

KIC 010471055

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})
010471055-01	OBS	8017.01	0.933740	131.534116	39.1	4.302	10.0	9.4	0.89	6102	0.65	2856.04
010471055-02	OBS	No	369.536291	479.573602	788.3	17.674	7.2	8.6	0.89	6102	2.55	0.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010471055-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—EPHEM_MATCH
010471055-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

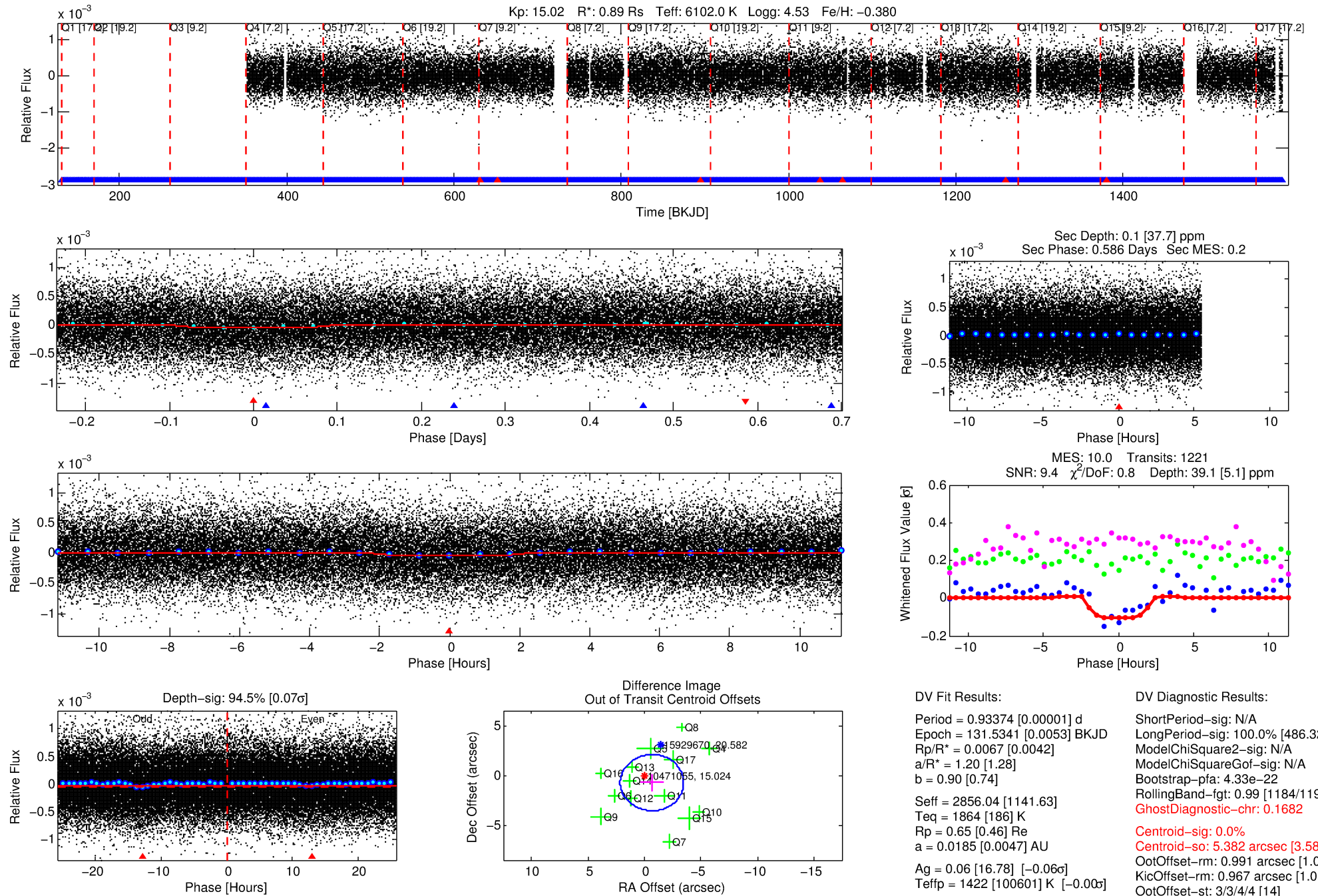
Ephemeris Match Information For 010471055-01

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
010471055-01	10471055	V2083-Cyg-pri	10342012	1:2	1726.2	330	-283	6.90	15.02	5085.20	Direct-PRF	0	1.40	1.21

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

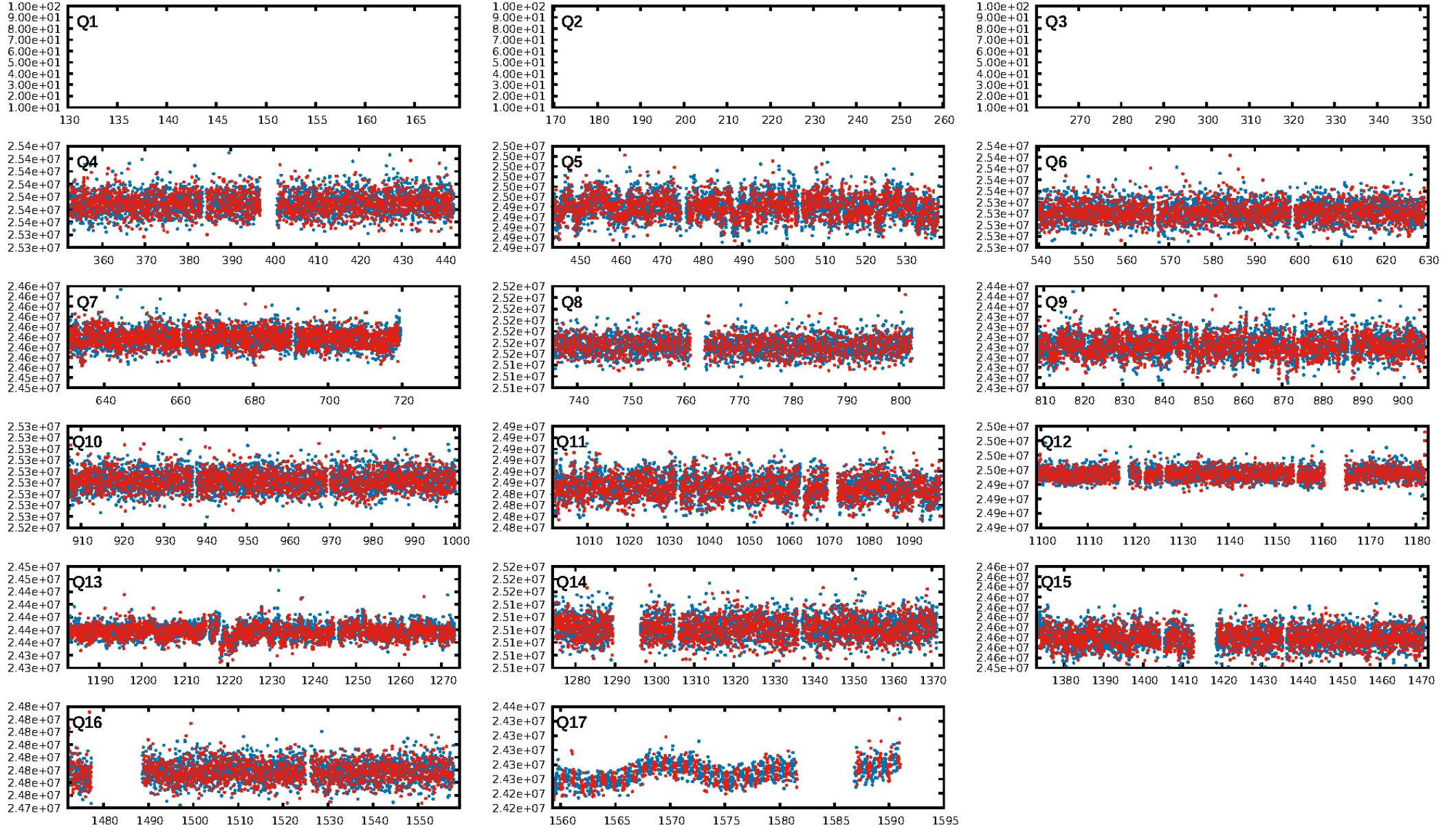
KIC: 10471055 Candidate: 1 of 2 Period: 0.934 d



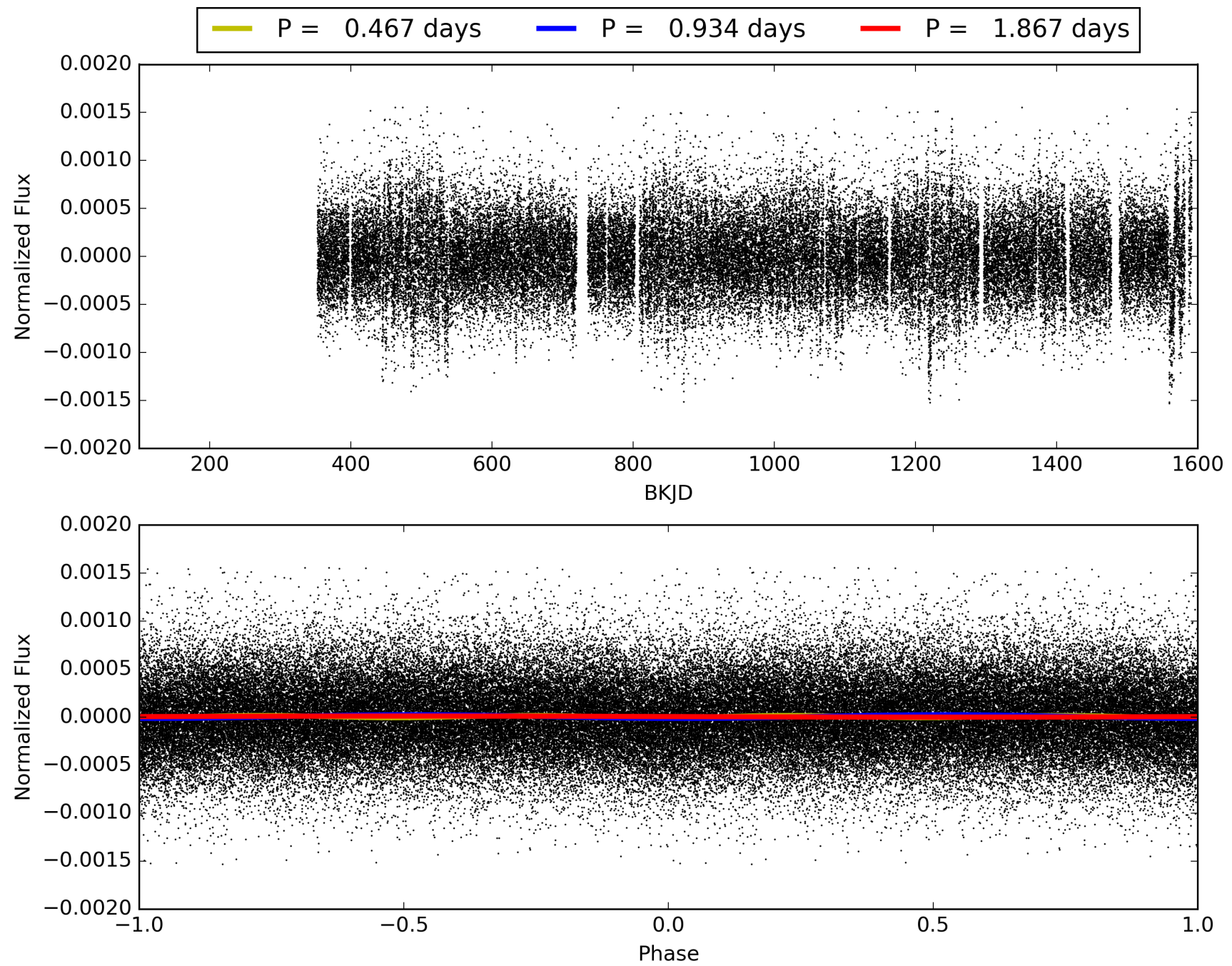
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:16:19 Z

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

TCE 010471055-01, PDC Light Curves

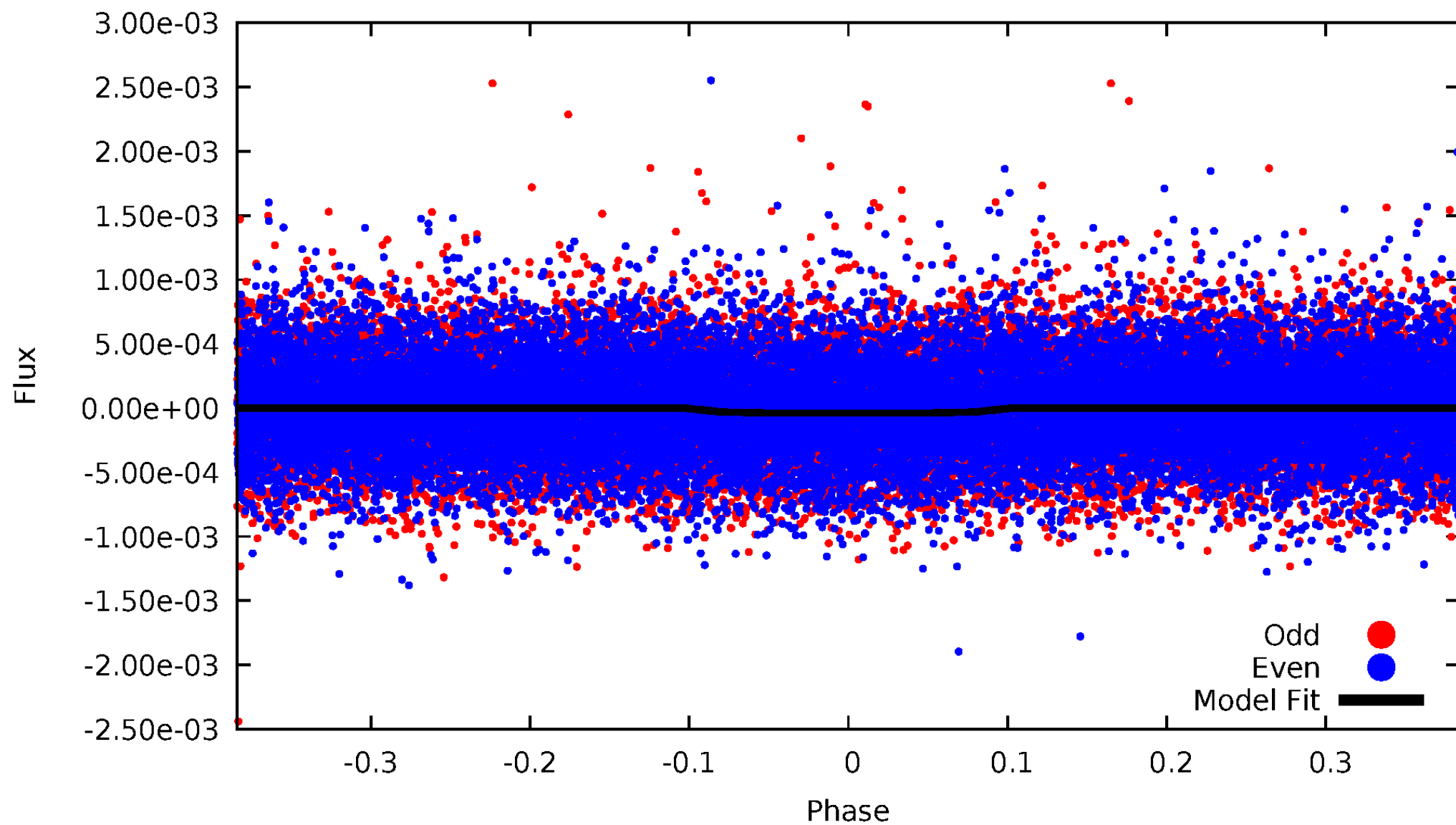


TCE 010471055-01



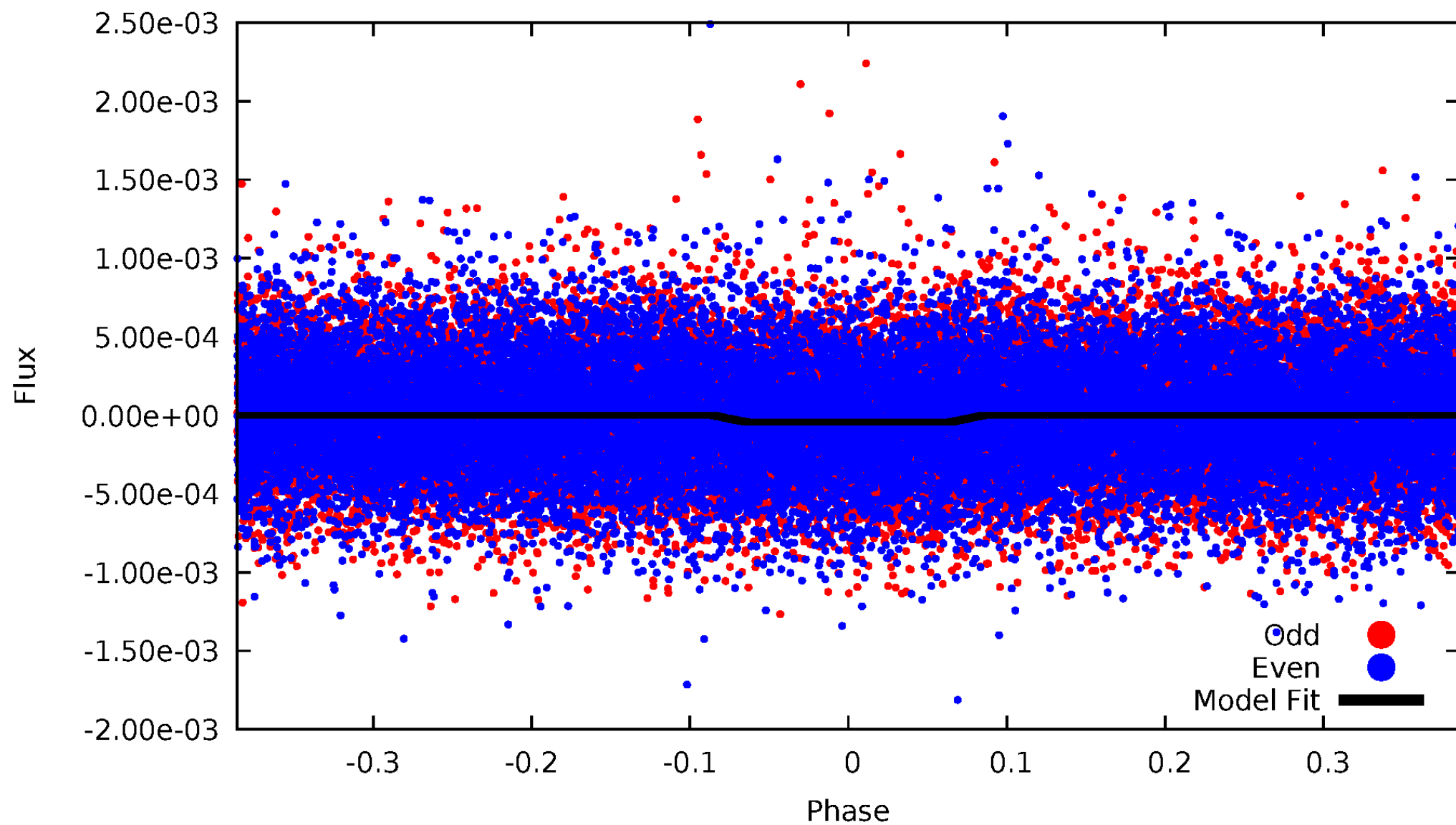
DV Odd/Even

TCE 010471055-01



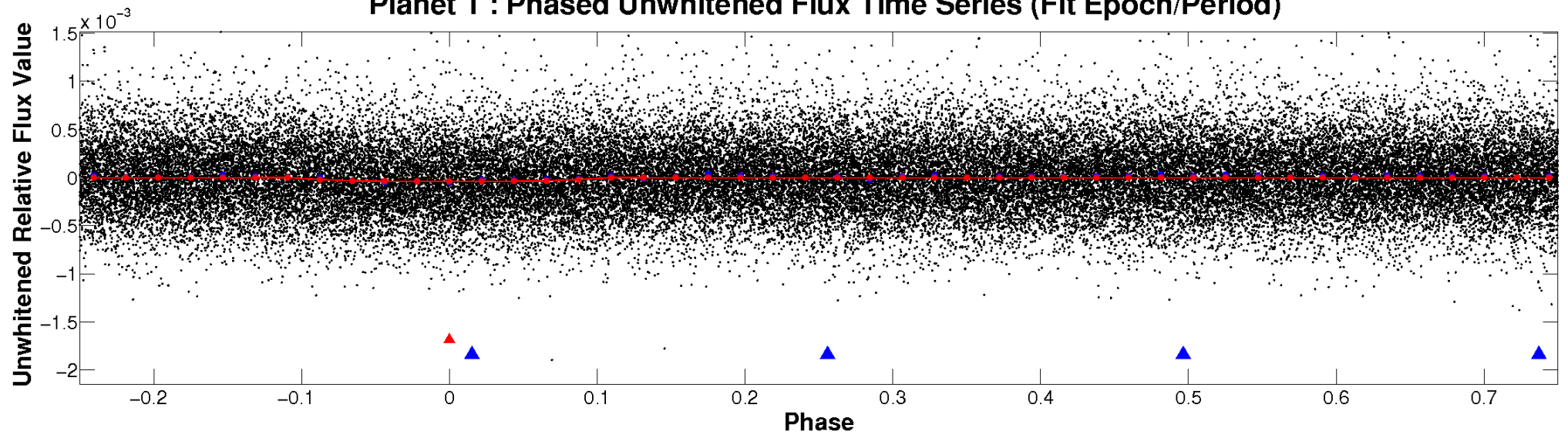
ALT Odd/Even

TCE 010471055-01

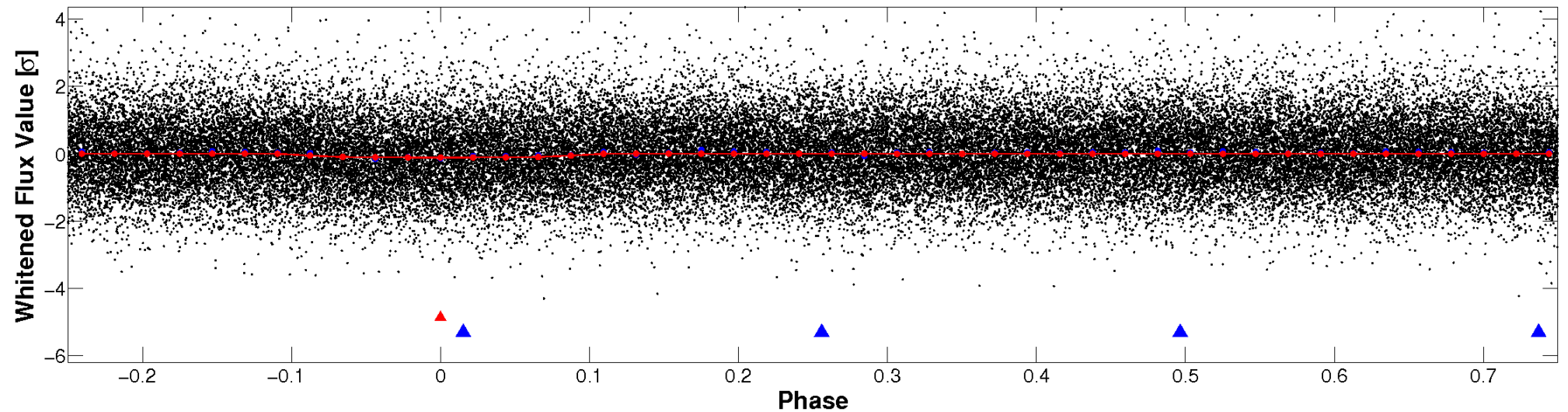


Non-Whitened Vs. Whitened Light Curve

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

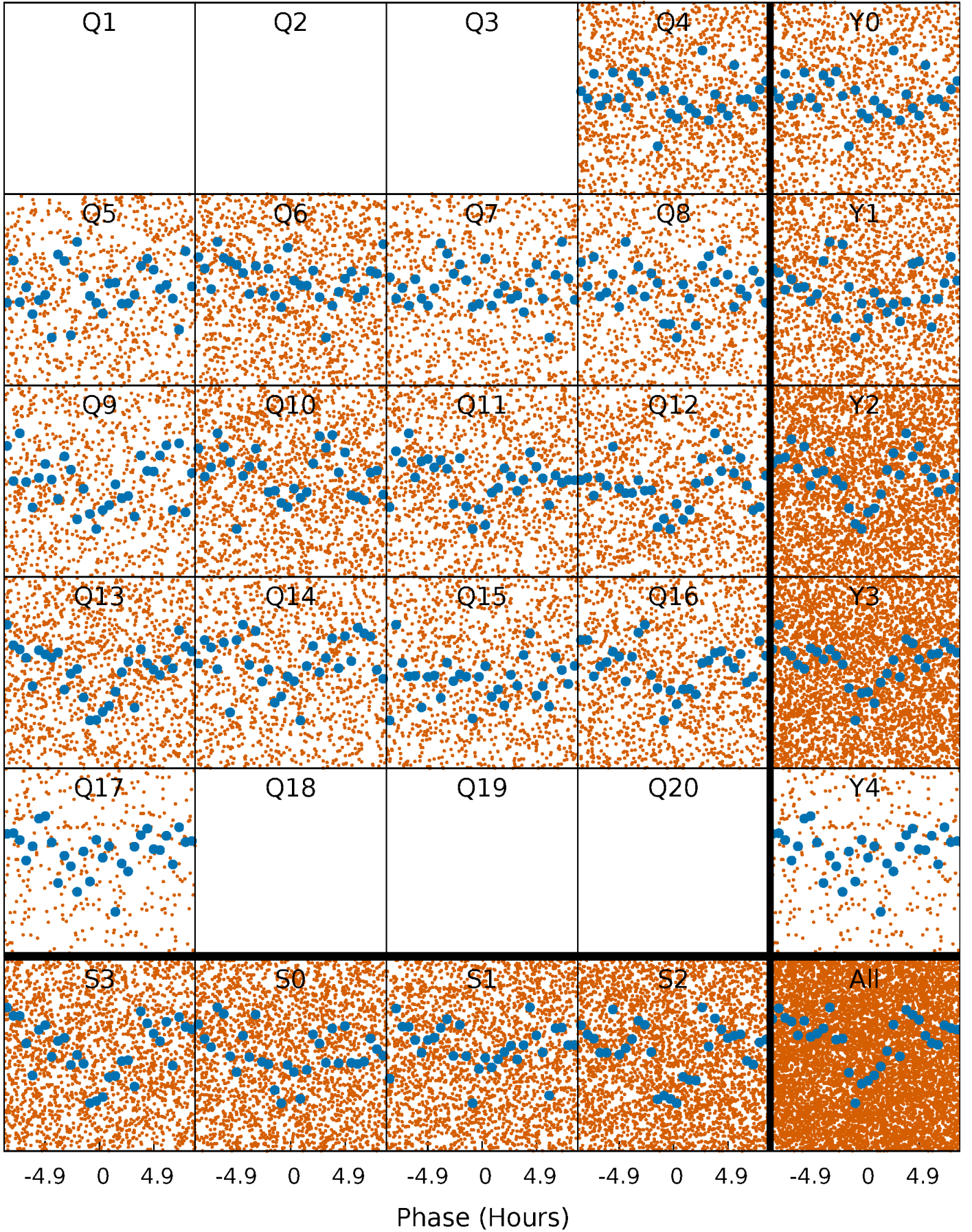


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



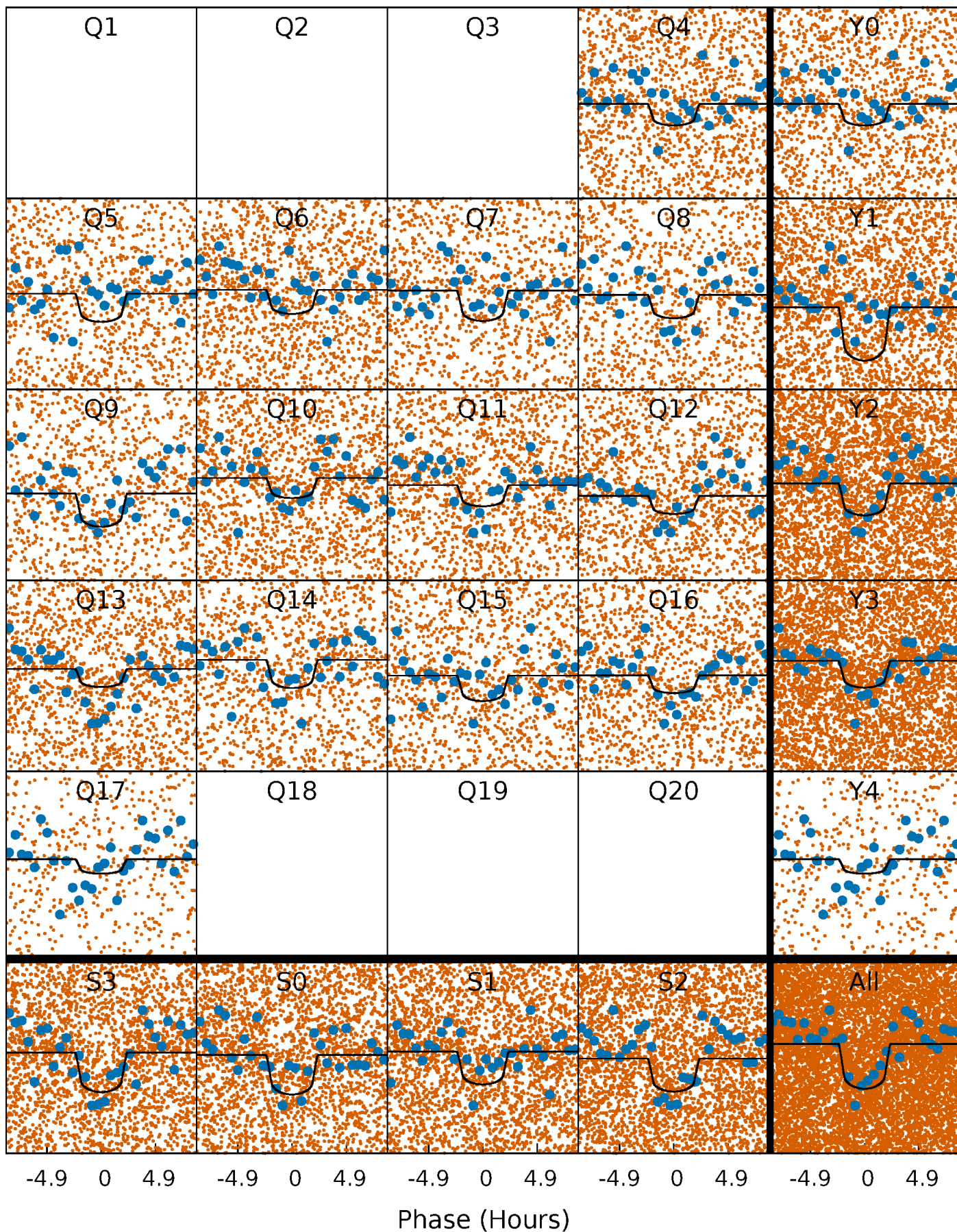
PDC Quarter-Phased Transit Curves

TCE 010471055-01 P= 0.933740 Days $T_0=131.534116$ (BKJD)



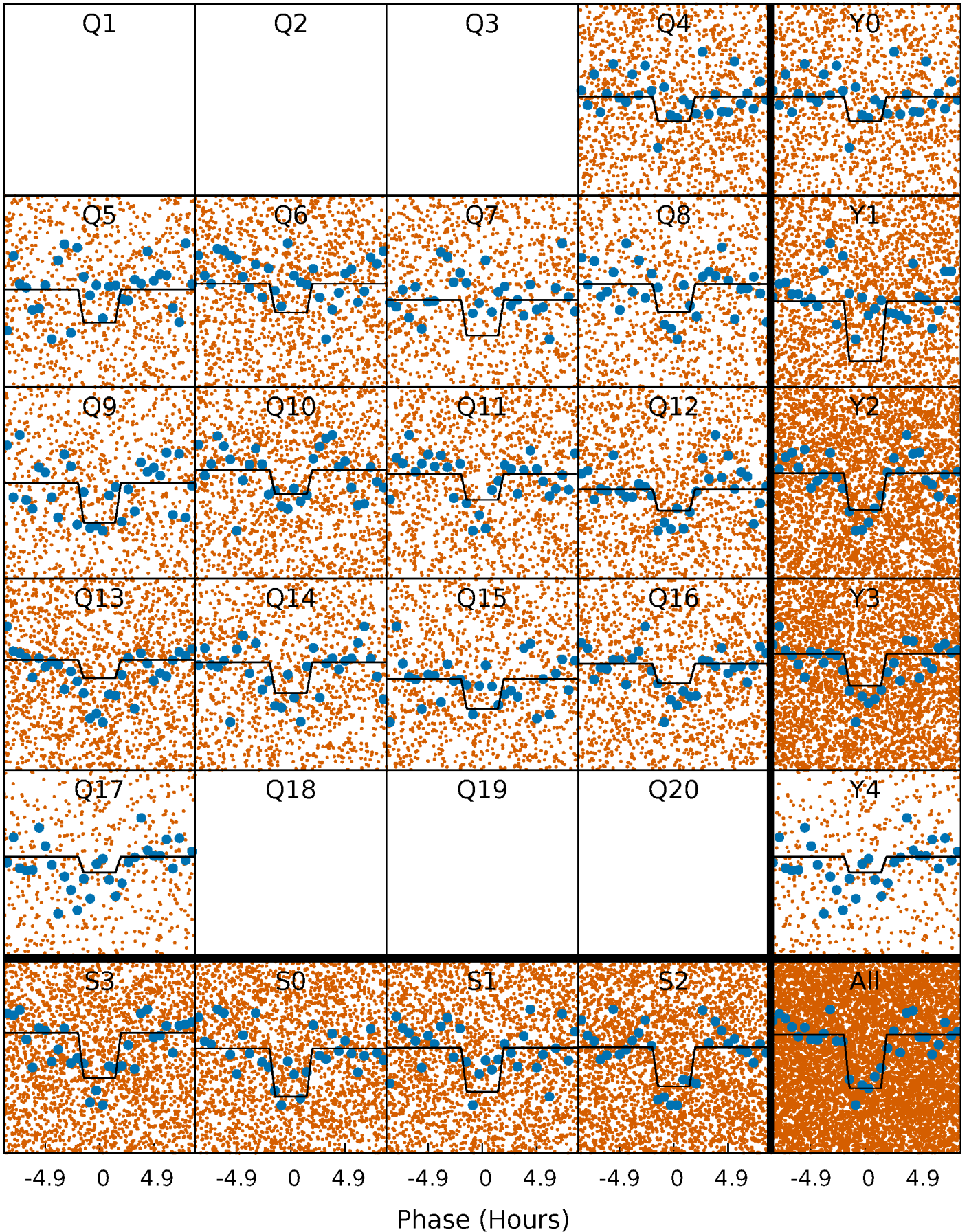
DV Quarter-Phased Transit Curves

TCE 010471055-01 P= 0.933740 Days $T_0=131.534116$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

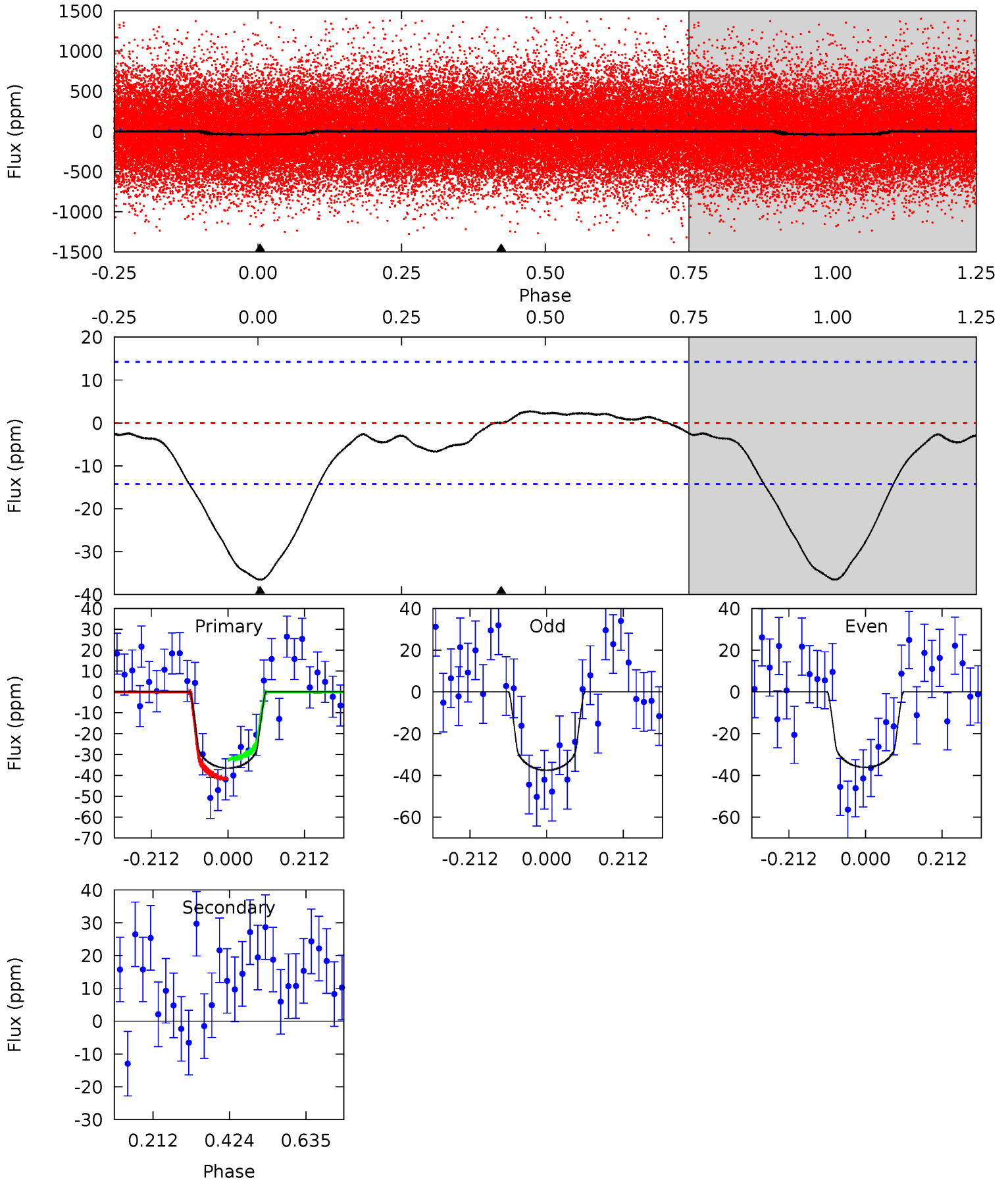
TCE 010471055-01 P= 0.933740 Days $T_0=131.534007$ (BKJD)



DV Model-Shift Uniqueness Test

010471055-01, P = 0.933740 Days, E = 131.534116 Days

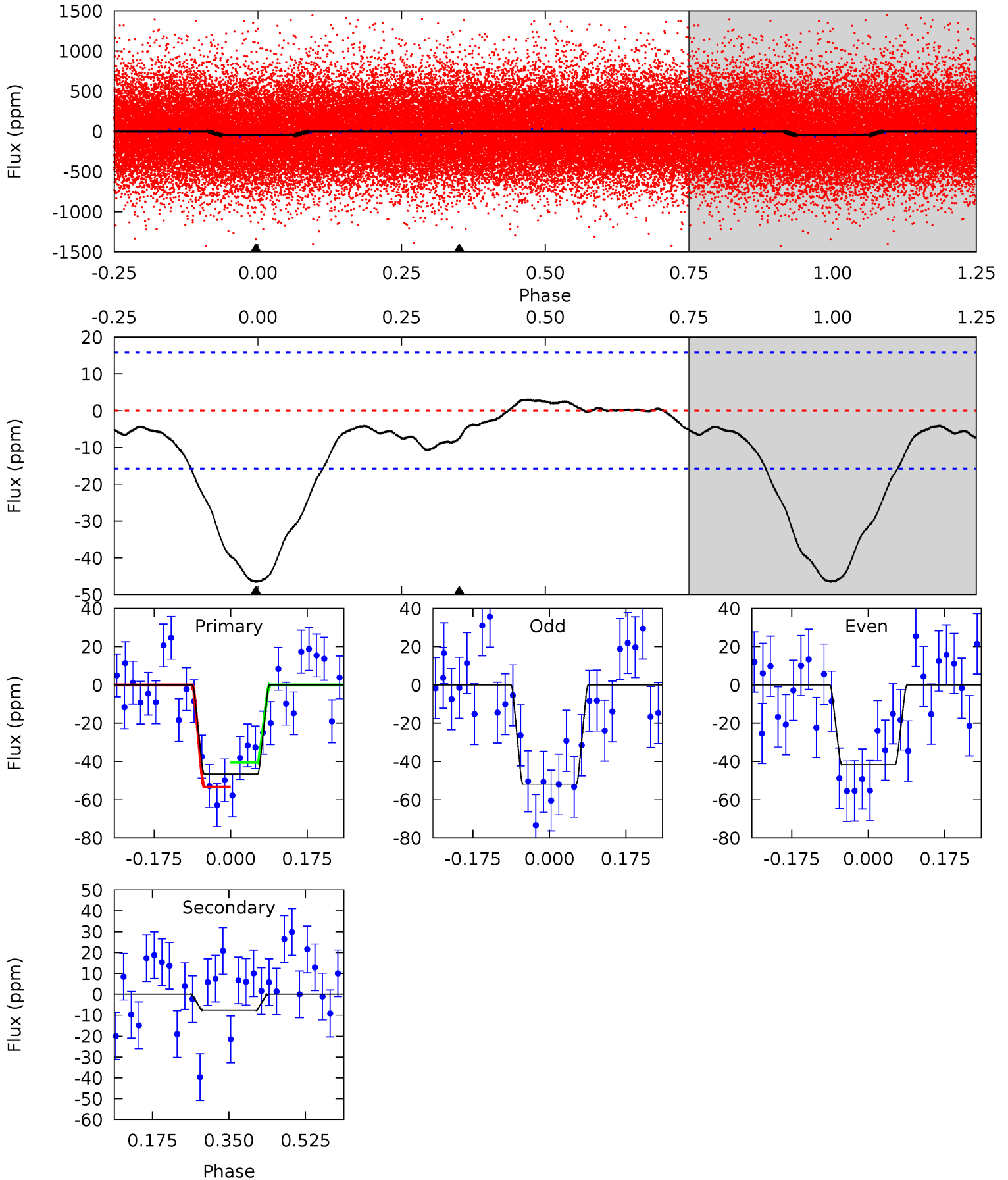
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	0	0	0	4.40	1.25	0.49	11.3	11.3	0	0	0.22	1.02	0.07	1.44



Alt Model-Shift Uniqueness Test

010471055-01, P = 0.933740 Days, E = 131.534007 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	2.12	0	0	4.45	1.36	0.75	13.1	13.1	2.12	2.12	1.43	1.04	0.06	1.79



Stellar Parameters For KIC 010471055

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6102^{+214}_{-235}	$4.528^{+0.050}_{-0.200}$	$-0.380^{+0.300}_{-0.300}$	$0.887^{+0.272}_{-0.091}$	$0.968^{+0.117}_{-0.129}$	$1.952^{+0.498}_{-0.959}$
	+4%/-4%	+1%/-4%	+79%/-79%	+31%/-10%	+12%/-13%	+25%/-49%
Source	KIC0	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 010471055-01 / KOI 8017.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 3	$0.72^{+0.39}_{-0.40}$	2663^{+194}_{-135}	-2918^{+6510}_{-976}	$-0.023^{+1.642}_{-1.680}$
Alt.	-8 ± 4	$0.71^{+0.44}_{-0.40}$	2663^{+189}_{-143}	3989^{+1780}_{-930}	$2.578^{+12.270}_{-1.848}$

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

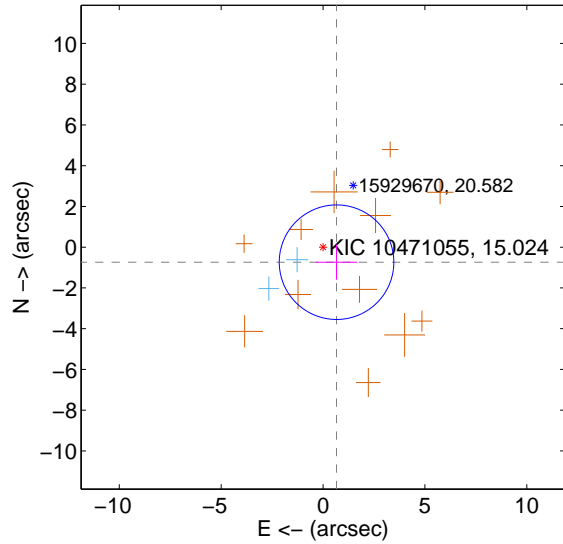
Supplemental centroid analysis for 010471055-01. Kepler magnitude: 15.02. Transit SNR 9.43

There are 2 quarters with good PRF difference image offsets

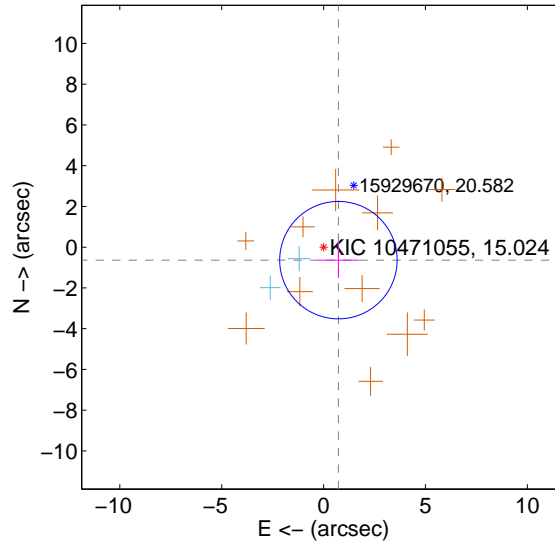
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.991 ± 0.937	1.06	-0.663 ± 1.024	-0.737 ± 0.861
PRF-fit source offset from KIC position	0.967 ± 0.960	1.01	-0.728 ± 1.024	-0.637 ± 0.870
photometric centroid source offset	5.38 ± 1.50	3.58	-1.74 ± 1.69	-5.09 ± 1.48

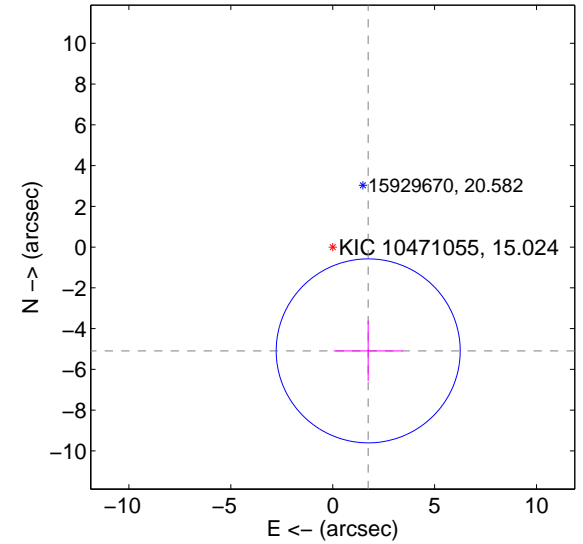
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

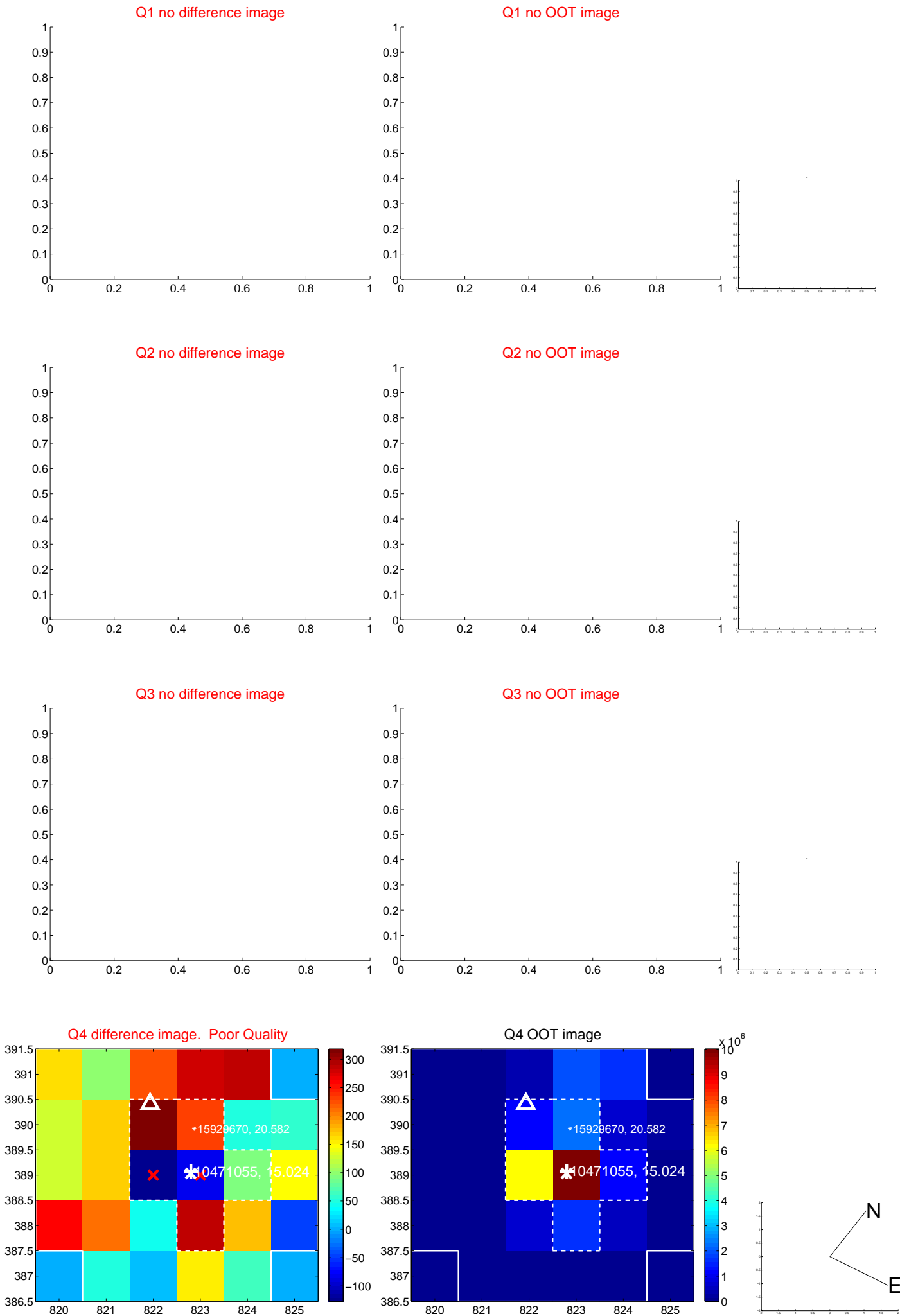


offset from photometric centroids

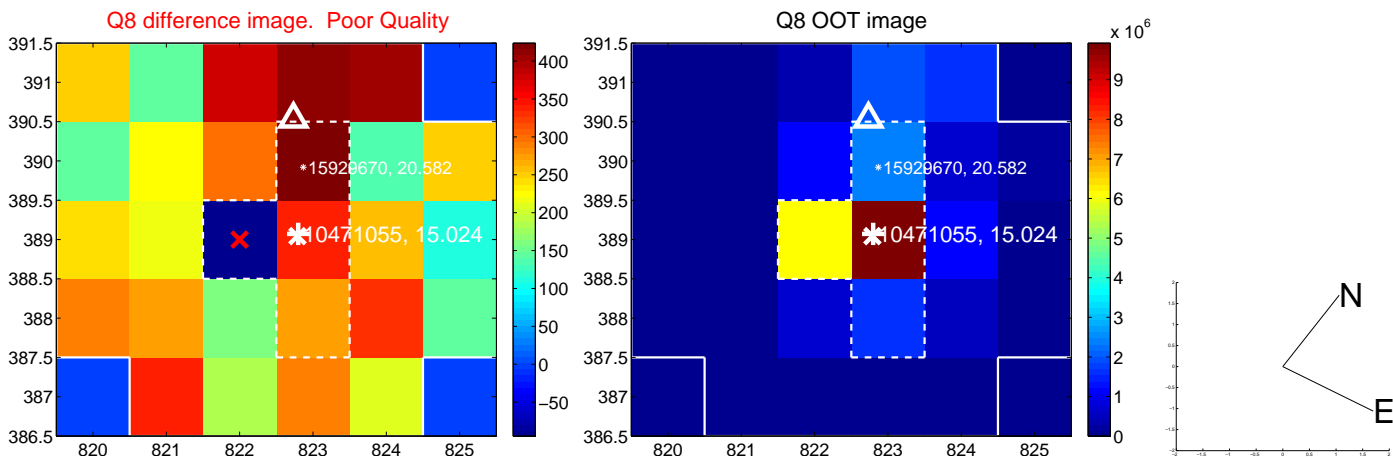
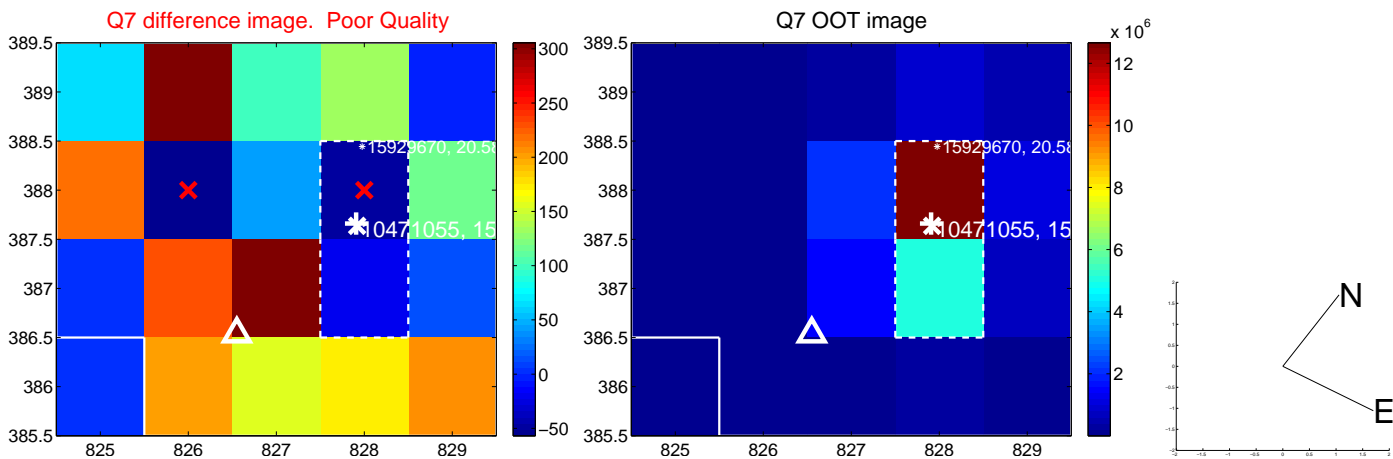
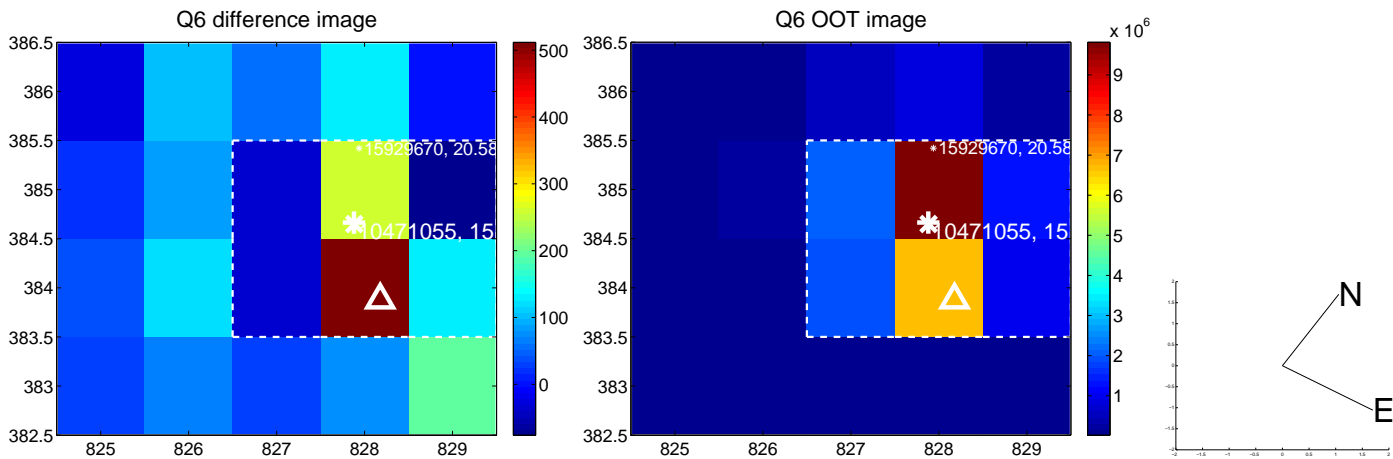
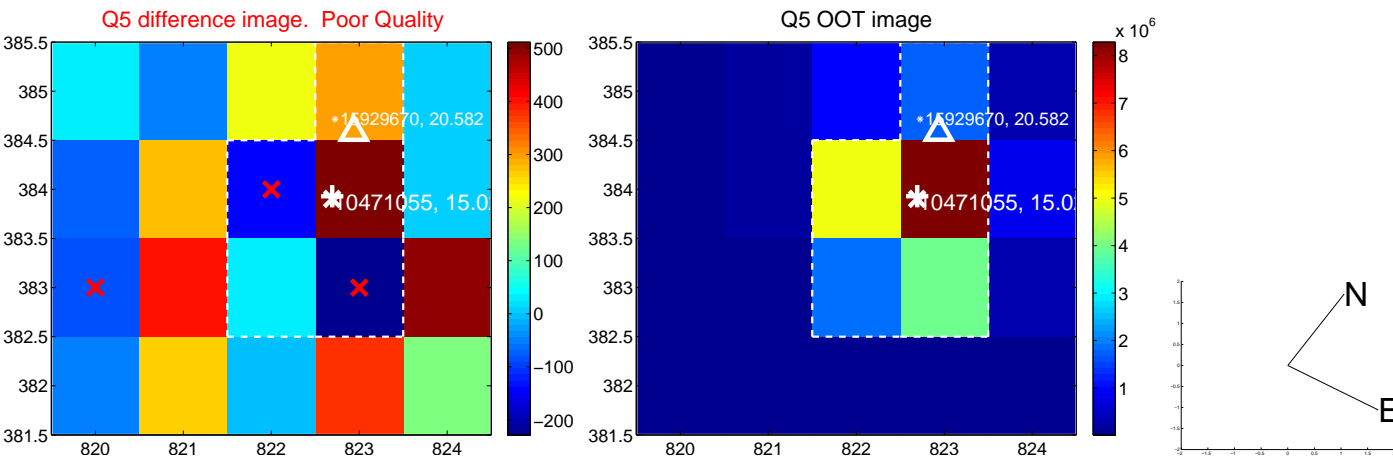


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

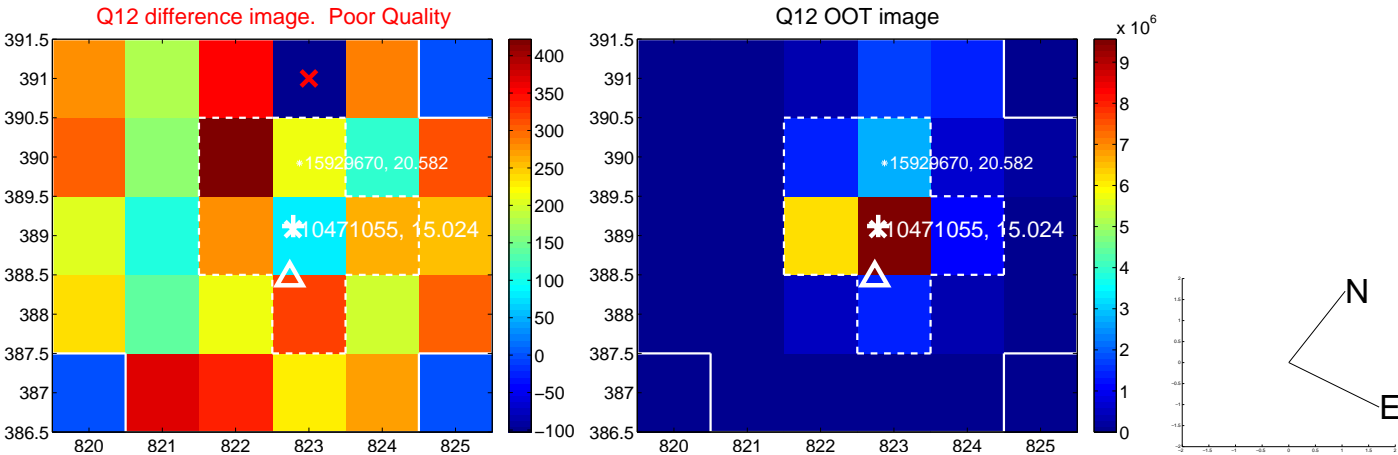
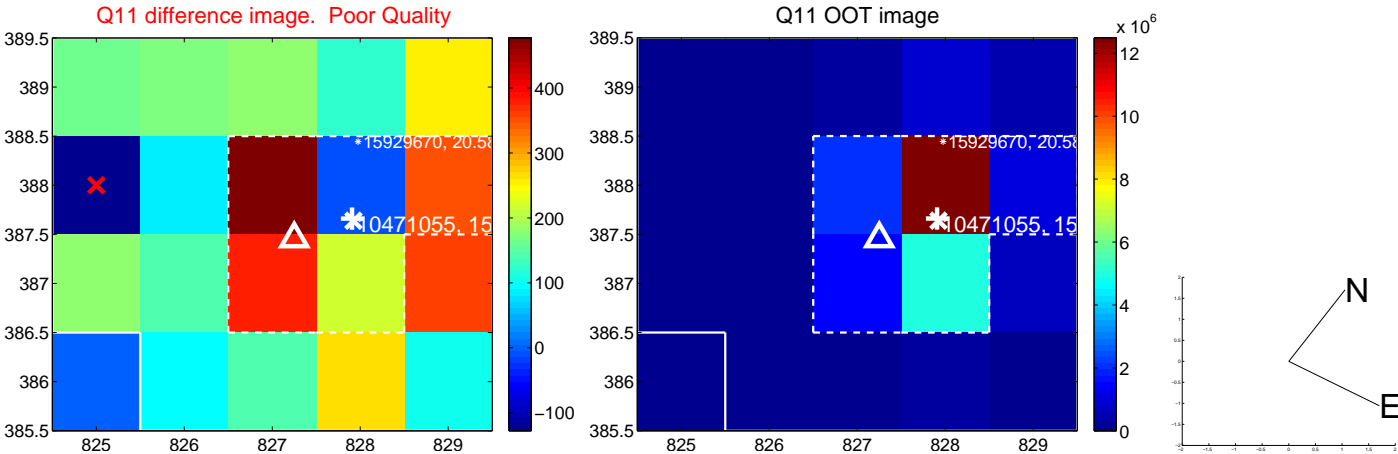
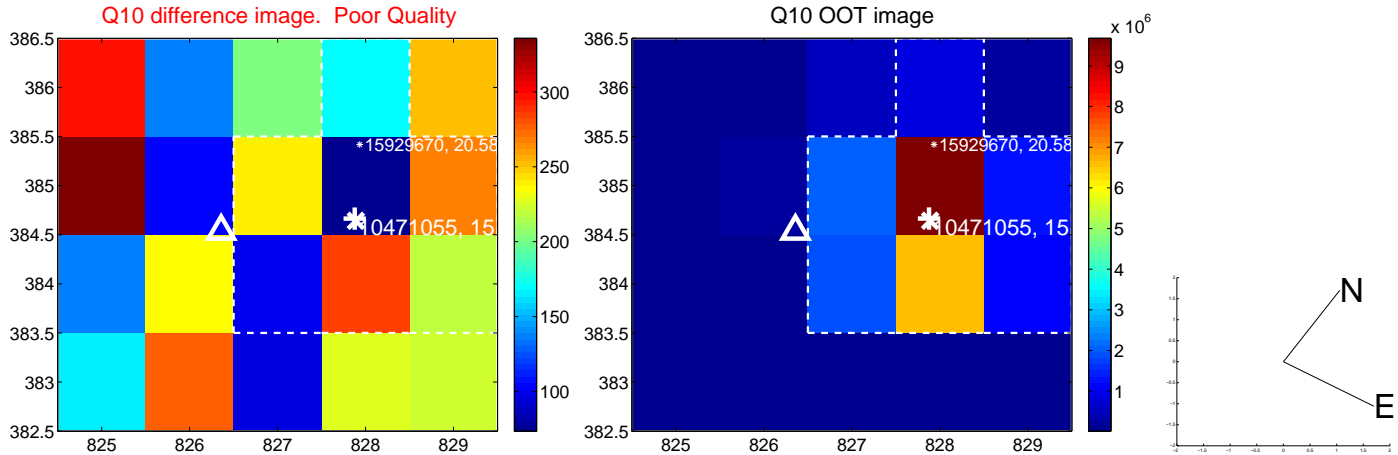
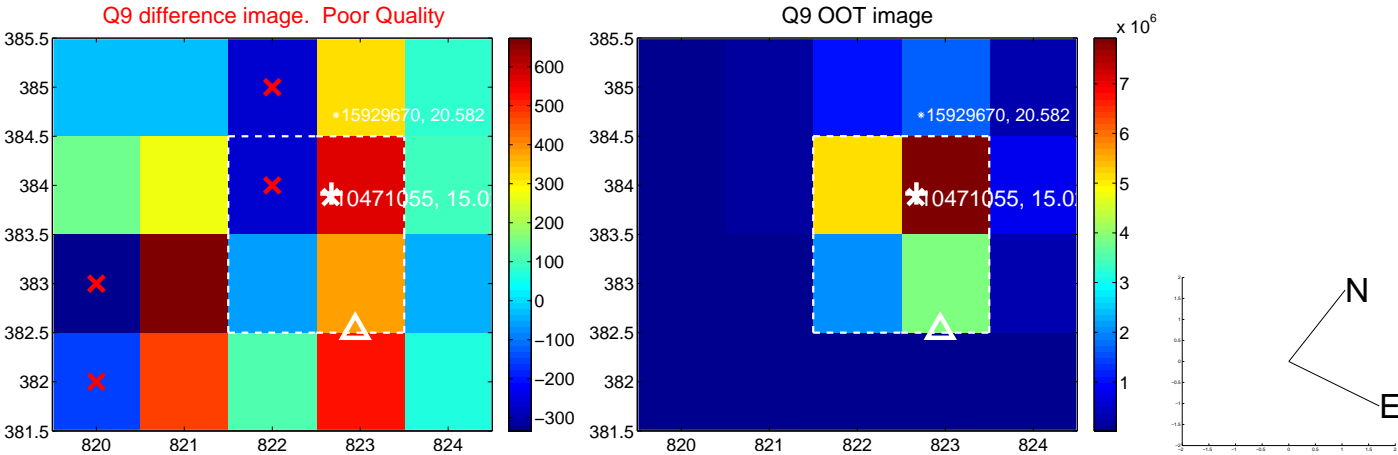
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



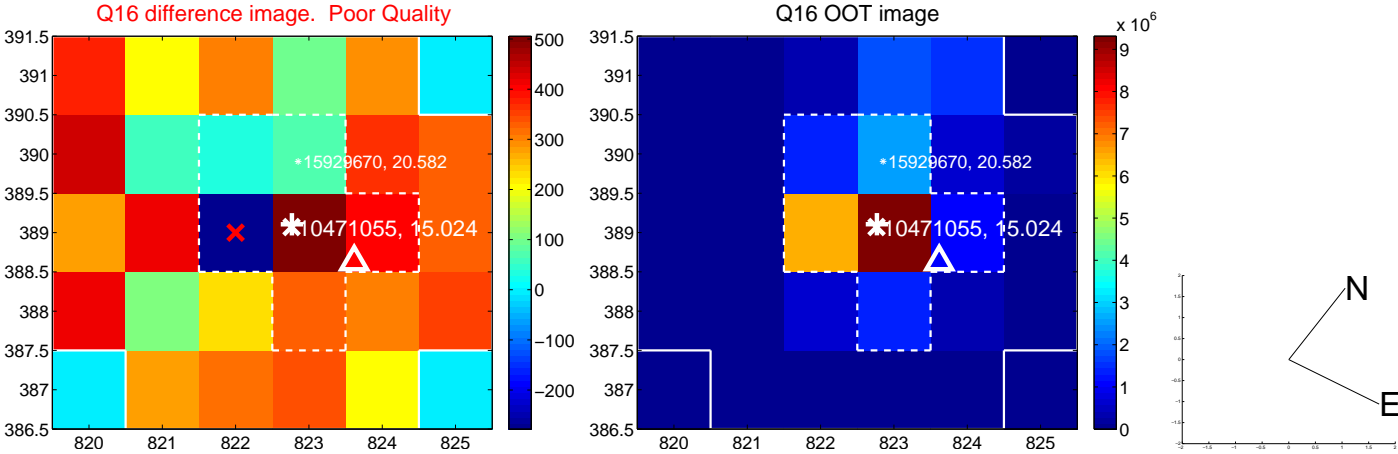
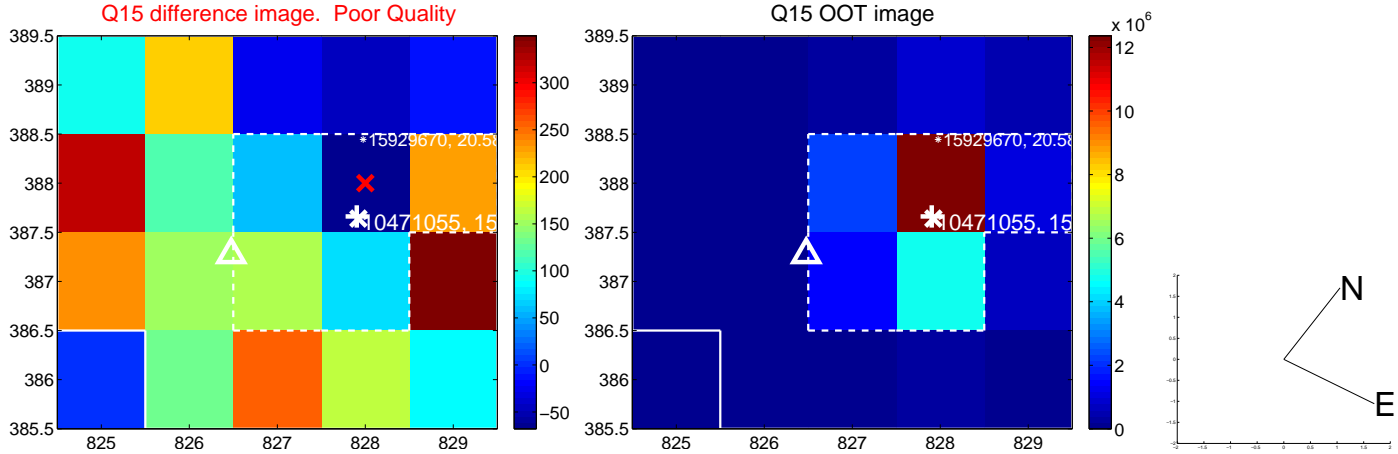
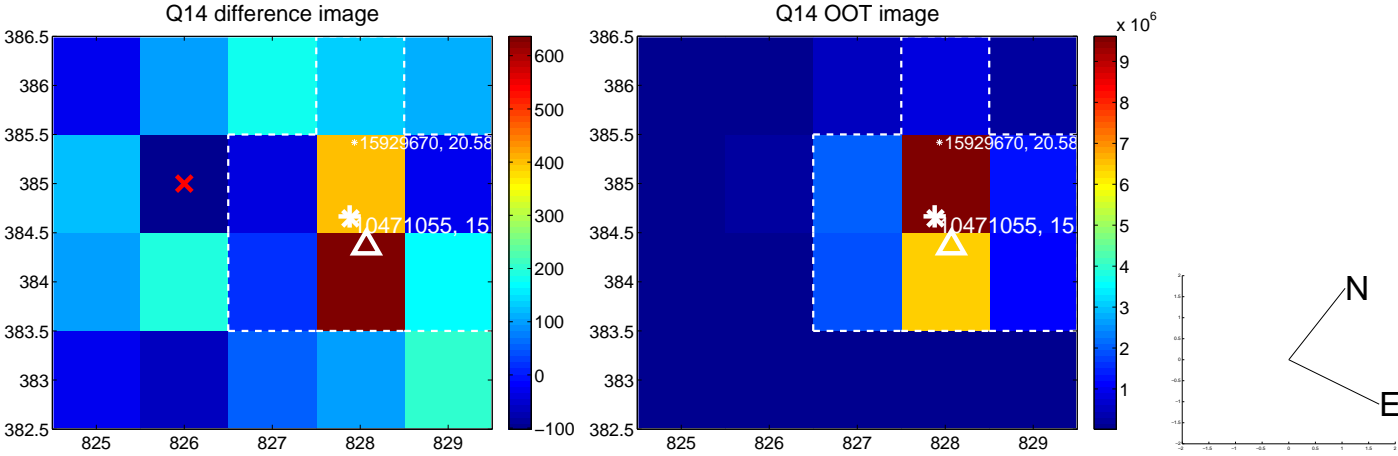
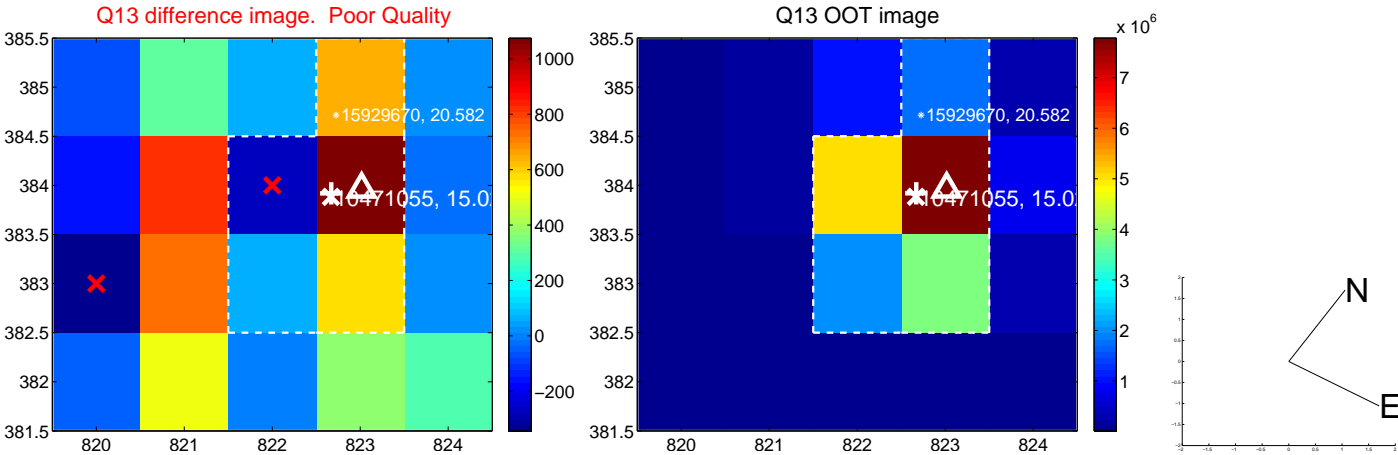
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



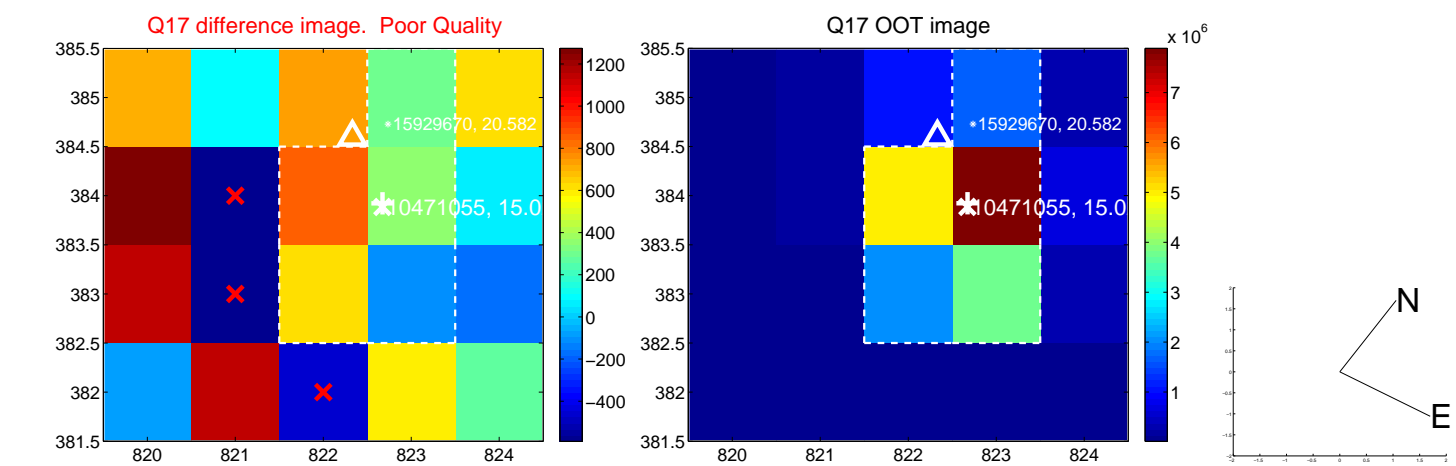
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



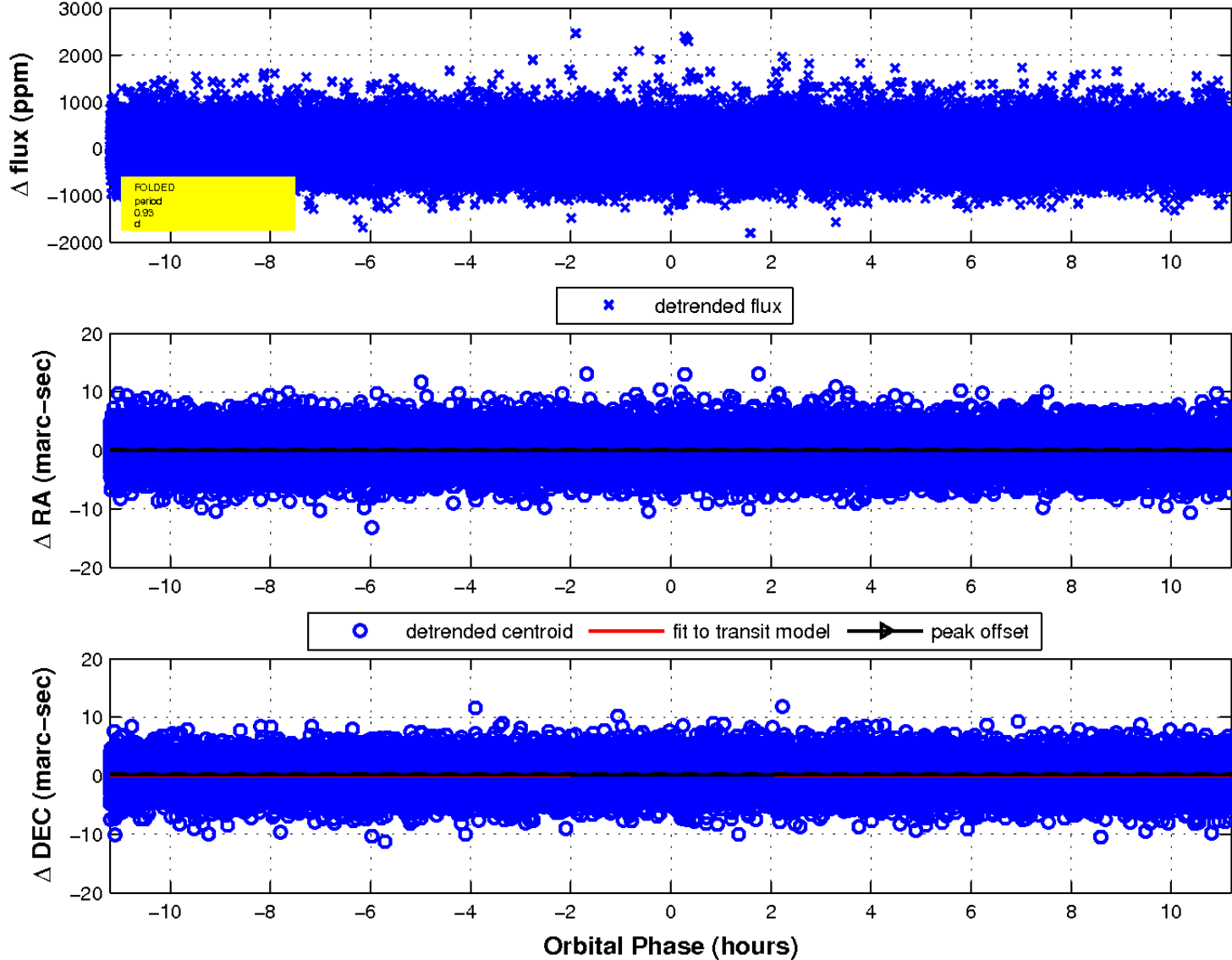
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

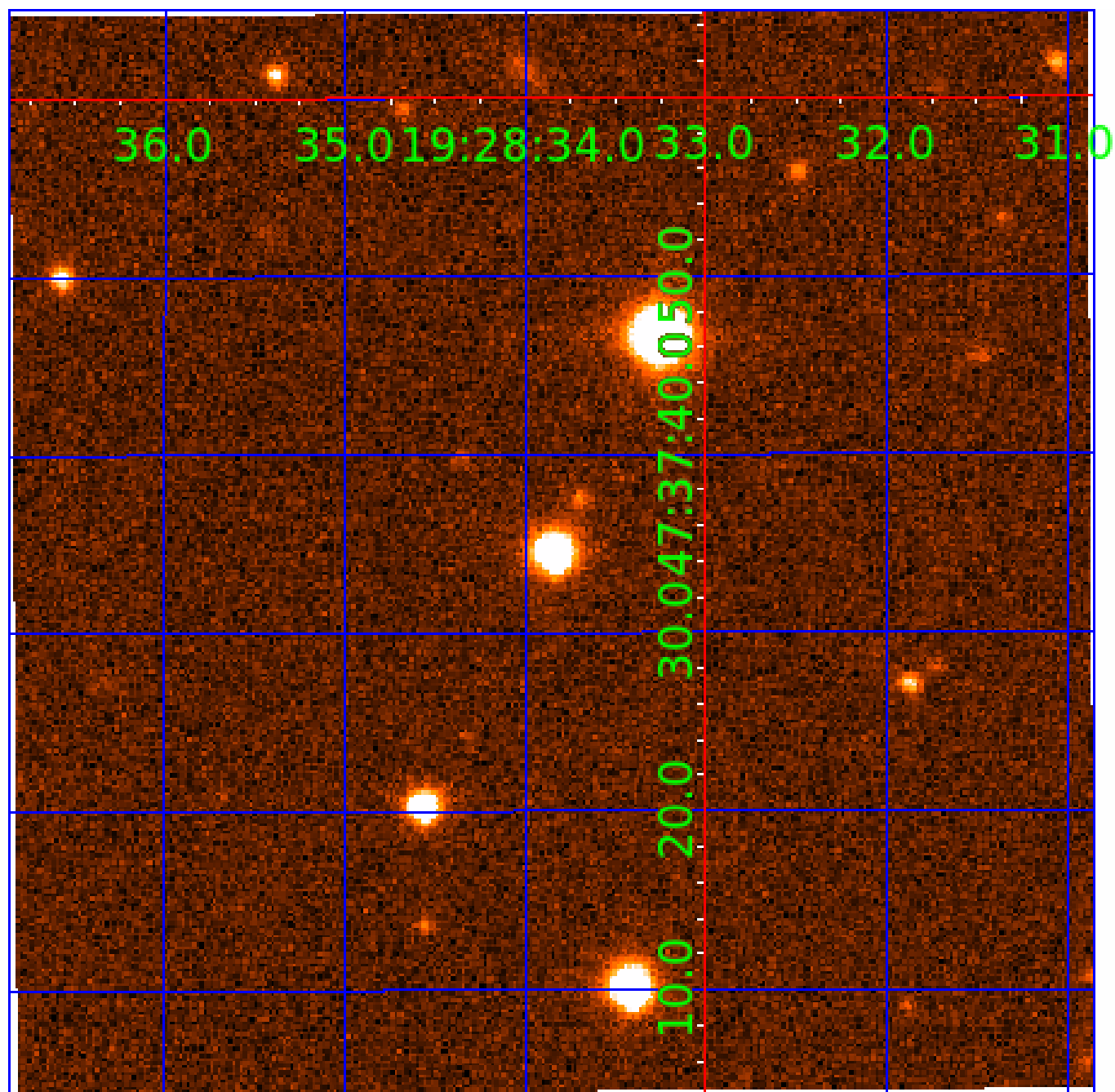


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010471055

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})
010471055-01	OBS	8017.01	0.933740	131.534116	39.1	4.302	10.0	9.4	0.89	6102	0.65	2856.04
010471055-02	OBS	No	369.536291	479.573602	788.3	17.674	7.2	8.6	0.89	6102	2.55	0.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010471055-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—EPHEM_MATCH
010471055-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

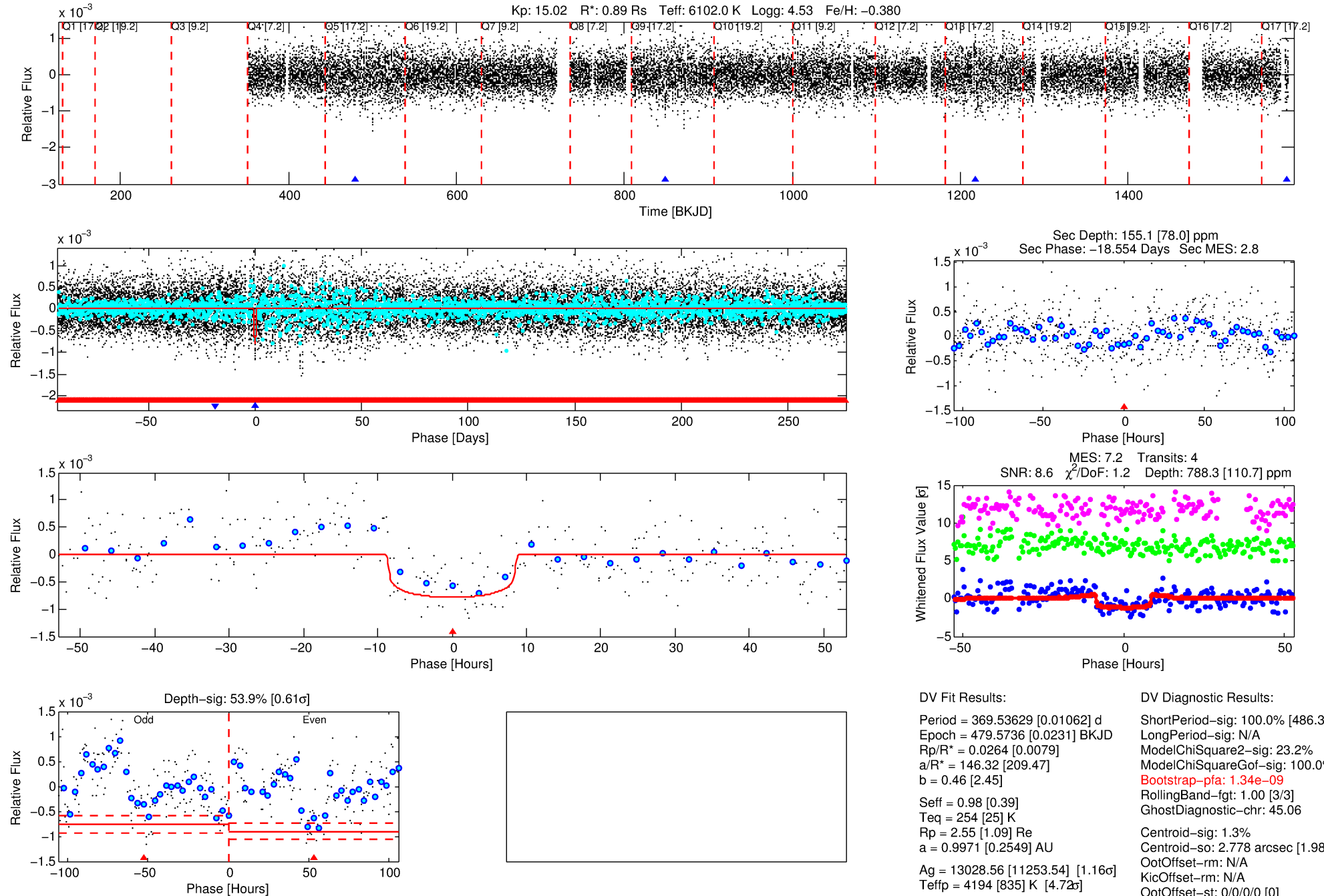
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010471055-02

No Significant Match Found

DV One-Page Summary

KIC: 10471055 Candidate: 2 of 2 Period: 369.536 d



DV Fit Results:

Period = 369.53629 [0.01062] d
Epoch = 479.5736 [0.0231] BKJD
Rp/R* = 0.0264 [0.0079]
a/R* = 146.32 [209.47]
b = 0.46 [2.45]
Seff = 0.98 [0.39]
Teq = 254 [25] K
Rp = 2.55 [1.09] Re
a = 0.9971 [0.2549] AU
Ag = 13028.56 [11253.54] [1.16 σ]
Teffp = 4194 [835] K [4.72 σ]

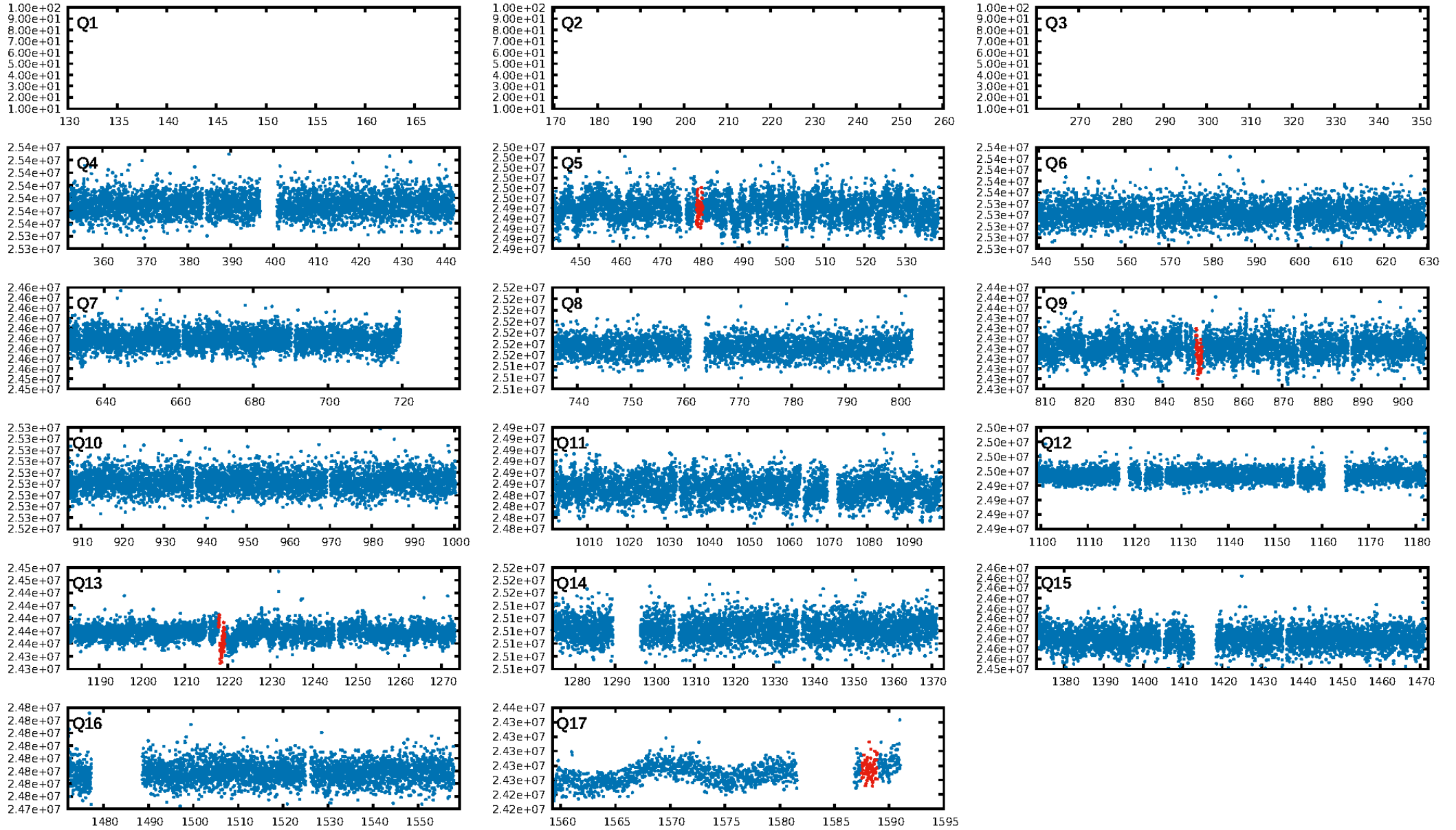
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [486.32 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 23.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.34e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 45.06
Centroid-sig: 1.3%
Centroid-so: 2.778 arcsec [1.98 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/2]

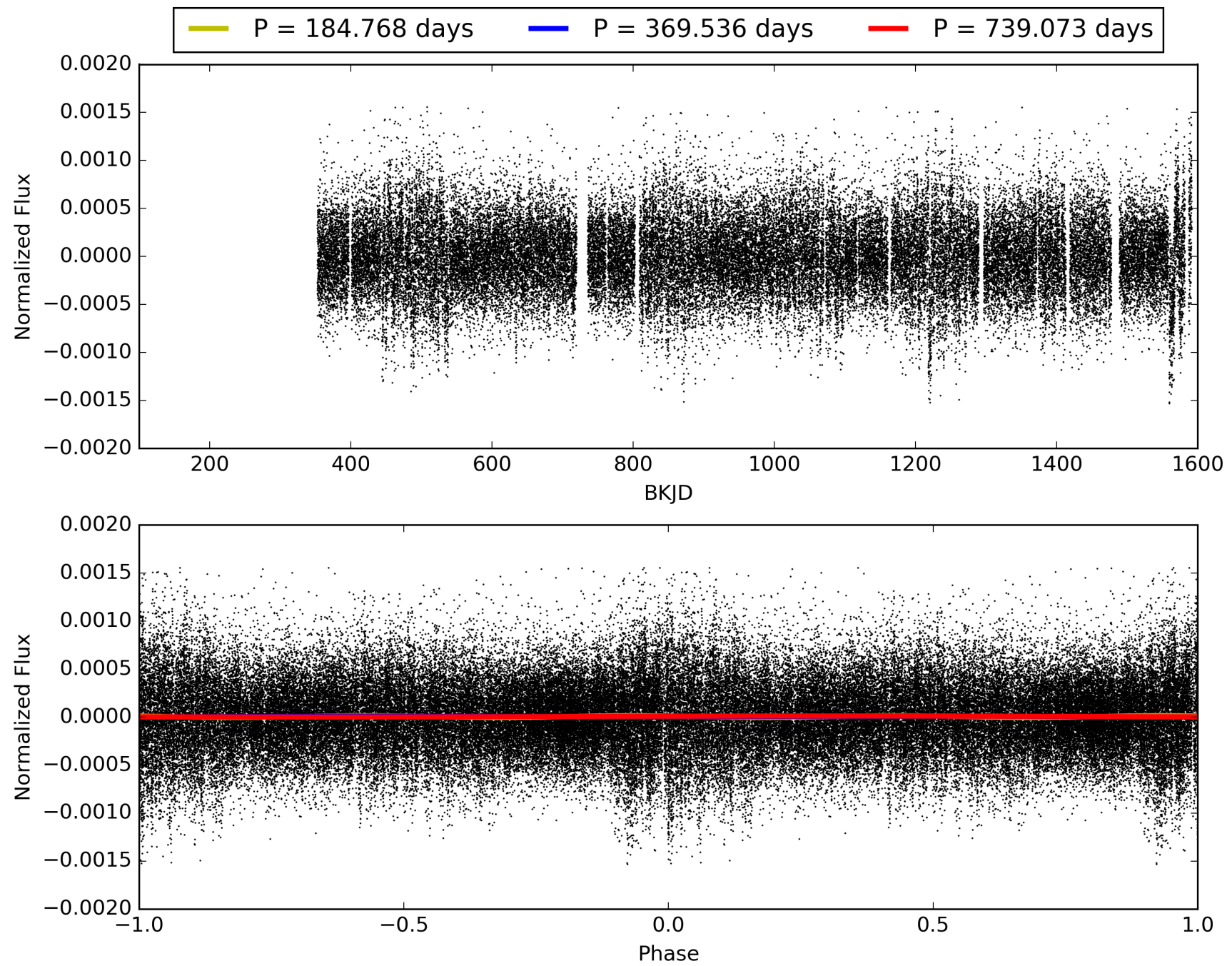
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:16:39 Z

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

TCE 010471055-02, PDC Light Curves

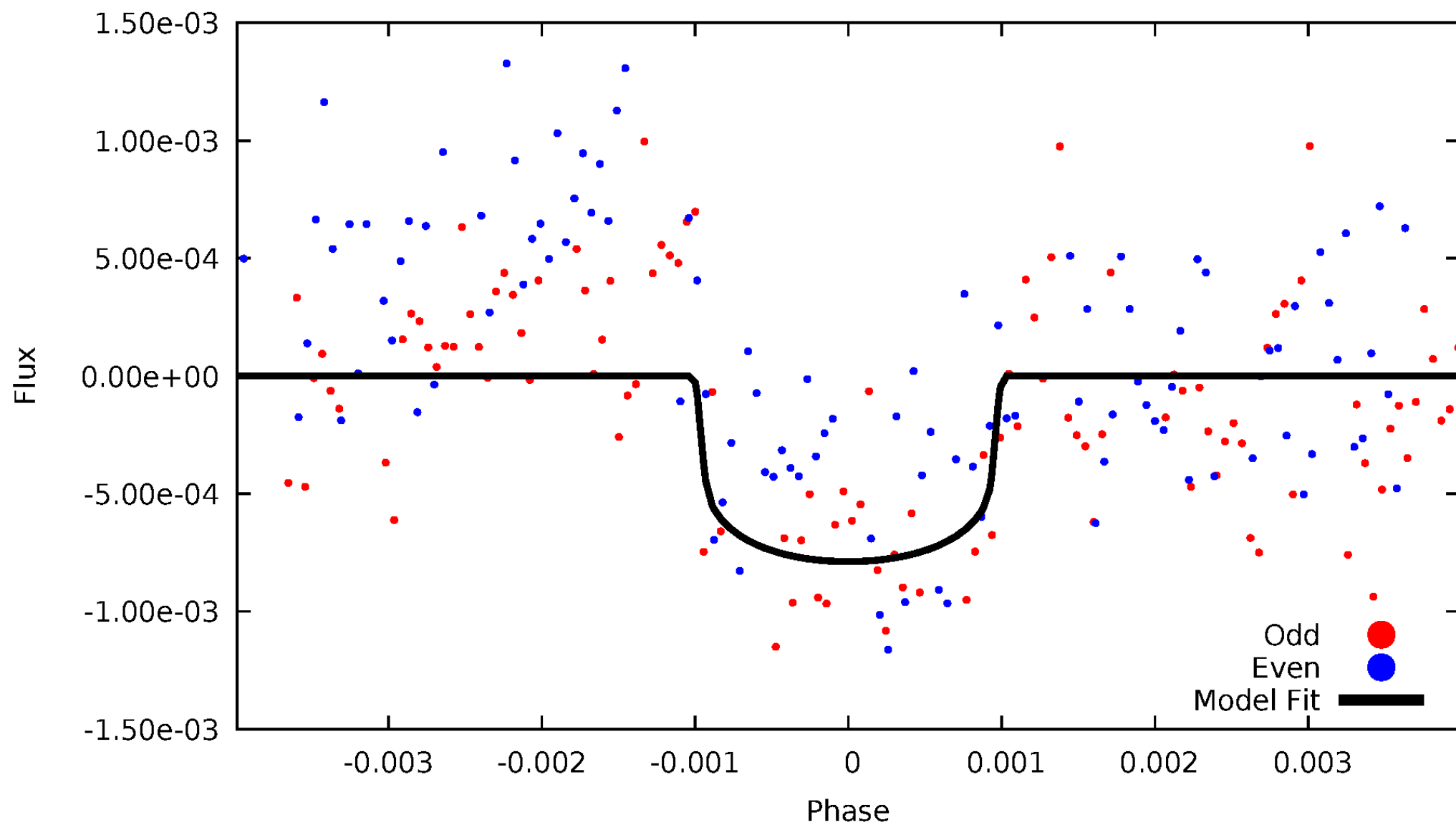


TCE 010471055-02



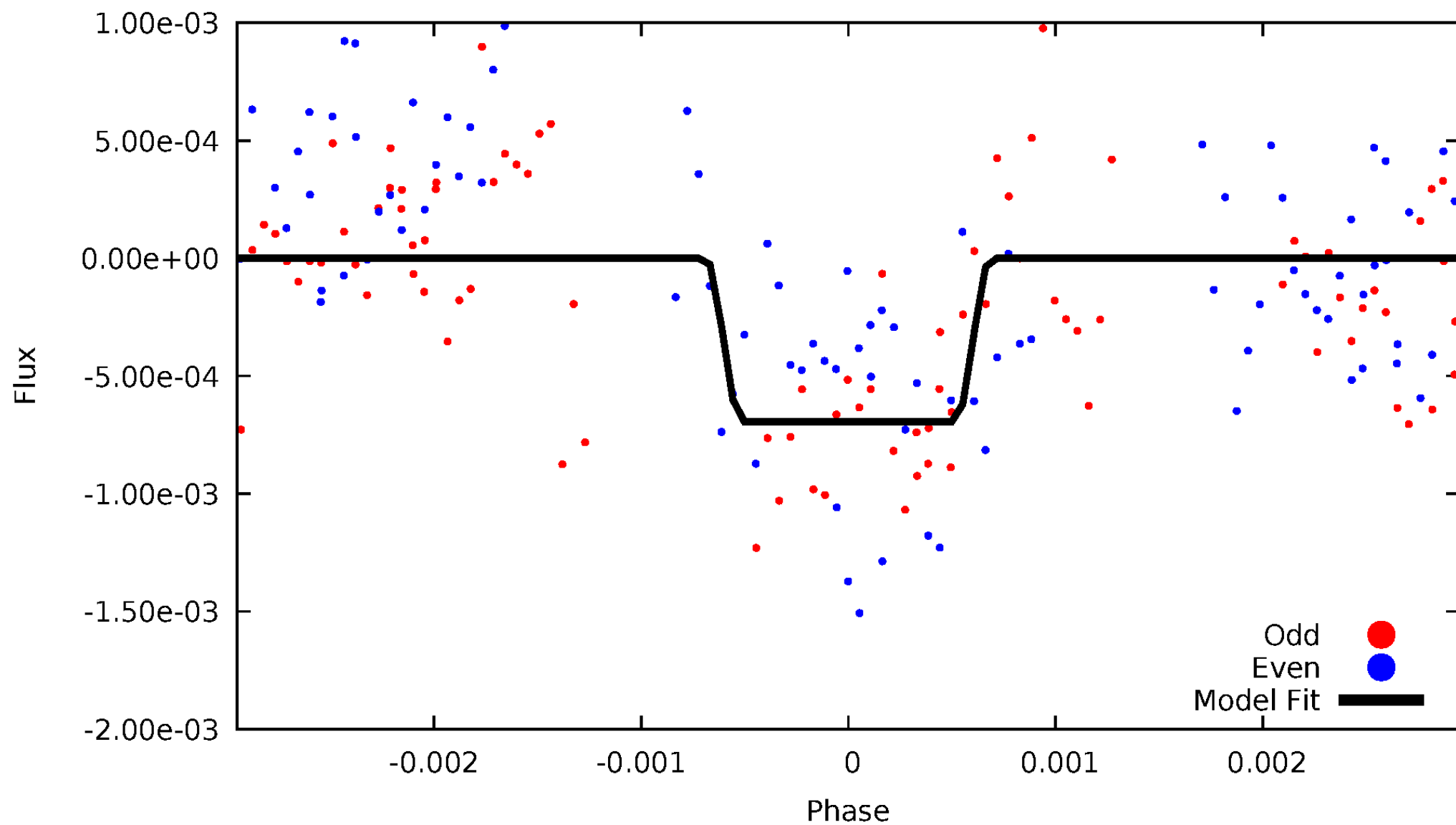
DV Odd/Even

TCE 010471055-02



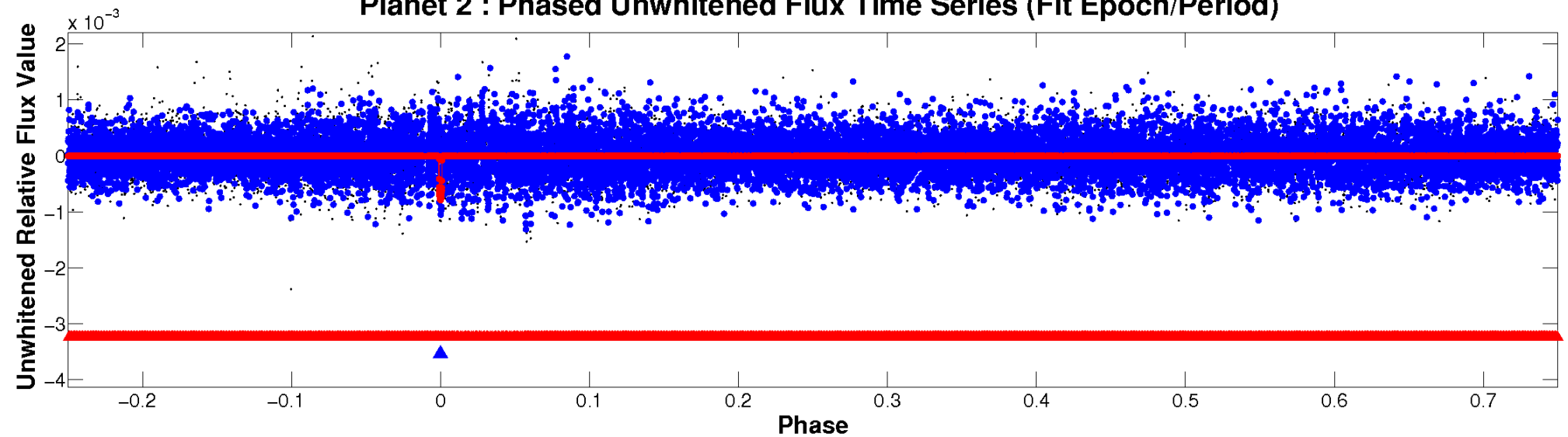
ALT Odd/Even

TCE 010471055-02

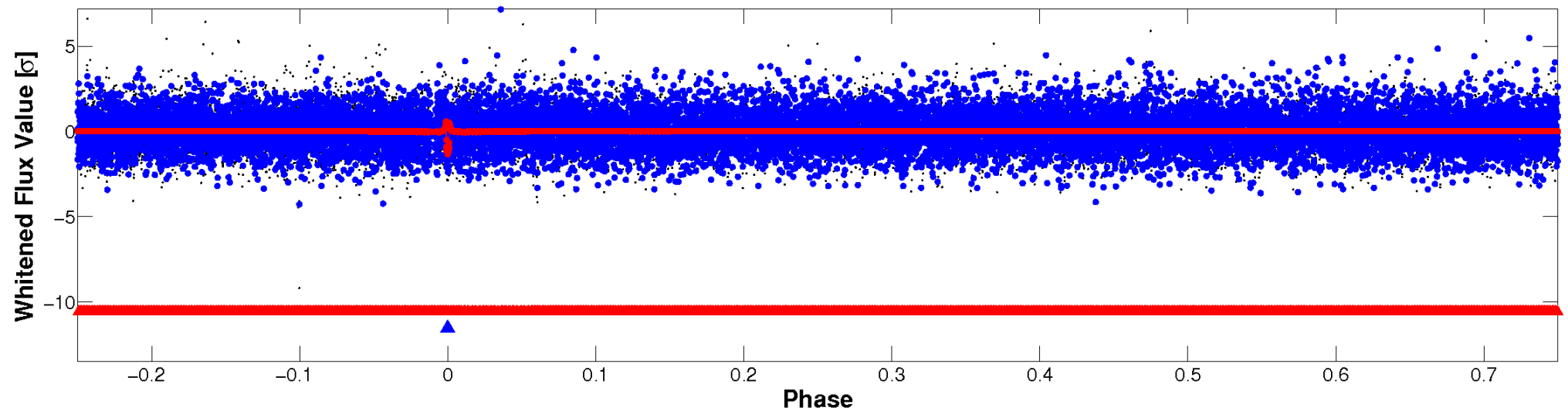


Non-Whitened Vs. Whitened Light Curve

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



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



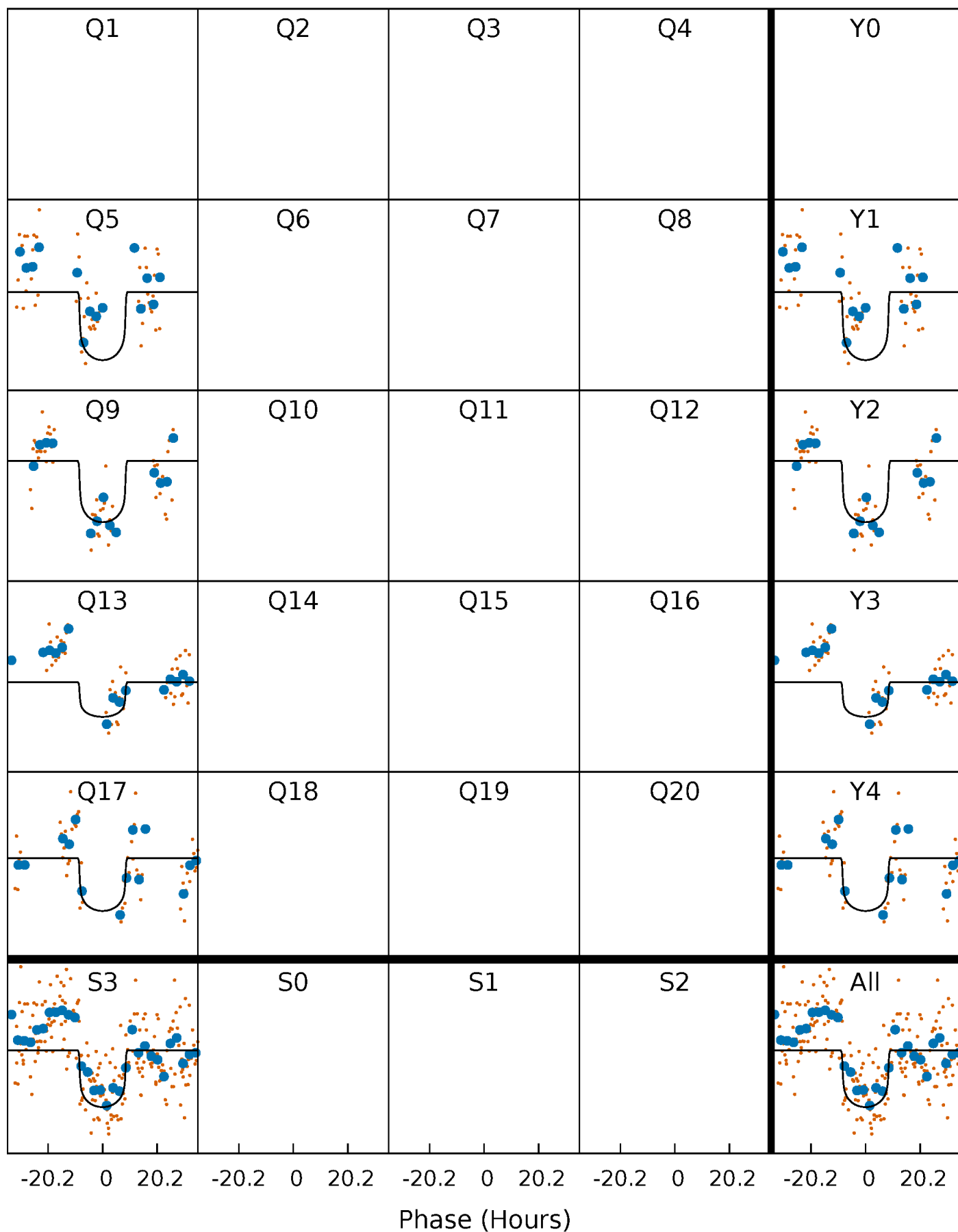
PDC Quarter-Phased Transit Curves

TCE 010471055-02 P=369.536291 Days $T_0=479.573602$ (BKJD)



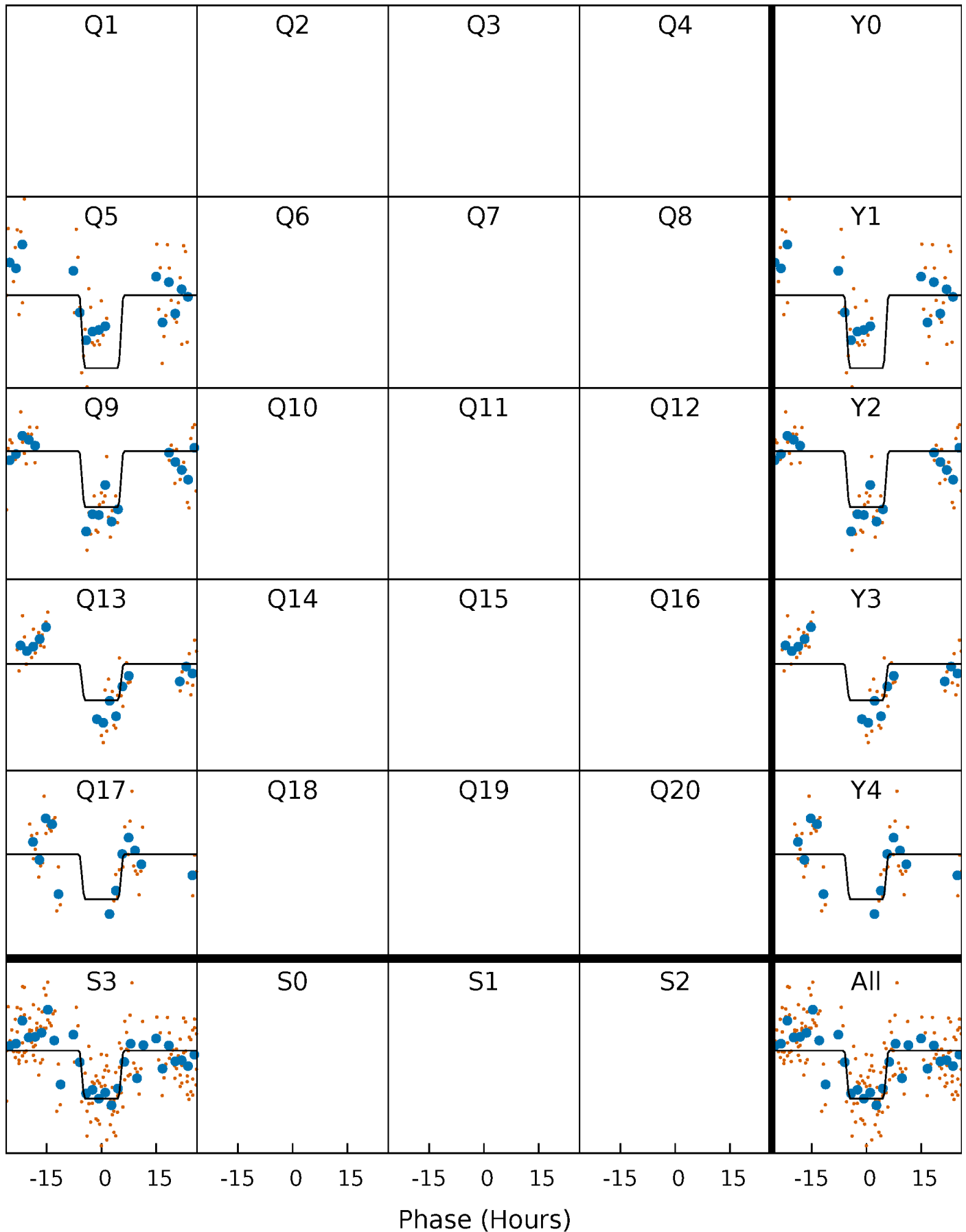
DV Quarter-Phased Transit Curves

TCE 010471055-02 $P=369.536291$ Days $T_0=479.573602$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

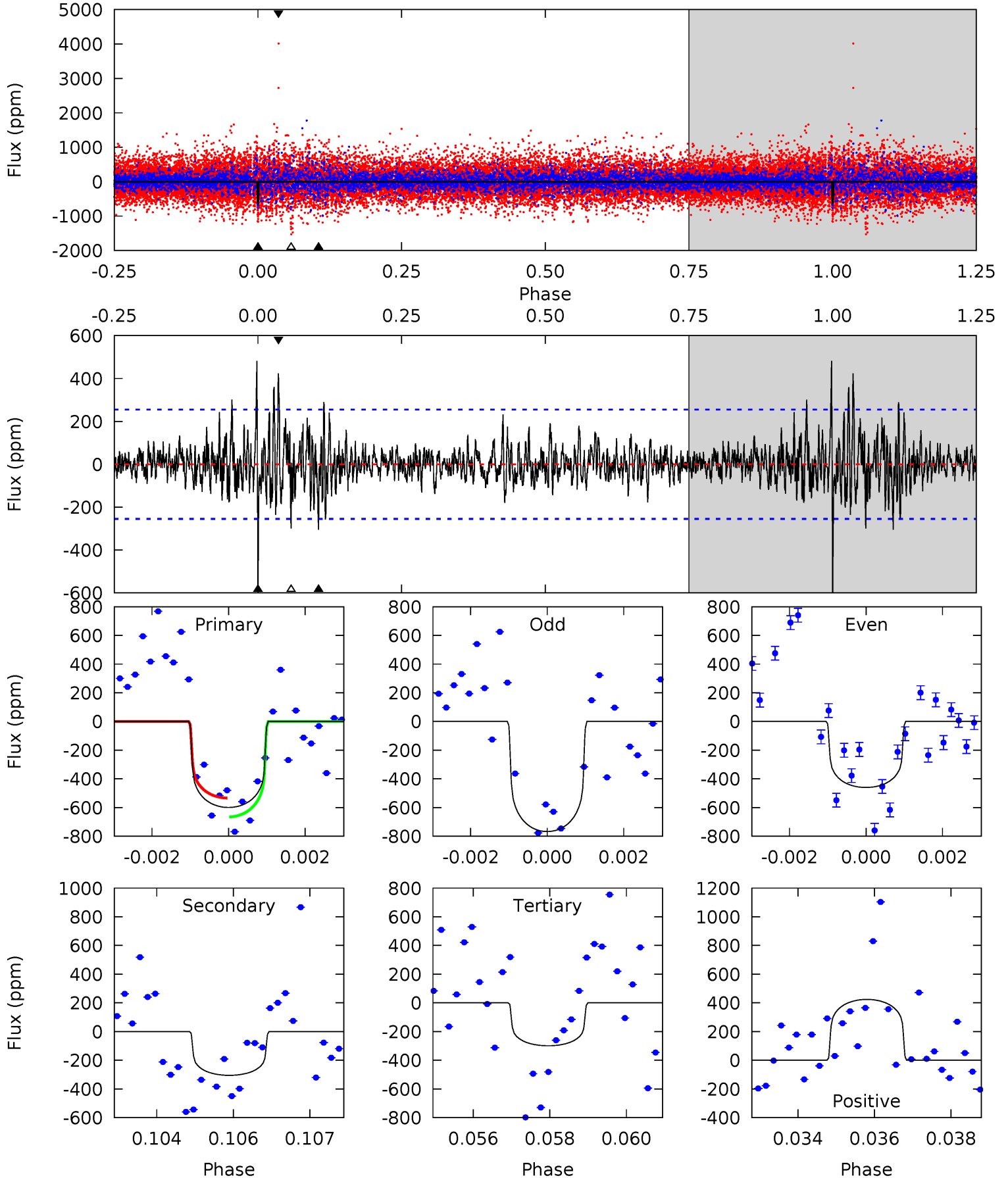
TCE 010471055-02 $P=369.622667$ Days $T_0=479.476585$ (BKJD)



DV Model-Shift Uniqueness Test

010471055-02, P = 369.536291 Days, E = 110.037311 Days

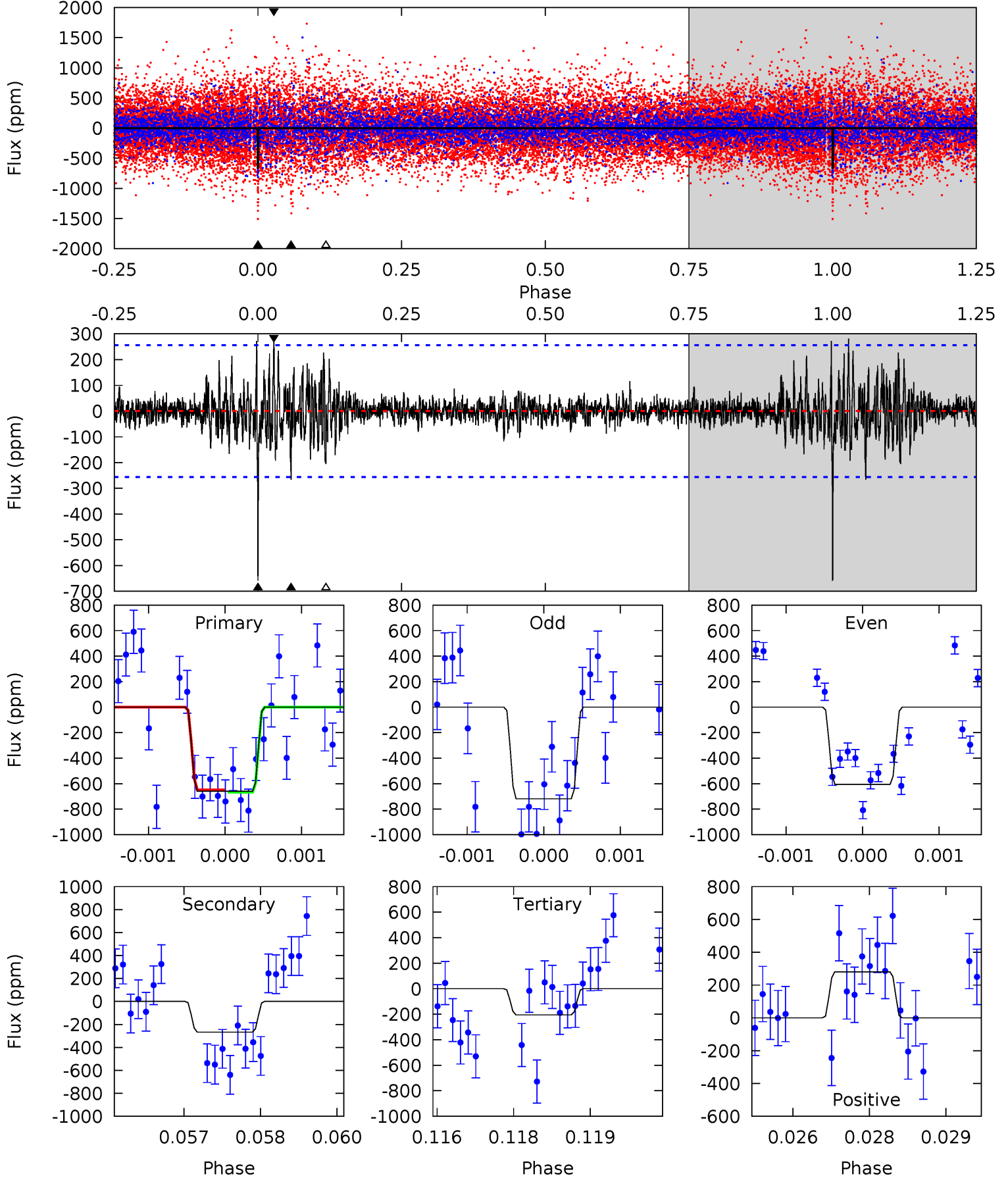
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	6.37	6.25	8.86	5.33	3.09	1.55	6.28	3.67	0.13	-2.49	3.21	0.95	0.45	1.37



Alt Model-Shift Uniqueness Test

010471055-02, P = 369.622667 Days, E = 109.853918 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	5.62	4.31	5.92	5.39	3.20	1.01	9.56	7.95	1.31	-0.30	1.20	0.97	0.30	0.17



Stellar Parameters For KIC 010471055

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6102^{+214}_{-235}	$4.528^{+0.050}_{-0.200}$	$-0.380^{+0.300}_{-0.300}$	$0.887^{+0.272}_{-0.091}$	$0.968^{+0.117}_{-0.129}$	$1.952^{+0.498}_{-0.959}$
	+4%/-4%	+1%/-4%	+79%/-79%	+31%/-10%	+12%/-13%	+25%/-49%
Source	KIC0	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 010471055-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-305 ± 48	$2.66^{+0.85}_{-0.90}$	363^{+24}_{-21}	5029^{+1054}_{-552}	23020^{+27743}_{-10436}
Alt.	-267 ± 47	$2.70^{+0.88}_{-0.83}$	364^{+25}_{-21}	4884^{+865}_{-521}	19518^{+20204}_{-8692}

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 $A_{\text{obs}} \gg 1.0$

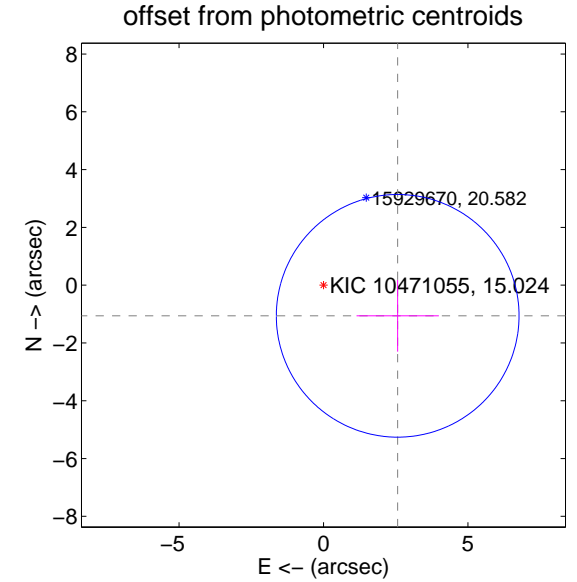
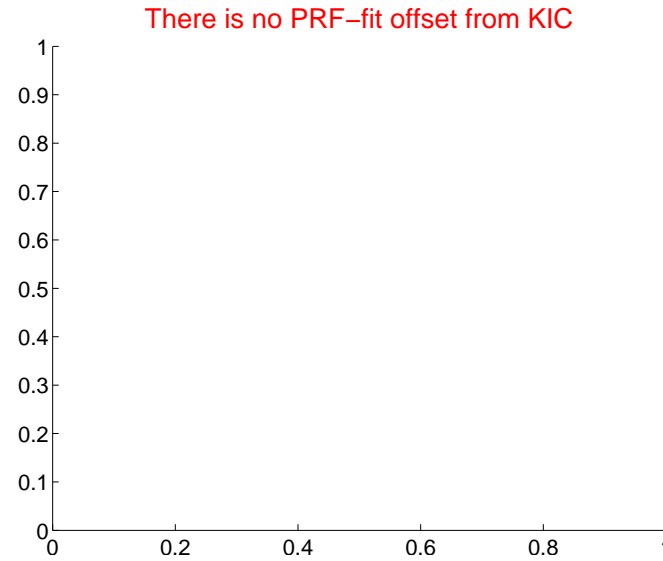
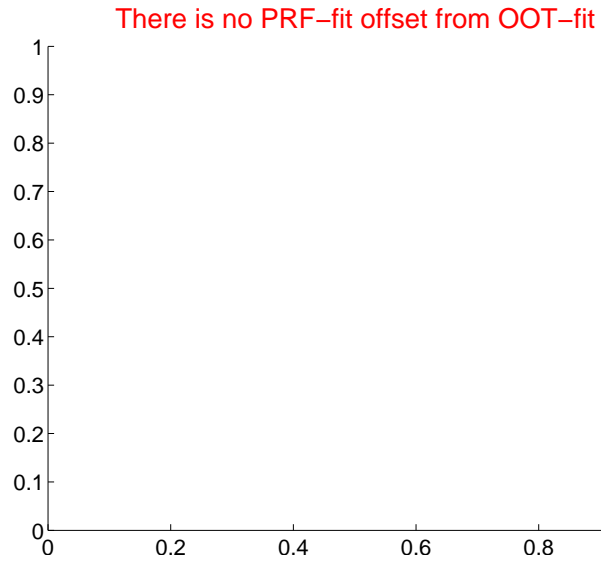
DV Centroid Data

Supplemental centroid analysis for 010471055-02. Kepler magnitude: 15.02. Transit SNR 8.59

There are 0 quarters with good PRF difference image offsets

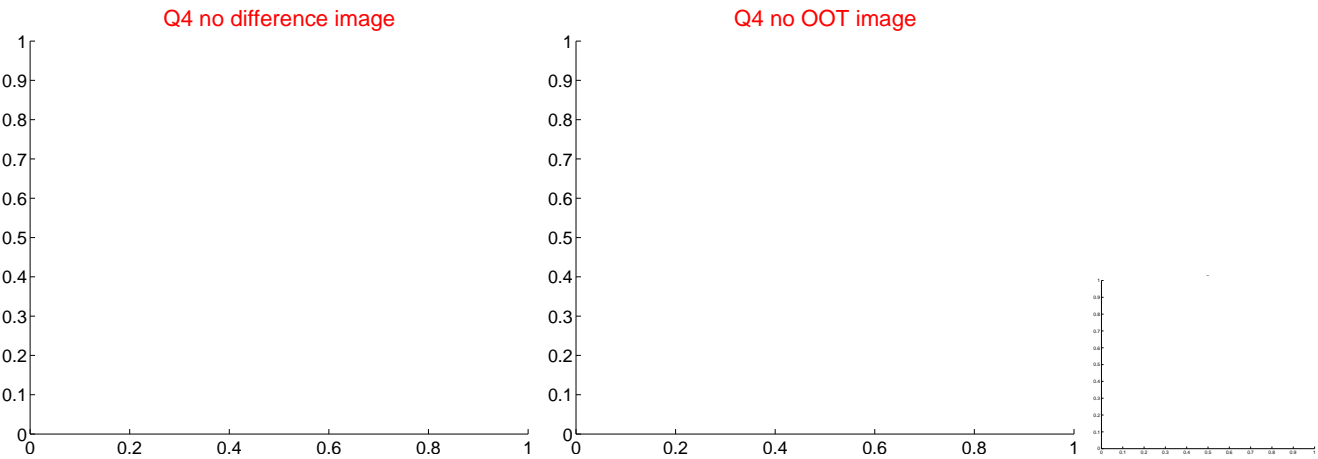
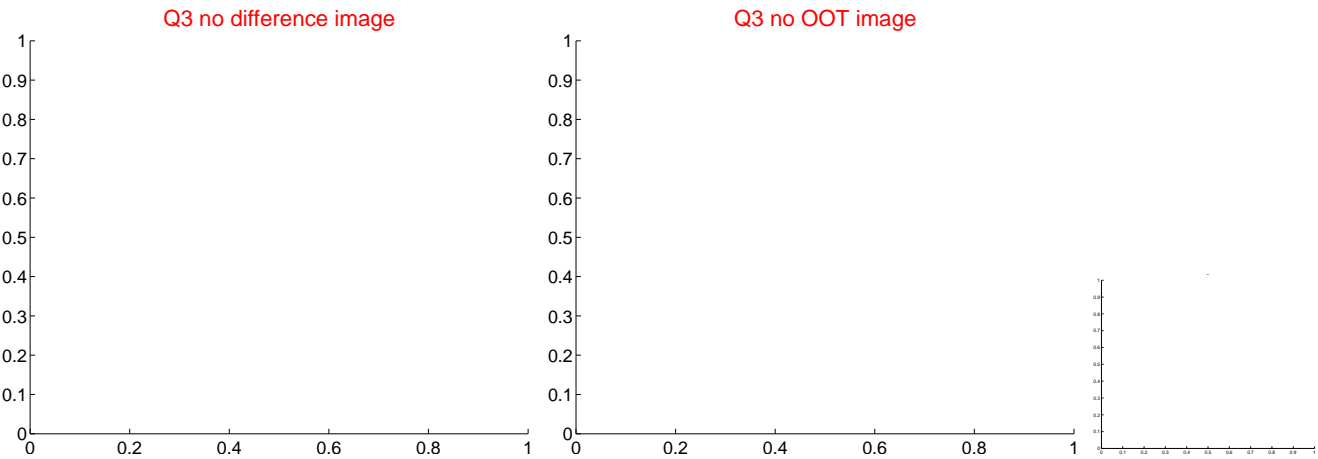
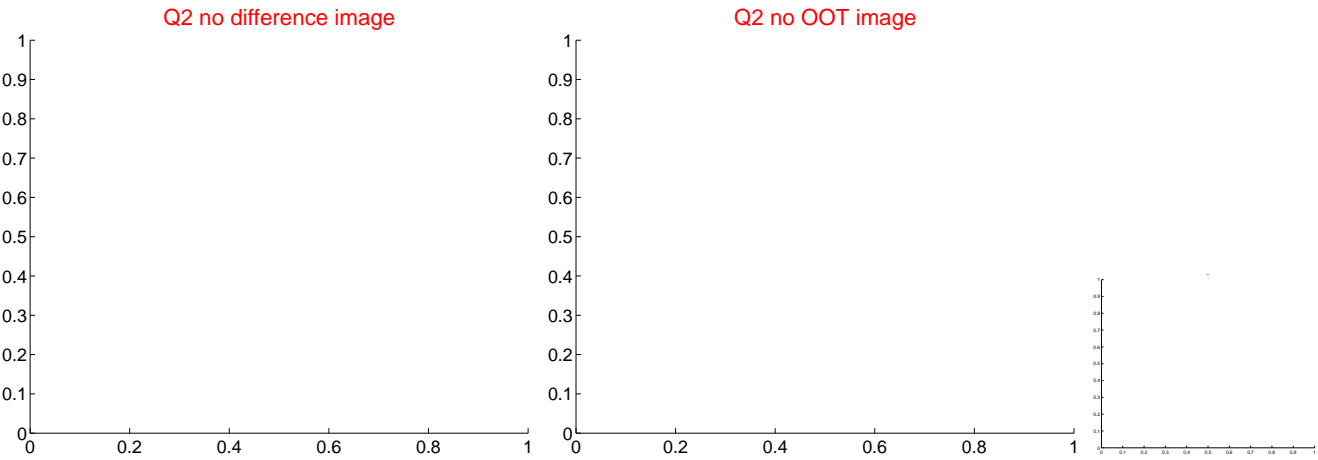
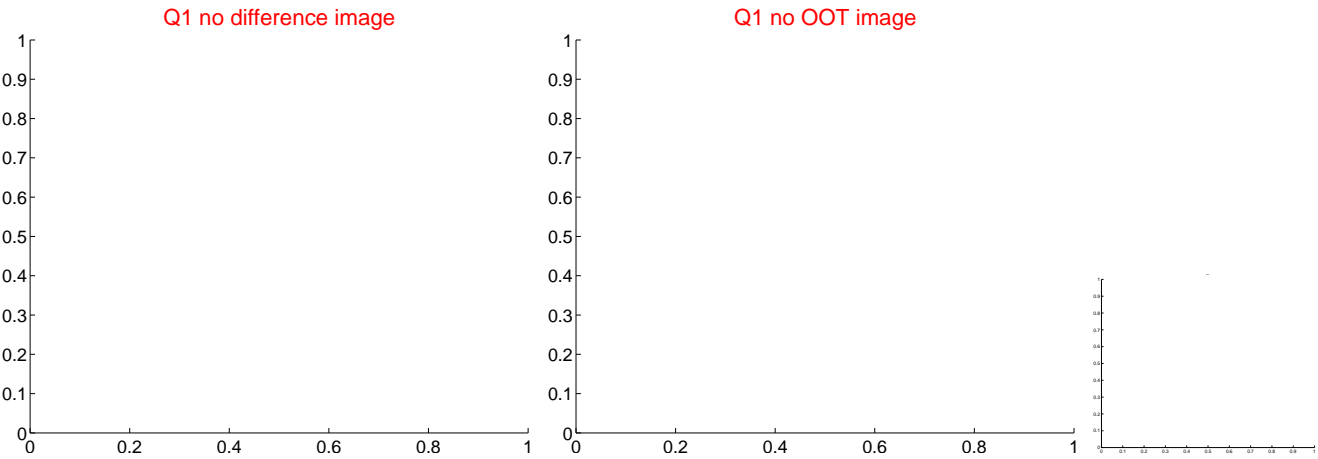
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.78 ± 1.40	1.98	-2.57 ± 1.43	-1.06 ± 1.24

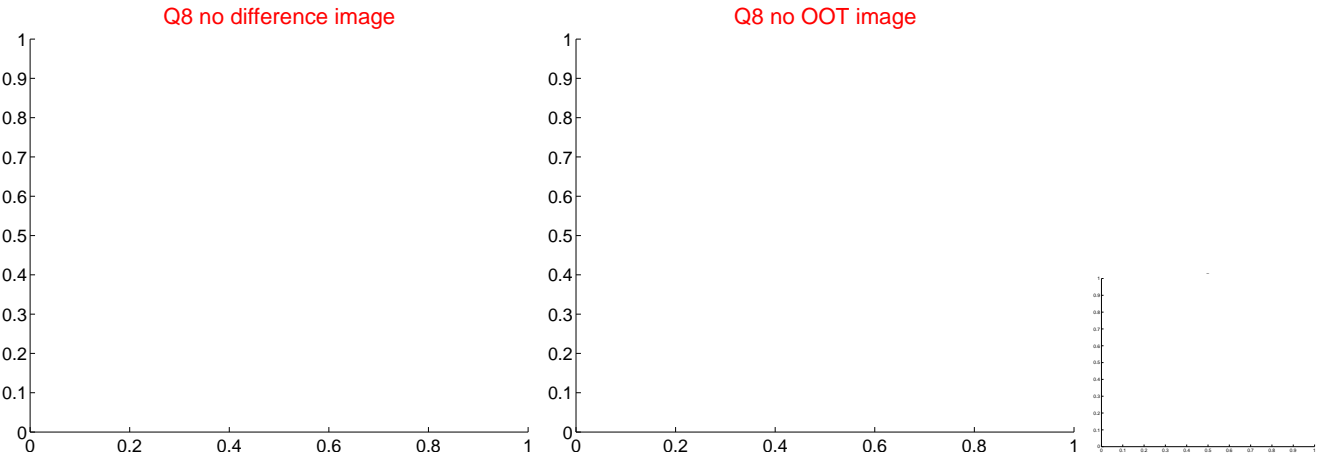
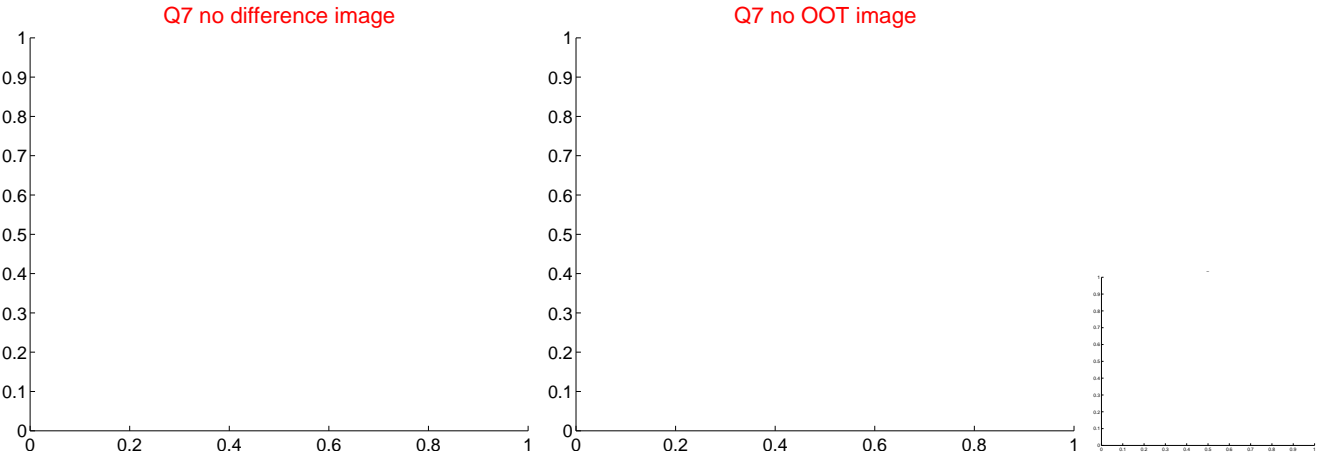
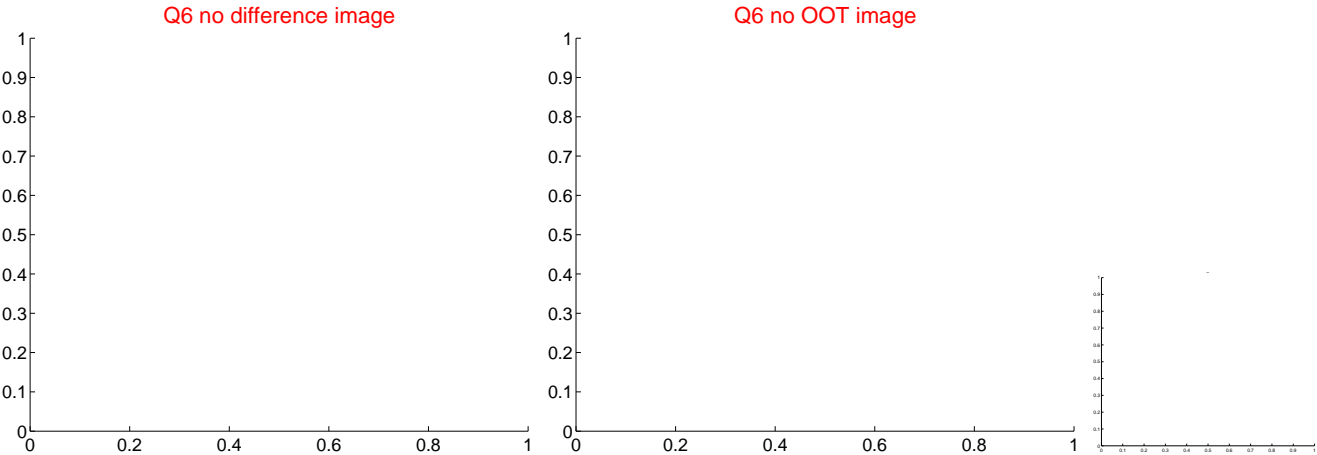
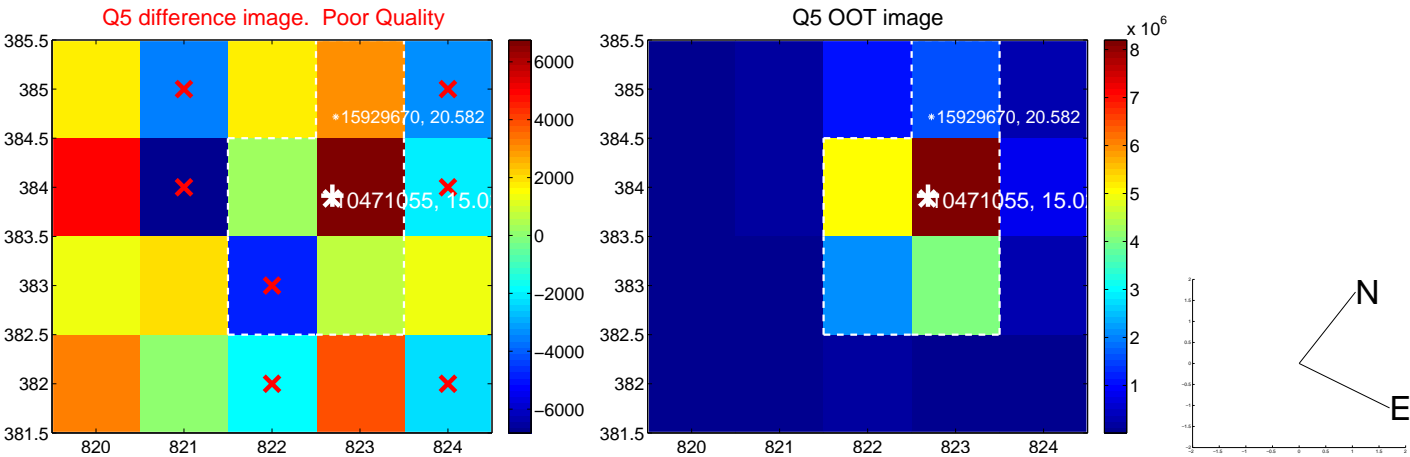


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

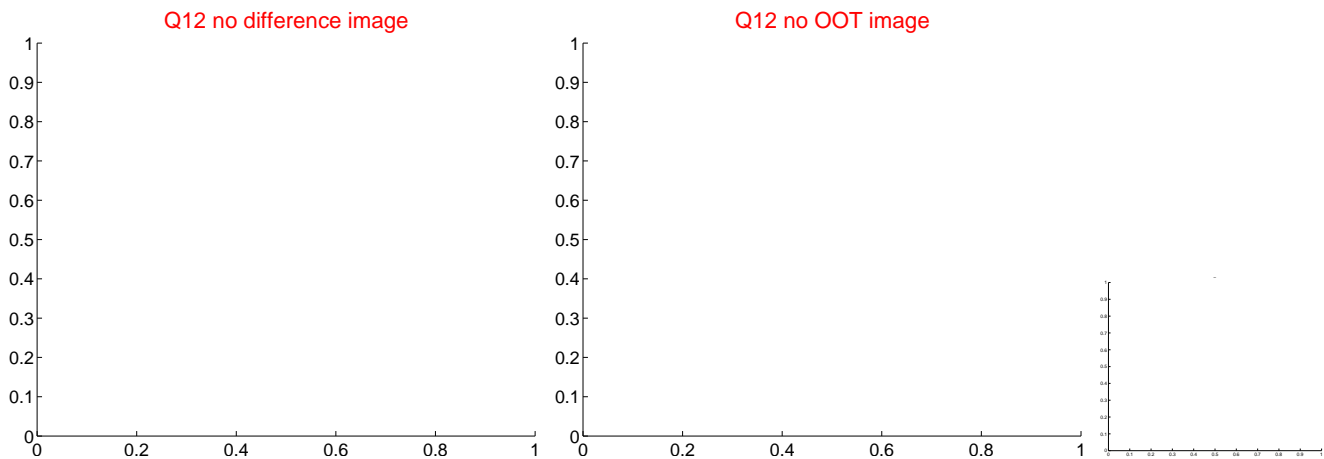
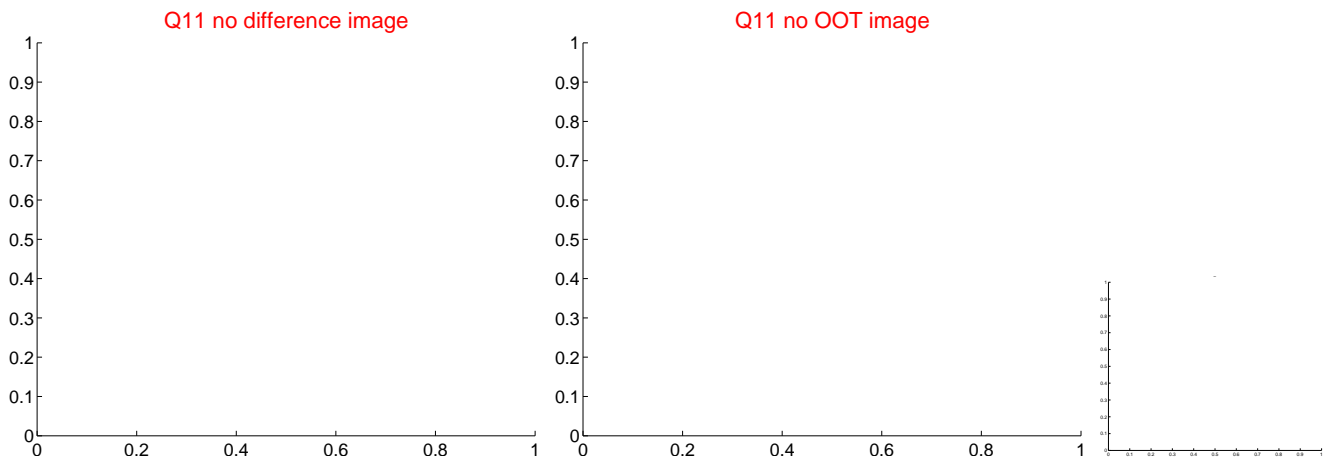
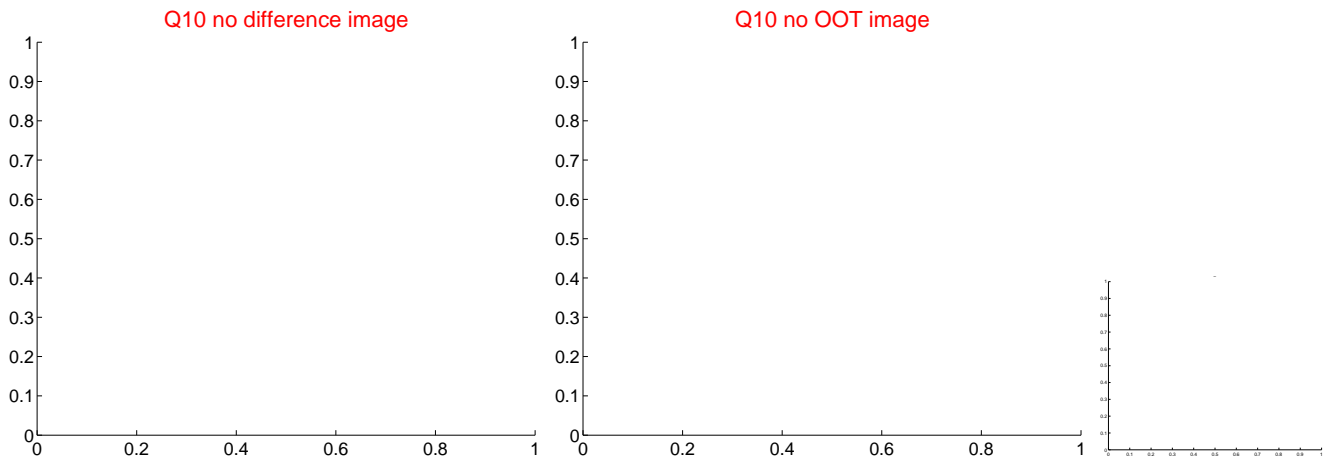
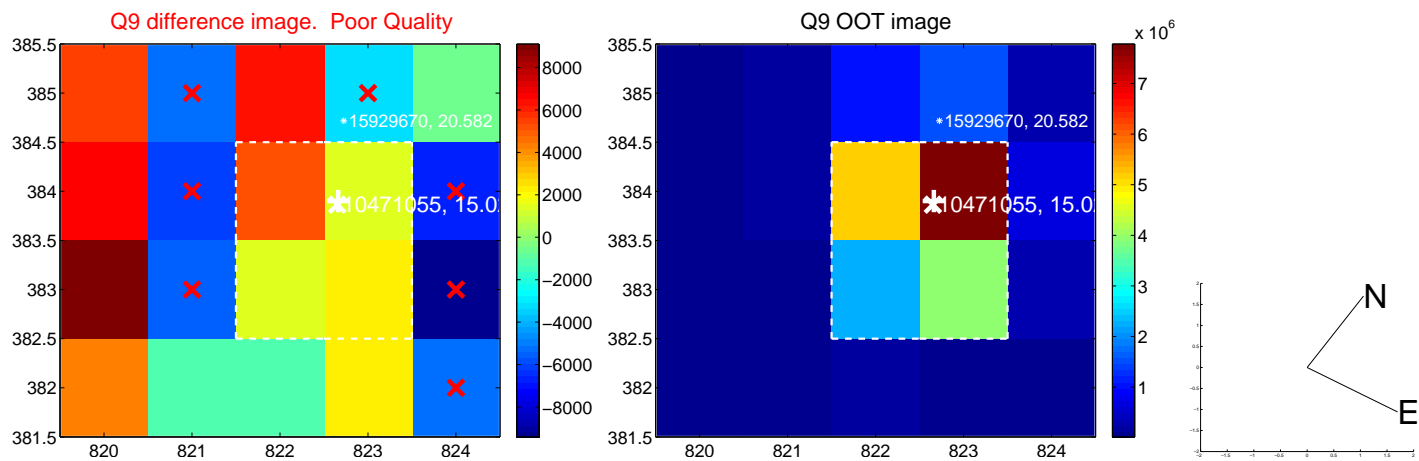
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



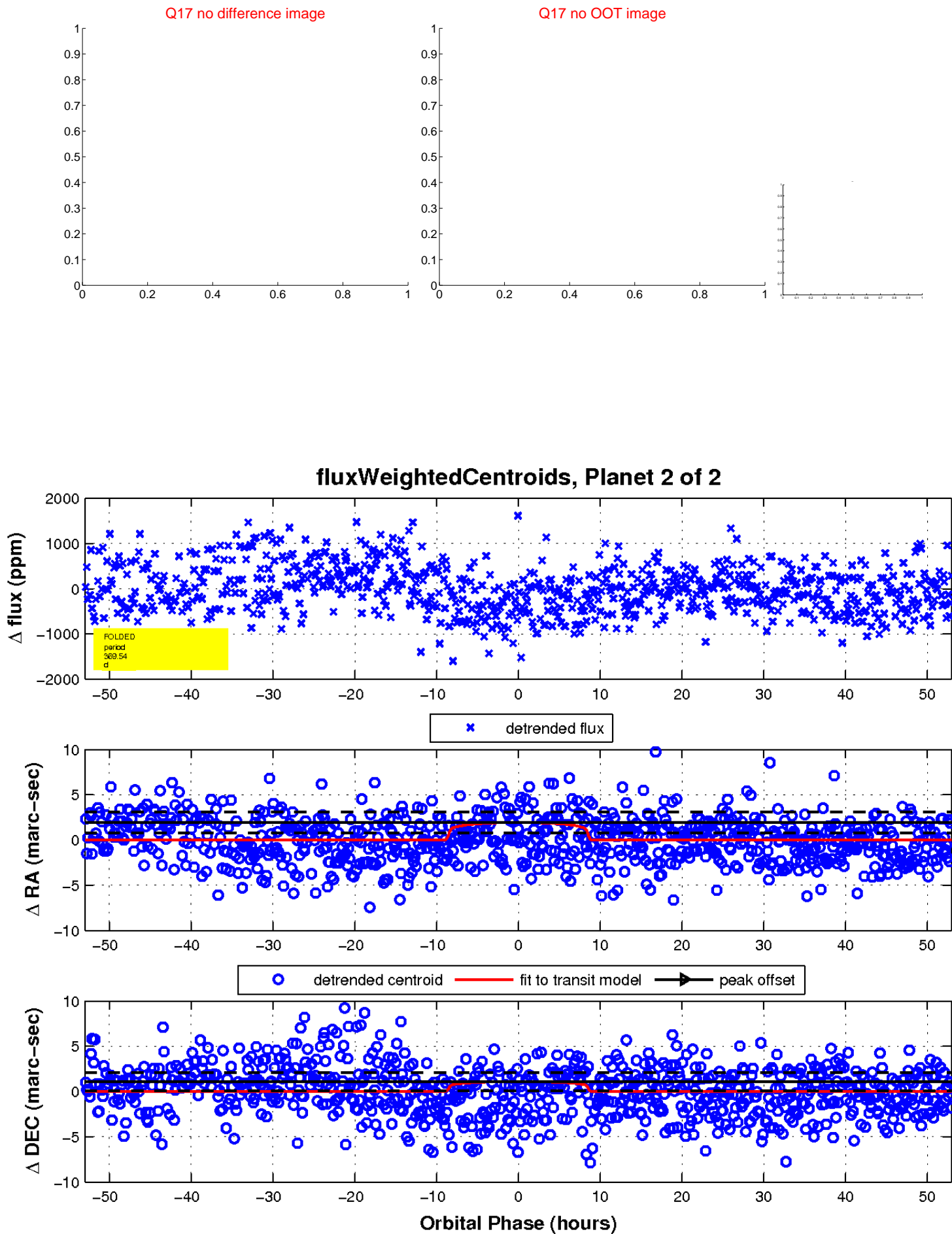
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

