

KIC 003545753

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})
003545753-01	OBS	No	538.199256	208.108574	151.5	14.978	8.9	9.3	2.28	5984	3.07	3.12
003545753-02	OBS	No	492.316750	403.800945	128.4	11.540	7.7	8.2	2.28	5984	2.98	3.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003545753-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_SATURATED
003545753-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

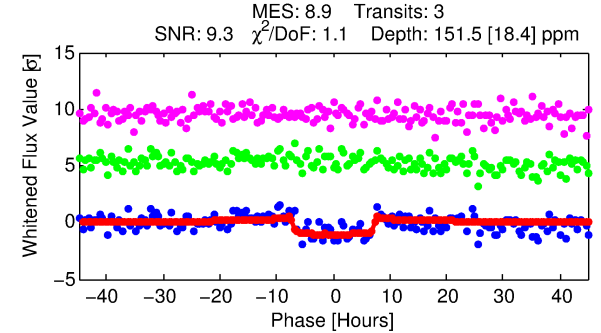
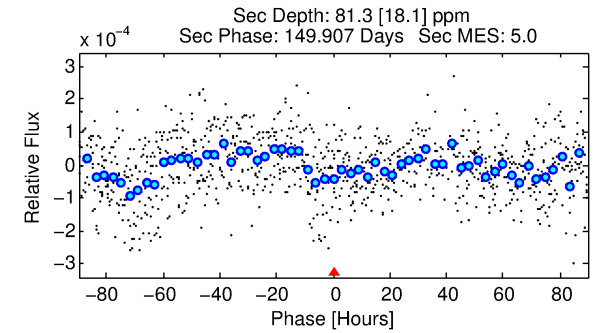
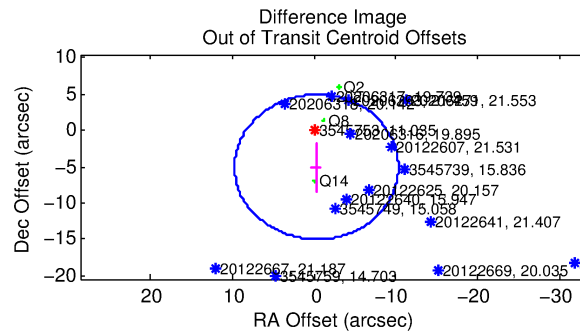
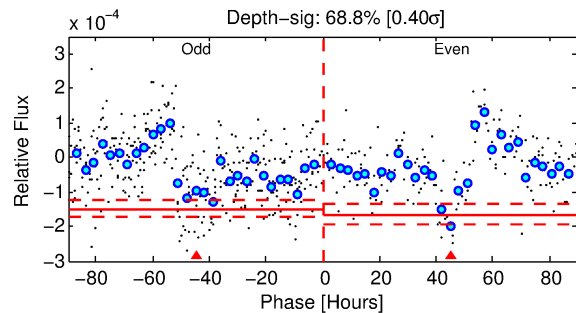
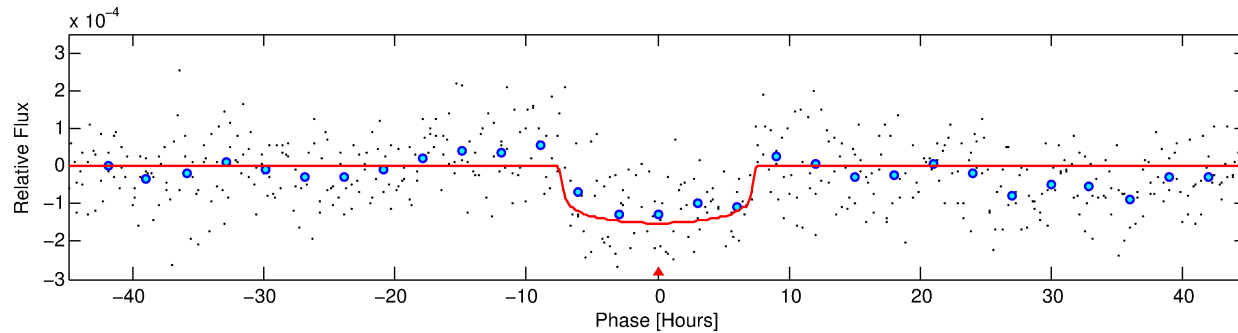
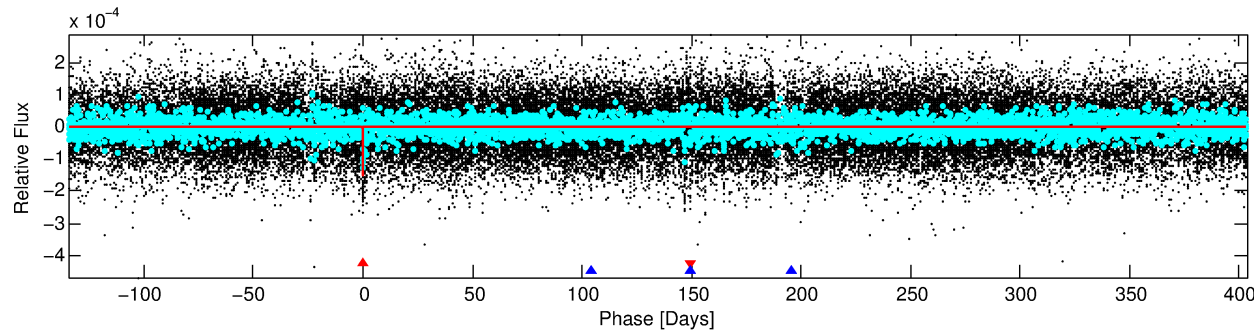
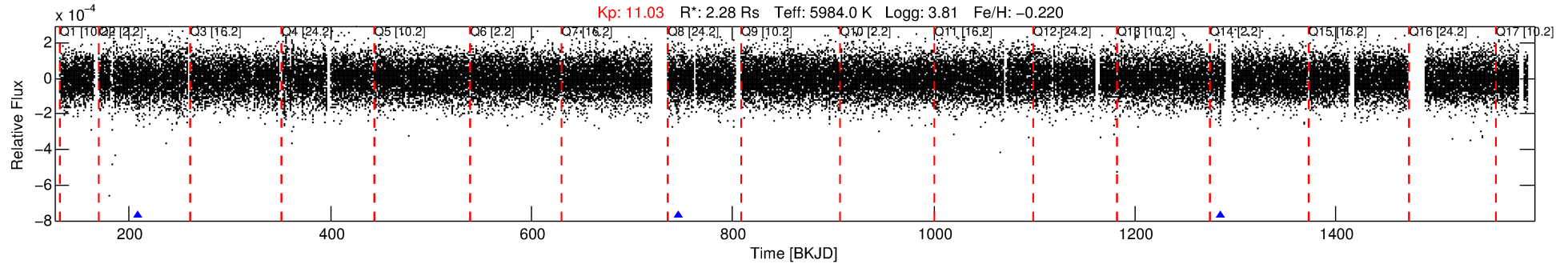
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003545753-01

No Significant Match Found

DV One-Page Summary

KIC: 3545753 Candidate: 1 of 2 Period: 538.199 d



DV Fit Results:

Period = 538.19926 [0.01063] d
Epoch = 208.1086 [0.0142] BKJD
Rp/R* = 0.0123 [0.0027]
a/R* = 179.33 [185.26]
b = 0.77 [0.54]
Seff = 3.12 [0.23]
Teq = 339 [6] K
Rp = 3.07 [0.68] Re
a = 1.3845 [0.0464] AU
Ag = 9086.99 [4430.74] [2.05σ]
Teffp = 5114 [626] K [7.63σ]

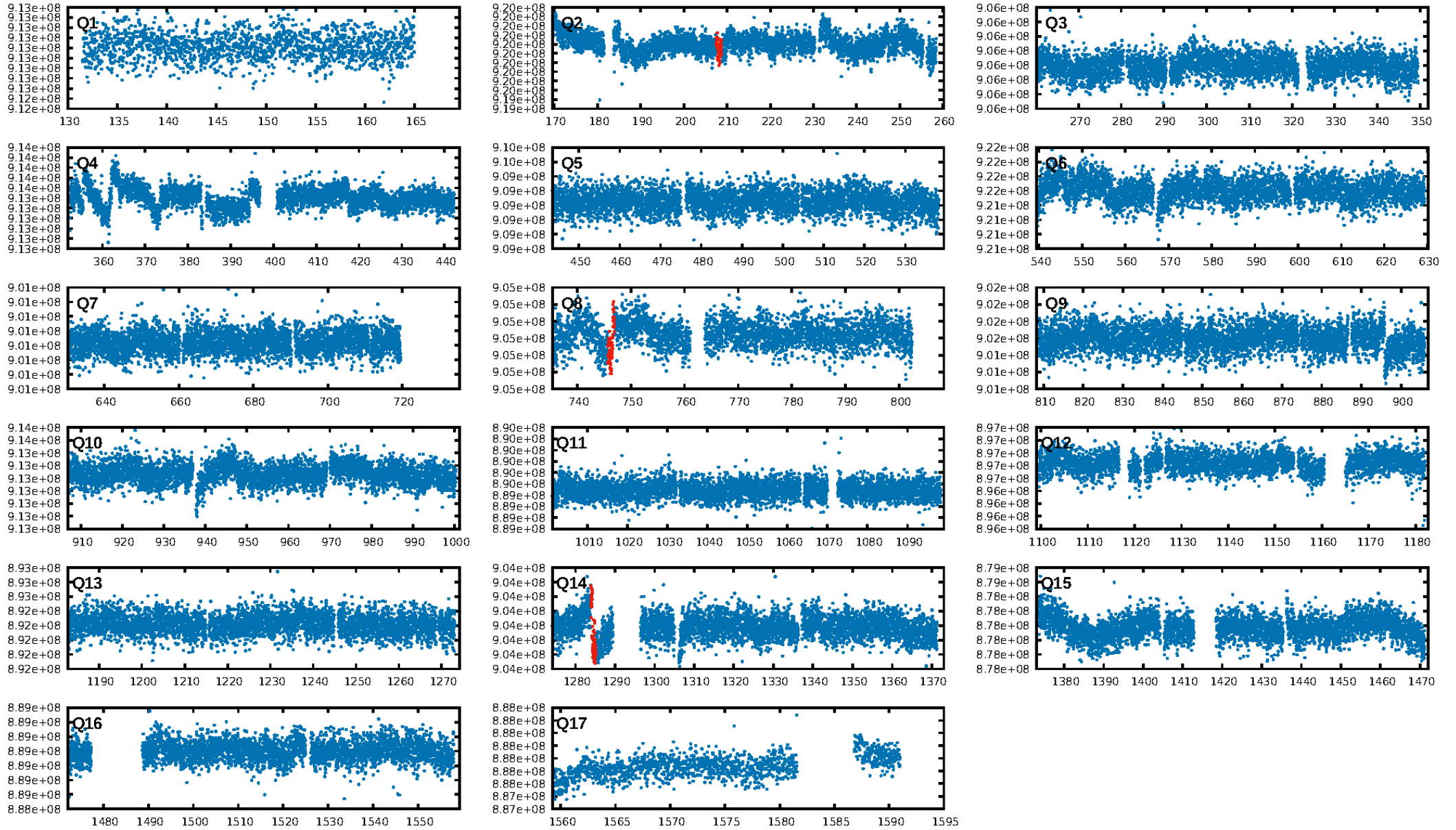
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [58.24σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 28.9%
ModelChiSquareGof-sig: 98.1%
Bootstrap-pfa: 3.72e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 10.27
Centroid-sig: 2.9%
Centroid-so: 2.812 arcsec [1.50σ]
OotOffset-rm: 5.047 arcsec [1.52σ]
KicOffset-rm: 5.254 arcsec [1.53σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

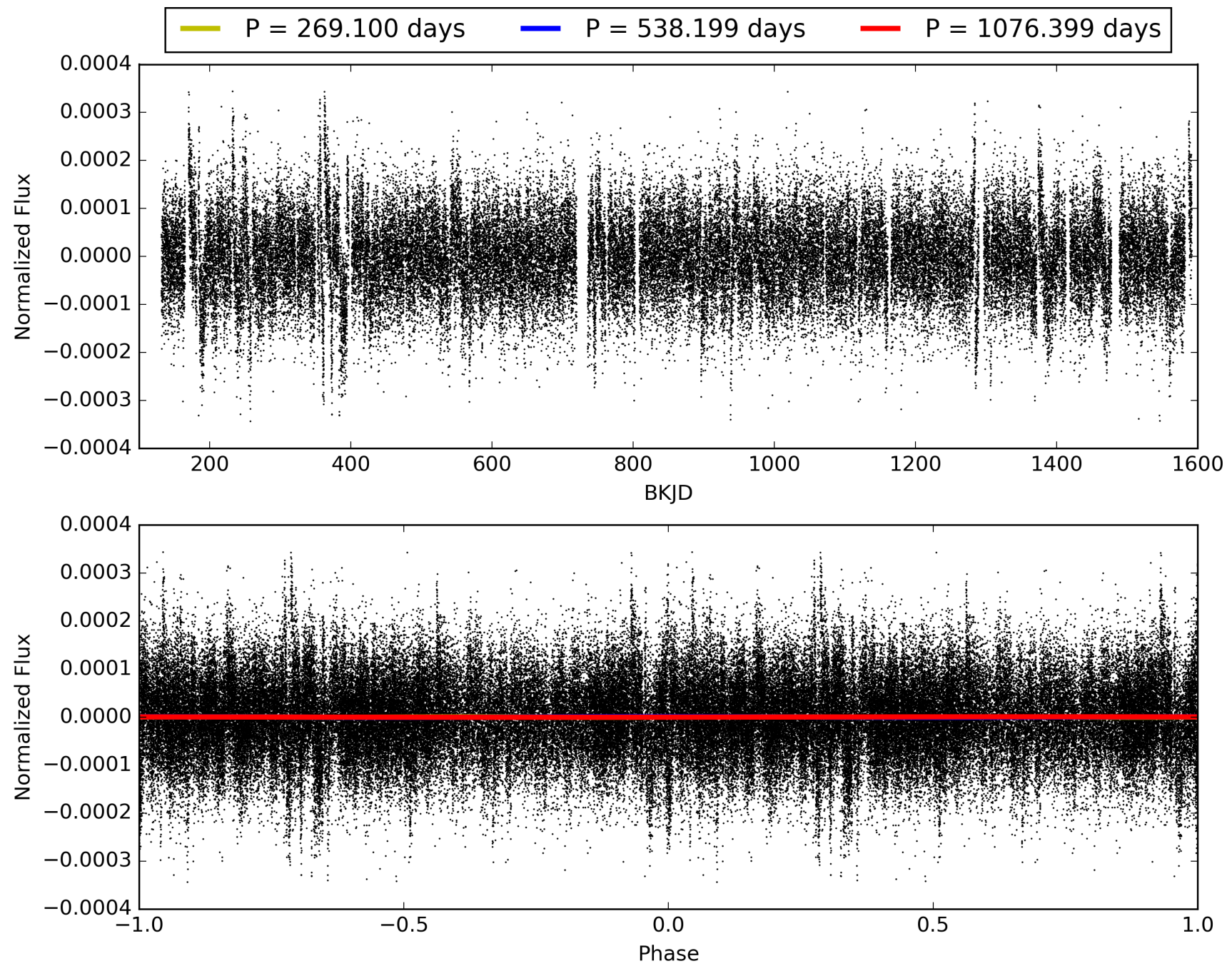
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:12 Z

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

TCE 003545753-01, PDC Light Curves

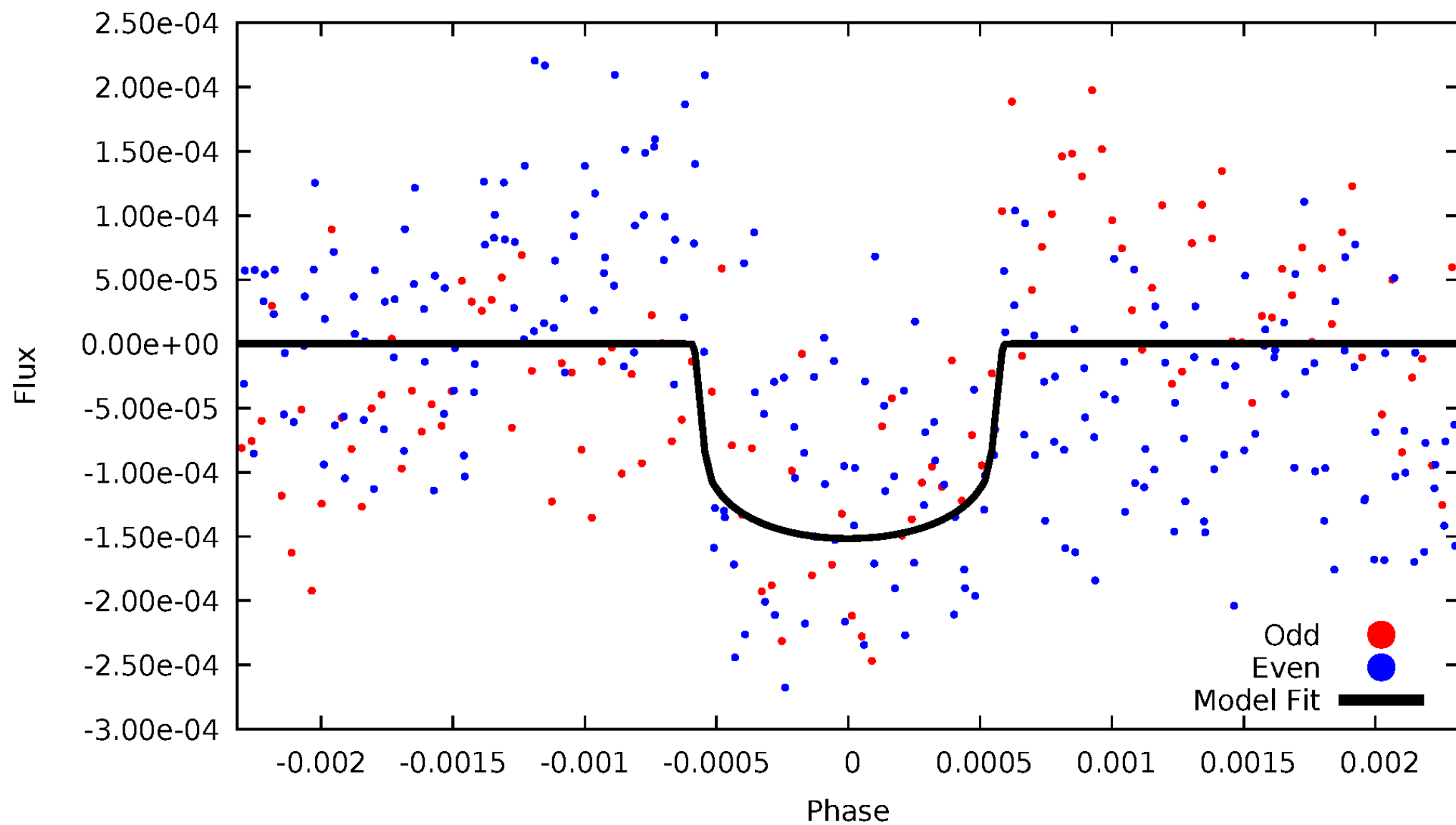


TCE 003545753-01



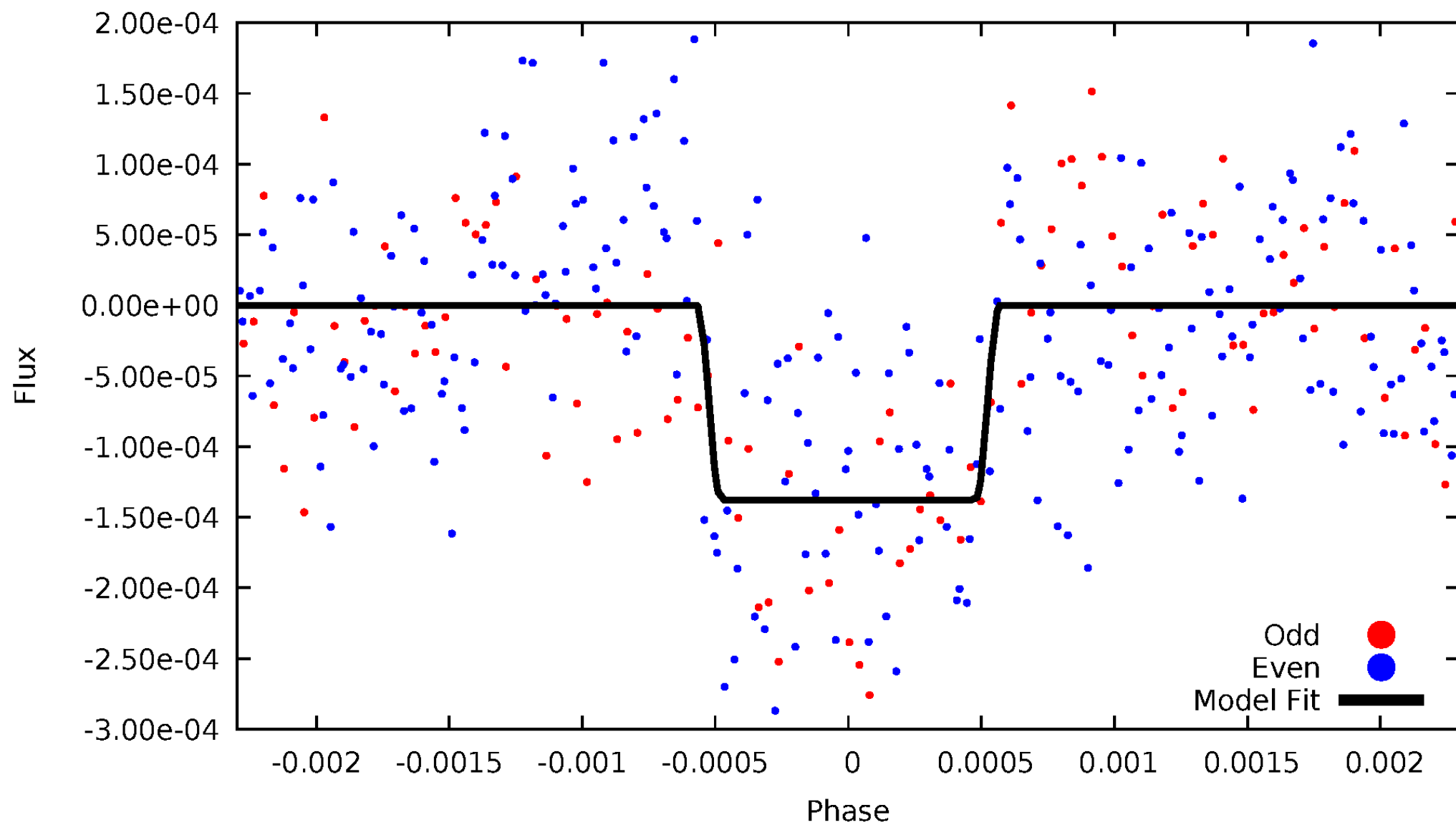
DV Odd/Even

TCE 003545753-01



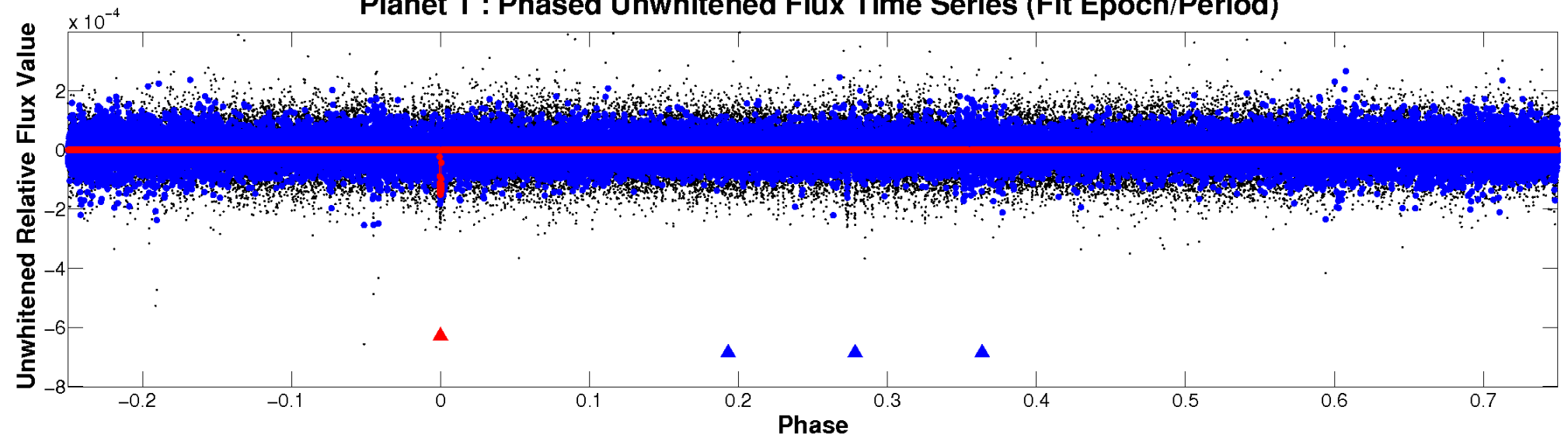
ALT Odd/Even

TCE 003545753-01

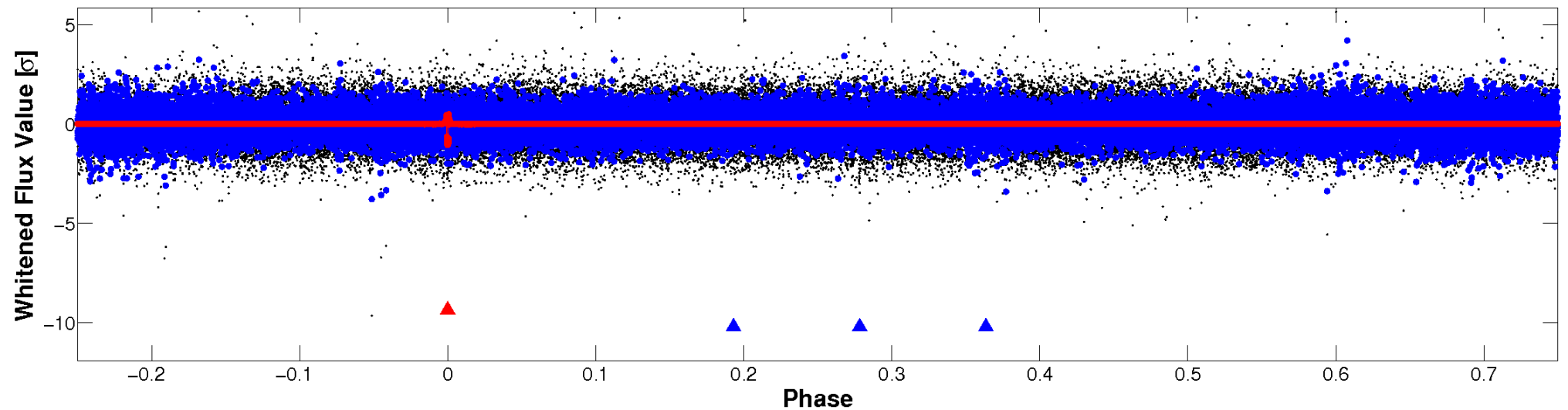


Non-Whitened Vs. Whitened Light Curve

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

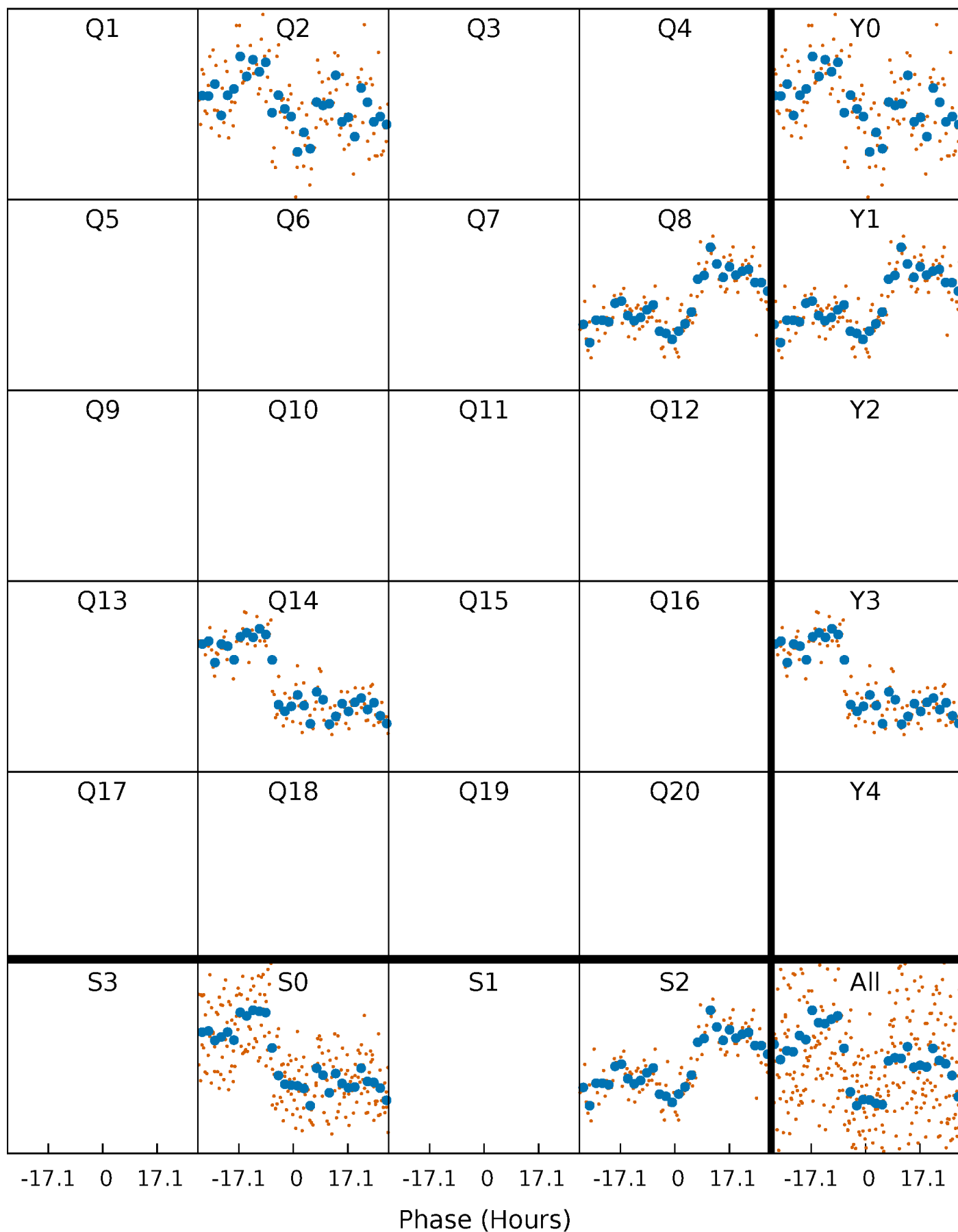


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



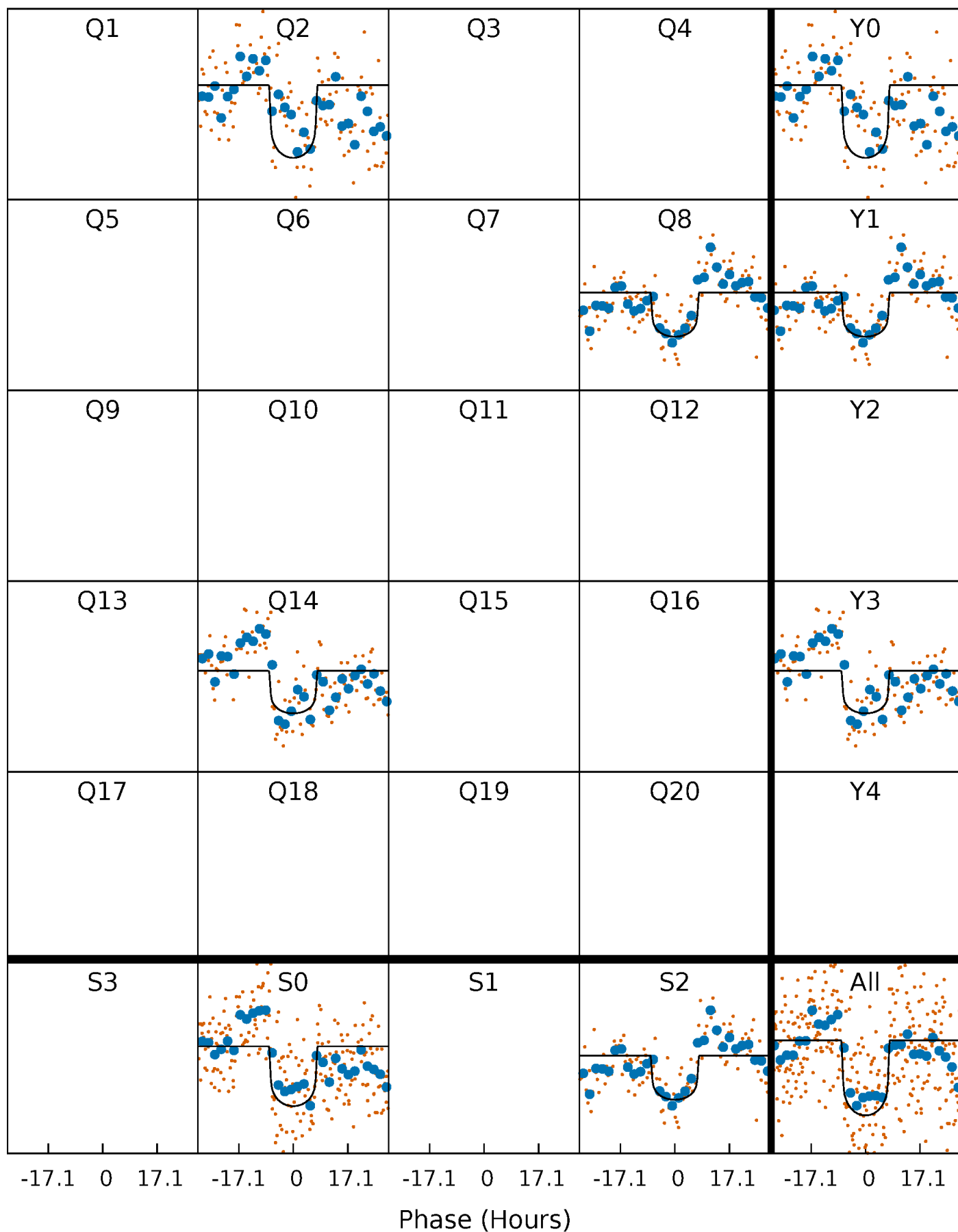
PDC Quarter-Phased Transit Curves

TCE 003545753-01 P=538.199256 Days $T_0=208.108574$ (BKJD)



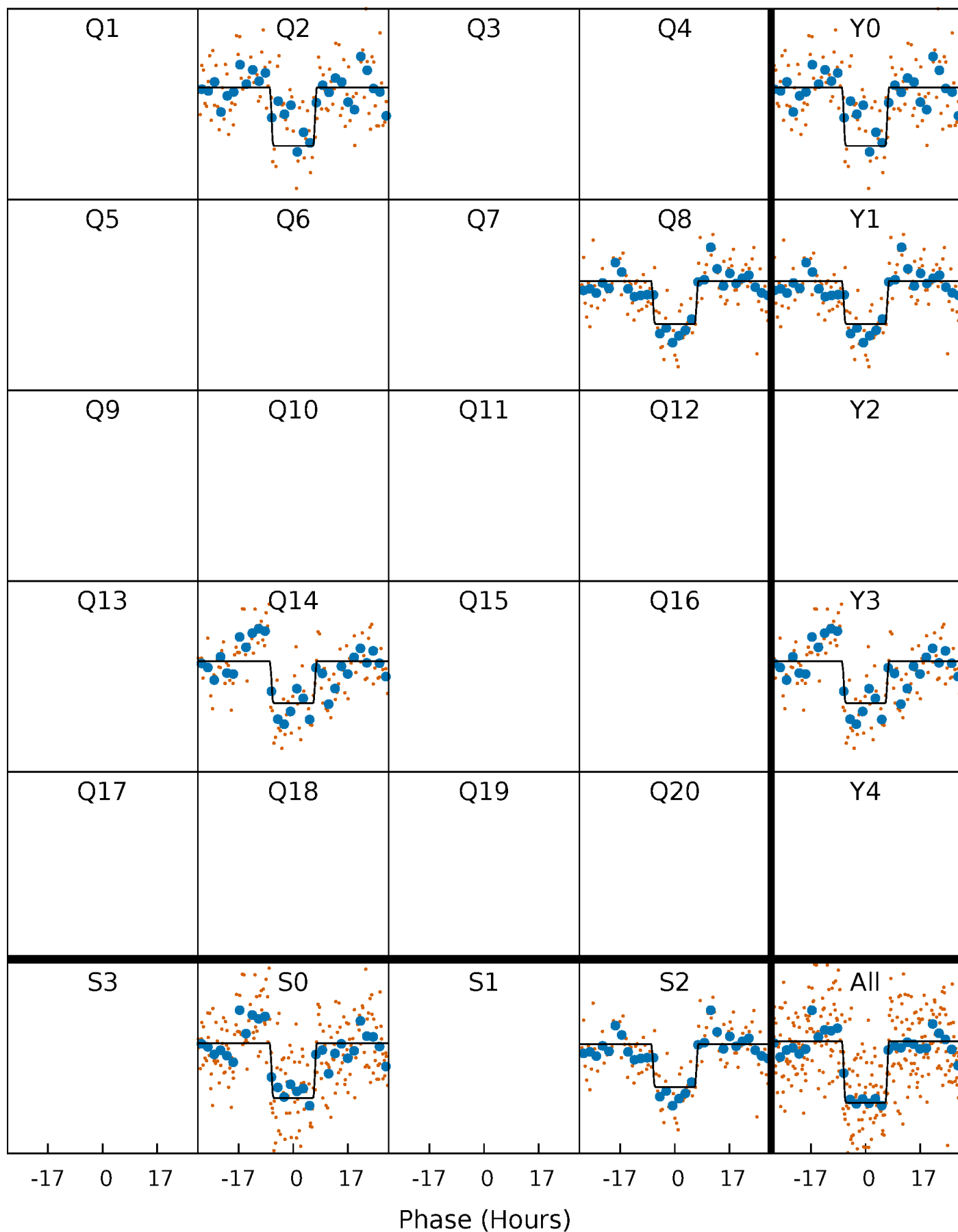
DV Quarter-Phased Transit Curves

TCE 003545753-01 P=538.199256 Days $T_0=208.108574$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

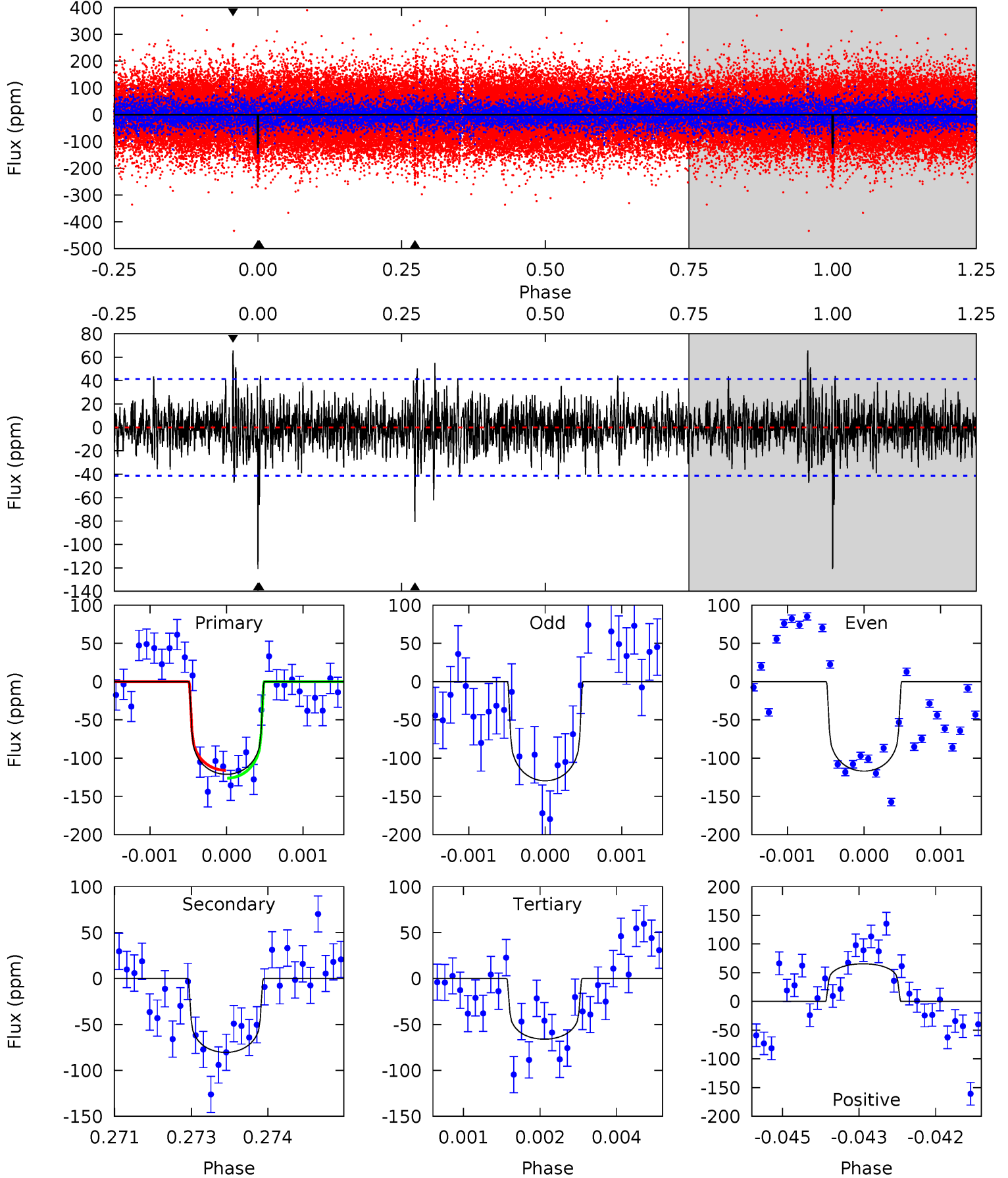
TCE 003545753-01 P=538.213159 Days $T_0=208.099700$ (BKJD)



DV Model-Shift Uniqueness Test

003545753-01, P = 538.199256 Days, E = 208.108574 Days

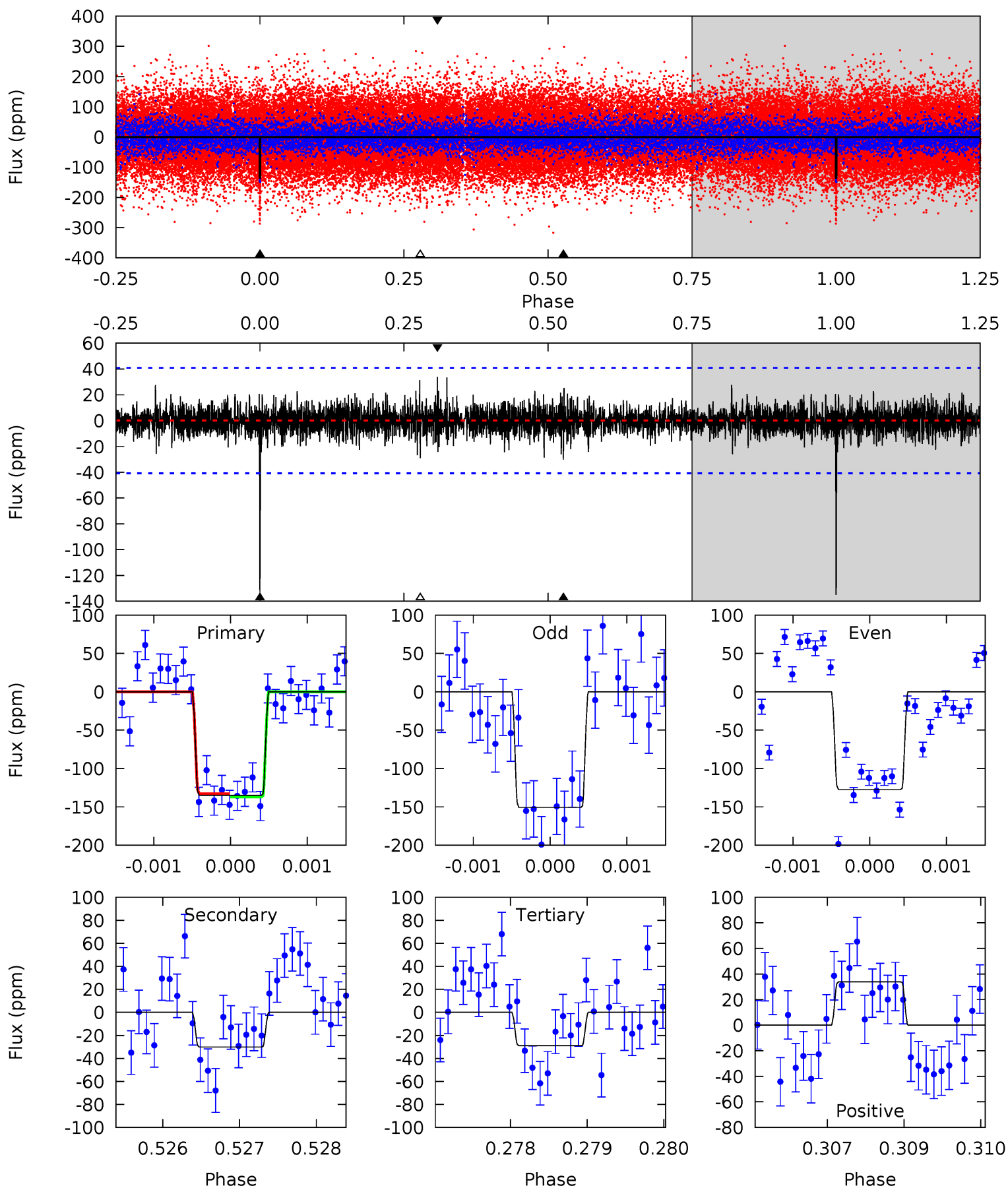
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	10.5	8.65	8.58	5.42	3.24	1.83	7.20	7.26	1.88	1.95	0.78	0.94	0.35	0.67



Alt Model-Shift Uniqueness Test

003545753-01, P = 538.213159 Days, E = 208.099700 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	4.00	3.85	4.50	5.43	3.25	0.97	14.1	13.4	0.14	-0.51	1.45	0.90	0.20	0.28



Stellar Parameters For KIC 003545753

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5984^{+71}_{-89}	$3.809^{+0.018}_{-0.020}$	$-0.220^{+0.150}_{-0.150}$	$2.280^{+0.084}_{-0.102}$	$1.221^{+0.068}_{-0.076}$	$0.145^{+0.013}_{-0.010}$
	+1%/-1%	+0%/-1%	+68%/-68%	+4%/-4%	+6%/-6%	+9%/-7%
Source	SPE72	AST10	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003545753-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-80 ± 8	$3.08^{+0.69}_{-0.69}$	473^{+7}_{-8}	5160^{+637}_{-447}	8990^{+6057}_{-3197}
Alt.	-30 ± 8	$2.92^{+0.68}_{-0.65}$	474^{+6}_{-9}	4287^{+525}_{-364}	3612^{+2732}_{-1442}

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

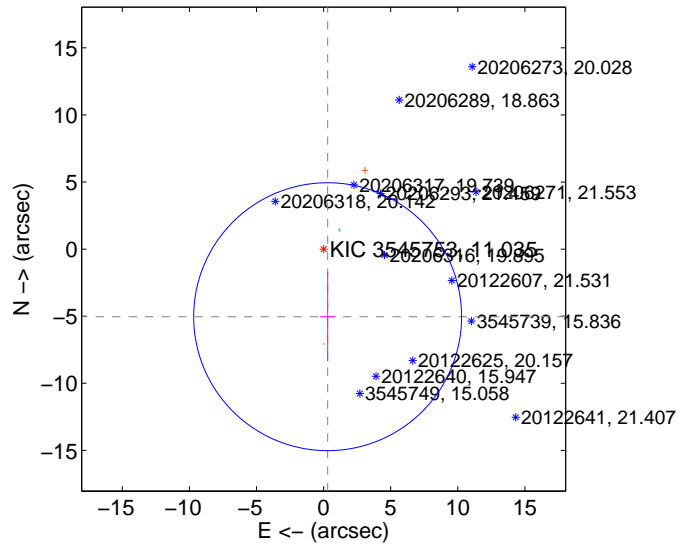
Supplemental centroid analysis for 003545753-01. **Kepler magnitude: 11.04.** Transit SNR 9.34

There are 2 quarters with good PRF difference image offsets

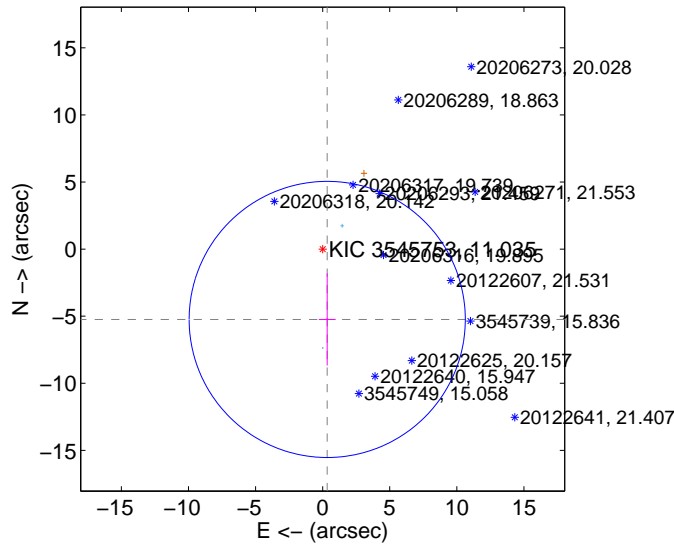
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.047 ± 3.328	1.52	-0.300 ± 0.567	-5.038 ± 3.334
PRF-fit source offset from KIC position	5.254 ± 3.430	1.53	-0.341 ± 0.627	-5.243 ± 3.437
photometric centroid source offset	2.81 ± 1.88	1.50	0.28 ± 1.37	-2.80 ± 1.88

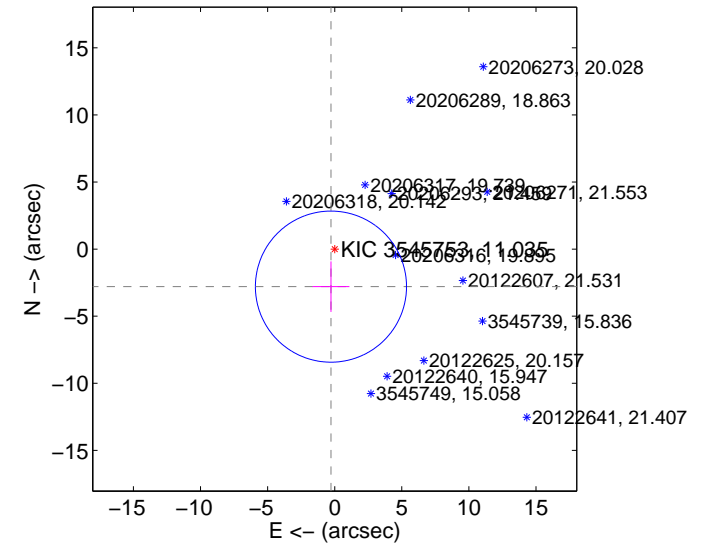
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

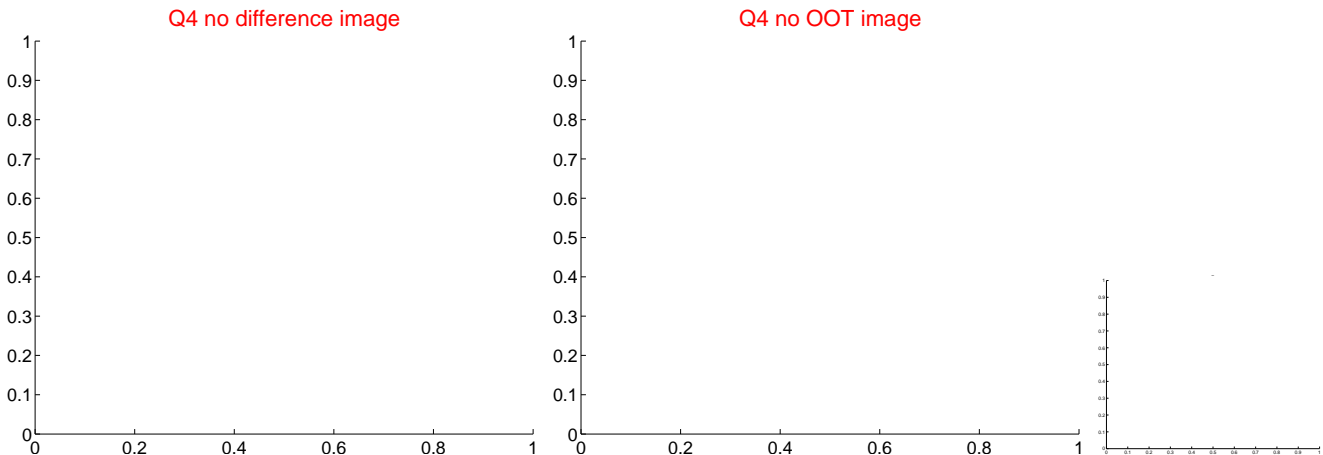
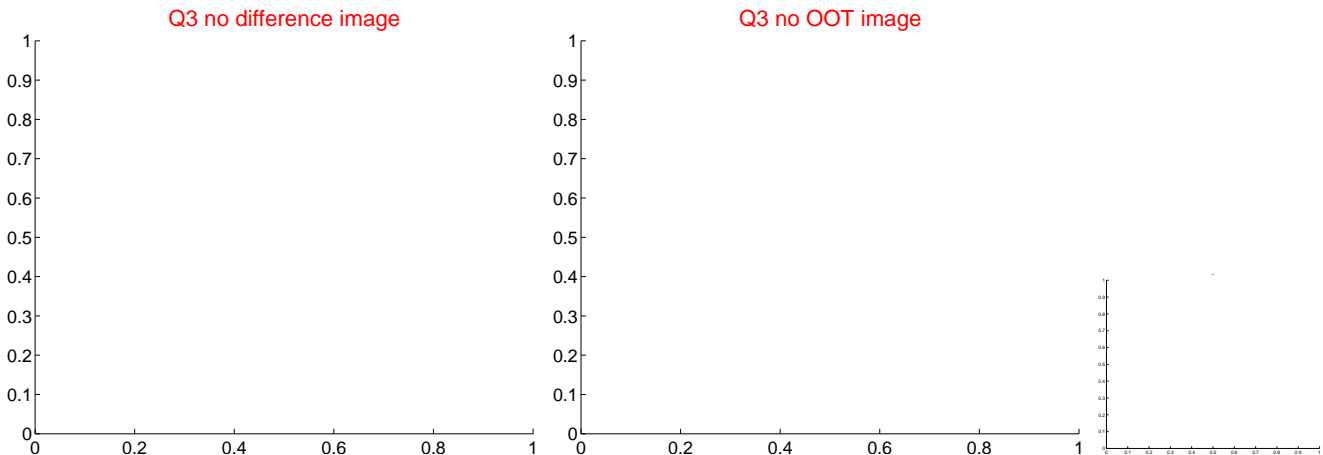
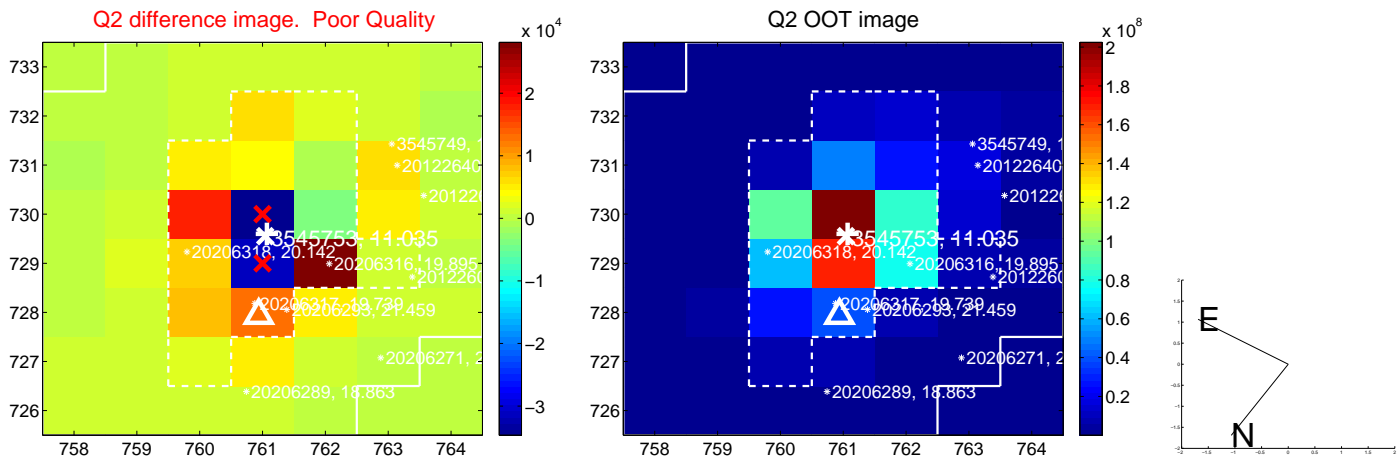
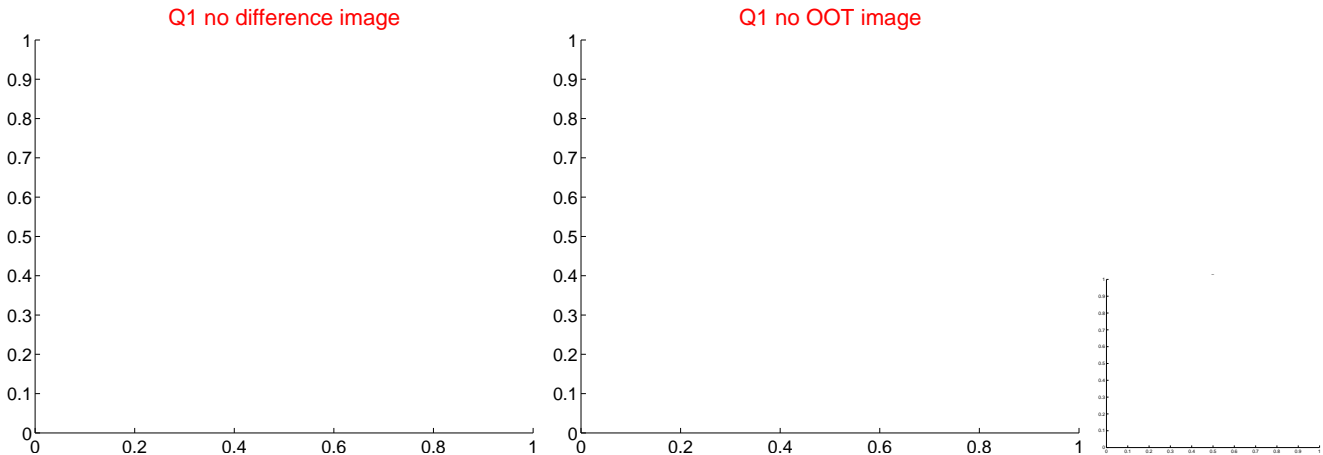


offset from photometric centroids



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.

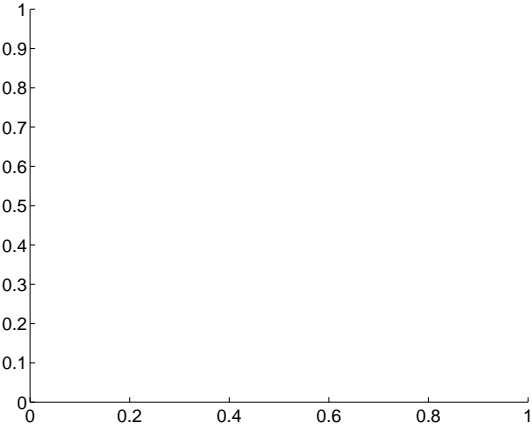
Q5 no difference image



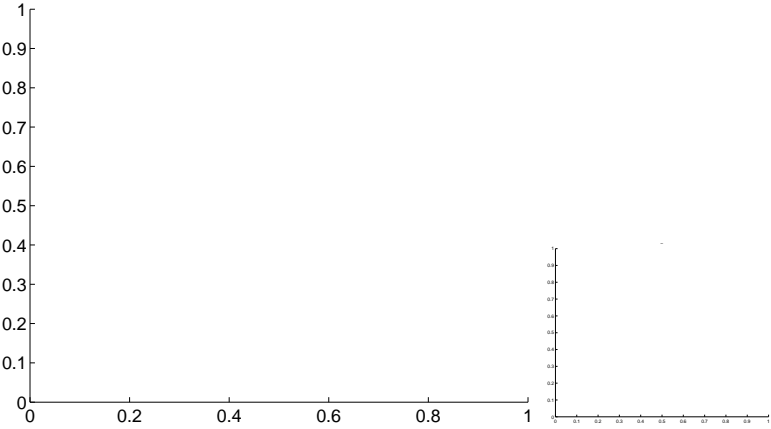
Q5 no OOT image



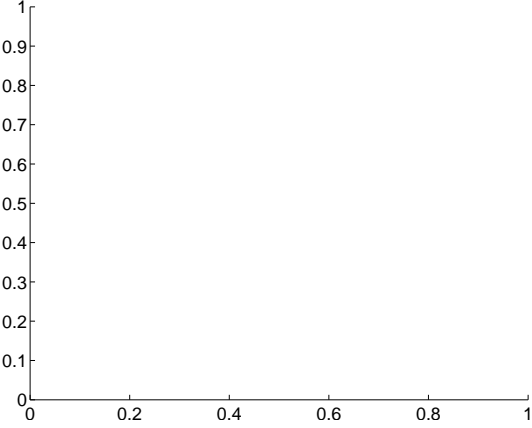
Q6 no difference image



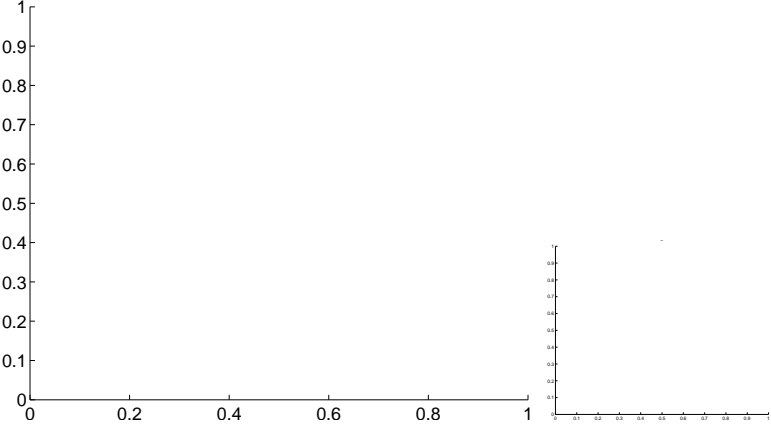
Q6 no OOT image



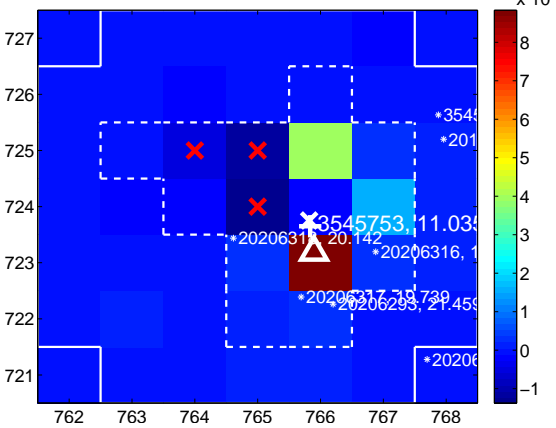
Q7 no difference image



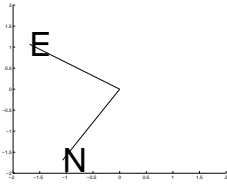
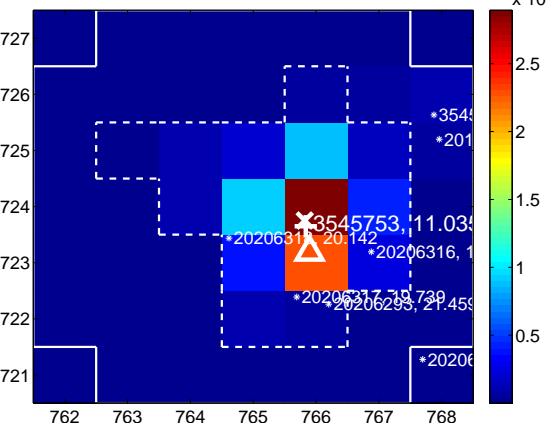
Q7 no OOT image



Q8 difference image



Q8 OOT image

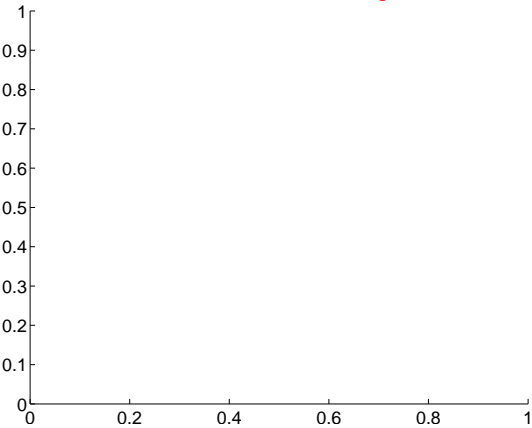


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

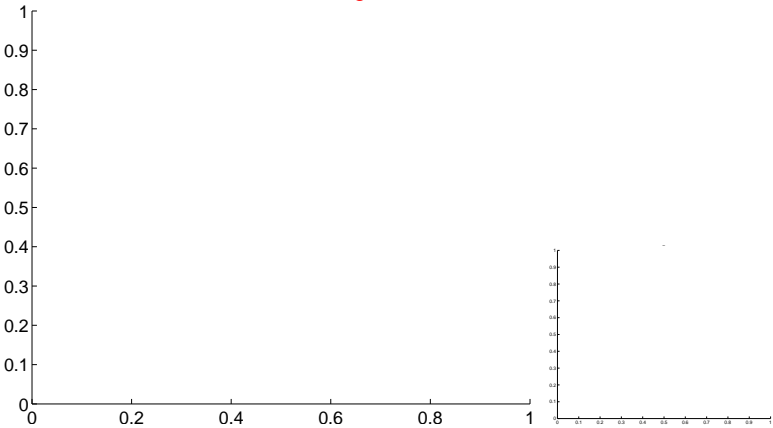


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

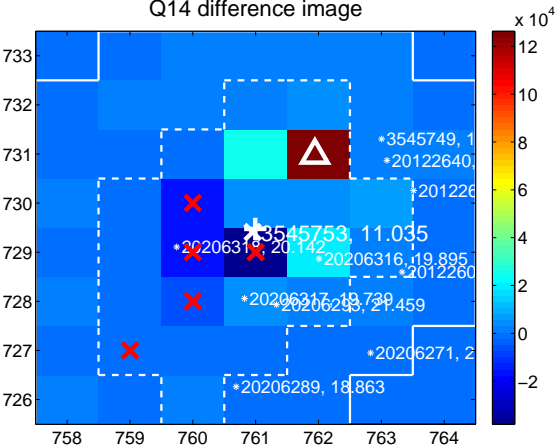
Q13 no difference image



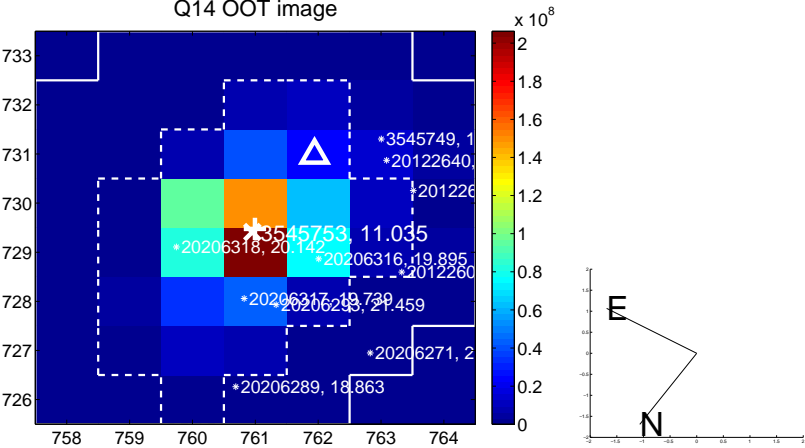
Q13 no OOT image



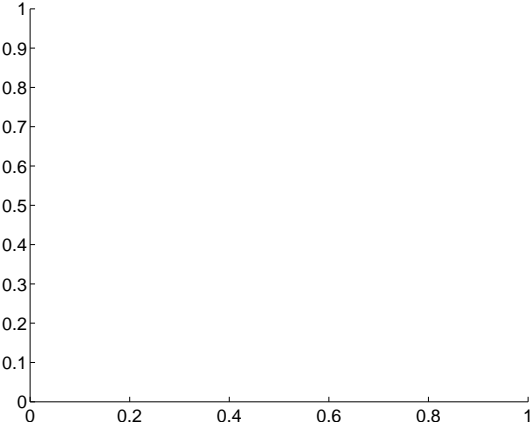
Q14 difference image



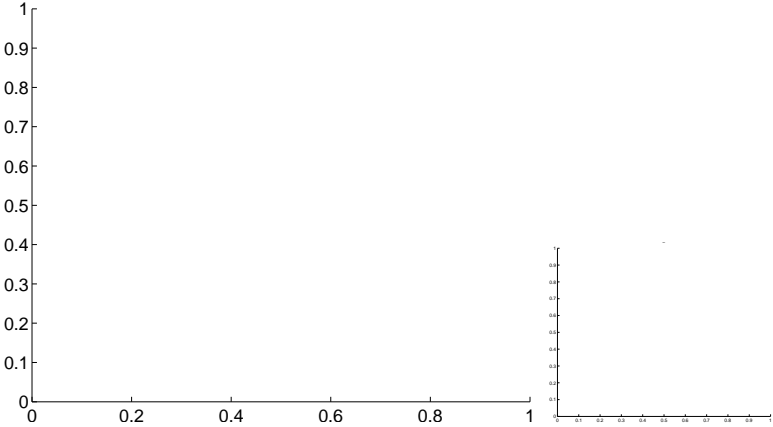
Q14 OOT image



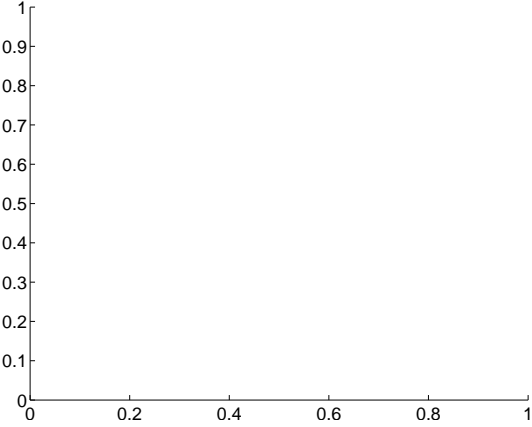
Q15 no difference image



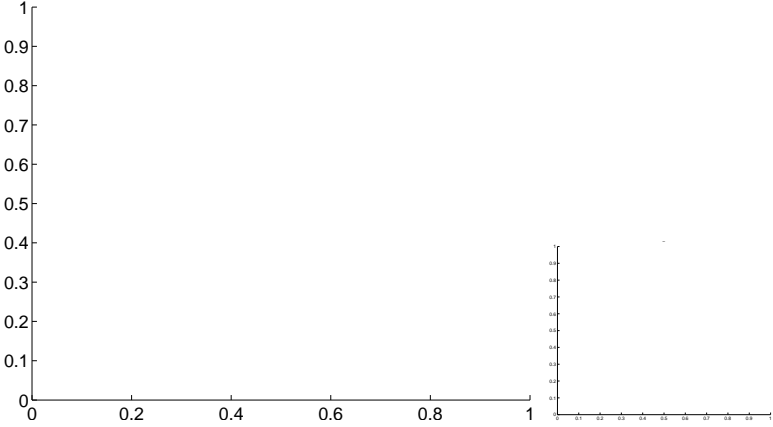
Q15 no OOT image



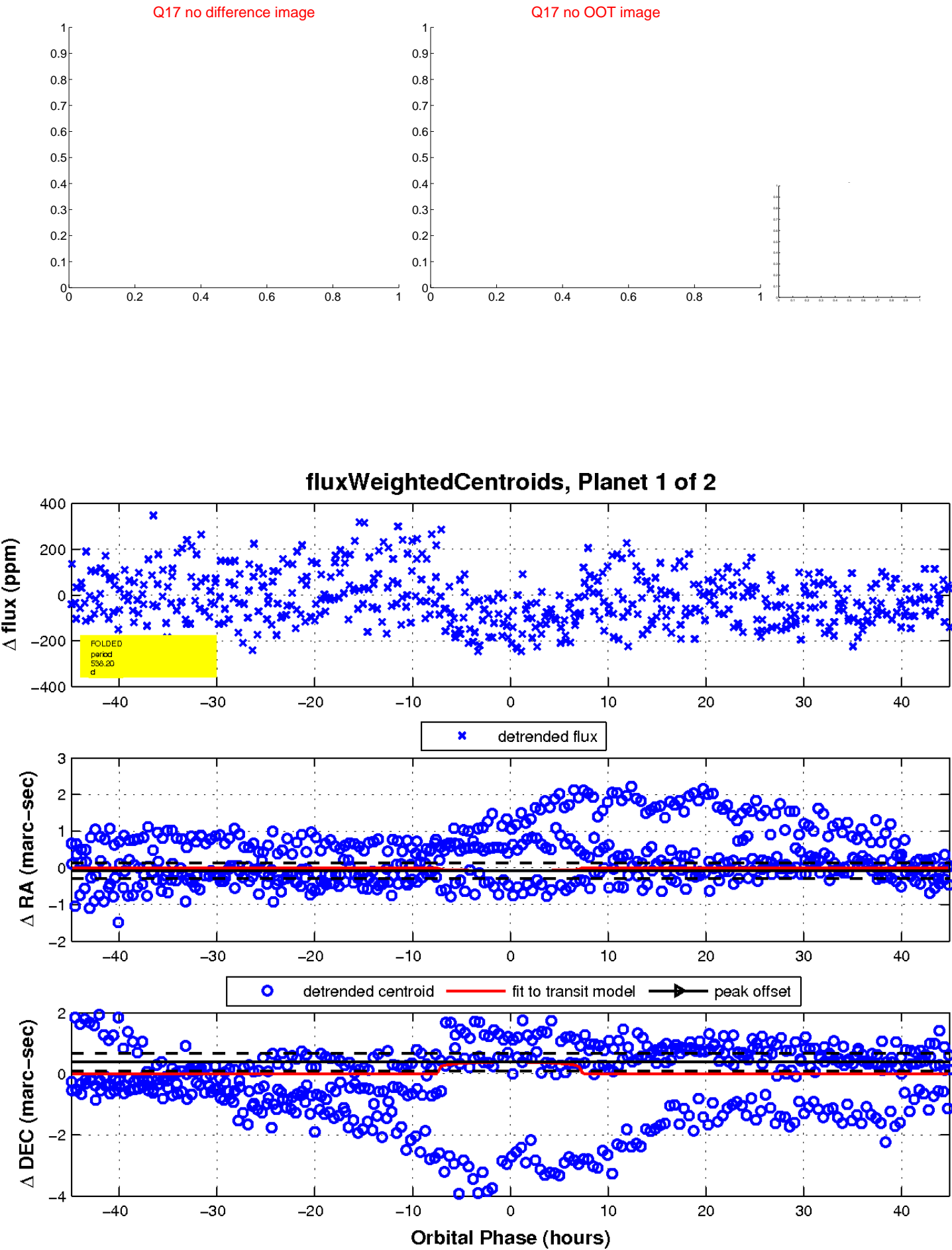
Q16 no difference image



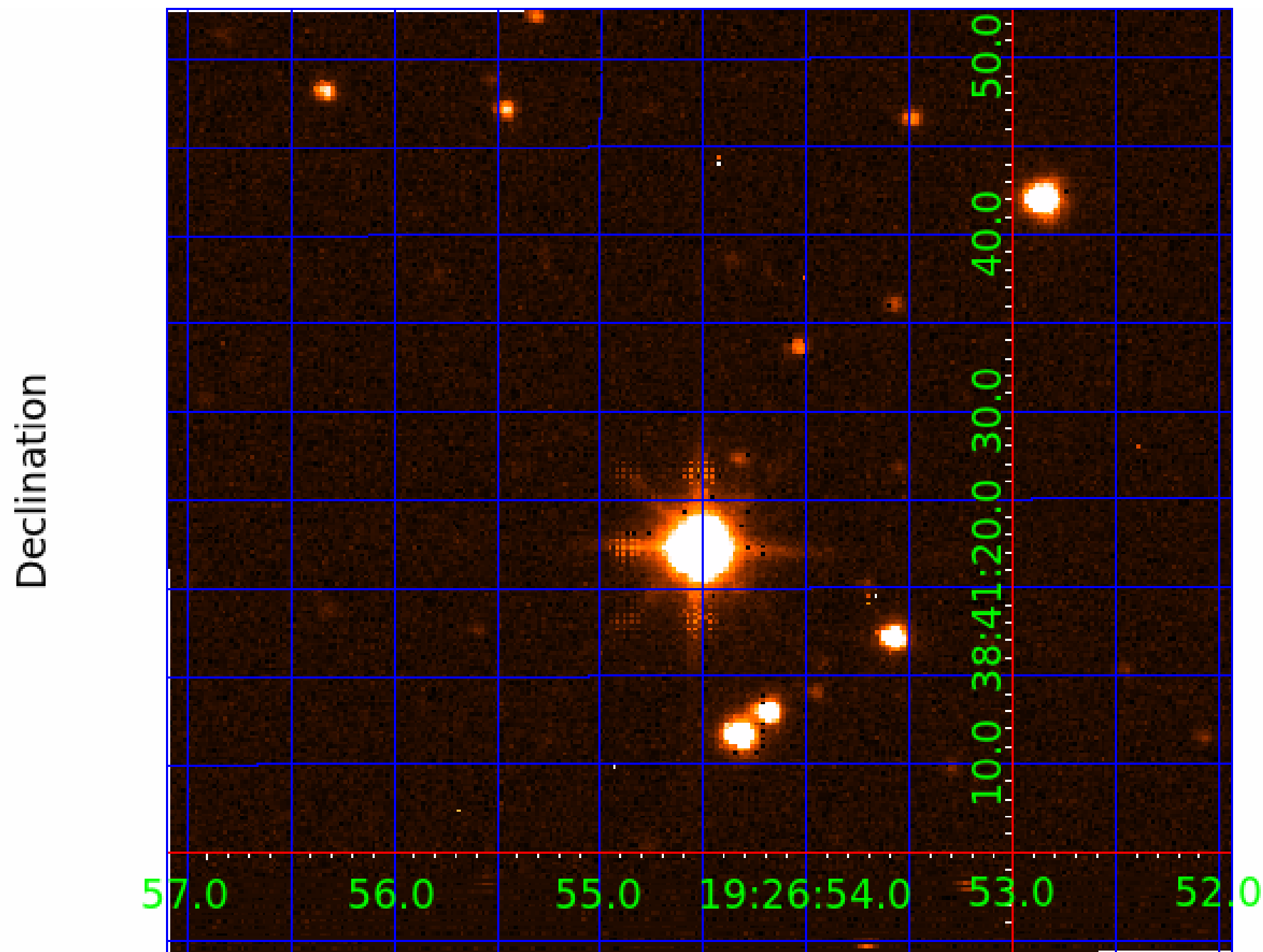
Q16 no OOT image



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



UKIRT Image



KIC 003545753

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})
003545753-01	OBS	No	538.199256	208.108574	151.5	14.978	8.9	9.3	2.28	5984	3.07	3.12
003545753-02	OBS	No	492.316750	403.800945	128.4	11.540	7.7	8.2	2.28	5984	2.98	3.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003545753-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_SATURATED
003545753-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

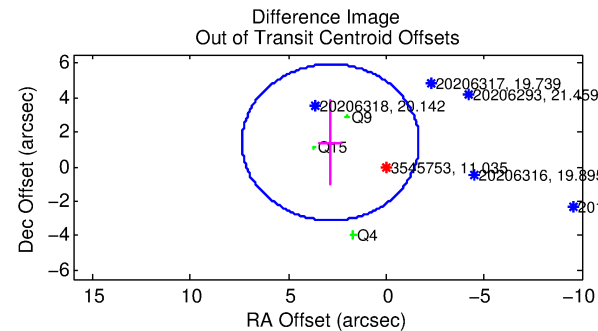
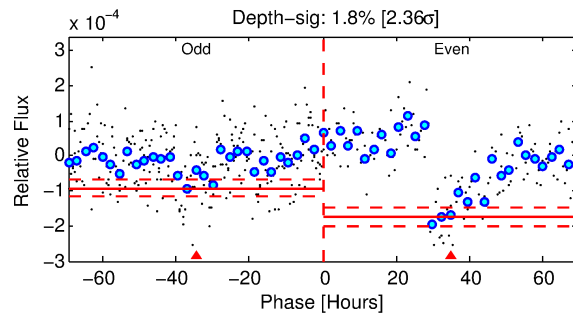
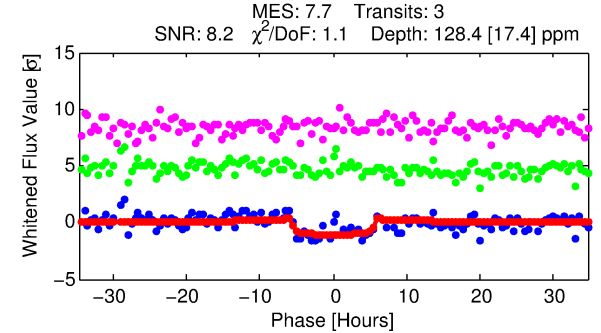
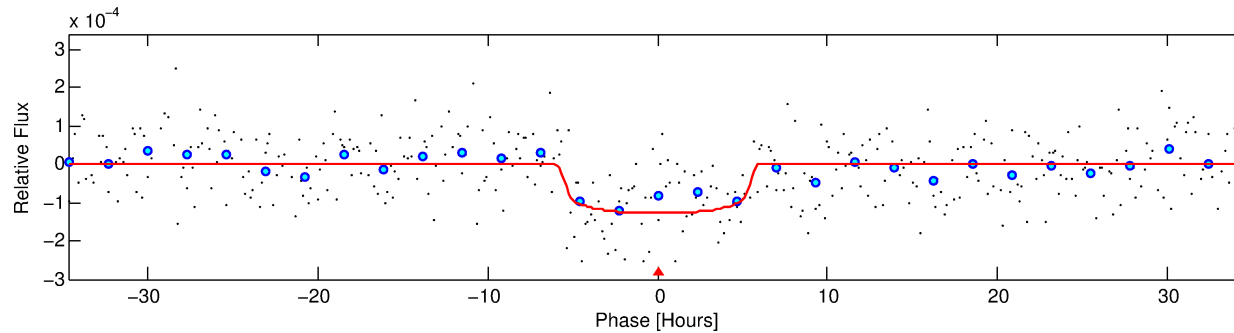
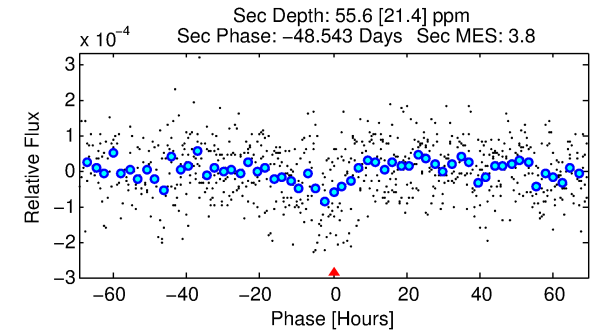
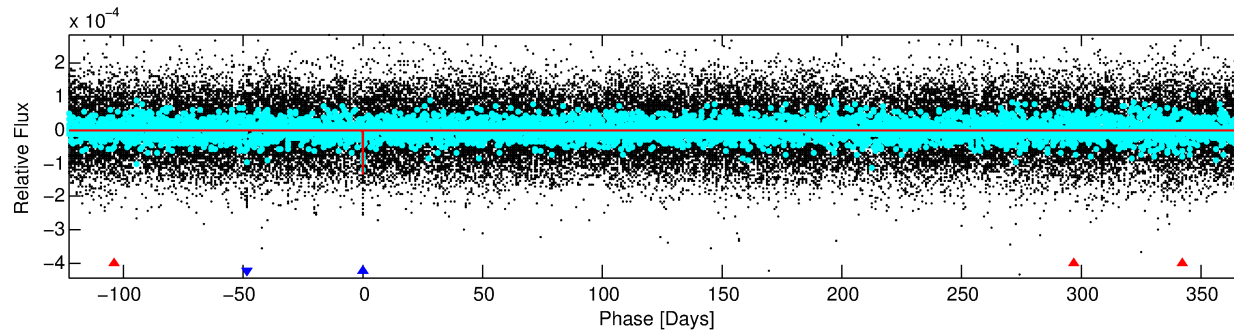
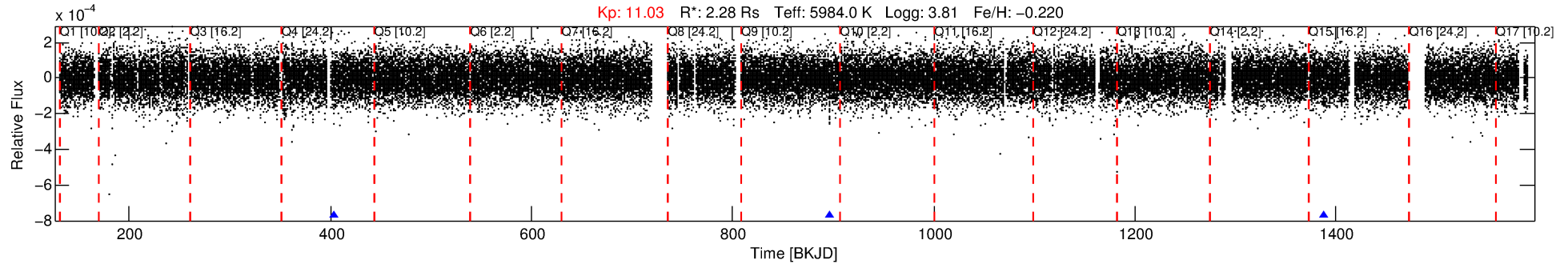
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003545753-02

No Significant Match Found

DV One-Page Summary

KIC: 3545753 Candidate: 2 of 2 Period: 492.317 d



DV Fit Results:

Period = 492.31675 [0.01258] d
Epoch = 403.8009 [0.0165] BKJD
Rp/R* = 0.0120 [0.0025]
a/R* = 167.65 [168.15]
b = 0.87 [0.28]
Seff = 3.51 [0.26]
Teff = 349 [6] K
Rp = 2.97 [0.64] Re
a = 1.3046 [0.0438] AU
Ag = 5883.23 [3355.88] [1.75σ]
Teffp = 4726 [676] K [6.48σ]

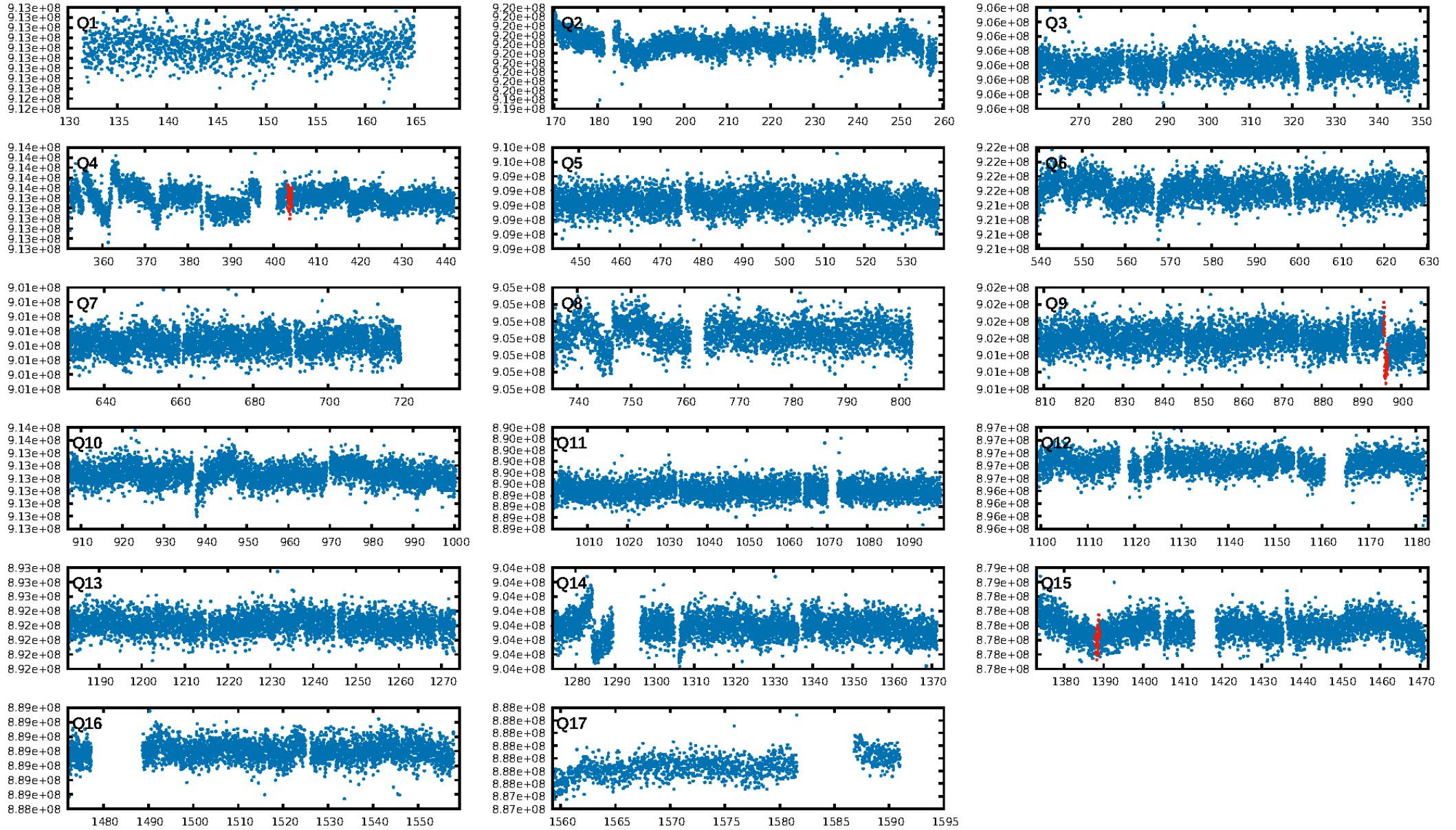
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [58.24σ]
ModelChiSquare2-sig: 3.6%
ModelChiSquareGof-sig: 83.0%
Bootstrap-pfa: 2.40e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.923
Centroid-sig: 5.1%
Centroid-so: 3.472 arcsec [1.24σ]
OotOffset-rm: 3.172 arcsec [2.10σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: **3.091 arcsec [3.32σ]**
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

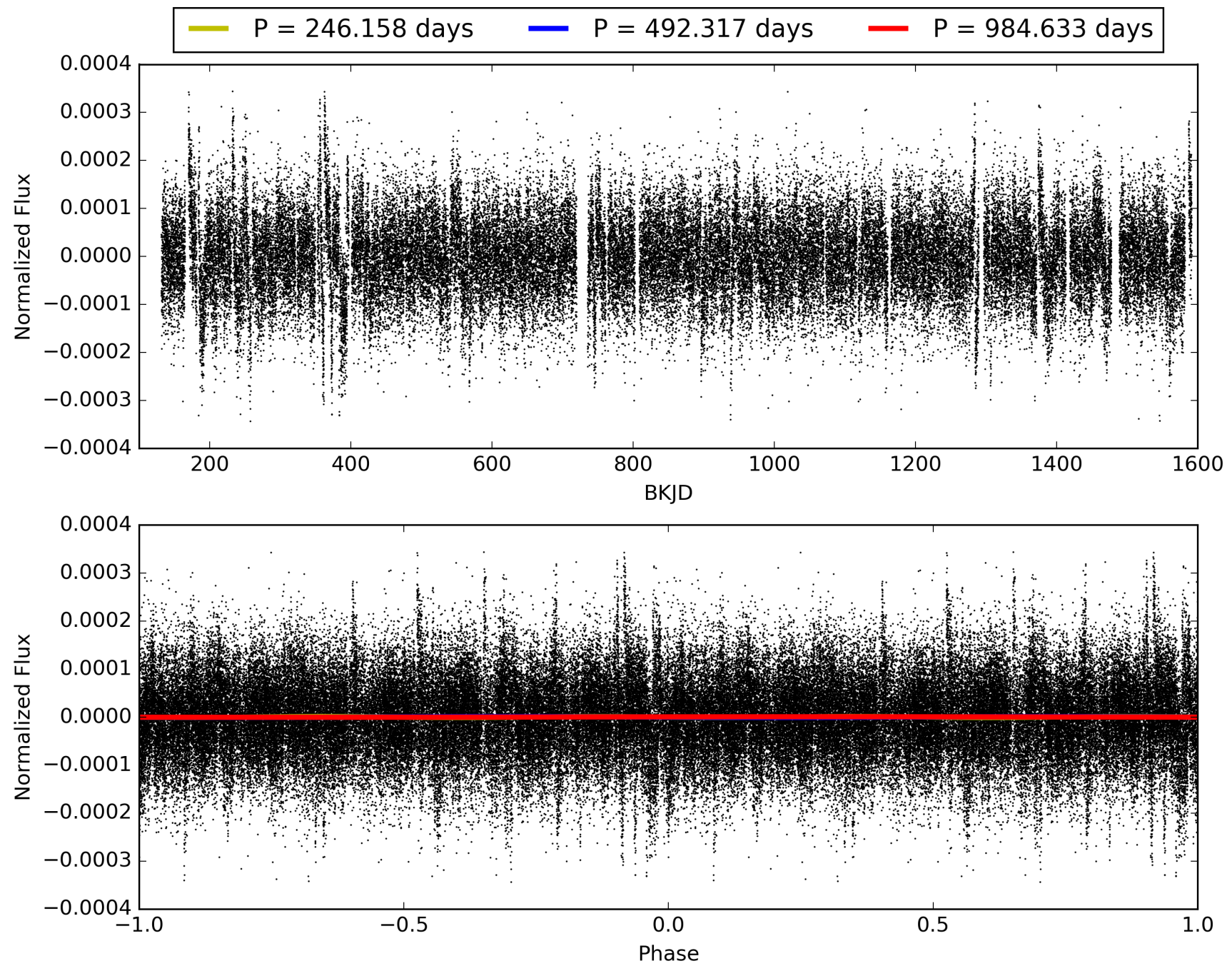
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:11:22 Z

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

TCE 003545753-02, PDC Light Curves

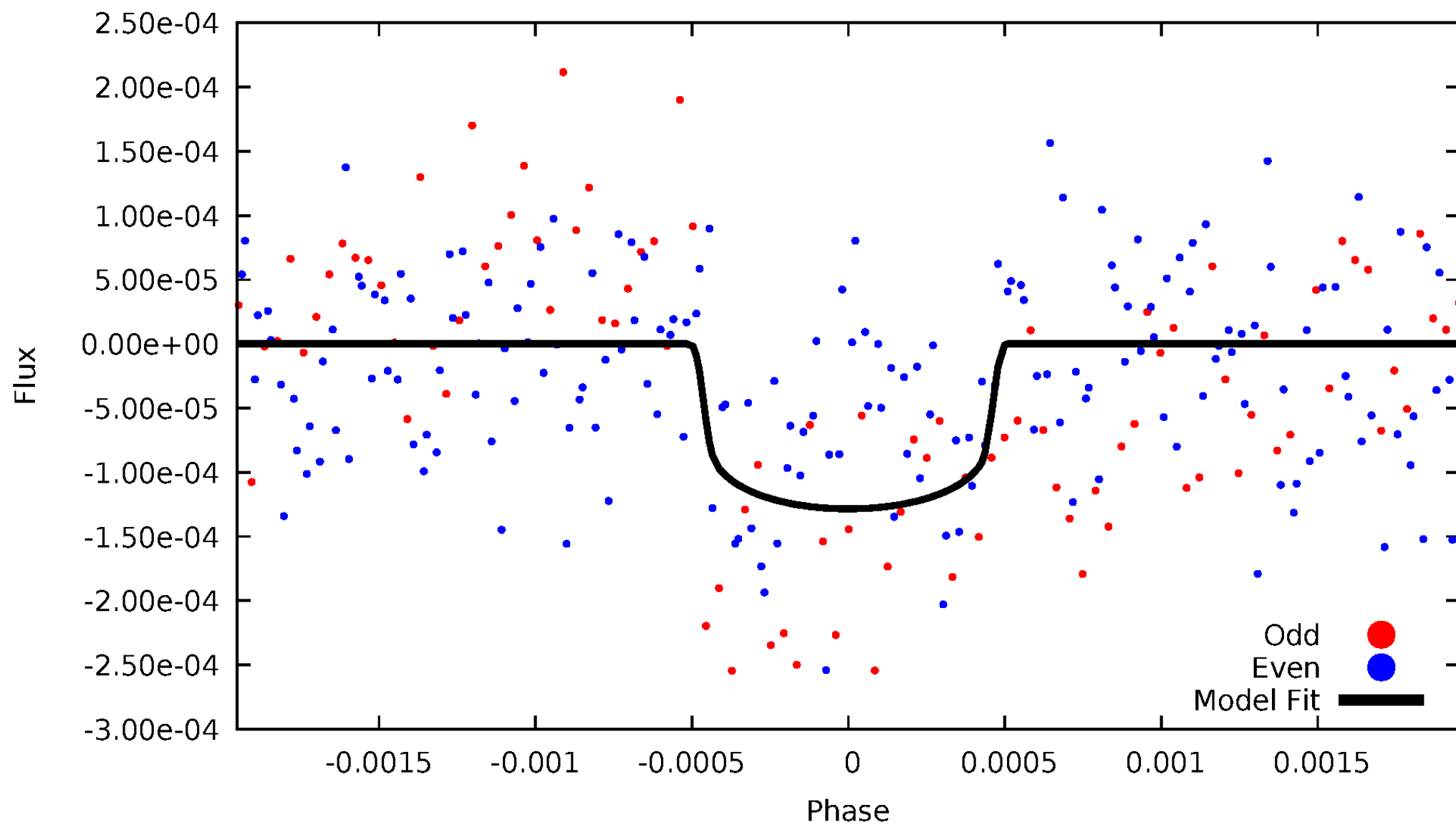


TCE 003545753-02



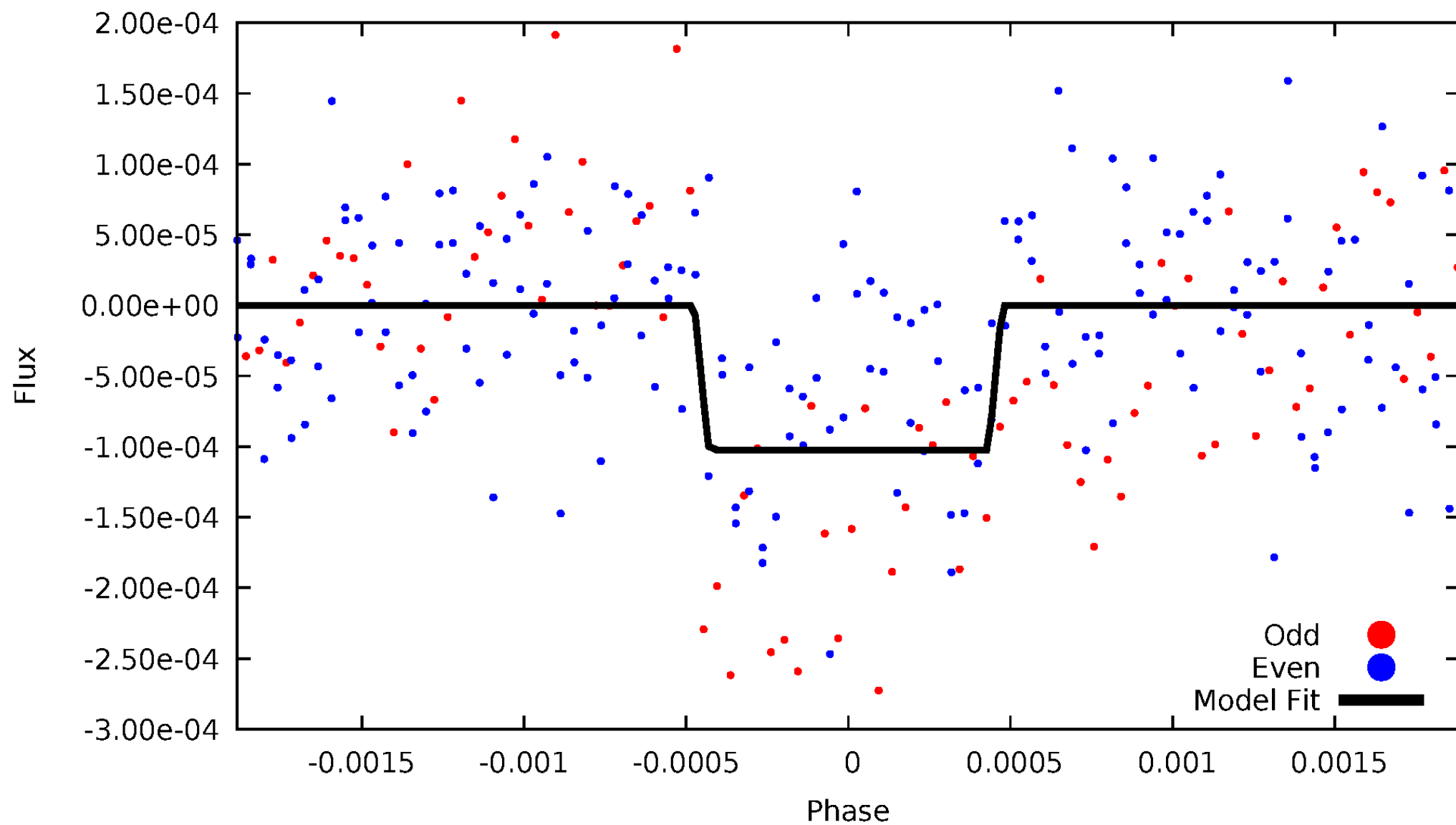
DV Odd/Even

TCE 003545753-02



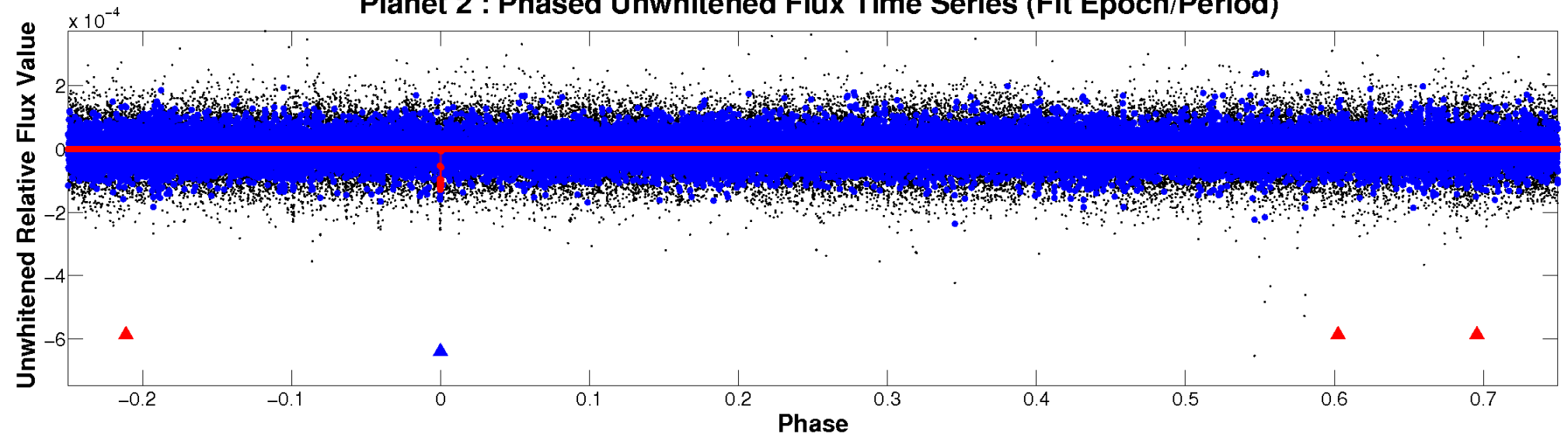
ALT Odd/Even

TCE 003545753-02

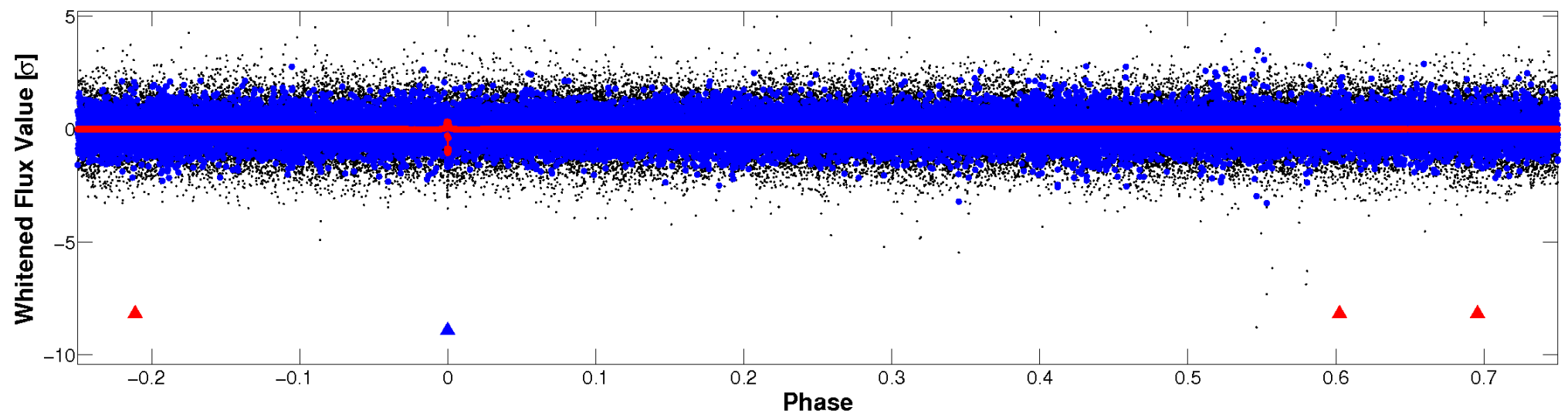


Non-Whitened Vs. Whitened Light Curve

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

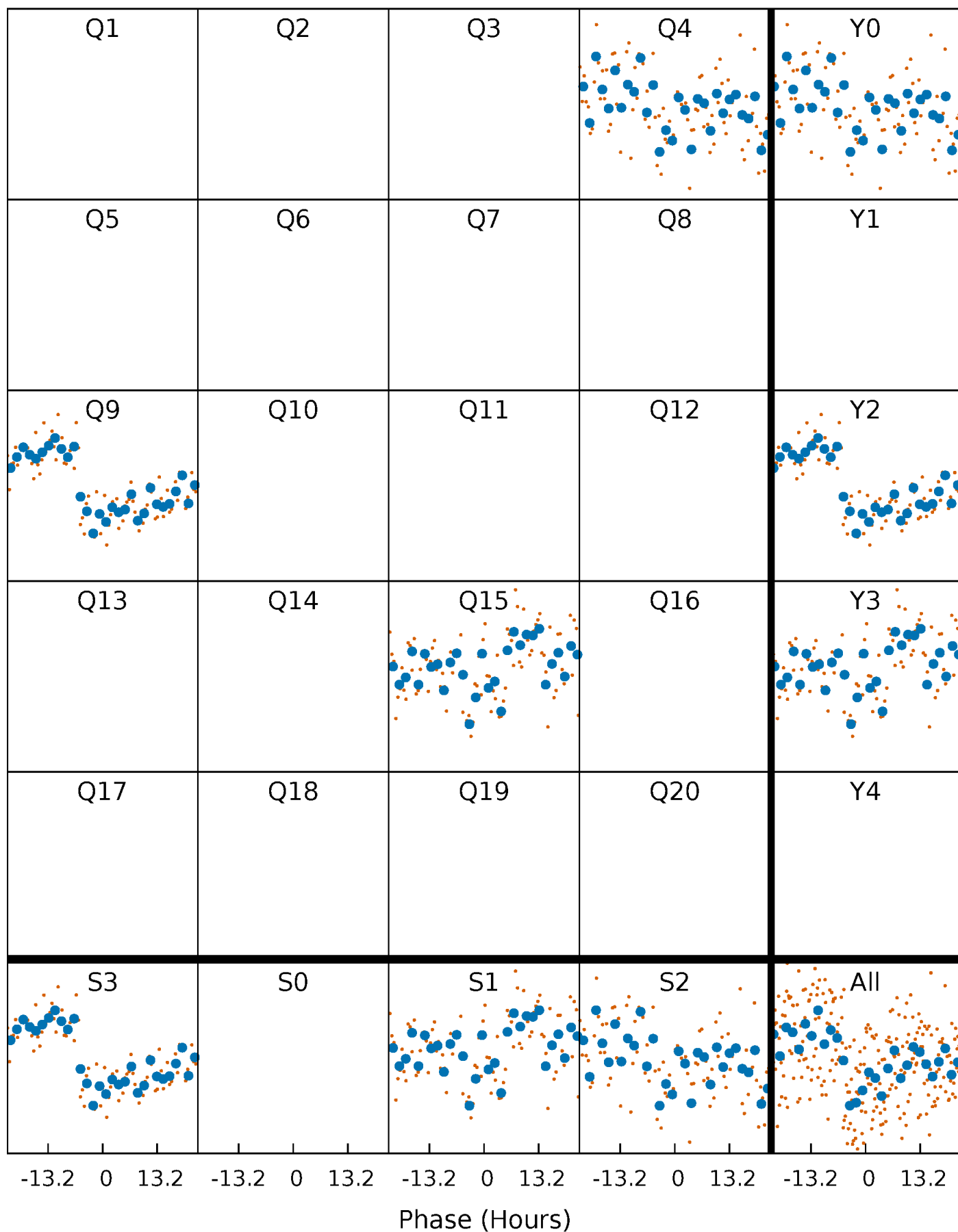


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



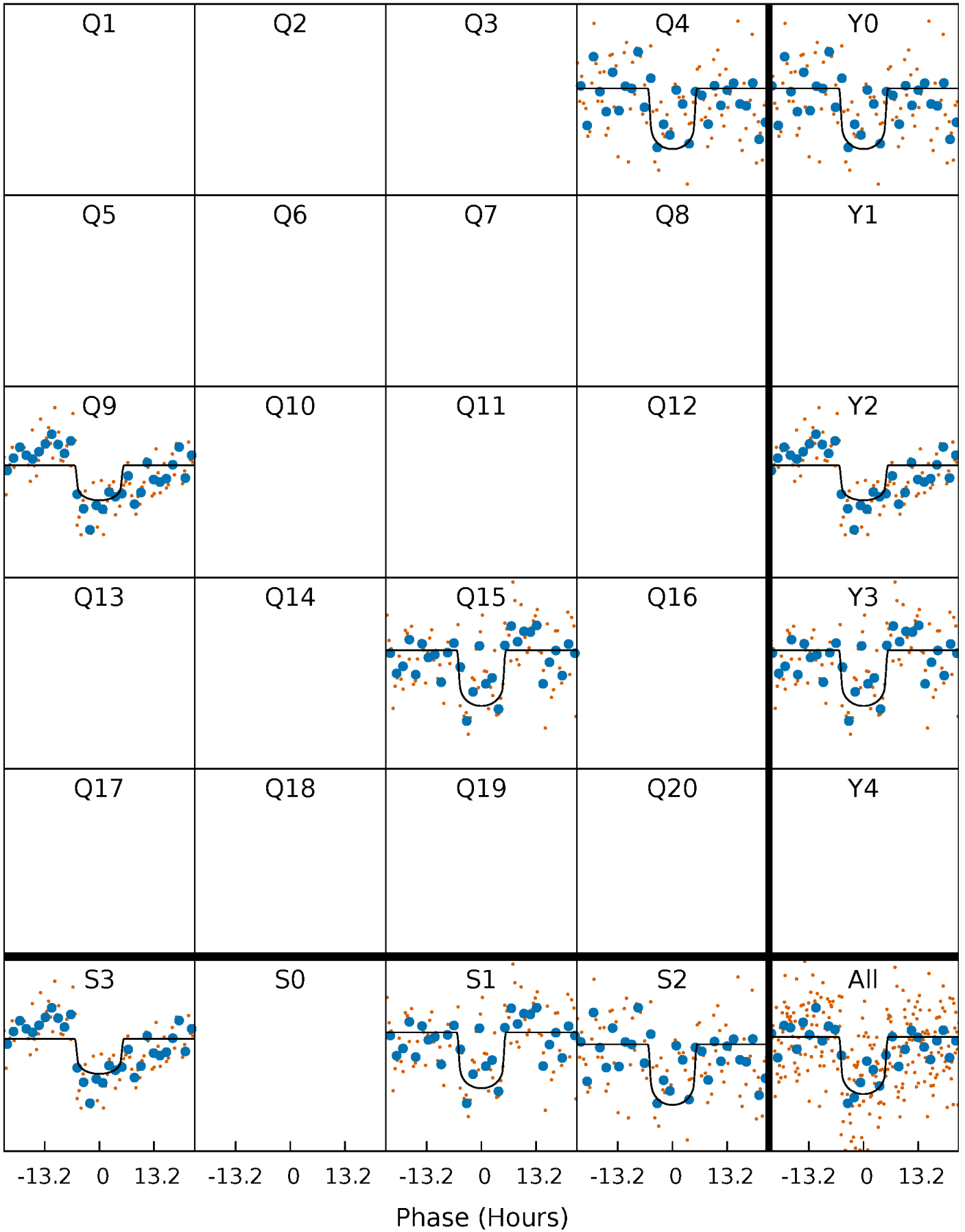
PDC Quarter-Phased Transit Curves

TCE 003545753-02 P=492.316750 Days $T_0=403.800945$ (BKJD)



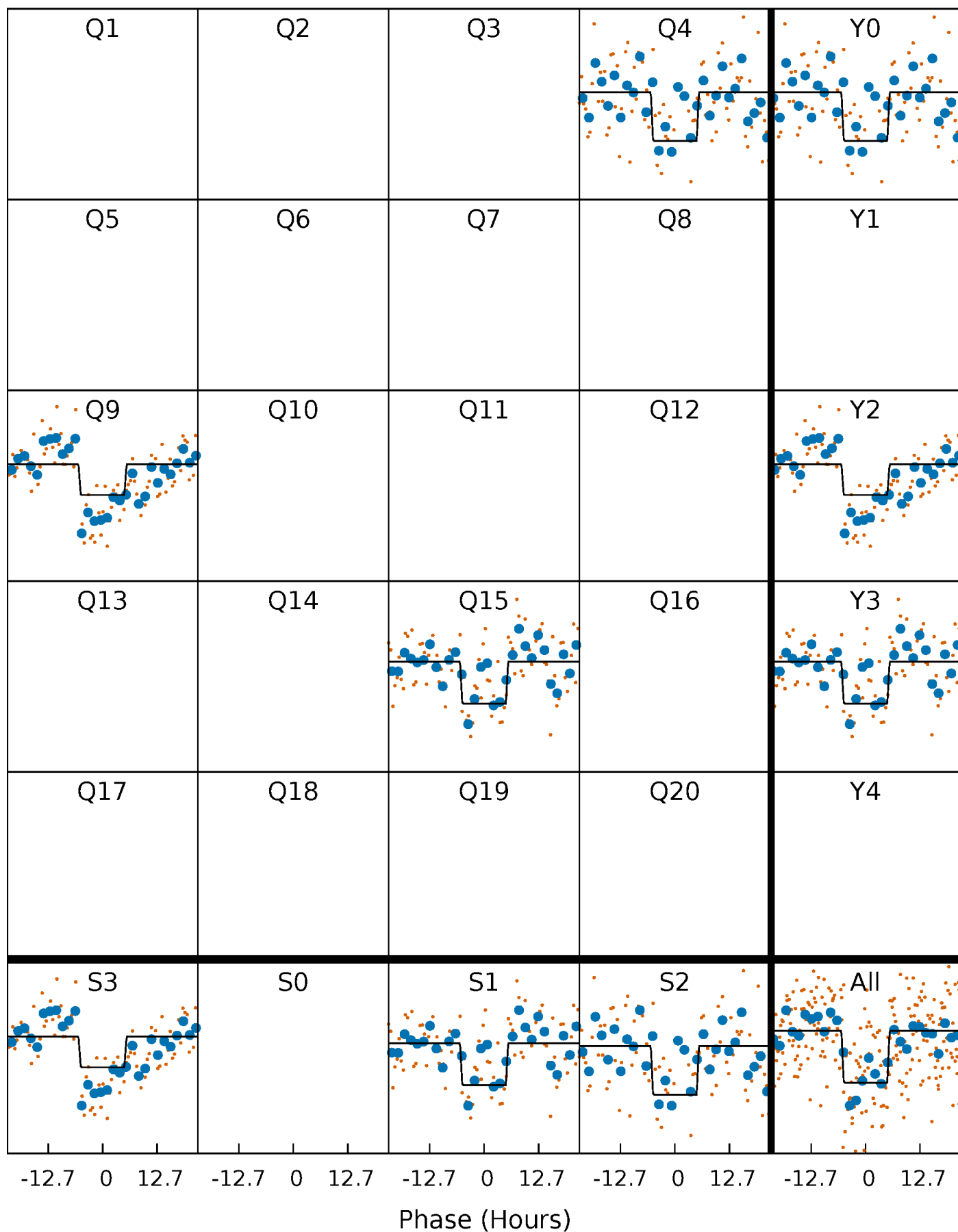
DV Quarter-Phased Transit Curves

TCE 003545753-02 $P=492.316750$ Days $T_0=403.800945$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

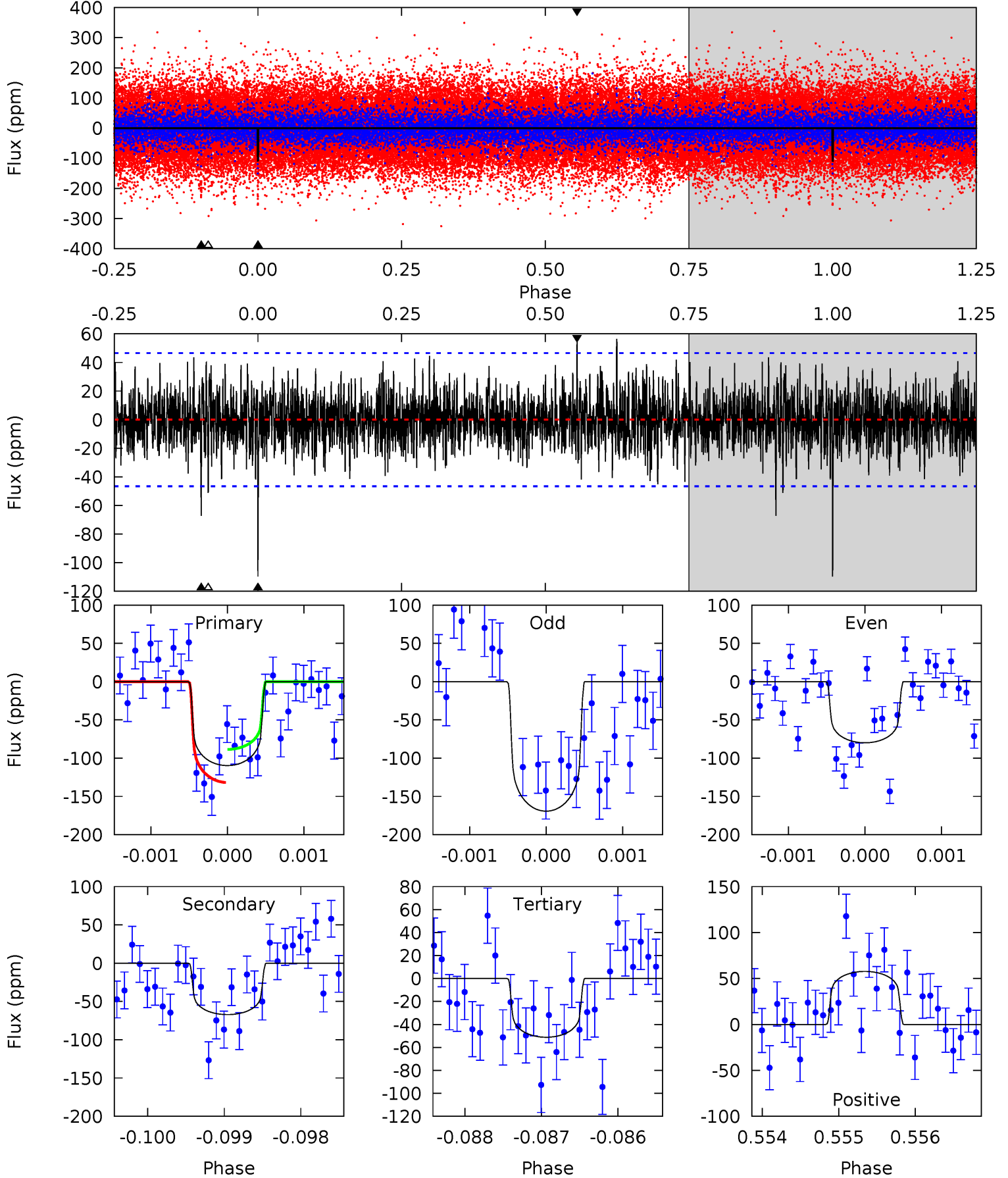
TCE 003545753-02 P=492.319383 Days $T_0=403.793800$ (BKJD)



DV Model-Shift Uniqueness Test

003545753-02, P = 492.316750 Days, E = 403.800945 Days

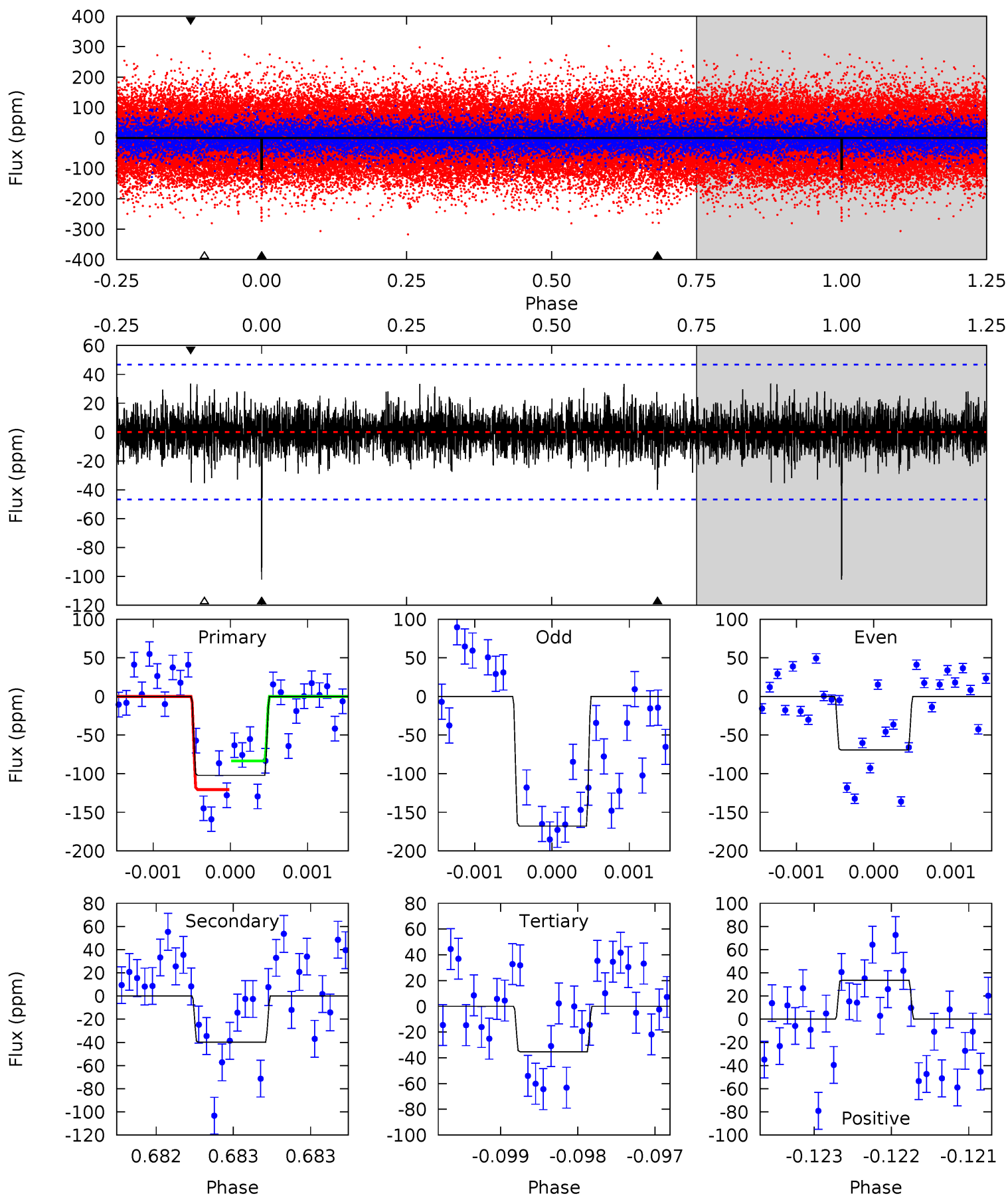
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	7.86	5.99	6.75	5.45	3.29	1.64	6.84	6.08	1.87	1.11	4.94	1.28	0.34	2.53



Alt Model-Shift Uniqueness Test

003545753-02, P = 492.319383 Days, E = 403.793800 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	4.67	4.12	3.93	5.46	3.30	1.07	7.82	8.01	0.55	0.74	5.45	1.28	0.25	2.17



Stellar Parameters For KIC 003545753

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5984^{+71}_{-89}	$3.809^{+0.018}_{-0.020}$	$-0.220^{+0.150}_{-0.150}$	$2.280^{+0.084}_{-0.102}$	$1.221^{+0.068}_{-0.076}$	$0.145^{+0.013}_{-0.010}$
	+1%/-1%	+0%/-1%	+68%/-68%	+4%/-4%	+6%/-6%	+9%/-7%
Source	SPE72	AST10	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003545753-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-67 ± 9	$2.96^{+0.67}_{-0.60}$	488^{+7}_{-8}	5043^{+559}_{-403}	7198^{+4376}_{-2444}
Alt.	-40 ± 9	$2.53^{+0.60}_{-0.60}$	488^{+8}_{-8}	4809^{+636}_{-408}	5757^{+4506}_{-2119}

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

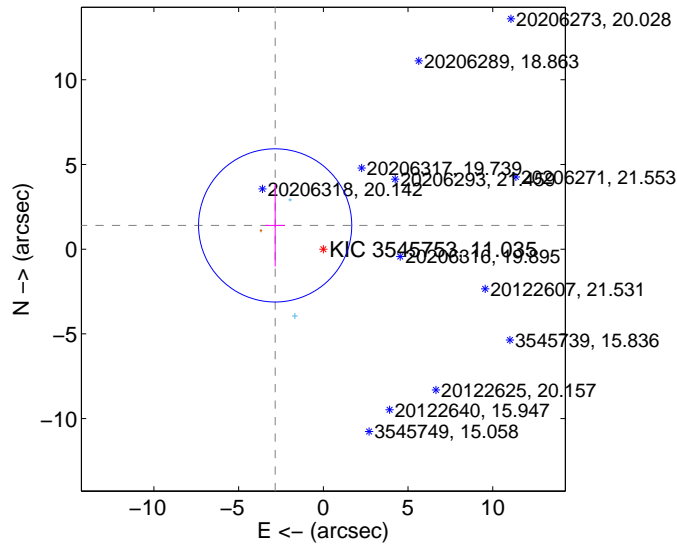
Supplemental centroid analysis for 003545753-02. **Kepler magnitude: 11.04.** Transit SNR 8.17

There are 2 quarters with good PRF difference image offsets

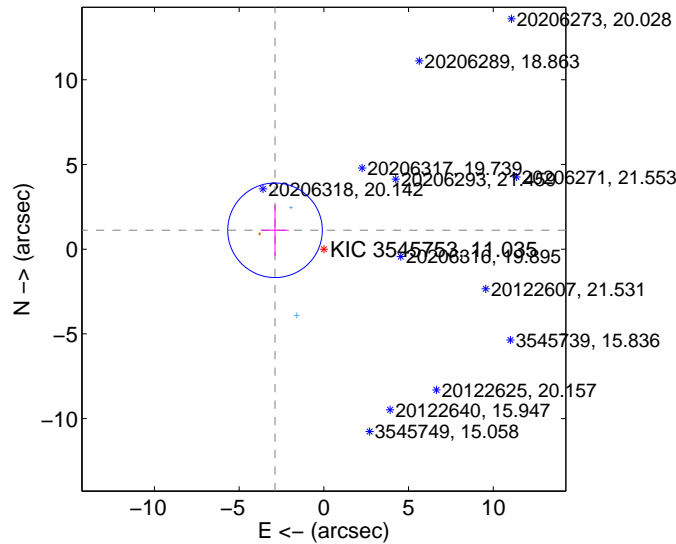
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.172 ± 1.507	2.10	2.845 ± 0.575	1.403 ± 2.429
PRF-fit source offset from KIC position	3.091 ± 0.930	3.32	2.883 ± 0.810	1.116 ± 1.506
photometric centroid source offset	3.47 ± 2.81	1.24	1.39 ± 1.43	-3.18 ± 3.00

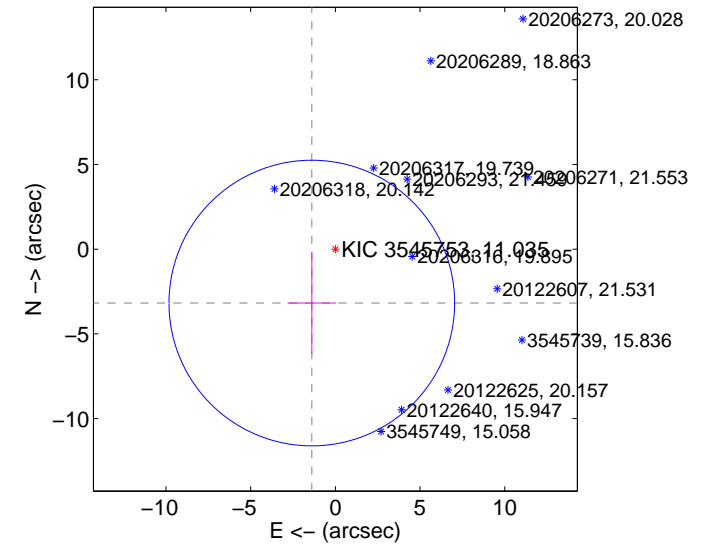
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

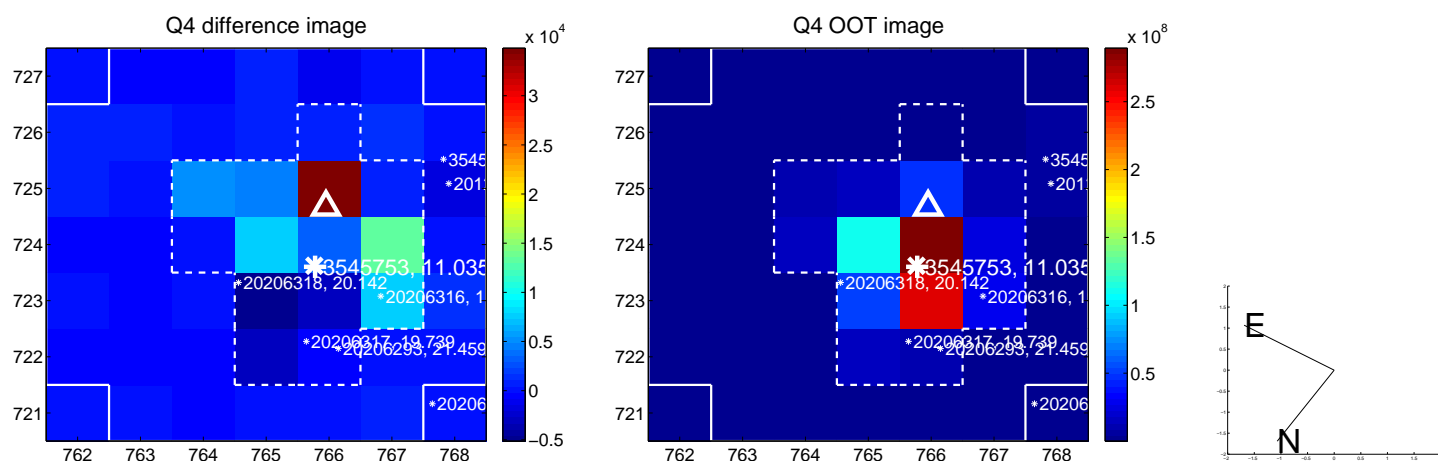
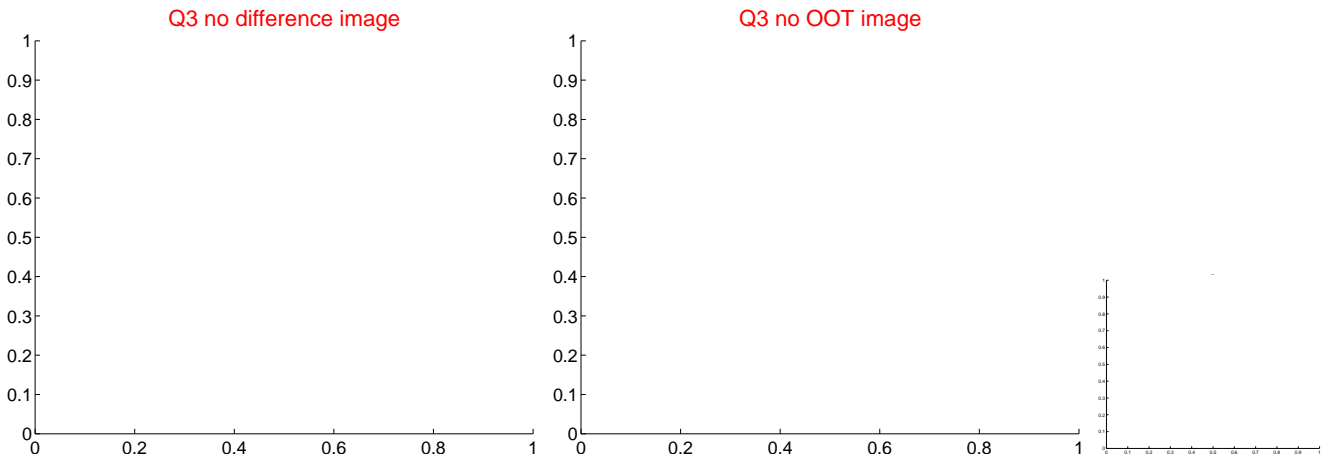
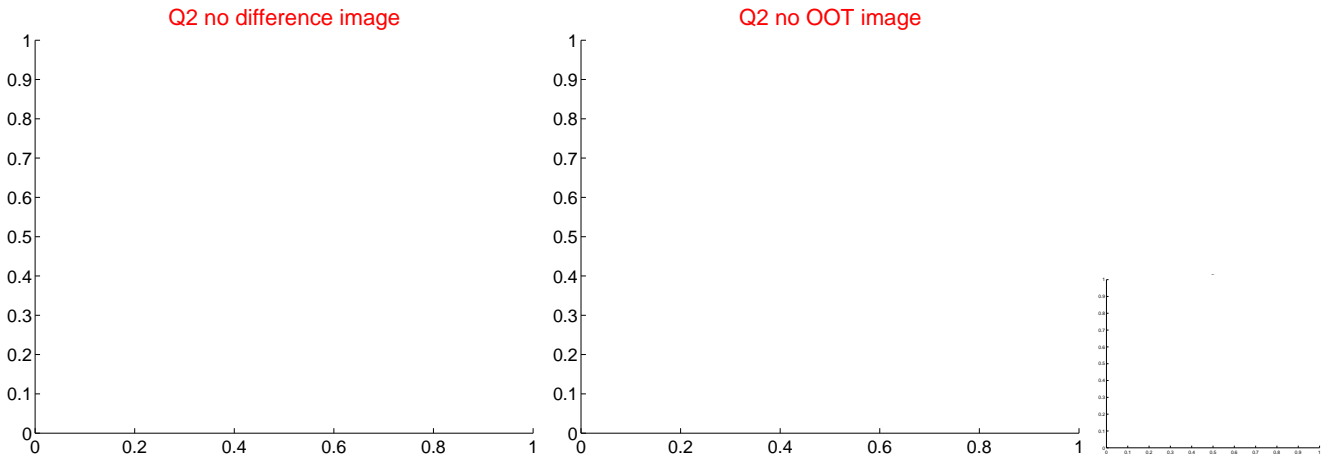
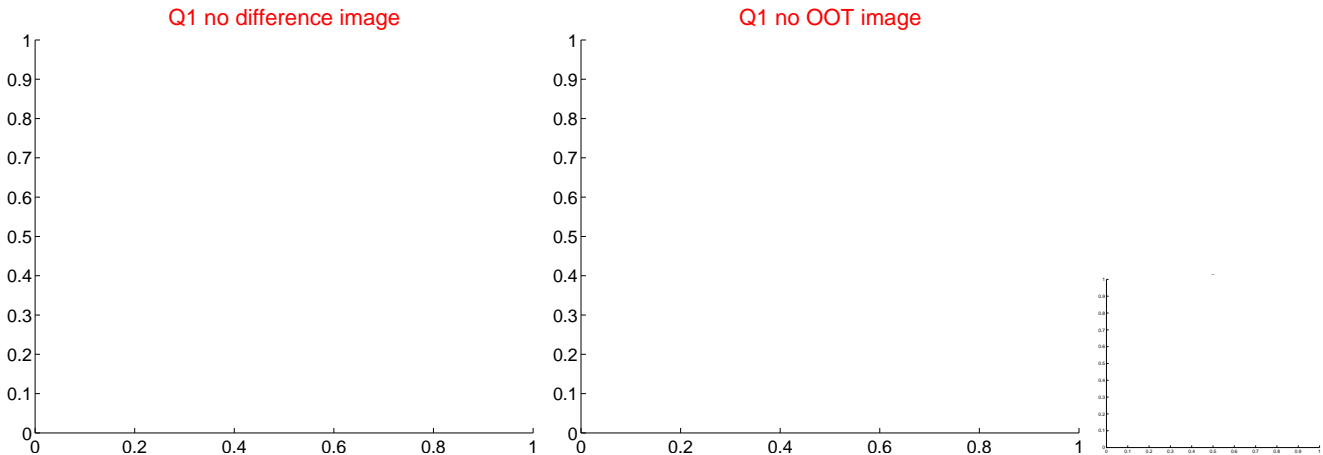


offset from photometric centroids

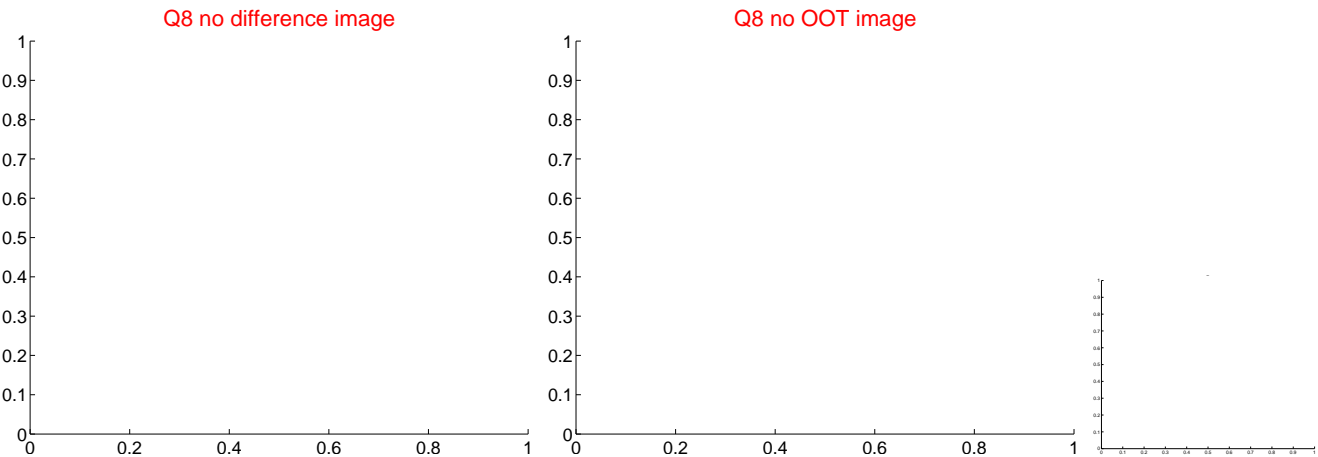
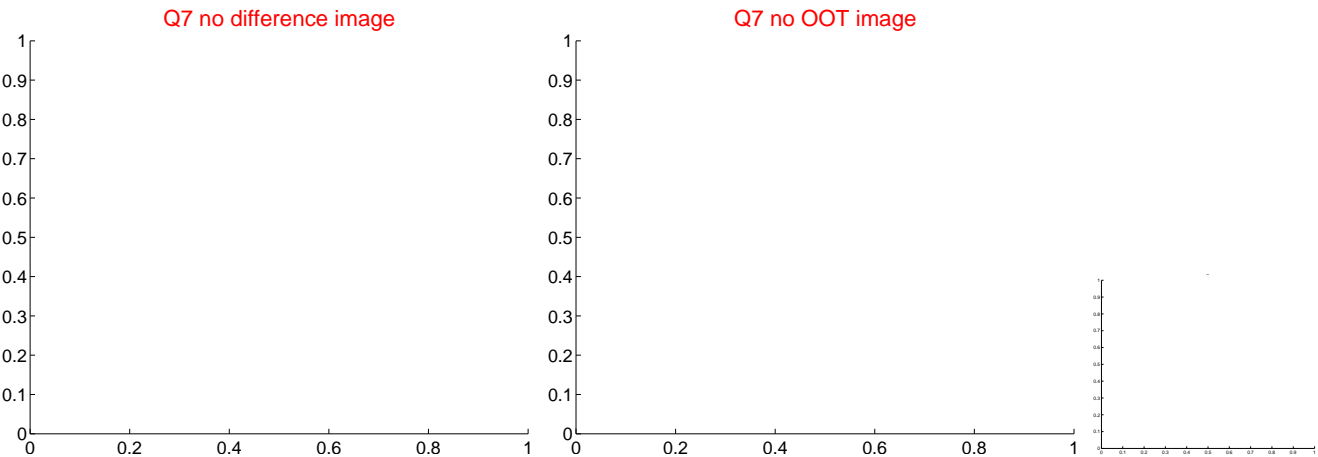
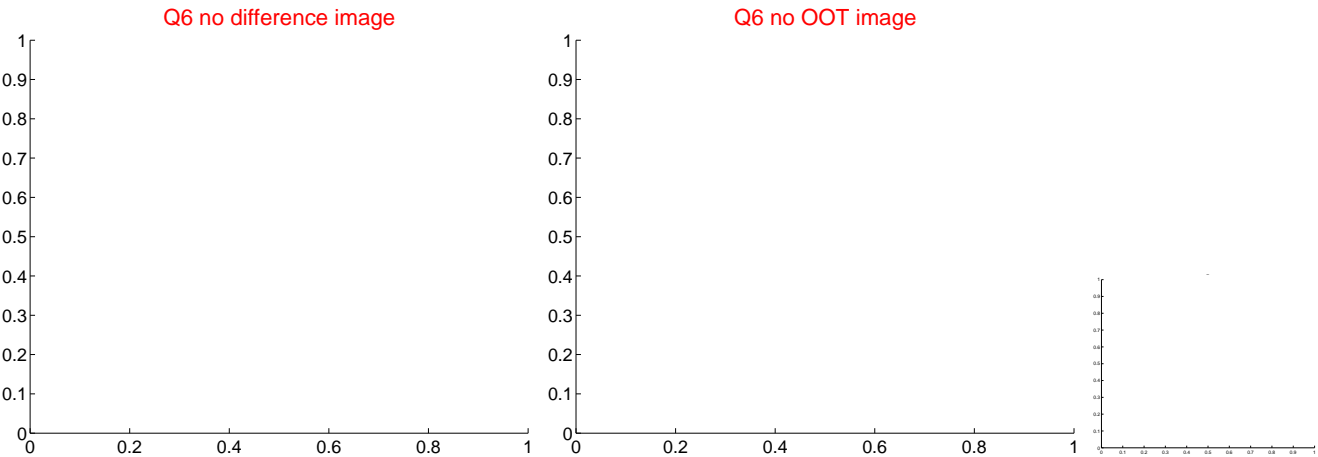
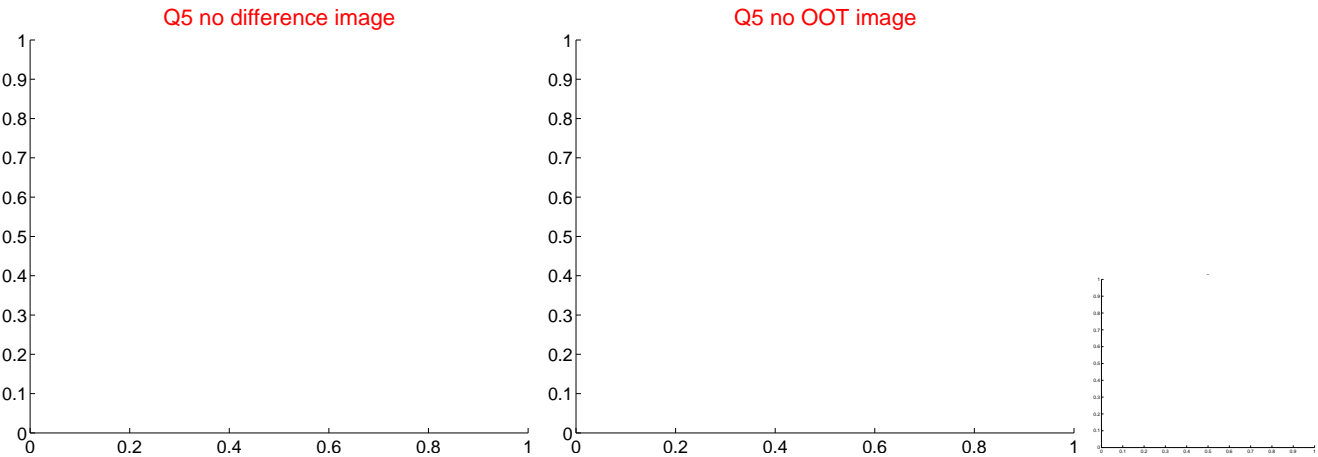


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

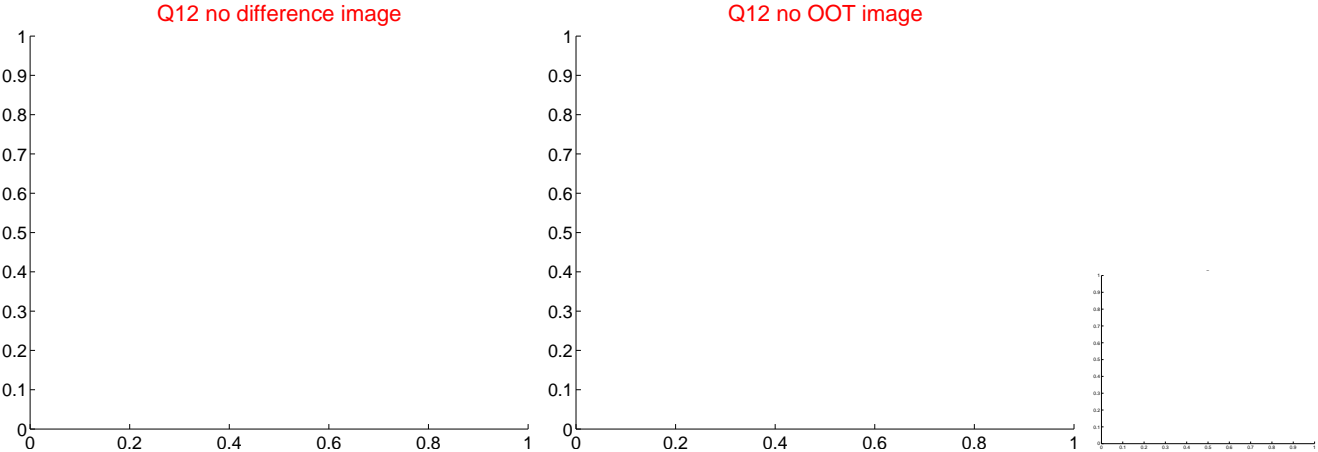
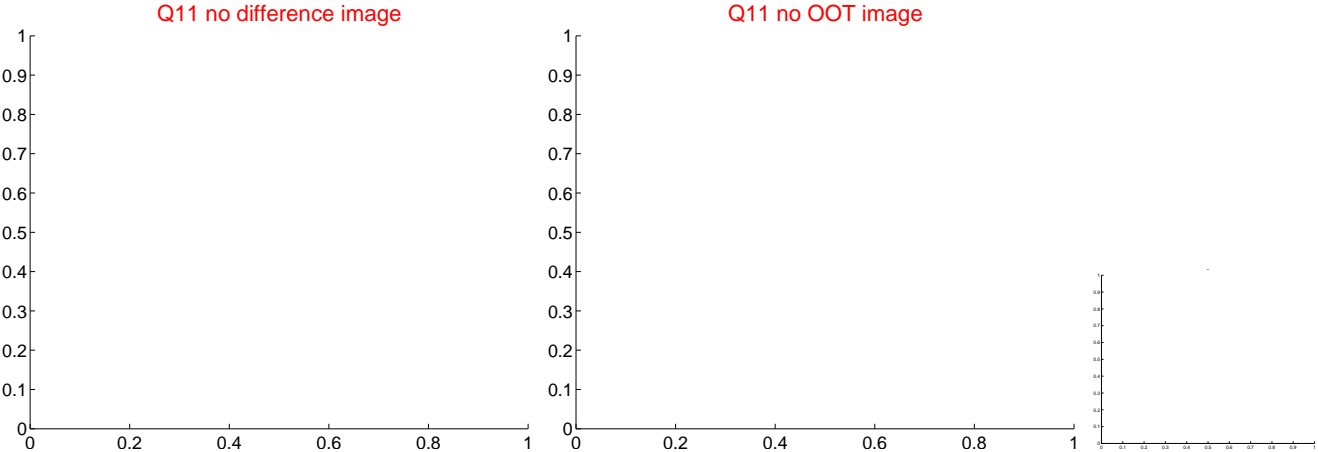
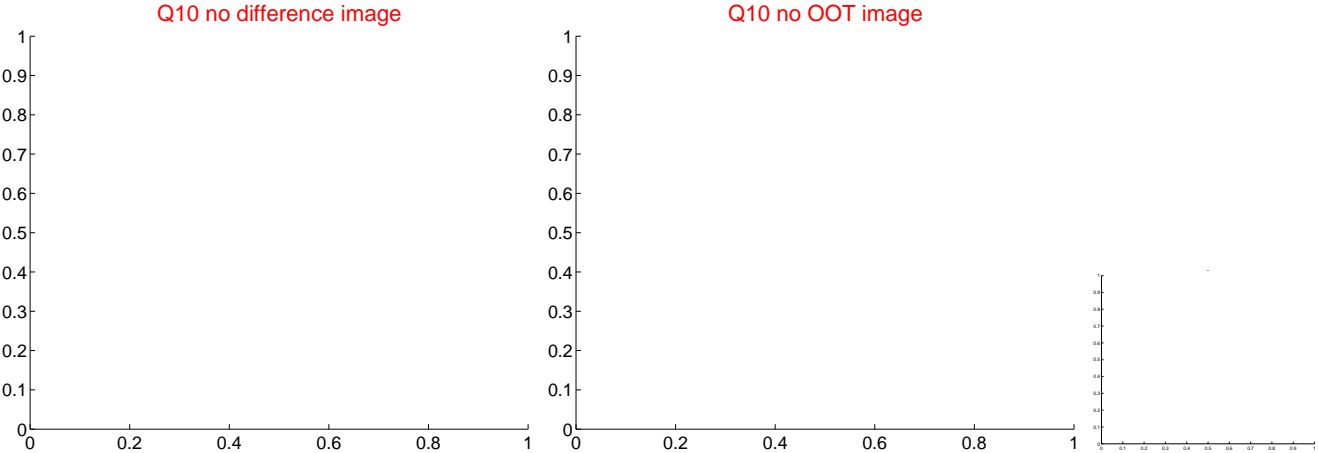
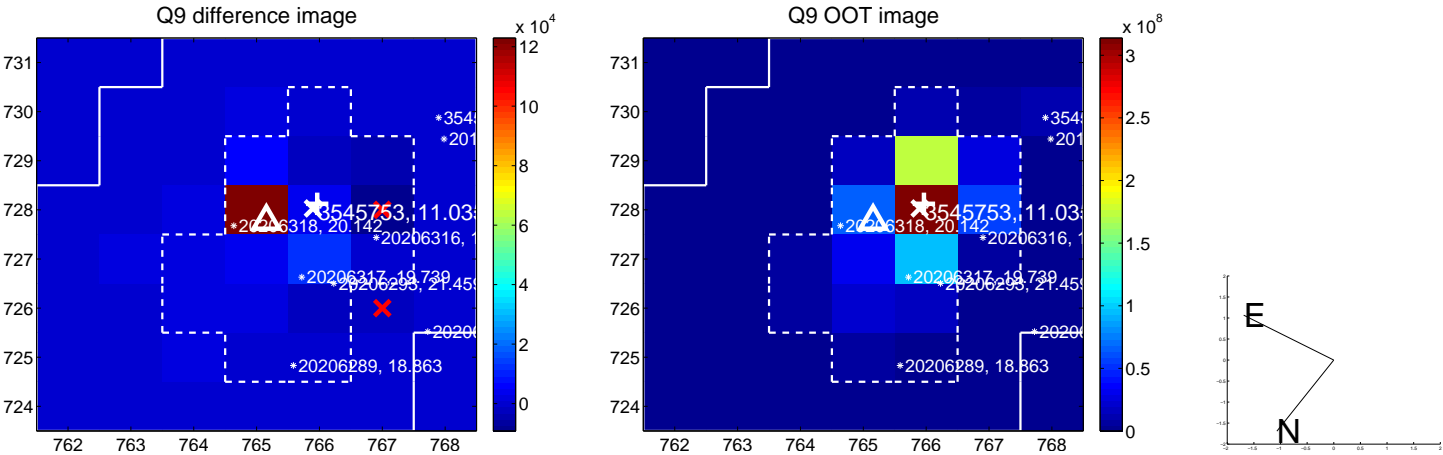
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



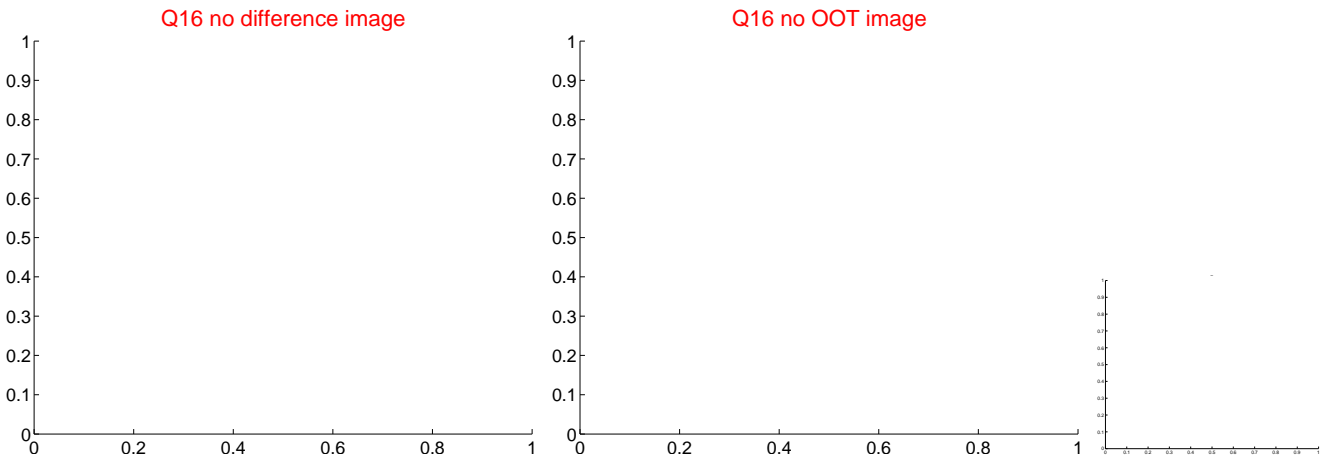
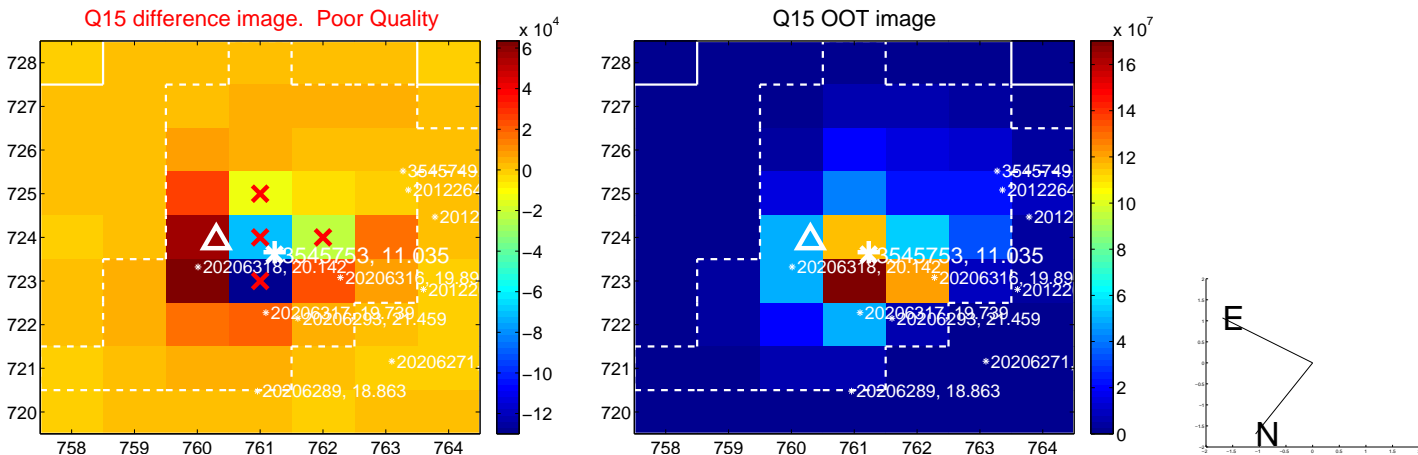
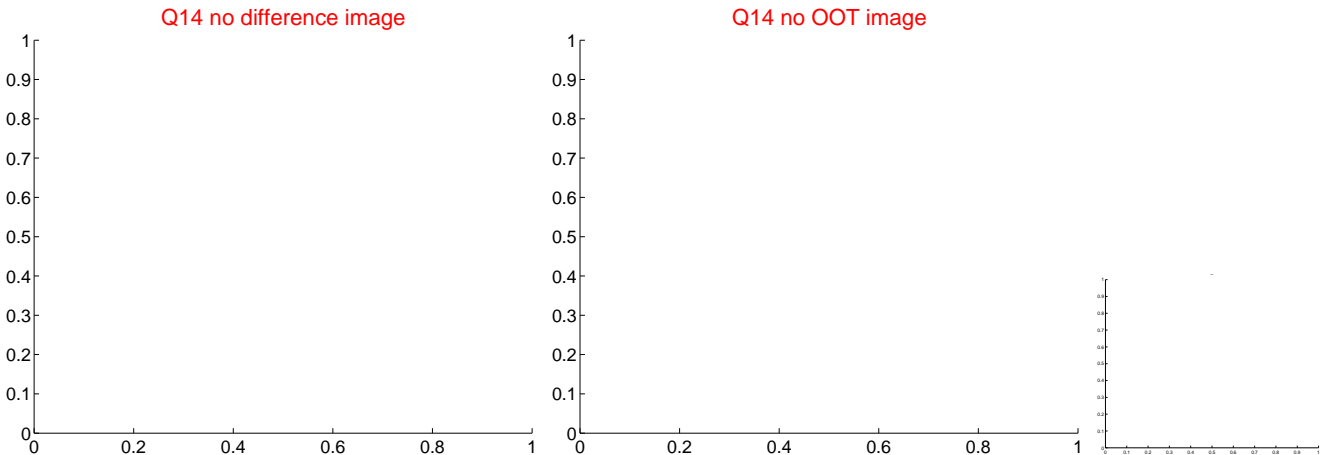
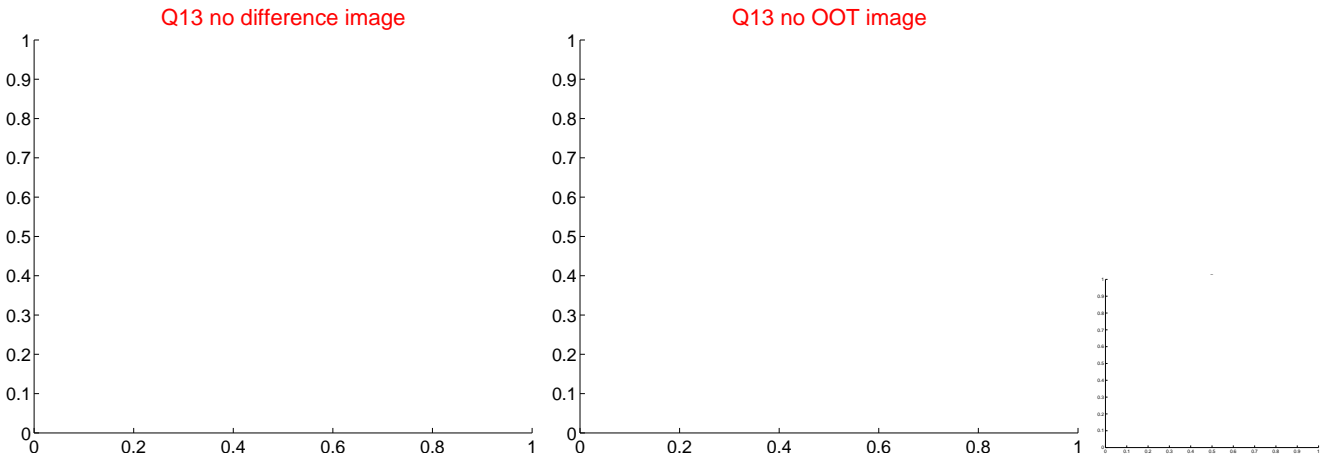
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



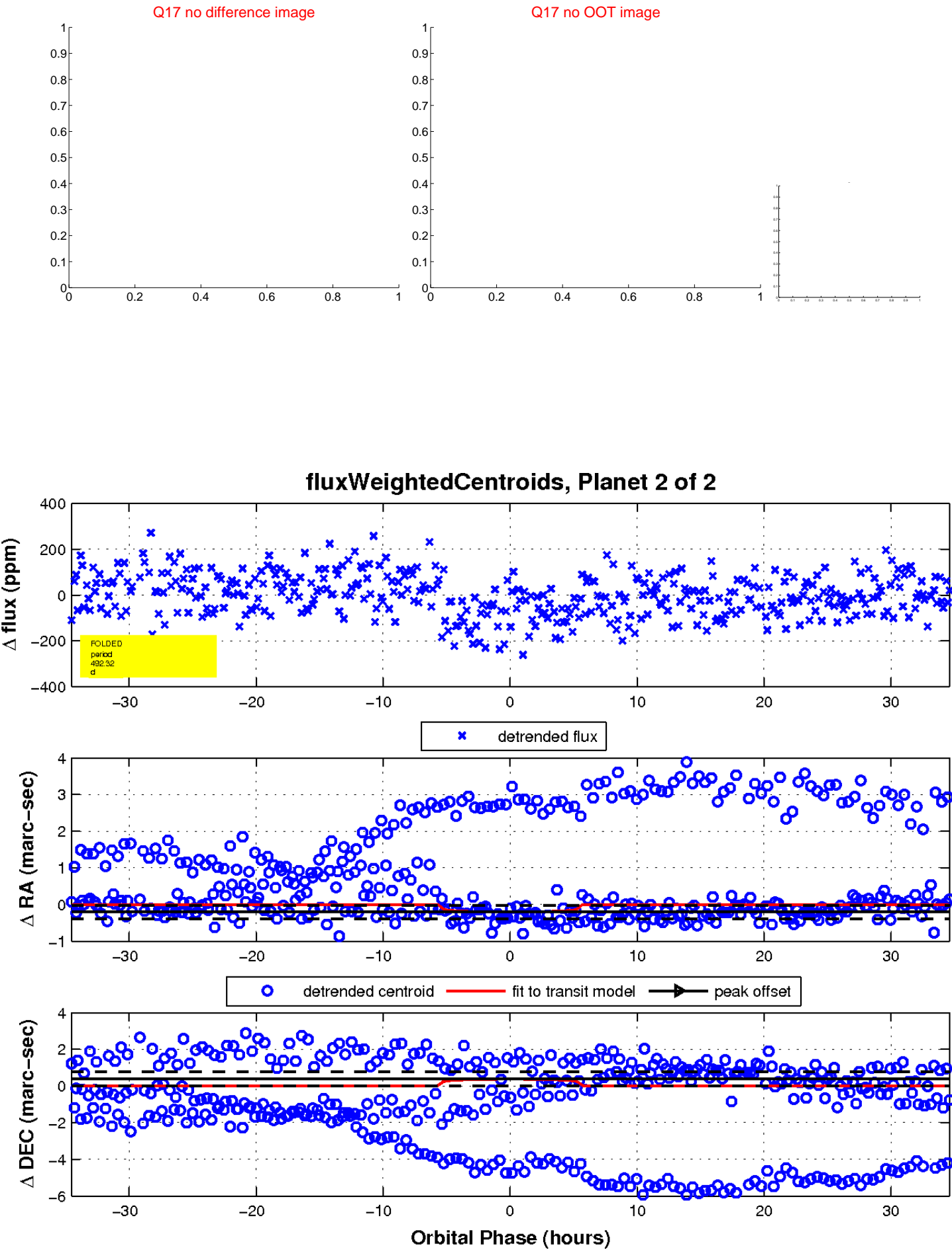
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

