

KIC 008453211

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})
008453211-01	OBS	0236.01	5.776758	131.543050	1391.0	6.766	376.3	111.8	0.88	5544	6.32	195.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008453211-01	OBS	FP	0.00	0	1	1	1	DEEP_V_SHAPED—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 008453211-01

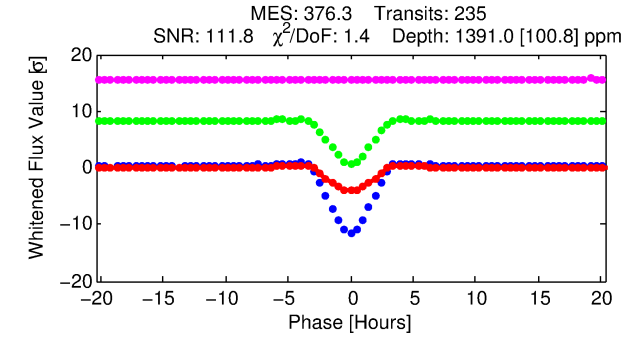
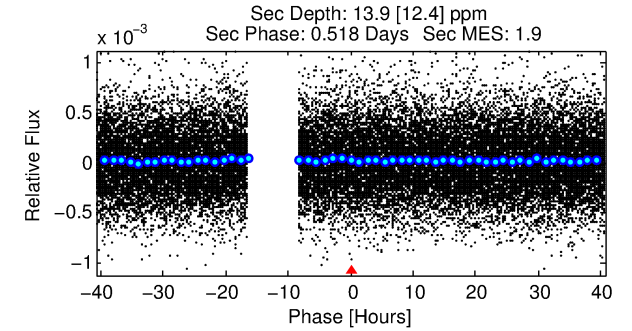
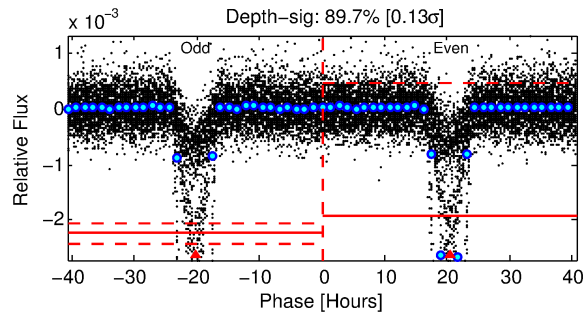
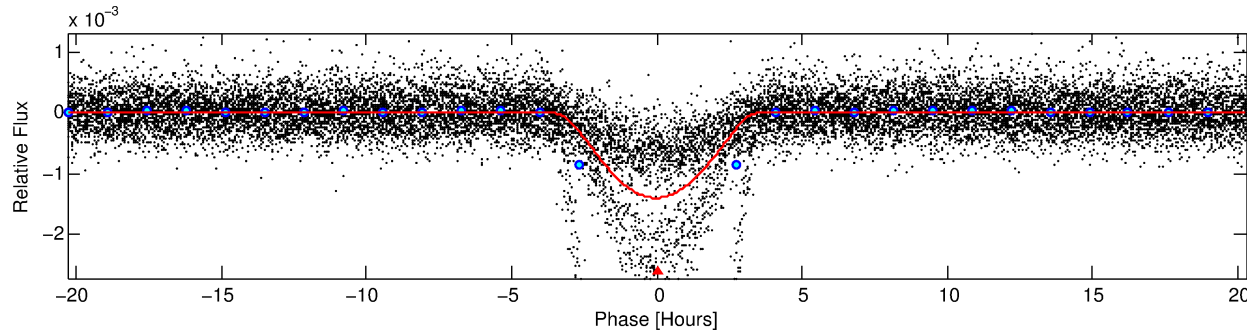
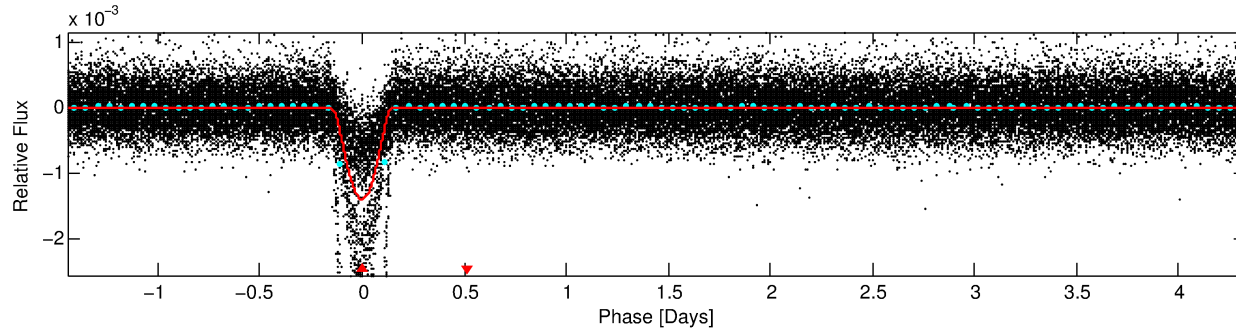
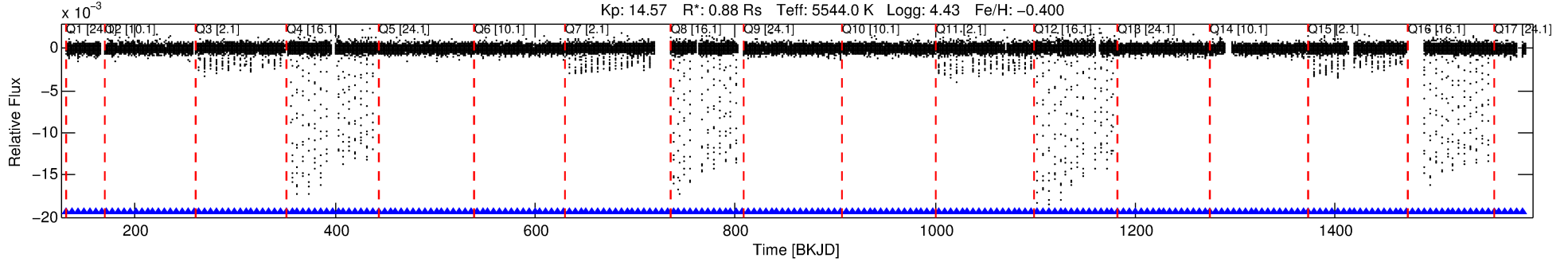
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008453211-01	8453211	7043.01	8453191	1:1	14.4	3	0	13.36	14.58	105.37	Direct-PRF	0	0.05	0.03

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8453211 Candidate: 1 of 1 Period: 5.777 d
KOI: K00236.01 Corr: 0.890

Kp: 14.57 R*: 0.88 Rs Teff: 5544.0 K Logg: 4.43 Fe/H: -0.400



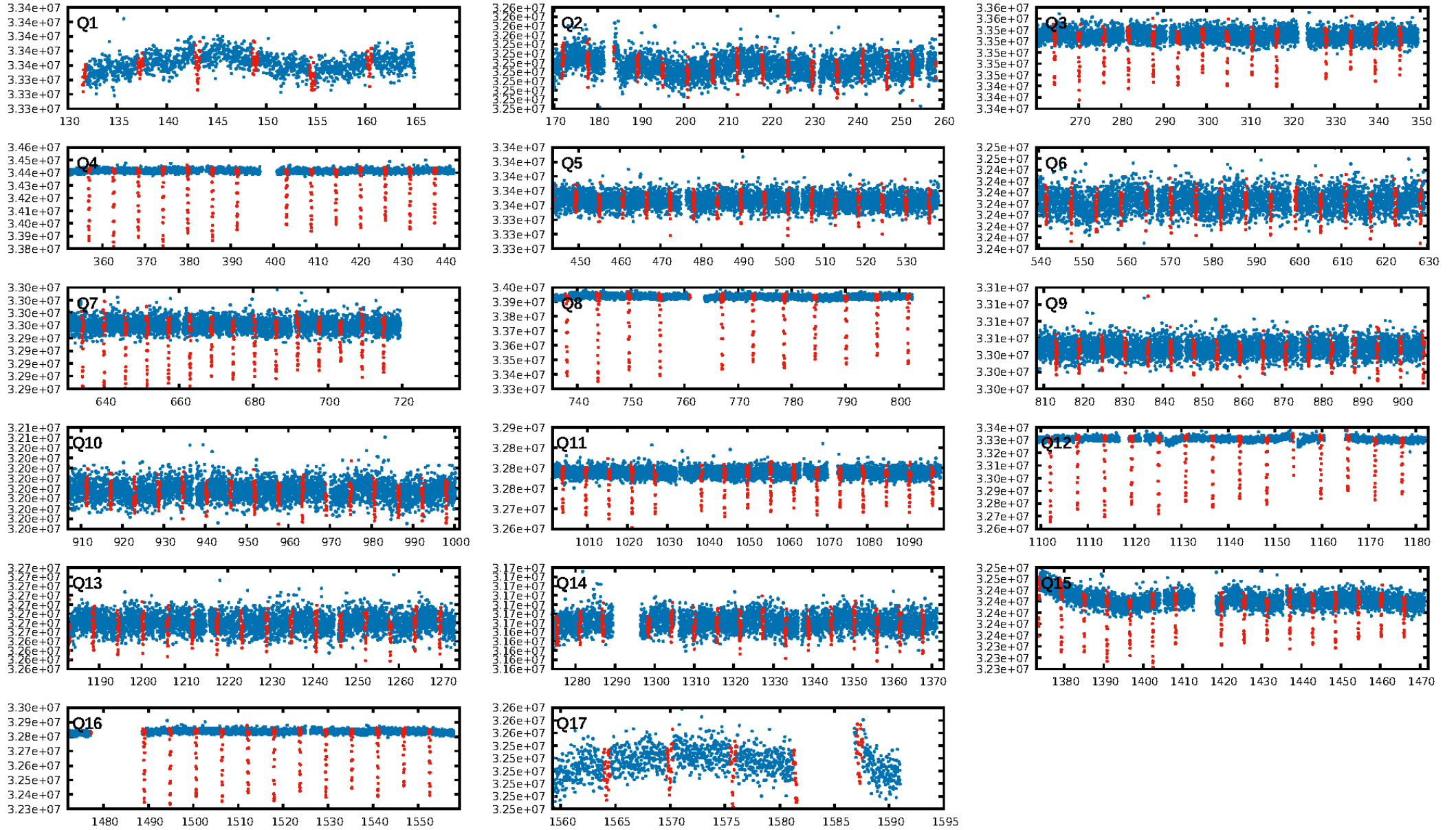
DV Fit Results:

Period = 5.77676 [0.00001] d
Epoch = 131.5431 [0.0014] BKJD
Rp/R* = 0.0661 [0.0236]
a/R* = 2.62 [0.17]
b = 1.00 [0.03]
Seff = 195.86 [76.50]
Teq = 954 [93] K
Rp = 6.32 [2.86] Re
a = 0.0575 [0.0141] AU
Ag = 0.63 [0.76] [-0.48σ]
Teffp = 1316 [378] K [0.93σ]

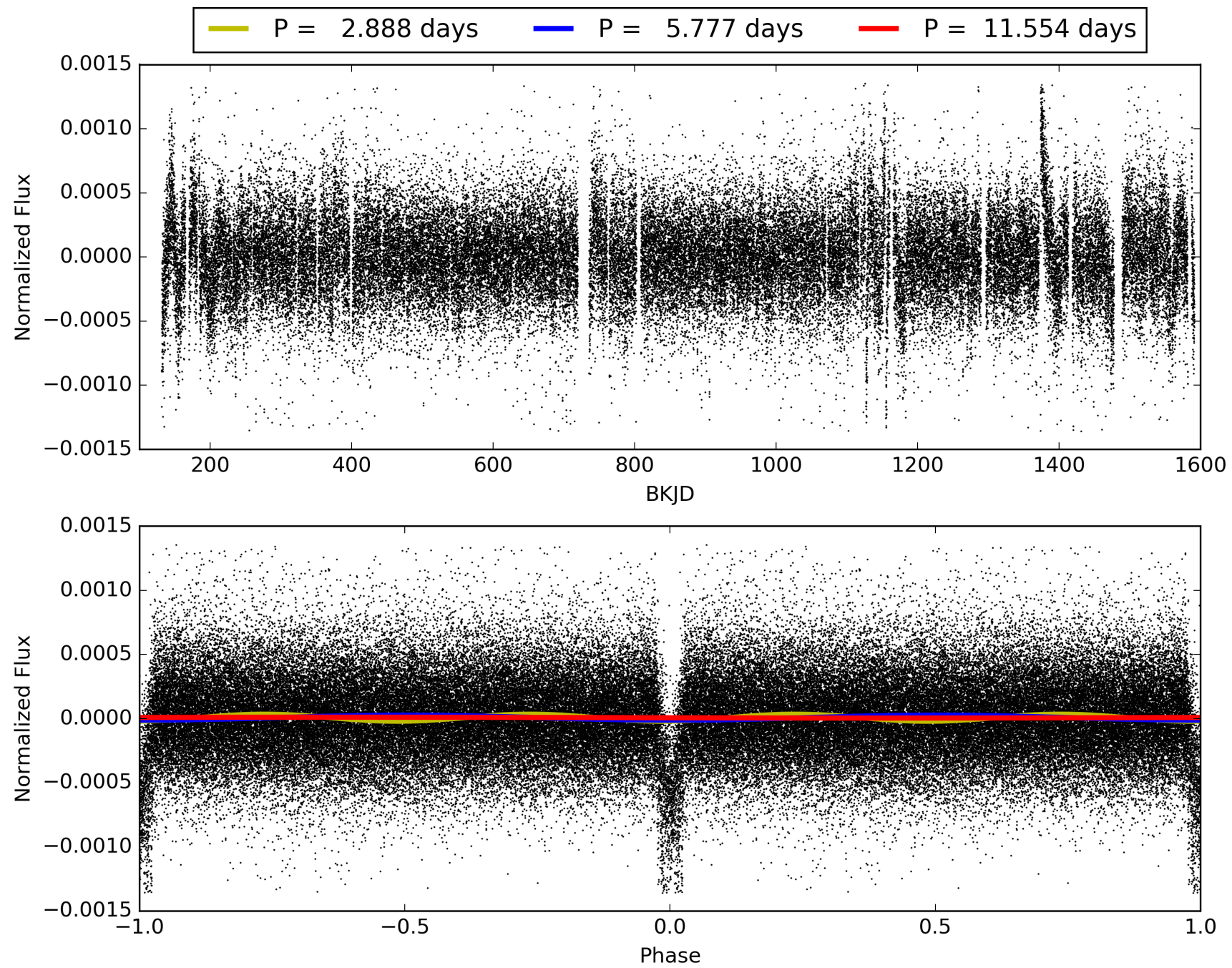
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [224/224]
GhostDiagnostic-chr: -0.2101
Centroid-sig: 0.0%
Centroid-so: 40.625 arcsec [442.31σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008453211-01, PDC Light Curves

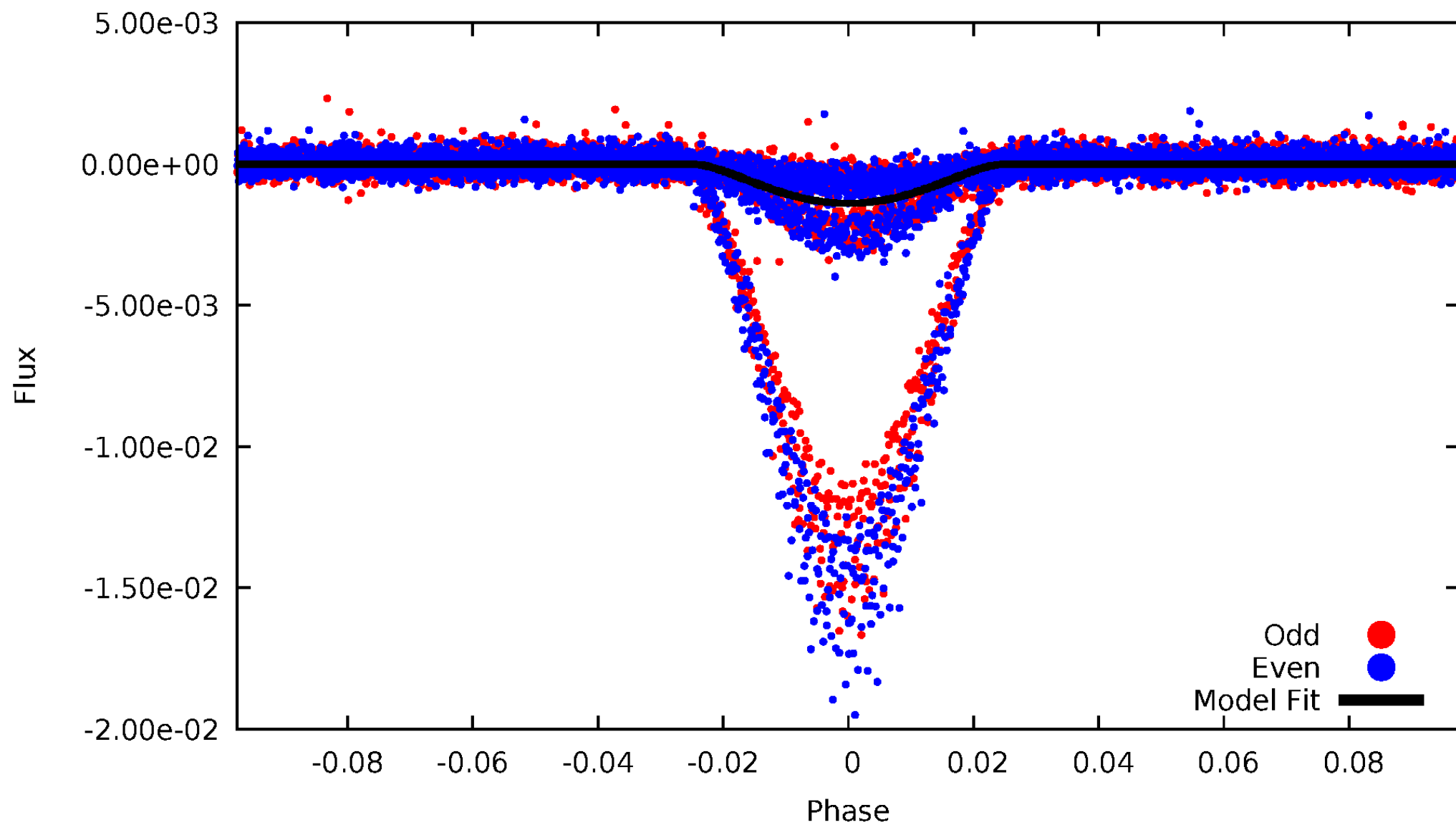


TCE 008453211-01



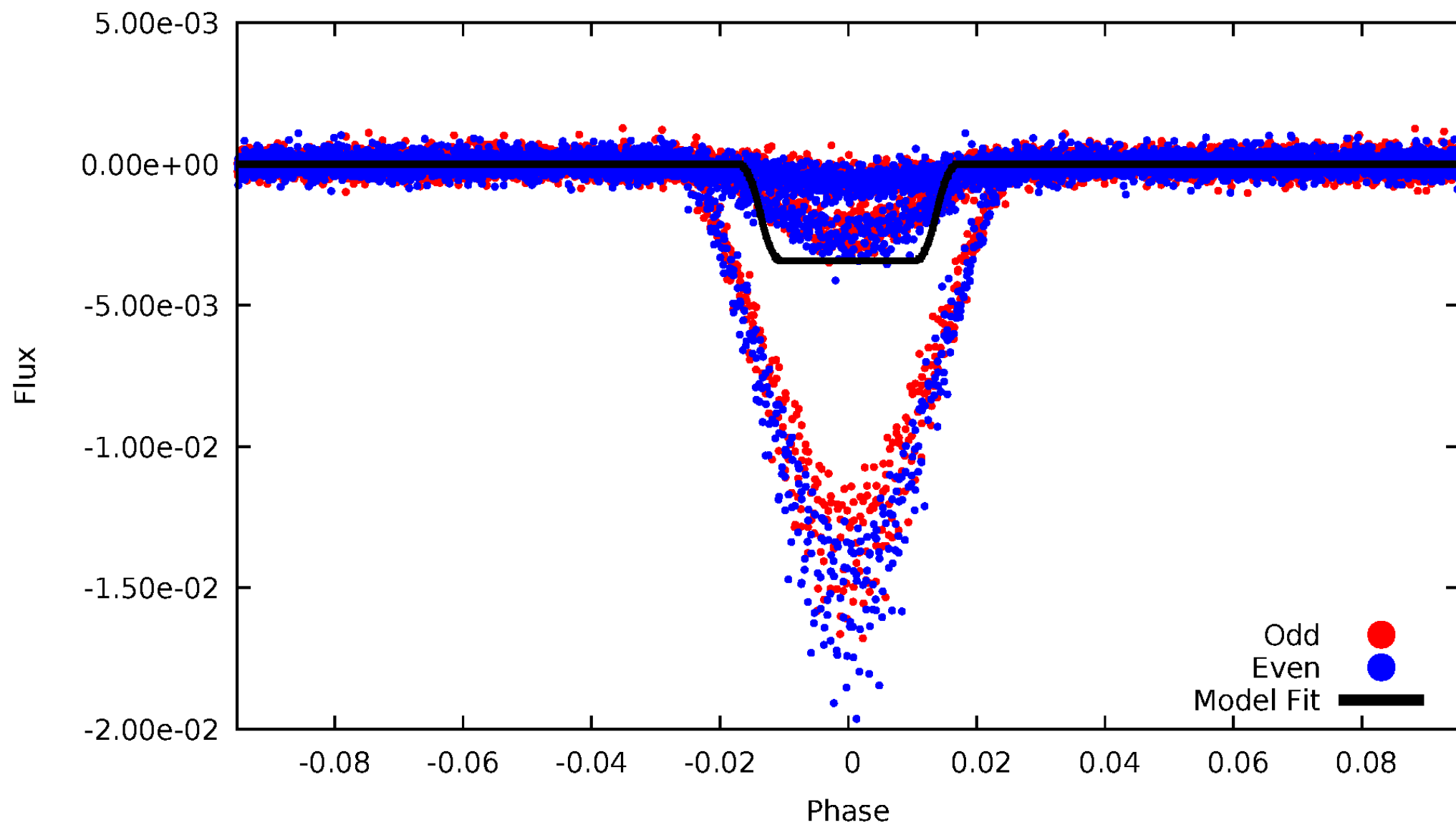
DV Odd/Even

TCE 008453211-01



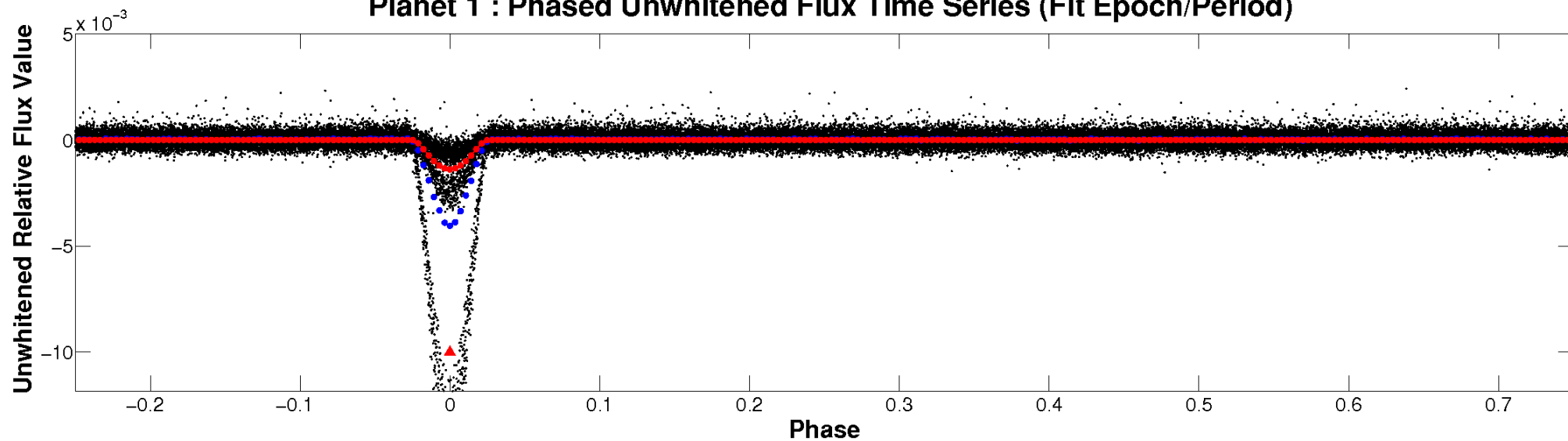
ALT Odd/Even

TCE 008453211-01

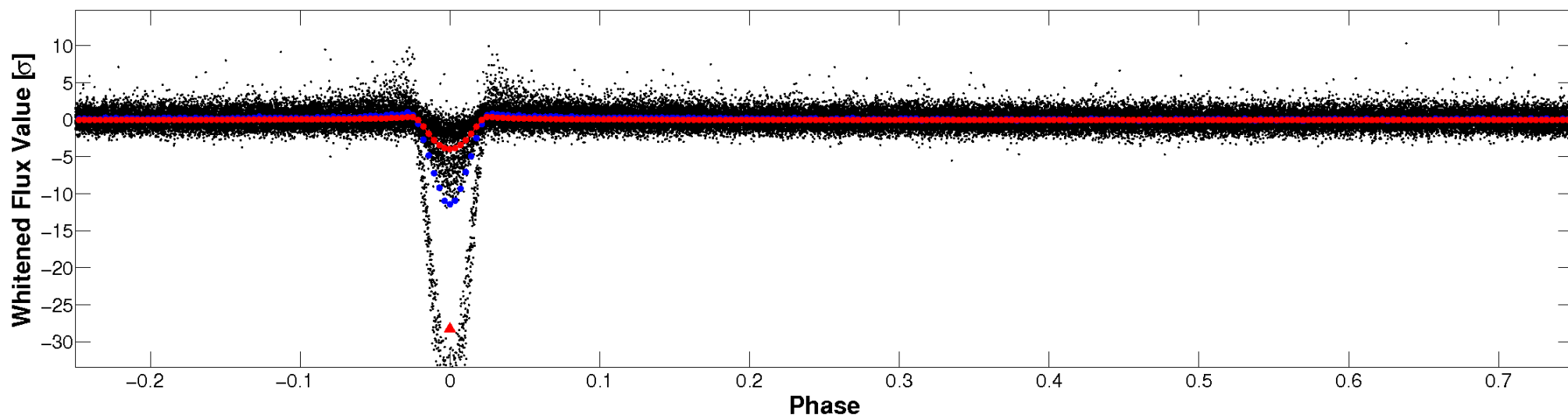


Non-Whitened Vs. Whitened Light Curve

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

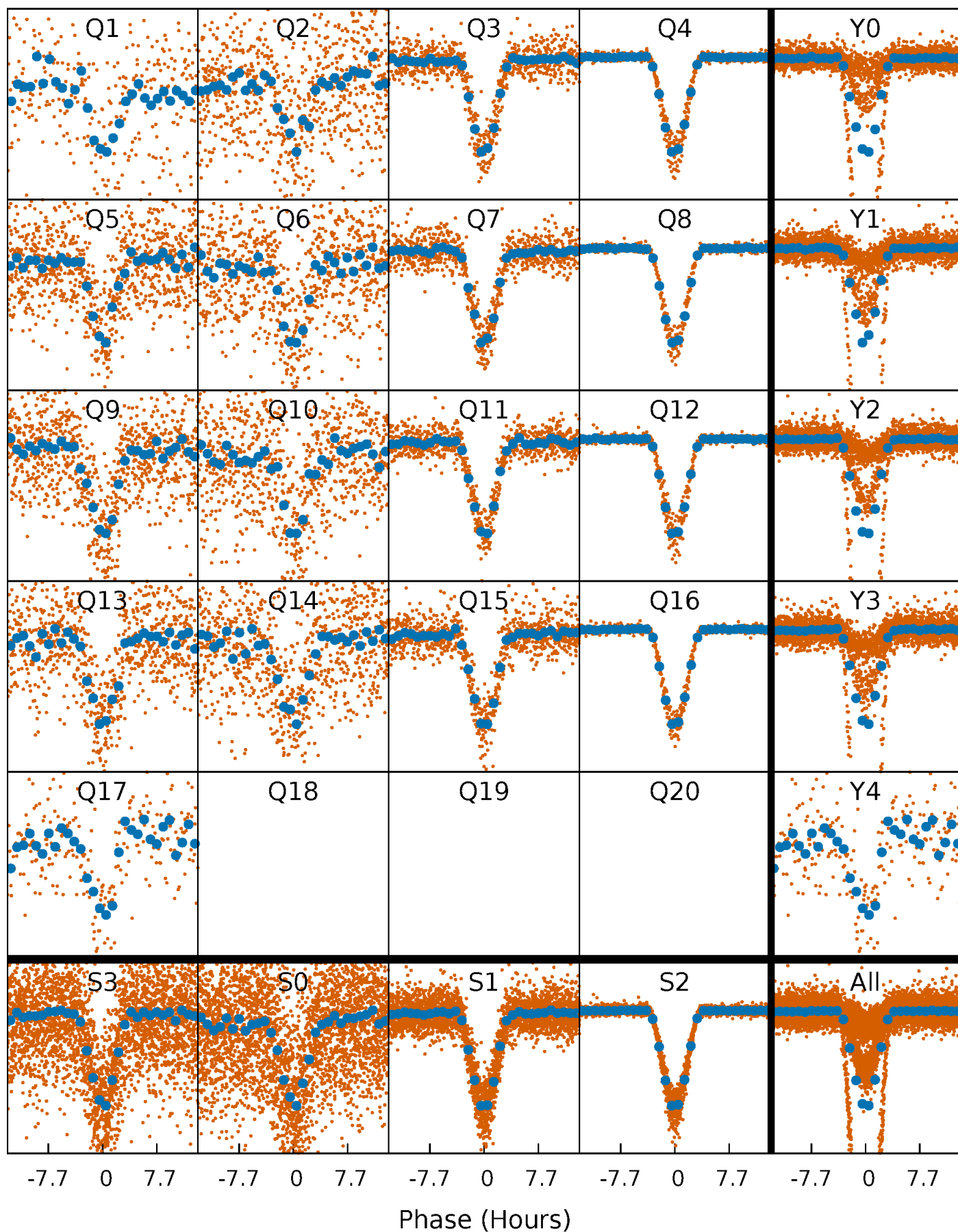


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



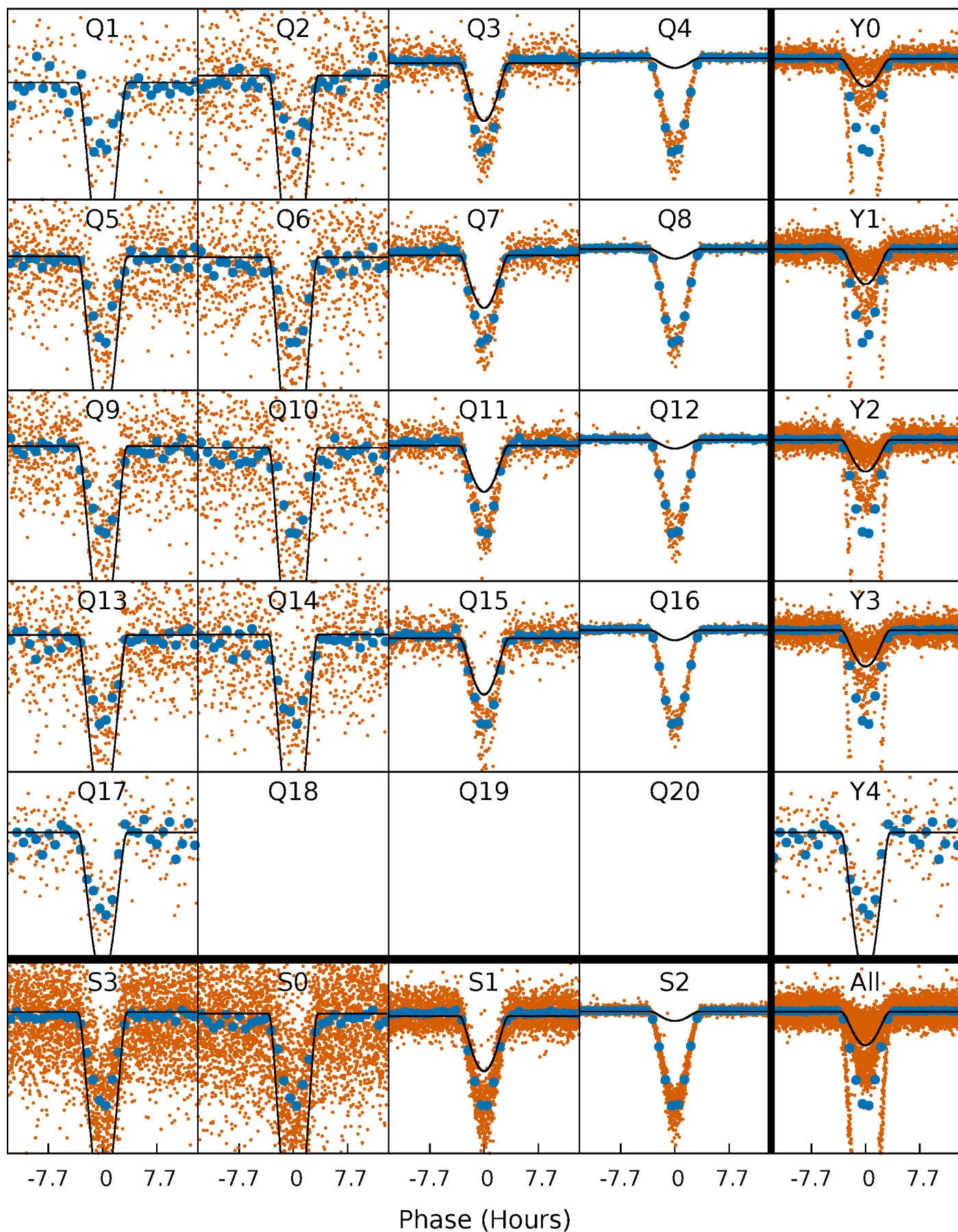
PDC Quarter-Phased Transit Curves

TCE 008453211-01 P= 5.776758 Days $T_0=131.543050$ (BKJD)



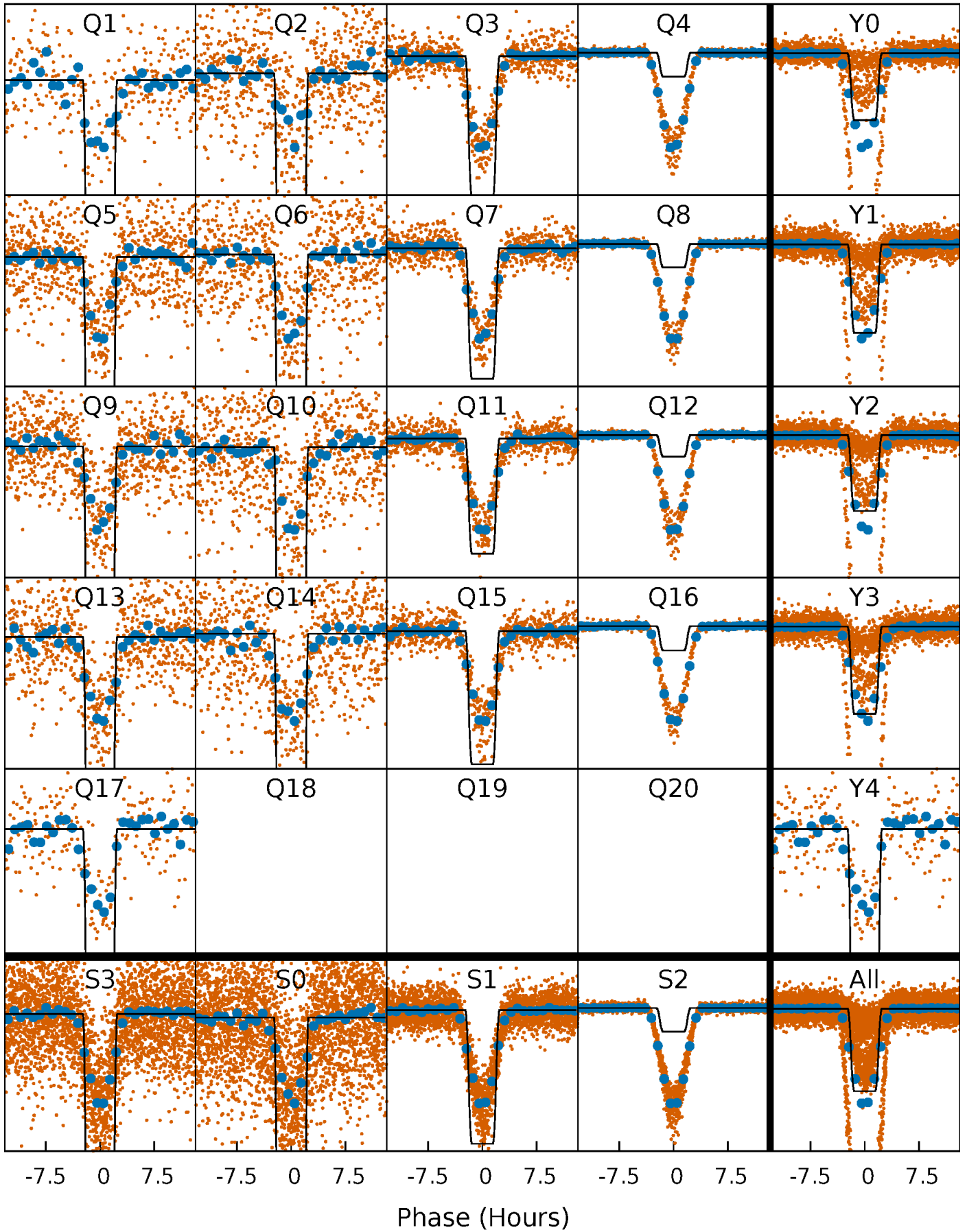
DV Quarter-Phased Transit Curves

TCE 008453211-01 P= 5.776758 Days $T_0=131.543050$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

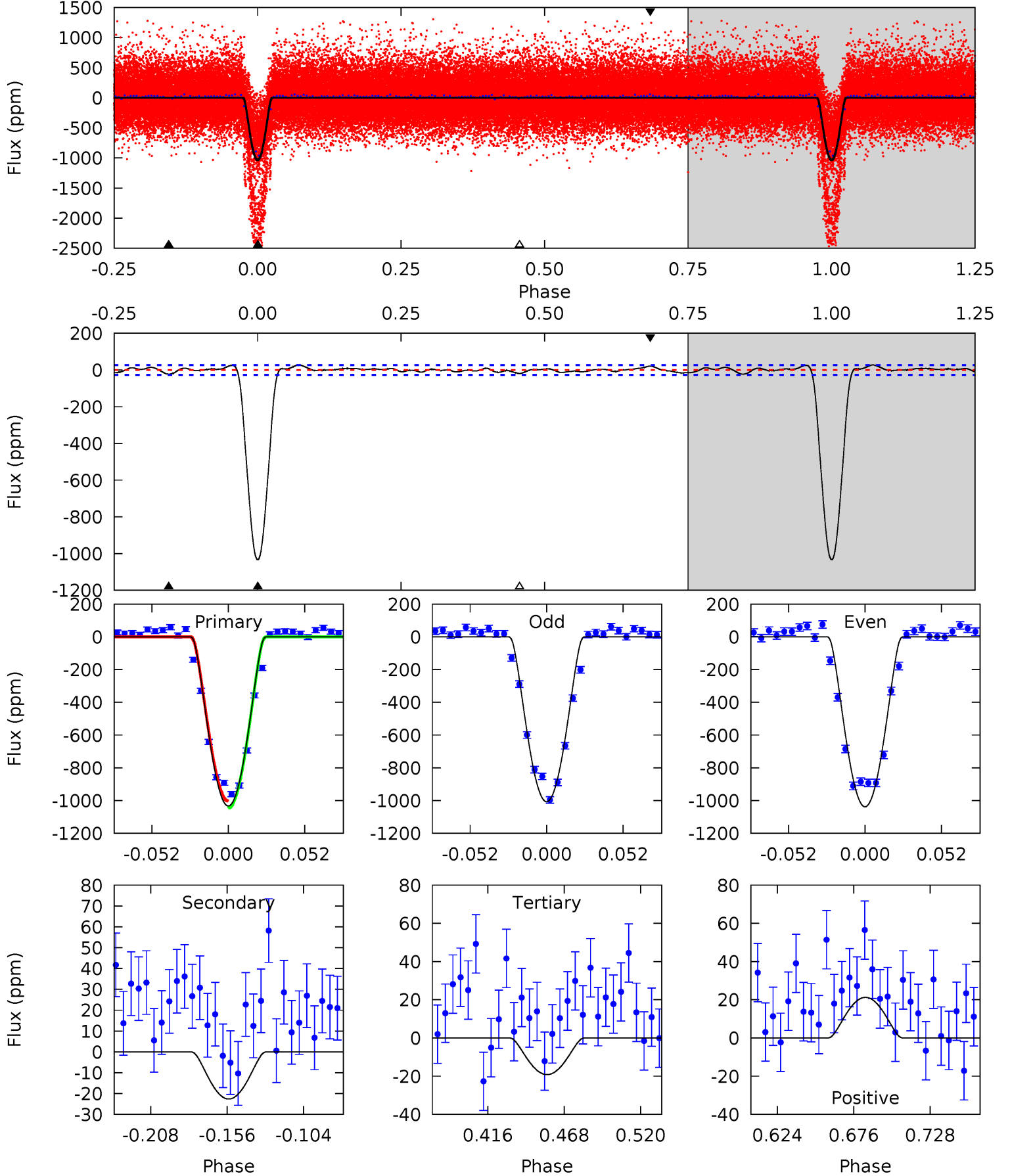
TCE 008453211-01 P= 5.776737 Days $T_0=131.545539$ (BKJD)



DV Model-Shift Uniqueness Test

008453211-01, P = 5.776758 Days, E = 125.766292 Days

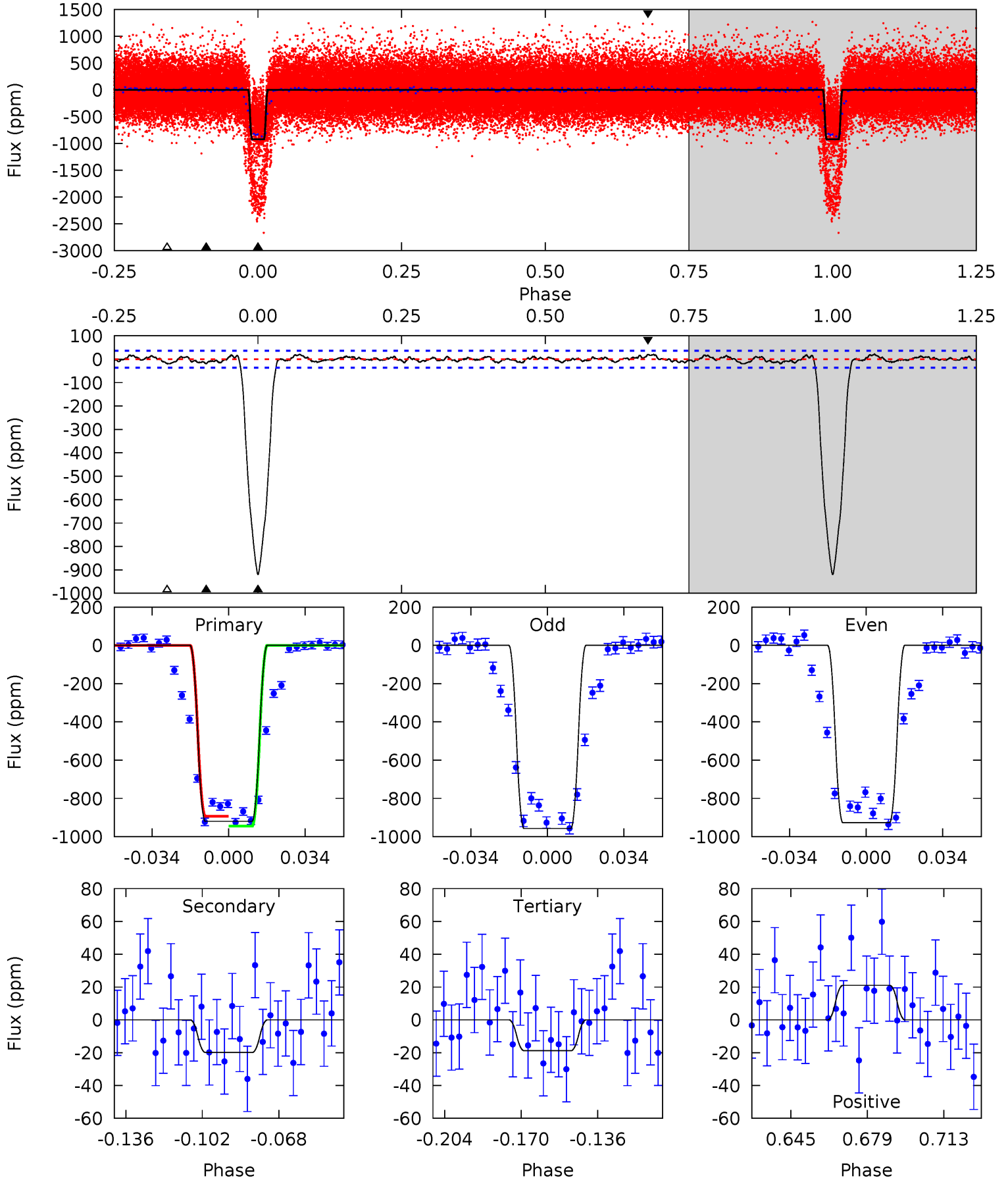
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
180.9	3.96	3.36	3.72	4.70	1.94	1.52	177.5	177.2	0.60	0.24	2.73	4.03	0.03	3.76



Alt Model-Shift Uniqueness Test

008453211-01, P = 5.776737 Days, E = 125.768802 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
122.2	2.64	2.50	2.80	4.79	2.12	1.06	119.7	119.4	0.14	-0.15	2.04	4.23	0.02	0



Stellar Parameters For KIC 008453211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5544^{+166}_{-166}	$4.435^{+0.157}_{-0.210}$	$-0.400^{+0.350}_{-0.250}$	$0.875^{+0.243}_{-0.149}$	$0.761^{+0.124}_{-0.044}$	$1.599^{+1.011}_{-0.834}$
	+3%/-3%	+4%/-5%	+87%/-62%	+28%/-17%	+16%/-6%	+63%/-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 008453211-01 / KOI 0236.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-23 ± 6	$6.42^{+2.77}_{-2.49}$	1342^{+101}_{-90}	2281^{+357}_{-313}	$1.043^{+1.707}_{-0.572}$
Alt.	-20 ± 8	$5.75^{+2.61}_{-2.31}$	1340^{+100}_{-79}	2293^{+414}_{-346}	$1.053^{+2.266}_{-0.599}$

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

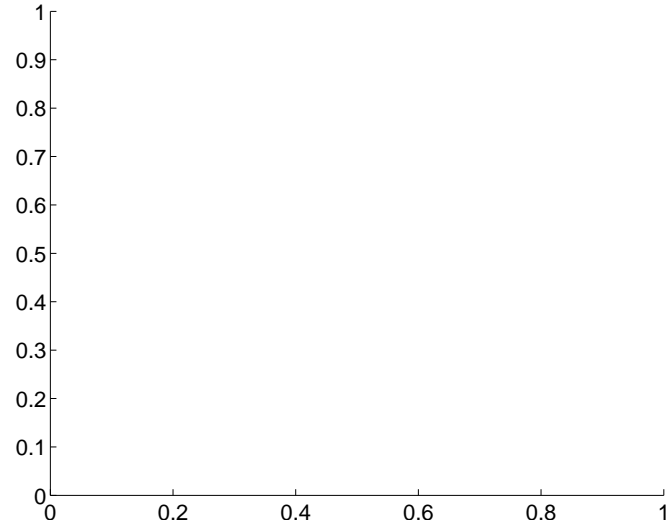
Supplemental centroid analysis for 008453211-01. Kepler magnitude: 14.57. Transit SNR 111.77

There are 0 quarters with good PRF difference image offsets

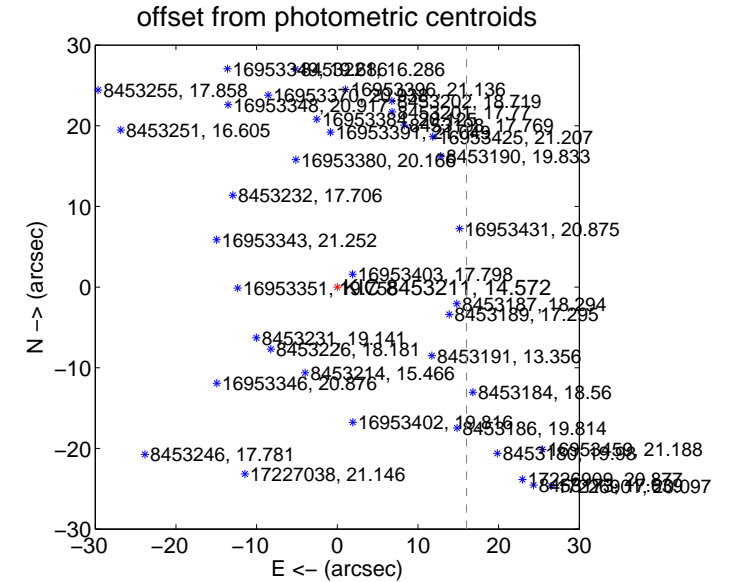
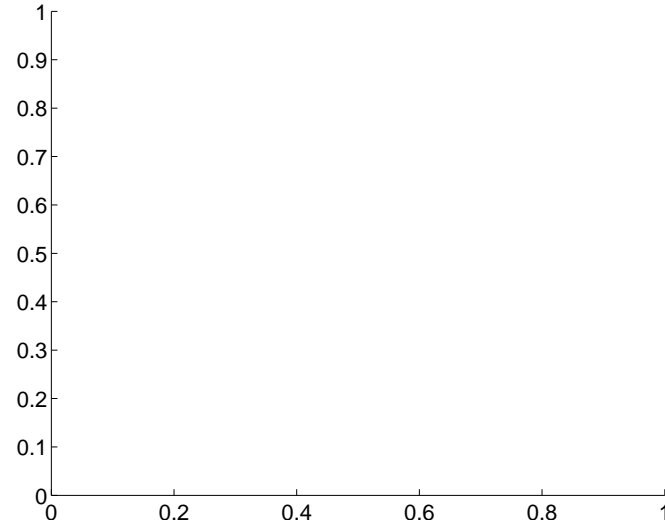
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	40.63 ± 0.09	442.31	-16.02 ± 0.08	-37.33 ± 0.09

There is no PRF-fit offset from OOT-fit

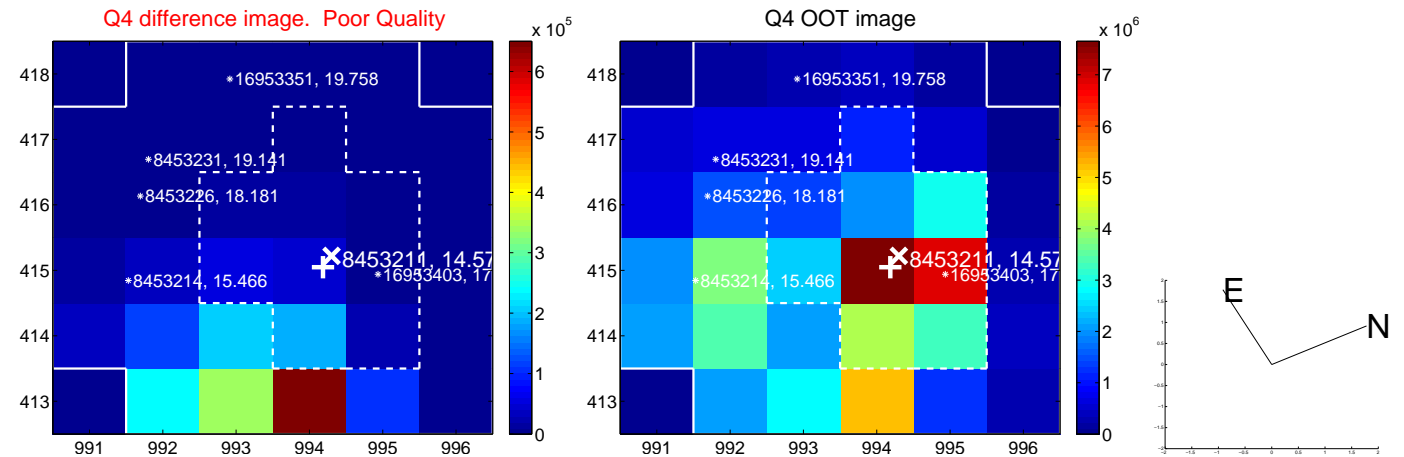
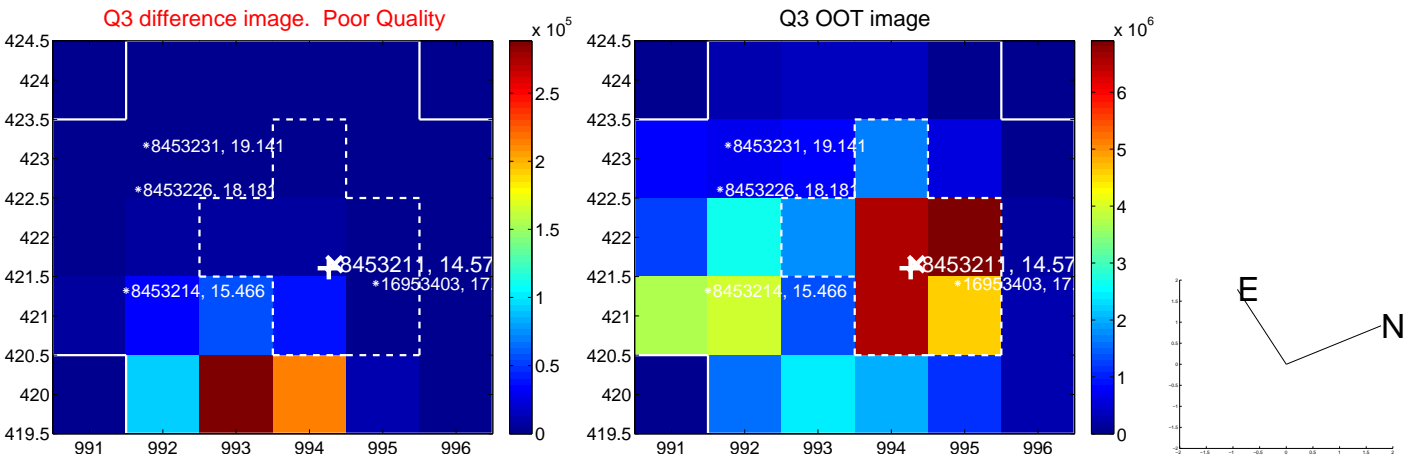
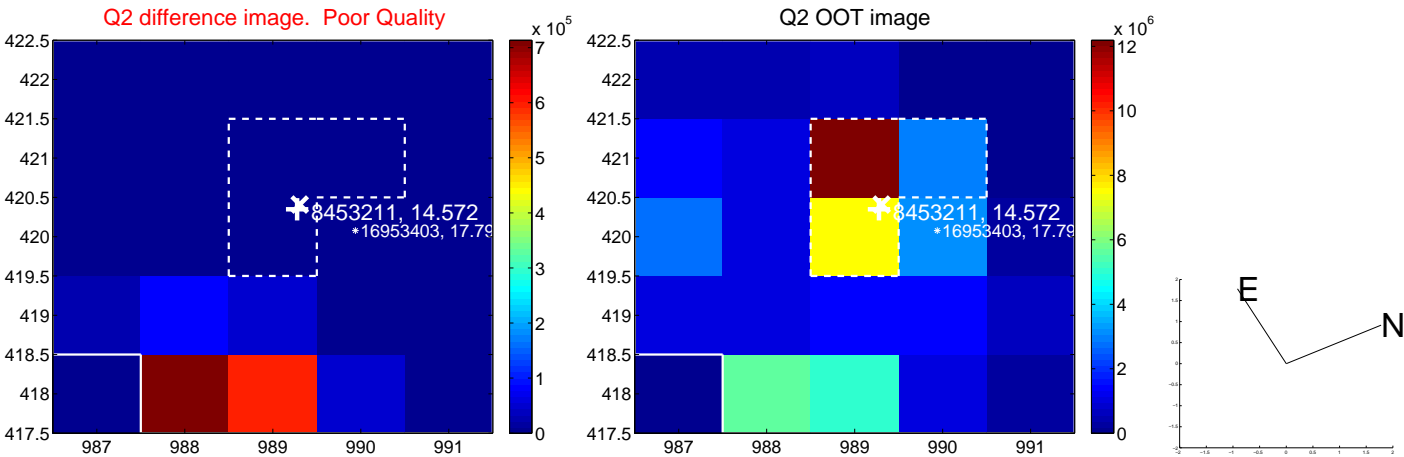
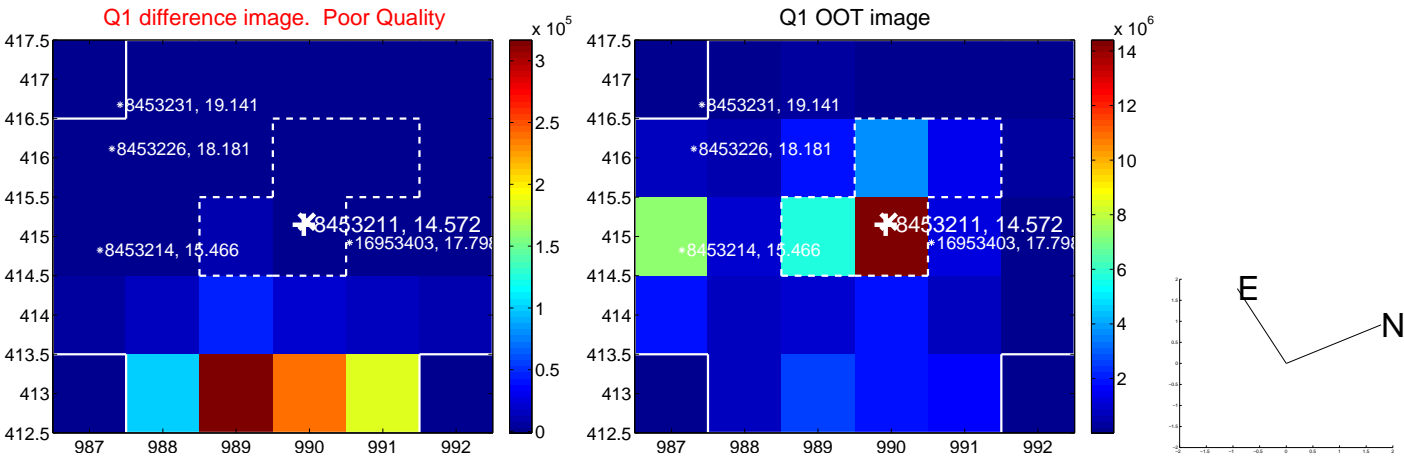


There is no PRF-fit offset from KIC

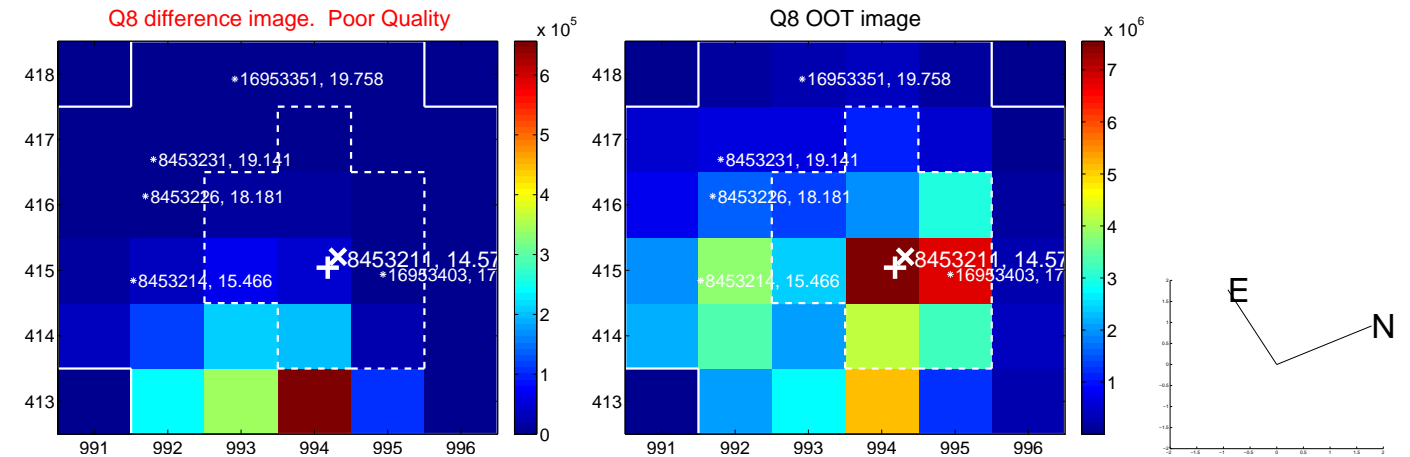
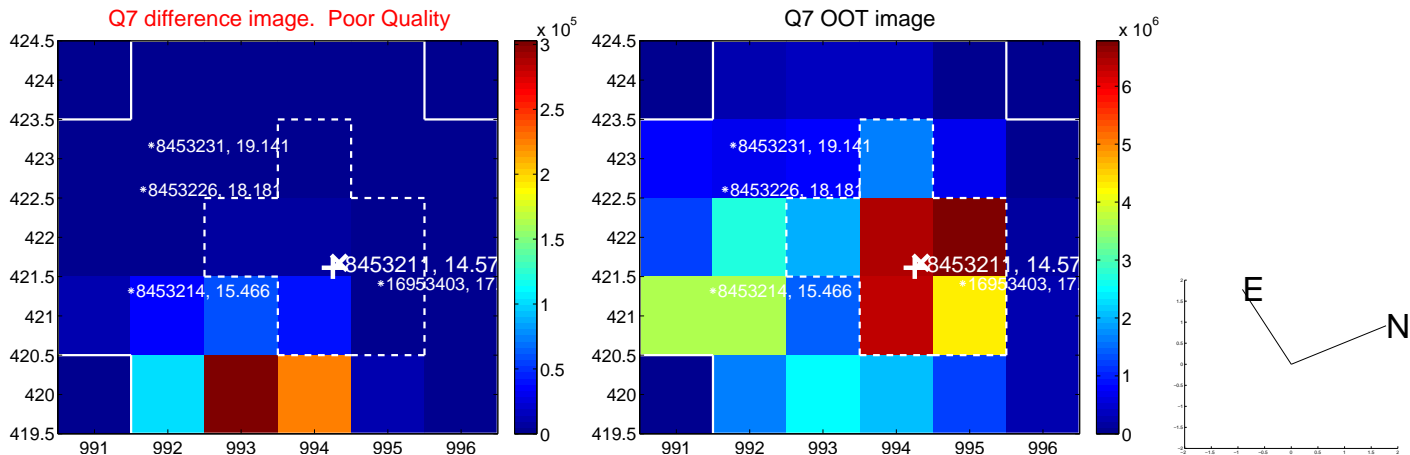
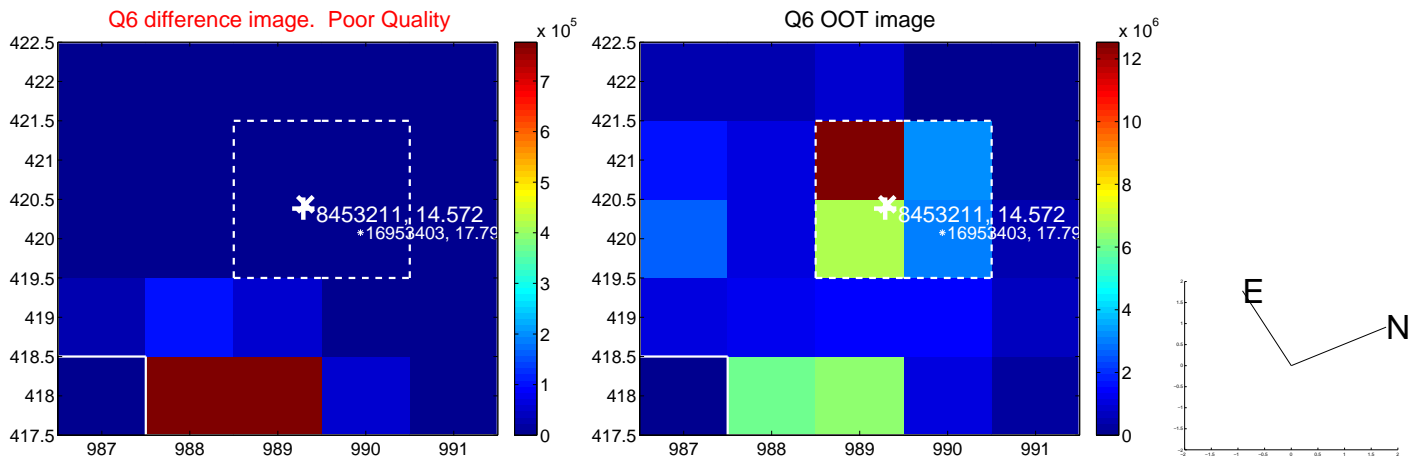
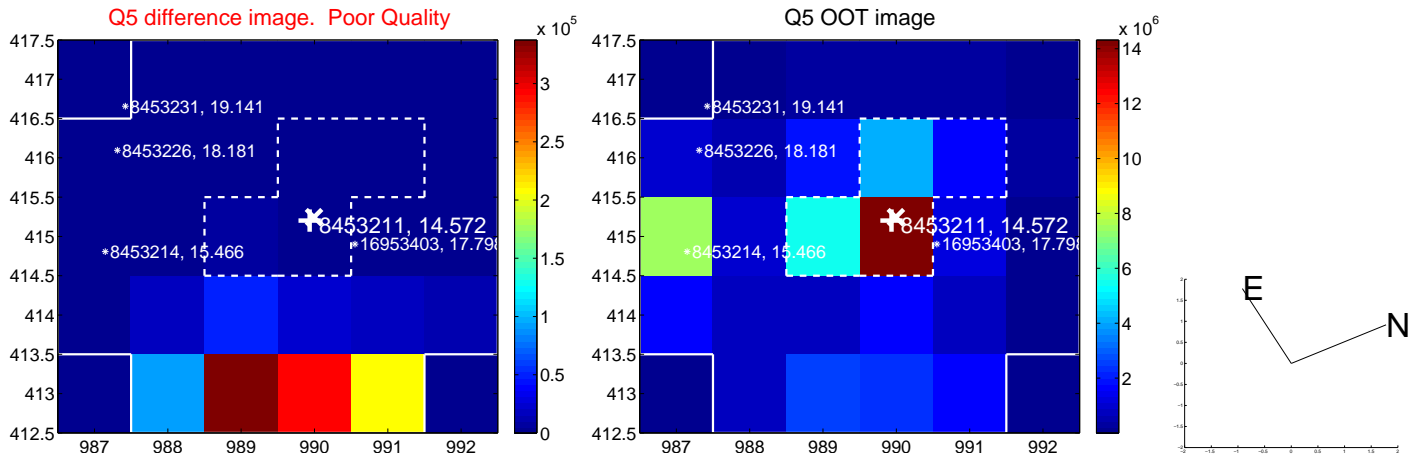


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

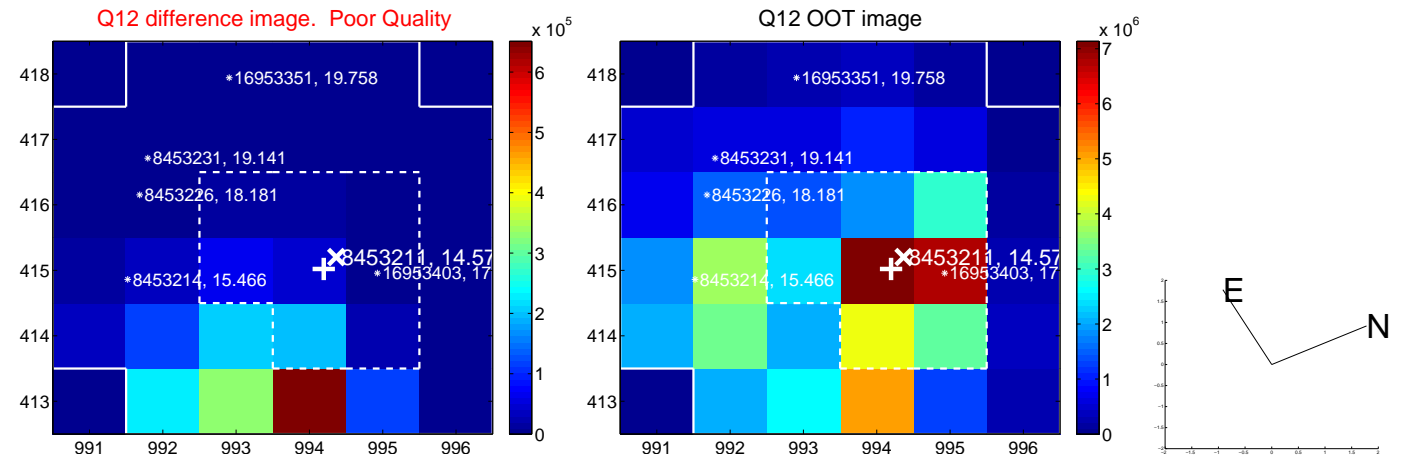
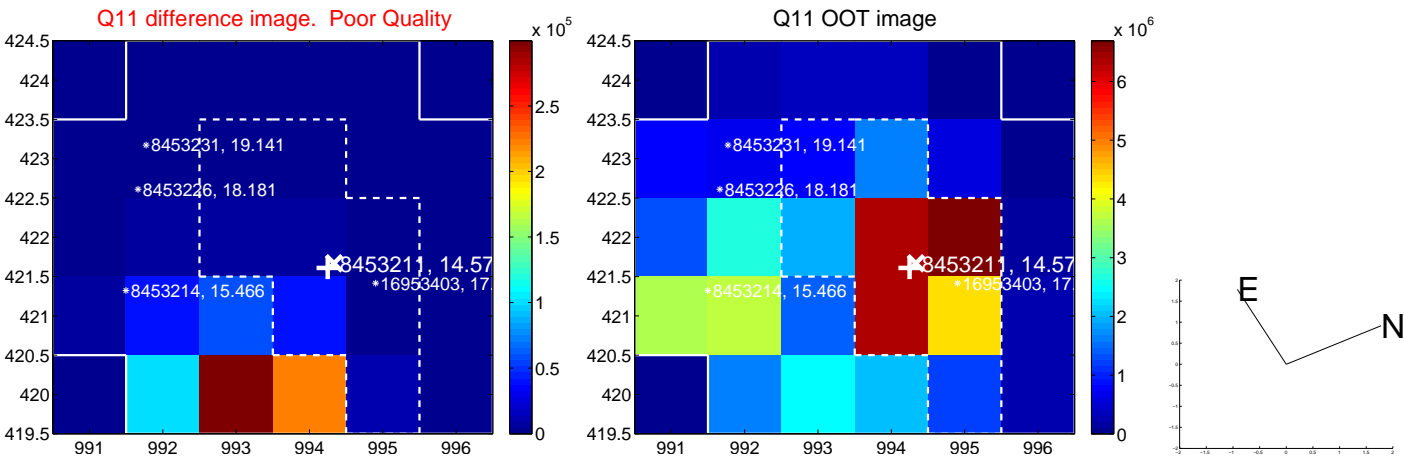
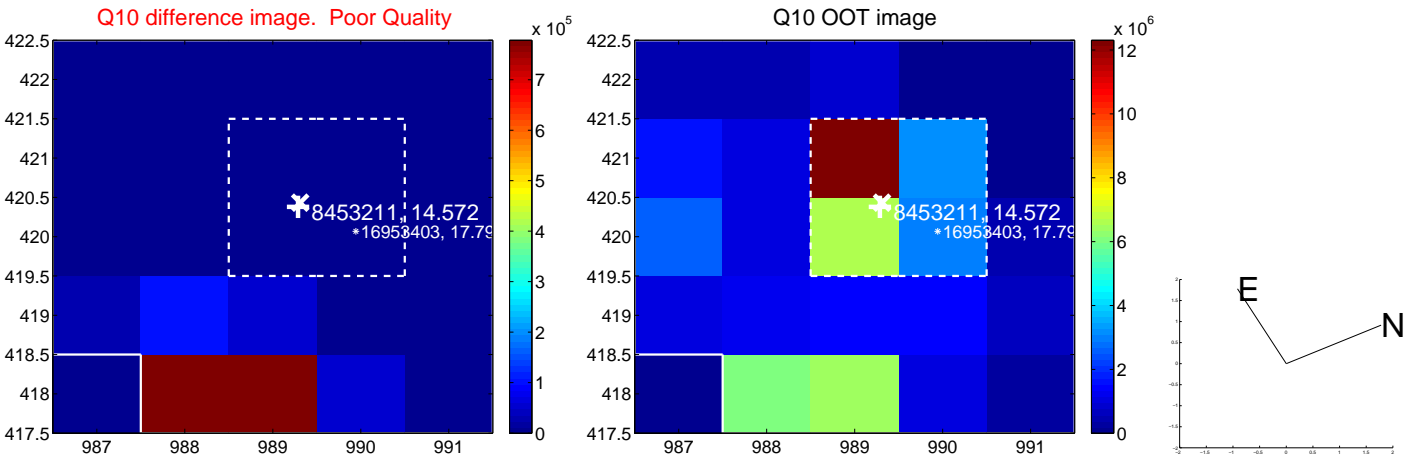
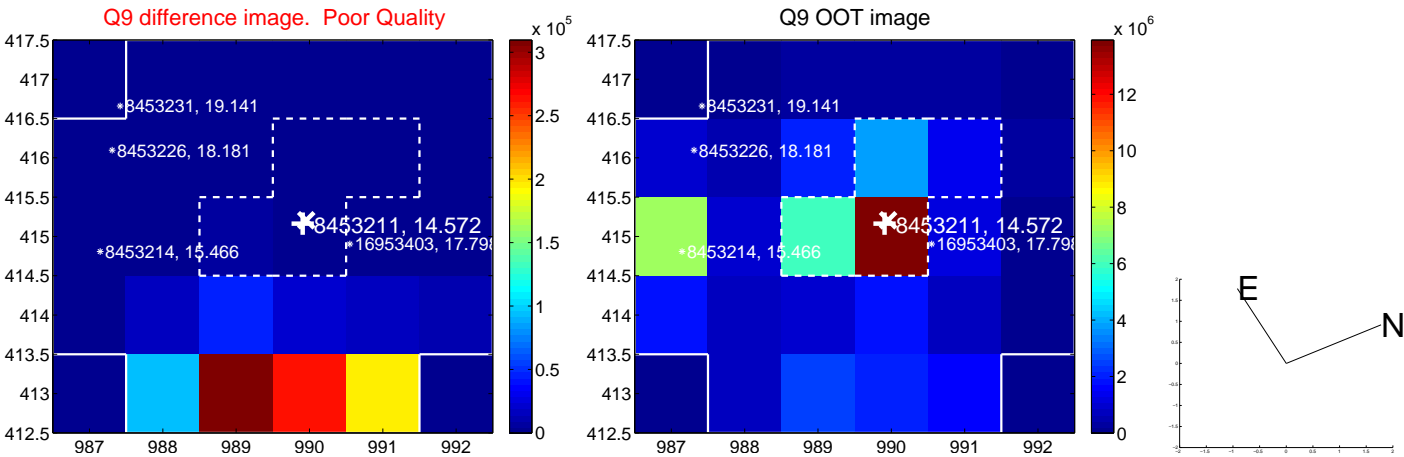
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



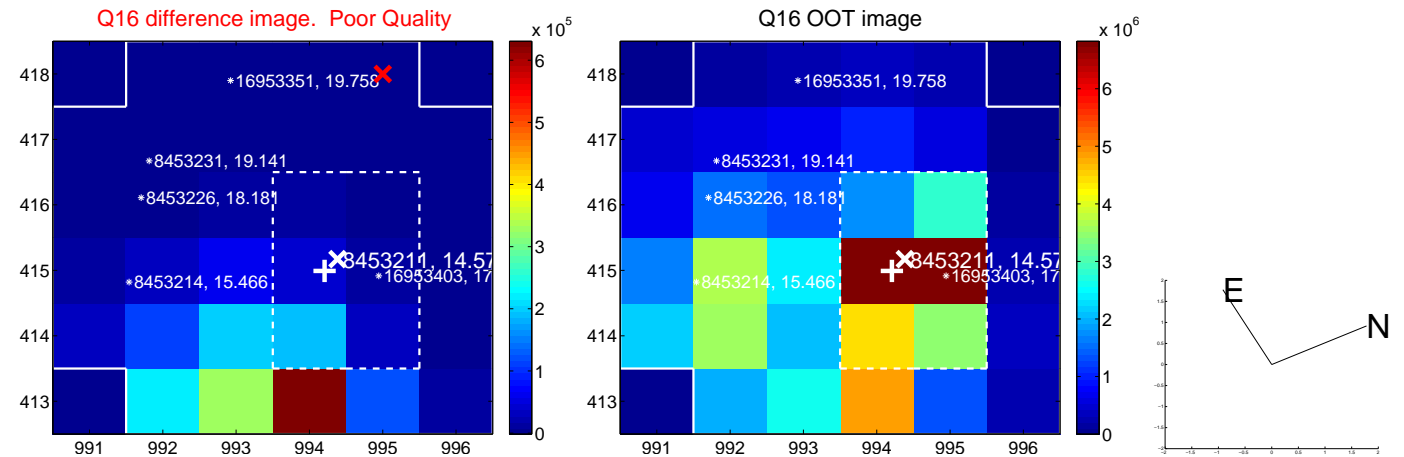
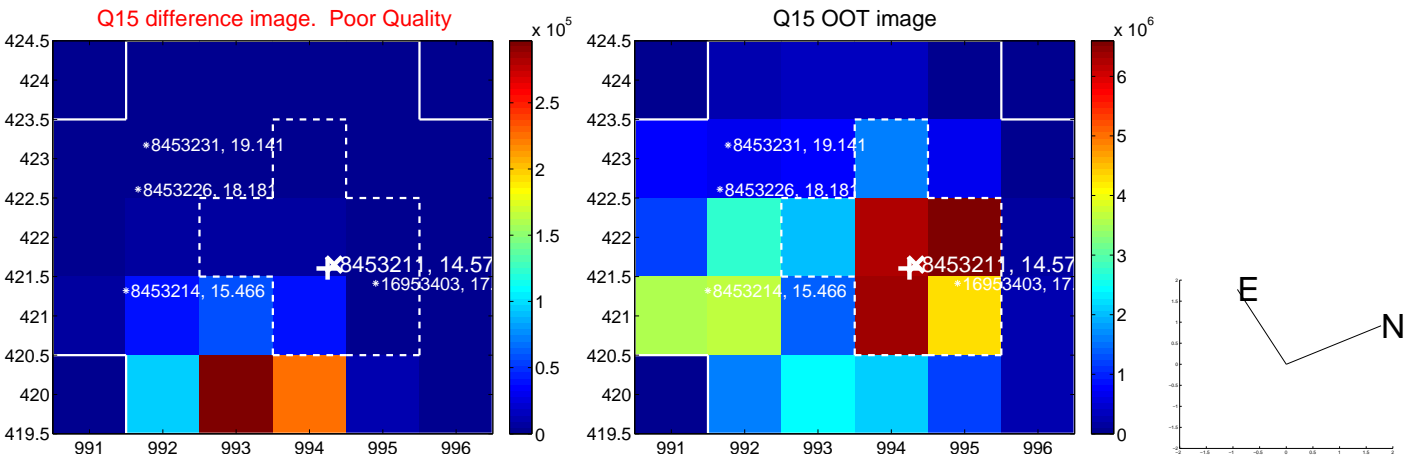
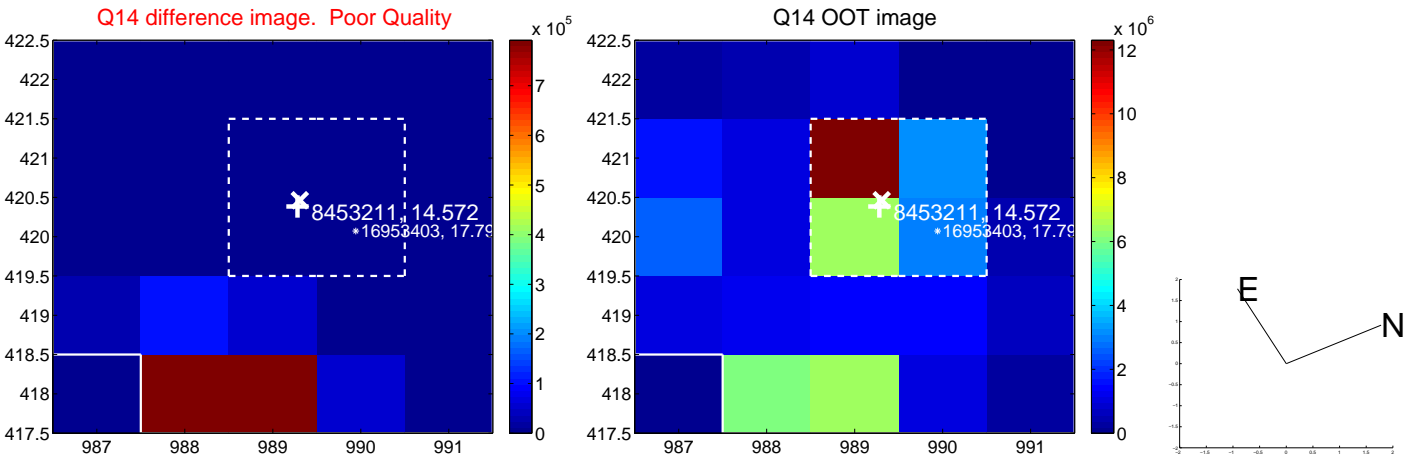
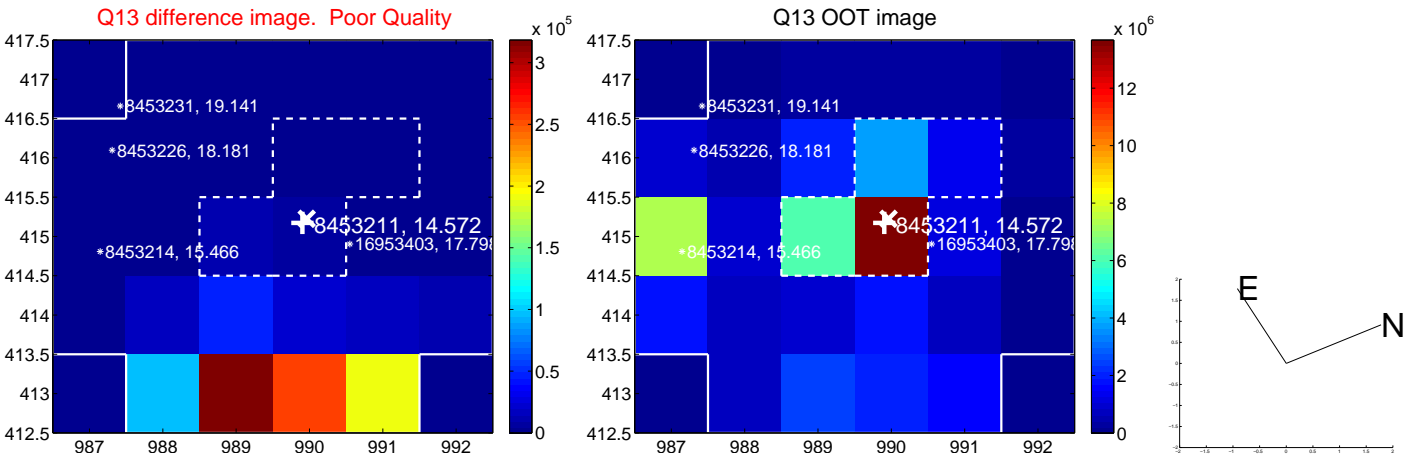
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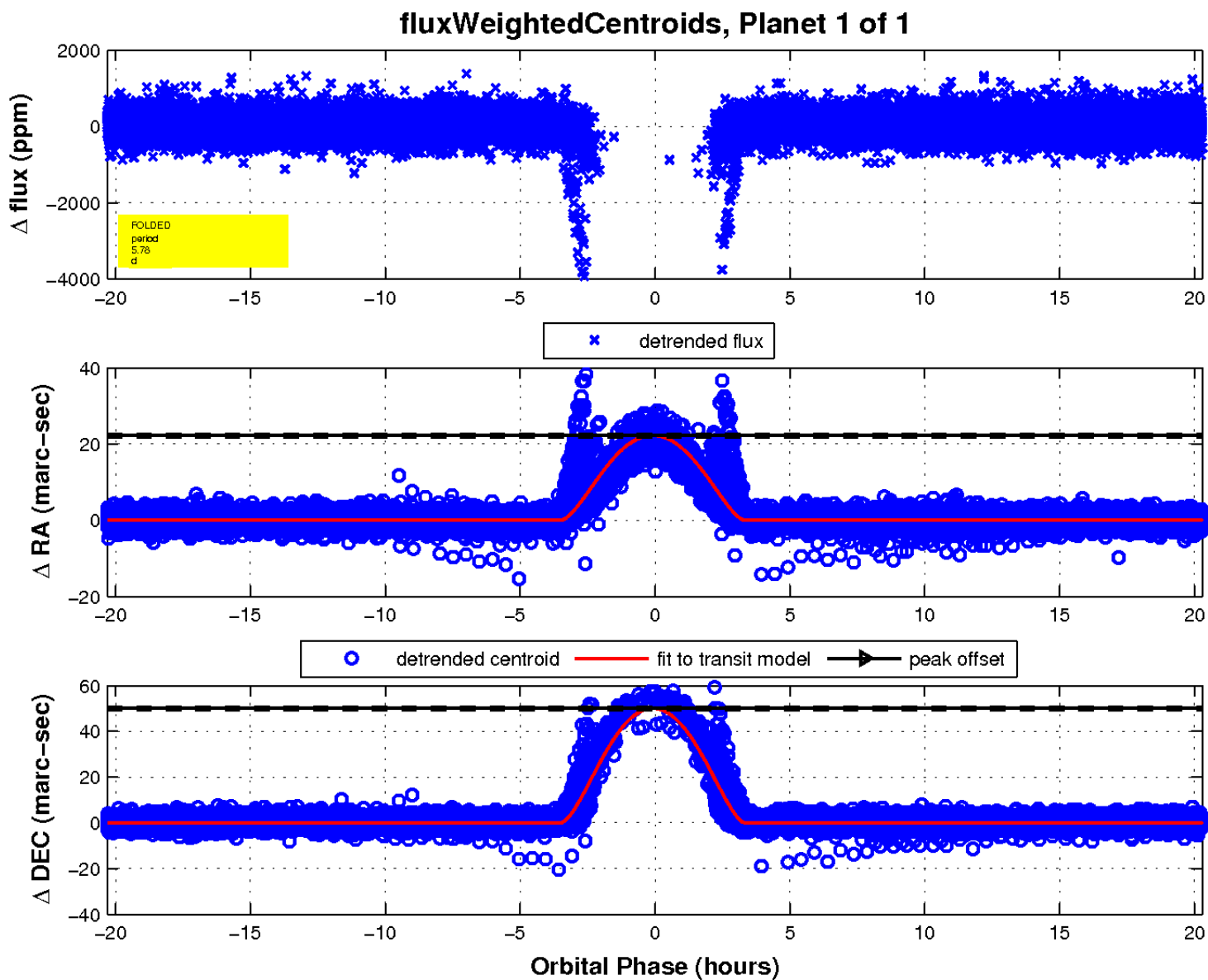
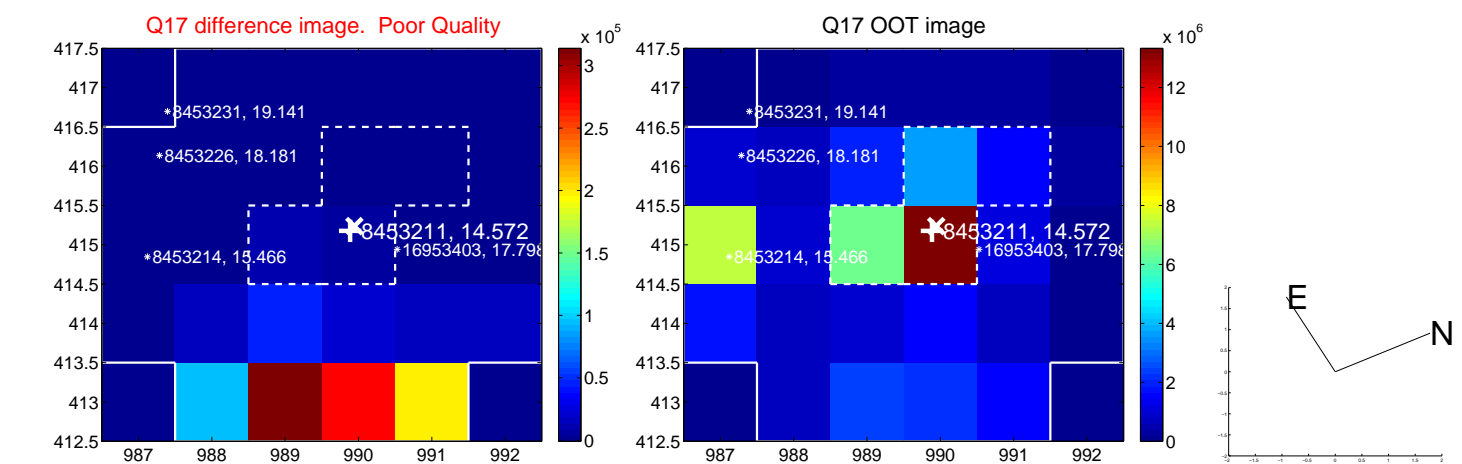
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UKIRT Image

Declination

