

KIC 008389518

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})
008389518-01	OBS	No	0.609095	131.877666	36.1	2.363	9.0	10.2	1.37	6849	0.96	15627.18
008389518-02	OBS	No	140.177620	266.242338	276.1	21.864	7.4	7.1	1.37	6849	2.60	11.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008389518-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008389518-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

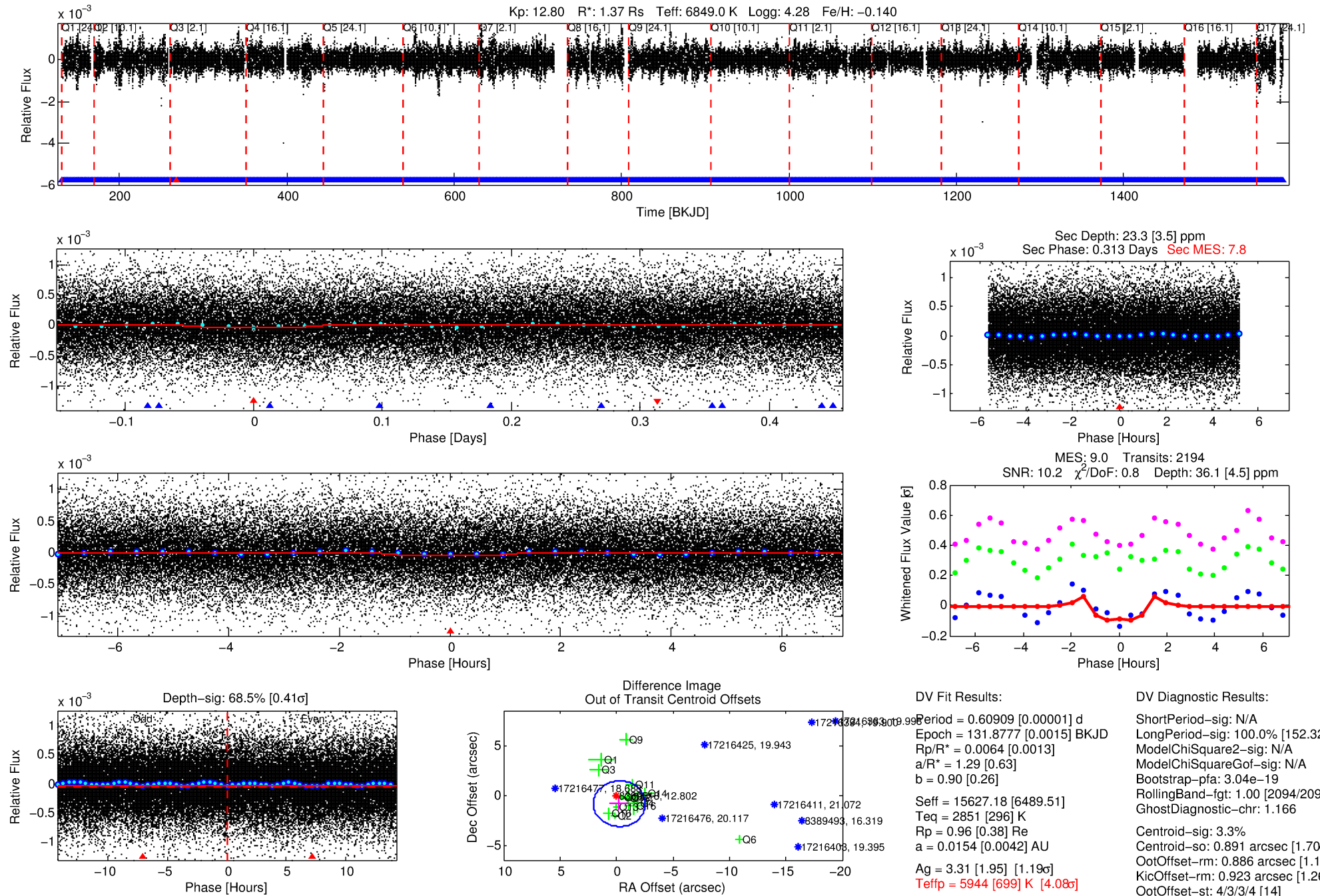
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008389518-01

No Significant Match Found

DV One-Page Summary

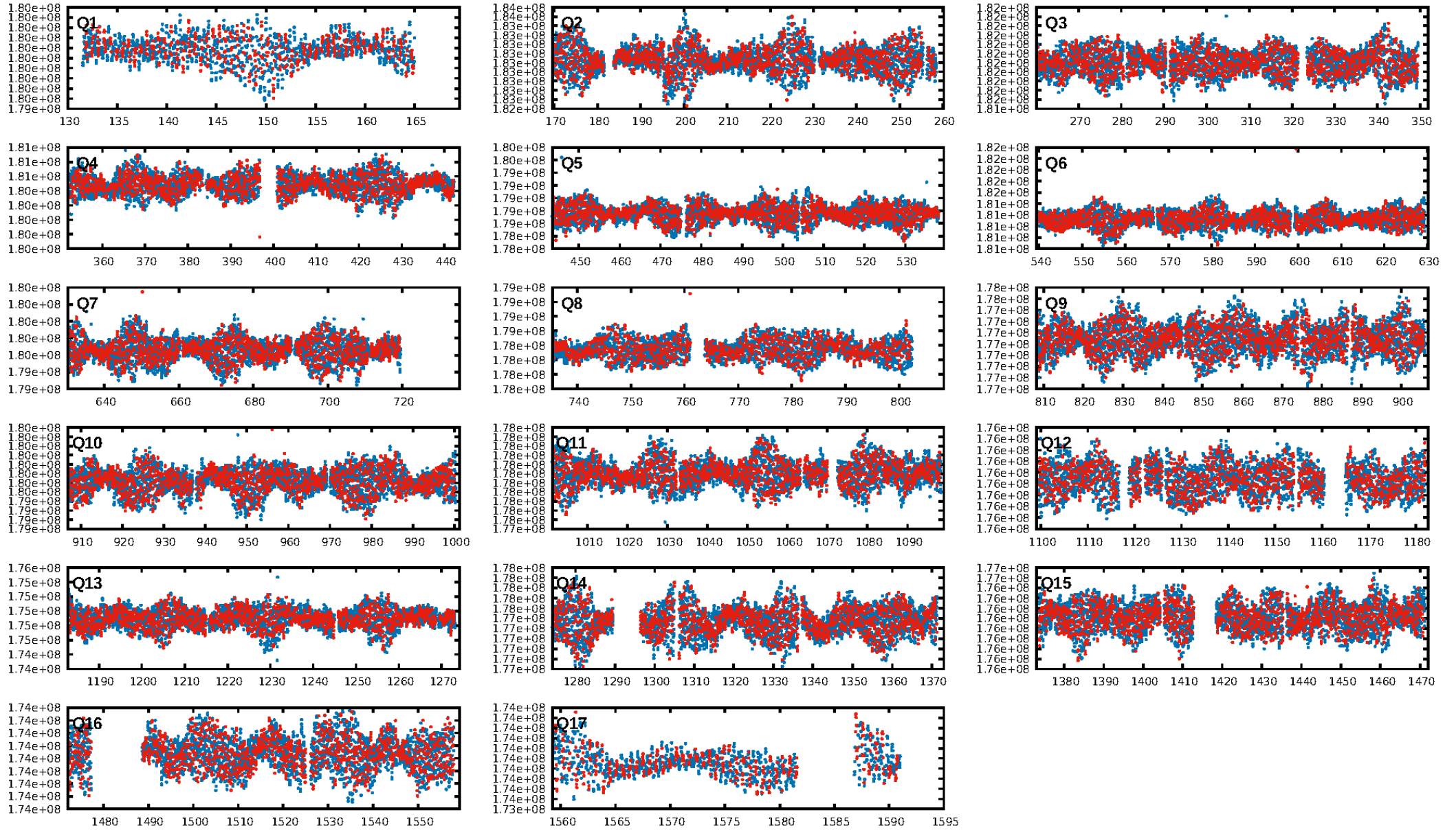
KIC: 8389518 Candidate: 1 of 2 Period: 0.609 d



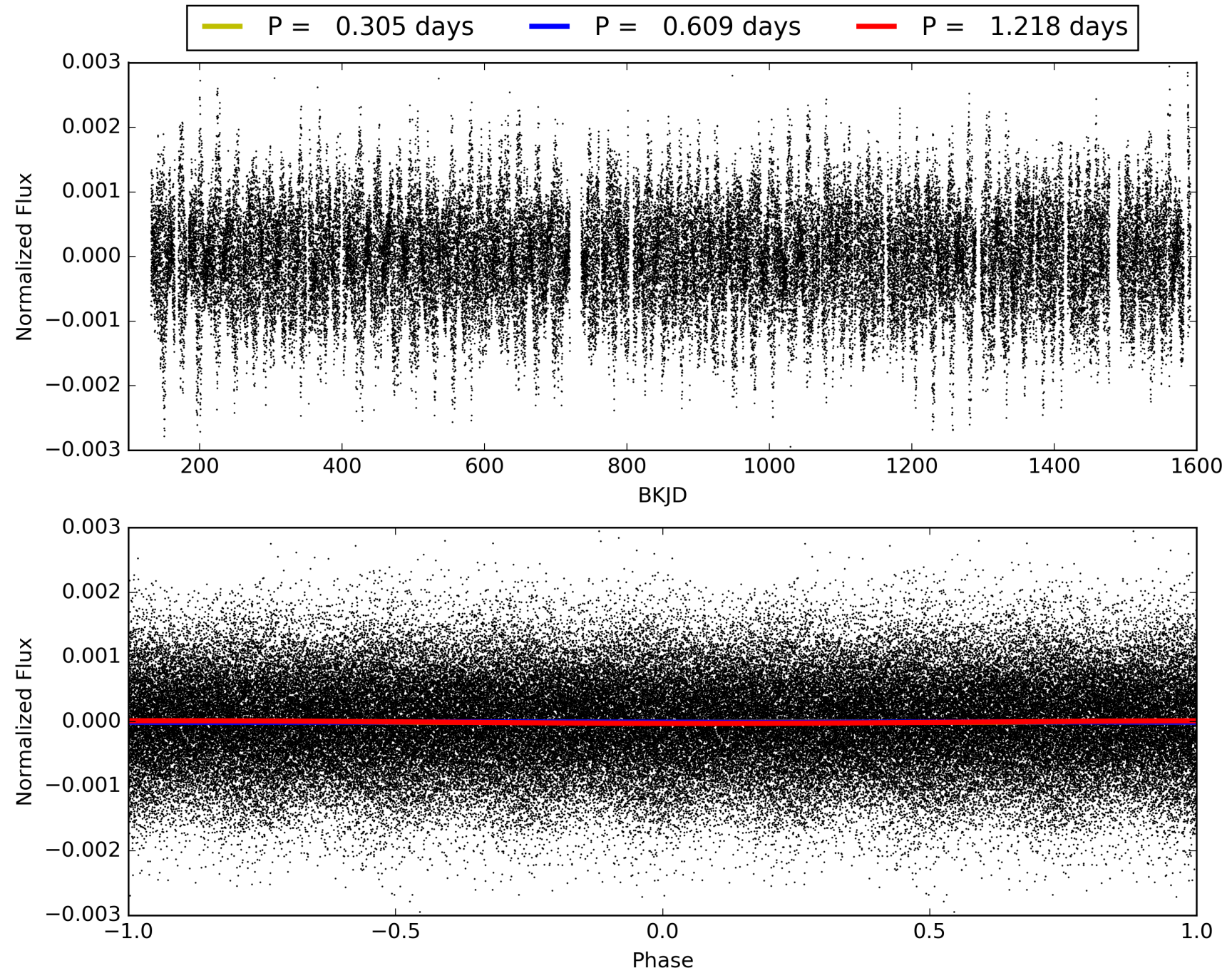
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:57:38 Z

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

TCE 008389518-01, PDC Light Curves

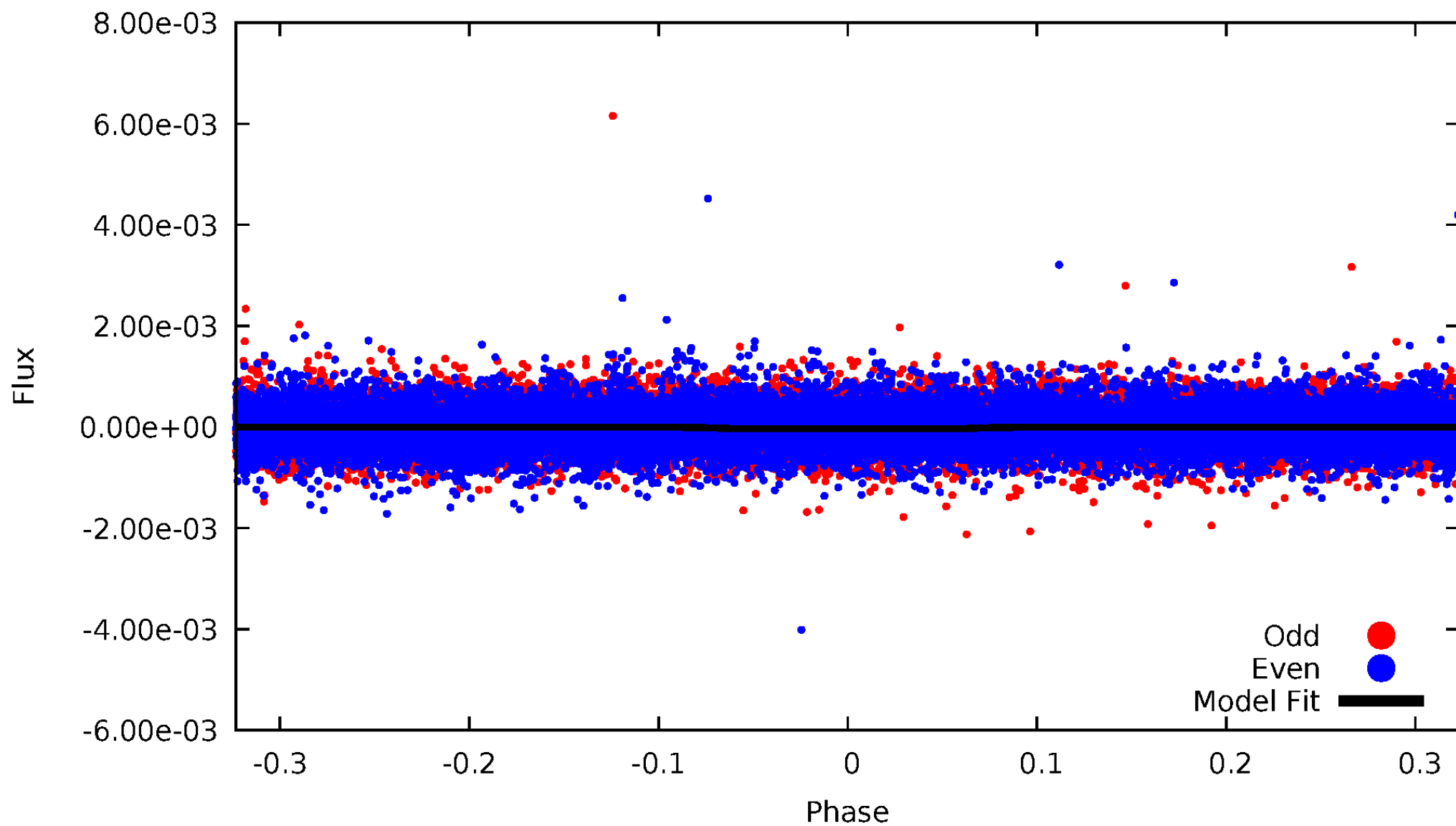


TCE 008389518-01



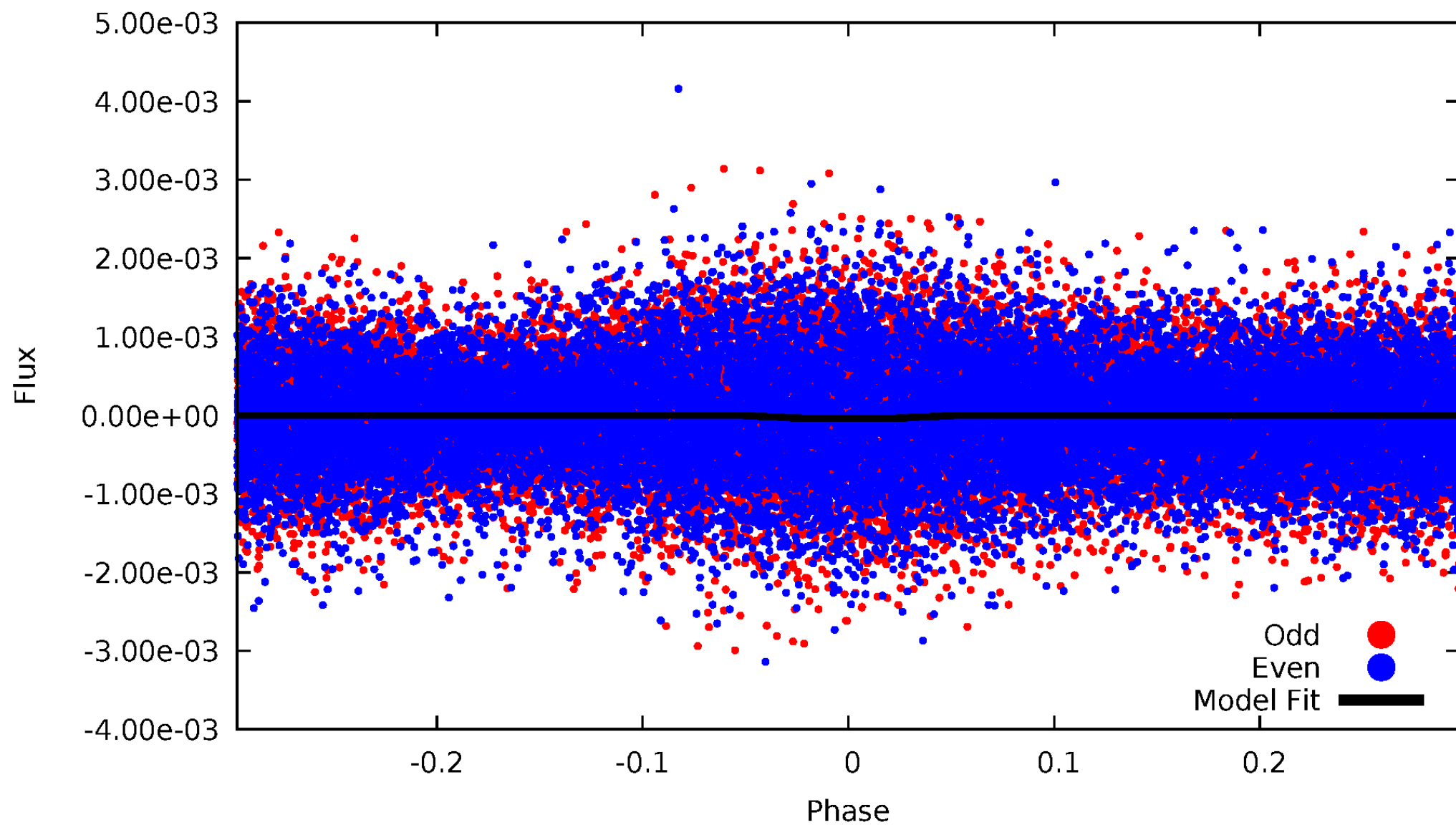
DV Odd/Even

TCE 008389518-01



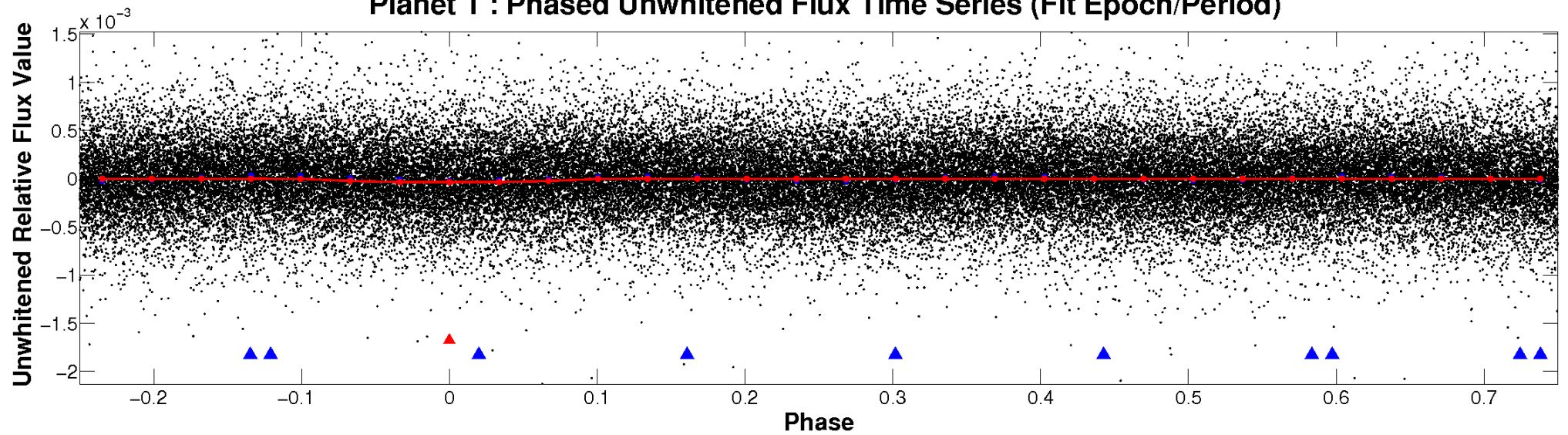
ALT Odd/Even

TCE 008389518-01

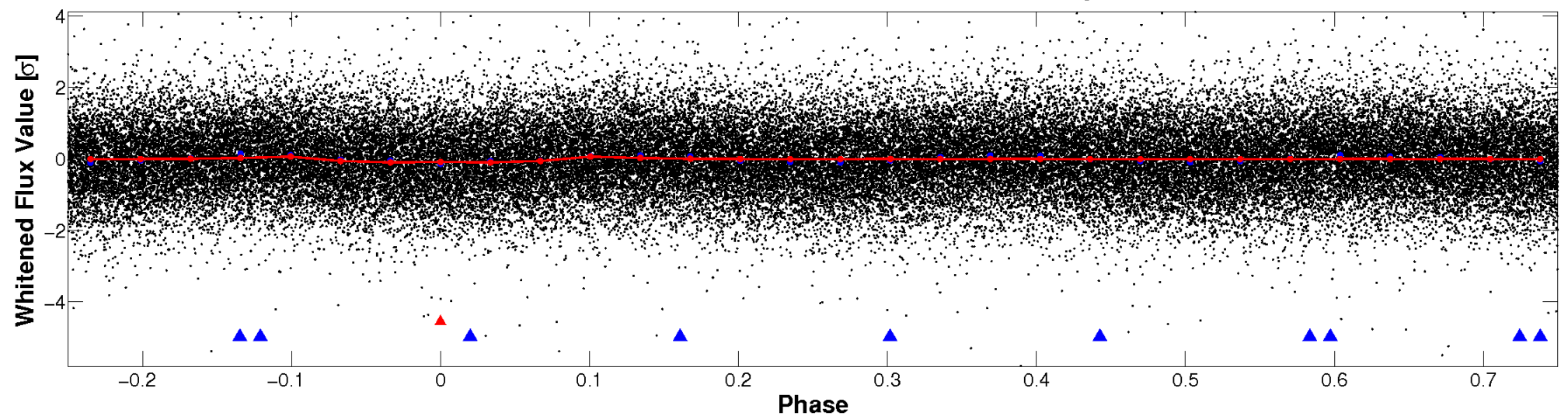


Non-Whitened Vs. Whitened Light Curve

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

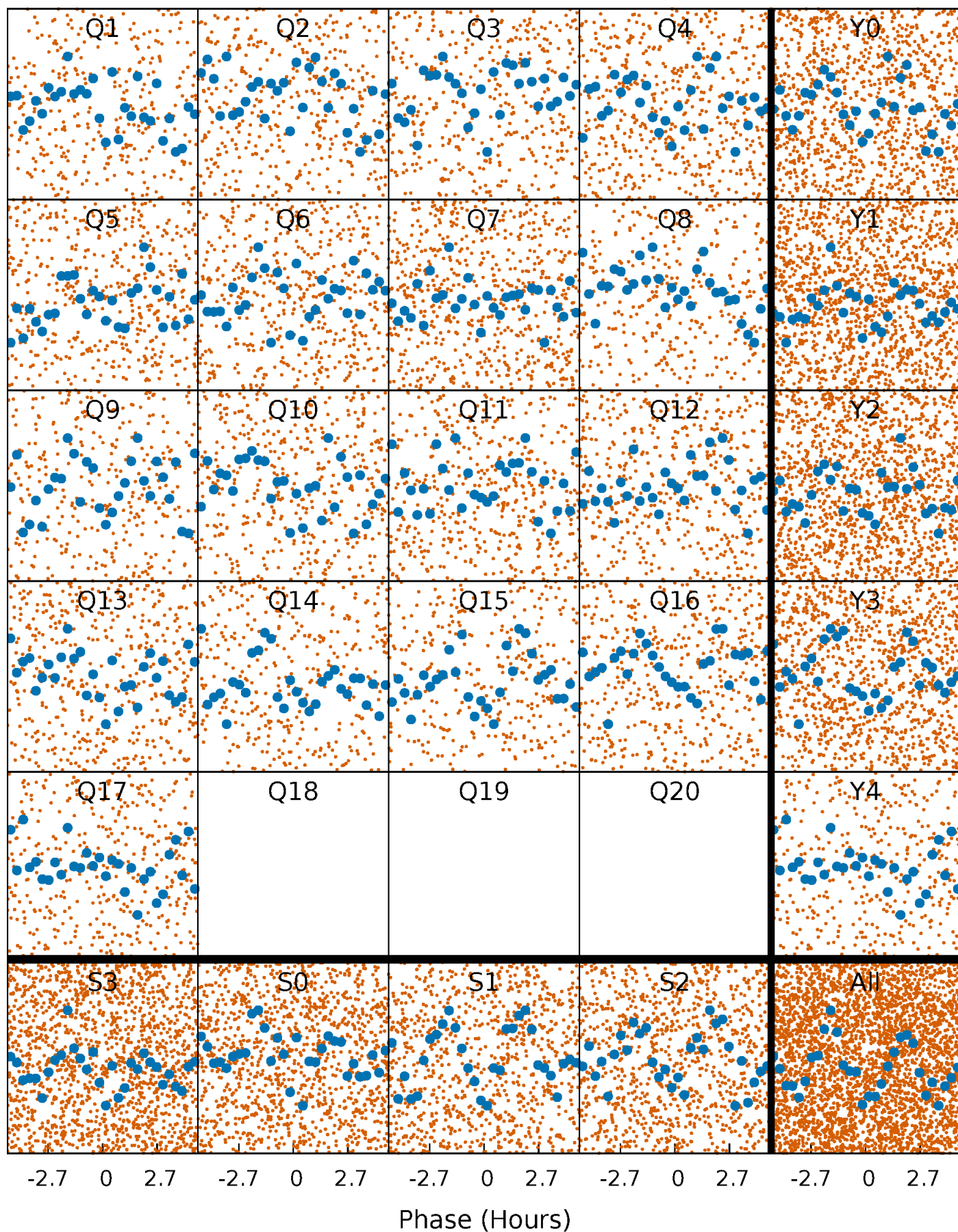


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



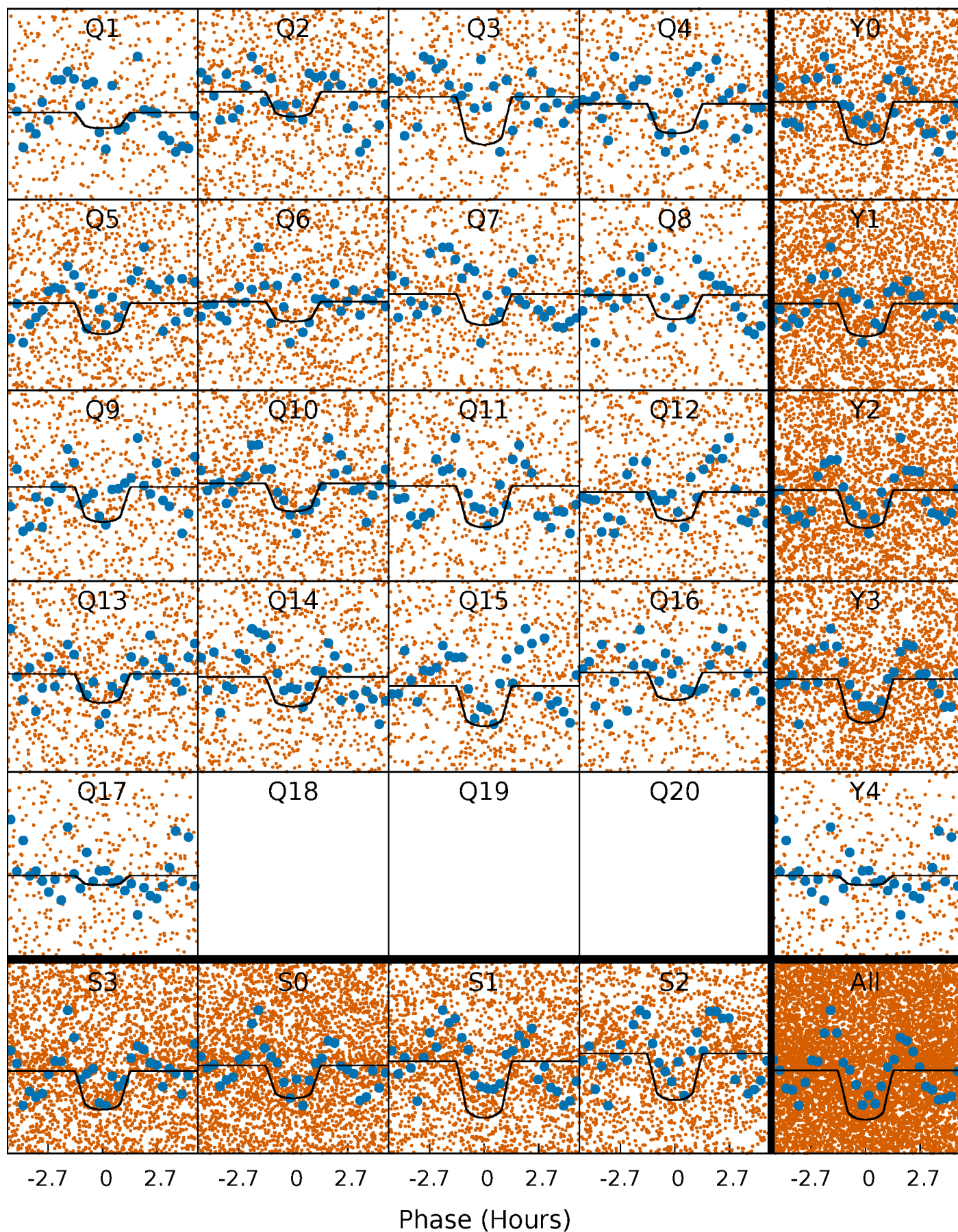
PDC Quarter-Phased Transit Curves

TCE 008389518-01 P= 0.609095 Days $T_0=131.877666$ (BKJD)



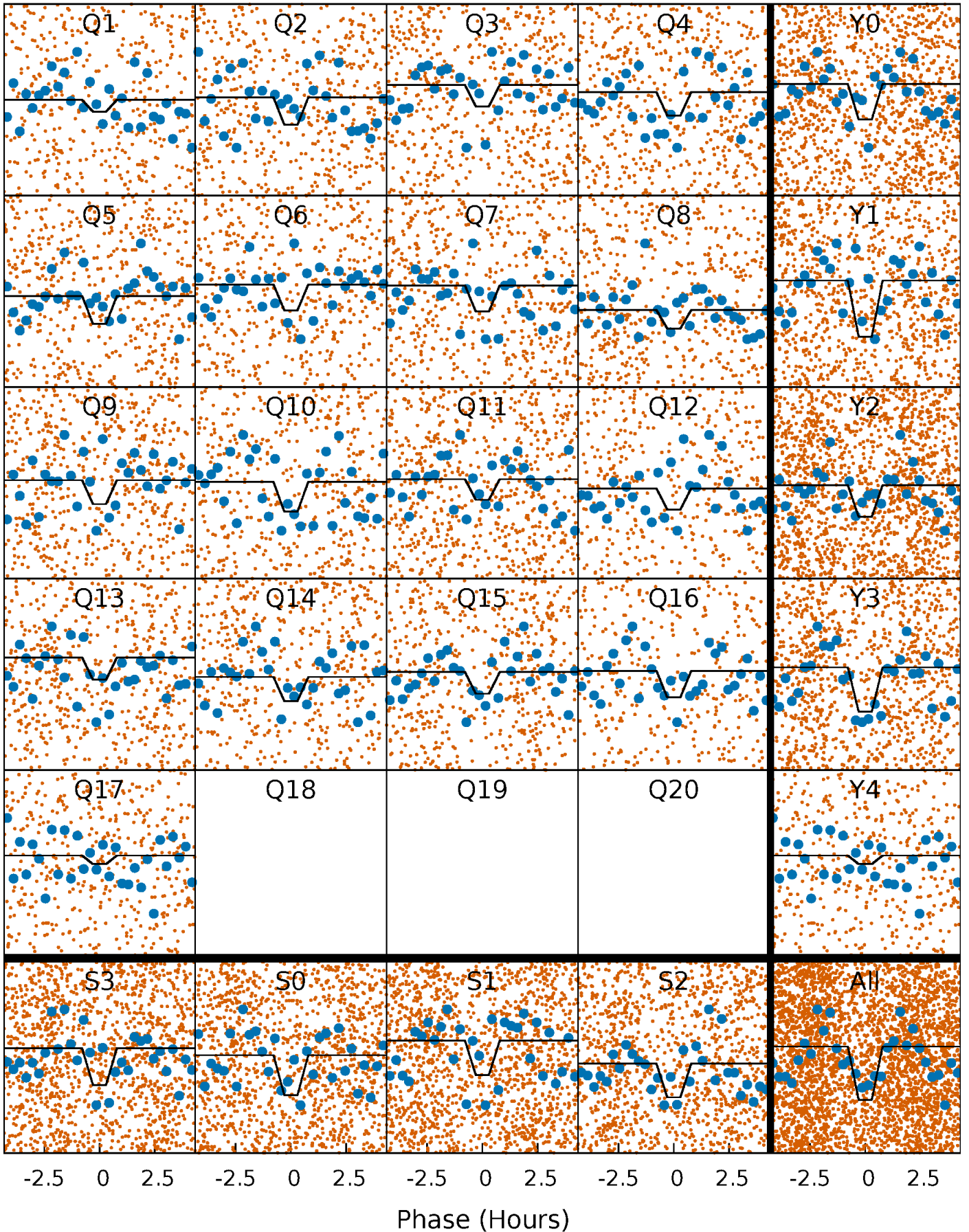
DV Quarter-Phased Transit Curves

TCE 008389518-01 P= 0.609095 Days $T_0=131.877666$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

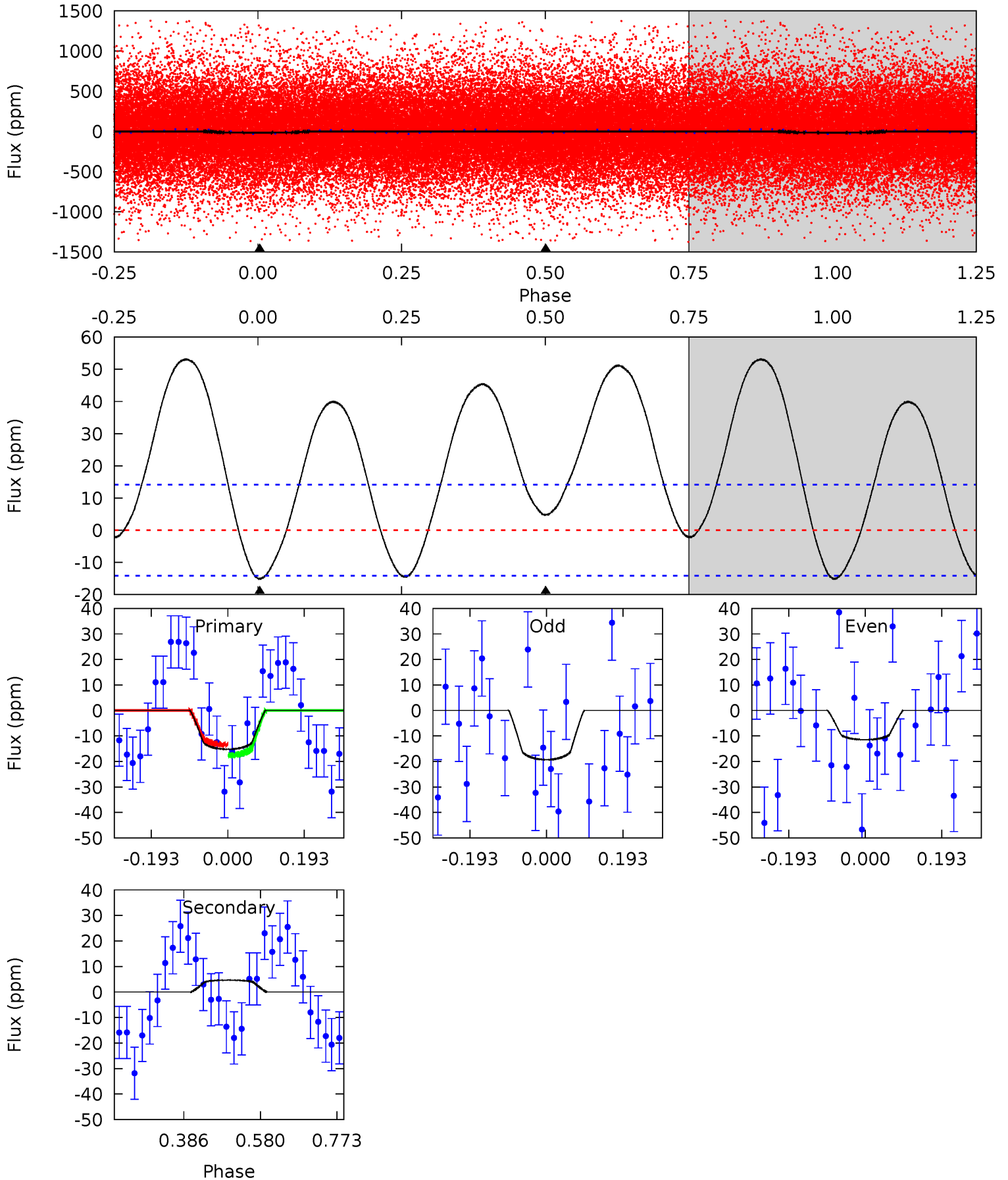
TCE 008389518-01 P= 0.609099 Days $T_0=131.878188$ (BKJD)



DV Model-Shift Uniqueness Test

008389518-01, P = 0.609095 Days, E = 131.268571 Days

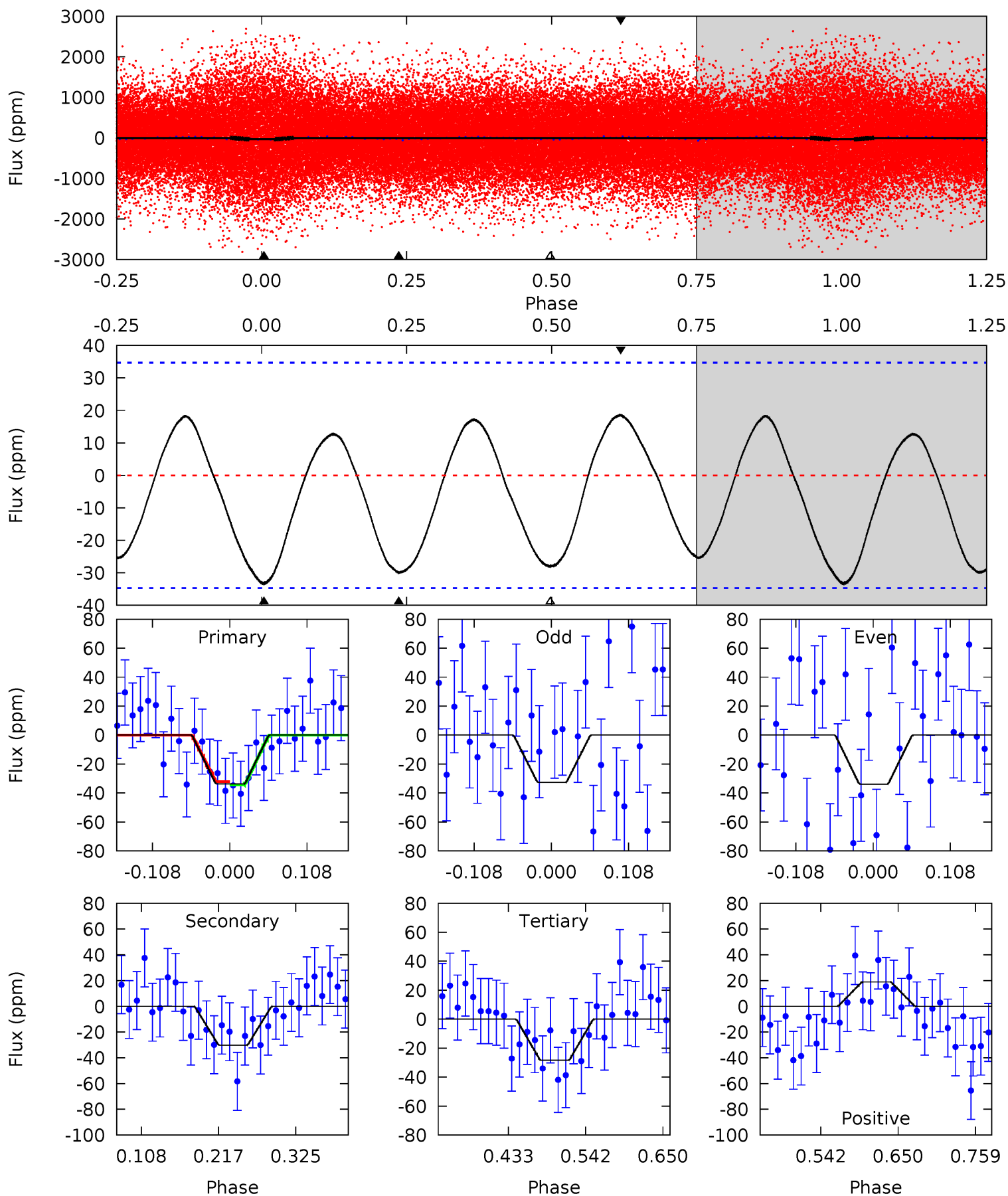
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.76	-1.46	0	0	4.42	1.30	3.02	4.76	4.76	-1.46	-1.46	1.23	0.56	0.78	0.66



Alt Model-Shift Uniqueness Test

008389518-01, P = 0.609099 Days, E = 131.269089 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.43	3.96	3.72	2.48	4.55	1.61	2.08	0.70	1.95	0.23	1.48	0.08	1.22	0.36	0.14



Stellar Parameters For KIC 008389518

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6849^{+168}_{-264}	$4.281^{+0.087}_{-0.203}$	$-0.140^{+0.250}_{-0.350}$	$1.368^{+0.466}_{-0.200}$	$1.311^{+0.201}_{-0.201}$	$0.721^{+0.295}_{-0.400}$
	+2%/-4%	+2%/-5%	+179%/-250%	+34%/-15%	+15%/-15%	+41%/-56%
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 008389518-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	5 ± 3	$1.00^{+0.24}_{-0.23}$	4028^{+293}_{-219}	-4533^{+493}_{-516}	$-0.568^{+0.391}_{-0.699}$
Alt.	-30 ± 8	$0.96^{+0.27}_{-0.22}$	4024^{+320}_{-221}	6214^{+1078}_{-788}	$4.126^{+2.949}_{-1.700}$

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 $A_{obs} \gg 1.0$

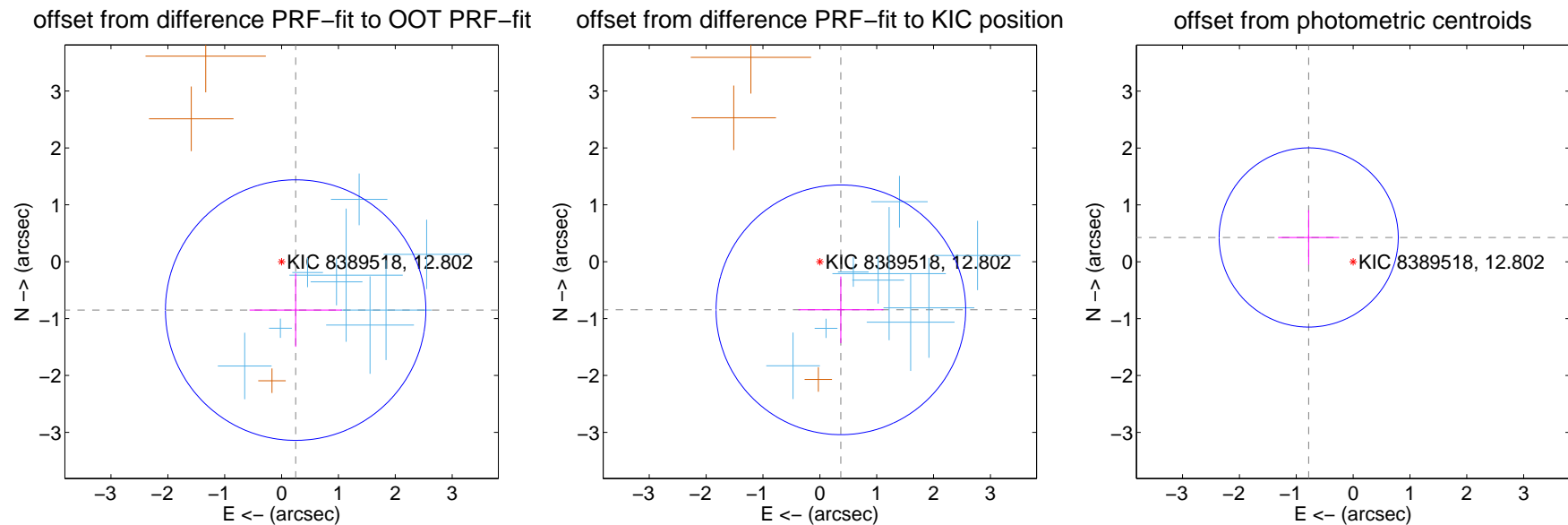
DV Centroid Data

Supplemental centroid analysis for 008389518-01. Kepler magnitude: 12.80. Transit SNR 10.17

There are 9 quarters with good PRF difference image offsets

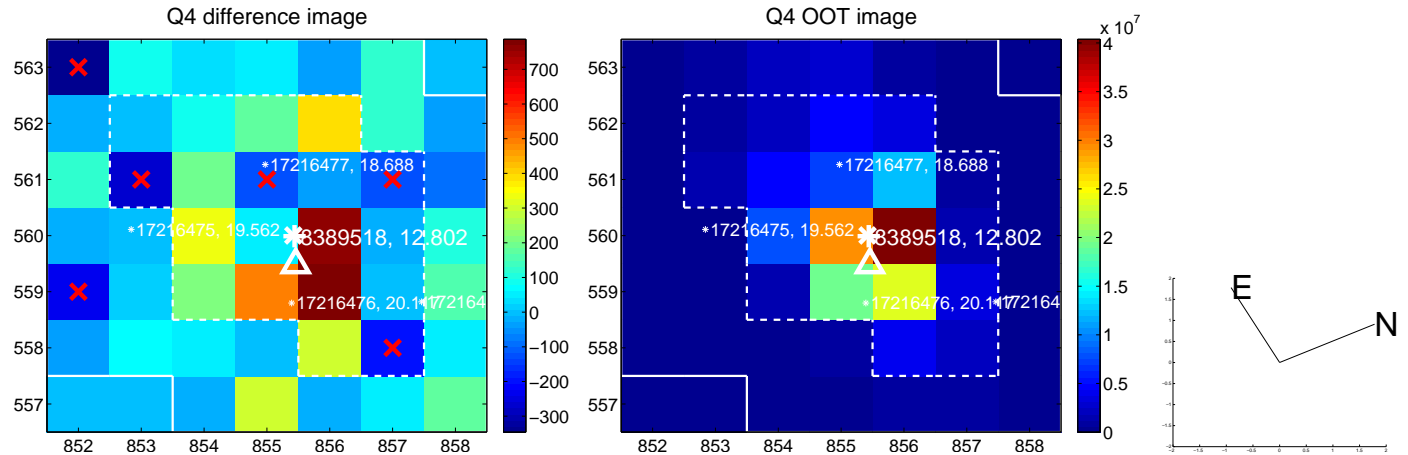
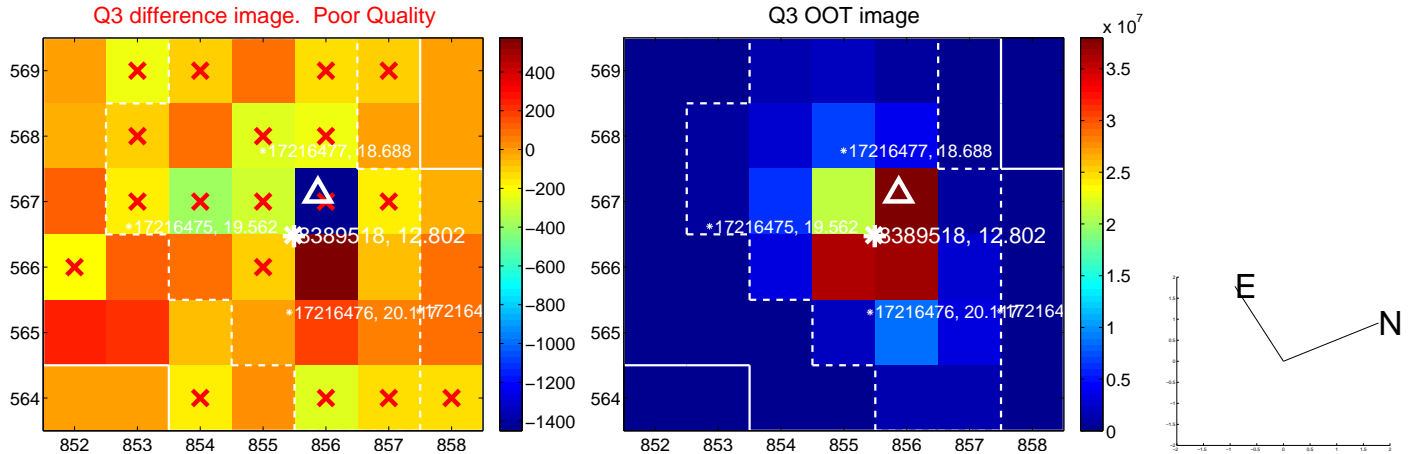
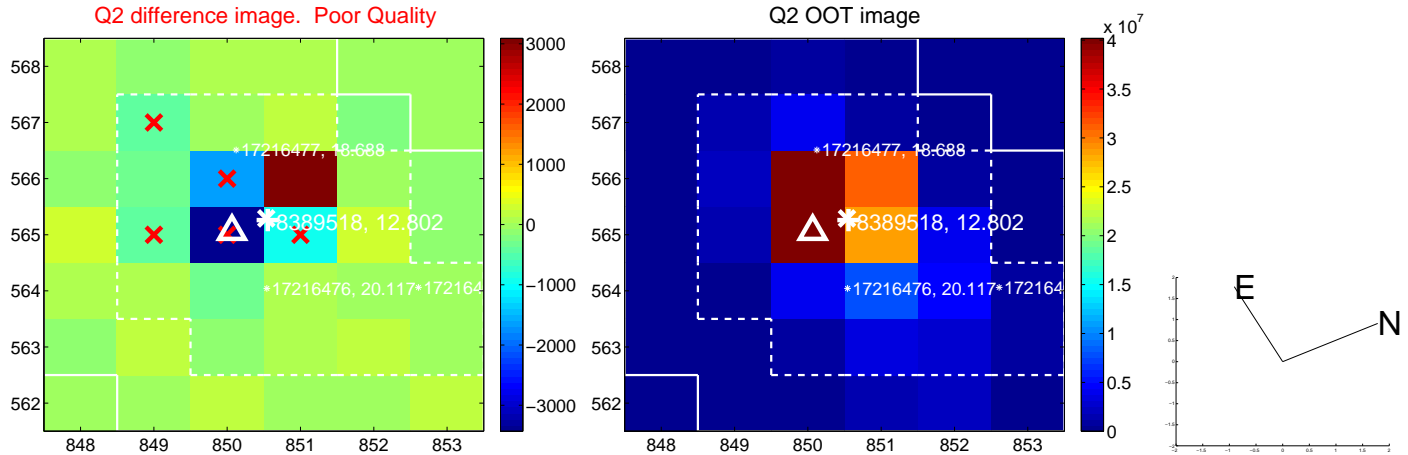
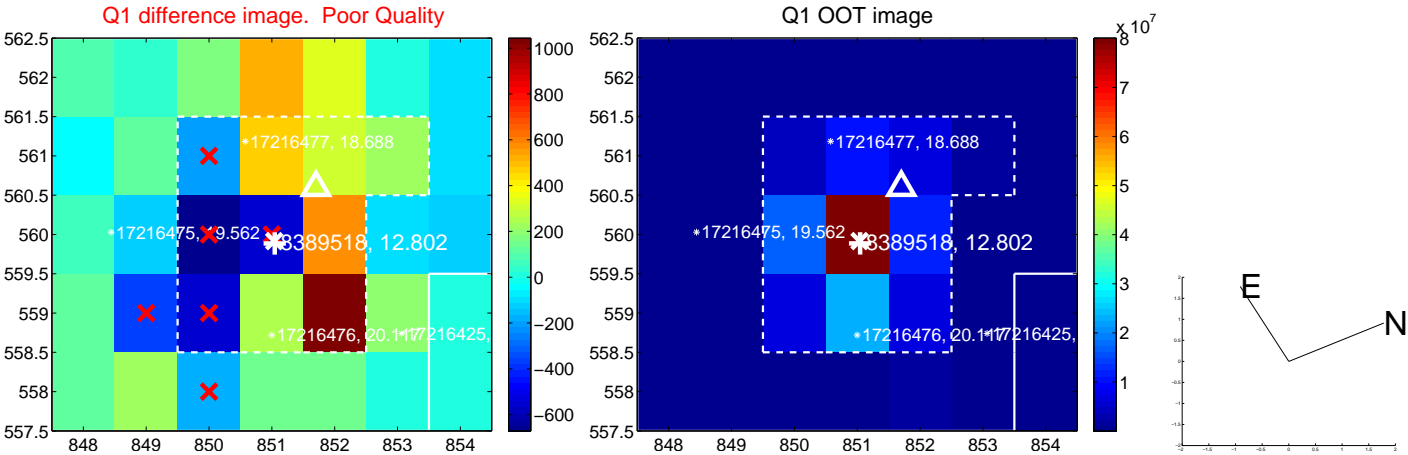
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.886 ± 0.763	1.16	-0.248 ± 0.811	-0.851 ± 0.645
PRF-fit source offset from KIC position	0.923 ± 0.732	1.26	-0.370 ± 0.746	-0.846 ± 0.586
photometric centroid source offset	0.89 ± 0.53	1.70	0.78 ± 0.54	0.43 ± 0.48

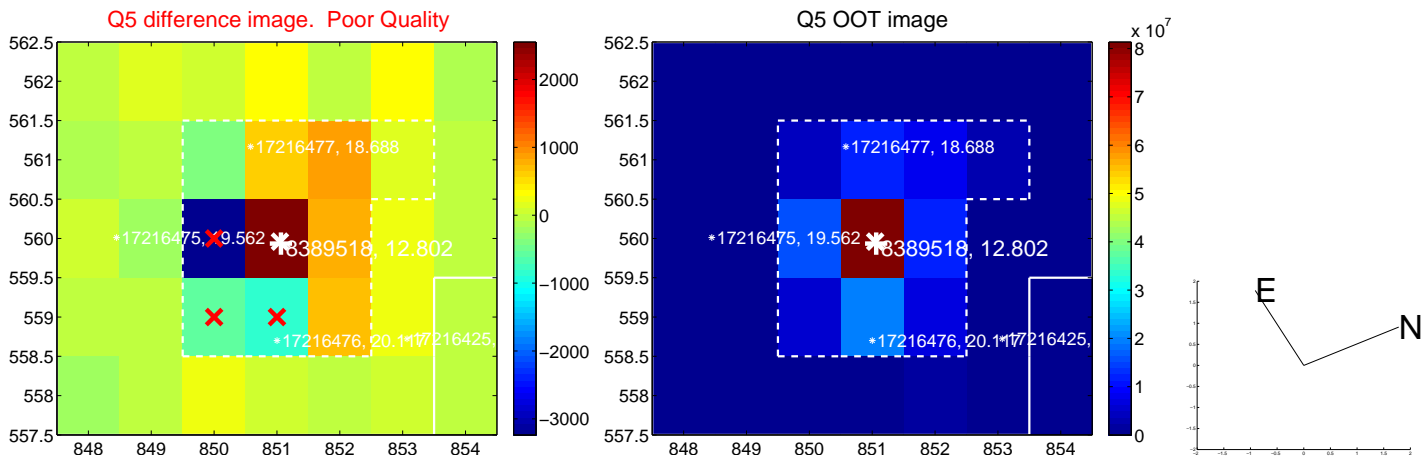


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

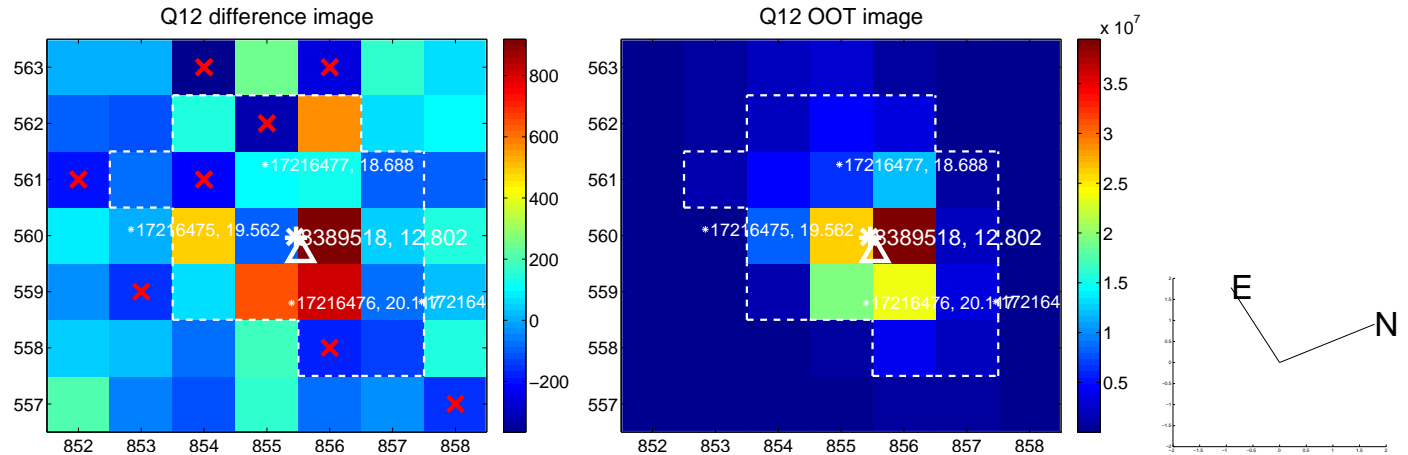
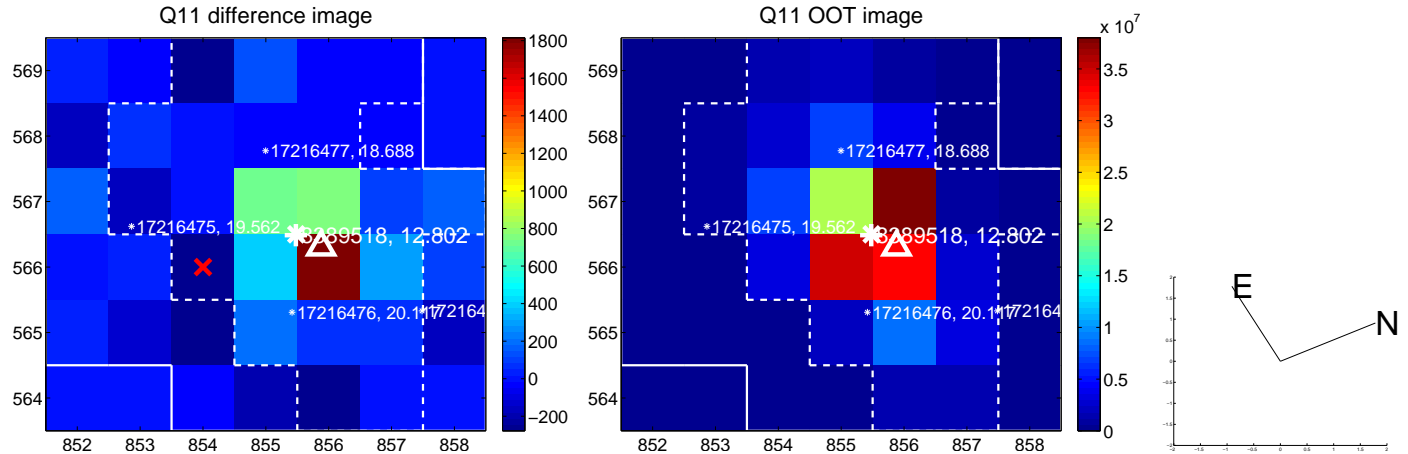
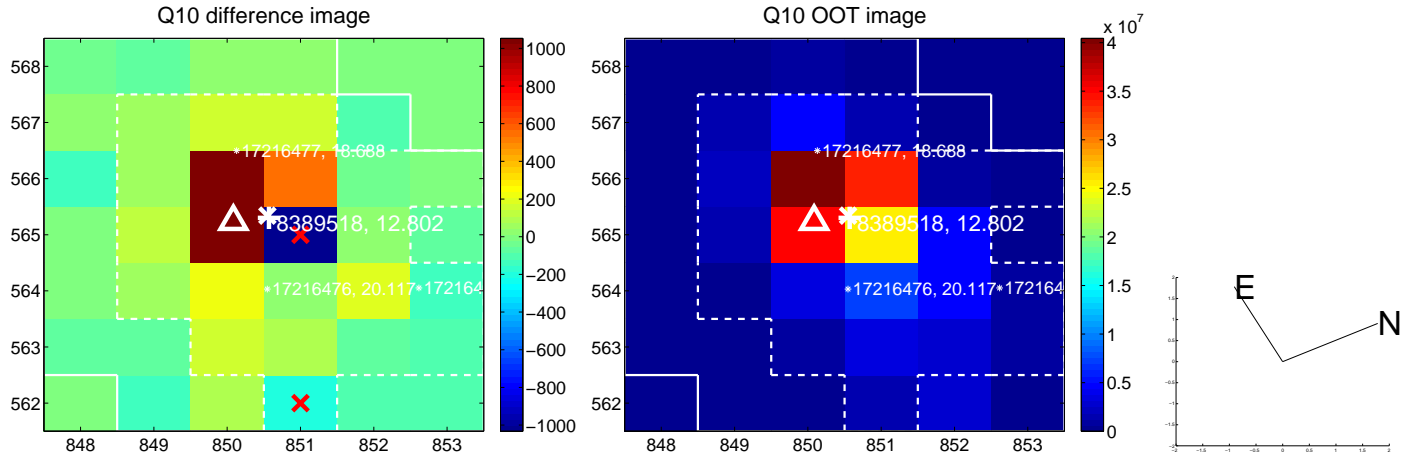
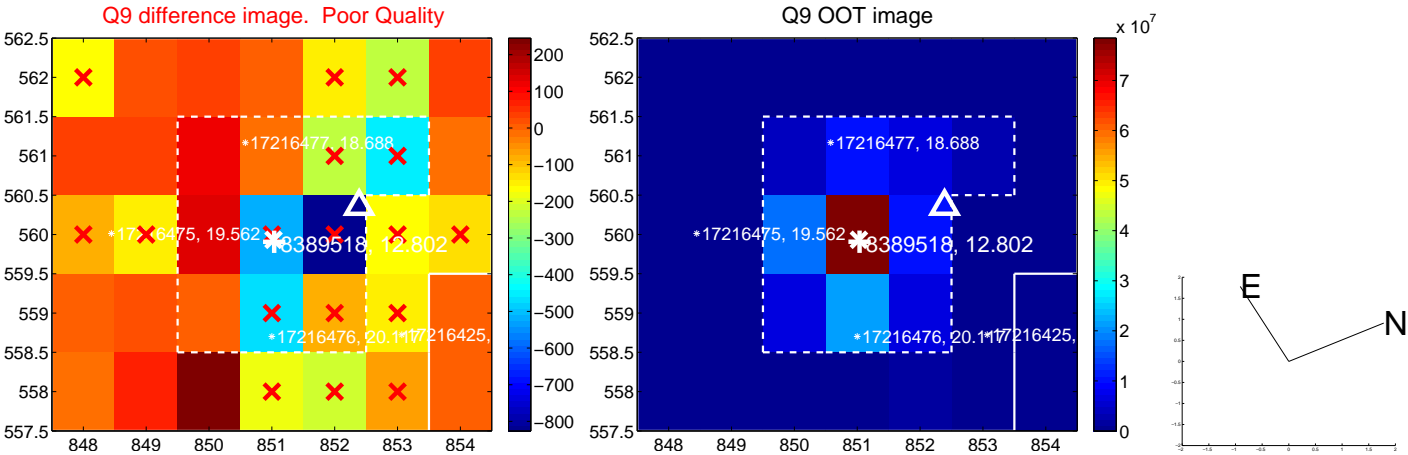
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



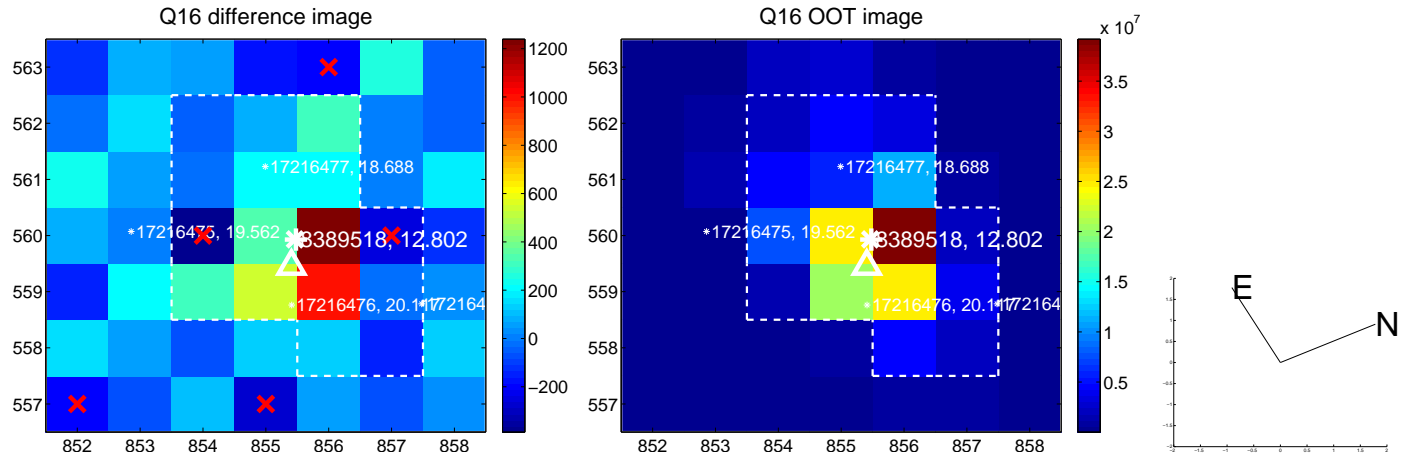
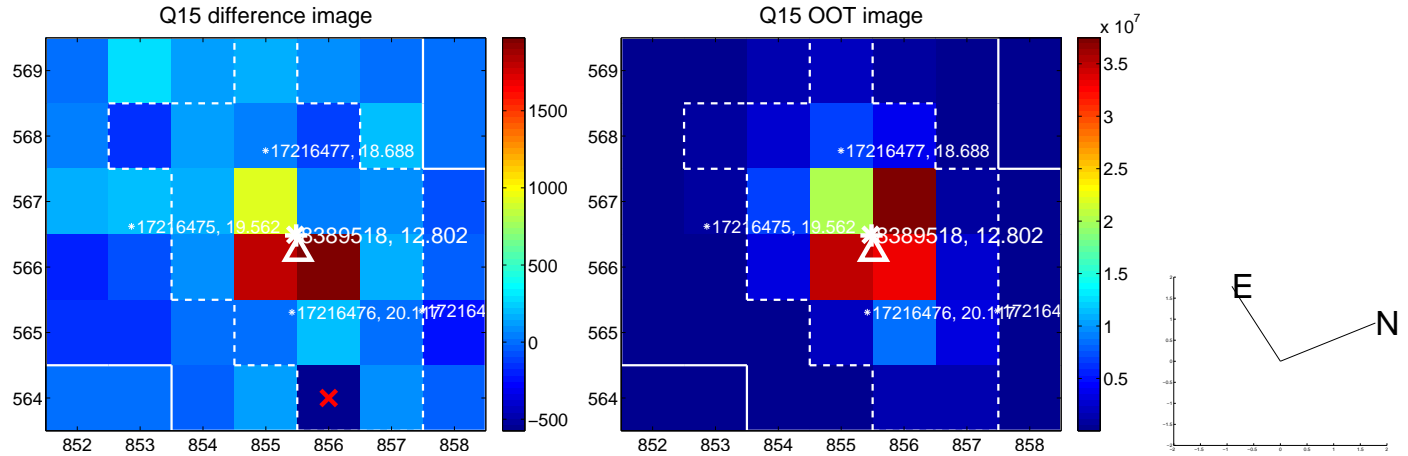
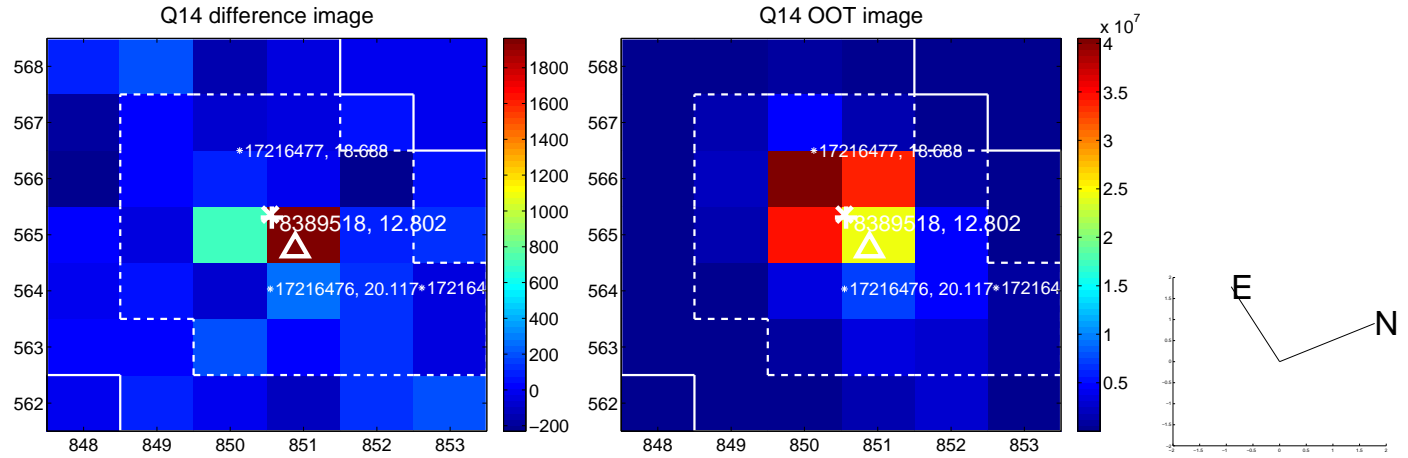
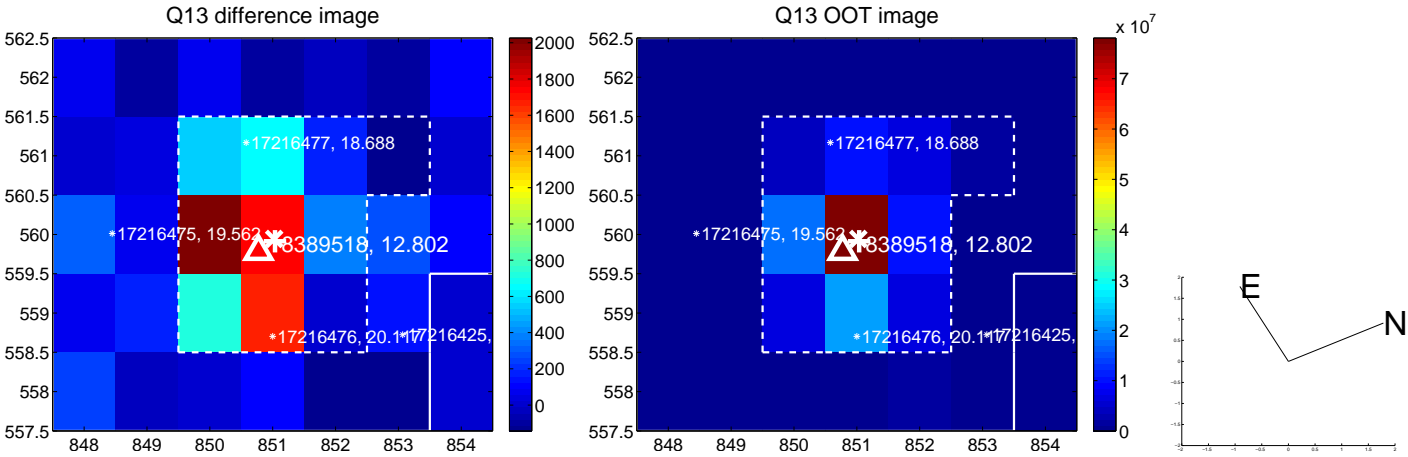
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



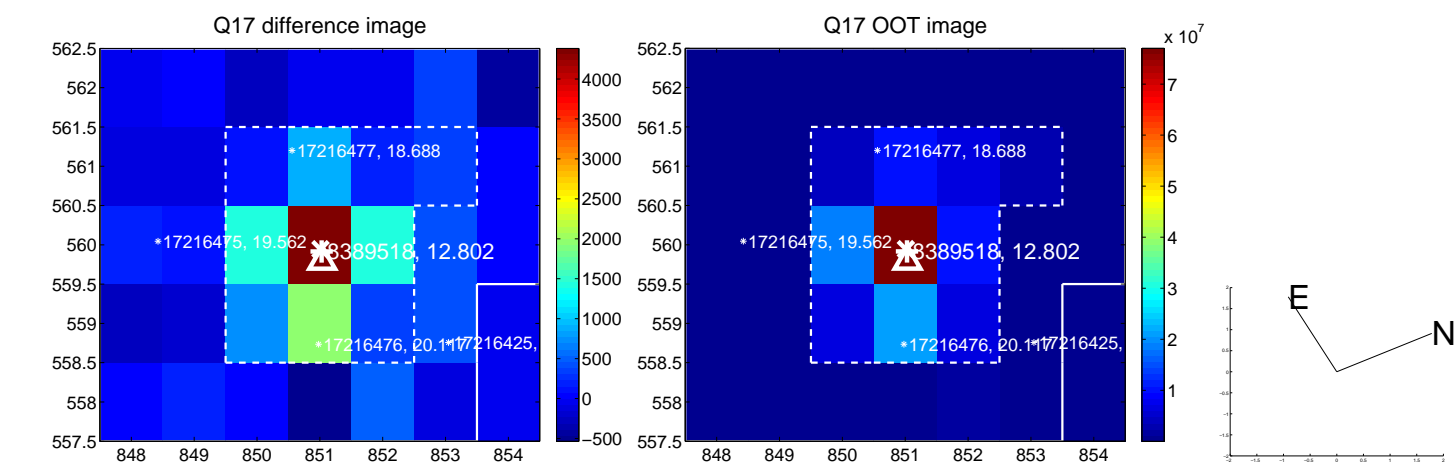
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



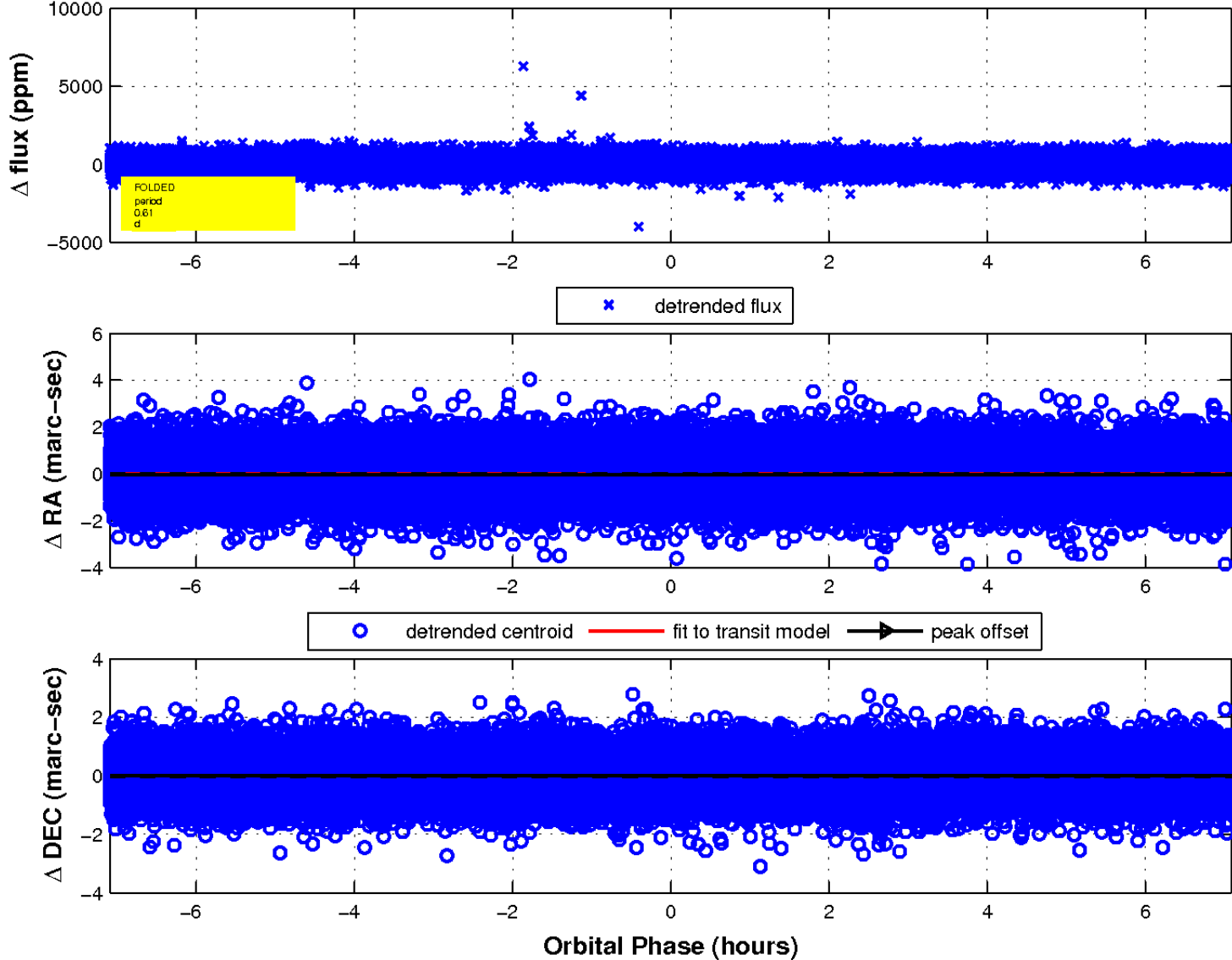
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

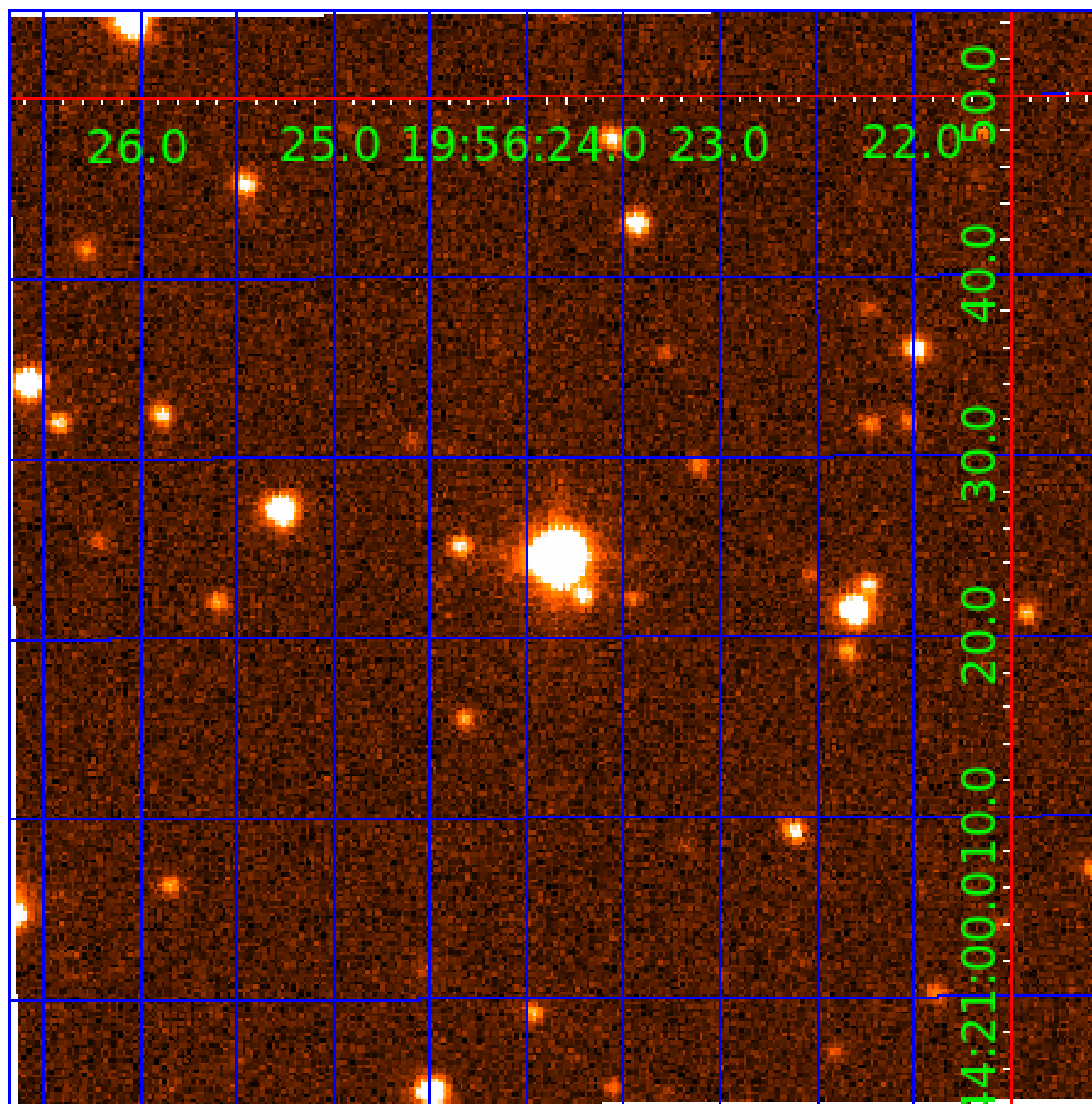


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008389518

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})
008389518-01	OBS	No	0.609095	131.877666	36.1	2.363	9.0	10.2	1.37	6849	0.96	15627.18
008389518-02	OBS	No	140.177620	266.242338	276.1	21.864	7.4	7.1	1.37	6849	2.60	11.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008389518-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008389518-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

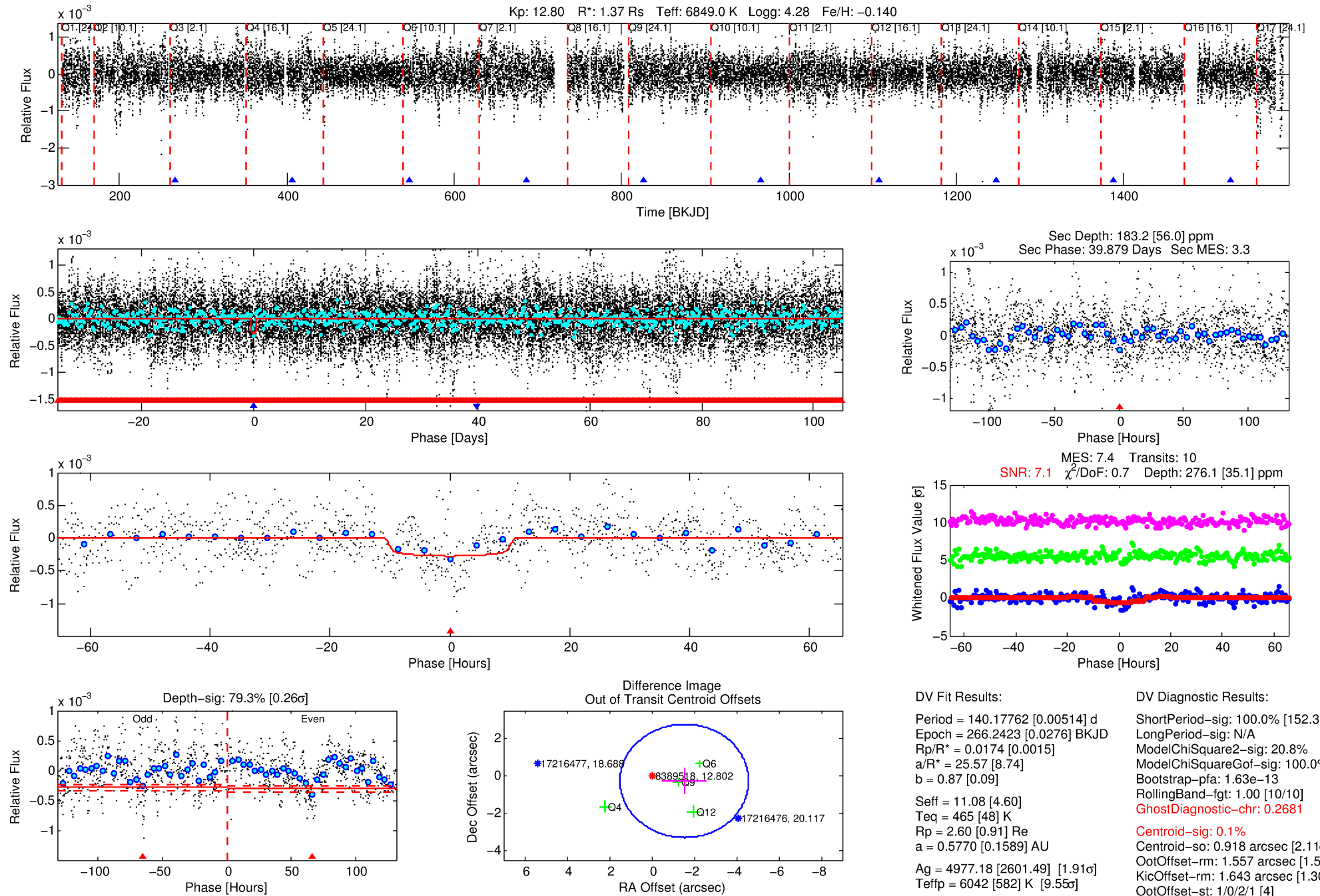
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008389518-02

No Significant Match Found

DV One-Page Summary

KIC: 8389518 Candidate: 2 of 2 Period: 140.178 d



DV Fit Results:

Period = 140.17762 [0.00514] d
Epoch = 266.2423 [0.0276] BKJD
Rp/R* = 0.0174 [0.0015]
a/R* = 25.57 [8.74]
b = 0.87 [0.09]
Seff = 11.08 [4.60]
Teff = 465 [48] K
Rp = 2.60 [0.91] Re
a = 0.5770 [0.1589] AU
Ag = 4977.18 [2601.49] [1.91 σ]
Teffp = 6042 [582] K [9.55 σ]

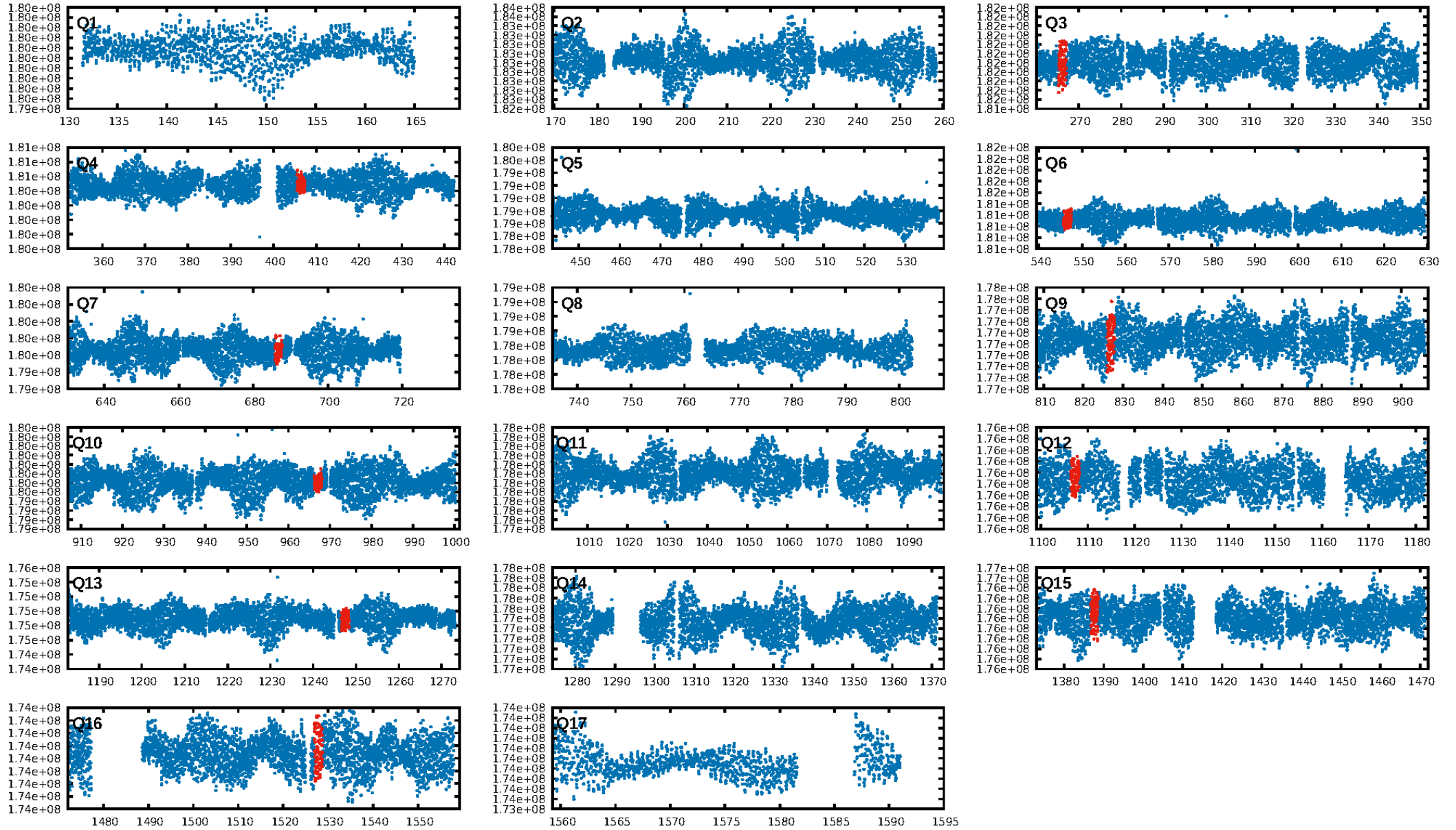
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [152.32 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.63e-13
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 0.2681
Centroid-sig: 0.1%
Centroid-so: 0.918 arcsec [2.11 σ]
OotOffset-rm: 1.557 arcsec [1.54 σ]
KicOffset-rm: 1.643 arcsec [1.30 σ]
OotOffset-st: 1/0/2/1 [4]
KicOffset-st: 1/0/2/1 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/5]

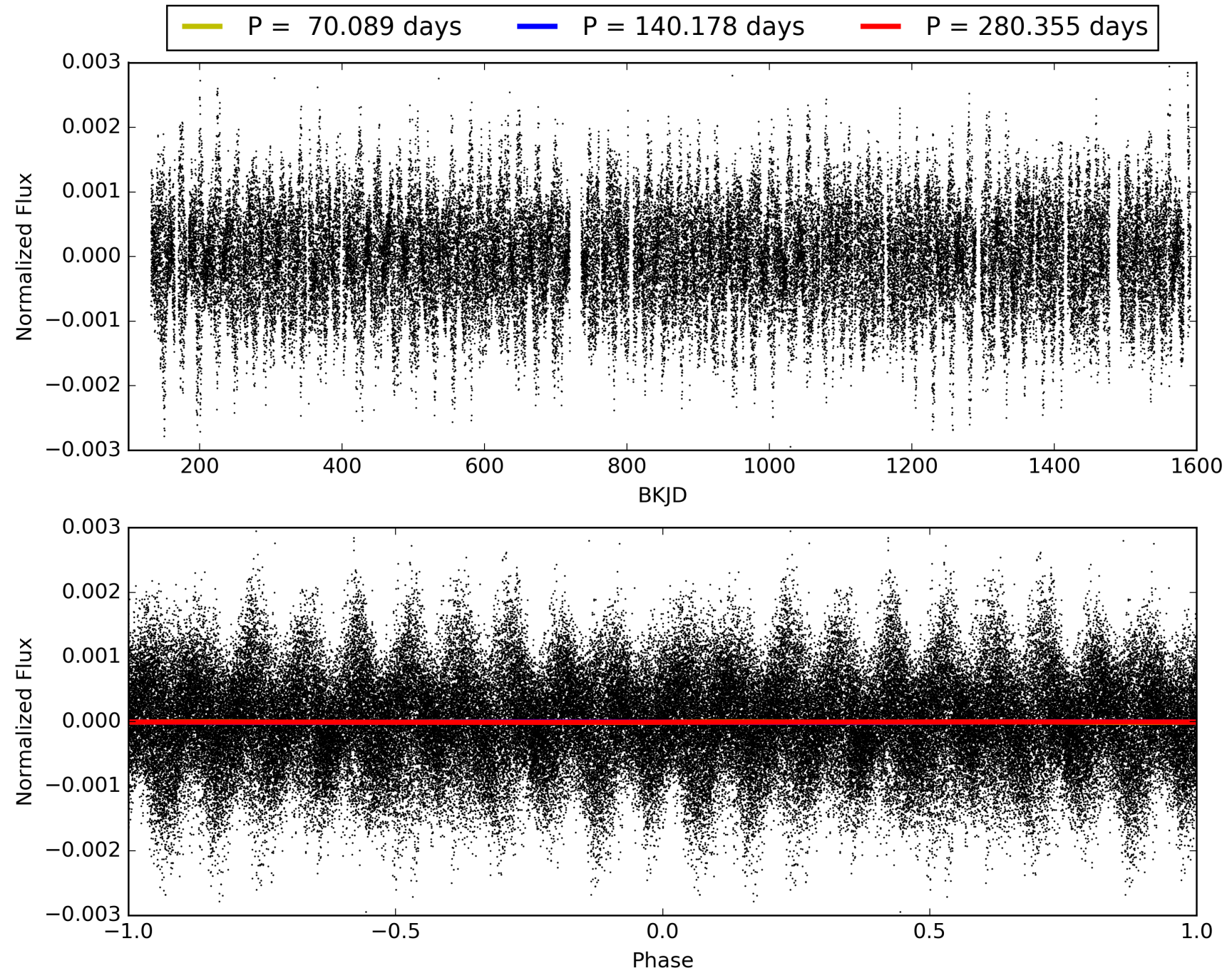
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:57:49 Z

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

TCE 008389518-02, PDC Light Curves

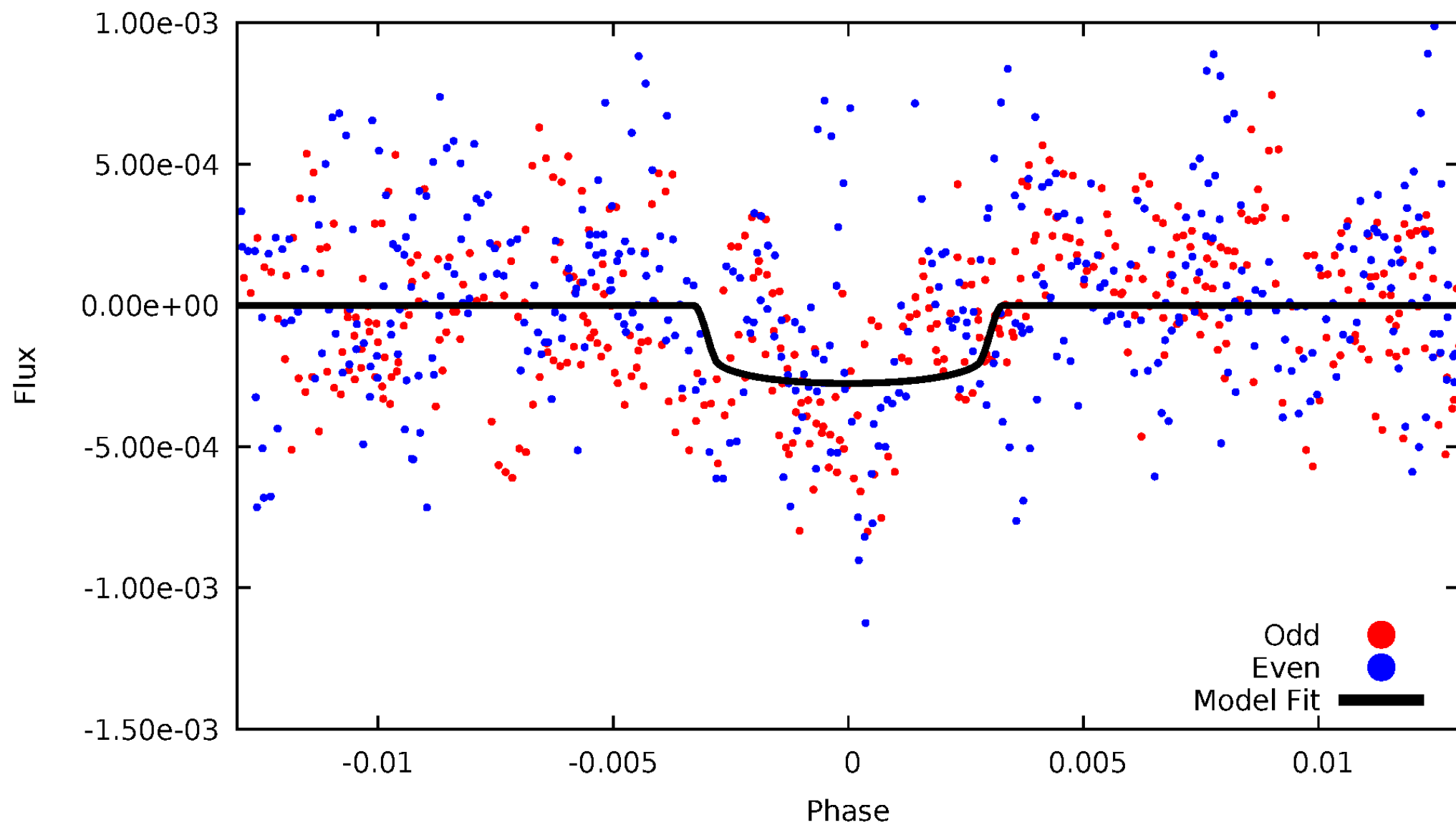


TCE 008389518-02



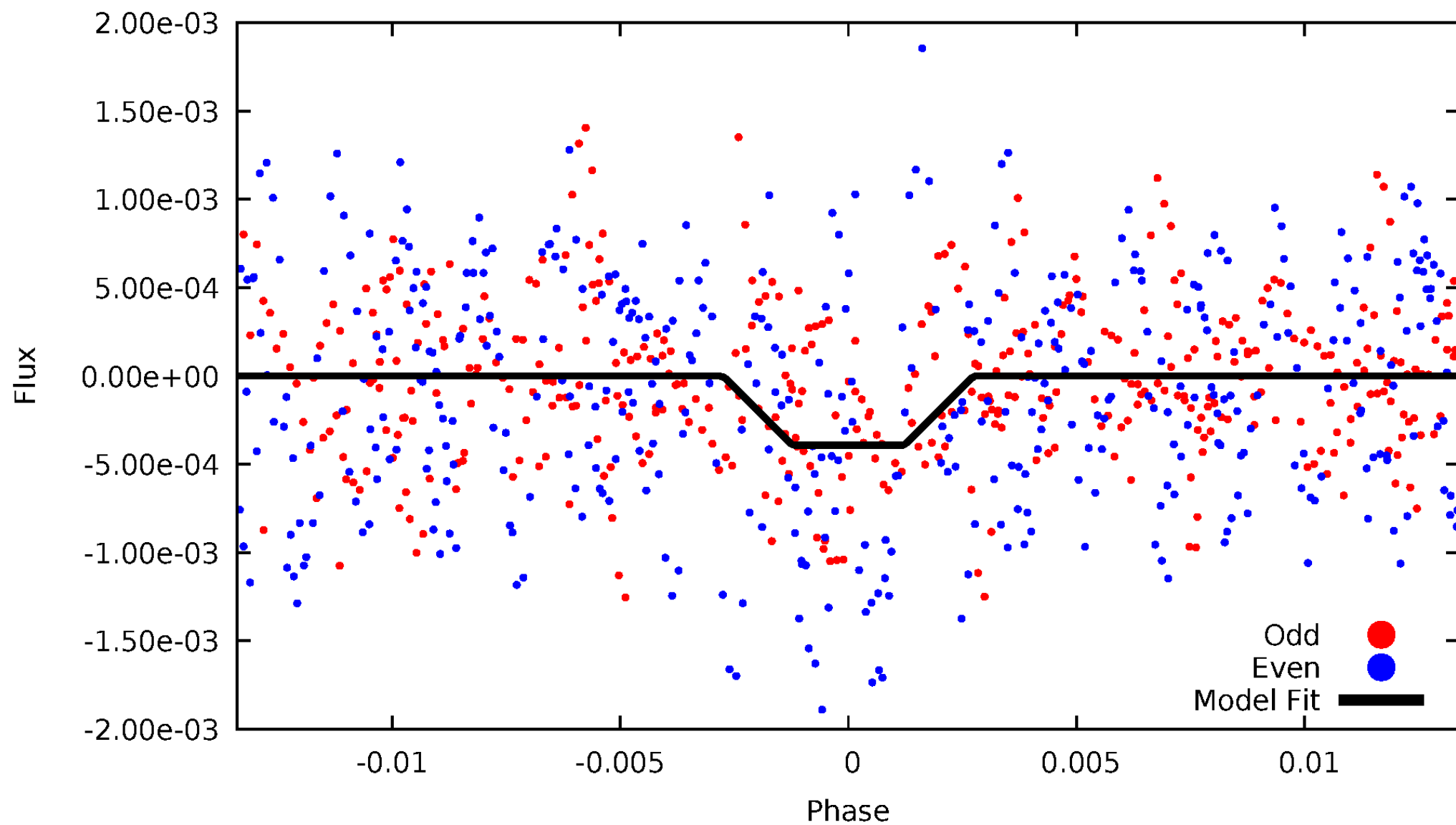
DV Odd/Even

TCE 008389518-02



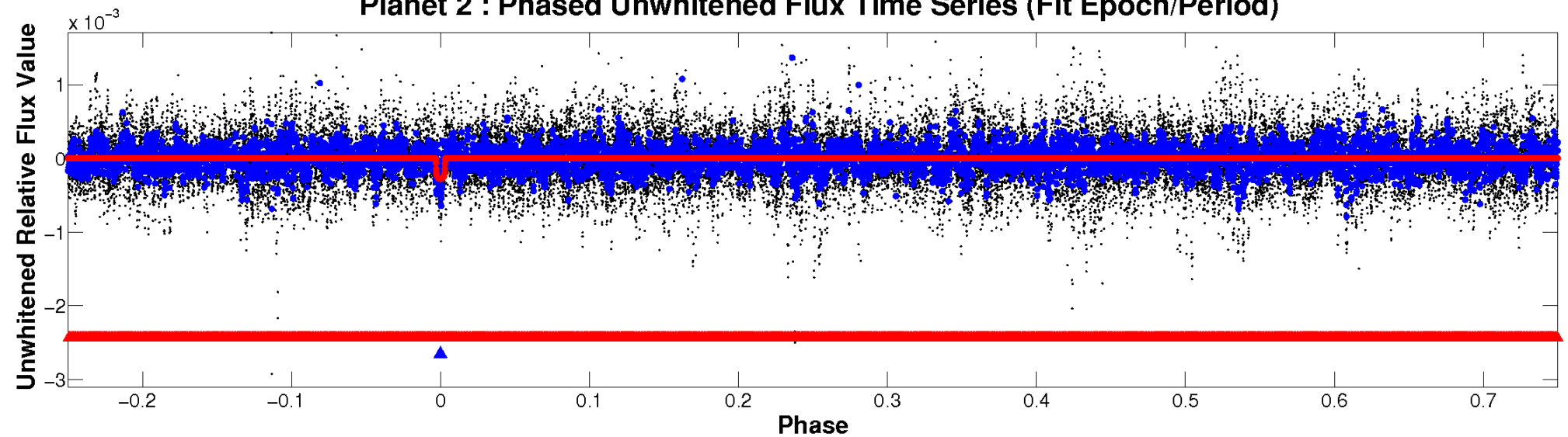
ALT Odd/Even

TCE 008389518-02

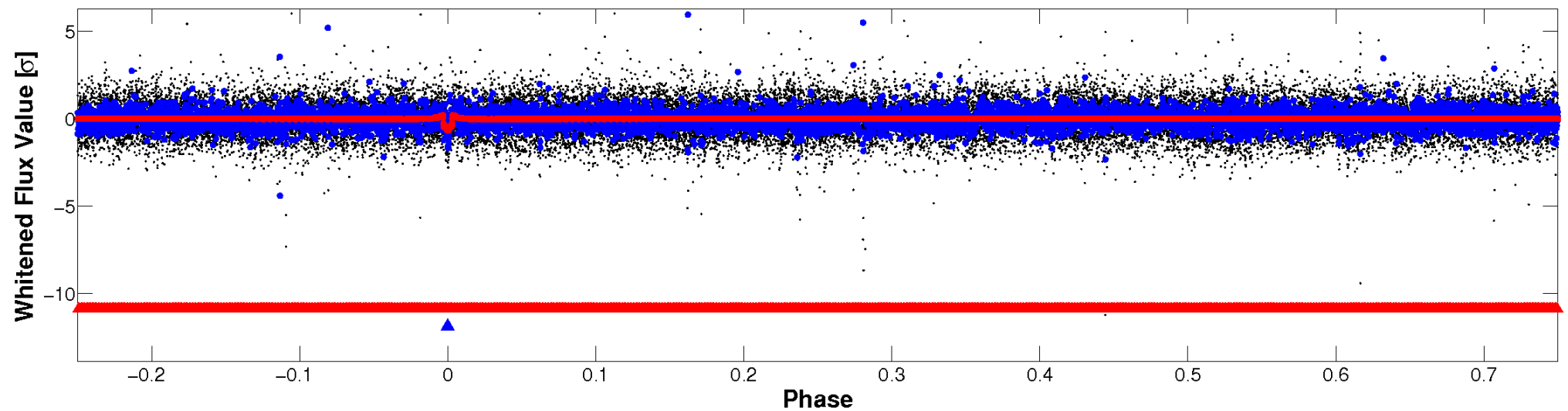


Non-Whitened Vs. Whitened Light Curve

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

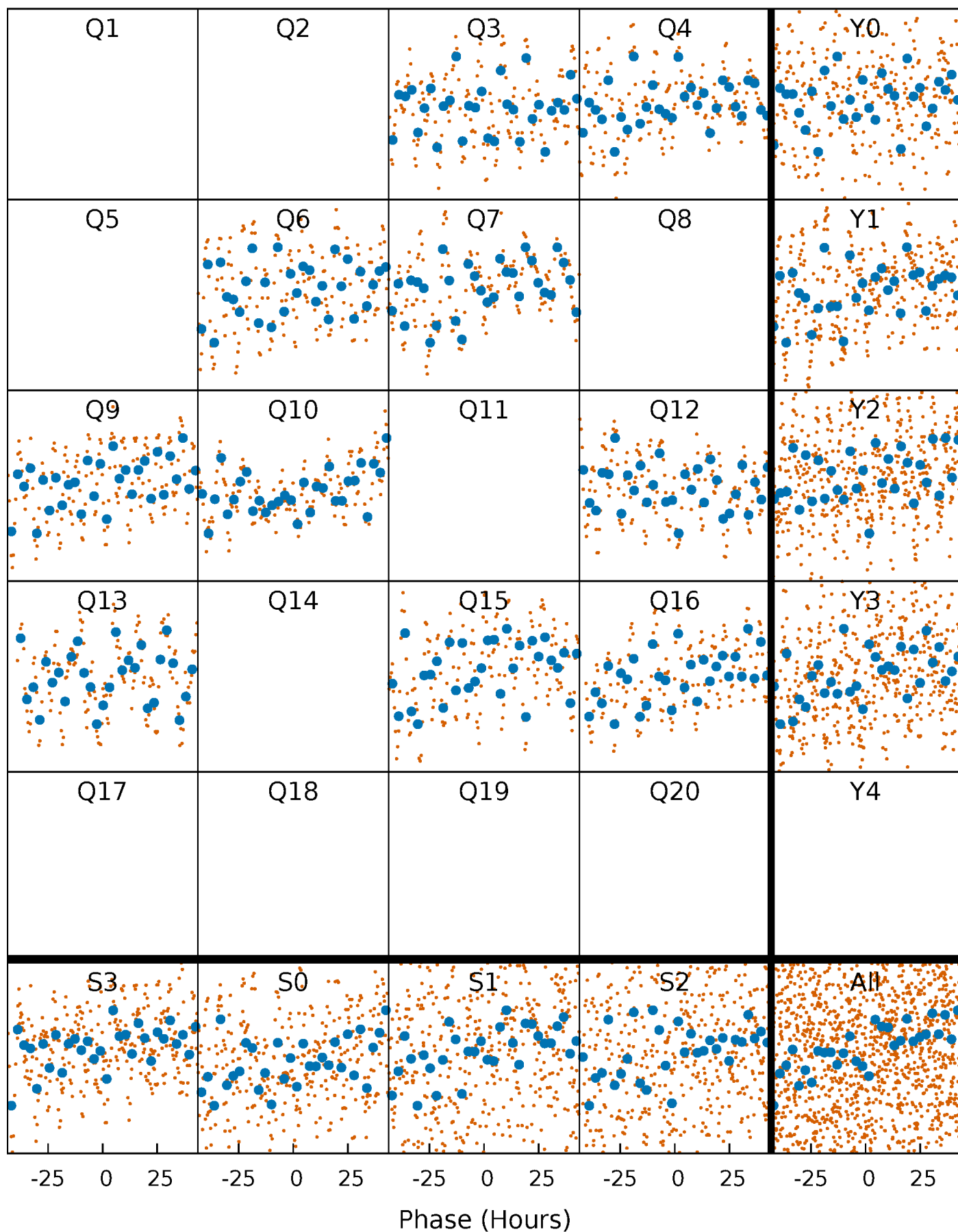


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



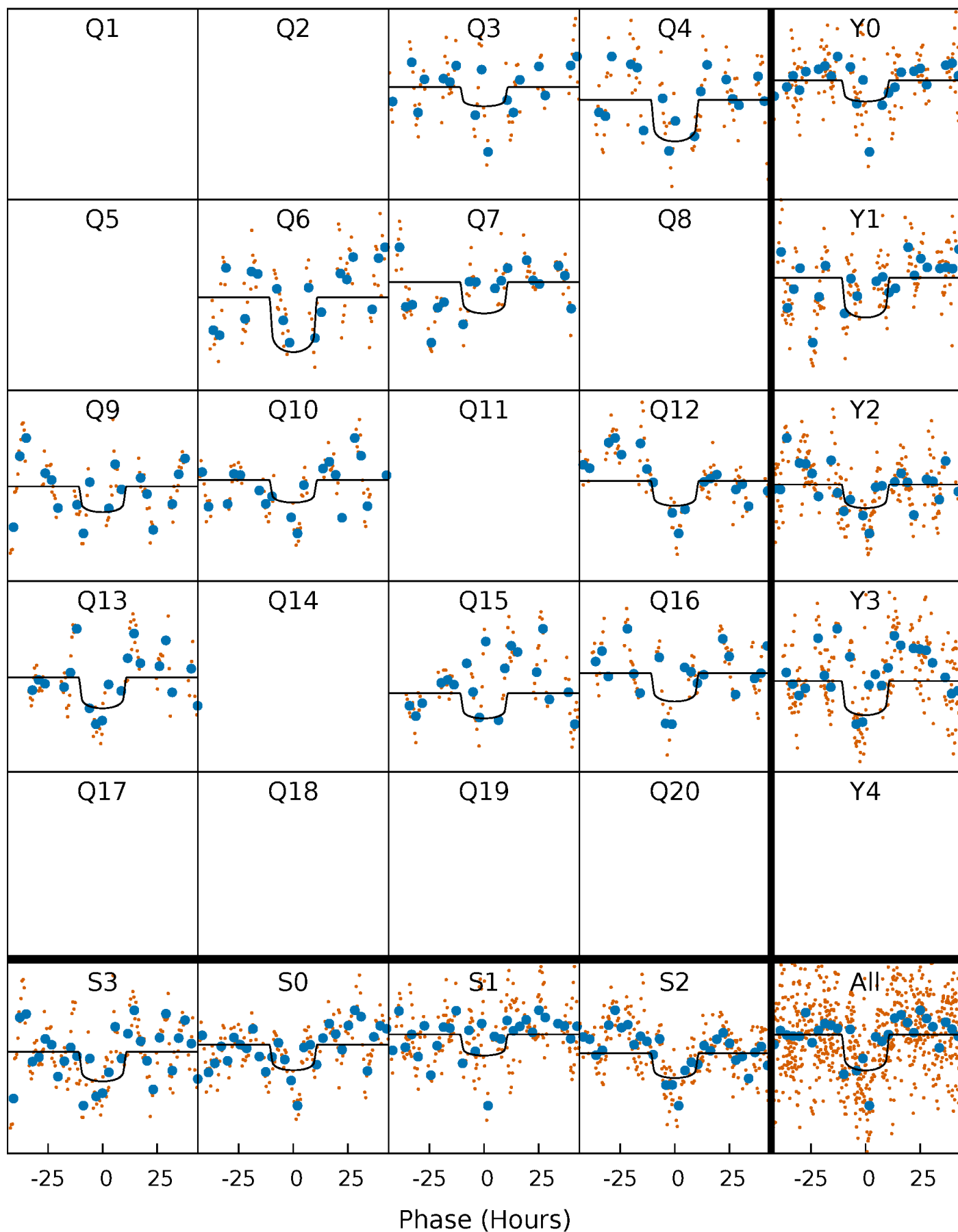
PDC Quarter-Phased Transit Curves

TCE 008389518-02 P=140.177620 Days $T_0=266.242338$ (BKJD)



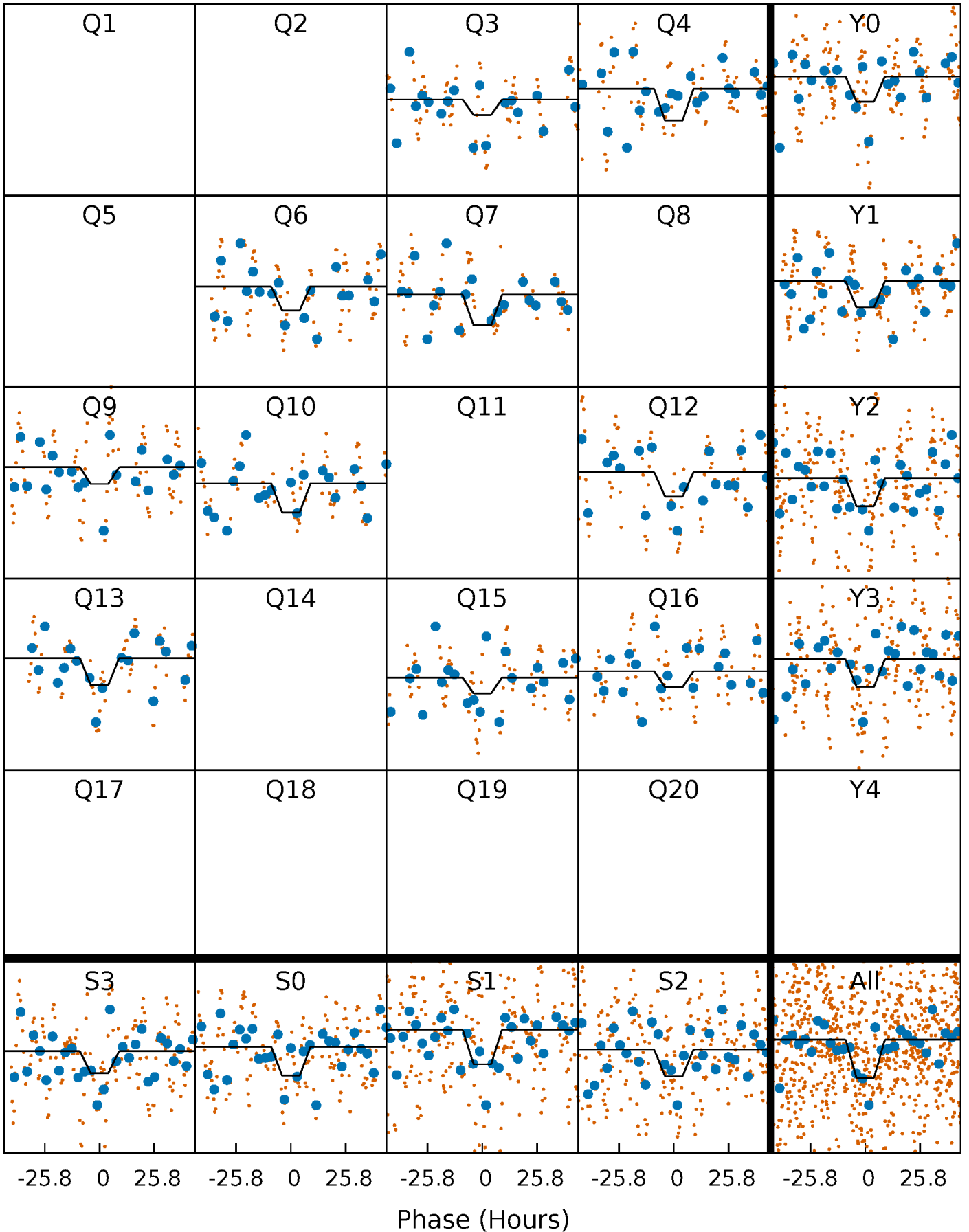
DV Quarter-Phased Transit Curves

TCE 008389518-02 P=140.177620 Days $T_0=266.242338$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

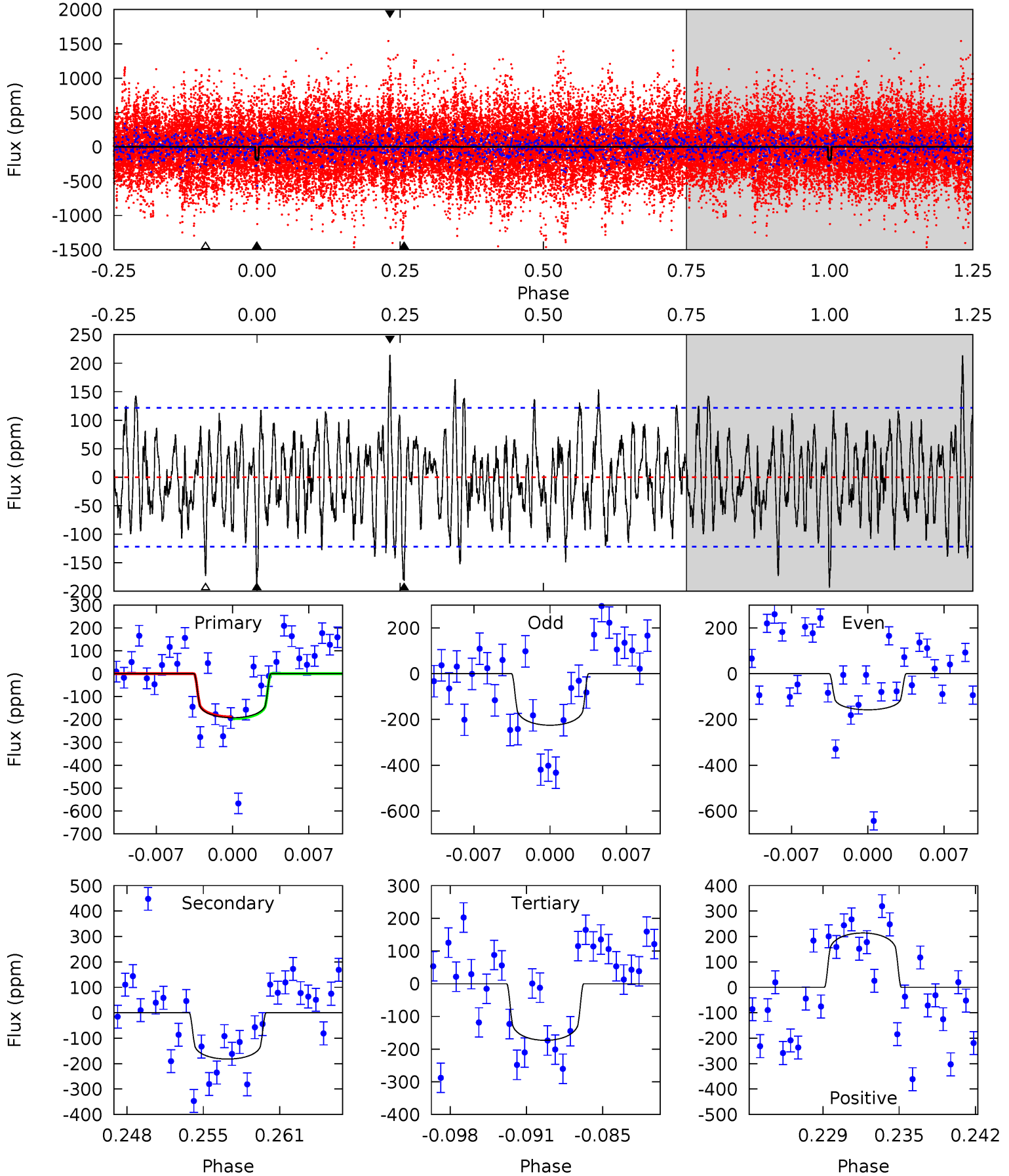
TCE 008389518-02 P=140.181033 Days $T_0=266.199671$ (BKJD)



DV Model-Shift Uniqueness Test

008389518-02, P = 140.177620 Days, E = 126.064718 Days

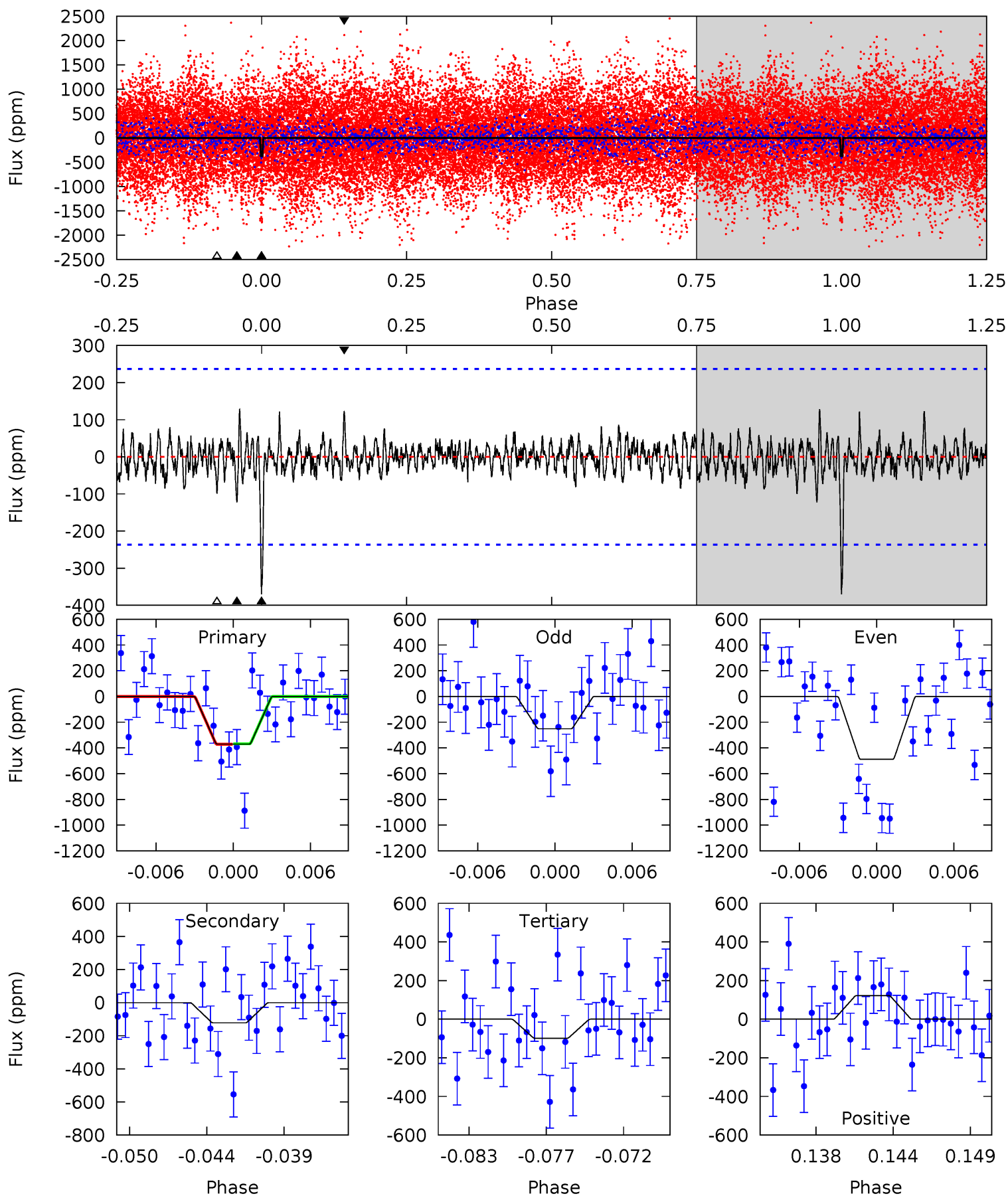
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.08	7.64	7.27	8.96	5.11	2.72	2.50	0.81	-0.88	0.37	-1.33	1.41	1.10	0.53	0.16



Alt Model-Shift Uniqueness Test

008389518-02, P = 140.181033 Days, E = 126.018638 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.04	2.66	2.15	2.66	5.14	2.77	0.69	5.89	5.38	0.51	0.00	2.58	1.02	0.26	0.04



Stellar Parameters For KIC 008389518

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6849^{+168}_{-264}	$4.281^{+0.087}_{-0.203}$	$-0.140^{+0.250}_{-0.350}$	$1.368^{+0.466}_{-0.200}$	$1.311^{+0.201}_{-0.201}$	$0.721^{+0.295}_{-0.400}$
	+2%/-4%	+2%/-5%	+179%/-250%	+34%/-15%	+15%/-15%	+41%/-56%
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 008389518-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-182 ± 24	$2.68^{+0.53}_{-0.34}$	658^{+49}_{-38}	5975^{+376}_{-340}	4549^{+1648}_{-1345}
Alt.	-122 ± 46	$3.07^{+0.54}_{-0.42}$	656^{+53}_{-36}	5136^{+449}_{-528}	2346^{+1298}_{-1082}

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 $A_{obs} \gg 1.0$

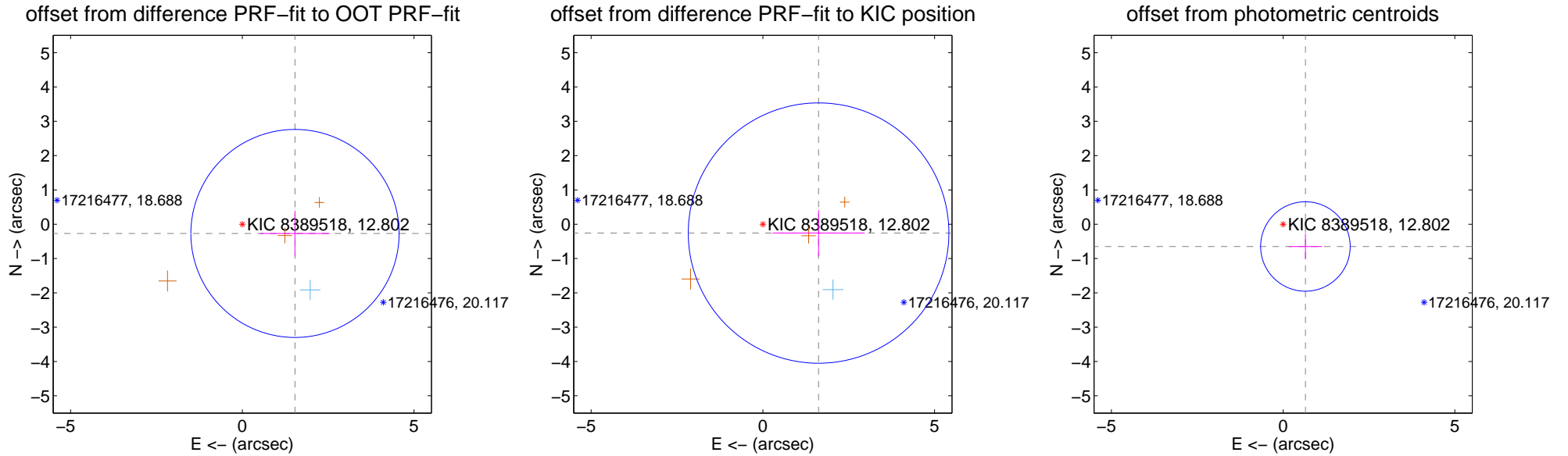
DV Centroid Data

Supplemental centroid analysis for 008389518-02. Kepler magnitude: 12.80. Transit SNR 7.07

There are 1 quarters with good PRF difference image offsets

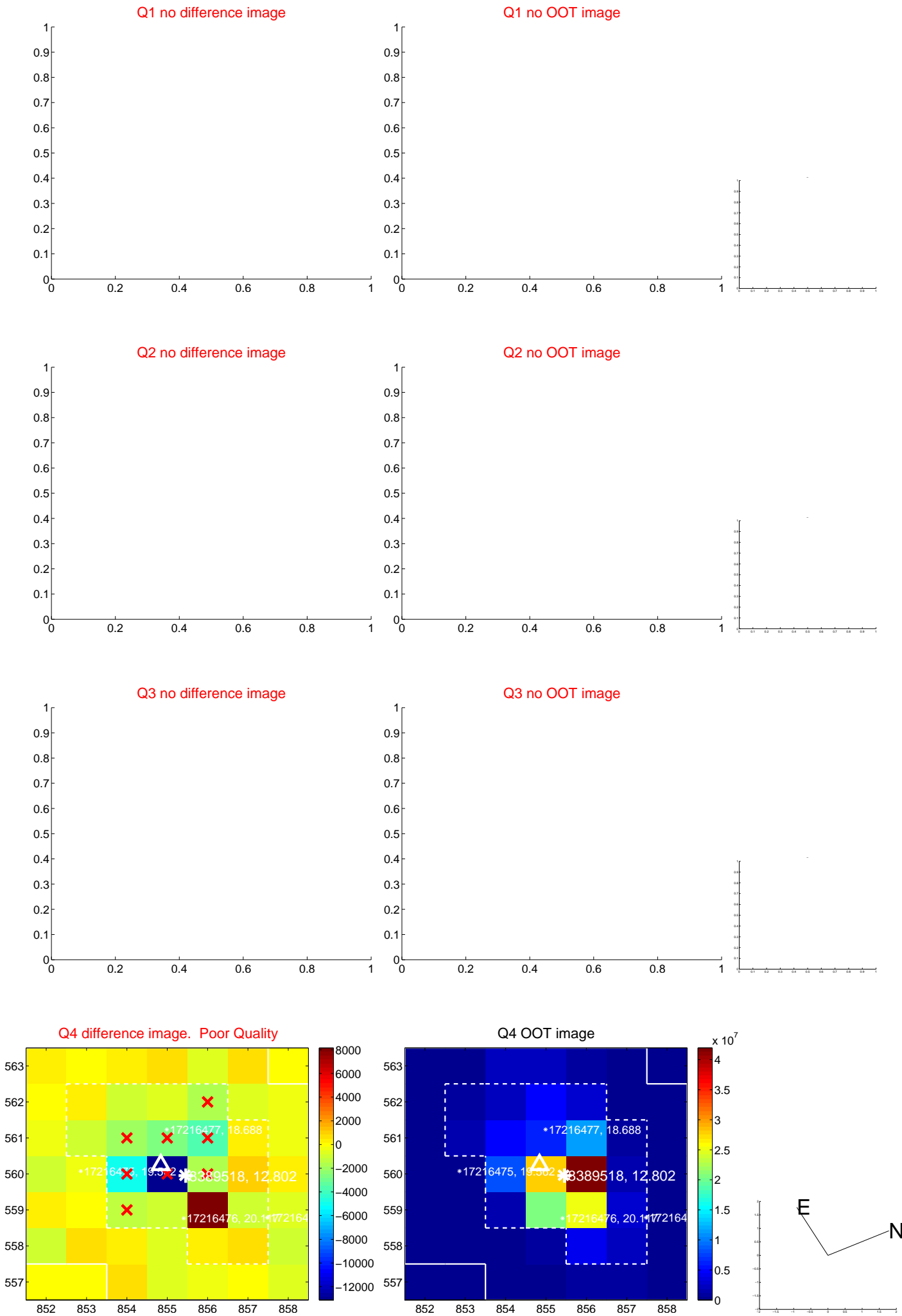
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.557 ± 1.010	1.54	-1.534 ± 1.019	-0.269 ± 0.659
PRF-fit source offset from KIC position	1.643 ± 1.265	1.30	-1.622 ± 1.341	-0.258 ± 0.674
photometric centroid source offset	0.92 ± 0.43	2.11	-0.65 ± 0.49	-0.65 ± 0.37



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.

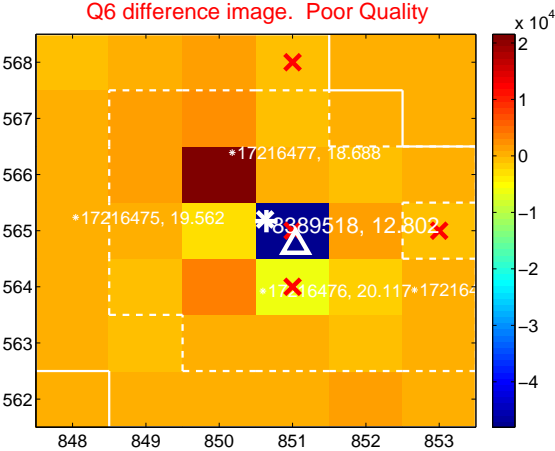
Q5 no difference image



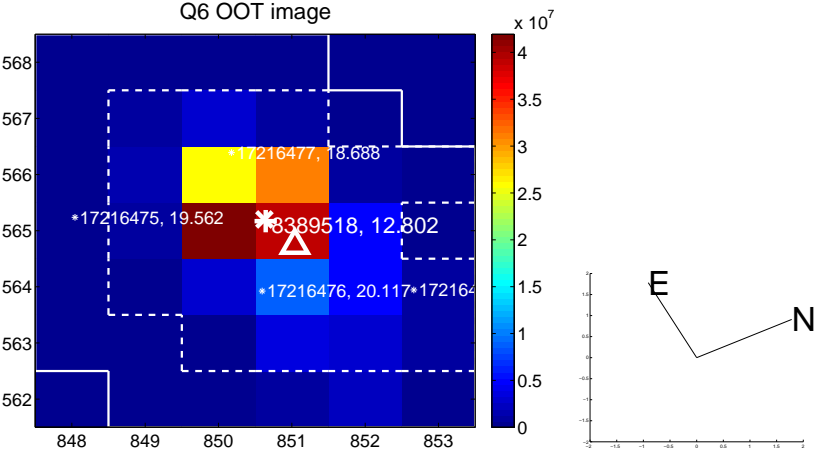
Q5 no OOT image



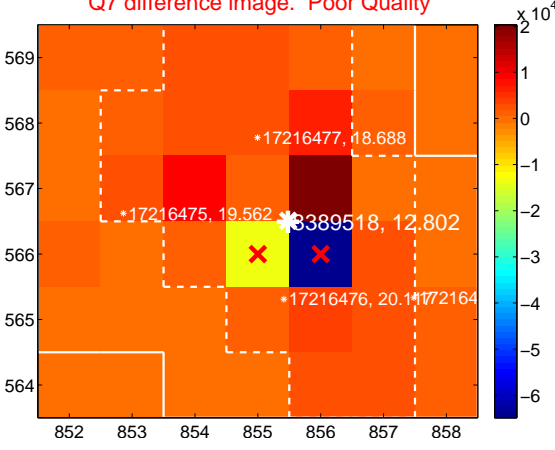
Q6 difference image. Poor Quality



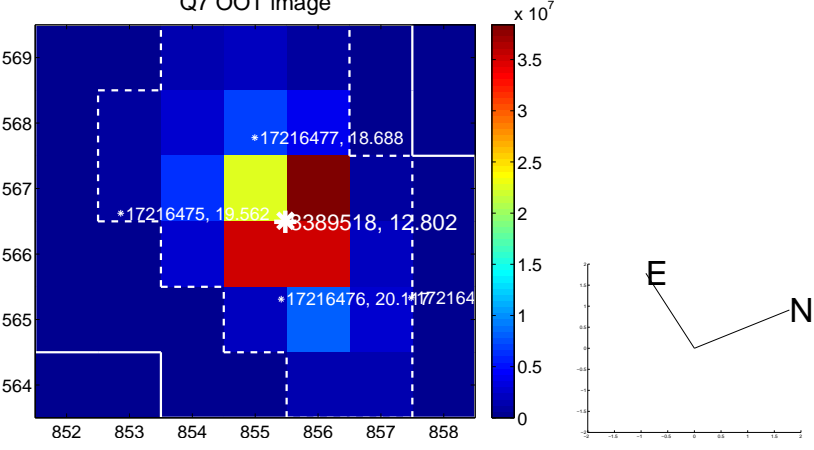
Q6 OOT image



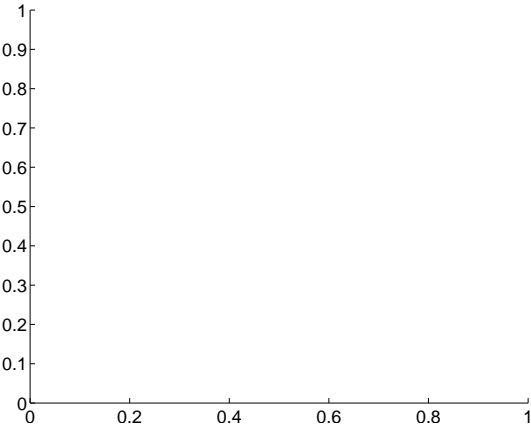
Q7 difference image. Poor Quality



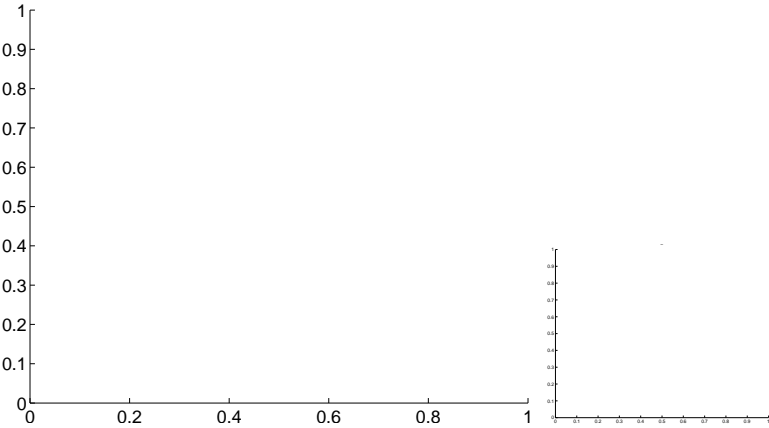
Q7 OOT image



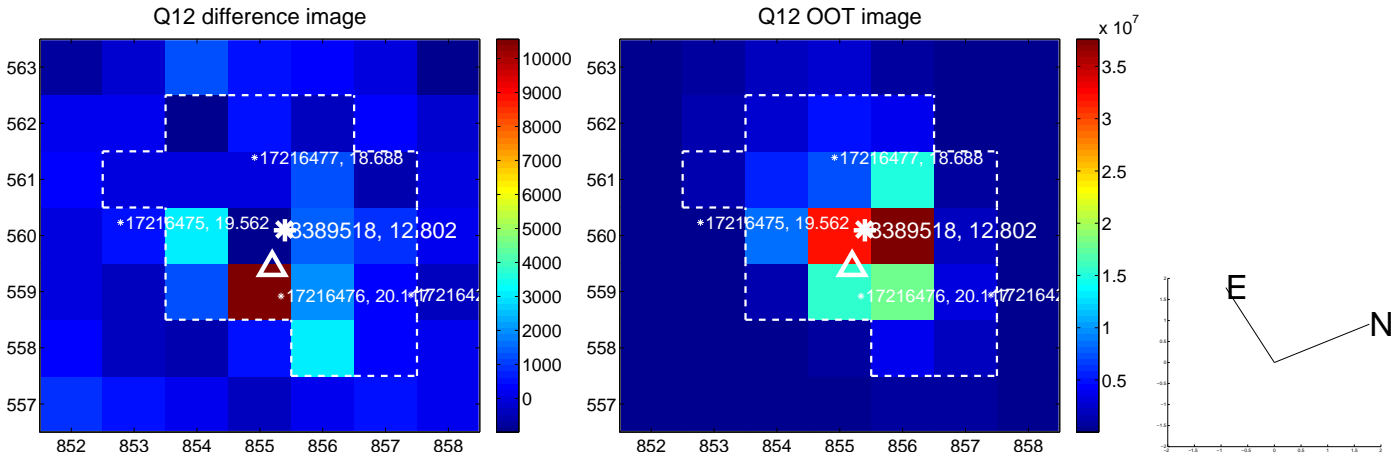
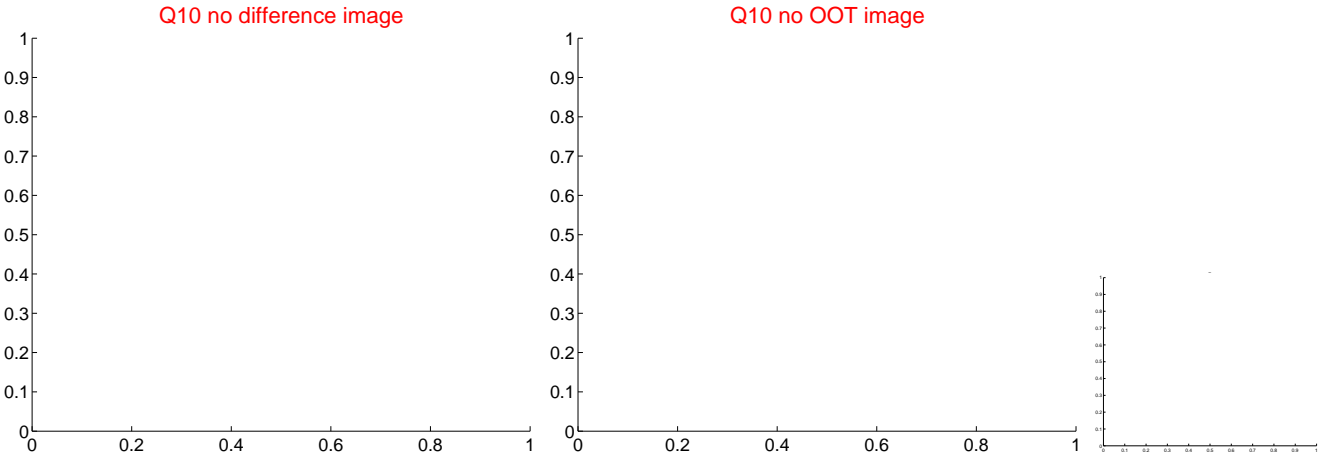
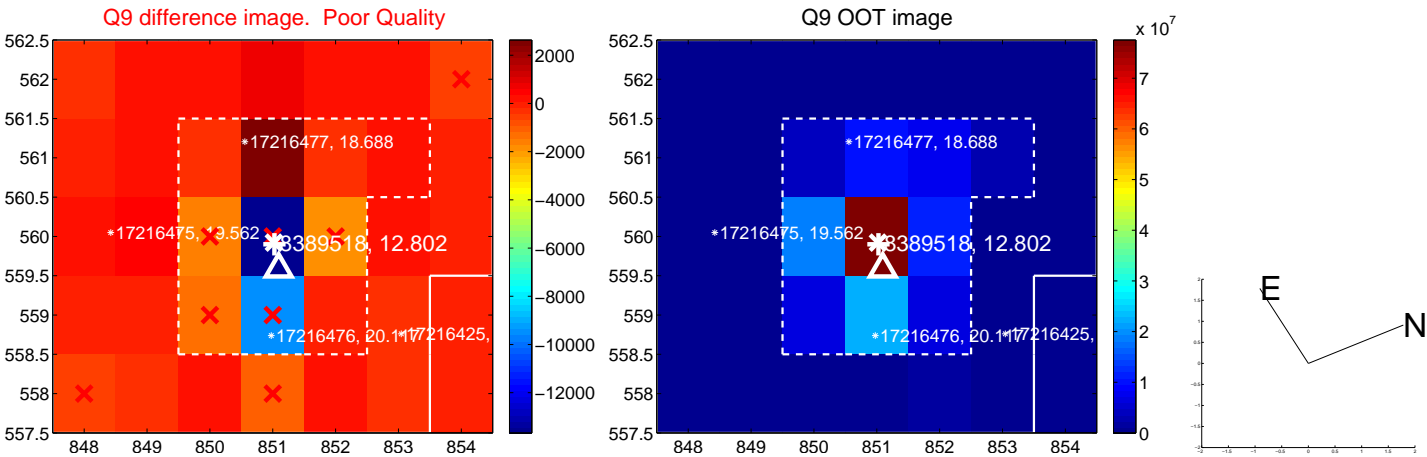
Q8 no difference image



Q8 no OOT image



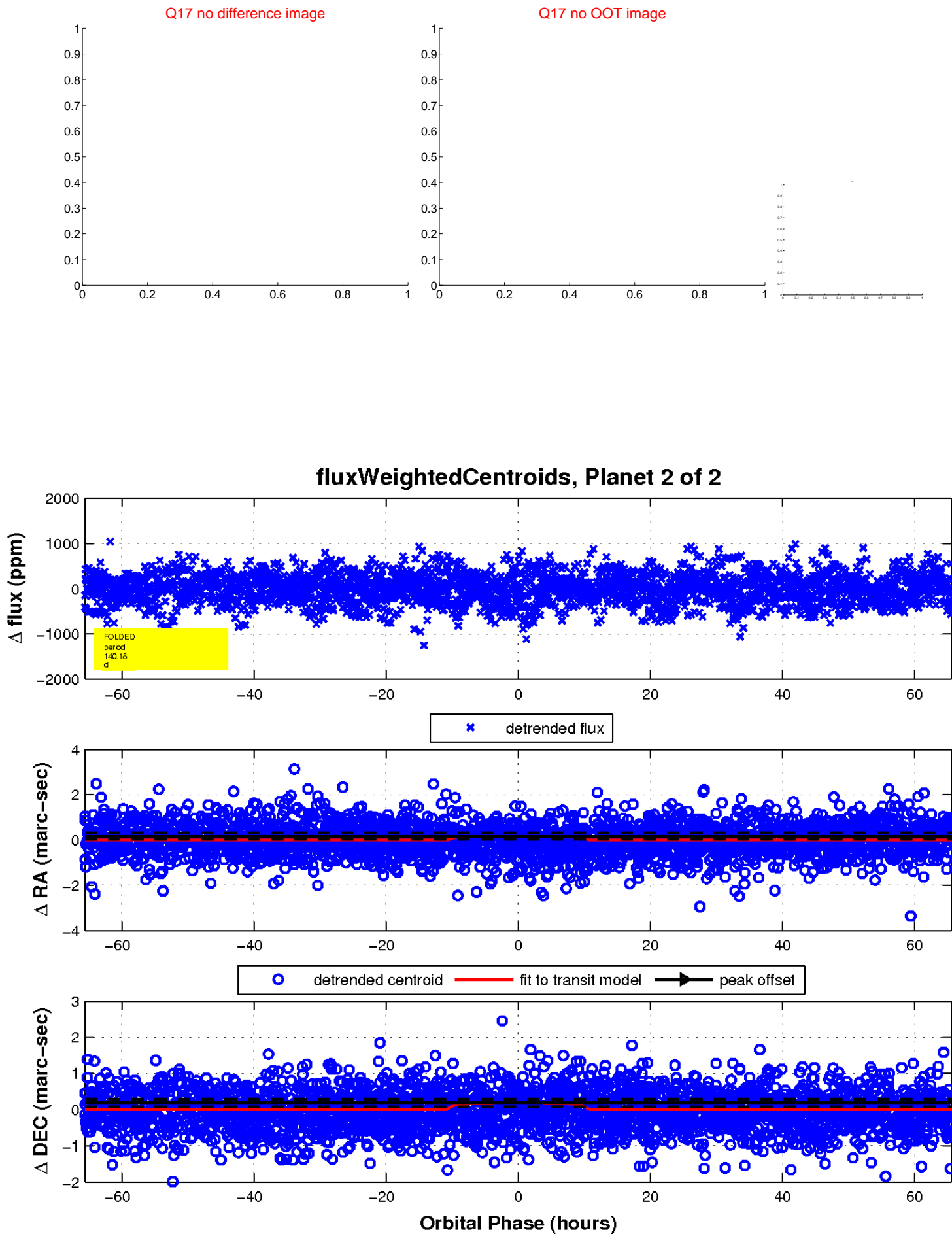
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

