

KIC 008702424

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})
008702424-01	OBS	No	0.898197	132.081158	21.9	1.464	9.2	5.5	0.68	5339	0.37	1341.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008702424-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

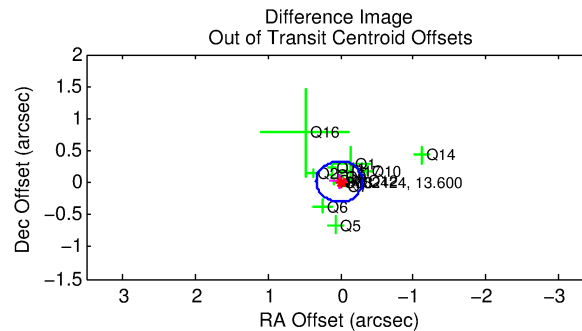
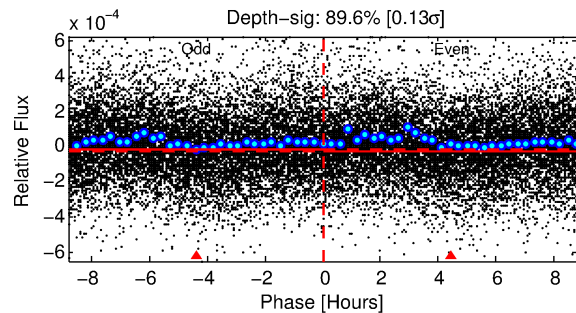
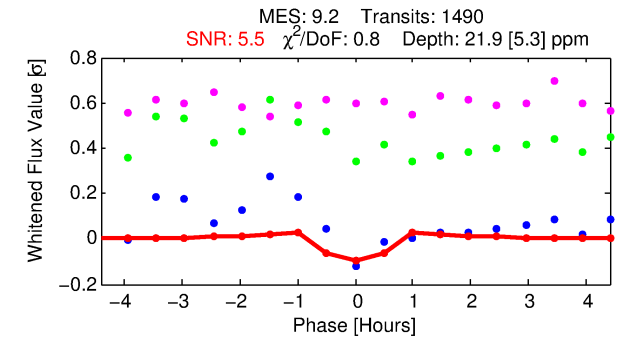
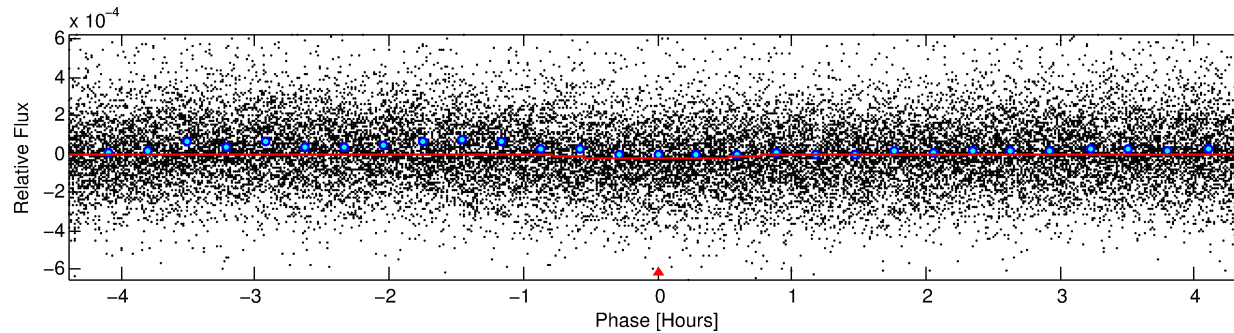
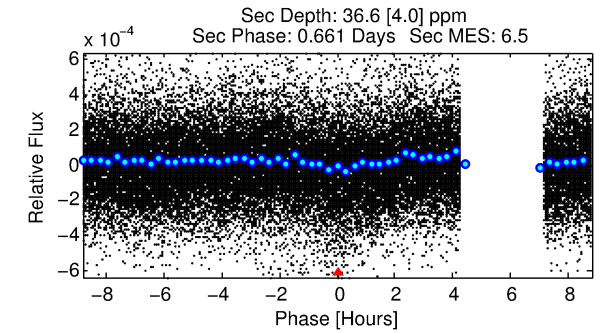
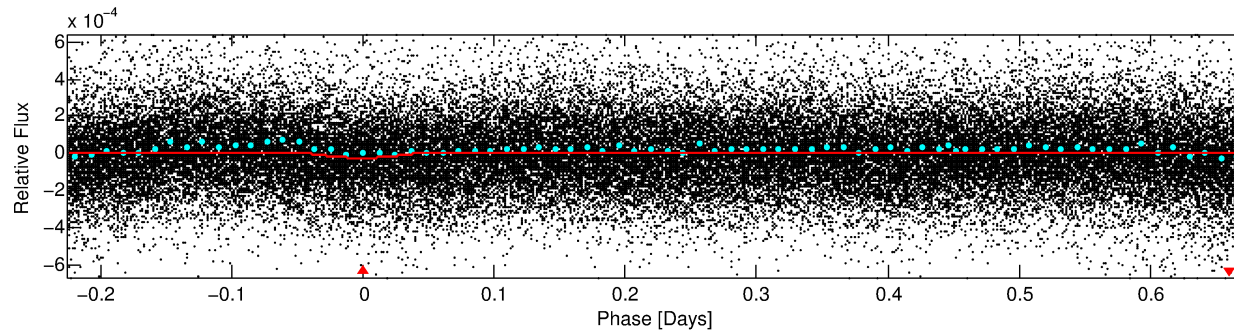
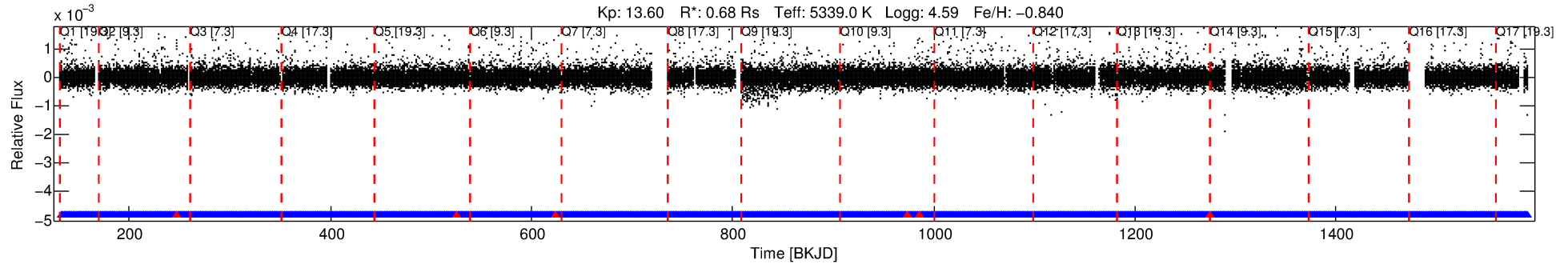
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008702424-01

No Significant Match Found

DV One-Page Summary

KIC: 8702424 Candidate: 1 of 1 Period: 0.898 d



DV Fit Results:

Period = 0.89820 [0.00002] d
Epoch = 132.0812 [0.0032] BKJD
Rp/R* = 0.0050 [0.0019]
a/R* = 2.44 [3.52]
b = 0.88 [0.45]
Seff = 1341.17 [242.36]
Teff = 1543 [70] K
Rp = 0.37 [0.15] Re
a = 0.0158 [0.0014] AU
Ag = 36.28 [28.83] [1.22σ]
Teffp = 5855 [1160] K [3.71σ]

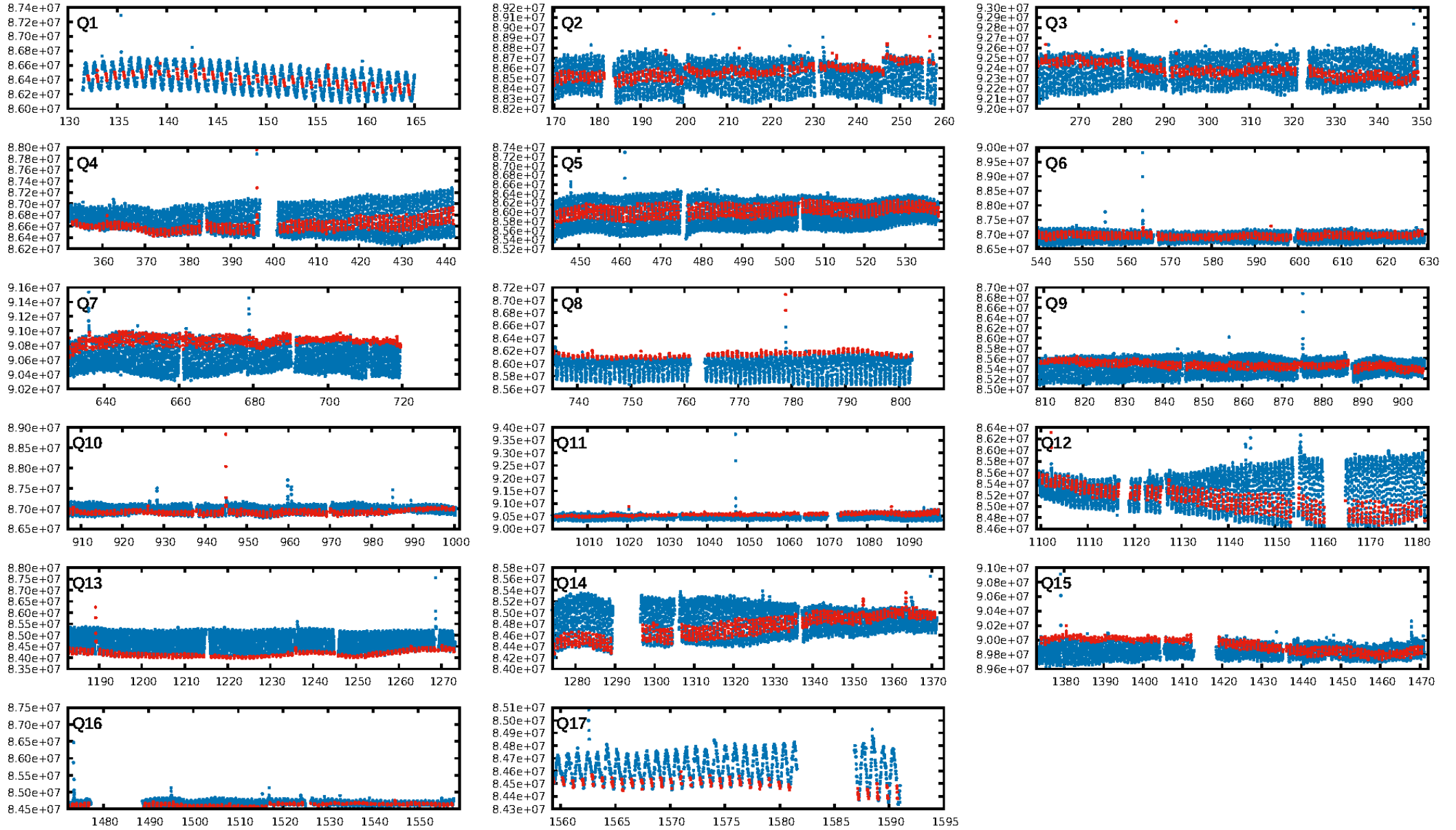
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.79e-17
RollingBand-fgt: 1.00 [1417/1423]
GhostDiagnostic-chr: 0.7885
Centroid-sig: 33.2%
Centroid-so: 1.180 arcsec [0.95σ]
OotOffset-rm: 0.024 arcsec [0.23σ]
KicOffset-rm: 0.065 arcsec [0.60σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 1.00 [17/17]

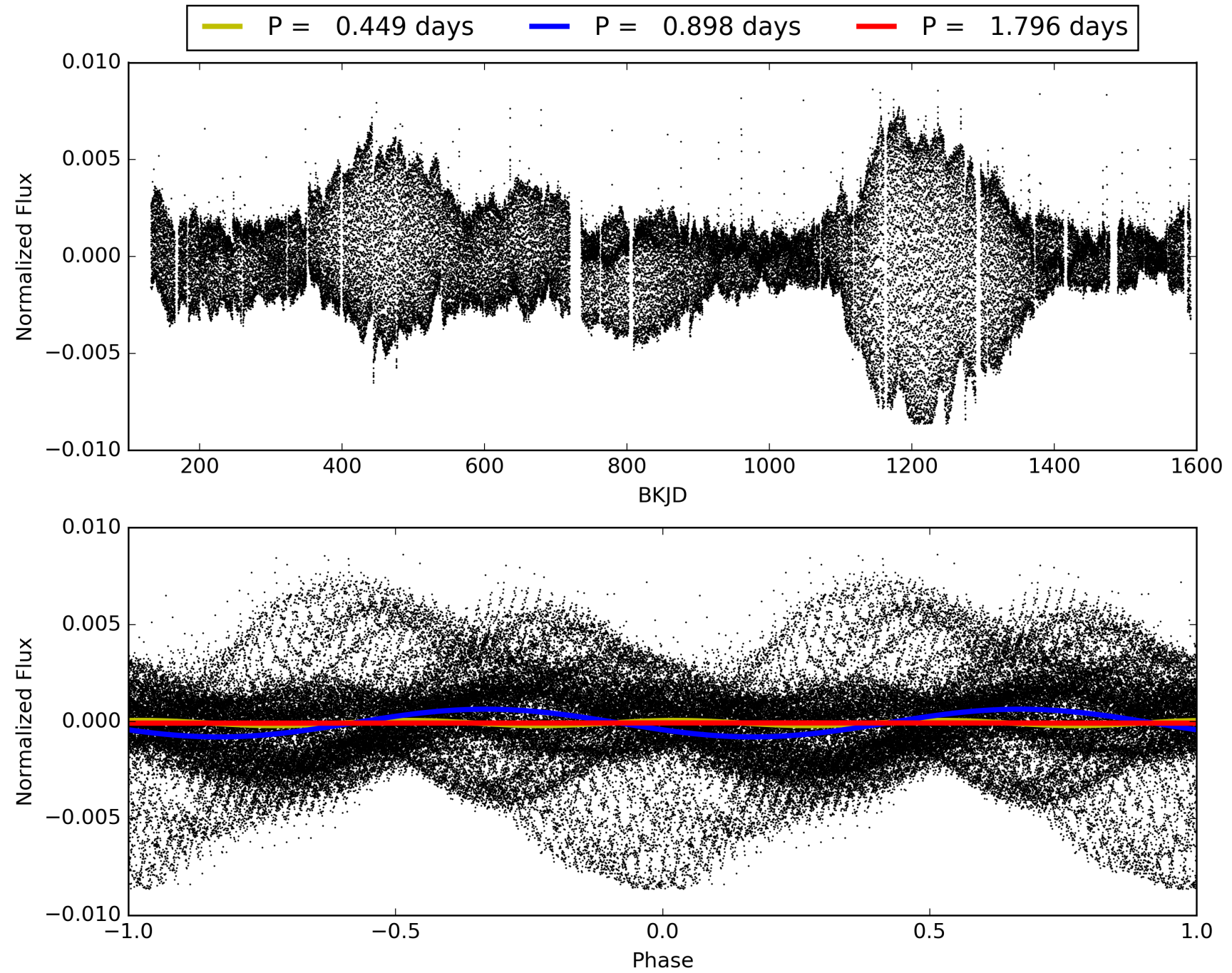
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:19:10 Z

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

TCE 008702424-01, PDC Light Curves

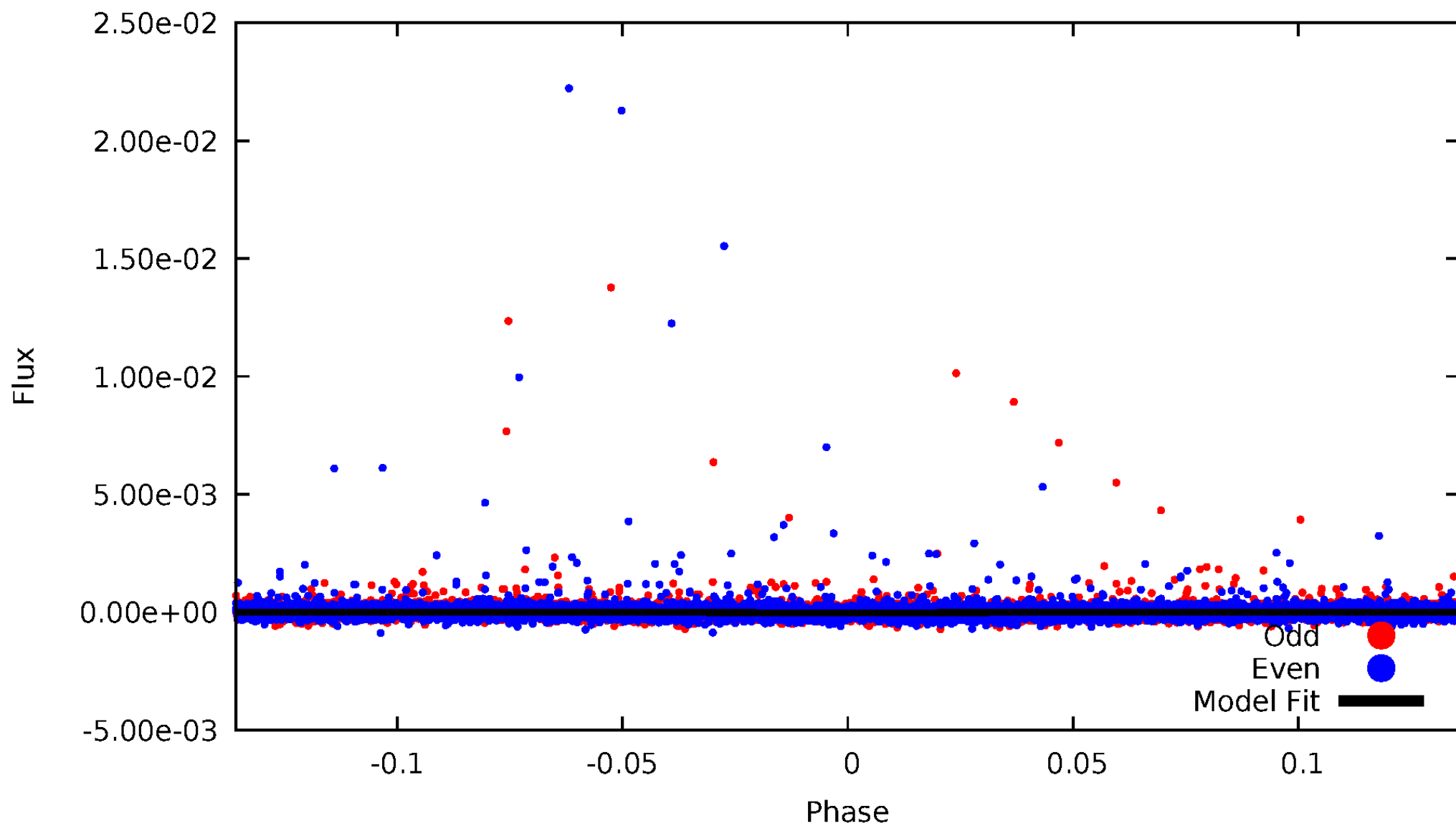


TCE 008702424-01



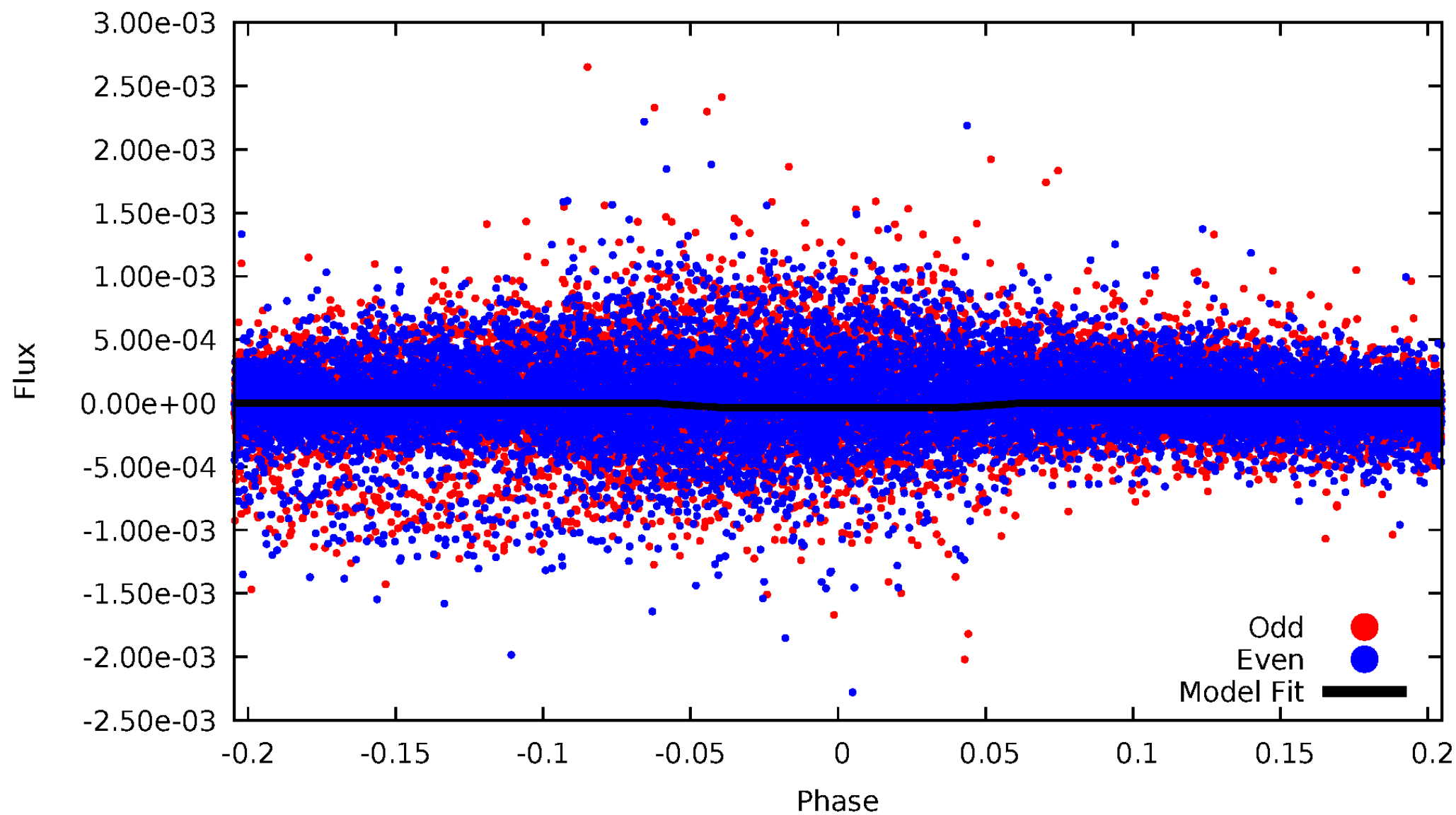
DV Odd/Even

TCE 008702424-01



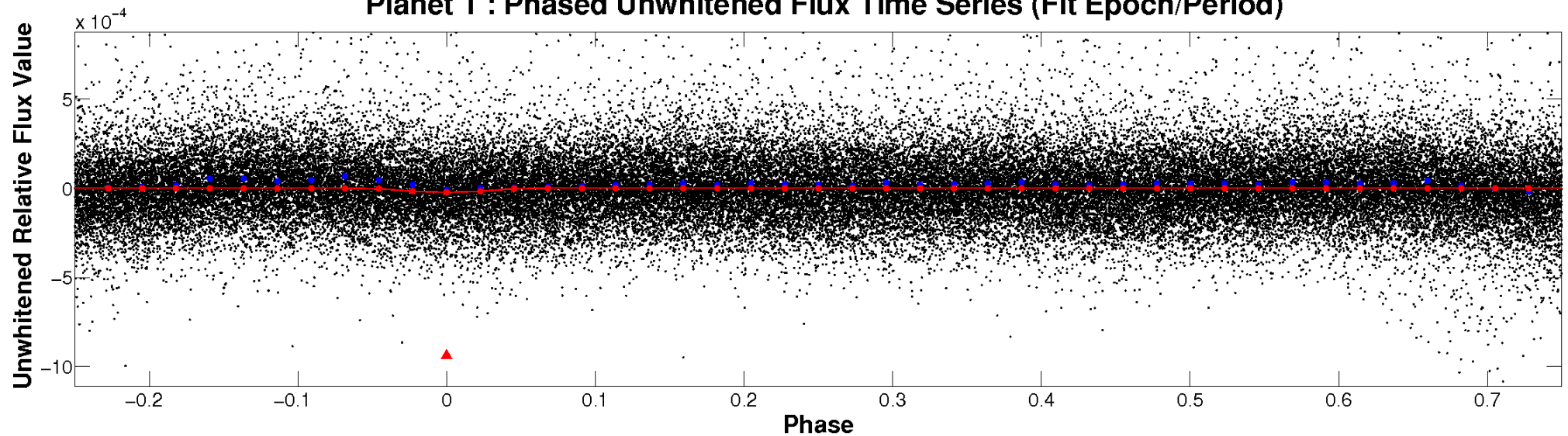
ALT Odd/Even

TCE 008702424-01

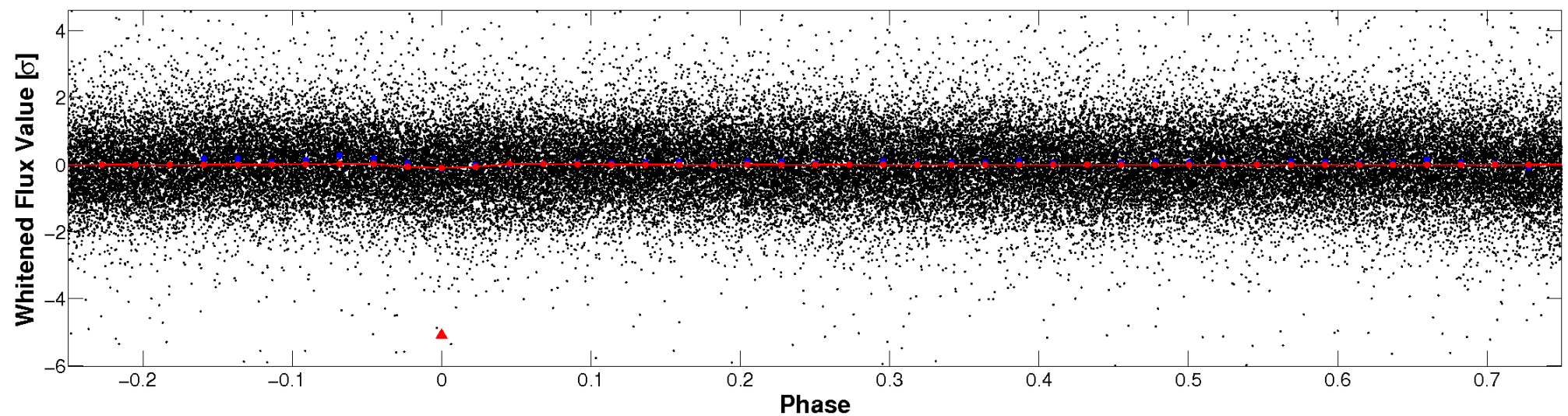


Non-Whitened Vs. Whitened Light Curve

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

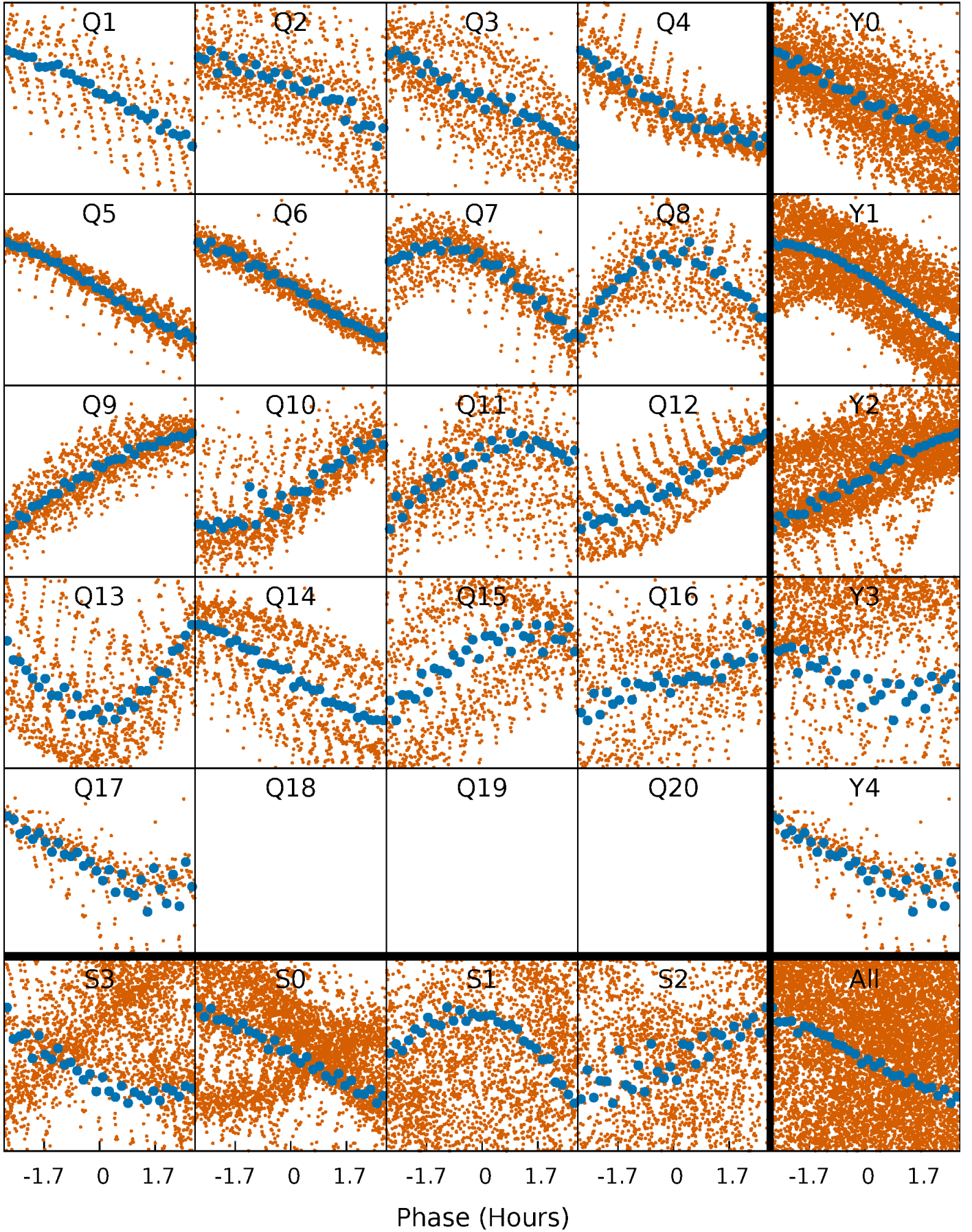


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



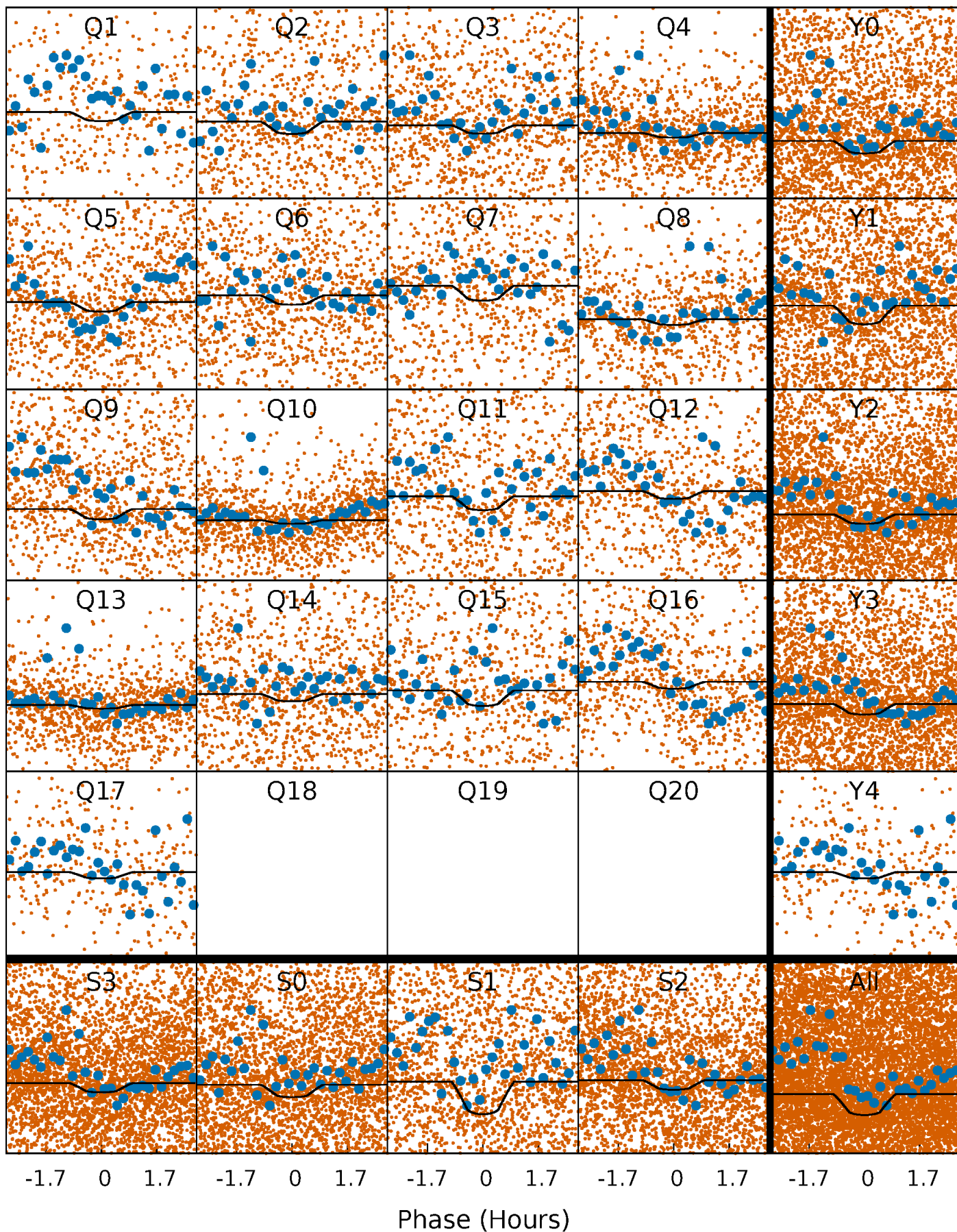
PDC Quarter-Phased Transit Curves

TCE 008702424-01 P= 0.898197 Days $T_0=132.081158$ (BKJD)



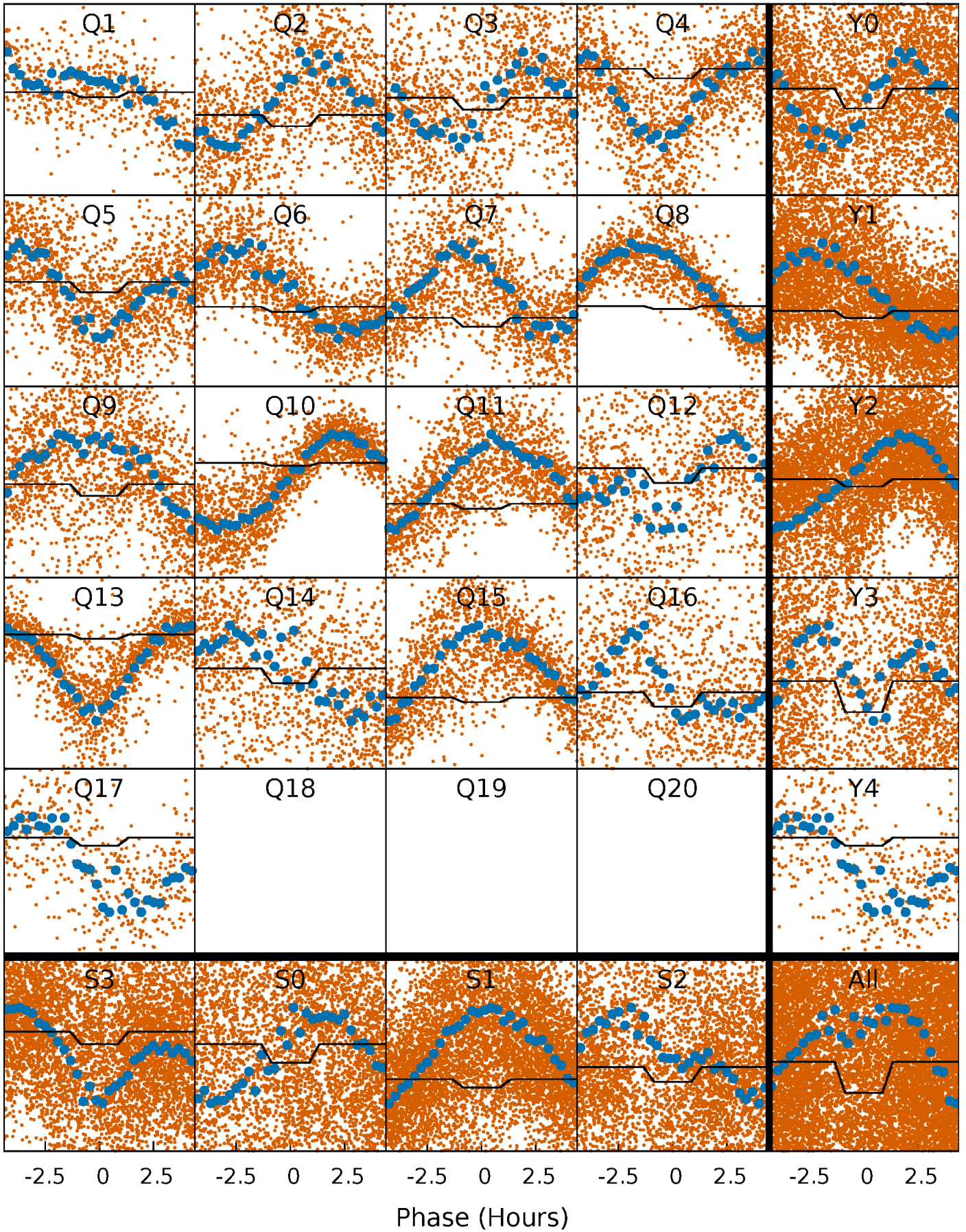
DV Quarter-Phased Transit Curves

TCE 008702424-01 P= 0.898197 Days $T_0=132.081158$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

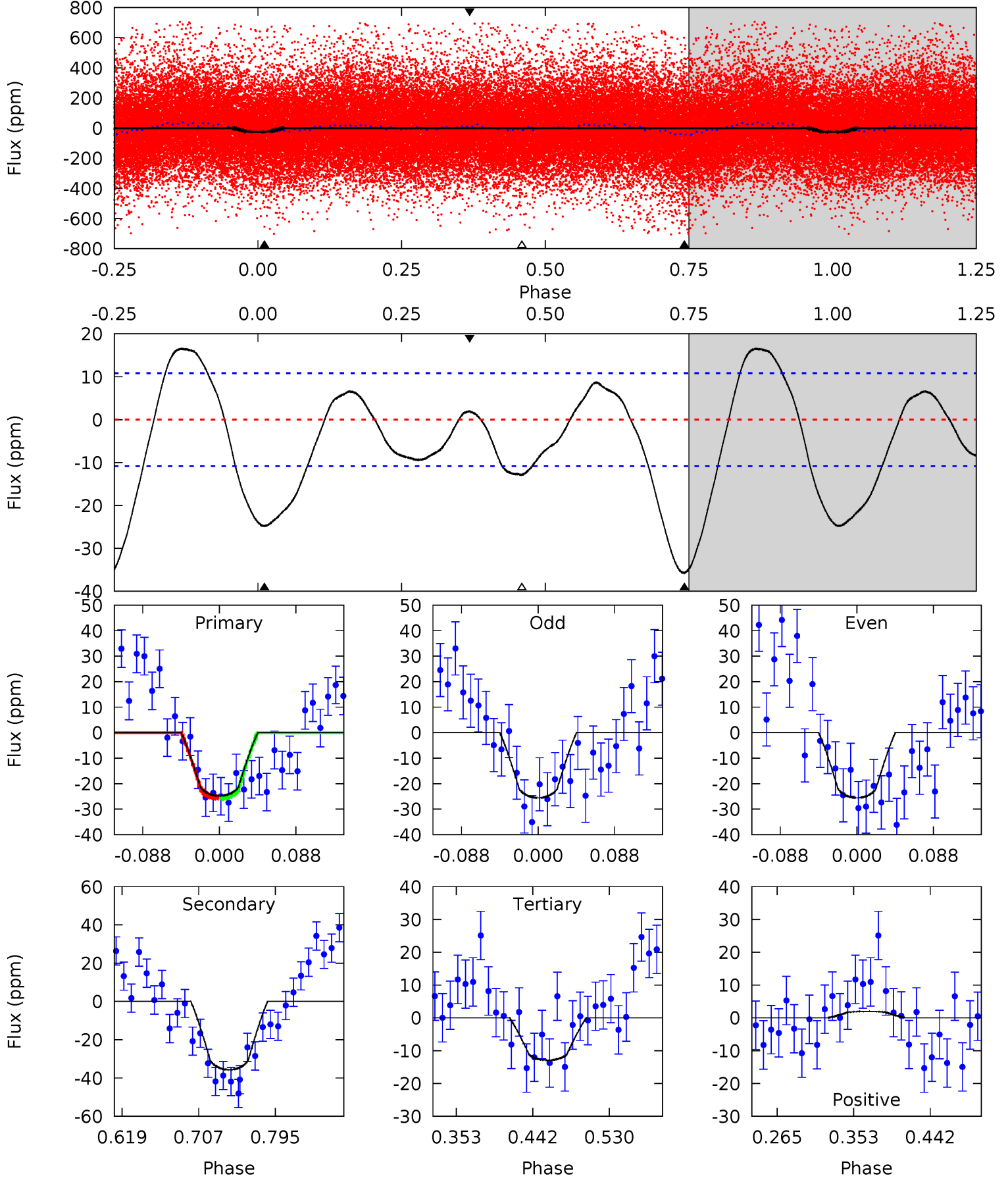
TCE 008702424-01 P= 0.898218 Days $T_0=132.085569$ (BKJD)



DV Model-Shift Uniqueness Test

008702424-01, P = 0.898197 Days, E = 131.182961 Days

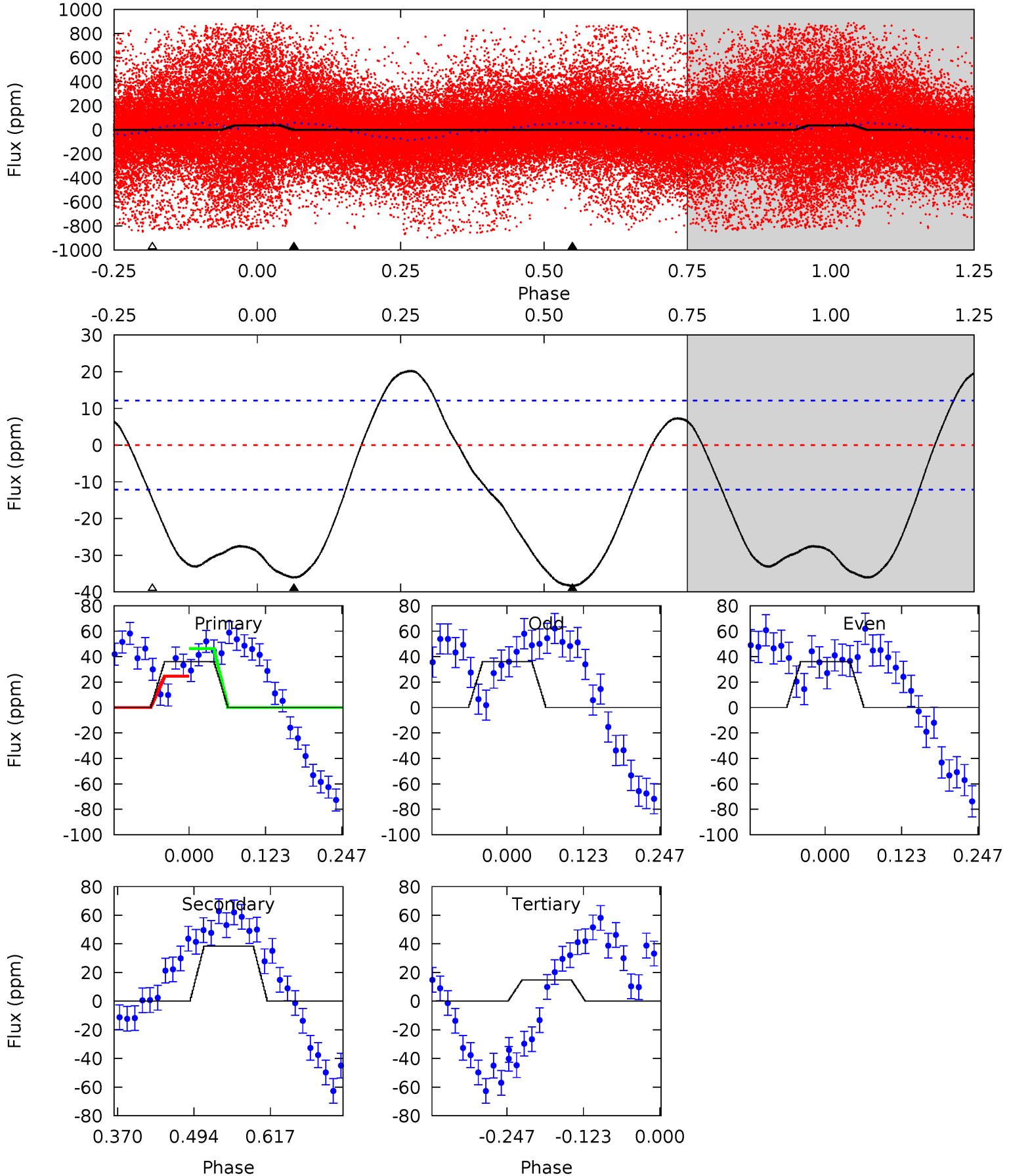
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	15.1	5.47	0.83	4.59	1.70	3.45	5.03	9.66	9.65	14.3	0.00	-0.16	0.32	0.04



Alt Model-Shift Uniqueness Test

008702424-01, P = 0.898218 Days, E = 131.187351 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	14.3	5.51	0	4.52	1.54	6.22	7.95	13.5	8.80	14.3	0.01	1.46	0.35	4.42



Stellar Parameters For KIC 008702424

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5339^{+160}_{-144}	$4.590^{+0.078}_{-0.052}$	$-0.840^{+0.300}_{-0.300}$	$0.679^{+0.064}_{-0.064}$	$0.654^{+0.071}_{-0.029}$	$2.946^{+0.904}_{-0.580}$
	+3%/-3%	+2%/-1%	+36%/-36%	+9%/-9%	+11%/-4%	+31%/-20%
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 008702424-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-36 ± 2	$0.38^{+0.15}_{-0.15}$	2146^{+85}_{-75}	5724^{+1666}_{-791}	35^{+63}_{-17}
Alt.	-38 ± 3	$0.44^{+0.15}_{-0.14}$	2151^{+82}_{-79}	5478^{+1049}_{-685}	28^{+32}_{-13}

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

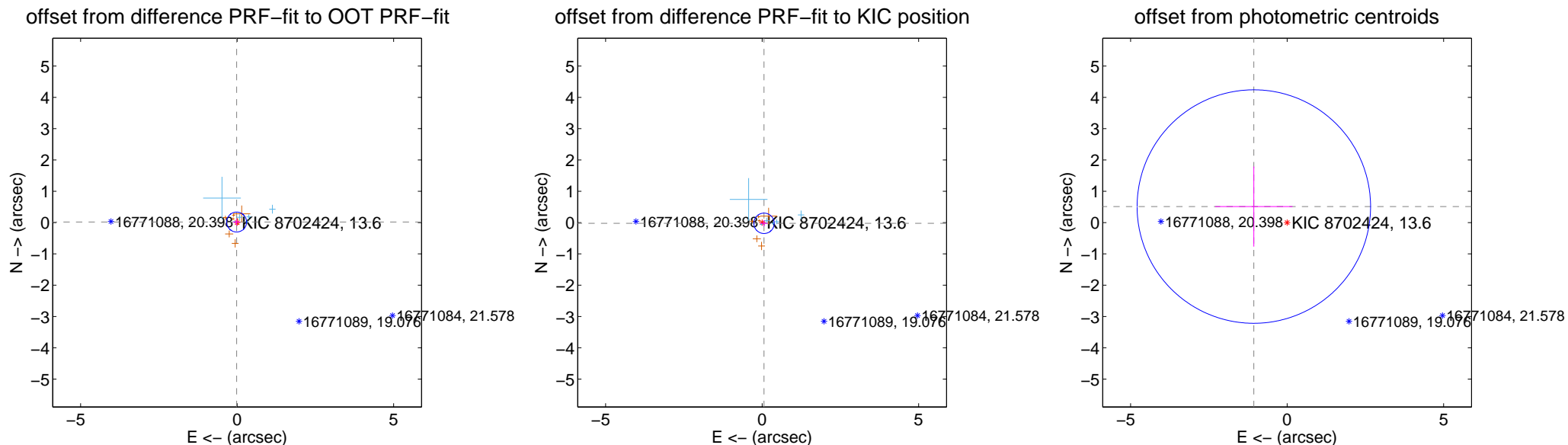
DV Centroid Data

Supplemental centroid analysis for 008702424-01. Kepler magnitude: 13.60. Transit SNR 5.52

There are 7 quarters with good PRF difference image offsets

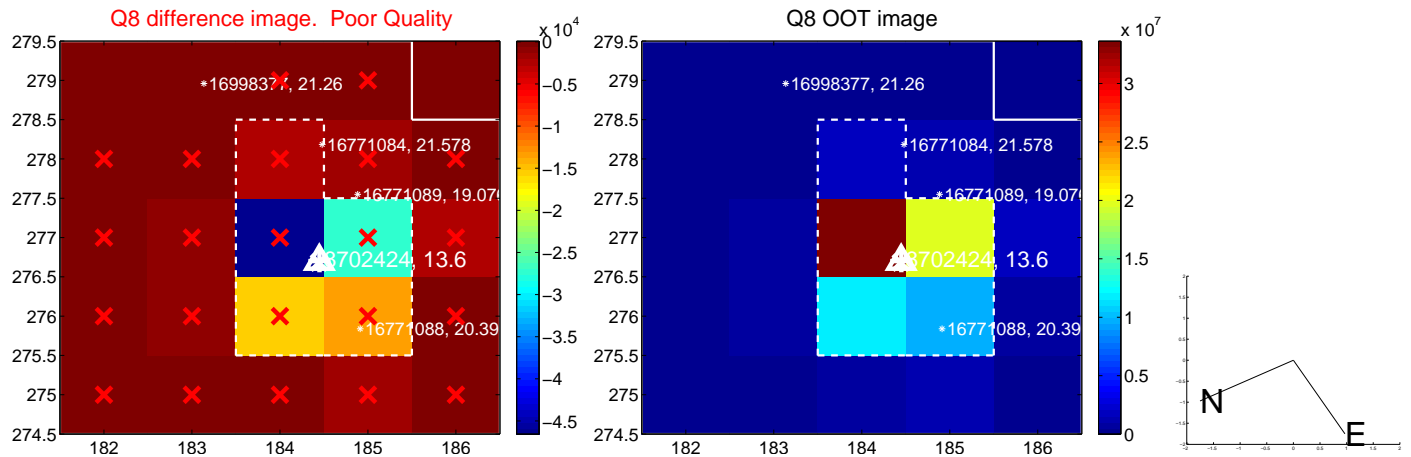
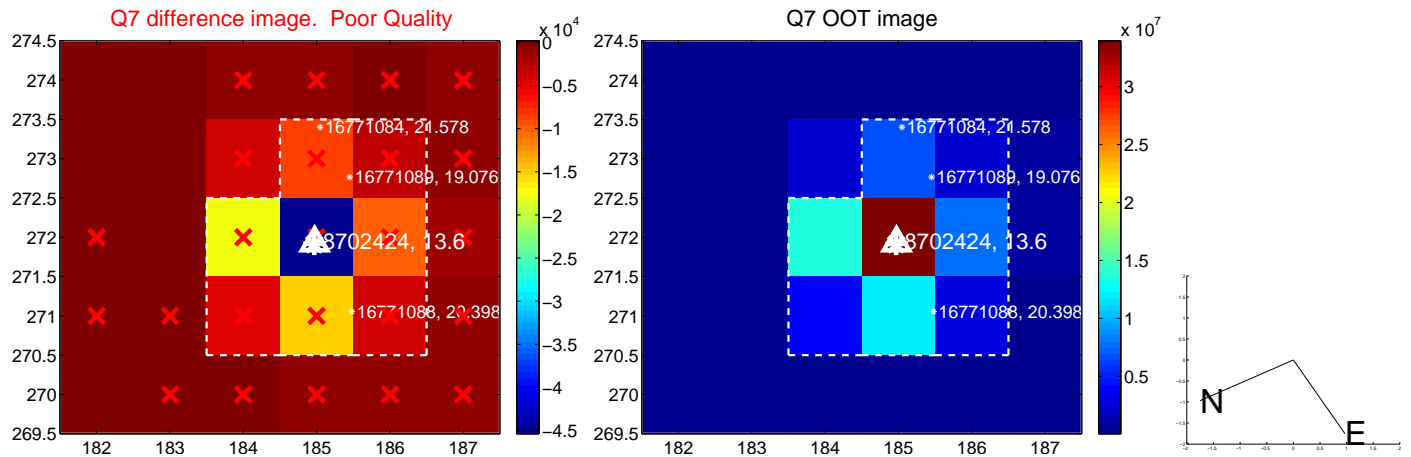
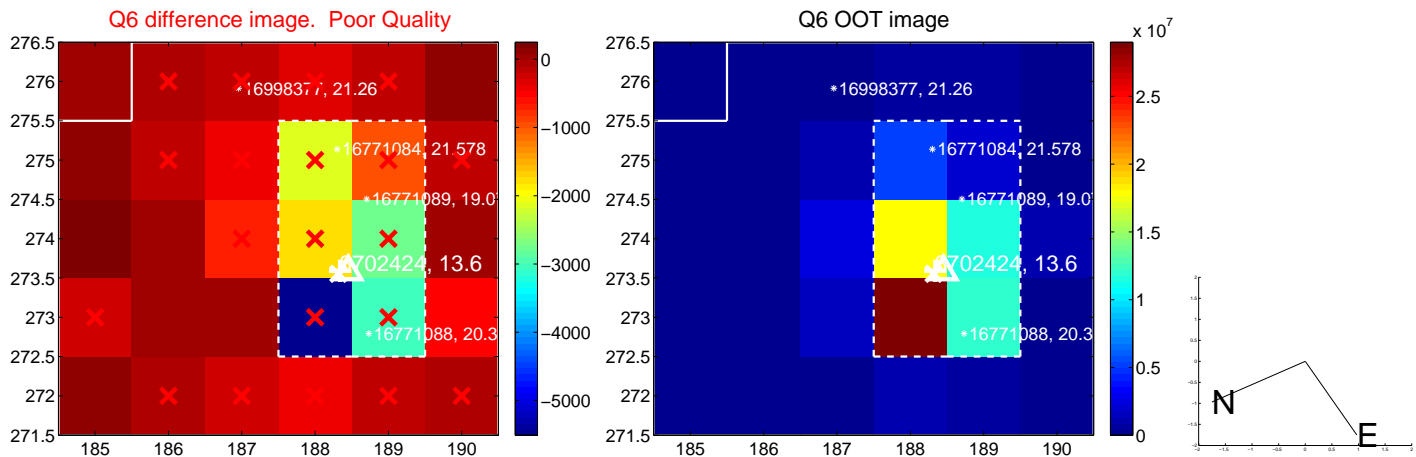
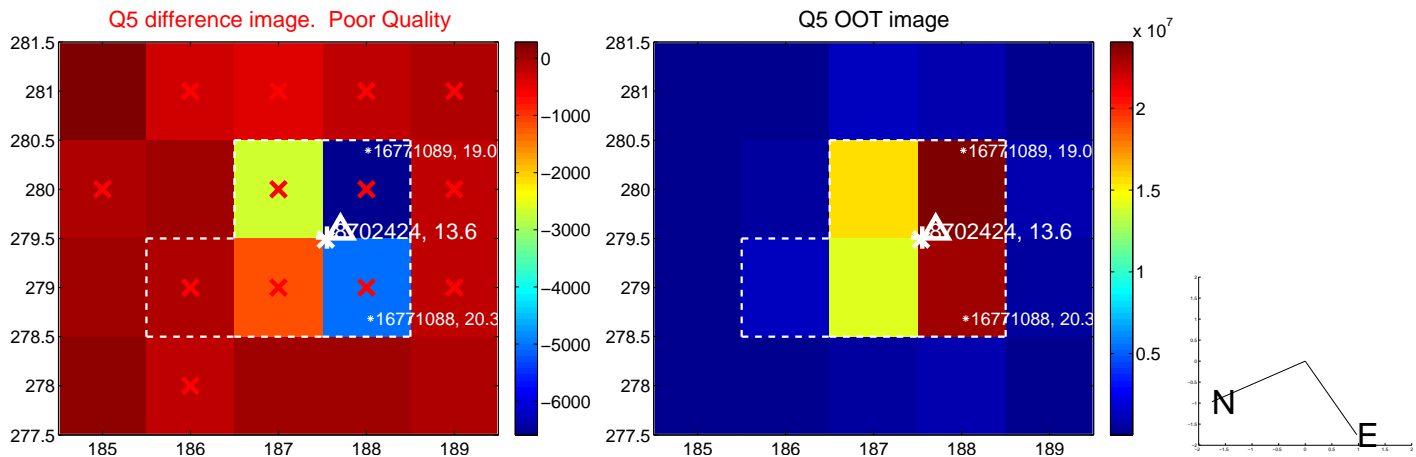
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.024 ± 0.106	0.23	0.016 ± 0.113	0.017 ± 0.104
PRF-fit source offset from KIC position	0.065 ± 0.109	0.60	-0.061 ± 0.114	-0.024 ± 0.102
photometric centroid source offset	1.18 ± 1.24	0.95	1.06 ± 1.23	0.51 ± 1.28

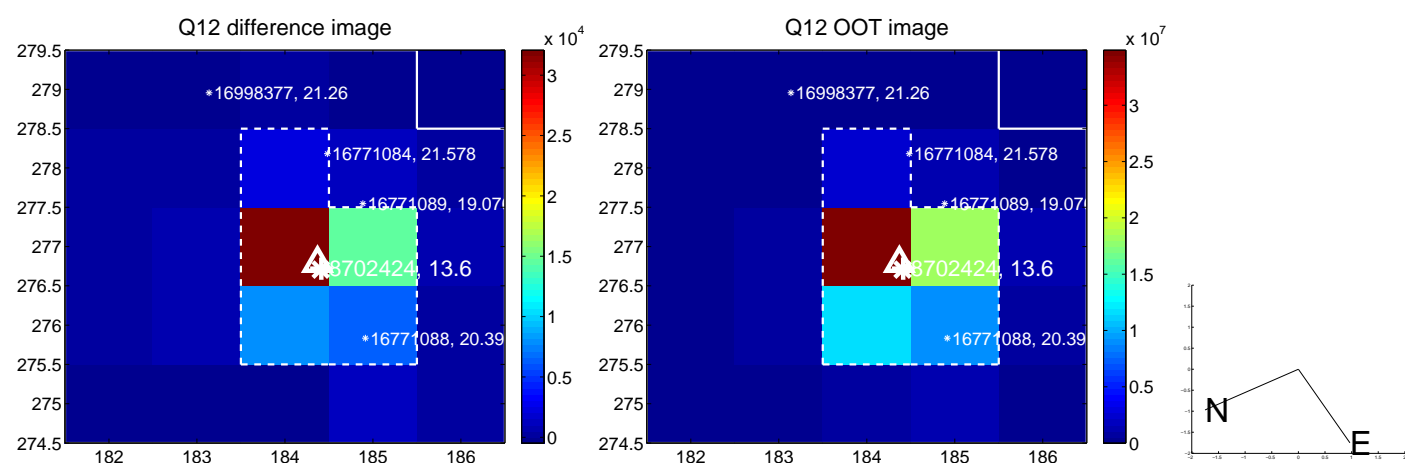
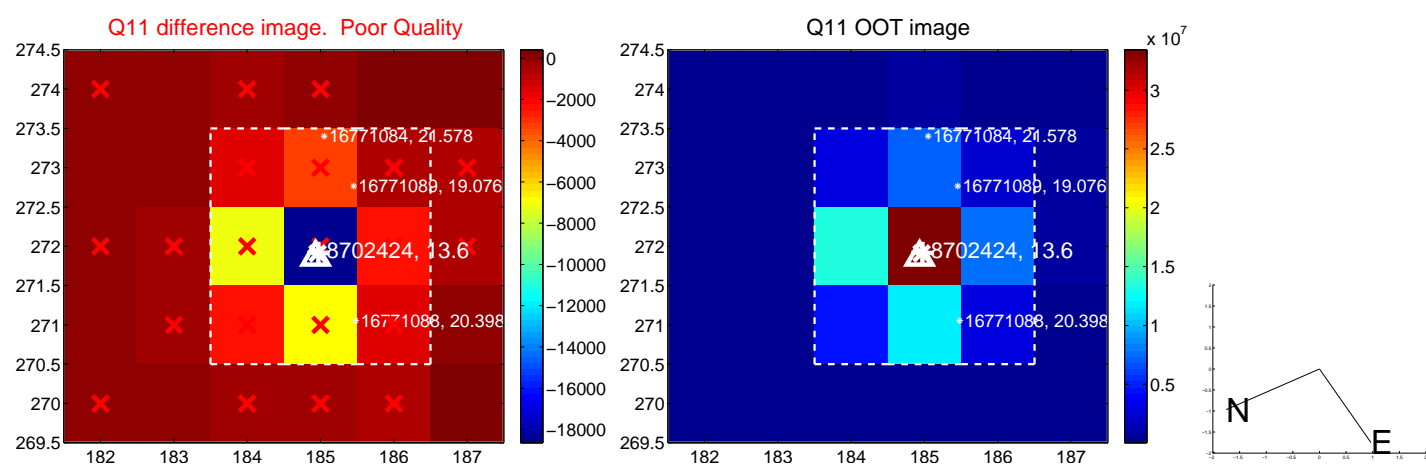
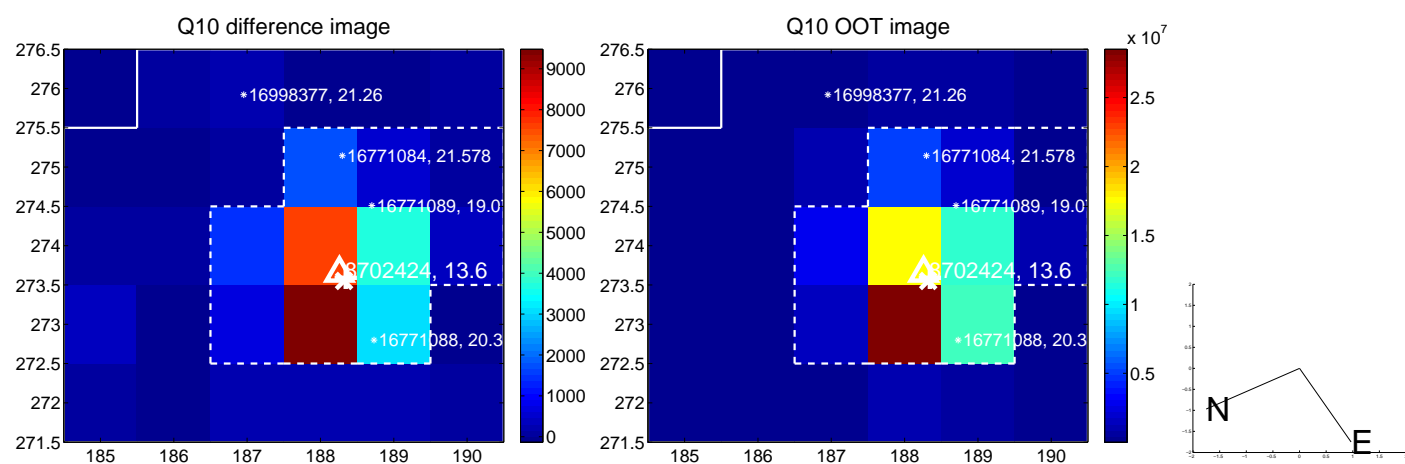
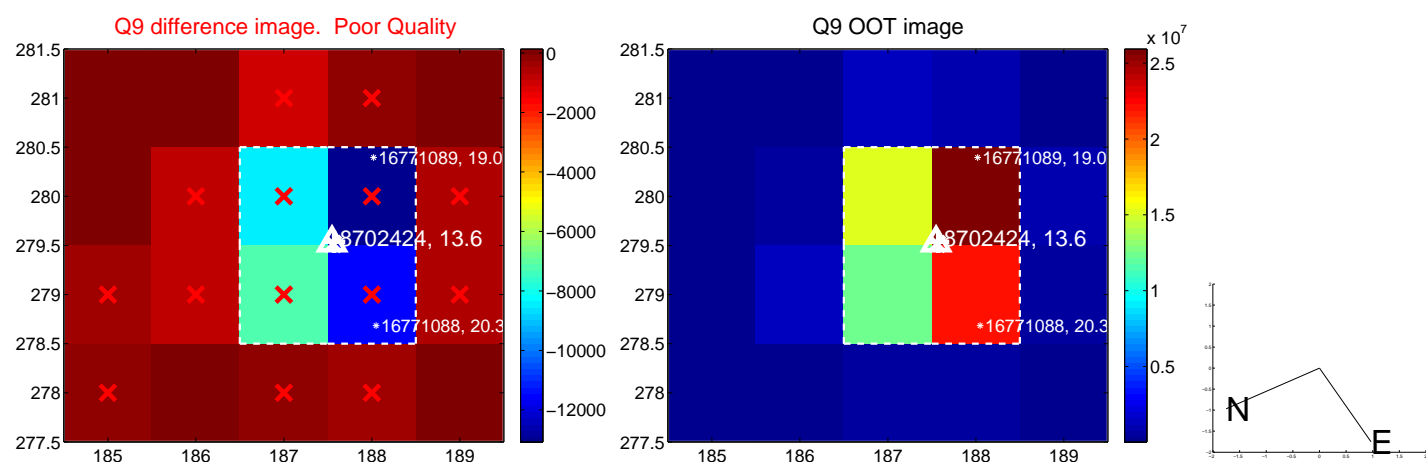


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

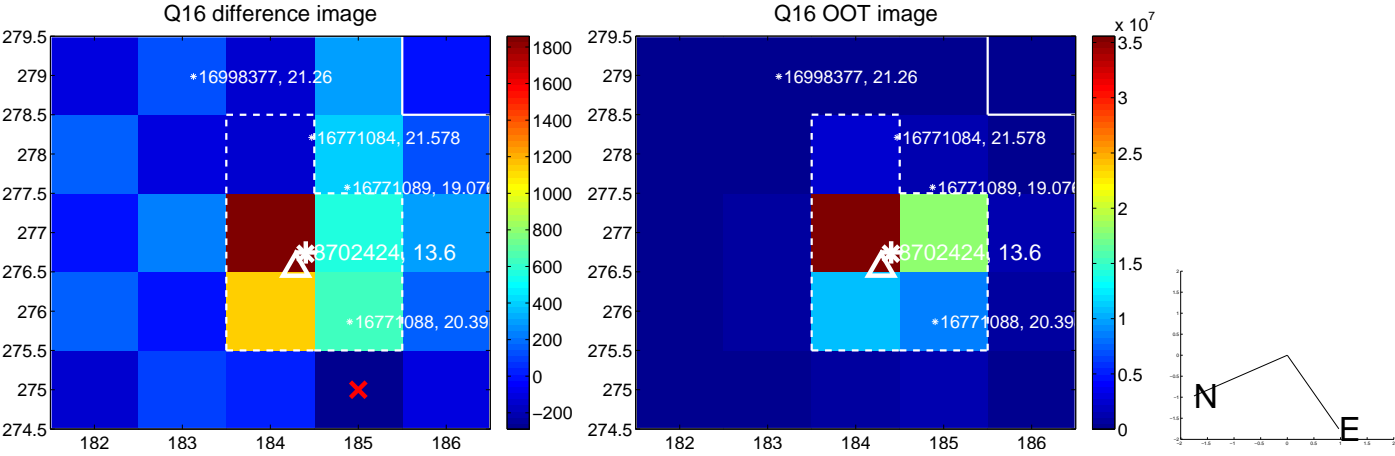
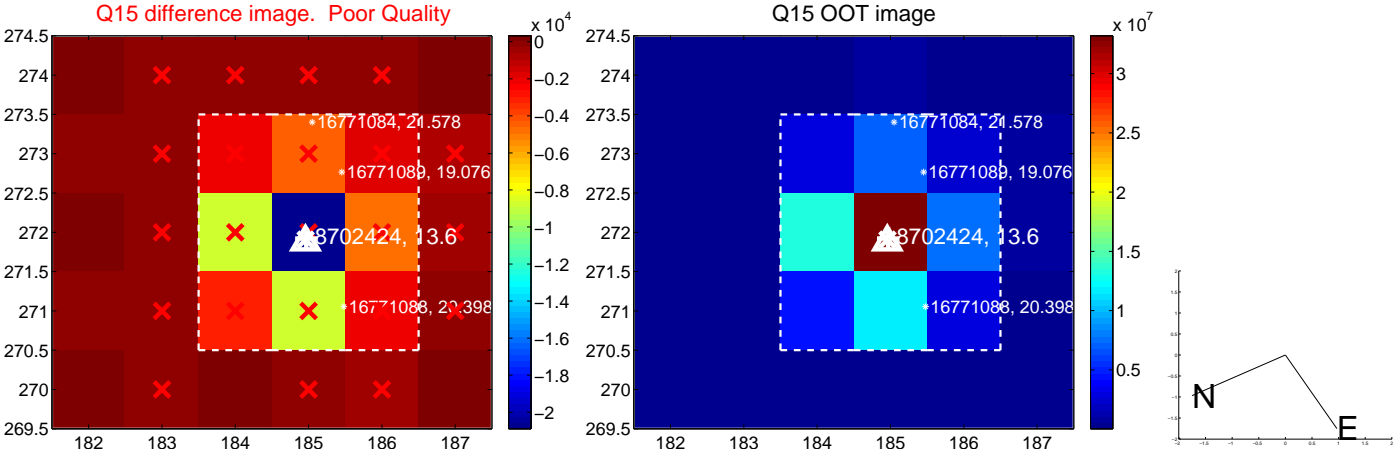
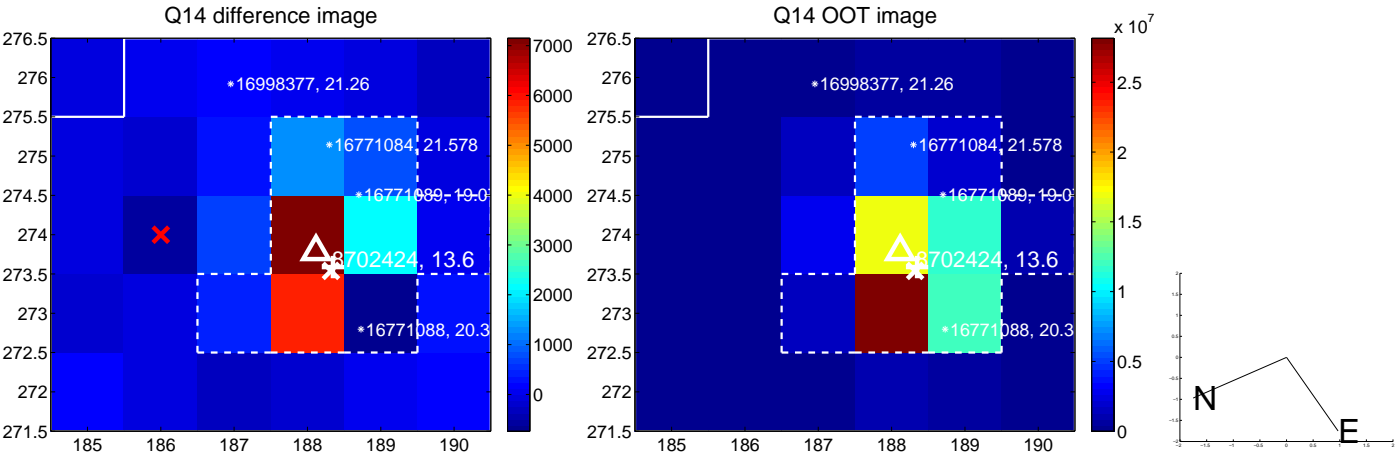
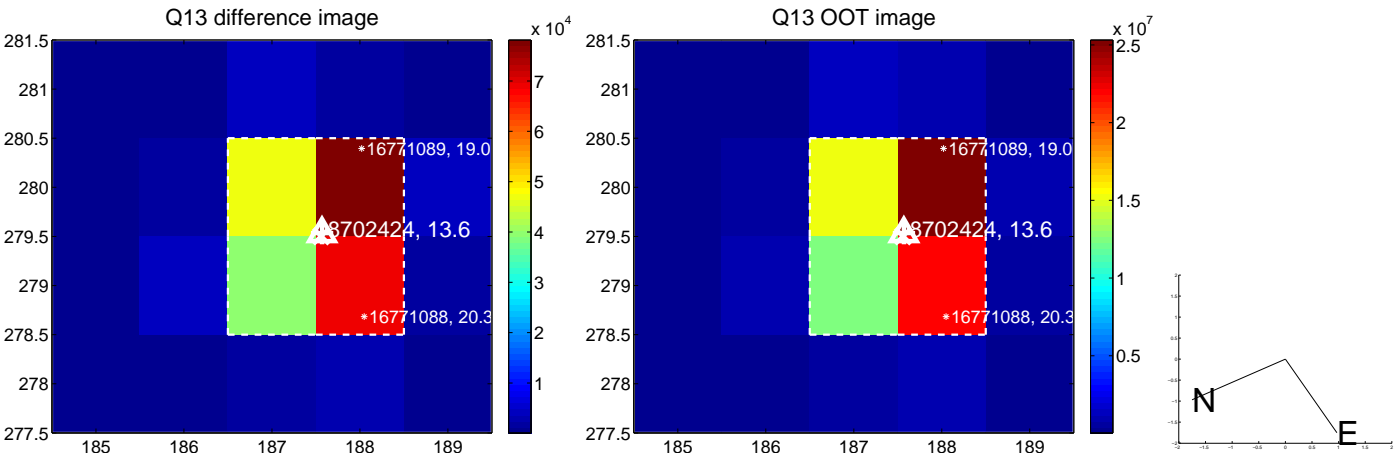
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



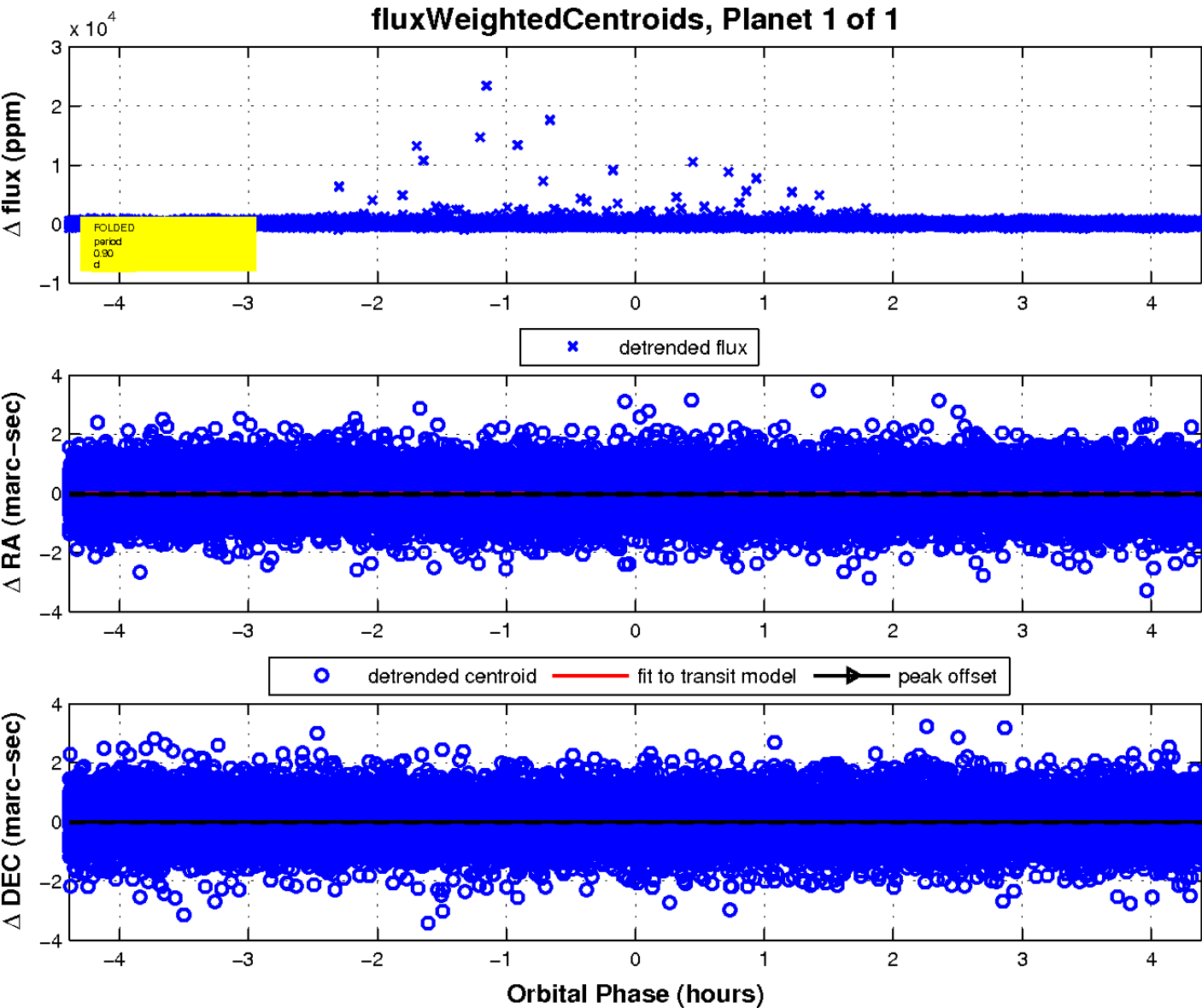
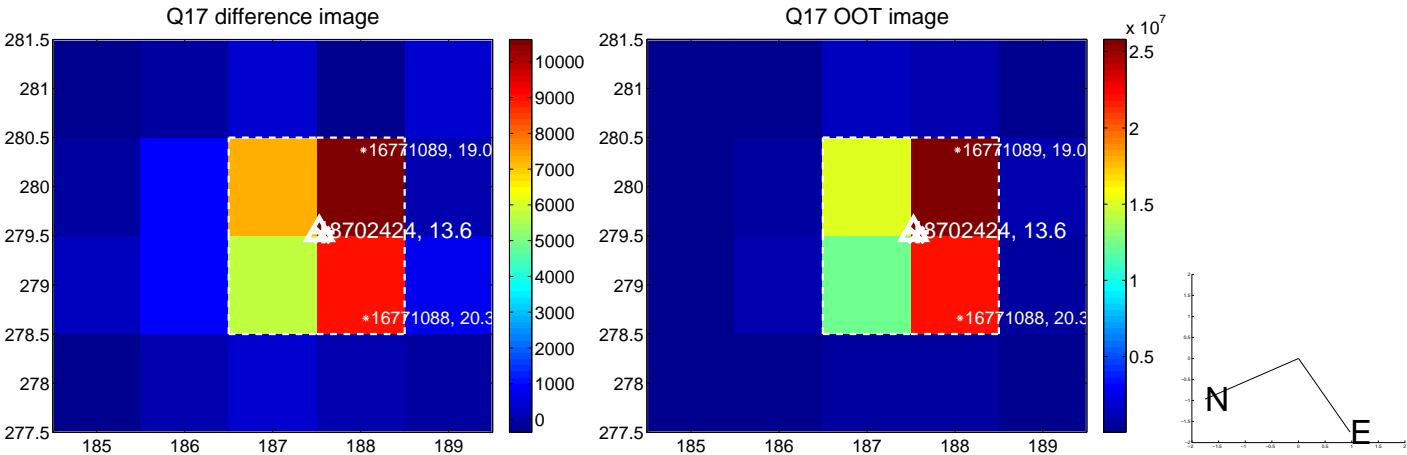
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

