

KIC 010748393

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})
010748393-01	OBS	1289.01	4.887811	134.587605	5326.6	2.724	138.0	129.4	0.81	5284	7.02	167.87
010748393-02	OBS	1289.02	386.399360	365.862782	2143.9	3.083	7.7	6.6	0.81	5284	4.16	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010748393-01	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—CENT_UNCERTAIN—EPHEM_MATCH
010748393-02	OBS	FP	0.00	1	0	0	0	MOD_POS_DV—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.

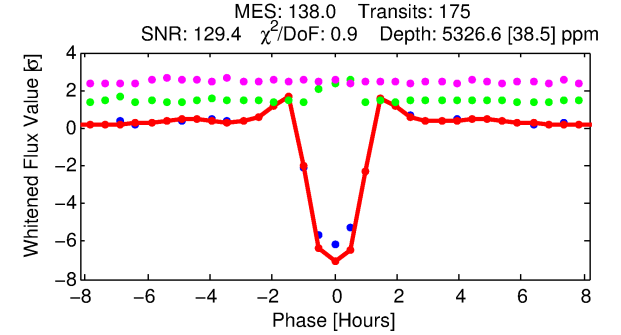
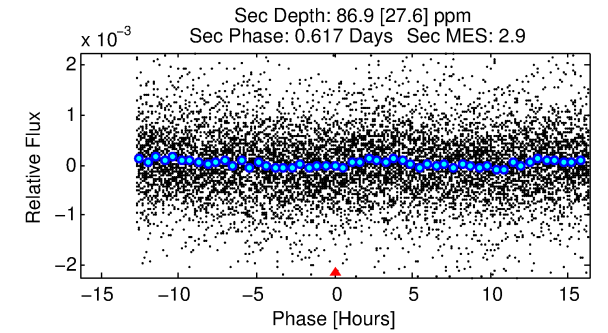
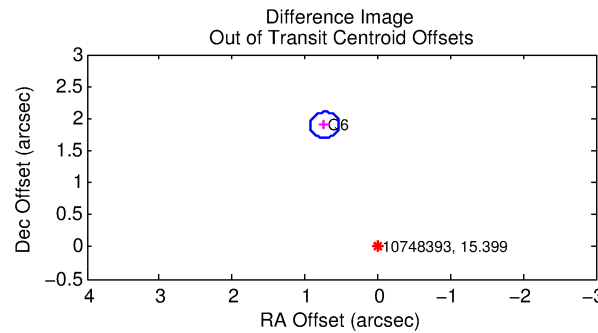
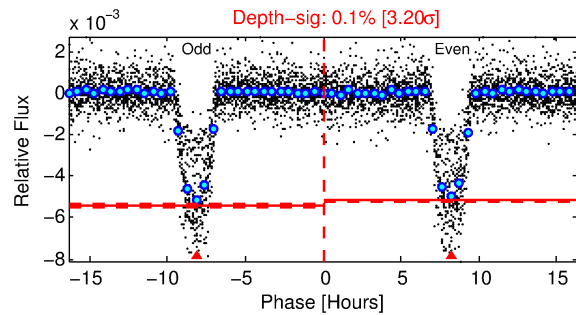
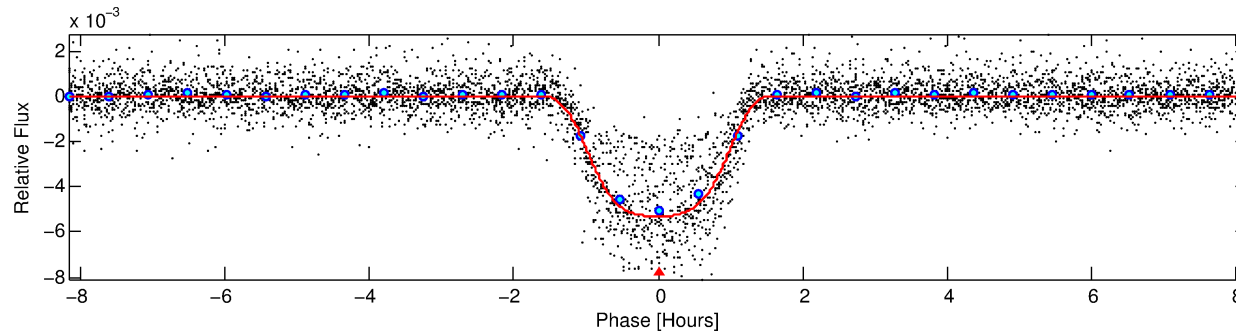
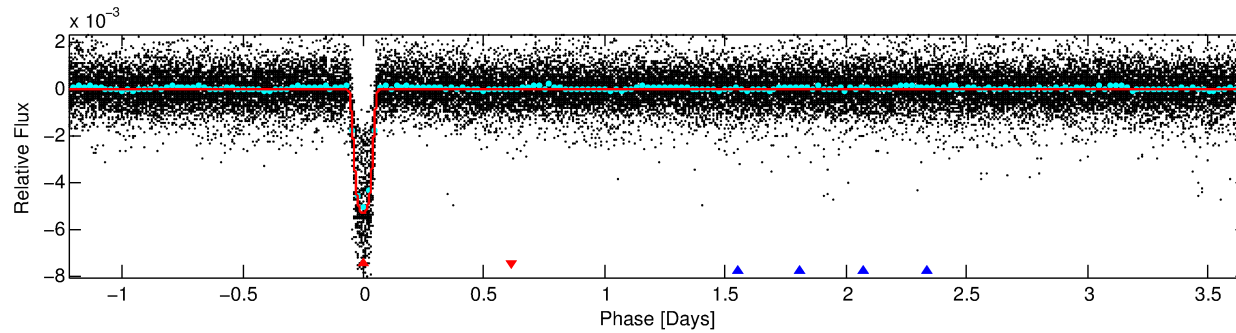
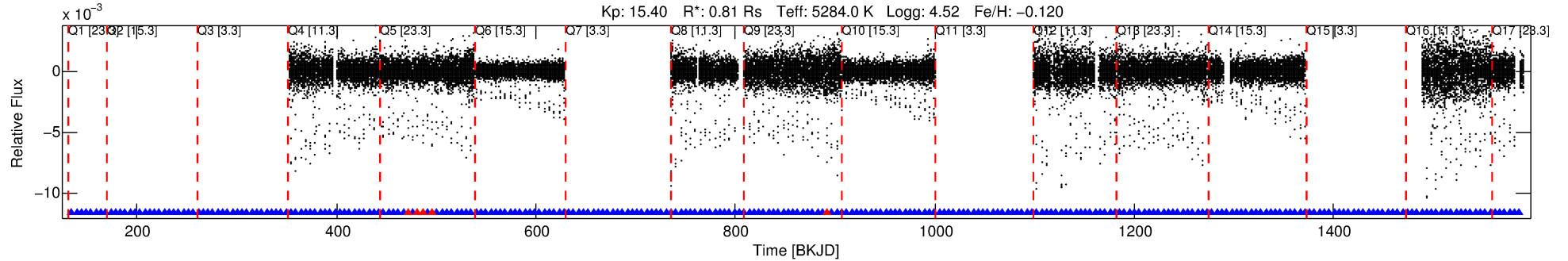
Ephemeris Match Information For 010748393-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010748393-01	10748393	010748390-01	10748390	1:1	11.0	-2	-2	9.17	15.39	1.46	Direct-PRF	0	0.09	0.05

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10748393 Candidate: 1 of 2 Period: 4.888 d
KOI: K01289.01 Corr: 0.942



DV Fit Results:

Period = 4.88781 [0.00000] d
Epoch = 134.5876 [0.0003] BKJD
Rp/R* = 0.0792 [0.0006]
a/R* = 8.70 [0.18]
b = 0.88 [0.01]
Seff = 167.87 [39.74]
Teq = 918 [54] K
Rp = 7.02 [1.15] Re
a = 0.0524 [0.0070] AU
Ag = 2.66 [0.99] [1.68 σ]
Teffp = 1813 [158] K [5.37 σ]

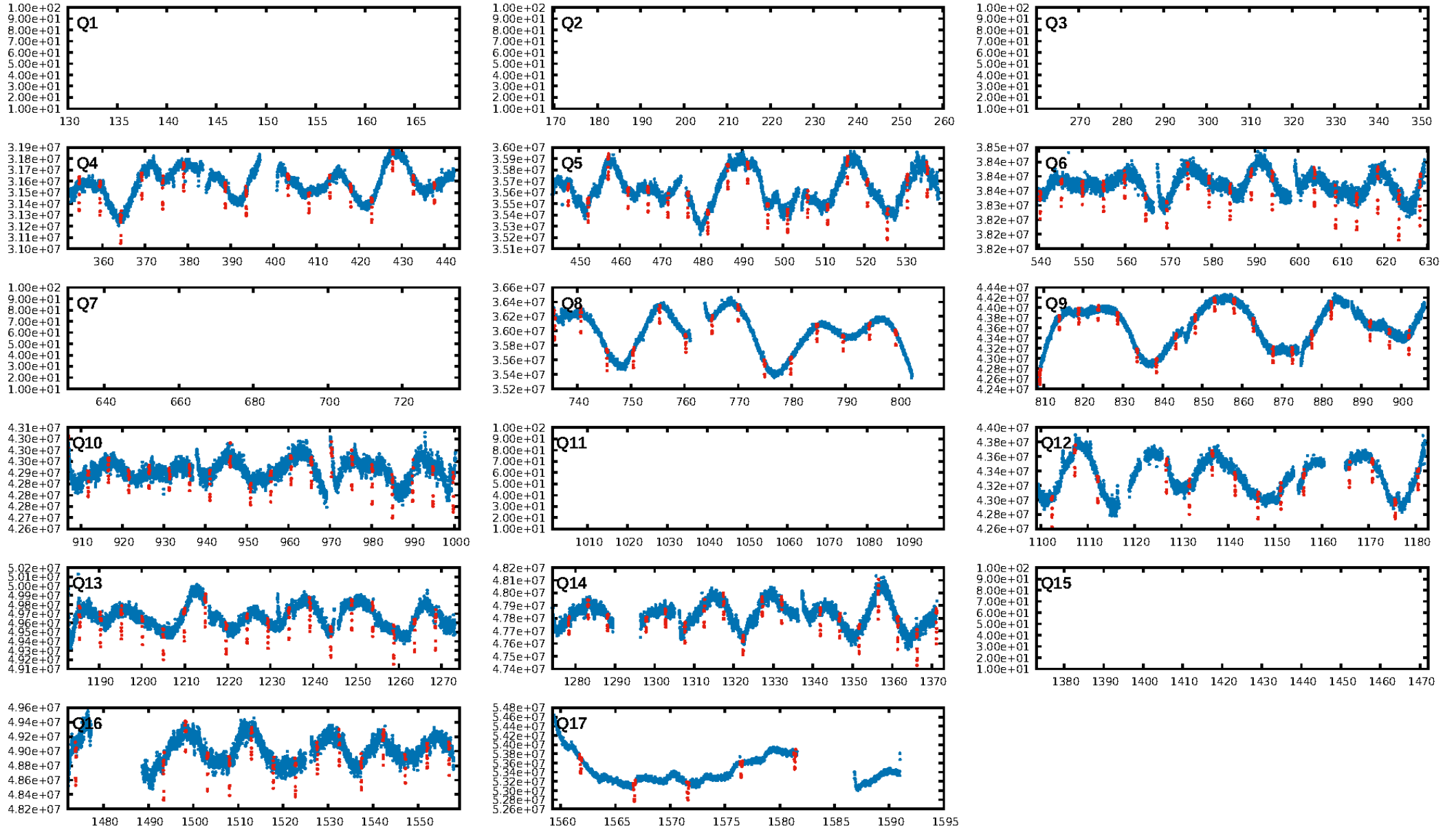
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [2225.50 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [165/170]
GhostDiagnostic-chr: -0.3369
Centroid-sig: 0.0%
Centroid-so: 3.026 arcsec [571.04 σ]
OotOffset-rm: 2.037 arcsec [30.49 σ]
KicOffset-rm: 4.731 arcsec [3.48 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [11/11]

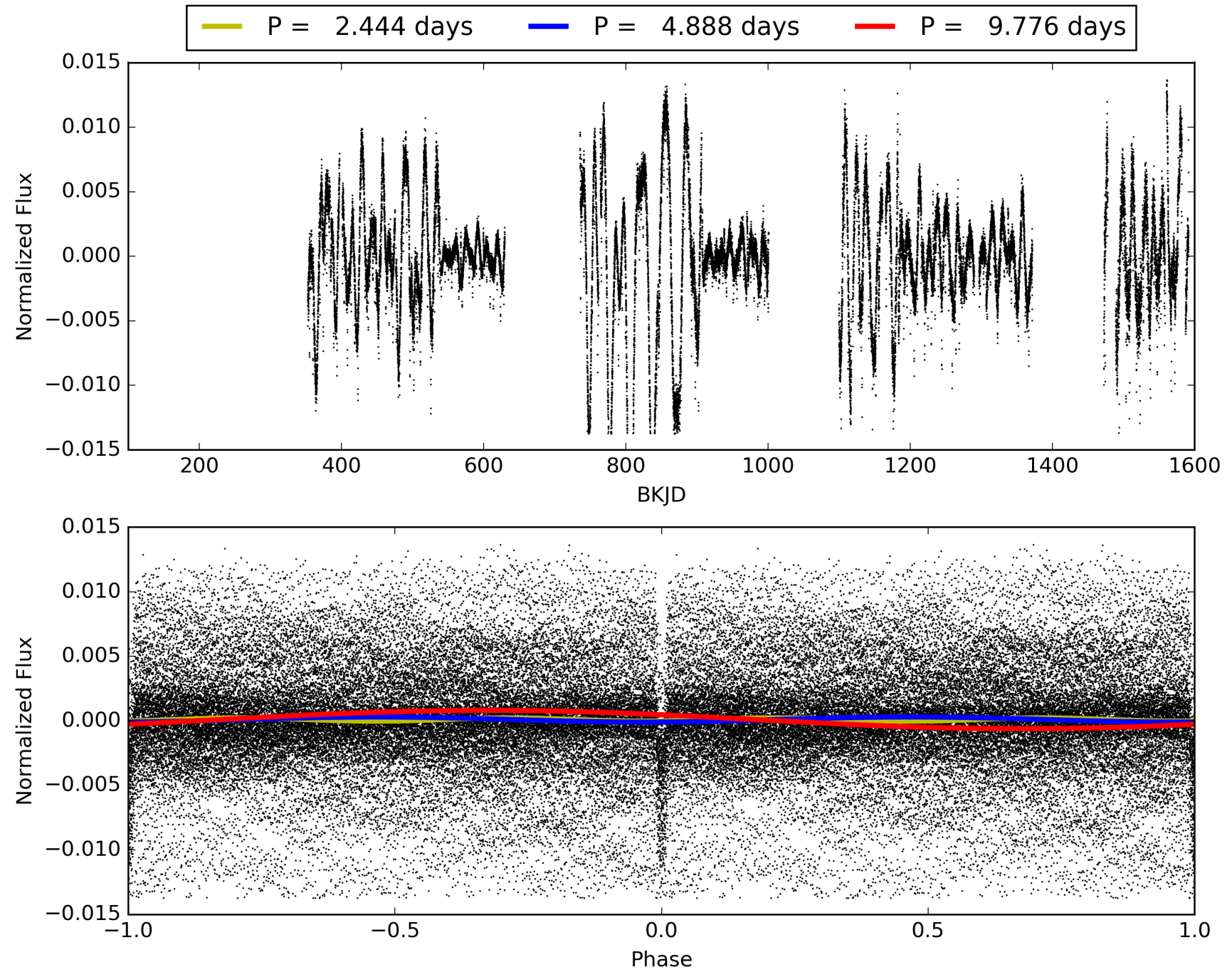
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:48:00 Z

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

TCE 010748393-01, PDC Light Curves

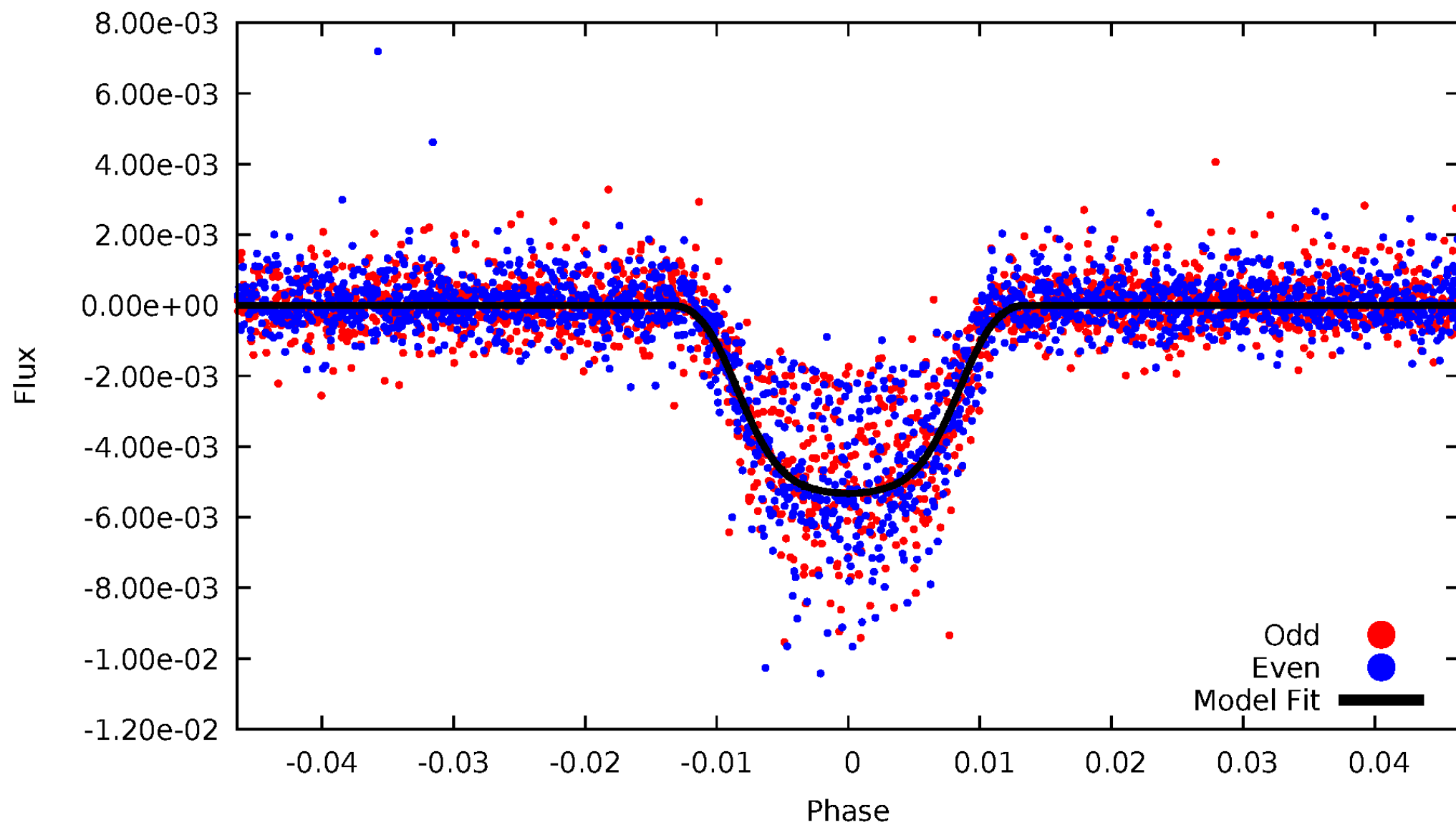


TCE 010748393-01



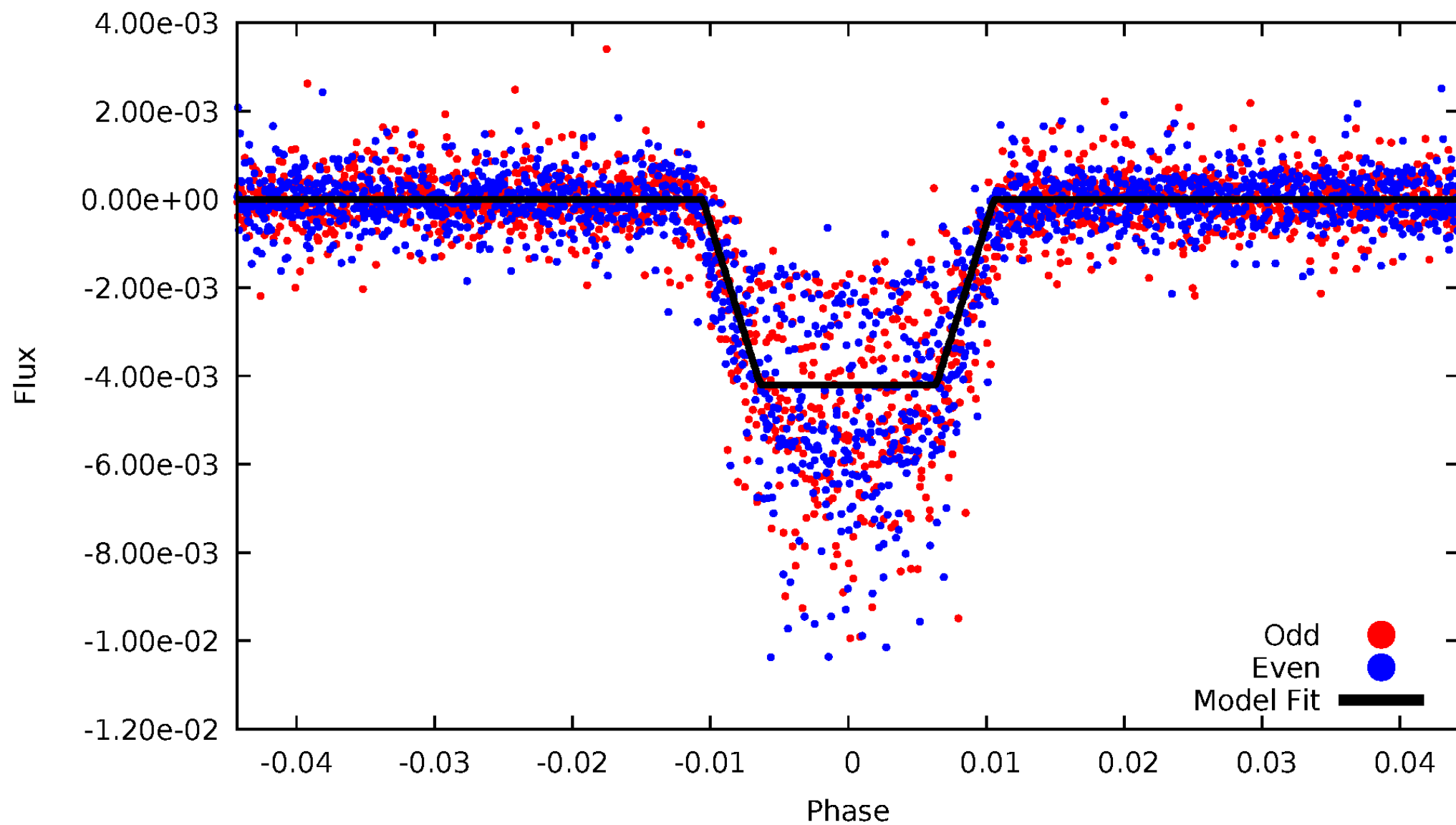
DV Odd/Even

TCE 010748393-01



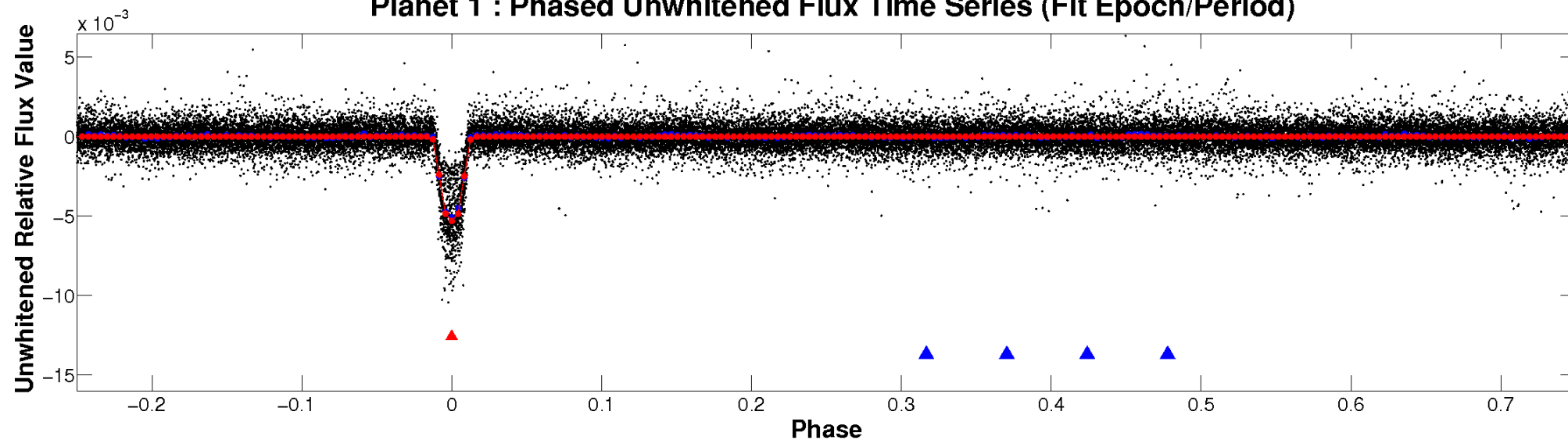
ALT Odd/Even

TCE 010748393-01

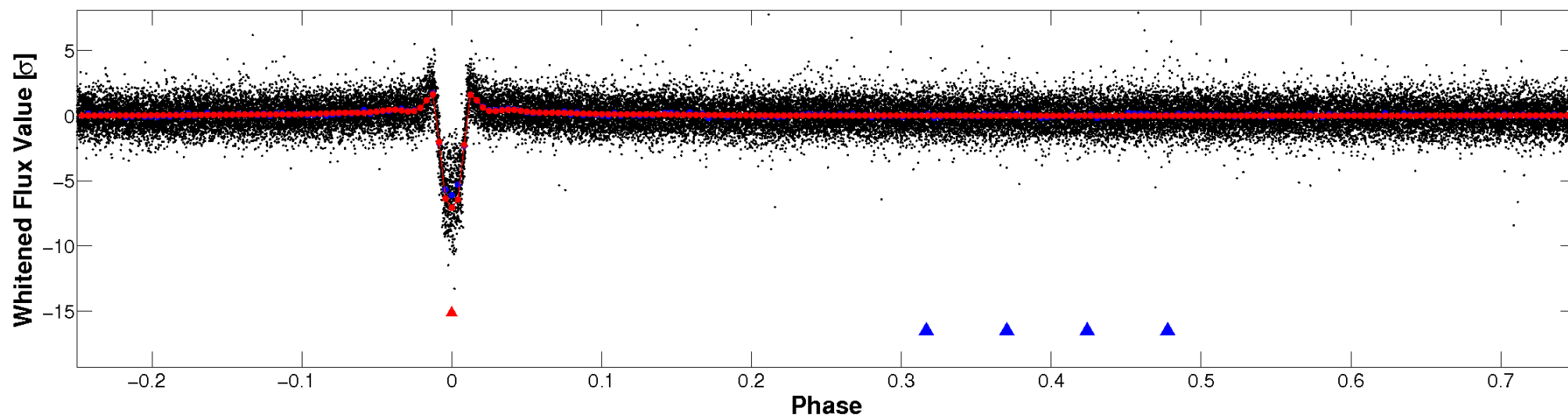


Non-Whitened Vs. Whitened Light Curve

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

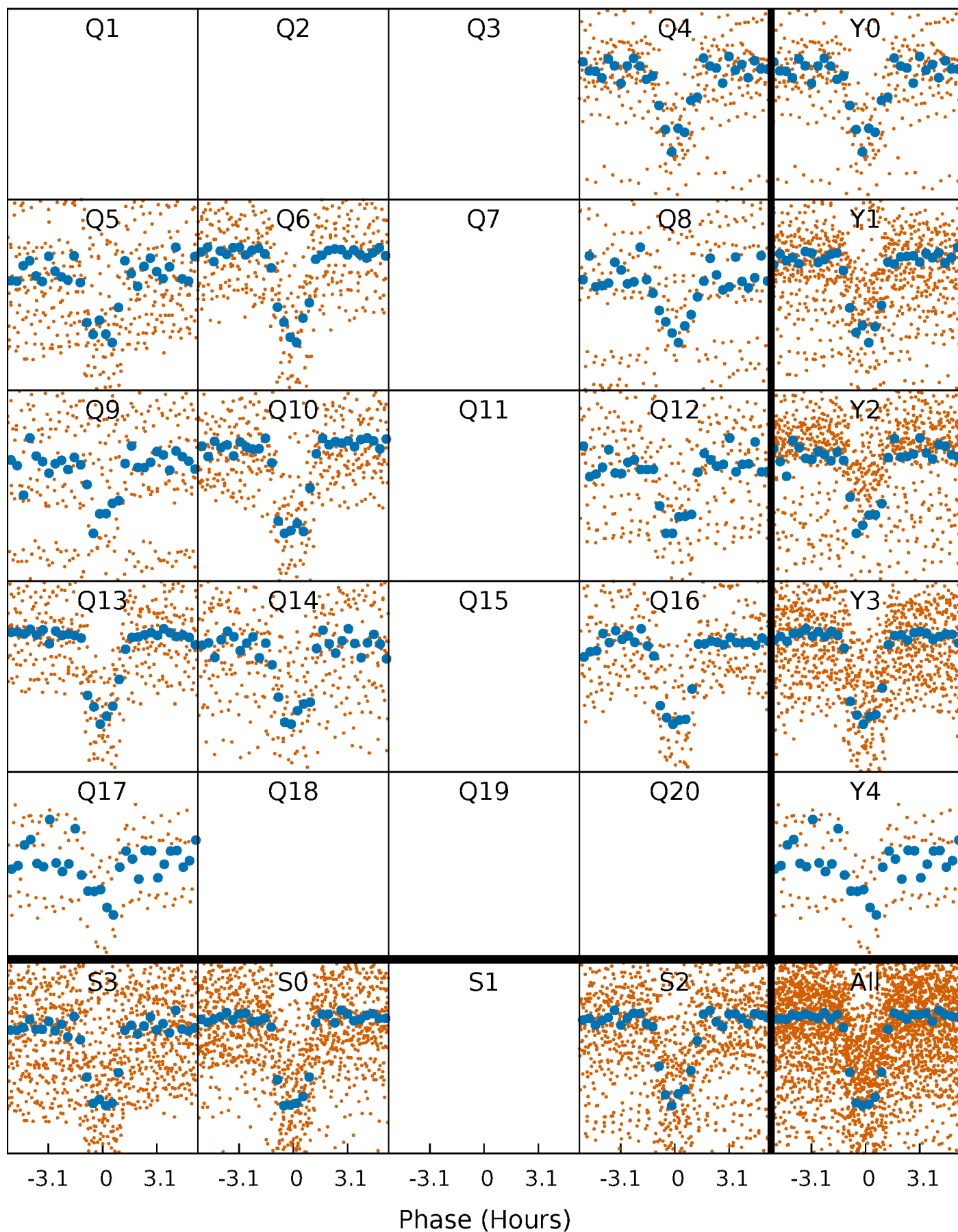


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



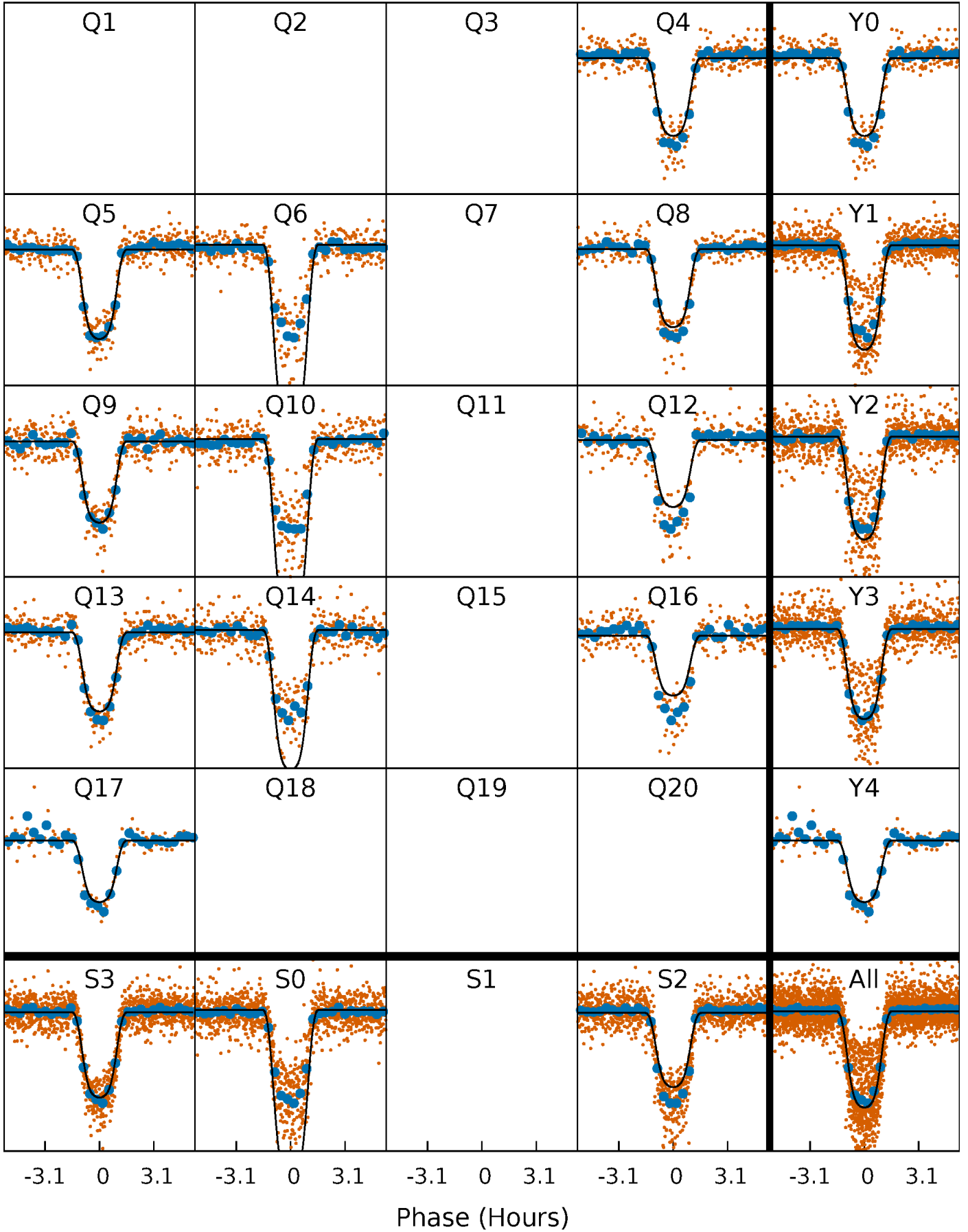
PDC Quarter-Phased Transit Curves

TCE 010748393-01 P= 4.887811 Days $T_0=134.587605$ (BKJD)



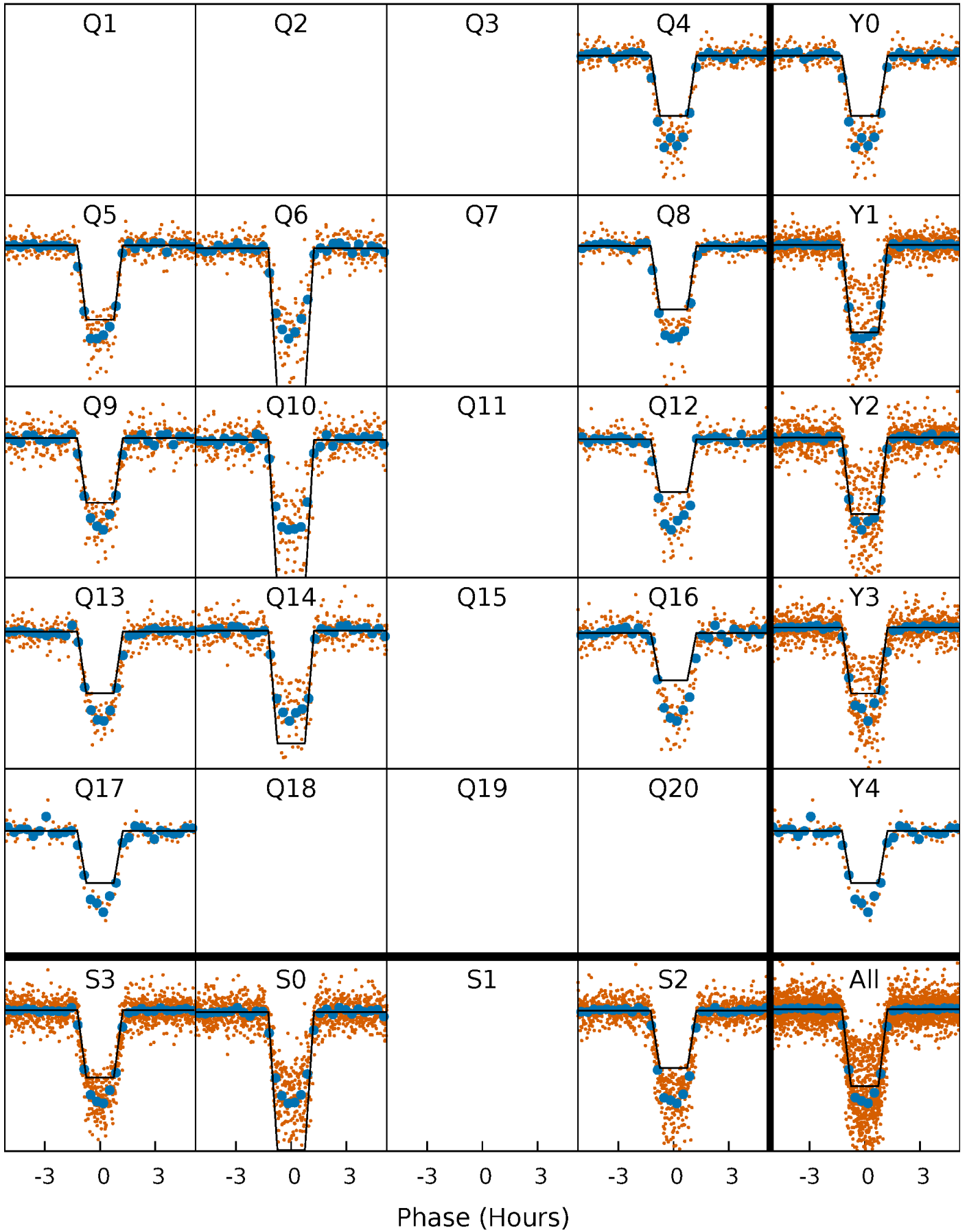
DV Quarter-Phased Transit Curves

TCE 010748393-01 P= 4.887811 Days $T_0=134.587605$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

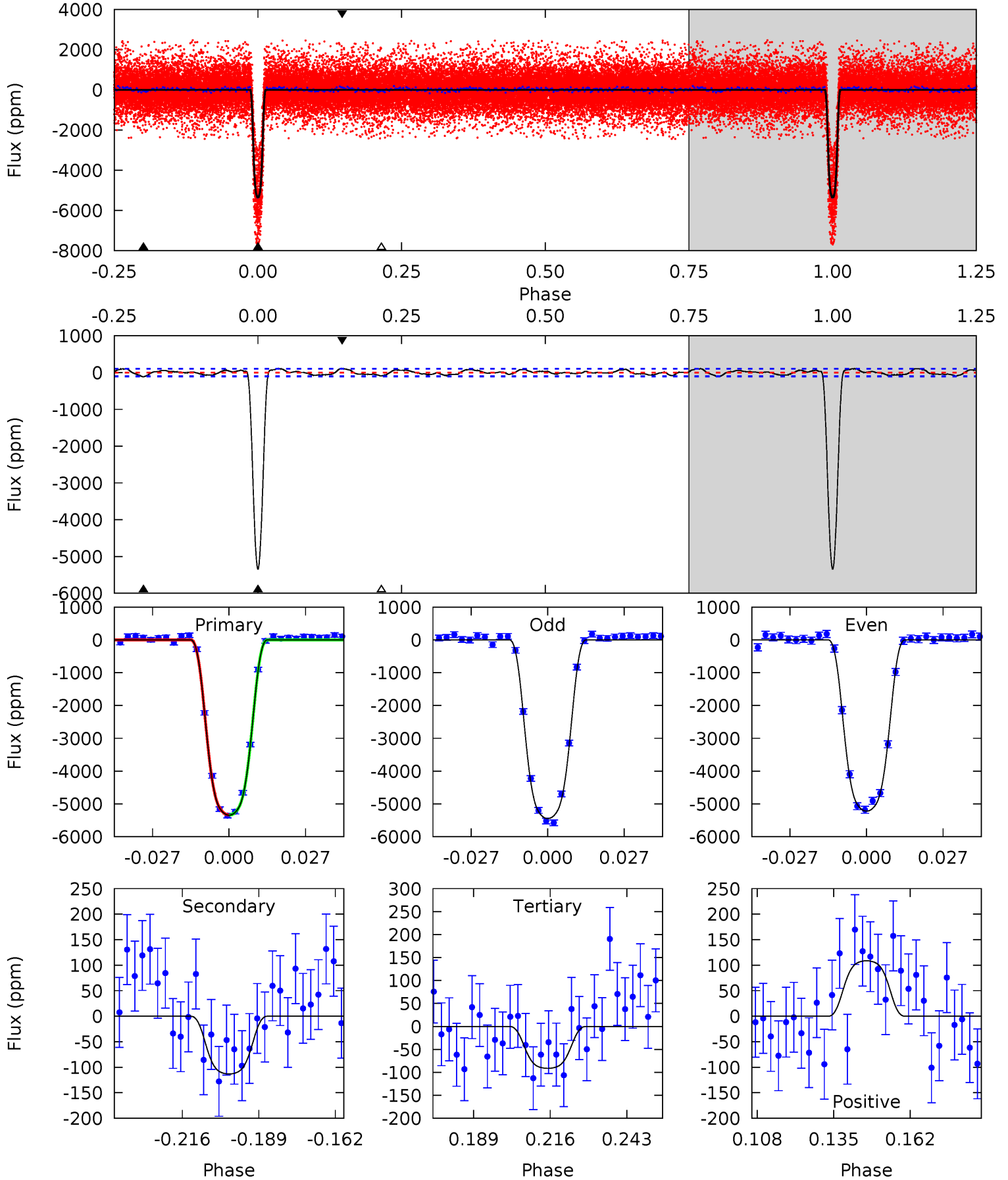
TCE 010748393-01 P= 4.887787 Days $T_0=134.591027$ (BKJD)



DV Model-Shift Uniqueness Test

010748393-01, P = 4.887811 Days, E = 134.587605 Days

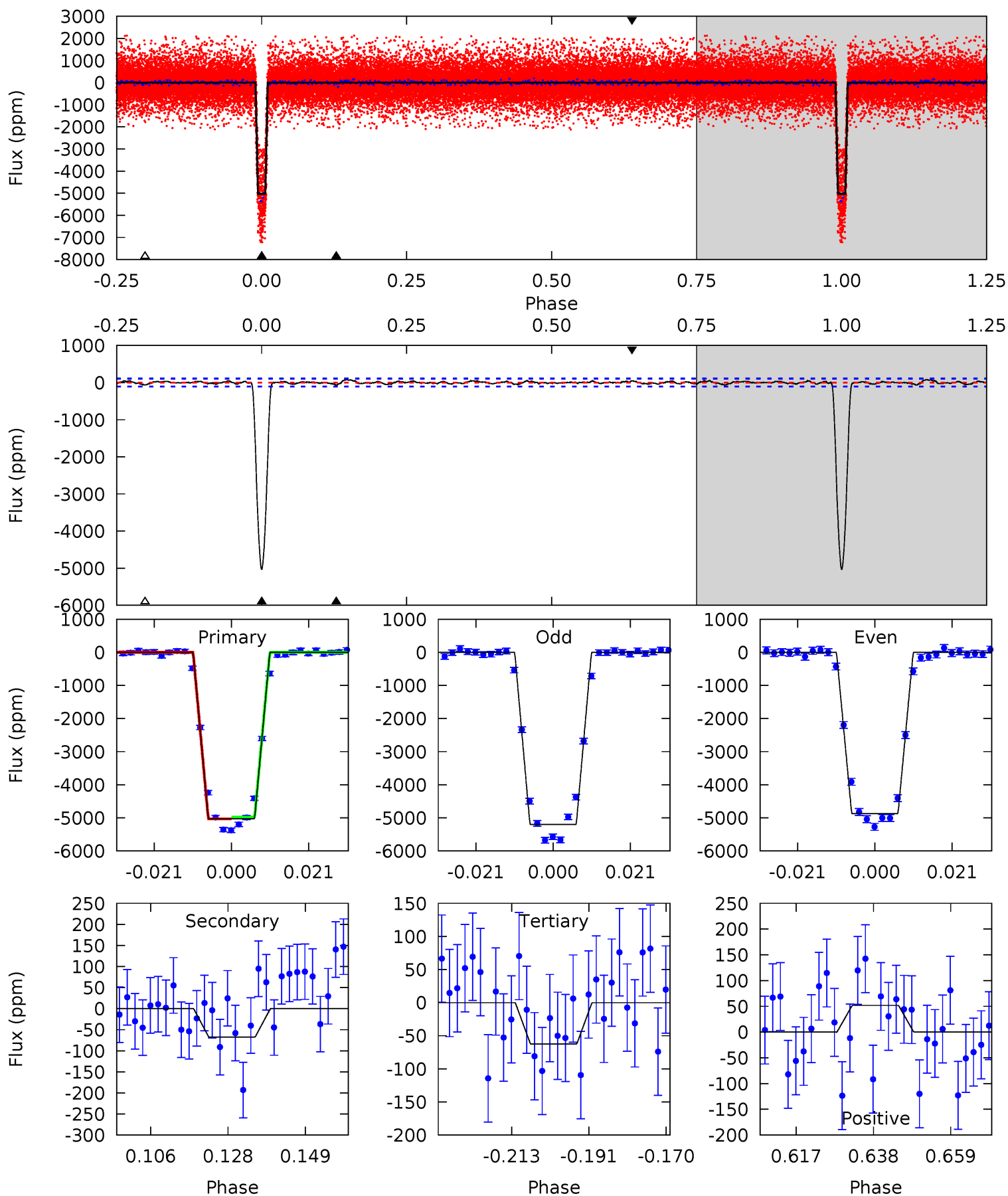
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
252.7	5.35	4.31	5.14	4.83	2.21	2.26	248.4	247.6	1.04	0.21	5.33	0.95	0.02	0.12



Alt Model-Shift Uniqueness Test

010748393-01, P = 4.887787 Days, E = 134.591027 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
229.2	3.08	2.85	2.36	4.88	2.30	1.07	226.4	226.9	0.23	0.72	7.44	0.94	0.02	1.13



Stellar Parameters For KIC 010748393

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5284^{+185}_{-185}	$4.523^{+0.076}_{-0.102}$	$-0.120^{+0.300}_{-0.300}$	$0.812^{+0.133}_{-0.082}$	$0.804^{+0.096}_{-0.070}$	$2.113^{+0.619}_{-0.628}$
	+4%/-4%	+2%/-2%	+250%/-250%	+16%/-10%	+12%/-9%	+29%/-30%
Source	KIC0	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 010748393-01 / KOI 1289.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-113 ± 21	$7.04^{+0.62}_{-0.43}$	1285^{+65}_{-63}	2668^{+83}_{-94}	$3.400^{+0.906}_{-0.683}$
Alt.	-68 ± 22	$5.75^{+0.53}_{-0.34}$	1286^{+69}_{-64}	2619^{+128}_{-140}	$3.020^{+1.025}_{-0.981}$

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

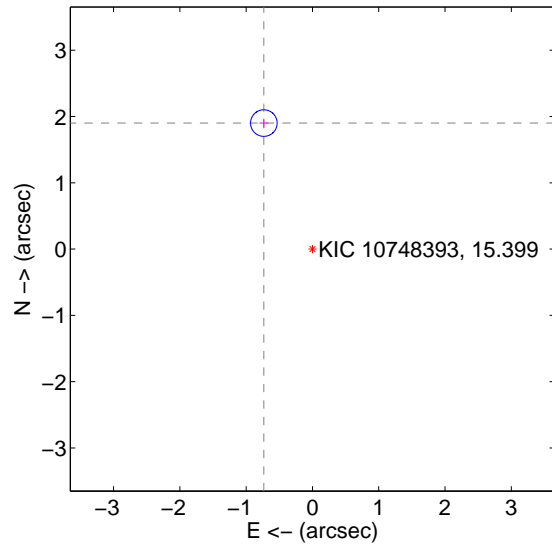
Supplemental centroid analysis for 010748393-01. Kepler magnitude: 15.40. Transit SNR 129.44

There are 1 quarters with good PRF difference image offsets

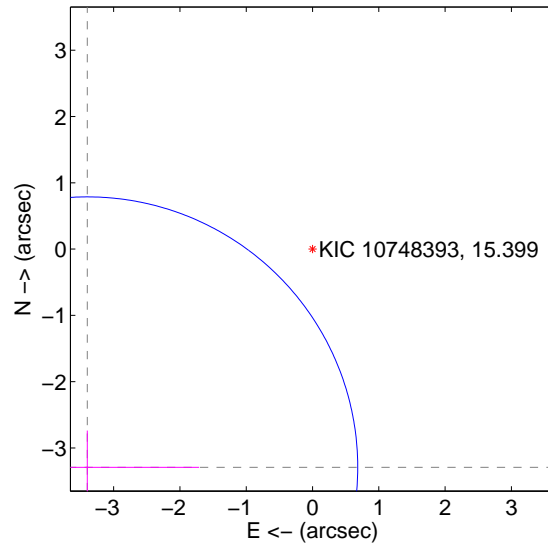
The OOT PRF centroid is offset from the target star catalog position by about 6.12 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.037 ± 0.067	30.49	0.733 ± 0.067	1.901 ± 0.067
PRF-fit source offset from KIC position	4.731 ± 1.360	3.48	3.398 ± 1.689	-3.292 ± 0.555
photometric centroid source offset	3.03 ± 0.01	571.04	0.44 ± 0.01	-2.99 ± 0.01

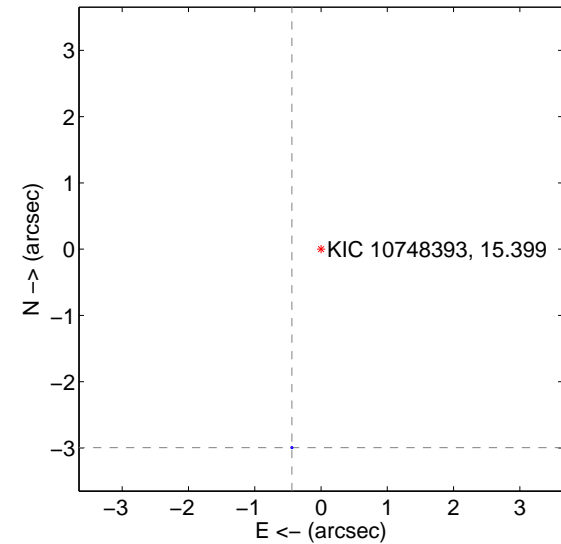
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

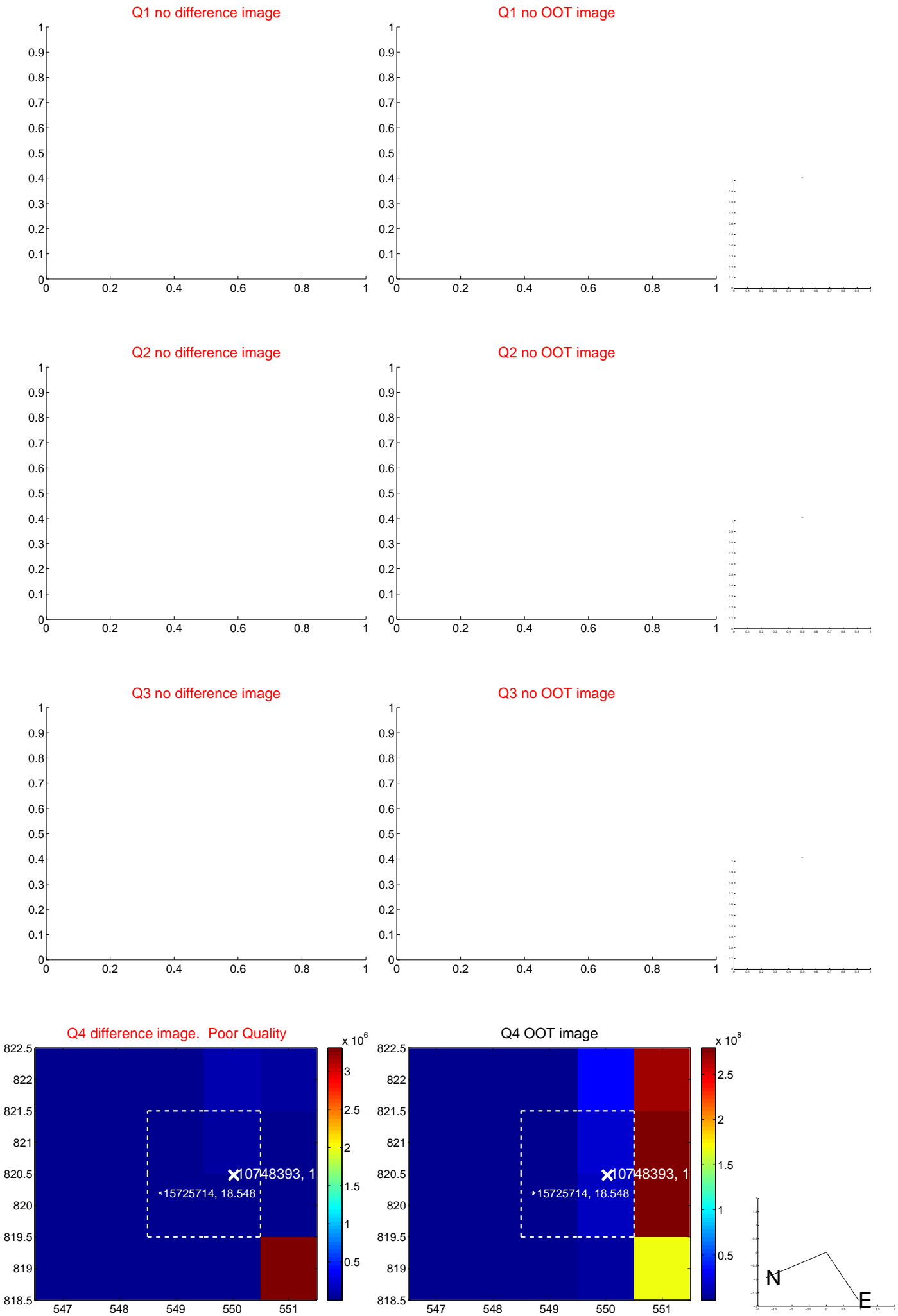


offset from photometric centroids

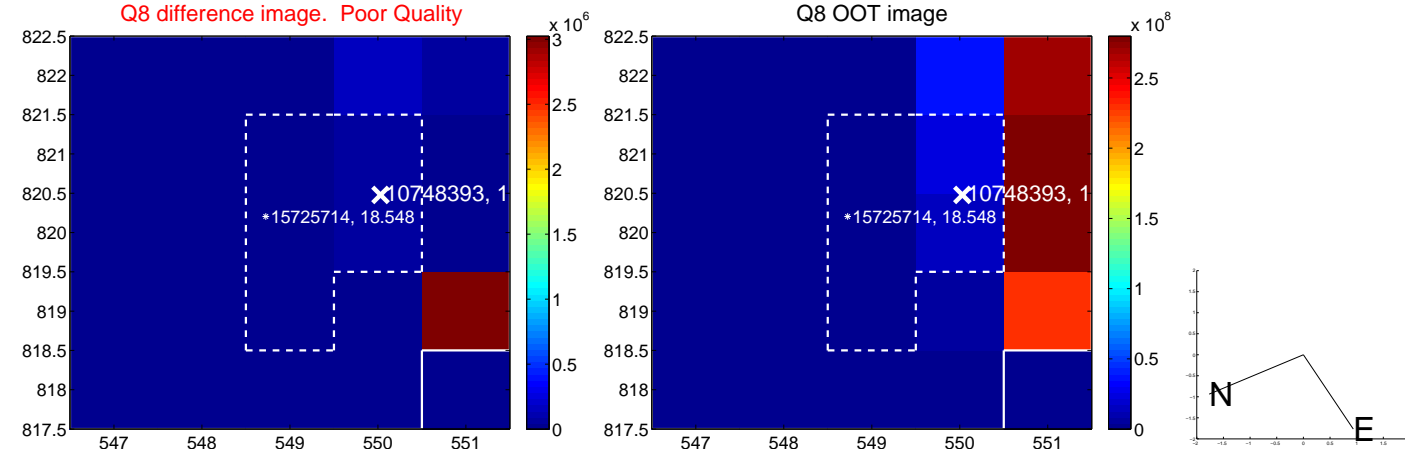
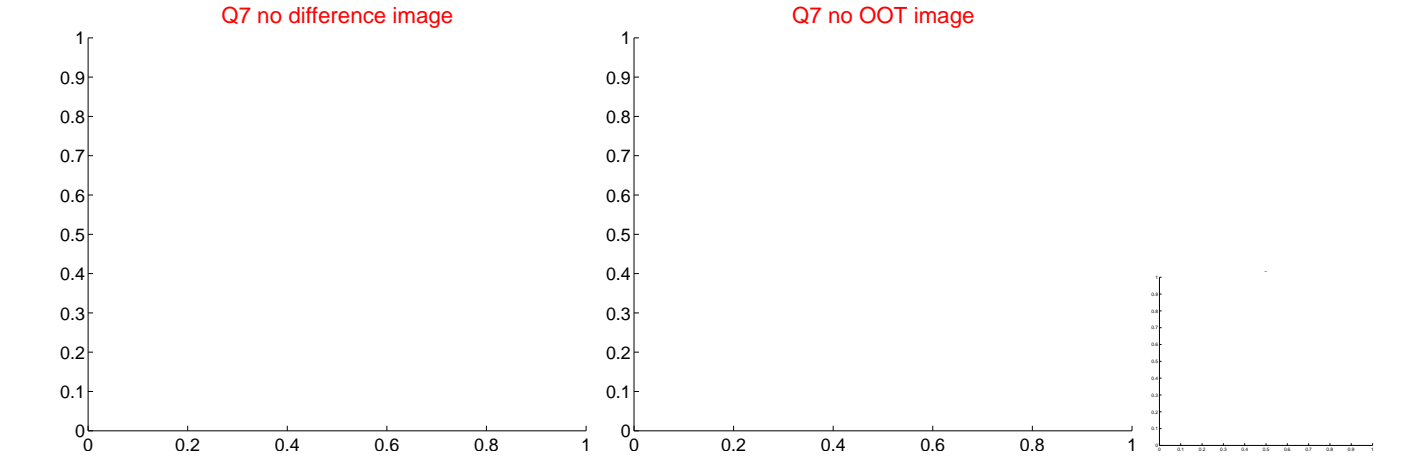
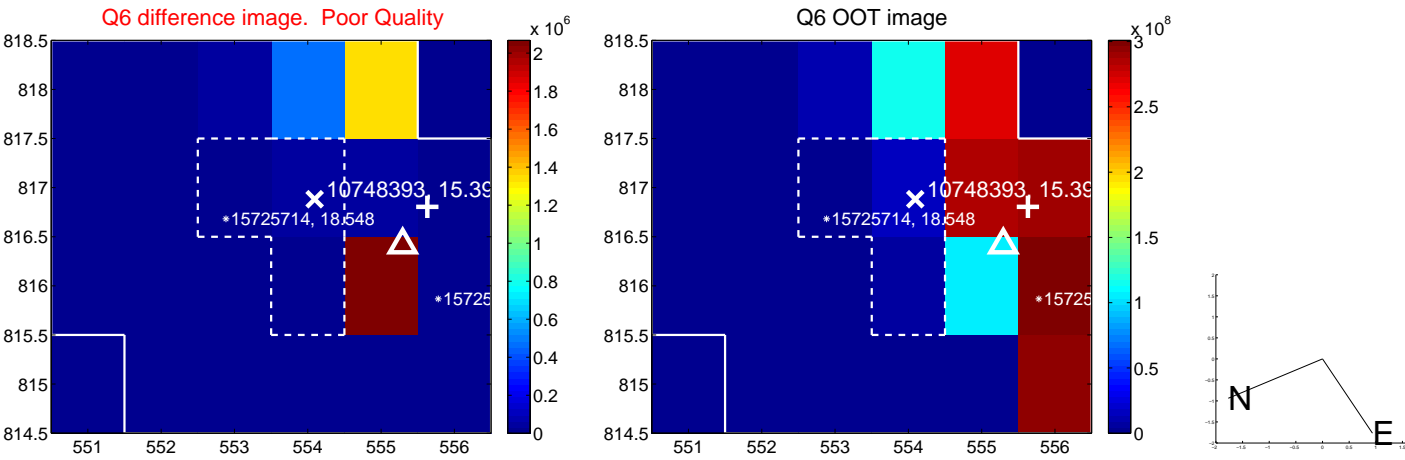
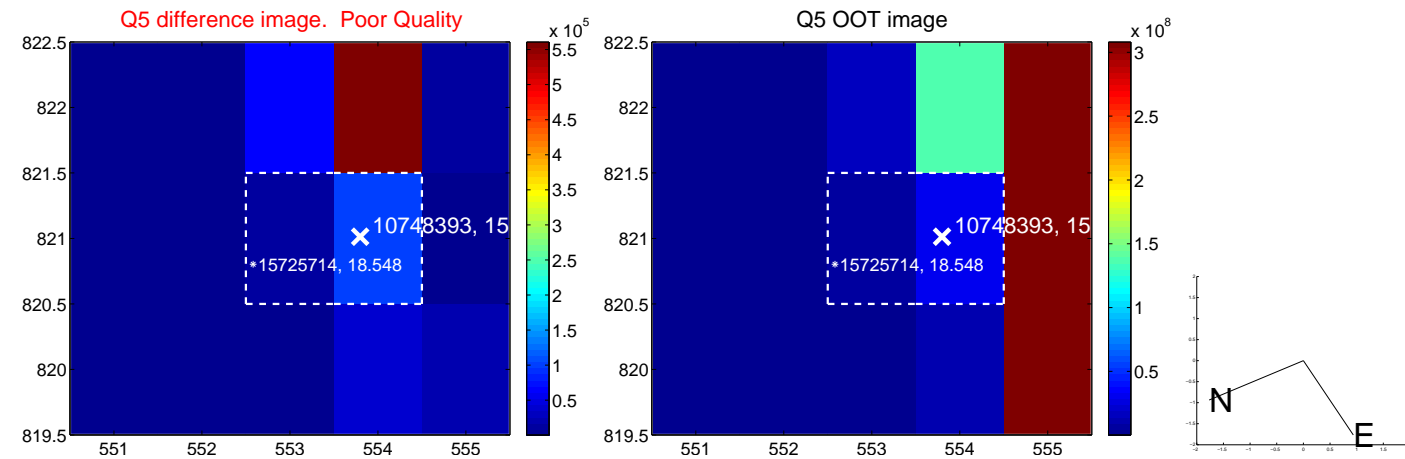


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

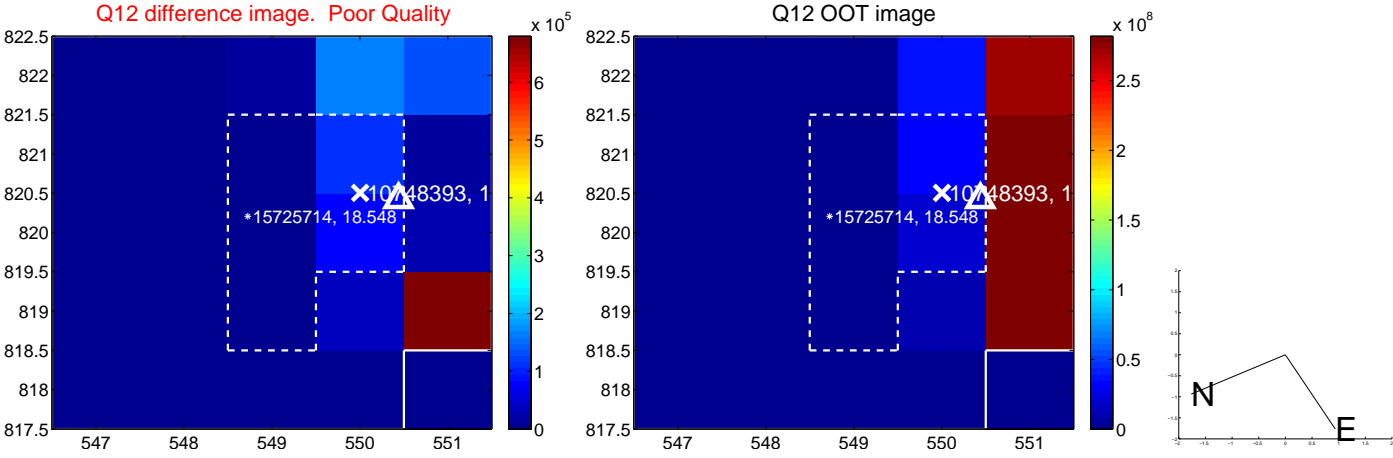
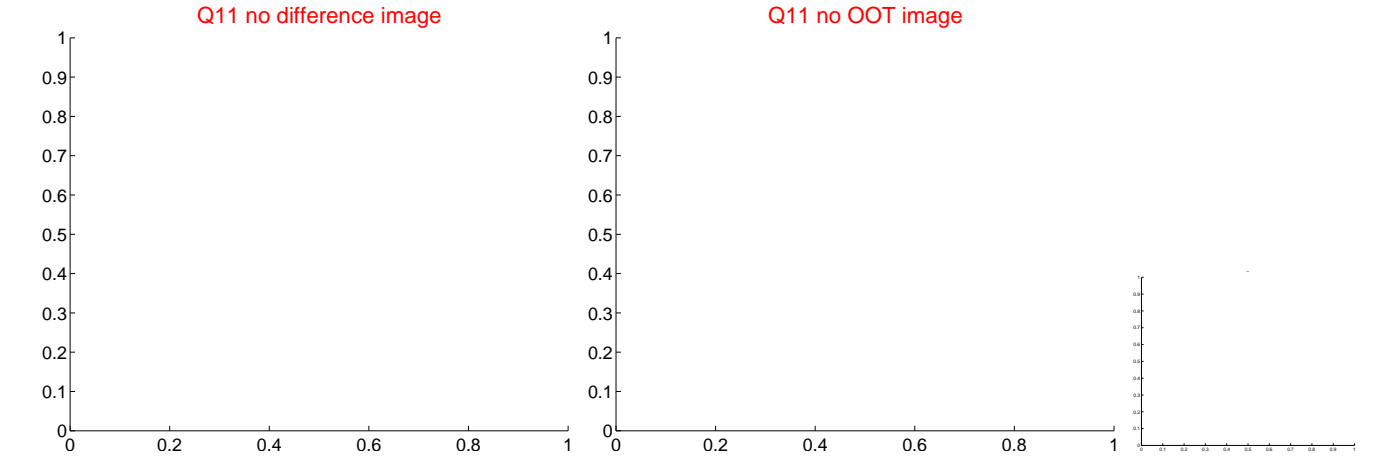
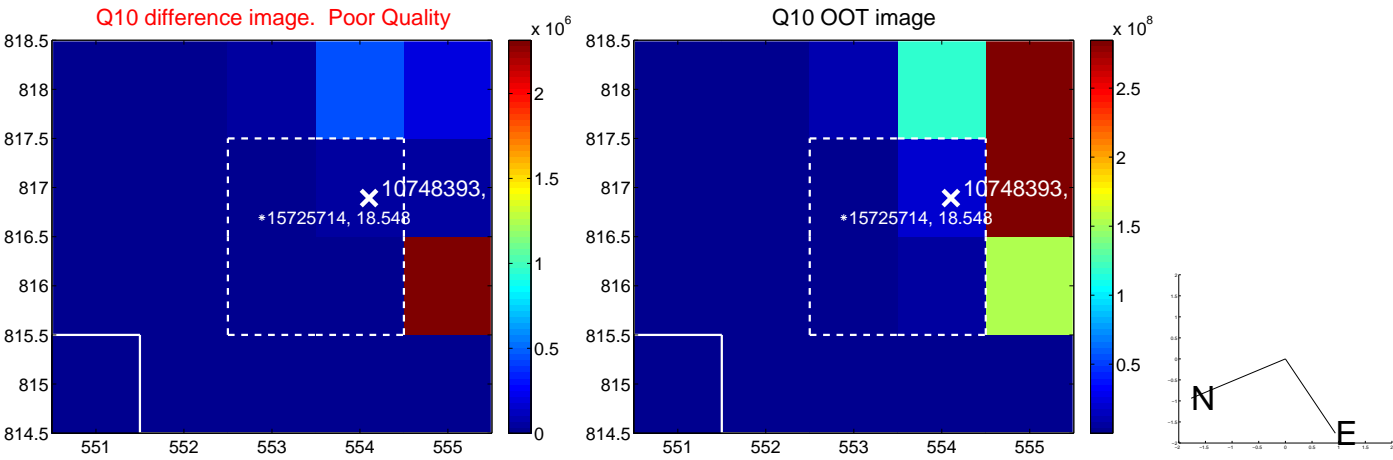
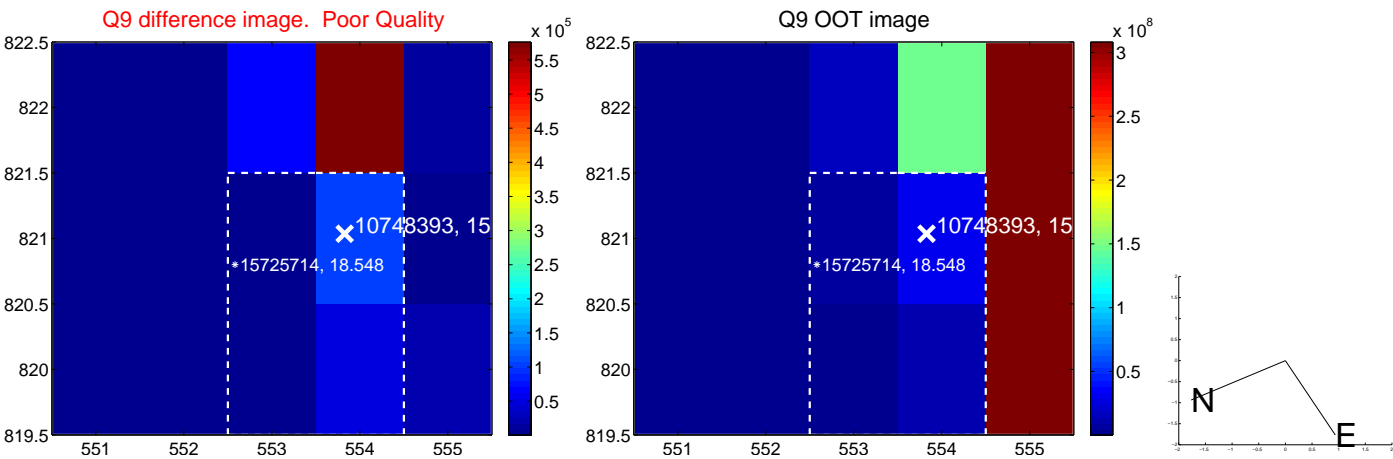
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



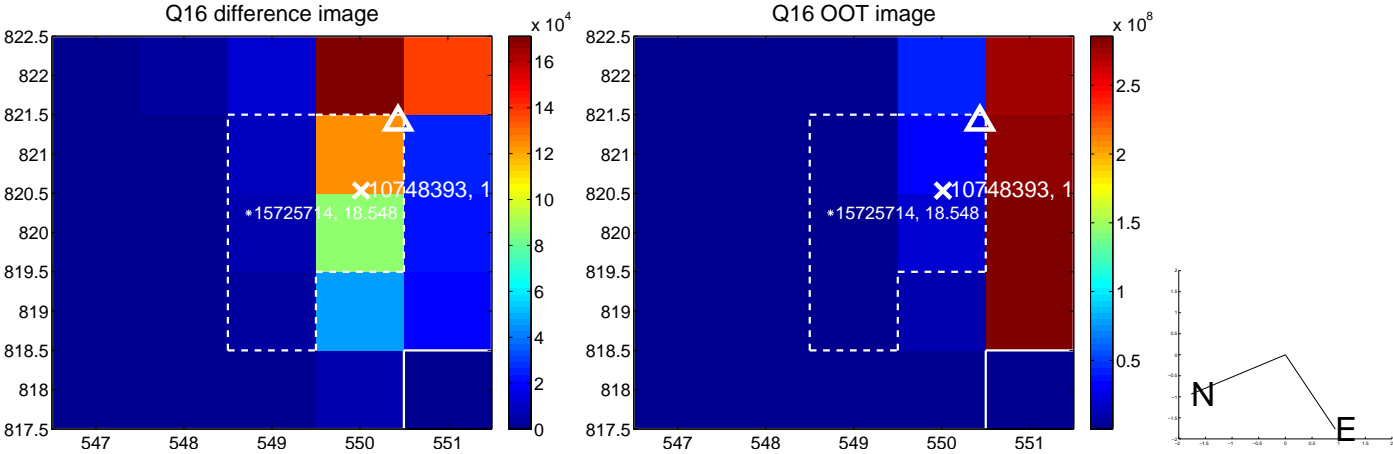
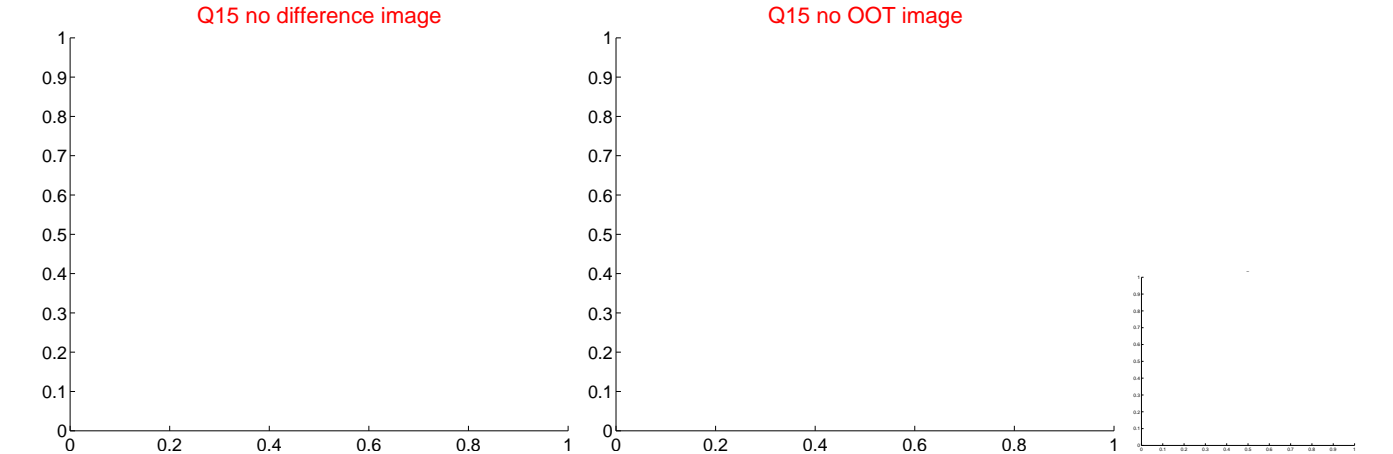
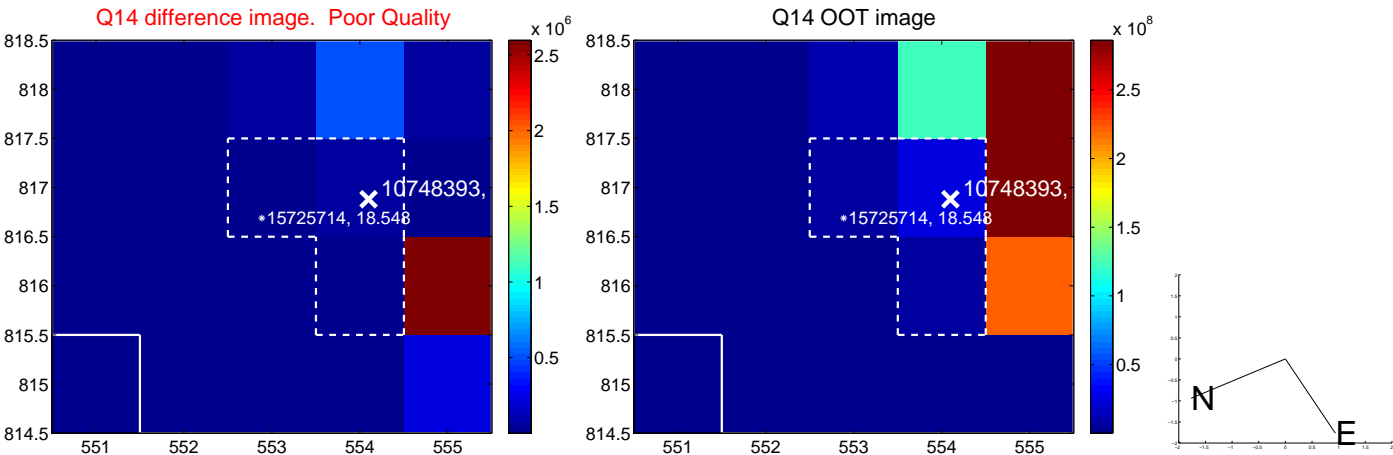
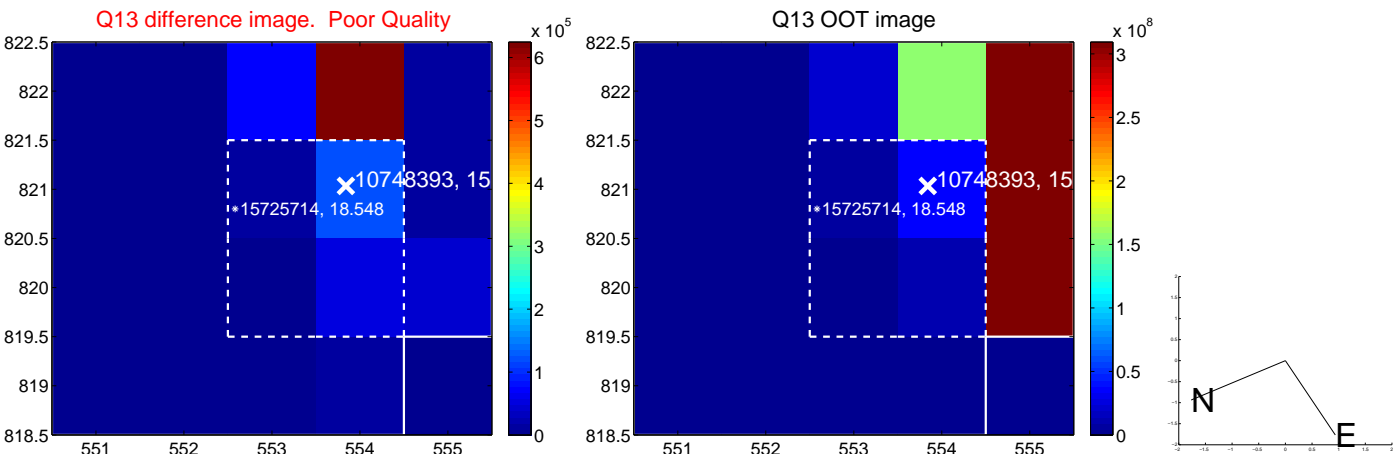
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



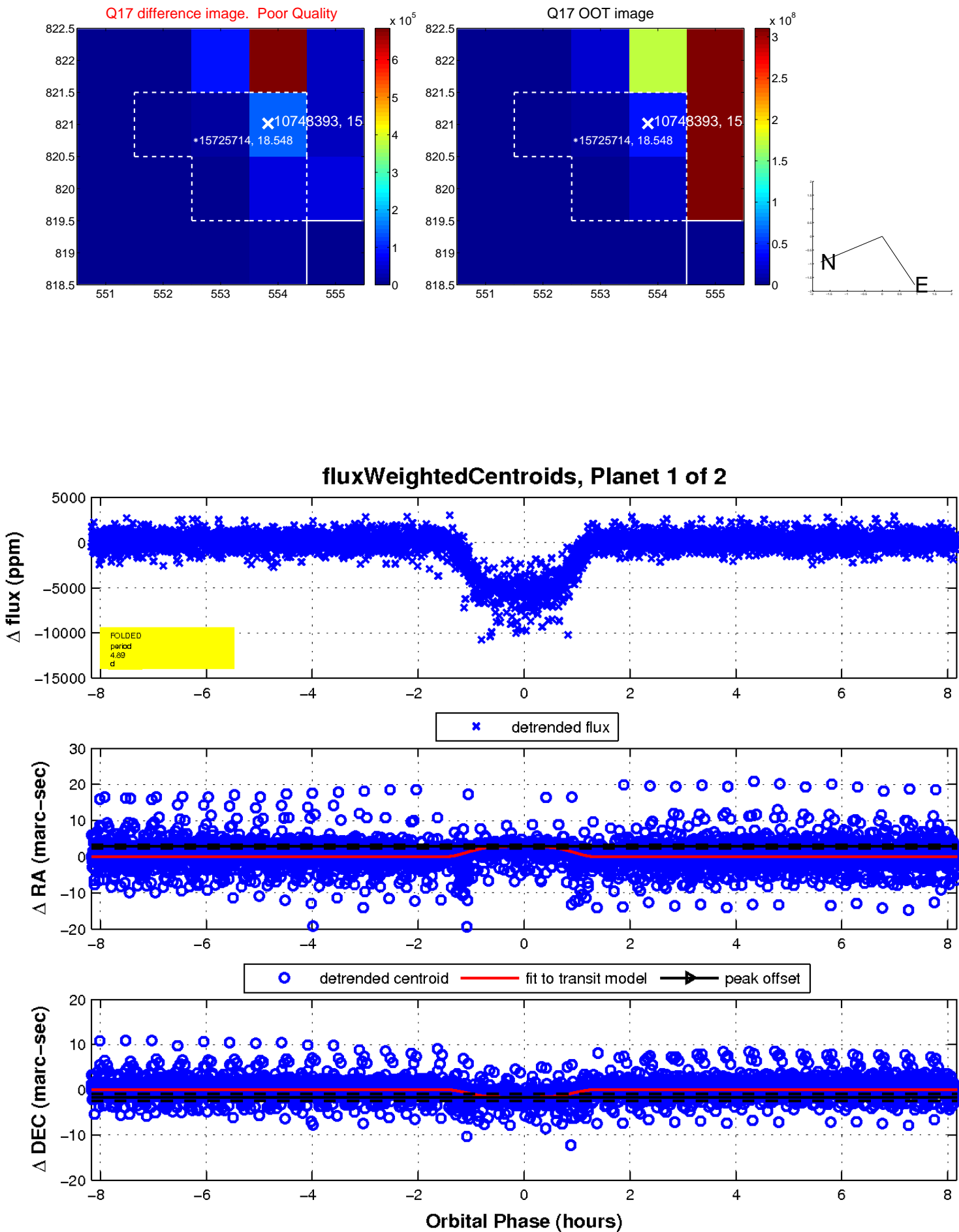
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

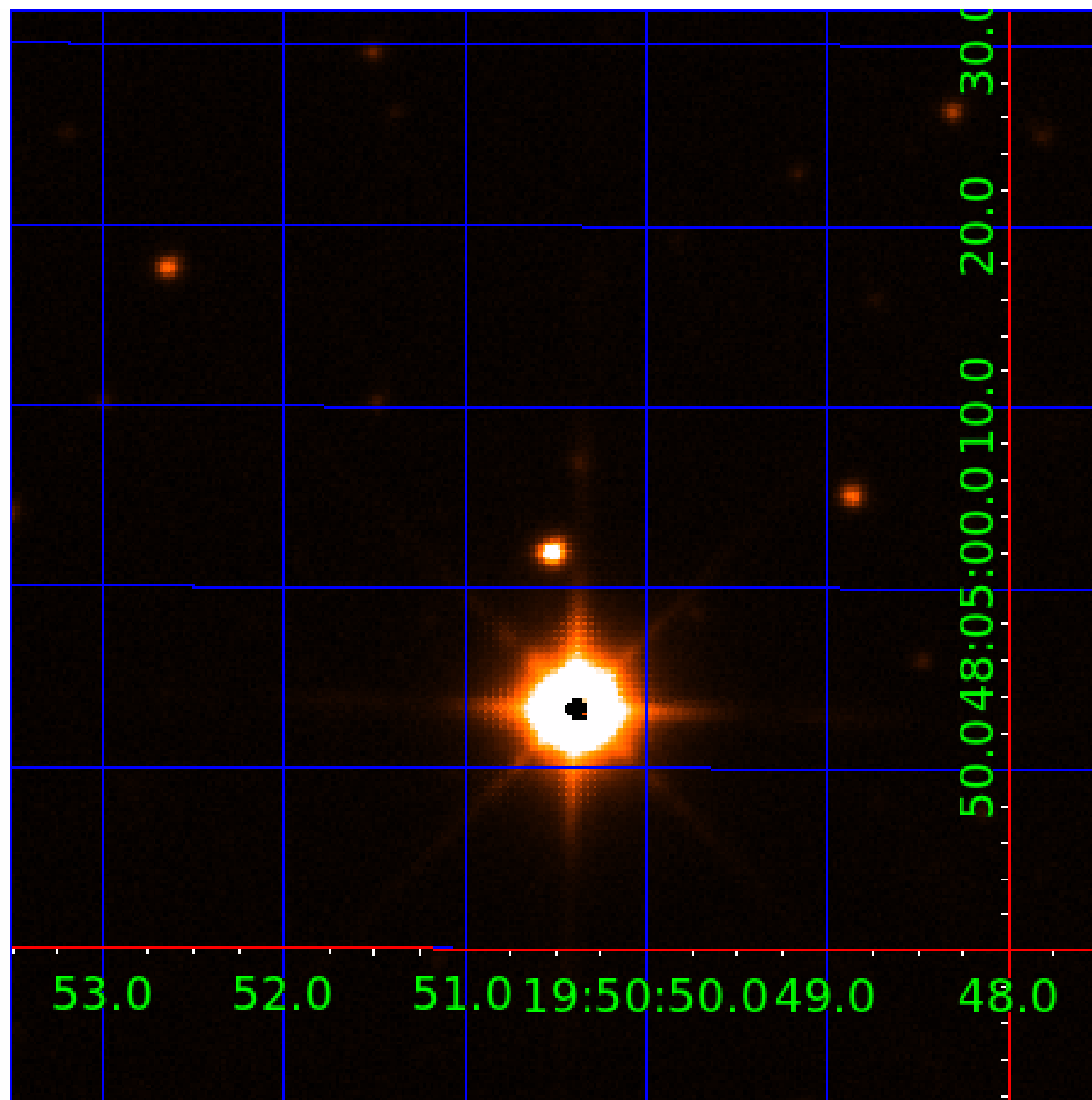


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010748393

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})
010748393-01	OBS	1289.01	4.887811	134.587605	5326.6	2.724	138.0	129.4	0.81	5284	7.02	167.87
010748393-02	OBS	1289.02	386.399360	365.862782	2143.9	3.083	7.7	6.6	0.81	5284	4.16	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010748393-01	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—CENT_UNCERTAIN—EPHEM_MATCH
010748393-02	OBS	FP	0.00	1	0	0	0	MOD_POS_DV—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.

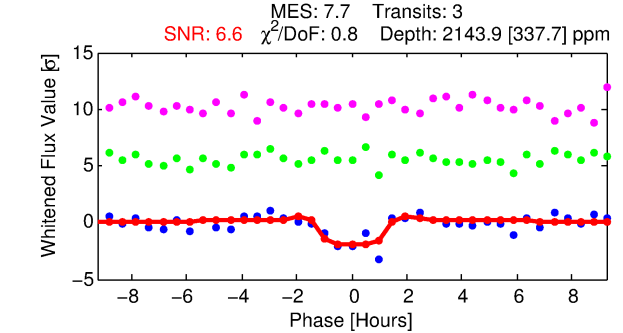
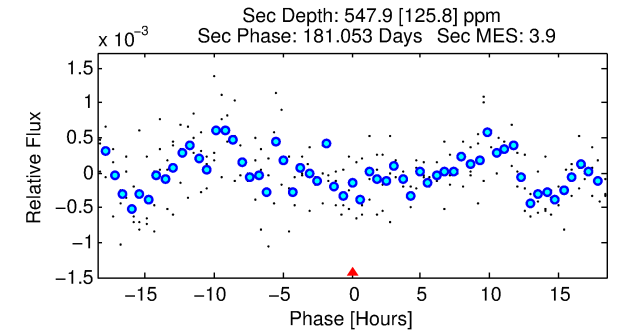
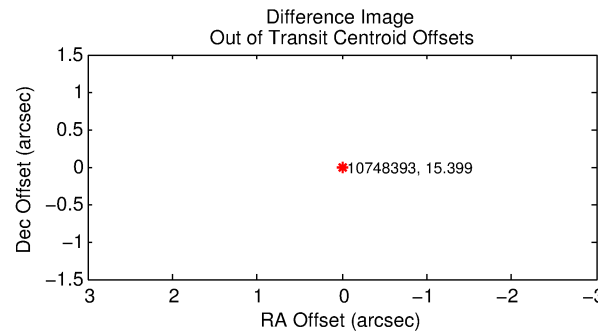
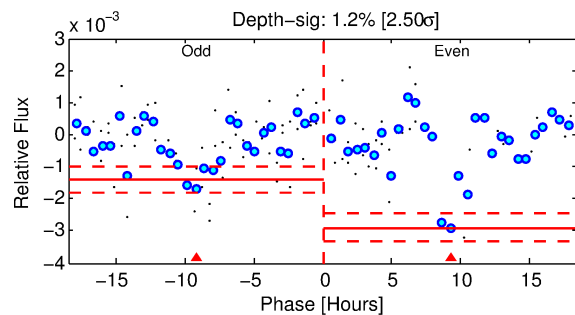
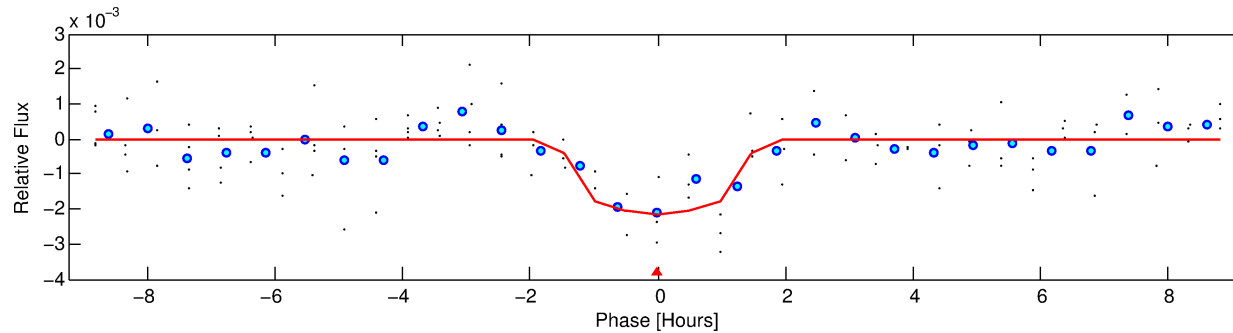
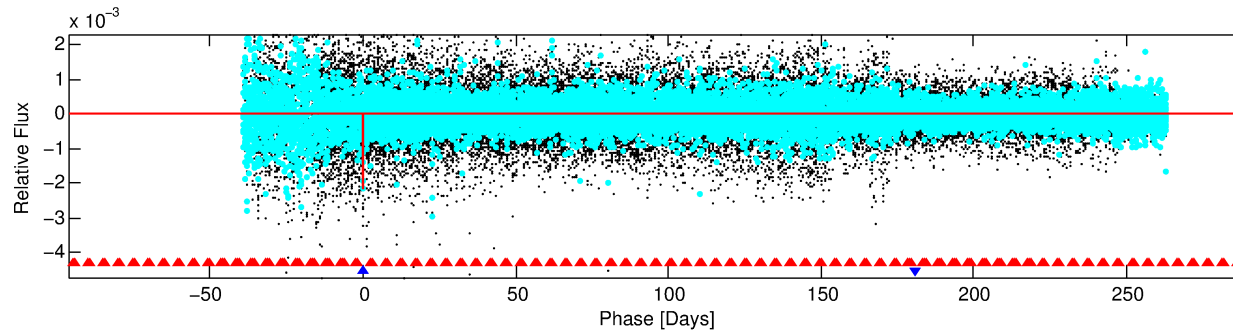
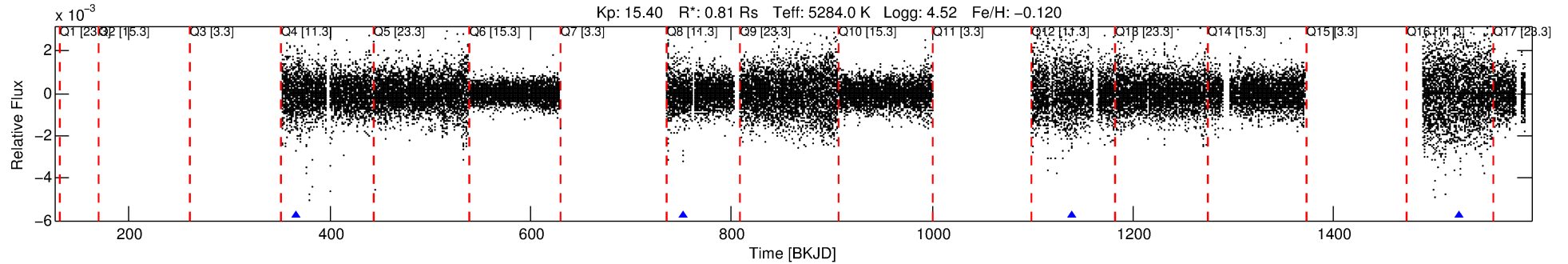
Ephemeris Match Information For 010748393-02

No Significant Match Found

DV One-Page Summary

KIC: 10748393 Candidate: 2 of 2 Period: 386.399 d
KOI: K01289 Corr: No Ephemeris Match

Kp: 15.40 R*: 0.81 Rs Teff: 5284.0 K Logg: 4.52 Fe/H: -0.120



DV Fit Results:

Period = 386.39936 [0.00654] d
Epoch = 365.8628 [0.0073] BKJD
Rp/R* = 0.0469 [0.1485]
a/R* = 666.90 [7985.36]
b = 0.78 [6.17]
Seff = 0.49 [0.12]
Teq = 214 [13] K
Rp = 4.16 [13.18] Re
a = 0.9648 [0.1296] AU
Ag = 16230.27 [102868.38] [0.16σ]
Teff = 3732 [5912] K [0.60σ]

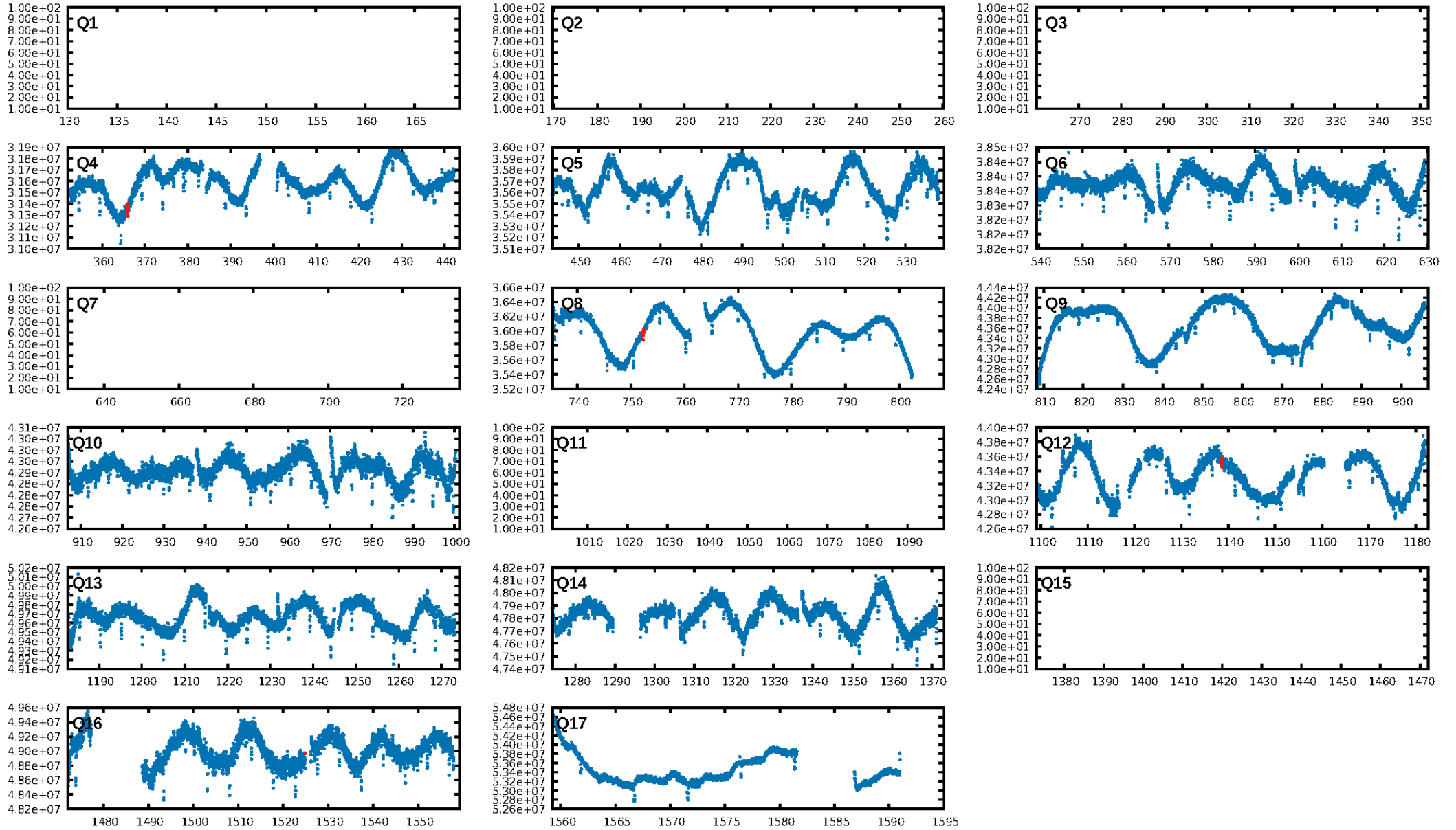
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [2225.50σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 30.8%
ModelChiSquareGof-sig: 93.1%
Bootstrap-pfa: 1.02e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.406
Centroid-sig: 36.8%
Centroid-so: 3.501 arcsec [15.37σ]
OotOffset-rm: N/A
KicOffset-rm: 1.562 arcsec [2.50σ]
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

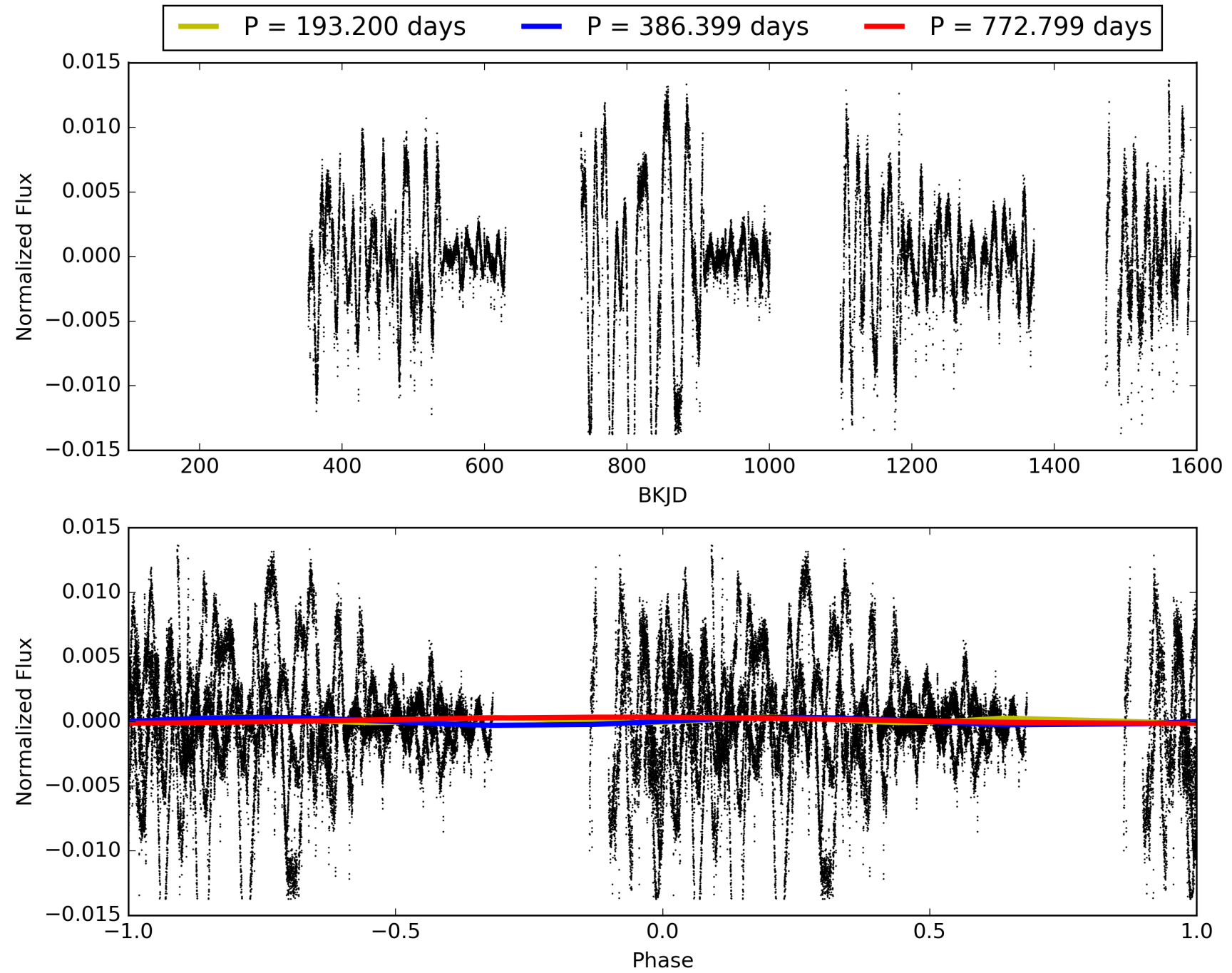
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:48:13 Z

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

TCE 010748393-02, PDC Light Curves

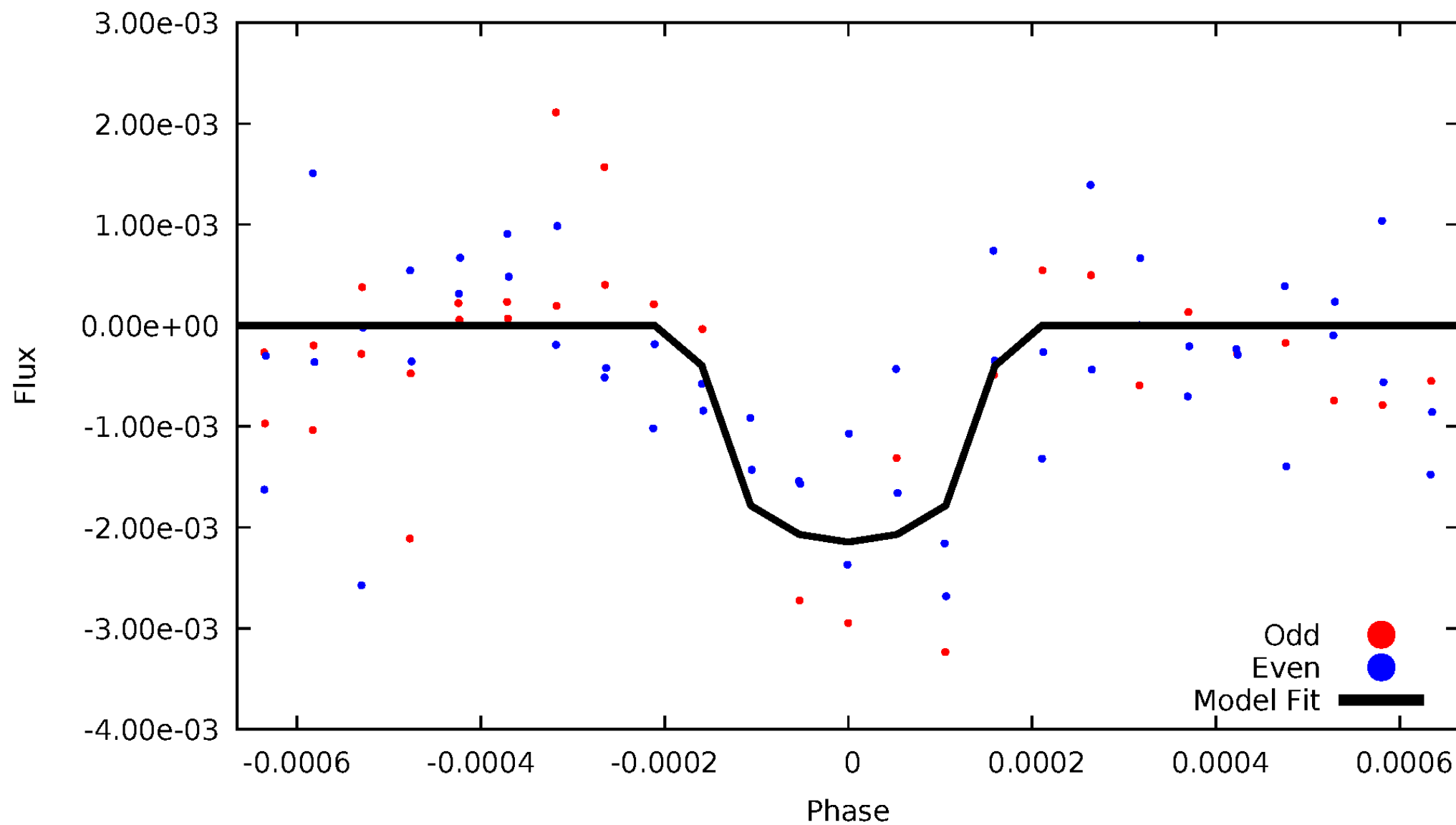


TCE 010748393-02



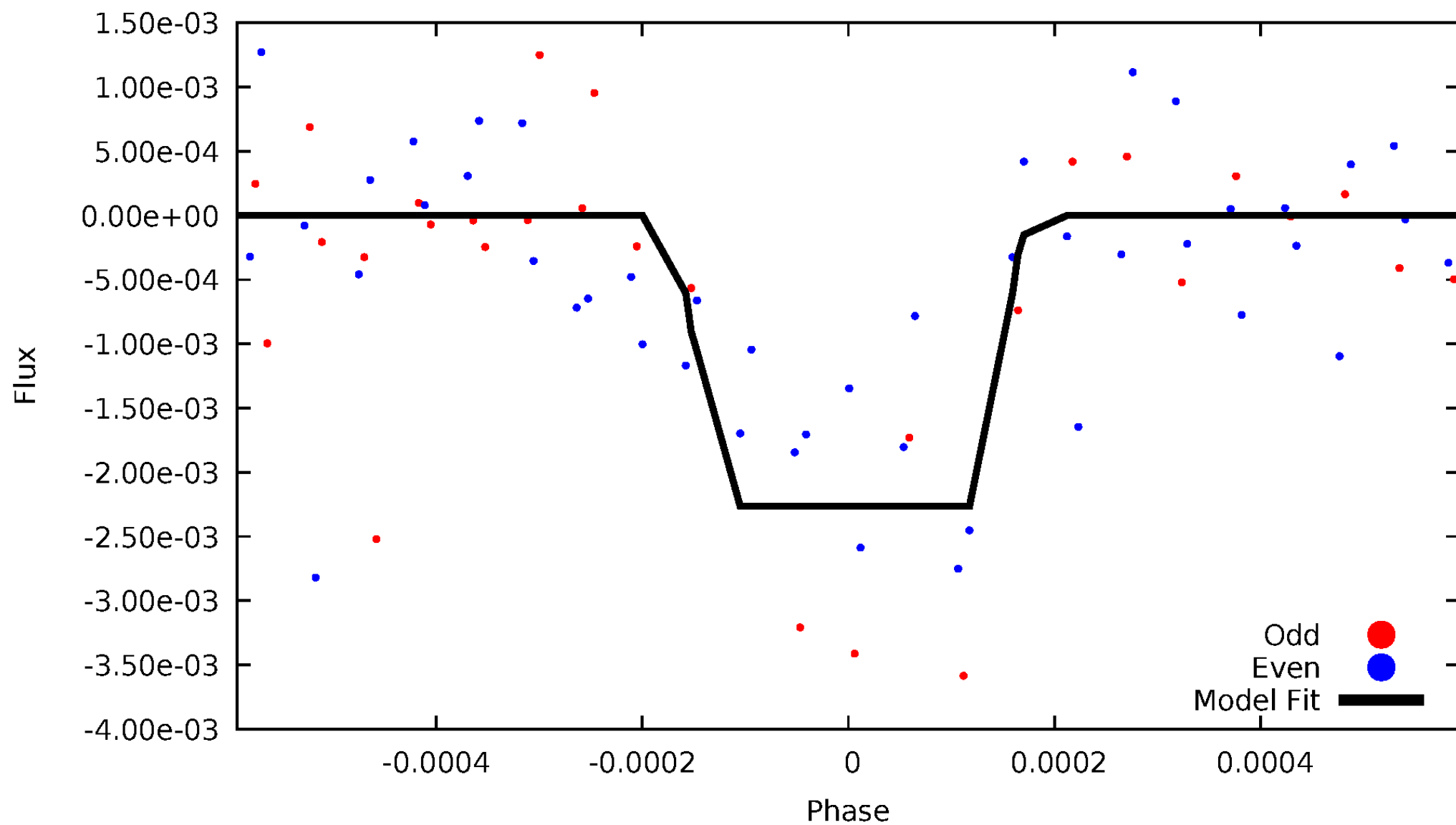
DV Odd/Even

TCE 010748393-02



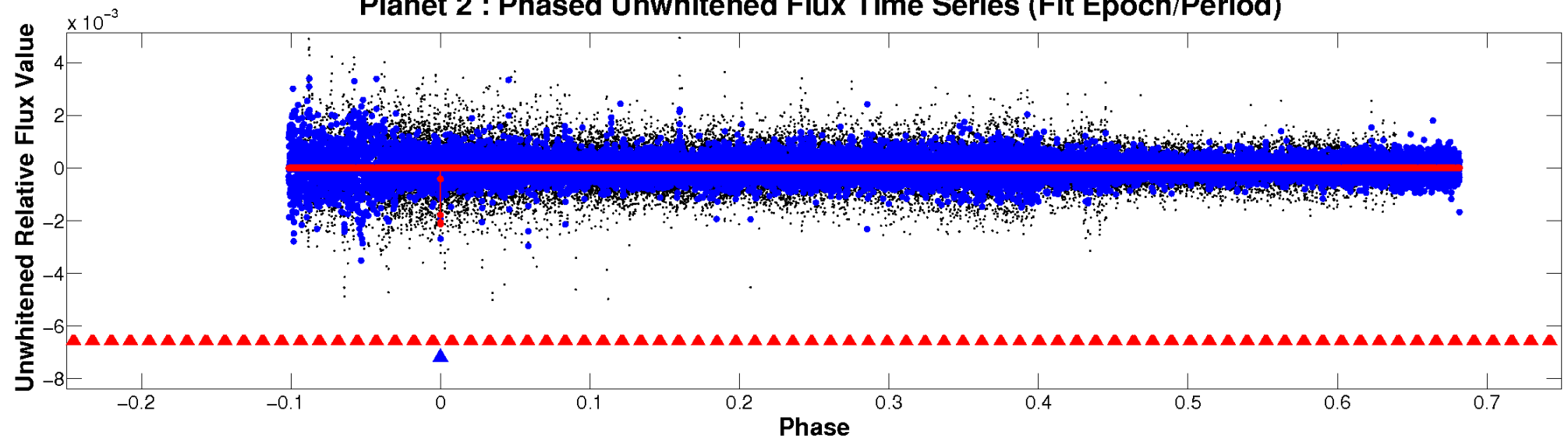
ALT Odd/Even

TCE 010748393-02

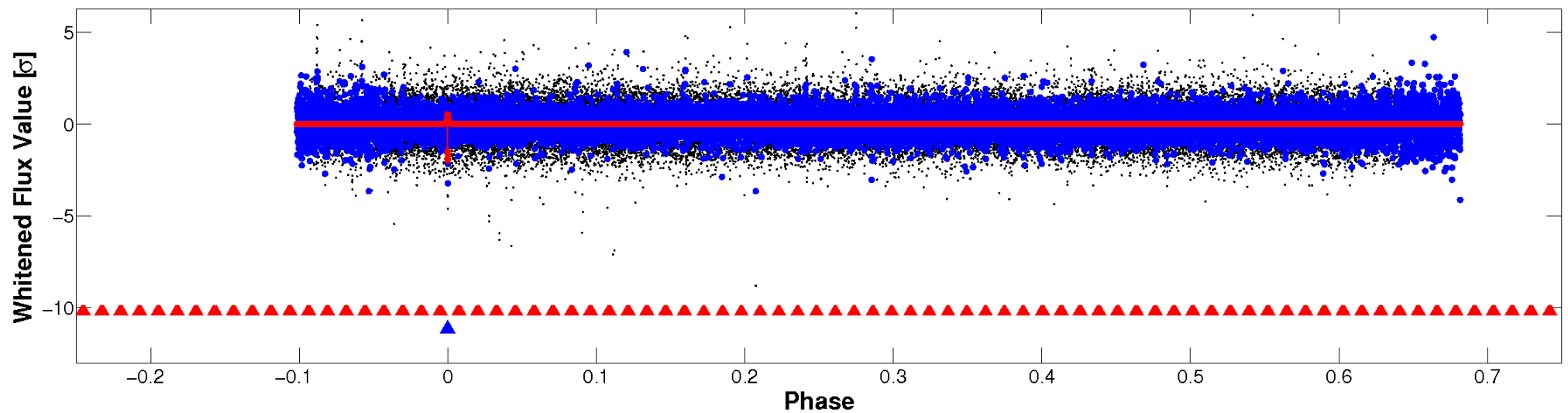


Non-Whitened Vs. Whitened Light Curve

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

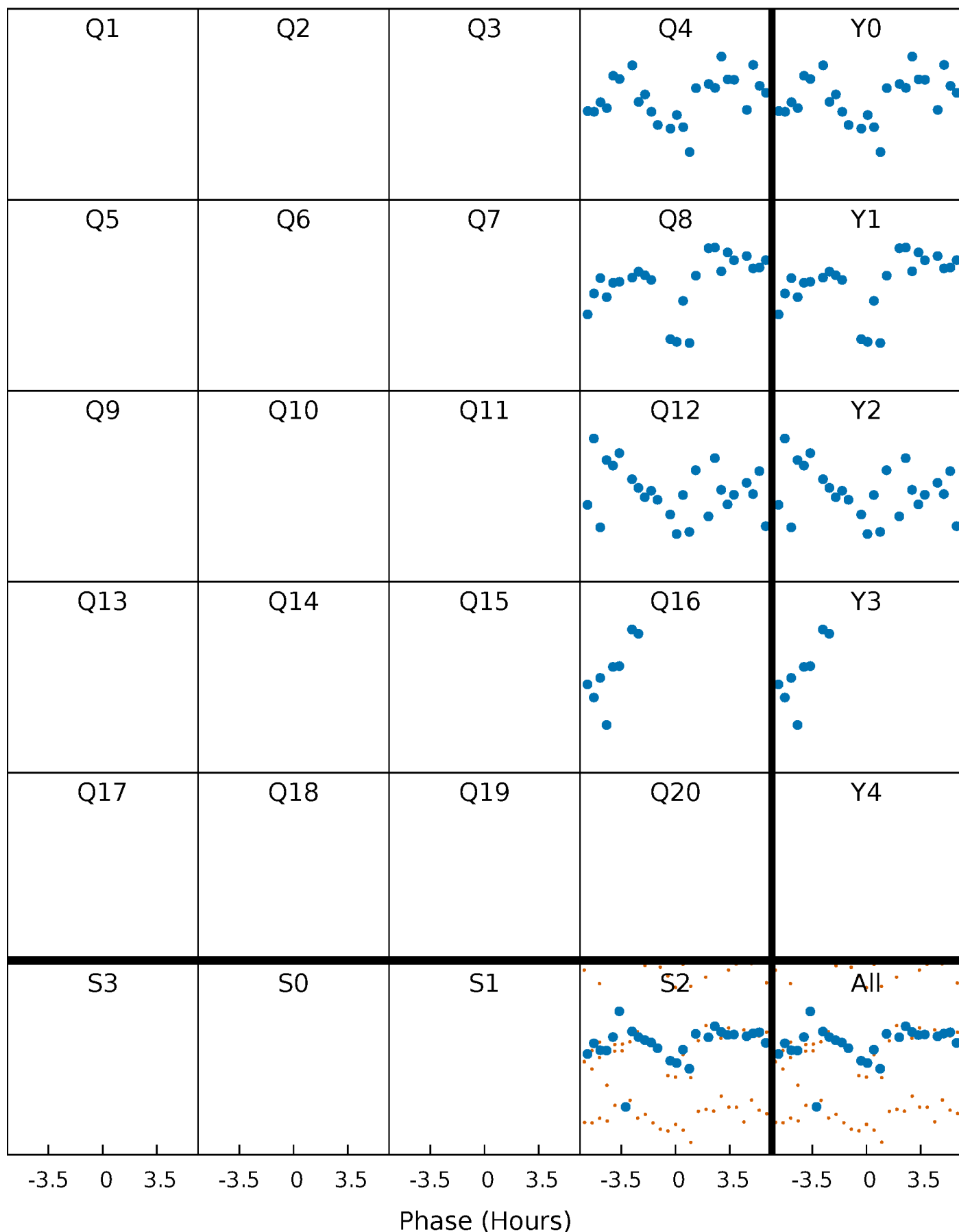


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



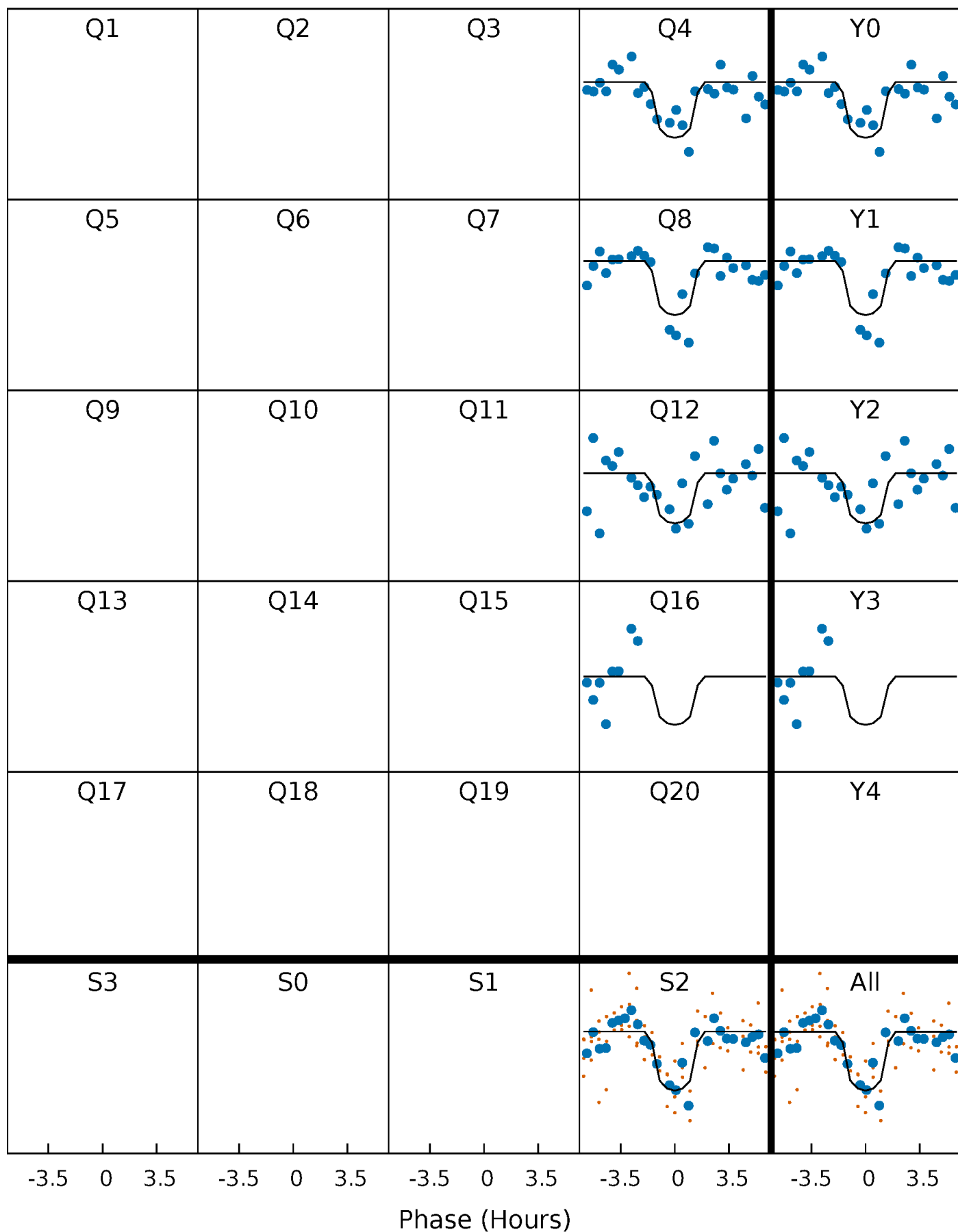
PDC Quarter-Phased Transit Curves

TCE 010748393-02 P=386.399360 Days $T_0=365.862782$ (BKJD)



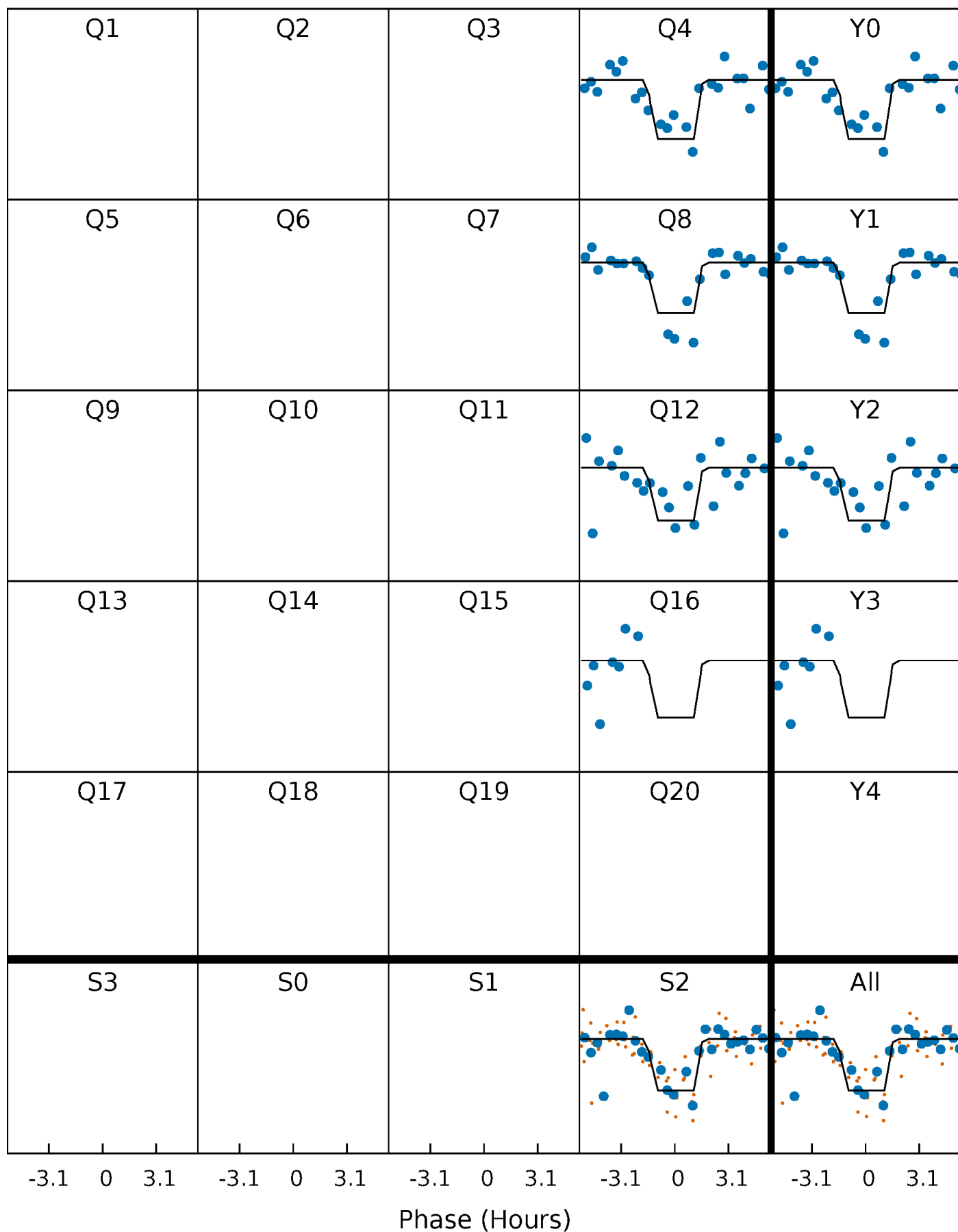
DV Quarter-Phased Transit Curves

TCE 010748393-02 $P=386.399360$ Days $T_0=365.862782$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

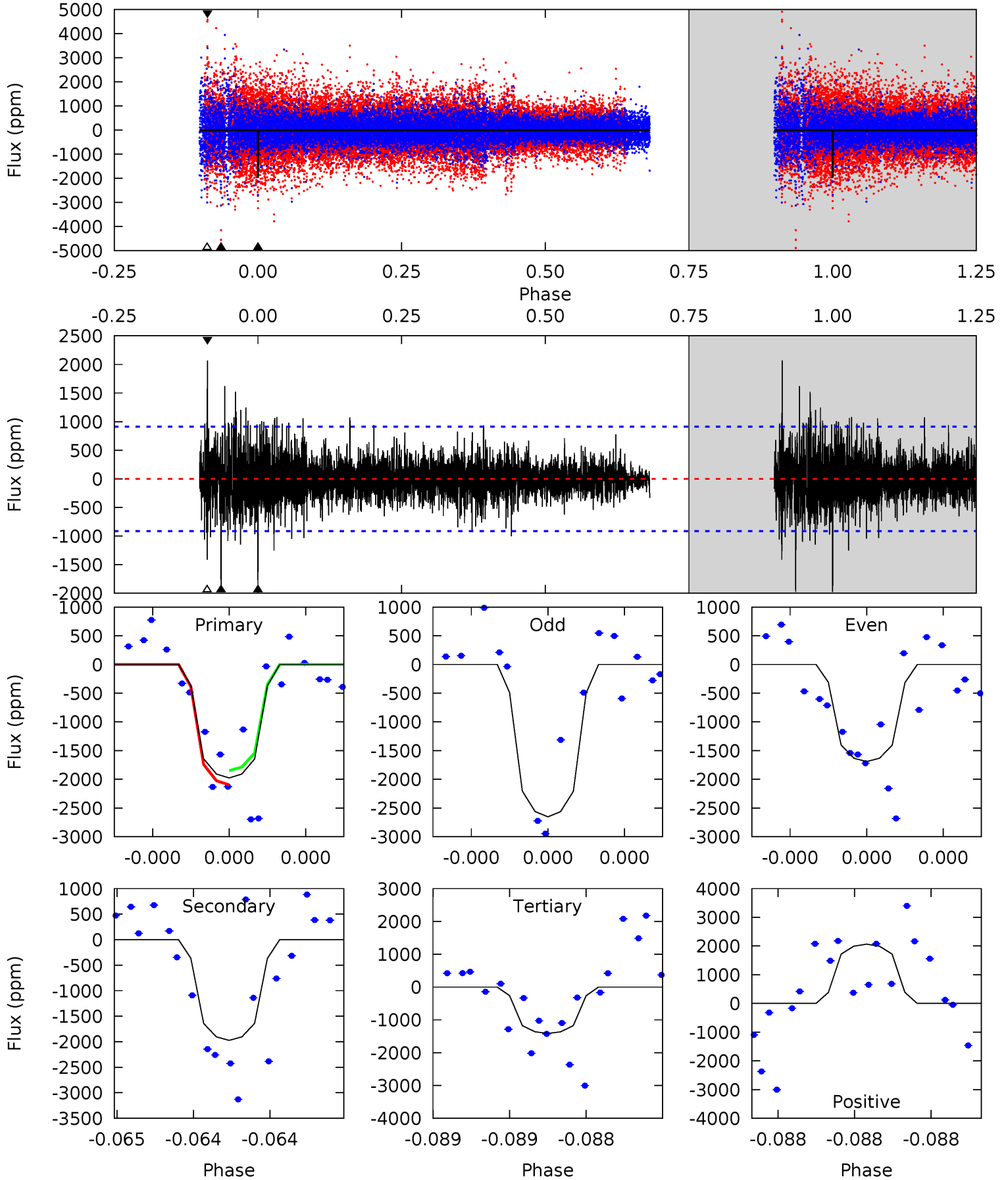
TCE 010748393-02 $P=386.396942$ Days $T_0=365.862741$ (BKJD)



DV Model-Shift Uniqueness Test

010748393-02, P = 386.399360 Days, E = 365.862782 Days

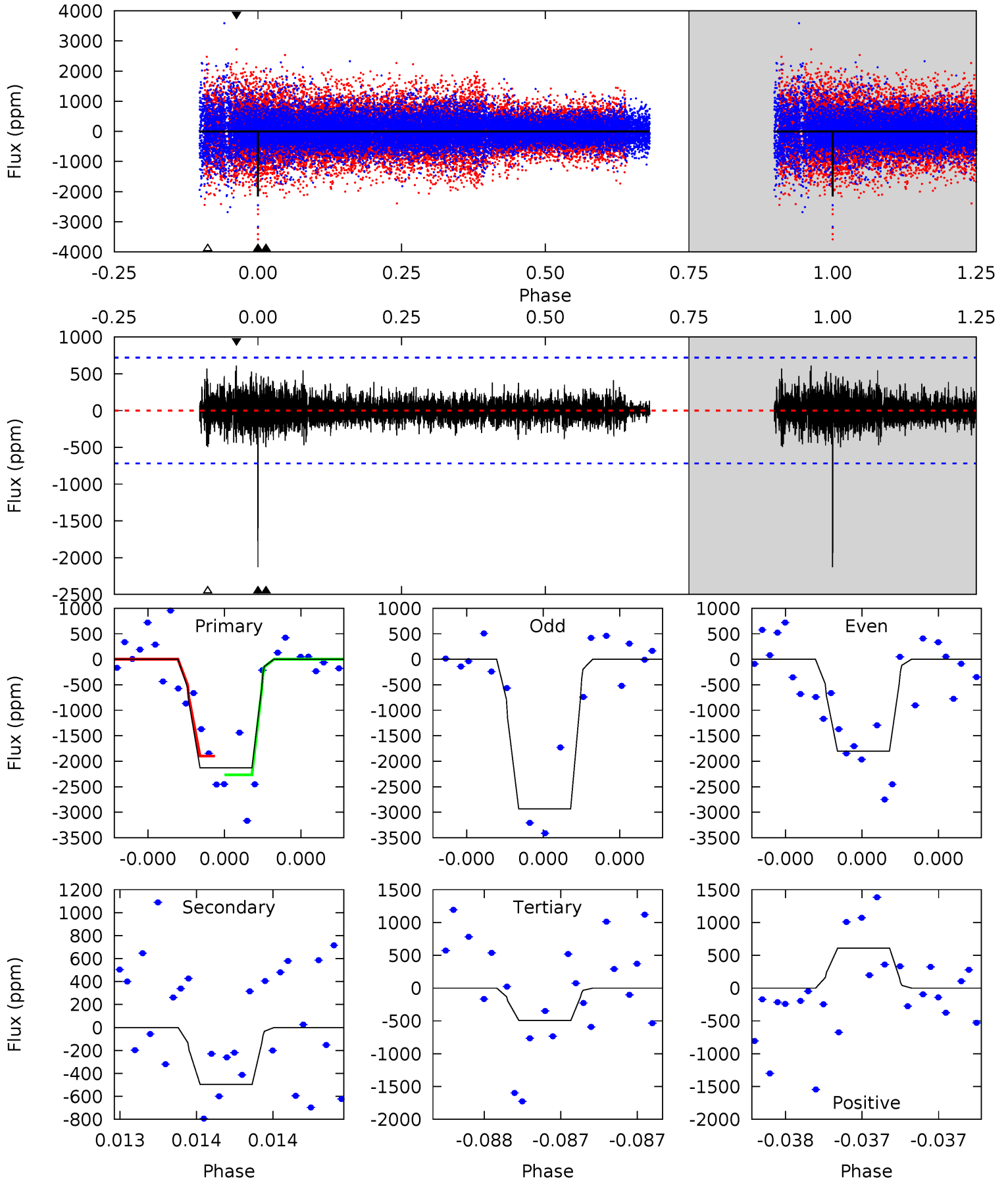
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	12.2	8.74	12.8	5.65	3.60	1.67	3.49	-0.55	3.46	-0.58	2.76	1.11	0.51	0.77



Alt Model-Shift Uniqueness Test

010748393-02, P = 386.396942 Days, E = 365.862741 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	3.90	3.89	4.79	5.65	3.59	0.90	12.8	11.9	0.02	-0.89	4.08	1.14	0.22	1.42



Stellar Parameters For KIC 010748393

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5284^{+185}_{-185}	$4.523^{+0.076}_{-0.102}$	$-0.120^{+0.300}_{-0.300}$	$0.812^{+0.133}_{-0.082}$	$0.804^{+0.096}_{-0.070}$	$2.113^{+0.619}_{-0.628}$
	+4%/-4%	+2%/-2%	+250%/-250%	+16%/-10%	+12%/-9%	+29%/-30%
Source	KIC0	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 010748393-02 / KOI 1289.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1972 ± 162	$10.27^{+11.40}_{-6.98}$	300^{+15}_{-14}	3667^{+2229}_{-708}	9645^{+87438}_{-7529}
Alt.	-497 ± 127	$10.41^{+10.82}_{-7.16}$	300^{+15}_{-14}	2967^{+1408}_{-522}	2249^{+21775}_{-1722}

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 $A_{obs} \gg 1.0$

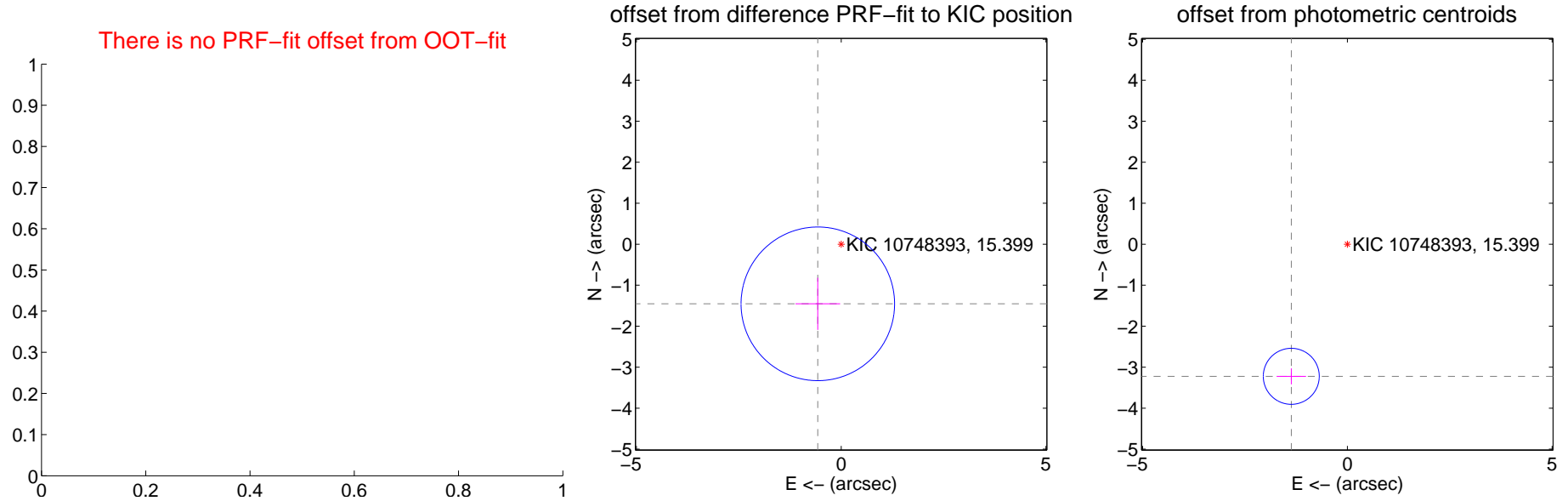
DV Centroid Data

Supplemental centroid analysis for 010748393-02. Kepler magnitude: 15.40. Transit SNR 6.61

There are 1 quarters with good PRF difference image offsets

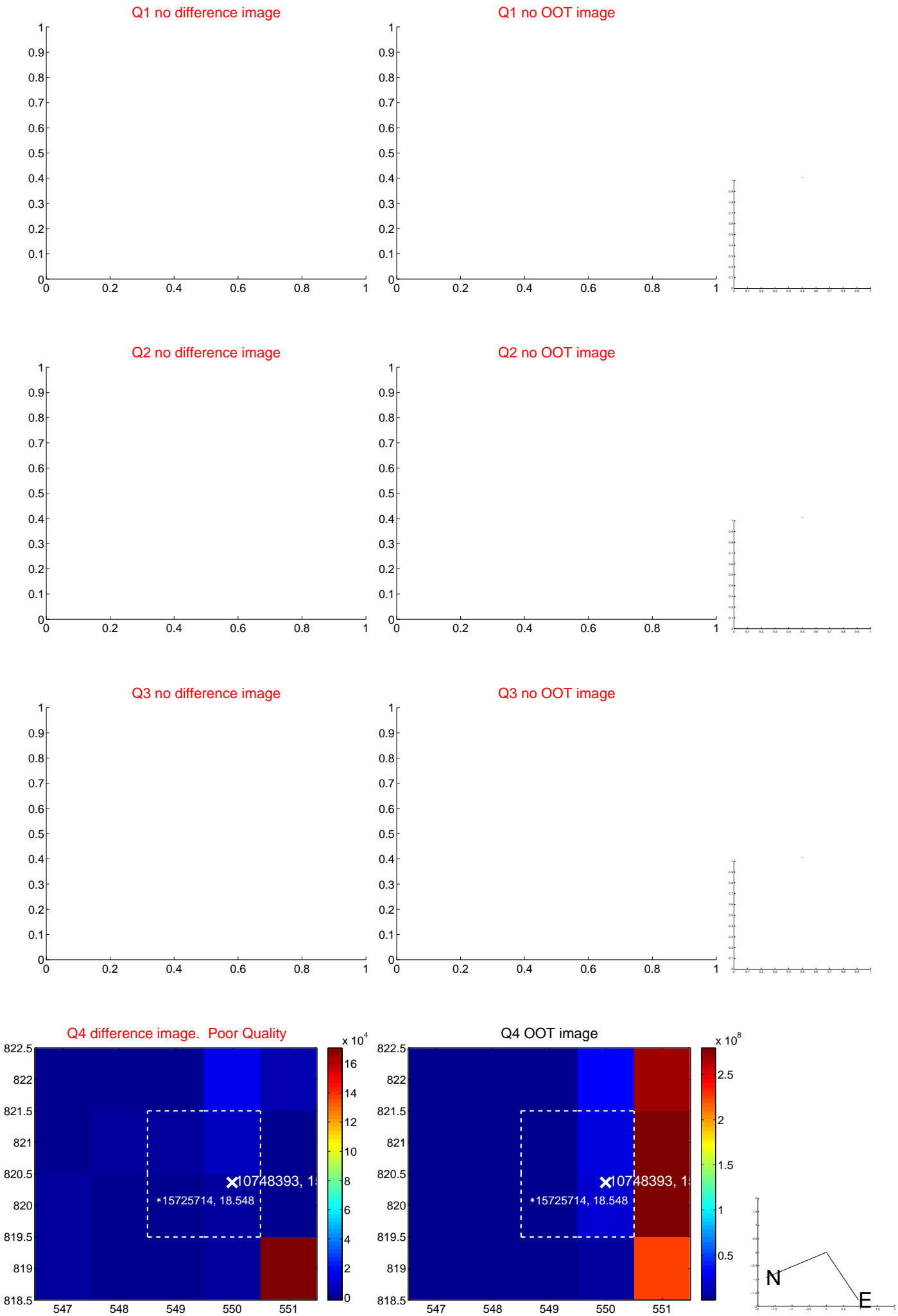
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	1.562 ± 0.625	2.50	0.570 ± 0.545	-1.454 ± 0.636
photometric centroid source offset	3.50 ± 0.23	15.37	1.37 ± 0.36	-3.22 ± 0.19

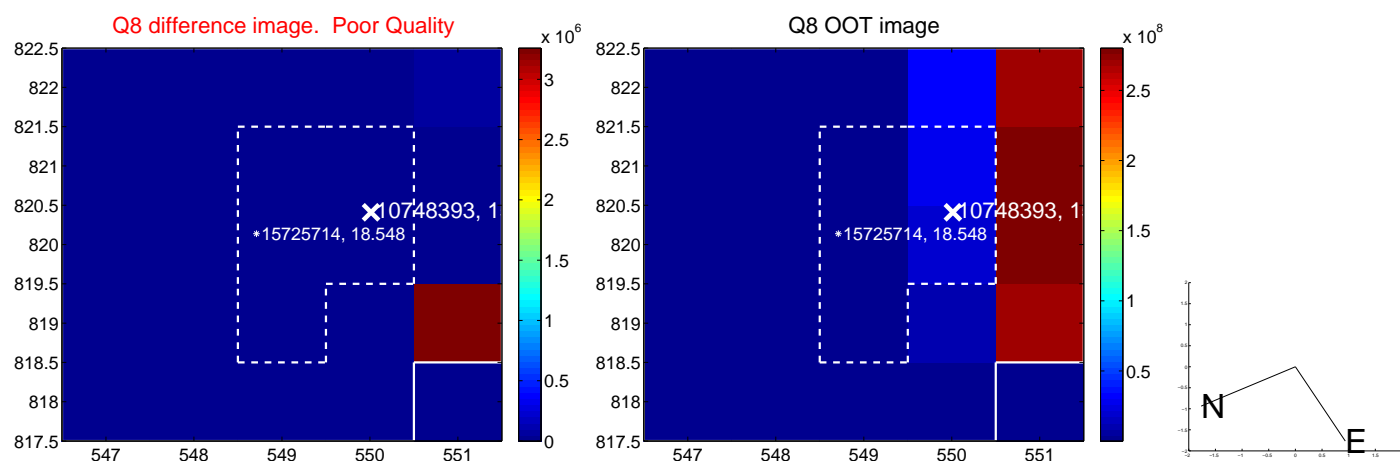
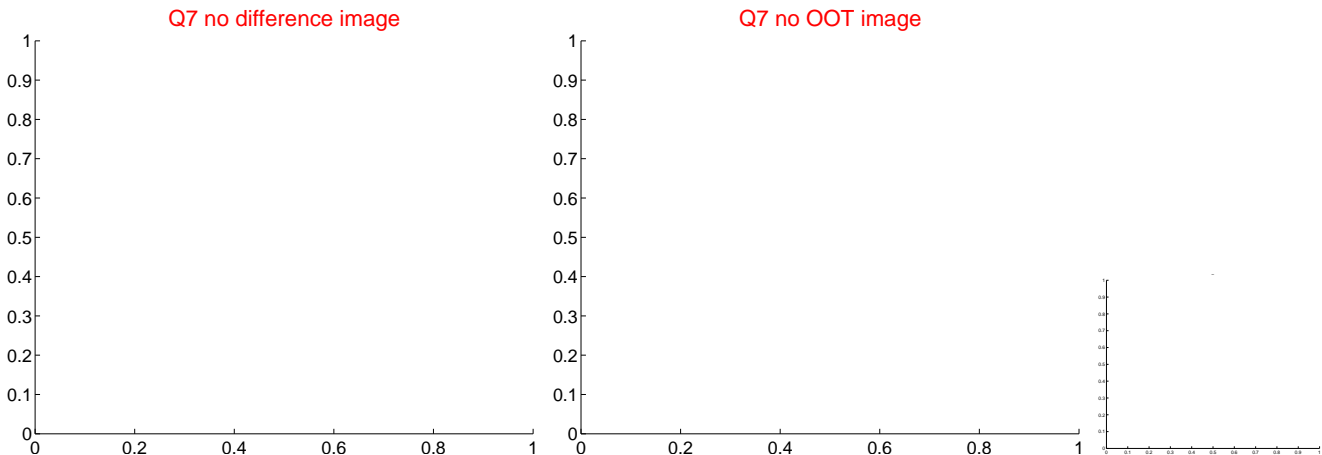
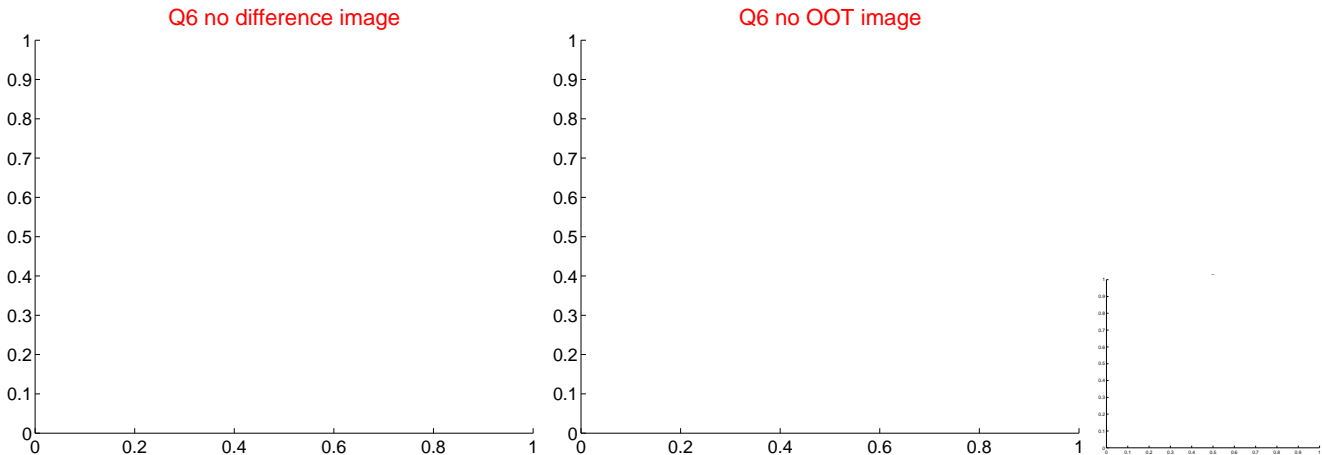
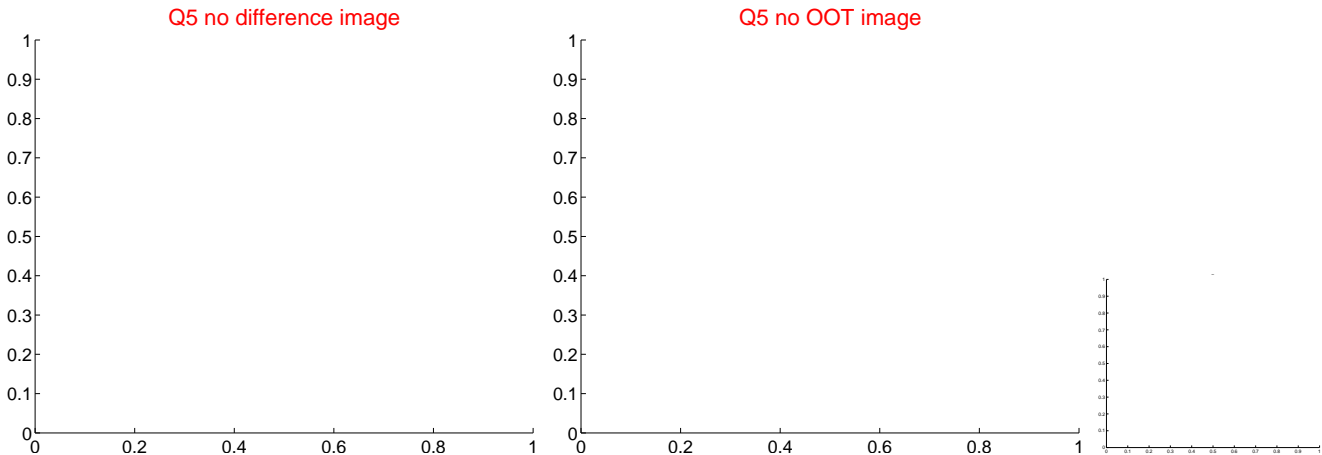


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

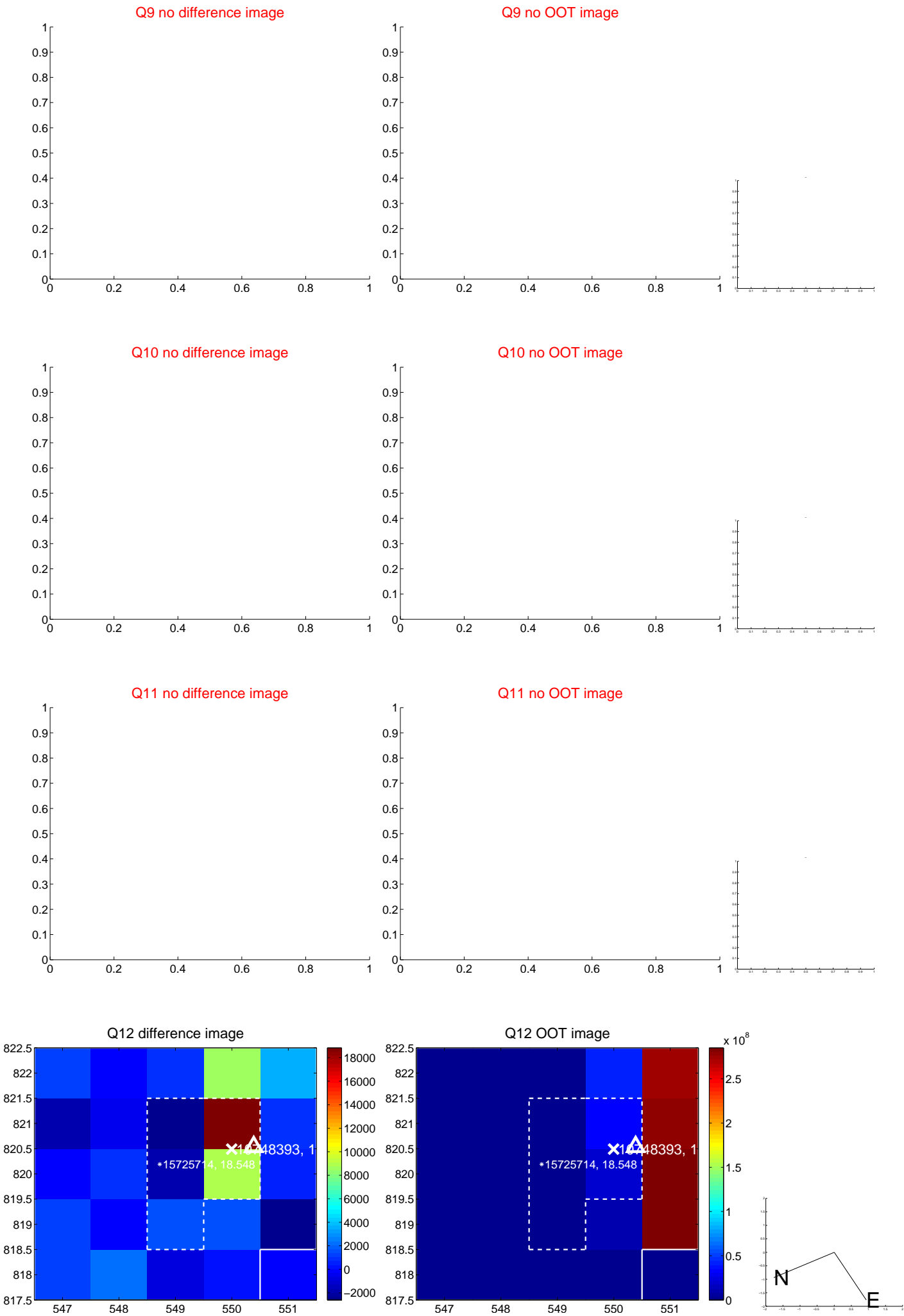
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



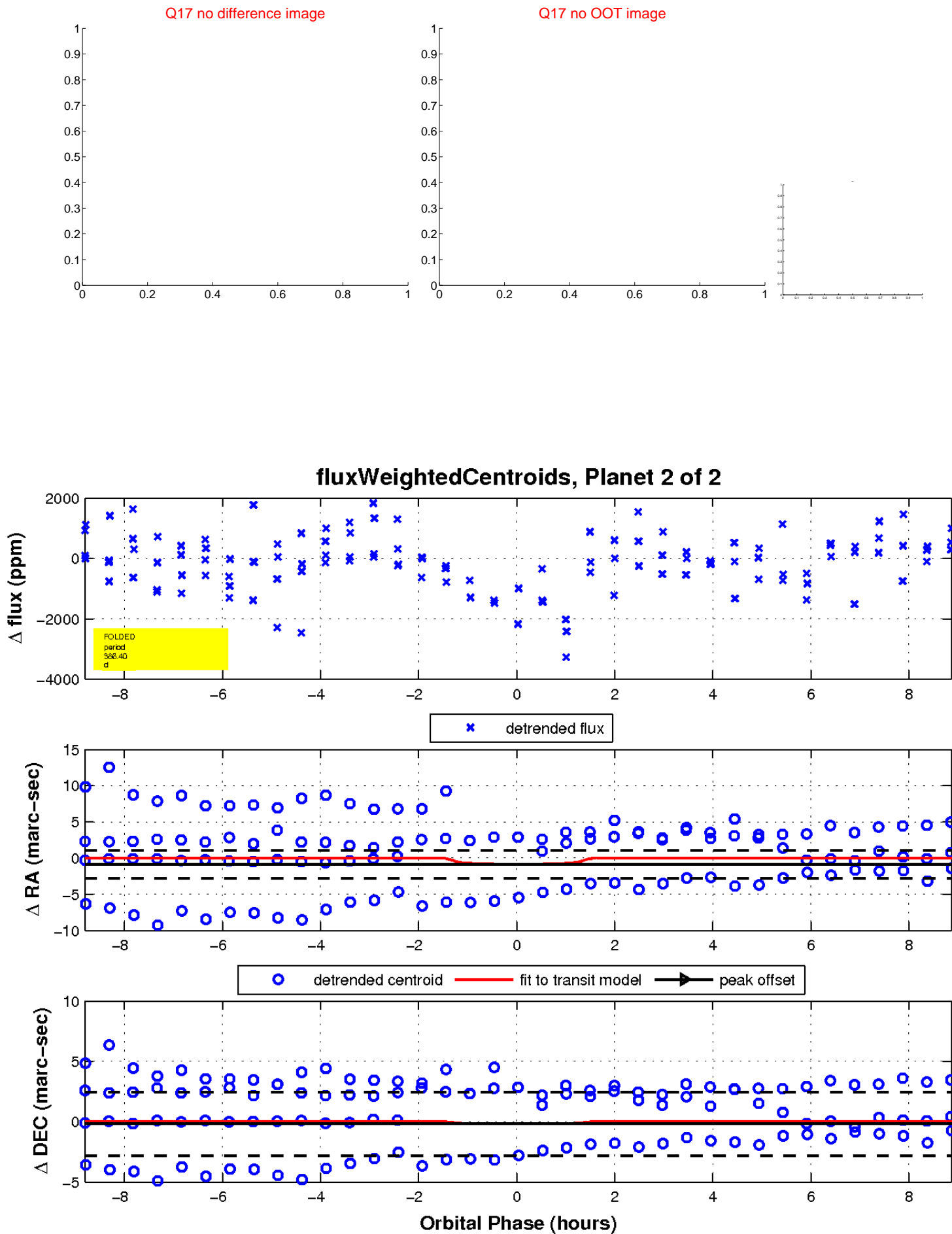
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

