

KIC 008453722

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})
008453722-01	OBS	No	2.081962	132.077419	56.9	11.608	12.1	11.3	3.52	7894	2.69	26744.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008453722-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

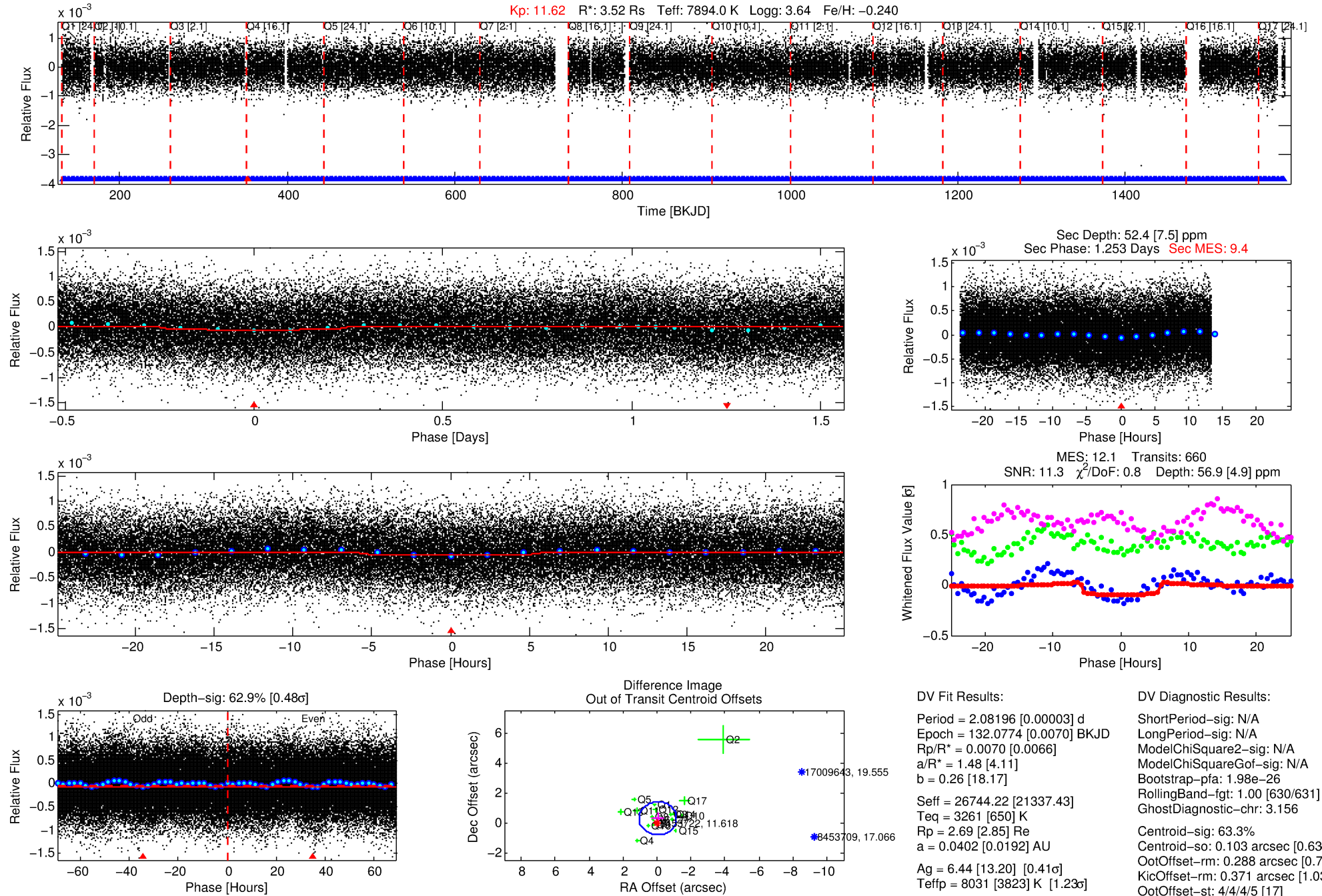
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008453722-01

No Significant Match Found

DV One-Page Summary

KIC: 8453722 Candidate: 1 of 1 Period: 2.082 d



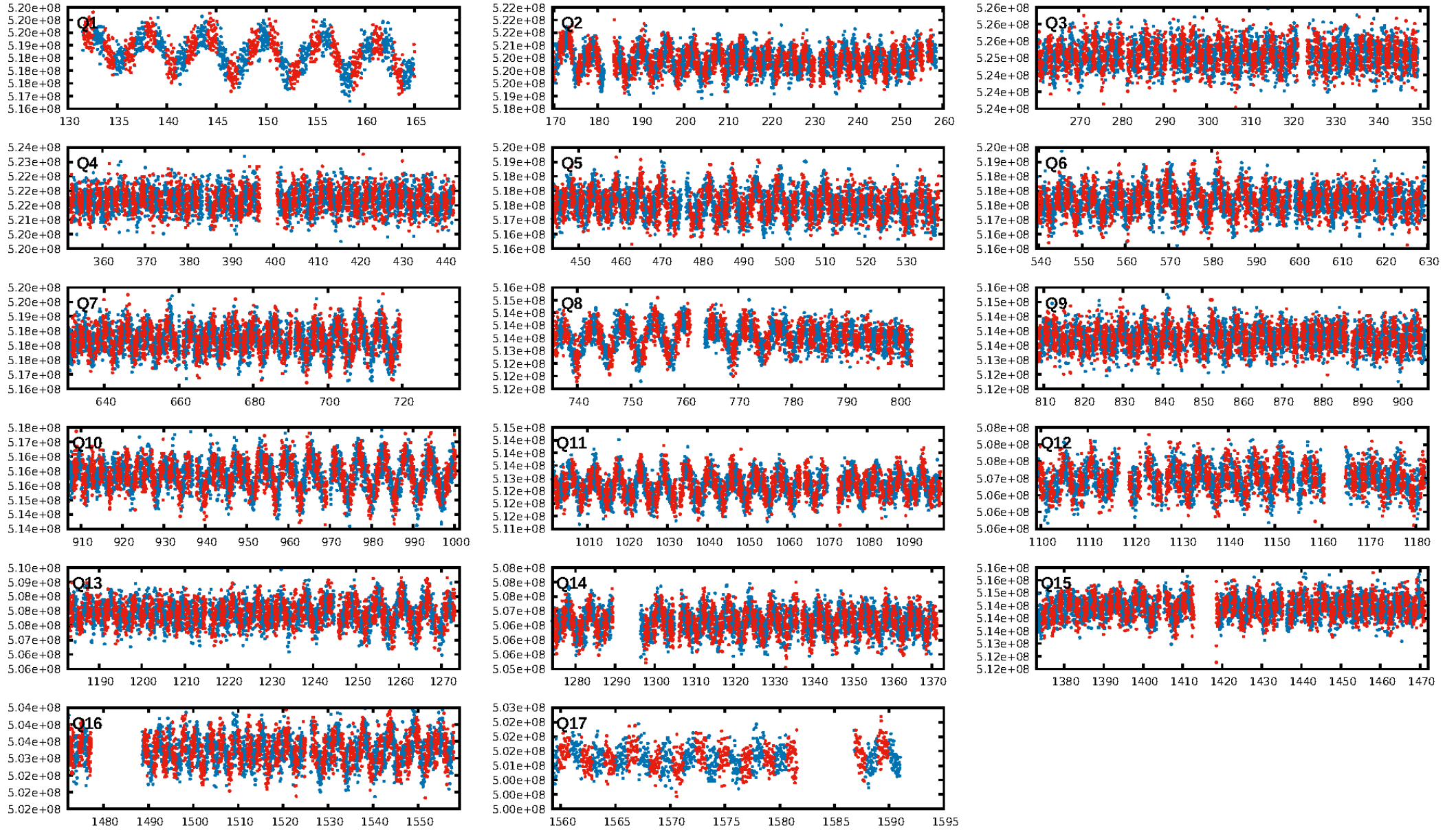
DV Fit Results:

Period = 2.08196 [0.00003] d
 Epoch = 132.0774 [0.0070] BKJD
 Rp/R* = 0.0070 [0.0066]
 a/R* = 1.48 [4.11]
 b = 0.26 [18.17]
 Seff = 26744.22 [21337.43]
 Teq = 3261 [650] K
 Rp = 2.69 [2.85] Re
 a = 0.0402 [0.0192] AU
 Ag = 6.44 [13.20] [0.41σ]
 Tefp = 8031 [3823] K [1.23σ]

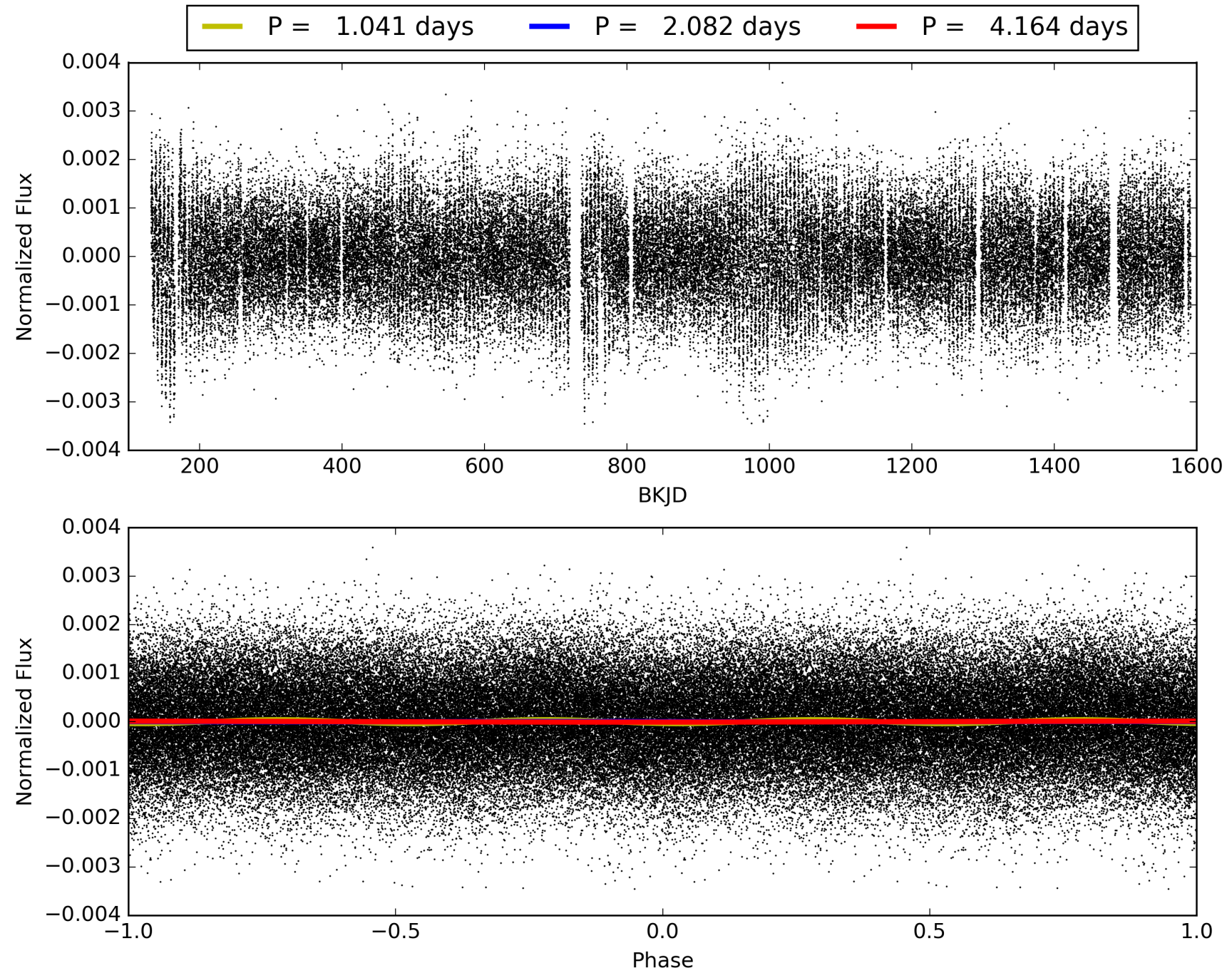
DV Diagnostic Results:

ShortPeriod-sig: N/A
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: N/A
 ModelChiSquareGof-sig: N/A
 Bootstrap-pfa: 1.98e-26
 RollingBand-fgt: 1.00 [630/631]
 GhostDiagnostic-chr: 3.156
 Centroid-sig: 63.3%
 Centroid-so: 0.103 arcsec [0.63σ]
 OotOffset-rm: 0.288 arcsec [0.79σ]
 KicOffset-rm: 0.371 arcsec [1.03σ]
 OotOffset-st: 4/4/4/5 [17]
 KicOffset-st: 4/4/4/5 [17]
 DiffImageQuality-fgm: 0.94 [16/17]
 DiffImageOverlap-fno: 1.00 [17/17]

TCE 008453722-01, PDC Light Curves

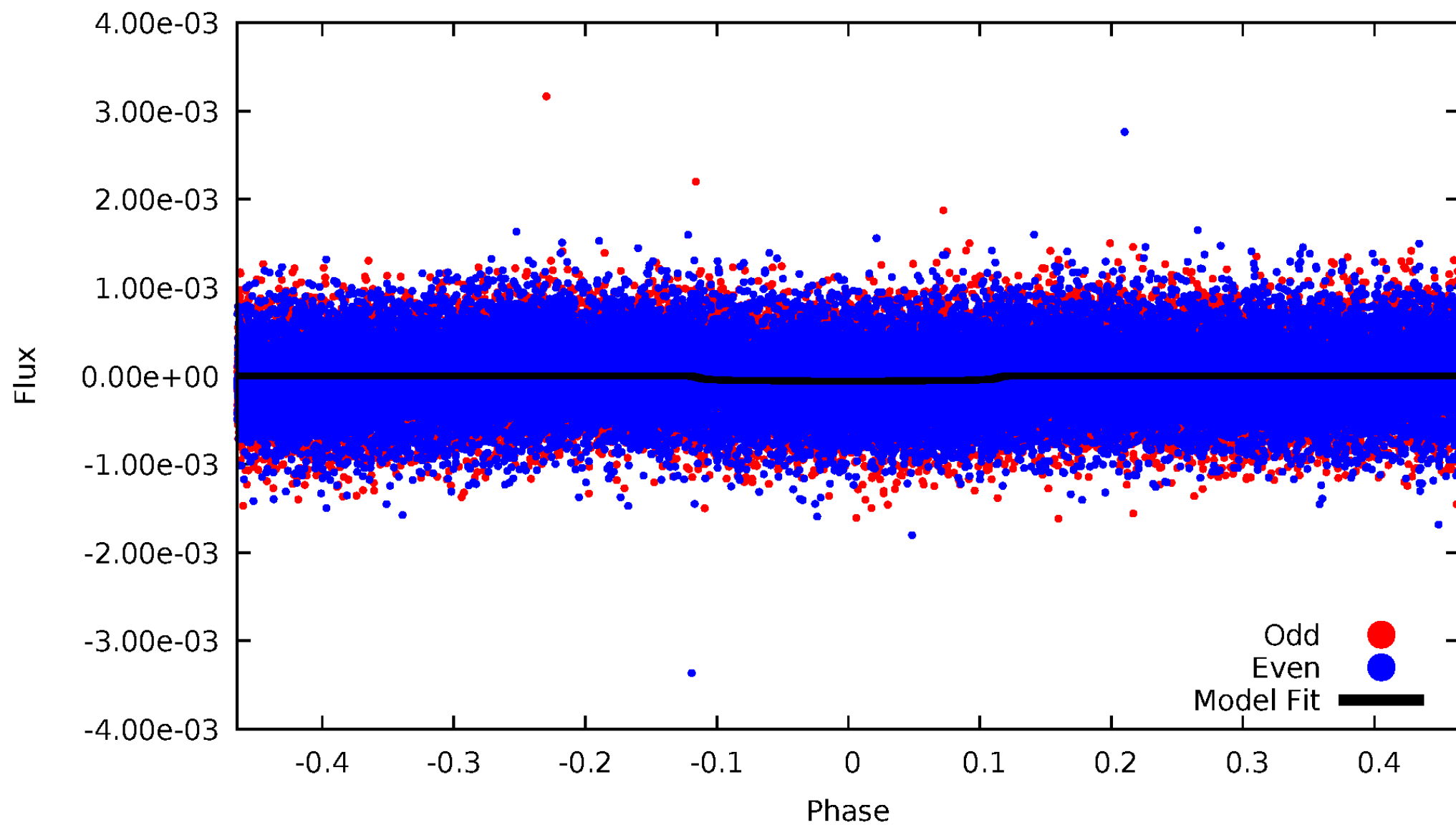


TCE 008453722-01



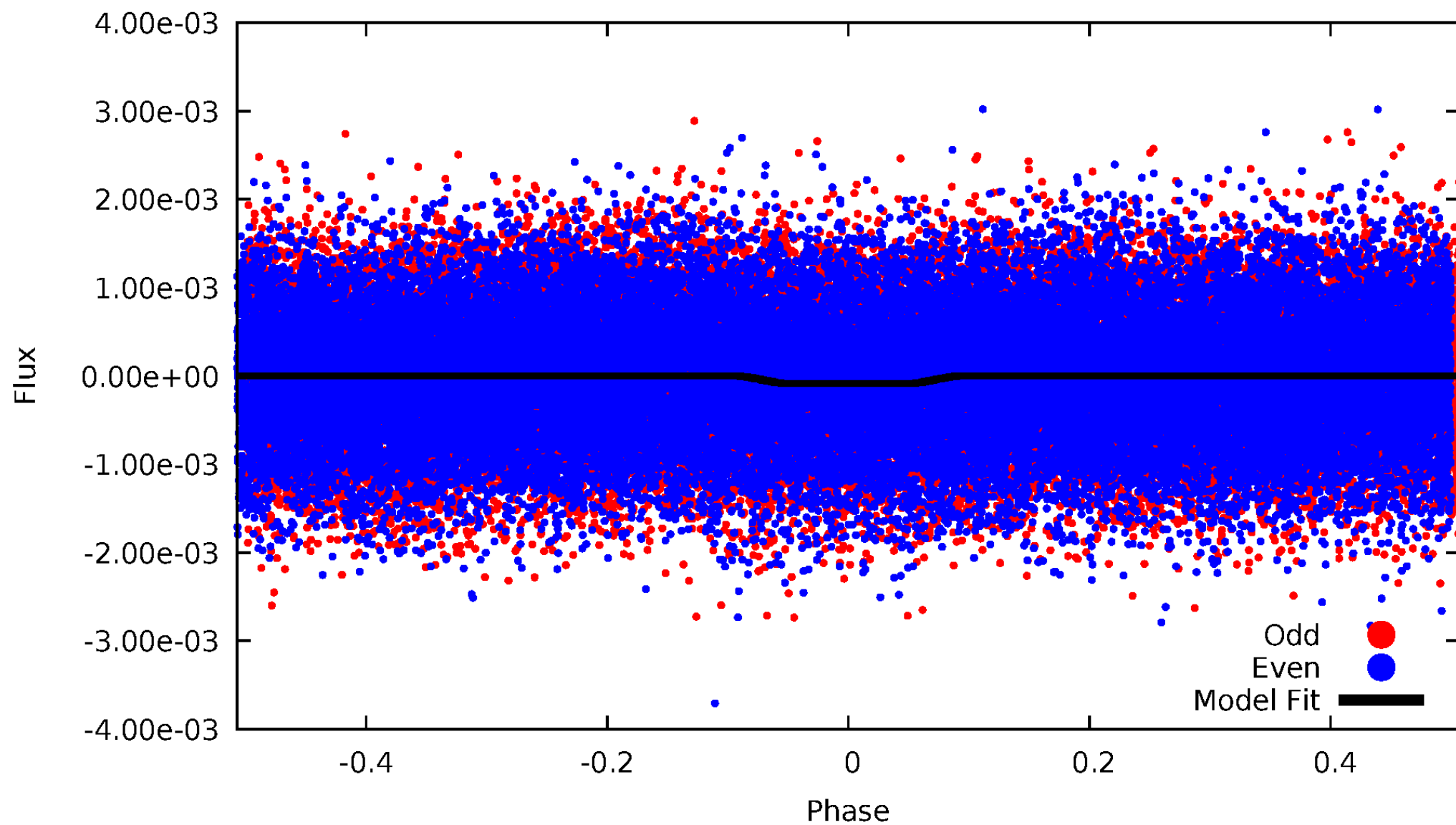
DV Odd/Even

TCE 008453722-01

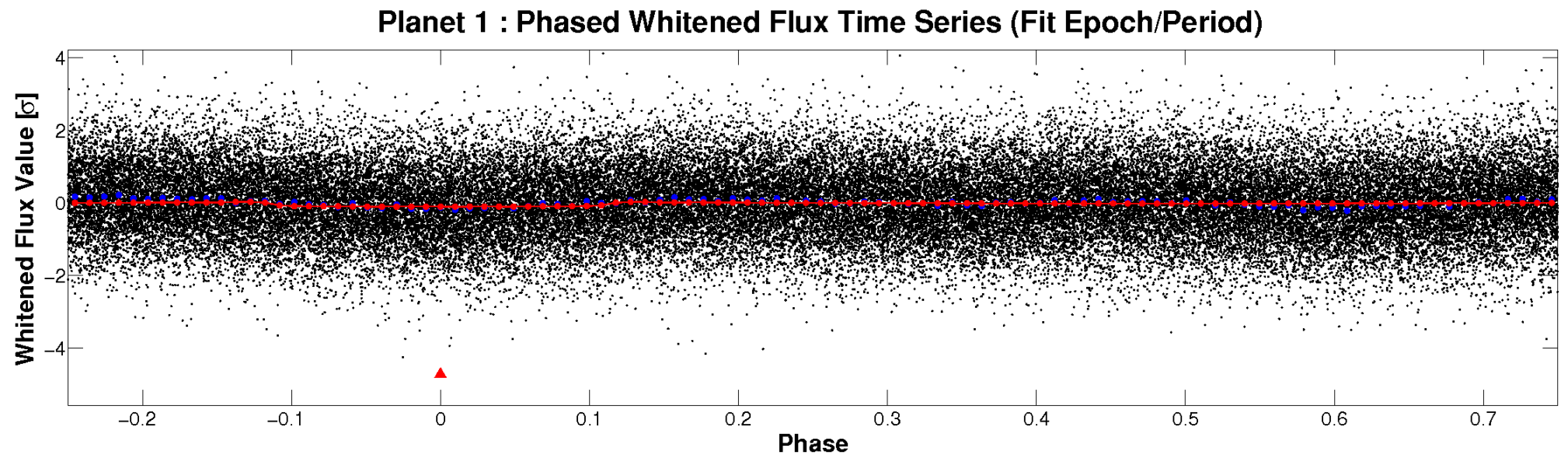
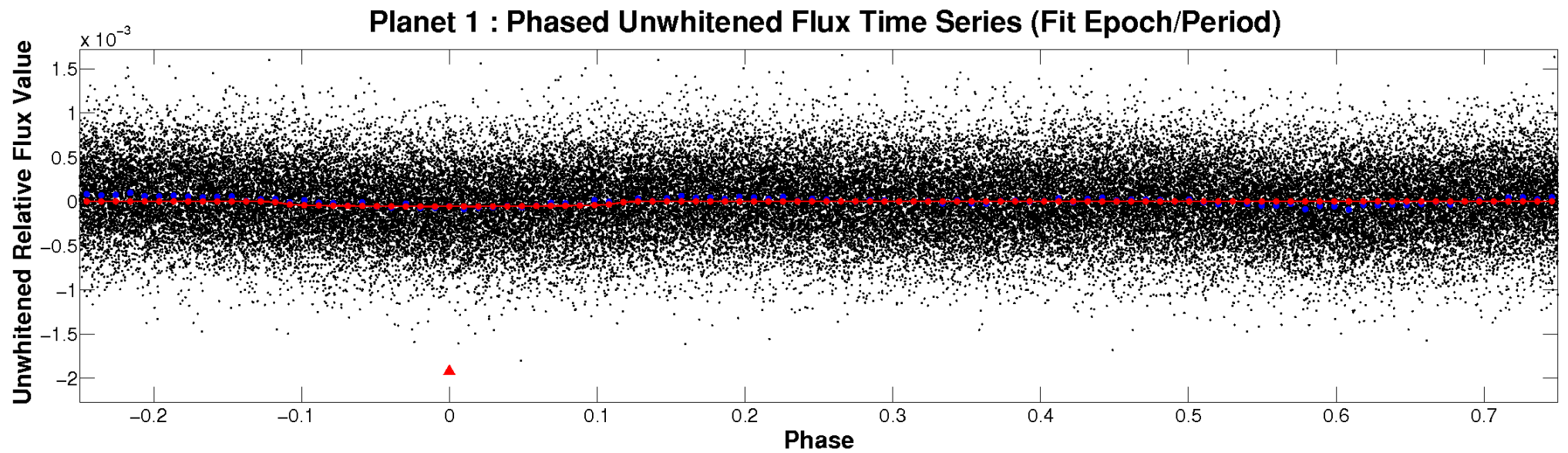


ALT Odd/Even

TCE 008453722-01

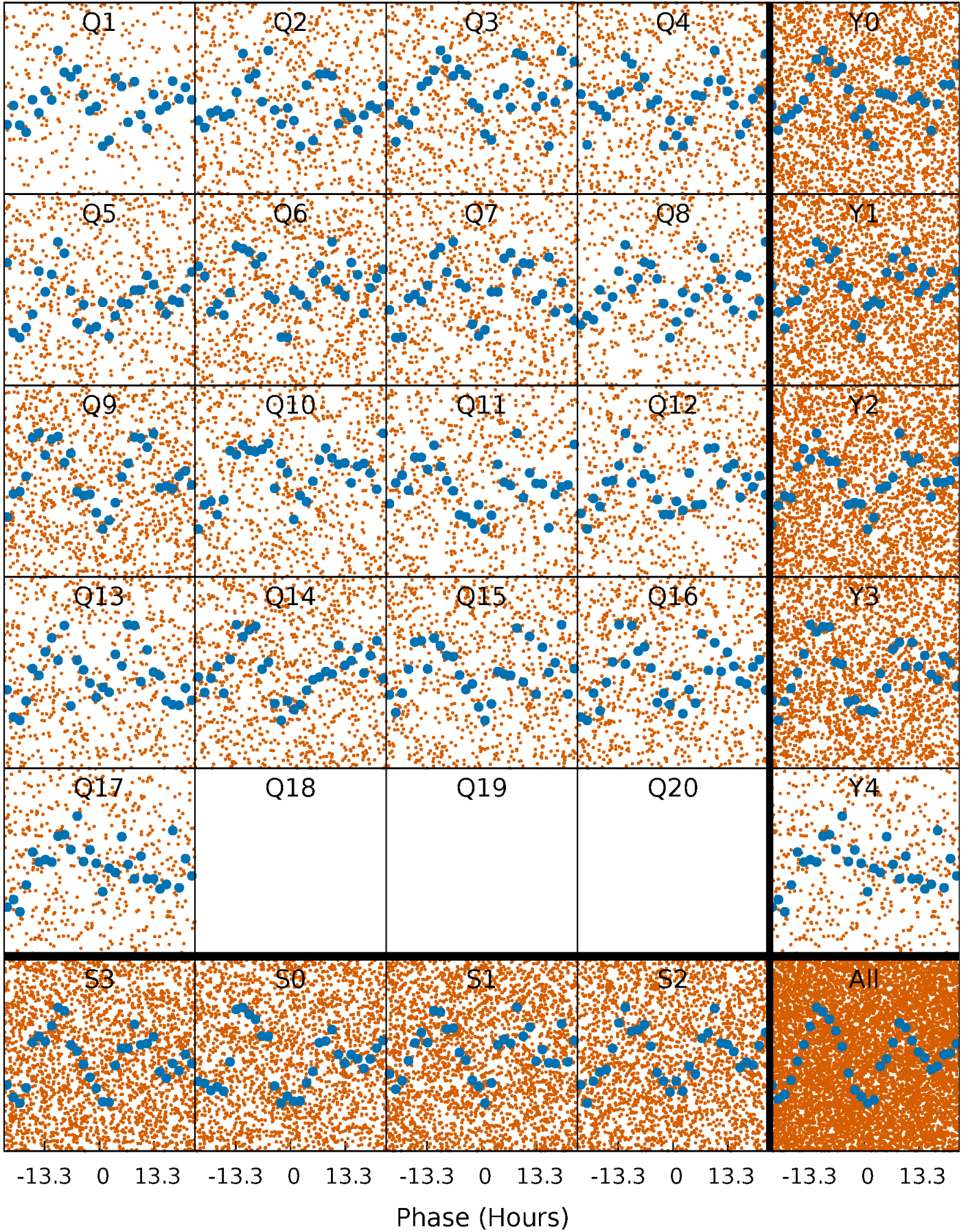


Non-Whitened Vs. Whitened Light Curve



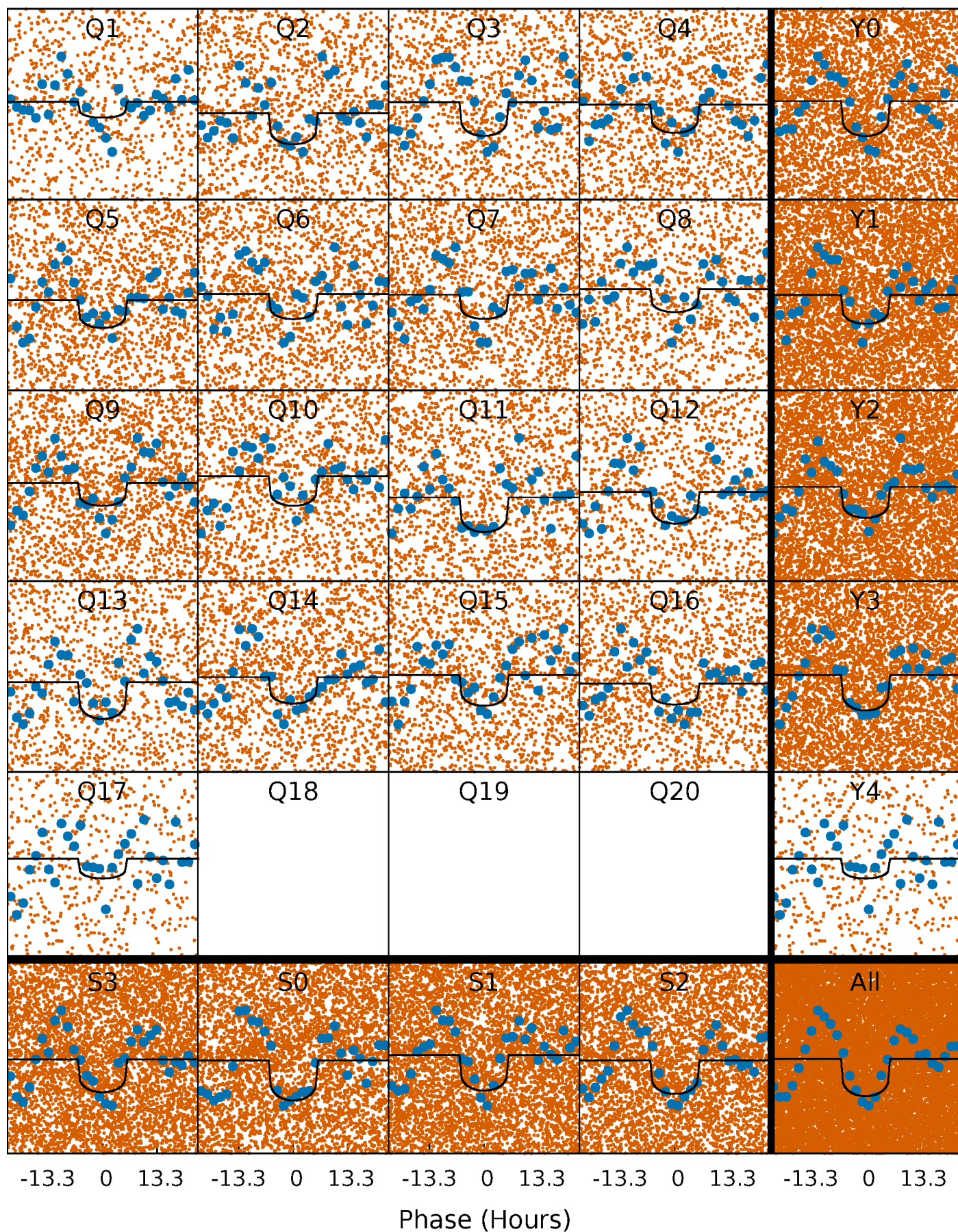
PDC Quarter-Phased Transit Curves

TCE 008453722-01 P= 2.081962 Days $T_0=132.077419$ (BKJD)



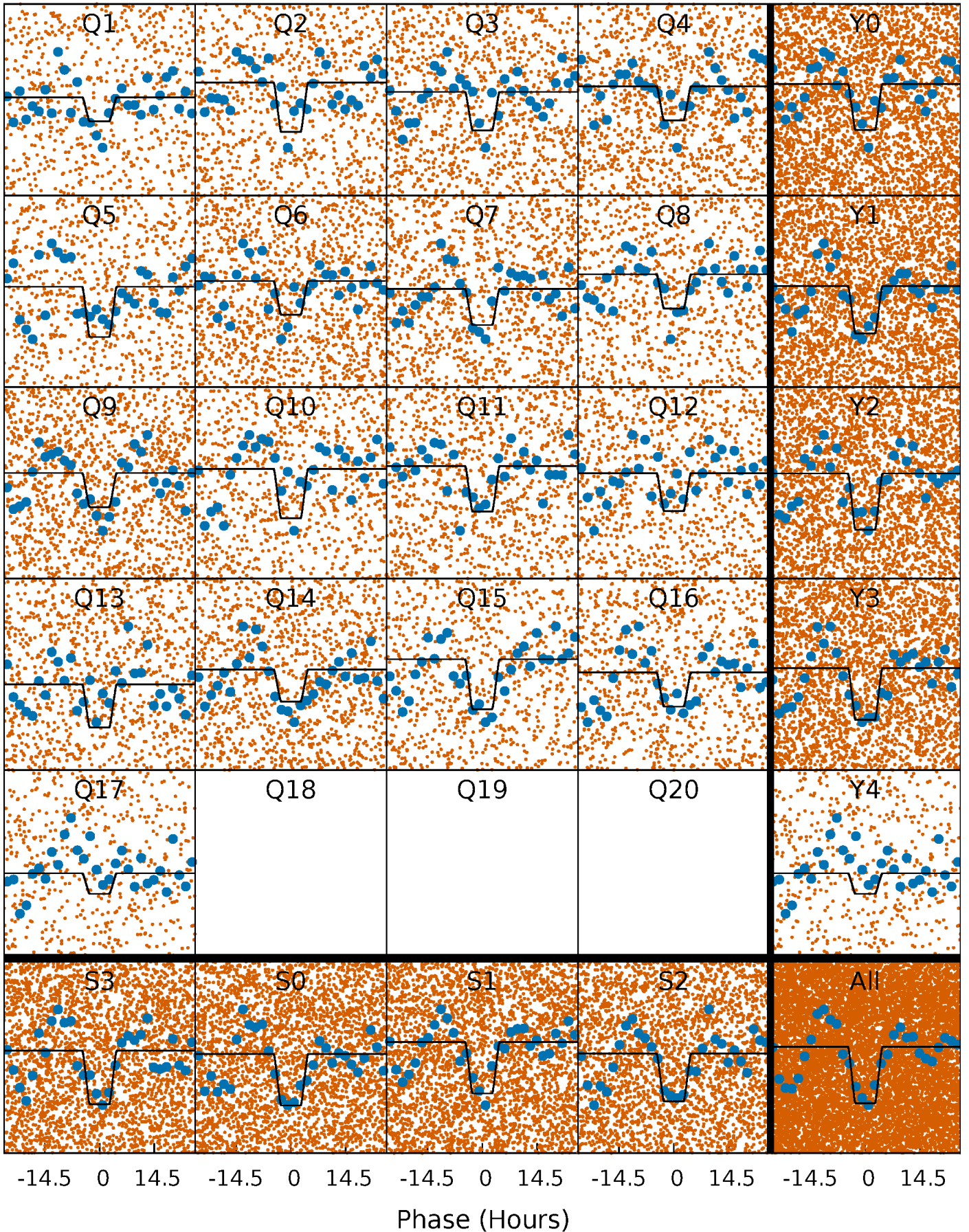
DV Quarter-Phased Transit Curves

TCE 008453722-01 P= 2.081962 Days $T_0=132.077419$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

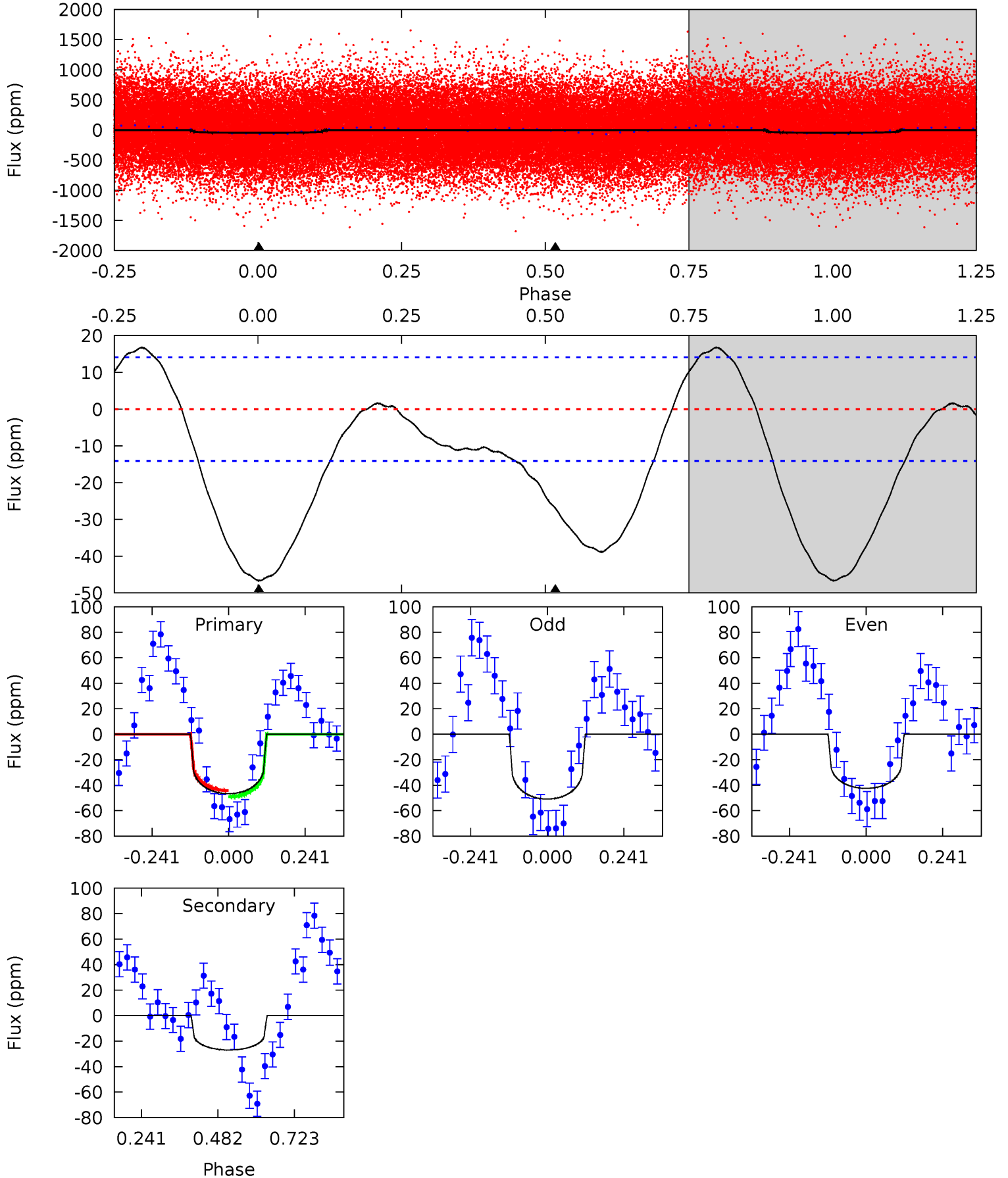
TCE 008453722-01 P= 2.081891 Days $T_0=132.103549$ (BKJD)



DV Model-Shift Uniqueness Test

008453722-01, P = 2.081962 Days, E = 129.995457 Days

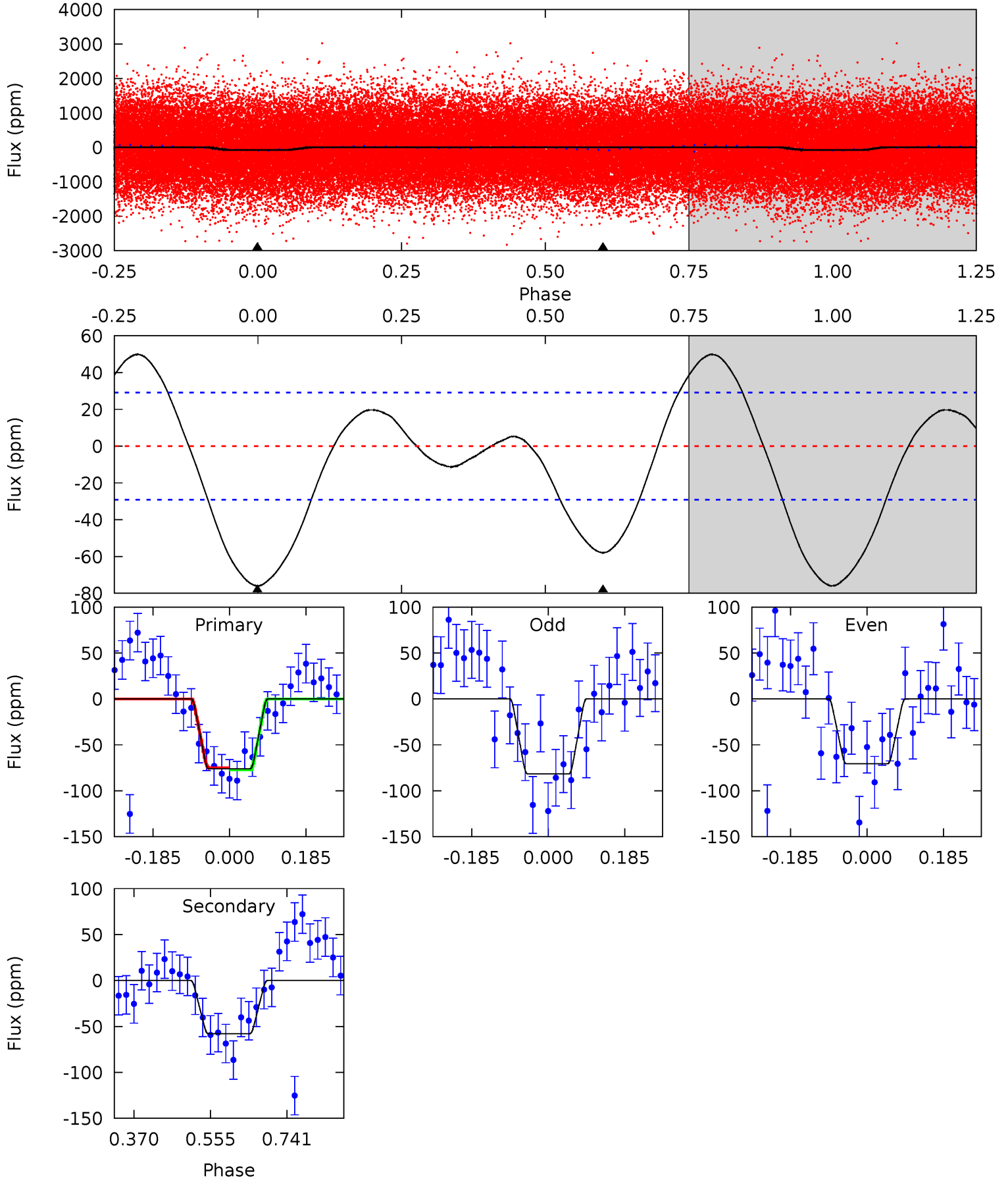
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	8.36	0	0	4.38	1.17	2.35	14.5	14.5	8.36	8.36	1.31	0.81	0.26	0.77



Alt Model-Shift Uniqueness Test

008453722-01, P = 2.081891 Days, E = 130.021658 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	8.81	0	0	4.43	1.33	2.74	11.6	11.6	8.81	8.81	0.83	0.91	0.40	0.18



Stellar Parameters For KIC 008453722

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7894^{+219}_{-329}	$3.644^{+0.464}_{-0.087}$	$-0.240^{+0.200}_{-0.300}$	$3.521^{+0.721}_{-1.682}$	$1.995^{+0.300}_{-0.487}$	$0.064^{+0.309}_{-0.023}$
	+3%/-4%	+13%/-2%	+83%/-125%	+20%/-48%	+15%/-24%	+481%/-36%
Source	KIC0	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 008453722-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 3	$2.75^{+2.42}_{-1.73}$	4364^{+333}_{-546}	5905^{+5080}_{-1586}	$3.164^{+18.921}_{-2.248}$
Alt.	-58 ± 7	$3.36^{+2.23}_{-1.91}$	4349^{+334}_{-497}	6654^{+4773}_{-1576}	$4.487^{+18.669}_{-2.856}$

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 $A_{obs} \gg 1.0$

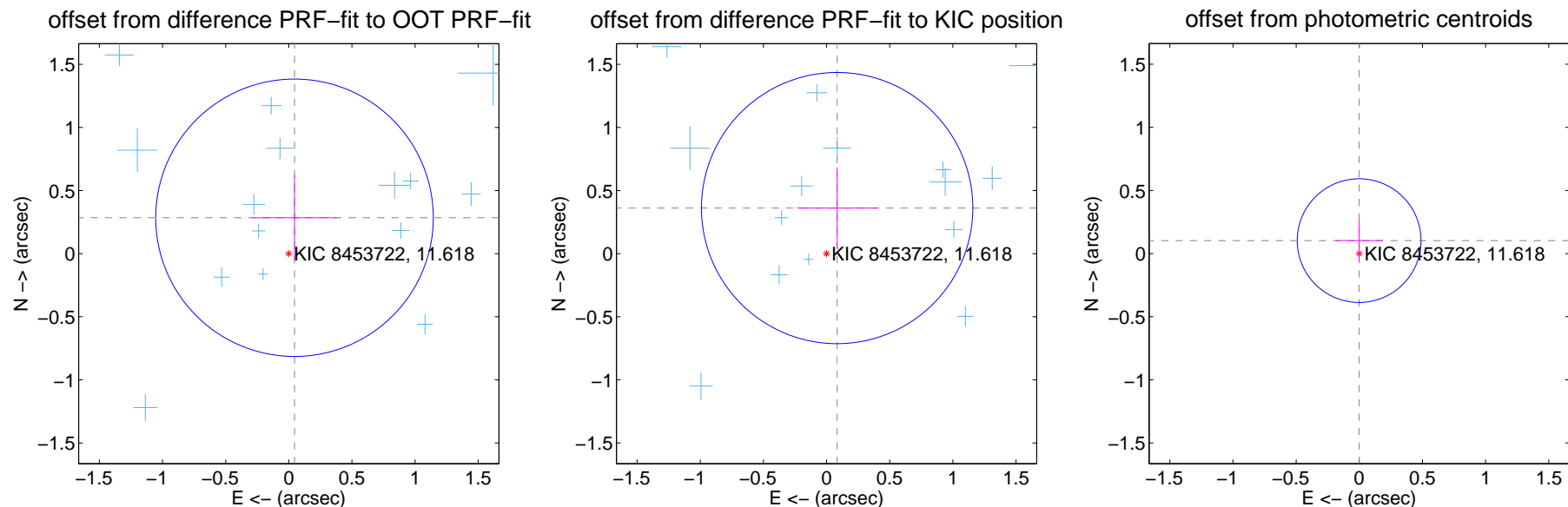
DV Centroid Data

Supplemental centroid analysis for 008453722-01. **Kepler magnitude: 11.62.** Transit SNR 11.26

There are 16 quarters with good PRF difference image offsets

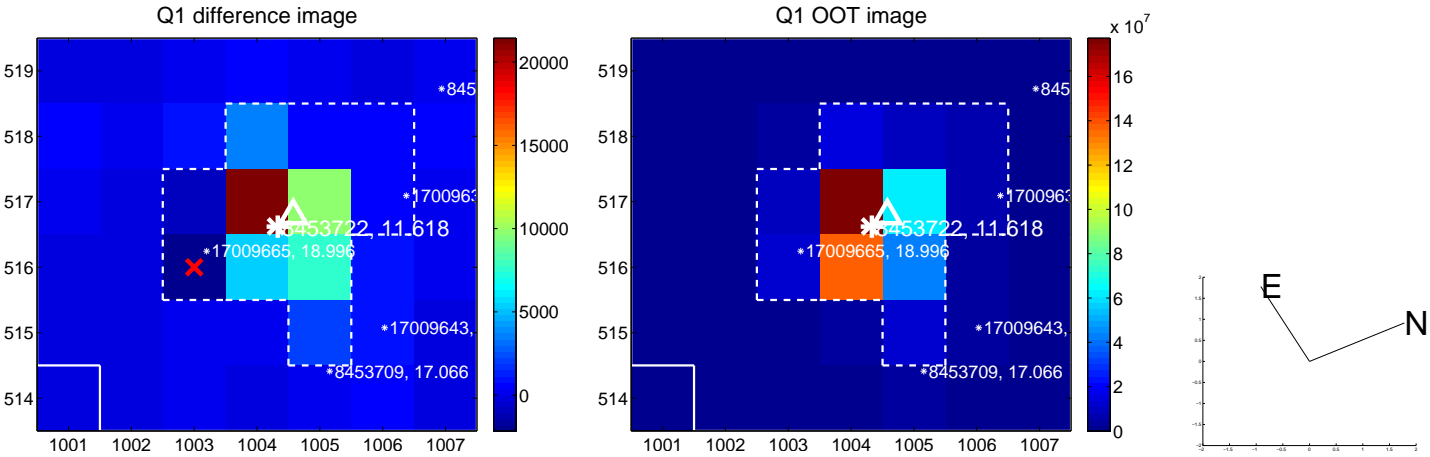
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.288 ± 0.366	0.79	-0.045 ± 0.339	0.284 ± 0.339
PRF-fit source offset from KIC position	0.371 ± 0.358	1.03	-0.084 ± 0.318	0.361 ± 0.323
photometric centroid source offset	0.10 ± 0.16	0.63	0.00 ± 0.18	0.10 ± 0.16

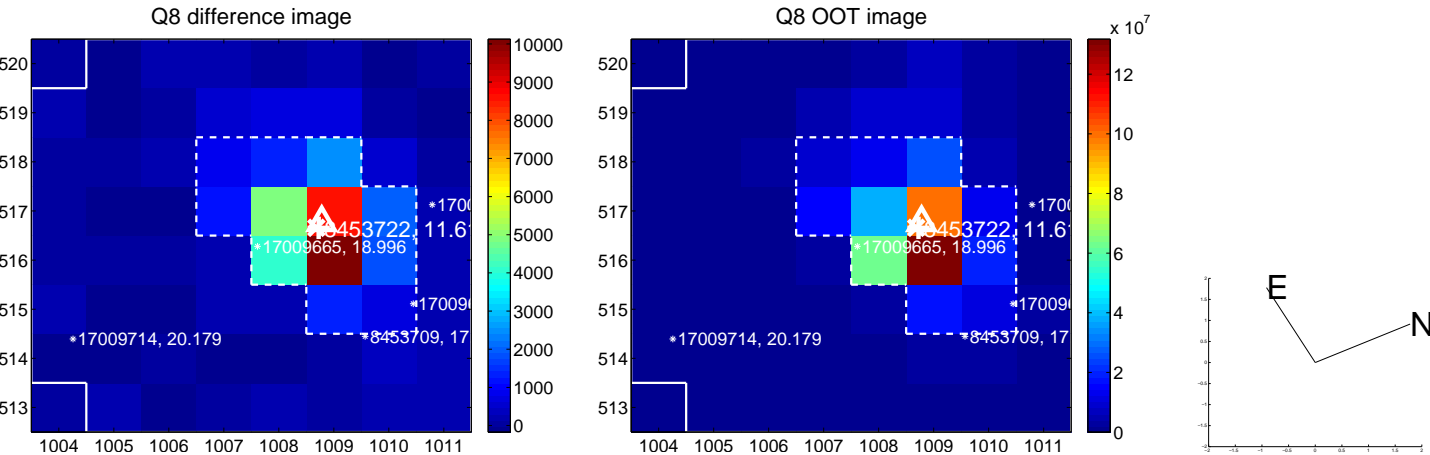
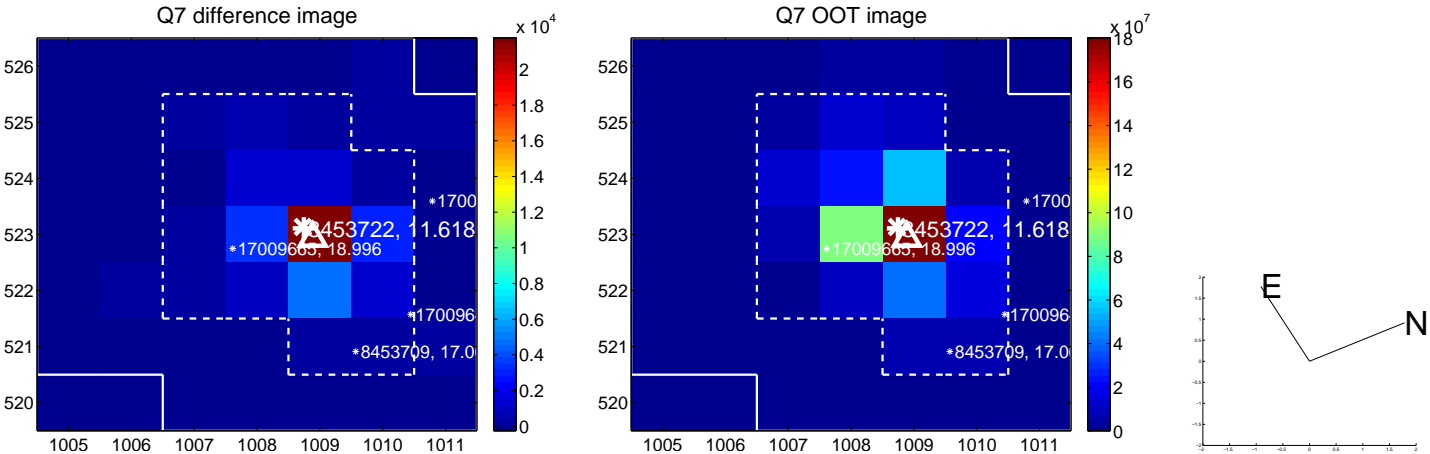
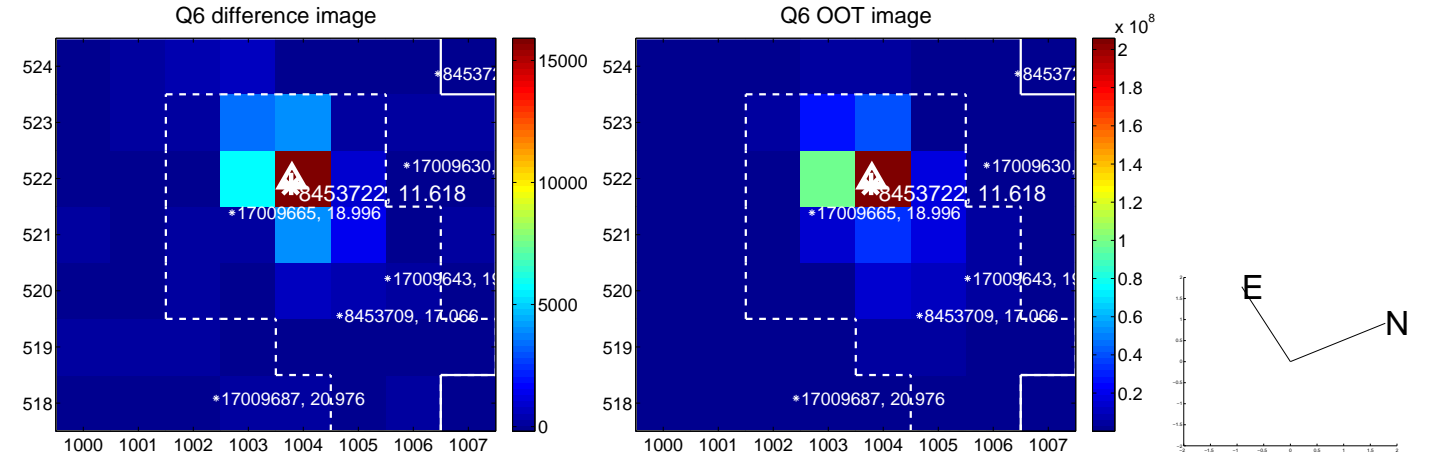
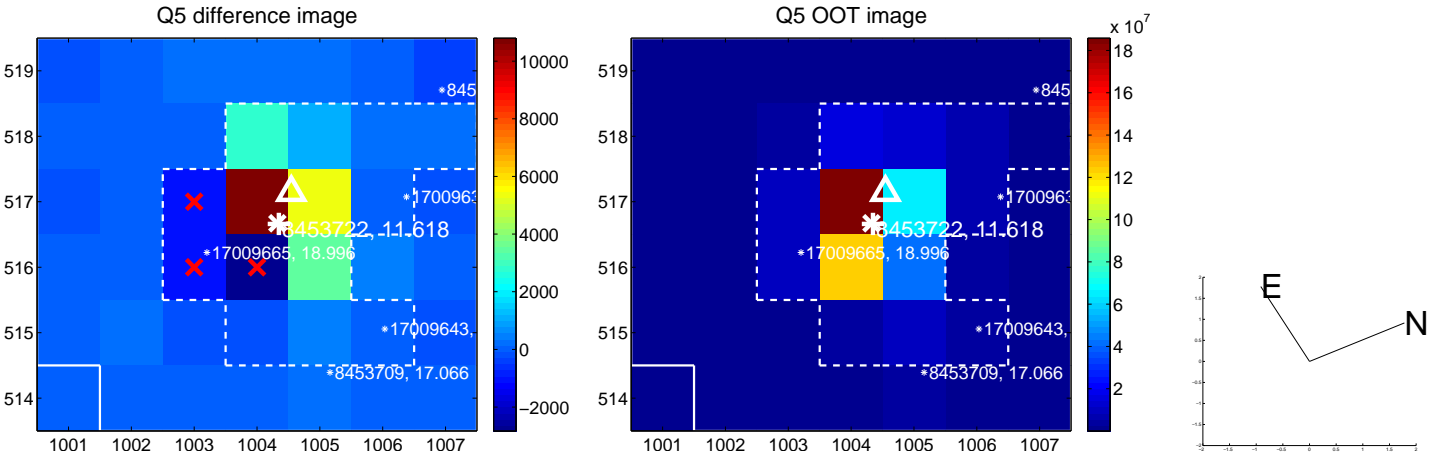


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

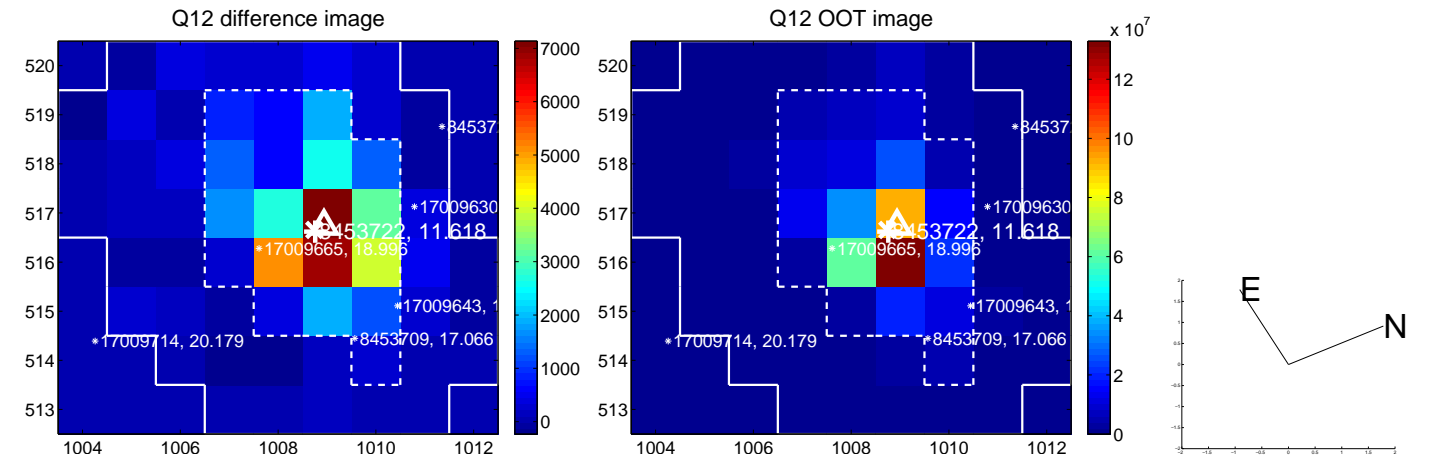
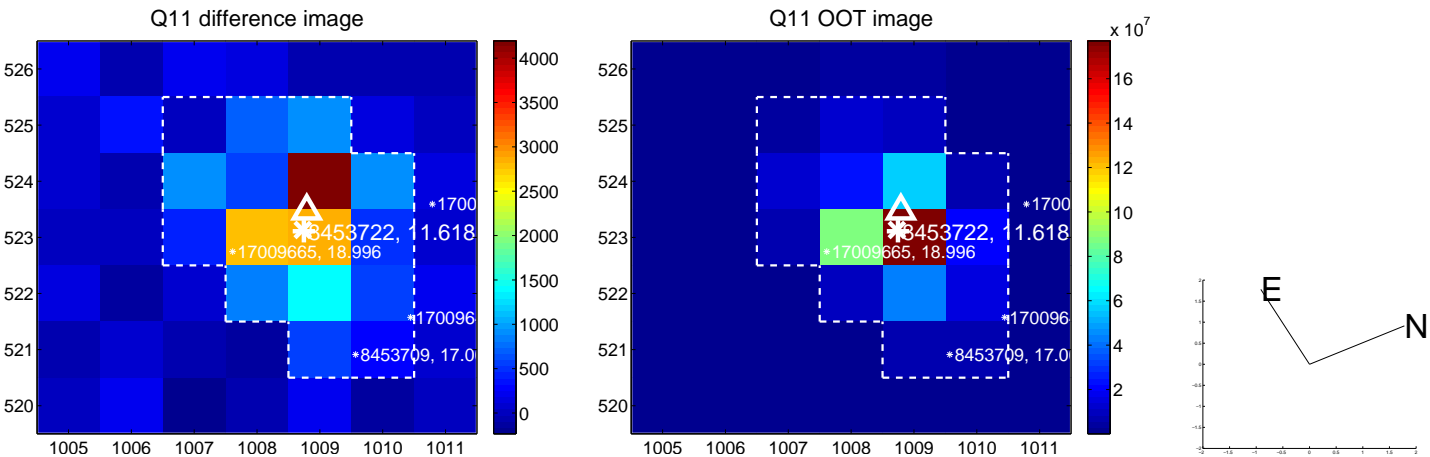
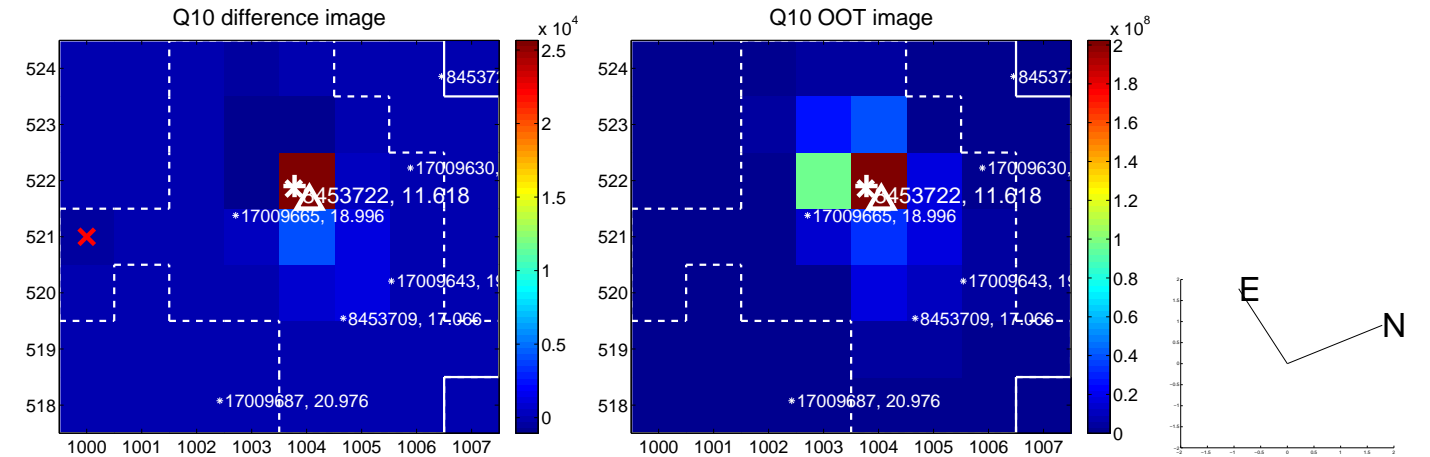
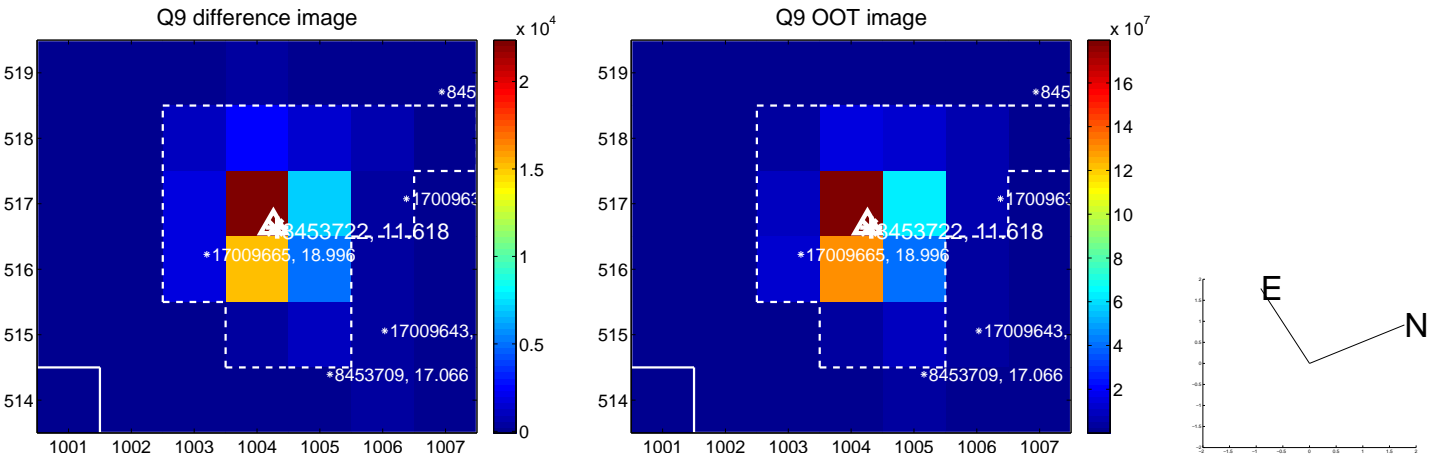
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



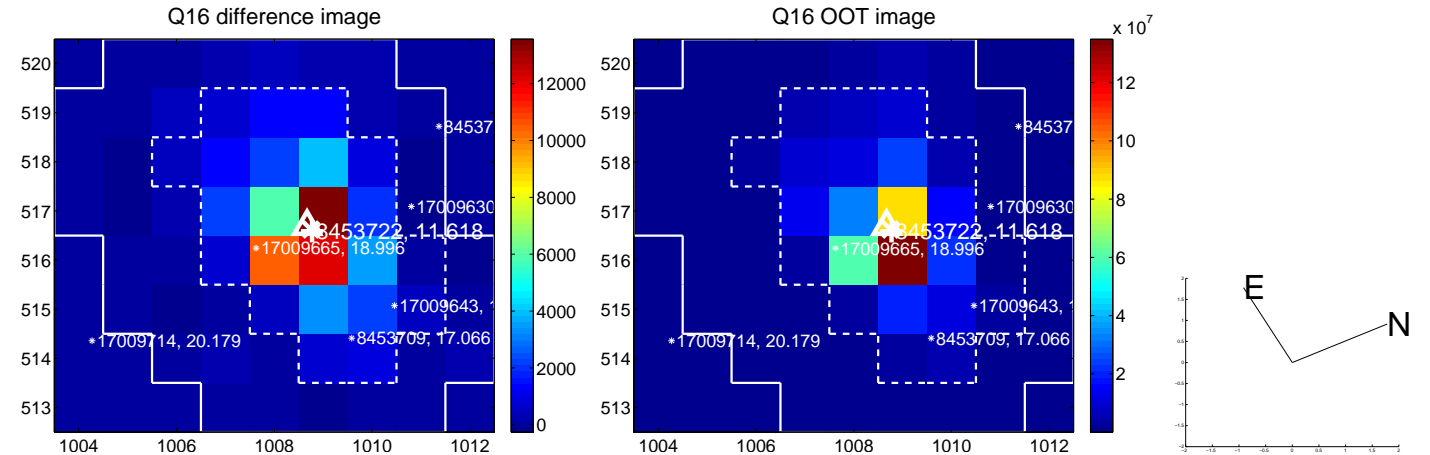
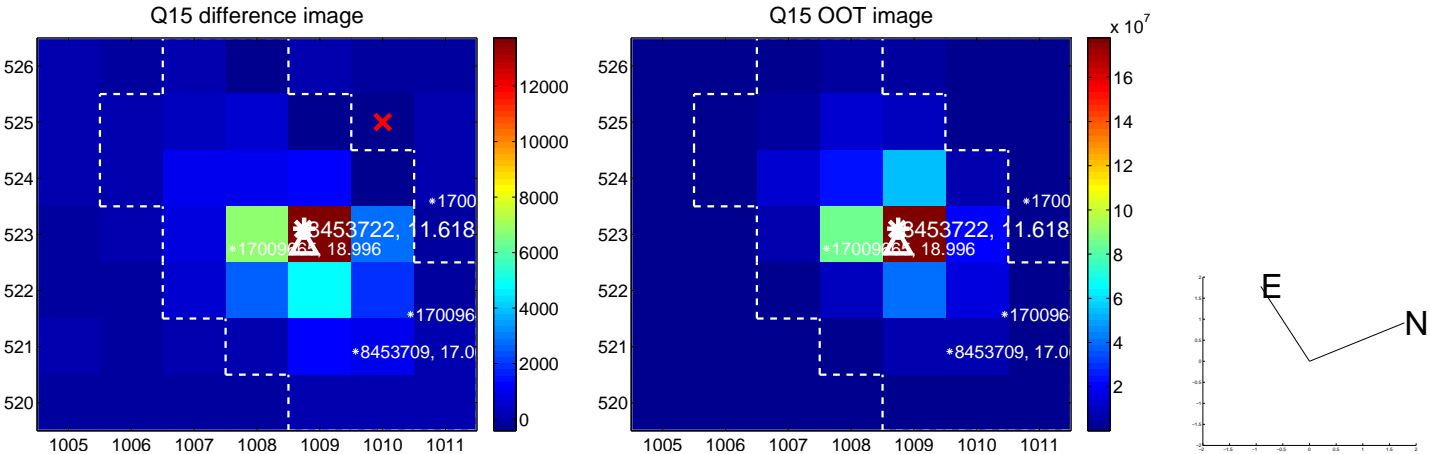
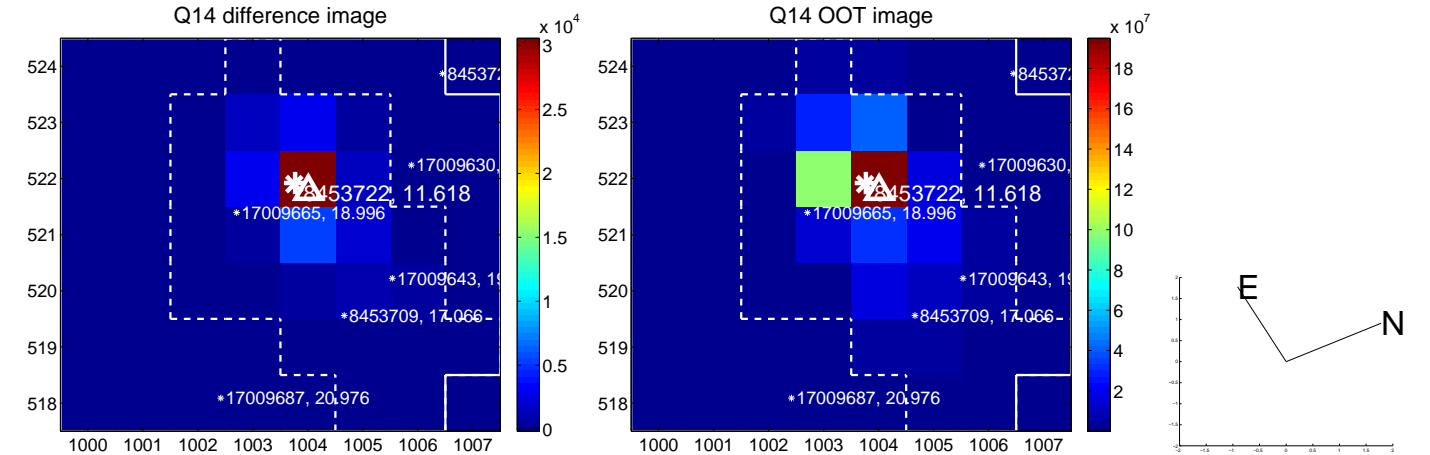
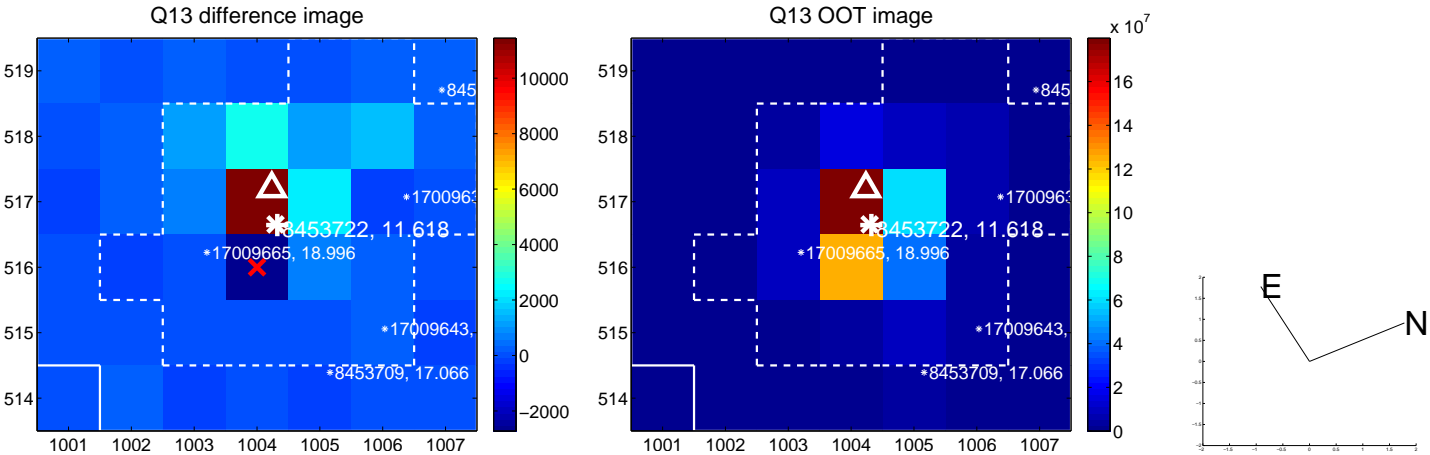
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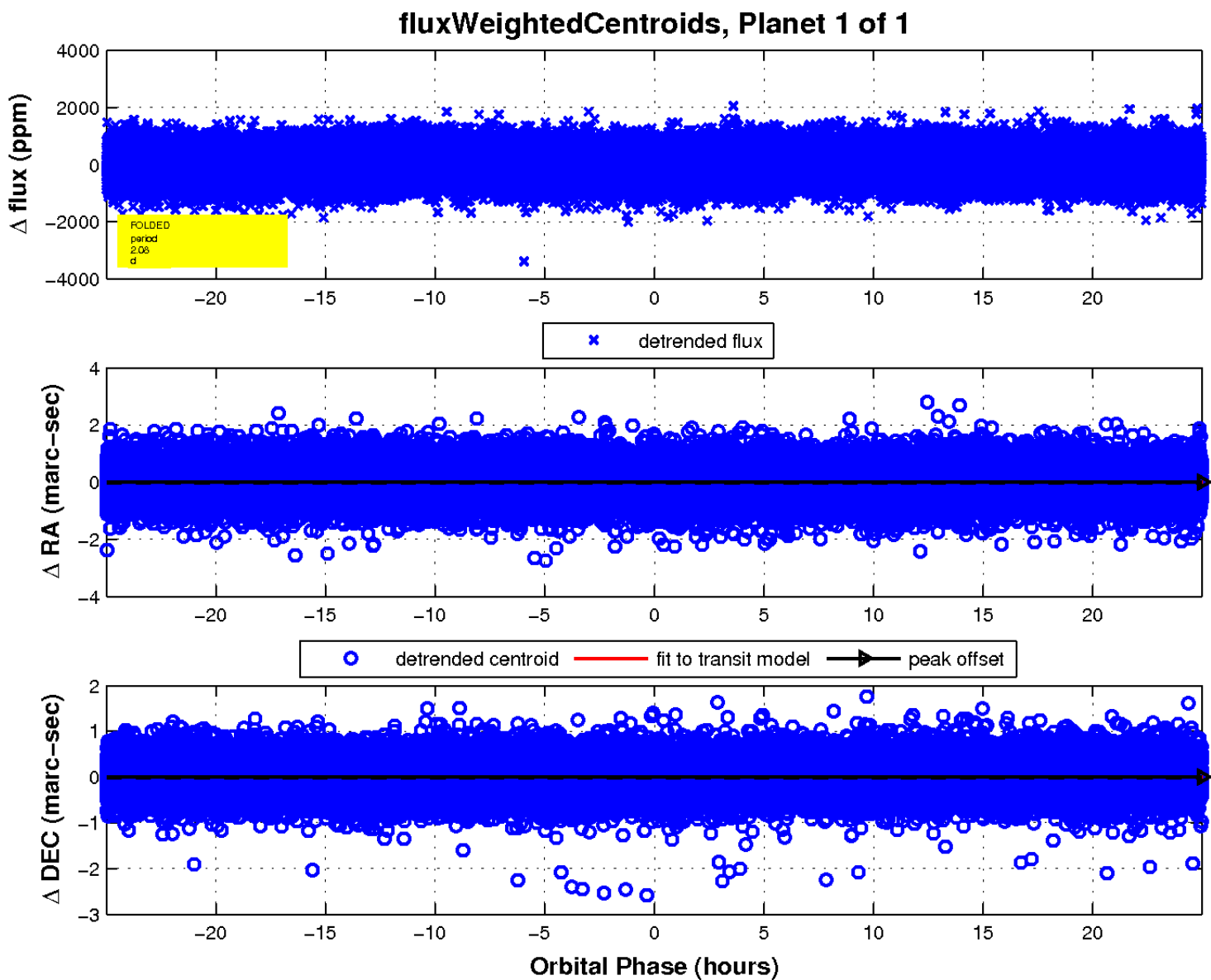
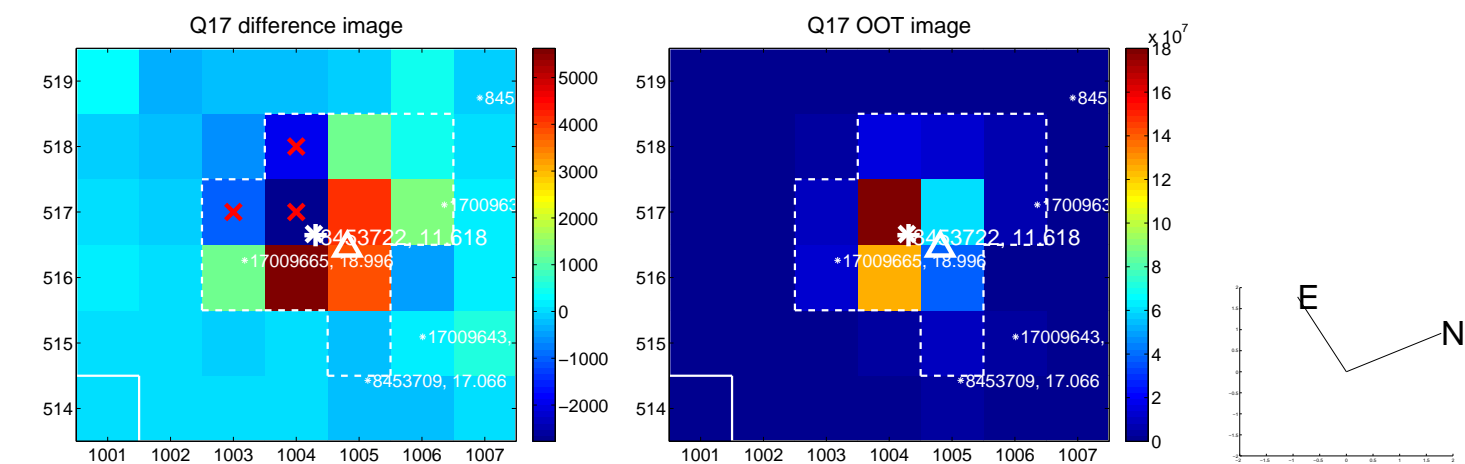
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UKIRT Image

