

KIC 008753023

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})
008753023-01	OBS	No	7.779857	133.192131	88.8	15.279	12.3	12.3	0.82	5696	0.91	127.00
008753023-02	OBS	No	241.313532	328.422400	980.3	15.000	26.2	-1.0	0.82	5696	2.56	1.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008753023-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
008753023-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

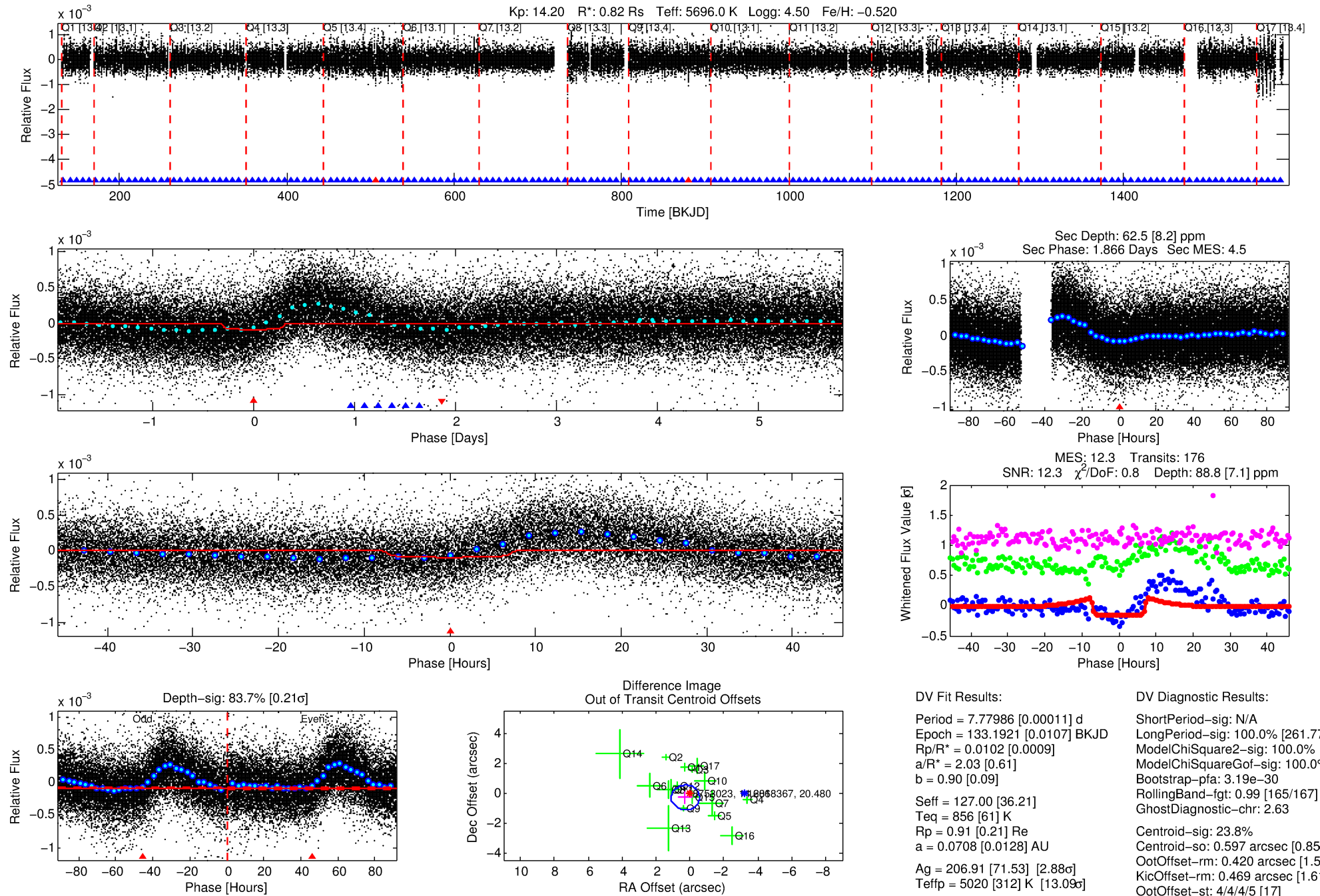
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008753023-01

No Significant Match Found

DV One-Page Summary

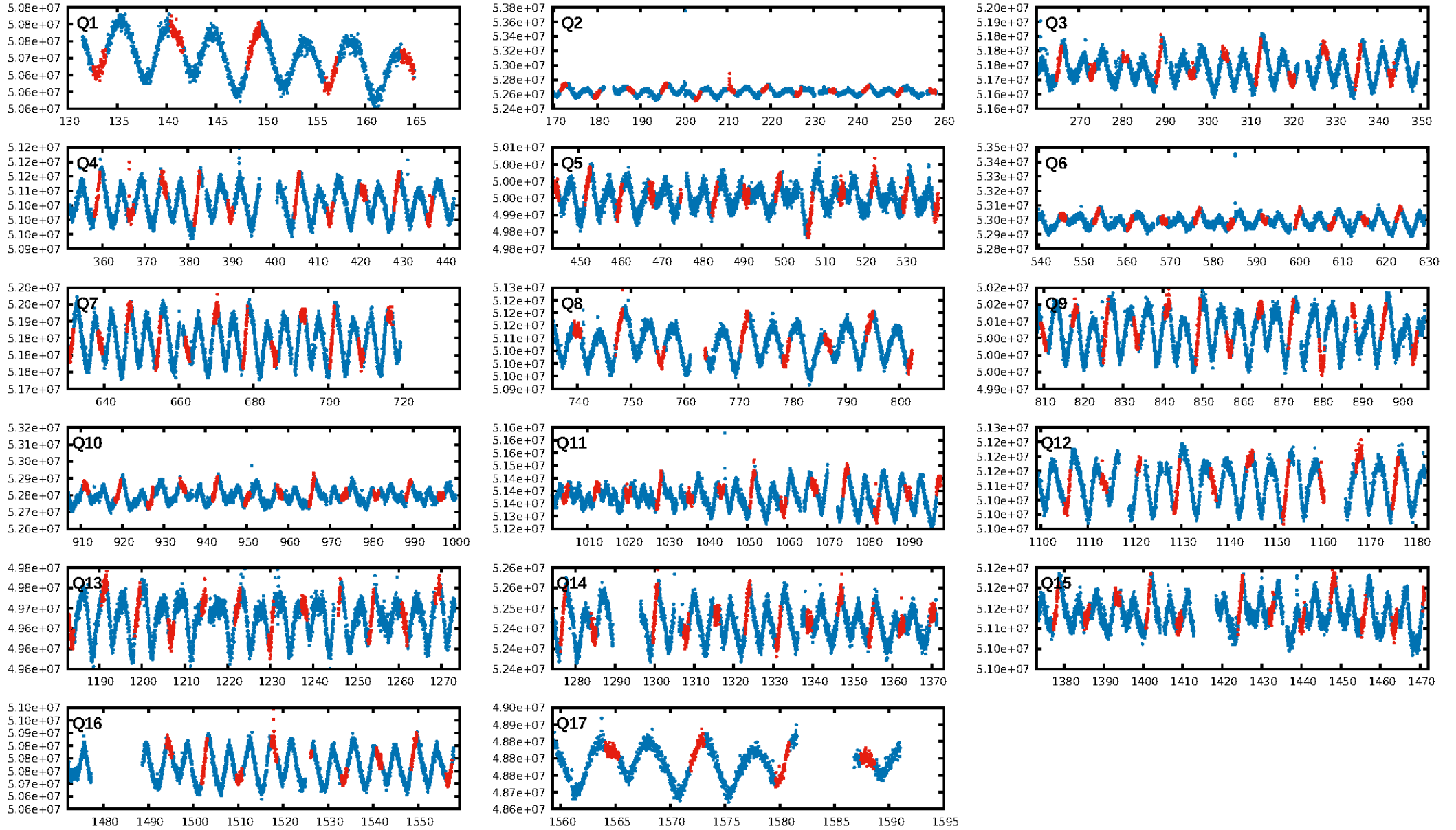
KIC: 8753023 Candidate: 1 of 2 Period: 7.780 d



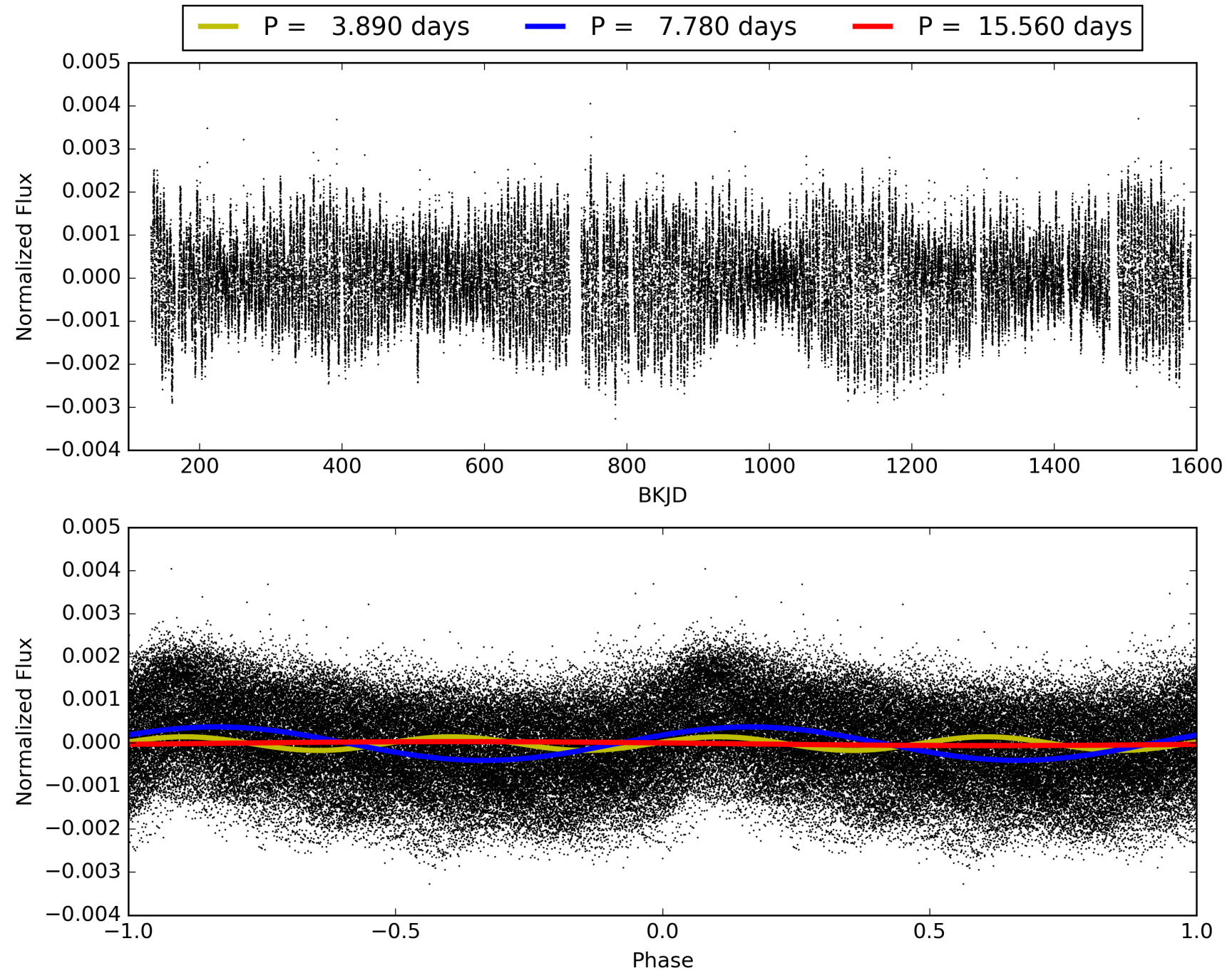
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:39:04 Z

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

TCE 008753023-01, PDC Light Curves

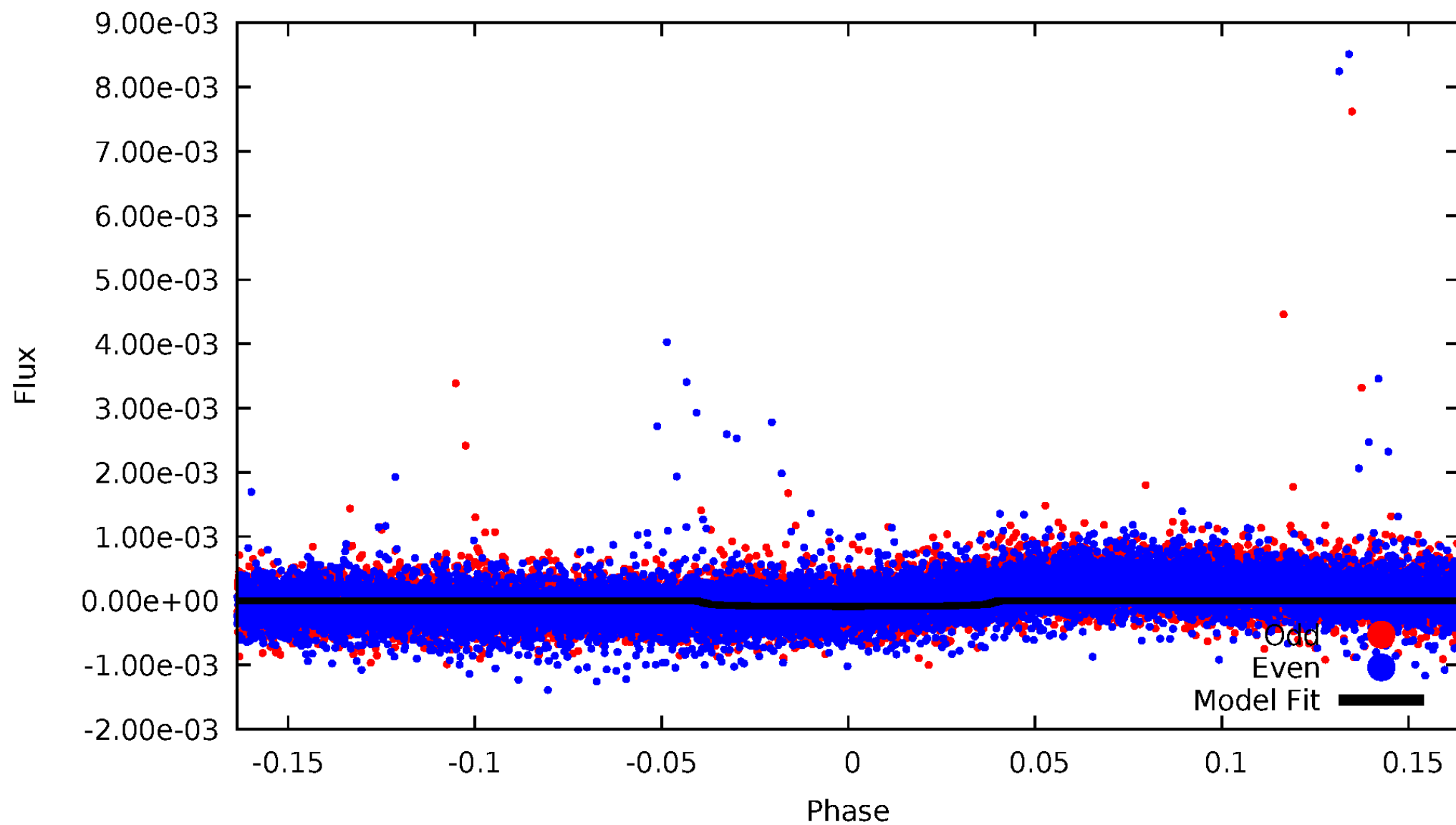


TCE 008753023-01



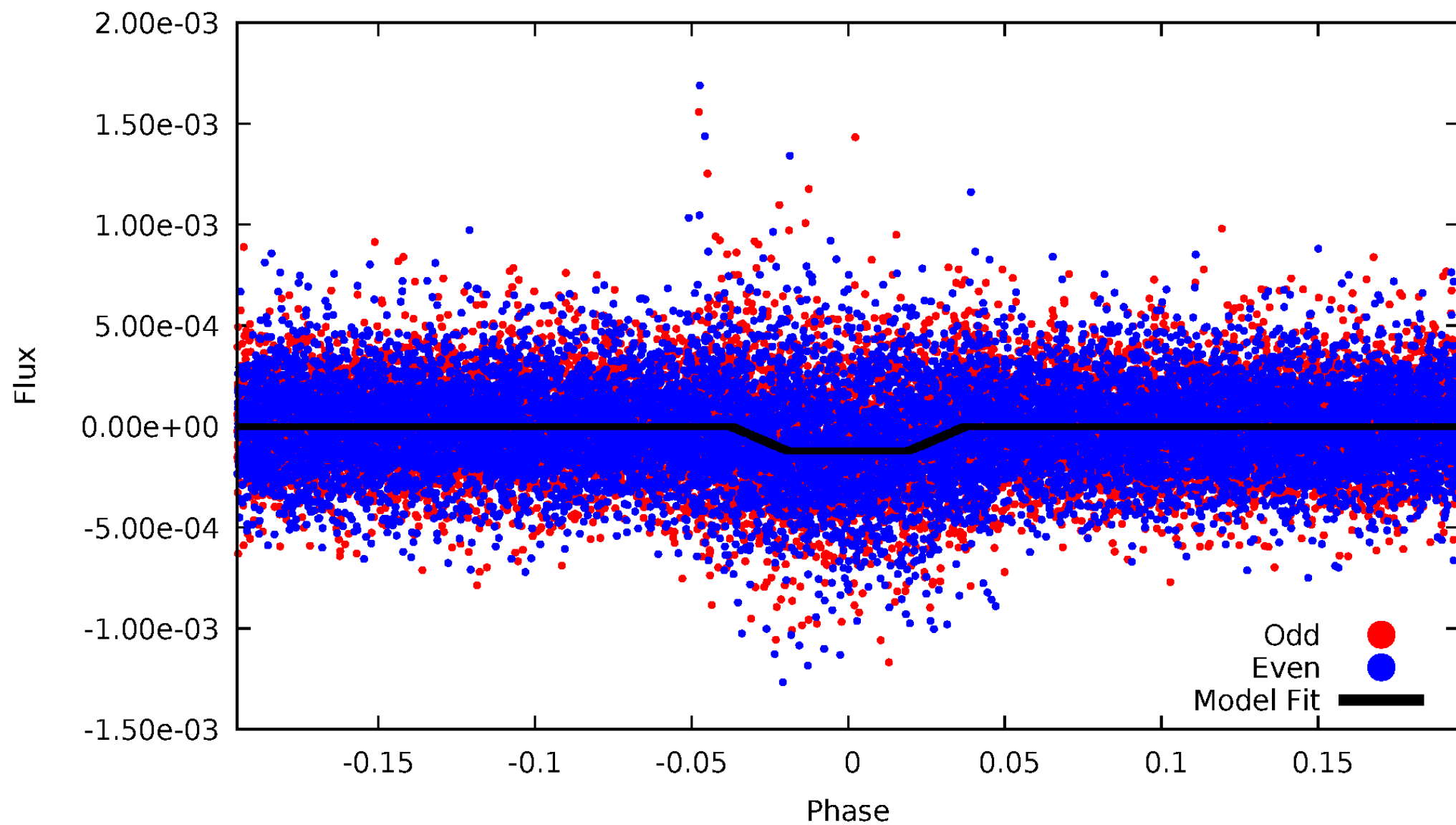
DV Odd/Even

TCE 008753023-01



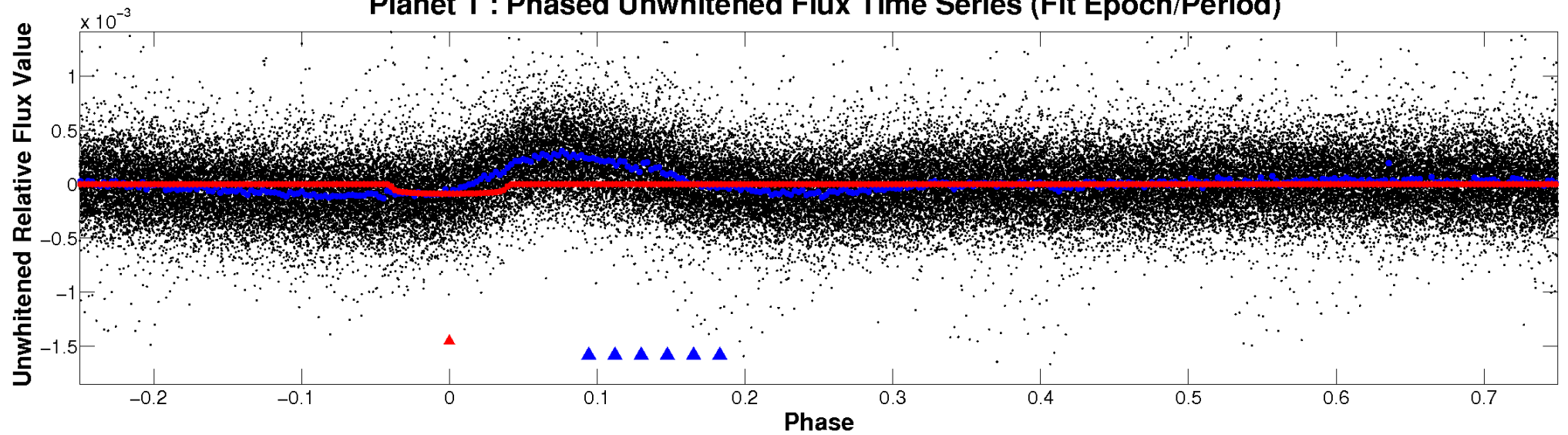
ALT Odd/Even

TCE 008753023-01

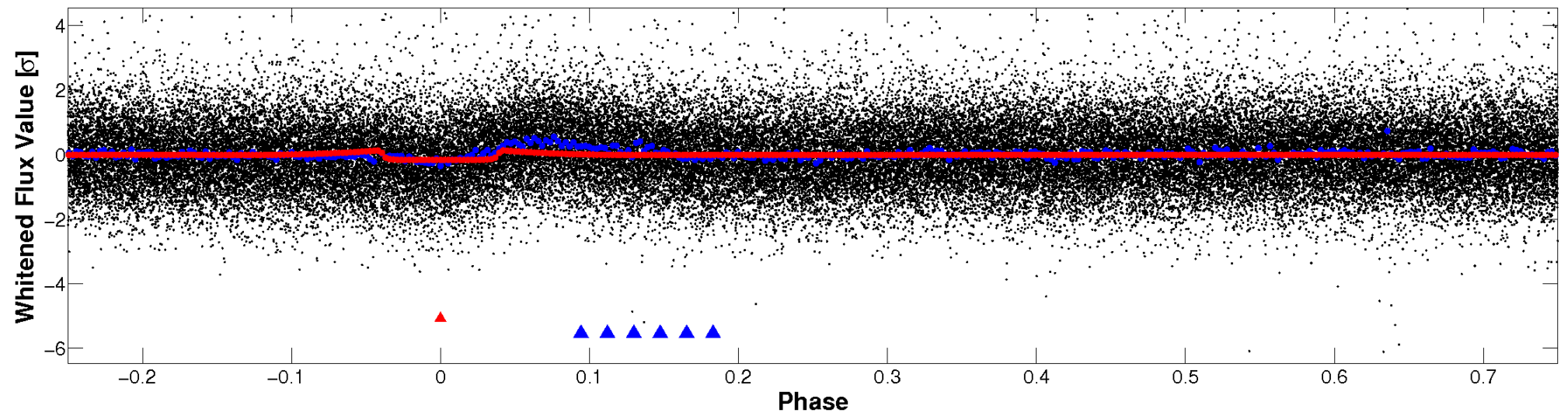


Non-Whitened Vs. Whitened Light Curve

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

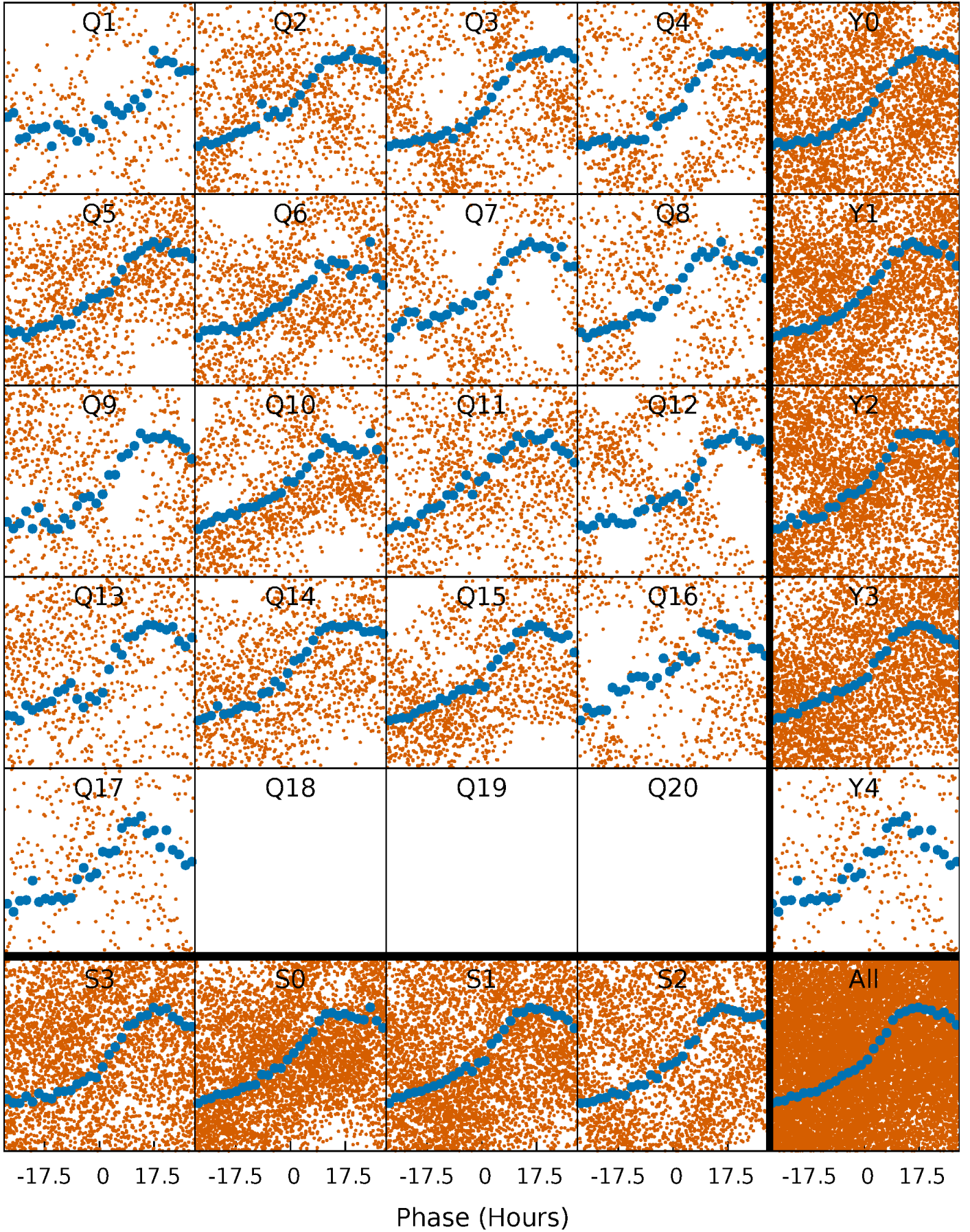


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



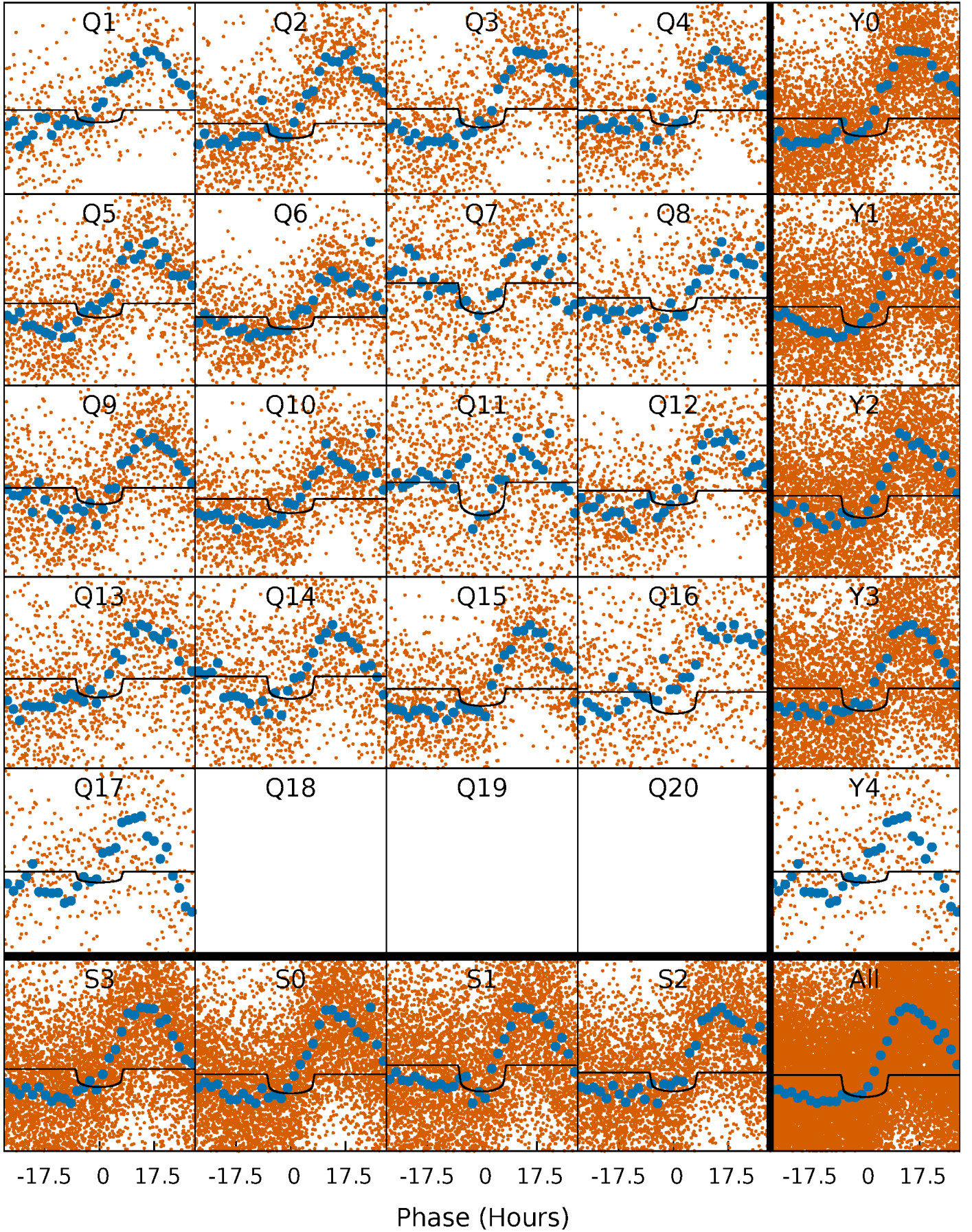
PDC Quarter-Phased Transit Curves

TCE 008753023-01 P= 7.779857 Days $T_0=133.192131$ (BKJD)



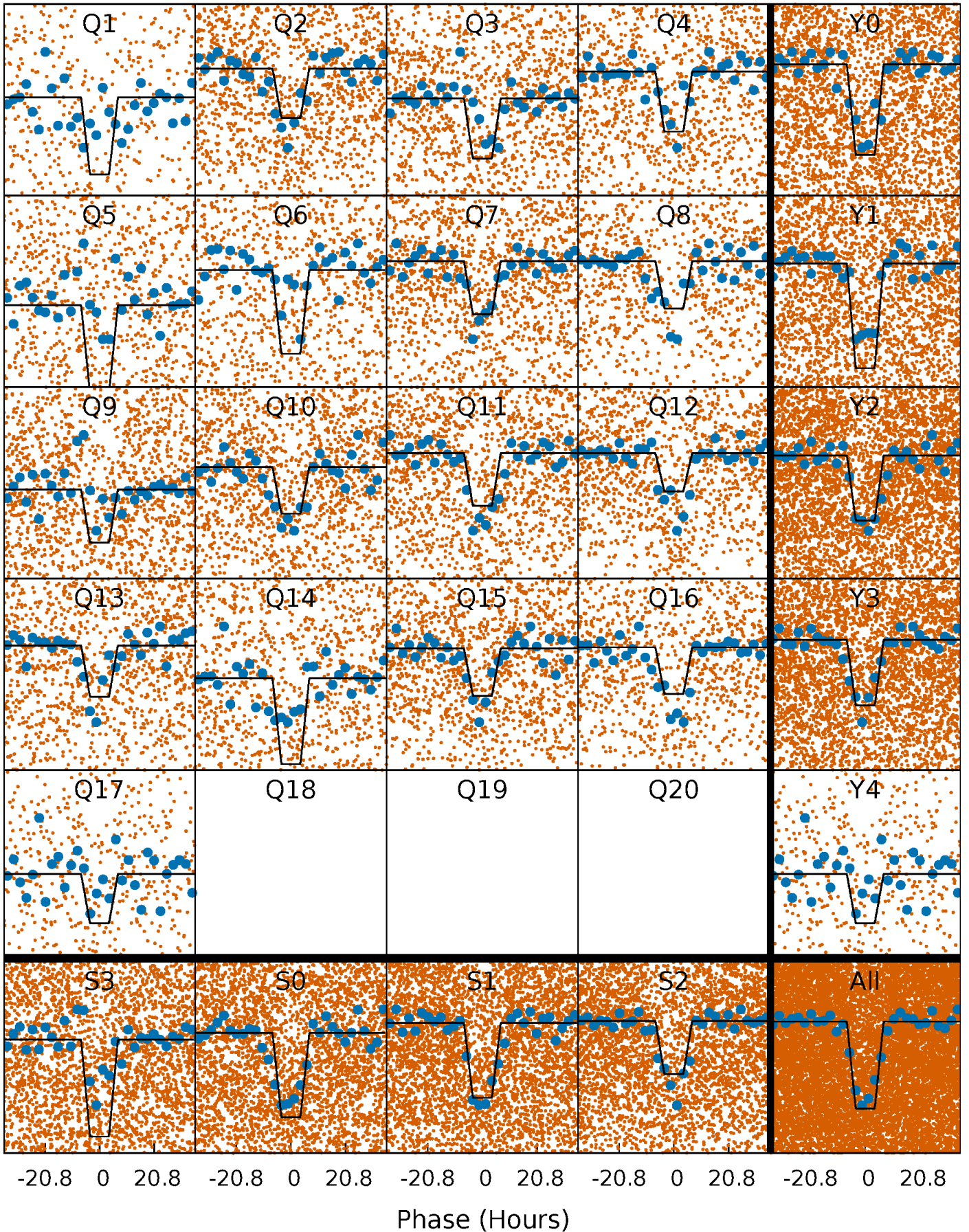
DV Quarter-Phased Transit Curves

TCE 008753023-01 P= 7.779857 Days $T_0=133.192131$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

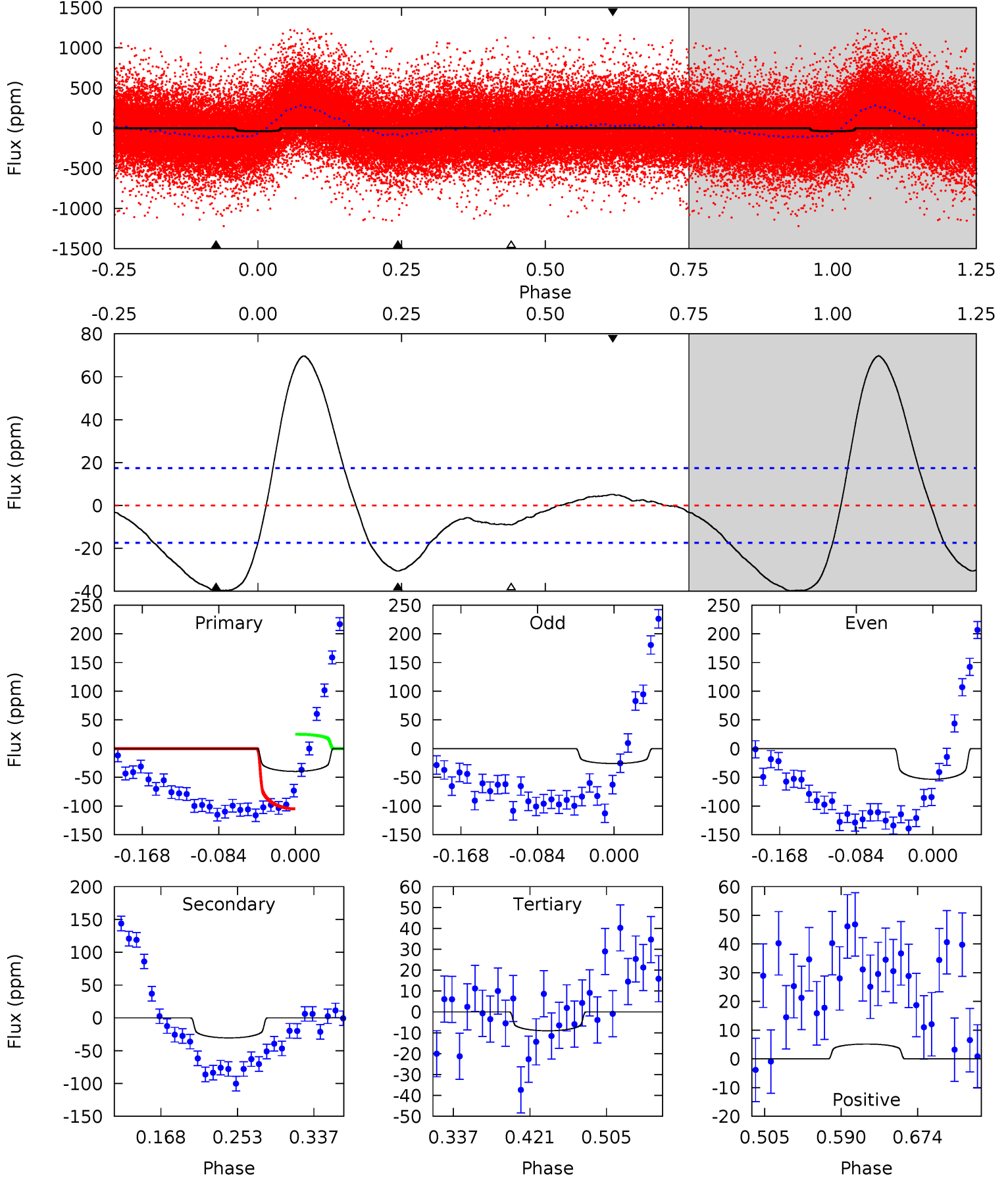
TCE 008753023-01 P= 7.779913 Days $T_0=133.250647$ (BKJD)



DV Model-Shift Uniqueness Test

008753023-01, P = 7.779857 Days, E = 125.412274 Days

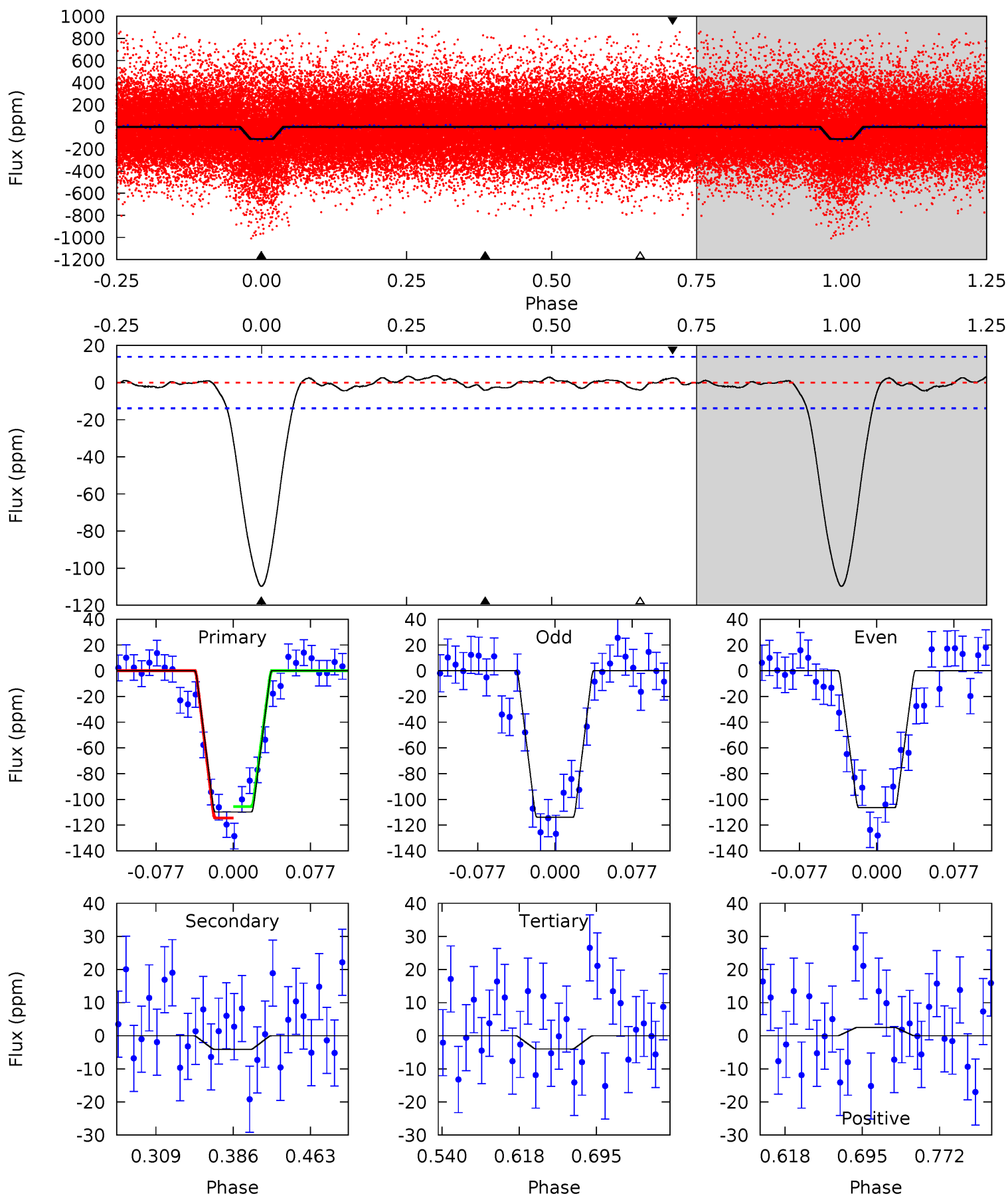
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	8.09	2.39	1.37	4.60	1.73	6.00	8.12	9.15	5.70	6.72	3.63	0.84	0.64	11.2



Alt Model-Shift Uniqueness Test

008753023-01, P = 7.779913 Days, E = 125.470734 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.5	1.37	1.33	0.84	4.62	1.77	0.61	35.2	35.6	0.04	0.52	1.23	1.12	0.03	1.48



Stellar Parameters For KIC 008753023

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5696^{+155}_{-155}	$4.502^{+0.096}_{-0.144}$	$-0.520^{+0.300}_{-0.300}$	$0.822^{+0.177}_{-0.095}$	$0.783^{+0.103}_{-0.055}$	$1.983^{+0.796}_{-0.785}$
	+3%/-3%	+2%/-3%	+58%/-58%	+22%/-12%	+13%/-7%	+40%/-40%
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 008753023-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-31 ± 4	$0.92^{+0.14}_{-0.10}$	1199^{+69}_{-56}	4392^{+234}_{-207}	100^{+30}_{-26}
Alt.	-4 ± 3	$1.00^{+0.14}_{-0.11}$	1201^{+68}_{-59}	3069^{+282}_{-591}	11^{+9}_{-9}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

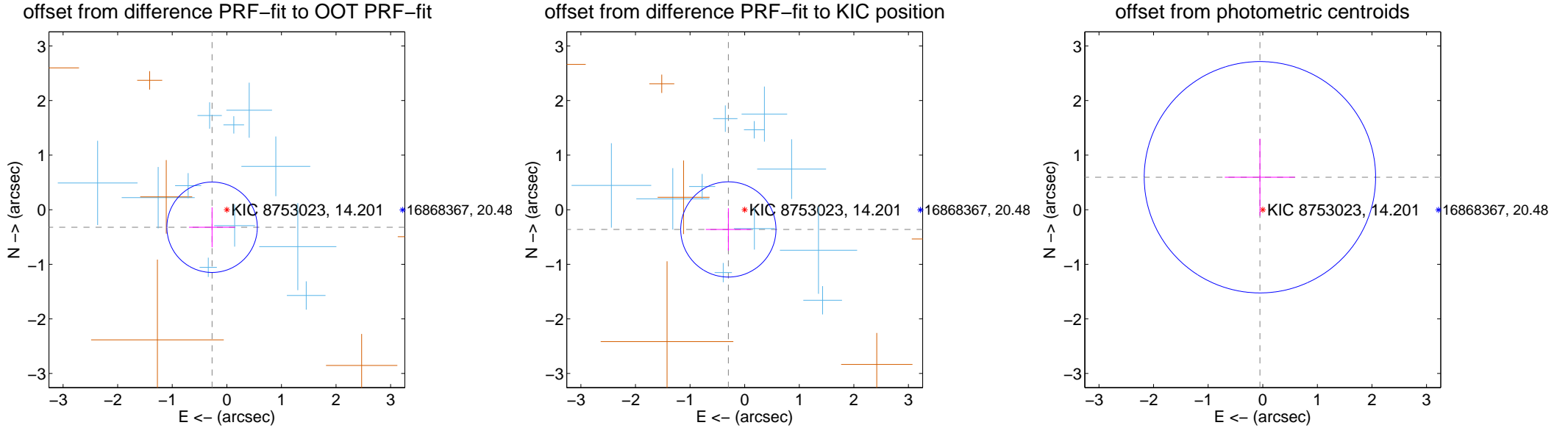
DV Centroid Data

Supplemental centroid analysis for 008753023-01. Kepler magnitude: 14.20. Transit SNR 12.34

There are 11 quarters with good PRF difference image offsets

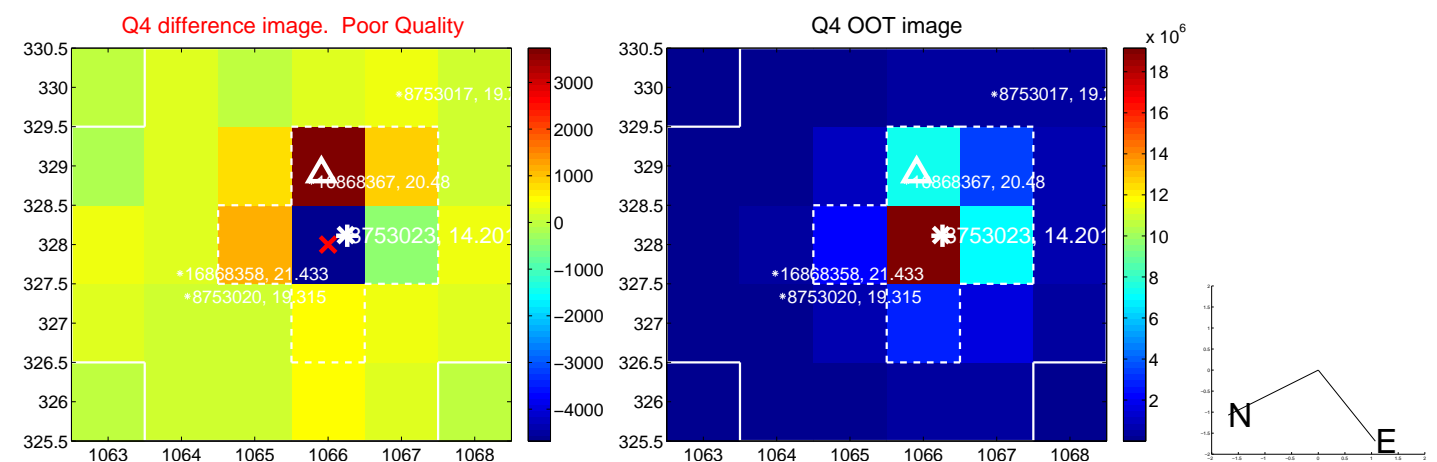
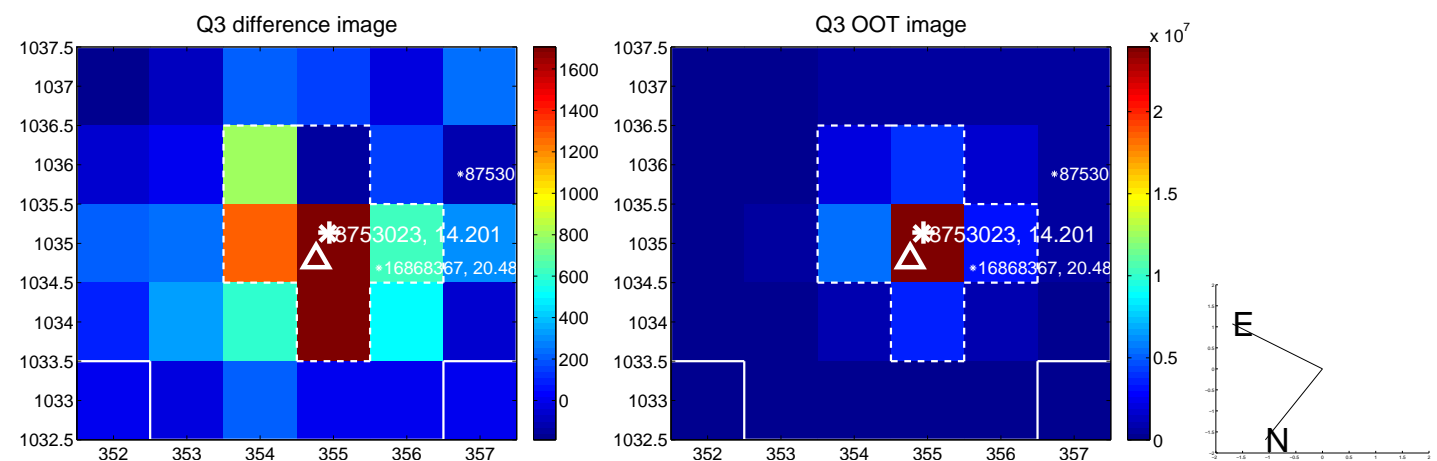
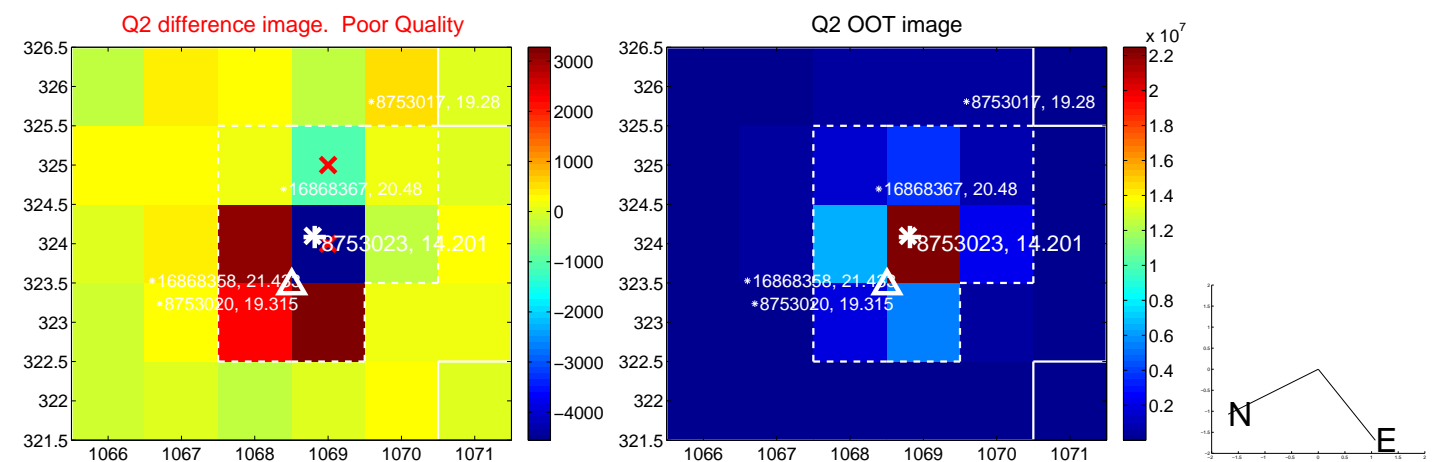
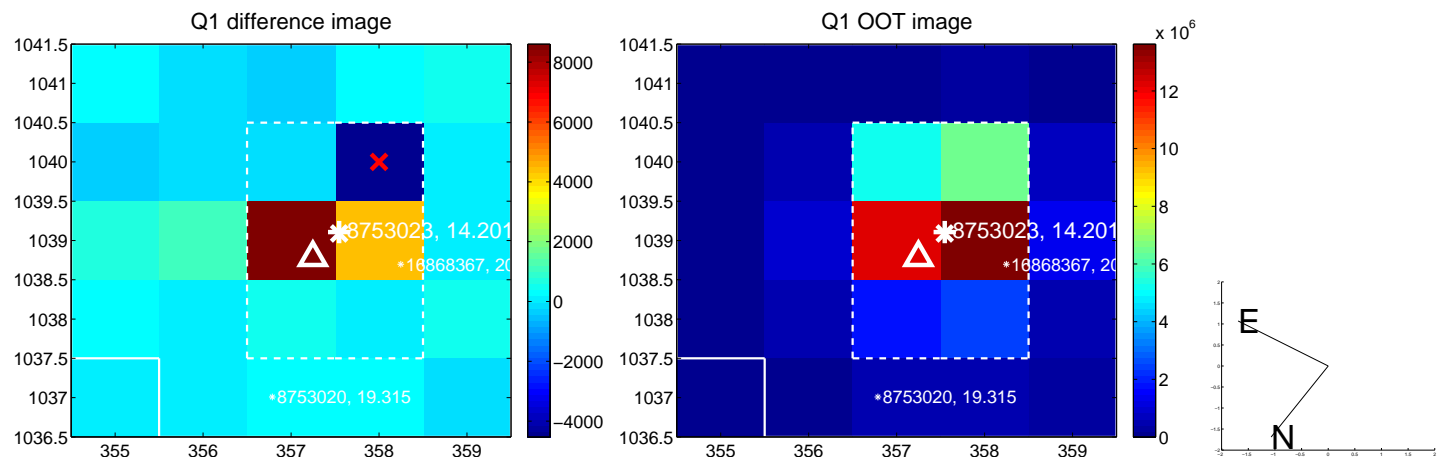
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.420 ± 0.276	1.52	0.270 ± 0.423	-0.322 ± 0.366
PRF-fit source offset from KIC position	0.469 ± 0.291	1.61	0.299 ± 0.413	-0.362 ± 0.389
photometric centroid source offset	0.60 ± 0.71	0.85	0.05 ± 0.64	0.60 ± 0.71

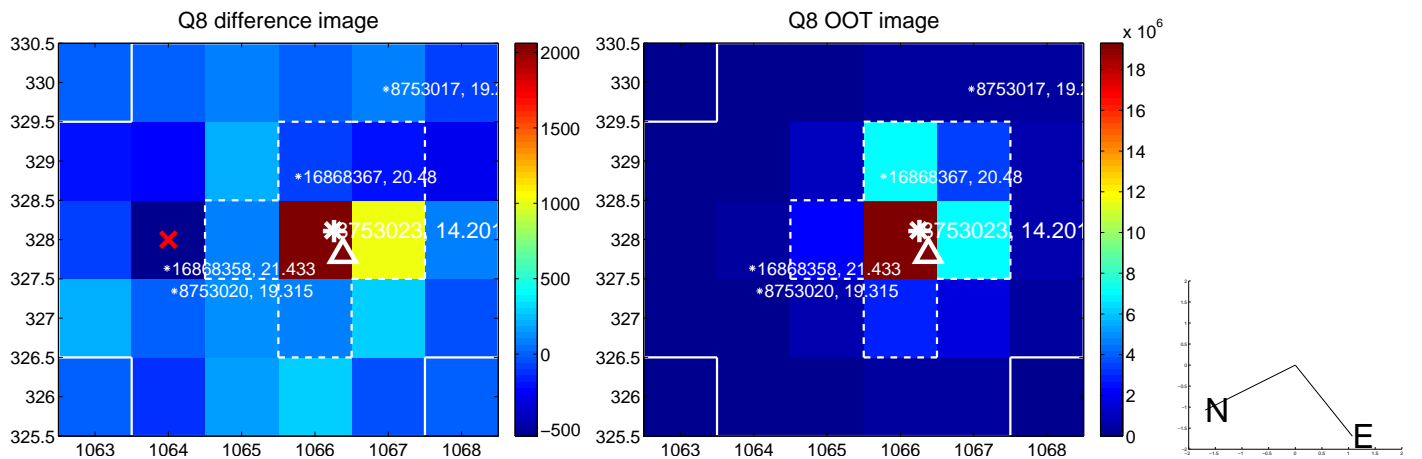
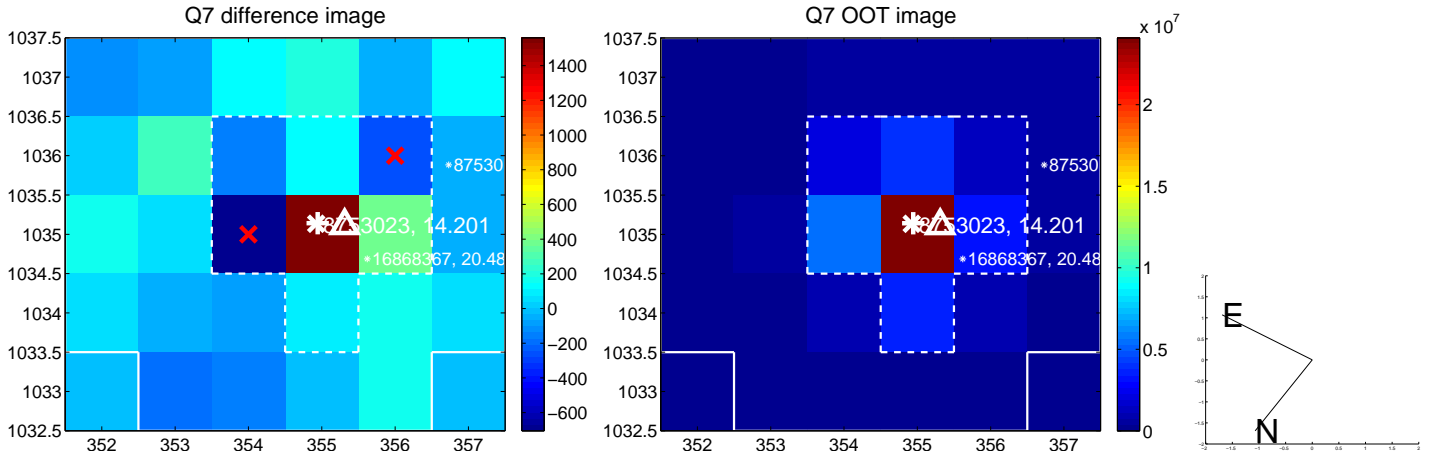
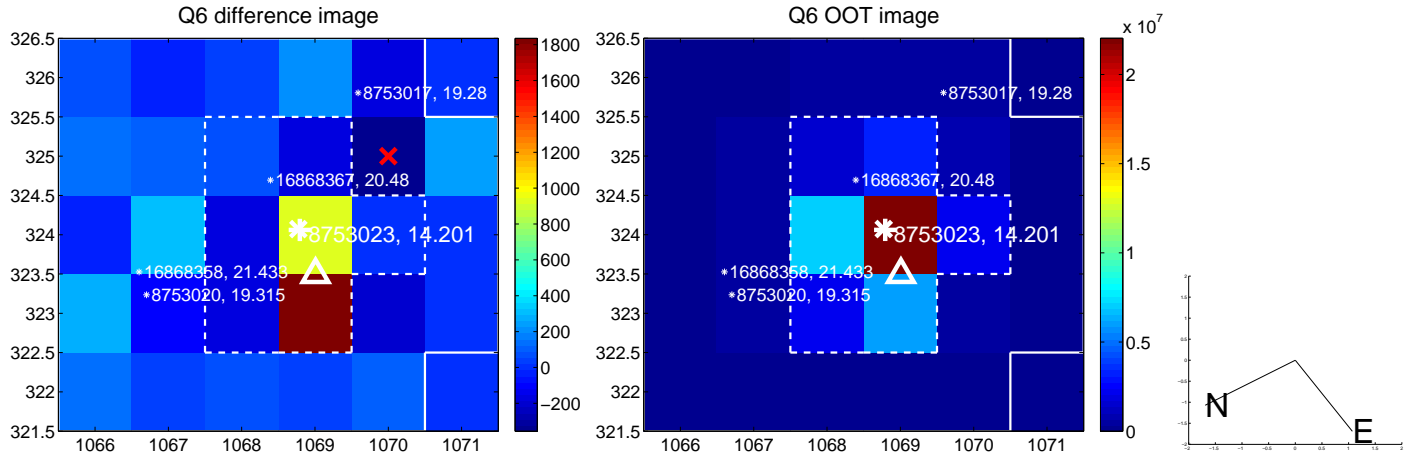
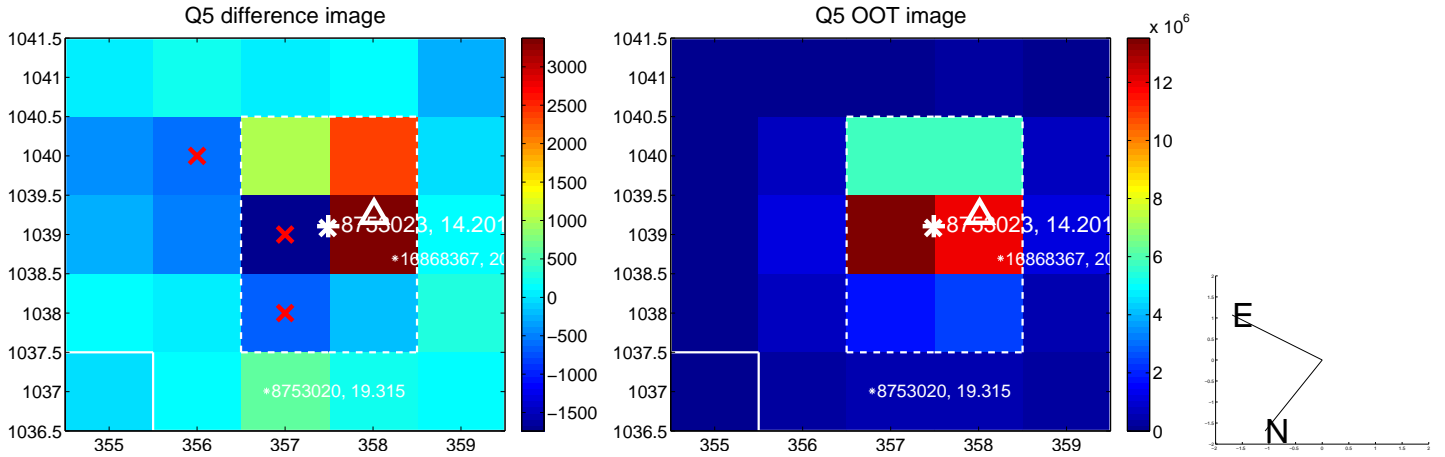


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

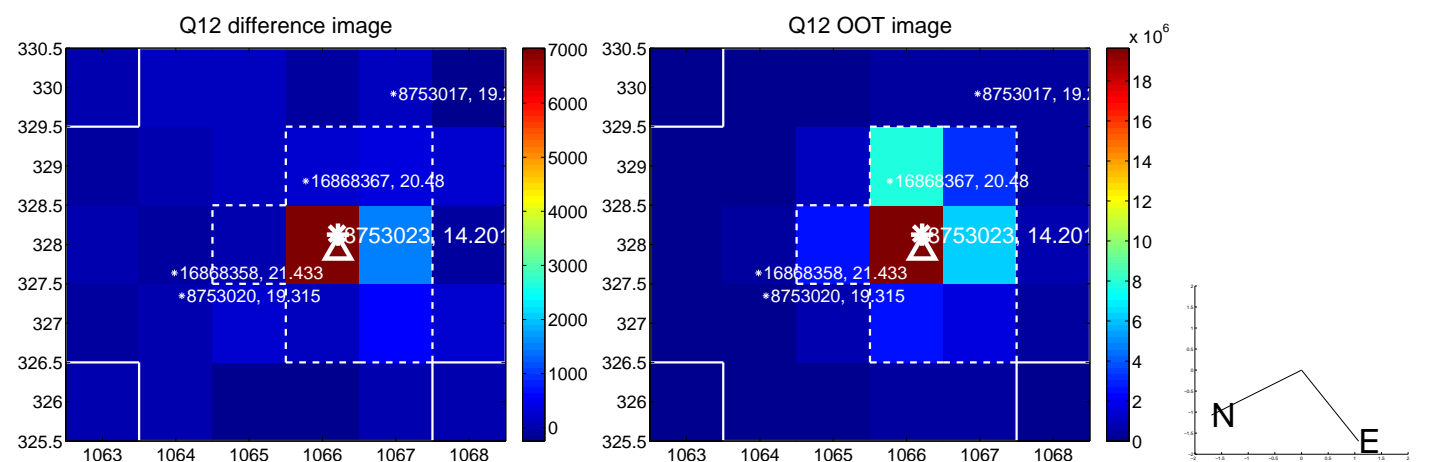
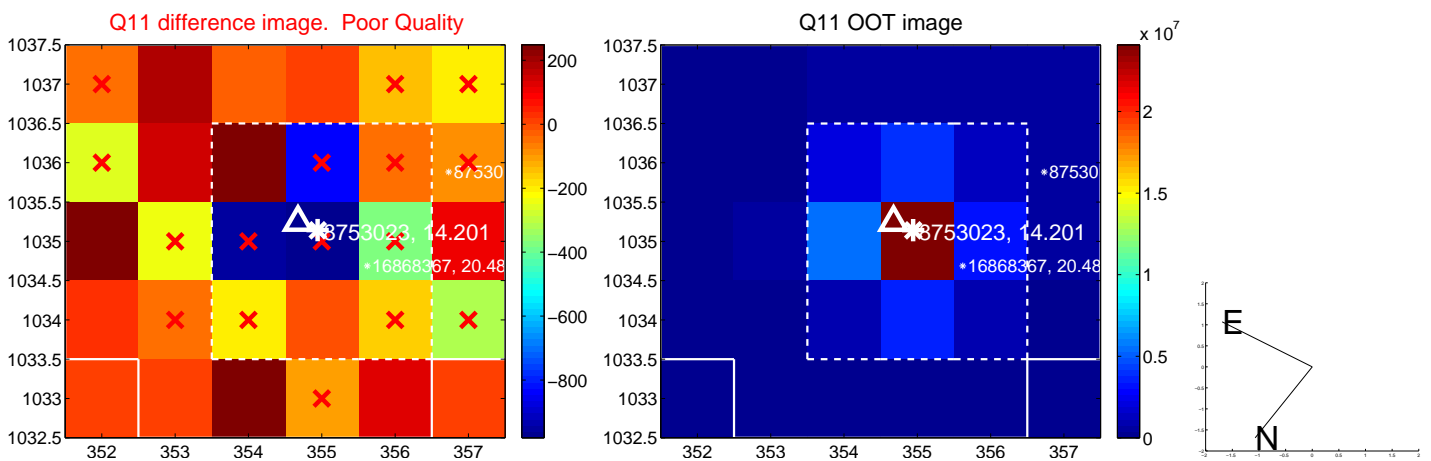
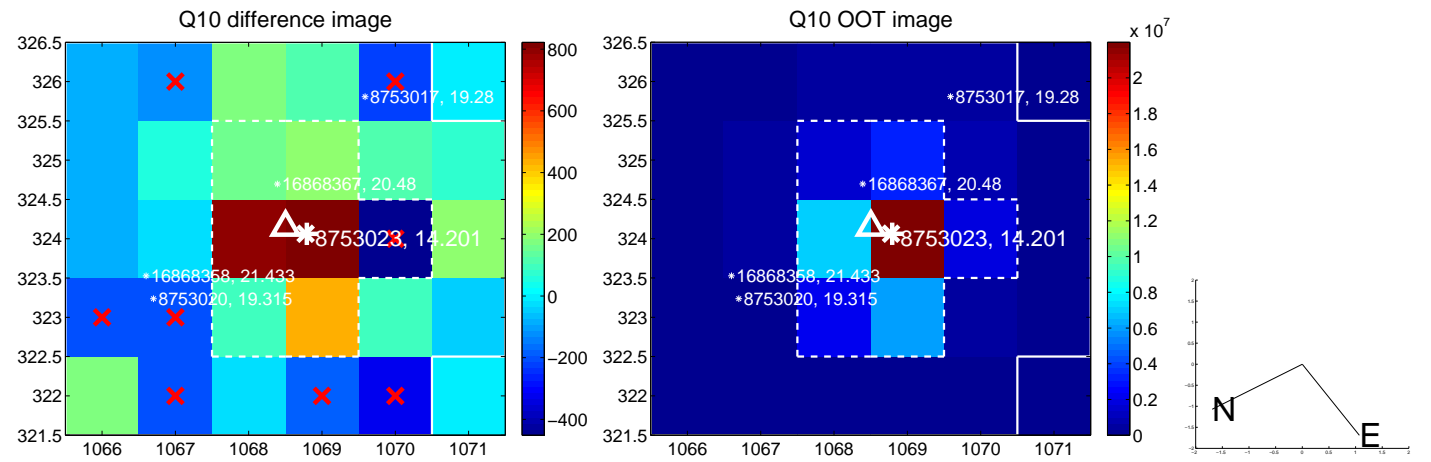
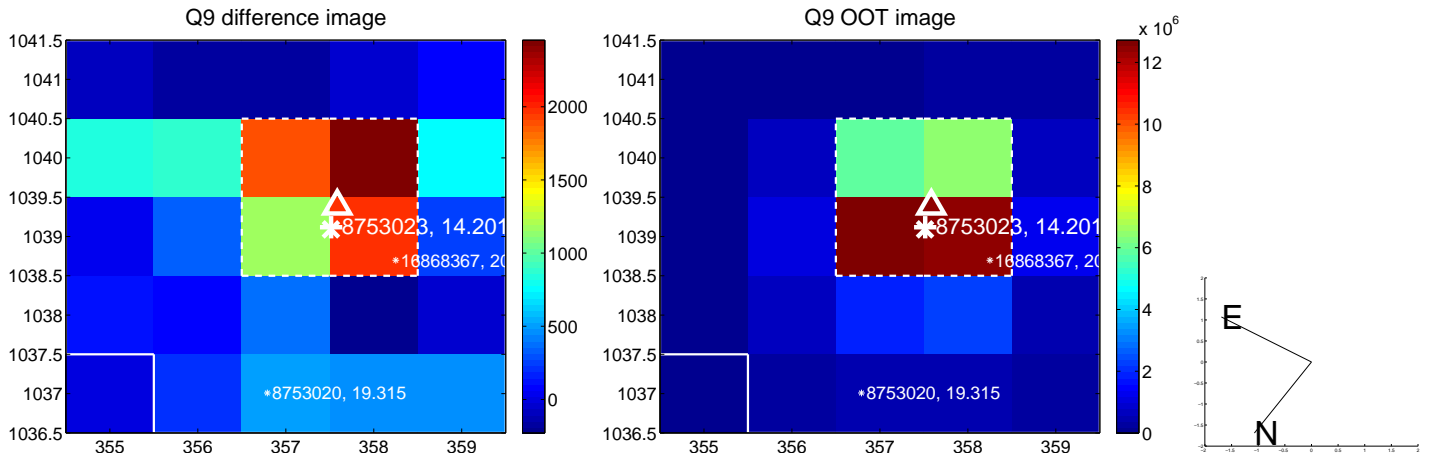
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



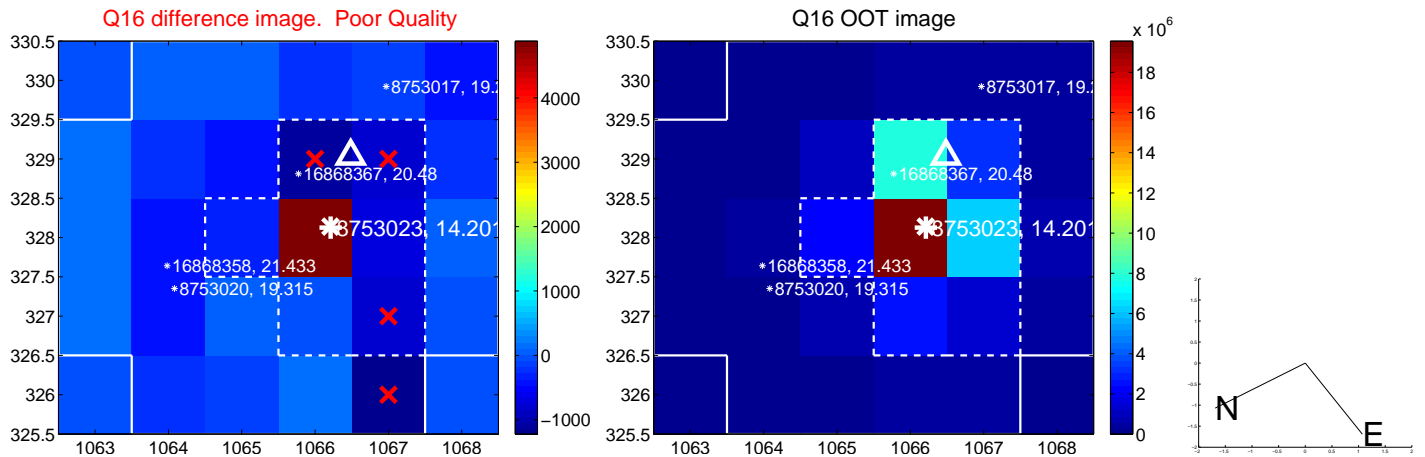
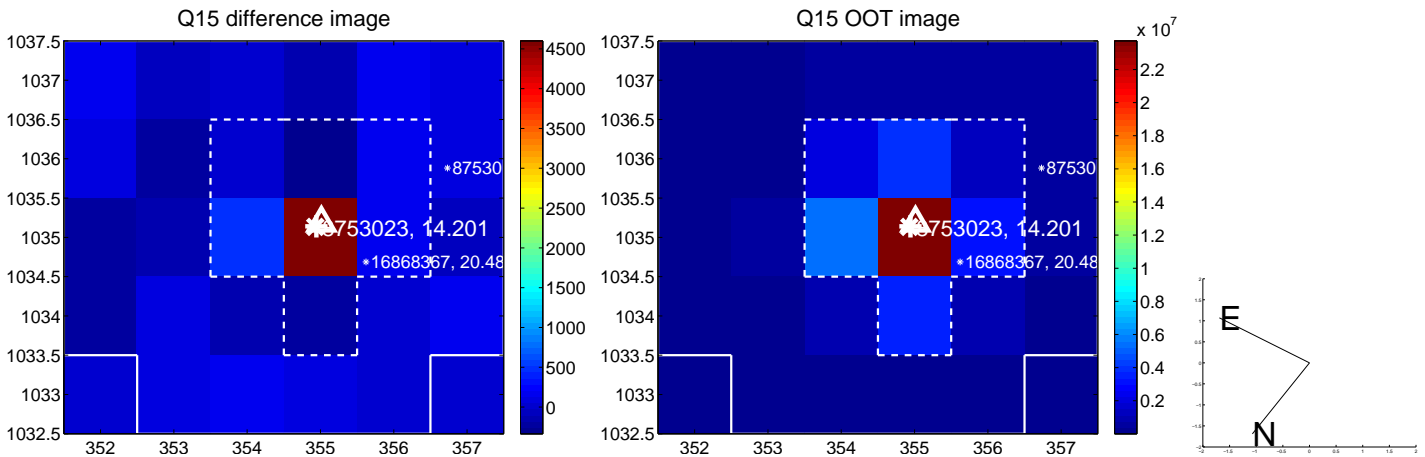
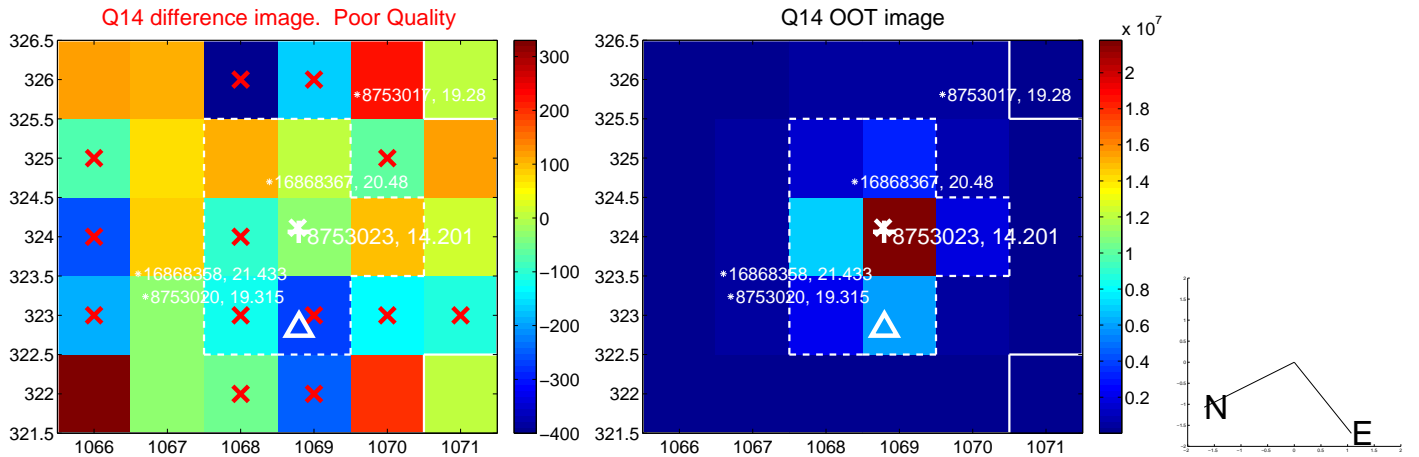
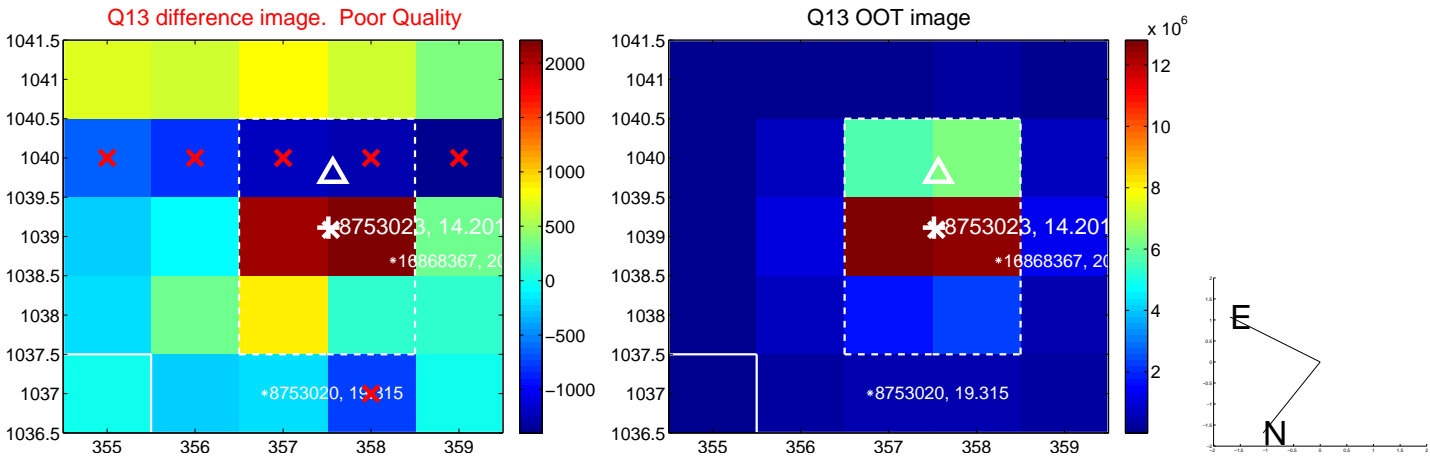
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



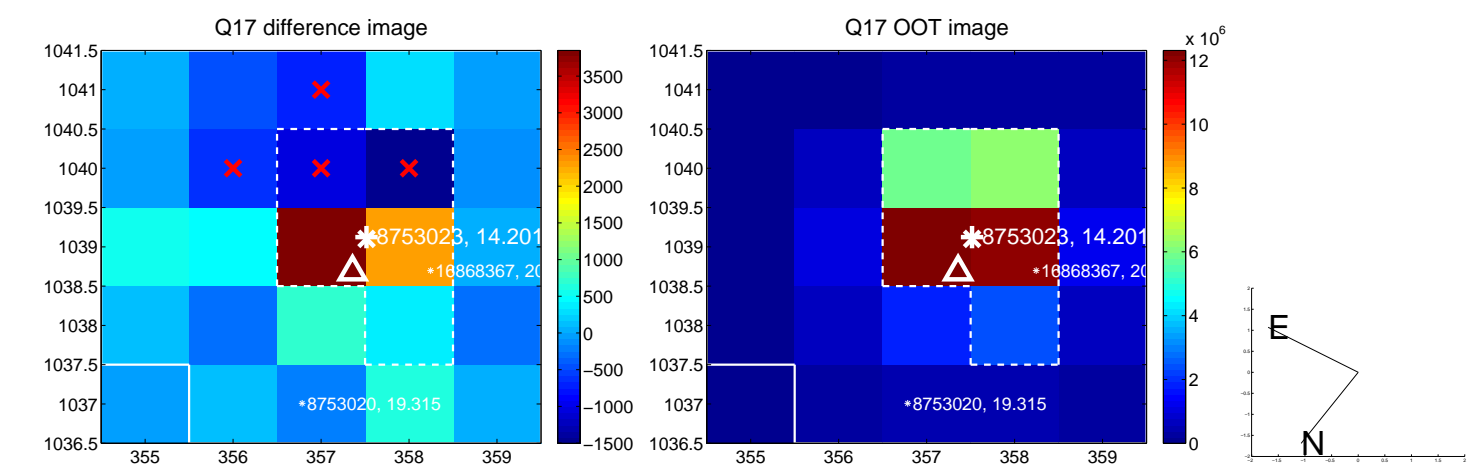
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



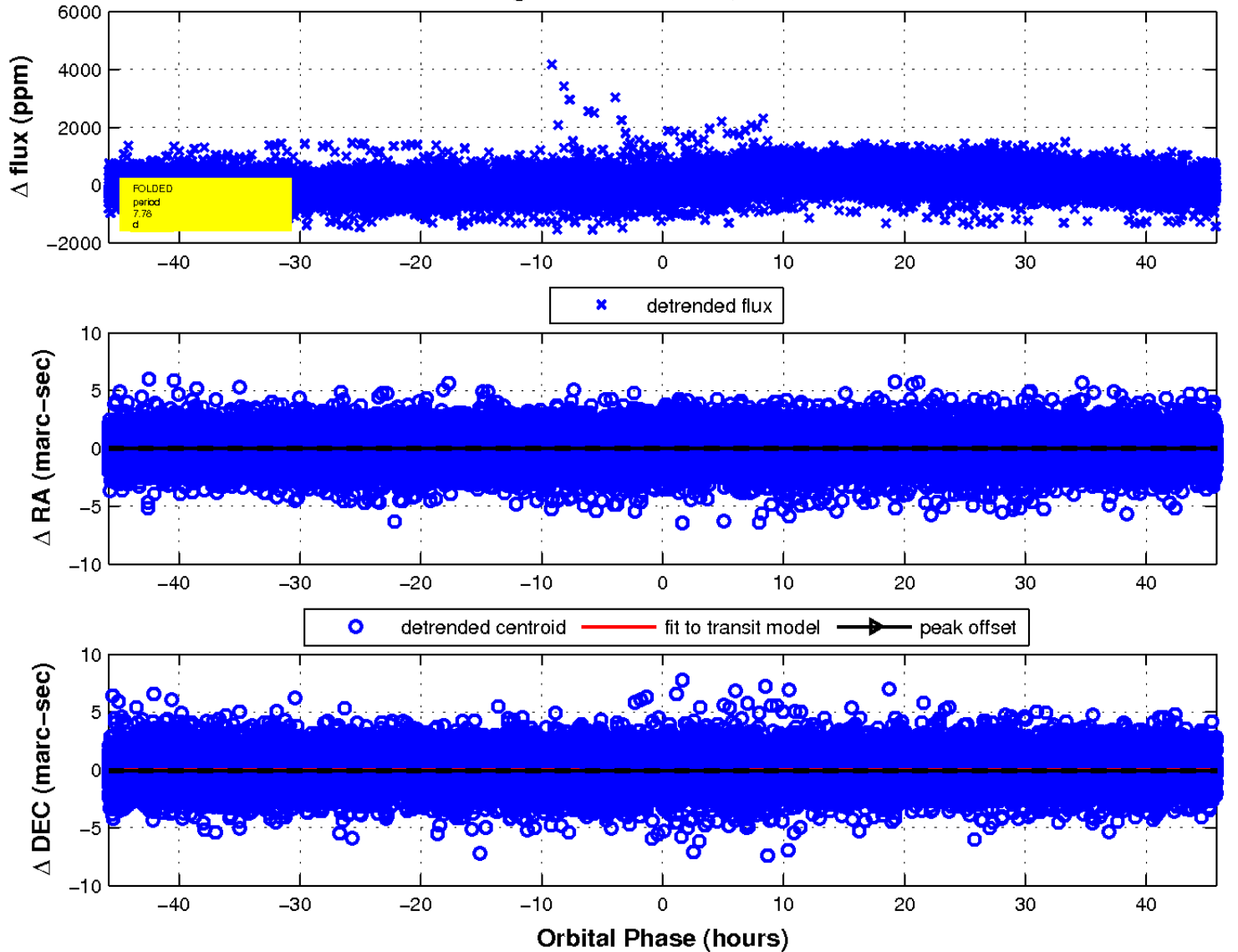
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

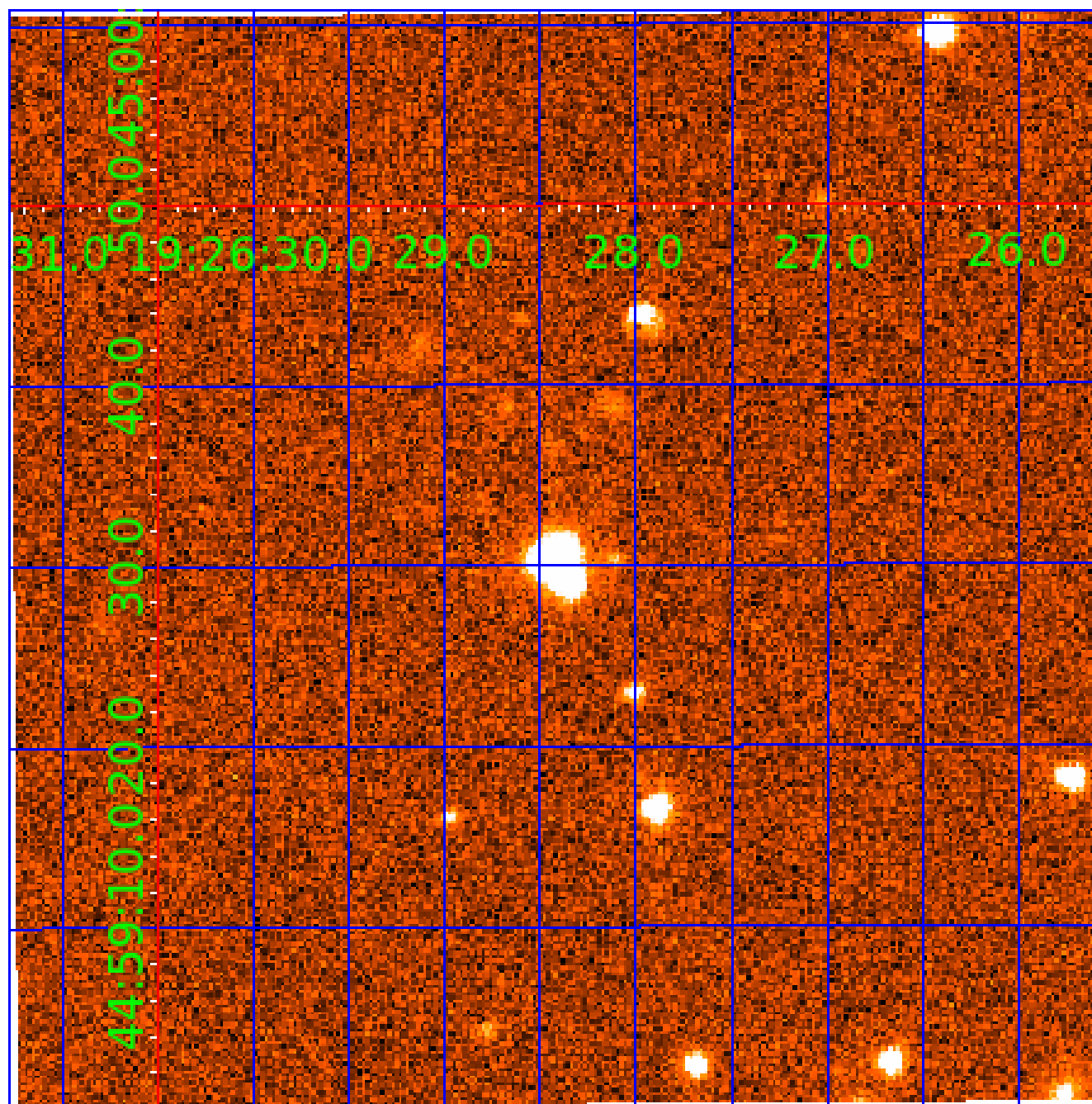


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008753023

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})
008753023-01	OBS	No	7.779857	133.192131	88.8	15.279	12.3	12.3	0.82	5696	0.91	127.00
008753023-02	OBS	No	241.313532	328.422400	980.3	15.000	26.2	-1.0	0.82	5696	2.56	1.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008753023-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
008753023-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

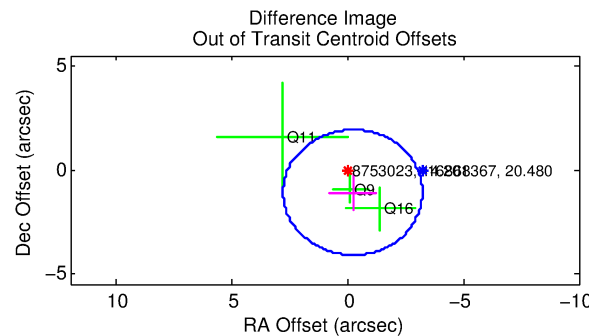
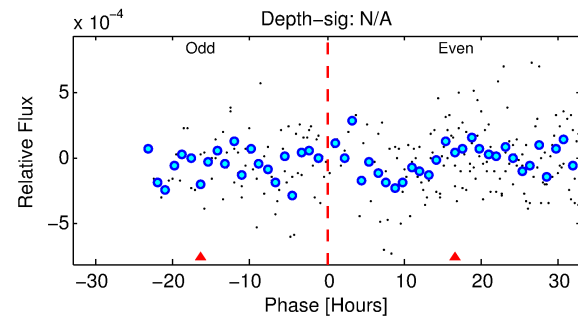
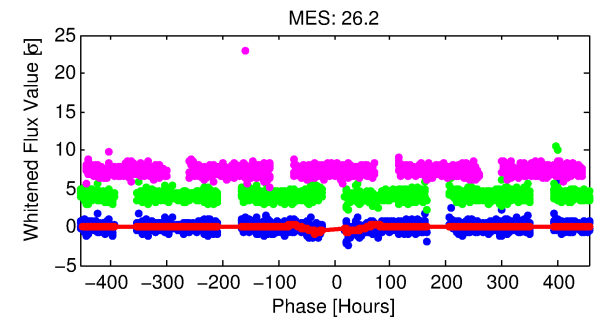
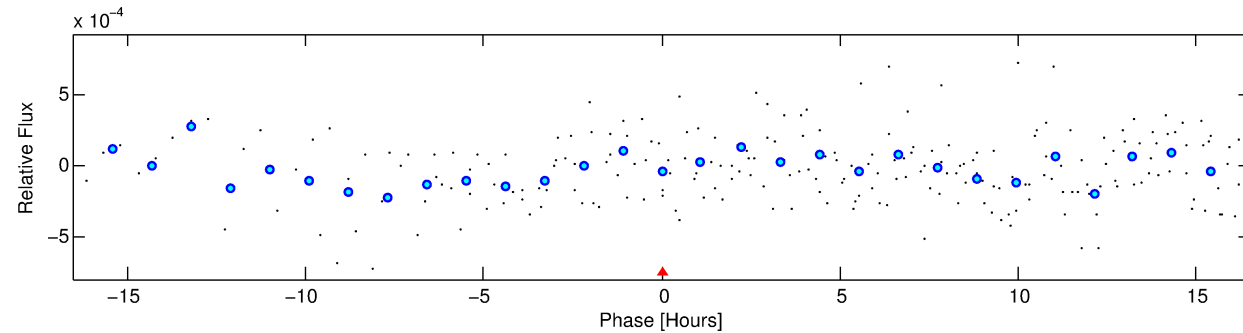
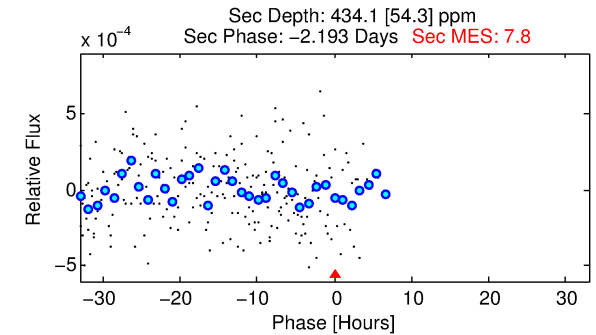
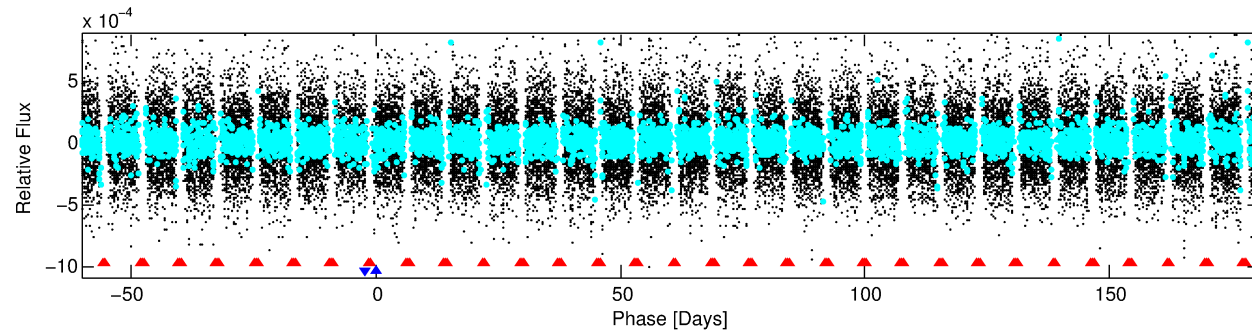
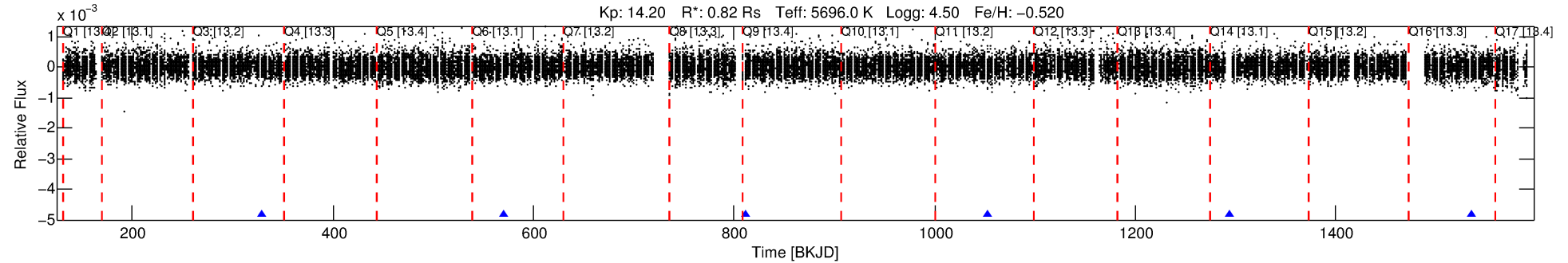
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008753023-02

No Significant Match Found

DV One-Page Summary

KIC: 8753023 Candidate: 2 of 2 Period: 241.314 d



TPS TCE Results:

Period = 241.31353 d
Epoch = 328.4224 BKJD

DV fit results are unavailable

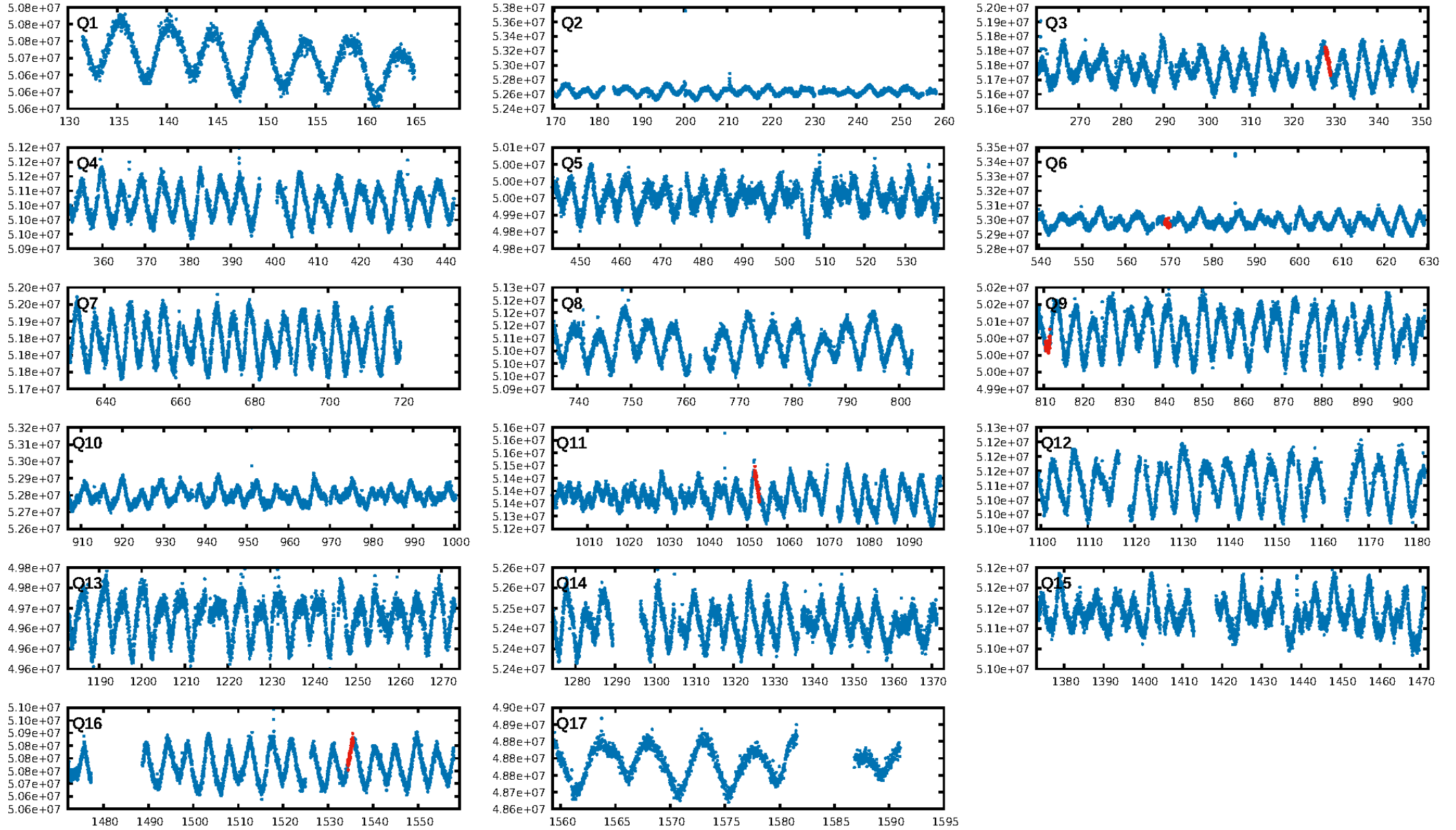
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [261.77σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.33e-67
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -93.69
Centroid-sig: 45.9%
Centroid-so: 4.755 arcsec [0.93σ]
OotOffset-rm: 1.113 arcsec [1.11σ]
KicOffset-rm: 1.167 arcsec [1.18σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [5/5]

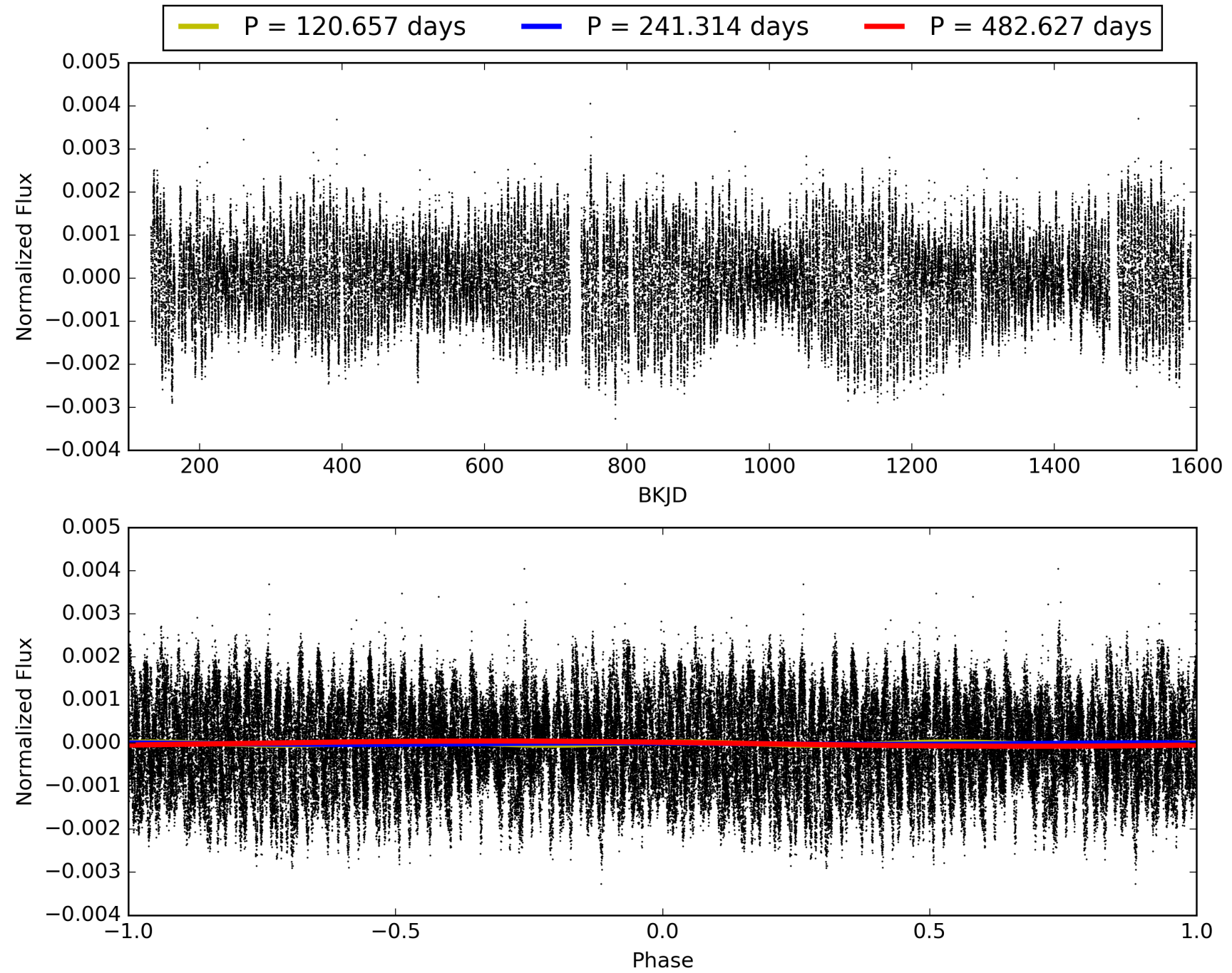
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:39:16 Z

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

TCE 008753023-02, PDC Light Curves

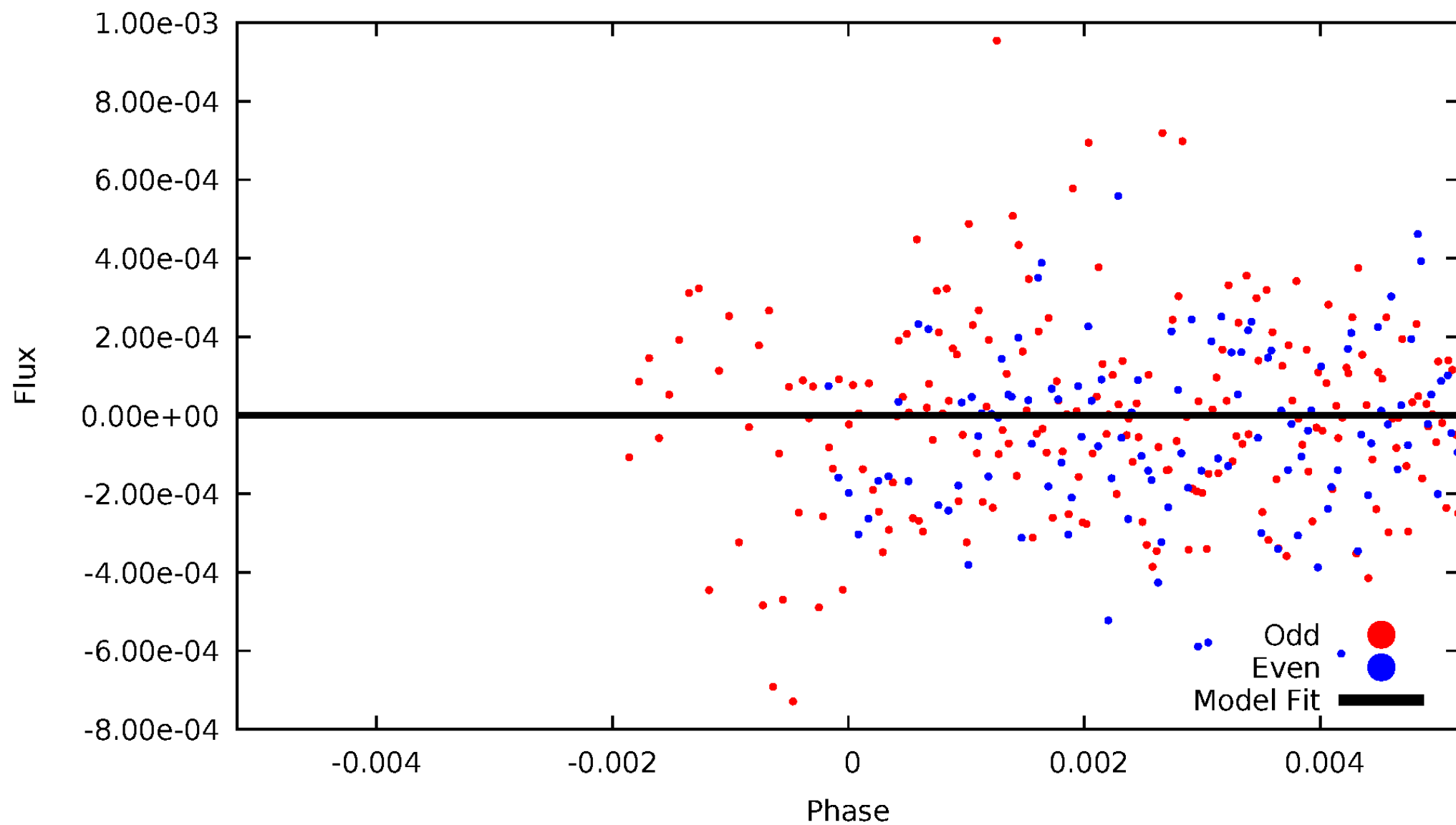


TCE 008753023-02



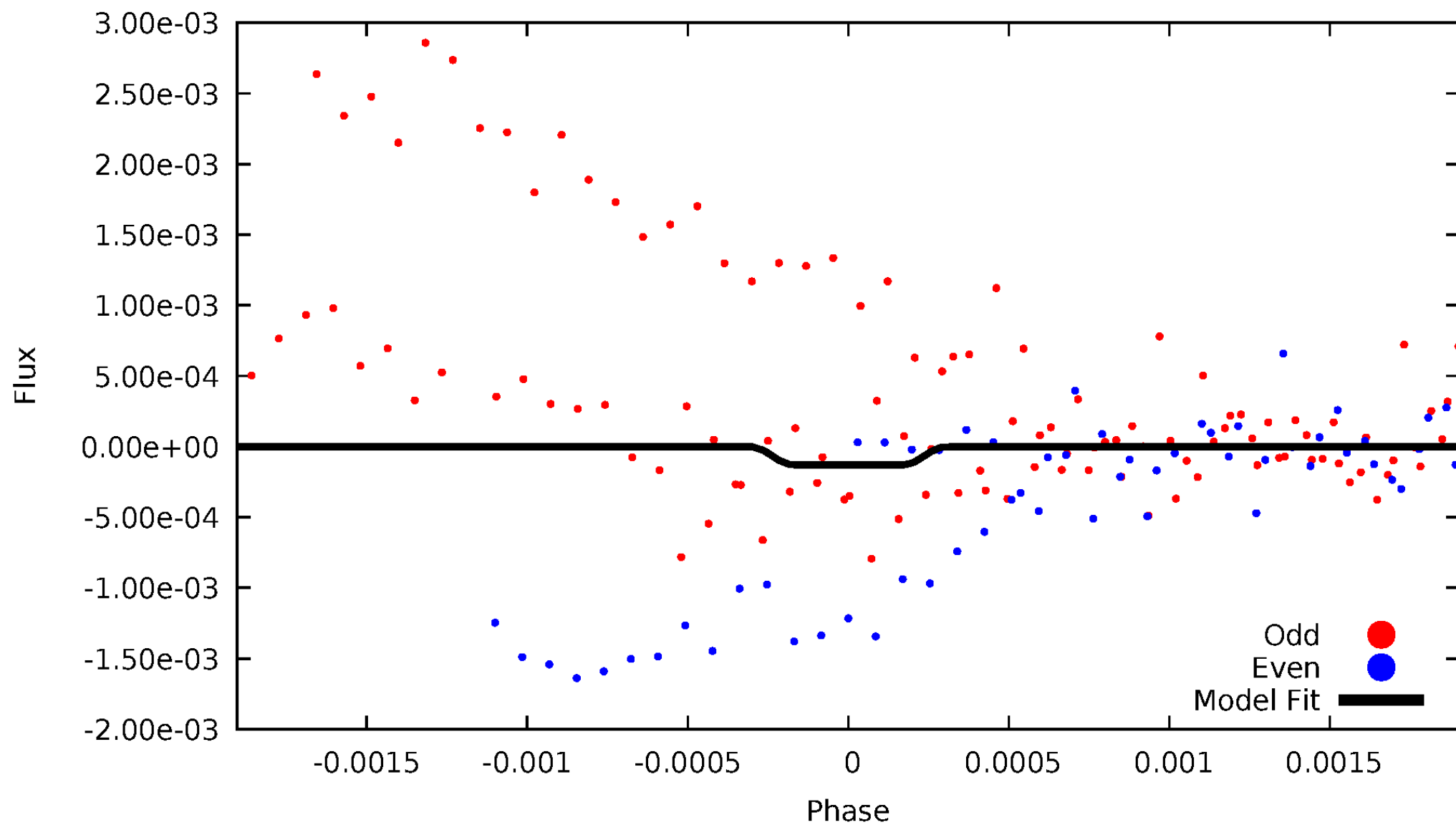
DV Odd/Even

TCE 008753023-02



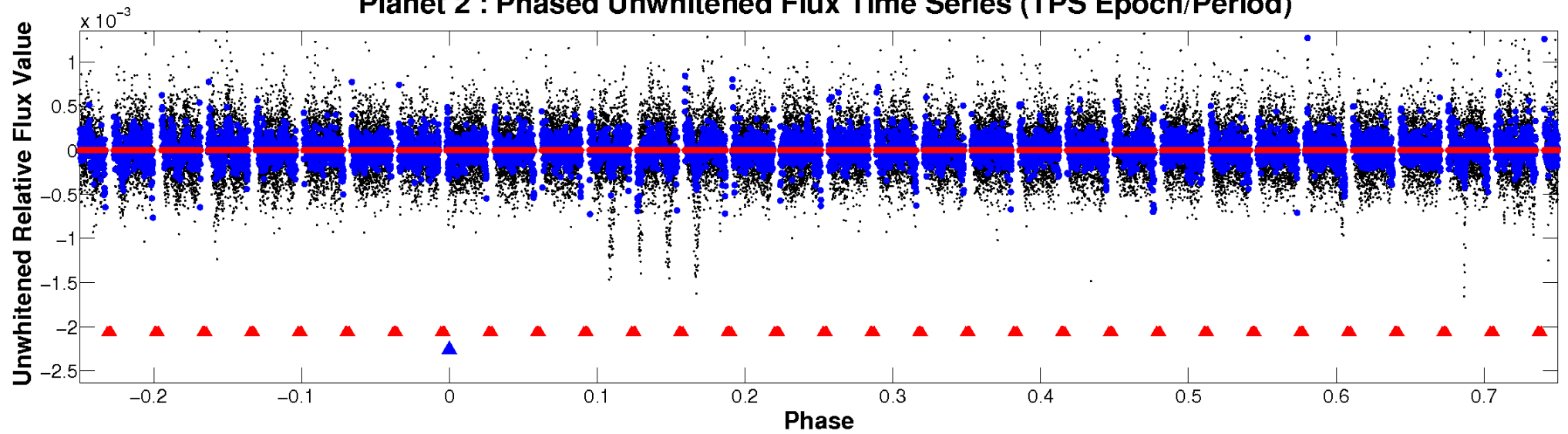
ALT Odd/Even

TCE 008753023-02

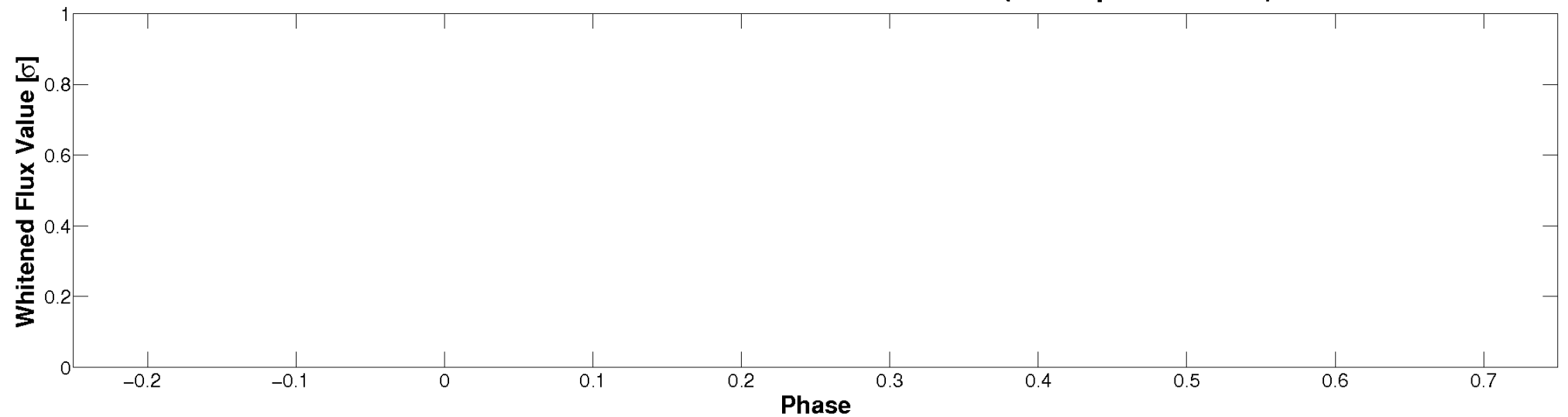


Non-Whitened Vs. Whitened Light Curve

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

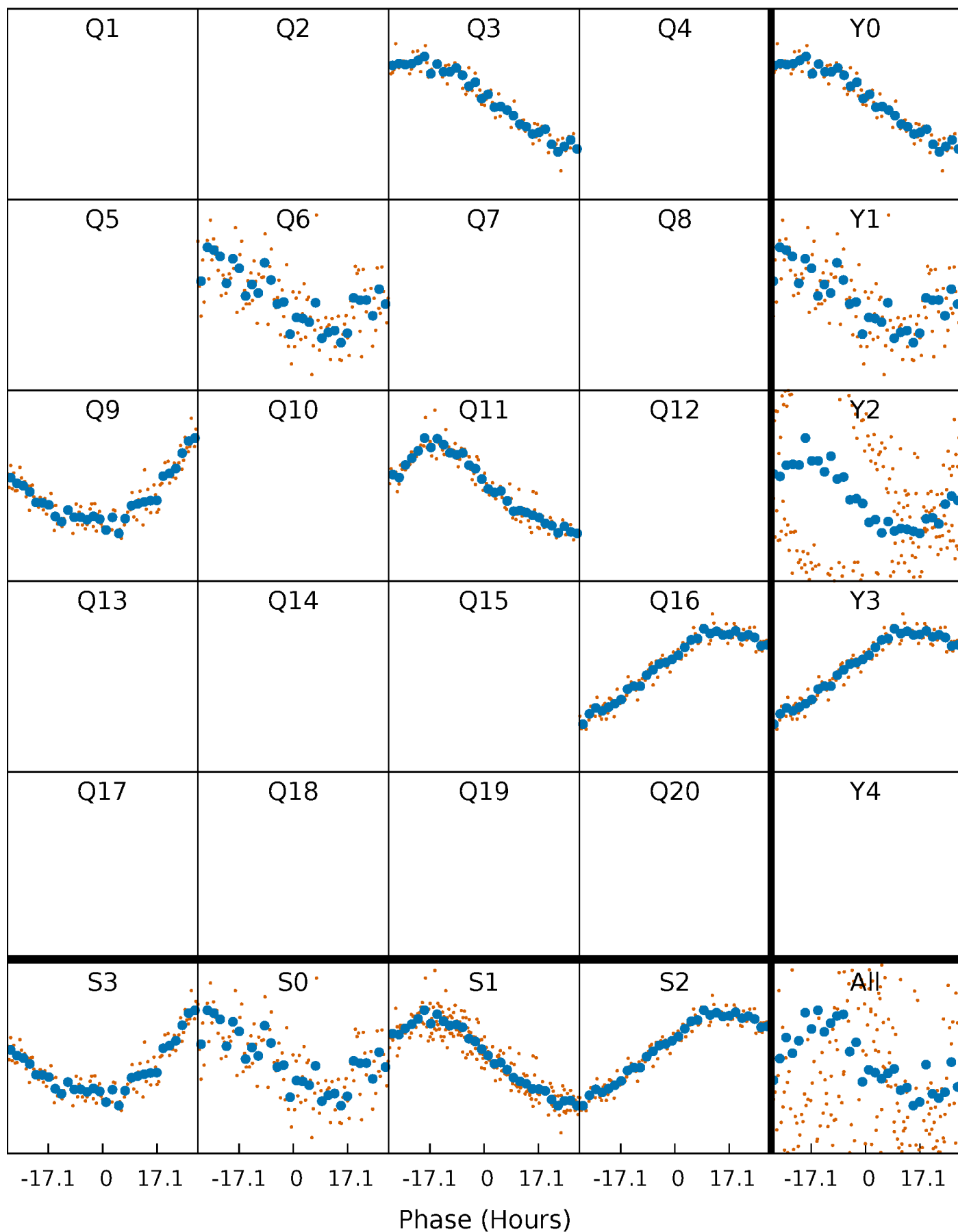


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 008753023-02 P=241.313532 Days $T_0=328.422400$ (BKJD)



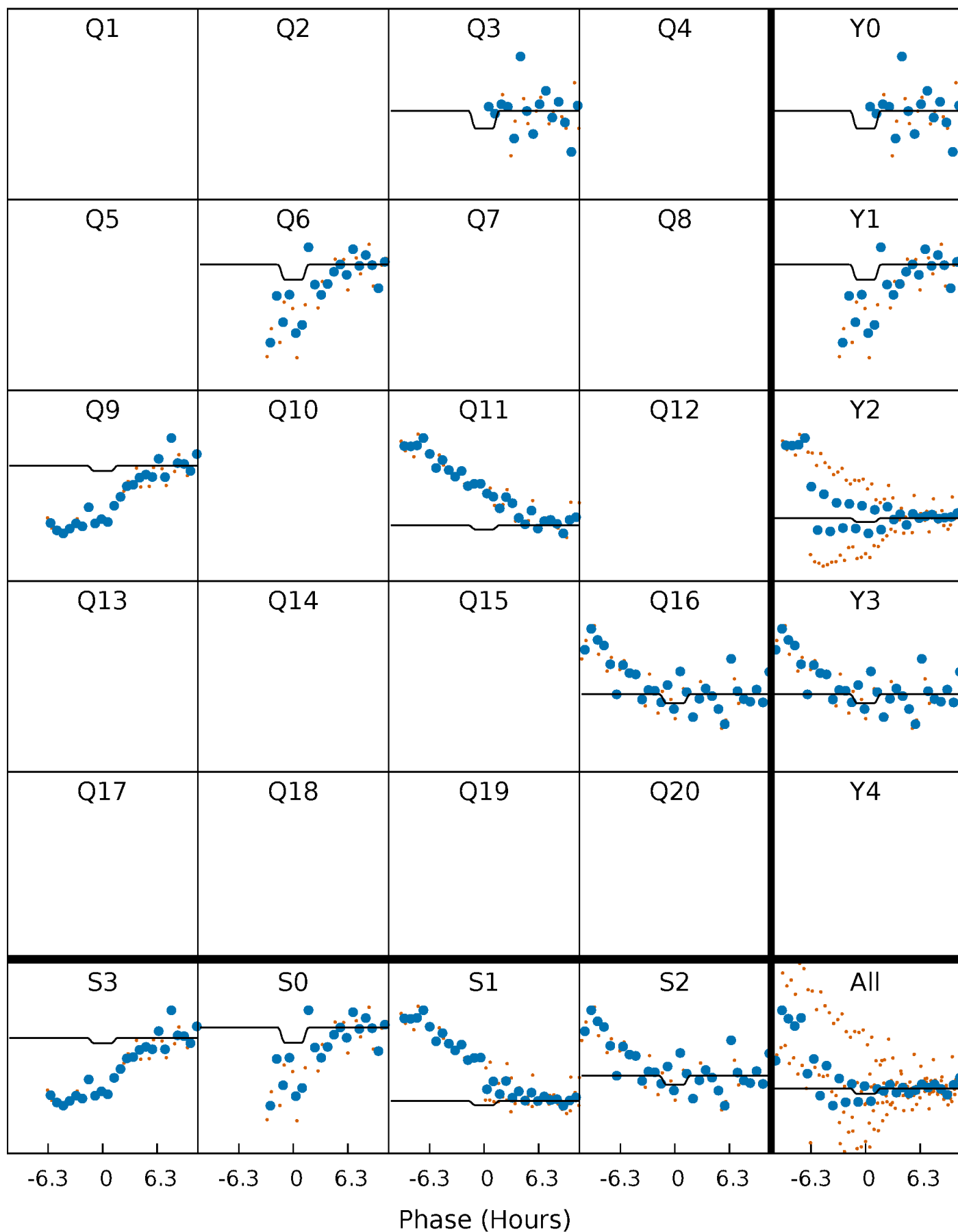
DV Quarter-Phased Transit Curves

TCE 008753023-02 P=241.313532 Days $T_0=328.422400$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

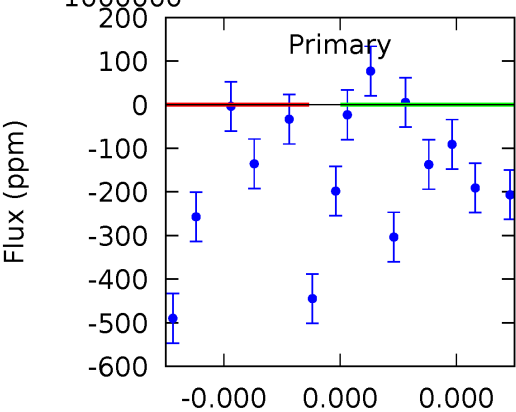
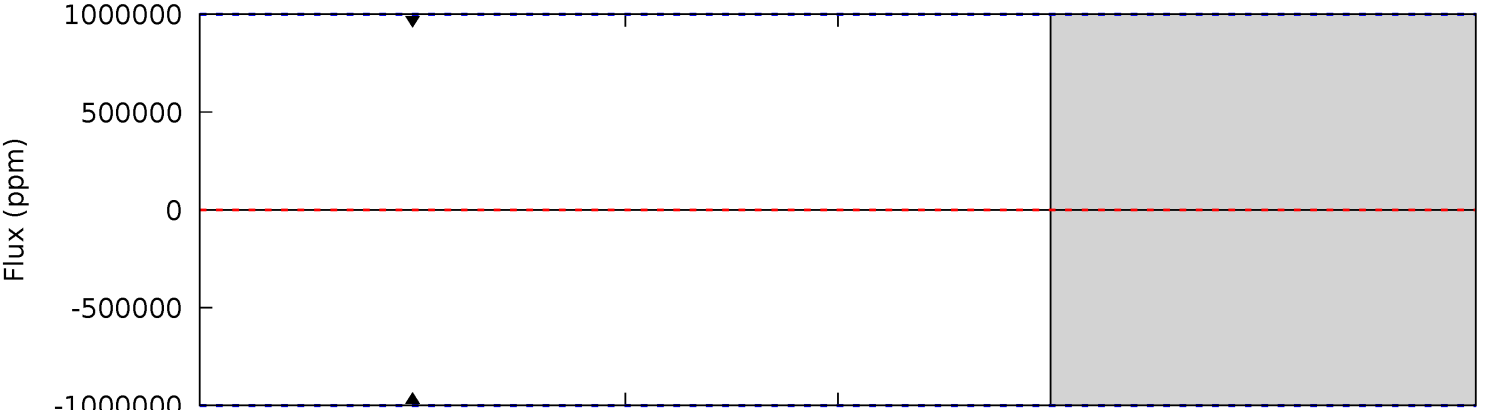
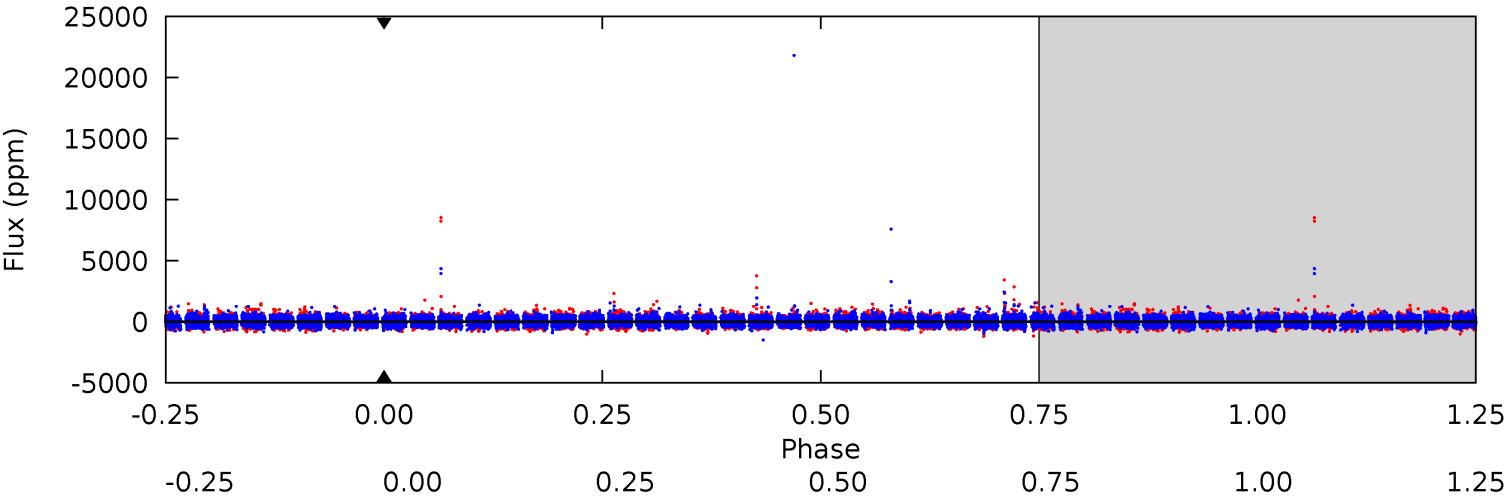
TCE 008753023-02 $P=241.313532$ Days $T_0=328.647343$ (BKJD)



DV Model-Shift Uniqueness Test

008753023-02, P = 241.313532 Days, E = 87.108868 Days

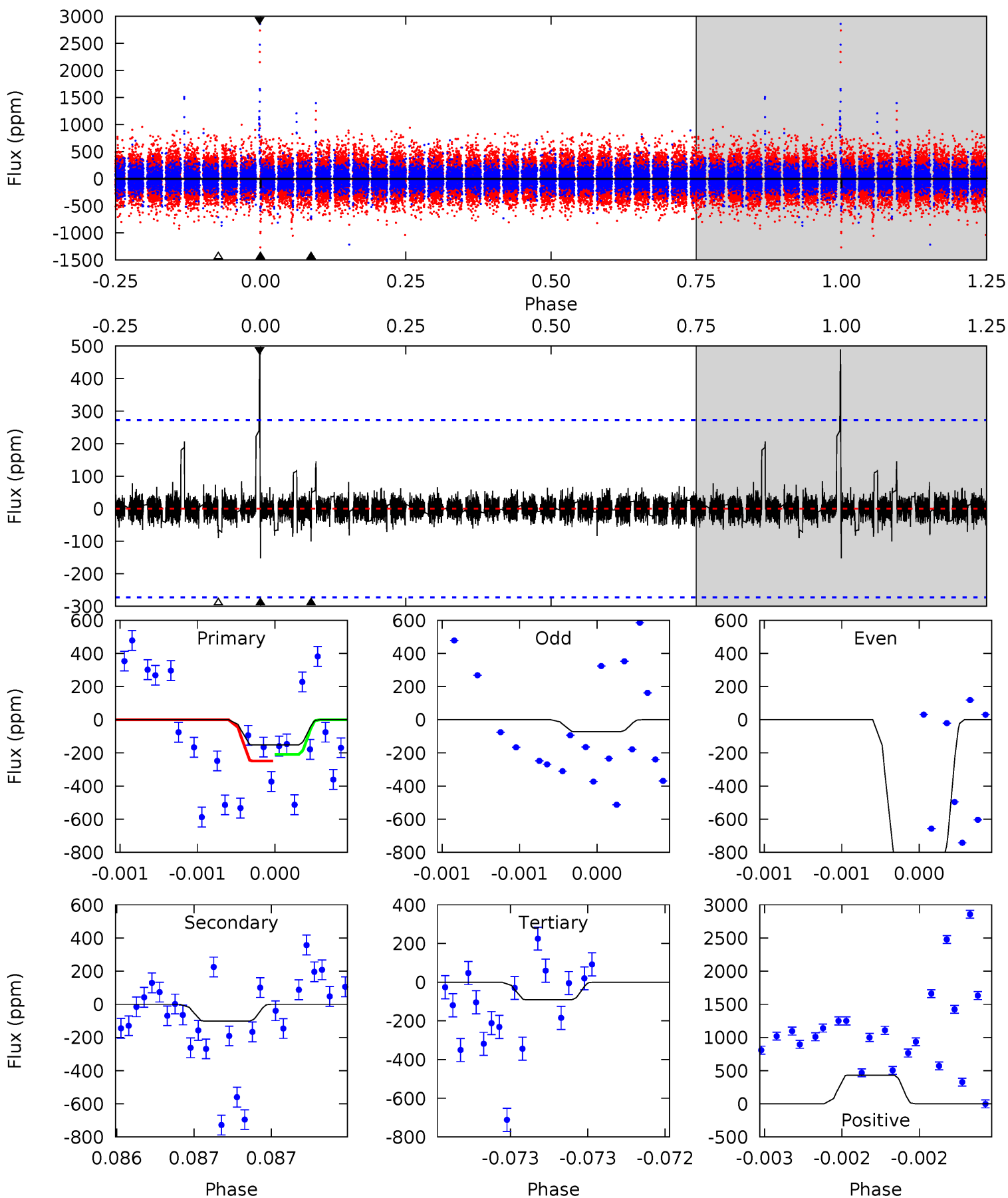
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008753023-02, P = 241.313532 Days, E = 87.333811 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.10	2.05	1.84	8.83	5.55	3.45	0.44	1.26	-5.72	0.21	-6.78	9.08	-8.02	0.76	0.39



Stellar Parameters For KIC 008753023

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5696^{+155}_{-155}	$4.502^{+0.096}_{-0.144}$	$-0.520^{+0.300}_{-0.300}$	$0.822^{+0.177}_{-0.095}$	$0.783^{+0.103}_{-0.055}$	$1.983^{+0.796}_{-0.785}$
	+3%/-3%	+2%/-3%	+58%/-58%	+22%/-12%	+13%/-7%	+40%/-40%
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 008753023-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$7.42^{+6.93}_{-4.86}$	382^{+25}_{-16}	3759^{+16943}_{-20054}	$4173^{+1002998}_{-720237}$
Alt.	-100 ± 49	$6.46^{+6.95}_{-4.26}$	384^{+23}_{-18}	2821^{+1237}_{-537}	591^{+5253}_{-494}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

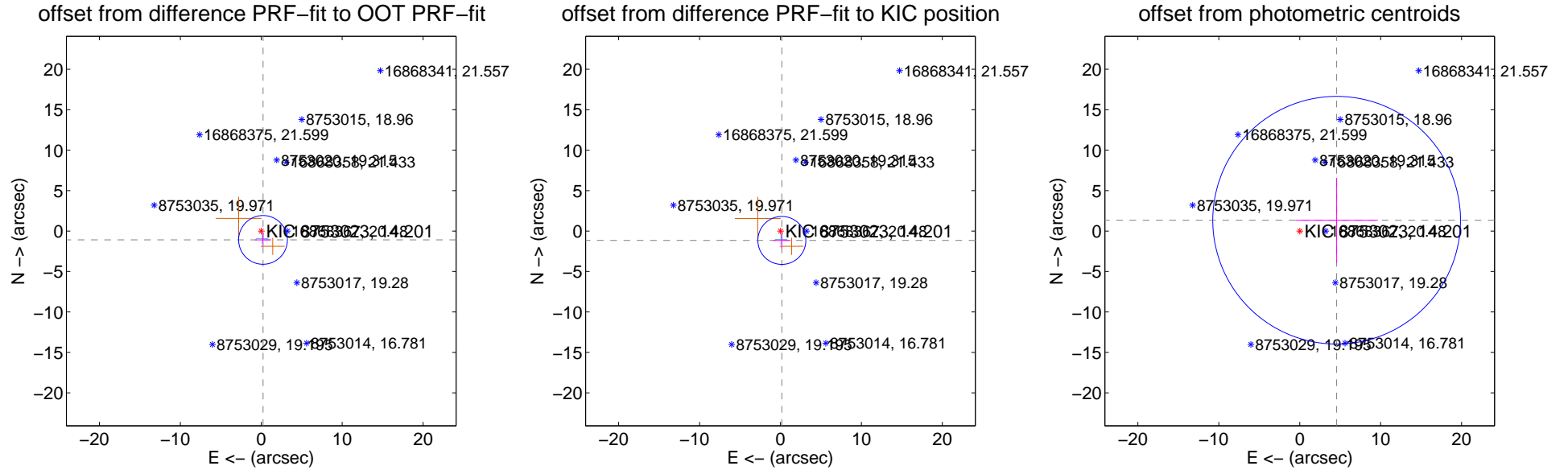
DV Centroid Data

Supplemental centroid analysis for 008753023-02. Kepler magnitude: 14.20. 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 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.113 ± 1.004	1.11	-0.217 ± 1.002	-1.091 ± 0.826
PRF-fit source offset from KIC position	1.167 ± 0.988	1.18	-0.167 ± 1.096	-1.155 ± 0.986
photometric centroid source offset	4.75 ± 5.10	0.93	-4.56 ± 5.09	1.34 ± 5.24



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.

Q1 no difference image



Q1 no OOT image



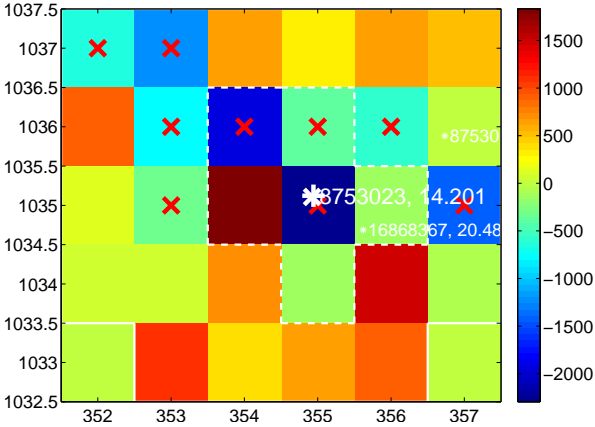
Q2 no difference image



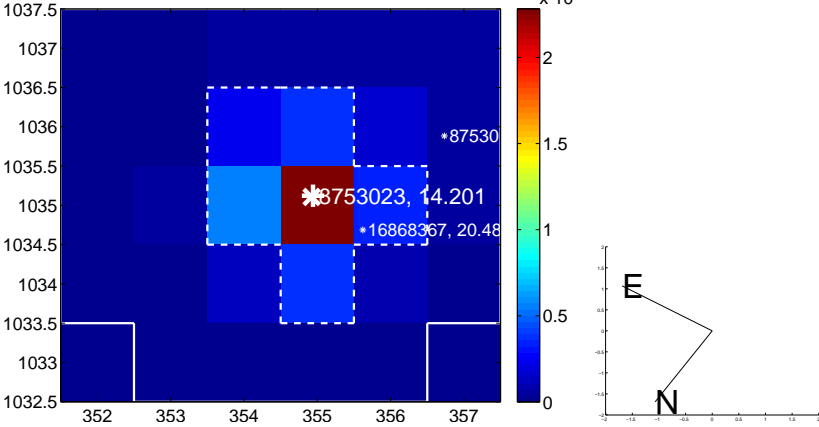
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



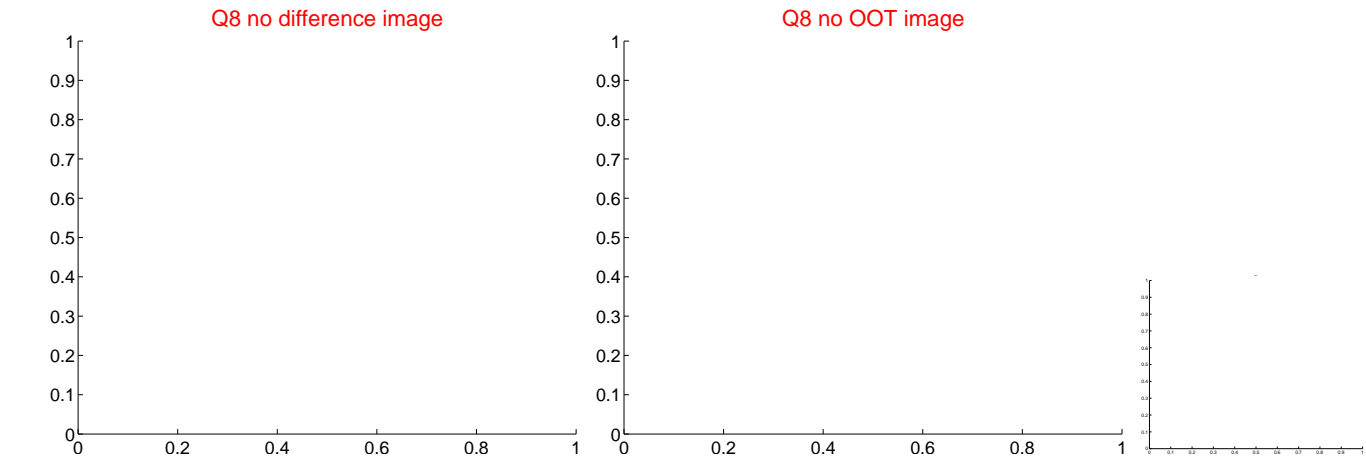
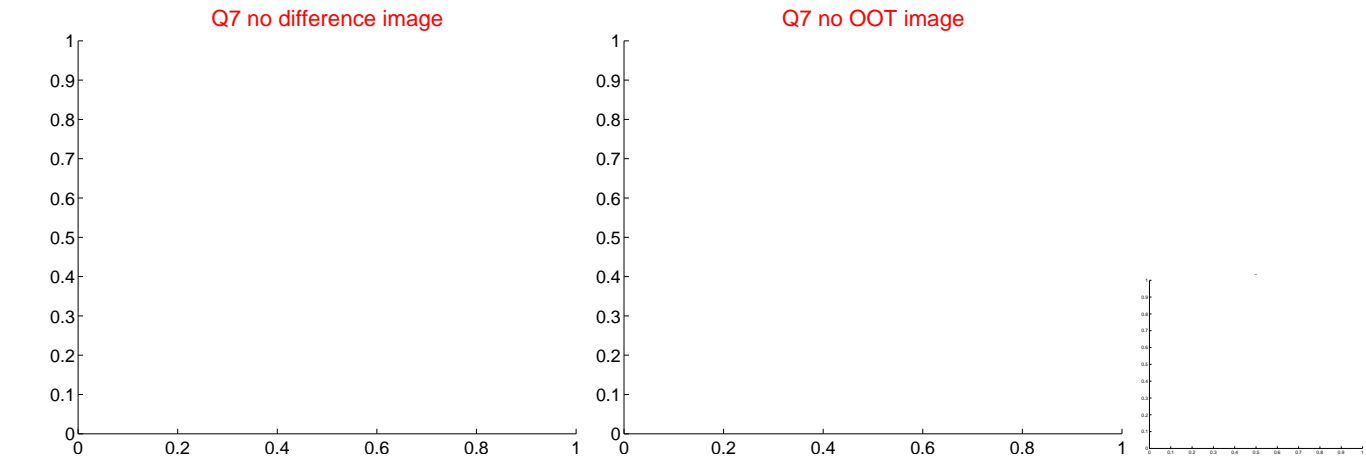
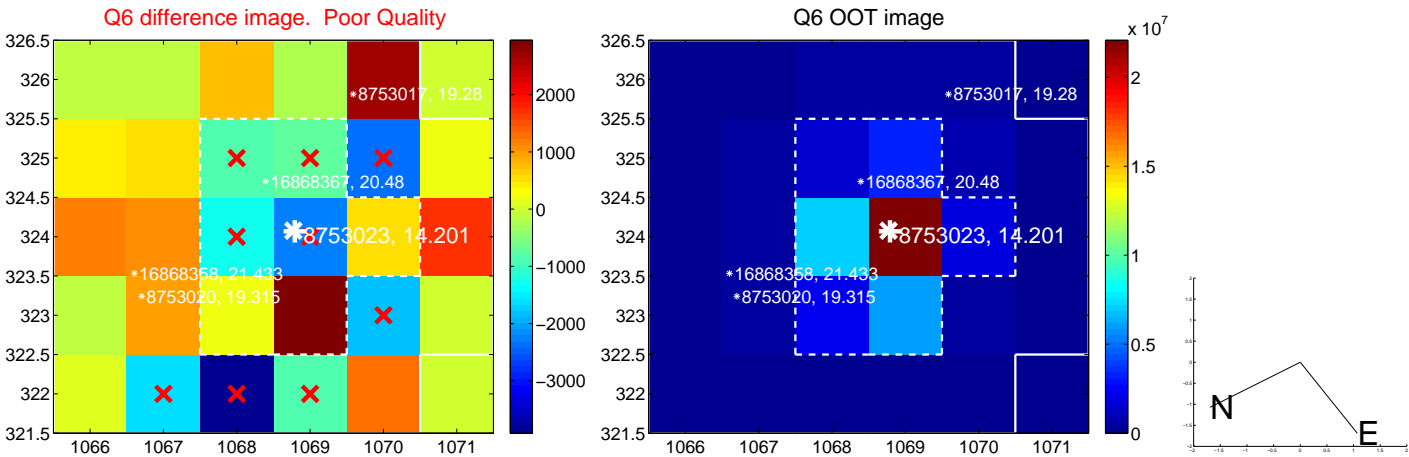
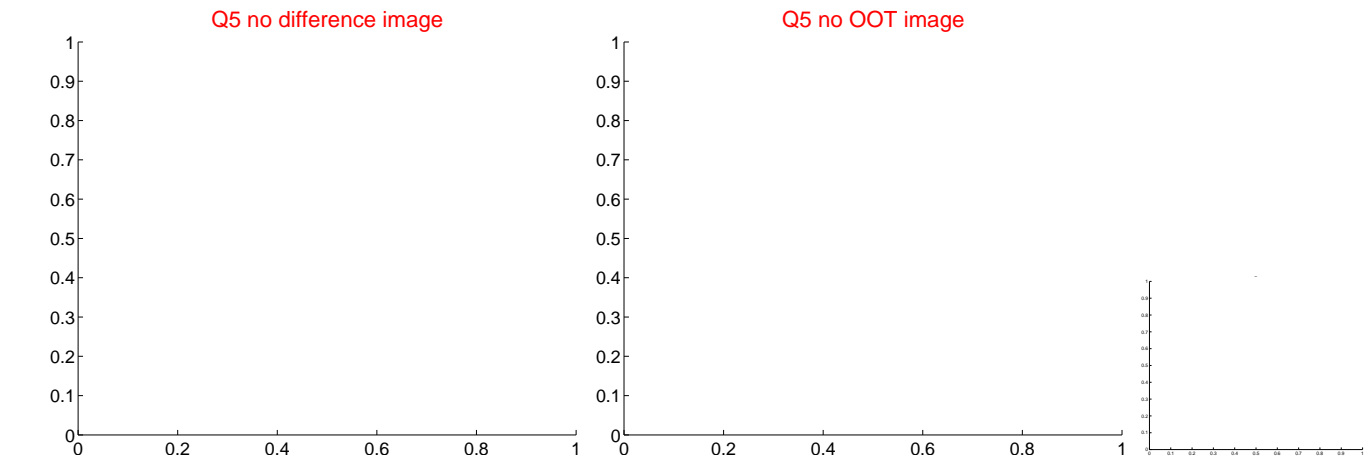
Q4 no difference image



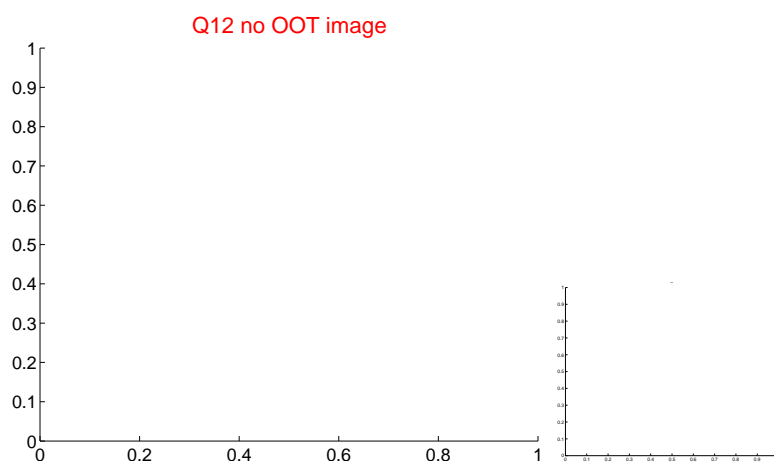
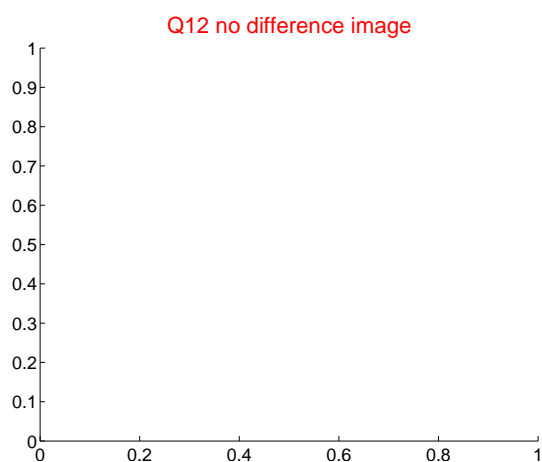
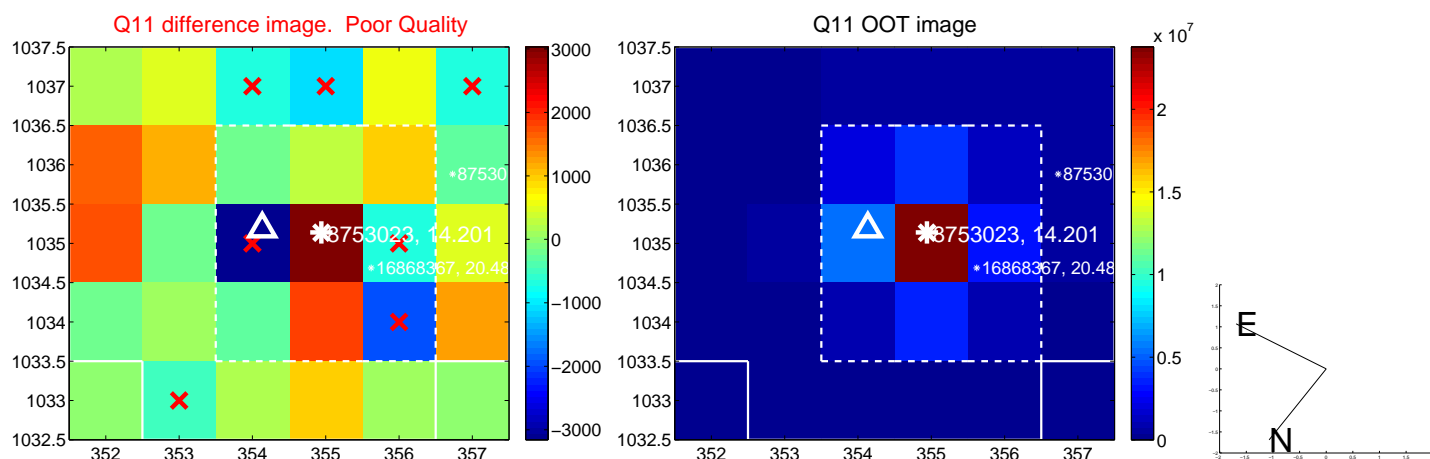
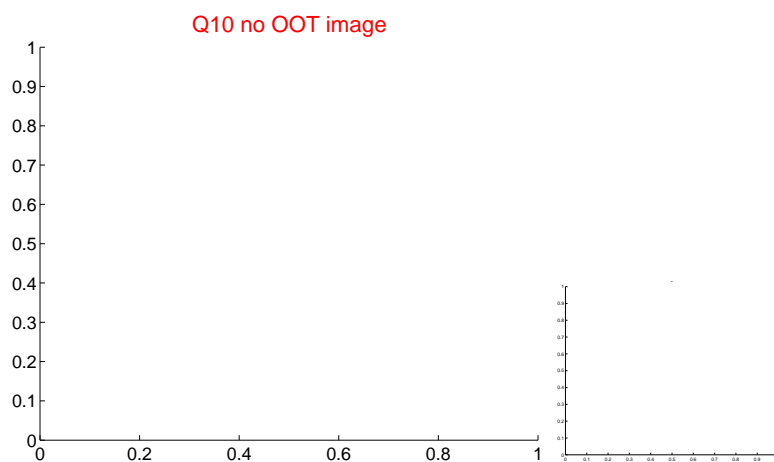
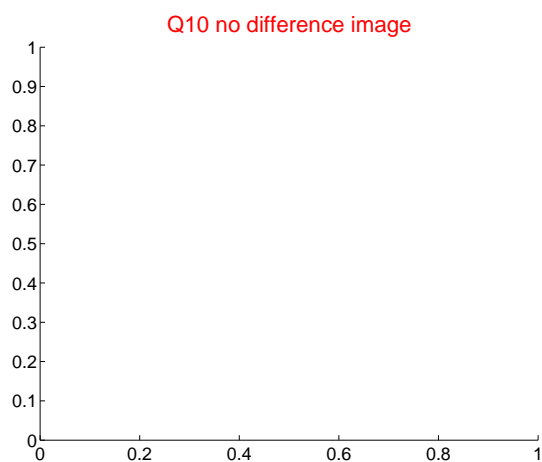
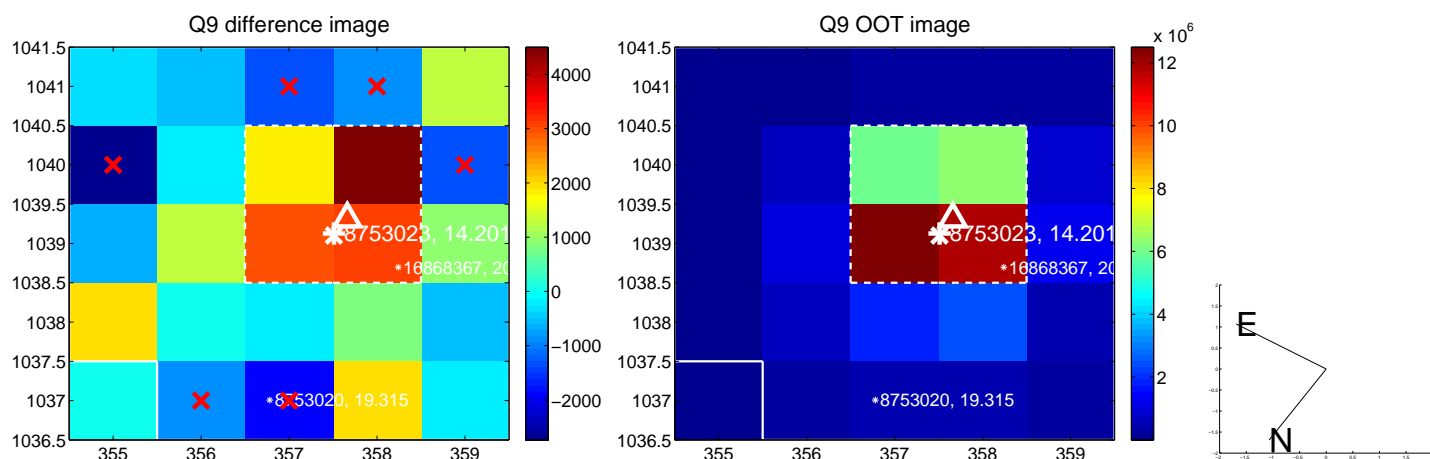
Q4 no OOT image



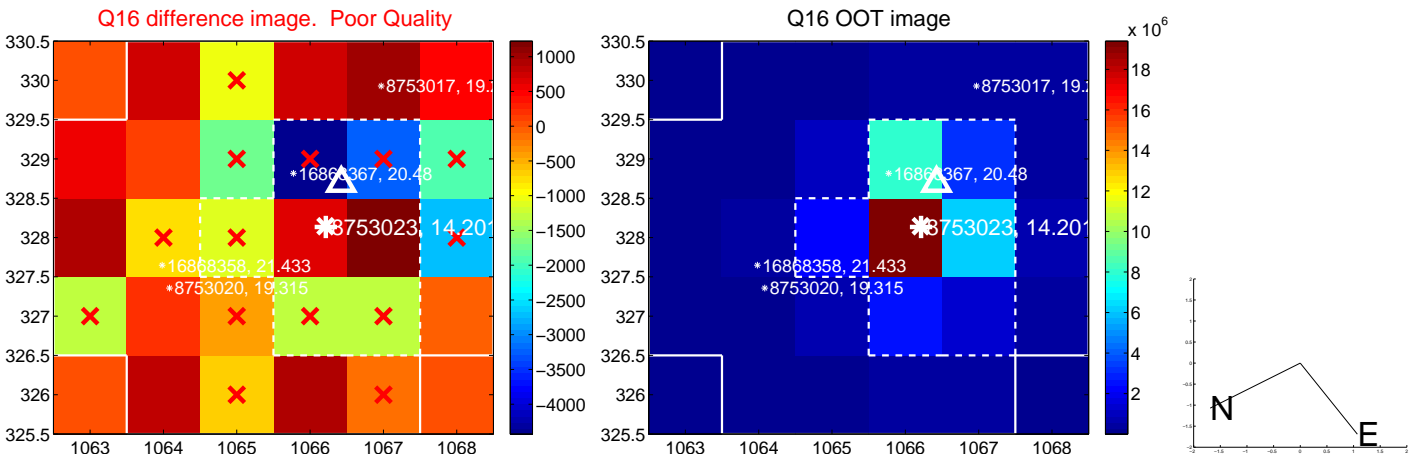
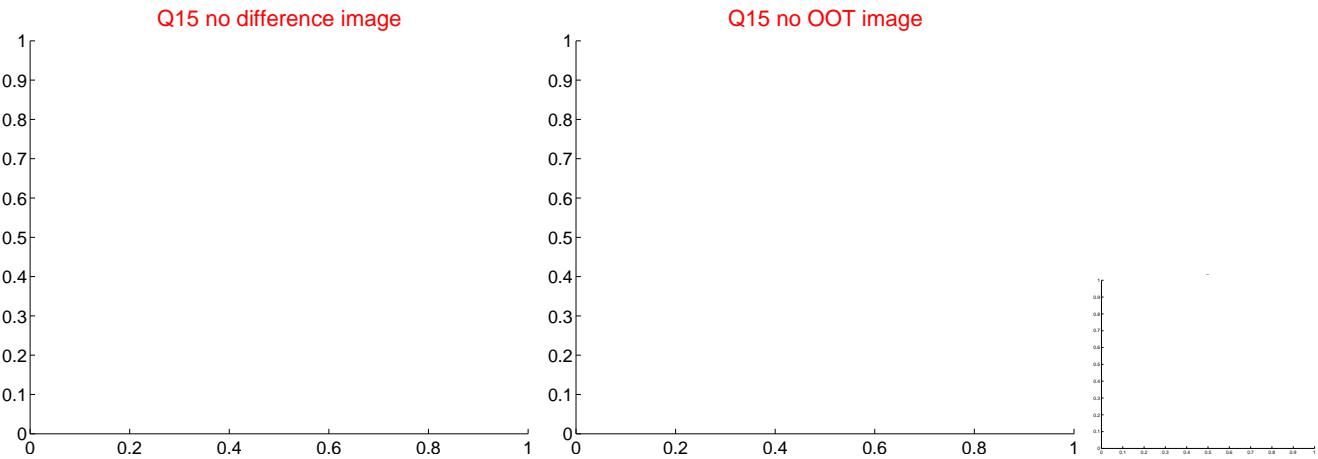
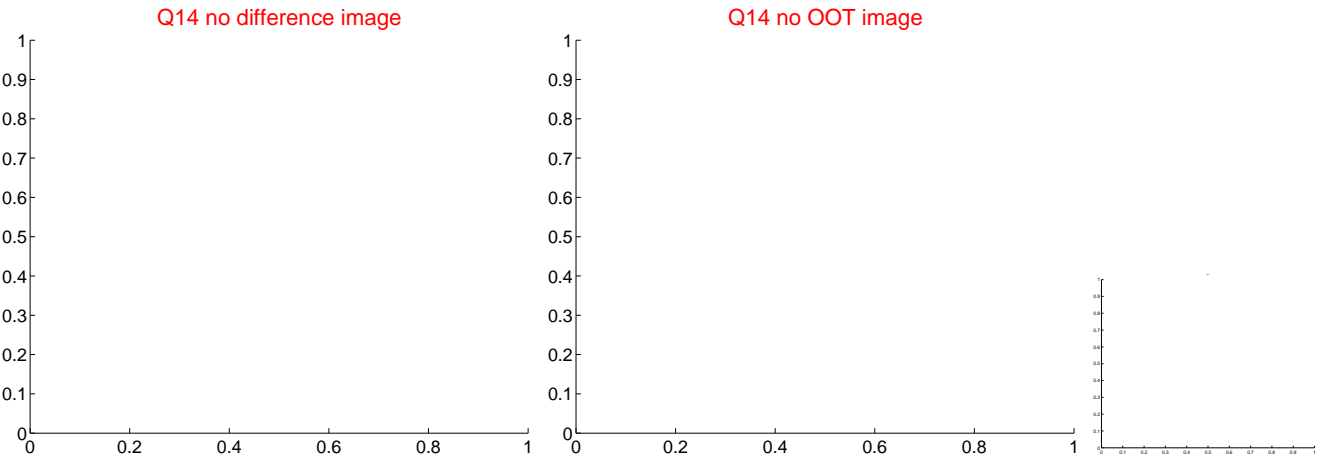
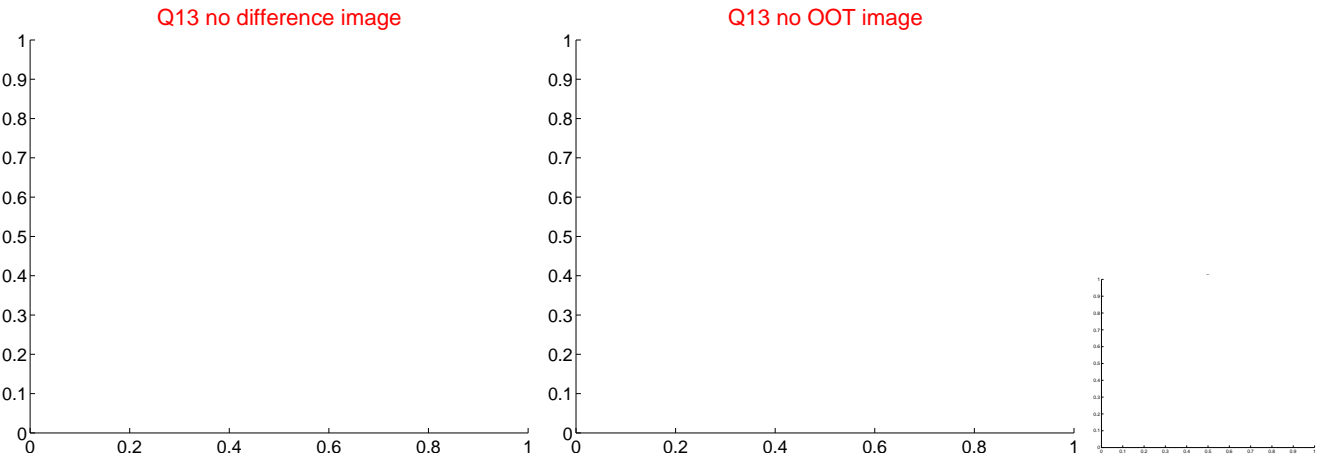
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



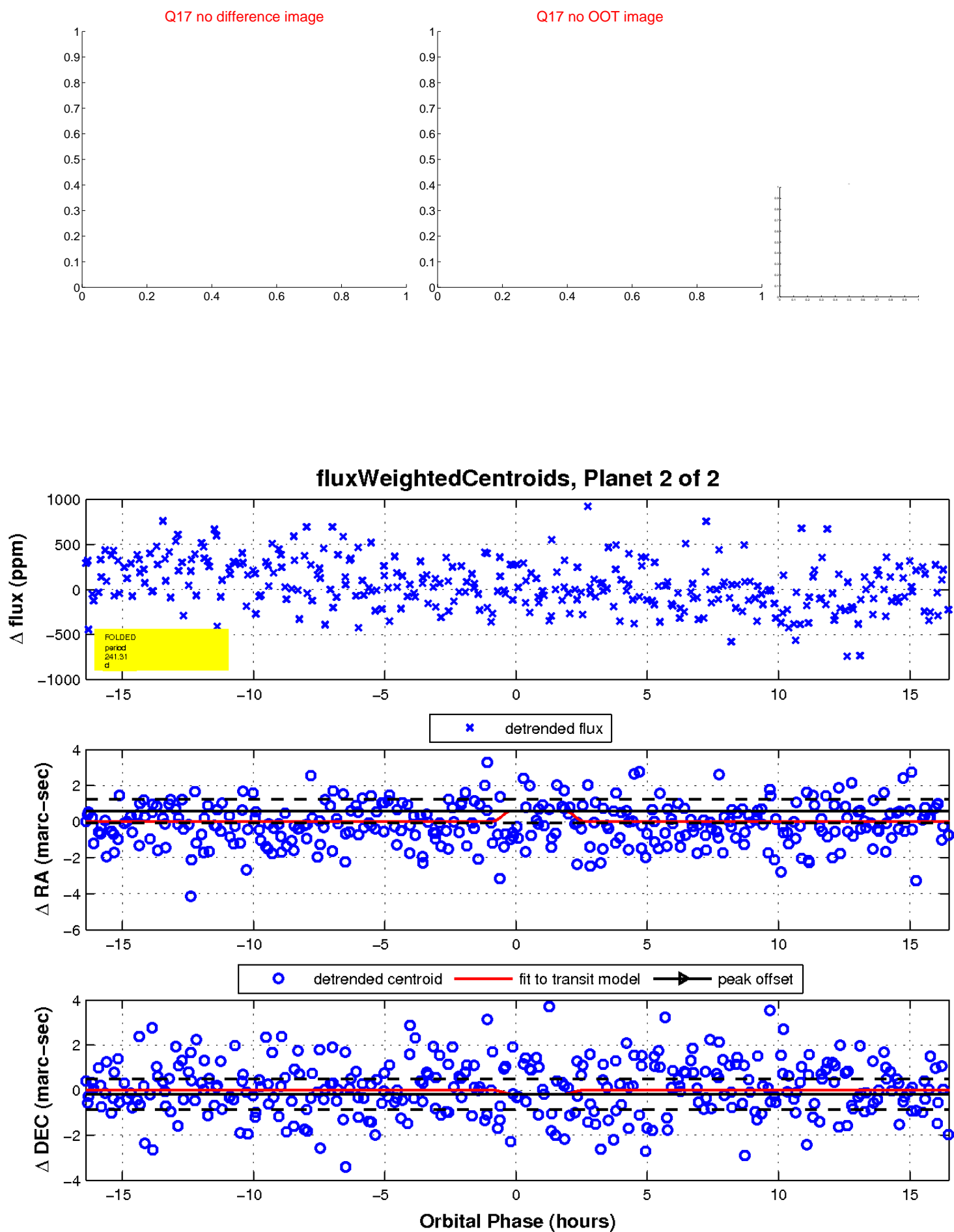
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

