

KIC 007516379

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})
007516379-01	OBS	No	0.983703	131.931467	36.9	1.971	8.3	7.6	0.76	5784	0.53	1752.56
007516379-02	OBS	No	0.983746	132.382959	29.3	3.044	7.5	7.5	0.76	5784	0.49	1752.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007516379-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007516379-02	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST—EPHEM_MATCH

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

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

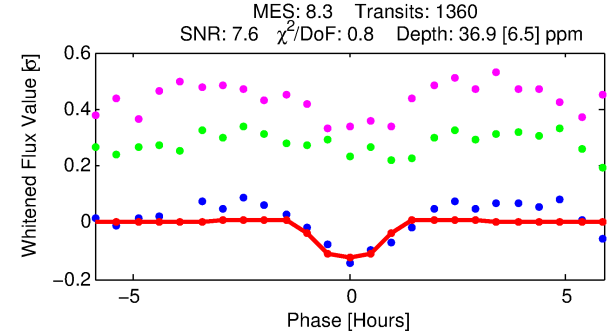
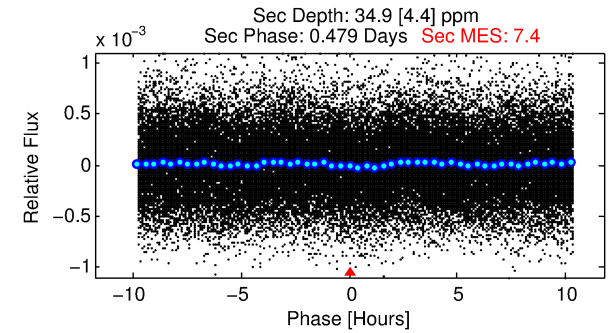
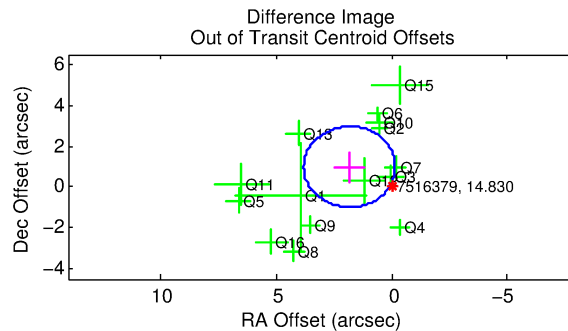
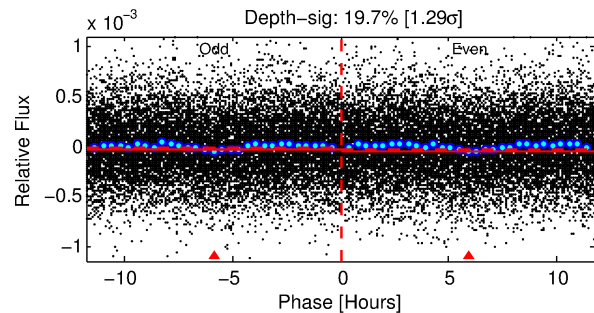
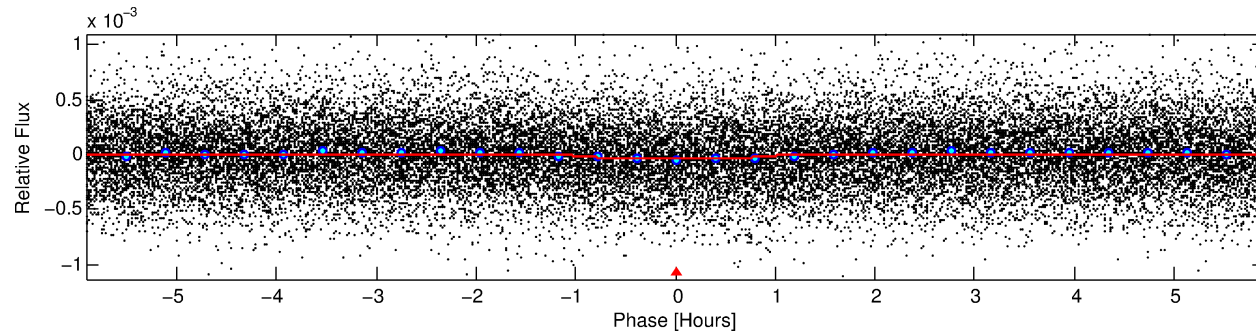
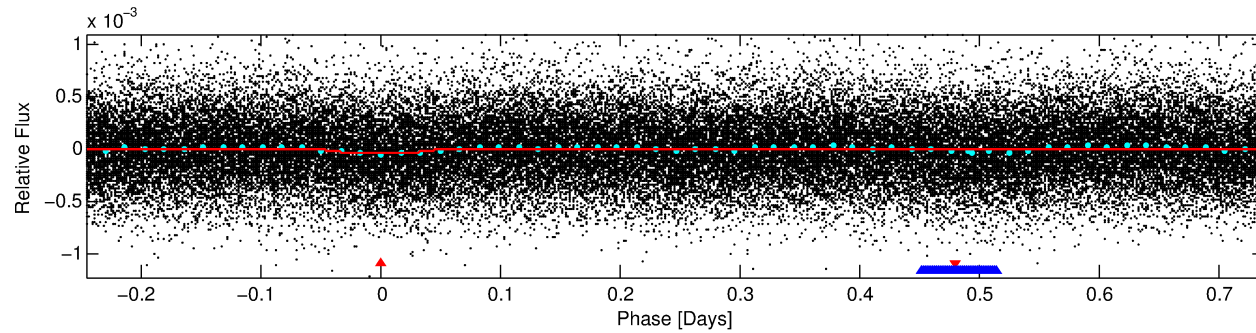
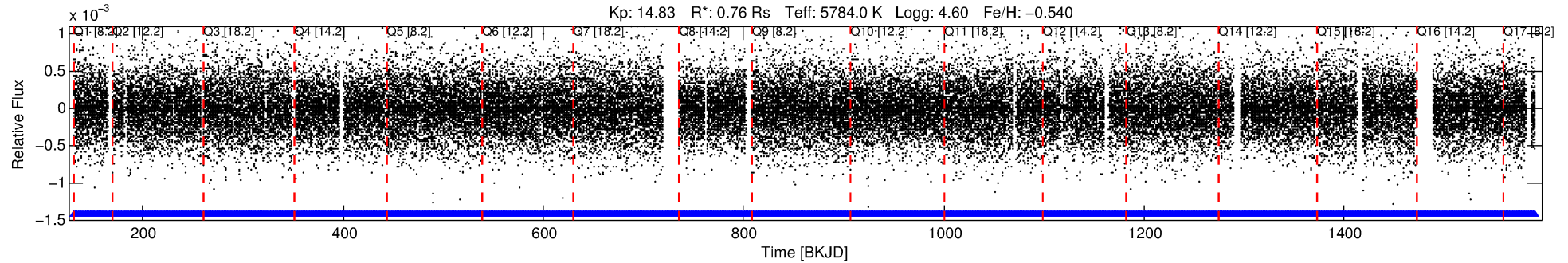
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007516379-01

No Significant Match Found

DV One-Page Summary

KIC: 7516379 Candidate: 1 of 2 Period: 0.984 d



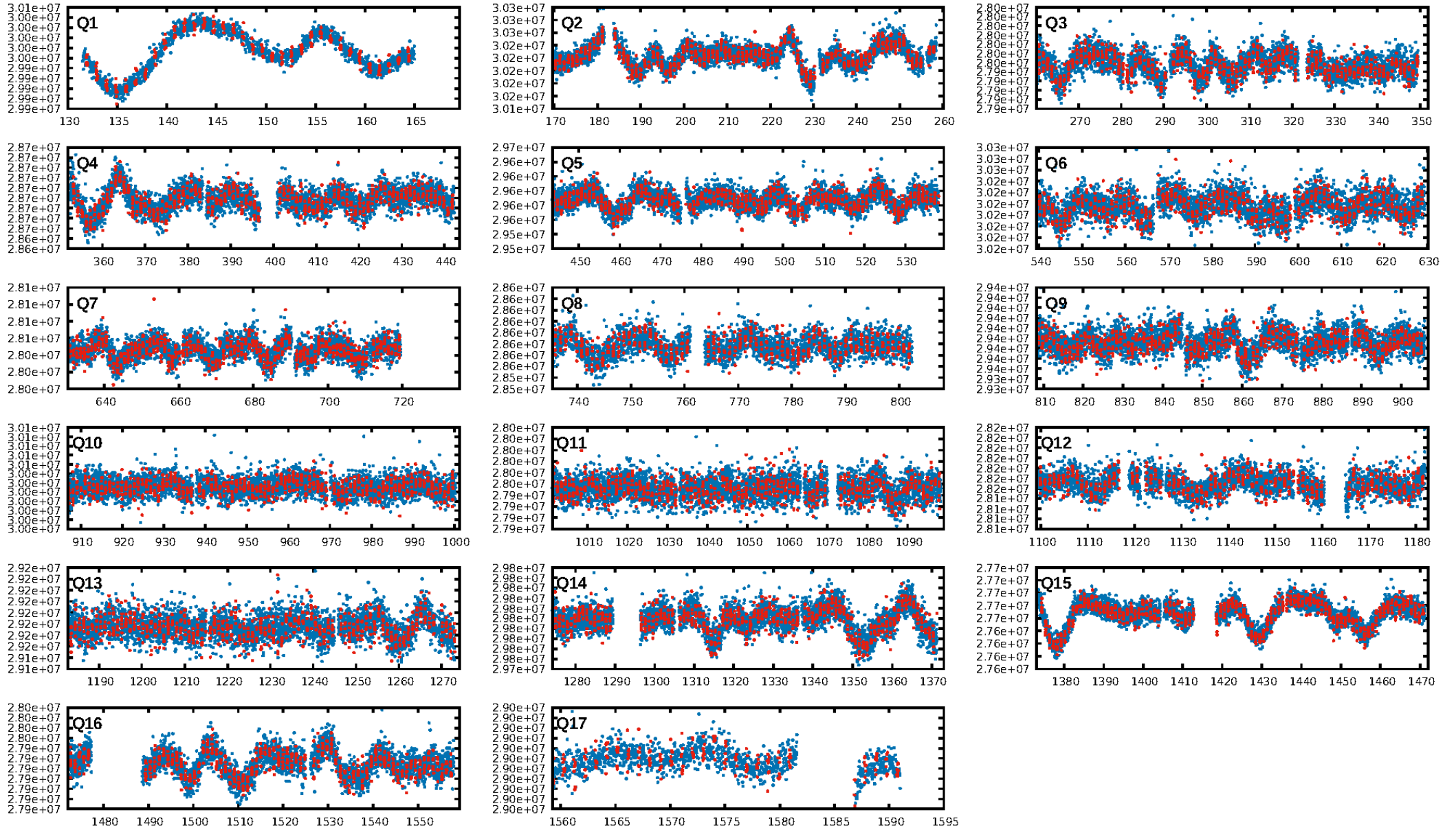
DV Fit Results:

Period = 0.98370 [0.00001] d
Epoch = 131.9315 [0.0037] BKJD
Rp/R* = 0.0063 [0.0031]
a/R* = 2.23 [4.37]
b = 0.85 [0.80]
Seff = 1752.56 [528.29]
Teff = 1650 [124] K
Rp = 0.53 [0.29] Re
a = 0.0183 [0.0035] AU
Ag = 22.91 [23.66] [0.93 σ]
Teffp = 5581 [1394] K [2.81 σ]

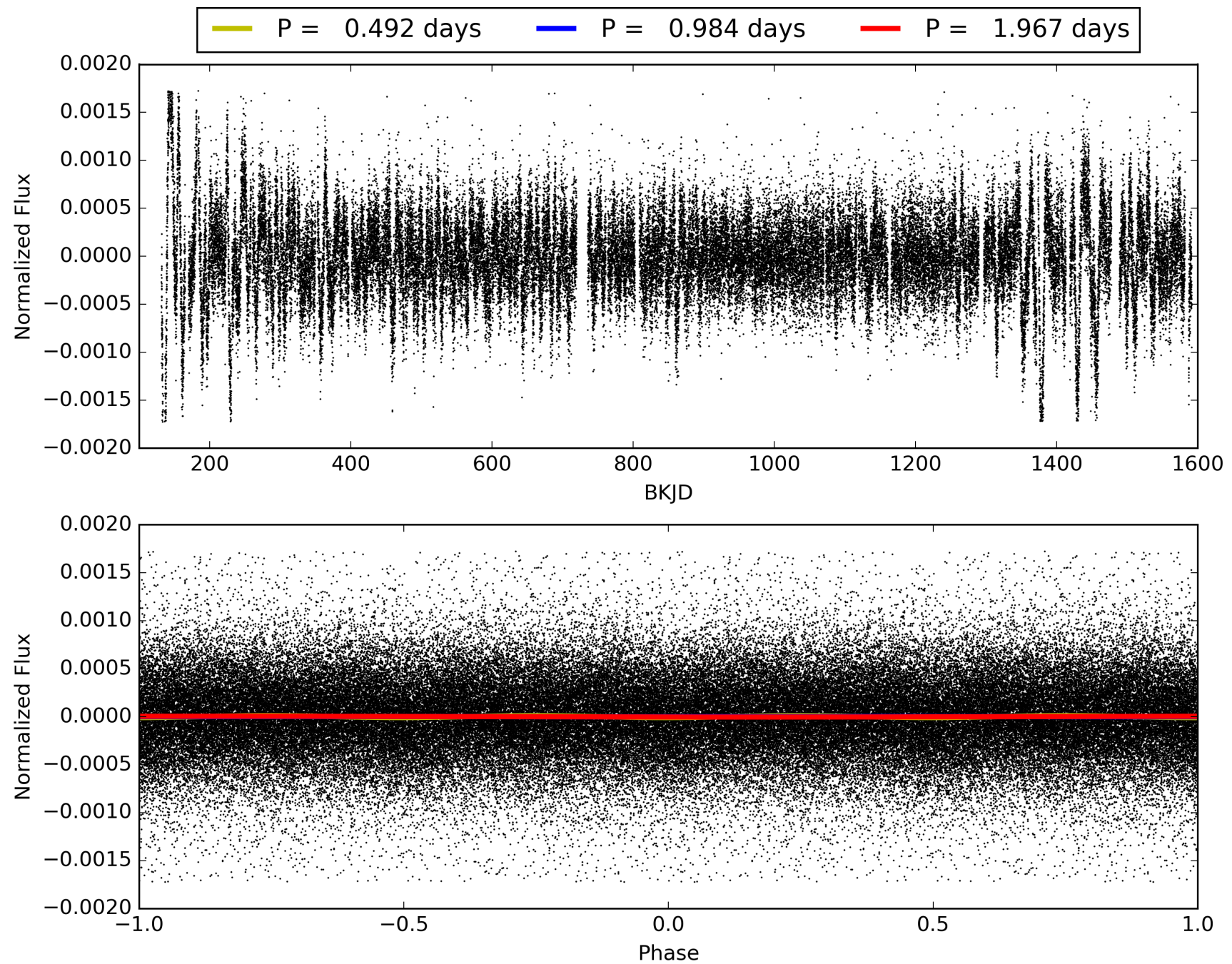
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.11e-18
RollingBand-fgt: 1.00 [1298/1298]
GhostDiagnostic-chr: 0.6018
Centroid-sig: 0.0%
Centroid-so: 5.113 arcsec [2.89 σ]
OotOffset-rm: 2.082 arcsec [3.15 σ]
KicOffset-rm: 2.038 arcsec [3.10 σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007516379-01, PDC Light Curves

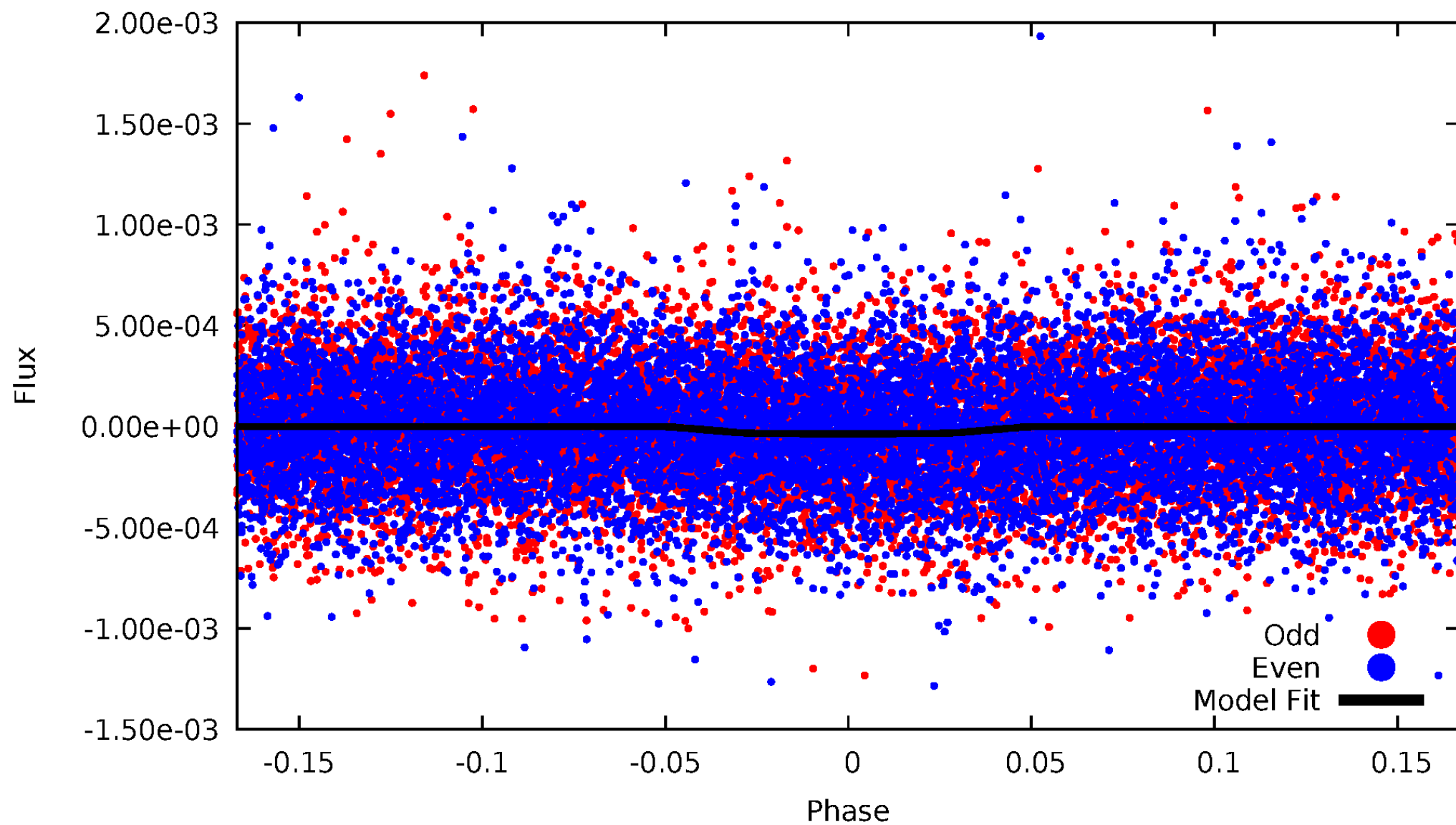


TCE 007516379-01



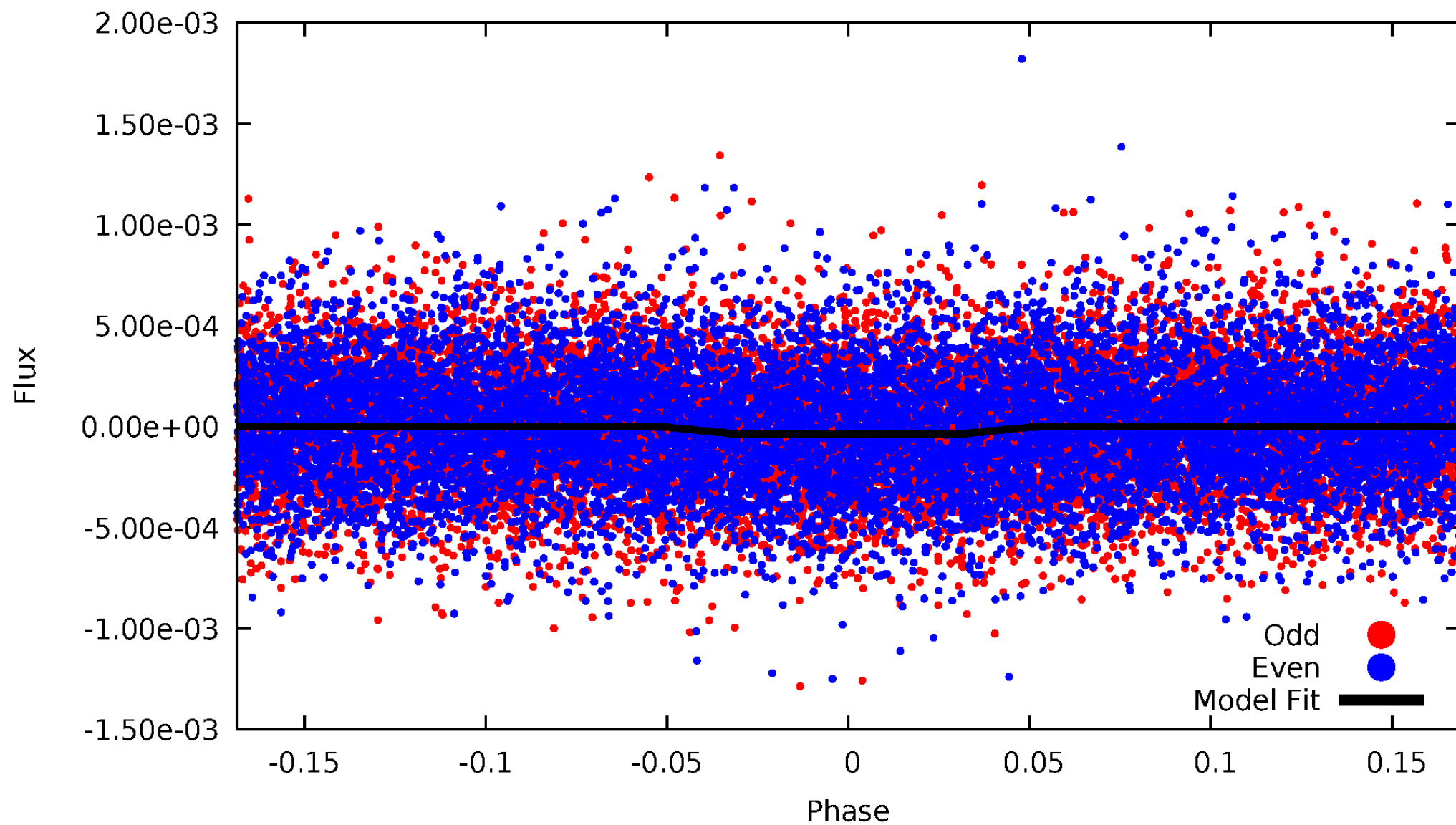
DV Odd/Even

TCE 007516379-01



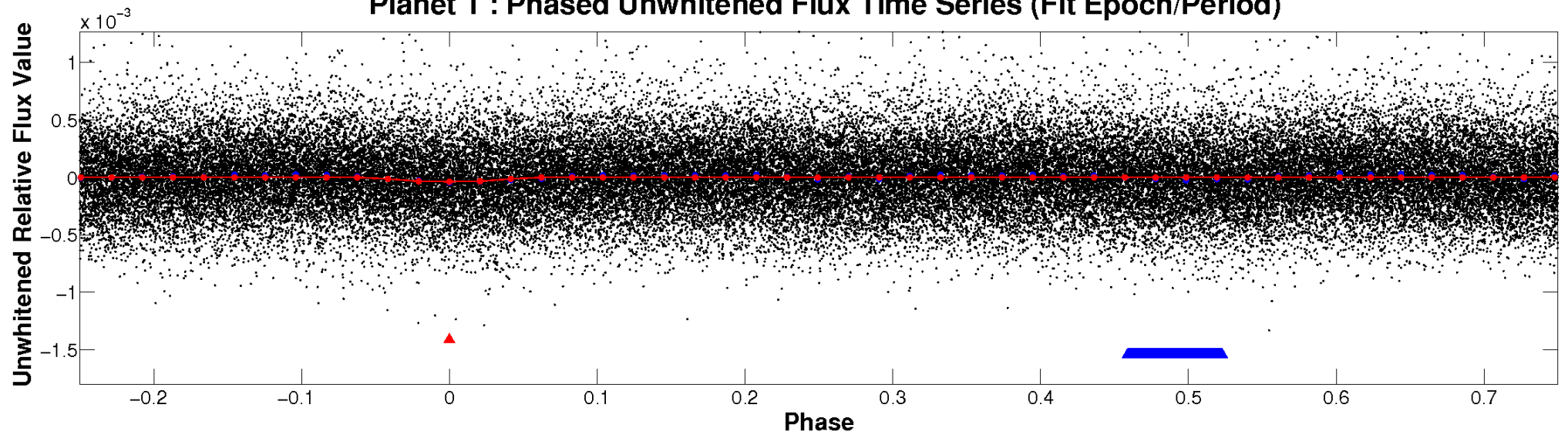
ALT Odd/Even

TCE 007516379-01

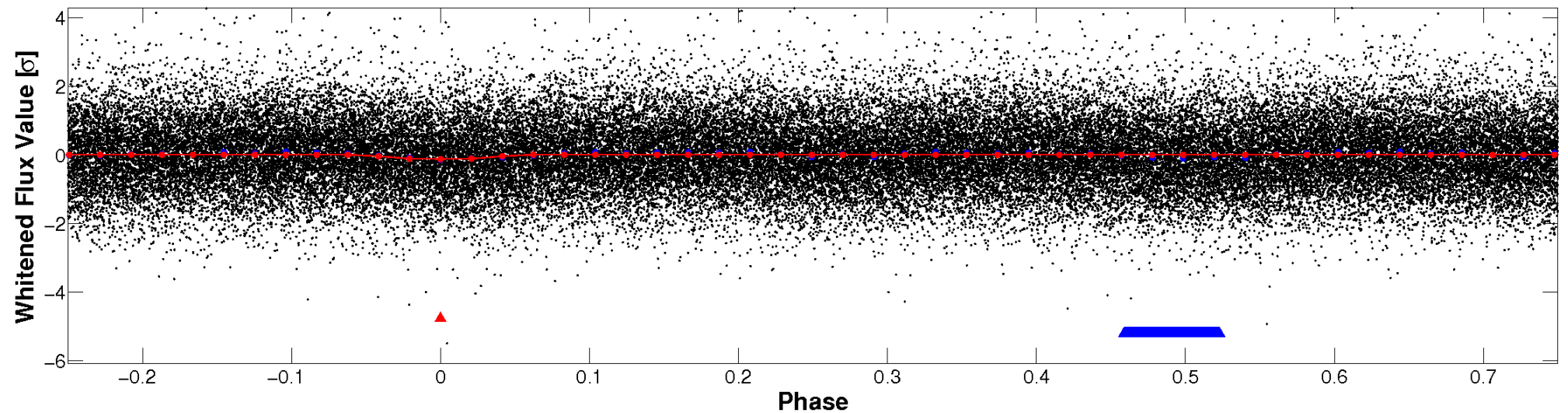


Non-Whitened Vs. Whitened Light Curve

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

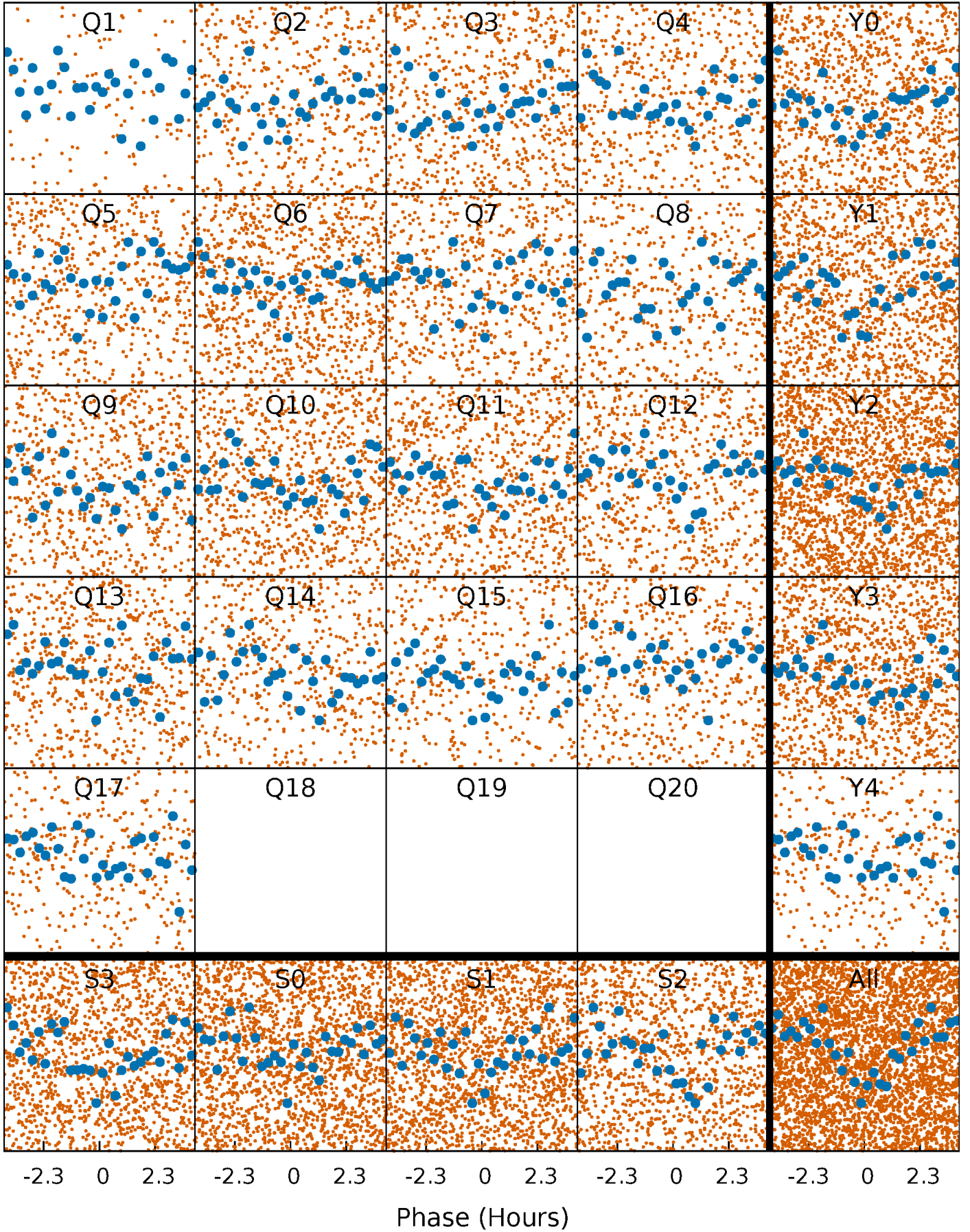


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



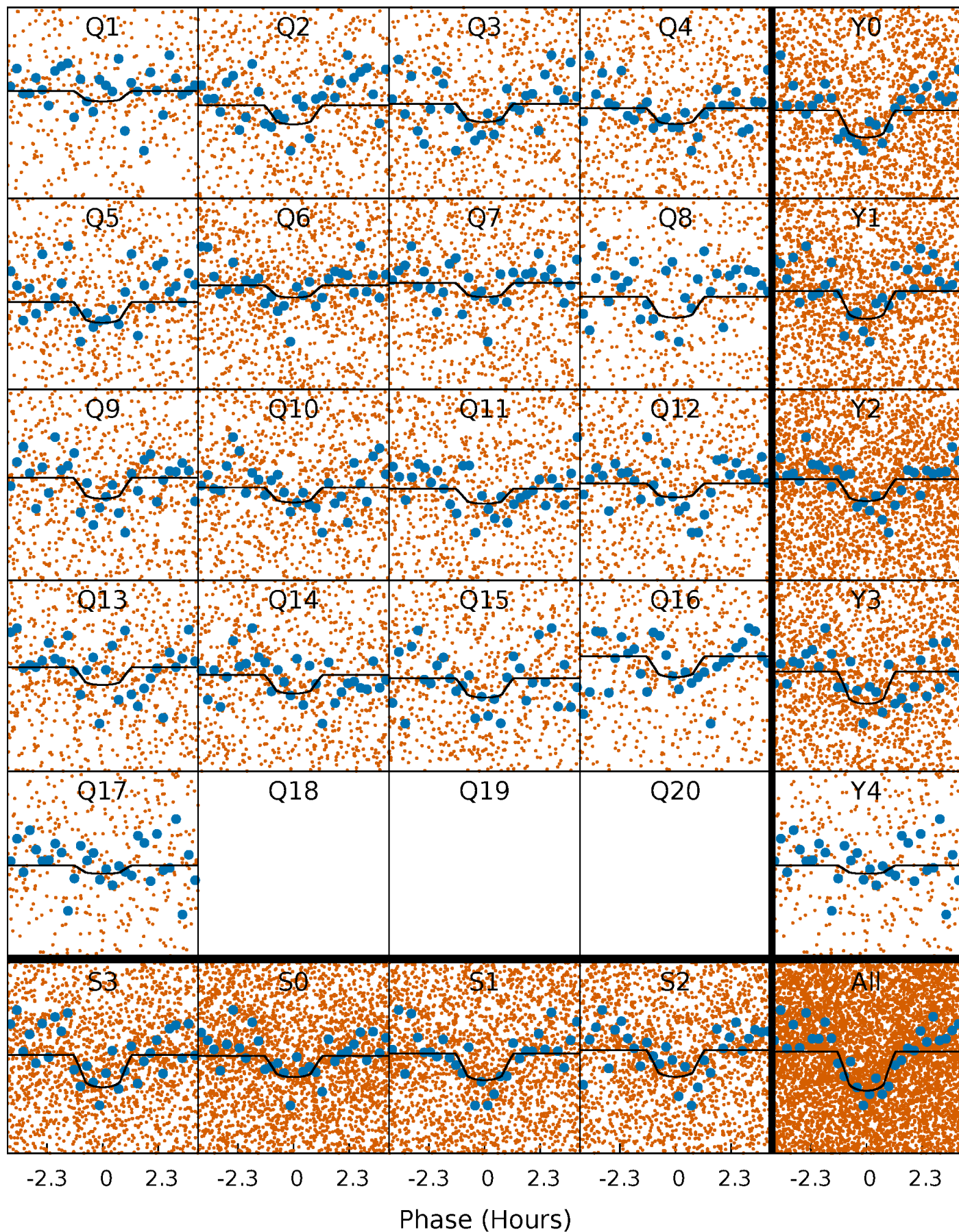
PDC Quarter-Phased Transit Curves

TCE 007516379-01 P= 0.983703 Days $T_0=131.931467$ (BKJD)



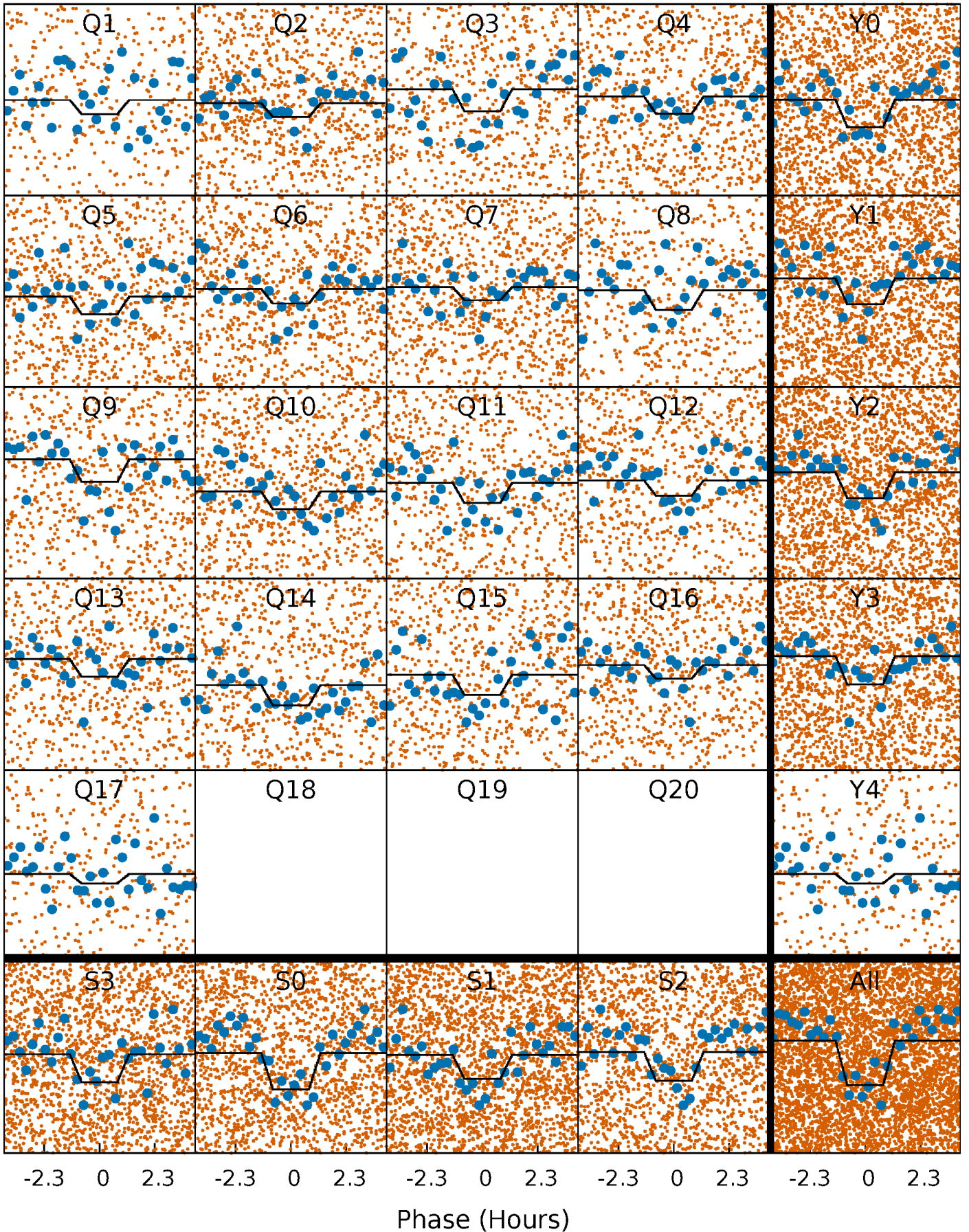
DV Quarter-Phased Transit Curves

TCE 007516379-01 P= 0.983703 Days $T_0=131.931467$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

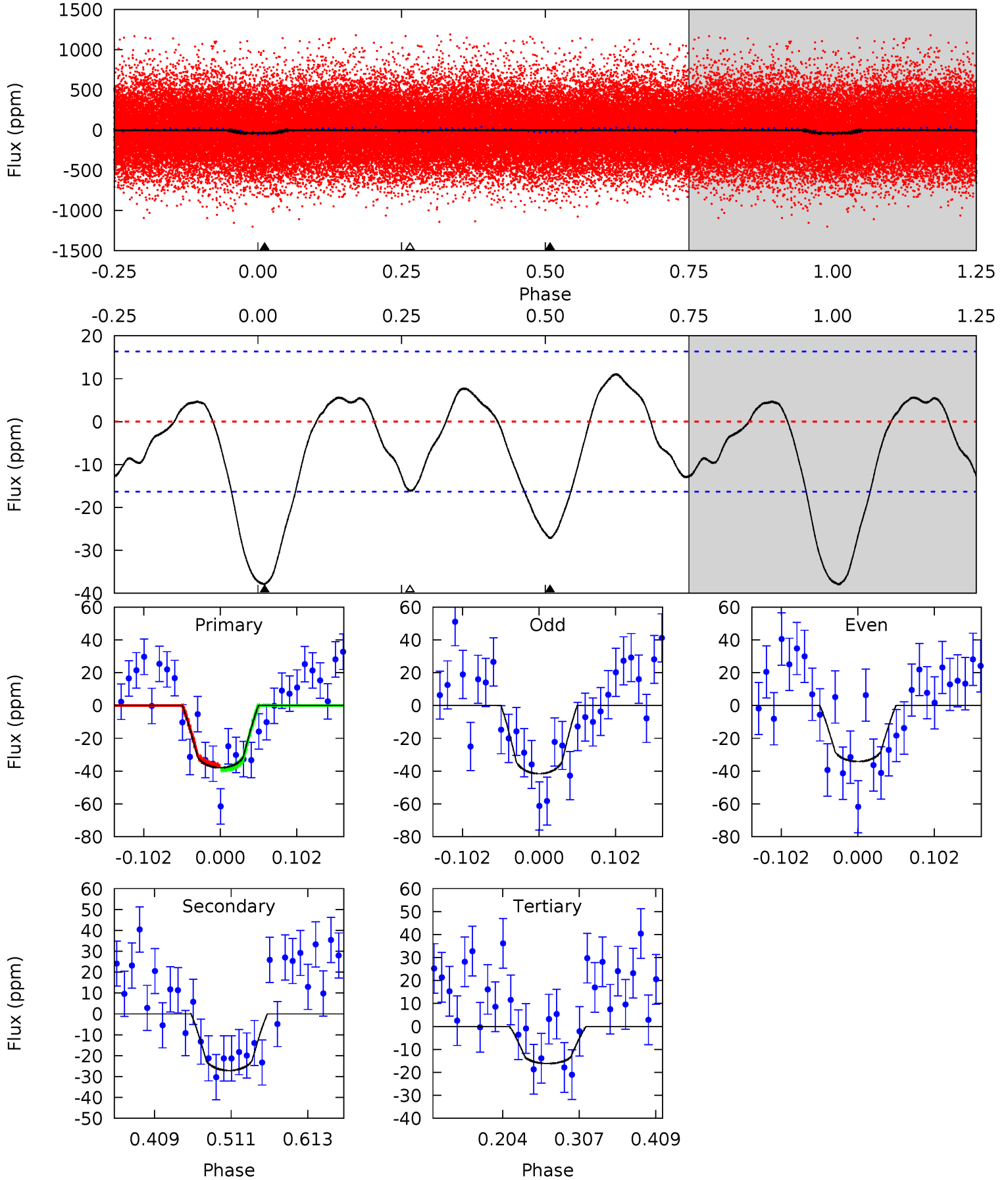
TCE 007516379-01 P= 0.983731 Days $T_0=131.921095$ (BKJD)



DV Model-Shift Uniqueness Test

007516379-01, P = 0.983703 Days, E = 130.947764 Days

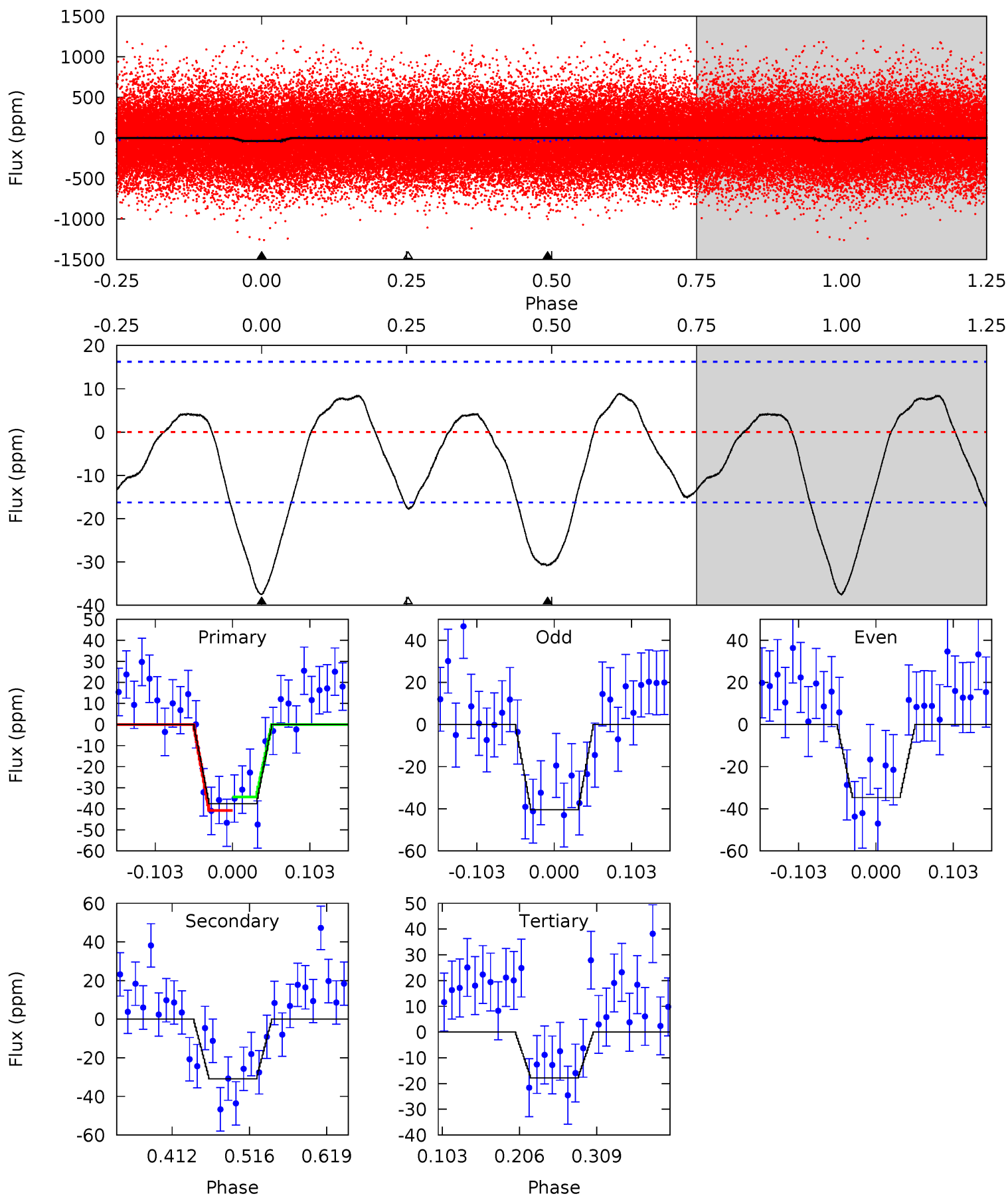
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	7.57	4.51	0	4.56	1.63	2.06	6.08	10.6	3.06	7.57	1.04	1.16	0.23	0.35



Alt Model-Shift Uniqueness Test

007516379-01, P = 0.983731 Days, E = 130.937364 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	8.66	4.99	0	4.56	1.63	2.19	5.56	10.6	3.67	8.66	0.80	0.99	0.19	0.91



Stellar Parameters For KIC 007516379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5784^{+157}_{-157}	$4.596^{+0.036}_{-0.153}$	$-0.540^{+0.300}_{-0.300}$	$0.763^{+0.177}_{-0.059}$	$0.852^{+0.077}_{-0.095}$	$2.697^{+0.410}_{-1.108}$
	+3%/-3%	+1%/-3%	+56%/-56%	+23%/-8%	+9%/-11%	+15%/-41%
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 007516379-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-27 ± 4	$0.58^{+0.29}_{-0.28}$	2357^{+128}_{-98}	5159^{+1944}_{-782}	15^{+39}_{-8}
Alt.	-31 ± 4	$0.54^{+0.29}_{-0.26}$	2358^{+126}_{-99}	5469^{+2326}_{-913}	19^{+54}_{-11}

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 $A_{obs} \gg 1.0$

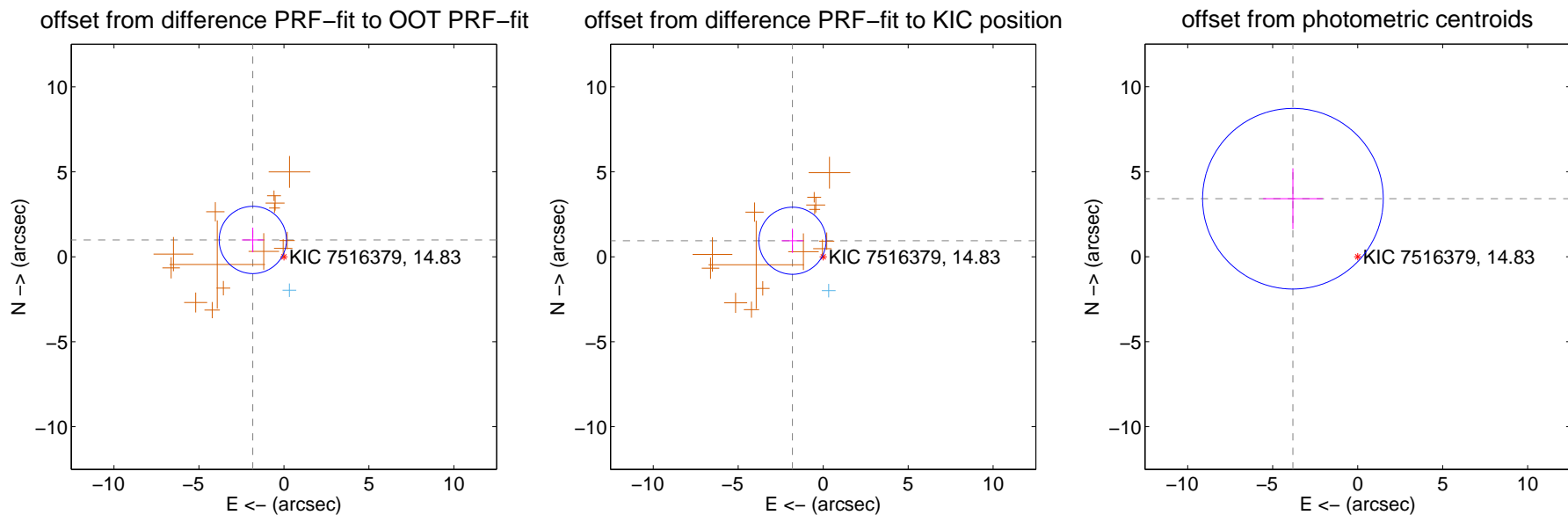
DV Centroid Data

Supplemental centroid analysis for 007516379-01. Kepler magnitude: 14.83. Transit SNR 7.56

There are 1 quarters with good PRF difference image offsets

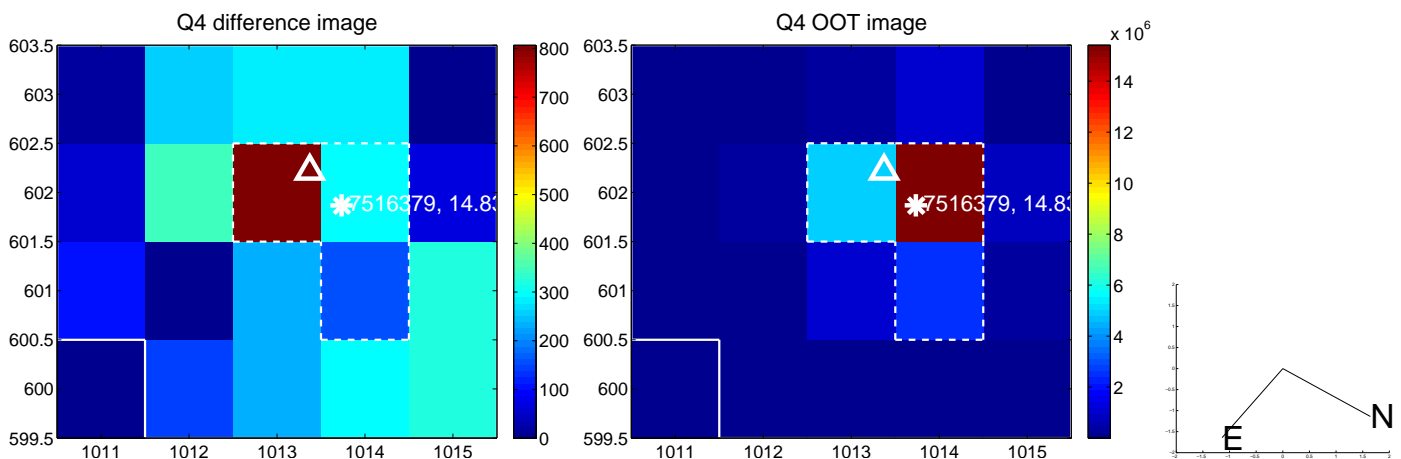
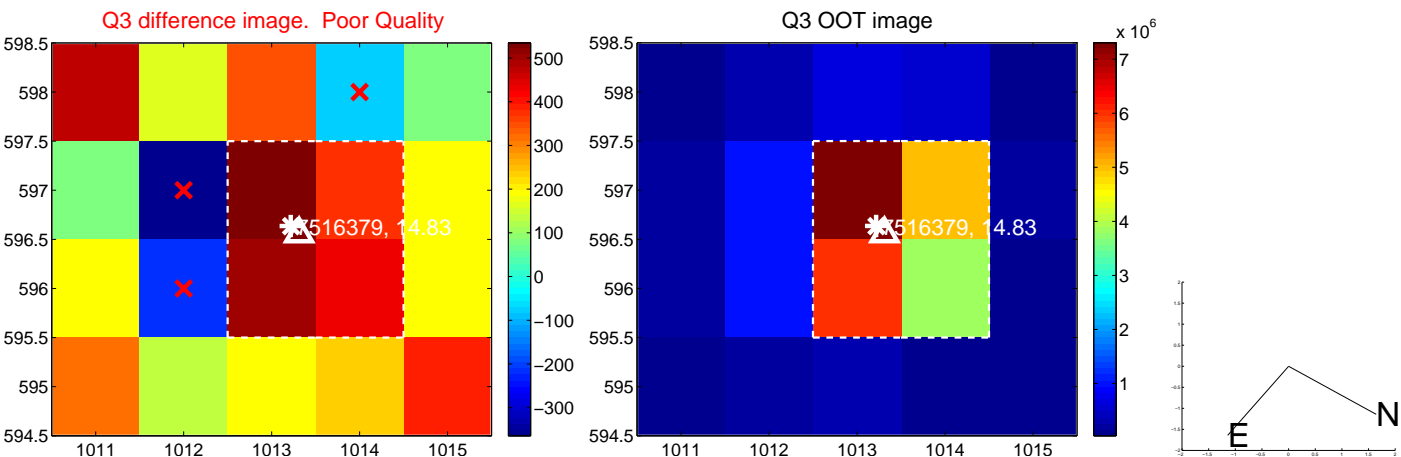
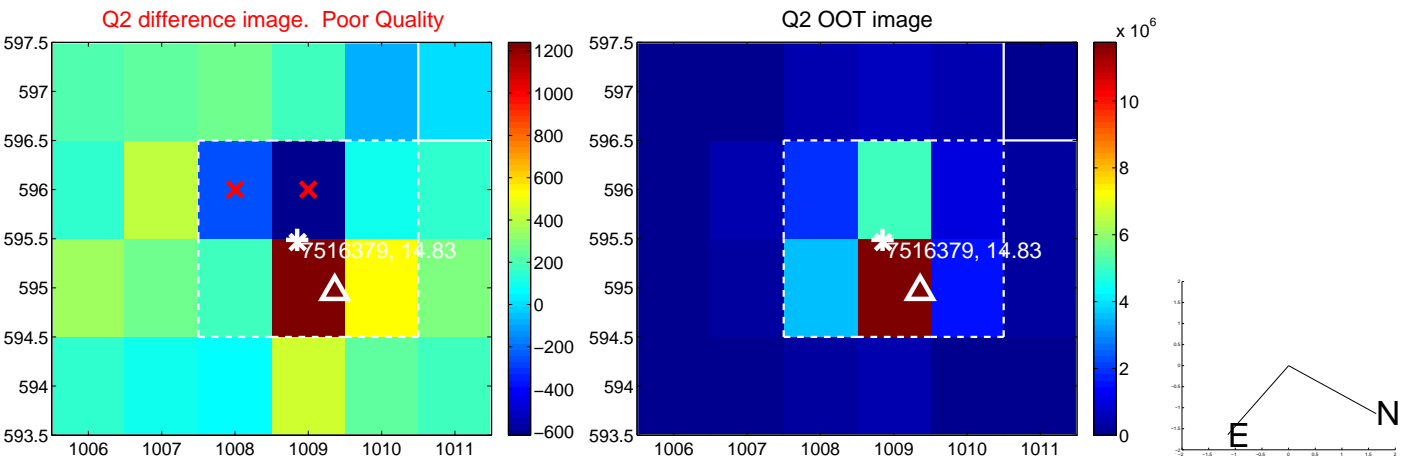
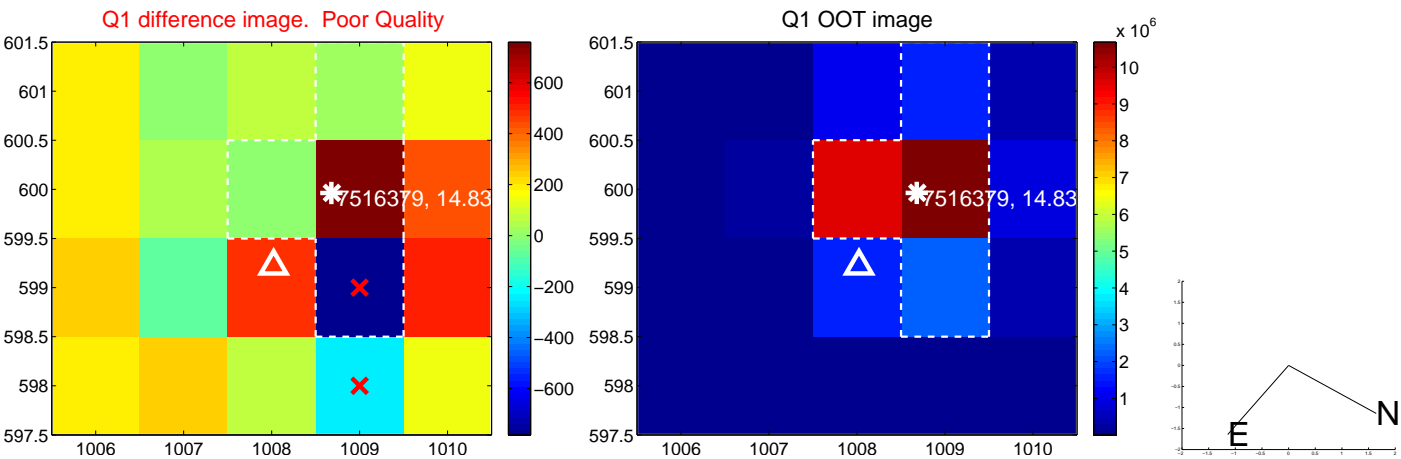
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.082 ± 0.660	3.15	1.831 ± 0.640	0.990 ± 0.725
PRF-fit source offset from KIC position	2.038 ± 0.658	3.10	1.806 ± 0.642	0.944 ± 0.714
photometric centroid source offset	5.11 ± 1.77	2.89	3.81 ± 1.75	3.41 ± 1.79

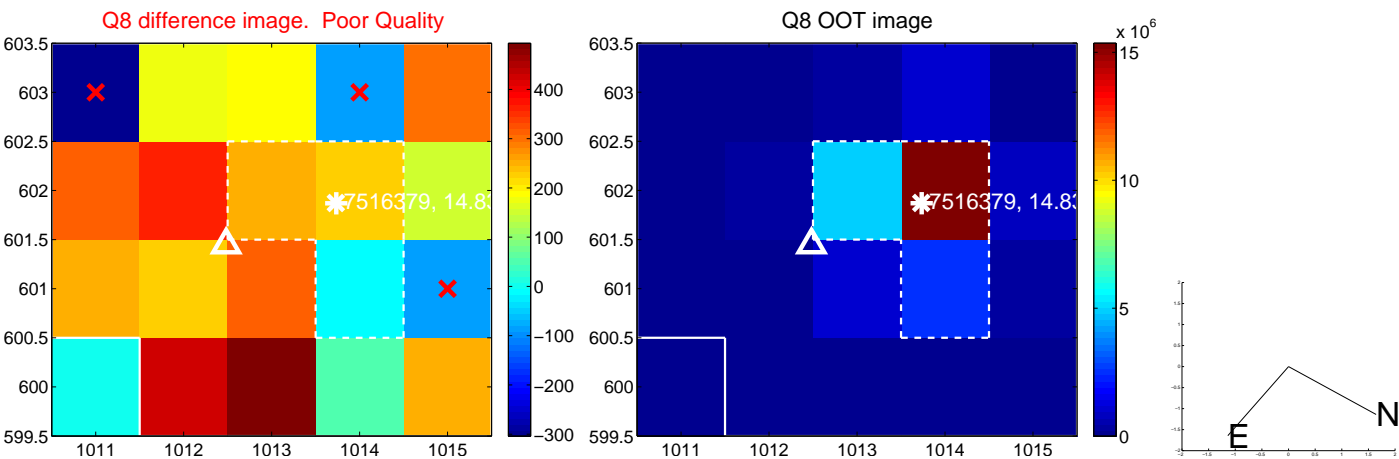
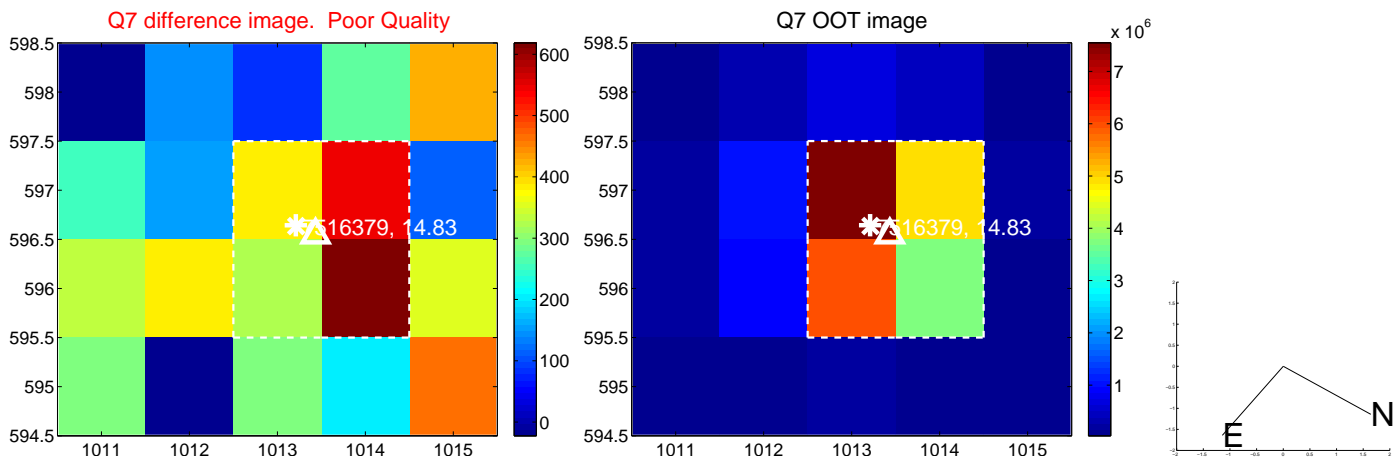
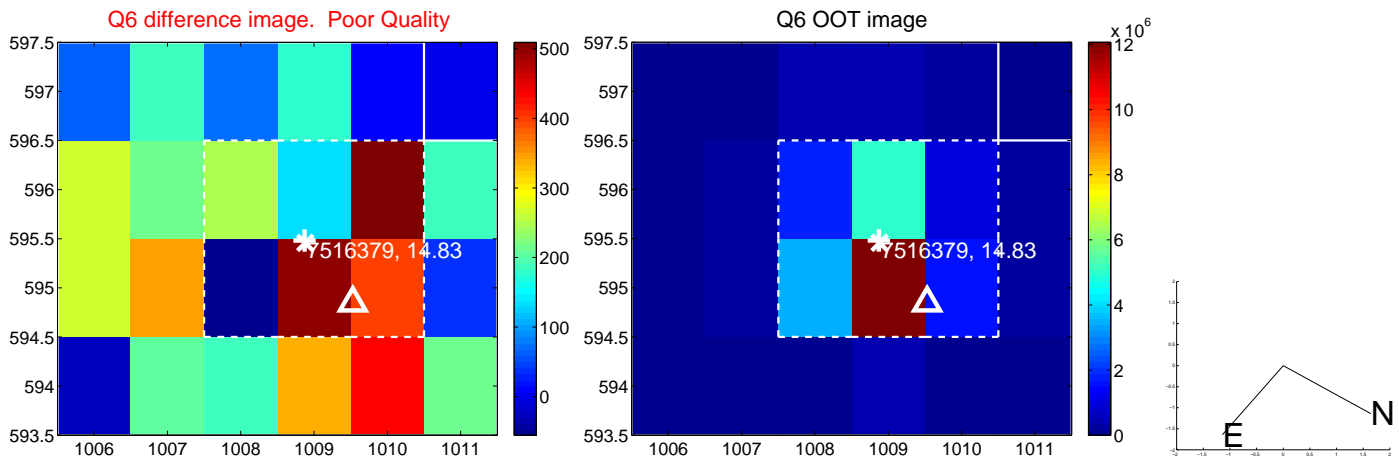
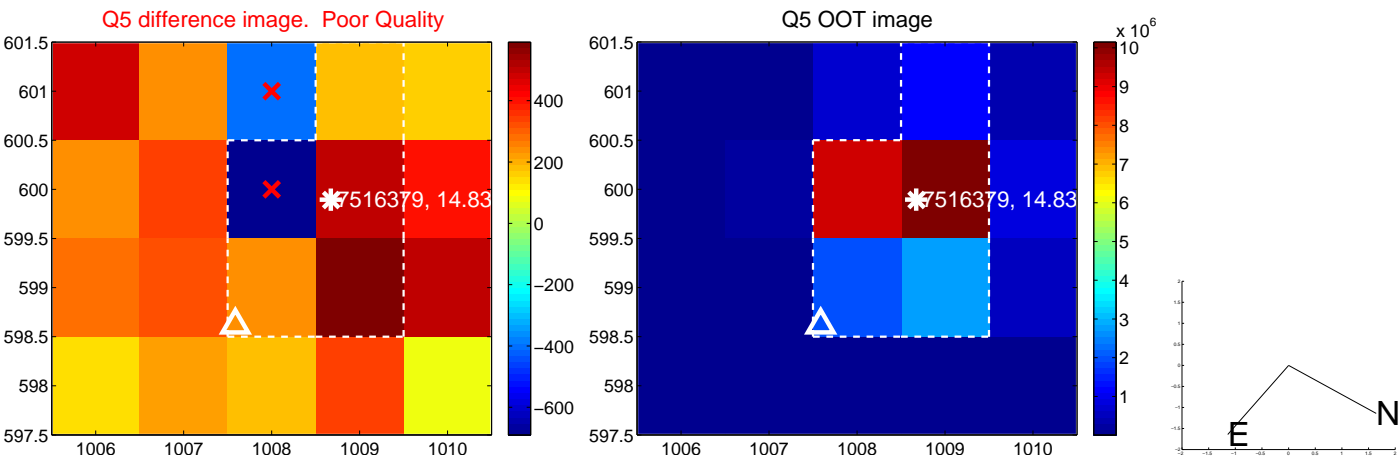


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

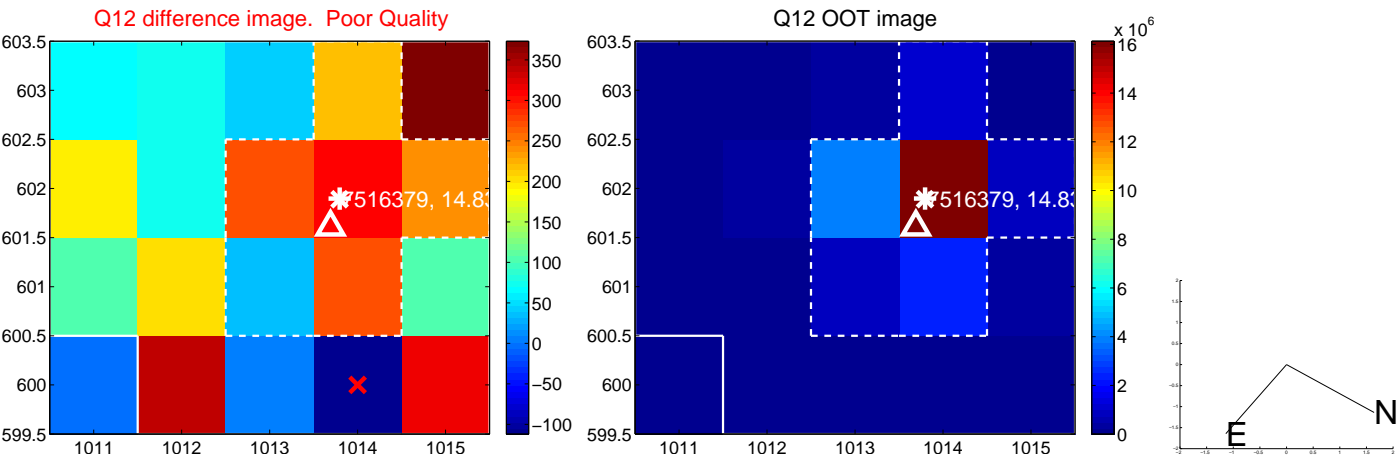
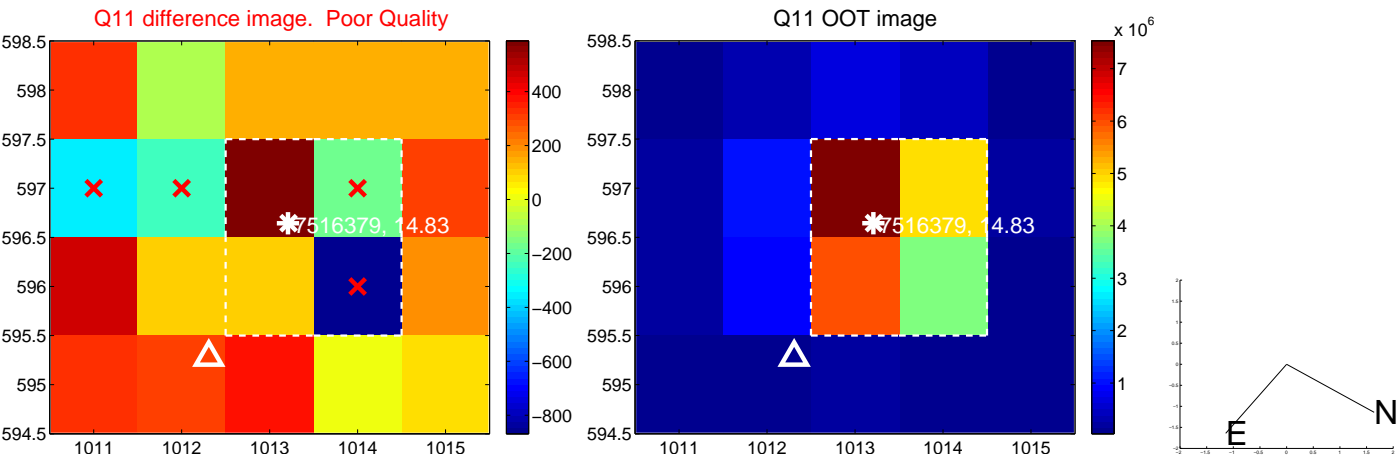
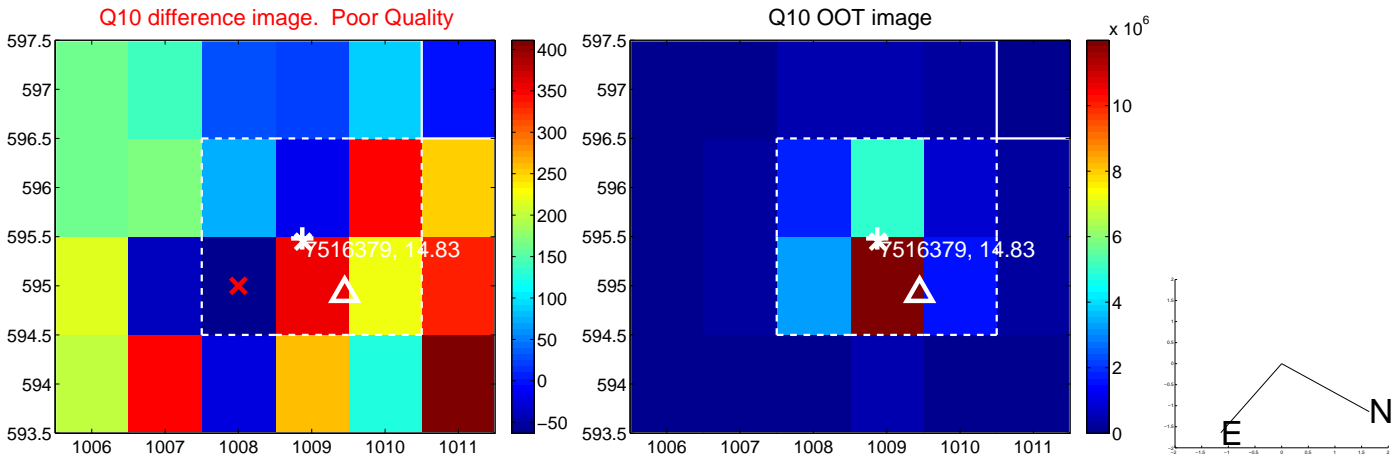
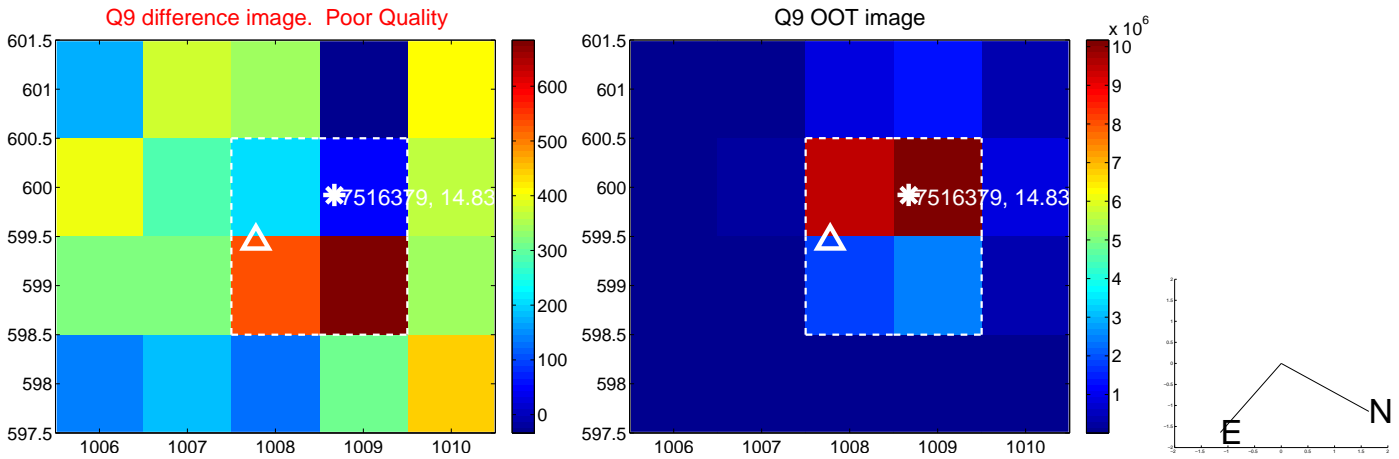
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



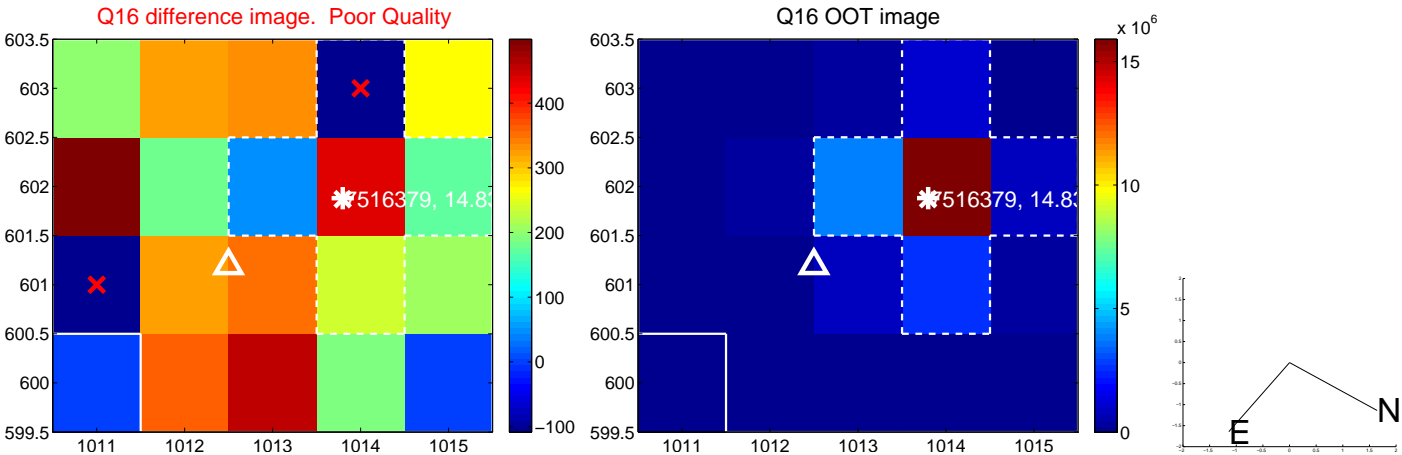
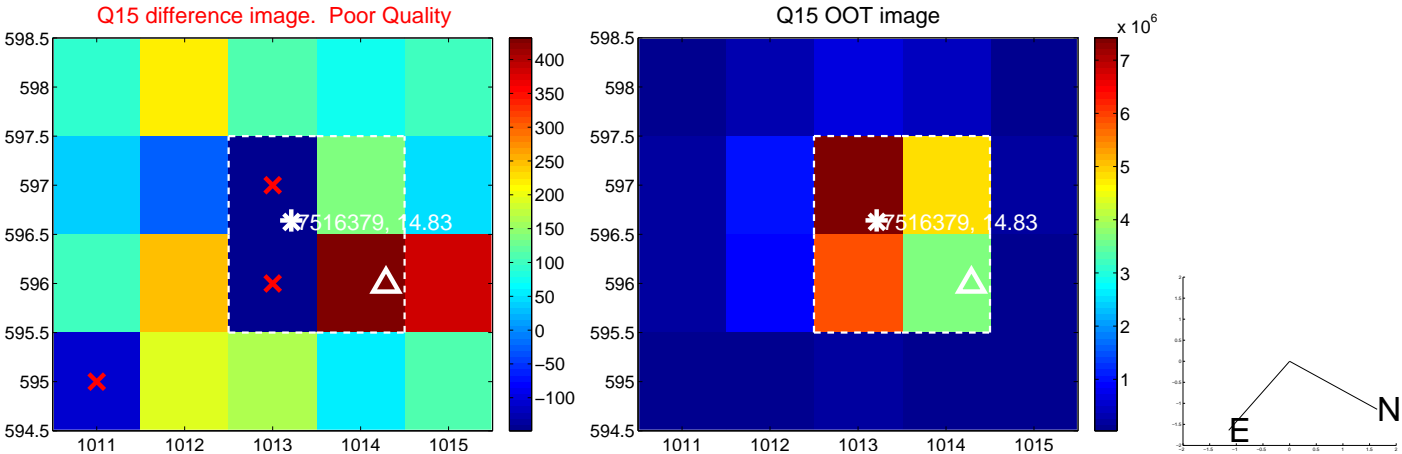
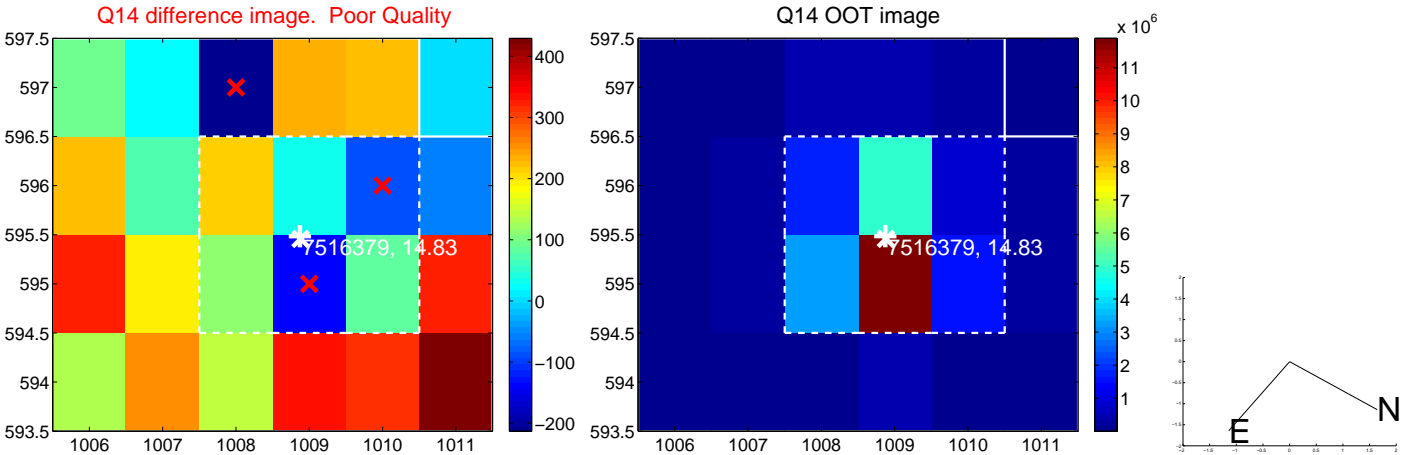
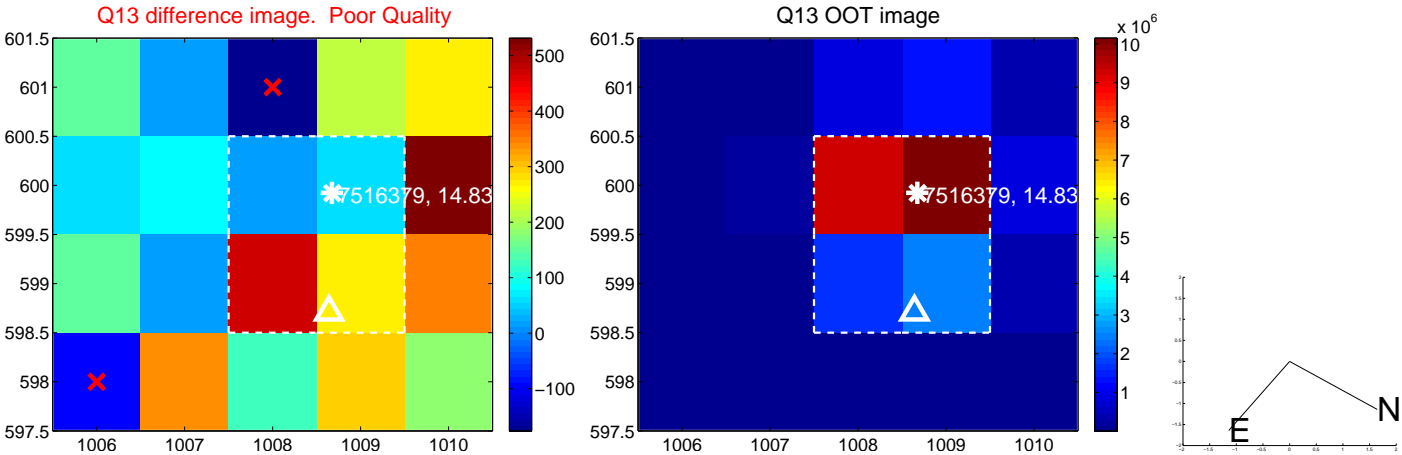
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



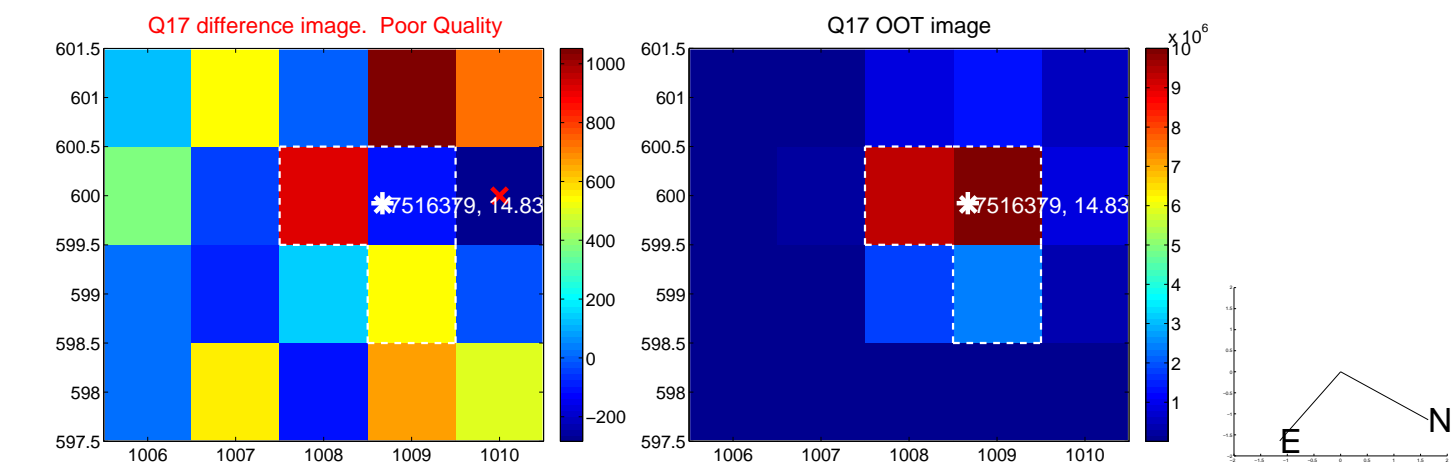
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



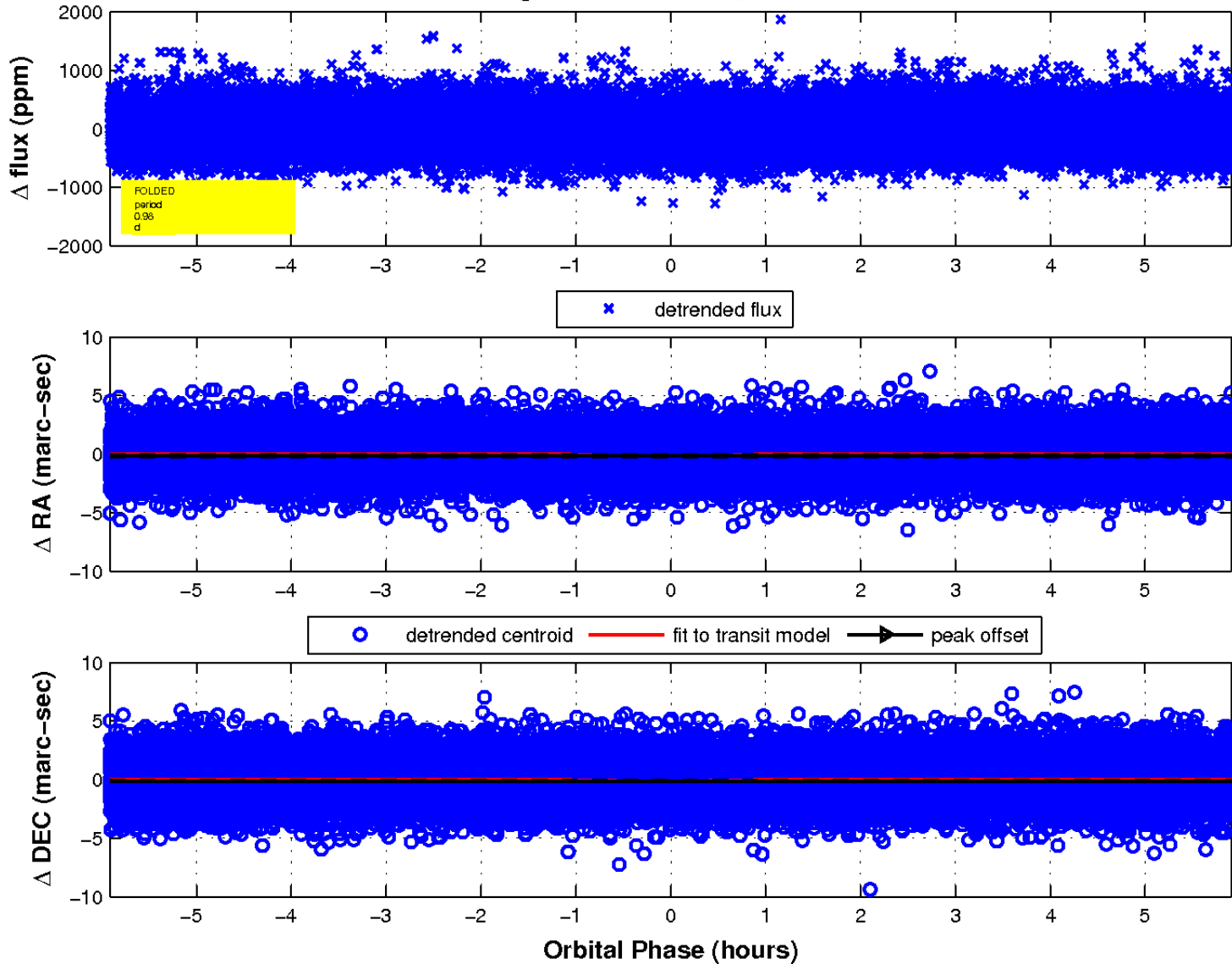
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

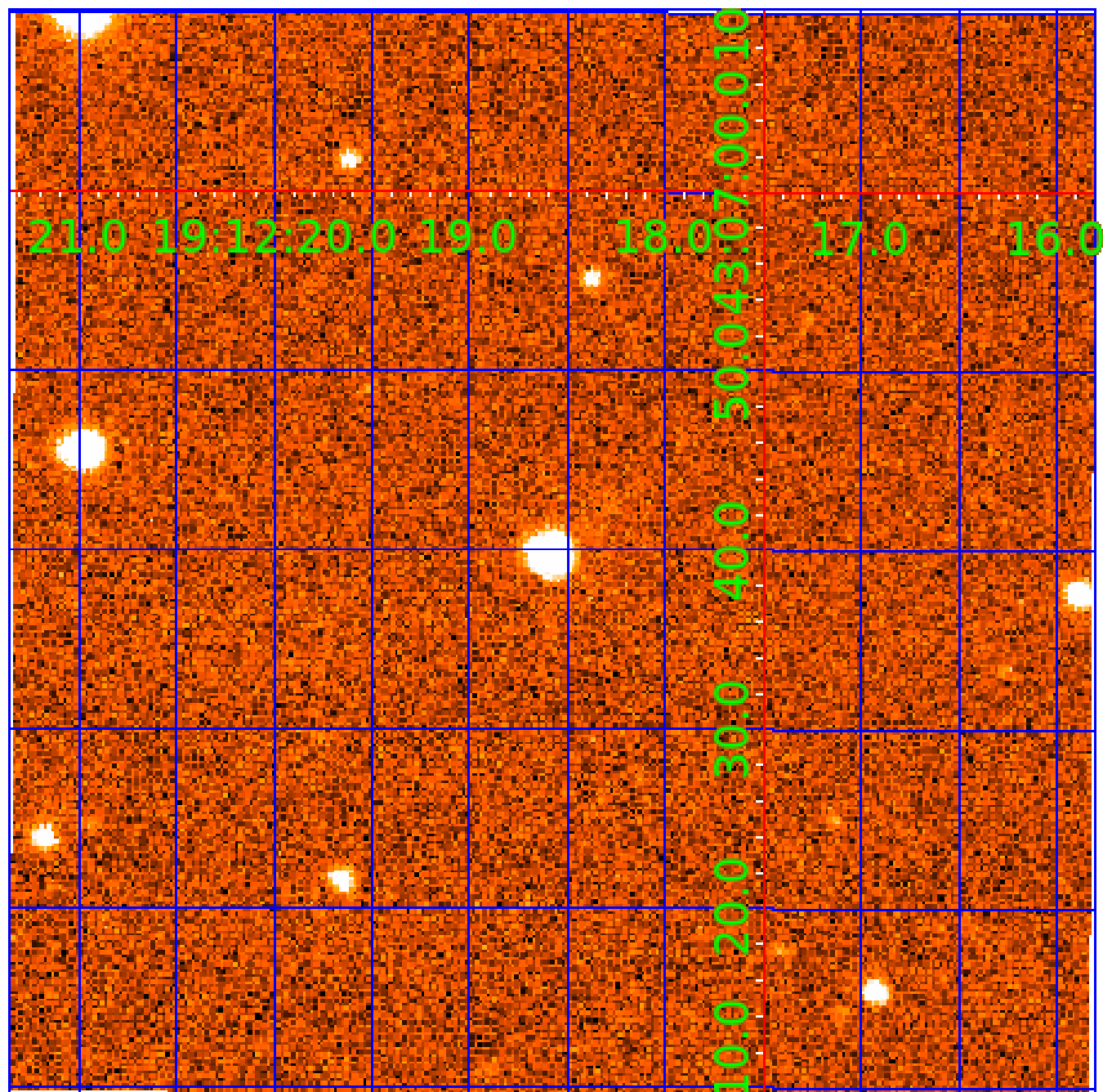


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007516379

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})
007516379-01	OBS	No	0.983703	131.931467	36.9	1.971	8.3	7.6	0.76	5784	0.53	1752.56
007516379-02	OBS	No	0.983746	132.382959	29.3	3.044	7.5	7.5	0.76	5784	0.49	1752.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007516379-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007516379-02	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST—EPHEM_MATCH

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.

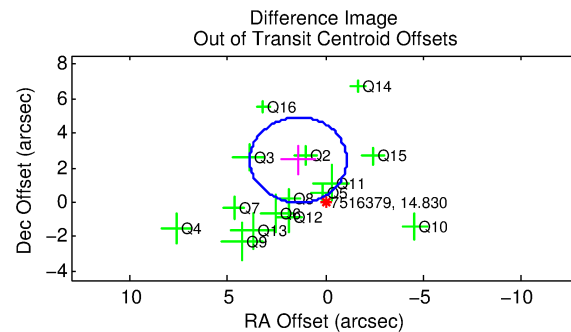
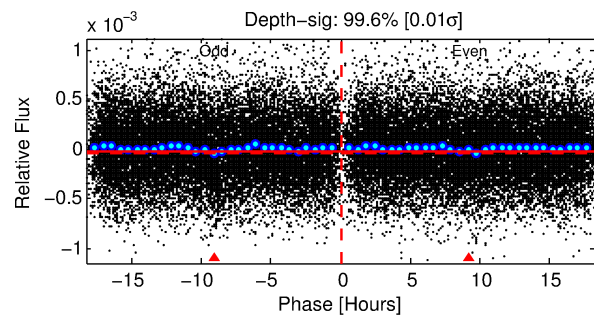
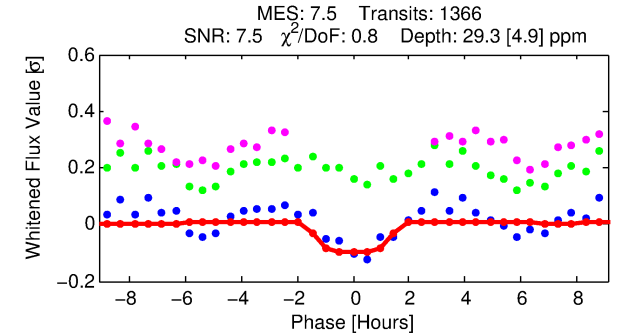
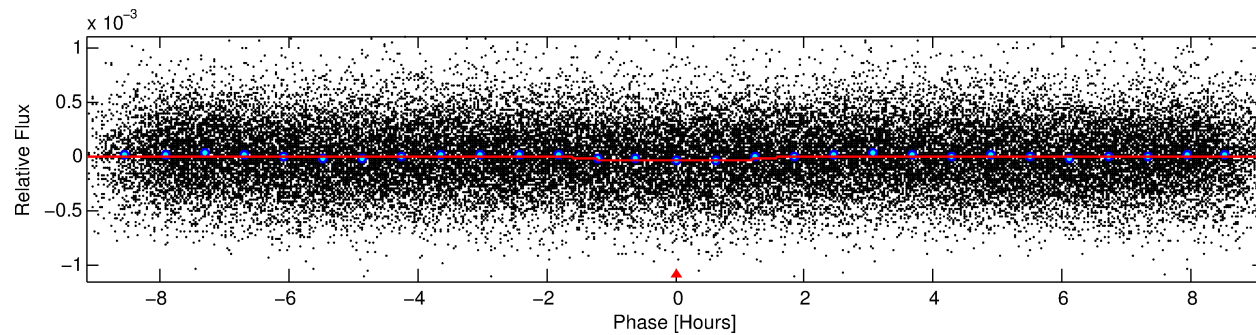
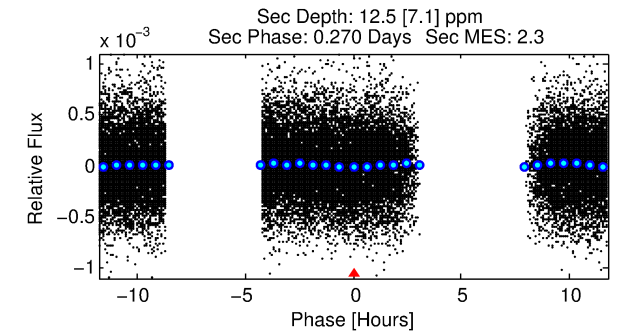
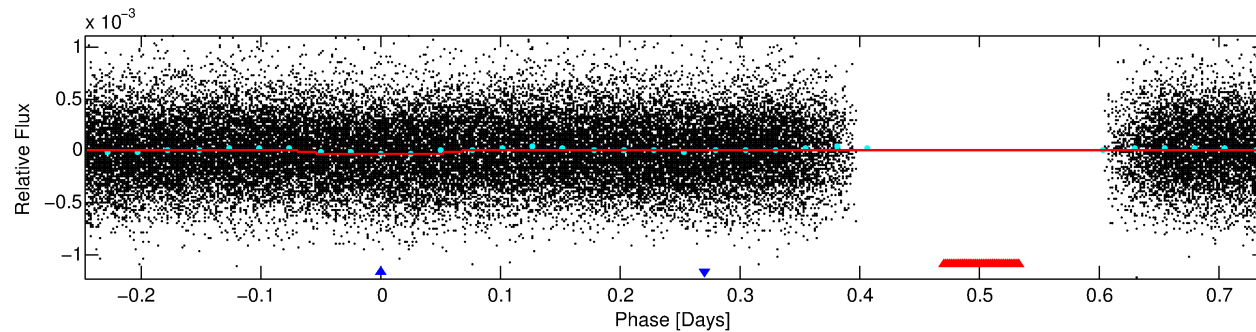
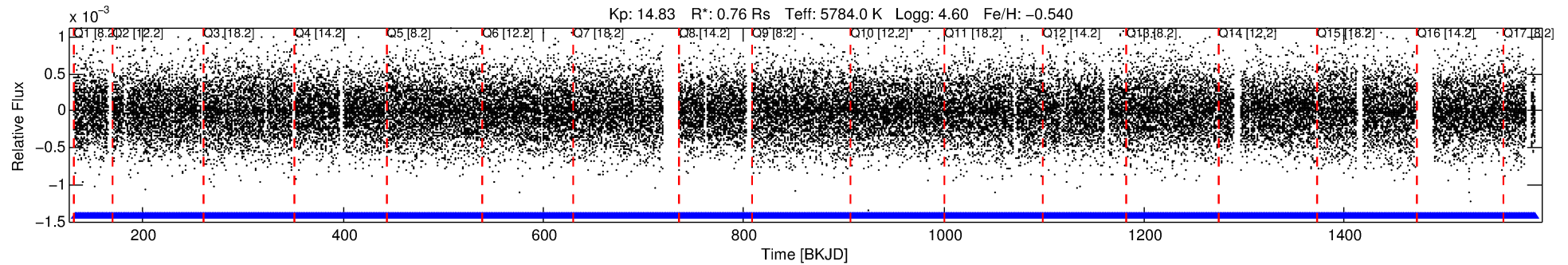
Ephemeris Match Information For 007516379-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007516379-02	7516379	007516345-pri	7516345	2:1	71.2	0	-18	12.32	14.83	9582.80	Direct-PRF	0	1.32	1.82

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7516379 Candidate: 2 of 2 Period: 0.984 d



DV Fit Results:

Period = 0.98375 [0.00002] d
Epoch = 132.3830 [0.0052] BKJD
Rp/R* = 0.0059 [0.0046]
a/R* = 1.44 [3.06]
b = 0.90 [0.85]
Seff = 1752.45 [528.26]
Teff = 1650 [124] K
Rp = 0.49 [0.40] Re
a = 0.0183 [0.0035] AU
Ag = 9.58 [16.13] [0.53 σ]
Teffp = 4487 [1867] K [1.52 σ]

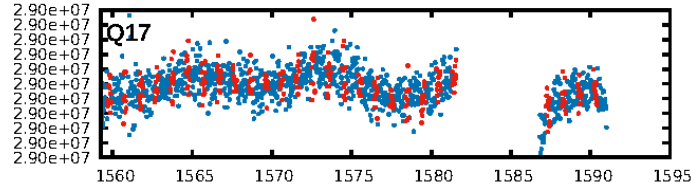
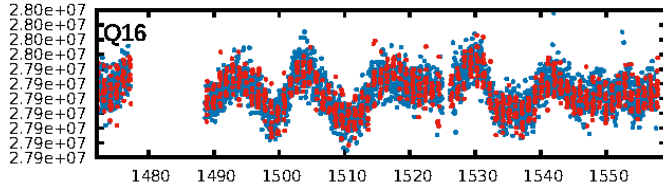
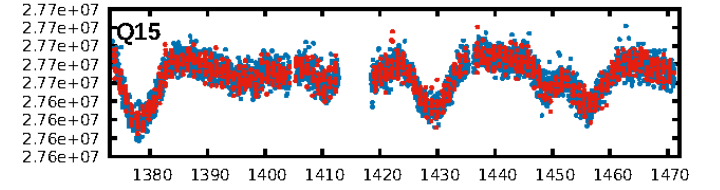
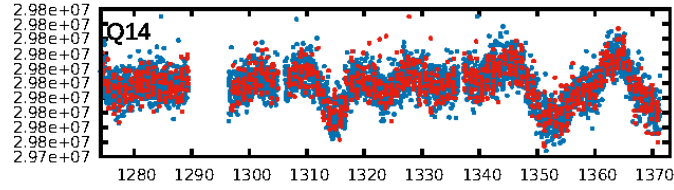
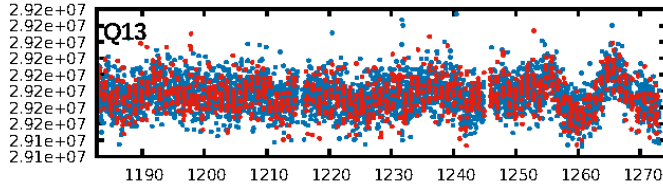
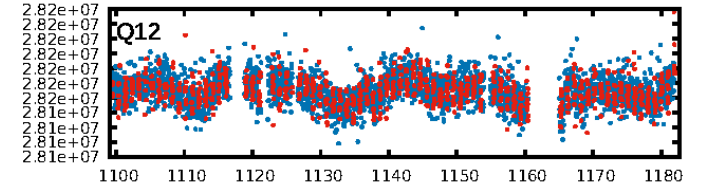
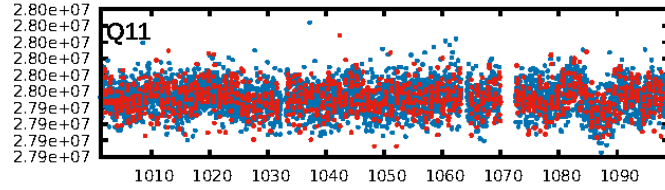
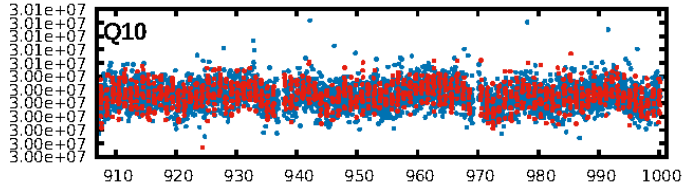
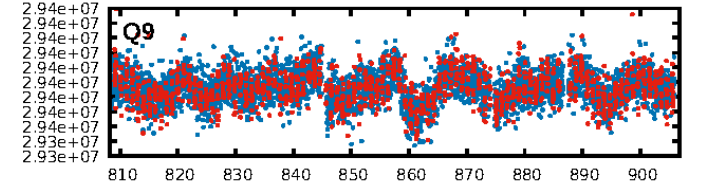
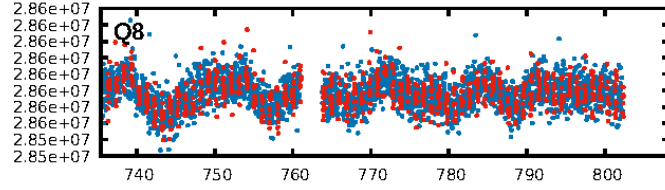
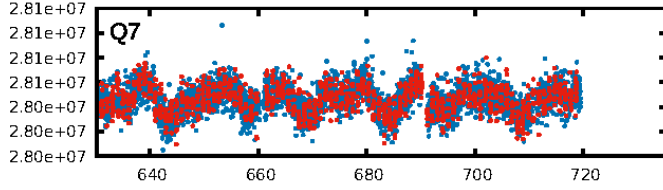
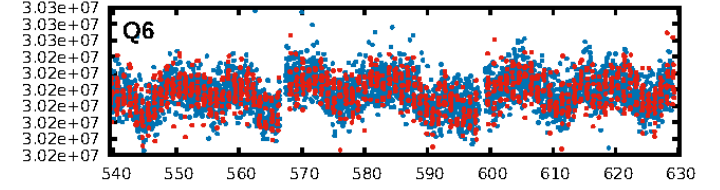
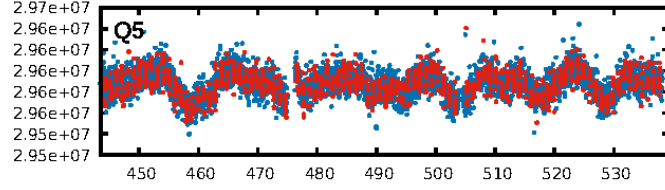
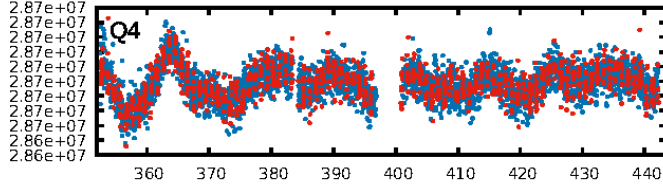
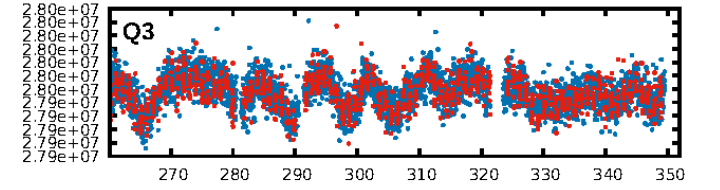
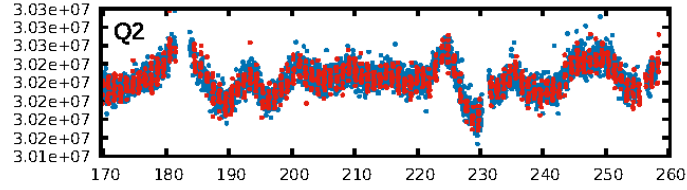
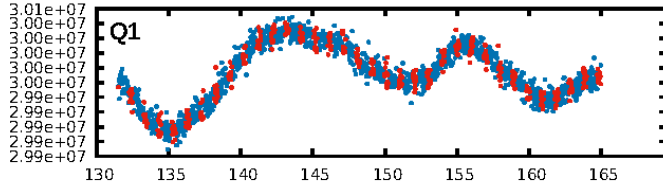
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.86e-16
RollingBand-fgt: 1.00 [1305/1305]
GhostDiagnostic-chr: 0.1697
Centroid-sig: 0.0%
Centroid-so: 6.034 arcsec [3.37 σ]
OotOffset-rm: 2.805 arcsec [3.40 σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-rm: 1.460 arcsec [1.71 σ]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 1.00 [17/17]

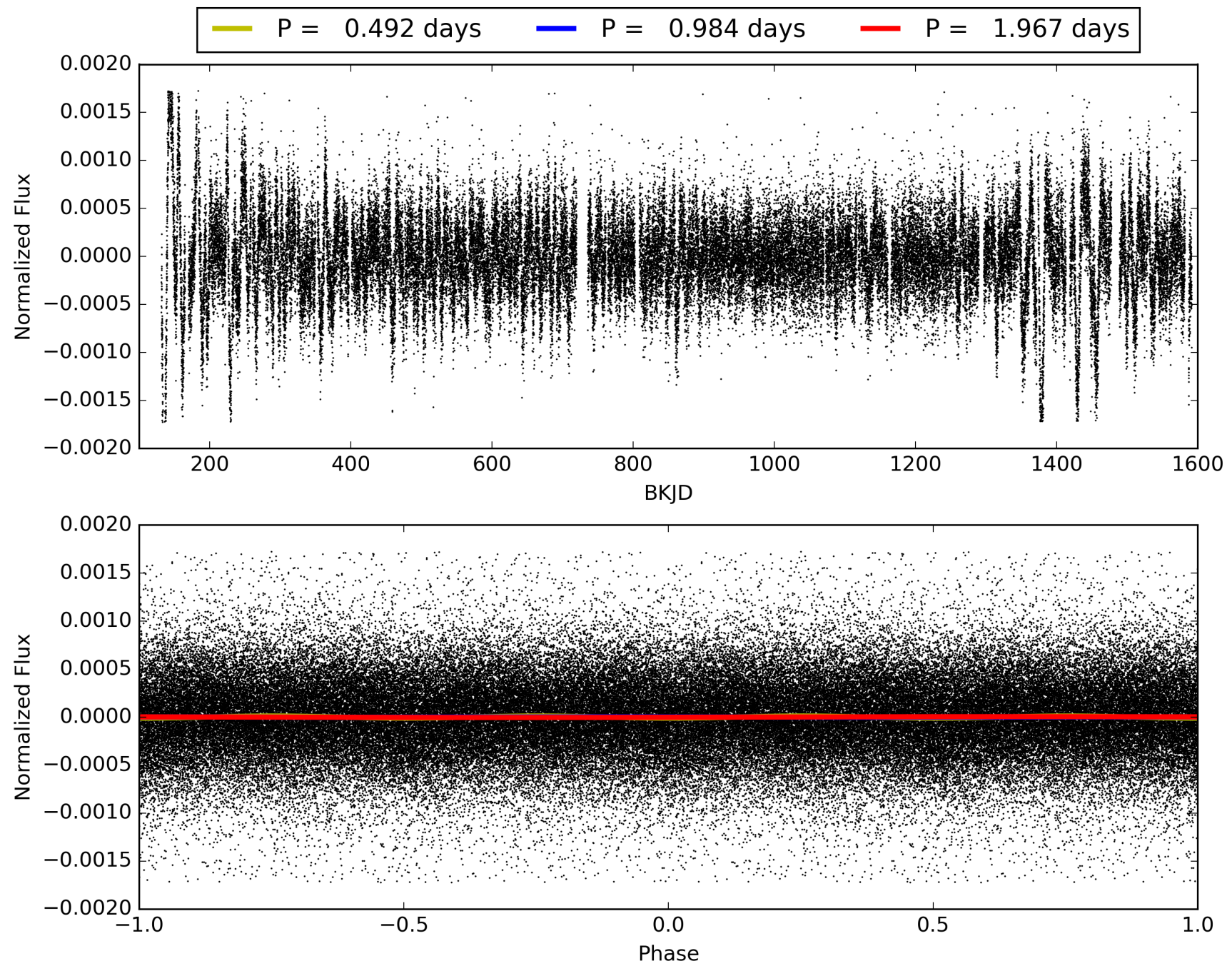
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:48:21 Z

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

TCE 007516379-02, PDC Light Curves

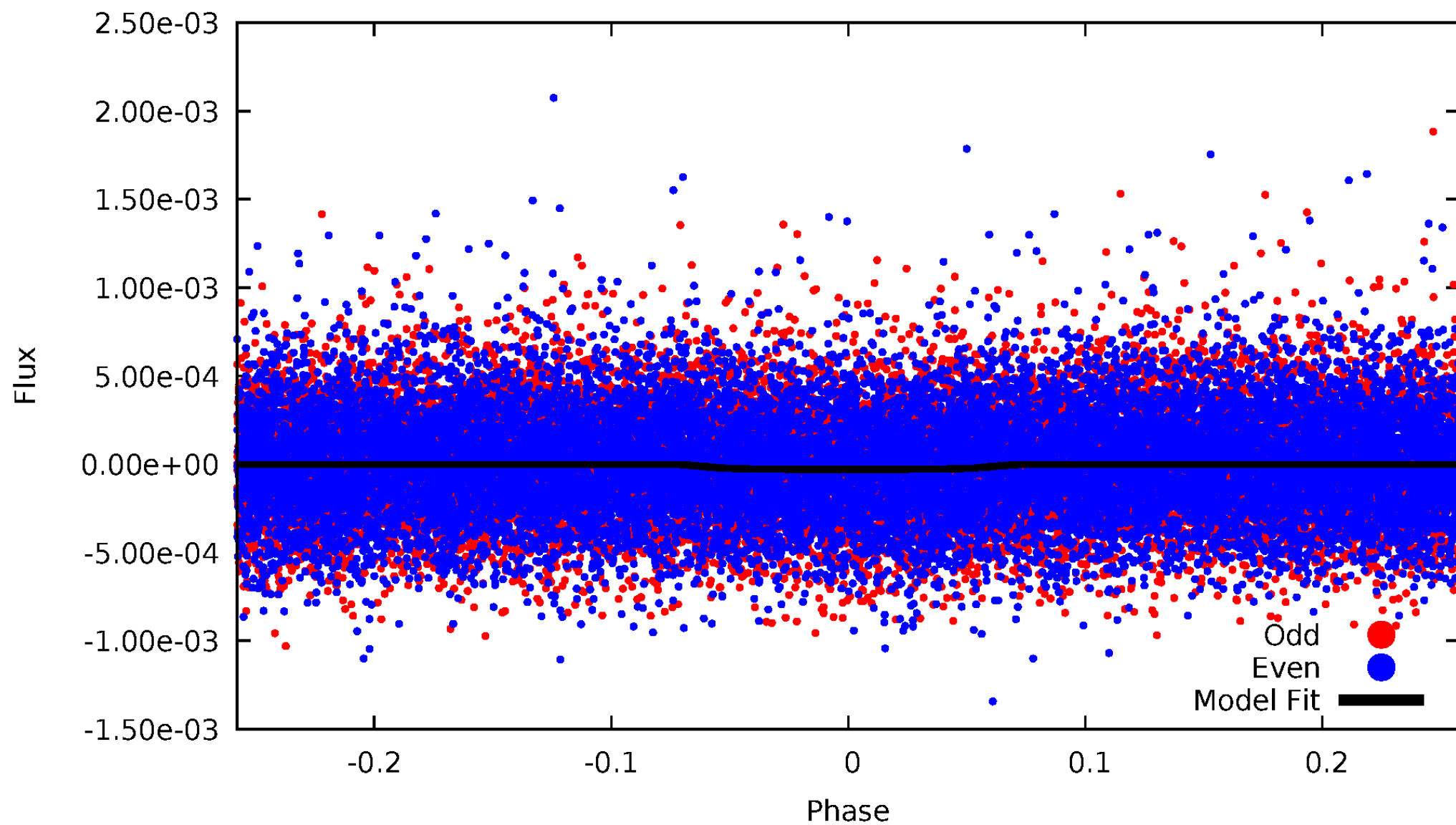


TCE 007516379-02



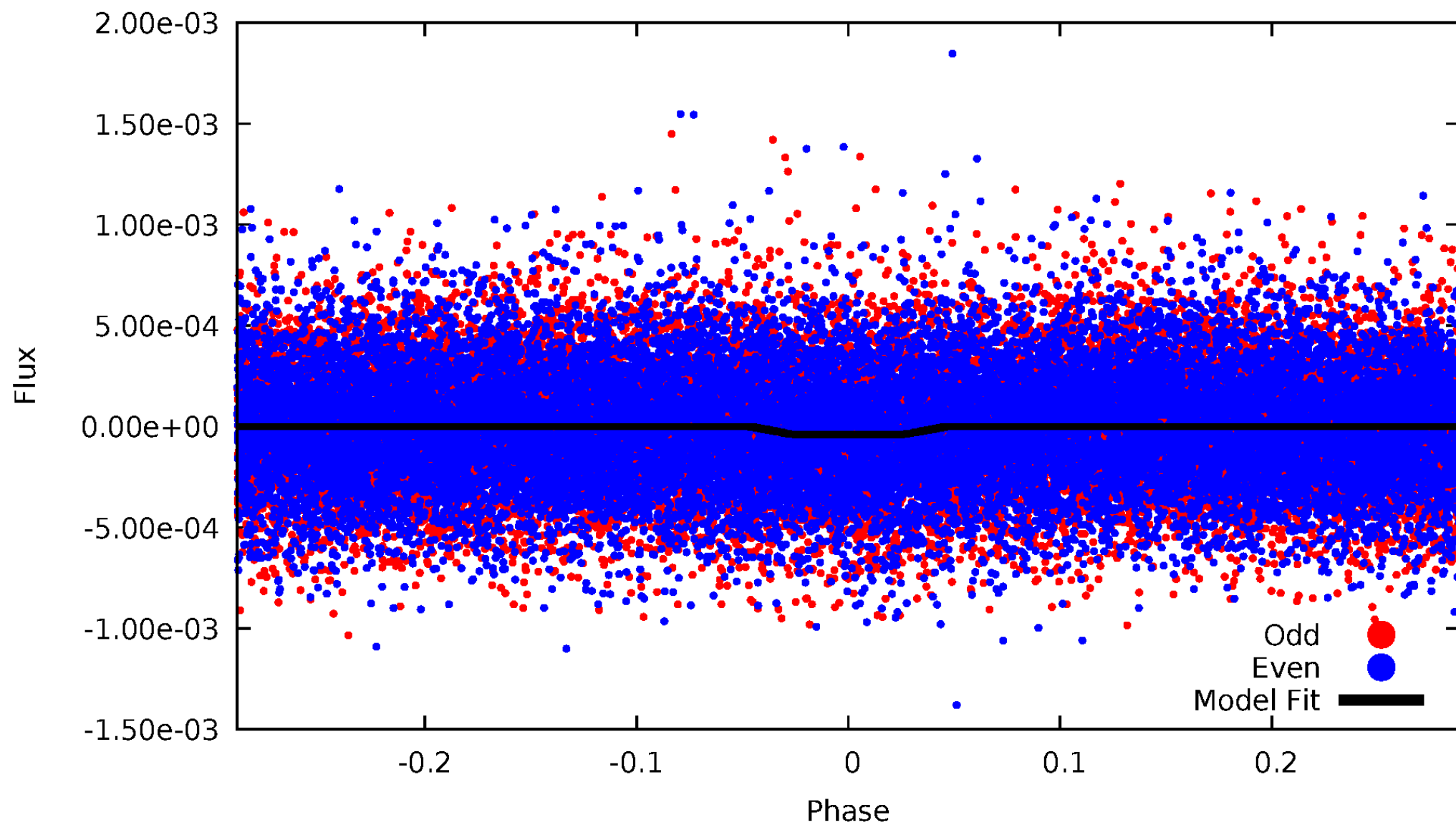
DV Odd/Even

TCE 007516379-02



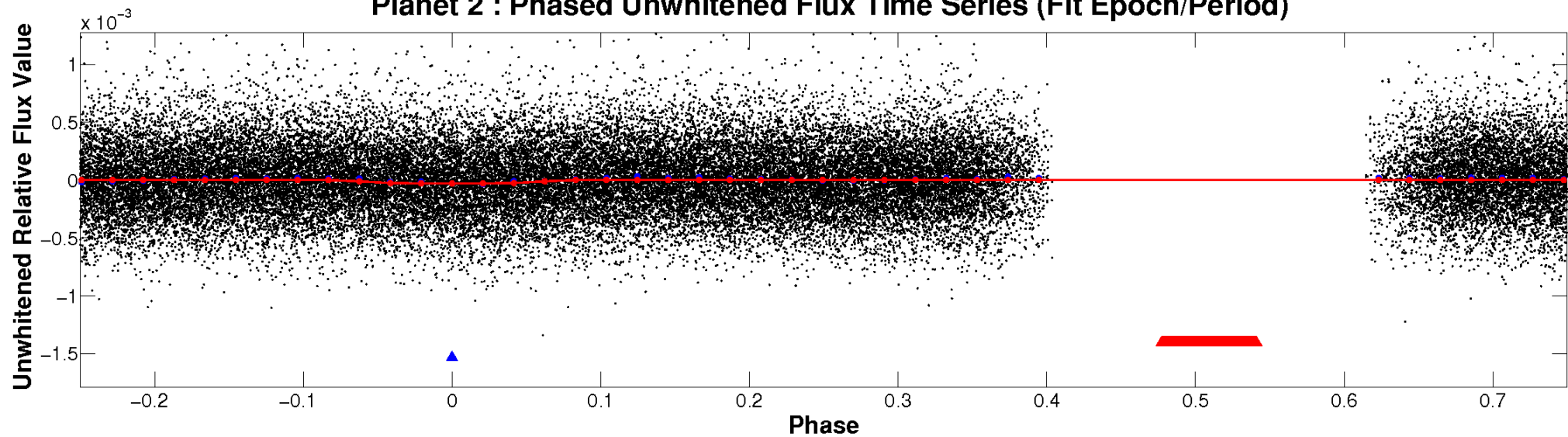
ALT Odd/Even

TCE 007516379-02

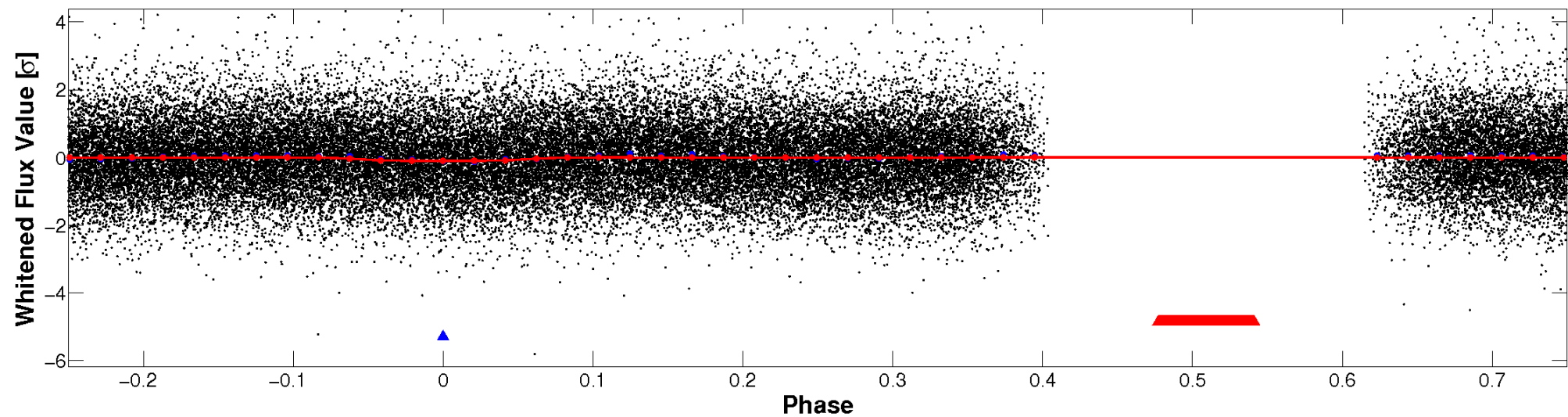


Non-Whitened Vs. Whitened Light Curve

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

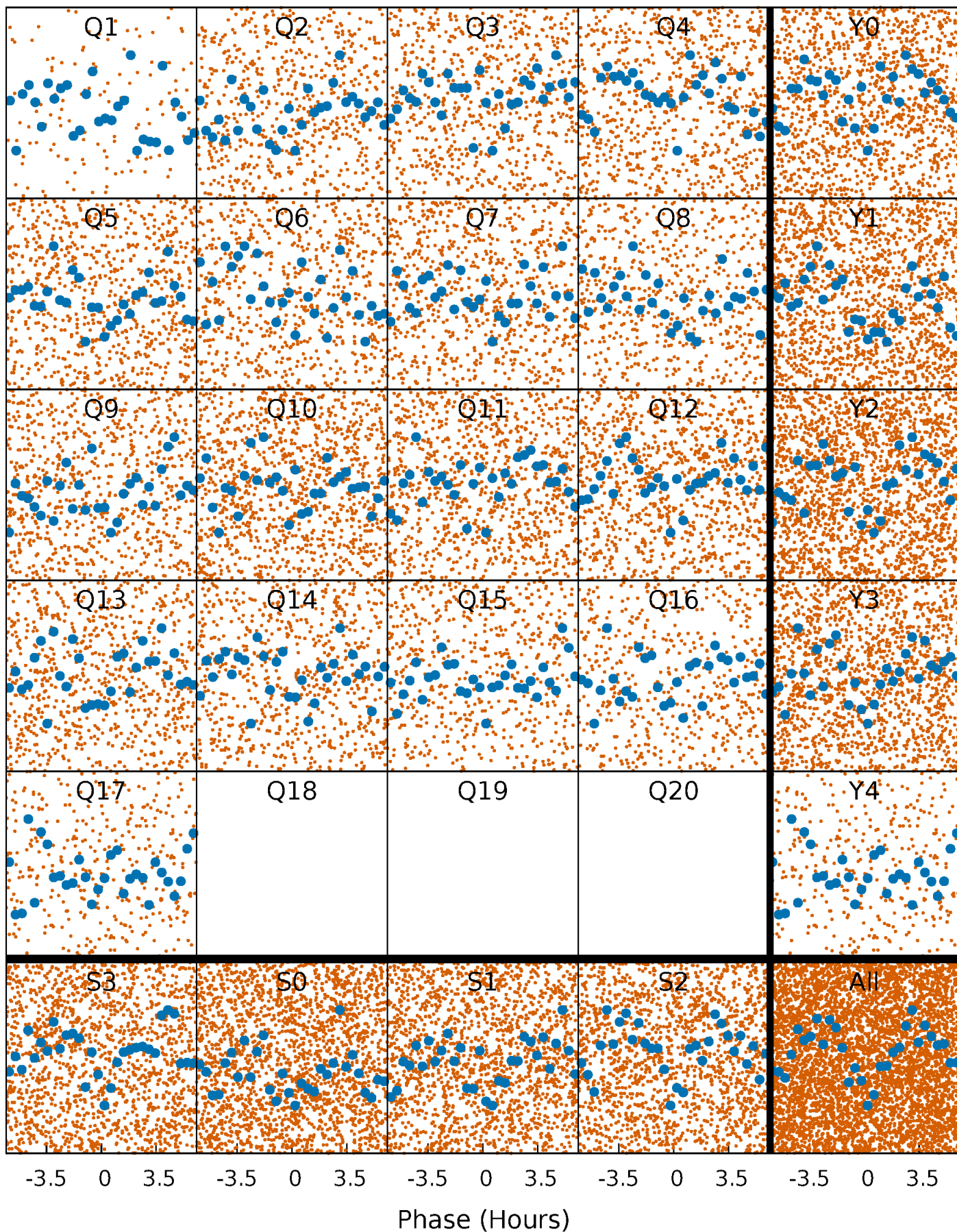


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



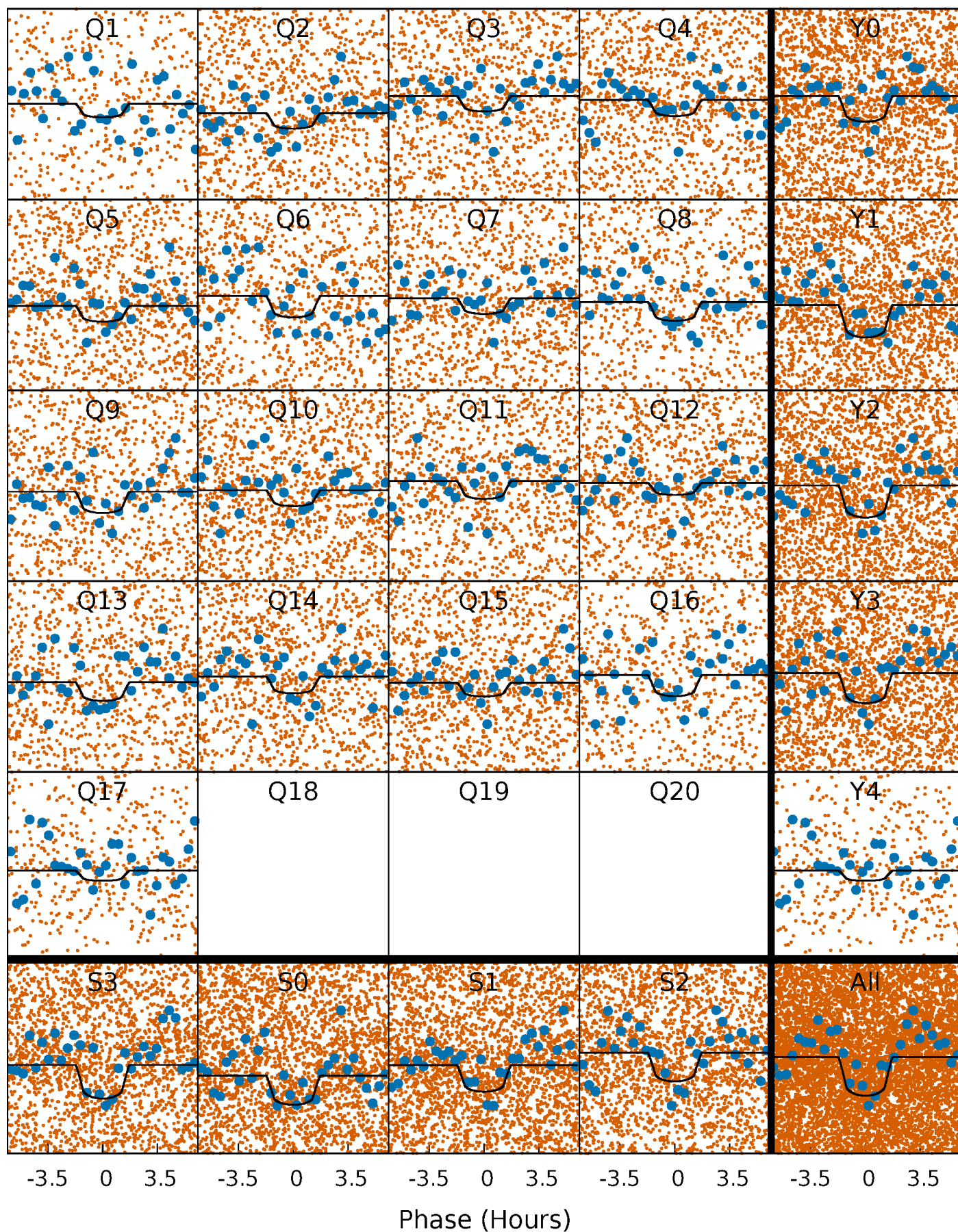
PDC Quarter-Phased Transit Curves

TCE 007516379-02 P= 0.983746 Days $T_0=132.382959$ (BKJD)



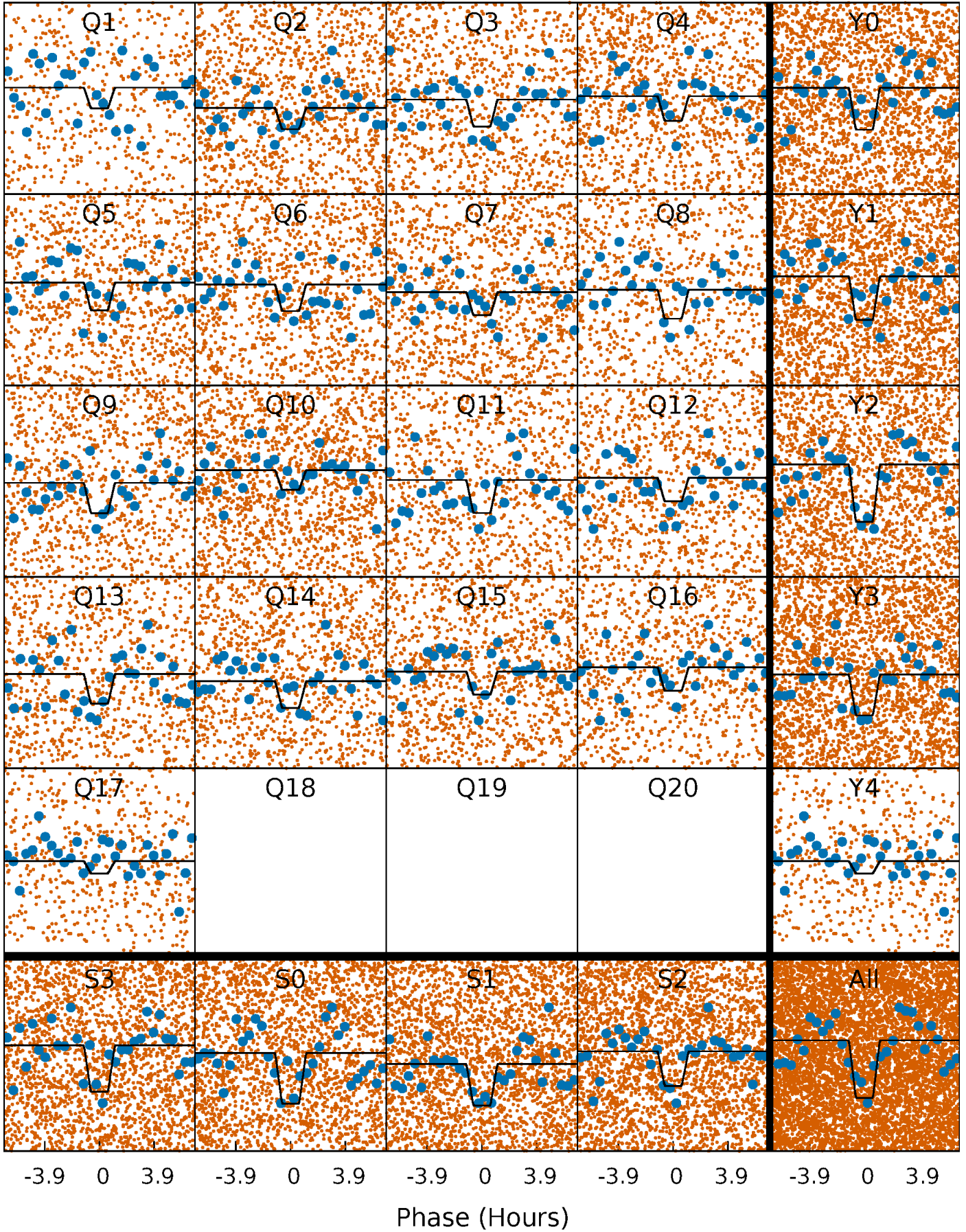
DV Quarter-Phased Transit Curves

TCE 007516379-02 P= 0.983746 Days $T_0=132.382959$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

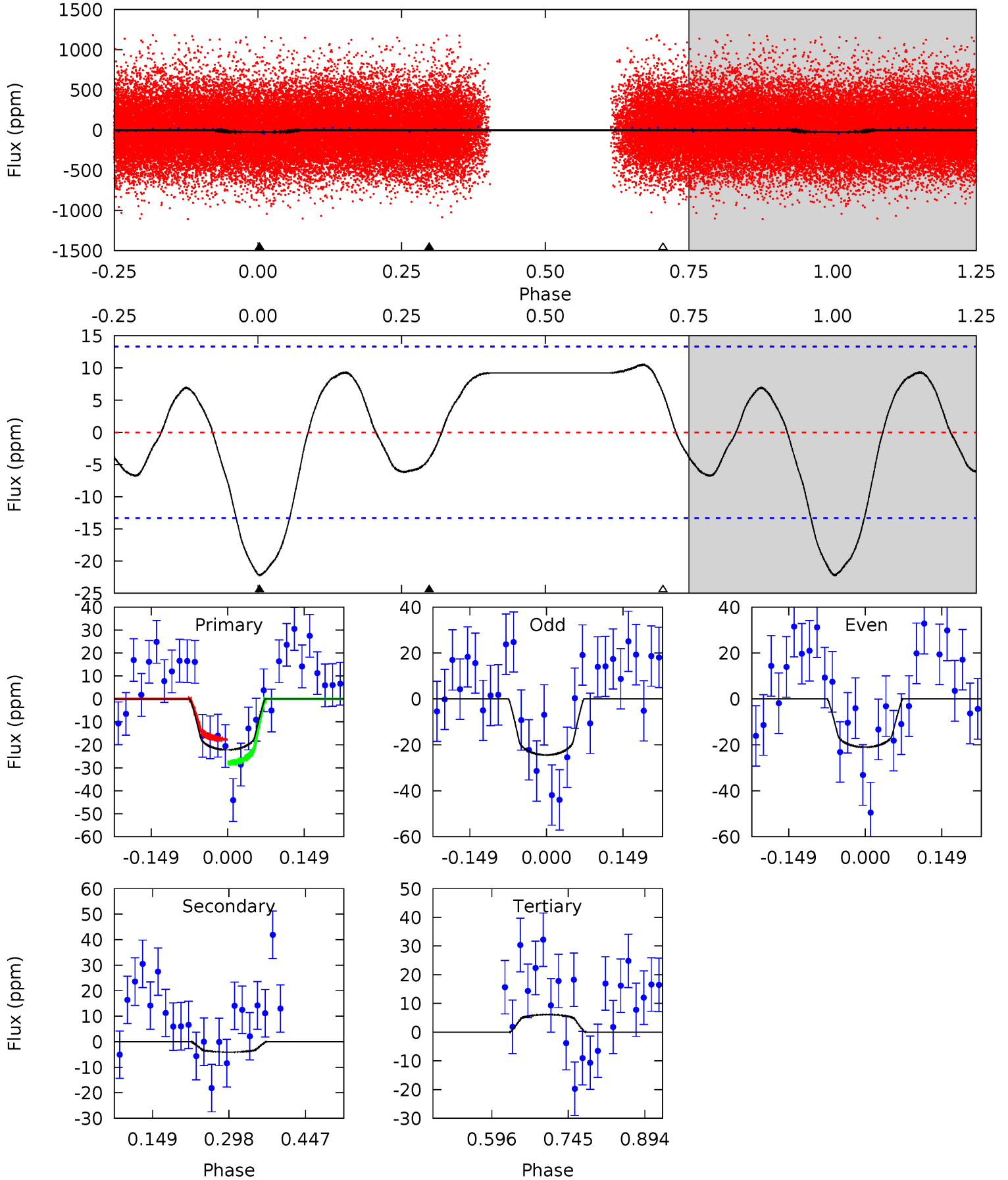
TCE 007516379-02 P= 0.983759 Days $T_0=132.381420$ (BKJD)



DV Model-Shift Uniqueness Test

007516379-02, P = 0.983746 Days, E = 131.399213 Days

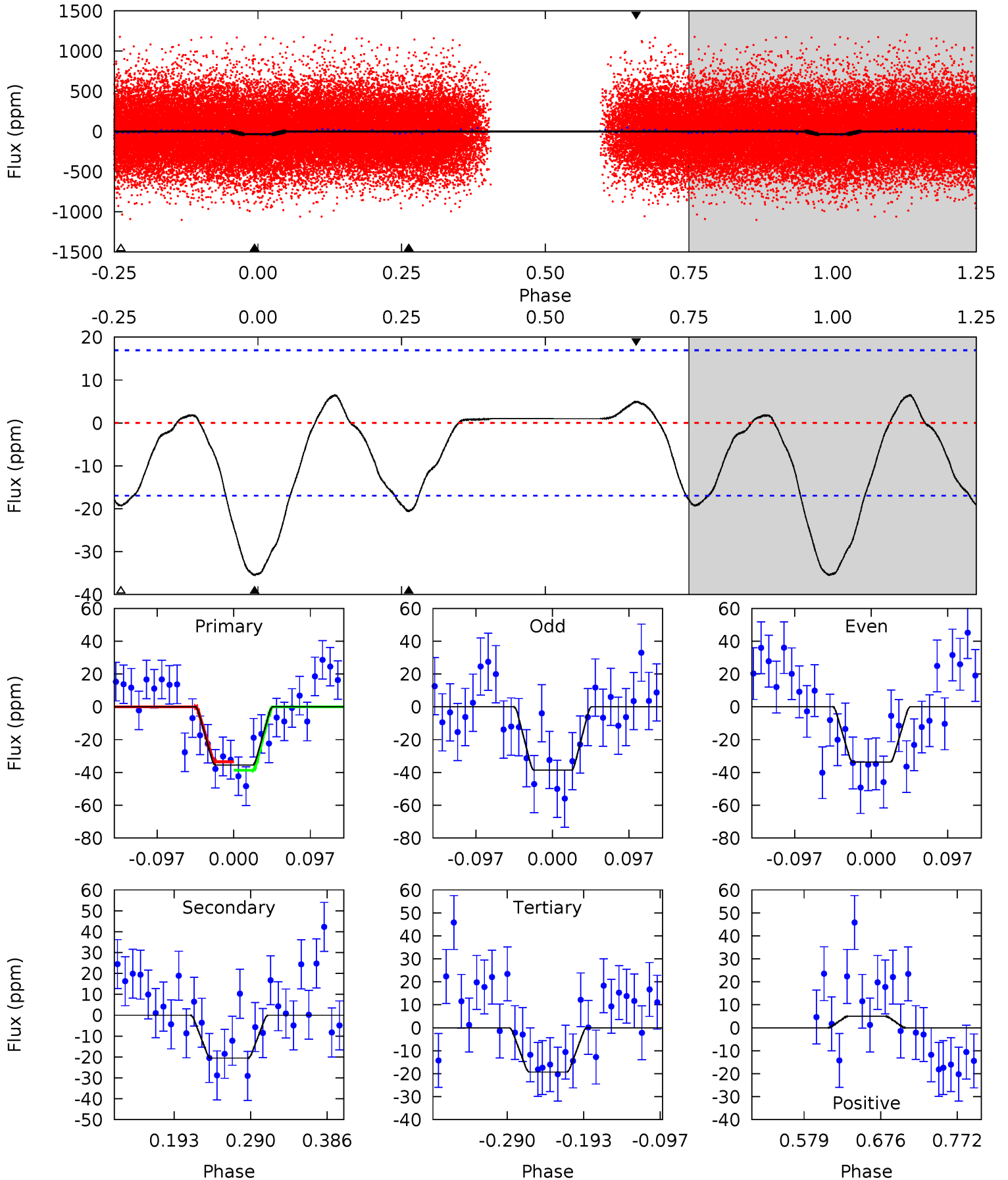
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.46	1.37	-2.05	0	4.48	1.44	2.04	9.51	7.46	3.42	1.37	0.58	0.91	0.32	1.72



Alt Model-Shift Uniqueness Test

007516379-02, P = 0.983759 Days, E = 131.397661 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.58	5.55	5.21	1.34	4.57	1.66	2.12	4.37	8.24	0.34	4.21	0.66	0.77	0.16	0.70



Stellar Parameters For KIC 007516379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5784^{+157}_{-157}	$4.596^{+0.036}_{-0.153}$	$-0.540^{+0.300}_{-0.300}$	$0.763^{+0.177}_{-0.059}$	$0.852^{+0.077}_{-0.095}$	$2.697^{+0.410}_{-1.108}$
	+3%/-3%	+1%/-3%	+56%/-56%	+23%/-8%	+9%/-11%	+15%/-41%
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 007516379-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4 ± 3	$0.57^{+0.42}_{-0.34}$	2355^{+126}_{-96}	3468^{+1568}_{-1075}	$2.018^{+10.569}_{-1.600}$
Alt.	-21 ± 4	$0.59^{+0.41}_{-0.34}$	2347^{+110}_{-92}	4833^{+2302}_{-941}	11^{+48}_{-8}

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 $A_{obs} \gg 1.0$

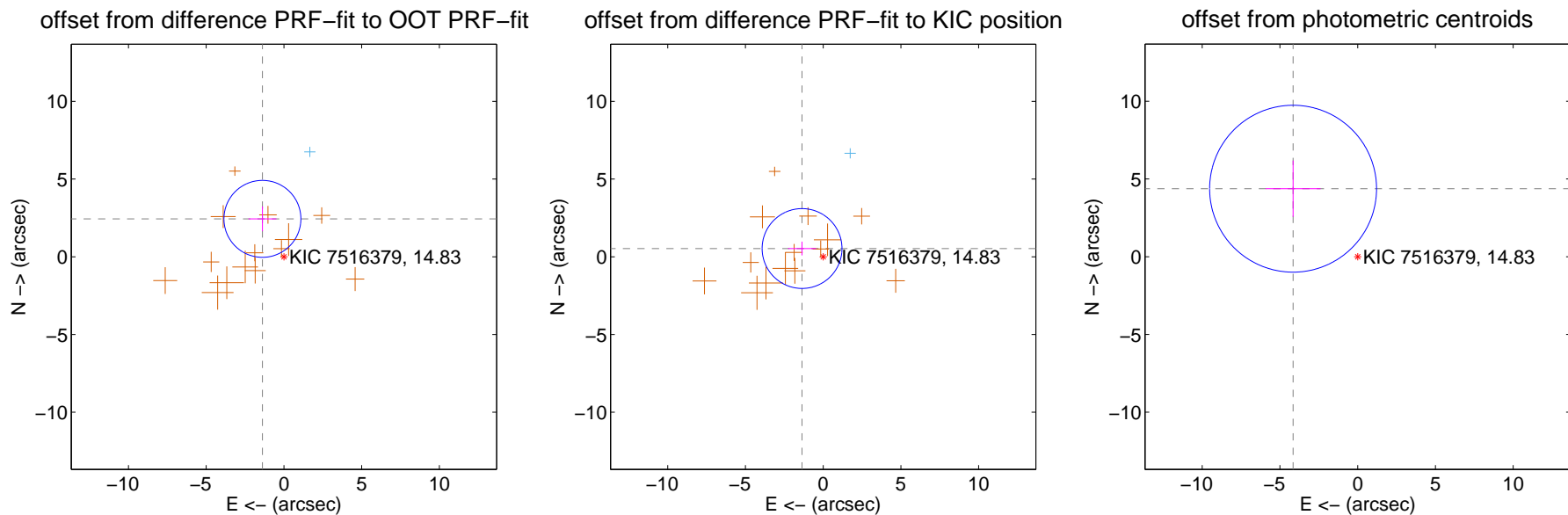
DV Centroid Data

Supplemental centroid analysis for 007516379-02. Kepler magnitude: 14.83. Transit SNR 7.53

There are 1 quarters with good PRF difference image offsets

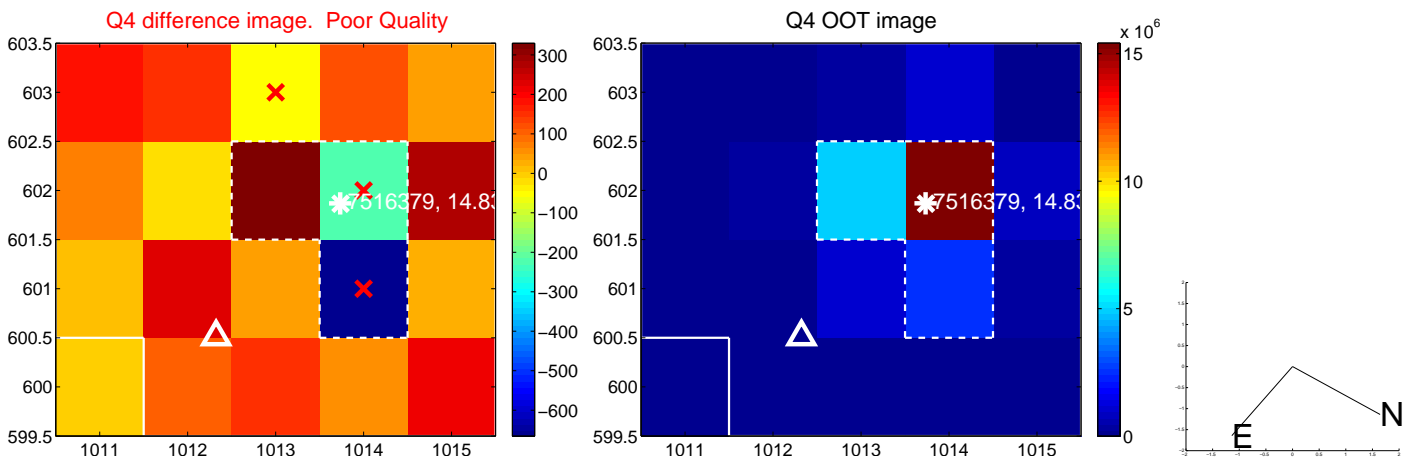
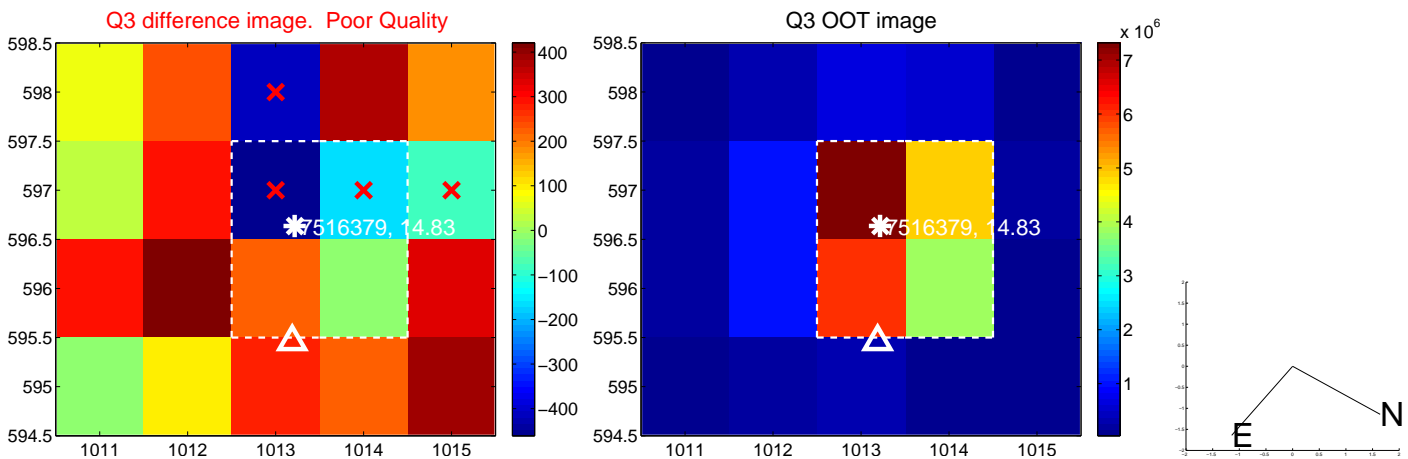
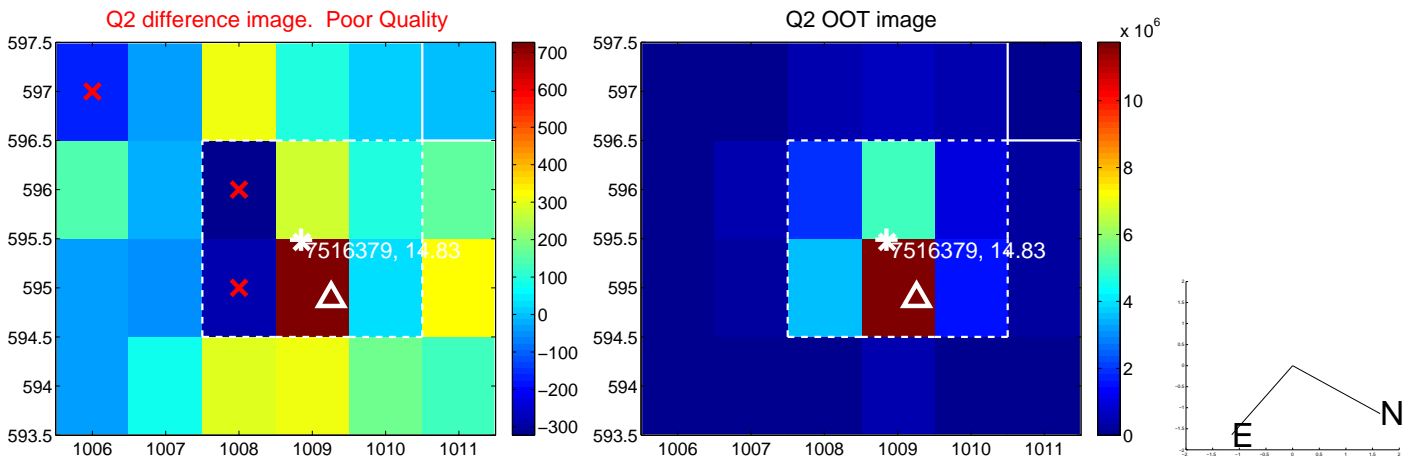
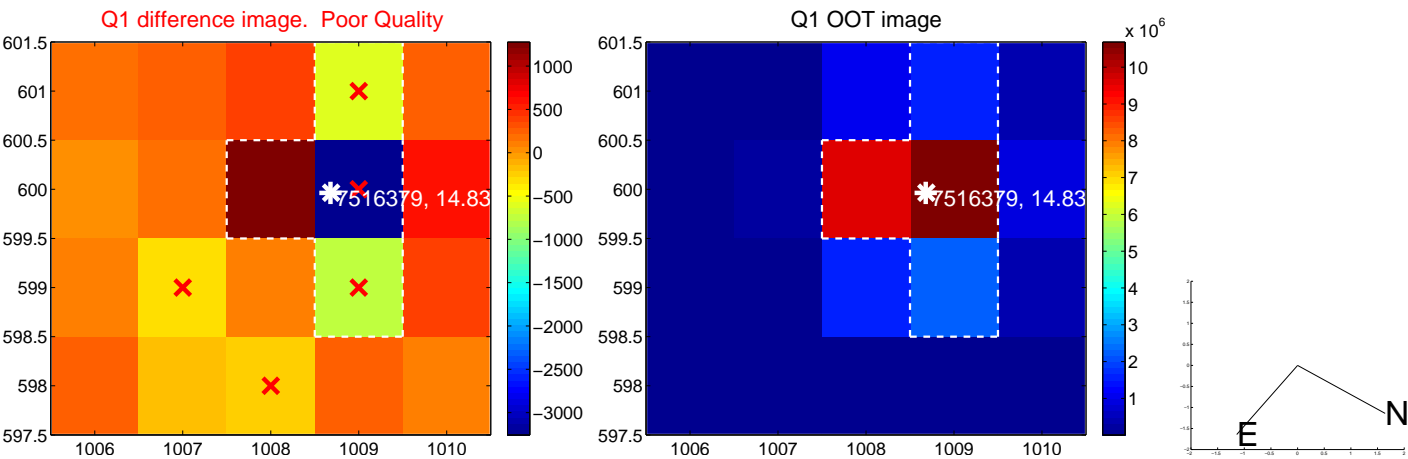
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.805 ± 0.825	3.40	1.384 ± 0.900	2.440 ± 0.800
PRF-fit source offset from KIC position	1.460 ± 0.856	1.71	1.360 ± 0.903	0.531 ± 0.442
photometric centroid source offset	6.03 ± 1.79	3.37	4.16 ± 1.77	4.37 ± 1.81

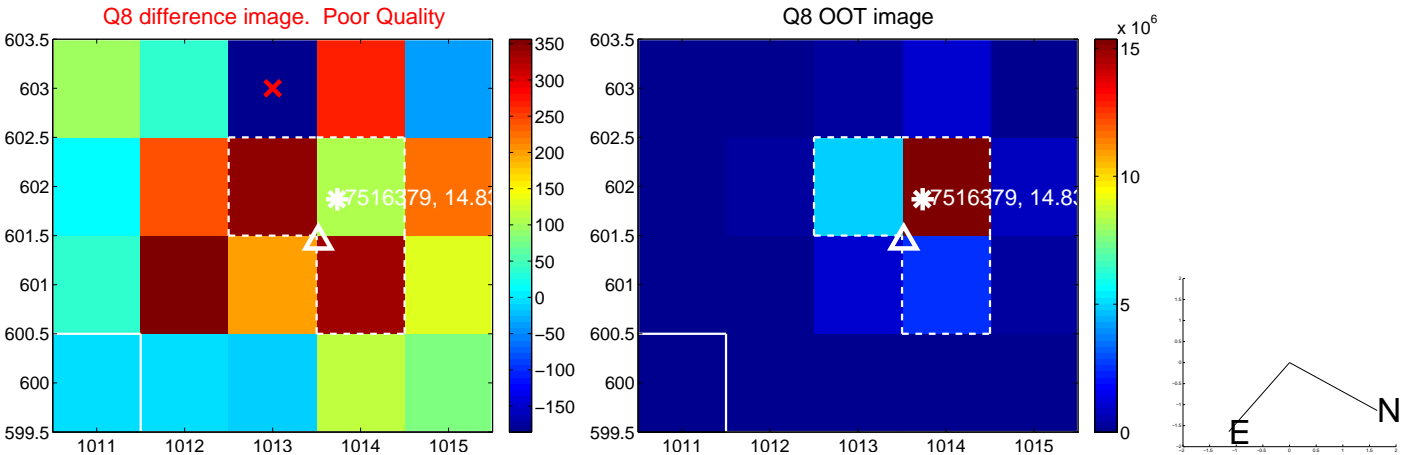
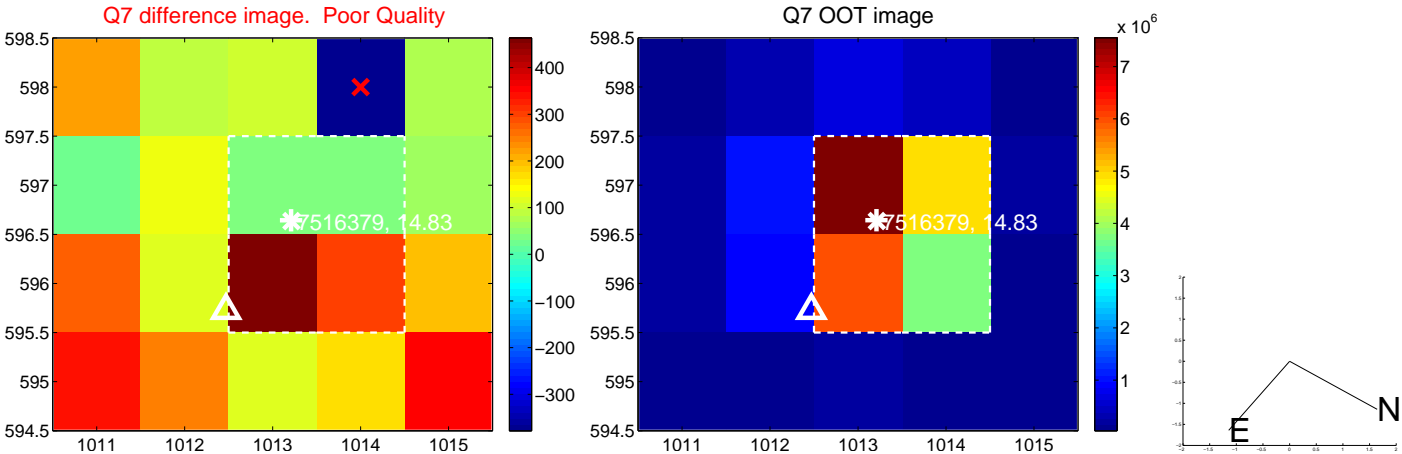
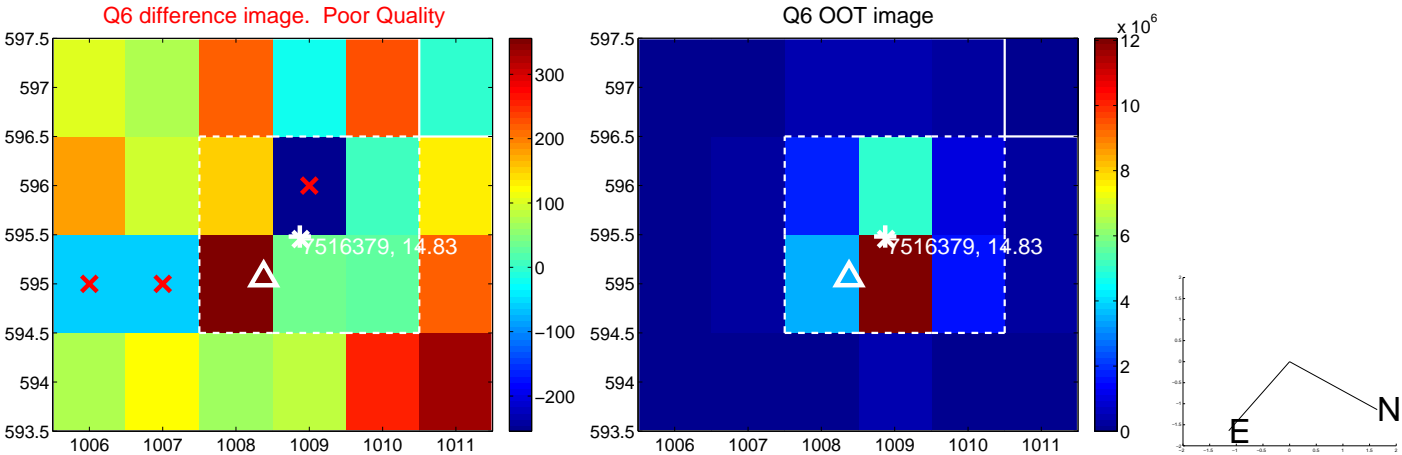
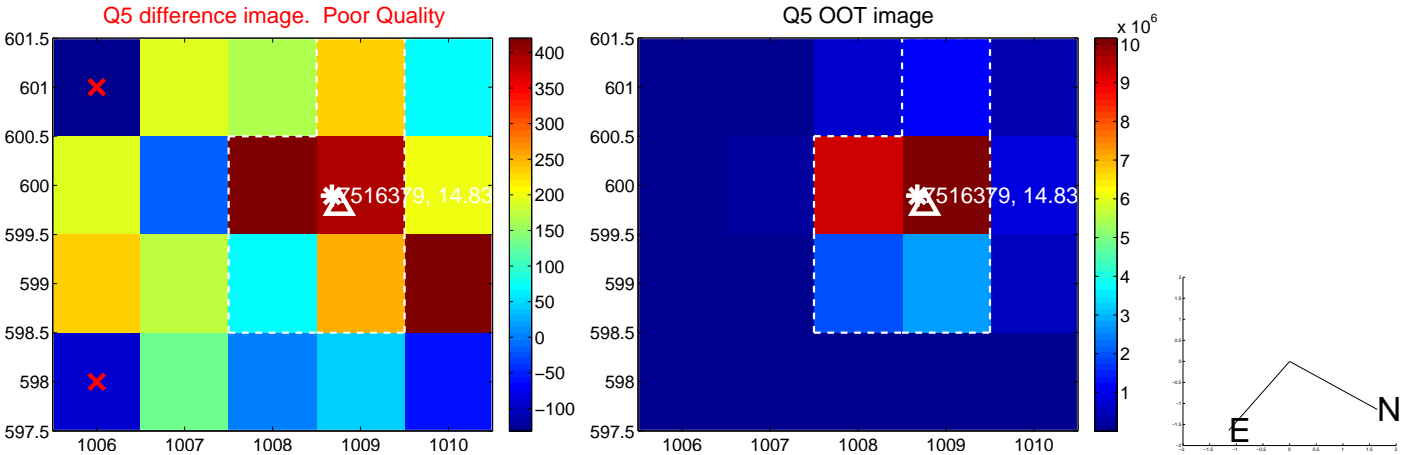


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

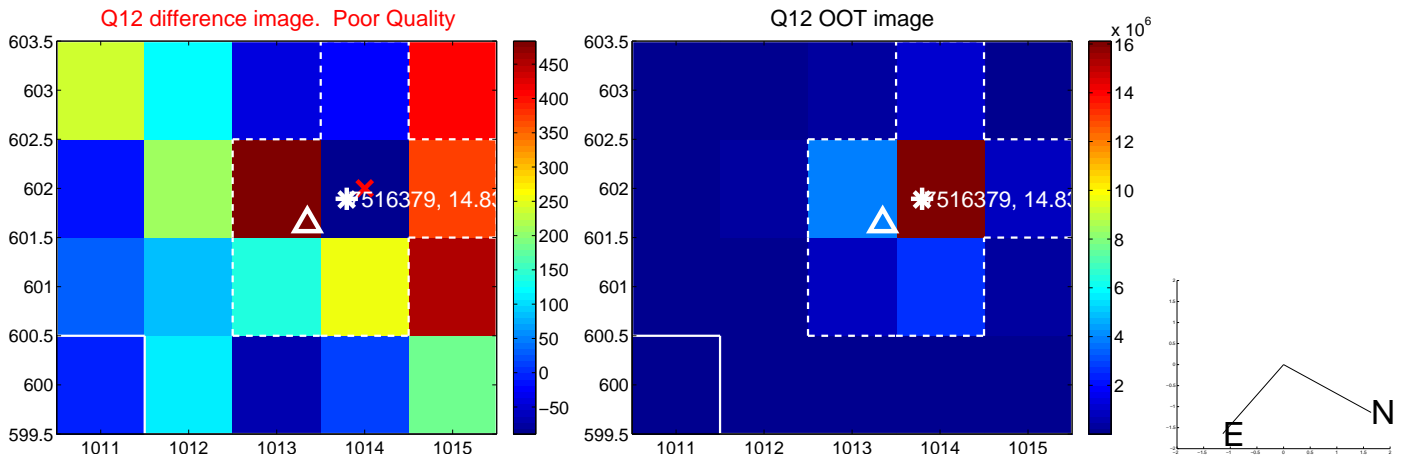
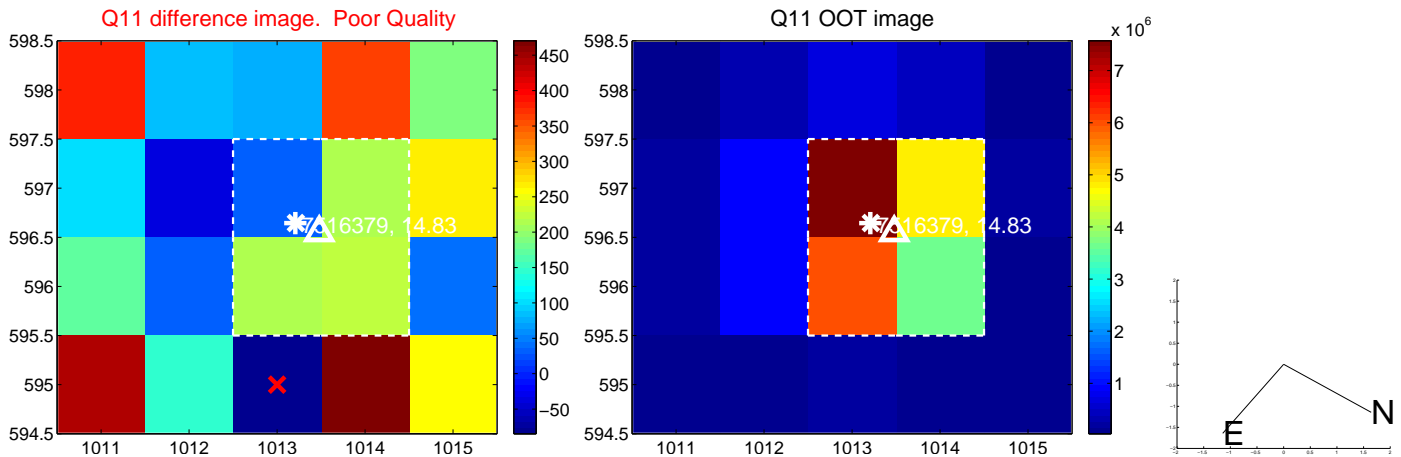
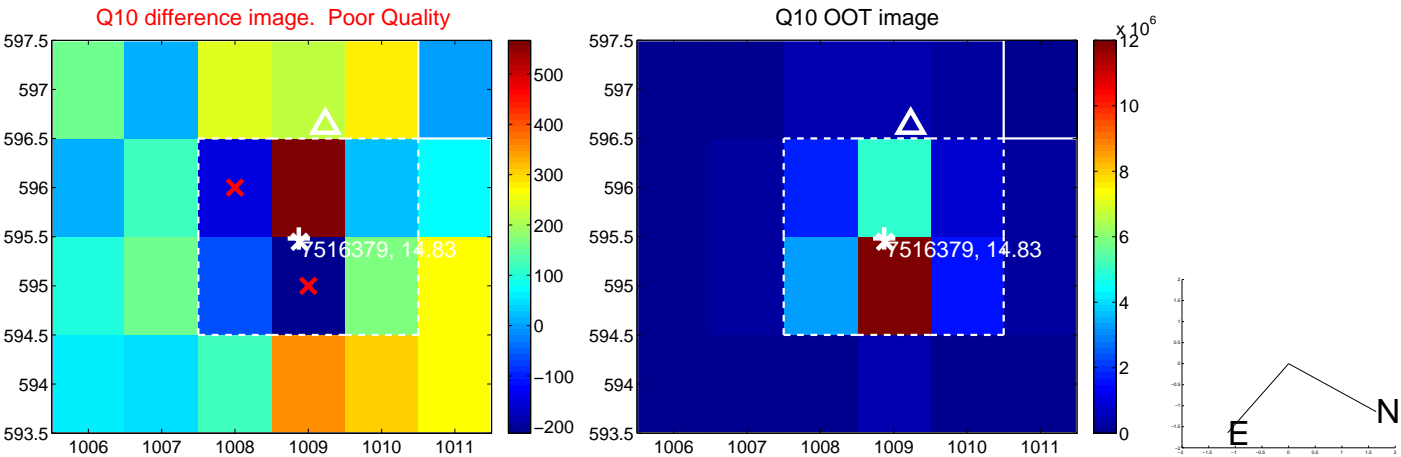
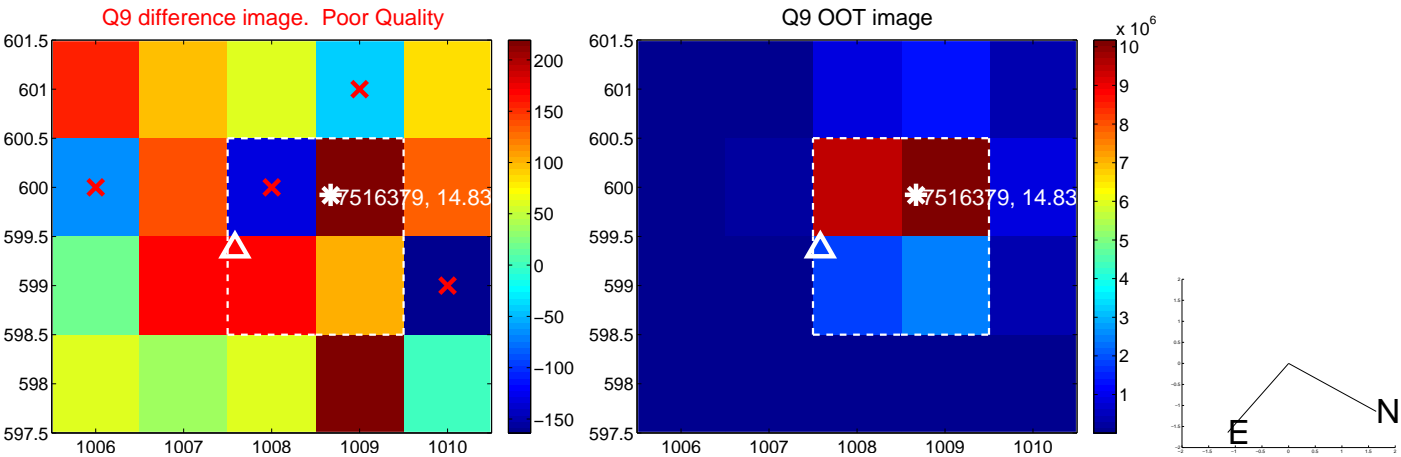
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



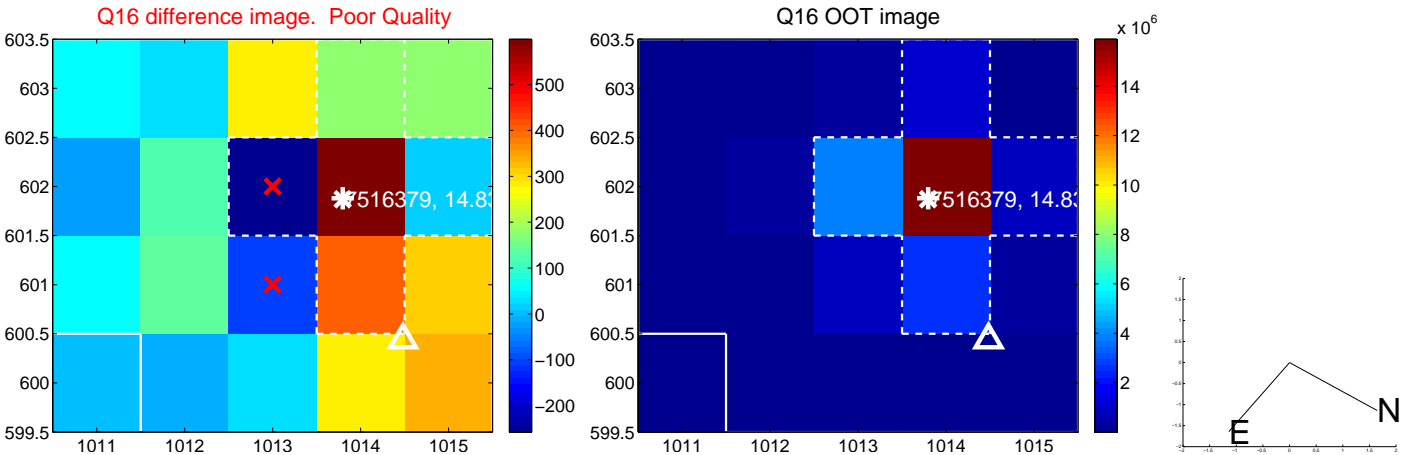
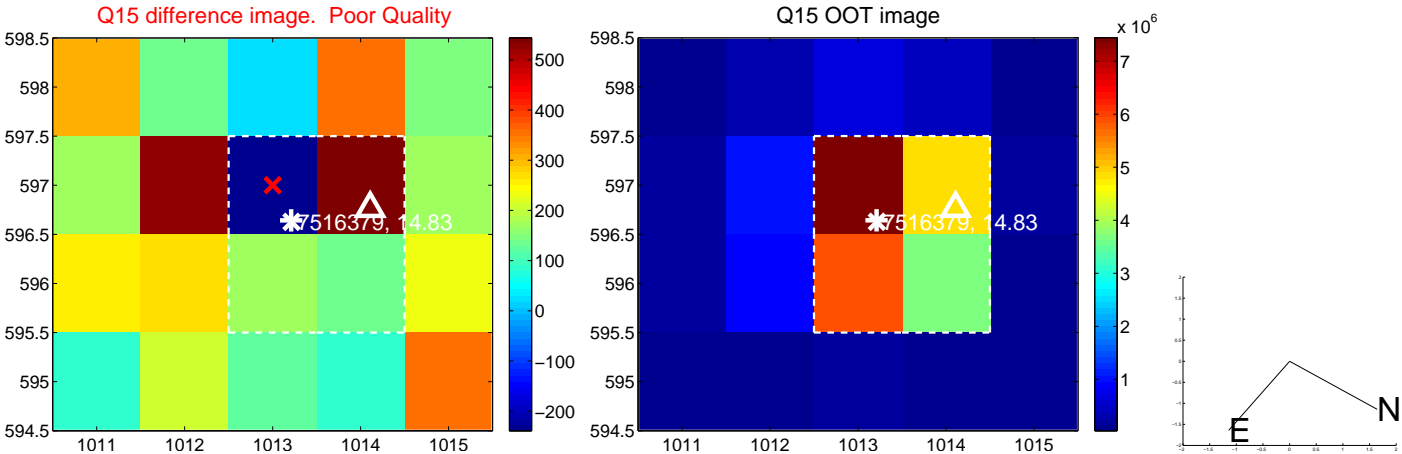
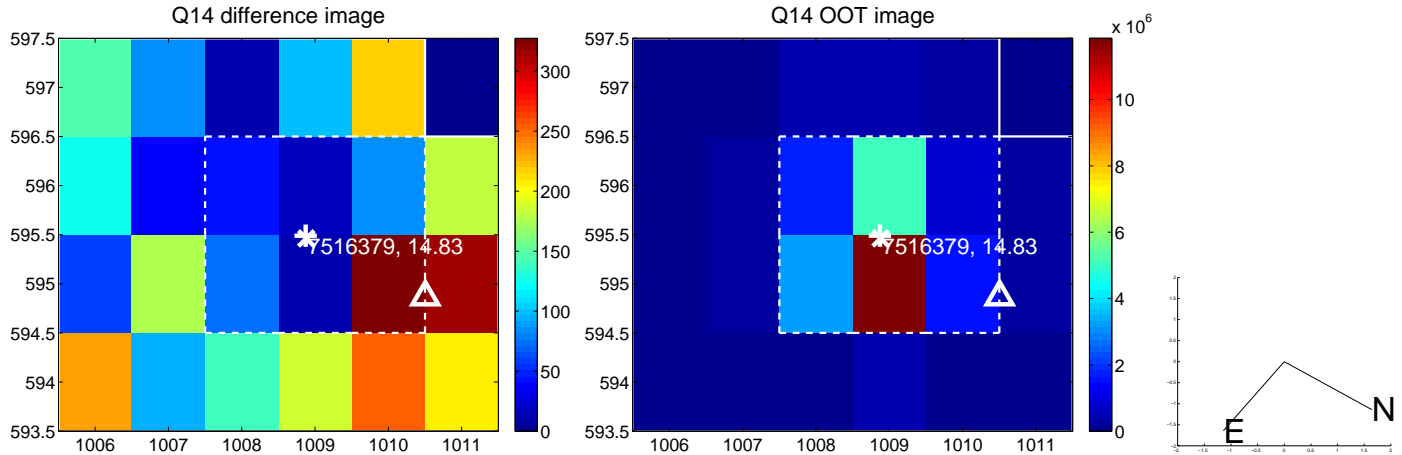
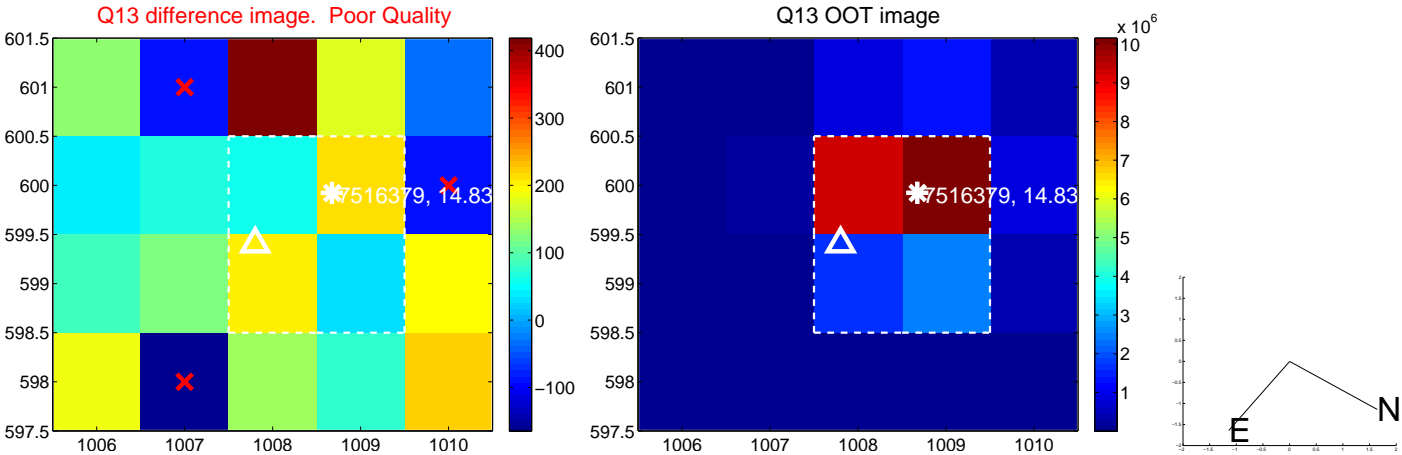
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



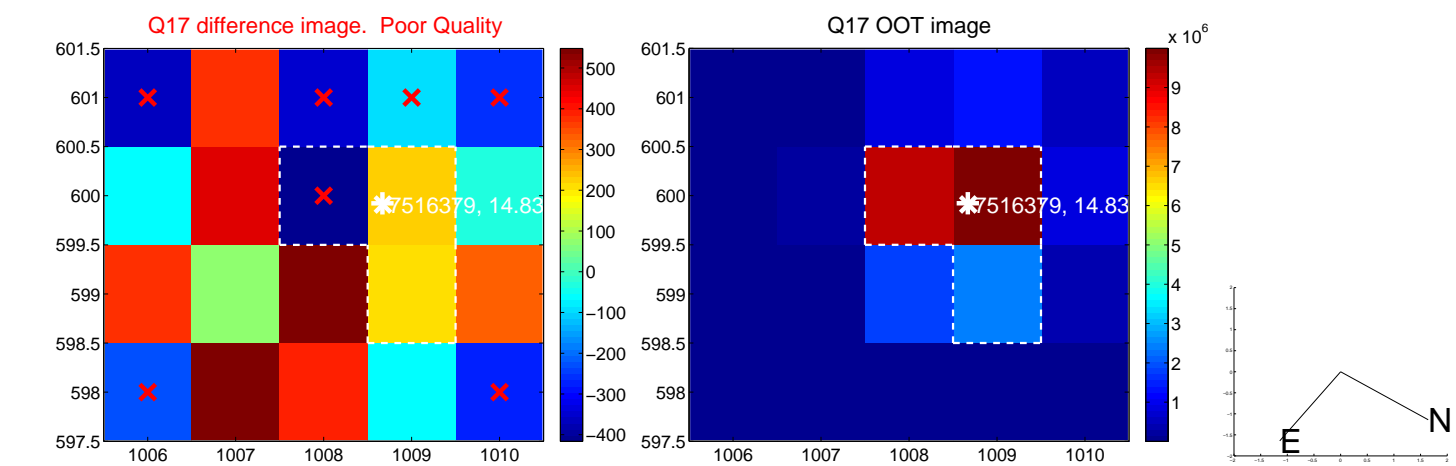
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



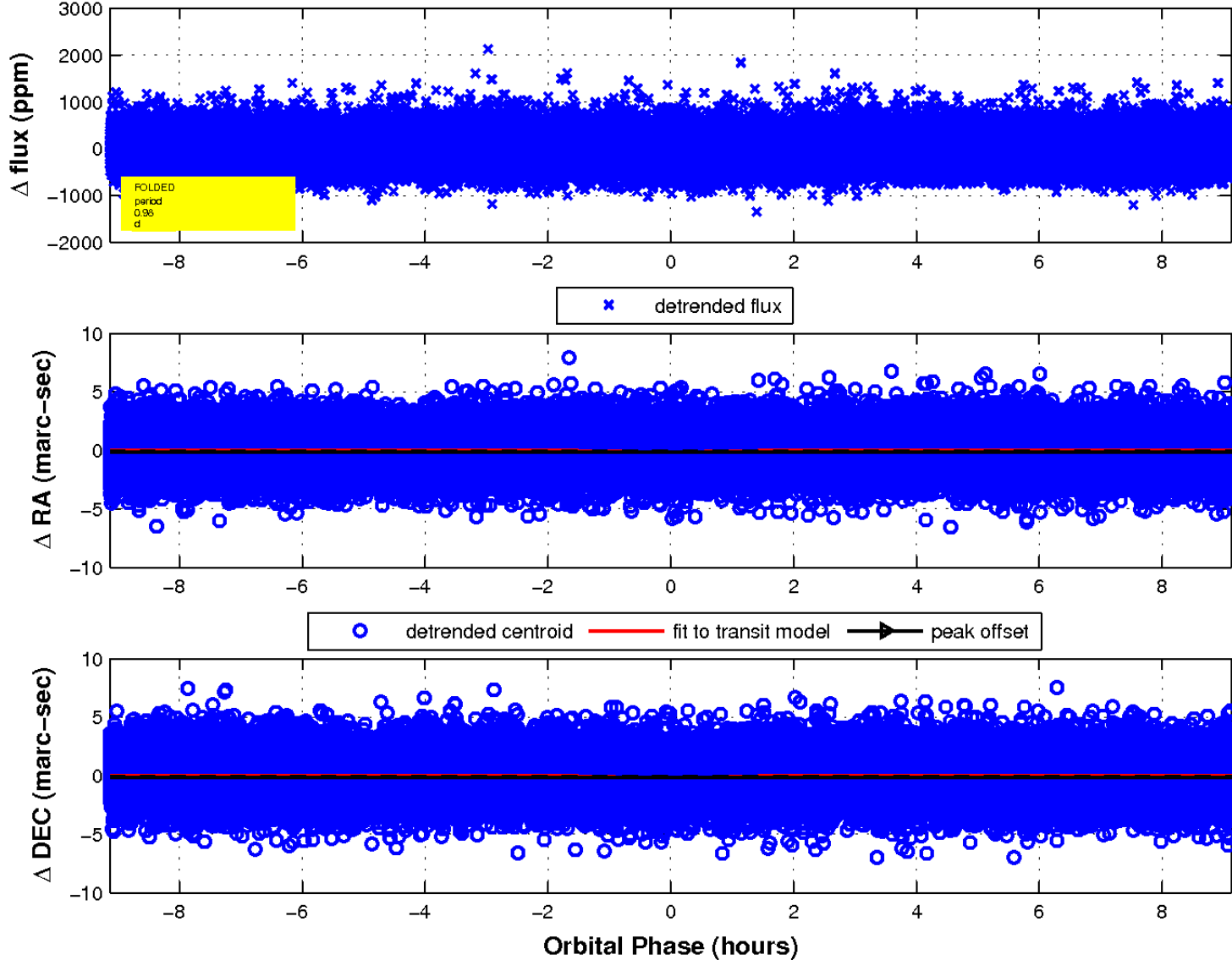
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

