

KIC 008454067

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})
008454067-01	OBS	No	392.953319	399.316777	193.4	18.810	8.6	7.4	1.82	6510	2.87	4.79
008454067-02	OBS	No	605.806419	287.825496	202.1	12.561	11.9	10.0	1.82	6510	2.77	2.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008454067-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008454067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

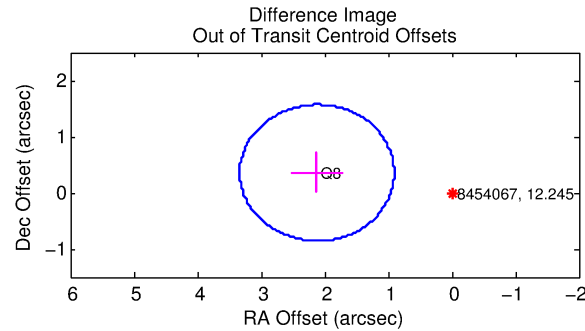
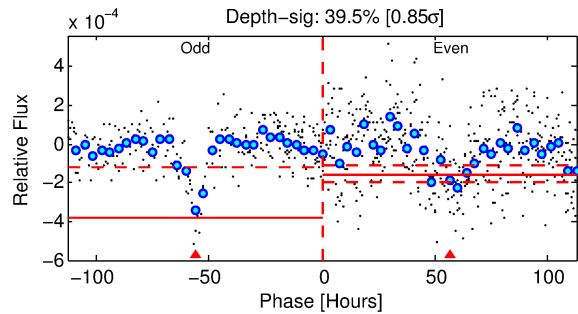
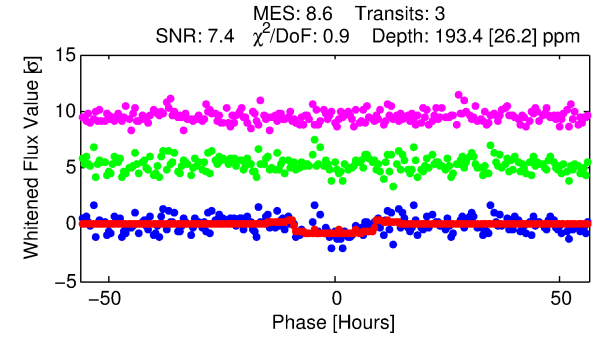
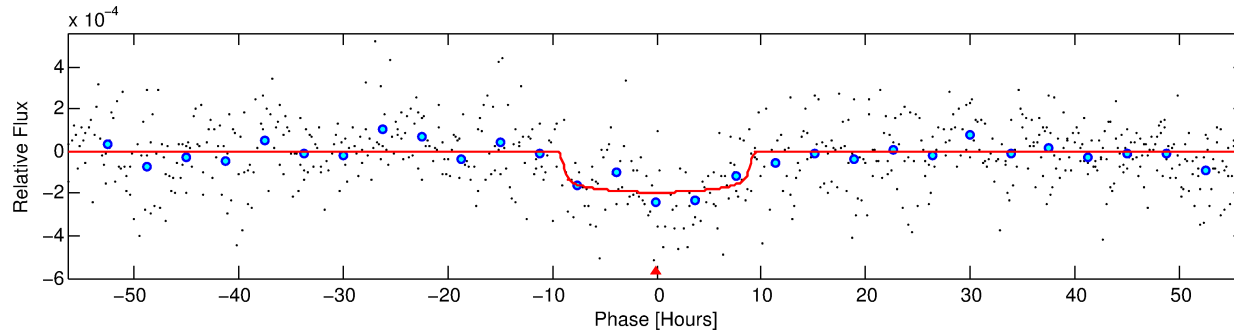
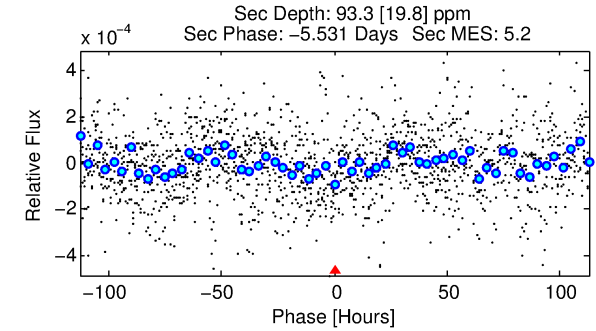
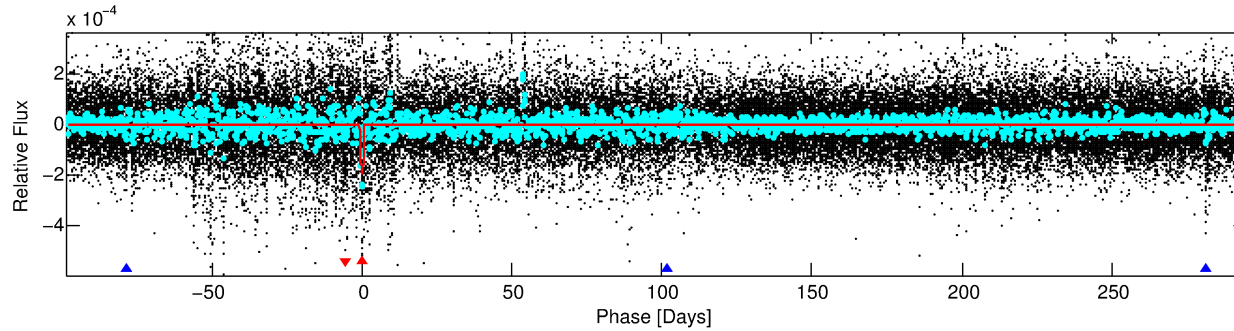
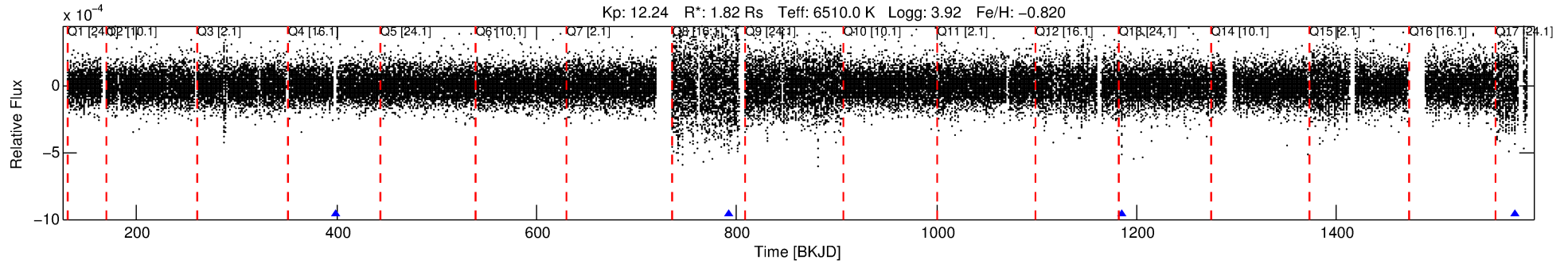
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008454067-01

No Significant Match Found

DV One-Page Summary

KIC: 8454067 Candidate: 1 of 2 Period: 392.953 d



DV Fit Results:

Period = 392.95332 [0.01622] d
Epoch = 399.3168 [0.0375] BKJD
Rp/R* = 0.0144 [0.0019]
a/R* = 87.81 [53.79]
b = 0.85 [0.20]
Seff = 4.79 [2.45]
Teq = 377 [48] K
Rp = 2.87 [0.98] Re
a = 1.0563 [0.3266] AU
Ag = 6976.57 [4188.24] [1.67σ]
Teffp = 5331 [470] K [10.48σ]

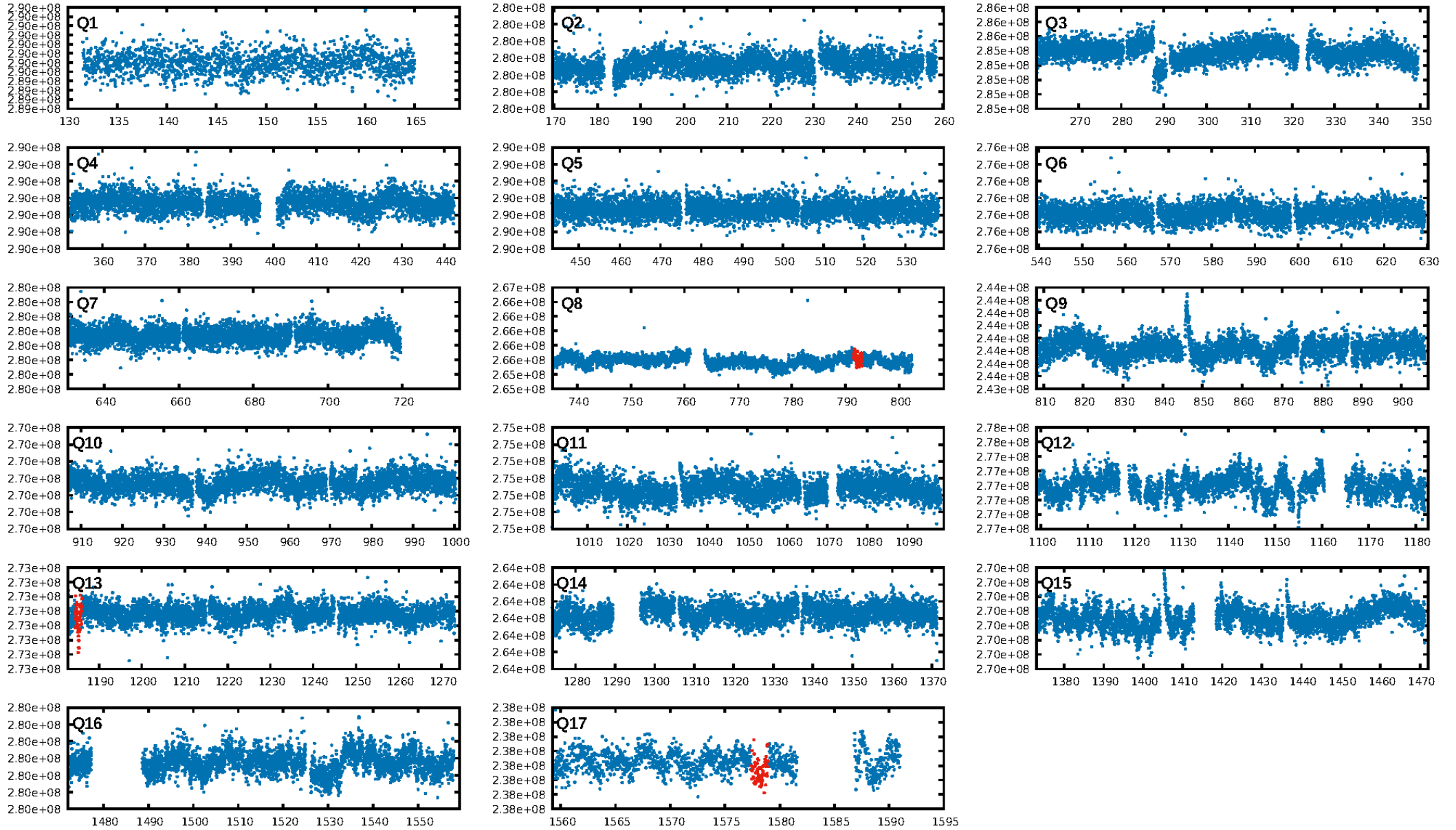
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [225.85σ]
ModelChiSquare2-sig: 55.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.51e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 18.99
Centroid-sig: 0.2%
Centroid-so: 1.280 arcsec [1.86σ]
OotOffset-rm: 2.150 arcsec [5.32σ]
KicOffset-rm: 3.022 arcsec [7.80σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

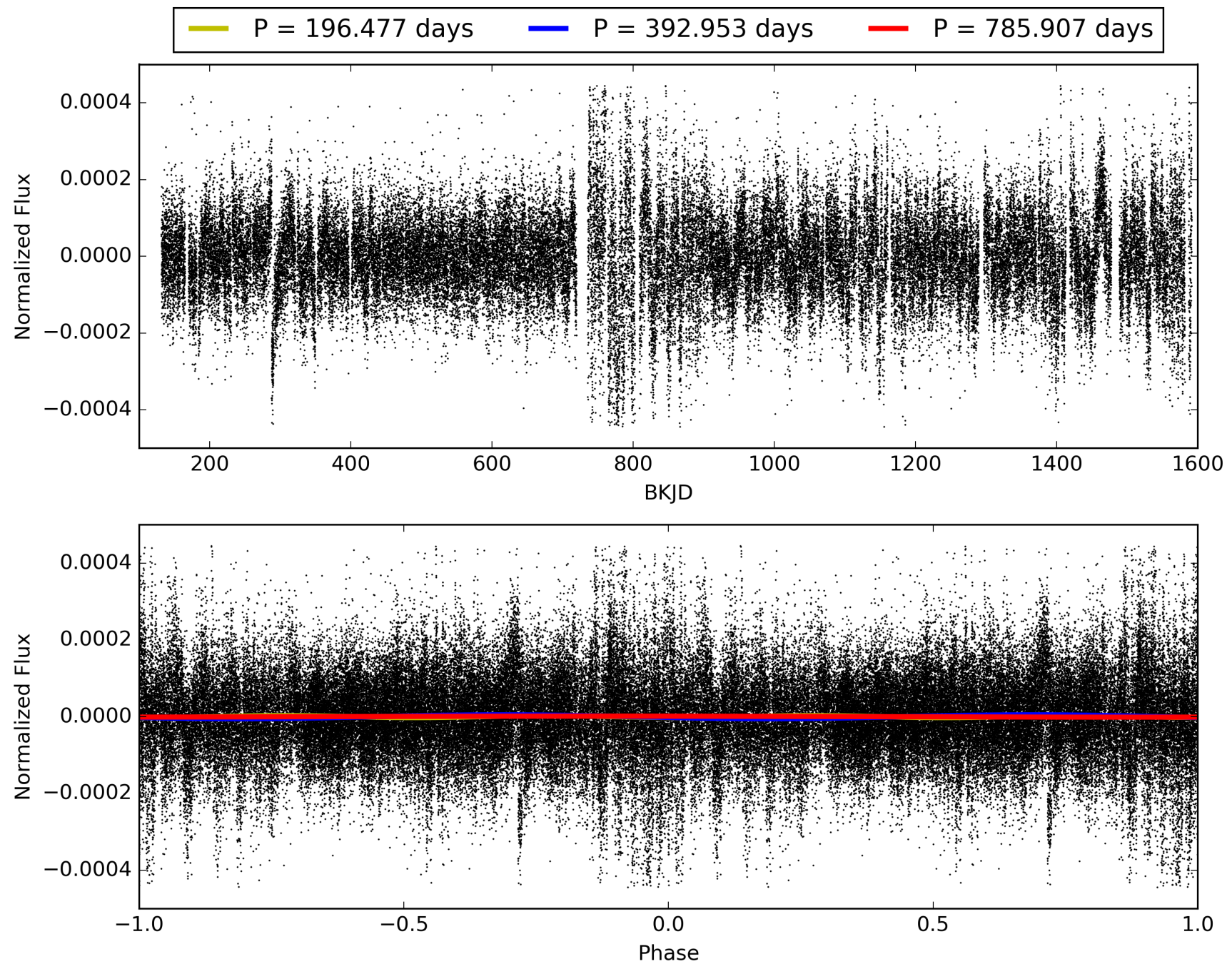
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:59:26 Z

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

TCE 008454067-01, PDC Light Curves

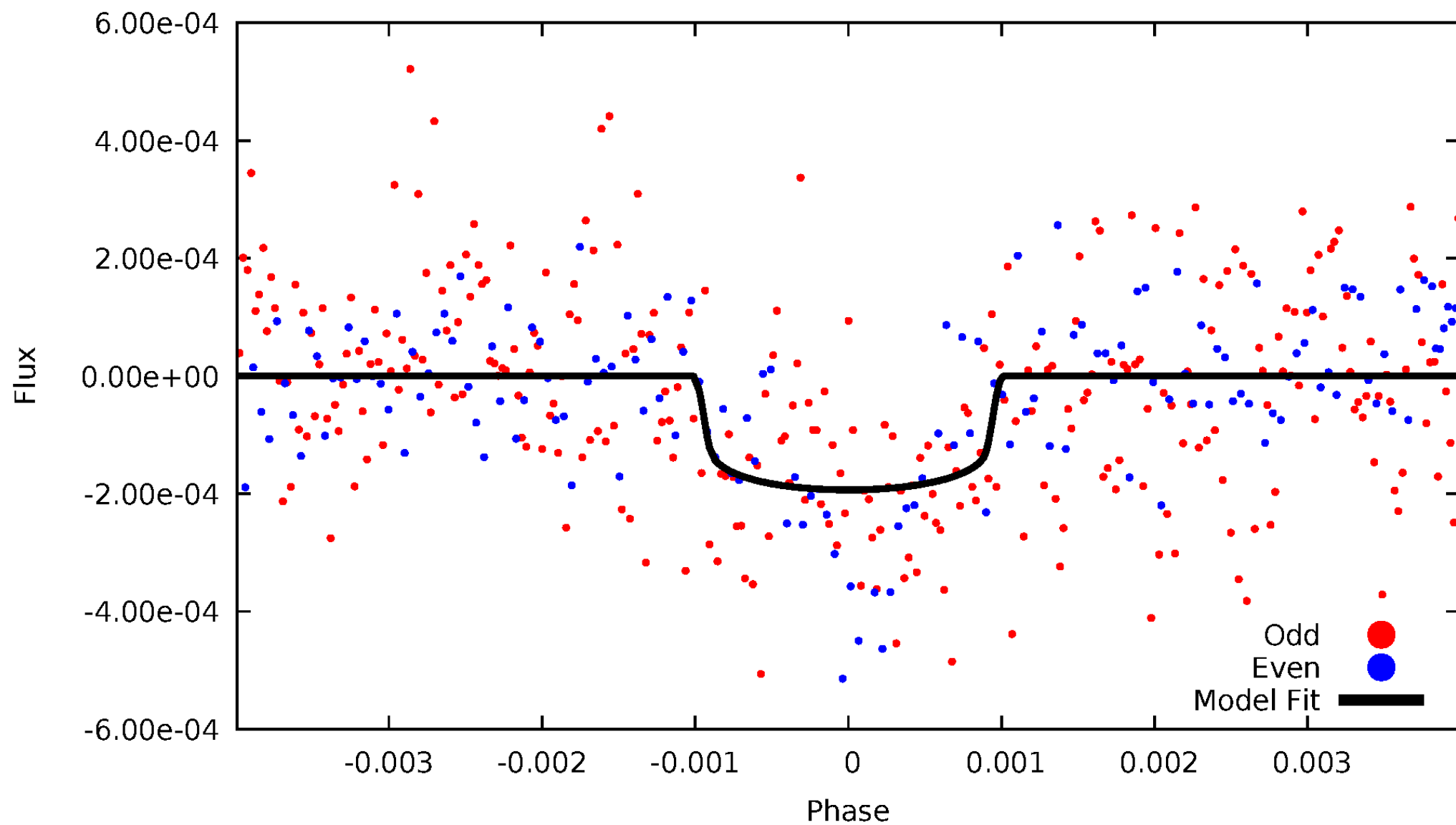


TCE 008454067-01



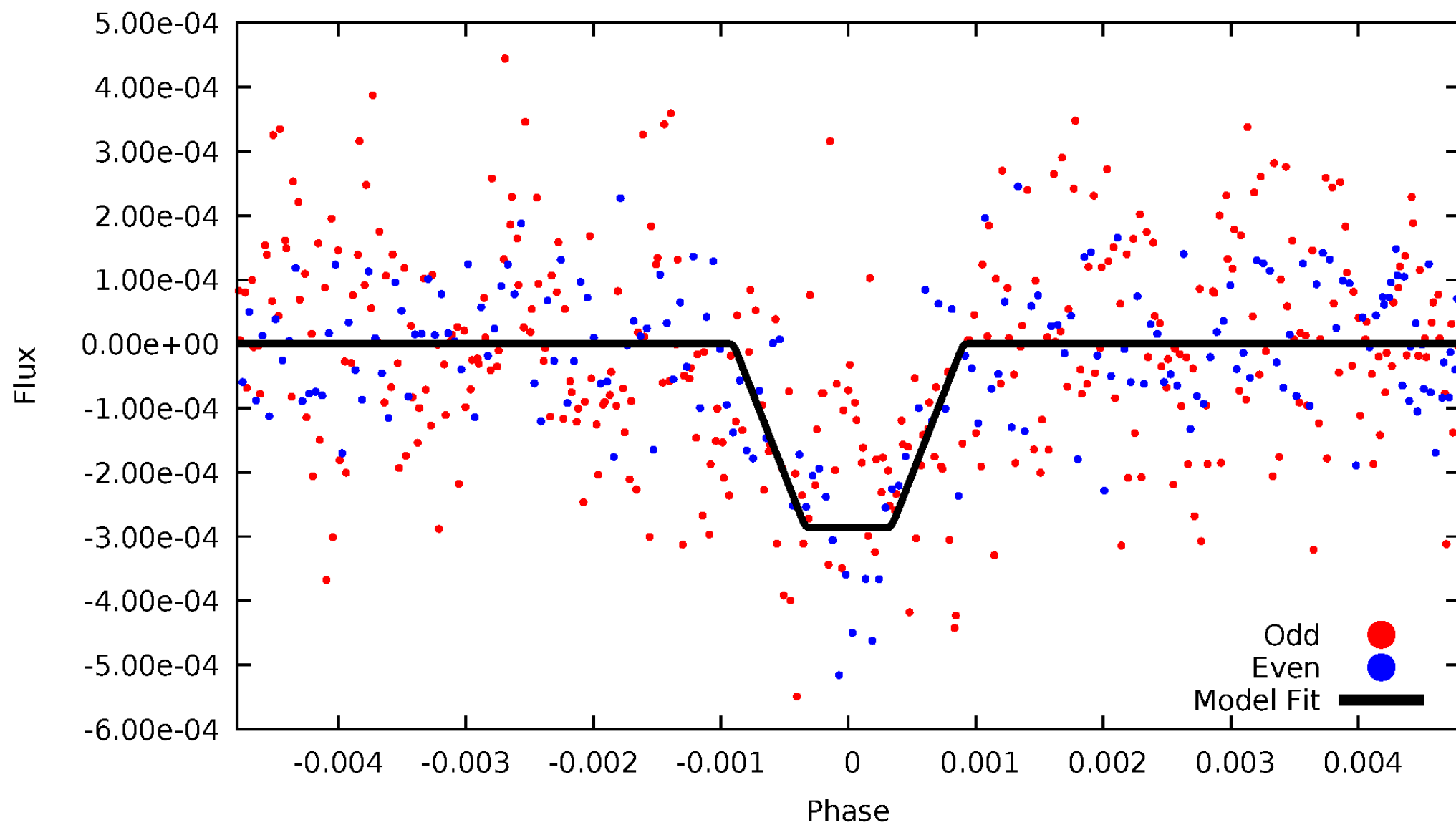
DV Odd/Even

TCE 008454067-01

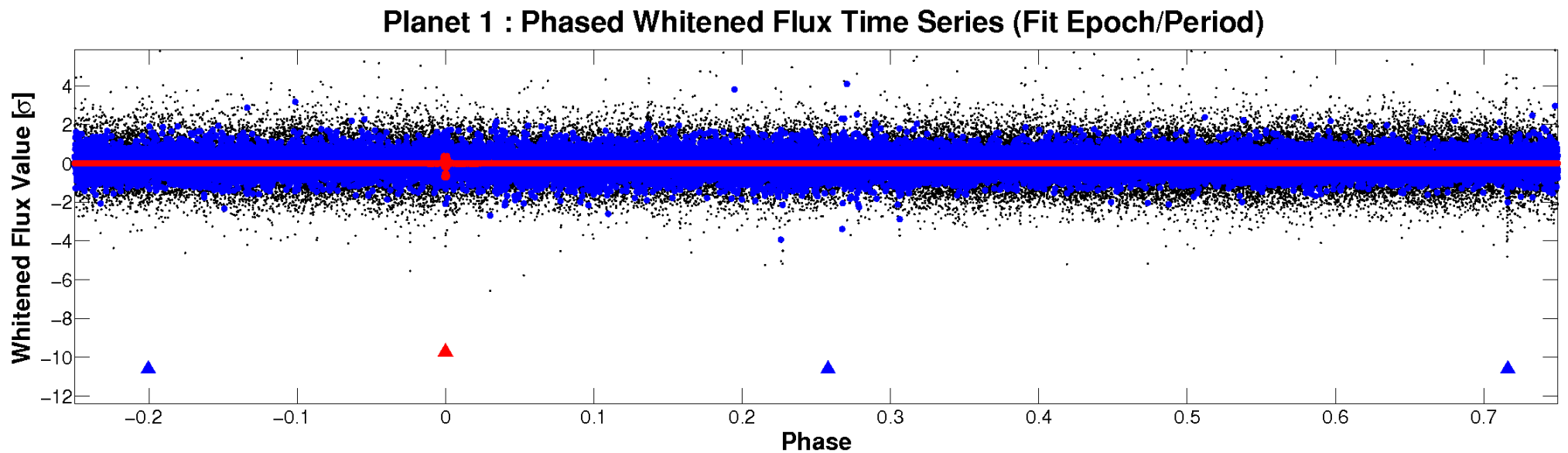
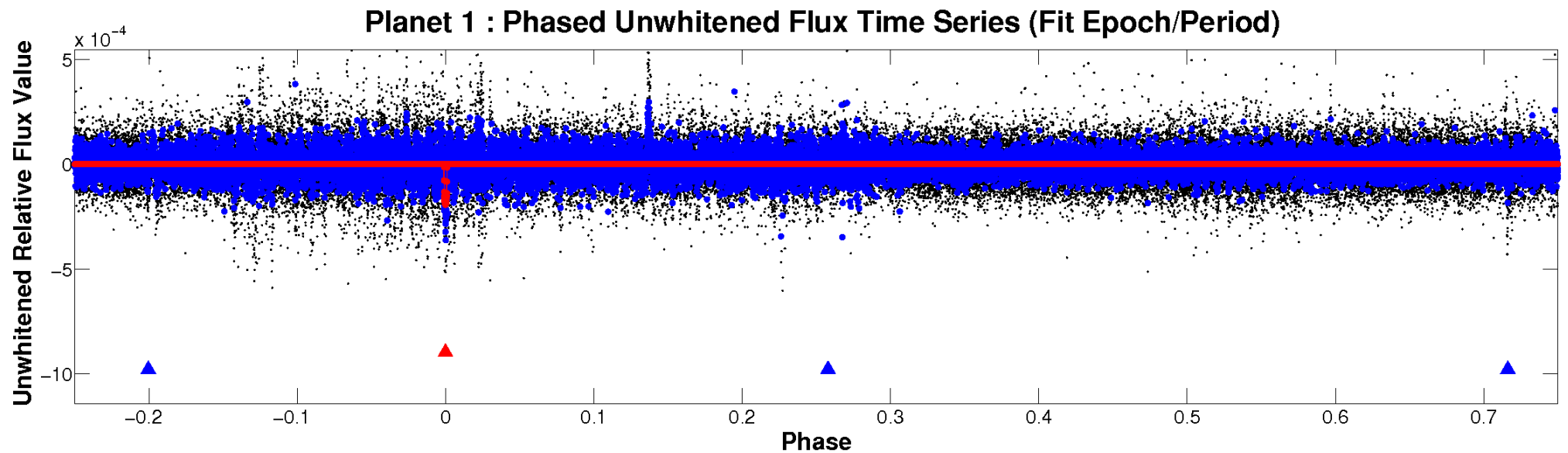


ALT Odd/Even

TCE 008454067-01



Non-Whitened Vs. Whitened Light Curve



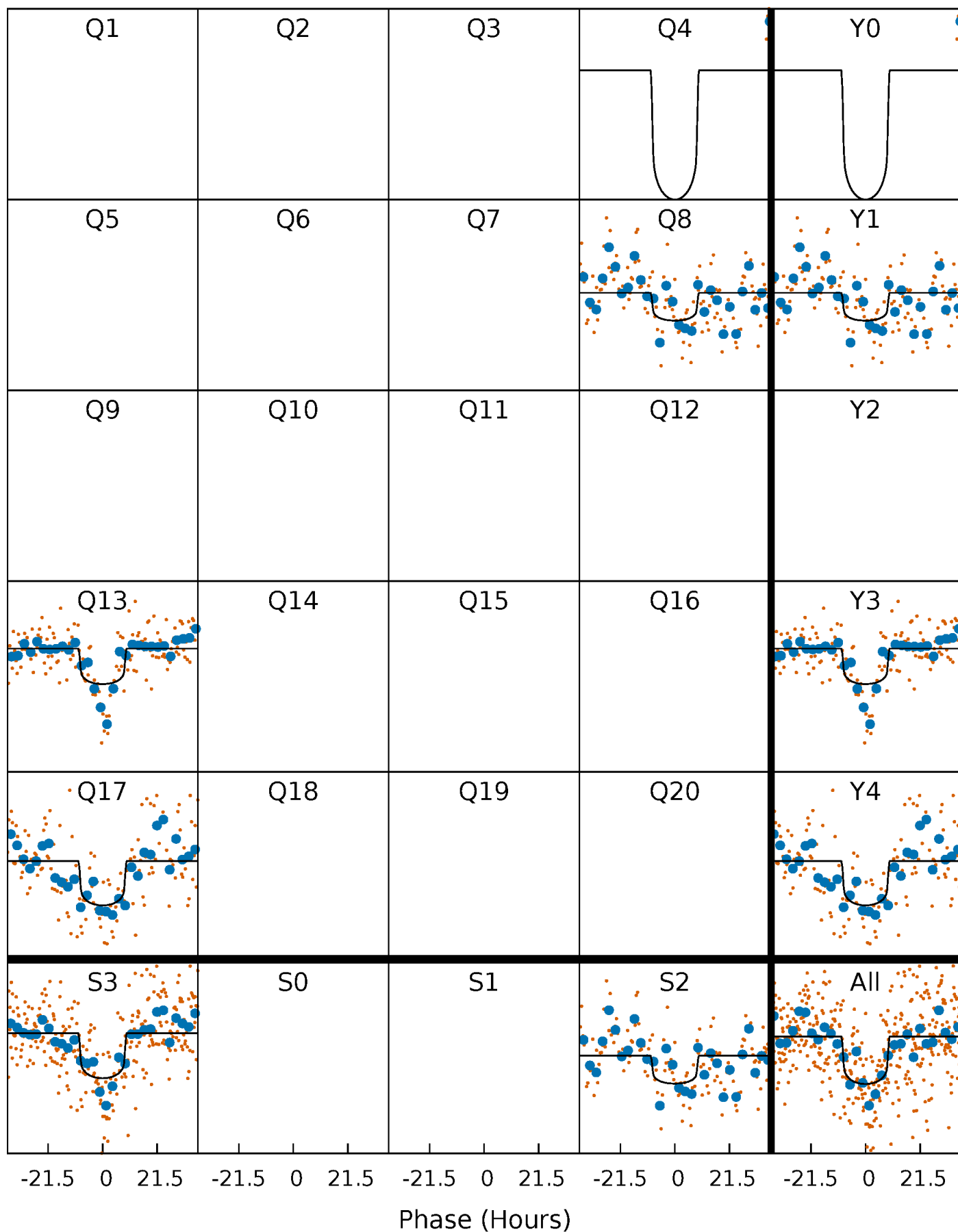
PDC Quarter-Phased Transit Curves

TCE 008454067-01 P=392.953319 Days $T_0=399.316777$ (BKJD)



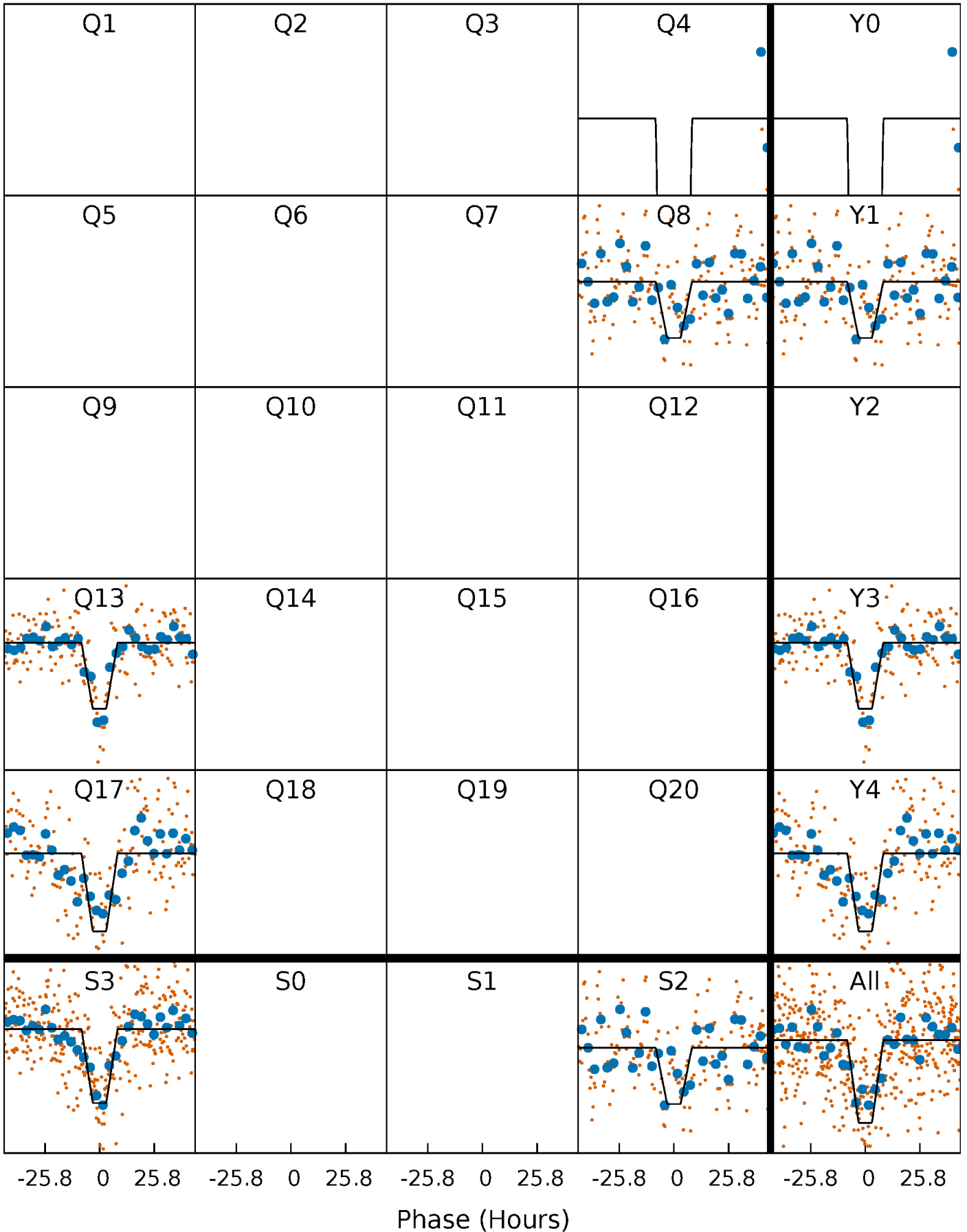
DV Quarter-Phased Transit Curves

TCE 008454067-01 $P=392.953319$ Days $T_0=399.316777$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

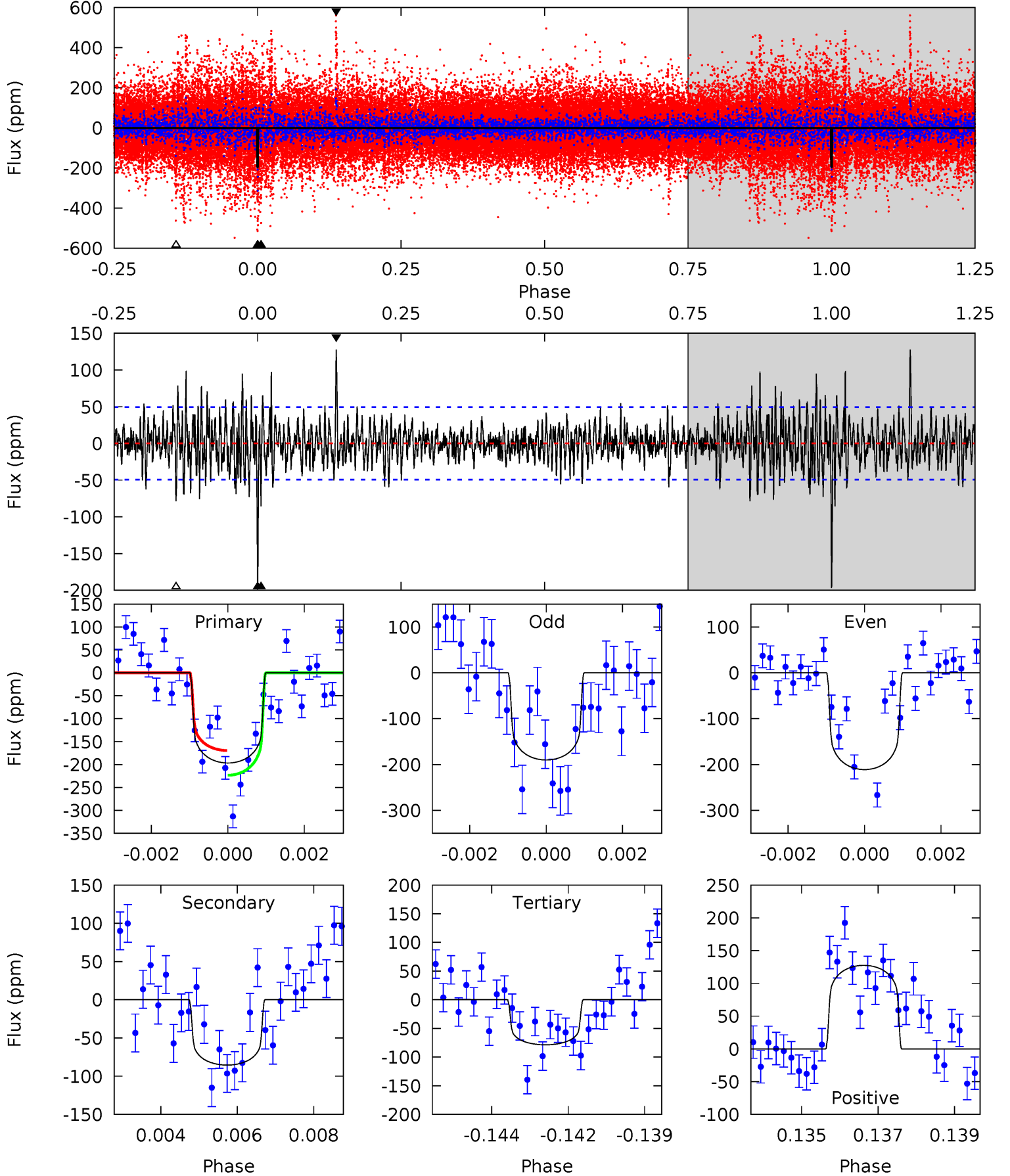
TCE 008454067-01 $P=393.032715$ Days $T_0=399.171751$ (BKJD)



DV Model-Shift Uniqueness Test

008454067-01, P = 392.953319 Days, E = 6.363458 Days

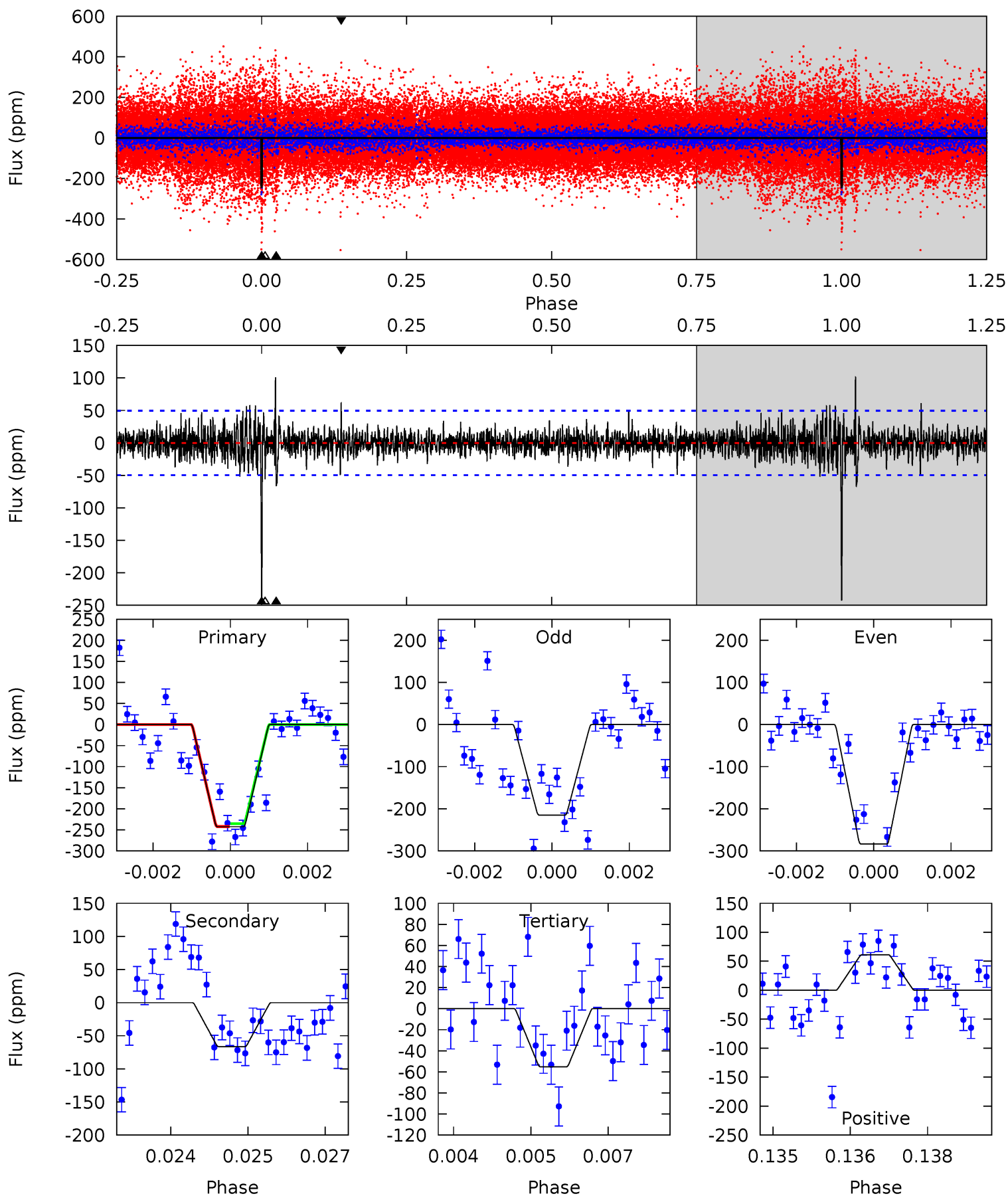
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	9.22	8.48	13.8	5.32	3.08	2.38	12.7	7.47	0.74	-4.54	1.08	0.99	0.39	2.91



Alt Model-Shift Uniqueness Test

008454067-01, P = 393.032715 Days, E = 6.139036 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.1	7.15	5.94	6.59	5.34	3.12	1.45	20.2	19.5	1.21	0.56	3.54	1.04	0.29	0.36



Stellar Parameters For KIC 008454067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6510^{+181}_{-181}	$3.924^{+0.294}_{-0.126}$	$-0.820^{+0.350}_{-0.250}$	$1.823^{+0.385}_{-0.578}$	$1.016^{+0.151}_{-0.136}$	$0.236^{+0.472}_{-0.089}$
	+3%/-3%	+7%/-3%	+43%/-30%	+21%/-32%	+15%/-13%	+199%/-38%
Source	PHO1	FLK73	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 008454067-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-85 ± 9	$2.78^{+0.56}_{-0.55}$	521^{+34}_{-44}	5258^{+366}_{-319}	6833^{+3761}_{-2156}
Alt.	-66 ± 9	$3.25^{+0.66}_{-0.62}$	521^{+35}_{-42}	4673^{+292}_{-243}	3875^{+2141}_{-1242}

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

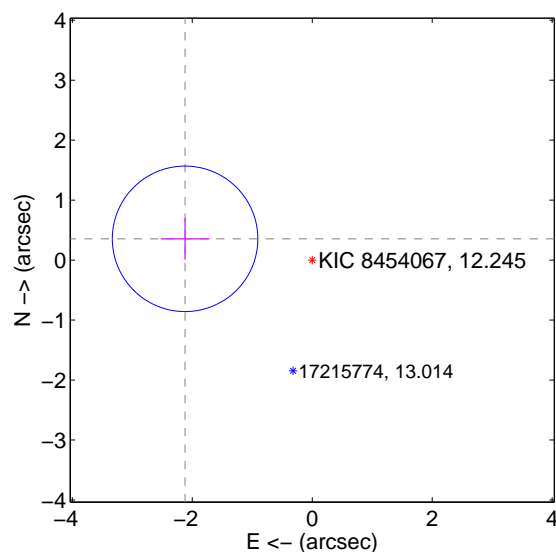
Supplemental centroid analysis for 008454067-01. Kepler magnitude: 12.24. Transit SNR 7.41

There are 1 quarters with good PRF difference image offsets

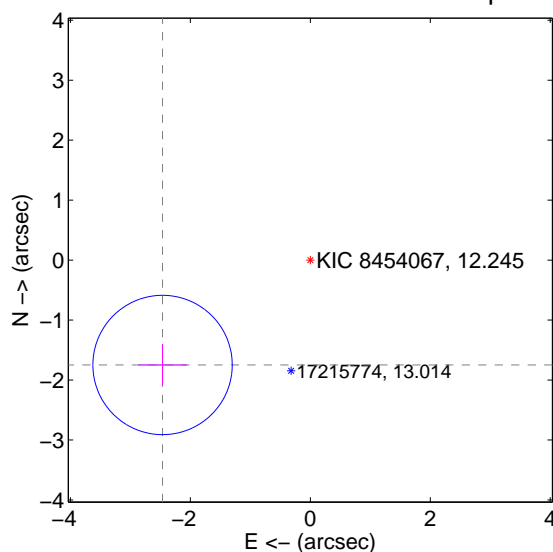
The OOT PRF centroid is offset from the target star catalog position by about 2.13 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.150 ± 0.404	5.32	2.121 ± 0.406	0.355 ± 0.347
PRF-fit source offset from KIC position	3.022 ± 0.387	7.80	2.464 ± 0.406	-1.749 ± 0.347
photometric centroid source offset	1.28 ± 0.69	1.86	0.80 ± 0.67	-1.00 ± 0.70

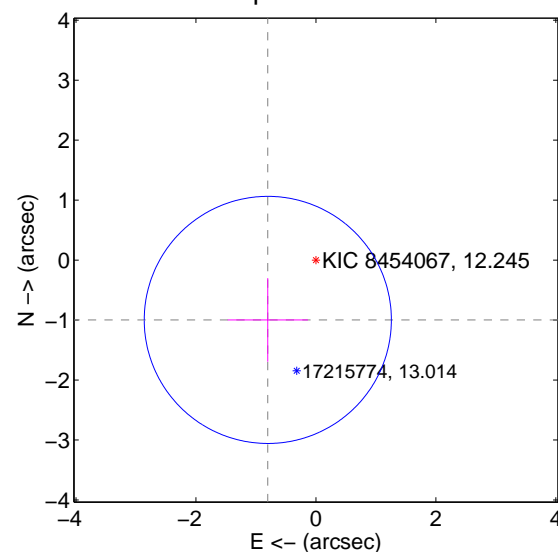
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

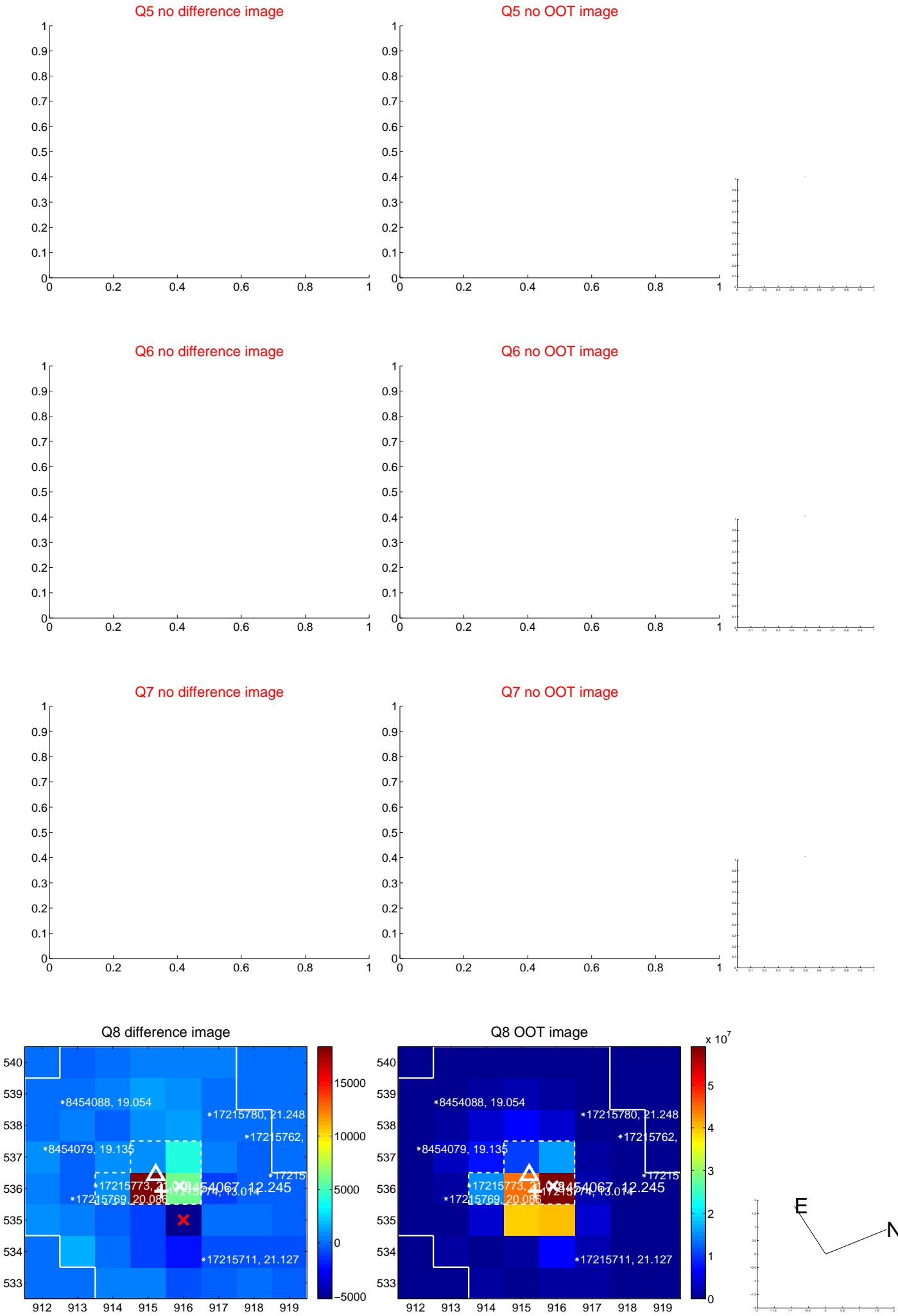


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



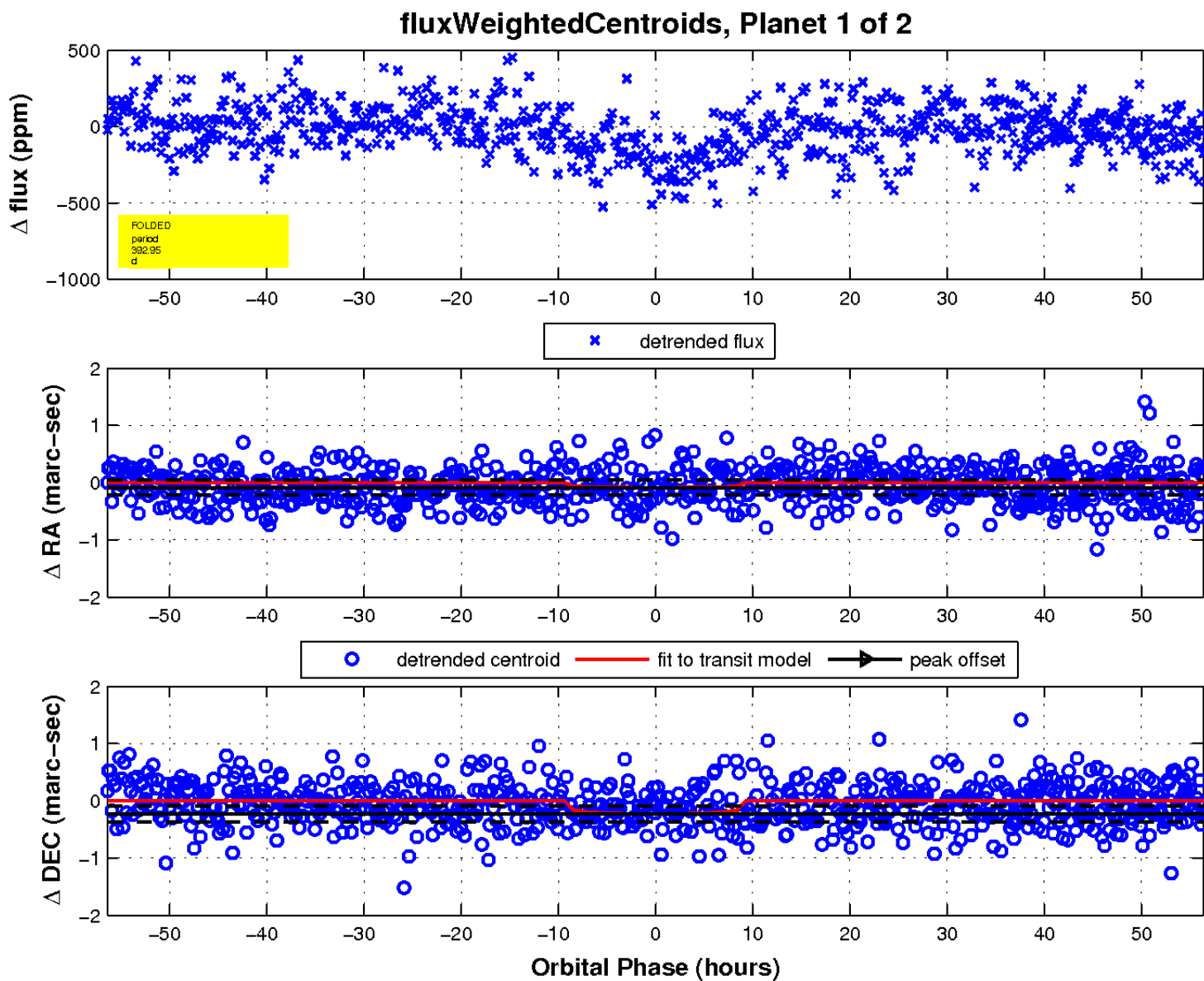
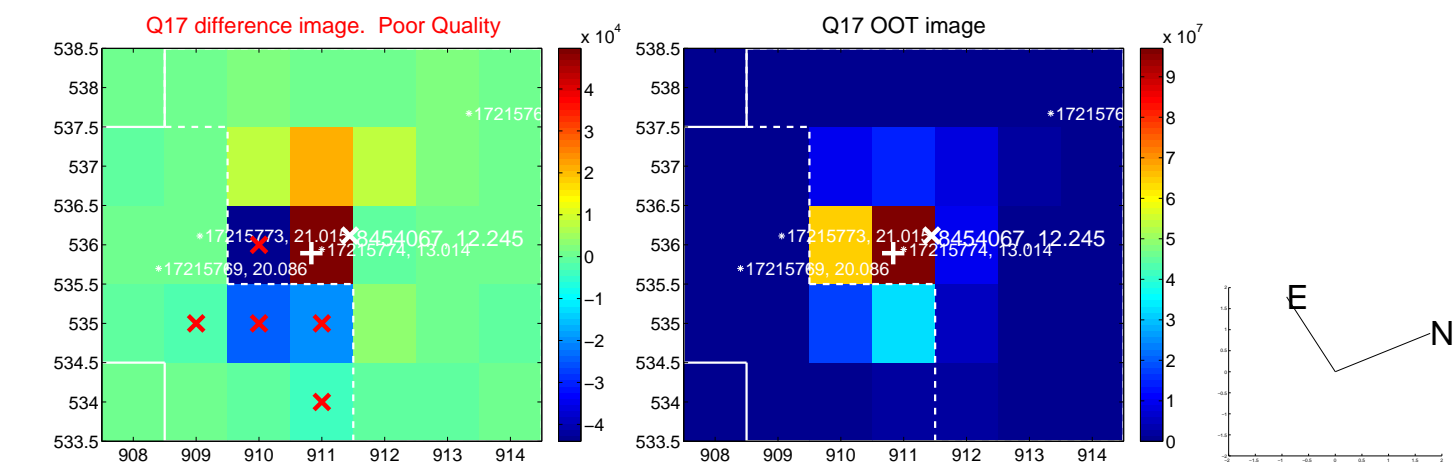
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



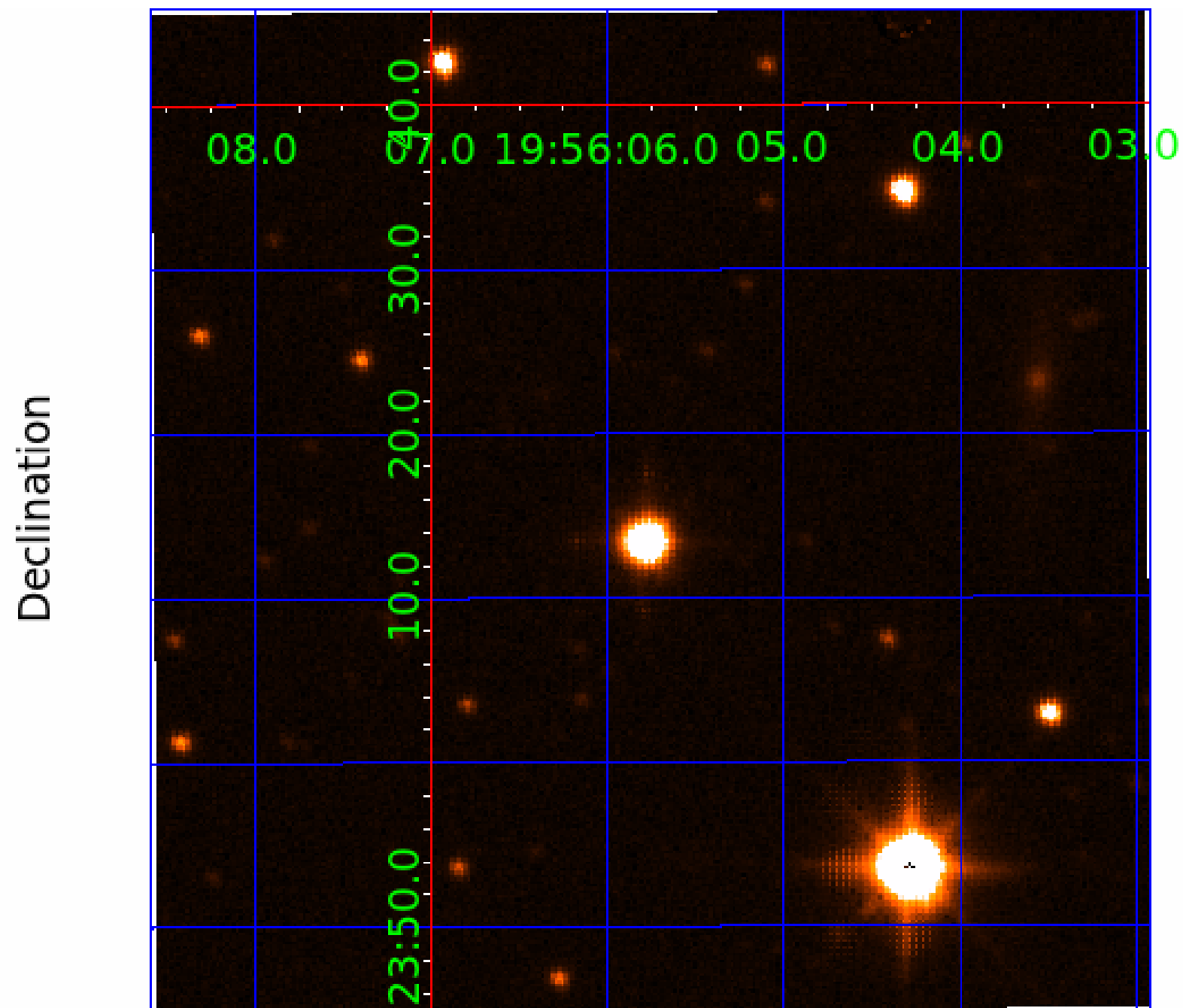
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008454067

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})
008454067-01	OBS	No	392.953319	399.316777	193.4	18.810	8.6	7.4	1.82	6510	2.87	4.79
008454067-02	OBS	No	605.806419	287.825496	202.1	12.561	11.9	10.0	1.82	6510	2.77	2.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008454067-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008454067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

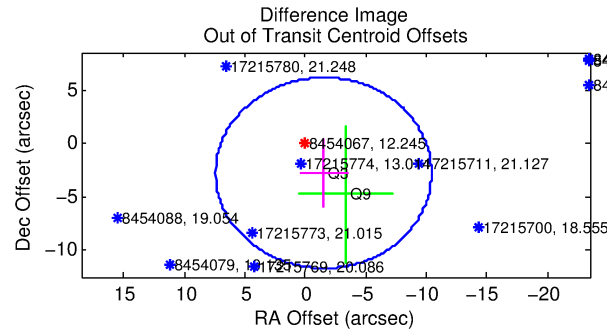
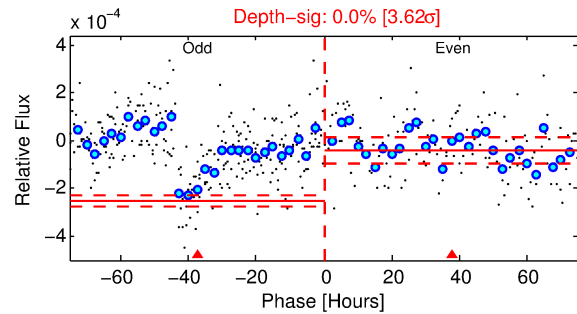
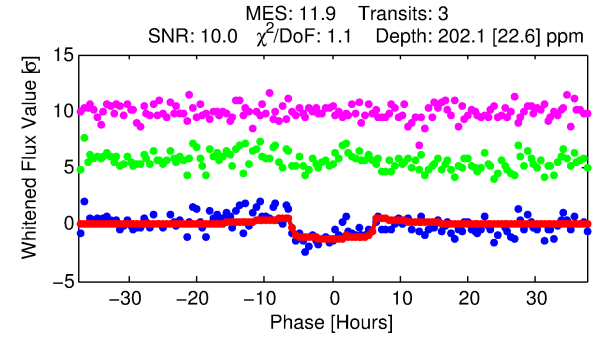
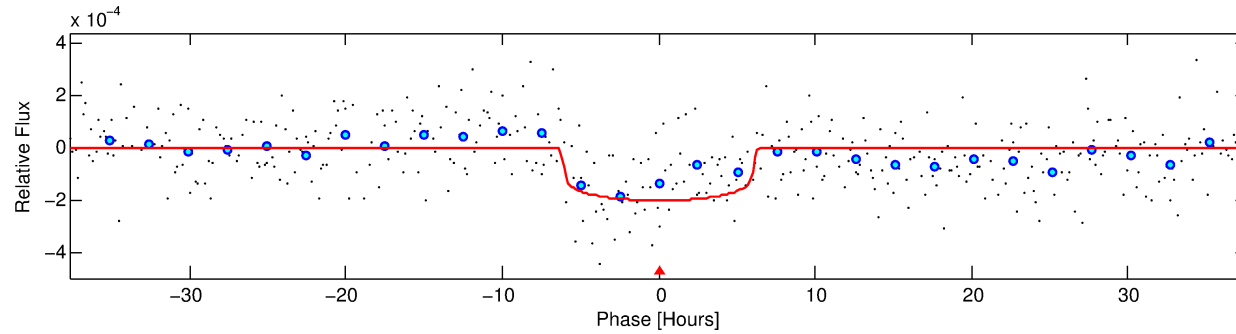
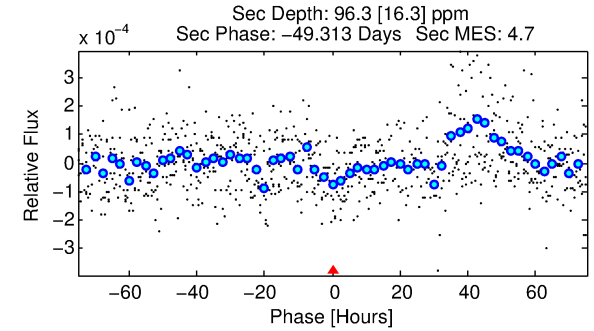
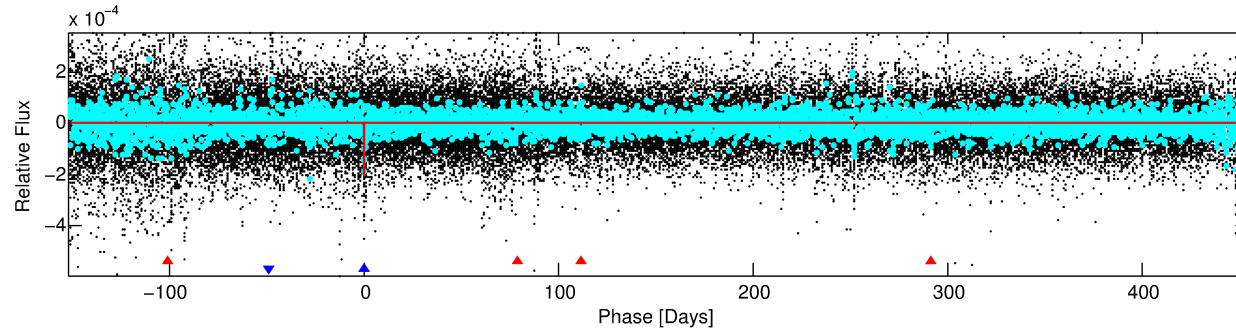
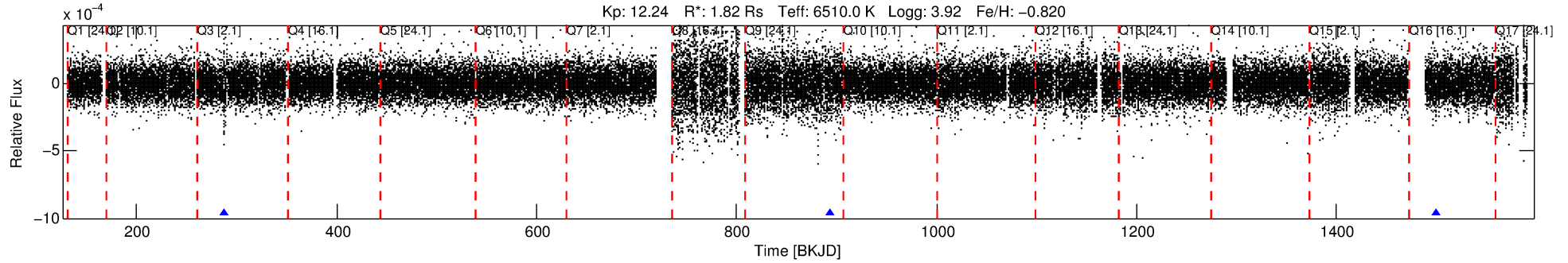
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008454067-02

No Significant Match Found

DV One-Page Summary

KIC: 8454067 Candidate: 2 of 2 Period: 605.806 d



DV Fit Results:

Period = 605.80642 [0.01019] d
Epoch = 287.8255 [0.0127] BKJD
Rp/R* = 0.0139 [0.0049]
a/R* = 271.44 [520.89]
b = 0.70 [1.42]
Seff = 2.69 [1.37]
Teq = 327 [42] K
Rp = 2.77 [1.31] Re
a = 1.4096 [0.4358] AU
Ag = 13690.07 [11958.79] [1.14σ]
Teffp = 5462 [991] K [5.18σ]

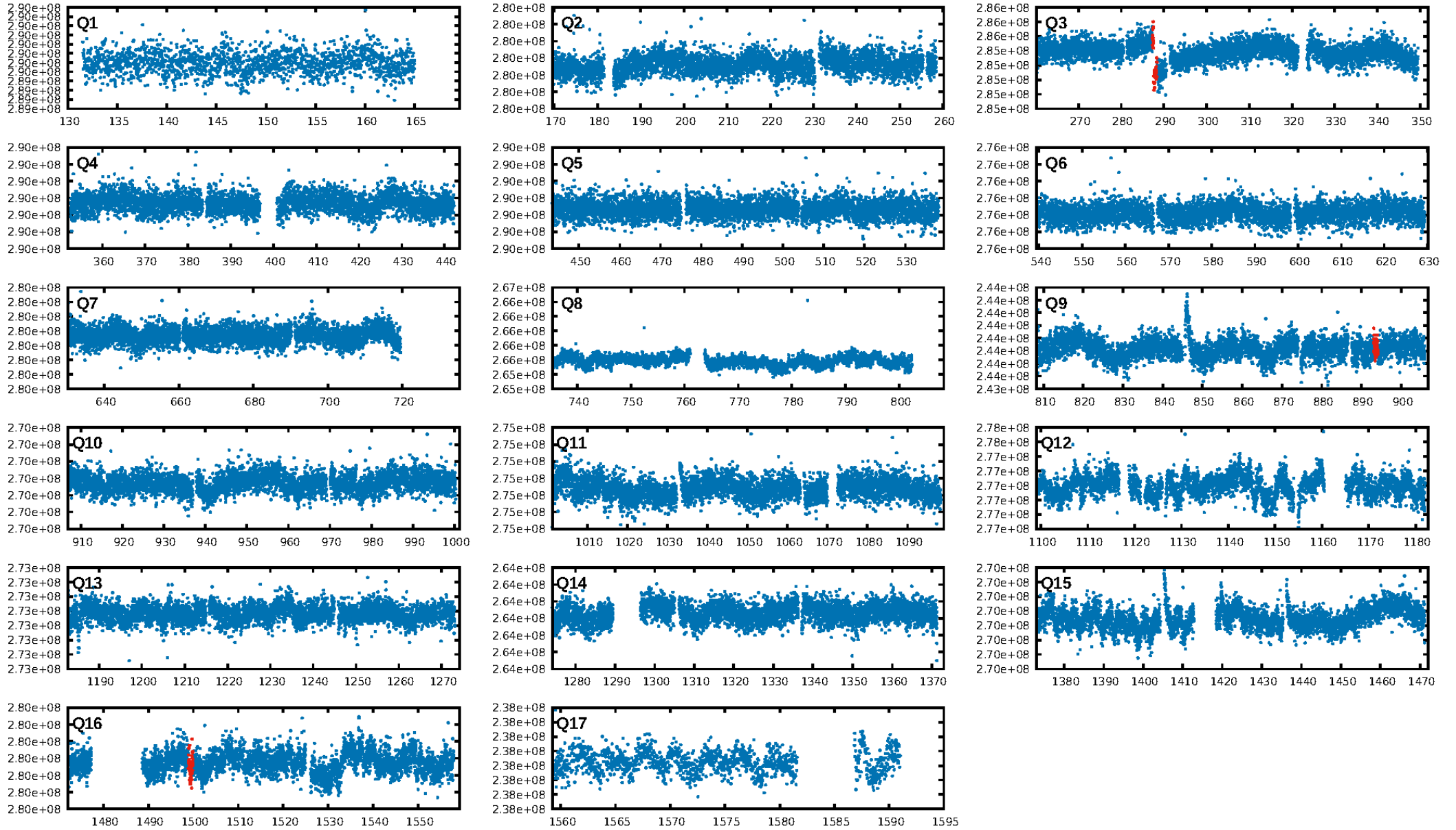
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [225.85σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 95.4%
Bootstrap-pfa: 2.52e-22
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.129
Centroid-sig: 12.8%
Centroid-so: 2.398 arcsec [2.66σ]
OotOffset-rm: 3.164 arcsec [1.06σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 4.820 arcsec [1.53σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

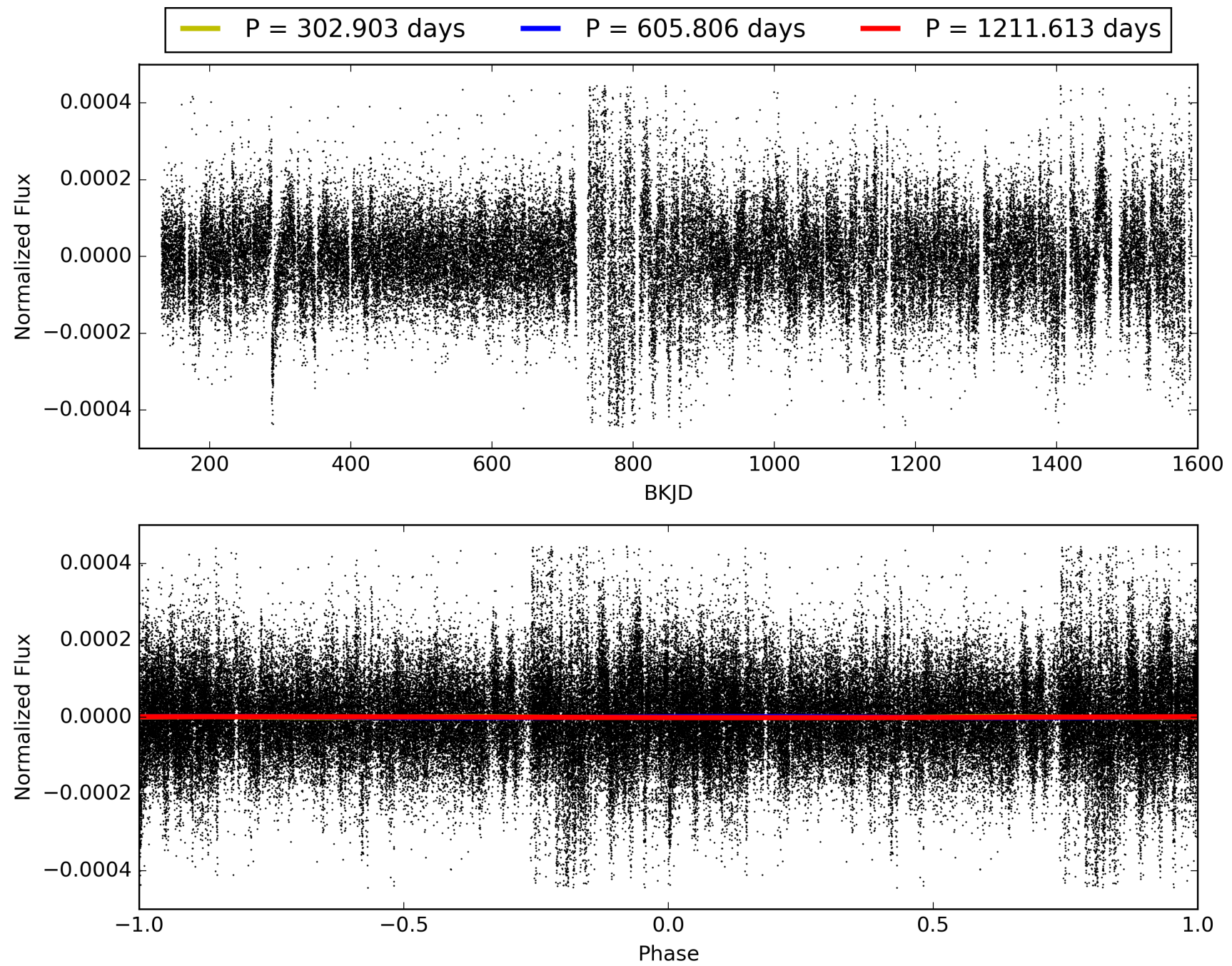
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:59:37 Z

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

TCE 008454067-02, PDC Light Curves

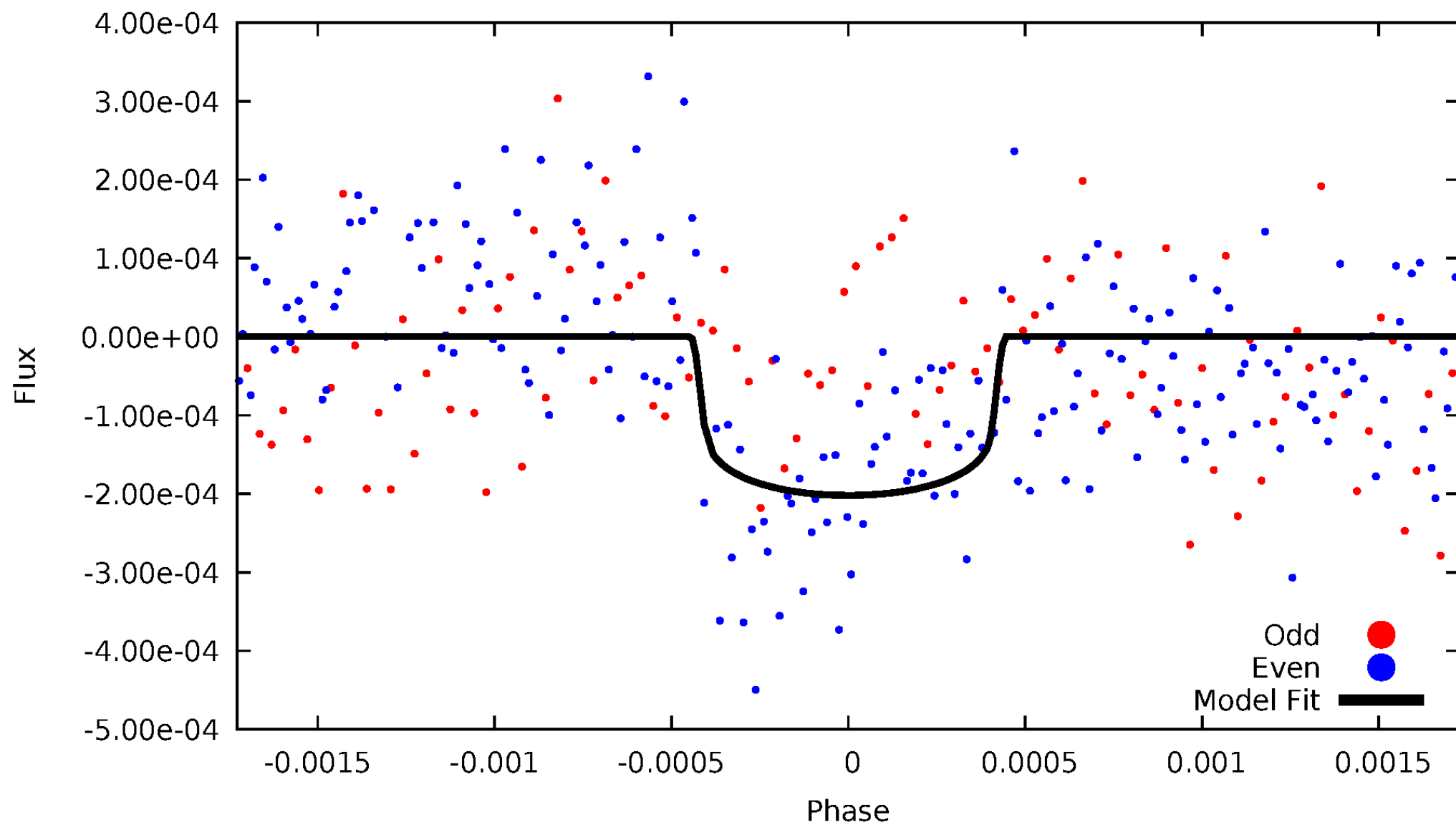


TCE 008454067-02



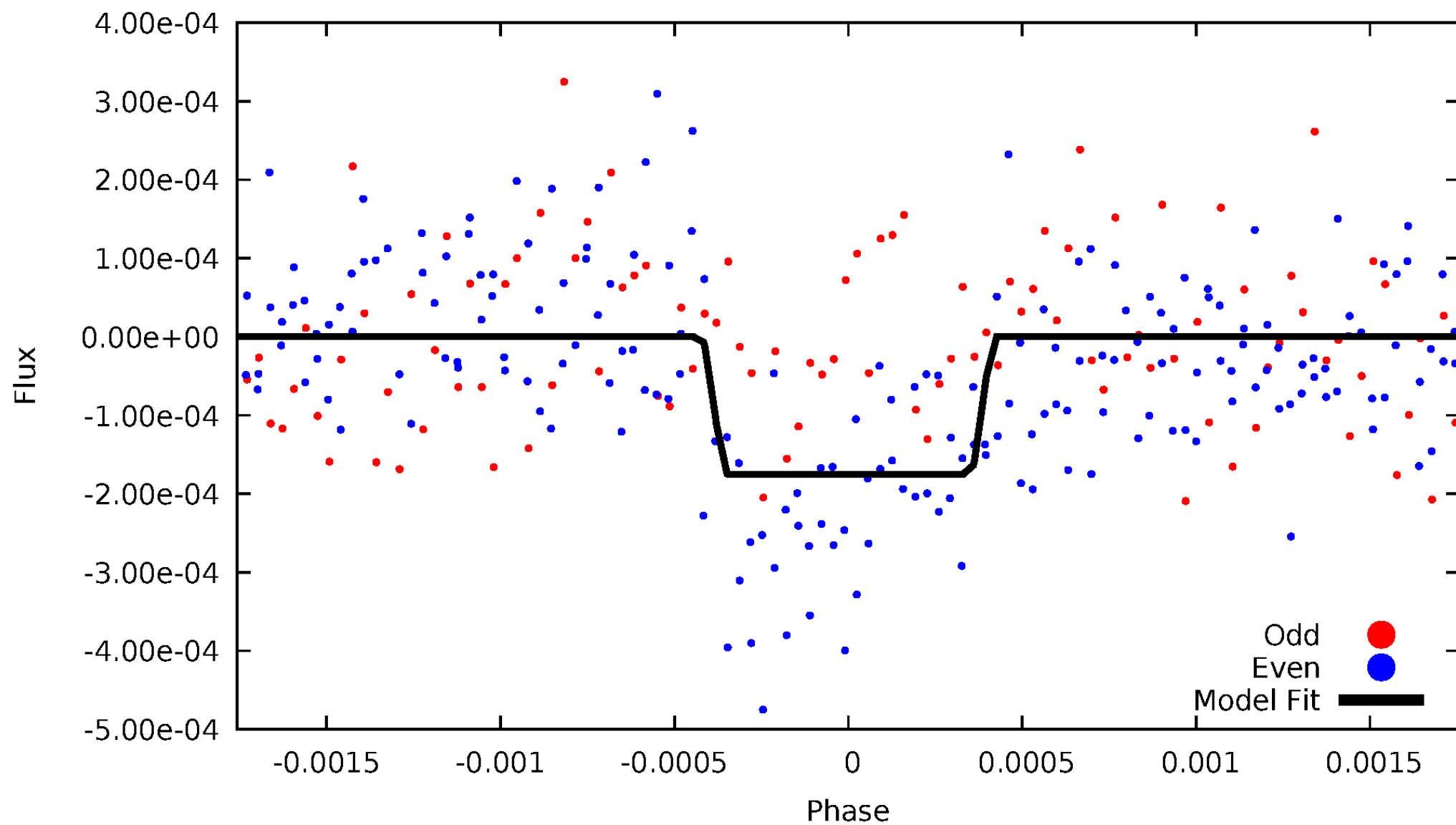
DV Odd/Even

TCE 008454067-02



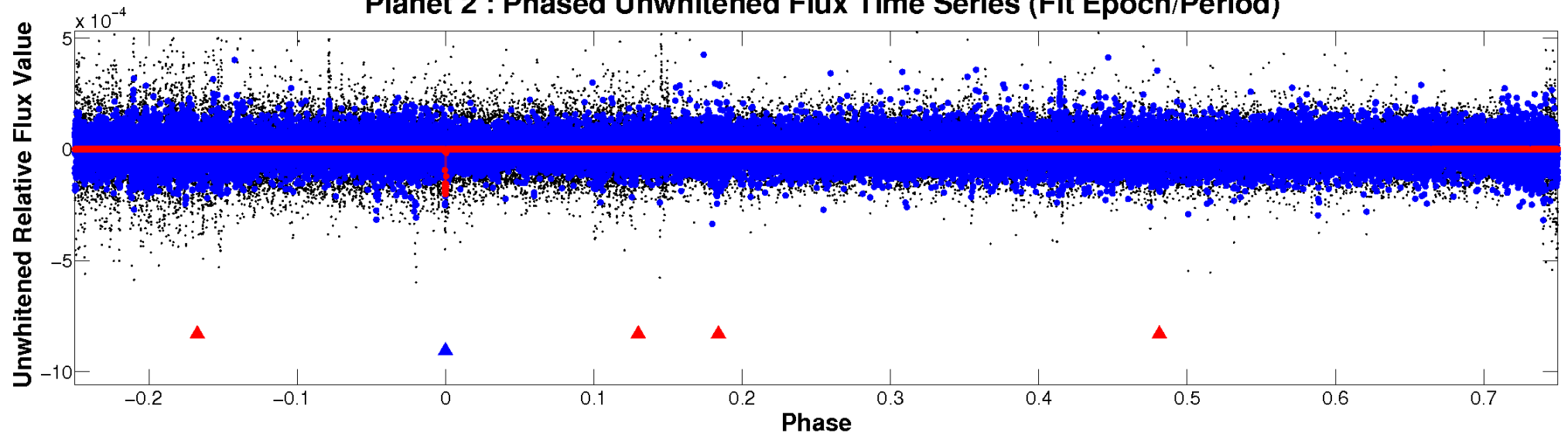
ALT Odd/Even

TCE 008454067-02

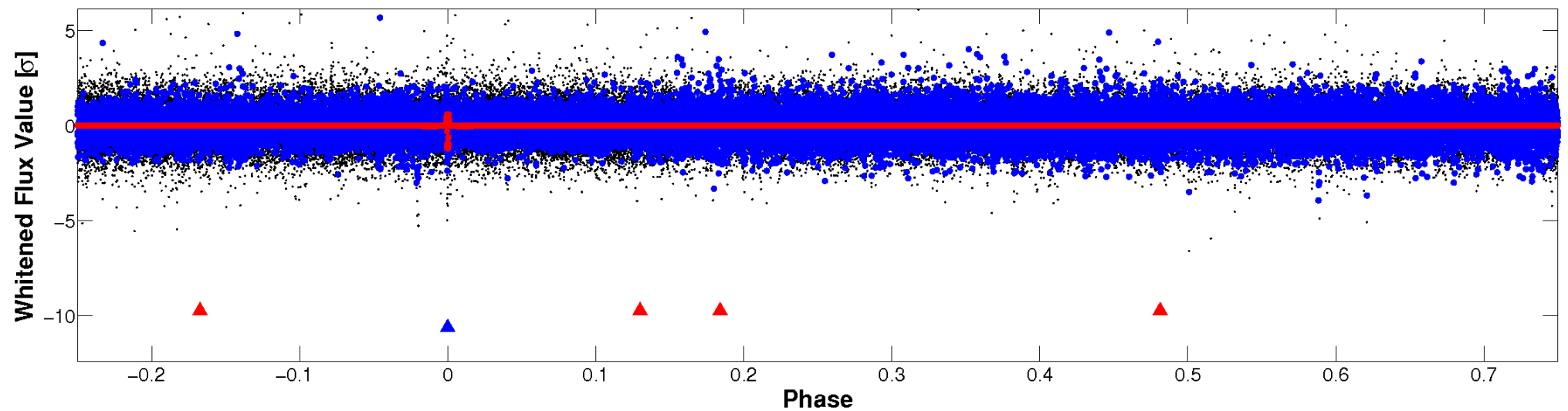


Non-Whitened Vs. Whitened Light Curve

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



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



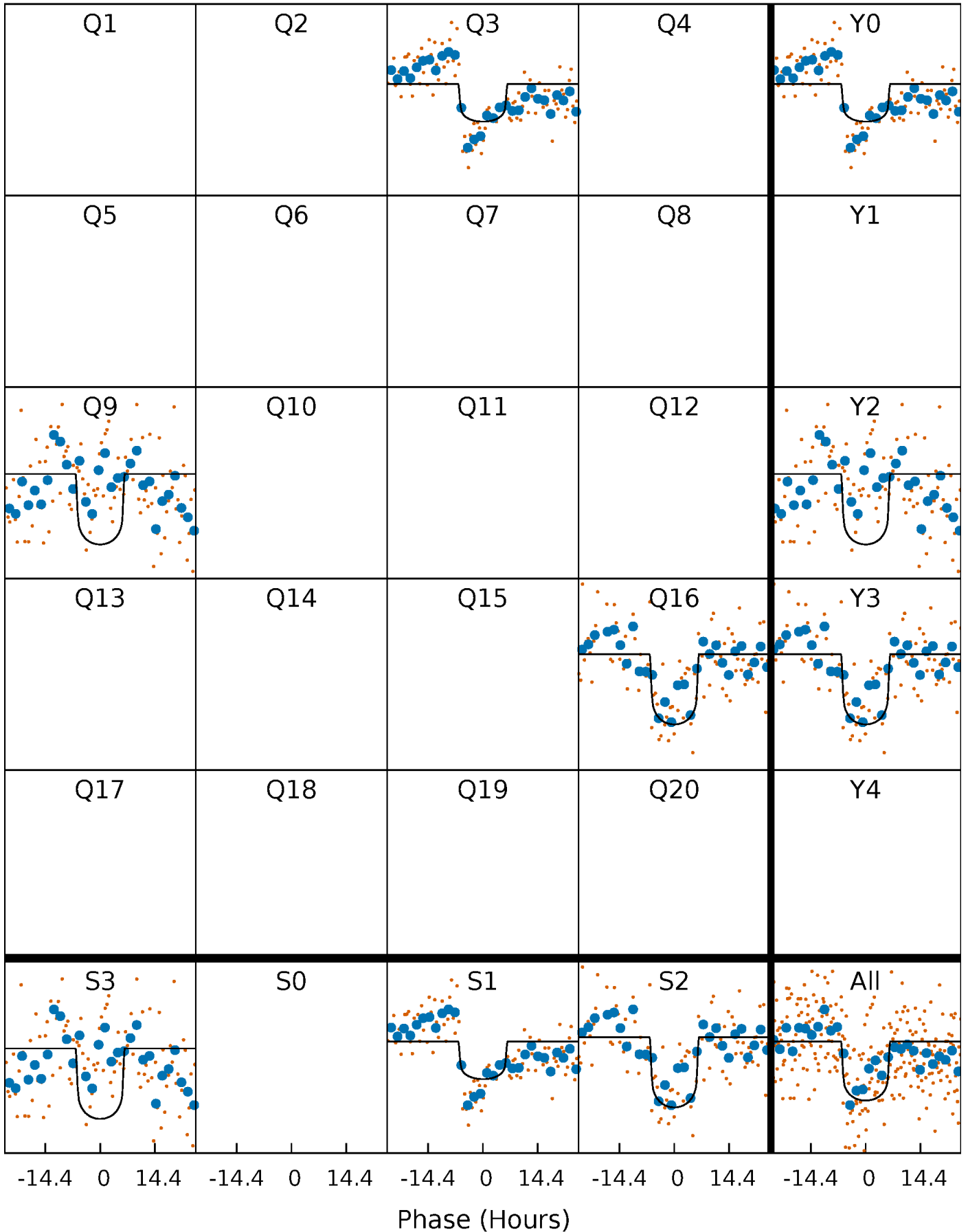
PDC Quarter-Phased Transit Curves

TCE 008454067-02 $P=605.806419$ Days $T_0=287.825496$ (BKJD)



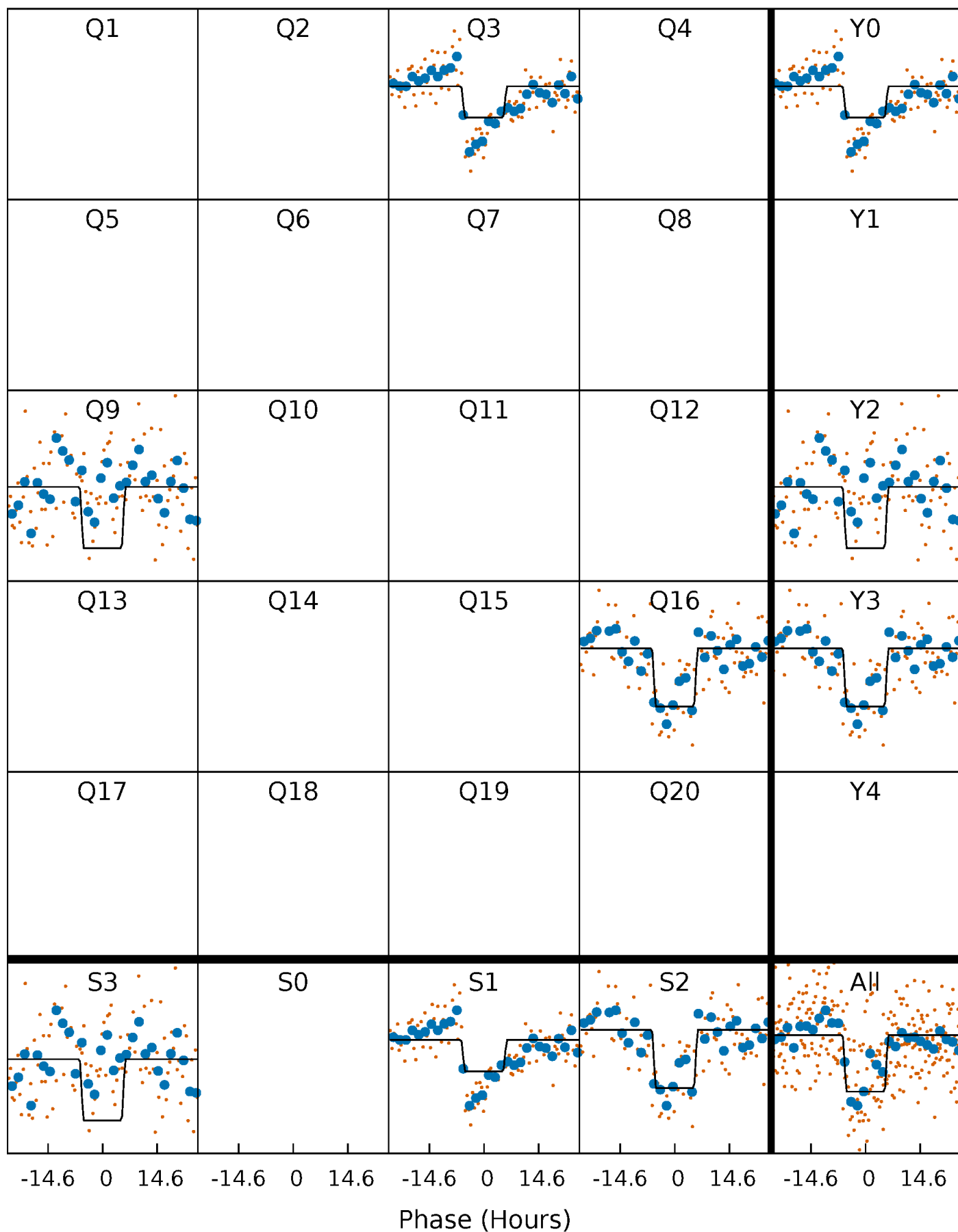
DV Quarter-Phased Transit Curves

TCE 008454067-02 $P=605.806419$ Days $T_0=287.825496$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

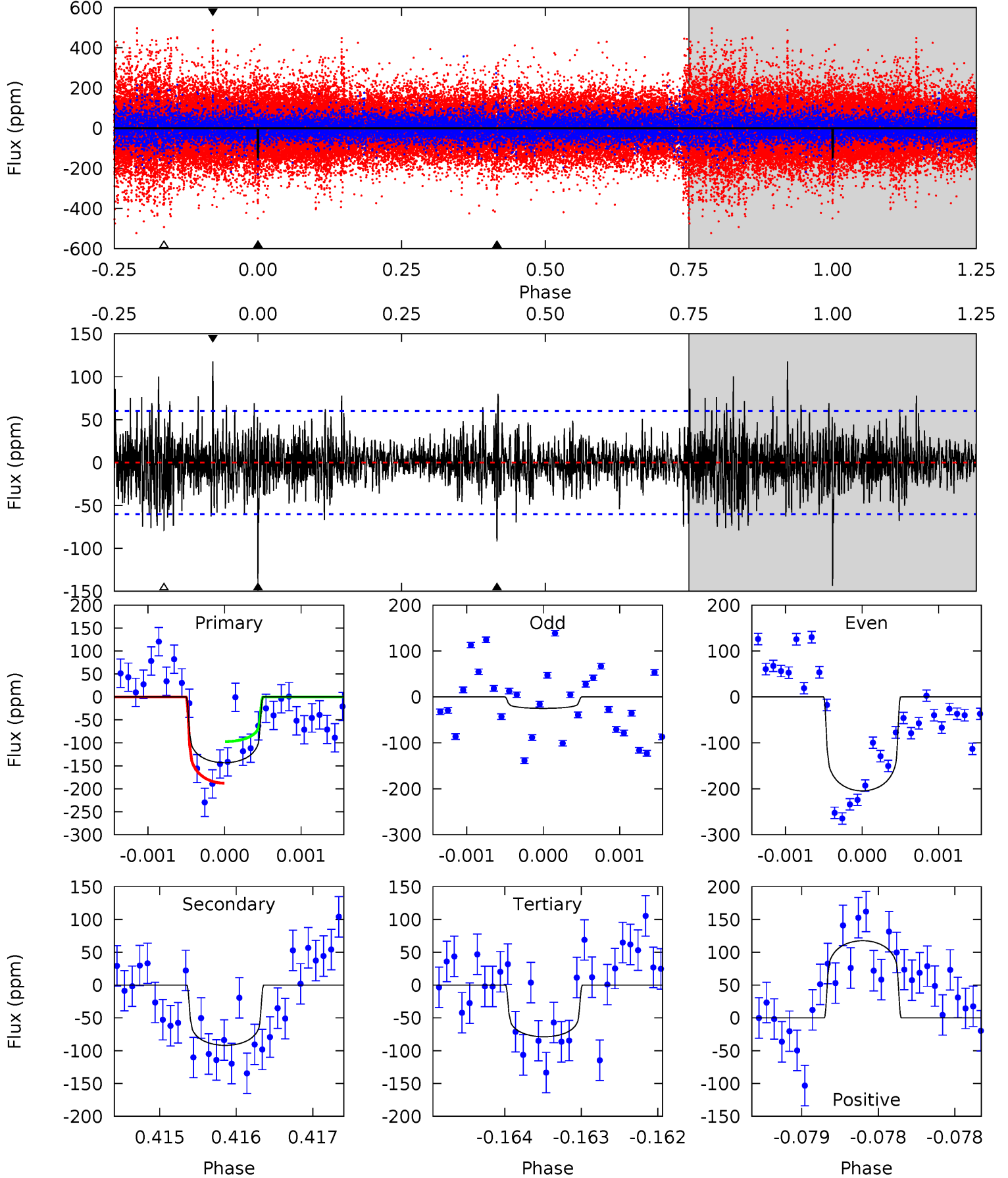
TCE 008454067-02 P=605.814187 Days $T_0=287.815331$ (BKJD)



DV Model-Shift Uniqueness Test

008454067-02, P = 605.806419 Days, E = 287.825496 Days

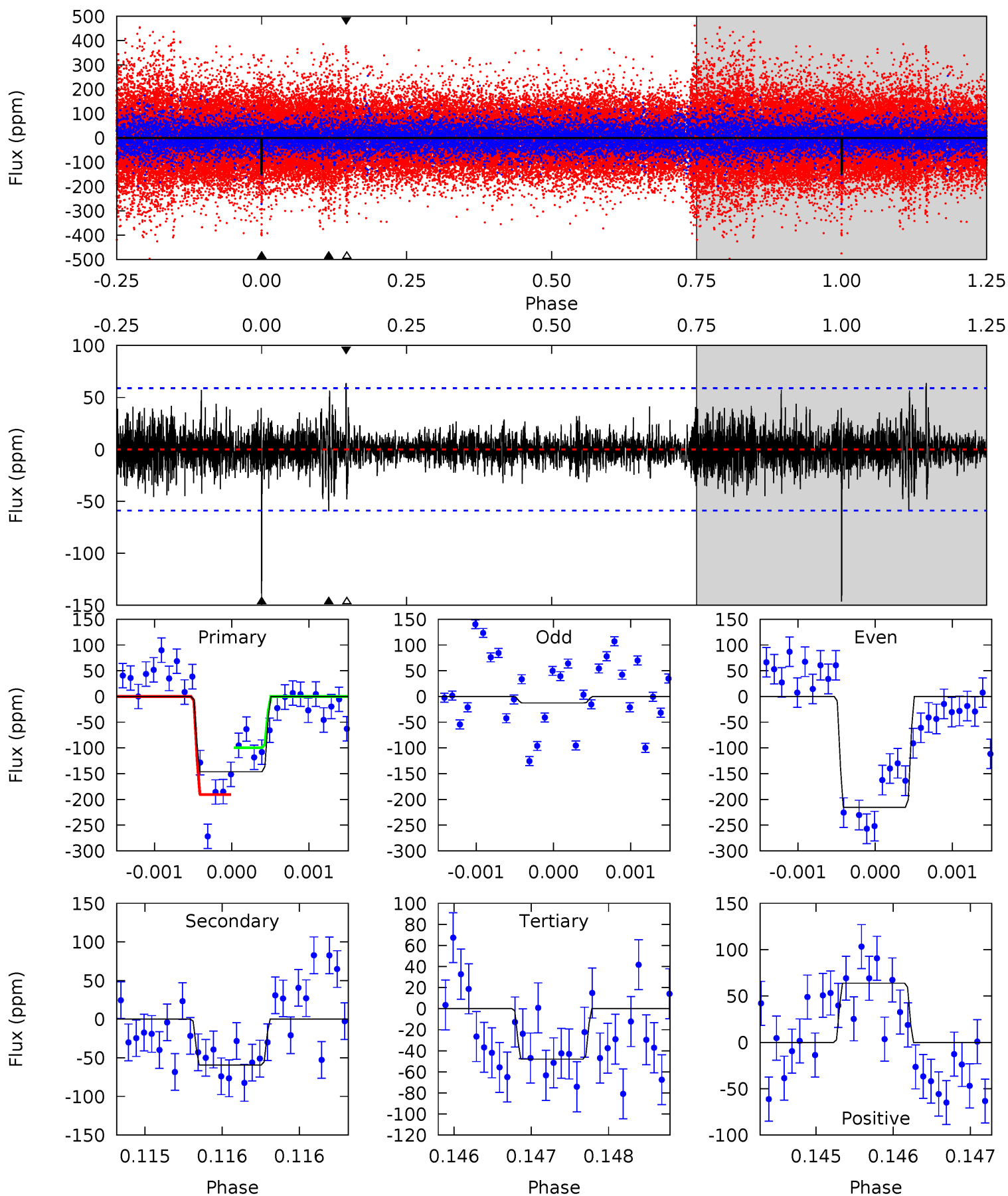
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	8.36	7.17	10.7	5.47	3.32	1.90	5.87	2.34	1.19	-2.33	7.35	0.94	0.45	4.12



Alt Model-Shift Uniqueness Test

008454067-02, P = 605.814187 Days, E = 287.815331 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	5.52	4.46	5.95	5.48	3.34	1.11	9.15	7.66	1.06	-0.43	8.62	0.93	0.30	4.24



Stellar Parameters For KIC 008454067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6510^{+181}_{-181}	$3.924^{+0.294}_{-0.126}$	$-0.820^{+0.350}_{-0.250}$	$1.823^{+0.385}_{-0.578}$	$1.016^{+0.151}_{-0.136}$	$0.236^{+0.472}_{-0.089}$
	+3%/-3%	+7%/-3%	+43%/-30%	+21%/-32%	+15%/-13%	+199%/-38%
Source	PHO1	FLK73	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 008454067-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-92 ± 11	$2.63^{+1.02}_{-0.96}$	453^{+28}_{-39}	5495^{+1213}_{-727}	14932^{+21411}_{-7494}
Alt.	-59 ± 11	$2.50^{+1.10}_{-0.96}$	450^{+29}_{-37}	5013^{+1282}_{-603}	10165^{+17566}_{-5298}

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 $A_{obs} \gg 1.0$

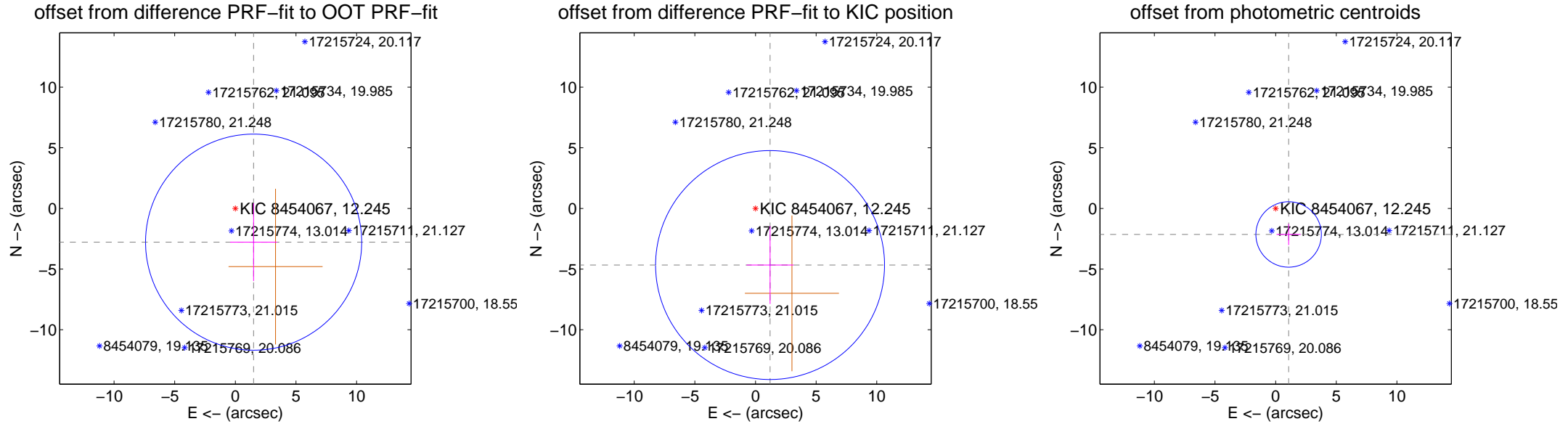
DV Centroid Data

Supplemental centroid analysis for 008454067-02. Kepler magnitude: 12.24. Transit SNR 10.02

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.23 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

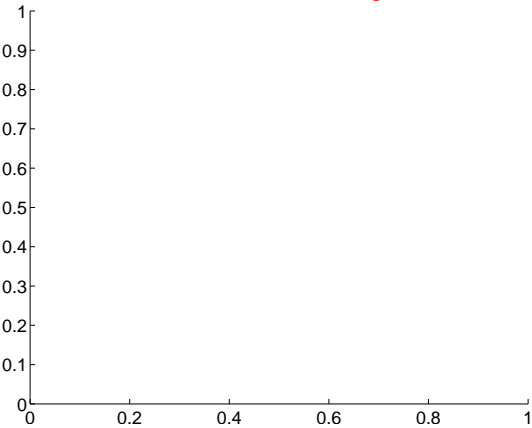
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.164 ± 2.971	1.06	-1.508 ± 1.941	-2.781 ± 3.211
PRF-fit source offset from KIC position	4.820 ± 3.147	1.53	-1.202 ± 1.941	-4.668 ± 3.211
photometric centroid source offset	2.40 ± 0.90	2.66	-1.07 ± 1.00	-2.15 ± 0.87



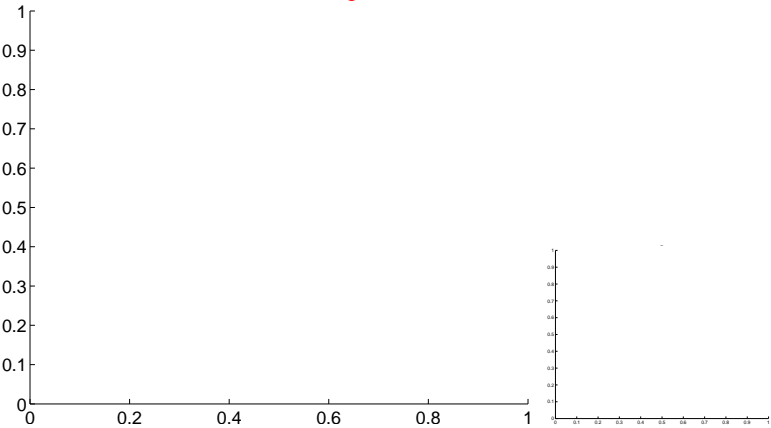
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

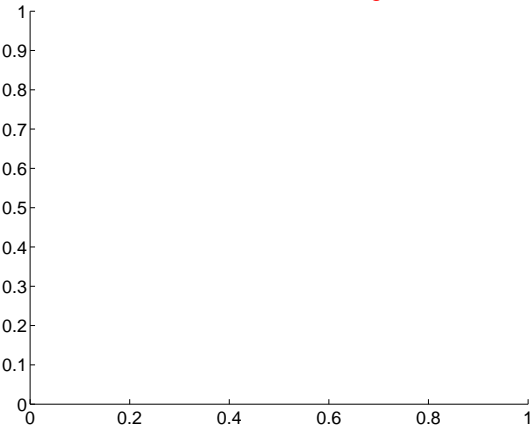
Q1 no difference image



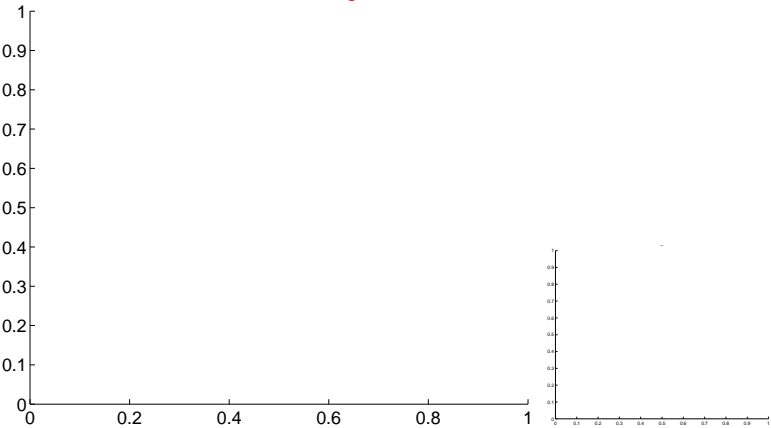
Q1 no OOT image



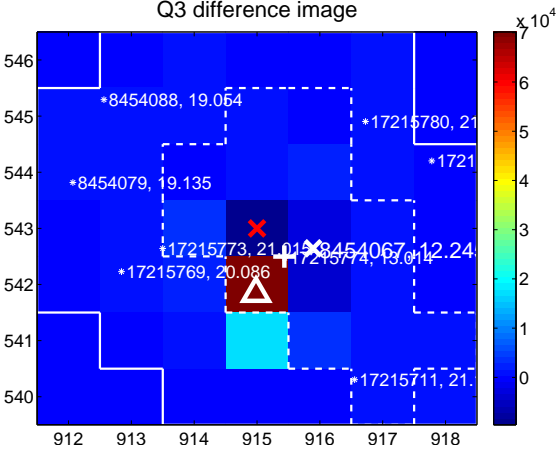
Q2 no difference image



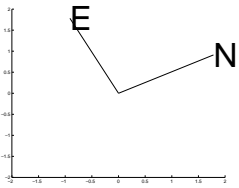
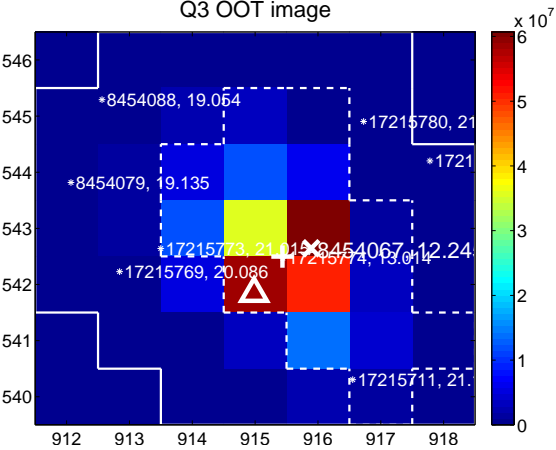
Q2 no OOT image



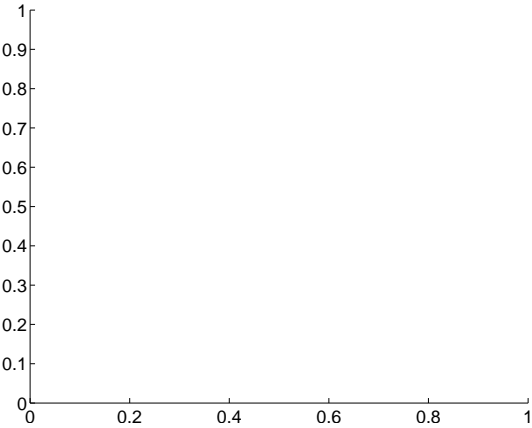
Q3 difference image



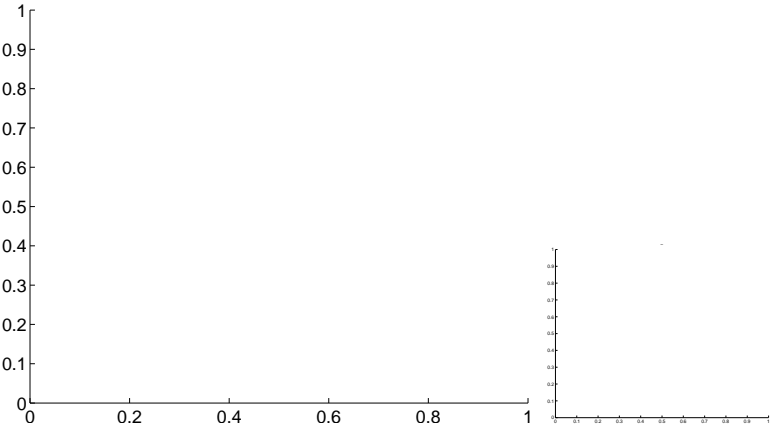
Q3 OOT image



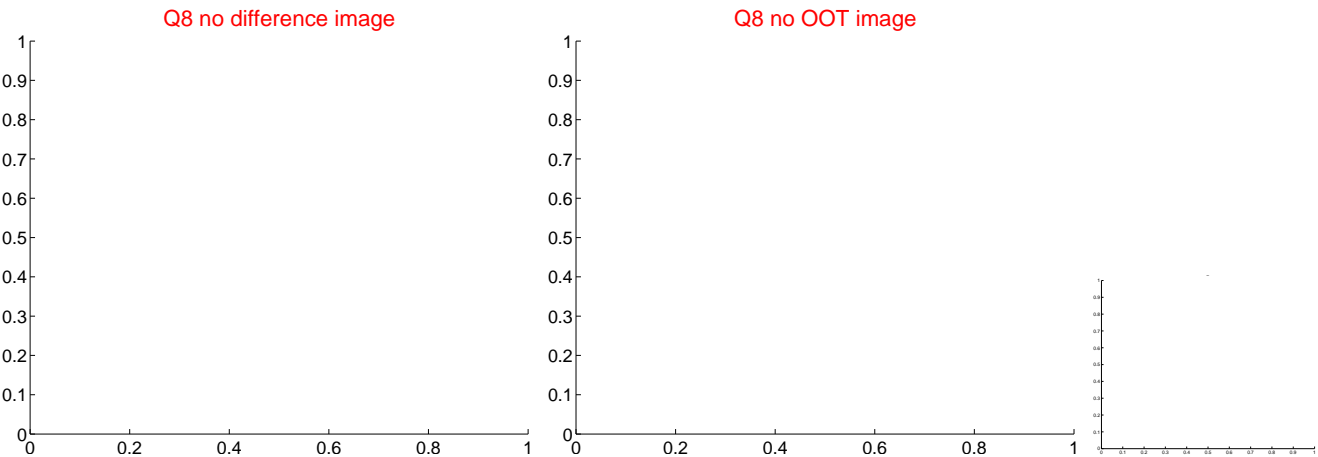
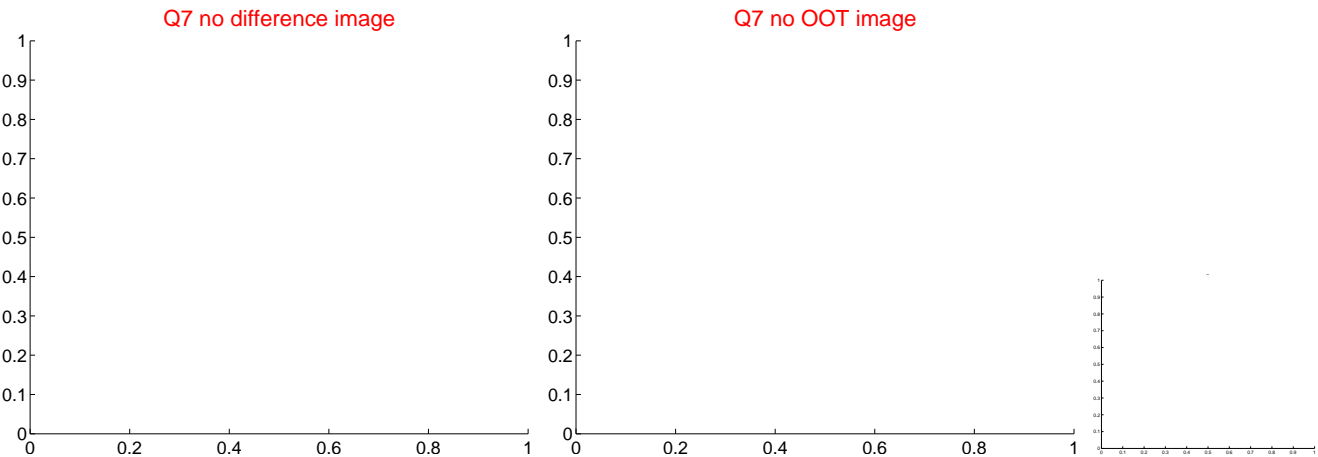
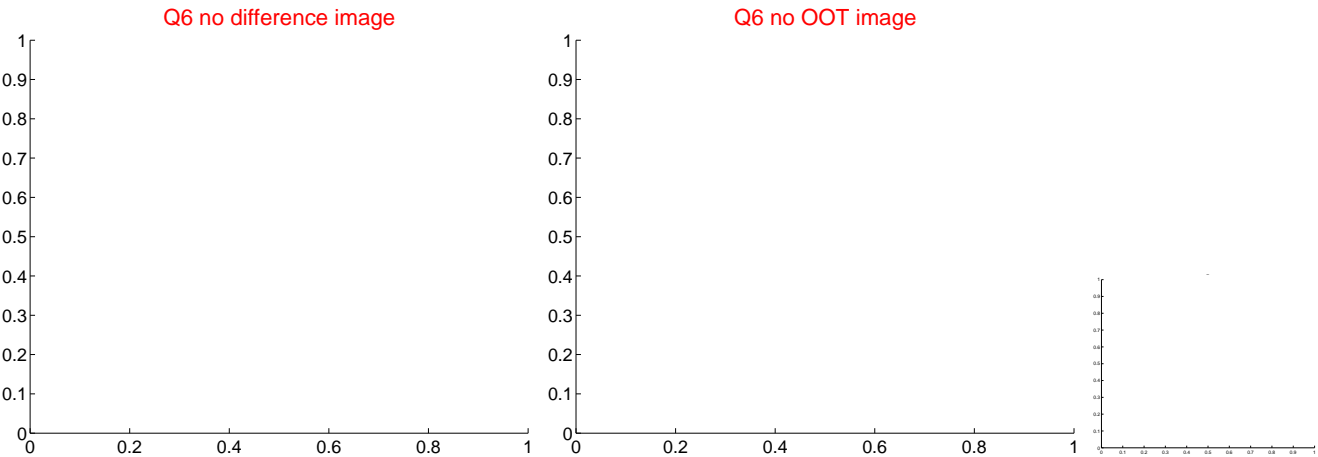
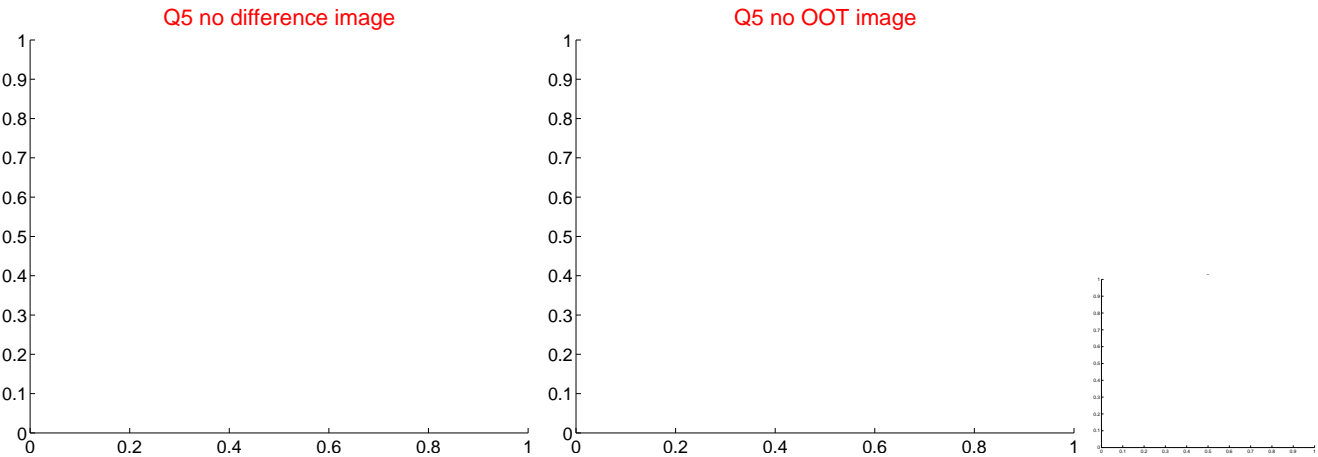
Q4 no difference image



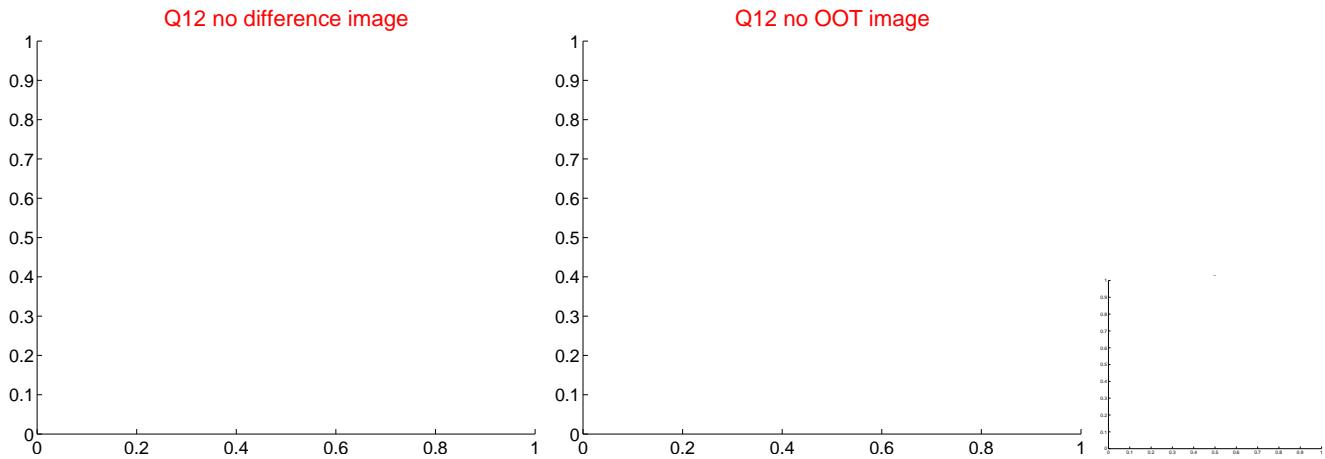
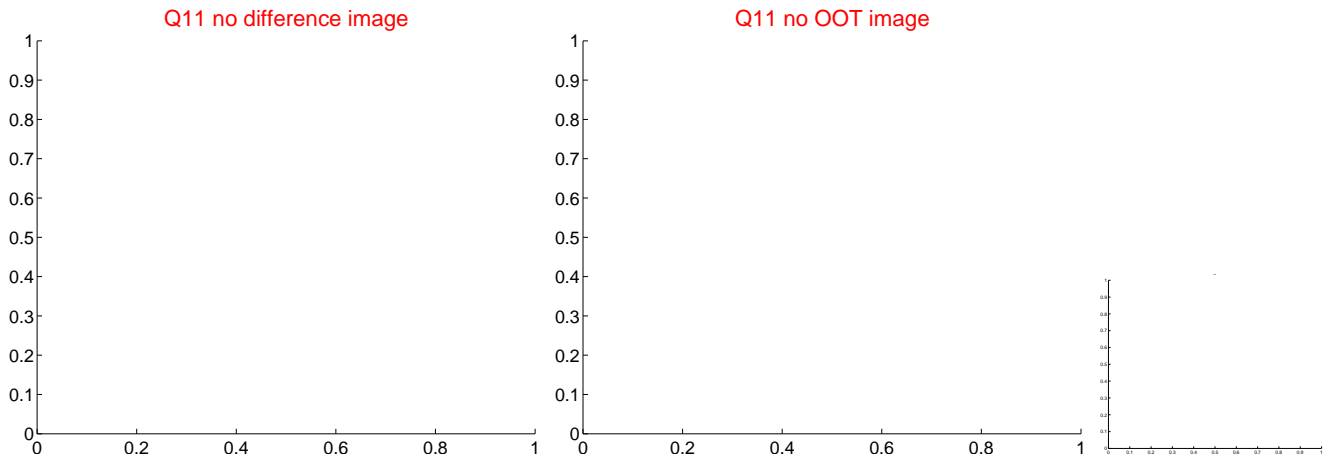
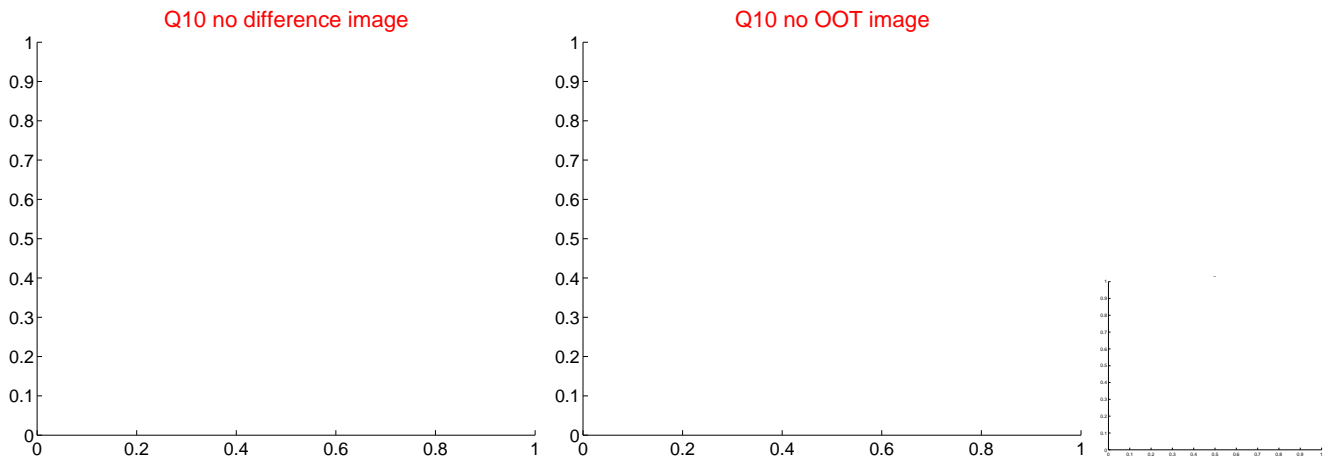
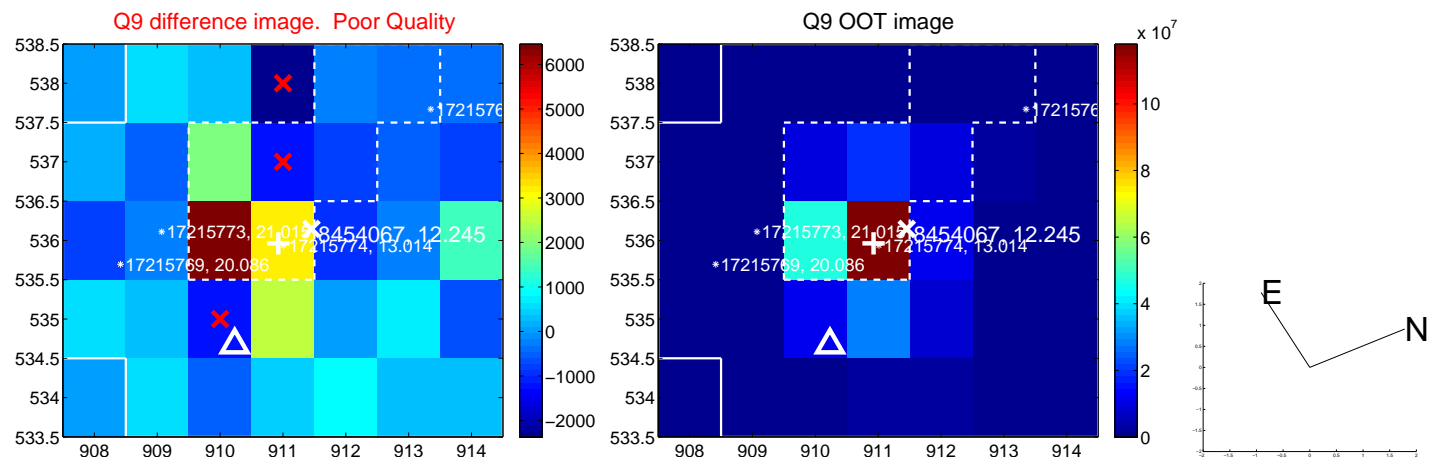
Q4 no OOT image



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



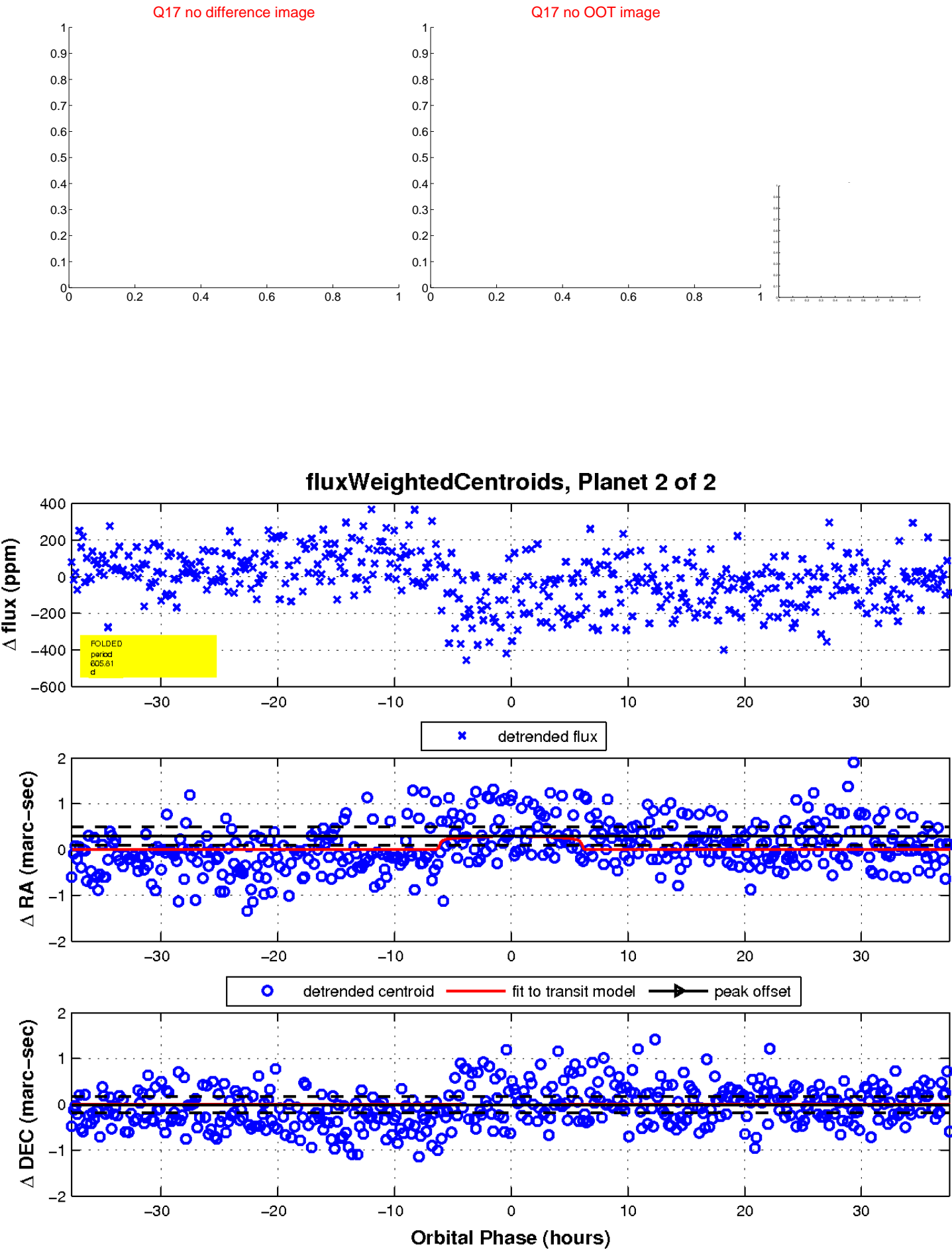
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

Declination

