

KIC 008218379

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})
008218379-01	OBS	1920.01	16.571035	133.904989	638.8	2.974	33.9	36.1	0.78	5483	2.14	33.59
008218379-02	OBS	1920.02	10.138438	137.716737	95.5	4.318	7.2	7.9	0.78	5483	0.94	64.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008218379-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008218379-02	OBS	PC	0.85	0	0	0	0	NO_COMMENT

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.

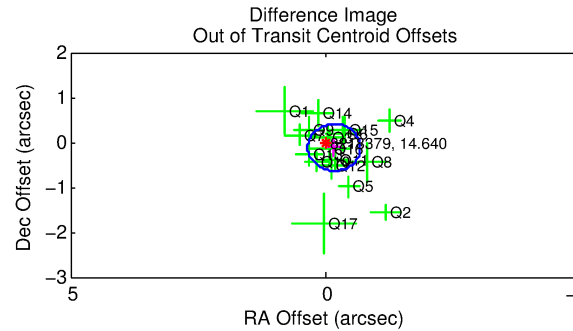
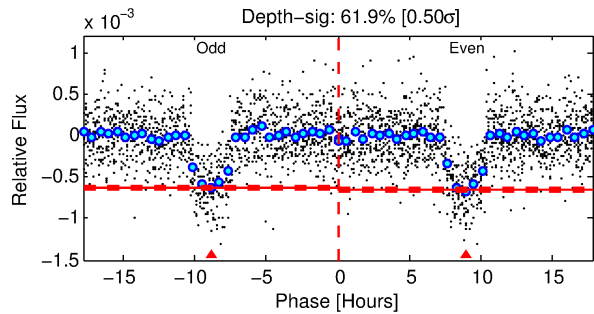
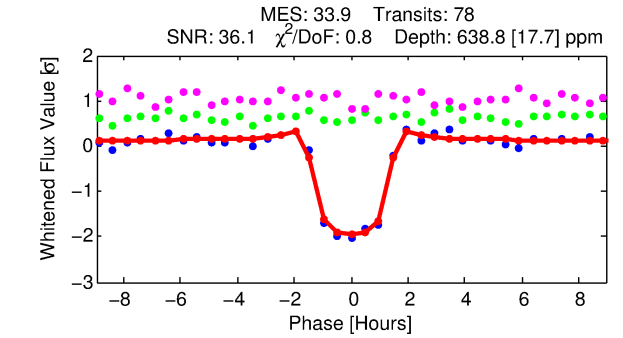
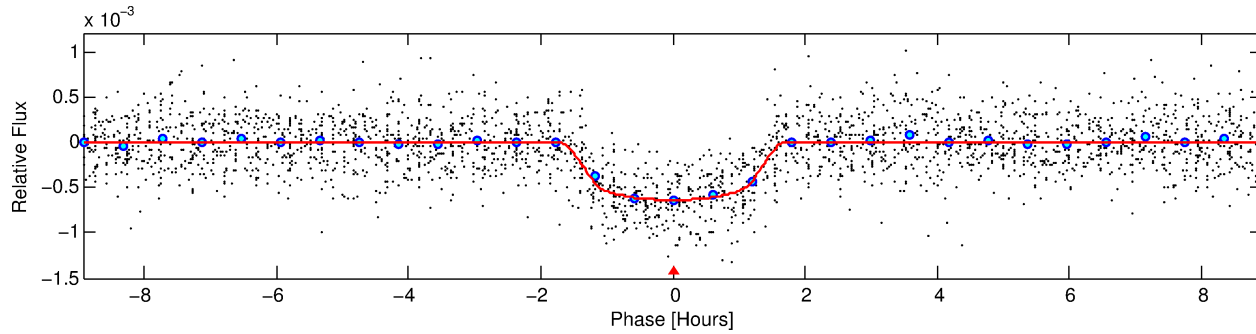
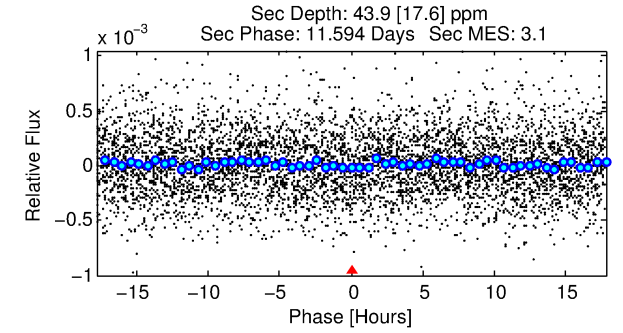
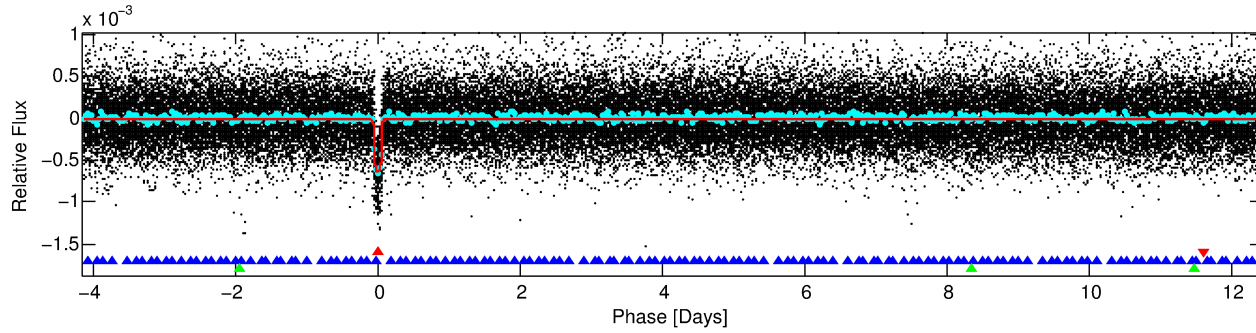
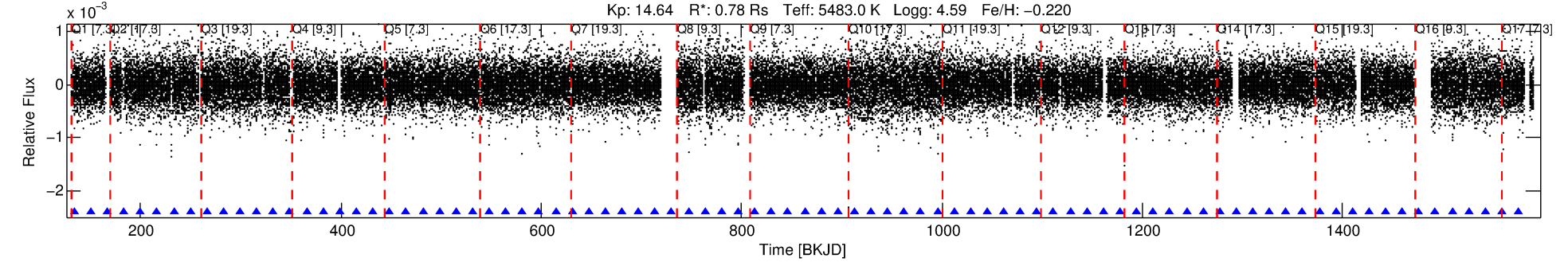
Ephemeris Match Information For 008218379-01

No Significant Match Found

DV One-Page Summary

KIC: 8218379 Candidate: 1 of 3 Period: 16.571 d
KOI: K01920.01 Corr: 0.987

Kp: 14.64 R*: 0.78 Rs Teff: 5483.0 K Logg: 4.59 Fe/H: -0.220



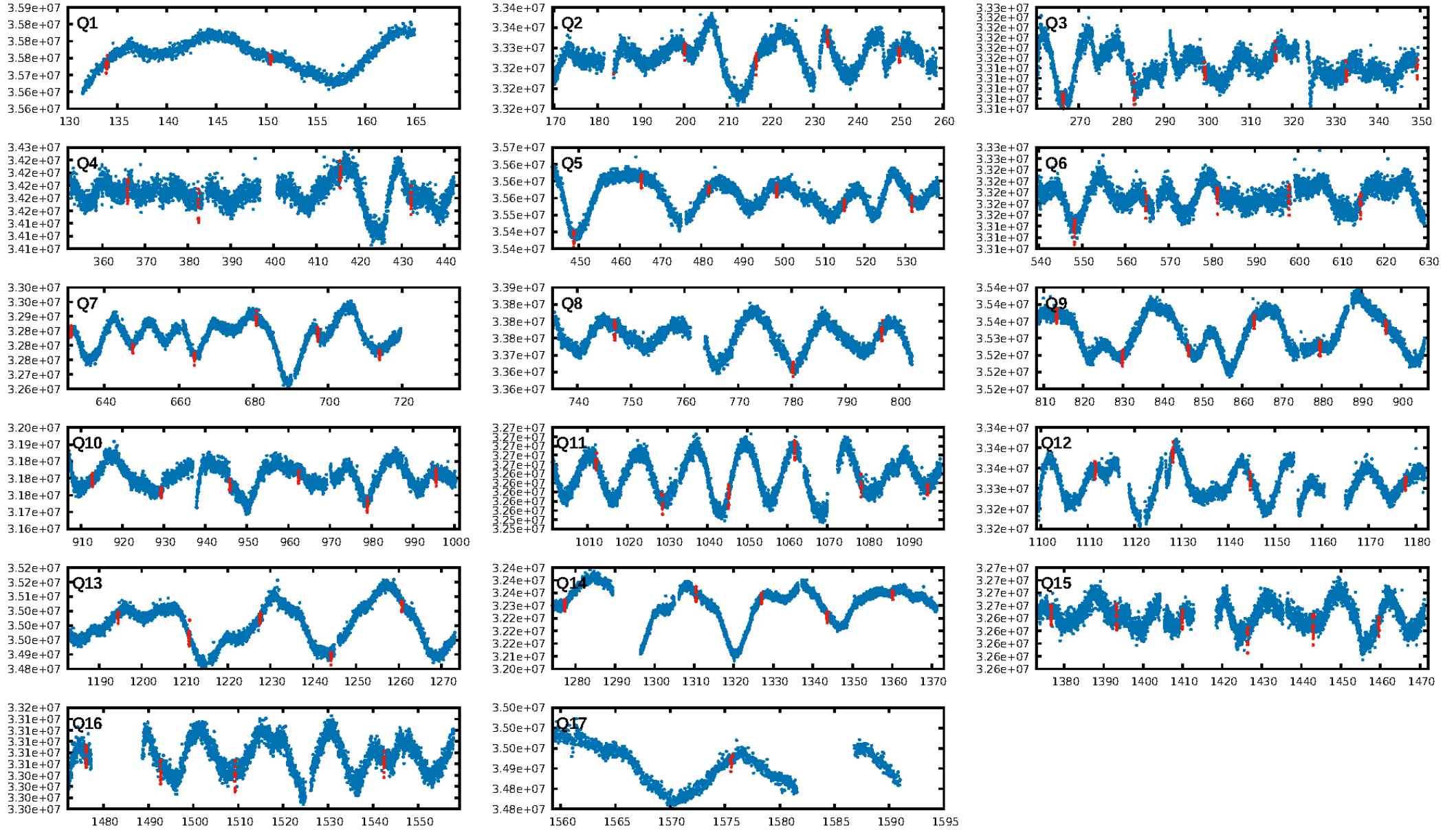
DV Fit Results:

Period = 16.57104 [0.00004] d
Epoch = 133.9050 [0.0018] BKJD
Rp/R* = 0.0252 [0.0079]
a/R* = 29.73 [38.91]
b = 0.75 [0.78]
Seff = 33.59 [9.38]
Teq = 614 [43] K
Rp = 2.14 [0.81] Re
a = 0.1210 [0.0212] AU
Ag = 76.96 [60.55] [1.25σ]
Teffp = 2811 [531] K [4.13σ]

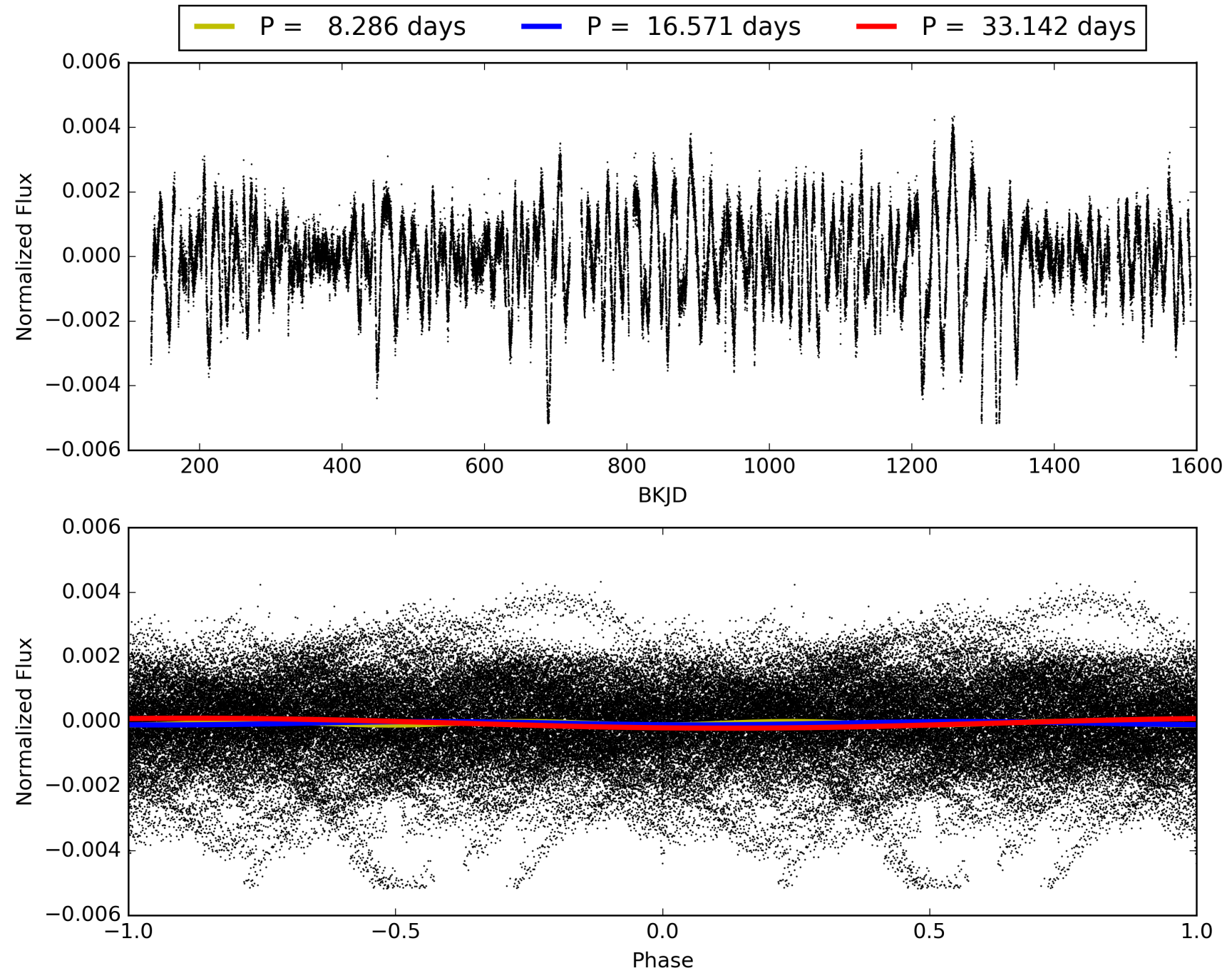
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.44σ]
LongPeriod-sig: 100.0% [1045.30σ]
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.17e-241
RollingBand-fgt: 1.00 [75/75]
GhostDiagnostic-chr: 17.37
Centroid-sig: 13.1%
Centroid-so: 0.502 arcsec [1.66σ]
OotOffset-rm: 0.215 arcsec [1.24σ]
KicOffset-rm: 0.353 arcsec [1.85σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008218379-01, PDC Light Curves

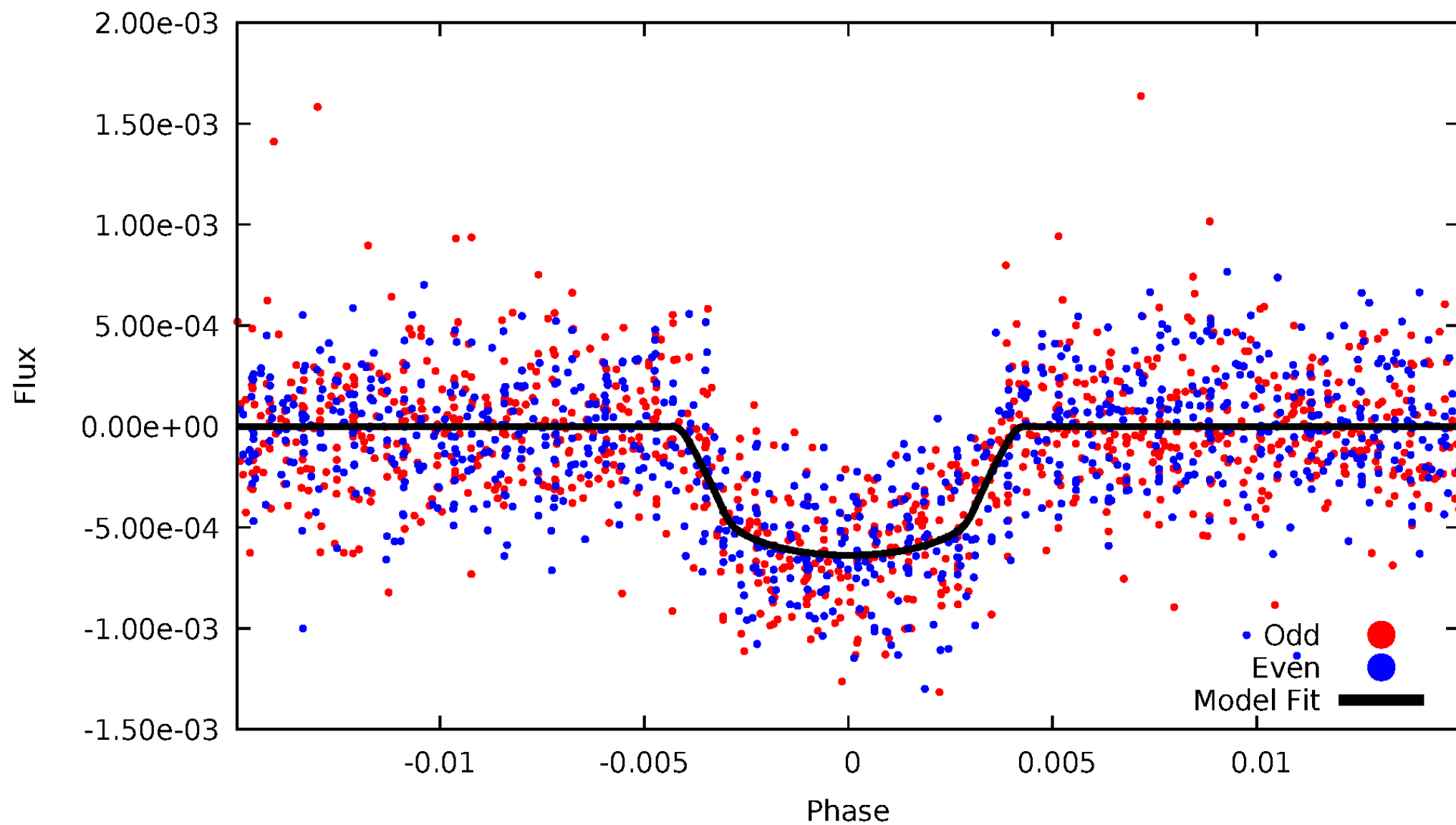


TCE 008218379-01



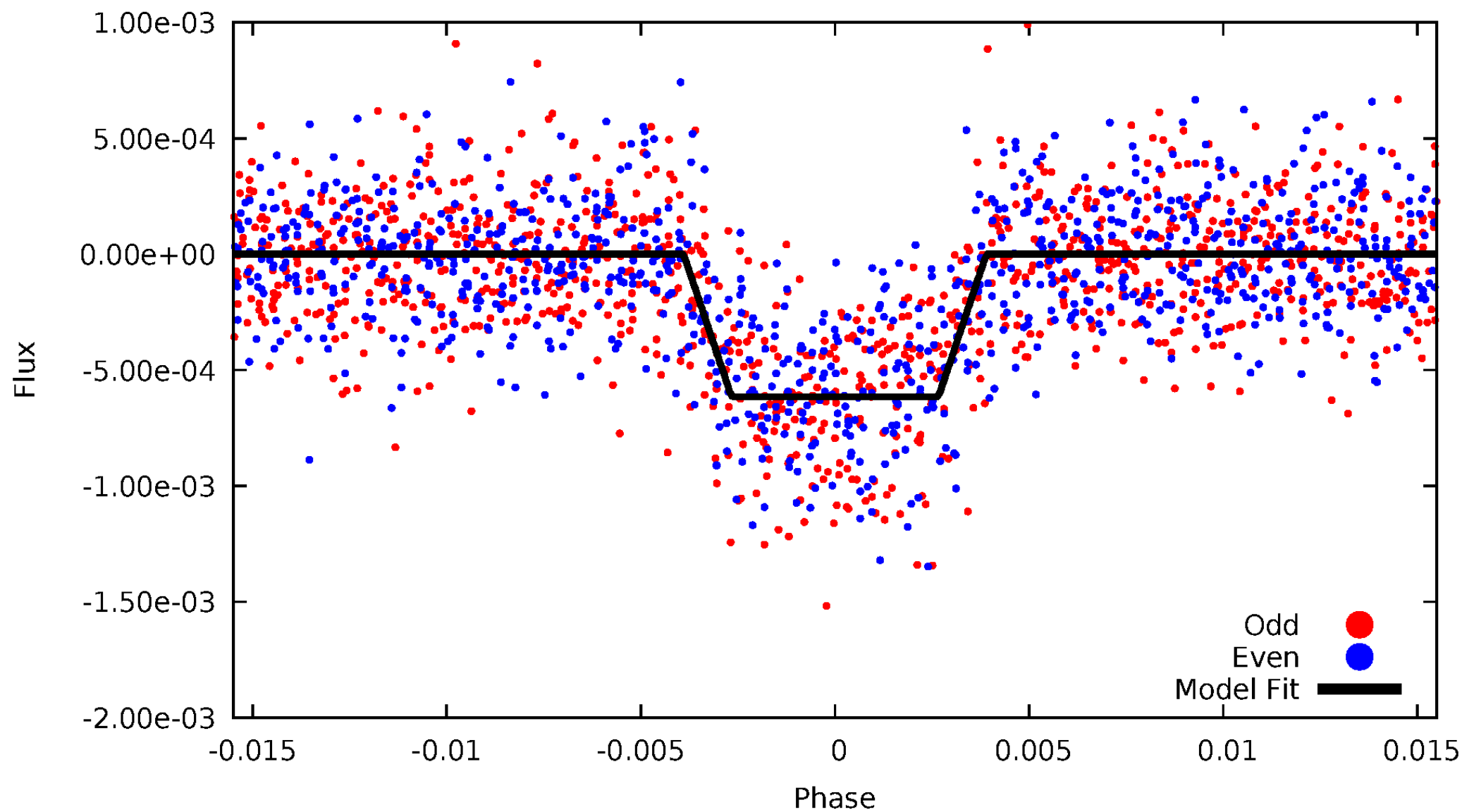
DV Odd/Even

TCE 008218379-01

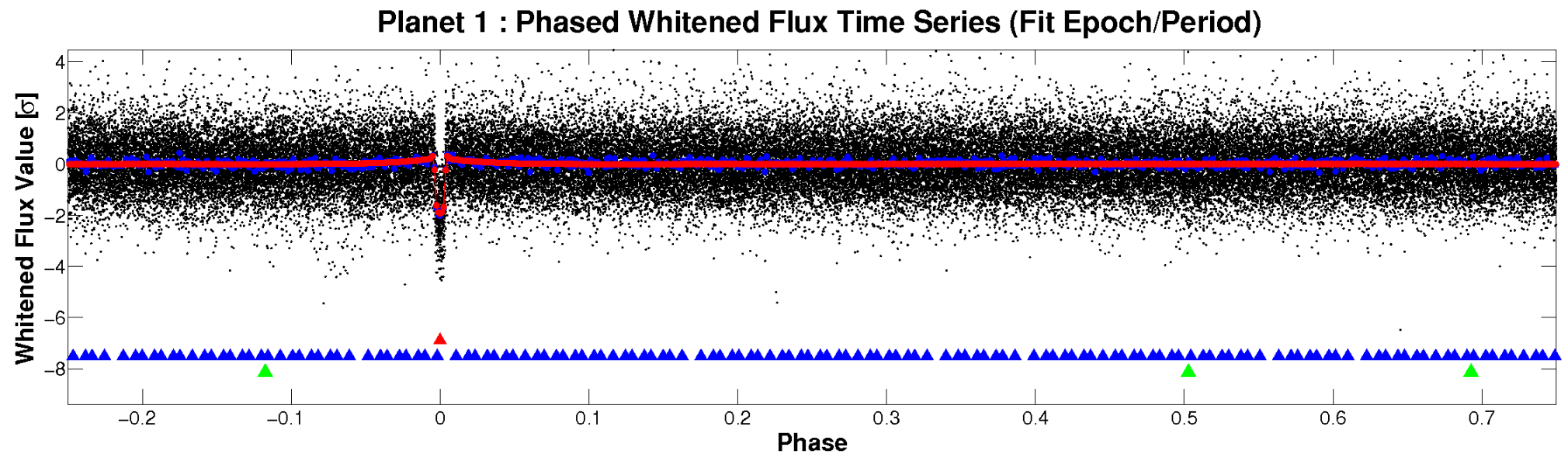
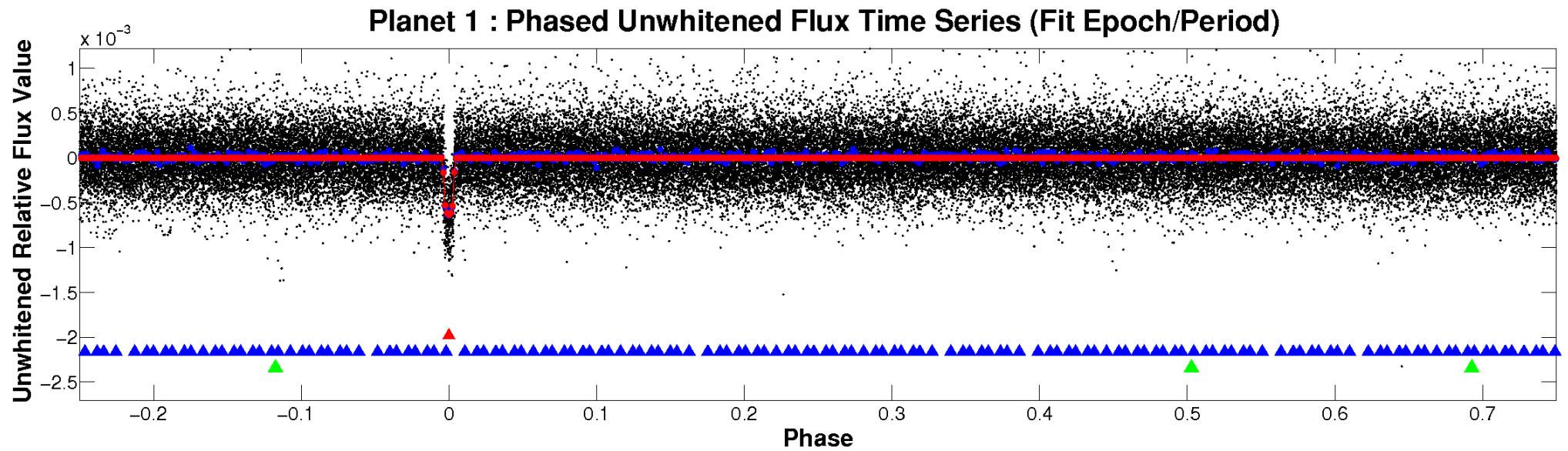


ALT Odd/Even

TCE 008218379-01

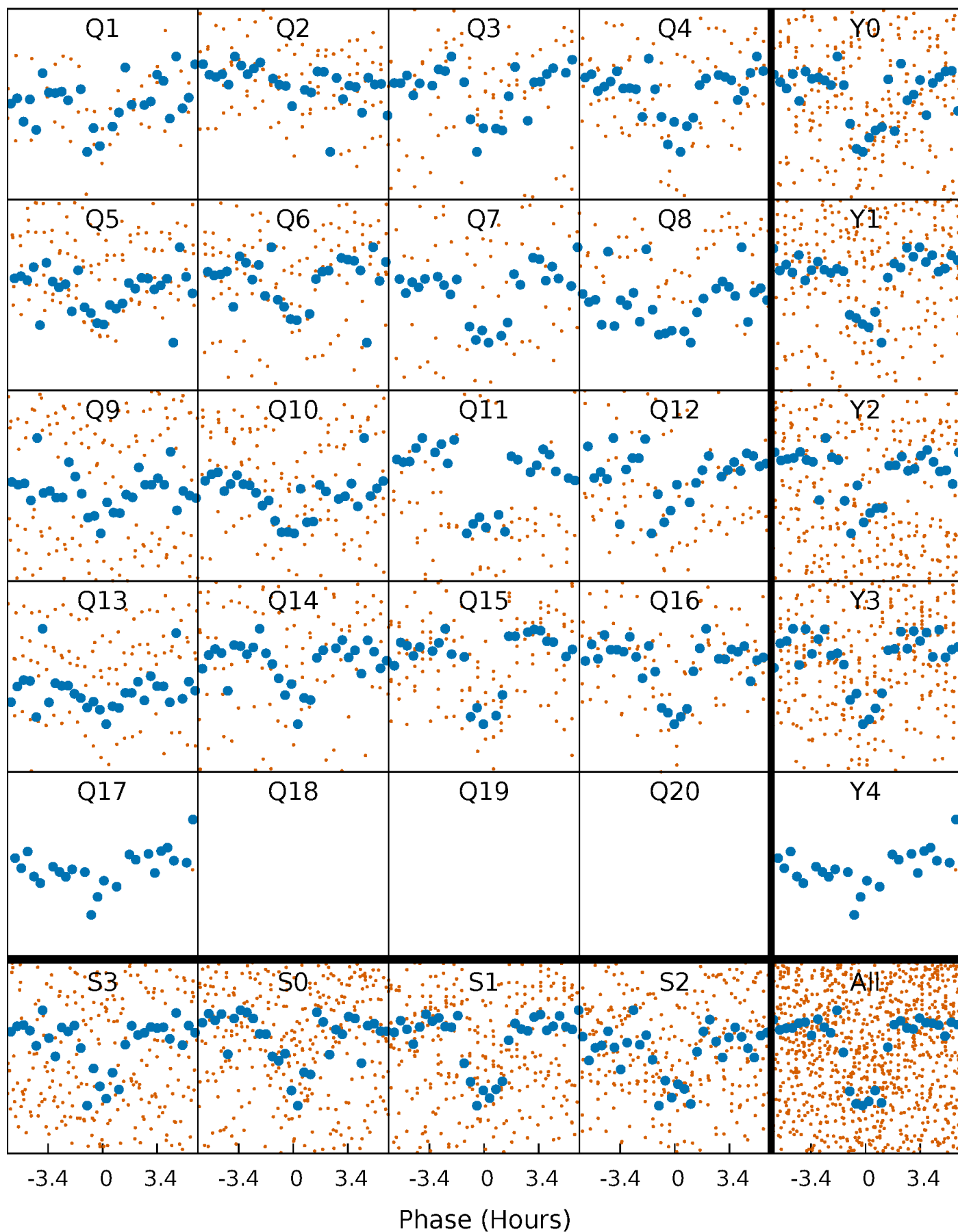


Non-Whitened Vs. Whitened Light Curve



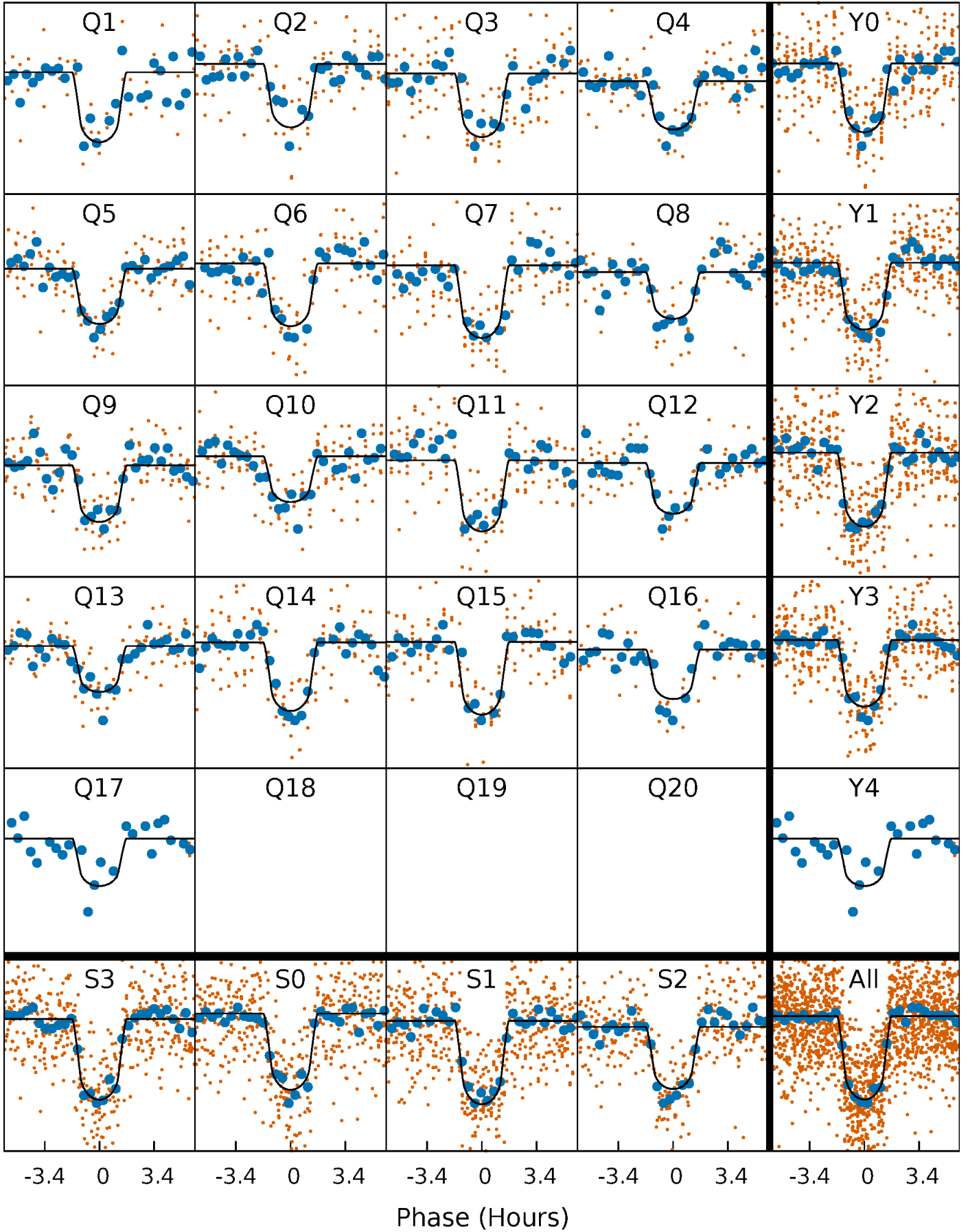
PDC Quarter-Phased Transit Curves

TCE 008218379-01 P= 16.571035 Days $T_0=133.904989$ (BKJD)



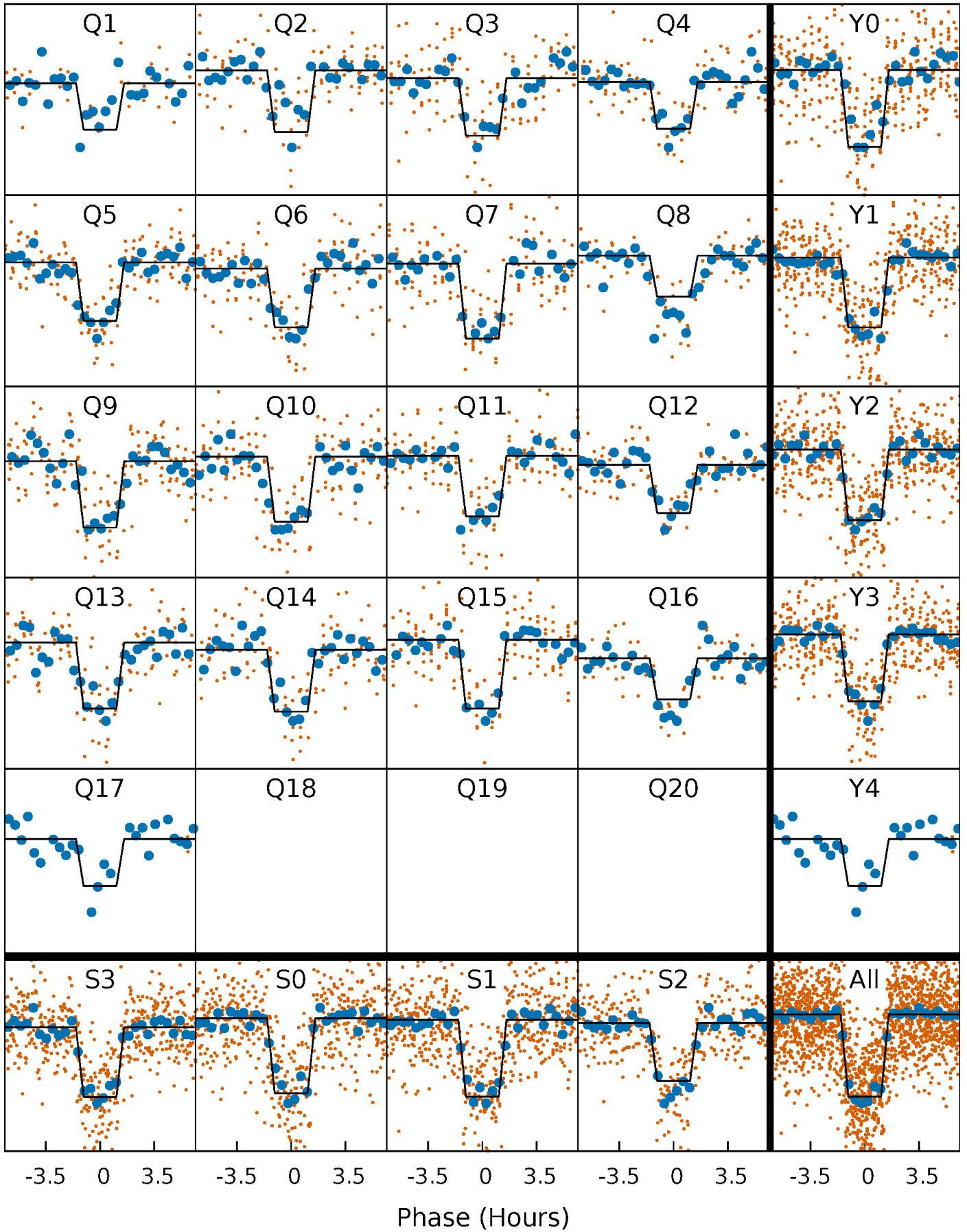
DV Quarter-Phased Transit Curves

TCE 008218379-01 P= 16.571035 Days $T_0=133.904989$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

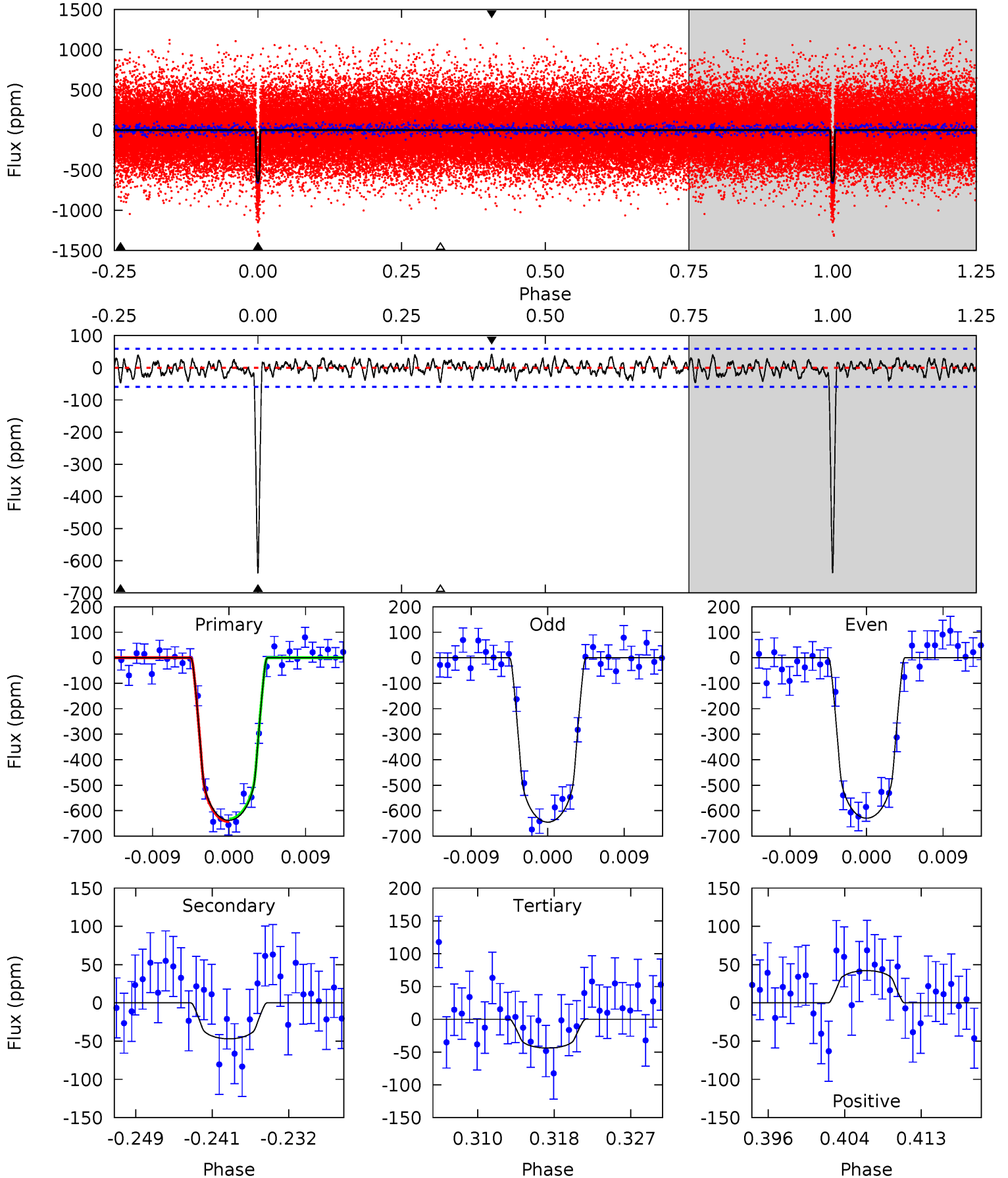
TCE 008218379-01 P= 16.570964 Days $T_0=133.908759$ (BKJD)



DV Model-Shift Uniqueness Test

008218379-01, $P = 16.571035$ Days, $E = 117.333954$ Days

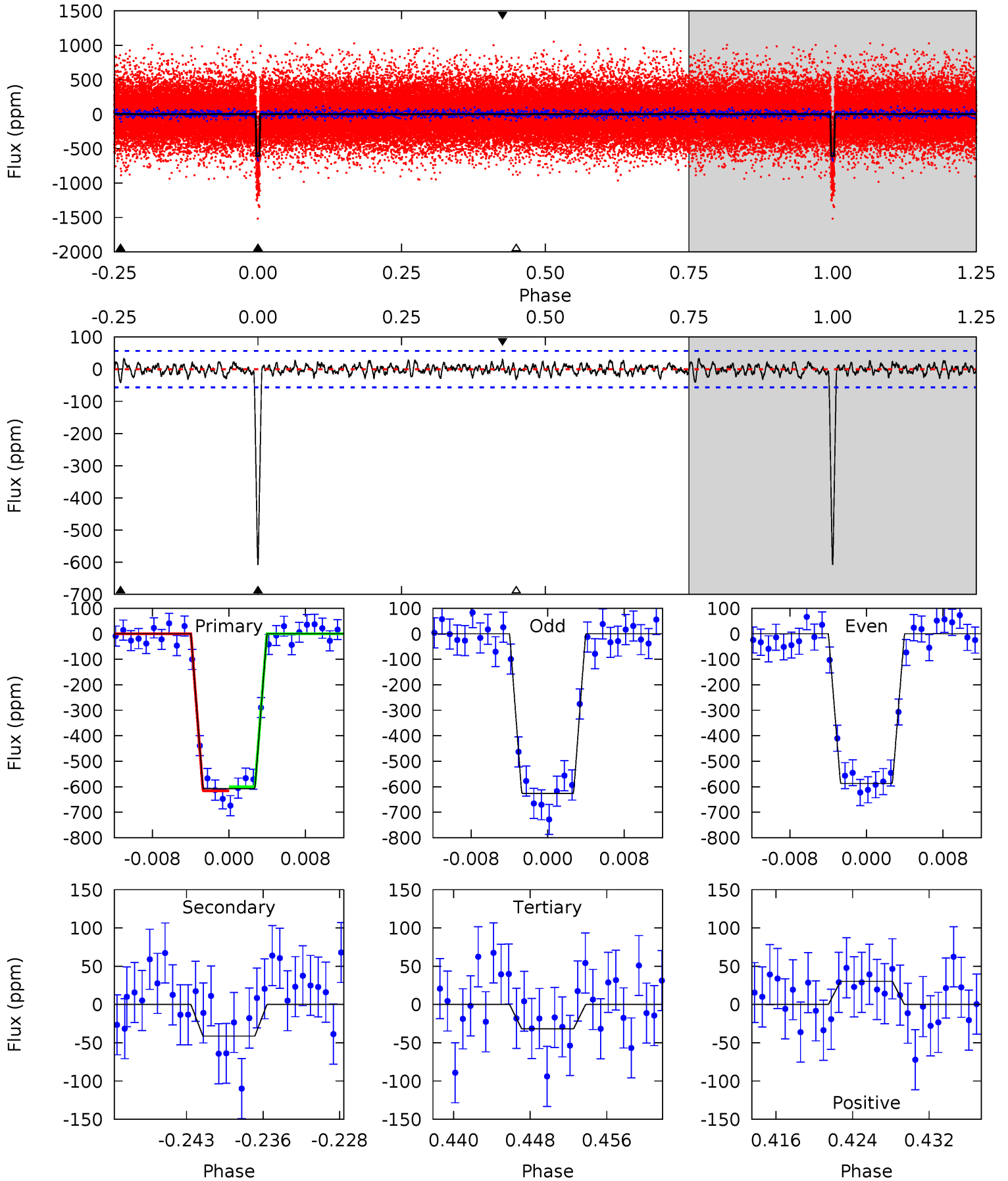
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.6	4.02	3.76	3.61	5.06	2.63	1.34	50.8	51.0	0.26	0.41	0.66	1.01	0.06	0.44



Alt Model-Shift Uniqueness Test

008218379-01, $P = 16.570964$ Days, $E = 117.337795$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.3	3.69	2.84	2.70	5.07	2.66	1.02	51.5	51.6	0.85	0.98	1.72	1.04	0.05	0.73



Stellar Parameters For KIC 008218379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5483^{+166}_{-149}	$4.589^{+0.034}_{-0.136}$	$-0.220^{+0.300}_{-0.300}$	$0.779^{+0.164}_{-0.059}$	$0.865^{+0.083}_{-0.102}$	$2.581^{+0.463}_{-1.004}$
	+3%/-3%	+1%/-3%	+136%/-136%	+21%/-8%	+10%/-12%	+18%/-39%
Source	PHO1	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 008218379-01 / KOI 1920.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-47 ± 12	$2.24^{+0.73}_{-0.70}$	875^{+46}_{-36}	3372^{+425}_{-307}	75^{+87}_{-37}
Alt.	-41 ± 11	$2.19^{+0.74}_{-0.70}$	874^{+43}_{-35}	3316^{+482}_{-326}	68^{+82}_{-34}

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 $A_{obs} \gg 1.0$

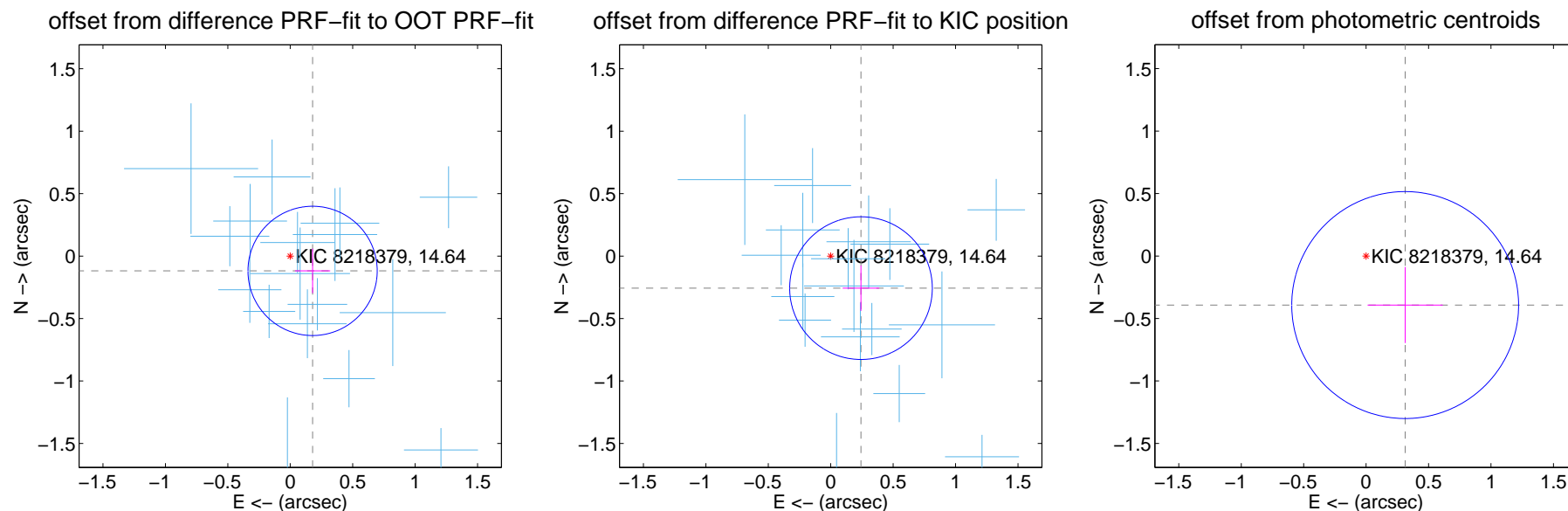
DV Centroid Data

Supplemental centroid analysis for 008218379-01. Kepler magnitude: 14.64. Transit SNR 36.07

There are 17 quarters with good PRF difference image offsets

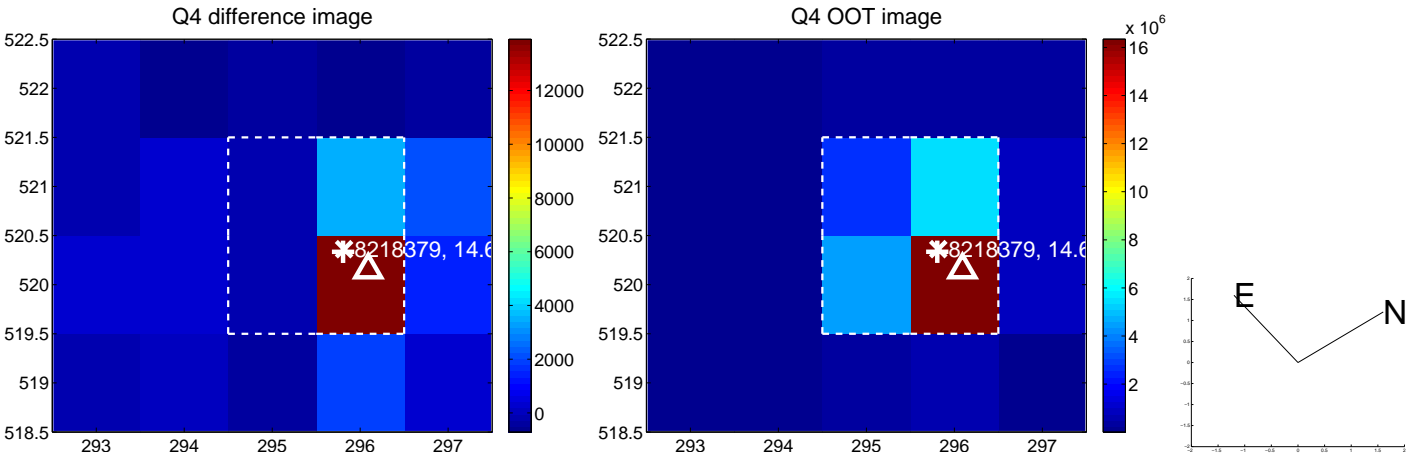
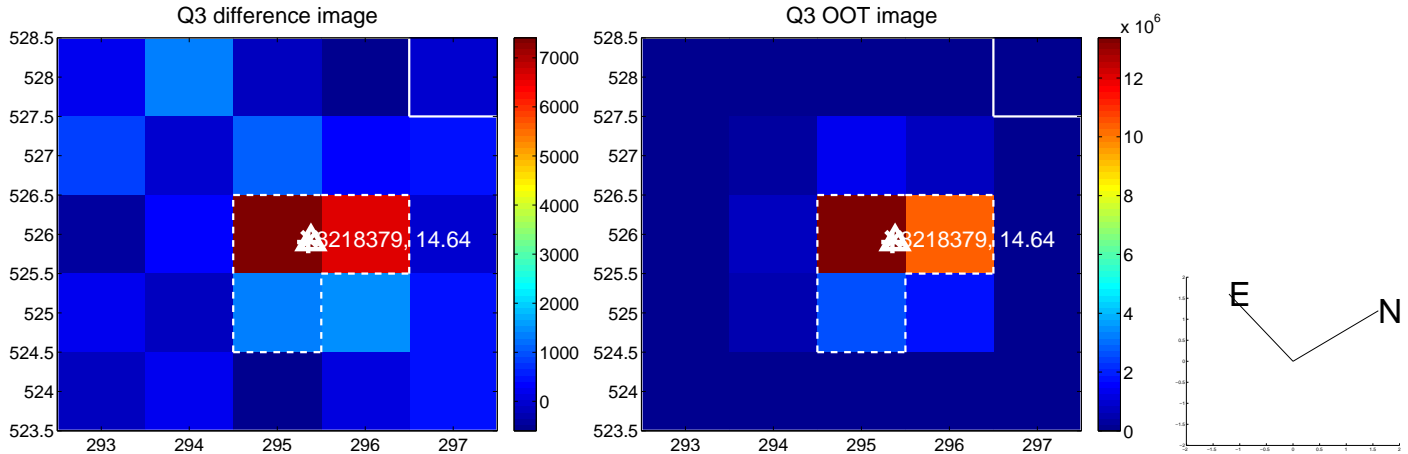
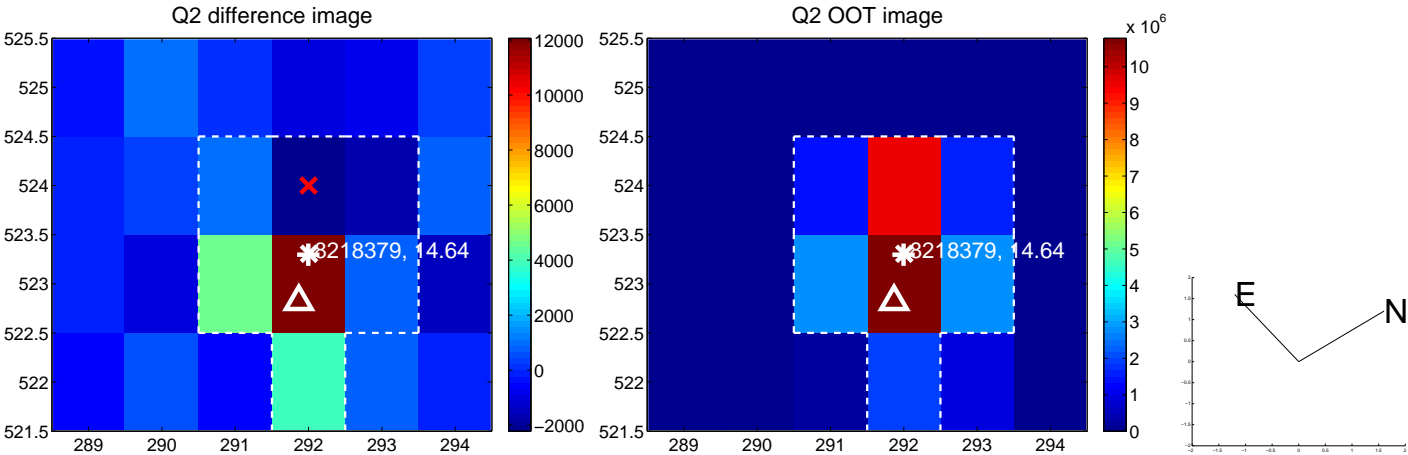
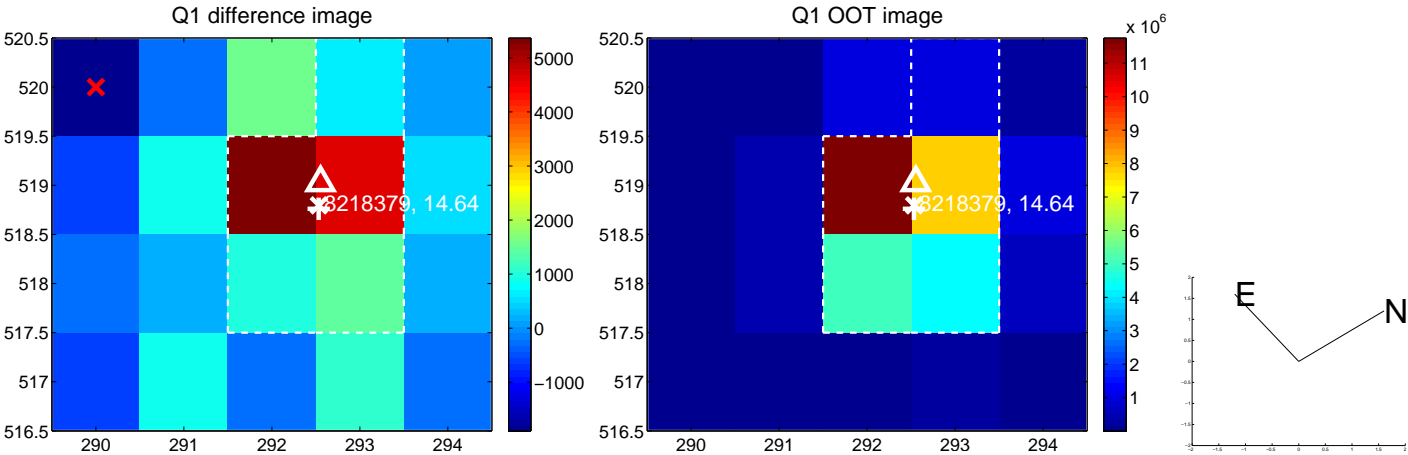
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.215 ± 0.173	1.24	-0.179 ± 0.141	-0.118 ± 0.179
PRF-fit source offset from KIC position	0.353 ± 0.190	1.85	-0.242 ± 0.147	-0.256 ± 0.182
photometric centroid source offset	0.50 ± 0.30	1.66	-0.31 ± 0.30	-0.39 ± 0.30

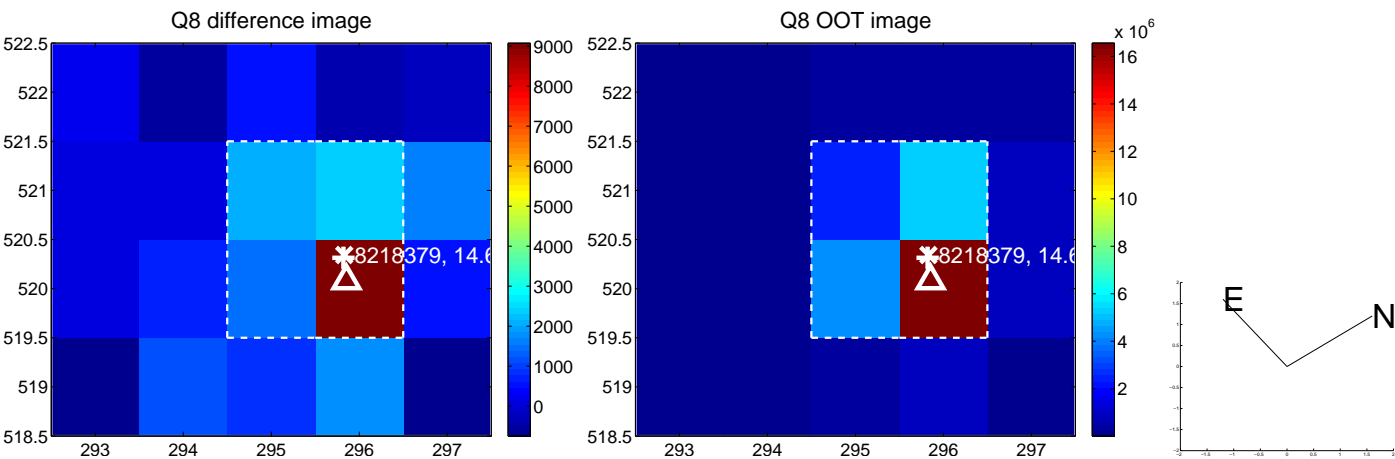
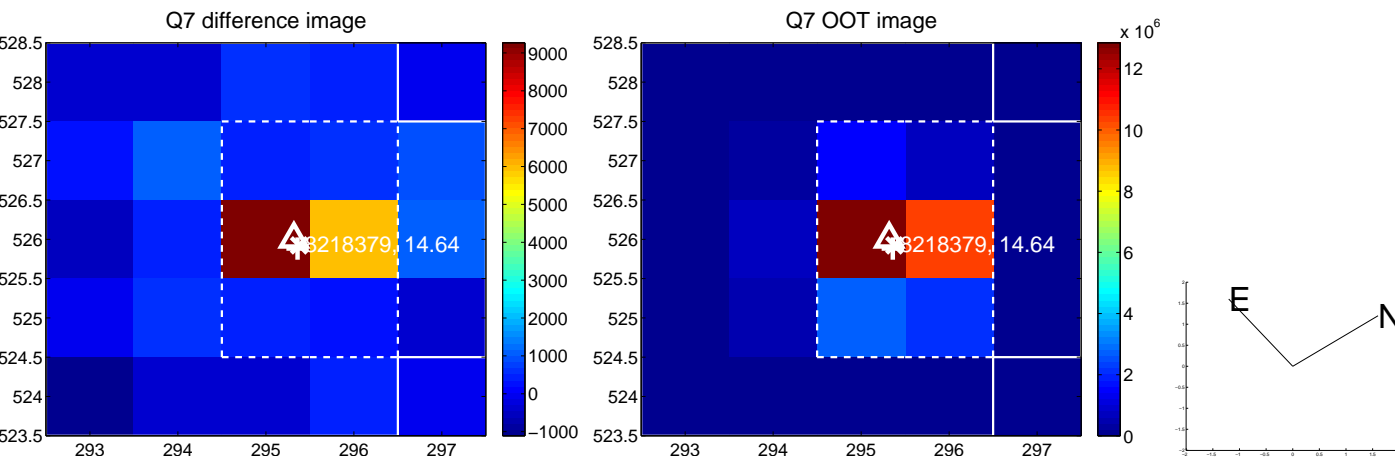
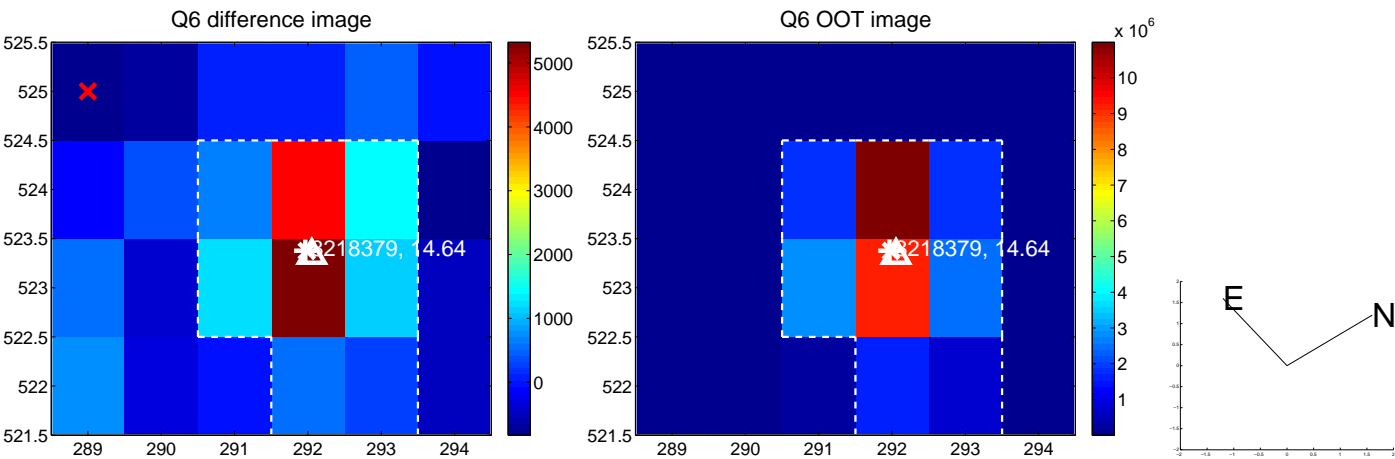
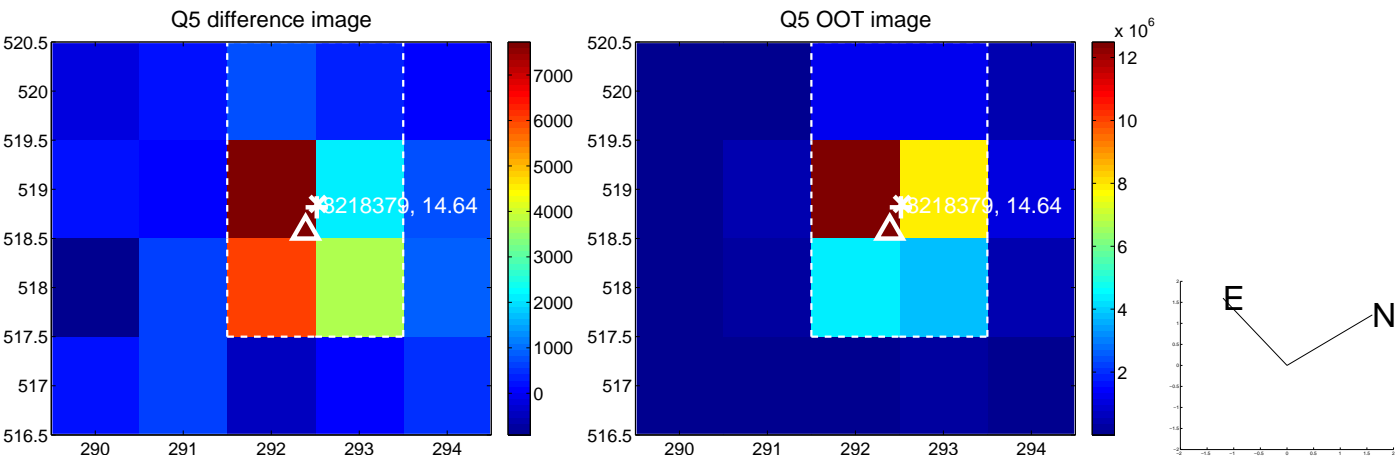


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

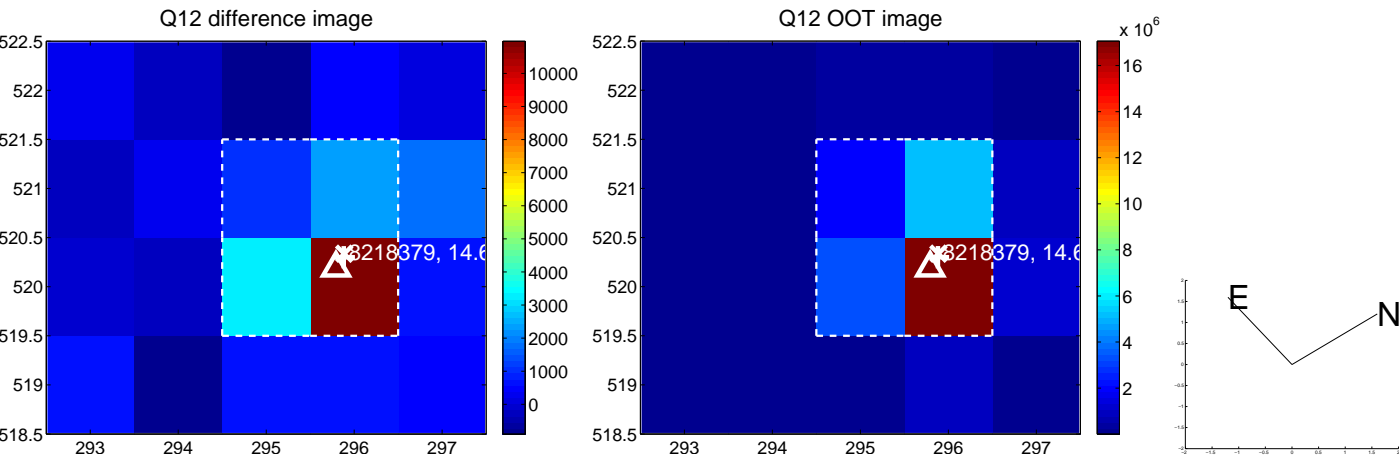
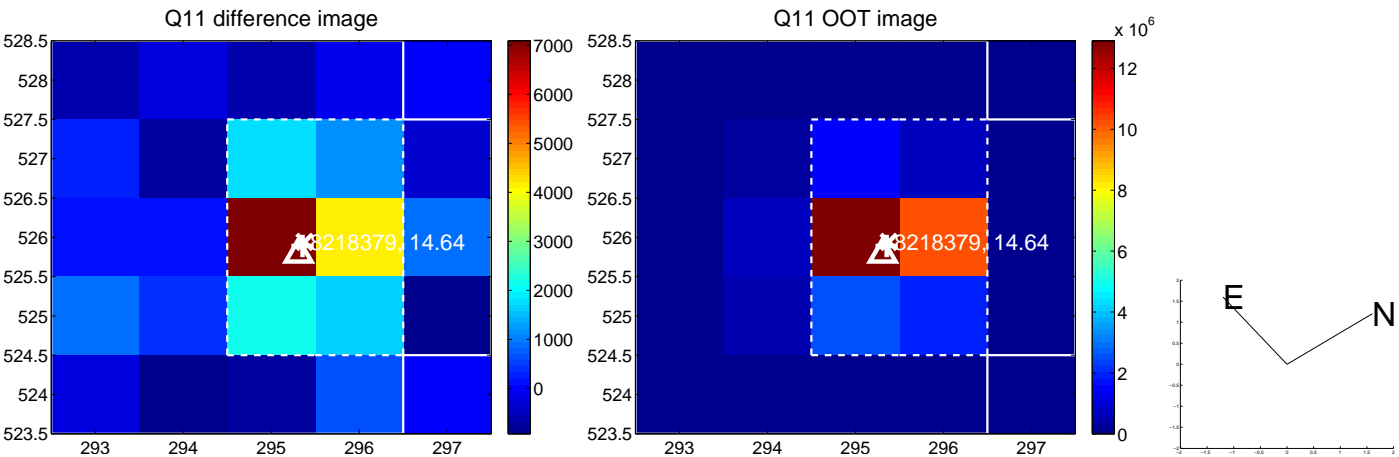
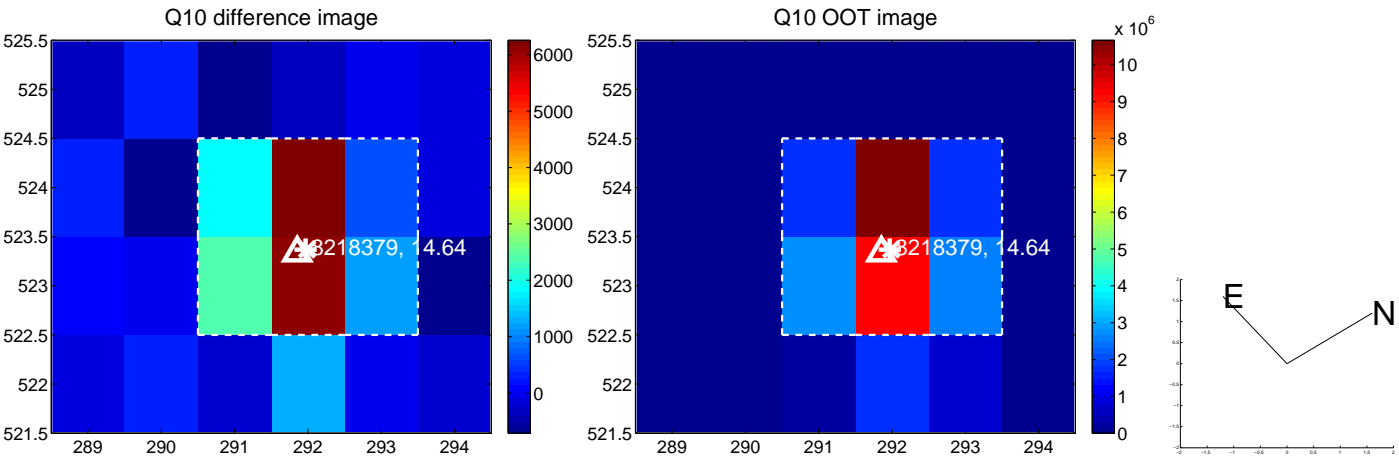
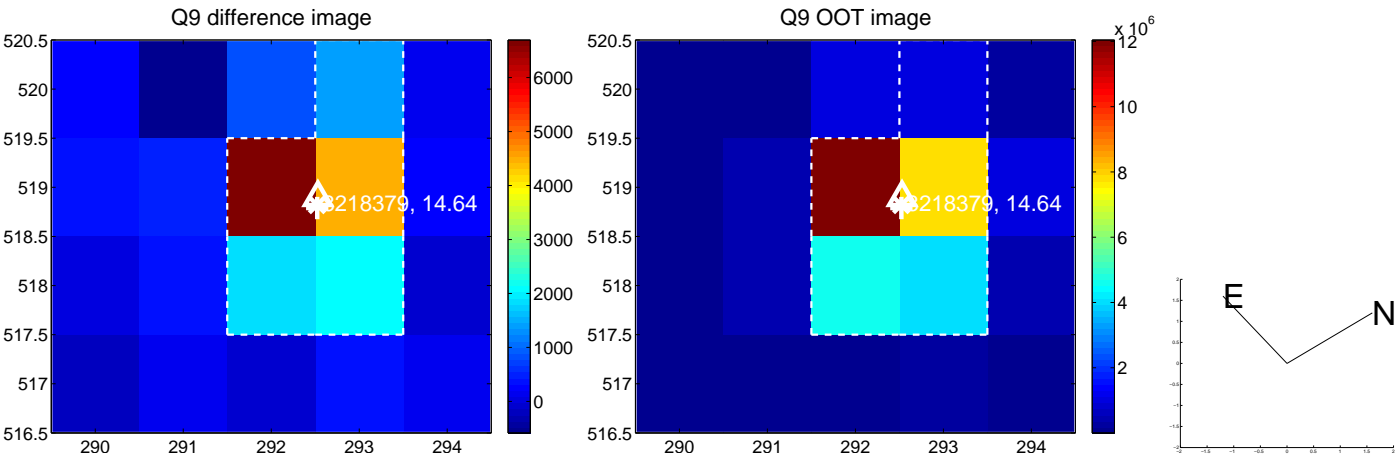
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



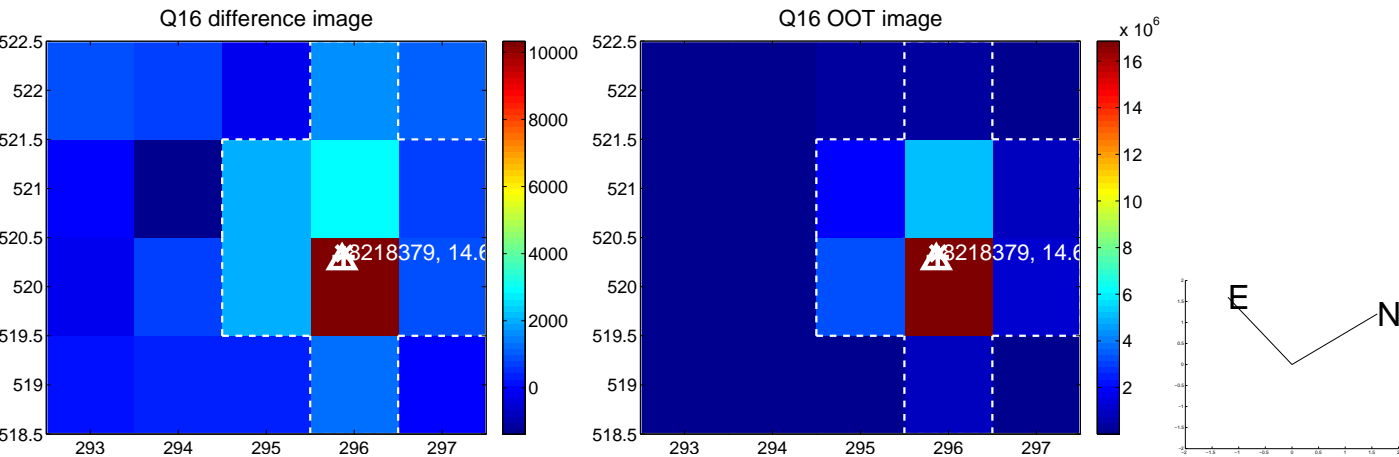
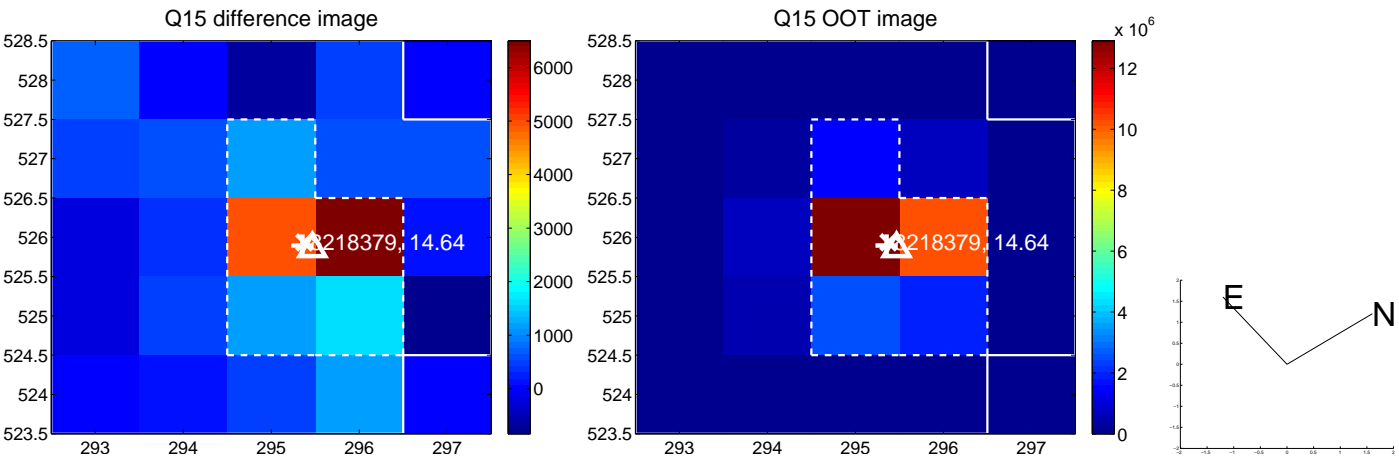
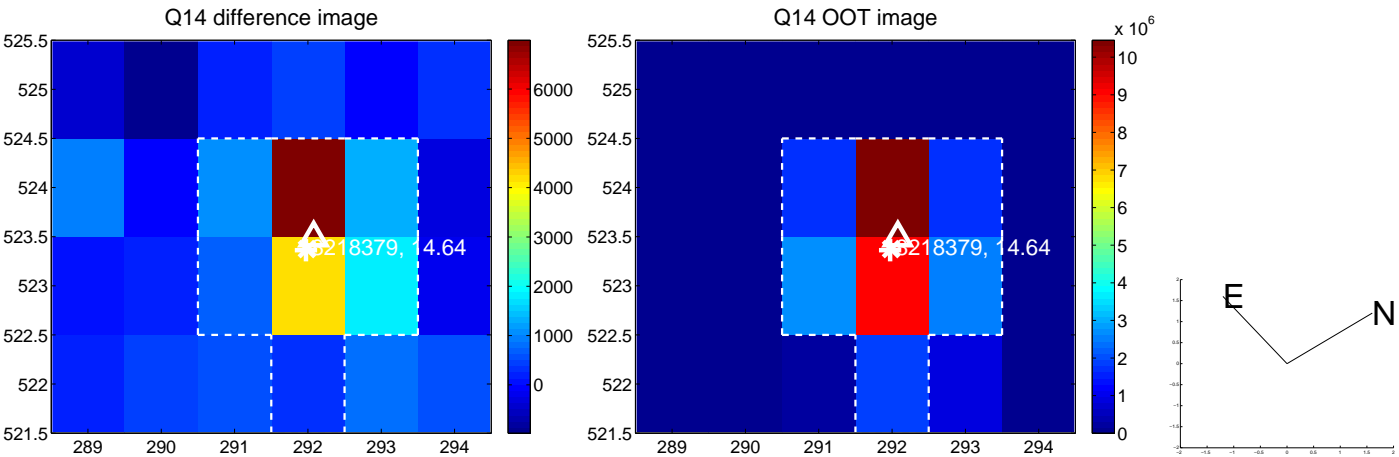
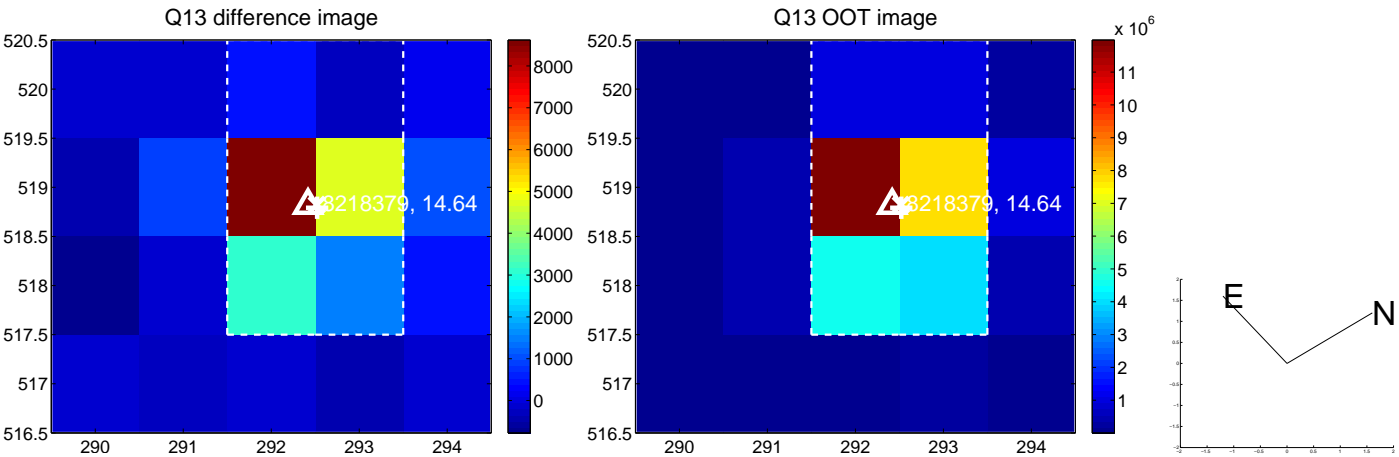
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



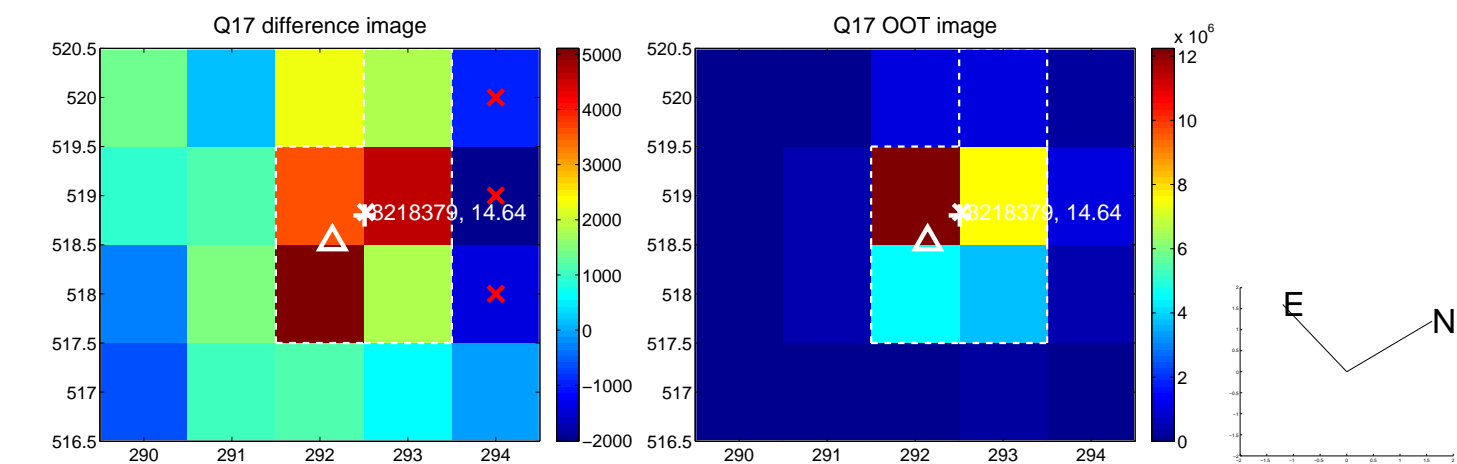
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



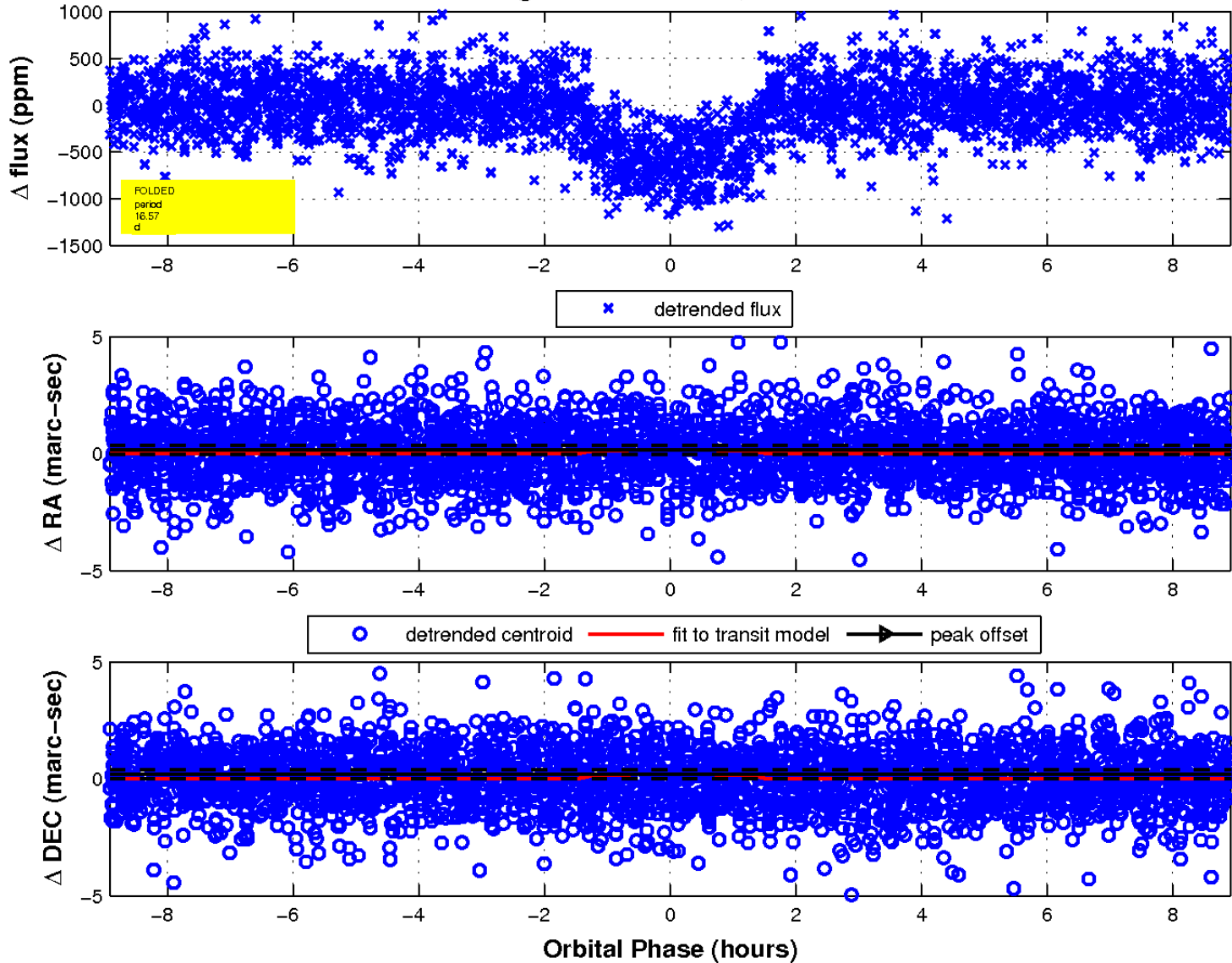
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

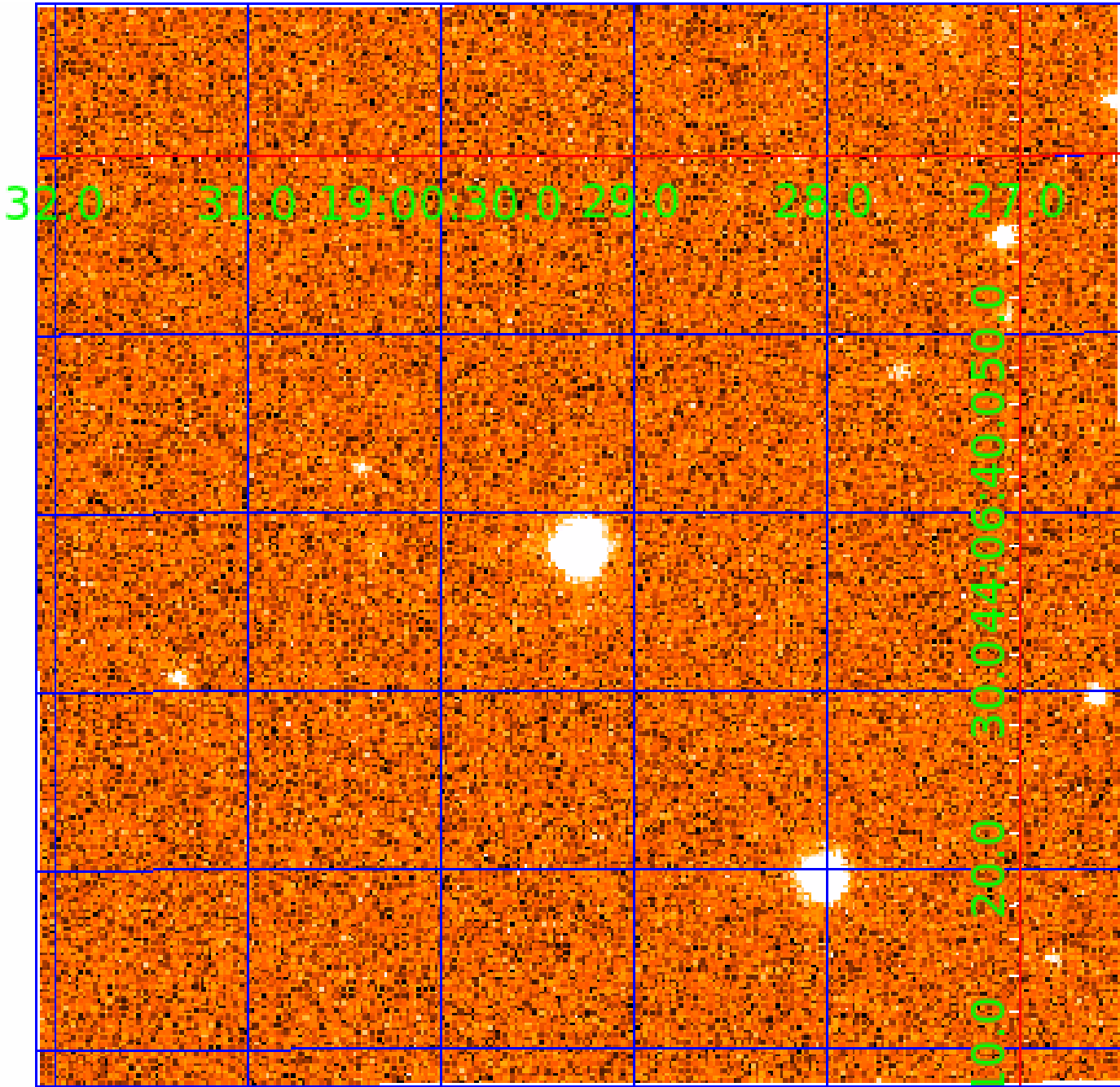


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008218379

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})
008218379-01	OBS	1920.01	16.571035	133.904989	638.8	2.974	33.9	36.1	0.78	5483	2.14	33.59
008218379-02	OBS	1920.02	10.138438	137.716737	95.5	4.318	7.2	7.9	0.78	5483	0.94	64.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008218379-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008218379-02	OBS	PC	0.85	0	0	0	0	NO_COMMENT

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 008218379-02

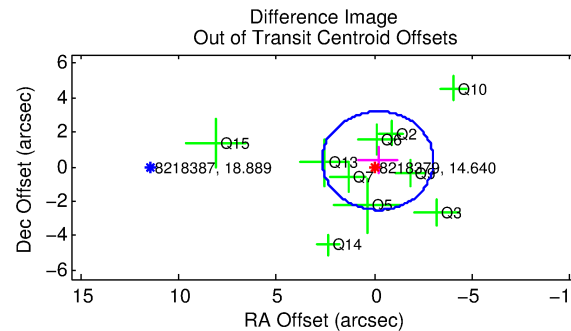
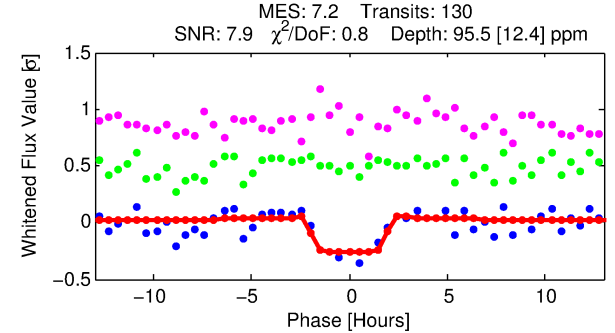
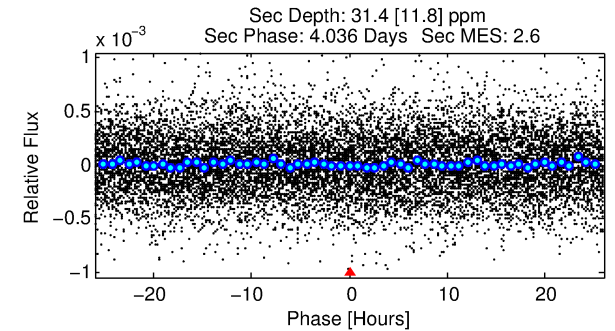
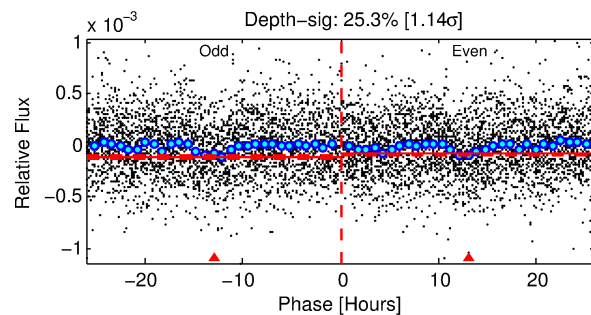
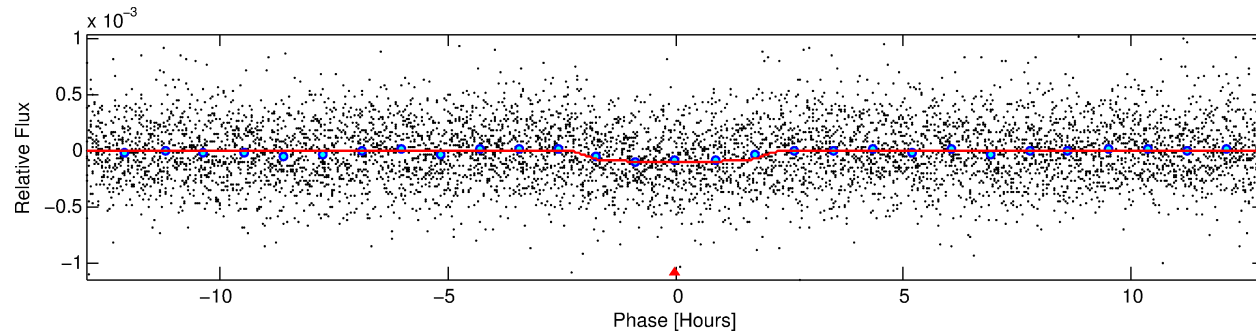
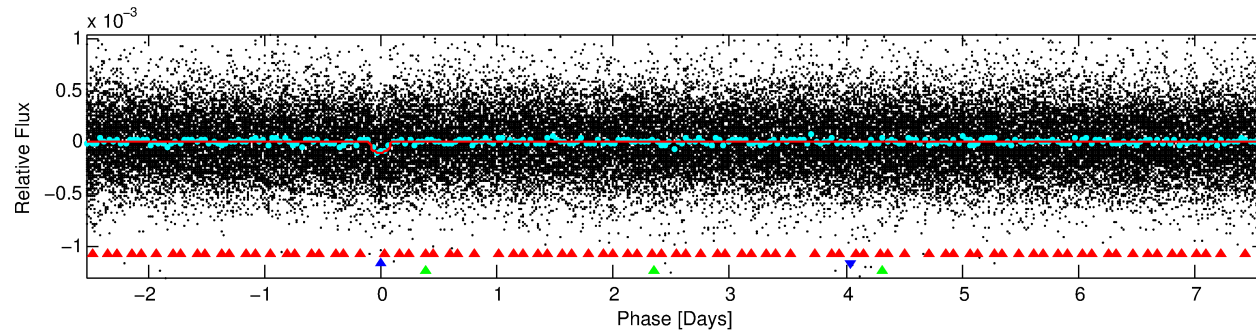
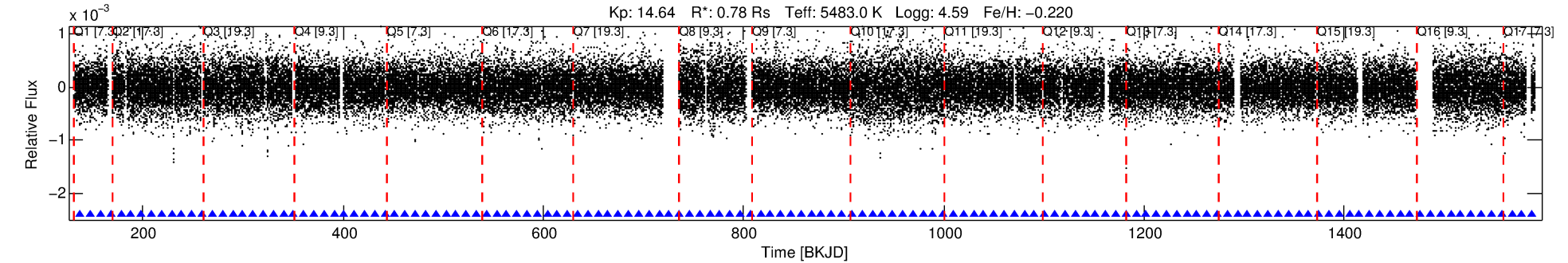
No Significant Match Found

DV One-Page Summary

KIC: 8218379 Candidate: 2 of 3 Period: 10.138 d

KOI: K01920.02 Corr: 0.932

Kp: 14.64 R*: 0.78 Rs Teff: 5483.0 K Logg: 4.59 Fe/H: -0.220



DV Fit Results:

Period = 10.13844 [0.00012] d
Epoch = 137.7167 [0.0094] BKJD
Rp/R* = 0.0110 [0.0046]
a/R* = 7.32 [14.16]
b = 0.93 [0.31]
Seff = 64.67 [18.06]
Teq = 723 [50] K
Rp = 0.94 [0.44] Re
a = 0.0872 [0.0152] AU
Ag = 149.04 [141.61] [1.05σ]
Teffp = 3906 [903] K [3.52σ]

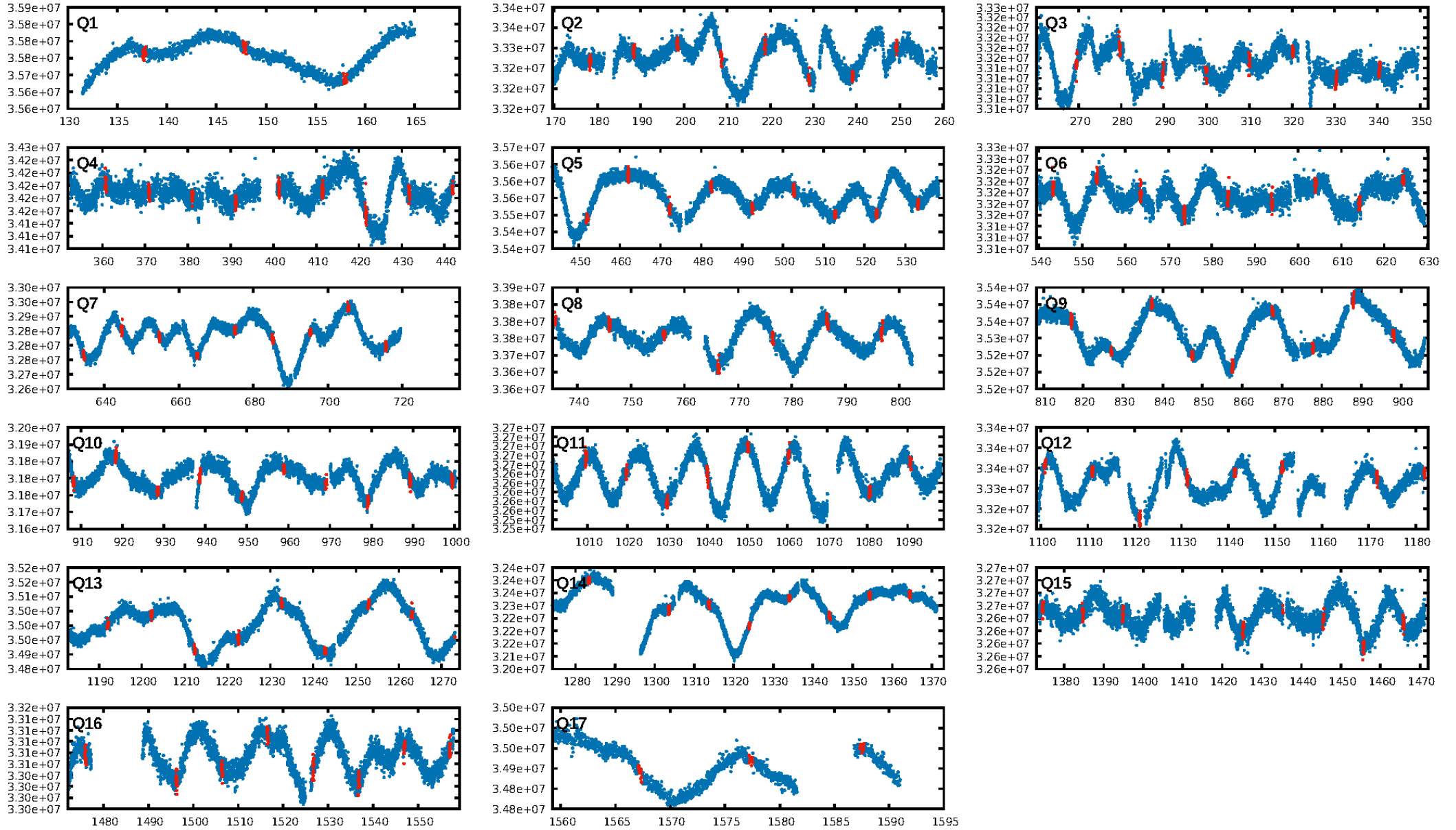
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [29.44σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.56e-13
RollingBand-fgt: 1.00 [124/124]
GhostDiagnostic-chr: 0.817
Centroid-sig: 15.6%
Centroid-so: 1.723 arcsec [1.35σ]
OotOffset-rm: 0.386 arcsec [0.41σ]
KicOffset-rm: 0.268 arcsec [0.26σ]
OotOffset-st: 4/3/0/3 [10]
KicOffset-st: 4/3/0/3 [10]
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DiffImageOverlap-fno: 1.00 [17/17]

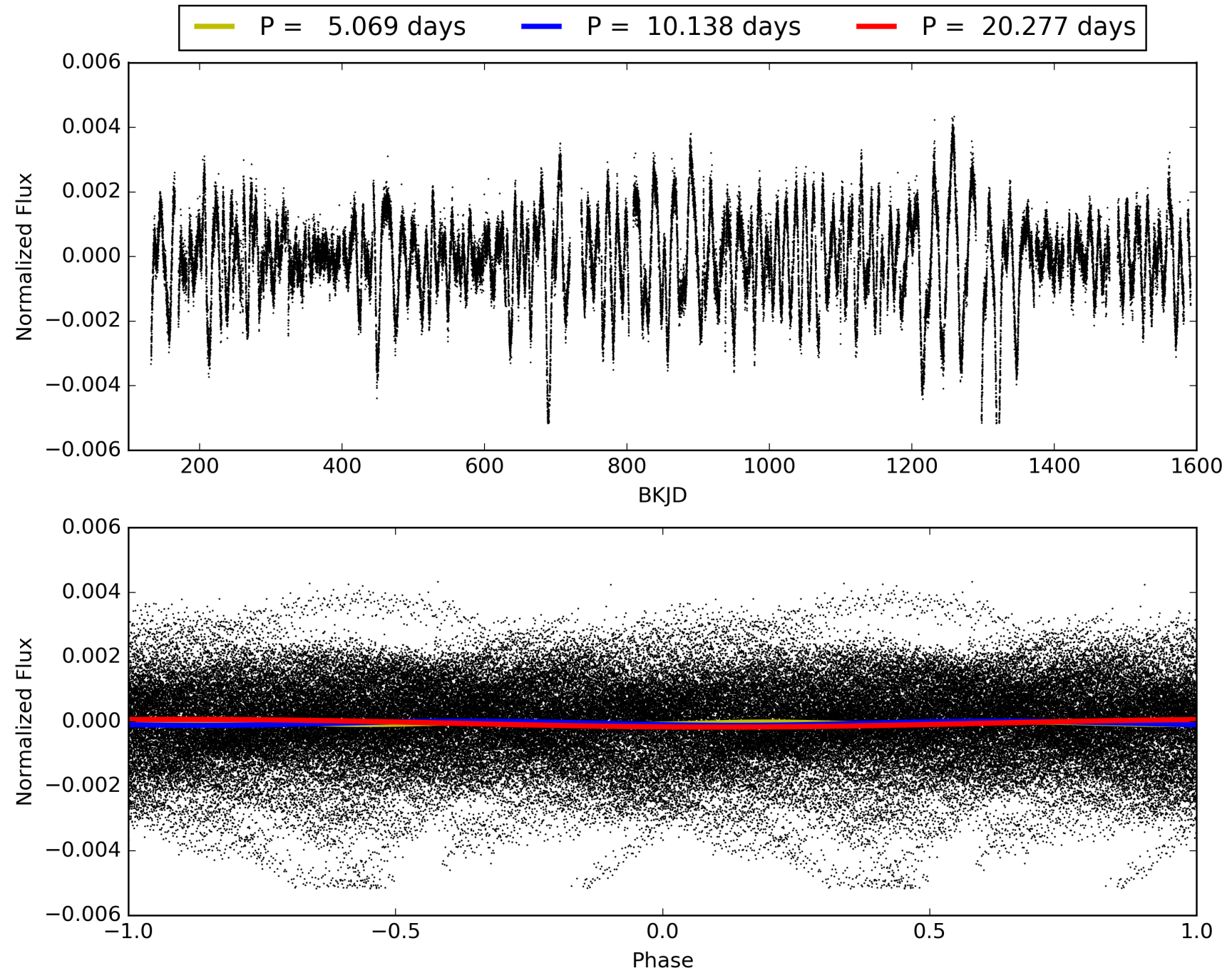
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:42:28 Z

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

TCE 008218379-02, PDC Light Curves

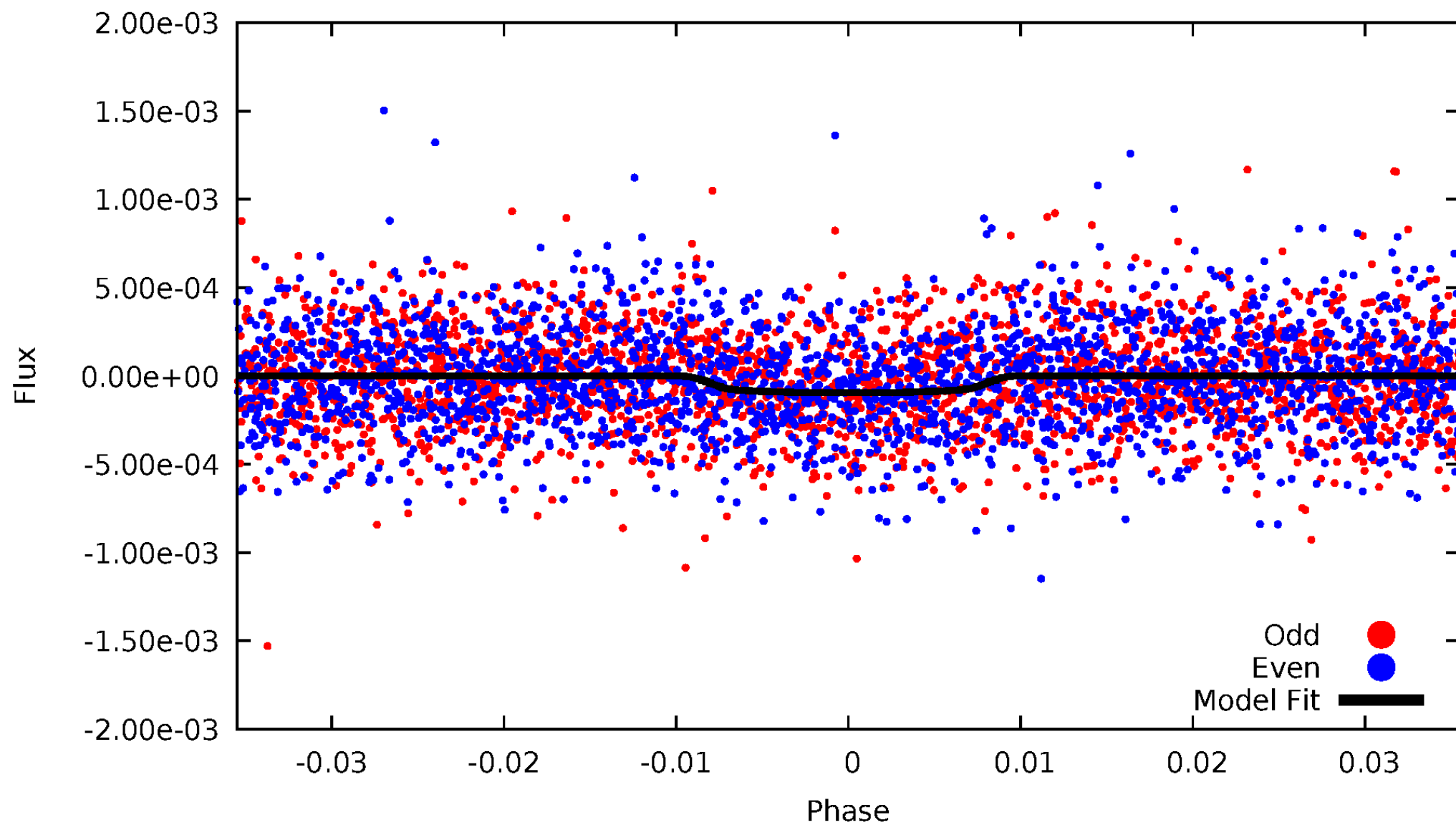


TCE 008218379-02



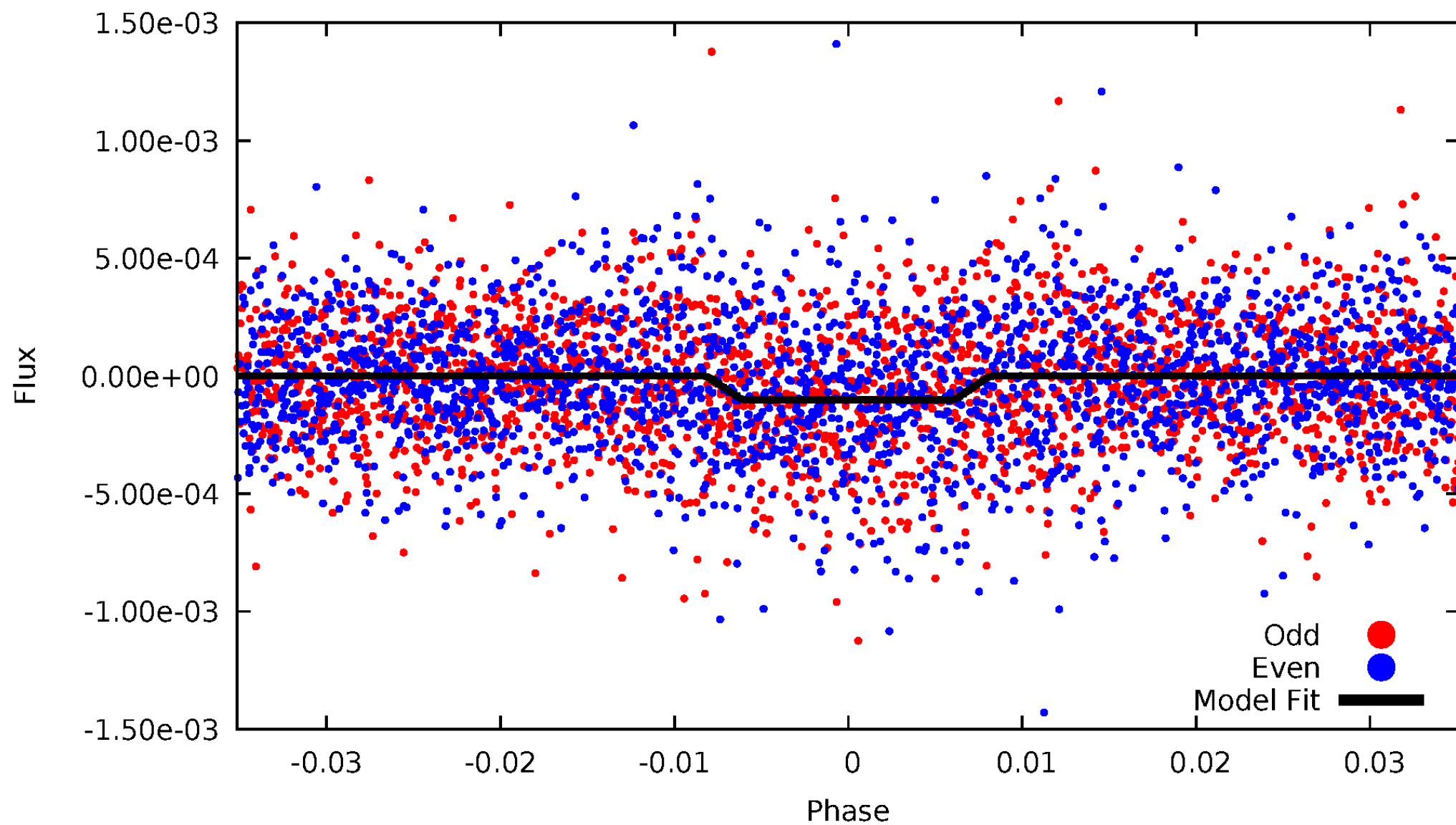
DV Odd/Even

TCE 008218379-02



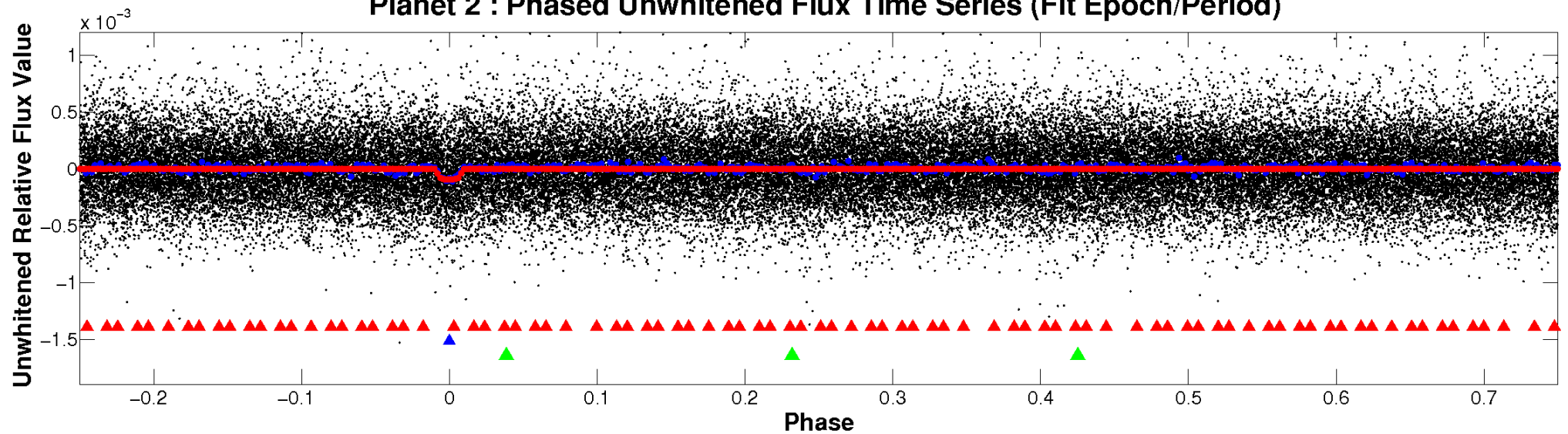
ALT Odd/Even

TCE 008218379-02

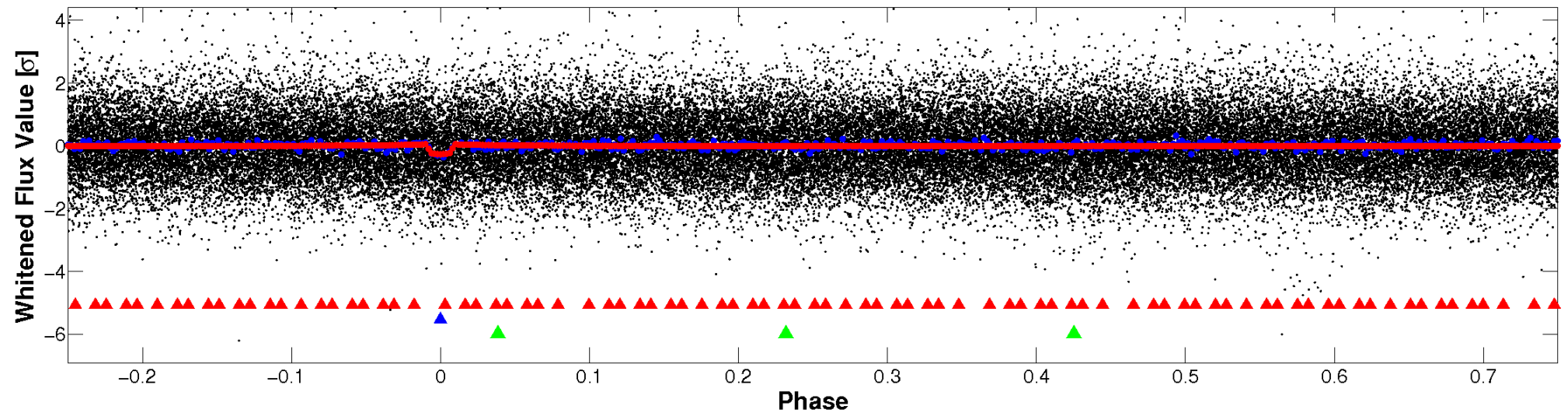


Non-Whitened Vs. Whitened Light Curve

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

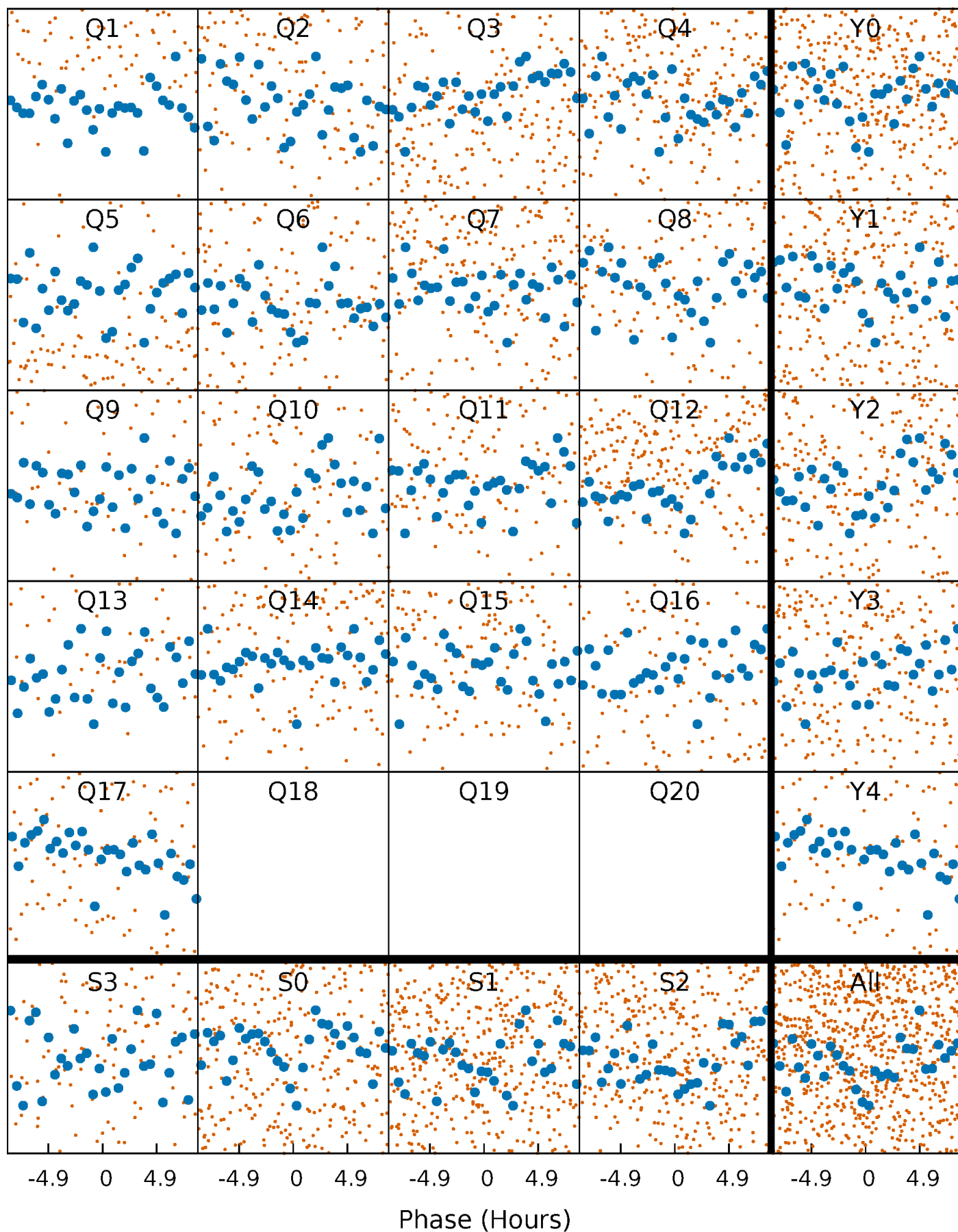


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



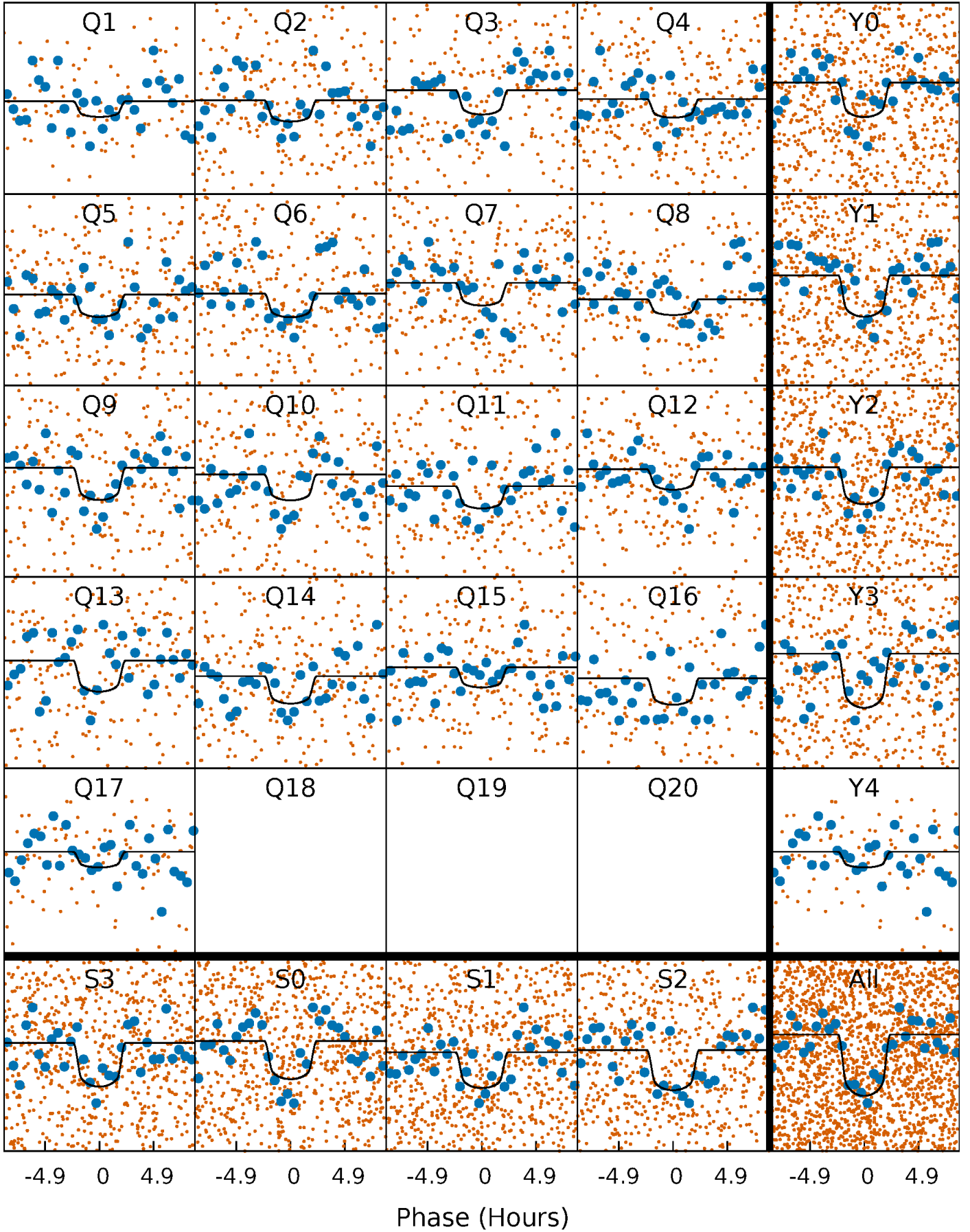
PDC Quarter-Phased Transit Curves

TCE 008218379-02 P= 10.138438 Days $T_0=137.716737$ (BKJD)



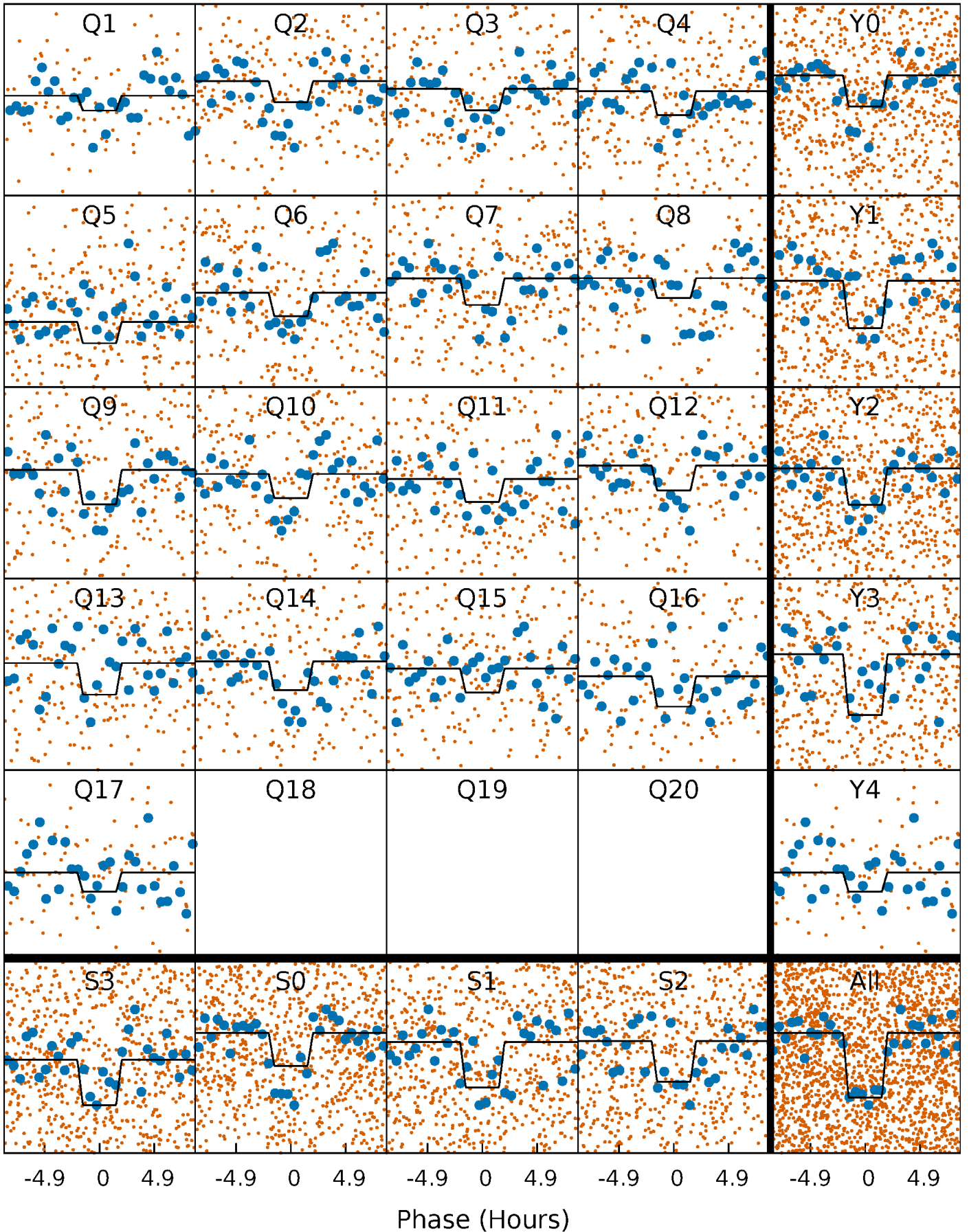
DV Quarter-Phased Transit Curves

TCE 008218379-02 P= 10.138438 Days $T_0=137.716737$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

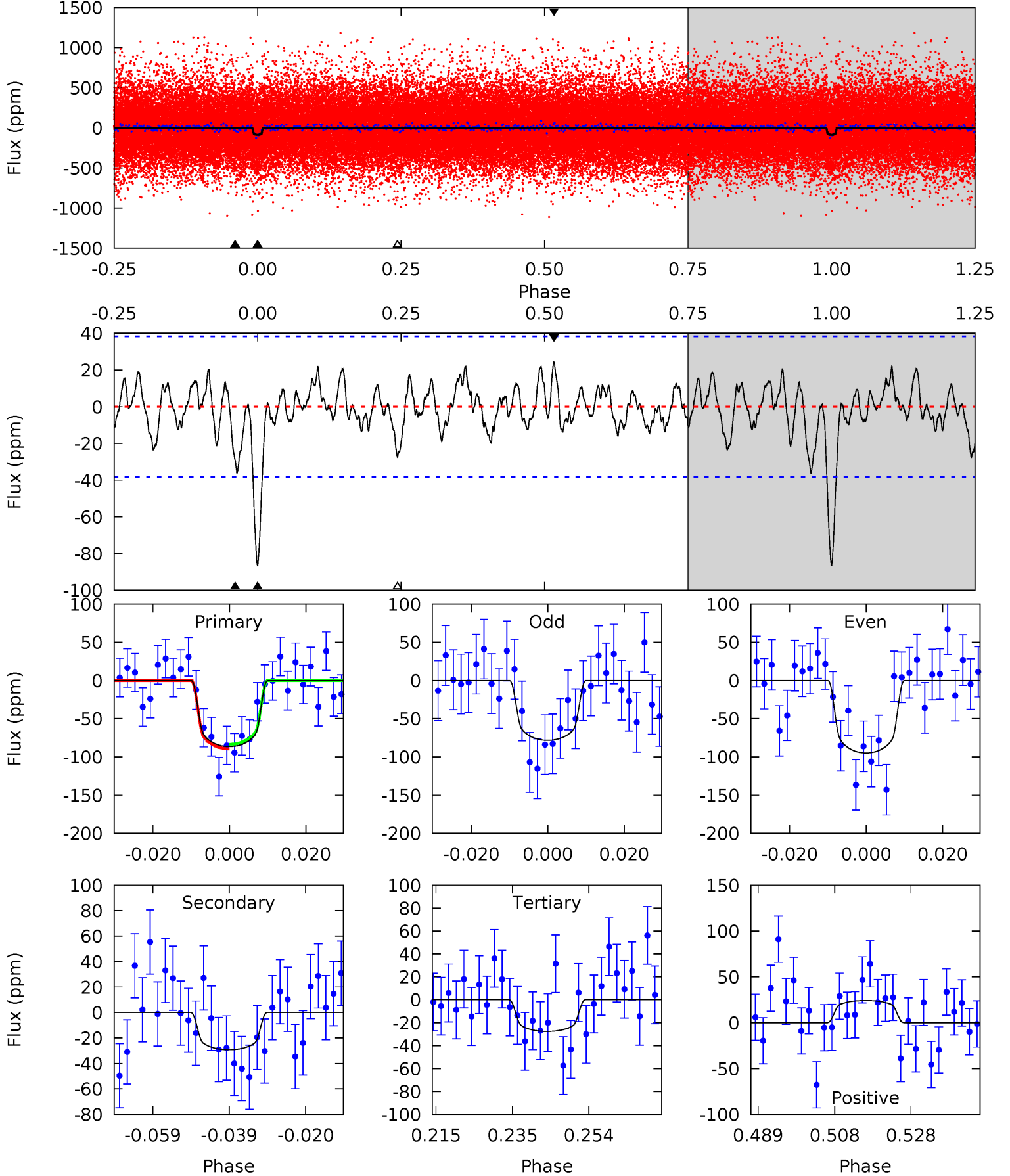
TCE 008218379-02 P= 10.138444 Days $T_0=137.715786$ (BKJD)



DV Model-Shift Uniqueness Test

008218379-02, P = 10.138438 Days, E = 127.578299 Days

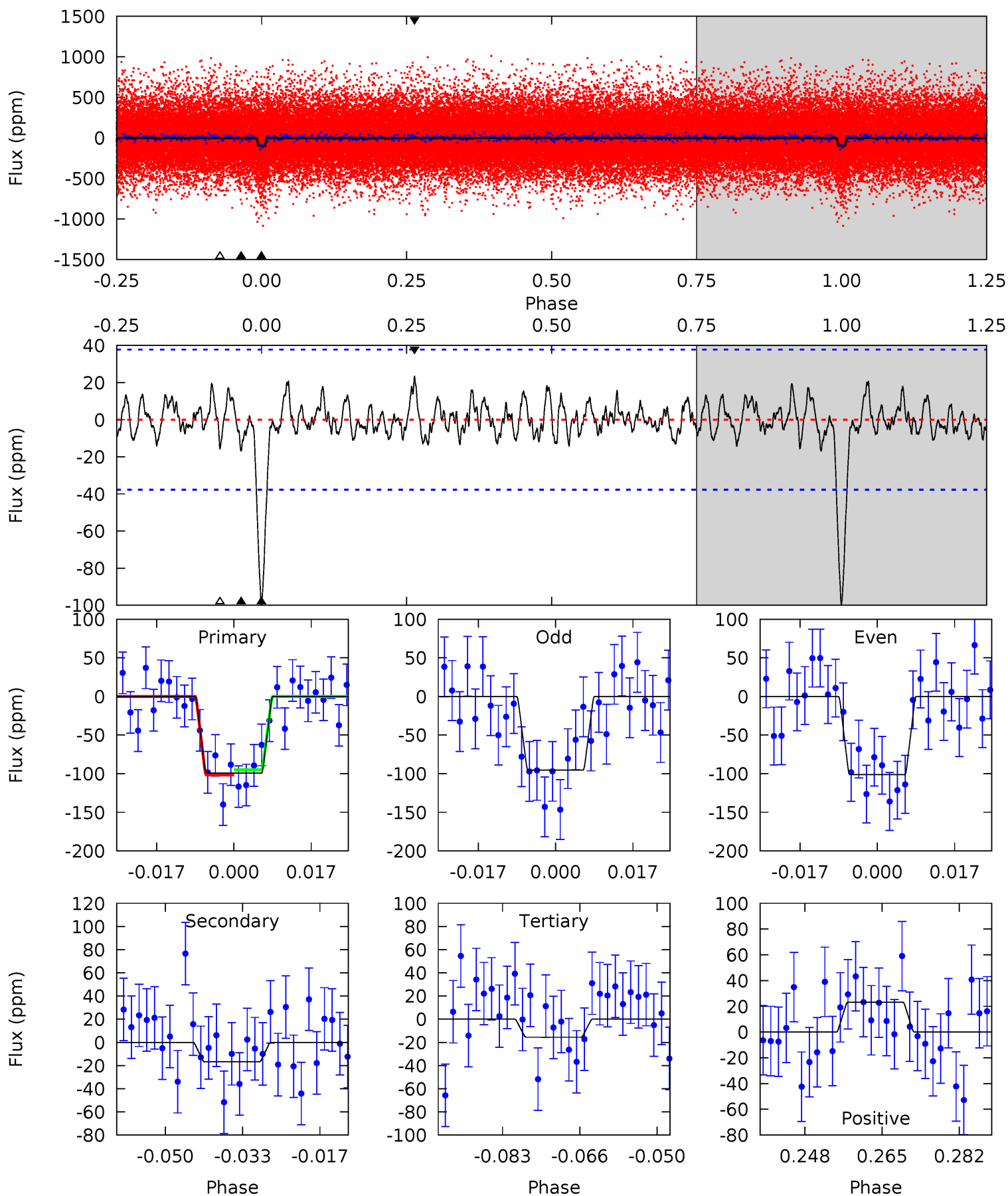
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	3.74	3.53	3.10	4.90	2.33	1.23	7.54	7.97	0.21	0.64	1.07	0.93	0.22	0.38



Alt Model-Shift Uniqueness Test

008218379-02, P = 10.138444 Days, E = 127.577342 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	2.19	2.03	3.03	4.93	2.40	0.94	10.9	9.94	0.16	-0.84	0.39	0.96	0.19	0.46



Stellar Parameters For KIC 008218379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5483^{+166}_{-149}	$4.589^{+0.034}_{-0.136}$	$-0.220^{+0.300}_{-0.300}$	$0.779^{+0.164}_{-0.059}$	$0.865^{+0.083}_{-0.102}$	$2.581^{+0.463}_{-1.004}$
	+3%/-3%	+1%/-3%	+136%/-136%	+21%/-8%	+10%/-12%	+18%/-39%
Source	PHO1	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 008218379-02 / KOI 1920.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-29 ± 8	$0.98^{+0.43}_{-0.38}$	1028^{+48}_{-40}	4065^{+869}_{-484}	126^{+211}_{-68}
Alt.	-17 ± 8	$0.87^{+0.40}_{-0.39}$	1030^{+52}_{-42}	3836^{+952}_{-558}	86^{+203}_{-55}

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 $A_{obs} \gg 1.0$

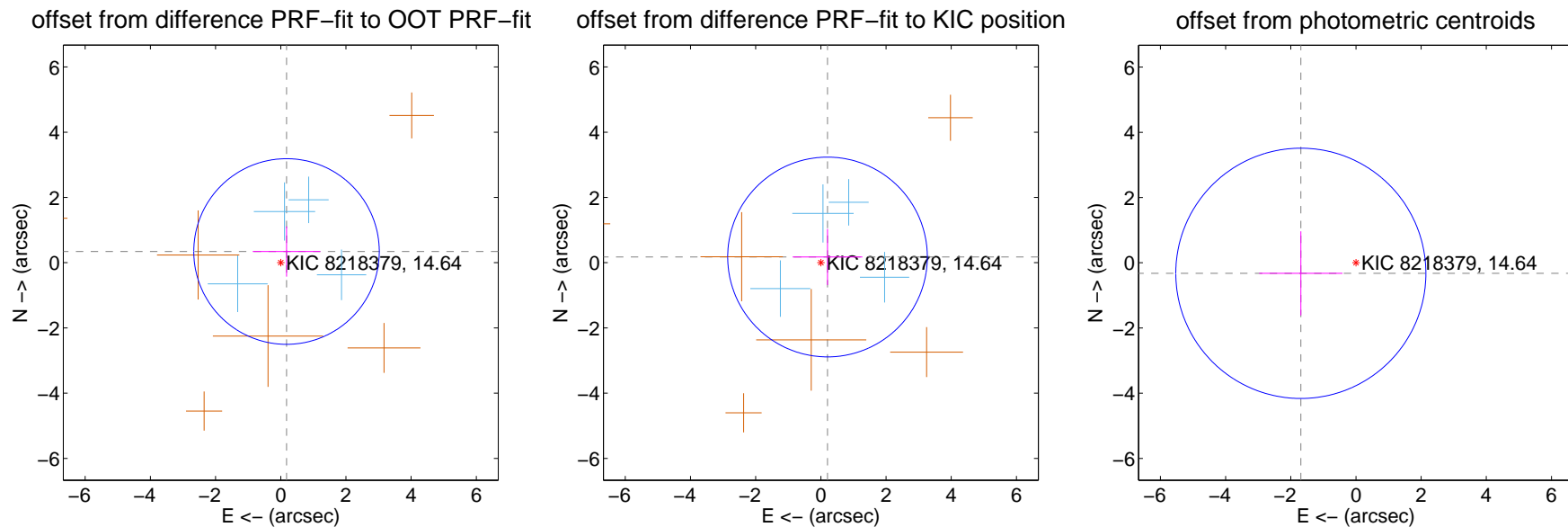
DV Centroid Data

Supplemental centroid analysis for 008218379-02. Kepler magnitude: 14.64. Transit SNR 7.87

There are 4 quarters with good PRF difference image offsets

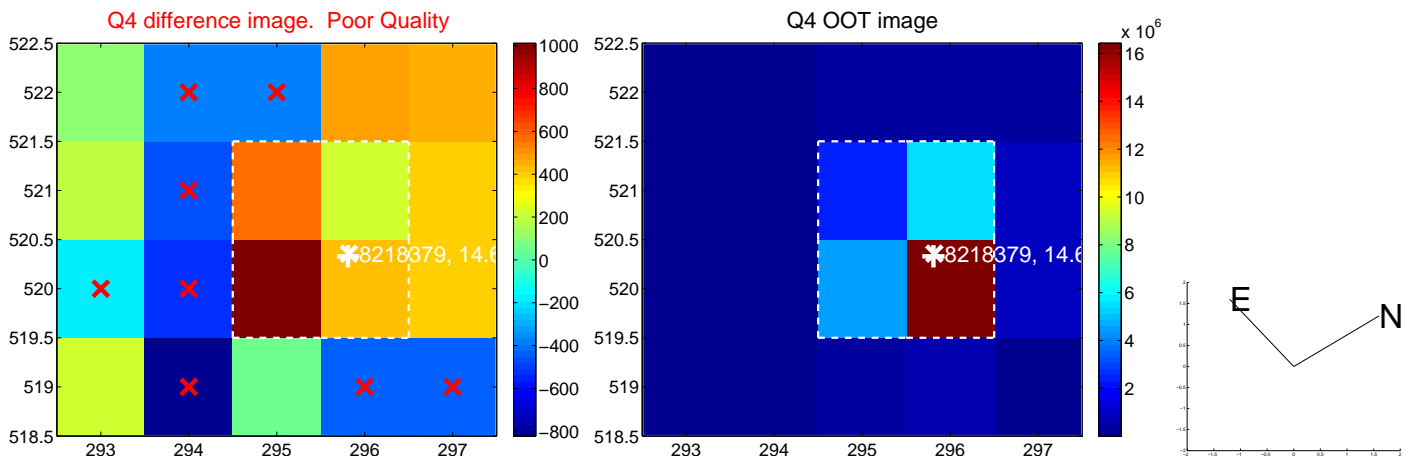
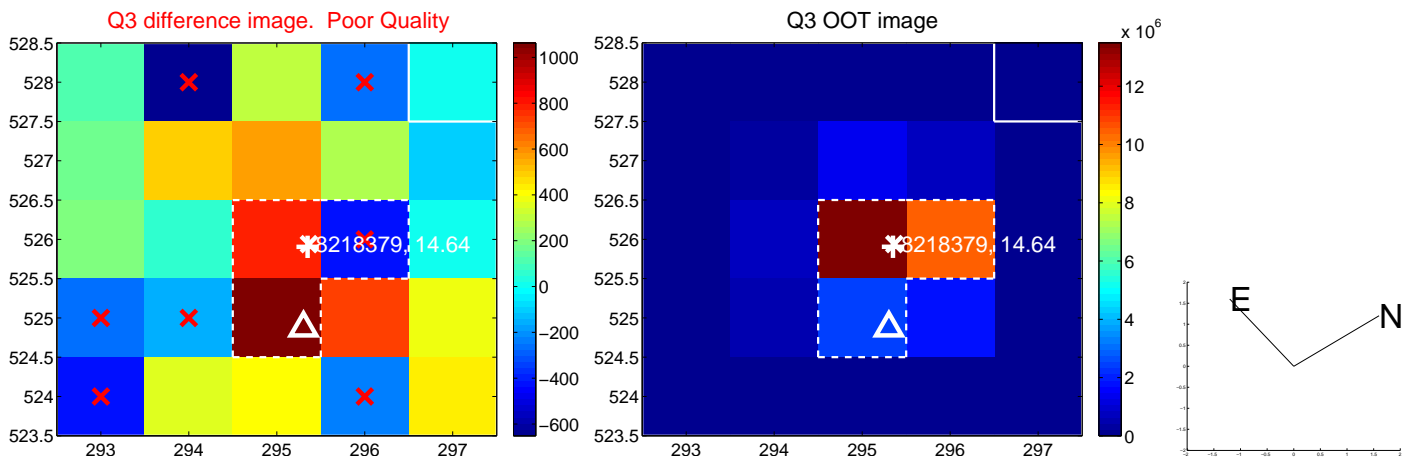
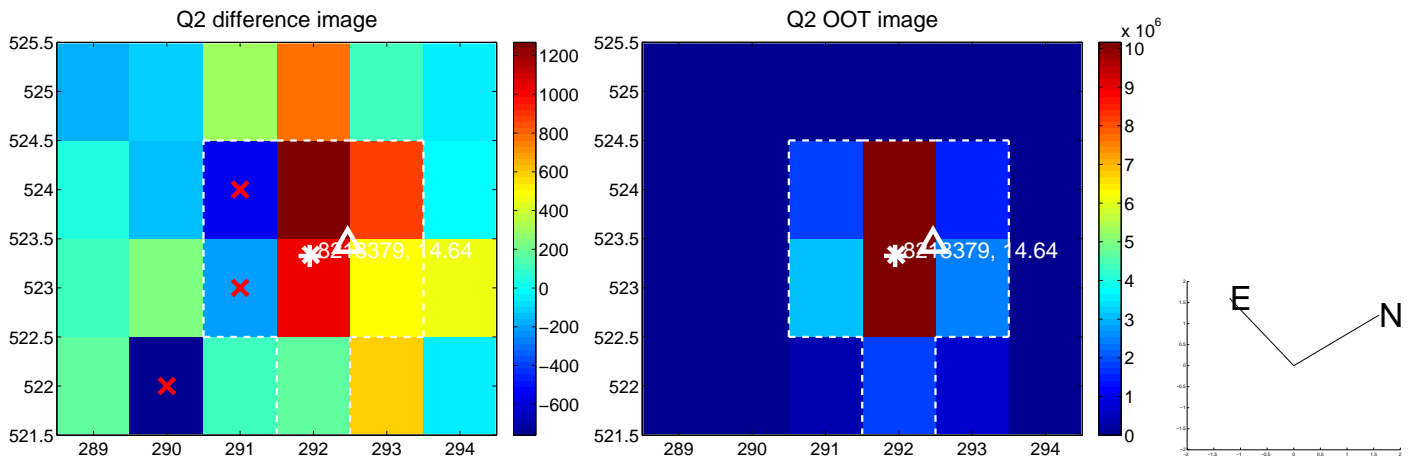
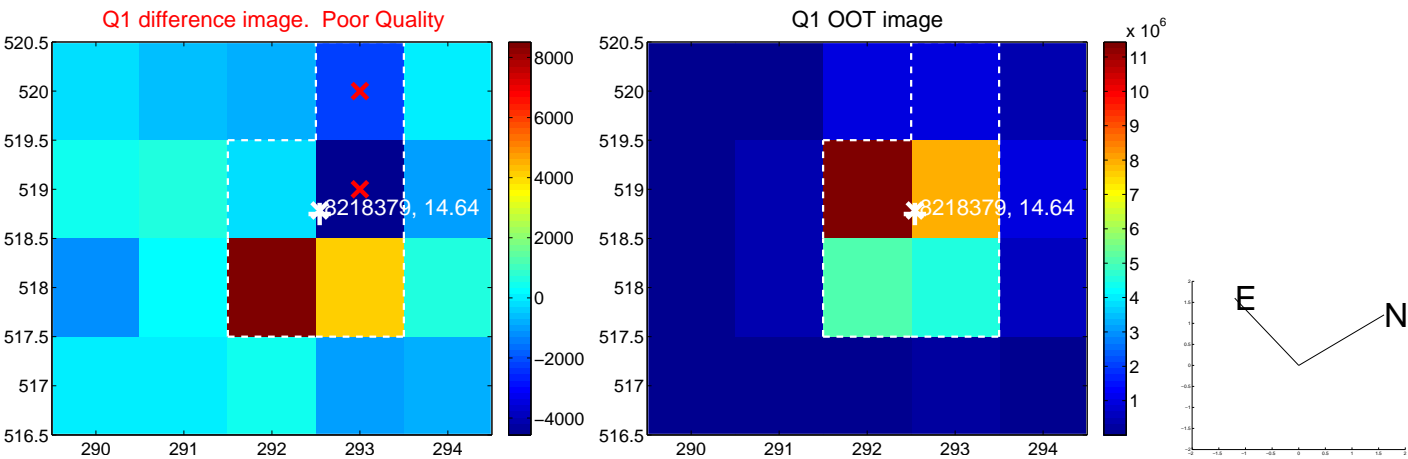
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.386 ± 0.949	0.41	-0.177 ± 1.037	0.343 ± 0.771
PRF-fit source offset from KIC position	0.268 ± 1.021	0.26	-0.204 ± 1.071	0.174 ± 0.861
photometric centroid source offset	1.72 ± 1.28	1.35	1.69 ± 1.28	-0.32 ± 1.29

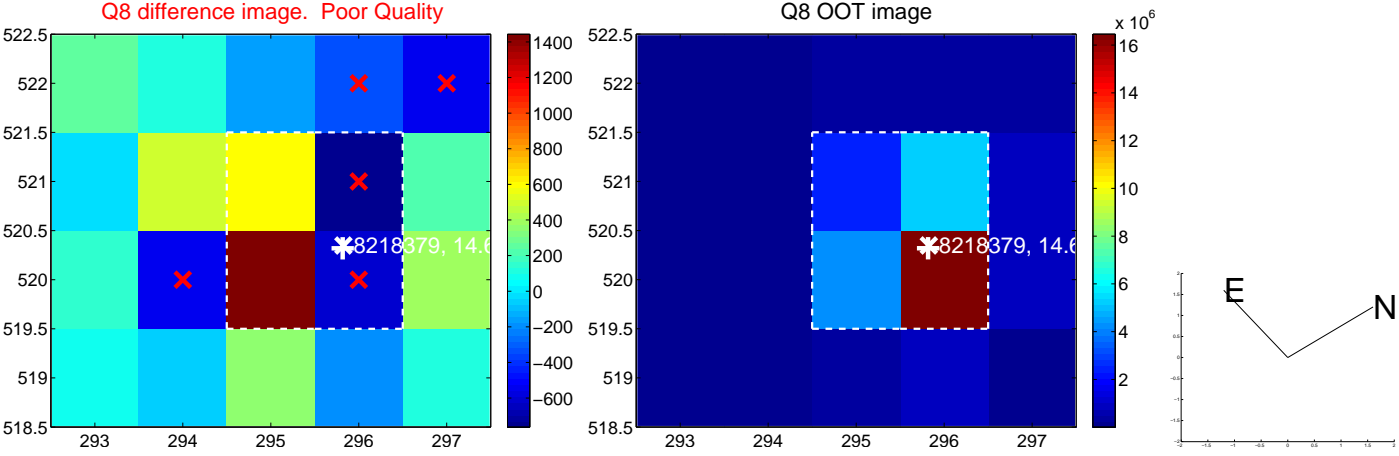
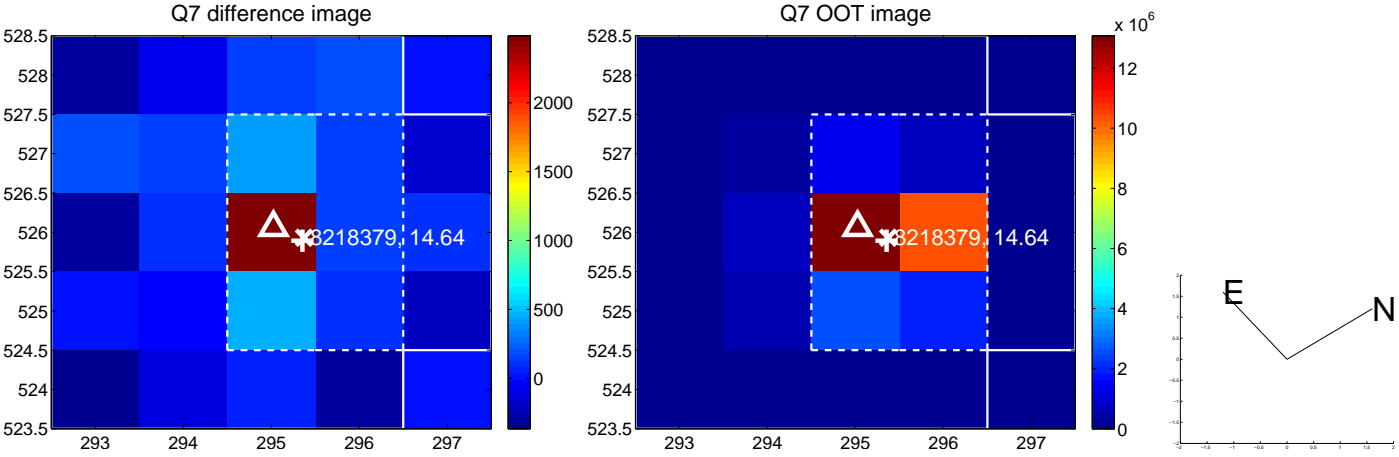
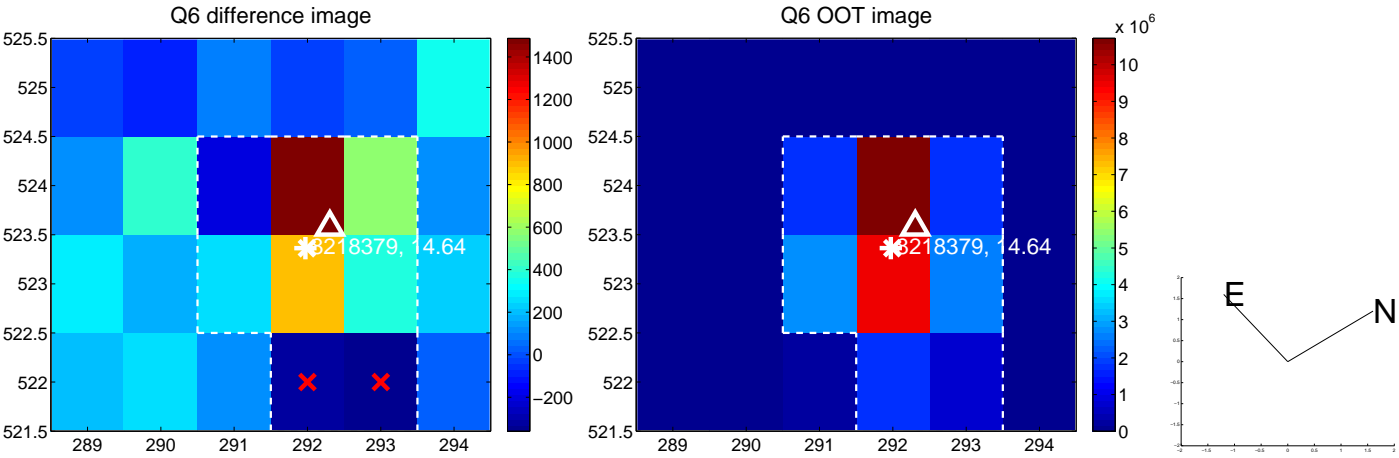
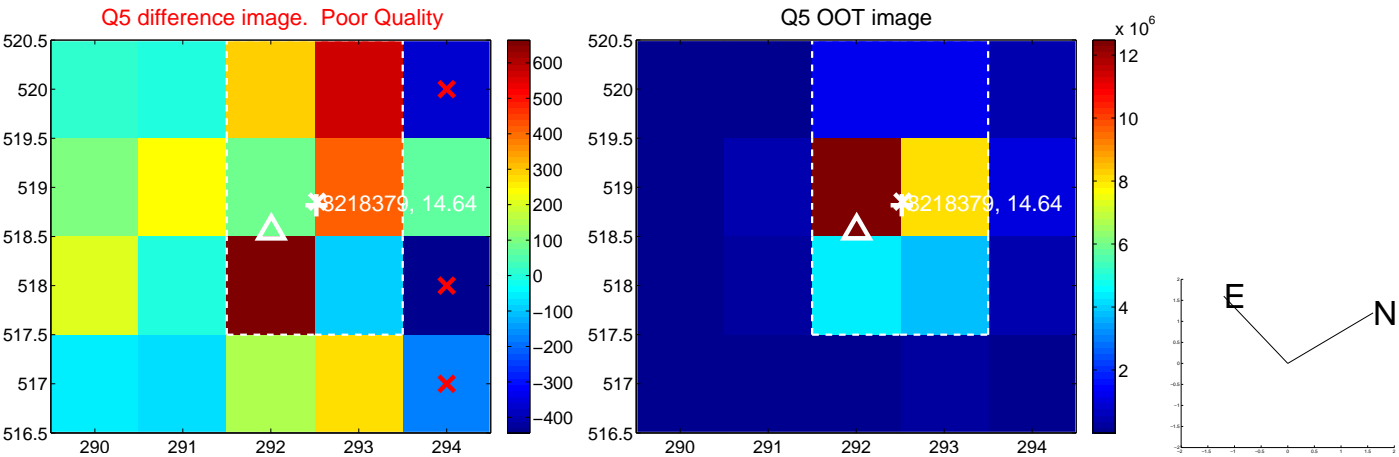


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

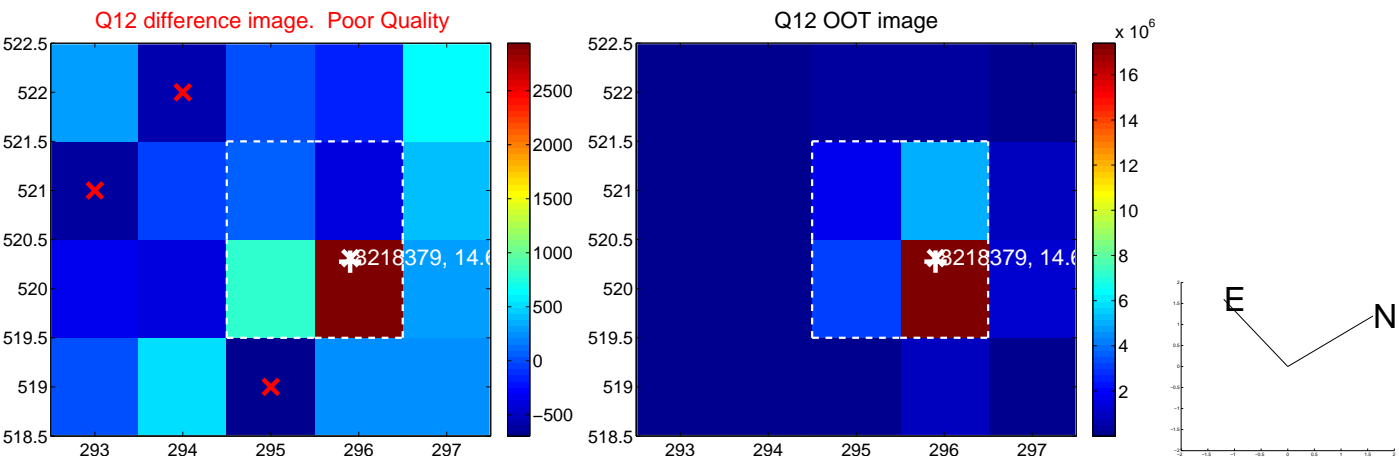
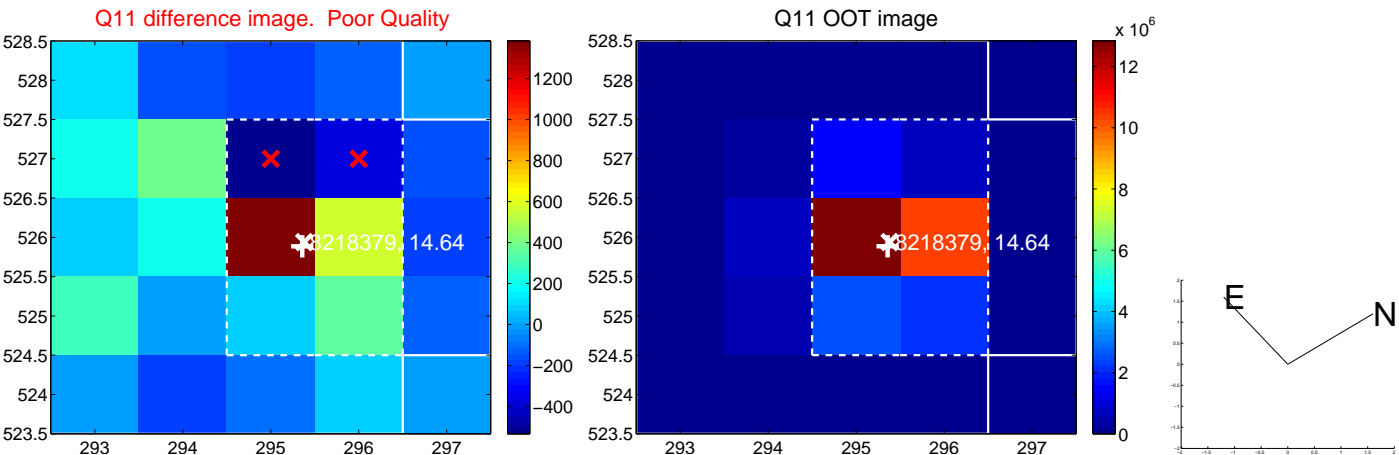
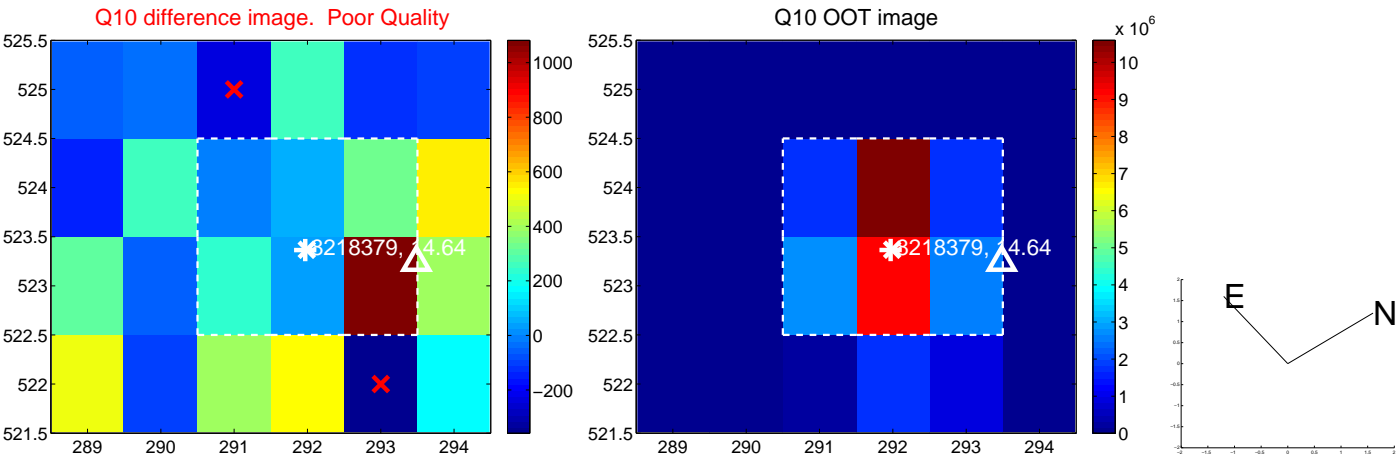
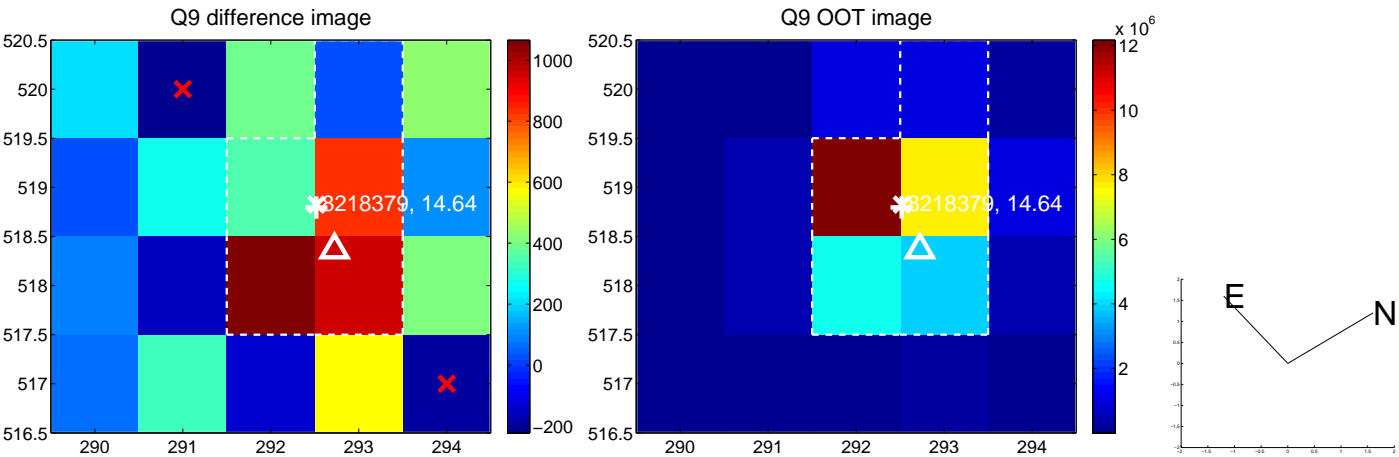
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



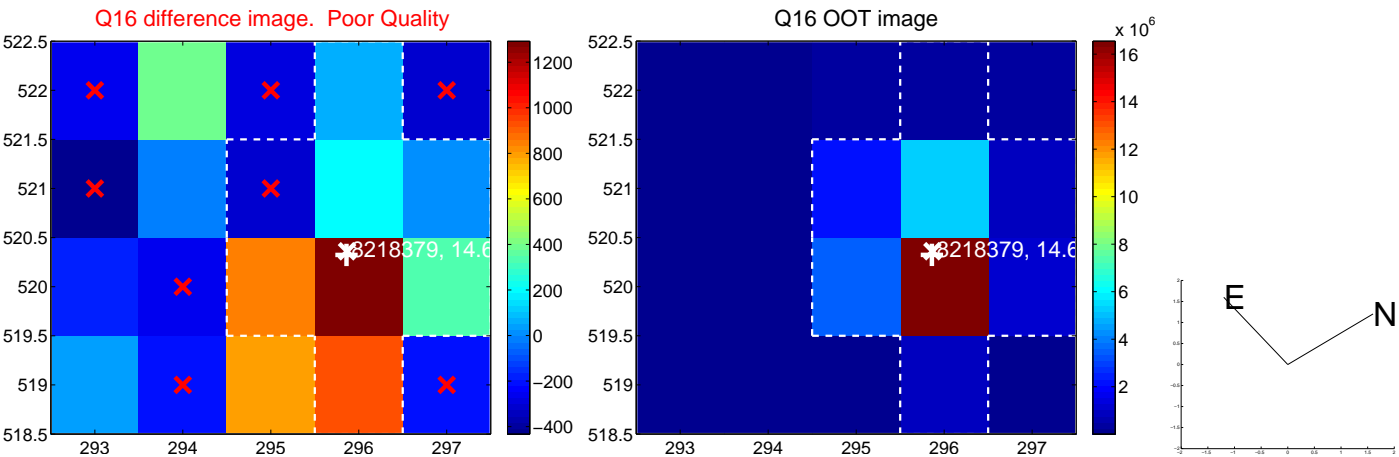
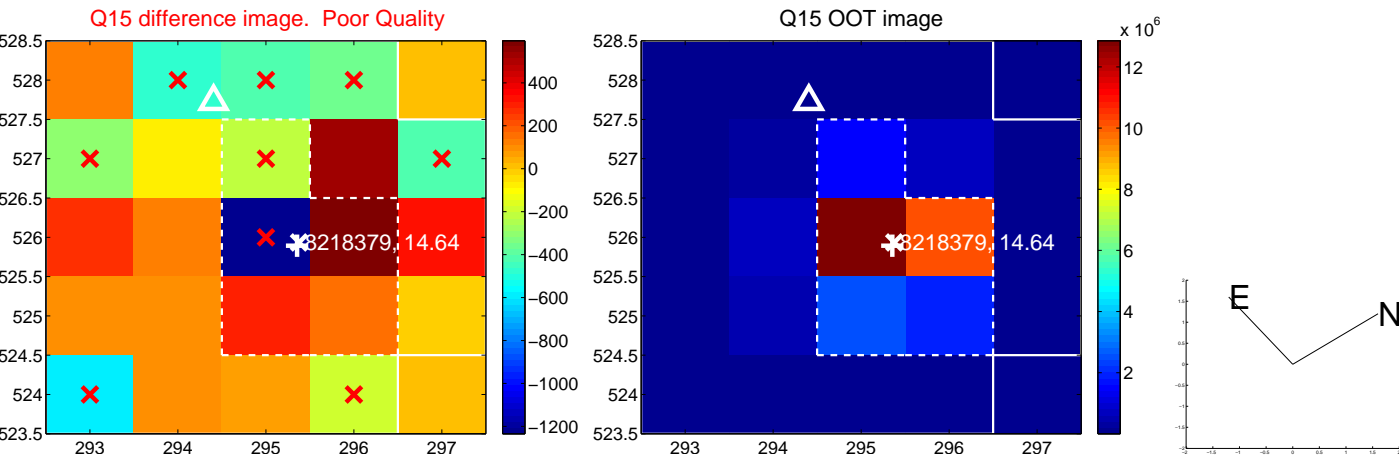
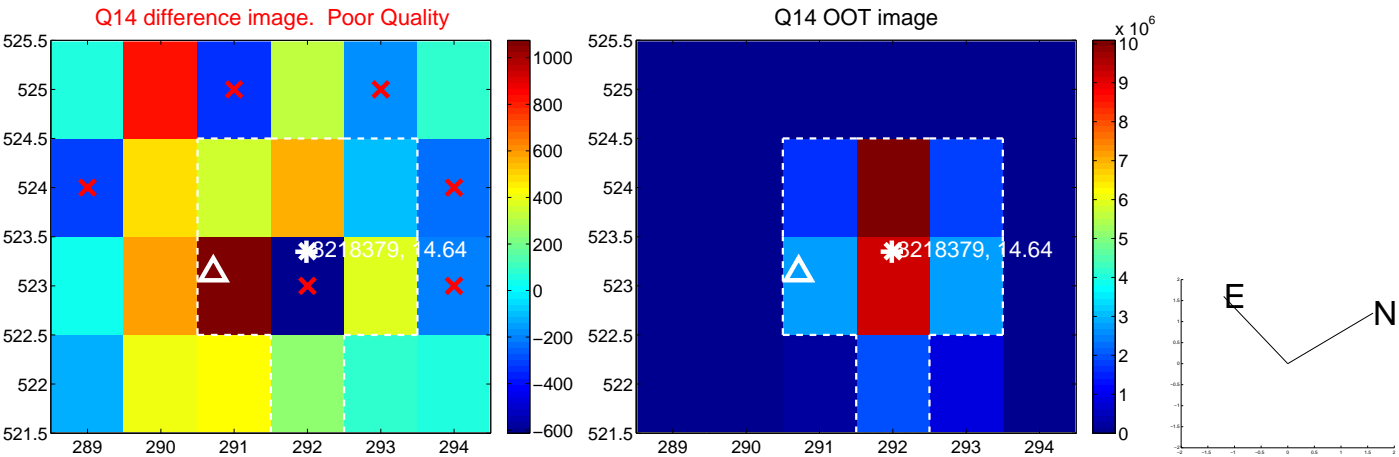
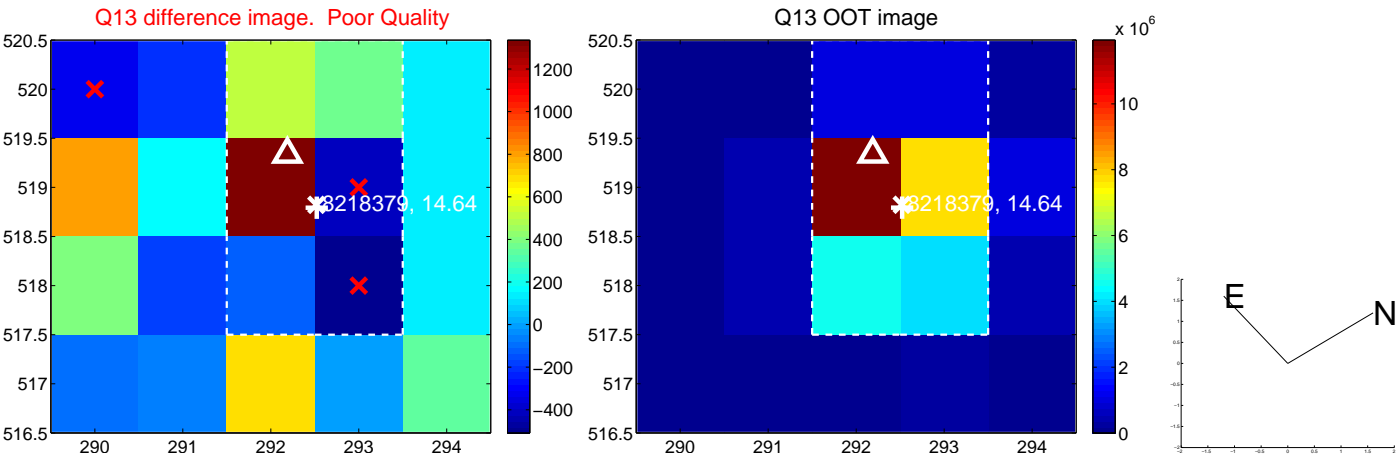
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



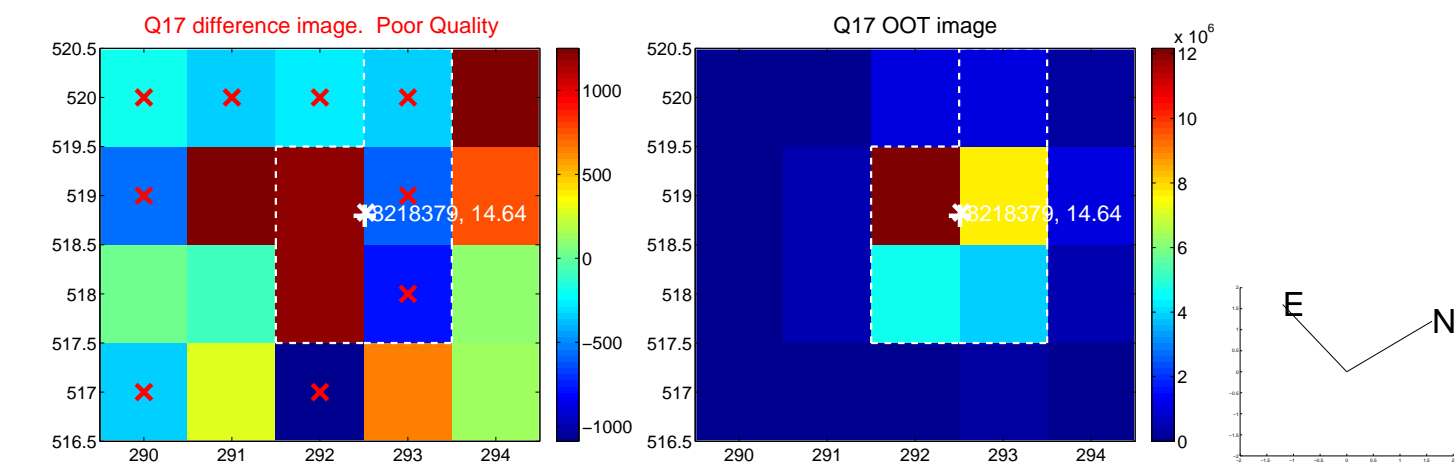
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



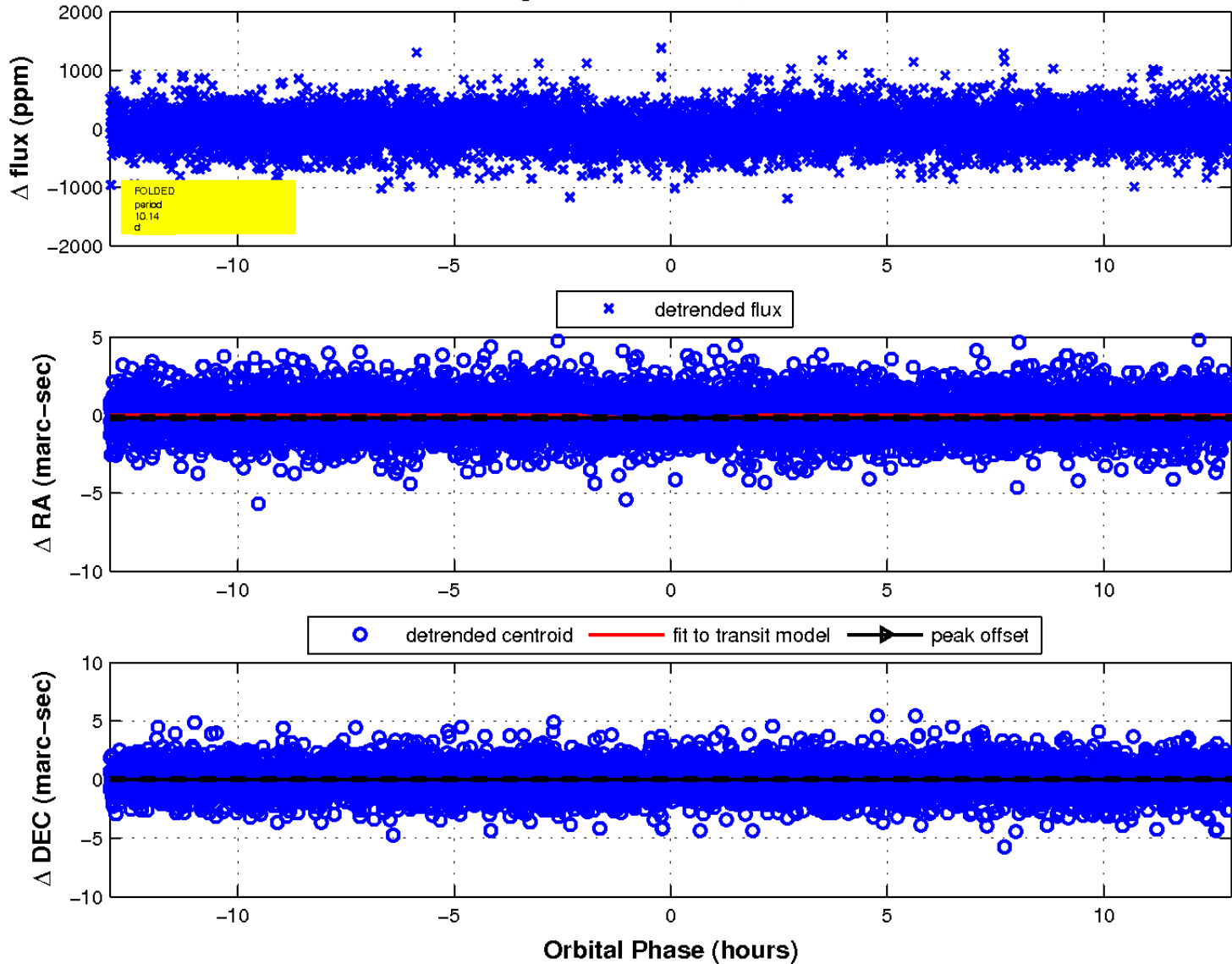
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination

