

KIC 008158429

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})
008158429-01	OBS	5482.01	31.707632	138.262264	554.0	6.709	16.7	17.7	0.86	5861	2.27	21.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008158429-01	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.

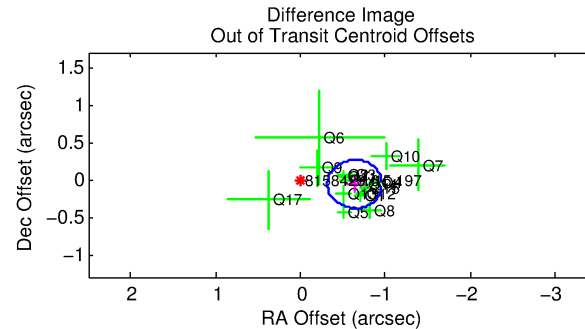
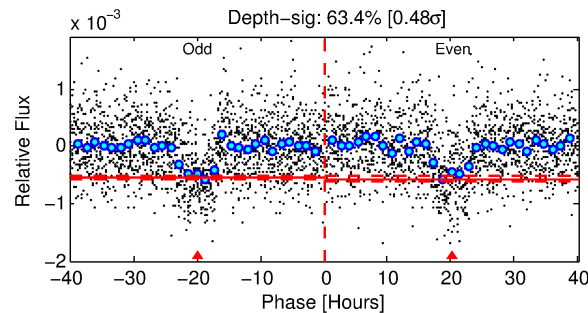
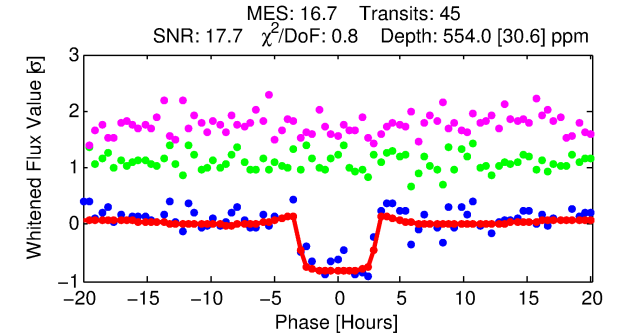
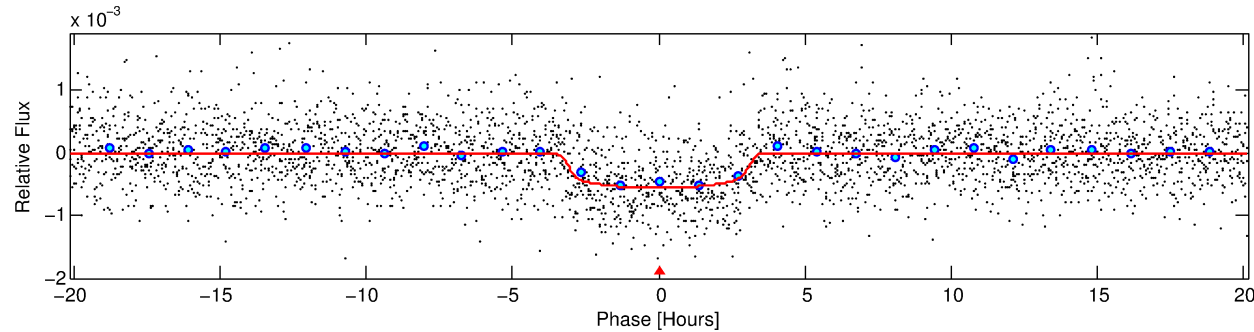
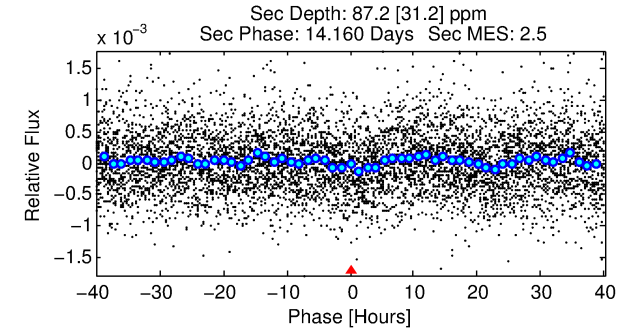
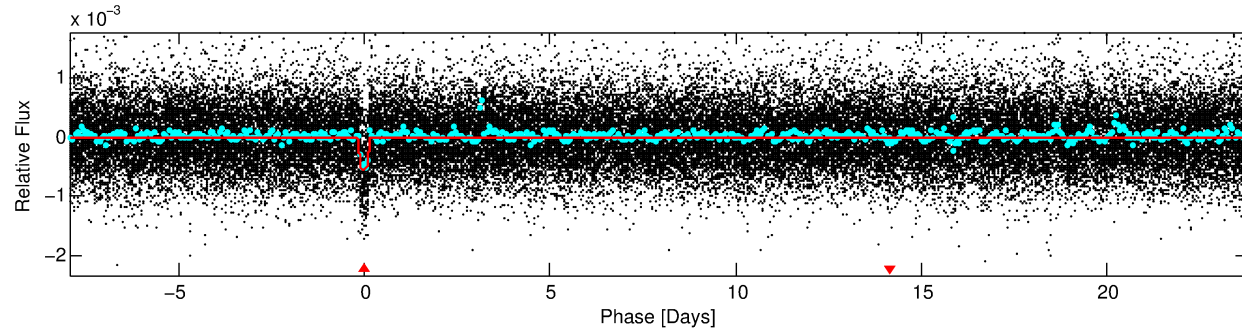
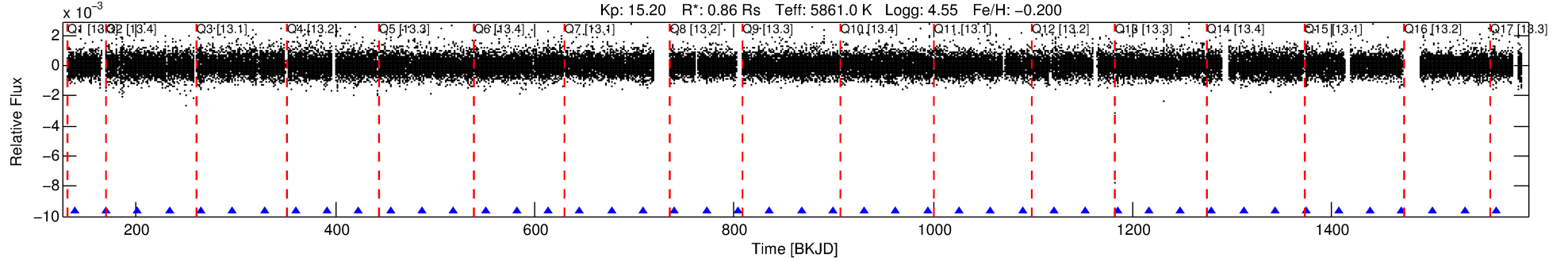
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008158429-01

No Significant Match Found

DV One-Page Summary

KIC: 8158429 Candidate: 1 of 1 Period: 31.708 d
KOI: K05482.01 Corr: 0.758



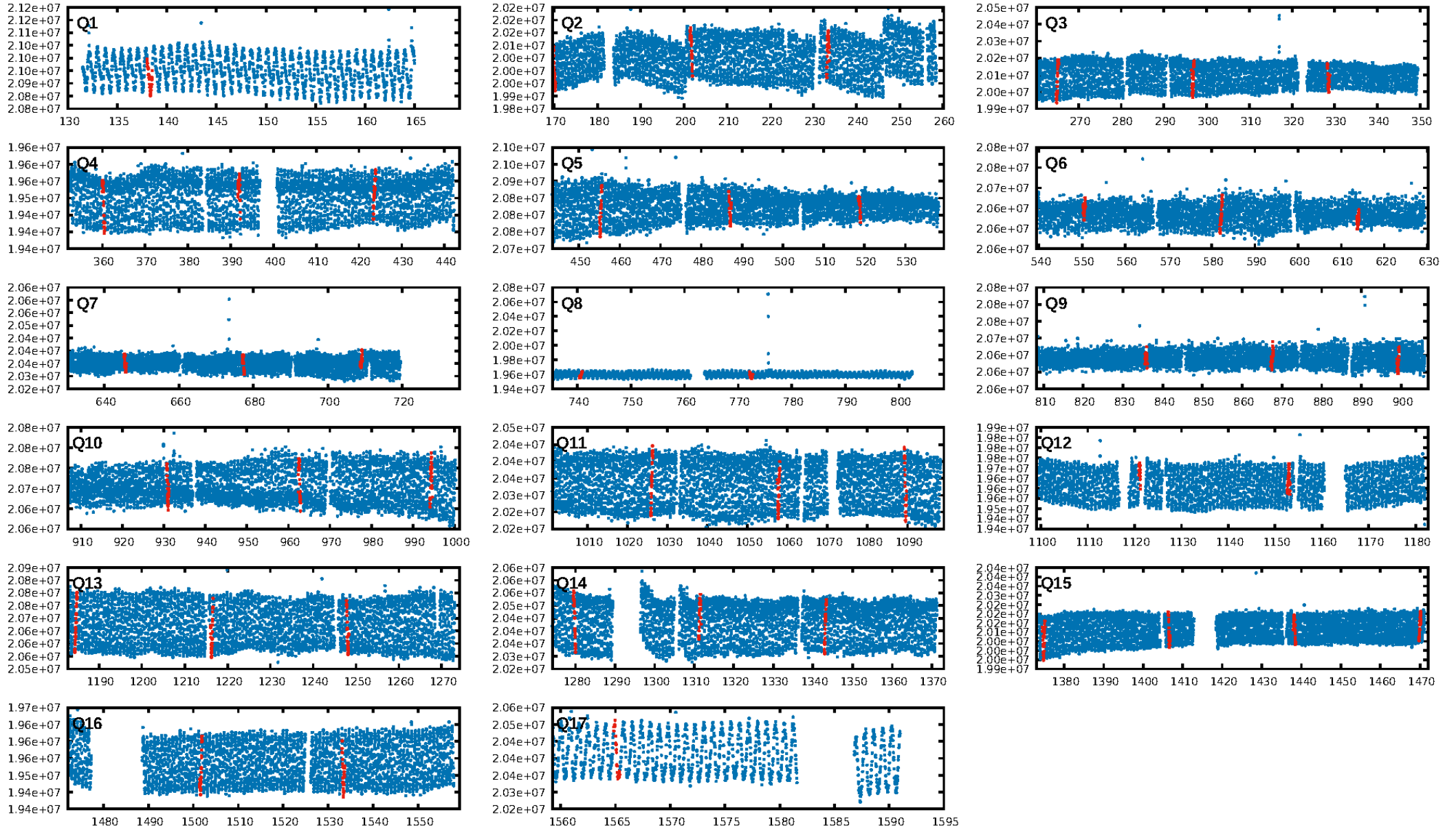
DV Fit Results:

Period = 31.70763 [0.00020] d
Epoch = 138.2623 [0.0055] BKJD
Rp/R* = 0.0241 [0.0032]
a/R* = 22.34 [13.62]
b = 0.82 [0.25]
Seff = 21.15 [8.29]
Teq = 547 [54] K
Rp = 2.27 [0.76] Re
a = 0.1934 [0.0495] AU
Ag = 346.86 [202.07] [1.71σ]
Teffp = 3649 [423] K [7.28σ]

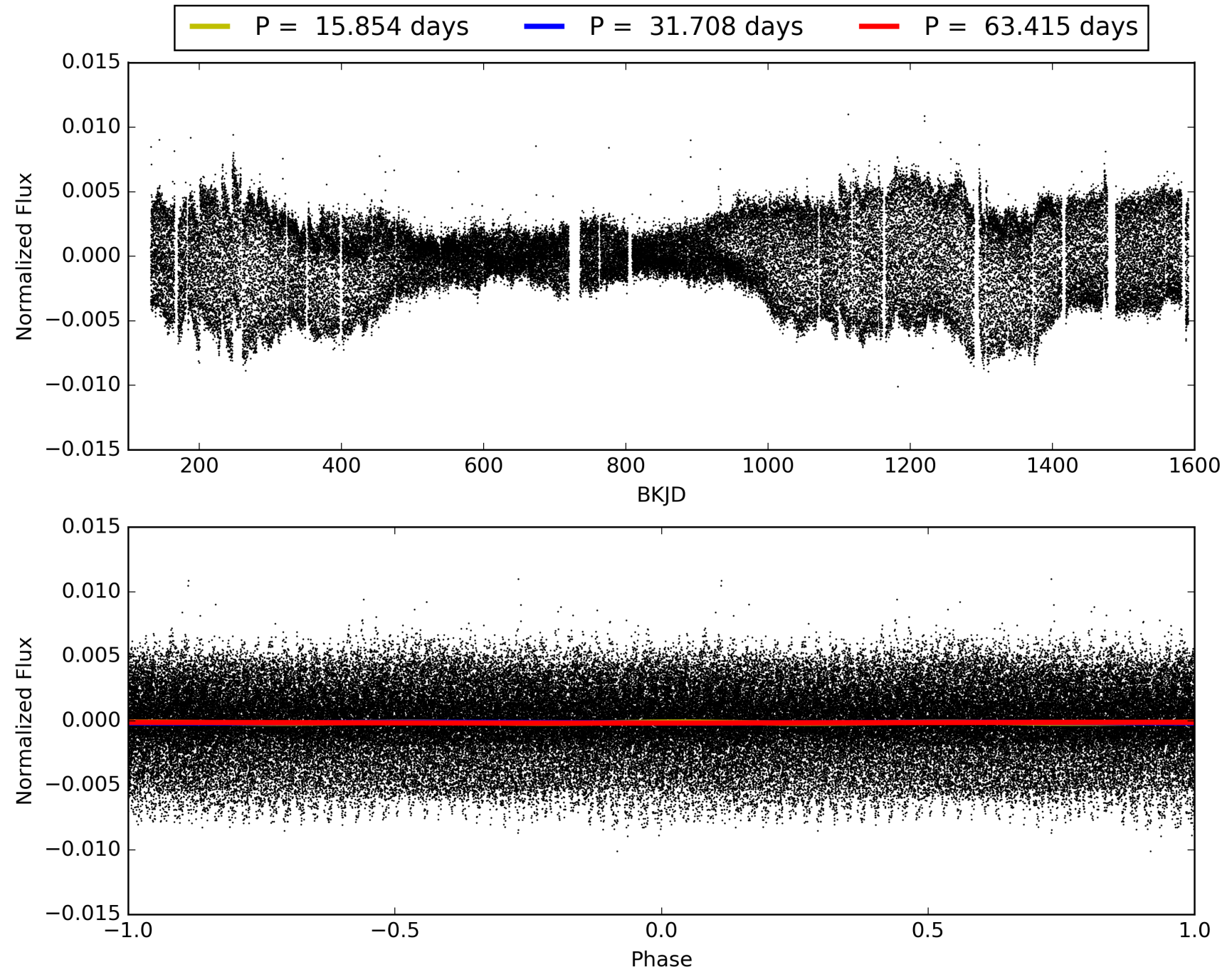
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.84e-58
RollingBand-fgt: 1.00 [43/43]
GhostDiagnostic-chr: 2.829
Centroid-sig: 4.0%
Centroid-so: 0.765 arcsec [1.45σ]
OotOffset-rm: 0.646 arcsec [6.02σ]
KicOffset-rm: 0.631 arcsec [5.47σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008158429-01, PDC Light Curves

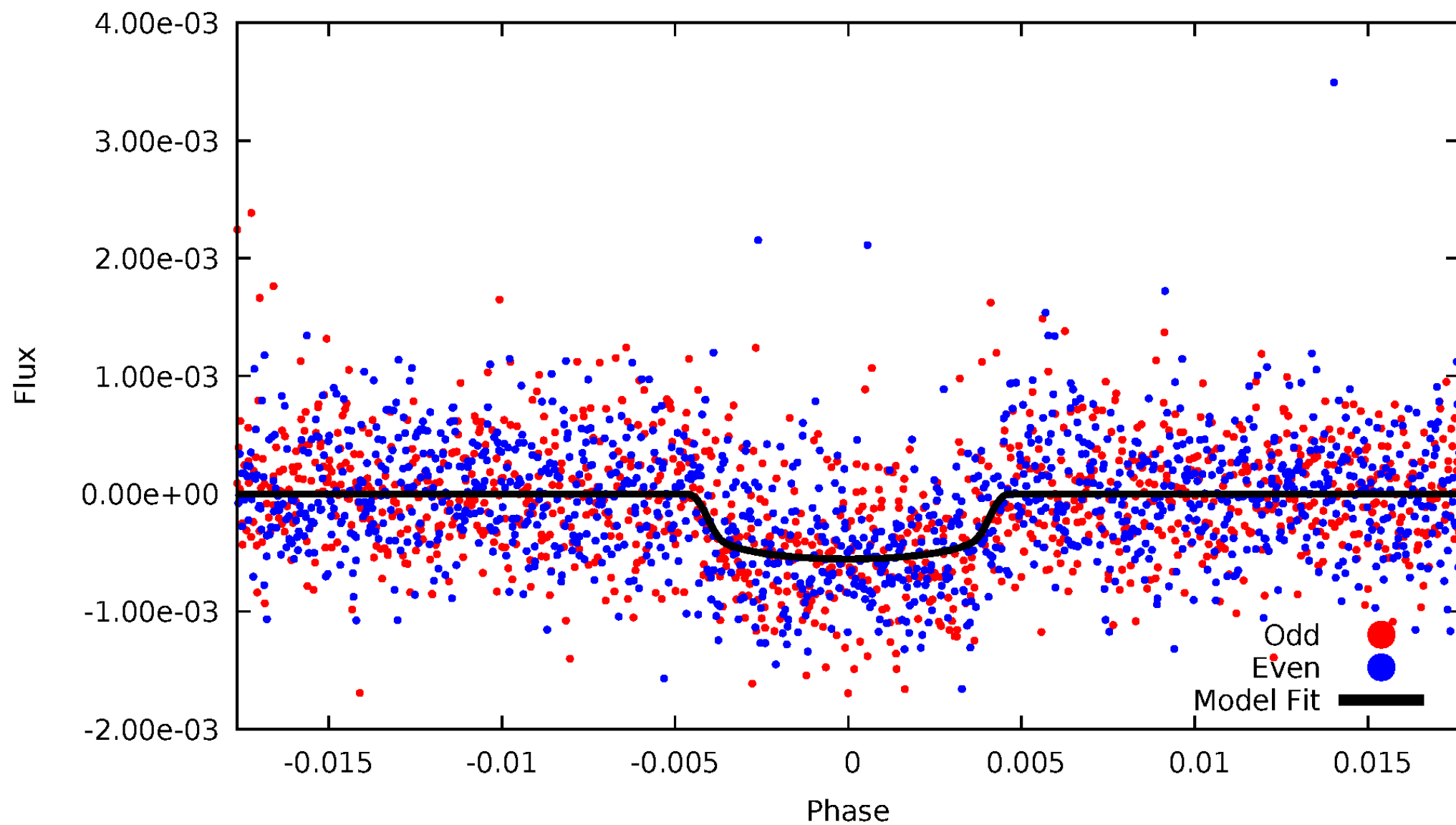


TCE 008158429-01



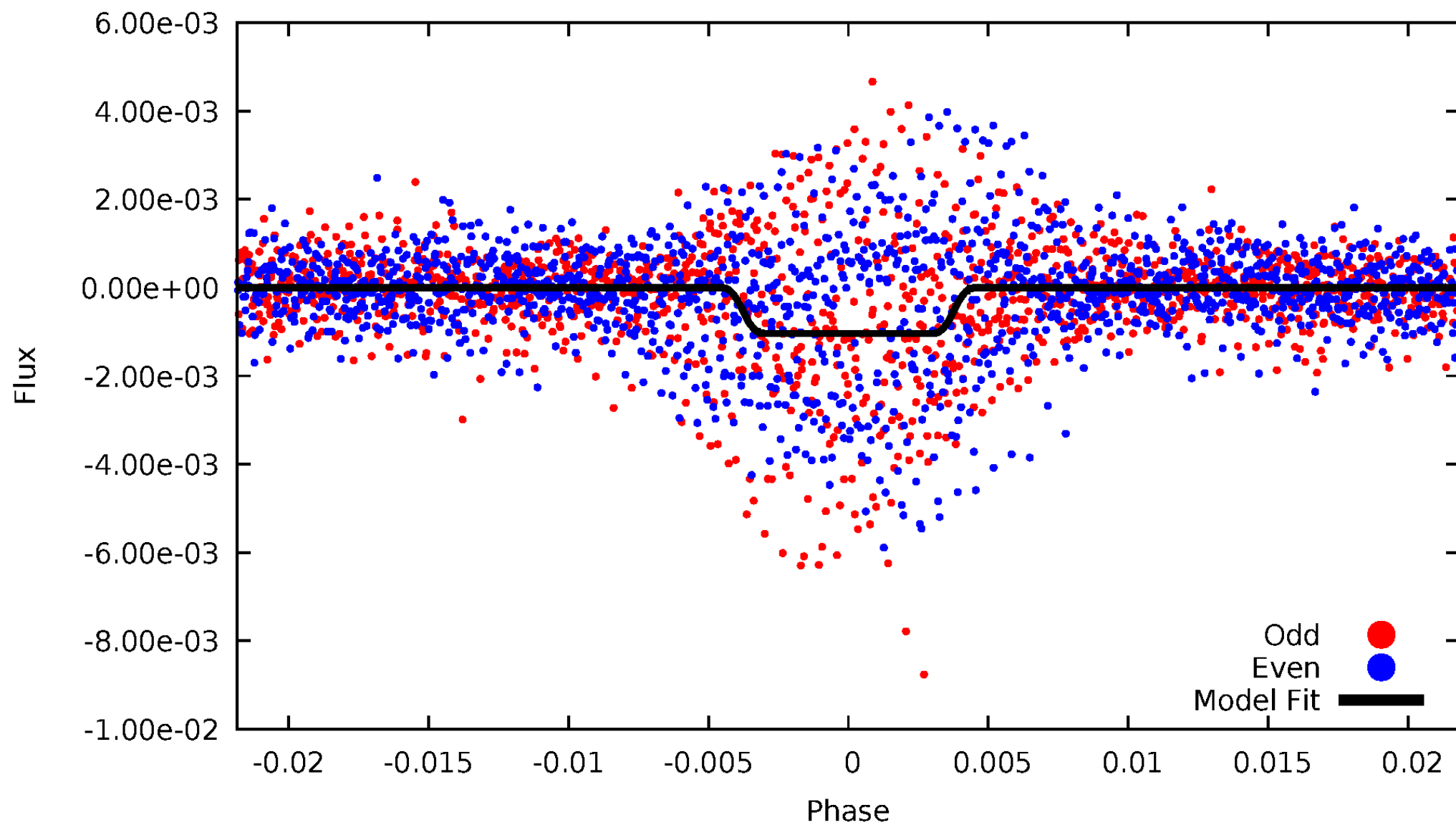
DV Odd/Even

TCE 008158429-01

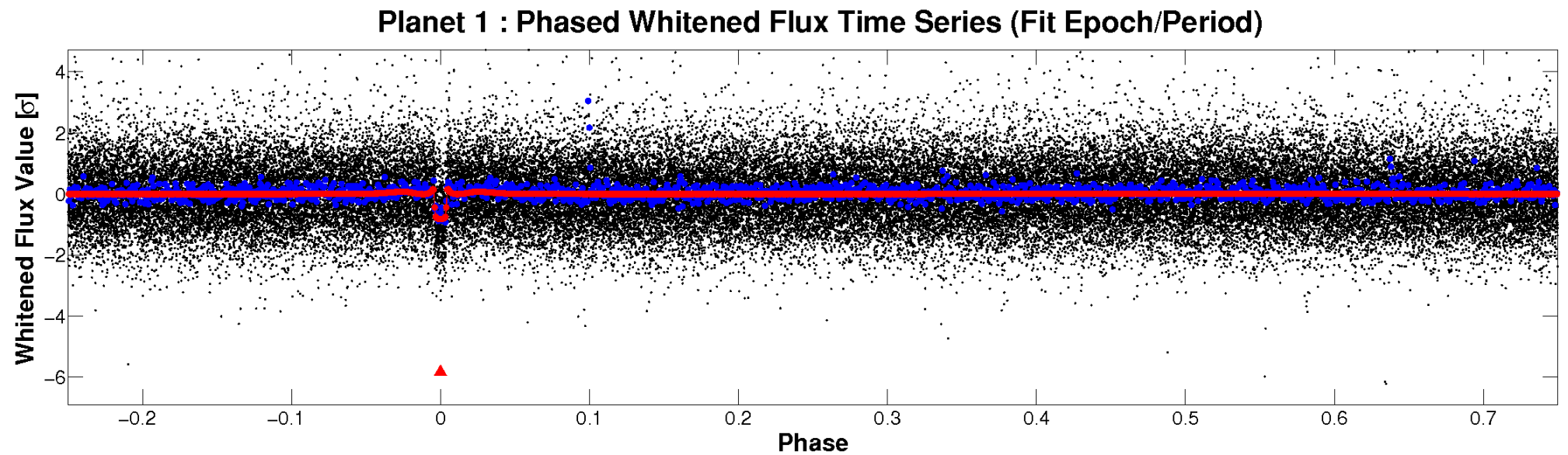
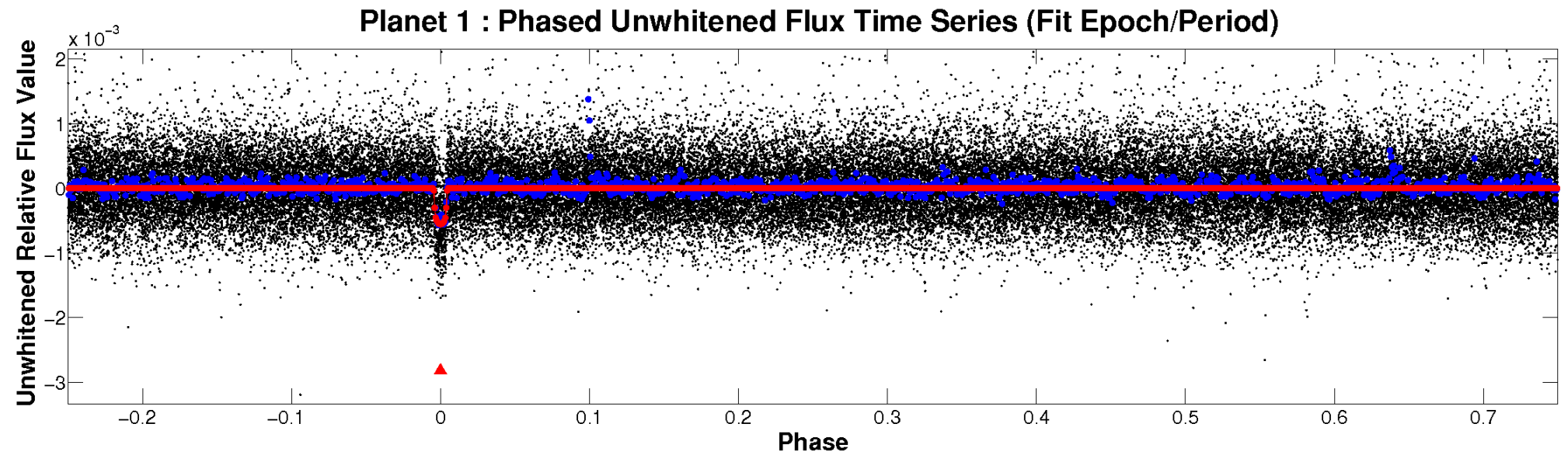


ALT Odd/Even

TCE 008158429-01

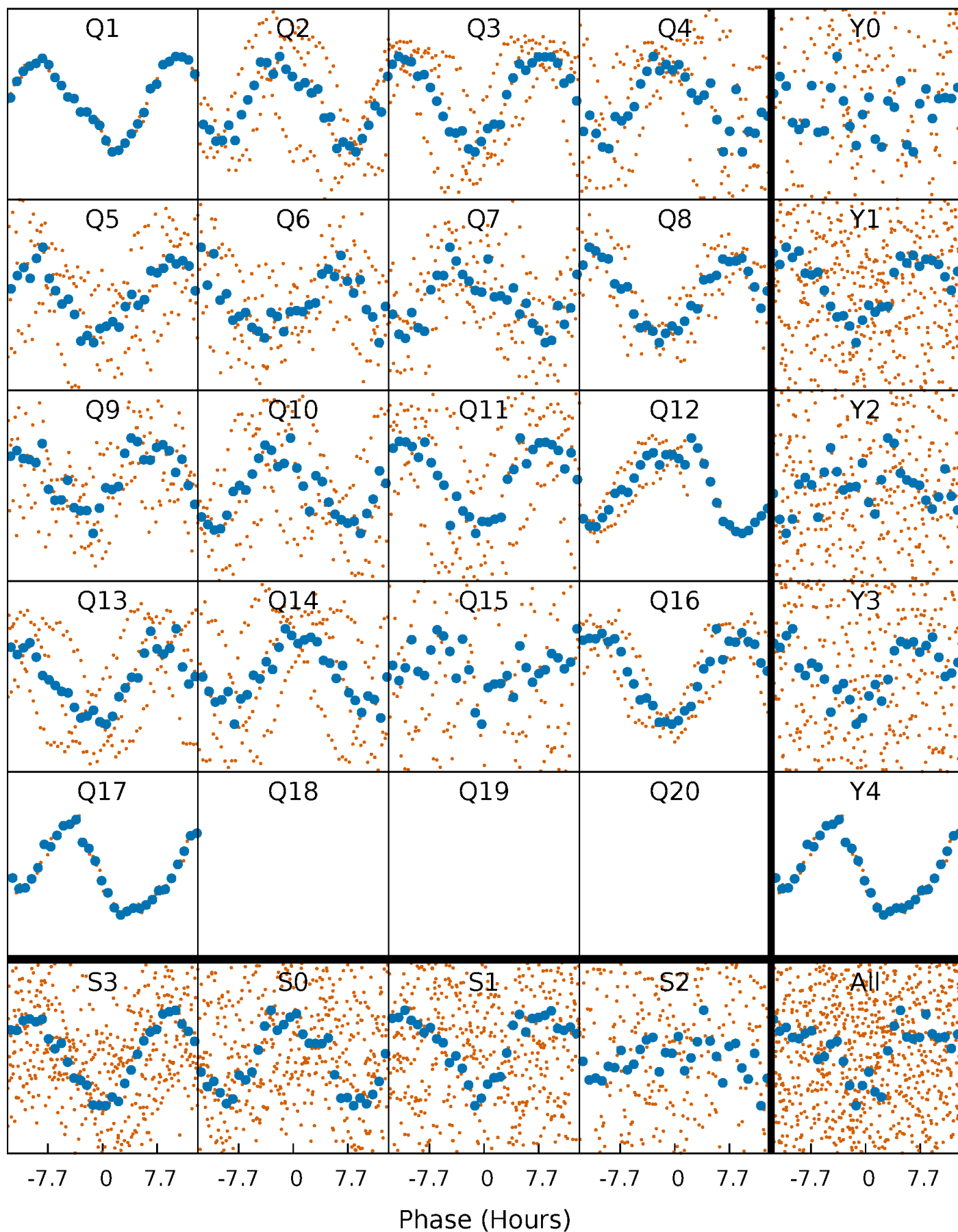


Non-Whitened Vs. Whitened Light Curve



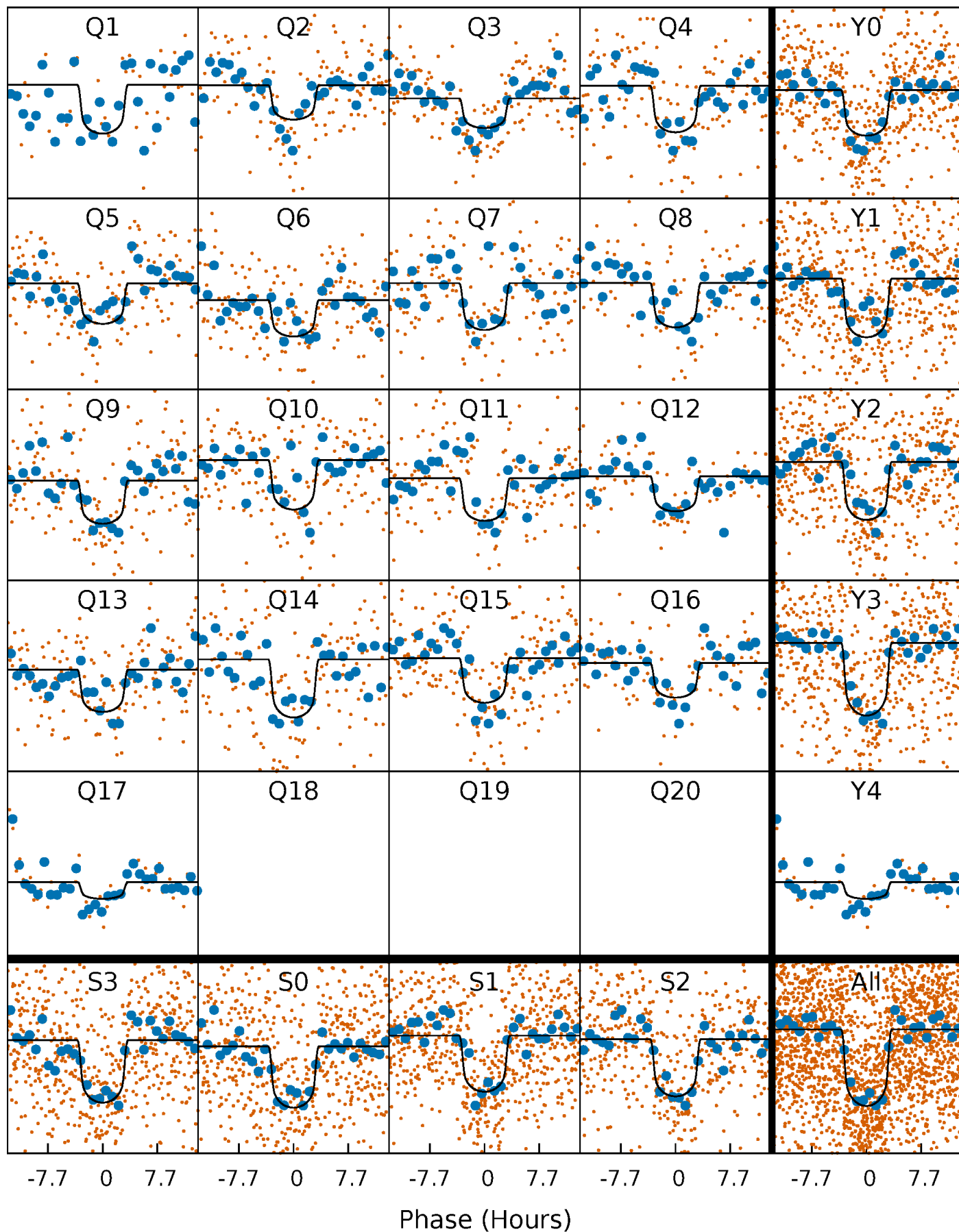
PDC Quarter-Phased Transit Curves

TCE 008158429-01 P= 31.707632 Days $T_0=138.262264$ (BKJD)



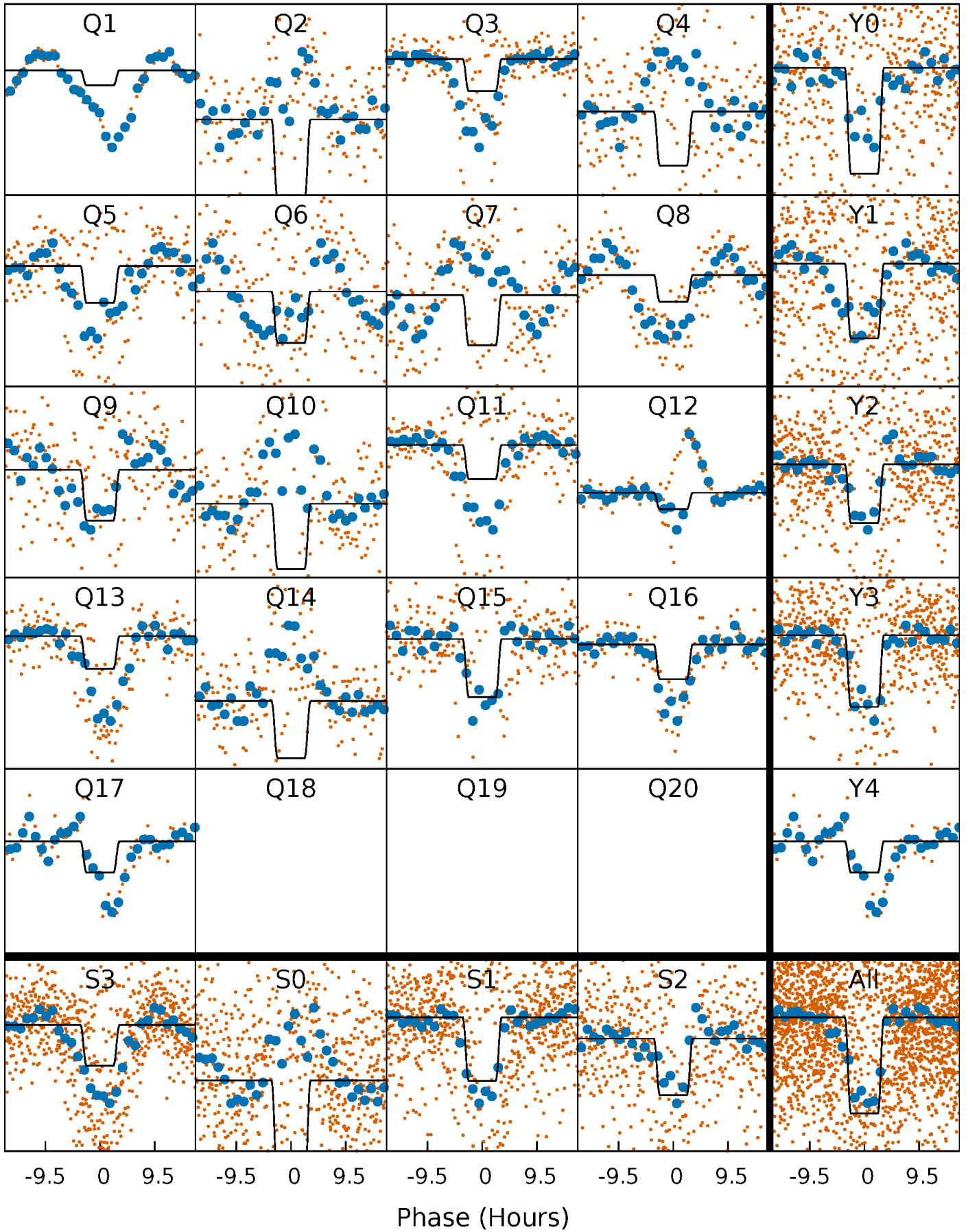
DV Quarter-Phased Transit Curves

TCE 008158429-01 P= 31.707632 Days $T_0=138.262264$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

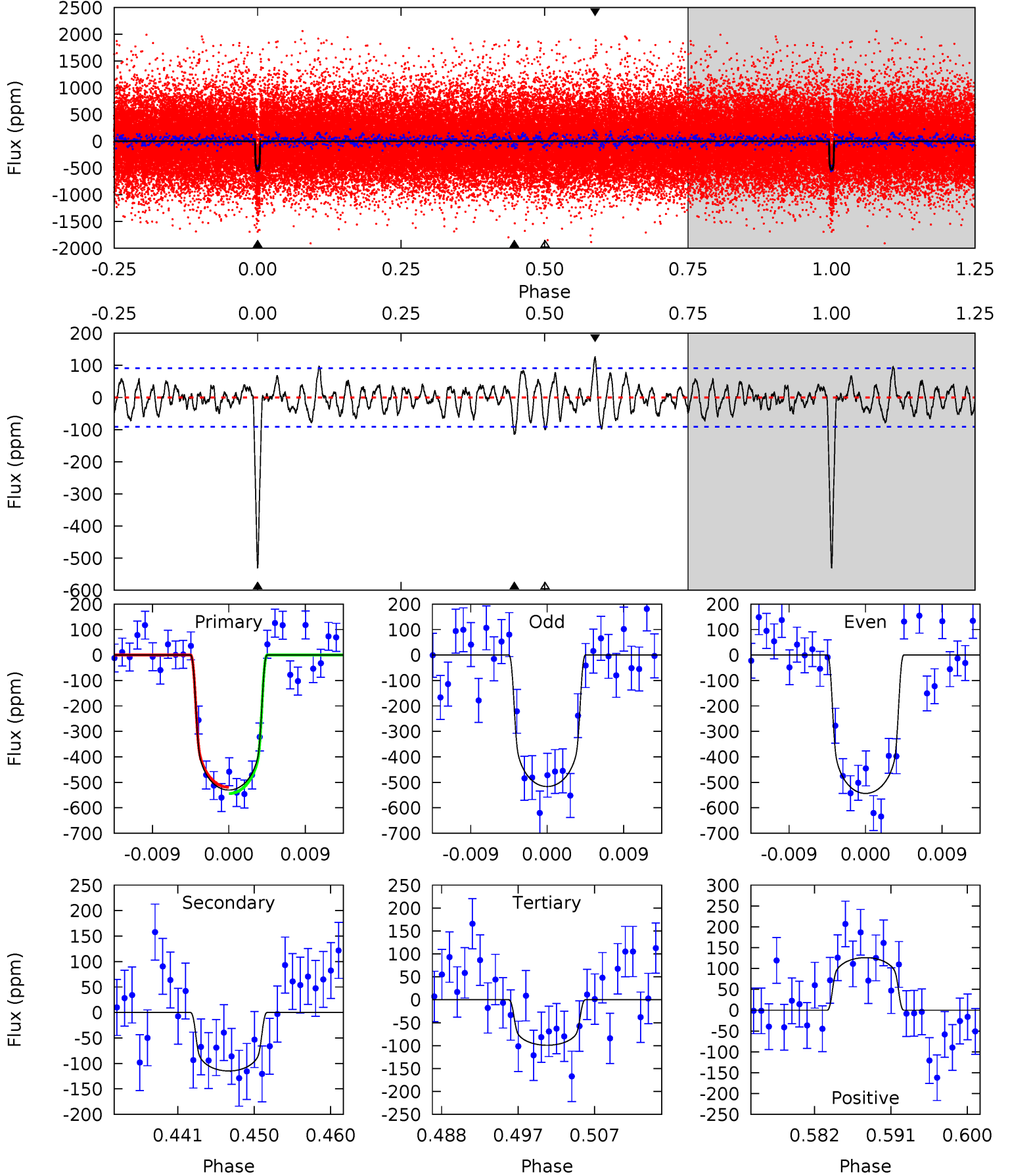
TCE 008158429-01 P= 31.707474 Days $T_0=138.254568$ (BKJD)



DV Model-Shift Uniqueness Test

008158429-01, $P = 31.707632$ Days, $E = 106.554632$ Days

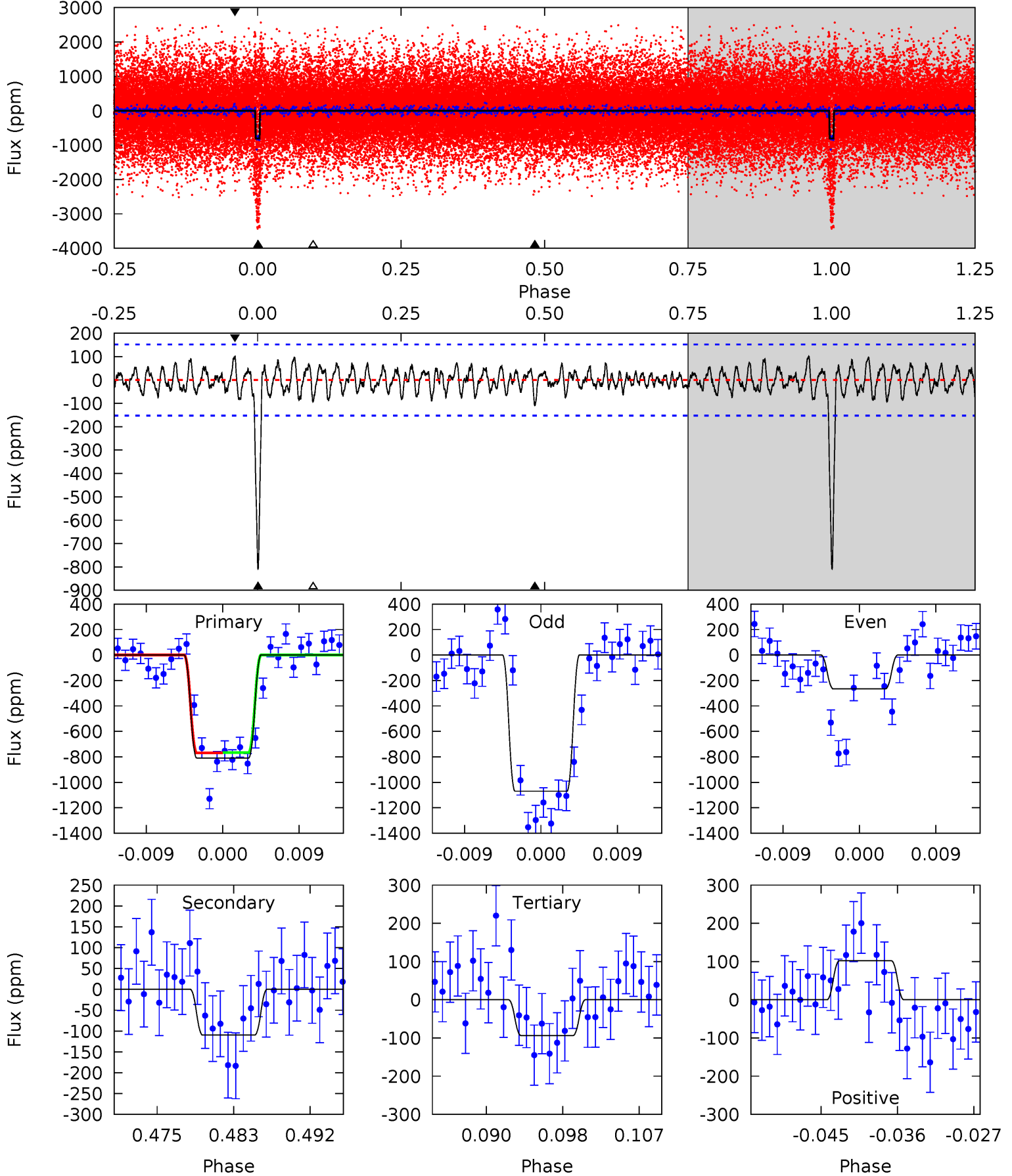
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.3	6.35	5.49	6.97	5.04	2.60	1.90	23.9	22.4	0.86	-0.62	0.75	1.04	0.19	0.69



Alt Model-Shift Uniqueness Test

008158429-01, P = 31.707474 Days, E = 106.547094 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	3.64	3.11	3.38	5.05	2.61	1.23	23.7	23.5	0.53	0.26	13.2	1.24	0.11	0.05



Stellar Parameters For KIC 008158429

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5861^{+141}_{-176}	$4.546^{+0.036}_{-0.204}$	$-0.200^{+0.300}_{-0.300}$	$0.865^{+0.263}_{-0.082}$	$0.957^{+0.108}_{-0.120}$	$2.084^{+0.406}_{-1.059}$
	+2%/-3%	+1%/-4%	+150%/-150%	+30%/-9%	+11%/-13%	+20%/-51%
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 008158429-01 / KOI 5482.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-115 ± 18	$2.38^{+0.45}_{-0.37}$	783^{+52}_{-33}	4175^{+276}_{-233}	404^{+174}_{-128}
Alt.	-110 ± 30	$3.21^{+0.50}_{-0.45}$	782^{+53}_{-35}	3729^{+220}_{-226}	213^{+96}_{-75}

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

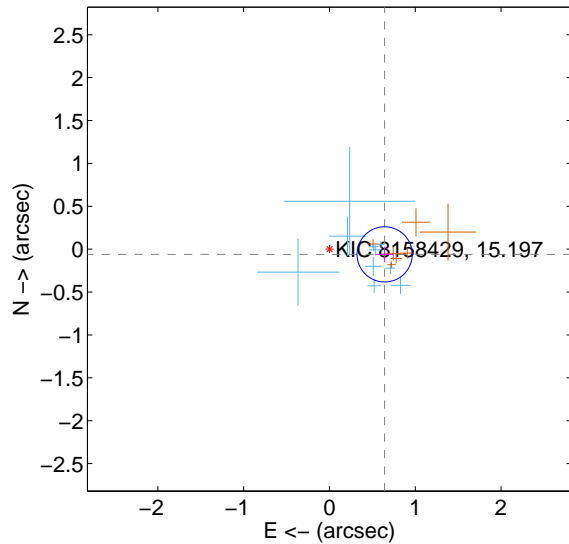
Supplemental centroid analysis for 008158429-01. Kepler magnitude: 15.20. Transit SNR 17.70

There are 10 quarters with good PRF difference image offsets

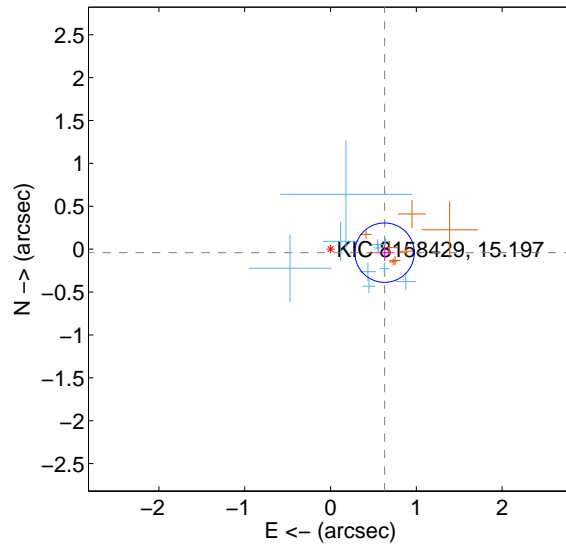
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.646 ± 0.107	6.02	-0.643 ± 0.108	-0.061 ± 0.092
PRF-fit source offset from KIC position	0.631 ± 0.115	5.47	-0.630 ± 0.116	-0.041 ± 0.094
photometric centroid source offset	0.77 ± 0.53	1.45	0.54 ± 0.55	-0.54 ± 0.51

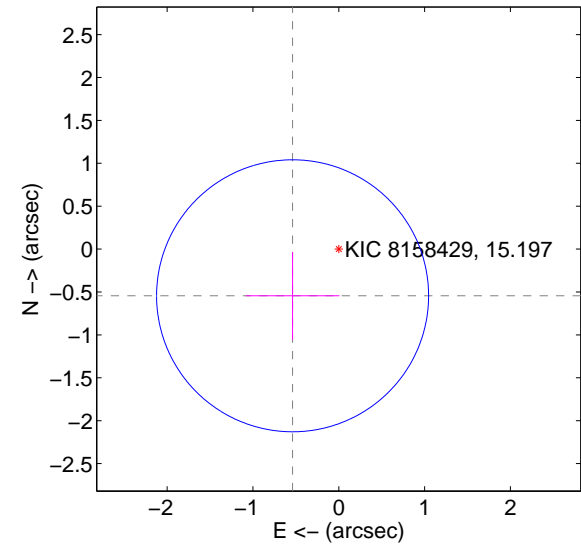
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

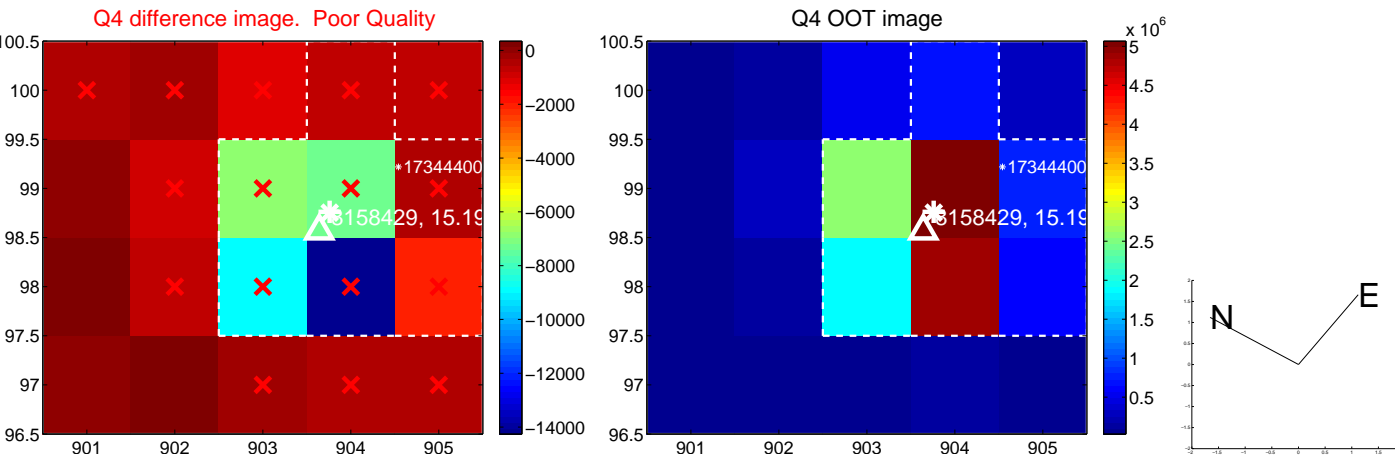
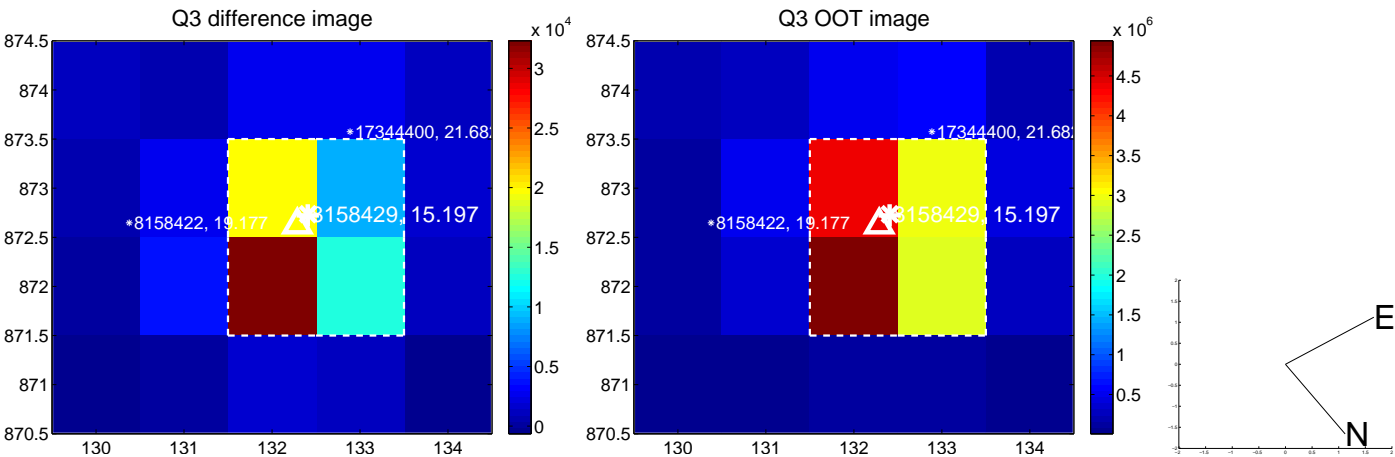
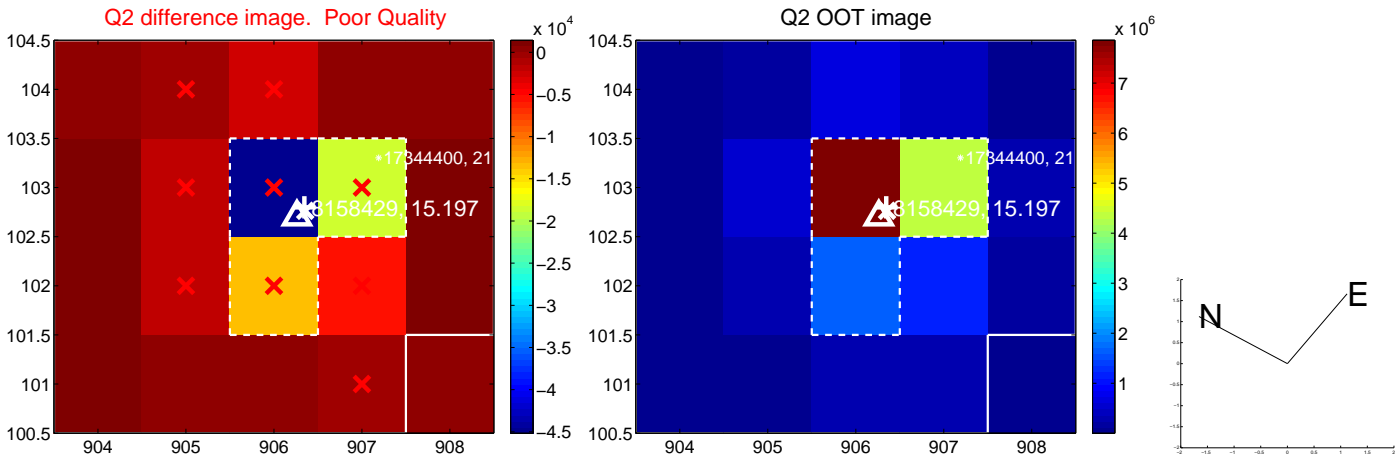
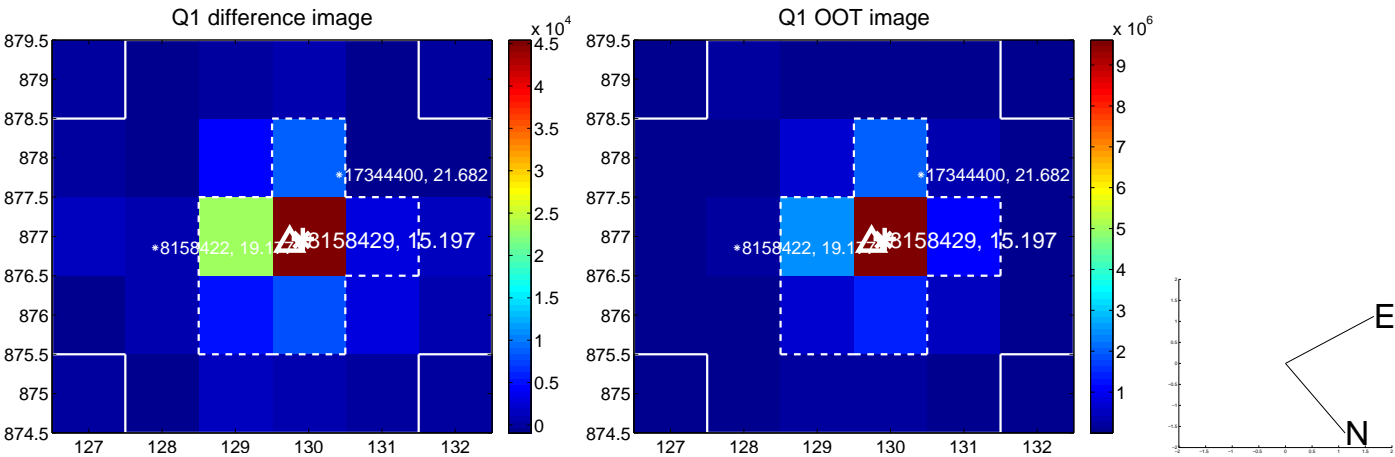


offset from photometric centroids

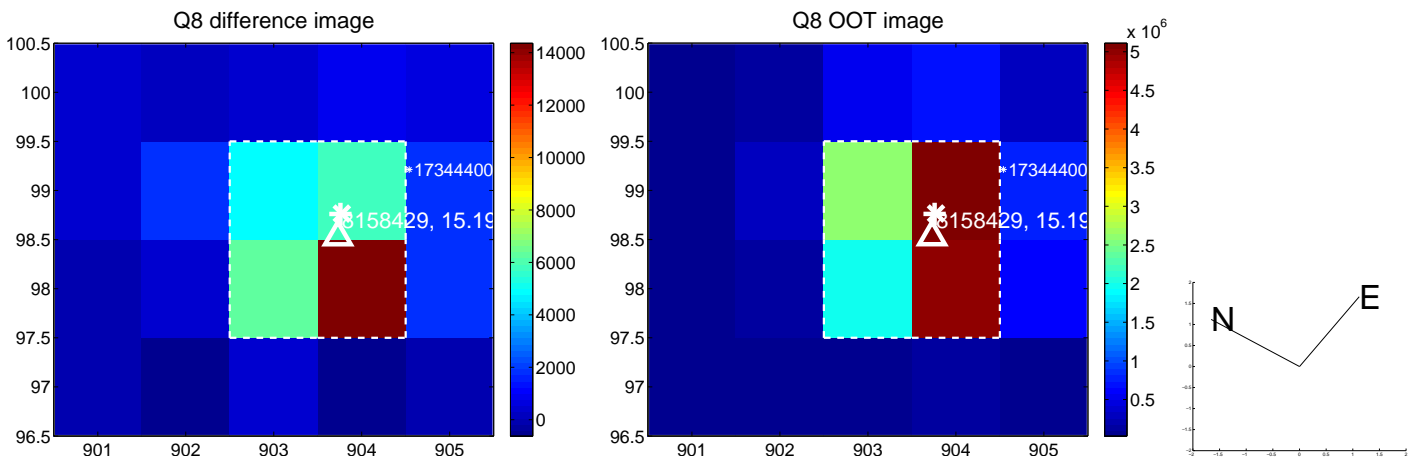
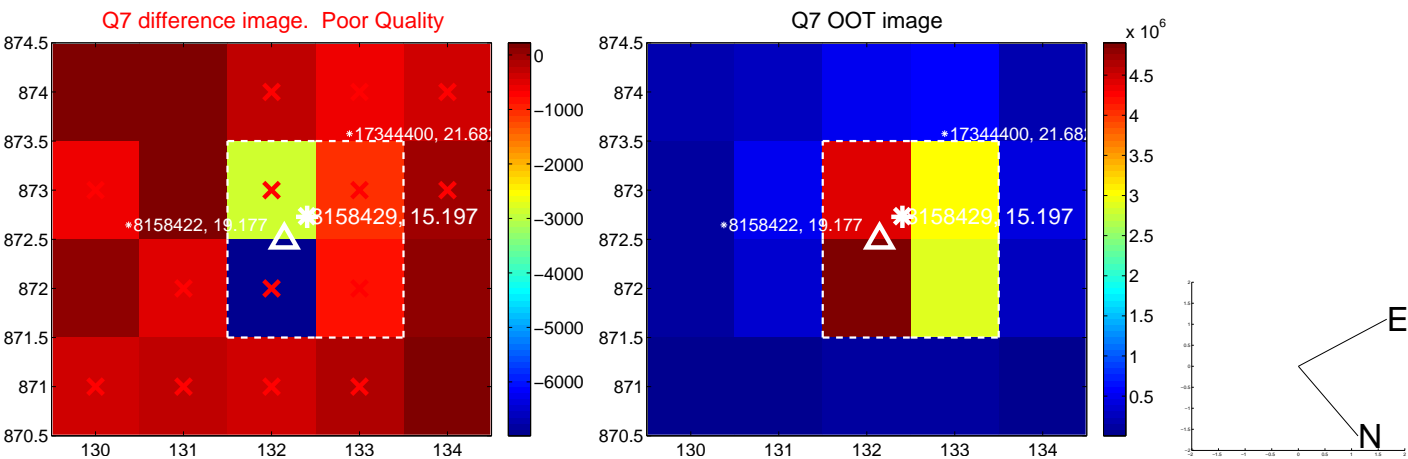
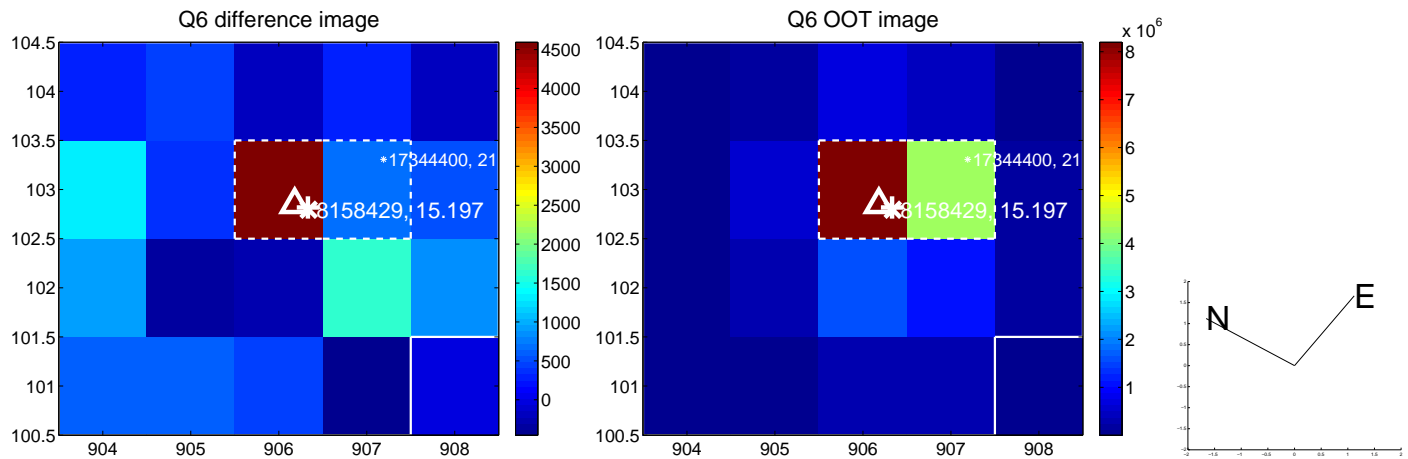
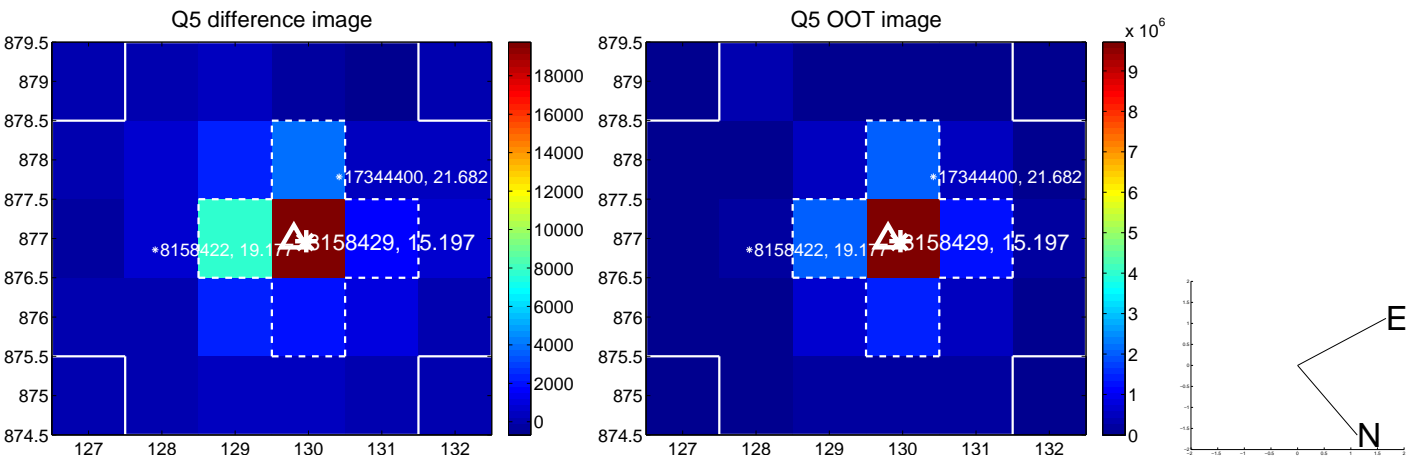


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

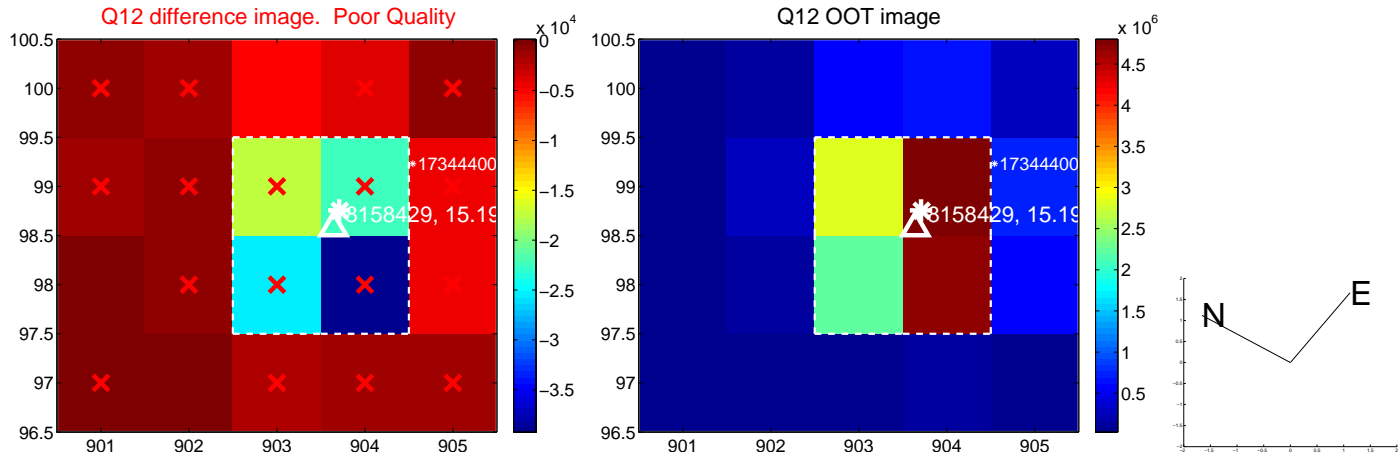
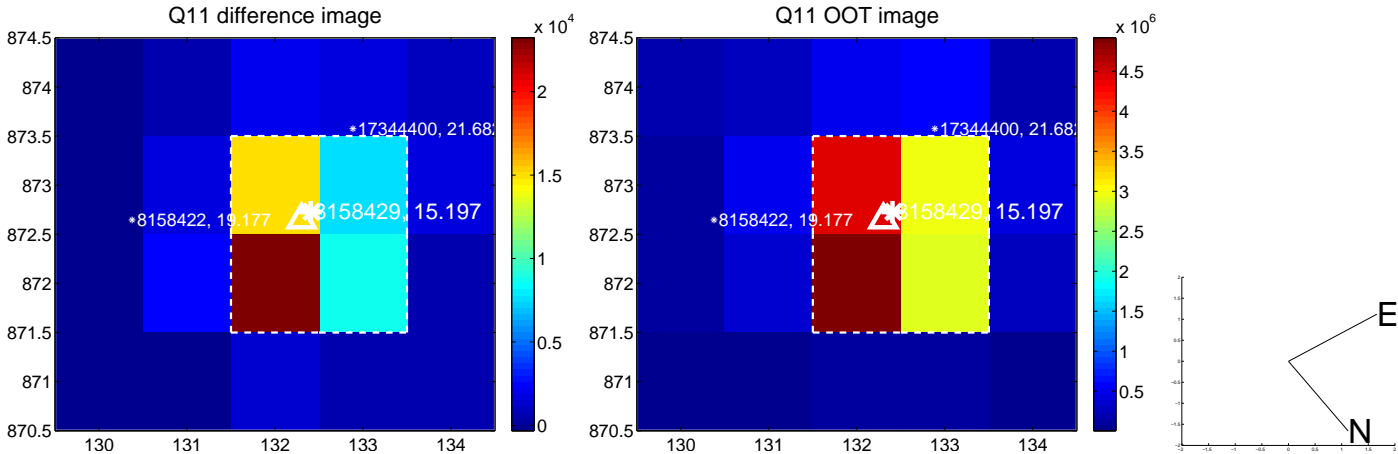
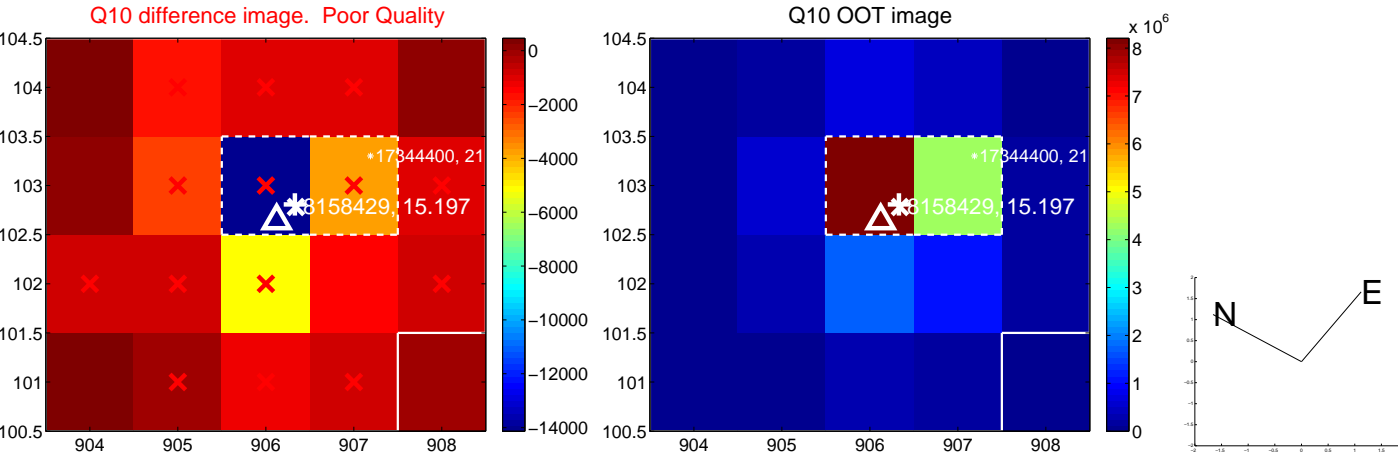
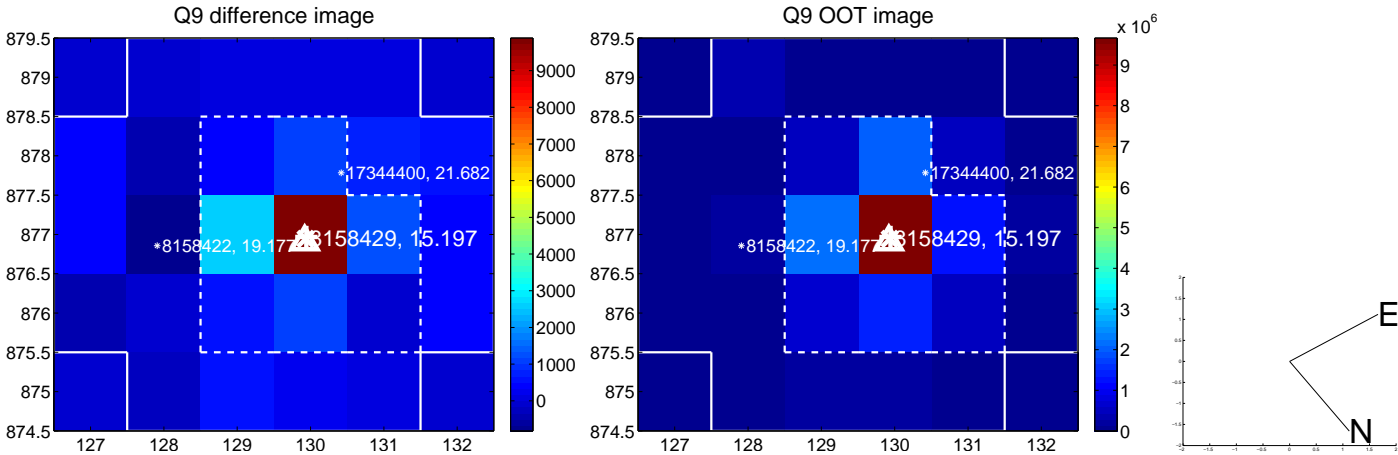
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



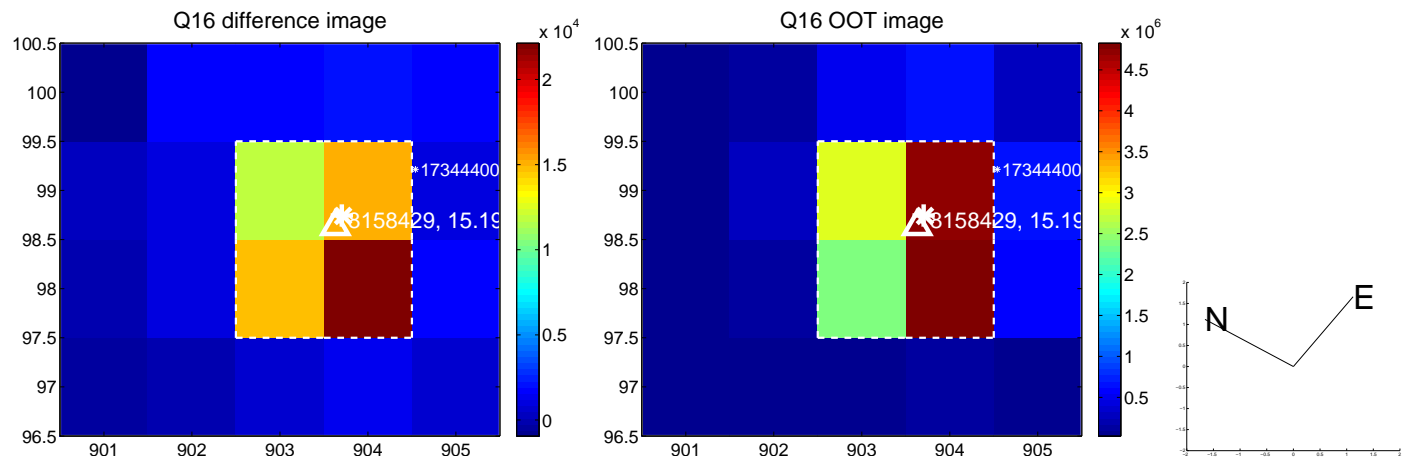
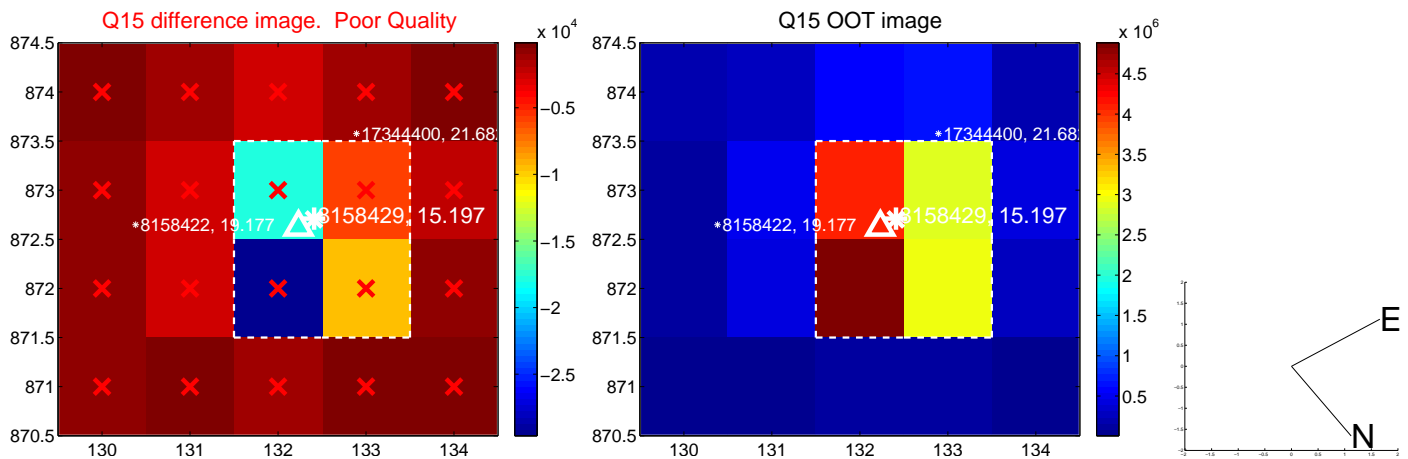
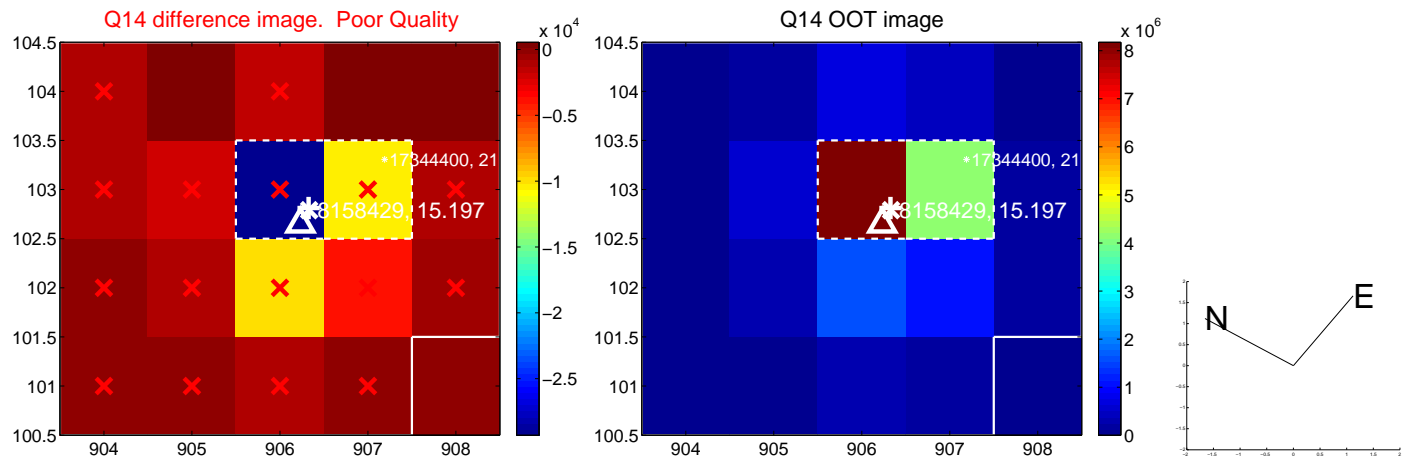
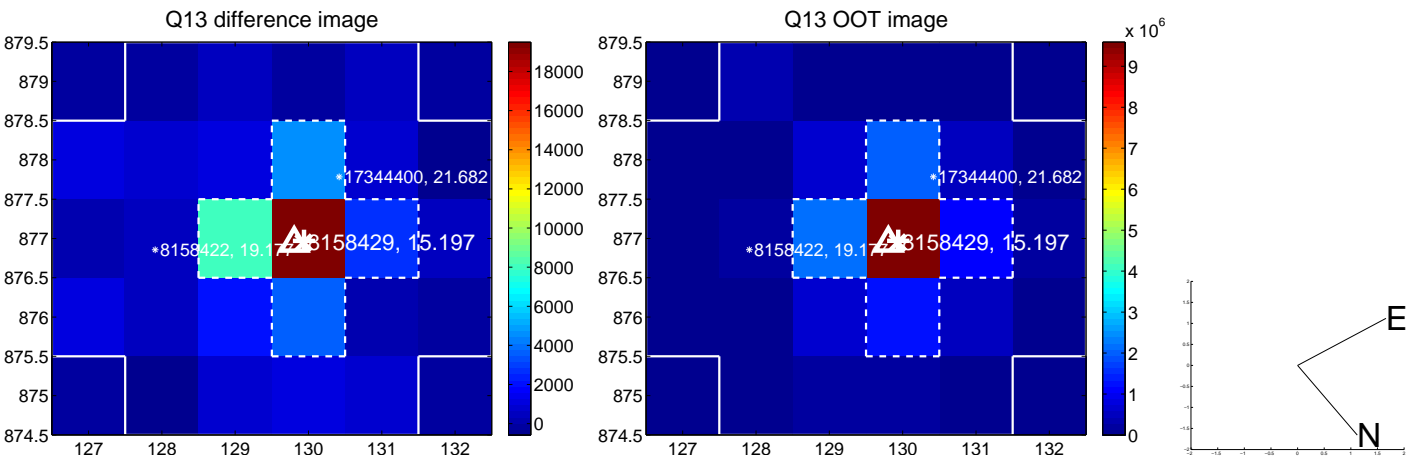
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

