

KIC 002309568

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})
002309568-01	OBS	No	5.473953	132.805421	148.7	33.177	7.3	10.6	1.12	6419	2.68	469.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002309568-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

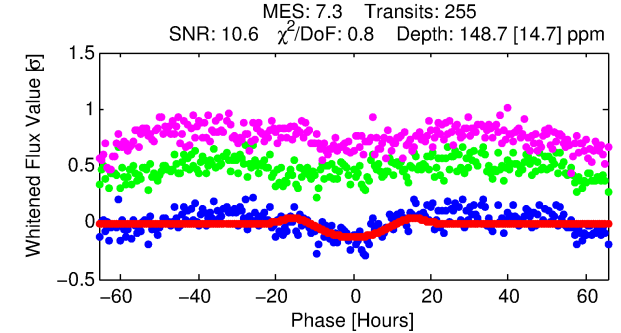
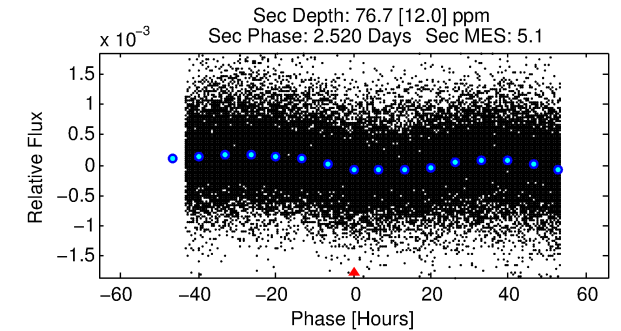
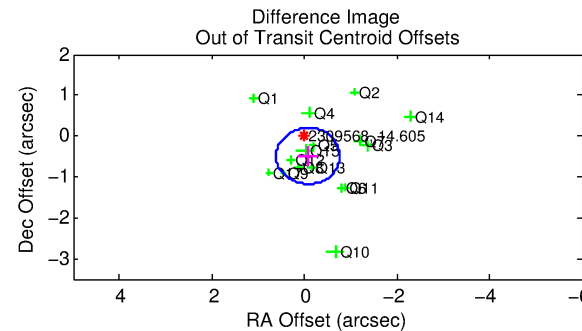
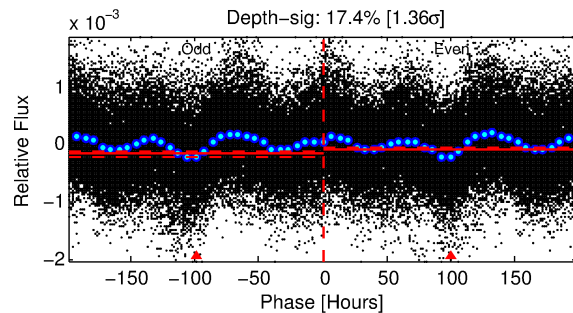
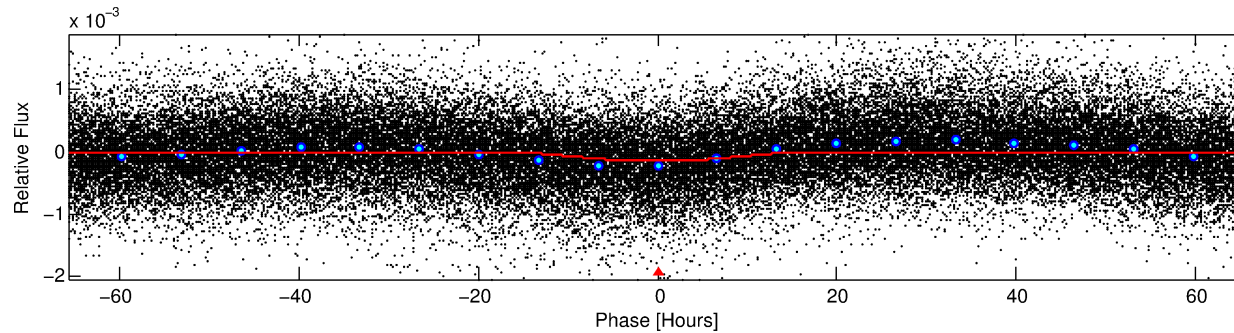
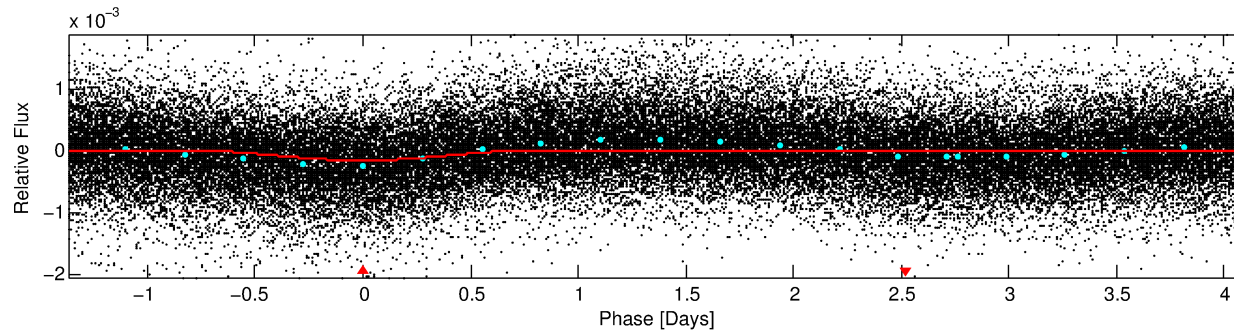
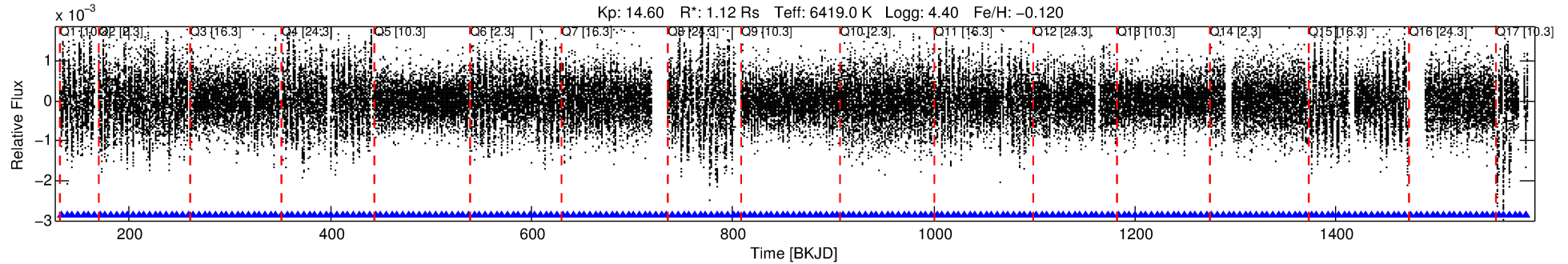
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002309568-01

No Significant Match Found

DV One-Page Summary

KIC: 2309568 Candidate: 1 of 1 Period: 5.474 d



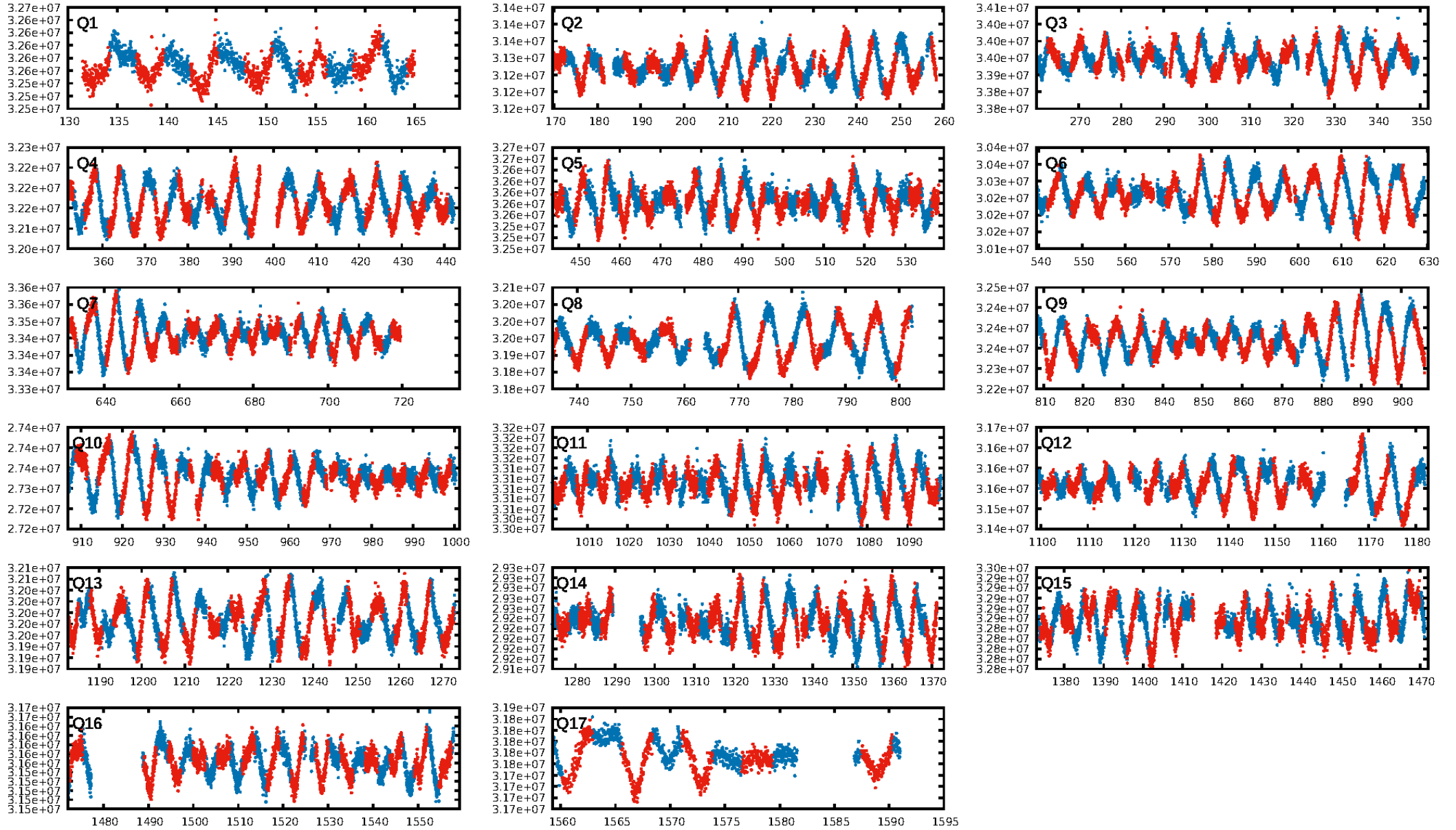
DV Fit Results:

Period = 5.47395 [0.00033] d
Epoch = 132.8054 [0.0510] BKJD
Rp/R* = 0.0219 [0.0238]
a/R* = 1.04 [0.01]
b = 1.00 [0.04]
Seff = 469.28 [182.48]
Teq = 1187 [115] K
Rp = 2.68 [3.04] Re
a = 0.0638 [0.0165] AU
Ag = 23.91 [52.88] [0.43σ]
Teff = 4058 [2217] K [1.29σ]

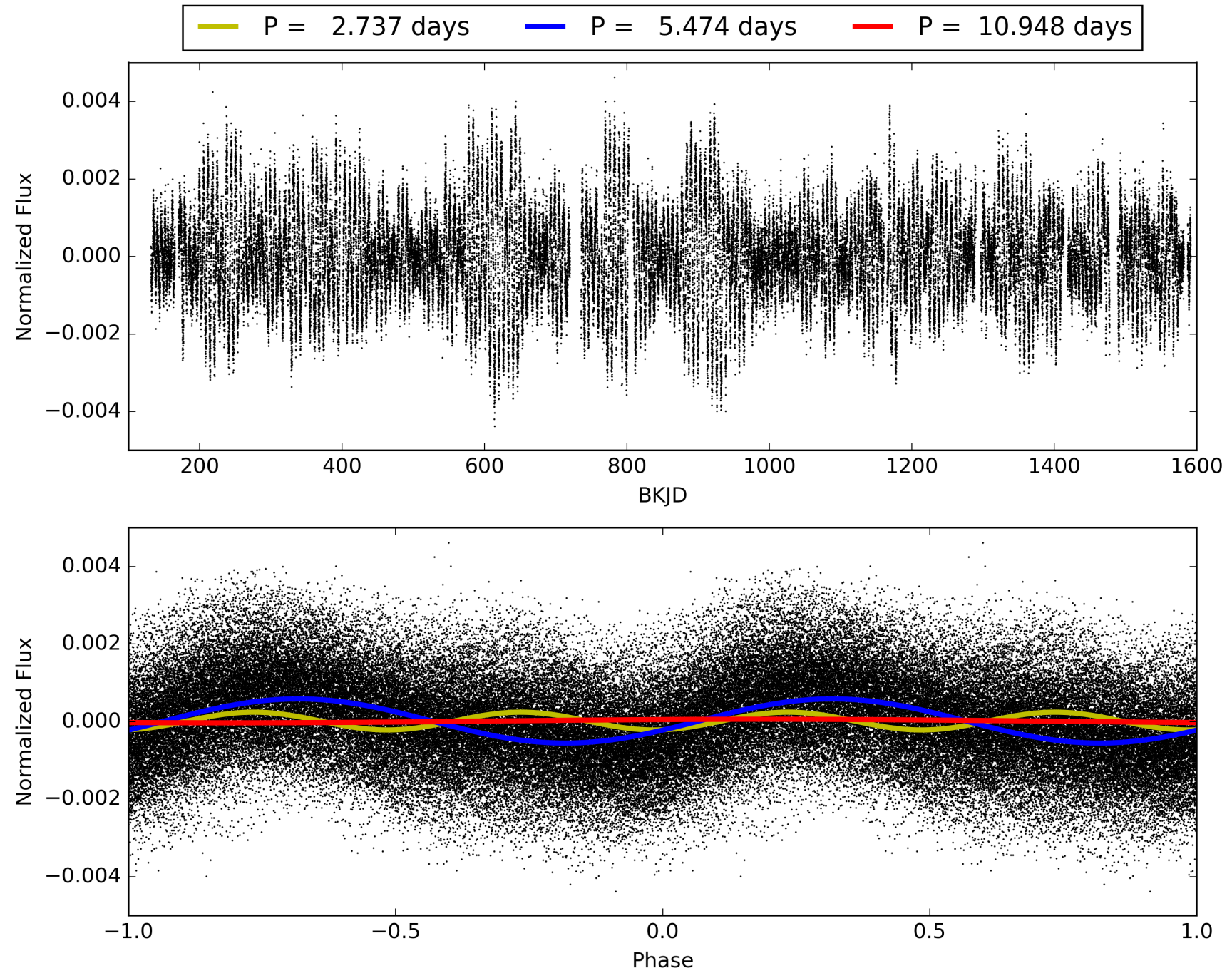
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.56e-13
RollingBand-fgt: 1.00 [243/243]
GhostDiagnostic-chr: 1.44
Centroid-sig: 0.0%
Centroid-so: 1.638 arcsec [3.15σ]
OotOffset-rm: 0.496 arcsec [2.17σ]
KicOffset-rm: 0.384 arcsec [1.61σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002309568-01, PDC Light Curves

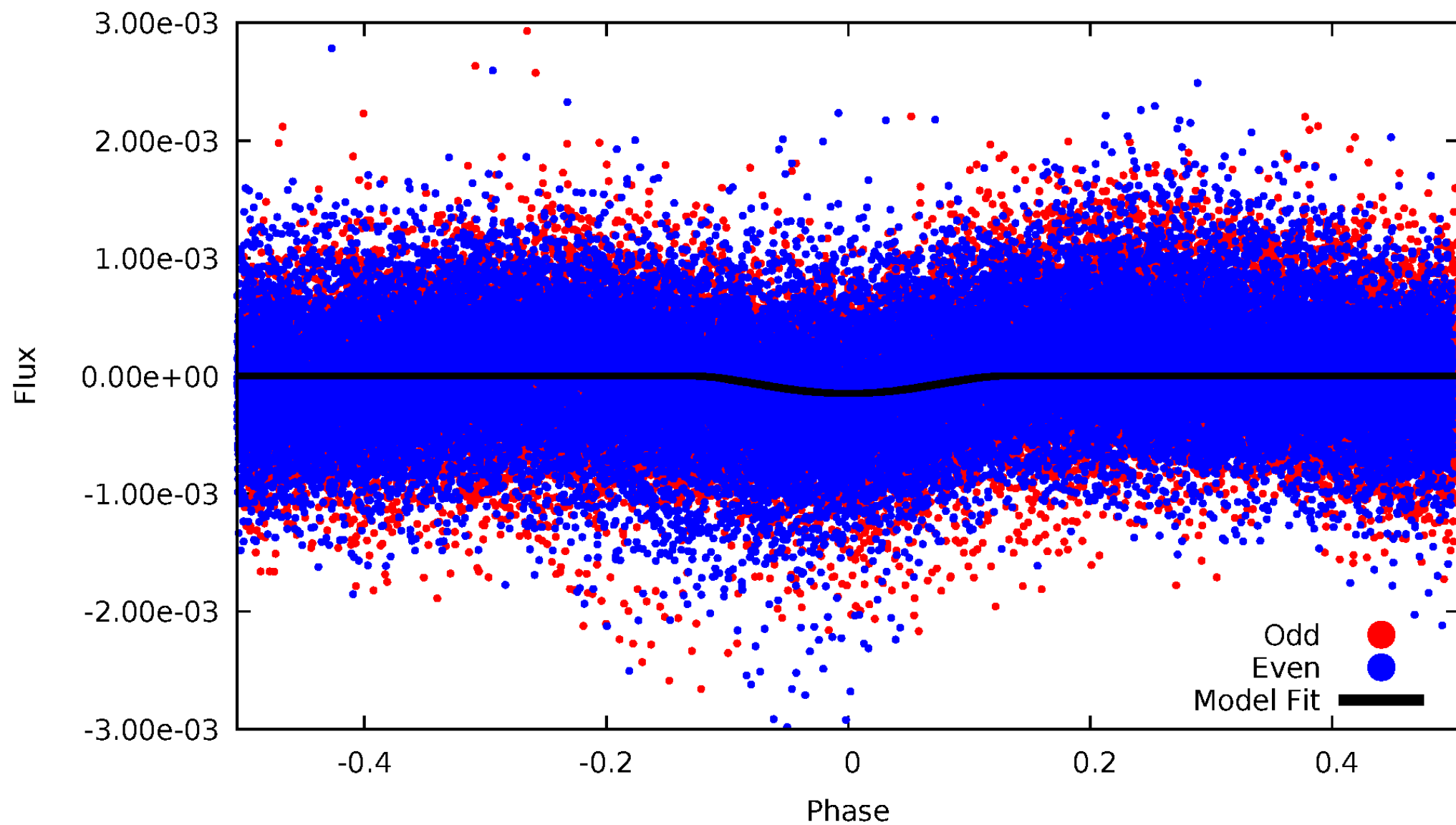


TCE 002309568-01



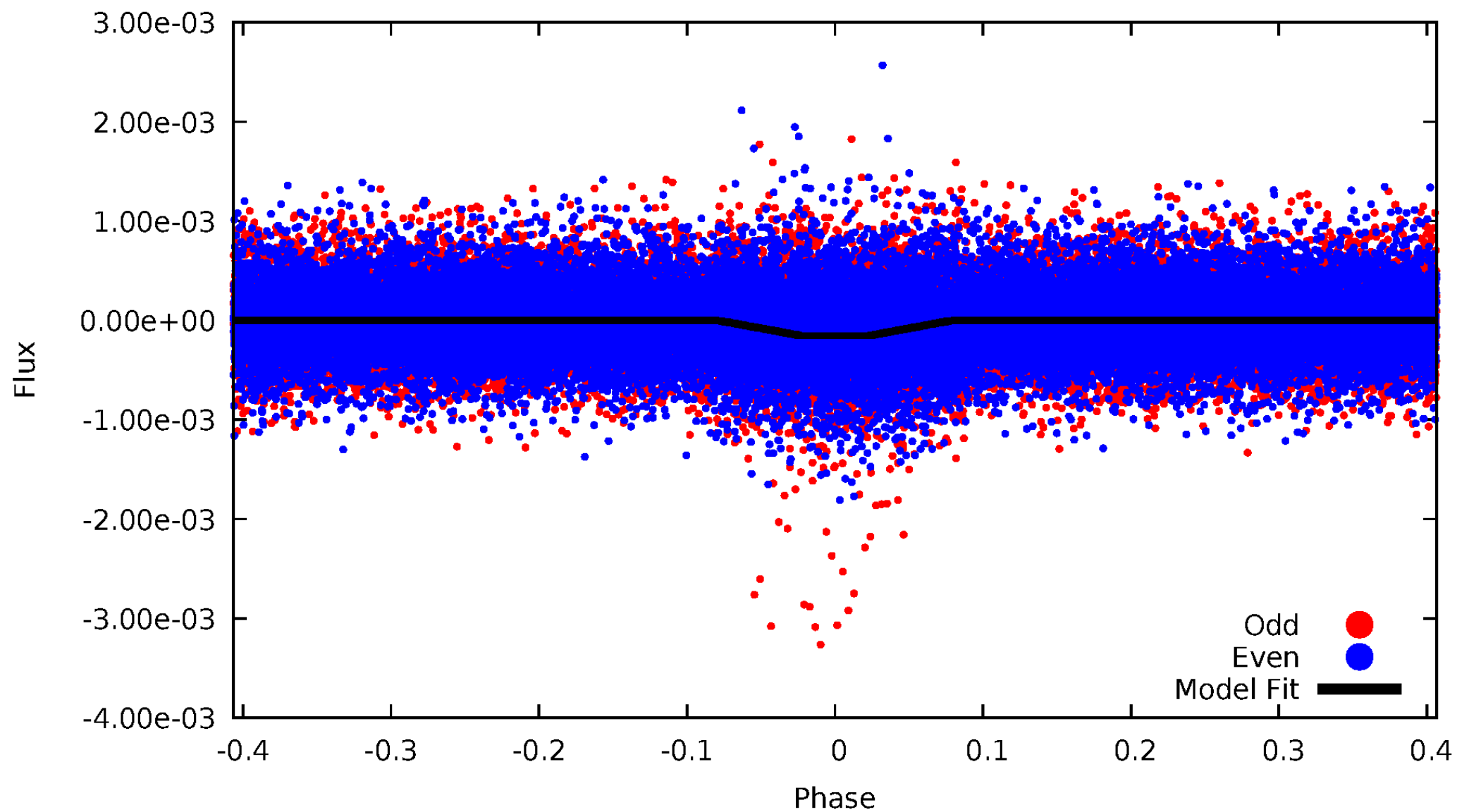
DV Odd/Even

TCE 002309568-01

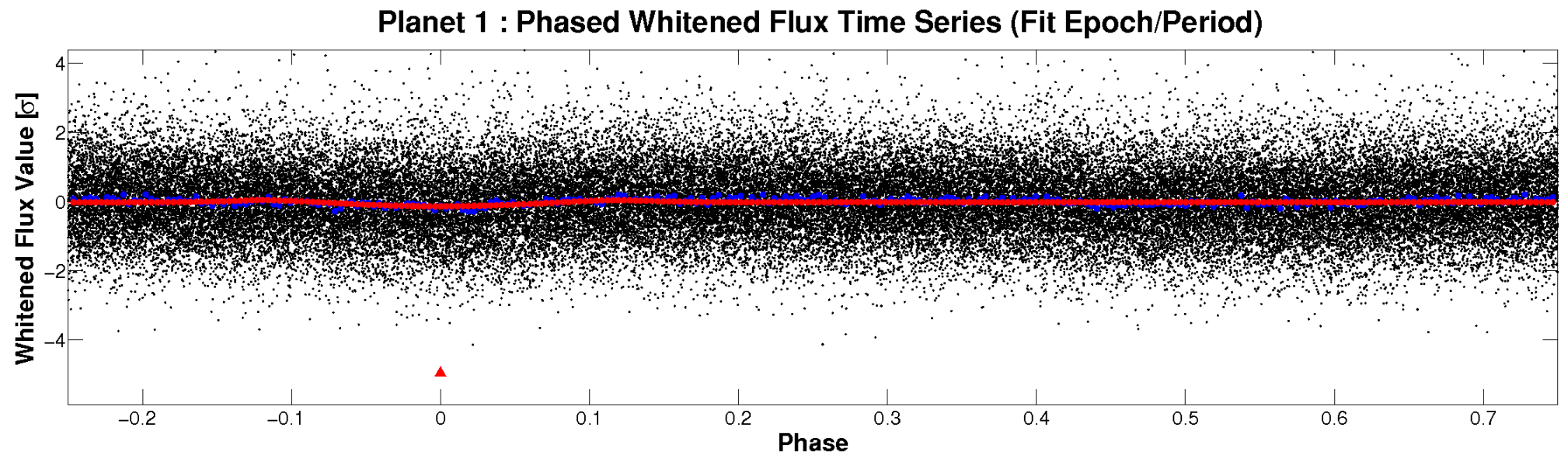
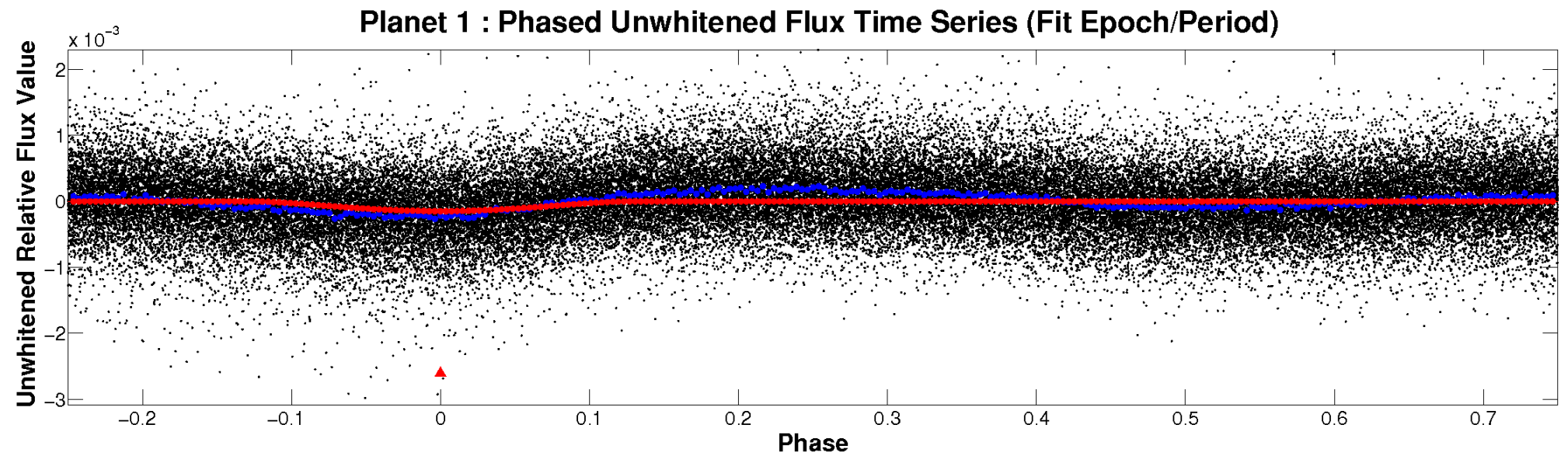


ALT Odd/Even

TCE 002309568-01

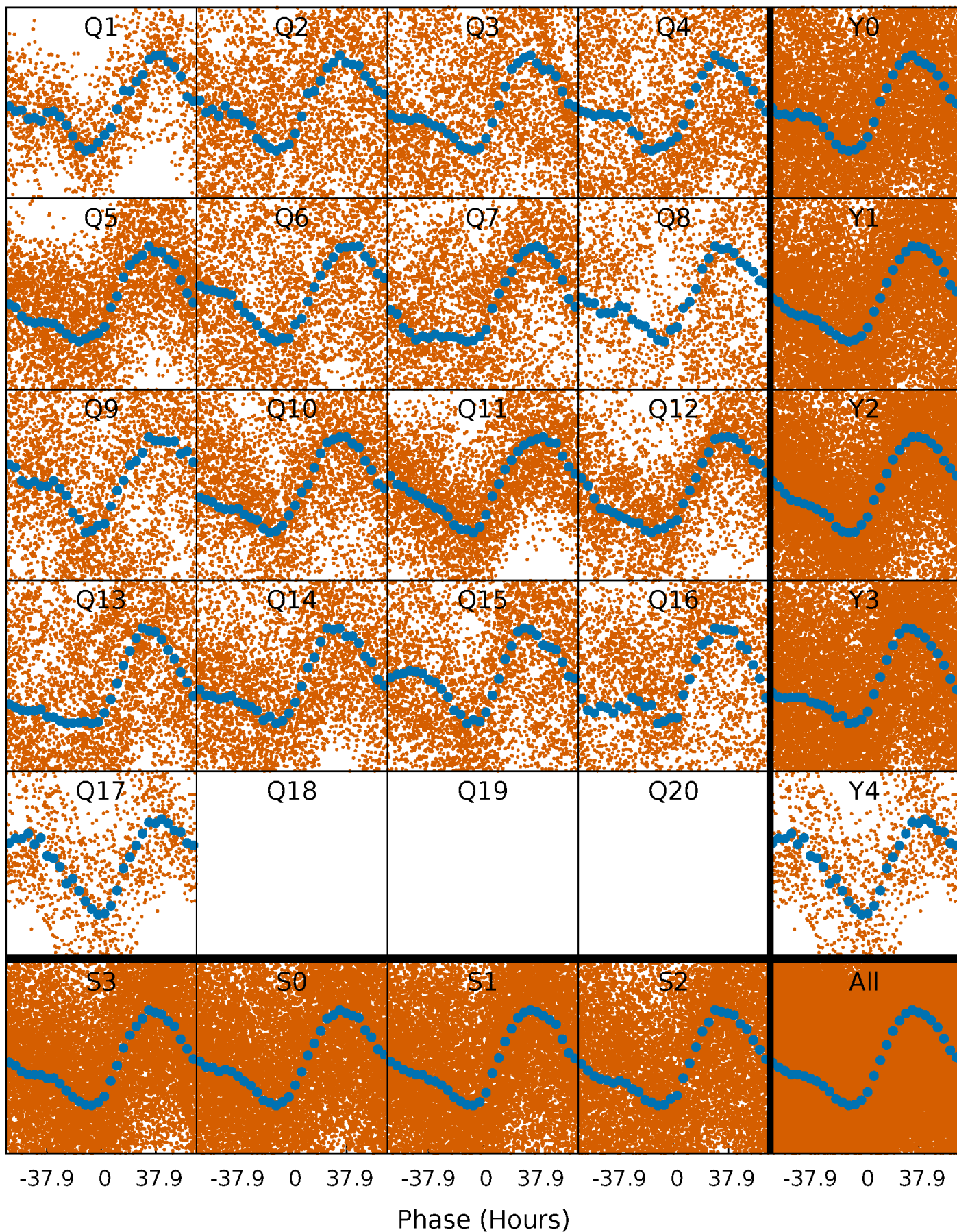


Non-Whitened Vs. Whitened Light Curve



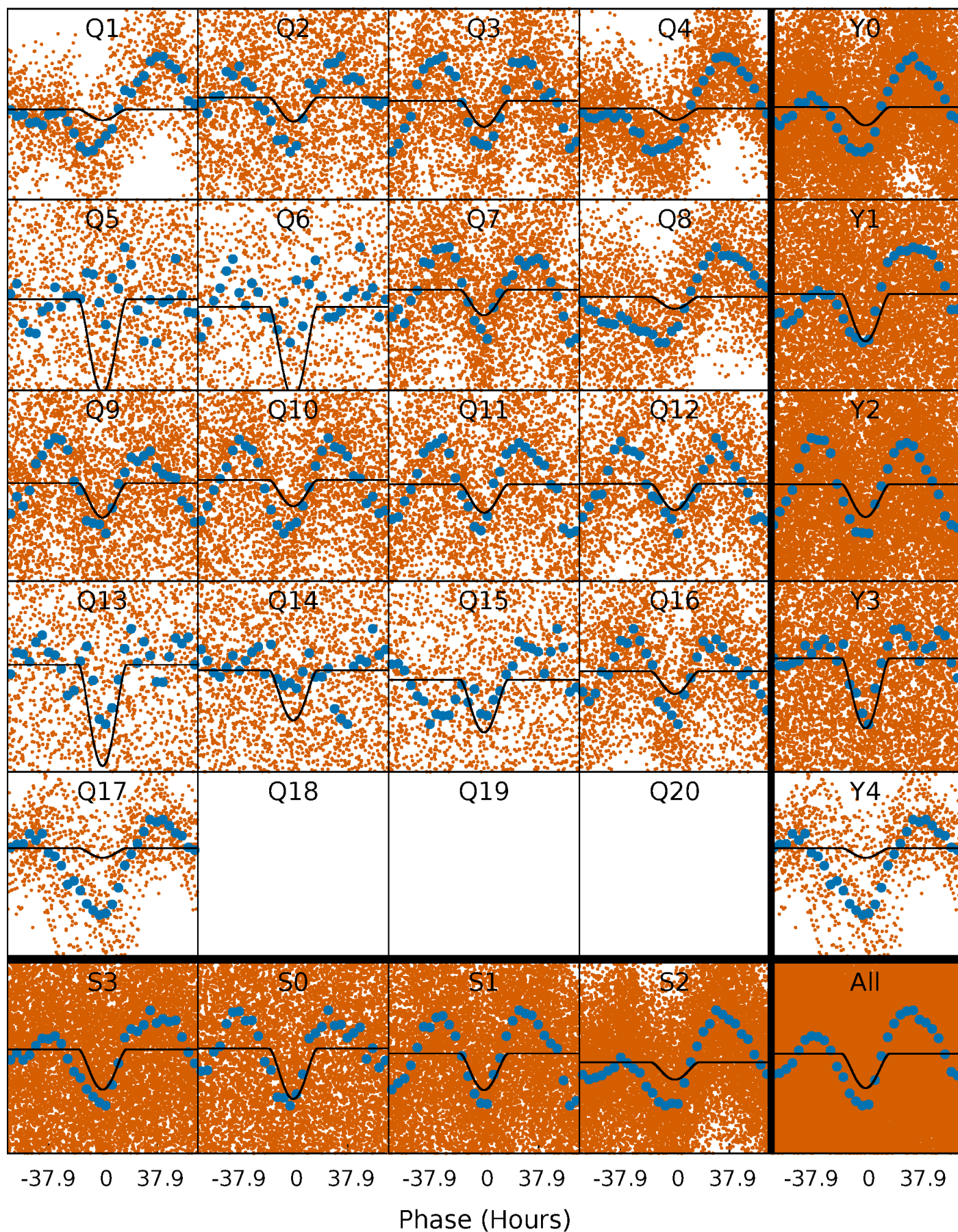
PDC Quarter-Phased Transit Curves

TCE 002309568-01 P= 5.473953 Days $T_0=132.805421$ (BKJD)



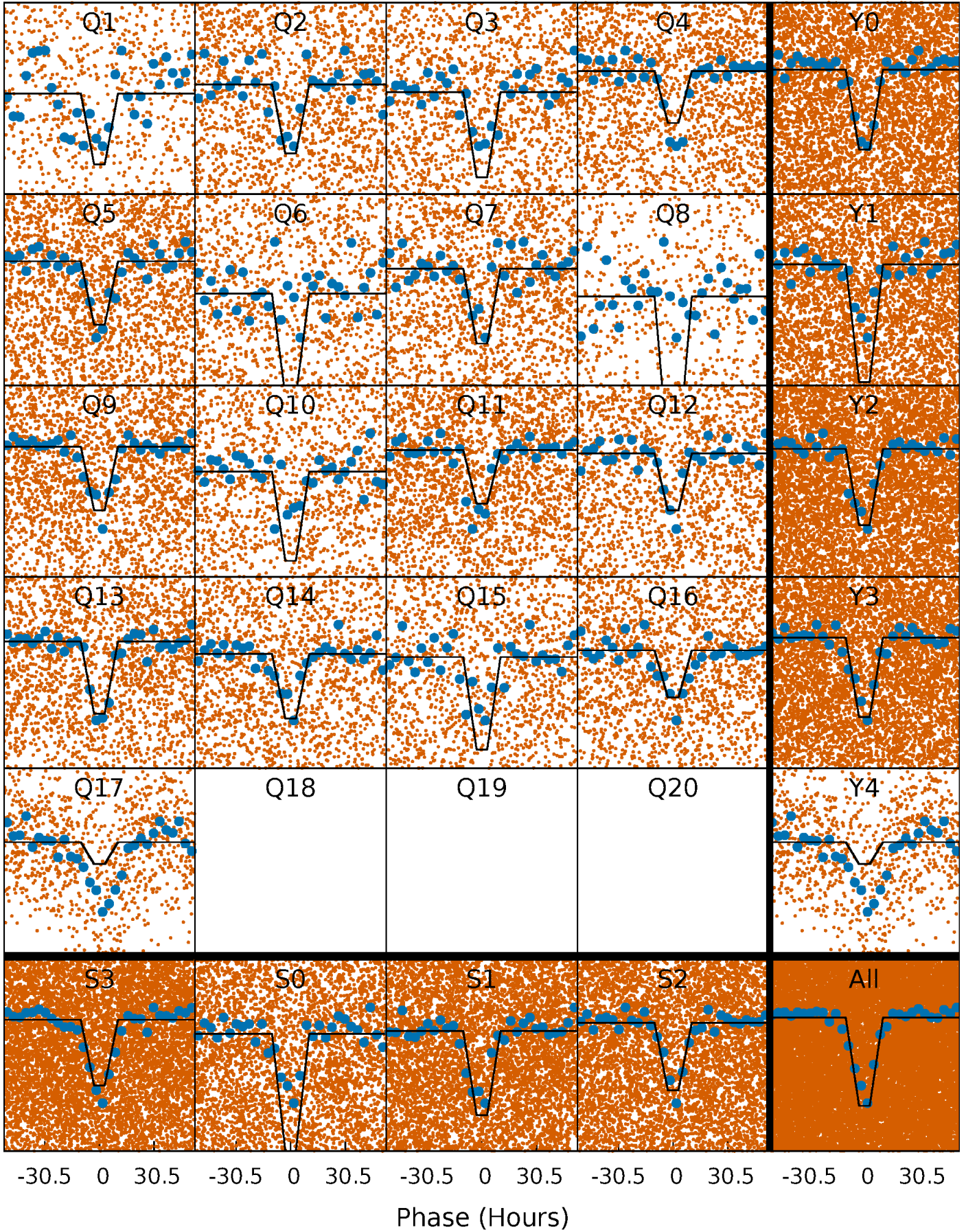
DV Quarter-Phased Transit Curves

TCE 002309568-01 P= 5.473953 Days $T_0=132.805421$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

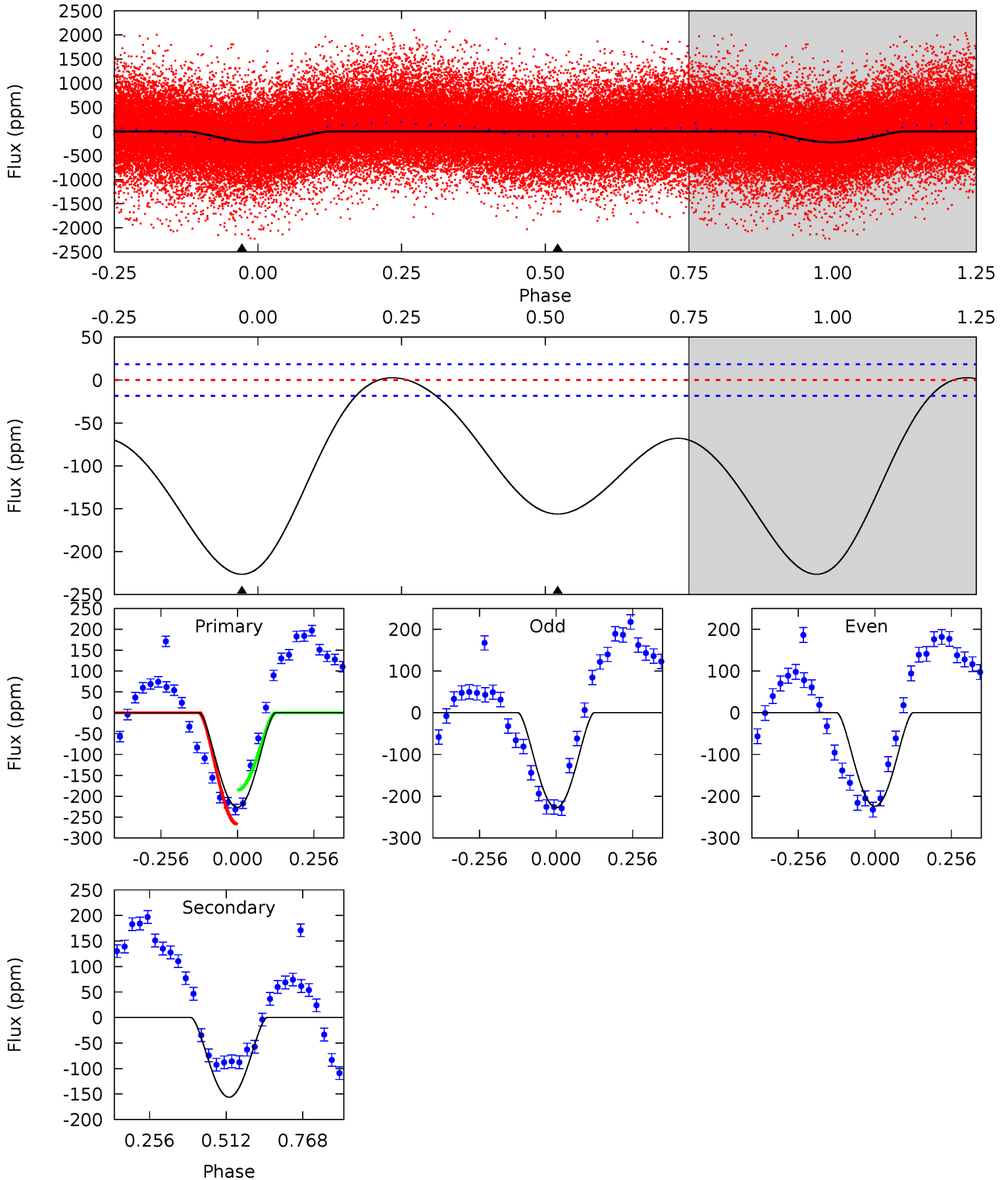
TCE 002309568-01 P= 5.473384 Days $T_0=132.925468$ (BKJD)



DV Model-Shift Uniqueness Test

002309568-01, P = 5.473953 Days, E = 127.331468 Days

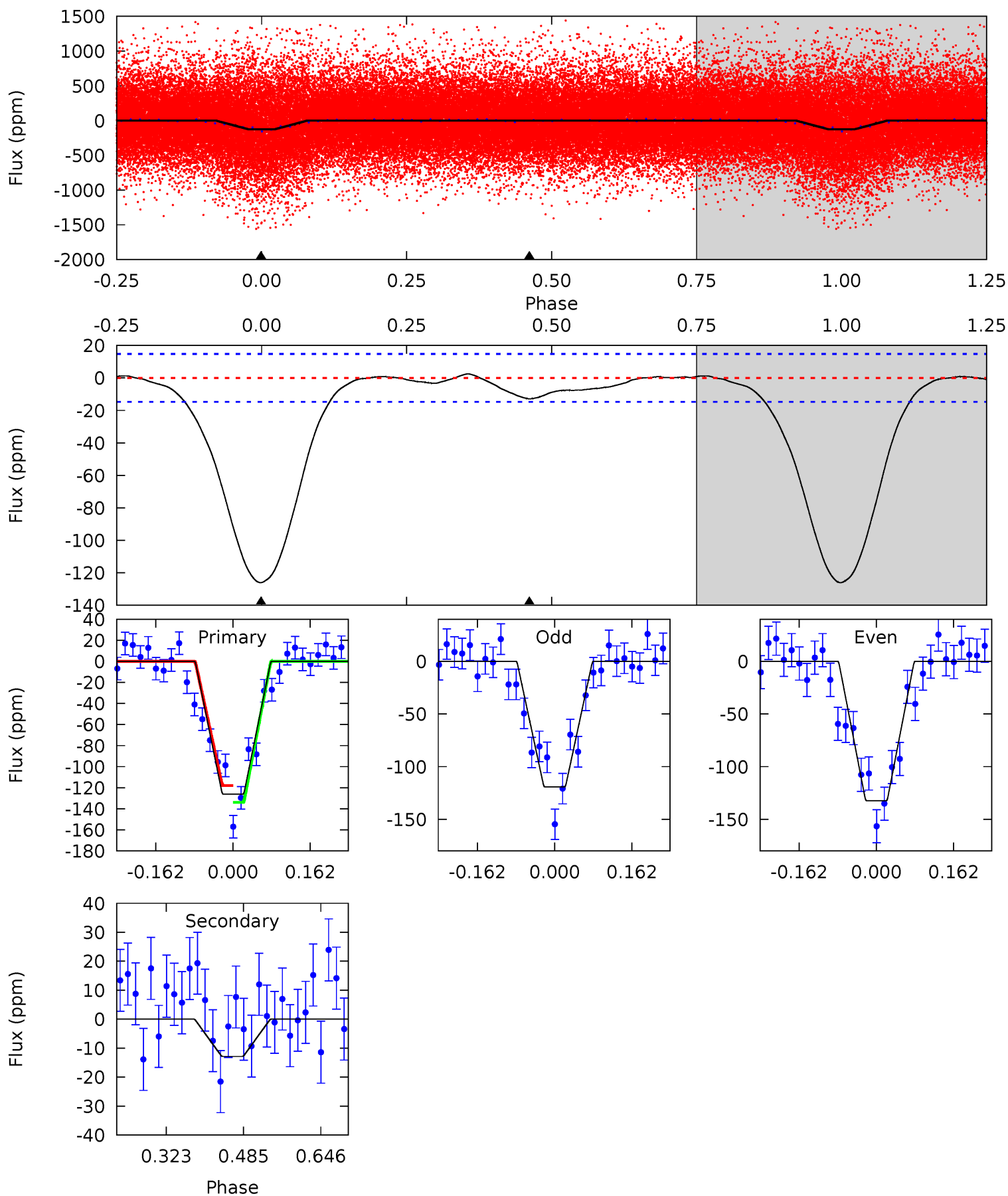
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.0	37.3	0	0	4.36	1.14	1.04	54.0	54.0	37.3	37.3	0.42	0.49	0.01	10.2



Alt Model-Shift Uniqueness Test

002309568-01, P = 5.473384 Days, E = 127.452084 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.1	3.89	0	0	4.46	1.40	0.46	38.1	38.1	3.89	3.89	1.99	1.51	0.02	2.42



Stellar Parameters For KIC 002309568

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6419^{+153}_{-211}	$4.402^{+0.065}_{-0.195}$	$-0.120^{+0.250}_{-0.300}$	$1.121^{+0.354}_{-0.118}$	$1.156^{+0.162}_{-0.162}$	$1.157^{+0.328}_{-0.577}$
	+2%/-3%	+1%/-4%	+208%/-250%	+32%/-11%	+14%/-14%	+28%/-50%
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 002309568-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-156 ± 4	$3.45^{+2.95}_{-2.23}$	1681^{+111}_{-83}	4510^{+2875}_{-898}	29^{+205}_{-20}
Alt.	-13 ± 3	$2.74^{+2.72}_{-1.90}$	1683^{+112}_{-80}	3156^{+1696}_{-654}	$3.597^{+37.978}_{-2.690}$

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 $A_{obs} \gg 1.0$

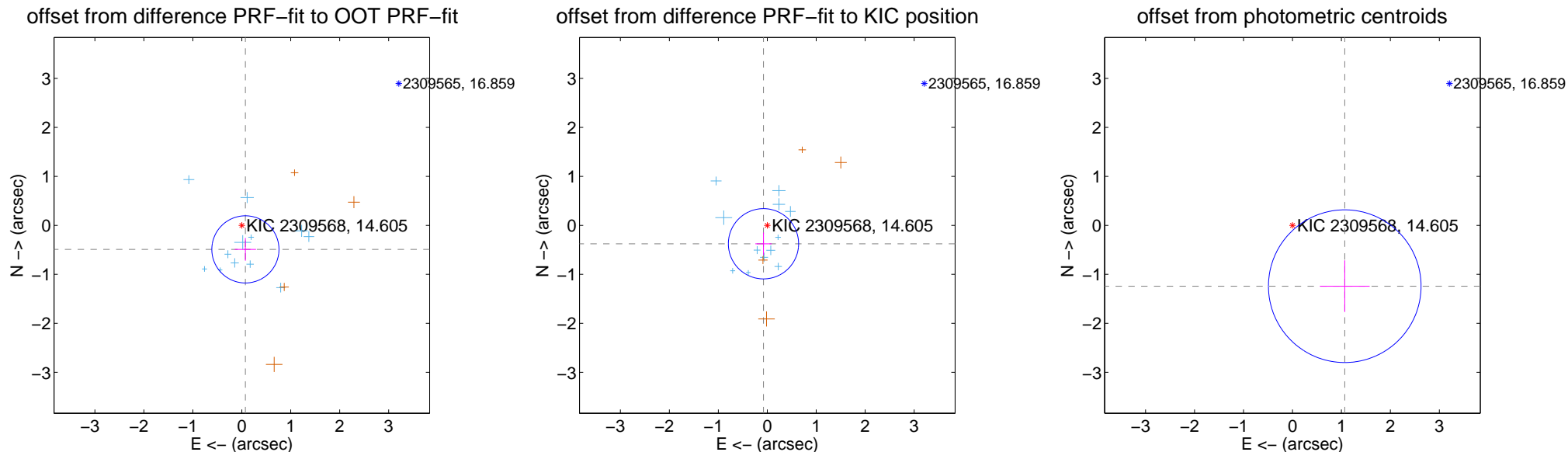
DV Centroid Data

Supplemental centroid analysis for 002309568-01. Kepler magnitude: 14.61. Transit SNR 10.61

There are 12 quarters with good PRF difference image offsets

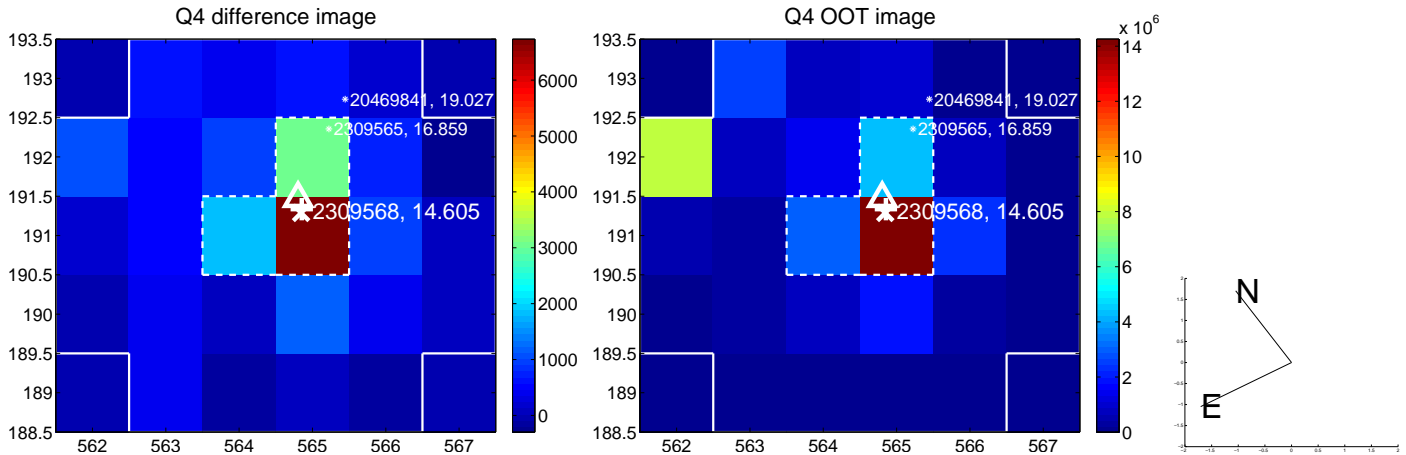
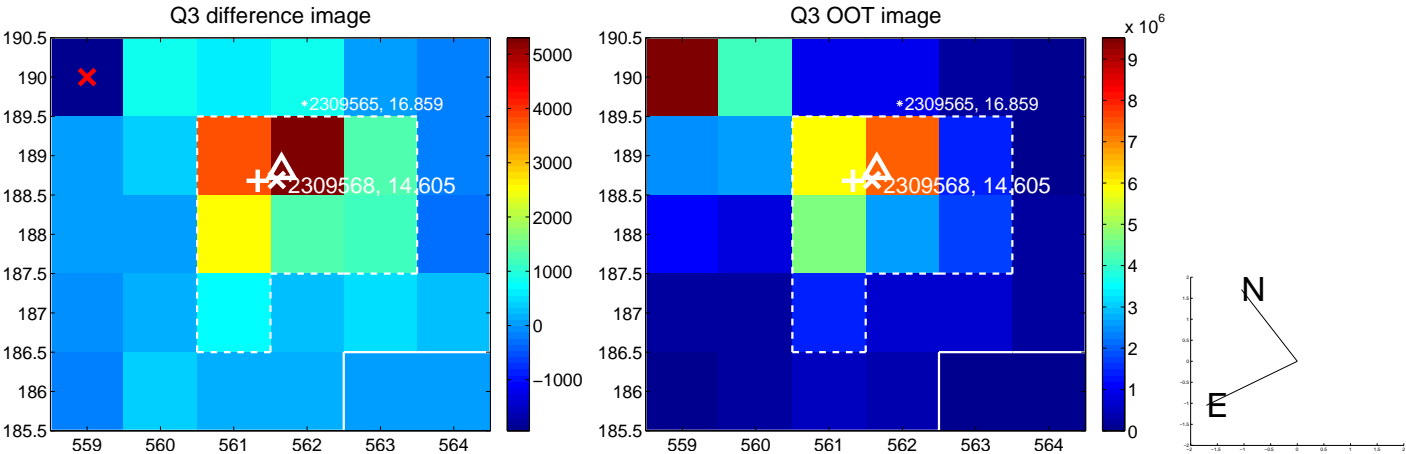
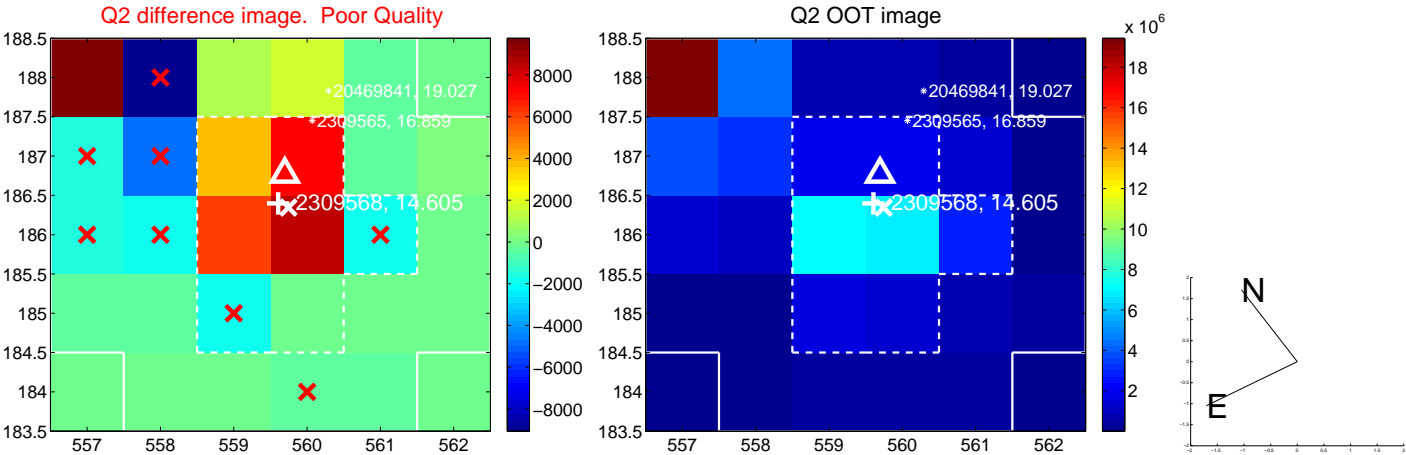
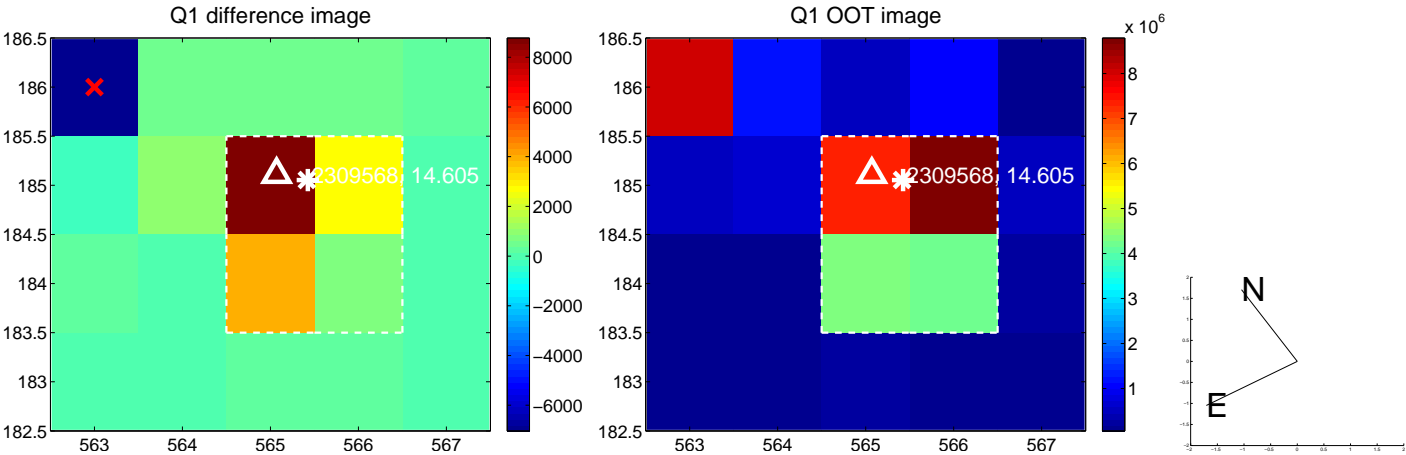
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.496 ± 0.229	2.17	-0.074 ± 0.218	-0.490 ± 0.231
PRF-fit source offset from KIC position	0.384 ± 0.239	1.61	0.077 ± 0.167	-0.376 ± 0.230
photometric centroid source offset	1.64 ± 0.52	3.15	-1.07 ± 0.51	-1.24 ± 0.53

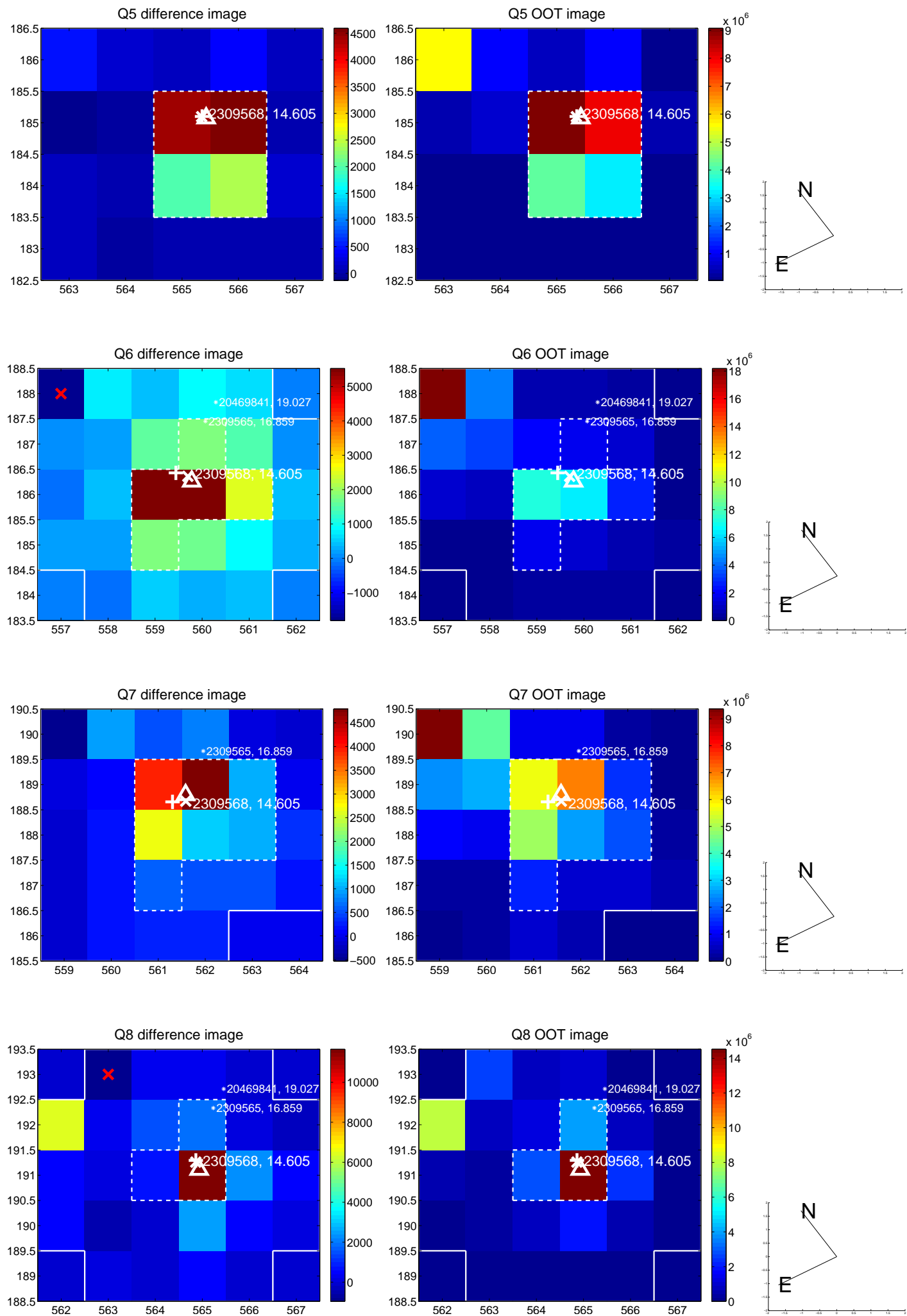


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

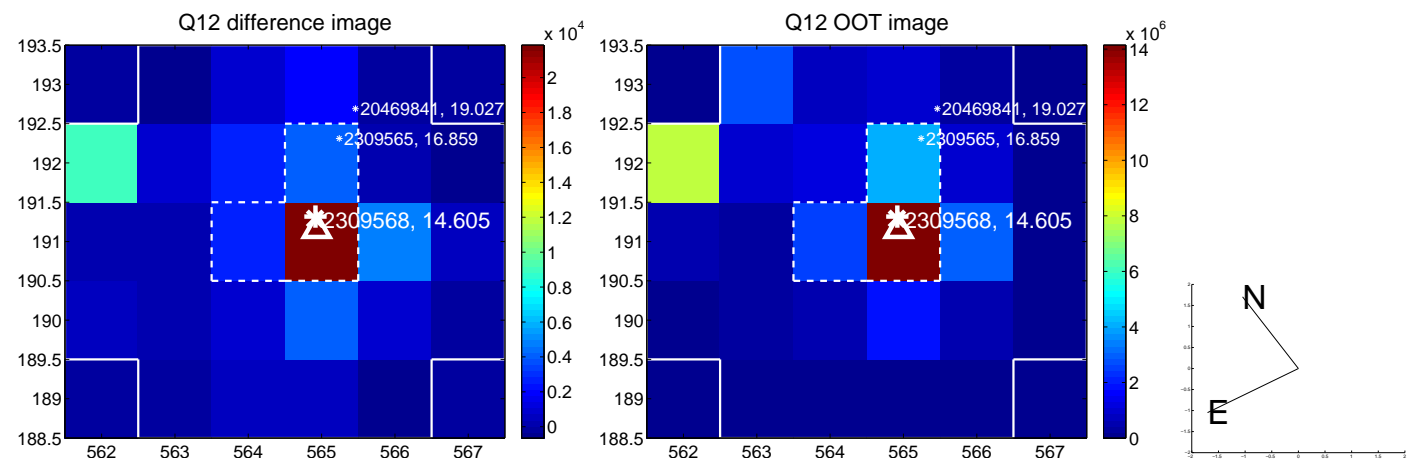
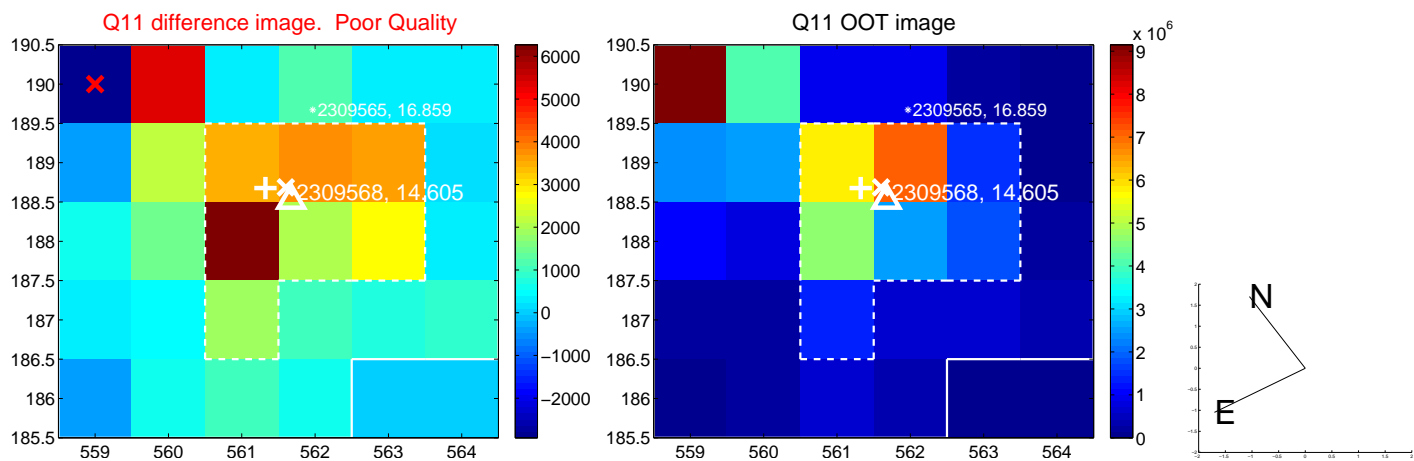
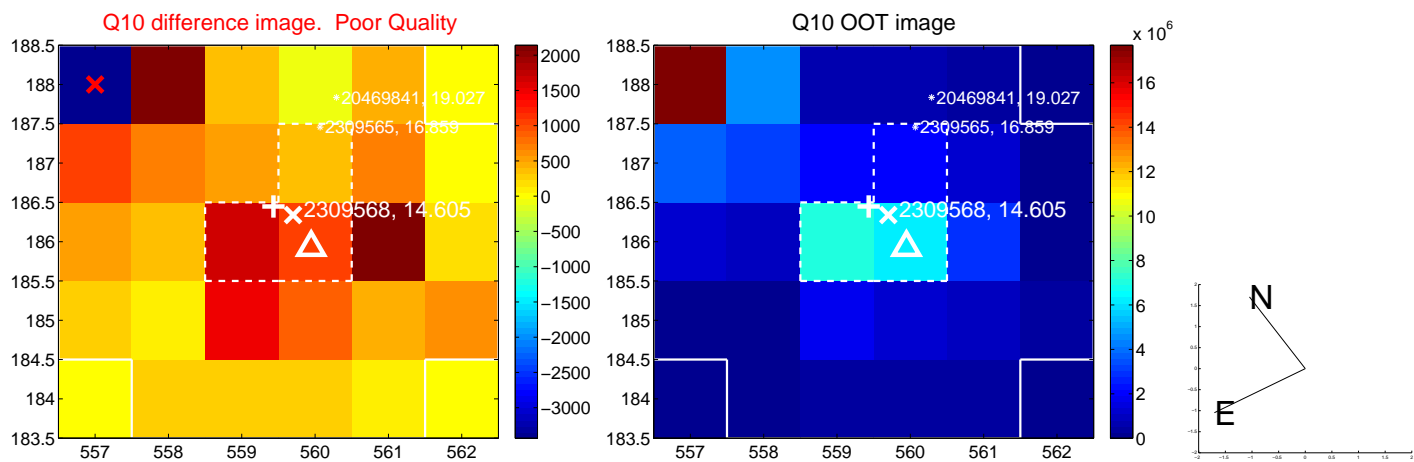
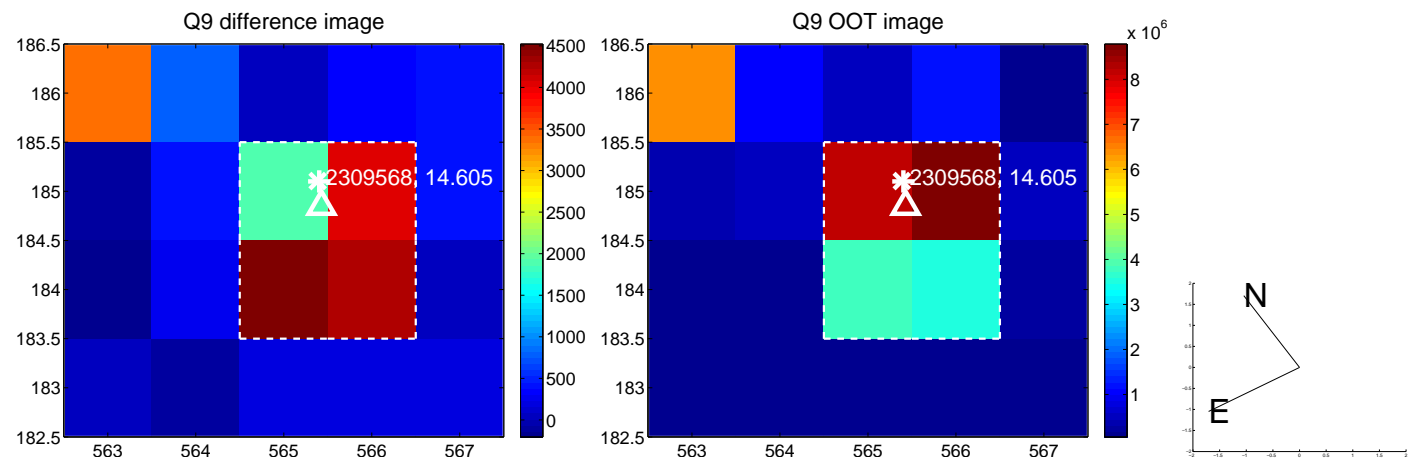
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



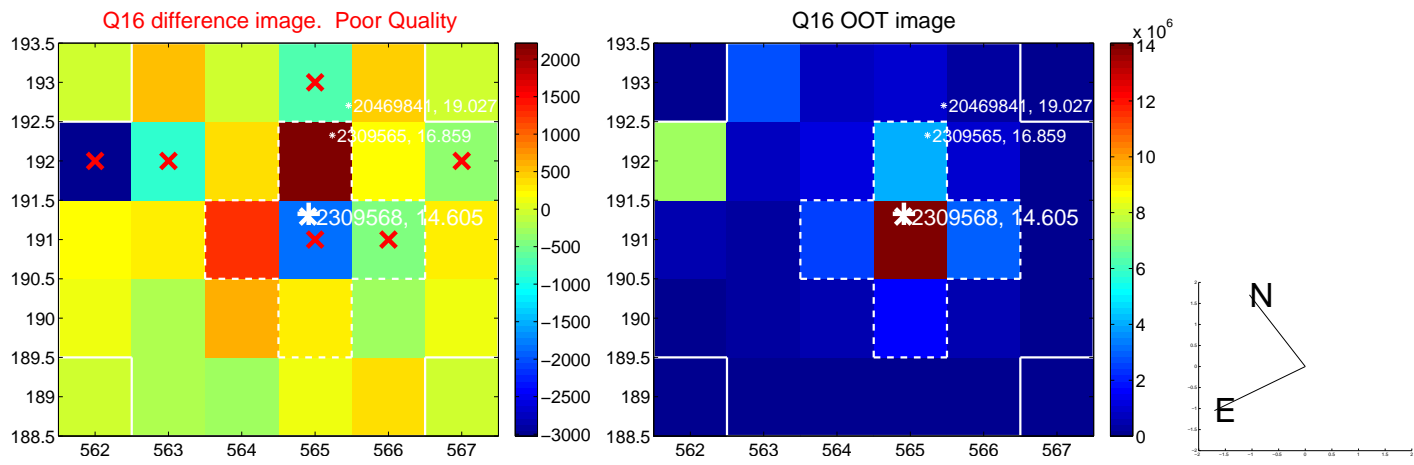
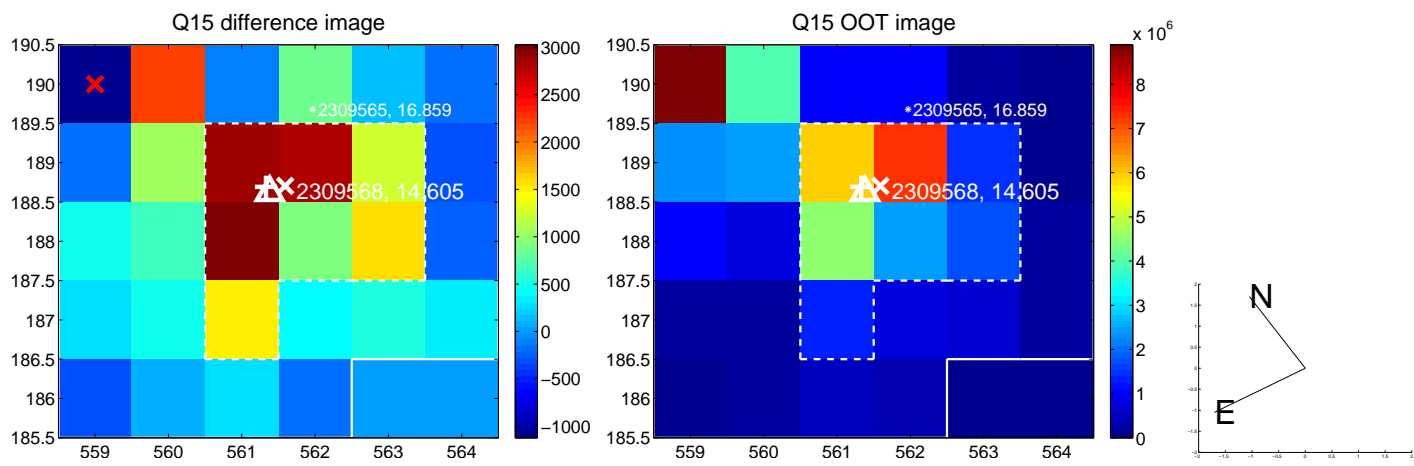
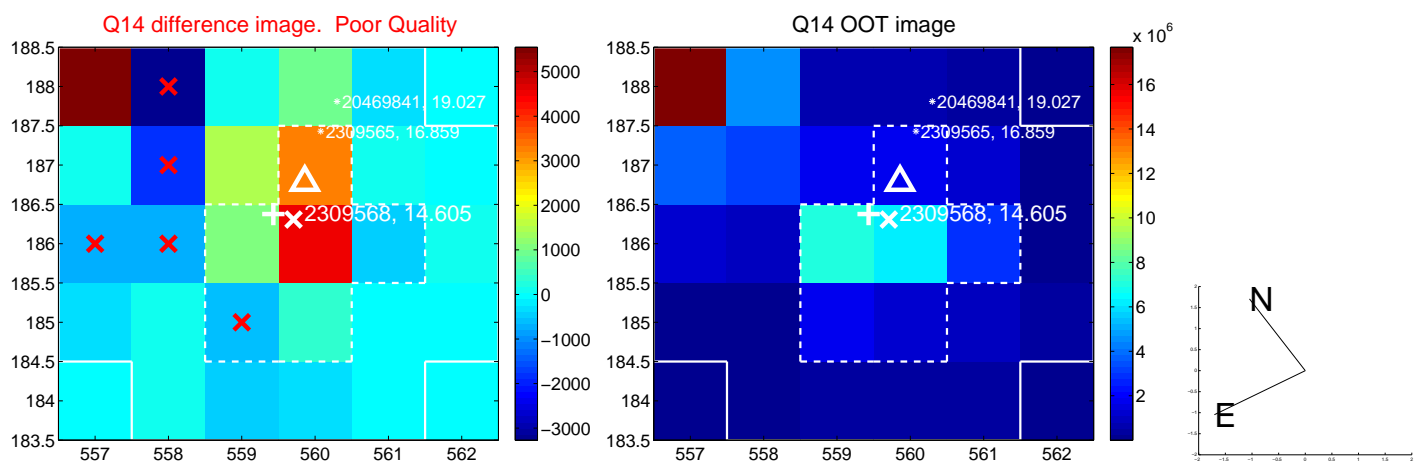
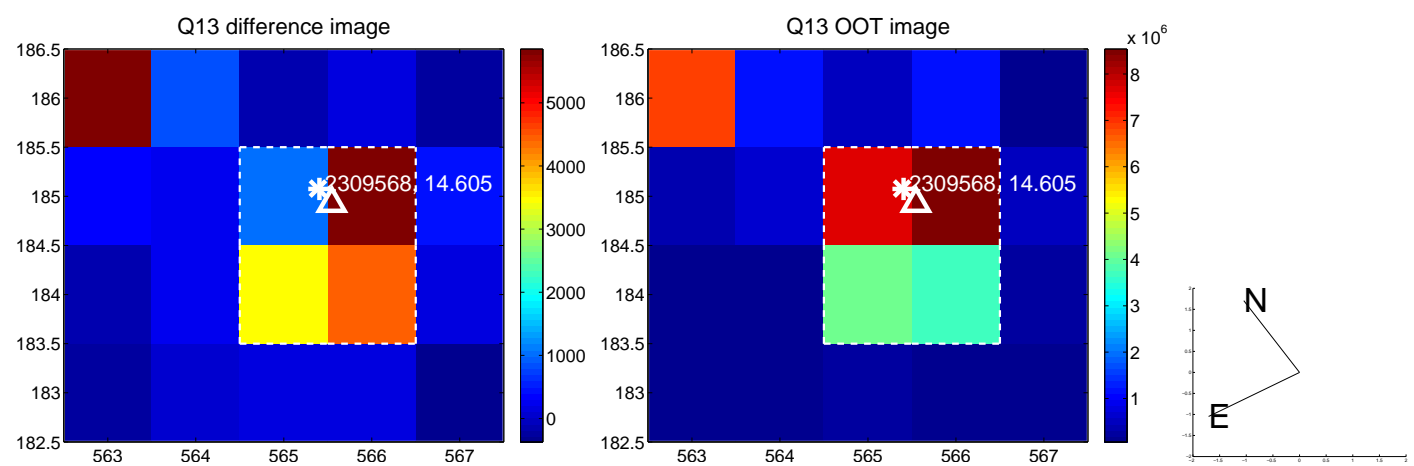
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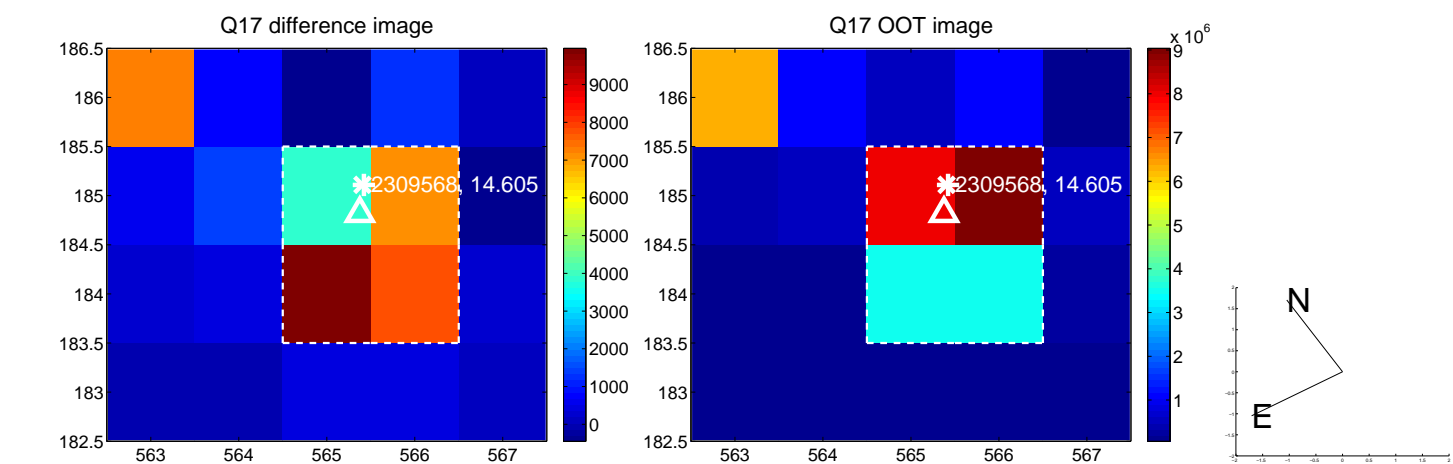
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



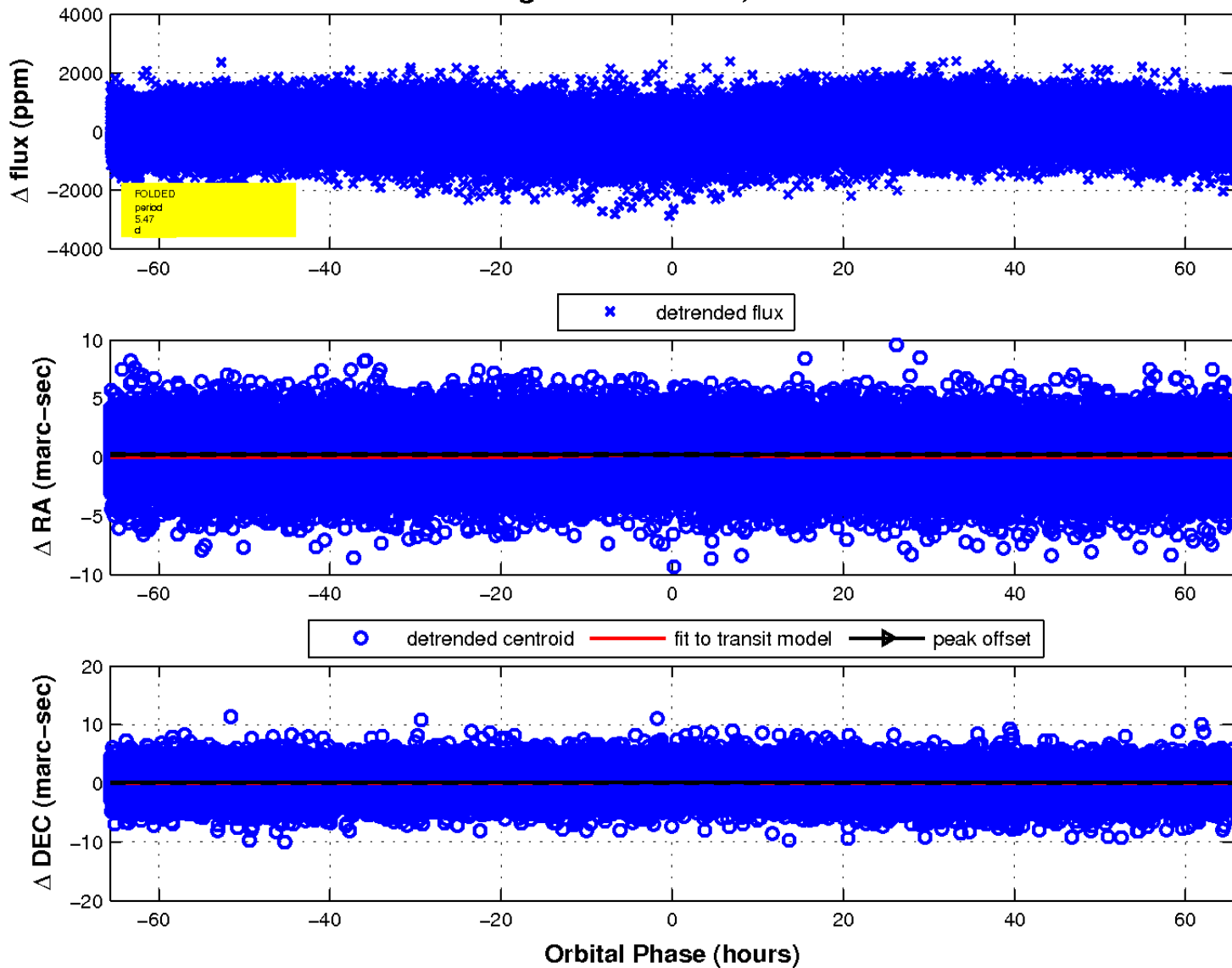
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

