

KIC 010188460

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})
010188460-01	OBS	No	422.111871	250.586438	530.4	13.525	10.1	6.8	0.51	3787	1.22	0.06
010188460-02	OBS	No	512.887848	510.079724	626.9	2.707	11.4	7.5	0.51	3787	1.35	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010188460-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010188460-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS

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

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

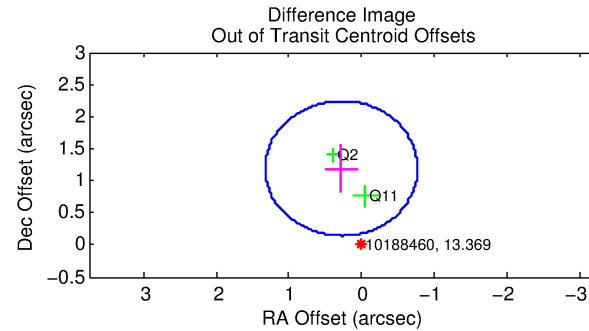
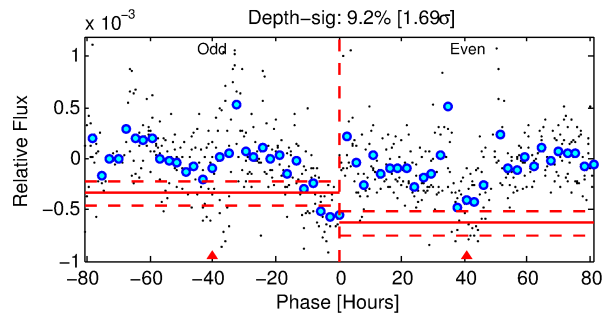
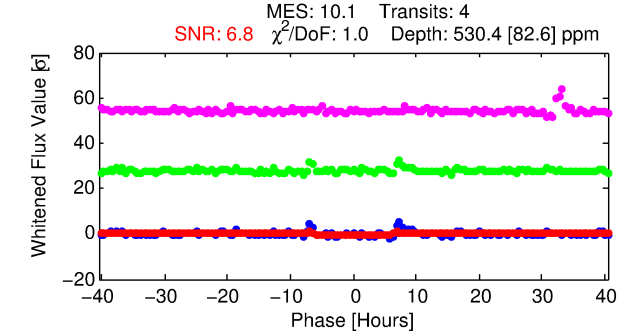
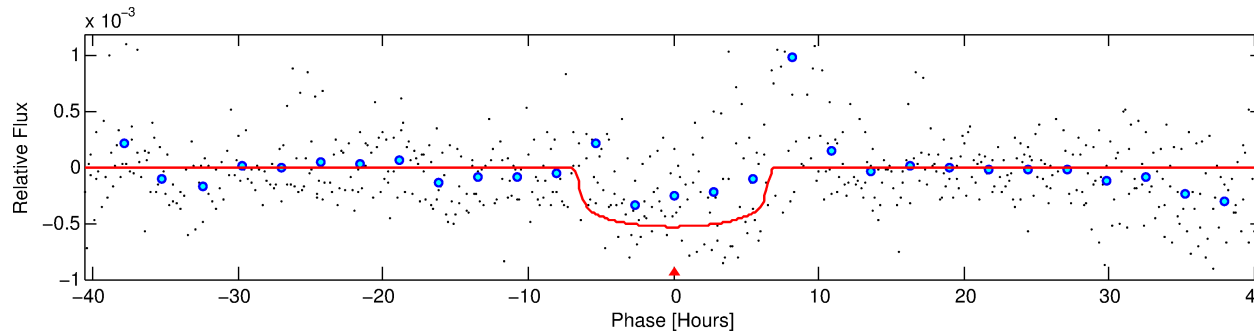
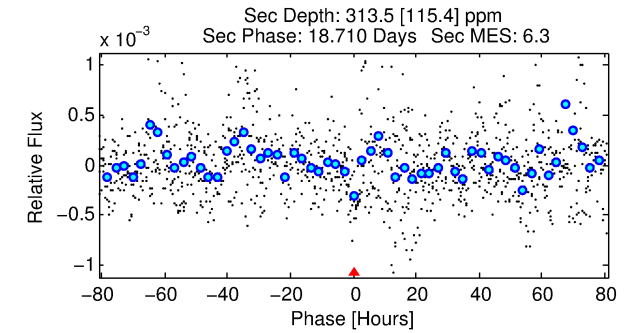
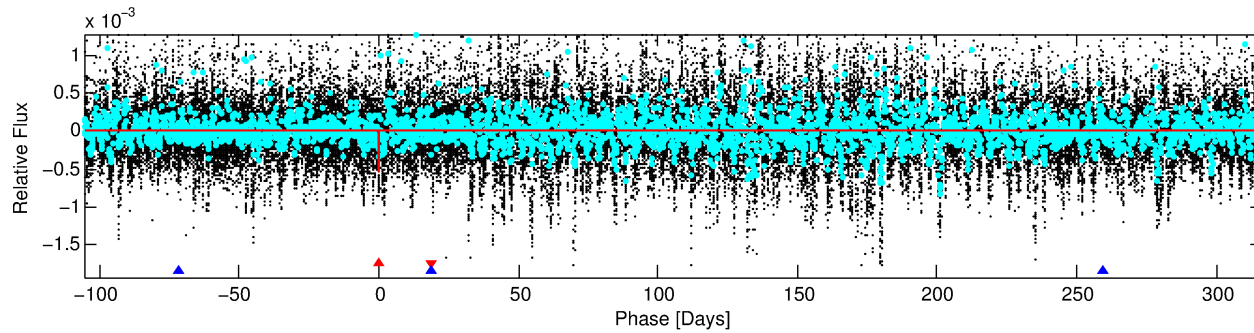
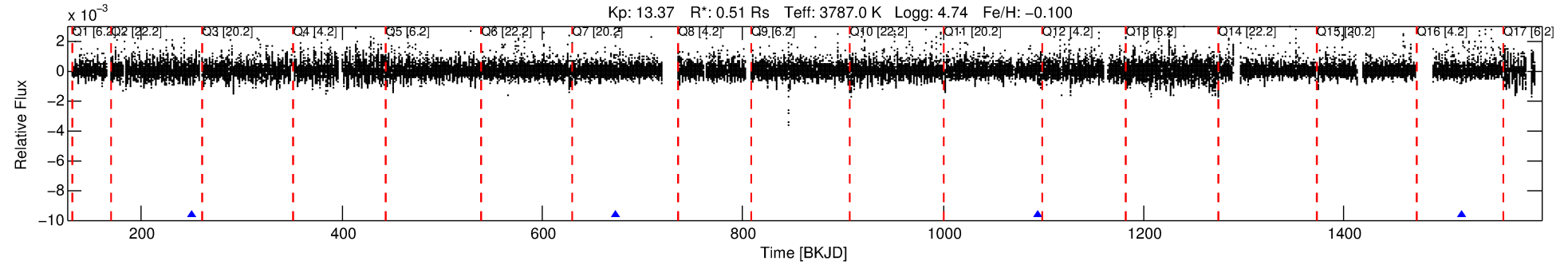
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010188460-01

No Significant Match Found

DV One-Page Summary

KIC: 10188460 Candidate: 1 of 2 Period: 422.112 d



DV Fit Results:

Period = 422.11187 [0.00595] d
Epoch = 250.5864 [0.0112] BKJD
Rp/R* = 0.0221 [0.0052]
a/R* = 190.21 [177.51]
b = 0.64 [0.87]
Seff = 0.06 [0.01]
Teq = 126 [3] K
Rp = 1.22 [0.30] Re
a = 0.8821 [0.0441] AU
Ag = 90231.61 [54194.94] [1.66 σ]
Teffp = 3387 [509] K [6.41 σ]

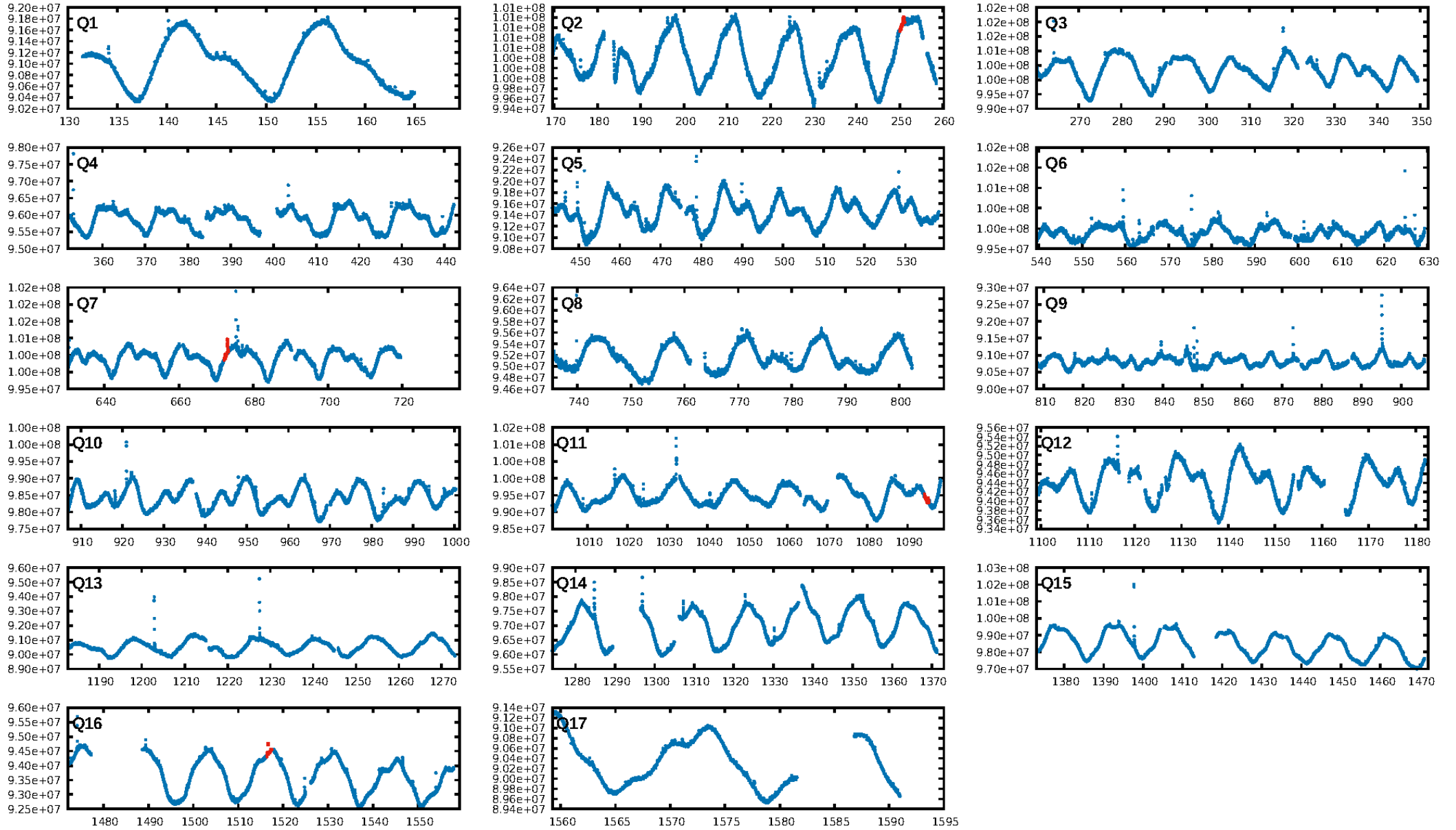
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [157.95 σ]
ModelChiSquare2-sig: 24.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.92e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.7271
Centroid-sig: 15.5%
Centroid-so: 1.084 arcsec [1.53 σ]
OotOffset-rm: 1.223 arcsec [3.50 σ]
KicOffset-rm: 1.334 arcsec [3.72 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

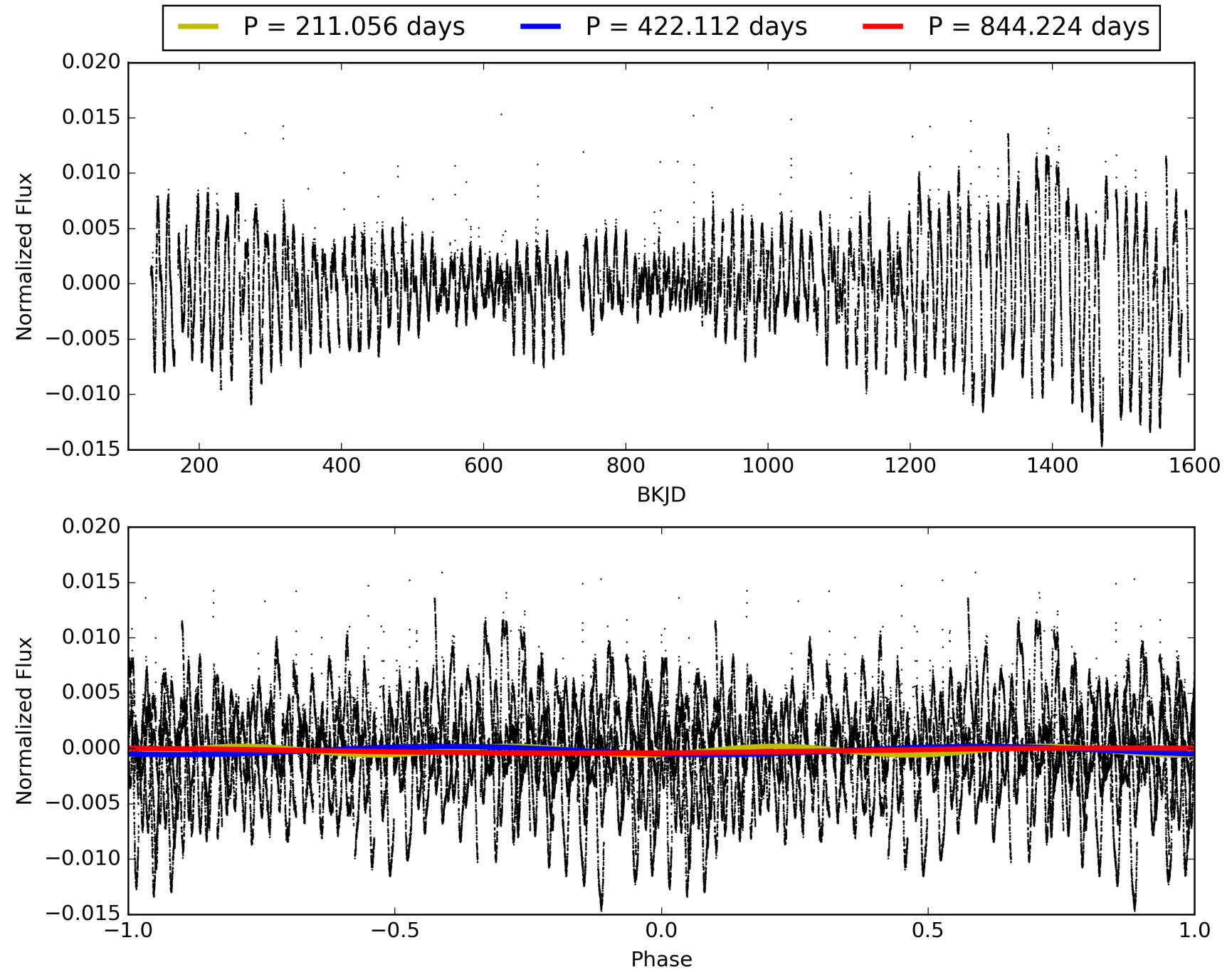
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:30:10 Z

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

TCE 010188460-01, PDC Light Curves

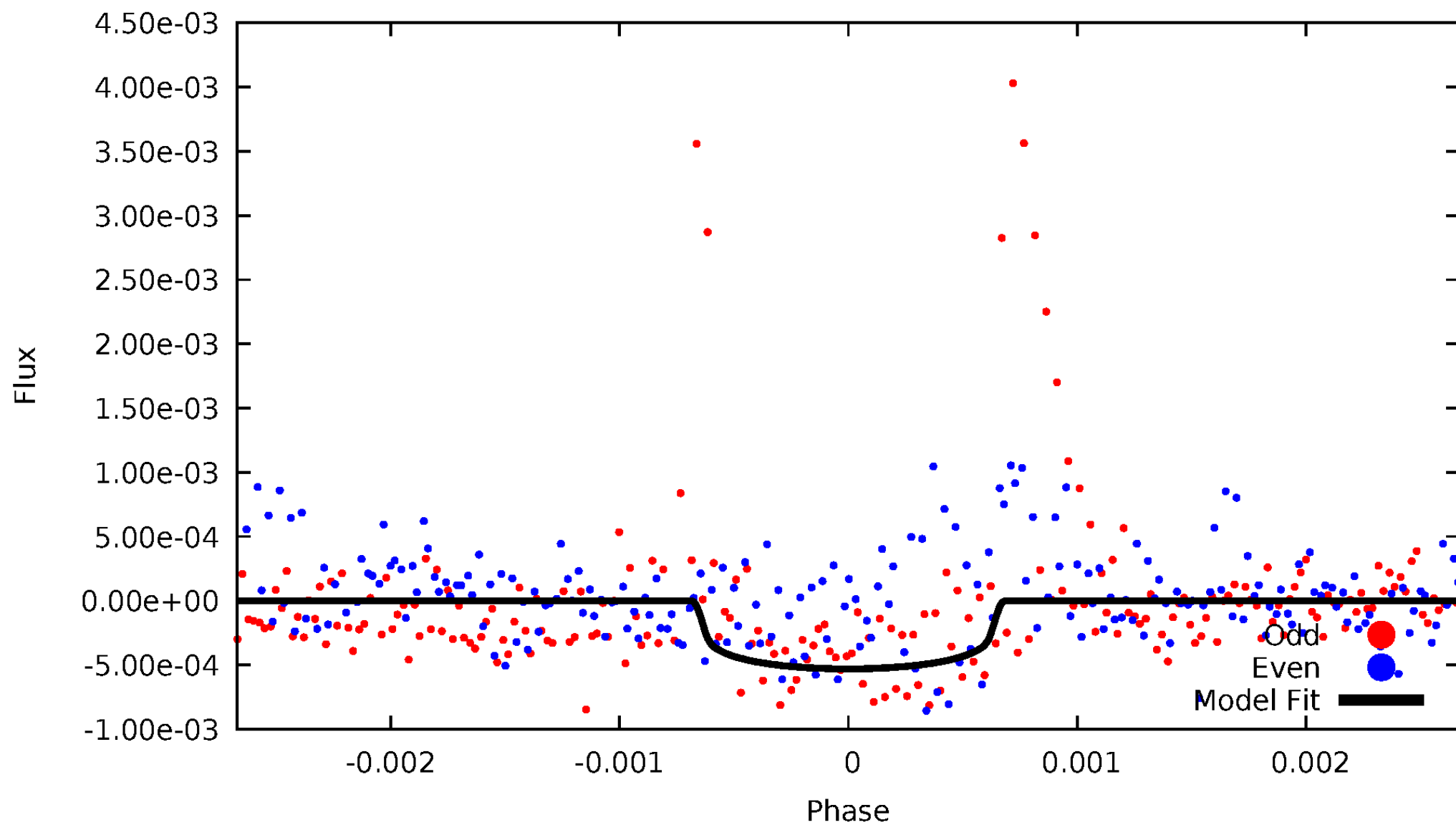


TCE 010188460-01



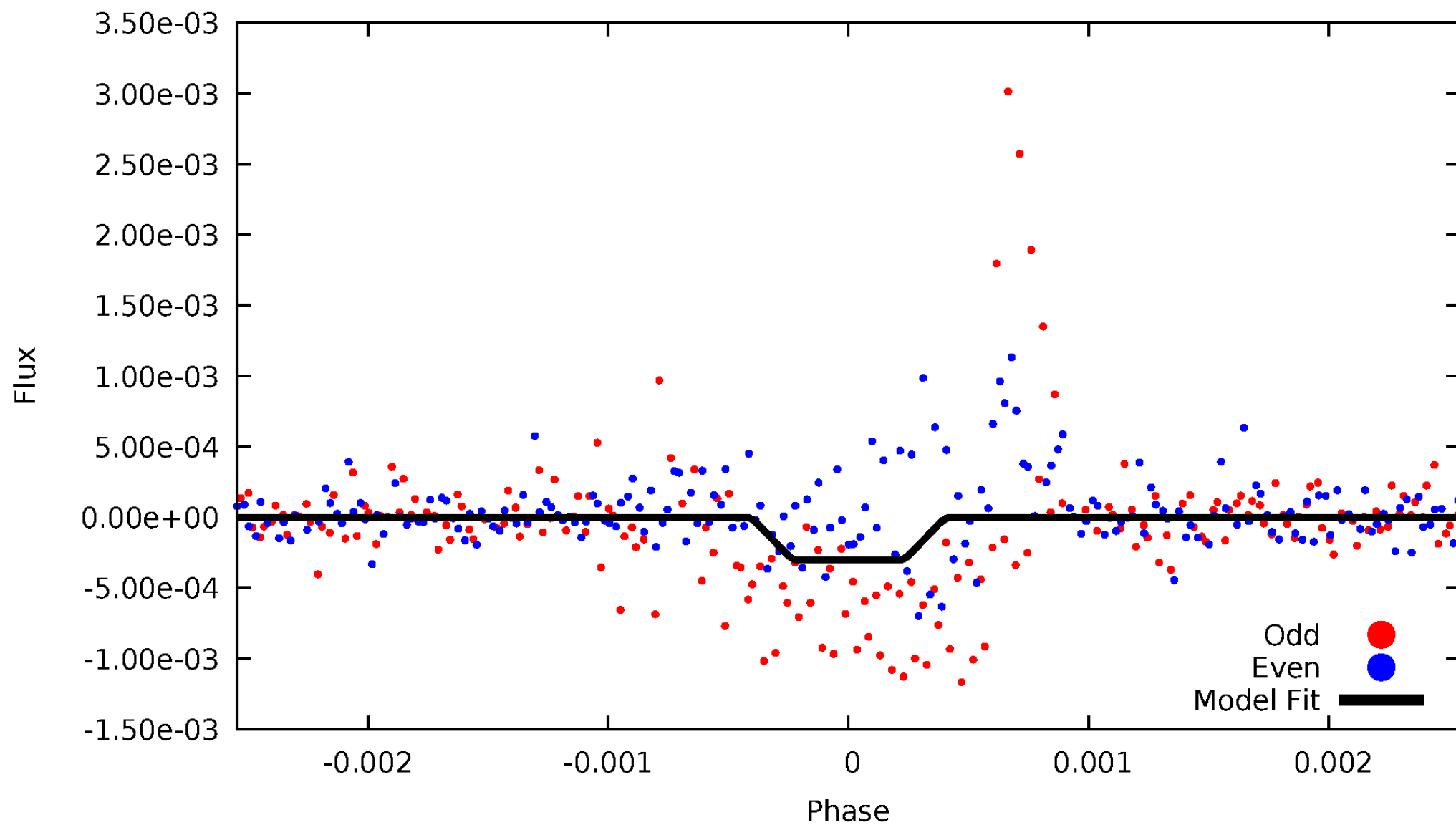
DV Odd/Even

TCE 010188460-01



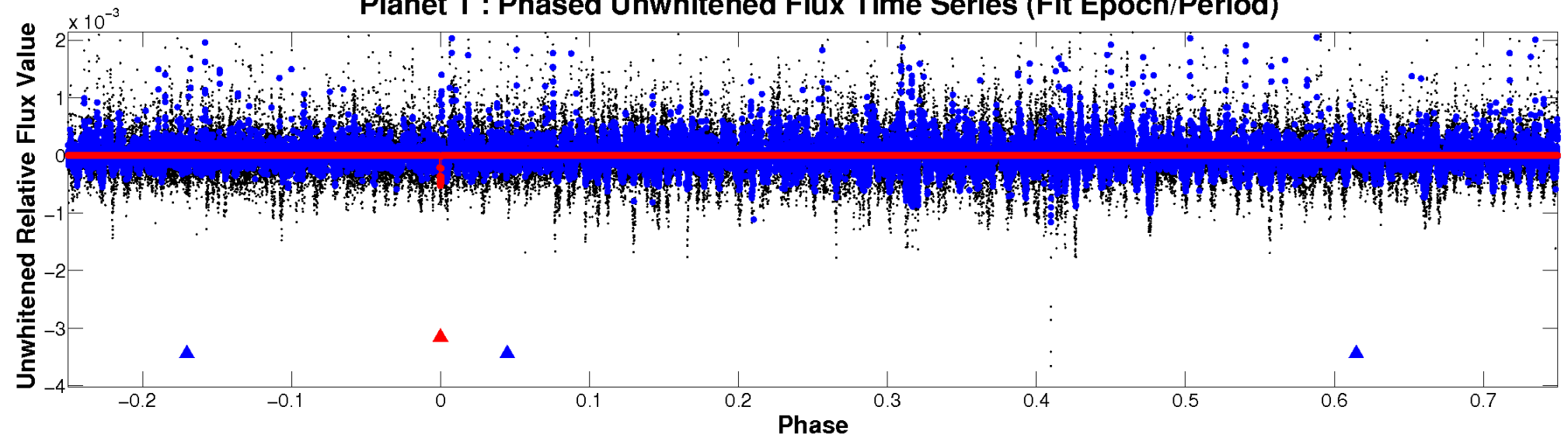
ALT Odd/Even

TCE 010188460-01

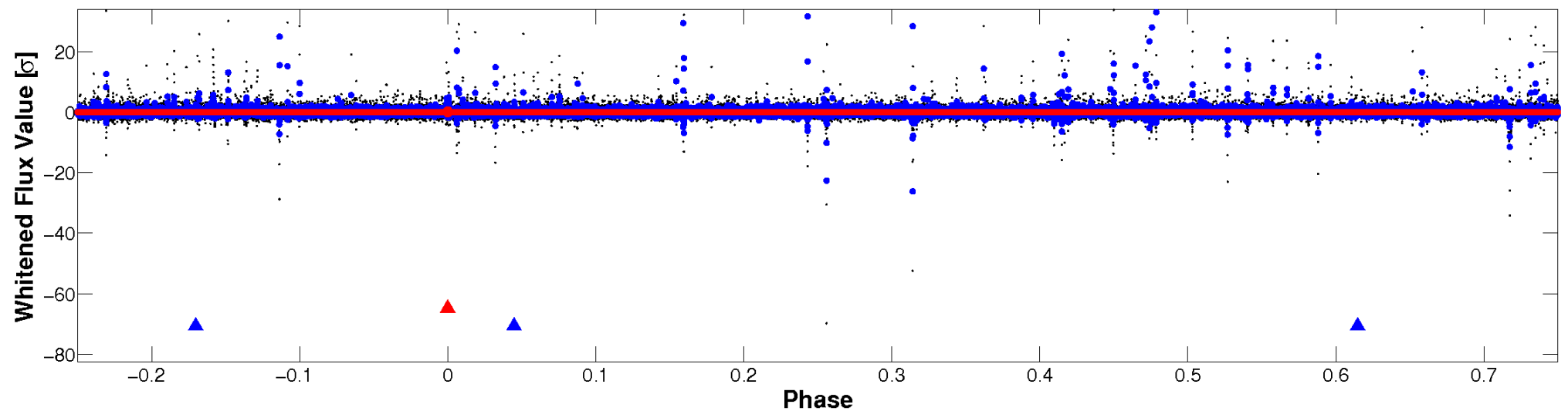


Non-Whitened Vs. Whitened Light Curve

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

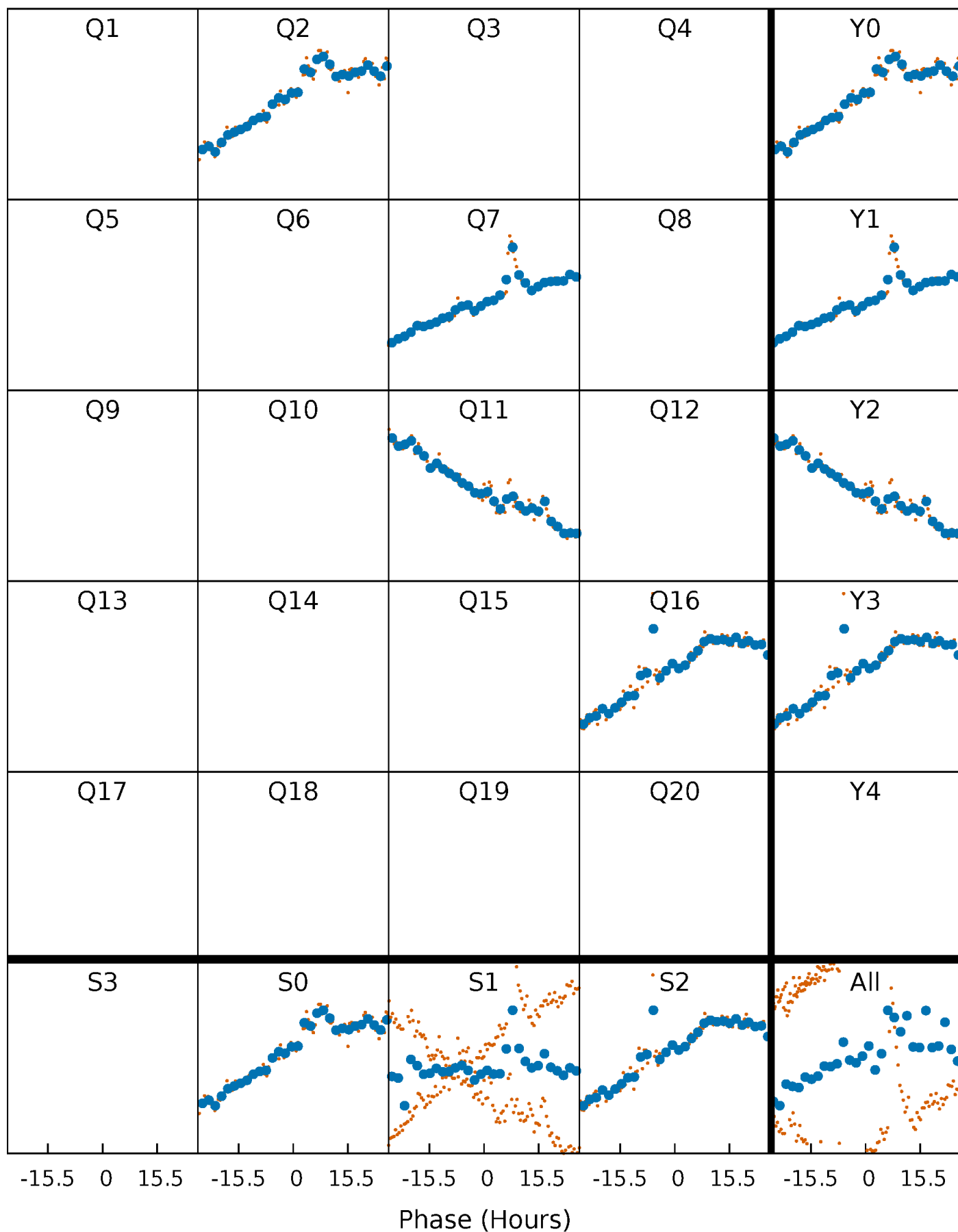


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



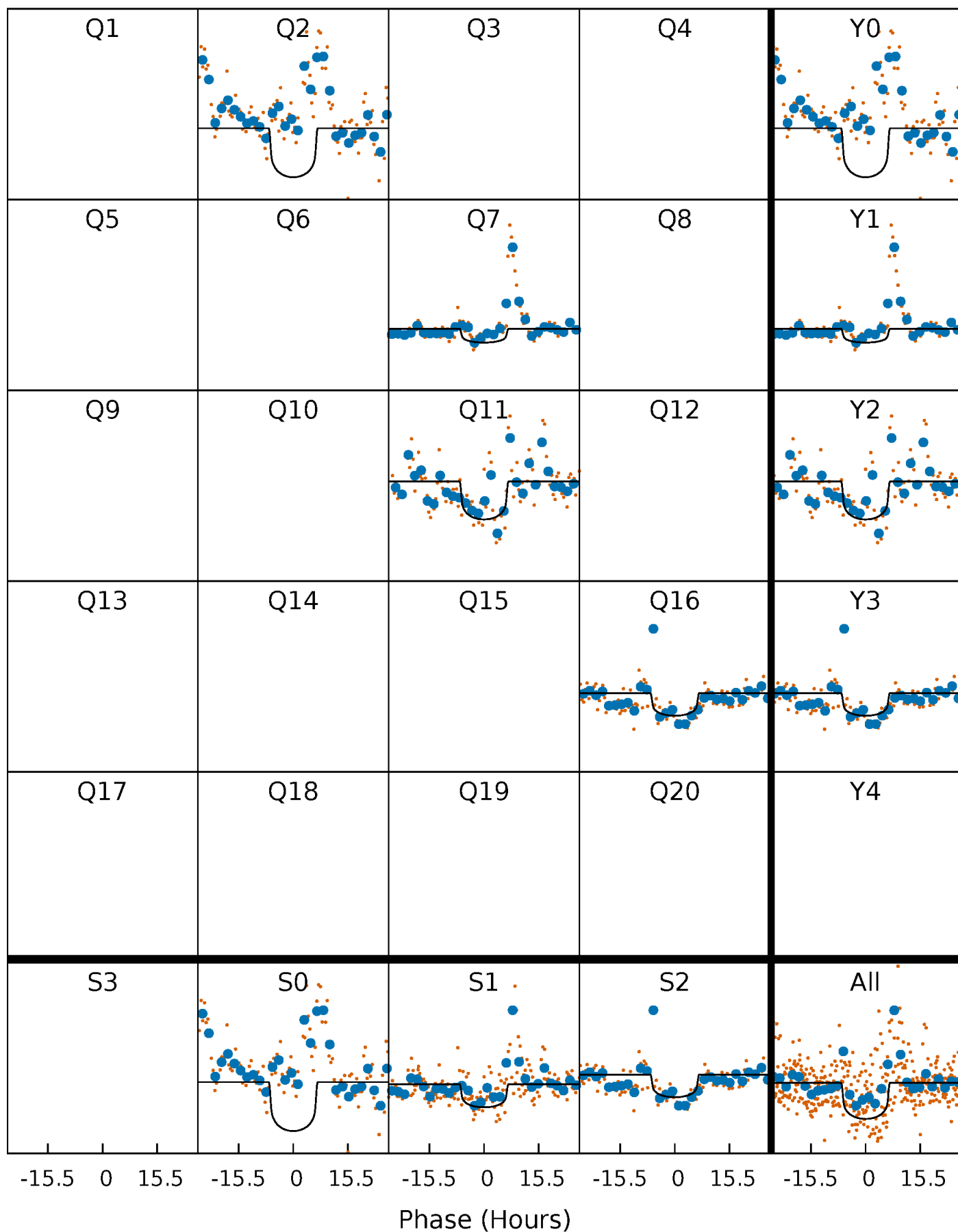
PDC Quarter-Phased Transit Curves

TCE 010188460-01 P=422.111871 Days $T_0=250.586438$ (BKJD)



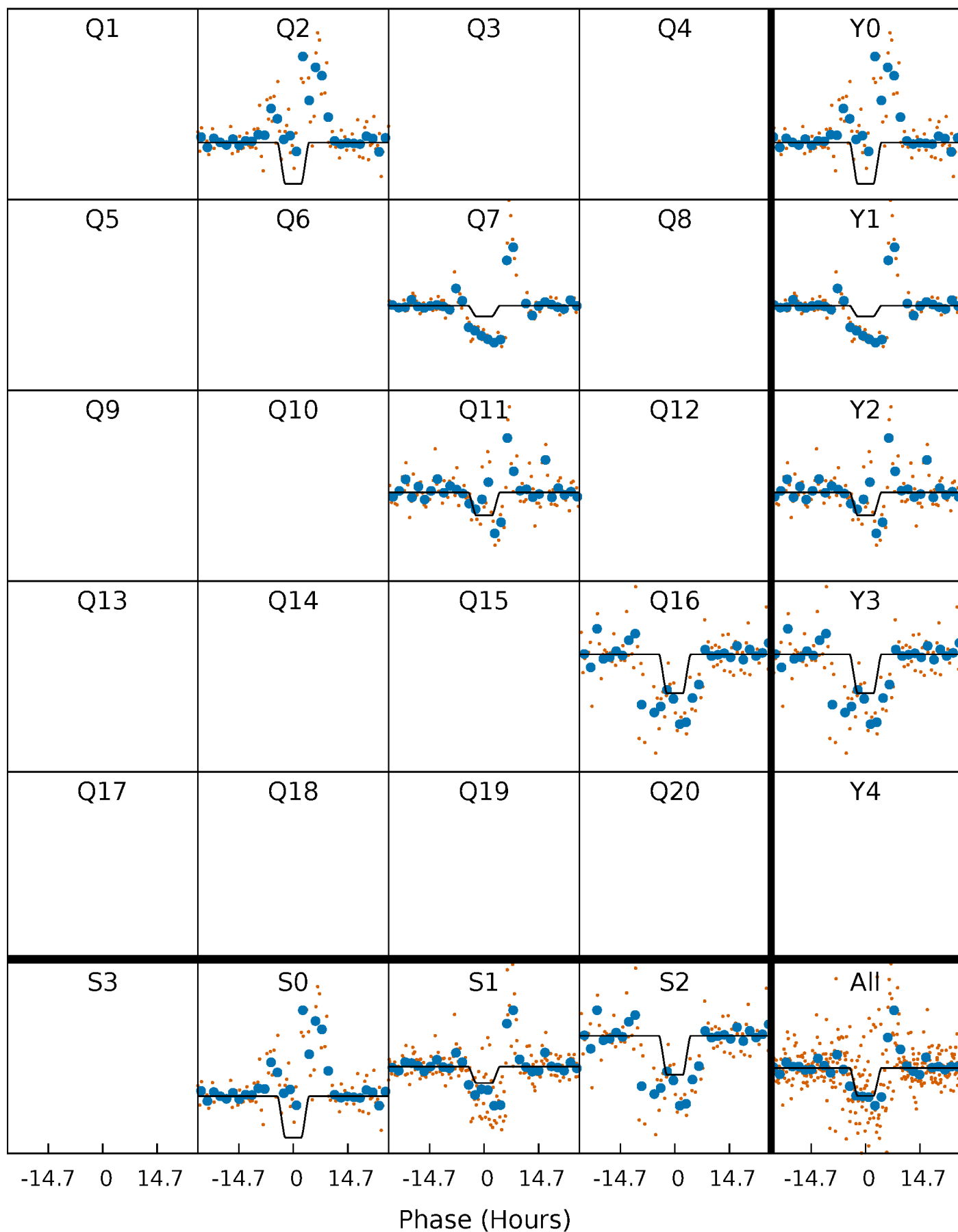
DV Quarter-Phased Transit Curves

TCE 010188460-01 P=422.111871 Days $T_0=250.586438$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

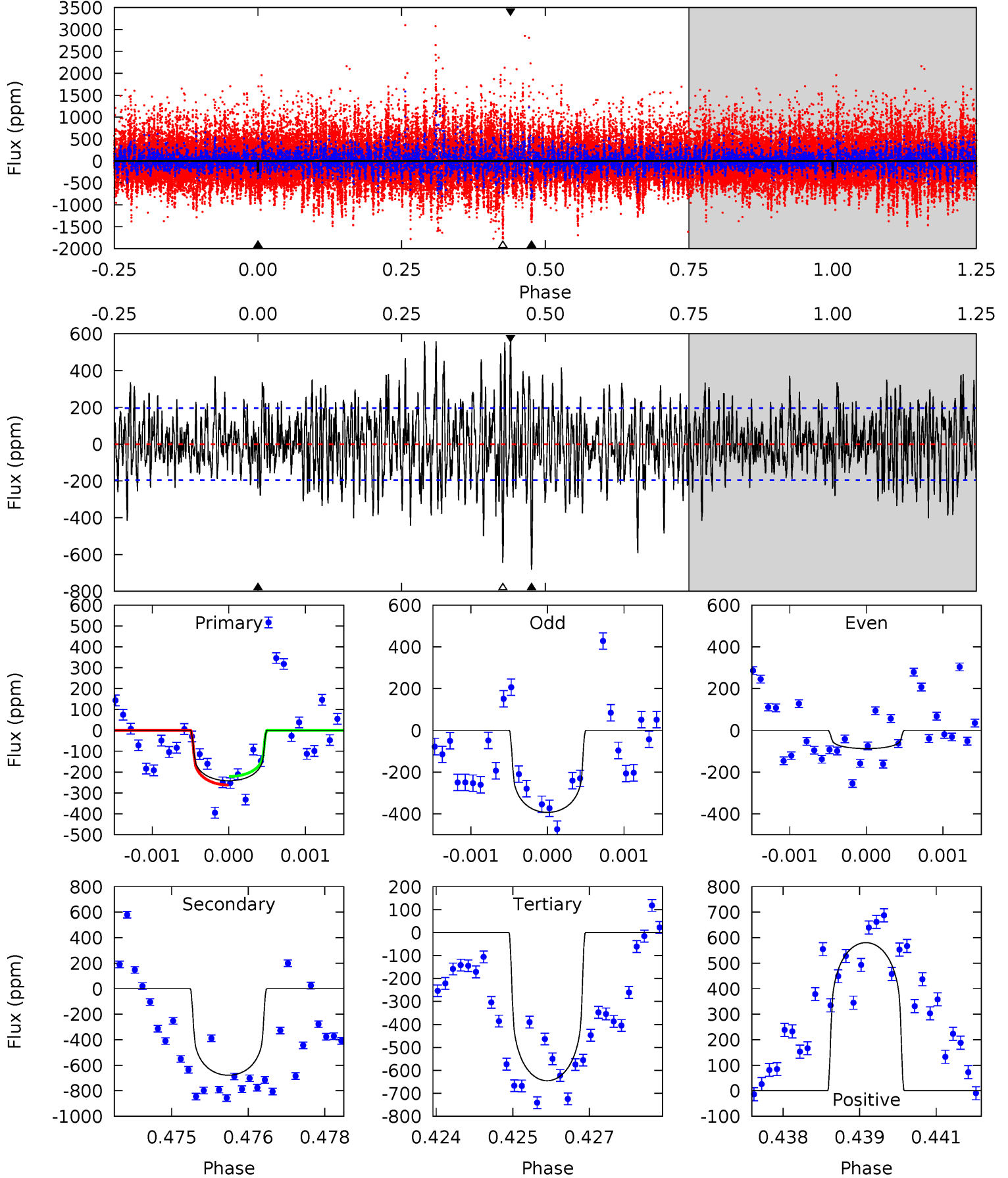
TCE 010188460-01 P=422.109671 Days $T_0=250.611469$ (BKJD)



DV Model-Shift Uniqueness Test

010188460-01, P = 422.111871 Days, E = 250.586438 Days

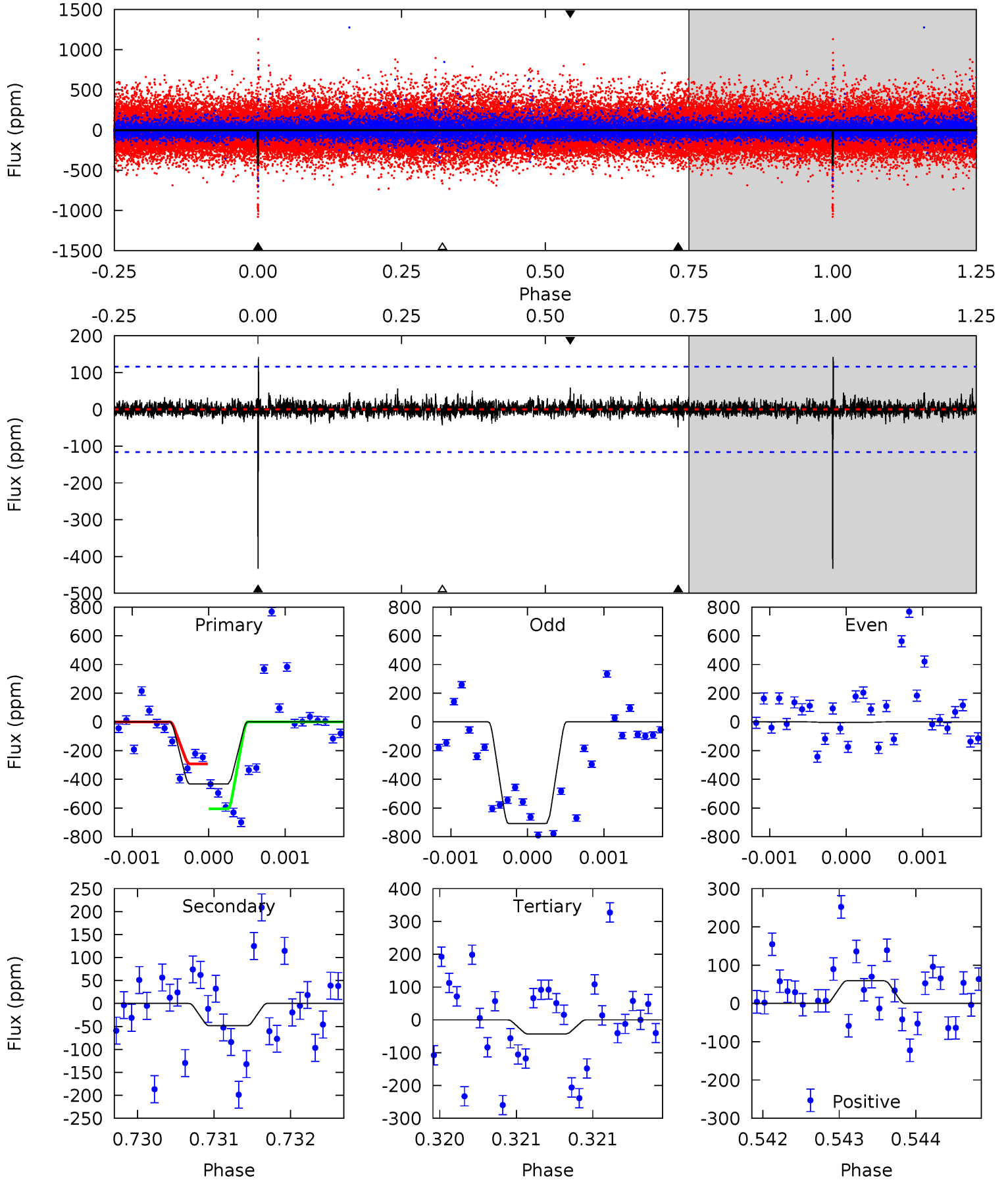
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.66	18.7	17.8	16.0	5.39	3.20	4.38	-11.1	-9.34	0.91	2.70	3.67	0.70	0.46	0.56



Alt Model-Shift Uniqueness Test

010188460-01, P = 422.109671 Days, E = 250.611469 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	2.30	2.03	2.79	5.48	3.34	0.51	18.4	17.7	0.26	-0.49	17.6	1.19	0.25	7.24



Stellar Parameters For KIC 010188460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3787^{+57}_{-62}	$4.742^{+0.032}_{-0.020}$	$-0.100^{+0.100}_{-0.100}$	$0.505^{+0.023}_{-0.033}$	$0.514^{+0.026}_{-0.026}$	$5.610^{+0.829}_{-0.492}$
	+2%/-2%	+1%/-0%	+100%/-100%	+5%/-7%	+5%/-5%	+15%/-9%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010188460-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-678 ± 36	$1.20^{+0.31}_{-0.26}$	176^{+3}_{-3}	4016^{+385}_{-314}	$199336^{+133382}_{-72286}$
Alt.	-49 ± 21	$0.96^{+0.28}_{-0.30}$	176^{+3}_{-4}	2853^{+331}_{-259}	21951^{+25155}_{-11298}

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

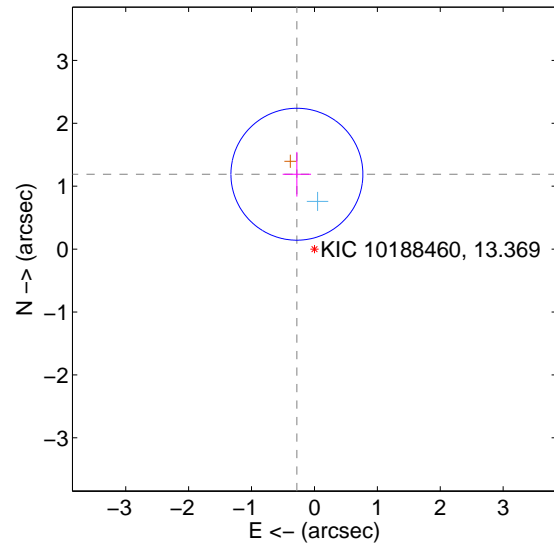
Supplemental centroid analysis for 010188460-01. Kepler magnitude: 13.37. Transit SNR 6.81

There are 1 quarters with good PRF difference image offsets

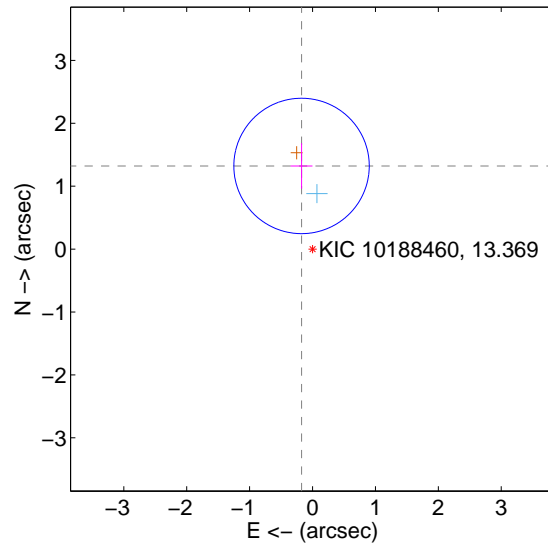
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.223 ± 0.350	3.50	0.279 ± 0.226	1.191 ± 0.355
PRF-fit source offset from KIC position	1.334 ± 0.359	3.72	0.175 ± 0.174	1.322 ± 0.361
photometric centroid source offset	1.08 ± 0.71	1.53	-1.04 ± 0.71	0.32 ± 0.63

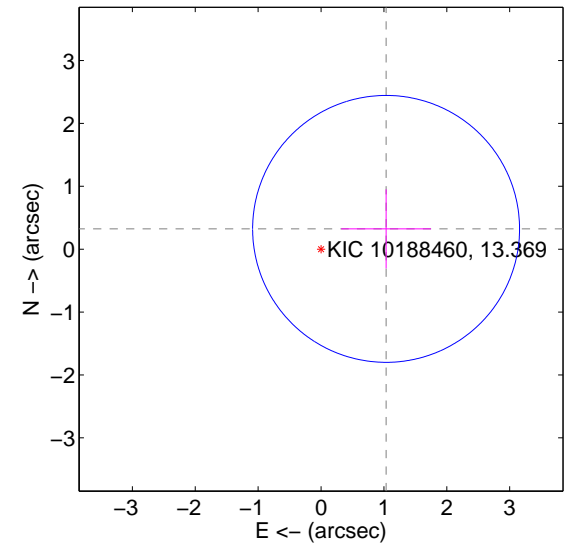
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

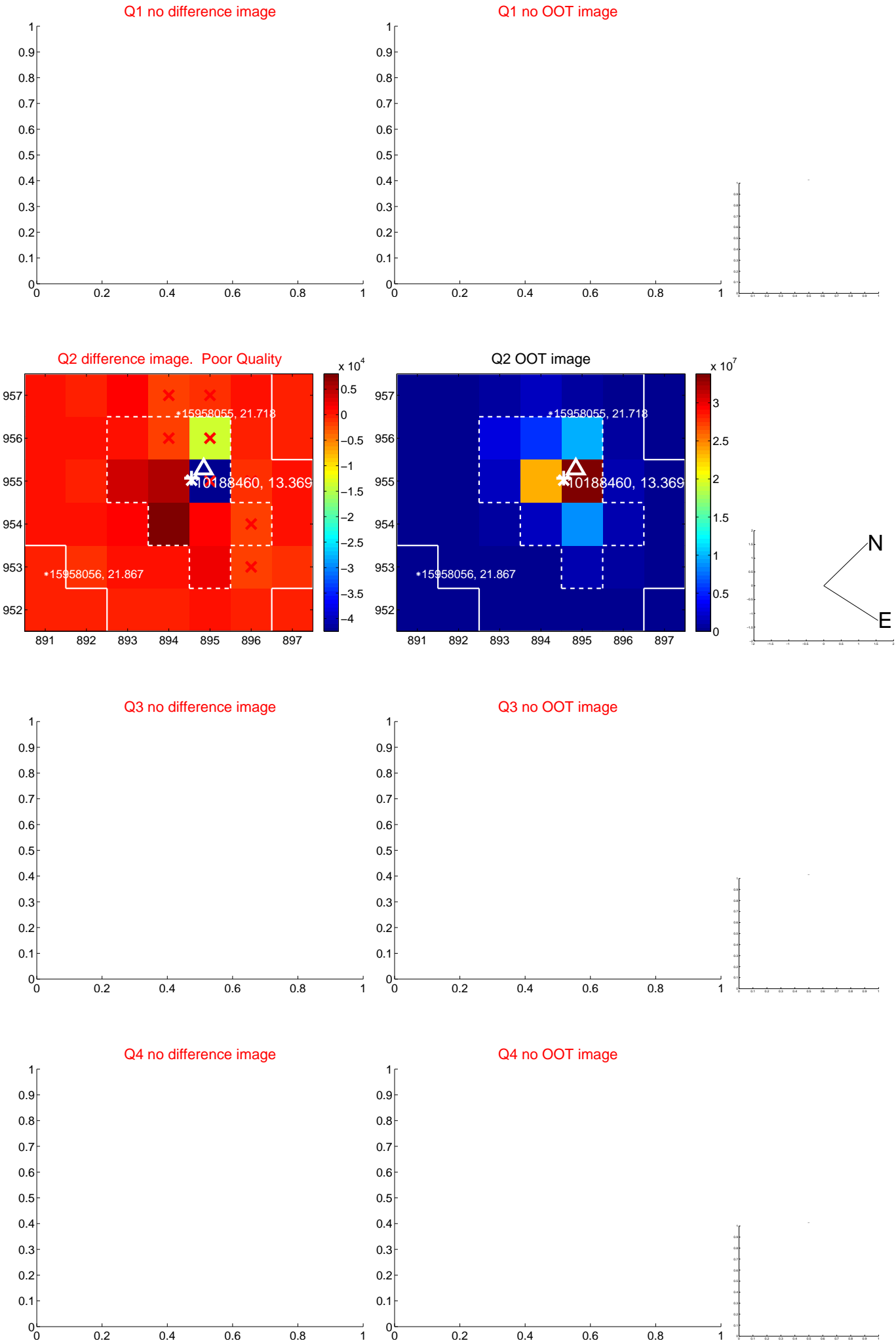


offset from photometric centroids

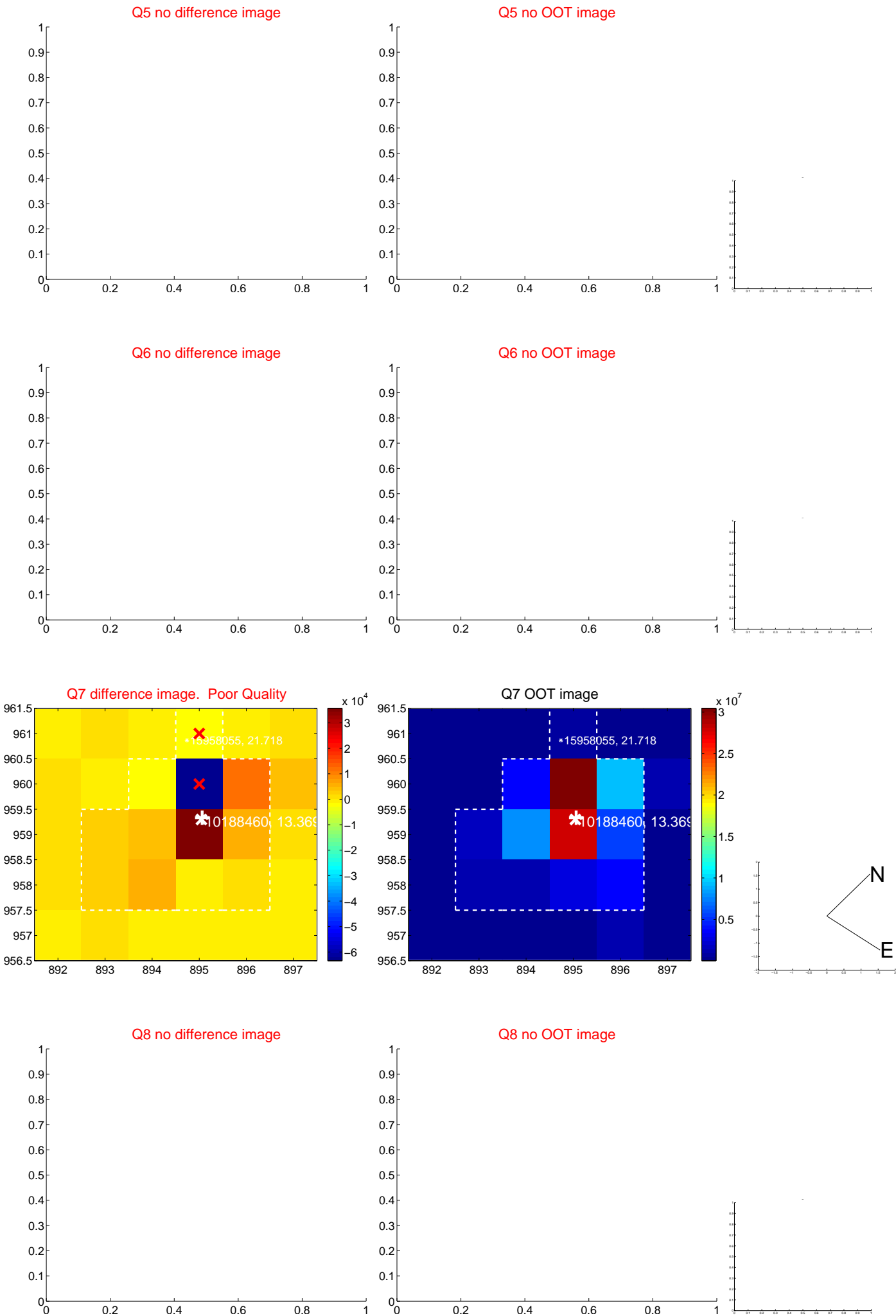


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

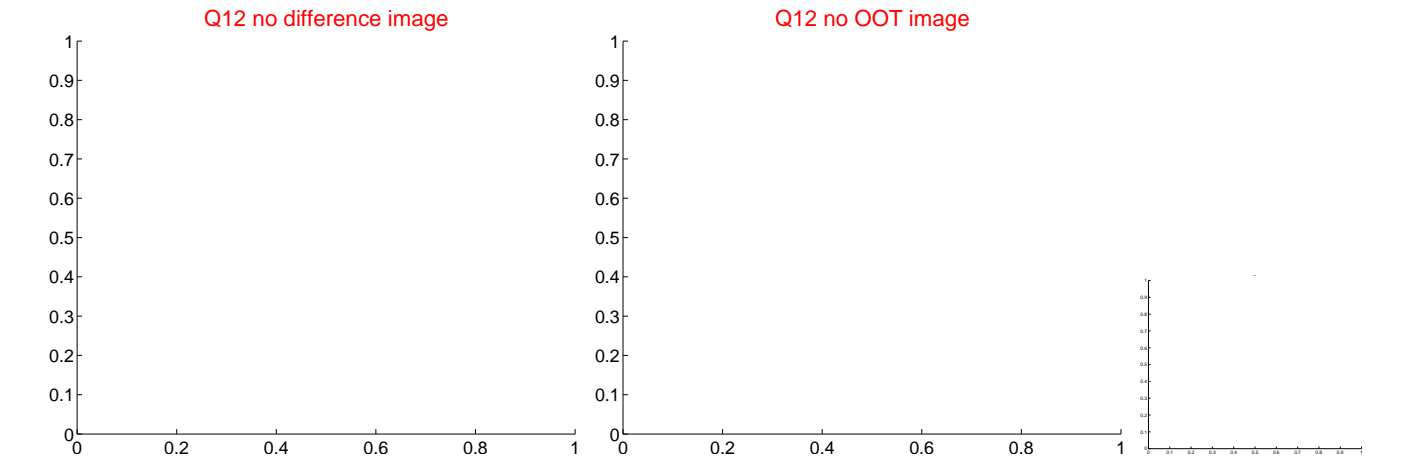
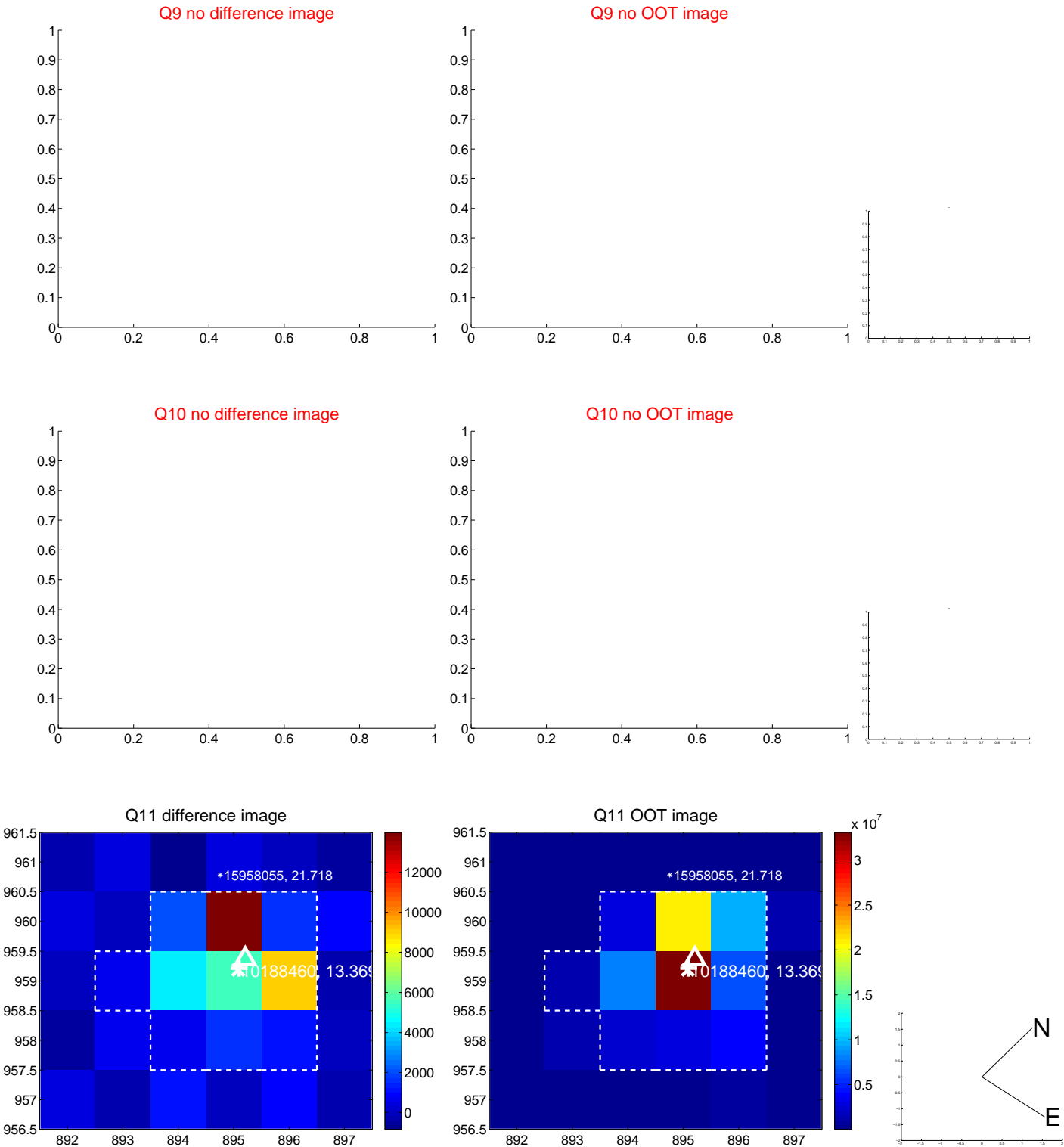
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



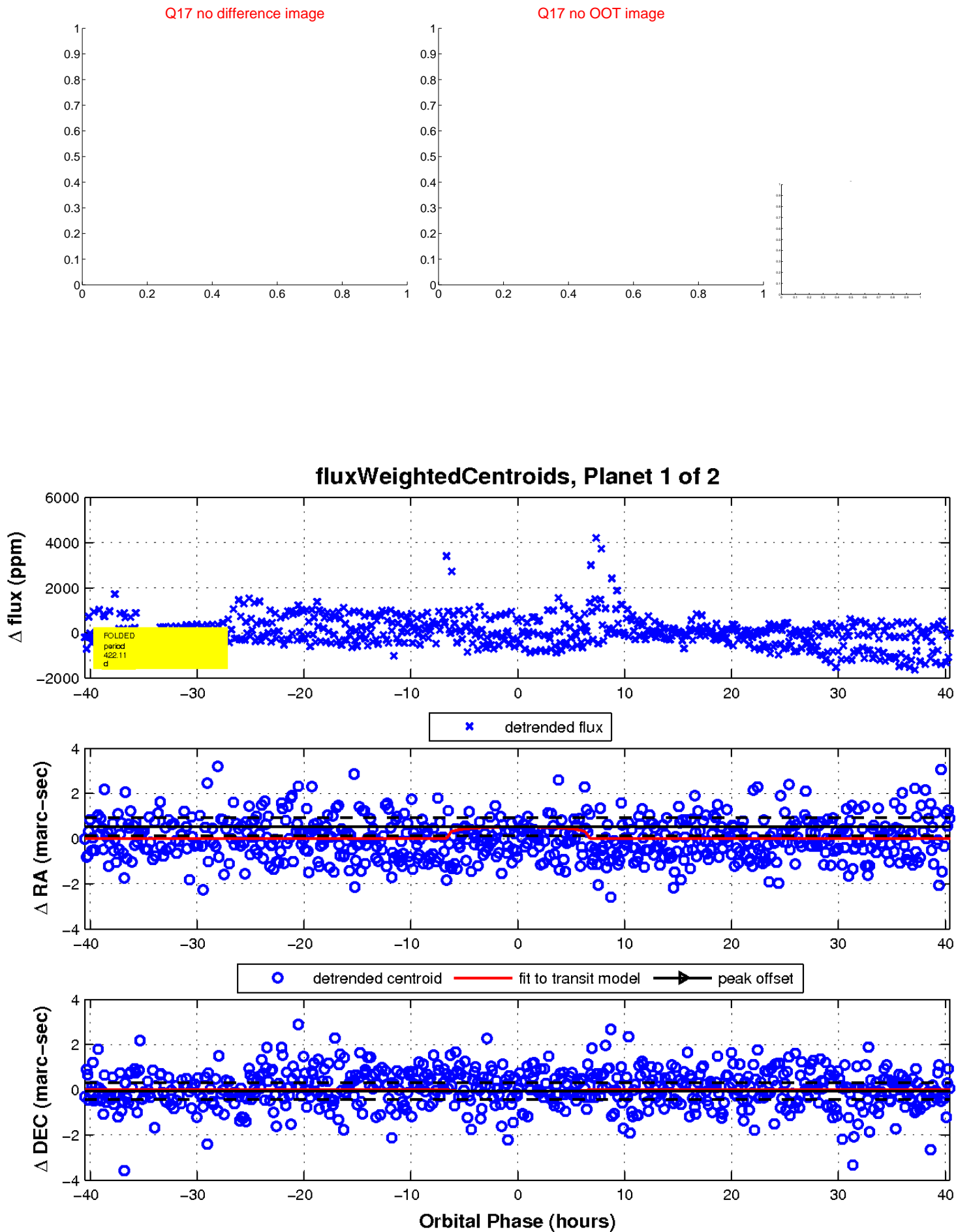
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

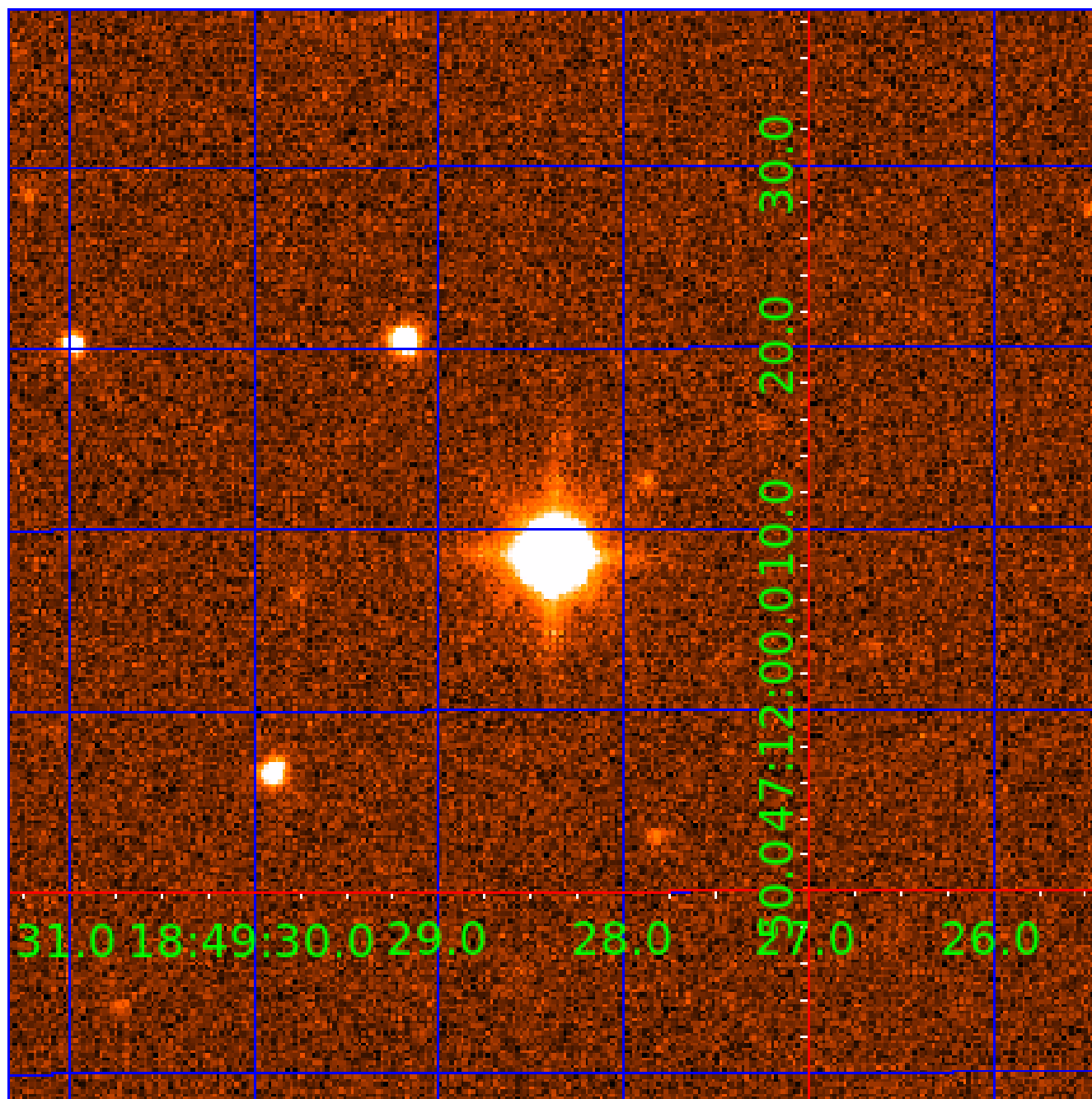


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010188460

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})
010188460-01	OBS	No	422.111871	250.586438	530.4	13.525	10.1	6.8	0.51	3787	1.22	0.06
010188460-02	OBS	No	512.887848	510.079724	626.9	2.707	11.4	7.5	0.51	3787	1.35	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010188460-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010188460-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS

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

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

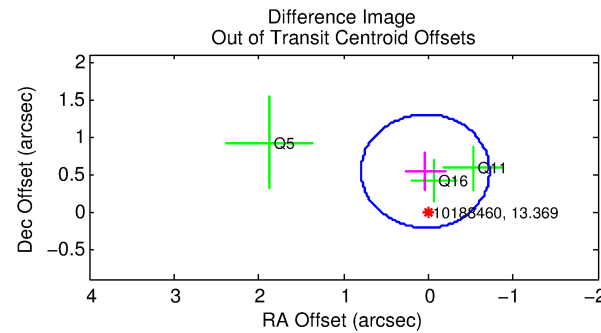
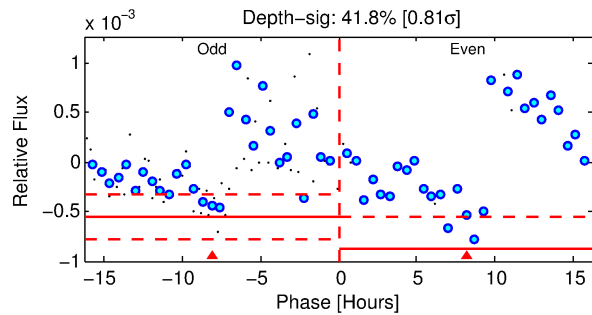
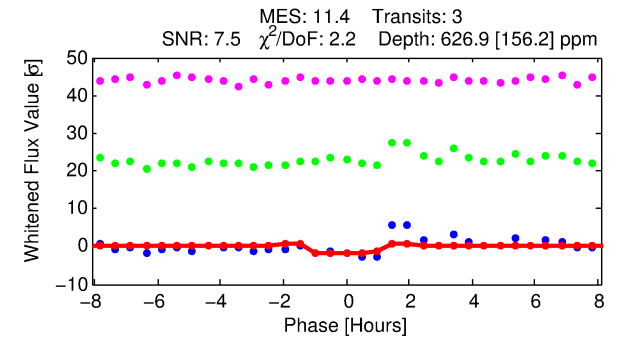
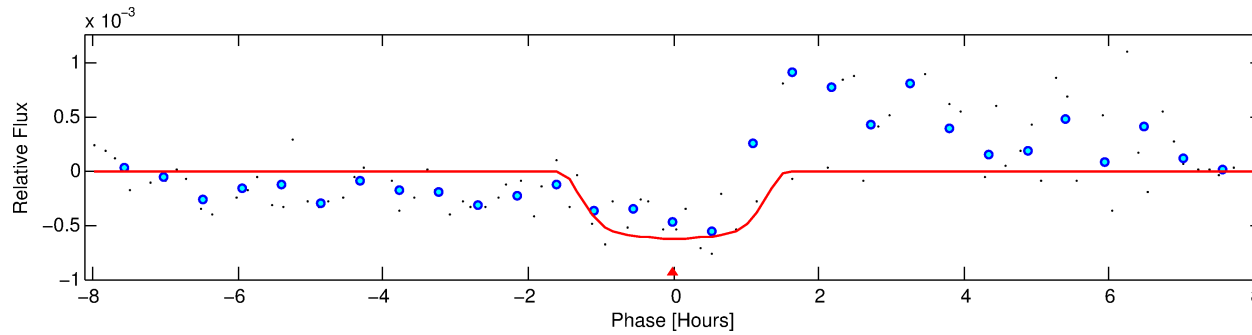
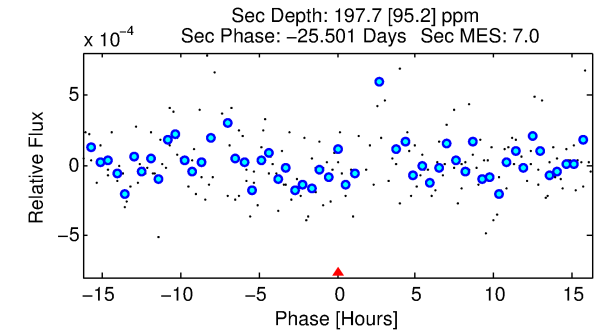
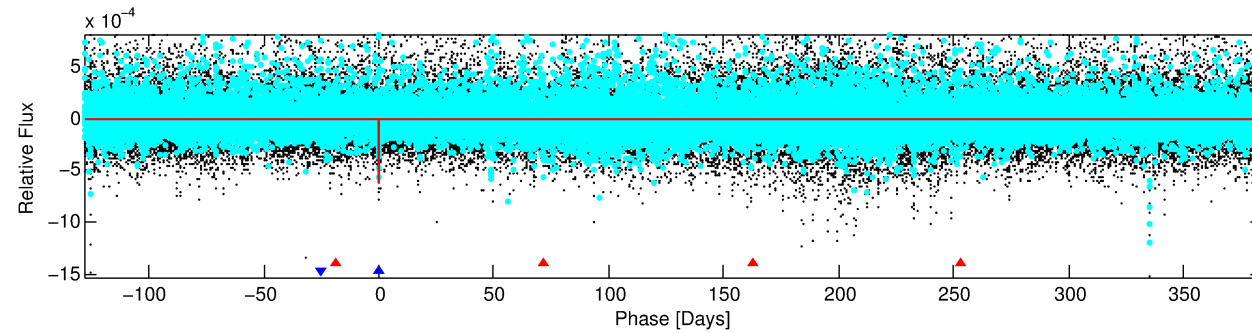
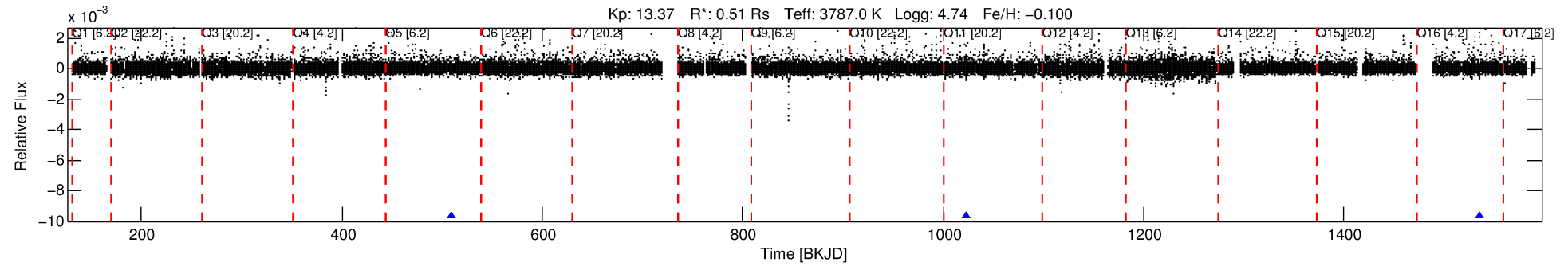
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010188460-02

No Significant Match Found

DV One-Page Summary

KIC: 10188460 Candidate: 2 of 2 Period: 512.888 d



DV Fit Results:

Period = 512.88785 [0.00611] d
Epoch = 510.0797 [0.0085] BKJD
Rp/R* = 0.0245 [0.0740]
a/R* = 1089.17 [14654.13]
b = 0.70 [10.09]
Seff = 0.05 [0.00]
Teq = 118 [3] K
Rp = 1.35 [4.08] Re
a = 1.0044 [0.0502] AU
Ag = 60403.91 [366602.73] [0.16σ]
Teffp = 2871 [4357] K [0.63σ]

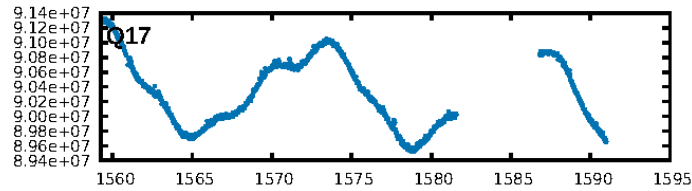
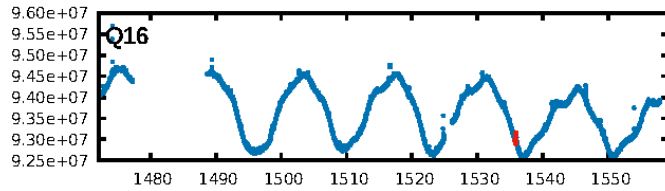
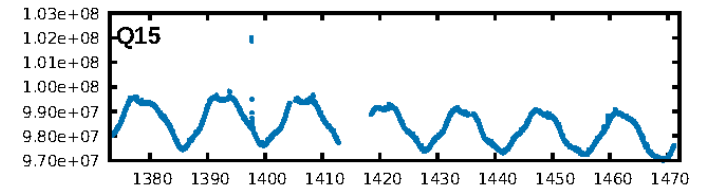
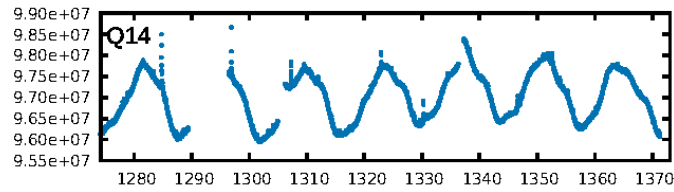
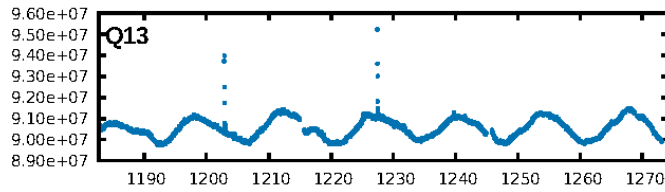
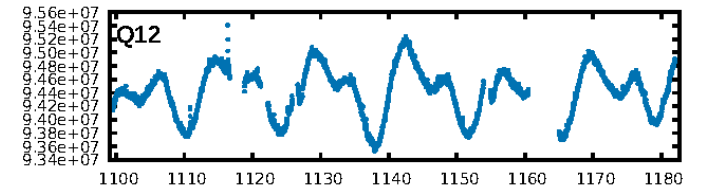
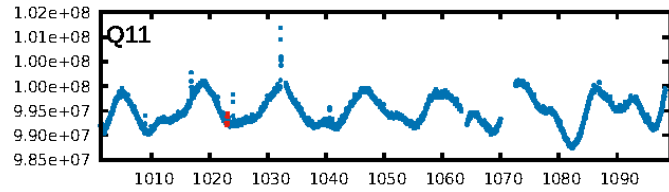
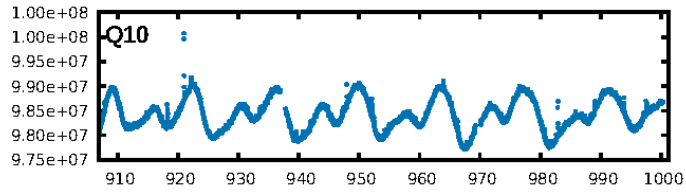
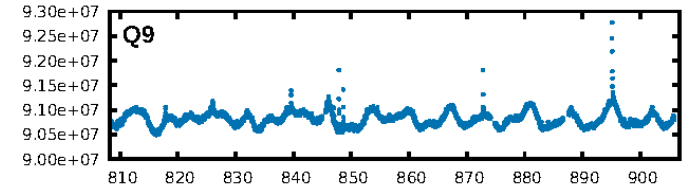
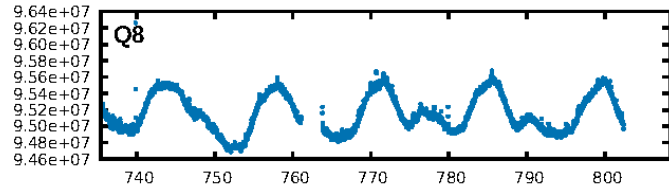
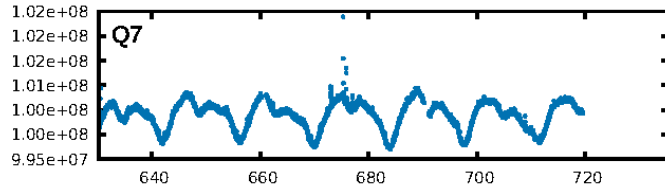
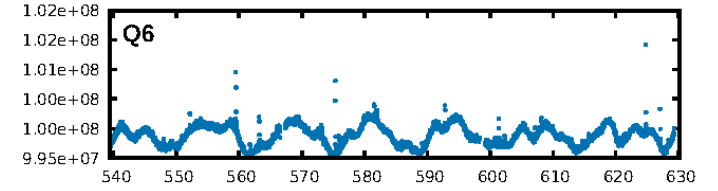
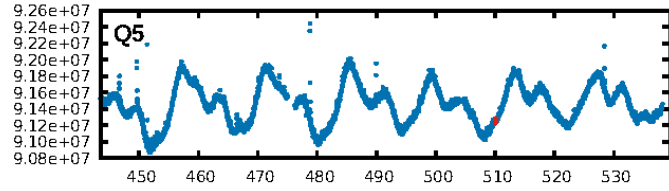
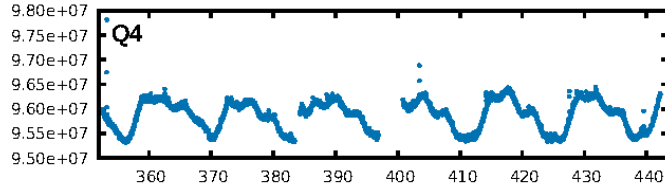
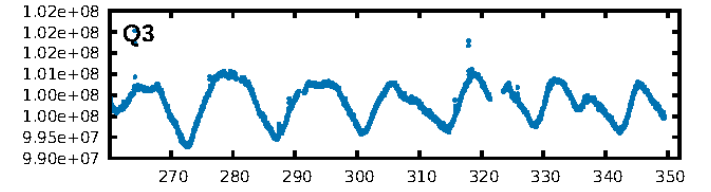
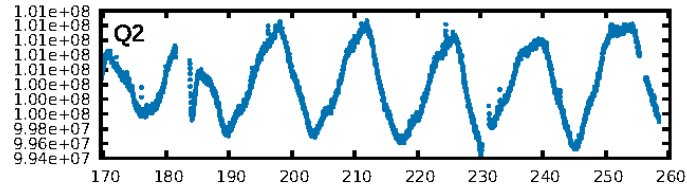
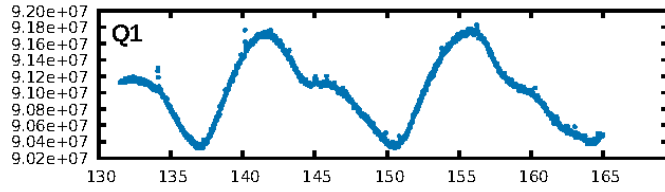
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [157.95σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 11.4%
Bootstrap-pfa: 3.02e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.238
Centroid-sig: 38.5%
Centroid-so: 1.050 arcsec [0.95σ]
OotOffset-rm: 0.540 arcsec [2.14σ]
KicOffset-rm: 0.714 arcsec [2.83σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

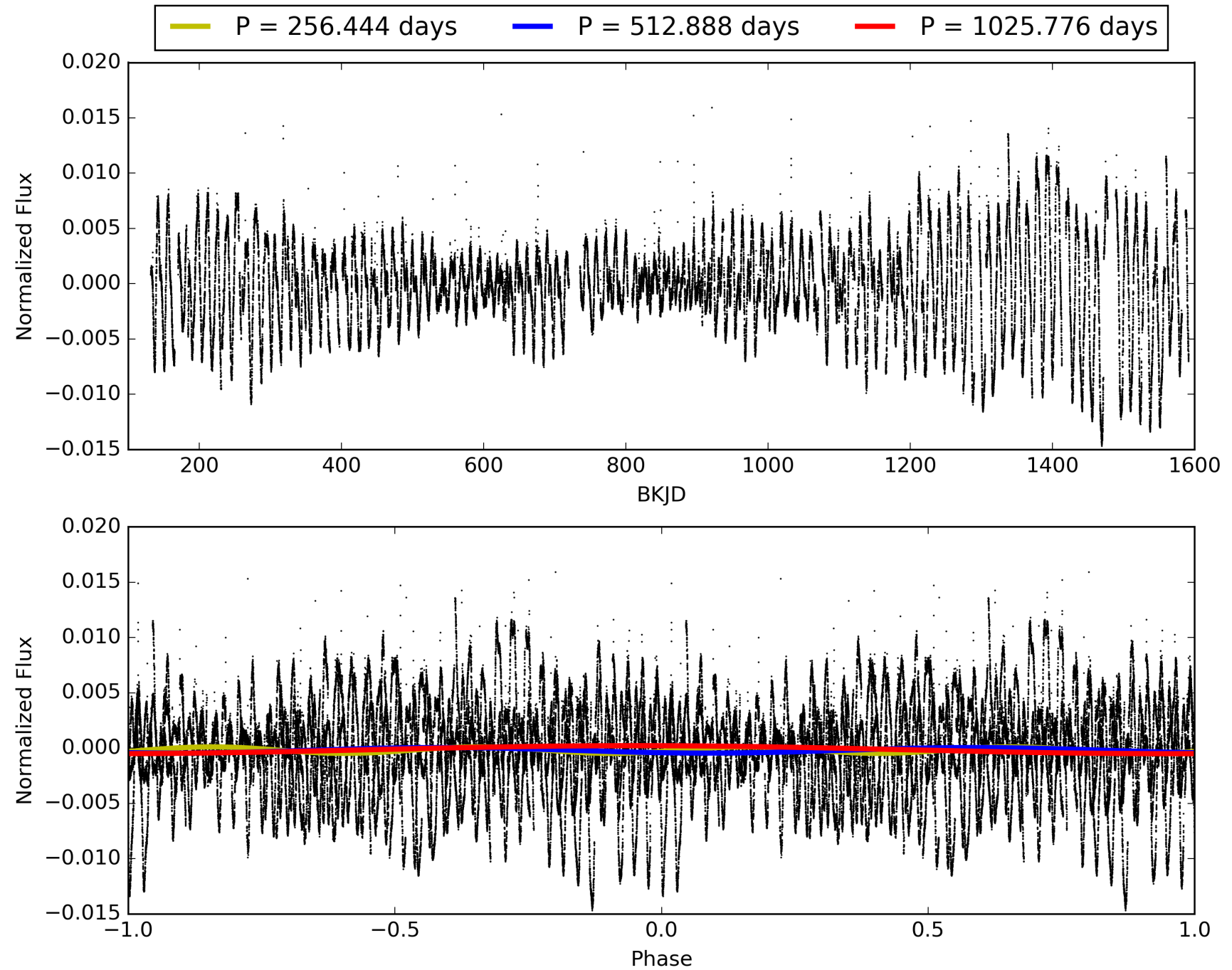
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:30:34 Z

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

TCE 010188460-02, PDC Light Curves

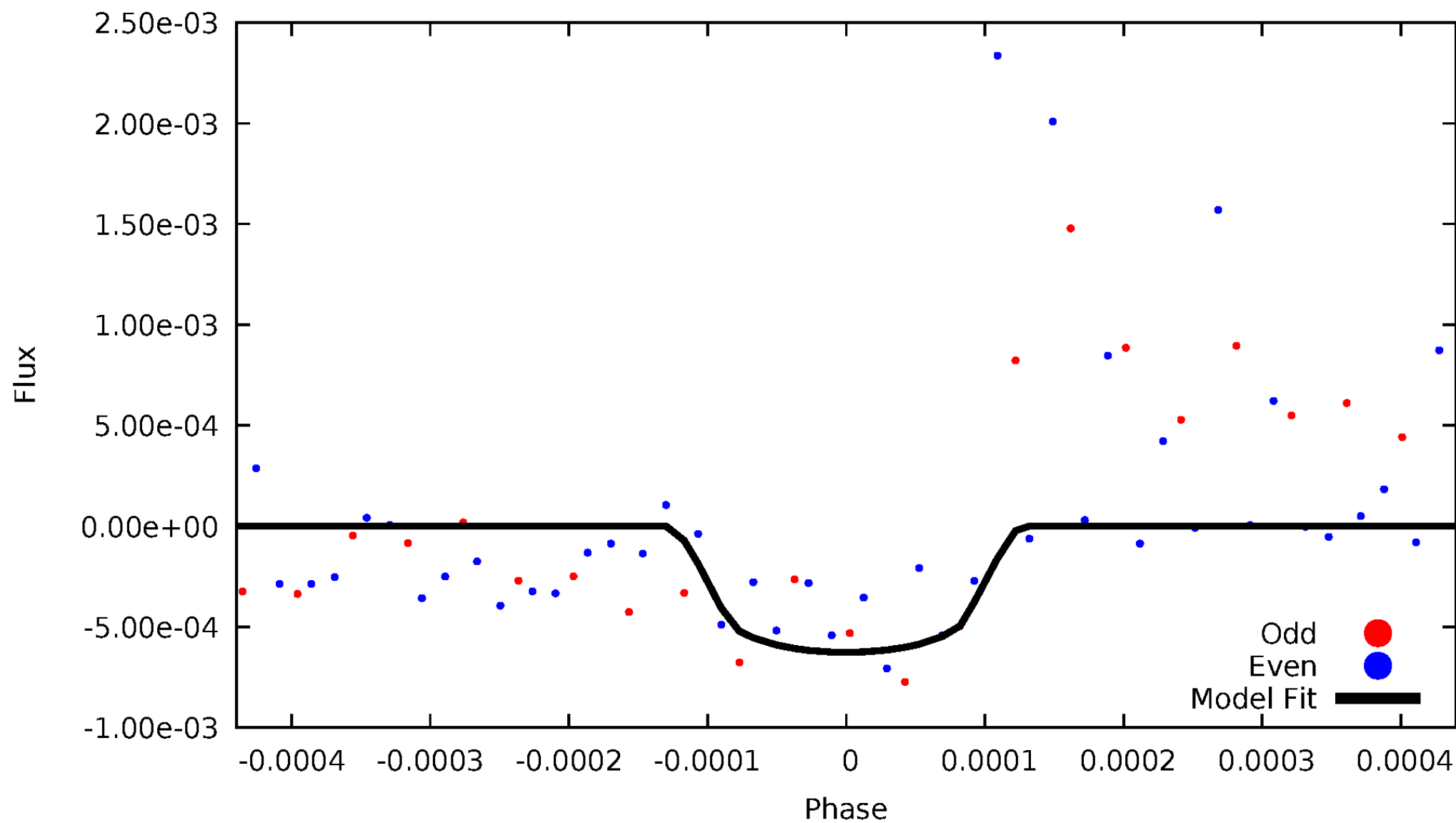


TCE 010188460-02



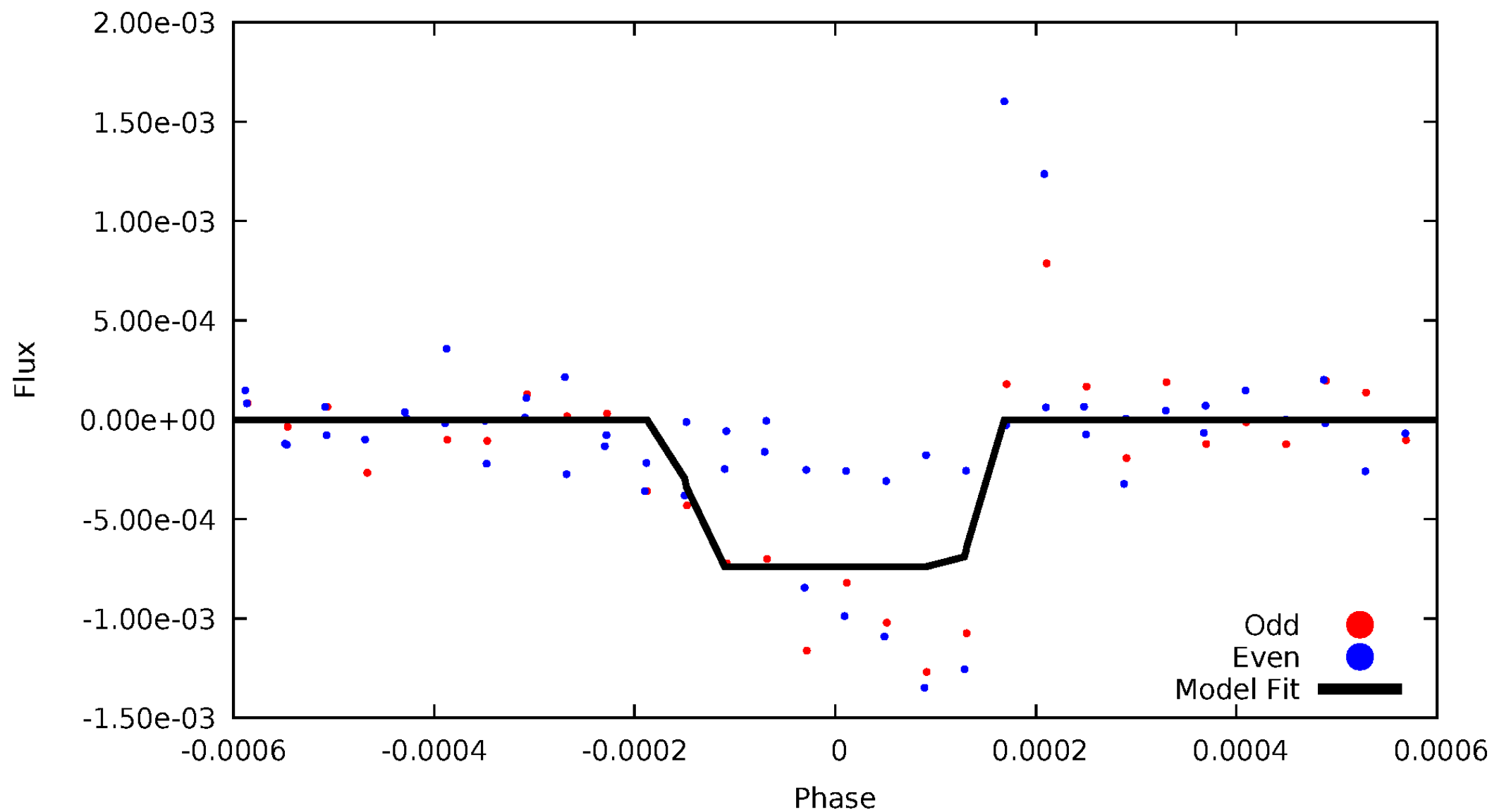
DV Odd/Even

TCE 010188460-02



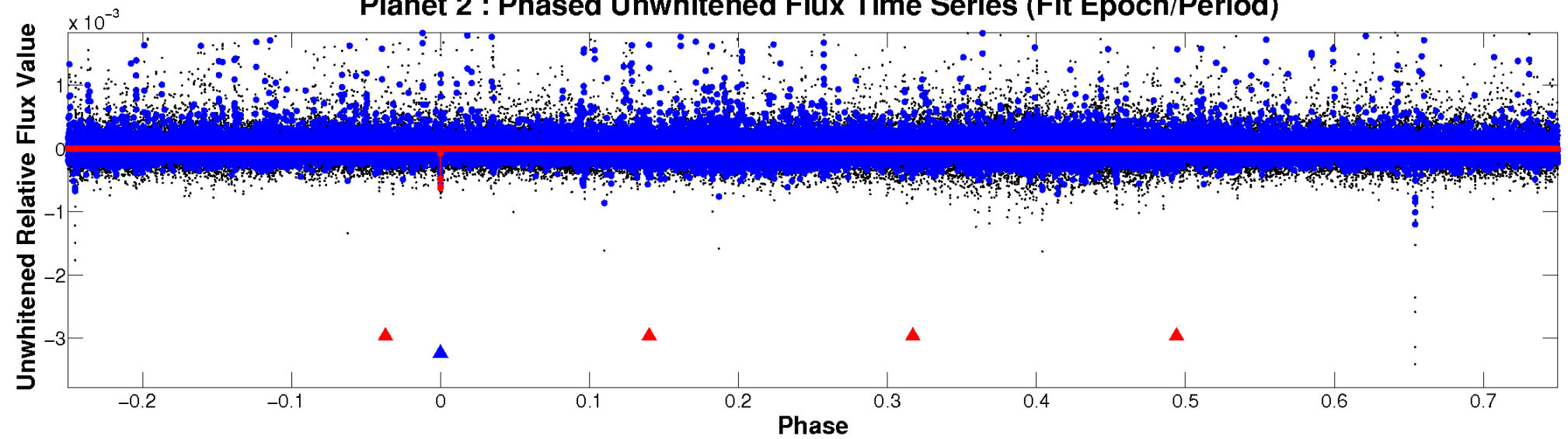
ALT Odd/Even

TCE 010188460-02

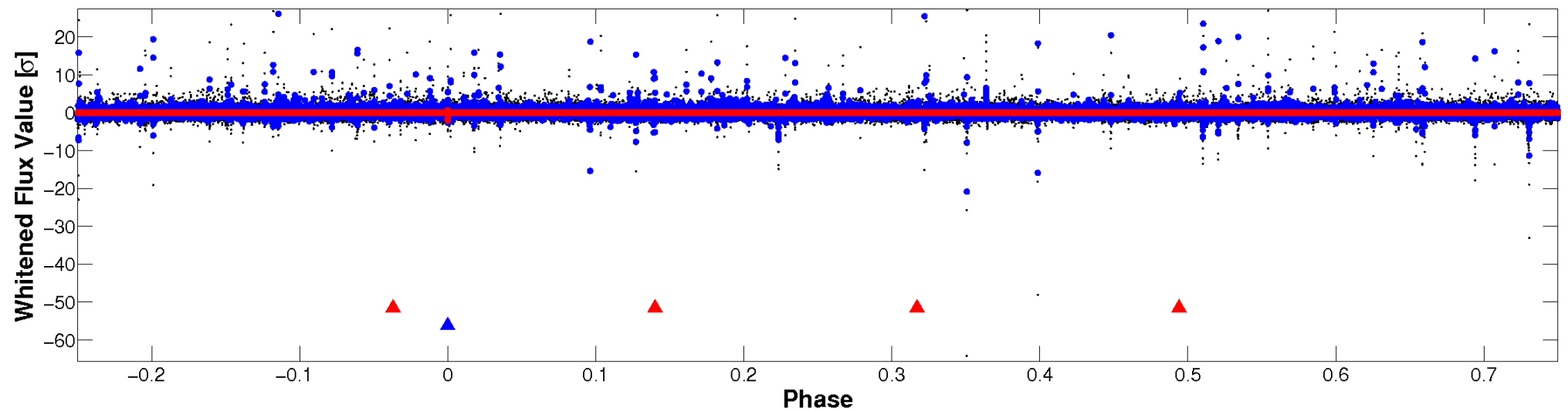


Non-Whitened Vs. Whitened Light Curve

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

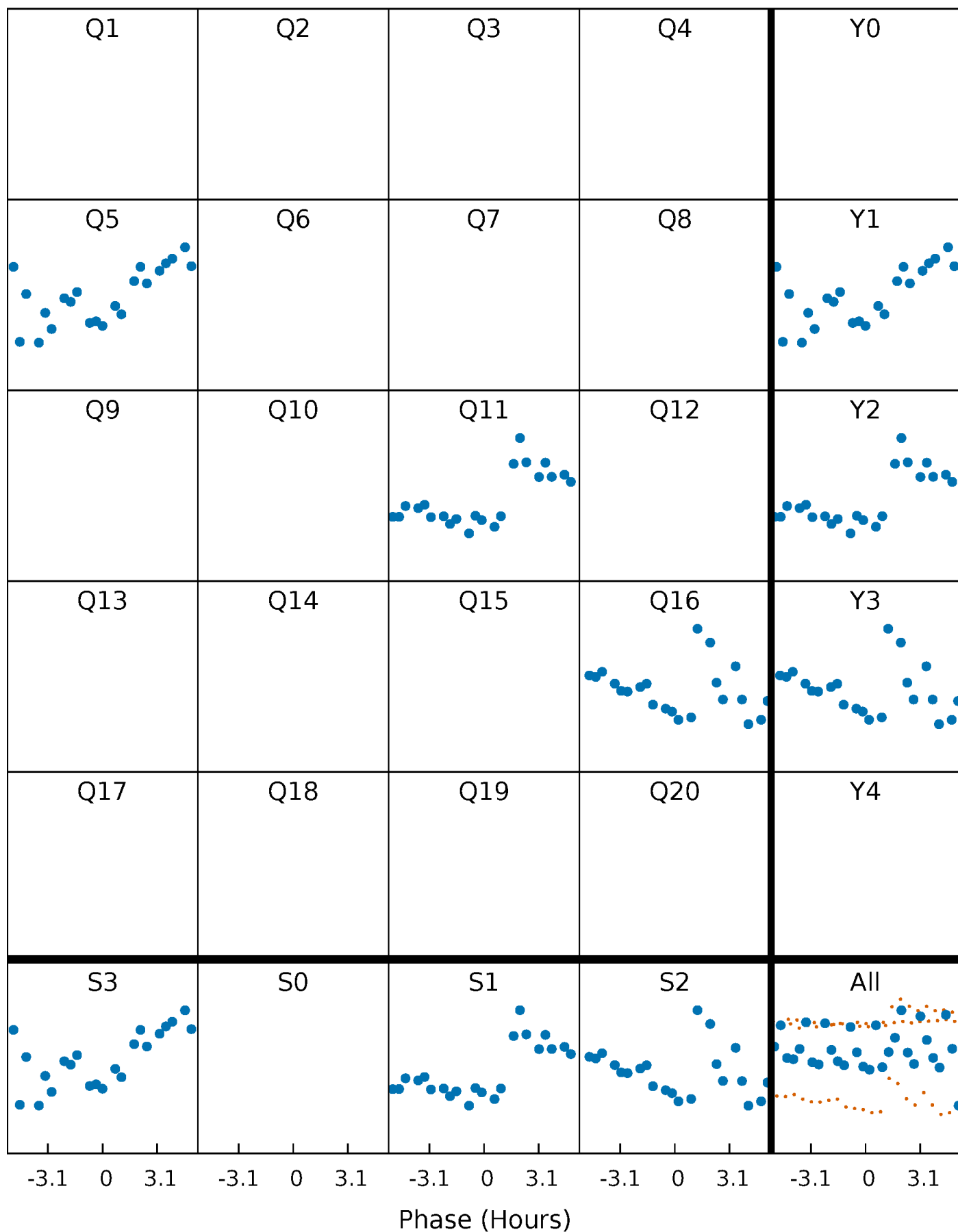


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



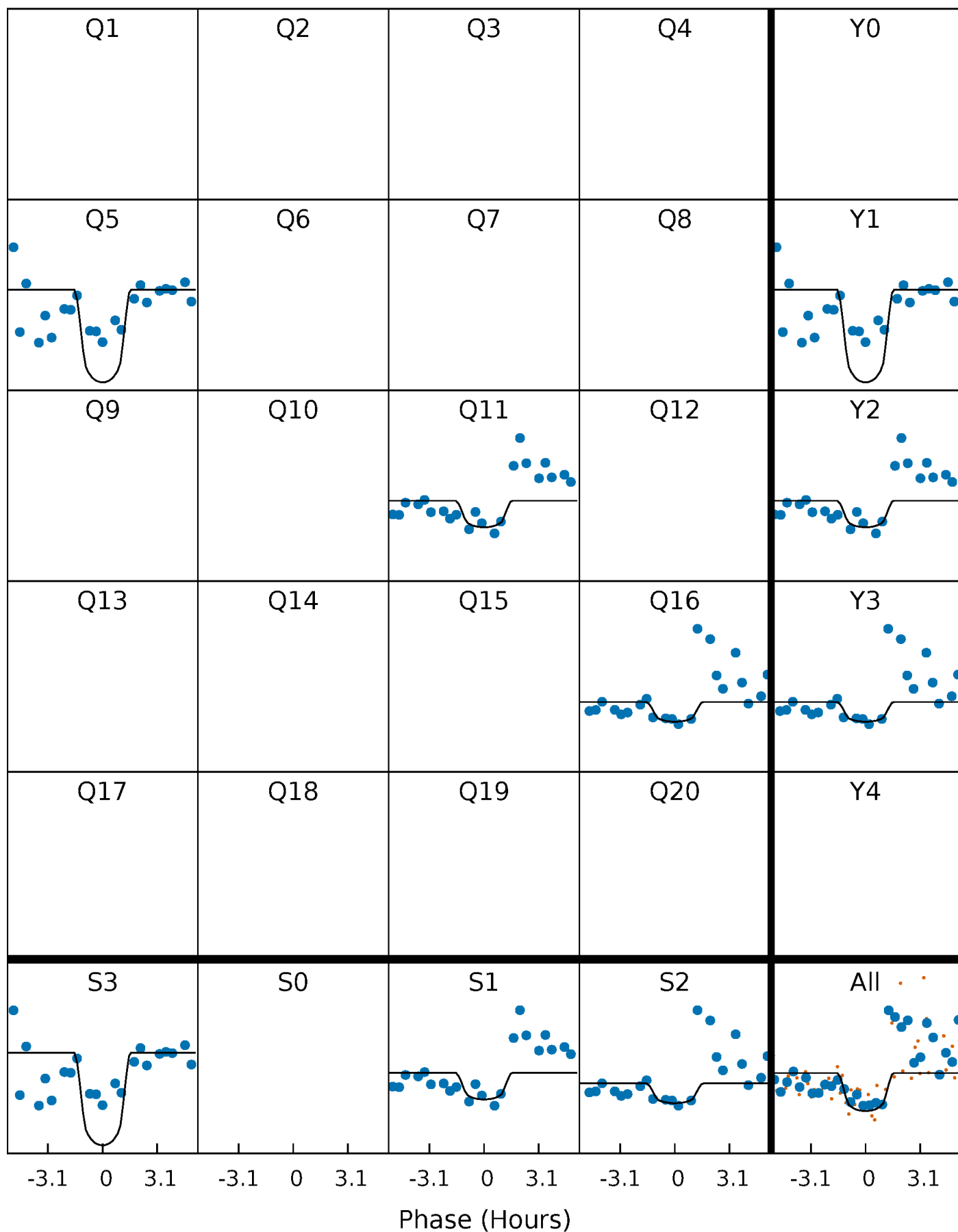
PDC Quarter-Phased Transit Curves

TCE 010188460-02 P=512.887848 Days $T_0=510.079724$ (BKJD)



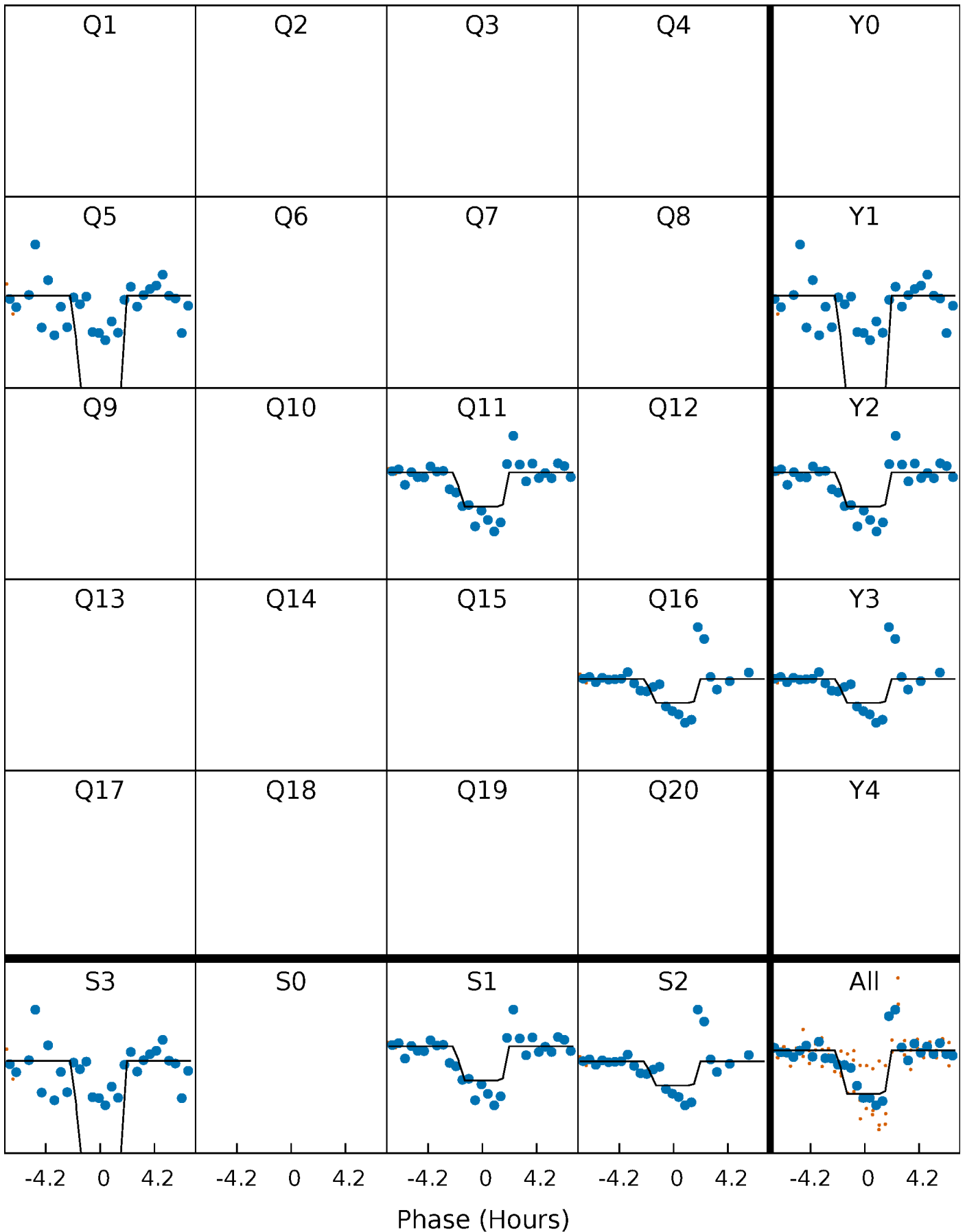
DV Quarter-Phased Transit Curves

TCE 010188460-02 $P=512.887848$ Days $T_0=510.079724$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

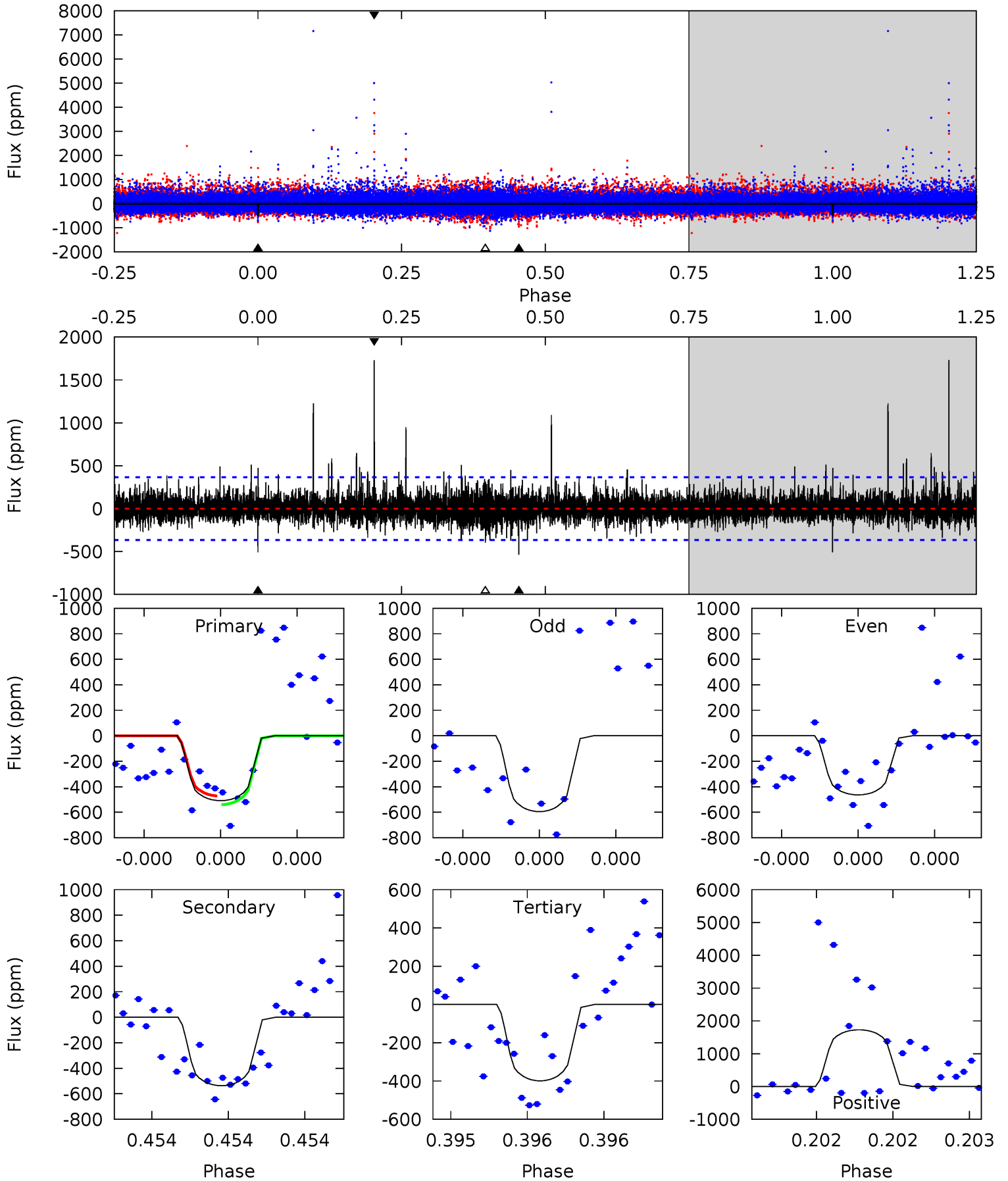
TCE 010188460-02 $P=512.882356$ Days $T_0=510.060167$ (BKJD)



DV Model-Shift Uniqueness Test

010188460-02, P = 512.887848 Days, E = 510.079724 Days

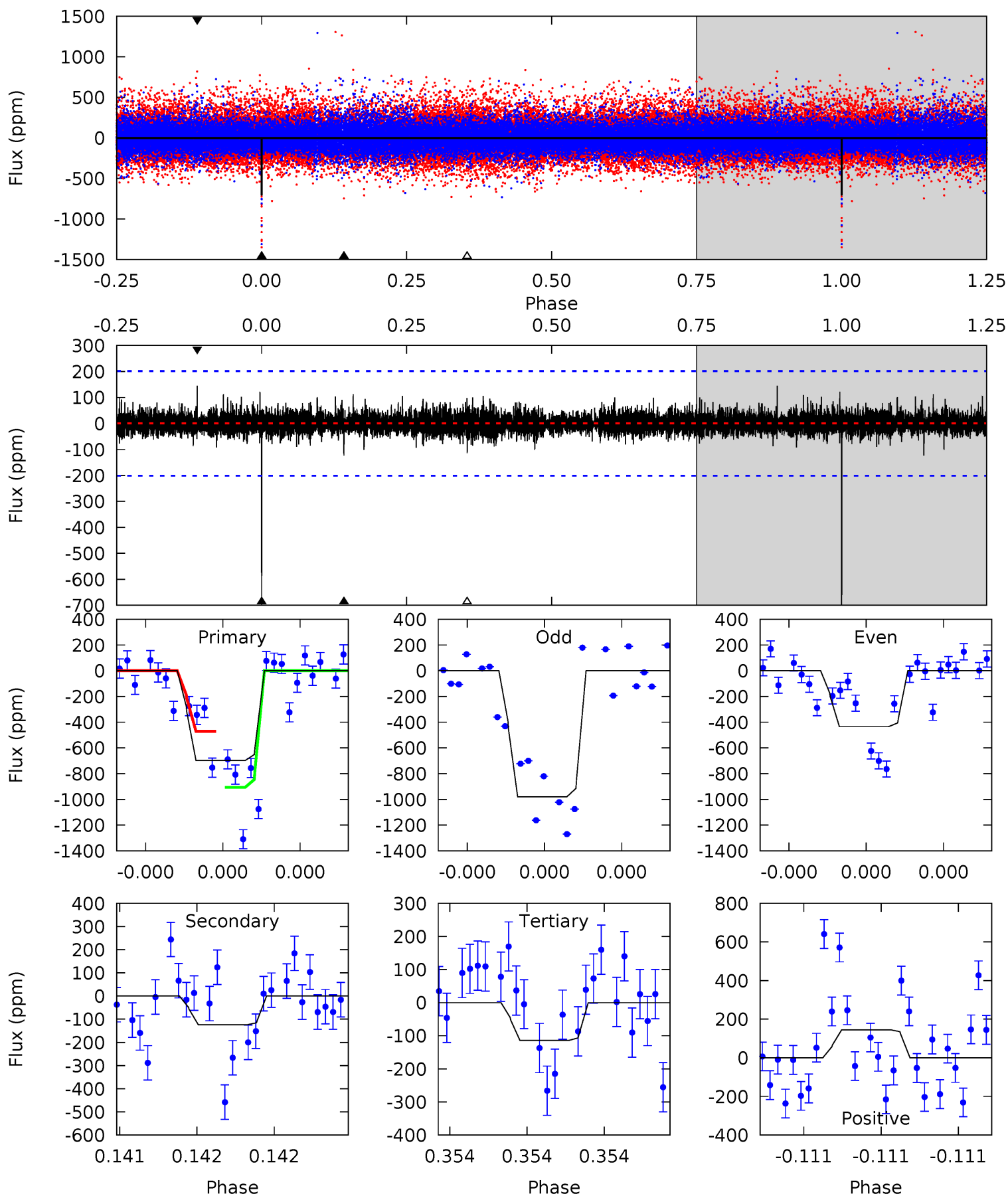
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.95	8.38	6.24	27.0	5.71	3.68	1.60	1.72	-19.1	2.15	-18.6	0.73	0.97	0.76	0.53



Alt Model-Shift Uniqueness Test

010188460-02, P = 512.882356 Days, E = 510.060167 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	3.47	3.20	4.06	5.65	3.60	0.68	16.4	15.5	0.27	-0.59	7.15	0.79	0.17	6.12



Stellar Parameters For KIC 010188460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3787^{+57}_{-62}	$4.742^{+0.032}_{-0.020}$	$-0.100^{+0.100}_{-0.100}$	$0.505^{+0.023}_{-0.033}$	$0.514^{+0.026}_{-0.026}$	$5.610^{+0.829}_{-0.492}$
	+2%/-2%	+1%/-0%	+100%/-100%	+5%/-7%	+5%/-5%	+15%/-9%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010188460-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-536 ± 64	$3.23^{+3.39}_{-2.20}$	165^{+3}_{-3}	2860^{+1212}_{-480}	$28440^{+252995}_{-21632}$
Alt.	-124 ± 36	$3.36^{+3.07}_{-2.34}$	165^{+3}_{-3}	2363^{+864}_{-339}	6329^{+59858}_{-4821}

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 $A_{obs} \gg 1.0$

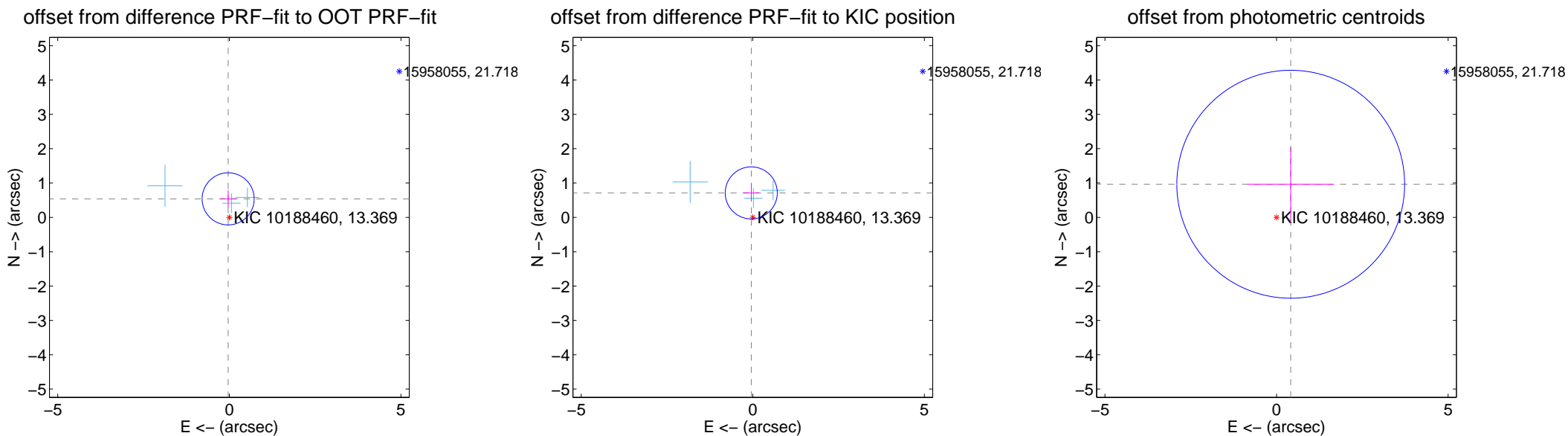
DV Centroid Data

Supplemental centroid analysis for 010188460-02. Kepler magnitude: 13.37. Transit SNR 7.46

There are 3 quarters with good PRF difference image offsets

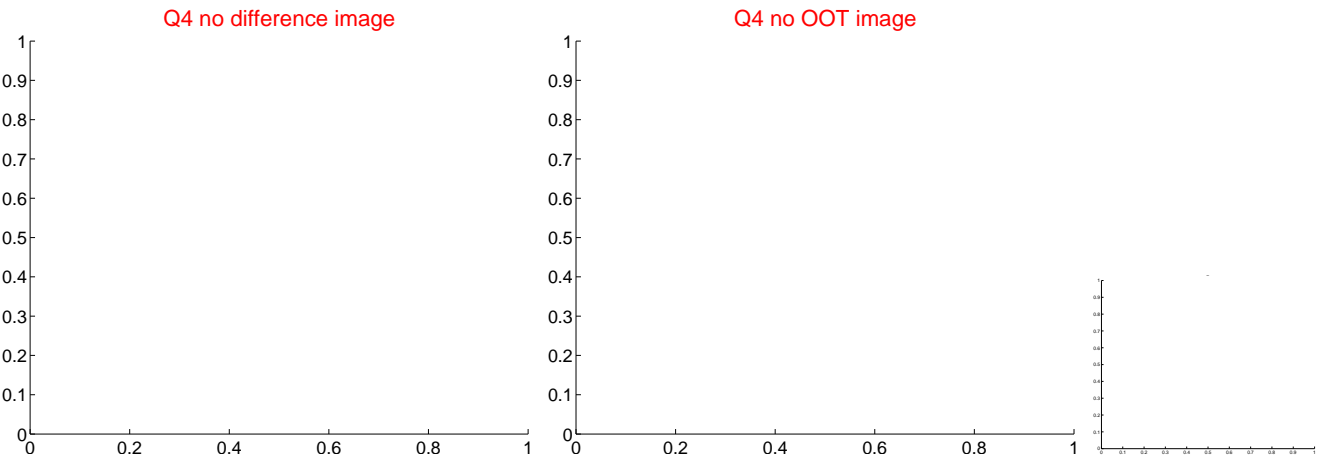
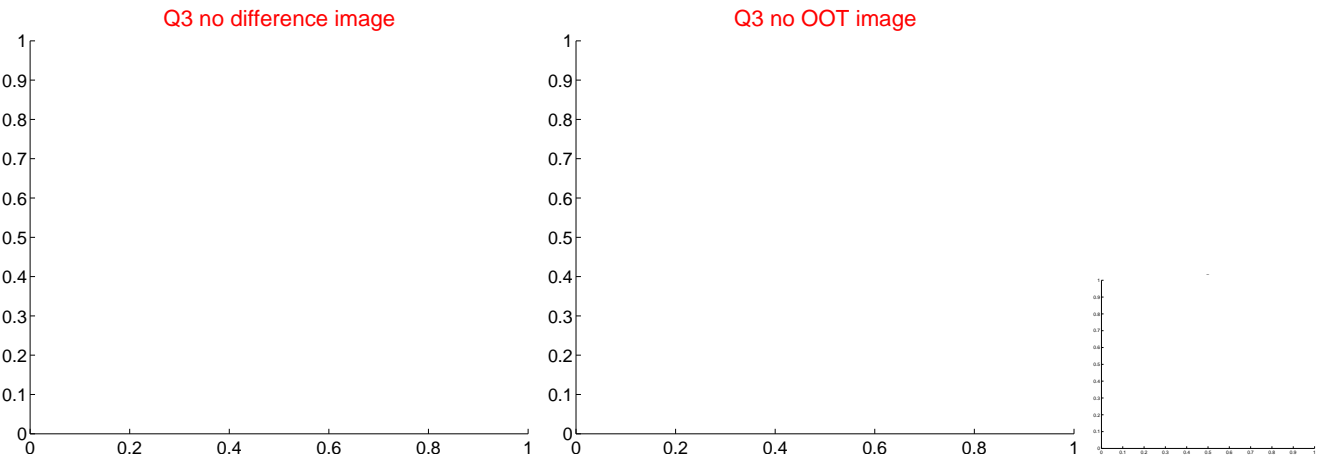
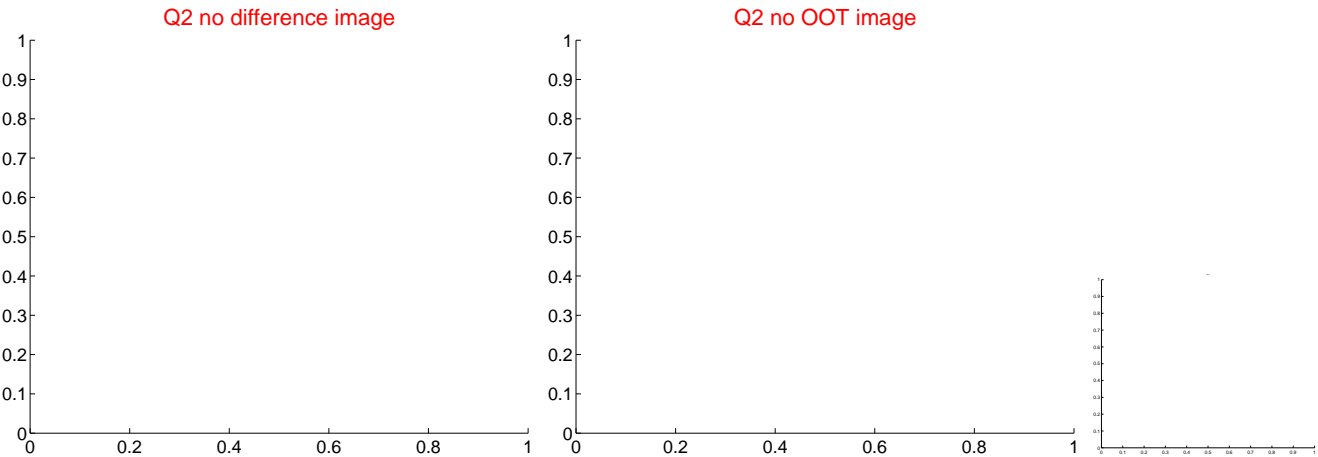
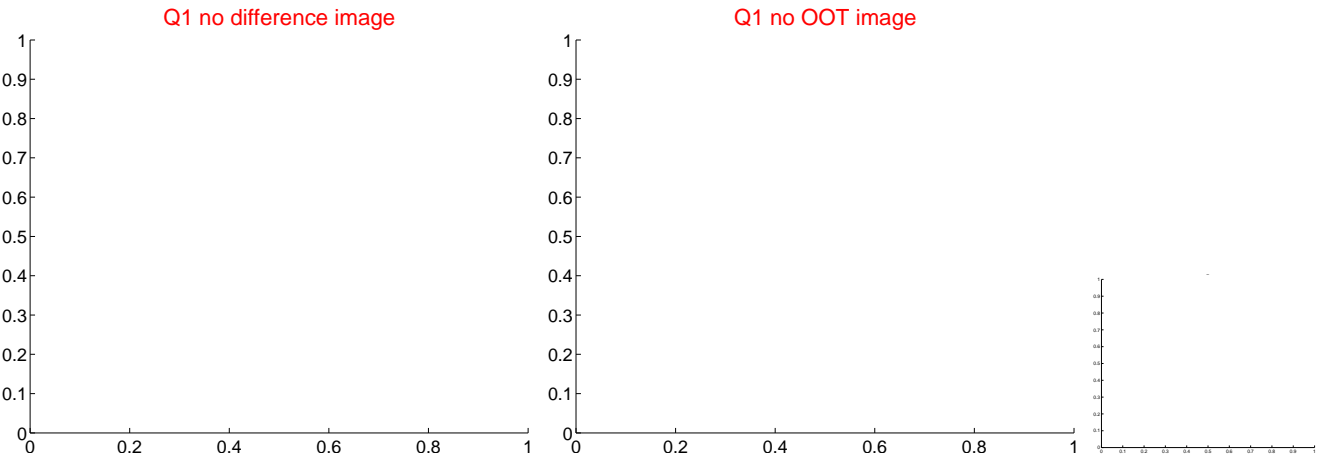
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.540 ± 0.253	2.14	0.034 ± 0.233	0.539 ± 0.253
PRF-fit source offset from KIC position	0.714 ± 0.253	2.83	0.045 ± 0.233	0.713 ± 0.253
photometric centroid source offset	1.05 ± 1.11	0.95	-0.41 ± 1.26	0.96 ± 1.08

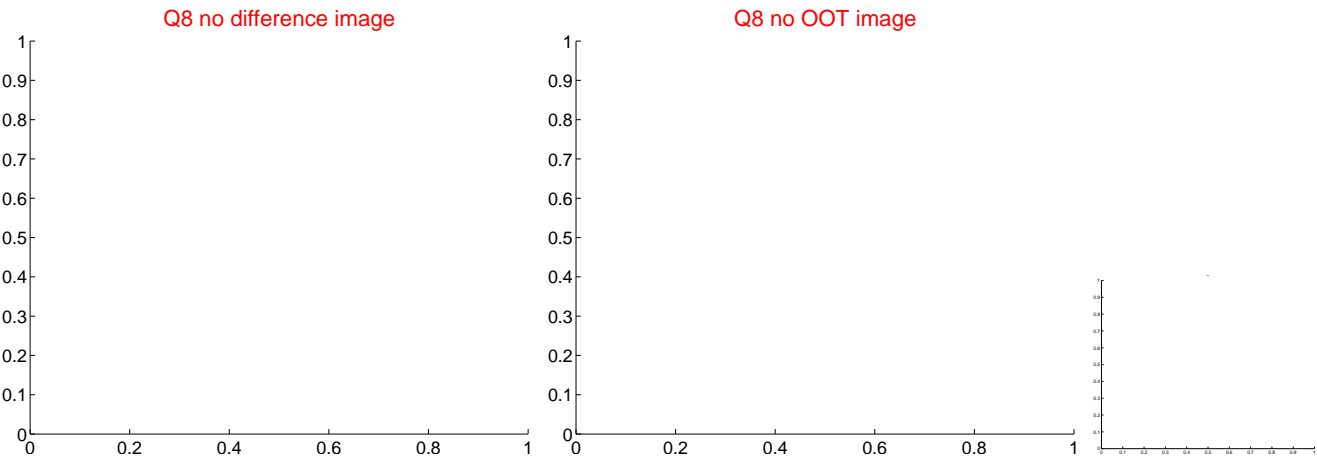
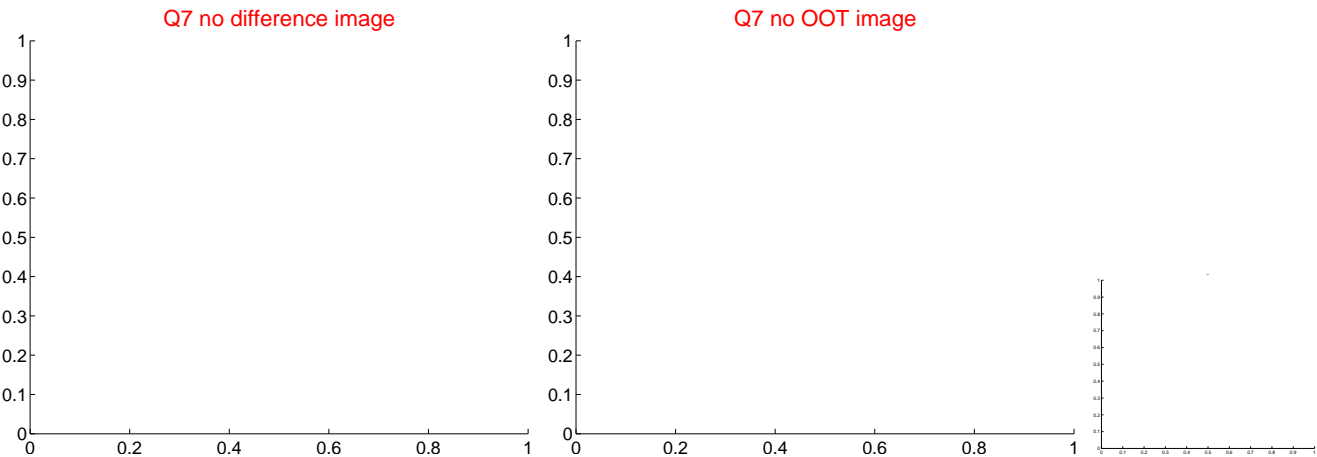
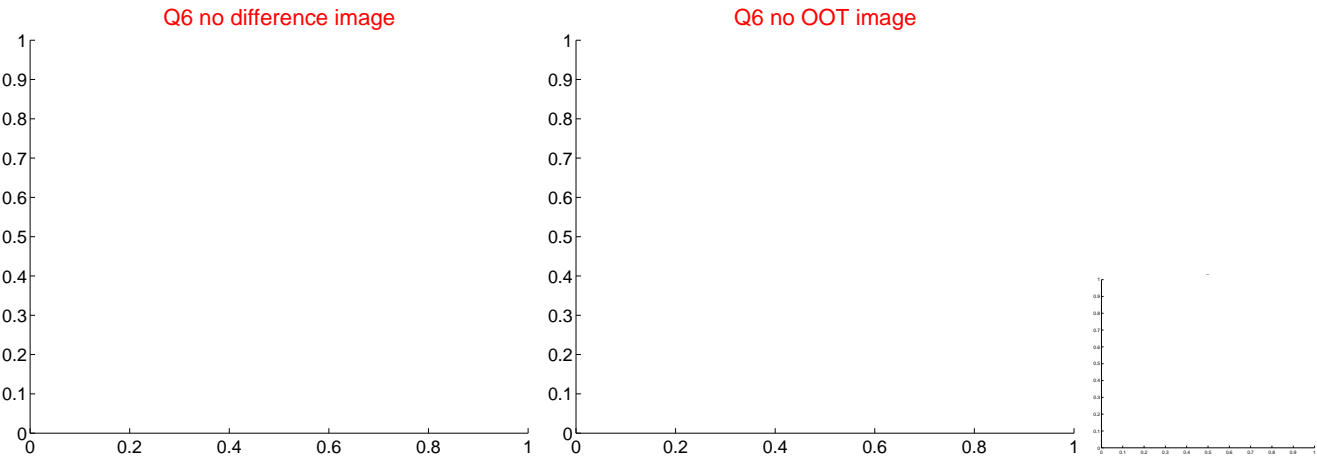
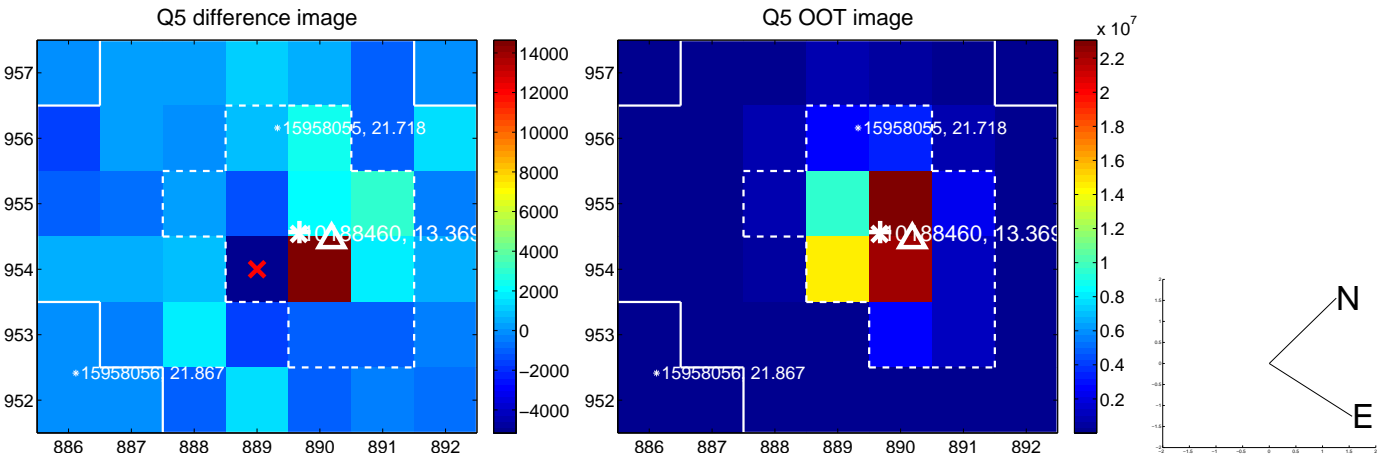


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

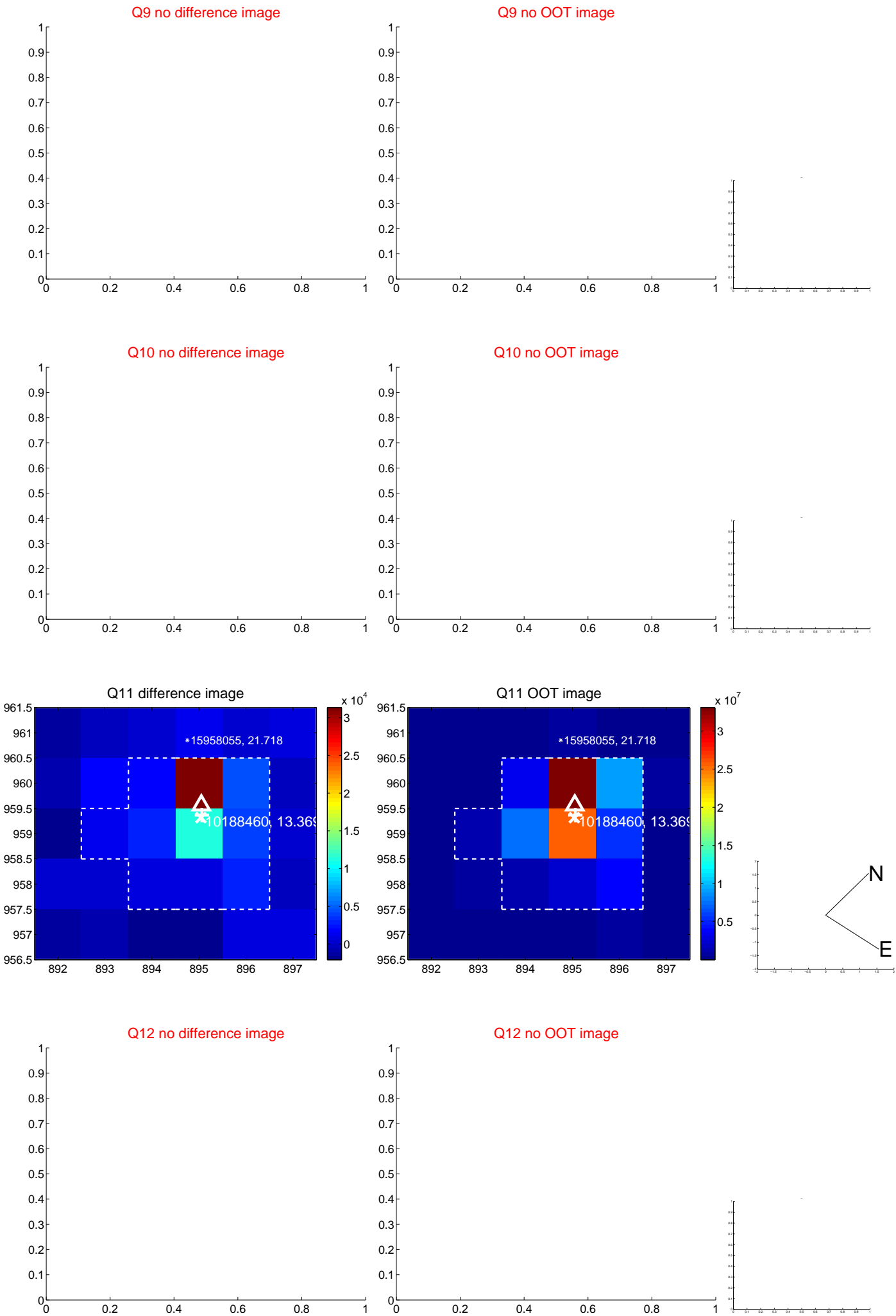
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



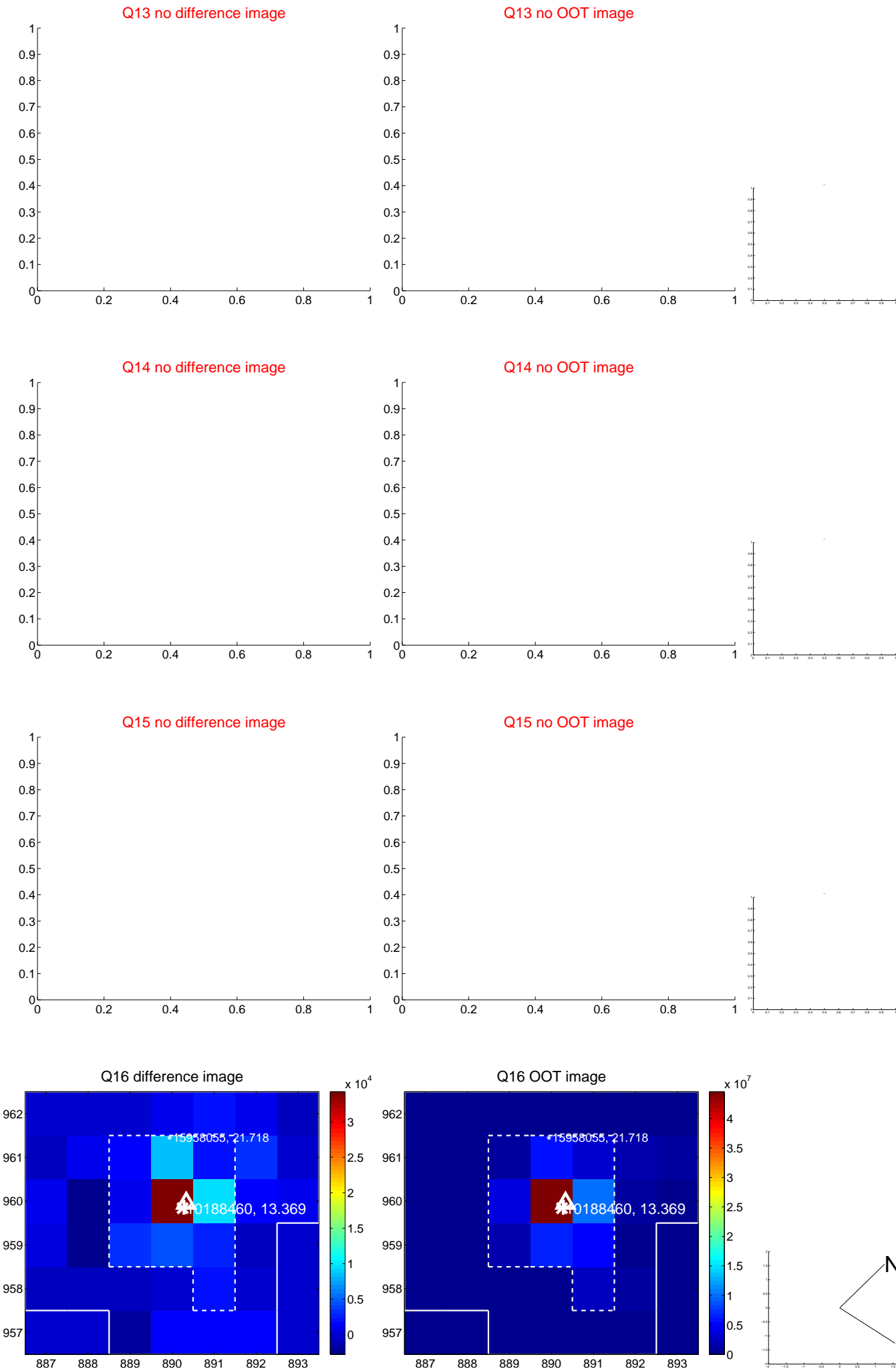
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



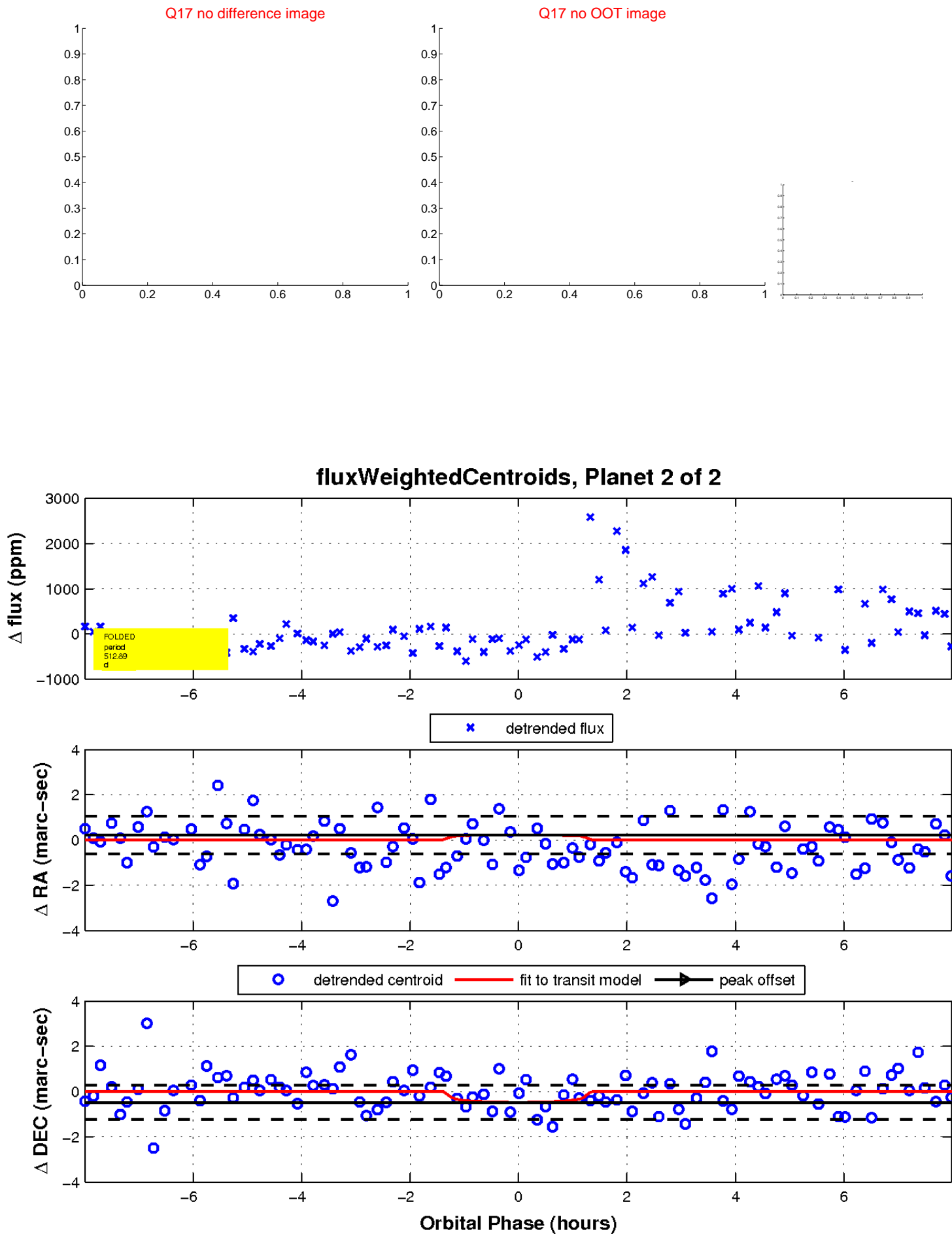
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \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

