

KIC 005869777

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})
005869777-01	OBS	No	609.296011	276.462866	175.3	20.142	7.2	7.0	1.42	6260	2.04	1.35
005869777-02	OBS	No	411.146556	259.749751	228.8	11.394	8.9	8.2	1.42	6260	2.41	2.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005869777-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005869777-02	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—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.

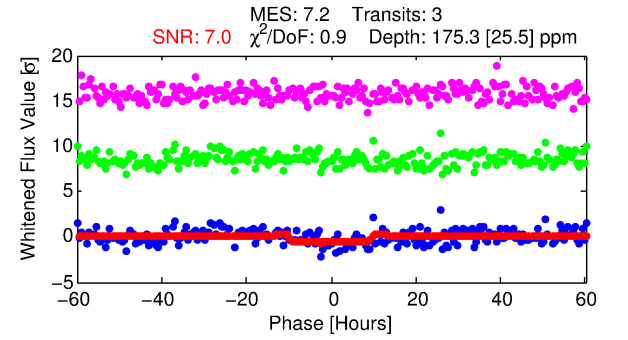
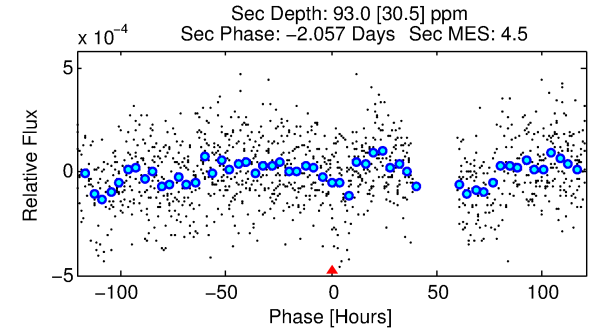
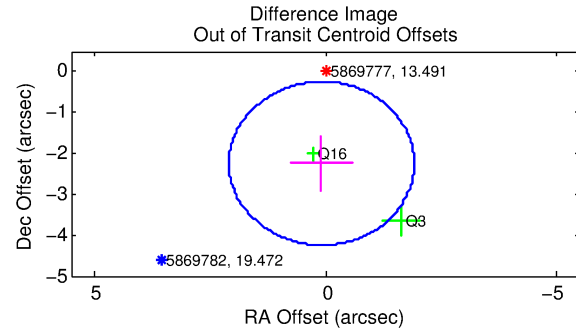
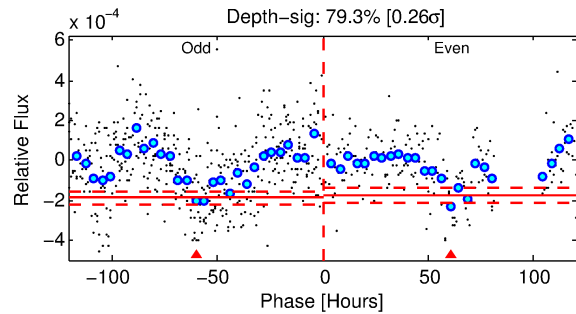
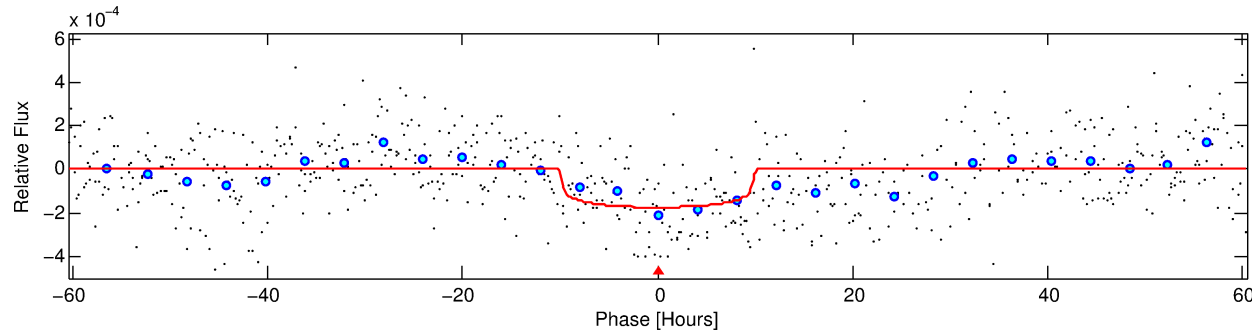
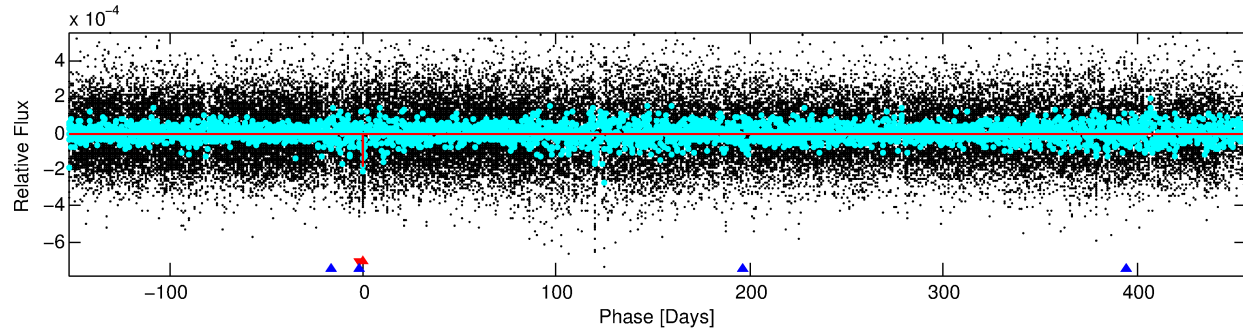
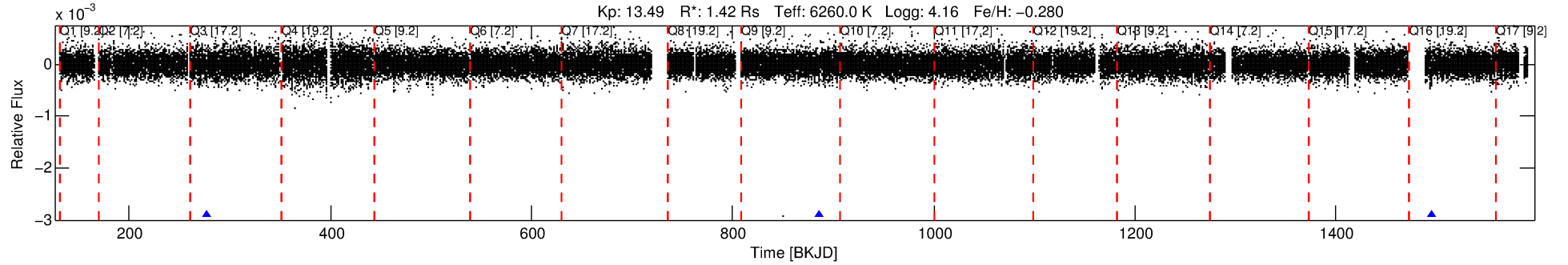
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005869777-01

No Significant Match Found

DV One-Page Summary

KIC: 5869777 Candidate: 1 of 2 Period: 609.296 d



DV Fit Results:

Period = 609.29601 [0.01805] d
Epoch = 276.4629 [0.0224] BKJD
Rp/R* = 0.0132 [0.0029]
a/R* = 157.45 [172.93]
b = 0.75 [0.64]
Seff = 1.35 [0.50]
Teq = 275 [25] K
Rp = 2.04 [0.65] Re
a = 1.4305 [0.3117] AU
Ag = 25263.49 [16505.02] [1.53 σ]
Teffp = 5358 [758] K [6.70 σ]

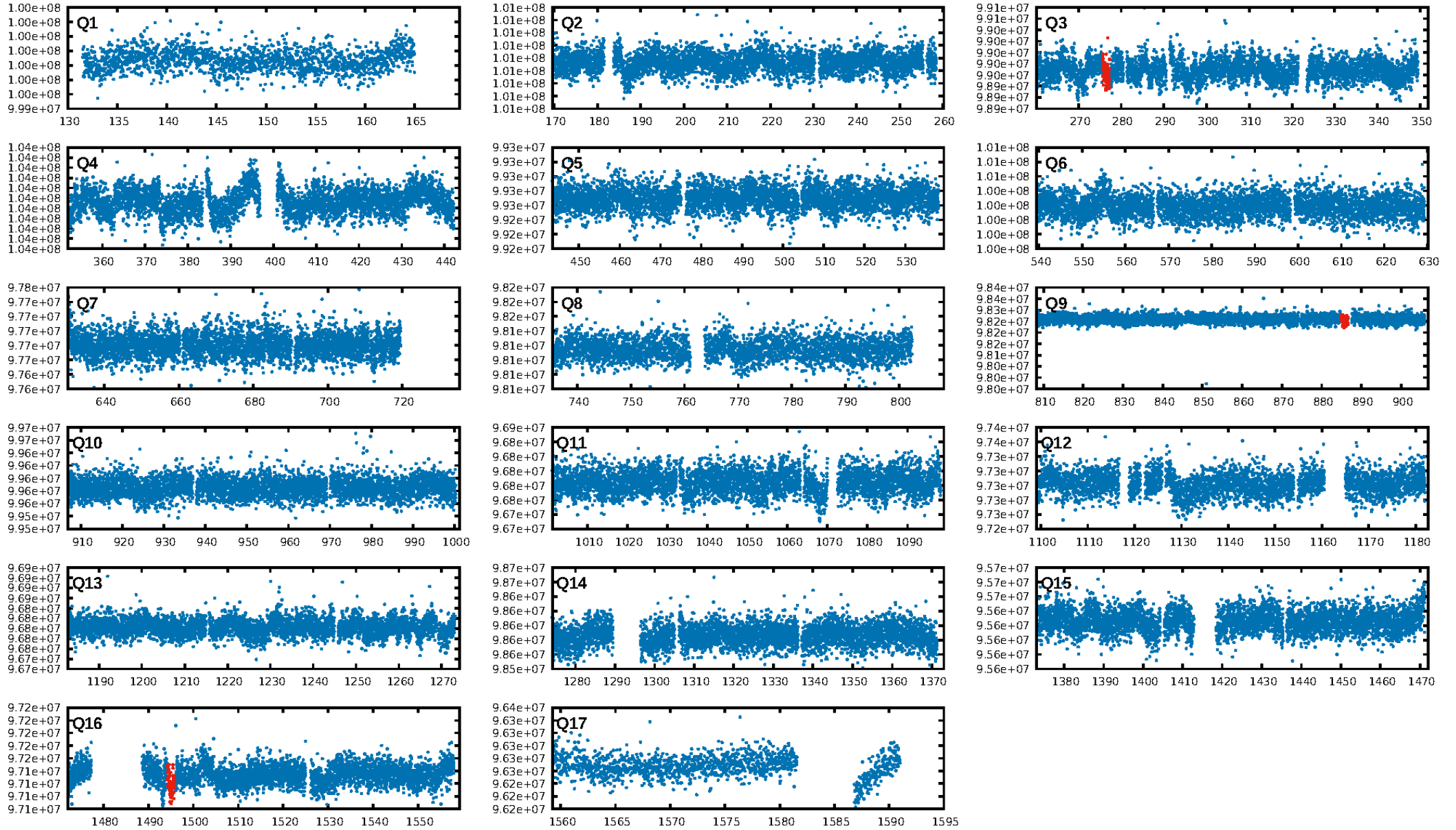
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [205.50 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 29.1%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 9.39e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 22.44
Centroid-sig: 5.4%
Centroid-so: 3.007 arcsec [1.72 σ]
OotOffset-rm: 2.247 arcsec [3.37 σ]
KicOffset-rm: 2.586 arcsec [3.47 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

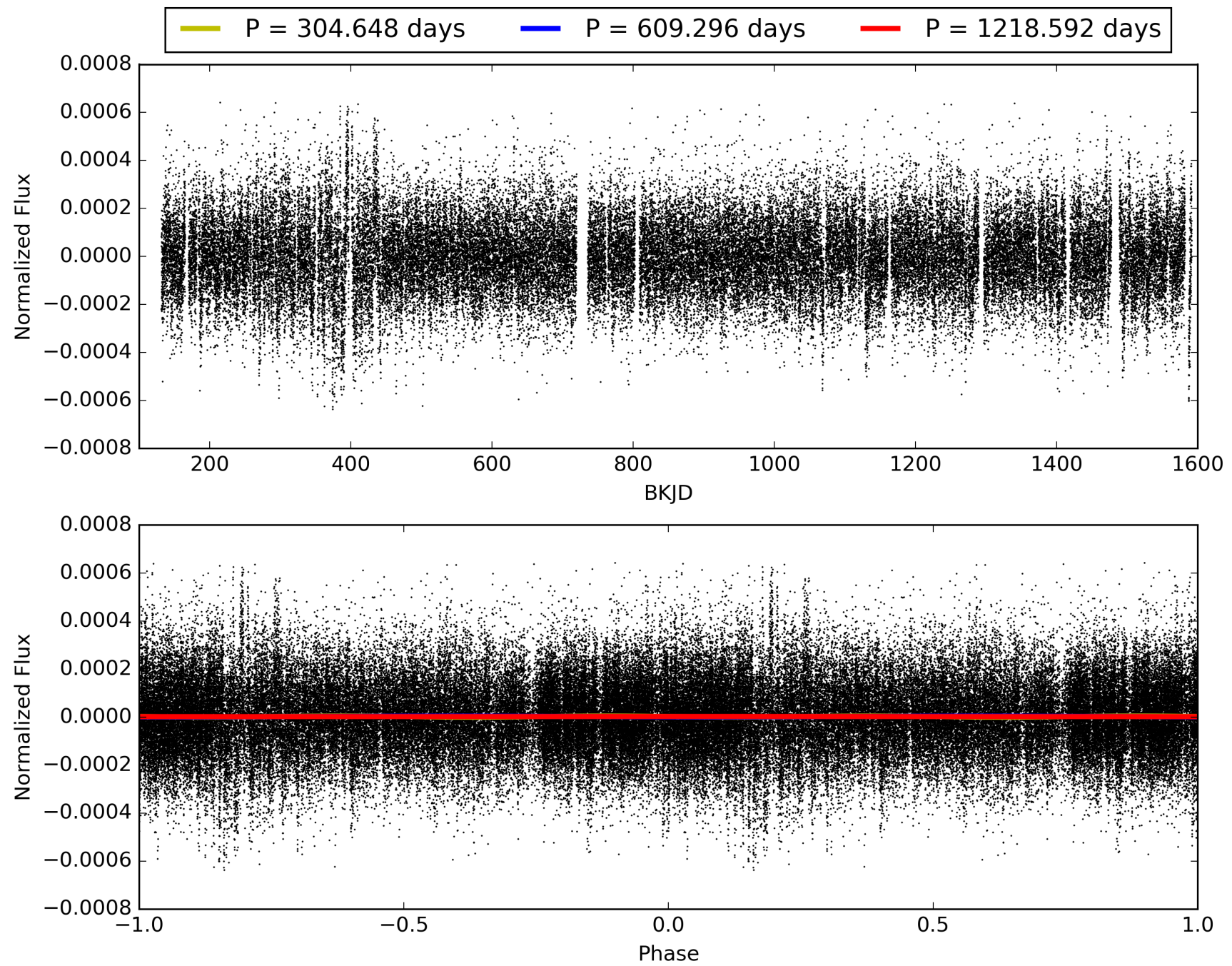
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:55:39 Z

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

TCE 005869777-01, PDC Light Curves

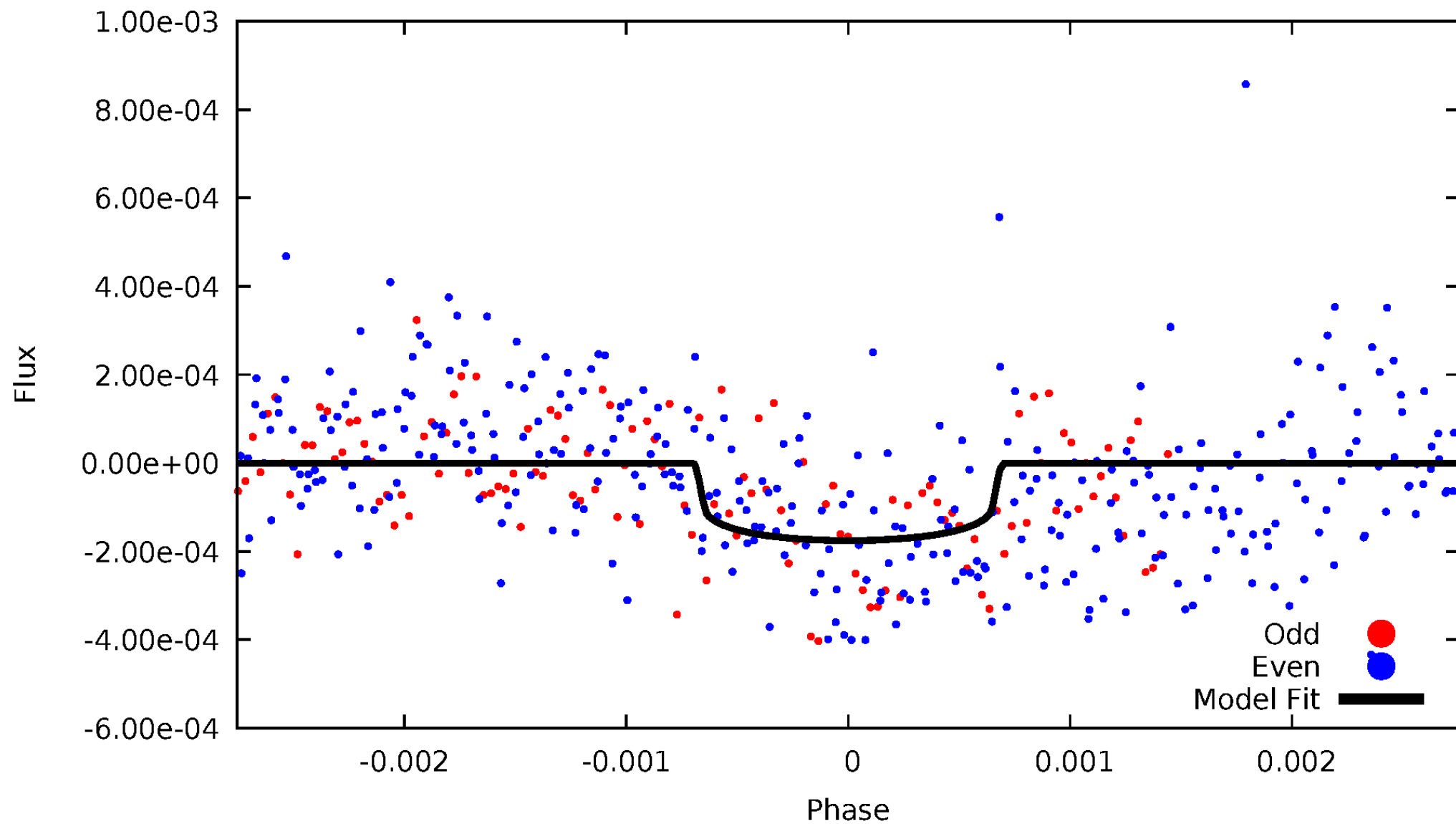


TCE 005869777-01



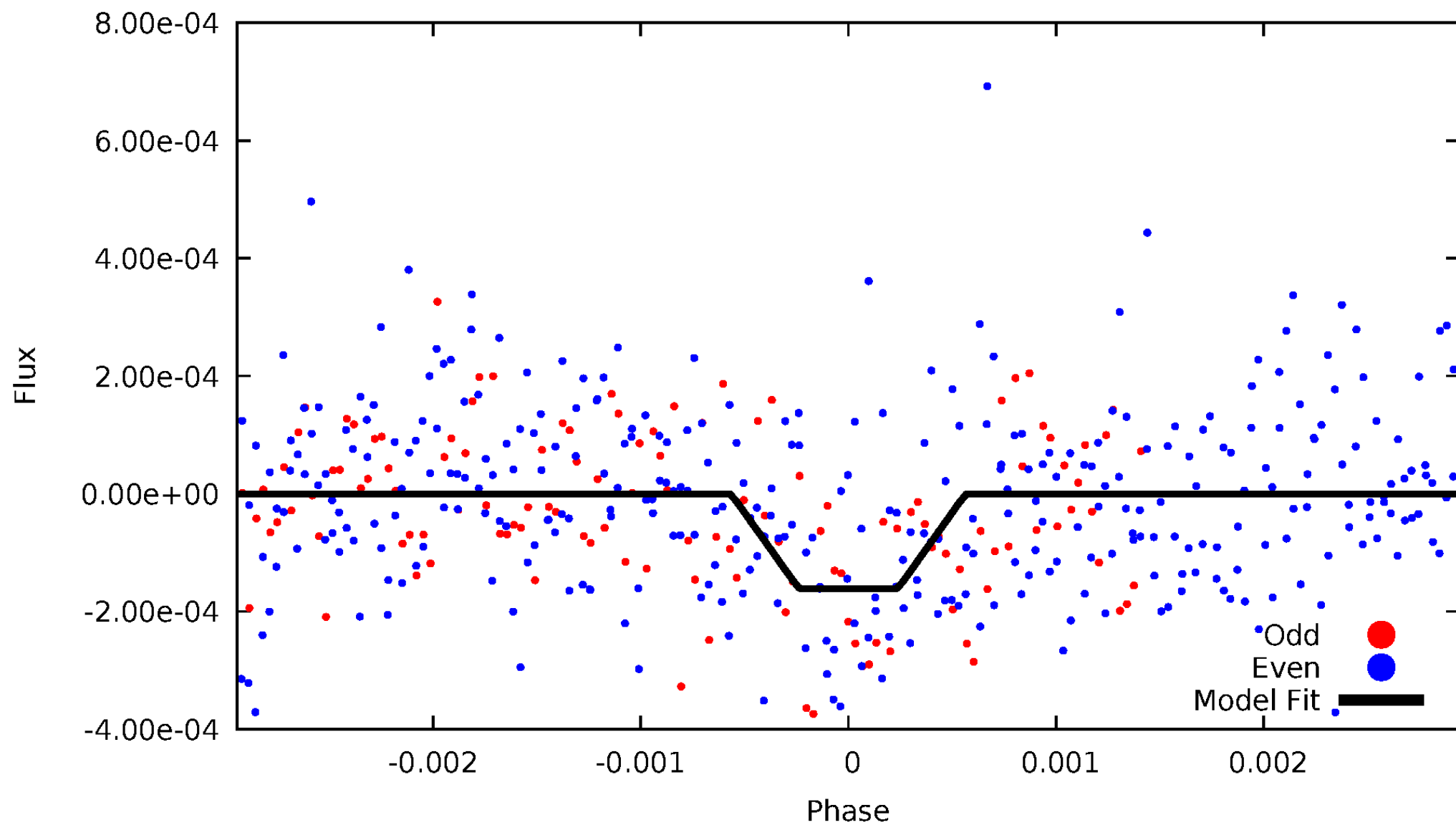
DV Odd/Even

TCE 005869777-01

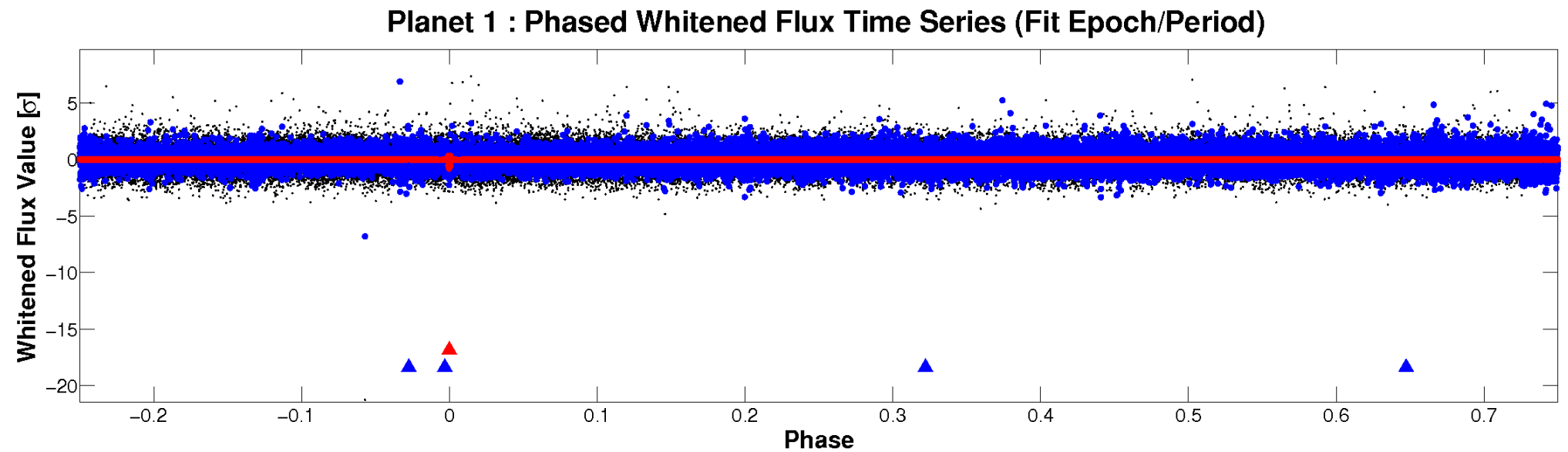
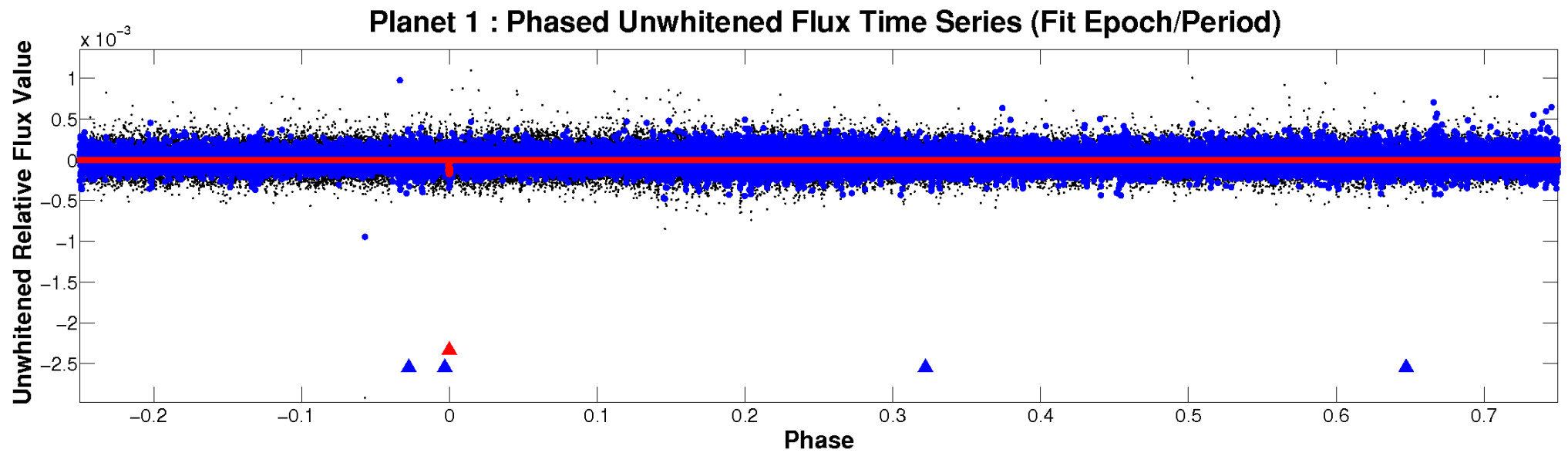


ALT Odd/Even

TCE 005869777-01



Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 005869777-01 P=609.296011 Days $T_0=276.462866$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005869777-01 P=609.296011 Days $T_0=276.462866$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

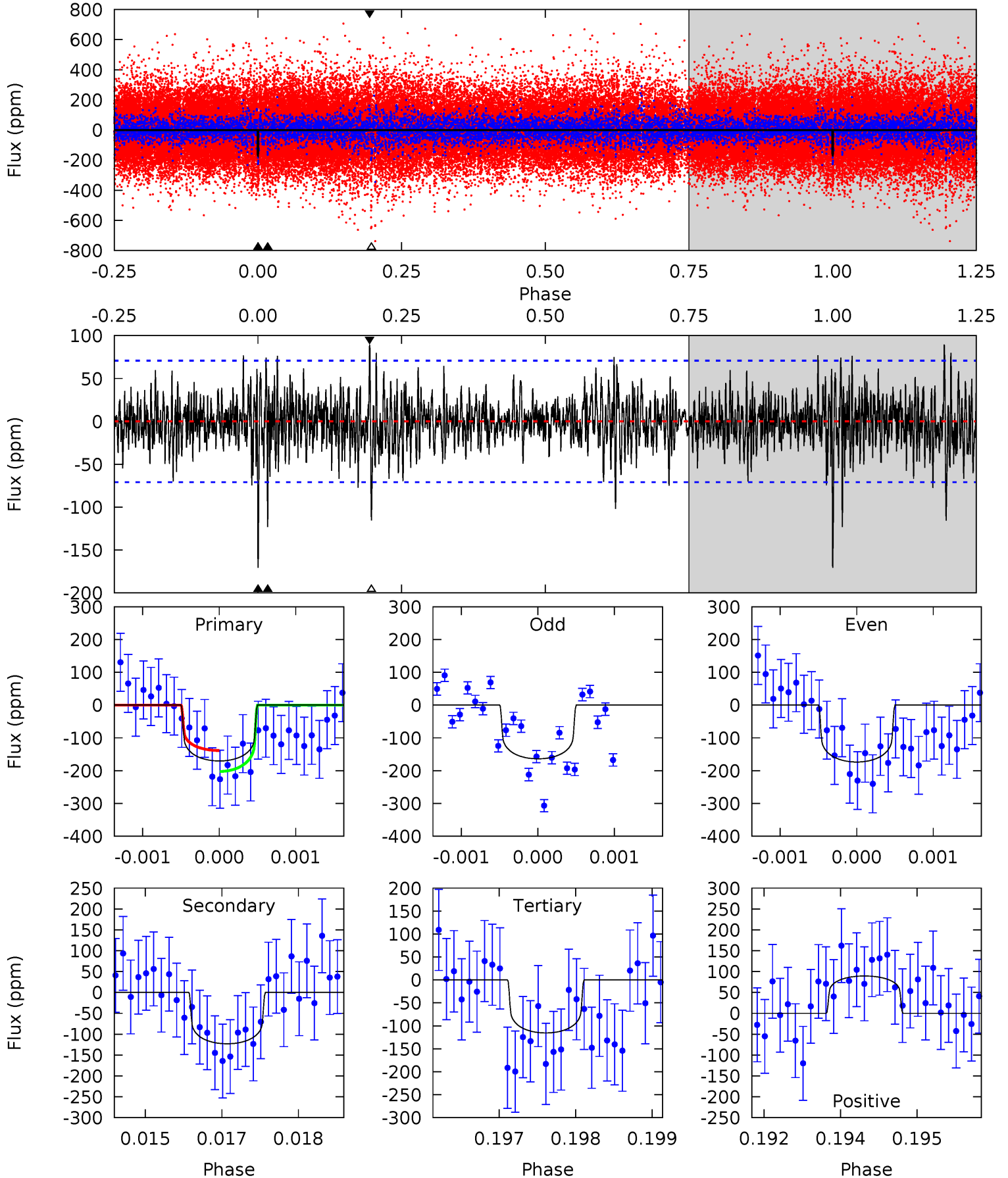
TCE 005869777-01 P=609.308326 Days $T_0=276.470150$ (BKJD)



DV Model-Shift Uniqueness Test

005869777-01, P = 609.296011 Days, E = 276.462866 Days

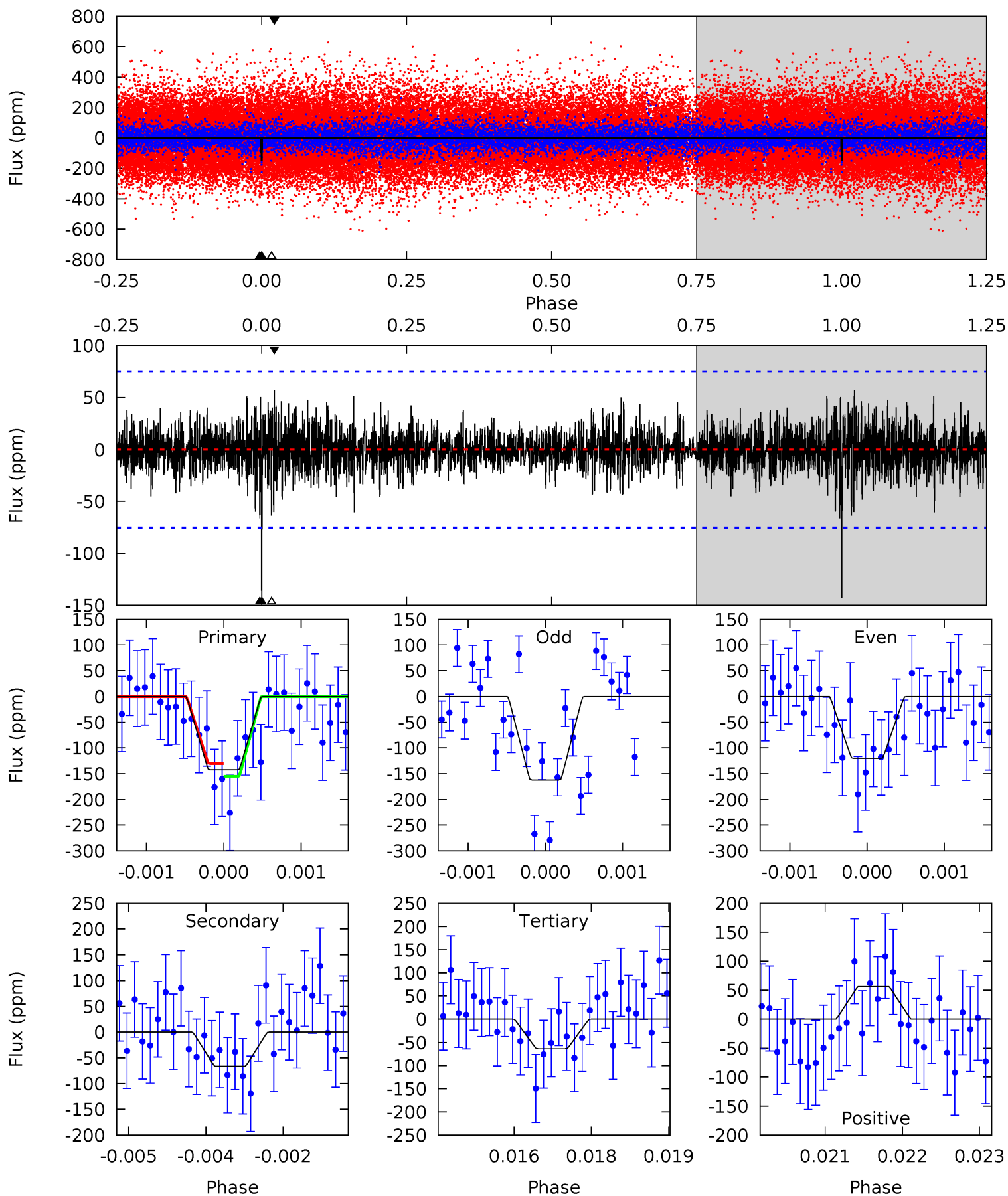
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	9.35	8.78	6.80	5.39	3.19	1.78	4.18	6.16	0.57	2.55	0.36	1.03	0.34	2.43



Alt Model-Shift Uniqueness Test

005869777-01, P = 609.308326 Days, E = 276.470150 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.79	4.58	4.08	5.42	3.25	1.12	5.69	6.20	0.20	0.71	1.45	0.82	0.28	0.89



Stellar Parameters For KIC 005869777

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6260^{+170}_{-189}	$4.157^{+0.204}_{-0.136}$	$-0.280^{+0.300}_{-0.300}$	$1.417^{+0.322}_{-0.322}$	$1.051^{+0.165}_{-0.135}$	$0.520^{+0.589}_{-0.208}$
	+3%/-3%	+5%/-3%	+107%/-107%	+23%/-23%	+16%/-13%	+113%/-40%
Source	PHO1	FLK73	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 005869777-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-123 ± 13	$1.97^{+0.56}_{-0.50}$	381^{+24}_{-26}	5807^{+808}_{-608}	36019^{+26887}_{-14912}
Alt.	-66 ± 14	$1.88^{+0.58}_{-0.45}$	379^{+28}_{-26}	5098^{+617}_{-541}	21025^{+16969}_{-9264}

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

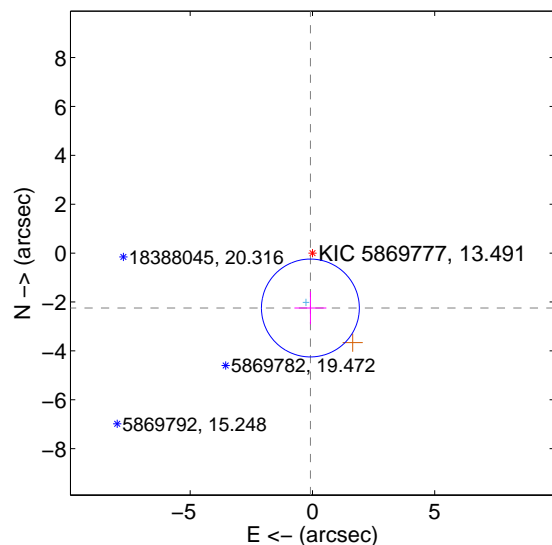
Supplemental centroid analysis for 005869777-01. Kepler magnitude: 13.49. Transit SNR 6.99

There are 1 quarters with good PRF difference image offsets

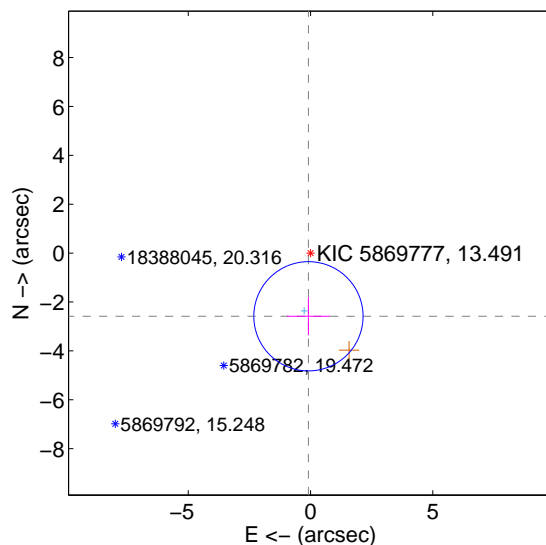
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.247 ± 0.667	3.37	0.084 ± 0.655	-2.245 ± 0.667
PRF-fit source offset from KIC position	2.586 ± 0.745	3.47	0.085 ± 0.881	-2.585 ± 0.774
photometric centroid source offset	3.01 ± 1.75	1.72	2.21 ± 1.74	-2.04 ± 1.75

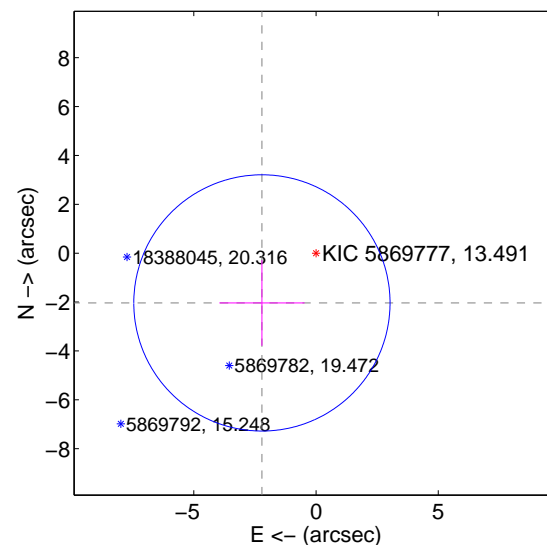
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

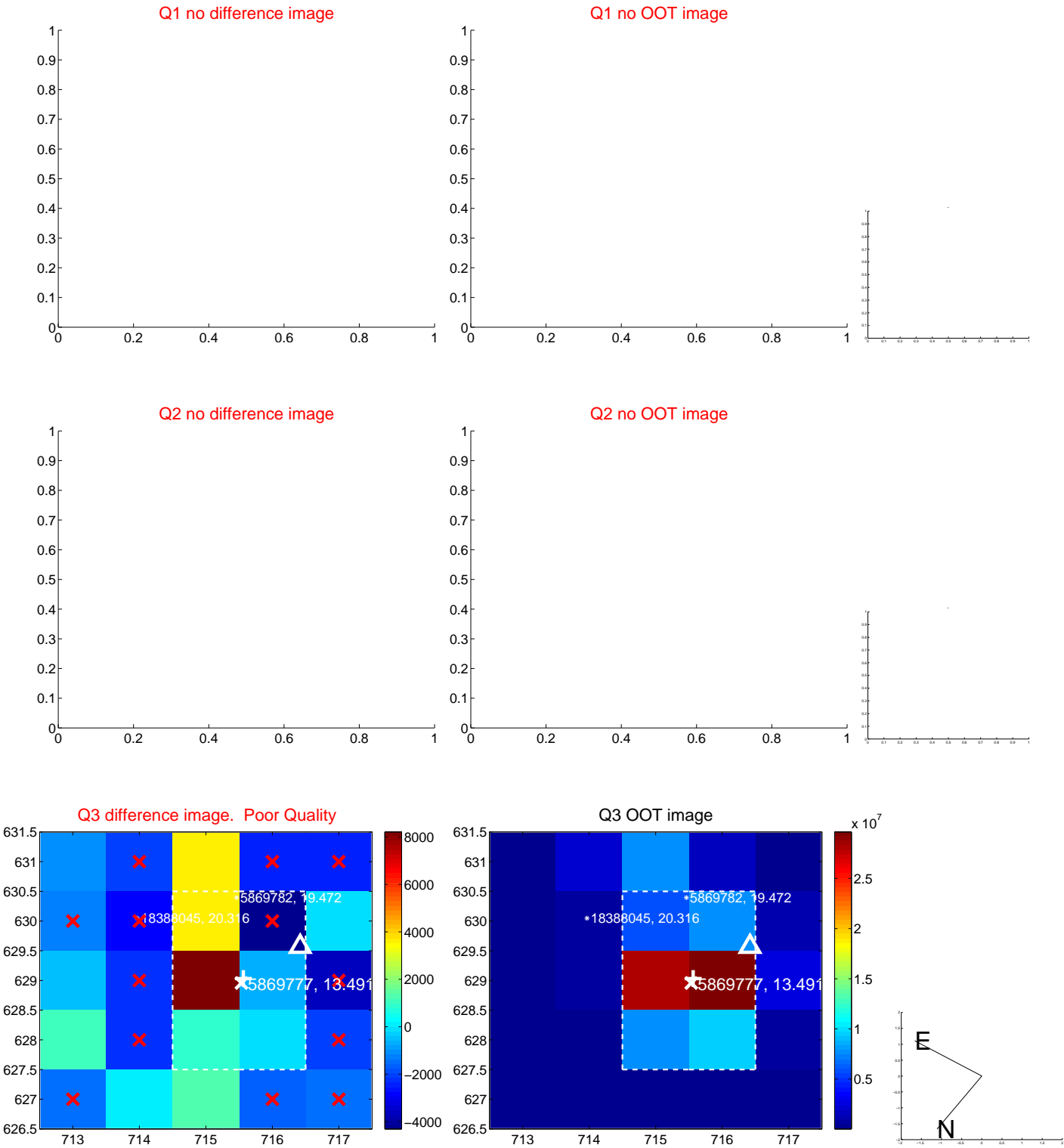


offset from photometric centroids



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



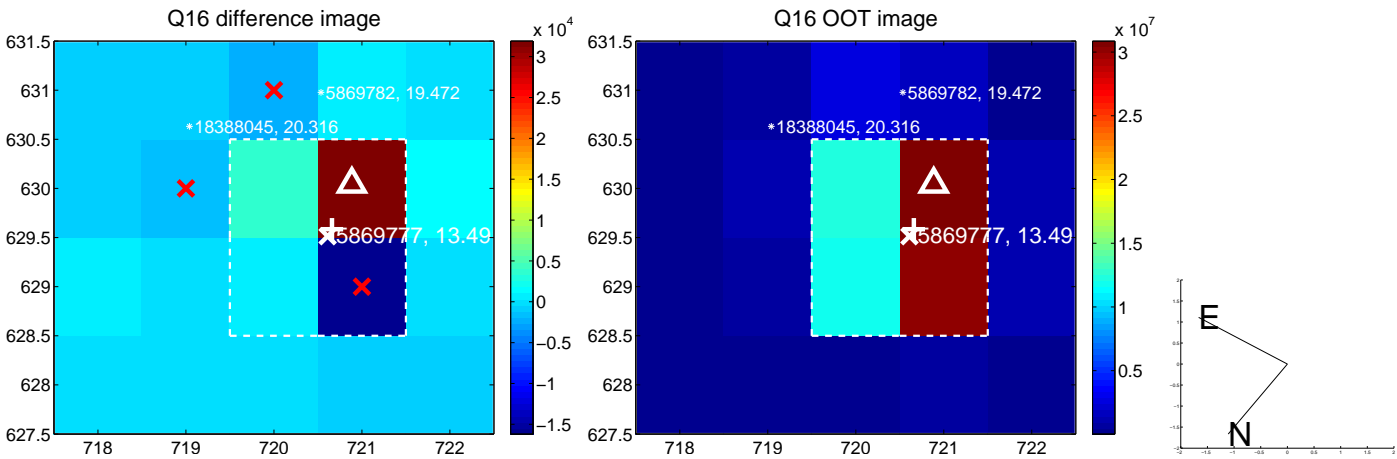
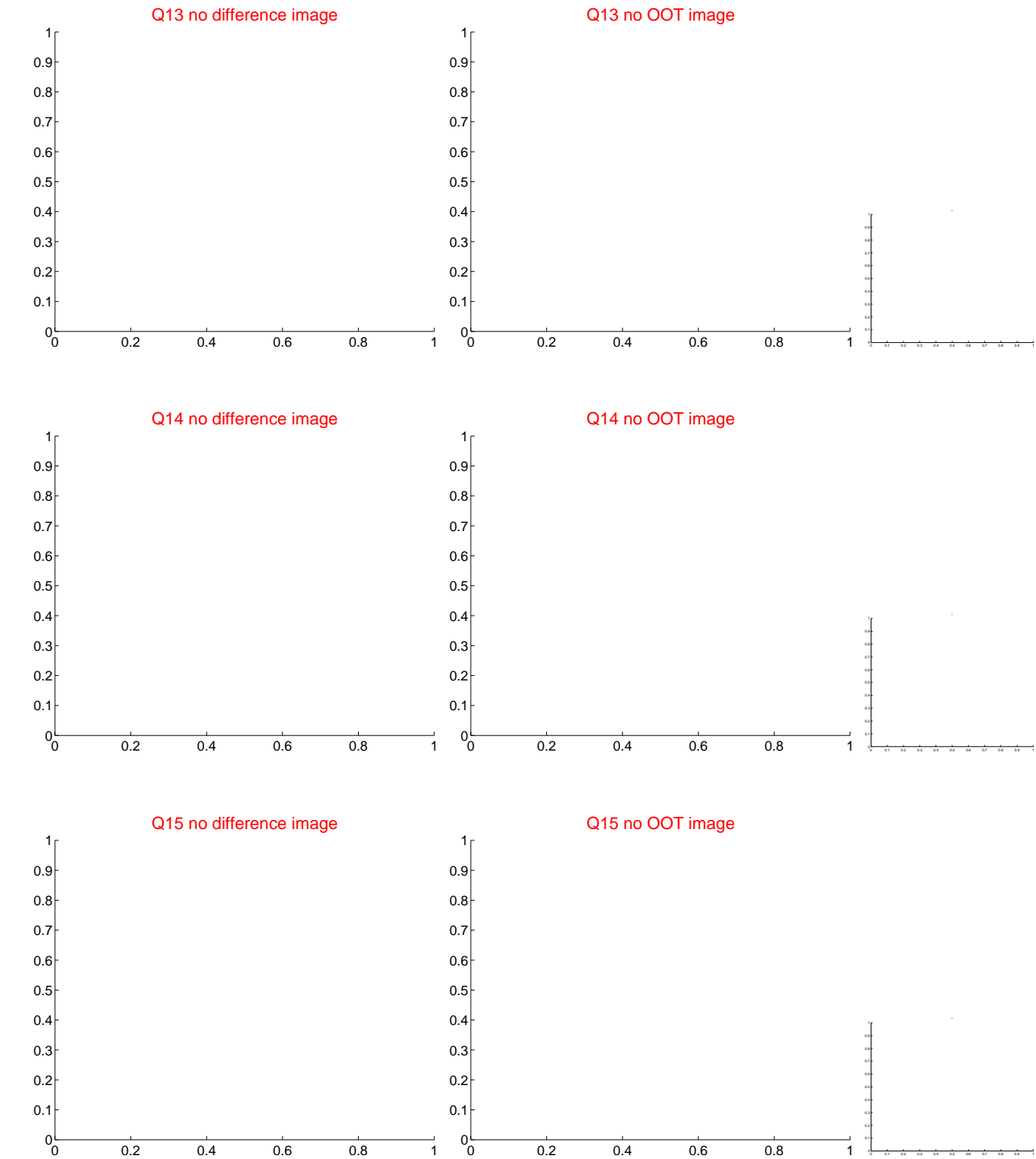
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



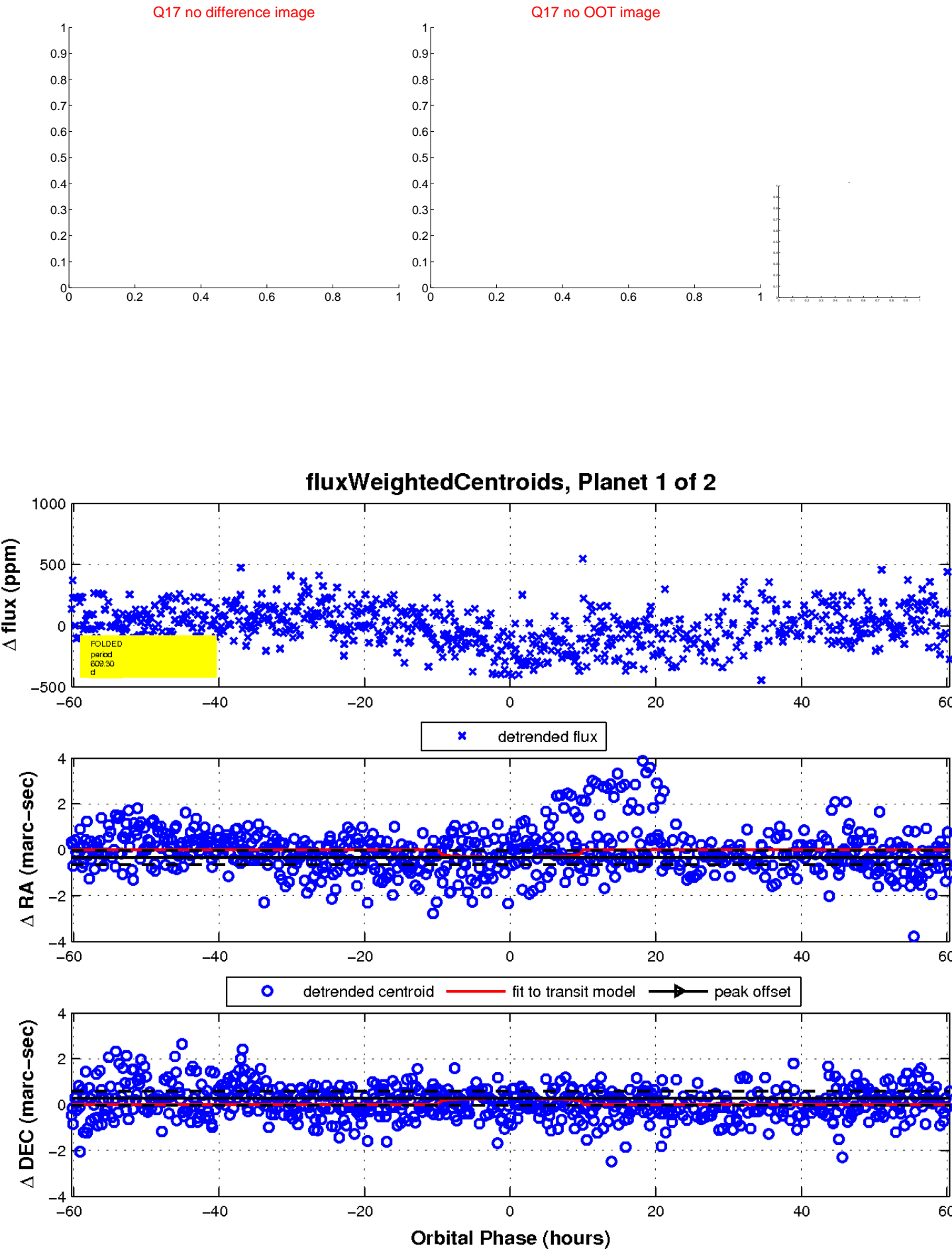
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

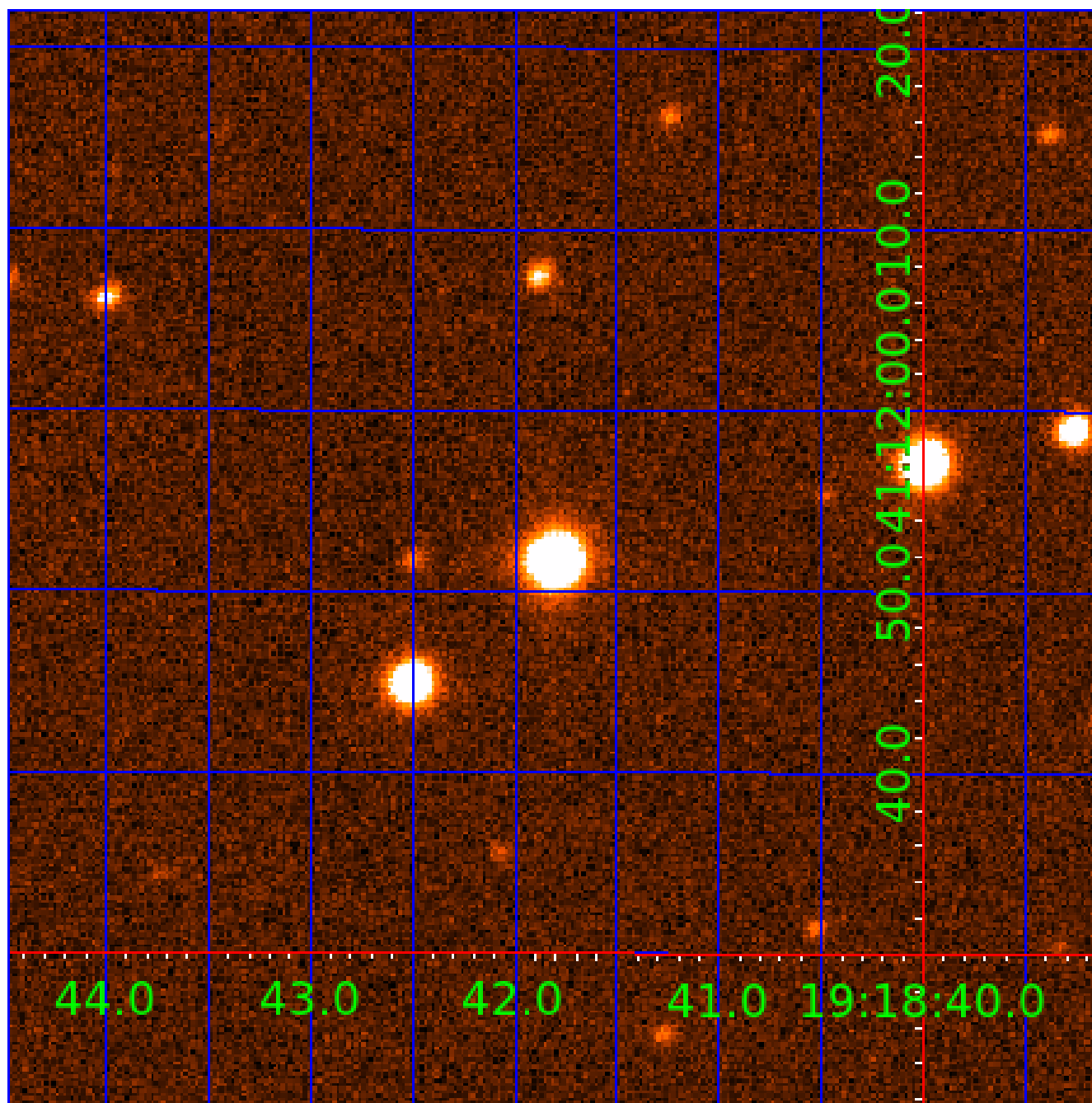


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005869777

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})
005869777-01	OBS	No	609.296011	276.462866	175.3	20.142	7.2	7.0	1.42	6260	2.04	1.35
005869777-02	OBS	No	411.146556	259.749751	228.8	11.394	8.9	8.2	1.42	6260	2.41	2.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005869777-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005869777-02	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—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.

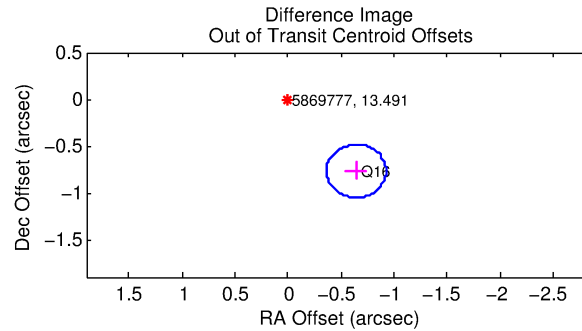
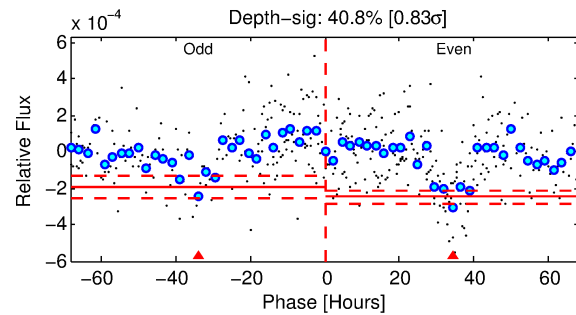
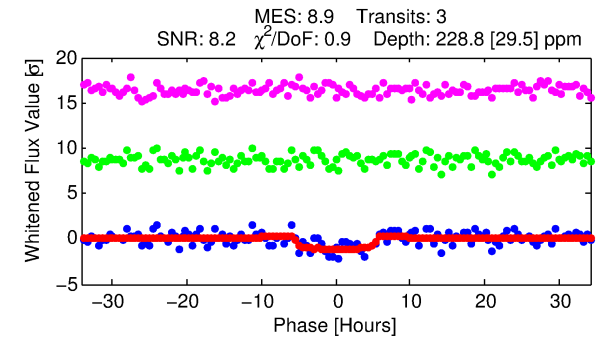
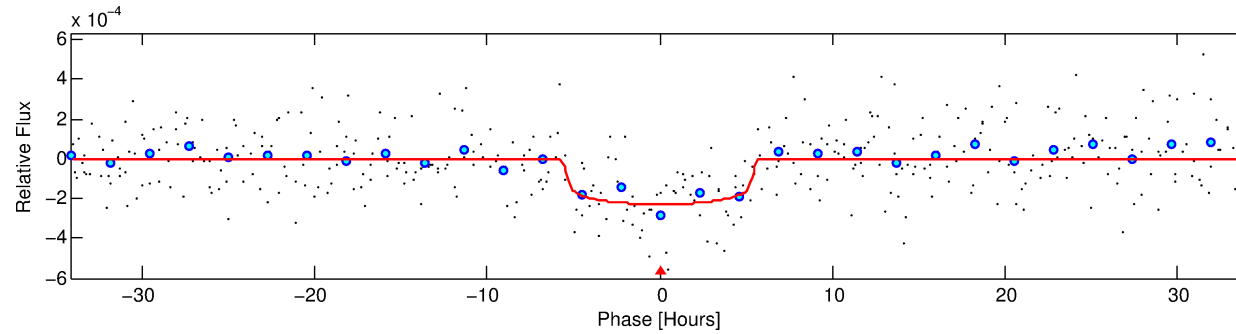
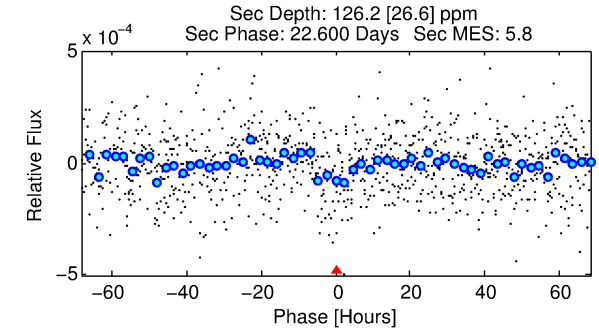
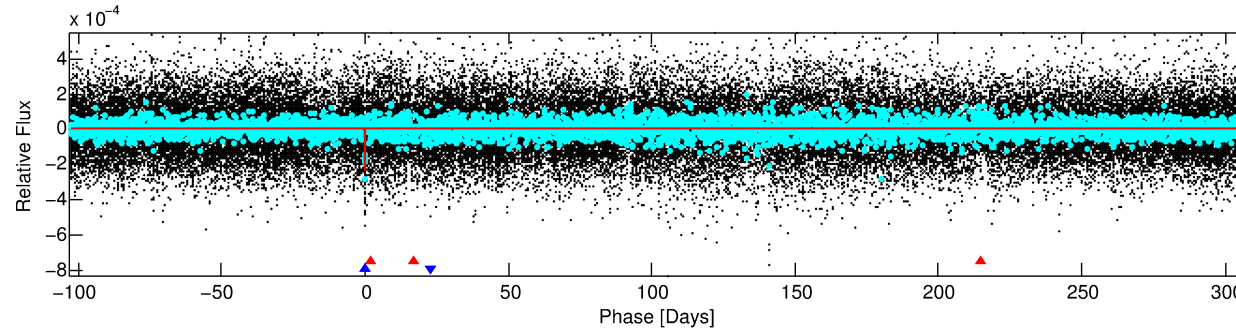
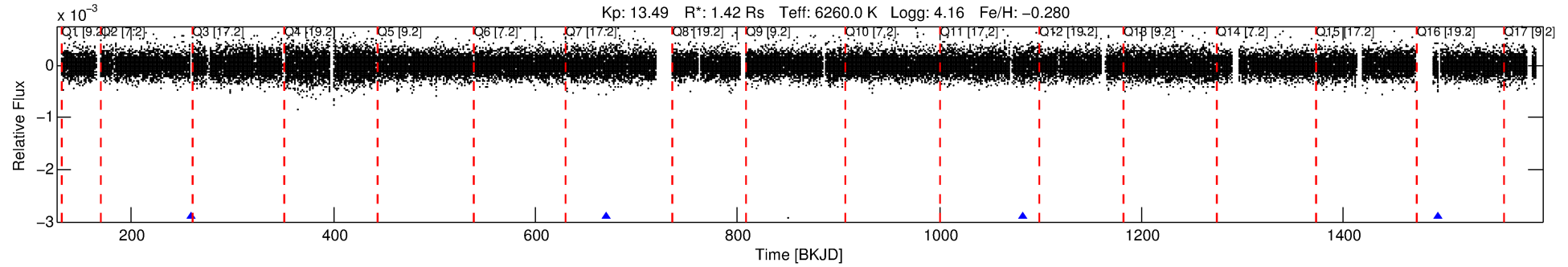
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005869777-02

No Significant Match Found

DV One-Page Summary

KIC: 5869777 Candidate: 2 of 2 Period: 411.147 d



DV Fit Results:

Period = 411.14656 [0.01242] d
Epoch = 259.7498 [0.0266] BKJD
Rp/R* = 0.0156 [0.0048]
a/R* = 158.51 [256.16]
b = 0.84 [0.58]
Seff = 2.28 [0.84]
Teq = 313 [29] K
Rp = 2.41 [0.92] Re
a = 1.1005 [0.2398] AU
Ag = 14485.95 [10690.17] [1.35σ]
Teff = 5315 [880] K [5.68σ]

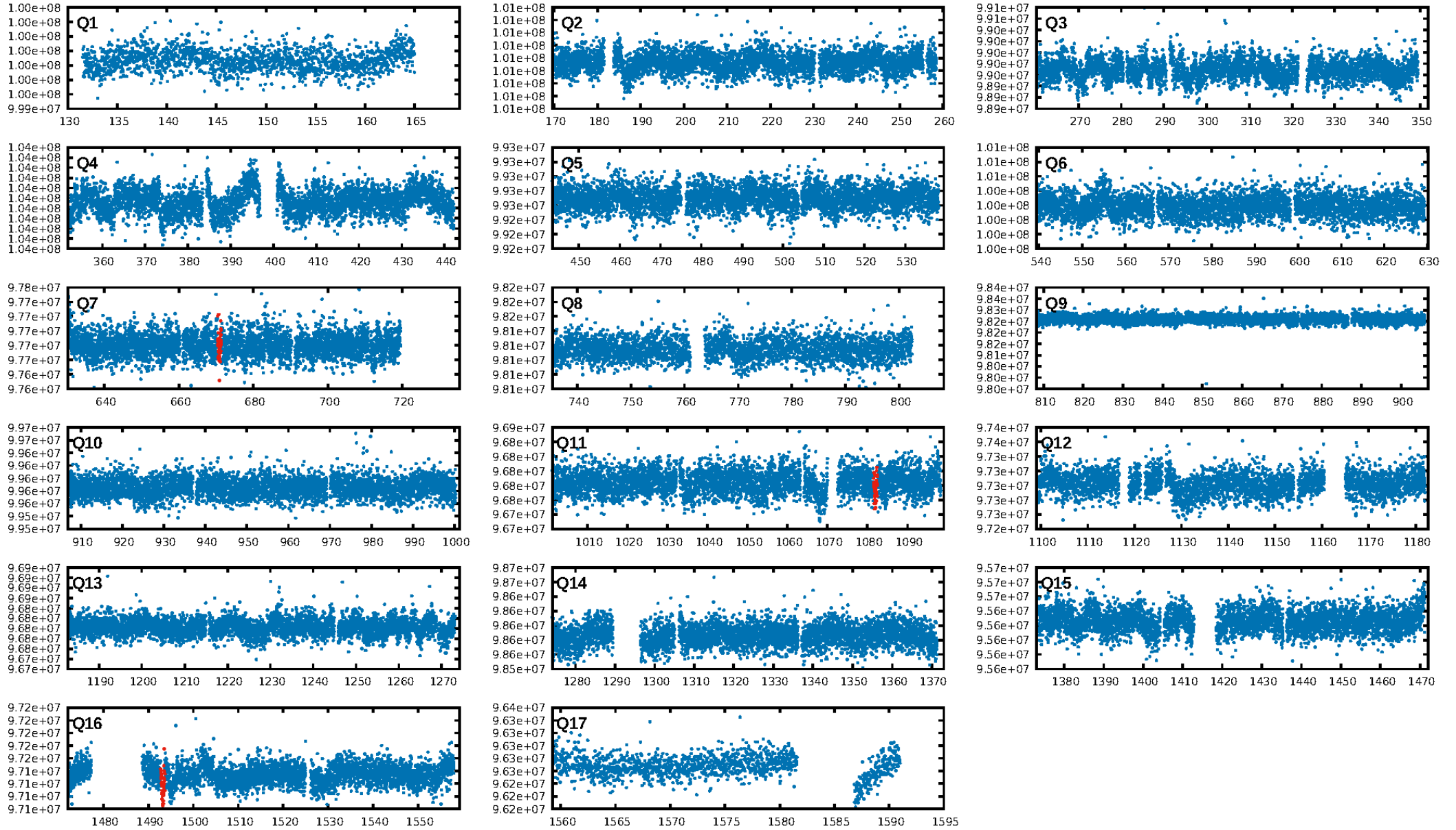
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [205.50σ]
ModelChiSquare2-sig: 0.9%
ModelChiSquareGoF-sig: 99.5%
Bootstrap-pfa: 5.72e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.248
Centroid-sig: 0.0%
Centroid-so: 6.562 arcsec [4.07σ]
OotOffset-rm: 1.003 arcsec [10.64σ]
KicOffset-rm: 1.289 arcsec [13.87σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

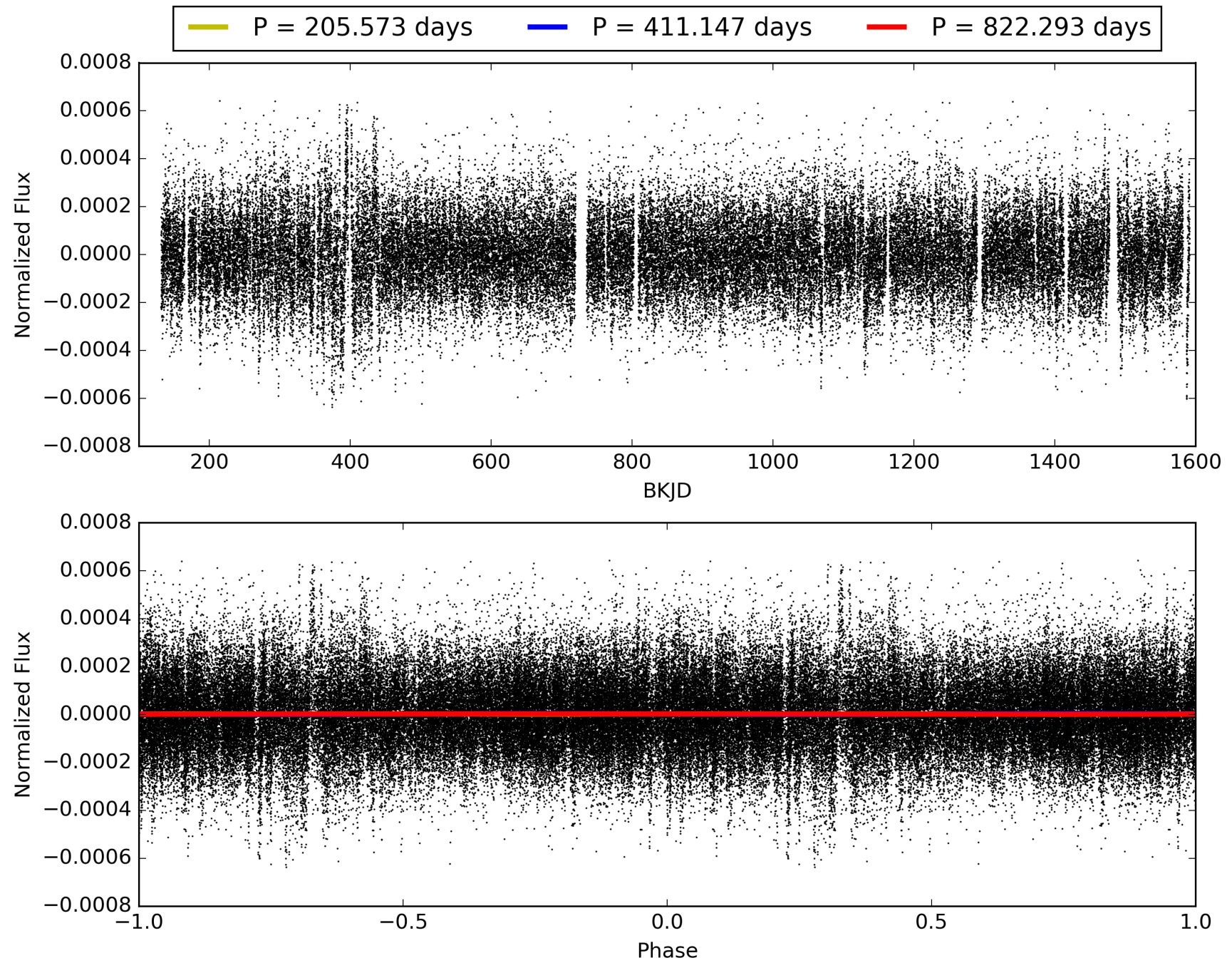
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:55:48 Z

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

TCE 005869777-02, PDC Light Curves

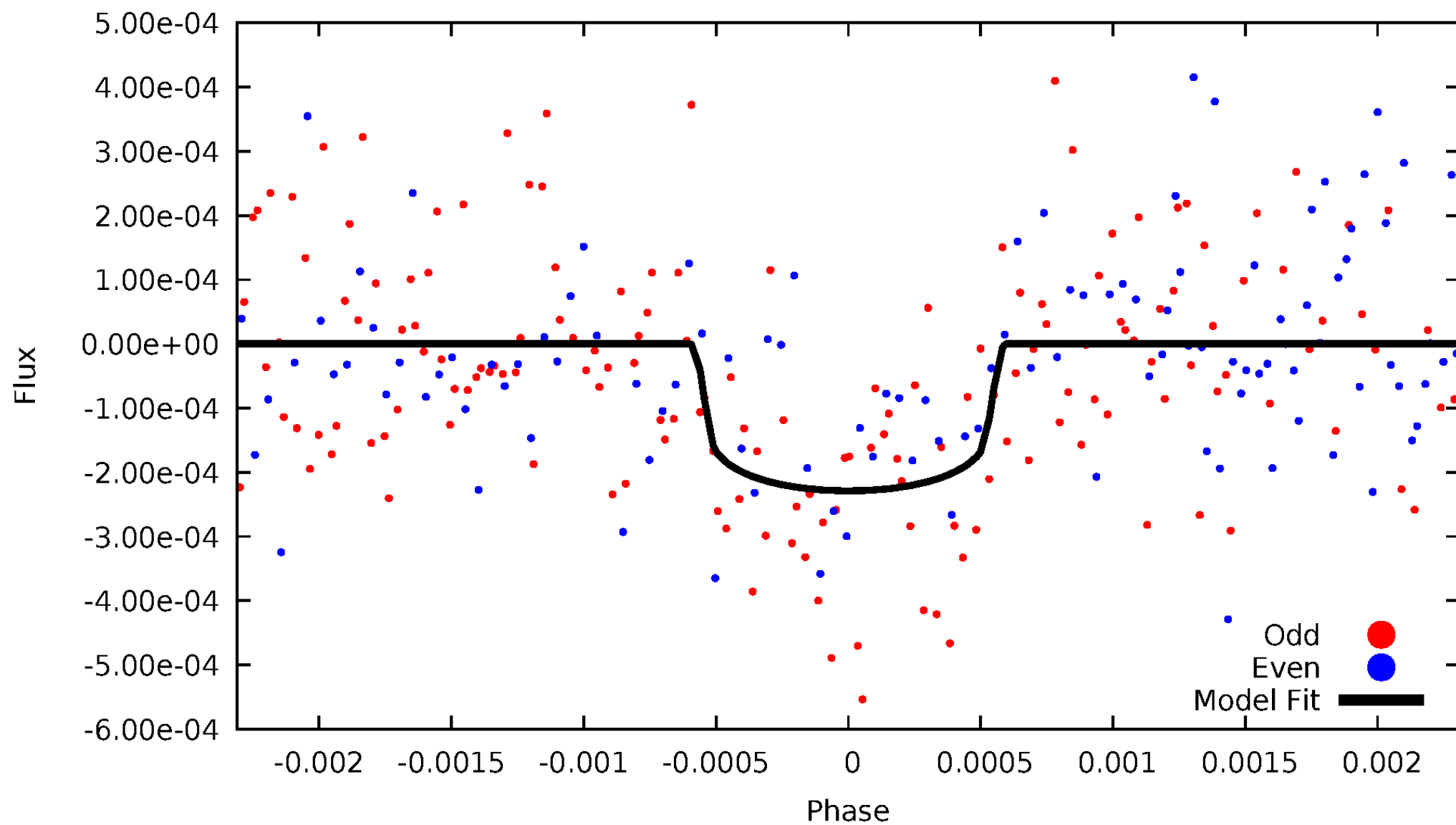


TCE 005869777-02



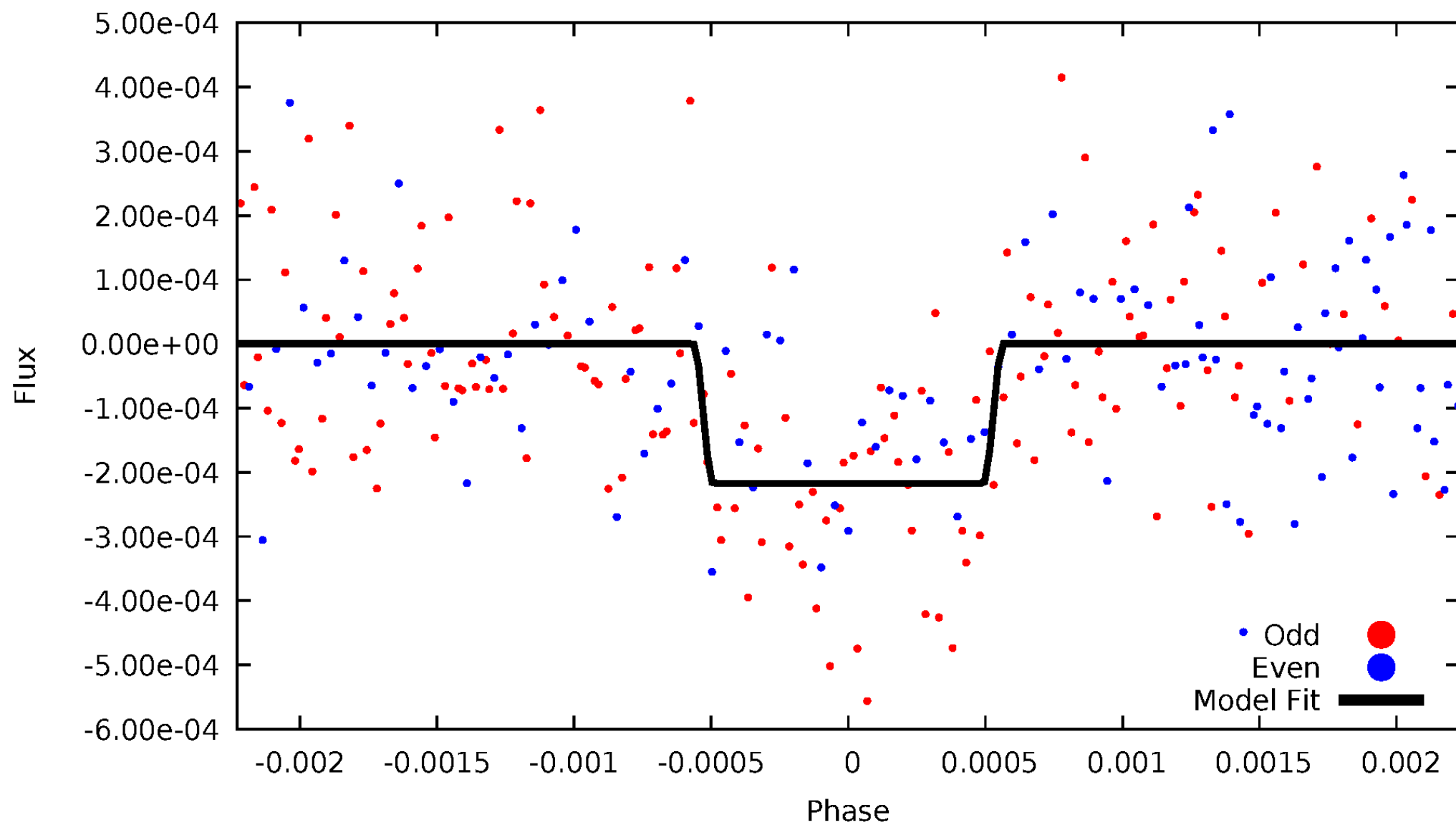
DV Odd/Even

TCE 005869777-02



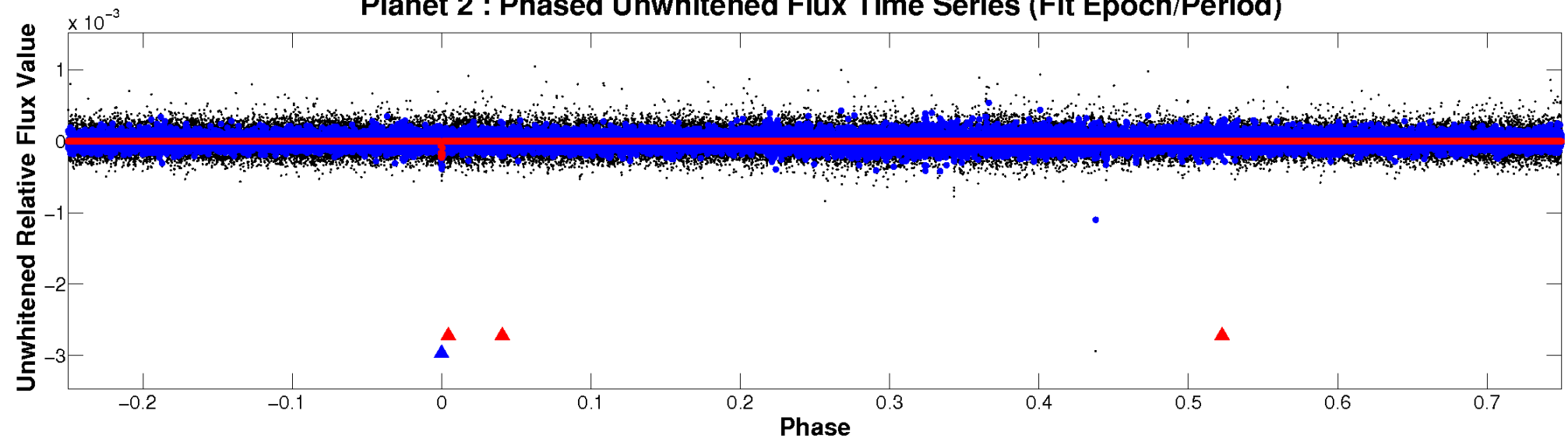
ALT Odd/Even

TCE 005869777-02

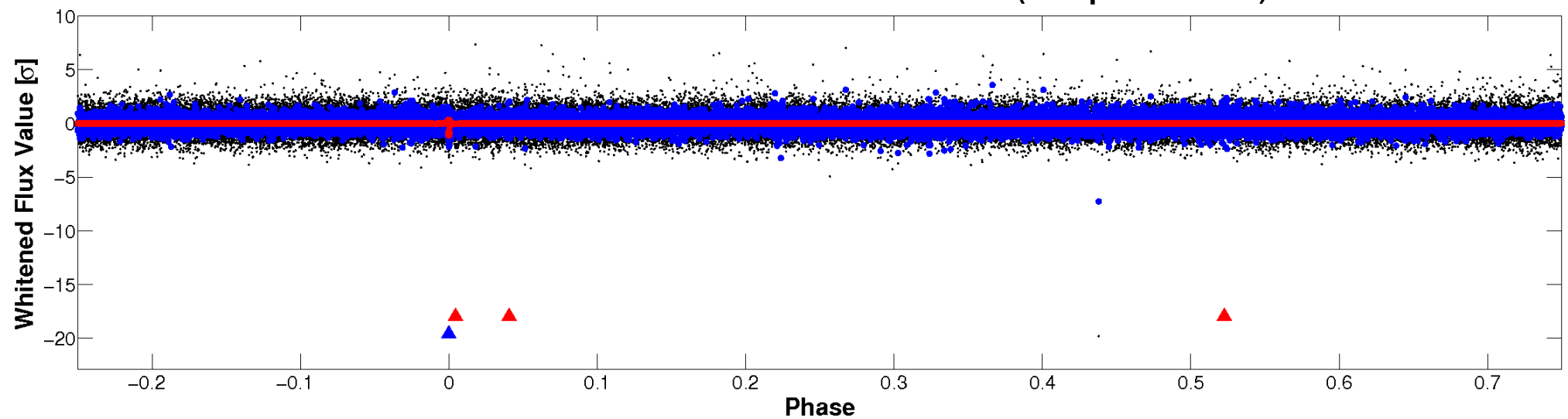


Non-Whitened Vs. Whitened Light Curve

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

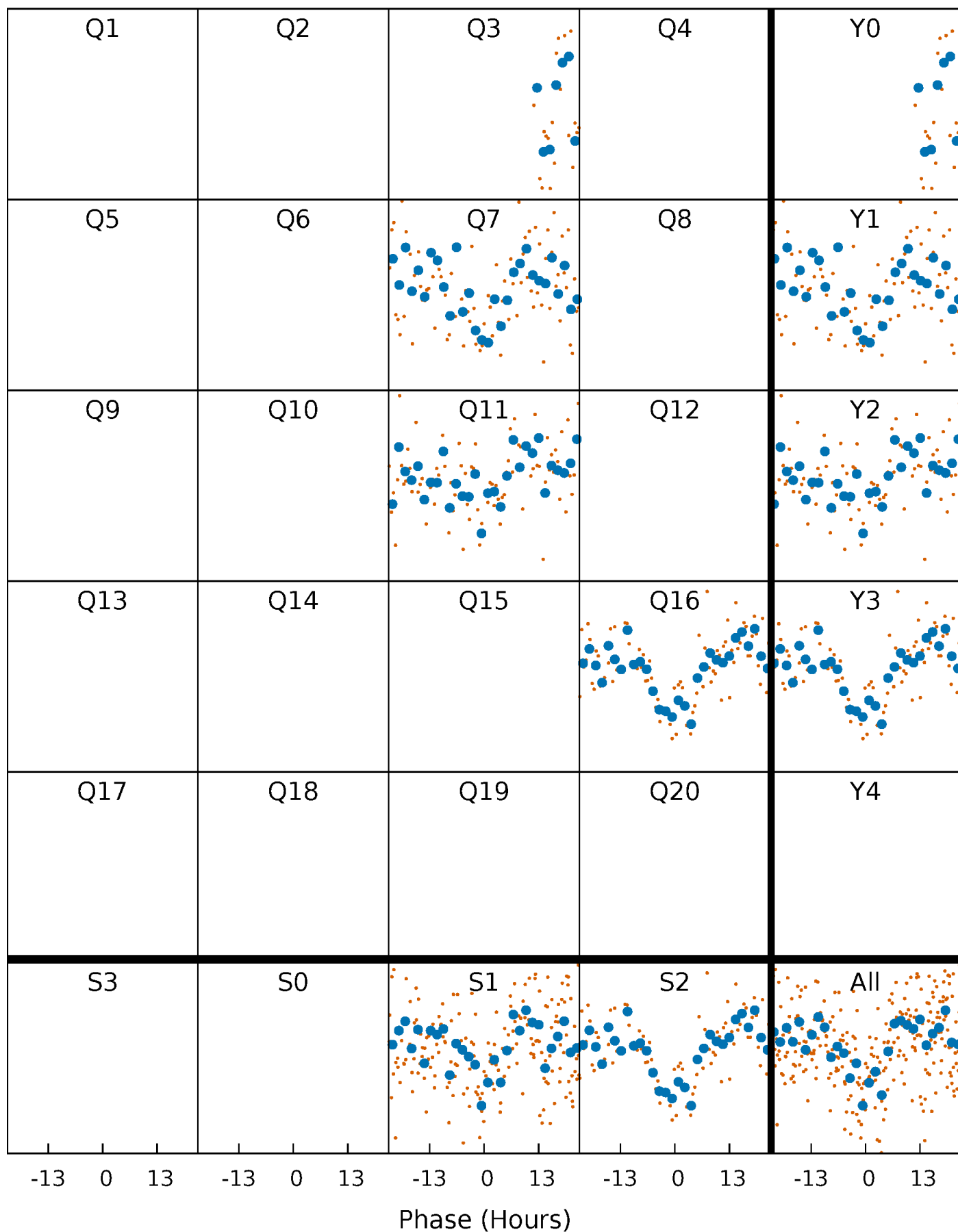


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



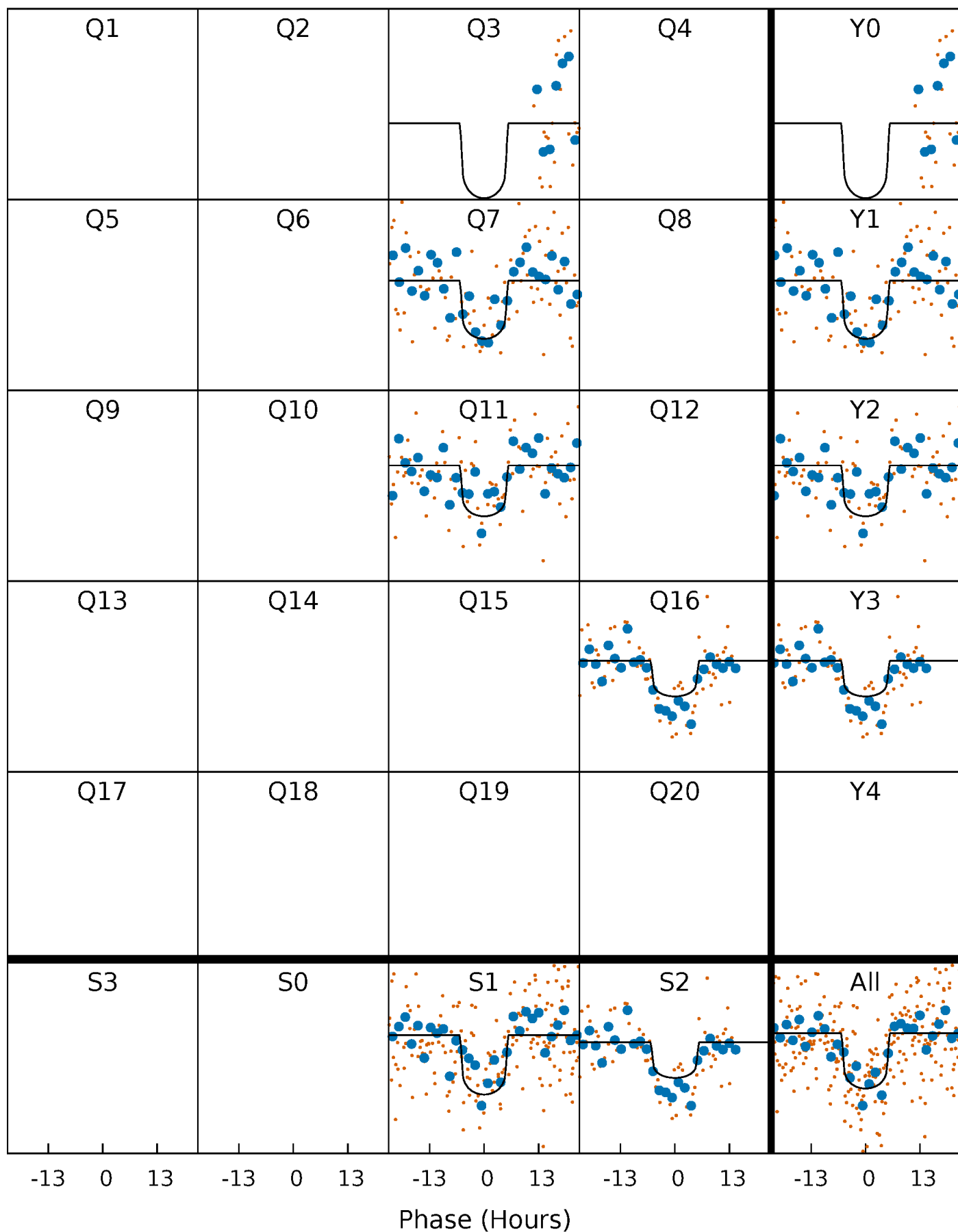
PDC Quarter-Phased Transit Curves

TCE 005869777-02 $P=411.146556$ Days $T_0=259.749751$ (BKJD)



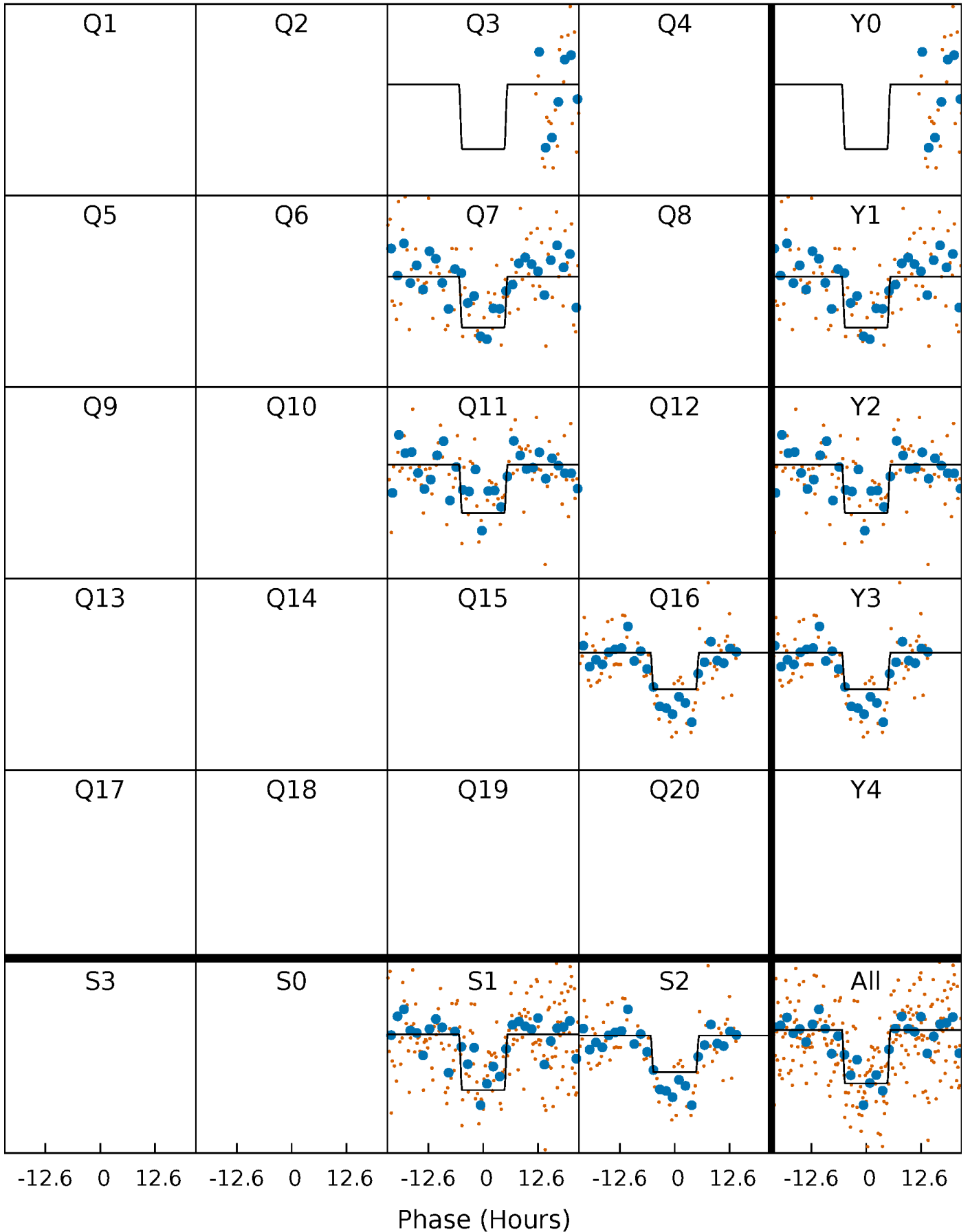
DV Quarter-Phased Transit Curves

TCE 005869777-02 $P=411.146556$ Days $T_0=259.749751$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

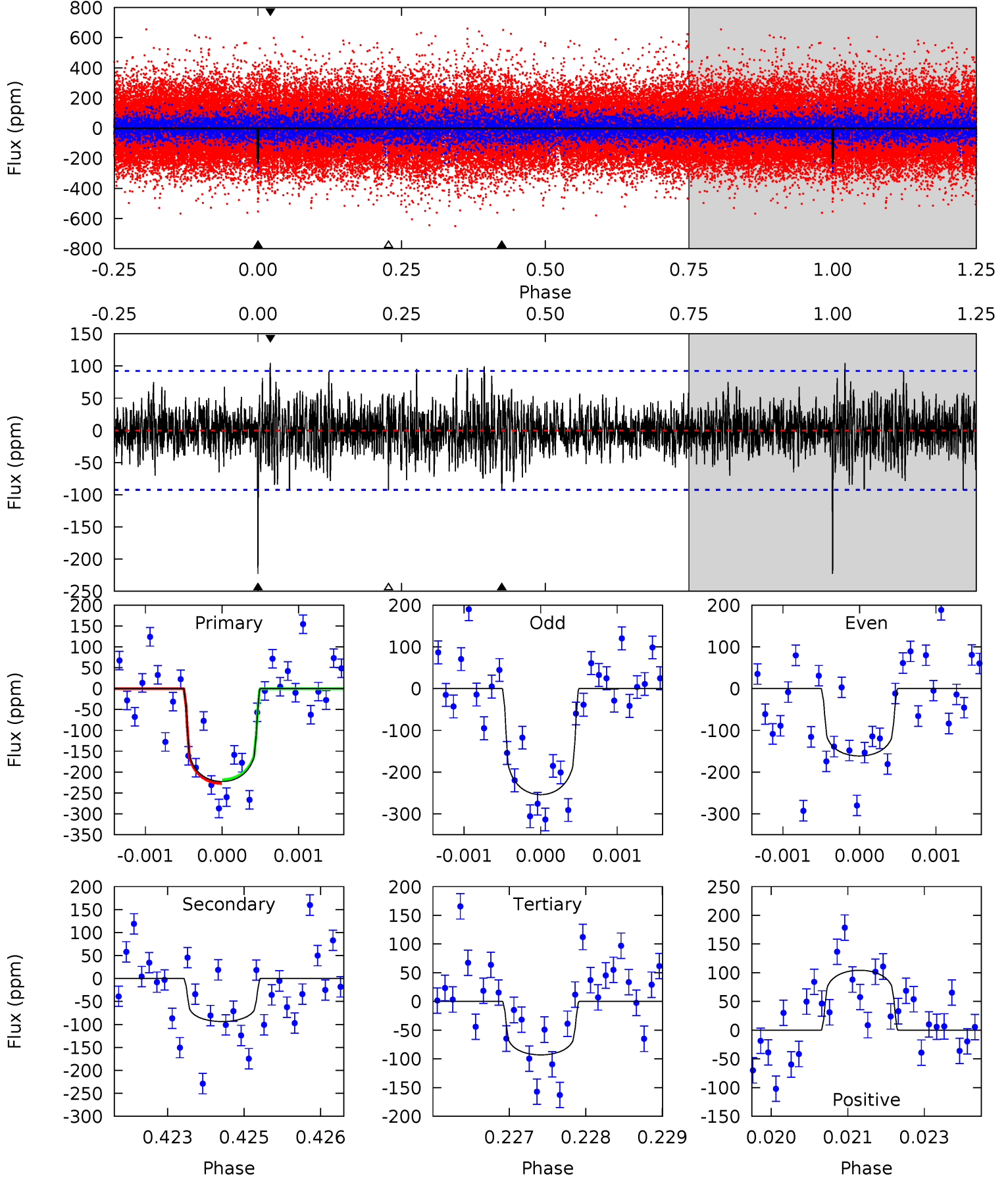
TCE 005869777-02 P=411.150472 Days $T_0=259.739272$ (BKJD)



DV Model-Shift Uniqueness Test

005869777-02, P = 411.146556 Days, E = 259.749751 Days

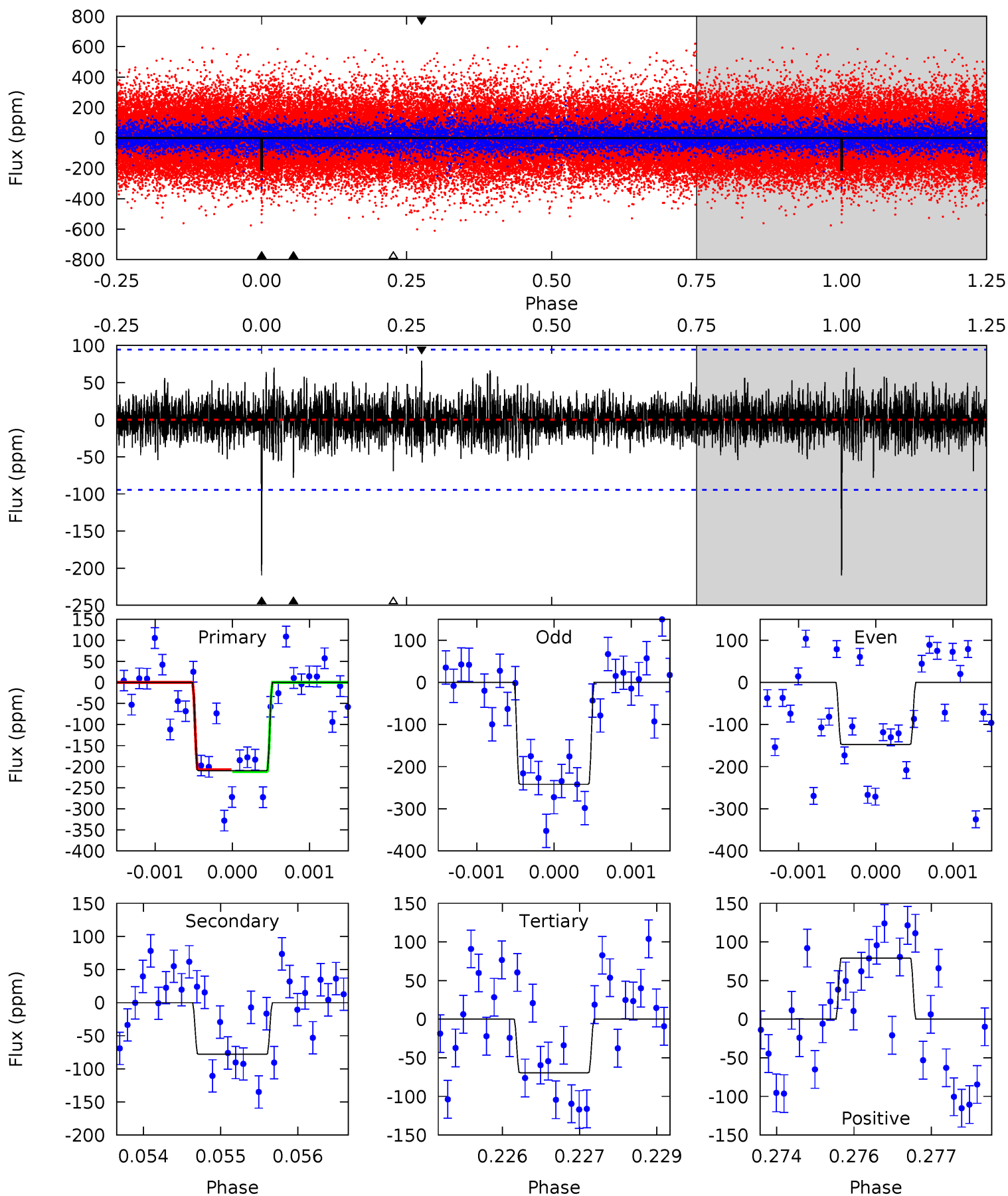
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	5.50	5.46	6.12	5.42	3.24	1.48	7.60	6.94	0.04	-0.62	2.56	1.30	0.32	0.27



Alt Model-Shift Uniqueness Test

005869777-02, P = 411.150472 Days, E = 259.739272 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	4.48	3.99	4.55	5.44	3.27	1.01	8.07	7.50	0.49	-0.07	2.54	1.32	0.27	0.15



Stellar Parameters For KIC 005869777

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6260^{+170}_{-189}	$4.157^{+0.204}_{-0.136}$	$-0.280^{+0.300}_{-0.300}$	$1.417^{+0.322}_{-0.322}$	$1.051^{+0.165}_{-0.135}$	$0.520^{+0.589}_{-0.208}$
	+3%/-3%	+5%/-3%	+107%/-107%	+23%/-23%	+16%/-13%	+113%/-40%
Source	PHO1	FLK73	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 005869777-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-94 ± 17	$2.38^{+0.83}_{-0.77}$	436^{+26}_{-30}	5004^{+908}_{-568}	11293^{+12849}_{-5391}
Alt.	-78 ± 17	$2.25^{+0.87}_{-0.83}$	435^{+29}_{-28}	4916^{+1070}_{-601}	10154^{+15456}_{-5189}

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

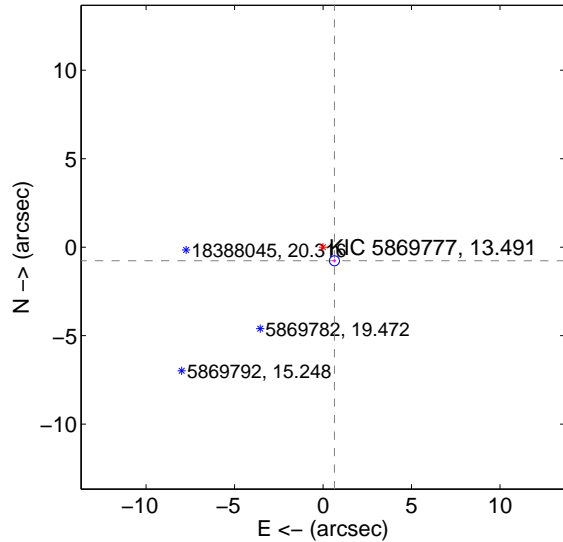
Supplemental centroid analysis for 005869777-02. Kepler magnitude: 13.49. Transit SNR 8.24

There are 1 quarters with good PRF difference image offsets

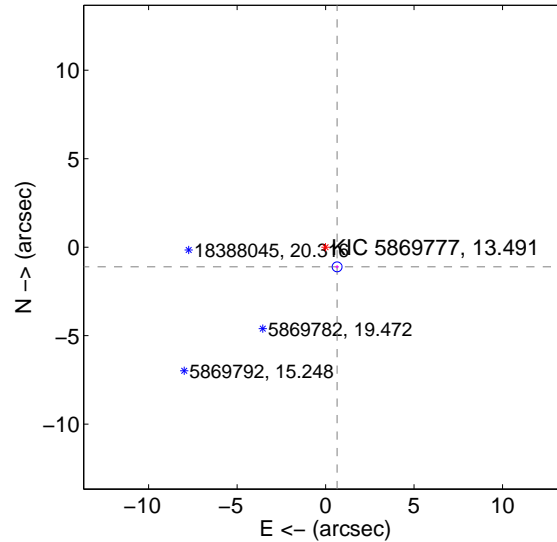
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.003 ± 0.094	10.64	-0.644 ± 0.099	-0.769 ± 0.091
PRF-fit source offset from KIC position	1.289 ± 0.093	13.87	-0.651 ± 0.099	-1.112 ± 0.091
photometric centroid source offset	6.56 ± 1.61	4.07	-2.68 ± 1.65	-5.99 ± 1.60

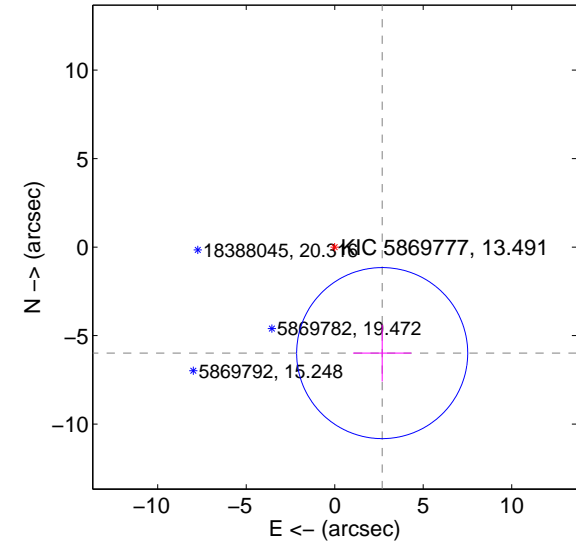
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

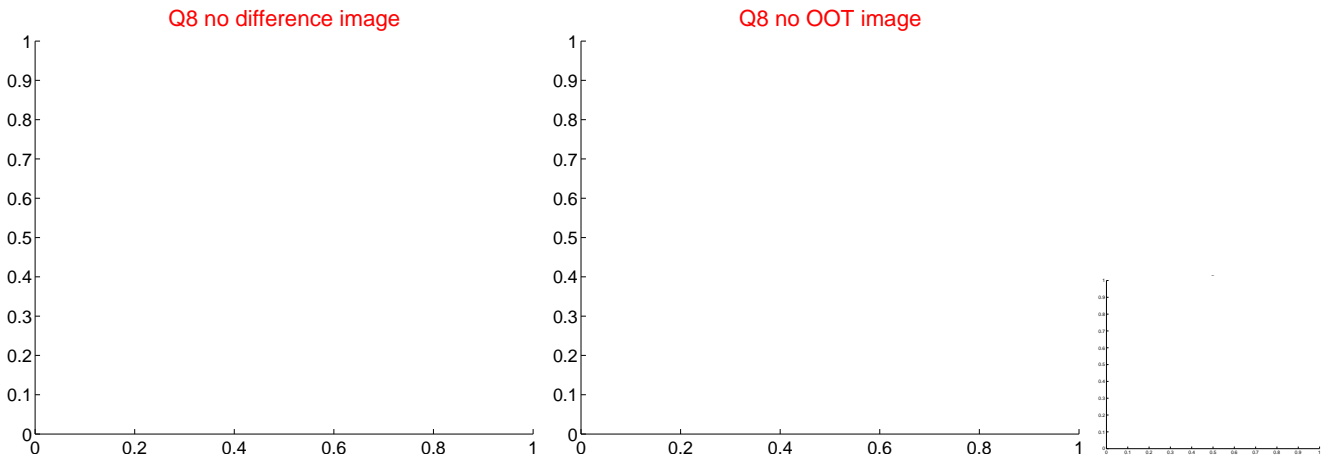
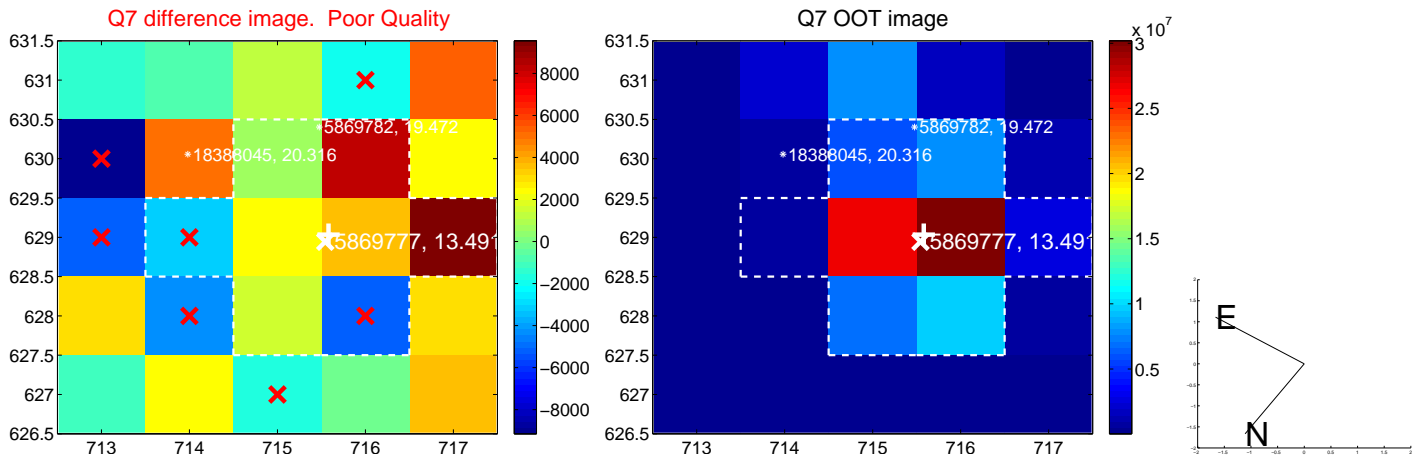
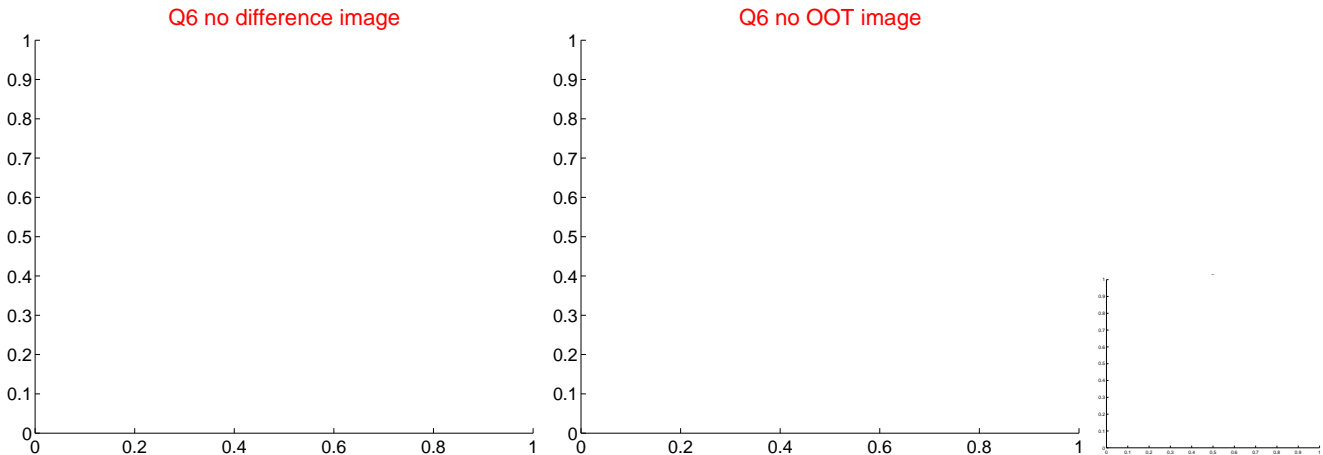
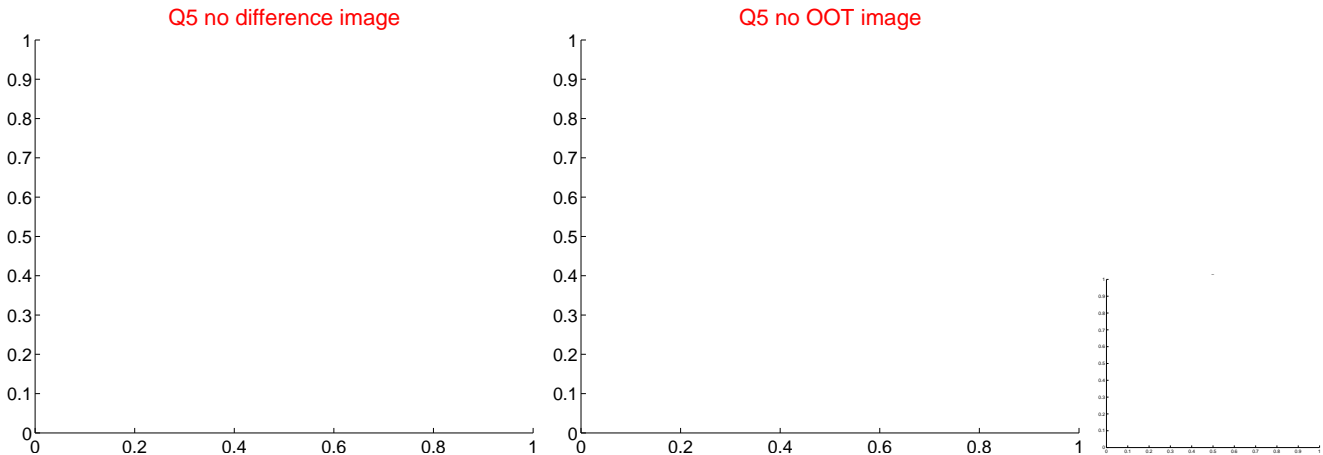


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

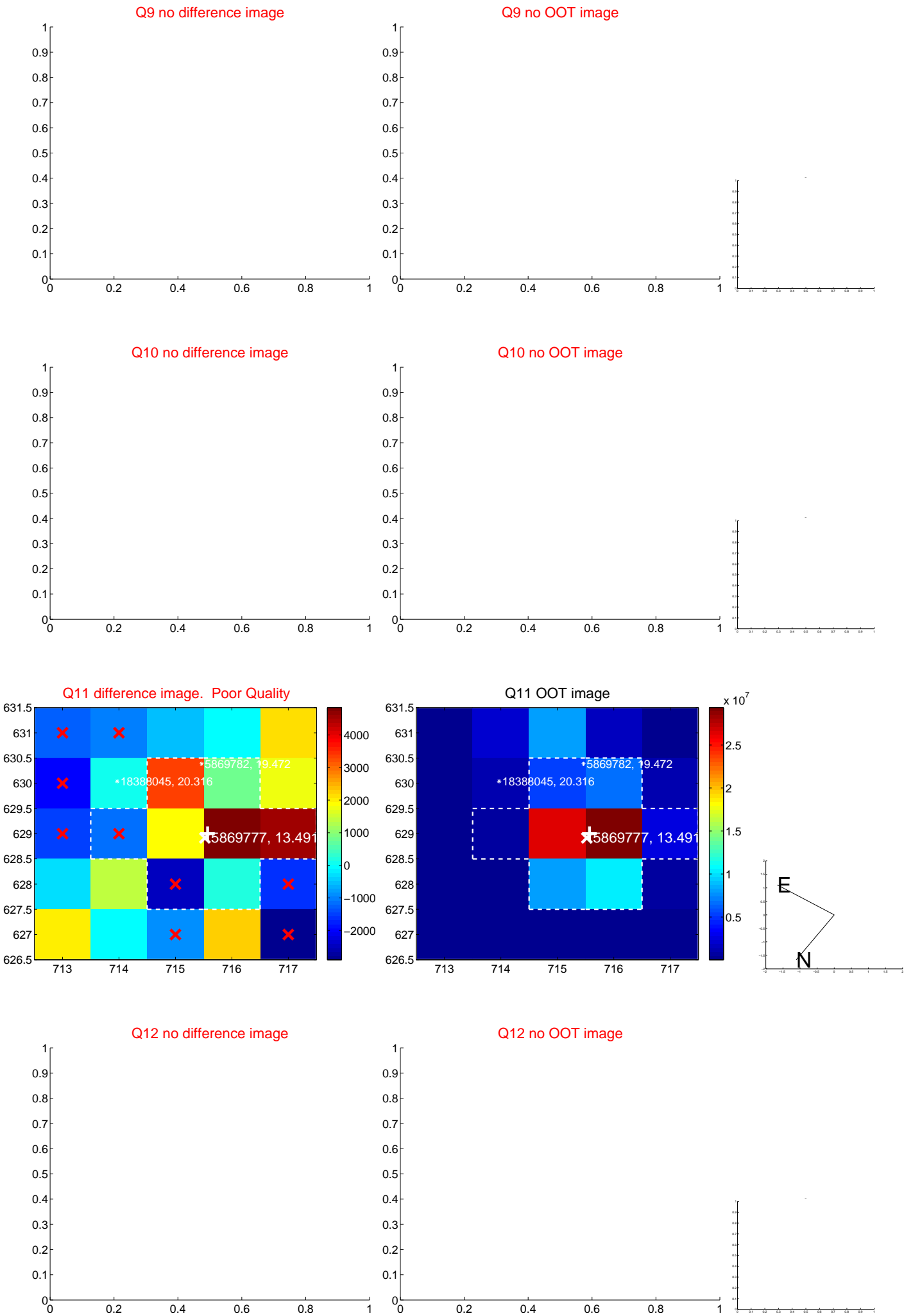
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



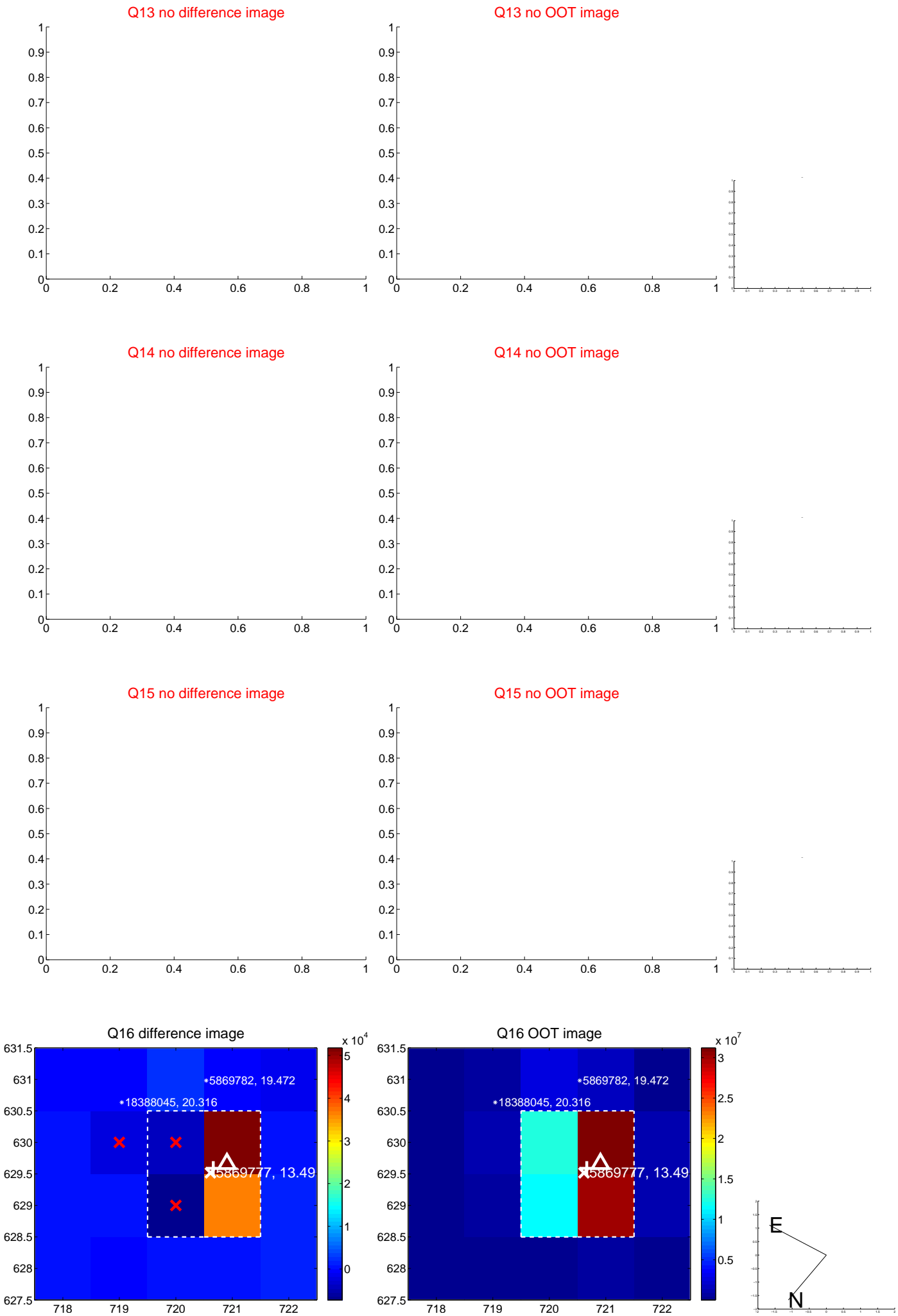
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



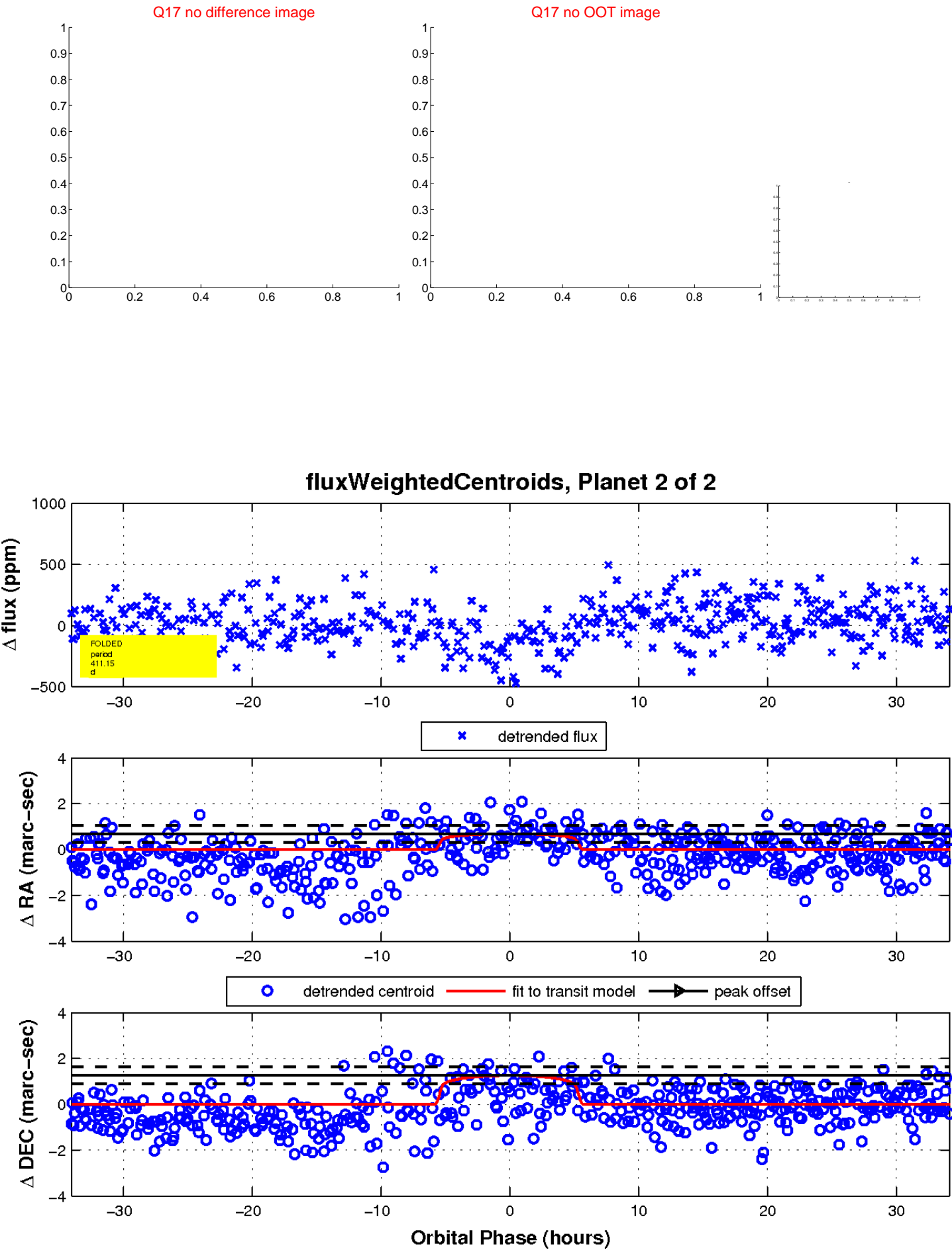
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

