

KIC 009966219

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})
009966219-01	OBS	3401.01	17.955739	139.051401	118.0	5.530	10.4	9.7	1.20	5641	1.43	74.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009966219-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

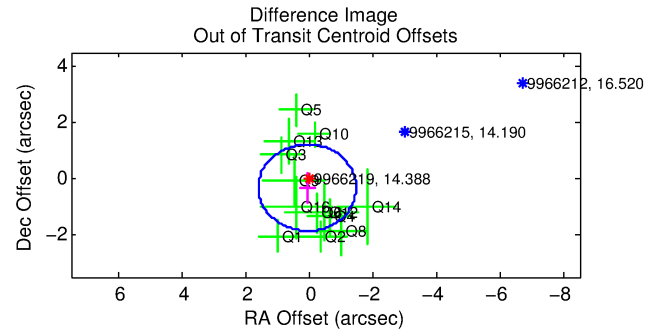
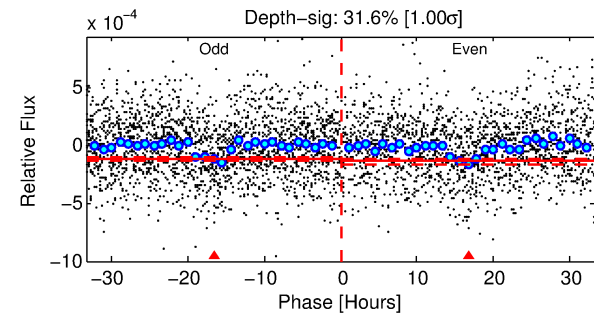
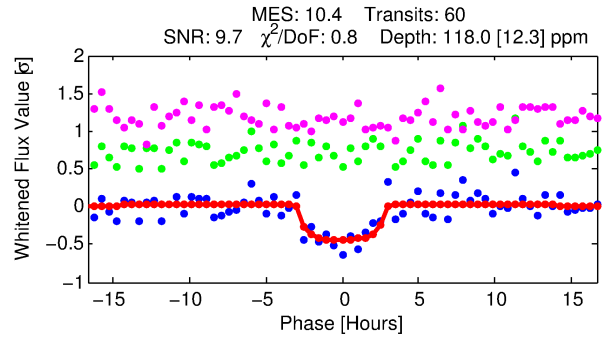
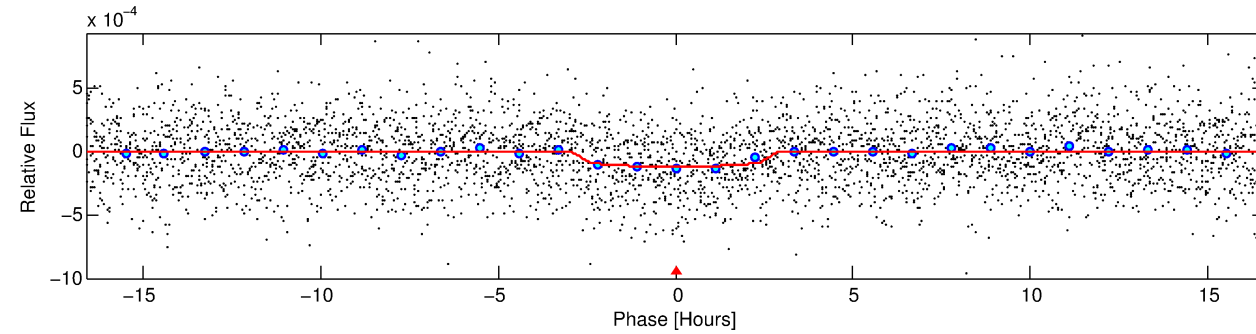
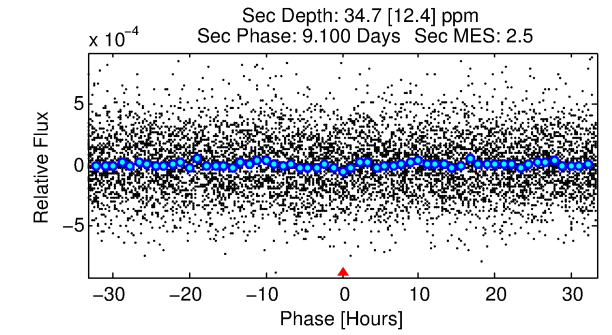
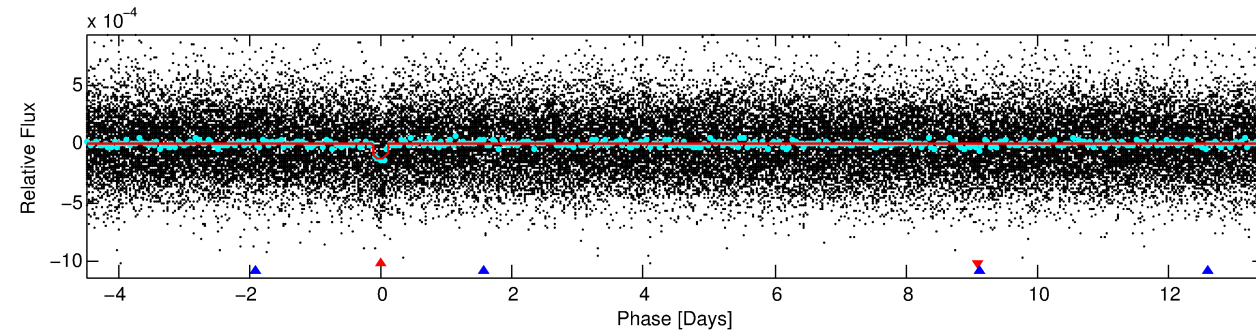
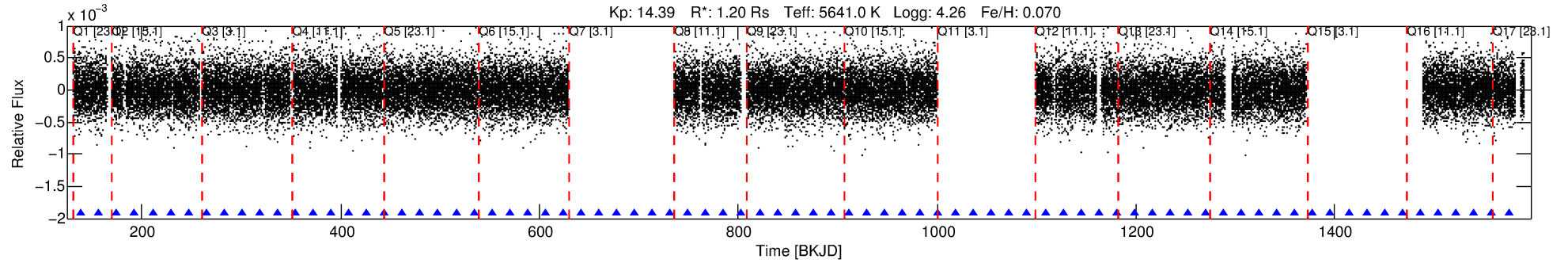
Ephemeris Match Information For 009966219-01

No Significant Match Found

DV One-Page Summary

KIC: 9966219 Candidate: 1 of 2 Period: 17.956 d

KOI: K03401.01 Corr: 0.909



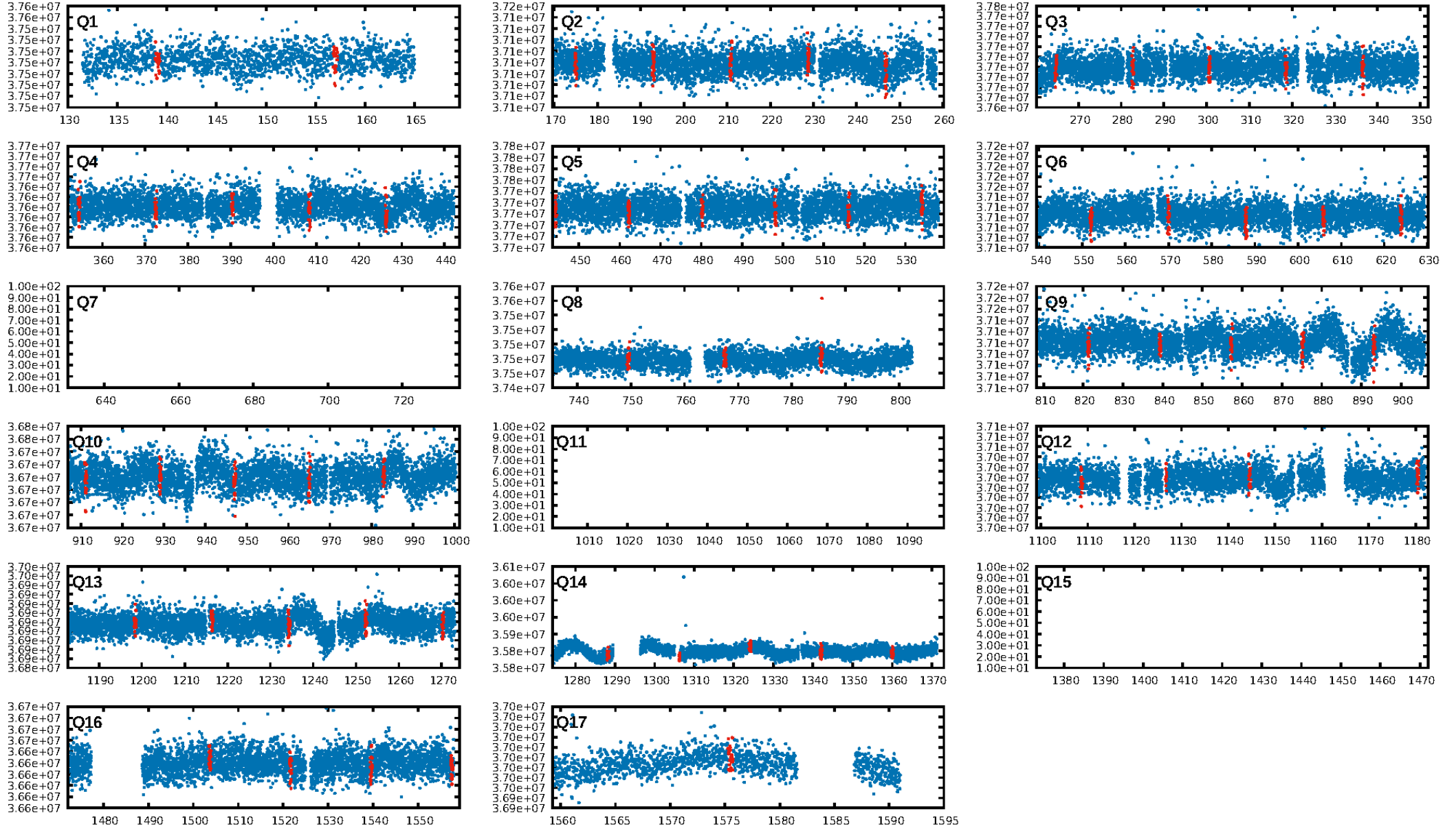
DV Fit Results:

Period = 17.95574 [0.00024] d
Epoch = 139.0514 [0.0102] BKJD
Rp/R* = 0.0109 [0.0090]
a/R* = 16.11 [56.58]
b = 0.78 [1.84]
Seff = 74.75 [20.70]
Teff = 750 [52] K
Rp = 1.43 [1.19] Re
a = 0.1316 [0.0218] AU
Ag = 162.50 [276.06] [0.59σ]
Teffp = 4139 [1736] K [1.95σ]

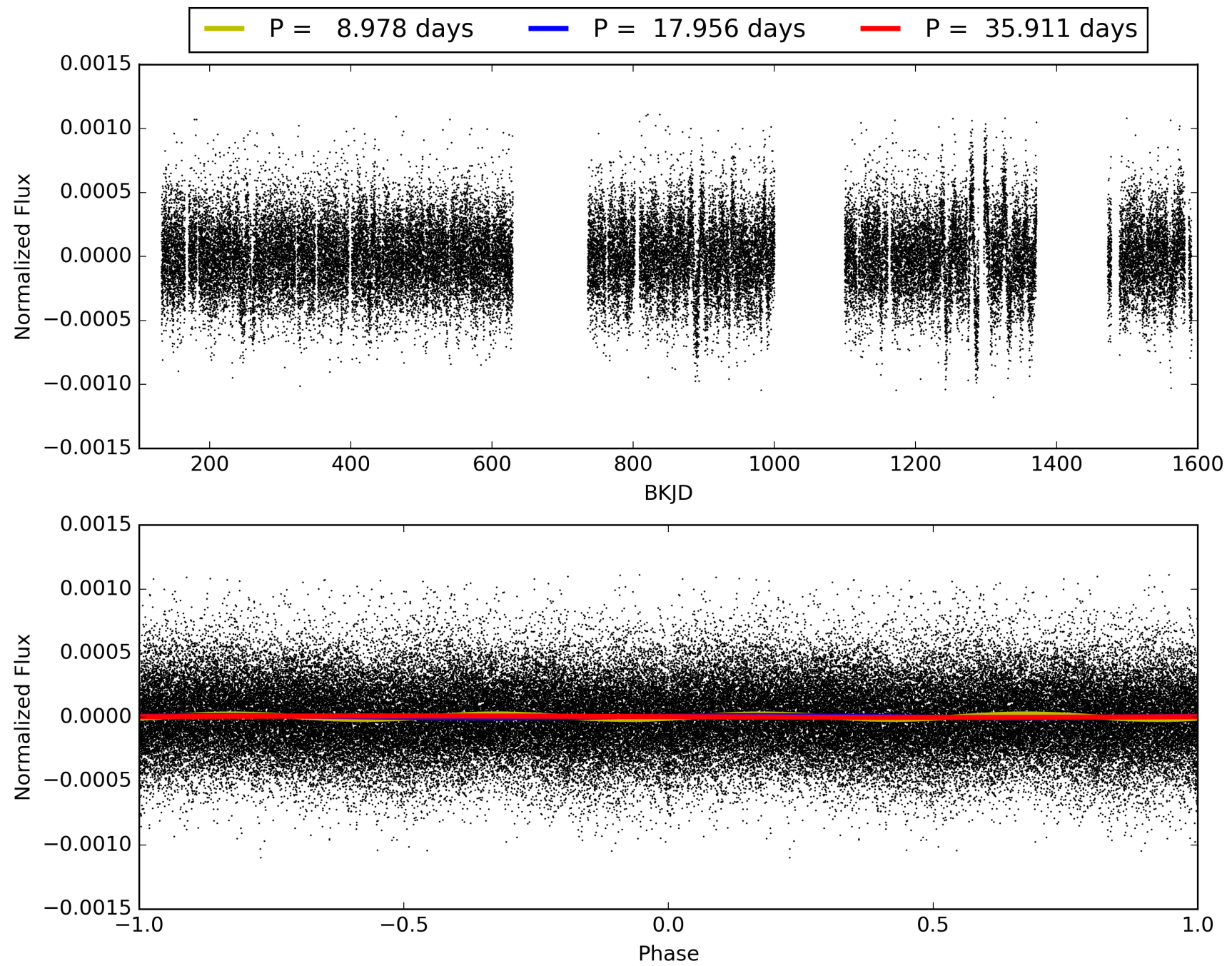
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [413.03σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.09e-26
RollingBand-fgt: 1.00 [57/57]
GhostDiagnostic-chr: 2.251
Centroid-sig: 2.0%
Centroid-so: 1.907 arcsec [1.48σ]
OotOffset-rm: 0.333 arcsec [0.65σ]
KicOffset-rm: 0.427 arcsec [0.87σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009966219-01, PDC Light Curves

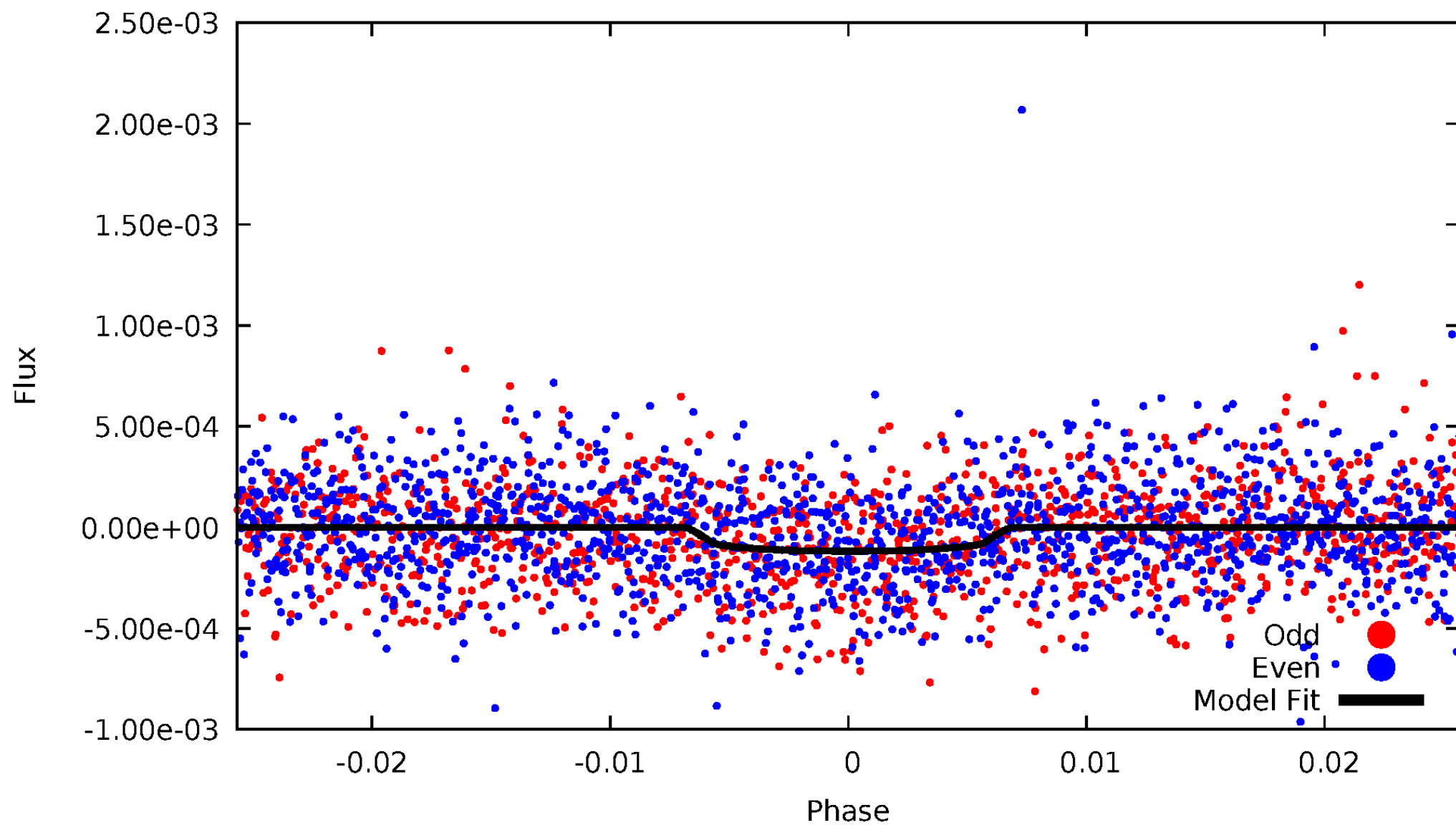


TCE 009966219-01



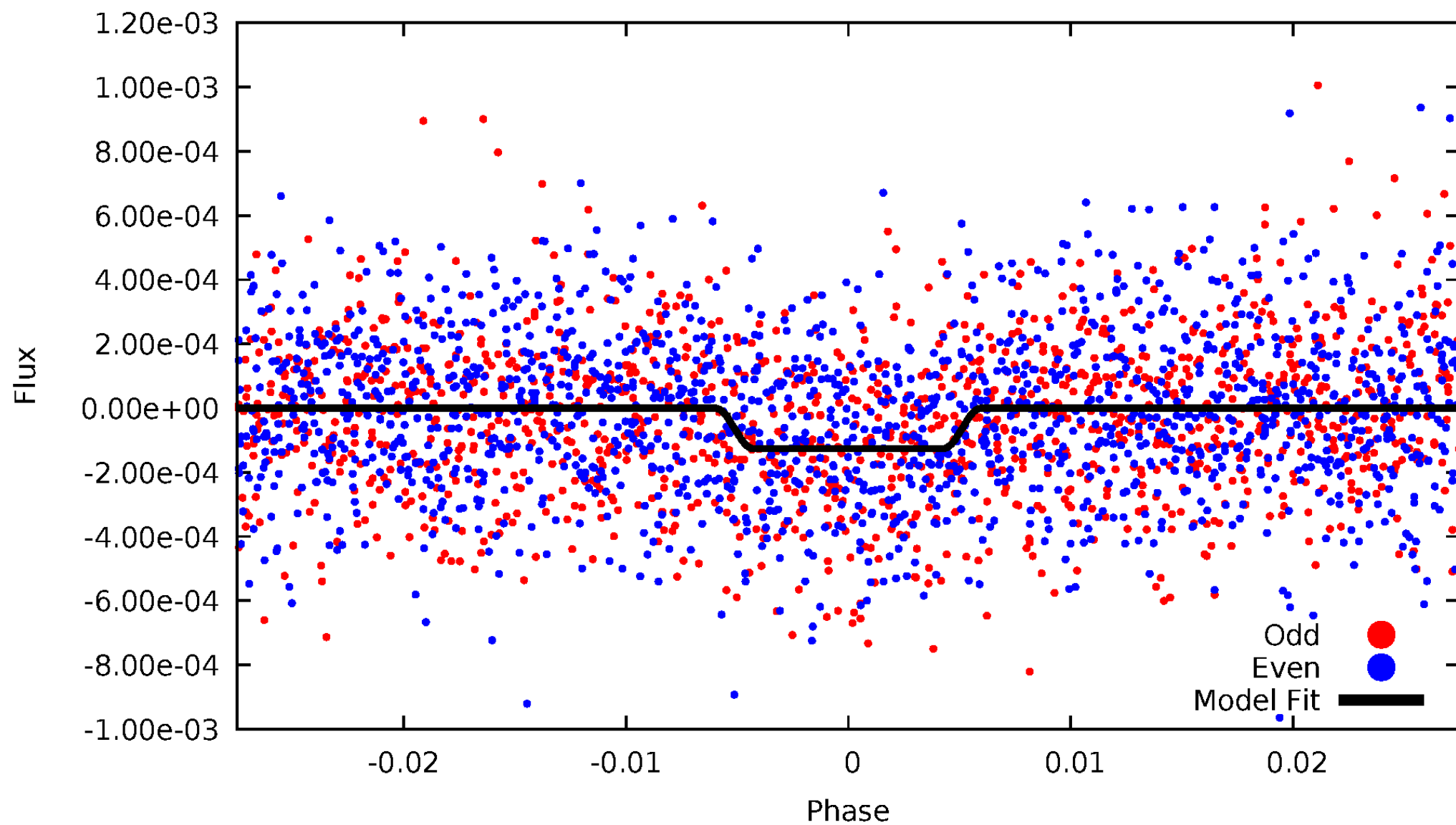
DV Odd/Even

TCE 009966219-01

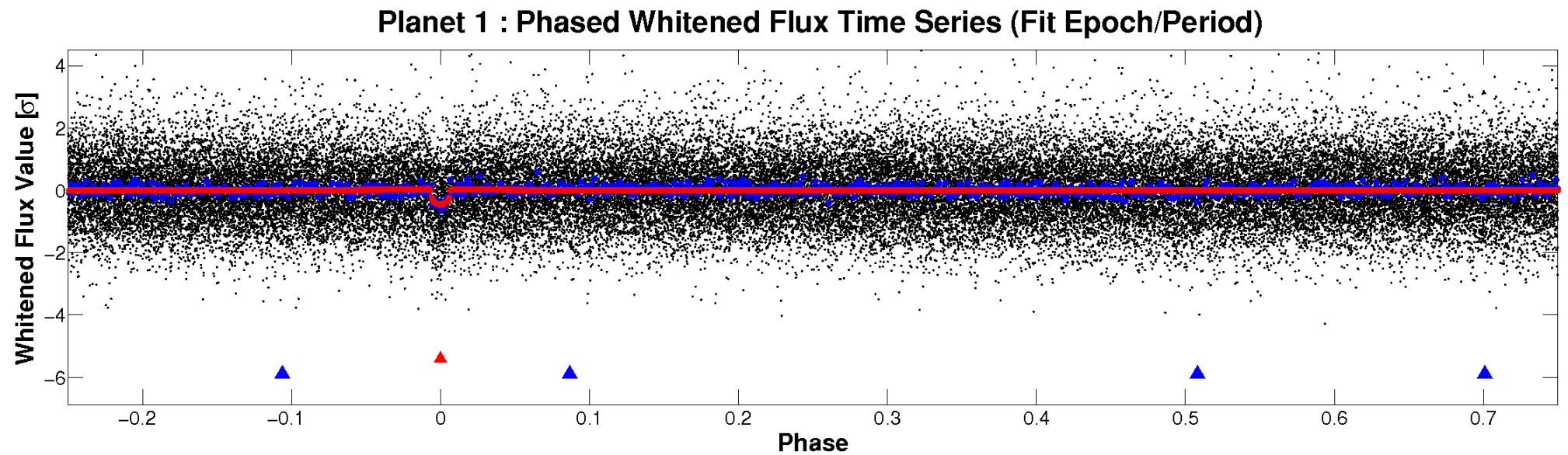
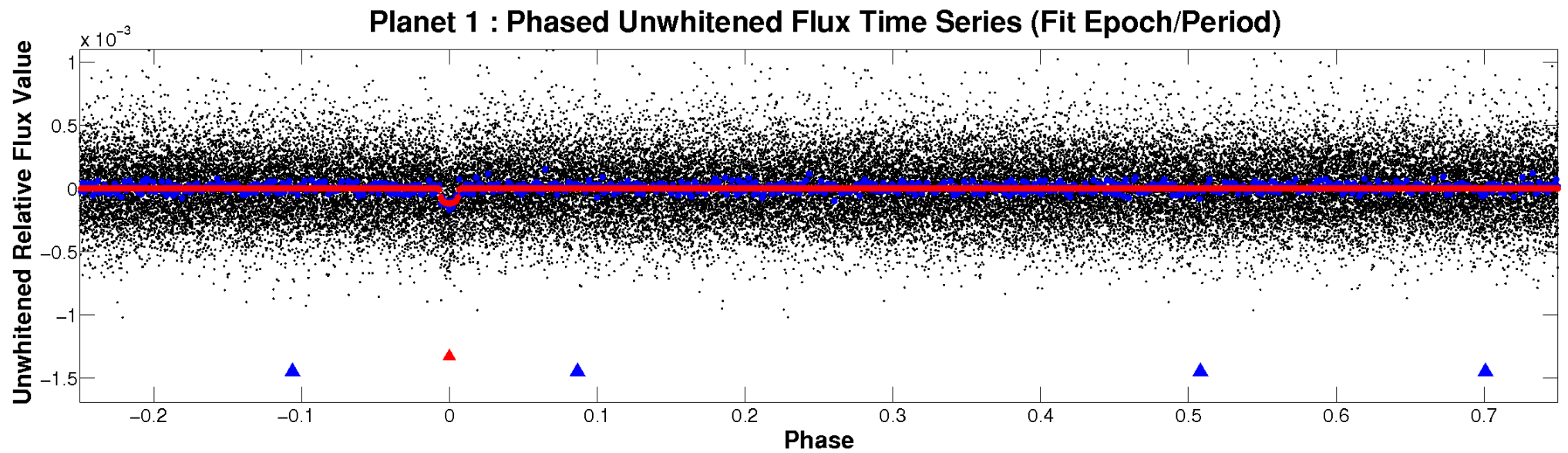


ALT Odd/Even

TCE 009966219-01

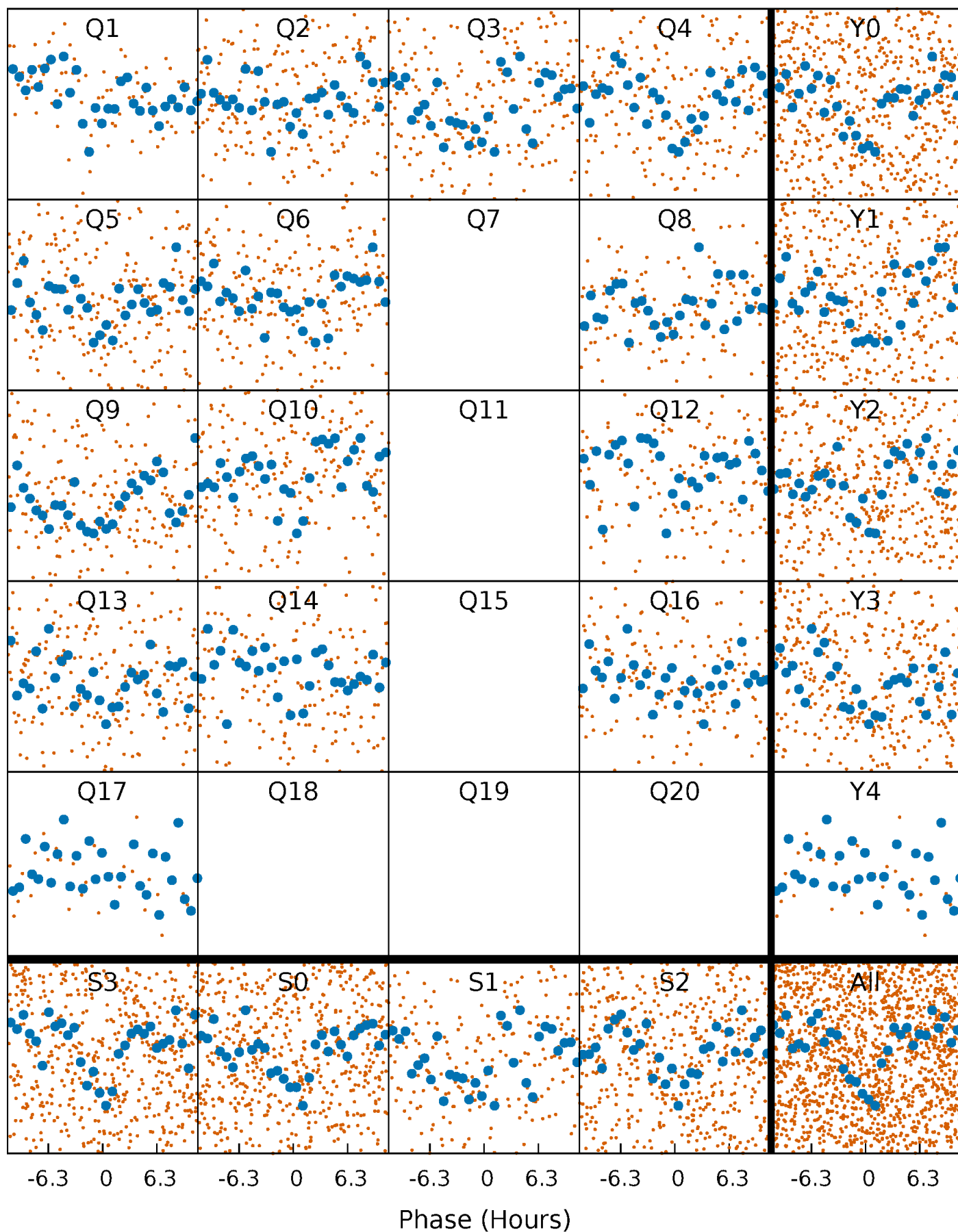


Non-Whitened Vs. Whitened Light Curve



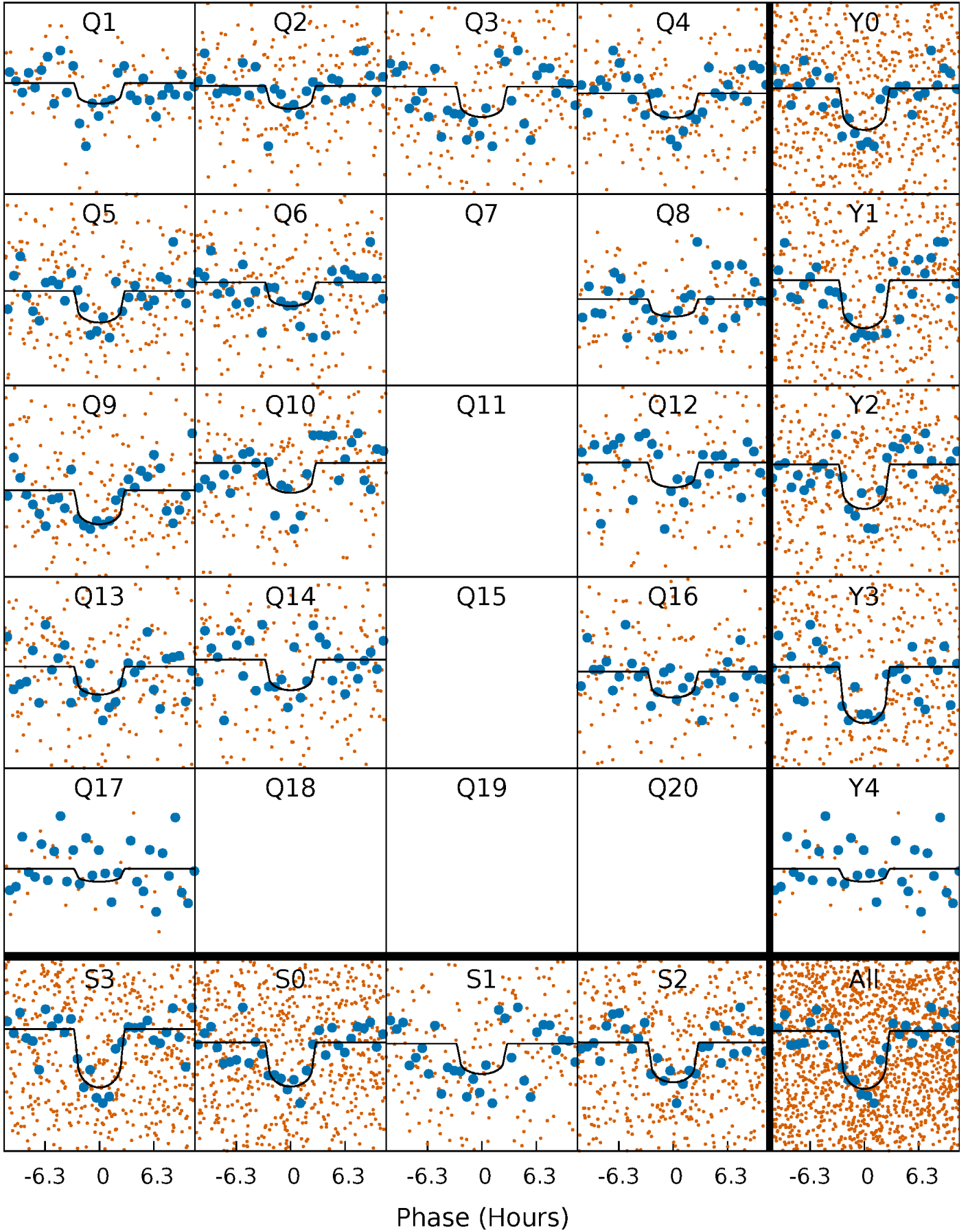
PDC Quarter-Phased Transit Curves

TCE 009966219-01 P= 17.955739 Days $T_0=139.051401$ (BKJD)



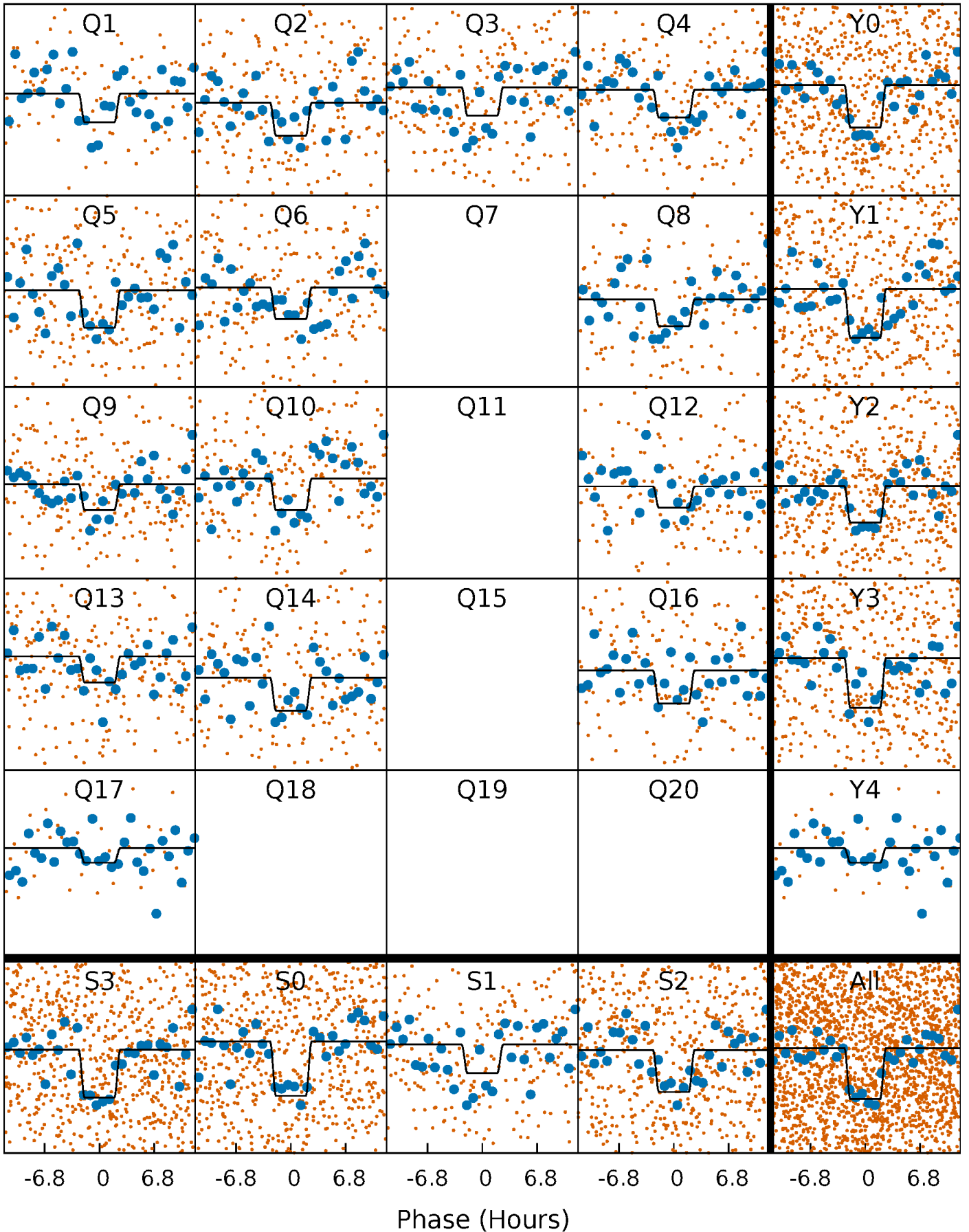
DV Quarter-Phased Transit Curves

TCE 009966219-01 P= 17.955739 Days $T_0=139.051401$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

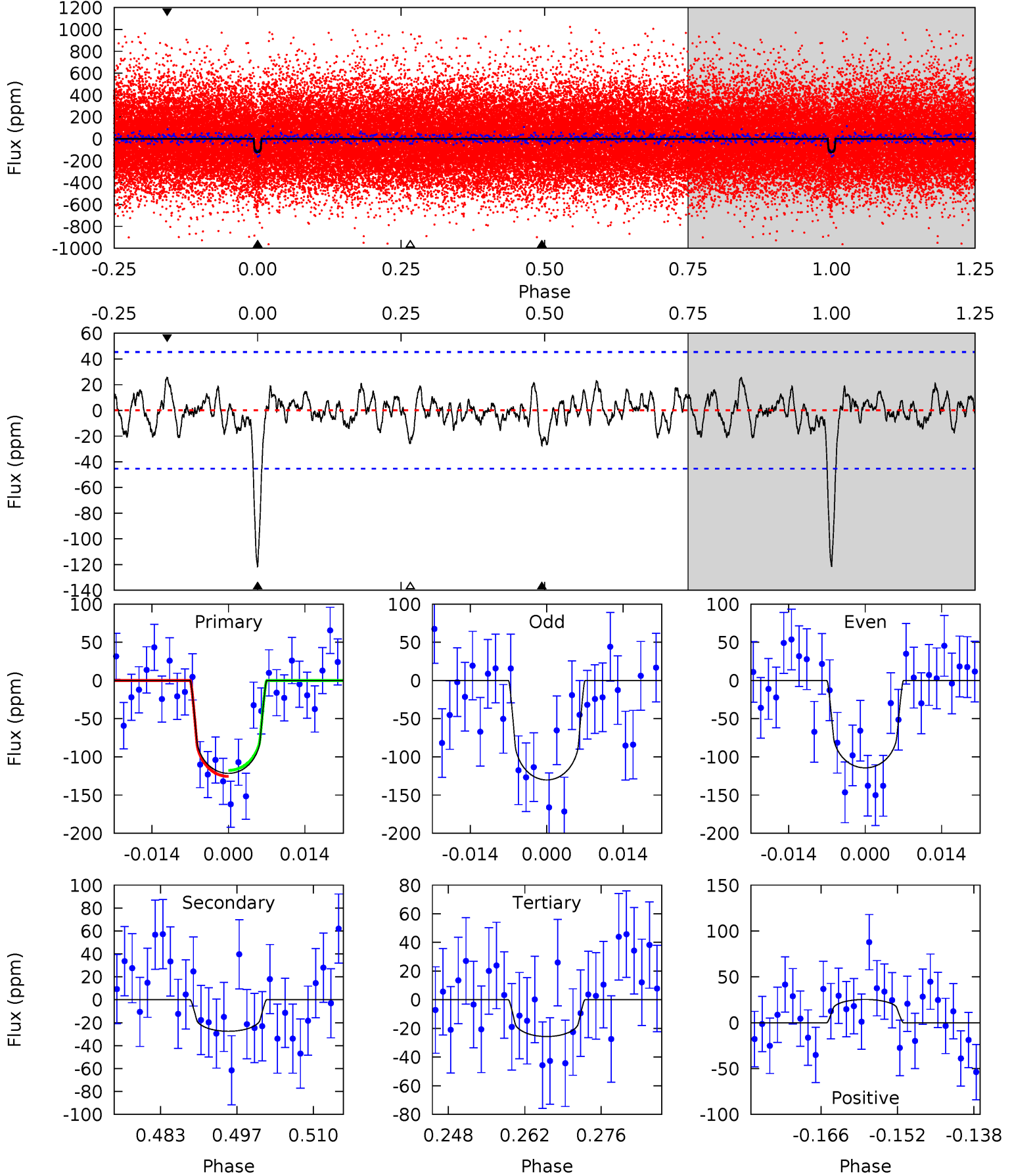
TCE 009966219-01 P= 17.955697 Days $T_0=139.046101$ (BKJD)



DV Model-Shift Uniqueness Test

009966219-01, $P = 17.955739$ Days, $E = 121.095662$ Days

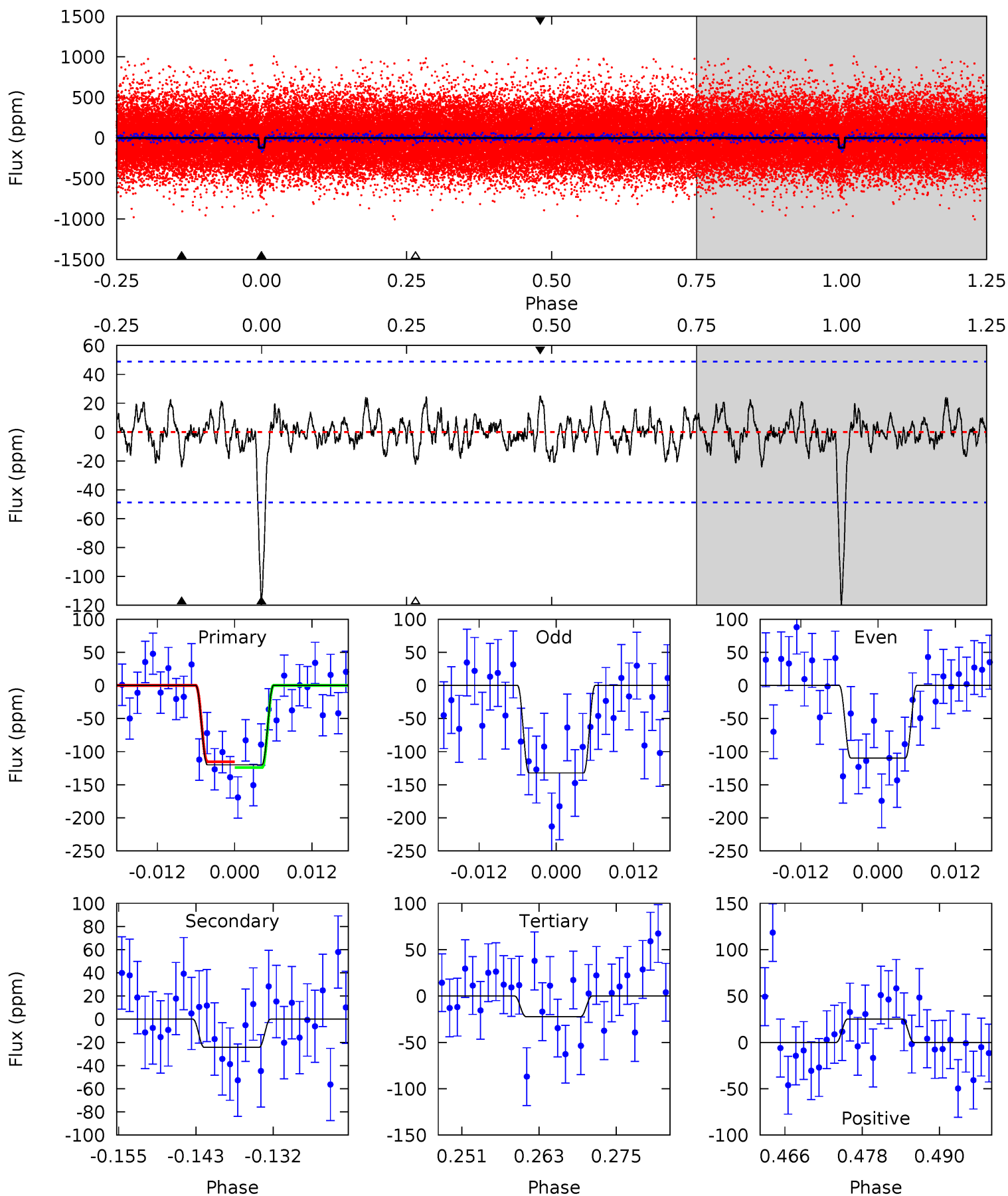
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	3.01	2.81	2.77	4.96	2.46	0.99	10.5	10.5	0.20	0.24	0.86	0.99	0.17	0.43



Alt Model-Shift Uniqueness Test

009966219-01, P = 17.955697 Days, E = 121.090404 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	2.49	2.27	2.57	4.99	2.51	0.91	10.00	9.70	0.22	-0.08	1.15	0.99	0.17	0.44



Stellar Parameters For KIC 009966219

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5641^{+76}_{-76}	$4.258^{+0.162}_{-0.108}$	$0.070^{+0.150}_{-0.150}$	$1.195^{+0.177}_{-0.196}$	$0.944^{+0.072}_{-0.052}$	$0.778^{+0.614}_{-0.251}$
	+1%/-1%	+4%/-3%	+214%/-214%	+15%/-16%	+8%/-6%	+79%/-32%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009966219-01 / KOI 3401.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 9	$1.53^{+1.04}_{-0.89}$	1044^{+45}_{-51}	3988^{+1708}_{-691}	104^{+519}_{-71}
Alt.	-24 ± 10	$1.67^{+1.08}_{-0.99}$	1043^{+48}_{-46}	3825^{+1532}_{-631}	82^{+416}_{-56}

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 $A_{obs} \gg 1.0$

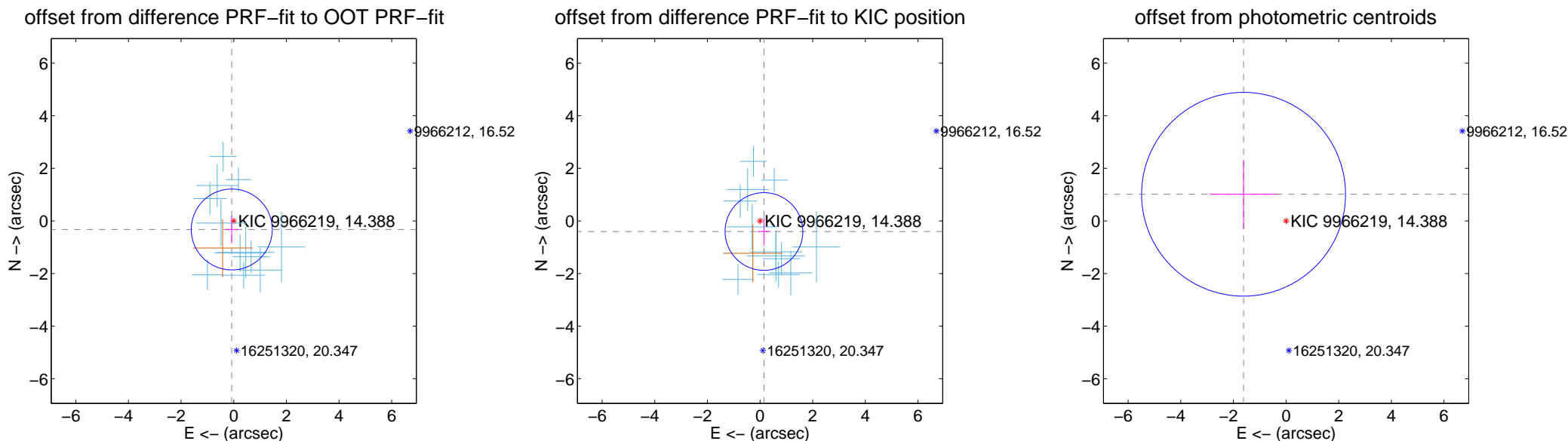
DV Centroid Data

Supplemental centroid analysis for 009966219-01. Kepler magnitude: 14.39. Transit SNR 9.67

There are 12 quarters with good PRF difference image offsets

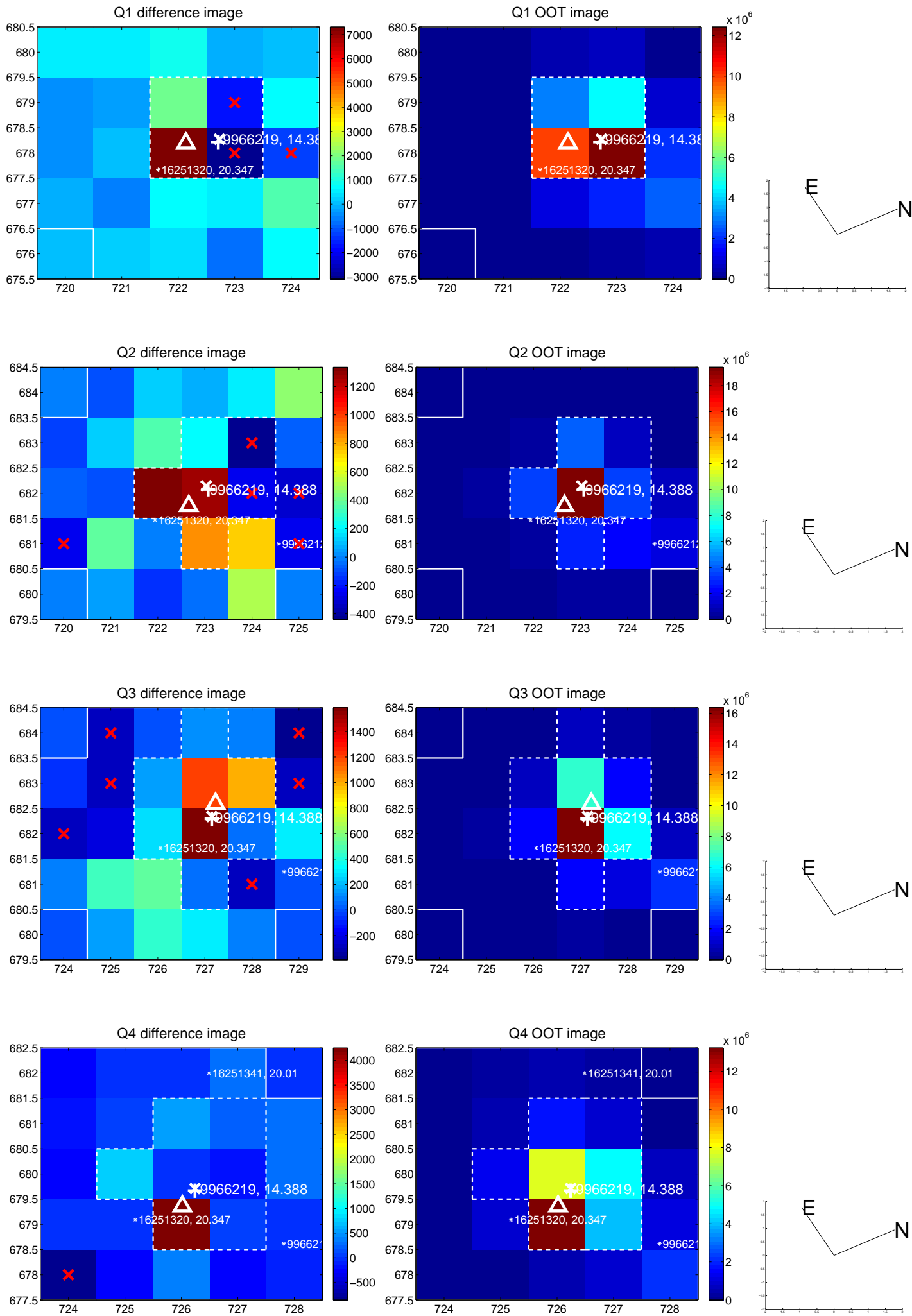
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.333 ± 0.513	0.65	0.076 ± 0.246	-0.324 ± 0.523
PRF-fit source offset from KIC position	0.427 ± 0.492	0.87	-0.148 ± 0.255	-0.401 ± 0.516
photometric centroid source offset	1.91 ± 1.29	1.48	1.61 ± 1.29	1.01 ± 1.30

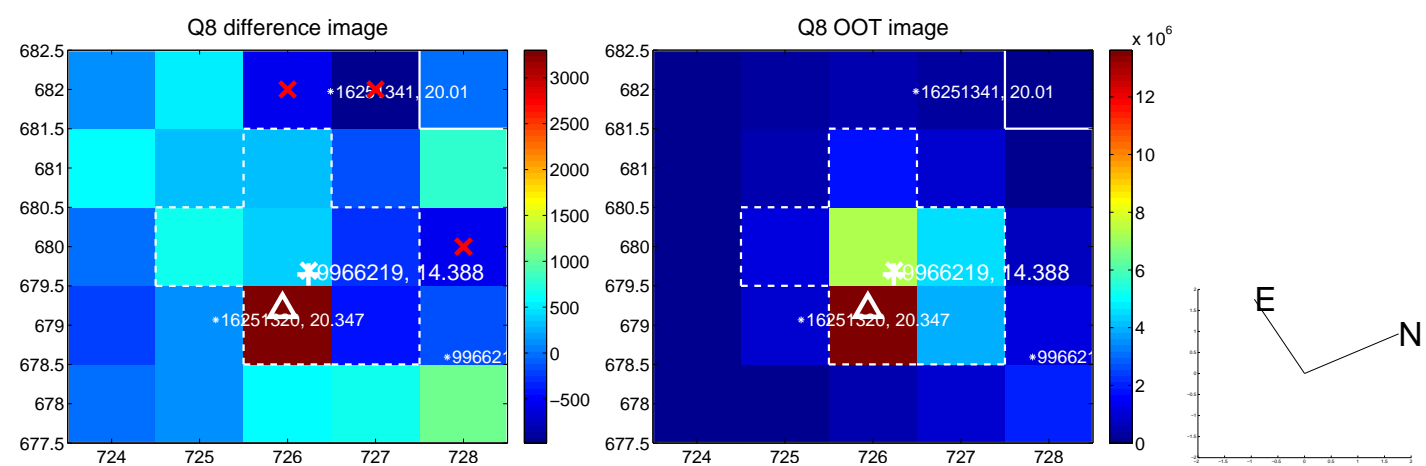
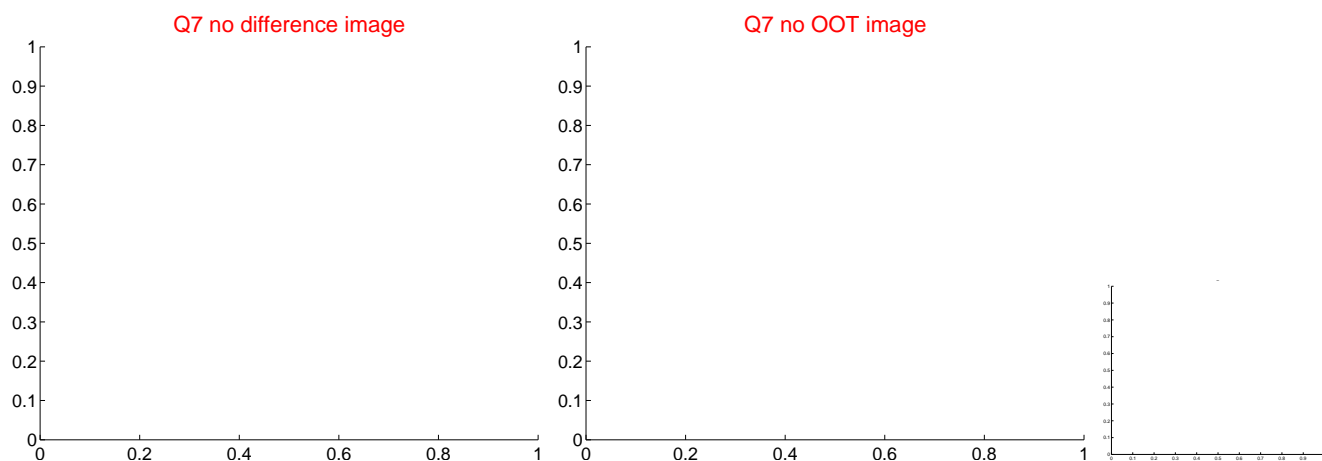
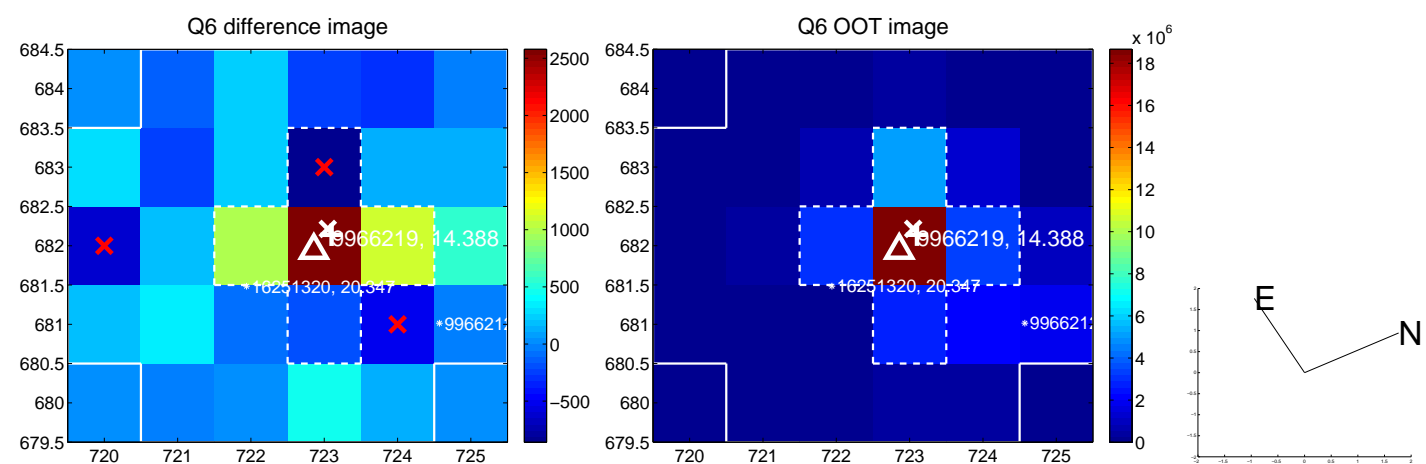
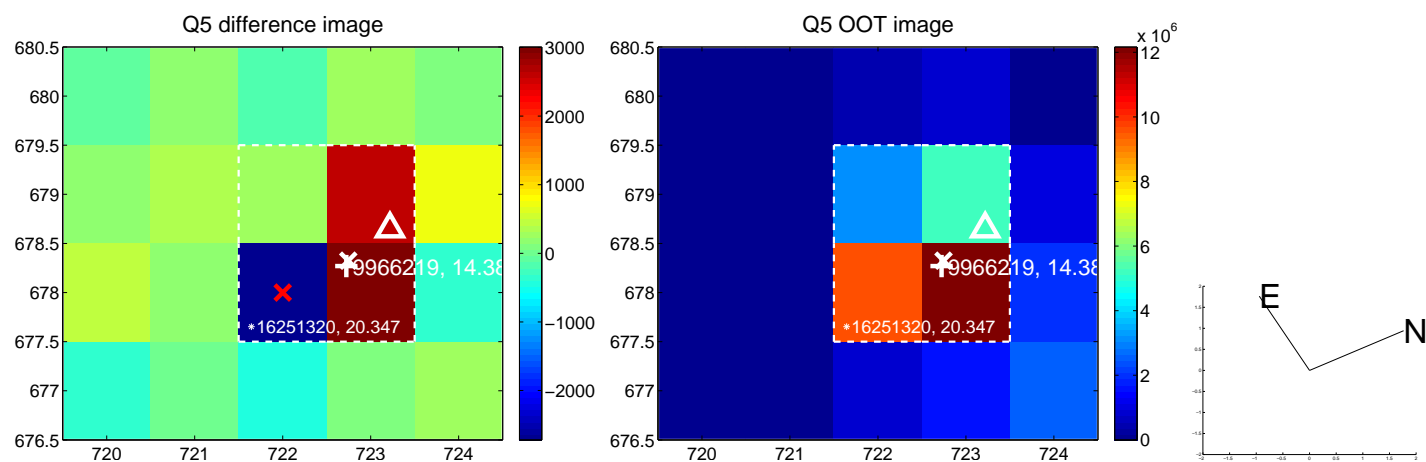


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

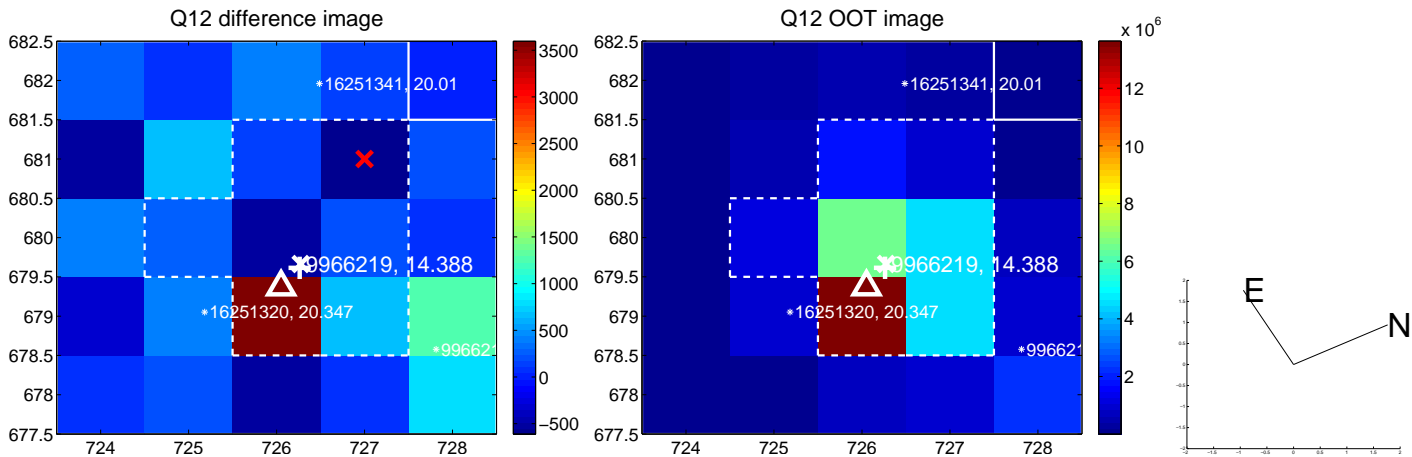
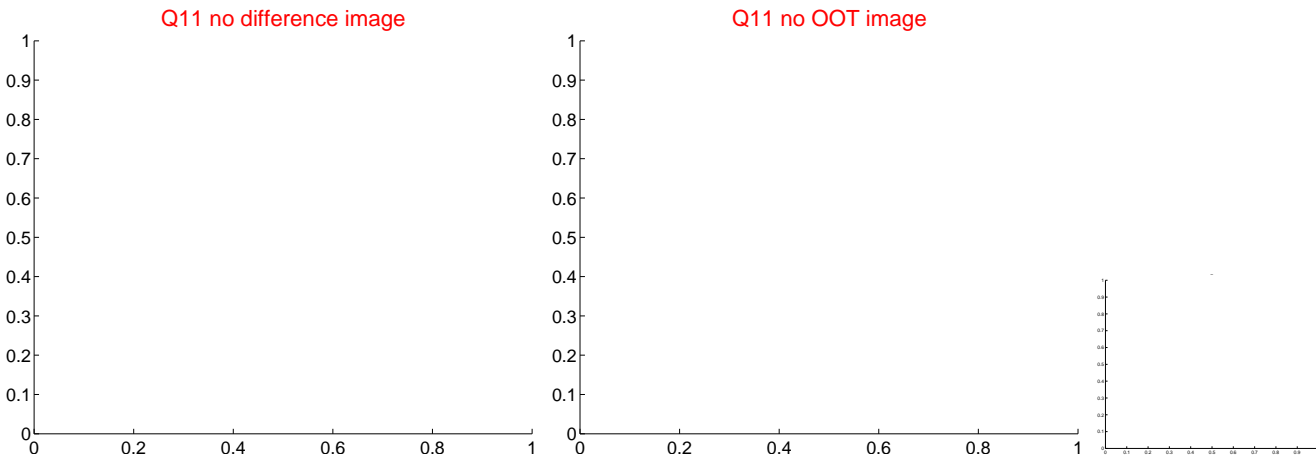
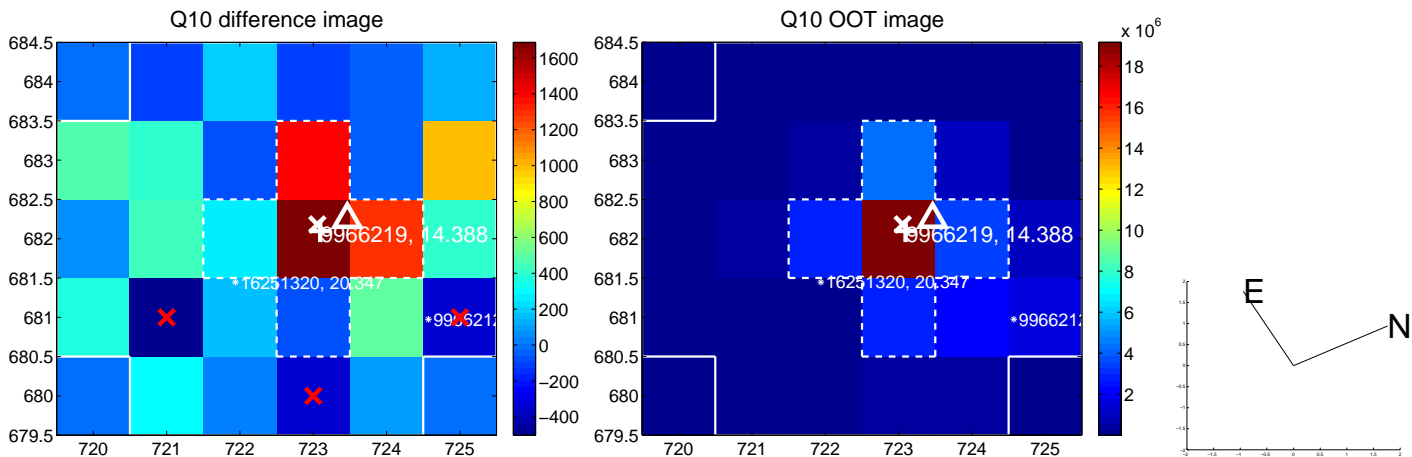
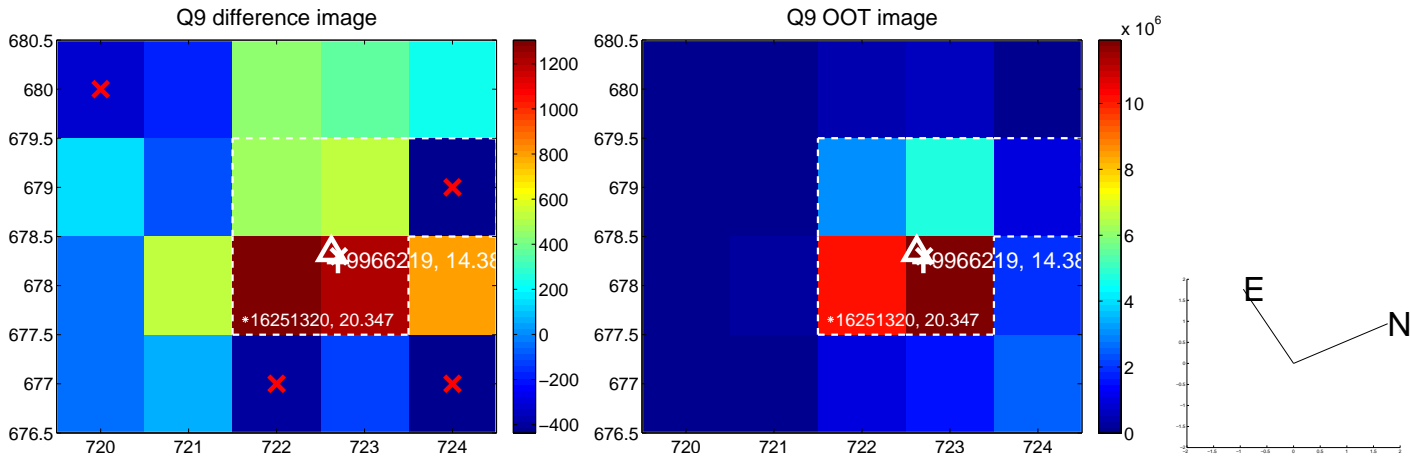
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



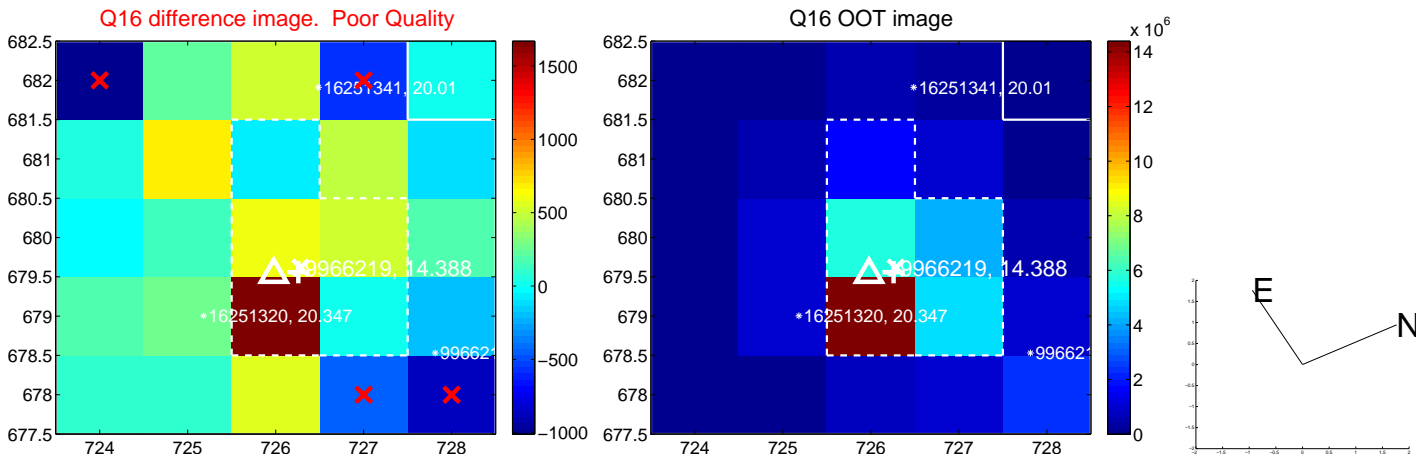
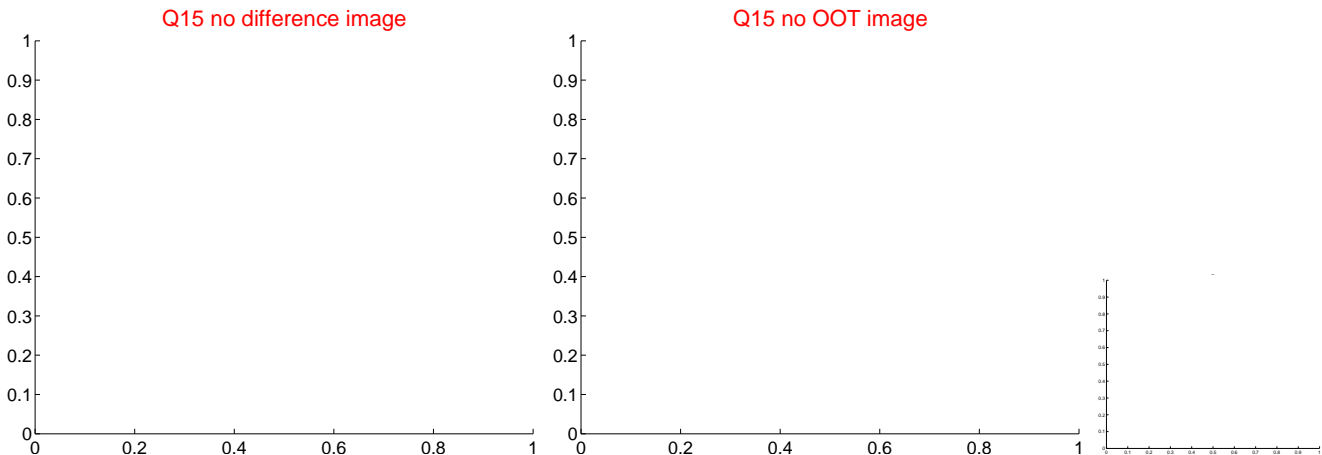
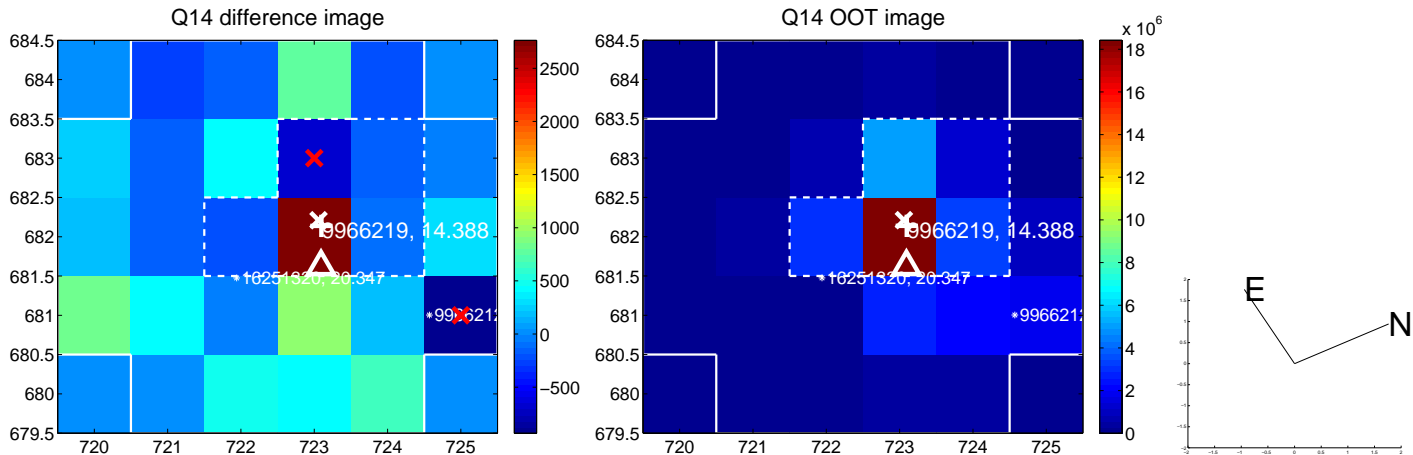
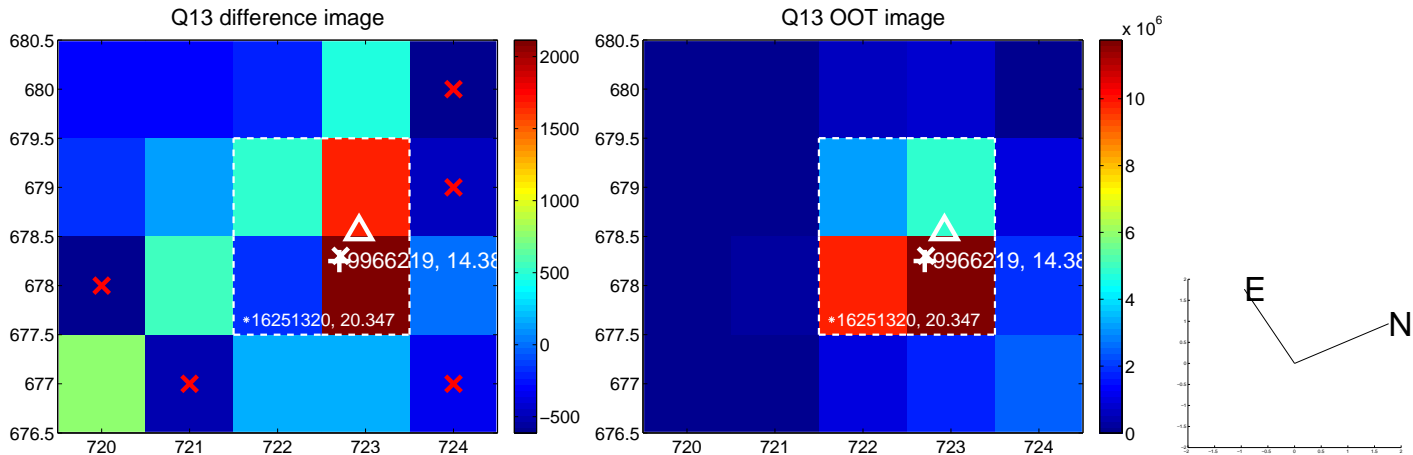
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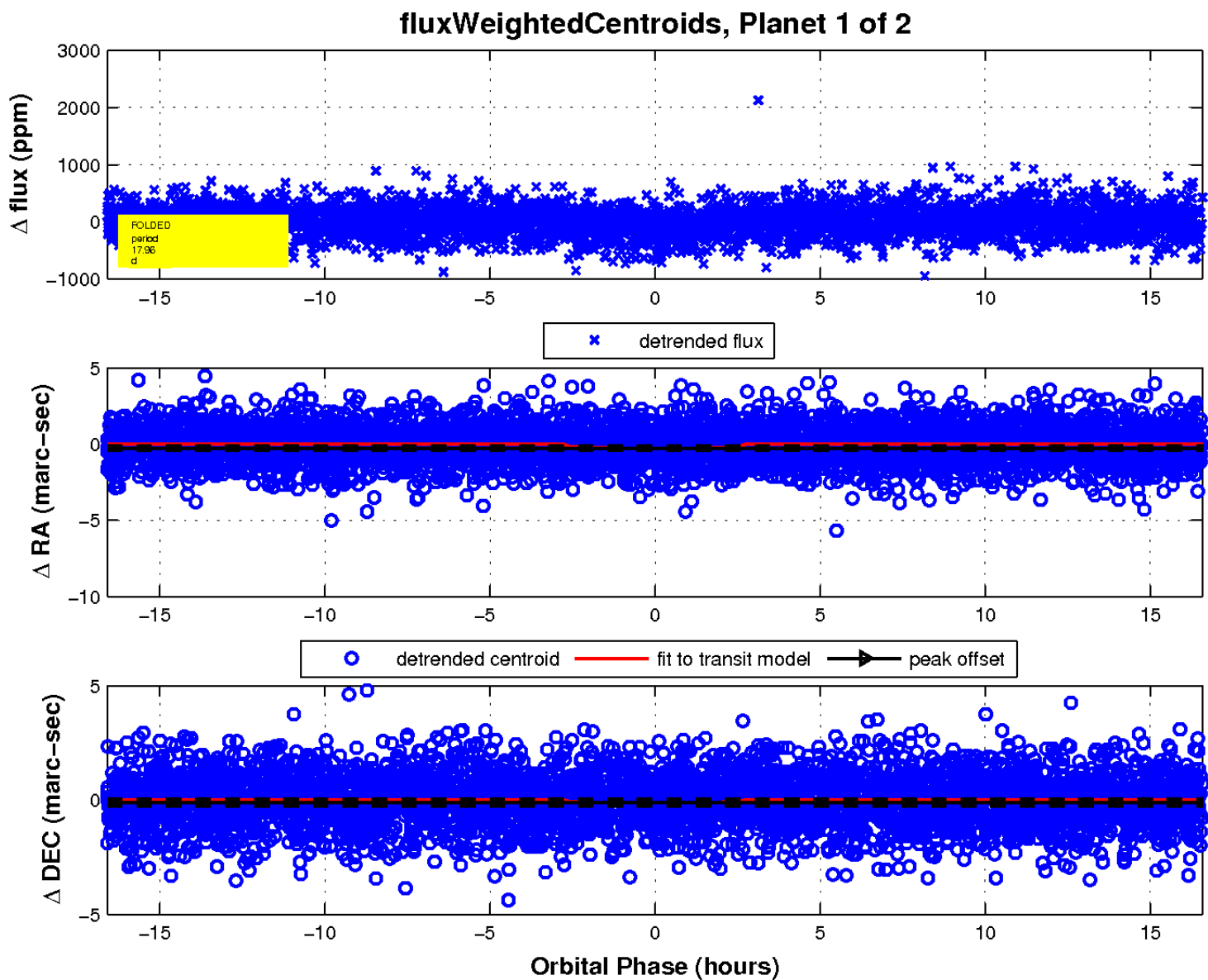
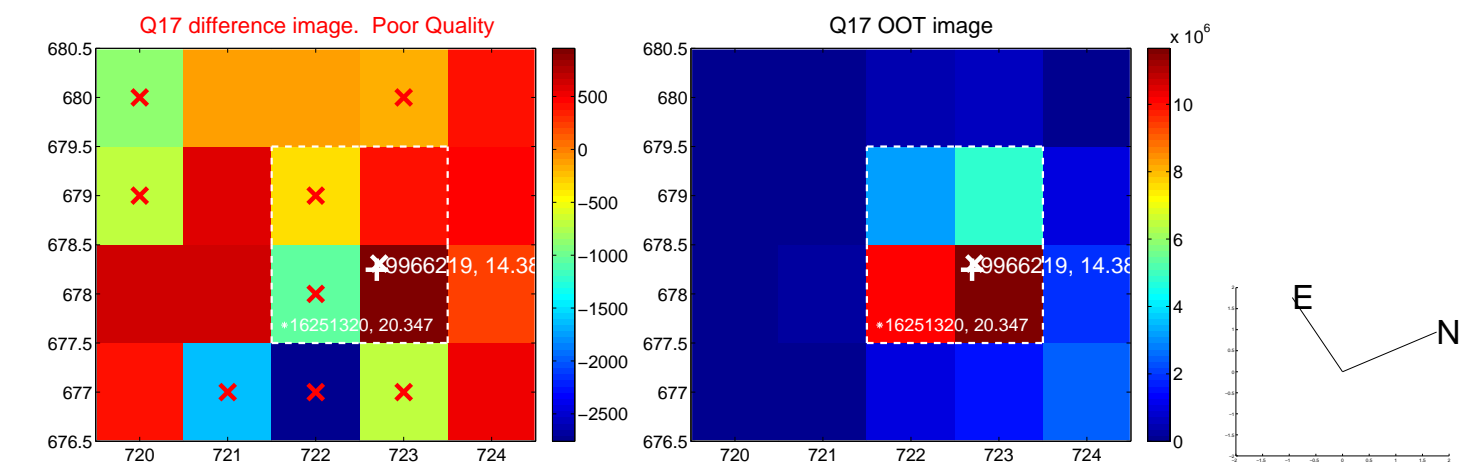
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UKIRT Image

Declination

