

KIC 005193077

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})
005193077-01	OBS	3492.01	22.293859	146.461323	90.8	3.951	12.1	12.2	1.39	5915	1.58	79.11
005193077-02	OBS	No	22.294799	138.519074	68.7	6.371	10.0	10.7	1.39	5915	1.34	79.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005193077-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET
005193077-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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 005193077-01

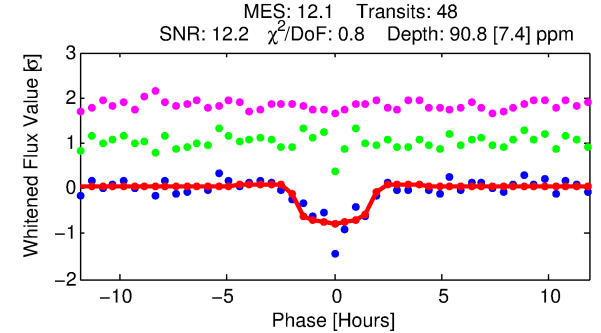
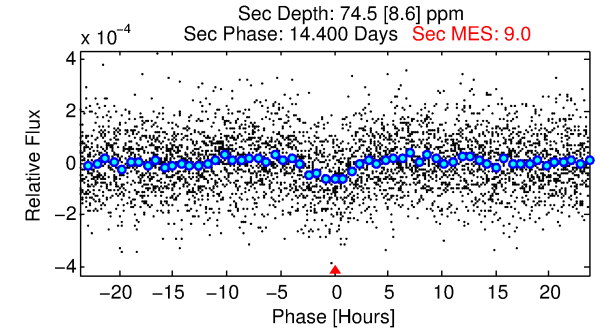
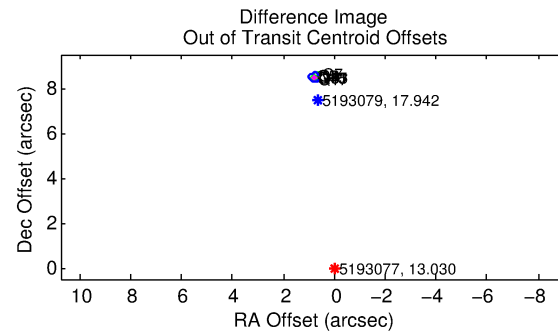
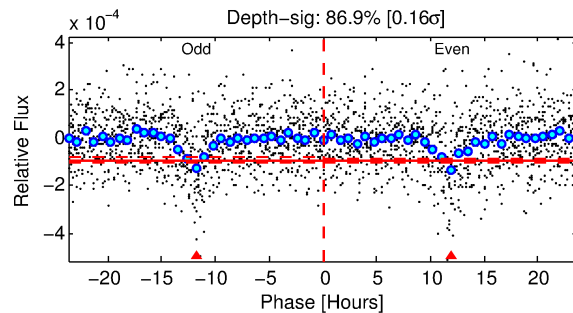
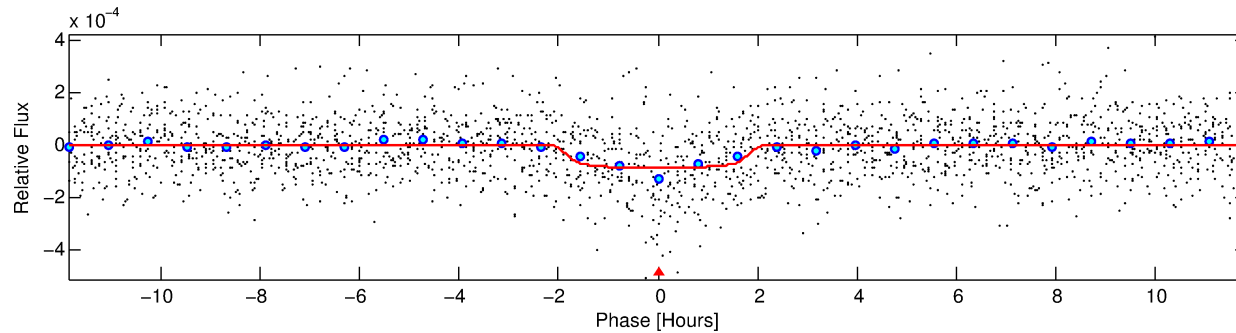
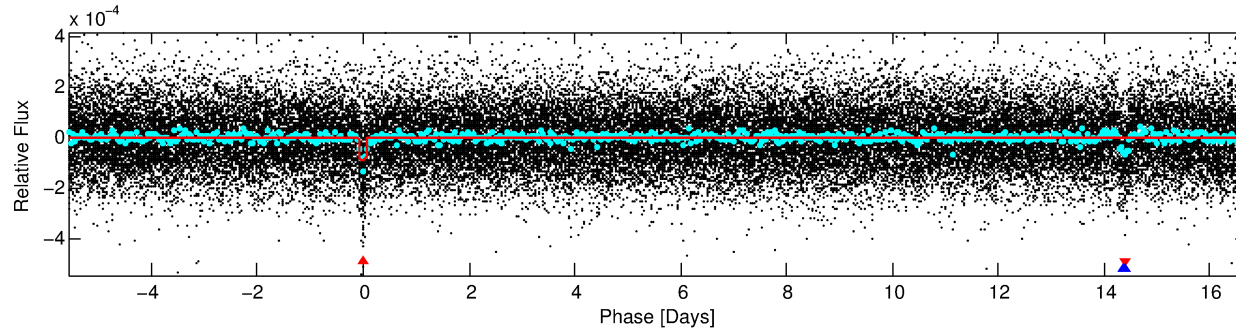
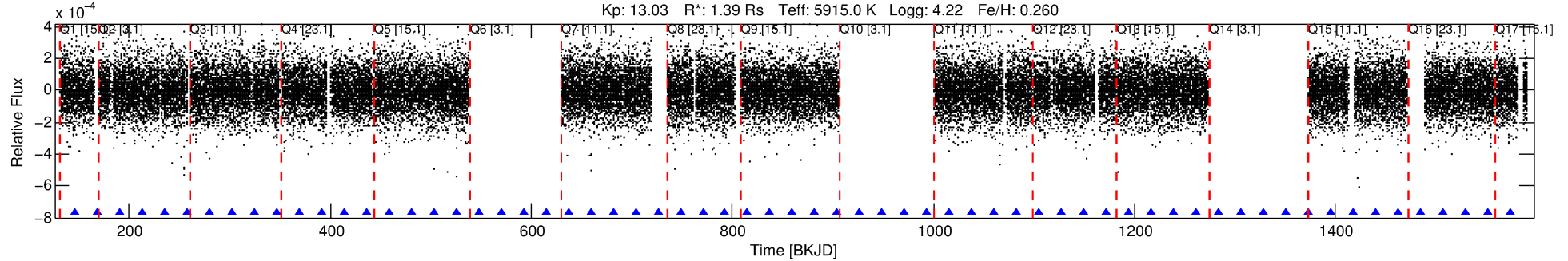
No Significant Match Found

DV One-Page Summary

KIC: 5193077 Candidate: 1 of 2 Period: 22.294 d

KOI: K03492 Corr: No Ephemeris Match

Kp: 13.03 R*: 1.39 Rs Teff: 5915.0 K Logg: 4.22 Fe/H: 0.260



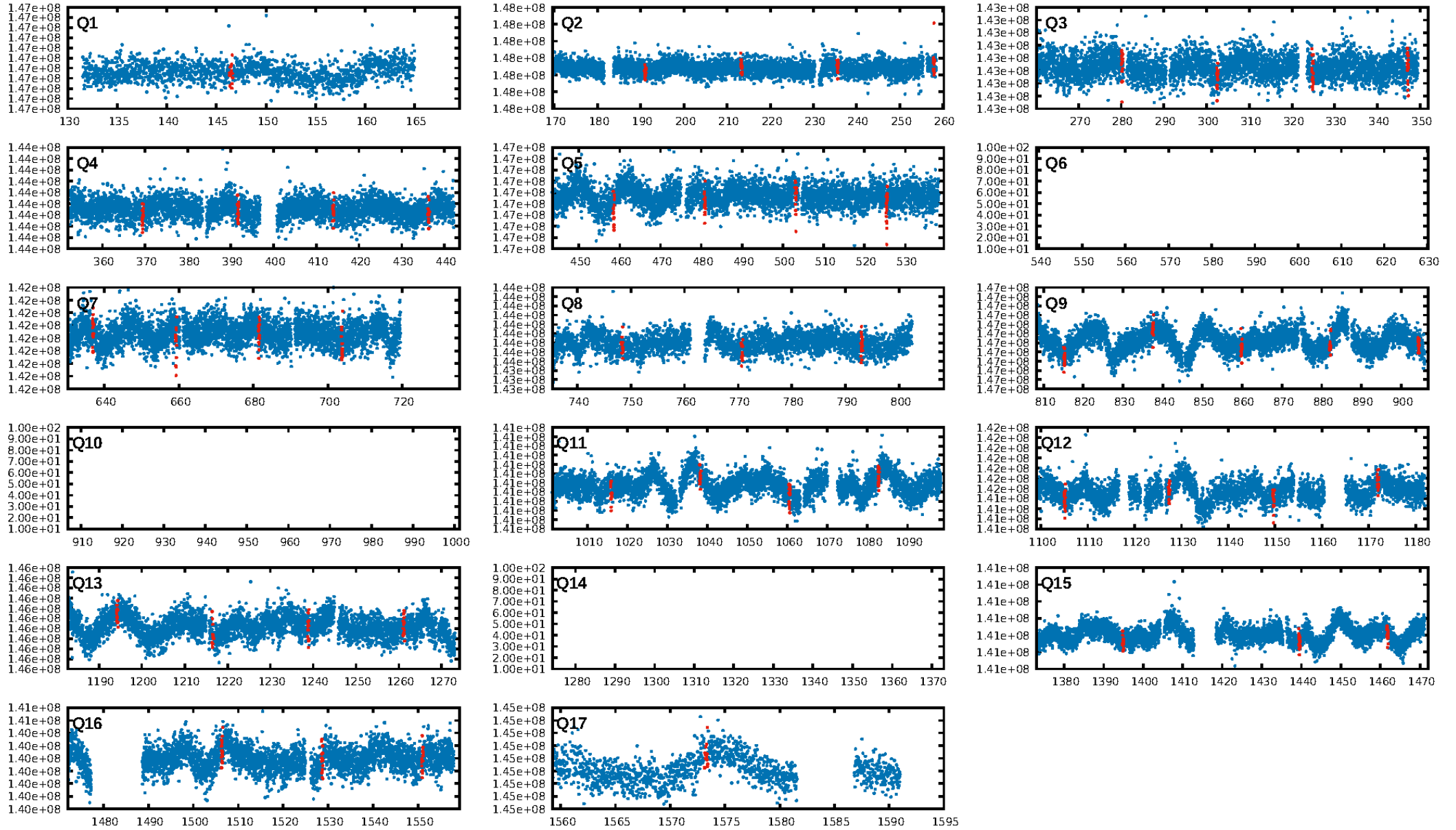
DV Fit Results:

Period = 22.29386 [0.00017] d
Epoch = 146.4613 [0.0060] BKJD
Rp/R* = 0.0104 [0.0046]
a/R* = 19.82 [42.65]
b = 0.90 [0.46]
Seff = 79.11 [24.77]
Teq = 760 [60] K
Rp = 1.58 [0.77] Re
a = 0.1639 [0.0309] AU
Ag = 443.21 [417.24] [1.06σ]
Teff = 5395 [1219] K [3.80σ]

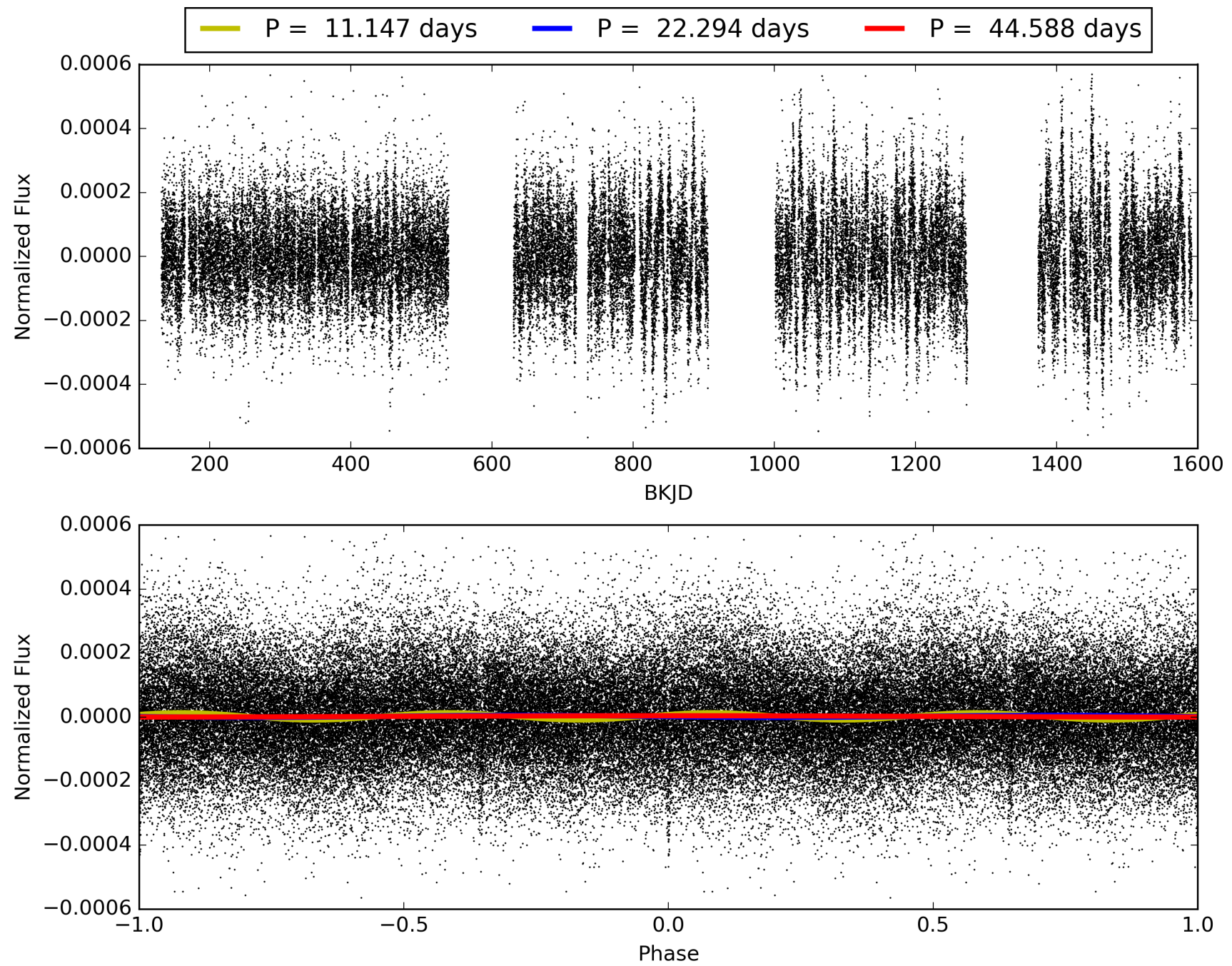
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.30e-32
RollingBand-fgt: 1.00 [46/46]
GhostDiagnostic-chr: -0.4833
Centroid-sig: 0.0%
Centroid-so: 49.640 arcsec [52.03σ]
OotOffset-rm: 8.520 arcsec [122.41σ]
KicOffset-rm: 8.491 arcsec [122.00σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 005193077-01, PDC Light Curves

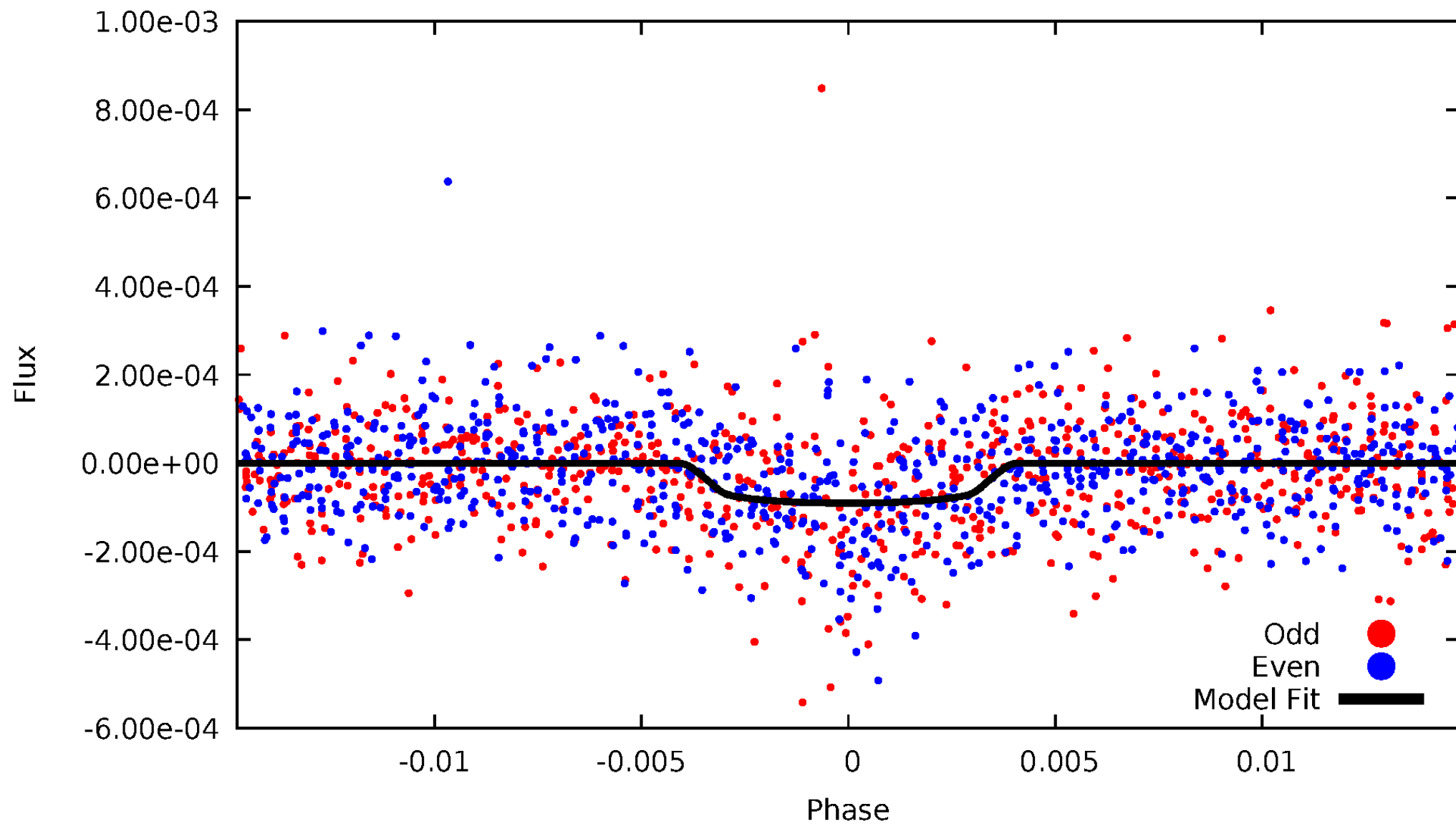


TCE 005193077-01



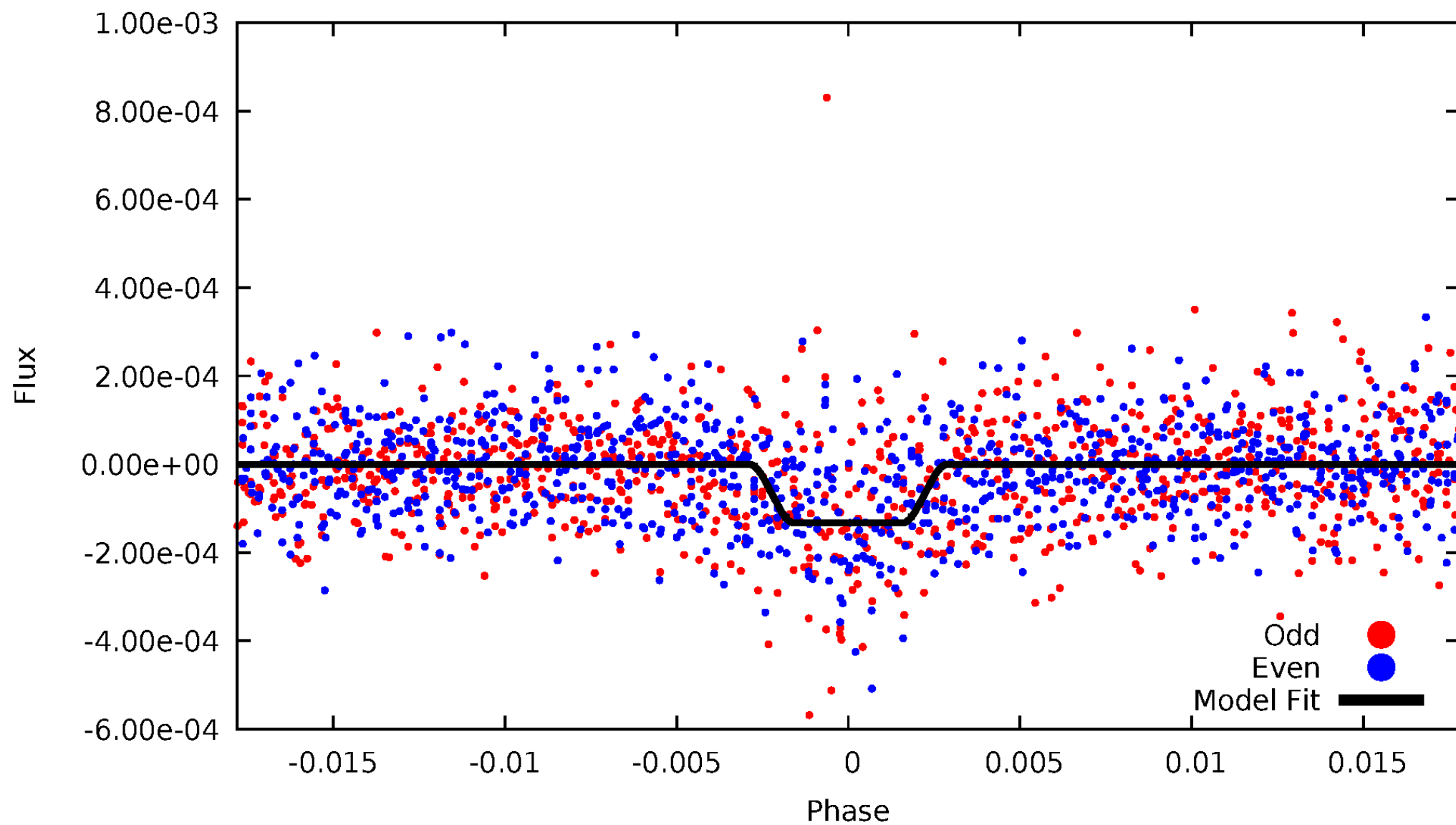
DV Odd/Even

TCE 005193077-01

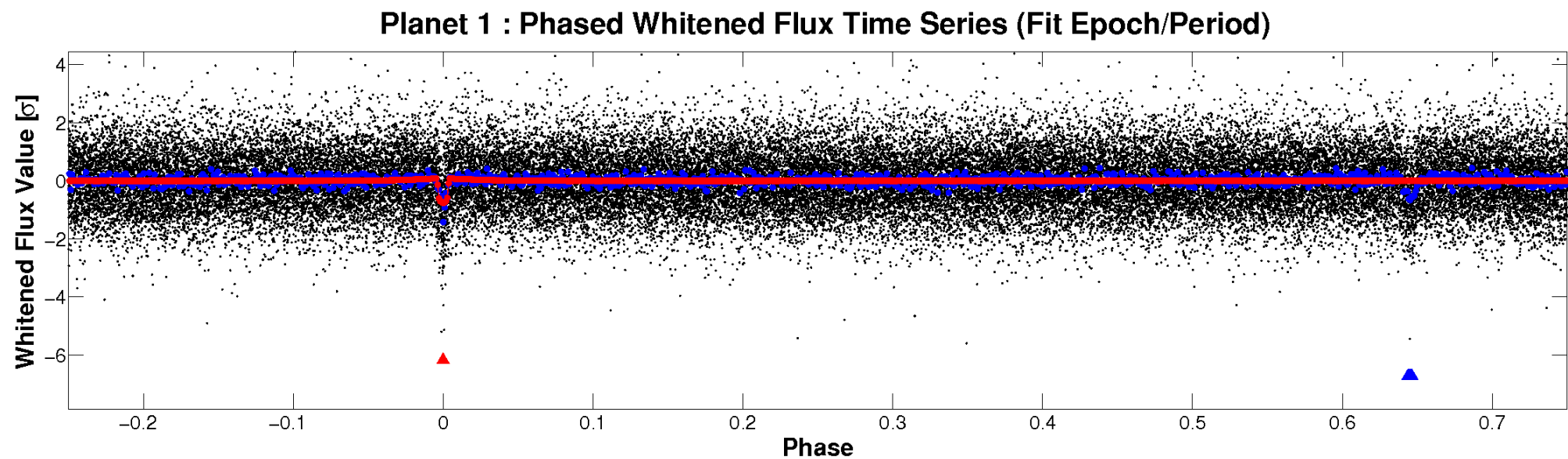
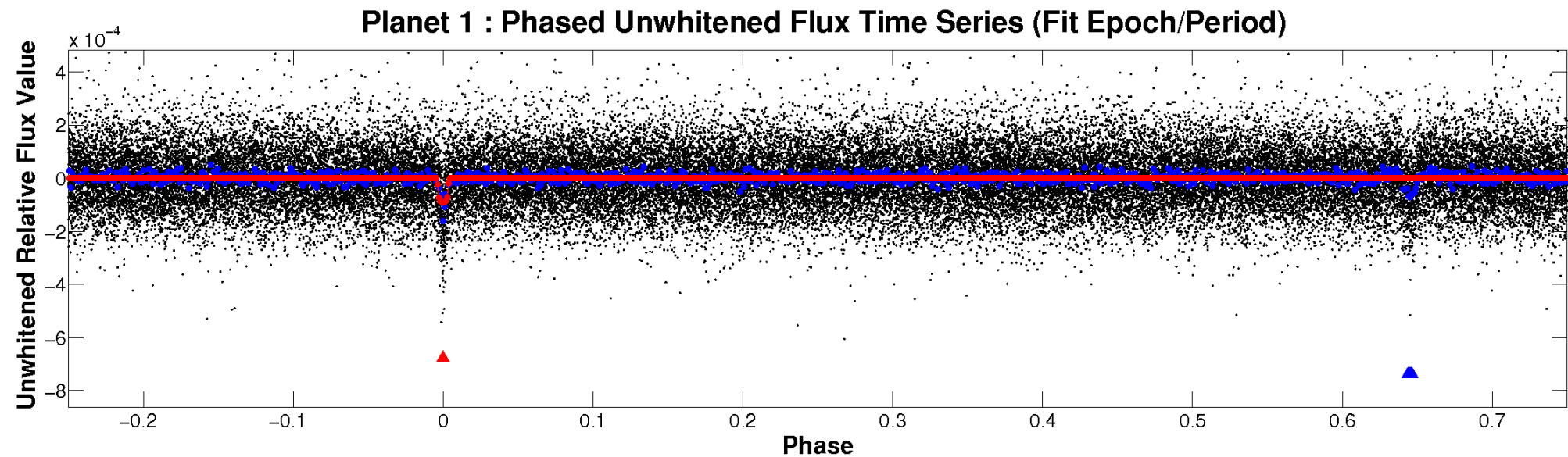


ALT Odd/Even

TCE 005193077-01

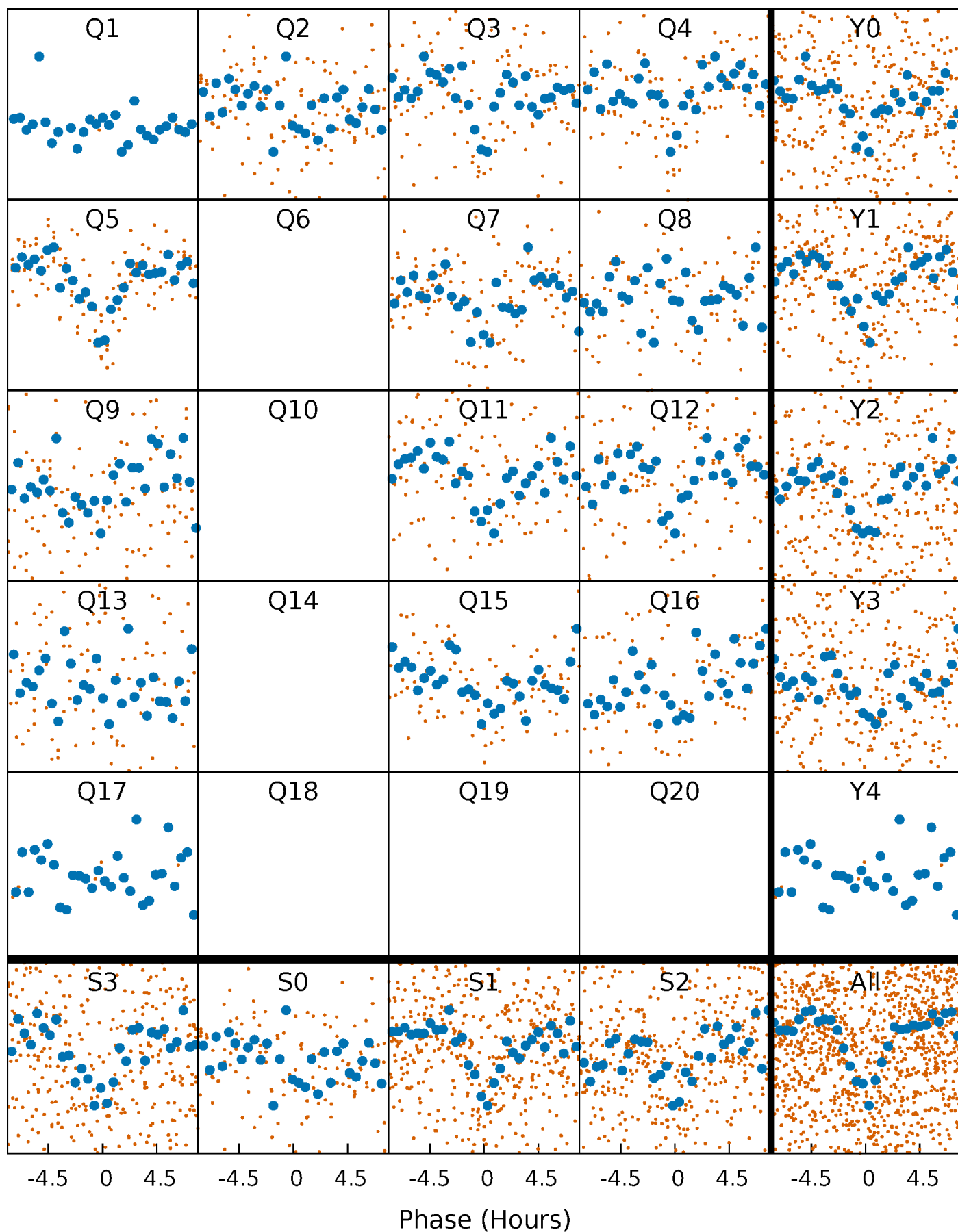


Non-Whitened Vs. Whitened Light Curve



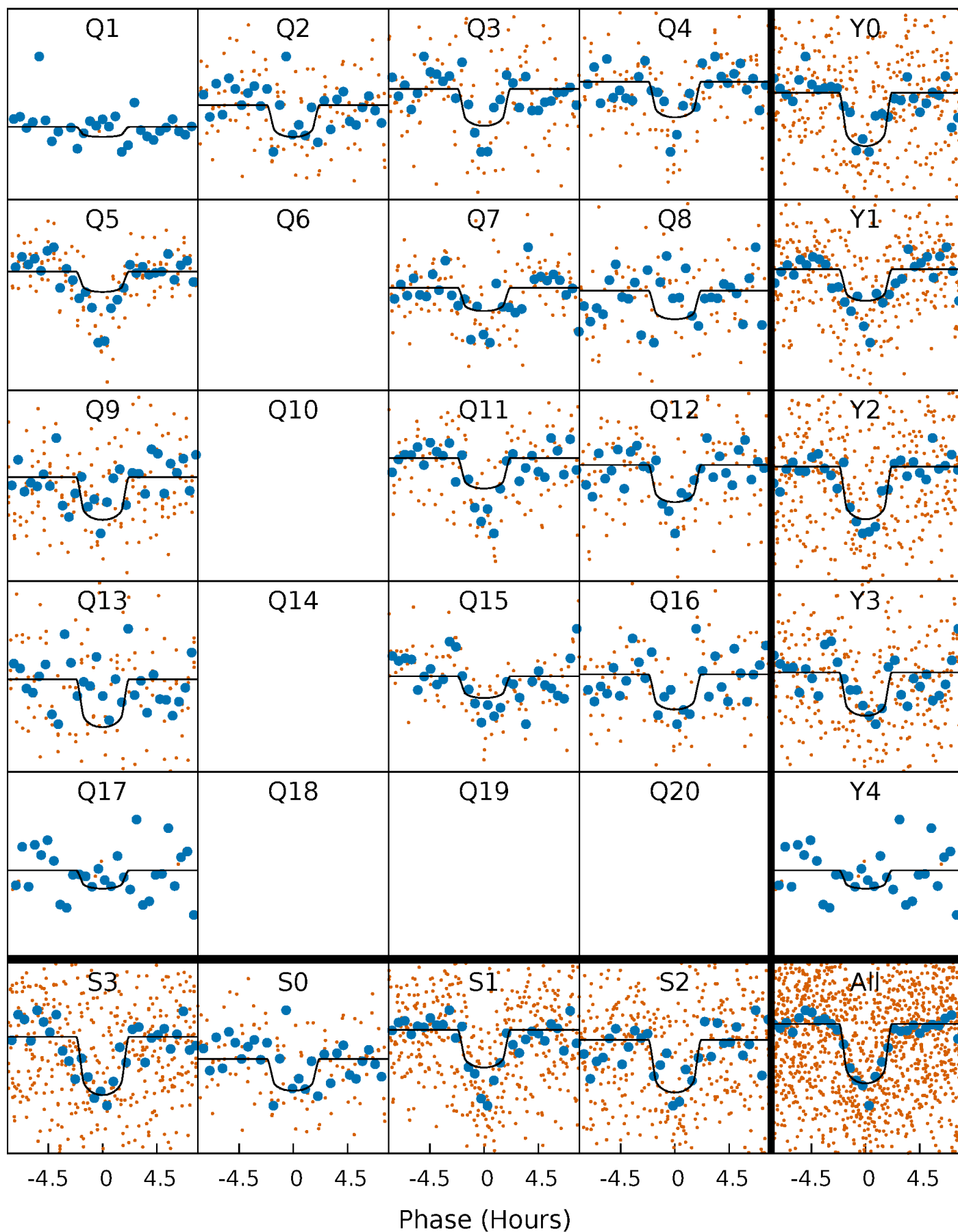
PDC Quarter-Phased Transit Curves

TCE 005193077-01 P= 22.293859 Days $T_0=146.461323$ (BKJD)



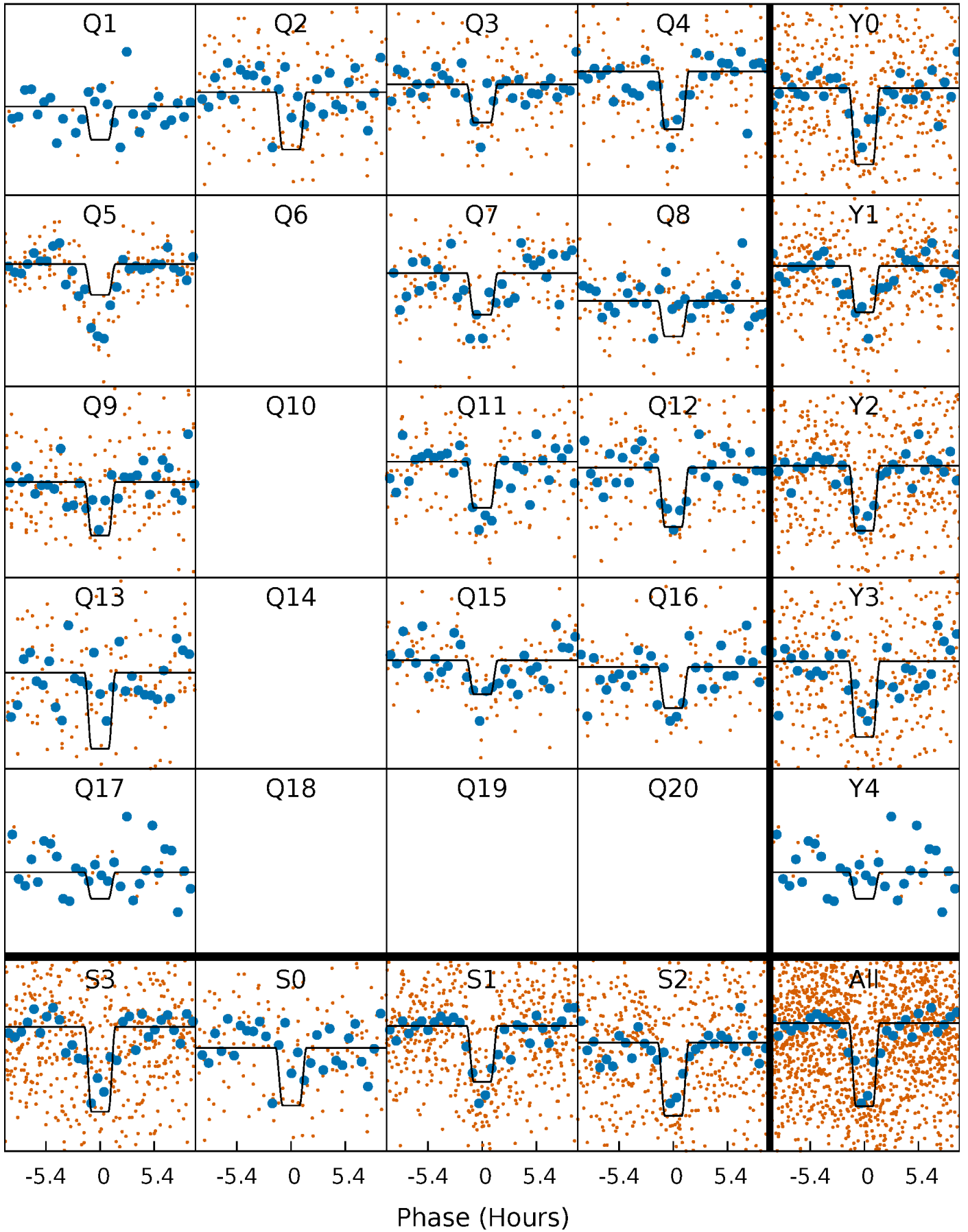
DV Quarter-Phased Transit Curves

TCE 005193077-01 P= 22.293859 Days $T_0=146.461323$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

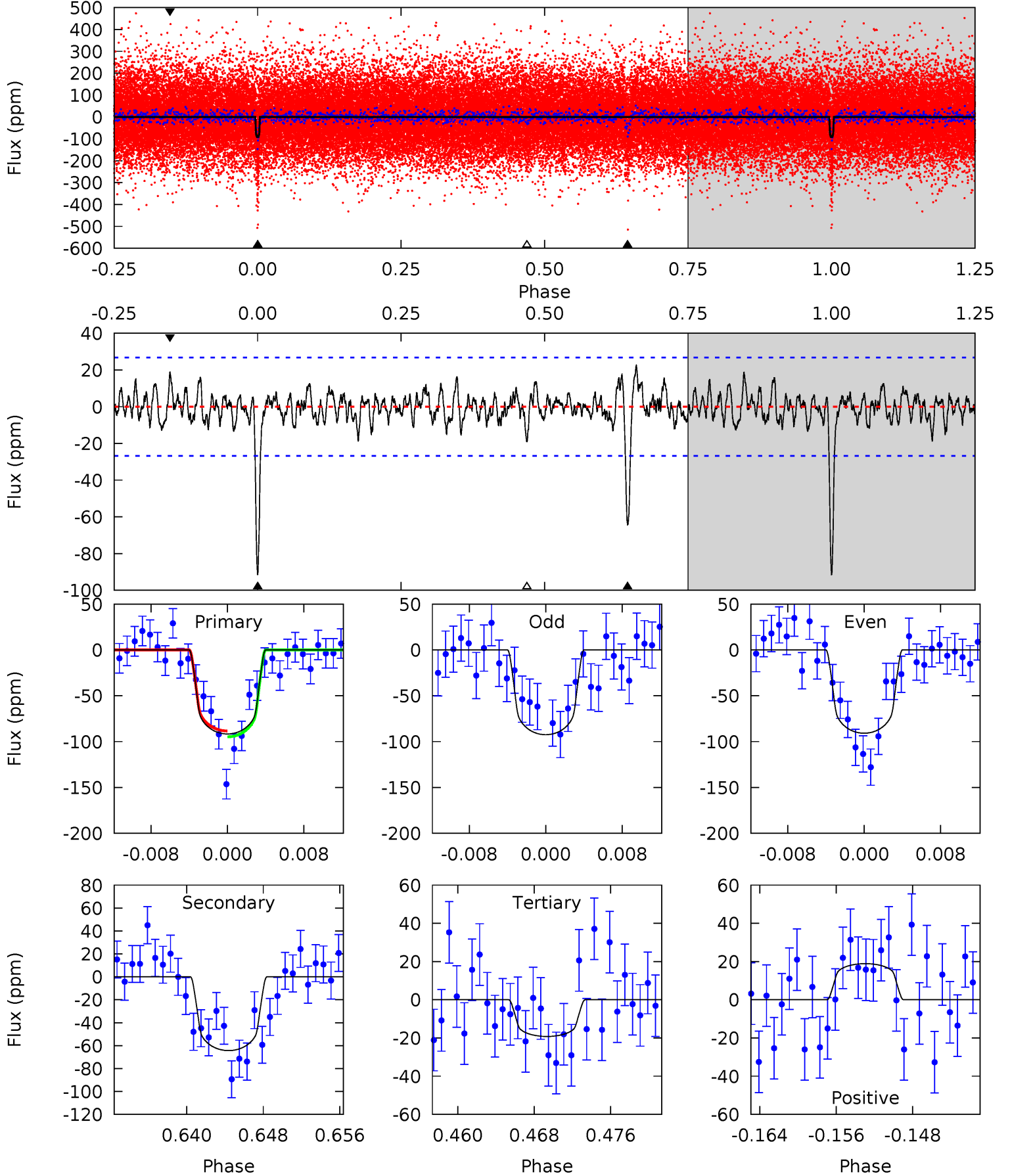
TCE 005193077-01 P= 22.293963 Days $T_0=146.460380$ (BKJD)



DV Model-Shift Uniqueness Test

005193077-01, P = 22.293859 Days, E = 124.167464 Days

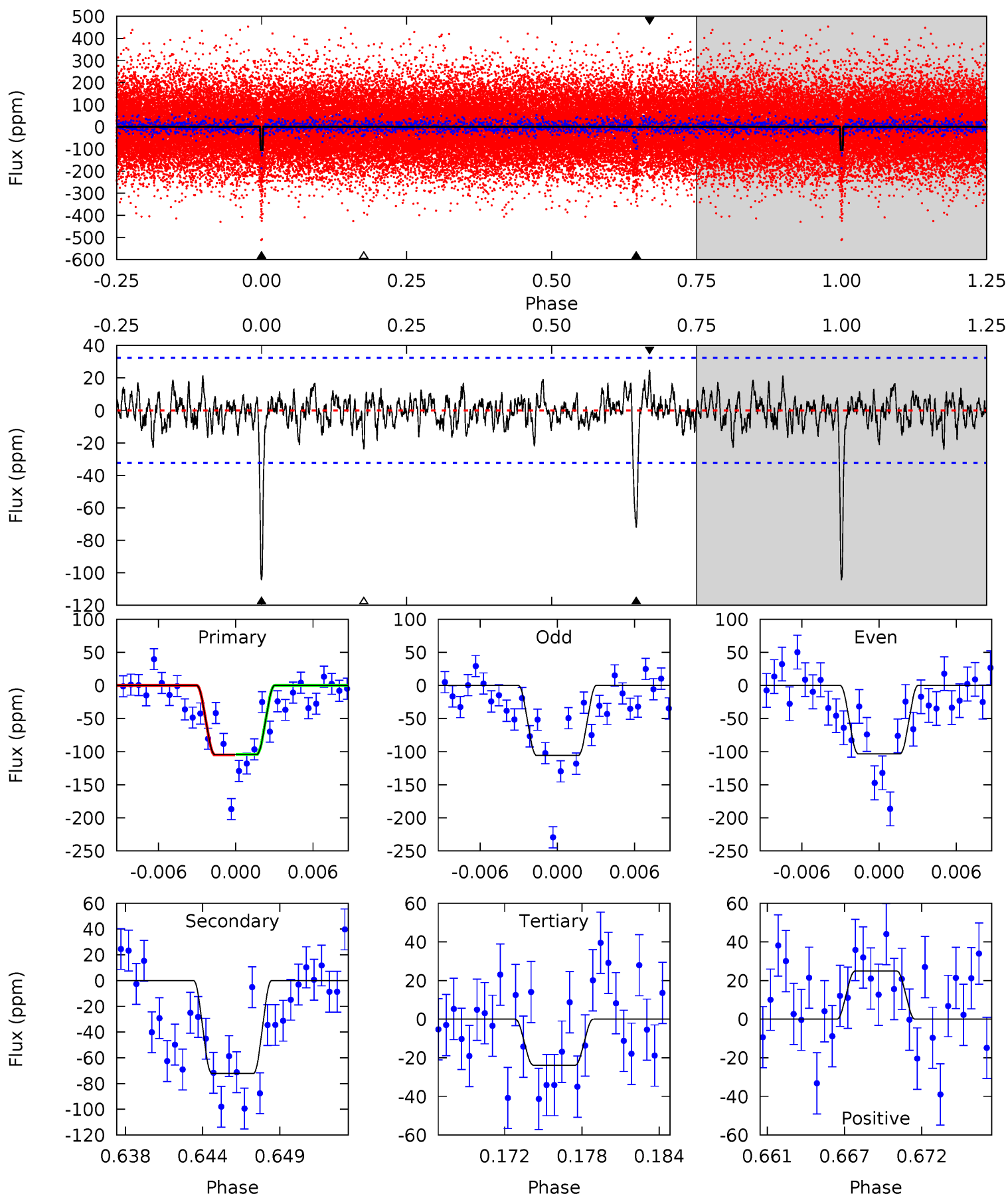
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	12.2	3.64	3.58	5.06	2.64	1.21	13.7	13.8	8.53	8.59	0.15	0.98	0.20	0.60



Alt Model-Shift Uniqueness Test

005193077-01, P = 22.293963 Days, E = 124.166417 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	11.4	3.78	3.95	5.13	2.76	1.15	12.8	12.6	7.66	7.49	0.19	1.05	0.19	0.08



Stellar Parameters For KIC 005193077

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5915^{+160}_{-178}	$4.223^{+0.165}_{-0.135}$	$0.260^{+0.150}_{-0.300}$	$1.392^{+0.291}_{-0.291}$	$1.183^{+0.109}_{-0.176}$	$0.618^{+0.534}_{-0.247}$
	+3%/-3%	+4%/-3%	+58%/-115%	+21%/-21%	+9%/-15%	+86%/-40%
Source	PHO1	FLK73	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 005193077-01 / KOI 3492.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-64 ± 5	$1.52^{+0.77}_{-0.68}$	1058^{+66}_{-66}	5285^{+1732}_{-814}	404^{+962}_{-228}
Alt.	-72 ± 6	$1.76^{+0.73}_{-0.71}$	1057^{+67}_{-62}	5109^{+1386}_{-688}	341^{+621}_{-174}

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 $A_{obs} \gg 1.0$

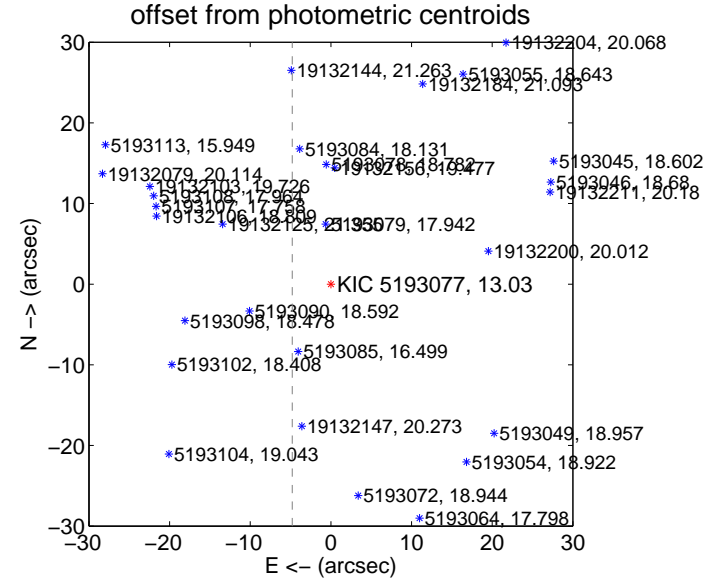
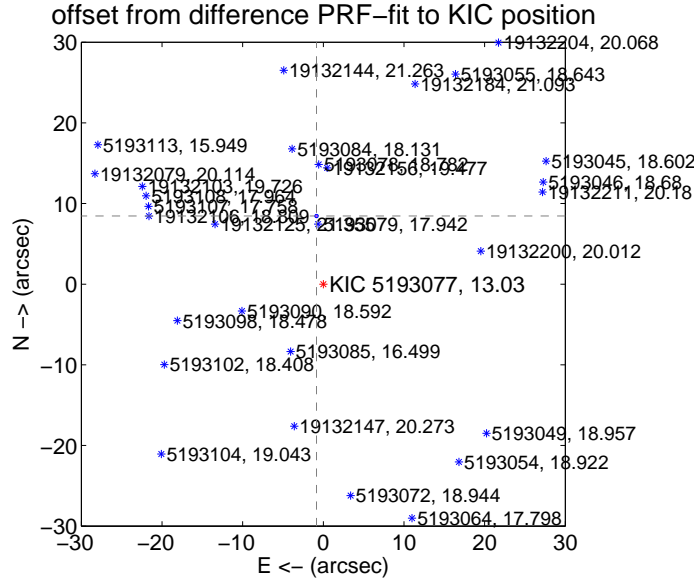
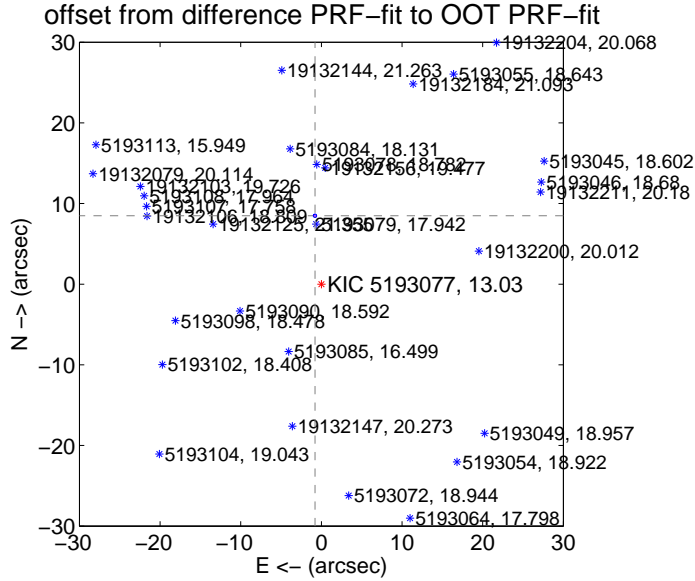
DV Centroid Data

Supplemental centroid analysis for 005193077-01. Kepler magnitude: 13.03. Transit SNR 12.23

There are 12 quarters with good PRF difference image offsets

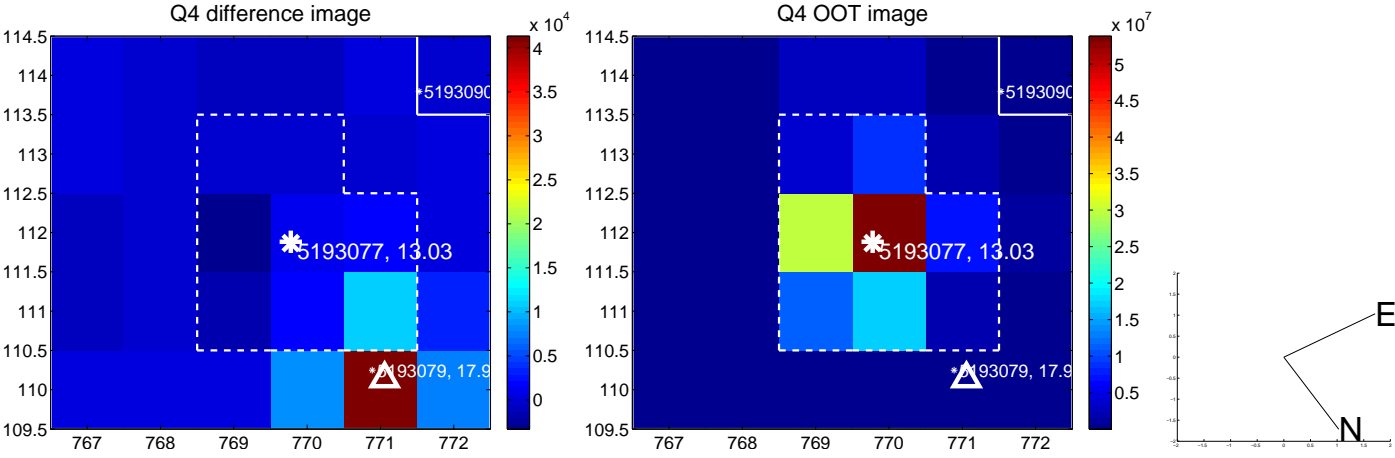
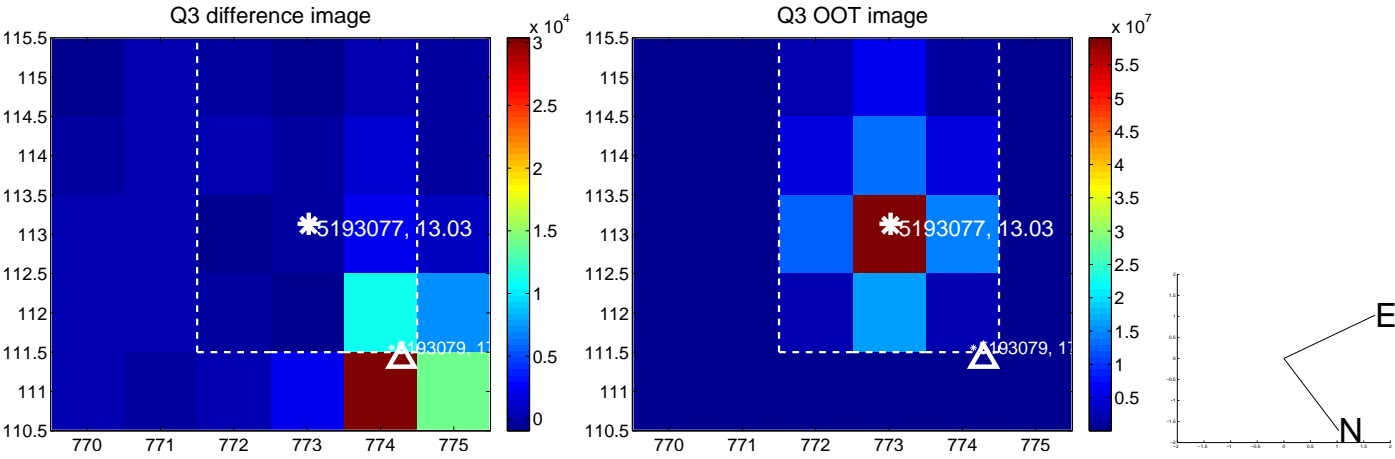
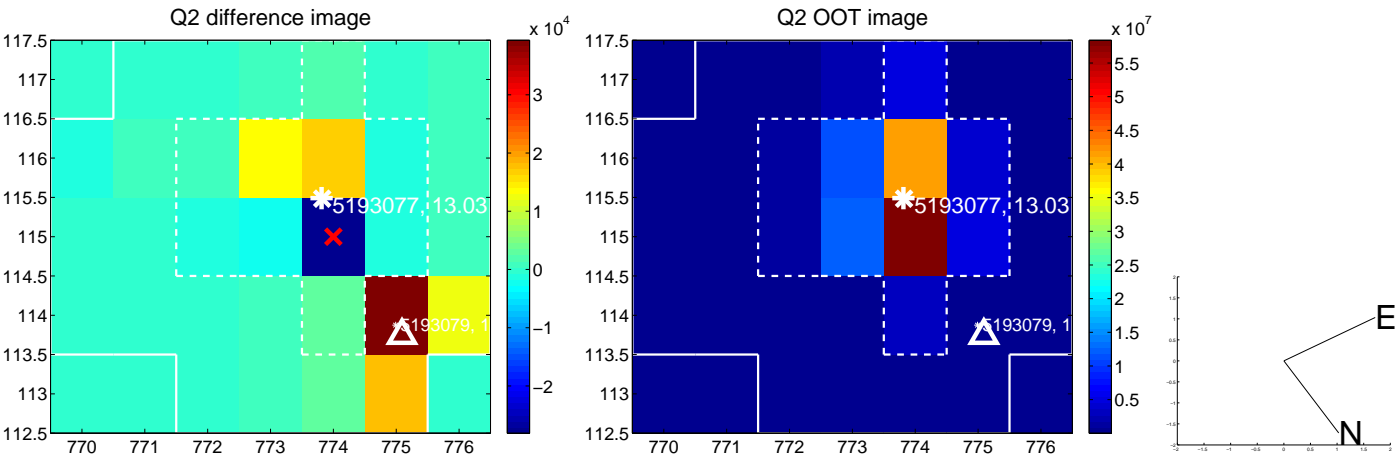
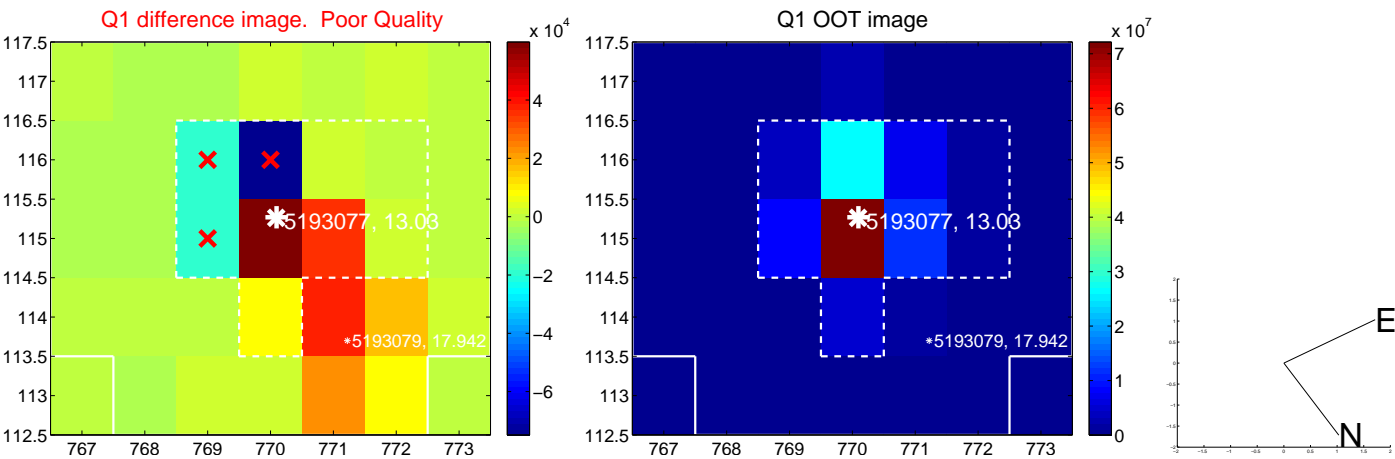
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.520 \pm 0.070	122.41	0.792 \pm 0.068	8.483 \pm 0.070
PRF-fit source offset from KIC position	8.491 \pm 0.070	122.00	0.843 \pm 0.068	8.449 \pm 0.070
photometric centroid source offset	49.64 \pm 0.95	52.03	4.79 \pm 0.93	49.41 \pm 0.95

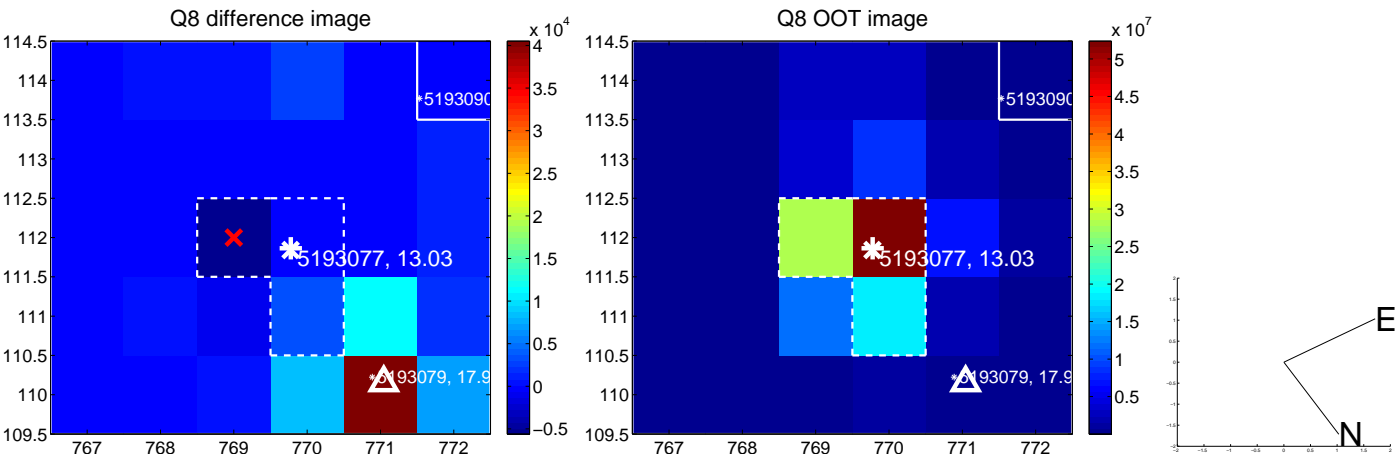
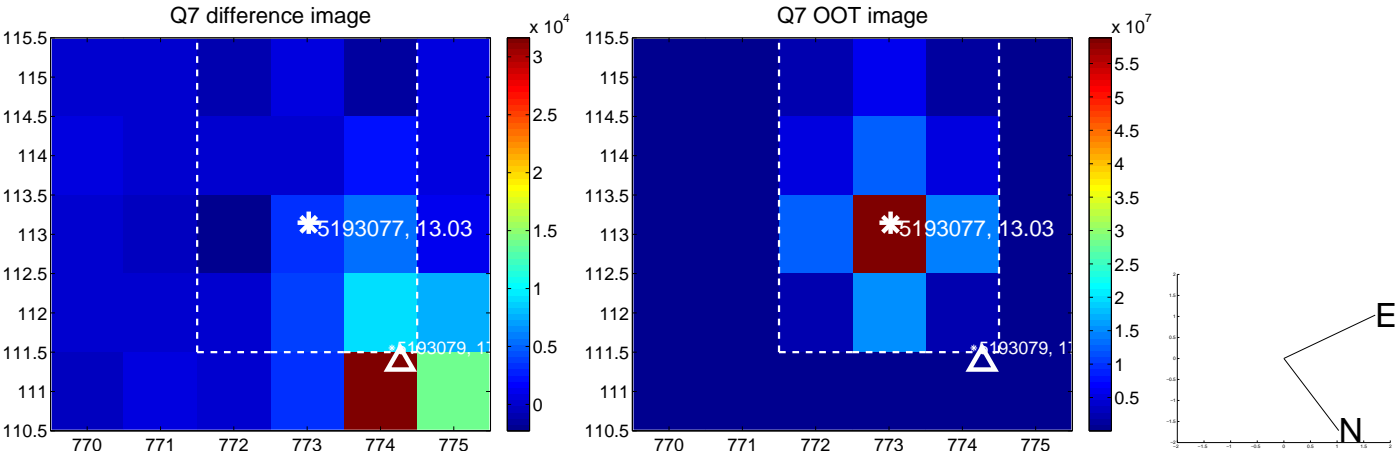
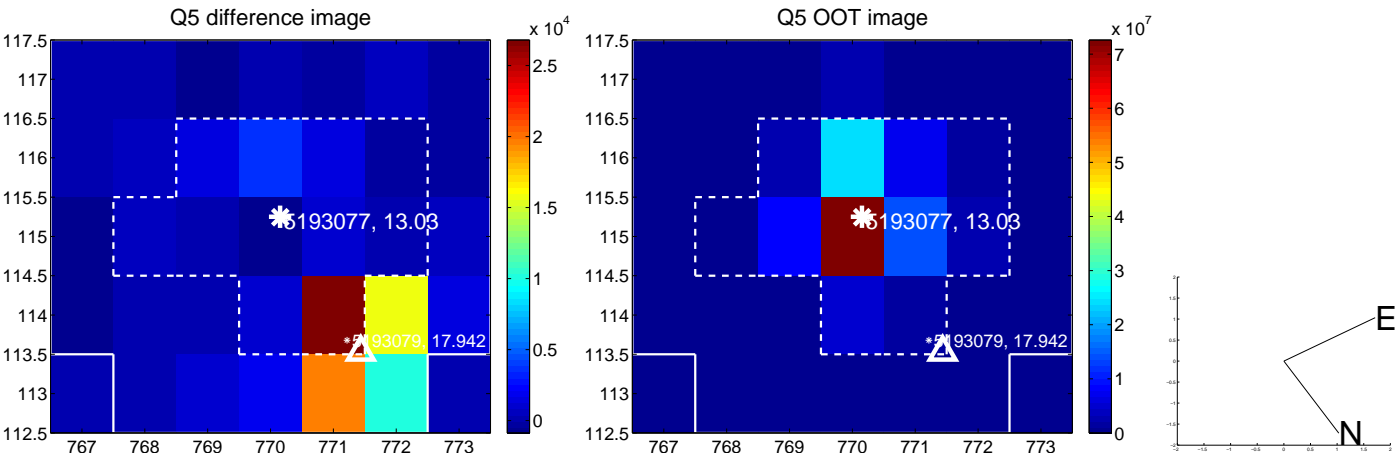


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

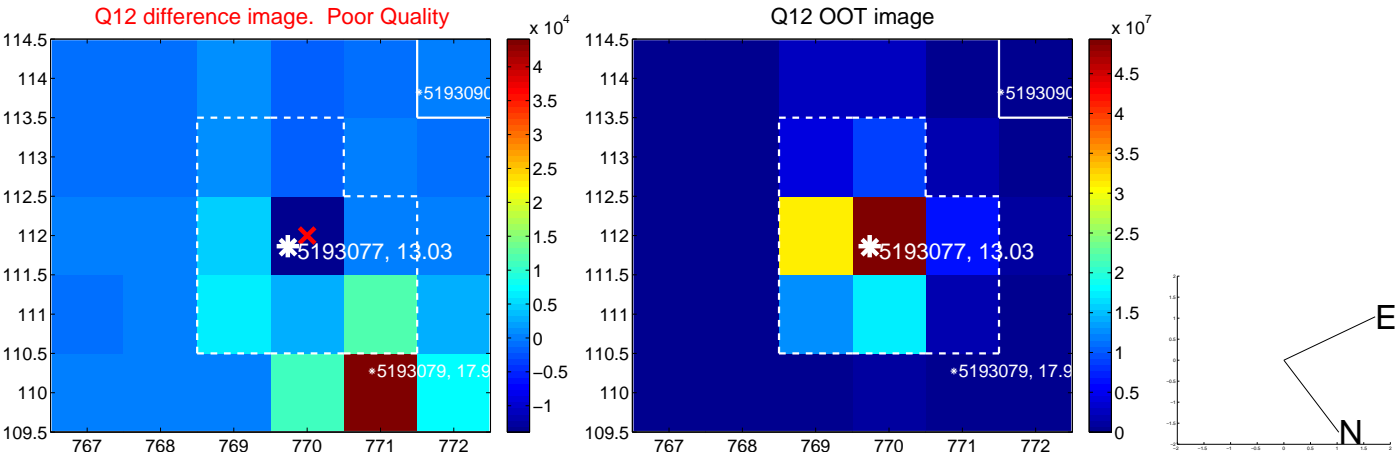
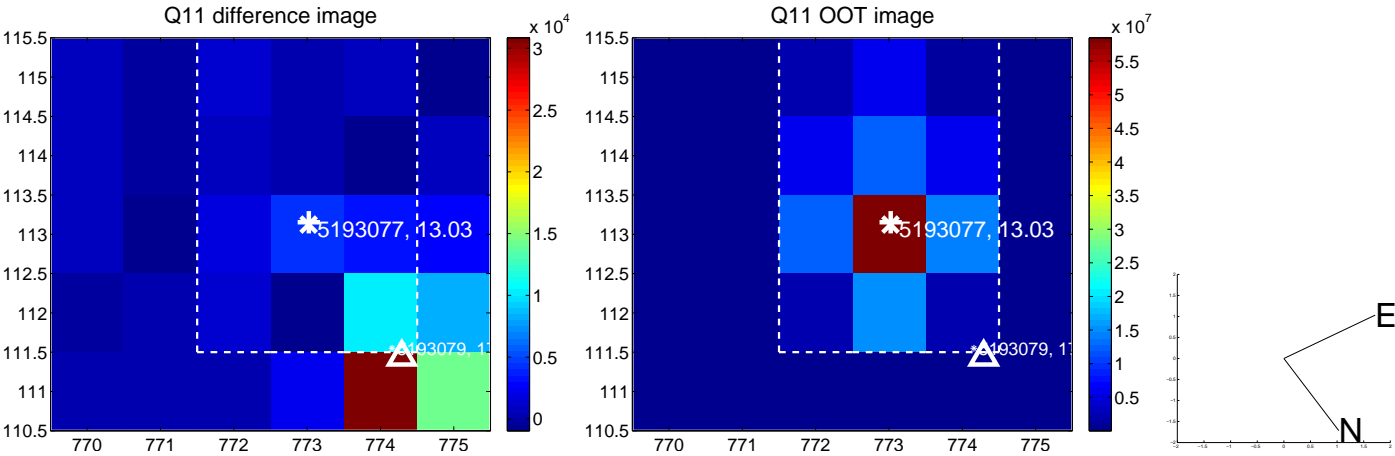
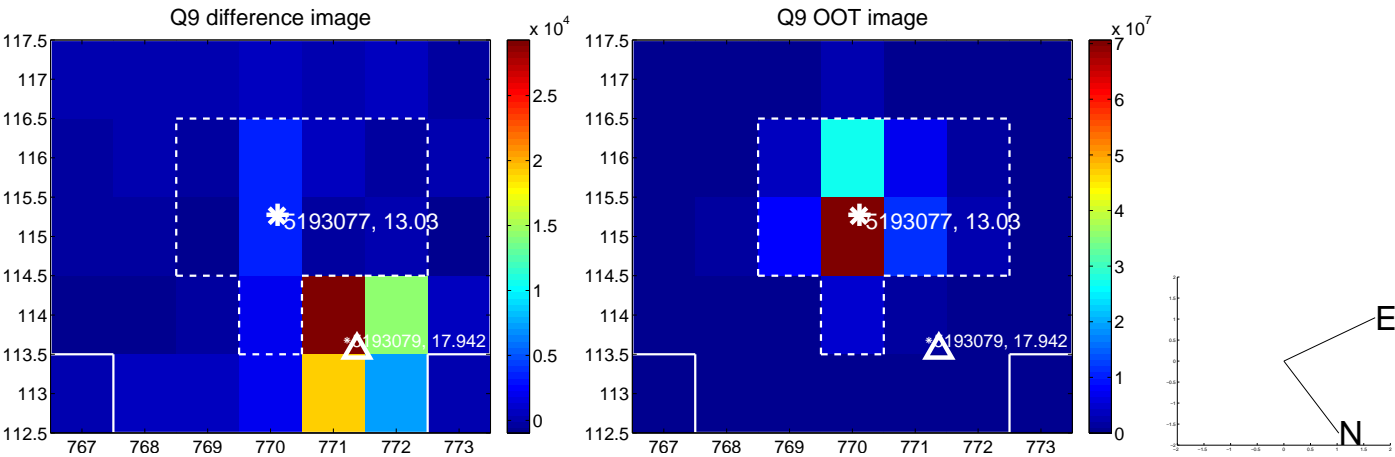
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



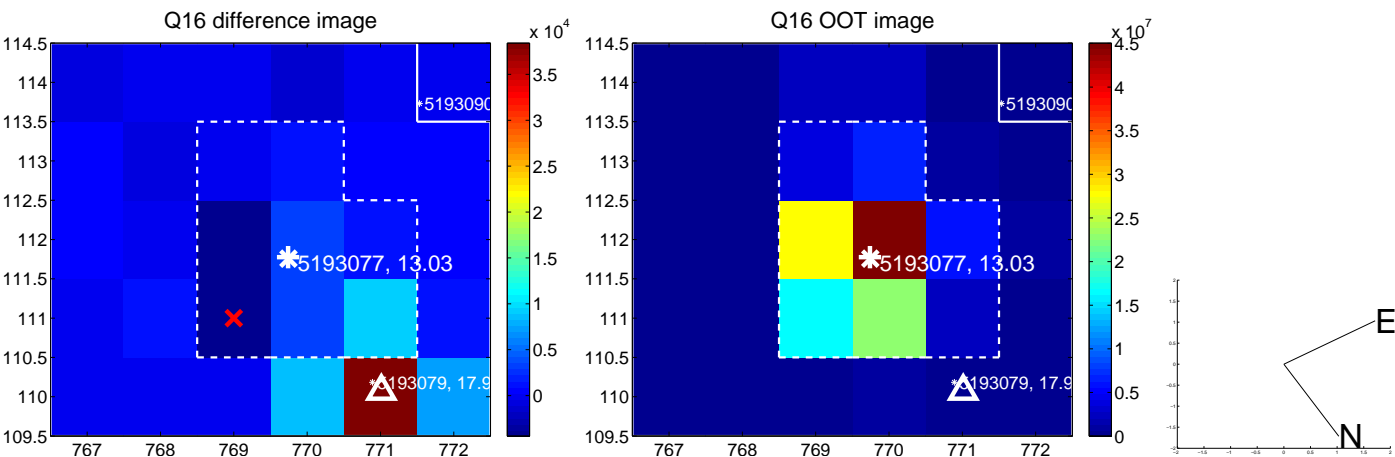
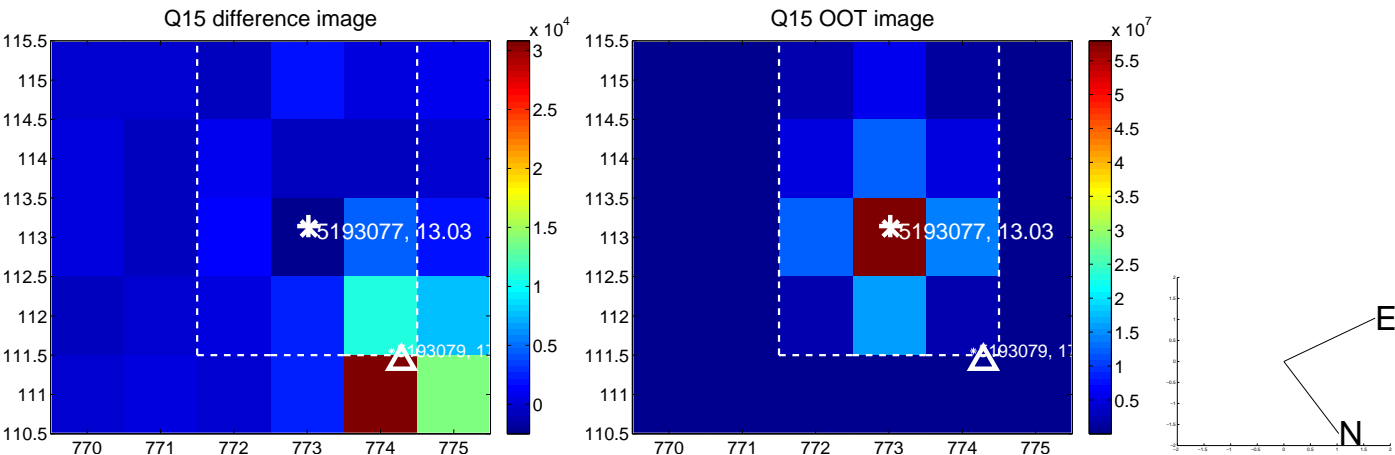
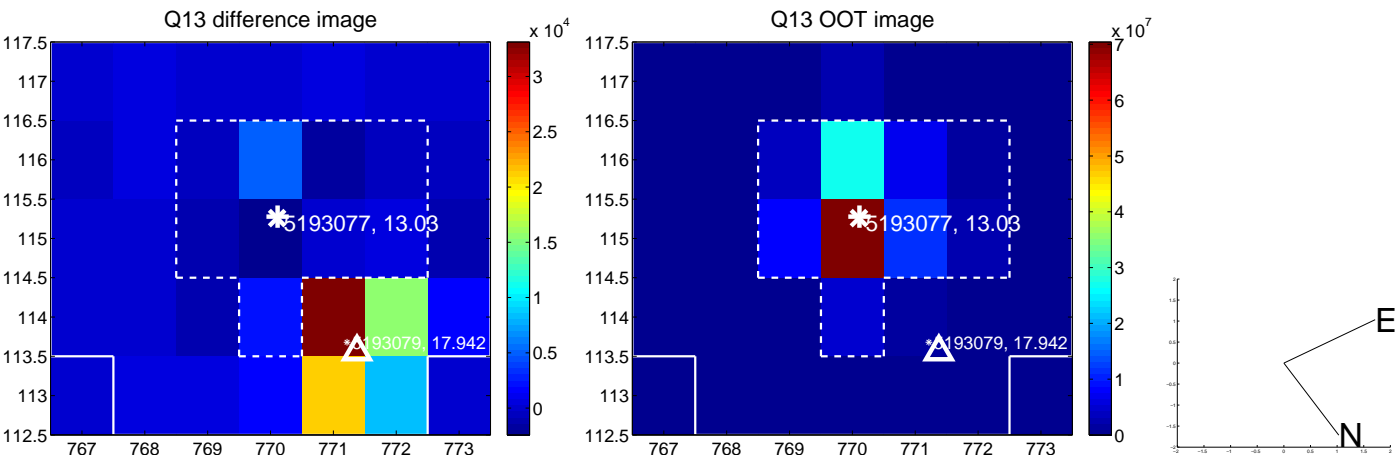
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



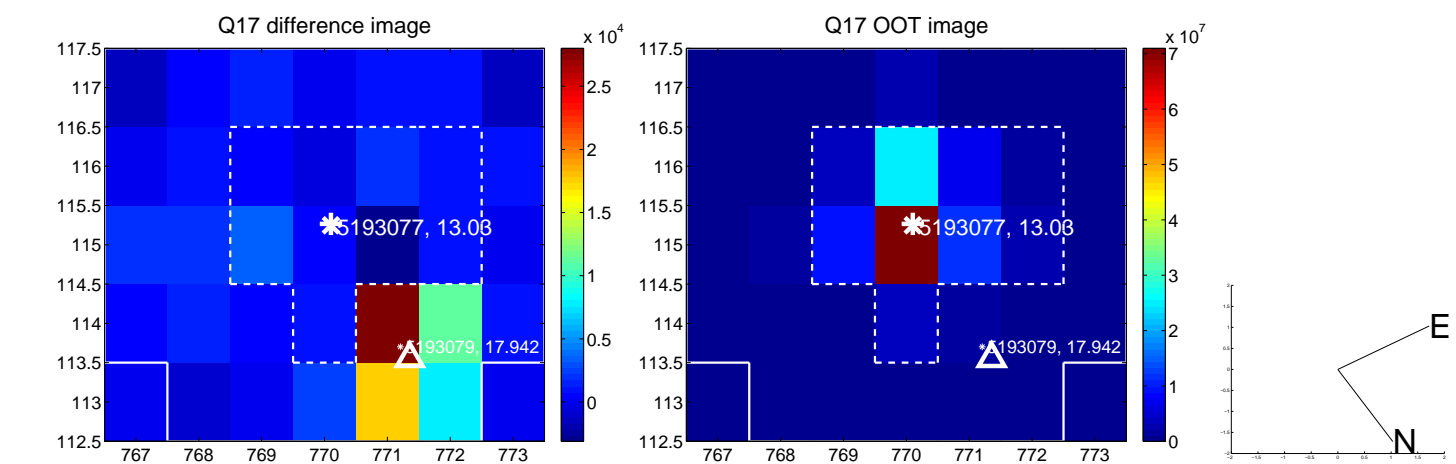
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



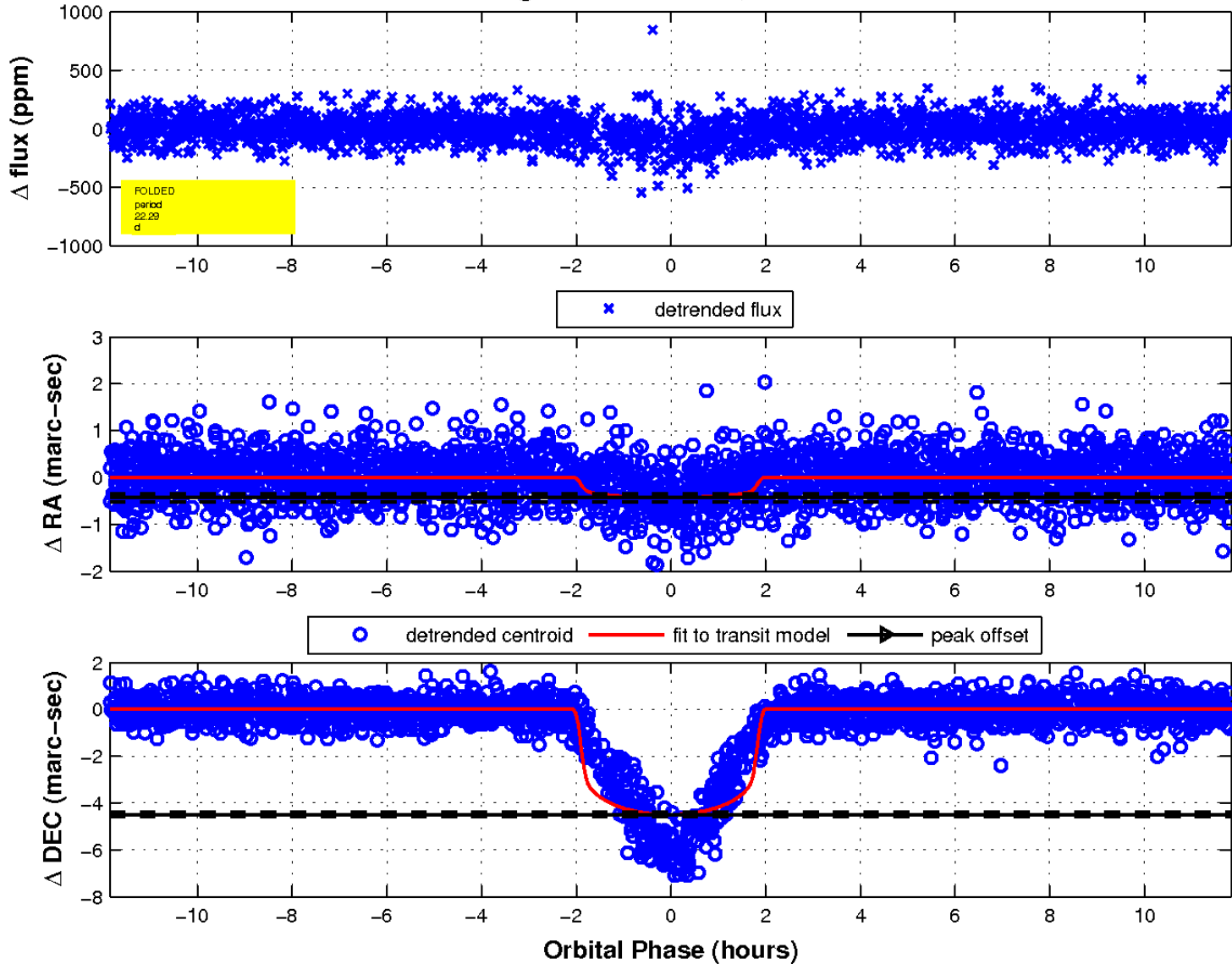
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

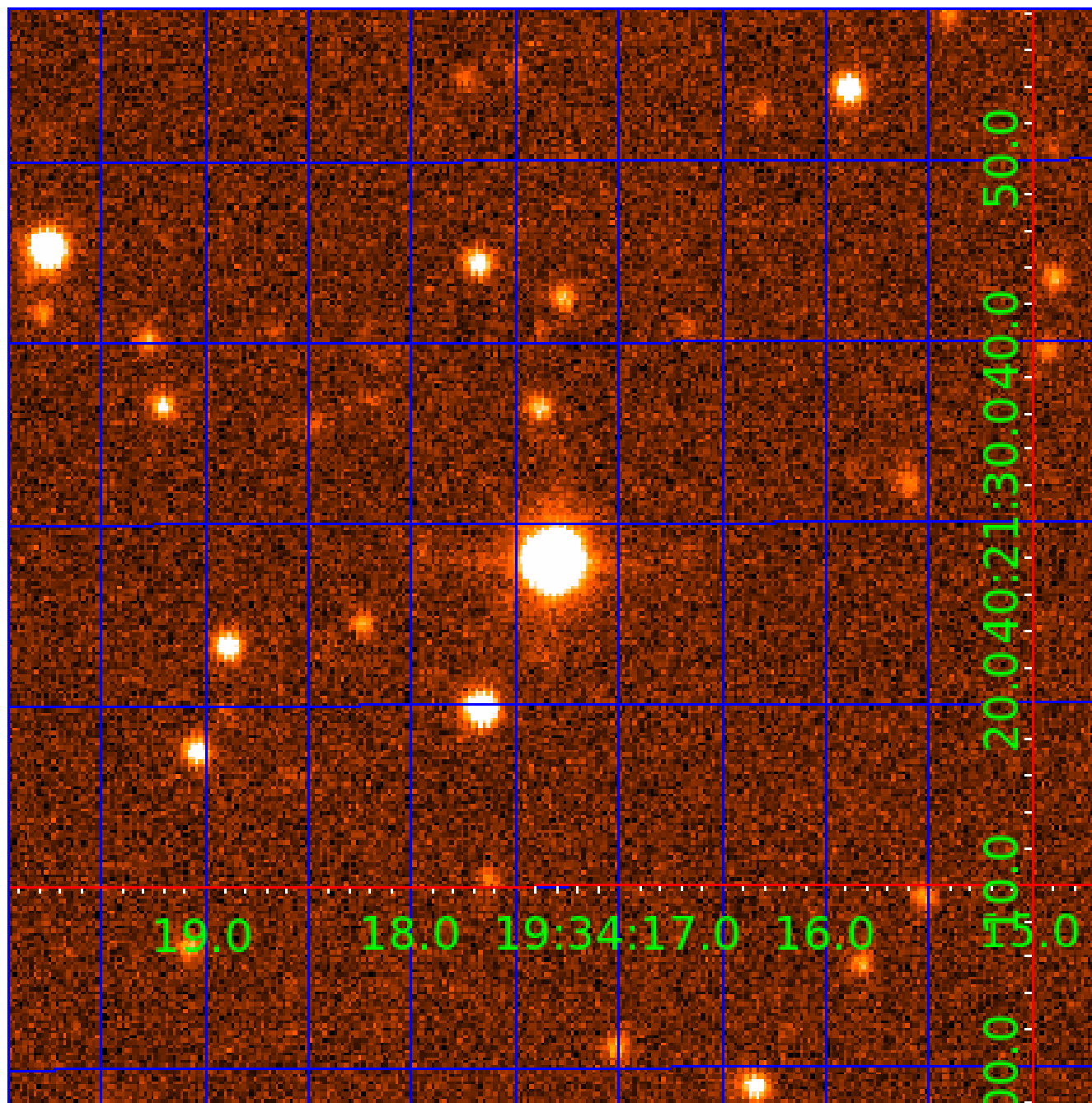


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005193077

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})
005193077-01	OBS	3492.01	22.293859	146.461323	90.8	3.951	12.1	12.2	1.39	5915	1.58	79.11
005193077-02	OBS	No	22.294799	138.519074	68.7	6.371	10.0	10.7	1.39	5915	1.34	79.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005193077-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET
005193077-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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 005193077-02

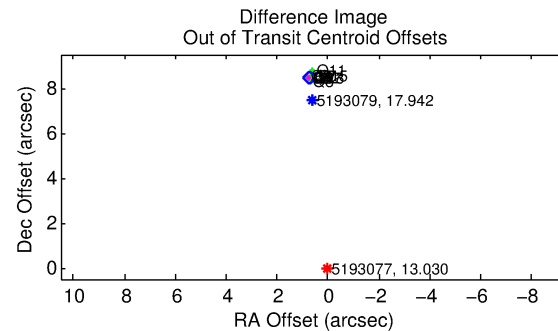
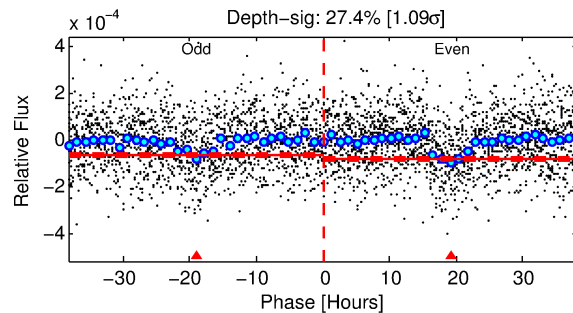
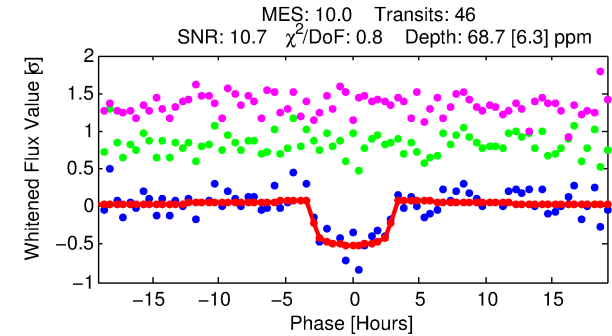
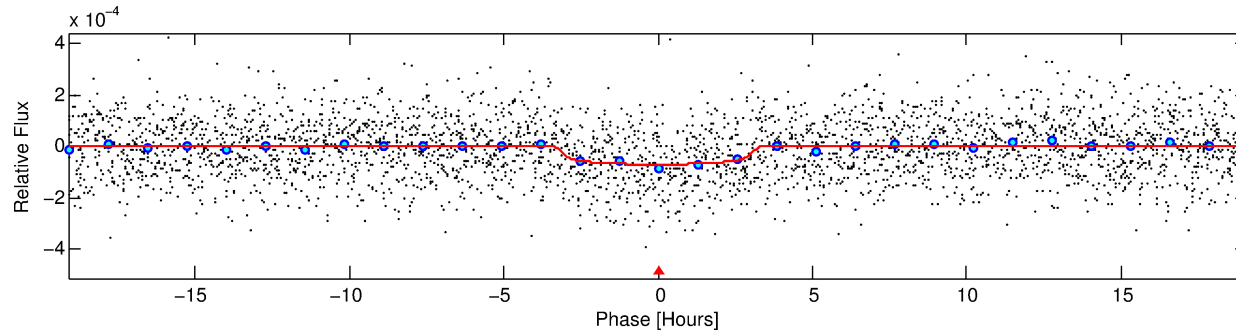
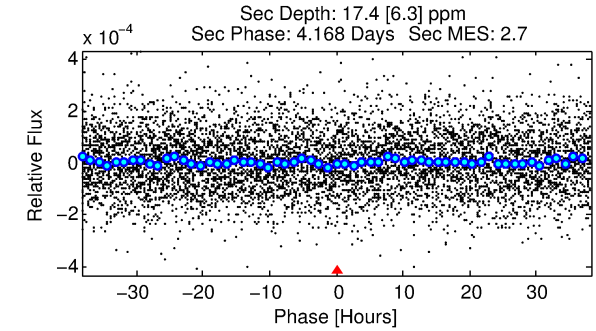
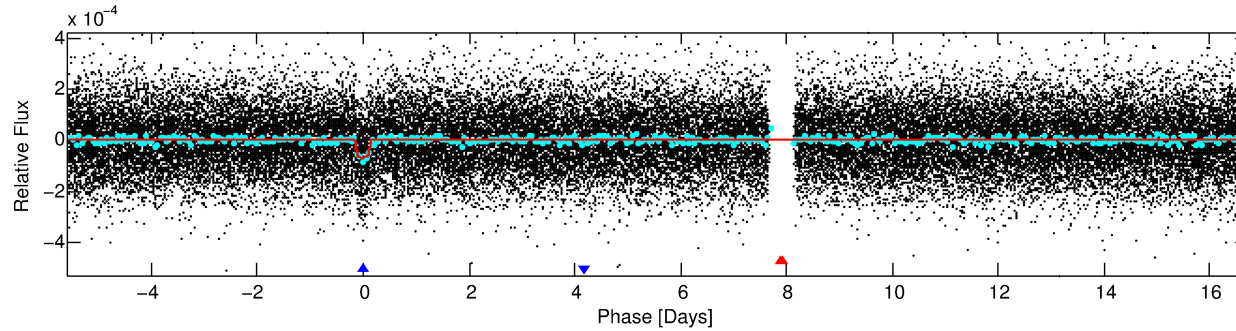
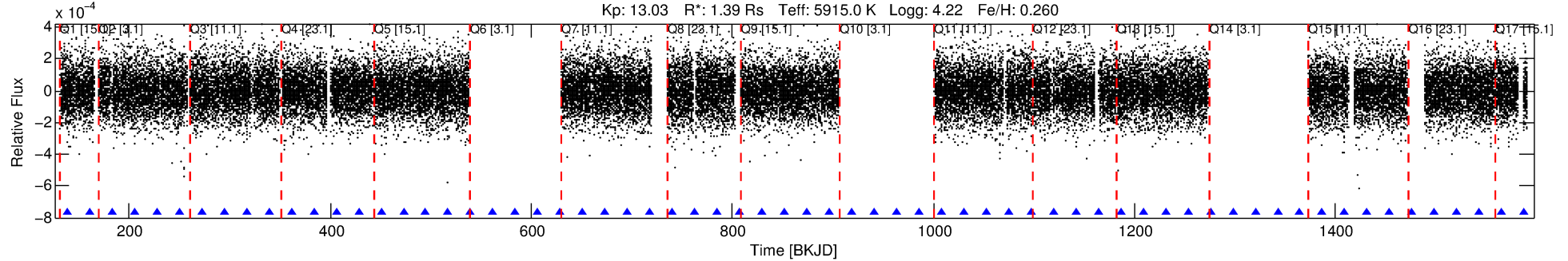
No Significant Match Found

DV One-Page Summary

KIC: 5193077 Candidate: 2 of 2 Period: 22.295 d

KOI: K03492 Corr: No Ephemeris Match

Kp: 13.03 R*: 1.39 Rs Teff: 5915.0 K Logg: 4.22 Fe/H: 0.260



DV Fit Results:

Period = 22.29480 [0.00026] d
Epoch = 138.5191 [0.0095] BKJD
Rp/R* = 0.0088 [0.0035]
a/R* = 13.62 [25.39]
b = 0.87 [0.52]
Seff = 79.10 [24.77]
Teq = 760 [60] K
Rp = 1.34 [0.60] Re
a = 0.1639 [0.0309] AU
Ag = 144.24 [132.21] [1.08σ]
Teff = 4075 [894] K [3.70σ]

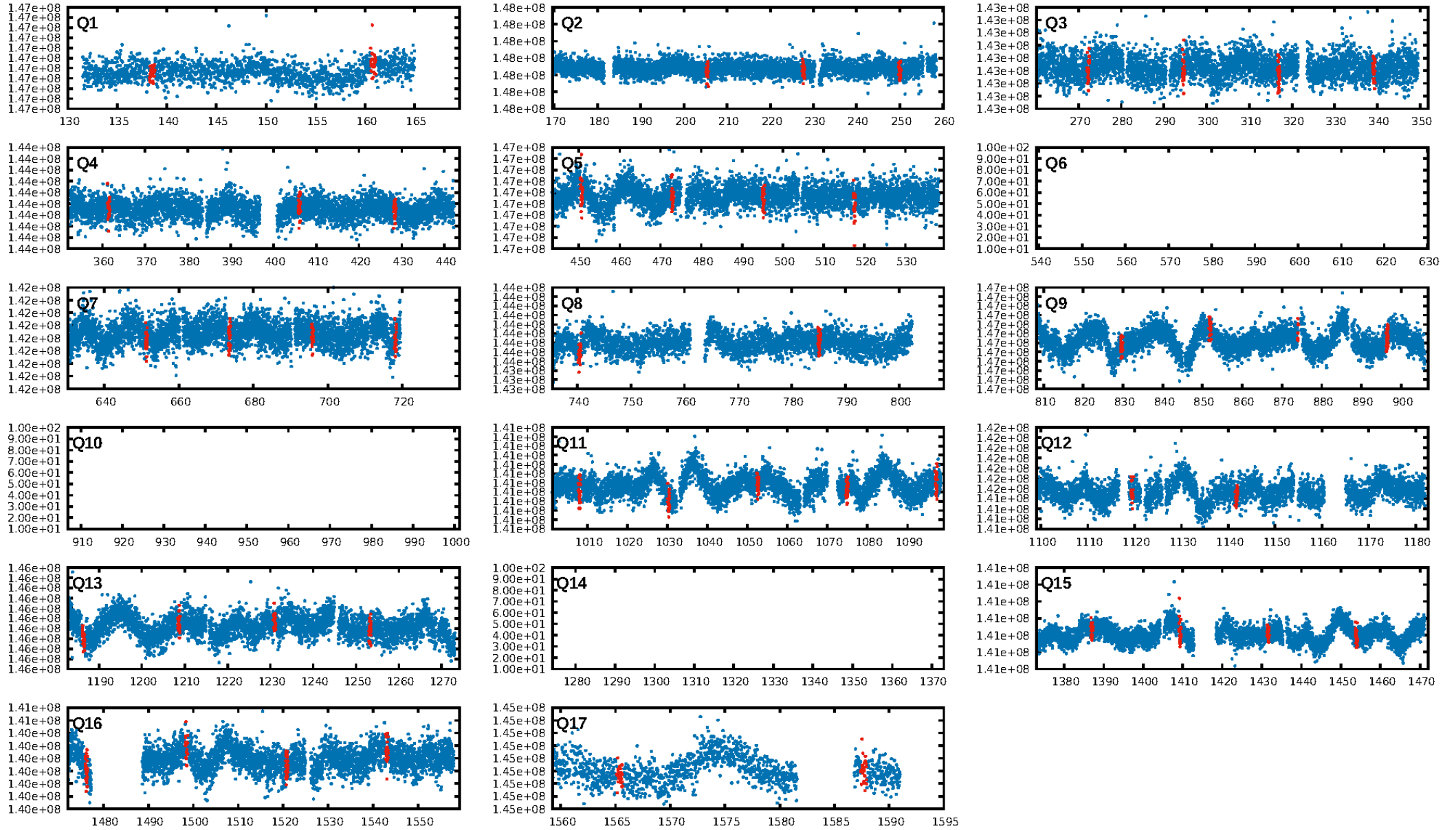
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.28e-22
RollingBand-fgt: 1.00 [42/42]
GhostDiagnostic-chr: -0.3333
Centroid-sig: 0.0%
Centroid-so: 46.308 arcsec [42.17σ]
OotOffset-rm: 8.493 arcsec [119.37σ]
KicOffset-rm: 8.464 arcsec [117.34σ]
OotOffset-st: 1/4/2/5 [12]
KicOffset-st: 1/4/2/5 [12]
DiffImageQuality-fgm: 0.92 [11/12]
DiffImageOverlap-fno: 1.00 [14/14]

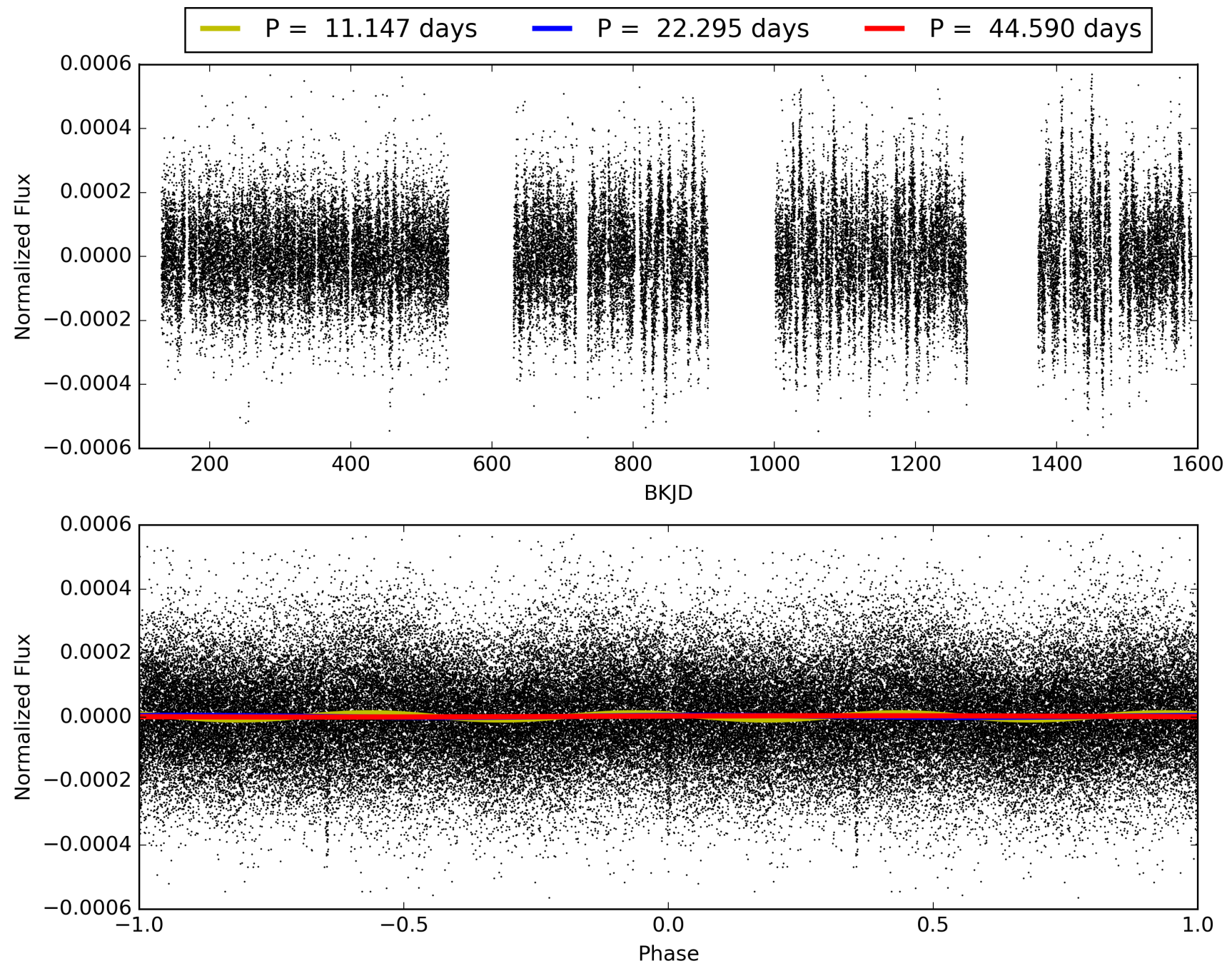
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:46:50 Z

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

TCE 005193077-02, PDC Light Curves

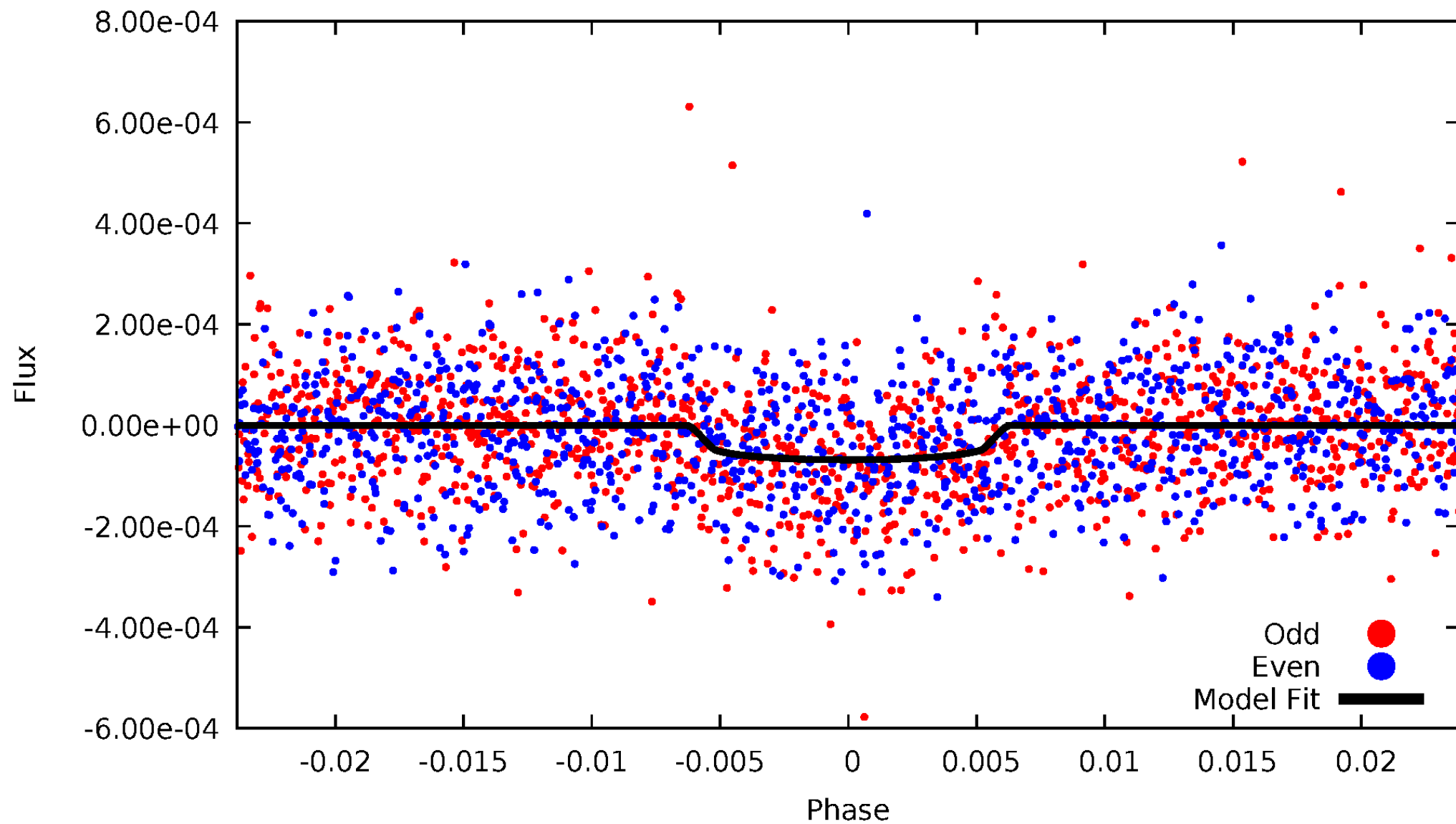


TCE 005193077-02



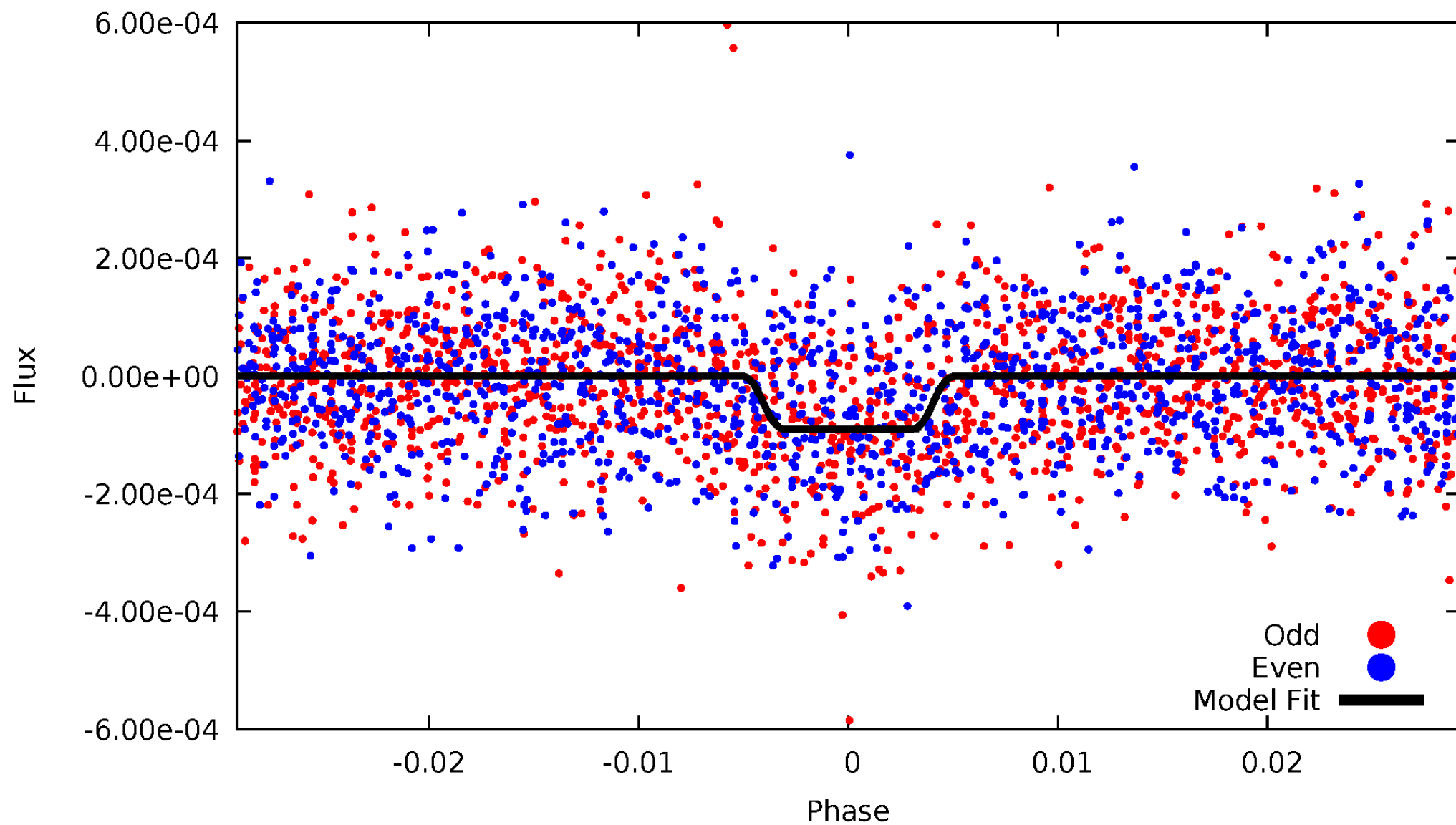
DV Odd/Even

TCE 005193077-02



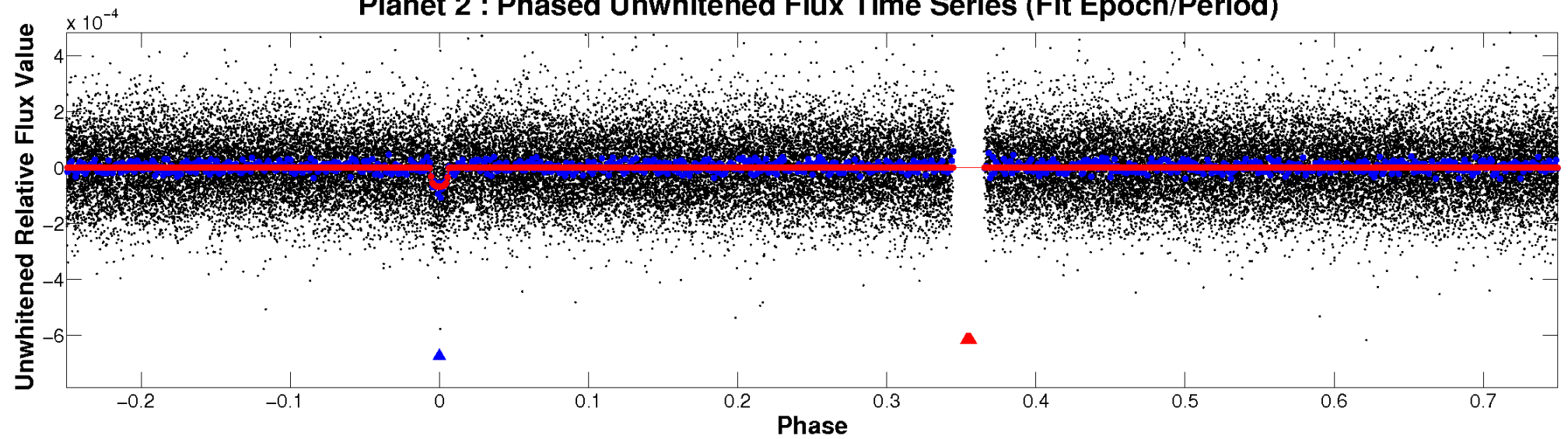
ALT Odd/Even

TCE 005193077-02

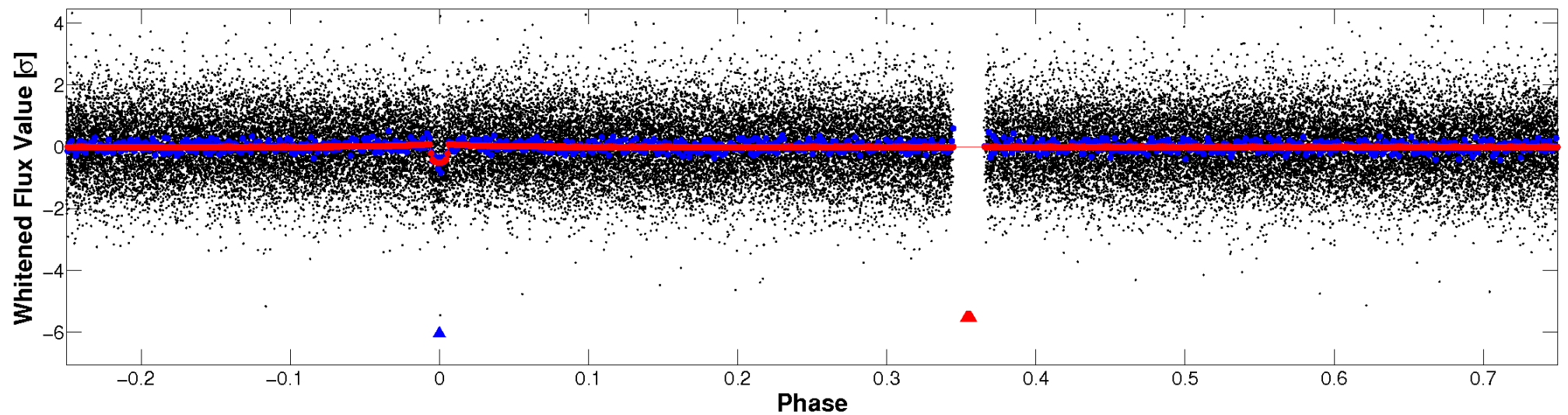


Non-Whitened Vs. Whitened Light Curve

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

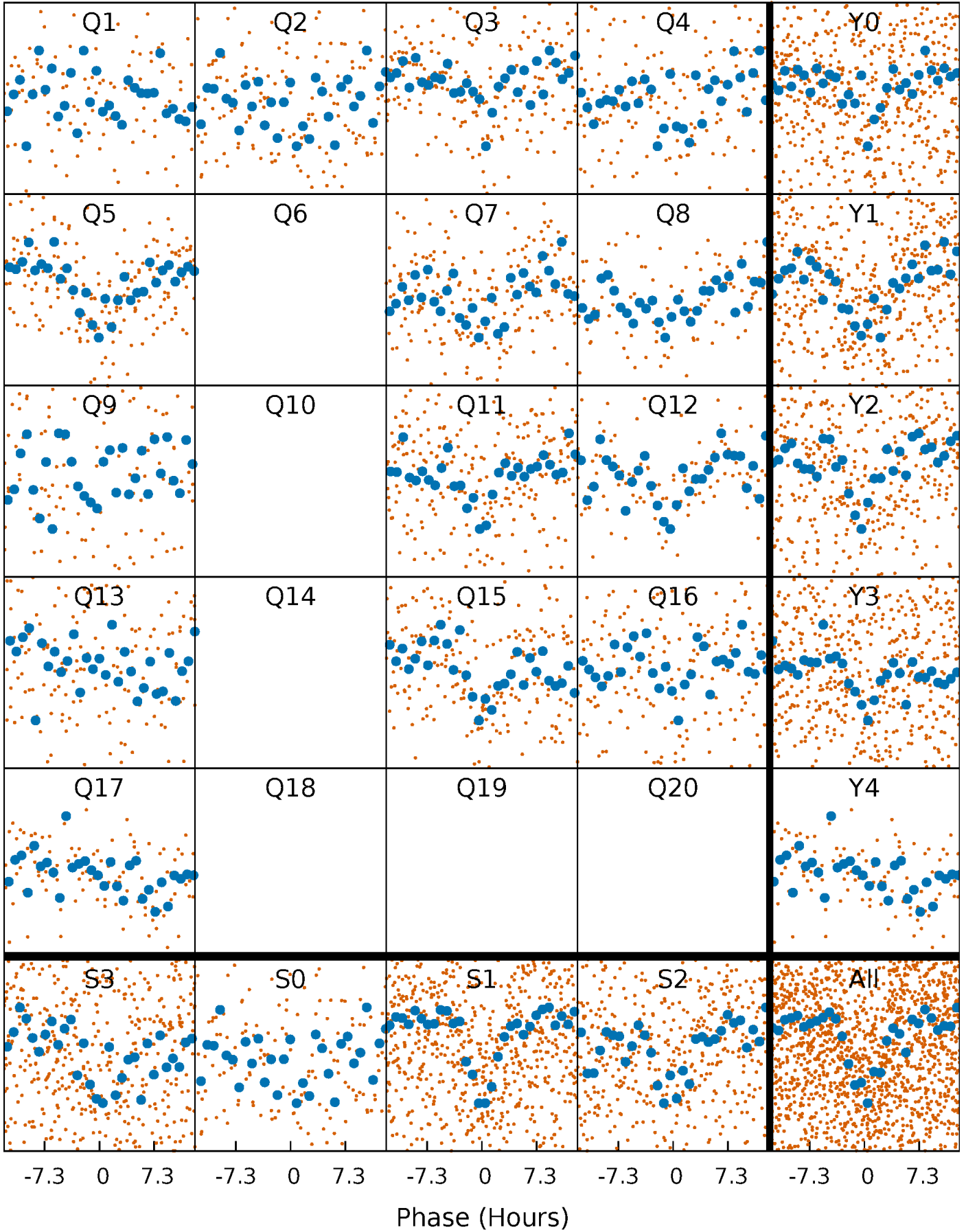


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



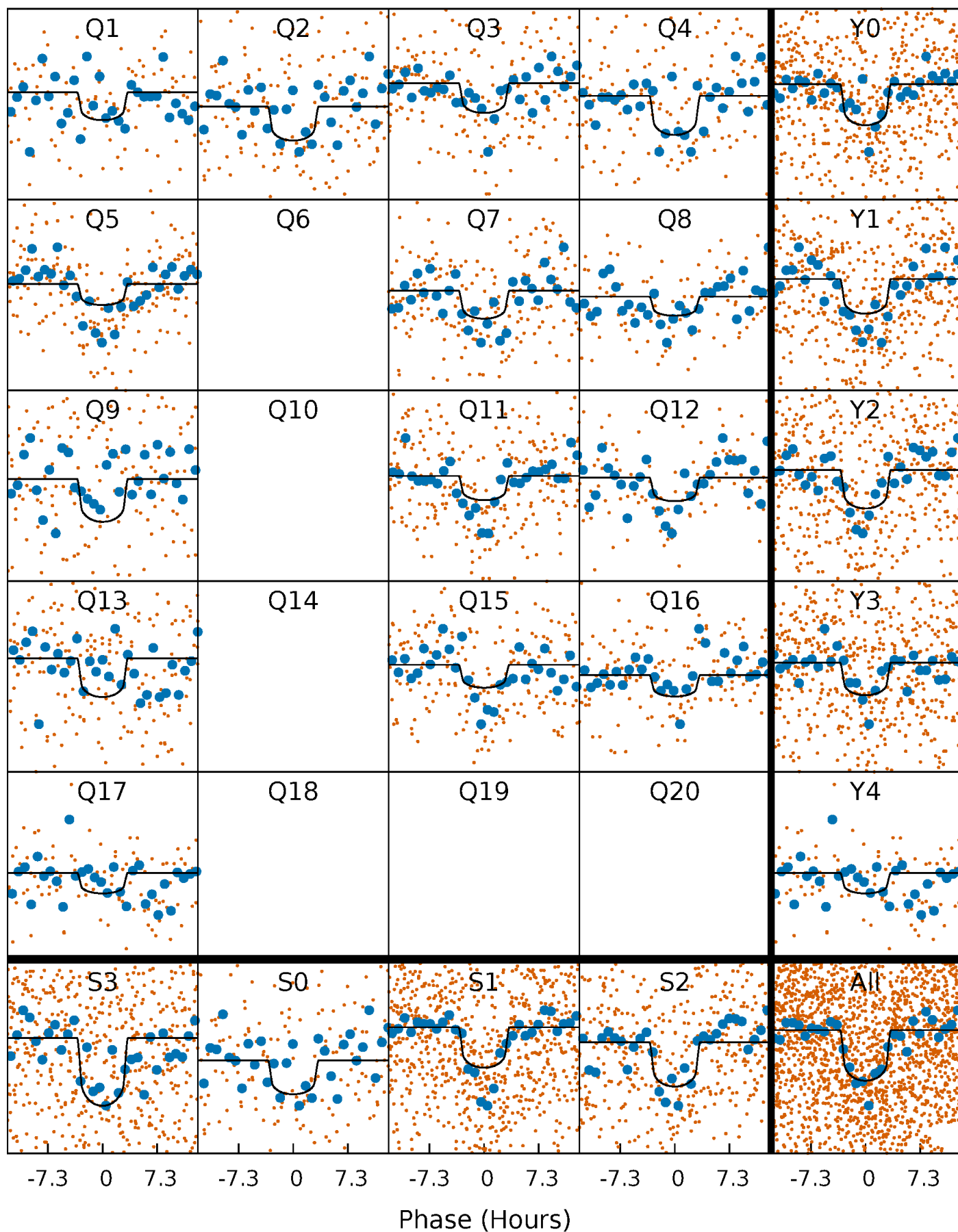
PDC Quarter-Phased Transit Curves

TCE 005193077-02 P= 22.294799 Days $T_0=138.519074$ (BKJD)



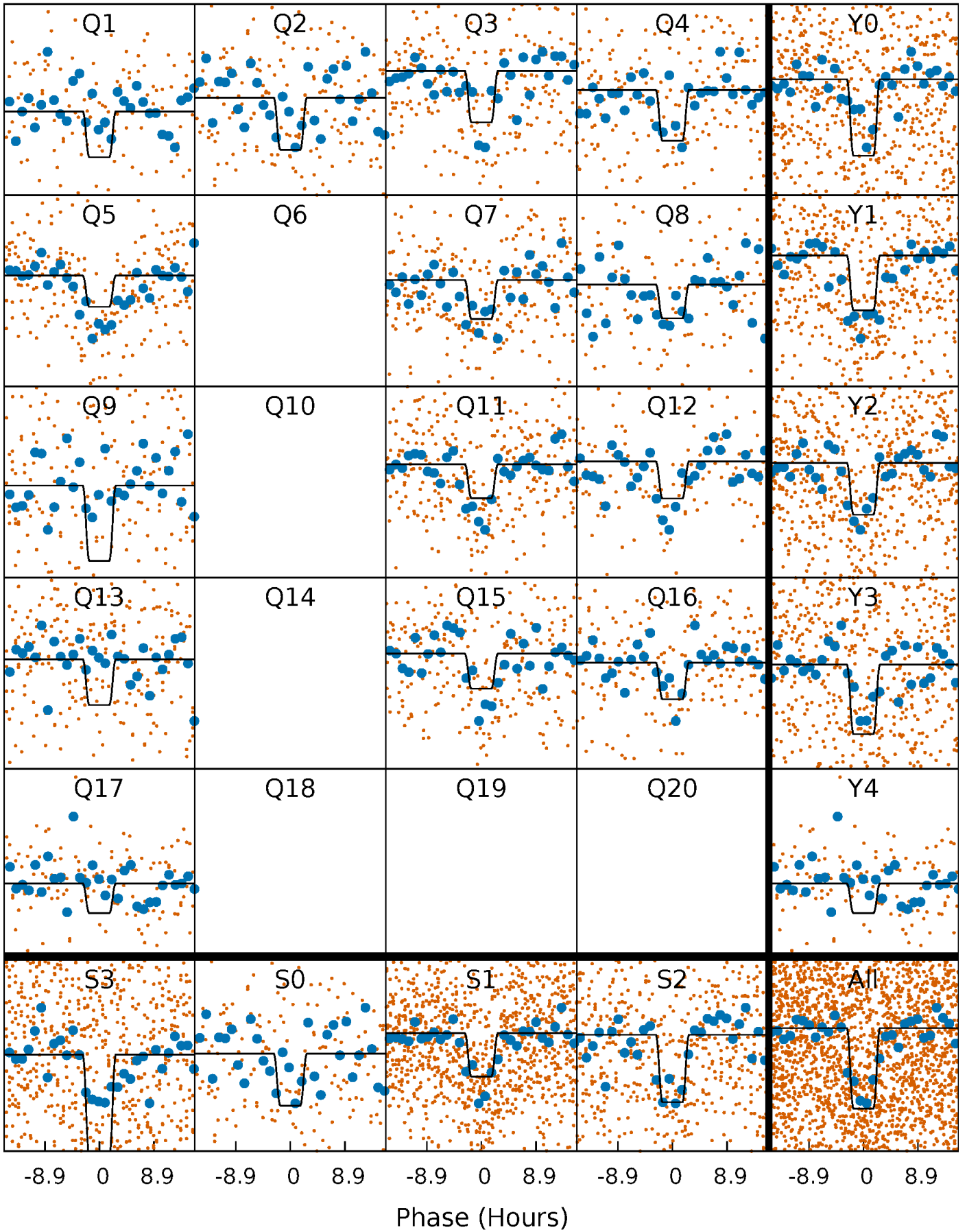
DV Quarter-Phased Transit Curves

TCE 005193077-02 P= 22.294799 Days $T_0=138.519074$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

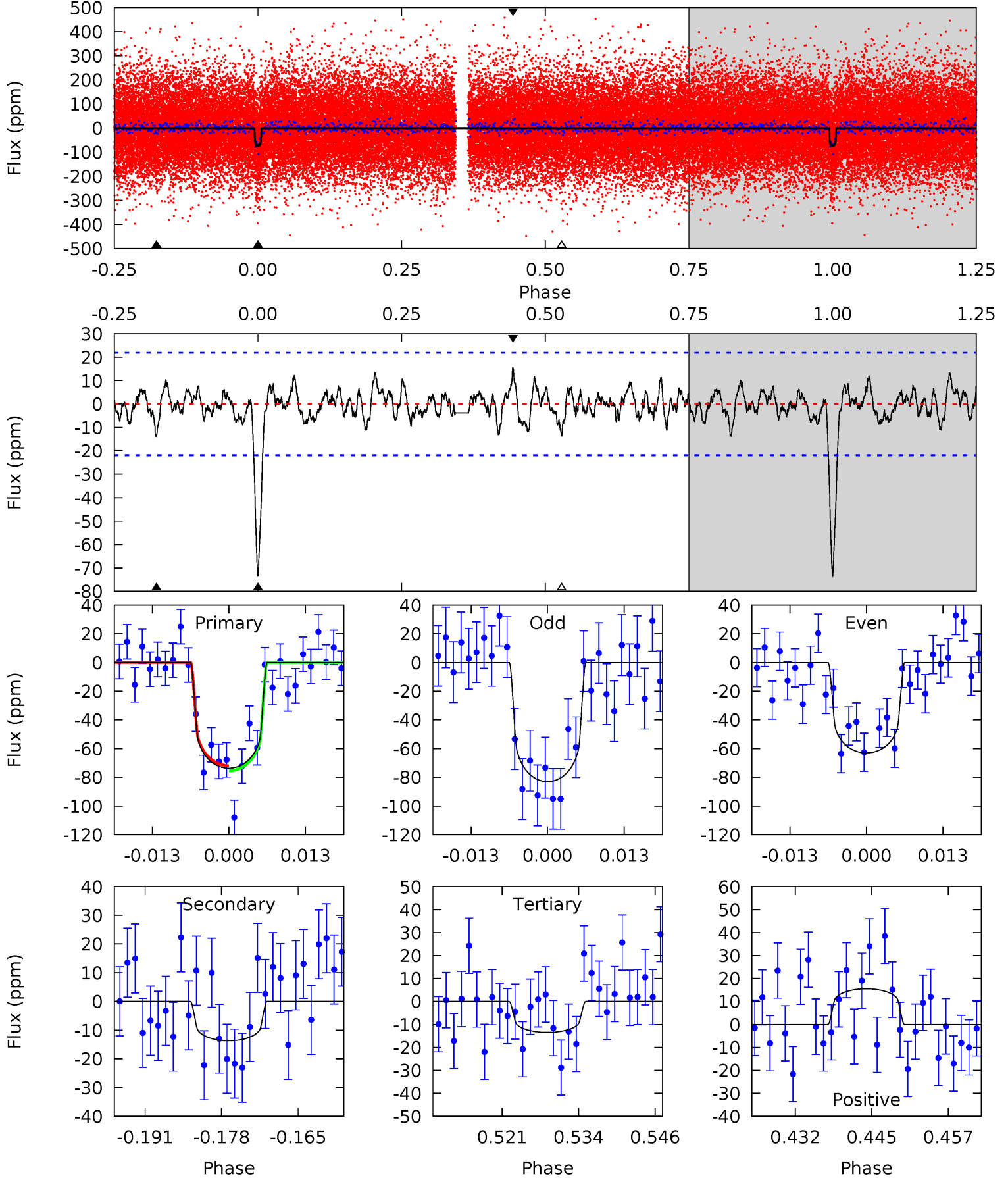
TCE 005193077-02 P= 22.294246 Days $T_0=138.541332$ (BKJD)



DV Model-Shift Uniqueness Test

005193077-02, P = 22.294799 Days, E = 116.224275 Days

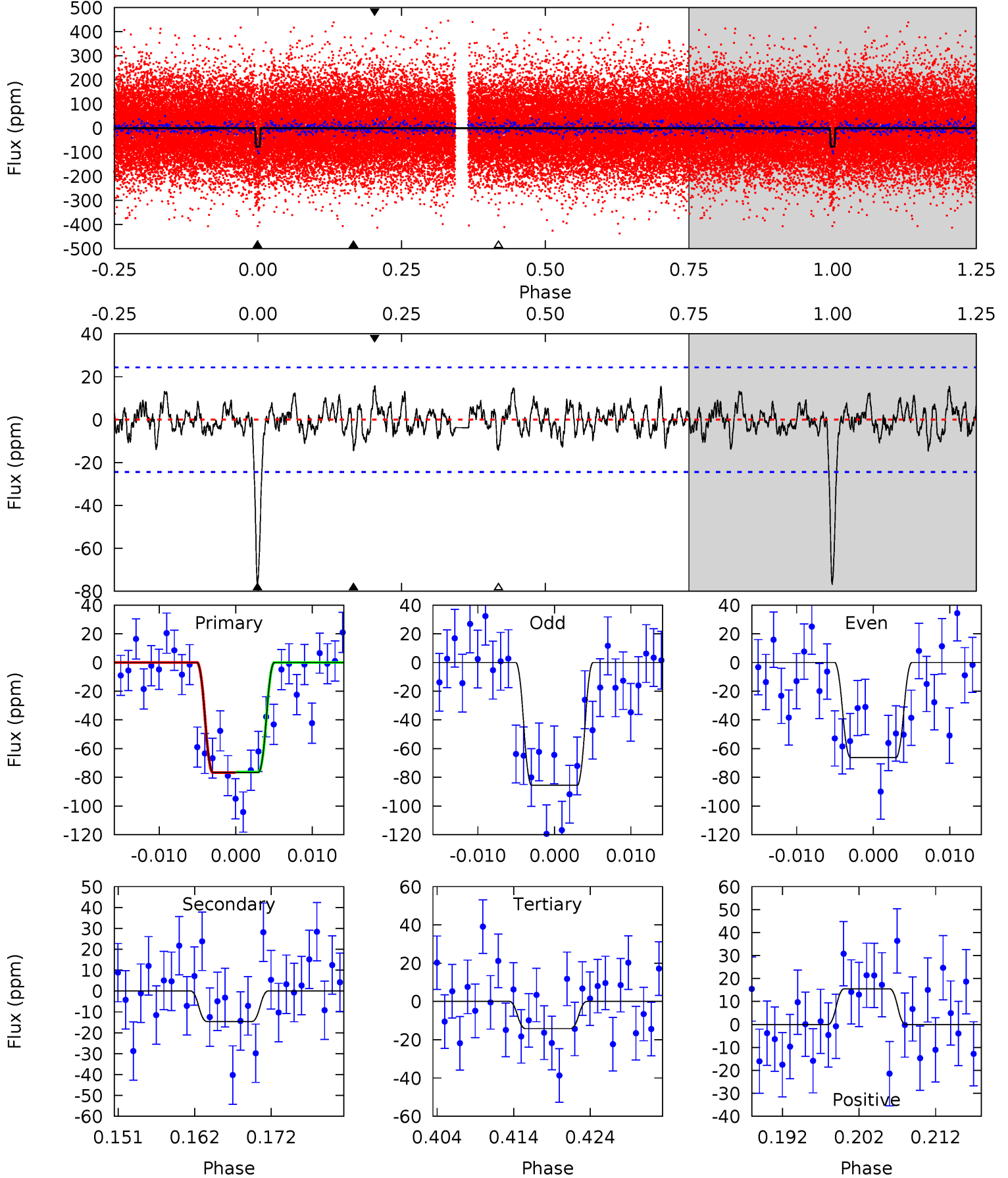
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	3.11	3.06	3.53	4.98	2.49	1.11	13.7	13.2	0.05	-0.42	2.27	0.95	0.17	0.40



Alt Model-Shift Uniqueness Test

005193077-02, P = 22.294246 Days, E = 116.247086 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	3.00	2.92	3.20	5.02	2.57	1.05	12.8	12.6	0.08	-0.20	2.00	0.89	0.17	0.05



Stellar Parameters For KIC 005193077

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5915^{+160}_{-178}	$4.223^{+0.165}_{-0.135}$	$0.260^{+0.150}_{-0.300}$	$1.392^{+0.291}_{-0.291}$	$1.183^{+0.109}_{-0.176}$	$0.618^{+0.534}_{-0.247}$
	+3%/-3%	+4%/-3%	+58%/-115%	+21%/-21%	+9%/-15%	+86%/-40%
Source	PHO1	FLK73	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 005193077-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 4	$1.34^{+0.58}_{-0.55}$	1055^{+71}_{-58}	4052^{+907}_{-463}	108^{+214}_{-59}
Alt.	-15 ± 5	$1.44^{+0.52}_{-0.59}$	1061^{+59}_{-64}	4020^{+859}_{-466}	101^{+190}_{-54}

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 $A_{obs} \gg 1.0$

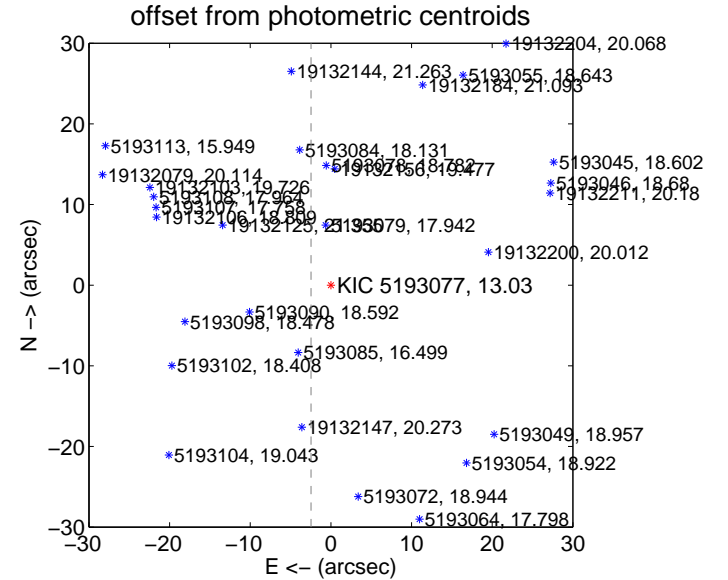
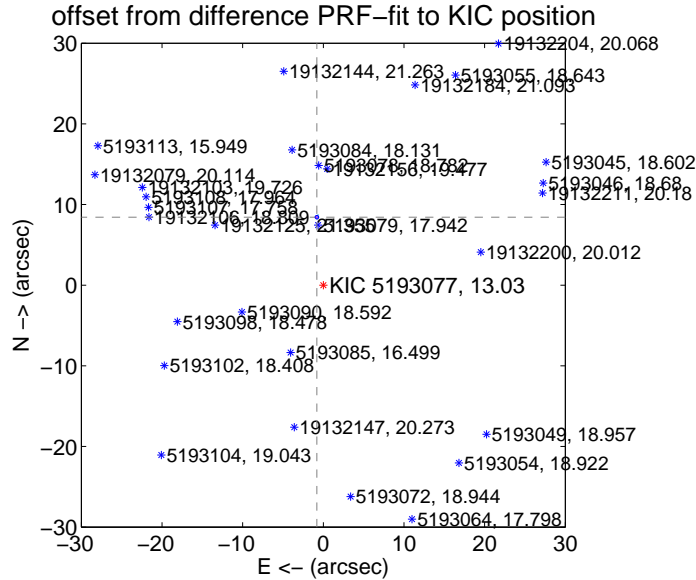
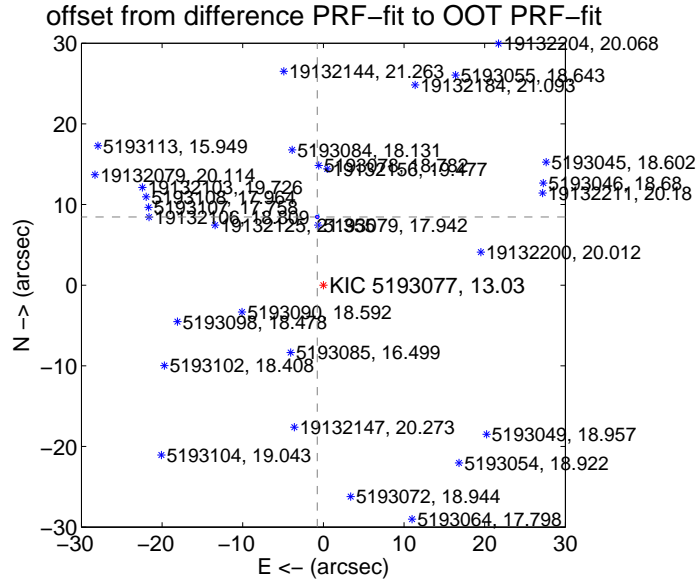
DV Centroid Data

Supplemental centroid analysis for 005193077-02. Kepler magnitude: 13.03. Transit SNR 10.66

There are 11 quarters with good PRF difference image offsets

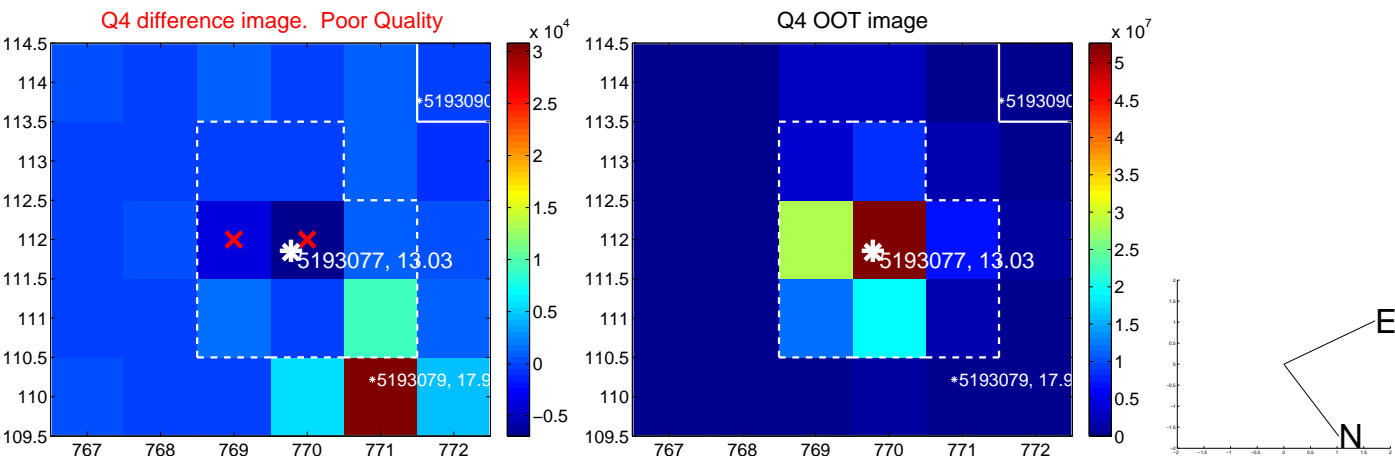
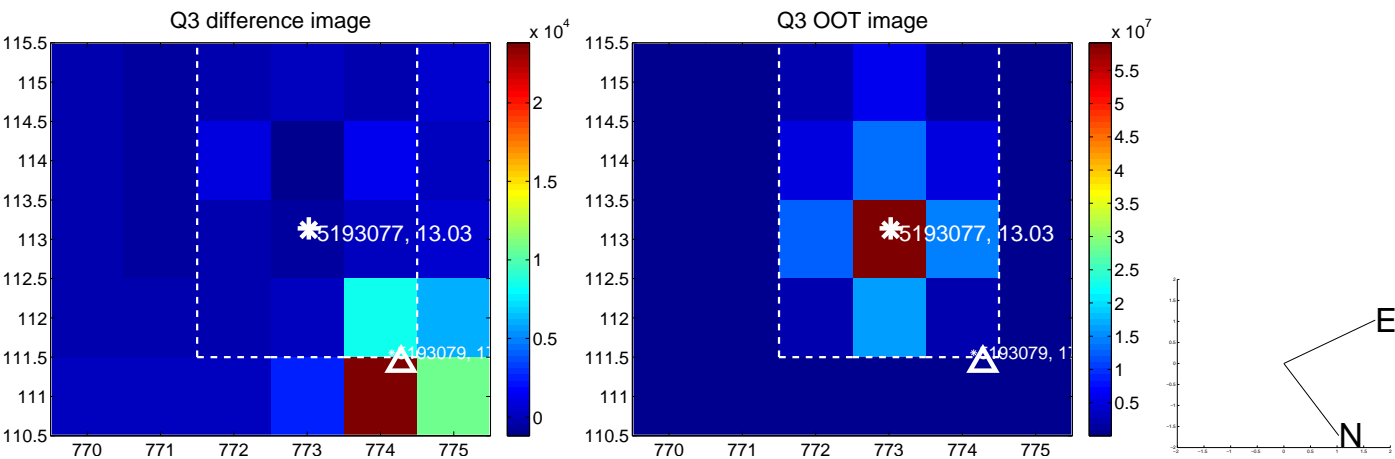
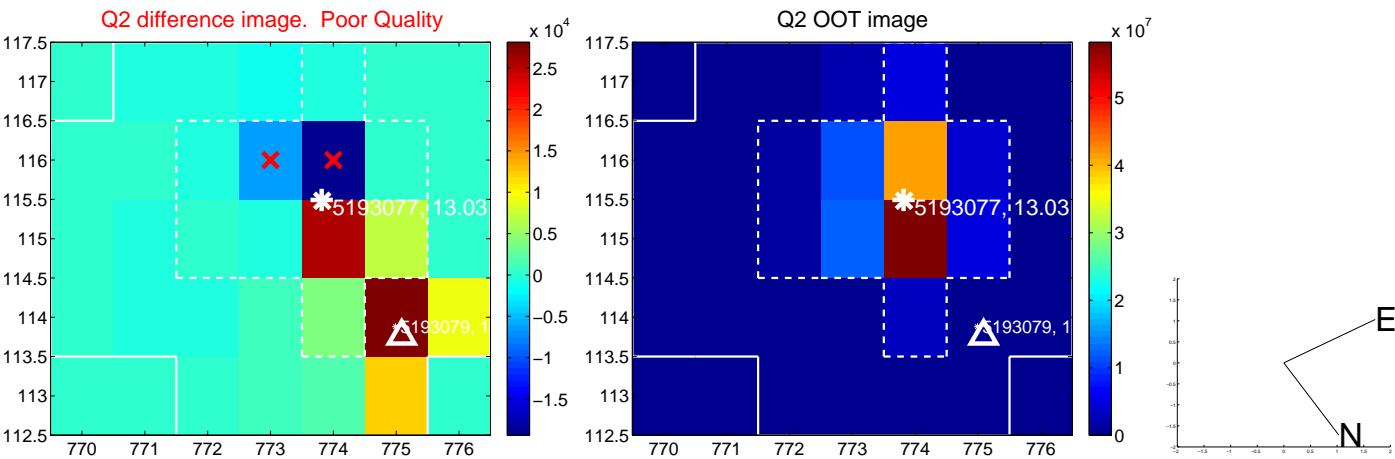
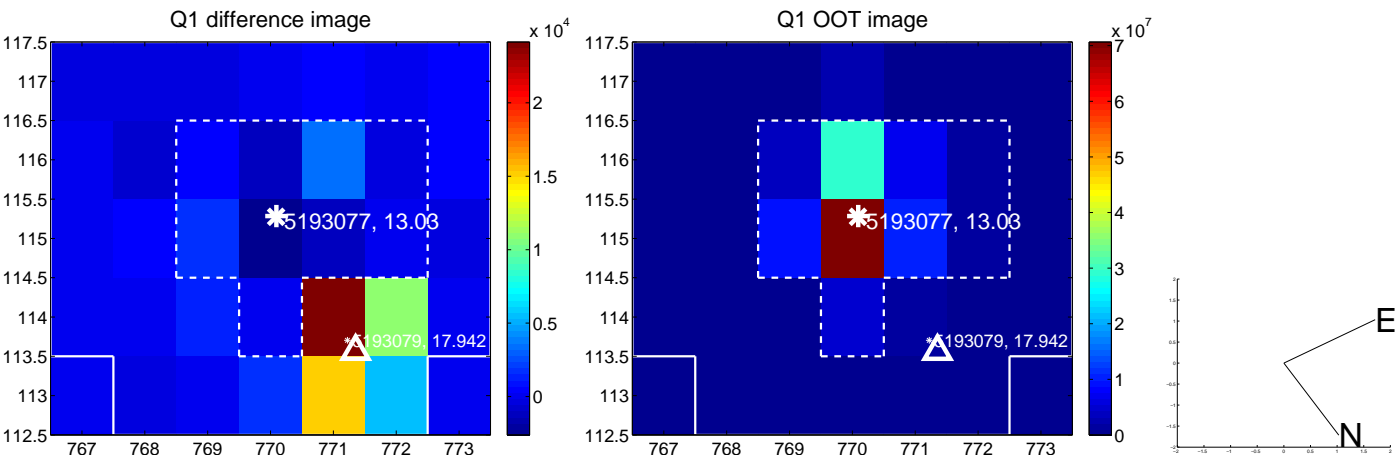
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.493 \pm 0.071	119.37	0.758 \pm 0.071	8.460 \pm 0.072
PRF-fit source offset from KIC position	8.464 \pm 0.072	117.34	0.799 \pm 0.070	8.426 \pm 0.073
photometric centroid source offset	46.31 \pm 1.10	42.17	2.46 \pm 1.02	46.24 \pm 1.10

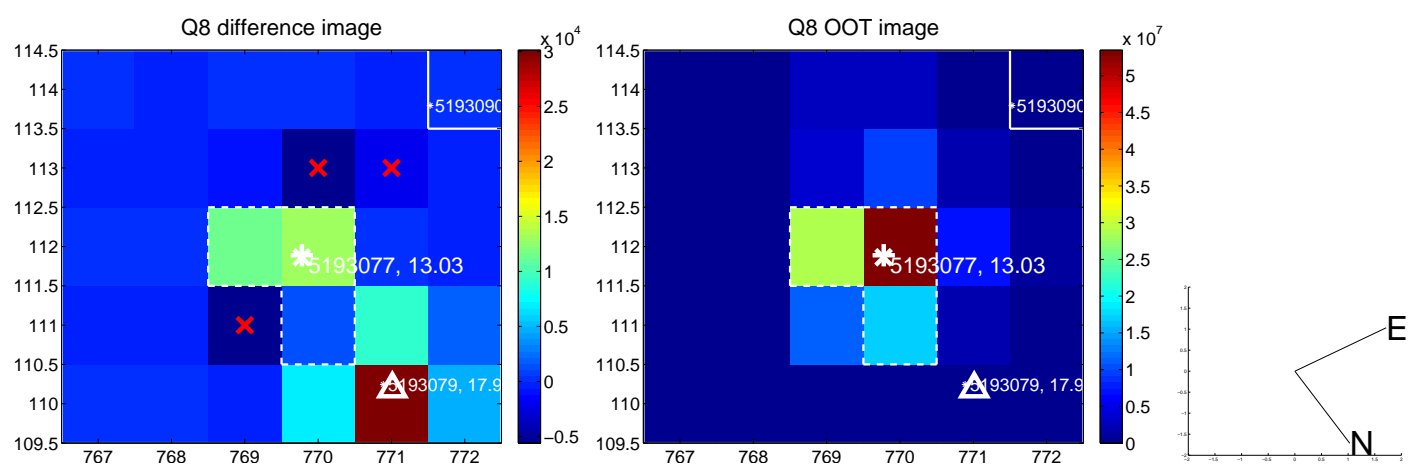
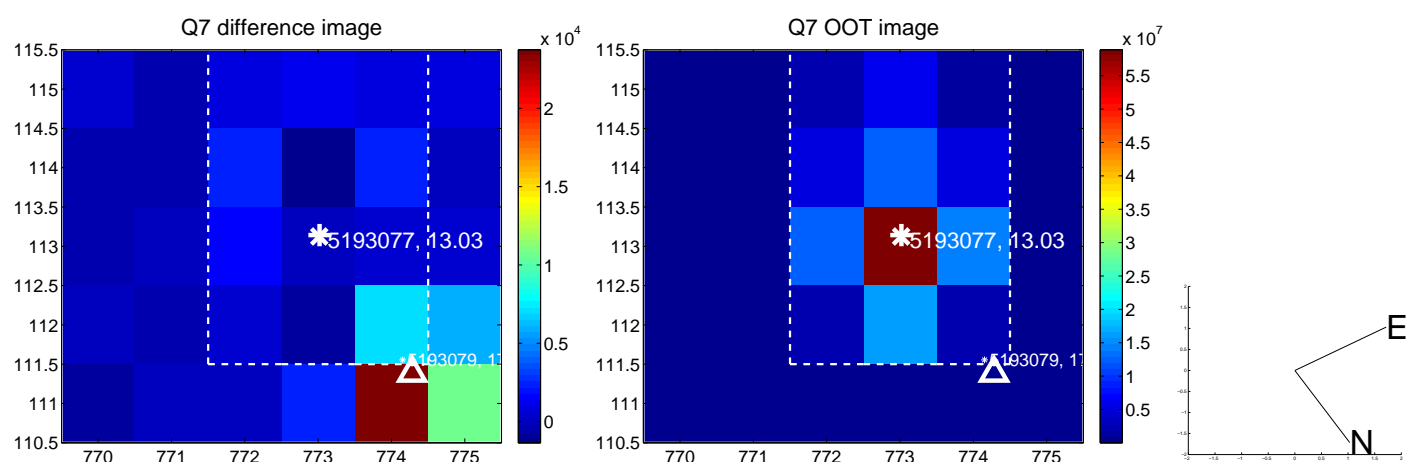
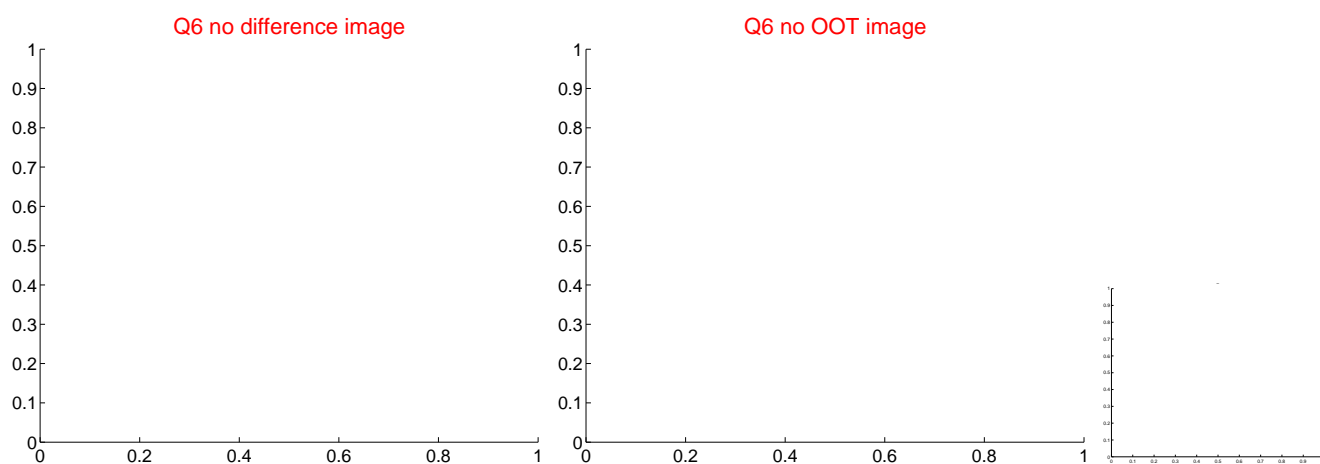
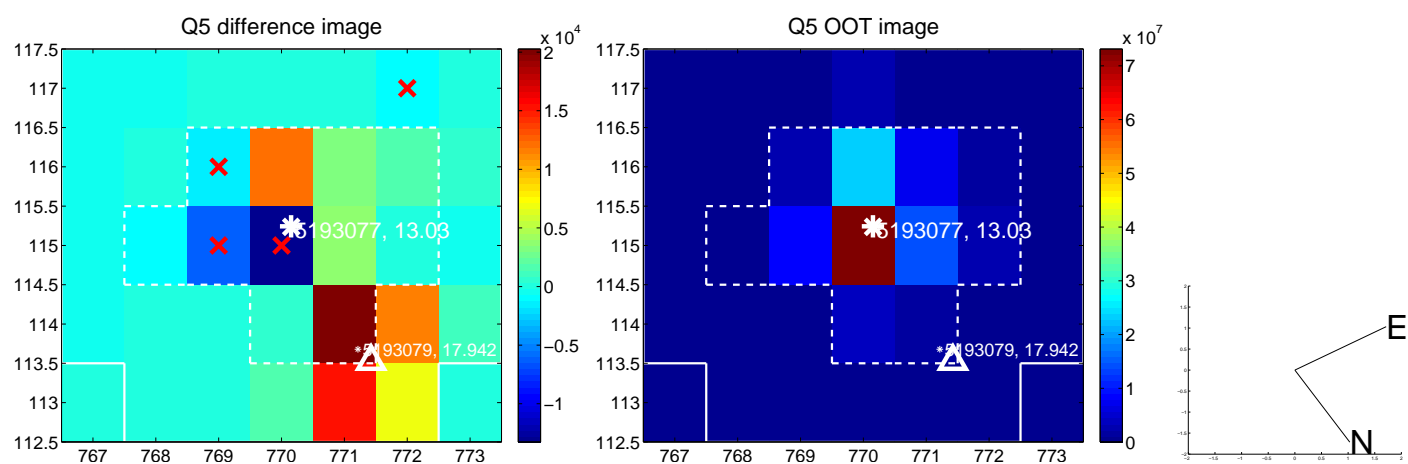


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

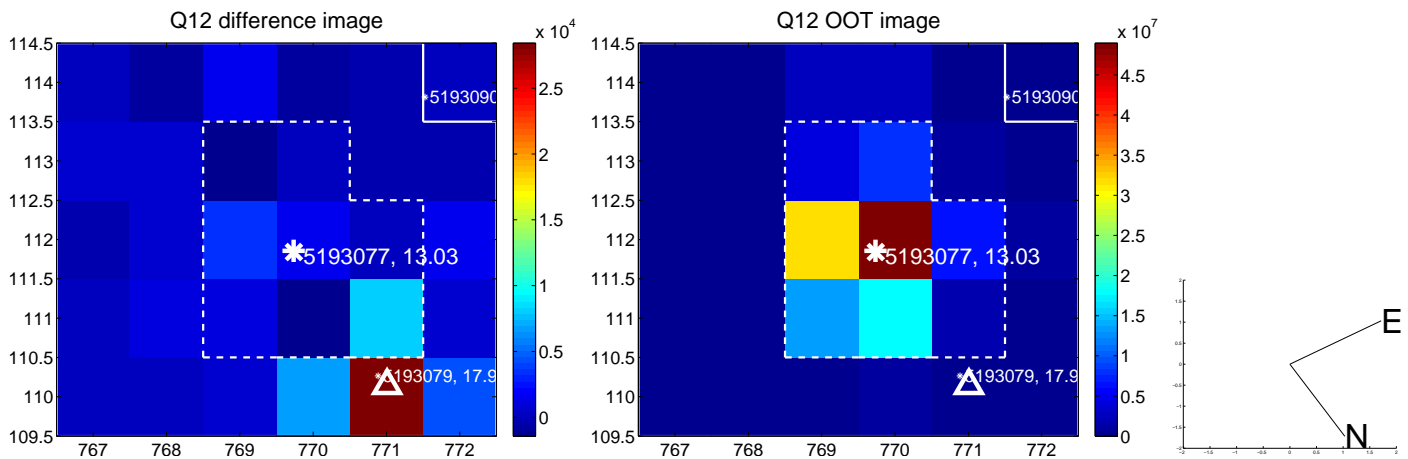
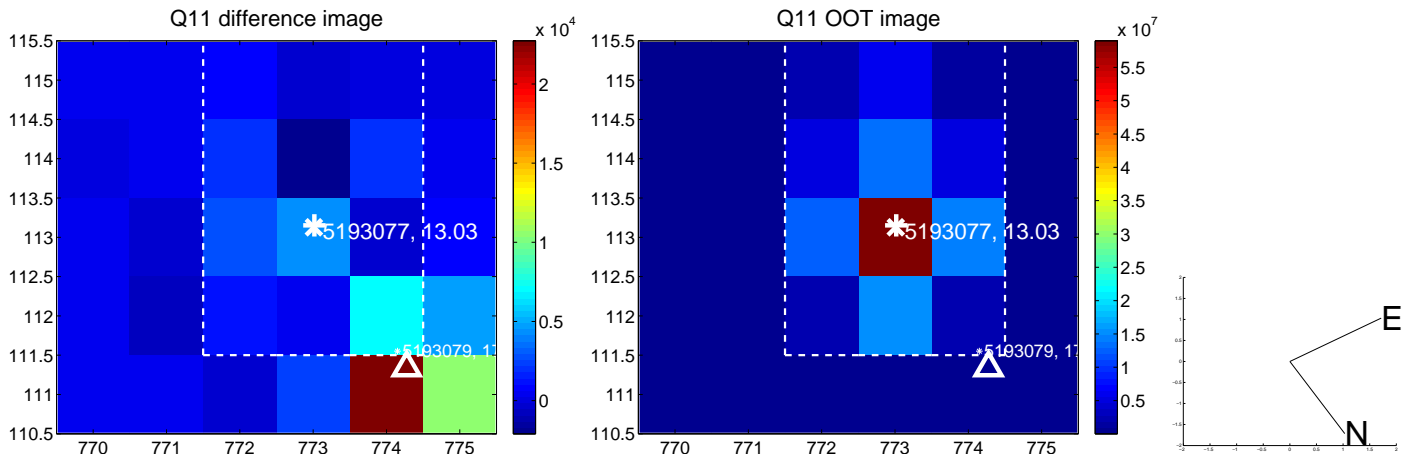
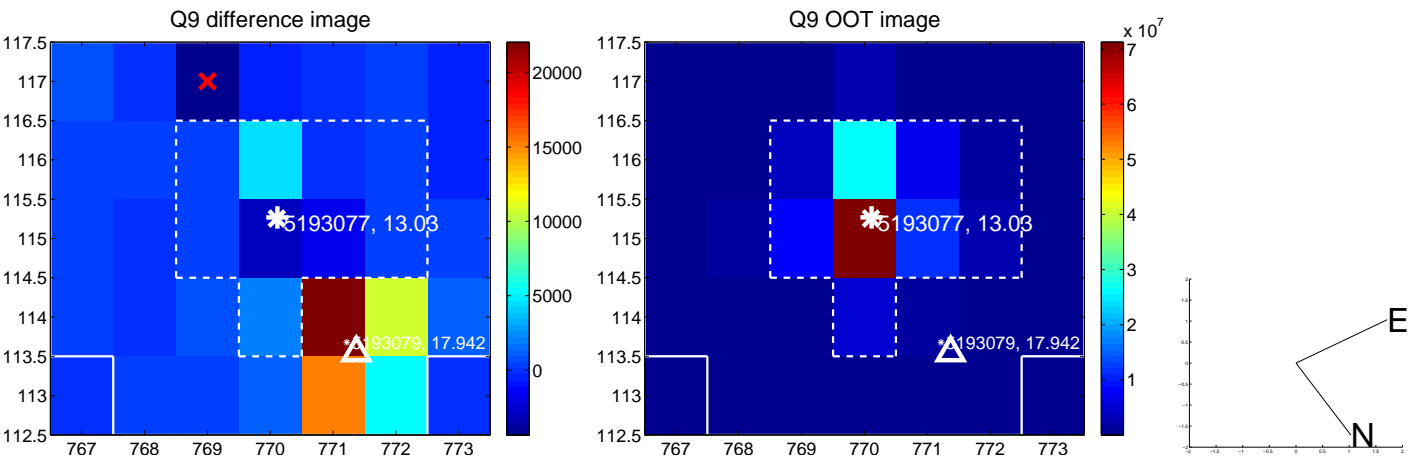
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



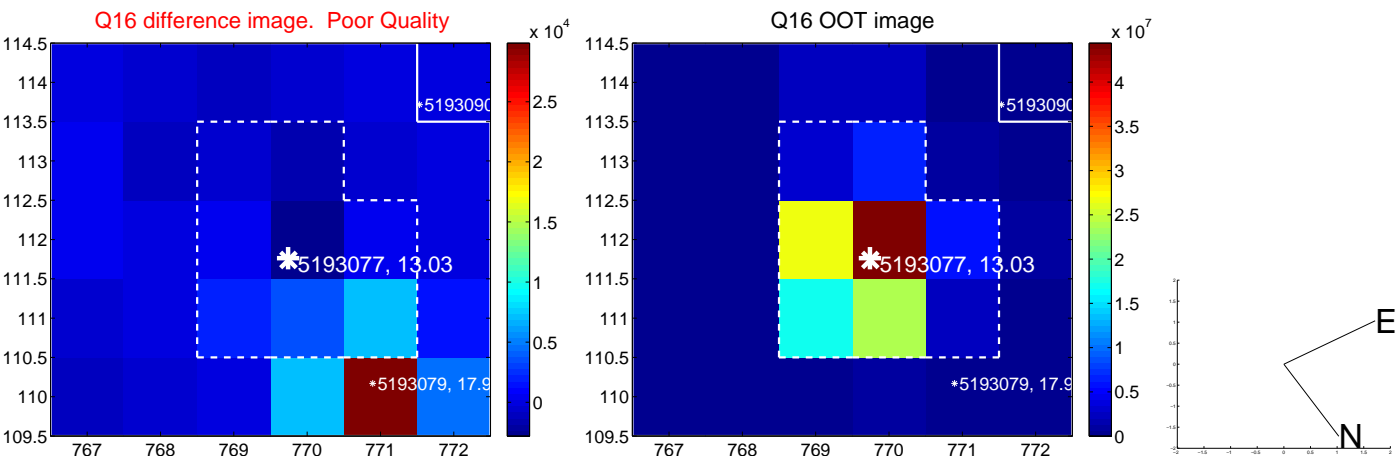
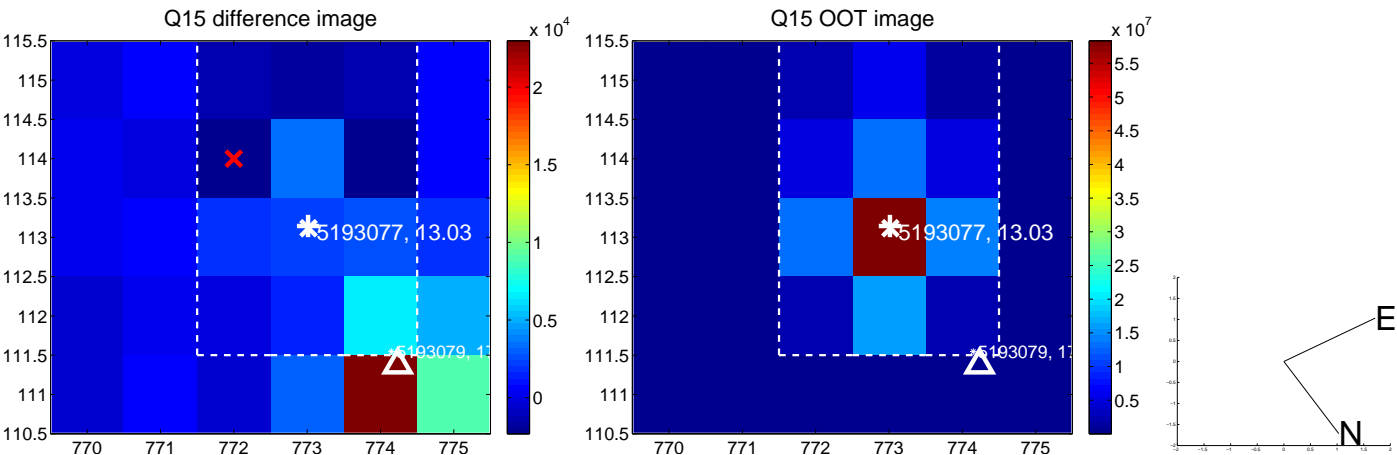
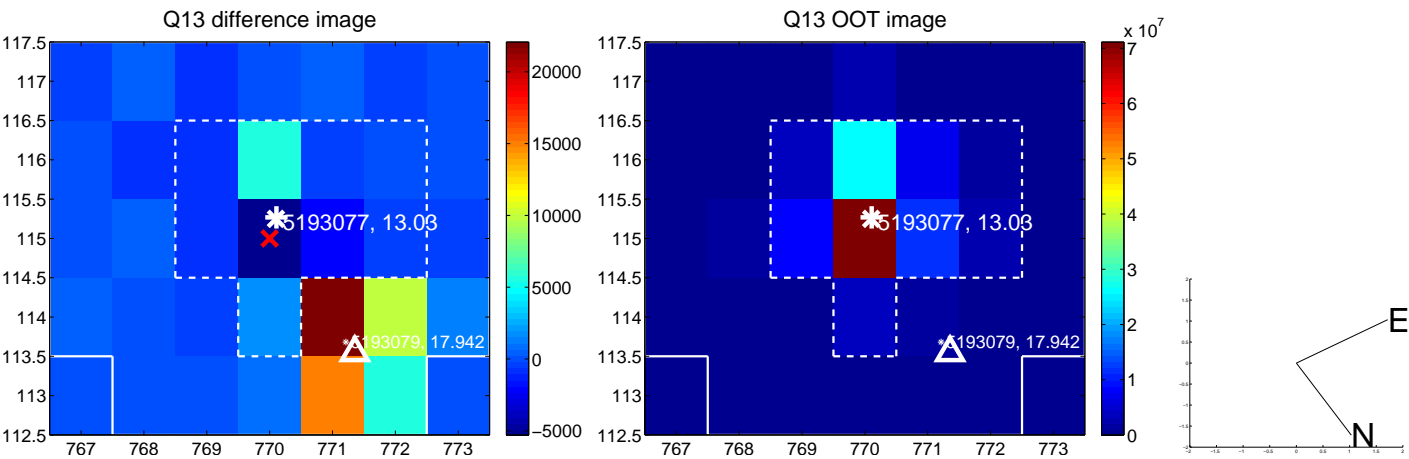
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



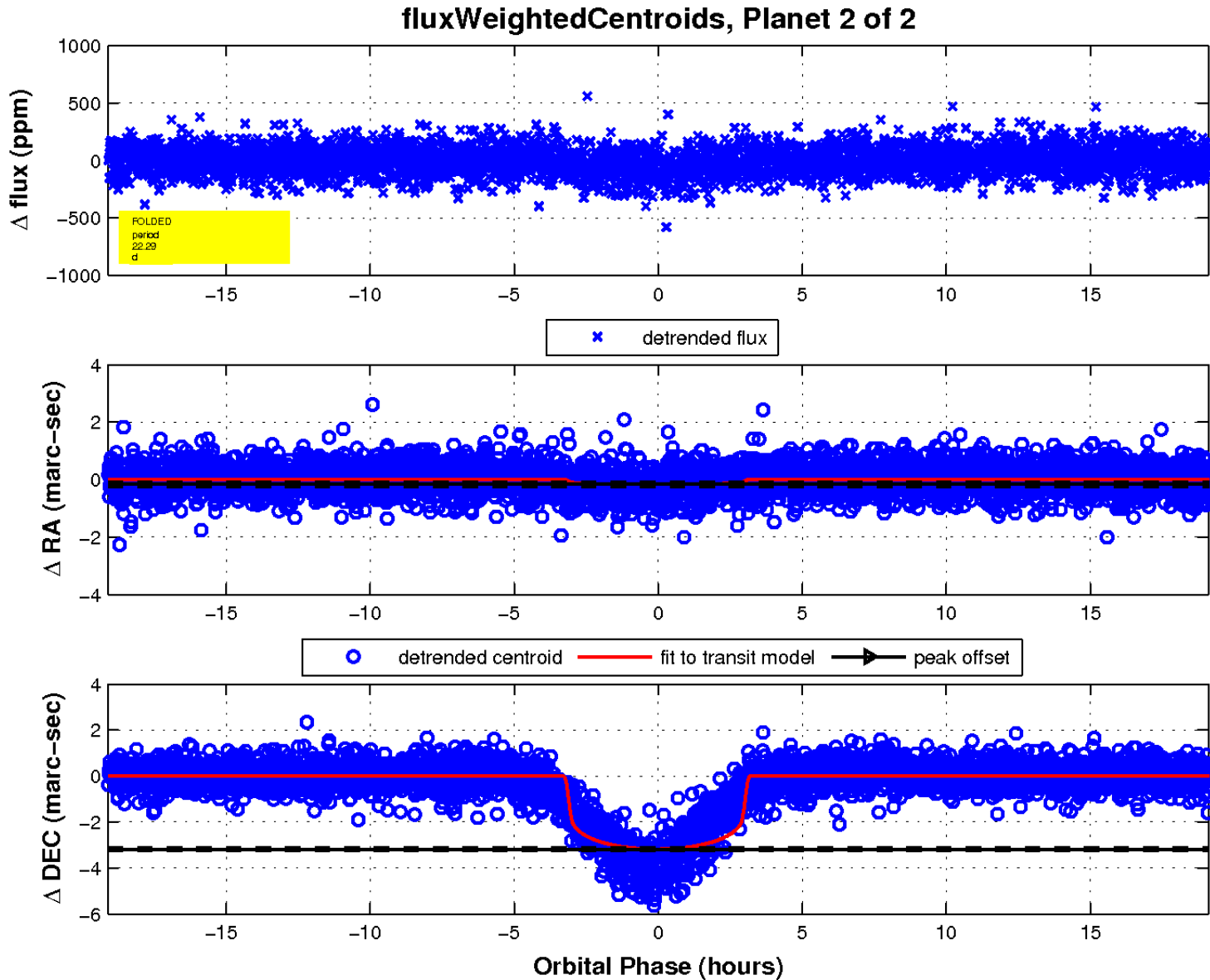
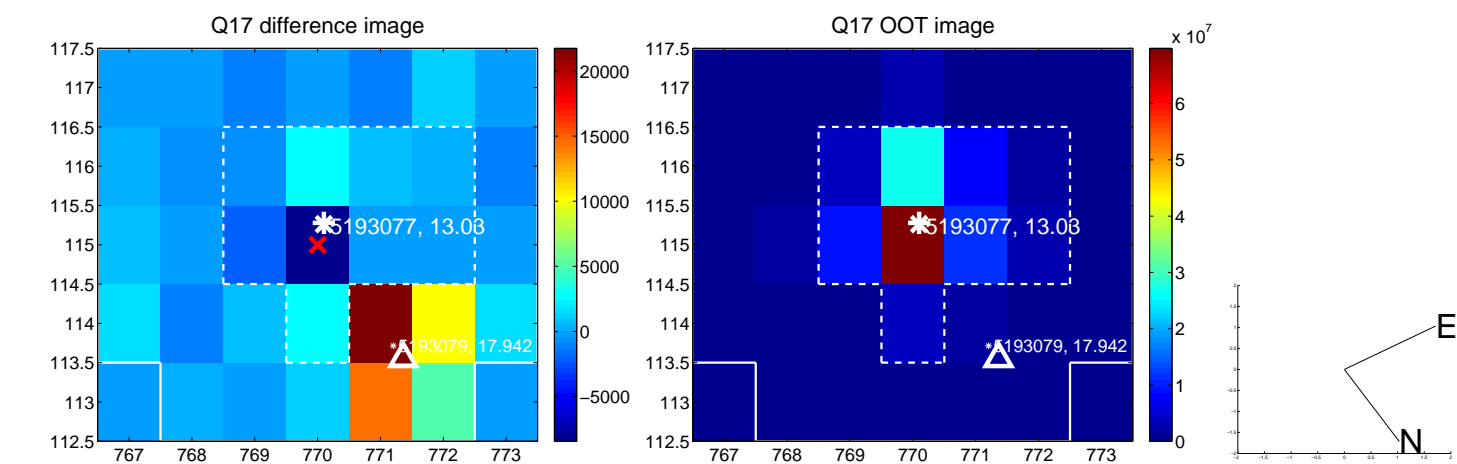
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

