

KIC 012553408

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})
012553408-01	OBS	No	44.756260	171.919316	26.5	0.981	9.2	18.9	1.46	6025	0.90	40.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012553408-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

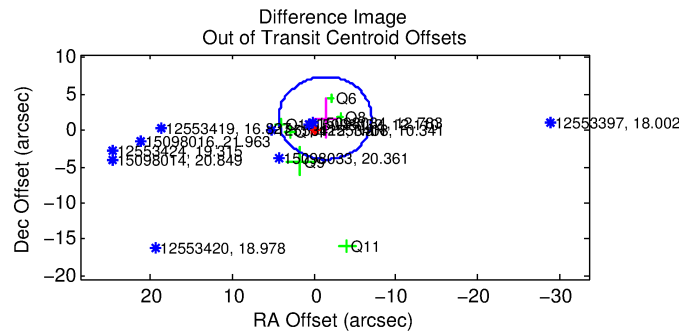
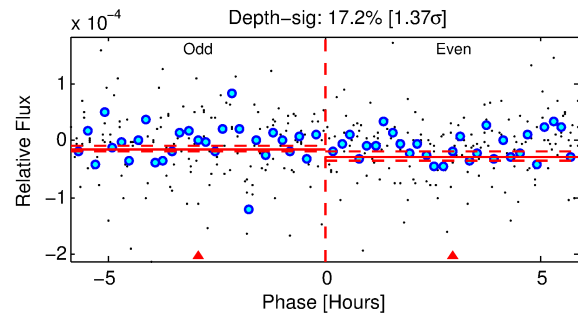
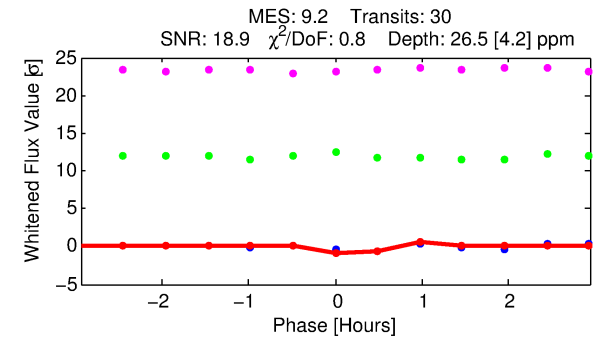
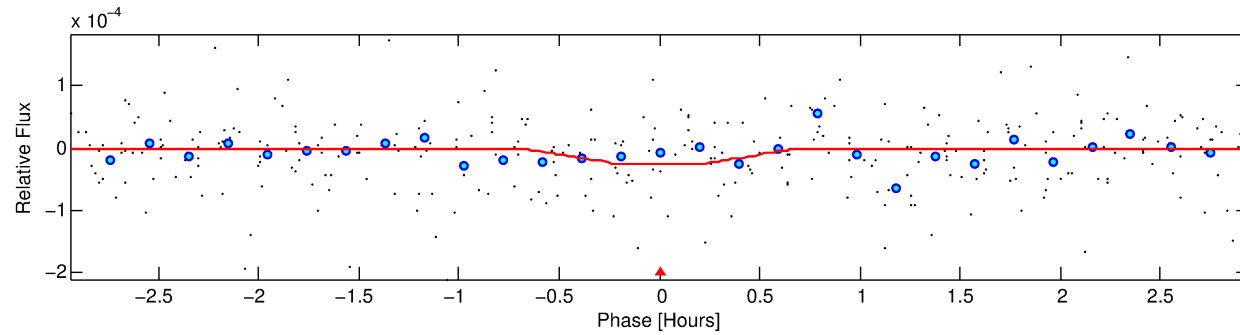
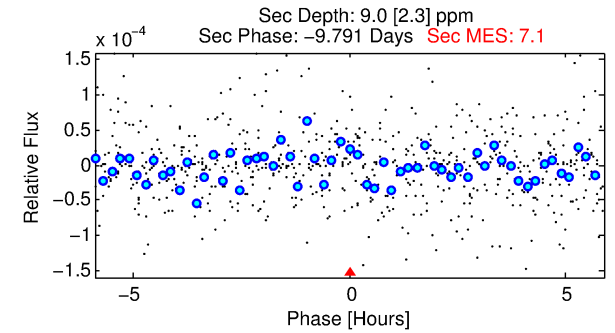
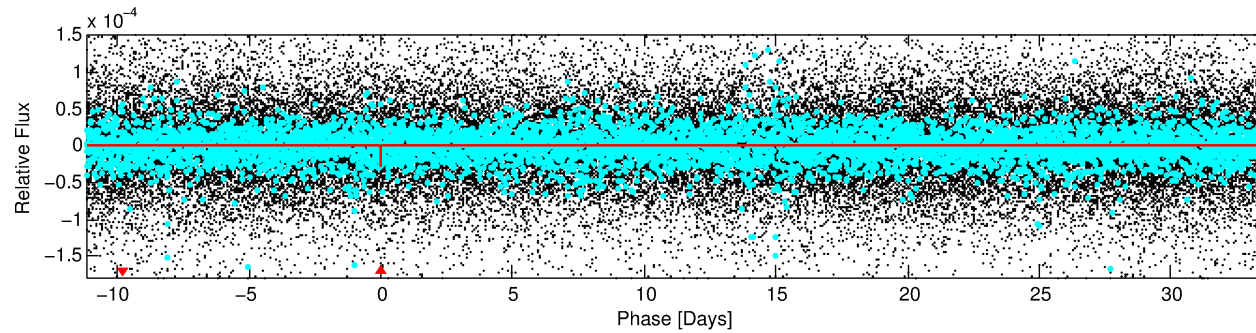
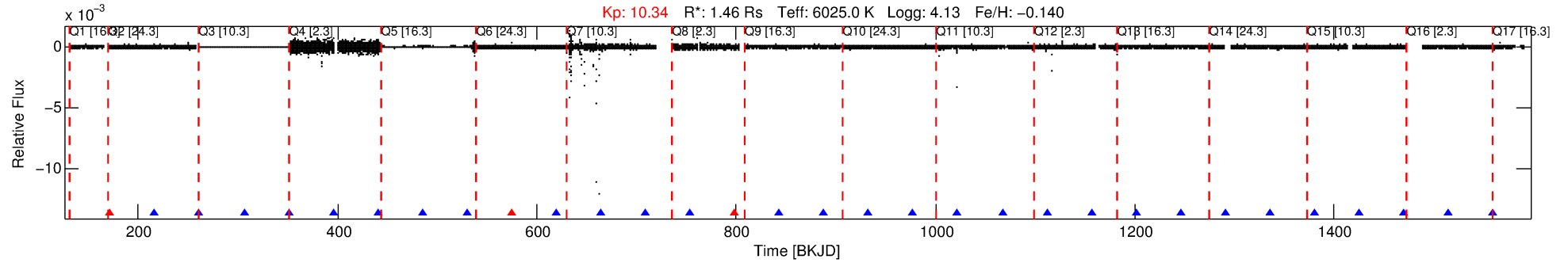
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012553408-01

No Significant Match Found

DV One-Page Summary

KIC: 12553408 Candidate: 1 of 1 Period: 44.756 d



DV Fit Results:

Period = 44.75626 [0.00024] d
Epoch = 171.9193 [0.0016] BKJD
Rp/R* = 0.0057 [0.0017]
a/R* = 146.26 [178.03]
b = 0.91 [0.24]
Seff = 40.23 [21.17]
Teq = 642 [84] K
Rp = 0.90 [0.40] Re
a = 0.2496 [0.0787] AU
Ag = 379.34 [309.42] [1.22σ]
Teffp = 4382 [716] K [5.19σ]

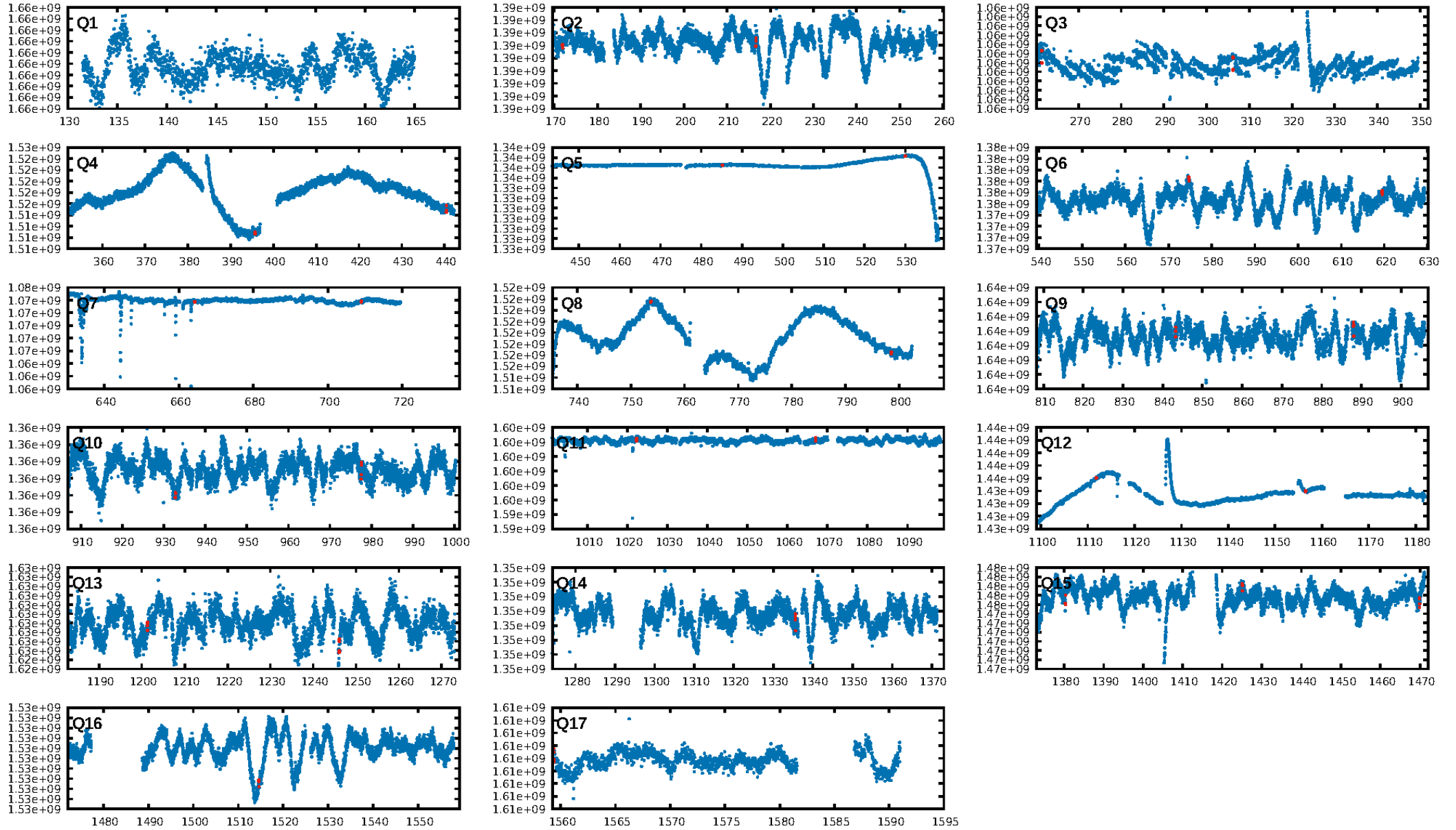
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 56.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.38e-09
RollingBand-fgt: 0.90 [26/29]
GhostDiagnostic-chr: N/A
Centroid-sig: 33.4%
Centroid-so: 4.067 arcsec [0.95σ]
OotOffset-rm: 2.185 arcsec [1.15σ]
KicOffset-rm: 3.097 arcsec [1.34σ]
OotOffset-st: 2/1/2/1 [6]
KicOffset-st: 2/1/2/1 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 1.00 [15/15]

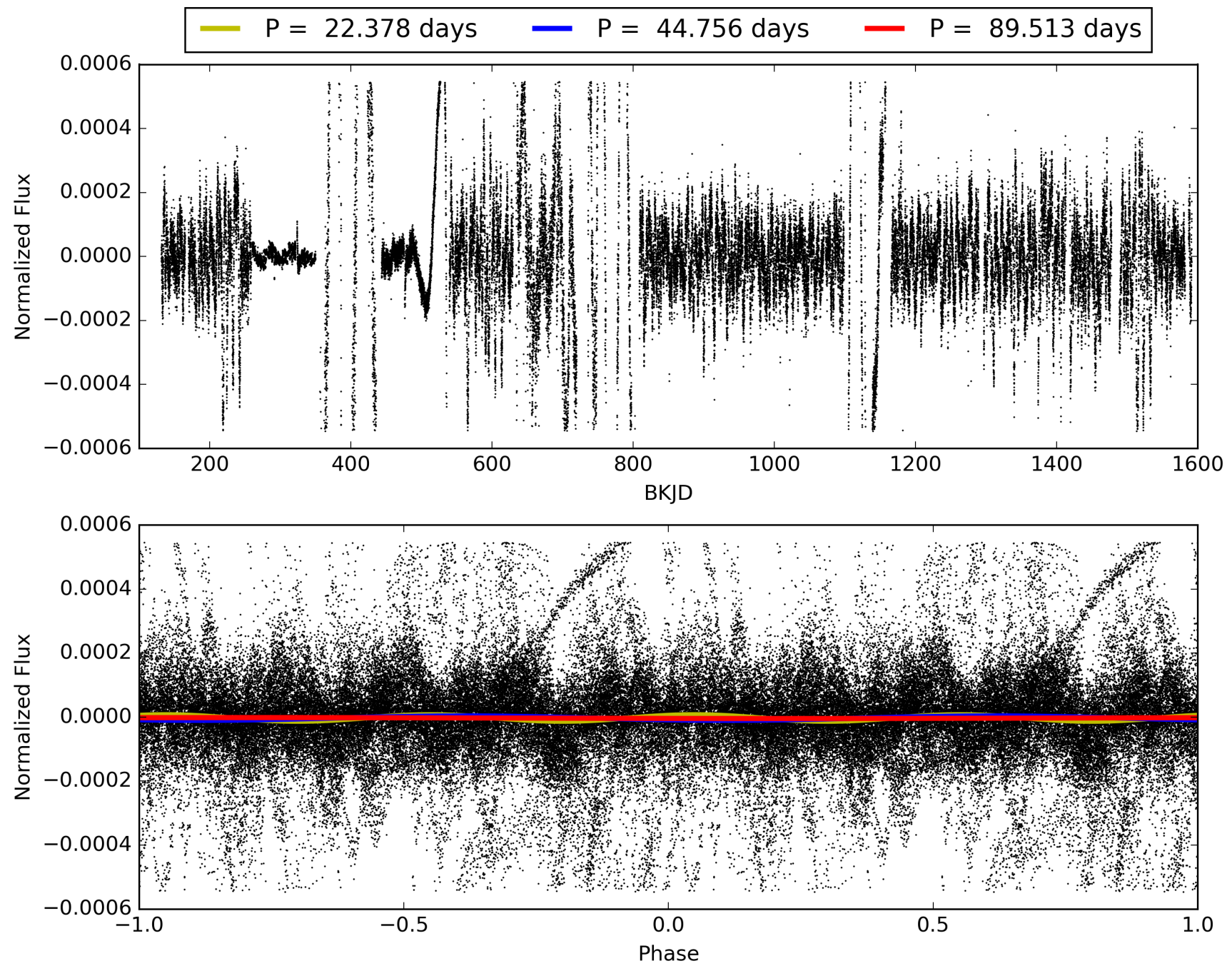
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:54:47 Z

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

TCE 012553408-01, PDC Light Curves

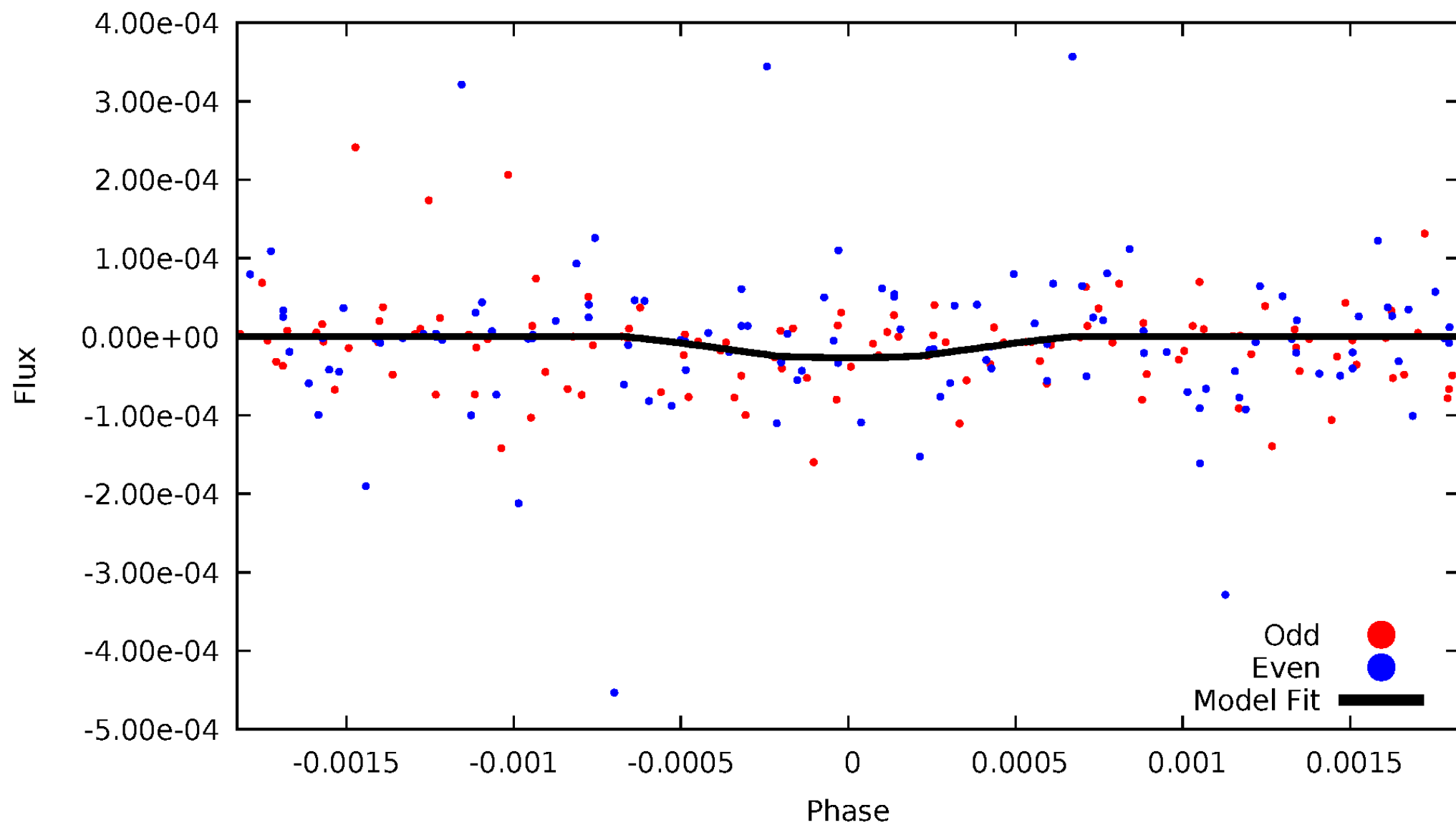


TCE 012553408-01



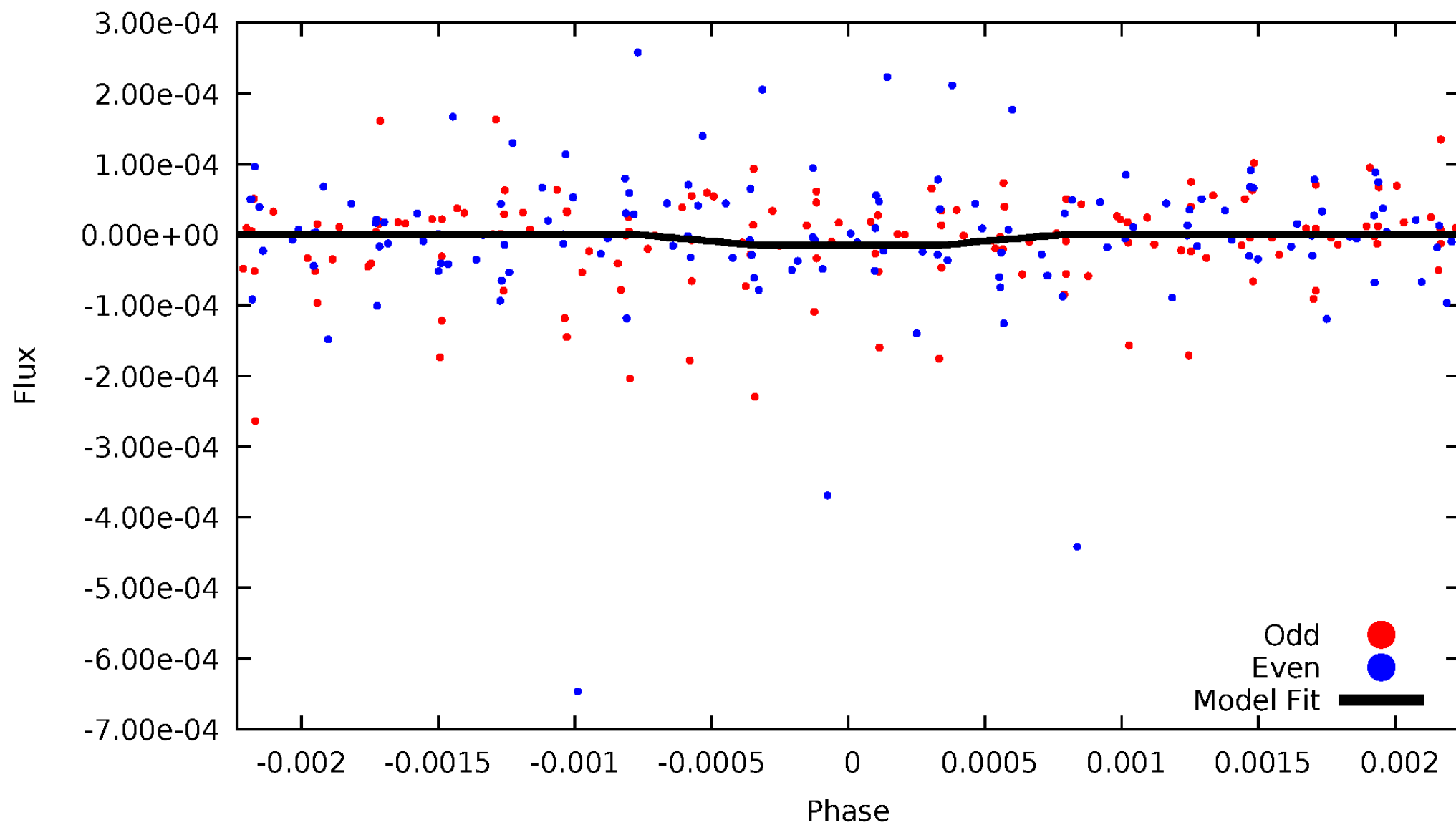
DV Odd/Even

TCE 012553408-01



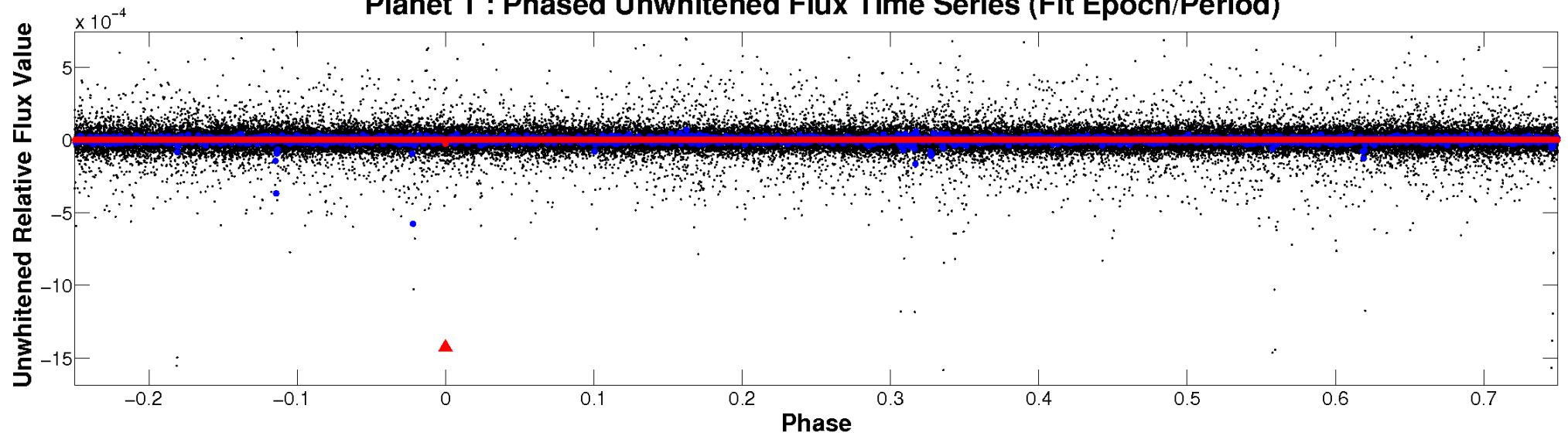
ALT Odd/Even

TCE 012553408-01

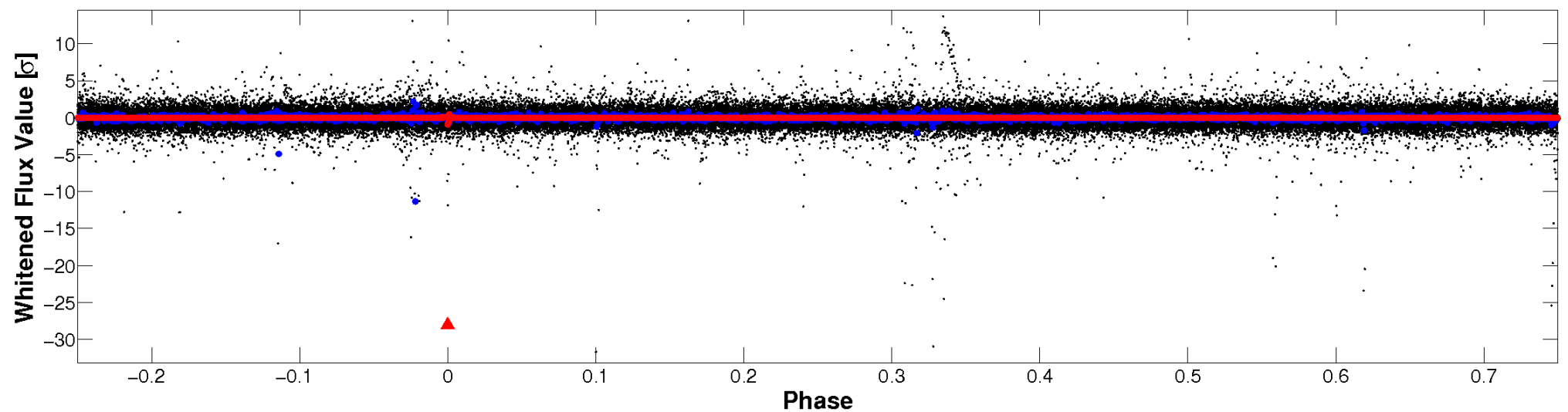


Non-Whitened Vs. Whitened Light Curve

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

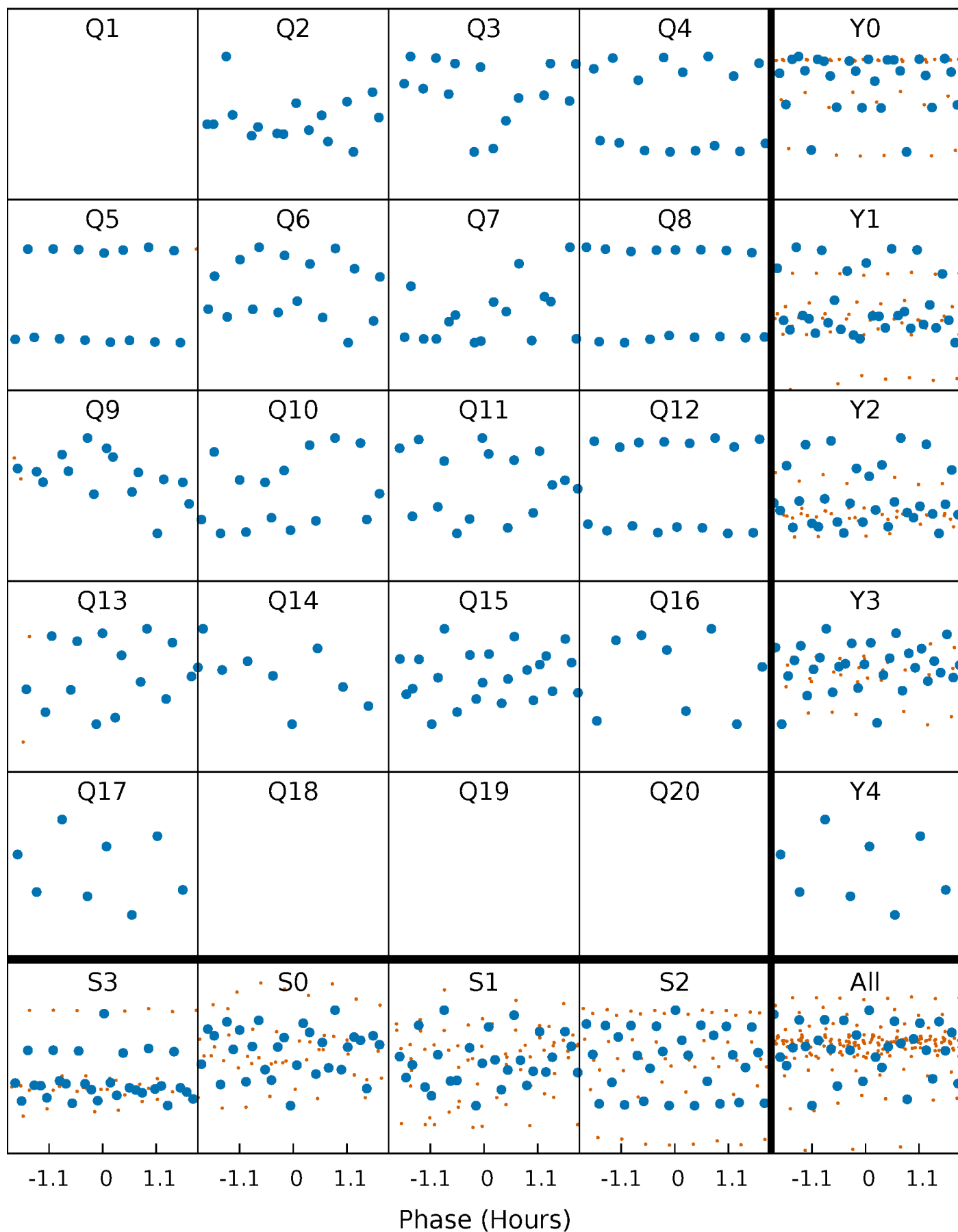


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



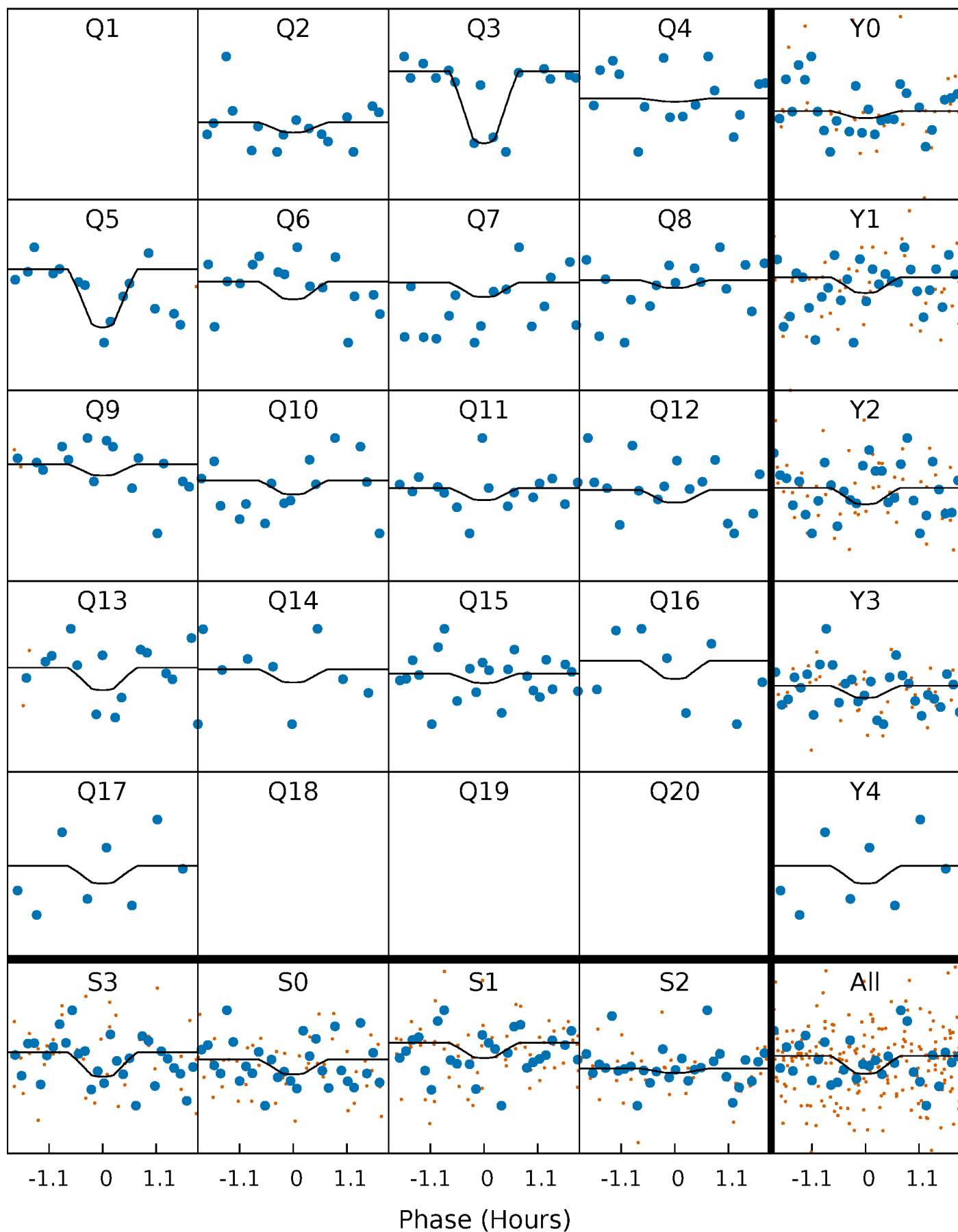
PDC Quarter-Phased Transit Curves

TCE 012553408-01 P= 44.756260 Days $T_0=171.919316$ (BKJD)



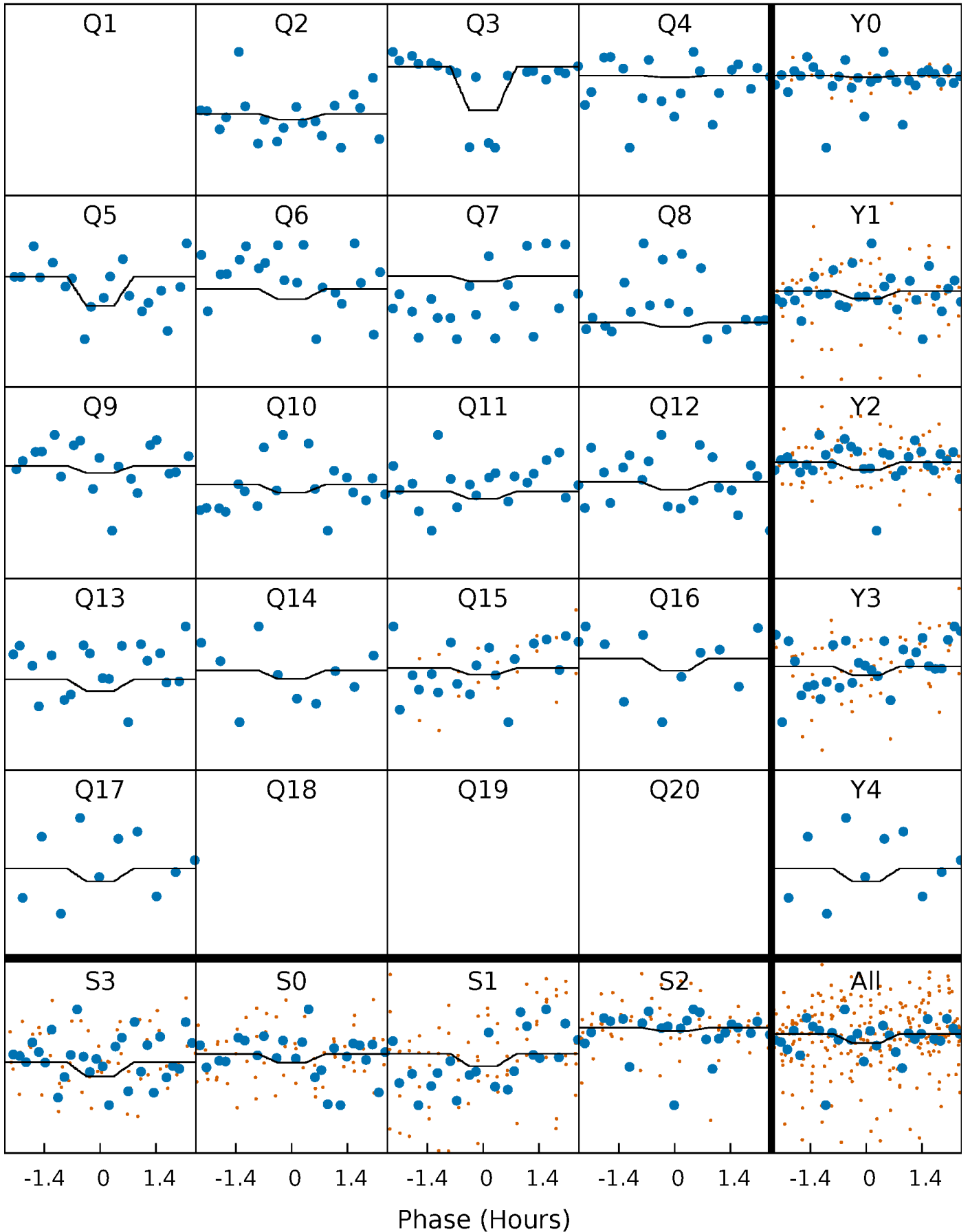
DV Quarter-Phased Transit Curves

TCE 012553408-01 P= 44.756260 Days $T_0=171.919316$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

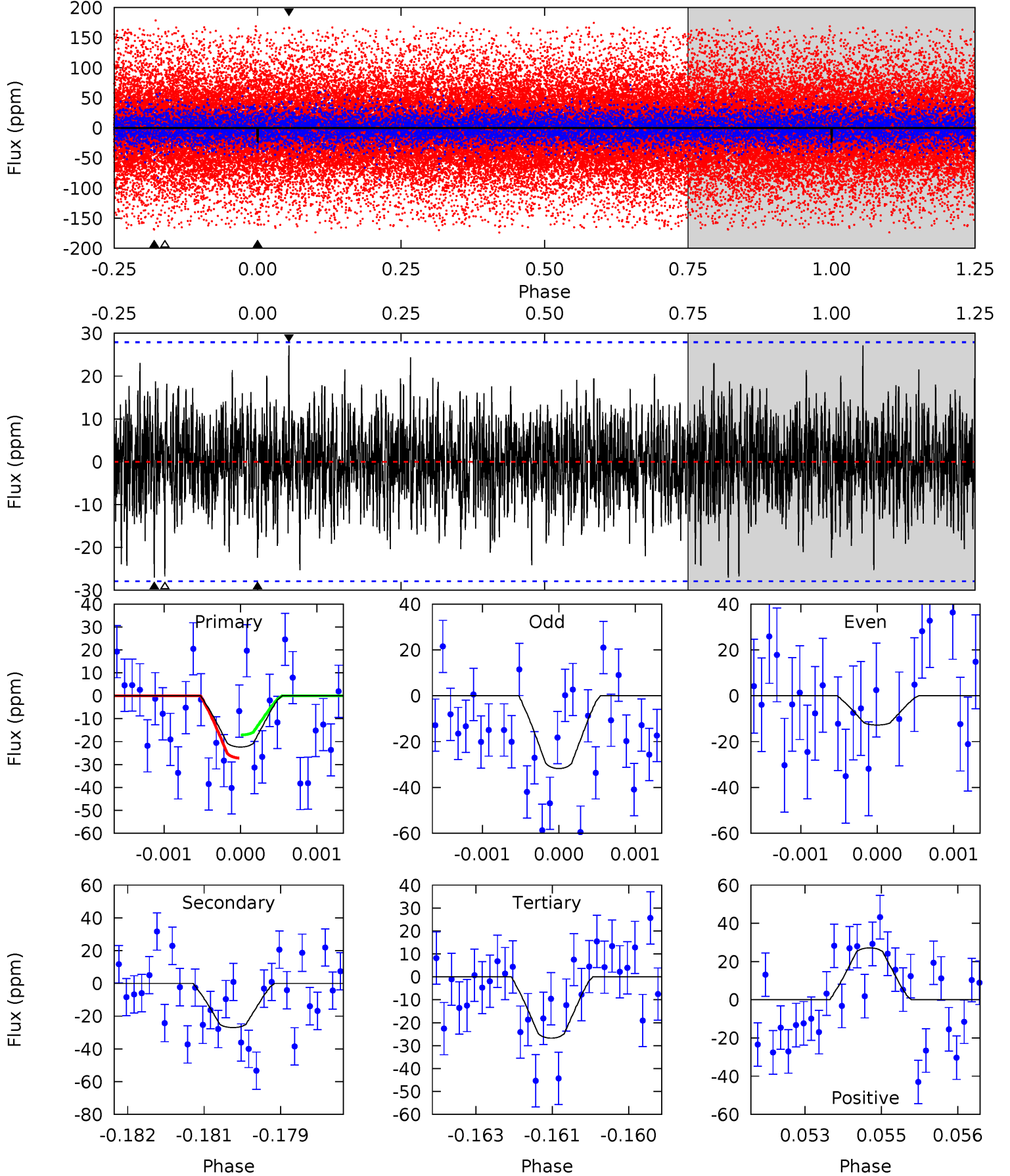
TCE 012553408-01 P= 44.758545 Days $T_0=171.918589$ (BKJD)



DV Model-Shift Uniqueness Test

012553408-01, $P = 44.756260$ Days, $E = 127.163056$ Days

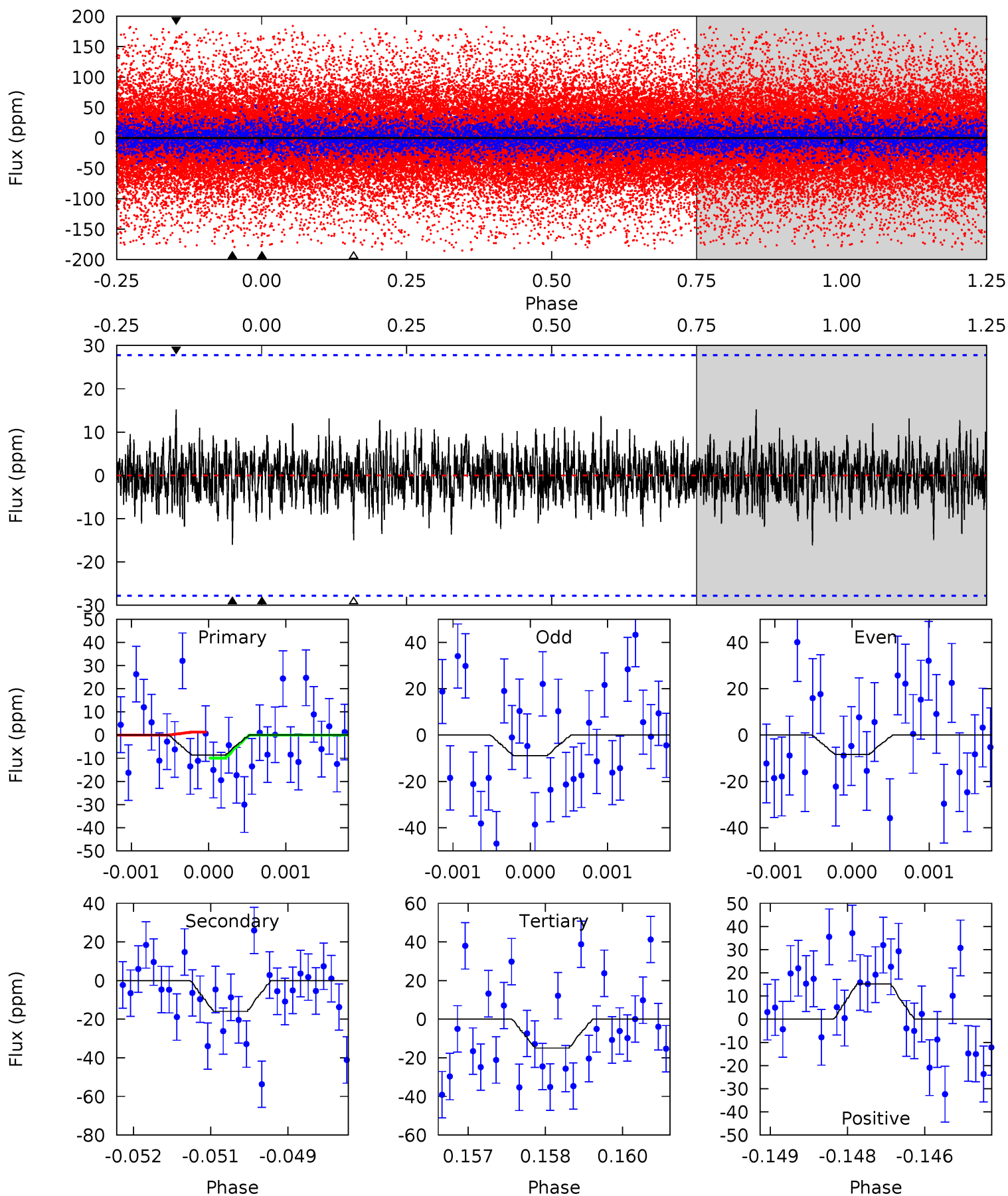
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.34	5.24	5.19	5.27	5.41	3.22	1.45	-0.85	-0.93	0.05	-0.03	1.86	0.94	0.50	0.99



Alt Model-Shift Uniqueness Test

012553408-01, P = 44.758545 Days, E = 127.160044 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.67	3.09	2.90	2.94	5.38	3.18	0.80	-1.22	-1.27	0.19	0.15	0.05	0.60	0.49	0.84



Stellar Parameters For KIC 012553408

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6025^{+210}_{-210}	$4.126^{+0.299}_{-0.161}$	$-0.140^{+0.300}_{-0.300}$	$1.457^{+0.387}_{-0.473}$	$1.035^{+0.165}_{-0.135}$	$0.471^{+0.924}_{-0.210}$
	+3%/-3%	+7%/-4%	+214%/-214%	+27%/-32%	+16%/-13%	+196%/-45%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012553408-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-27 ± 5	$0.85^{+0.34}_{-0.28}$	888^{+72}_{-83}	5782^{+1275}_{-726}	1258^{+1517}_{-623}
Alt.	-16 ± 5	$0.59^{+0.28}_{-0.27}$	886^{+74}_{-82}	5983^{+2351}_{-957}	1472^{+3572}_{-838}

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

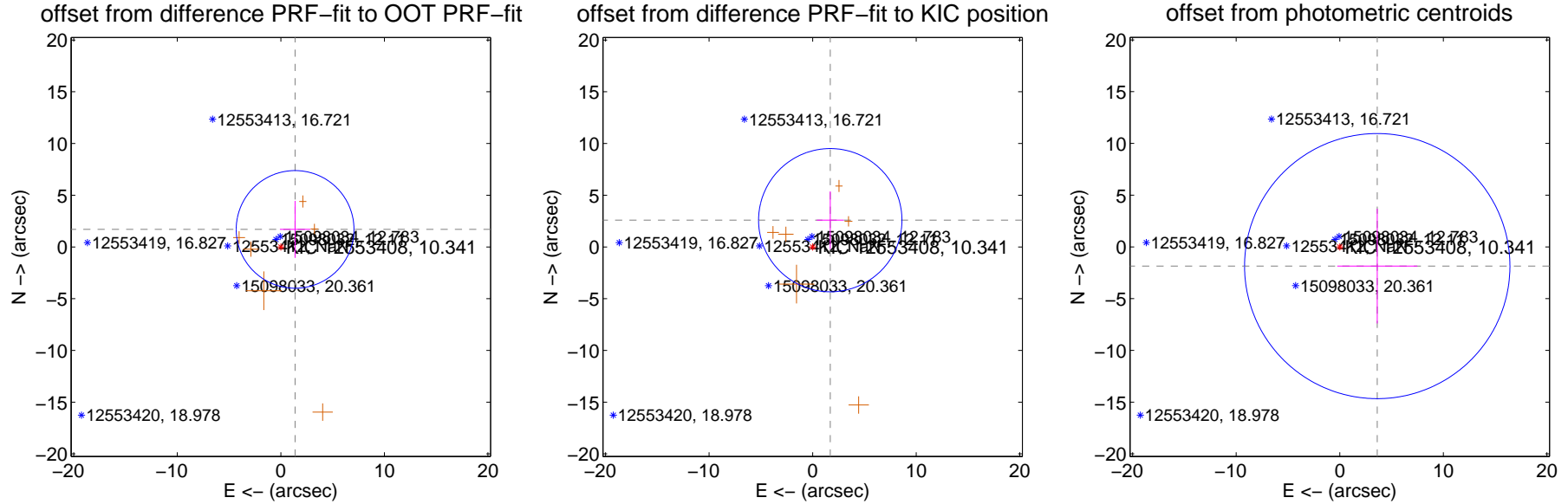
DV Centroid Data

Supplemental centroid analysis for 012553408-01. **Kepler magnitude: 10.34.** Transit SNR 18.92

There are 0 quarters with good PRF difference image offsets

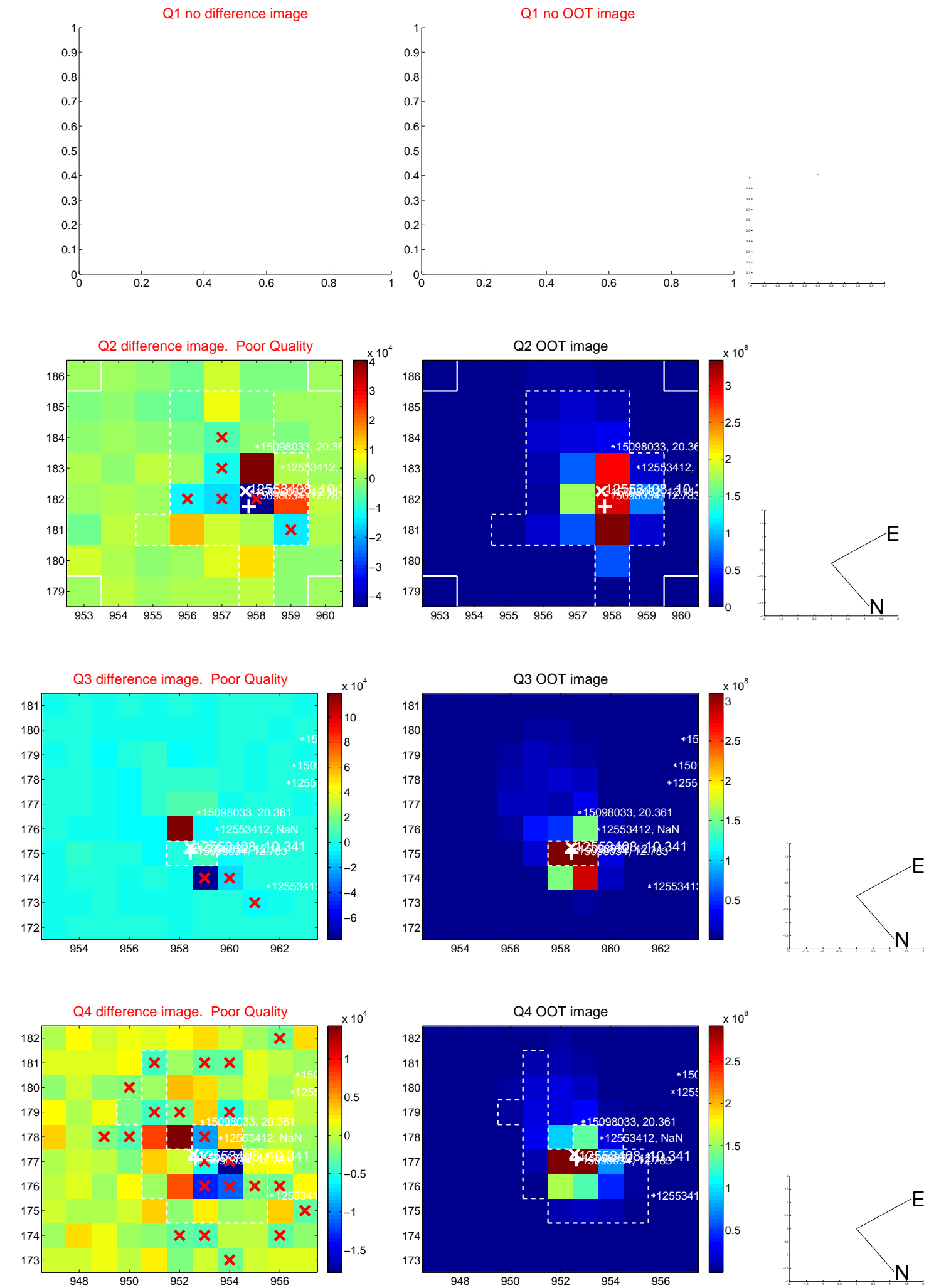
The direct PRF centroid is offset from the target star catalog position by about 1.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.185 ± 1.895	1.15	-1.377 ± 1.464	1.696 ± 2.756
PRF-fit source offset from KIC position	3.097 ± 2.307	1.34	-1.701 ± 1.299	2.588 ± 2.797
photometric centroid source offset	4.07 ± 4.27	0.95	-3.62 ± 3.87	-1.86 ± 5.54

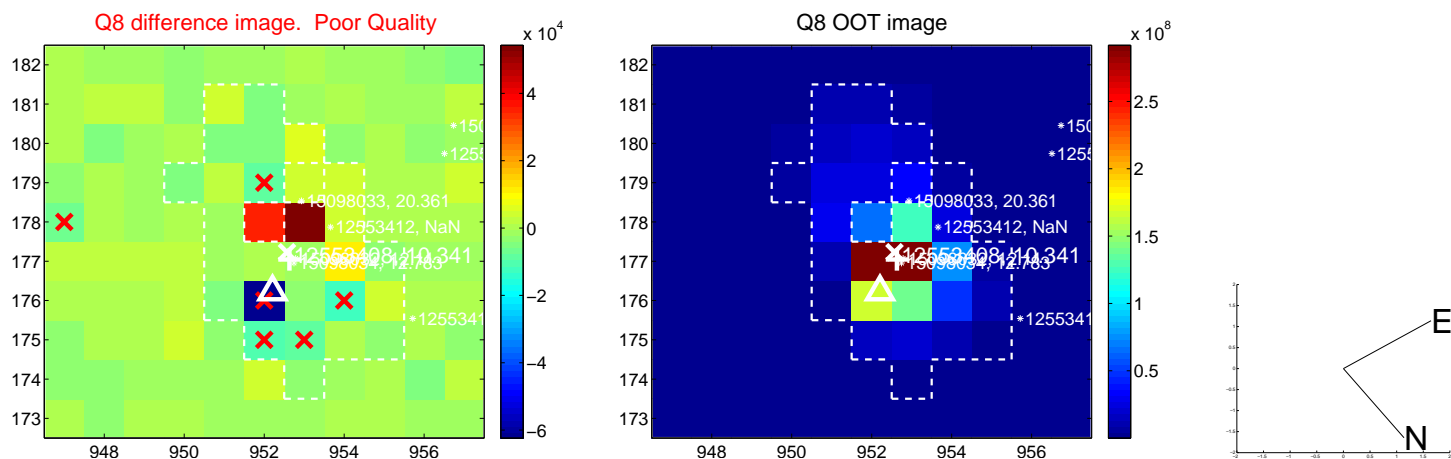
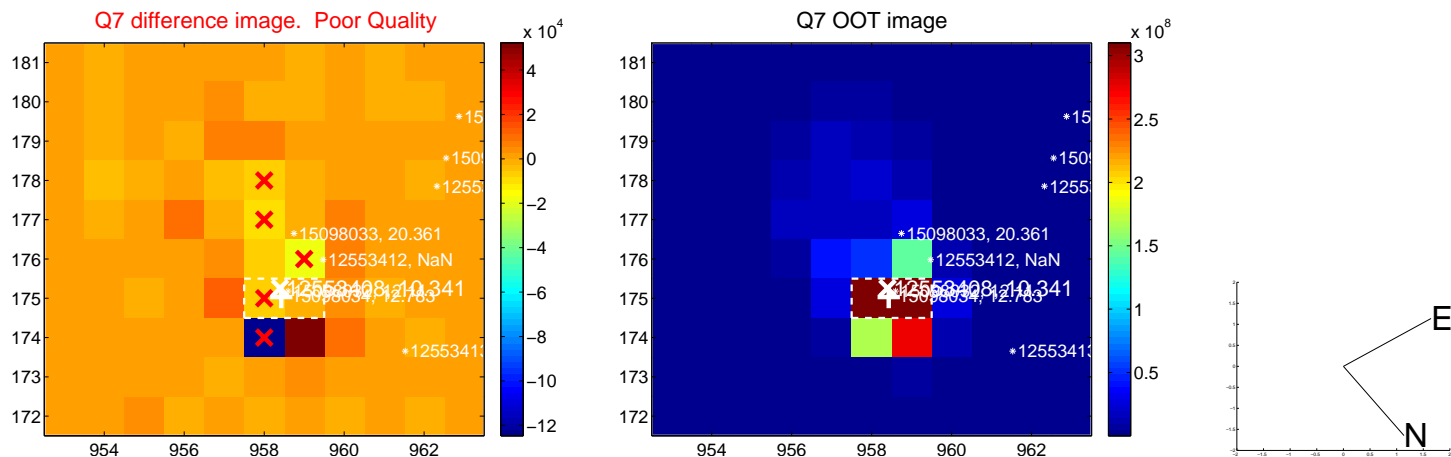
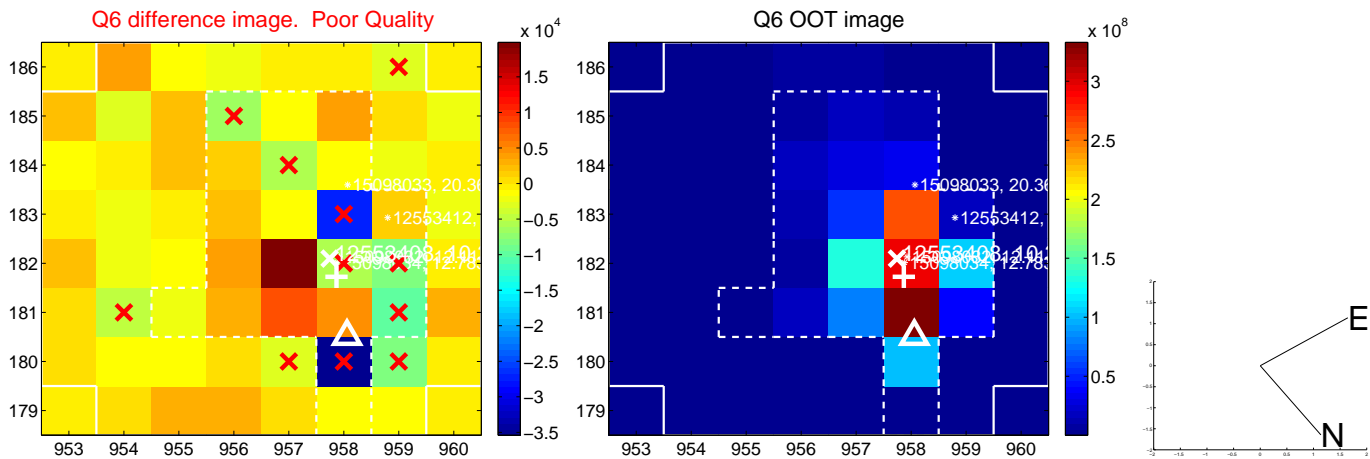
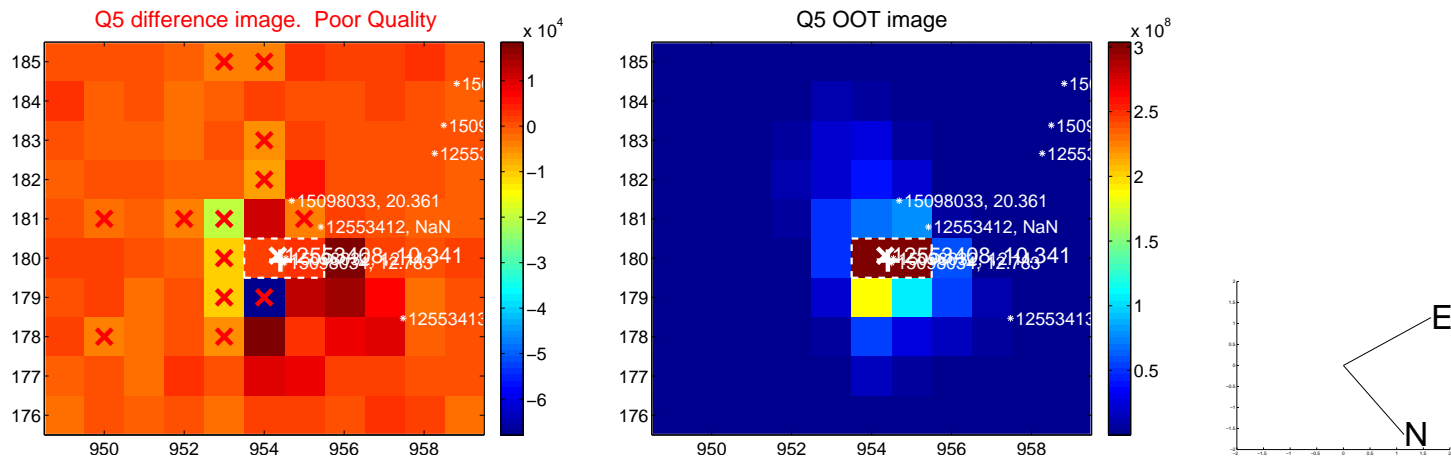


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

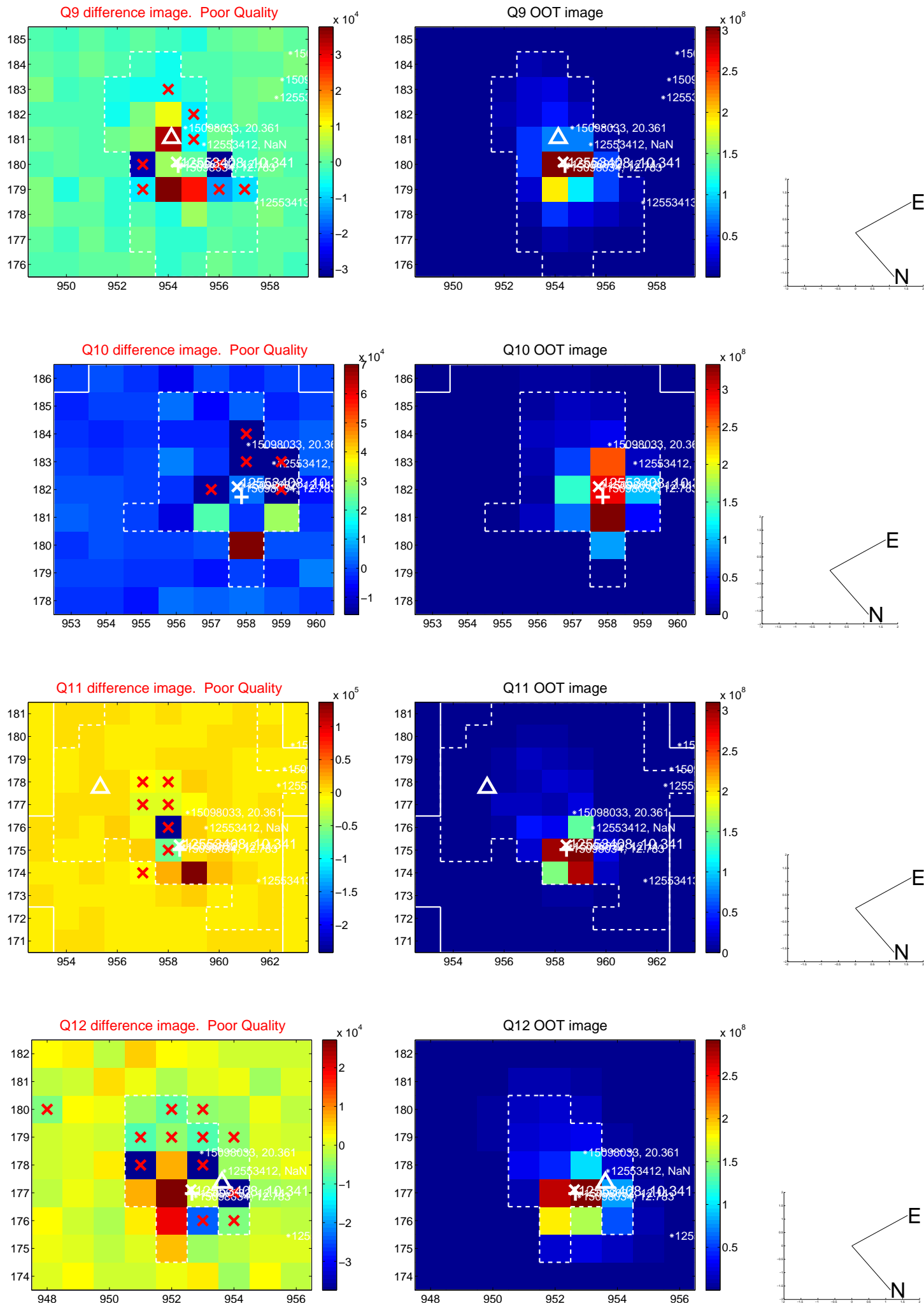
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



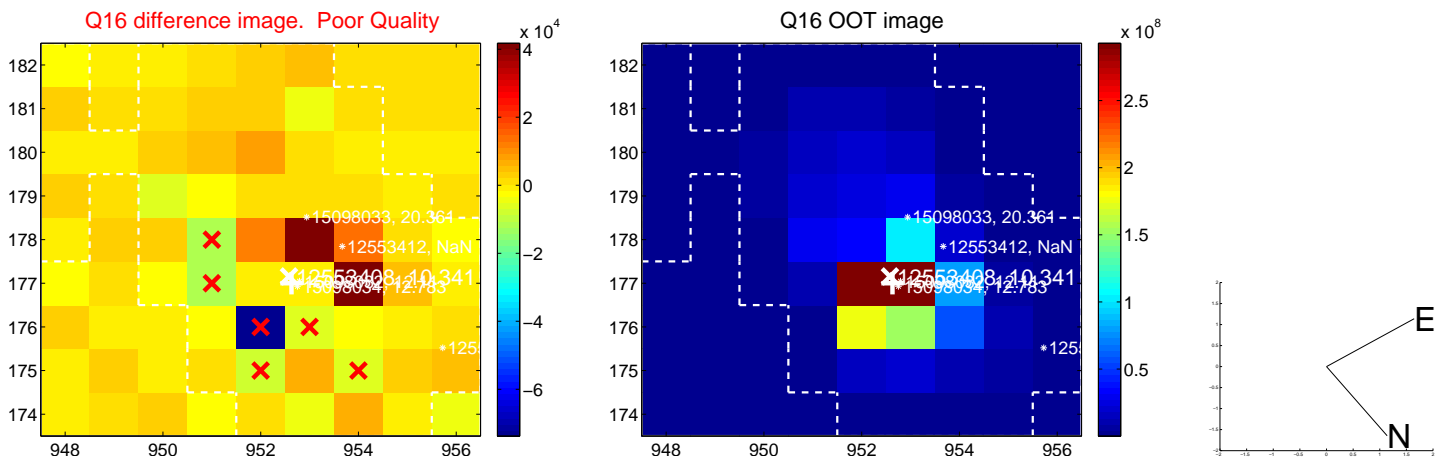
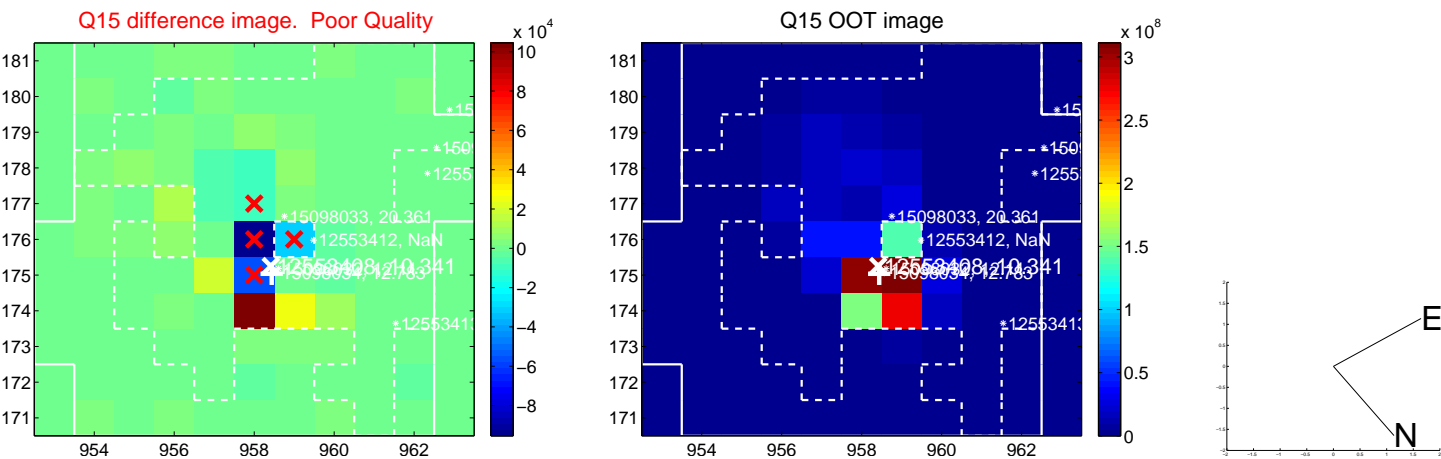
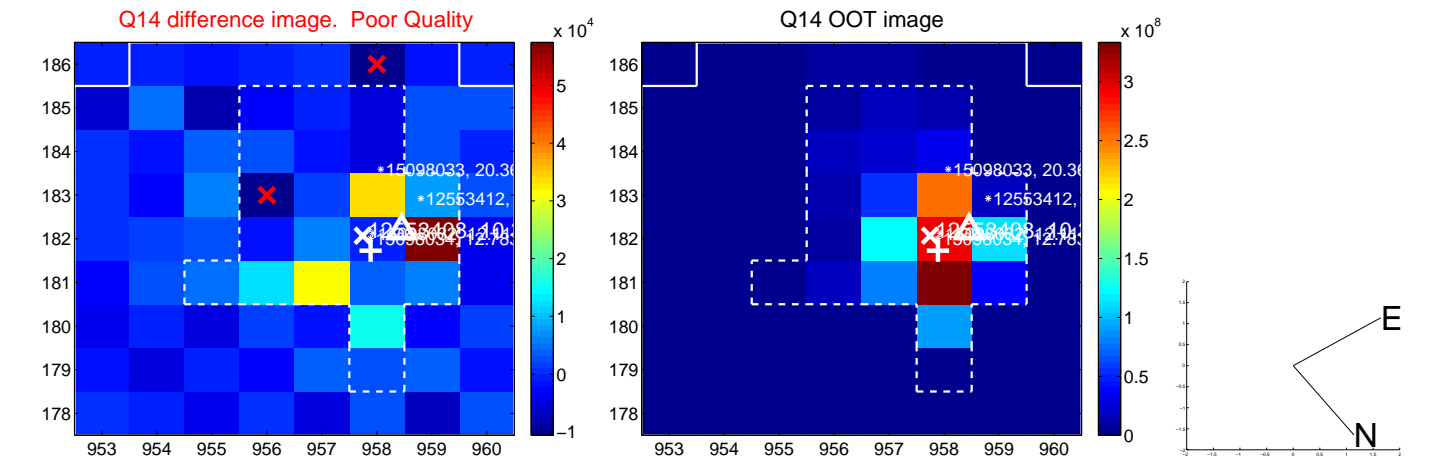
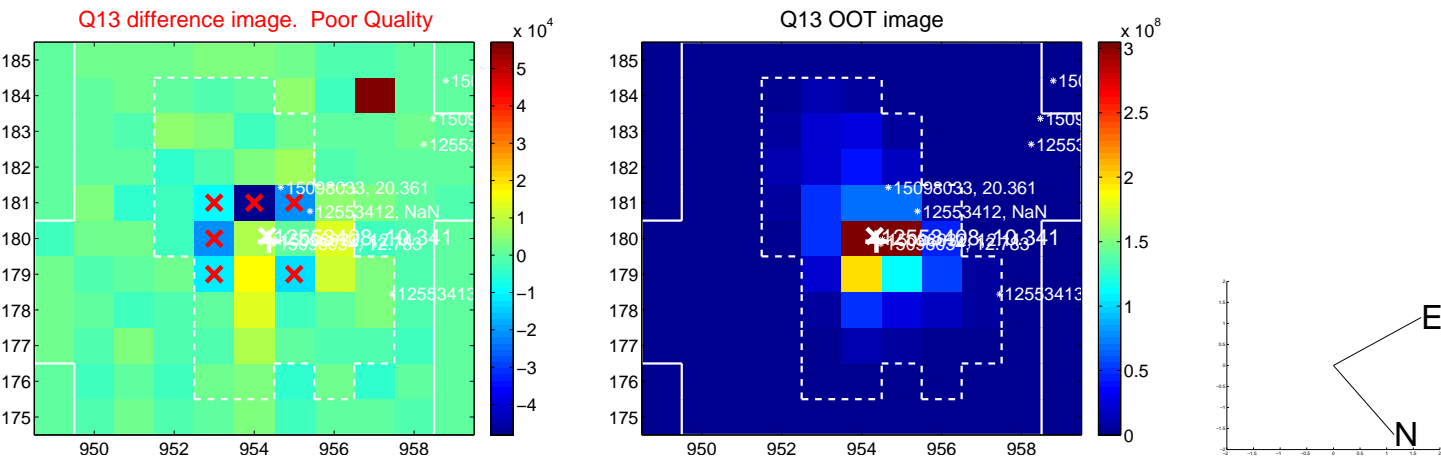
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



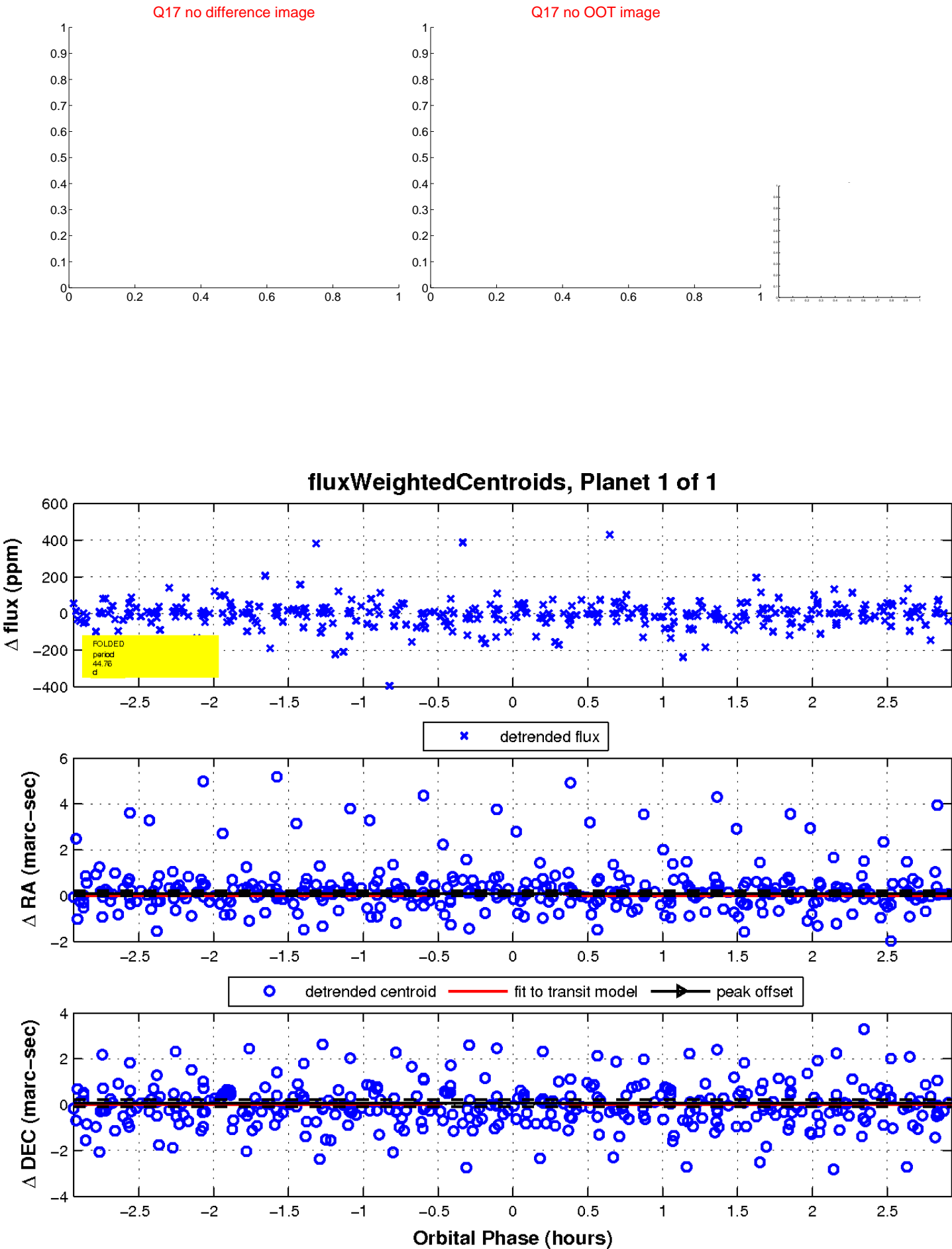
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UKIRT Image

