

KIC 008557280

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})
008557280-01	OBS	No	378.200160	501.631241	1366.5	19.732	8.4	7.8	0.86	5749	3.64	0.72
008557280-02	OBS	No	403.567717	447.593240	1311.0	20.720	8.6	7.8	0.86	5749	3.26	0.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008557280-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008557280-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

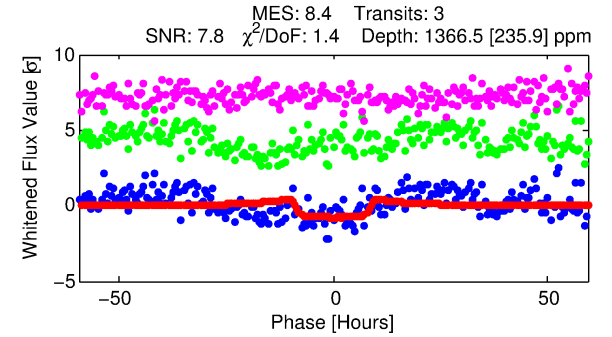
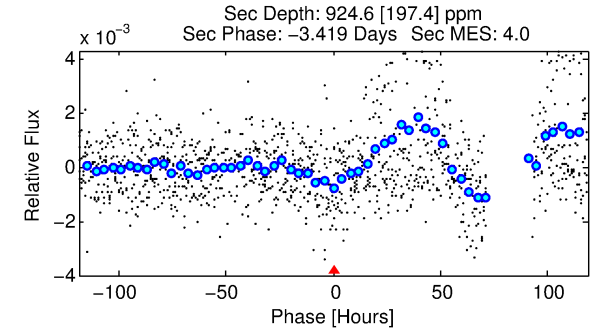
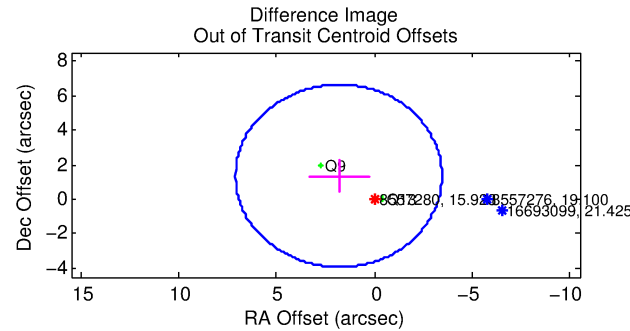
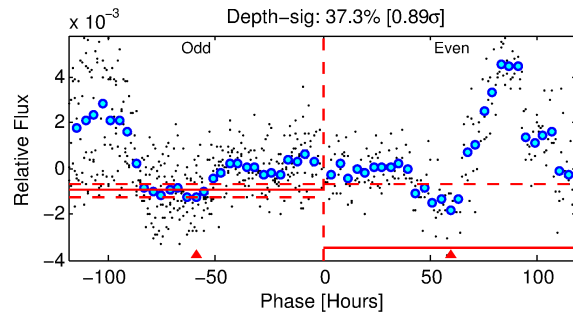
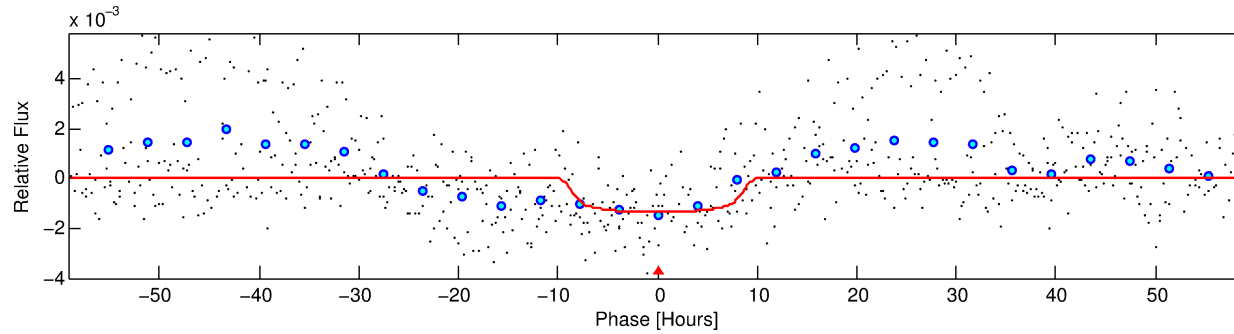
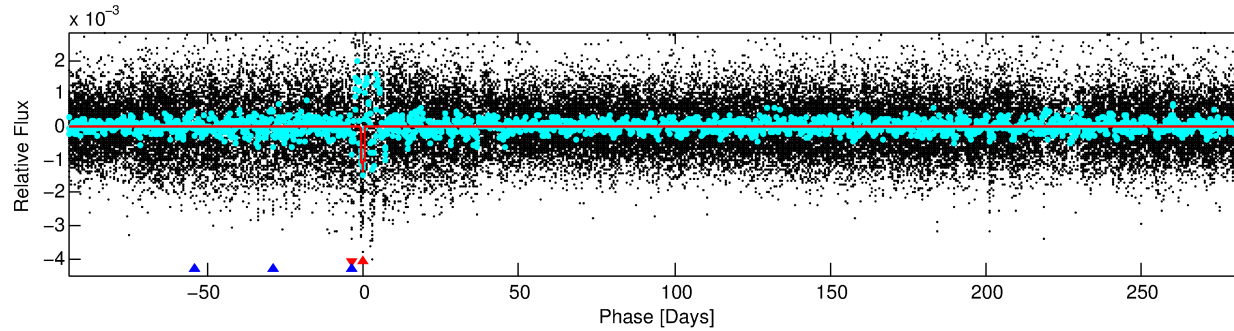
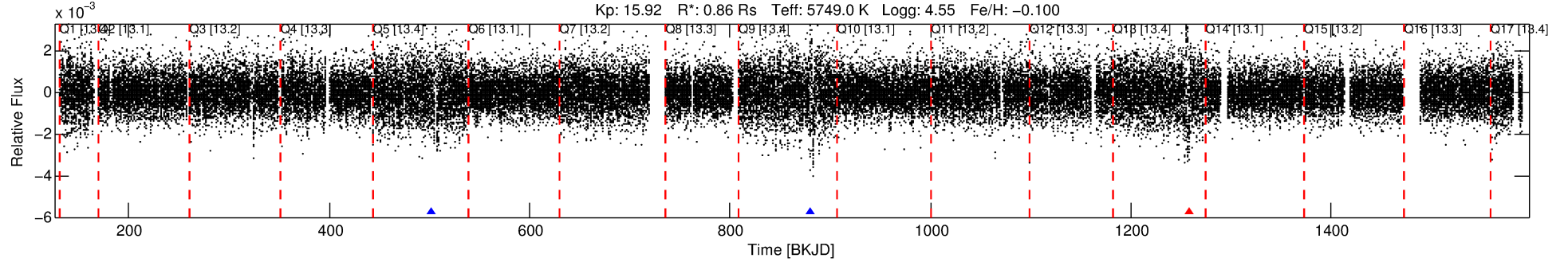
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008557280-01

No Significant Match Found

DV One-Page Summary

KIC: 8557280 Candidate: 1 of 2 Period: 378.200 d



DV Fit Results:

Period = 378.20016 [0.02687] d
Epoch = 501.6312 [0.0362] BKJD
Rp/R* = 0.0386 [0.0060]
a/R* = 87.79 [46.71]
b = 0.85 [0.18]
Seff = 0.72 [0.24]
Teq = 235 [20] K
Rp = 3.64 [1.12] Re
a = 1.0097 [0.2215] AU
Ag = 39080.44 [19170.66] [2.04 σ]
Teffp = 5100 [505] K [9.62 σ]

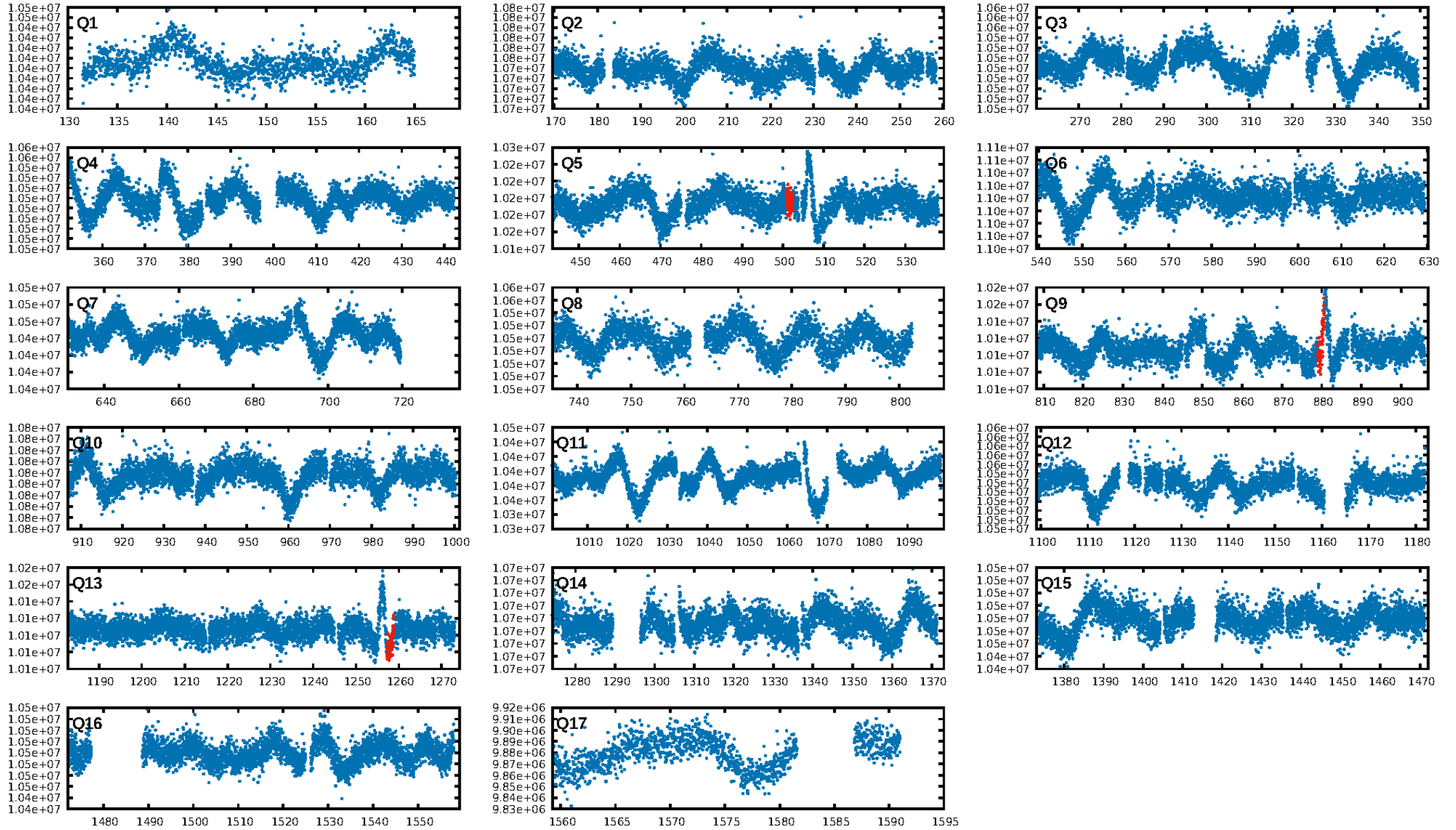
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [21.28 σ]
ModelChiSquare2-sig: 10.4%
ModelChiSquareGof-sig: 97.9%
Bootstrap-pfa: 3.75e-11
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: -2.342
Centroid-sig: 2.9%
Centroid-so: 3.064 arcsec [1.57 σ]
OotOffset-rm: 2.267 arcsec [1.29 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 2.287 arcsec [1.27 σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

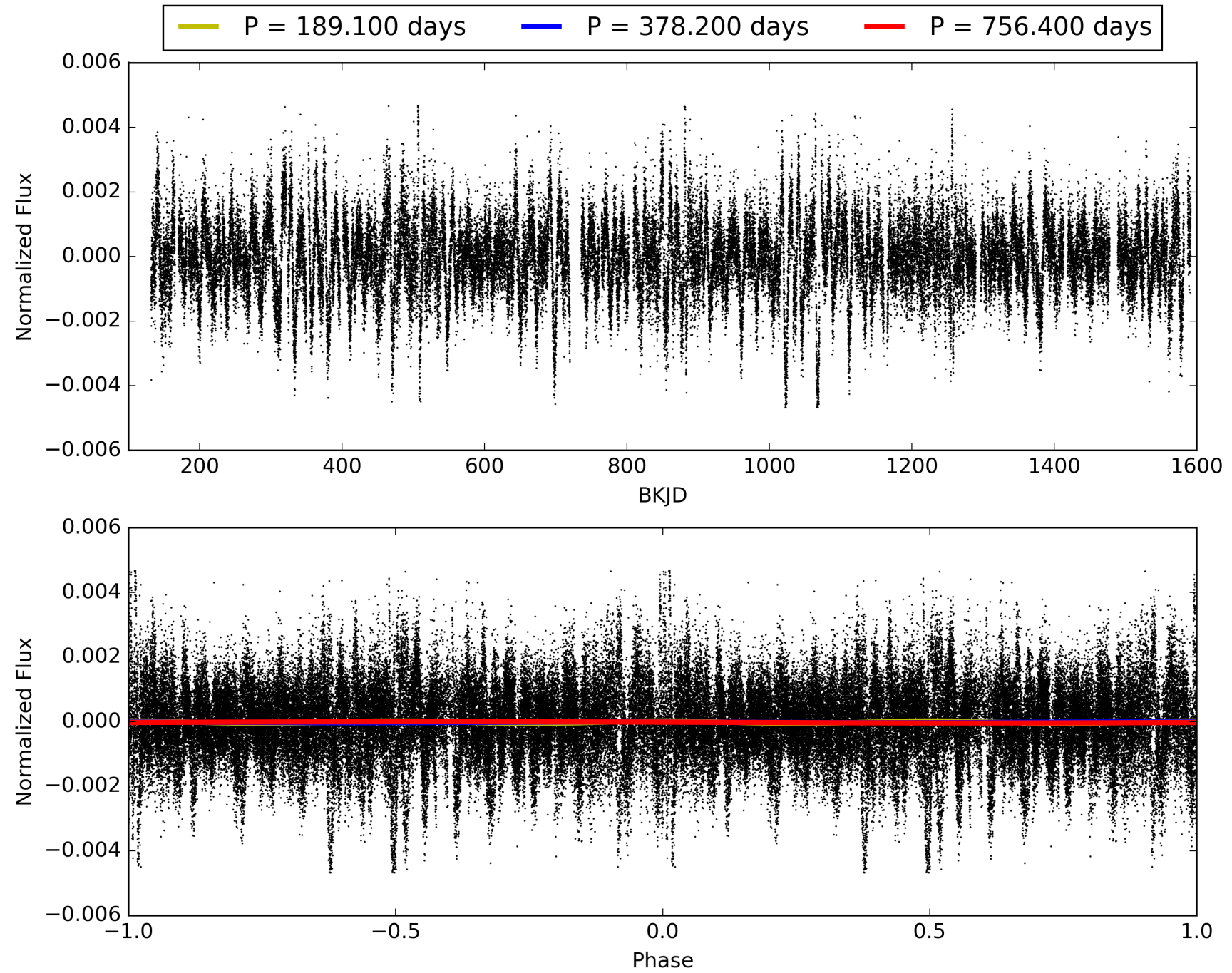
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:21:34 Z

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

TCE 008557280-01, PDC Light Curves

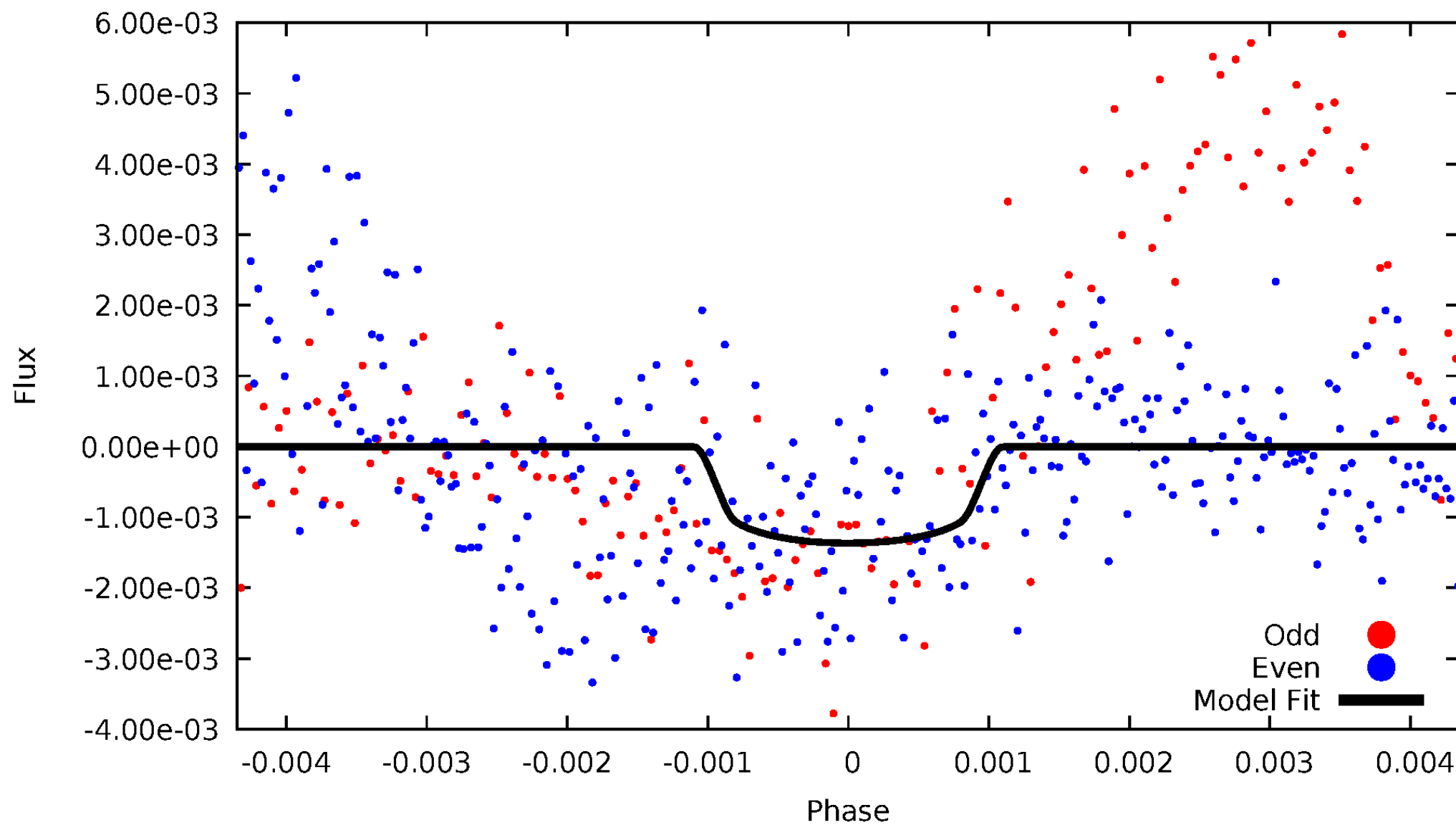


TCE 008557280-01



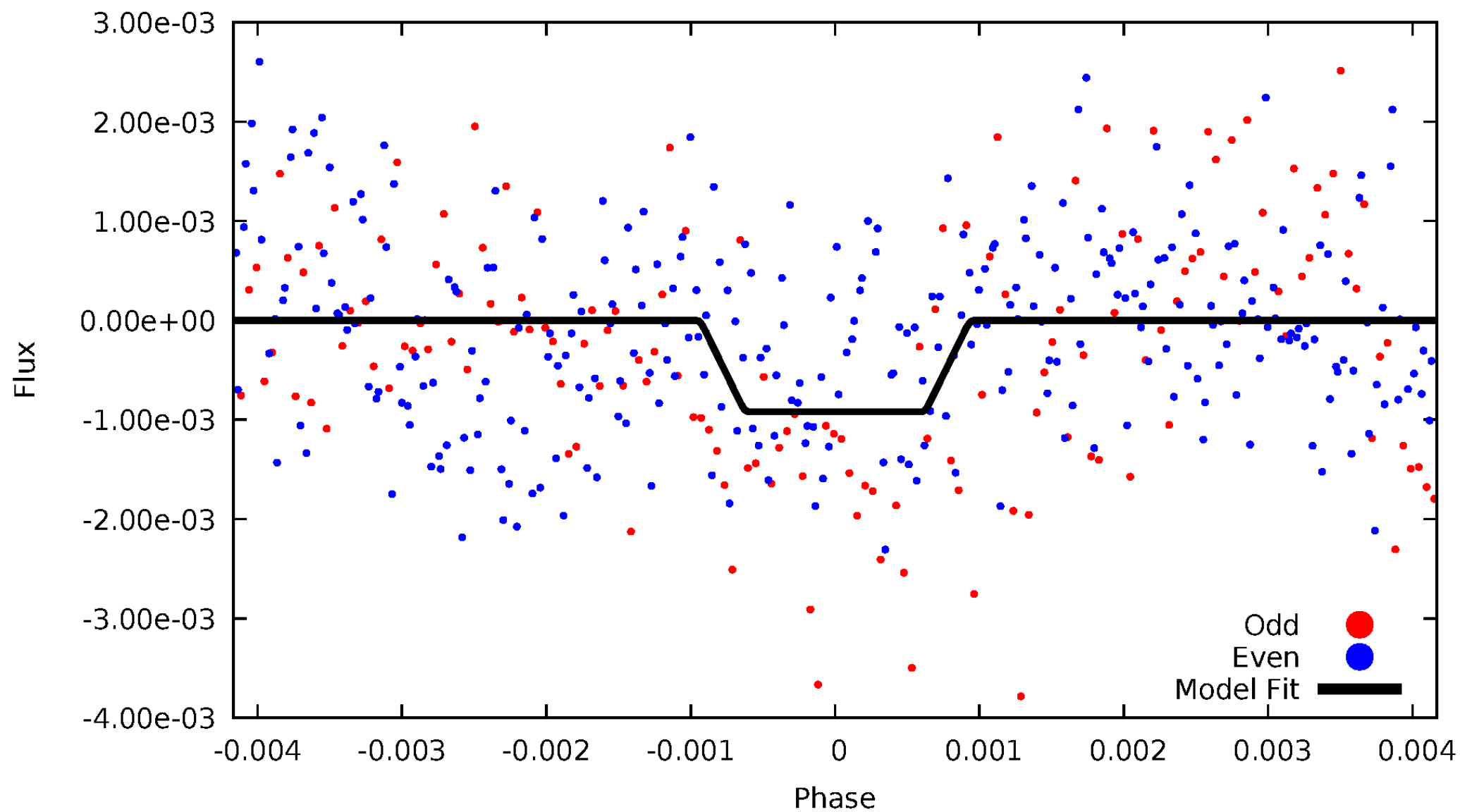
DV Odd/Even

TCE 008557280-01

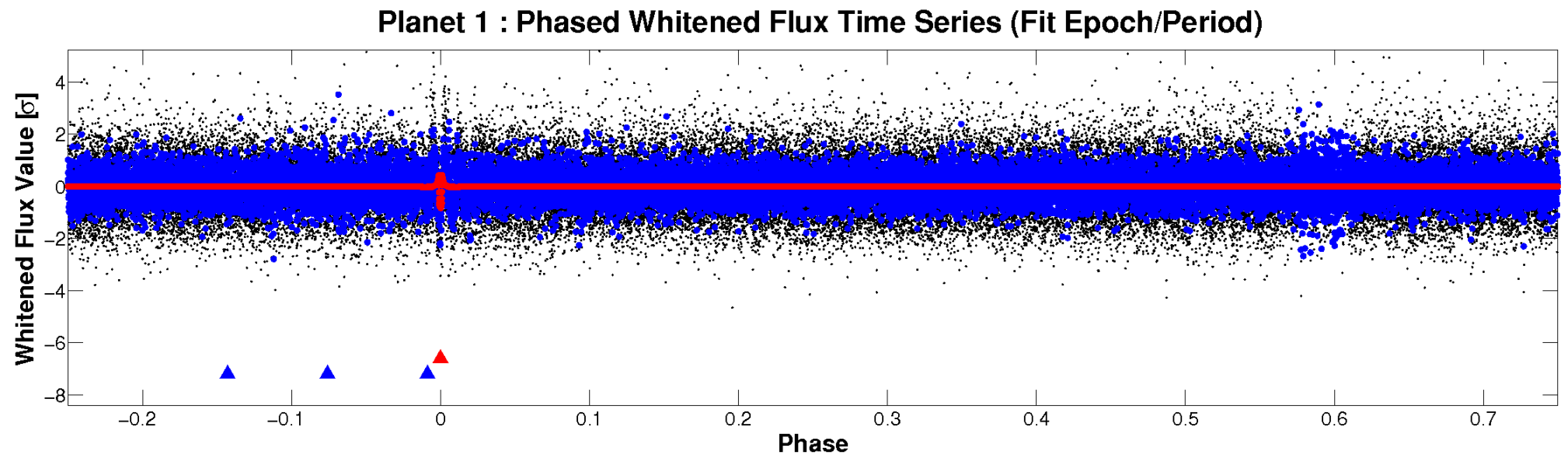
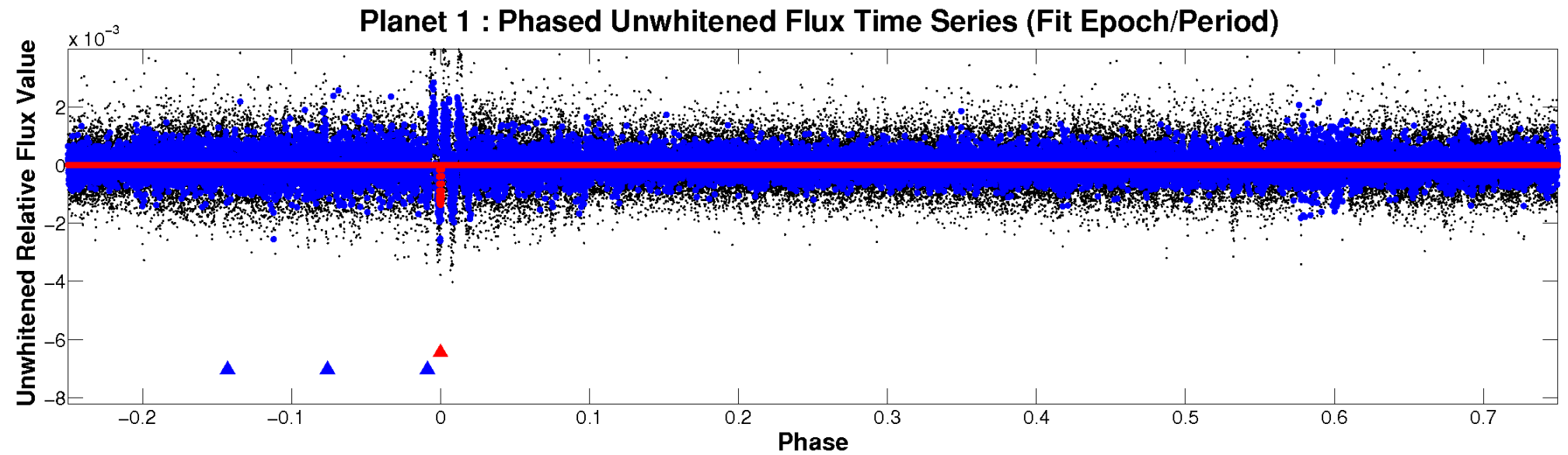


ALT Odd/Even

TCE 008557280-01

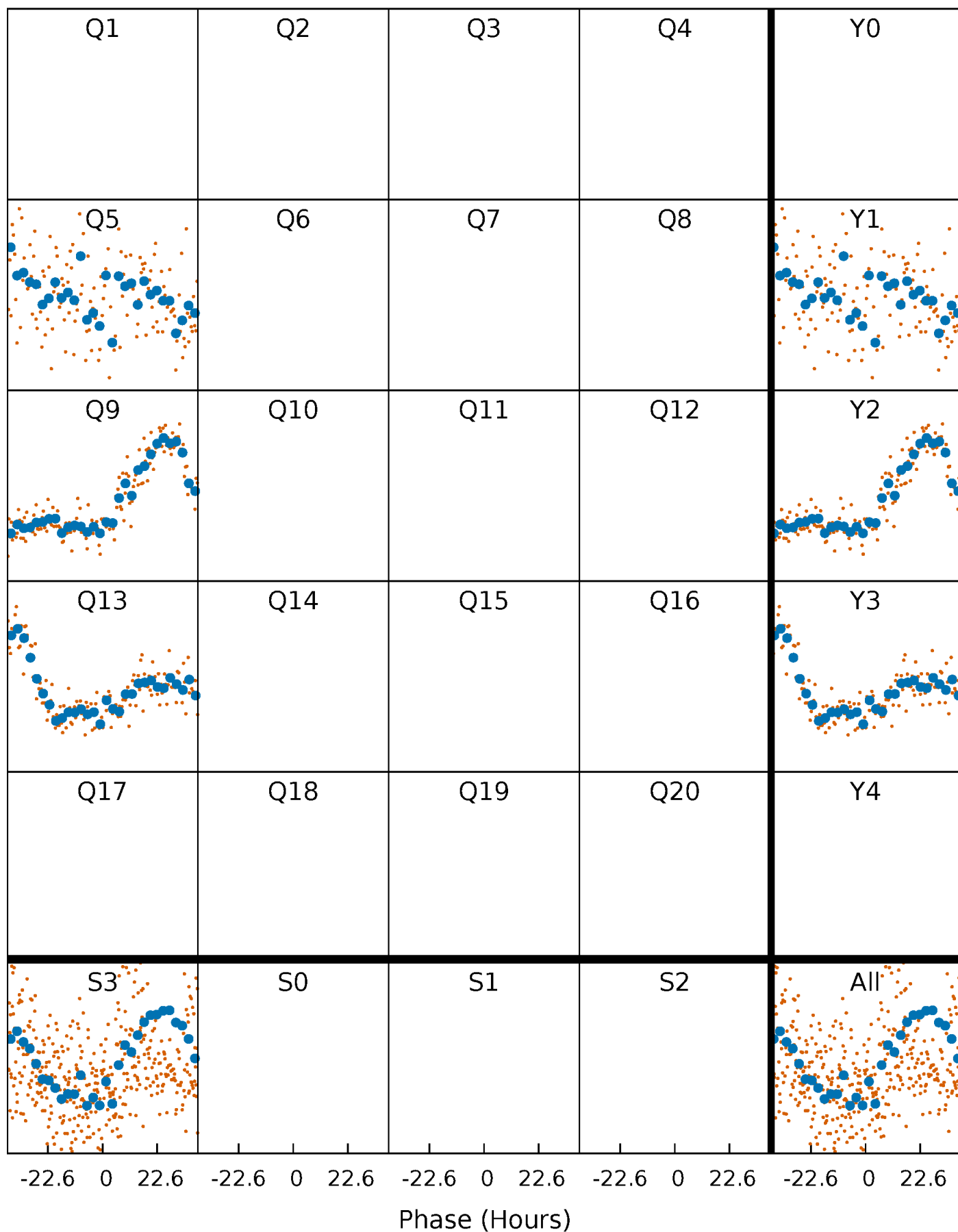


Non-Whitened Vs. Whitened Light Curve



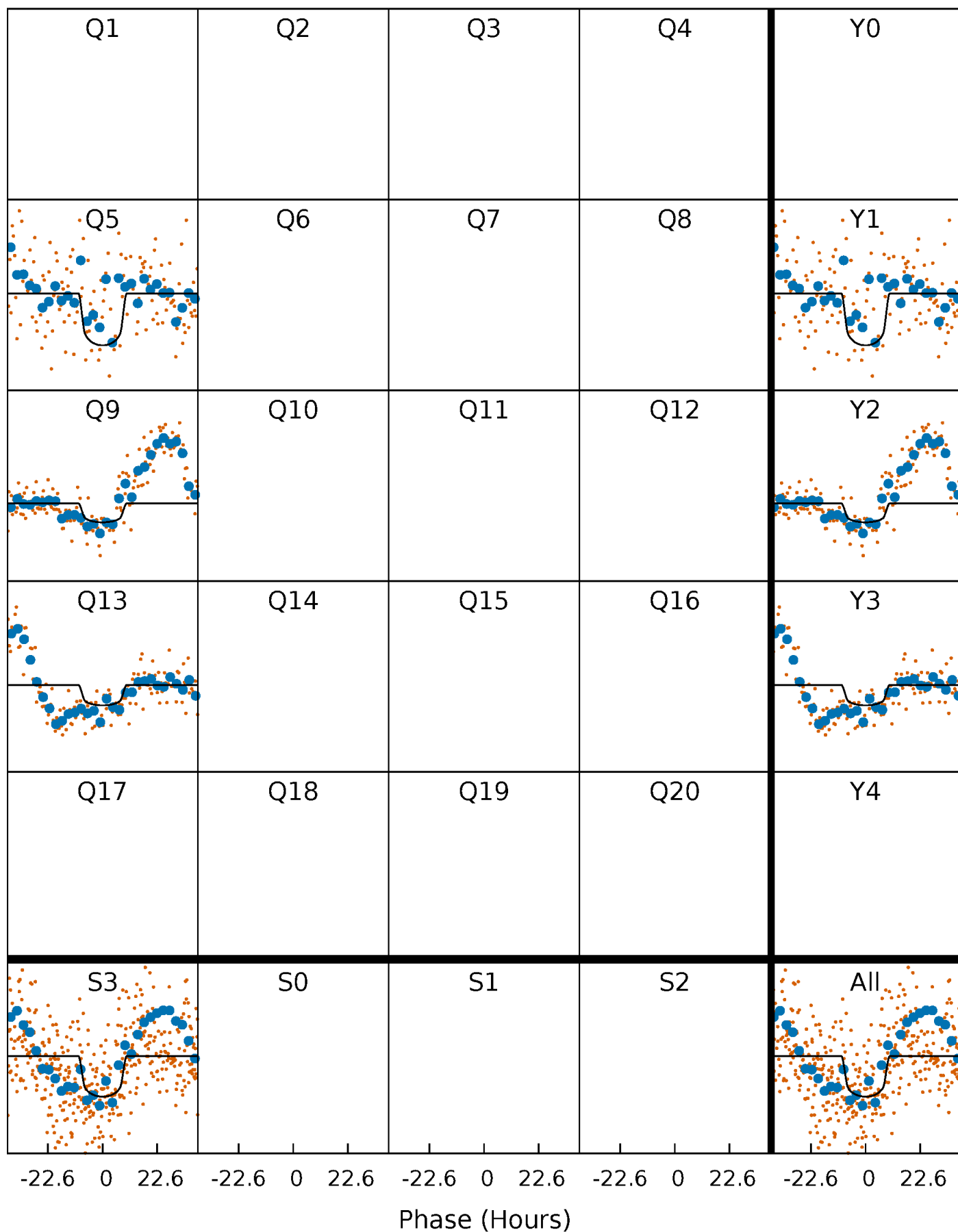
PDC Quarter-Phased Transit Curves

TCE 008557280-01 P=378.200160 Days $T_0=501.631241$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008557280-01 P=378.200160 Days $T_0=501.631241$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

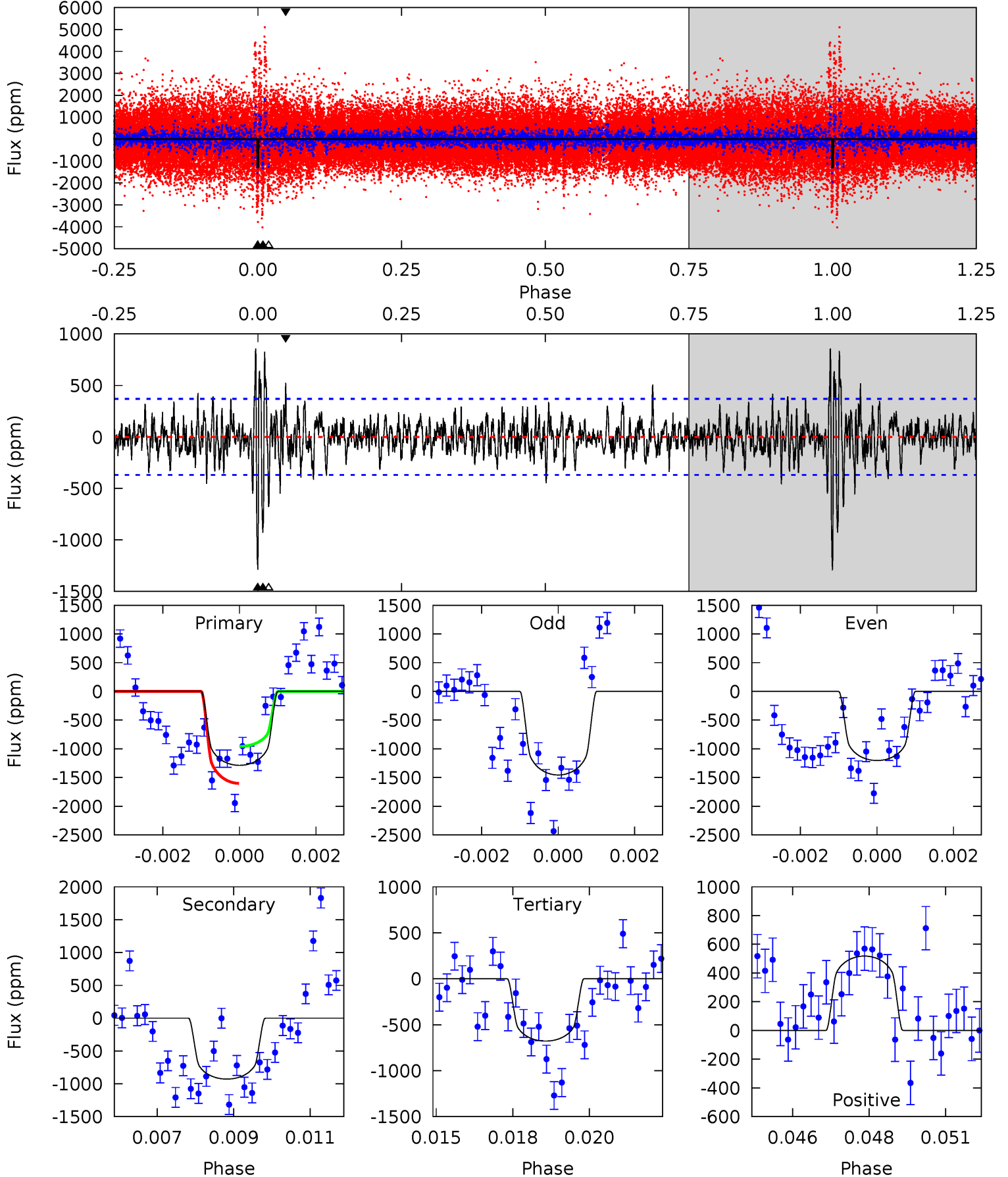
TCE 008557280-01 P=378.218384 Days $T_0=501.616794$ (BKJD)



DV Model-Shift Uniqueness Test

008557280-01, P = 378.200160 Days, E = 123.431081 Days

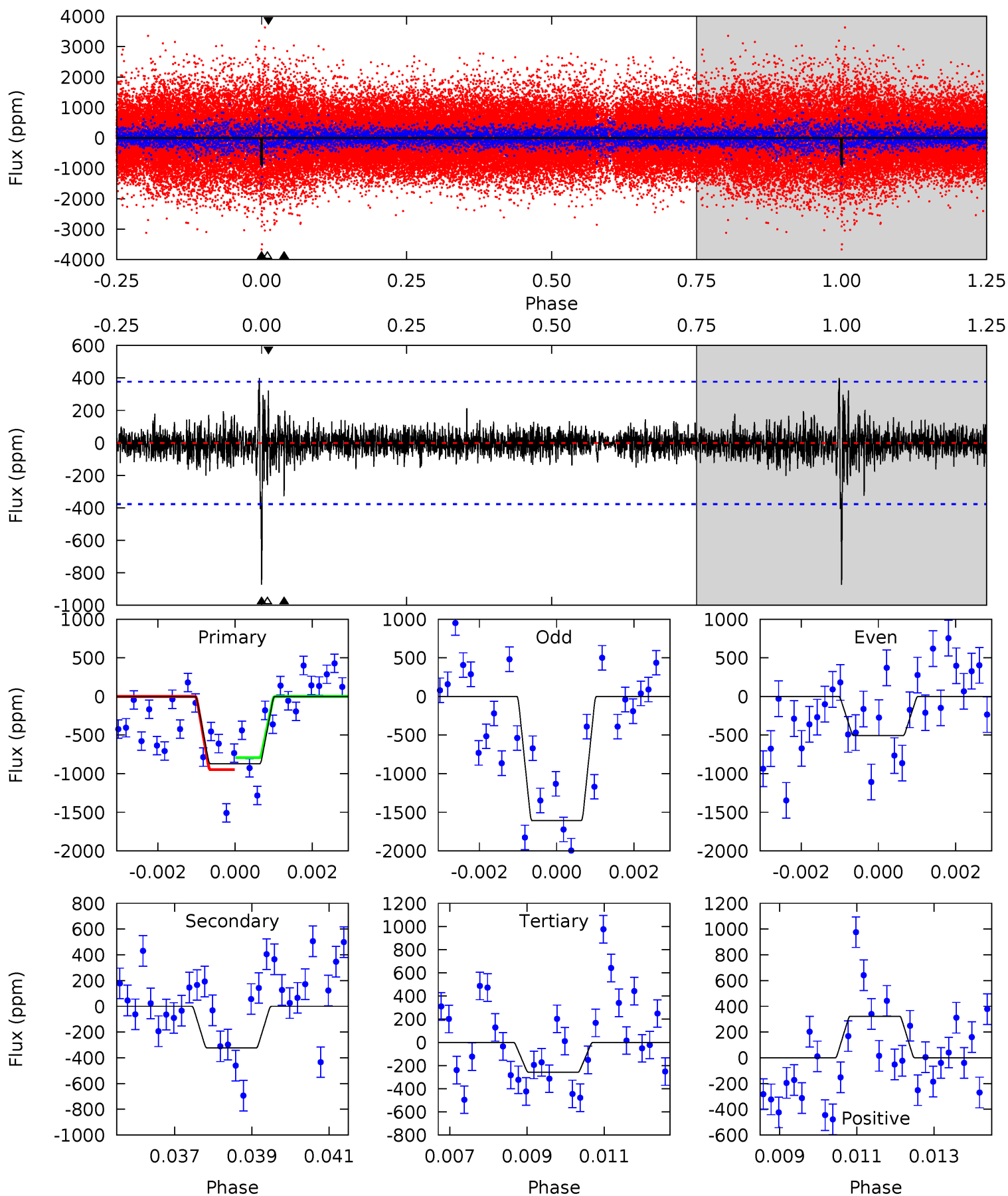
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	13.3	9.75	7.44	5.31	3.06	2.05	8.76	11.1	3.59	5.90	1.68	0.88	0.40	4.63



Alt Model-Shift Uniqueness Test

008557280-01, $P = 378.218384$ Days, $E = 123.398410$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	4.58	3.66	4.57	5.34	3.11	0.81	8.71	7.79	0.92	0.01	7.36	1.23	0.31	1.12



Stellar Parameters For KIC 008557280

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5749^{+156}_{-173}	$4.547^{+0.042}_{-0.168}$	$-0.100^{+0.300}_{-0.300}$	$0.864^{+0.230}_{-0.077}$	$0.961^{+0.103}_{-0.114}$	$2.097^{+0.448}_{-0.965}$
	+3%/-3%	+1%/-4%	+300%/-300%	+27%/-9%	+11%/-12%	+21%/-46%
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 008557280-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-929 ± 70	$3.77^{+0.77}_{-0.62}$	334^{+20}_{-15}	5155^{+423}_{-345}	35784^{+15562}_{-10924}
Alt.	-323 ± 71	$2.99^{+0.65}_{-0.62}$	335^{+22}_{-15}	4539^{+522}_{-349}	18999^{+13282}_{-6871}

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

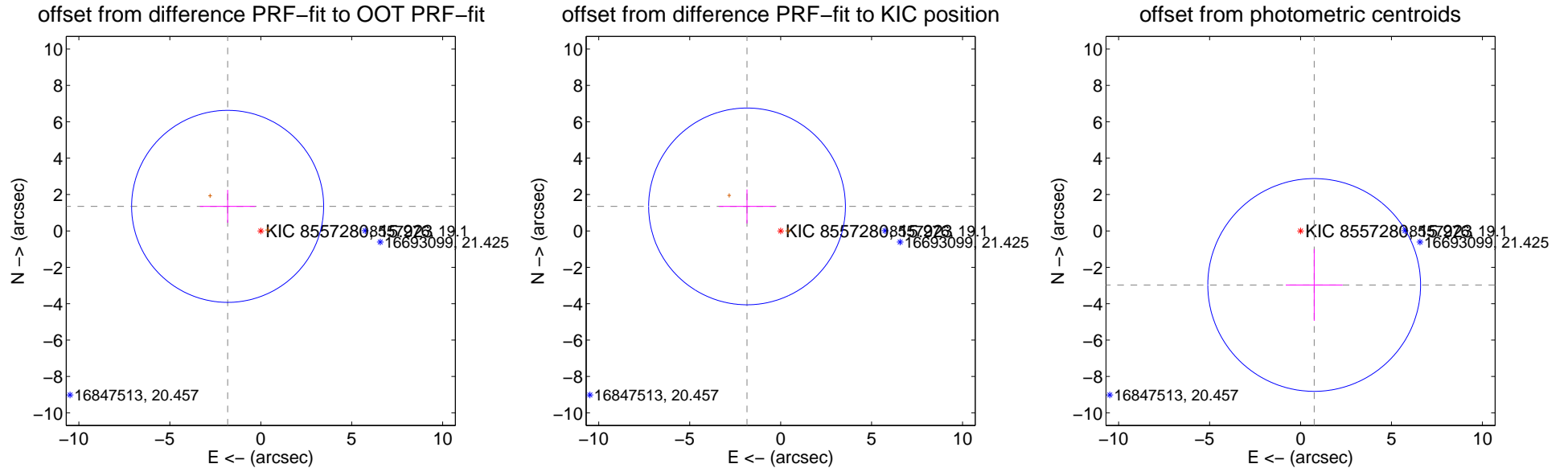
DV Centroid Data

Supplemental centroid analysis for 008557280-01. Kepler magnitude: 15.92. Transit SNR 7.77

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.267 ± 1.759	1.29	1.822 ± 1.522	1.350 ± 0.903
PRF-fit source offset from KIC position	2.287 ± 1.802	1.27	1.848 ± 1.552	1.348 ± 0.933
photometric centroid source offset	3.06 ± 1.95	1.57	-0.75 ± 1.56	-2.97 ± 1.97

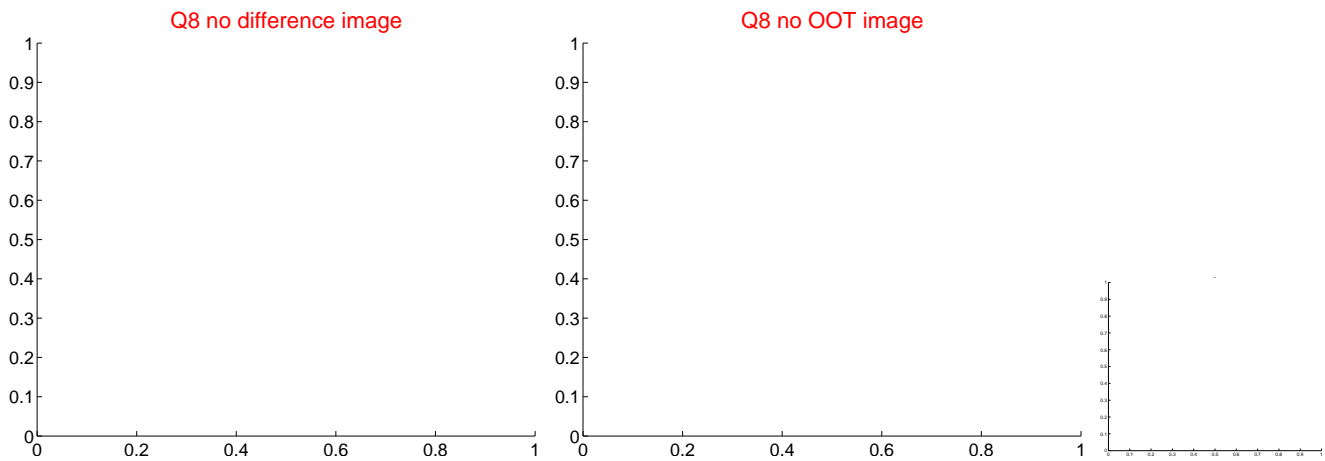
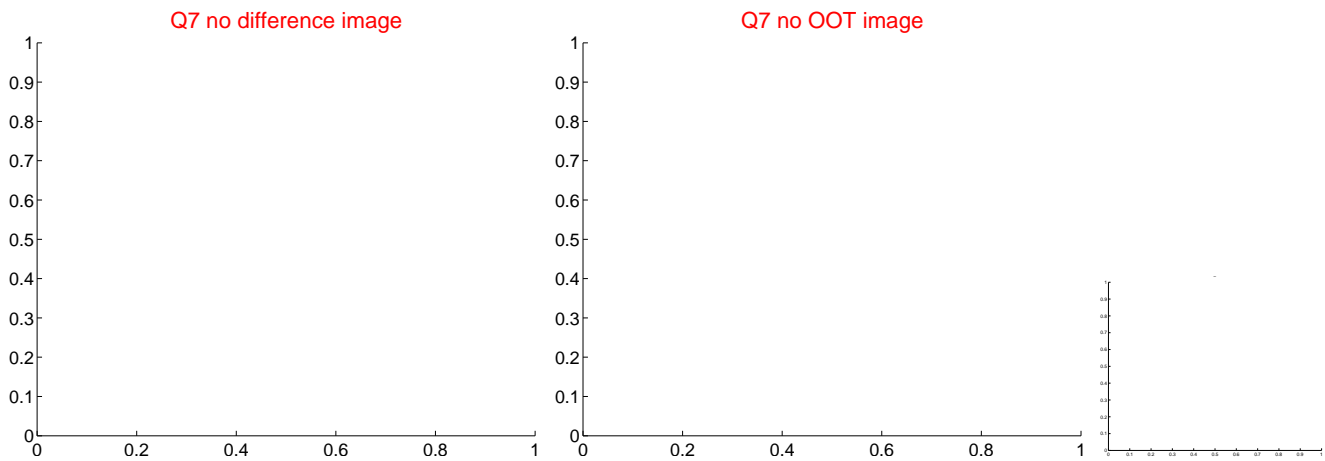
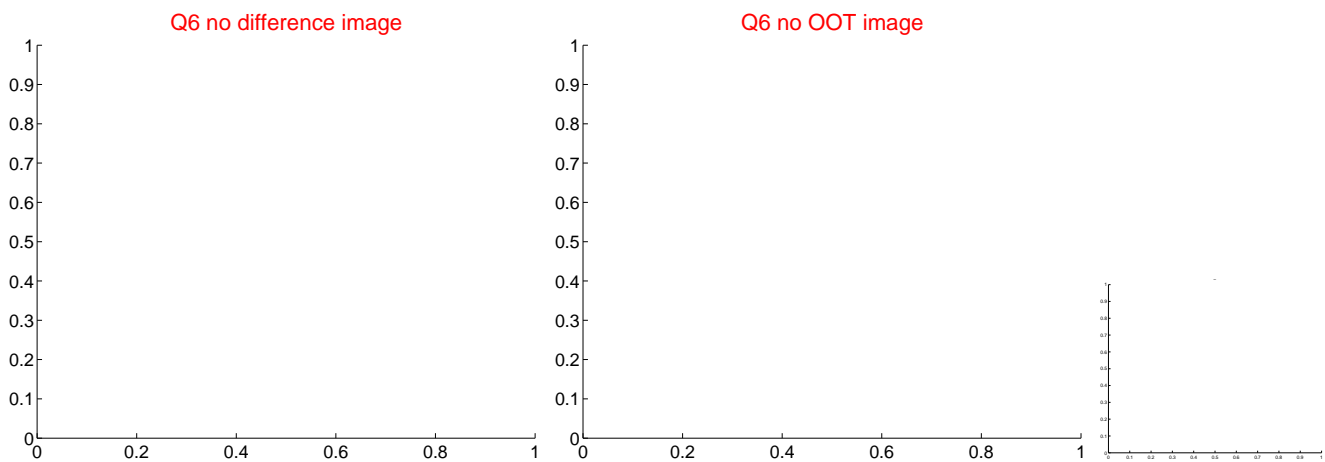
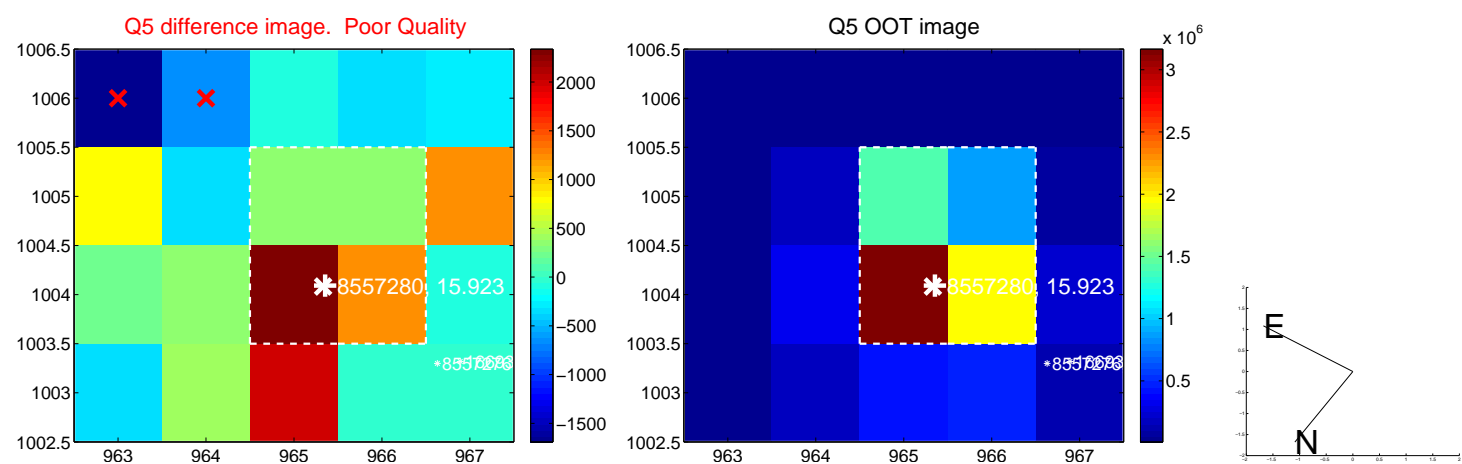


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

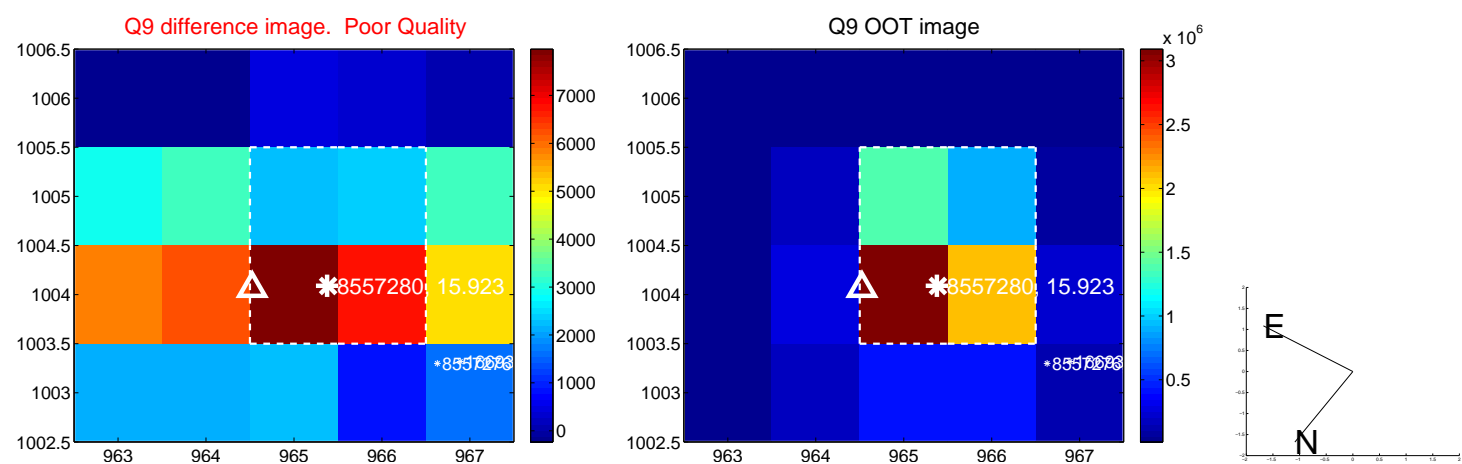
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



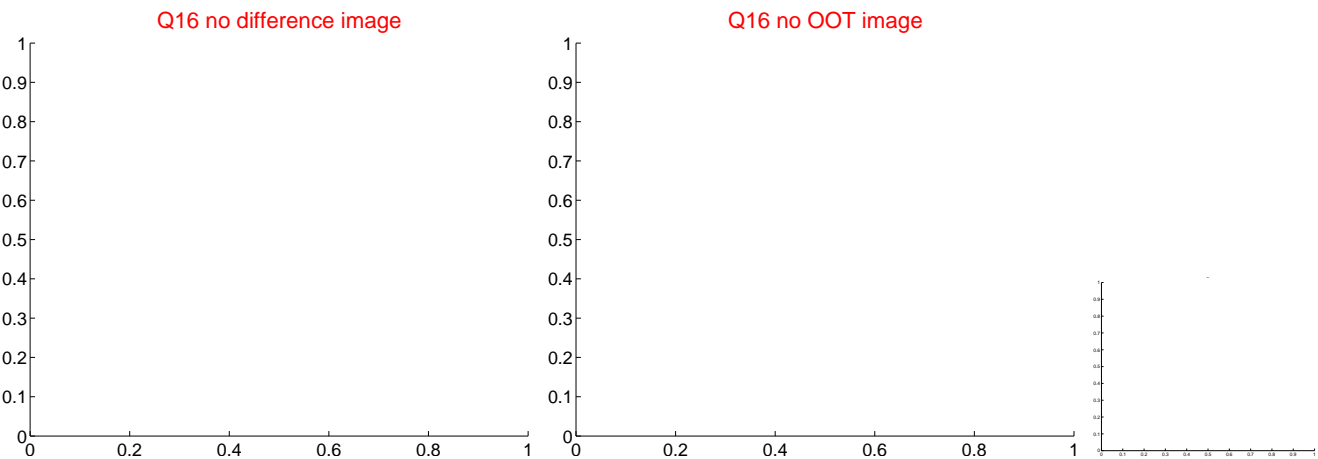
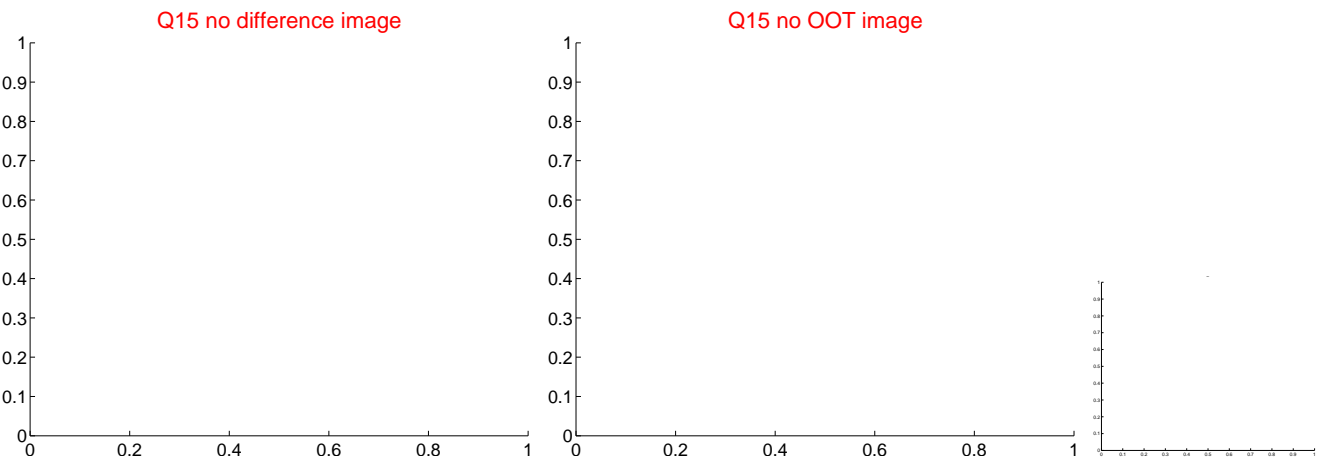
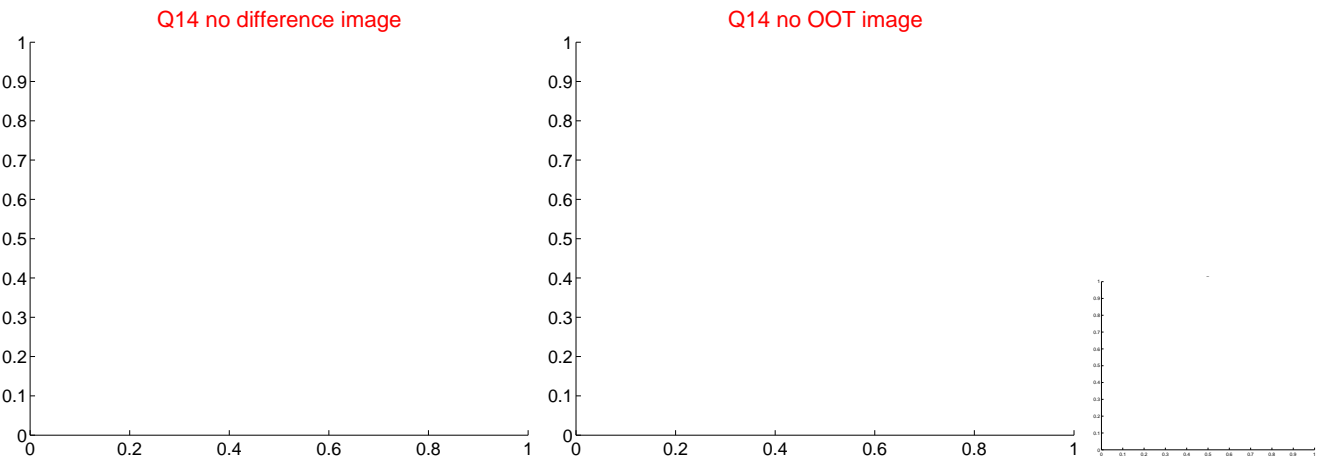
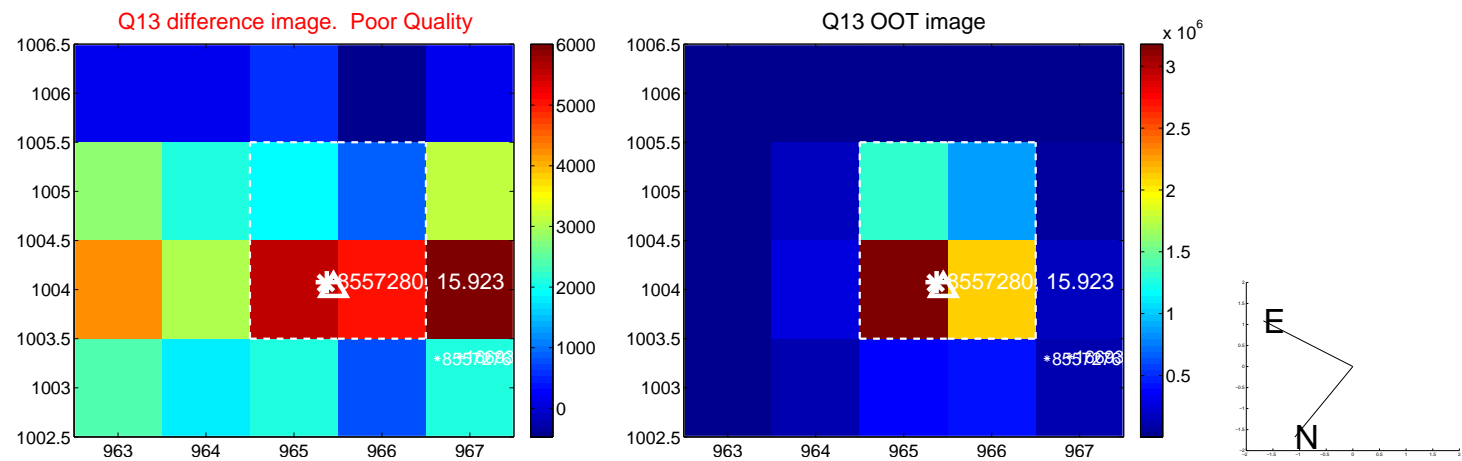
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



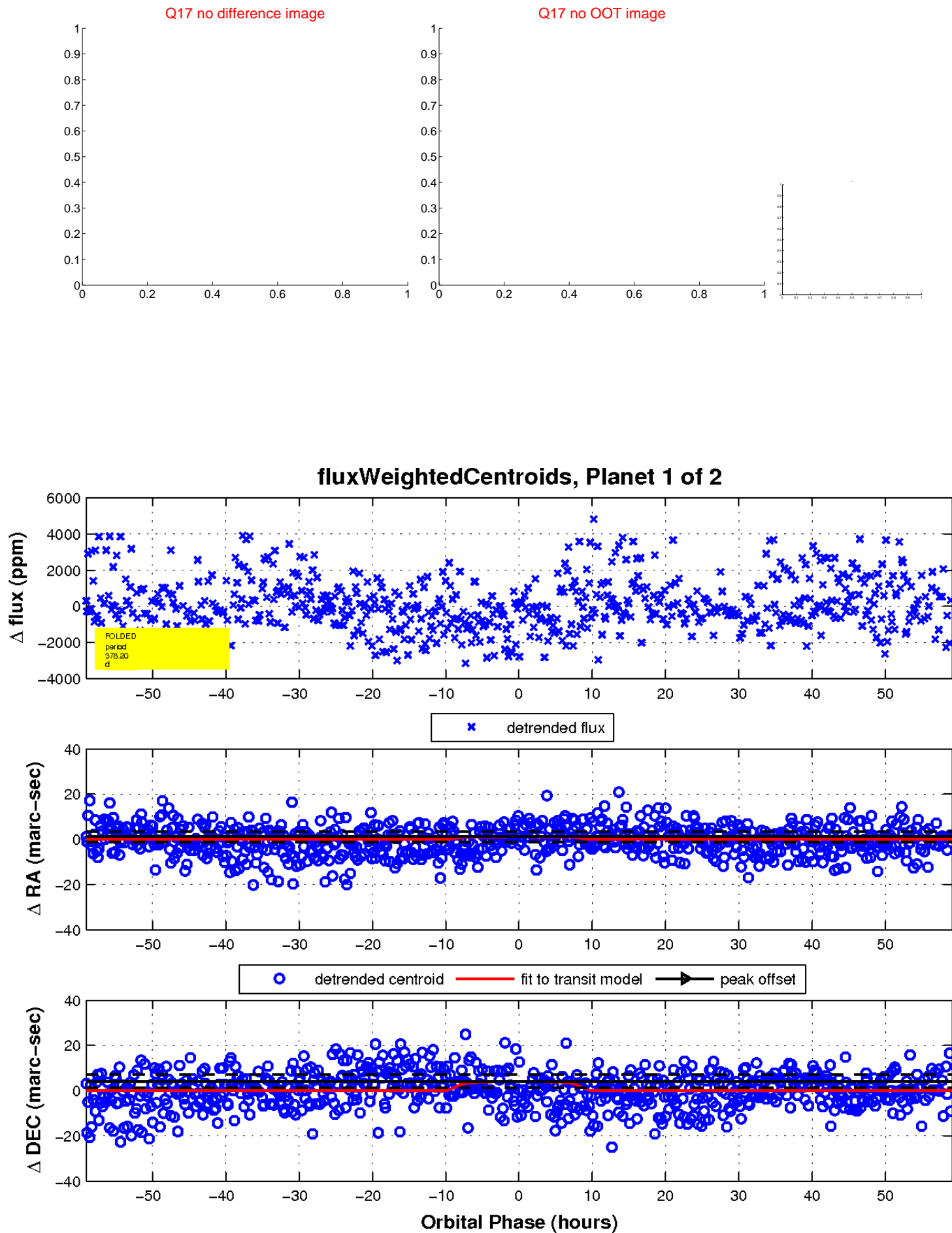
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

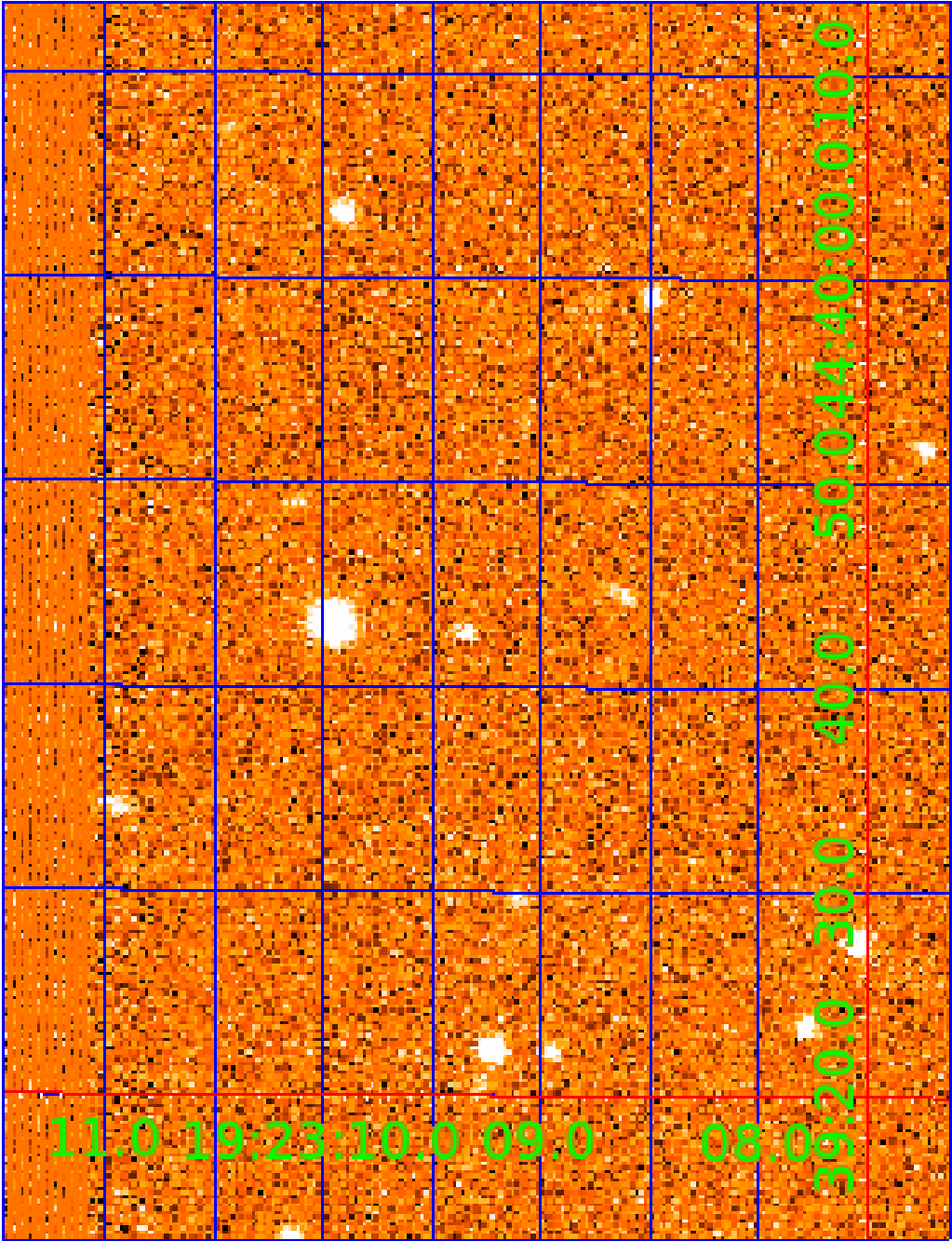


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008557280

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})
008557280-01	OBS	No	378.200160	501.631241	1366.5	19.732	8.4	7.8	0.86	5749	3.64	0.72
008557280-02	OBS	No	403.567717	447.593240	1311.0	20.720	8.6	7.8	0.86	5749	3.26	0.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008557280-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008557280-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

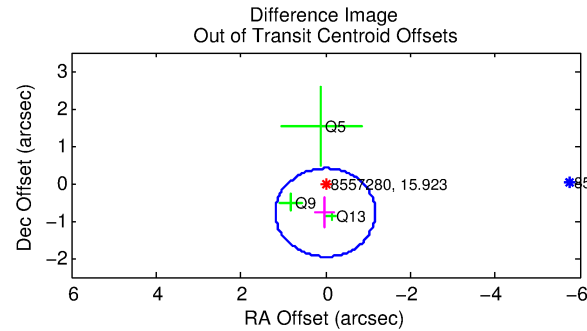
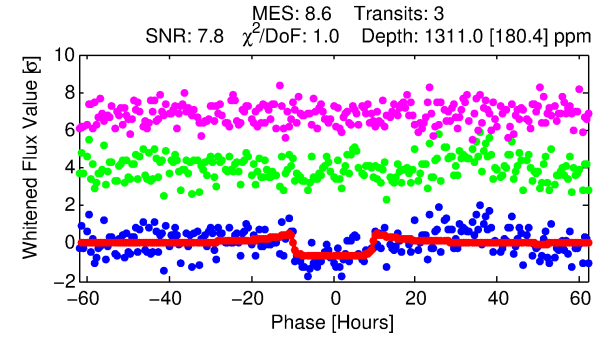
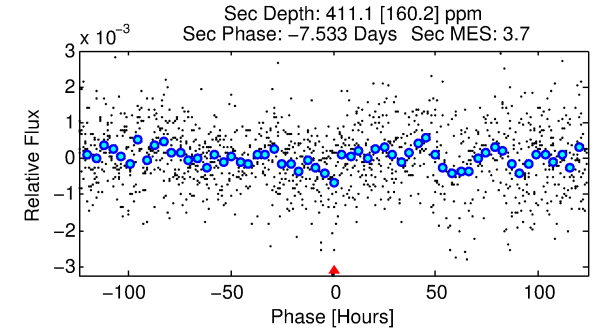
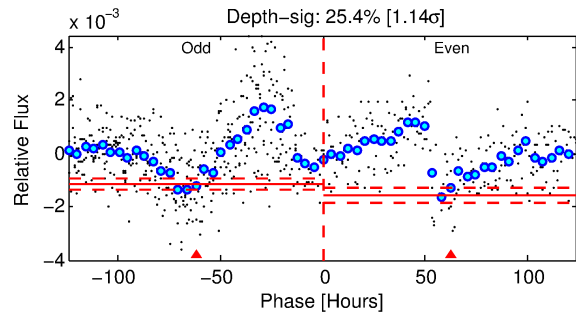
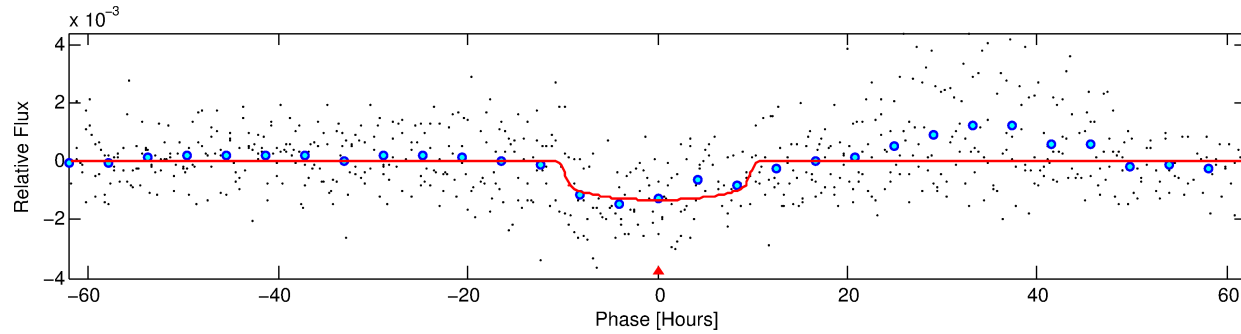
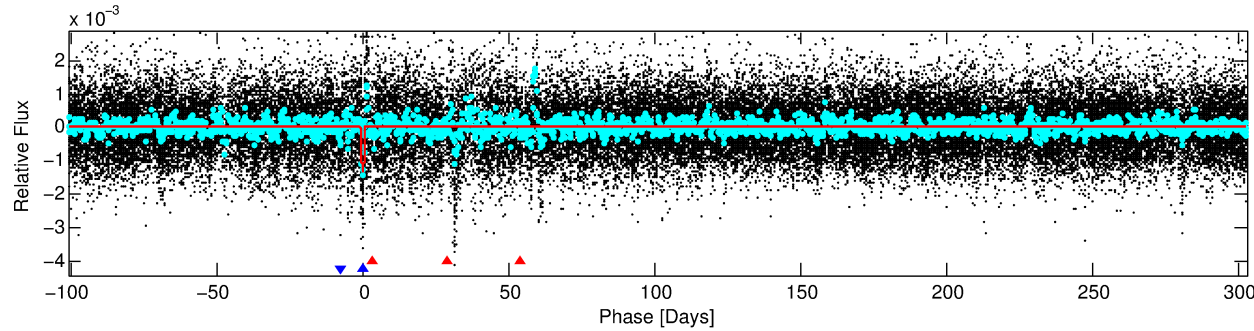
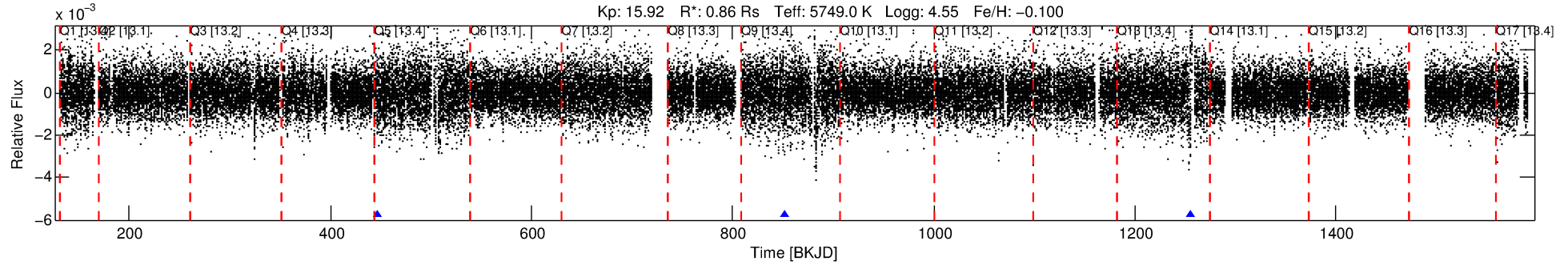
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008557280-02

No Significant Match Found

DV One-Page Summary

KIC: 8557280 Candidate: 2 of 2 Period: 403.568 d



DV Fit Results:

Period = 403.56772 [0.01883] d
Epoch = 447.5932 [0.0233] BKJD
Rp/R* = 0.0346 [0.0090]
a/R* = 124.88 [134.03]
b = 0.60 [1.13]
Seff = 0.66 [0.22]
Teq = 230 [19] K
Rp = 3.26 [1.21] Re
a = 1.0543 [0.2313] AU
Ag = 23678.77 [17116.92] [1.38 σ]
Teffp = 4403 [729] K [5.72 σ]

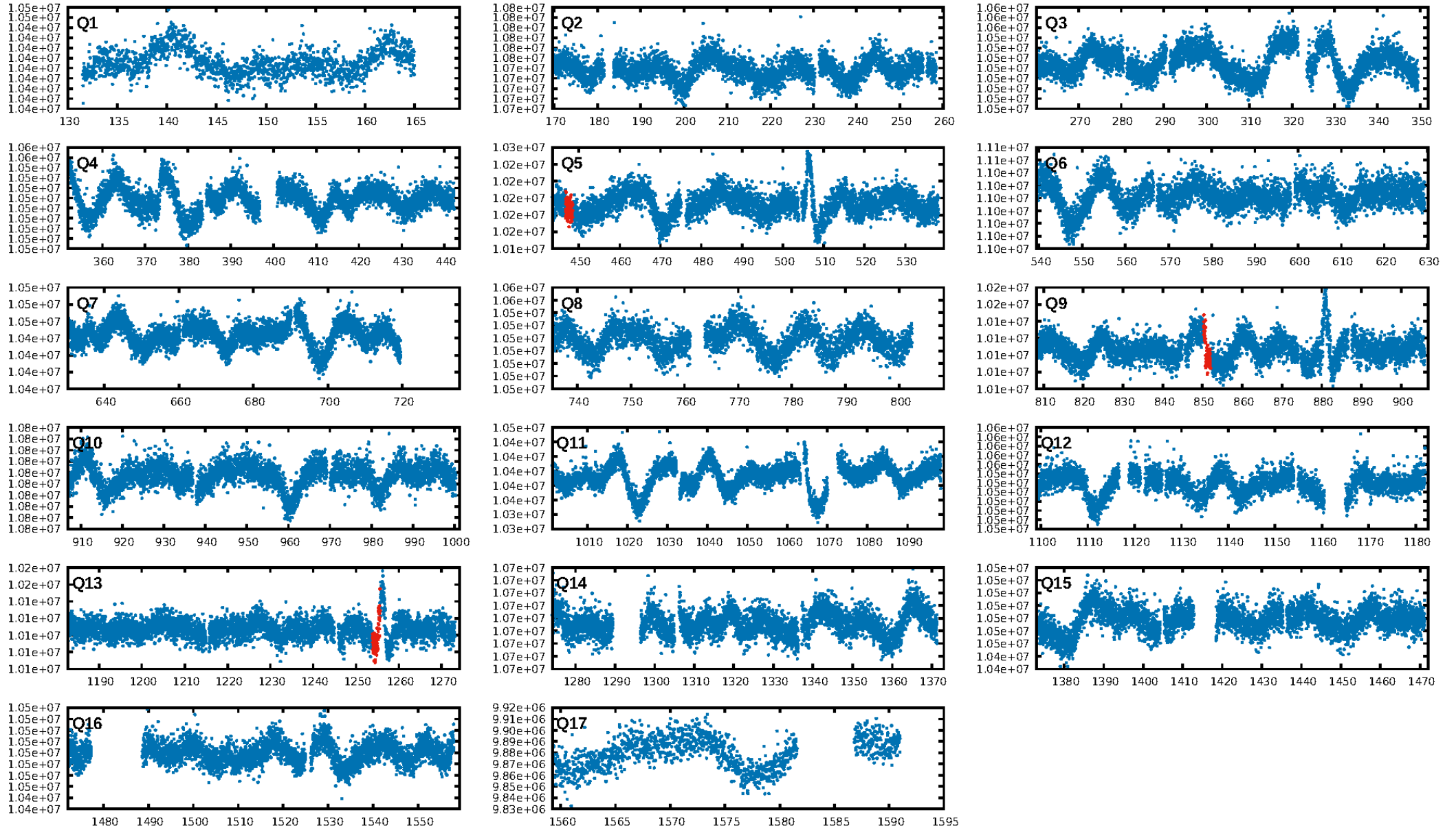
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.28 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.8%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.29e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -8.482
Centroid-sig: 68.7%
Centroid-so: 0.915 arcsec [0.47 σ]
OotOffset-rm: 0.778 arcsec [1.98 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-rm: 0.822 arcsec [1.26 σ]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

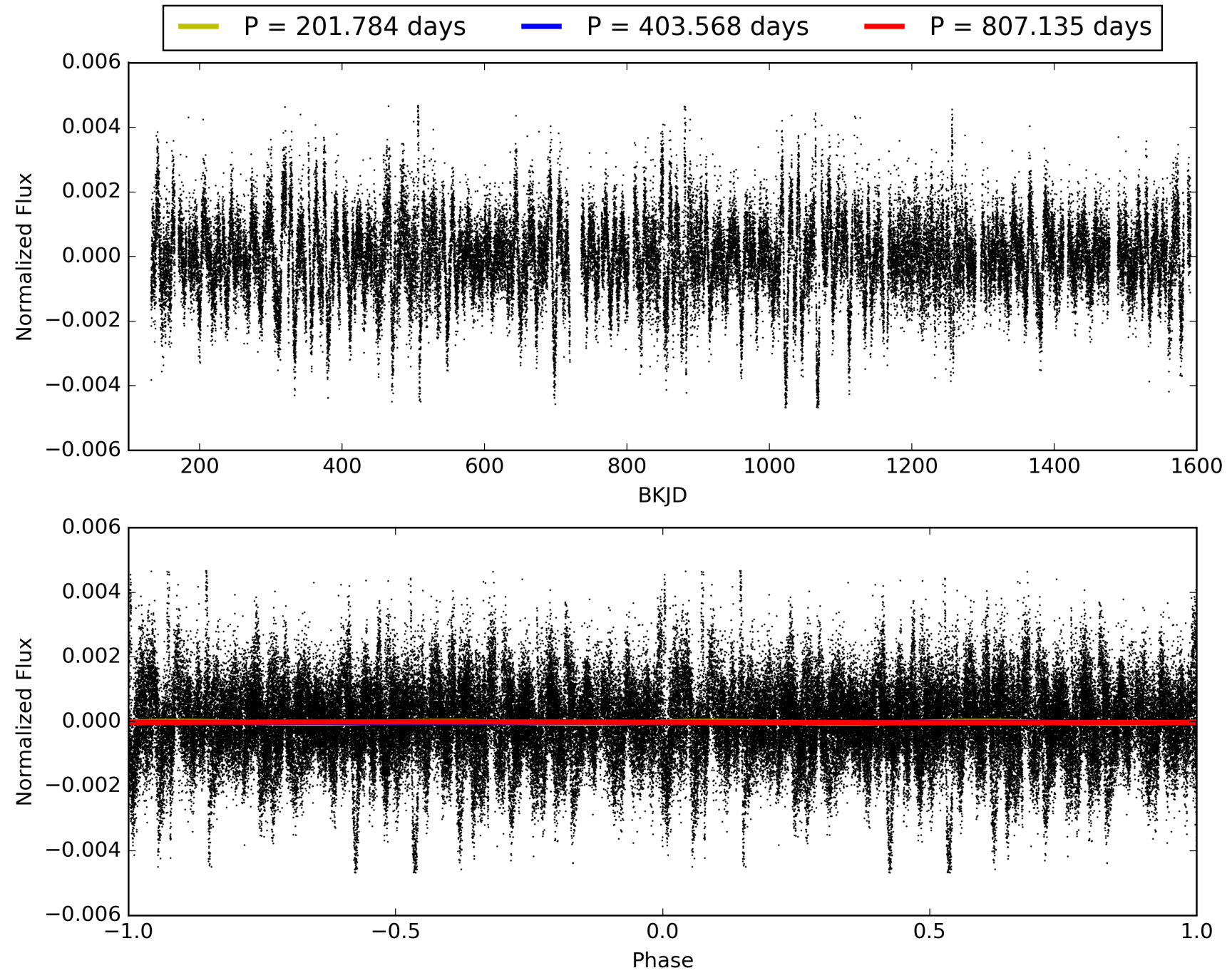
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:21:42 Z

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

TCE 008557280-02, PDC Light Curves

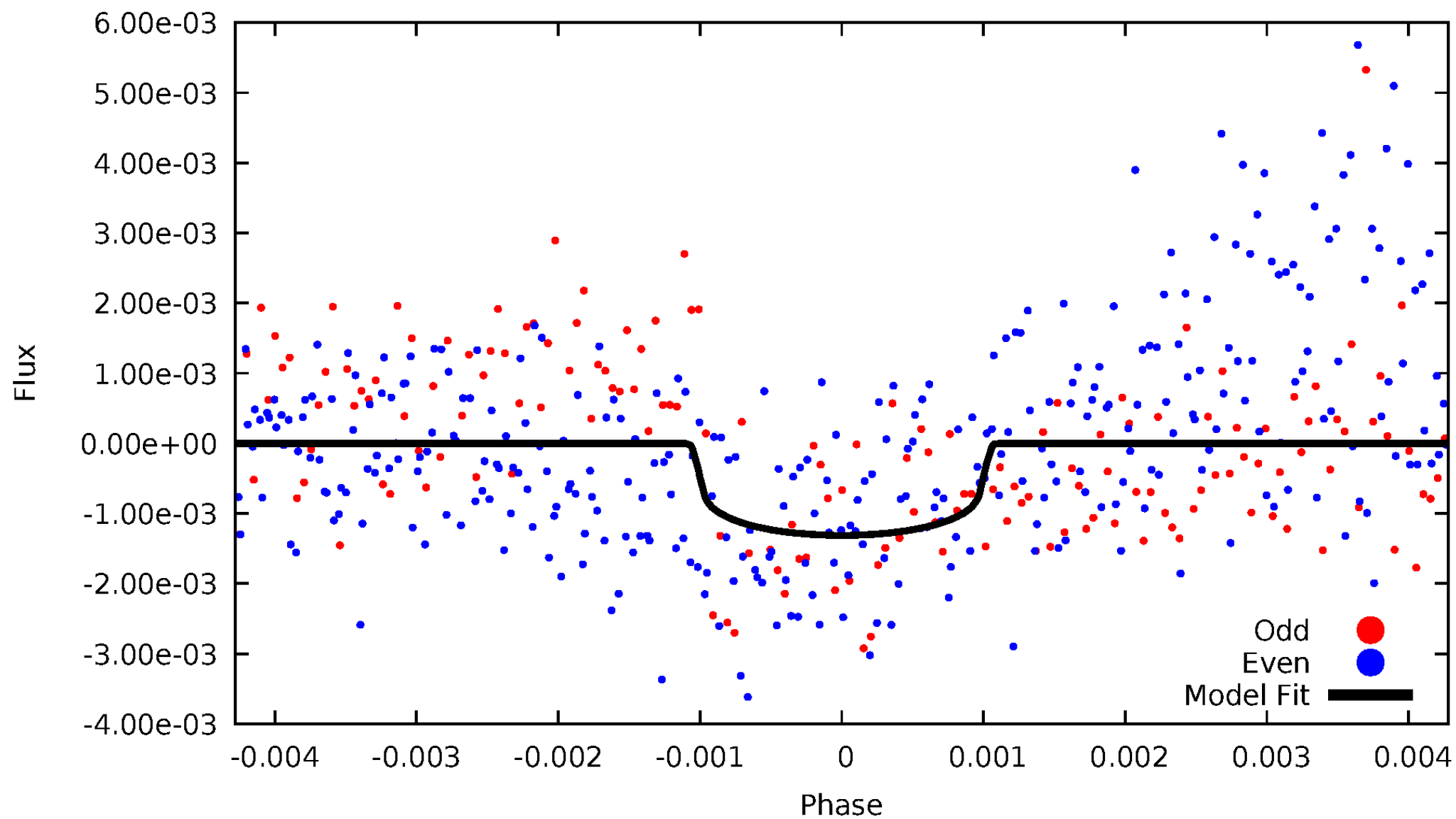


TCE 008557280-02



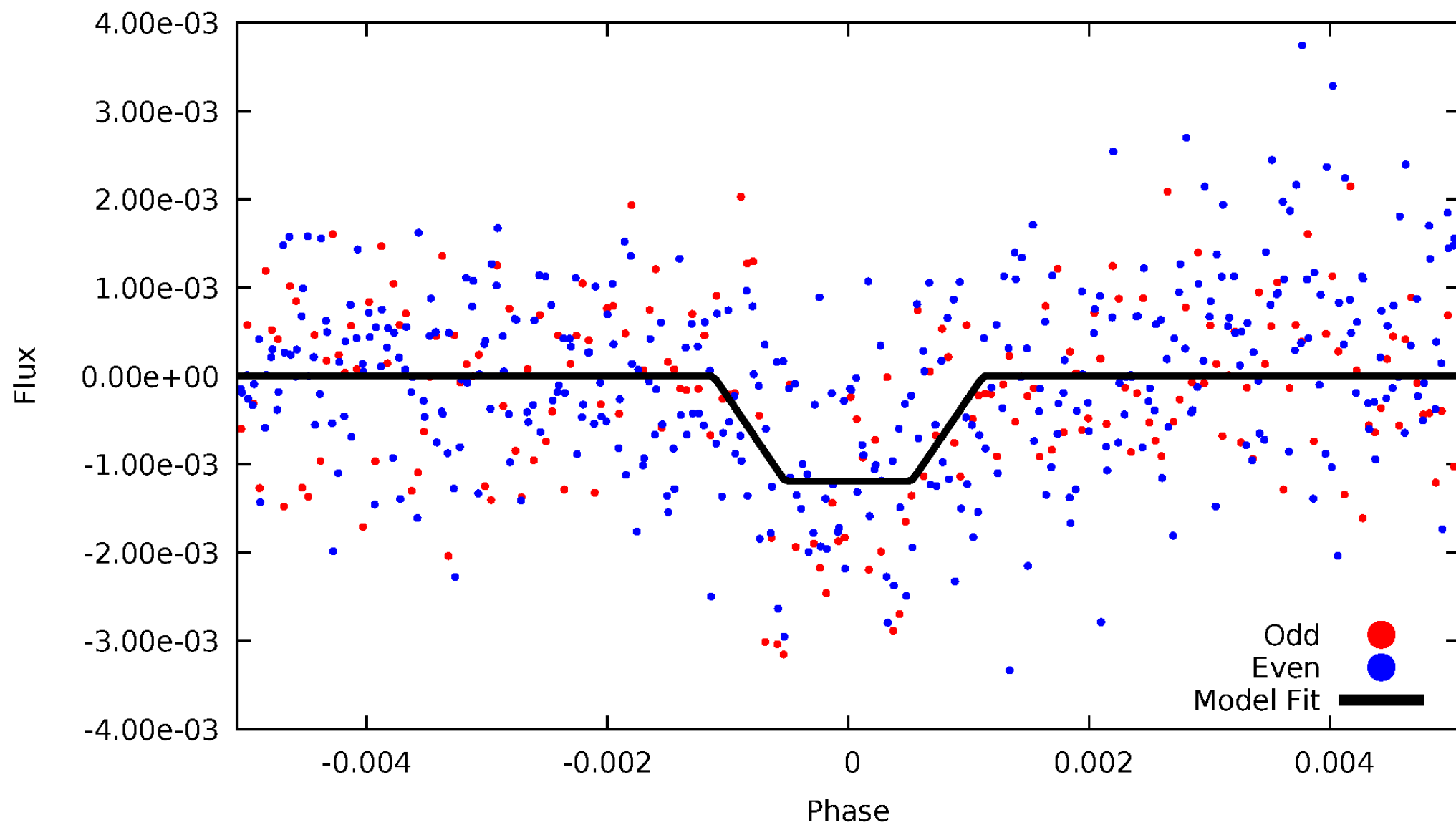
DV Odd/Even

TCE 008557280-02



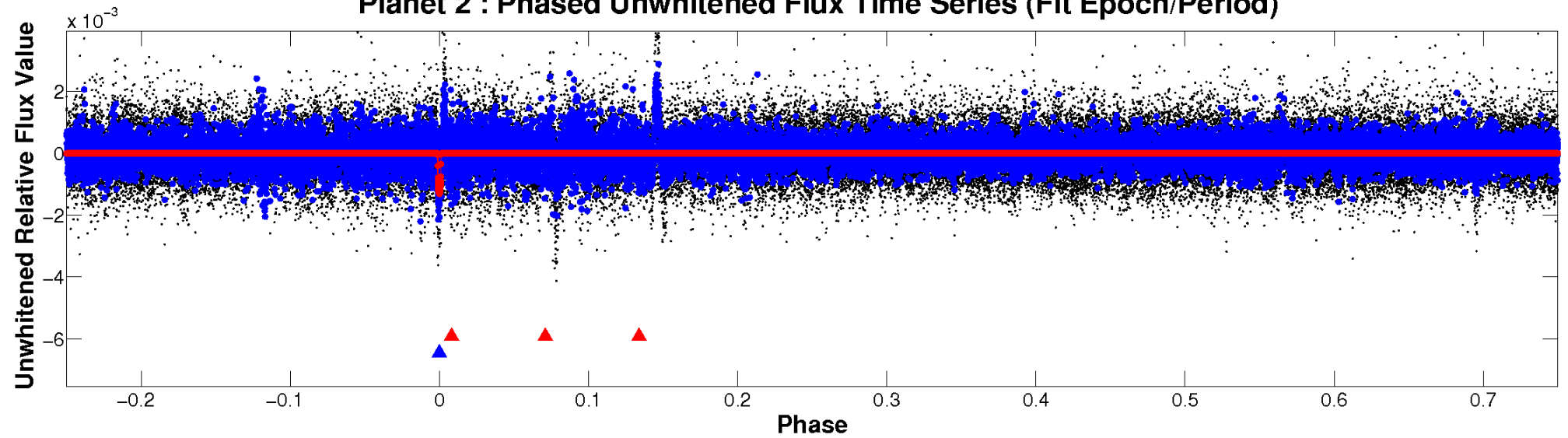
ALT Odd/Even

TCE 008557280-02

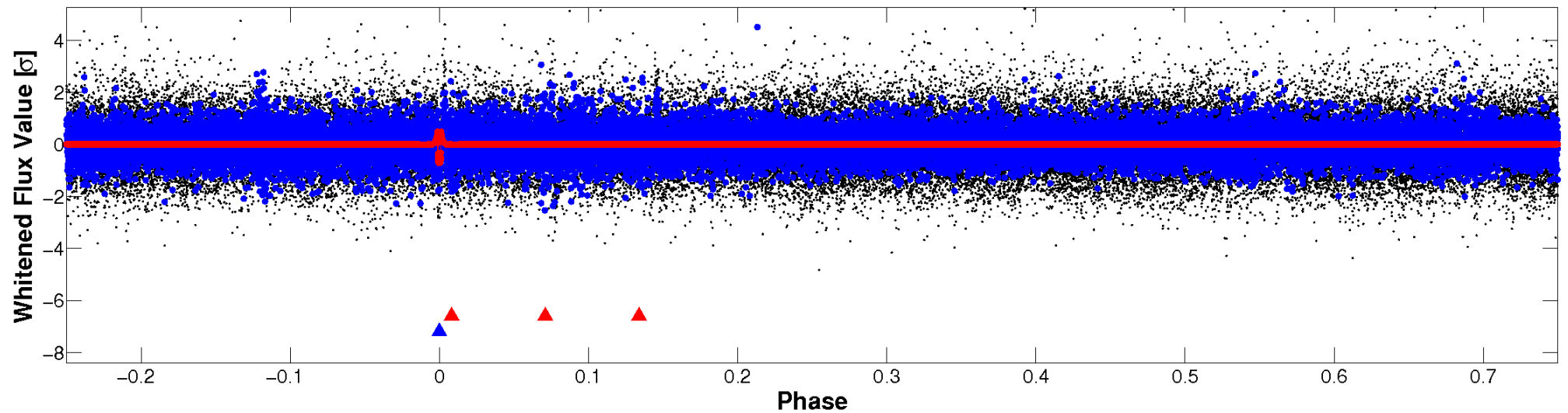


Non-Whitened Vs. Whitened Light Curve

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

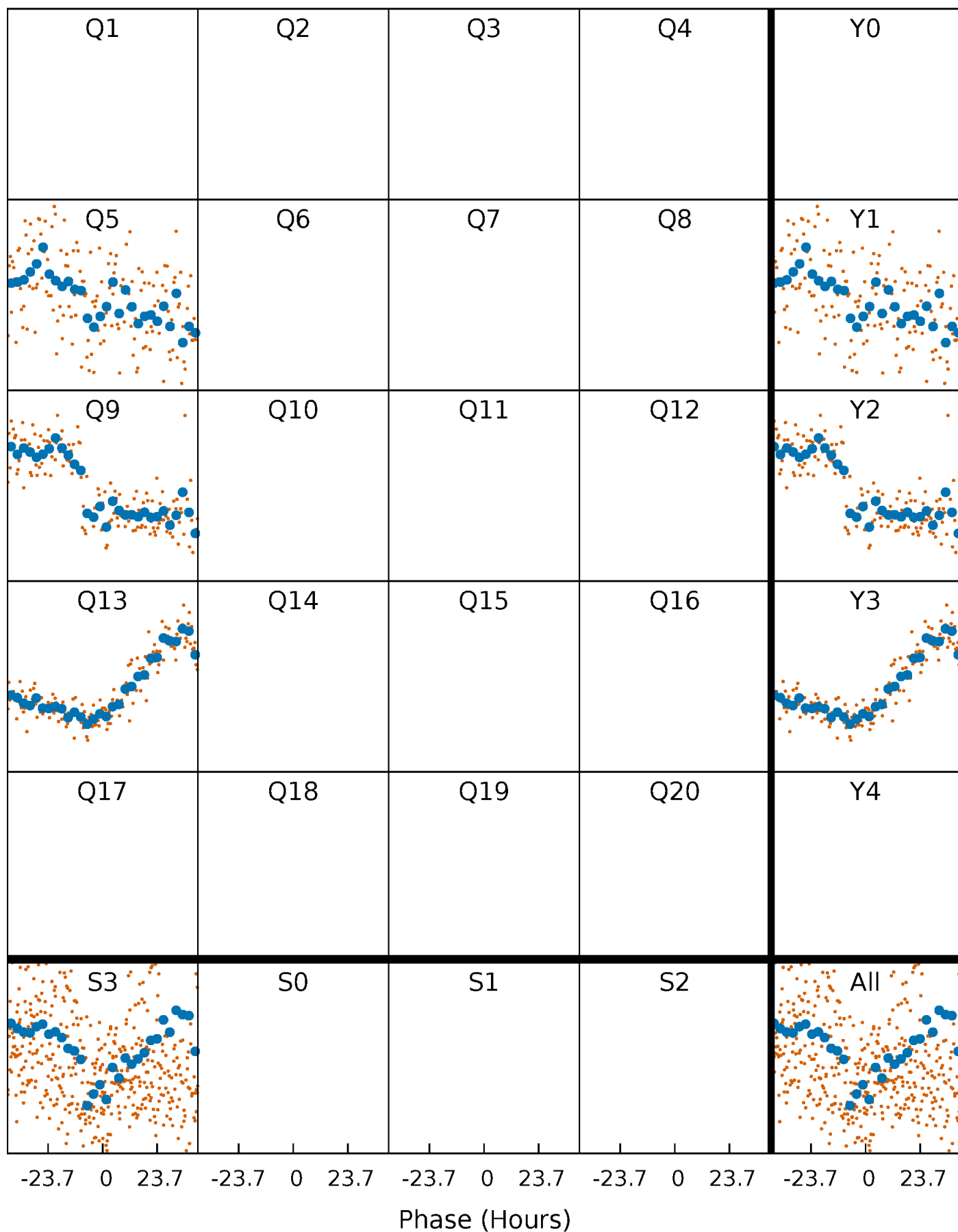


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 008557280-02 $P=403.567717$ Days $T_0=447.593240$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008557280-02 $P=403.567717$ Days $T_0=447.593240$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

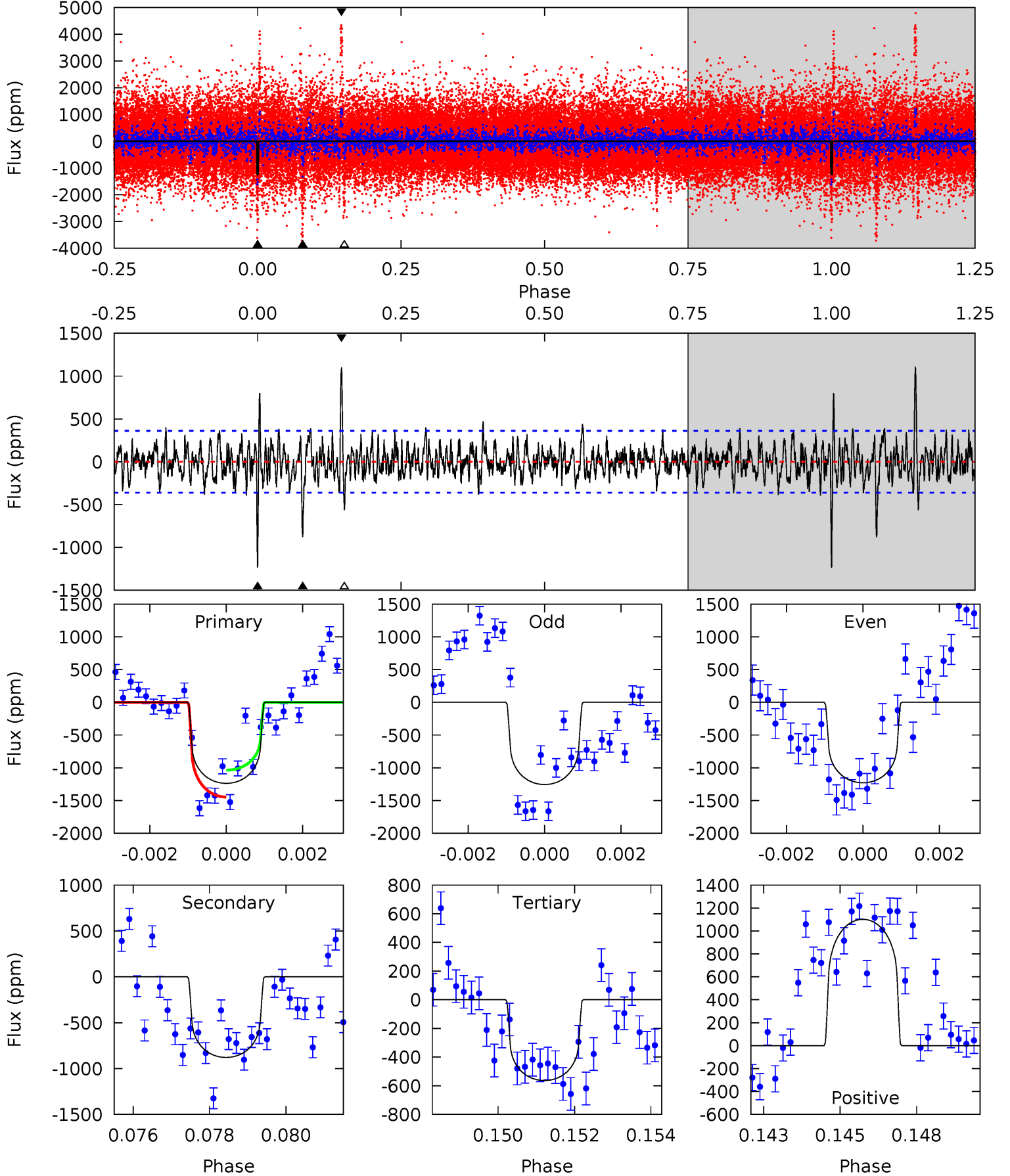
TCE 008557280-02 $P=403.603677$ Days $T_0=447.469101$ (BKJD)



DV Model-Shift Uniqueness Test

008557280-02, P = 403.567717 Days, E = 44.025523 Days

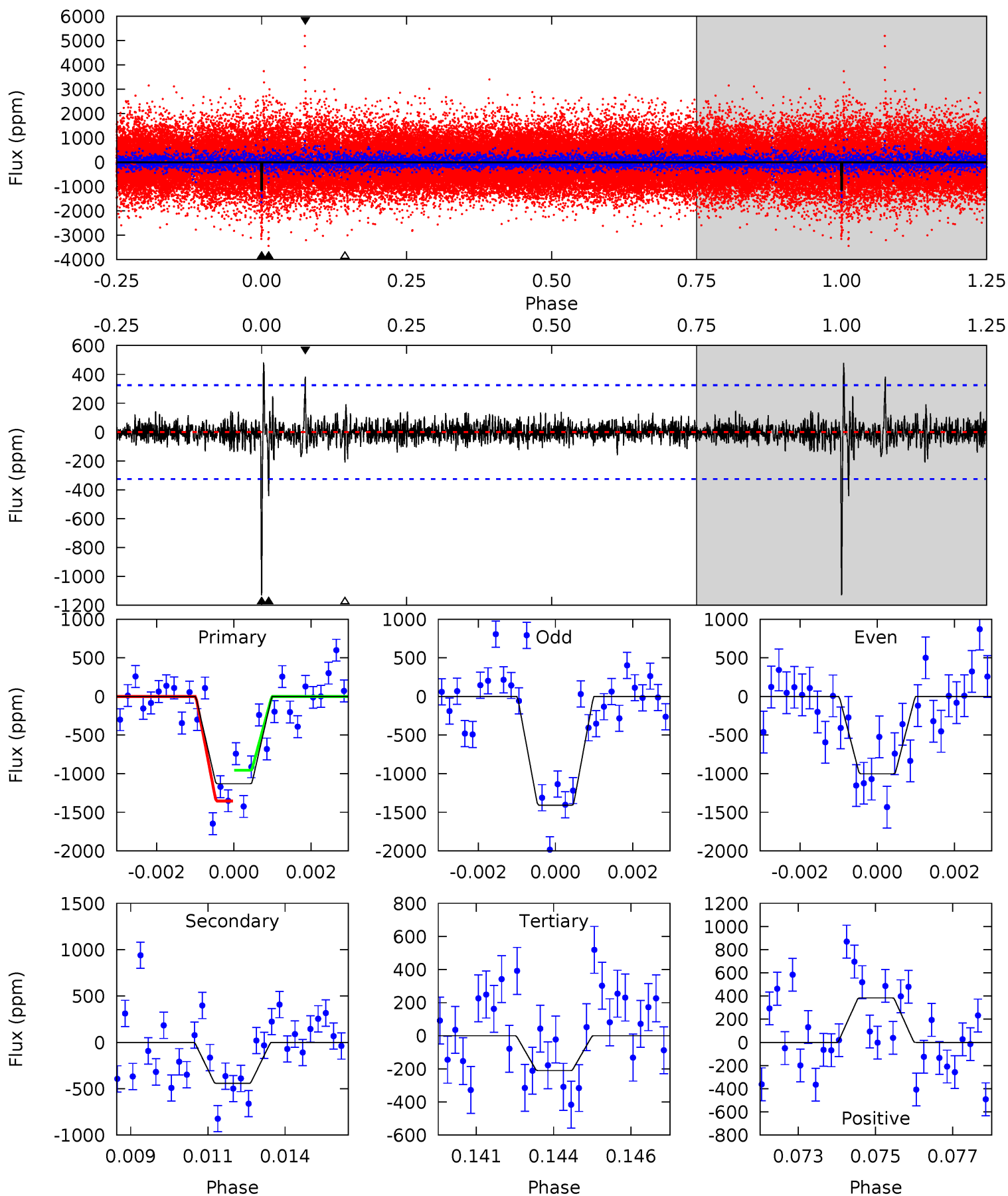
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	12.9	8.29	16.2	5.31	3.07	2.20	9.92	2.00	4.64	-3.27	0.19	0.98	0.47	3.02



Alt Model-Shift Uniqueness Test

008557280-02, $P = 403.603677$ Days, $E = 43.865424$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	7.21	3.42	6.25	5.30	3.05	0.86	15.0	12.2	3.78	0.96	3.09	0.81	0.30	3.23



Stellar Parameters For KIC 008557280

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5749^{+156}_{-173}	$4.547^{+0.042}_{-0.168}$	$-0.100^{+0.300}_{-0.300}$	$0.864^{+0.230}_{-0.077}$	$0.961^{+0.103}_{-0.114}$	$2.097^{+0.448}_{-0.965}$
	+3%/-3%	+1%/-4%	+300%/-300%	+27%/-9%	+11%/-12%	+21%/-46%
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 008557280-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-879 ± 68	$3.45^{+0.90}_{-0.92}$	327^{+19}_{-14}	5329^{+757}_{-503}	45153^{+36956}_{-17440}
Alt.	-442 ± 61	$3.36^{+0.95}_{-0.97}$	327^{+20}_{-14}	4628^{+692}_{-413}	23284^{+23411}_{-9393}

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

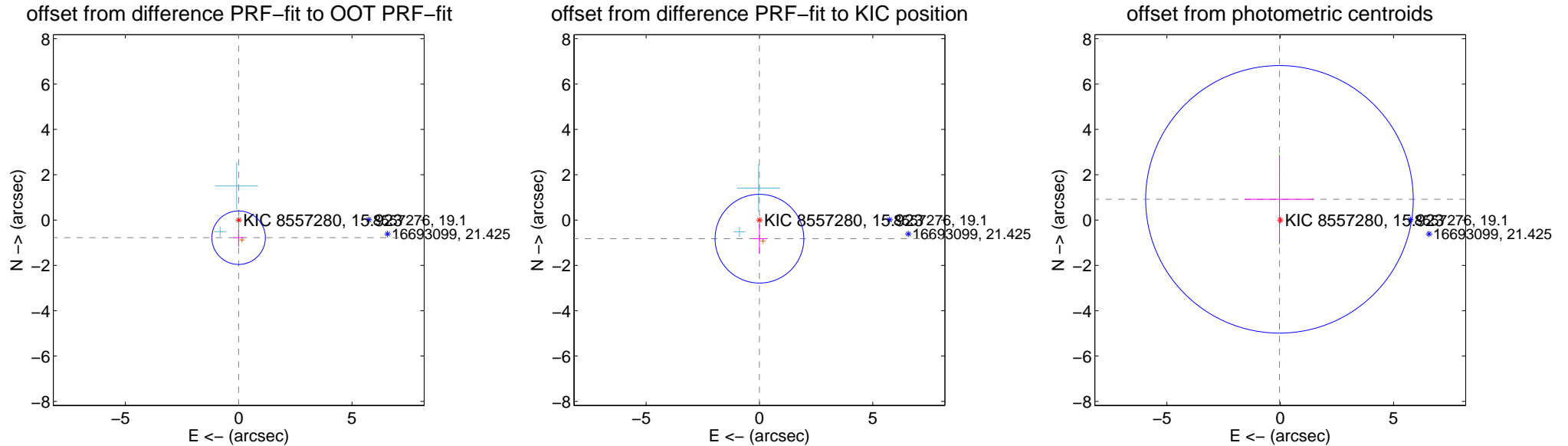
DV Centroid Data

Supplemental centroid analysis for 008557280-02. Kepler magnitude: 15.92. Transit SNR 7.80

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.778 ± 0.393	1.98	0.004 ± 0.222	-0.778 ± 0.393
PRF-fit source offset from KIC position	0.822 ± 0.652	1.26	0.001 ± 0.296	-0.822 ± 0.653
photometric centroid source offset	0.91 ± 1.97	0.47	0.03 ± 1.53	0.91 ± 1.97

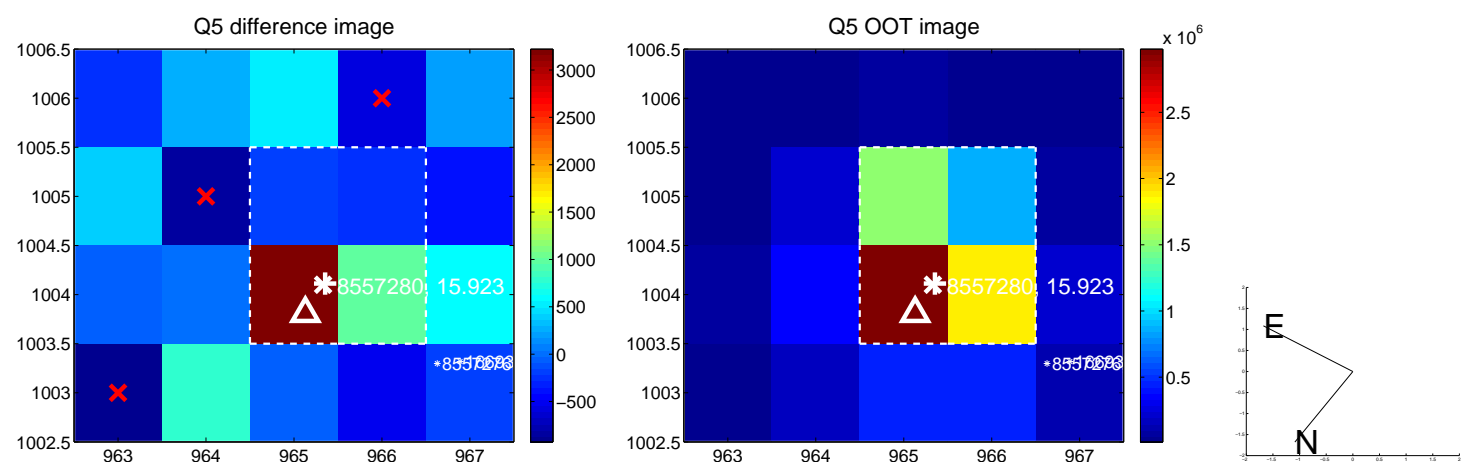


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

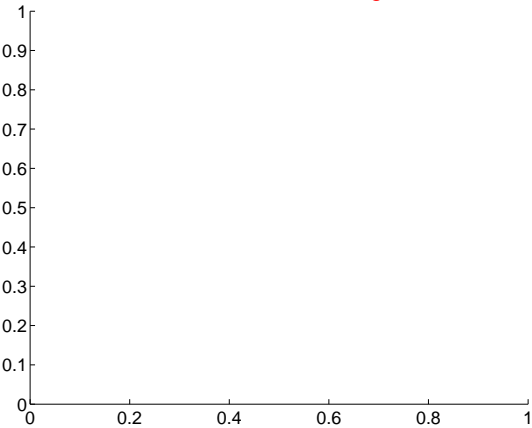
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



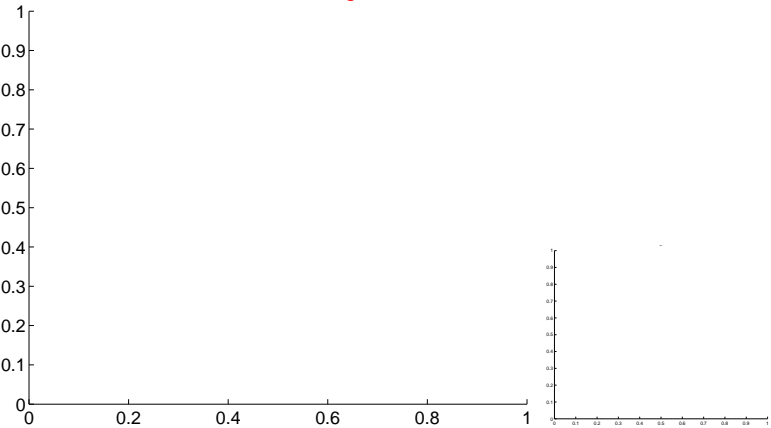
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



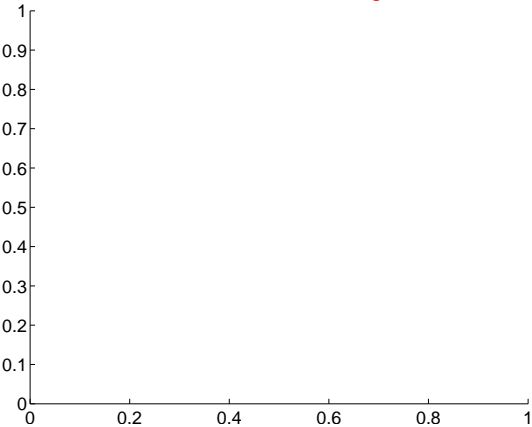
Q6 no difference image



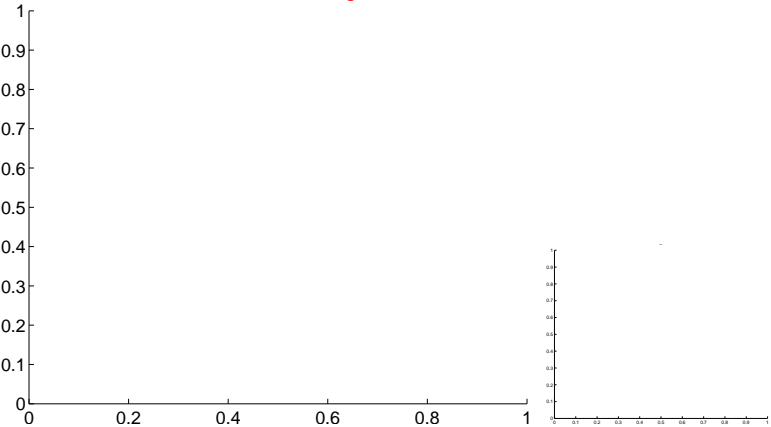
Q6 no OOT image



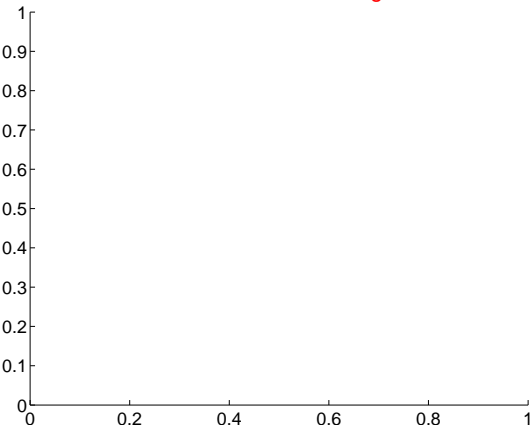
Q7 no difference image



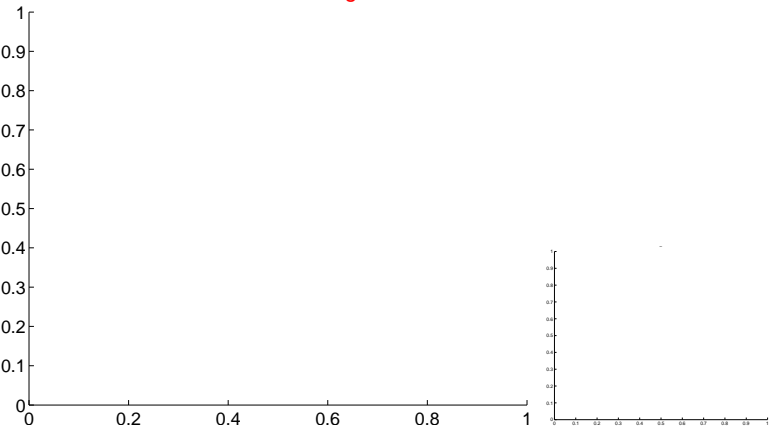
Q7 no OOT image



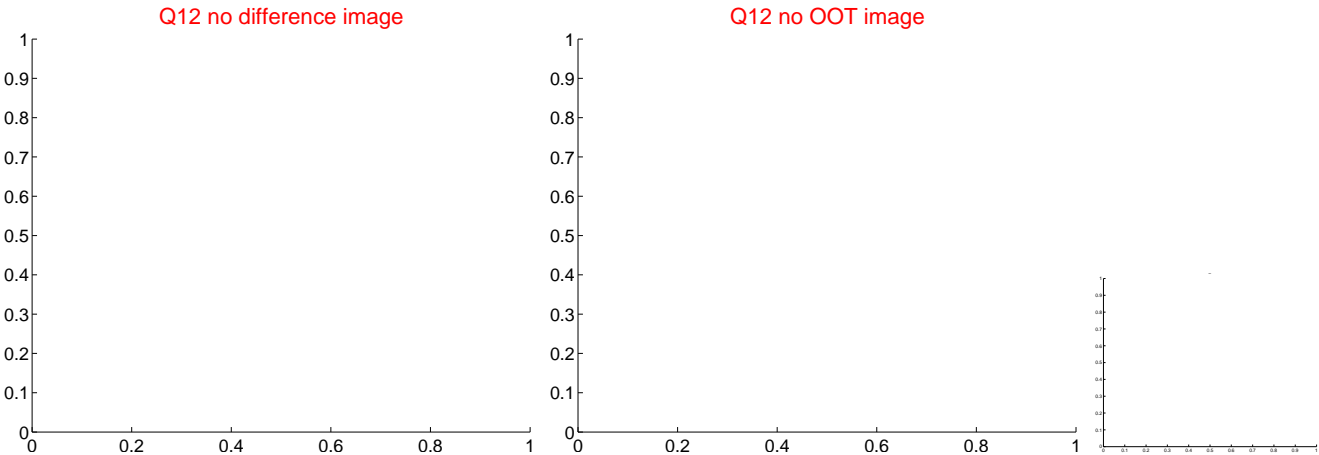
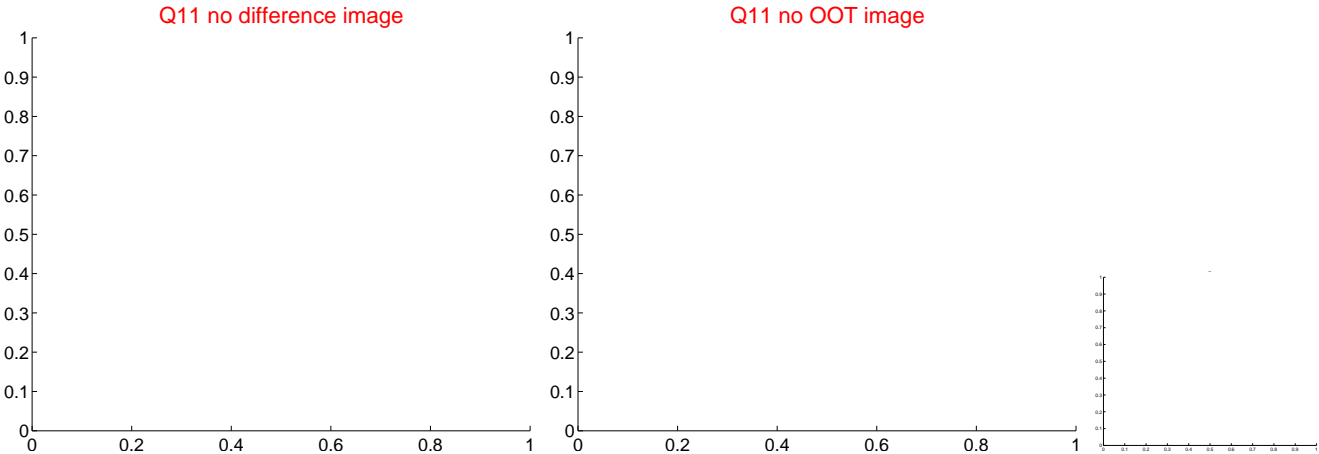
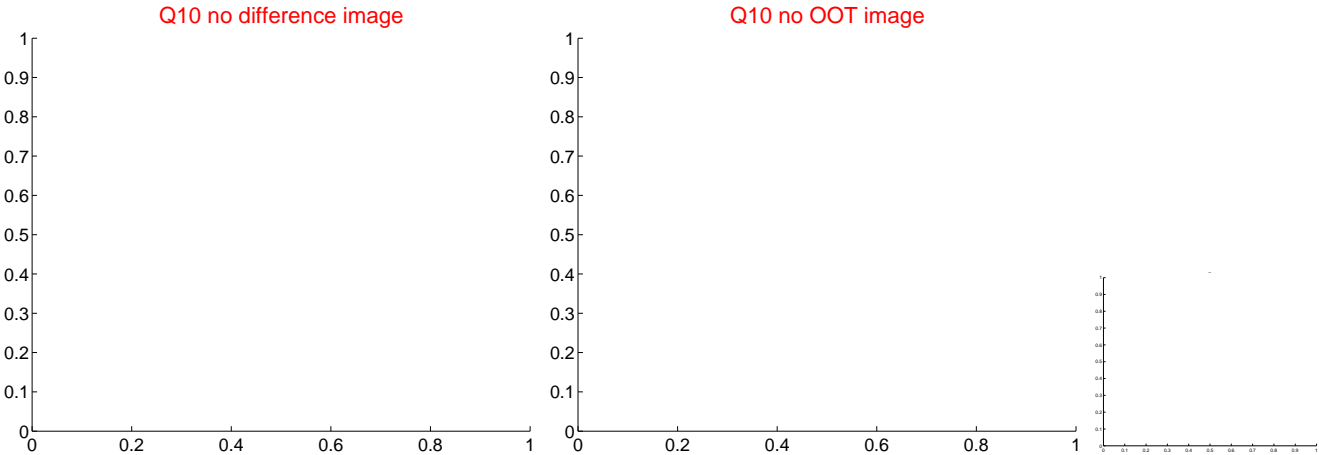
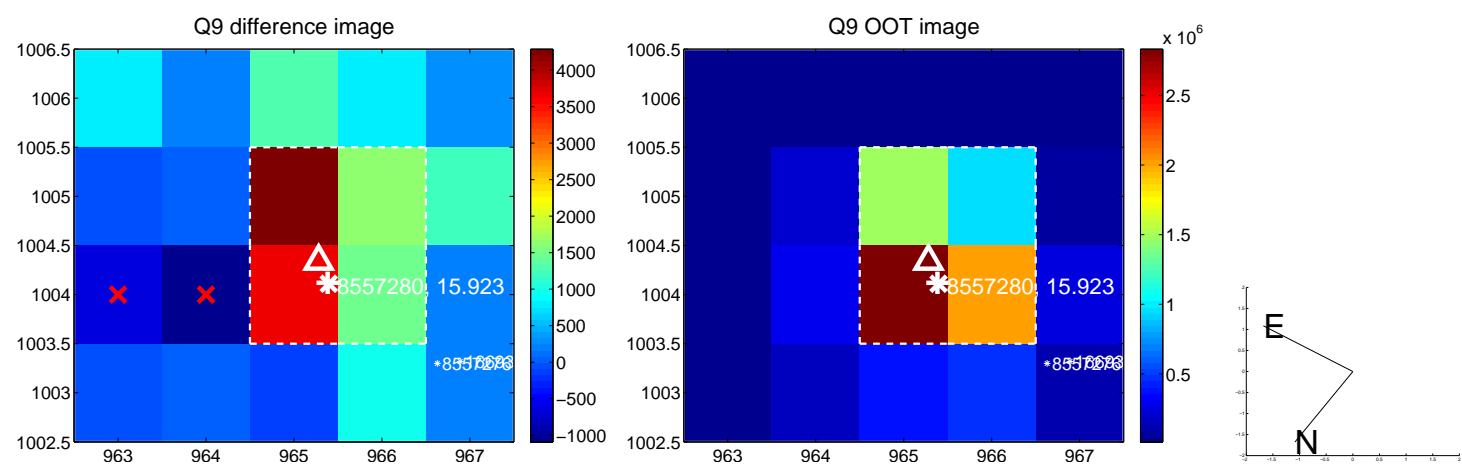
Q8 no difference image



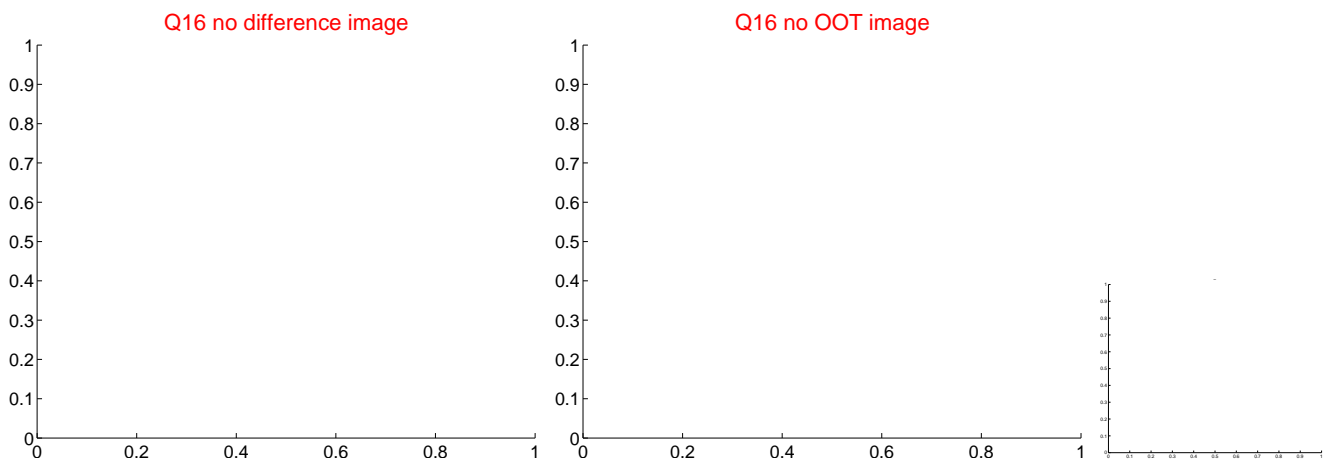
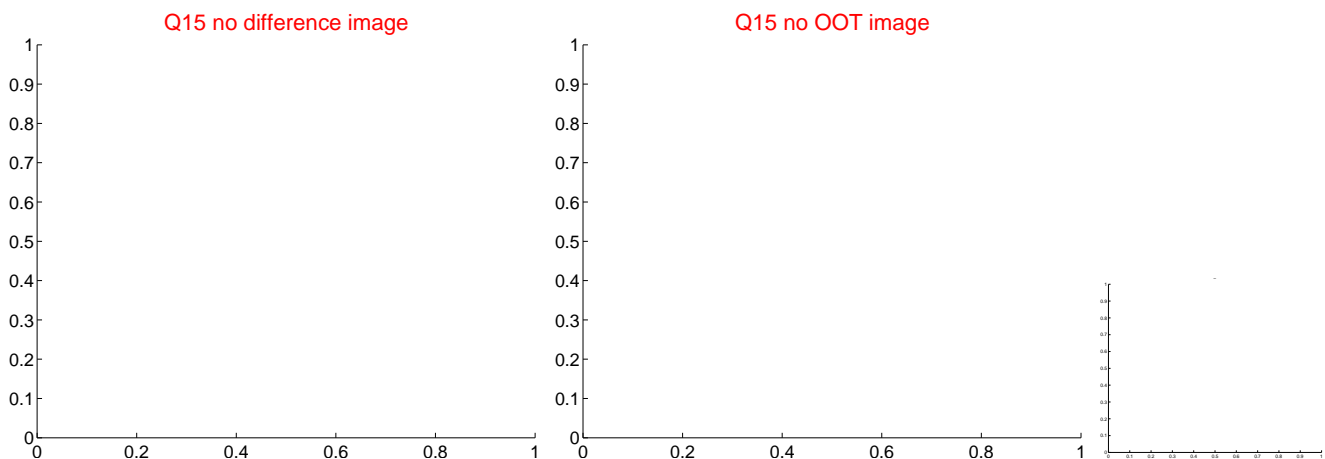
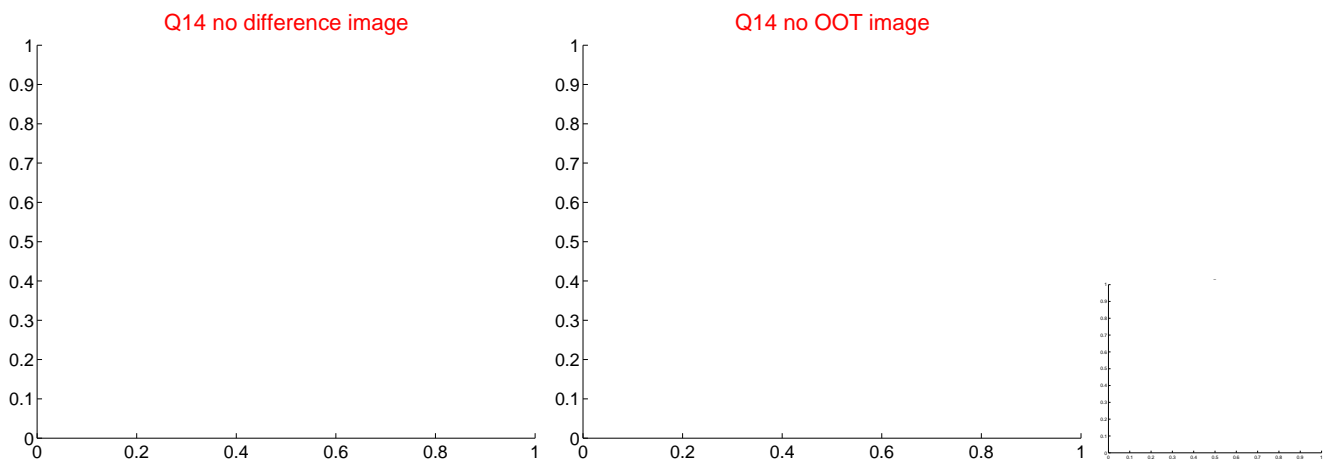
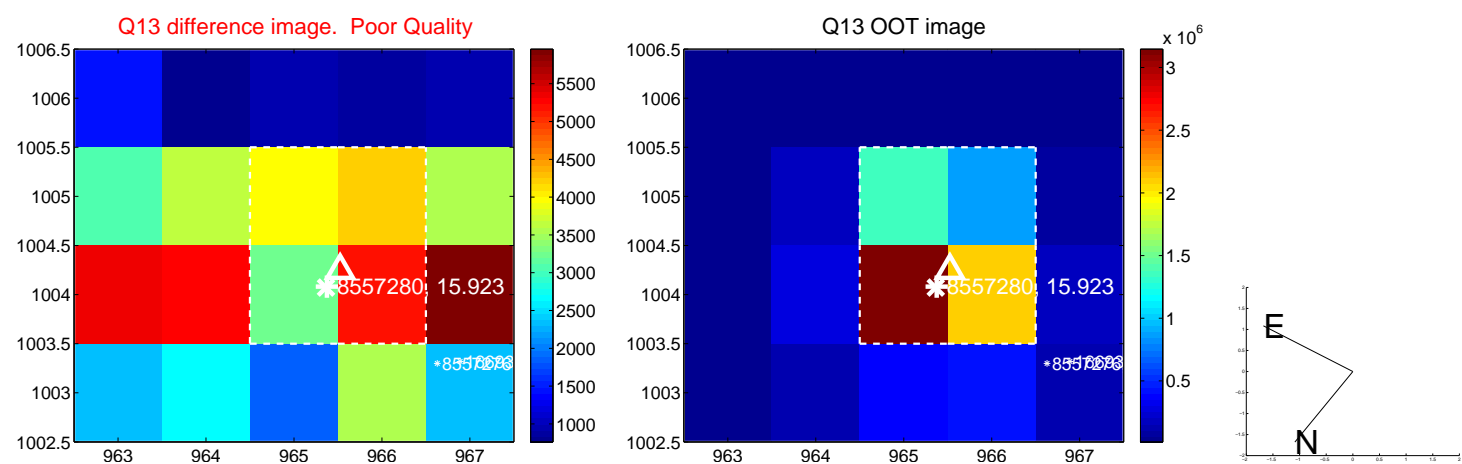
Q8 no OOT image



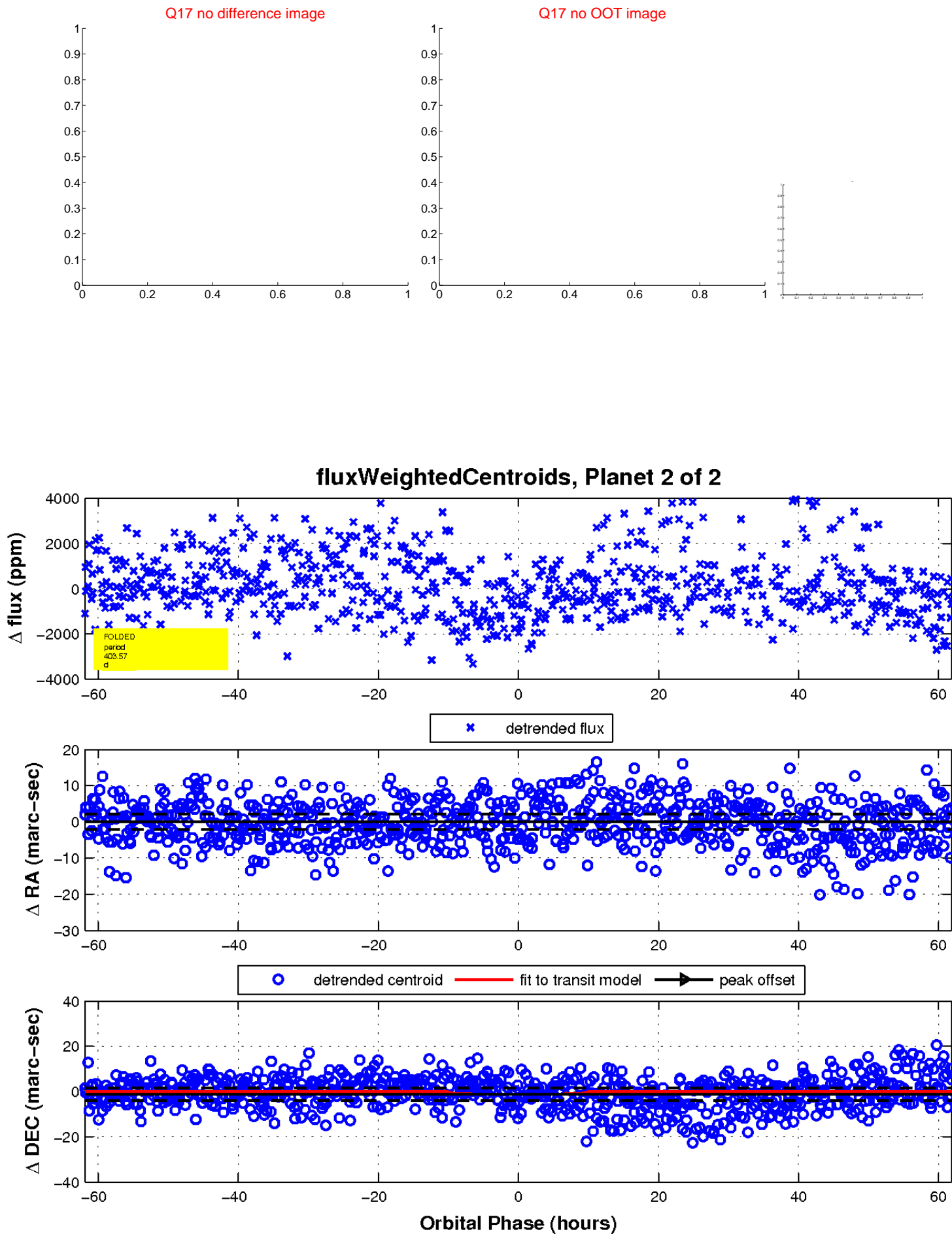
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

