

KIC 004679457

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})
004679457-01	OBS	No	319.362920	136.169846	639.0	15.000	26.1	-1.0	152.28	3293	353.21	2650.44
004679457-02	OBS	No	287.798362	240.982721	124.2	6.938	10.9	3.1	152.28	3293	199.92	3044.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004679457-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
004679457-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

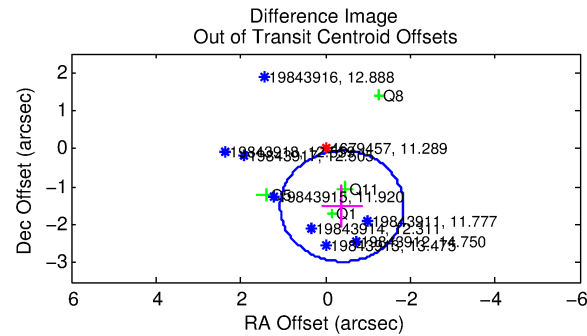
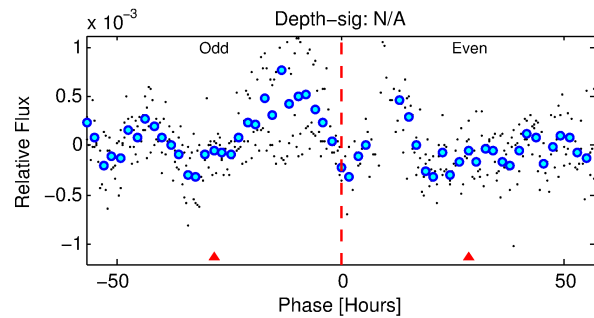
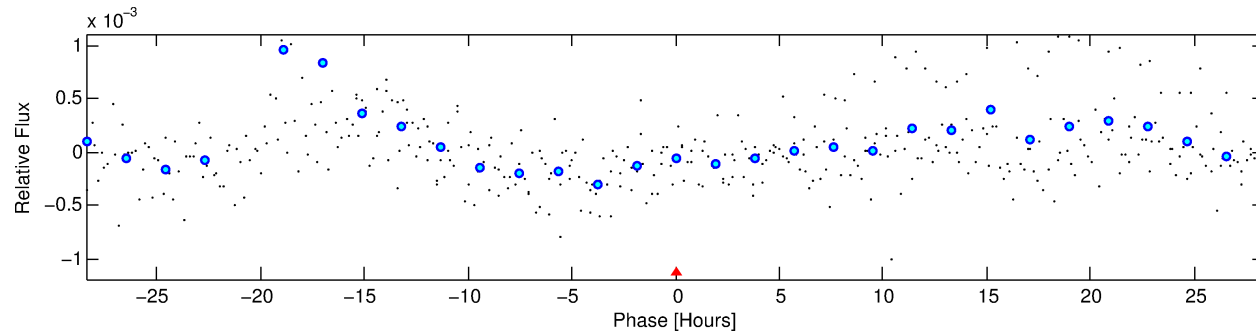
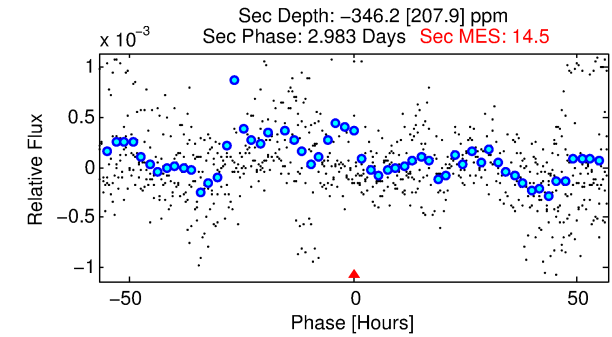
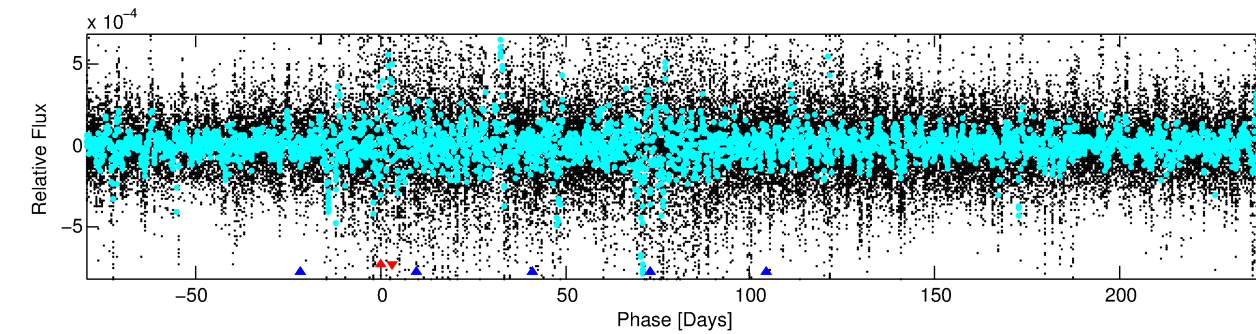
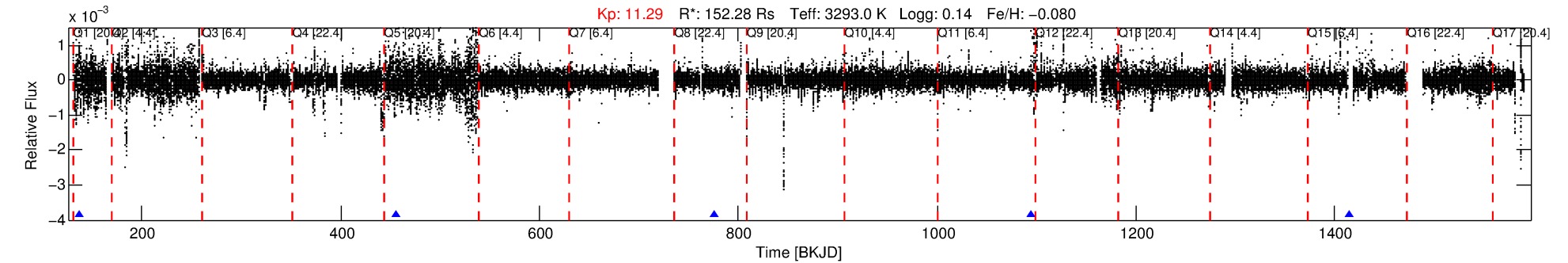
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004679457-01

No Significant Match Found

DV One-Page Summary

KIC: 4679457 Candidate: 1 of 2 Period: 319.363 d



TPS TCE Results:

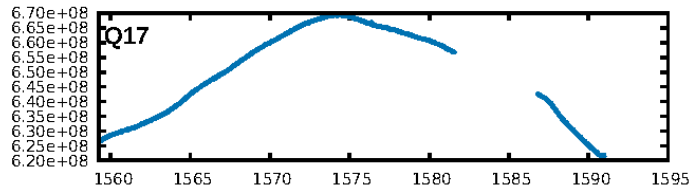
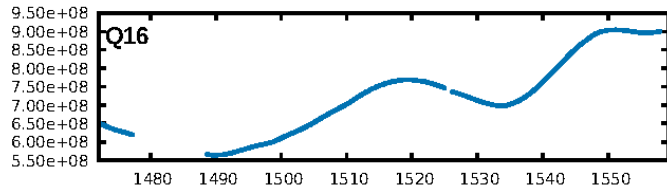
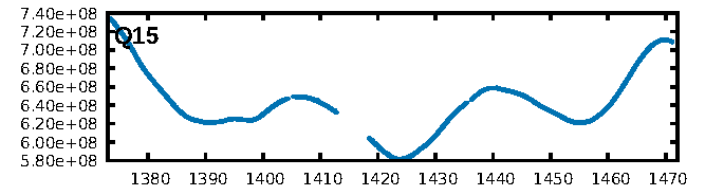
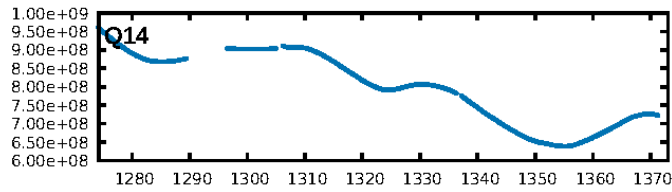
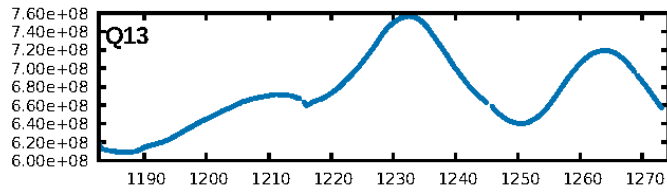
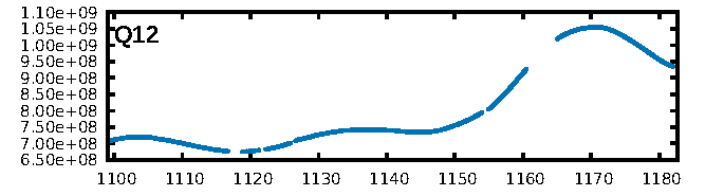
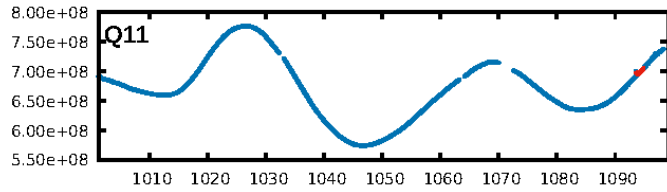
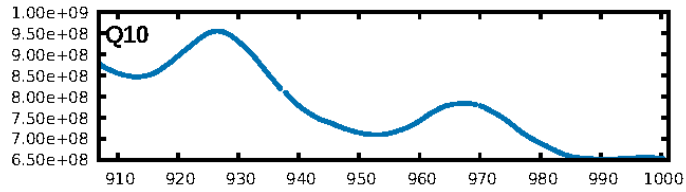
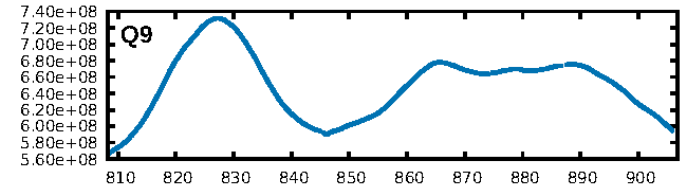
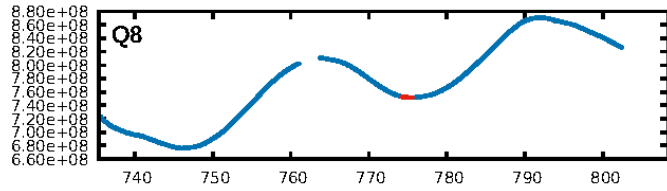
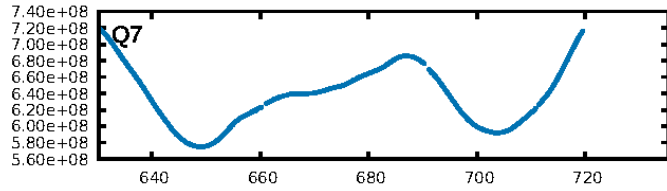
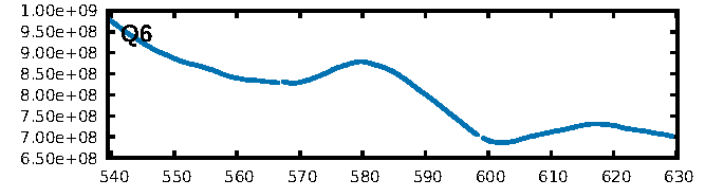
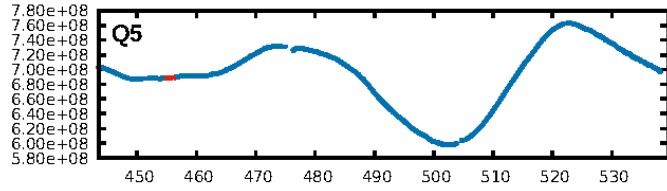
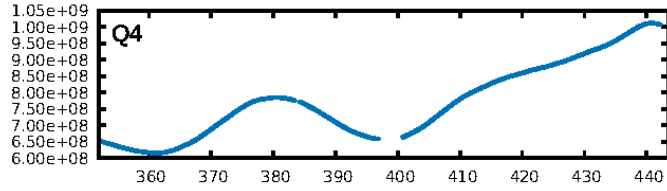
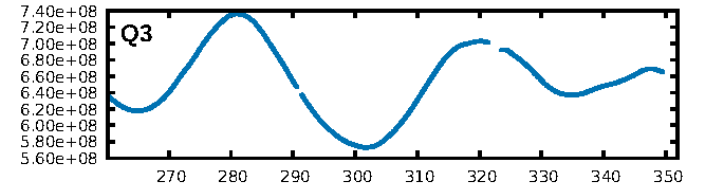
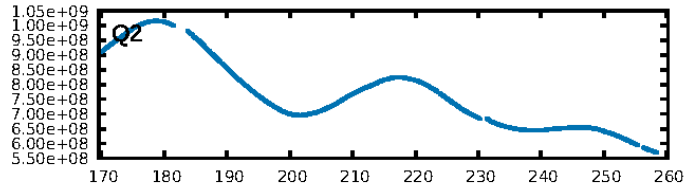
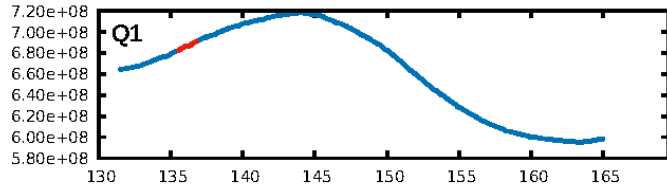
Period = 319.36292 d
Epoch = 136.1698 BKJD

DV fit results are unavailable

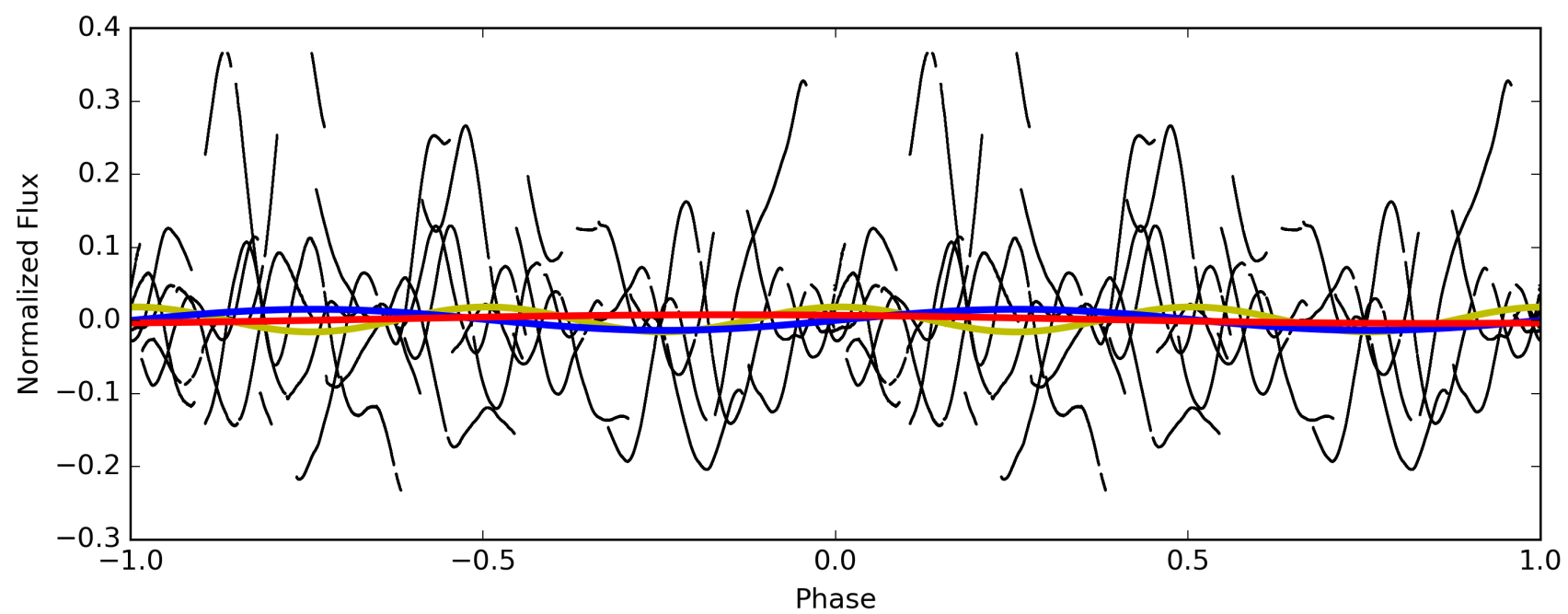
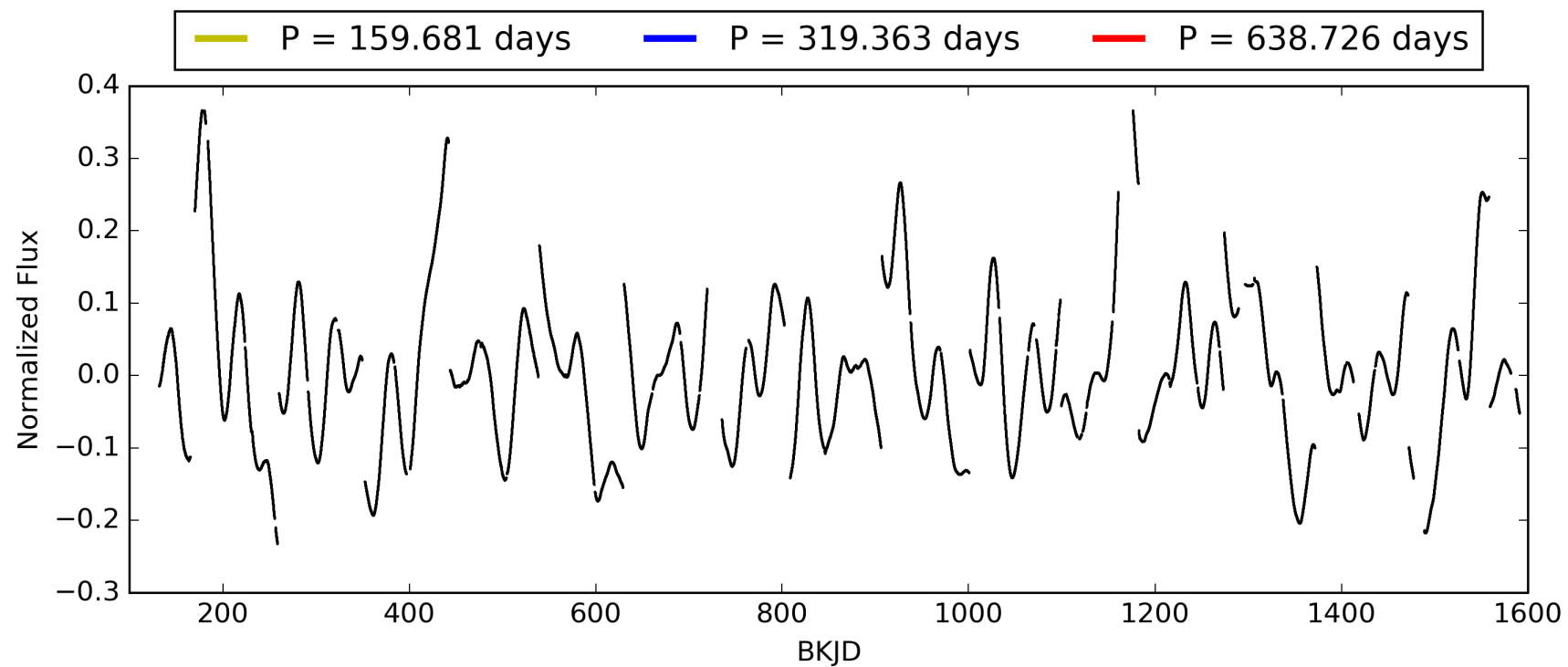
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.84 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.60e-21
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.011
Centroid-sig: 99.1%
Centroid-so: 0.238 arcsec [0.13 σ]
OotOffset-rm: 1.560 arcsec [3.21 σ]
KicOffset-rm: 1.751 arcsec [3.74 σ]
OotOffset-st: 0/1/1/2 [4]
KicOffset-st: 0/1/1/2 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 004679457-01, PDC Light Curves

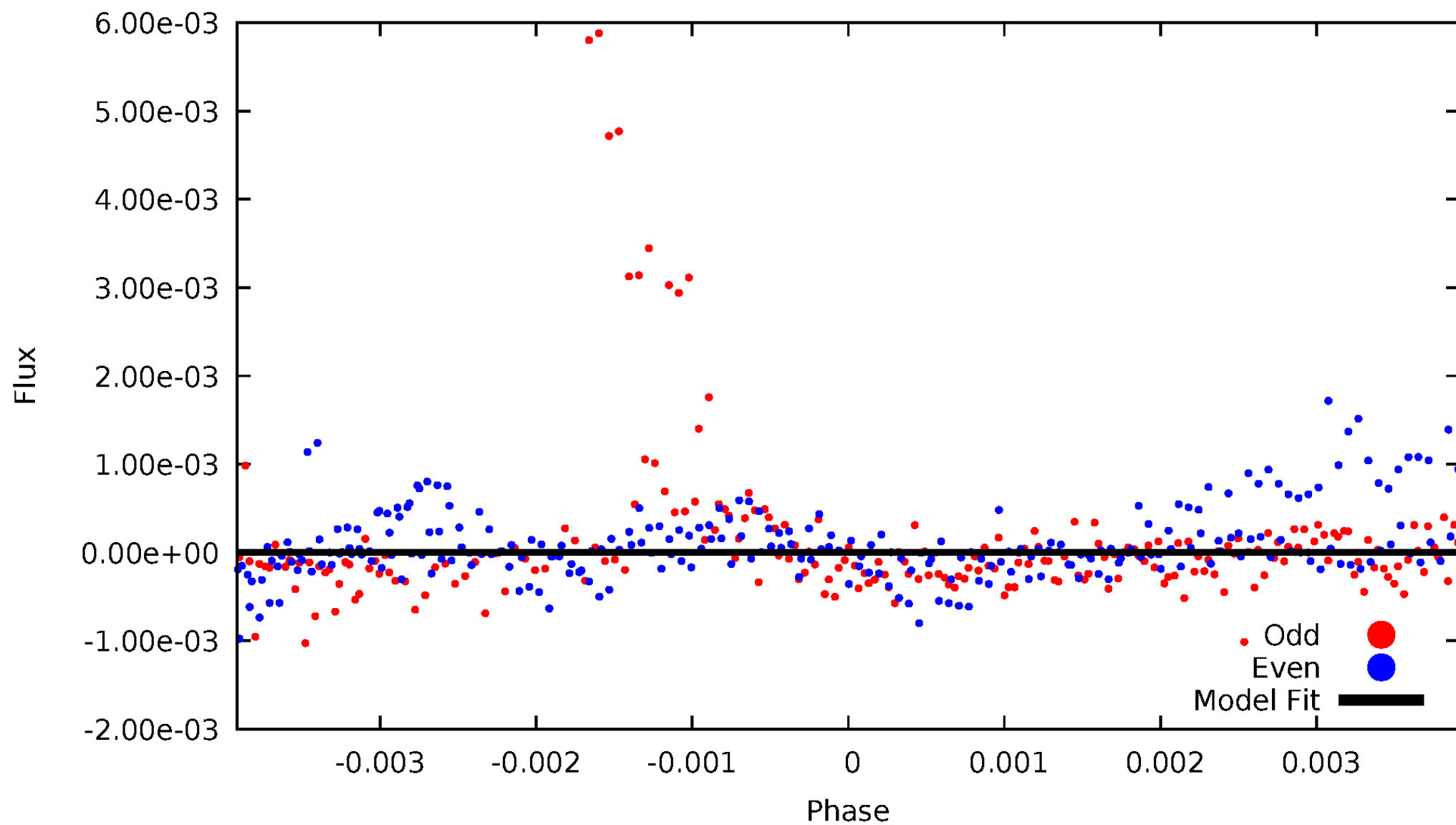


TCE 004679457-01



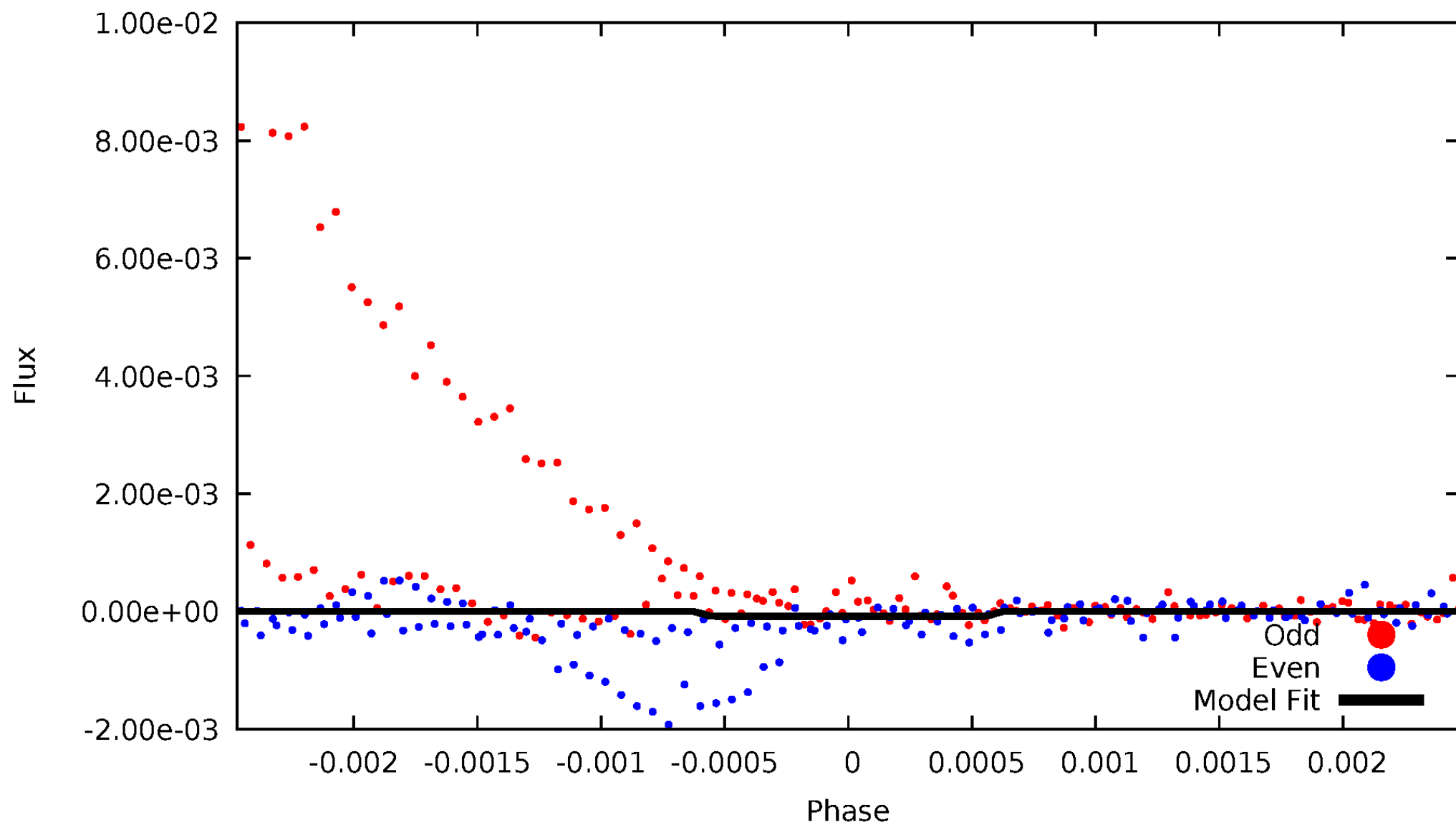
DV Odd/Even

TCE 004679457-01

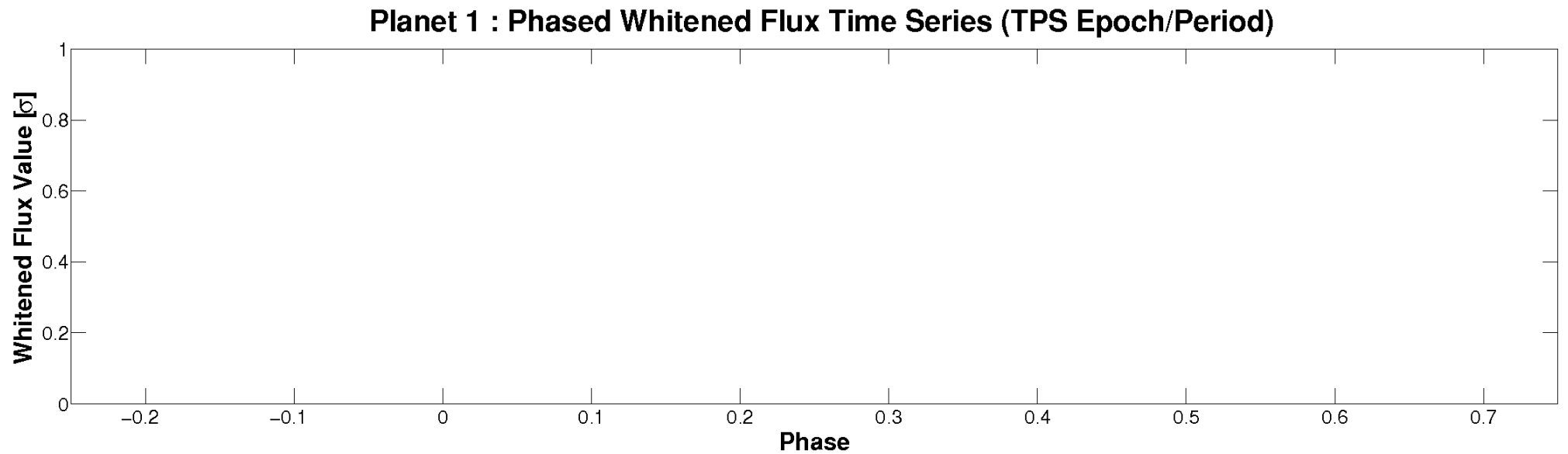
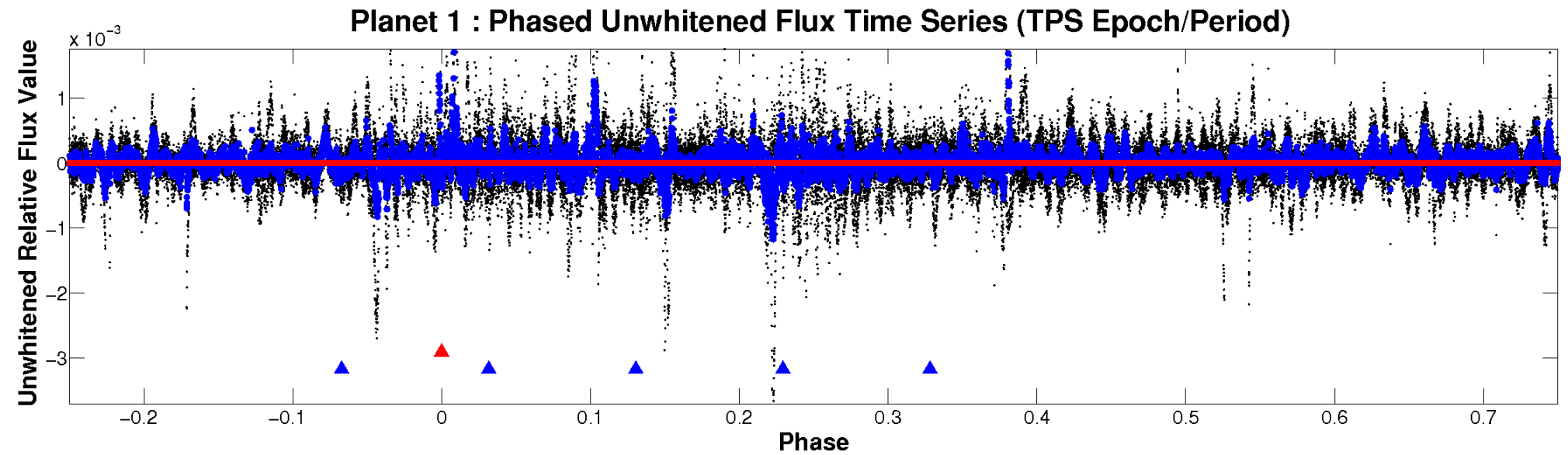


ALT Odd/Even

TCE 004679457-01

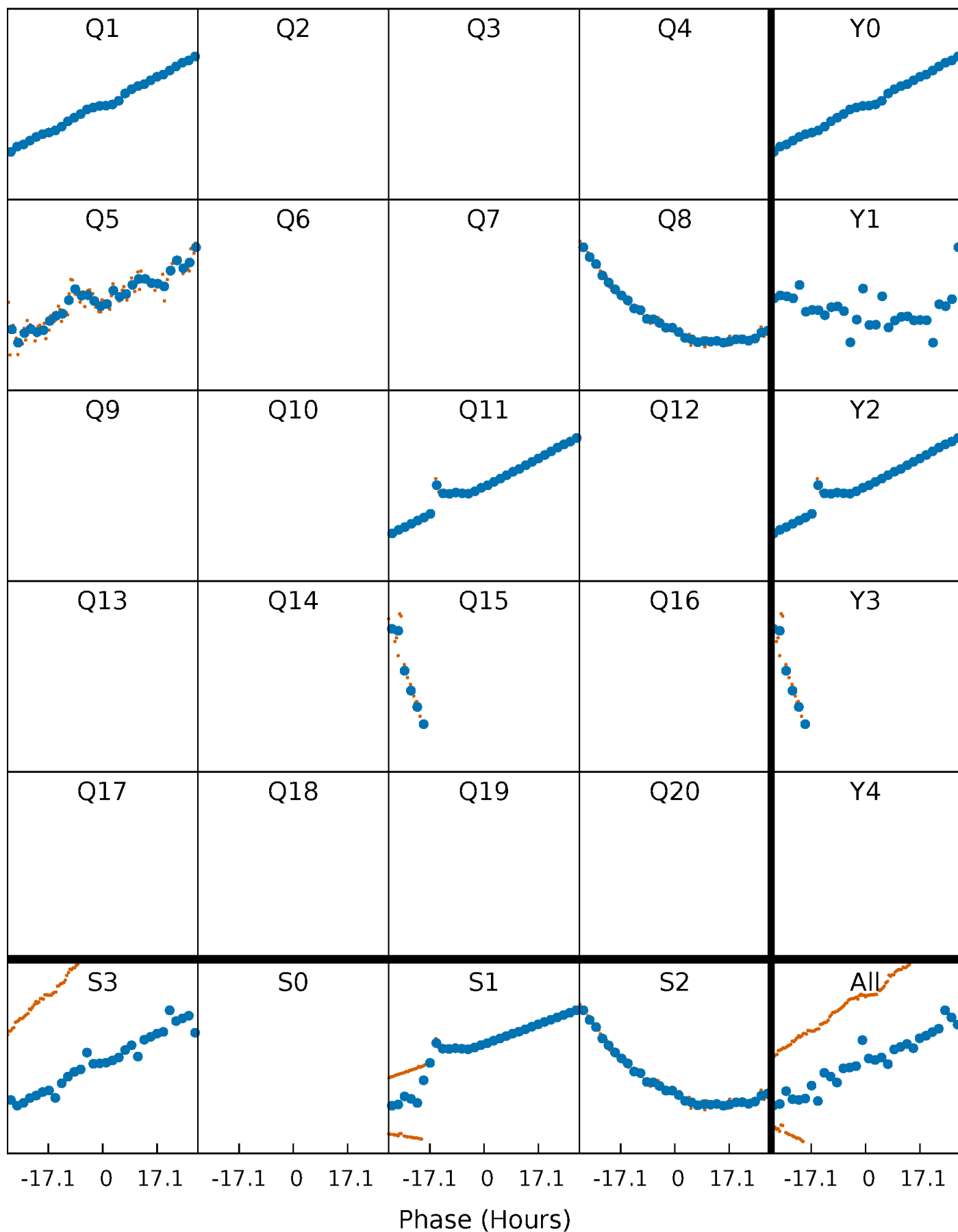


Non-Whitened Vs. Whitened Light Curve



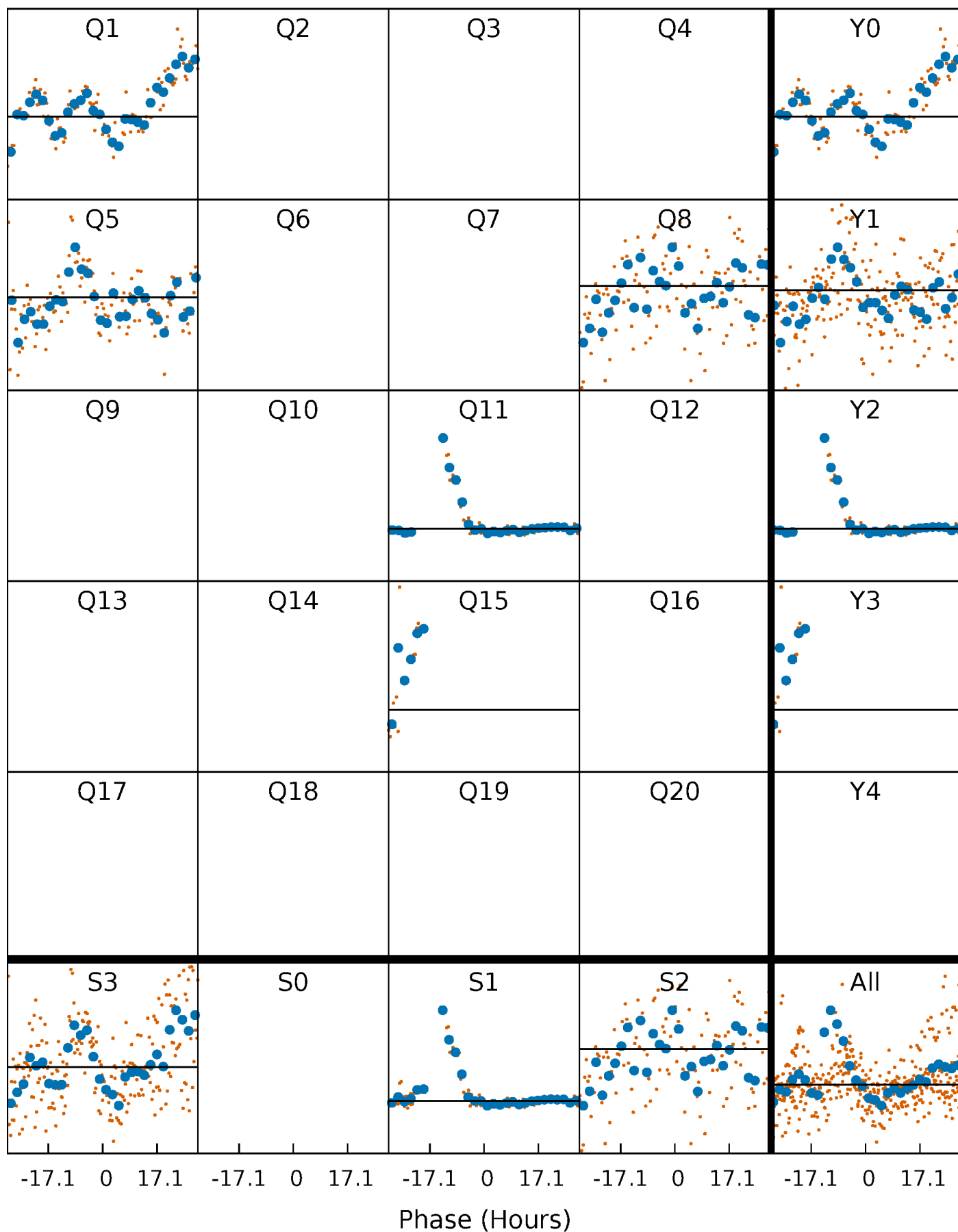
PDC Quarter-Phased Transit Curves

TCE 004679457-01 P=319.362920 Days $T_0=136.169846$ (BKJD)



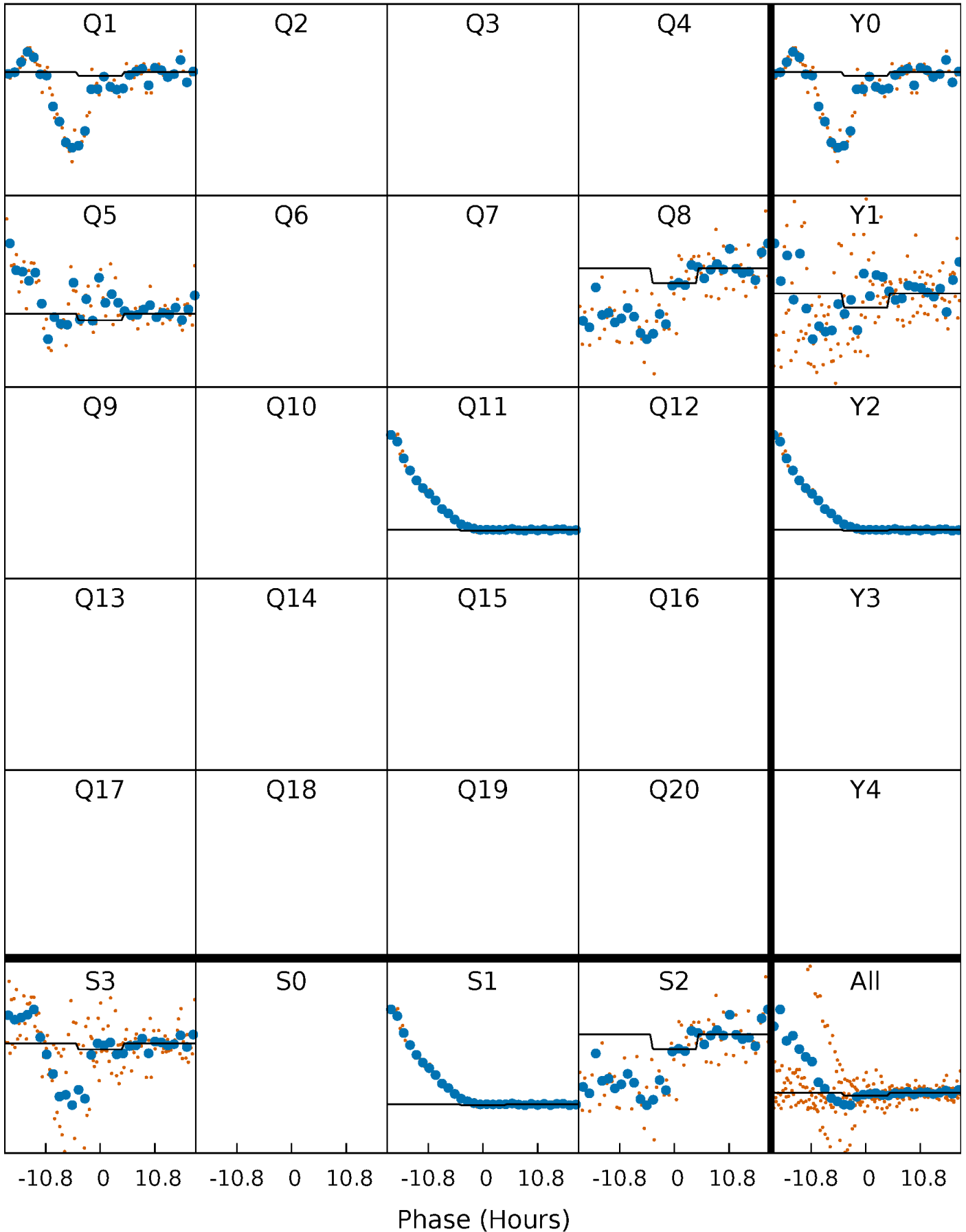
DV Quarter-Phased Transit Curves

TCE 004679457-01 P=319.362920 Days $T_0=136.169846$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

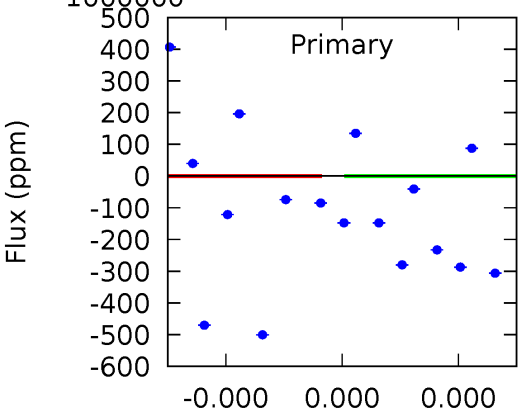
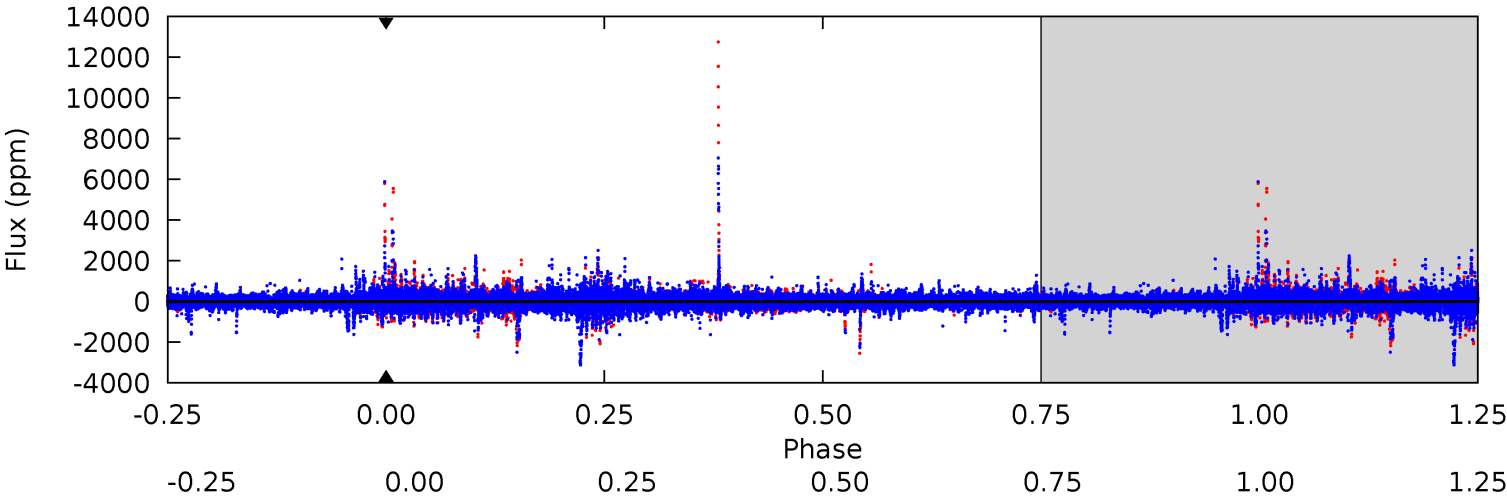
TCE 004679457-01 P=319.362920 Days $T_0=136.546369$ (BKJD)



DV Model-Shift Uniqueness Test

004679457-01, P = 319.362920 Days, E = 136.169846 Days

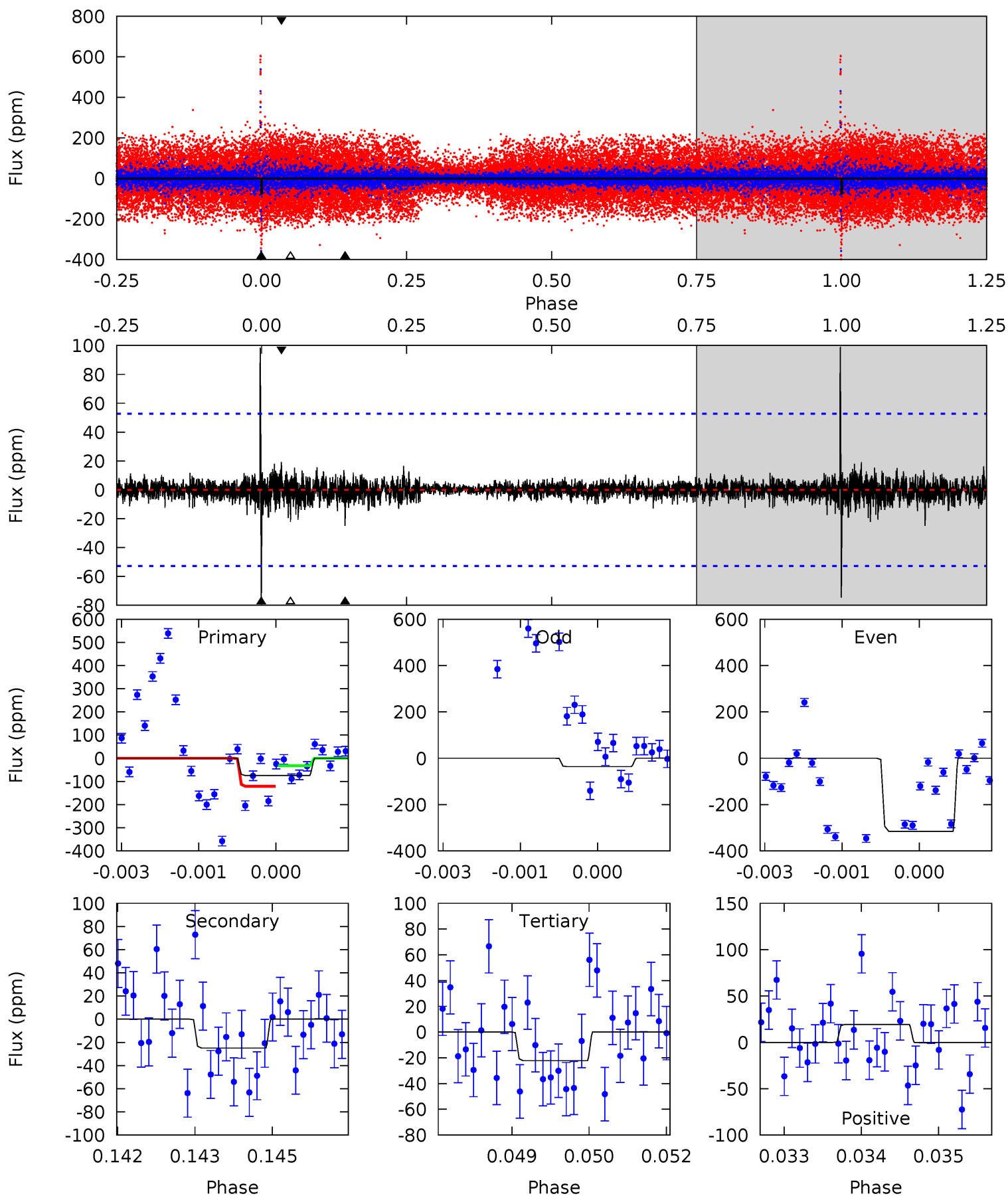
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004679457-01, P = 319.362920 Days, E = 136.546369 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.67	2.56	2.28	1.98	5.41	3.23	0.42	5.39	5.69	0.28	0.58	15.2	3.44	0.57	4.53



Stellar Parameters For KIC 004679457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3293^{+107}_{-88}	$0.136^{+0.212}_{-0.050}$	$-0.080^{+0.250}_{-0.150}$	$152.284^{+7.966}_{-29.874}$	$1.156^{+0.189}_{-0.155}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+156%/-37%	+312%/-188%	+5%/-20%	+16%/-13%	+97%/-11%
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 004679457-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$1175.80^{+1228.66}_{-866.80}$	2510^{+109}_{-147}	-3050^{+9876}_{-3693}	$-0.860^{+86.165}_{-73.354}$
Alt.	-25 ± 10	$1063.21^{+1184.46}_{-747.54}$	2517^{+114}_{-135}	-2510^{+191}_{-94}	$0.012^{+0.119}_{-0.010}$

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 $A_{obs} \gg 1.0$

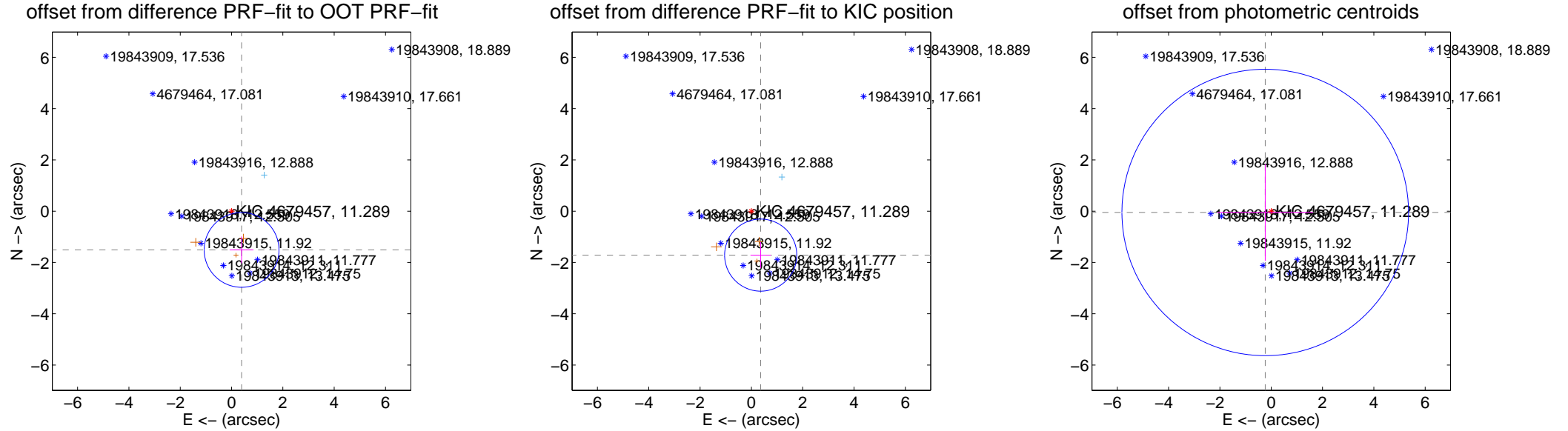
DV Centroid Data

Supplemental centroid analysis for 004679457-01. **Kepler magnitude: 11.29.** Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

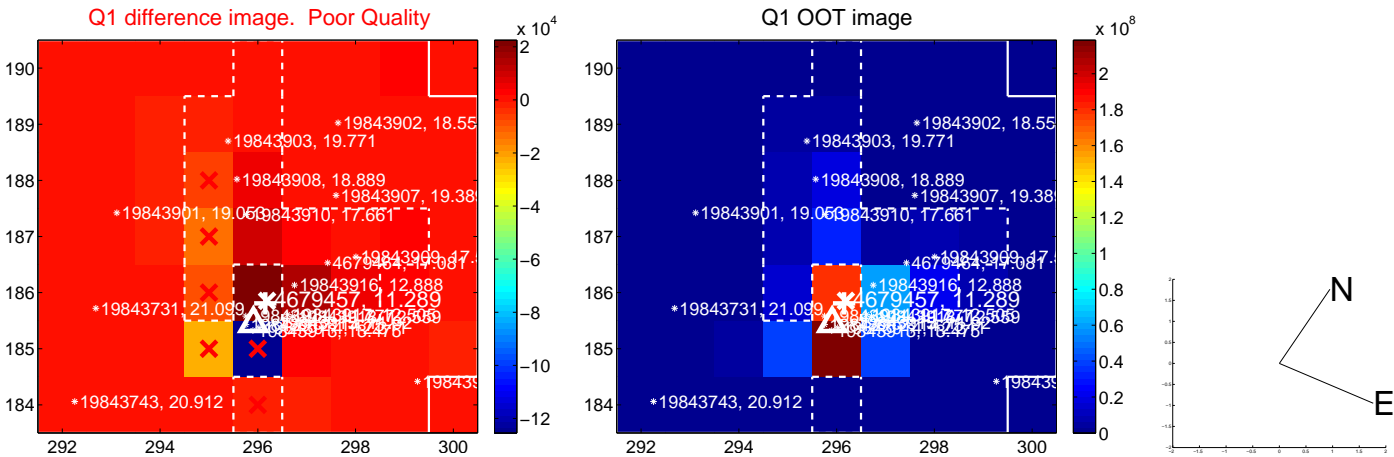
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.560 ± 0.486	3.21	-0.390 ± 0.463	-1.510 ± 0.523
PRF-fit source offset from KIC position	1.751 ± 0.468	3.74	-0.363 ± 0.398	-1.713 ± 0.509
photometric centroid source offset	0.24 ± 1.86	0.13	0.23 ± 1.86	-0.05 ± 1.88

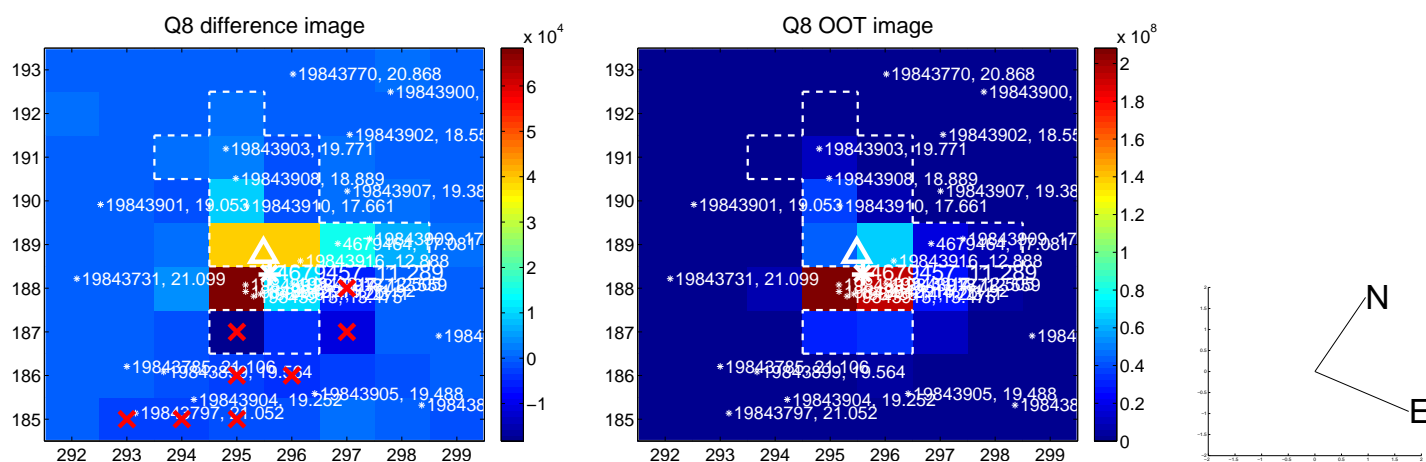
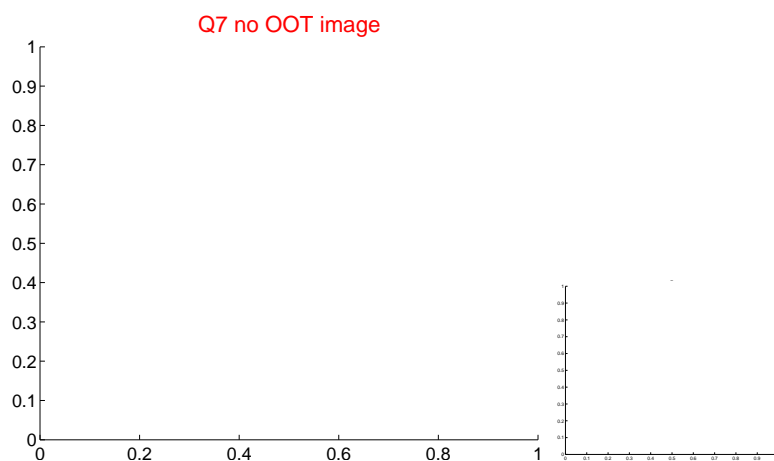
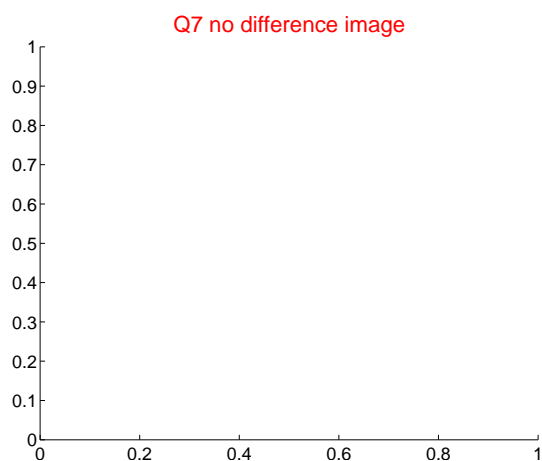
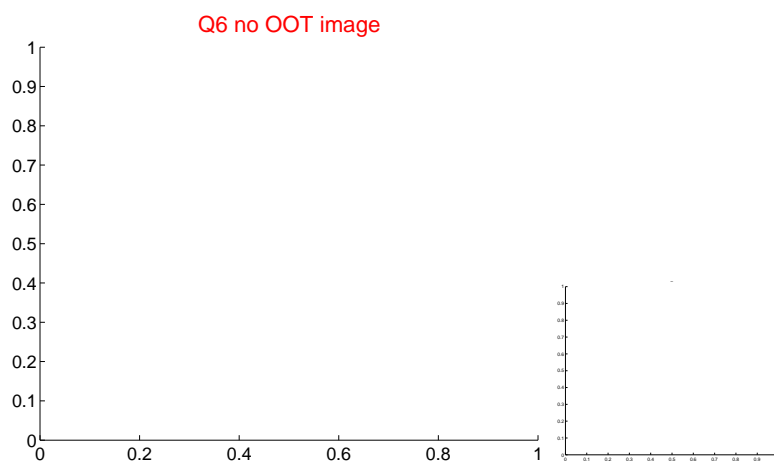
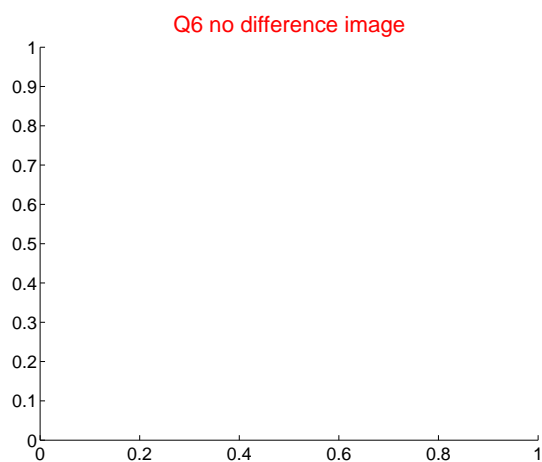
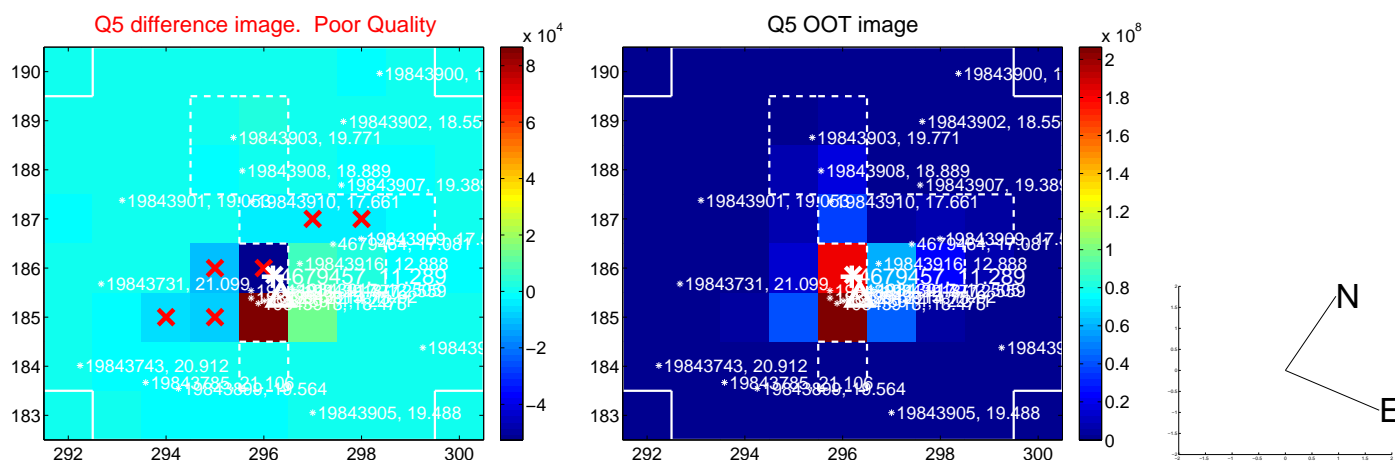


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

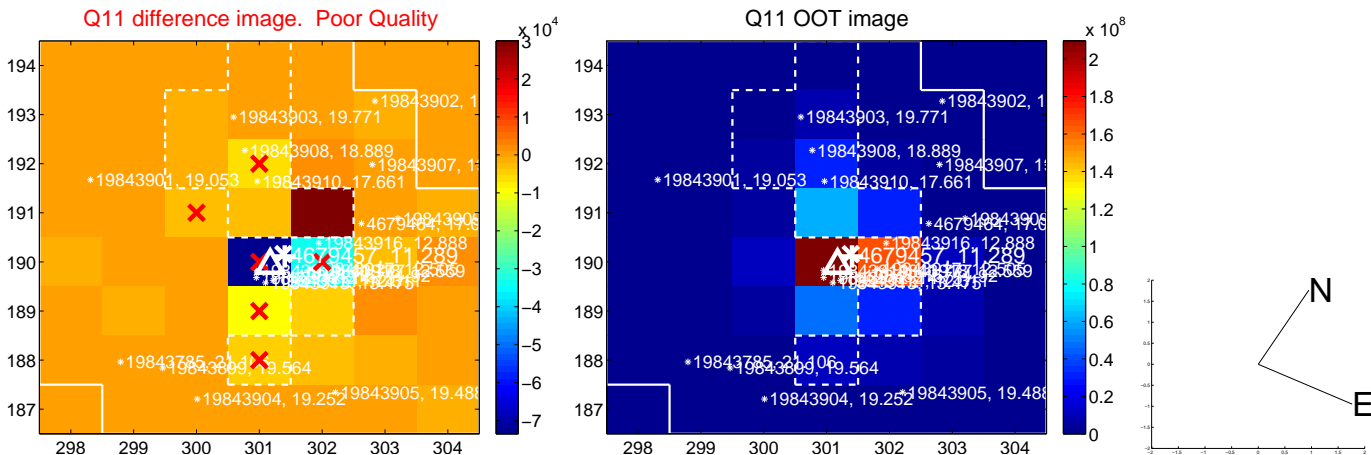
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



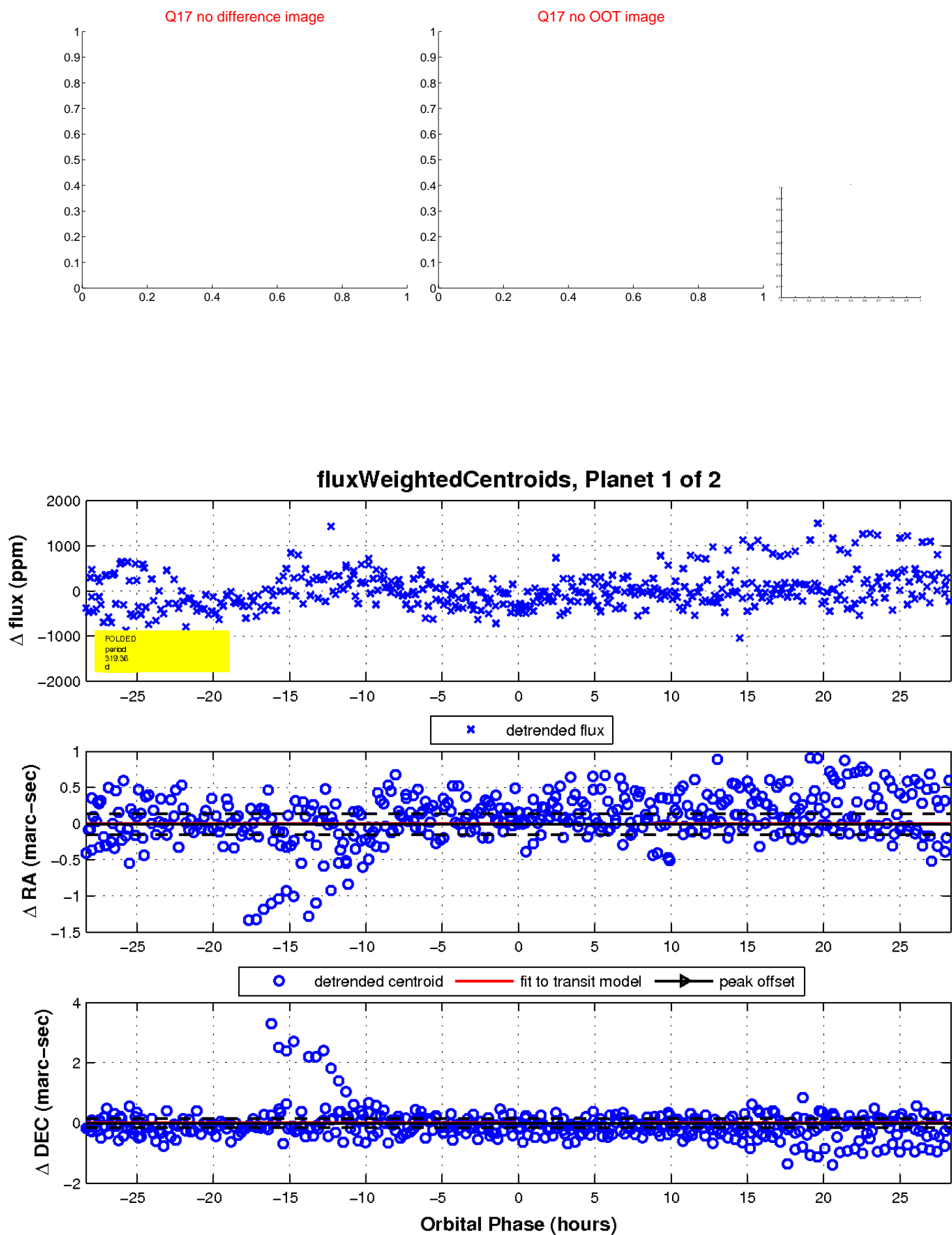
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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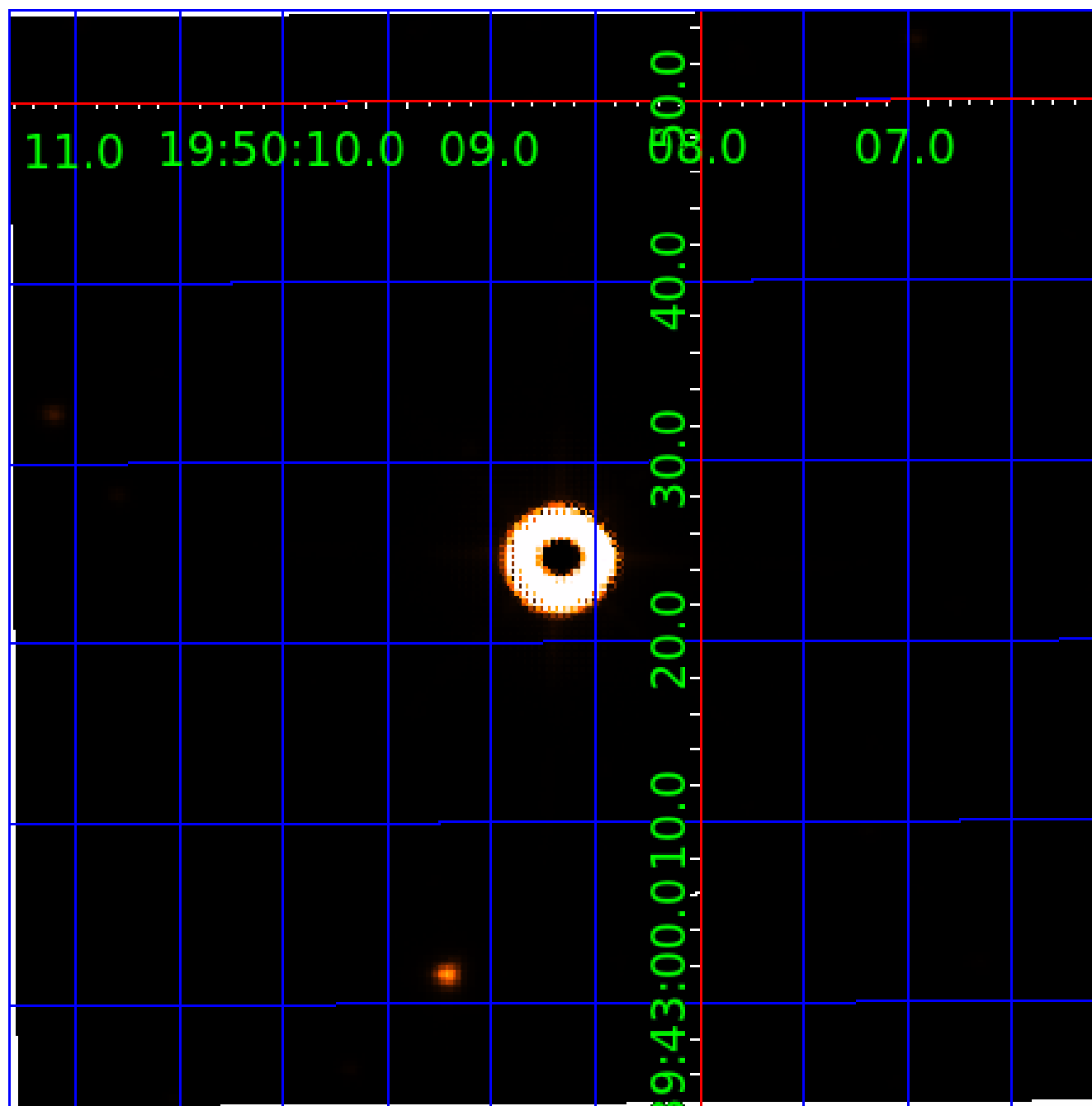


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004679457

Q1-17 DR25 TCE Parameters

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004679457-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

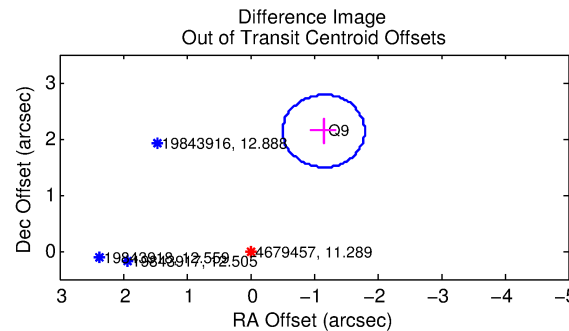
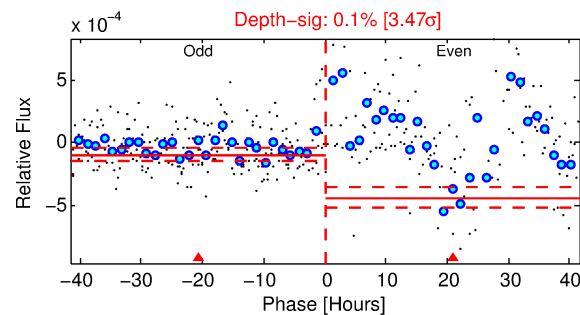
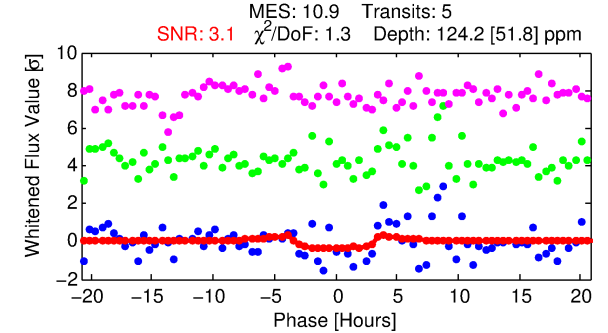
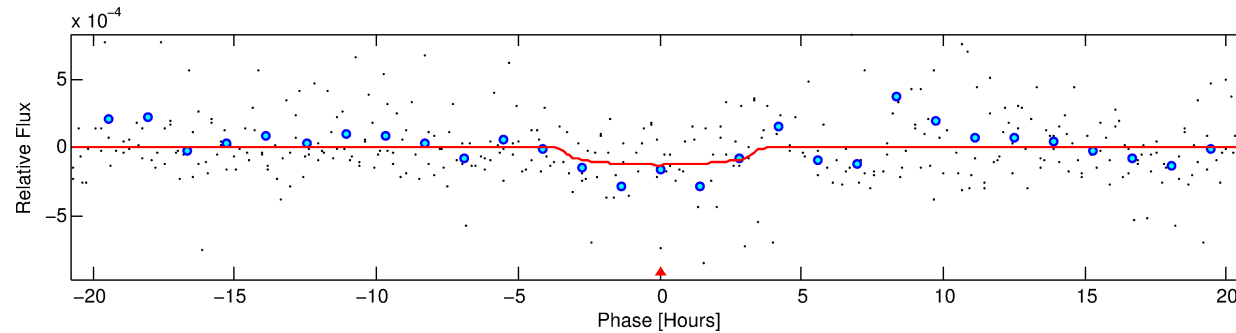
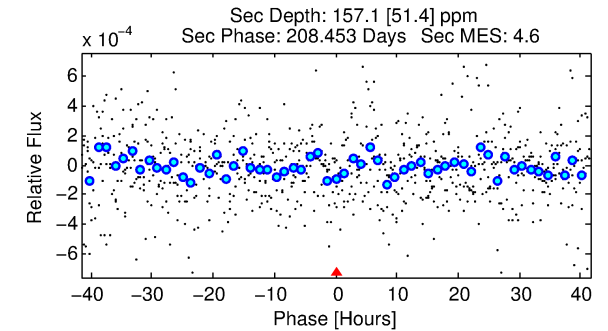
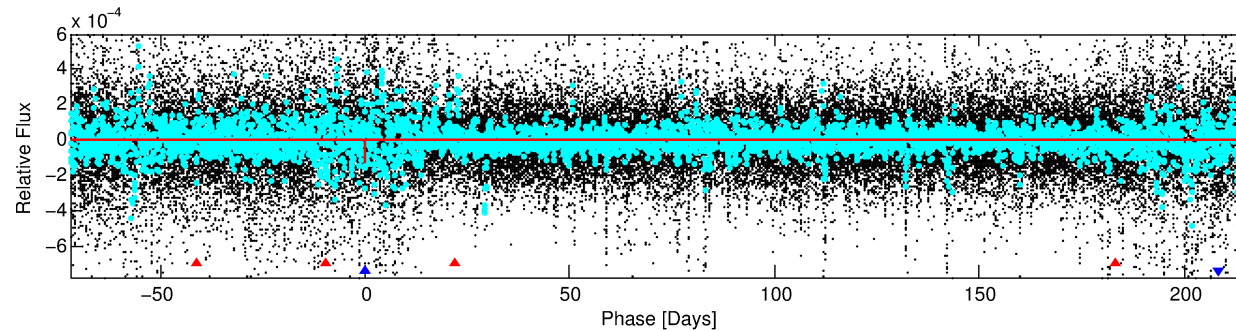
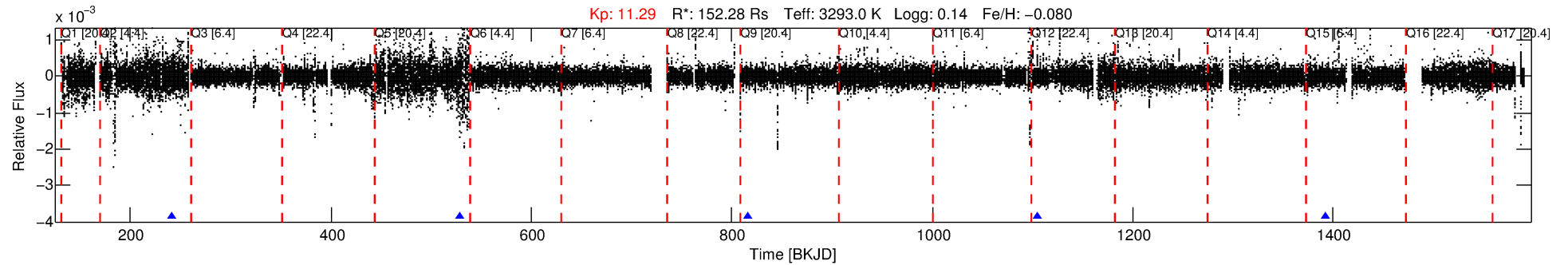
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004679457-02

No Significant Match Found

DV One-Page Summary

KIC: 4679457 Candidate: 2 of 2 Period: 287.798 d



DV Fit Results:

Period = 287.79836 [0.01202] d
Epoch = 240.9827 [0.0366] BKJD
 $R_p/R^* = 0.0120$ [0.0157]
 $a/R^* = 184.28$ [667.32]
 $b = 0.83$ [1.41]
 $\text{Seff} = 3044.95$ [1138.92]
 $T_{\text{eq}} = 1894$ [177] K
 $R_p = 199.92$ [264.36] Re
 $a = 0.8958$ [0.1870] AU
 $Ag = 1.74$ [4.61] [0.16σ]
 $T_{\text{eff}} = 3361$ [2218] K [0.66σ]

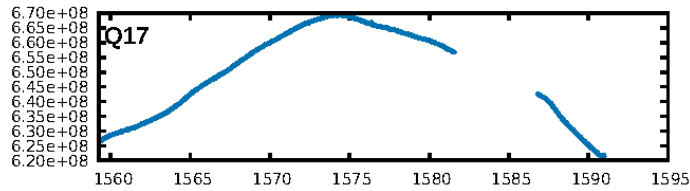
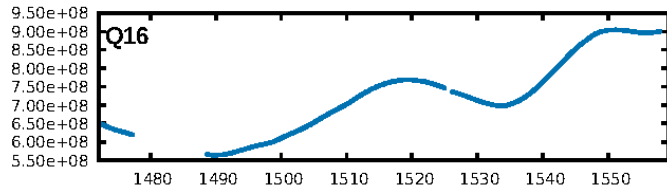
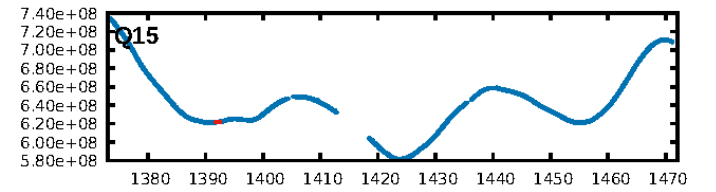
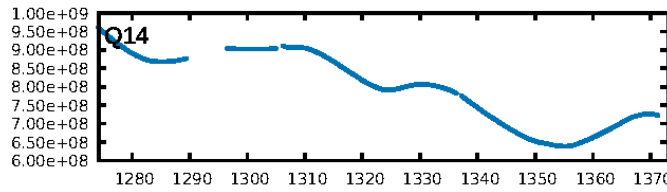
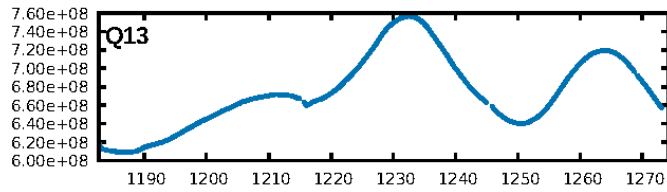
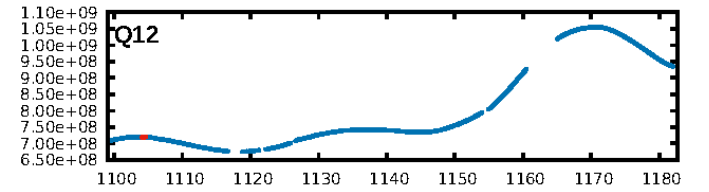
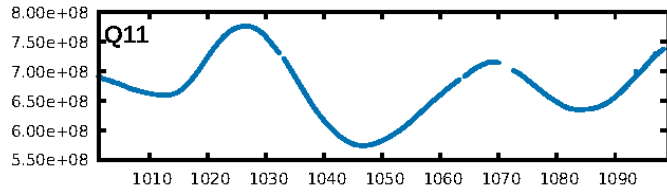
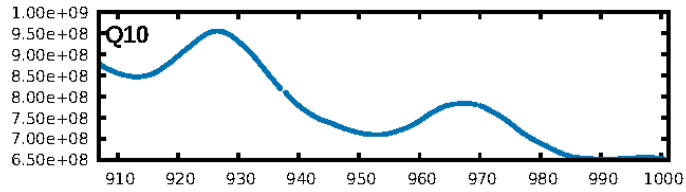
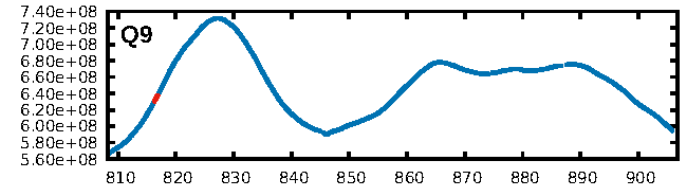
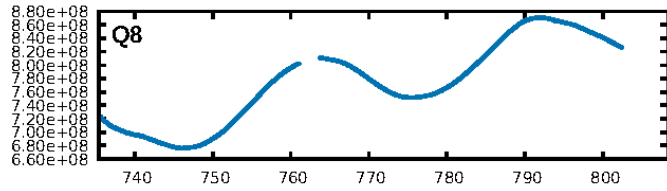
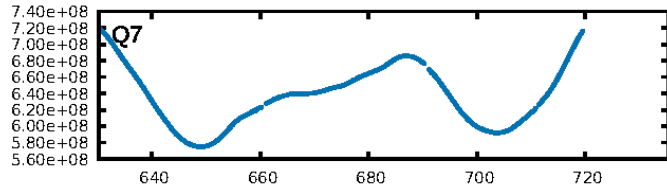
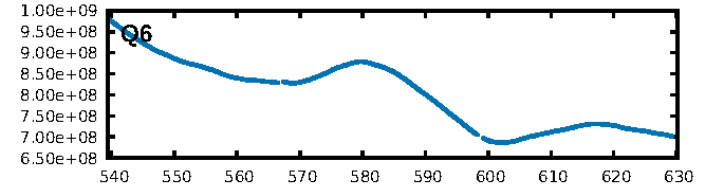
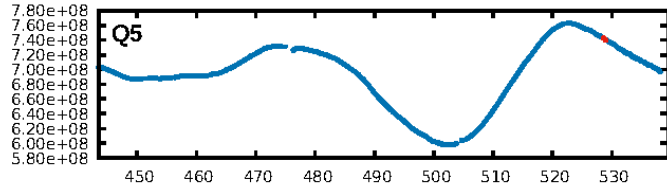
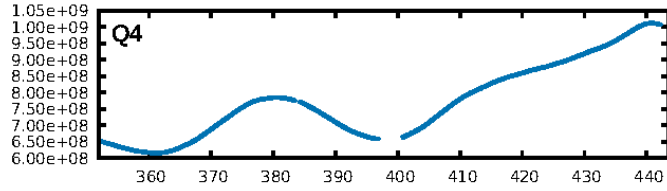
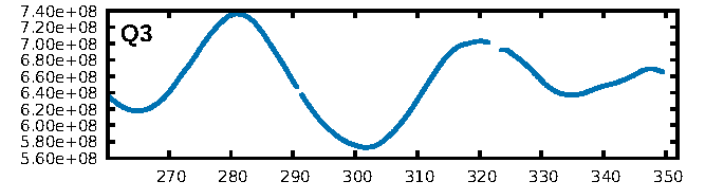
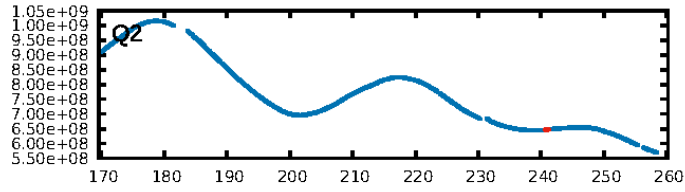
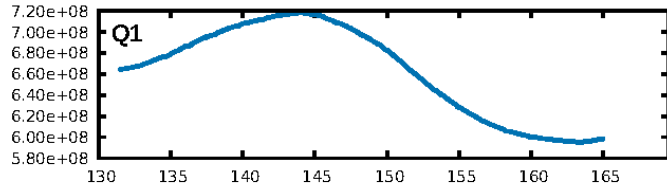
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [45.84σ]
ModelChiSquare2-sig: 1.9%
ModelChiSquareGoF-sig: 43.2%
Bootstrap-pfa: 7.03e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 2.964
Centroid-sig: 25.9%
Centroid-so: 1.704 arcsec [0.98σ]
OotOffset-rm: 2.426 arcsec [11.29σ]
KicOffset-rm: 2.253 arcsec [10.50σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [4/4]

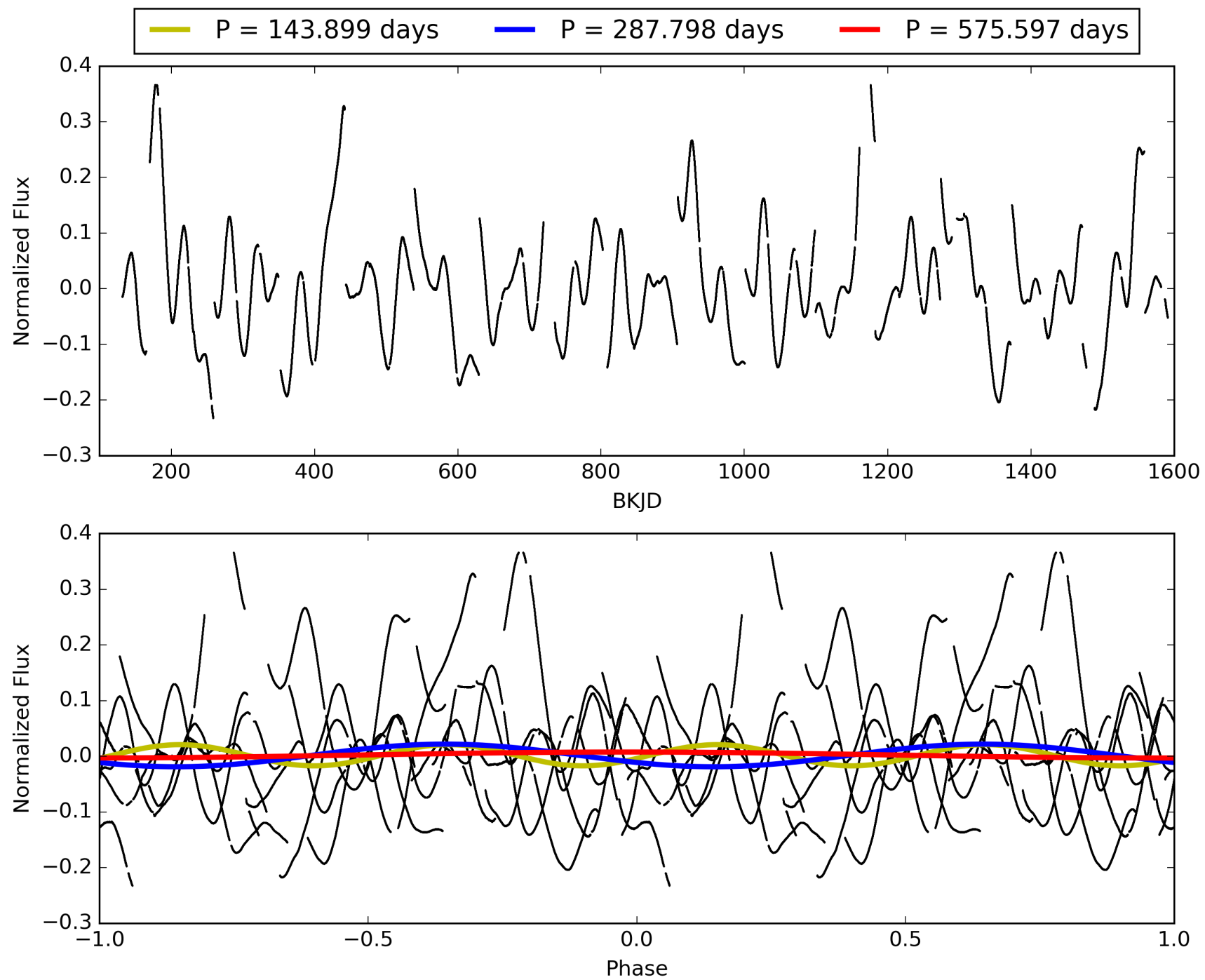
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:36:59 Z

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

TCE 004679457-02, PDC Light Curves

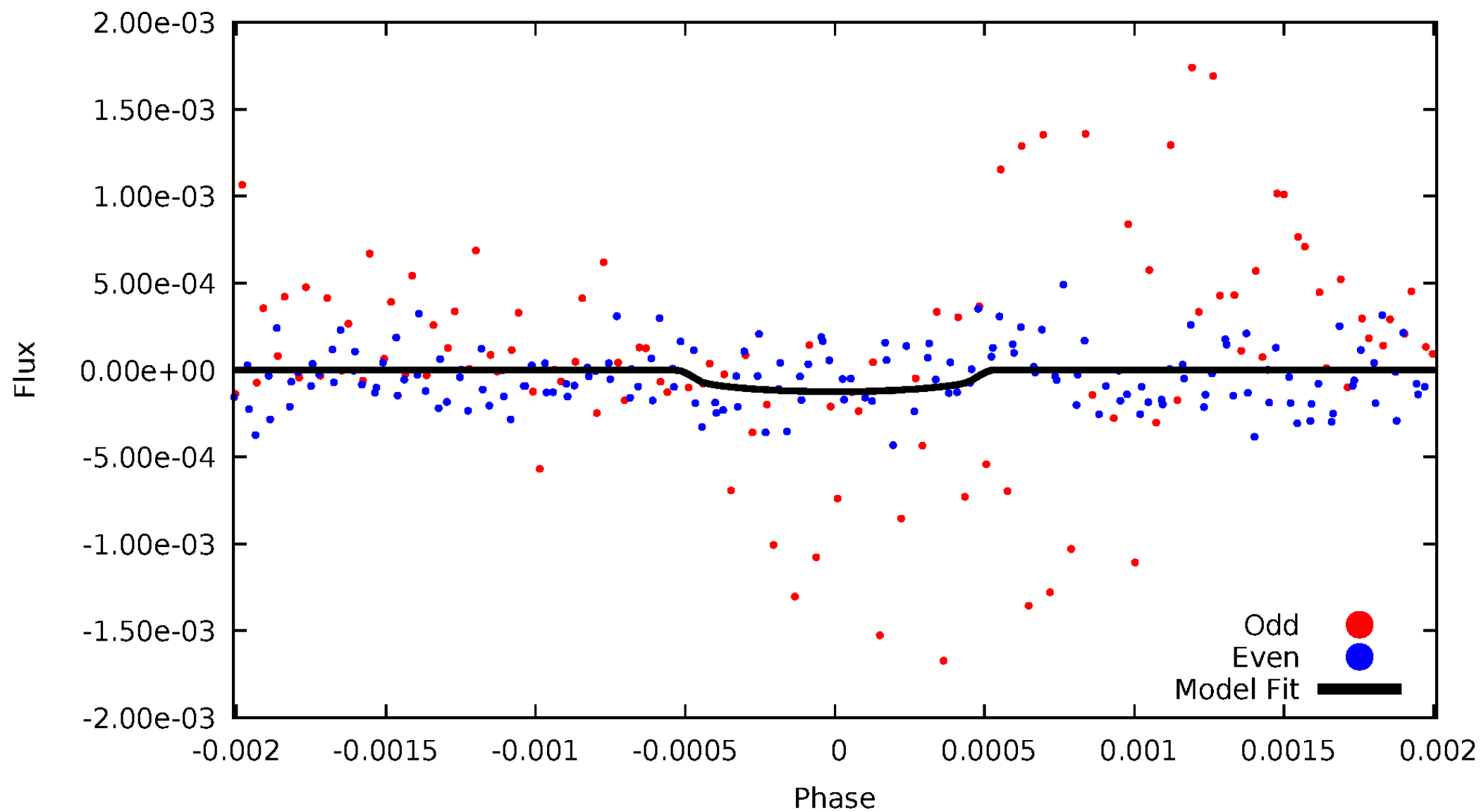


TCE 004679457-02



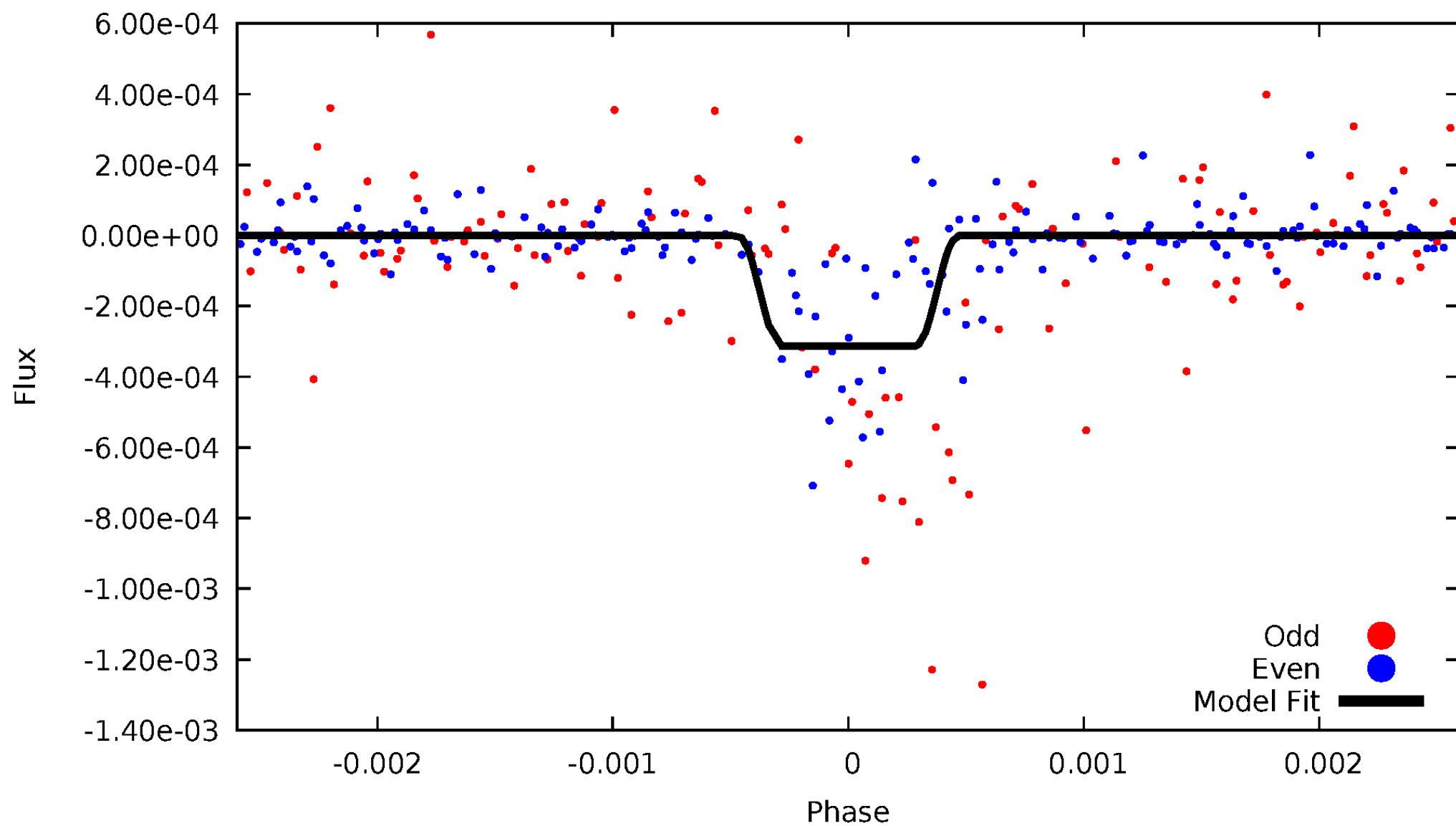
DV Odd/Even

TCE 004679457-02



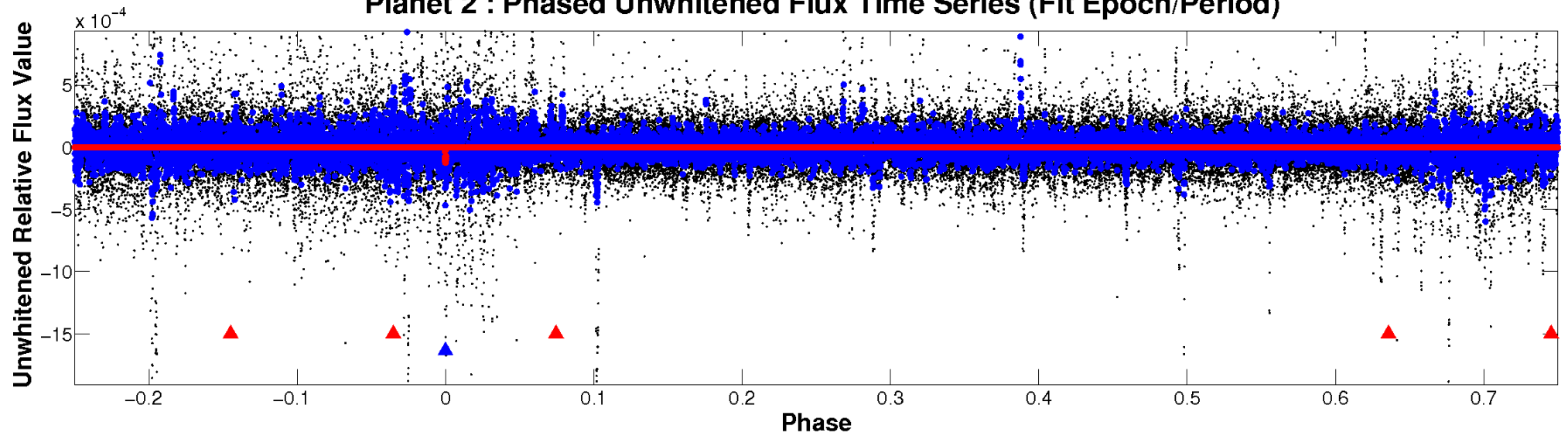
ALT Odd/Even

TCE 004679457-02

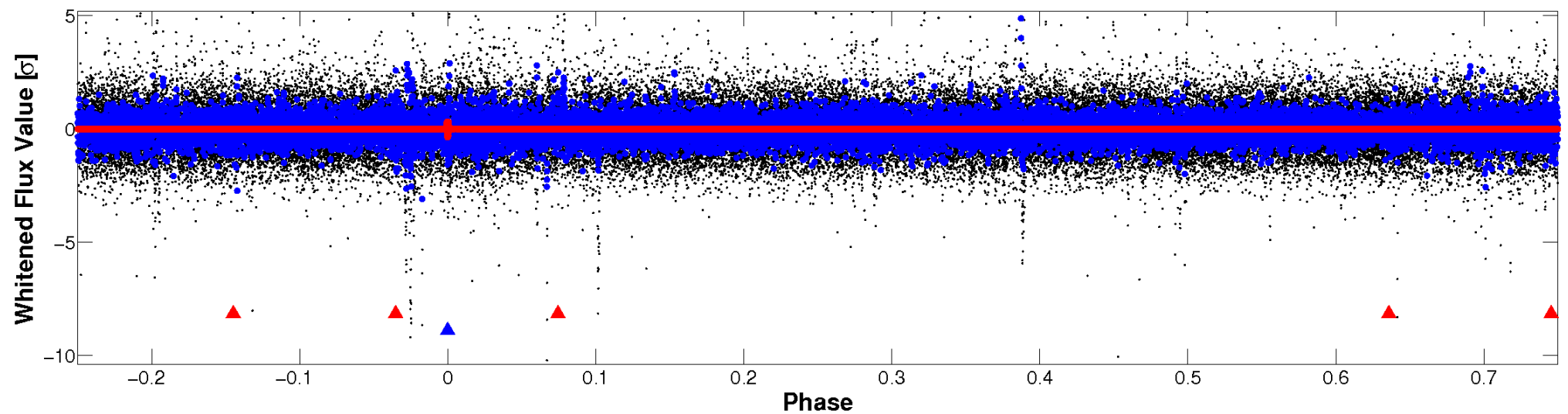


Non-Whitened Vs. Whitened Light Curve

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

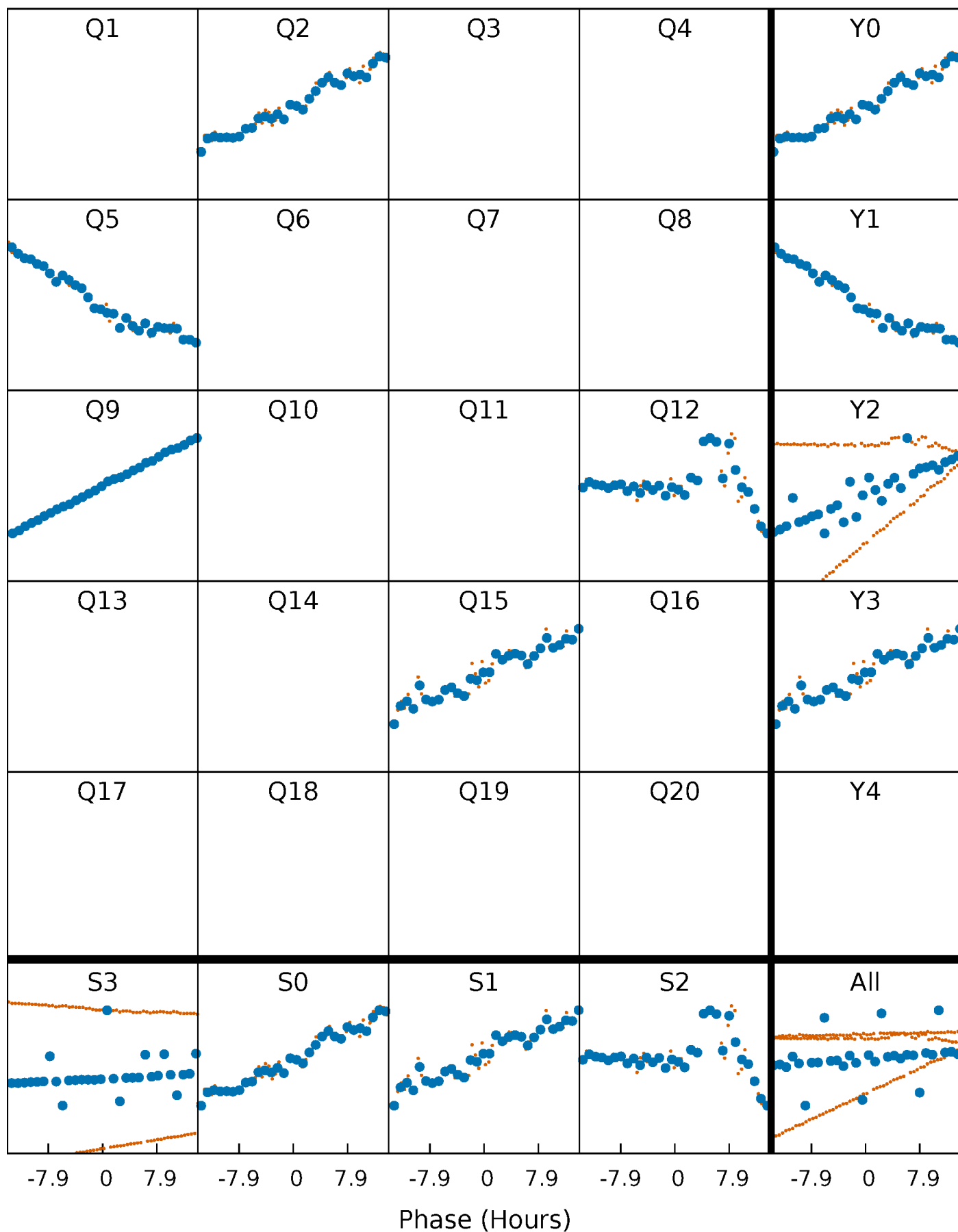


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



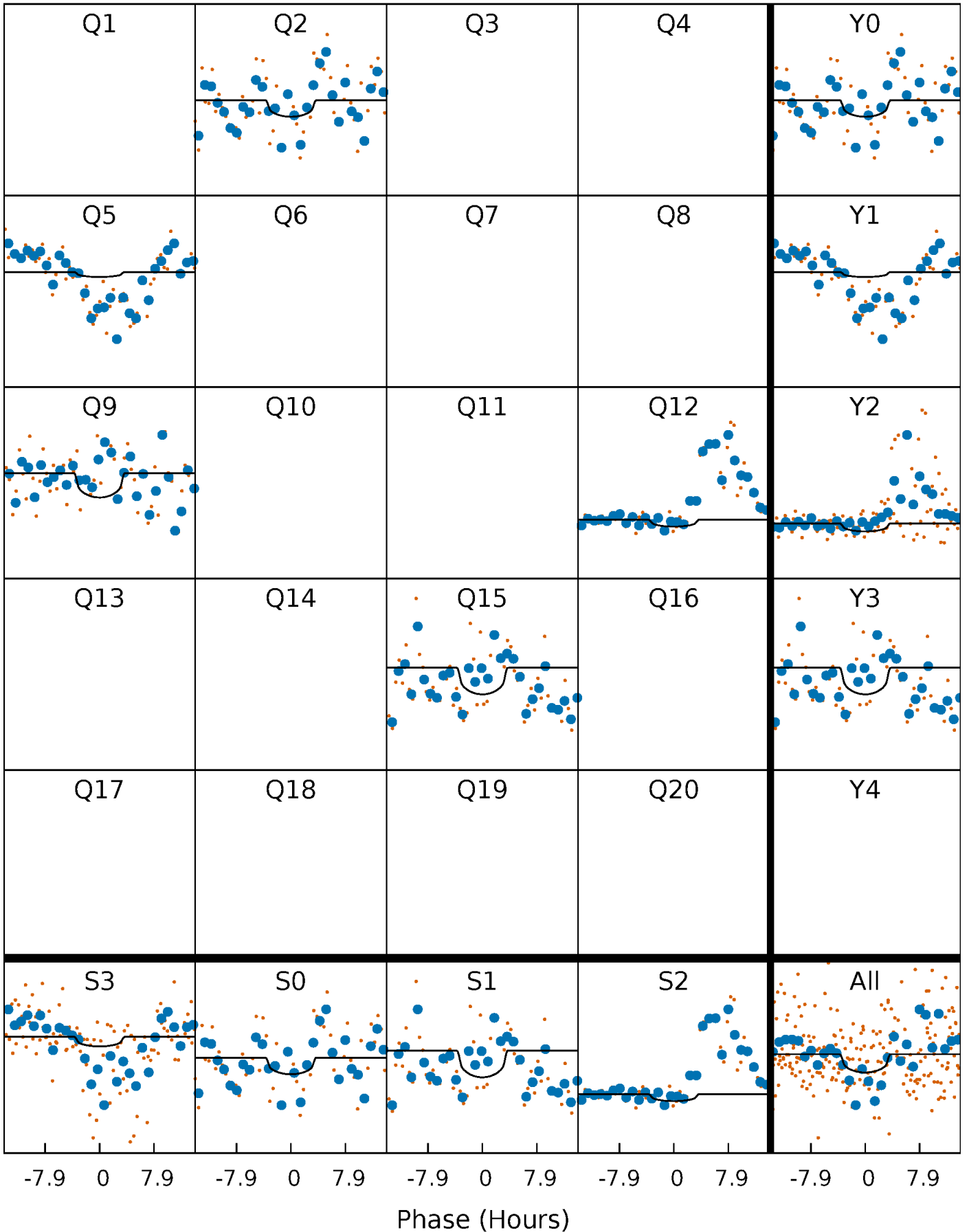
PDC Quarter-Phased Transit Curves

TCE 004679457-02 $P=287.798362$ Days $T_0=240.982721$ (BKJD)



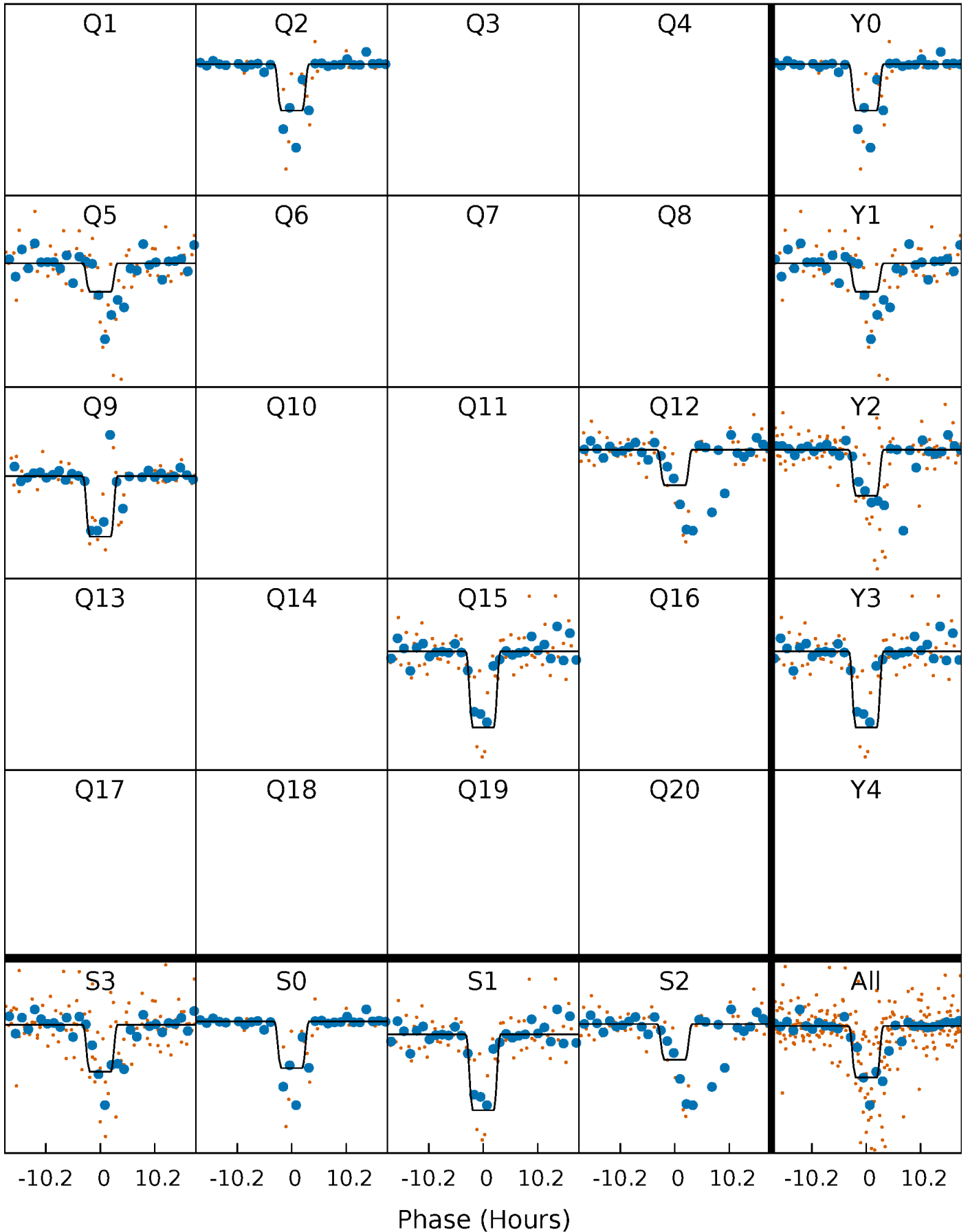
DV Quarter-Phased Transit Curves

TCE 004679457-02 $P=287.798362$ Days $T_0=240.982721$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

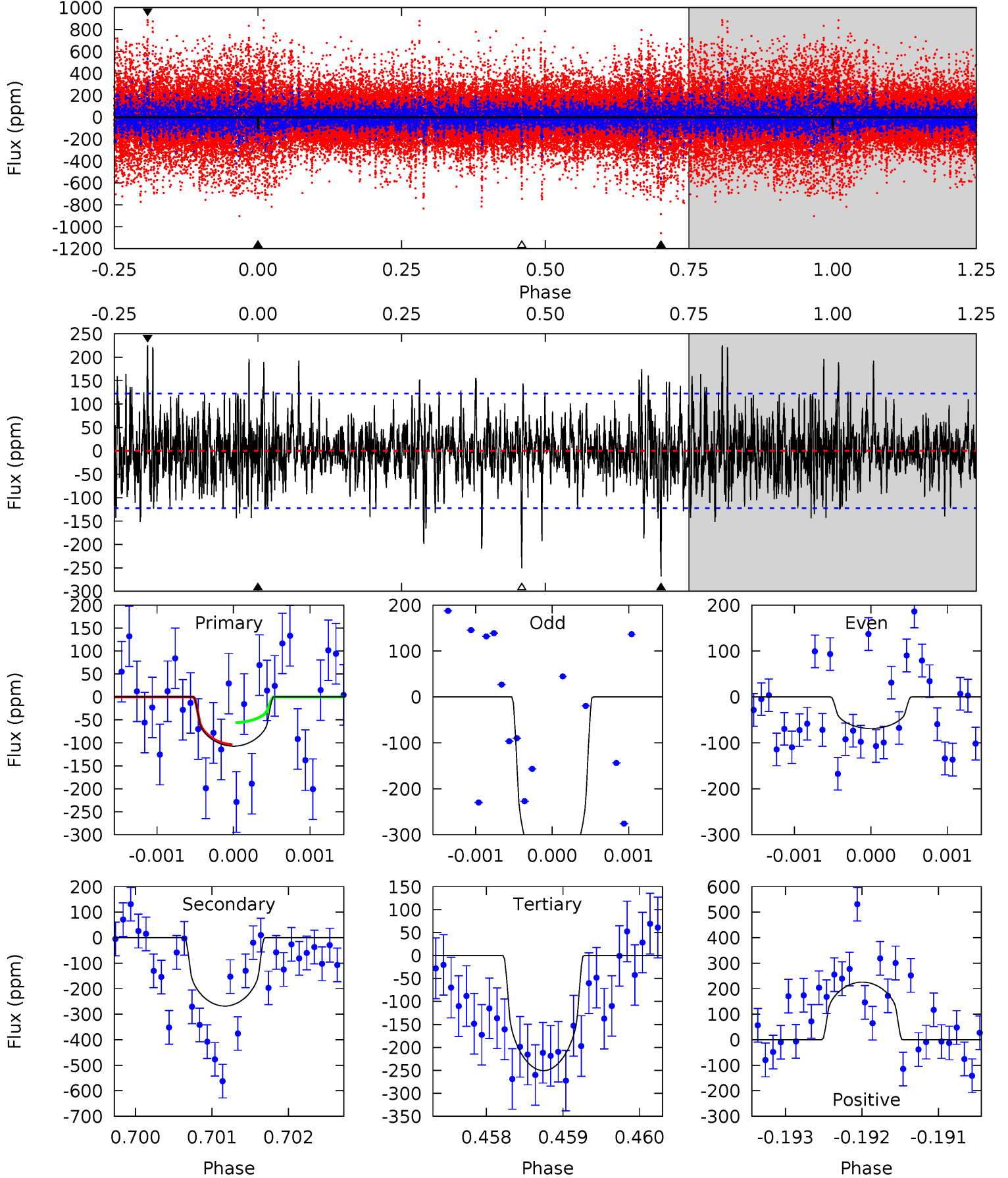
TCE 004679457-02 $P=287.823554$ Days $T_0=240.898260$ (BKJD)



DV Model-Shift Uniqueness Test

004679457-02, P = 287.798362 Days, E = 240.982721 Days

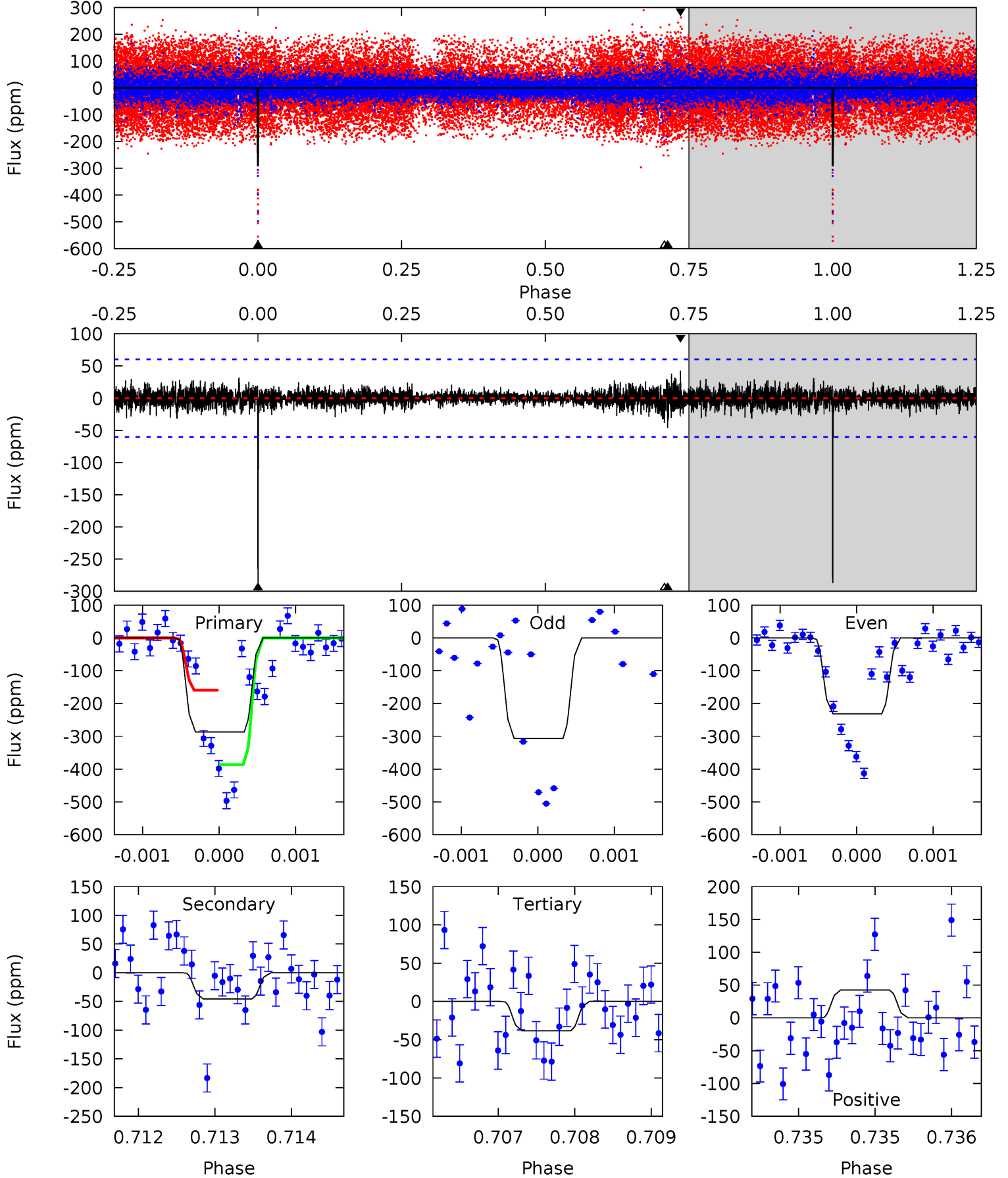
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.77	11.9	11.2	10.1	5.45	3.29	2.26	-6.39	-5.28	0.78	1.88	6.46	6.79	0.46	1.05



Alt Model-Shift Uniqueness Test

004679457-02, P = 287.823554 Days, E = 240.898260 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.1	4.13	3.48	3.87	5.48	3.33	0.69	22.6	22.2	0.65	0.27	3.45	0.91	0.13	10.5



Stellar Parameters For KIC 004679457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	3293^{+107}_{-88}	$0.136^{+0.212}_{-0.050}$	$-0.080^{+0.250}_{-0.150}$	$152.284^{+7.966}_{-29.874}$	$1.156^{+0.189}_{-0.155}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+156%/-37%	+312%/-188%	+5%/-20%	+16%/-13%	+97%/-11%
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 004679457-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-268 ± 22	$258.35^{+237.76}_{-176.03}$	2600^{+121}_{-153}	3207^{+1740}_{-788}	$1.795^{+15.401}_{-1.317}$
Alt.	-46 ± 11	$319.79^{+237.05}_{-185.88}$	2608^{+106}_{-150}	-2262^{+5205}_{-269}	$0.198^{+0.927}_{-0.135}$

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

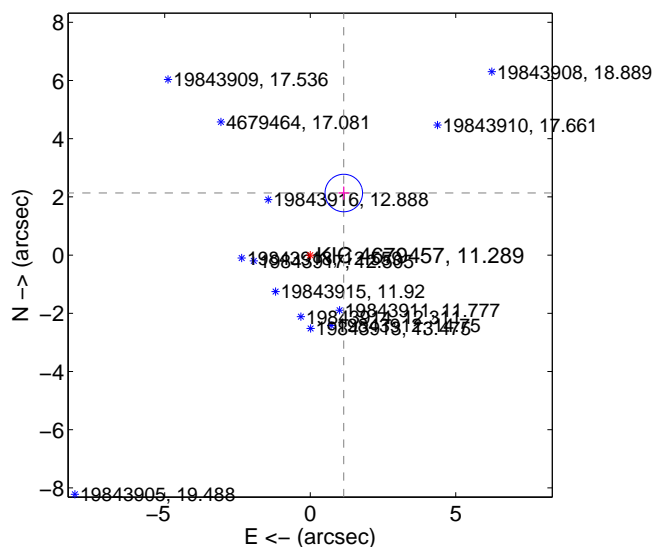
Supplemental centroid analysis for 004679457-02. **Kepler magnitude: 11.29.** Transit SNR 3.07

There are 0 quarters with good PRF difference image offsets

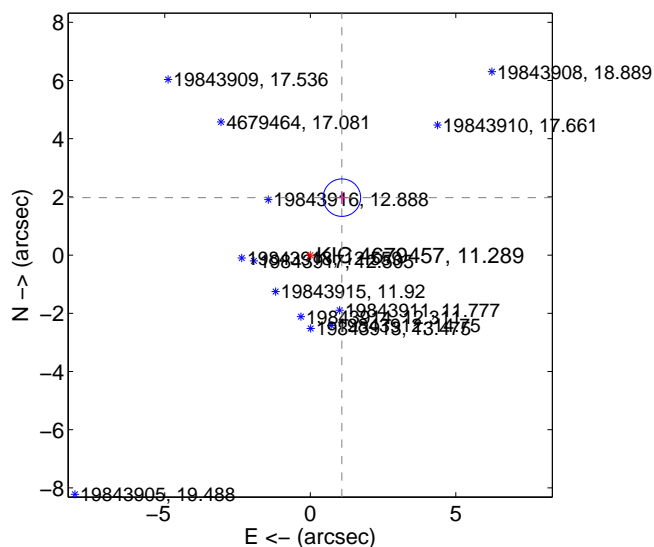
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.426 \pm 0.215	11.29	-1.153 \pm 0.185	2.134 \pm 0.223
PRF-fit source offset from KIC position	2.253 \pm 0.215	10.50	-1.086 \pm 0.185	1.974 \pm 0.223
photometric centroid source offset	1.70 \pm 1.74	0.98	-1.23 \pm 1.52	-1.18 \pm 1.95

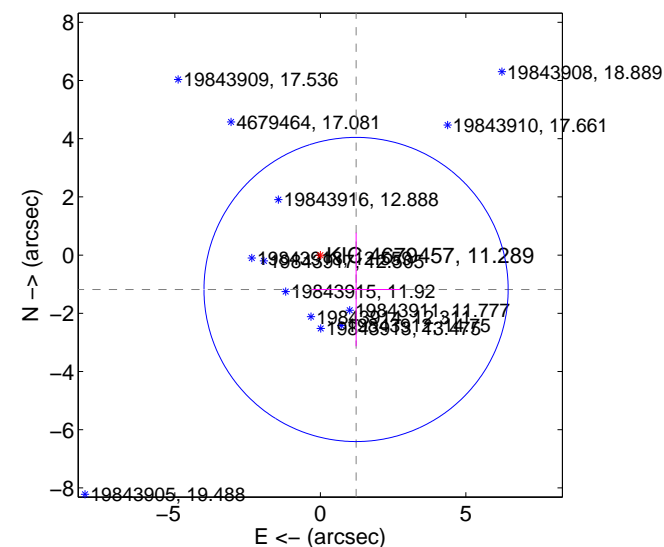
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

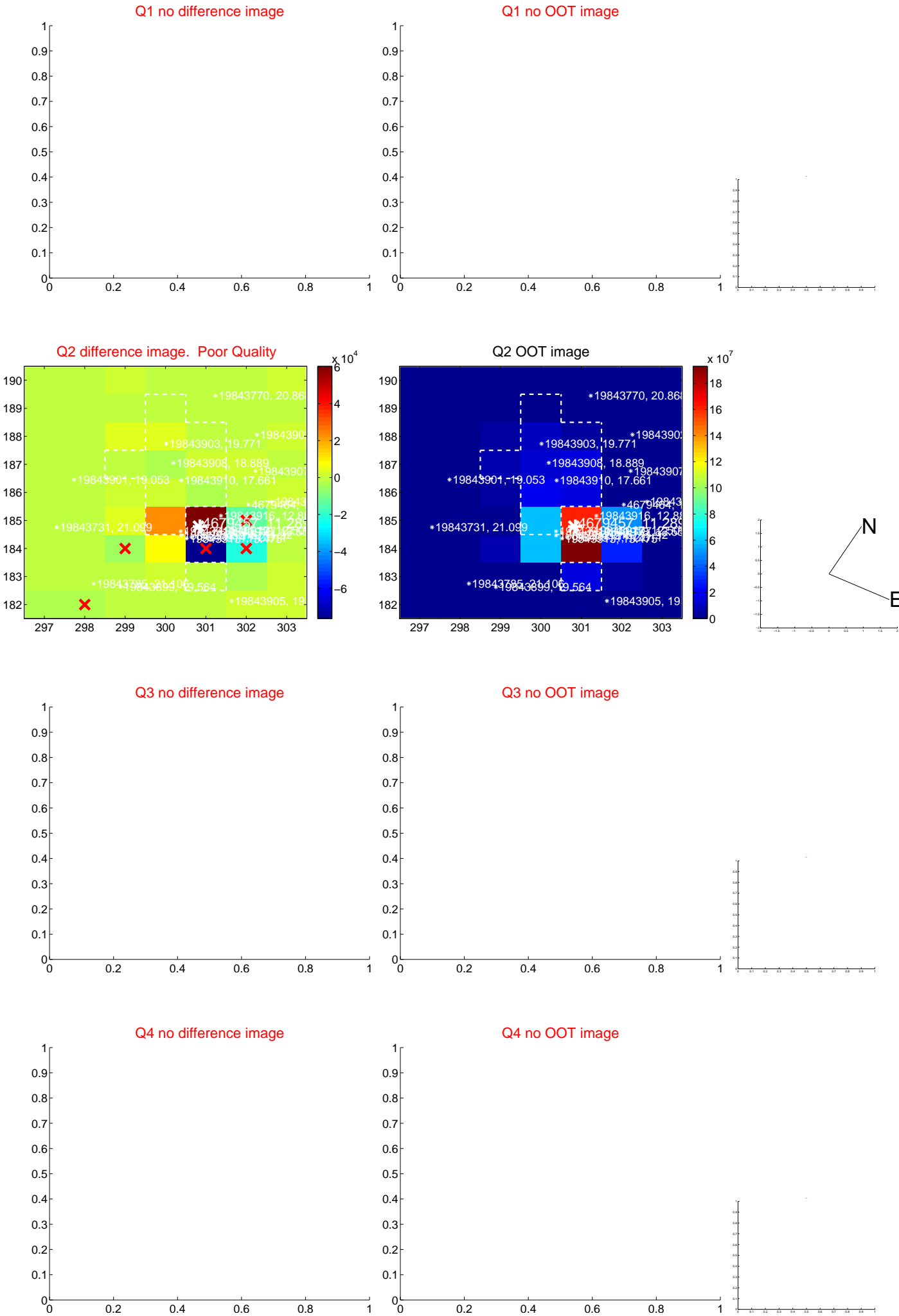


offset from photometric centroids

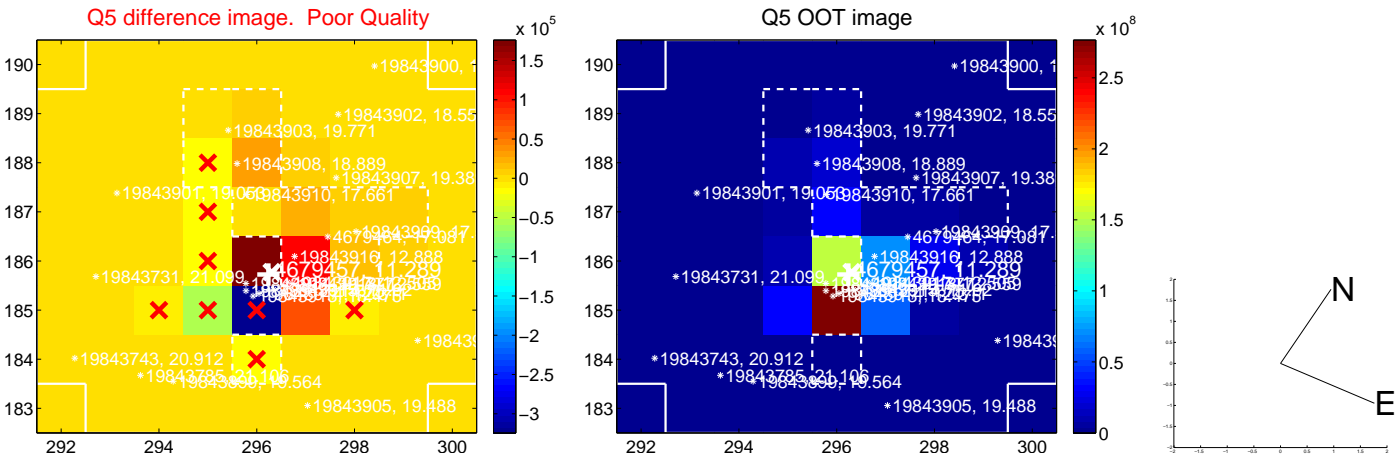


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

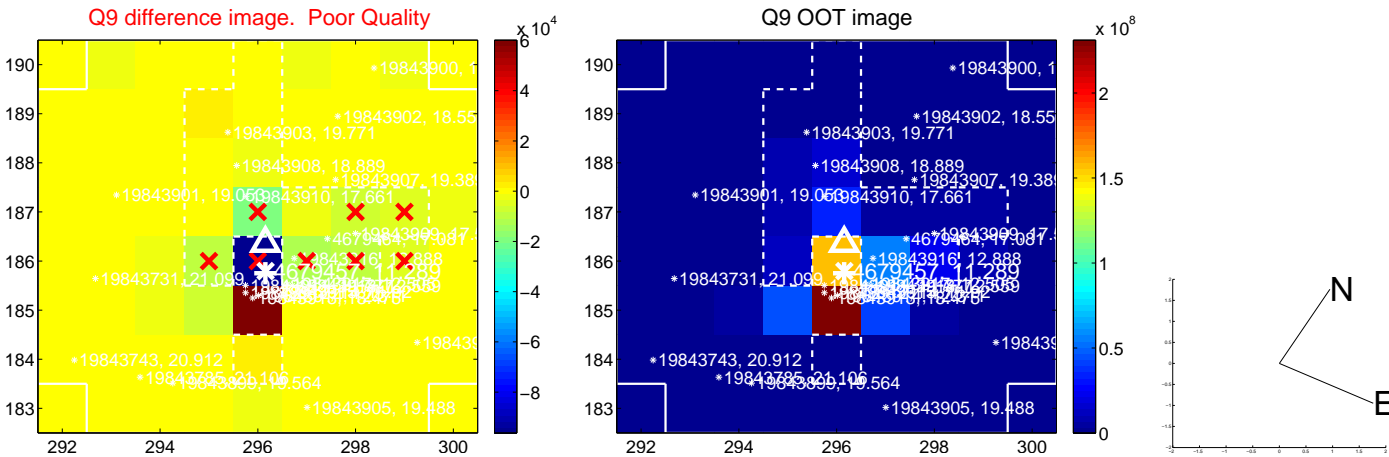
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



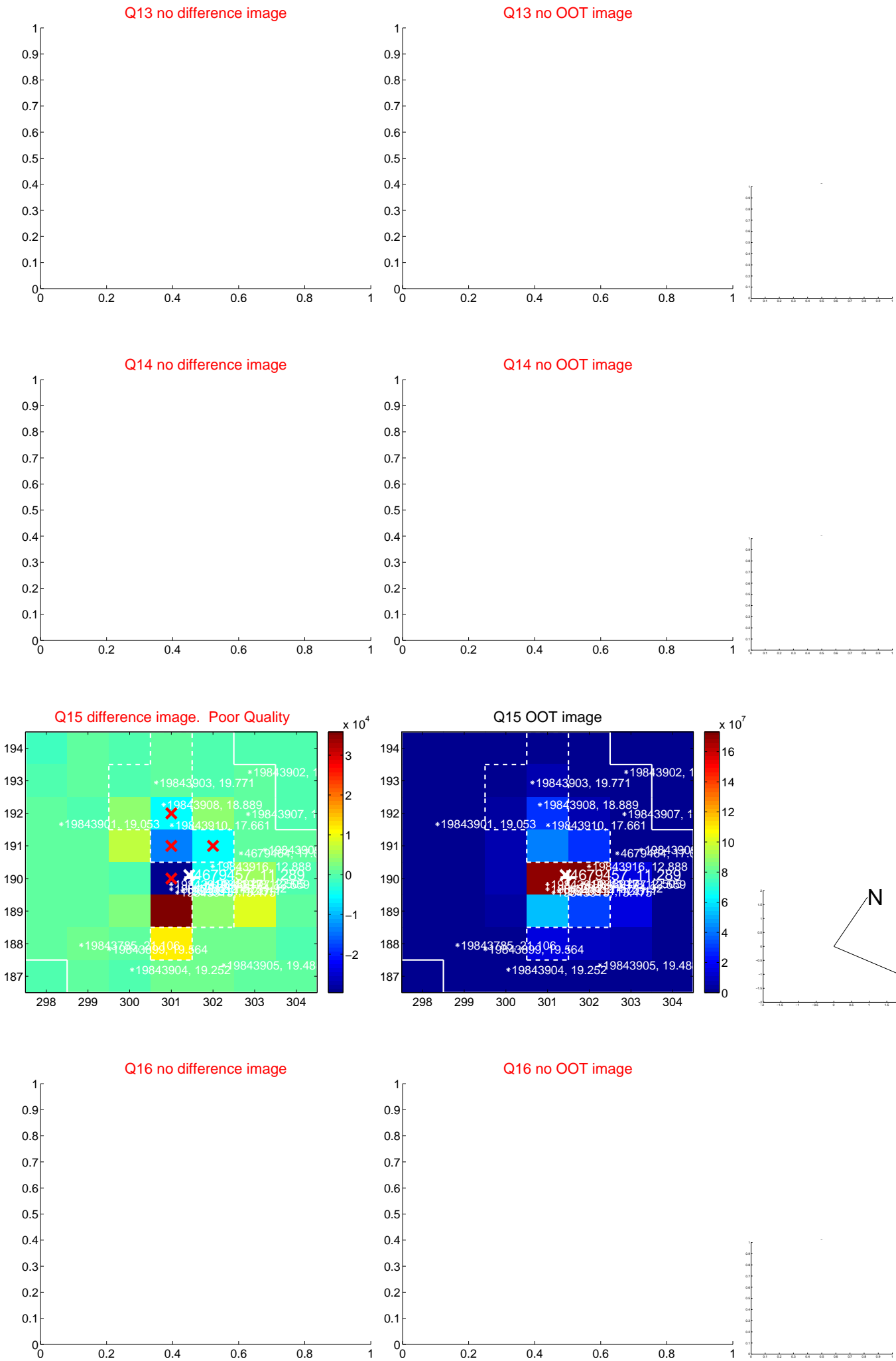
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



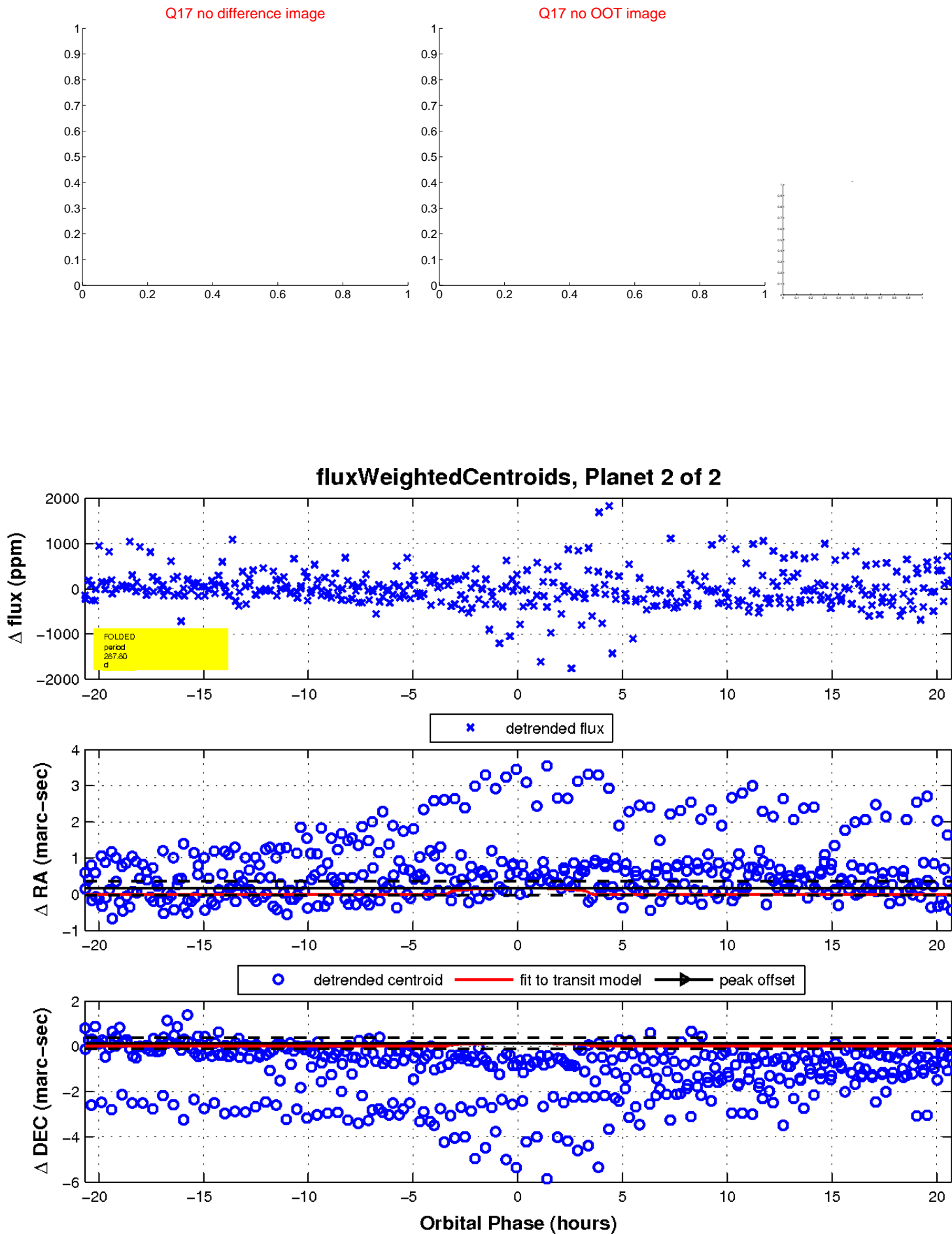
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

