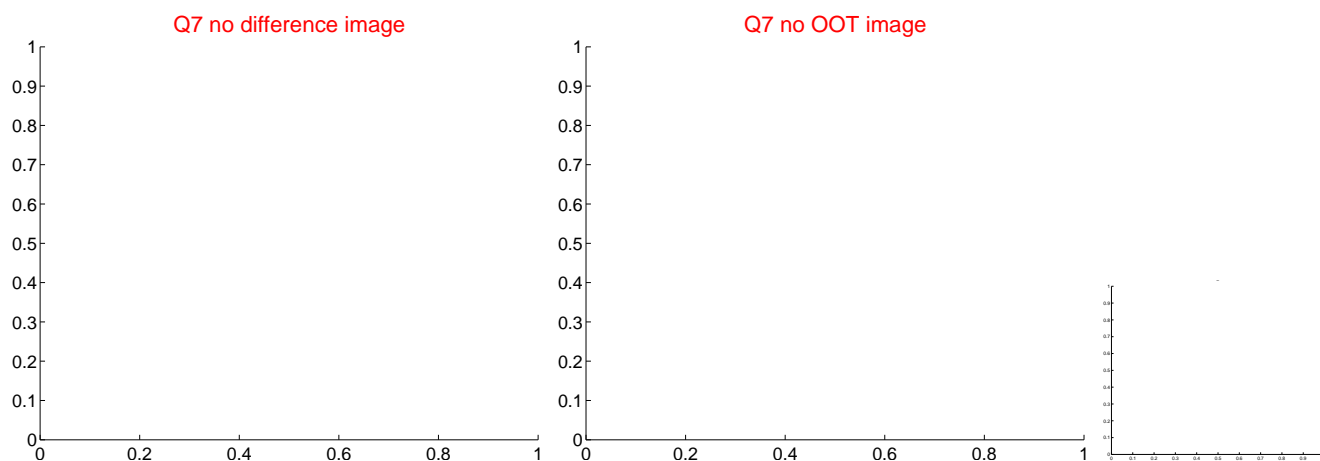
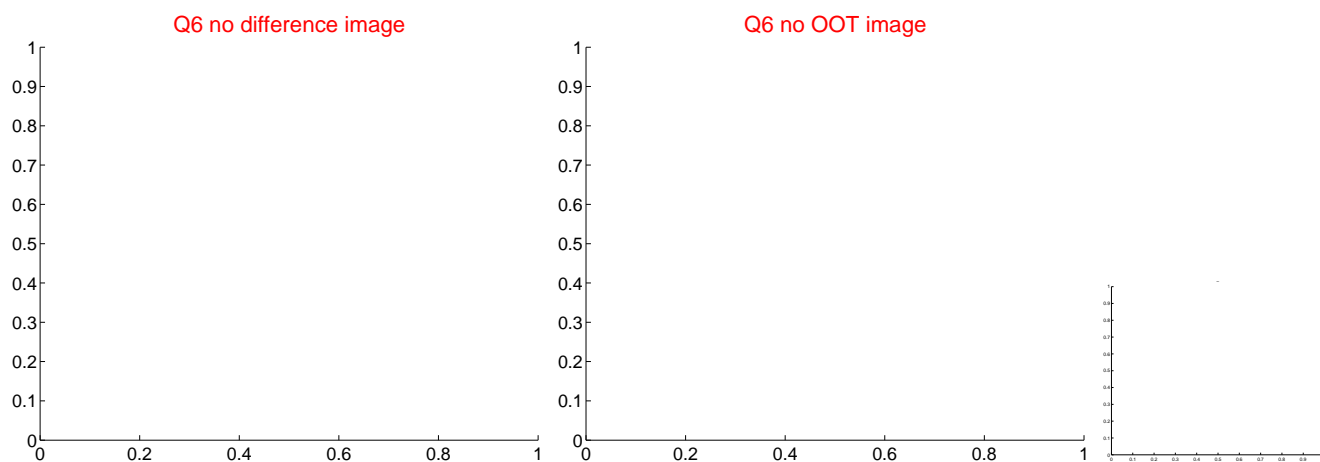
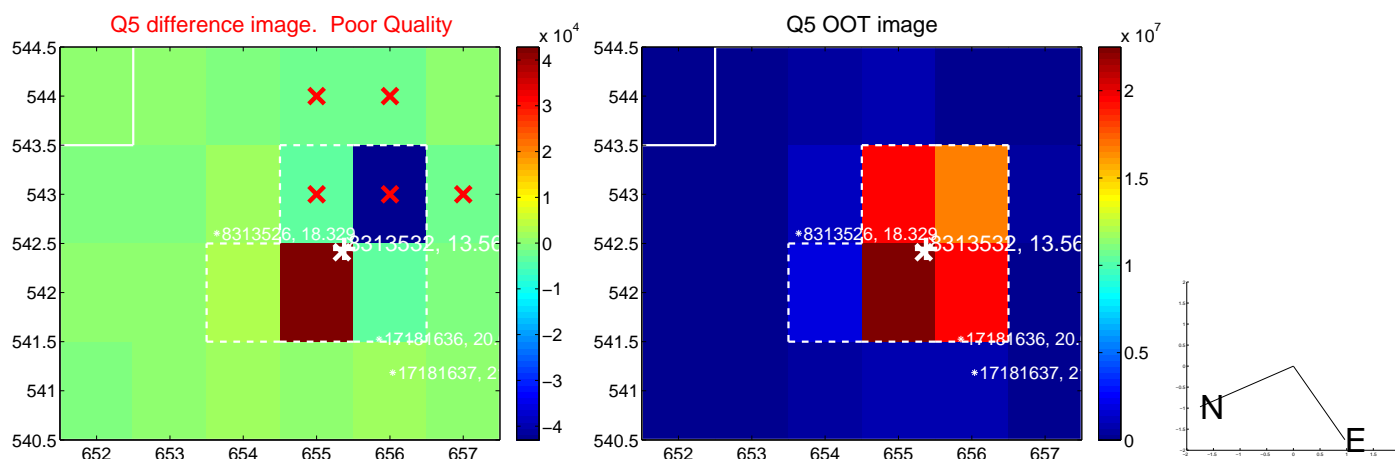


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



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

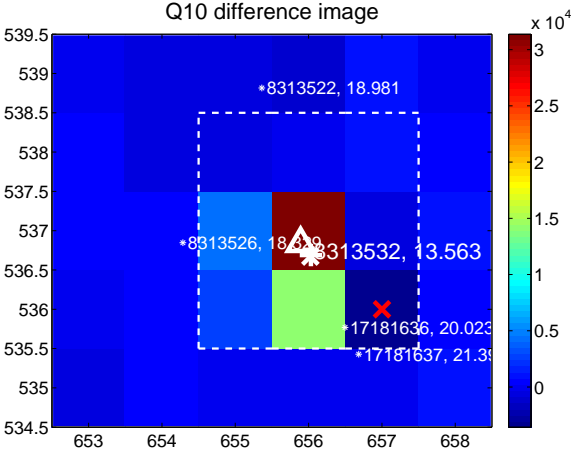
Q9 no difference image



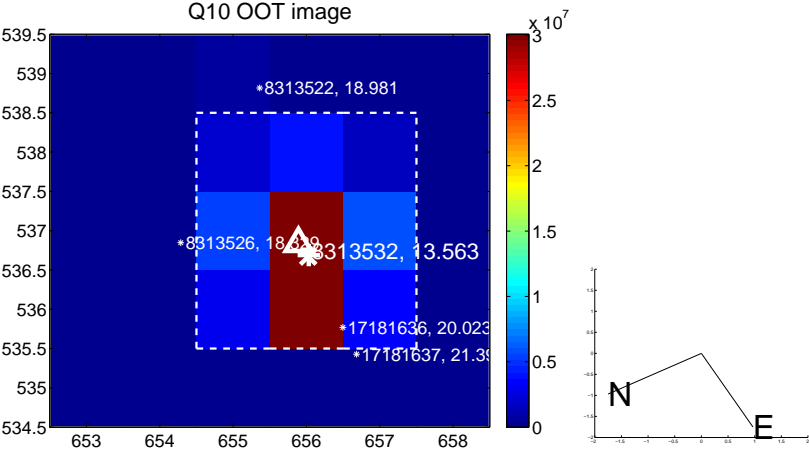
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



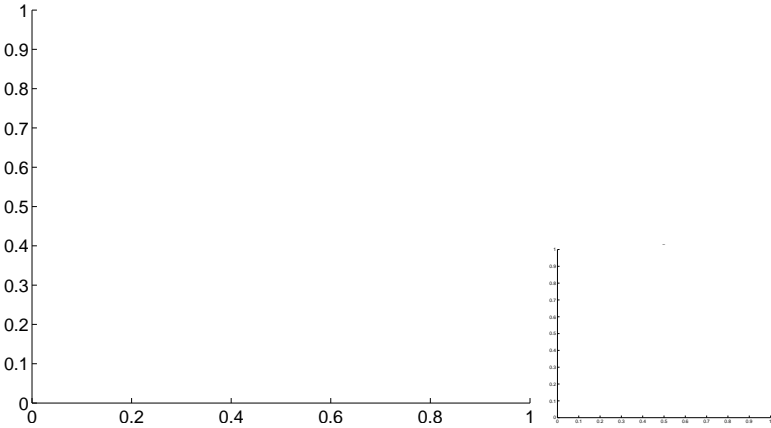
Q11 no OOT image



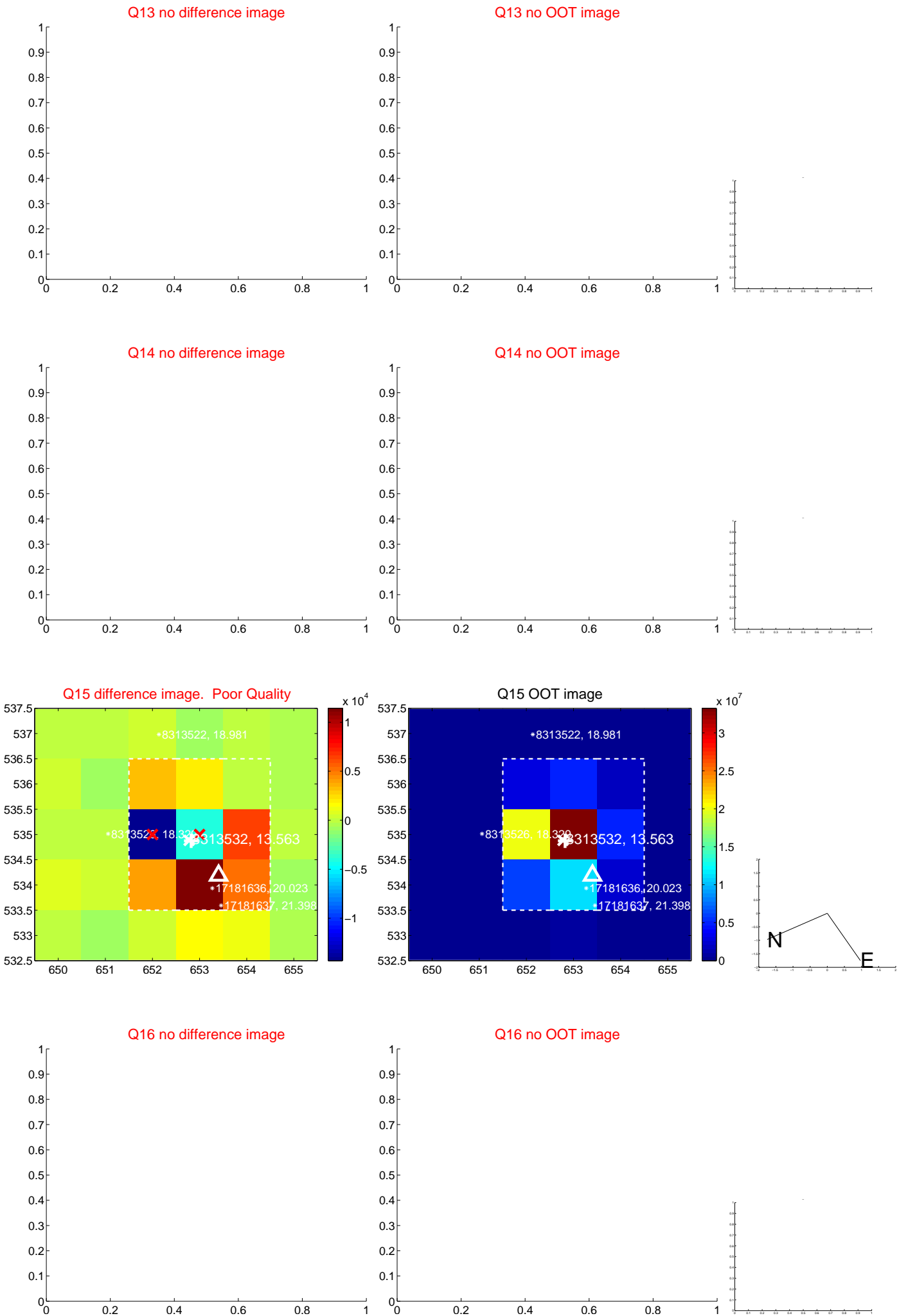
Q12 no difference image



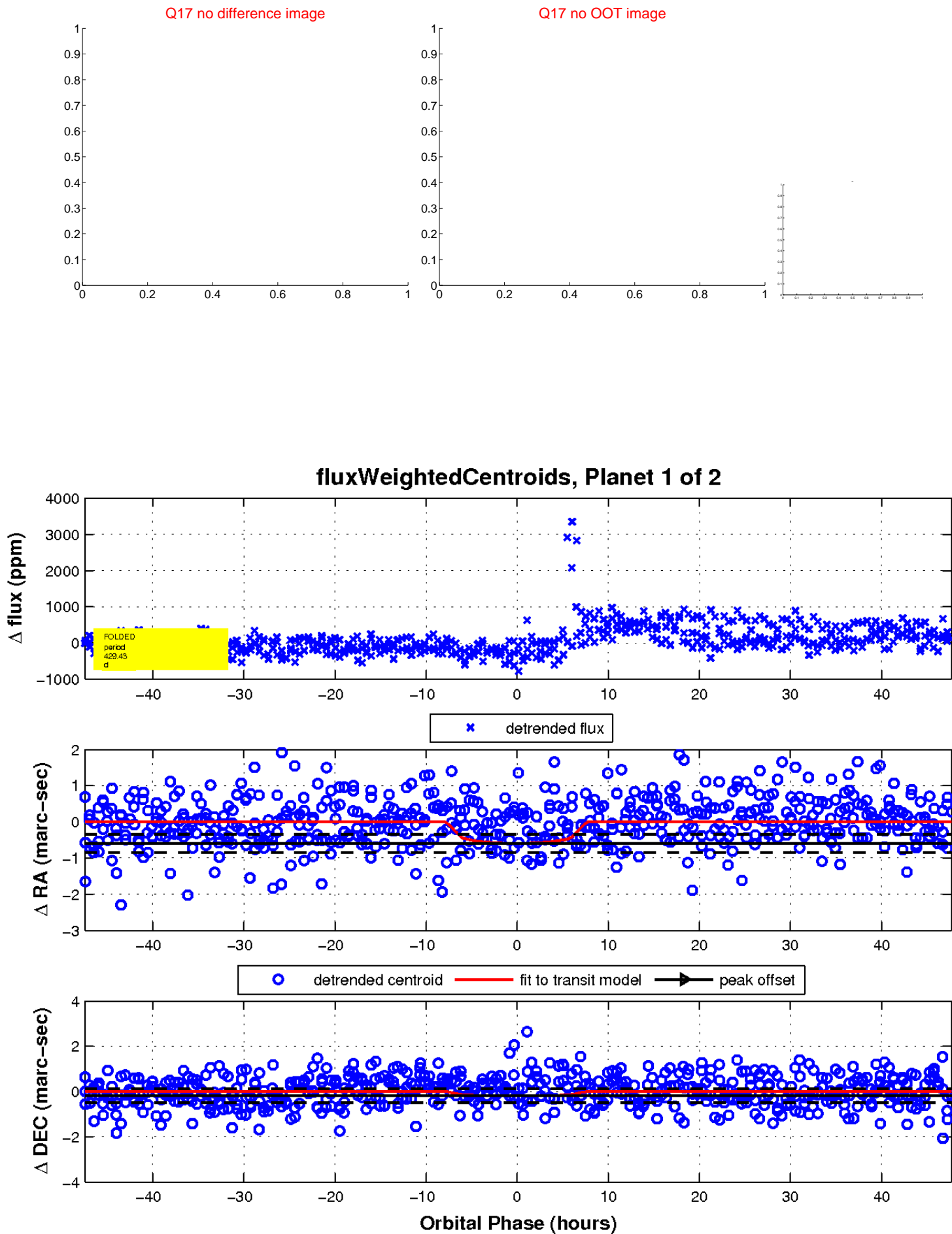
Q12 no OOT image



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

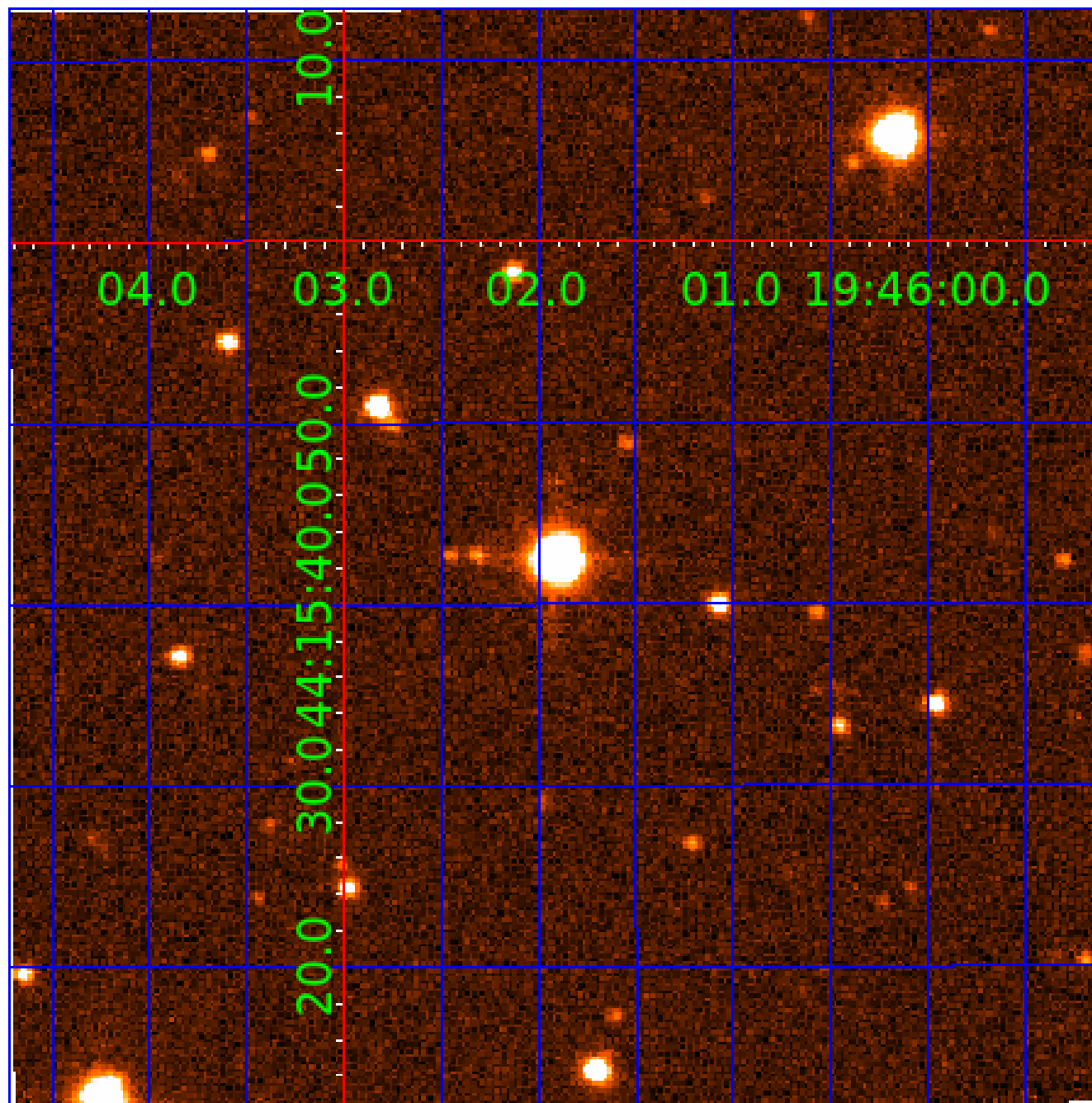


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008313532

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})
008313532-01	OBS	No	429.433586	532.471898	495.1	15.901	10.3	9.3	2.42	5180	6.60	2.58
008313532-02	OBS	No	507.164911	529.083456	461.0	15.814	10.2	8.7	2.42	5180	5.31	2.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008313532-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008313532-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

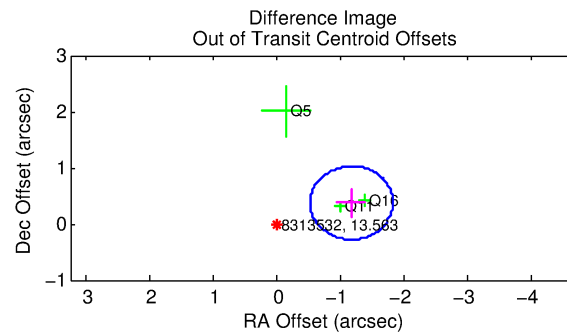
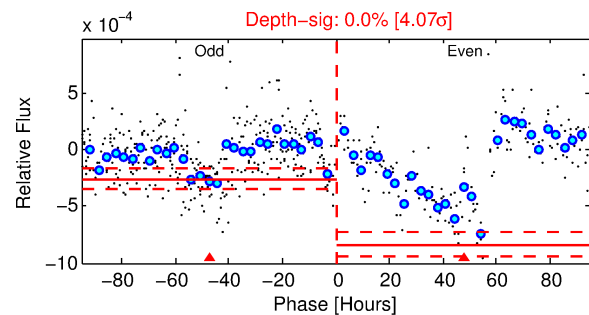
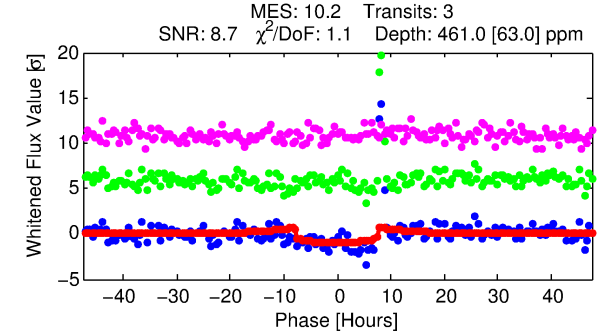
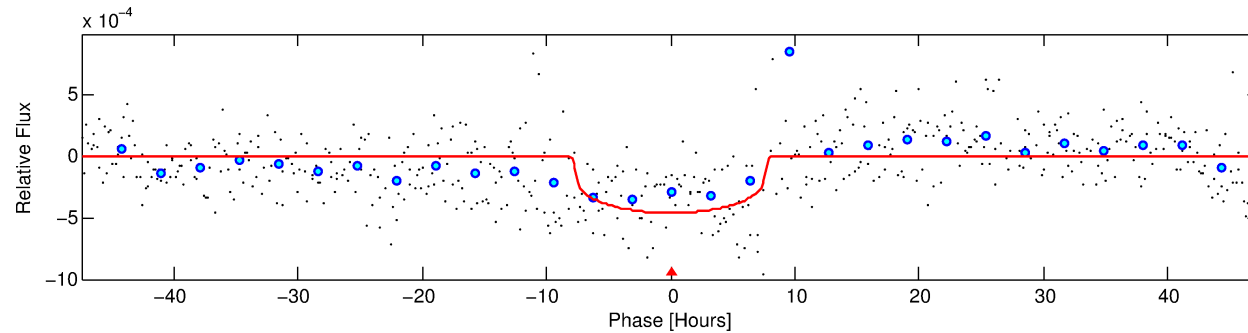
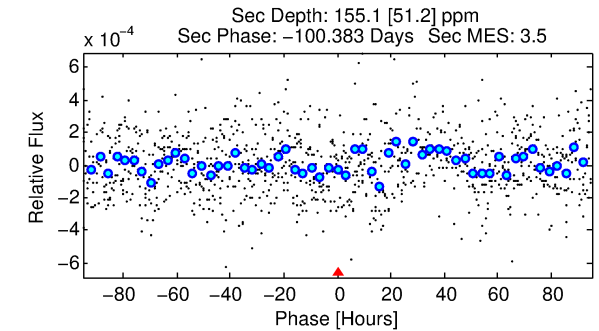
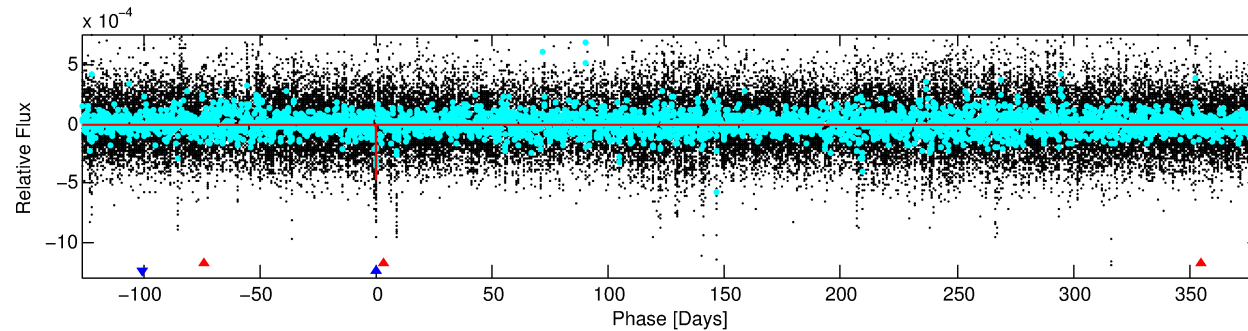
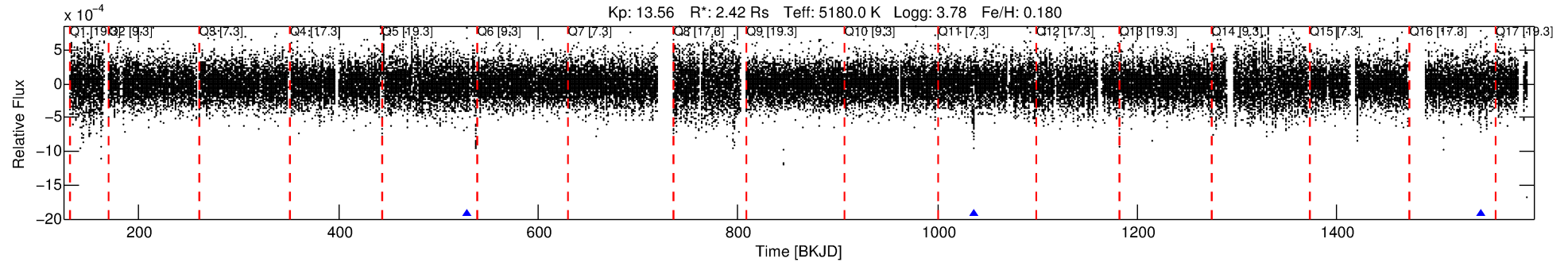
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008313532-02

No Significant Match Found

DV One-Page Summary

KIC: 8313532 Candidate: 2 of 2 Period: 507.165 d



DV Fit Results:

Period = 507.16491 [0.01180] d
Epoch = 529.0835 [0.0146] BKJD
Rp/R* = 0.0201 [0.0082]
a/R* = 209.06 [298.89]
b = 0.56 [1.77]
Seff = 2.07 [2.52]
Teq = 306 [93] K
Rp = 5.31 [4.03] Re
a = 1.3489 [0.9548] AU
Ag = 5510.91 [8226.95] [0.67σ]
Teffp = 4075 [907] K [4.13σ]

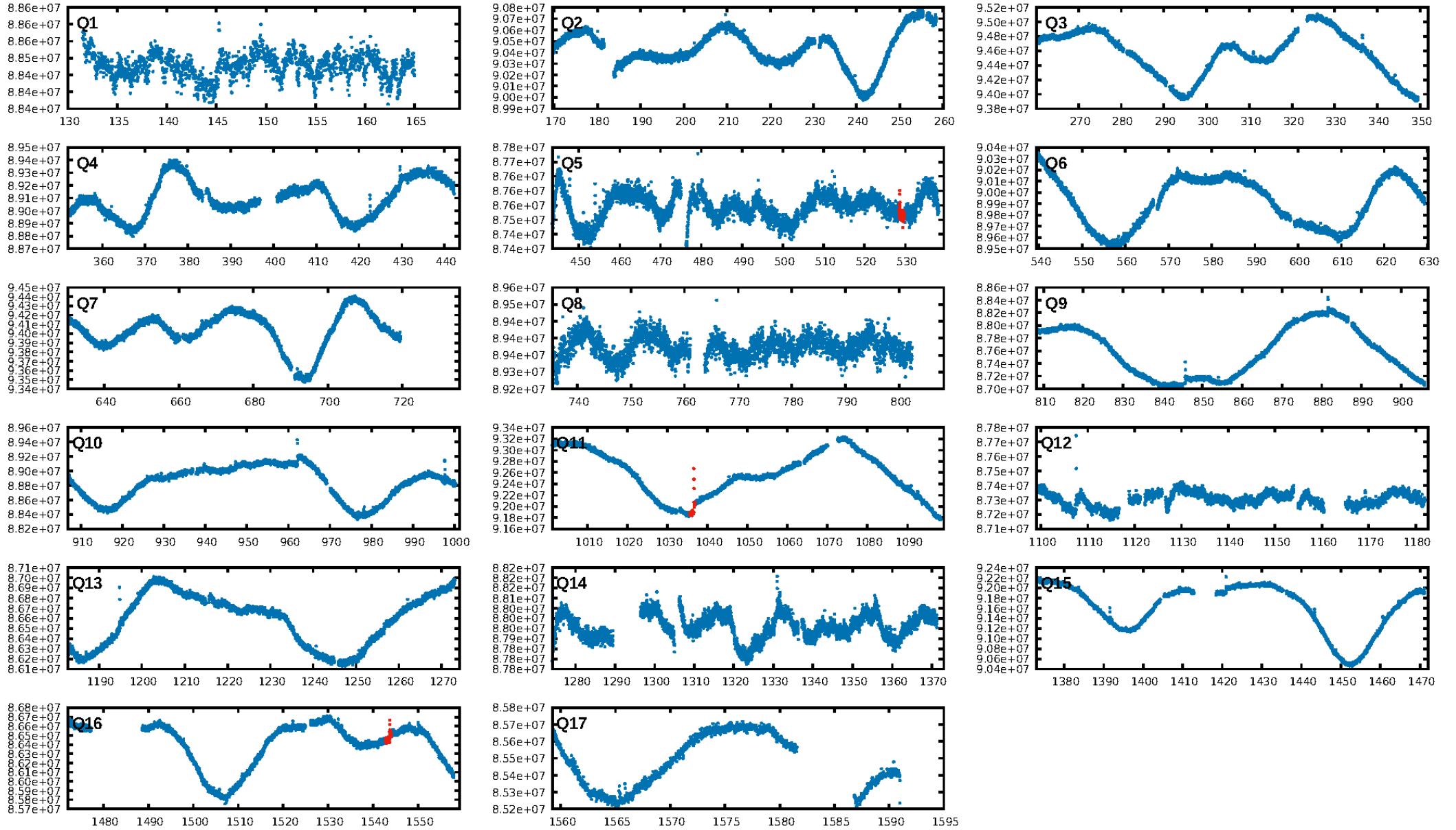
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [83.19σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 82.0%
Bootstrap-pfa: 5.94e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.258
Centroid-sig: 11.4%
Centroid-so: 0.512 arcsec [0.93σ]
OotOffset-rm: 1.228 arcsec [5.65σ]
KicOffset-rm: 1.145 arcsec [5.10σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

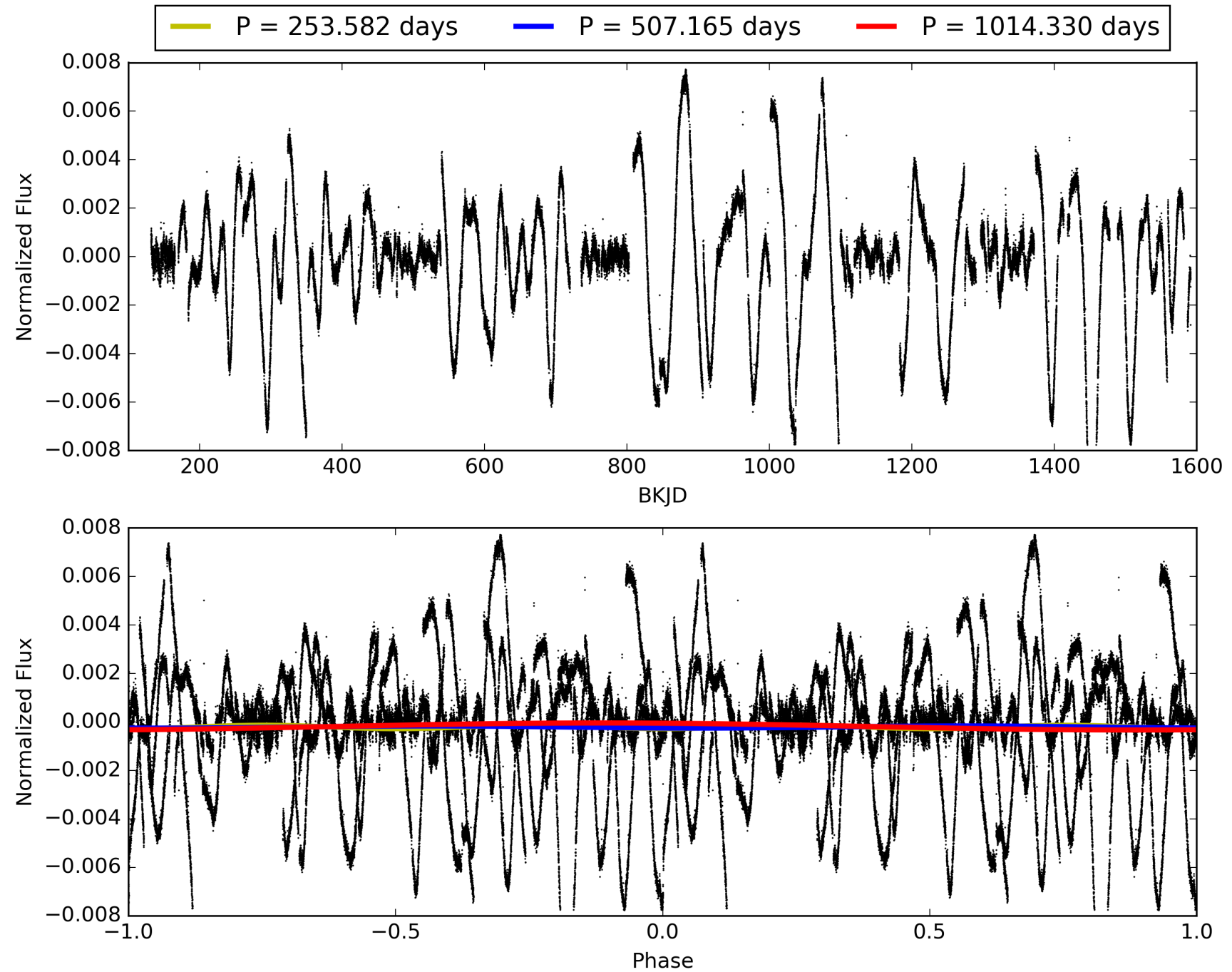
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:39:39 Z

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

TCE 008313532-02, PDC Light Curves

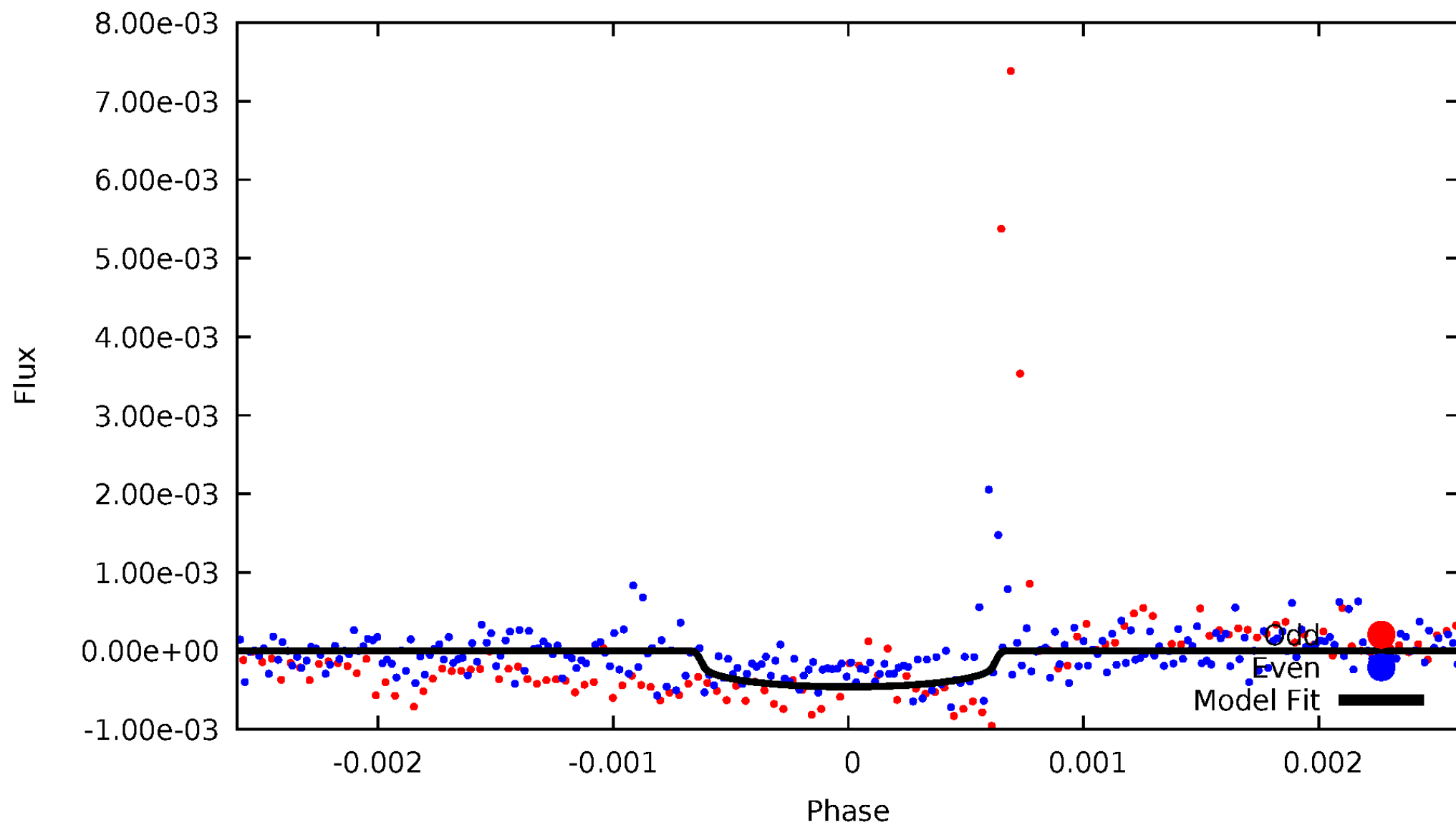


TCE 008313532-02



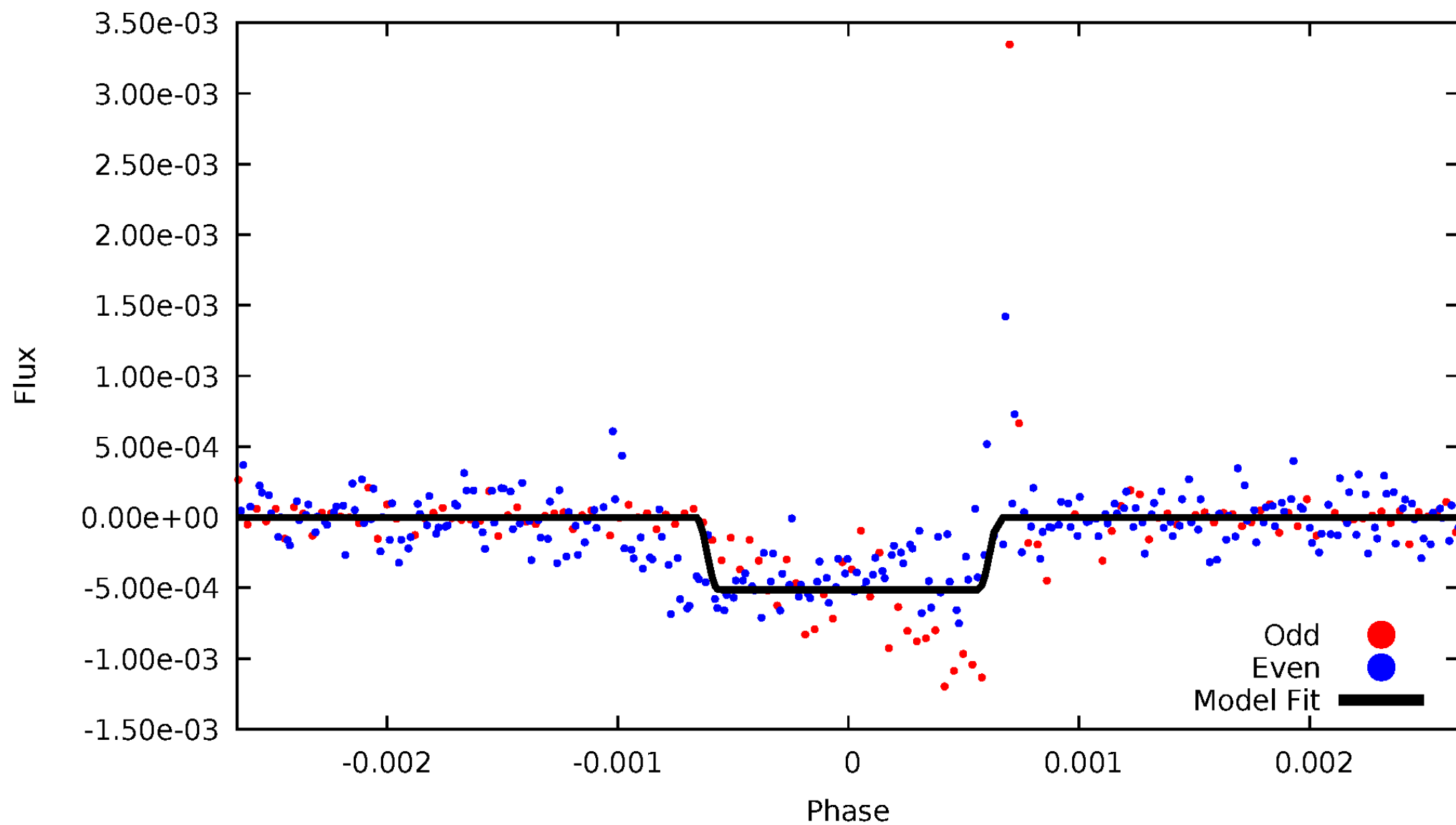
DV Odd/Even

TCE 008313532-02



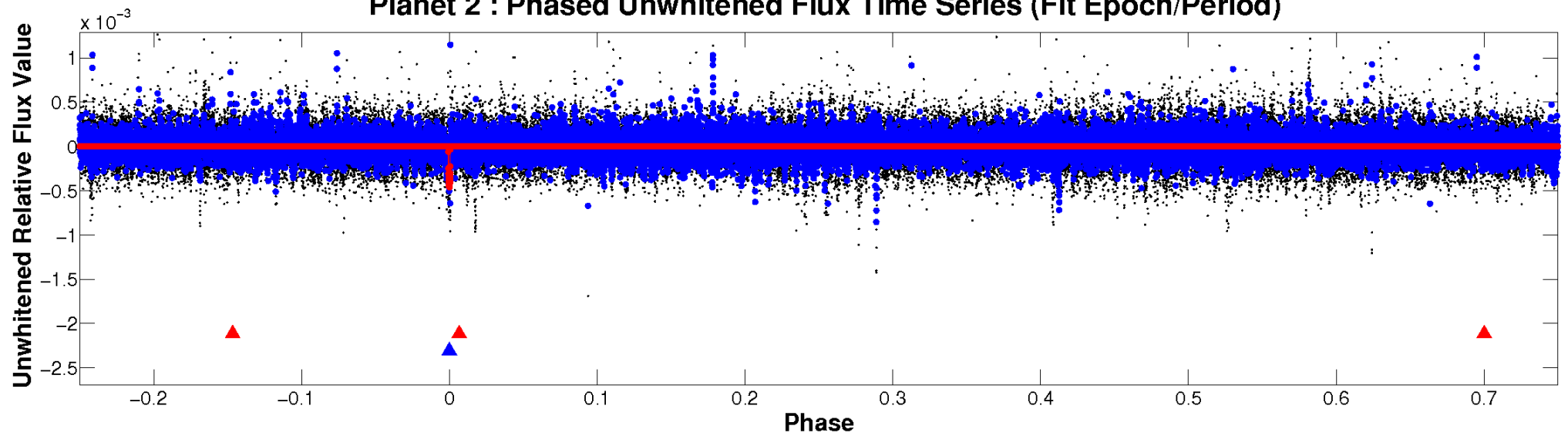
ALT Odd/Even

TCE 008313532-02

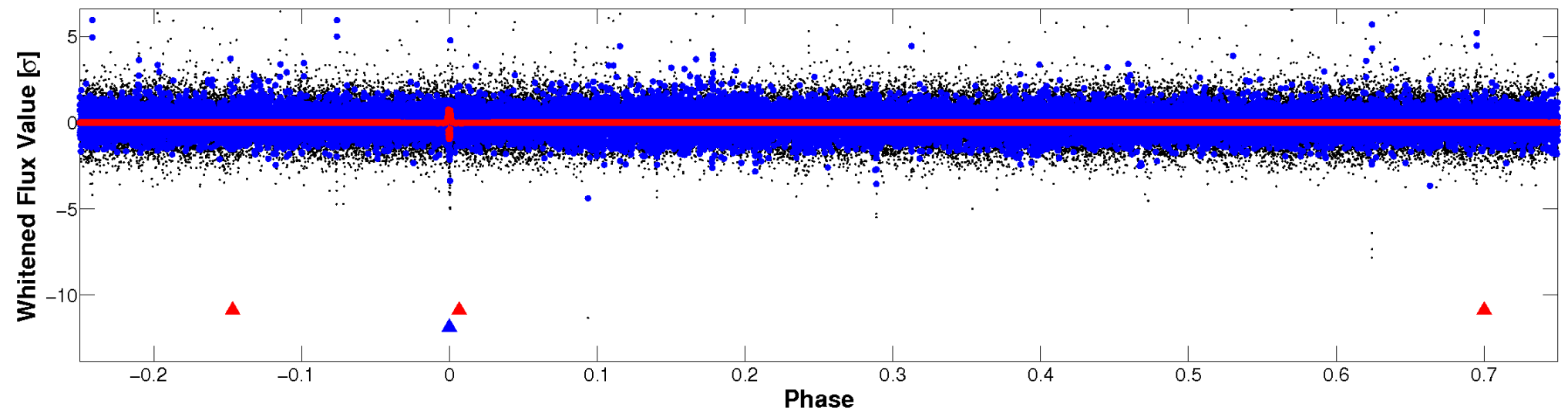


Non-Whitened Vs. Whitened Light Curve

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

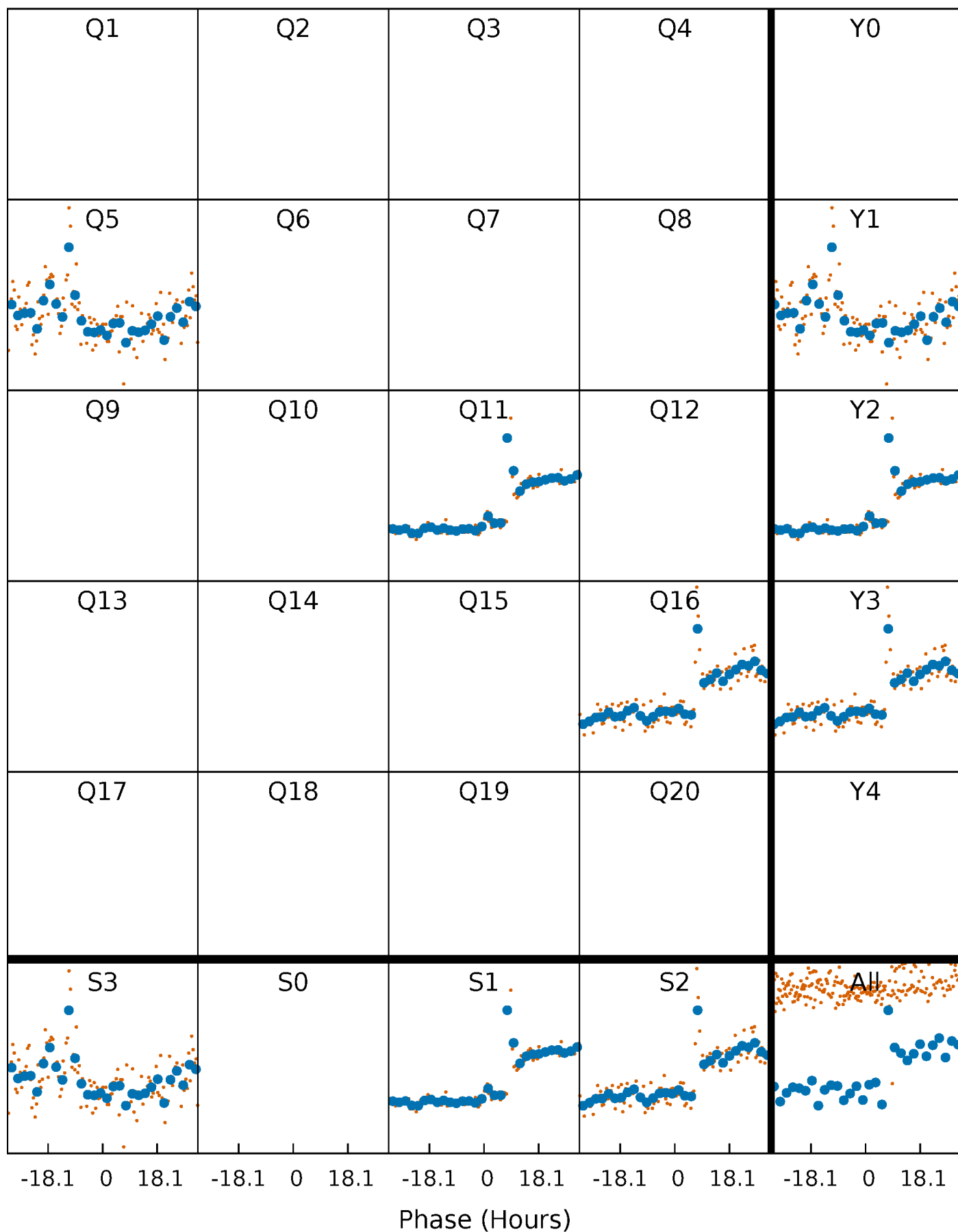


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



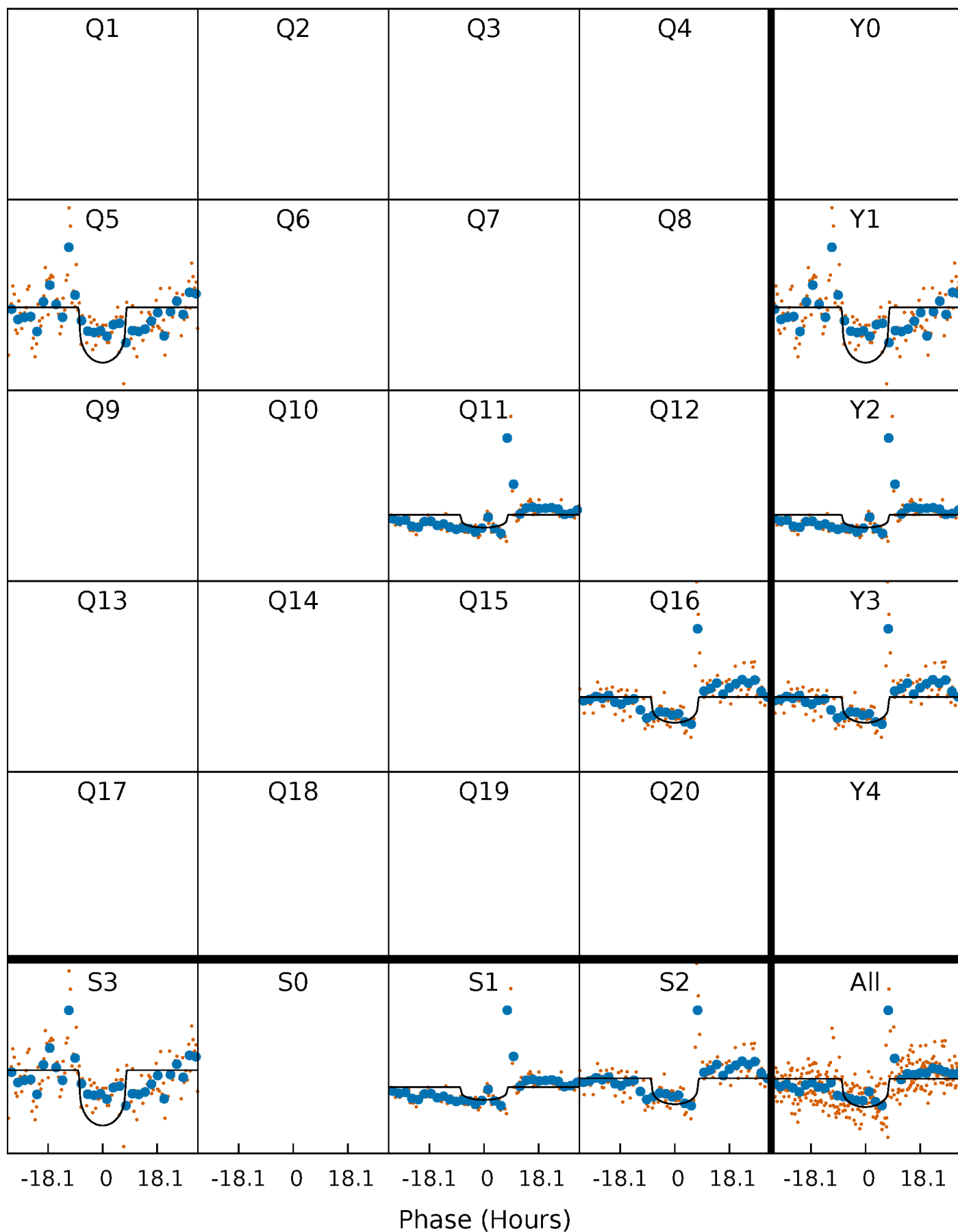
PDC Quarter-Phased Transit Curves

TCE 008313532-02 $P=507.164912$ Days $T_0=529.083456$ (BKJD)



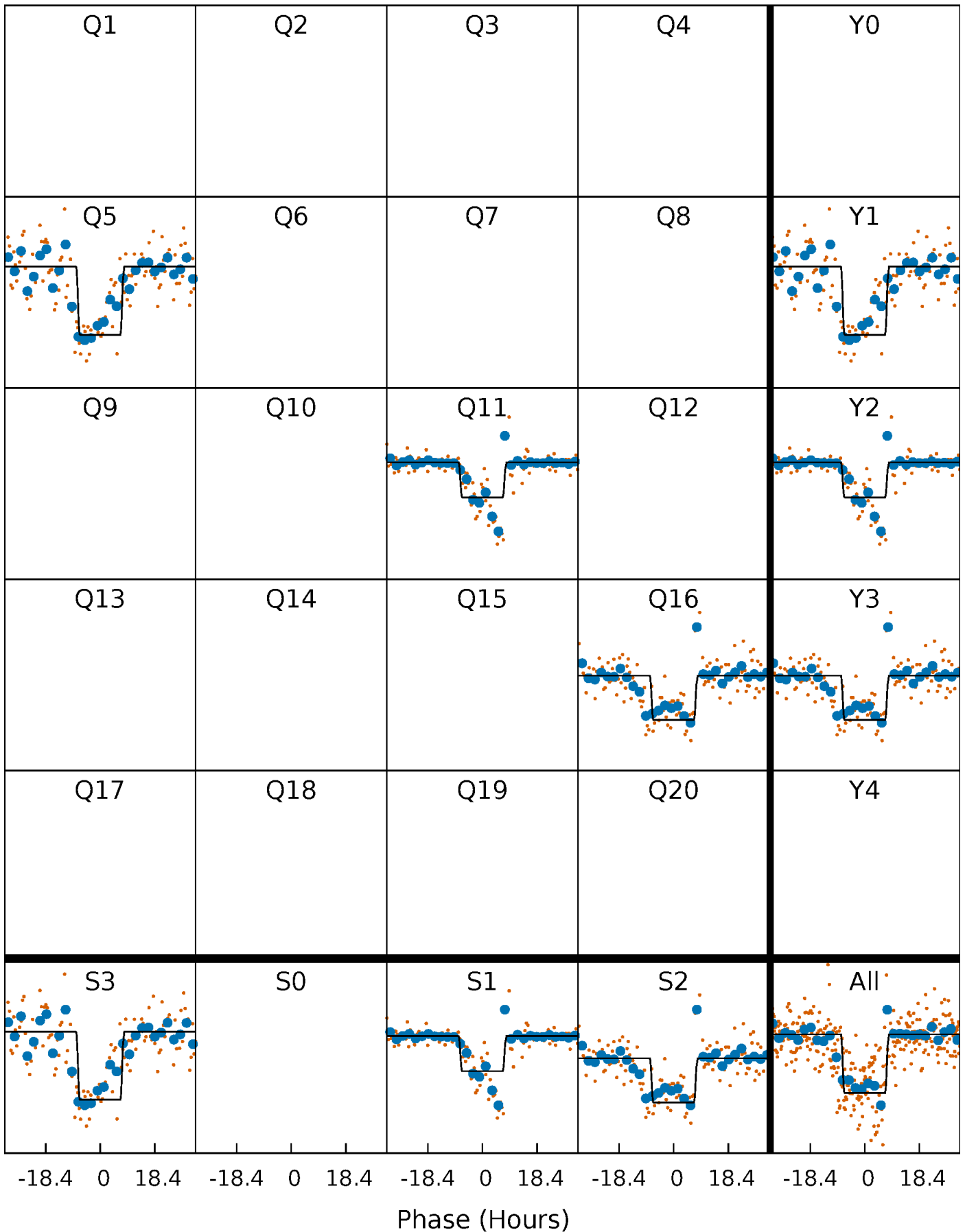
DV Quarter-Phased Transit Curves

TCE 008313532-02 P=507.164912 Days $T_0=529.083456$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

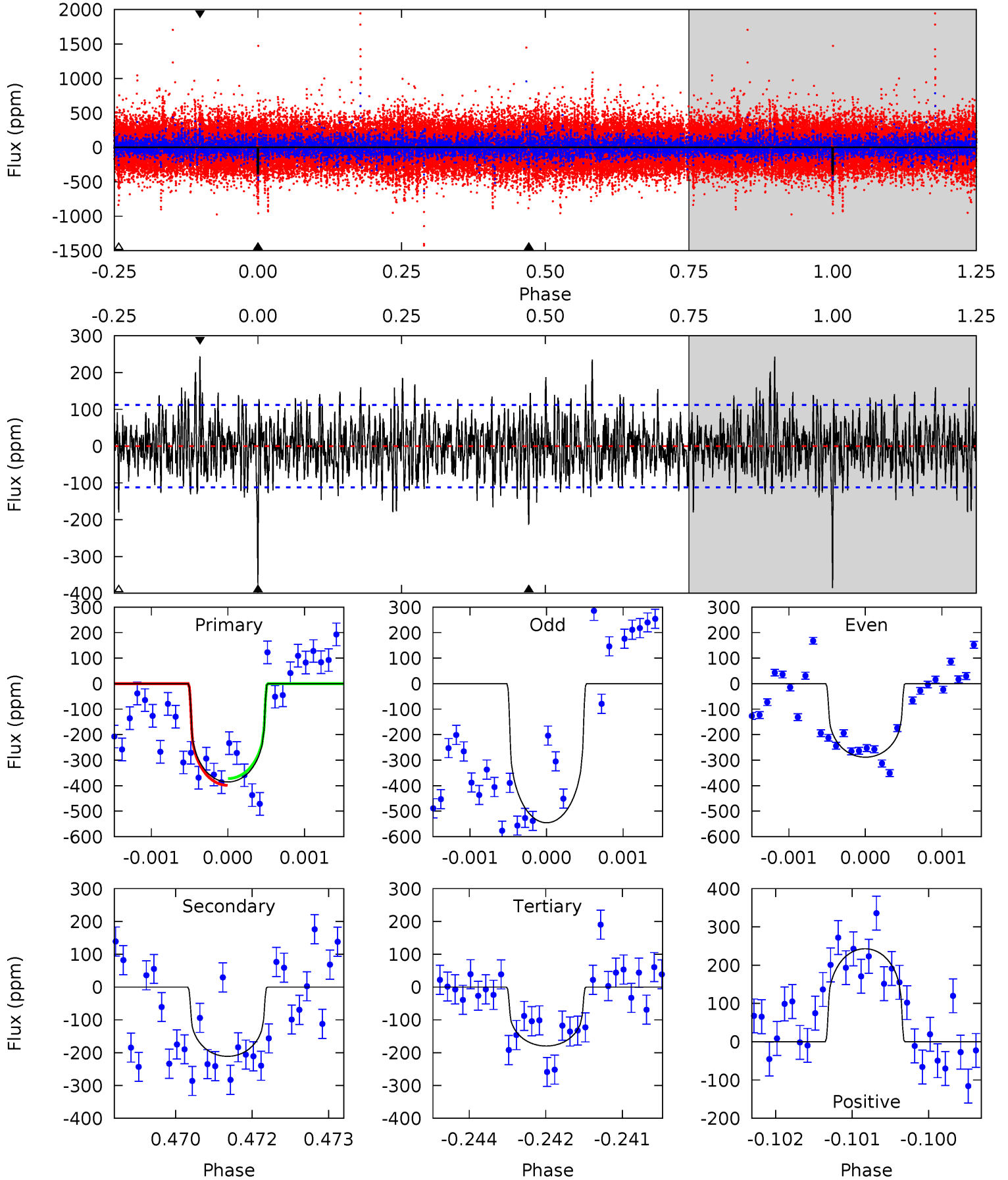
TCE 008313532-02 $P=507.126903$ Days $T_0=529.137441$ (BKJD)



DV Model-Shift Uniqueness Test

008313532-02, $P = 507.164912$ Days, $E = 21.918544$ Days

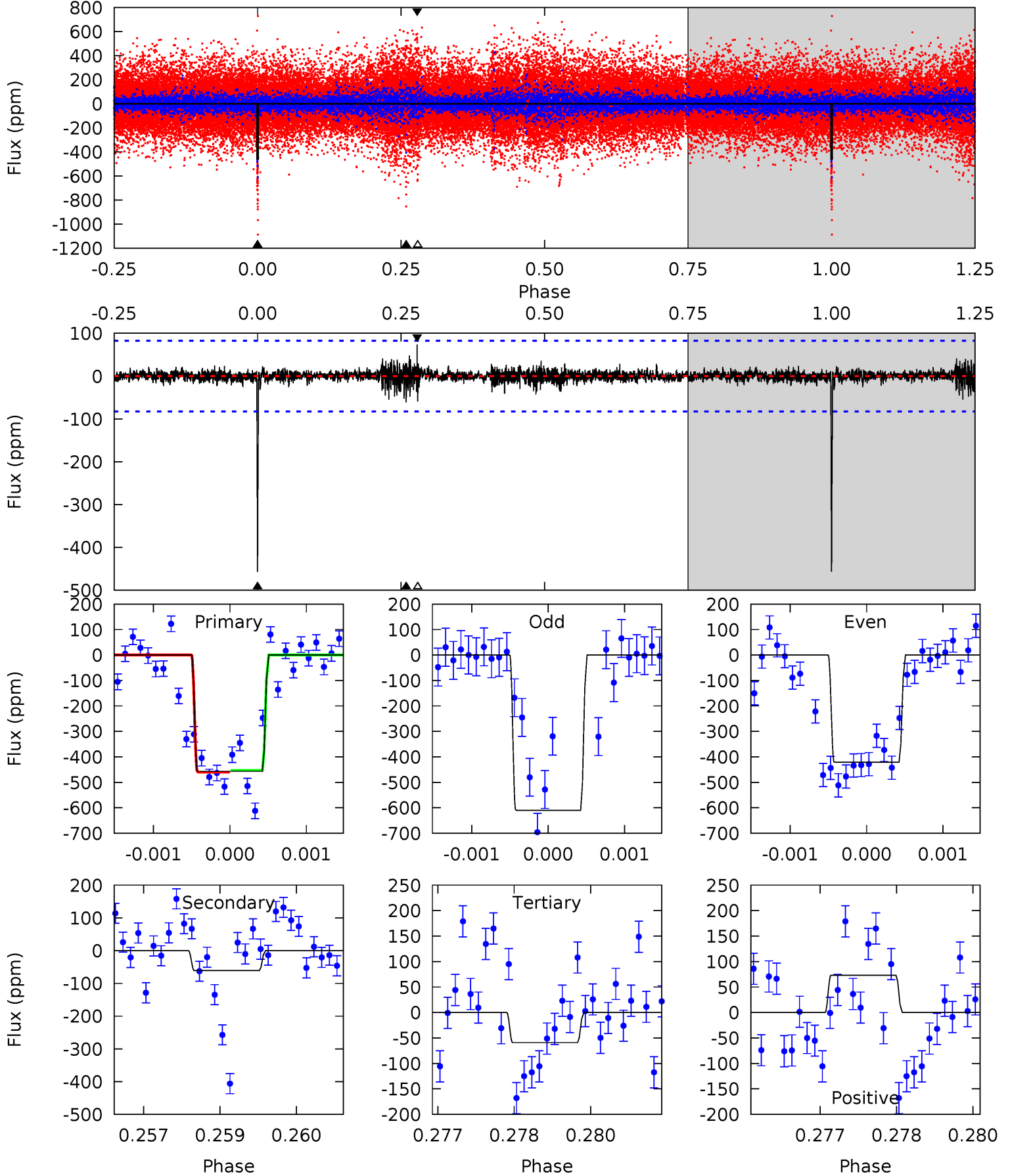
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	10.2	8.65	11.7	5.41	3.22	2.79	9.91	6.87	1.52	-1.53	5.84	1.17	0.39	0.64



Alt Model-Shift Uniqueness Test

008313532-02, P = 507.126903 Days, E = 22.010538 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.9	3.99	3.87	4.79	5.40	3.21	0.57	26.0	25.1	0.12	-0.79	5.98	1.14	0.14	0.22



Stellar Parameters For KIC 008313532

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5180^{+181}_{-145}	$3.776^{+0.735}_{-0.245}$	$0.180^{+0.250}_{-0.250}$	$2.417^{+0.835}_{-1.550}$	$1.271^{+0.172}_{-0.429}$	$0.127^{+1.729}_{-0.073}$
	+3%/-3%	+19%/-6%	+139%/-139%	+35%/-64%	+14%/-34%	+1362%/-58%
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 008313532-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-211 ± 21	$4.69^{+2.73}_{-2.18}$	422^{+51}_{-73}	4540^{+1136}_{-541}	9167^{+23489}_{-5415}
Alt.	-61 ± 15	$5.26^{+2.83}_{-2.39}$	423^{+52}_{-76}	3522^{+579}_{-356}	2067^{+5143}_{-1214}

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

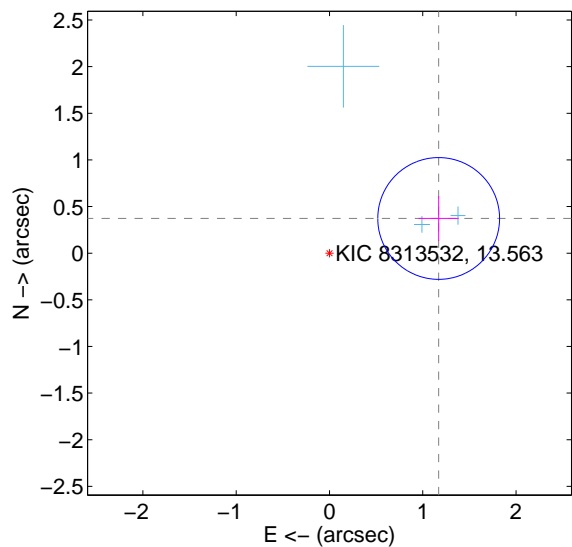
Supplemental centroid analysis for 008313532-02. Kepler magnitude: 13.56. Transit SNR 8.66

There are 3 quarters with good PRF difference image offsets

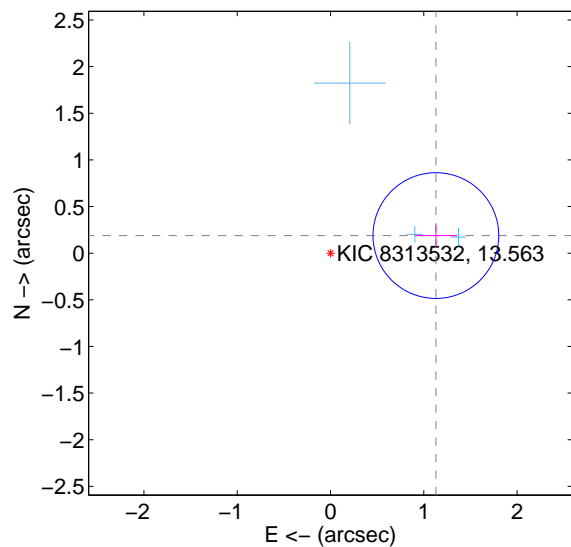
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.228 ± 0.218	5.65	-1.171 ± 0.215	0.372 ± 0.241
PRF-fit source offset from KIC position	1.145 ± 0.225	5.10	-1.129 ± 0.227	0.189 ± 0.109
photometric centroid source offset	0.51 ± 0.55	0.93	0.17 ± 0.48	0.48 ± 0.56

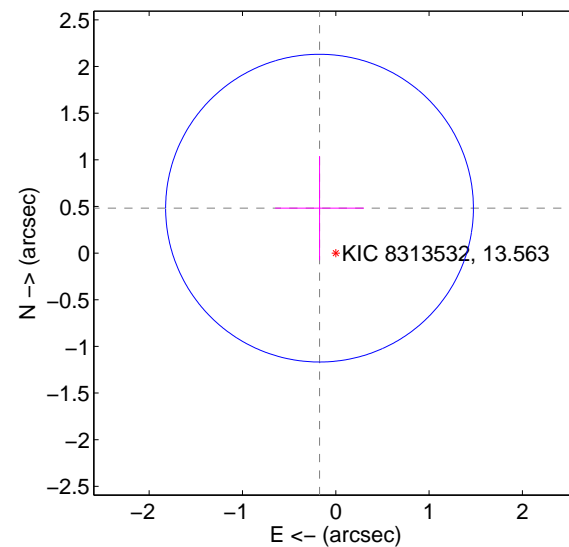
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

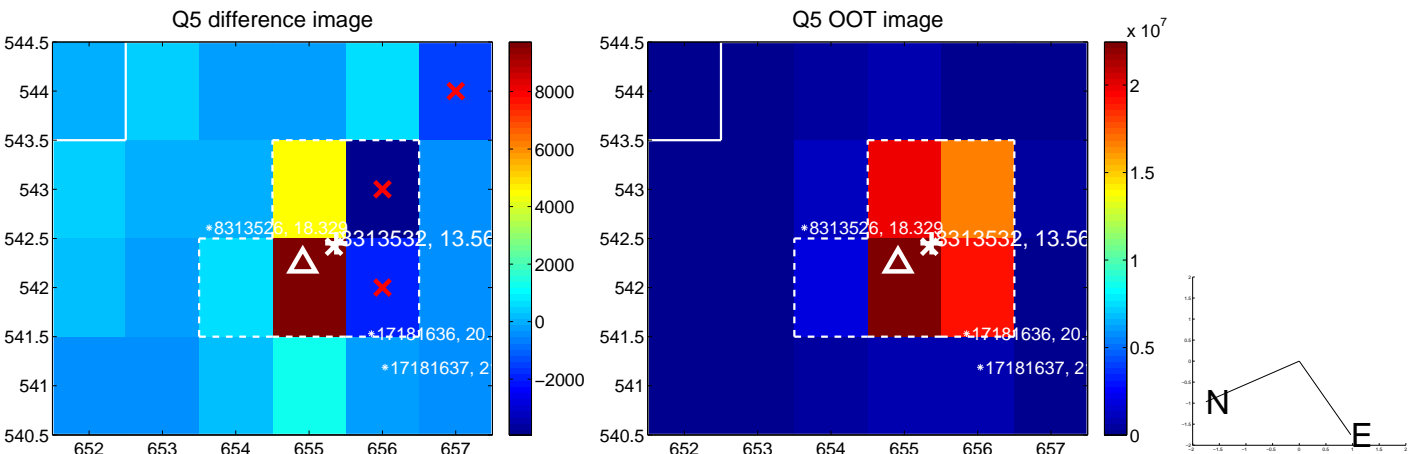


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



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

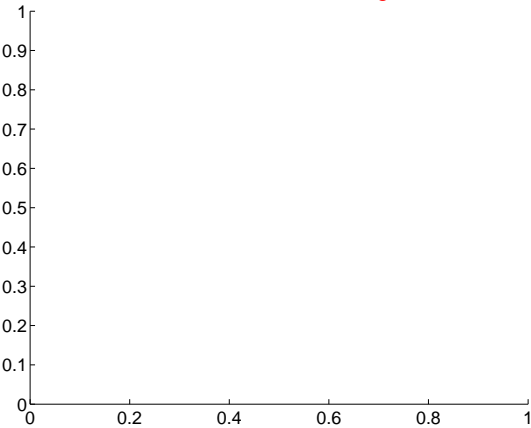
Q9 no difference image



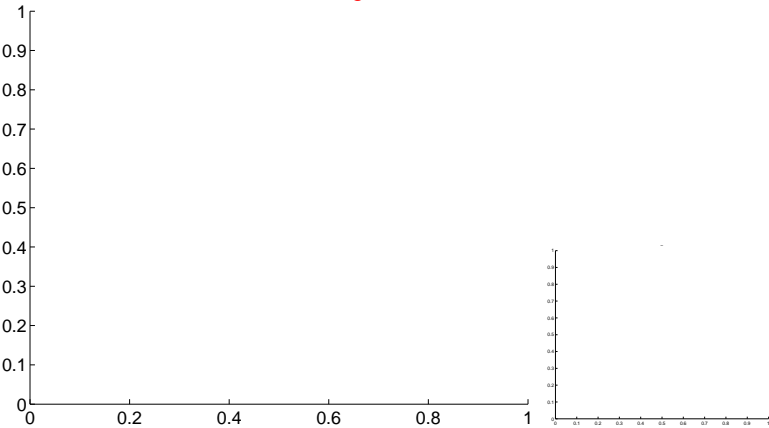
Q9 no OOT image



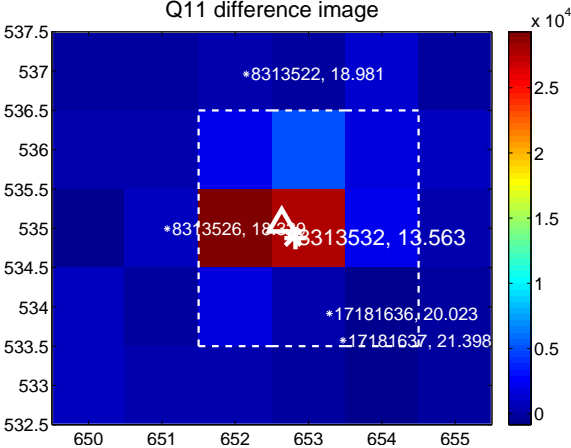
Q10 no difference image



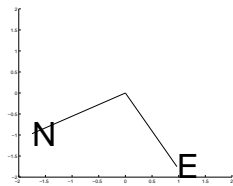
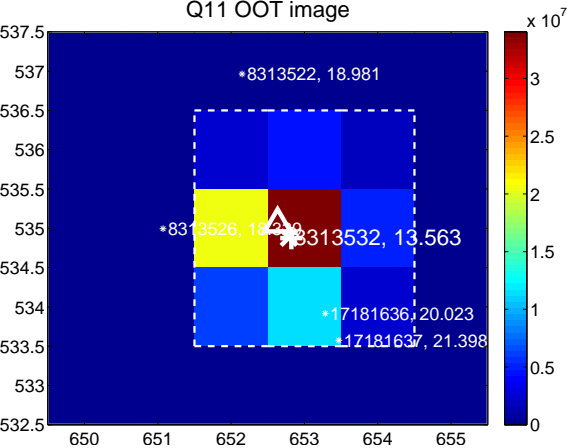
Q10 no OOT image



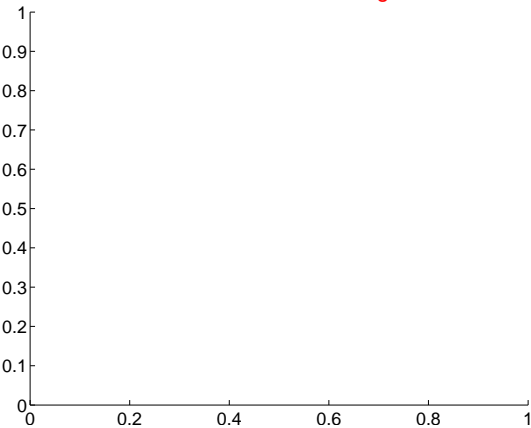
Q11 difference image



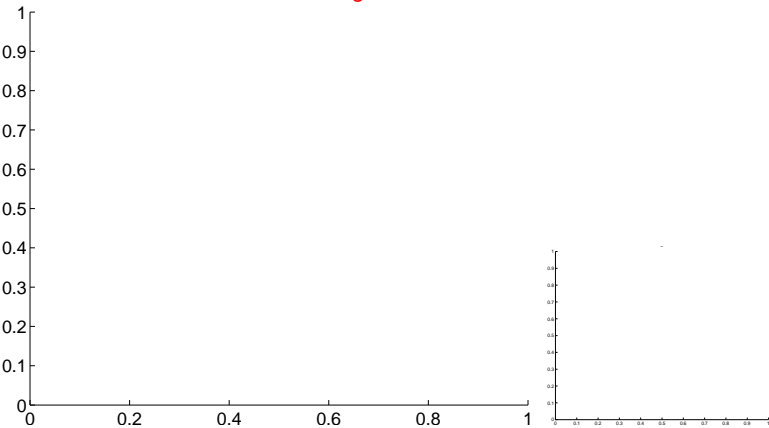
Q11 OOT image



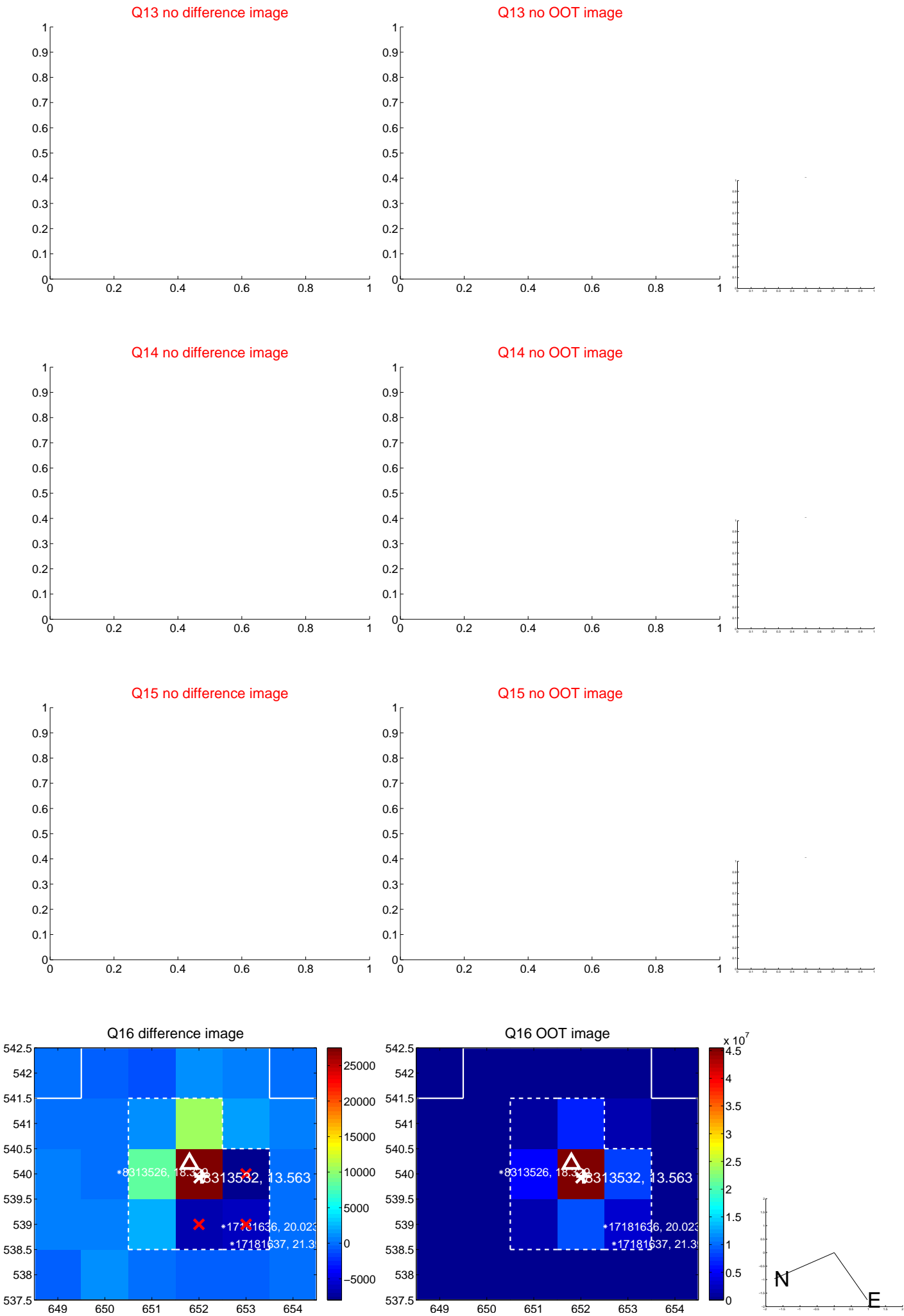
Q12 no difference image



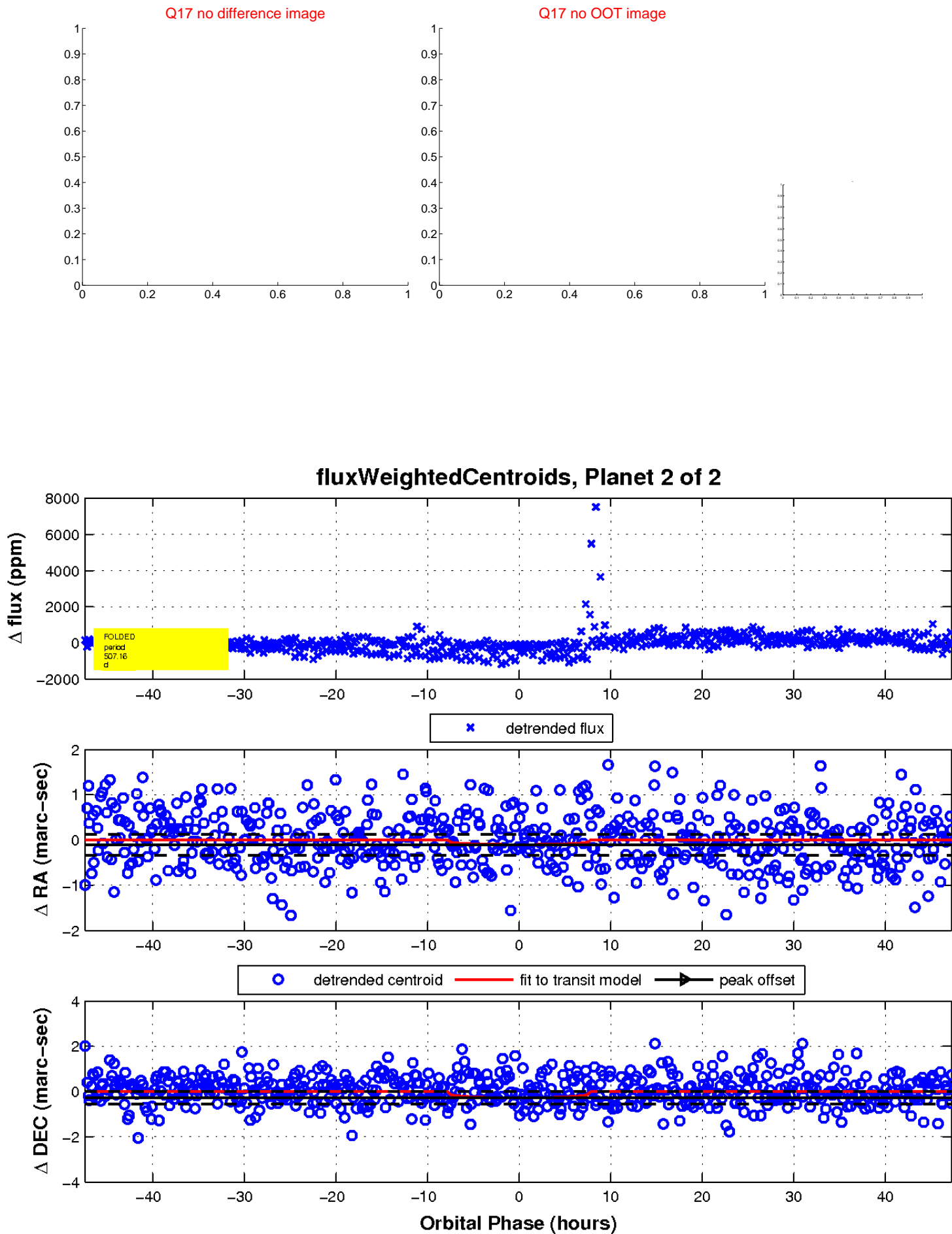
Q12 no OOT image



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

