

KIC 012156930

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})
012156930-01	OBS	8076.01	71.106941	176.715675	121.0	7.066	7.6	7.7	1.22	6339	1.54	17.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012156930-01	OBS	PC	0.75	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.

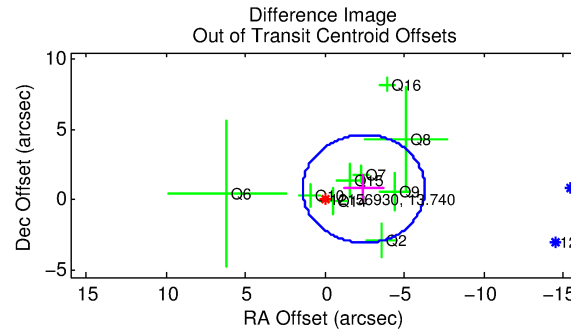
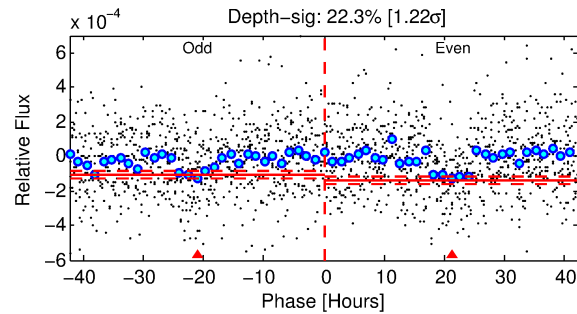
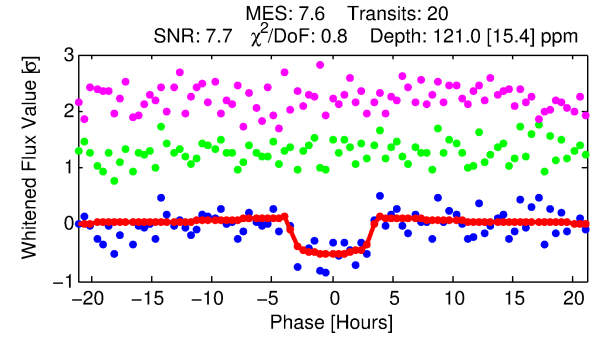
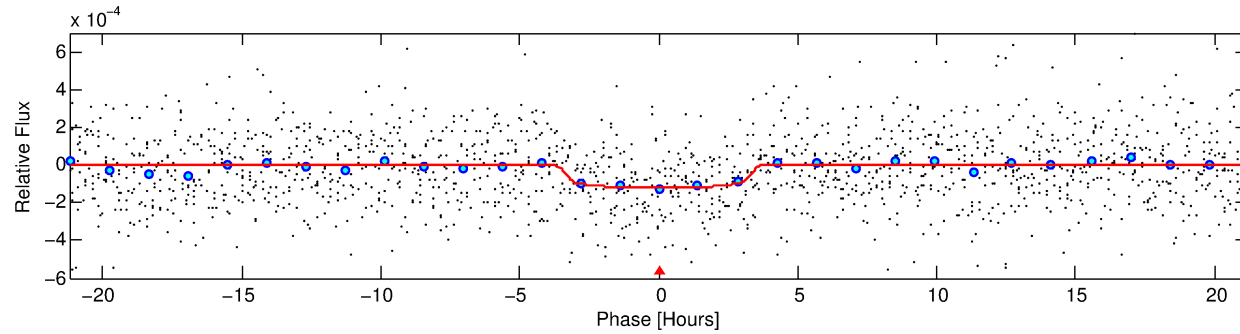
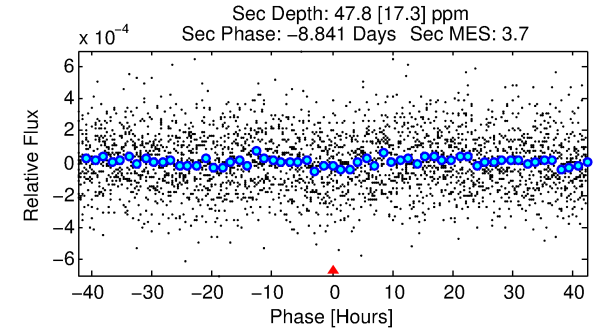
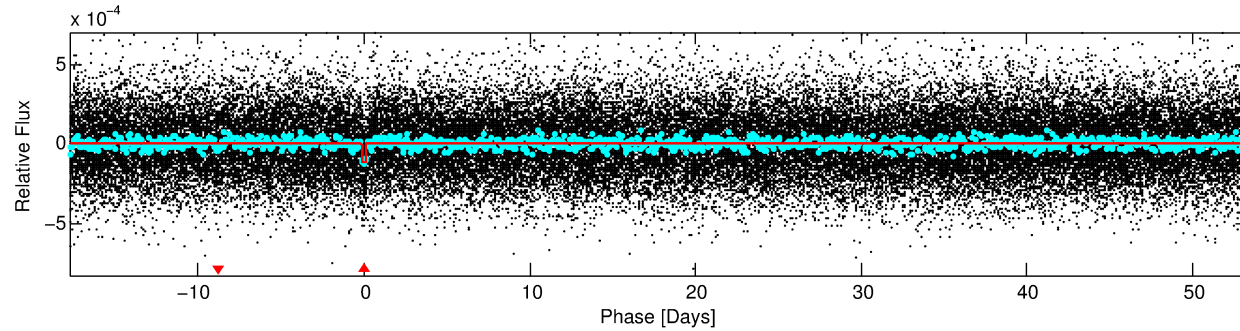
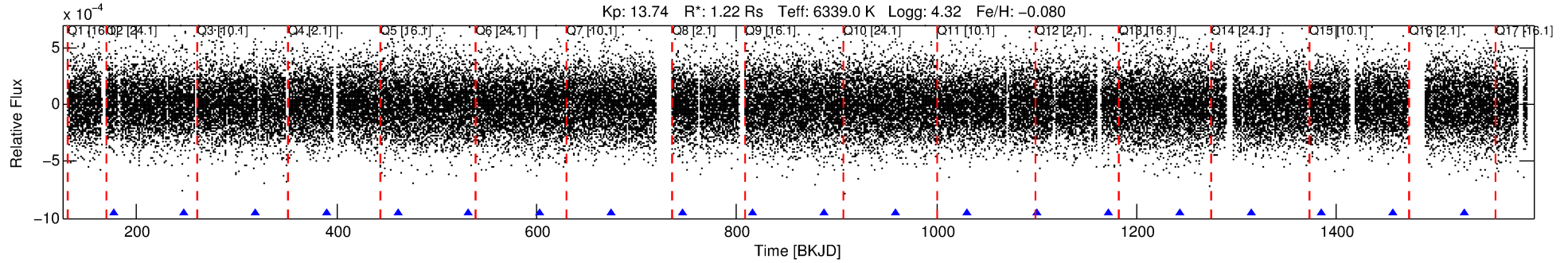
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012156930-01

No Significant Match Found

DV One-Page Summary

KIC: 12156930 Candidate: 1 of 1 Period: 71.107 d



DV Fit Results:

Period = 71.10694 [0.00120] d
Epoch = 176.7157 [0.0137] BKJD
Rp/R* = 0.0116 [0.0044]
a/R* = 39.42 [80.70]
b = 0.87 [0.57]
Teff = 17.71 [7.05]
Teff = 523 [52] K
Rp = 1.55 [0.76] Re
a = 0.3498 [0.0911] AU
Ag = 1348.10 [1237.62] [1.09σ]
Teffp = 4901 [1042] K [4.20σ]

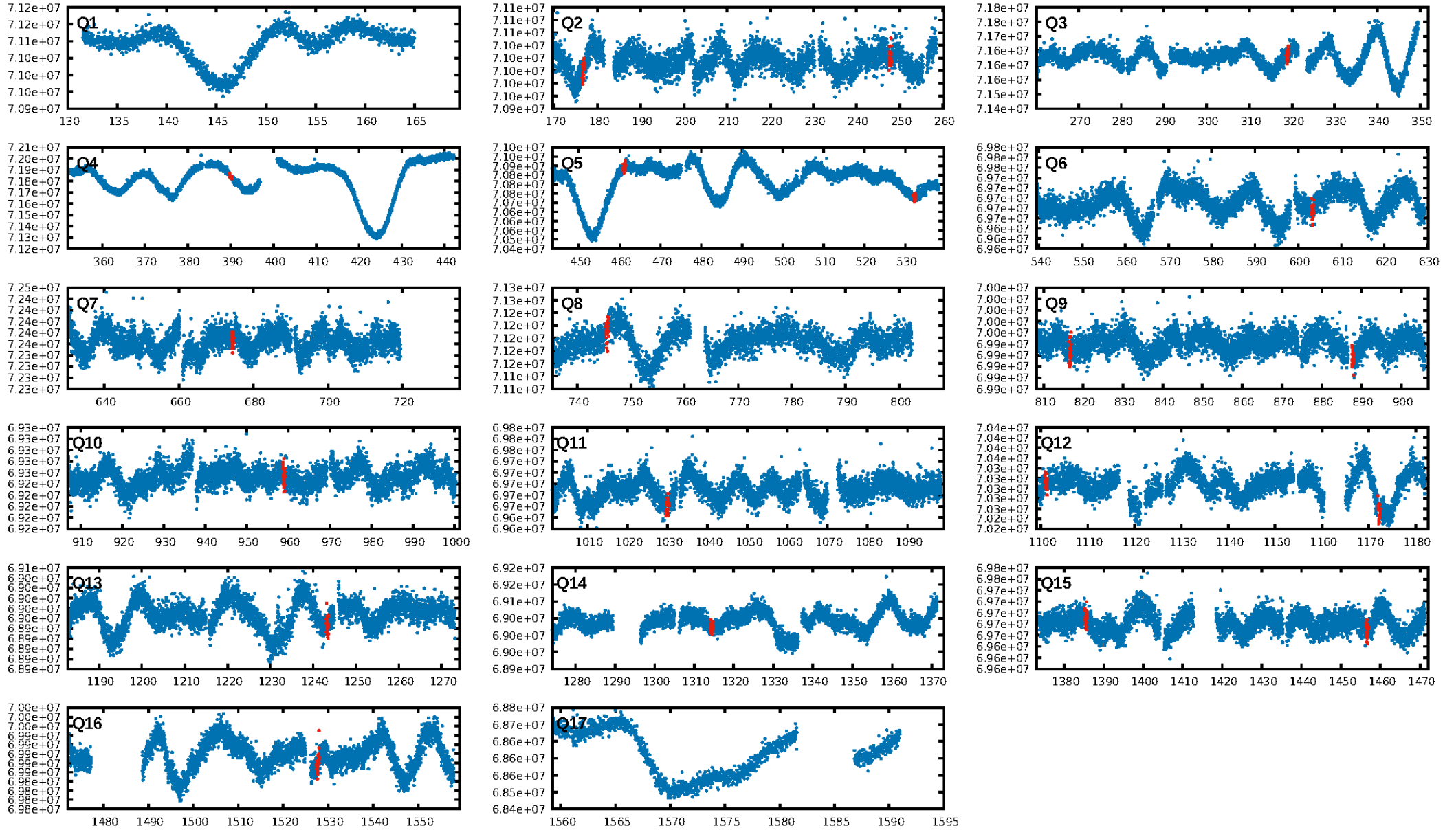
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.10e-13
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: -10.71
Centroid-sig: 18.7%
Centroid-so: 3.890 arcsec [2.33σ]
OotOffset-rm: 2.583 arcsec [2.01σ]
KicOffset-rm: 2.743 arcsec [2.43σ]
OotOffset-st: 4/2/2/1 [9]
KicOffset-st: 4/2/2/1 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 1.00 [14/14]

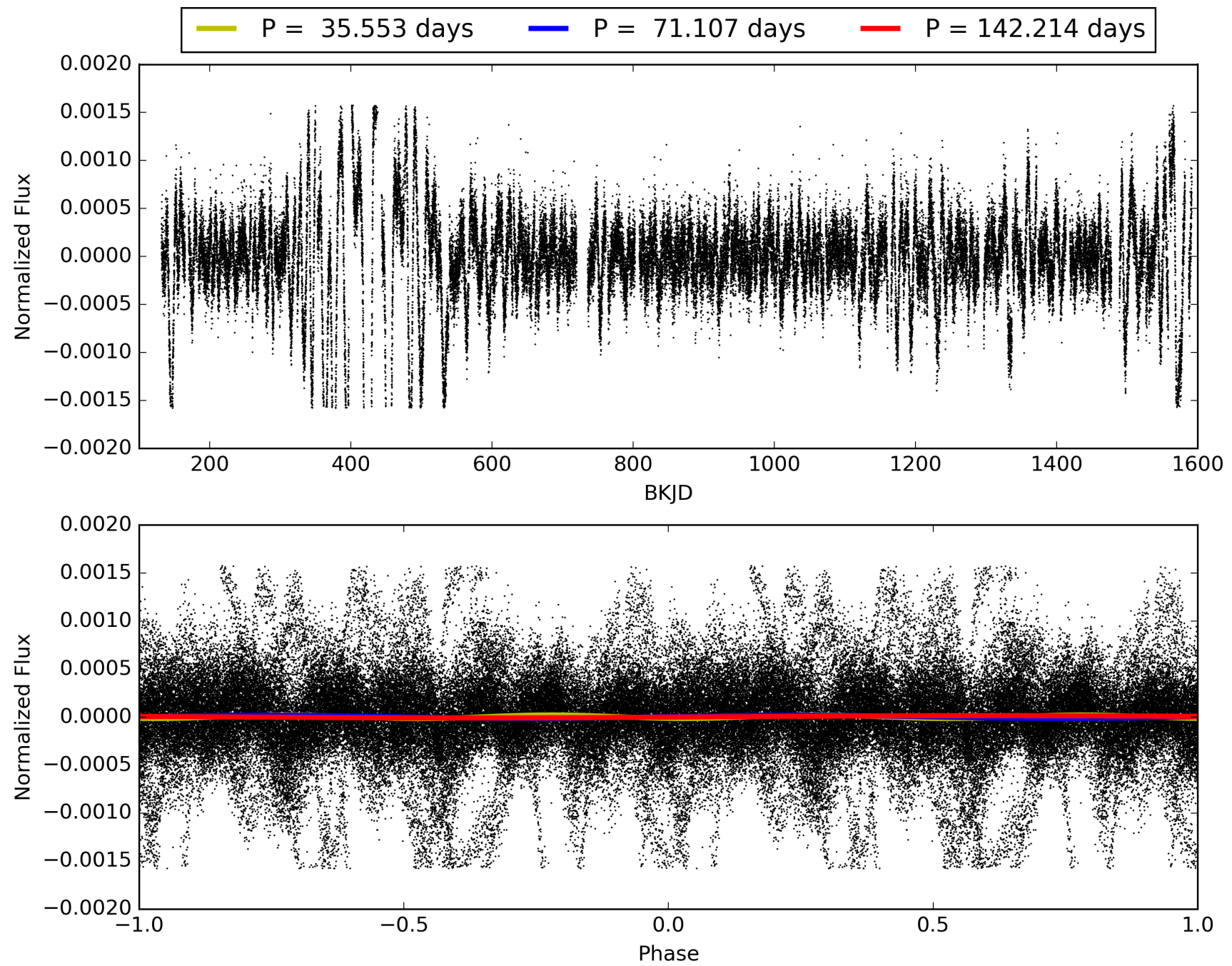
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:18:46 Z

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

TCE 012156930-01, PDC Light Curves

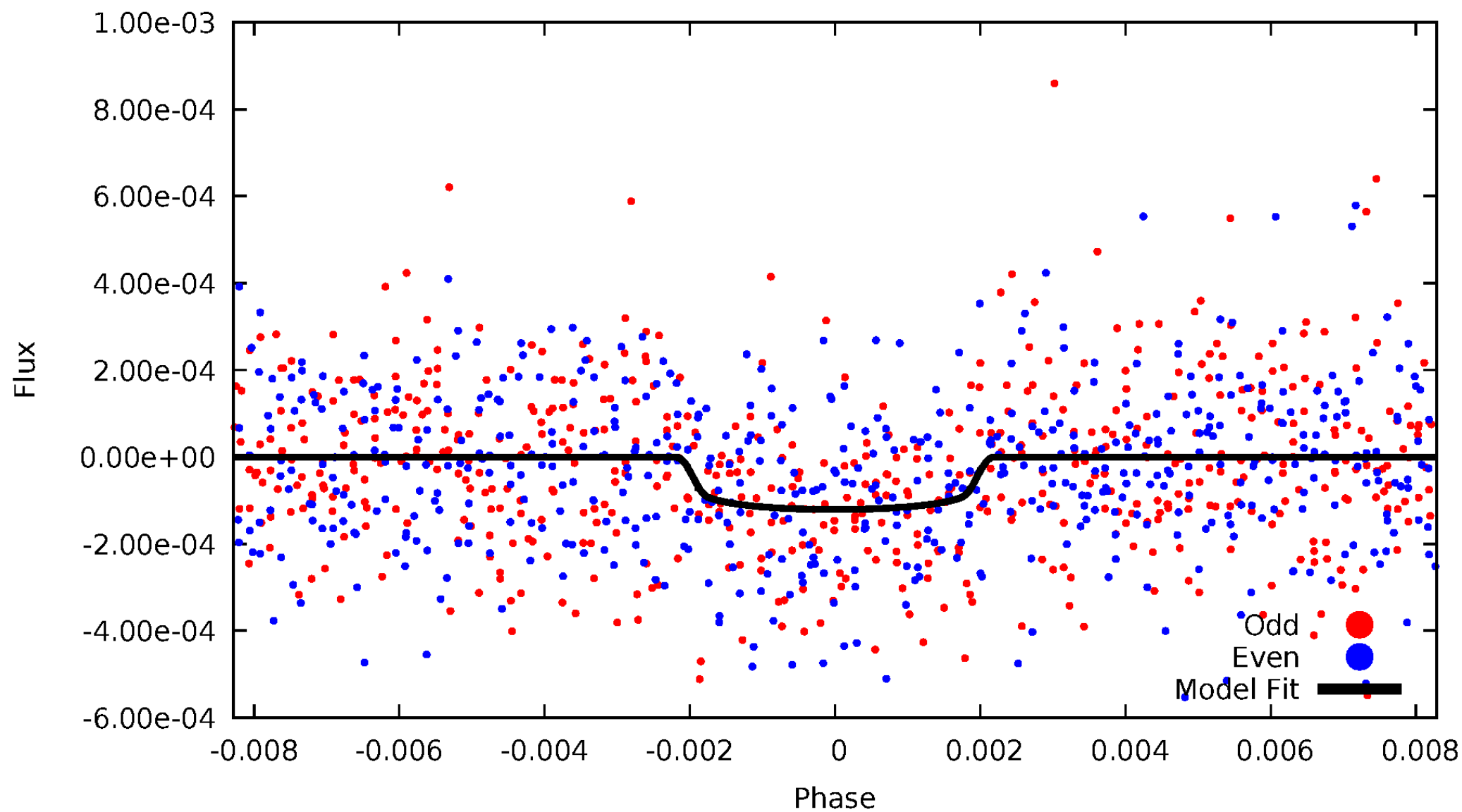


TCE 012156930-01



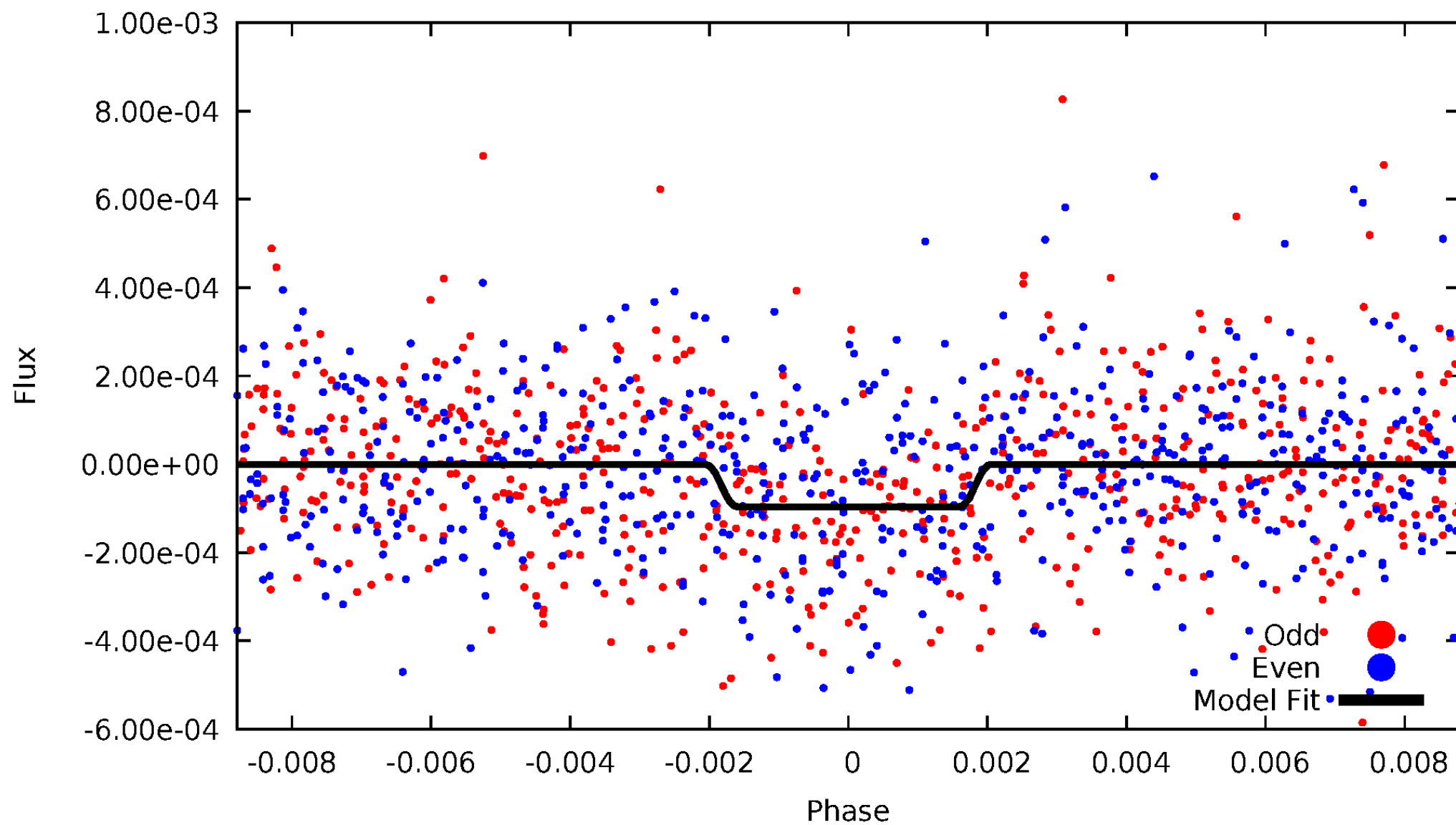
DV Odd/Even

TCE 012156930-01

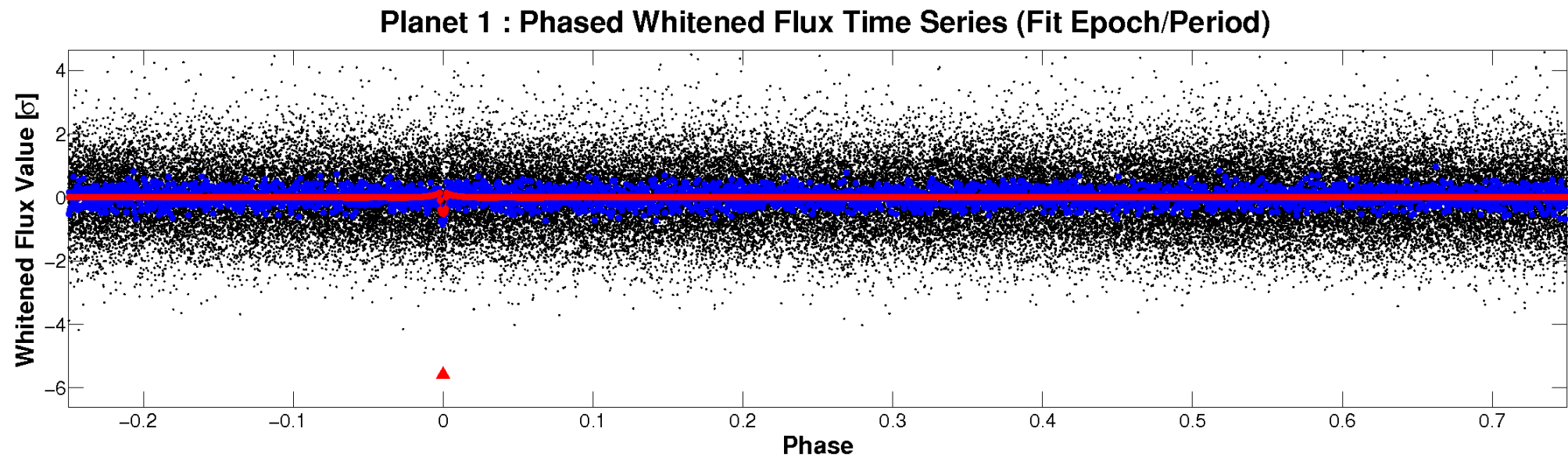
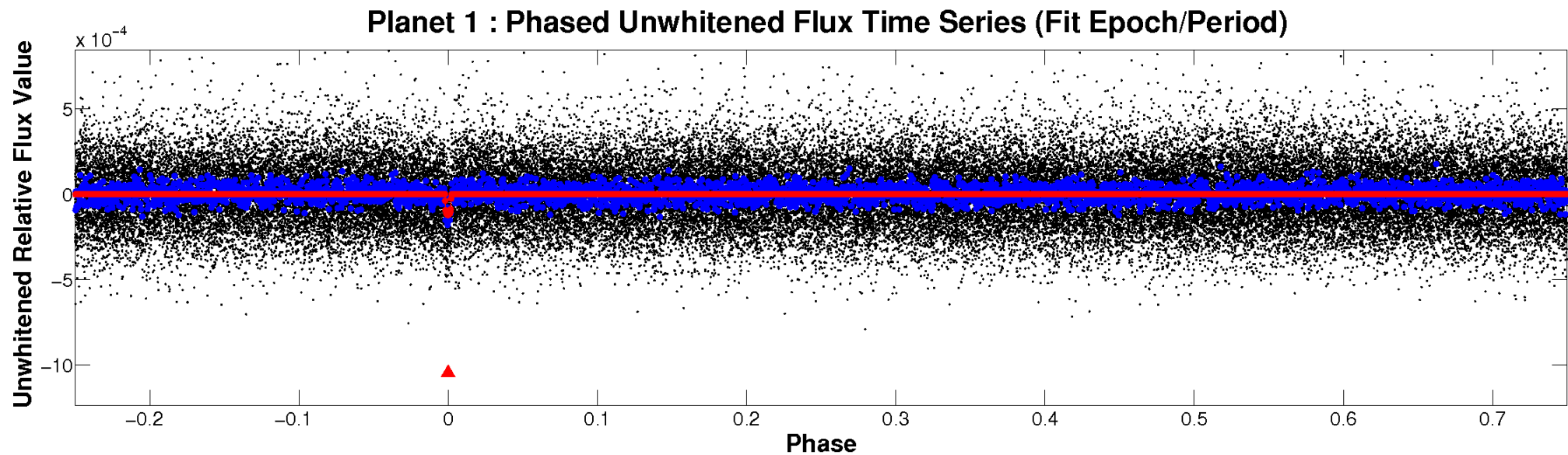


ALT Odd/Even

TCE 012156930-01

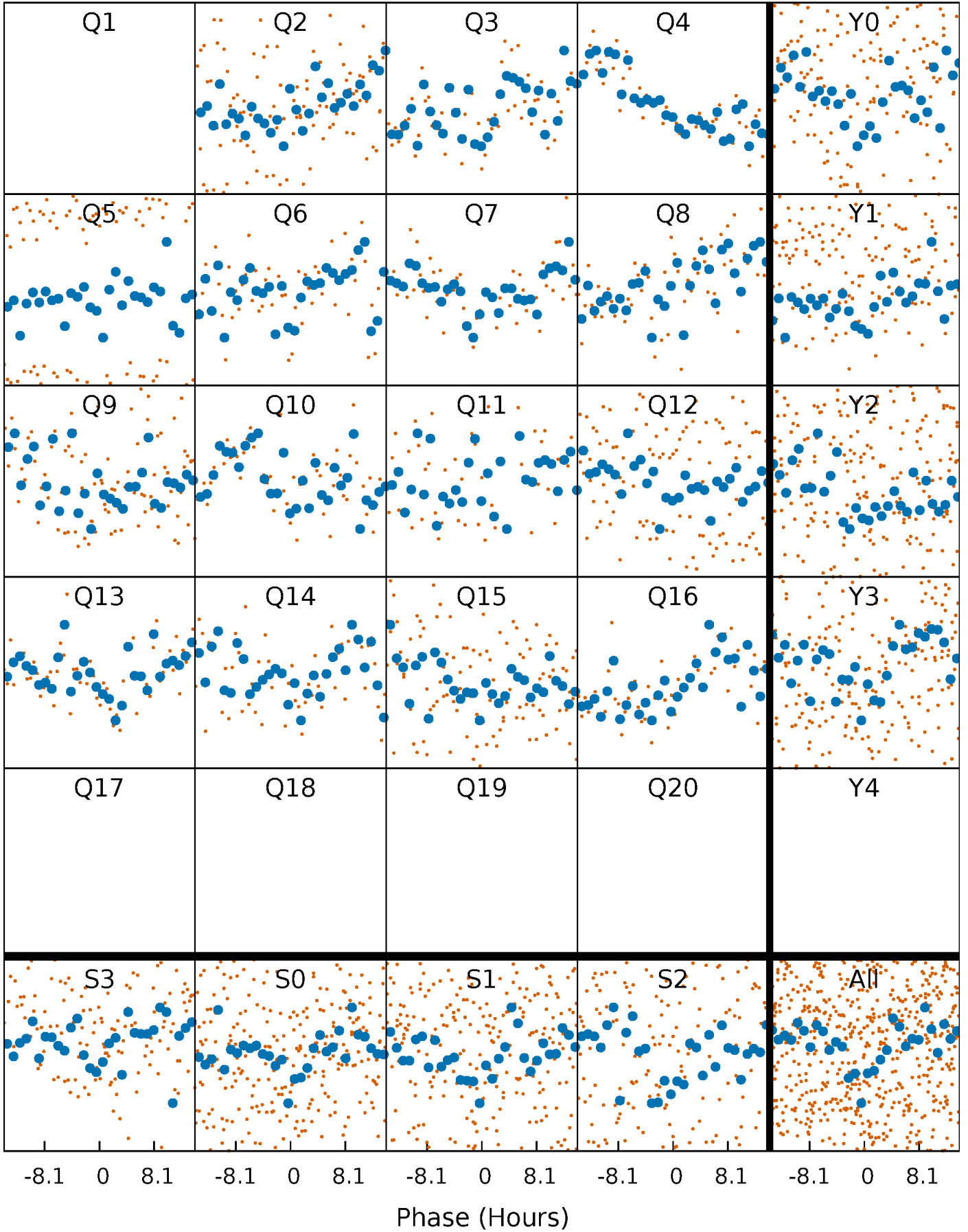


Non-Whitened Vs. Whitened Light Curve



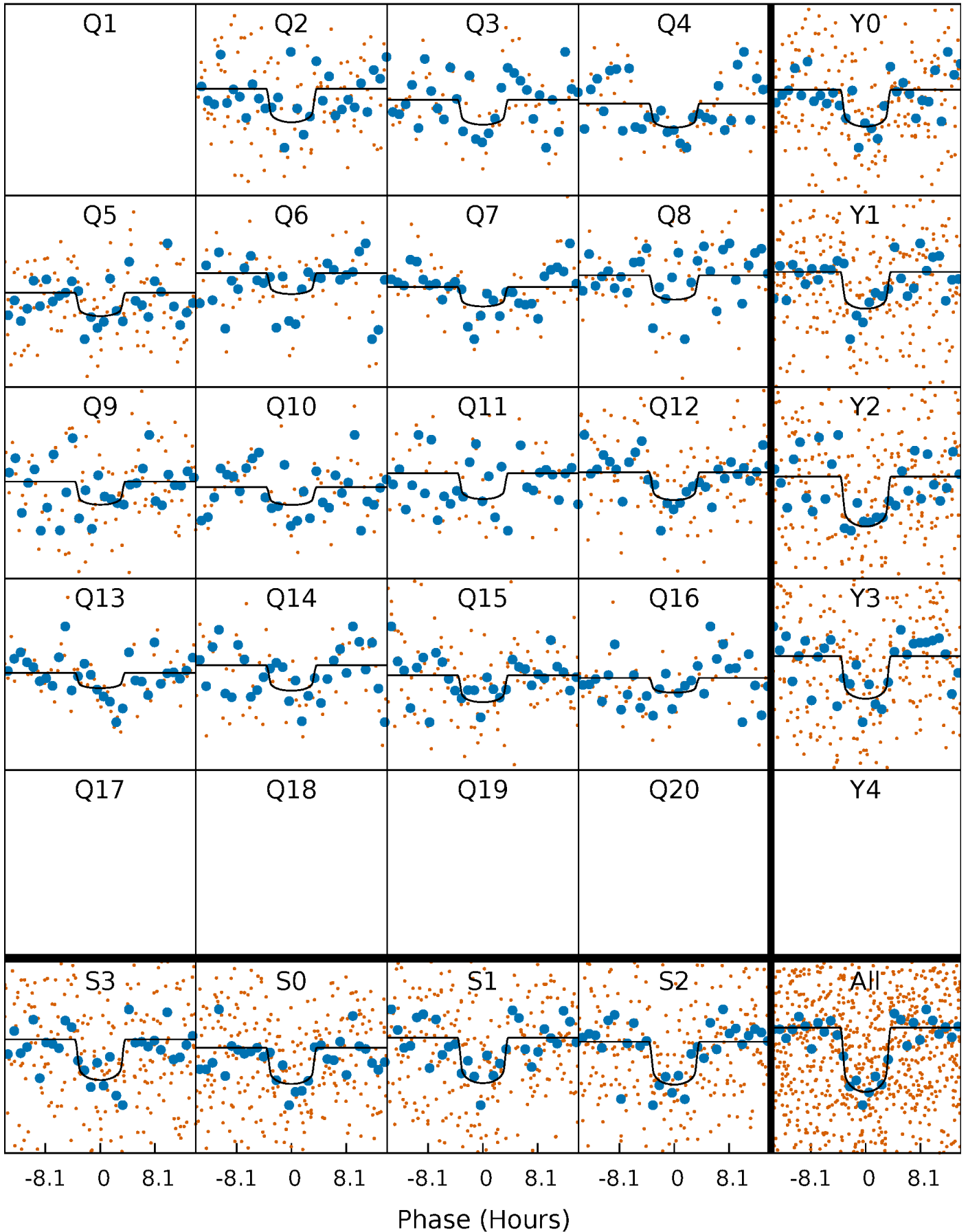
PDC Quarter-Phased Transit Curves

TCE 012156930-01 P= 71.106941 Days $T_0=176.715675$ (BKJD)



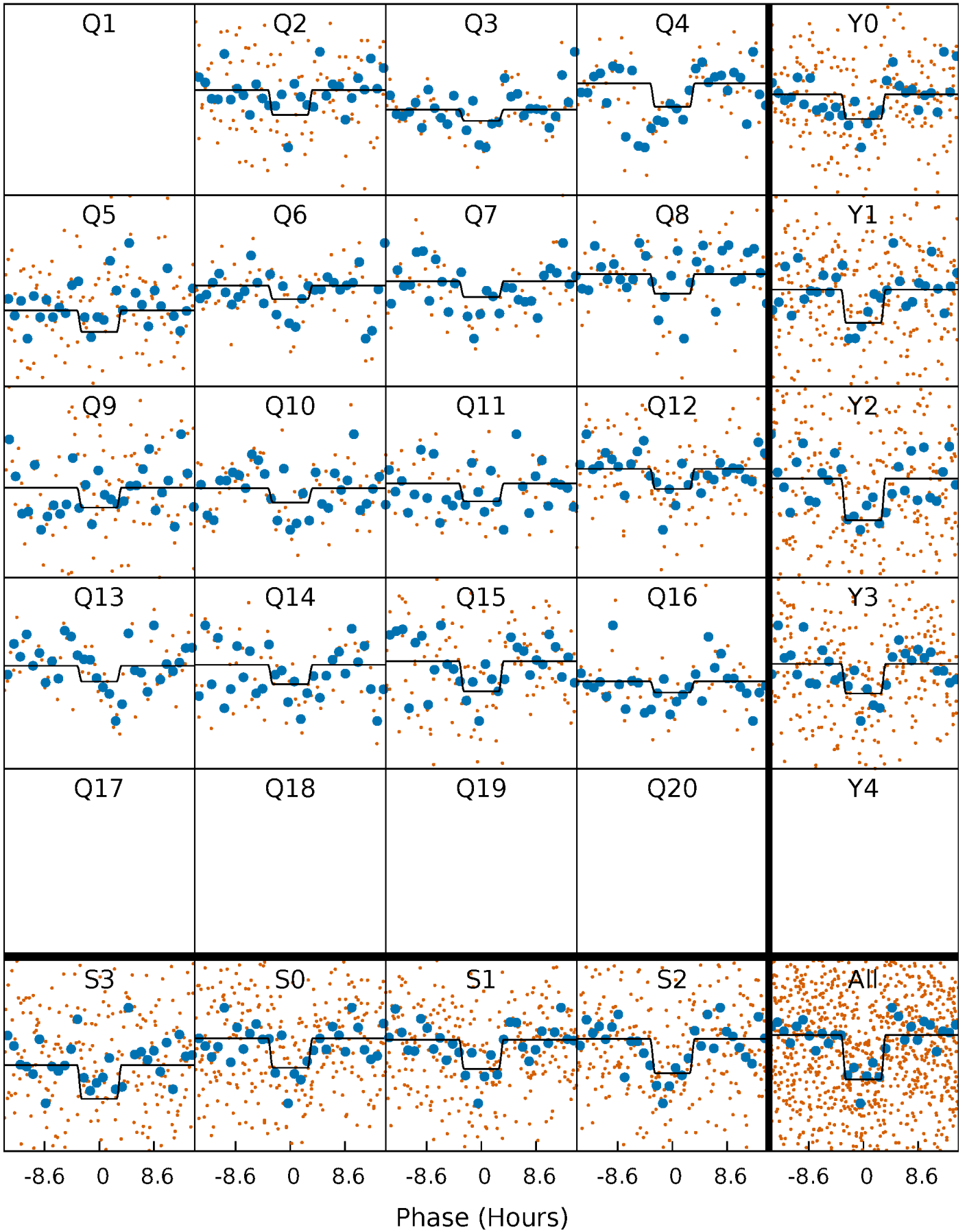
DV Quarter-Phased Transit Curves

TCE 012156930-01 P= 71.106941 Days $T_0=176.715675$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

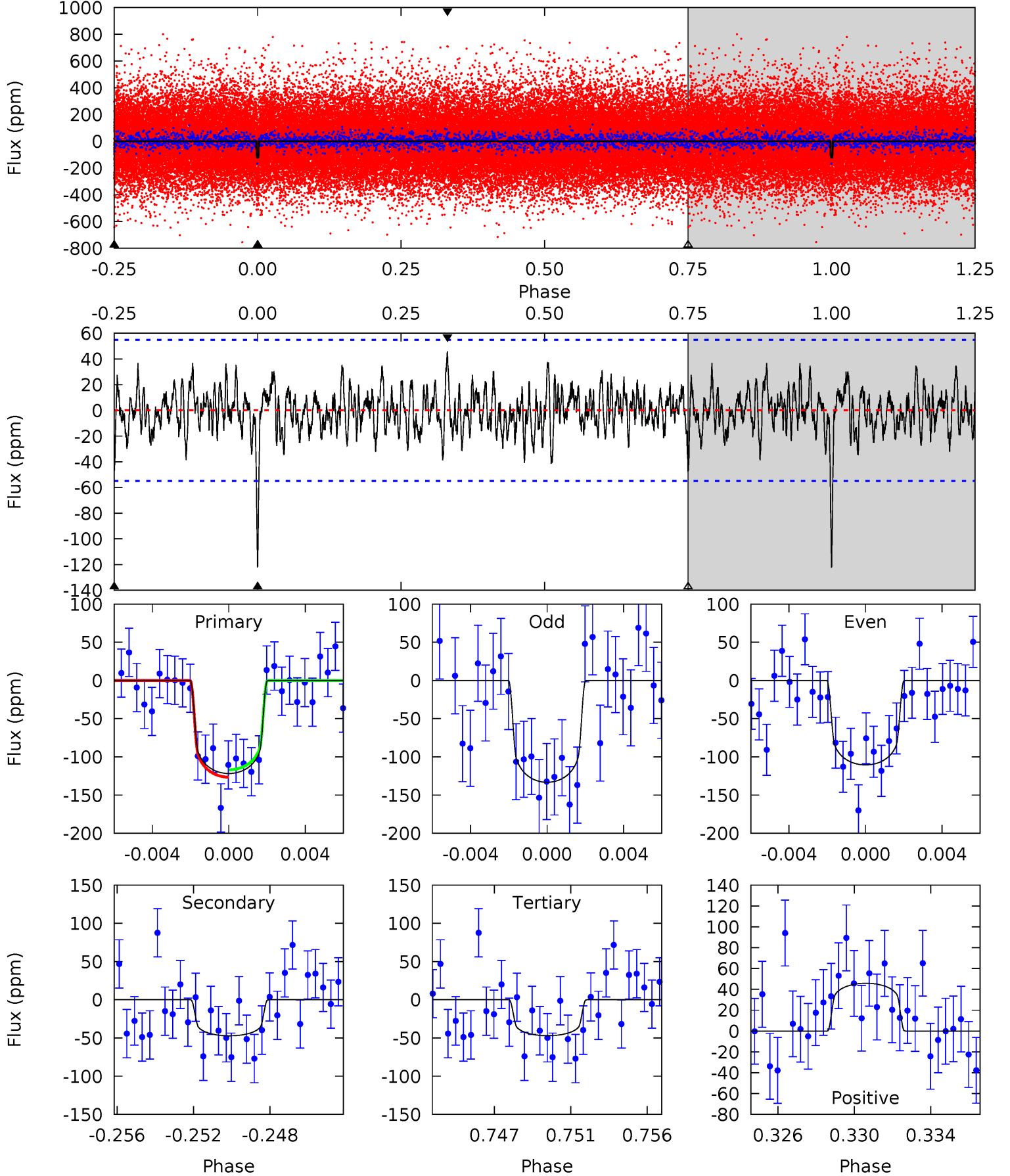
TCE 012156930-01 P= 71.107666 Days $T_0=176.697686$ (BKJD)



DV Model-Shift Uniqueness Test

012156930-01, $P = 71.106941$ Days, $E = 105.608734$ Days

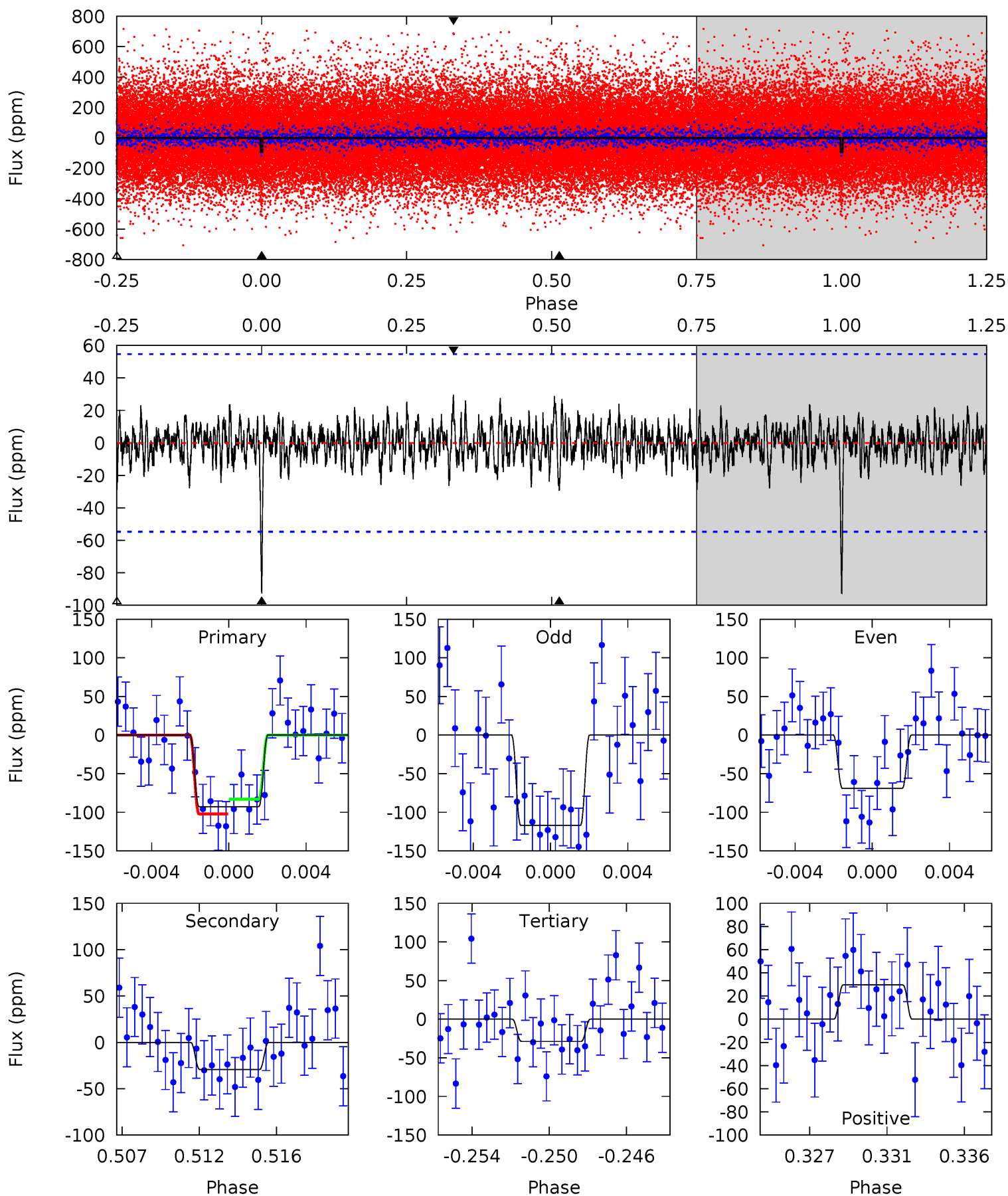
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	4.45	4.44	4.33	5.18	2.85	1.32	7.06	7.18	0.01	0.13	1.08	1.00	0.27	0.46



Alt Model-Shift Uniqueness Test

012156930-01, $P = 71.107666$ Days, $E = 105.590020$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.81	2.79	2.74	2.81	5.20	2.87	0.86	6.07	6.00	0.05	-0.02	2.28	0.85	0.24	0.90



Stellar Parameters For KIC 012156930

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6339^{+177}_{-221}	$4.315^{+0.108}_{-0.201}$	$-0.080^{+0.250}_{-0.300}$	$1.224^{+0.385}_{-0.207}$	$1.129^{+0.181}_{-0.148}$	$0.867^{+0.424}_{-0.450}$
	+3%/-3%	+3%/-5%	+312%/-375%	+31%/-17%	+16%/-13%	+49%/-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 012156930-01 / KOI 8076.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-47 ± 11	$1.52^{+0.68}_{-0.57}$	735^{+55}_{-41}	5036^{+1199}_{-710}	1328^{+2145}_{-715}
Alt.	-29 ± 11	$1.37^{+0.58}_{-0.58}$	741^{+53}_{-44}	4799^{+1327}_{-740}	1036^{+1997}_{-602}

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

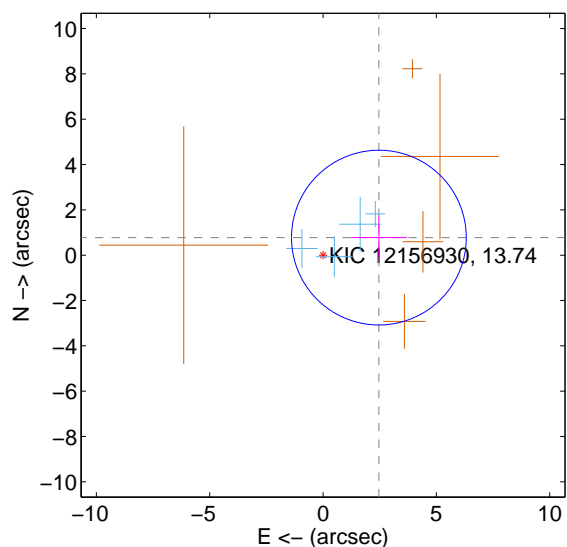
Supplemental centroid analysis for 012156930-01. Kepler magnitude: 13.74. Transit SNR 7.75

There are 4 quarters with good PRF difference image offsets

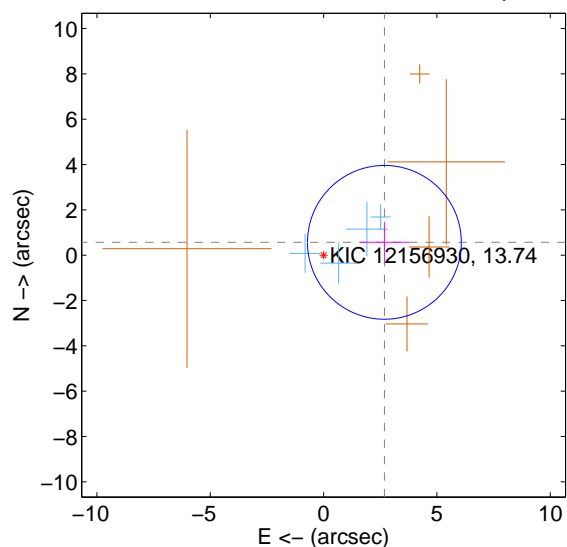
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.583 ± 1.285	2.01	-2.464 ± 1.235	0.775 ± 0.936
PRF-fit source offset from KIC position	2.743 ± 1.131	2.43	-2.684 ± 1.087	0.566 ± 0.902
photometric centroid source offset	3.89 ± 1.67	2.33	-3.67 ± 1.65	1.29 ± 1.81

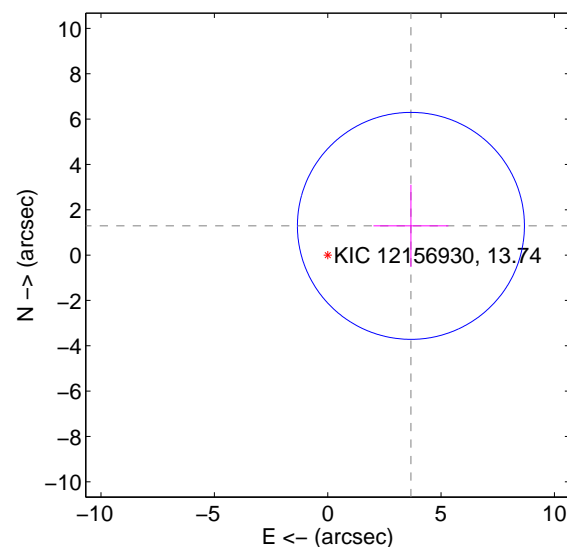
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

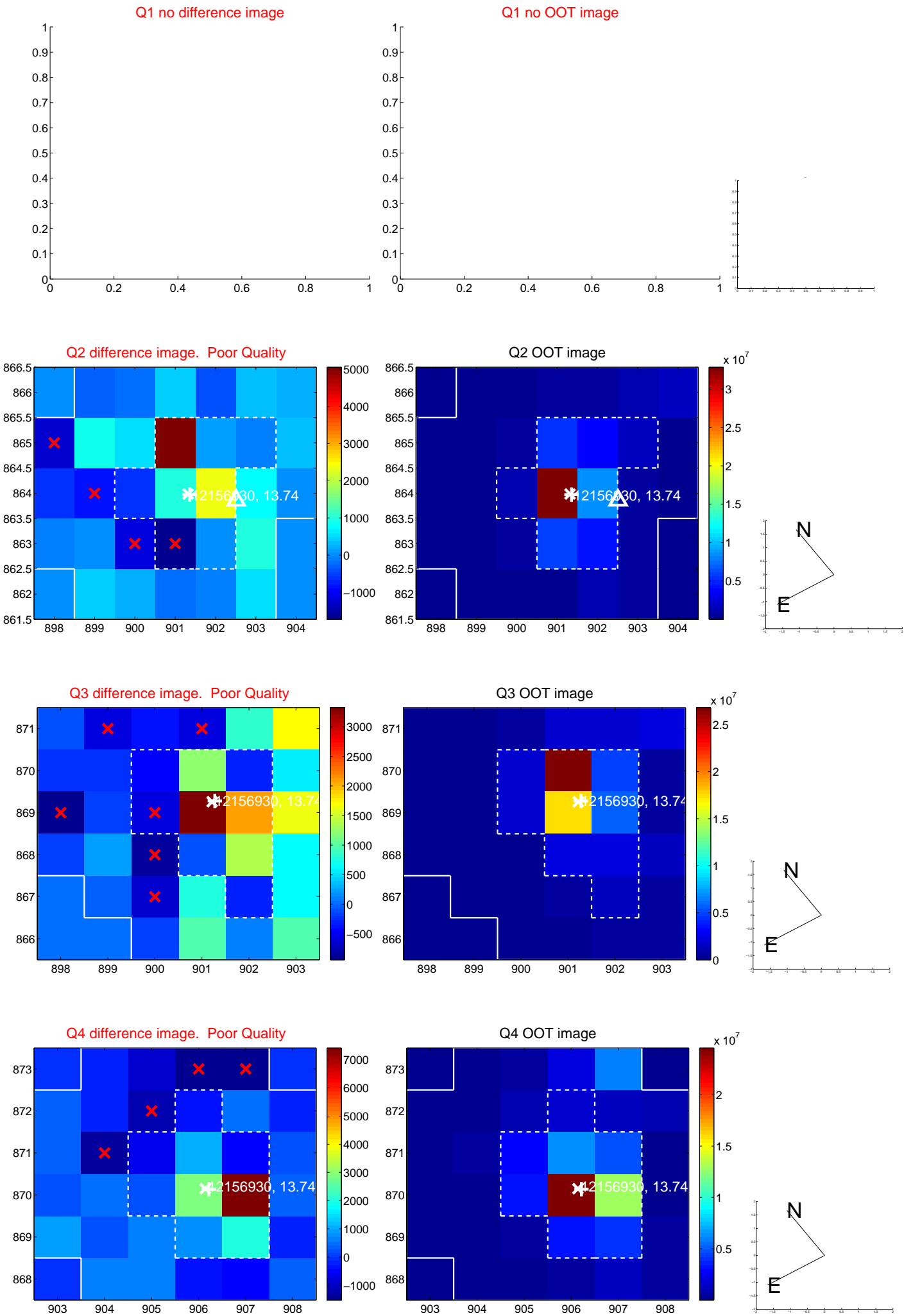


offset from photometric centroids

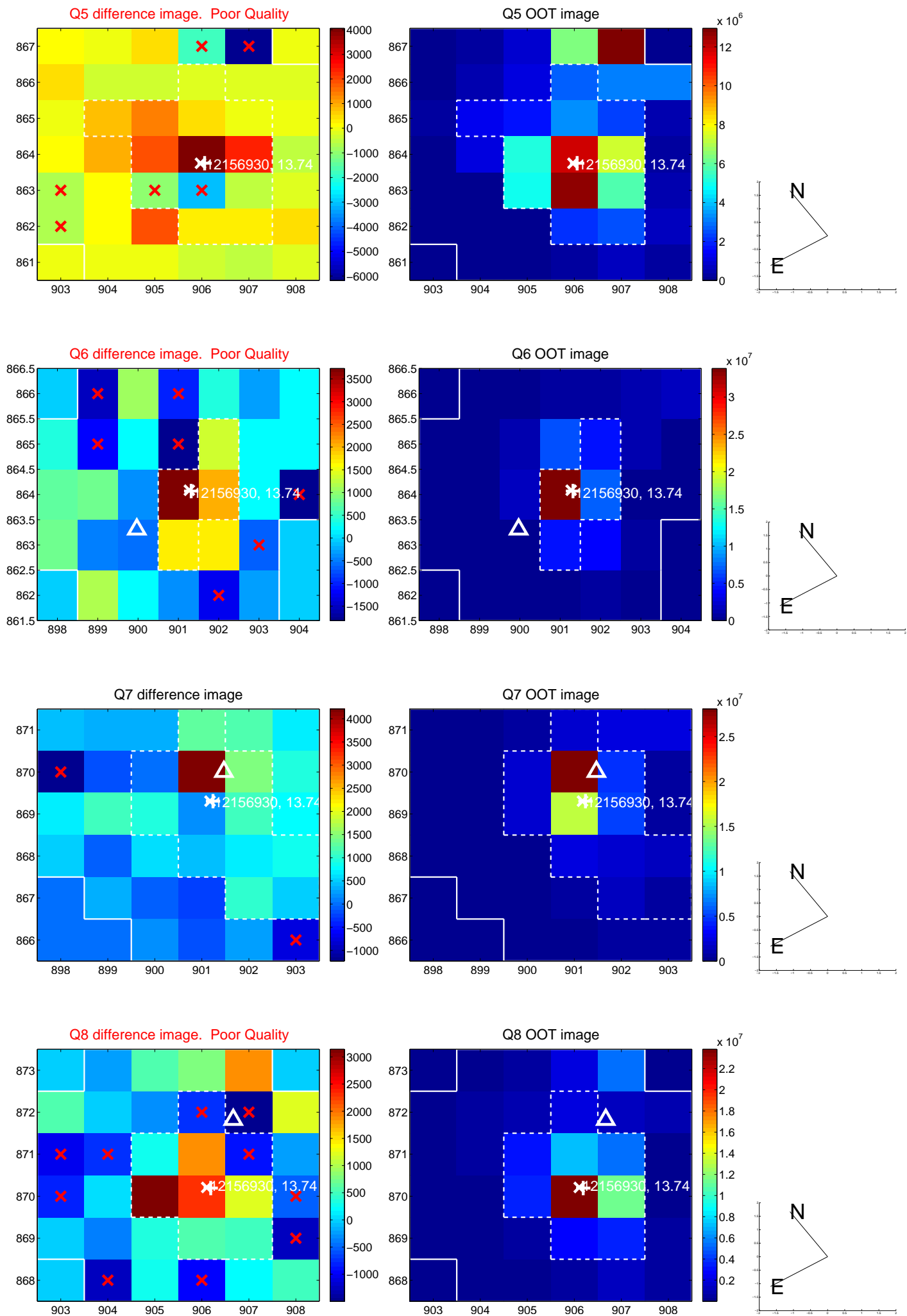


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

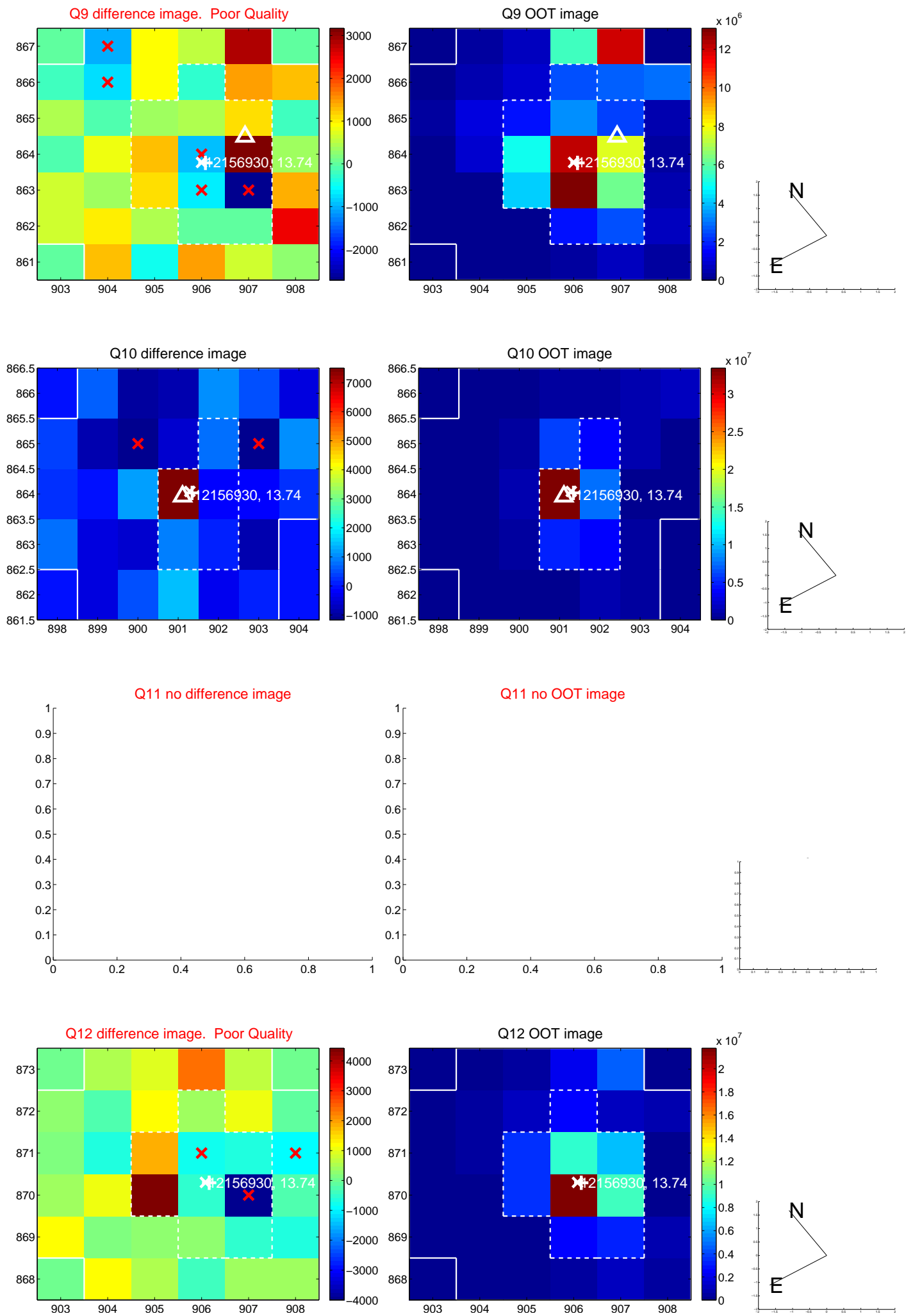
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



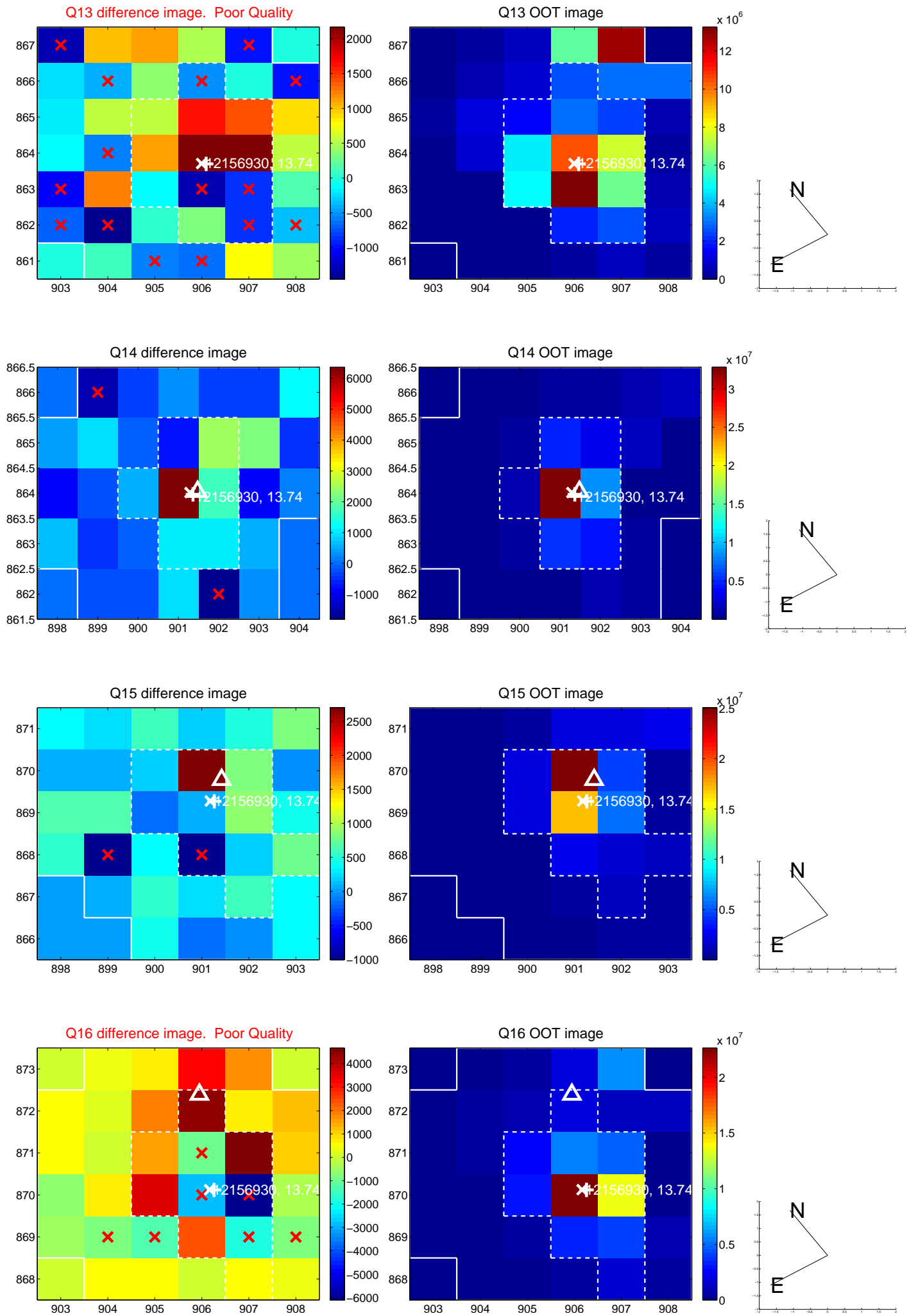
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



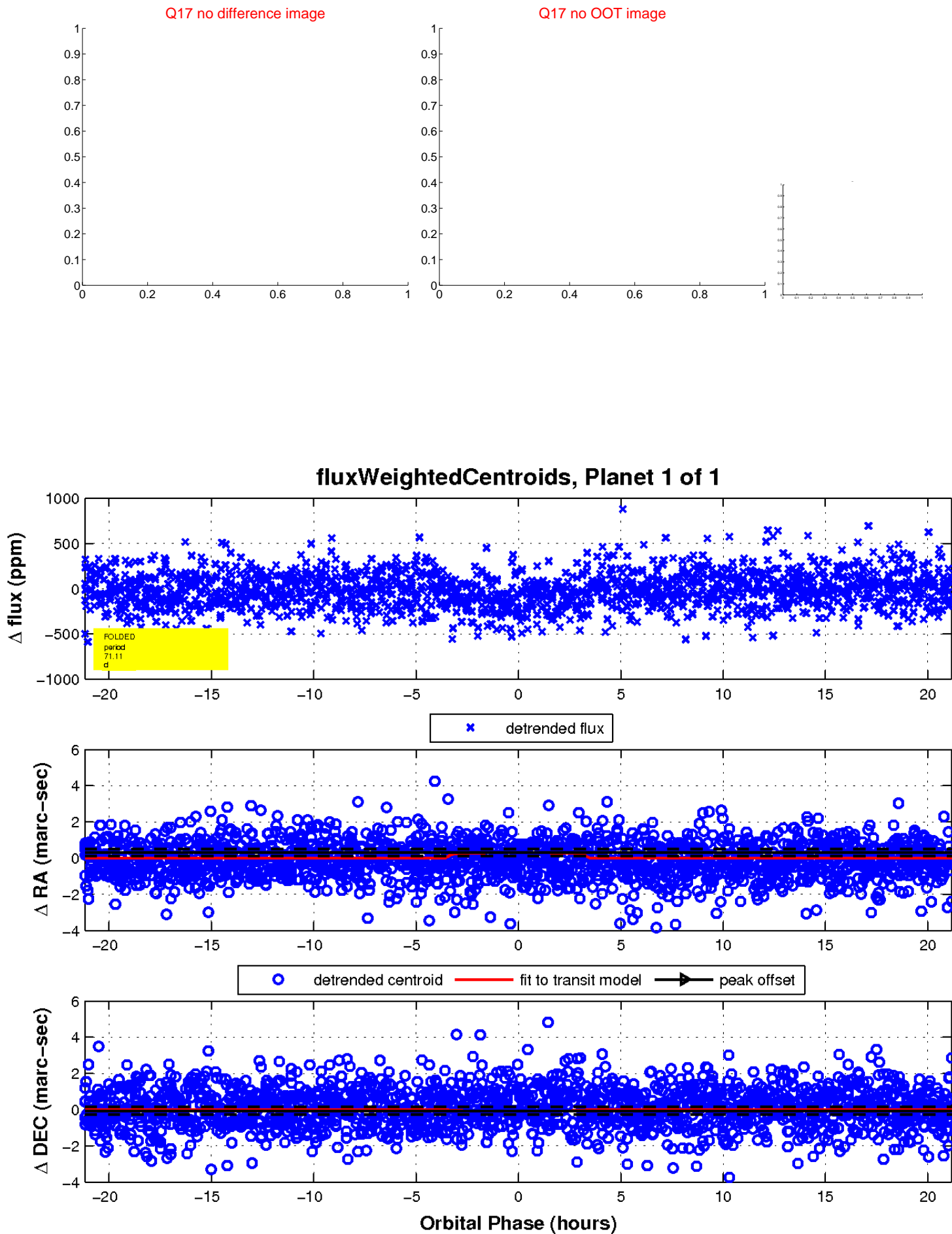
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

