

KIC 010536177

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})
010536177-01	OBS	8025.01	0.933717	131.543433	37.7	3.400	7.9	9.3	1.02	5984	0.73	3420.74
010536177-02	OBS	No	75.452016	176.902839	175.2	13.470	7.6	5.8	1.02	5984	1.49	9.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010536177-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010536177-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

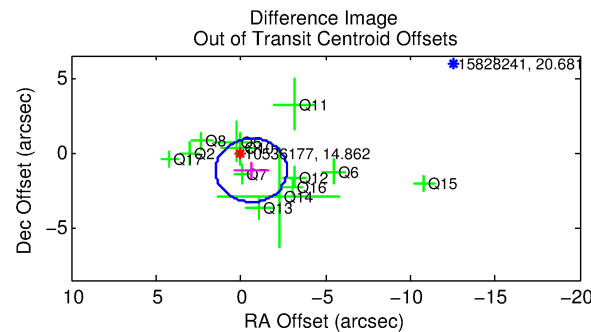
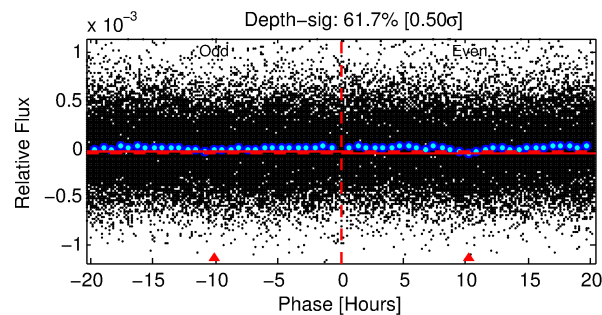
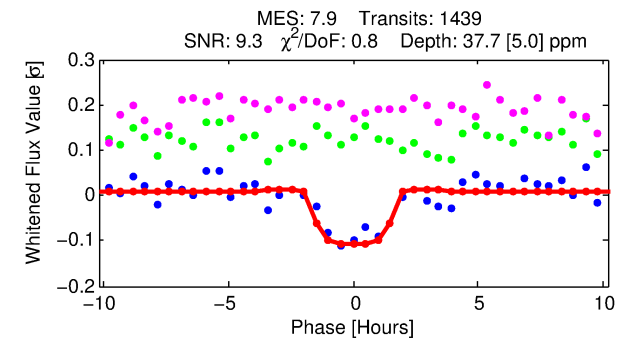
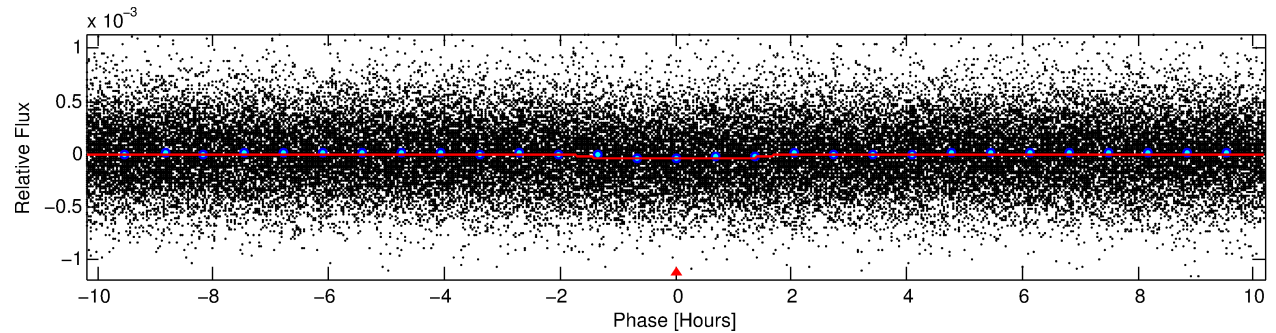
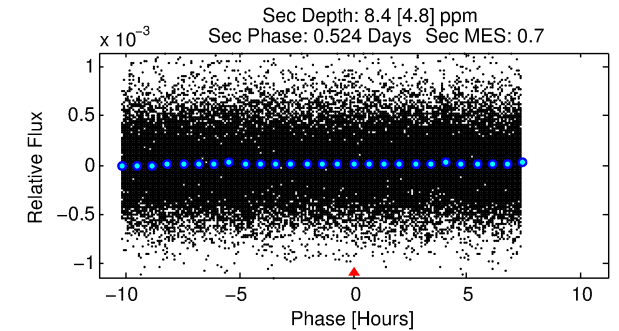
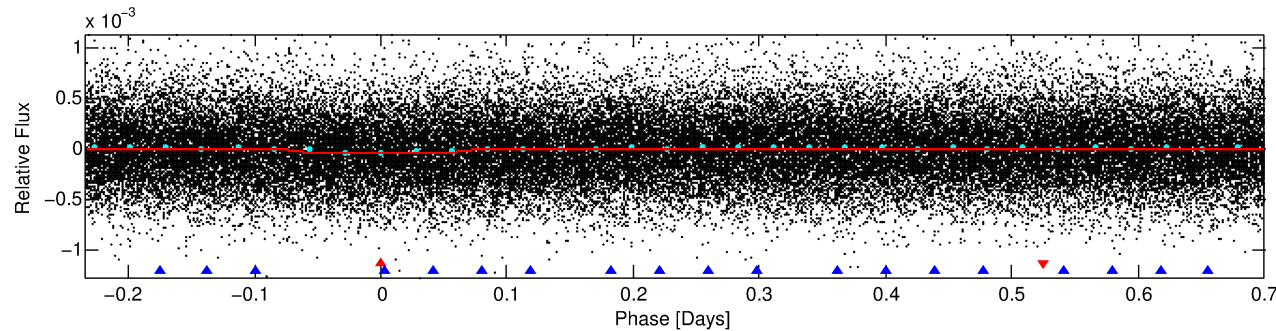
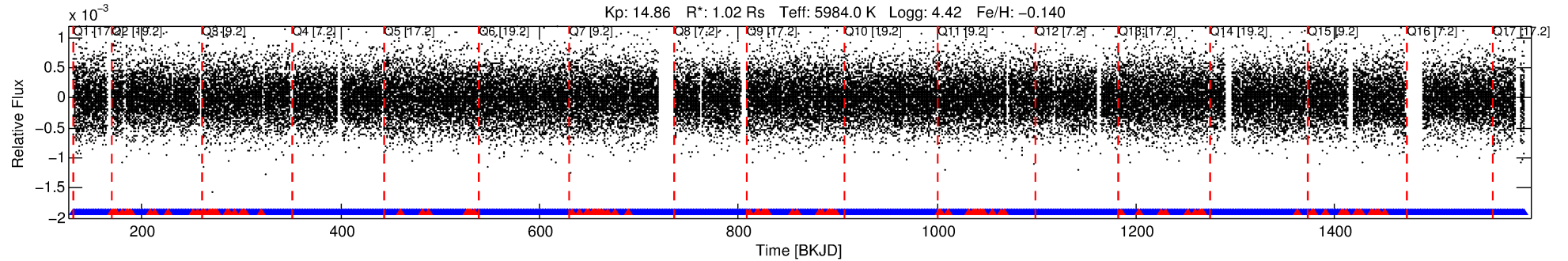
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010536177-01

No Significant Match Found

DV One-Page Summary

KIC: 10536177 Candidate: 1 of 2 Period: 0.934 d



DV Fit Results:

Period = 0.93372 [0.00001] d
Epoch = 131.5434 [0.0042] BKJD
Rp/R* = 0.0066 [0.0043]
a/R* = 1.36 [2.12]
b = 0.89 [0.82]
Seff = 3420.74 [1325.27]
Teff = 1950 [189] K
Rp = 0.73 [0.52] Re
a = 0.0186 [0.0047] AU
Ag = 3.01 [4.44] [0.45σ]
Teffp = 3971 [1423] K [1.41σ]

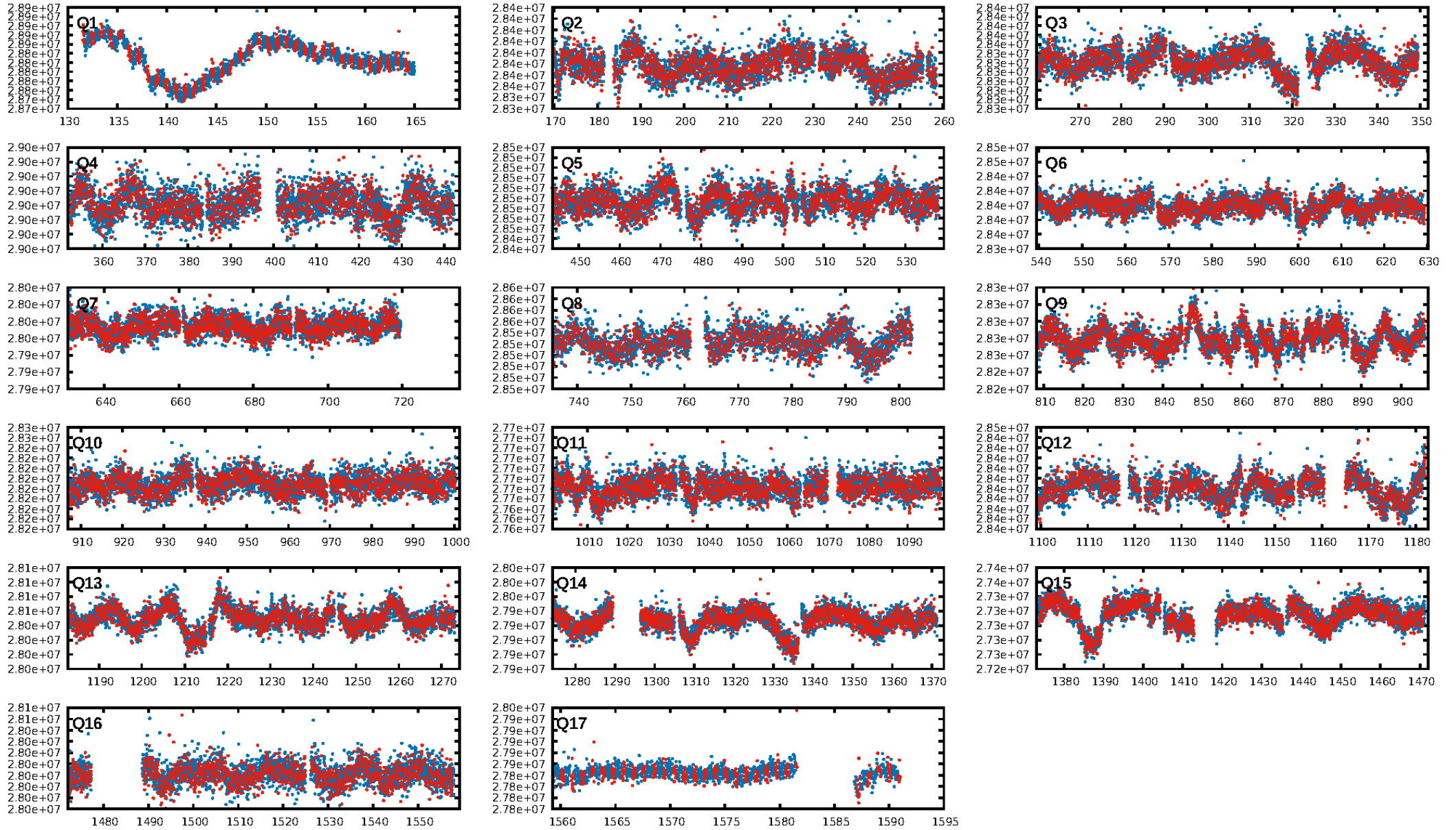
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [128.73σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.37e-15
RollingBand-fgt: 0.91 [1251/1373]
GhostDiagnostic-chr: 0.1763
Centroid-sig: 10.6%
Centroid-so: 2.723 arcsec [1.75σ]
OotOffset-rm: 1.326 arcsec [1.88σ]
KicOffset-rm: 1.209 arcsec [1.66σ]
OotOffset-st: 4/3/3 [13]
KicOffset-st: 4/3/3 [13]
DiffImageQuality-fgm: 0.15 [2/13]
DiffImageOverlap-fno: 1.00 [17/17]

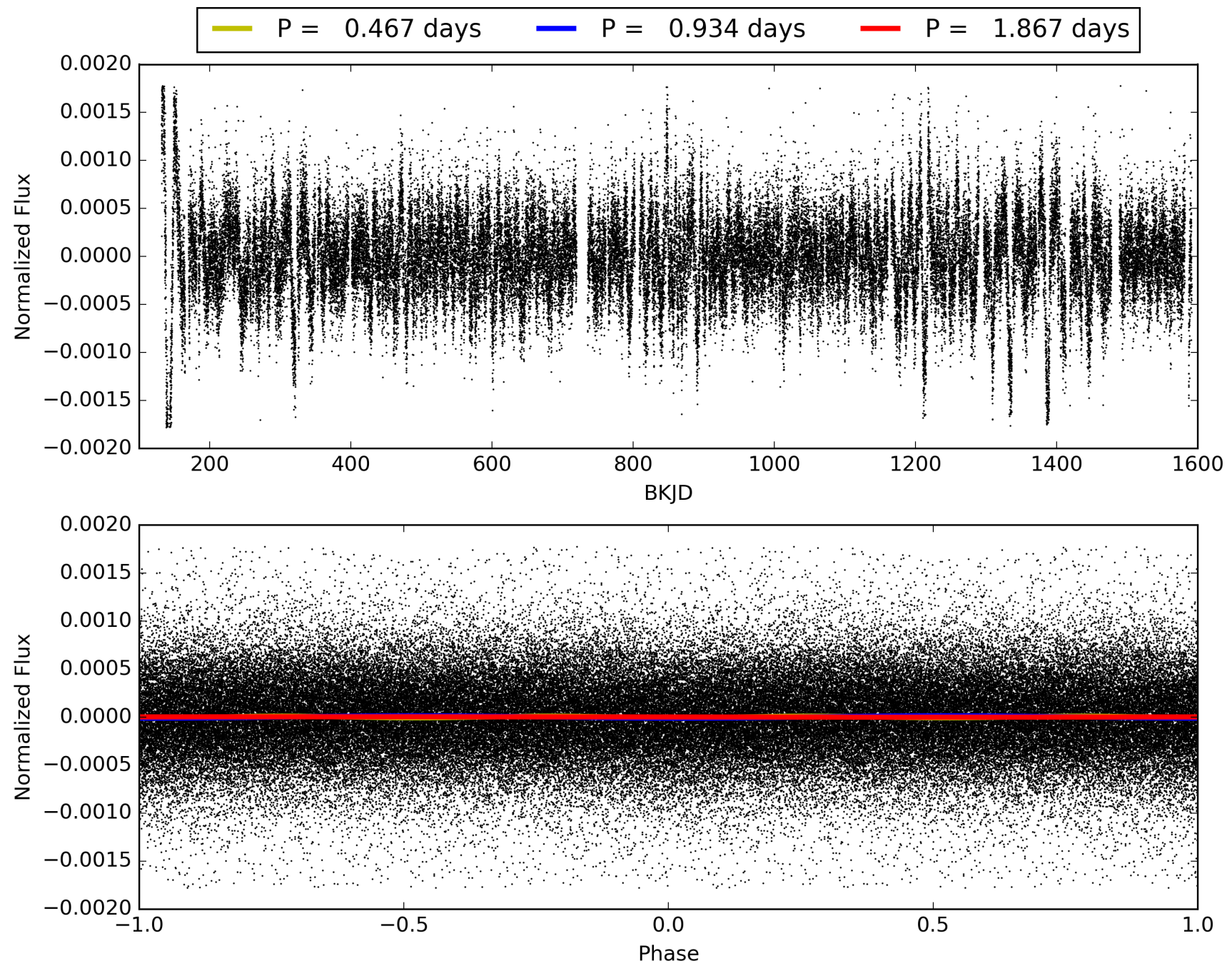
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:21:21 Z

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

TCE 010536177-01, PDC Light Curves

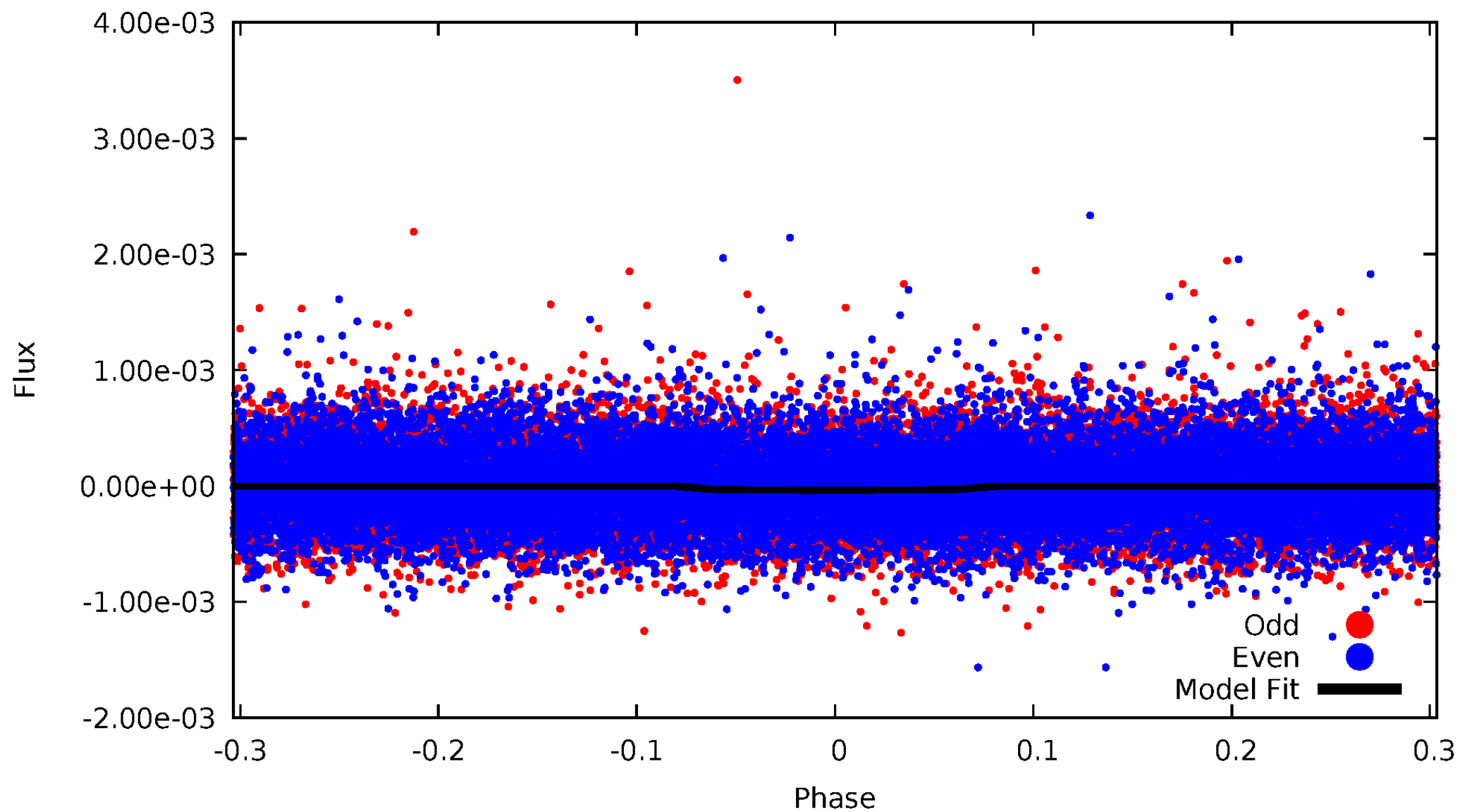


TCE 010536177-01



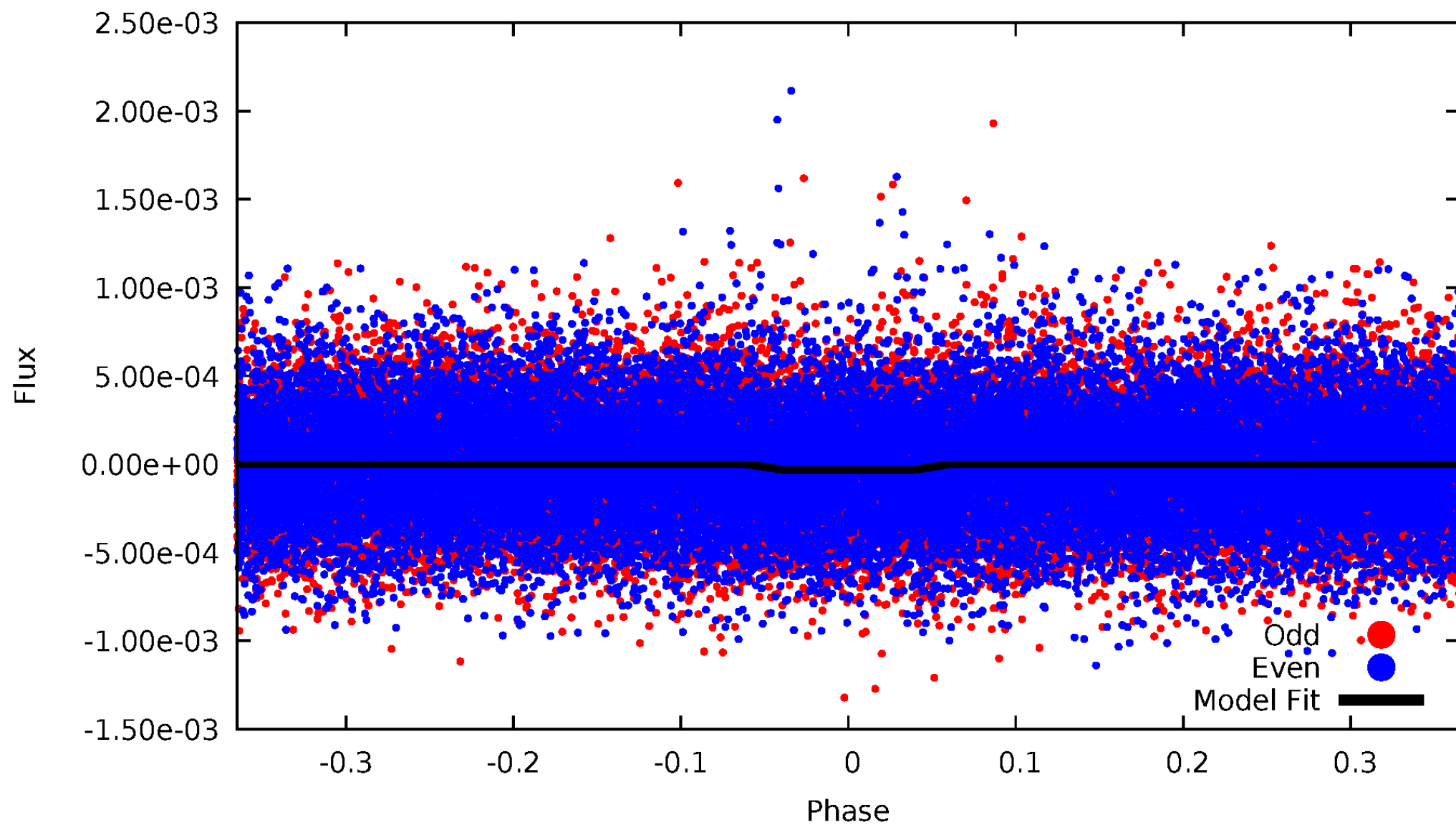
DV Odd/Even

TCE 010536177-01



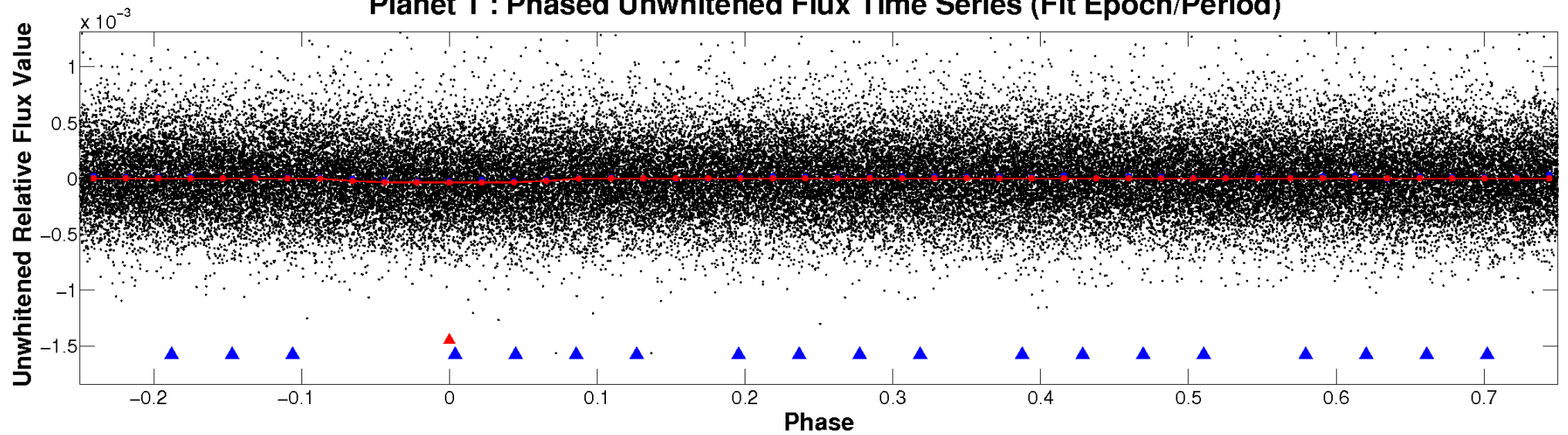
ALT Odd/Even

TCE 010536177-01

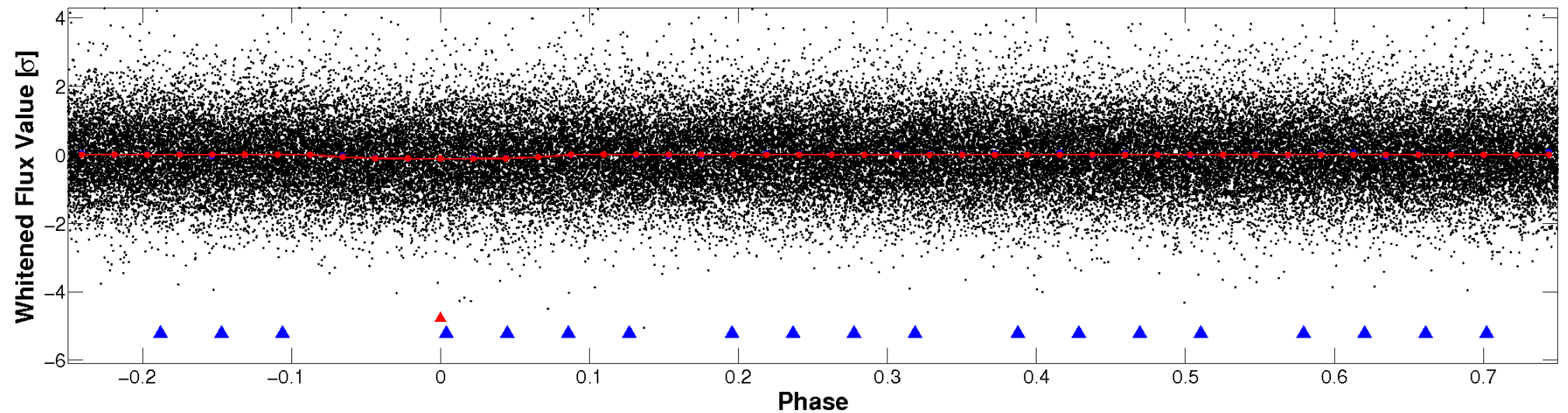


Non-Whitened Vs. Whitened Light Curve

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

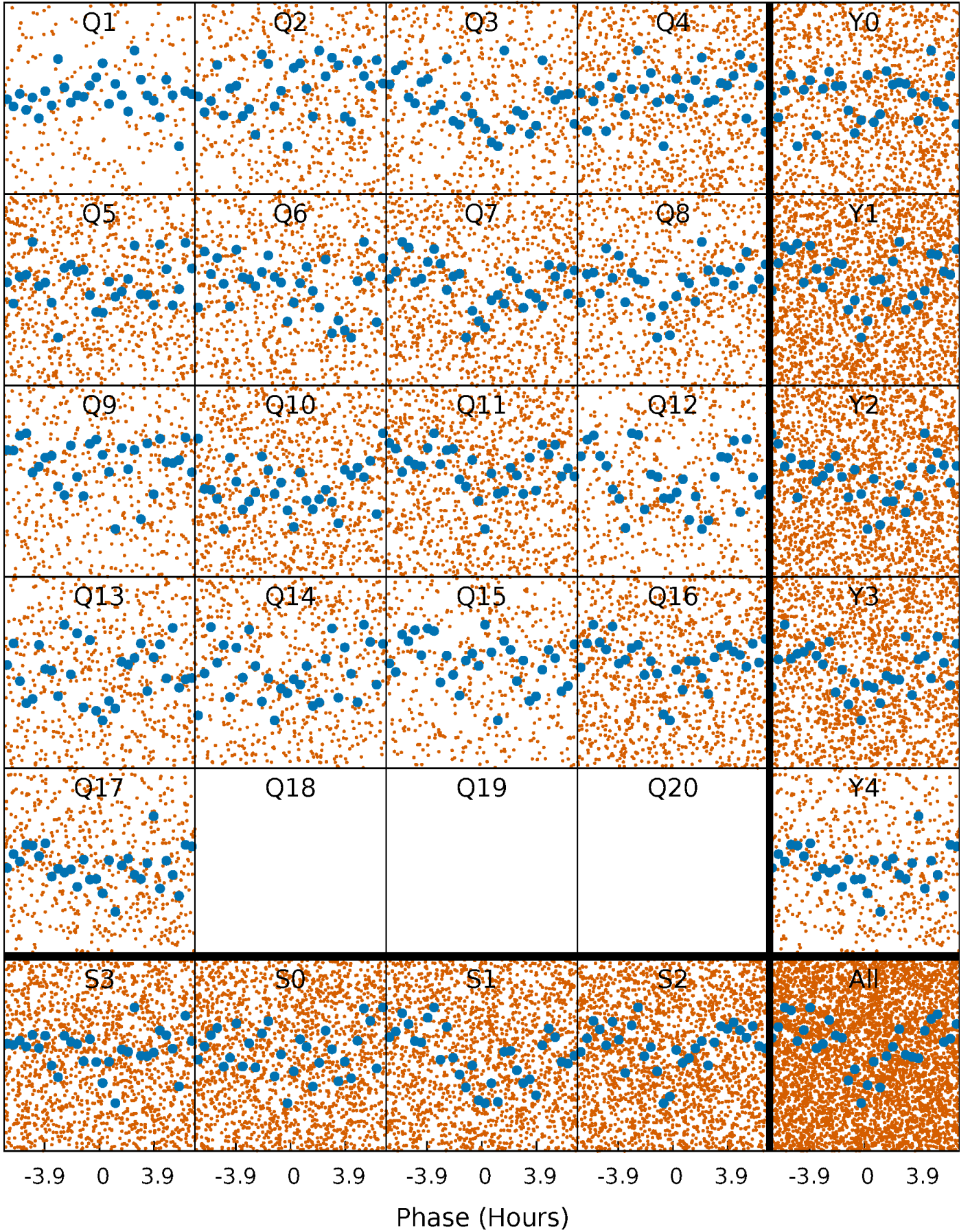


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



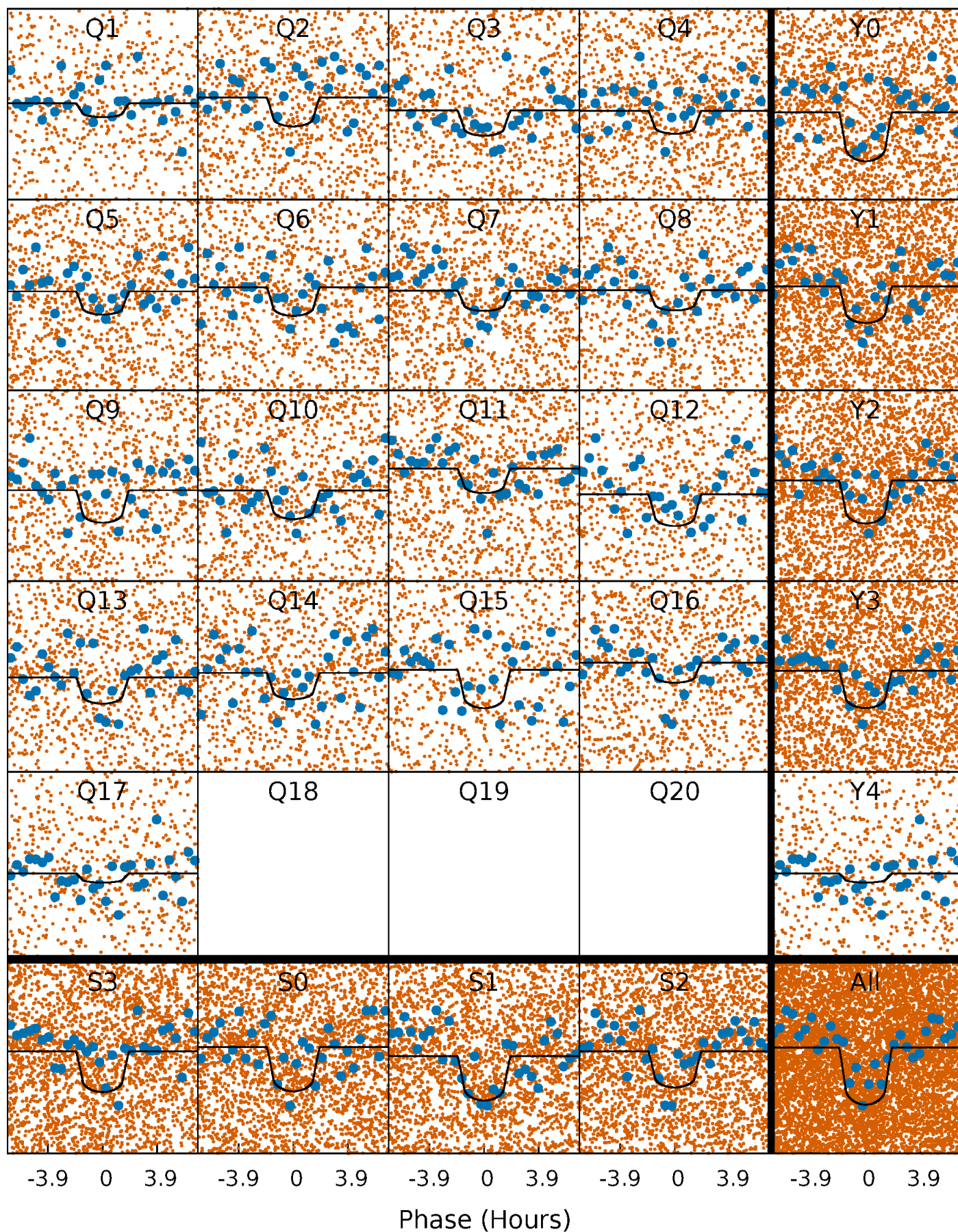
PDC Quarter-Phased Transit Curves

TCE 010536177-01 P= 0.933717 Days $T_0=131.543433$ (BKJD)



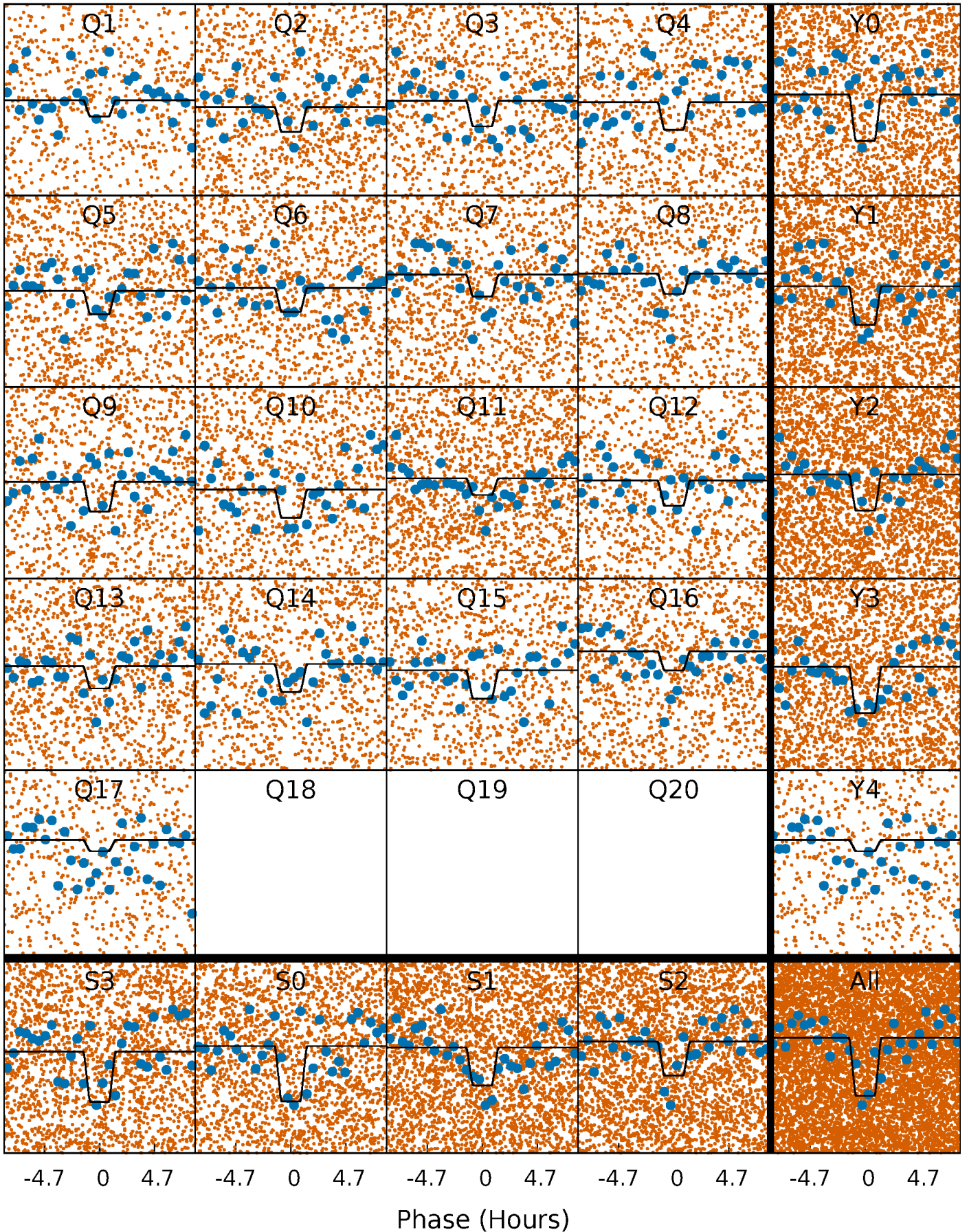
DV Quarter-Phased Transit Curves

TCE 010536177-01 P= 0.933717 Days $T_0=131.543433$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

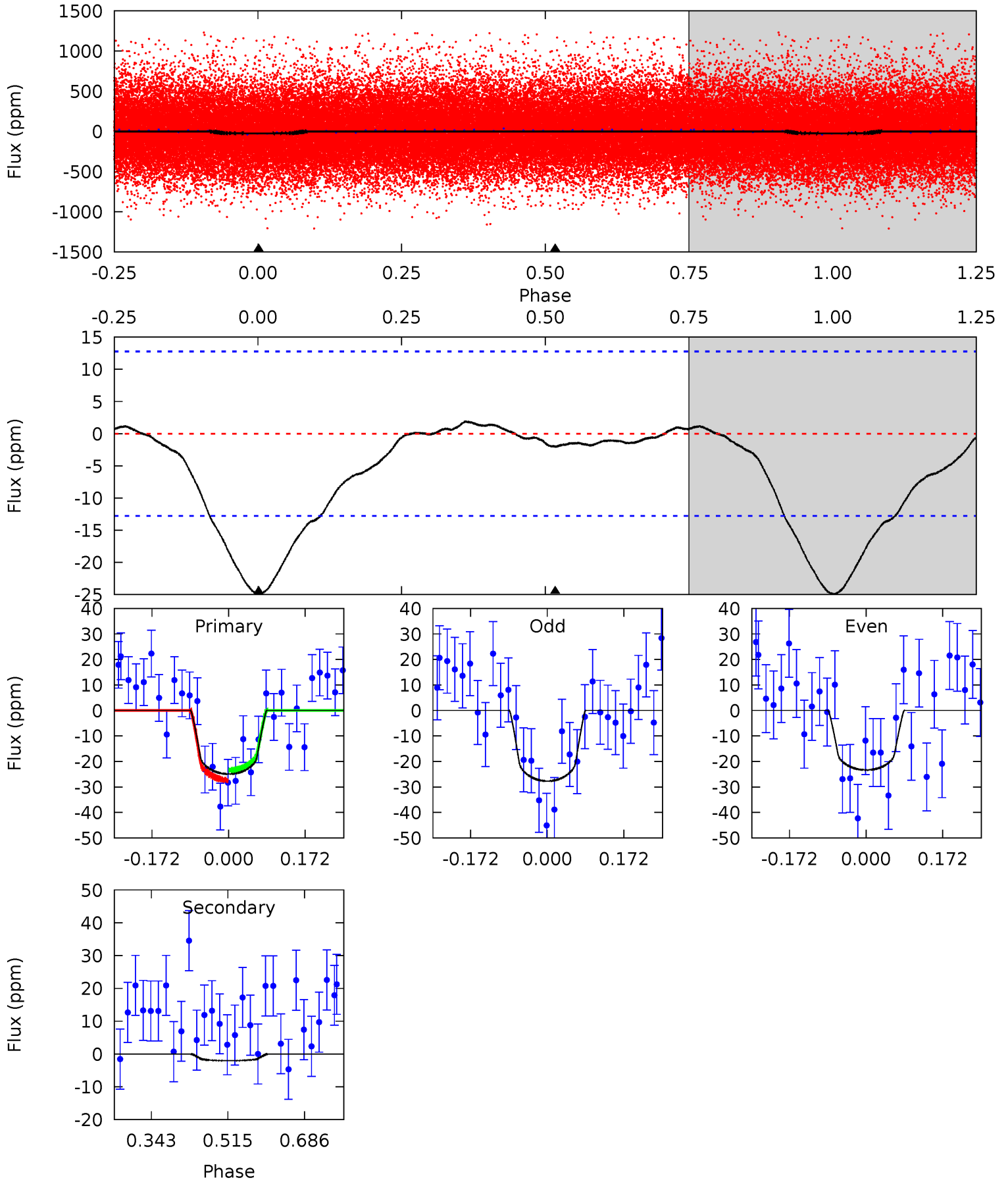
TCE 010536177-01 P= 0.933740 Days $T_0=131.521703$ (BKJD)



DV Model-Shift Uniqueness Test

010536177-01, $P = 0.933717$ Days, $E = 130.609716$ Days

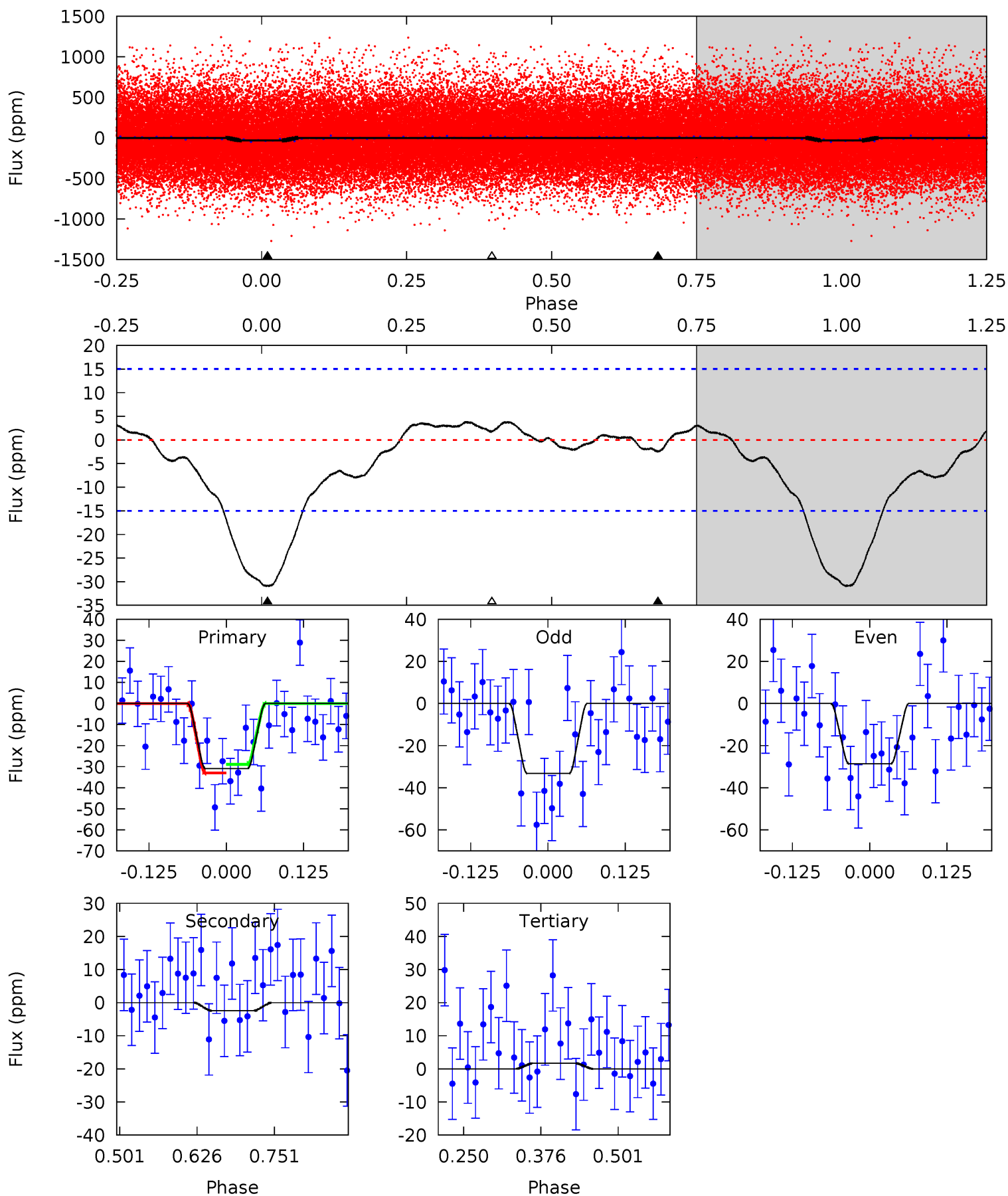
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.68	0.71	0	0	4.45	1.37	0.73	8.68	8.68	0.71	0.71	0.76	1.19	0.07	0.67



Alt Model-Shift Uniqueness Test

010536177-01, P = 0.933740 Days, E = 130.587963 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.30	0.74	-0.50	0	4.52	1.53	1.07	9.81	9.30	1.24	0.74	0.70	1.05	0.11	0.61



Stellar Parameters For KIC 010536177

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5984^{+161}_{-179}	$4.419^{+0.087}_{-0.203}$	$-0.140^{+0.300}_{-0.300}$	$1.017^{+0.300}_{-0.128}$	$0.991^{+0.145}_{-0.118}$	$1.326^{+0.592}_{-0.691}$
	+3%/-3%	+2%/-5%	+214%/-214%	+29%/-13%	+15%/-12%	+45%/-52%
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 010536177-01 / KOI 8025.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2 ± 3	$0.80^{+0.48}_{-0.44}$	2764^{+209}_{-138}	2805^{+1405}_{-5950}	$0.497^{+2.548}_{-0.674}$
Alt.	-2 ± 3	$0.76^{+0.43}_{-0.44}$	2762^{+186}_{-134}	3022^{+1426}_{-6238}	$0.645^{+3.521}_{-0.846}$

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 $A_{obs} \gg 1.0$

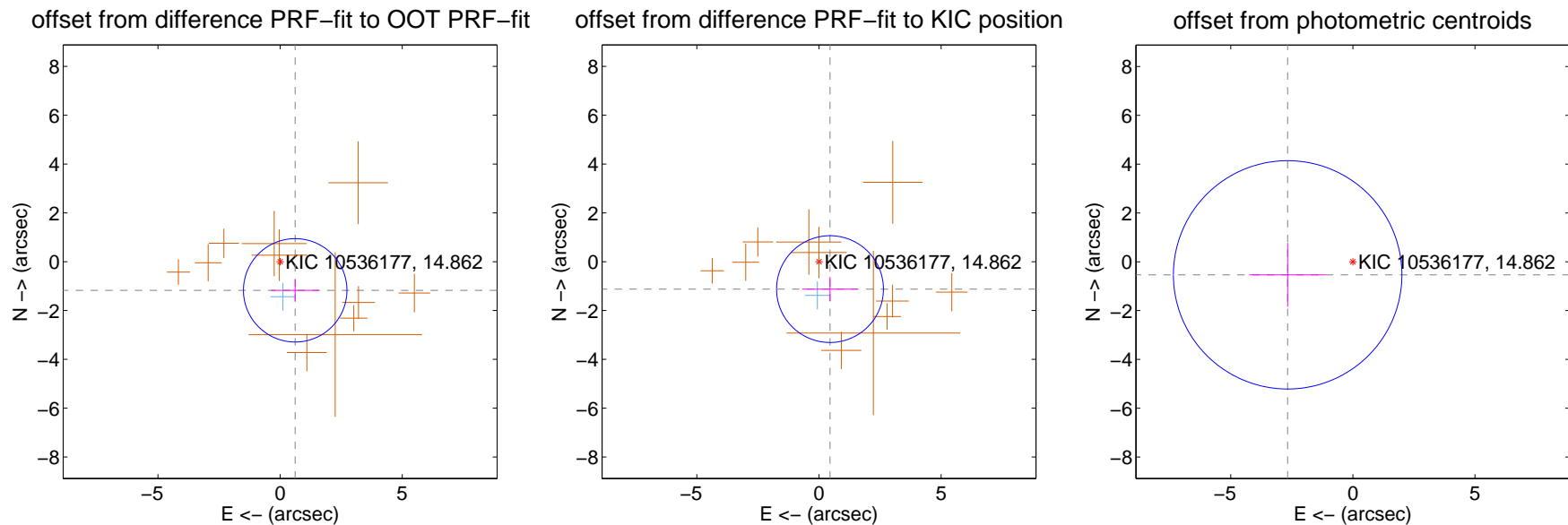
DV Centroid Data

Supplemental centroid analysis for 010536177-01. Kepler magnitude: 14.86. Transit SNR 9.28

There are 2 quarters with good PRF difference image offsets

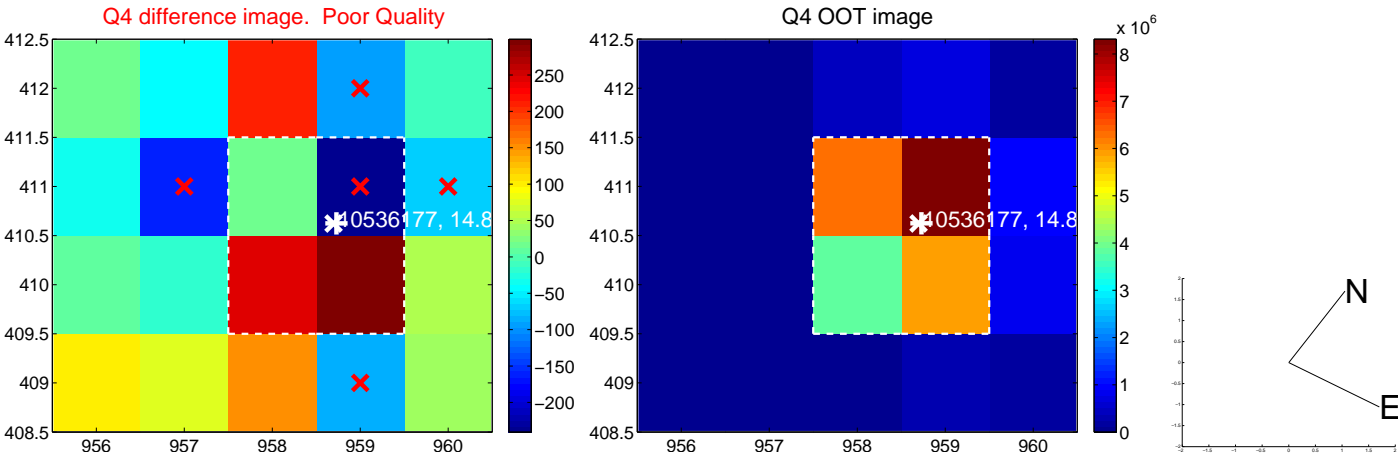
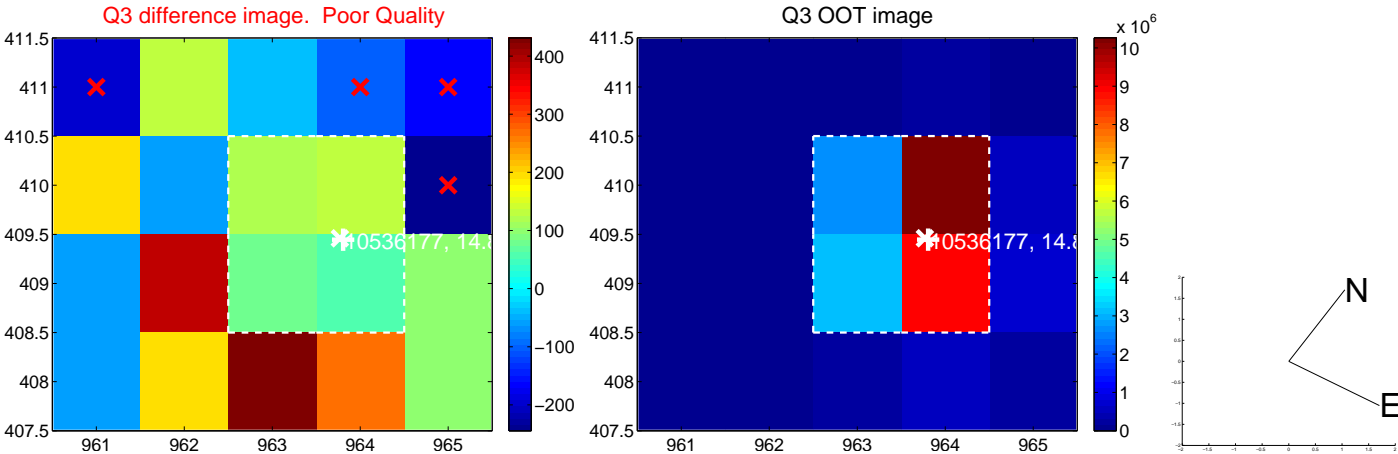
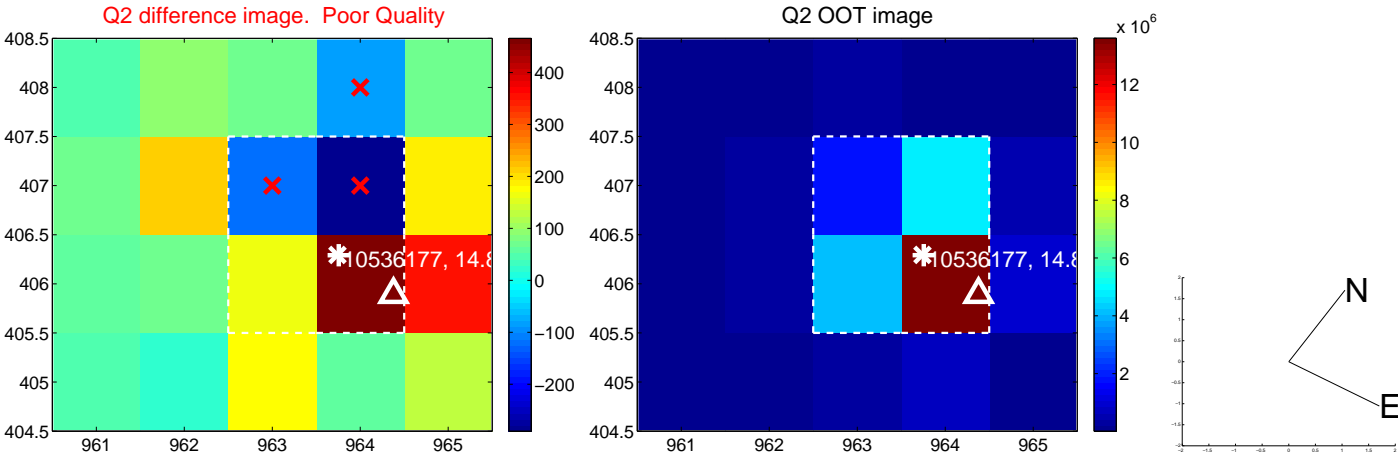
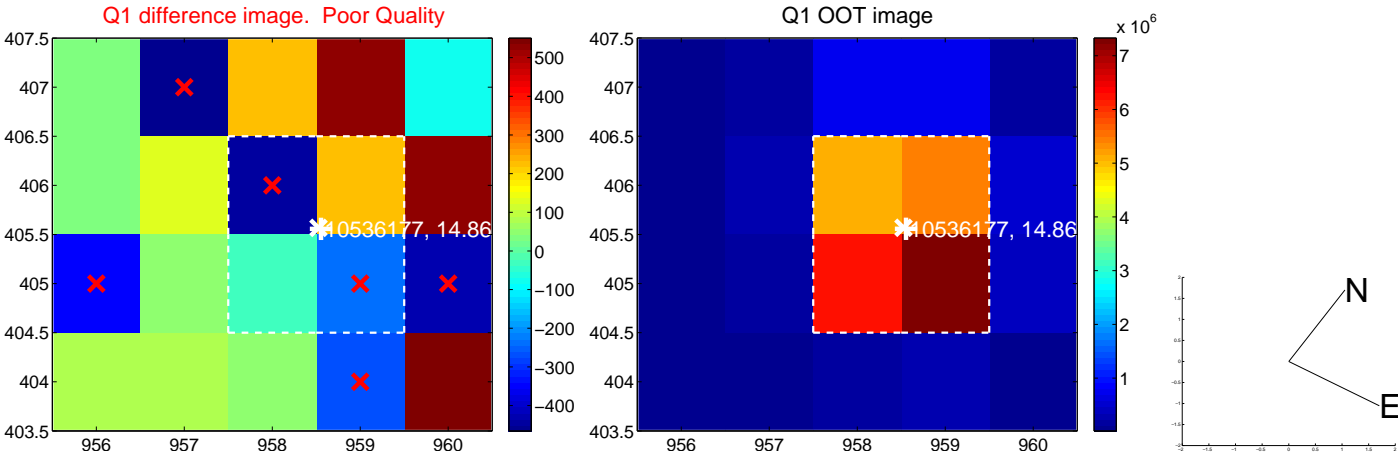
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.326 ± 0.706	1.88	-0.618 ± 0.990	-1.173 ± 0.462
PRF-fit source offset from KIC position	1.209 ± 0.729	1.66	-0.451 ± 1.134	-1.122 ± 0.499
photometric centroid source offset	2.72 ± 1.56	1.75	2.67 ± 1.57	-0.54 ± 1.31

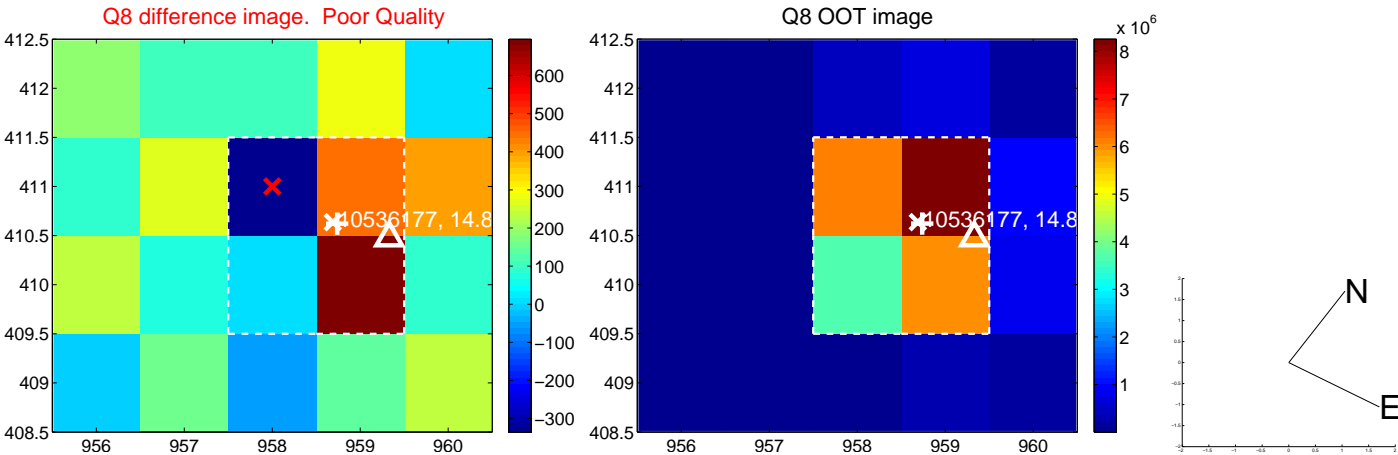
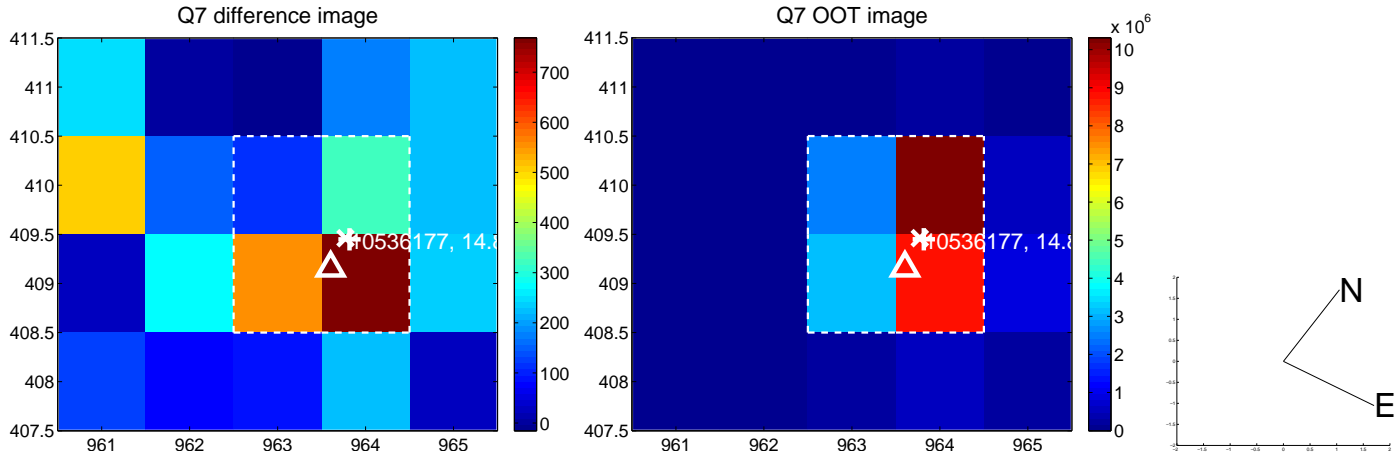
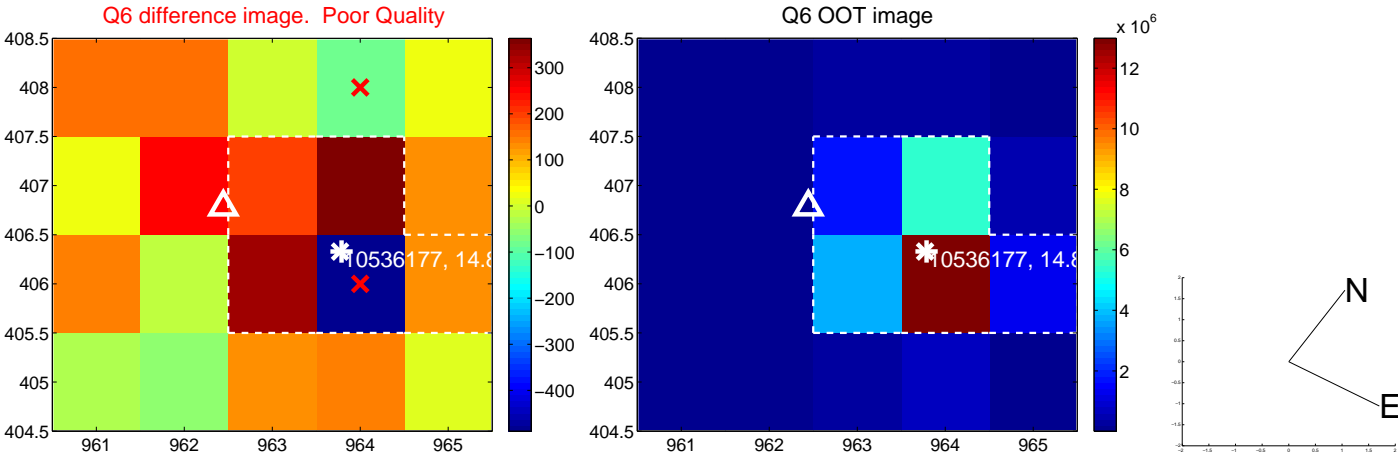
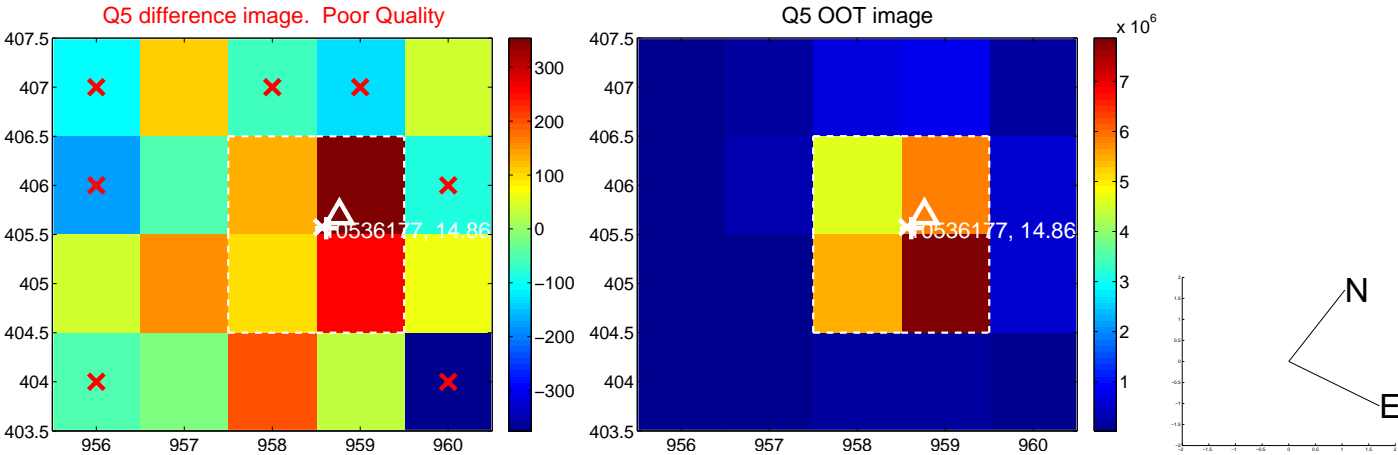


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

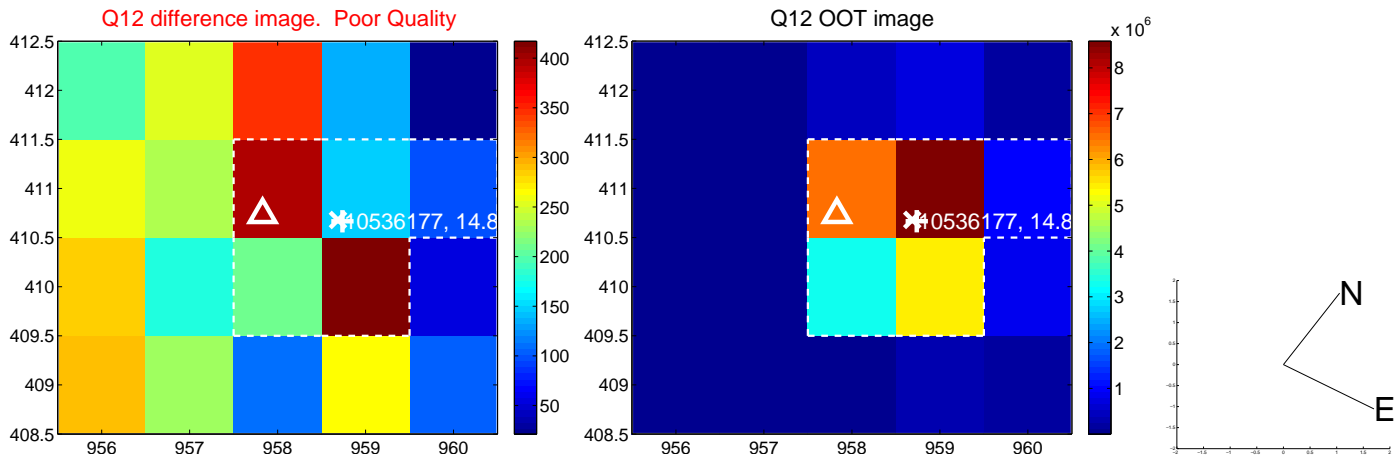
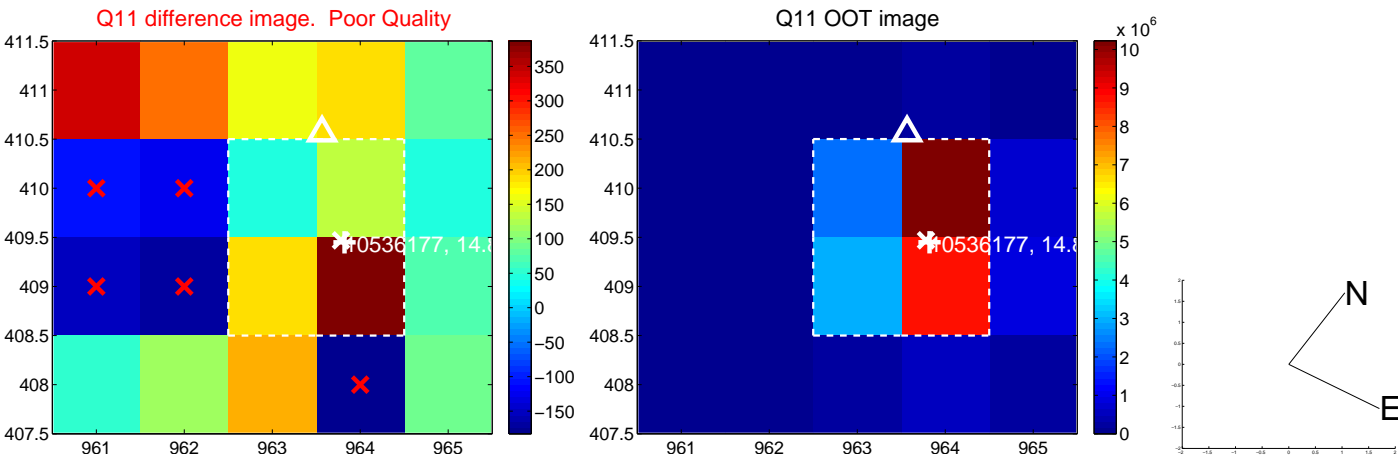
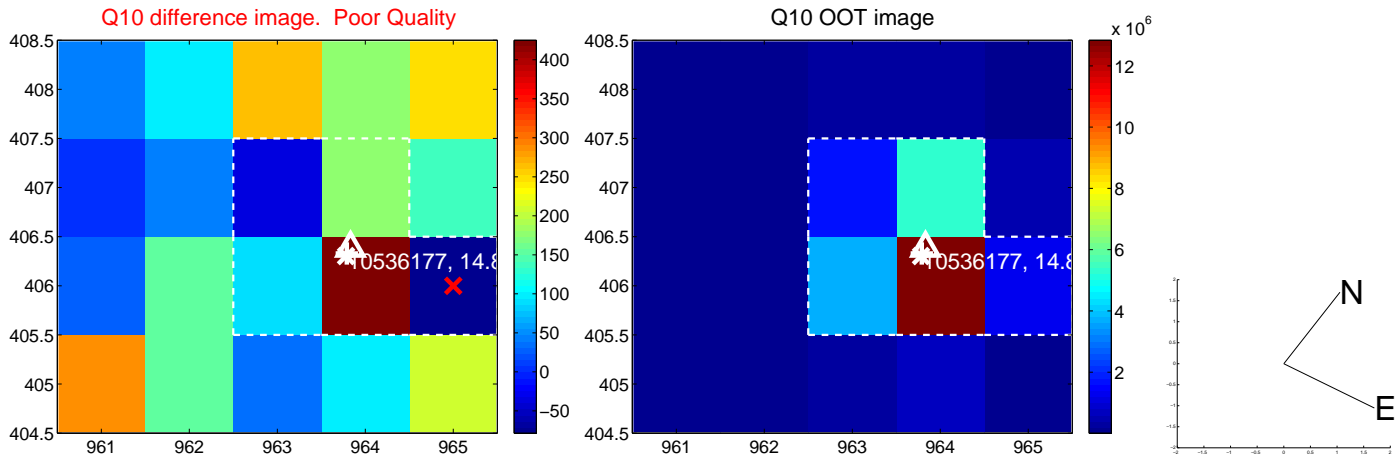
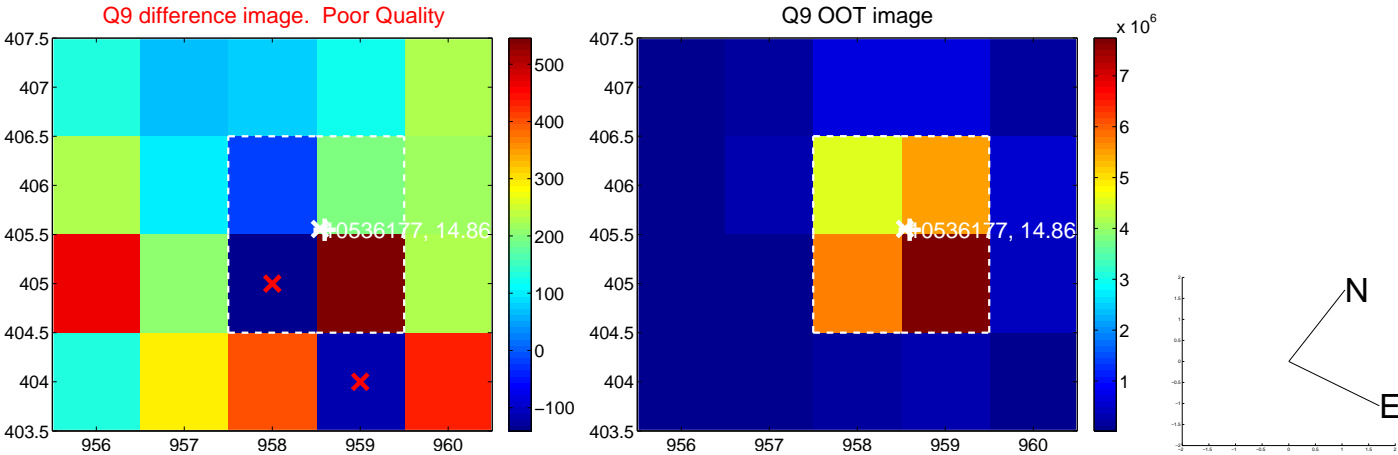
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



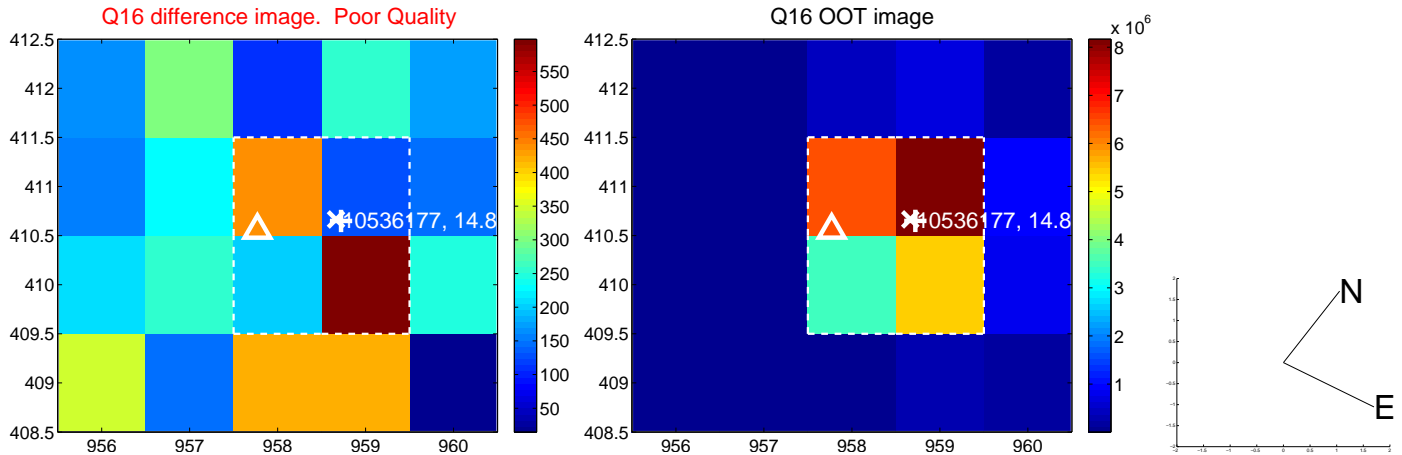
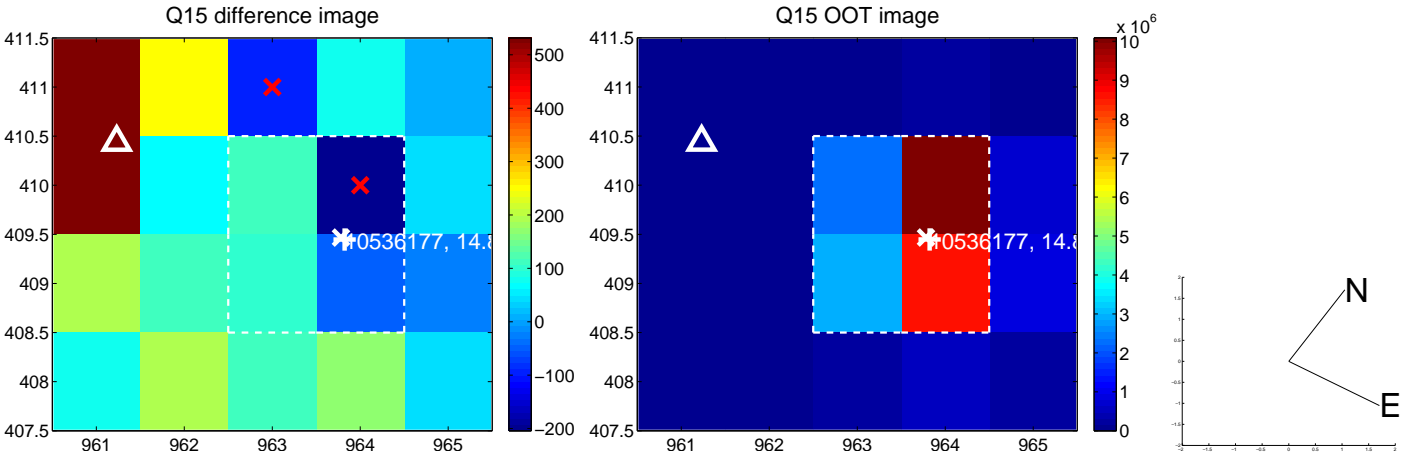
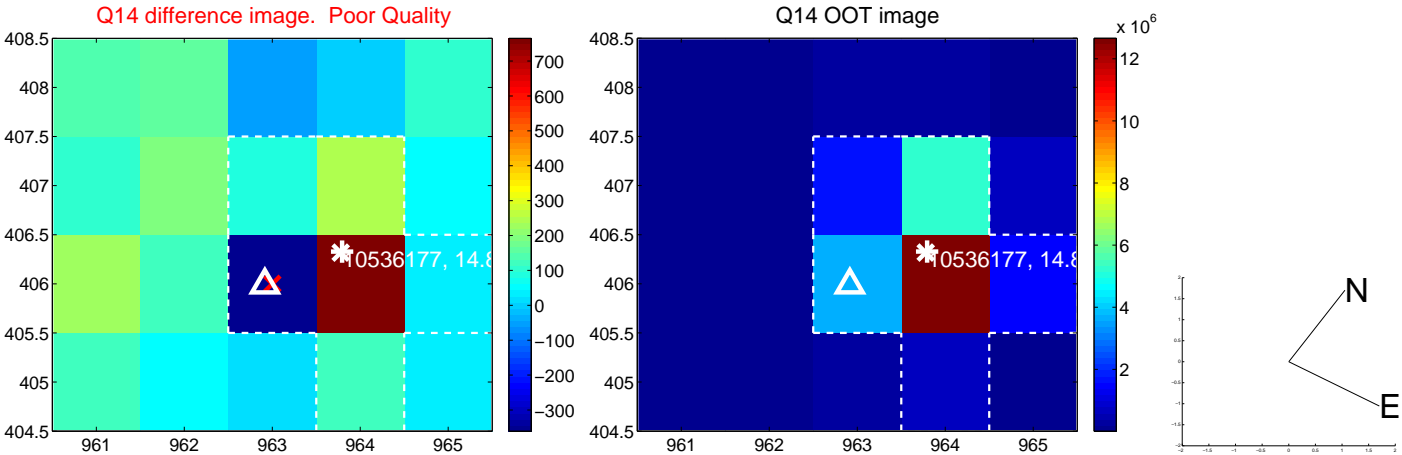
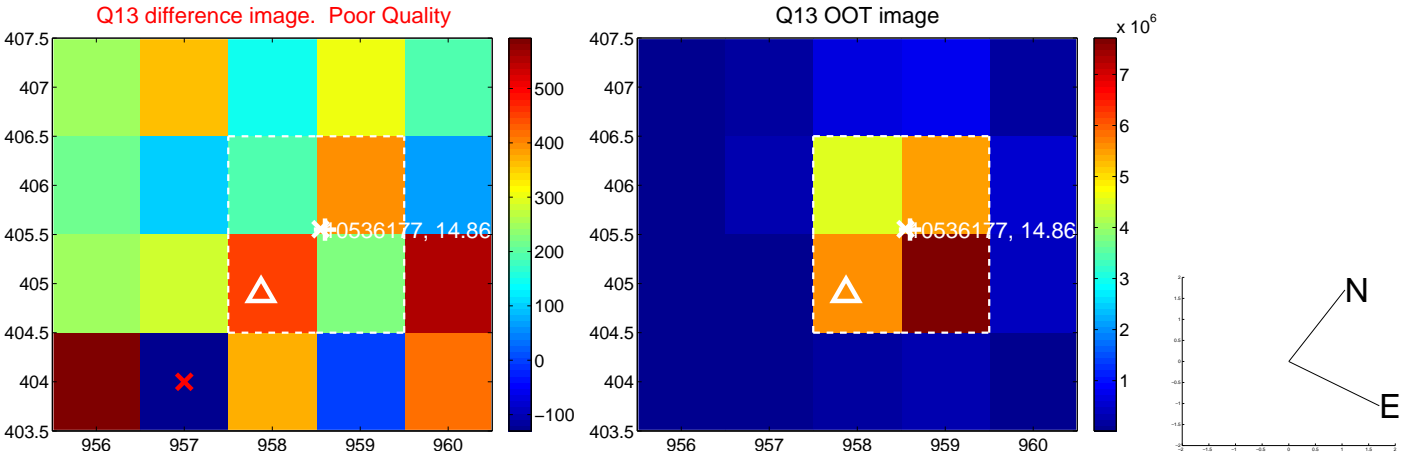
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



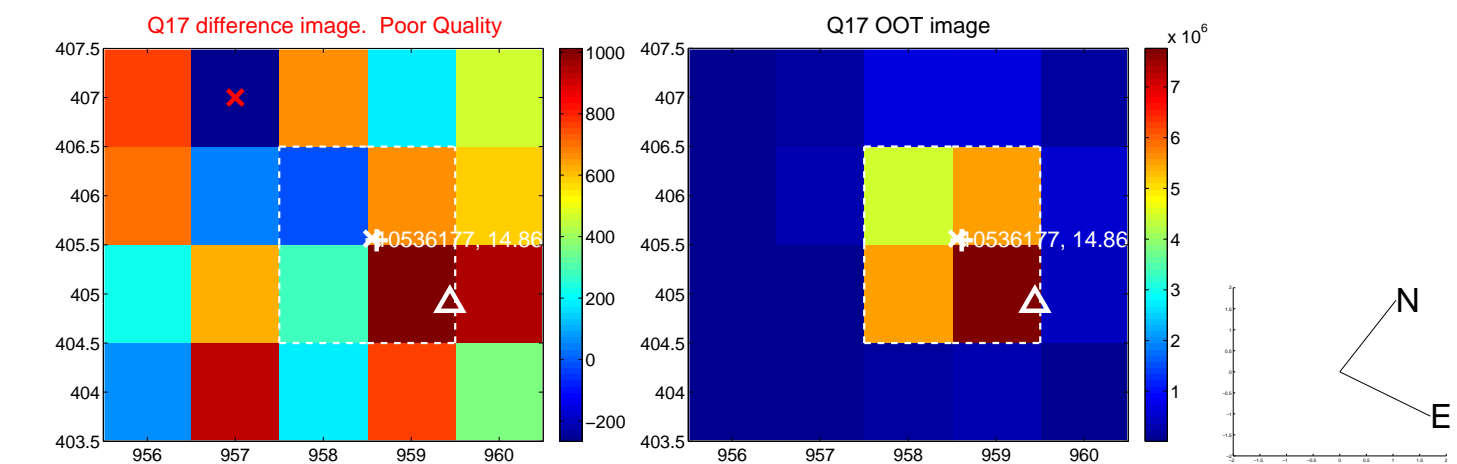
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



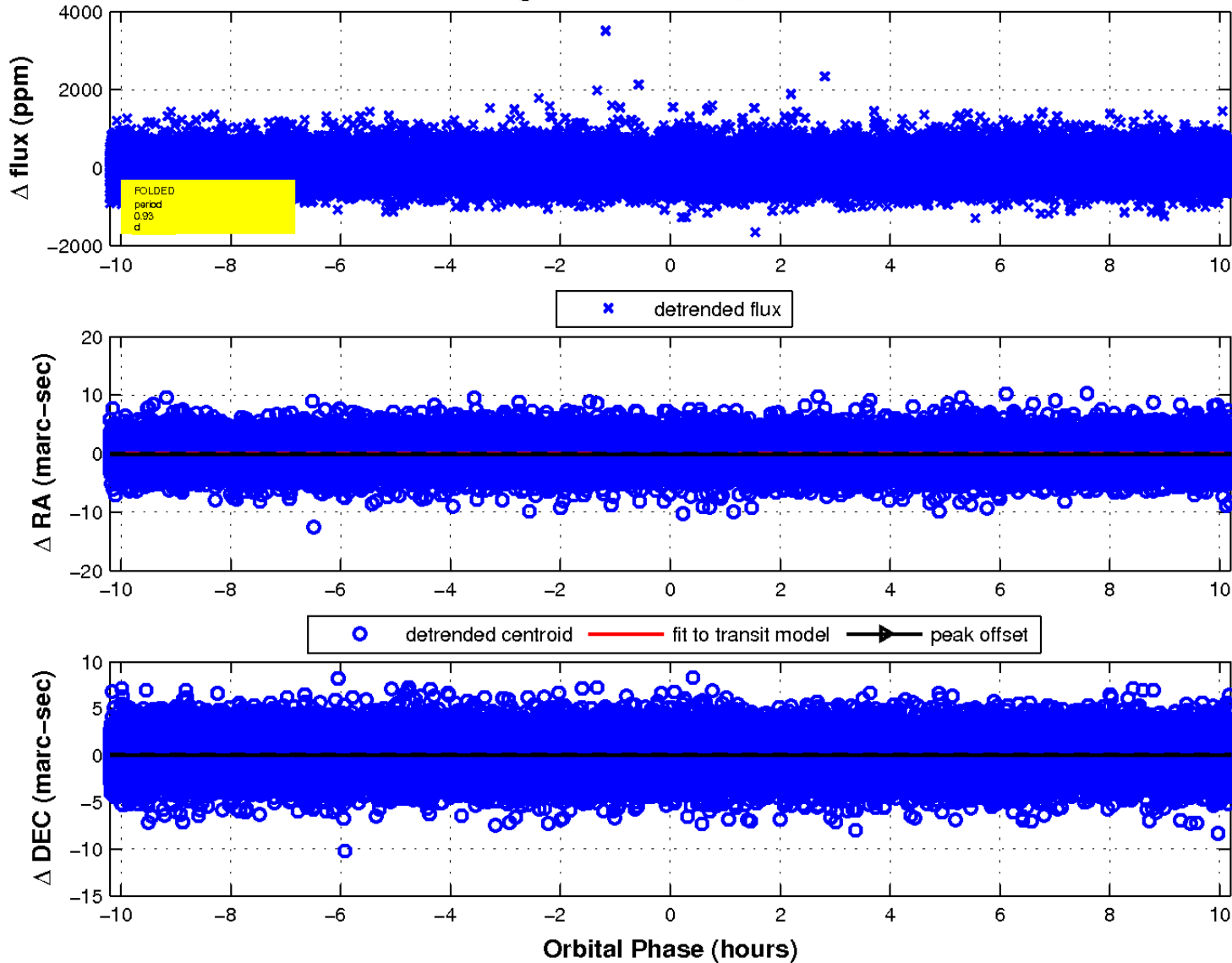
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

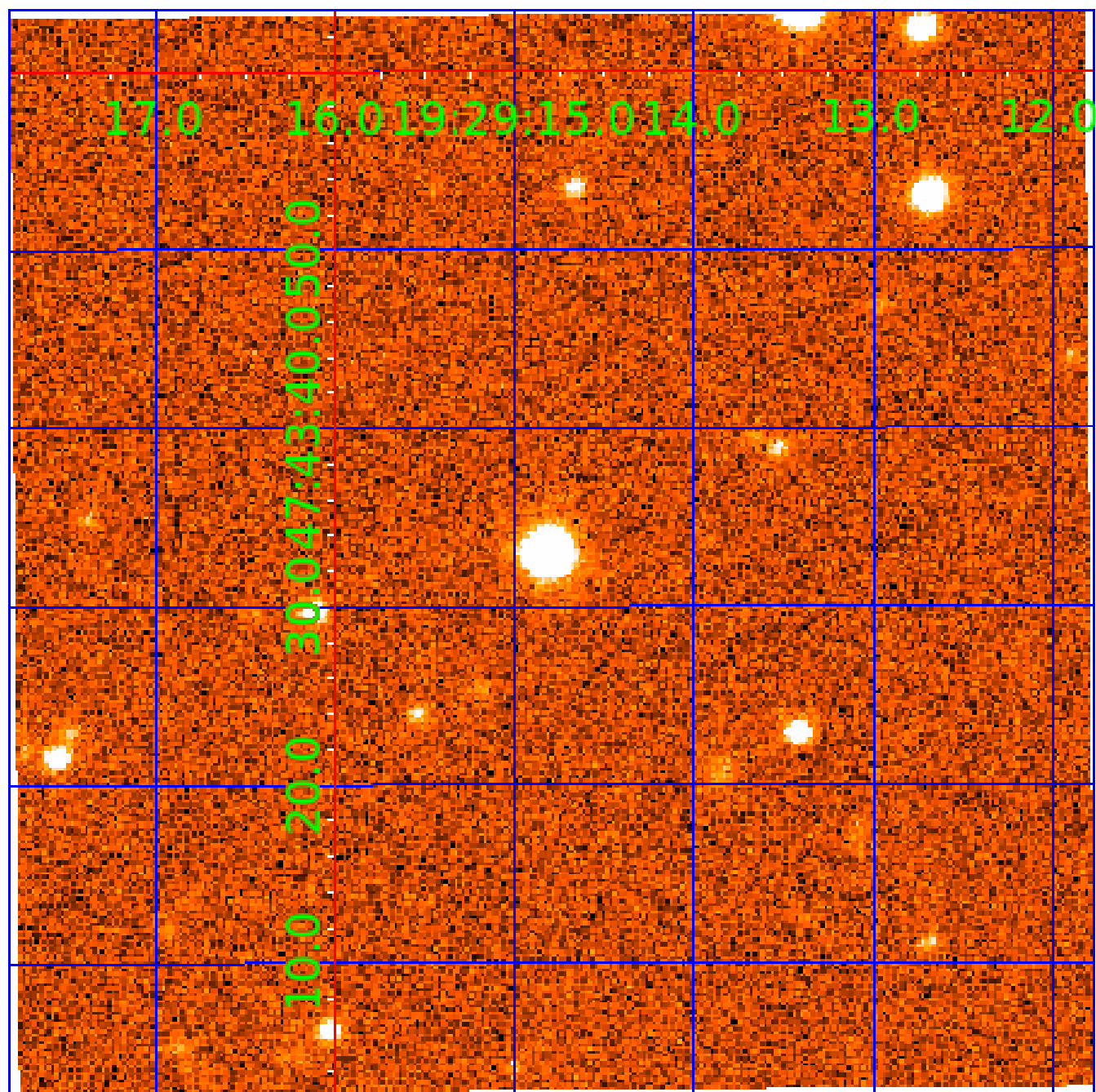


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010536177

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})
010536177-01	OBS	8025.01	0.933717	131.543433	37.7	3.400	7.9	9.3	1.02	5984	0.73	3420.74
010536177-02	OBS	No	75.452016	176.902839	175.2	13.470	7.6	5.8	1.02	5984	1.49	9.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010536177-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010536177-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

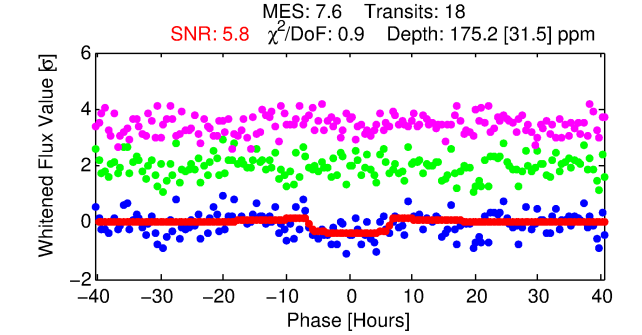
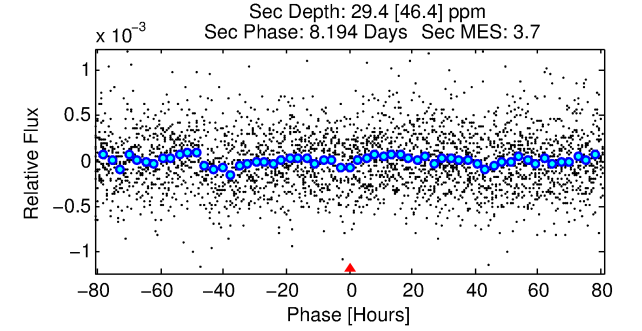
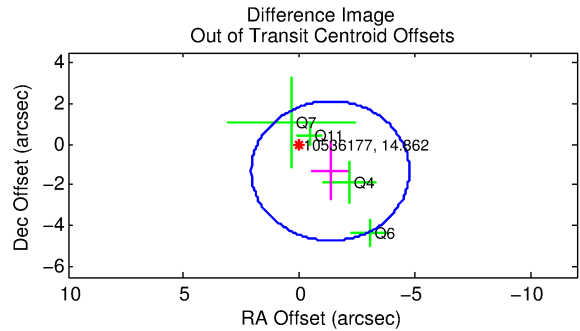
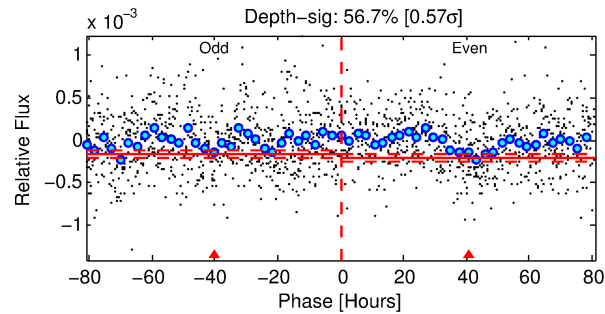
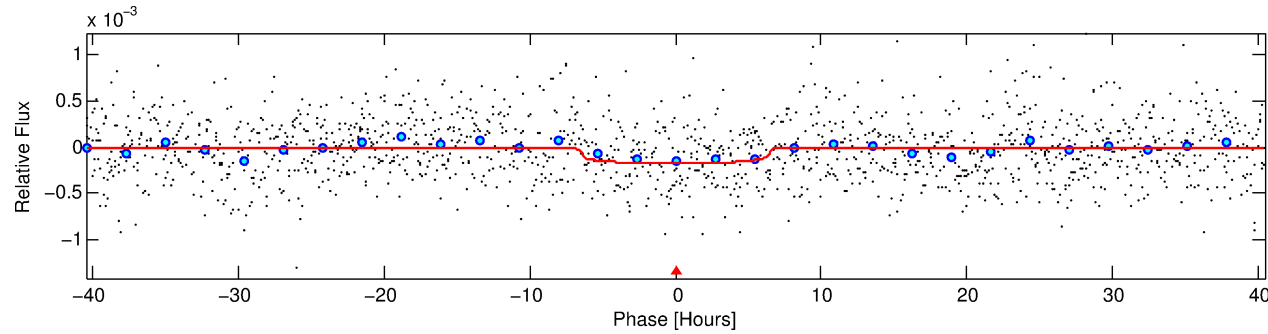
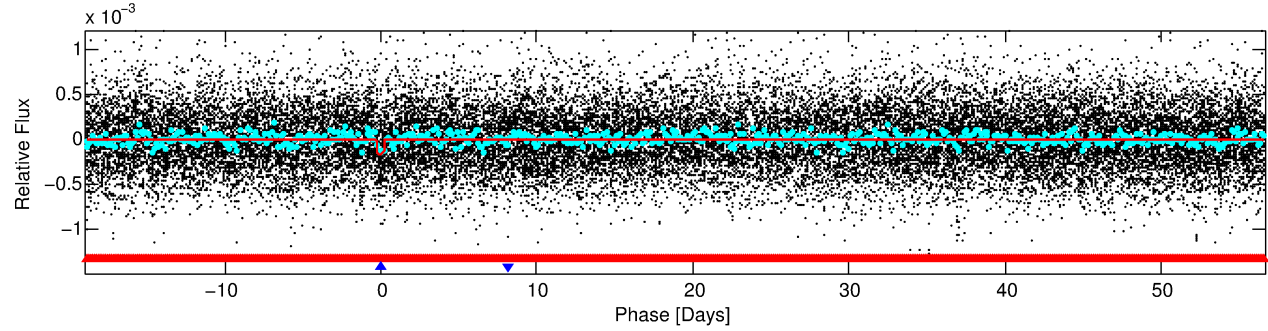
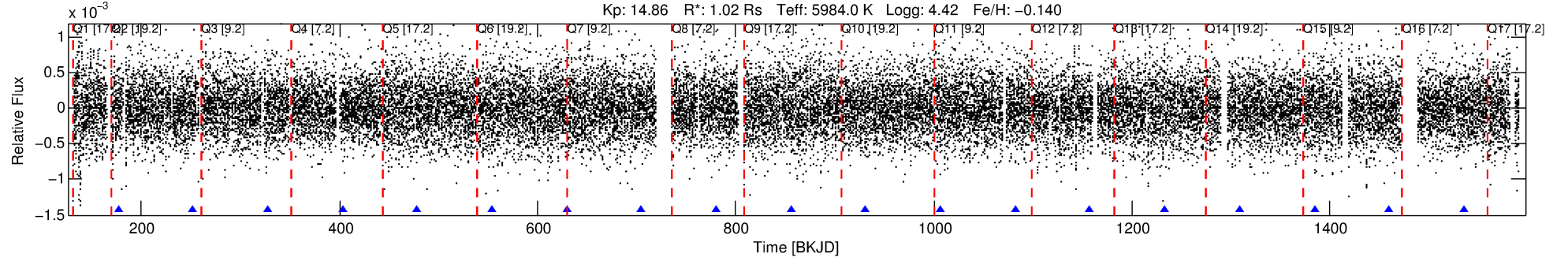
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010536177-02

No Significant Match Found

DV One-Page Summary

KIC: 10536177 Candidate: 2 of 2 Period: 75.452 d



DV Fit Results:

Period = 75.45202 [0.00258] d
Epoch = 176.9028 [0.0261] BKJD
Rp/R* = 0.0134 [0.0064]
a/R* = 26.72 [61.30]
b = 0.80 [1.05]
Seff = 9.79 [3.79]
Teff = 451 [44] K
Rp = 1.49 [0.84] Re
a = 0.3484 [0.0874] AU
Ag = 883.92 [1664.91] [0.53 σ]
Teffp = 3803 [1760] K [1.90 σ]

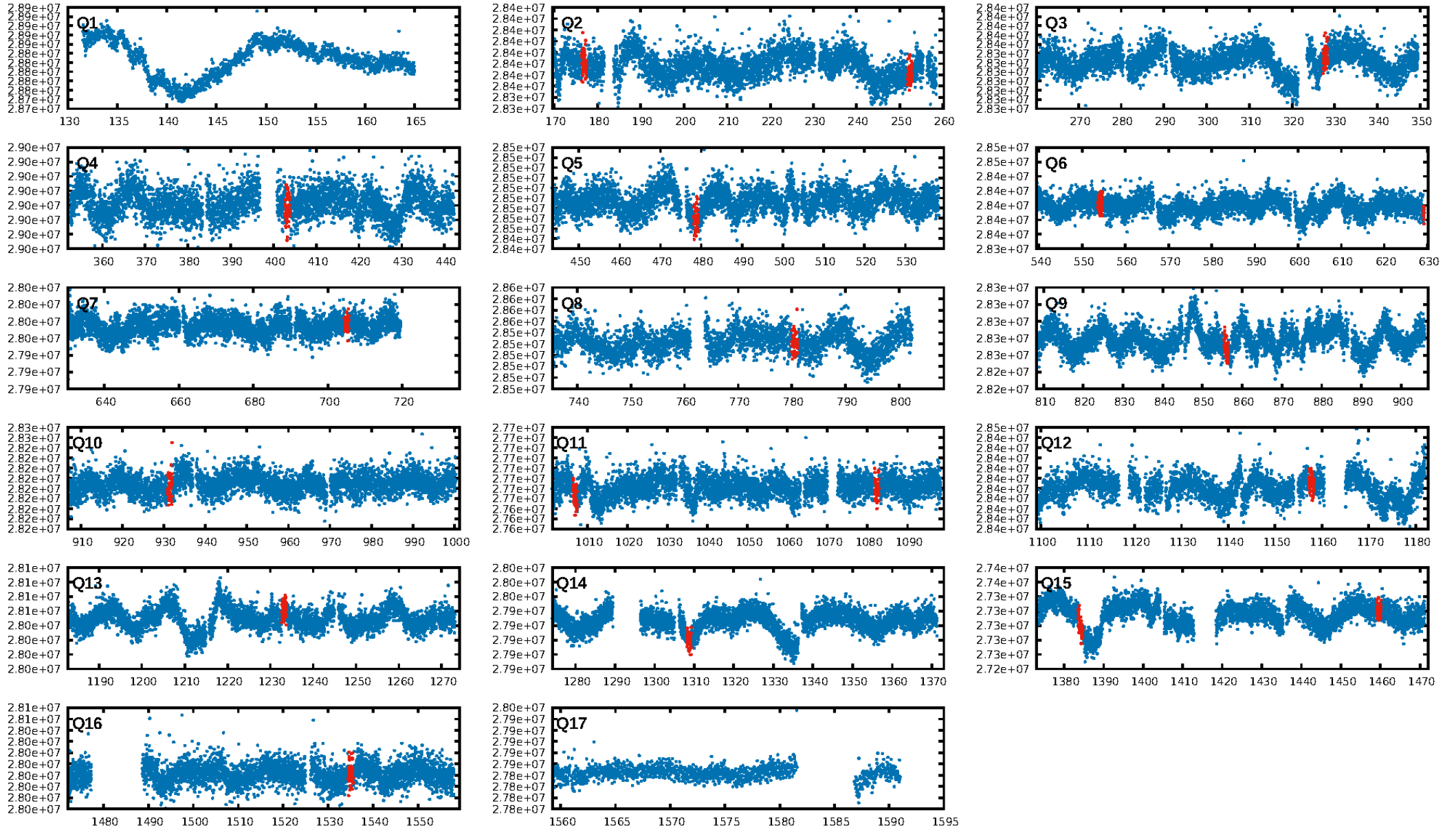
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [128.73 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 75.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.43e-11
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: 0.8671
Centroid-sig: 23.7%
Centroid-so: 1.700 arcsec [1.02 σ]
OotOffset-rm: 1.870 arcsec [1.64 σ]
KicOffset-rm: 1.775 arcsec [1.53 σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/15]

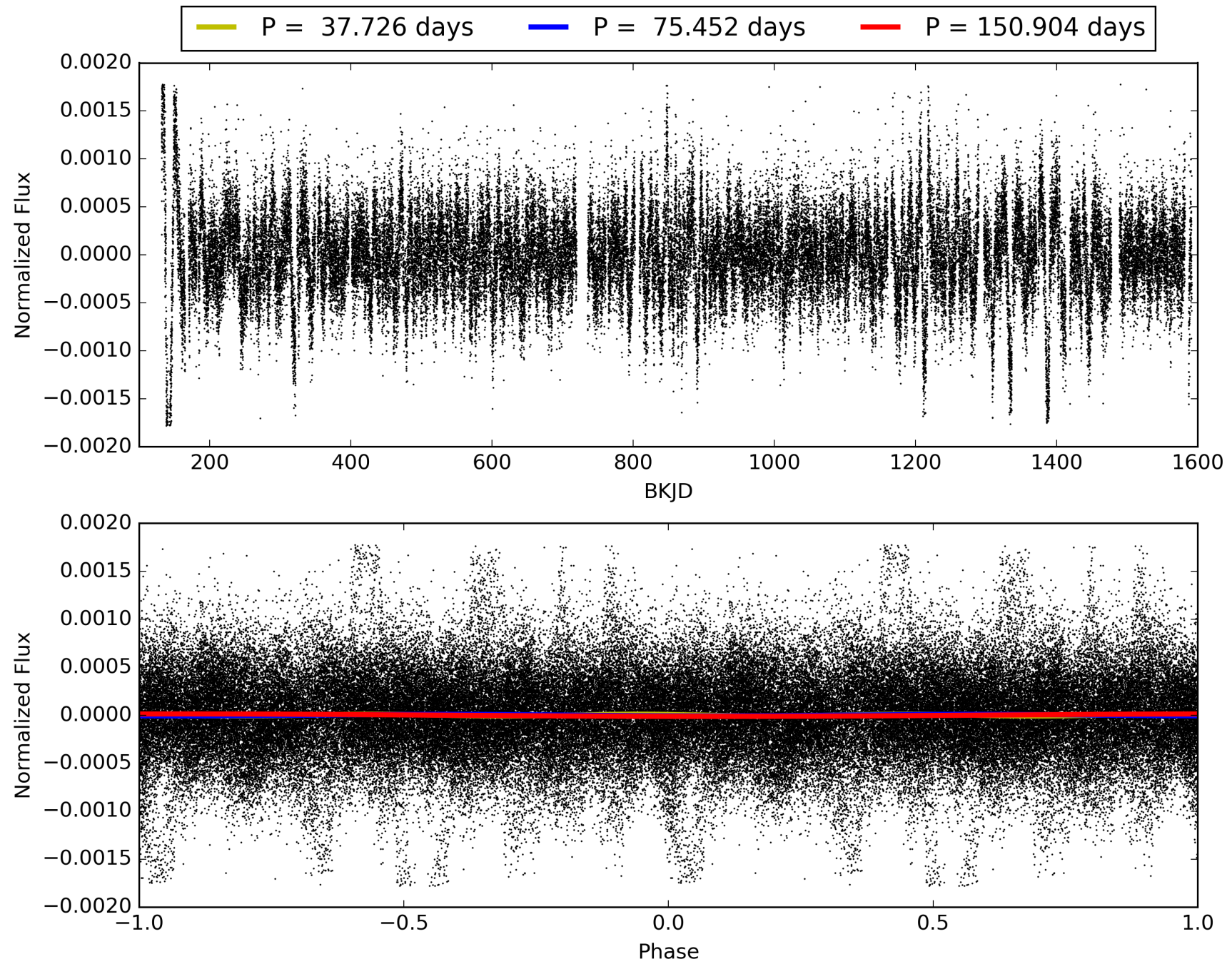
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:21:31 Z

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

TCE 010536177-02, PDC Light Curves

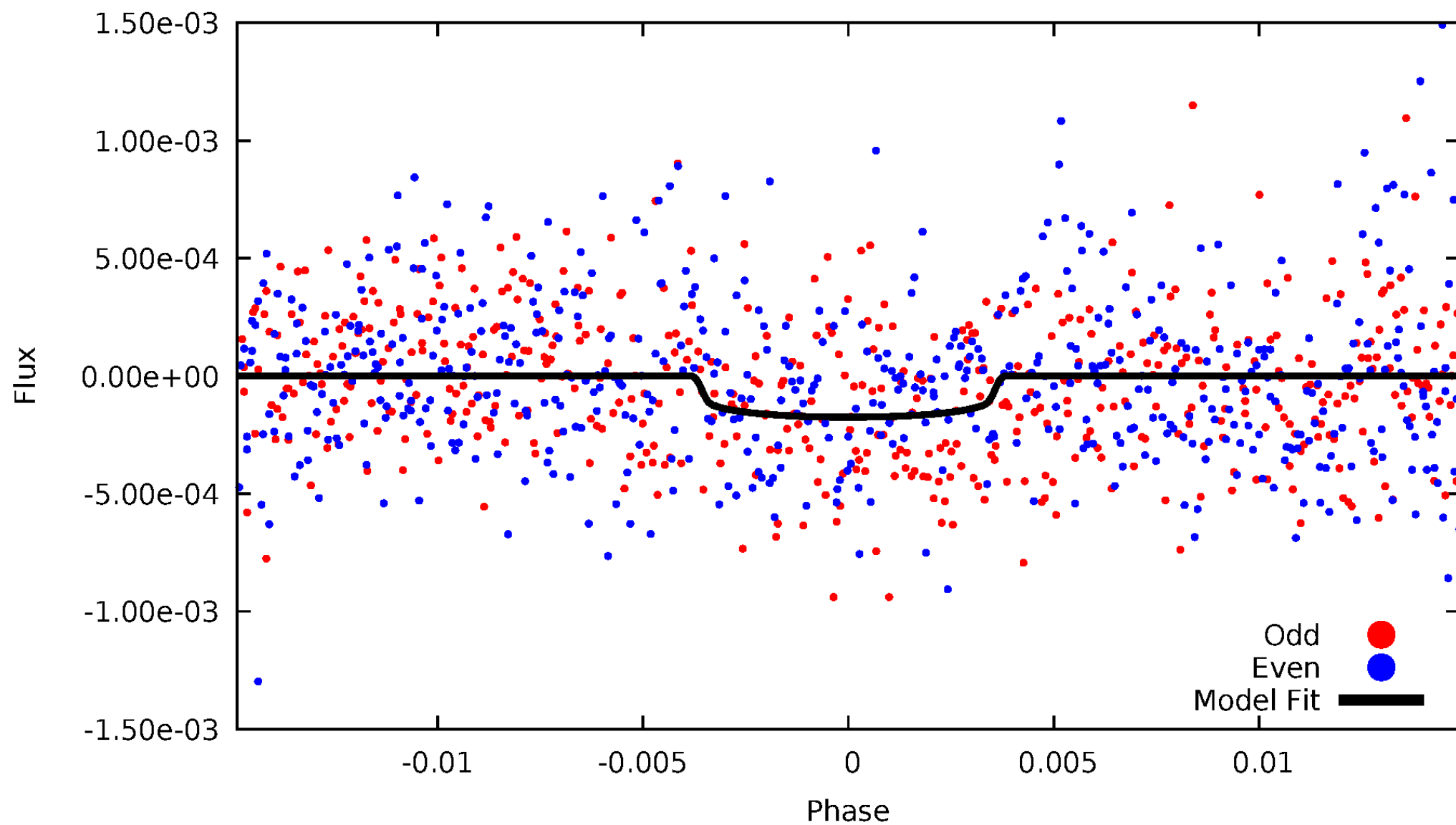


TCE 010536177-02



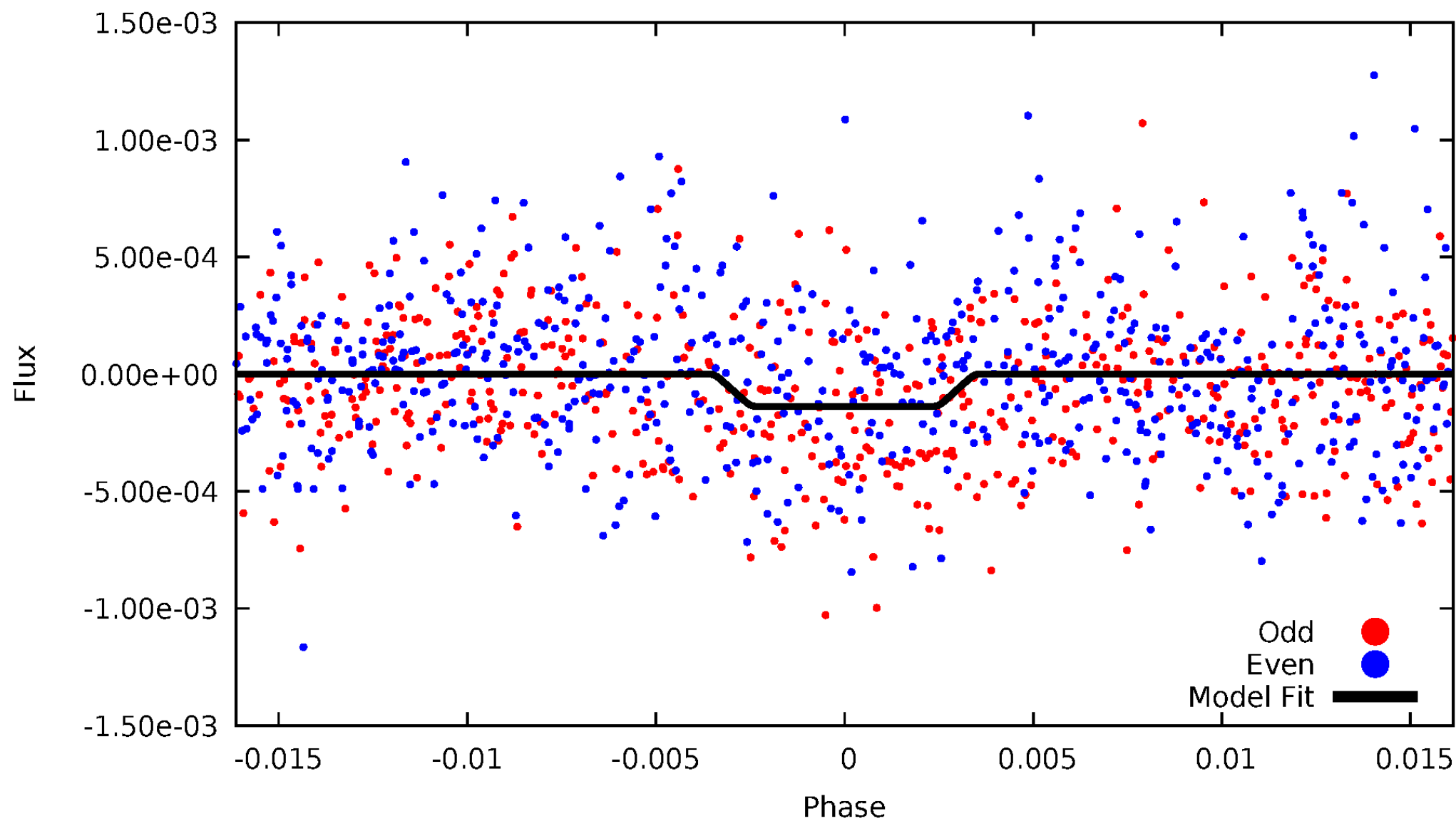
DV Odd/Even

TCE 010536177-02



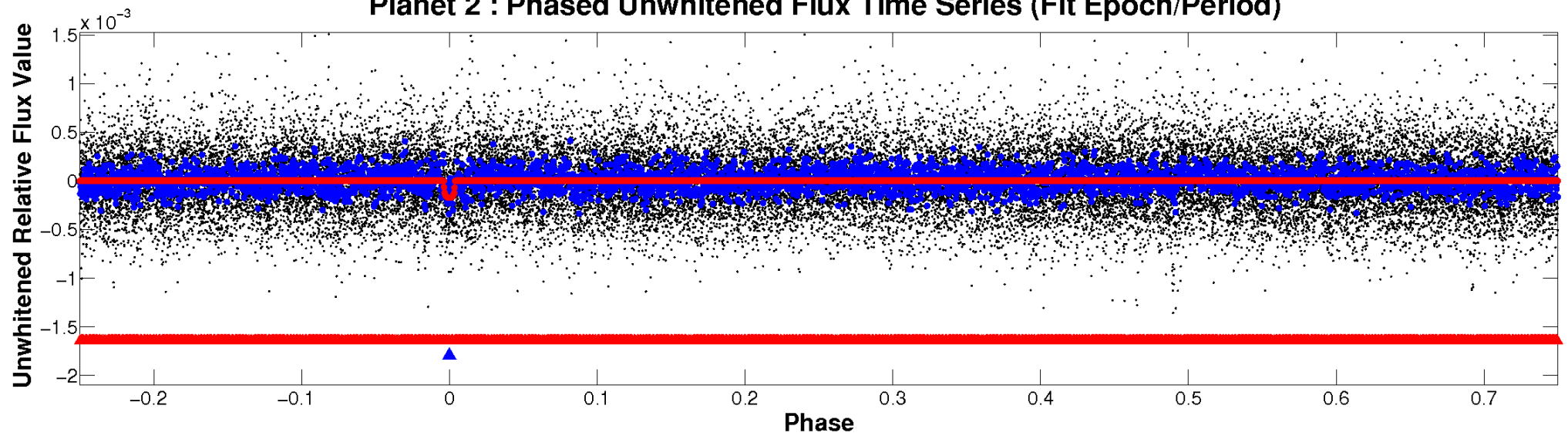
ALT Odd/Even

TCE 010536177-02

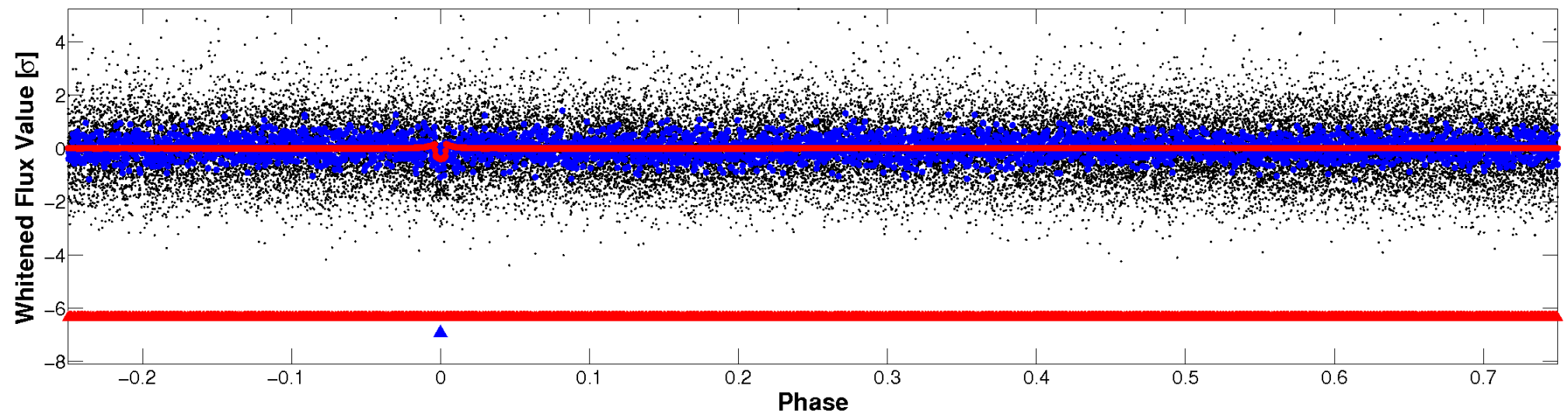


Non-Whitened Vs. Whitened Light Curve

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

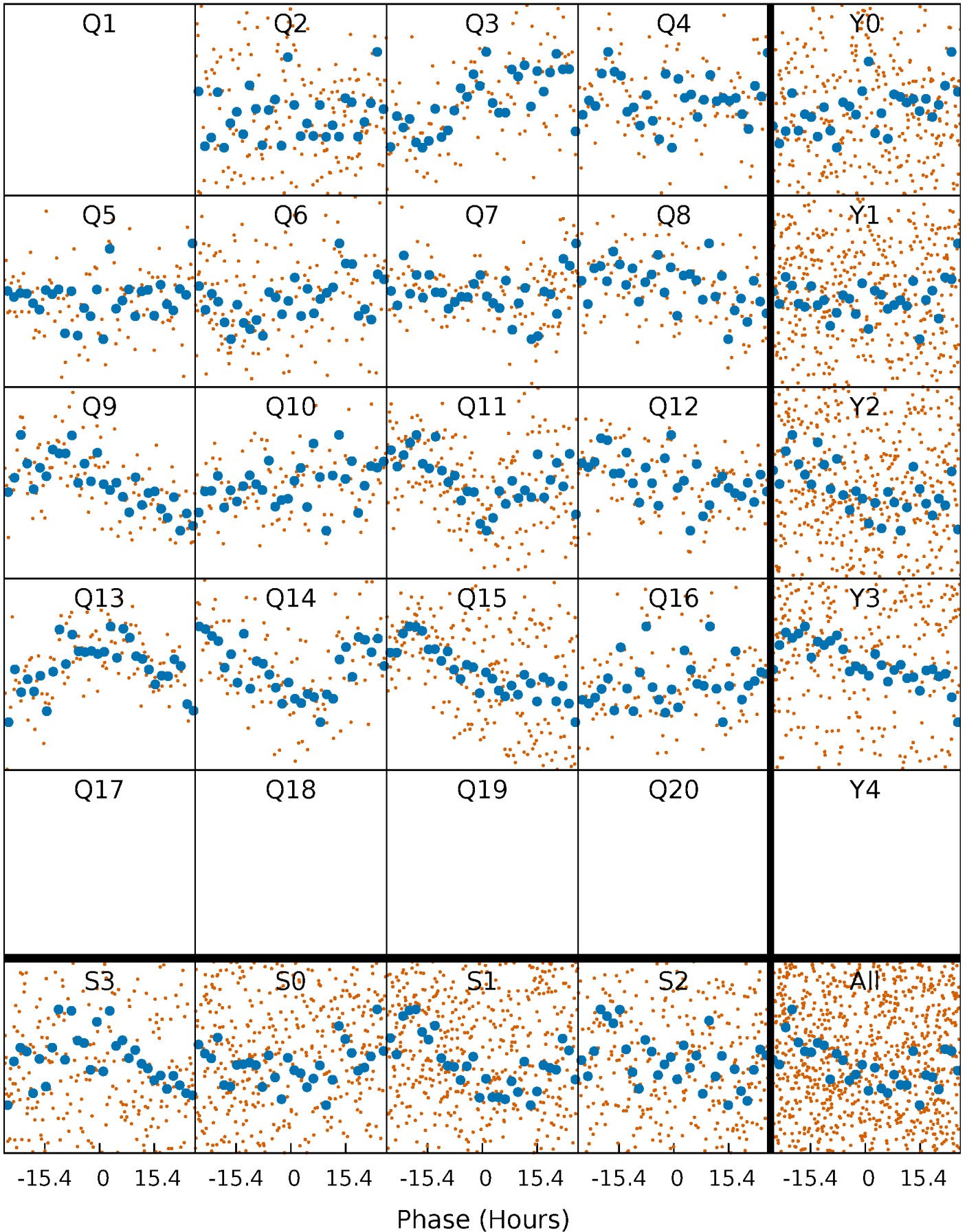


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



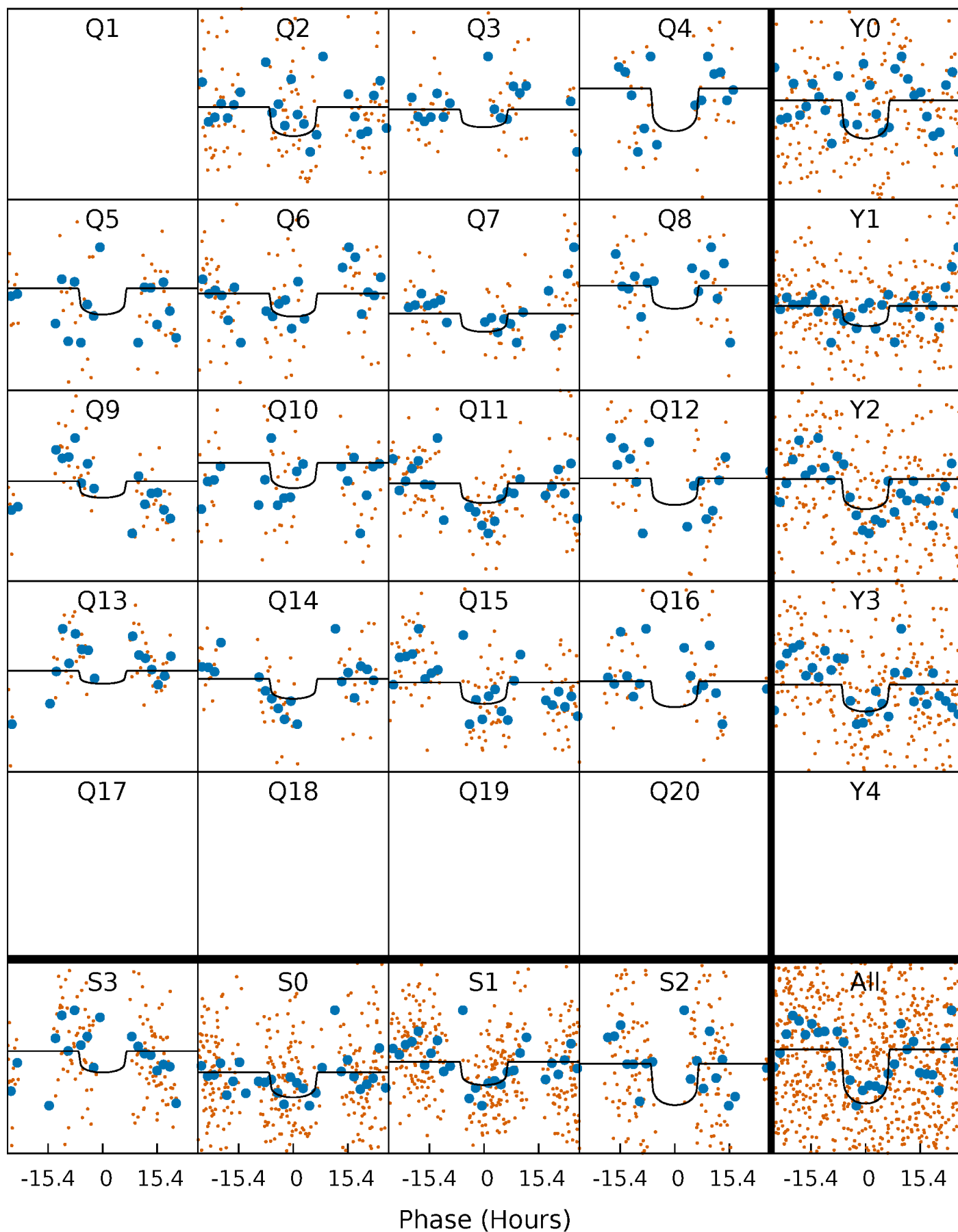
PDC Quarter-Phased Transit Curves

TCE 010536177-02 $P = 75.452016$ Days $T_0 = 176.902839$ (BKJD)



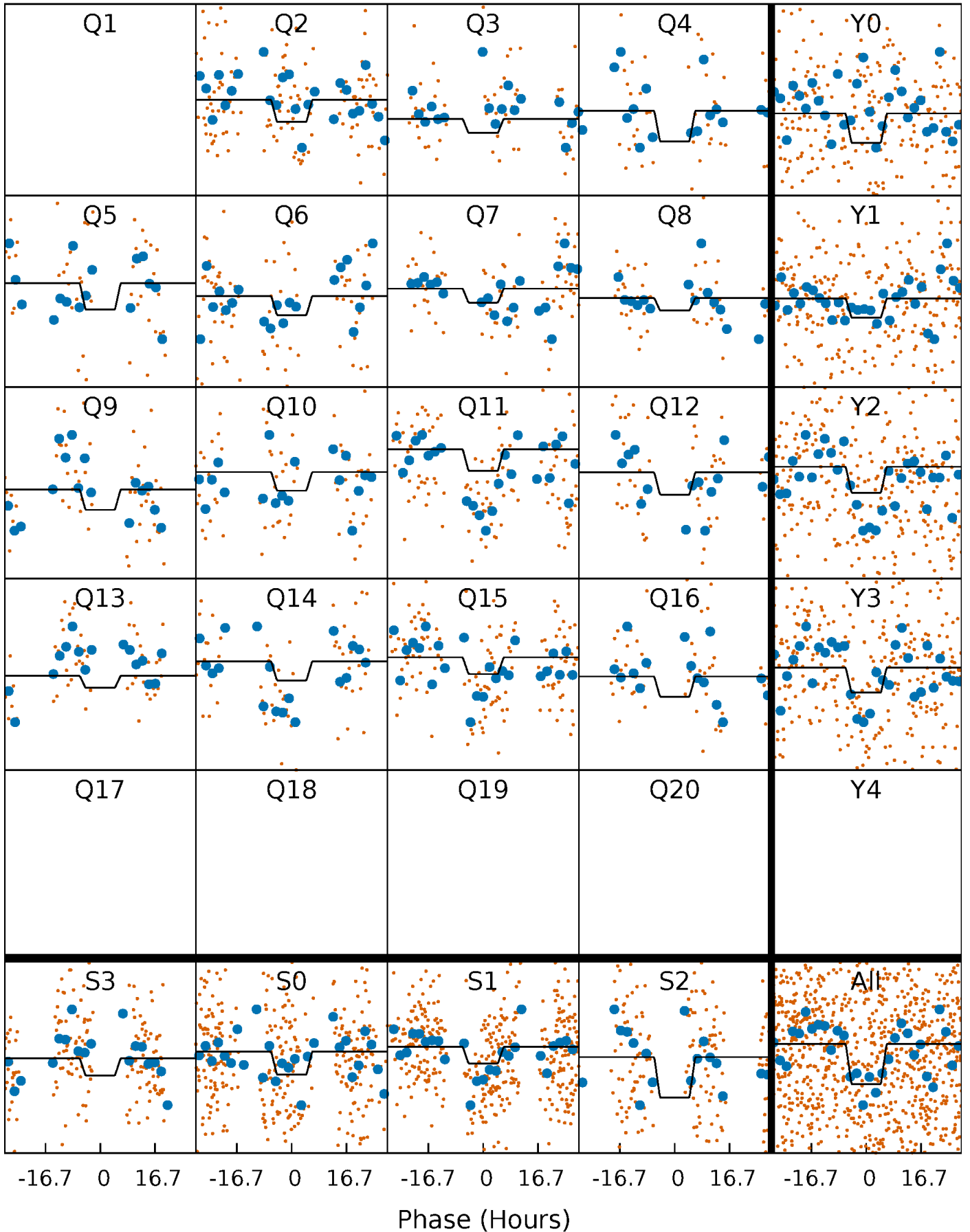
DV Quarter-Phased Transit Curves

TCE 010536177-02 P= 75.452016 Days $T_0=176.902839$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

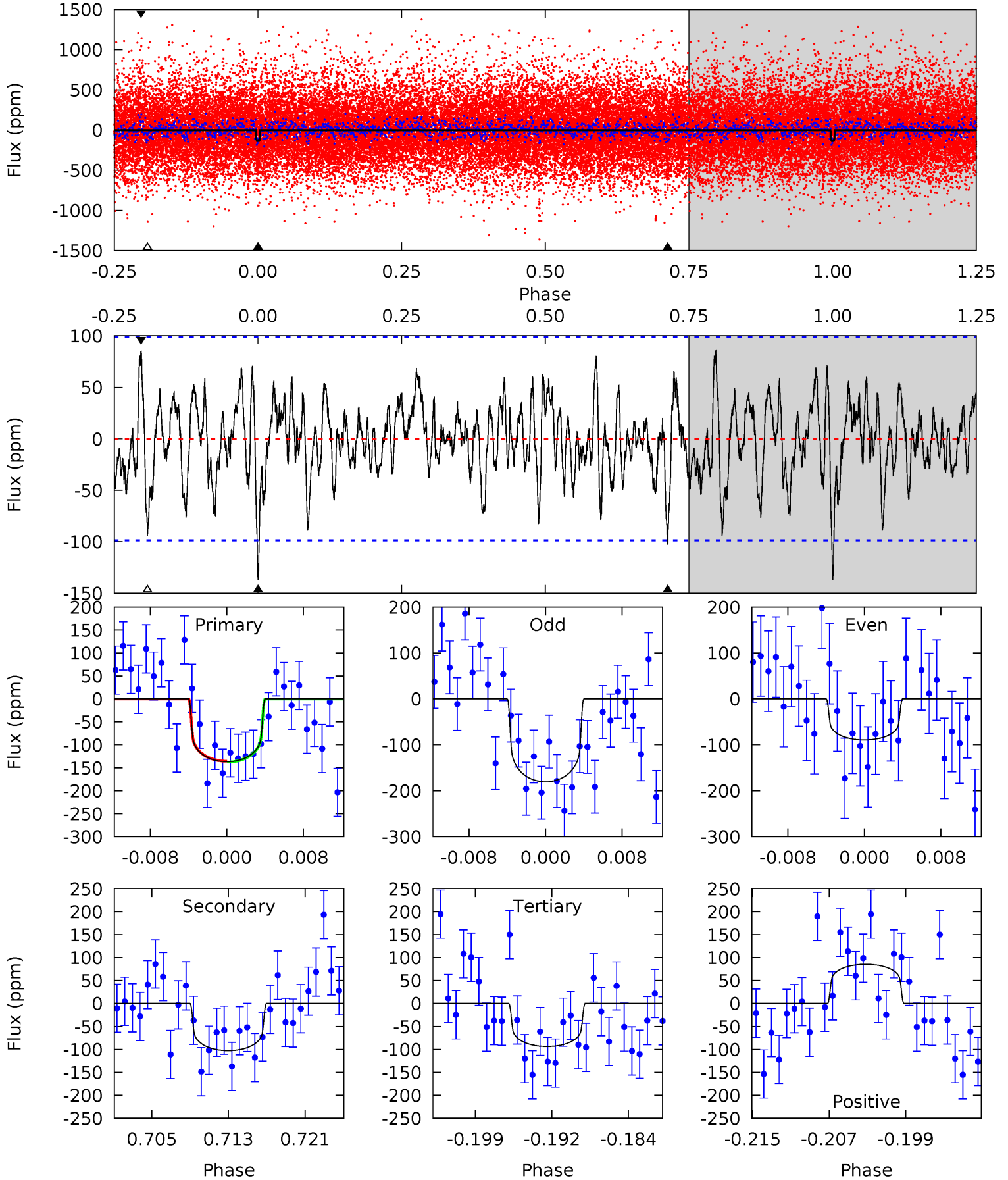
TCE 010536177-02 $P = 75.447727$ Days $T_0 = 176.961022$ (BKJD)



DV Model-Shift Uniqueness Test

010536177-02, P = 75.452016 Days, E = 101.450823 Days

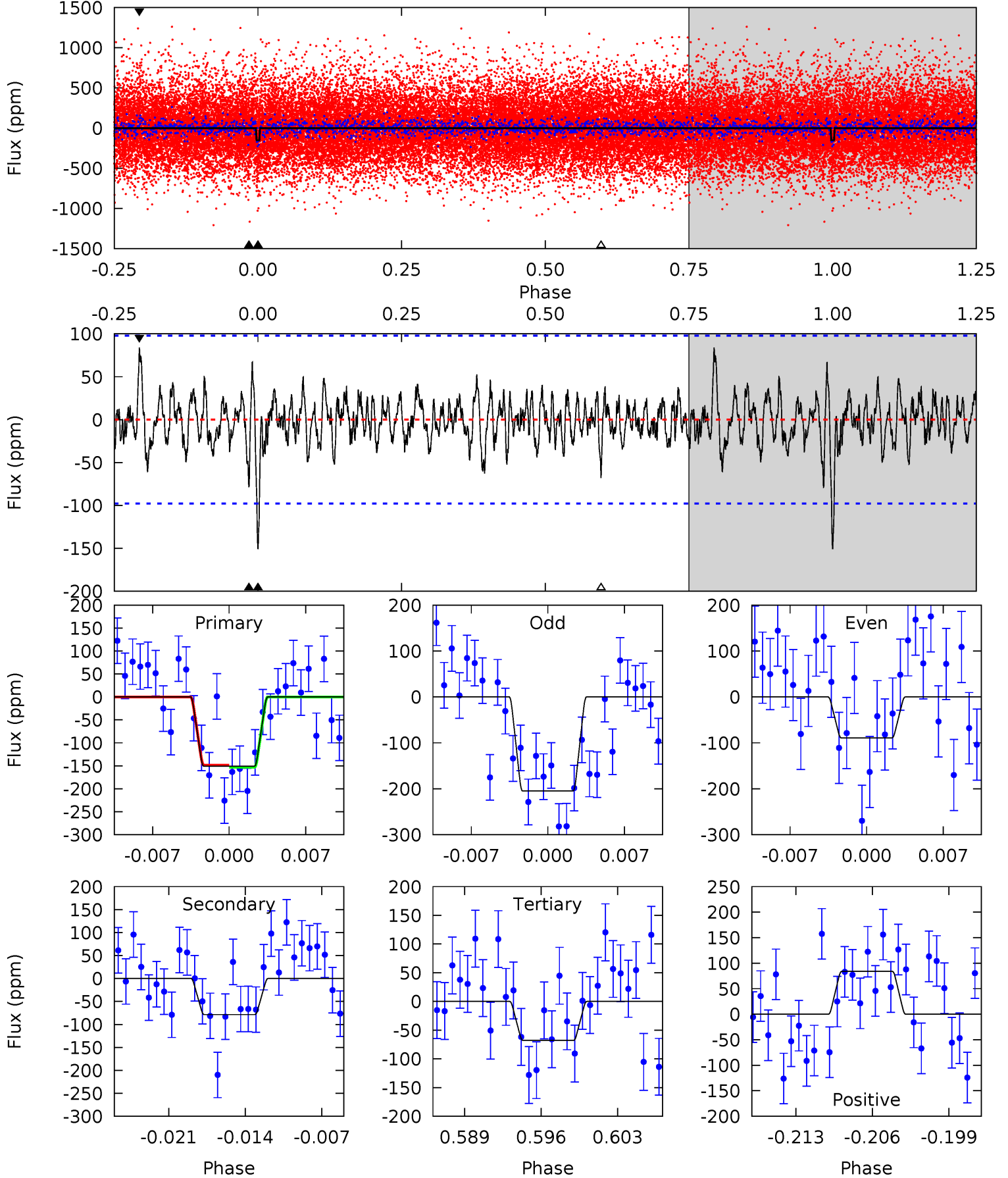
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.04	5.29	4.82	4.39	5.08	2.67	1.60	2.21	2.65	0.47	0.90	2.35	0.72	0.38	0.05



Alt Model-Shift Uniqueness Test

010536177-02, P = 75.447727 Days, E = 101.513295 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.86	4.09	3.53	4.37	5.09	2.69	1.11	4.33	3.49	0.56	-0.27	3.00	1.06	0.36	0.12



Stellar Parameters For KIC 010536177

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5984^{+161}_{-179}	$4.419^{+0.087}_{-0.203}$	$-0.140^{+0.300}_{-0.300}$	$1.017^{+0.300}_{-0.128}$	$0.991^{+0.145}_{-0.118}$	$1.326^{+0.592}_{-0.691}$
	+3%/-3%	+2%/-5%	+214%/-214%	+29%/-13%	+15%/-12%	+45%/-52%
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 010536177-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-103 ± 19	$1.56^{+0.77}_{-0.70}$	638^{+44}_{-31}	5236^{+1798}_{-826}	2720^{+6769}_{-1494}
Alt.	-79 ± 19	$1.38^{+0.80}_{-0.69}$	638^{+48}_{-33}	5187^{+1960}_{-851}	2741^{+7878}_{-1669}

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

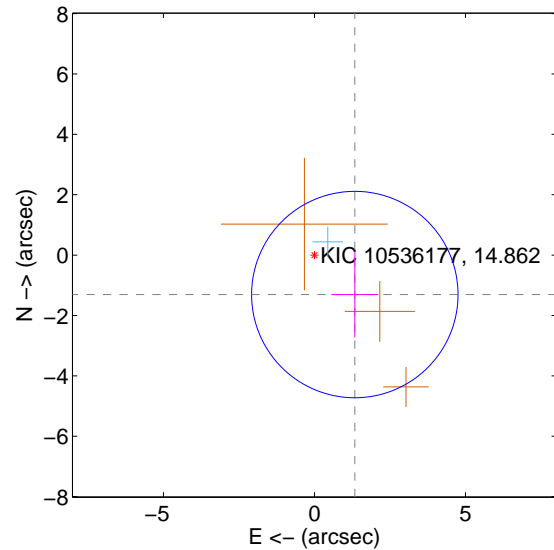
Supplemental centroid analysis for 010536177-02. Kepler magnitude: 14.86. Transit SNR 5.82

There are 1 quarters with good PRF difference image offsets

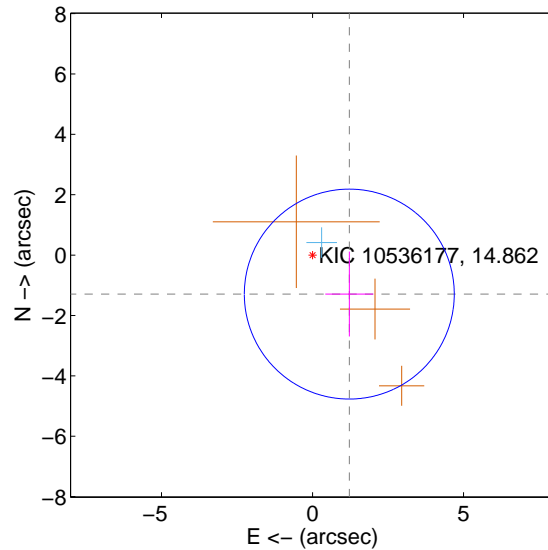
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.870 ± 1.139	1.64	-1.337 ± 0.776	-1.307 ± 1.424
PRF-fit source offset from KIC position	1.775 ± 1.159	1.53	-1.218 ± 0.794	-1.291 ± 1.406
photometric centroid source offset	1.70 ± 1.66	1.02	-1.15 ± 1.84	1.25 ± 1.48

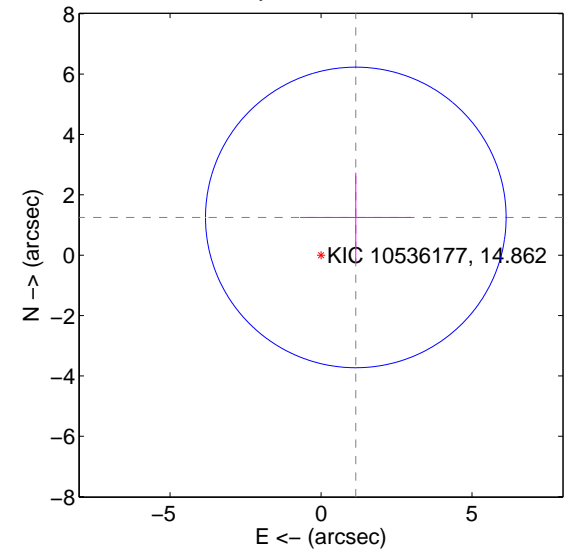
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

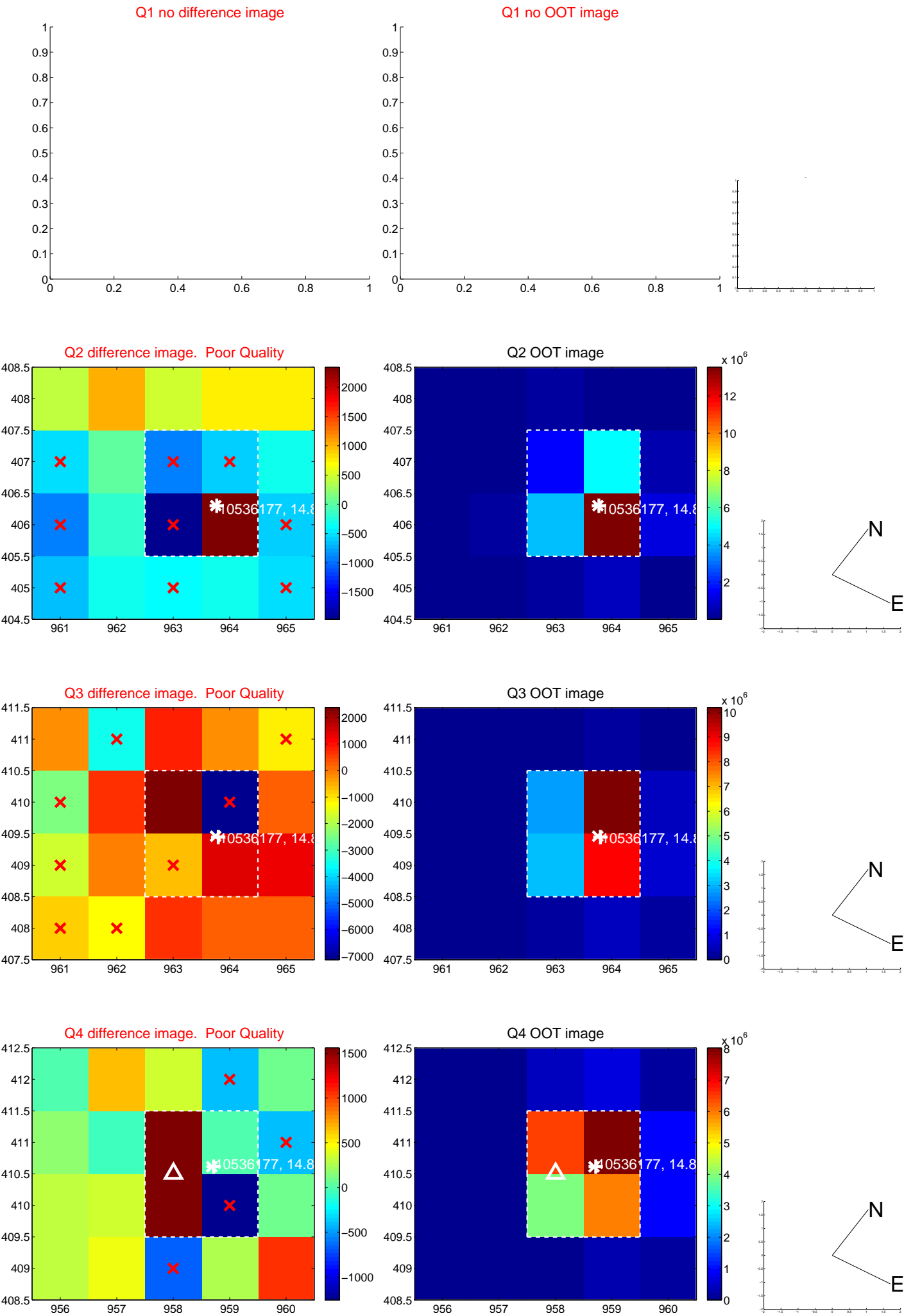


offset from photometric centroids

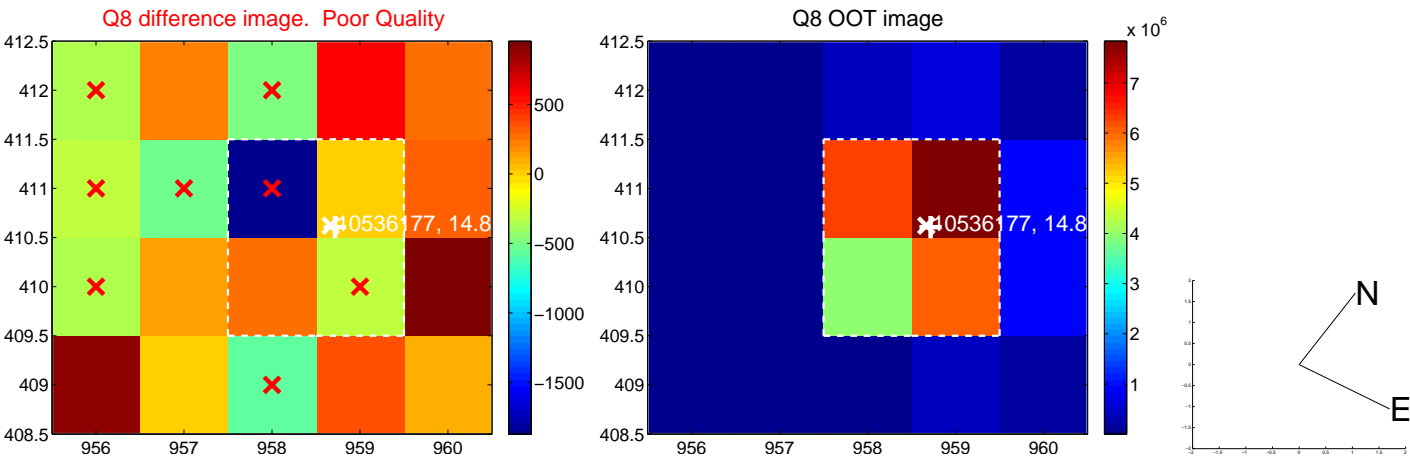
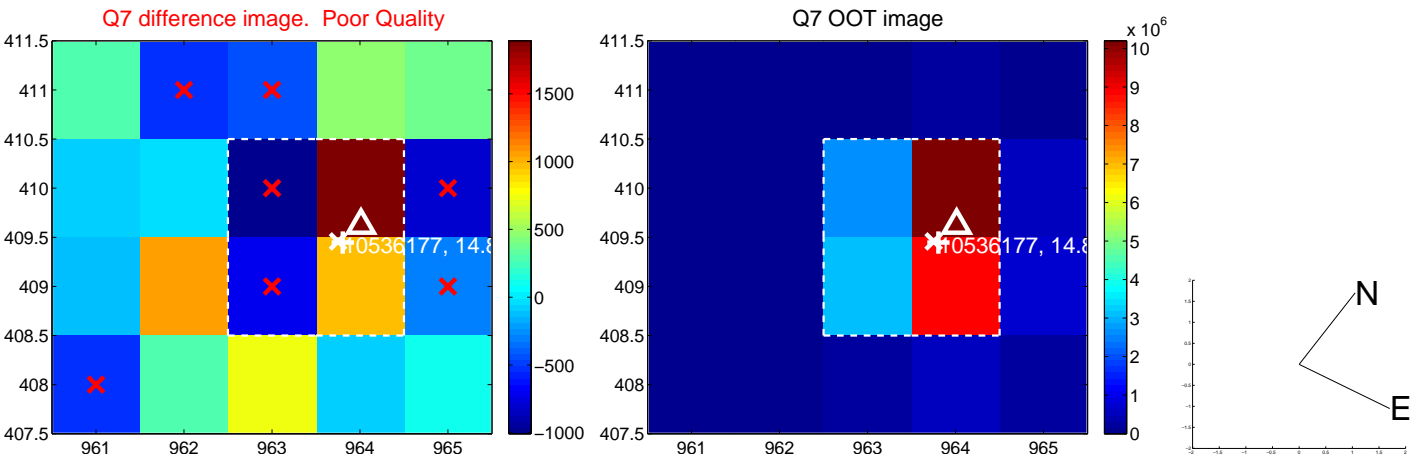
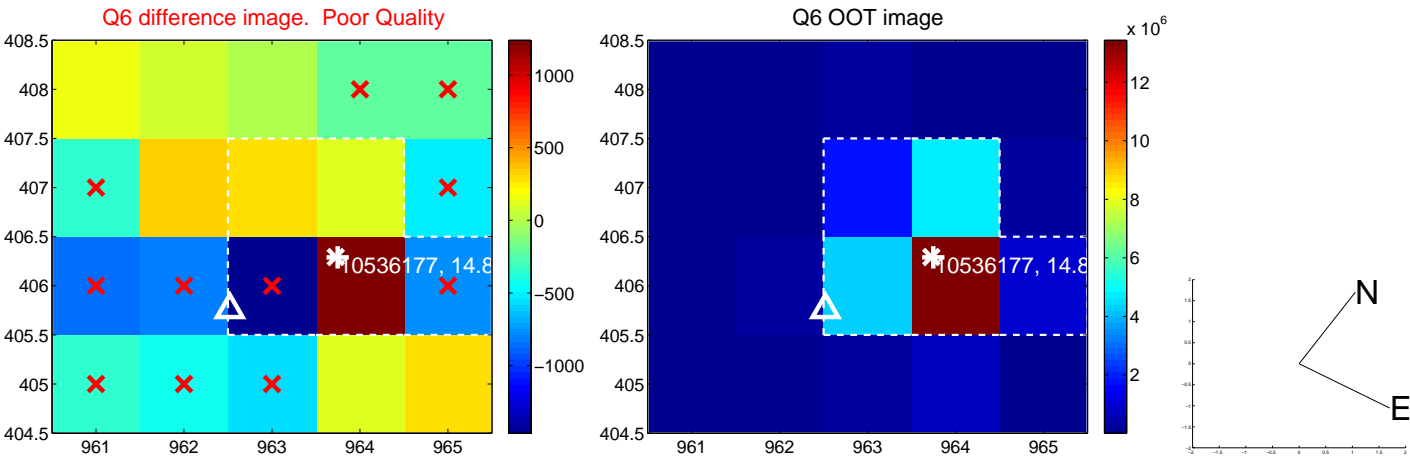
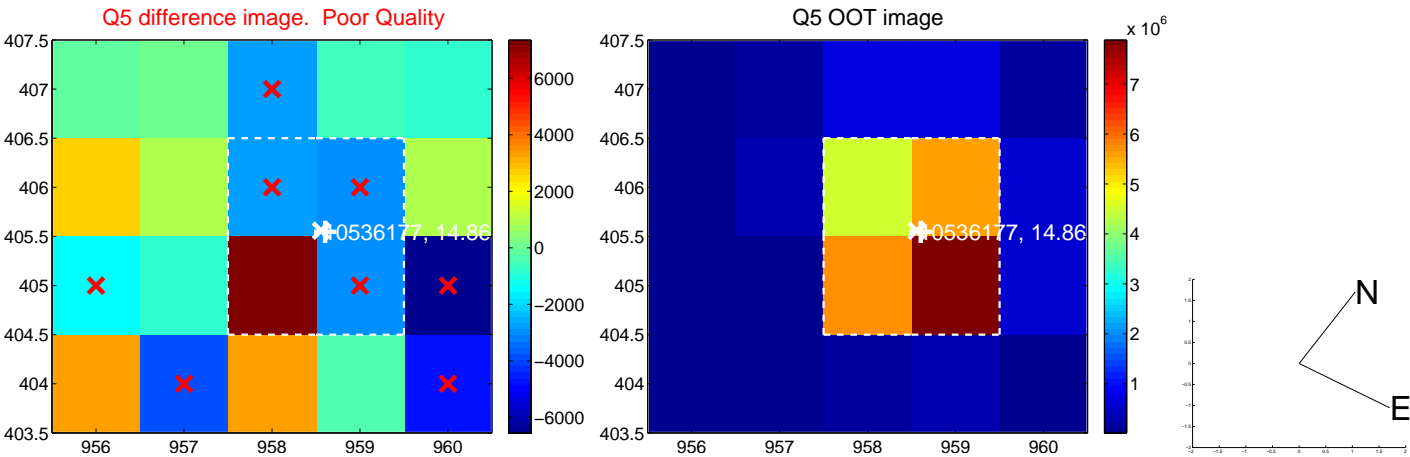


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

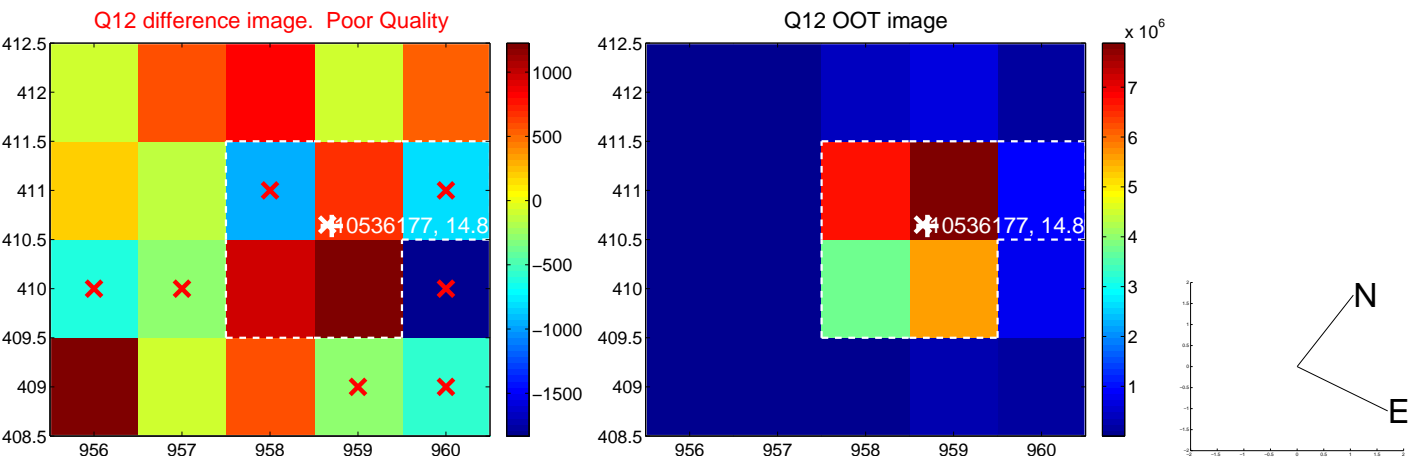
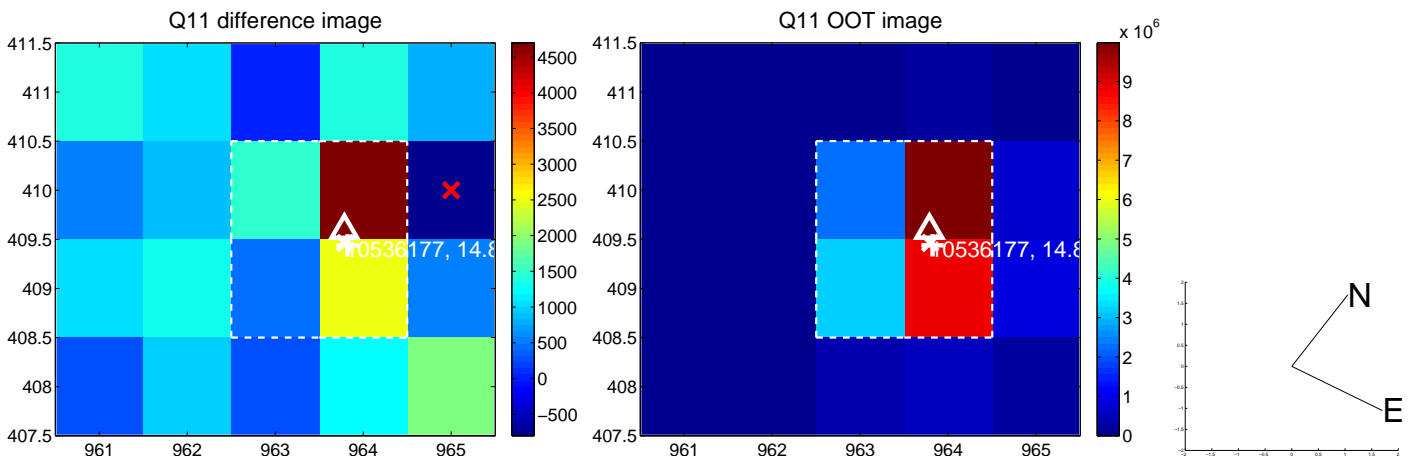
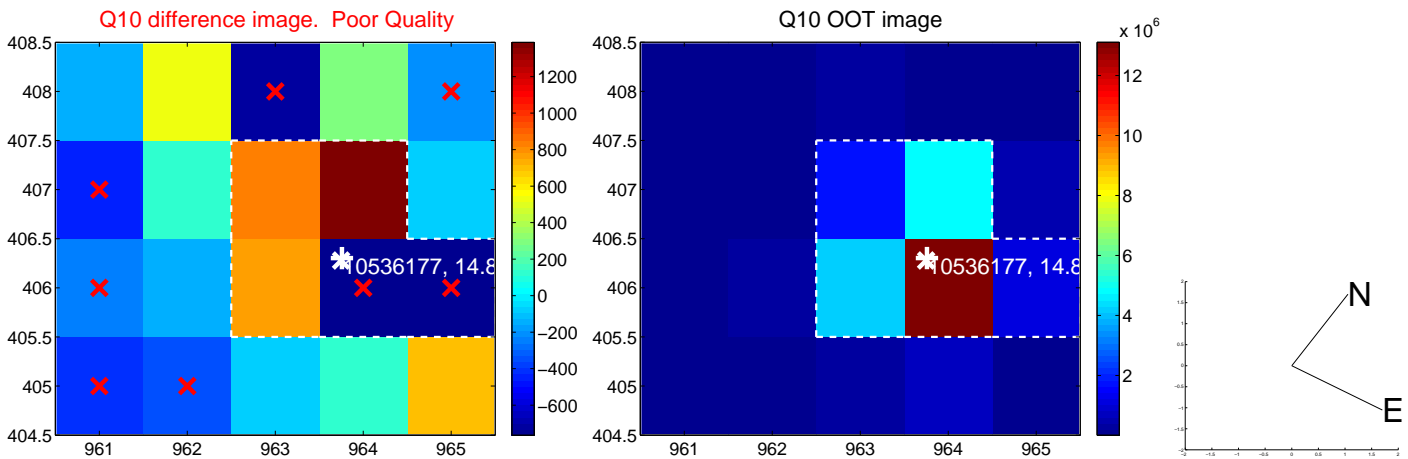
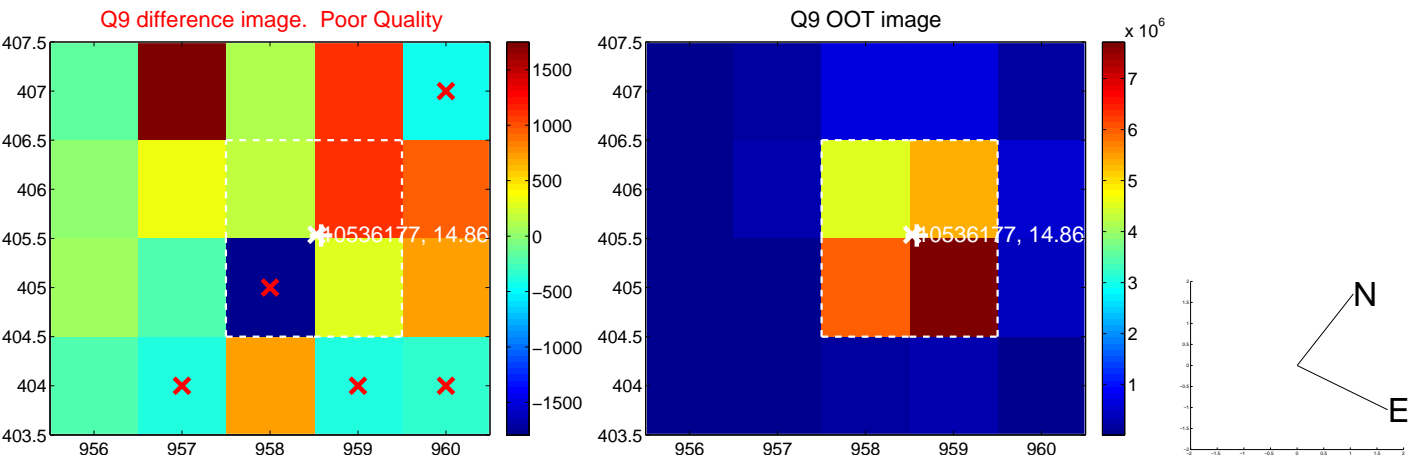
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



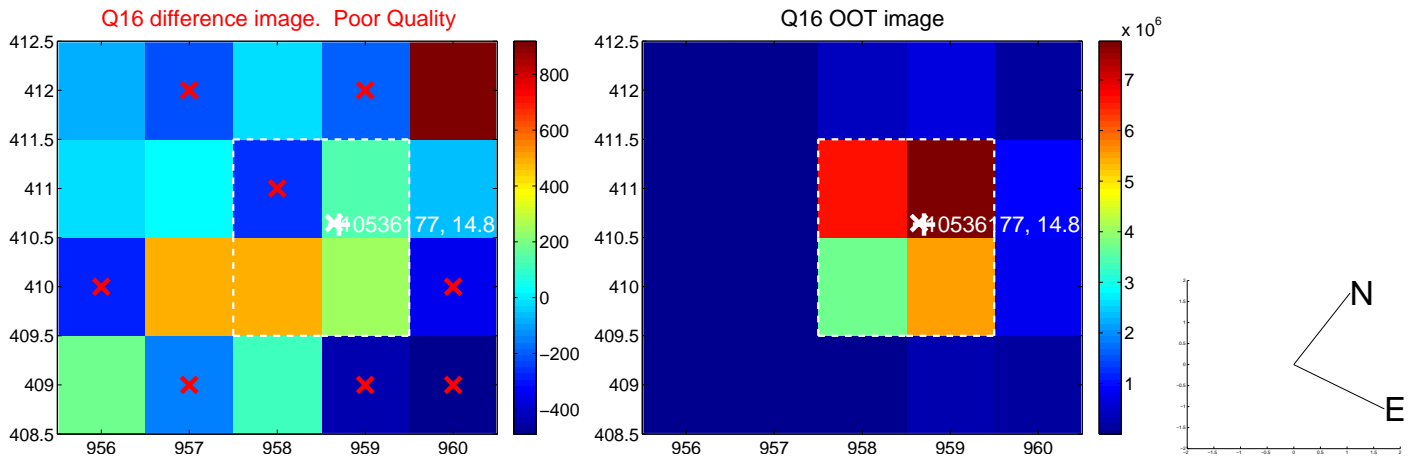
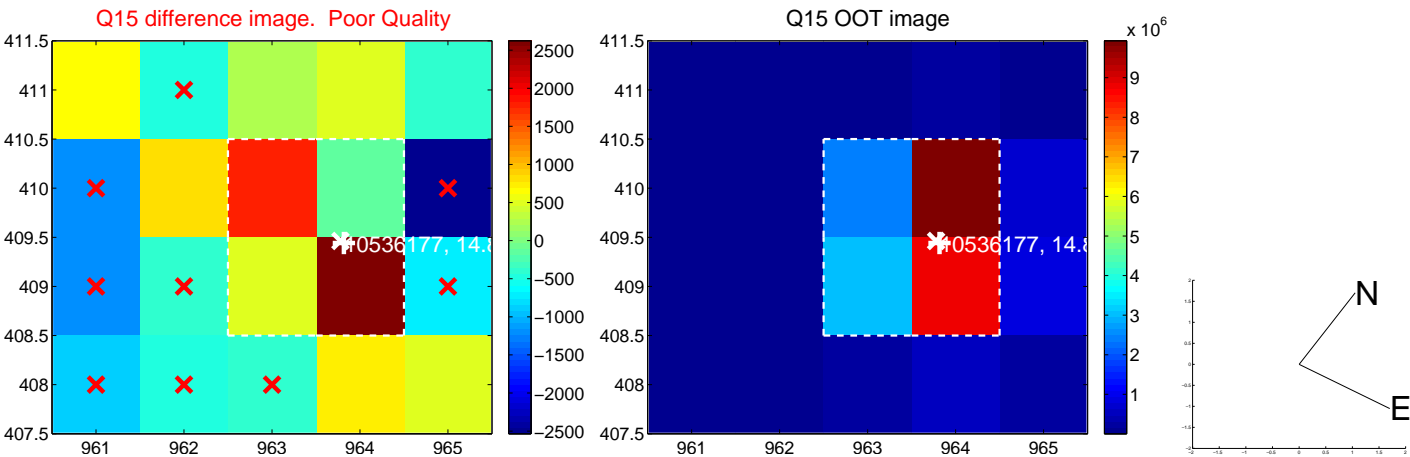
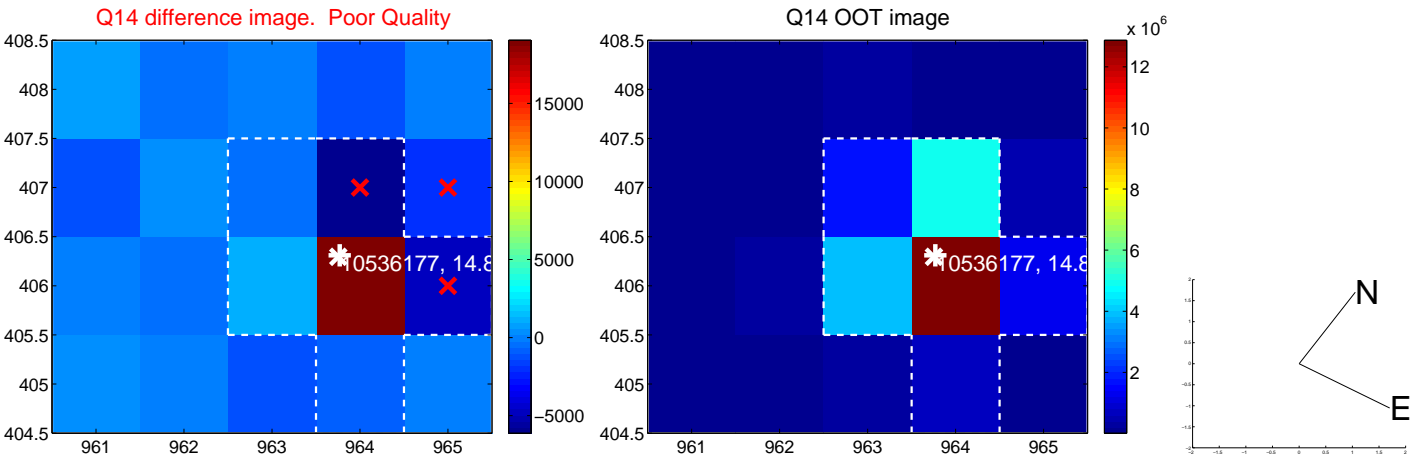
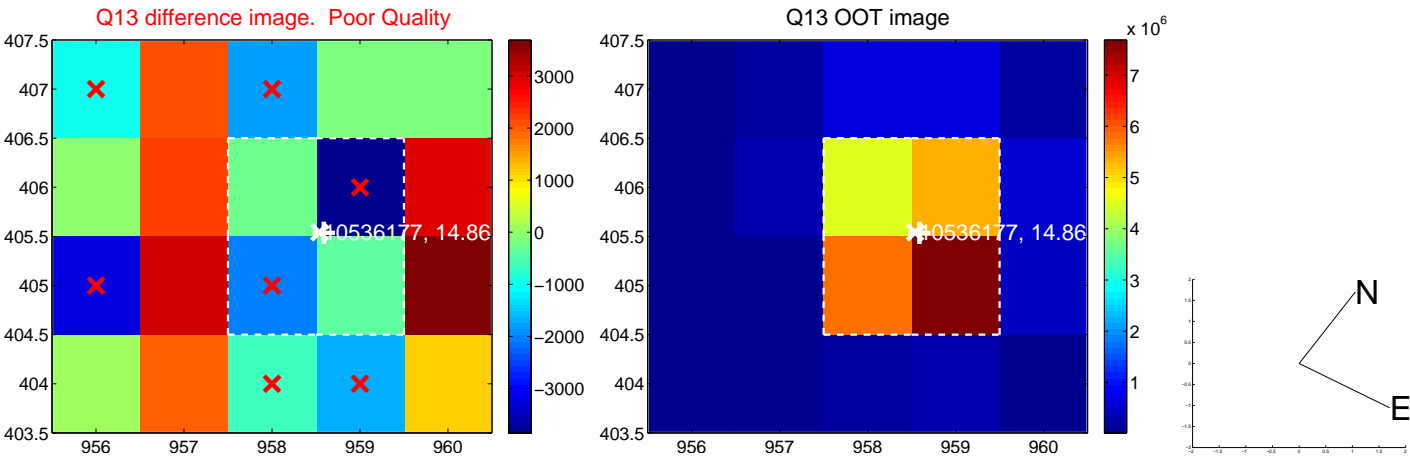
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



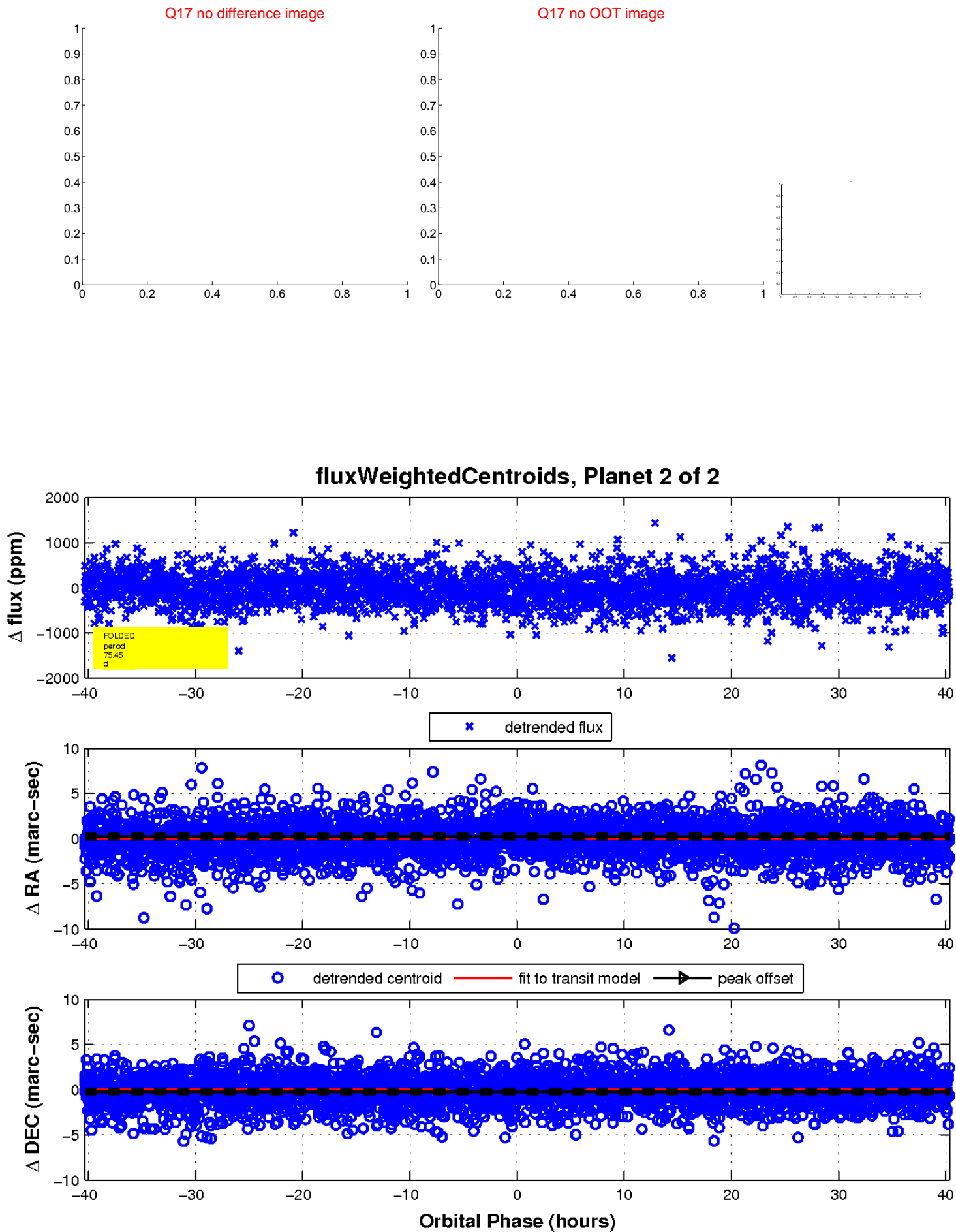
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

