

KIC 002166218

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})
002166218-01	OBS	No	0.698658	131.681945	8.2	6.900	11.0	7.1	11.95	6980	3.68	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002166218-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED

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

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

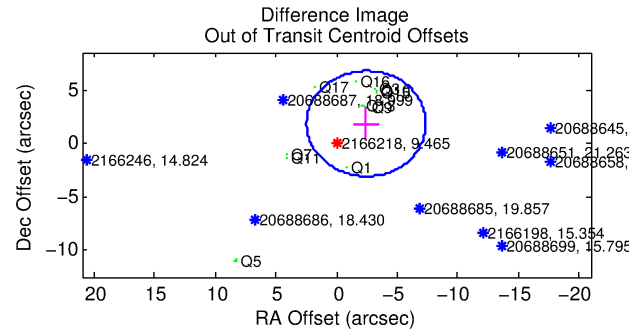
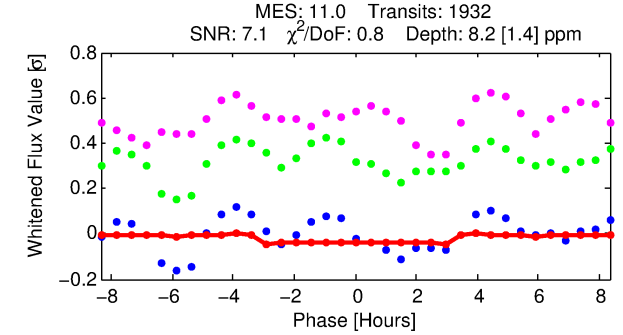
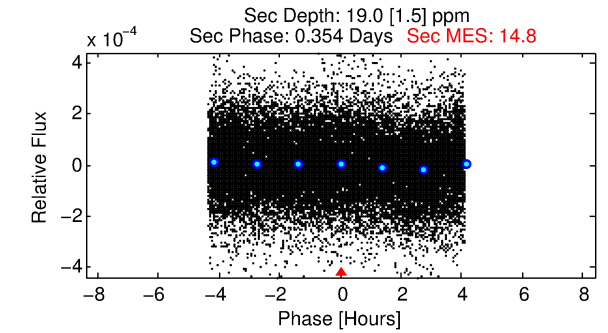
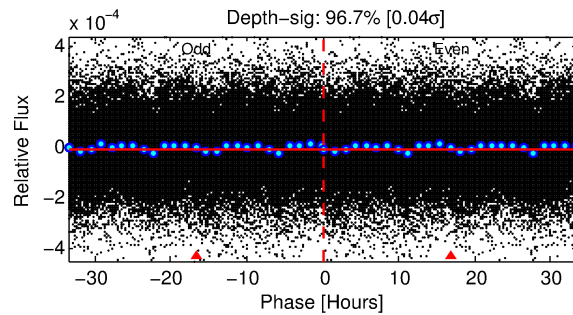
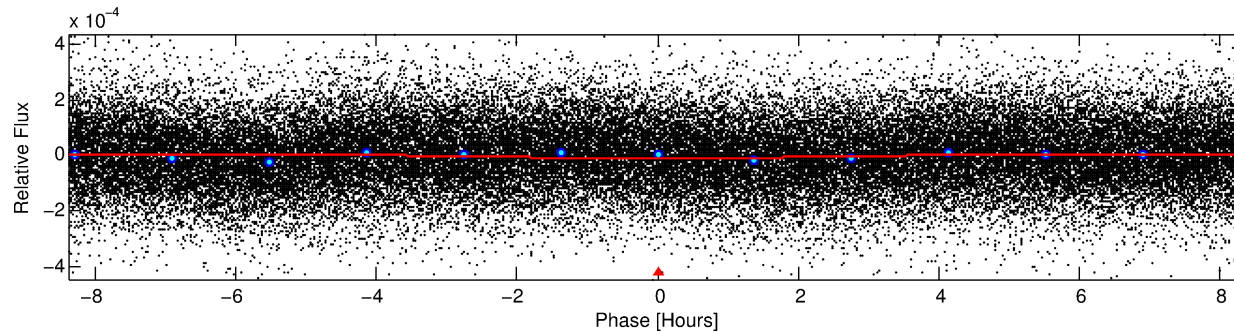
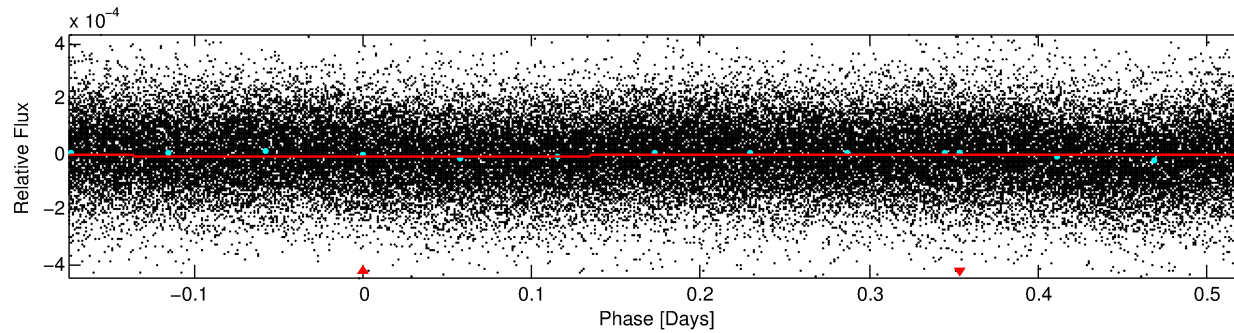
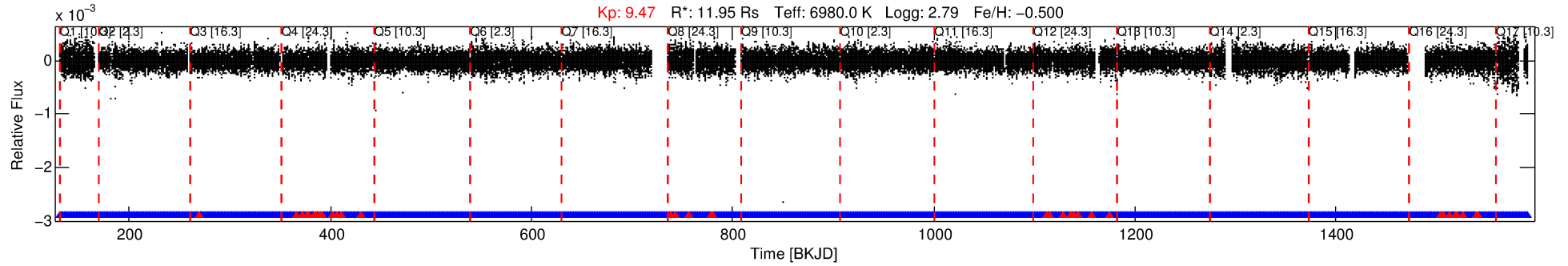
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002166218-01

No Significant Match Found

DV One-Page Summary

KIC: 2166218 Candidate: 1 of 1 Period: 0.699 d



DV Fit Results:

Period = 0.69866 [0.00002] d
Epoch = 131.6819 [0.0047] BKJD
Rp/R* = 0.0028 [0.0018]
a/R* = 1.02 [0.17]
b = 0.71 [2.77]
Seff = N/A
Teq = N/A
Rp = 3.68 [2.53] Re
a = N/A
Ag = N/A
Teffp = N/A

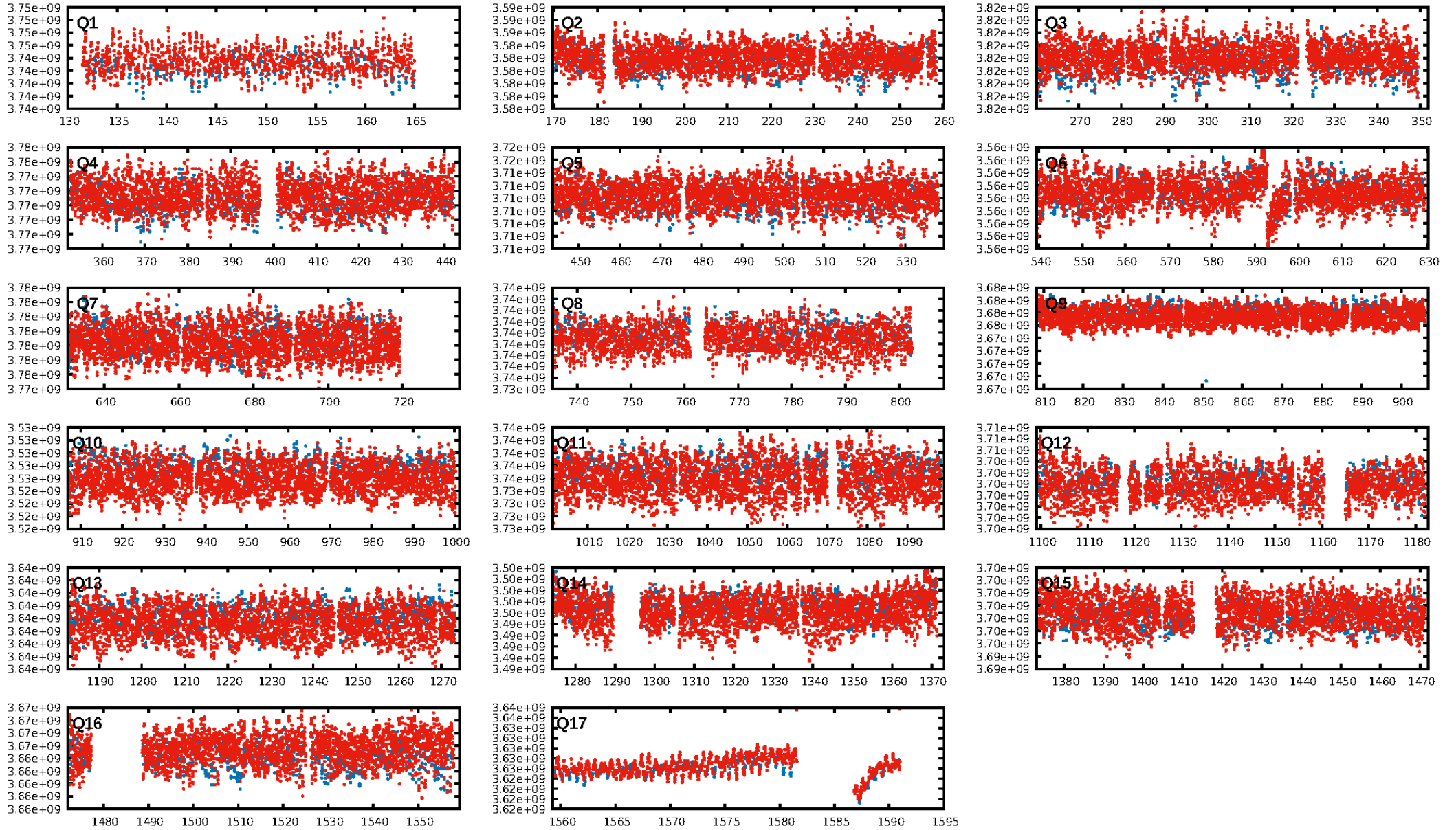
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [1808/1846]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.772 arcsec [1.20 σ]
OotOffset-rm: 3.057 arcsec [1.86 σ]
KicOffset-rm: 2.860 arcsec [1.71 σ]
OotOffset-st: 1/4/1/5 [11]
KicOffset-st: 1/4/1/5 [11]
DiffImageQuality-fgm: 0.09 [1/11]
DiffImageOverlap-fno: 1.00 [17/17]

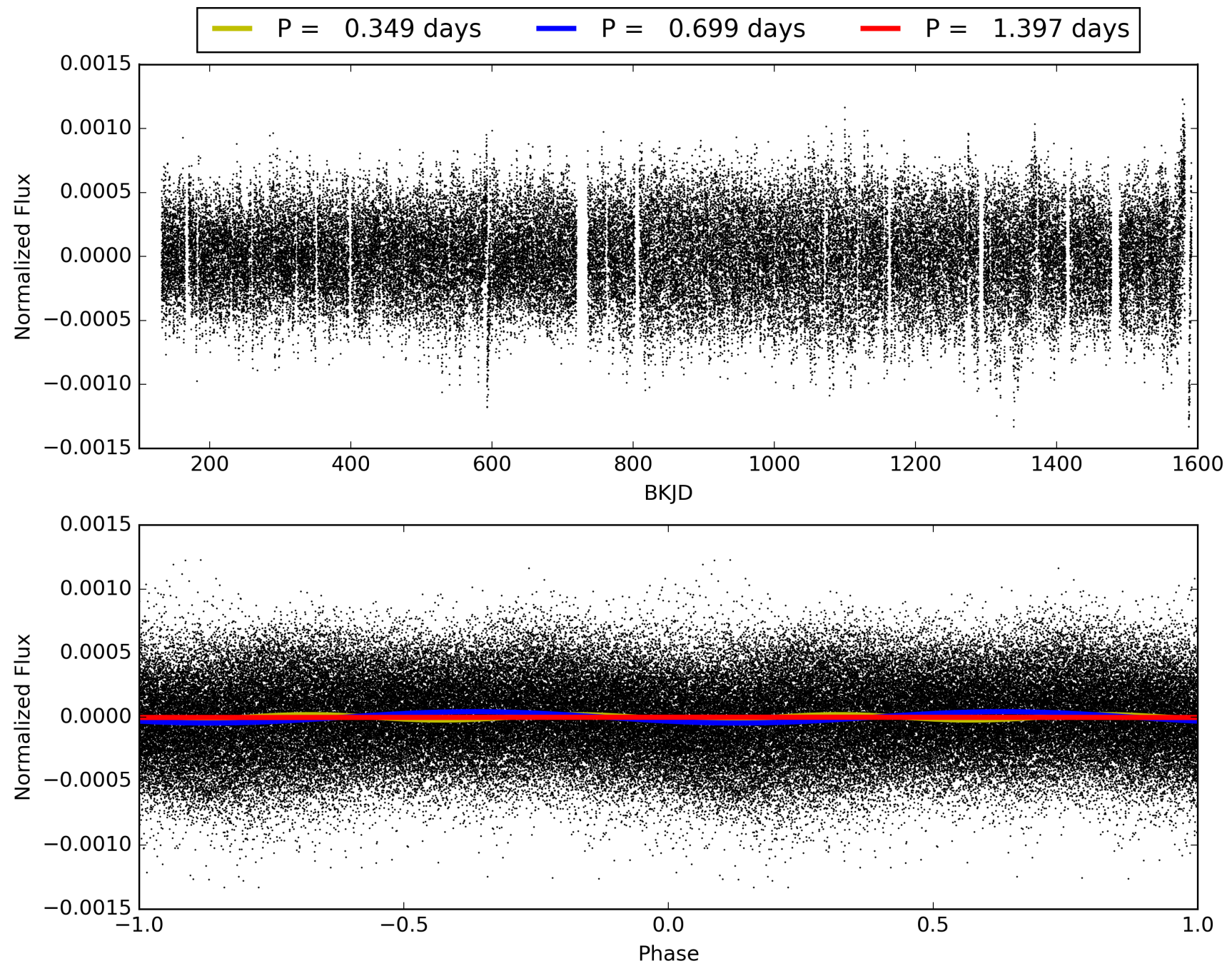
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:51:19 Z

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

TCE 002166218-01, PDC Light Curves

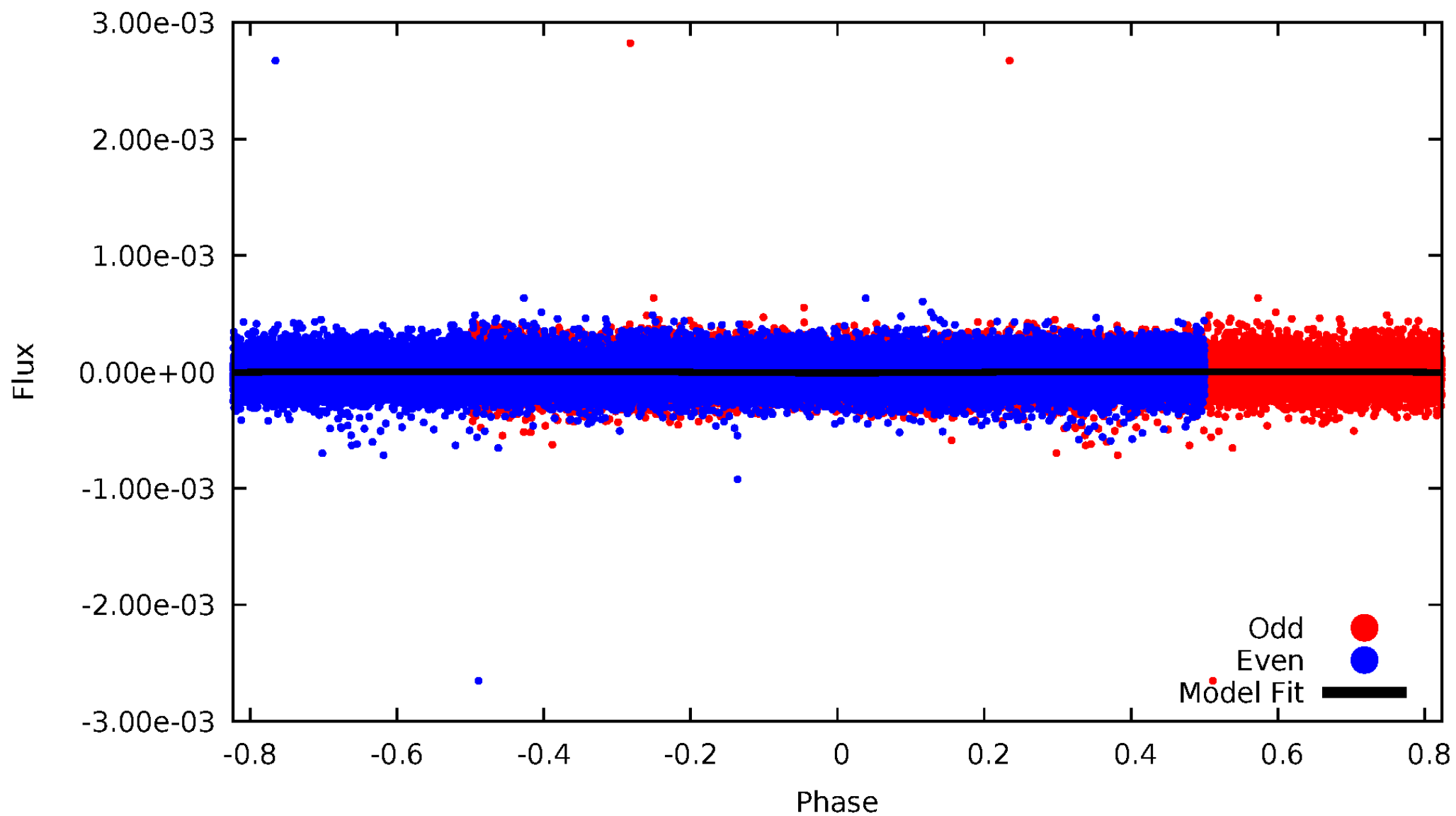


TCE 002166218-01



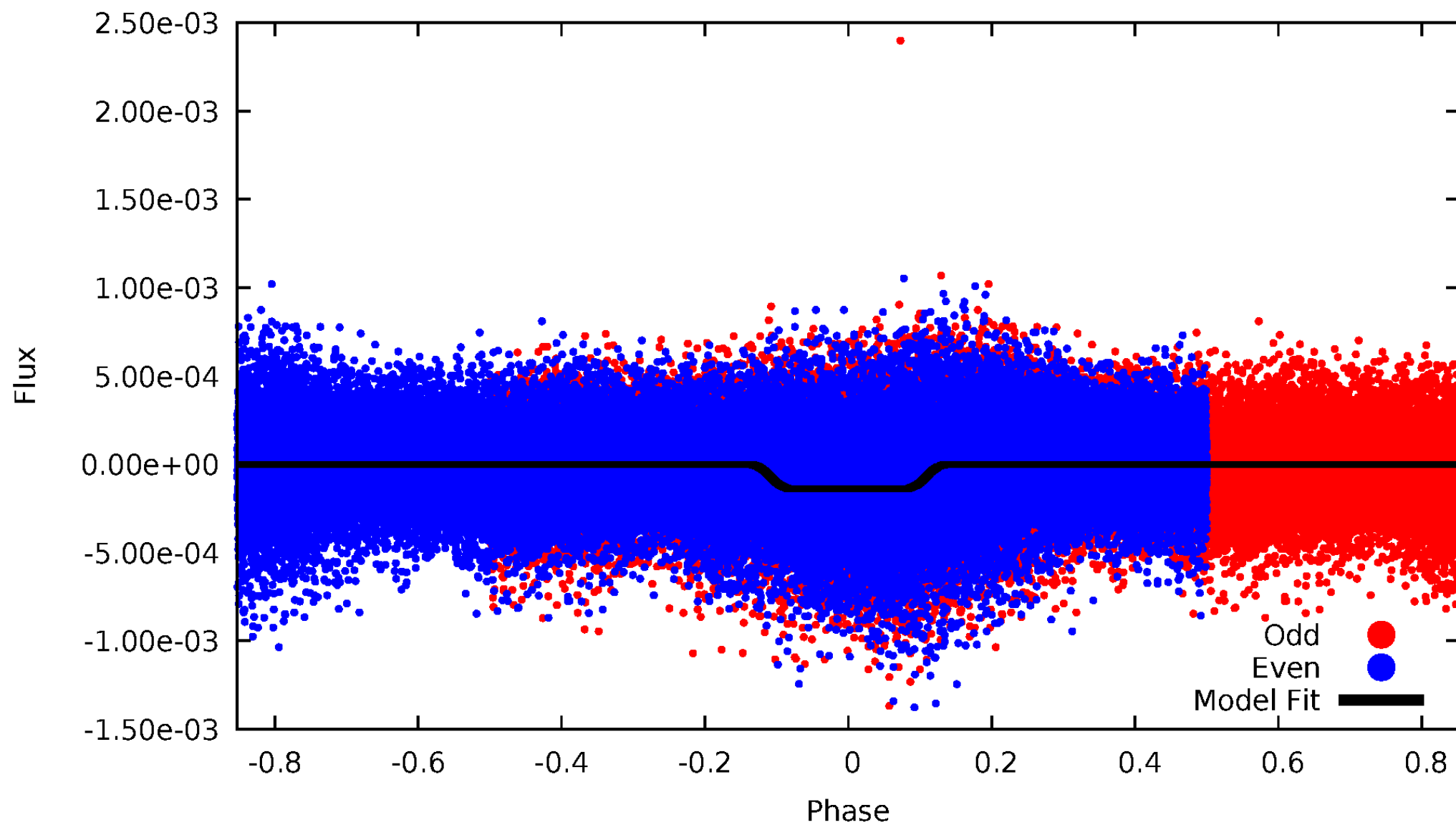
DV Odd/Even

TCE 002166218-01

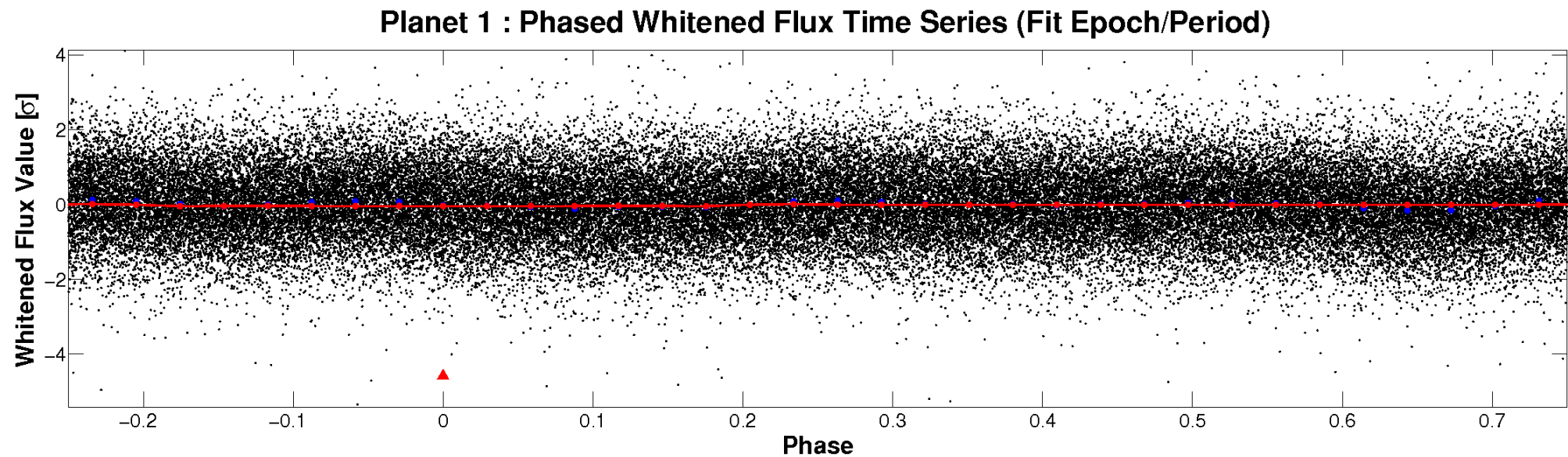
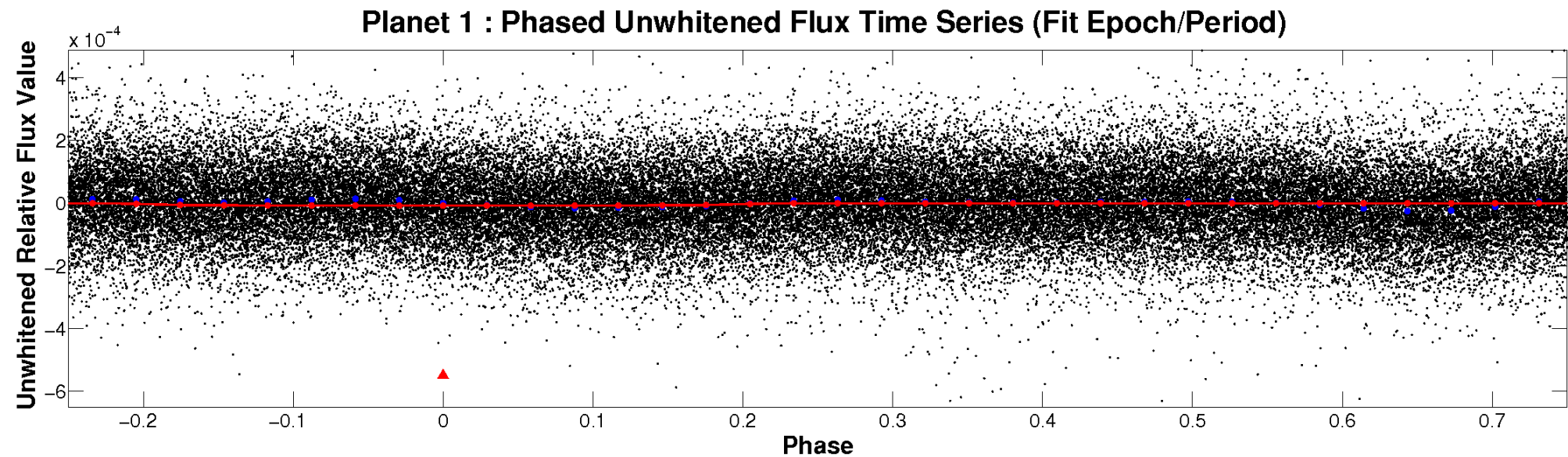


ALT Odd/Even

TCE 002166218-01

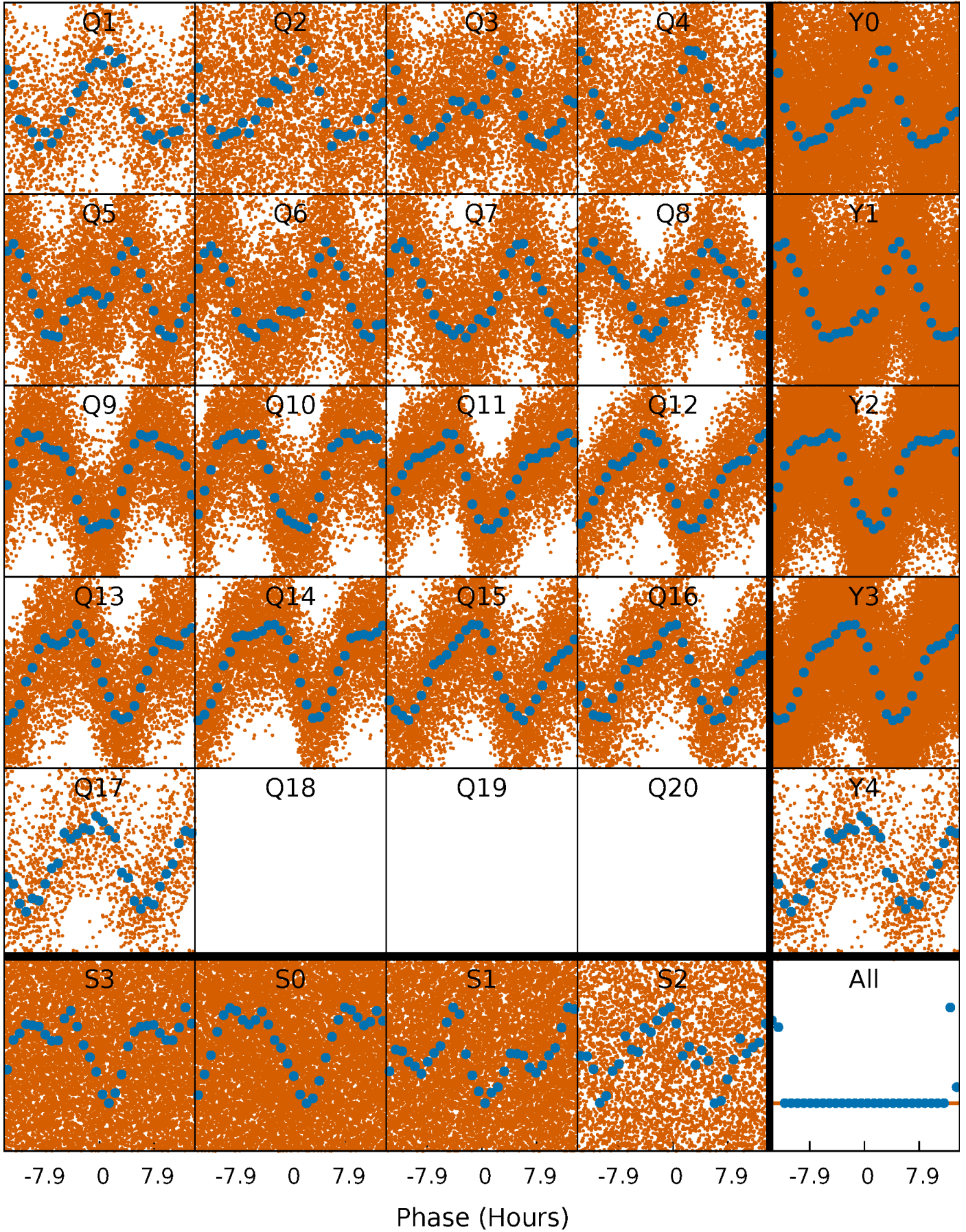


Non-Whitened Vs. Whitened Light Curve



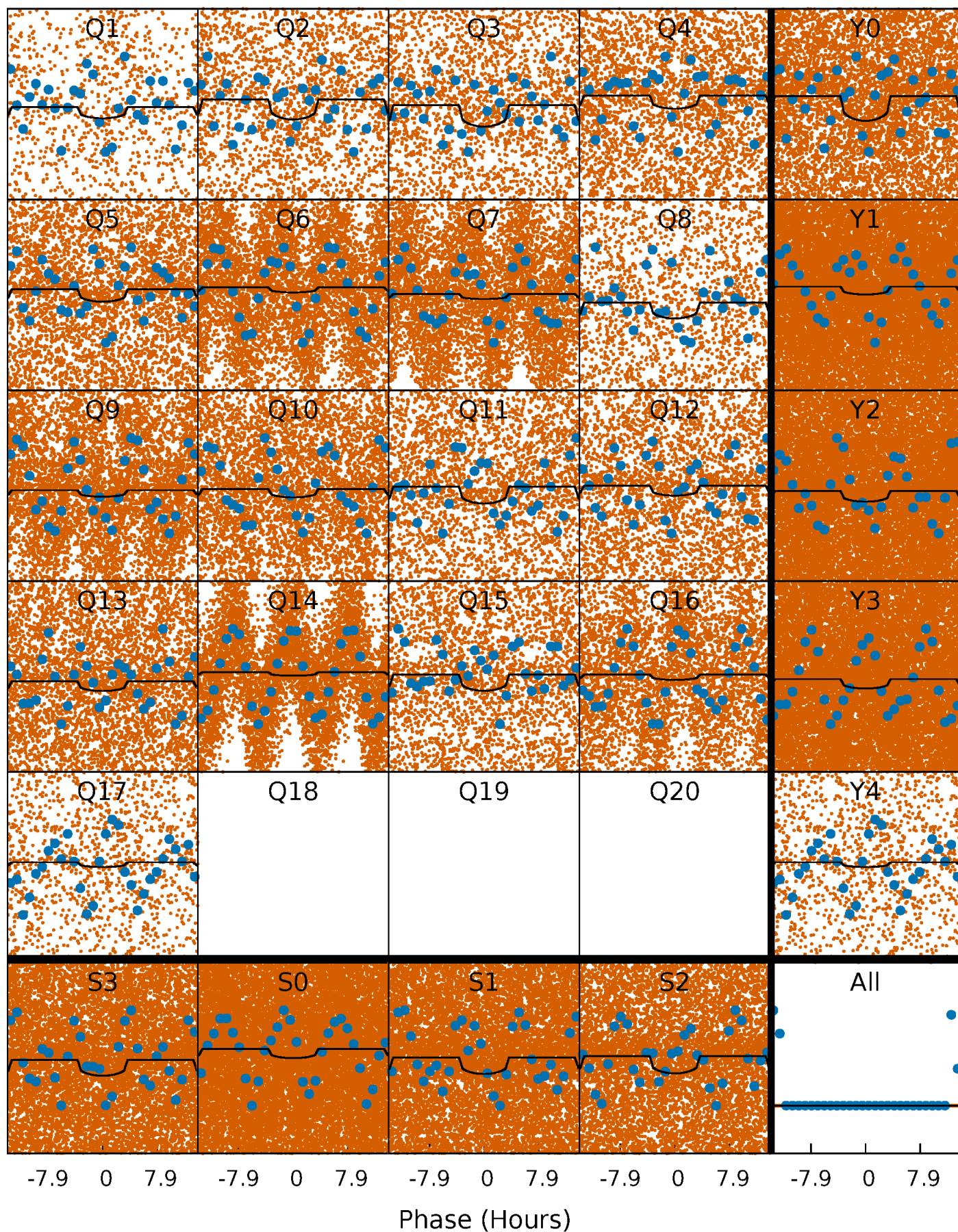
PDC Quarter-Phased Transit Curves

TCE 002166218-01 P= 0.698658 Days $T_0=131.681946$ (BKJD)



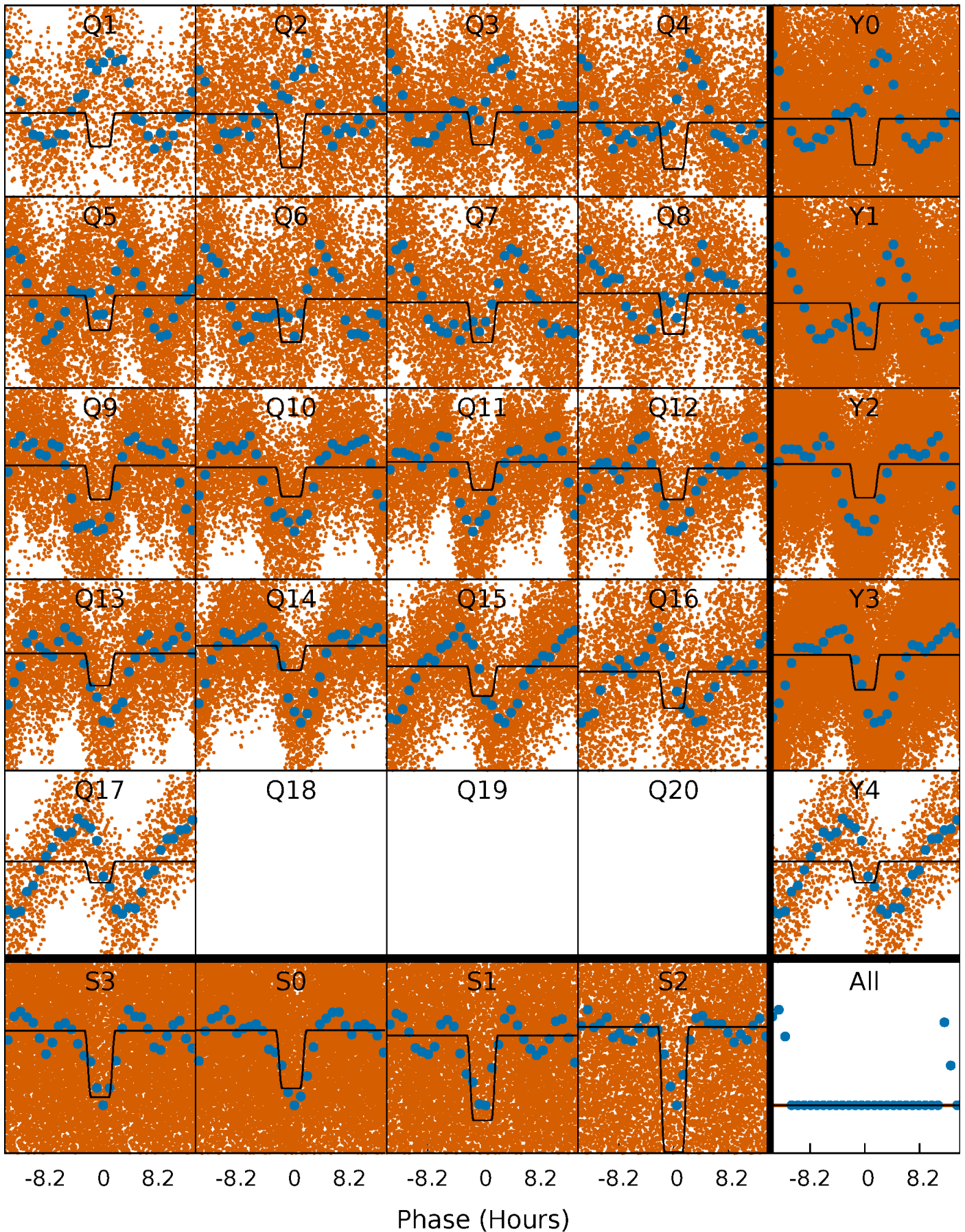
DV Quarter-Phased Transit Curves

TCE 002166218-01 P= 0.698658 Days $T_0=131.681946$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

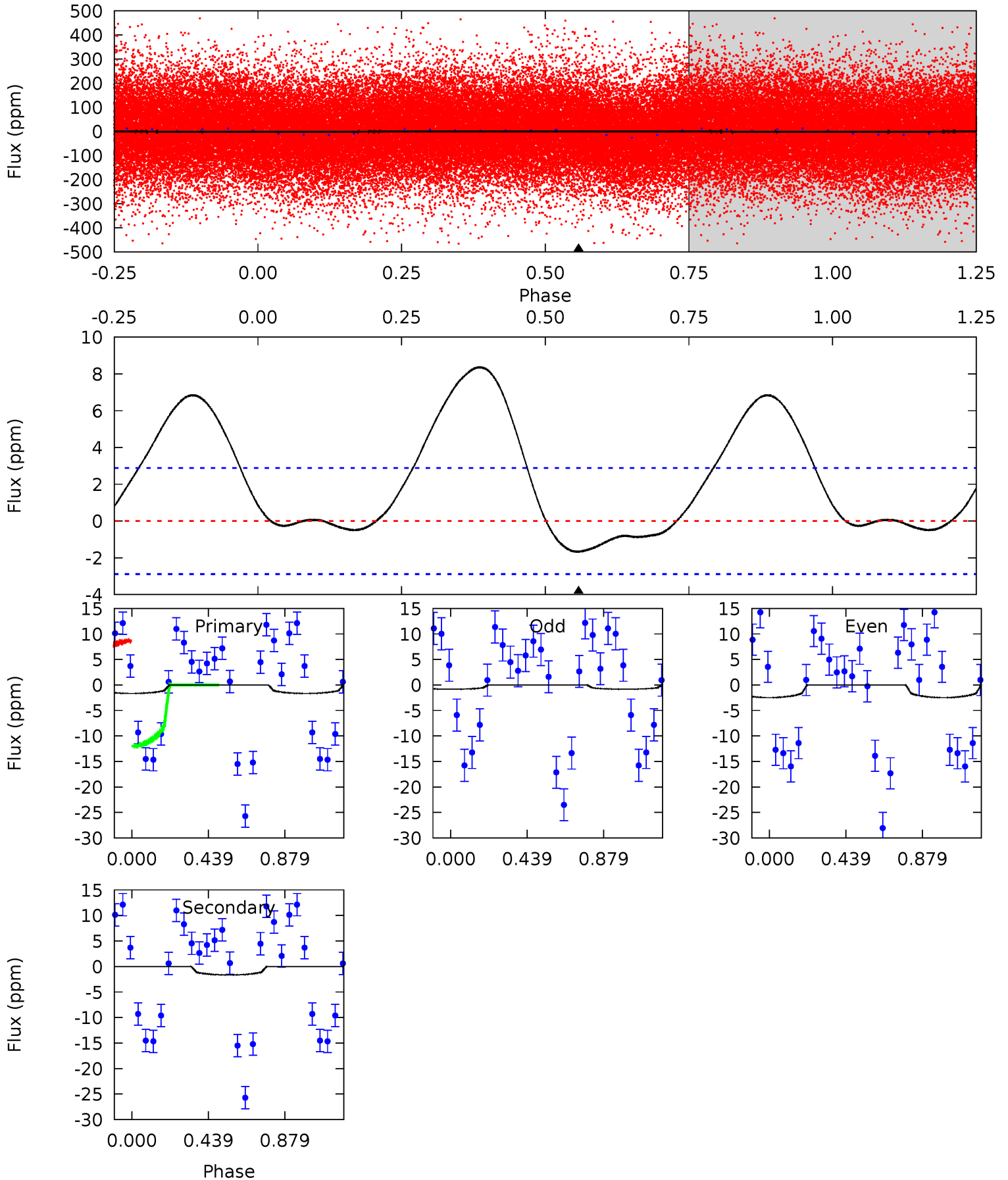
TCE 002166218-01 P= 0.698715 Days $T_0=131.676313$ (BKJD)



DV Model-Shift Uniqueness Test

002166218-01, P = 0.698658 Days, E = 130.983288 Days

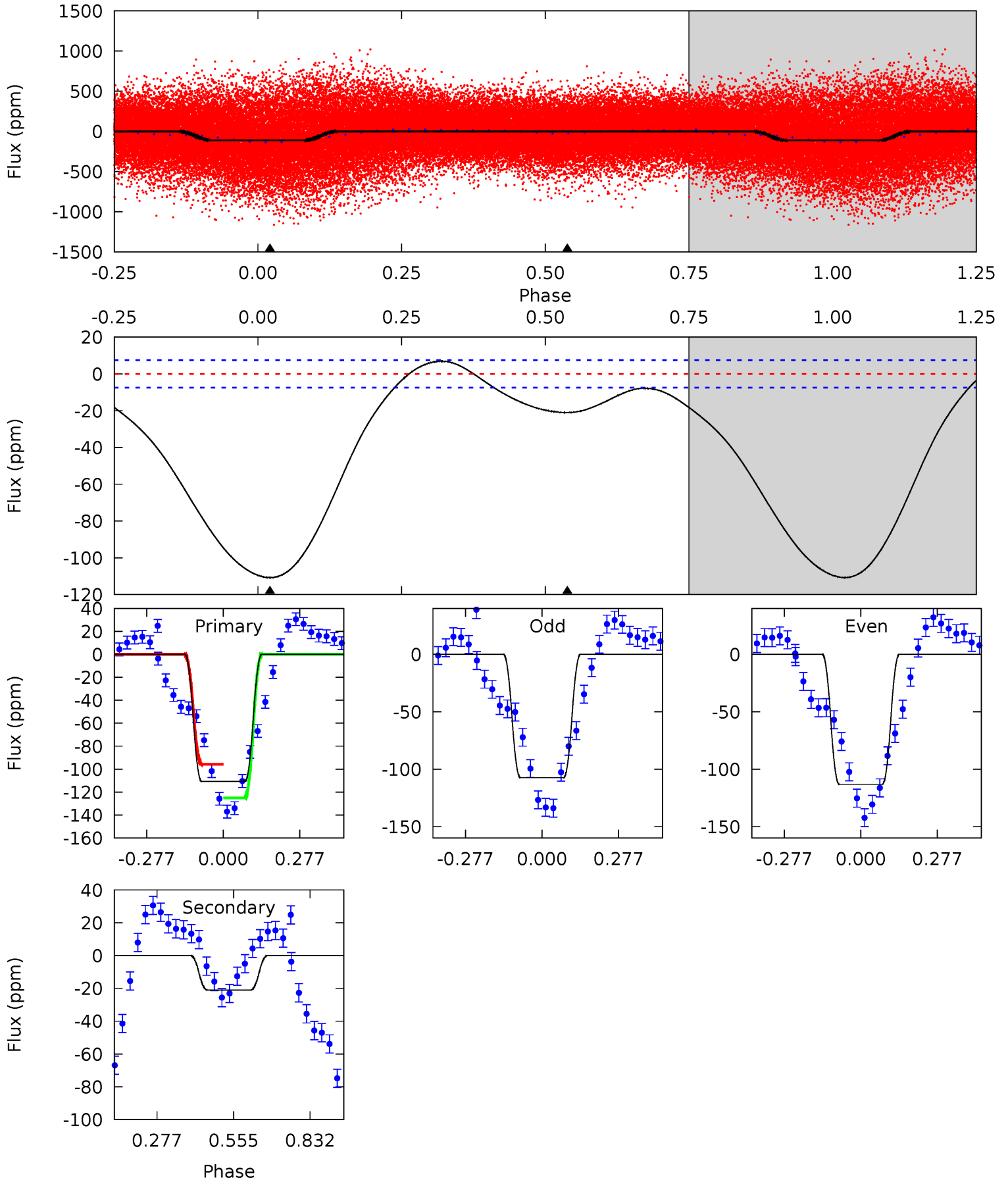
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.46	2.46	0	0	4.24	0.77	0.40	2.46	2.46	2.46	2.46	1.20	0.76	0.83	2.41



Alt Model-Shift Uniqueness Test

002166218-01, P = 0.698715 Days, E = 130.977598 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.6	12.3	0	0	4.35	1.09	7.96	64.6	64.6	12.3	12.3	1.65	0.94	0.06	7.53



Stellar Parameters For KIC 002166218

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6980^{+380}_{-1523}	$2.794^{+0.187}_{-0.170}$	$-0.500^{+0.600}_{-0.050}$	$11.948^{+1.838}_{-2.757}$	$3.239^{+0.039}_{-0.744}$	$0.003^{+0.003}_{-0.001}$
	+5%/-22%	+7%/-6%	+120%/-10%	+15%/-23%	+1%/-23%	+95%/-42%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 002166218-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 1	$3.74^{+2.18}_{-2.21}$	9606^{+1020}_{-2116}	-7390^{+3122}_{-1341}	$0.030^{+0.155}_{-0.020}$
Alt.	-21 ± 2	$15.18^{+3.02}_{-2.90}$	9662^{+1011}_{-2117}	-7813^{+1845}_{-1101}	$0.025^{+0.013}_{-0.008}$

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

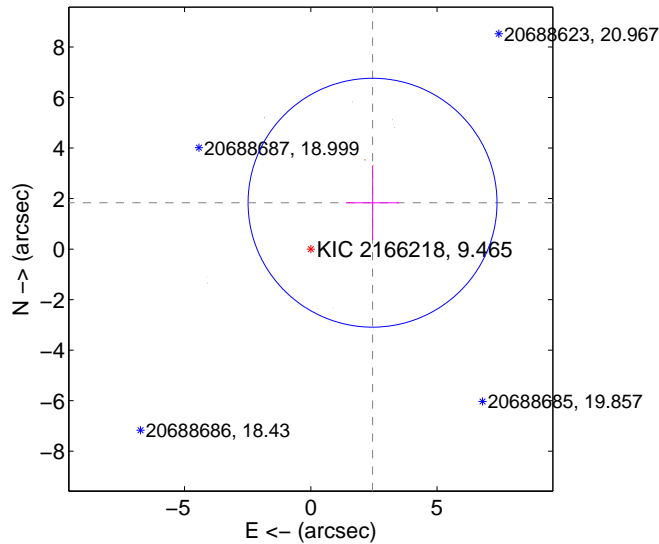
Supplemental centroid analysis for 002166218-01. **Kepler magnitude: 9.46.** Transit SNR 7.12

There are 1 quarters with good PRF difference image offsets

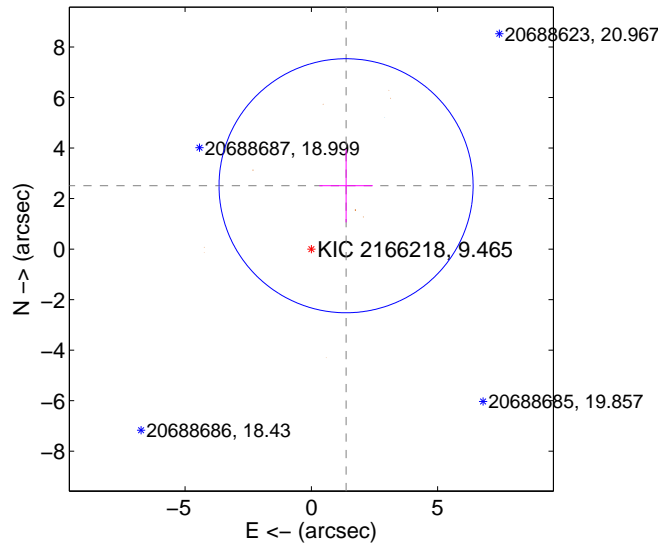
The OOT PRF centroid is offset from the target star catalog position by about 2.12 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.057 ± 1.642	1.86	-2.444 ± 1.050	1.836 ± 1.472
PRF-fit source offset from KIC position	2.860 ± 1.676	1.71	-1.374 ± 1.057	2.508 ± 1.450
photometric centroid source offset	1.77 ± 1.48	1.20	0.73 ± 0.95	-1.61 ± 1.57

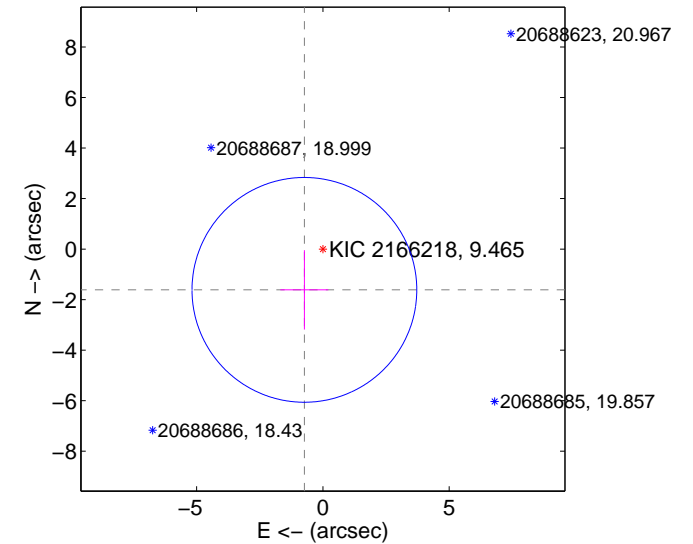
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

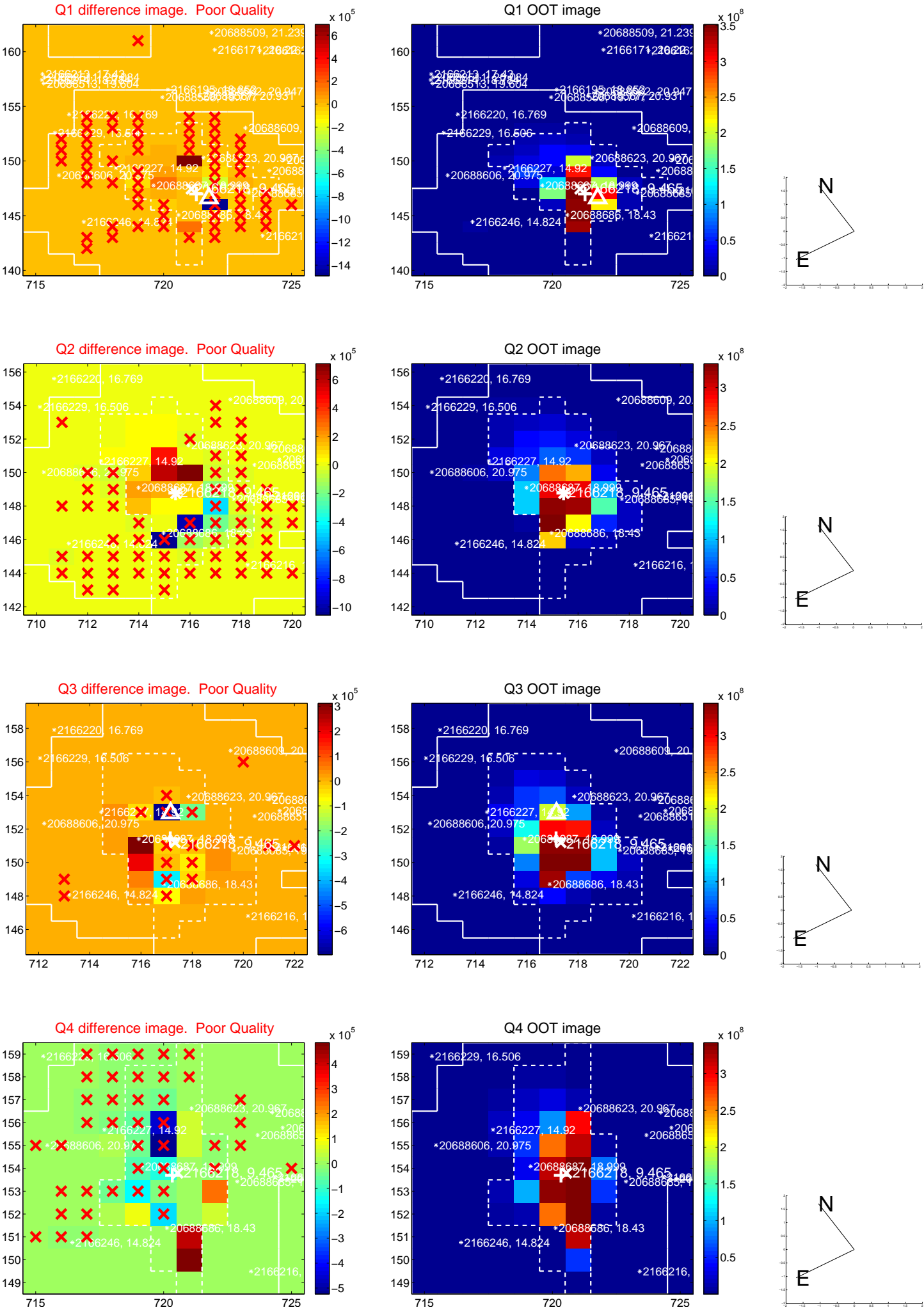


offset from photometric centroids

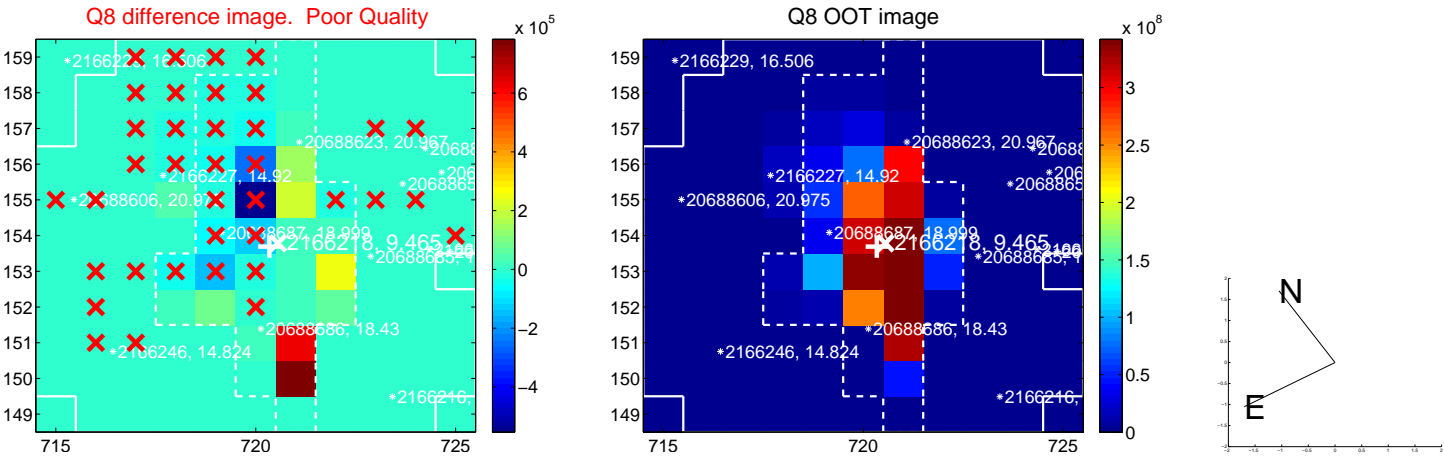
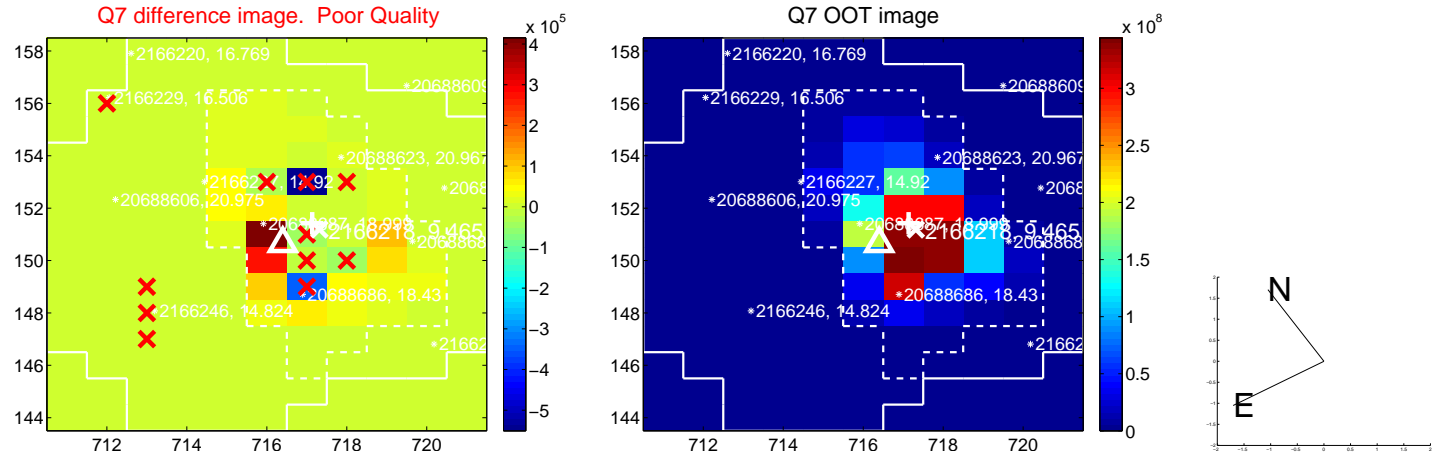
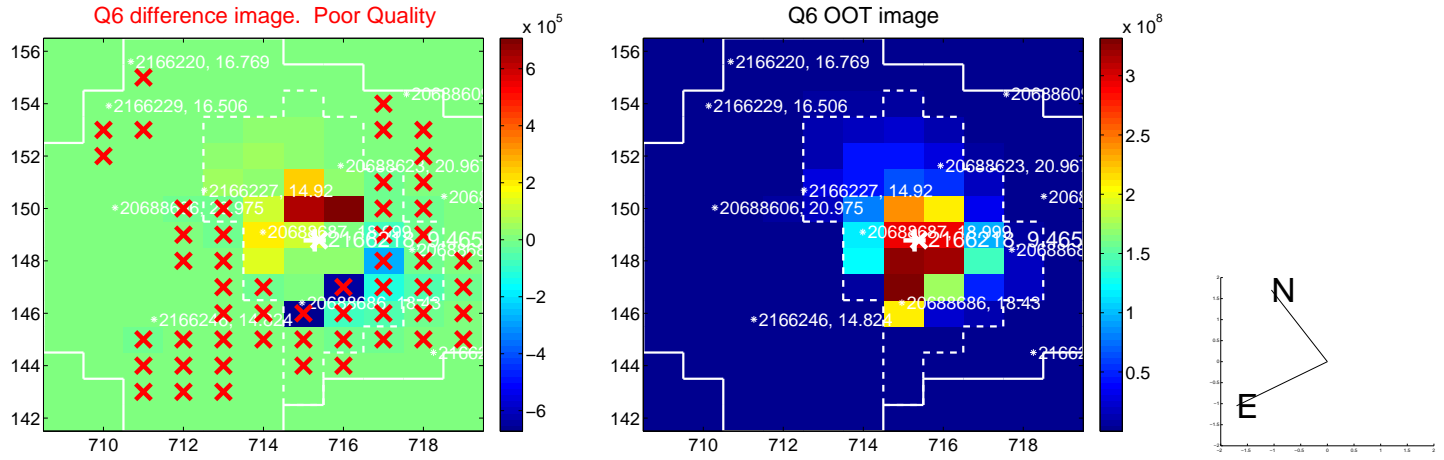
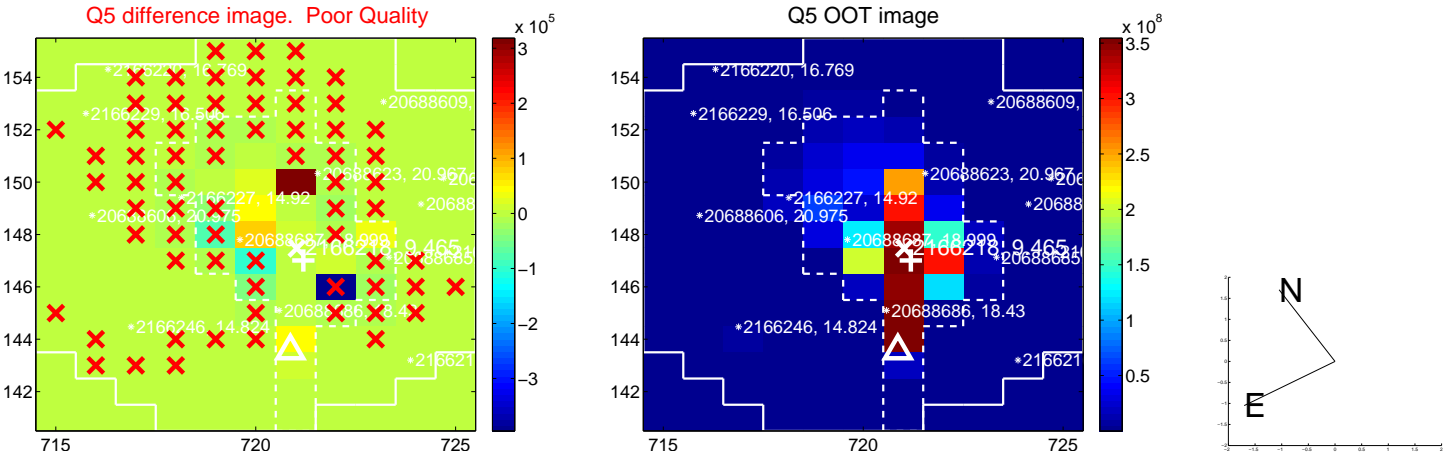


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

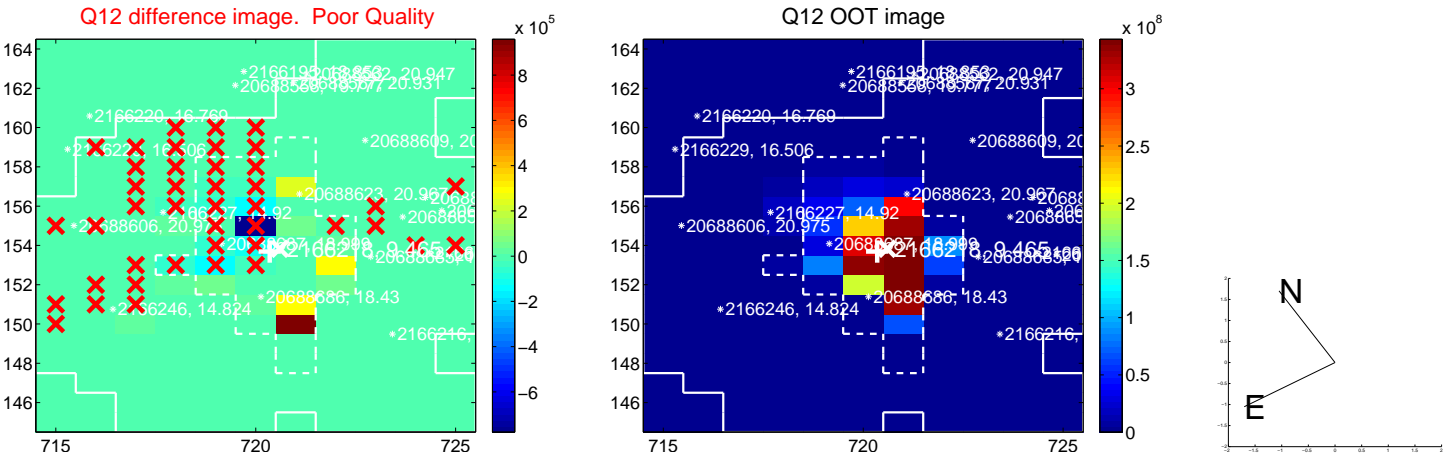
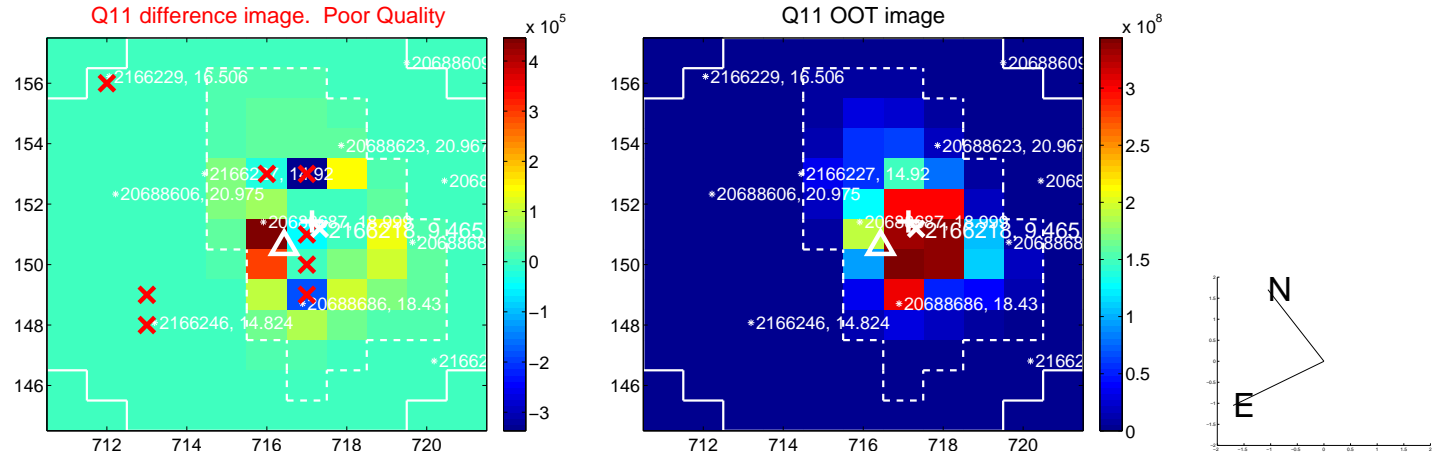
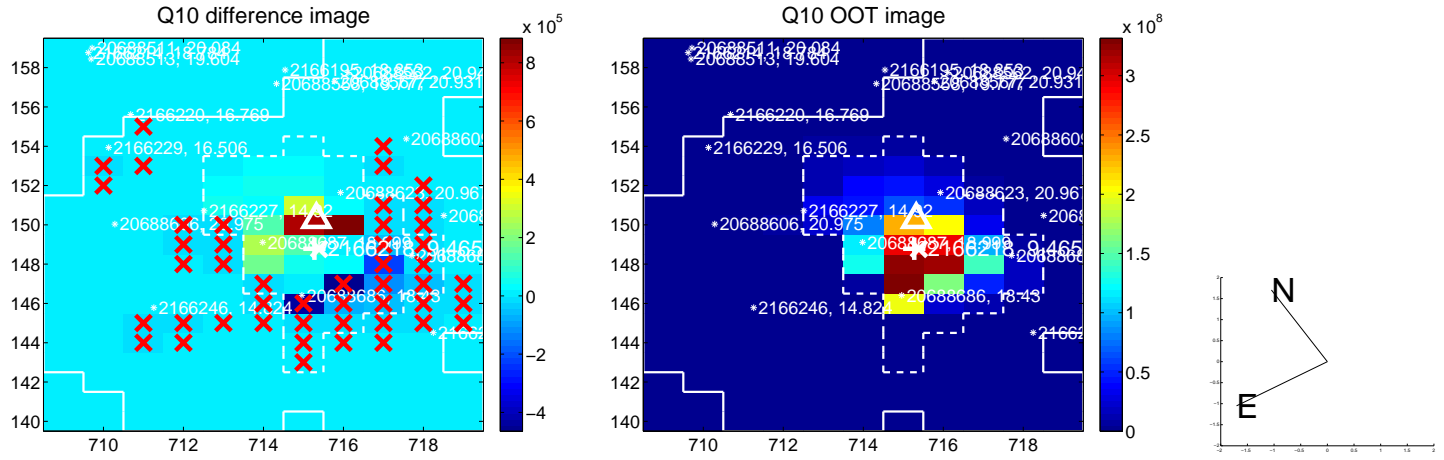
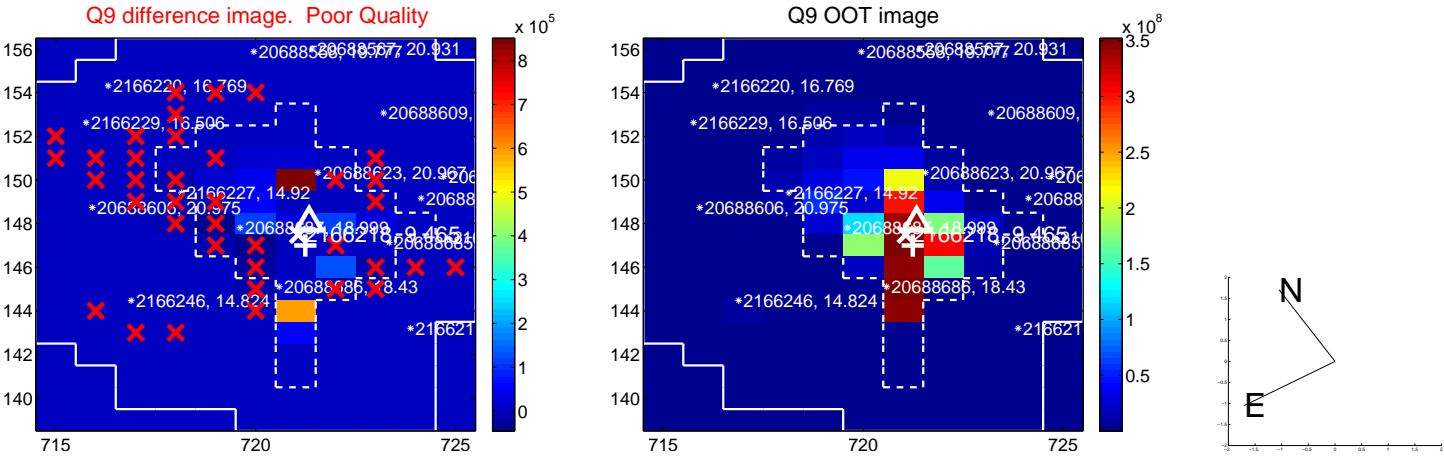
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



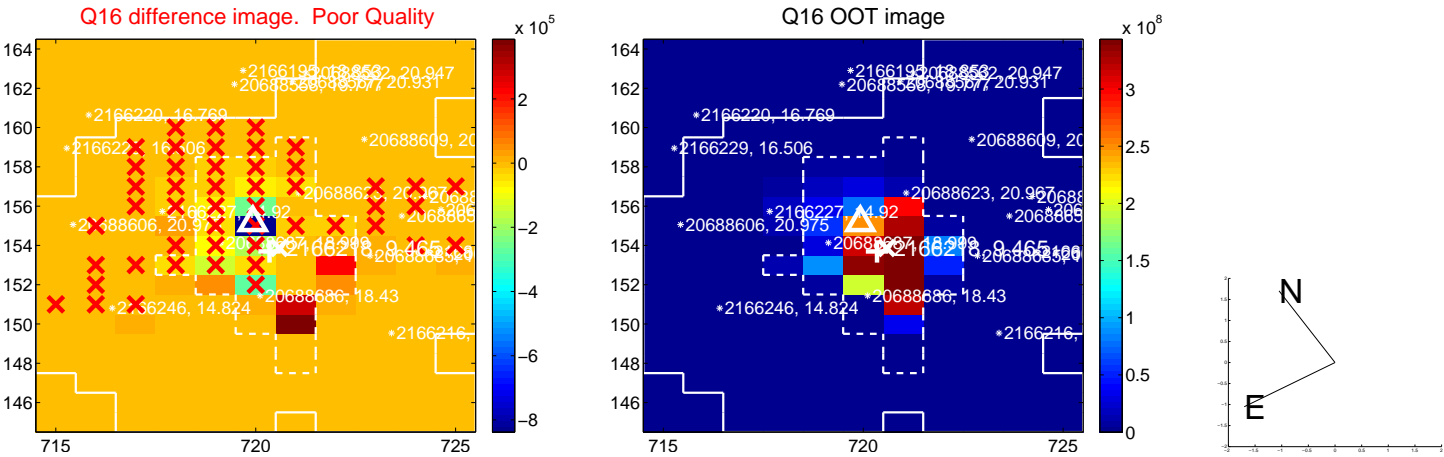
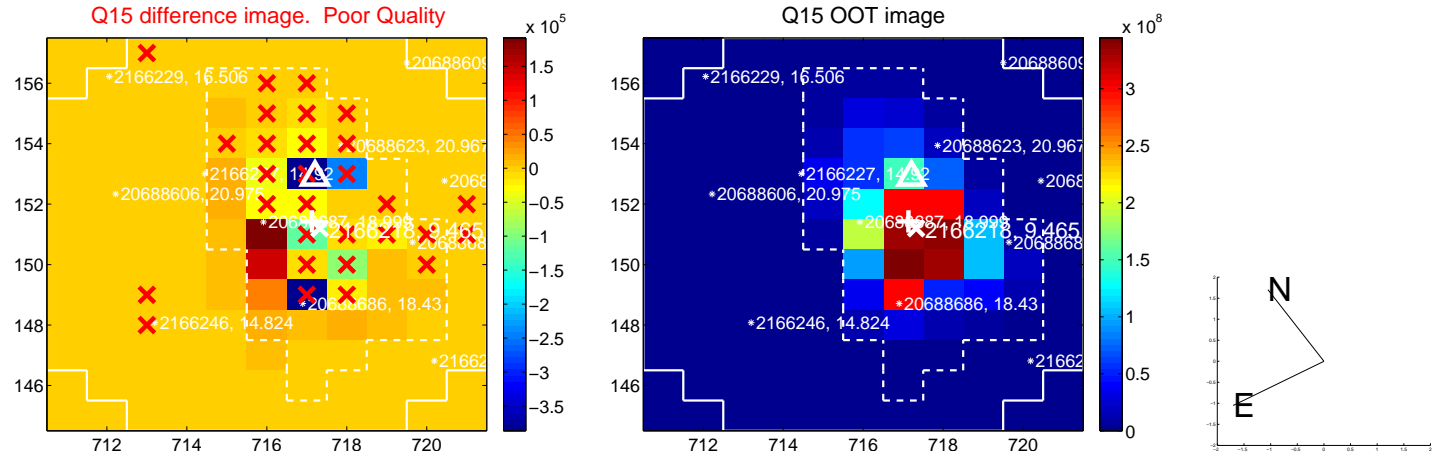
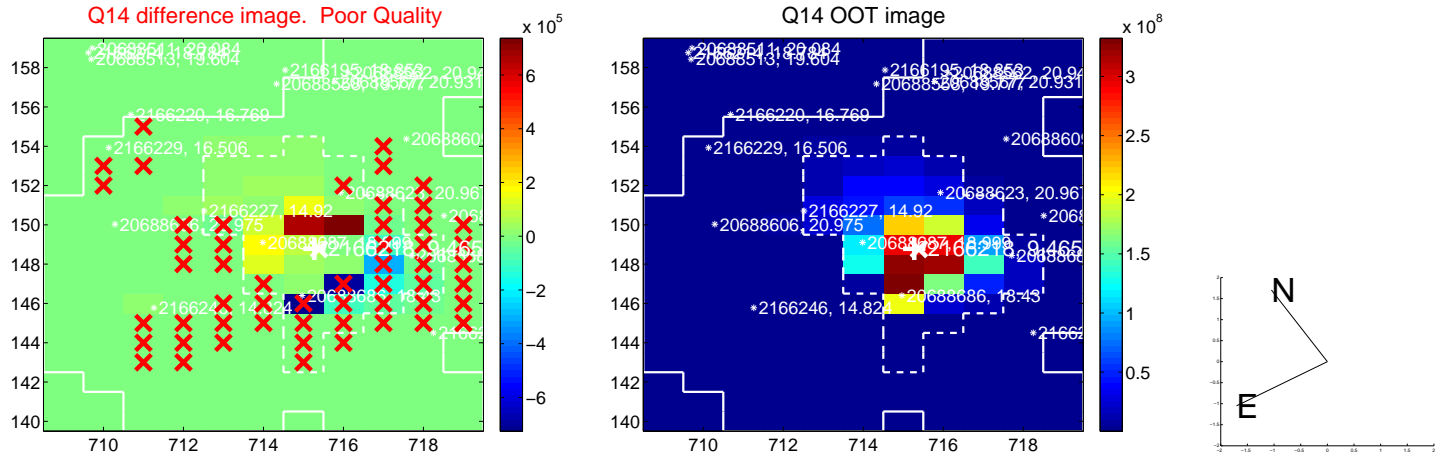
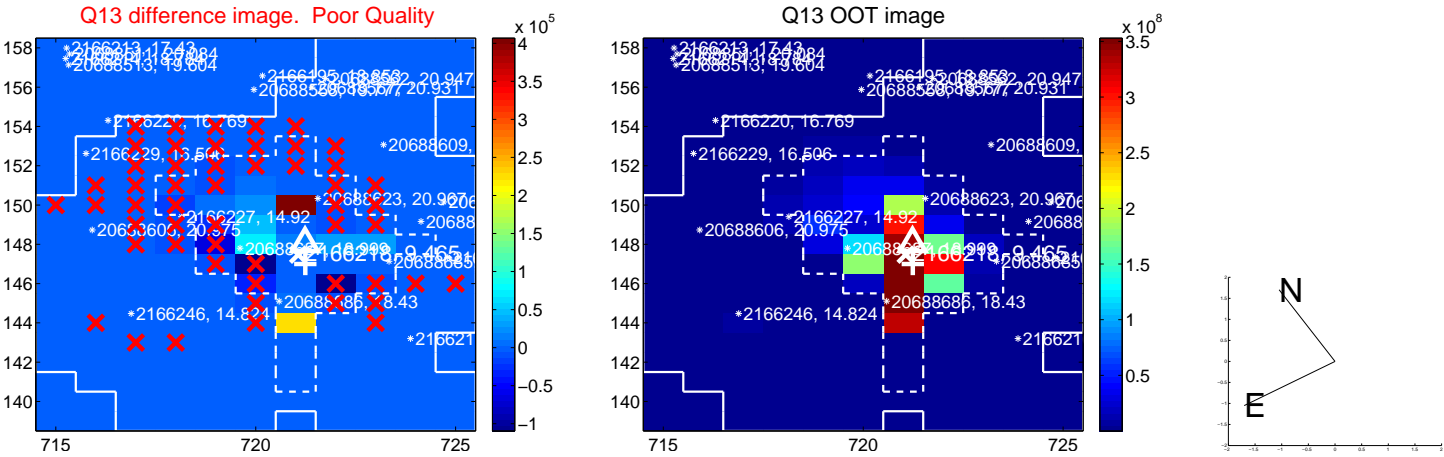
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



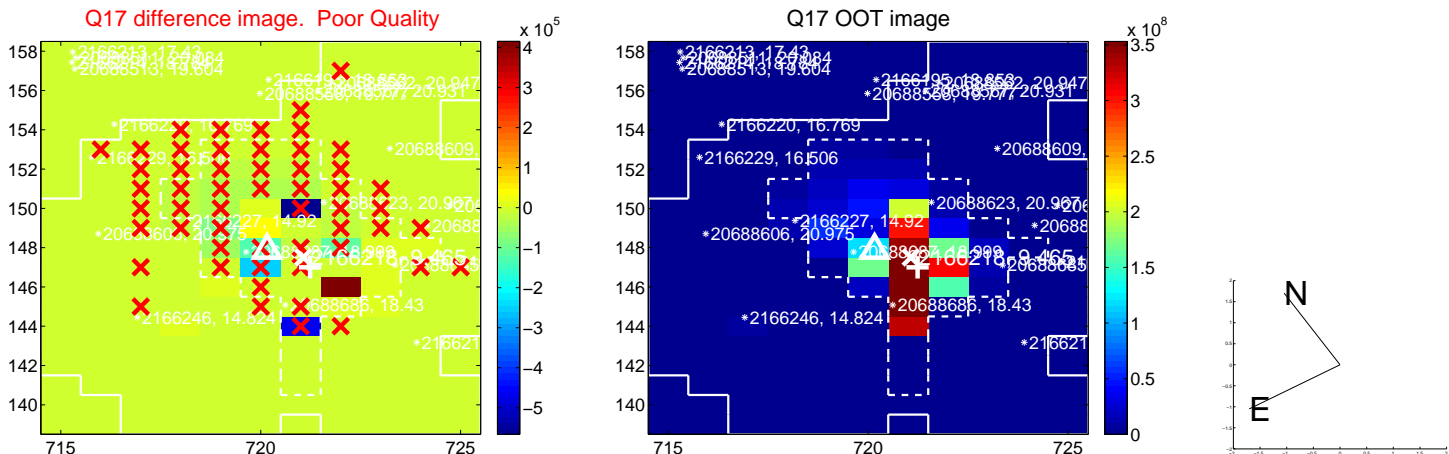
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



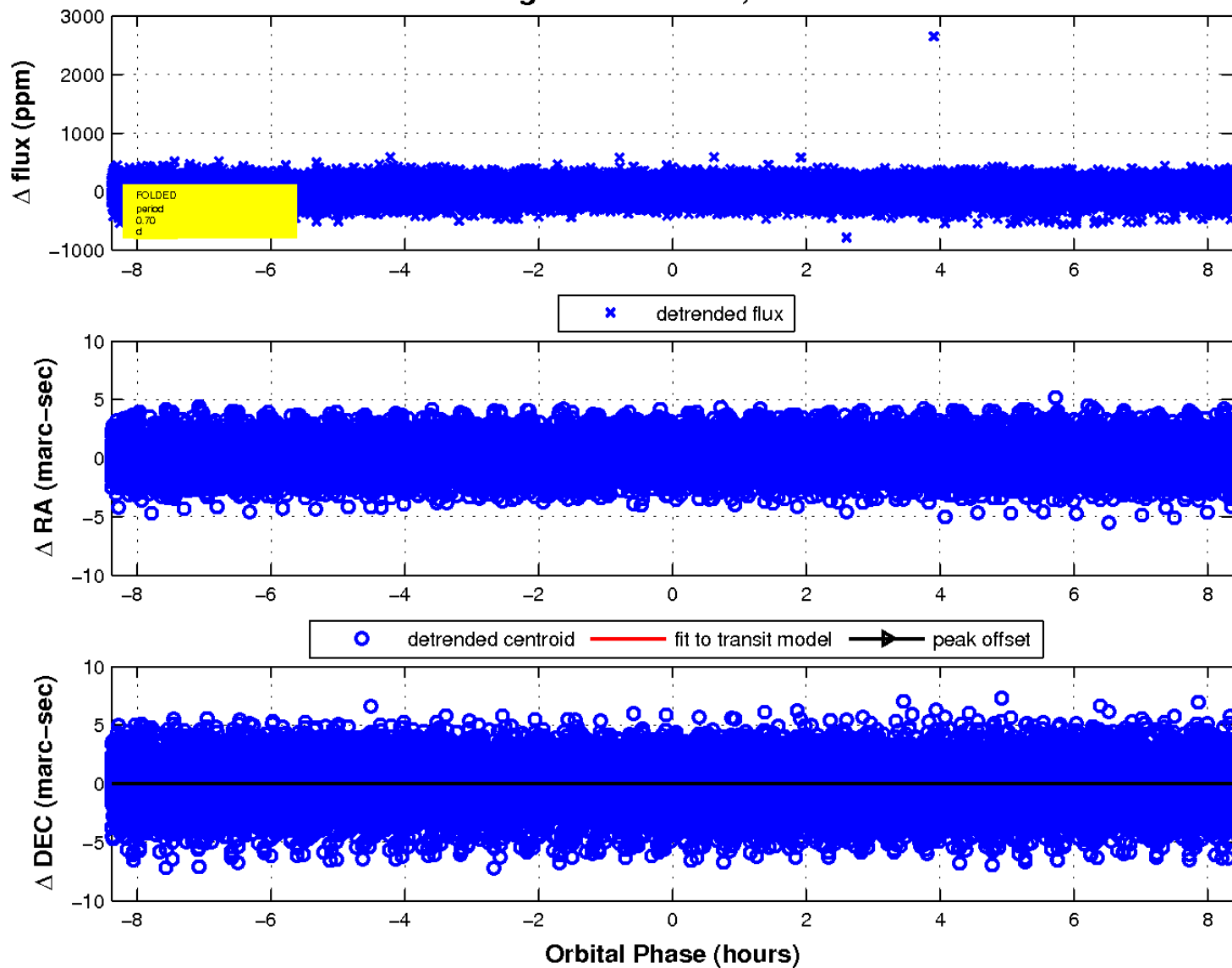
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

