

KIC 010216016

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})
010216016-01	OBS	No	0.536899	132.001901	6.2	5.032	10.1	9.4	2.22	7904	0.58	69117.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010216016-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL — LPP_DV — CENT_FEW_DIFFS

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

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

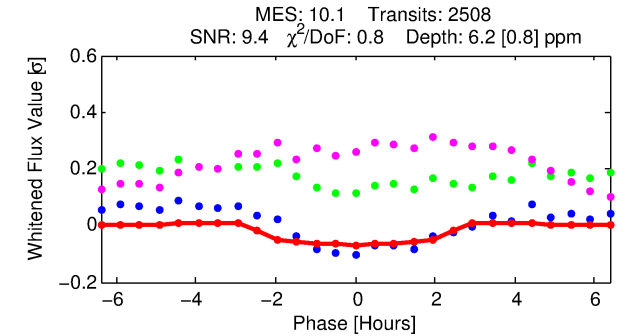
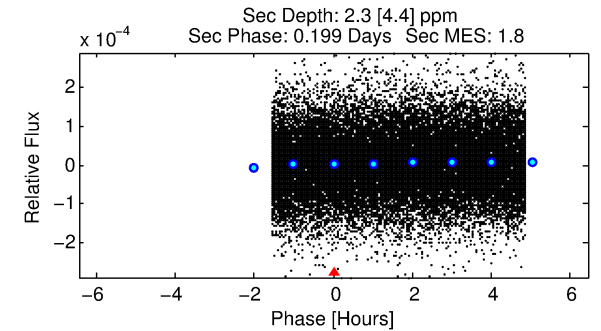
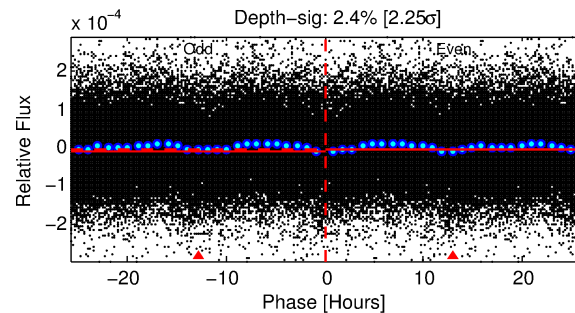
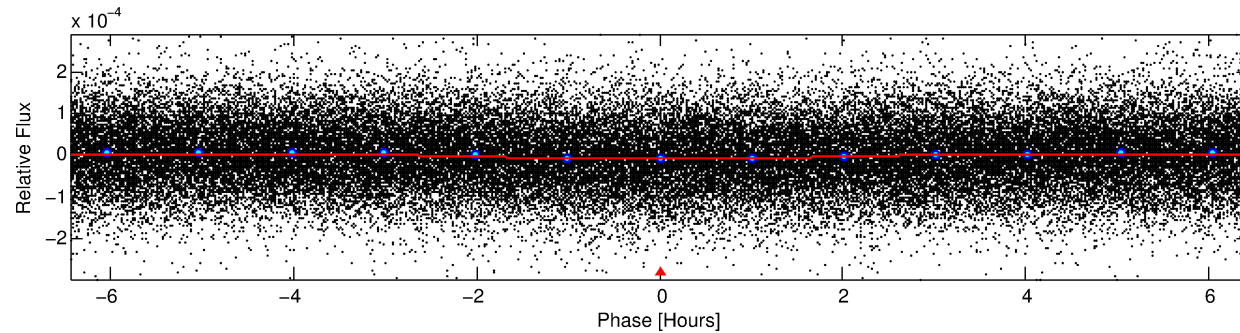
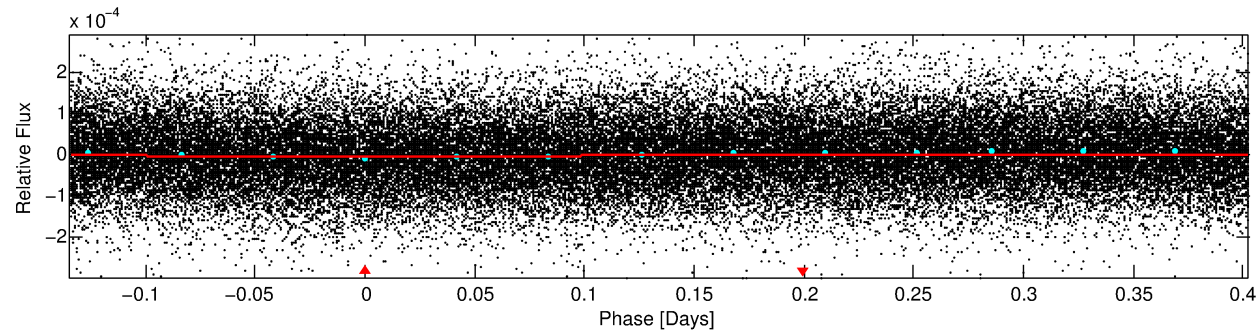
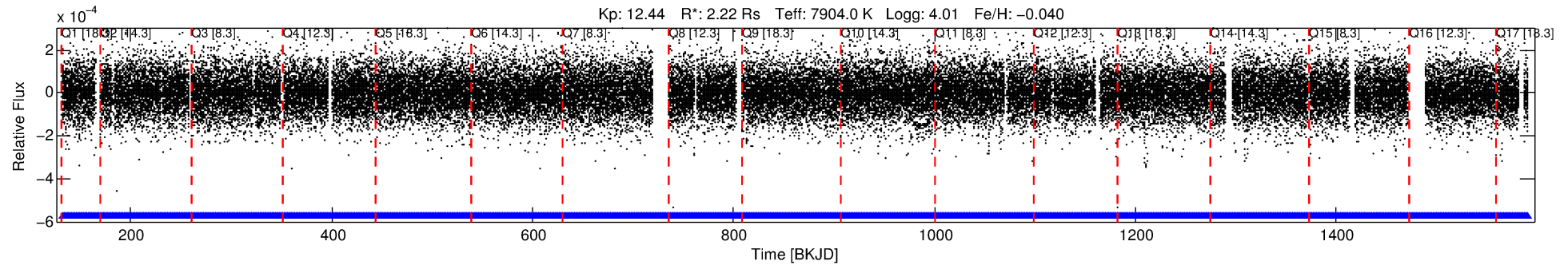
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010216016-01

No Significant Match Found

DV One-Page Summary

KIC: 10216016 Candidate: 1 of 1 Period: 0.537 d



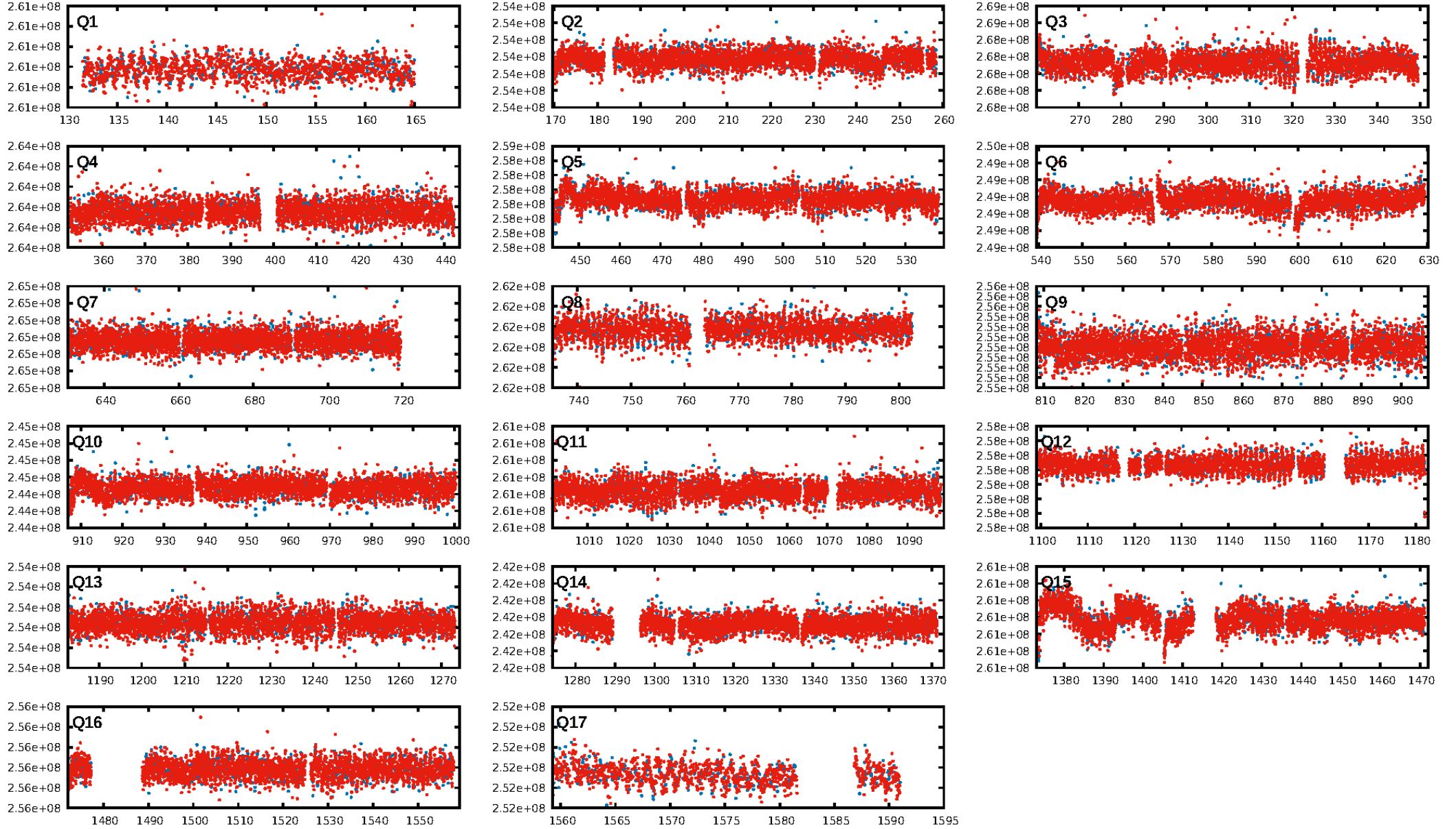
DV Fit Results:

Period = 0.53690 [0.00001] d
Epoch = 132.0019 [0.0051] BKJD
Rp/R* = 0.0024 [0.0019]
a/R* = 1.04 [0.40]
b = 0.59 [5.36]
Seff = 69117.49 [27613.41]
Teq = 4135 [413] K
Rp = 0.58 [0.49] Re
a = 0.0158 [0.0038] AU
Ag = 0.94 [2.33] [-0.03 σ]
Teffp = 6286 [3889] K [0.55 σ]

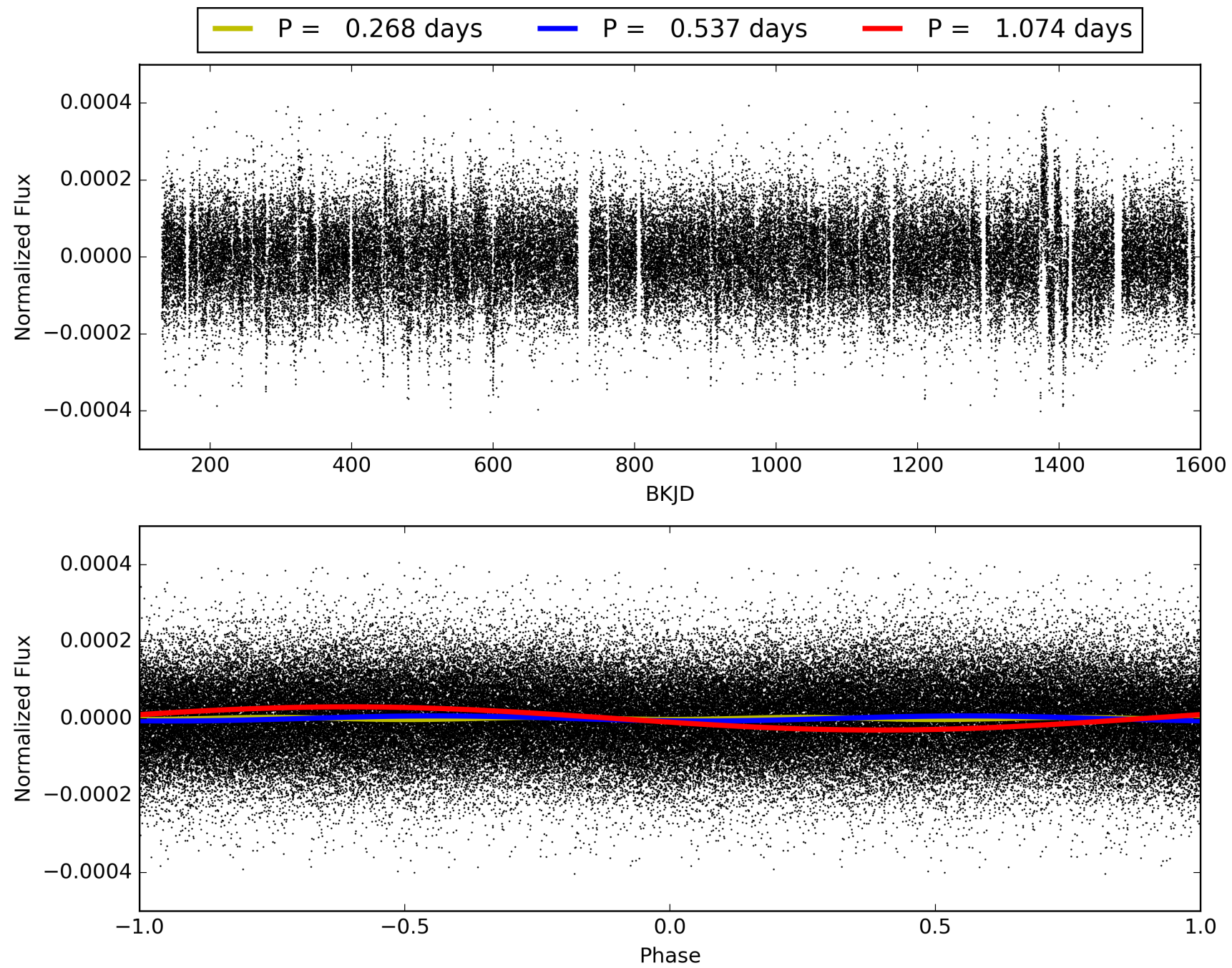
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2395/2395]
GhostDiagnostic-chr: 1.027
Centroid-sig: 12.1%
Centroid-so: 1.580 arcsec [1.30 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010216016-01, PDC Light Curves

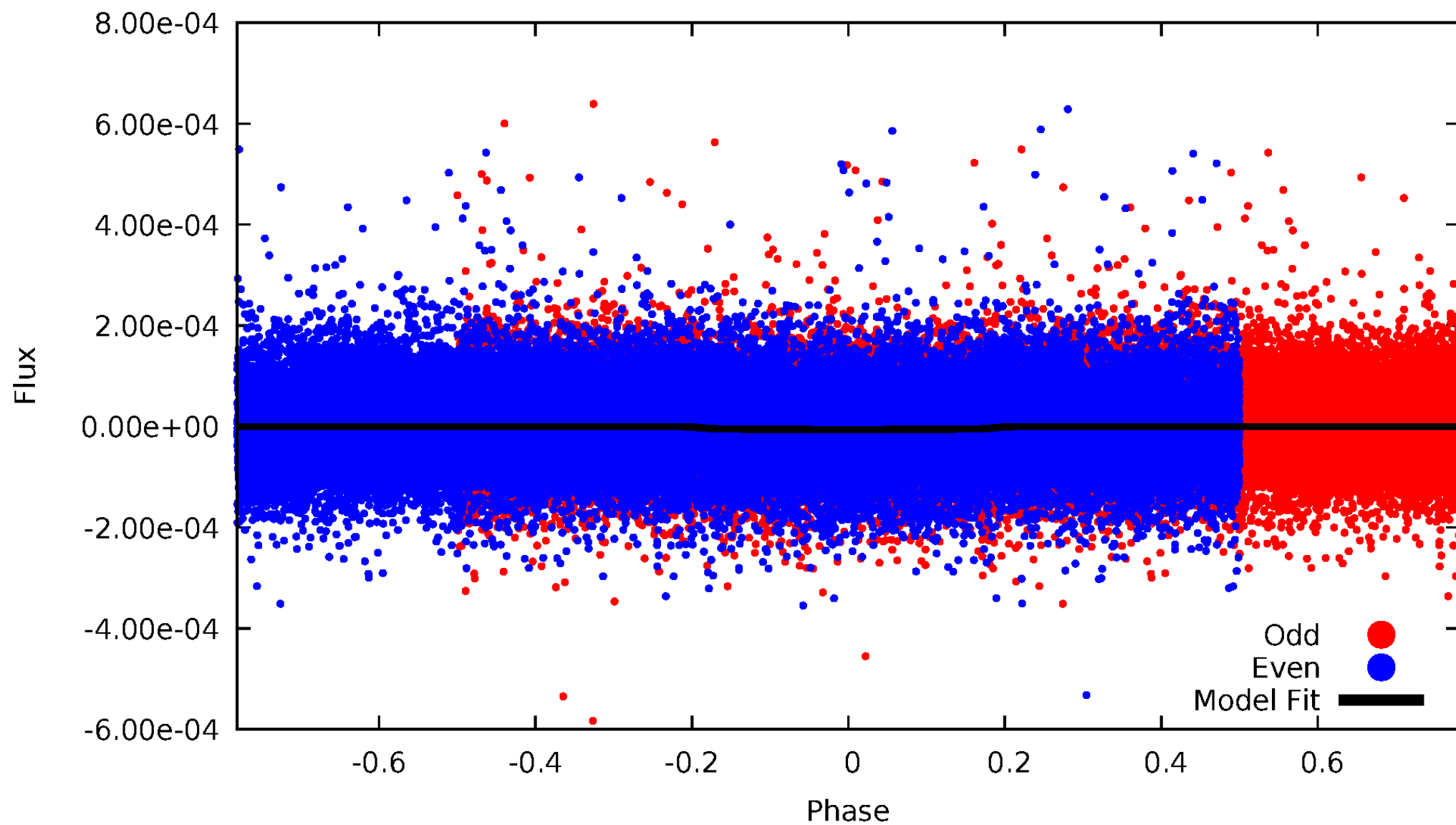


TCE 010216016-01



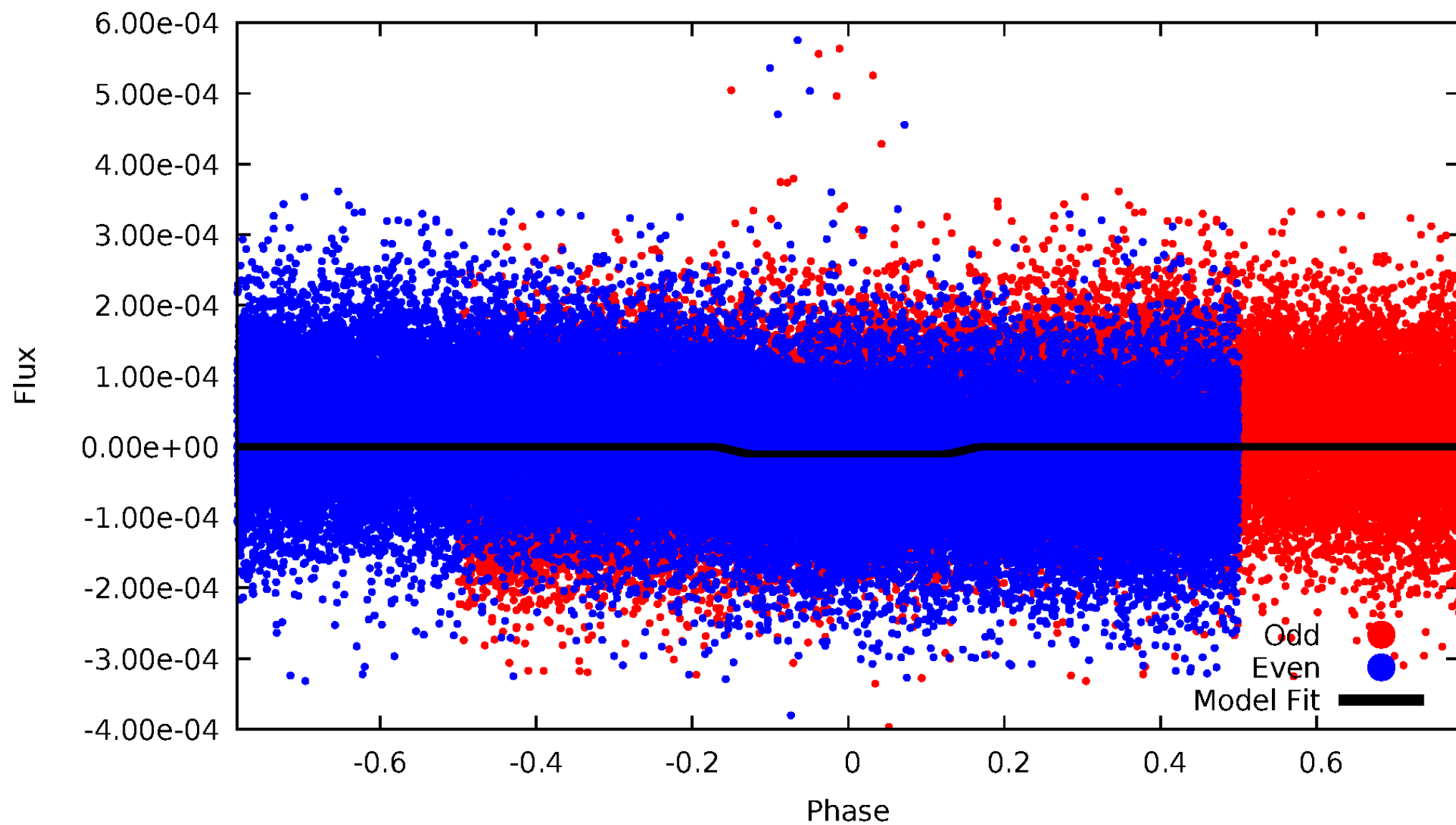
DV Odd/Even

TCE 010216016-01



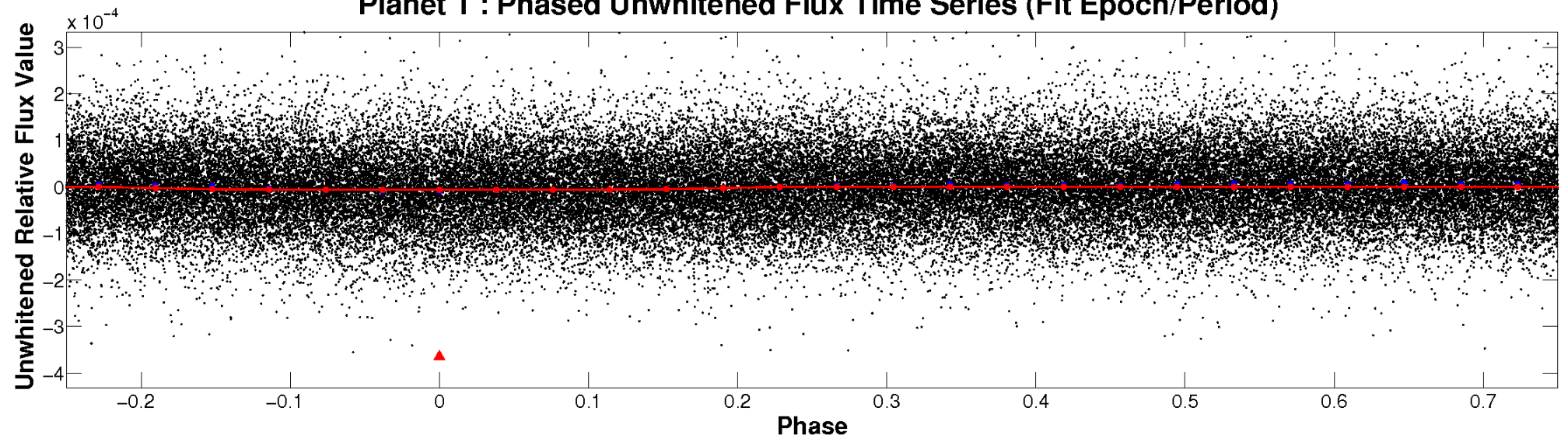
ALT Odd/Even

TCE 010216016-01

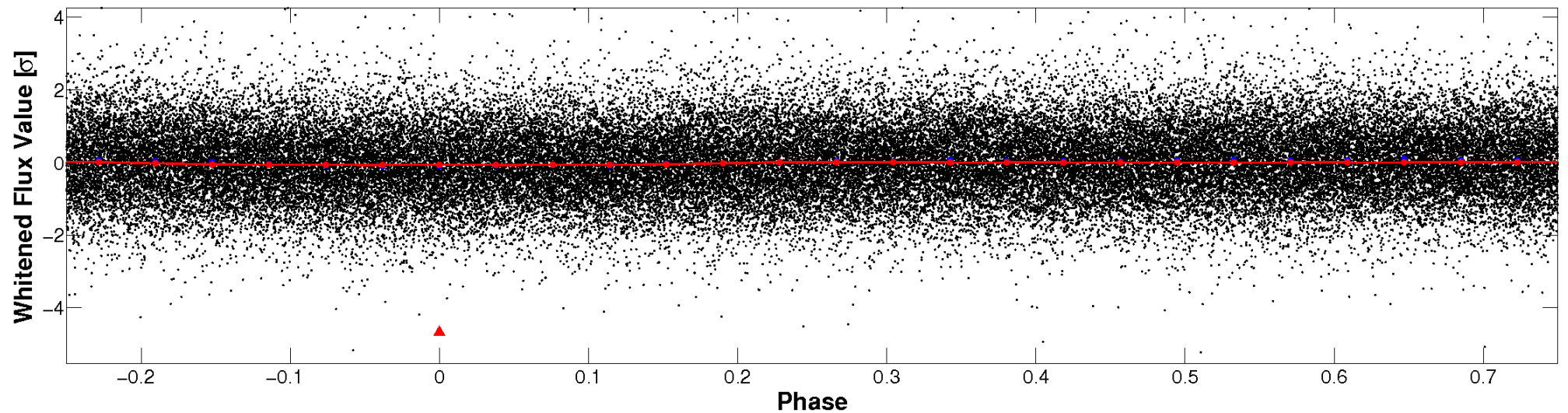


Non-Whitened Vs. Whitened Light Curve

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

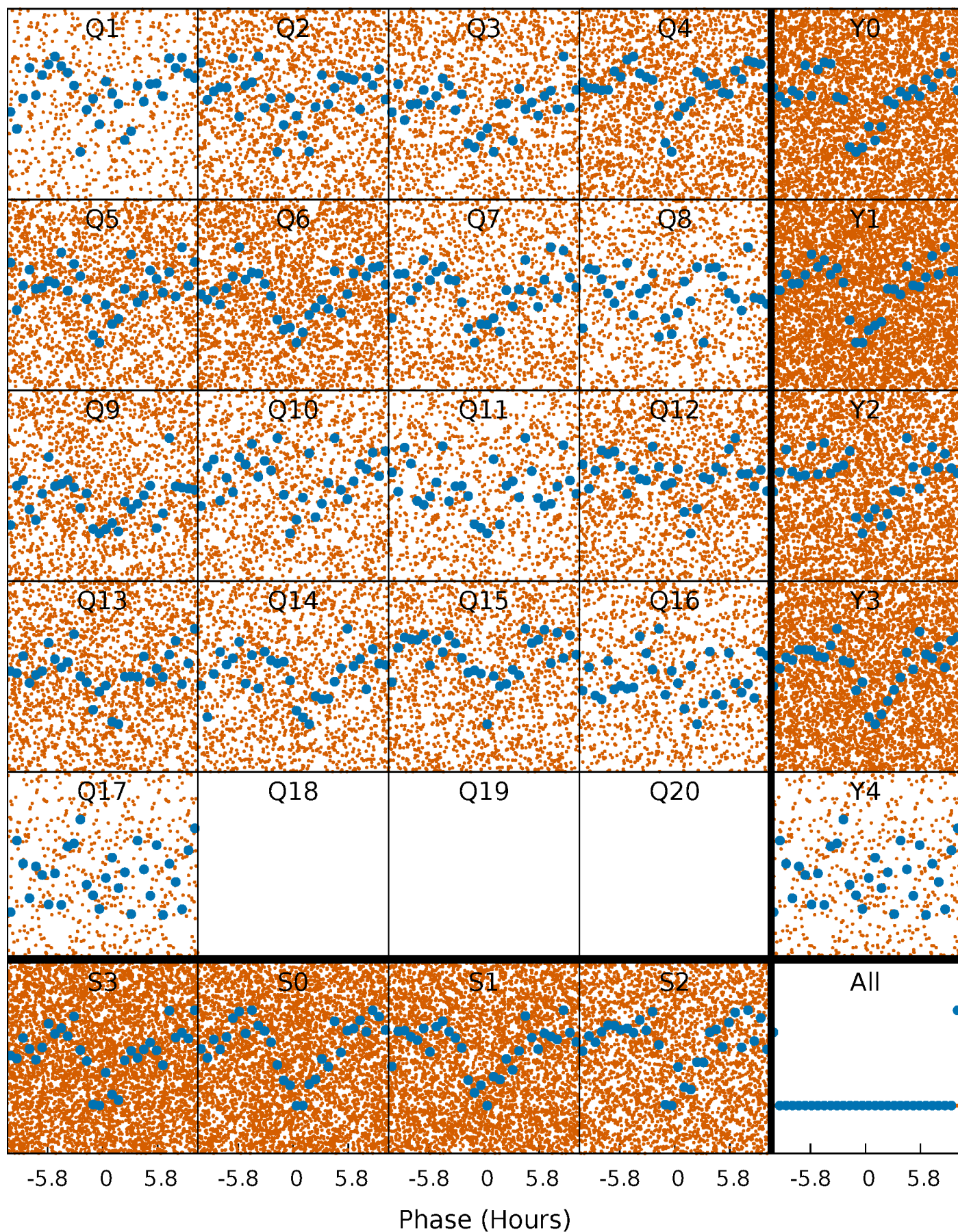


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



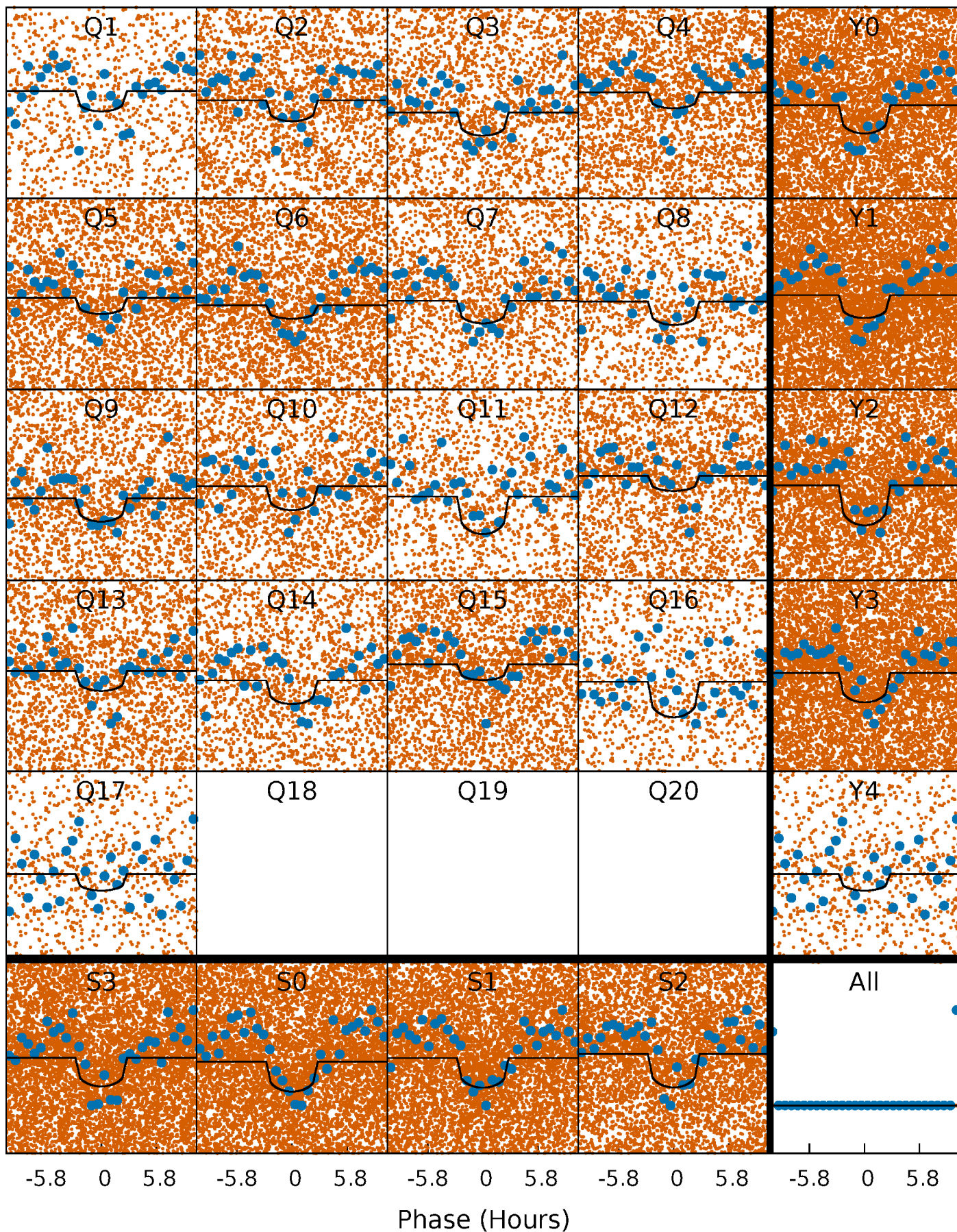
PDC Quarter-Phased Transit Curves

TCE 010216016-01 P= 0.536899 Days $T_0=132.001901$ (BKJD)



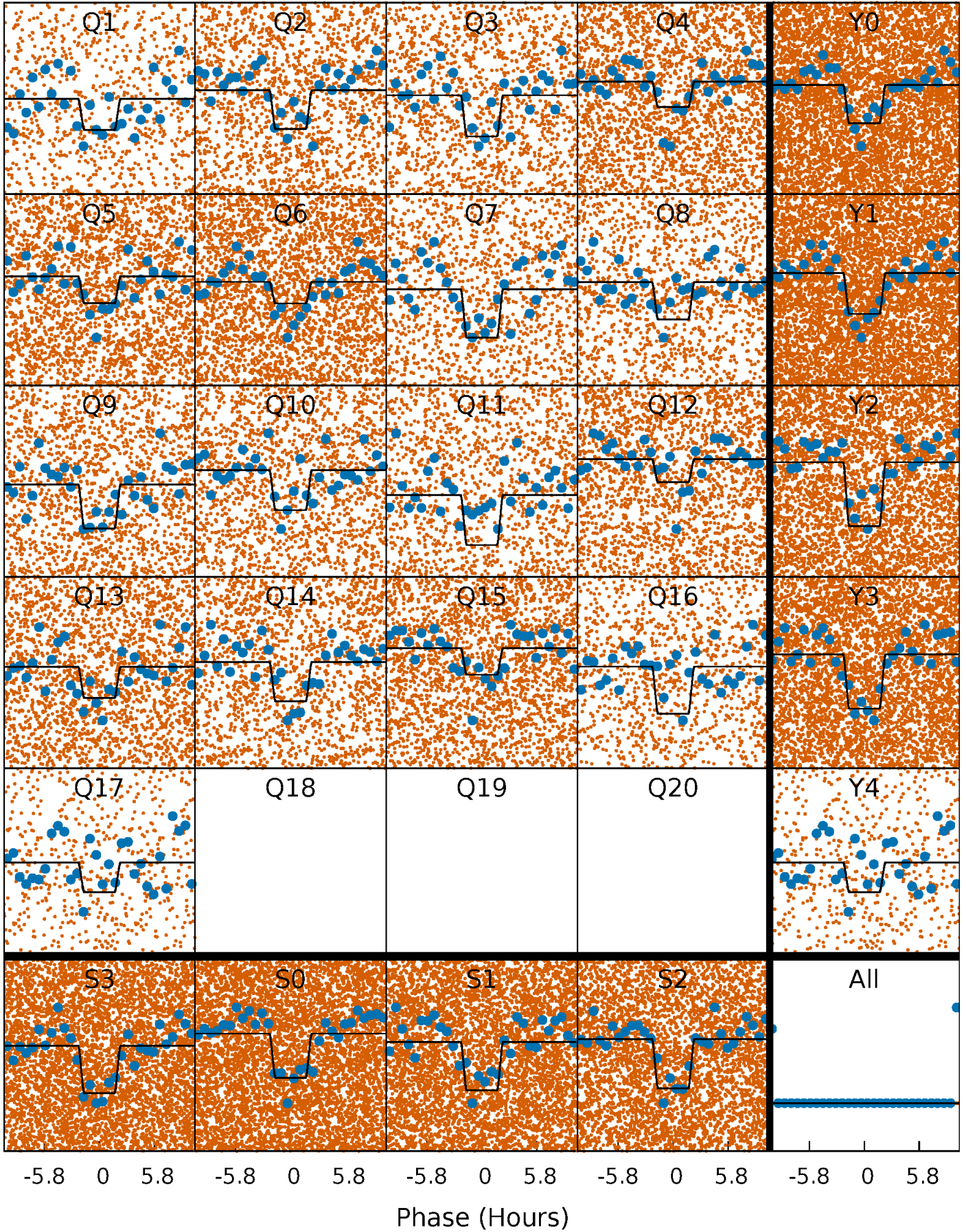
DV Quarter-Phased Transit Curves

TCE 010216016-01 P= 0.536899 Days $T_0=132.001901$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

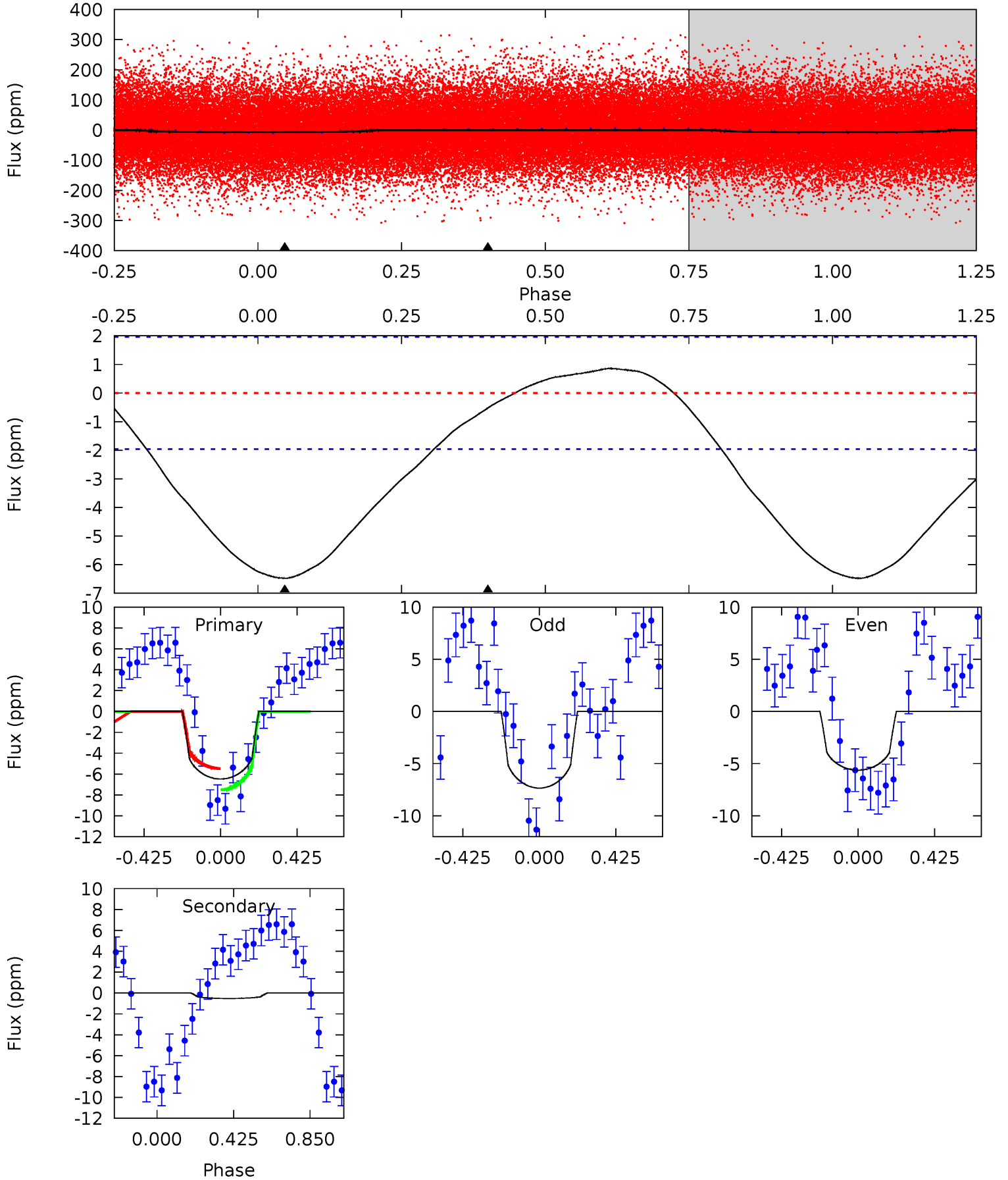
TCE 010216016-01 P= 0.536930 Days $T_0=131.982614$ (BKJD)



DV Model-Shift Uniqueness Test

010216016-01, P = 0.536899 Days, E = 131.465002 Days

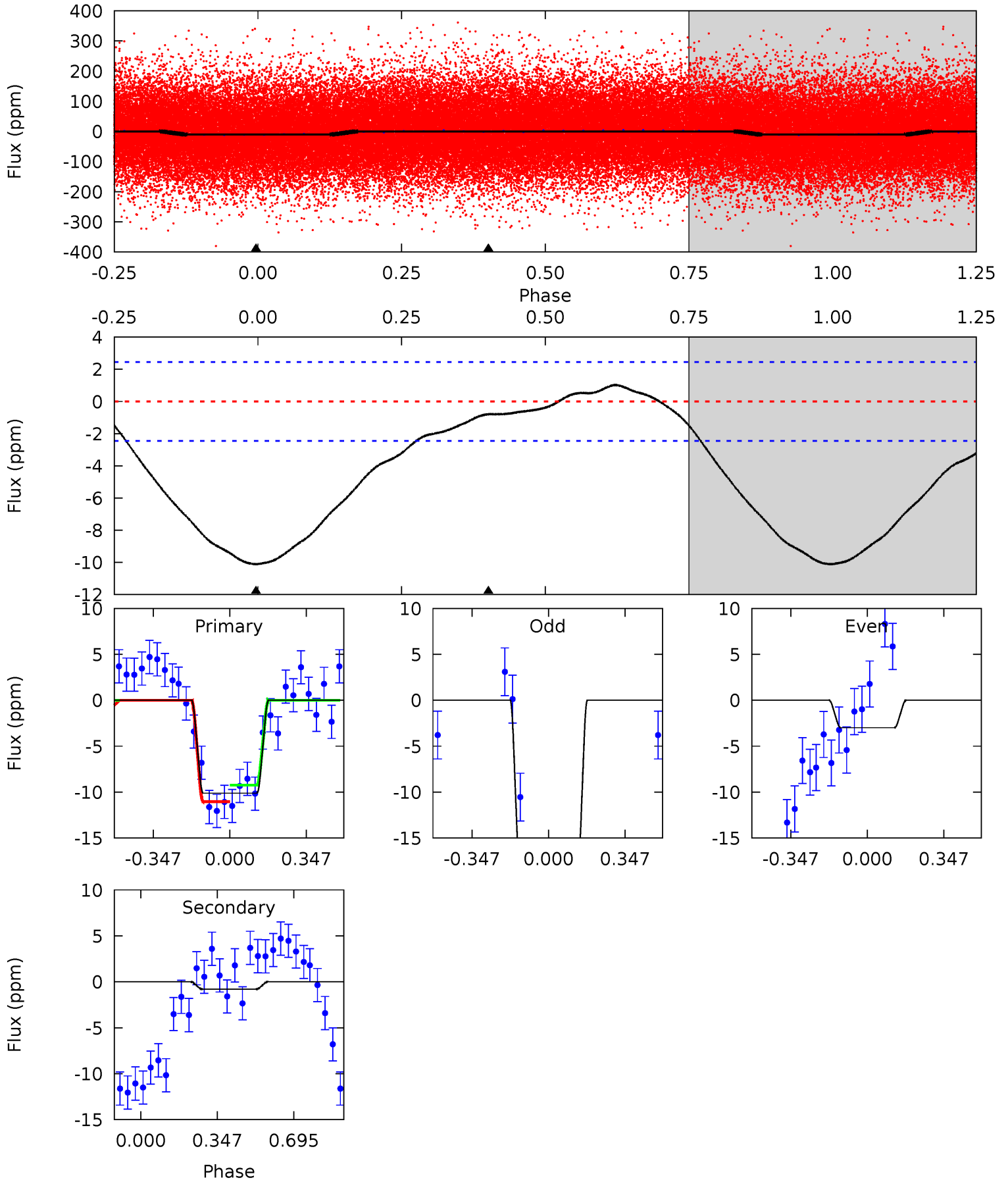
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	1.14	0	0	4.25	0.80	1.16	14.0	14.0	1.14	1.14	1.88	1.05	0.12	2.17



Alt Model-Shift Uniqueness Test

010216016-01, P = 0.536930 Days, E = 131.445684 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	1.41	0	0	4.30	0.94	1.10	17.7	17.7	1.41	1.41	17.4	0.92	0.09	1.55



Stellar Parameters For KIC 010216016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7904^{+219}_{-329}	$4.006^{+0.204}_{-0.136}$	$-0.040^{+0.200}_{-0.350}$	$2.222^{+0.446}_{-0.613}$	$1.828^{+0.120}_{-0.361}$	$0.235^{+0.277}_{-0.095}$
	+3%/-4%	+5%/-3%	+500%/-875%	+20%/-28%	+7%/-20%	+118%/-40%
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 010216016-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 0	$0.61^{+0.45}_{-0.36}$	5748^{+362}_{-418}	-4008^{+9654}_{-761}	$0.161^{+0.901}_{-0.148}$
Alt.	-1 ± 1	$0.76^{+0.48}_{-0.43}$	5734^{+391}_{-423}	-4054^{+9305}_{-657}	$0.156^{+0.694}_{-0.123}$

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

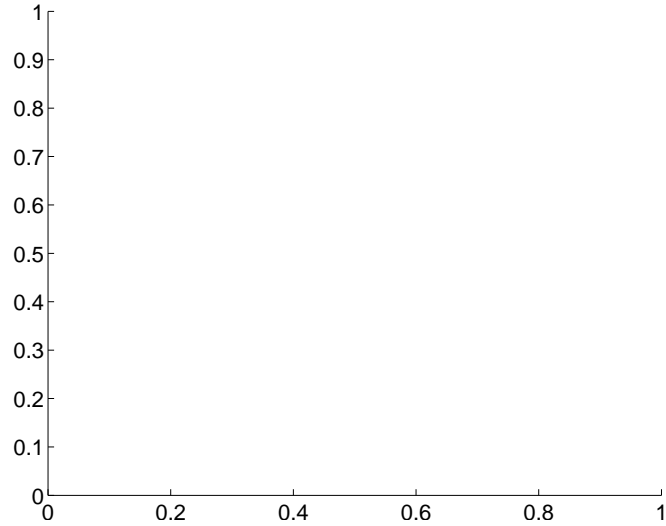
Supplemental centroid analysis for 010216016-01. Kepler magnitude: 12.44. Transit SNR 9.42

There are 0 quarters with good PRF difference image offsets

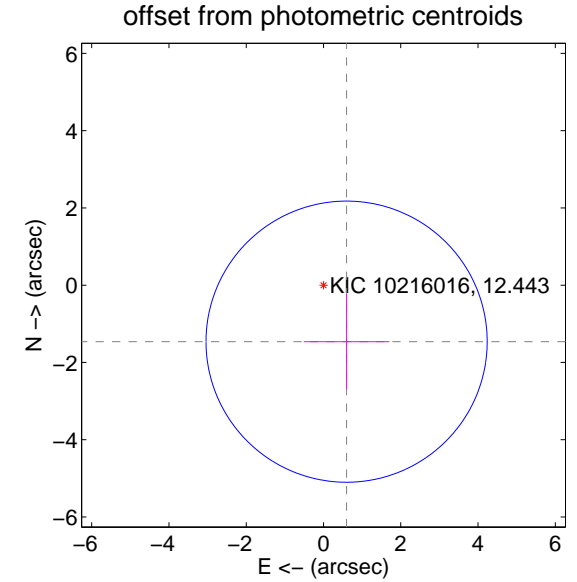
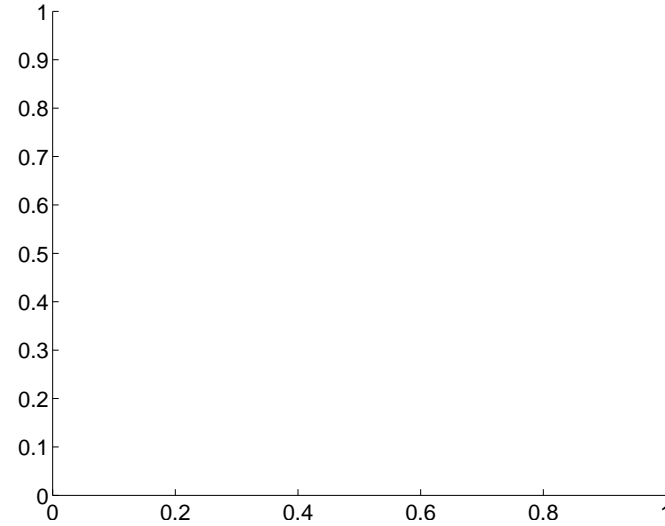
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	1.58 ± 1.21	1.30	-0.60 ± 1.11	-1.46 ± 1.23

There is no PRF-fit offset from OOT-fit

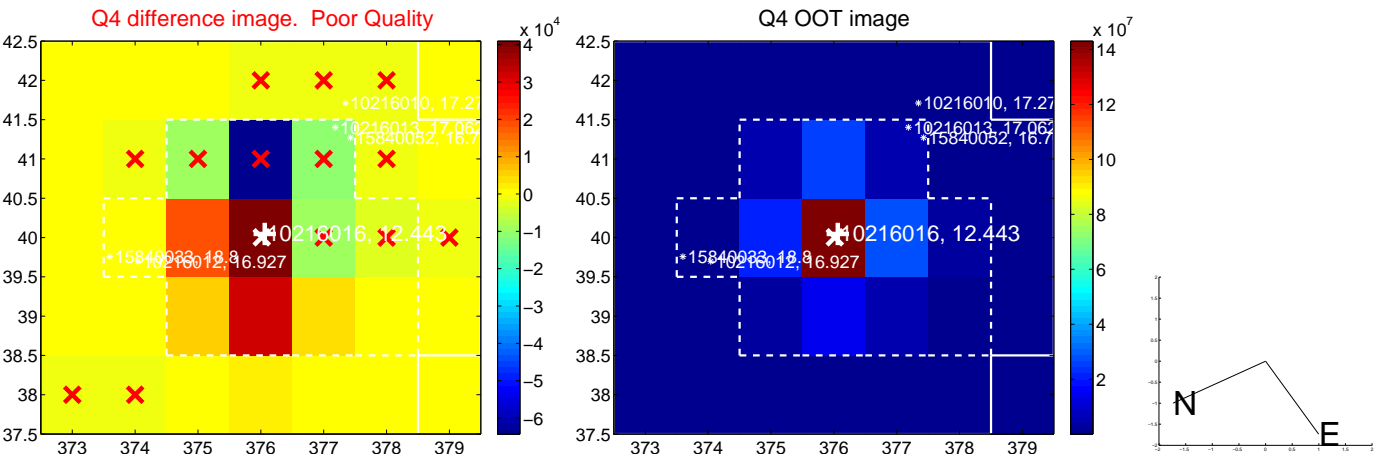
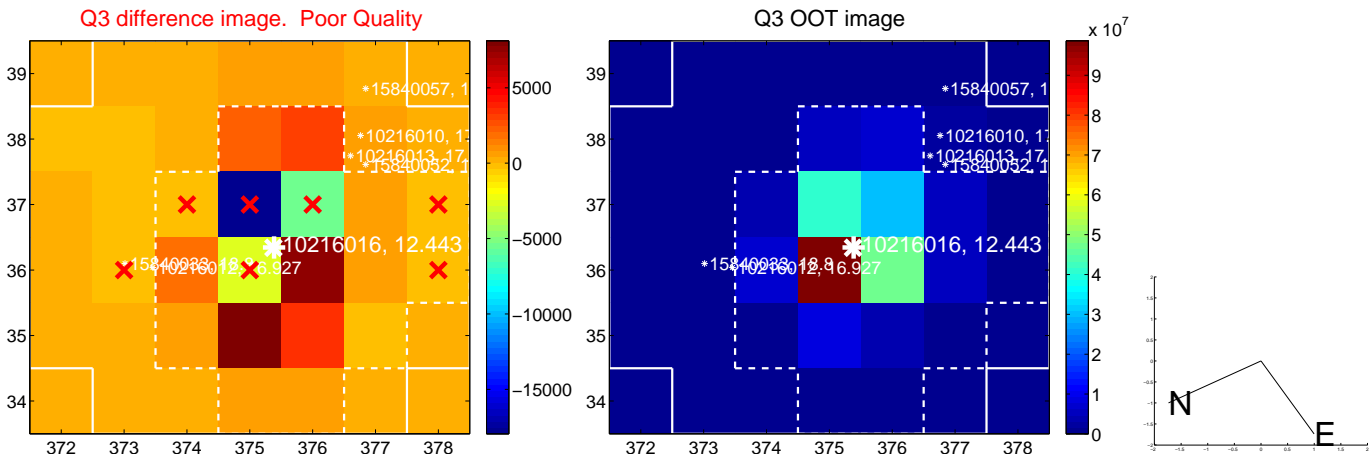
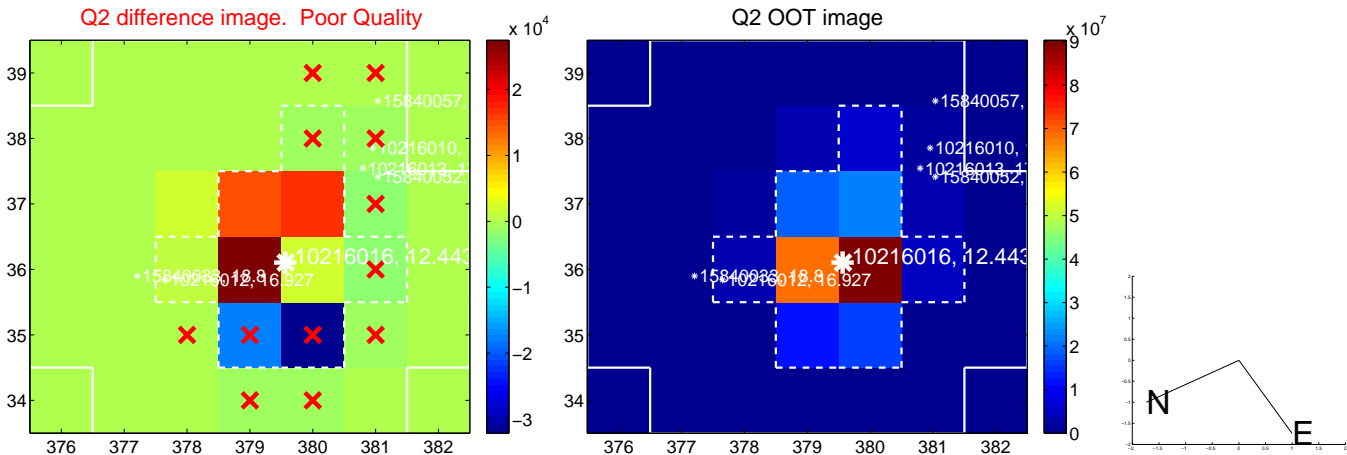
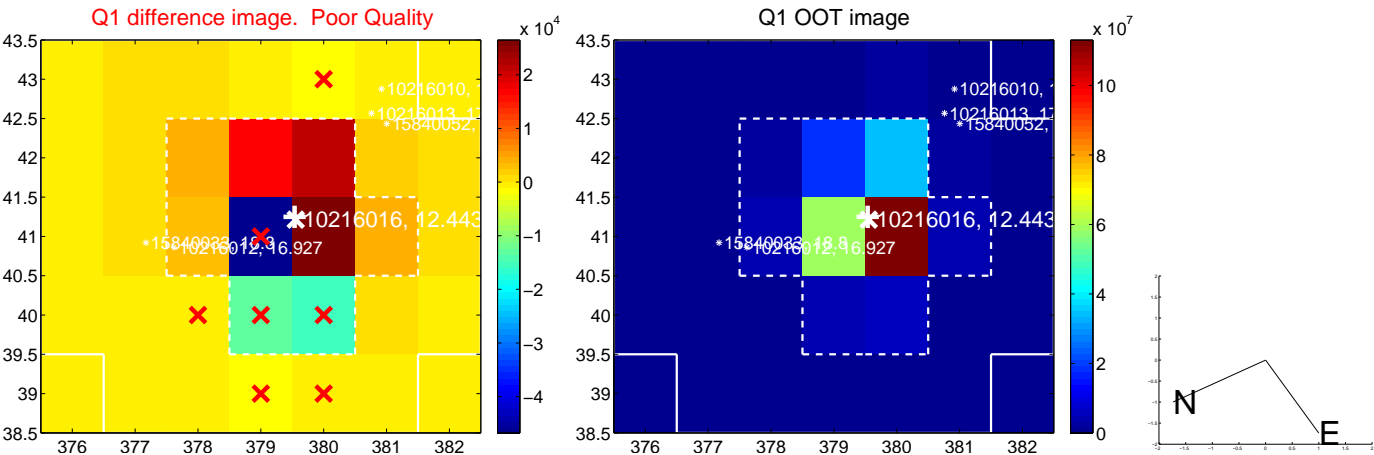


There is no PRF-fit offset from KIC

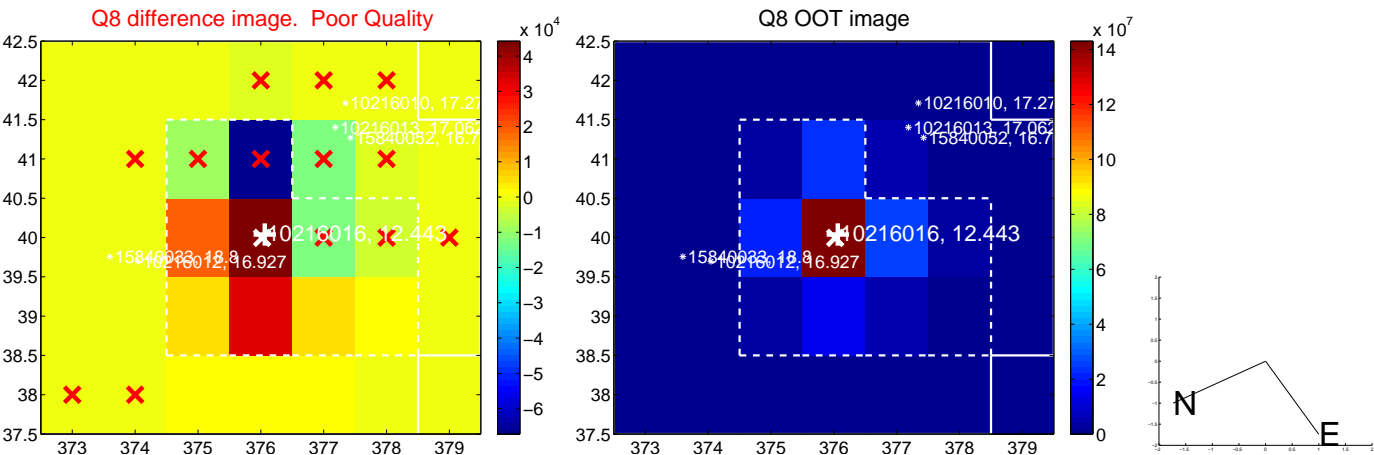
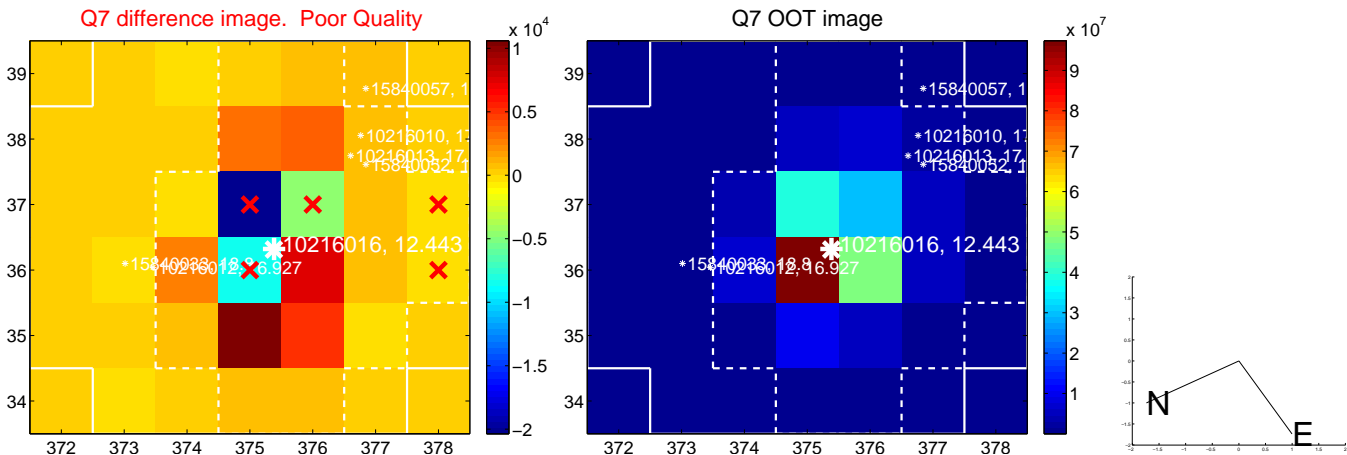
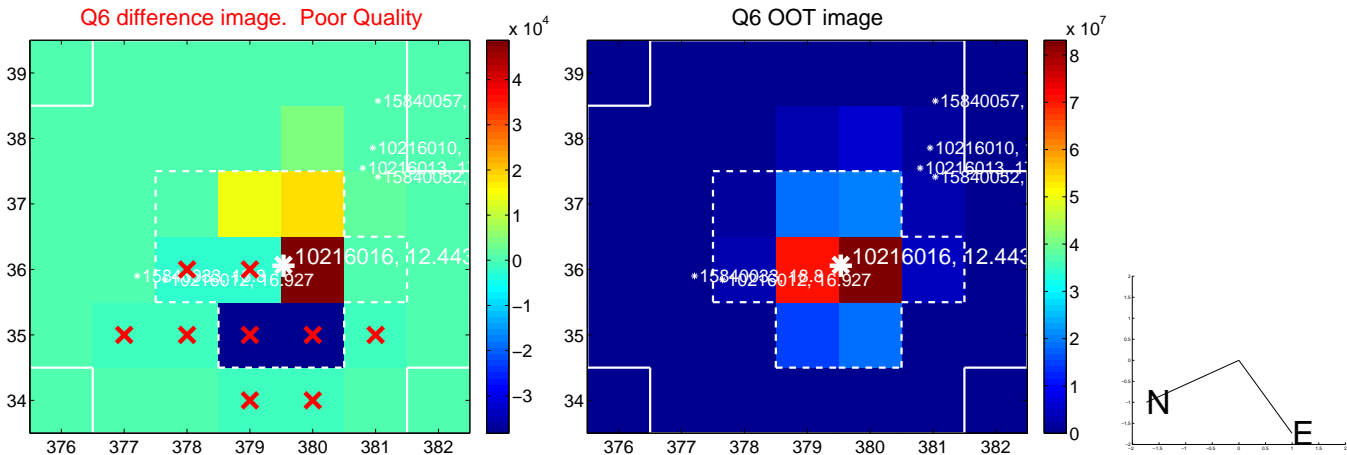
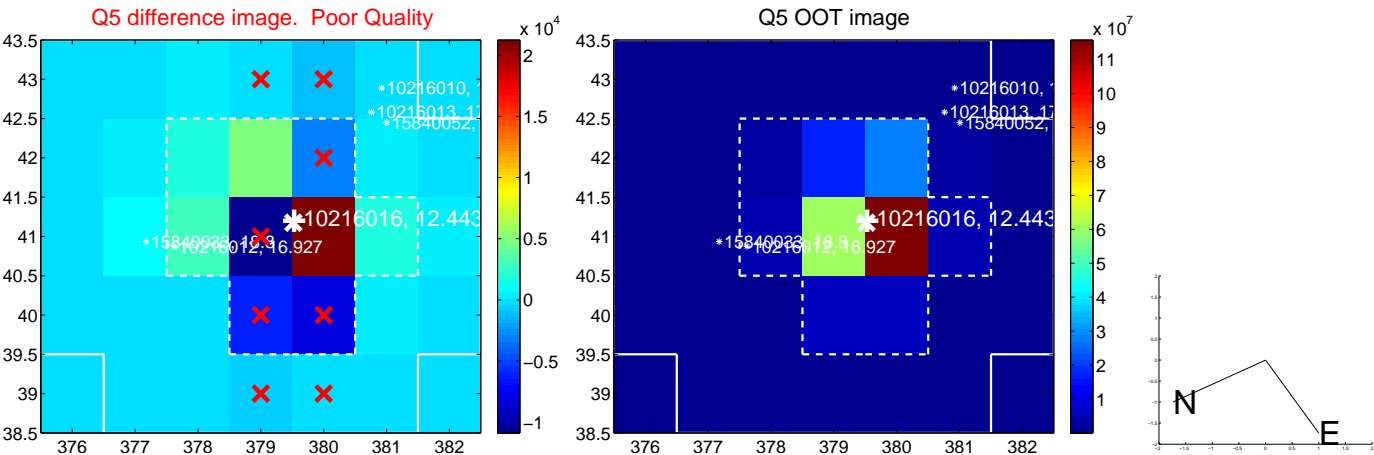


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

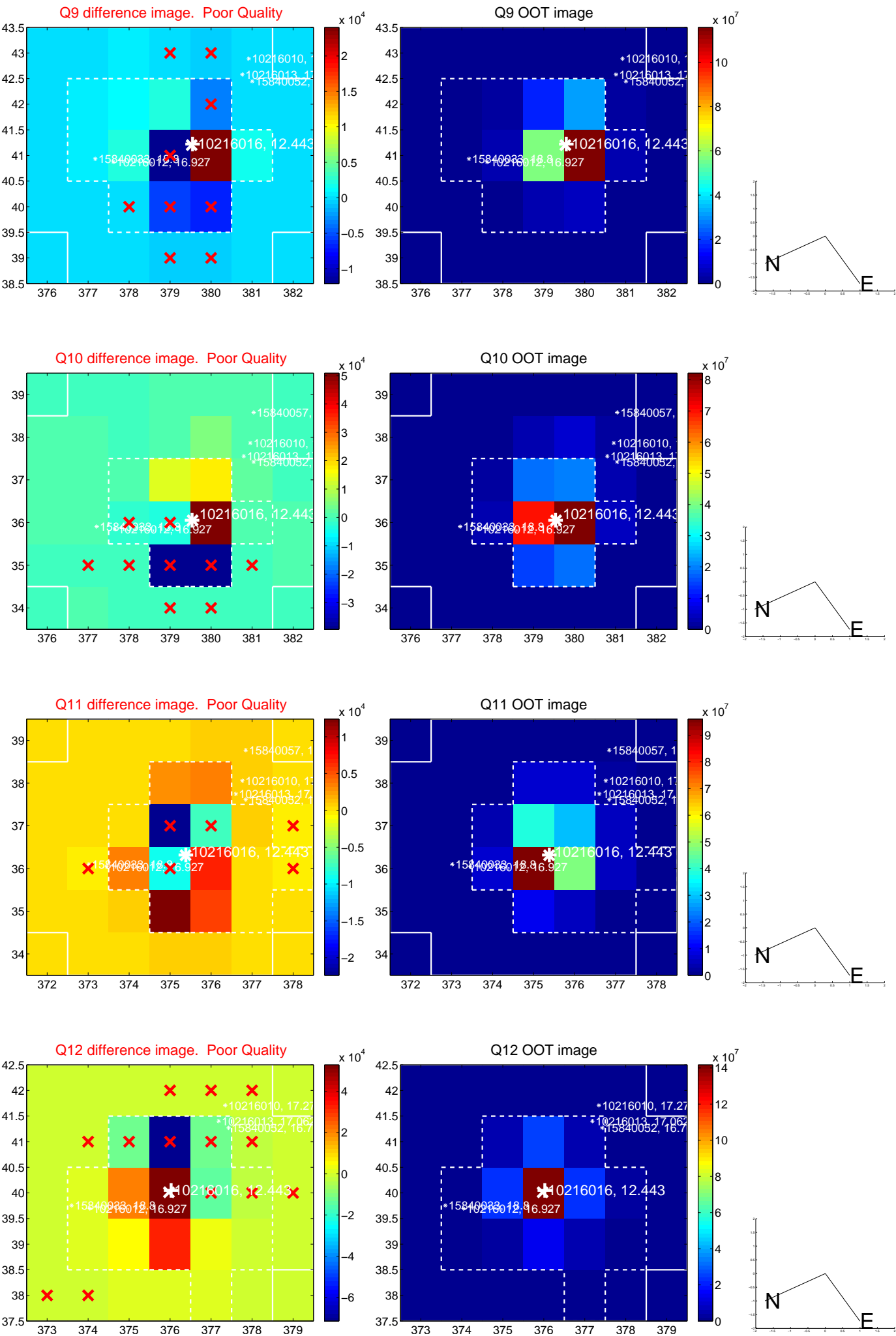
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



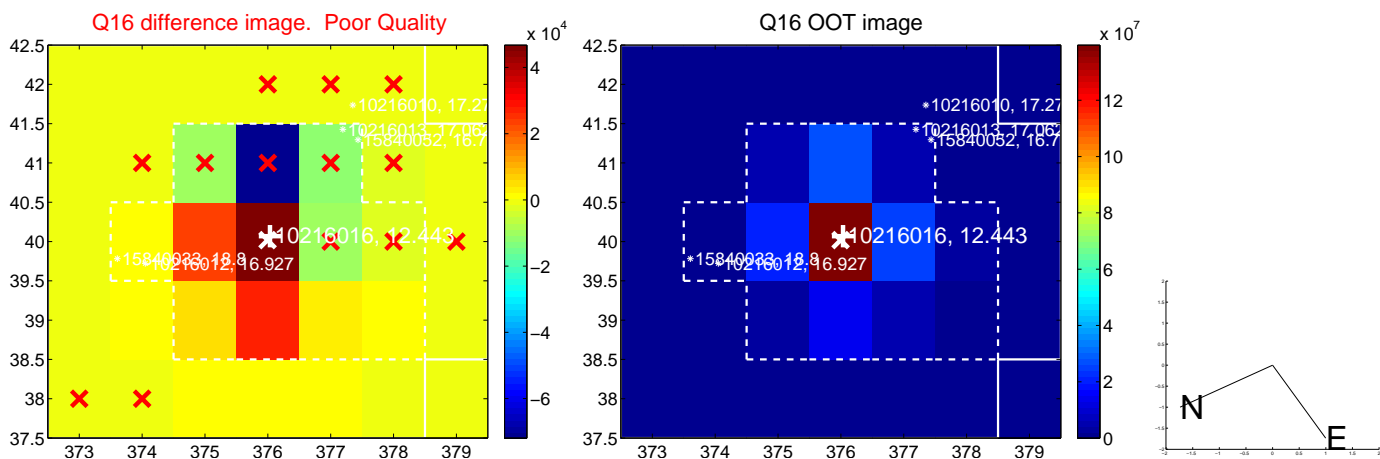
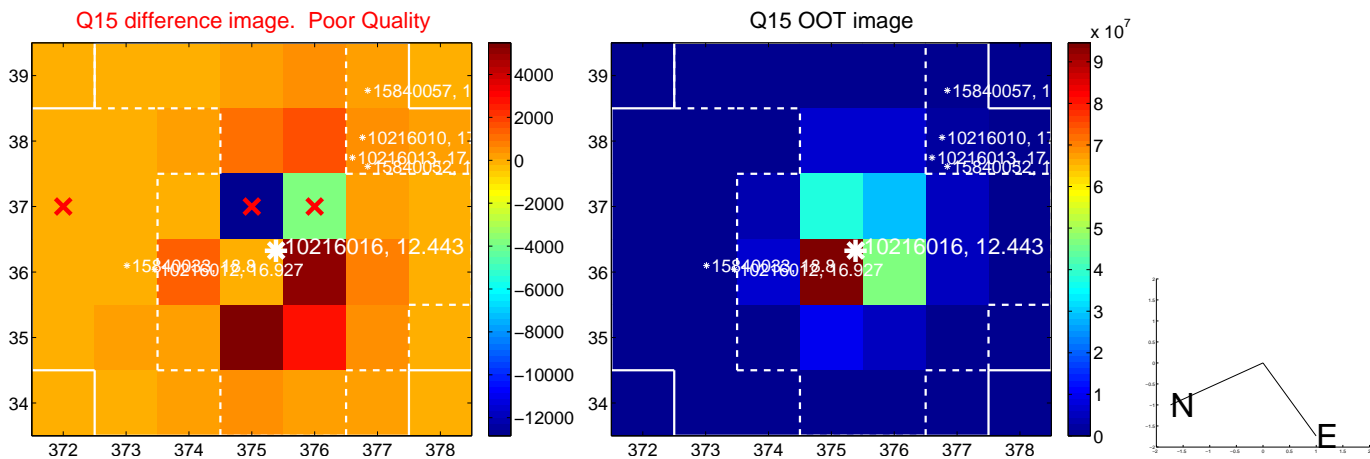
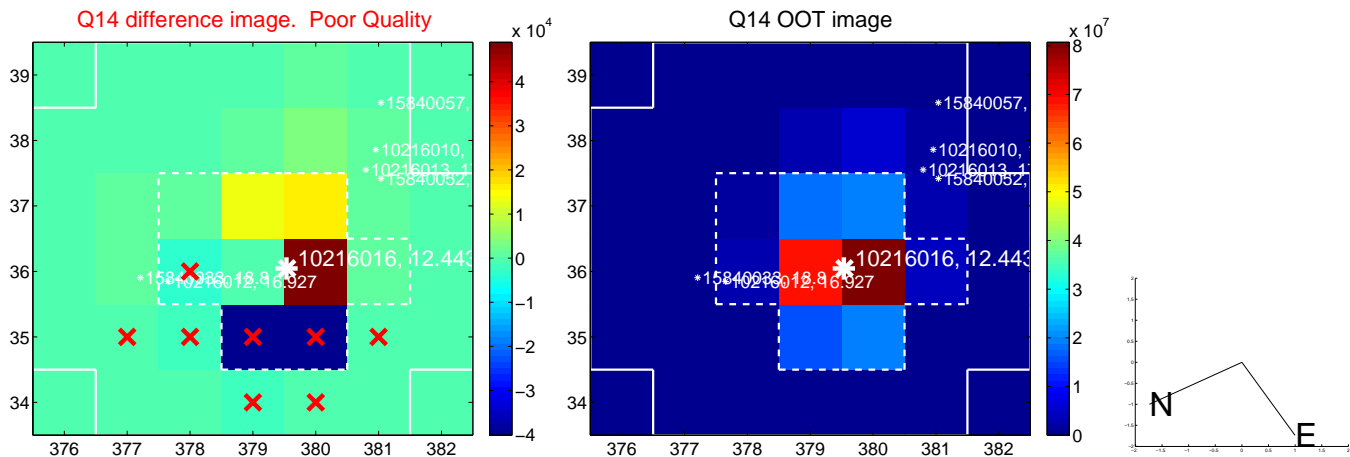
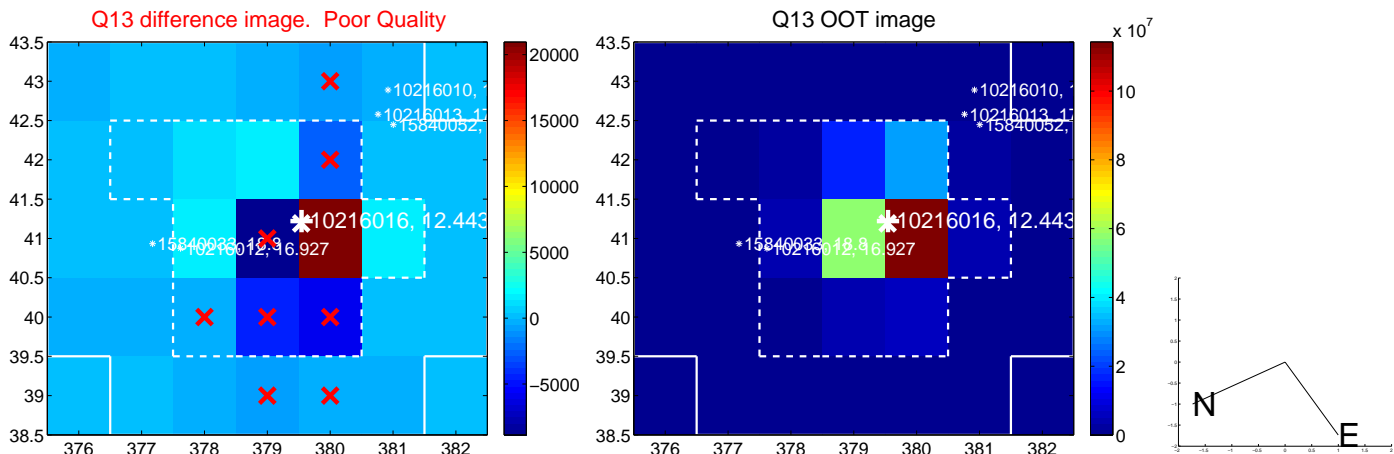
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



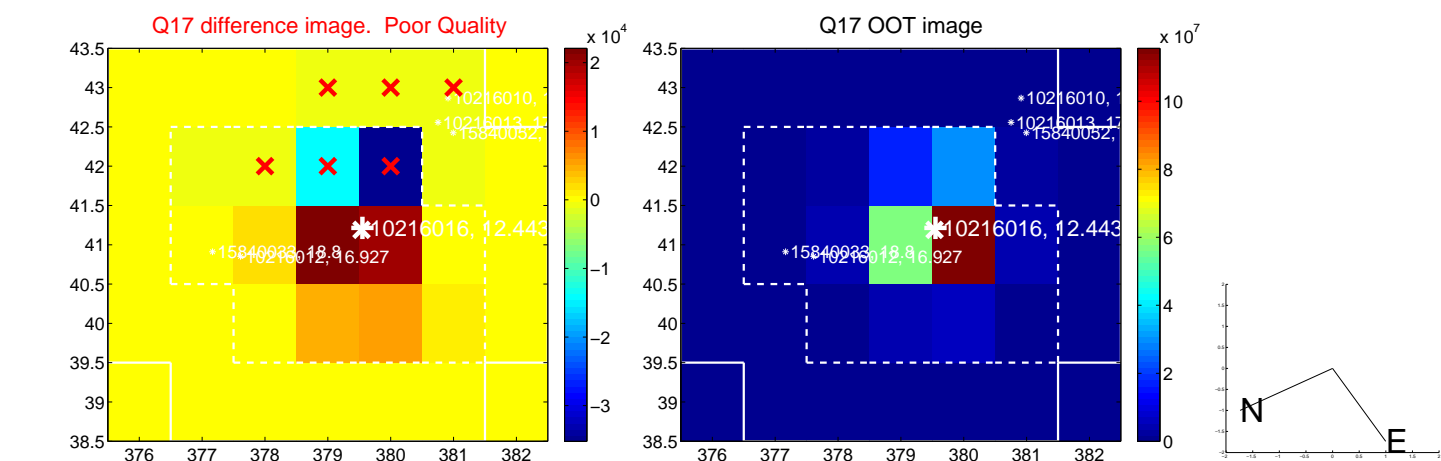
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



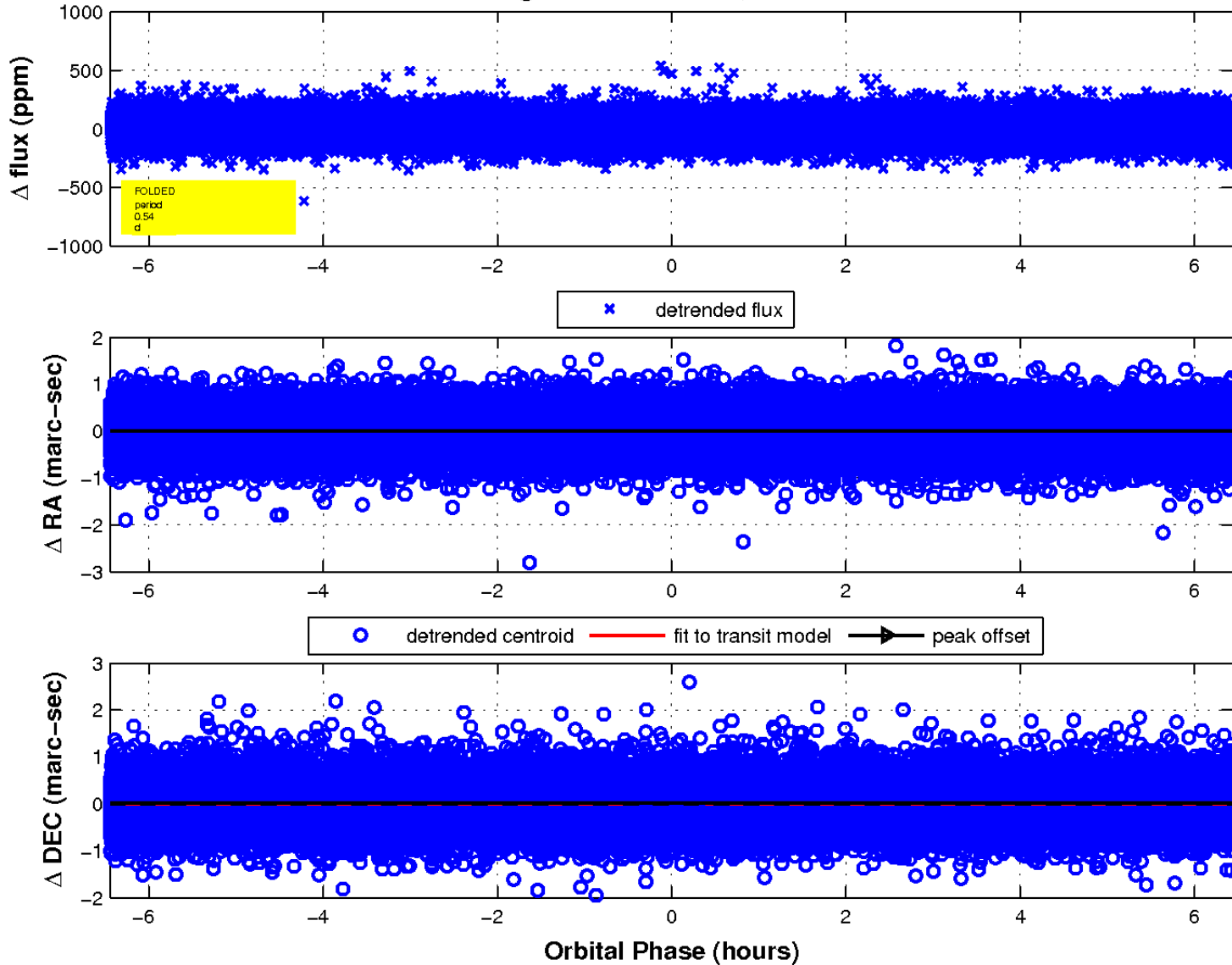
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

