

KIC 011359786

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})
011359786-01	OBS	No	2.674673	132.008994	6.2	10.186	7.6	8.2	2.17	7531	0.77	6690.37
011359786-02	OBS	No	174.173672	212.668252	49.0	10.783	10.9	6.8	2.17	7531	1.74	25.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011359786-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL —LPP_DV —CENT_SATURATED
011359786-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL —ALL_TRANS_CHASES —MOD_NONUNIQ_DV —MOD_NONUNIQ_ALT —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.

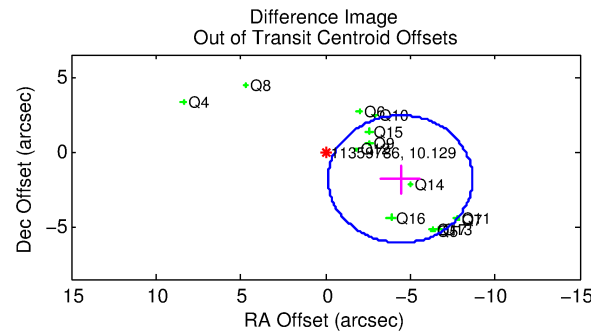
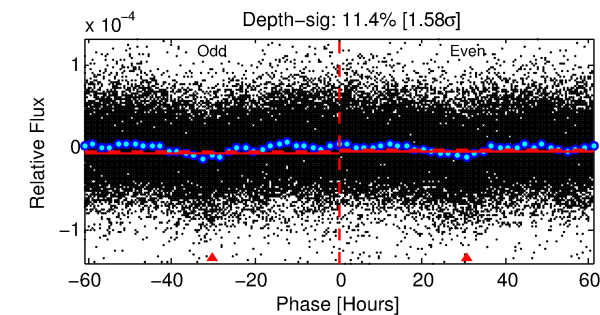
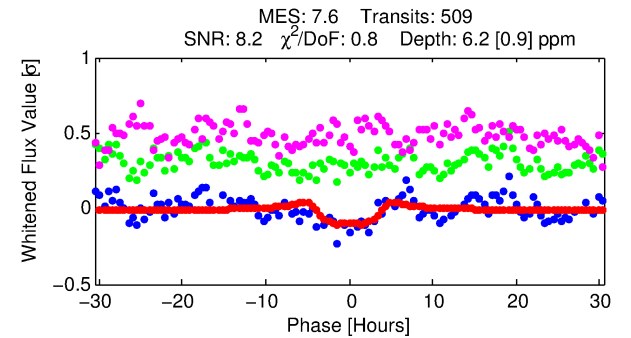
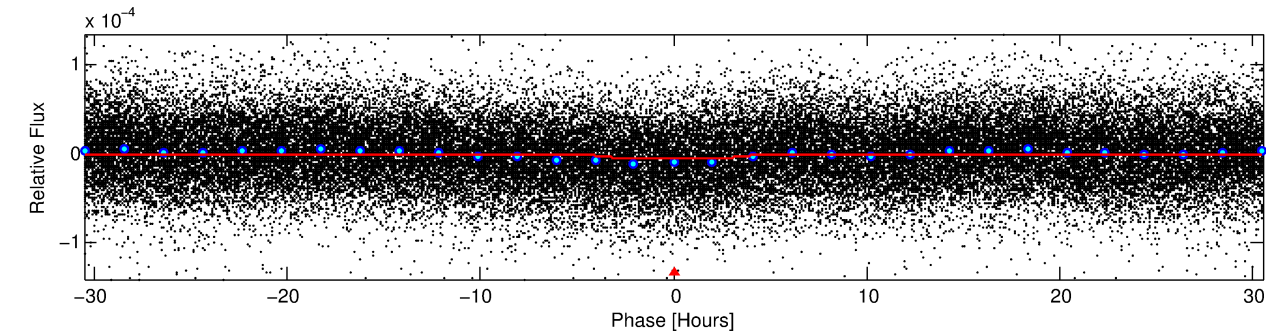
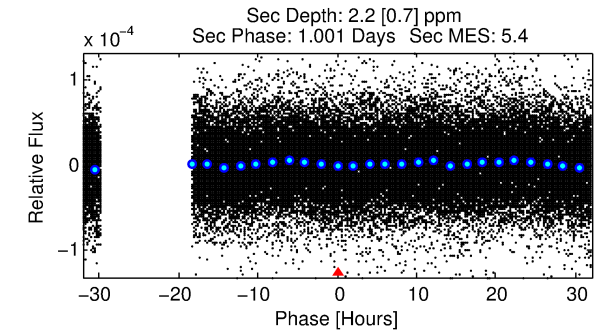
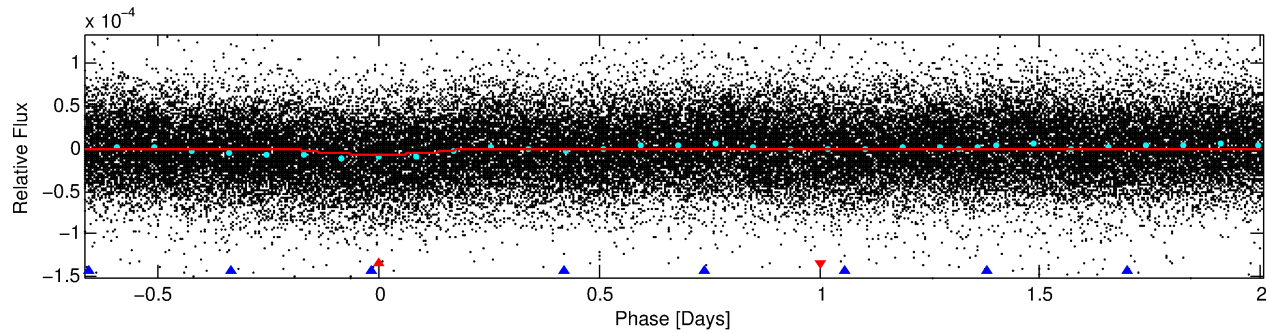
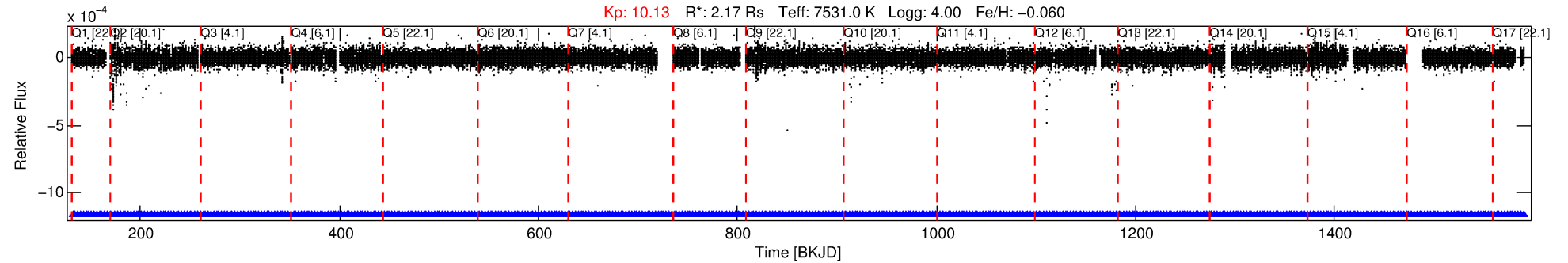
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011359786-01

No Significant Match Found

DV One-Page Summary

KIC: 11359786 Candidate: 1 of 2 Period: 2.675 d



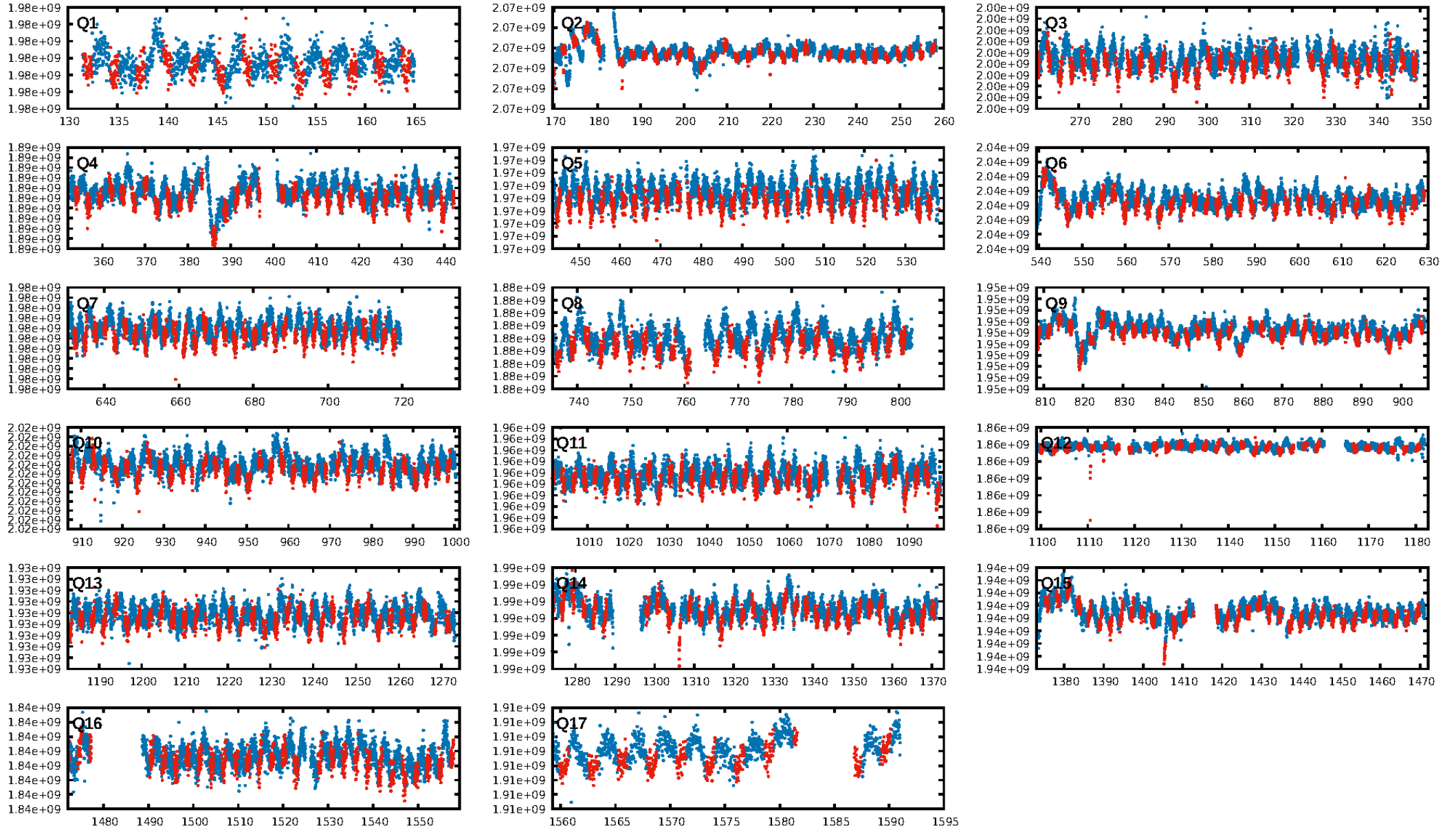
DV Fit Results:

Period = 2.67467 [0.00006] d
Epoch = 132.0090 [0.0180] BKJD
Rp/R* = 0.0033 [0.0003]
a/R* = 1.03 [0.01]
b = 1.00 [0.00]
Seff = 6690.37 [2554.81]
Teff = 2306 [220] K
Rp = 0.77 [0.21] Re
a = 0.0451 [0.0103] AU
Ag = 4.12 [2.04] [1.53σ]
Teffp = 5081 [498] K [5.09σ]

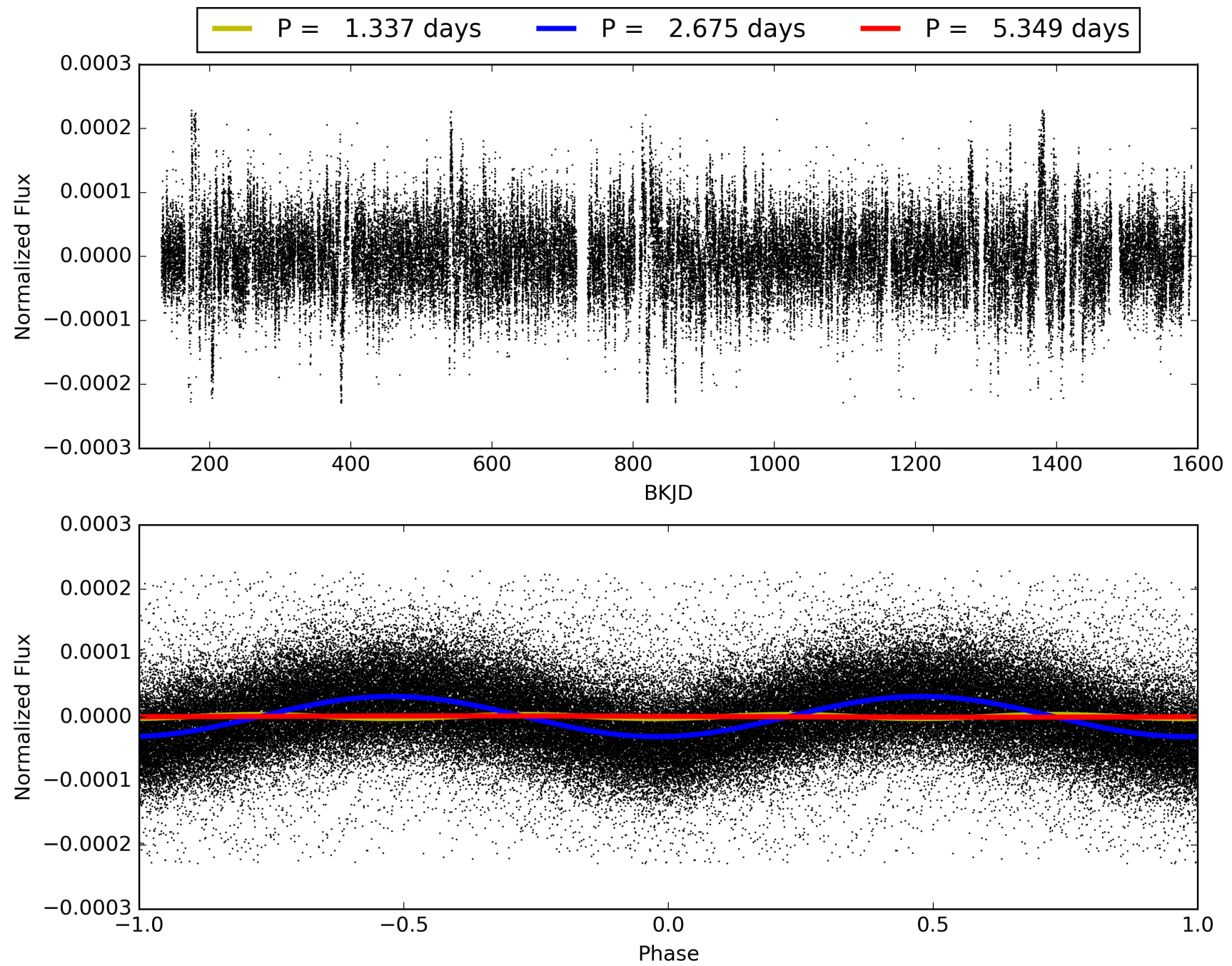
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [277.49σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.91e-11
RollingBand-fgt: 1.00 [485/485]
GhostDiagnostic-chr: 1.892
Centroid-sig: 3.7%
Centroid-so: 2.883 arcsec [1.31σ]
OotOffset-rm: 4.779 arcsec [3.37σ]
KicOffset-rm: 5.014 arcsec [3.95σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.29 [4/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011359786-01, PDC Light Curves

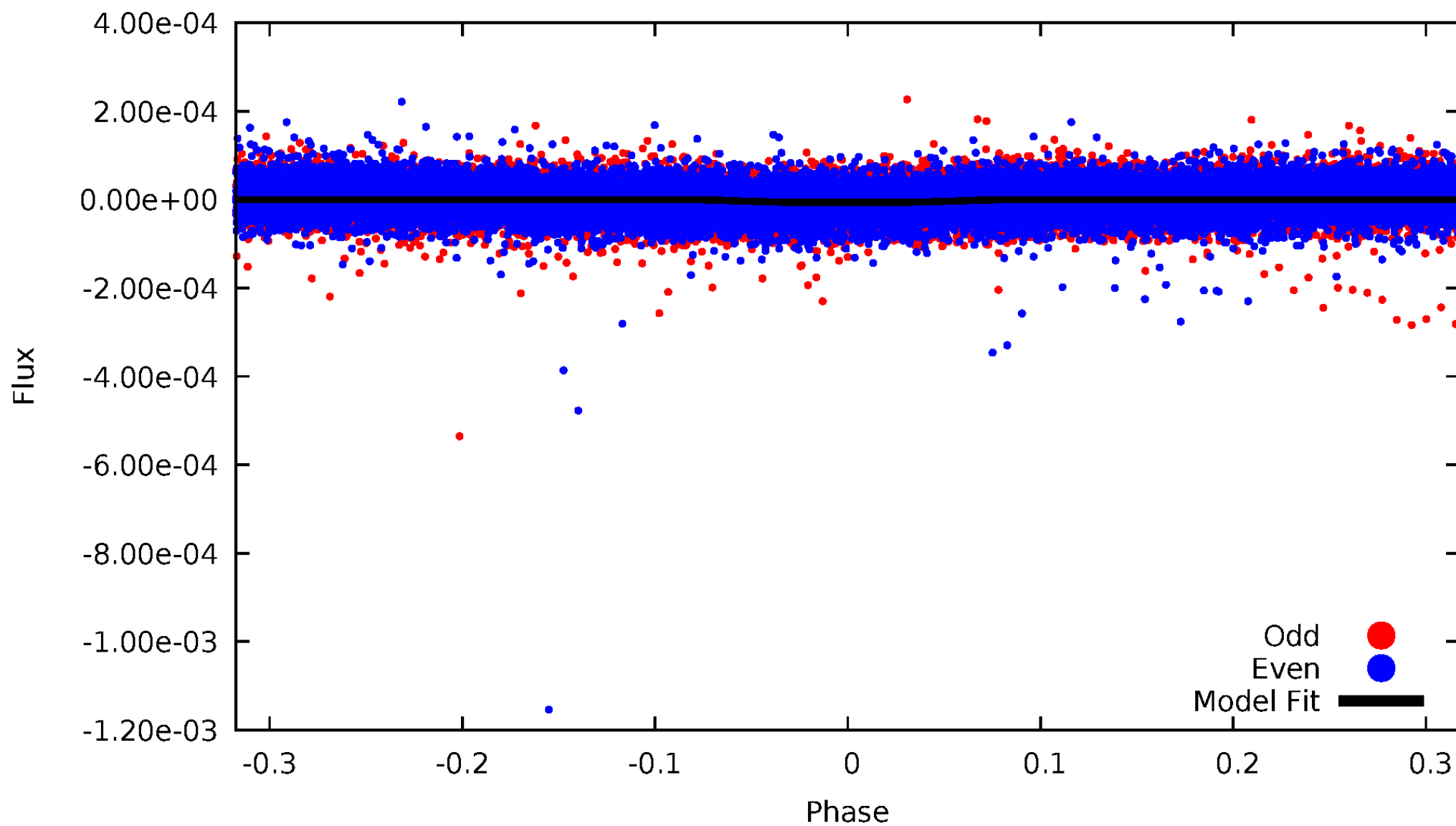


TCE 011359786-01



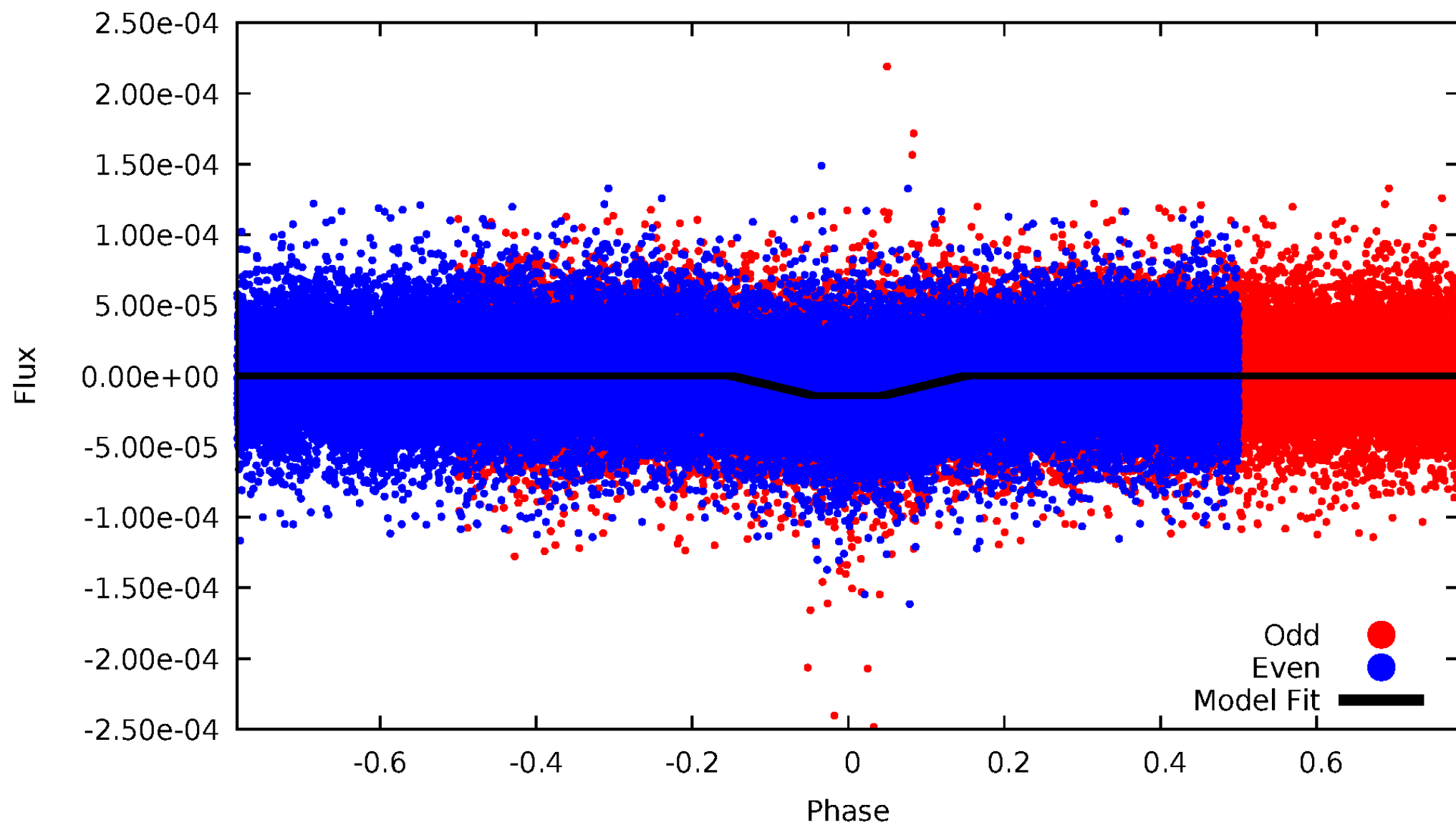
DV Odd/Even

TCE 011359786-01

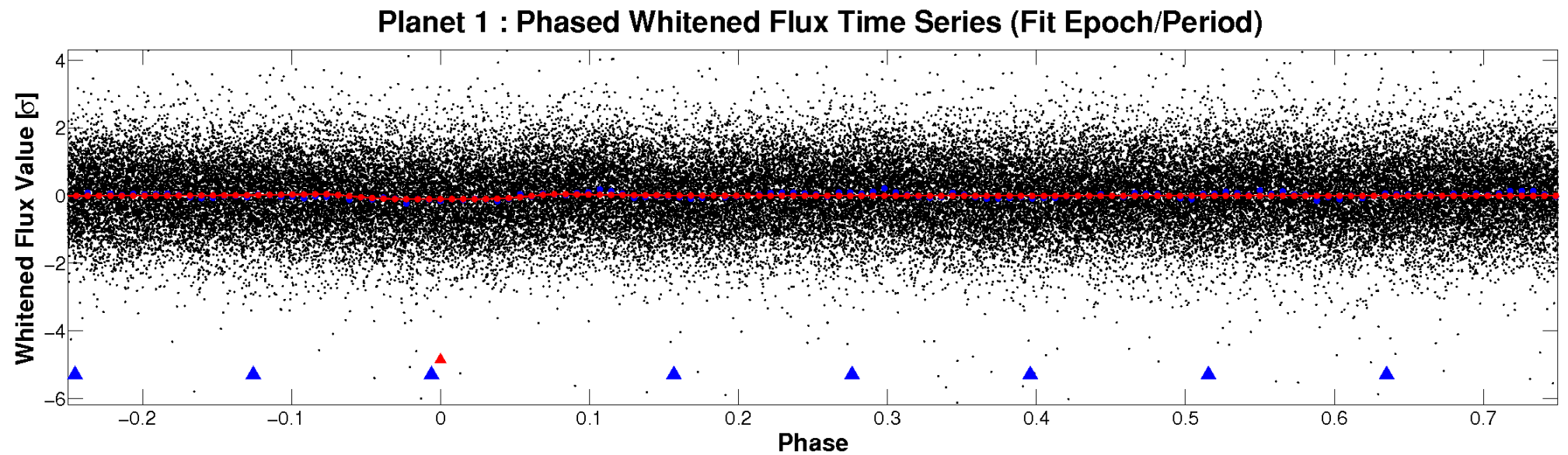
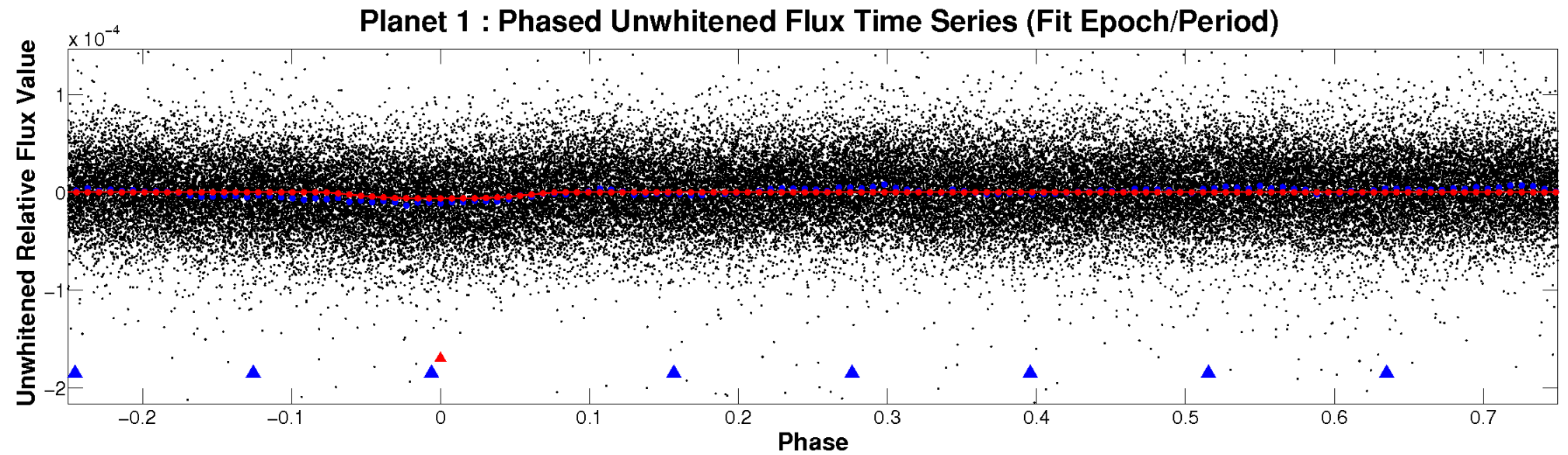


ALT Odd/Even

TCE 011359786-01

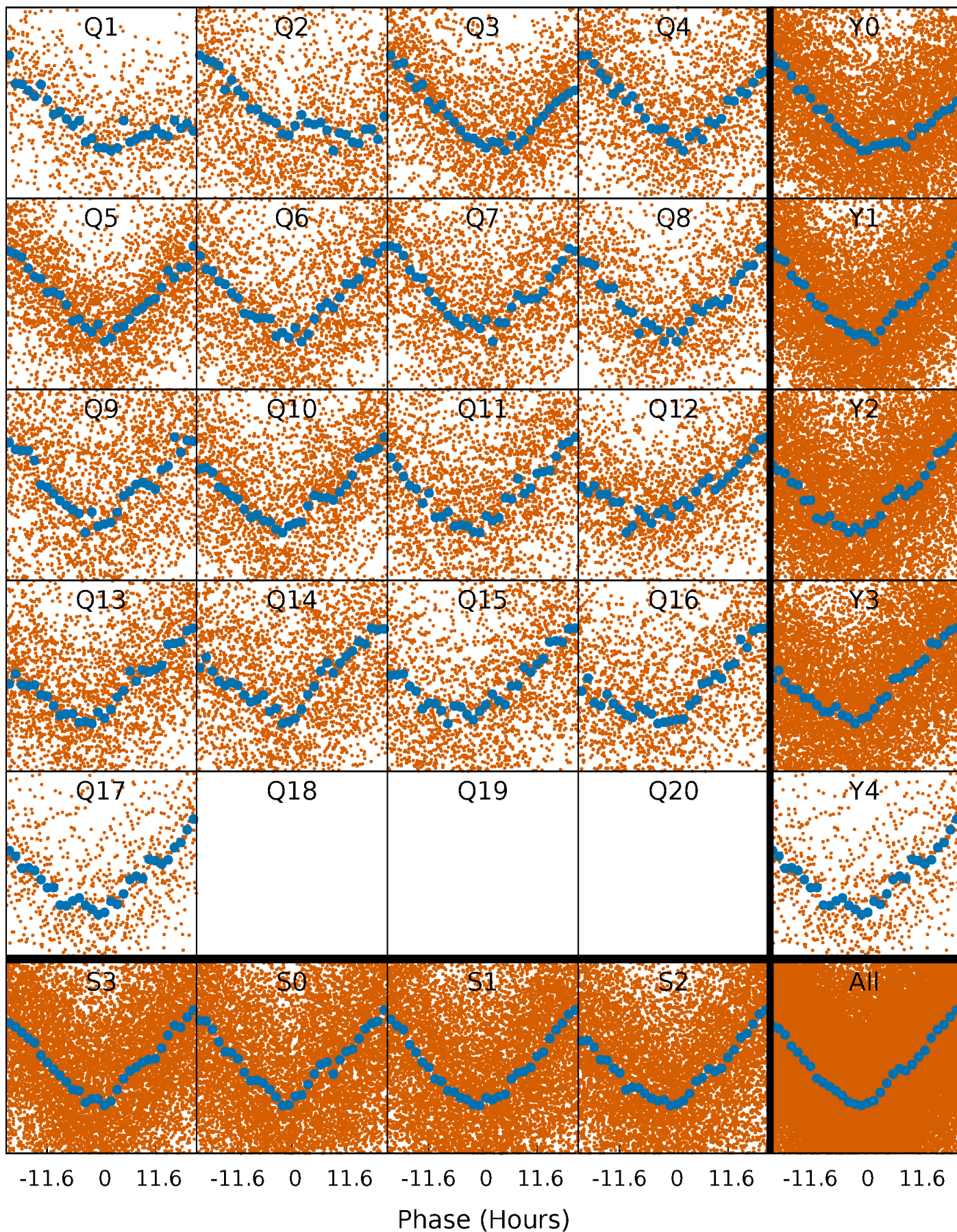


Non-Whitened Vs. Whitened Light Curve



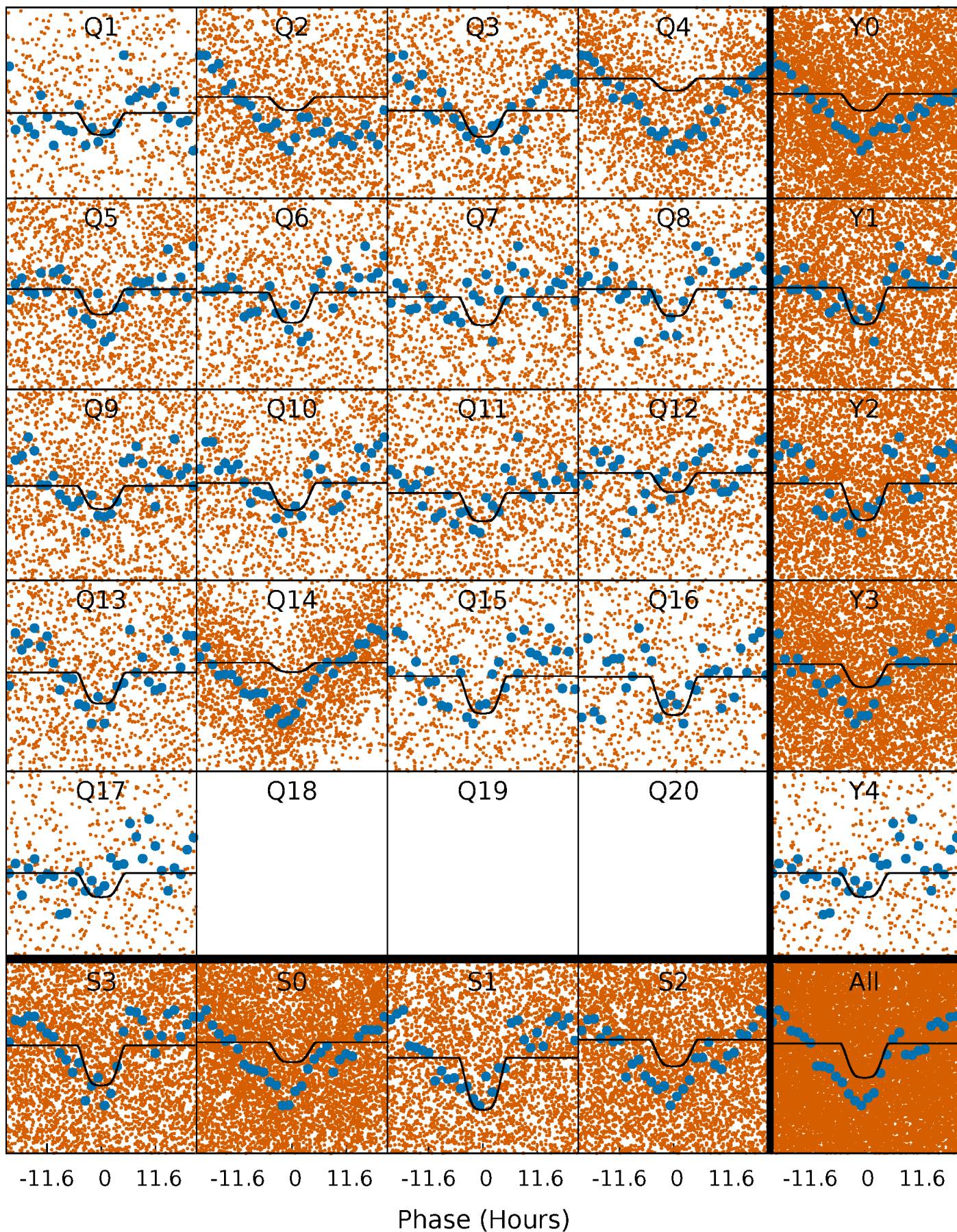
PDC Quarter-Phased Transit Curves

TCE 011359786-01 P= 2.674673 Days $T_0=132.008994$ (BKJD)



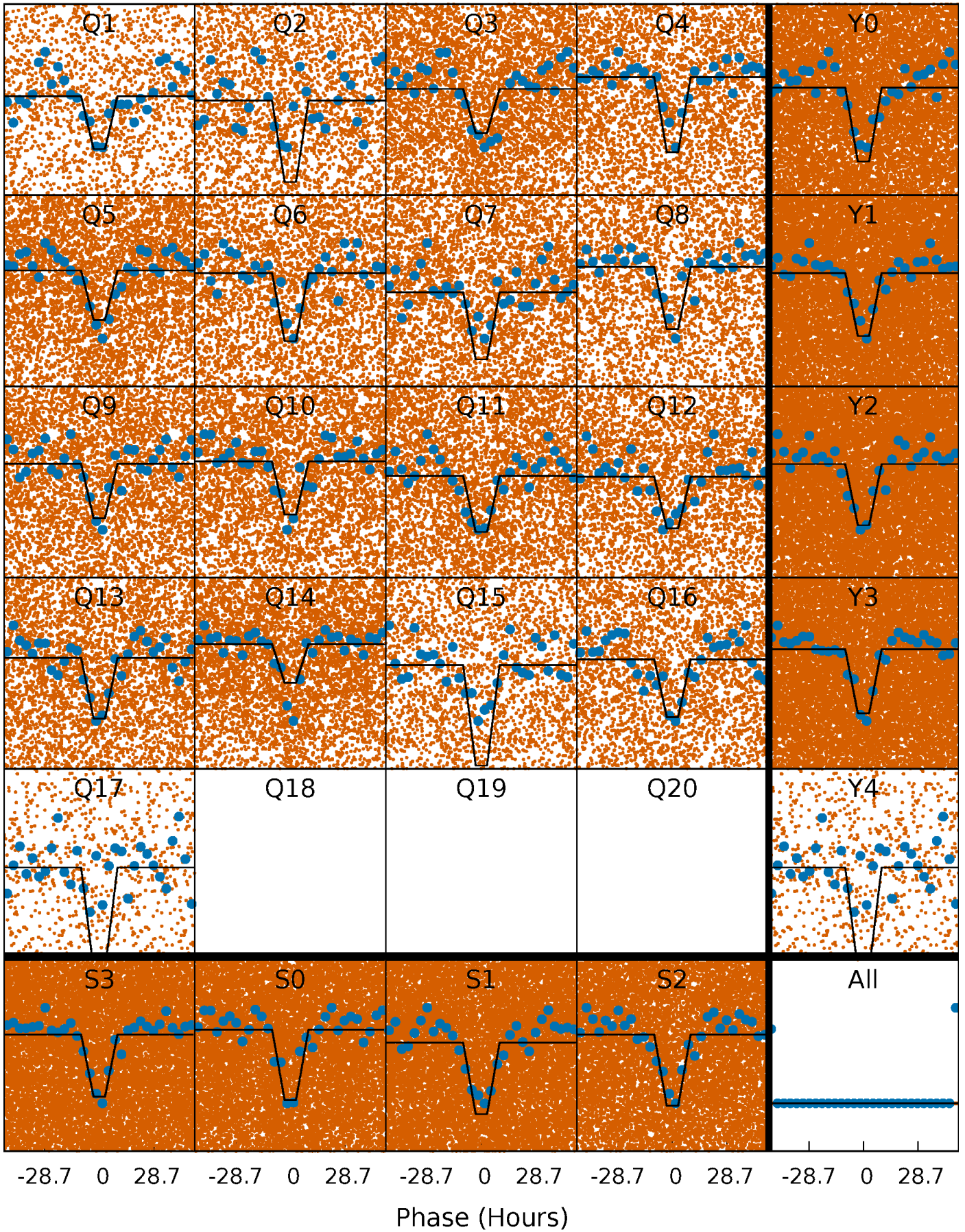
DV Quarter-Phased Transit Curves

TCE 011359786-01 P= 2.674673 Days $T_0=132.008994$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

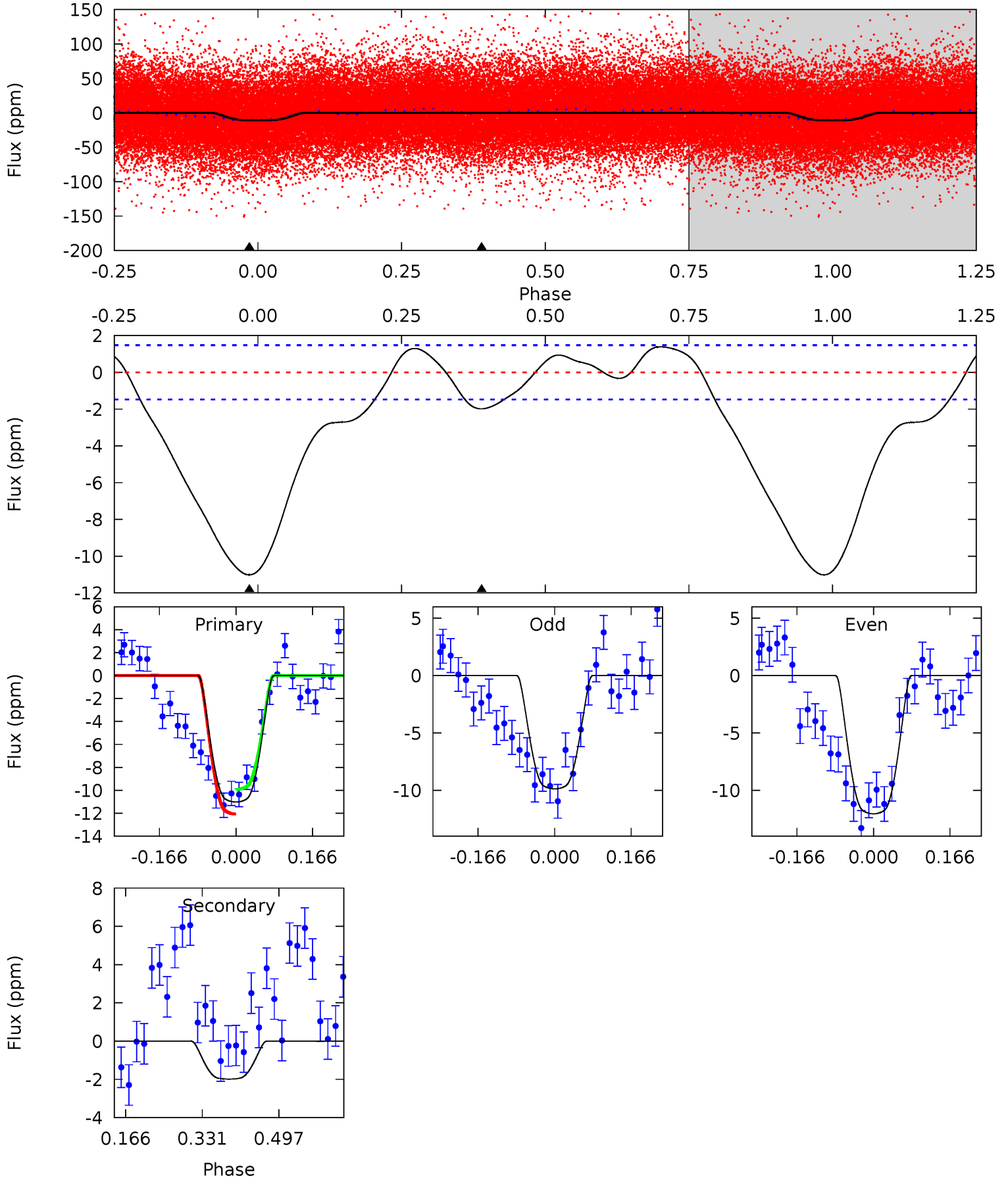
TCE 011359786-01 P= 2.674557 Days $T_0=132.003097$ (BKJD)



DV Model-Shift Uniqueness Test

011359786-01, P = 2.674673 Days, E = 129.334321 Days

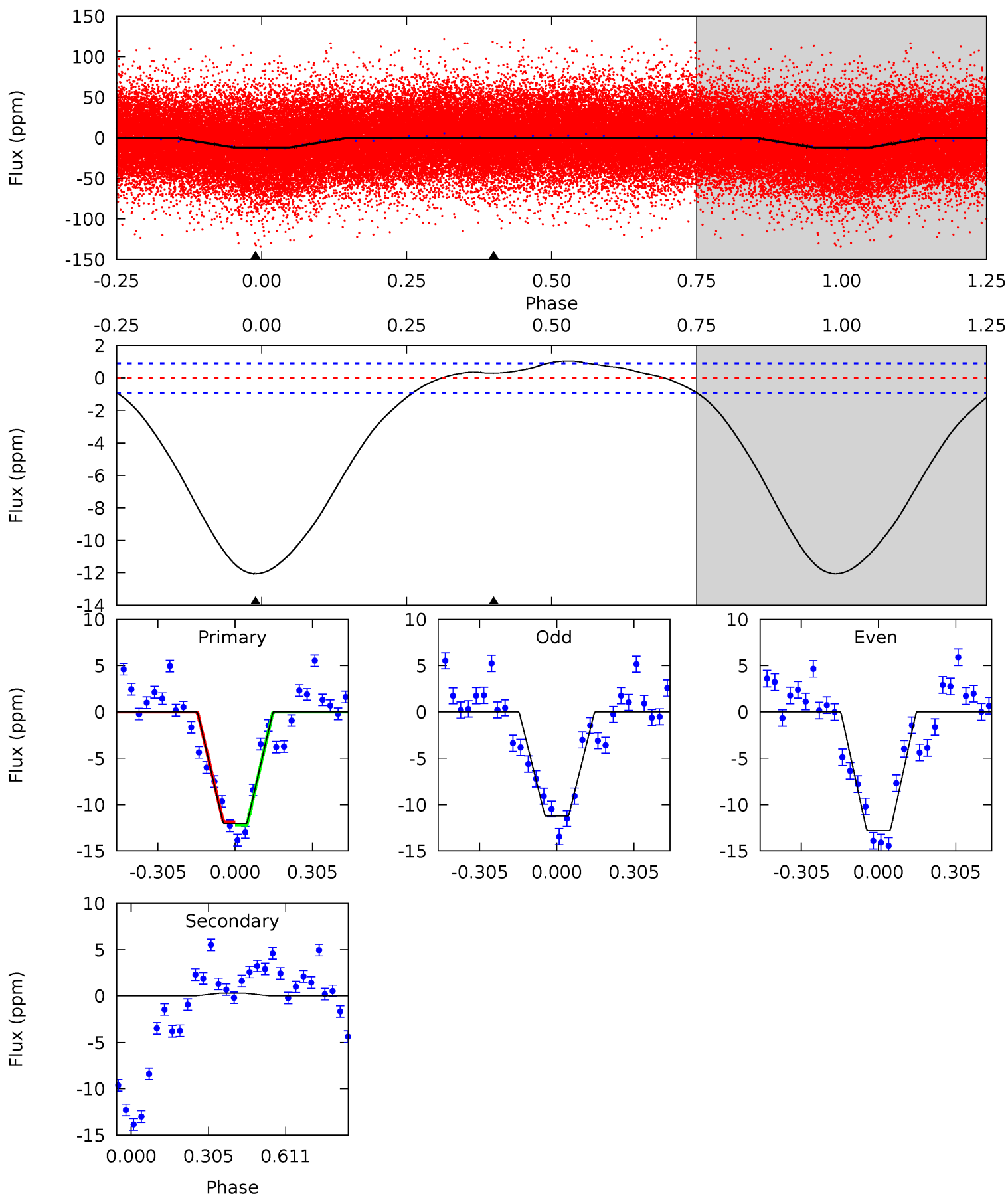
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.3	5.99	0	0	4.46	1.39	3.89	33.3	33.3	5.99	5.99	3.29	1.21	0.11	3.28



Alt Model-Shift Uniqueness Test

011359786-01, P = 2.674557 Days, E = 129.328540 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.2	-1.43	0	0	4.32	1.03	1.64	57.2	57.2	-1.43	-1.43	3.76	1.10	0.08	0.84



Stellar Parameters For KIC 011359786

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7531^{+209}_{-314}	$3.997^{+0.193}_{-0.158}$	$-0.060^{+0.200}_{-0.350}$	$2.174^{+0.510}_{-0.567}$	$1.711^{+0.200}_{-0.300}$	$0.234^{+0.265}_{-0.100}$
	+3%/-4%	+5%/-4%	+333%/-583%	+23%/-26%	+12%/-18%	+113%/-43%
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 011359786-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 0	$0.77^{+0.12}_{-0.11}$	3201^{+225}_{-243}	4857^{+270}_{-287}	$3.677^{+1.576}_{-1.008}$
Alt.	0 ± 0	$0.88^{+0.12}_{-0.14}$	3214^{+220}_{-227}	-3672^{+307}_{-246}	$-0.428^{+0.292}_{-0.374}$

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

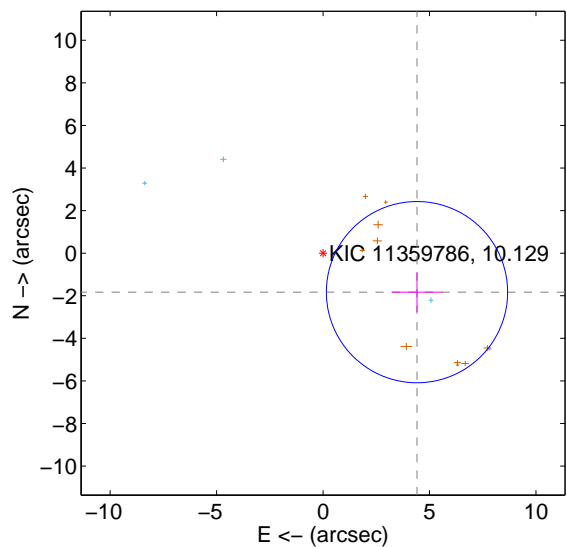
Supplemental centroid analysis for 011359786-01. **Kepler magnitude: 10.13.** Transit SNR 8.16

There are 4 quarters with good PRF difference image offsets

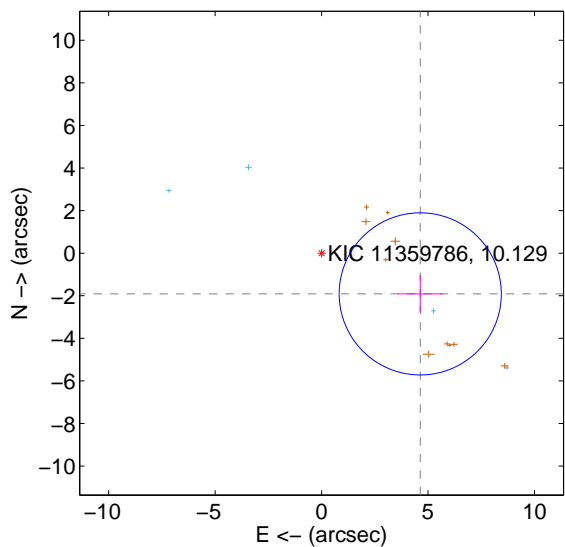
The direct PRF centroid is offset from the target star catalog position by about 0.96 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.779 ± 1.419	3.37	-4.414 ± 1.197	-1.831 ± 0.938
PRF-fit source offset from KIC position	5.014 ± 1.269	3.95	-4.635 ± 1.065	-1.913 ± 0.875
photometric centroid source offset	2.88 ± 2.20	1.31	0.54 ± 2.46	2.83 ± 2.19

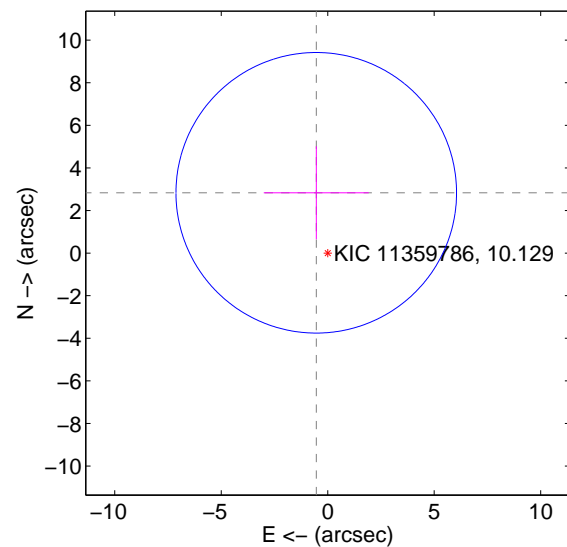
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

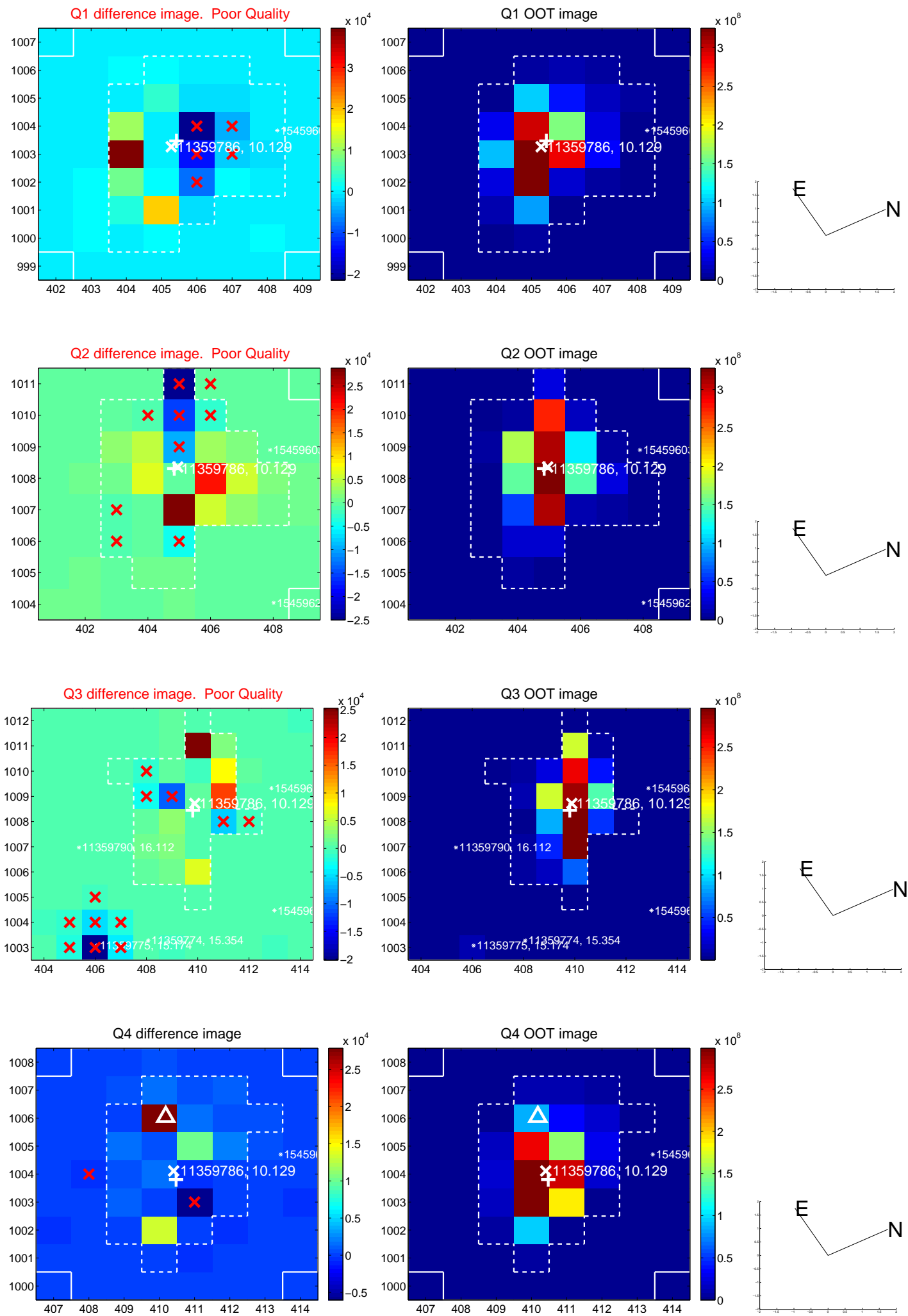


offset from photometric centroids

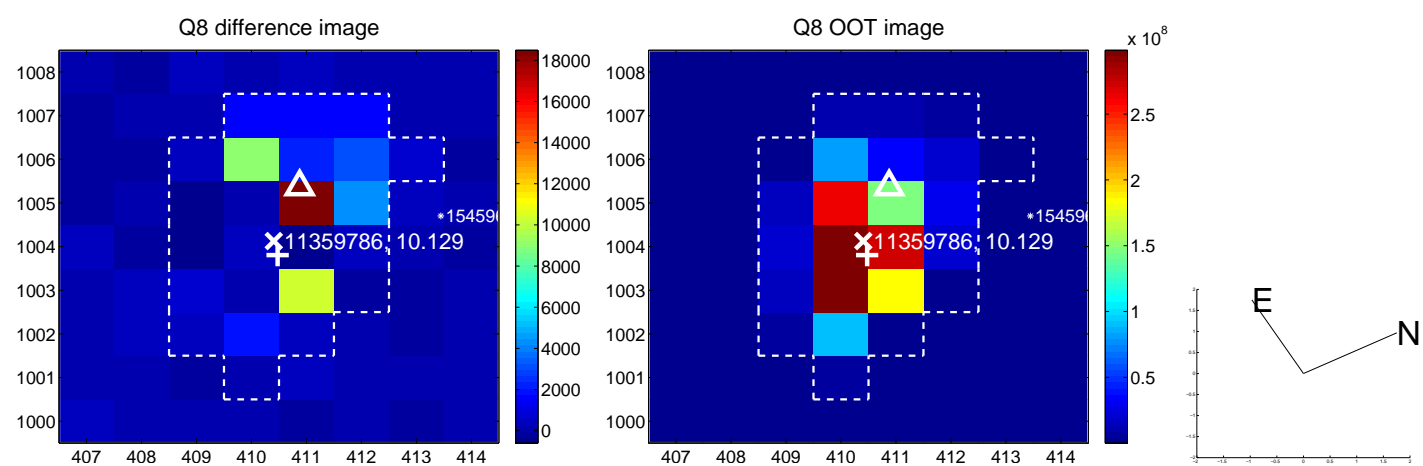
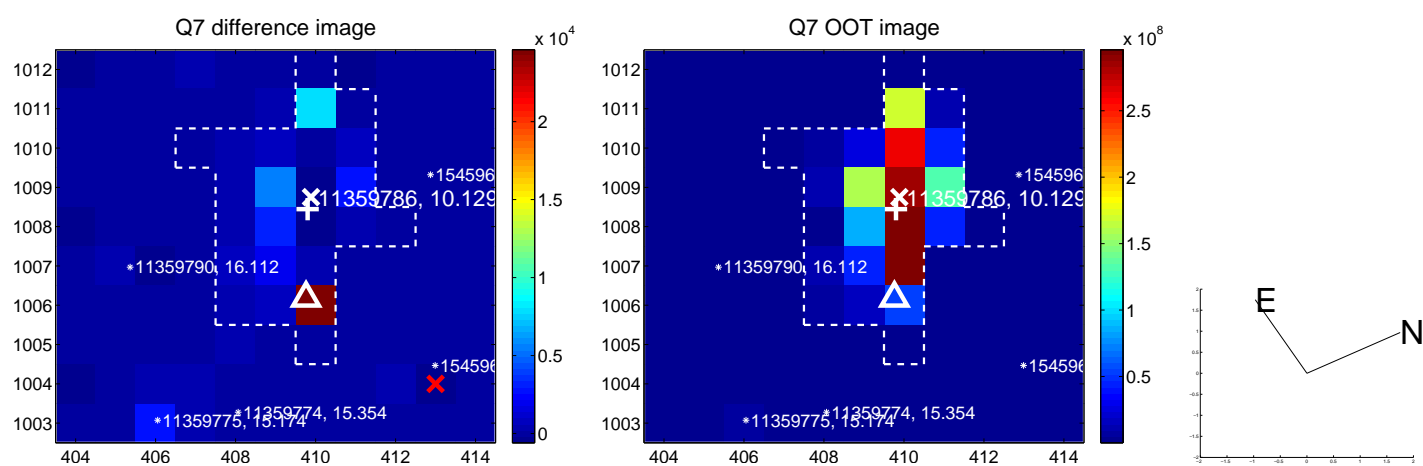
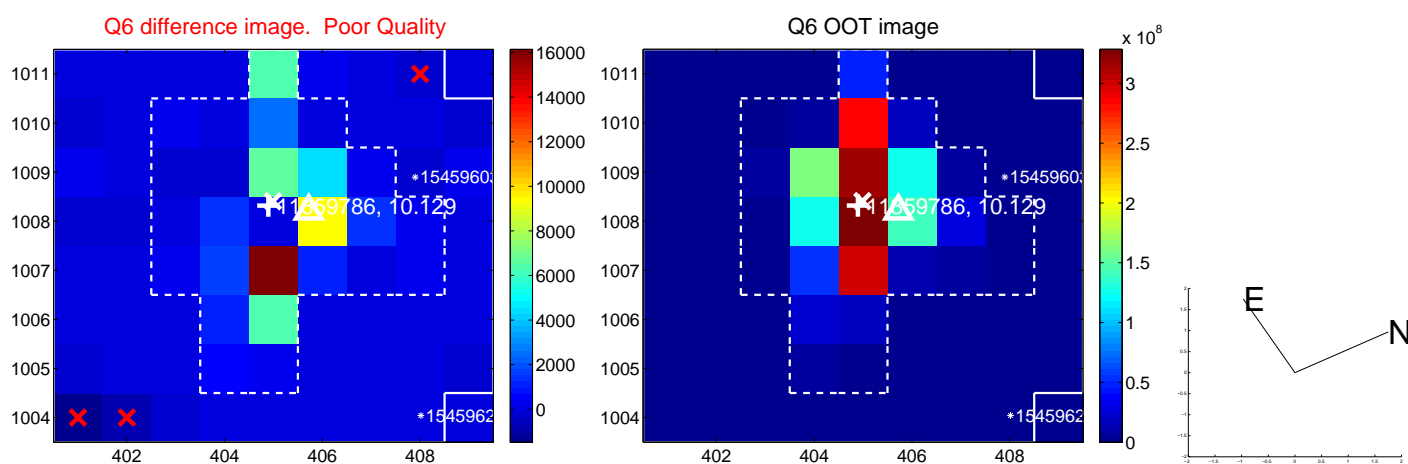
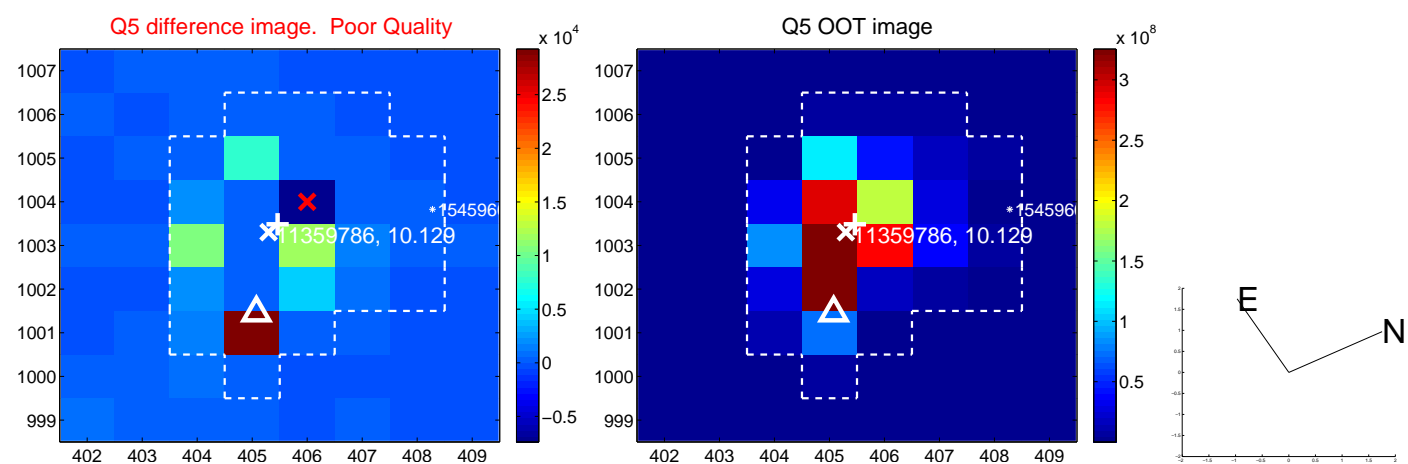


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

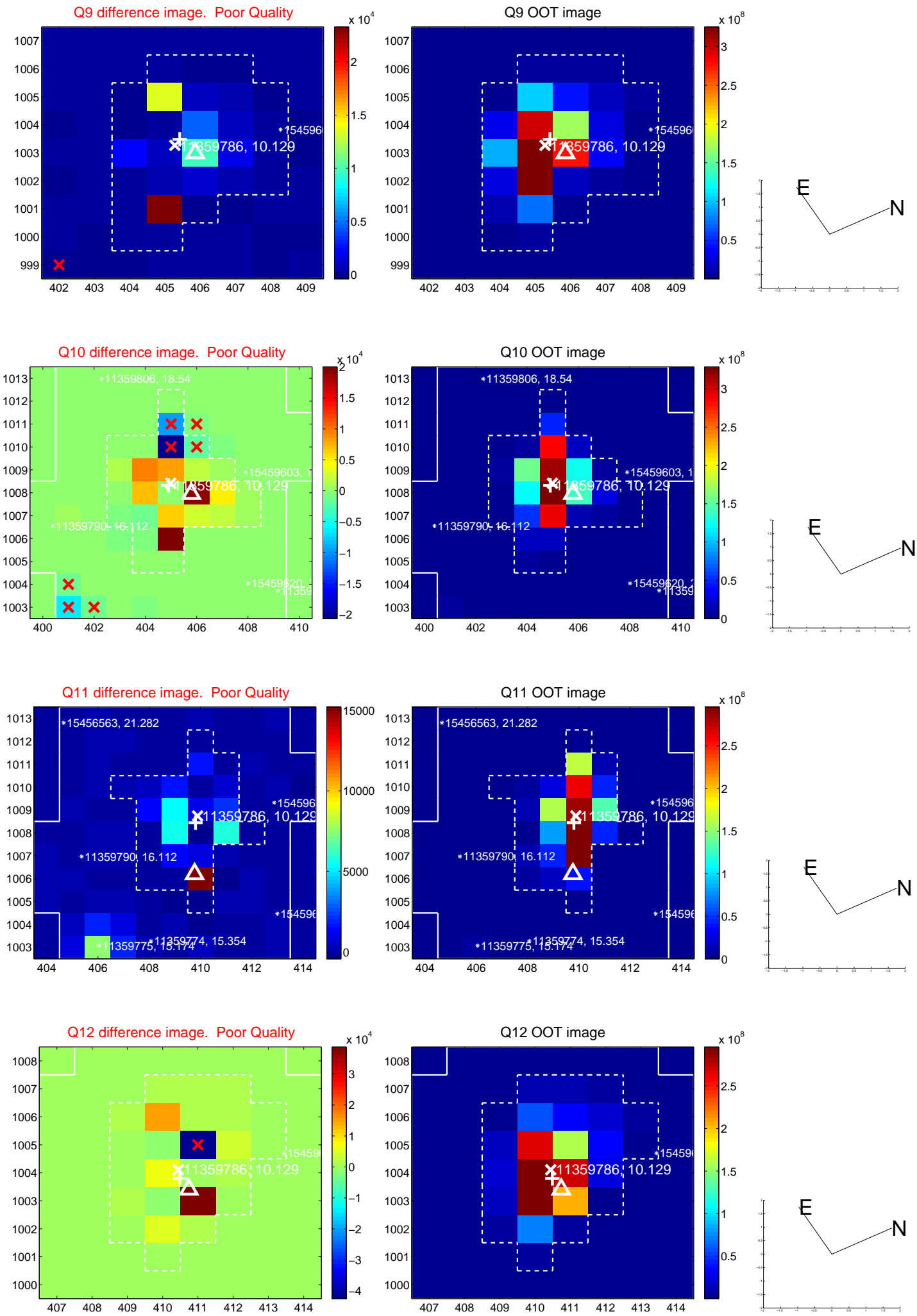
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



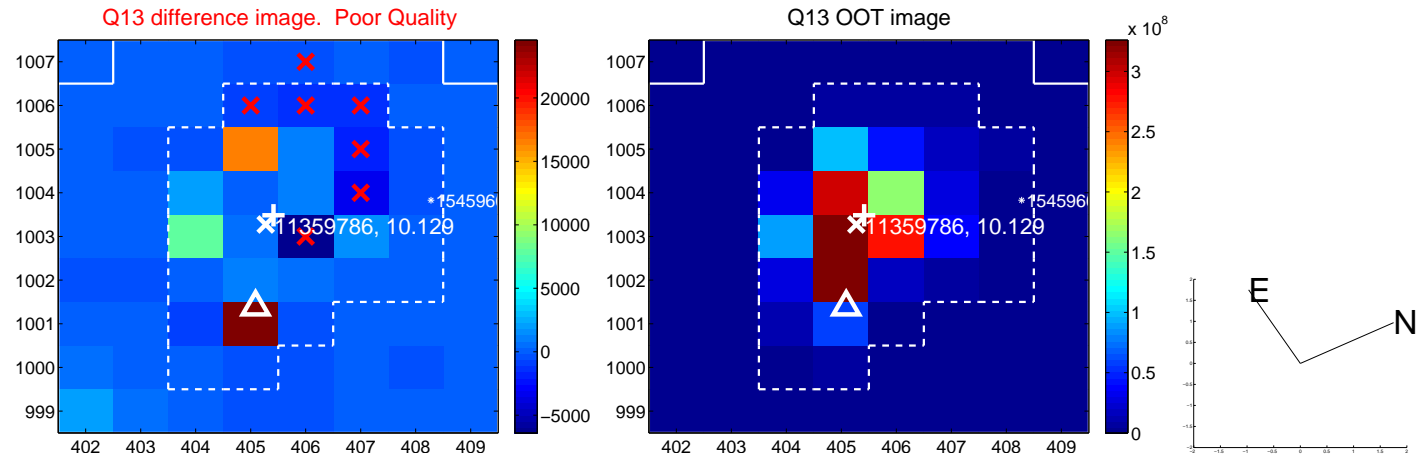
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



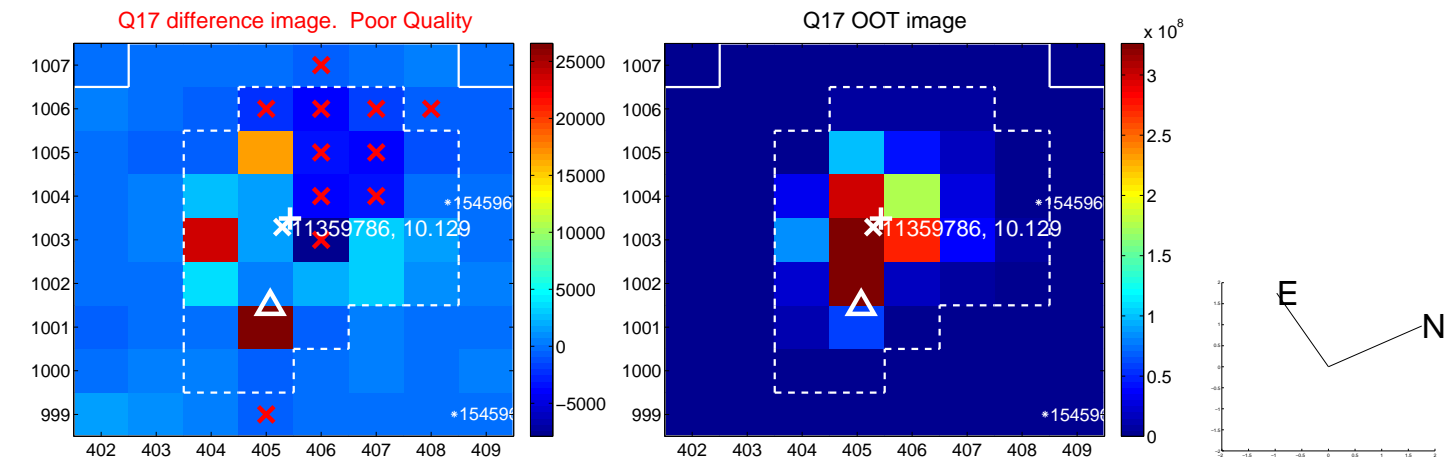
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



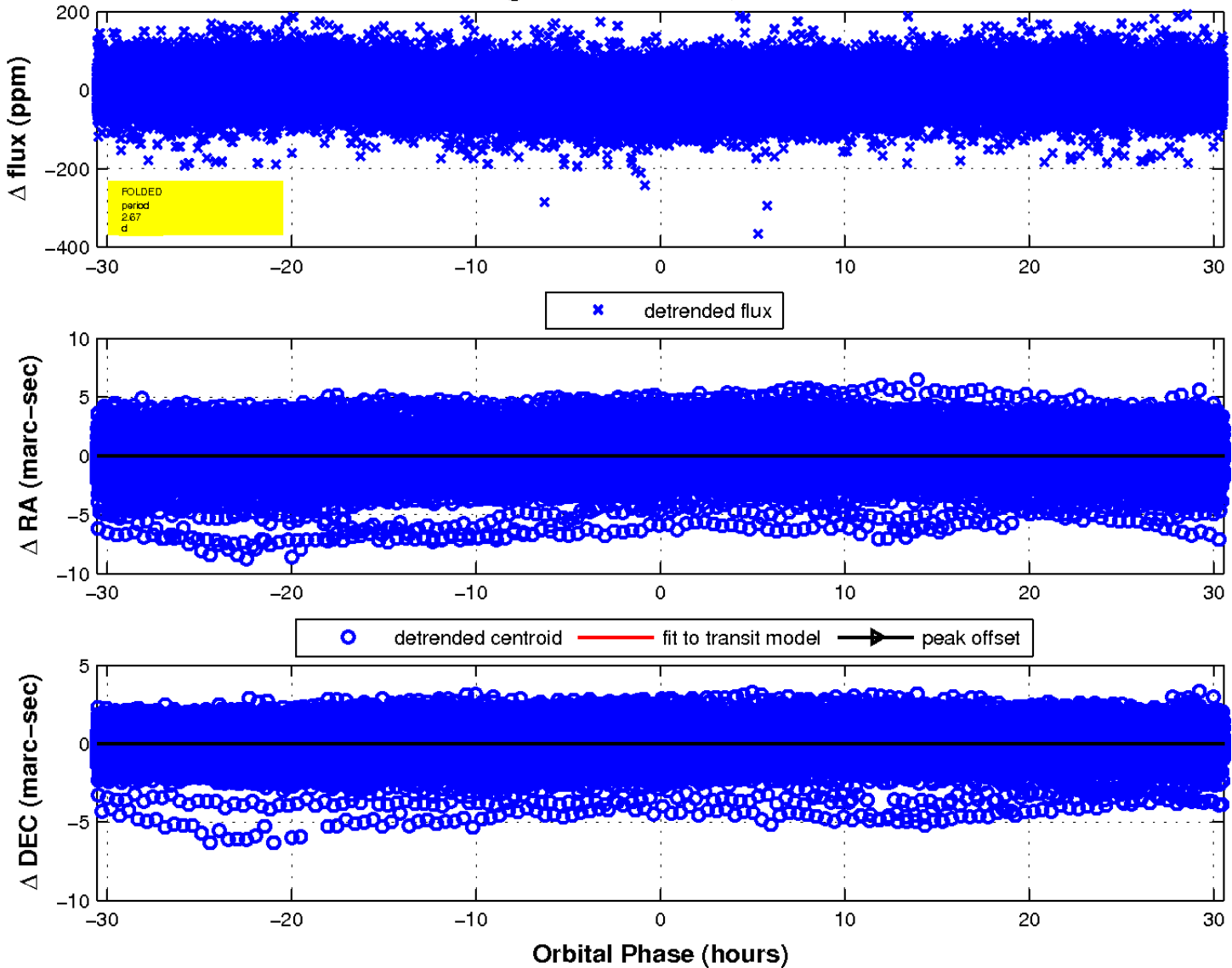
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

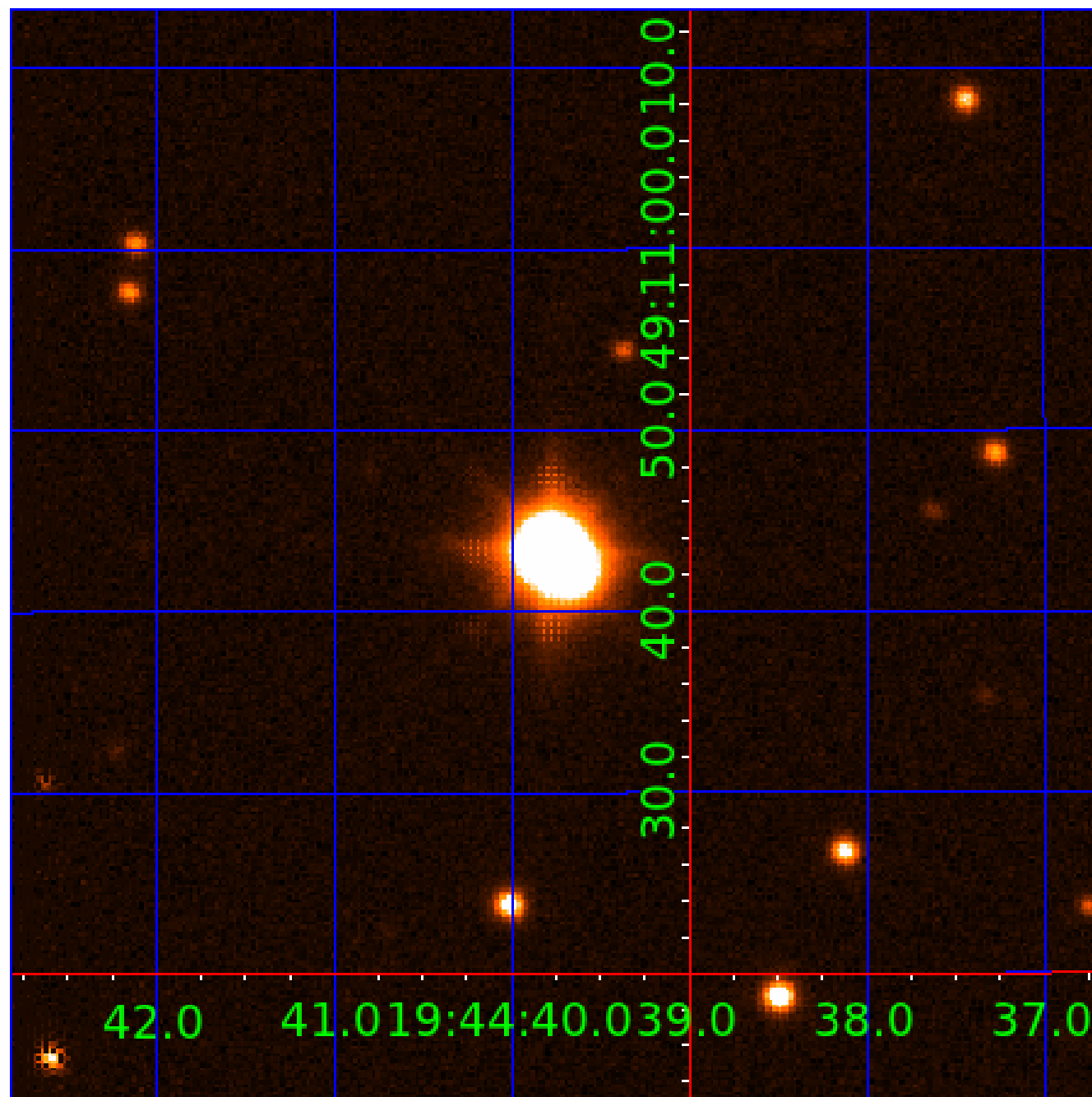


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 011359786

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})
011359786-01	OBS	No	2.674673	132.008994	6.2	10.186	7.6	8.2	2.17	7531	0.77	6690.37
011359786-02	OBS	No	174.173672	212.668252	49.0	10.783	10.9	6.8	2.17	7531	1.74	25.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011359786-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
011359786-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

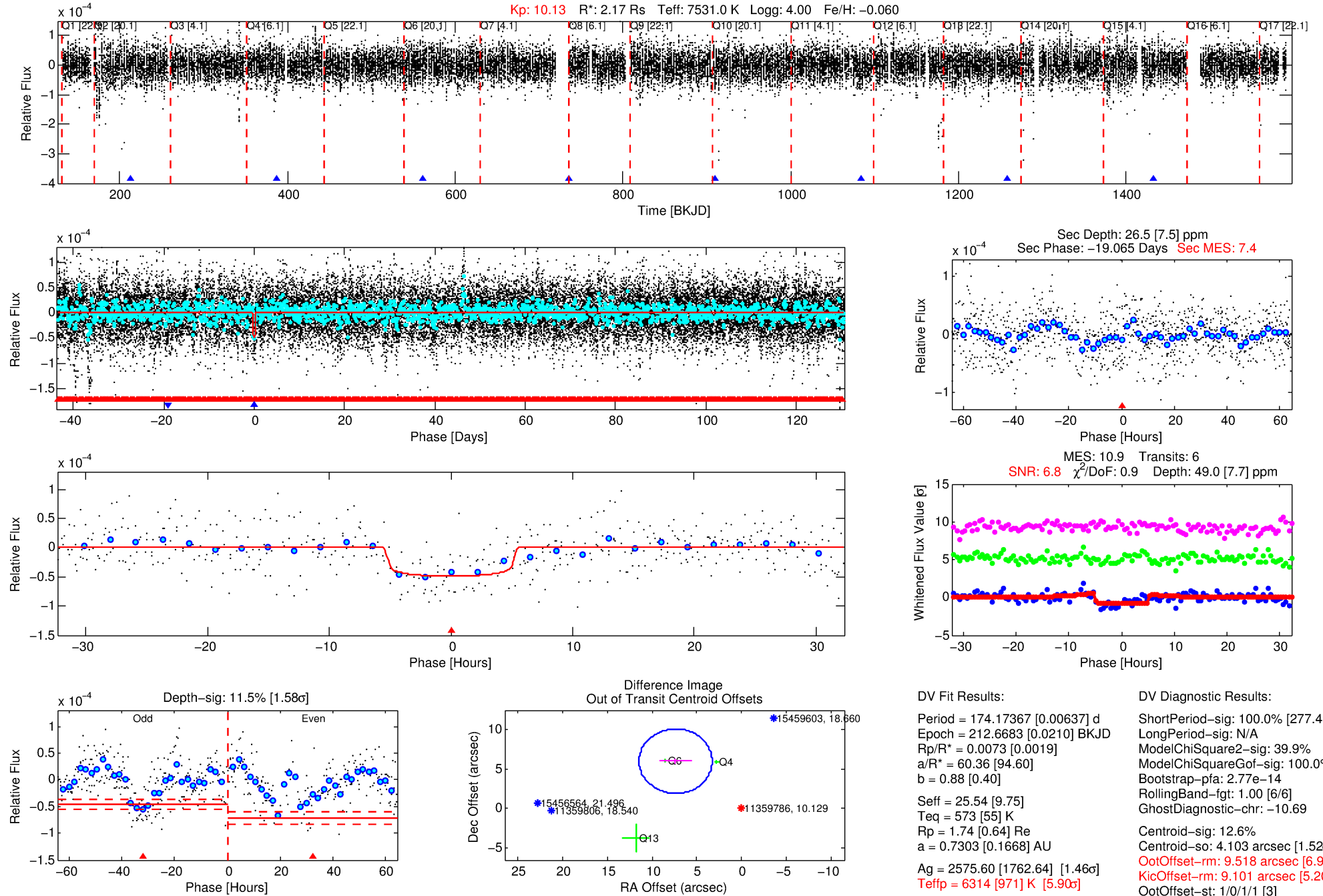
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011359786-02

No Significant Match Found

DV One-Page Summary

KIC: 11359786 Candidate: 2 of 2 Period: 174.174 d



DV Fit Results:

Period = 174.17367 [0.00637] d
 Epoch = 212.6683 [0.0210] BKJD
 Rp/R* = 0.0073 [0.0019]
 a/R* = 60.36 [94.60]
 b = 0.88 [0.40]
 Seff = 25.54 [9.75]
 Teq = 573 [55] K
 Rp = 1.74 [0.64] Re
 a = 0.7303 [0.1668] AU
 Ag = 2575.60 [1762.64] [1.46 σ]
 Teffp = 6314 [971] K [5.90 σ]

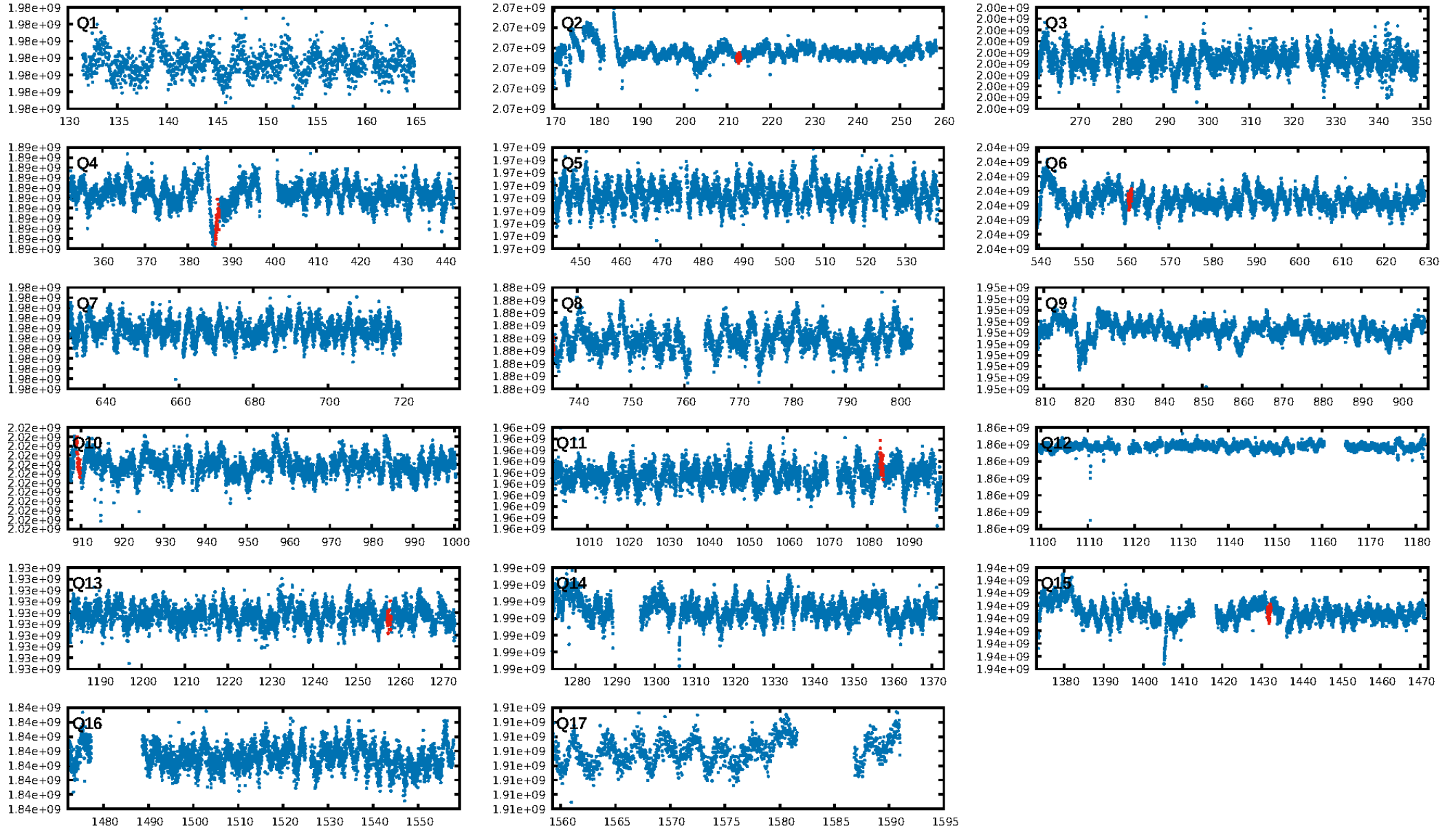
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [277.49 σ]
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: 39.9%
 ModelChiSquareGof-sig: 100.0%
 Bootstrap-pfa: 2.77e-14
 RollingBand-fgt: 1.00 [6/6]
 GhostDiagnostic-chr: -10.69
 Centroid-sig: 12.6%
 Centroid-so: 4.103 arcsec [1.52 σ]
 OotOffset-rm: 9.518 arcsec [6.98 σ]
 KicOffset-rm: 9.101 arcsec [5.20 σ]
 OotOffset-st: 1/0/1/1 [3]
 KicOffset-st: 1/0/1/1 [3]
 DiffImageQuality-fgm: 0.33 [1/3]
 DiffImageOverlap-fno: 0.17 [1/6]

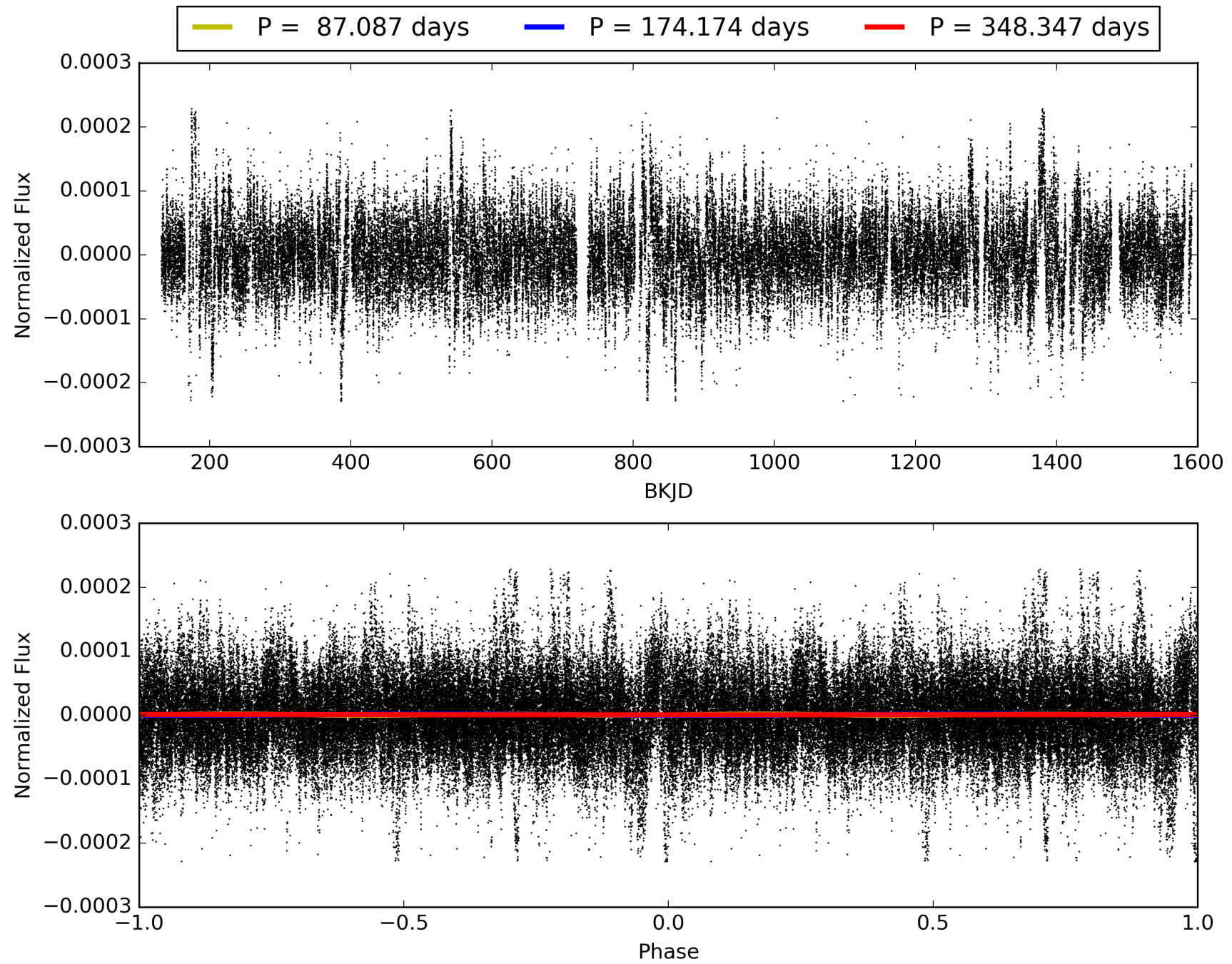
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:39:43 Z

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

TCE 011359786-02, PDC Light Curves

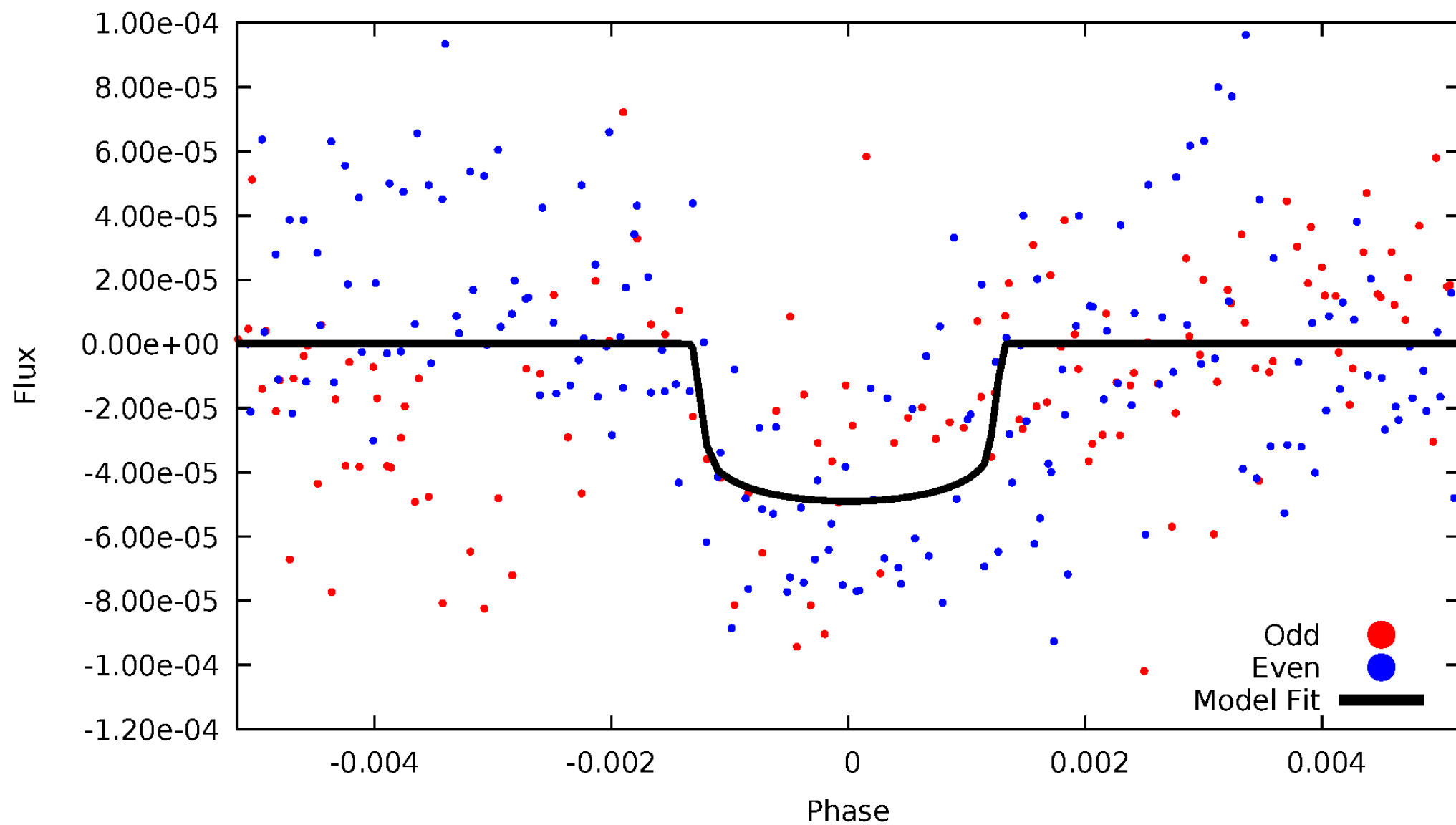


TCE 011359786-02



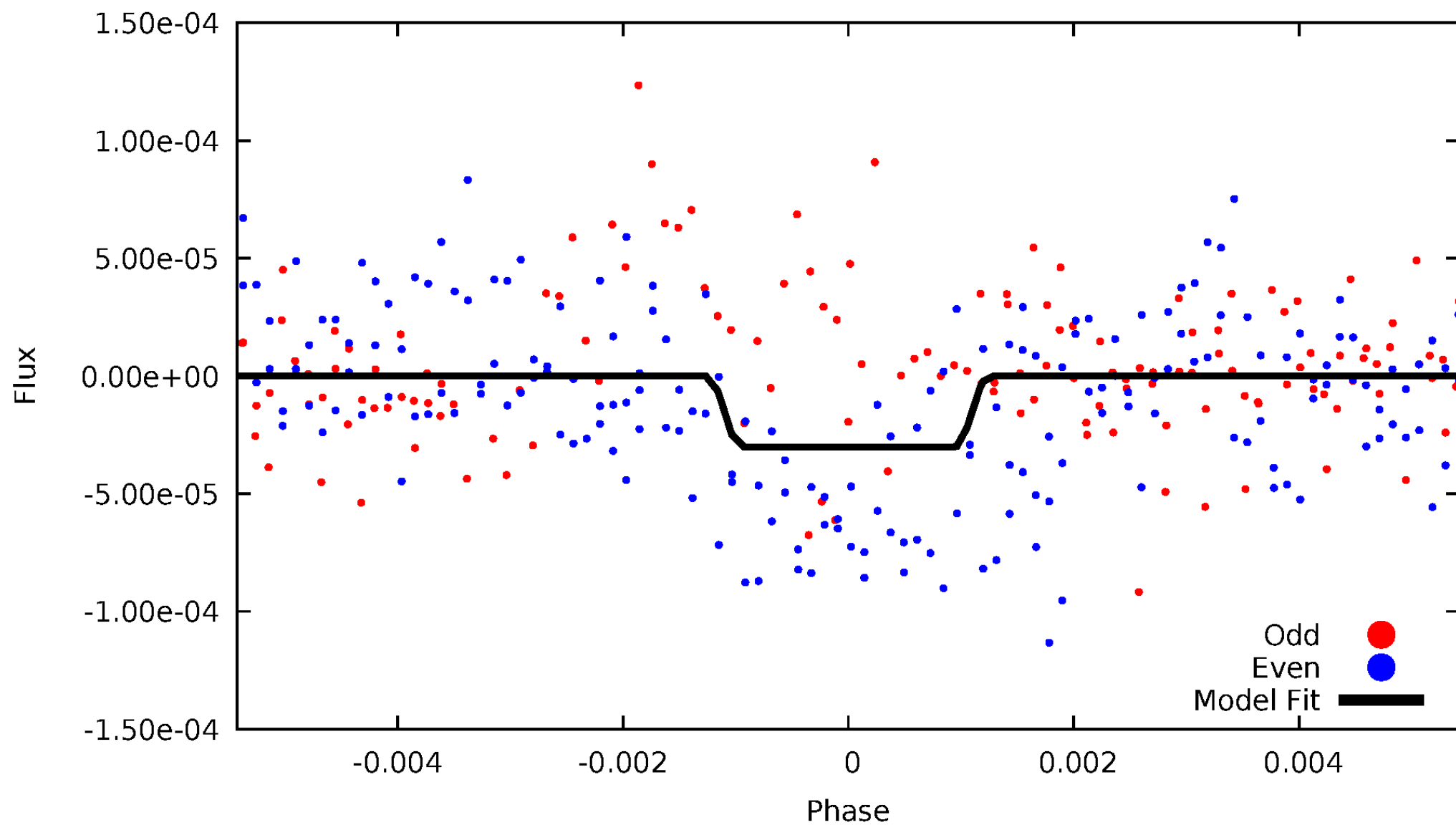
DV Odd/Even

TCE 011359786-02



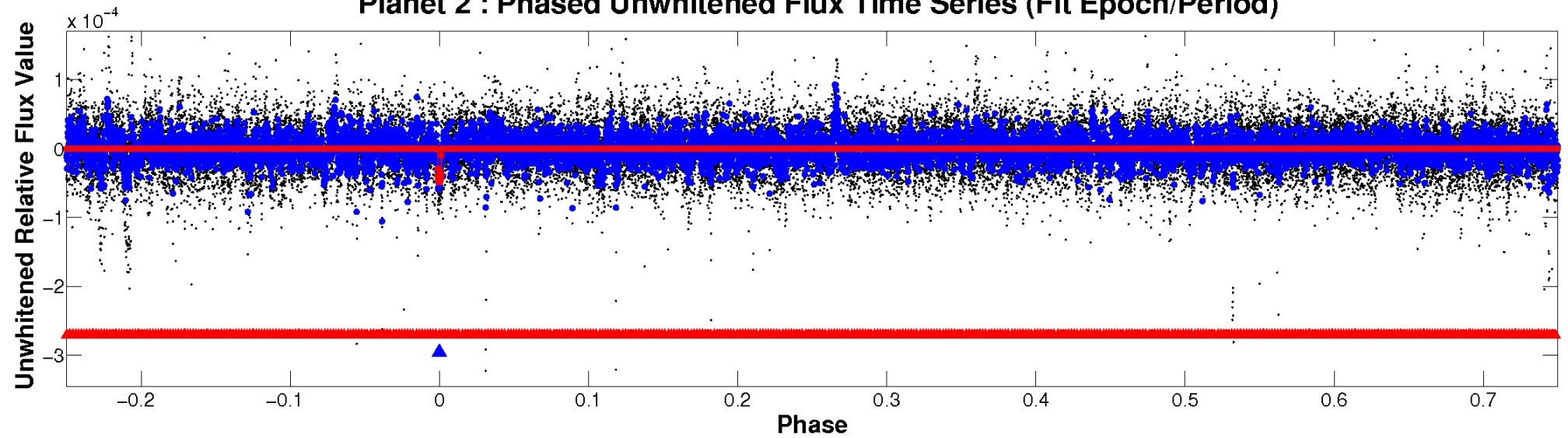
ALT Odd/Even

TCE 011359786-02

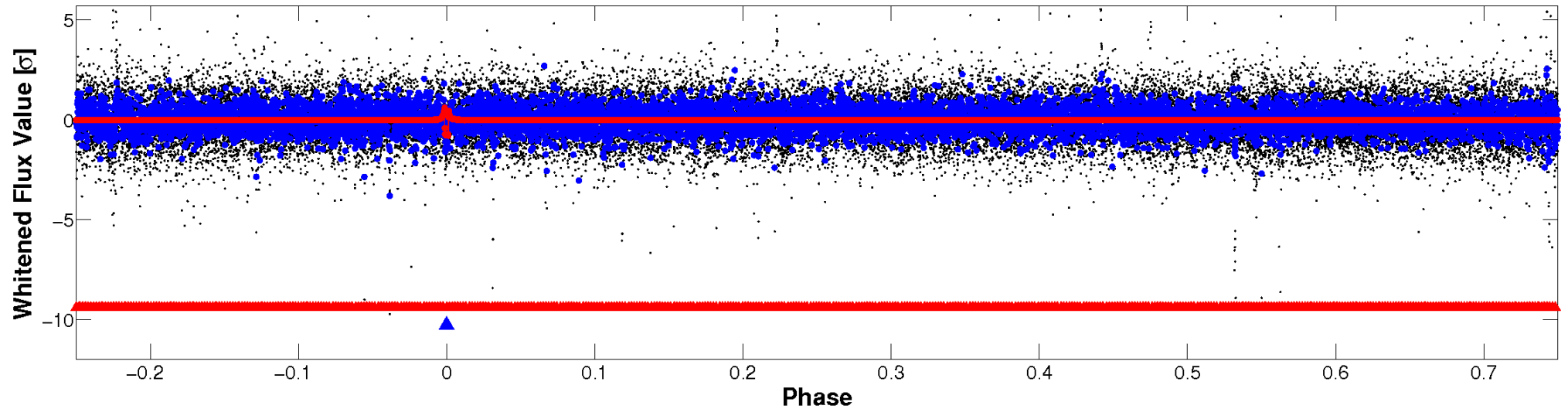


Non-Whitened Vs. Whitened Light Curve

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

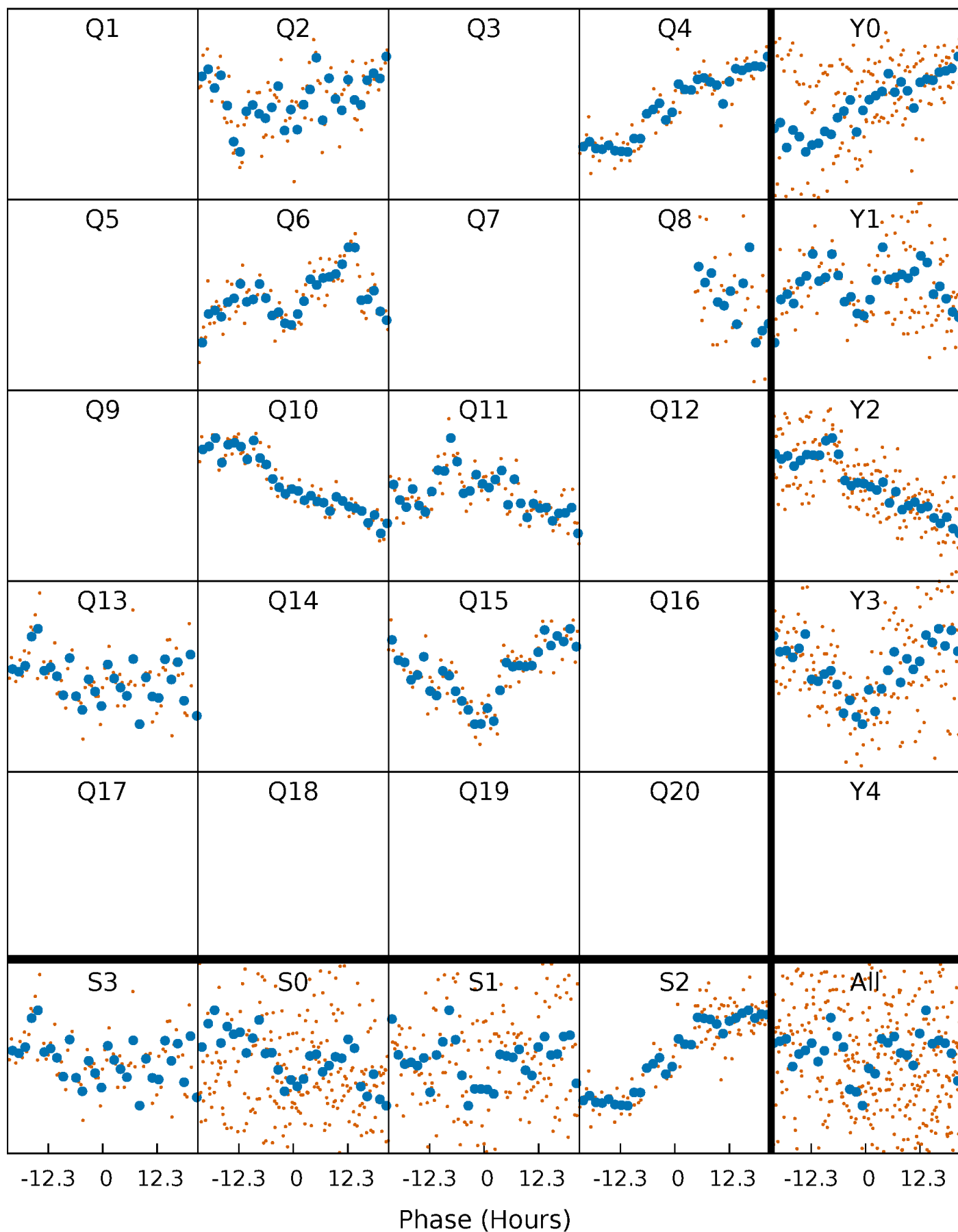


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



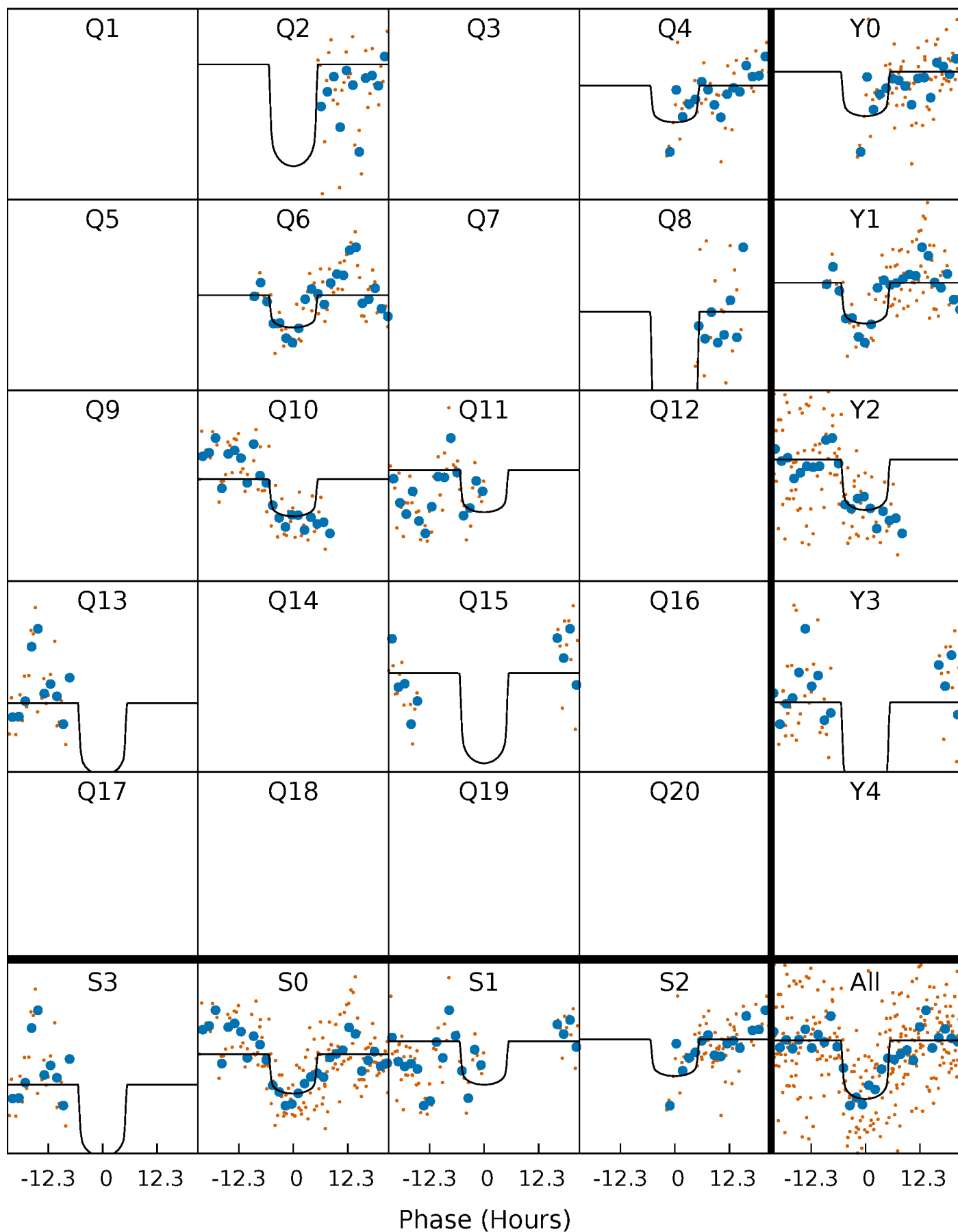
PDC Quarter-Phased Transit Curves

TCE 011359786-02 P=174.173672 Days $T_0=212.668252$ (BKJD)



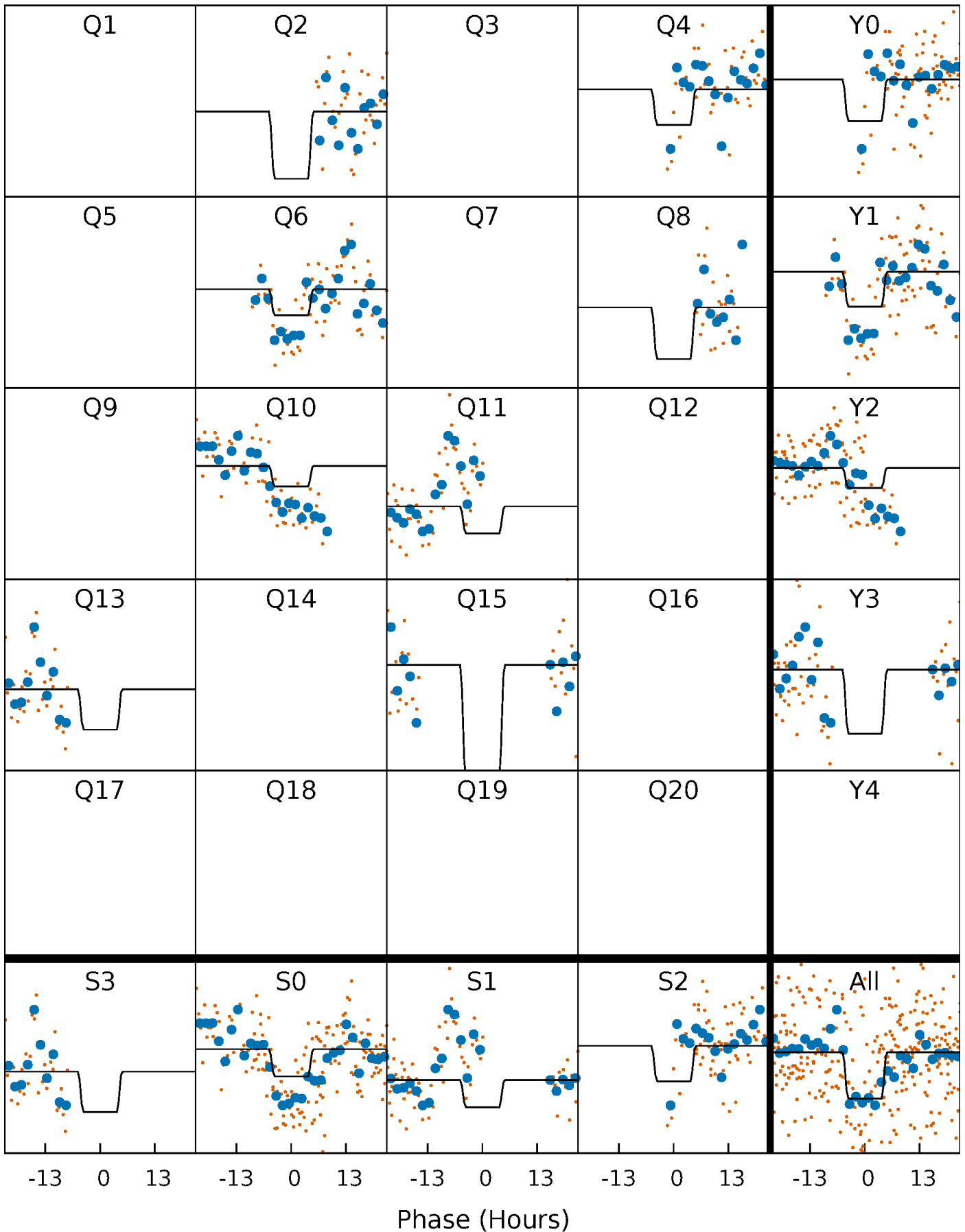
DV Quarter-Phased Transit Curves

TCE 011359786-02 P=174.173672 Days $T_0=212.668252$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

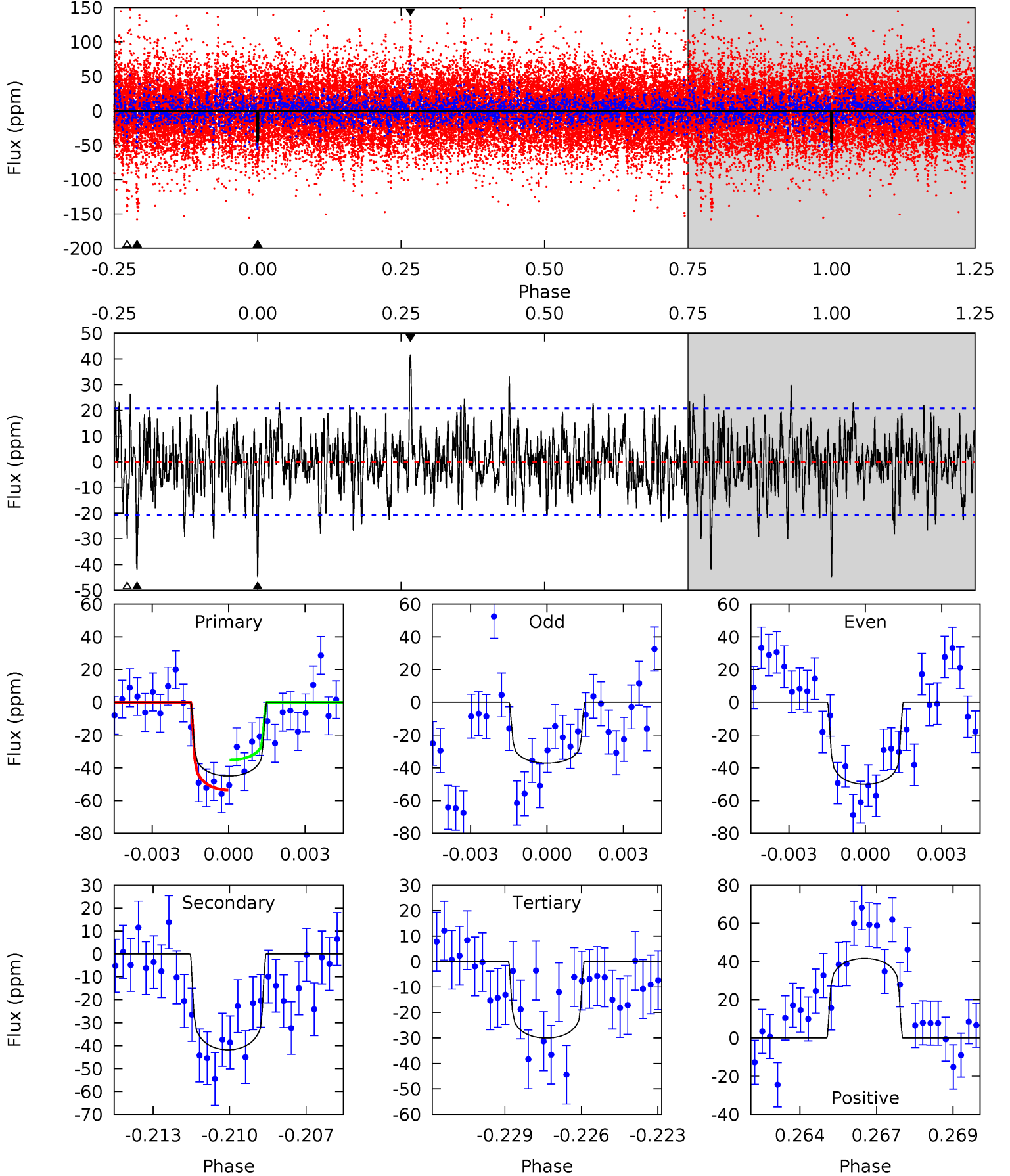
TCE 011359786-02 P=174.175665 Days $T_0=212.651902$ (BKJD)



DV Model-Shift Uniqueness Test

011359786-02, $P = 174.173672$ Days, $E = 38.494580$ Days

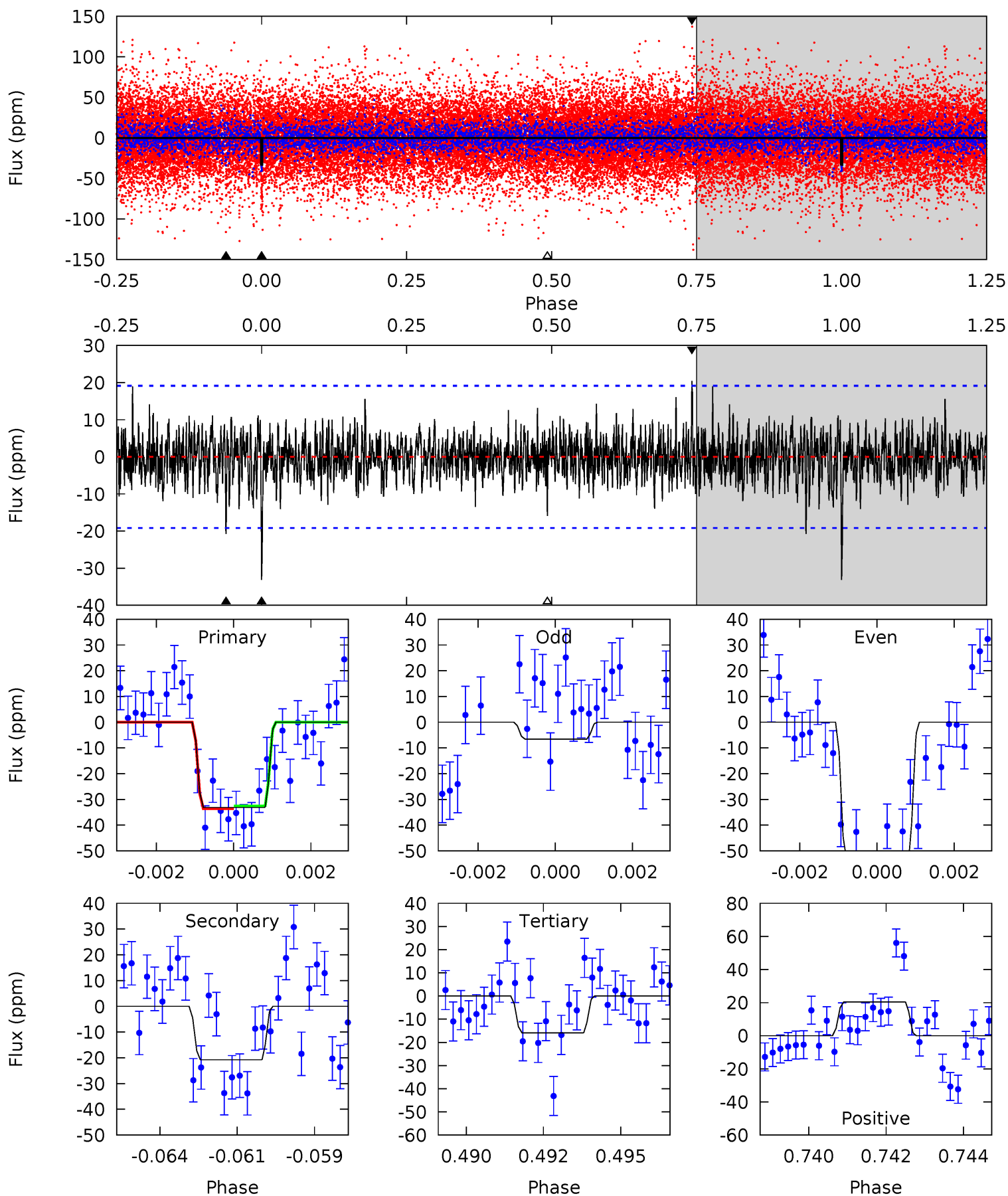
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	10.6	7.65	10.6	5.27	3.00	2.35	3.82	0.86	3.00	0.04	1.61	1.03	0.48	2.33



Alt Model-Shift Uniqueness Test

011359786-02, $P = 174.175665$ Days, $E = 38.476237$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.15	5.73	4.39	5.65	5.30	3.04	1.27	4.76	3.50	1.34	0.09	6.46	0.84	0.38	0.14



Stellar Parameters For KIC 011359786

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7531^{+209}_{-314}	$3.997^{+0.193}_{-0.158}$	$-0.060^{+0.200}_{-0.350}$	$2.174^{+0.510}_{-0.567}$	$1.711^{+0.200}_{-0.300}$	$0.234^{+0.265}_{-0.100}$
	+3%/-4%	+5%/-4%	+333%/-583%	+23%/-26%	+12%/-18%	+113%/-43%
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 011359786-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-42 ± 4	$1.69^{+0.51}_{-0.45}$	798^{+55}_{-63}	7011^{+1360}_{-866}	4246^{+3652}_{-1778}
Alt.	-21 ± 4	$1.29^{+0.51}_{-0.46}$	794^{+57}_{-55}	6696^{+1836}_{-981}	3597^{+4774}_{-1759}

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

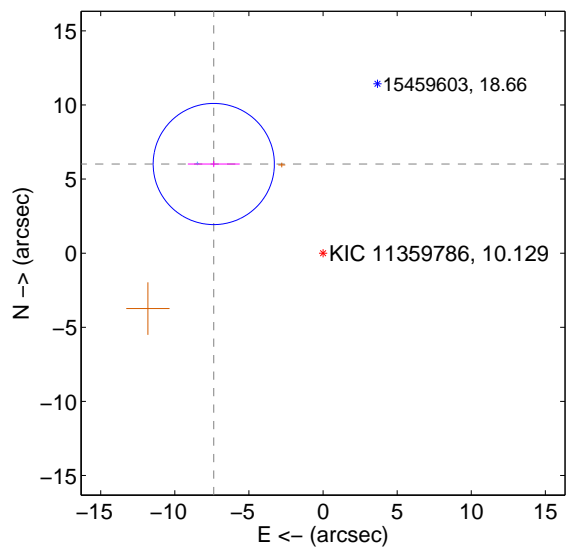
Supplemental centroid analysis for 011359786-02. **Kepler magnitude: 10.13.** Transit SNR 6.79

There are 1 quarters with good PRF difference image offsets

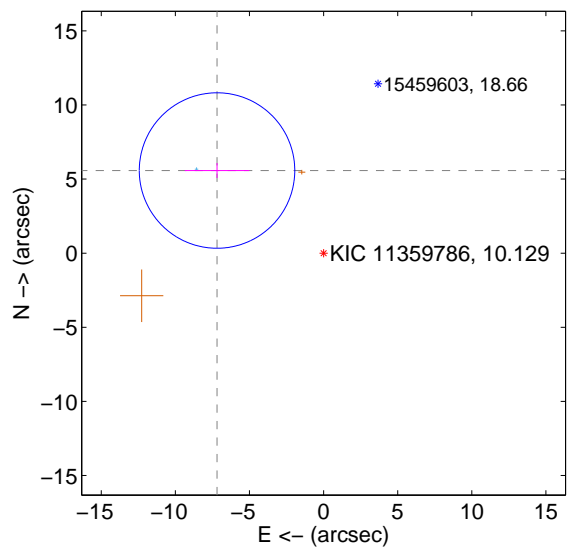
The direct PRF centroid is offset from the target star catalog position by about 0.98 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.518 ± 1.363	6.98	7.374 ± 1.751	6.018 ± 0.210
PRF-fit source offset from KIC position	9.101 ± 1.749	5.20	7.191 ± 2.178	5.578 ± 0.504
photometric centroid source offset	4.10 ± 2.70	1.52	4.02 ± 2.72	-0.80 ± 2.16

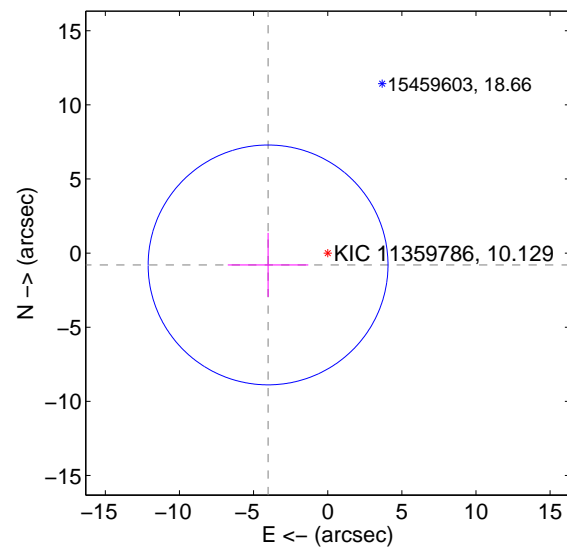
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

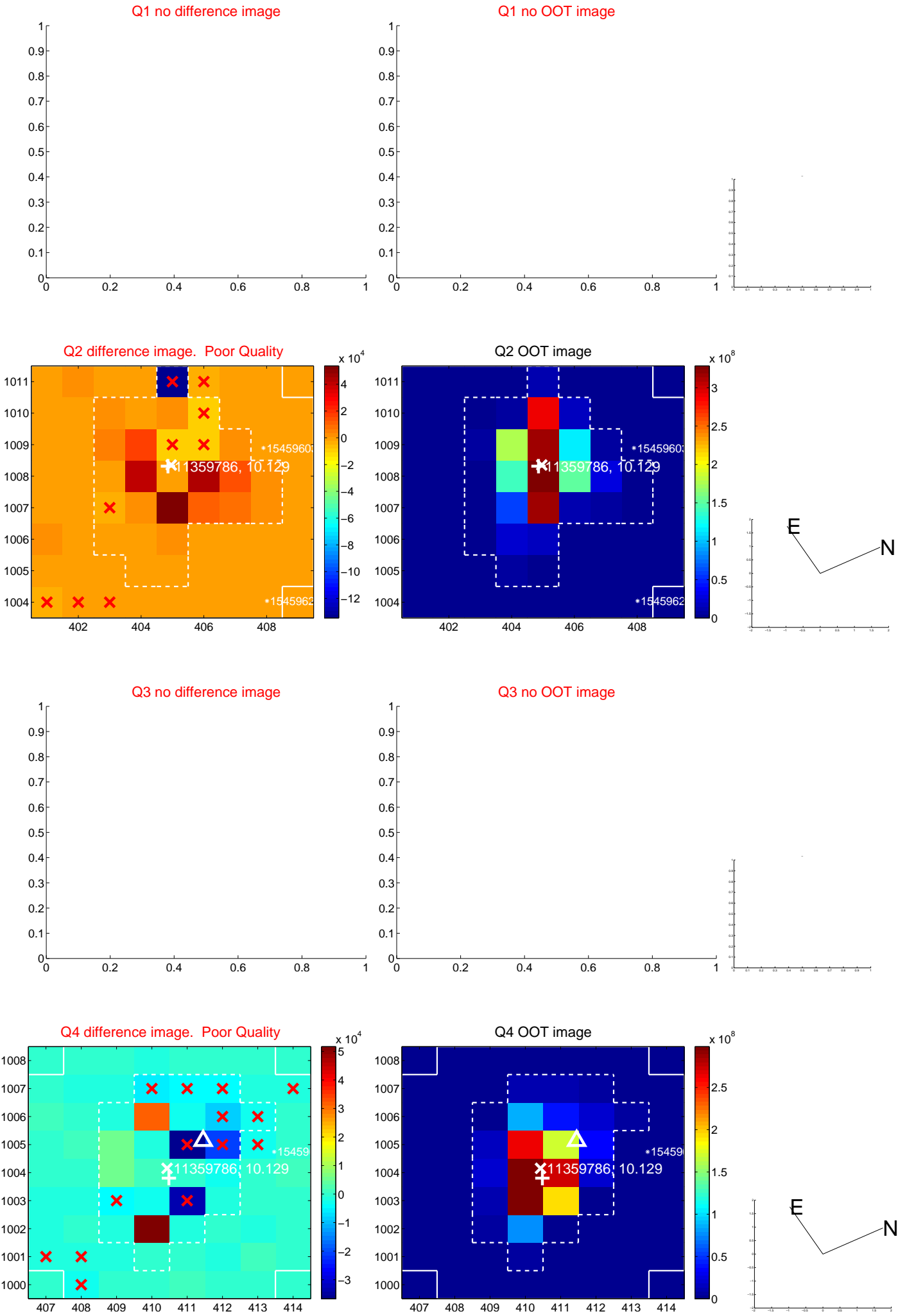


offset from photometric centroids



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.

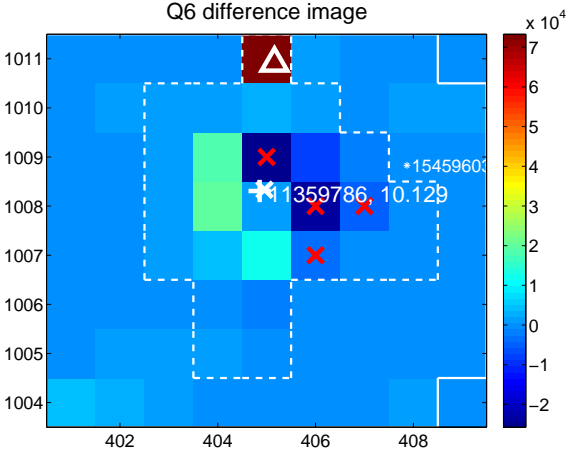
Q5 no difference image



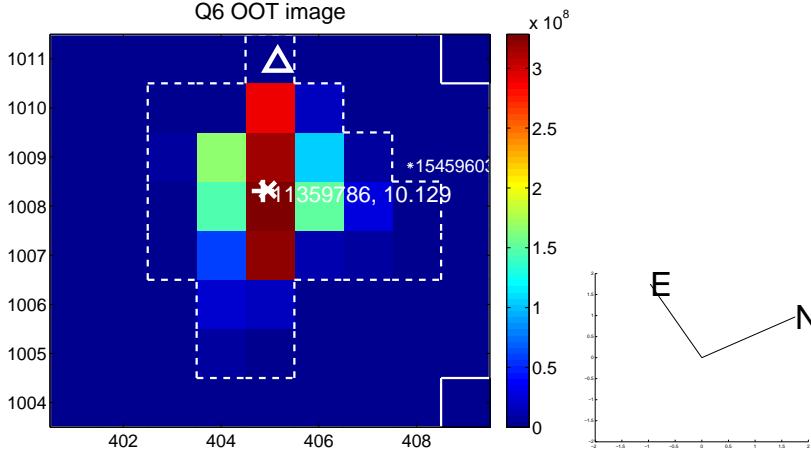
Q5 no OOT image



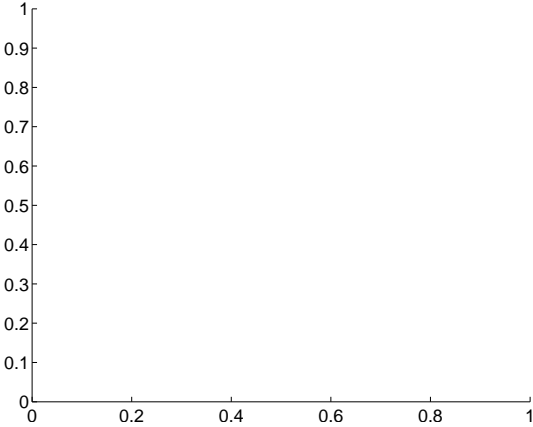
Q6 difference image



Q6 OOT image



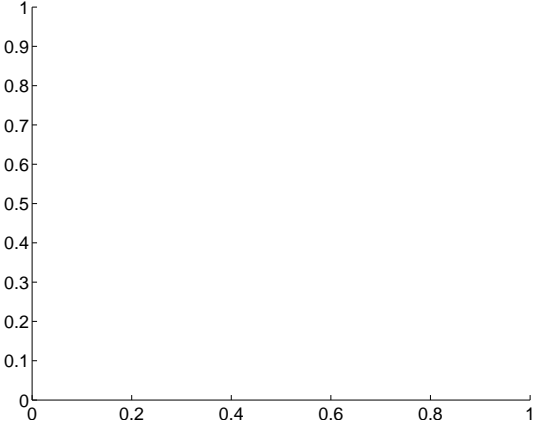
Q7 no difference image



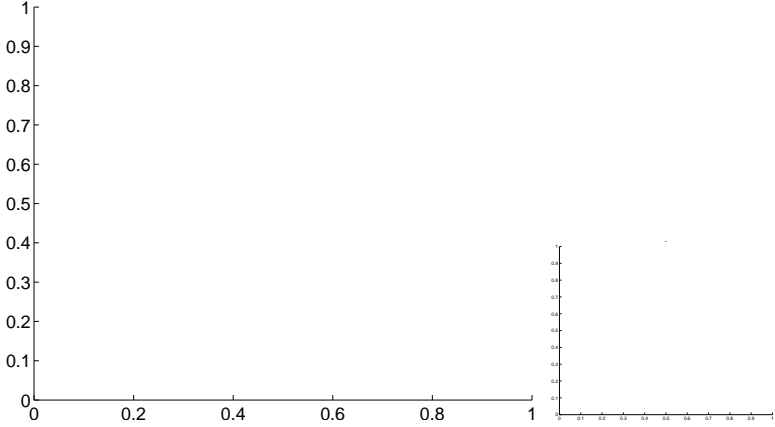
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

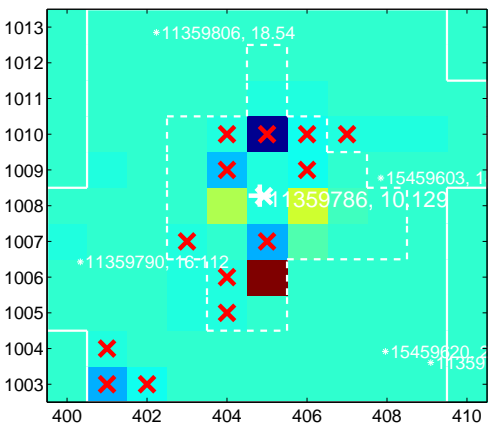
Q9 no difference image



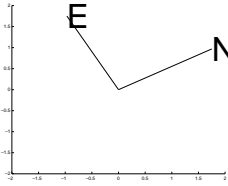
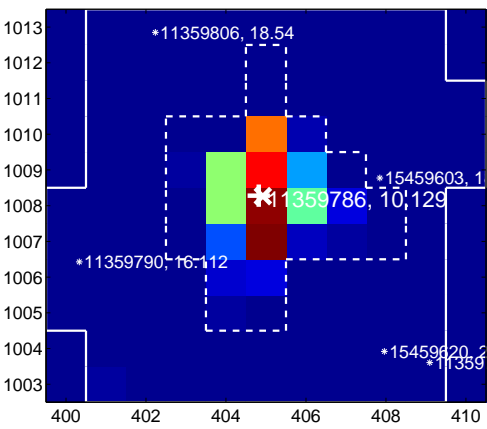
Q9 no OOT image



Q10 difference image. Poor Quality



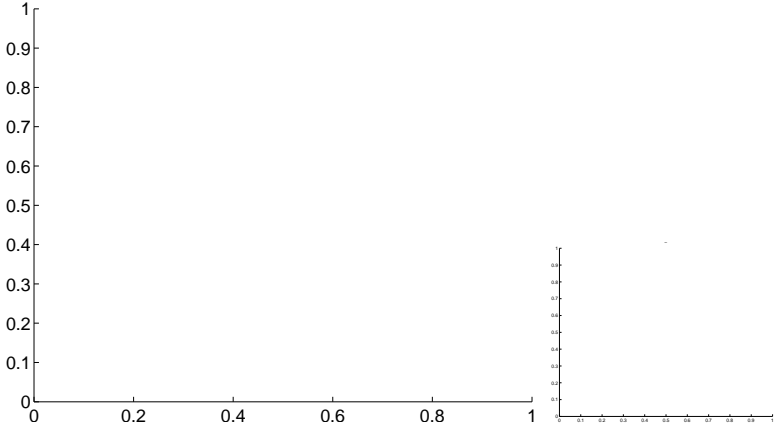
Q10 OOT image



Q11 no difference image



Q11 no OOT image



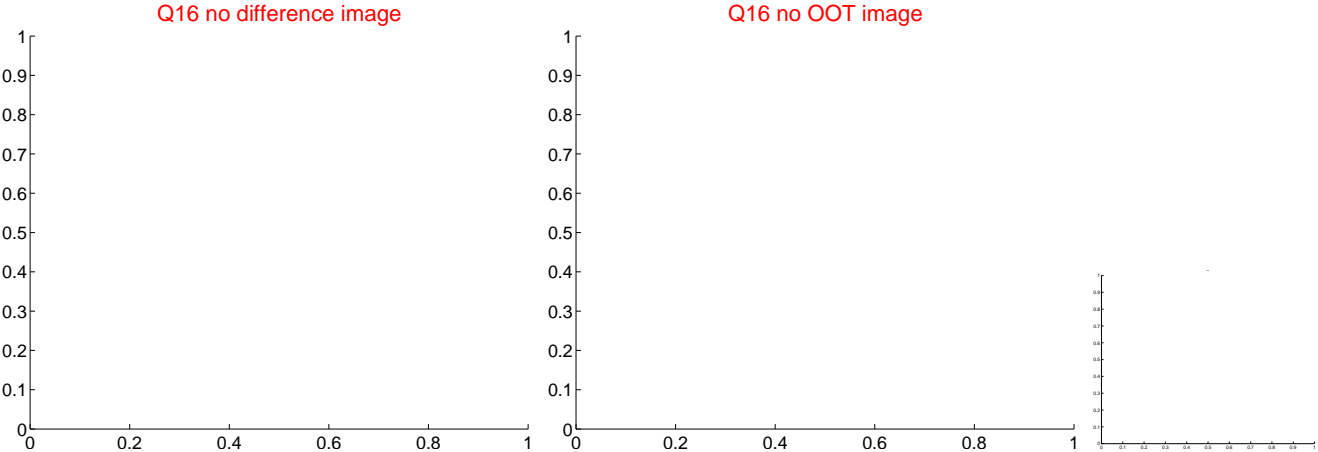
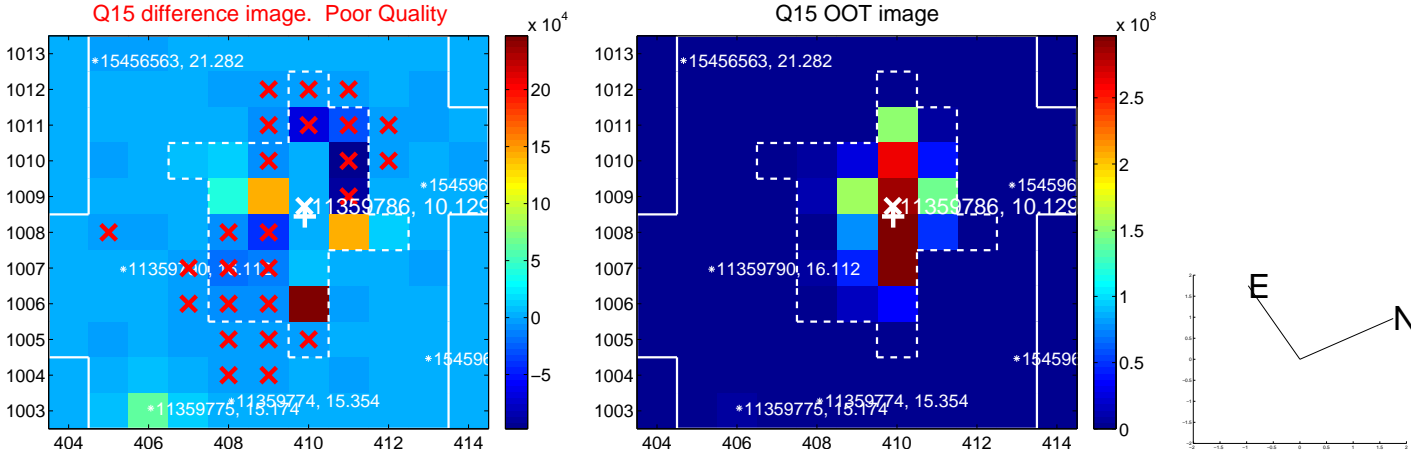
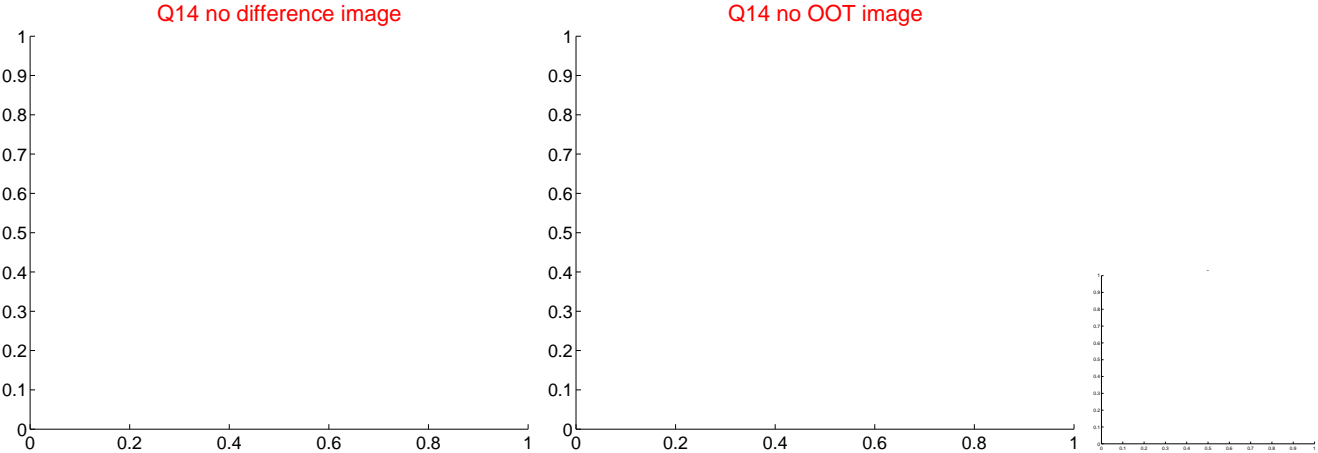
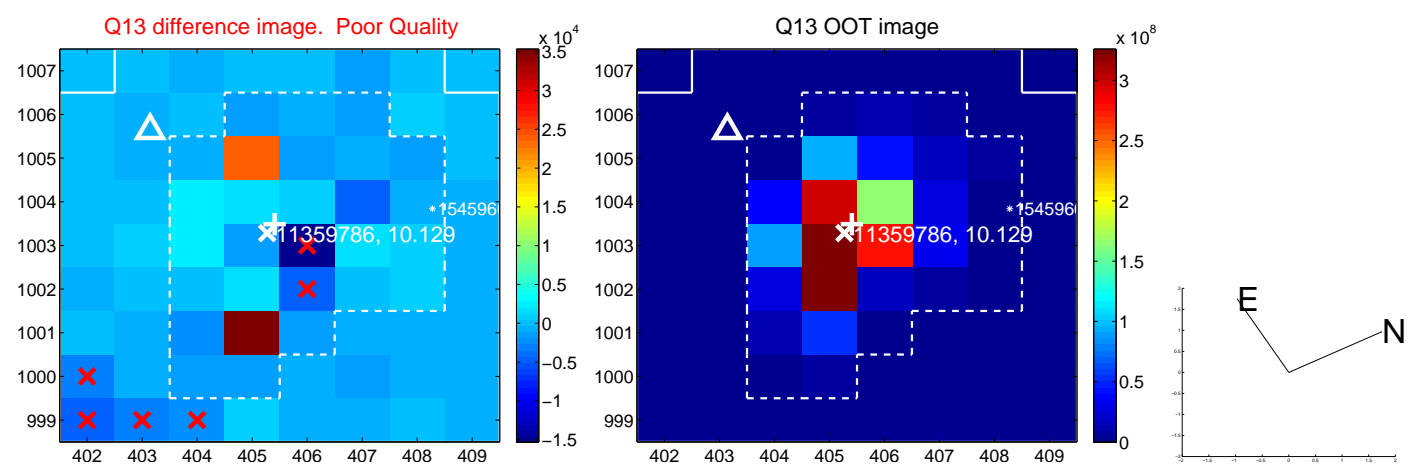
Q12 no difference image



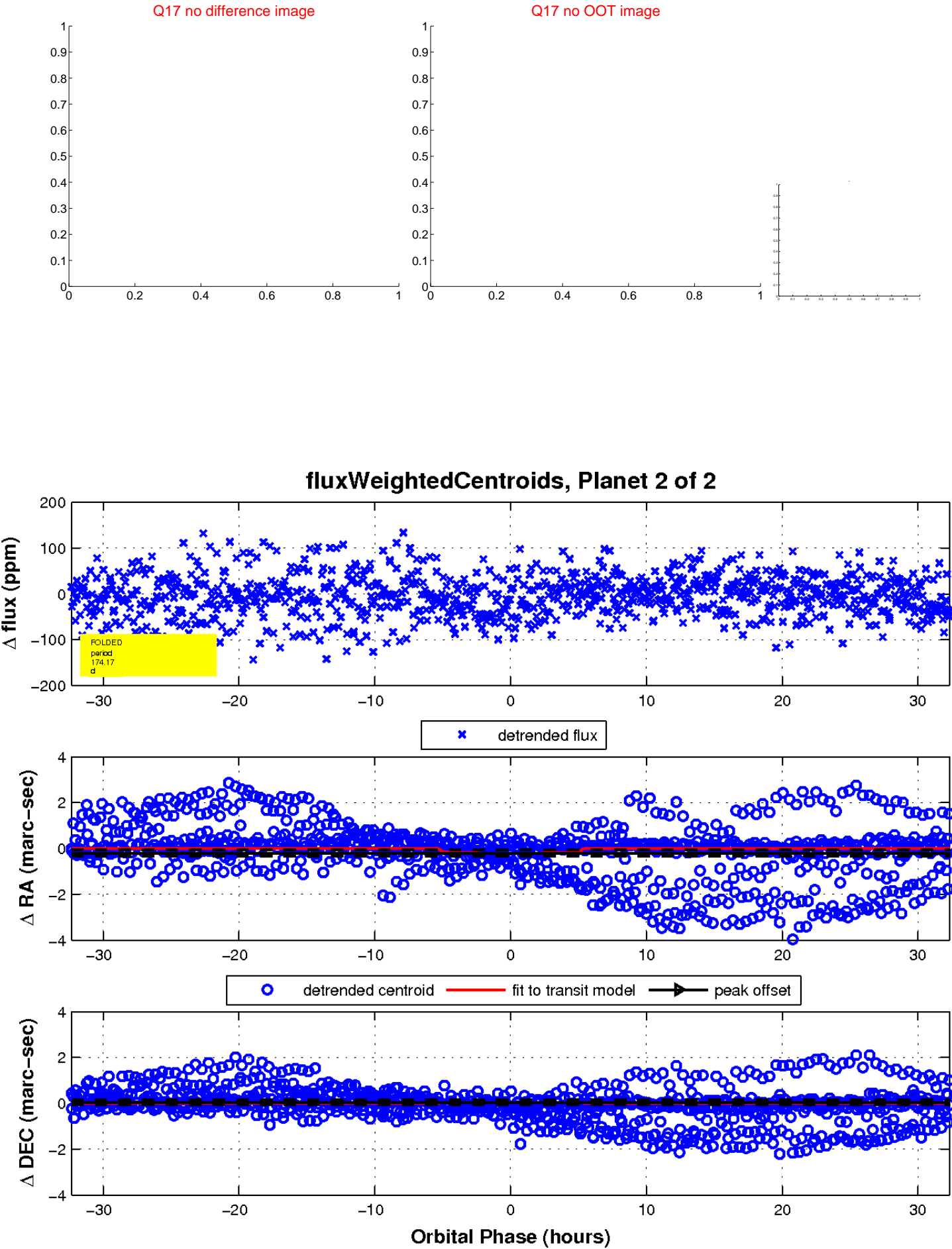
Q12 no OOT image



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.



UKIRT Image

Declination

