

KIC 011360805

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})
011360805-01	OBS	2422.01	26.783887	140.755894	368.6	4.780	18.7	19.0	0.86	5242	1.91	17.73
011360805-02	OBS	2422.02	57.388274	141.629640	307.7	3.697	8.0	10.2	0.86	5242	1.74	6.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011360805-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011360805-02	OBS	PC	0.85	0	0	0	0	NO_COMMENT

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

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

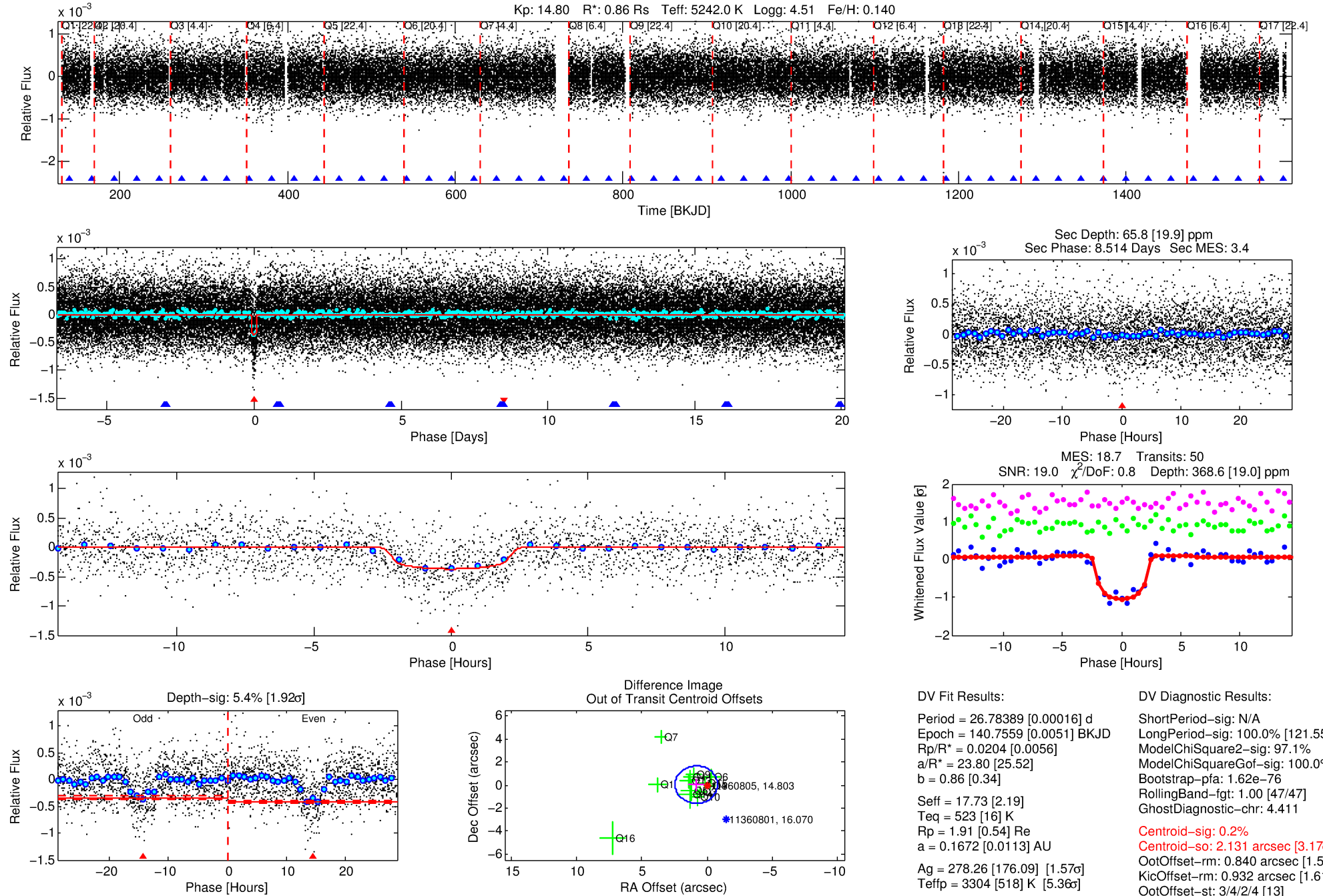
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011360805-01

No Significant Match Found

DV One-Page Summary

KIC: 11360805 Candidate: 1 of 2 Period: 26.784 d
KOI: K02422.01 Corr: 0.972



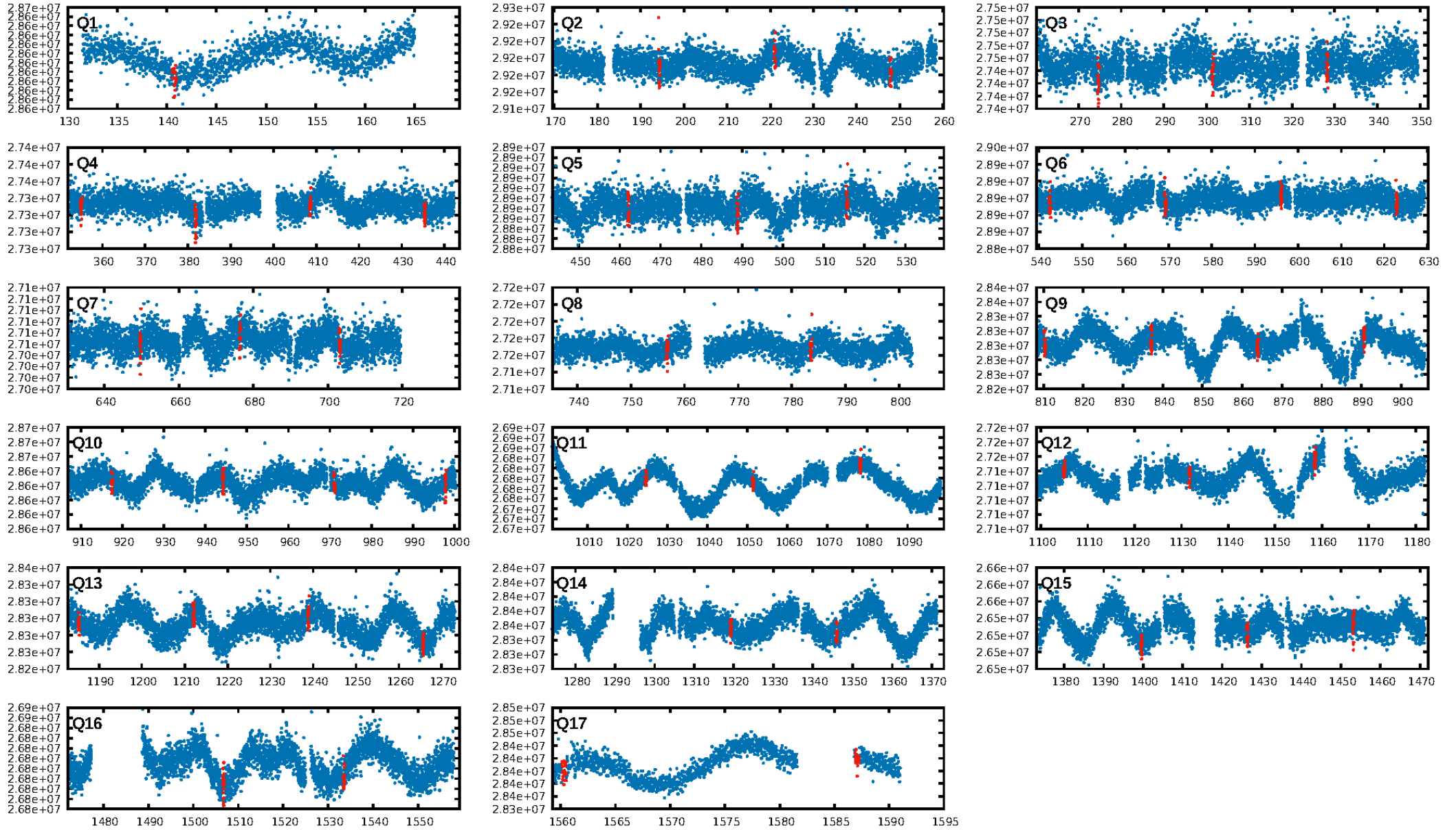
DV Fit Results:

Period = 26.78389 [0.00016] d
Epoch = 140.7559 [0.0051] BKJD
Rp/R* = 0.0204 [0.0056]
a/R* = 23.80 [25.52]
b = 0.86 [0.34]
Seff = 17.73 [2.19]
Teff = 523 [16] K
Rp = 1.91 [0.54] Re
a = 0.1672 [0.0113] AU
Ag = 278.26 [176.09] [1.57 σ]
Teffp = 3304 [518] K [5.36 σ]

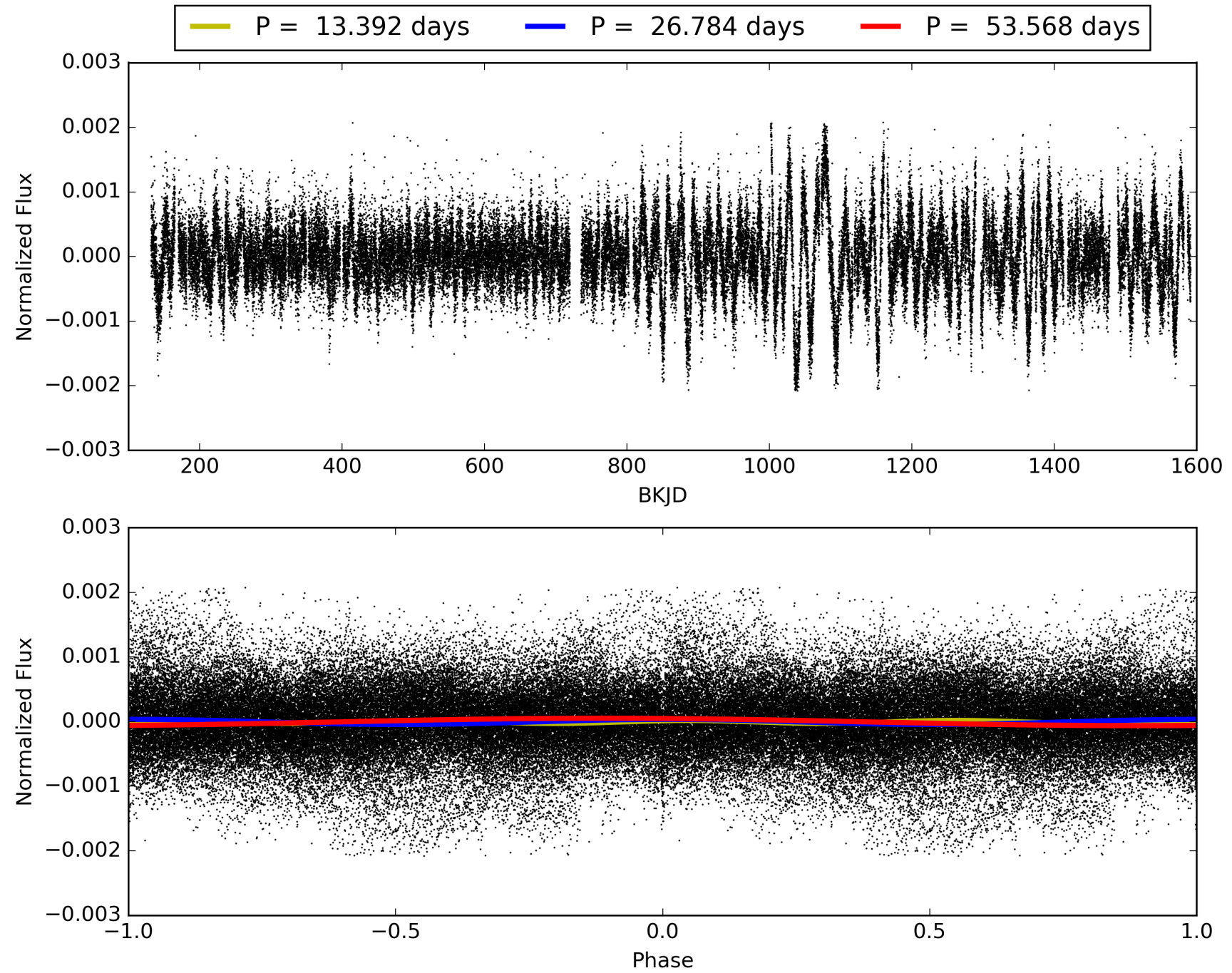
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [121.55 σ]
ModelChiSquare2-sig: 97.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.62e-76
RollingBand-fgt: 1.00 [47/47]
GhostDiagnostic-chr: 4.411
Centroid-sig: 0.2%
Centroid-so: 2.131 arcsec [3.17 σ]
OotOffset-rm: 0.840 arcsec [1.55 σ]
KicOffset-rm: 0.932 arcsec [1.61 σ]
OotOffset-st: 3/4/2/4 [13]
KicOffset-st: 3/4/2/4 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 011360805-01, PDC Light Curves

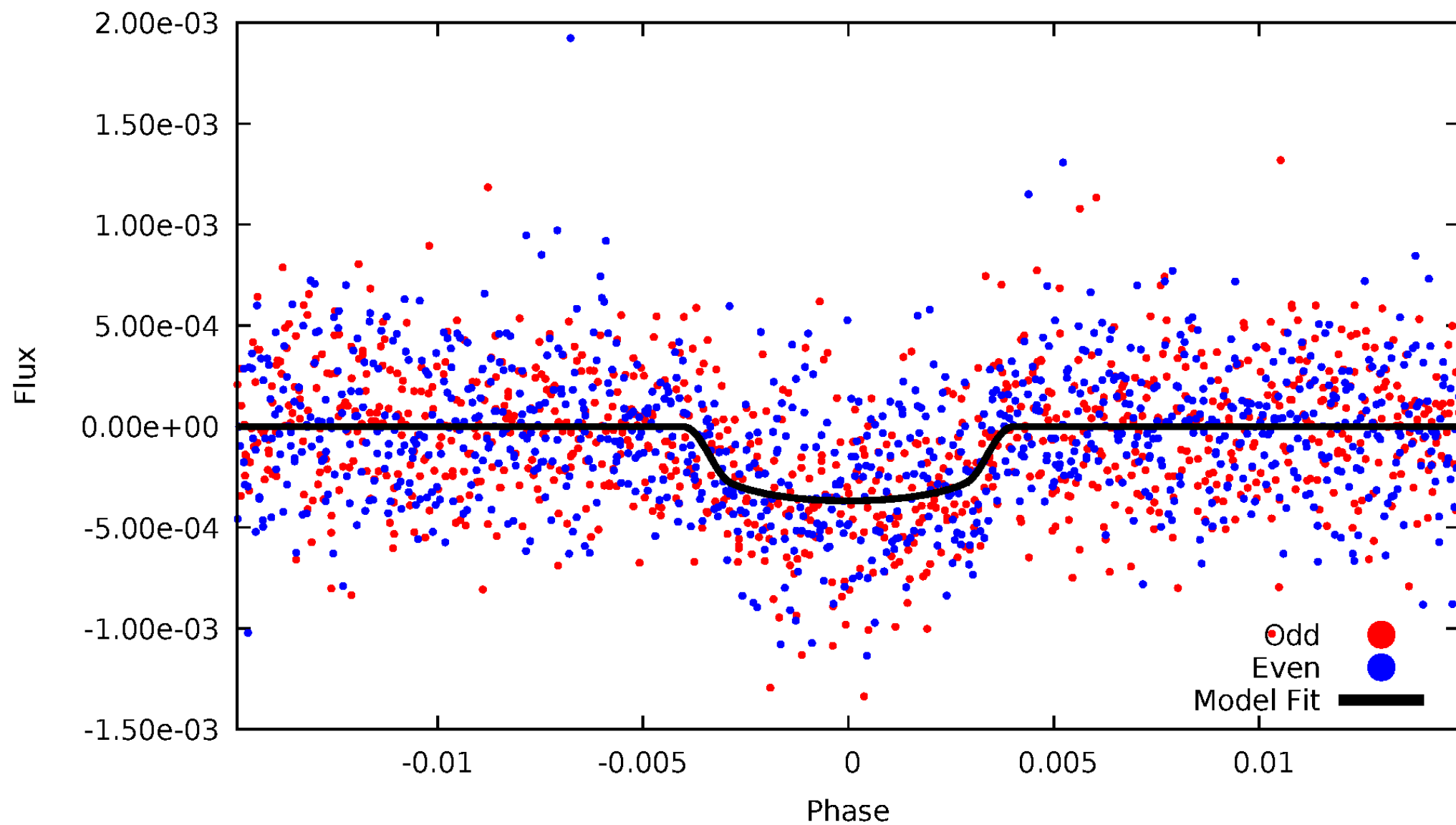


TCE 011360805-01



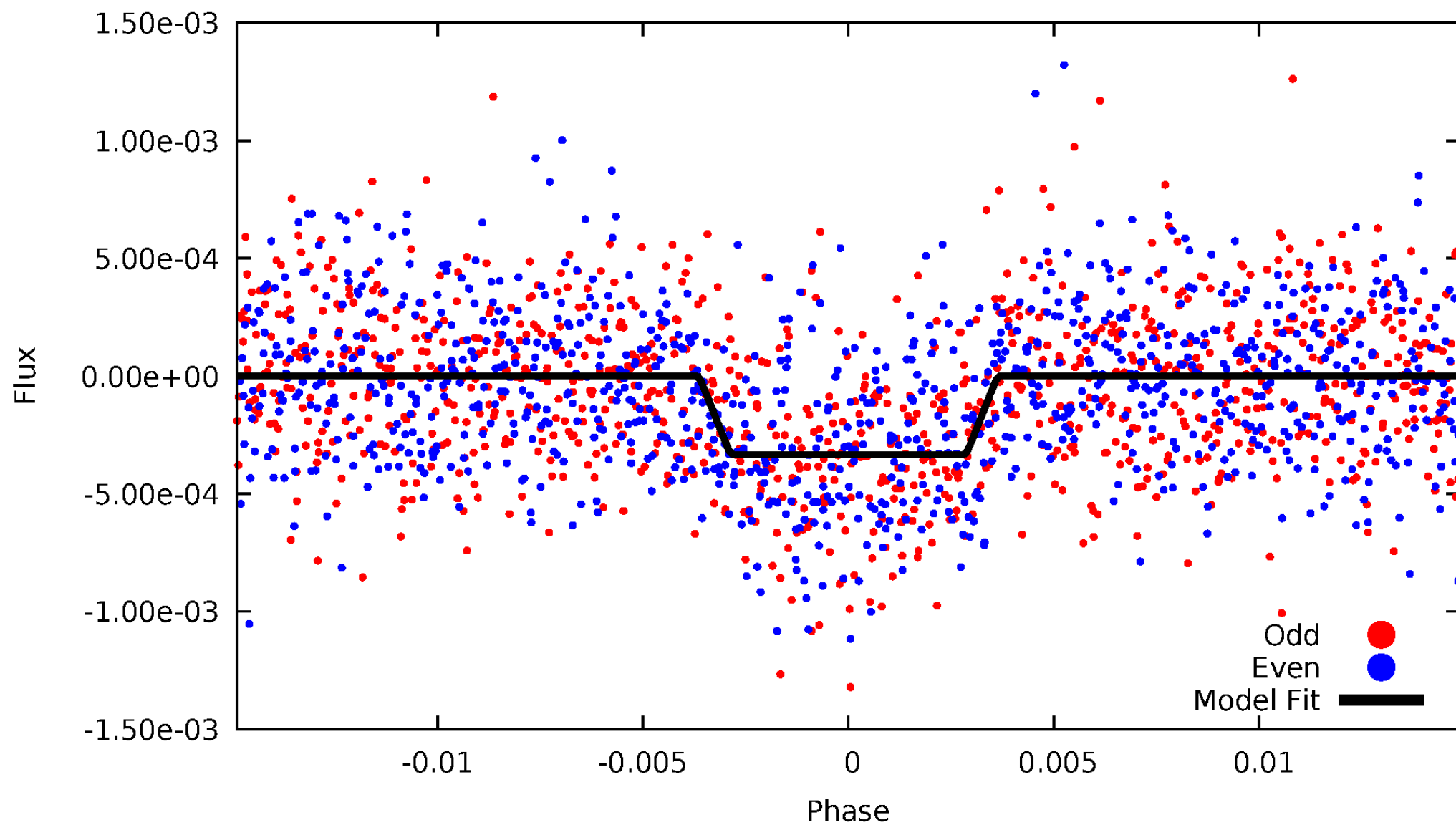
DV Odd/Even

TCE 011360805-01



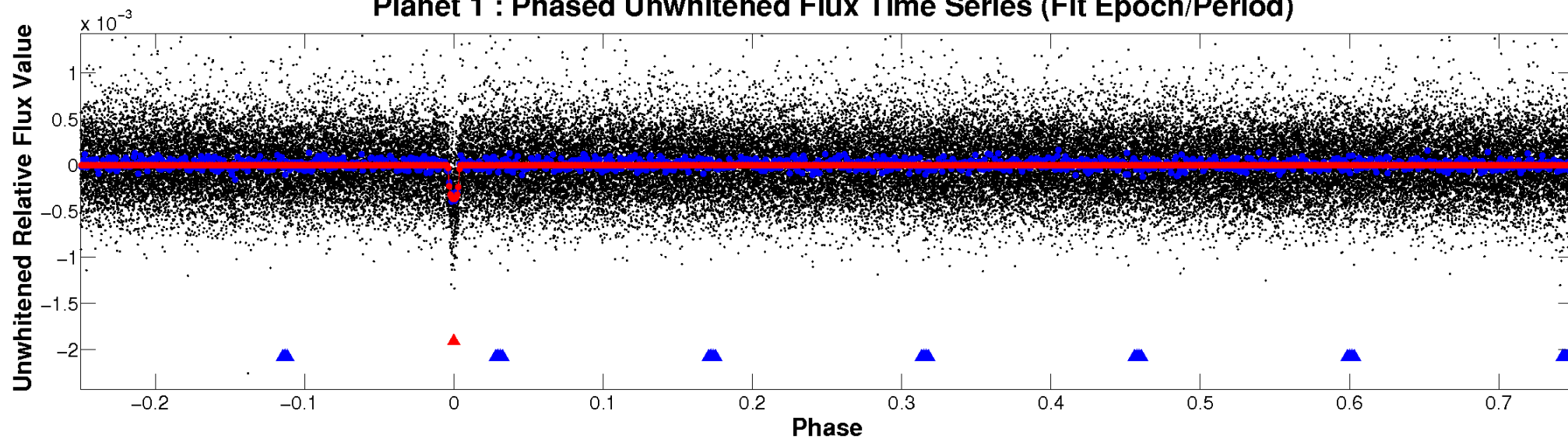
ALT Odd/Even

TCE 011360805-01

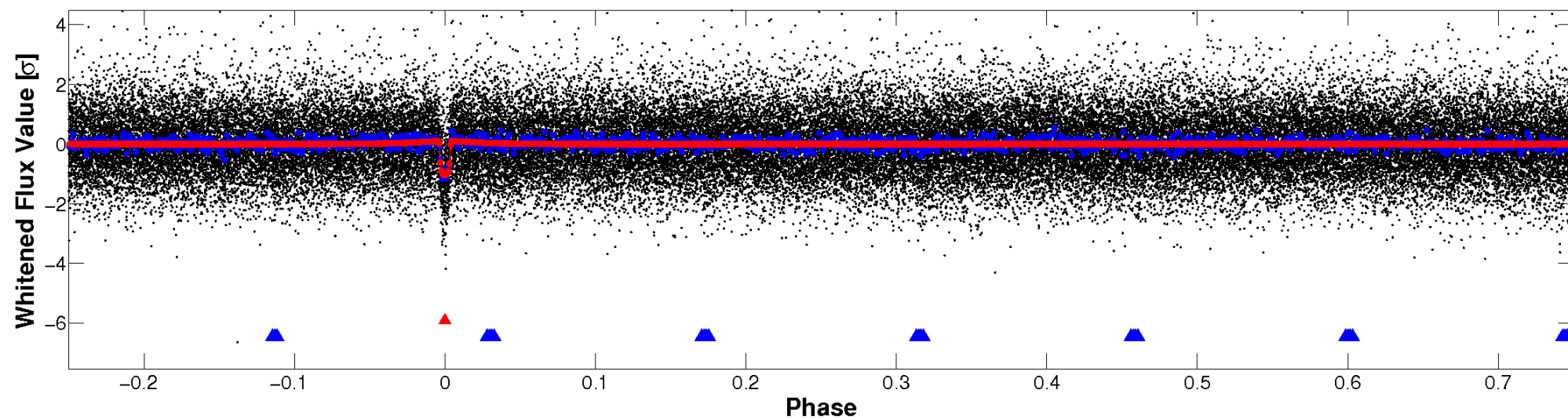


Non-Whitened Vs. Whitened Light Curve

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

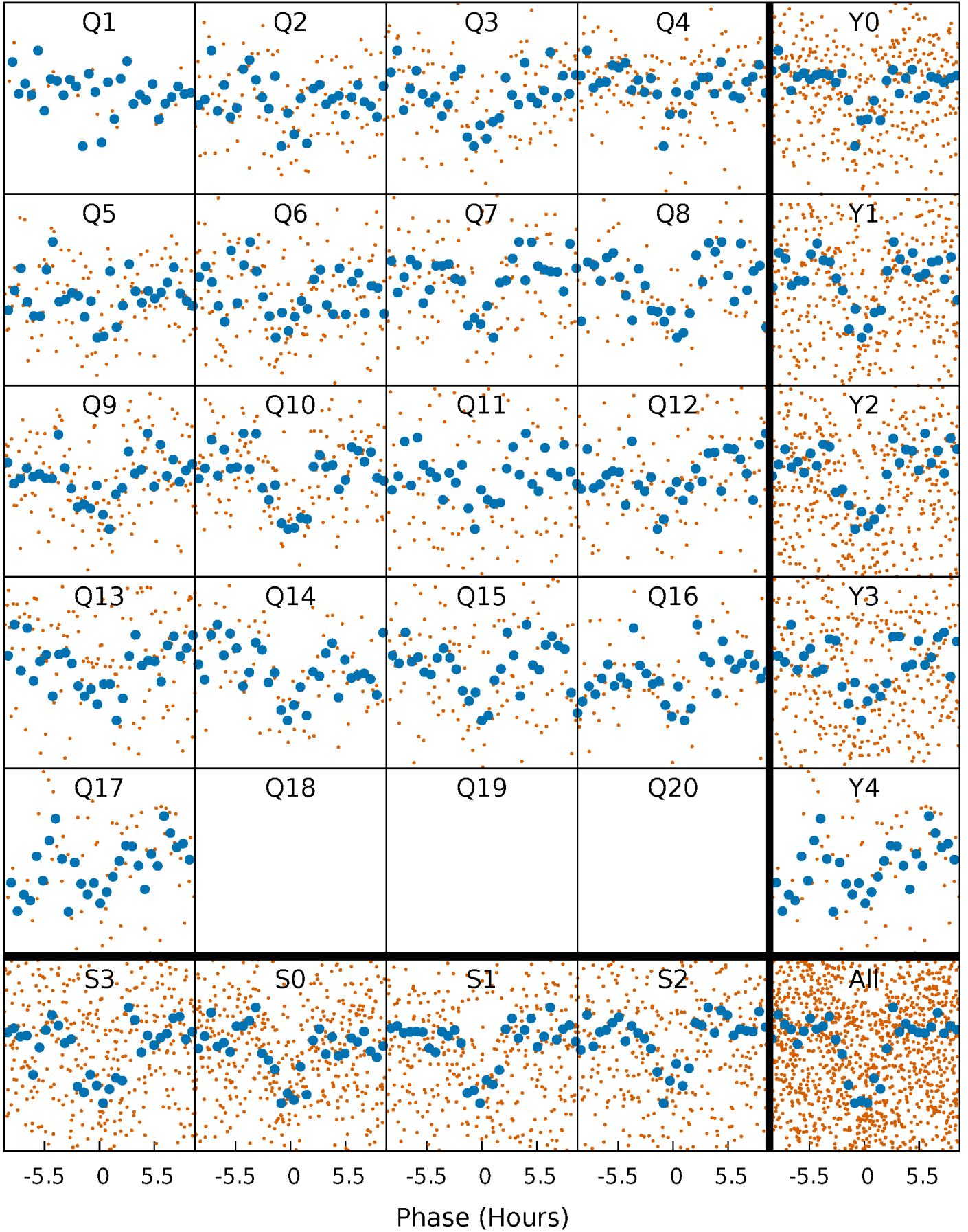


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



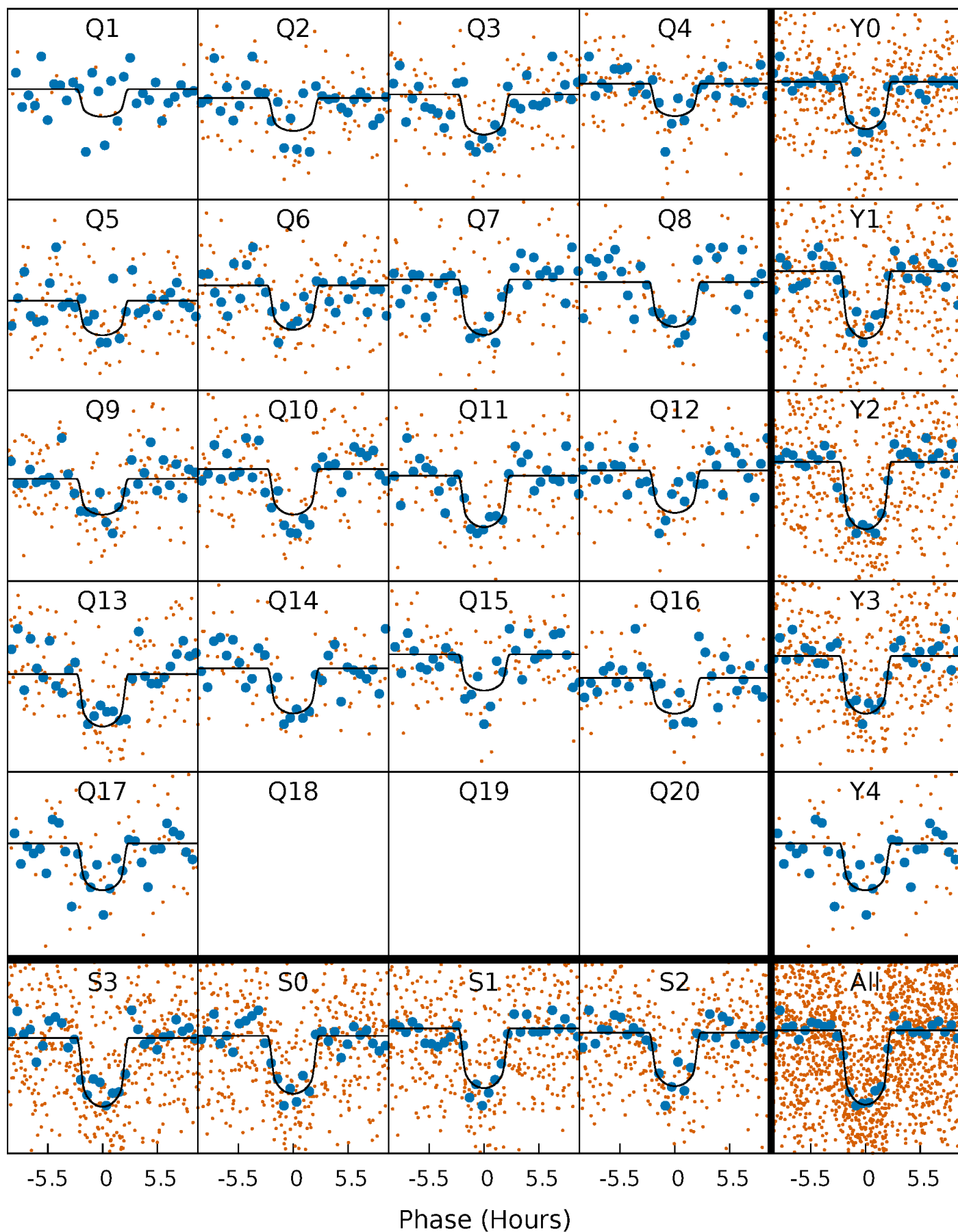
PDC Quarter-Phased Transit Curves

TCE 011360805-01 P= 26.783887 Days $T_0=140.755894$ (BKJD)



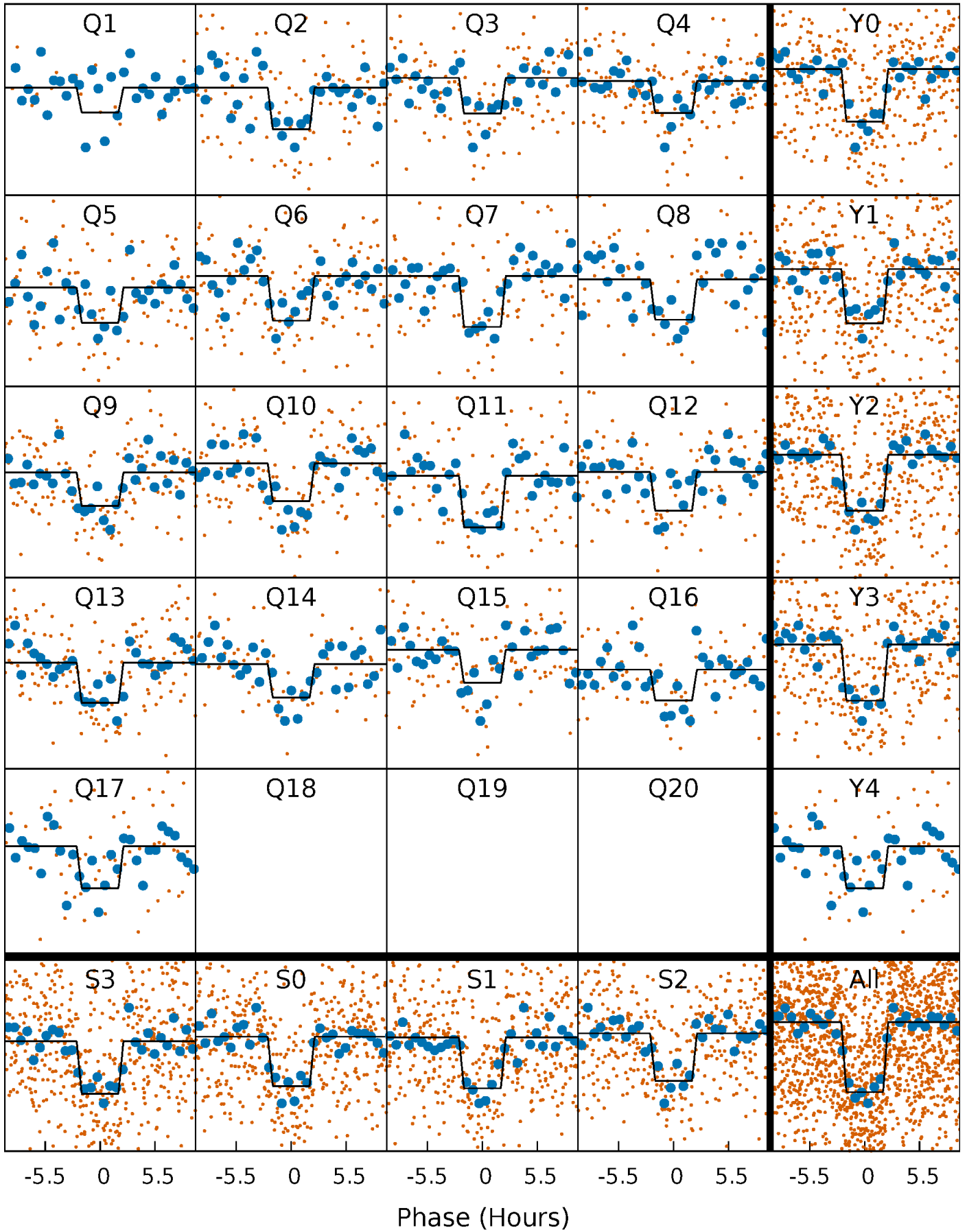
DV Quarter-Phased Transit Curves

TCE 011360805-01 P= 26.783887 Days $T_0=140.755894$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

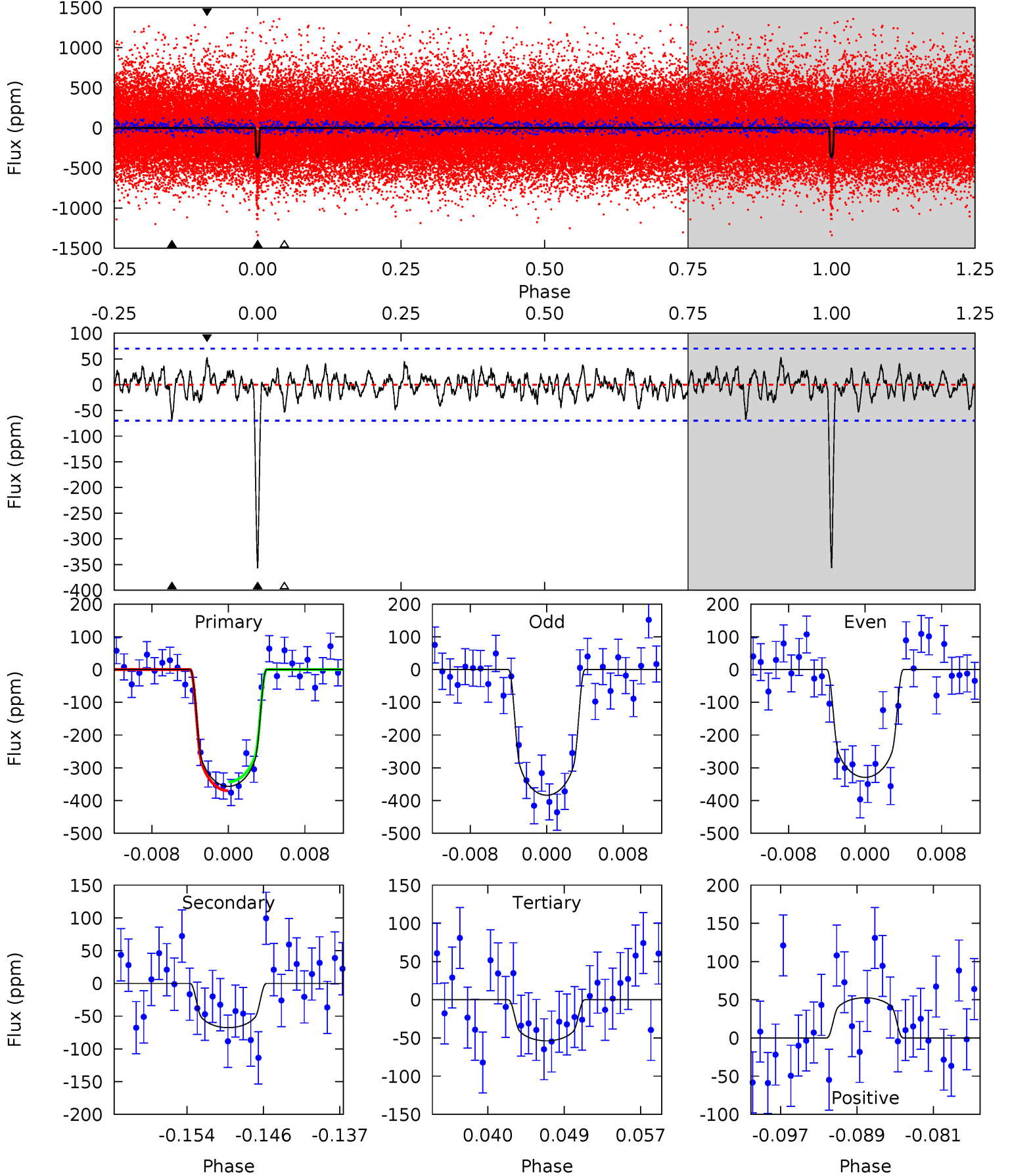
TCE 011360805-01 P= 26.784272 Days $T_0=140.745953$ (BKJD)



DV Model-Shift Uniqueness Test

011360805-01, P = 26.783887 Days, E = 113.972007 Days

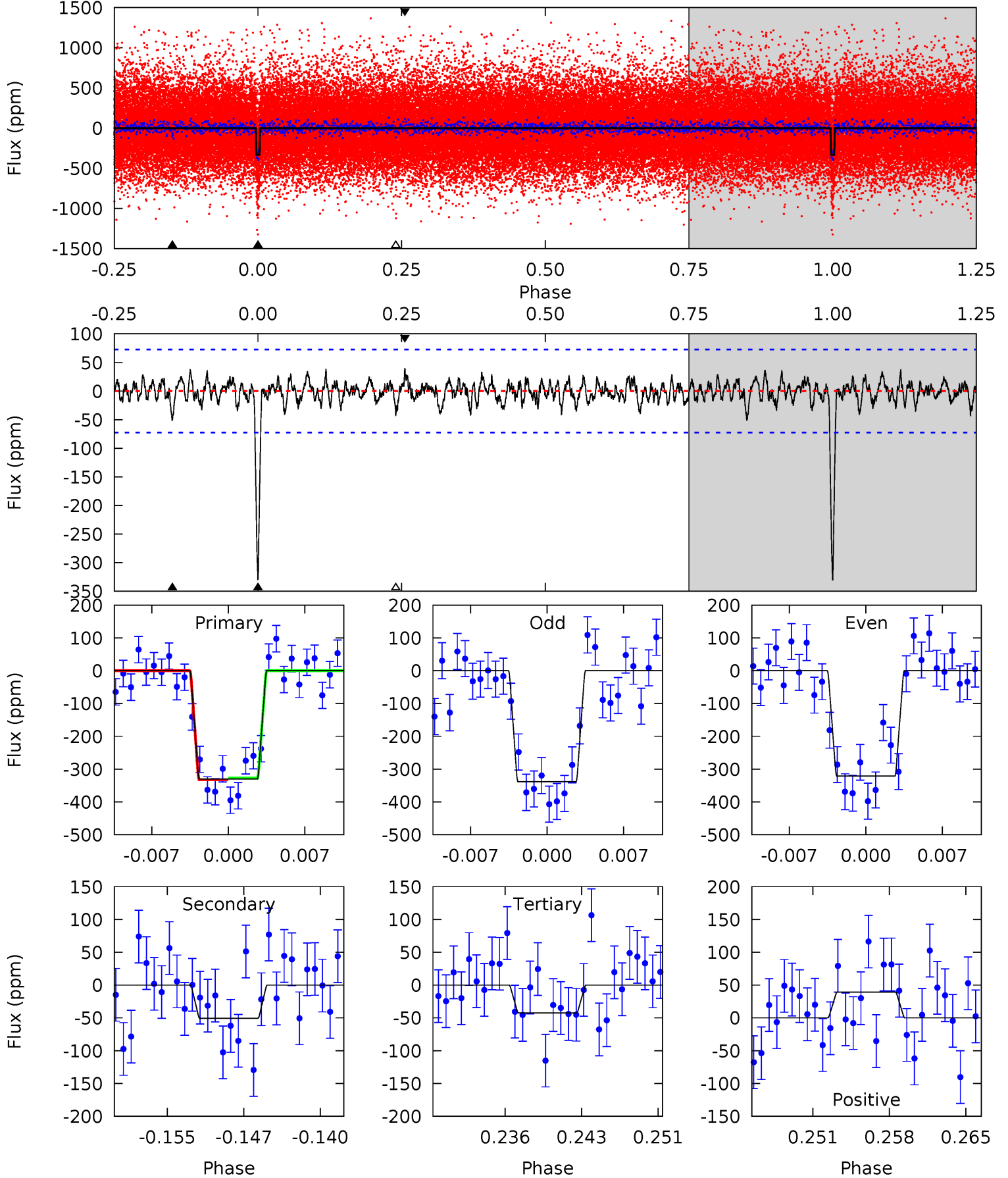
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	4.89	3.88	3.80	5.07	2.65	1.23	21.9	22.0	1.00	1.08	1.98	0.96	0.13	0.99



Alt Model-Shift Uniqueness Test

011360805-01, P = 26.784272 Days, E = 113.961681 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.1	3.55	2.97	2.76	5.08	2.68	1.00	20.2	20.4	0.58	0.79	0.61	1.00	0.11	0.17



Stellar Parameters For KIC 011360805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5242^{+84}_{-73}	$4.512^{+0.050}_{-0.061}$	$0.140^{+0.150}_{-0.150}$	$0.856^{+0.063}_{-0.046}$	$0.869^{+0.046}_{-0.041}$	$1.948^{+0.351}_{-0.387}$
	+2%/-1%	+1%/-1%	+107%/-107%	+7%/-5%	+5%/-5%	+18%/-20%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011360805-01 / KOI 2422.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-68 ± 14	$1.92^{+0.54}_{-0.55}$	731^{+18}_{-16}	3694^{+460}_{-299}	282^{+267}_{-124}
Alt.	-51 ± 14	$1.69^{+0.55}_{-0.50}$	732^{+19}_{-17}	3654^{+531}_{-364}	252^{+318}_{-116}

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

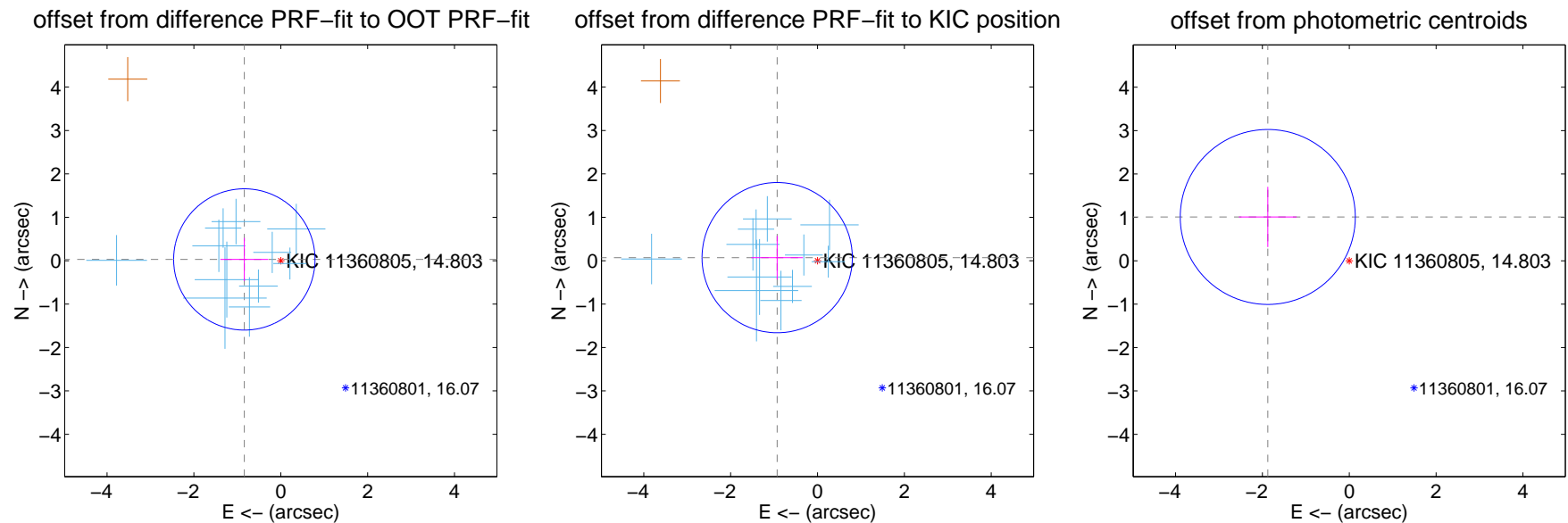
DV Centroid Data

Supplemental centroid analysis for 011360805-01. Kepler magnitude: 14.80. Transit SNR 18.95

There are 11 quarters with good PRF difference image offsets

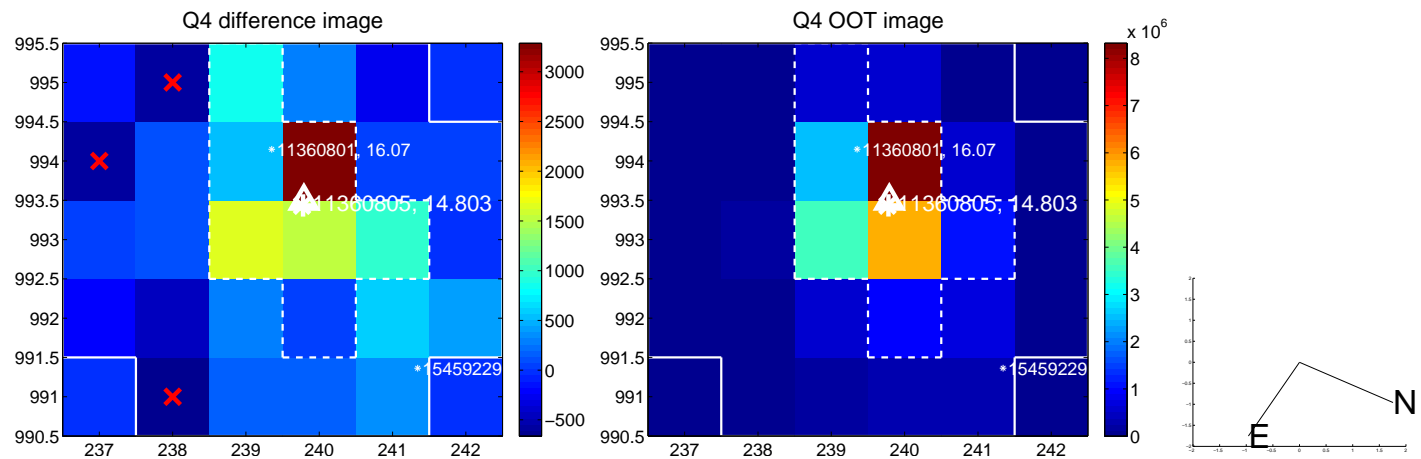
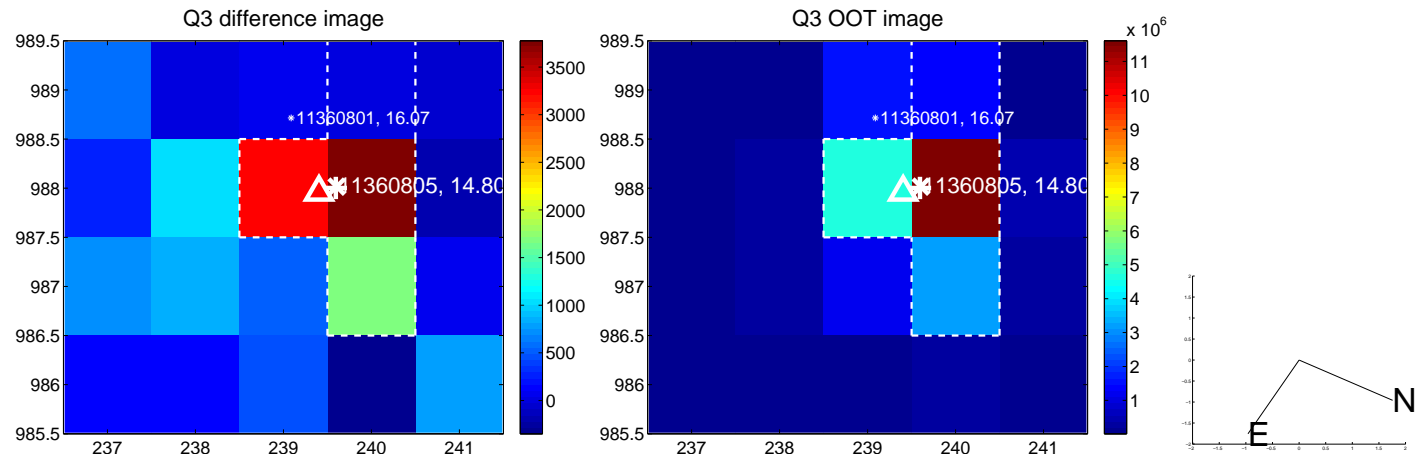
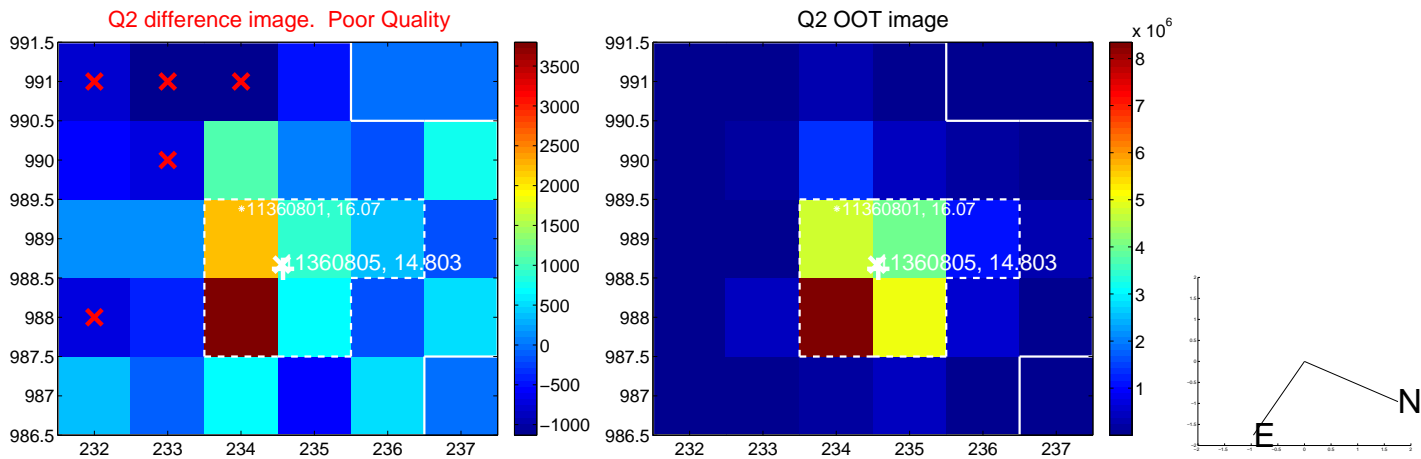
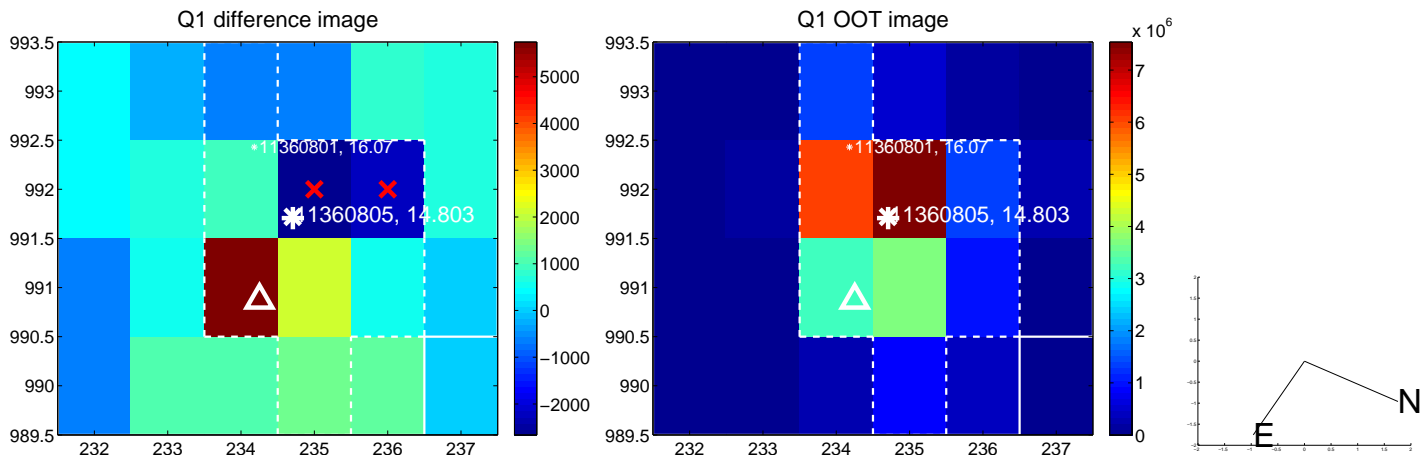
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.840 ± 0.543	1.55	0.839 ± 0.551	0.029 ± 0.497
PRF-fit source offset from KIC position	0.932 ± 0.577	1.61	0.929 ± 0.593	0.070 ± 0.500
photometric centroid source offset	2.13 ± 0.67	3.17	1.88 ± 0.67	1.01 ± 0.69

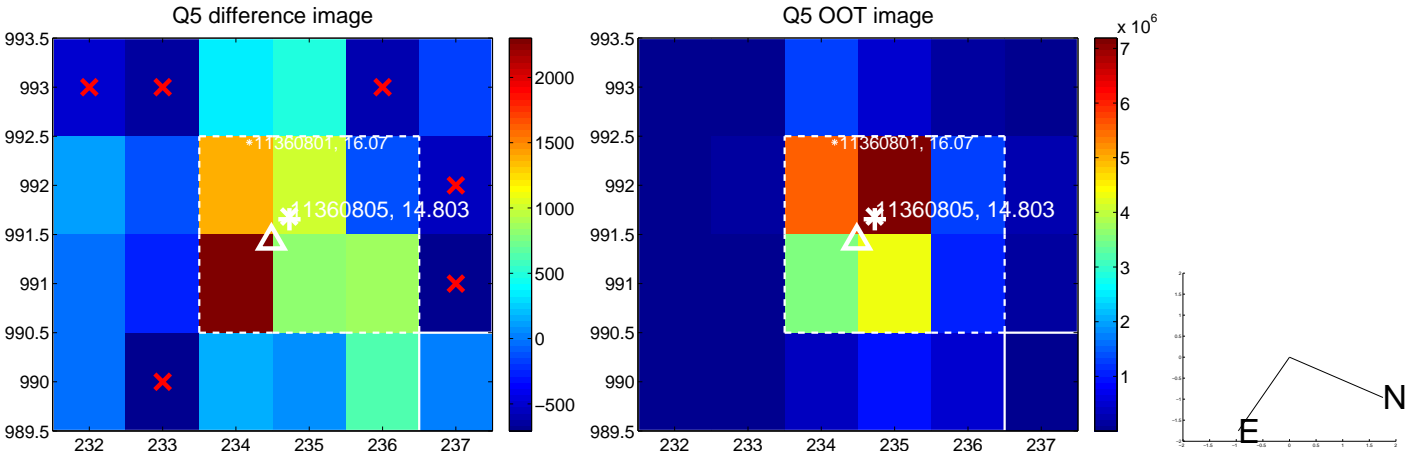


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

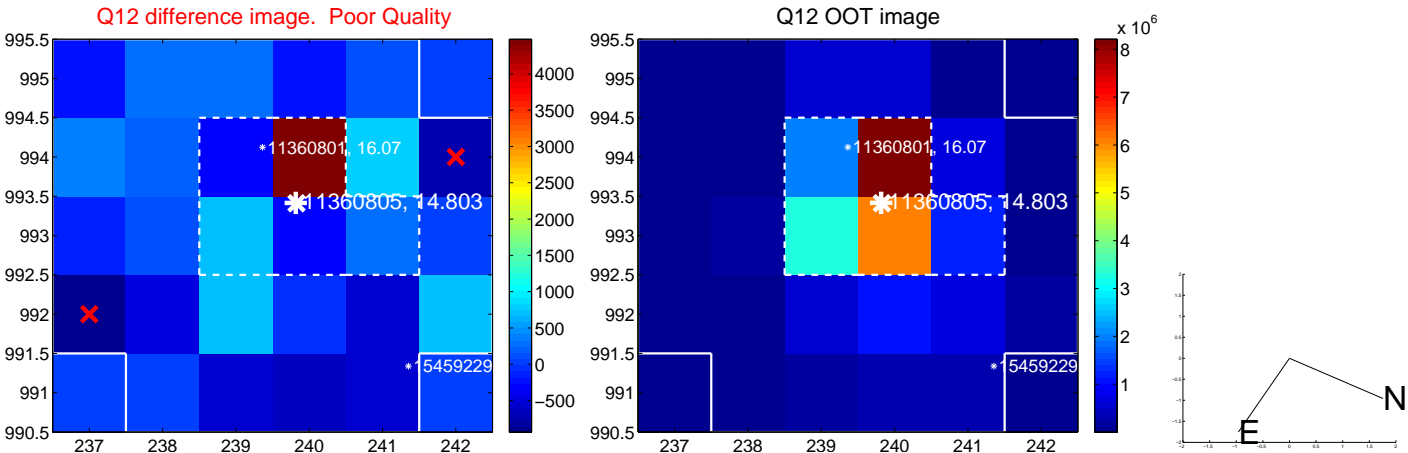
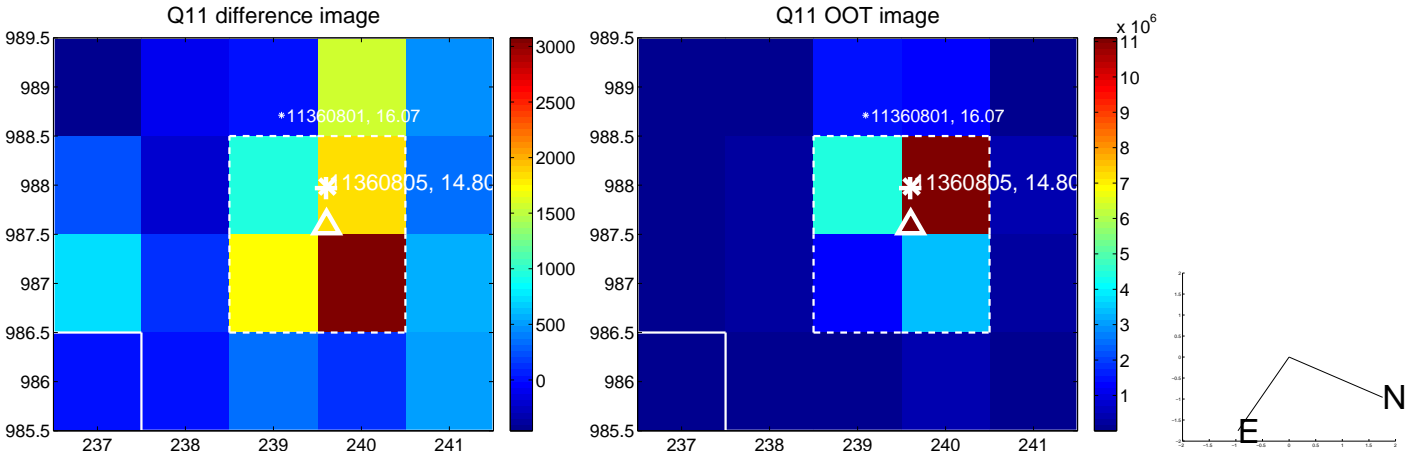
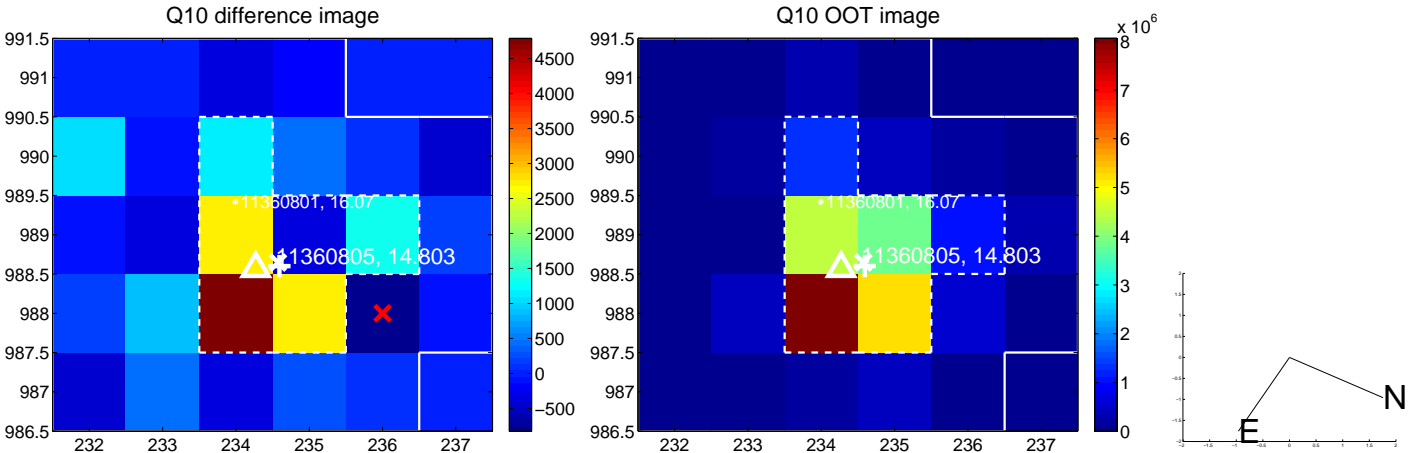
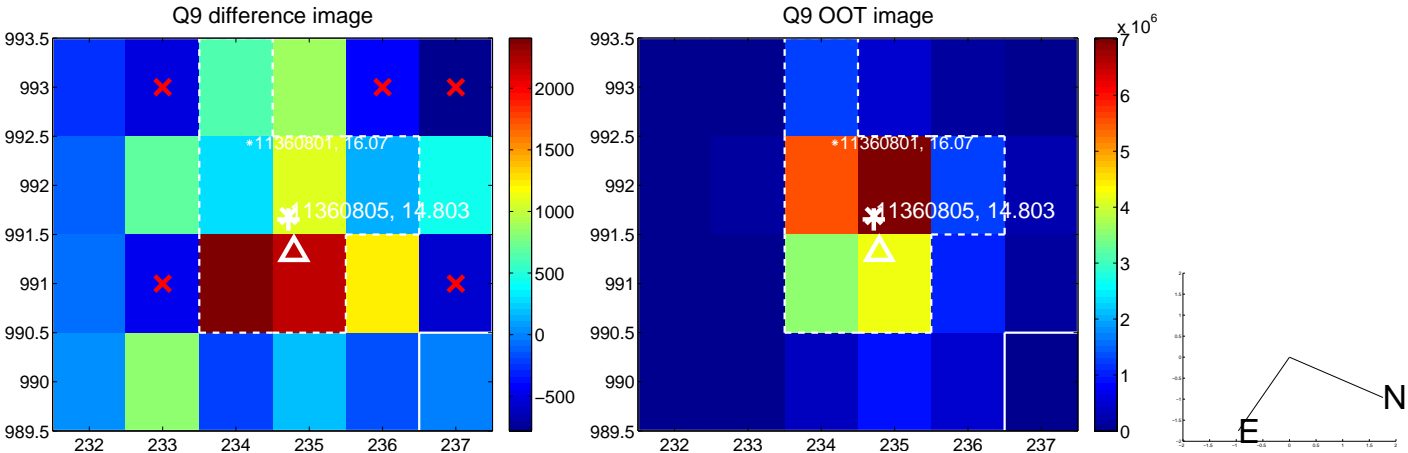
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



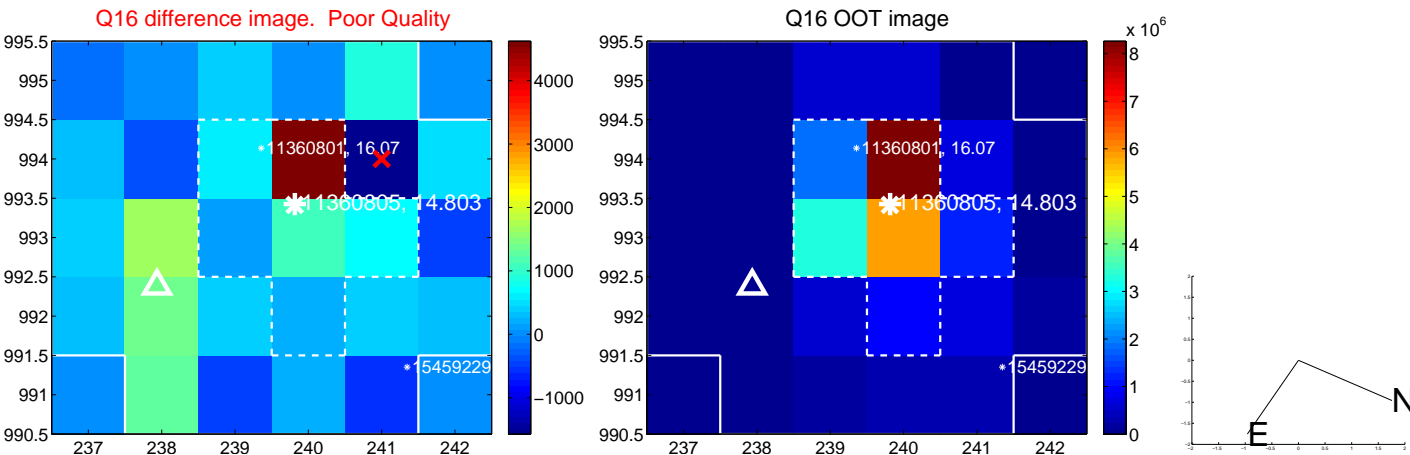
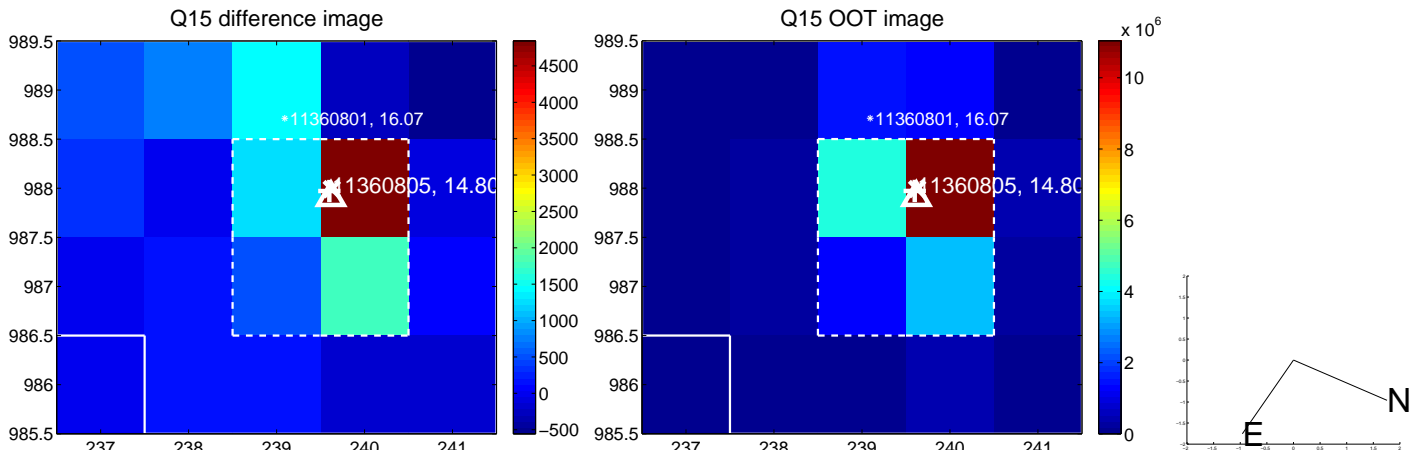
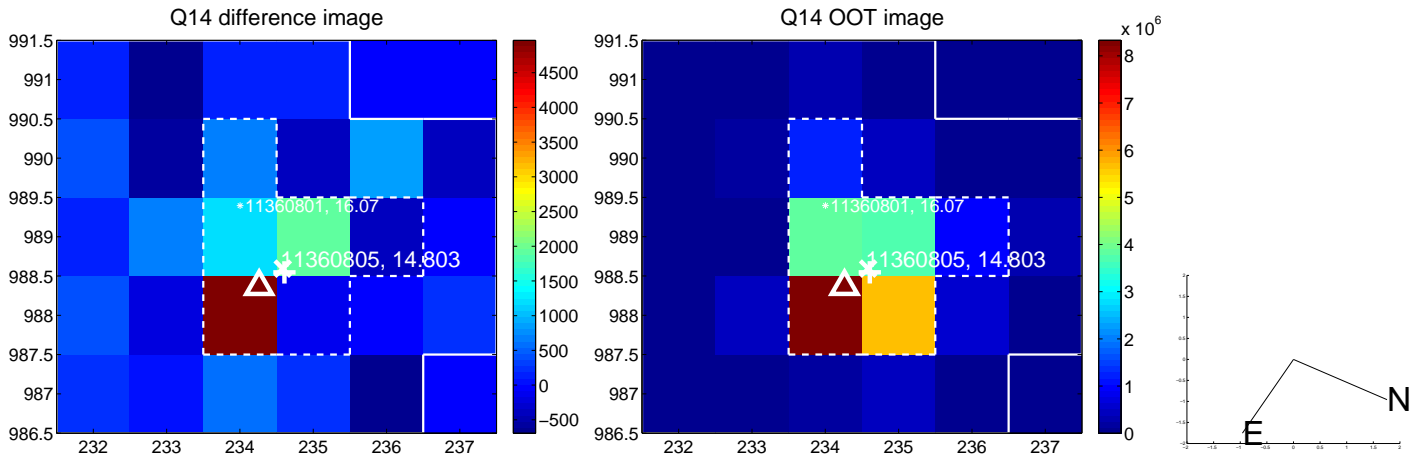
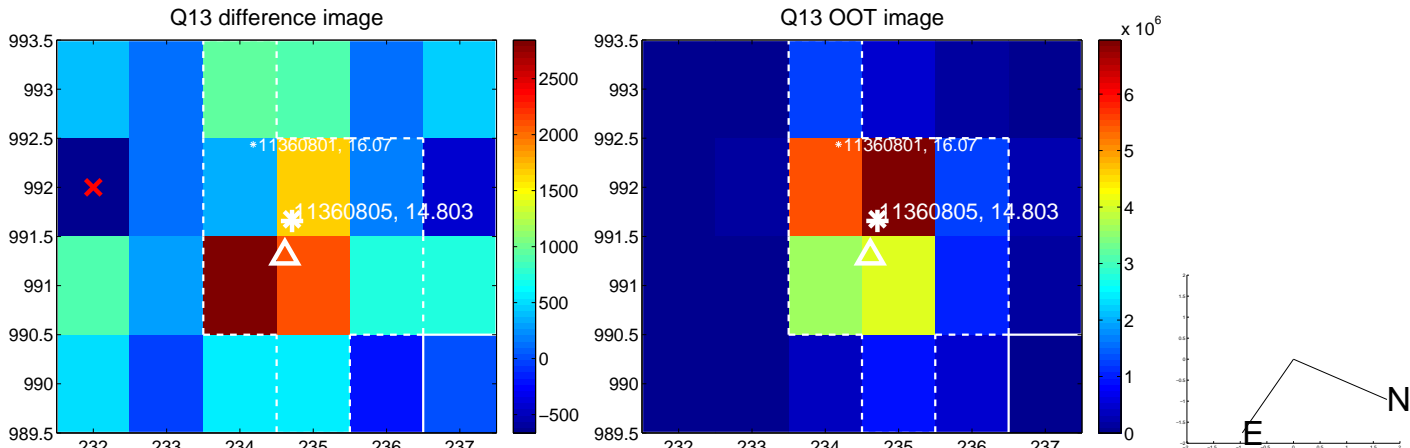
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



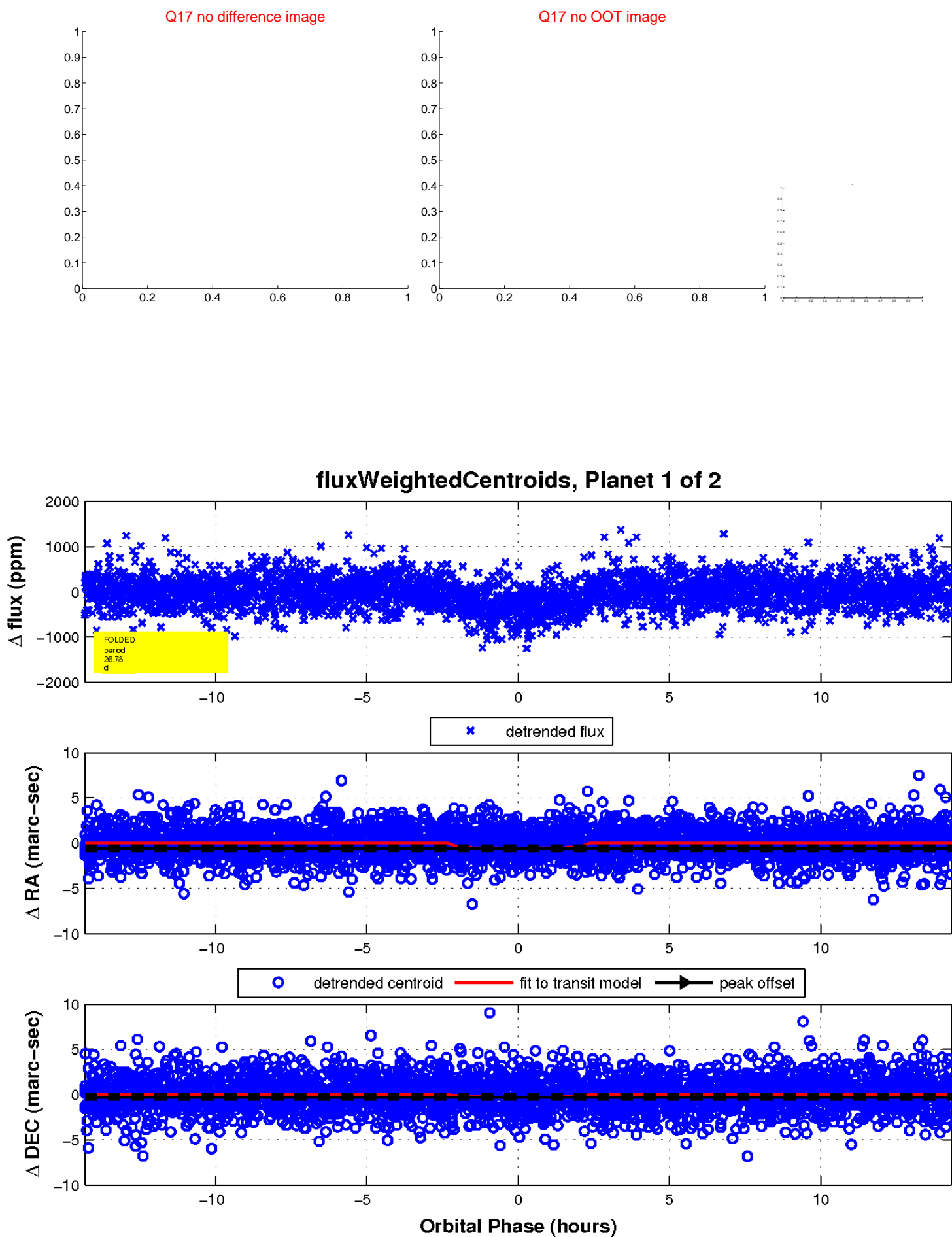
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



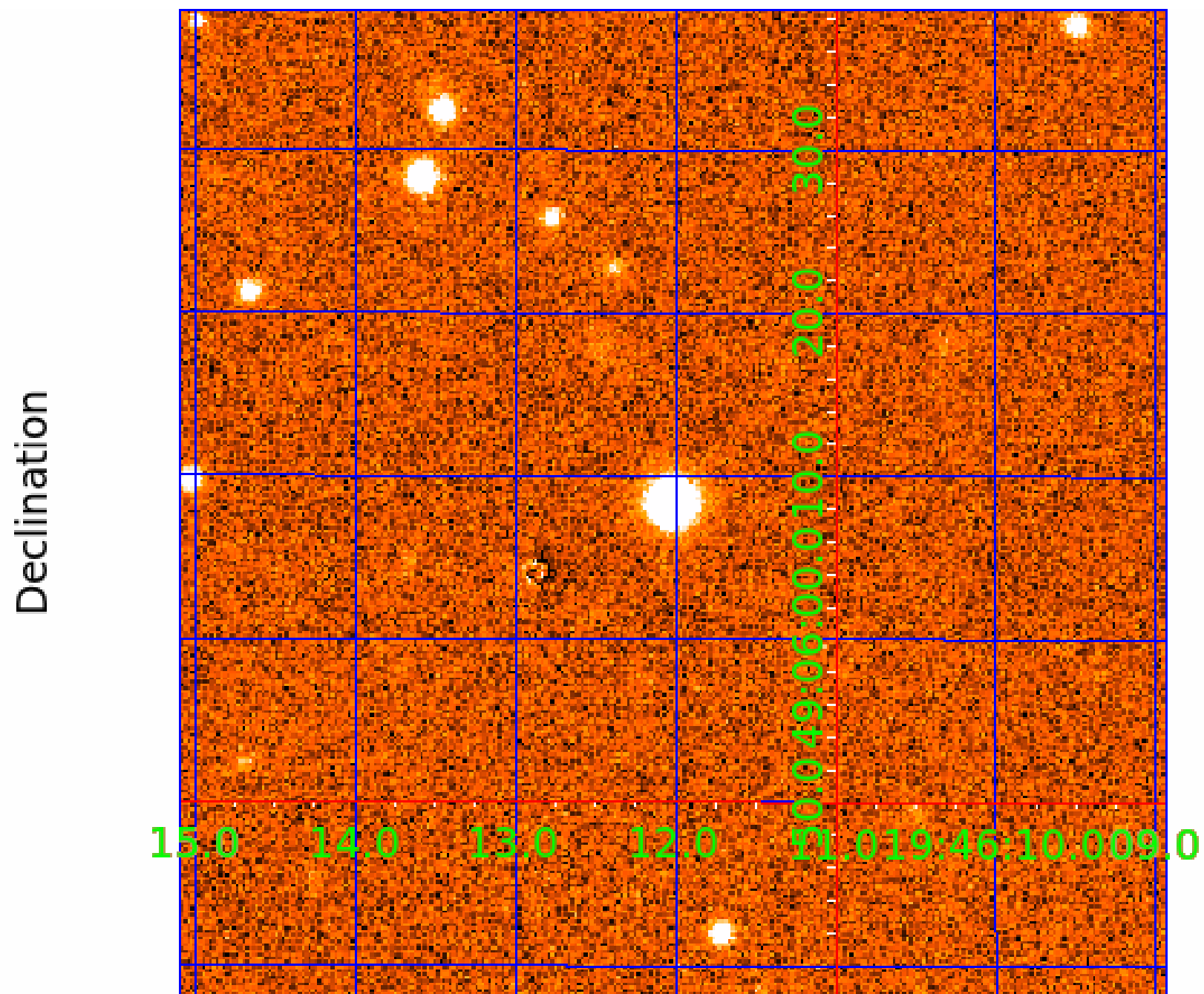
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011360805

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})
011360805-01	OBS	2422.01	26.783887	140.755894	368.6	4.780	18.7	19.0	0.86	5242	1.91	17.73
011360805-02	OBS	2422.02	57.388274	141.629640	307.7	3.697	8.0	10.2	0.86	5242	1.74	6.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011360805-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011360805-02	OBS	PC	0.85	0	0	0	0	NO_COMMENT

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

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

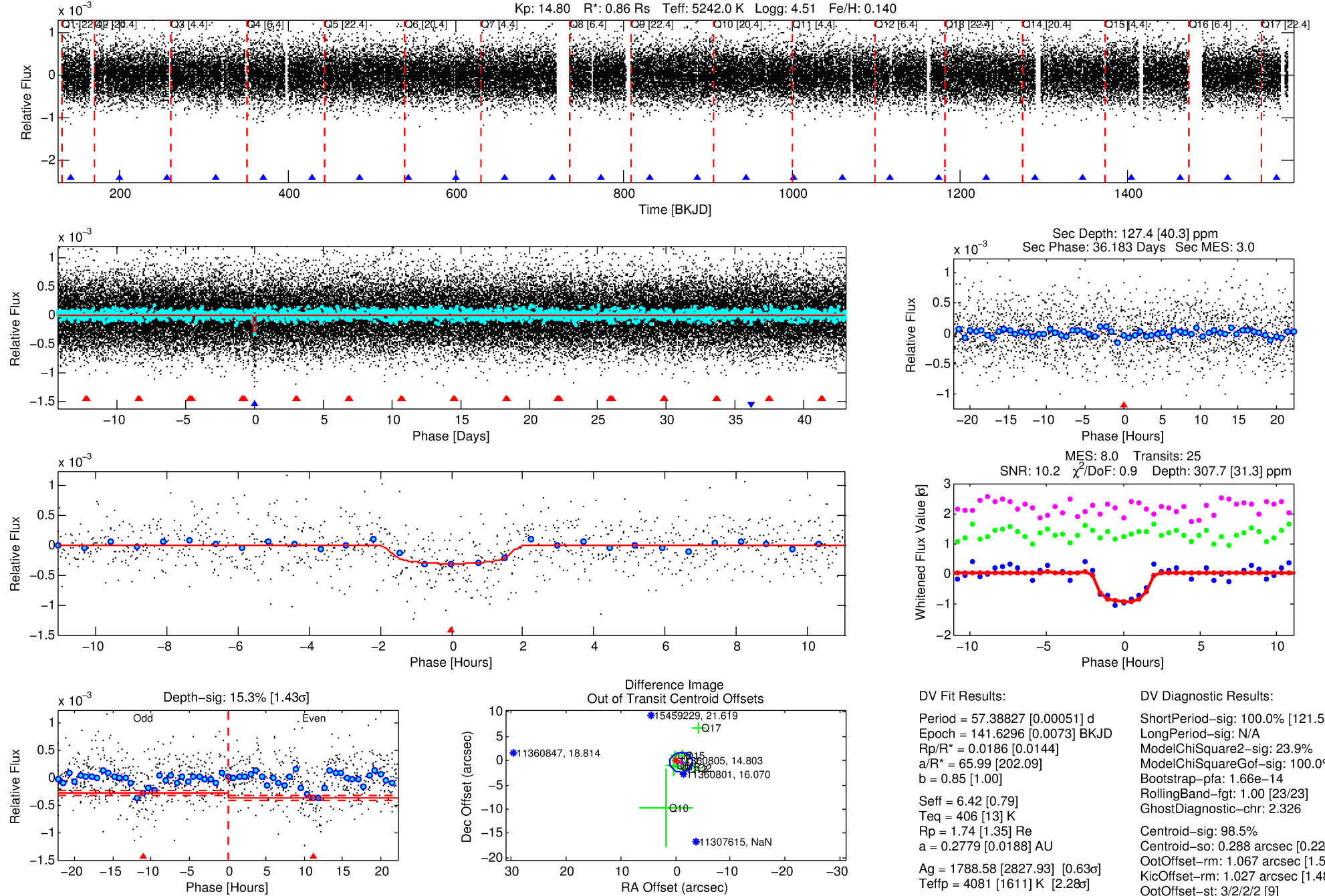
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011360805-02

No Significant Match Found

DV One-Page Summary

KIC: 11360805 Candidate: 2 of 2 Period: 57.388 d
KOI: K02422.02 Corr: 0.957



DV Fit Results:

Period = 57.38827 [0.00051] d
Epoch = 141.6296 [0.0073] BKJD
Rp/R* = 0.0186 [0.0144]
a/R* = 65.99 [202.09]
b = 0.85 [1.00]
Seff = 6.42 [0.79]
Teq = 406 [13] K
Rp = 1.74 [1.35] Re
a = 0.2779 [0.0188] AU
Ag = 1788.58 [2827.93] [0.63 σ]
Teff = 4081 [1611] K [2.28 σ]

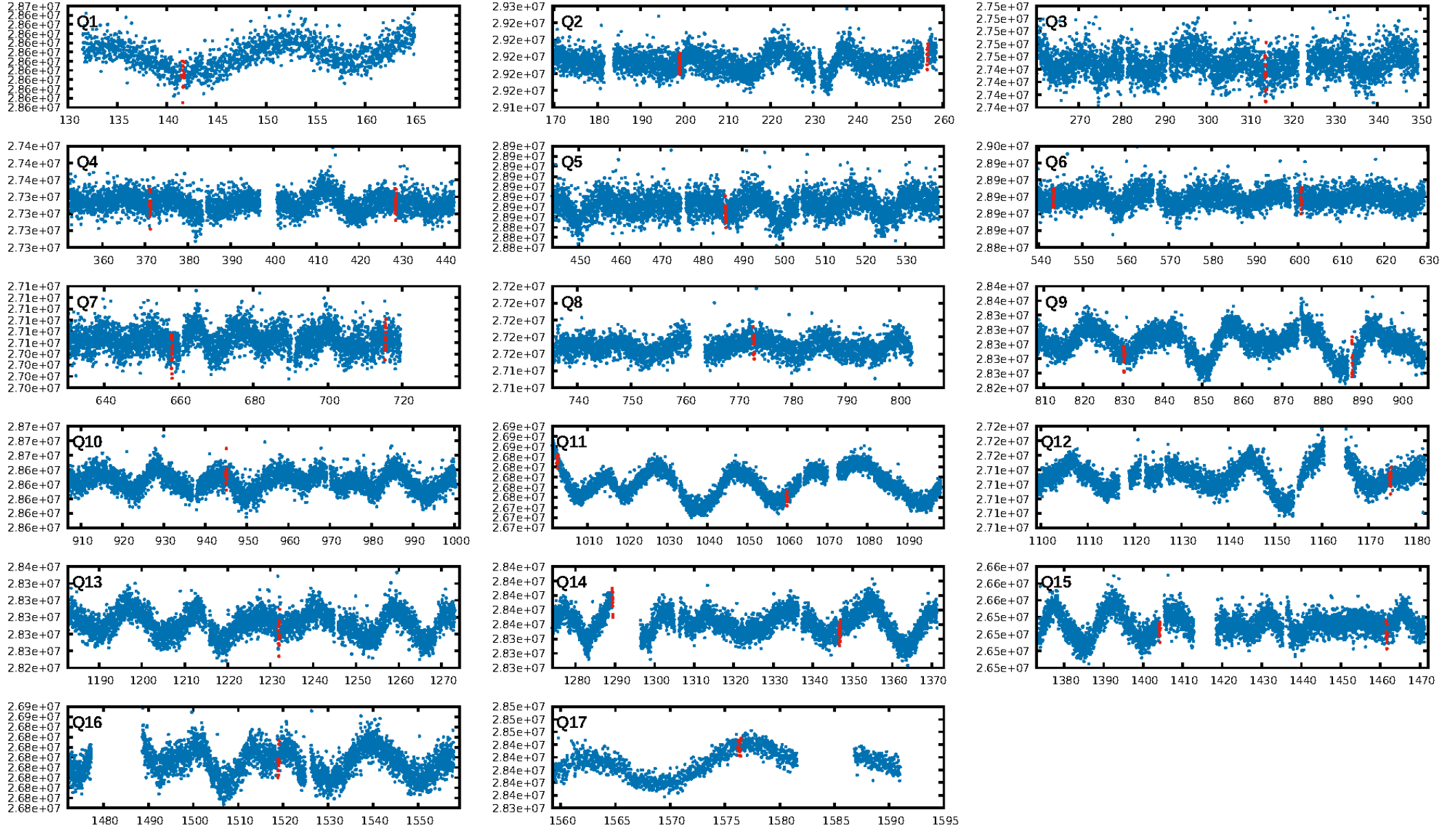
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [121.55 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 23.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.66e-14
RollingBand-fgt: 1.00 [23/23]
GhostDiagnostic-chr: 2.326
Centroid-sig: 98.5%
Centroid-so: 0.288 arcsec [0.22 σ]
OotOffset-rm: 1.067 arcsec [1.55 σ]
KicOffset-rm: 1.027 arcsec [1.48 σ]
OotOffset-st: 3/2/2/2 [9]
KicOffset-st: 3/2/2/2 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 1.00 [16/16]

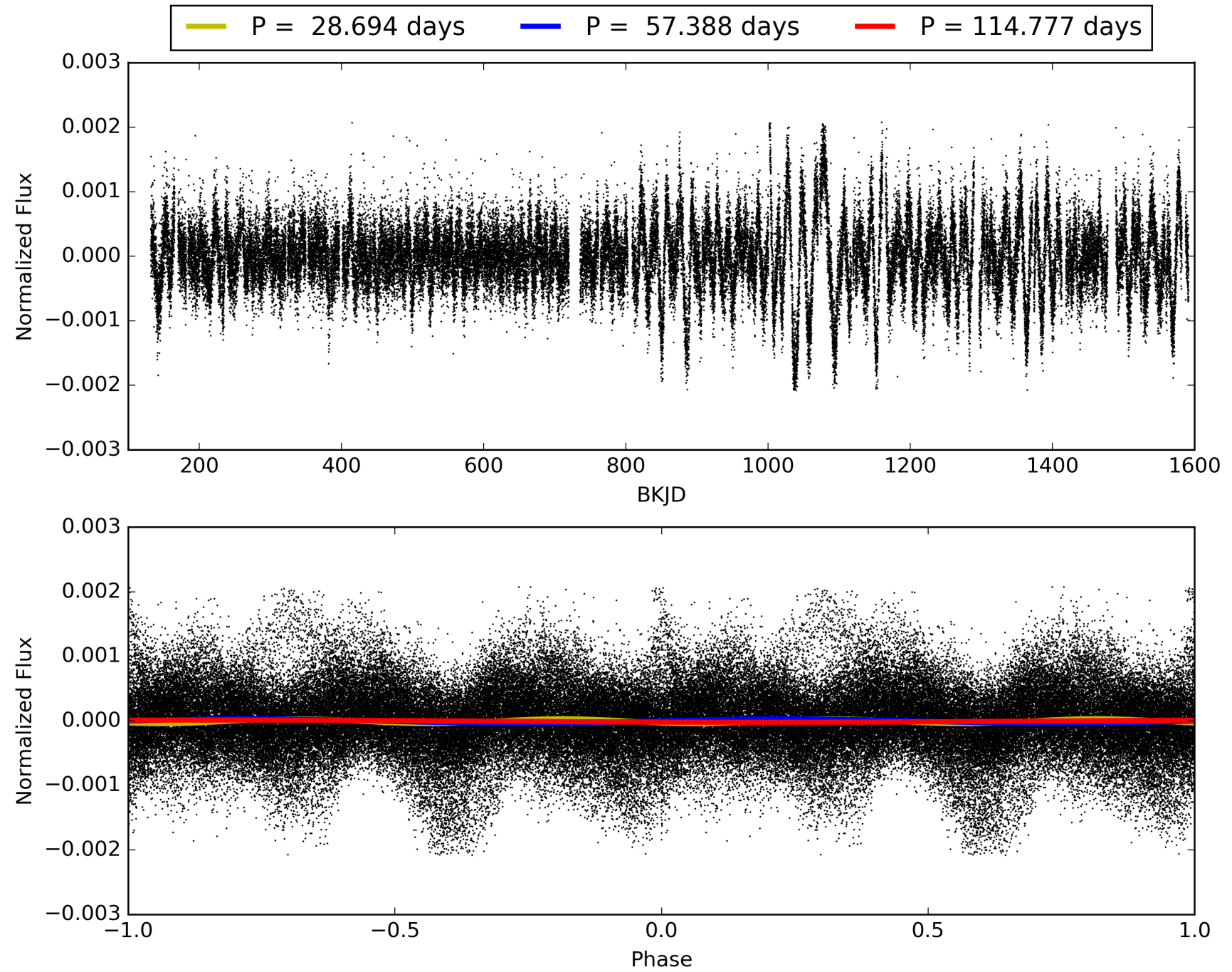
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:57:00 Z

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

TCE 011360805-02, PDC Light Curves

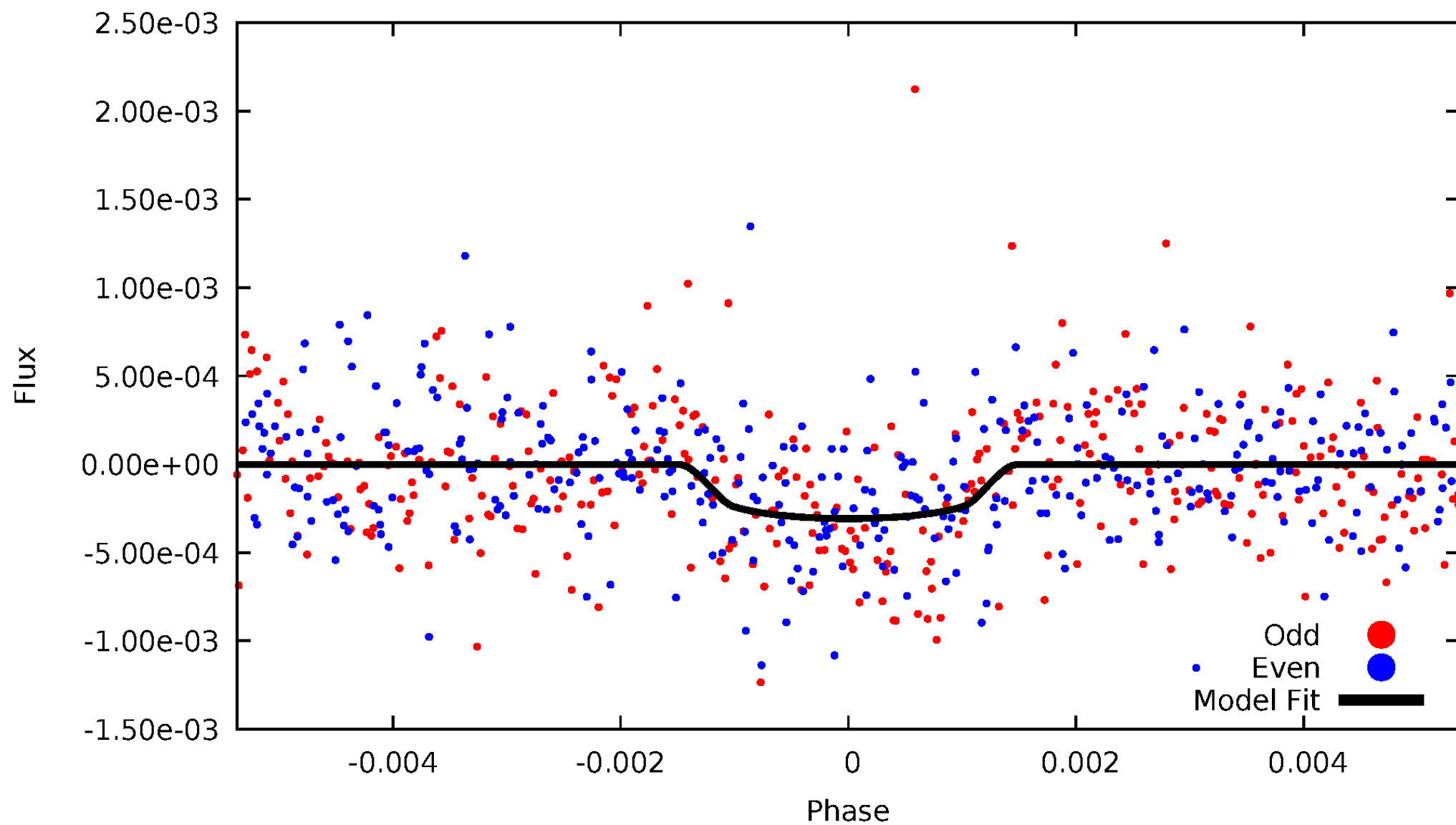


TCE 011360805-02



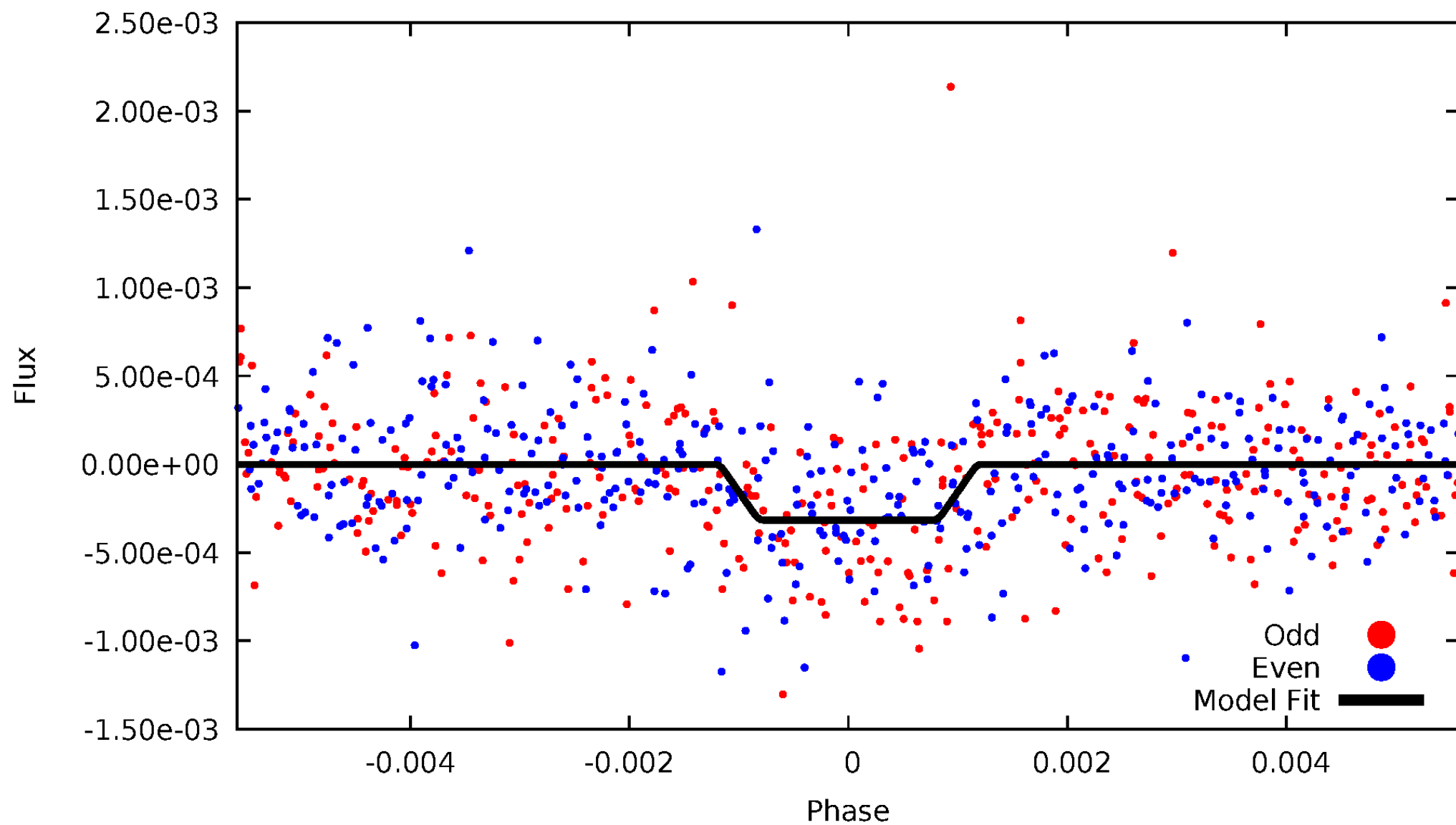
DV Odd/Even

TCE 011360805-02



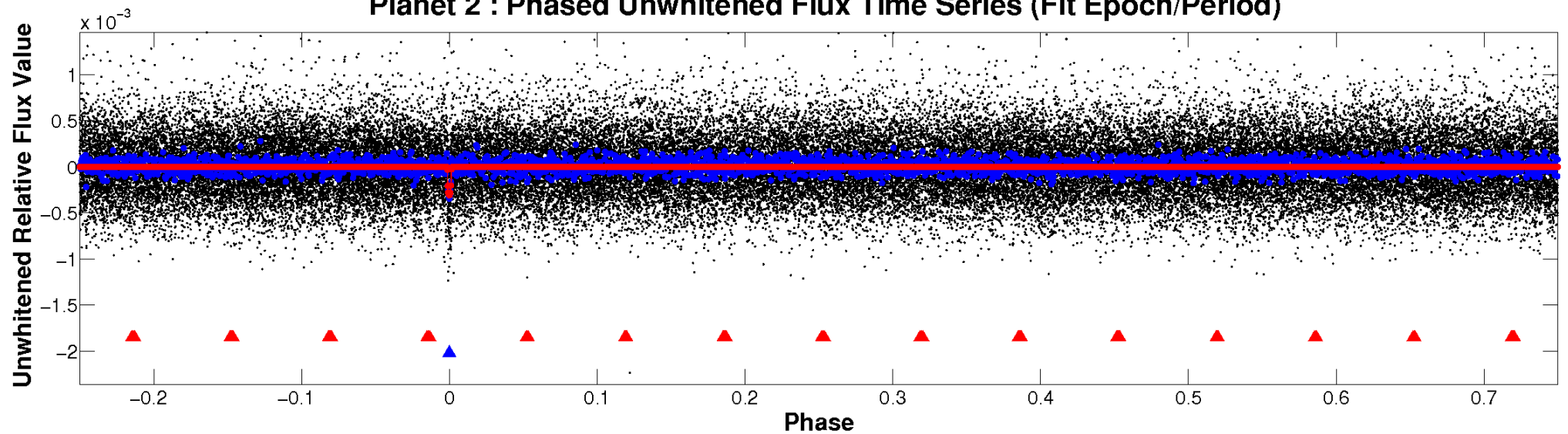
ALT Odd/Even

TCE 011360805-02

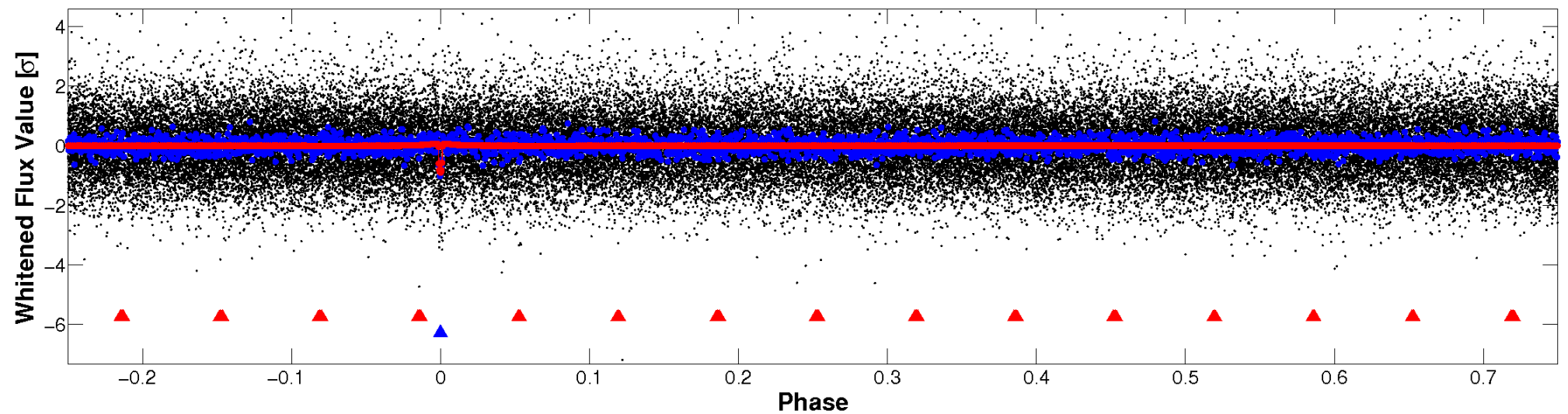


Non-Whitened Vs. Whitened Light Curve

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

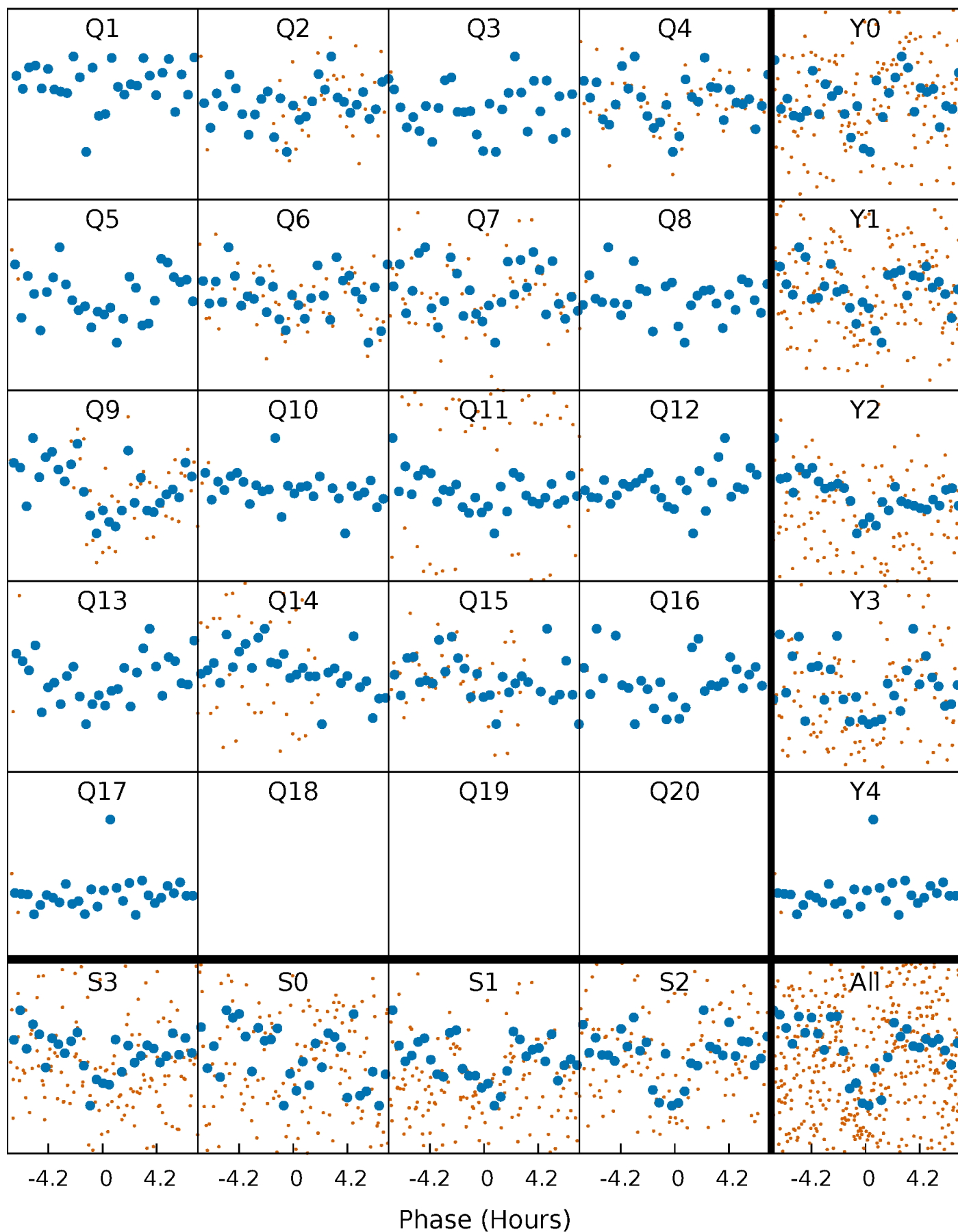


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



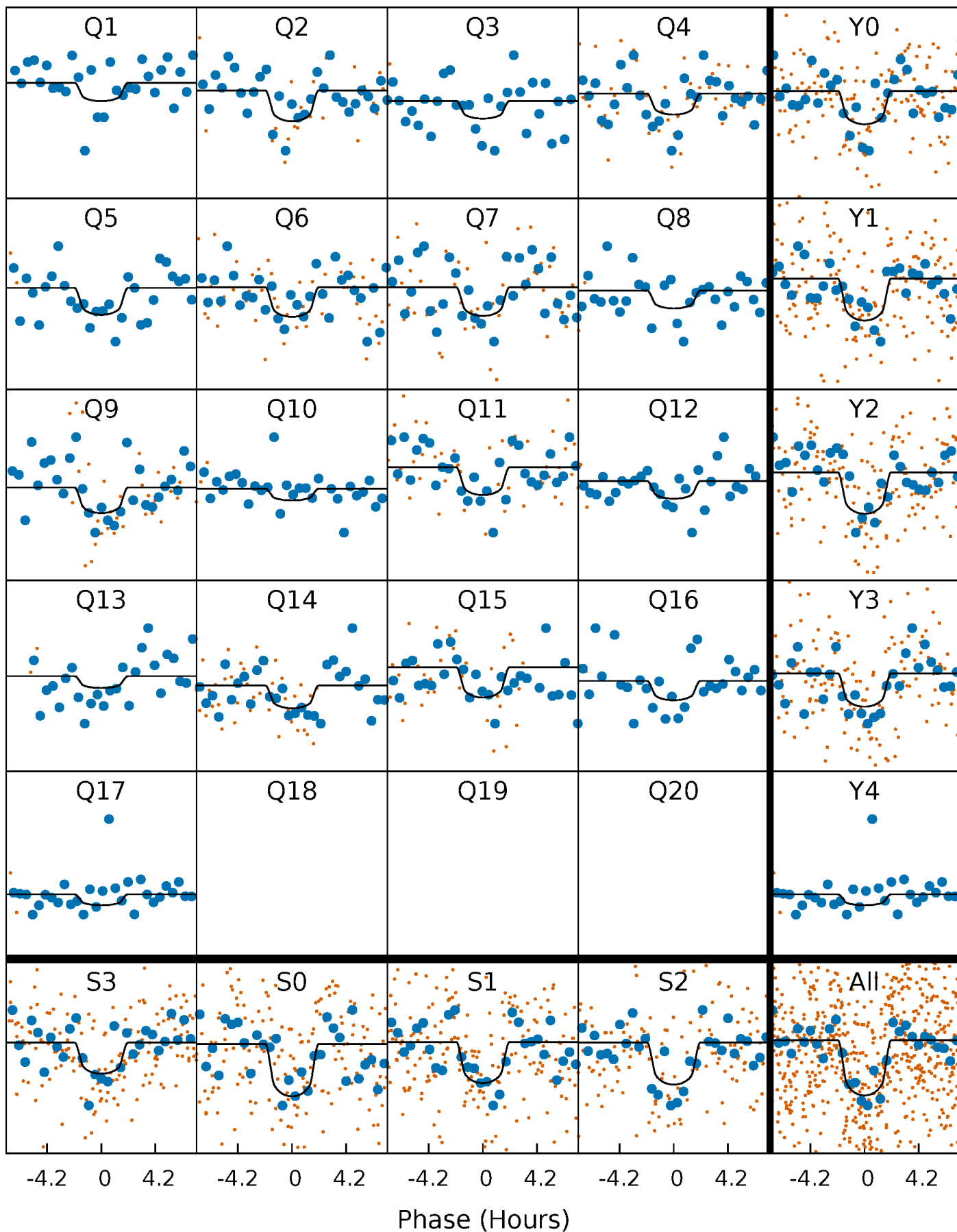
PDC Quarter-Phased Transit Curves

TCE 011360805-02 P= 57.388274 Days $T_0=141.629640$ (BKJD)



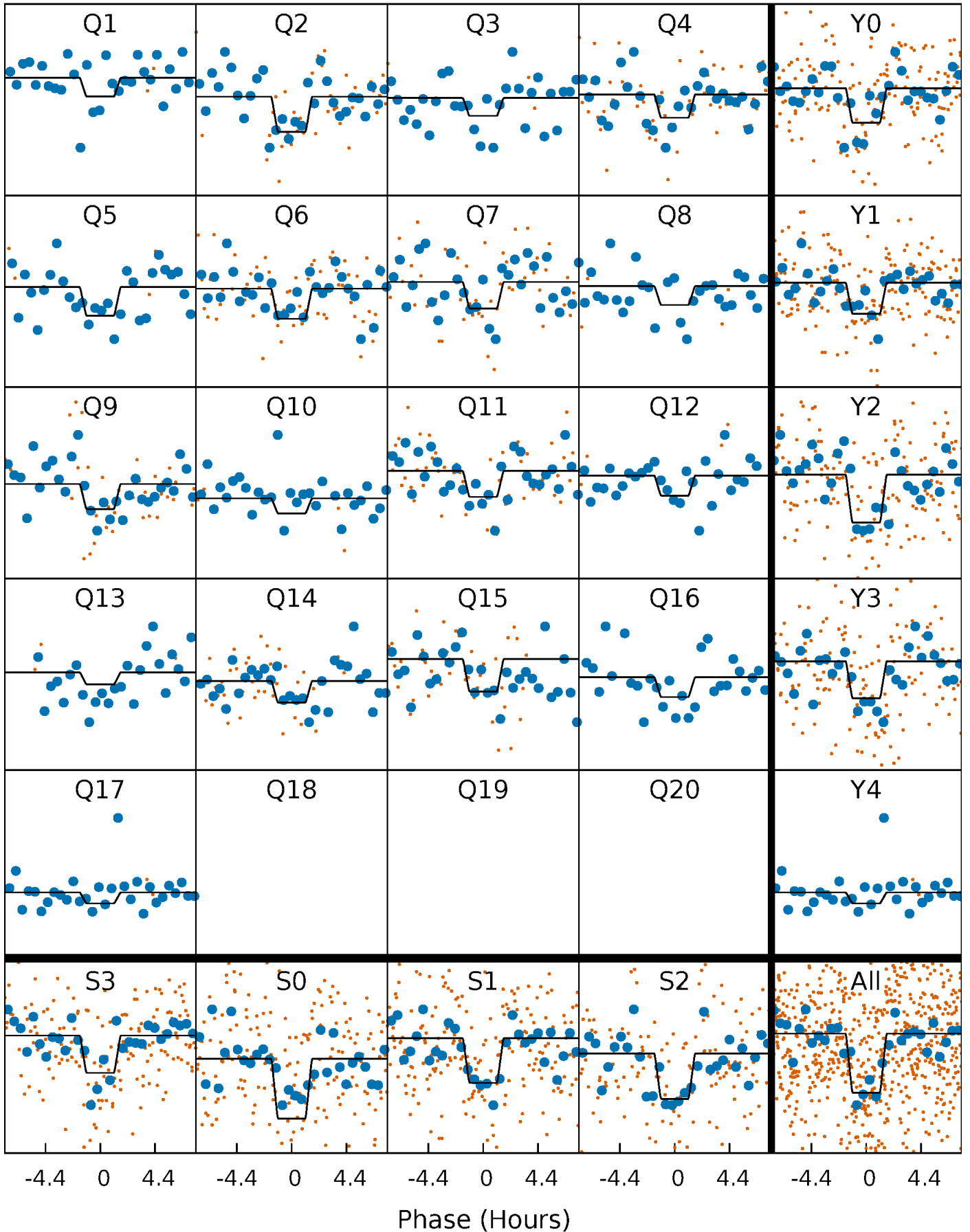
DV Quarter-Phased Transit Curves

TCE 011360805-02 P= 57.388274 Days $T_0=141.629640$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

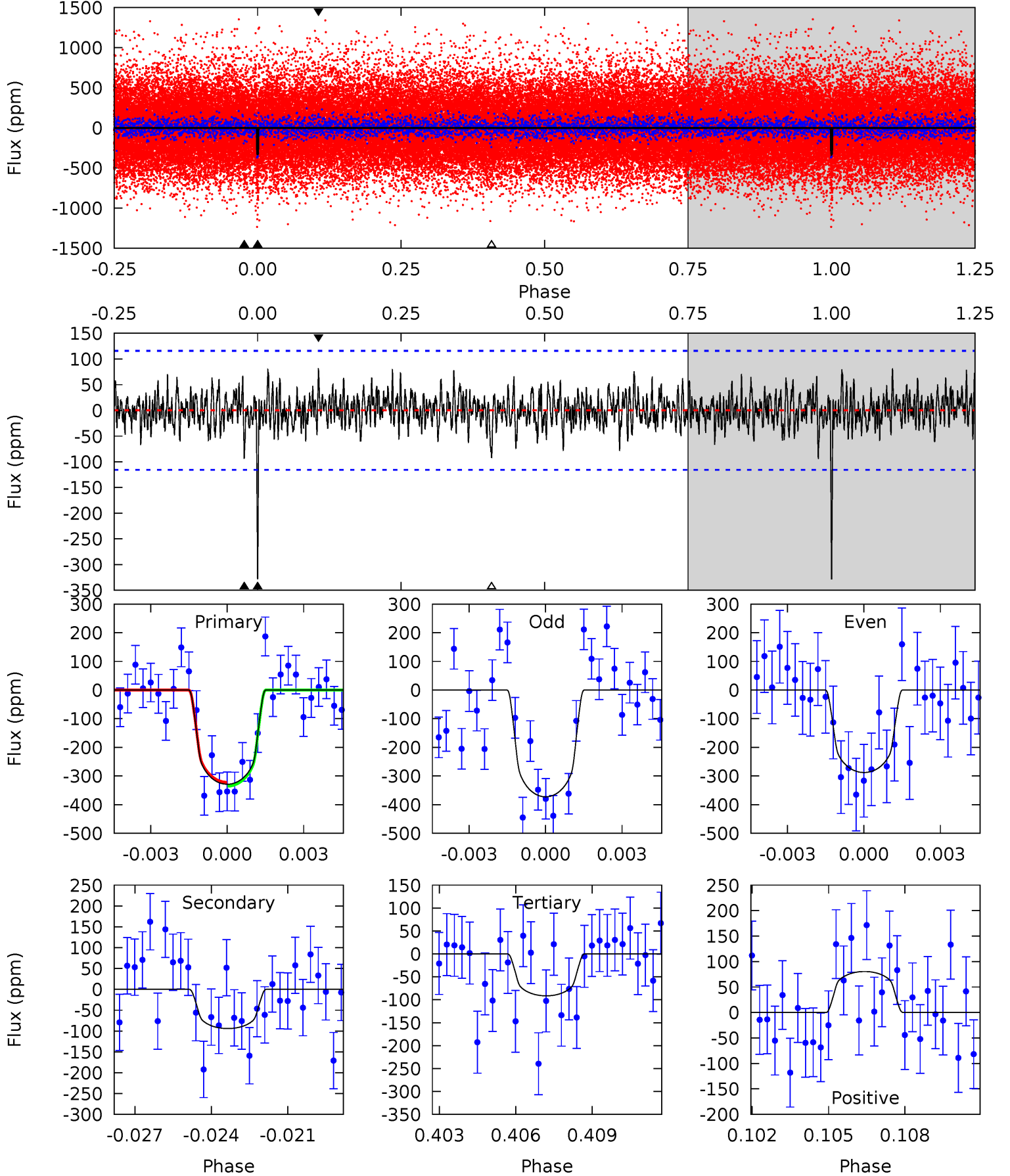
TCE 011360805-02 P= 57.386565 Days $T_0=141.652337$ (BKJD)



DV Model-Shift Uniqueness Test

011360805-02, P = 57.388274 Days, E = 84.241366 Days

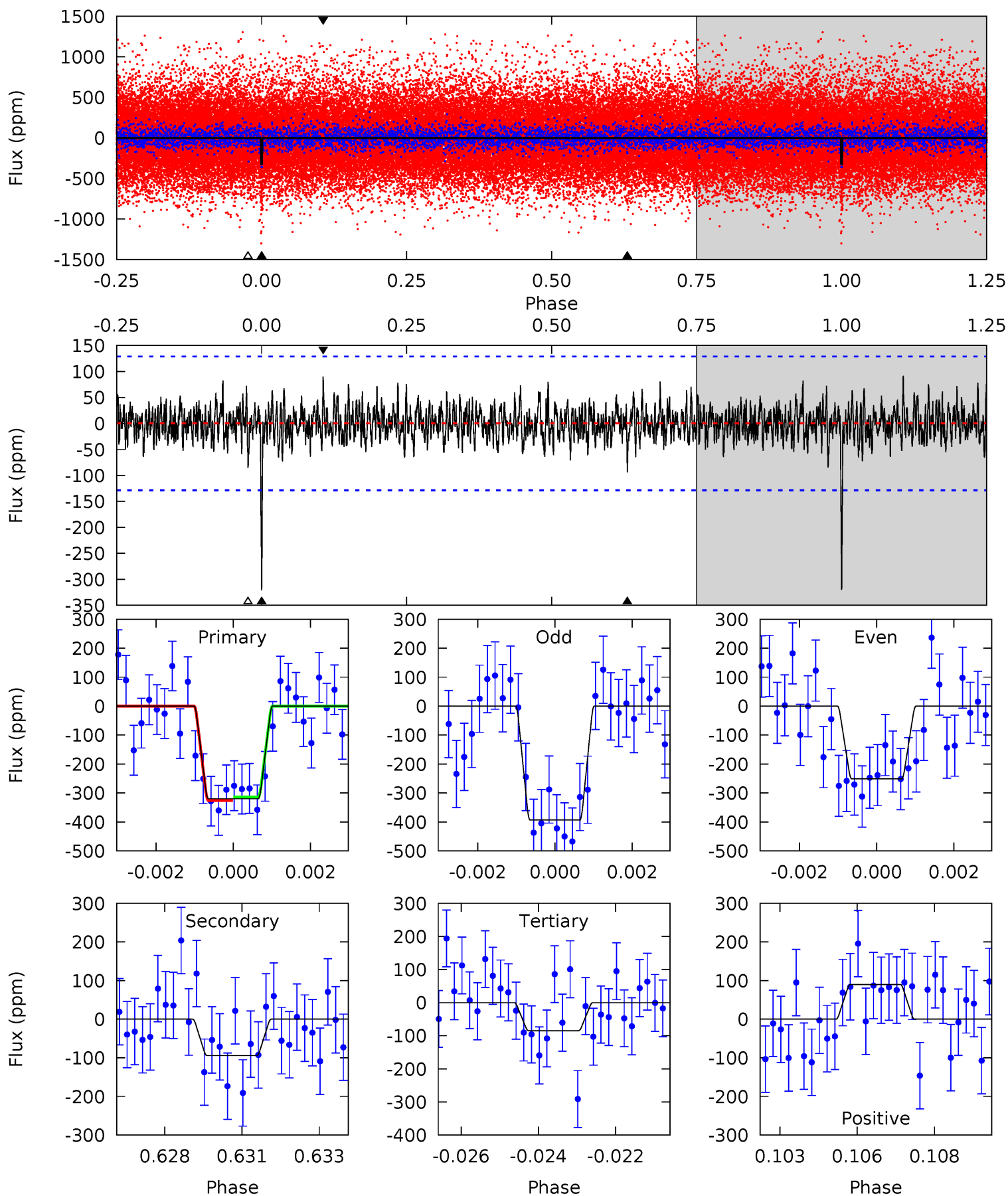
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	4.27	4.15	3.65	5.25	2.97	1.16	10.8	11.3	0.12	0.62	1.93	0.99	0.20	0.31



Alt Model-Shift Uniqueness Test

011360805-02, P = 57.386565 Days, E = 84.265772 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	3.87	3.49	3.70	5.29	3.04	1.06	9.67	9.46	0.38	0.17	2.91	0.87	0.22	0.25



Stellar Parameters For KIC 011360805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5242^{+84}_{-73}	$4.512^{+0.050}_{-0.061}$	$0.140^{+0.150}_{-0.150}$	$0.856^{+0.063}_{-0.046}$	$0.869^{+0.046}_{-0.041}$	$1.948^{+0.351}_{-0.387}$
	+2%/-1%	+1%/-1%	+107%/-107%	+7%/-5%	+5%/-5%	+18%/-20%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011360805-02 / KOI 2422.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-94 ± 22	$1.93^{+1.27}_{-1.19}$	568^{+15}_{-13}	3893^{+1861}_{-583}	1050^{+5979}_{-675}
Alt.	-94 ± 24	$1.83^{+1.26}_{-1.10}$	568^{+14}_{-13}	3977^{+1814}_{-663}	1201^{+6568}_{-823}

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

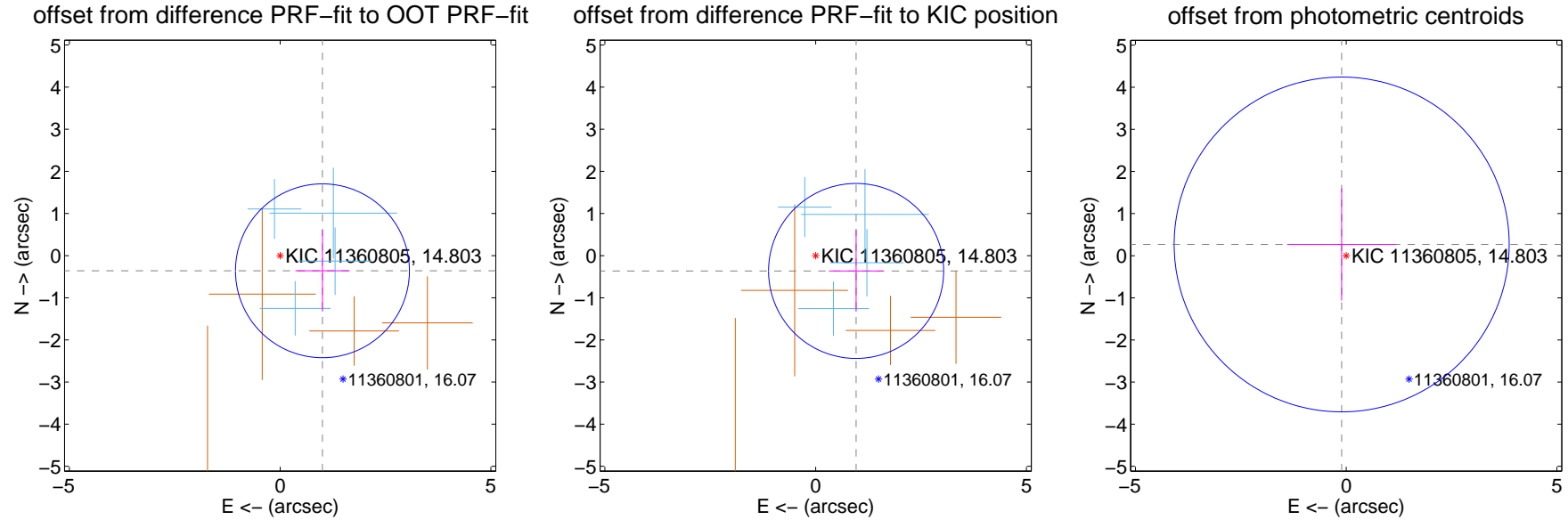
DV Centroid Data

Supplemental centroid analysis for 011360805-02. Kepler magnitude: 14.80. Transit SNR 10.22

There are 4 quarters with good PRF difference image offsets

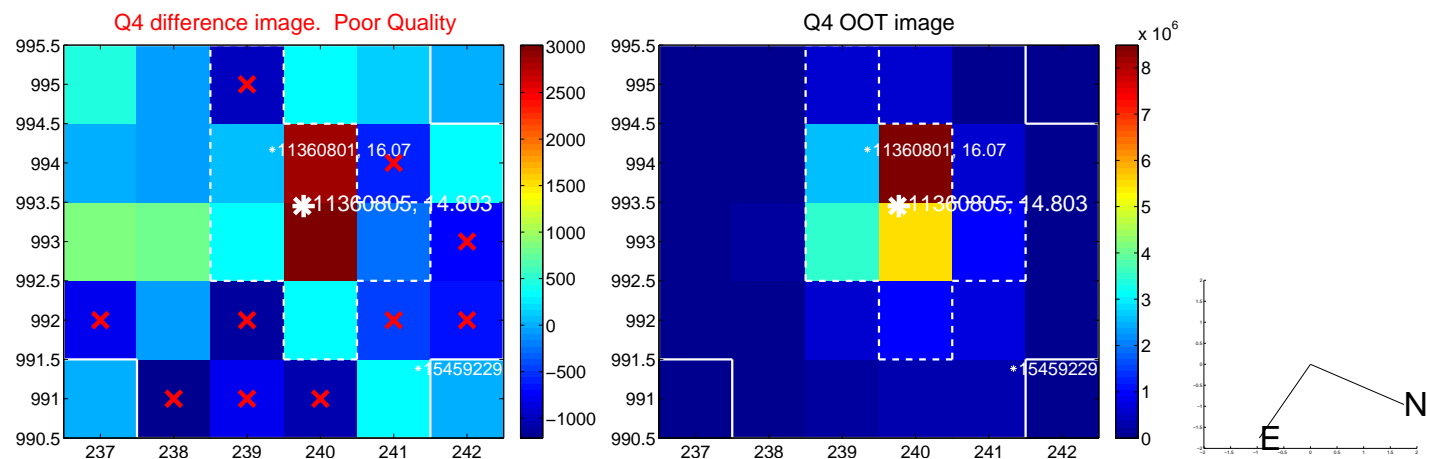
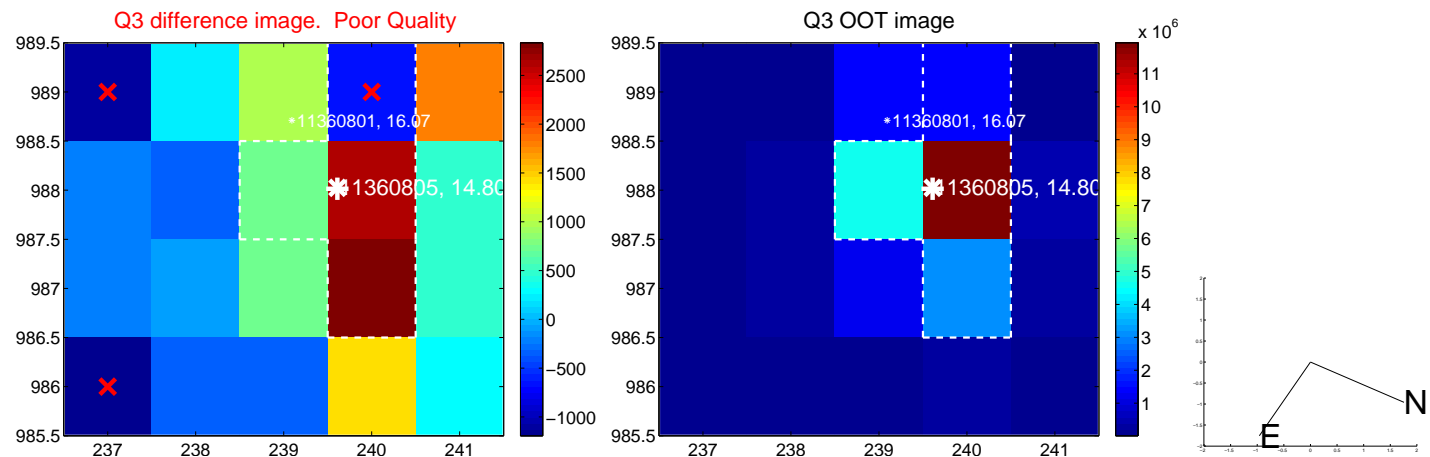
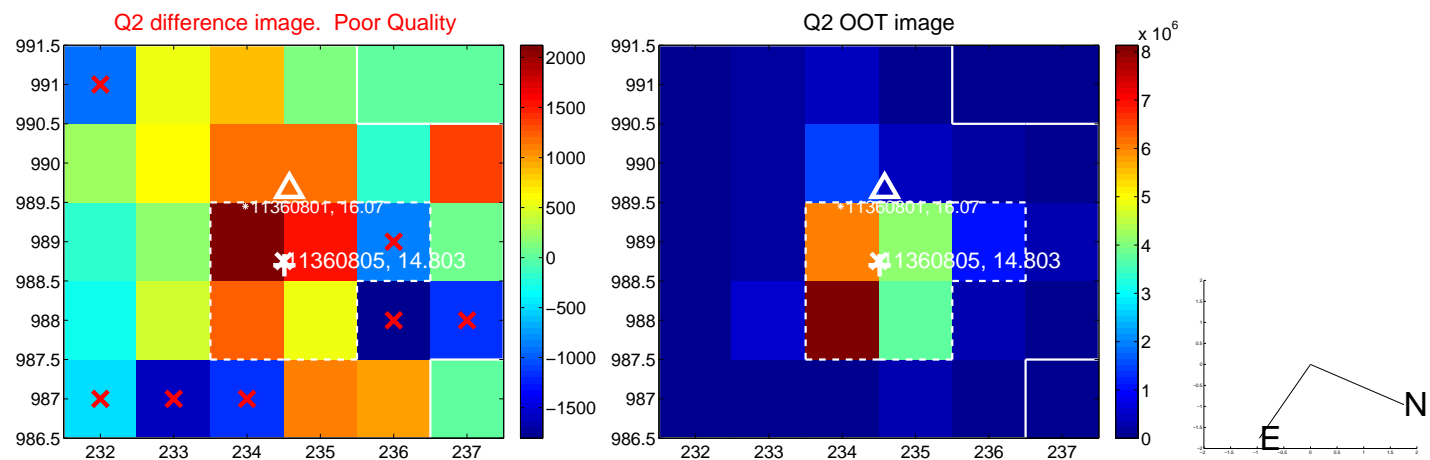
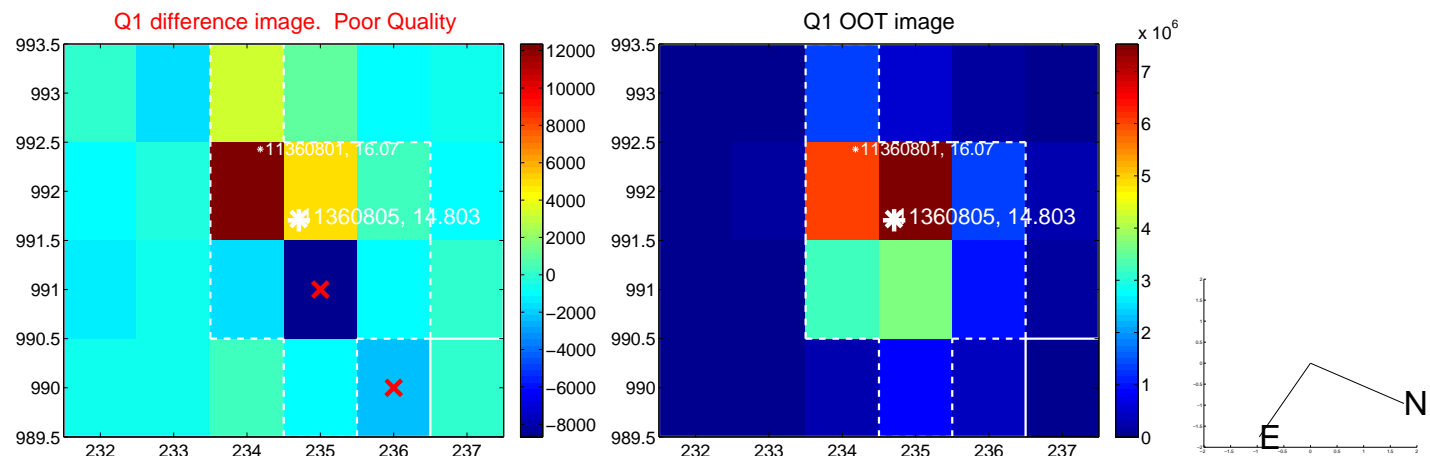
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.067 ± 0.688	1.55	-1.004 ± 0.643	-0.360 ± 0.969
PRF-fit source offset from KIC position	1.027 ± 0.692	1.48	-0.960 ± 0.643	-0.364 ± 0.969
photometric centroid source offset	0.29 ± 1.33	0.22	0.11 ± 1.29	0.27 ± 1.33

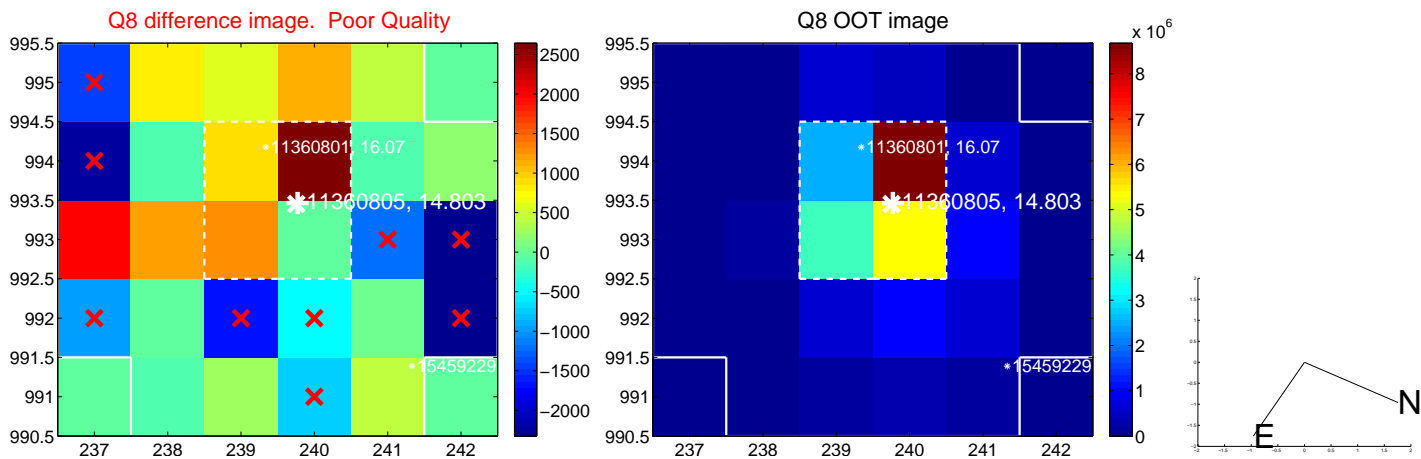
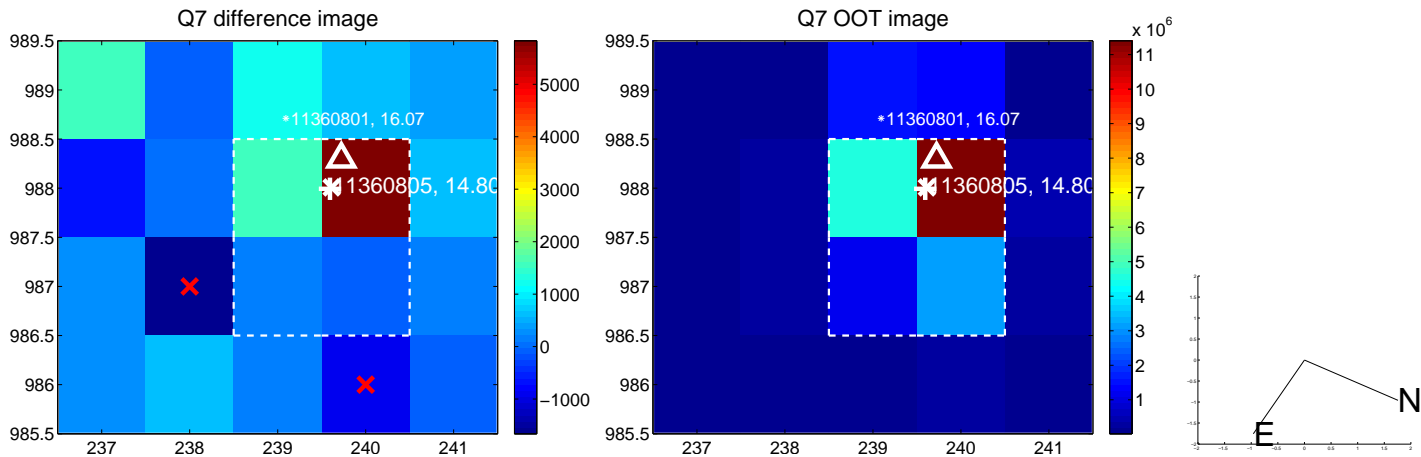
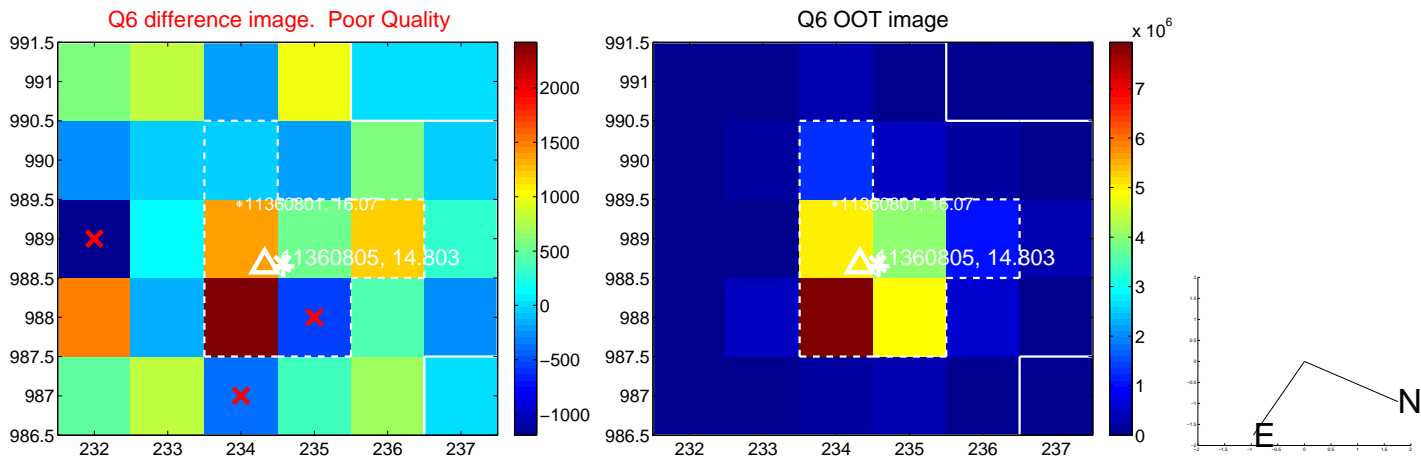
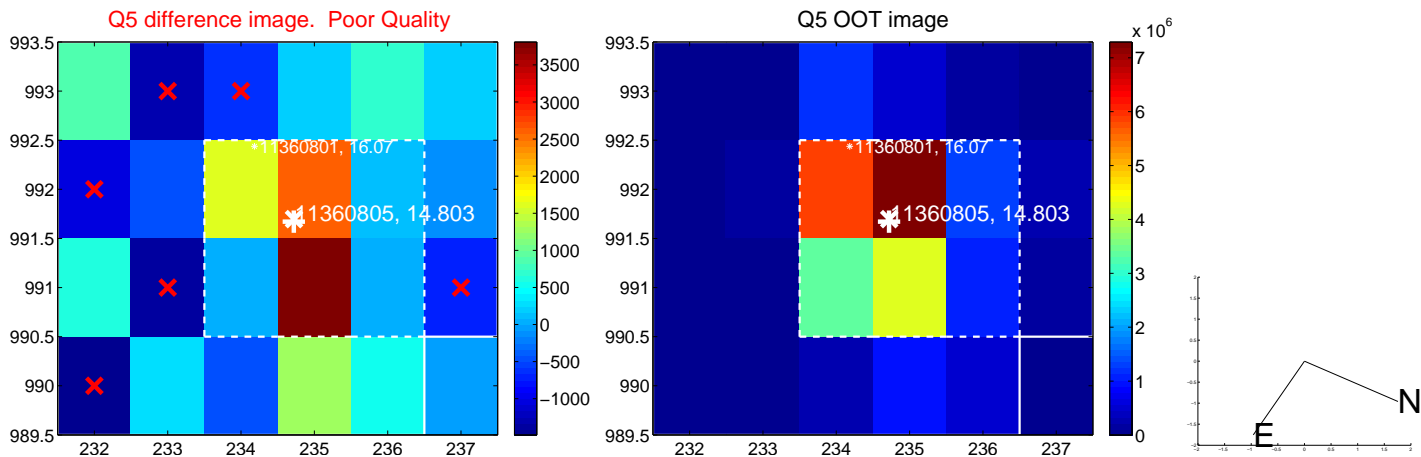


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

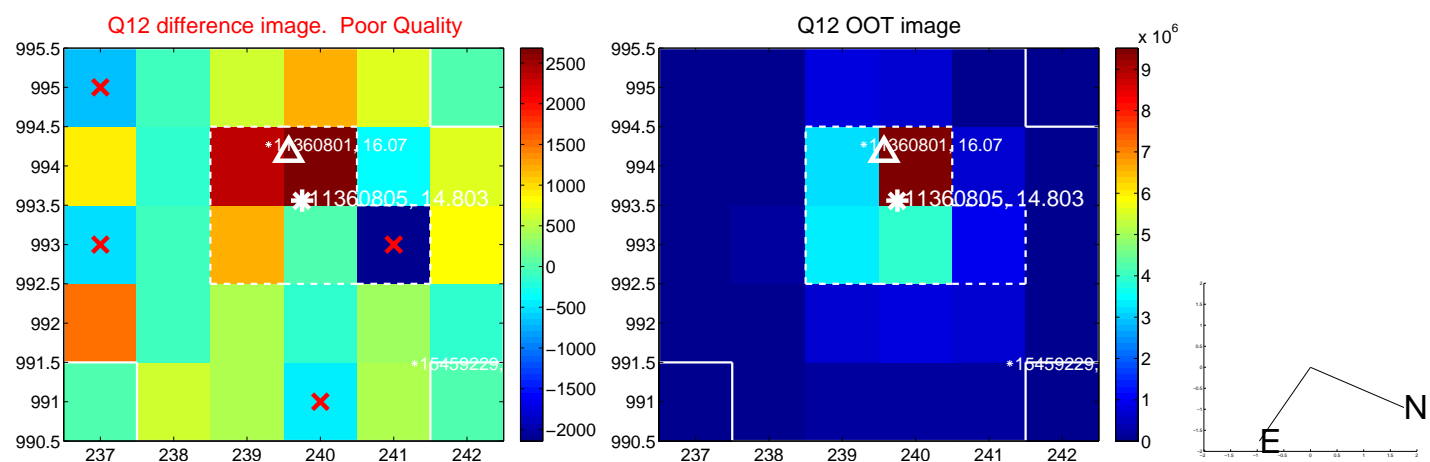
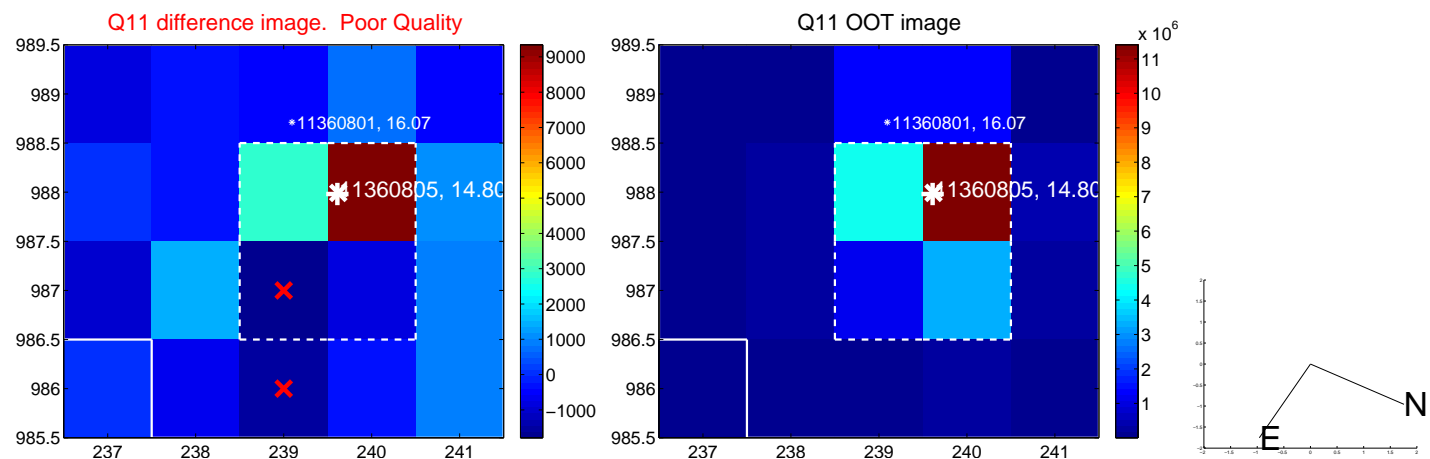
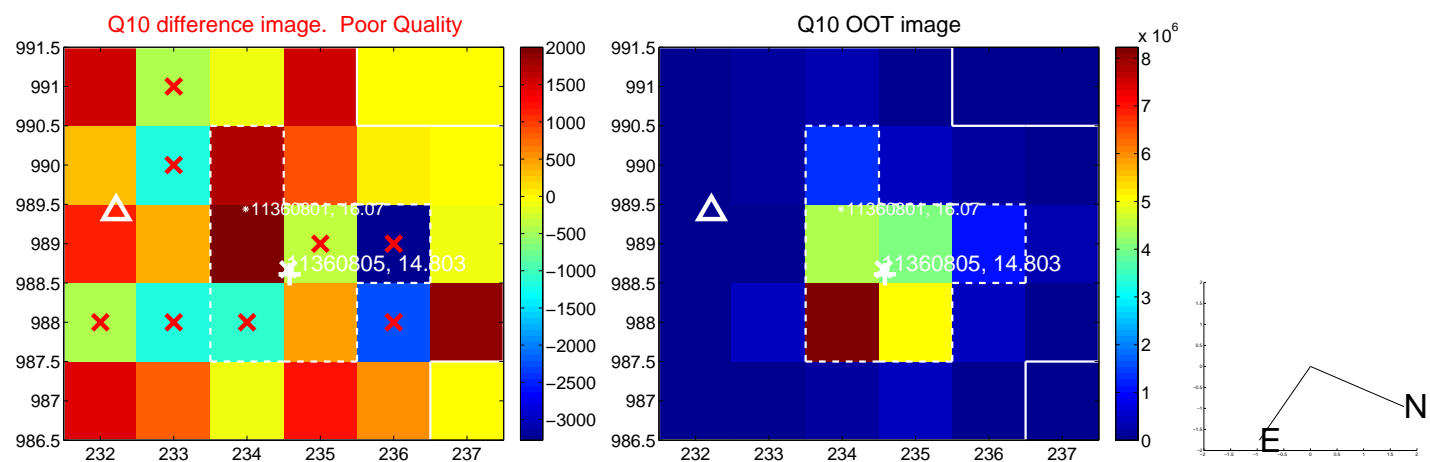
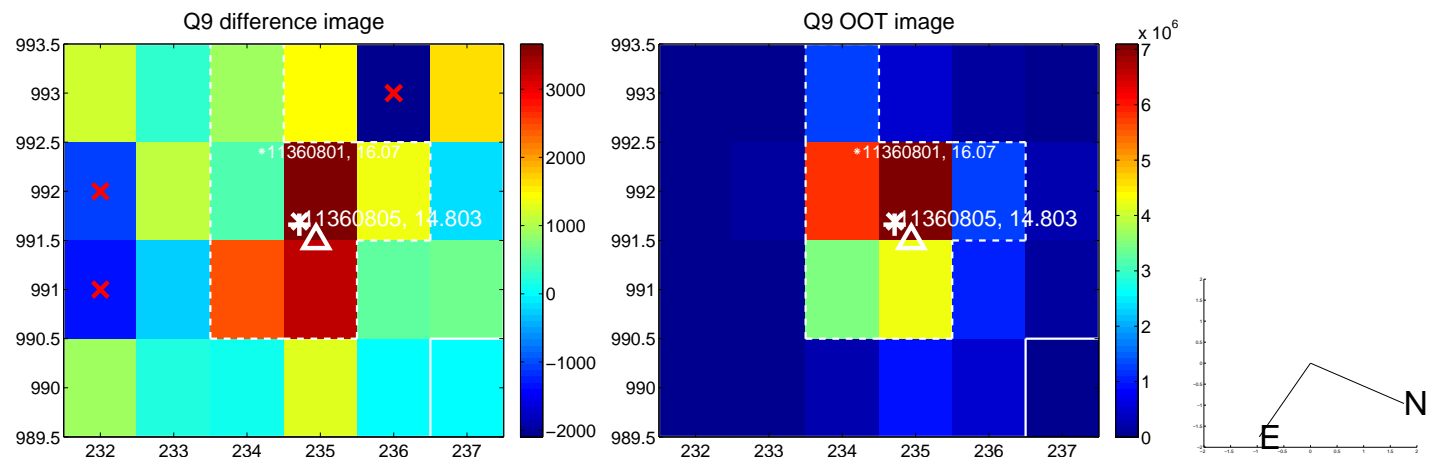
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



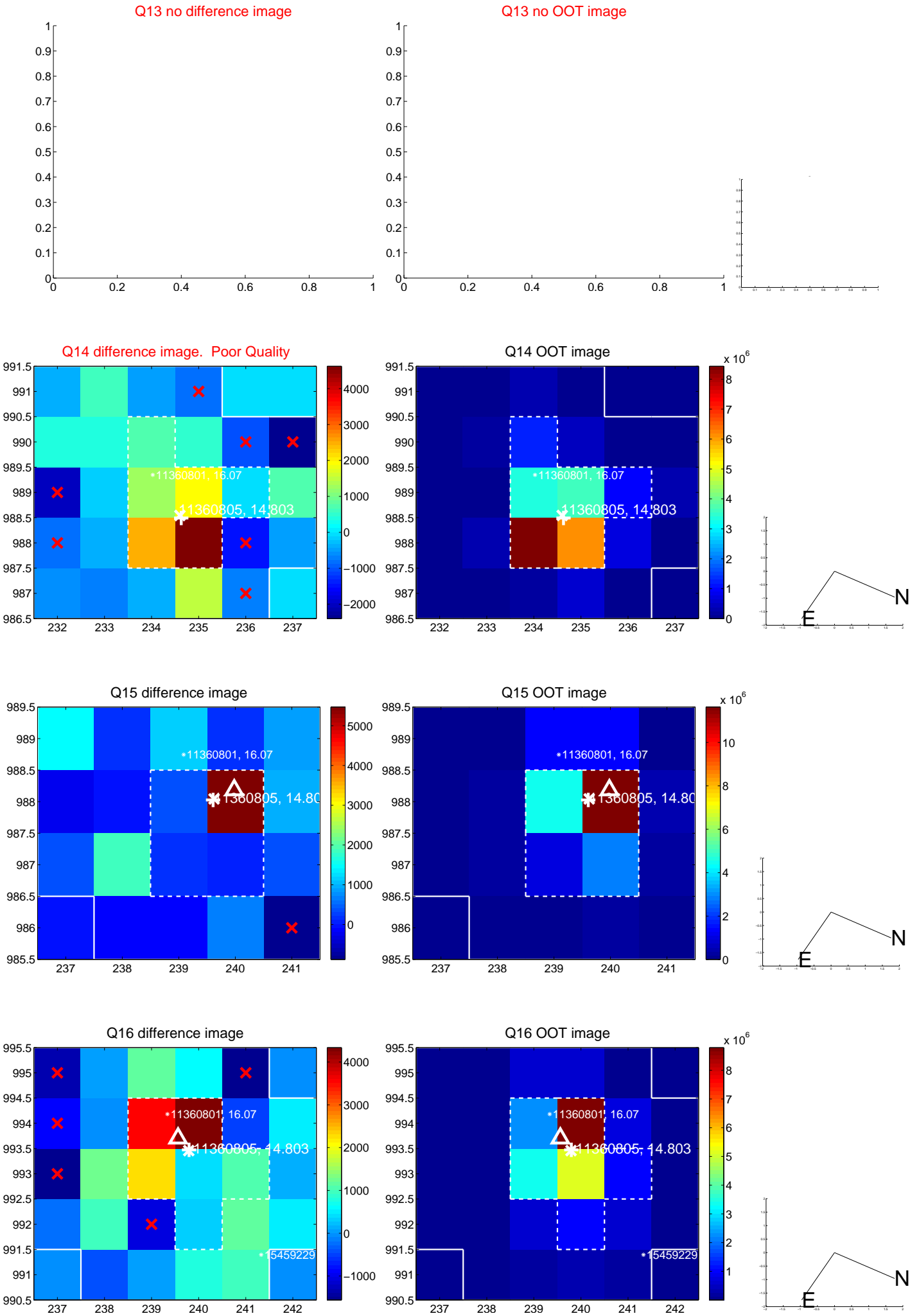
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



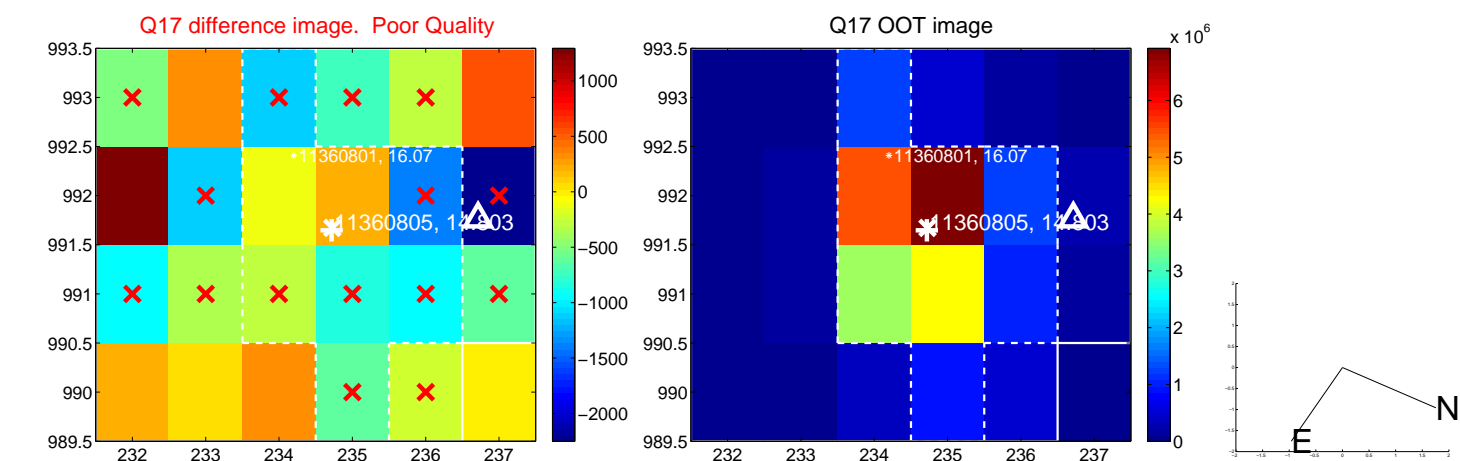
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



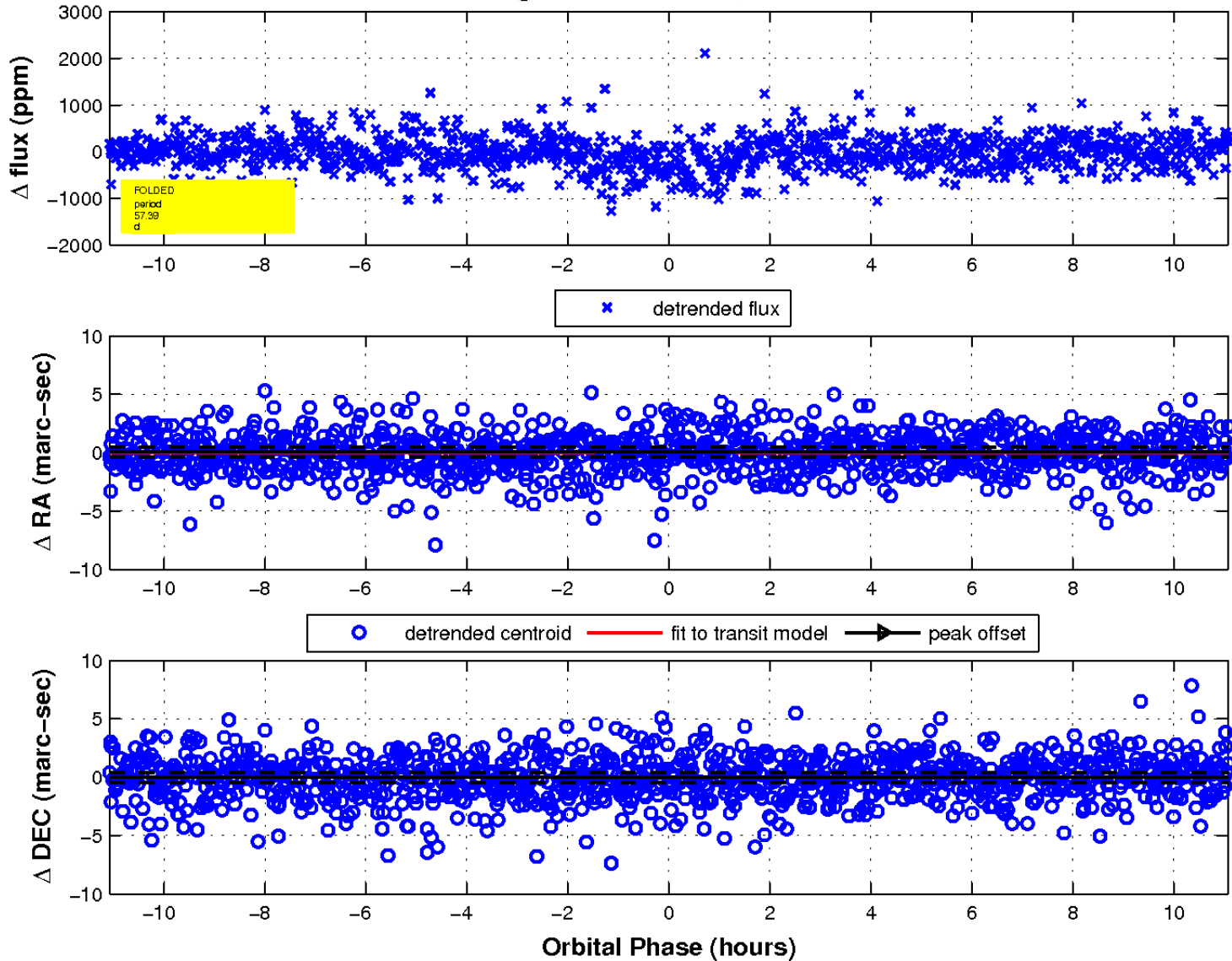
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

