

KIC 010471005

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})
010471005-01	OBS	8016.01	0.933759	131.519248	39.3	3.491	7.8	8.4	1.09	5593	0.82	3051.45
010471005-02	OBS	No	180.065608	185.959508	500.8	3.689	10.6	4.8	1.09	5593	2.76	2.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010471005-01	OBS	FP	0.00	0	0	1	1	CENT_UNCERTAIN—HALO_GHOST—EPHEM_MATCH
010471005-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

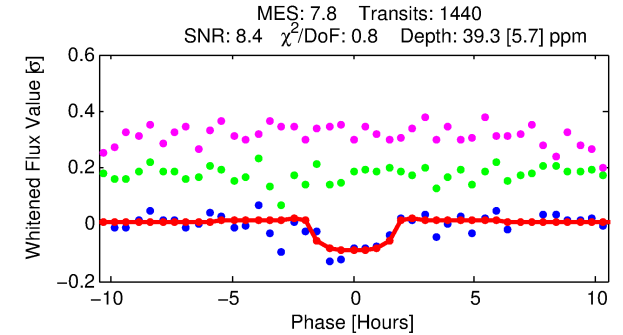
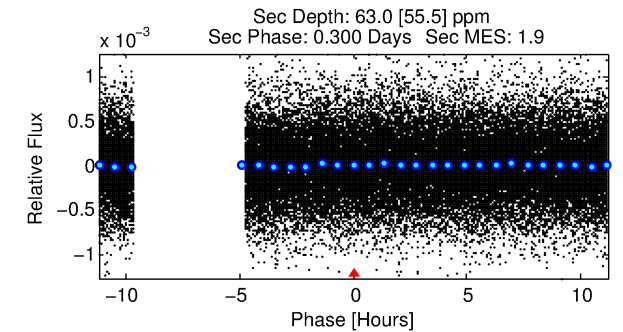
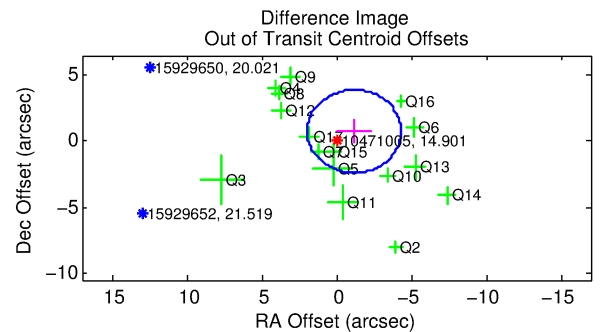
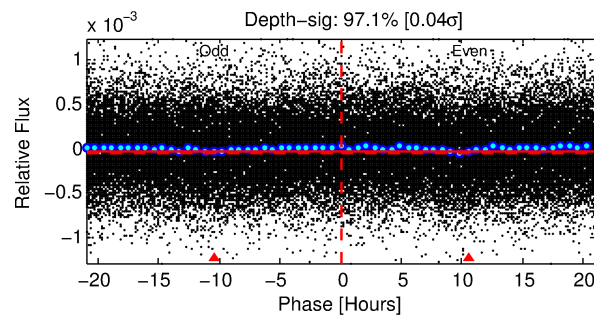
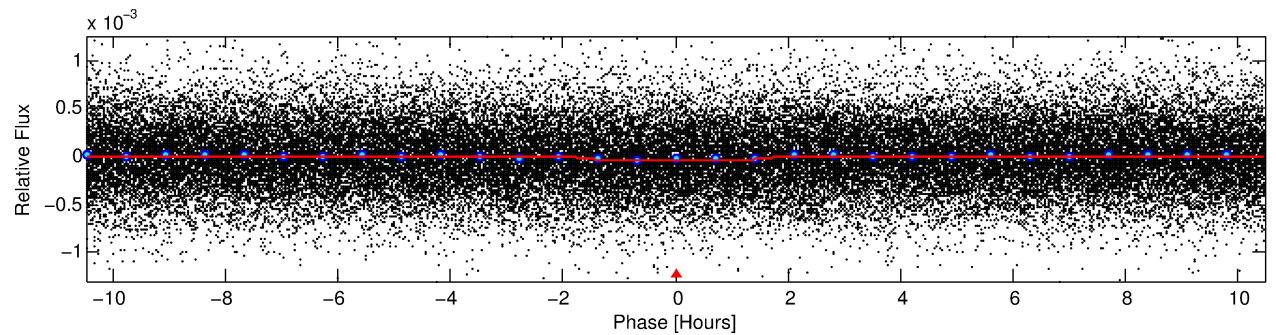
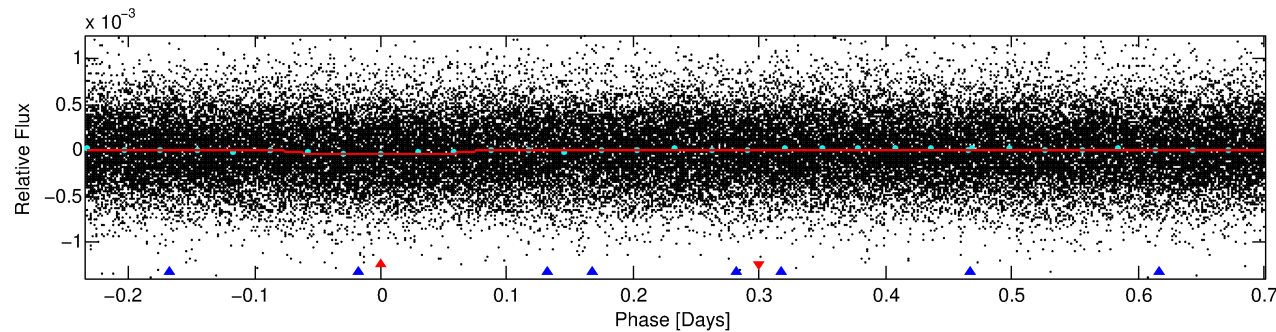
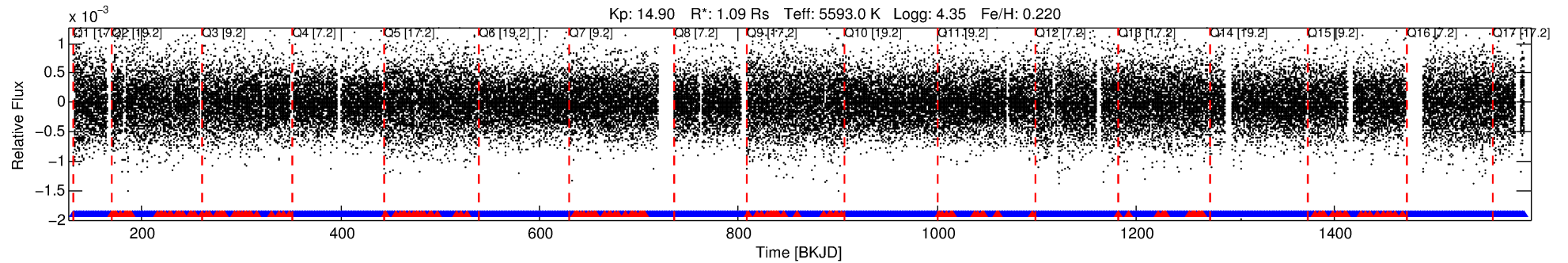
Ephemeris Match Information For 010471005-01

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
010471005-01	10471005	V2083-Cyg-pri	10342012	1:2	1744.7	325	-296	6.90	14.90	5085.20	Direct-PRF	0	2.00	0.02

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: 10471005 Candidate: 1 of 2 Period: 0.934 d



DV Fit Results:

Period = 0.93376 [0.00001] d
Epoch = 131.5192 [0.0044] BKJD
Rp/R* = 0.0069 [0.0045]
a/R* = 1.32 [1.66]
b = 0.90 [0.65]
Seff = 3051.44 [1125.15]
Teff = 1895 [175] K
Rp = 0.82 [0.58] Re
a = 0.0185 [0.0044] AU
Ag = 17.67 [28.49] [0.59 σ]
Teffp = 6008 [2370] K [1.73 σ]

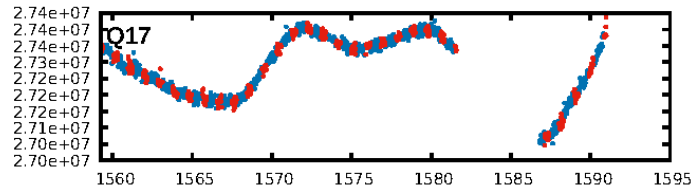
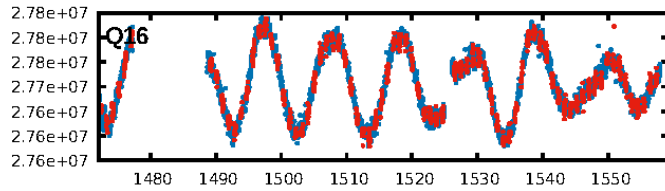
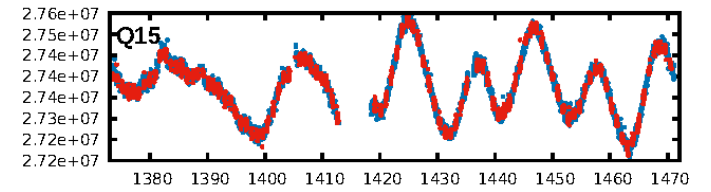
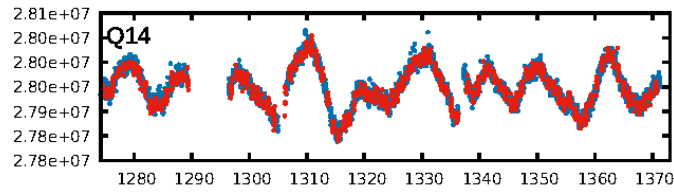
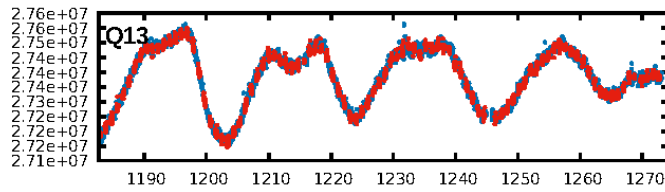
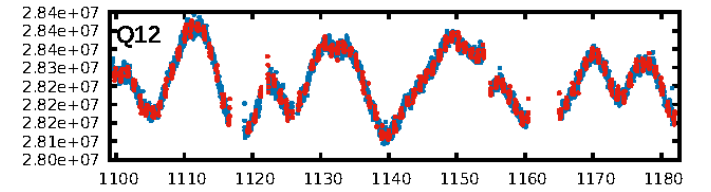
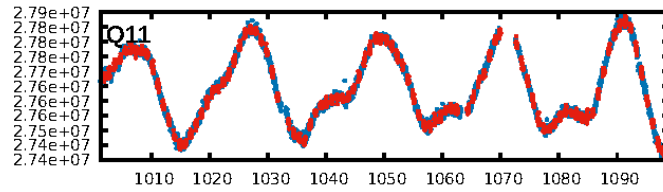
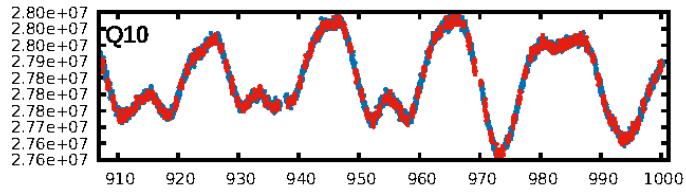
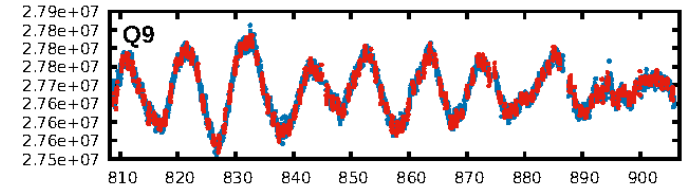
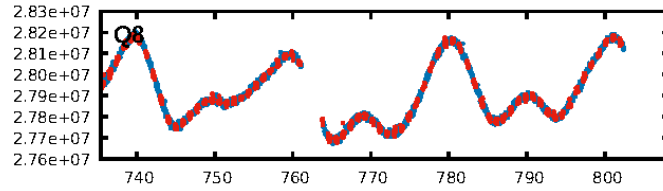
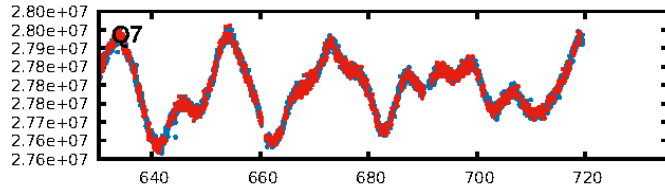
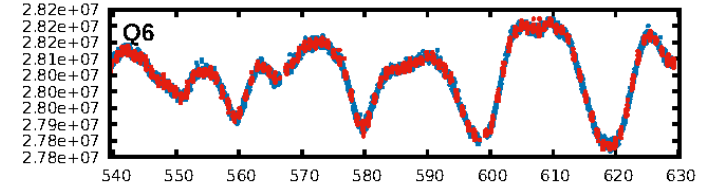
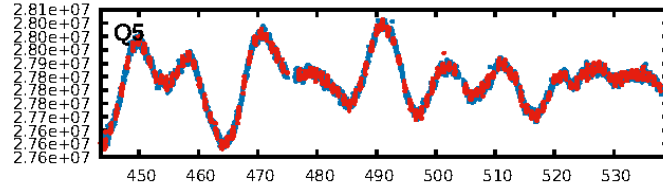
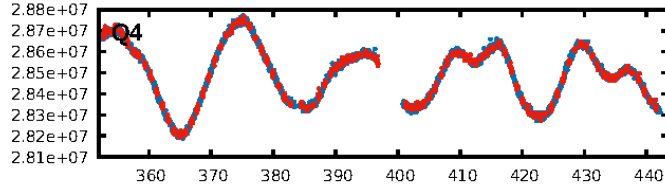
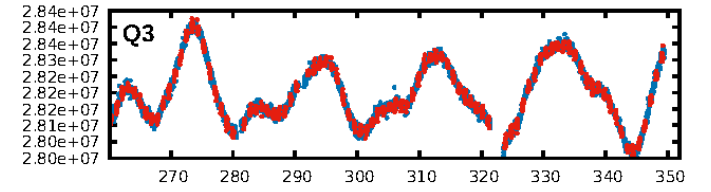
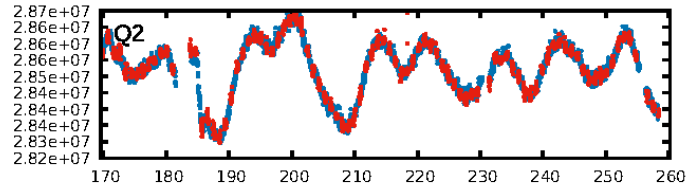
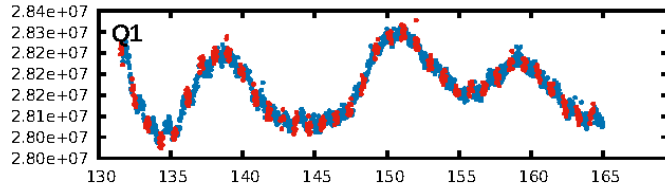
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [846.54 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.88e-12
RollingBand-fgt: 0.88 [1214/1374]
GhostDiagnostic-chr: -0.04346
Centroid-sig: 8.9%
Centroid-so: 1.800 arcsec [1.22 σ]
OotOffset-rm: 1.391 arcsec [1.33 σ]
KicOffset-rm: 1.322 arcsec [1.28 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

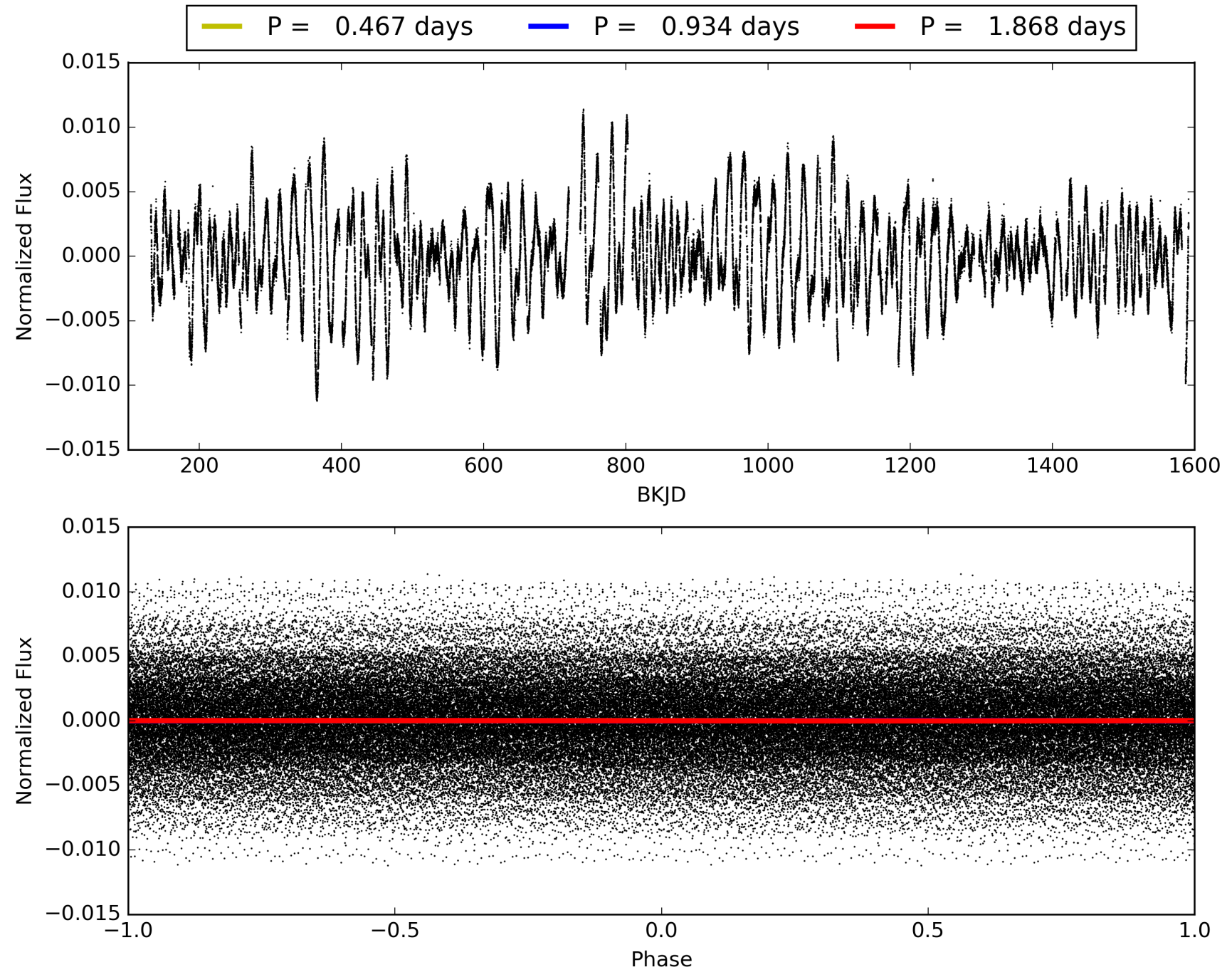
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:52:25 Z

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

TCE 010471005-01, PDC Light Curves

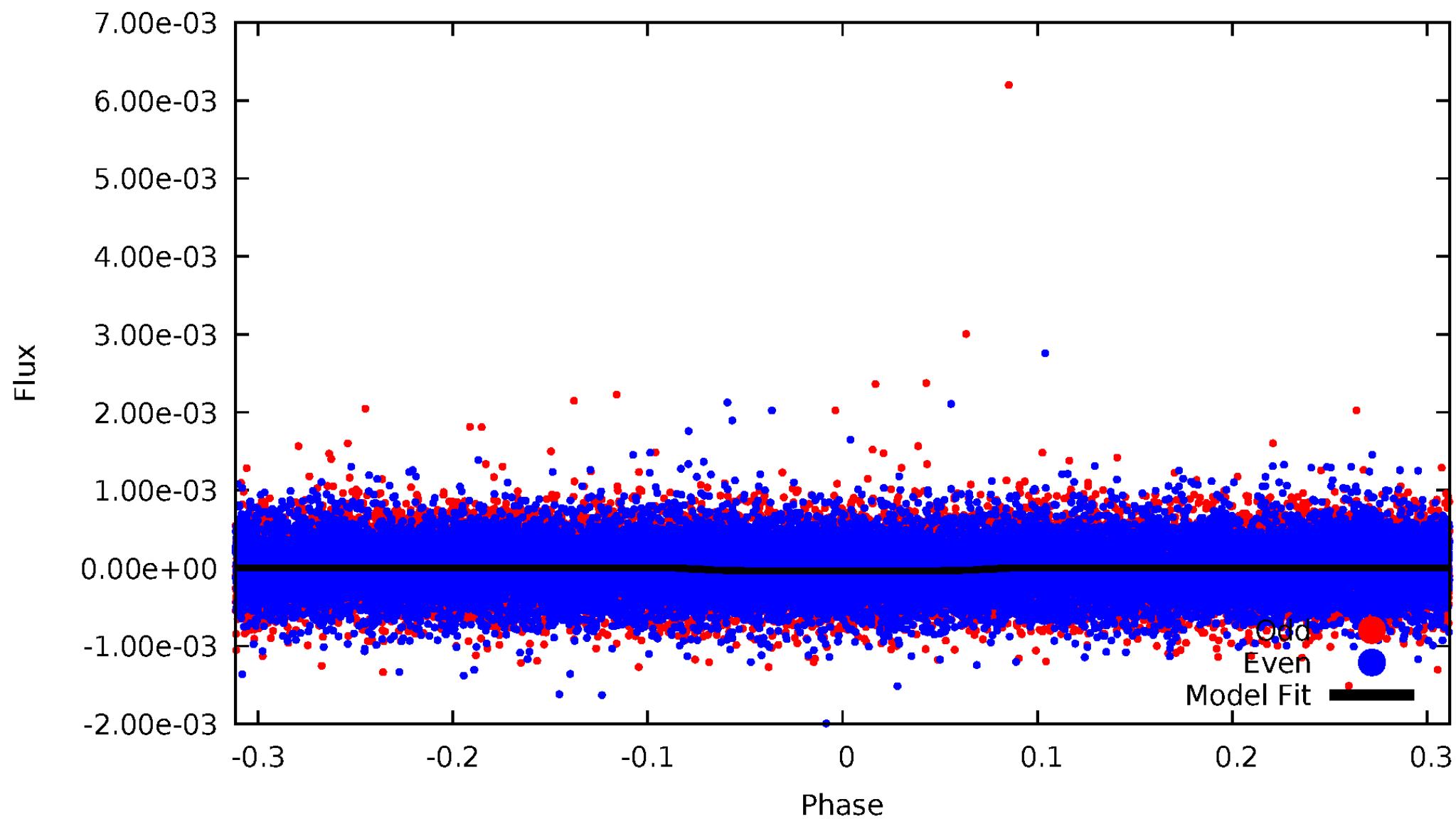


TCE 010471005-01



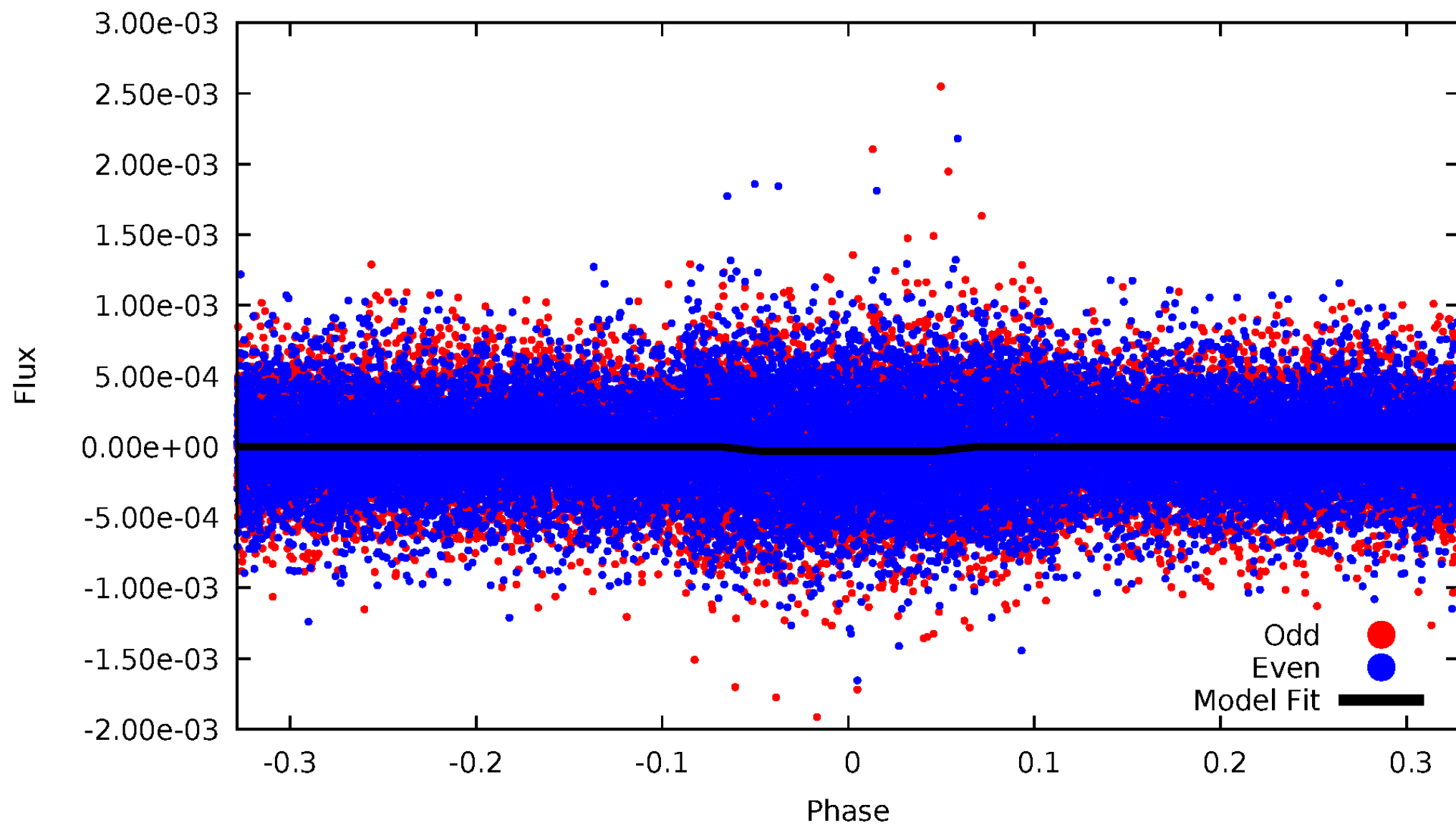
DV Odd/Even

TCE 010471005-01



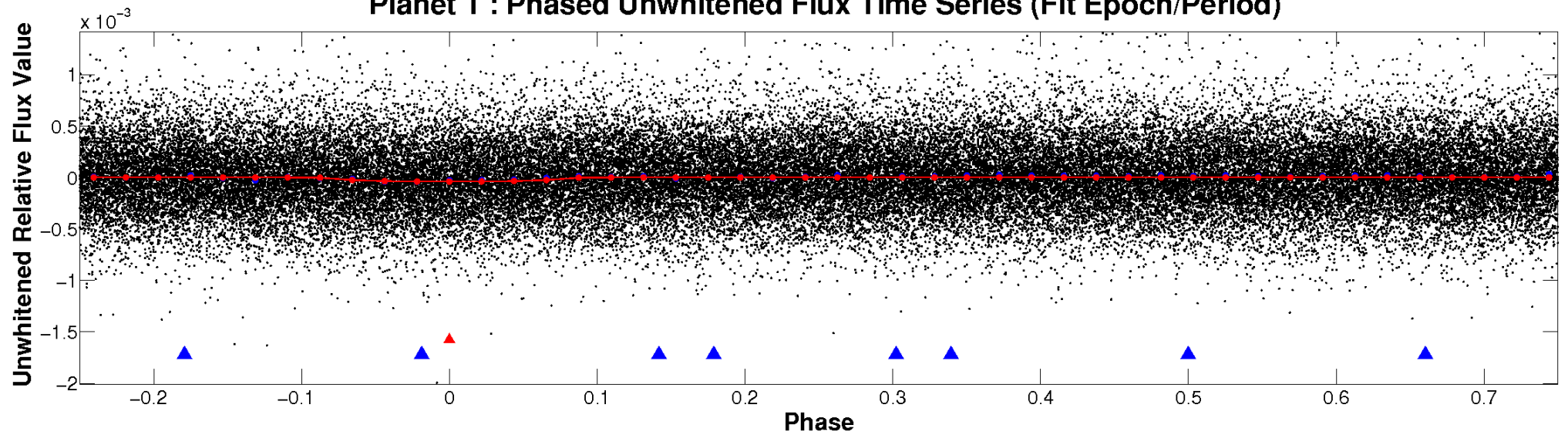
ALT Odd/Even

TCE 010471005-01

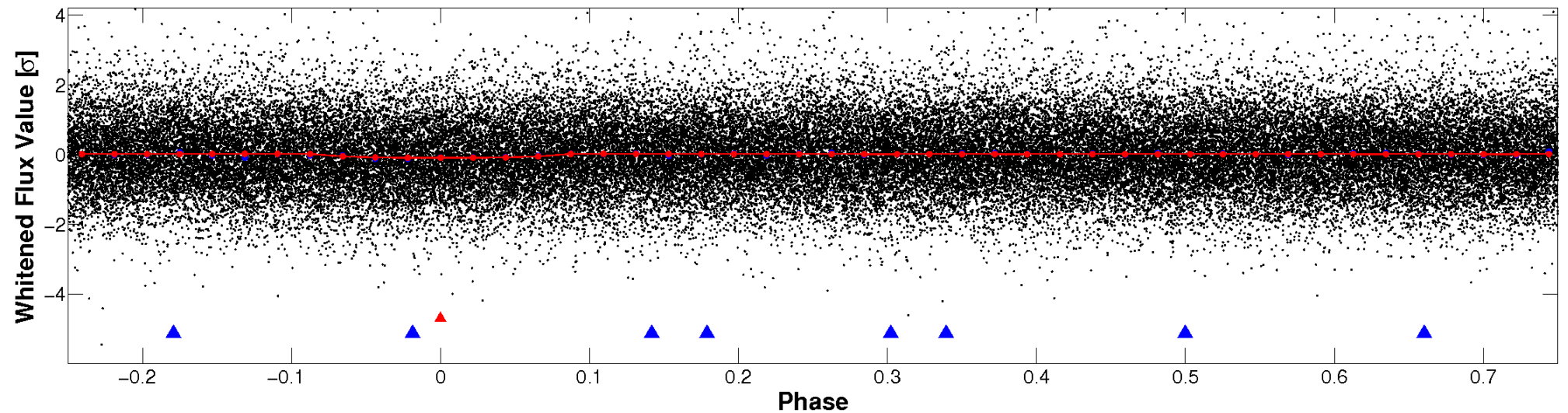


Non-Whitened Vs. Whitened Light Curve

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

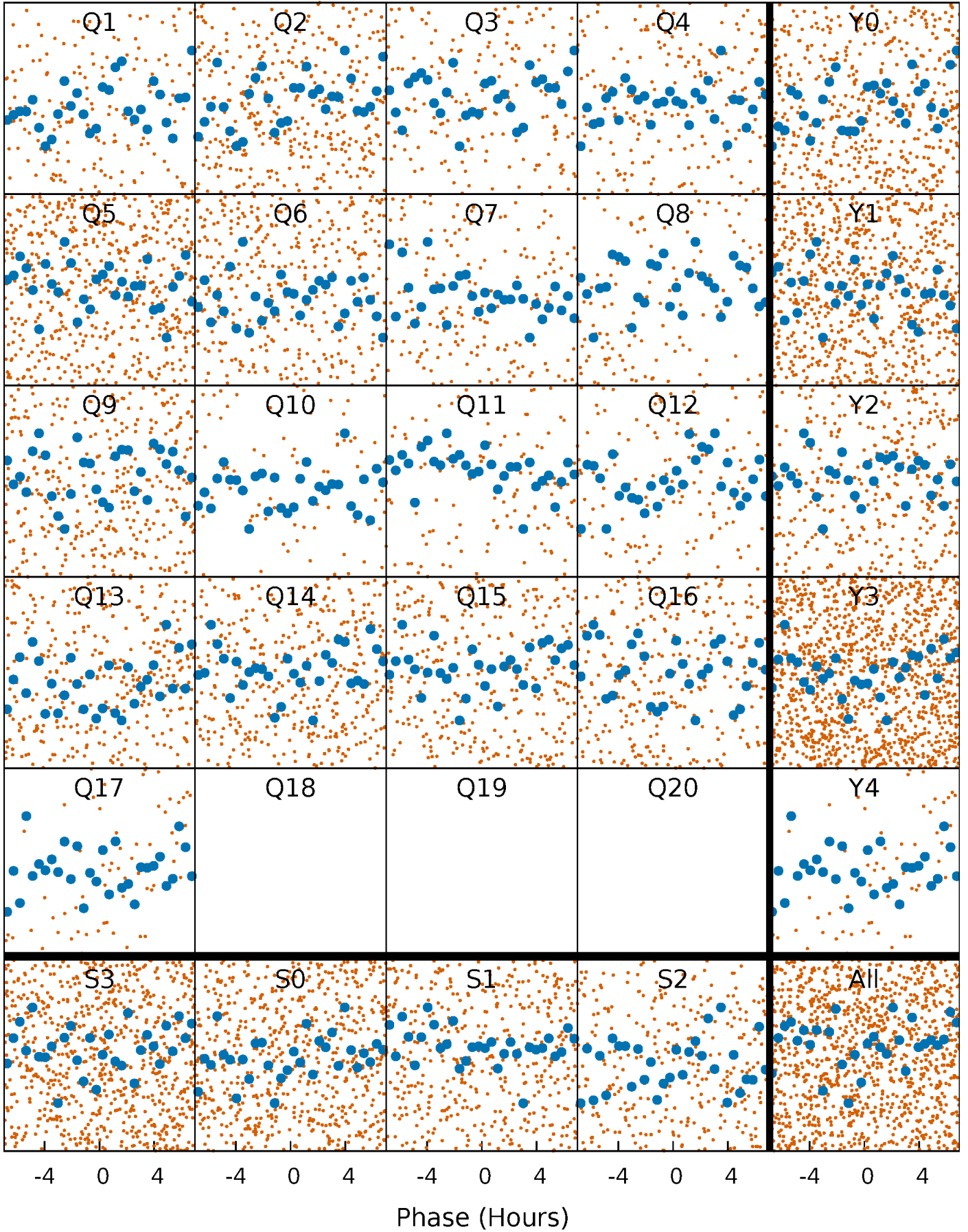


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



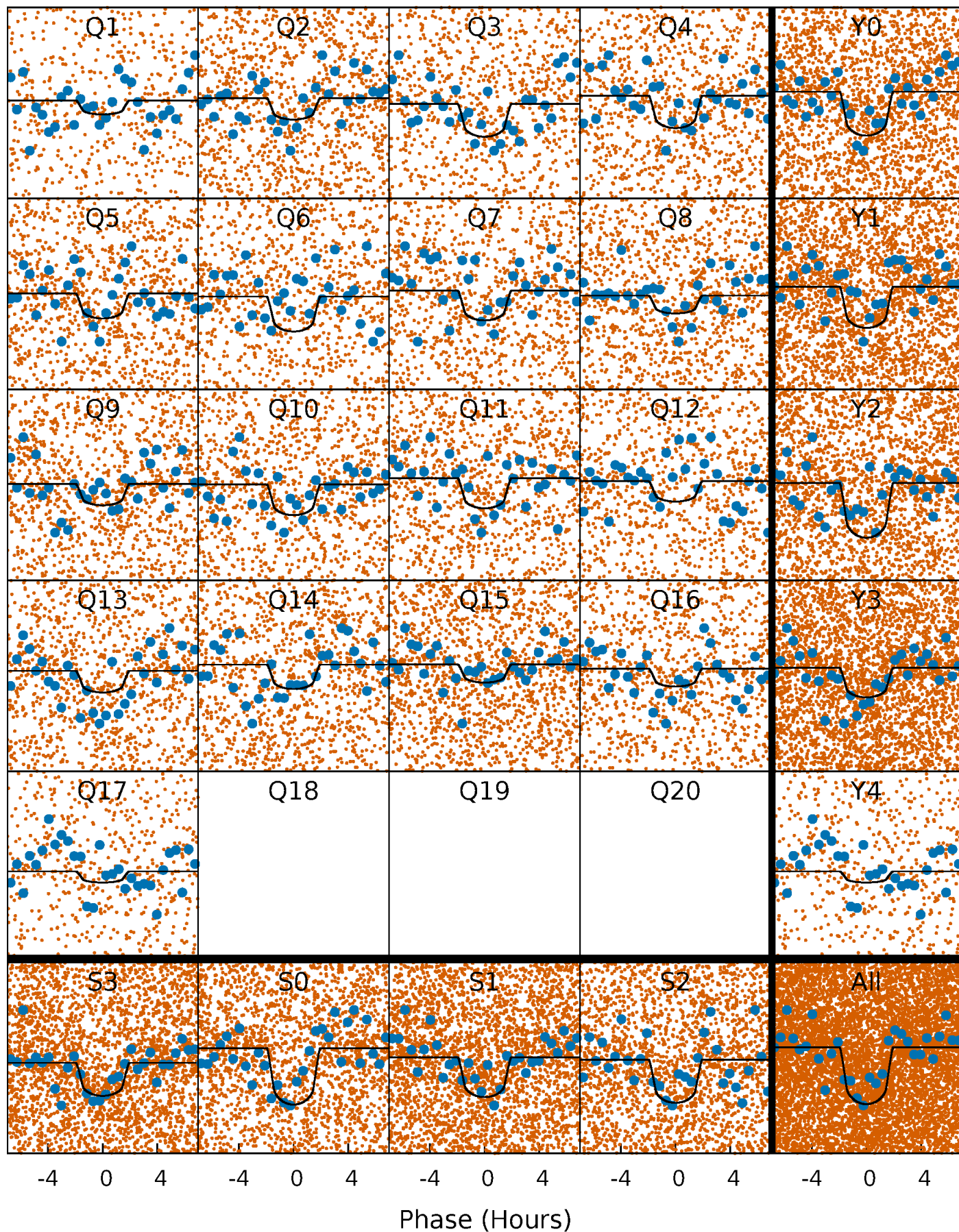
PDC Quarter-Phased Transit Curves

TCE 010471005-01 P= 0.933759 Days $T_0=131.519248$ (BKJD)



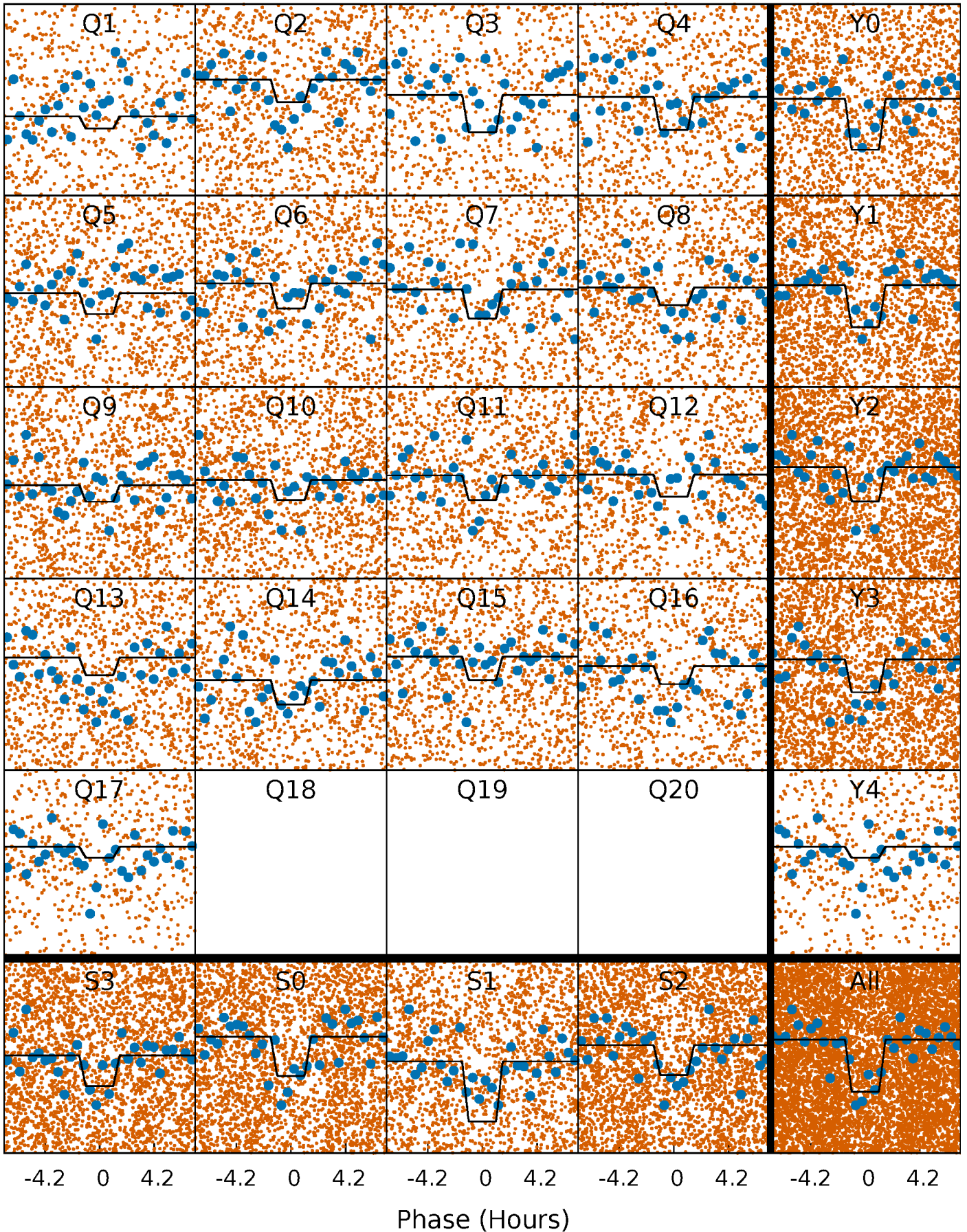
DV Quarter-Phased Transit Curves

TCE 010471005-01 P= 0.933759 Days $T_0=131.519248$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

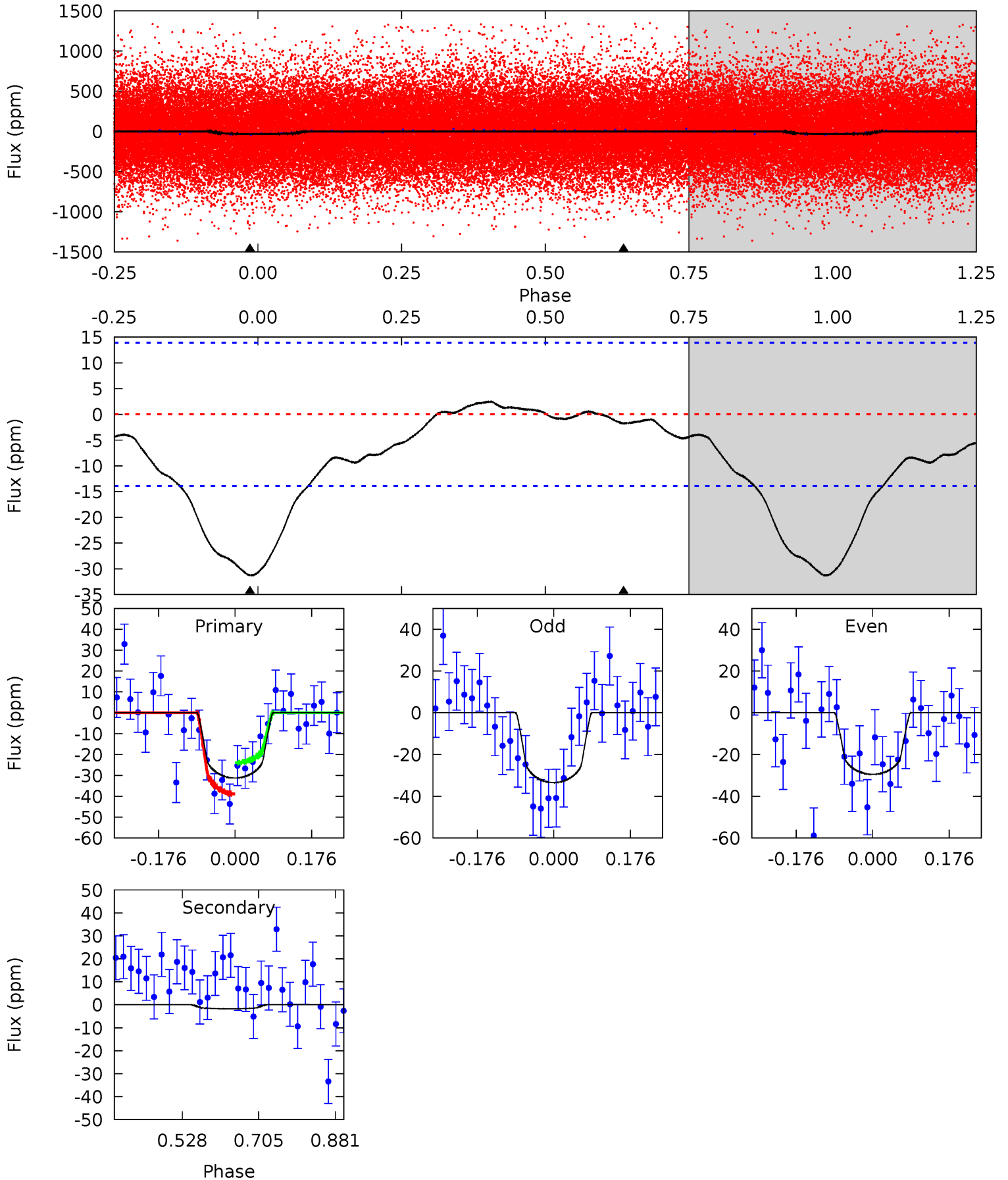
TCE 010471005-01 P= 0.933748 Days $T_0=131.520726$ (BKJD)



DV Model-Shift Uniqueness Test

010471005-01, $P = 0.933759$ Days, $E = 130.585489$ Days

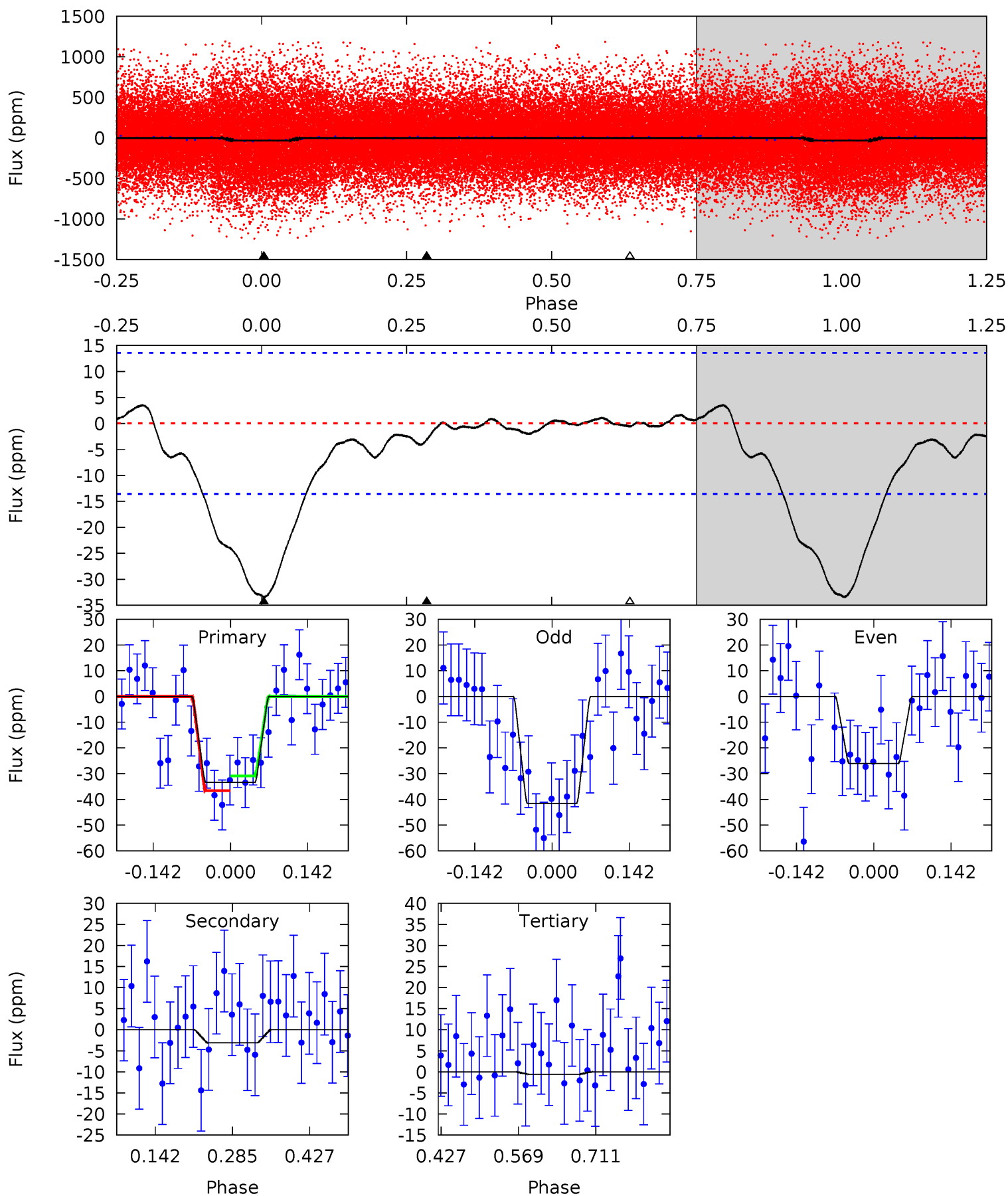
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.99	0.56	0	0	4.44	1.35	1.29	9.99	9.99	0.56	0.56	0.64	0.94	0.07	2.42



Alt Model-Shift Uniqueness Test

010471005-01, P = 0.933748 Days, E = 130.586978 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	1.03	0.19	0	4.49	1.47	0.69	10.9	11.1	0.84	1.03	2.58	0.87	0.09	0.95



Stellar Parameters For KIC 010471005

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5593^{+166}_{-166}	$4.349^{+0.144}_{-0.192}$	$0.220^{+0.200}_{-0.300}$	$1.094^{+0.307}_{-0.189}$	$0.976^{+0.104}_{-0.094}$	$1.050^{+0.645}_{-0.512}$
	+3%/-3%	+3%/-4%	+91%/-136%	+28%/-17%	+11%/-10%	+61%/-49%
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 010471005-01 / KOI 8016.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 3	$0.91^{+0.51}_{-0.50}$	2660^{+206}_{-162}	-2194^{+5923}_{-1103}	$0.269^{+1.710}_{-0.656}$
Alt.	-3 ± 3	$0.79^{+0.49}_{-0.49}$	2666^{+219}_{-157}	3171^{+1518}_{-6025}	$0.863^{+4.888}_{-0.800}$

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 $A_{obs} \gg 1.0$

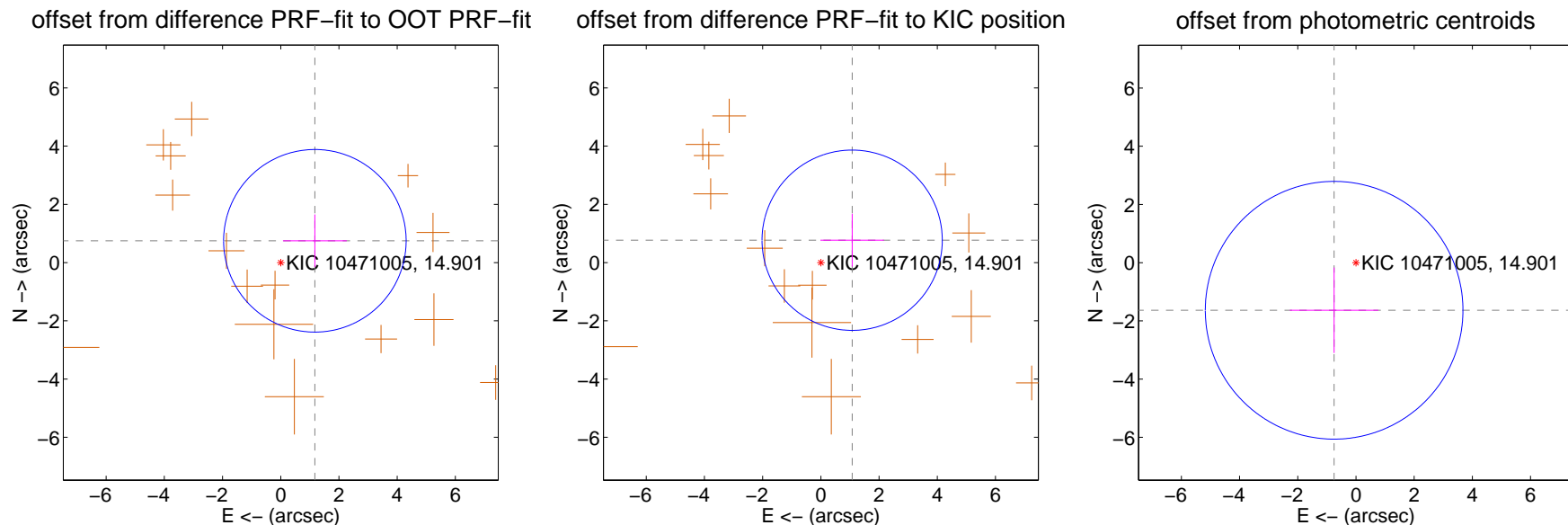
DV Centroid Data

Supplemental centroid analysis for 010471005-01. Kepler magnitude: 14.90. Transit SNR 8.35

There are 0 quarters with good PRF difference image offsets

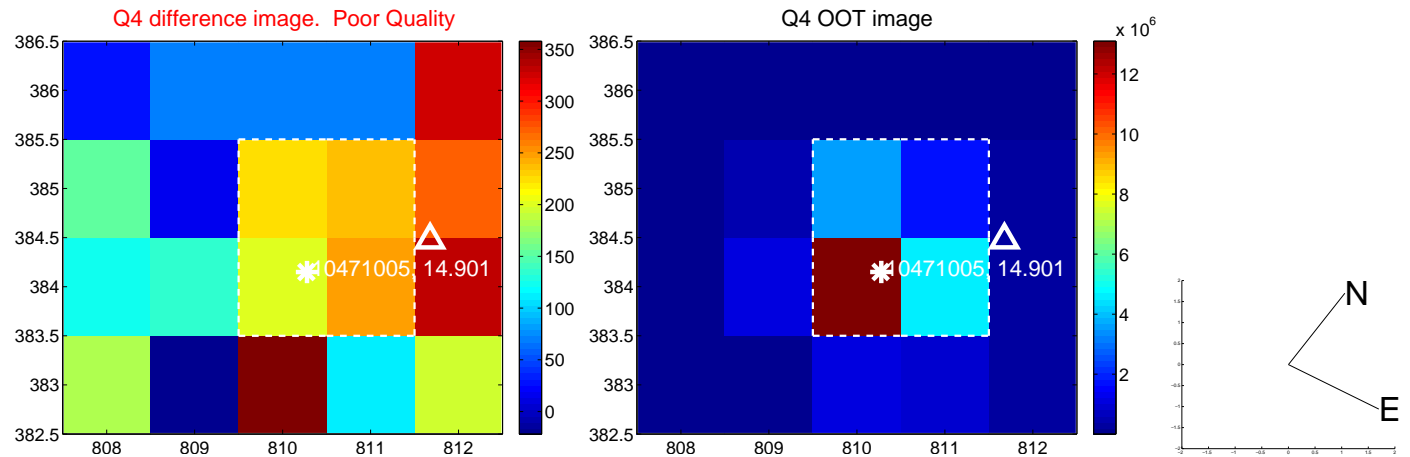
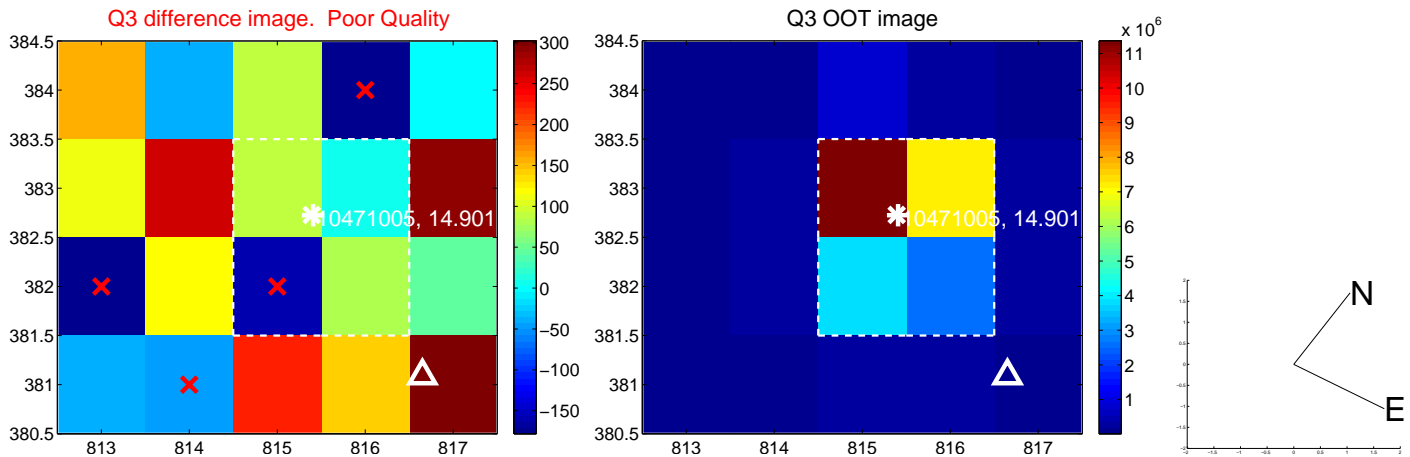
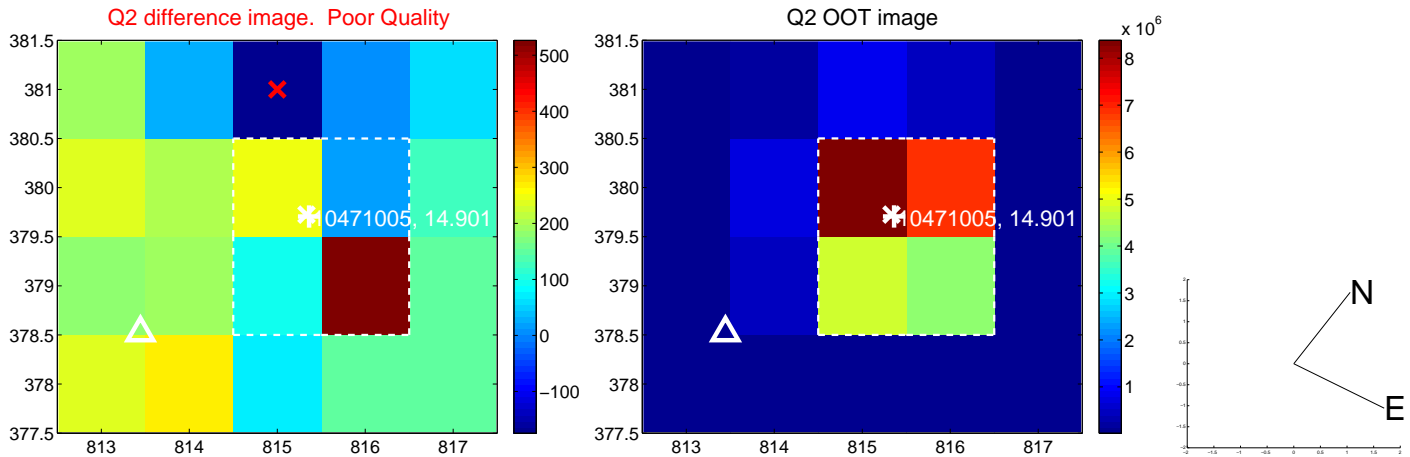
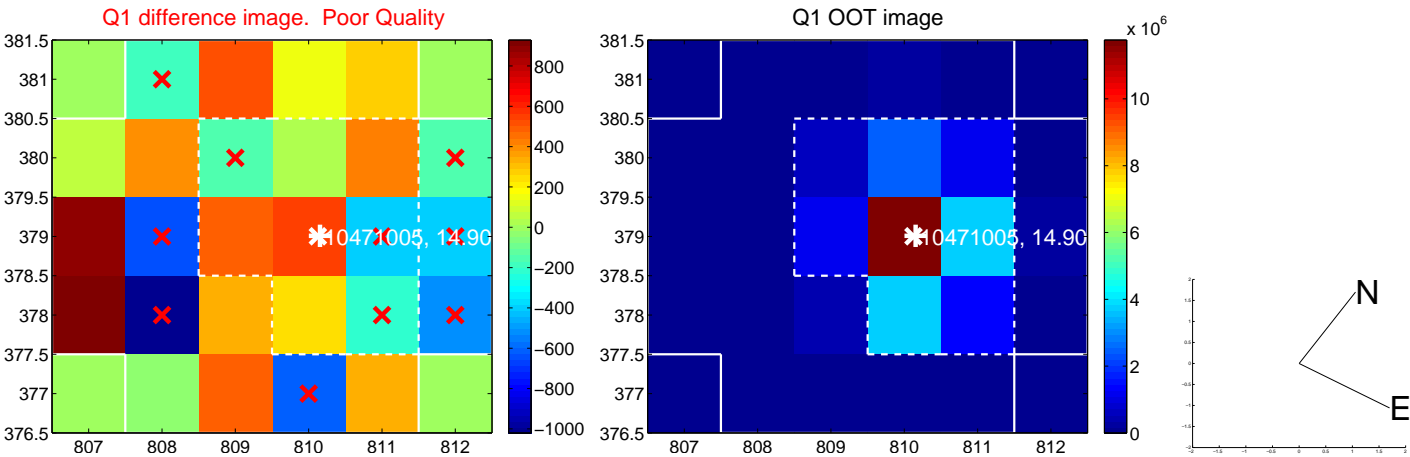
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.391 ± 1.045	1.33	-1.173 ± 1.098	0.748 ± 0.905
PRF-fit source offset from KIC position	1.322 ± 1.032	1.28	-1.075 ± 1.089	0.768 ± 0.910
photometric centroid source offset	1.80 ± 1.48	1.22	0.75 ± 1.52	-1.64 ± 1.47

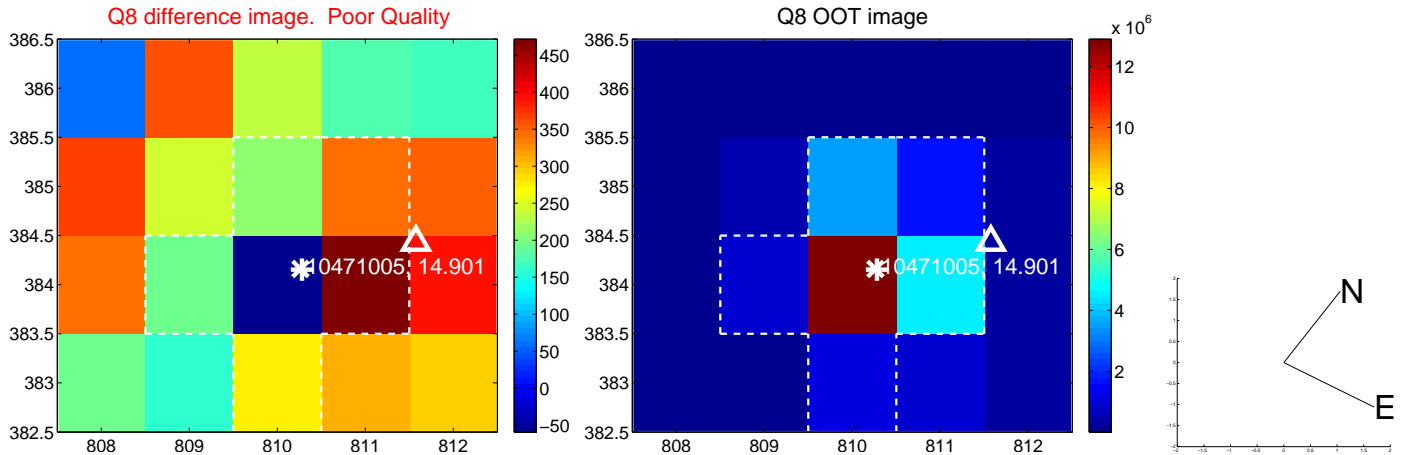
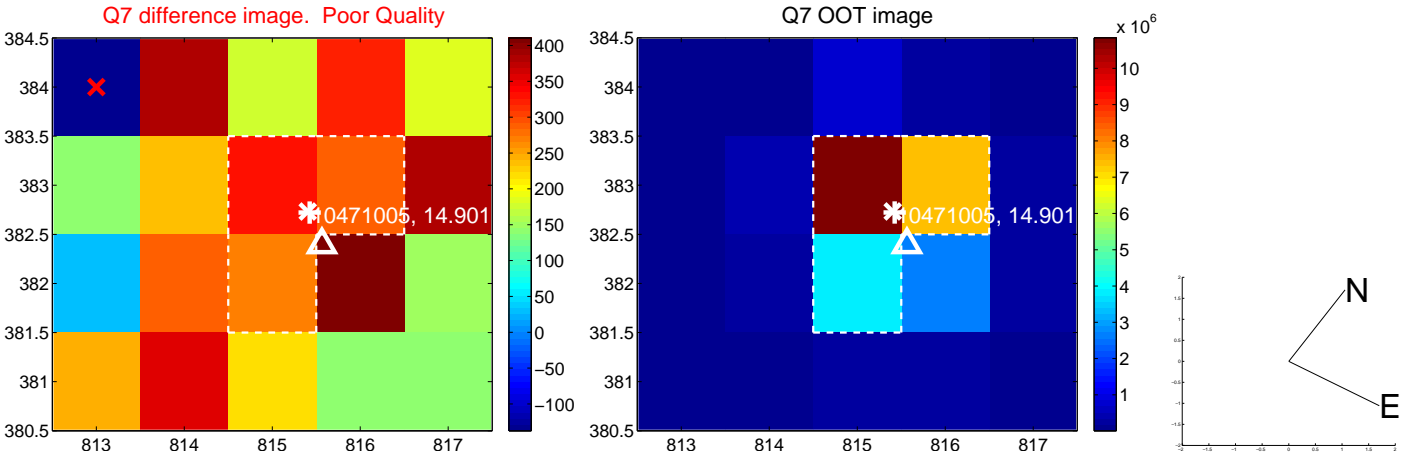
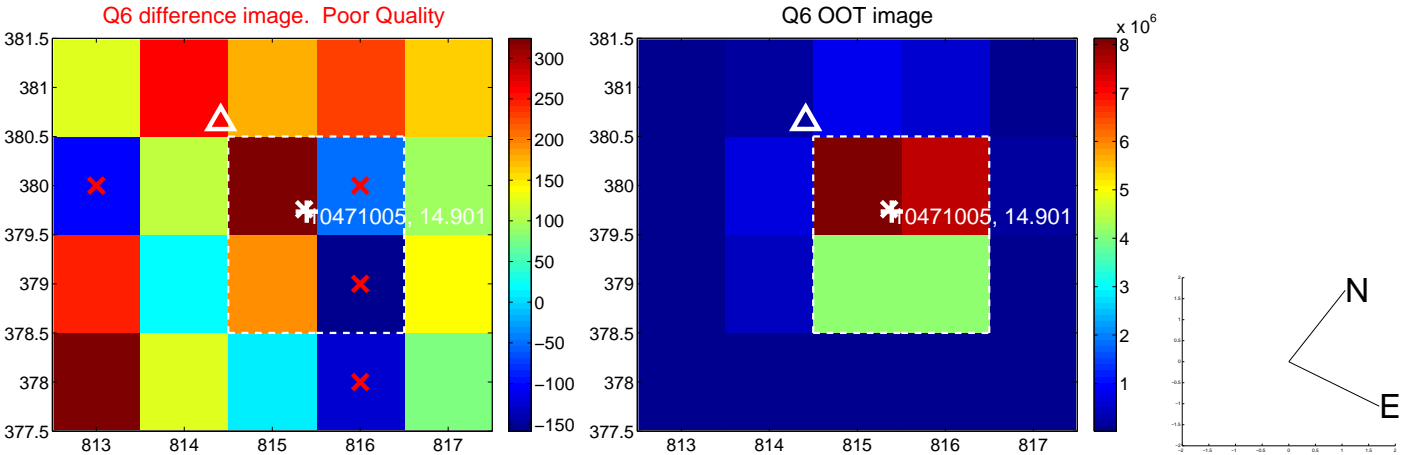
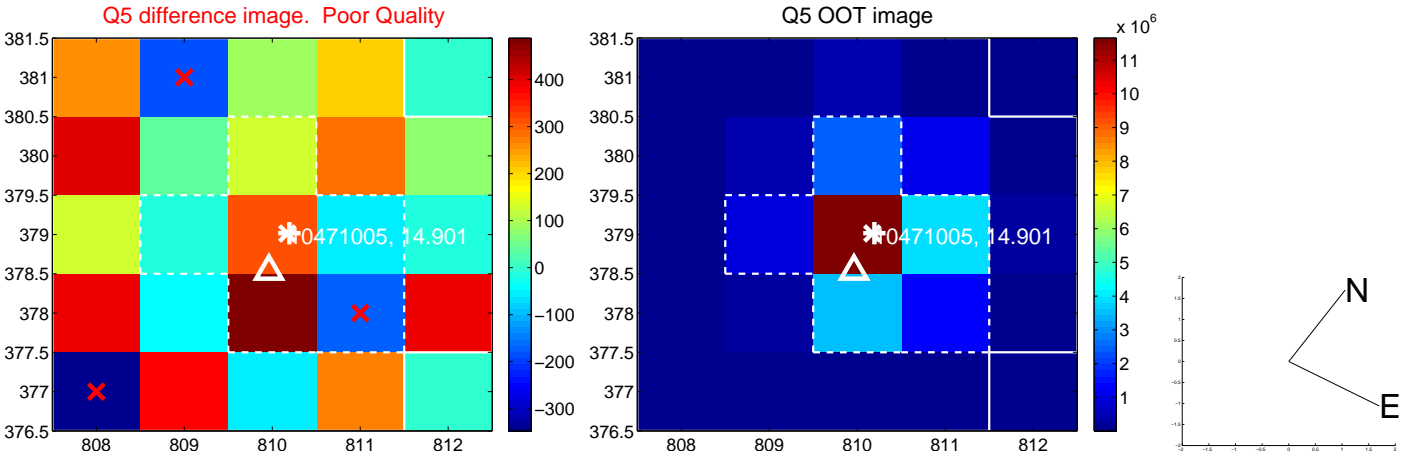


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

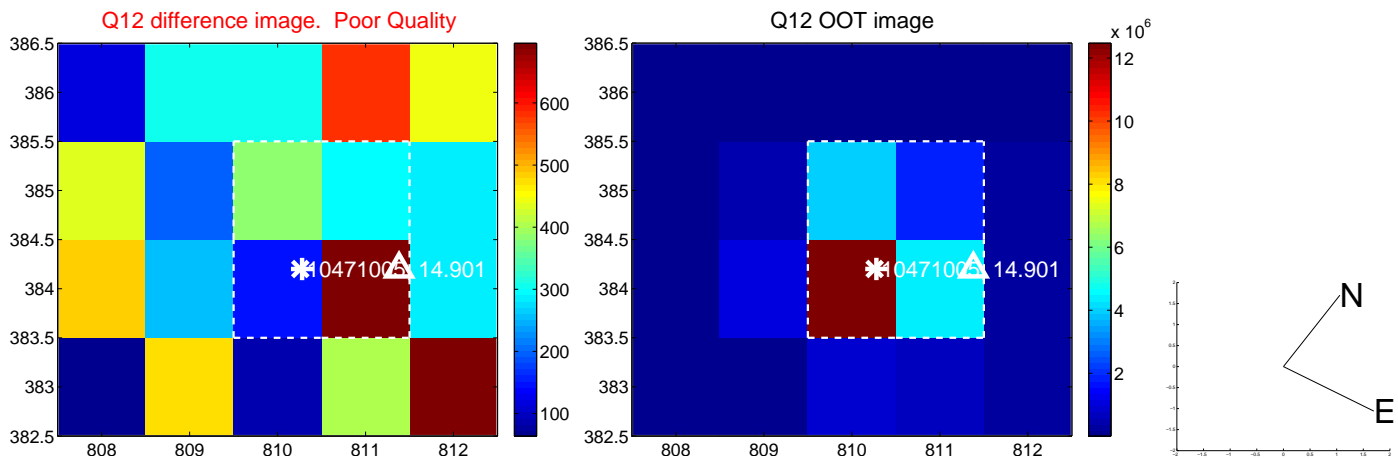
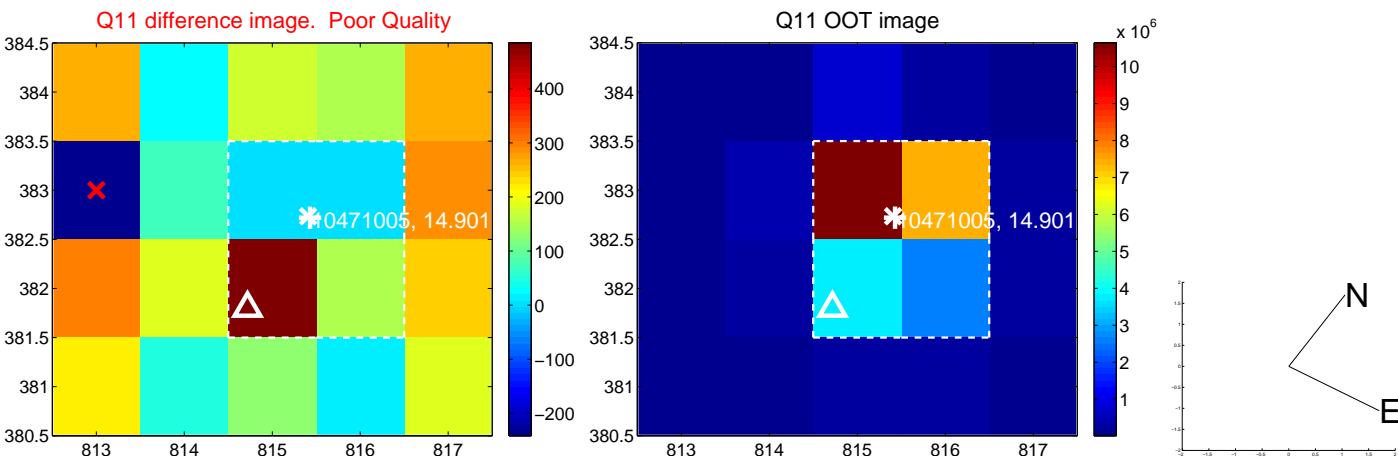
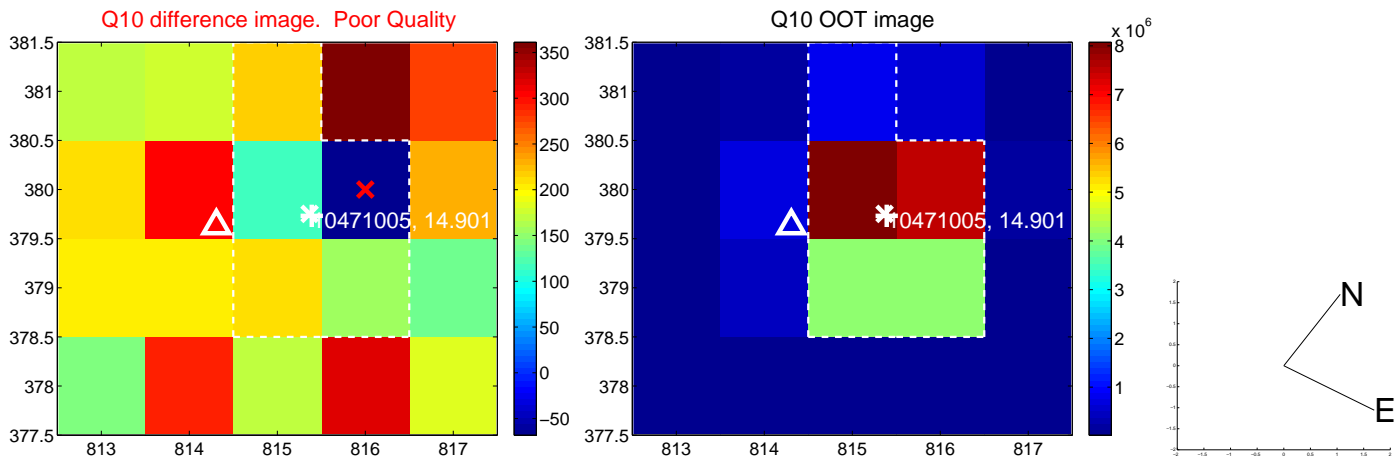
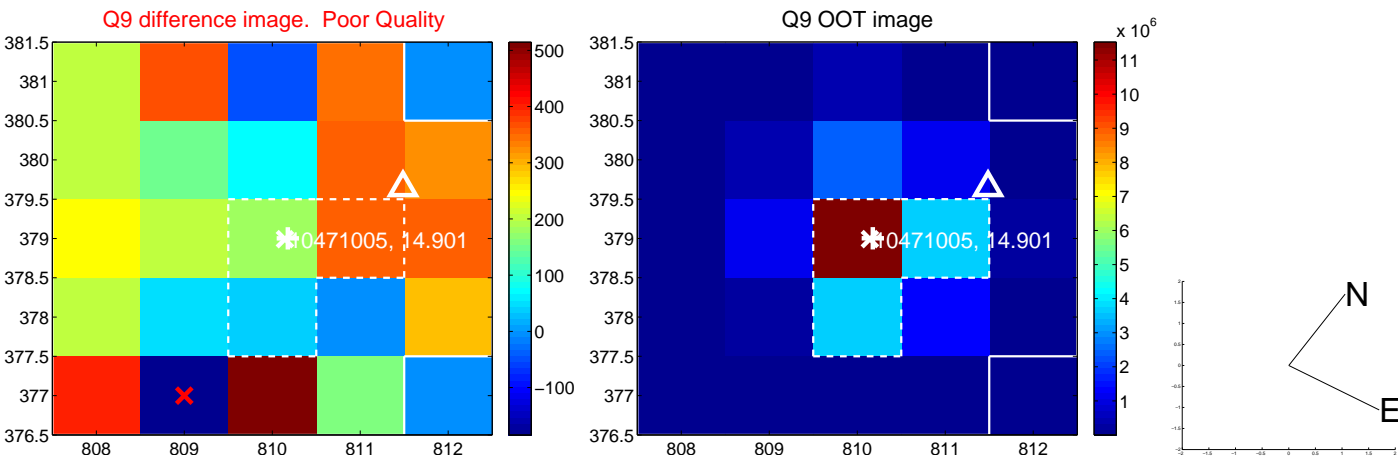
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



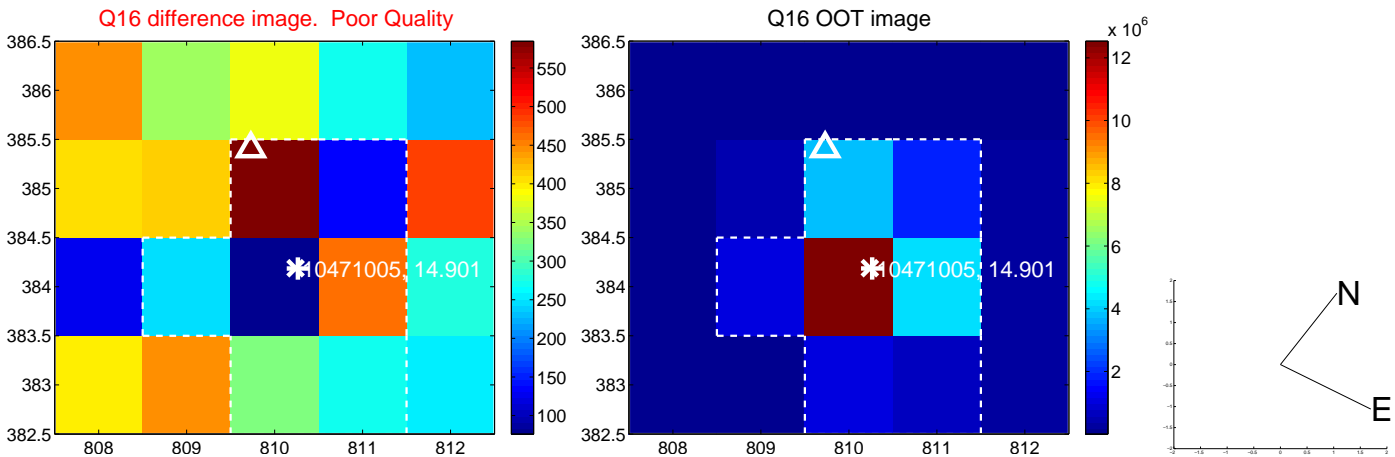
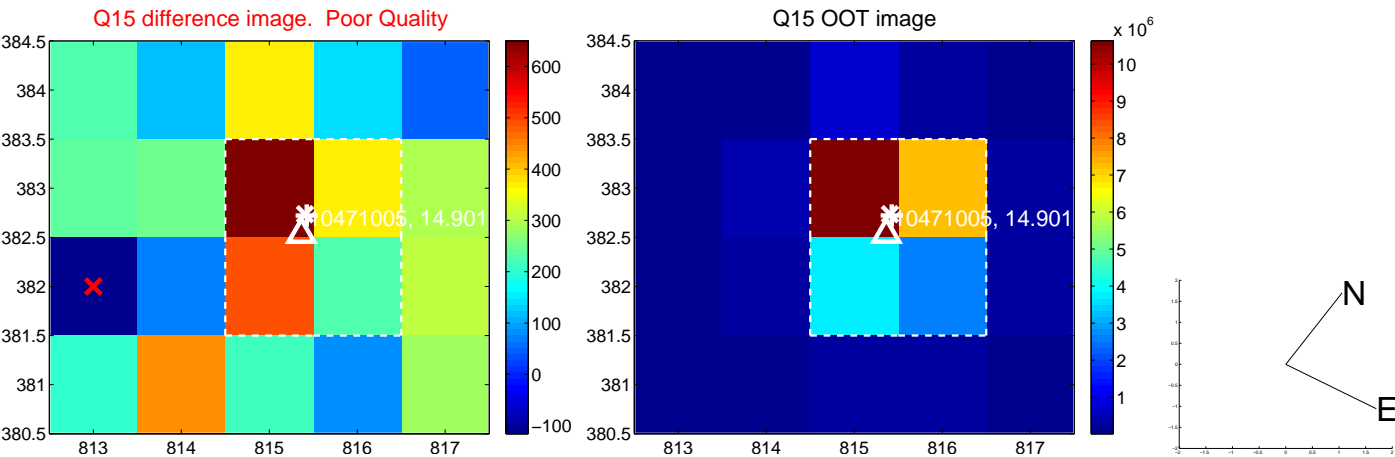
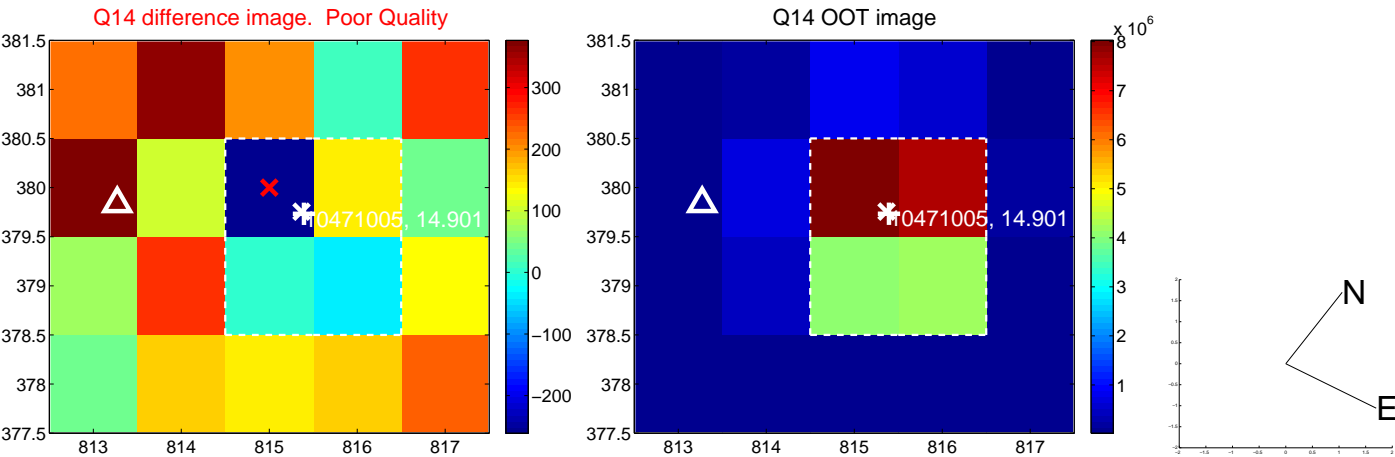
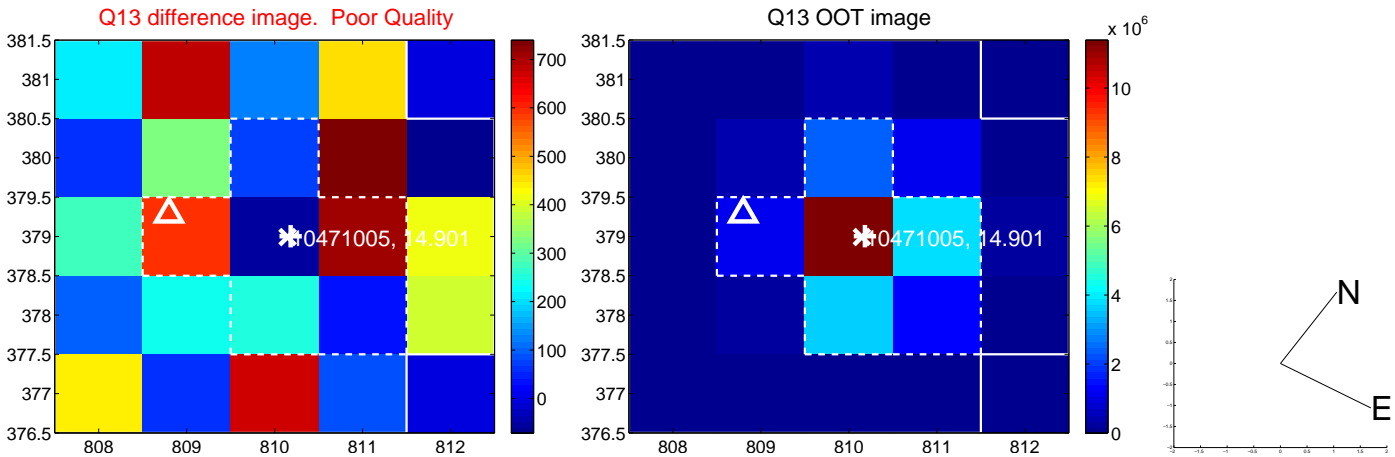
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



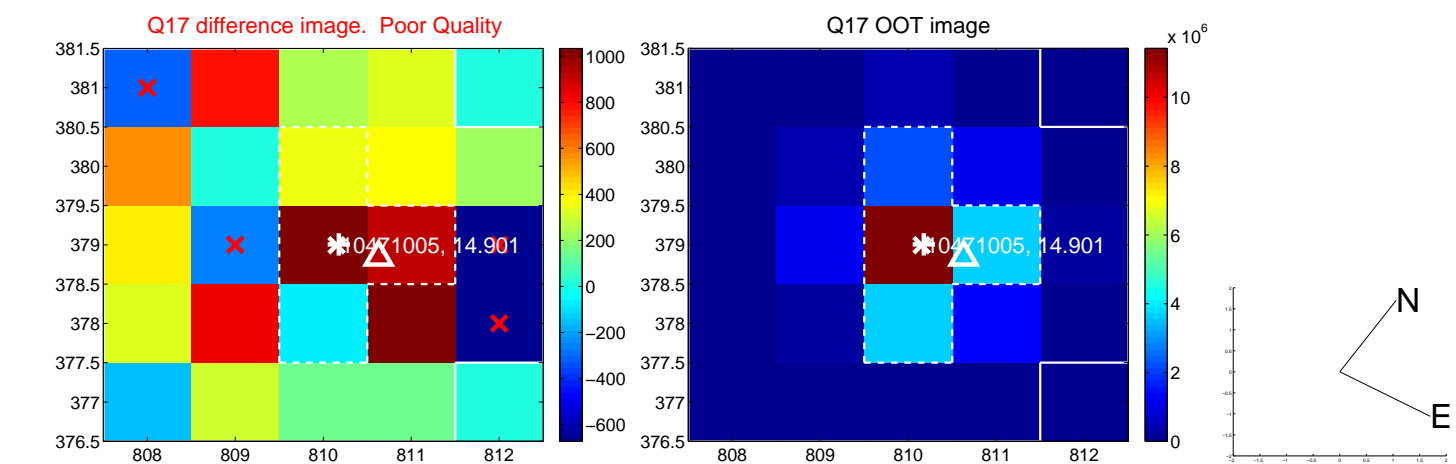
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



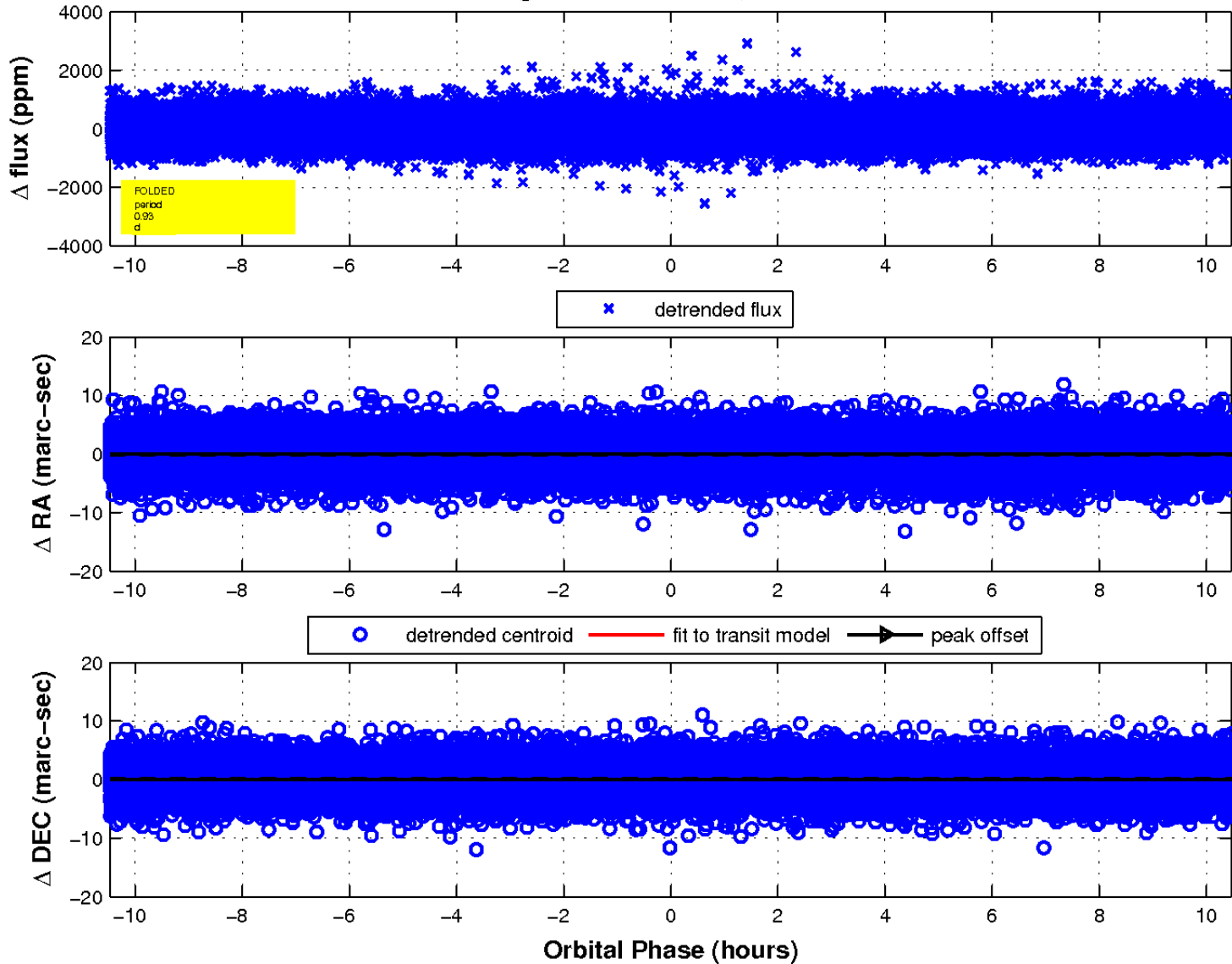
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

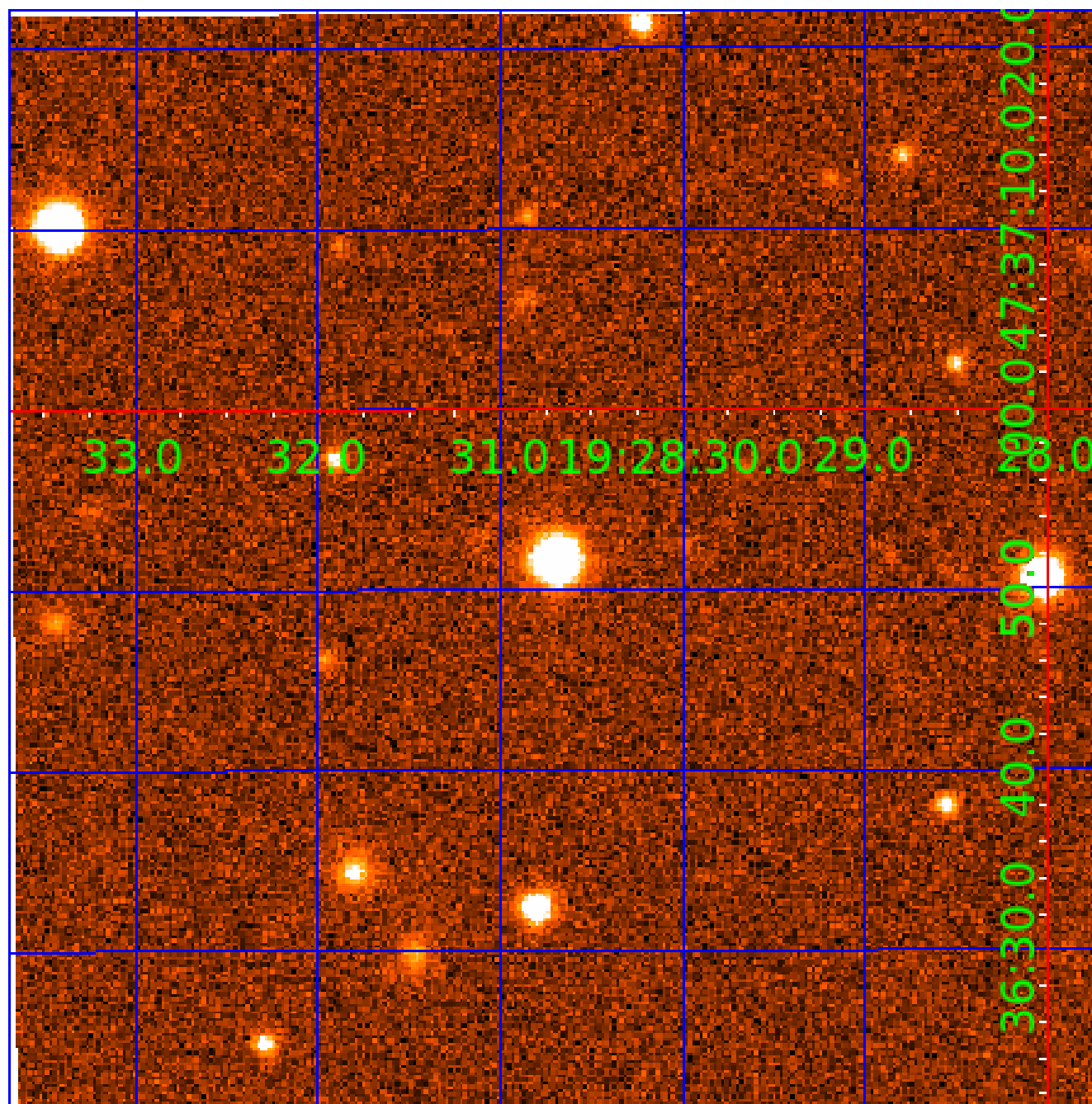


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010471005

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})
010471005-01	OBS	8016.01	0.933759	131.519248	39.3	3.491	7.8	8.4	1.09	5593	0.82	3051.45
010471005-02	OBS	No	180.065608	185.959508	500.8	3.689	10.6	4.8	1.09	5593	2.76	2.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010471005-01	OBS	FP	0.00	0	0	1	1	CENT_UNCERTAIN—HALO_GHOST—EPHEM_MATCH
010471005-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

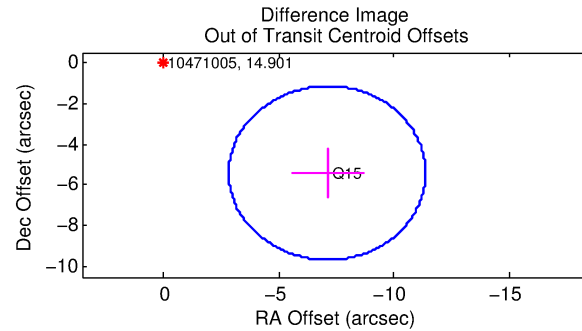
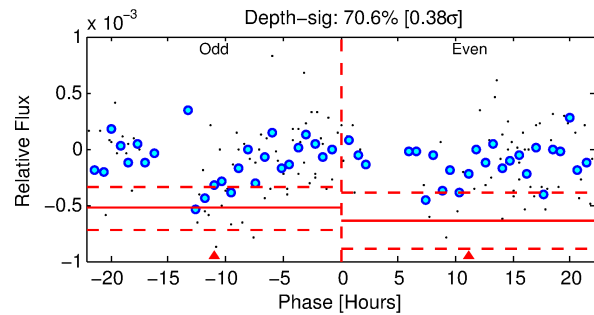
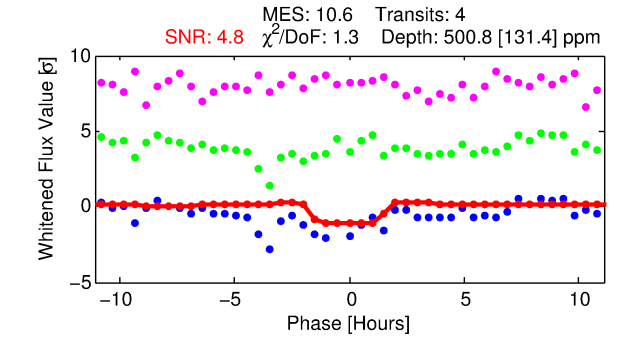
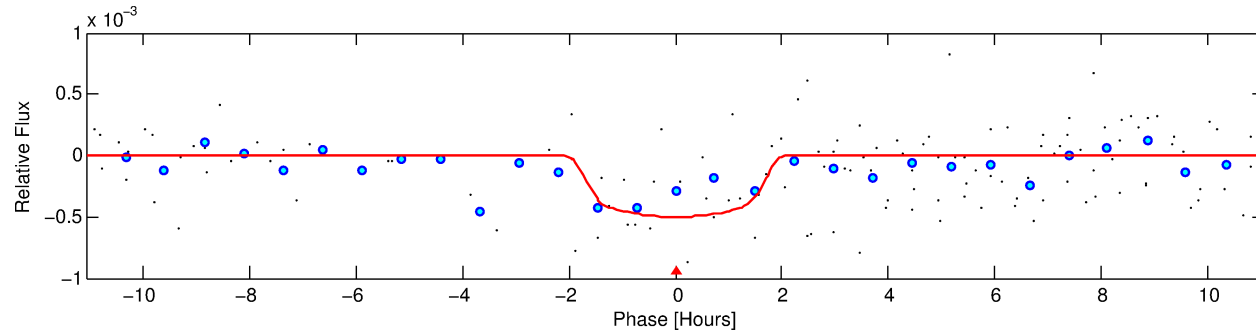
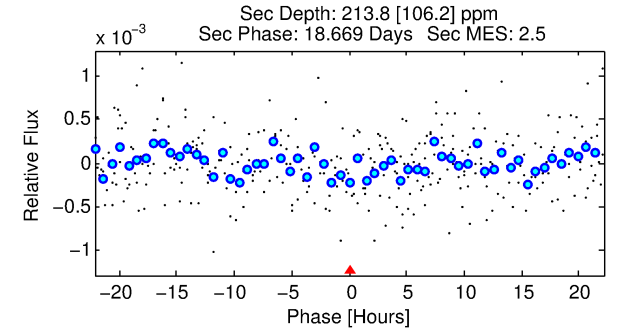
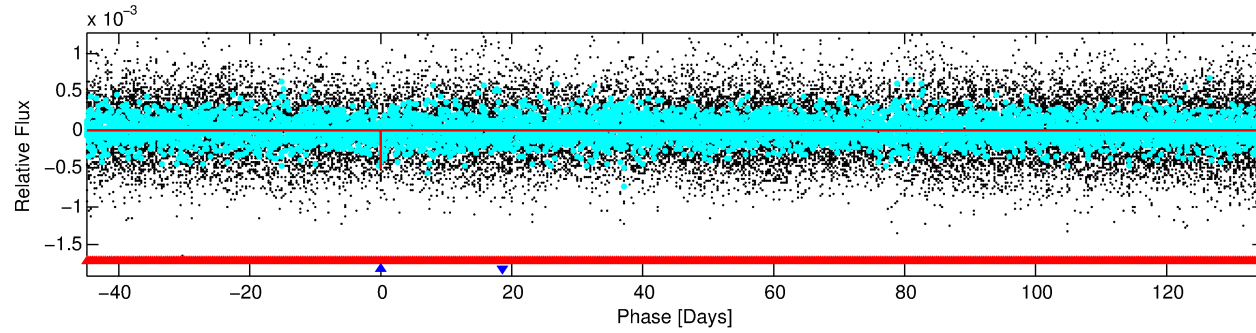
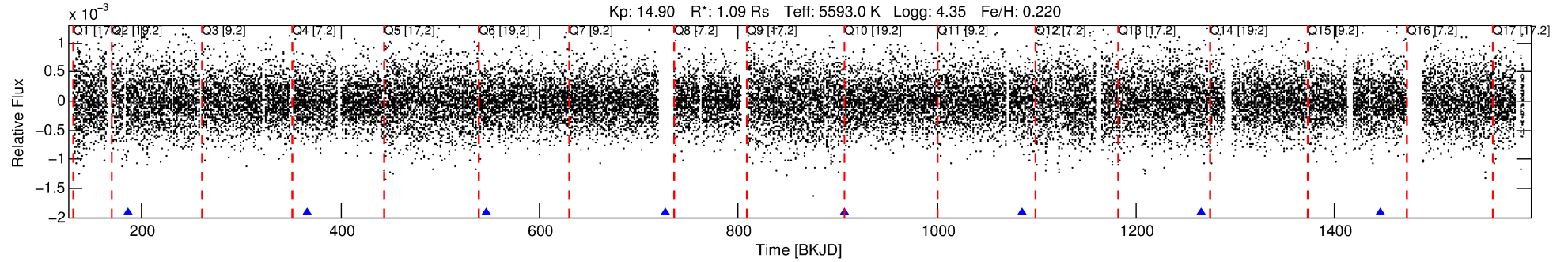
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010471005-02

No Significant Match Found

DV One-Page Summary

KIC: 10471005 Candidate: 2 of 2 Period: 180.066 d



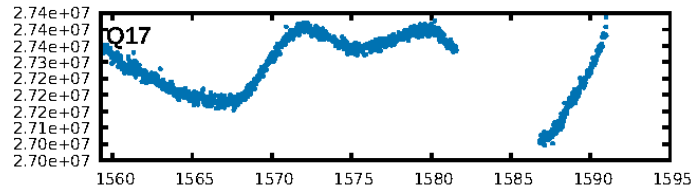
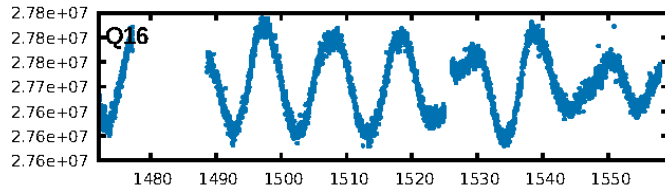
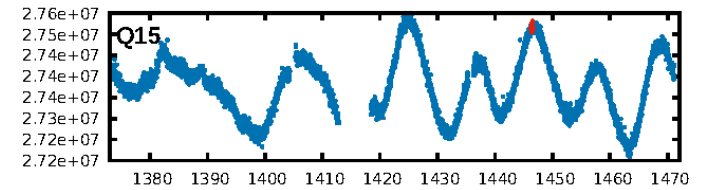
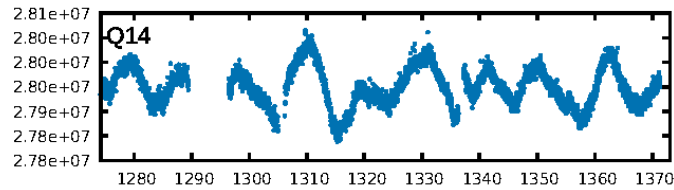
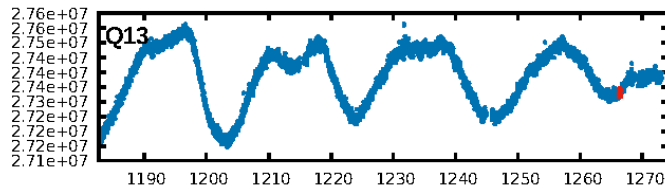
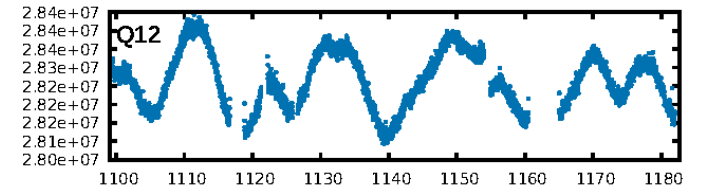
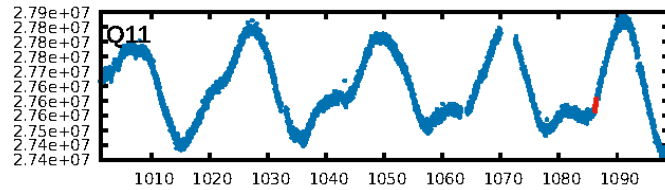
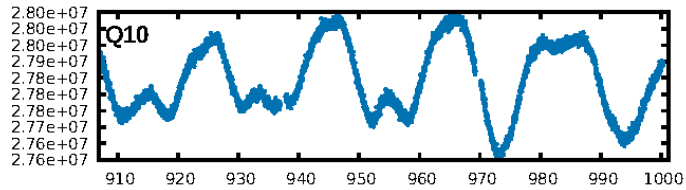
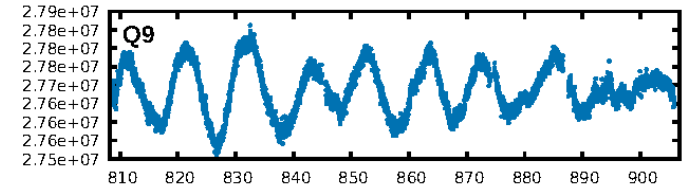
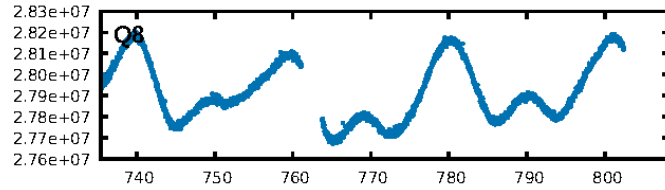
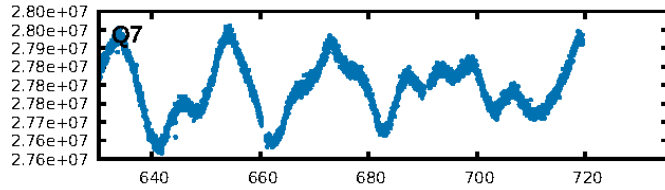
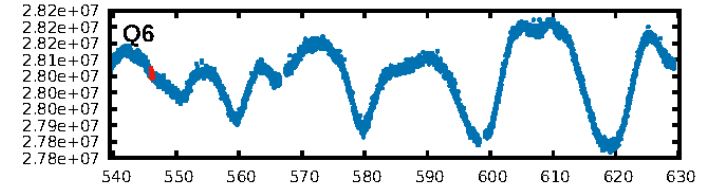
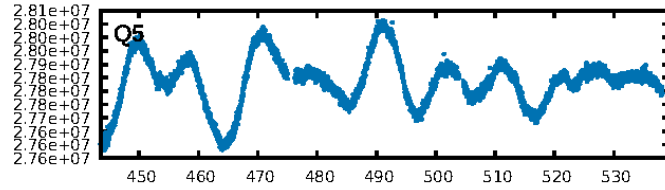
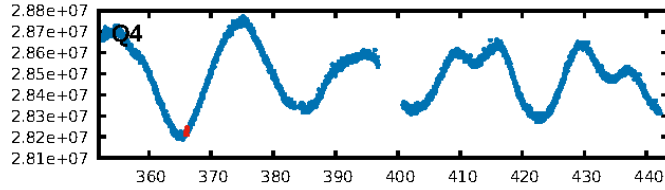
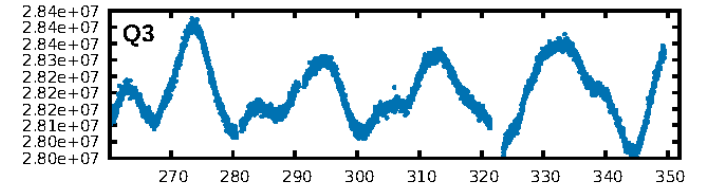
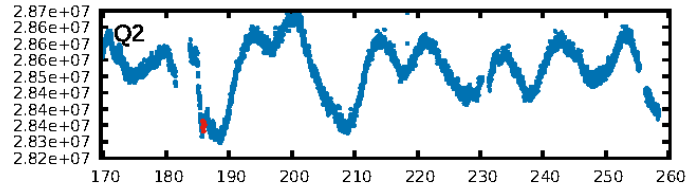
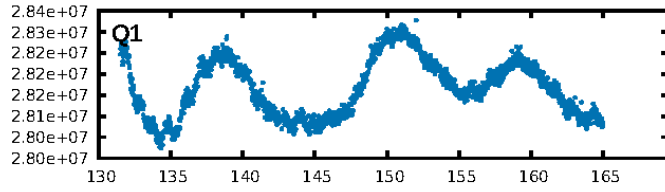
DV Fit Results:

Period = 180.06561 [0.00401] d
Epoch = 185.9595 [0.0220] BKJD
Rp/R* = 0.0231 [0.0403]
a/R* = 227.54 [1643.32]
b = 0.82 [2.91]
Seff = 2.74 [1.01]
Teq = 328 [30] K
Rp = 2.76 [4.87] Re
a = 0.6190 [0.1474] AU
Ag = 5918.43 [20955.28] [0.28 σ]
Teff = 4448 [3921] K [1.05 σ]

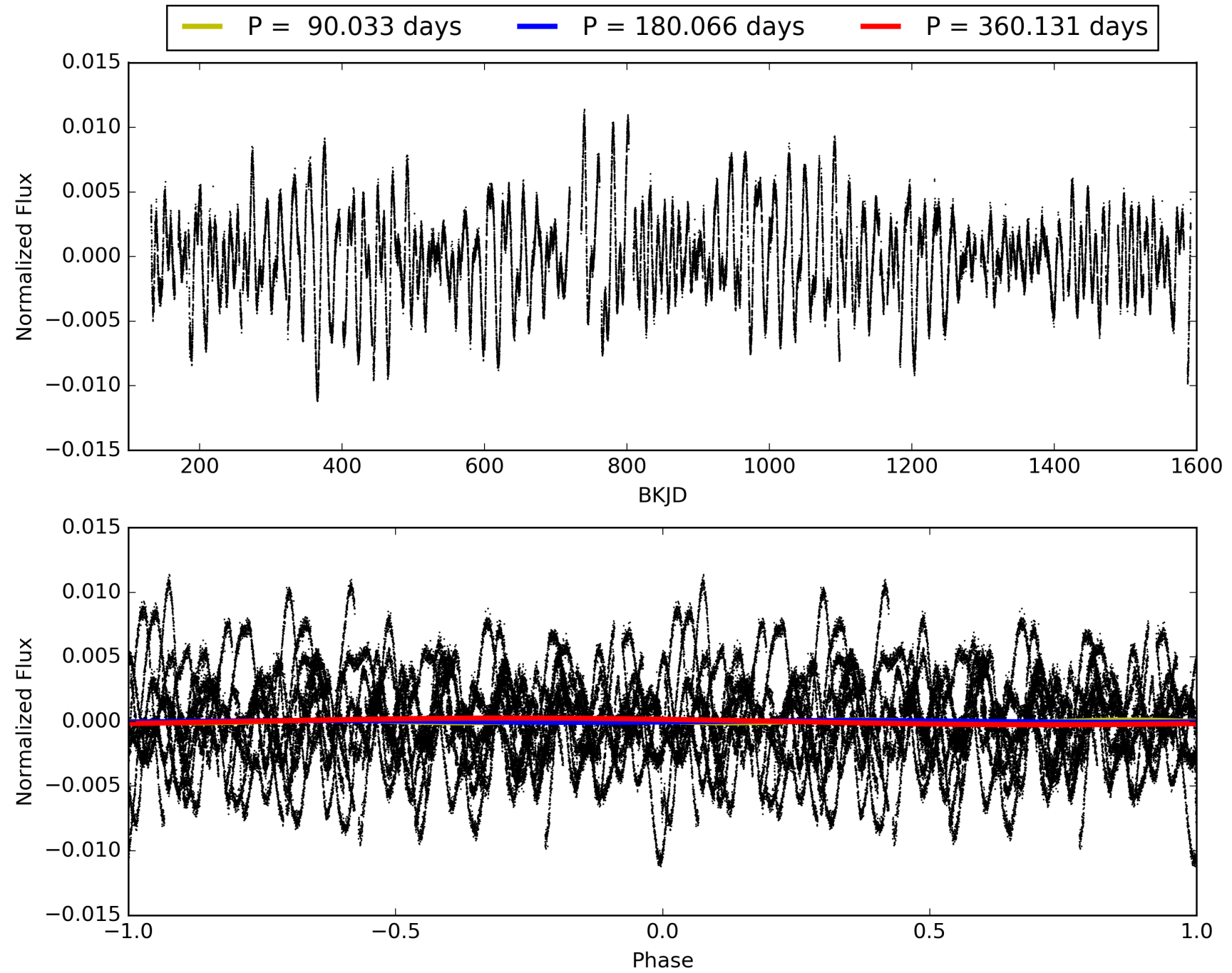
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [846.54 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.2%
ModelChiSquareGof-sig: 92.0%
Bootstrap-pfa: 1.35e-15
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 20.21
Centroid-sig: 16.5%
Centroid-so: 1.703 arcsec [0.97 σ]
OotOffset-rm: 8.933 arcsec [6.30 σ]
KicOffset-rm: 8.872 arcsec [6.26 σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.17 [1/6]

TCE 010471005-02, PDC Light Curves

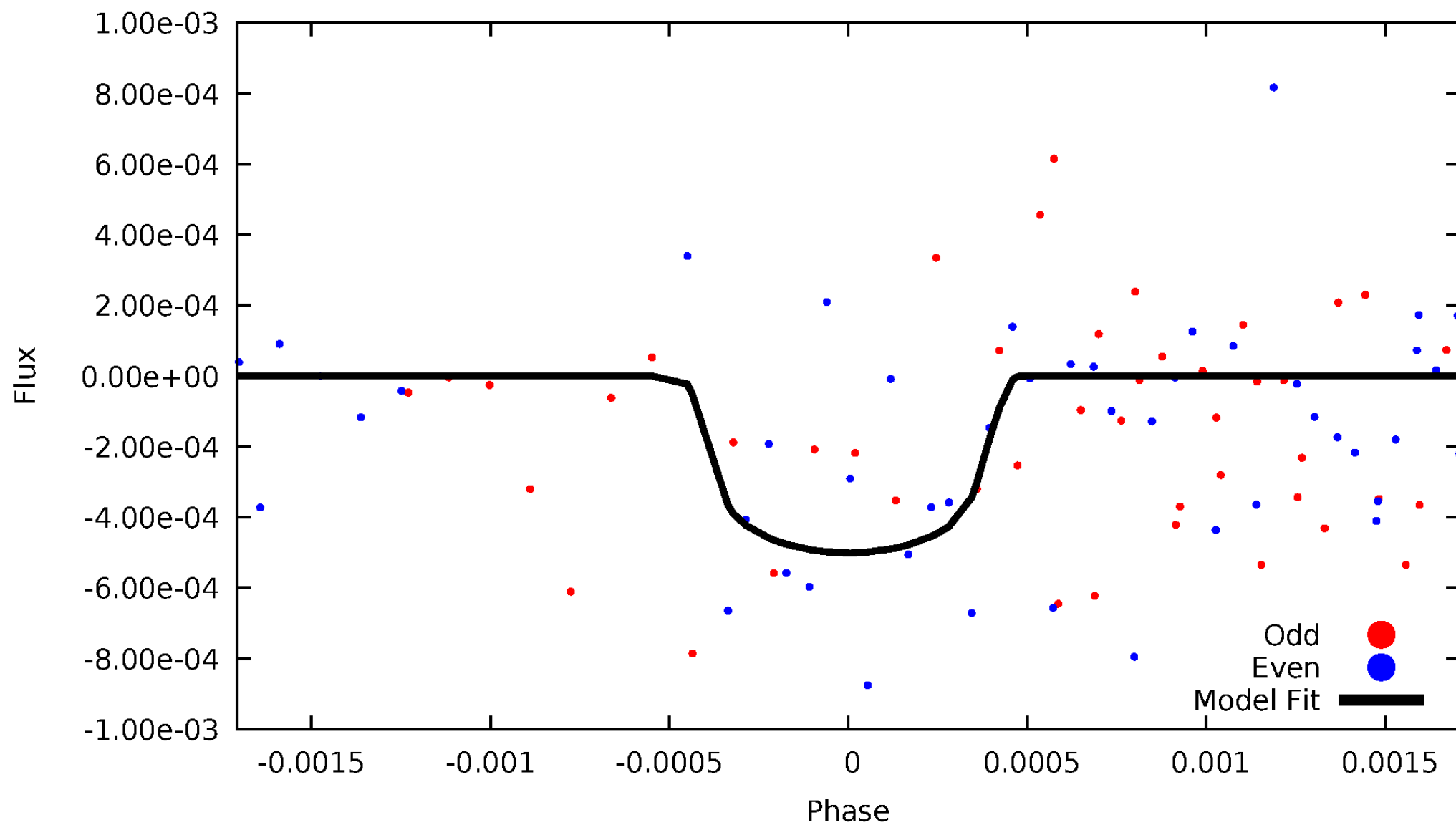


TCE 010471005-02



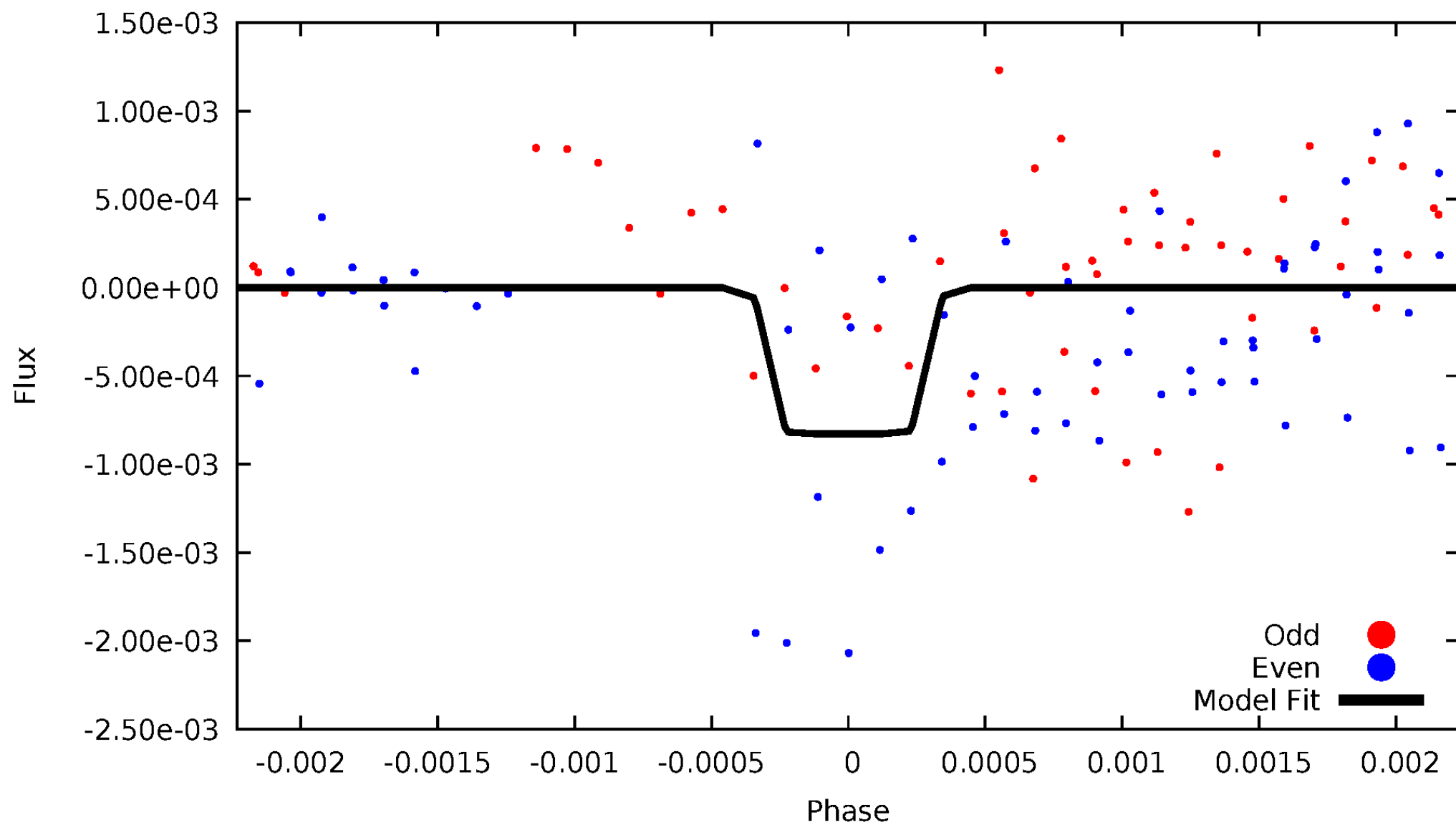
DV Odd/Even

TCE 010471005-02



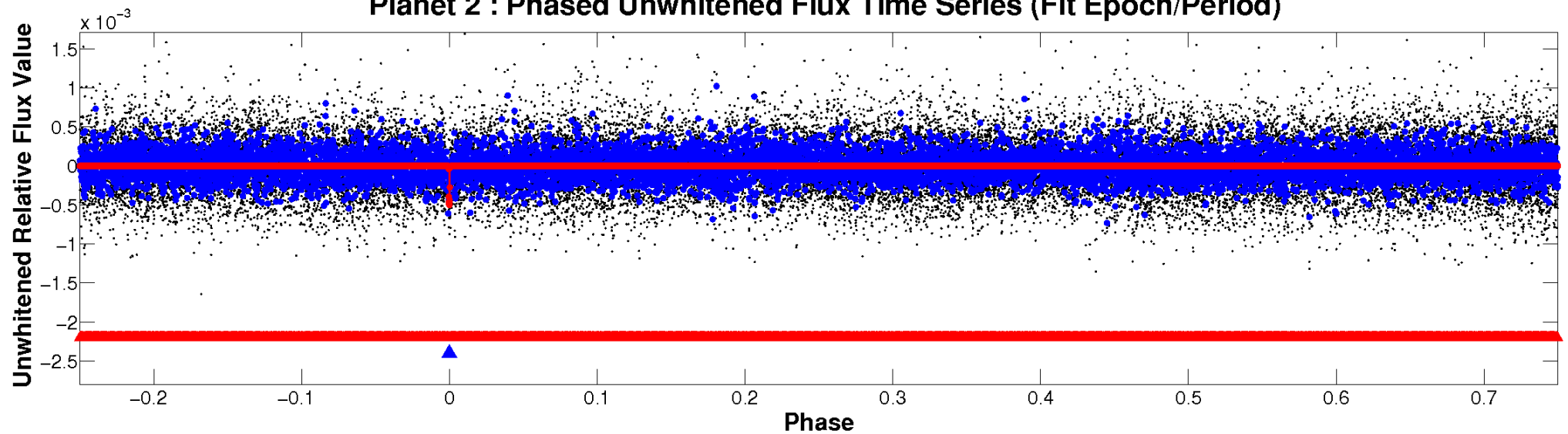
ALT Odd/Even

TCE 010471005-02

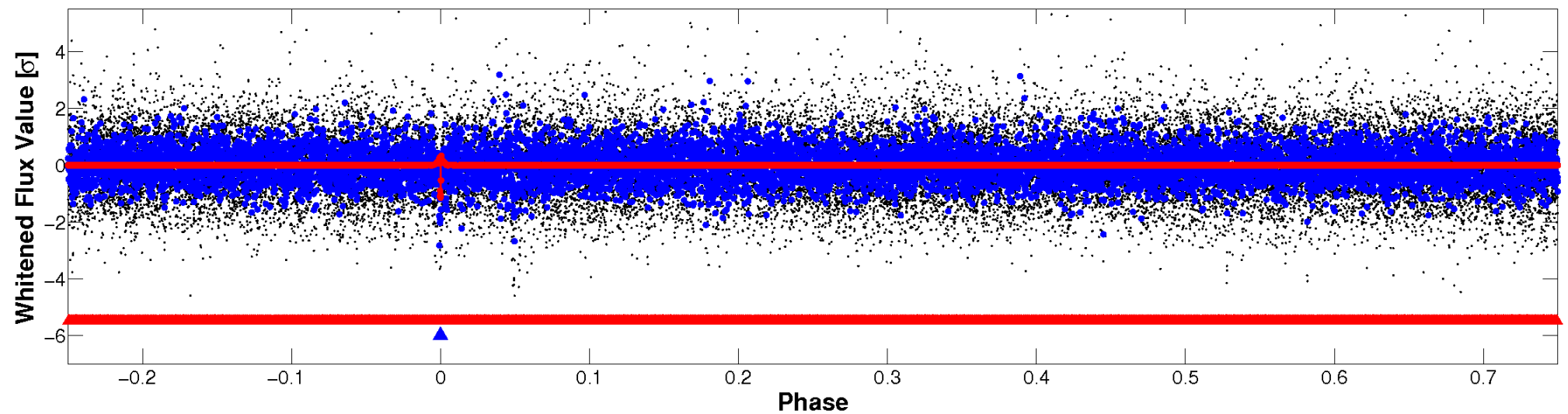


Non-Whitened Vs. Whitened Light Curve

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

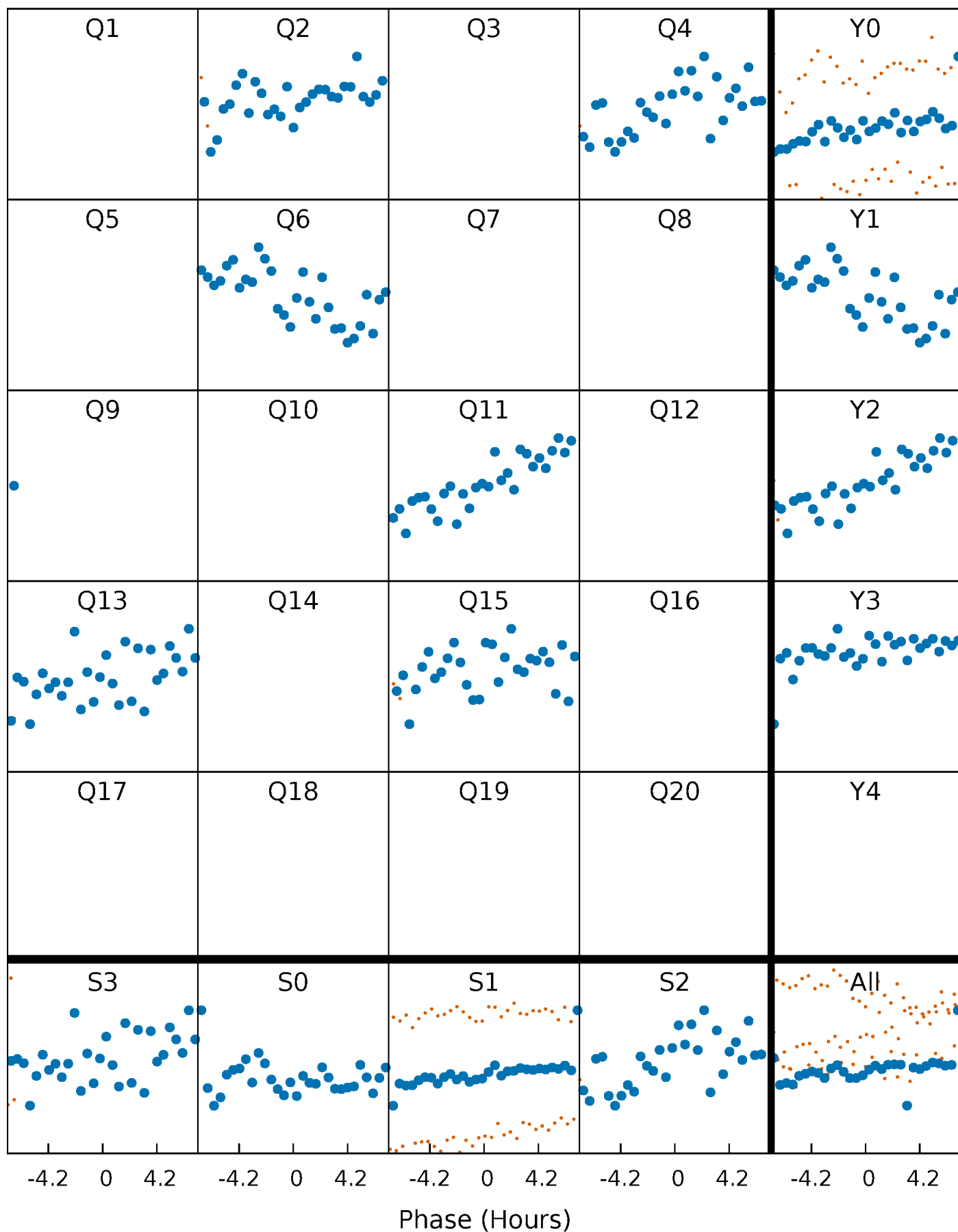


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



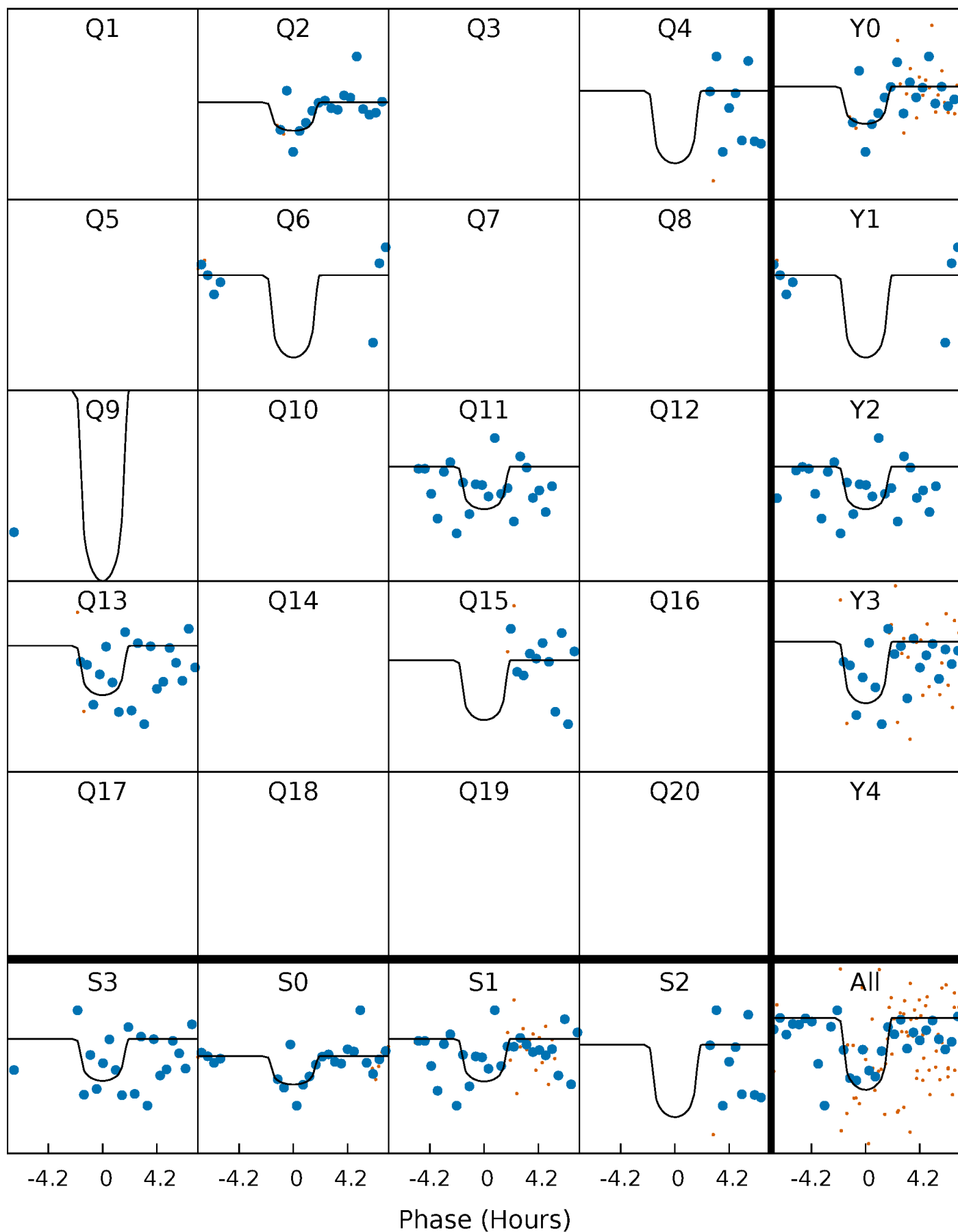
PDC Quarter-Phased Transit Curves

TCE 010471005-02 $P=180.065608$ Days $T_0=185.959508$ (BKJD)



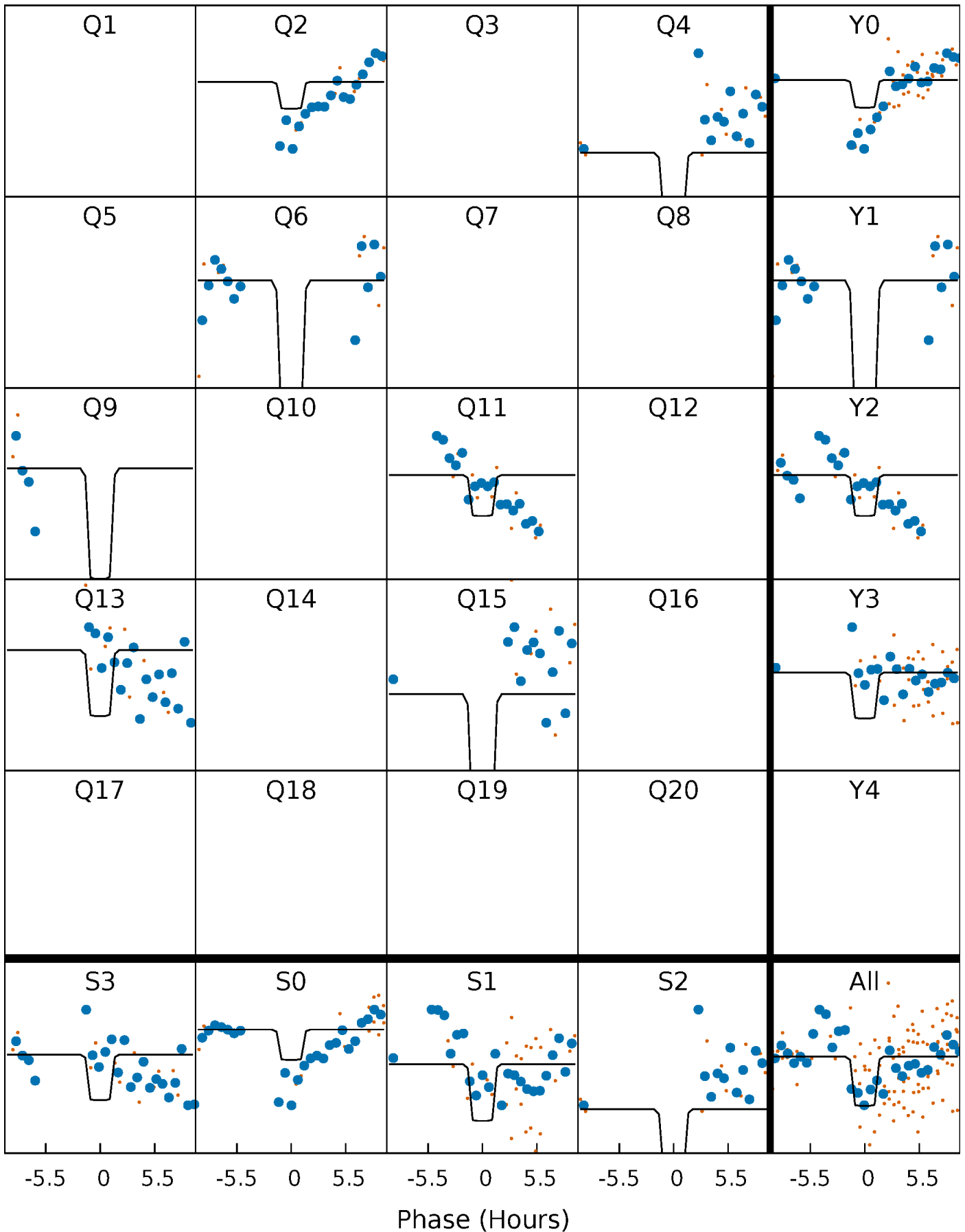
DV Quarter-Phased Transit Curves

TCE 010471005-02 P=180.065608 Days $T_0=185.959508$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

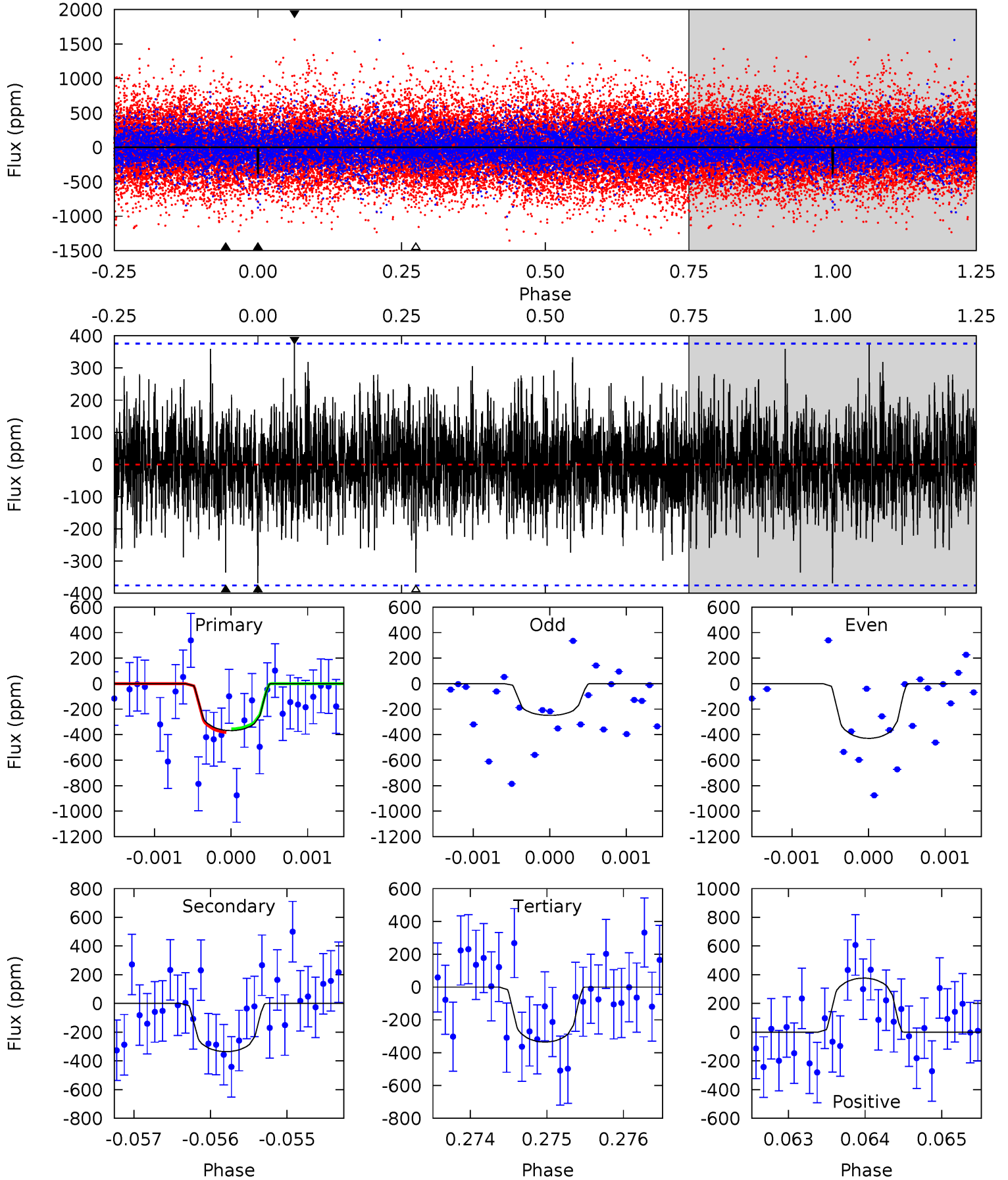
TCE 010471005-02 P=180.060531 Days $T_0=185.968879$ (BKJD)



DV Model-Shift Uniqueness Test

010471005-02, P = 180.065608 Days, E = 5.893900 Days

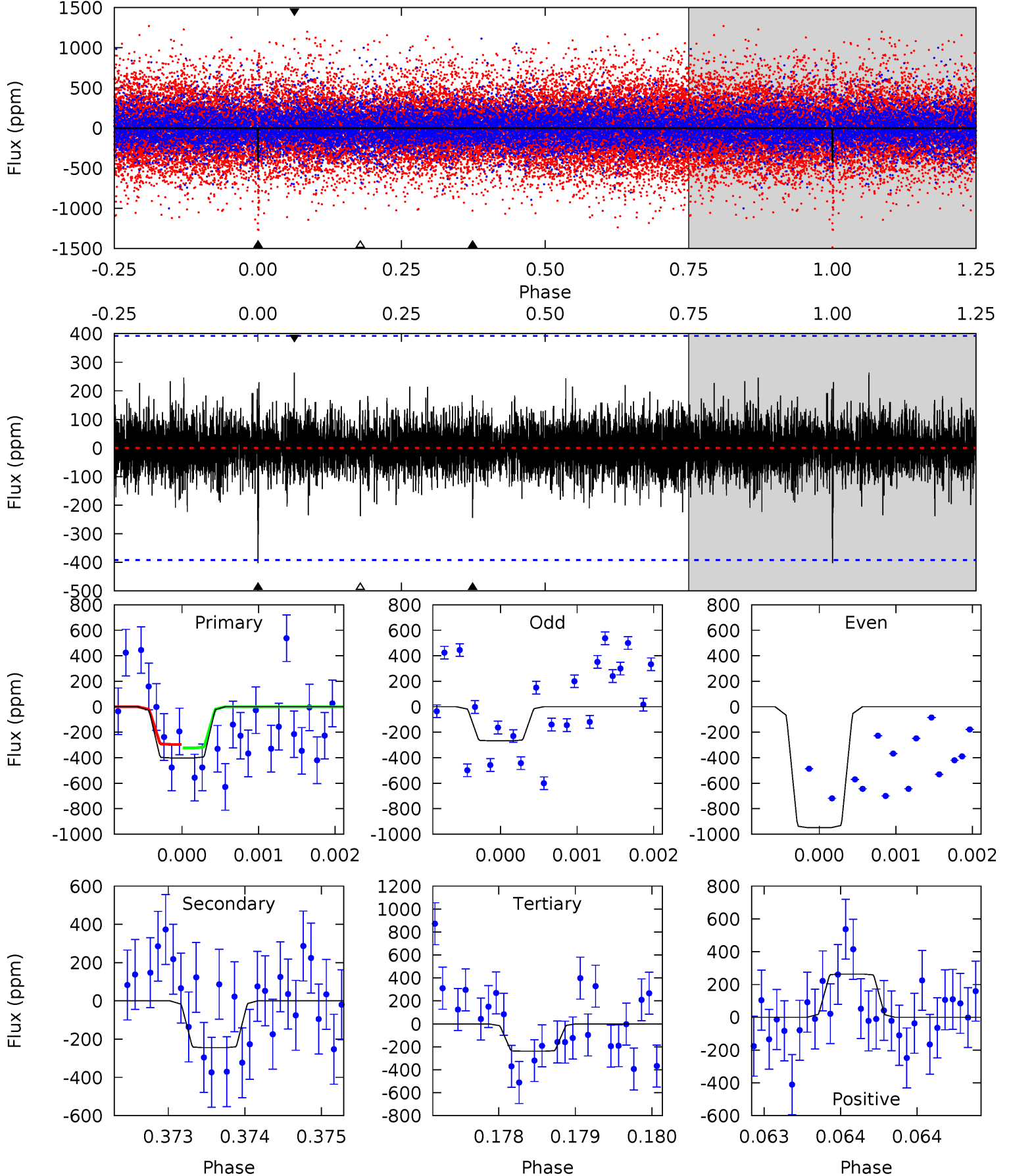
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.36	4.89	4.88	5.48	5.47	3.31	1.33	0.48	-0.12	0.00	-0.60	1.30	0.89	0.51	0.21



Alt Model-Shift Uniqueness Test

010471005-02, P = 180.060531 Days, E = 5.908348 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.63	3.43	3.34	3.69	5.49	3.35	0.80	2.30	1.94	0.09	-0.27	4.70	2.39	0.40	0.19



Stellar Parameters For KIC 010471005

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5593^{+166}_{-166}	$4.349^{+0.144}_{-0.192}$	$0.220^{+0.200}_{-0.300}$	$1.094^{+0.307}_{-0.189}$	$0.976^{+0.104}_{-0.094}$	$1.050^{+0.645}_{-0.512}$
	+3%/-3%	+3%/-4%	+91%/-136%	+28%/-17%	+11%/-10%	+61%/-49%
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 010471005-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-336 ± 69	$4.54^{+4.06}_{-3.02}$	459^{+36}_{-28}	4167^{+2541}_{-805}	3429^{+27688}_{-2487}
Alt.	-244 ± 71	$4.84^{+4.42}_{-3.15}$	460^{+36}_{-28}	3813^{+1991}_{-699}	2098^{+16289}_{-1528}

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

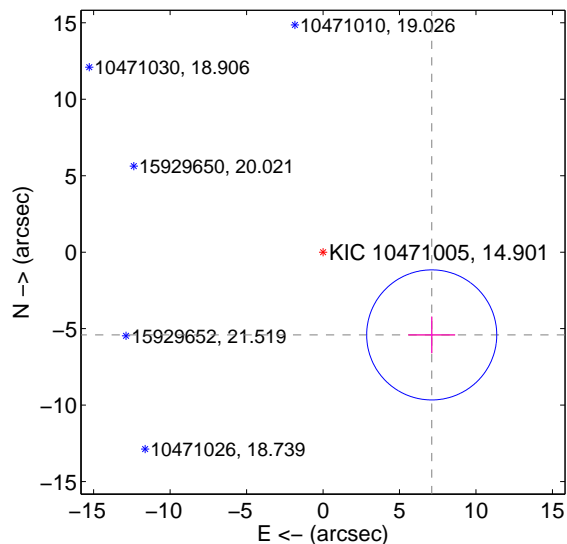
Supplemental centroid analysis for 010471005-02. Kepler magnitude: 14.90. Transit SNR 4.80

There are 0 quarters with good PRF difference image offsets

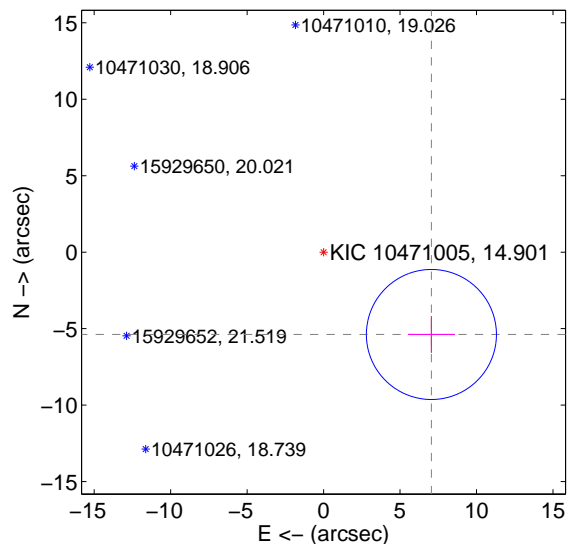
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.933 ± 1.418	6.30	-7.107 ± 1.532	-5.411 ± 1.196
PRF-fit source offset from KIC position	8.872 ± 1.417	6.26	-7.052 ± 1.532	-5.383 ± 1.196
photometric centroid source offset	1.70 ± 1.76	0.97	-0.07 ± 1.81	-1.70 ± 1.76

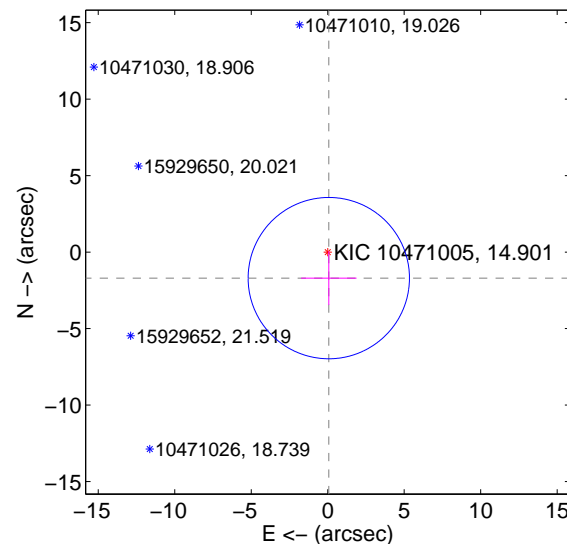
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

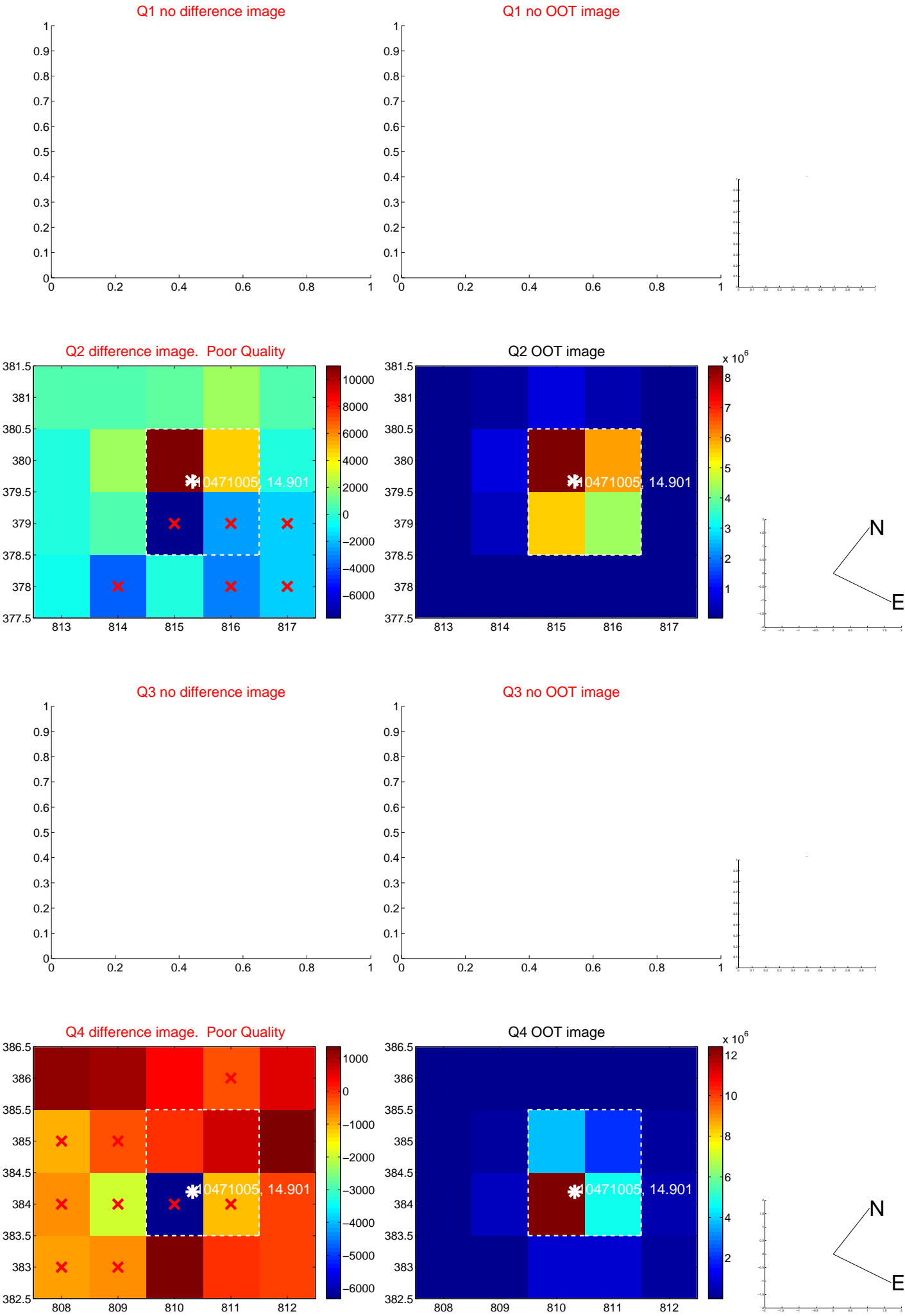


offset from photometric centroids

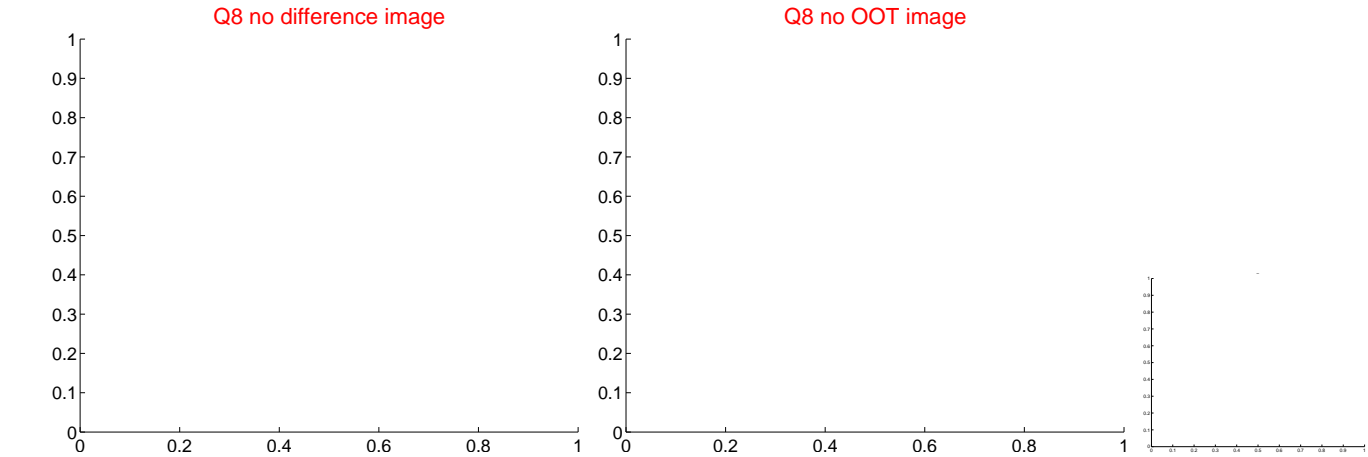
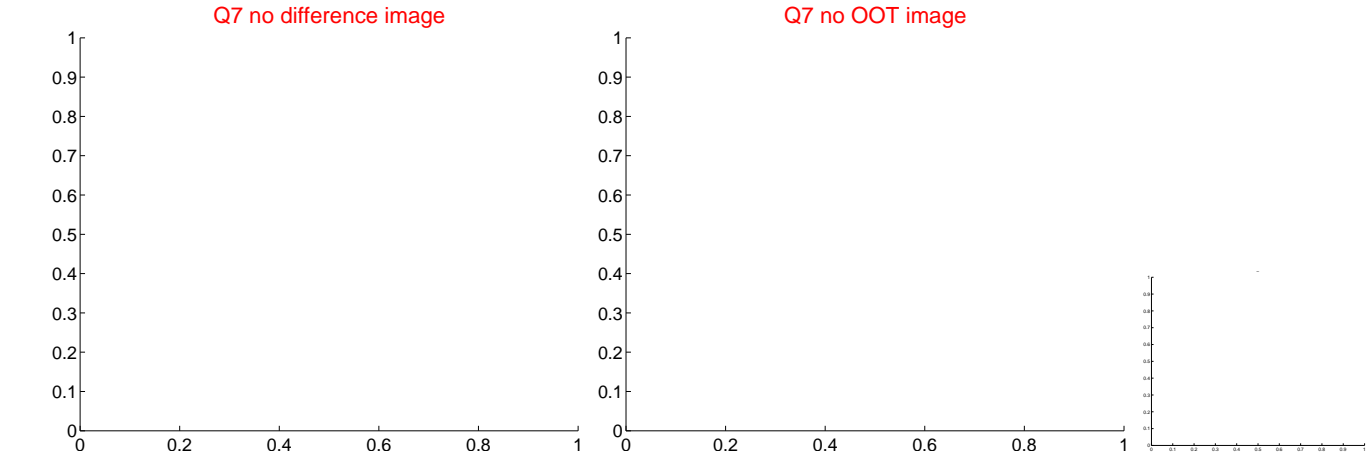
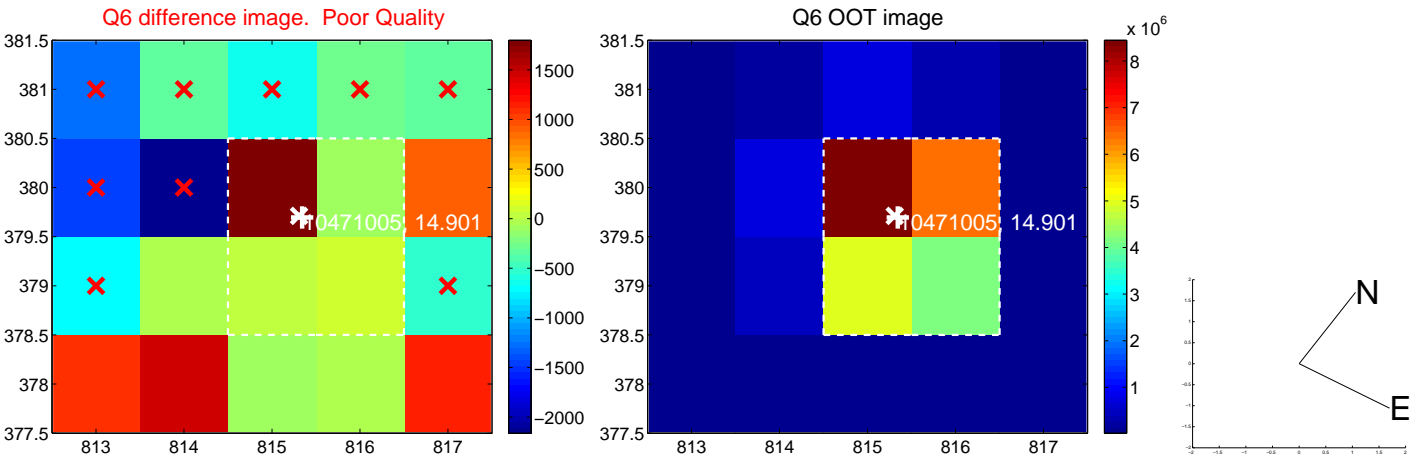
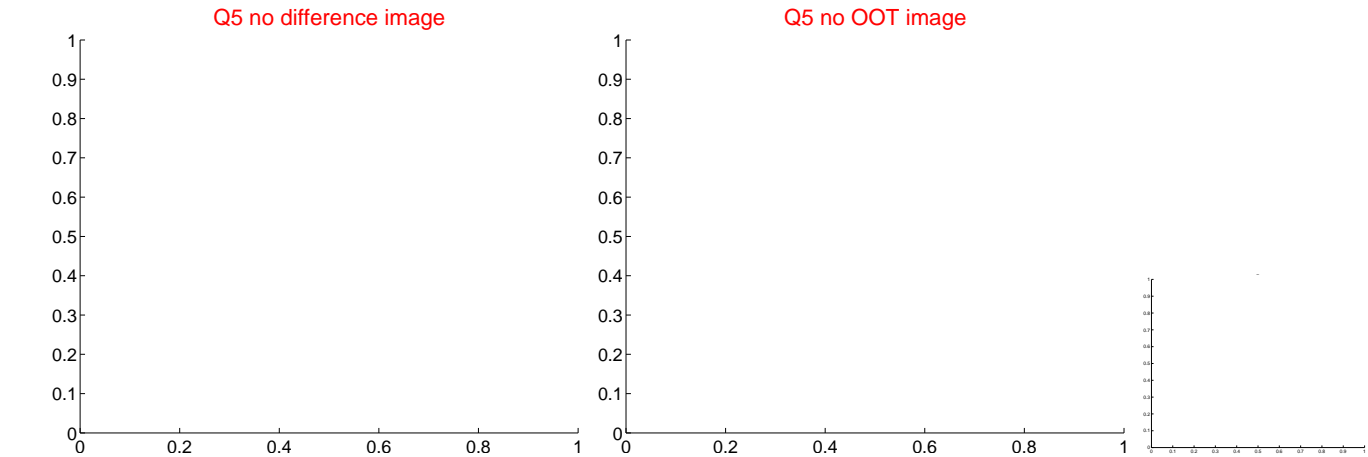


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



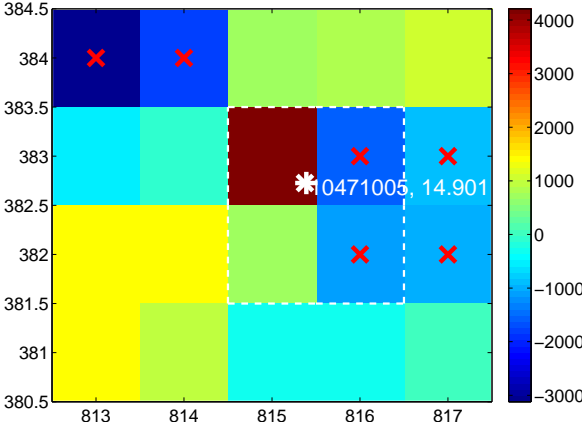
Q10 no difference image



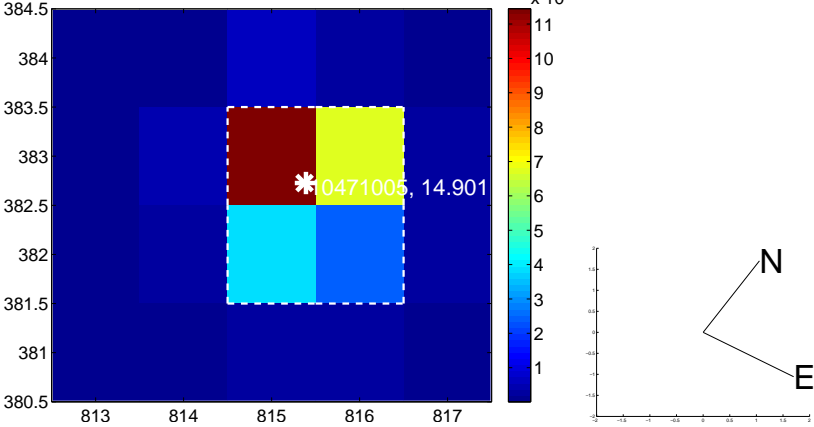
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



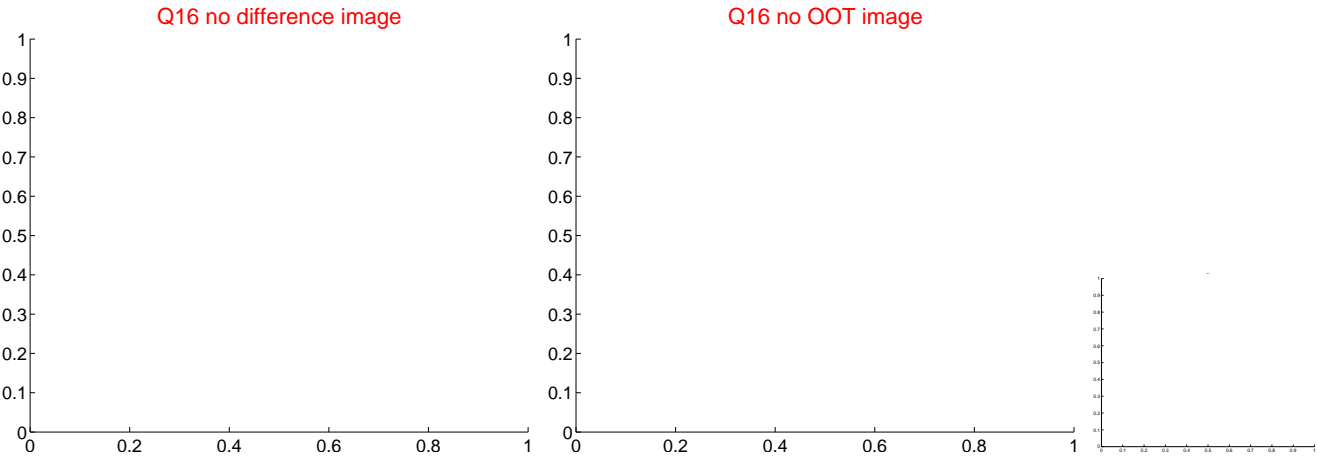
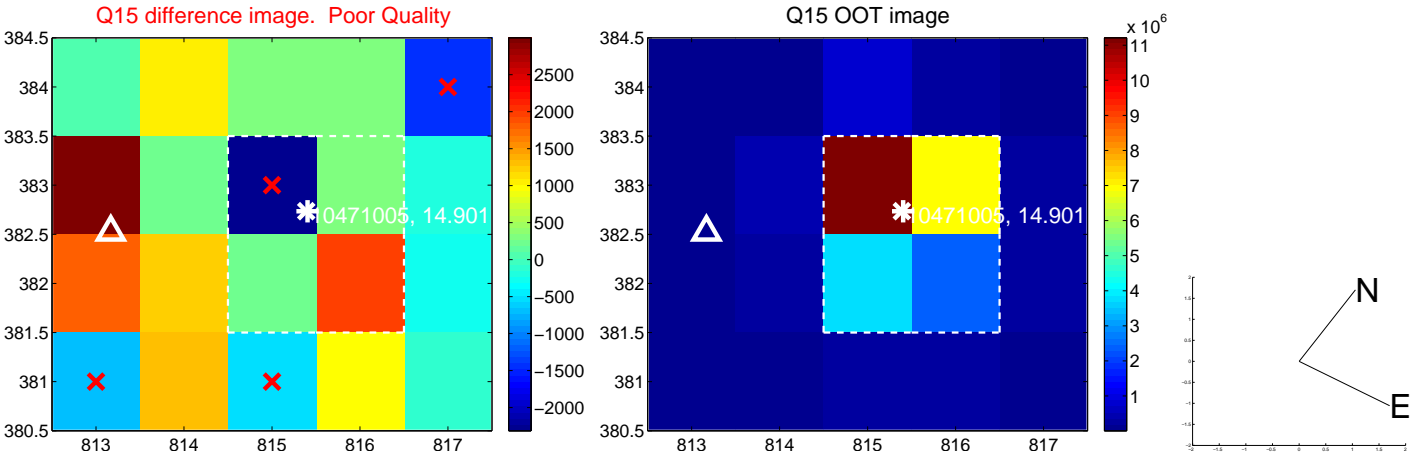
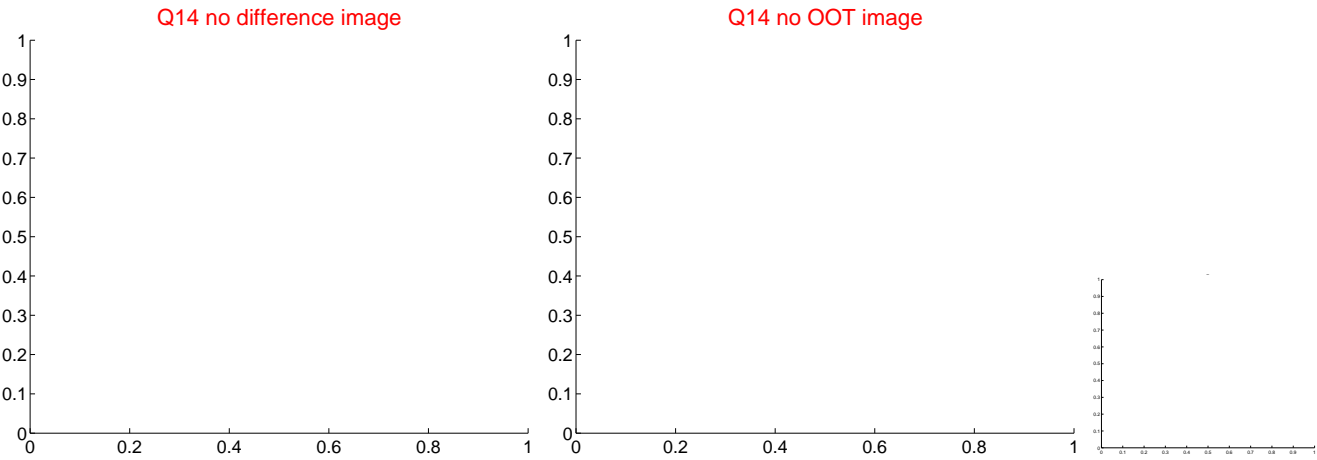
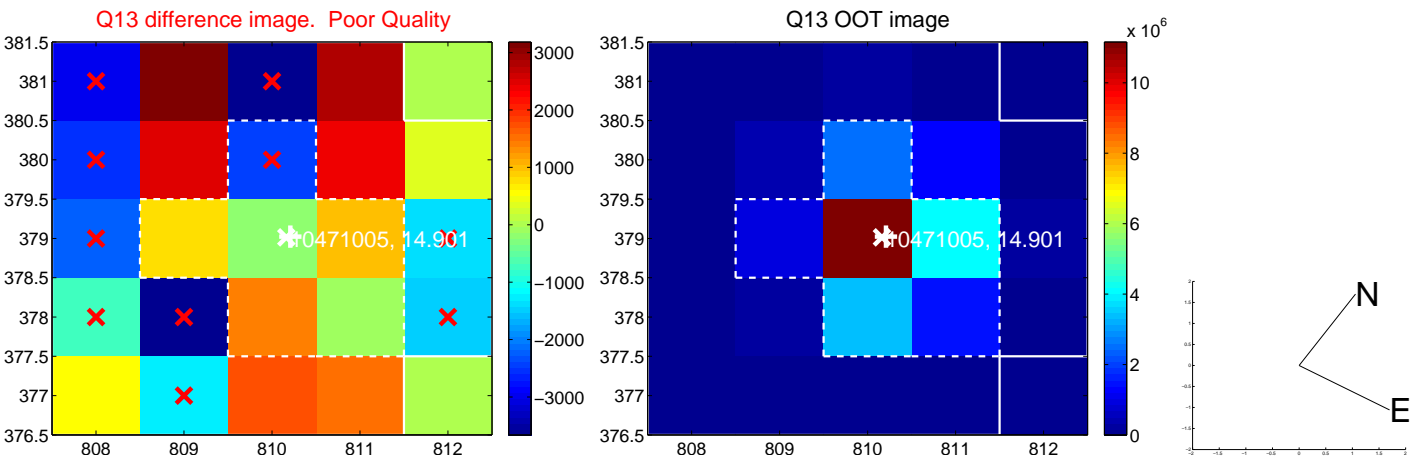
Q12 no difference image



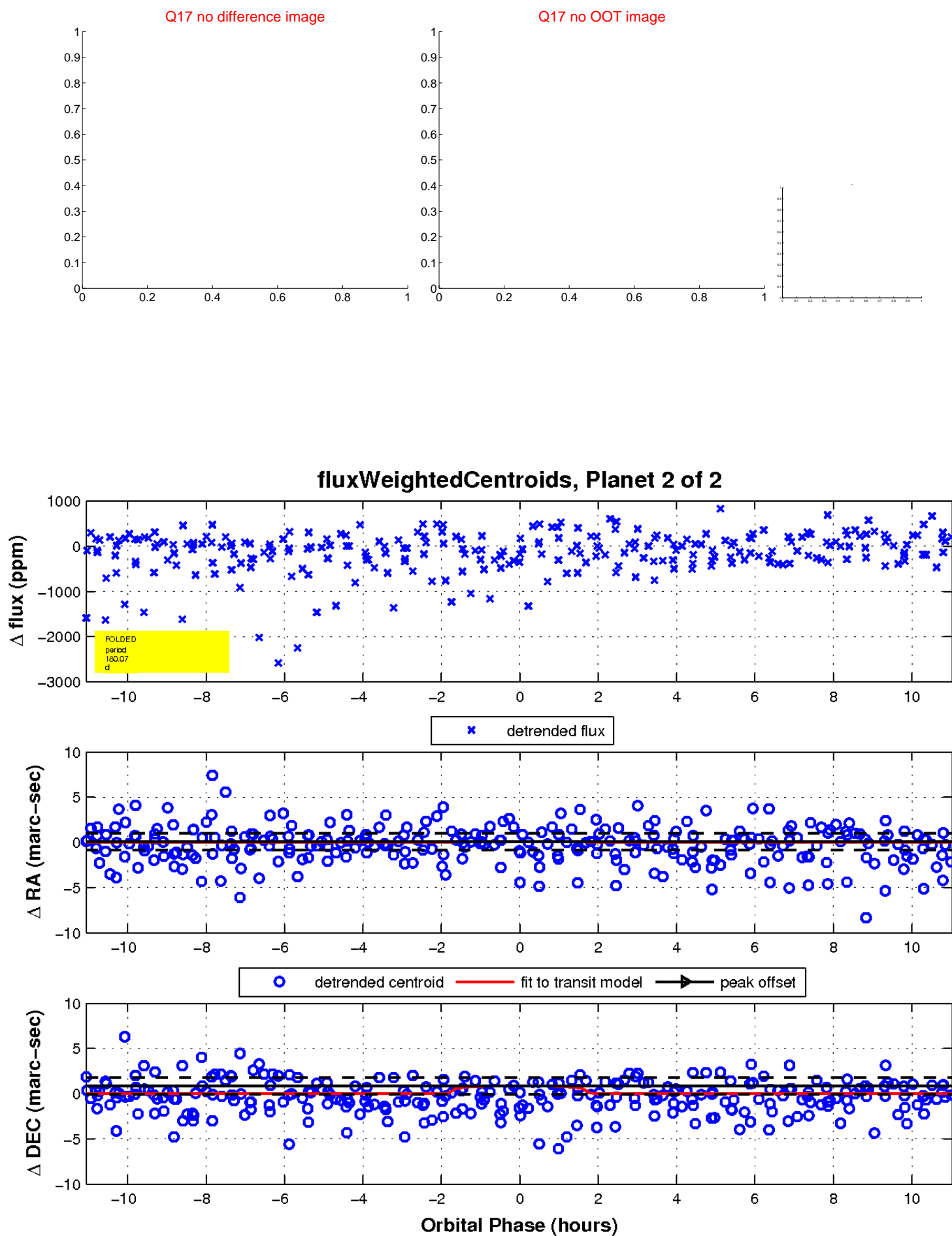
Q12 no OOT image



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

