

KIC 012218729

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})
012218729-01	OBS	No	0.537279	131.555239	3.1	2.947	10.3	0.7	1.00	5780	0.19	5975.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012218729-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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.

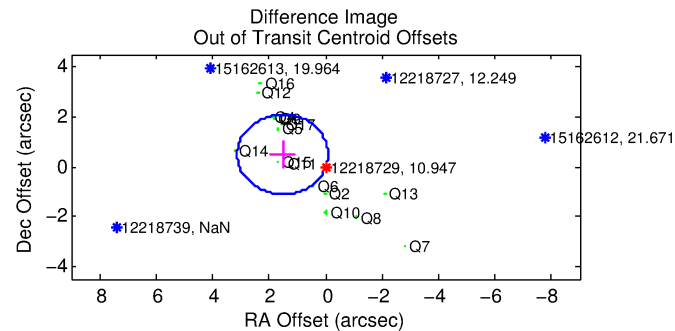
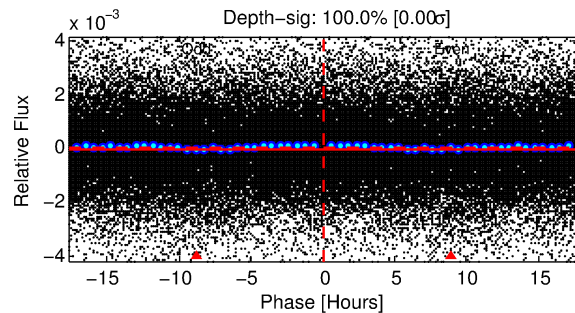
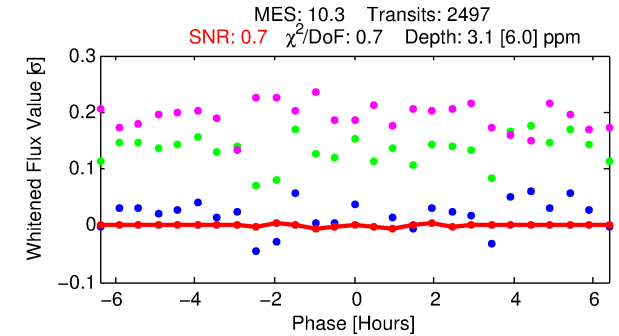
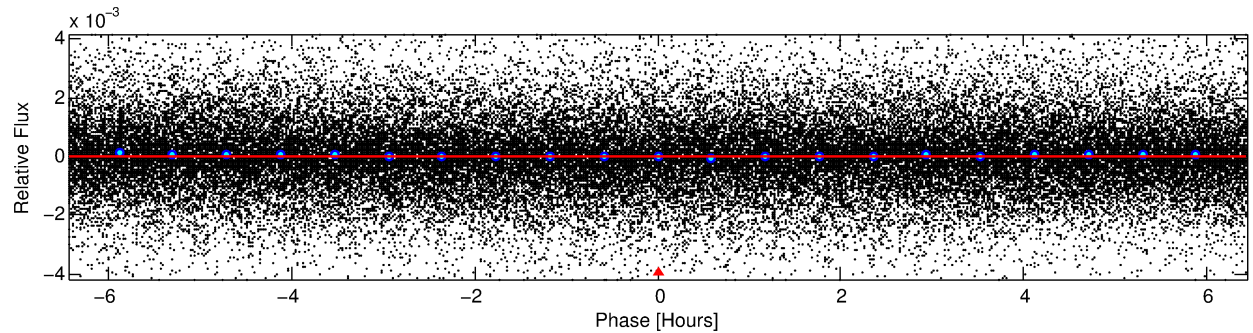
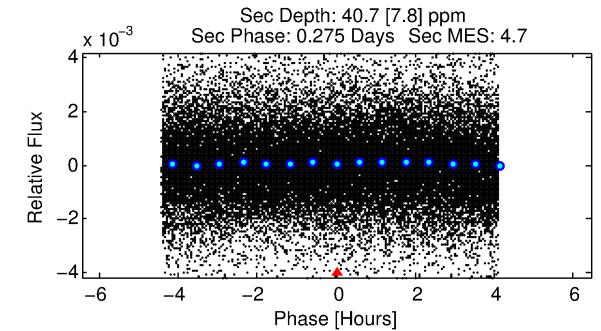
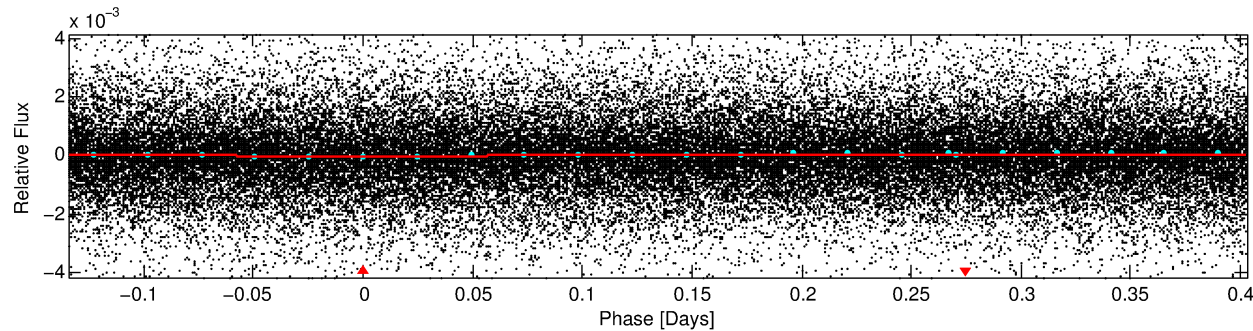
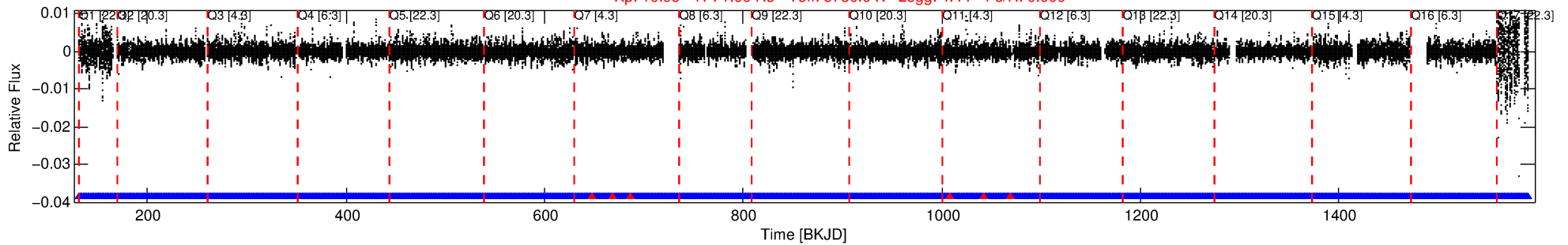
Ephemeris Match Information For 012218729-01

No Significant Match Found

DV One-Page Summary

KIC: 12218729 Candidate: 1 of 1 Period: 0.537 d

Kp: 10.95 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



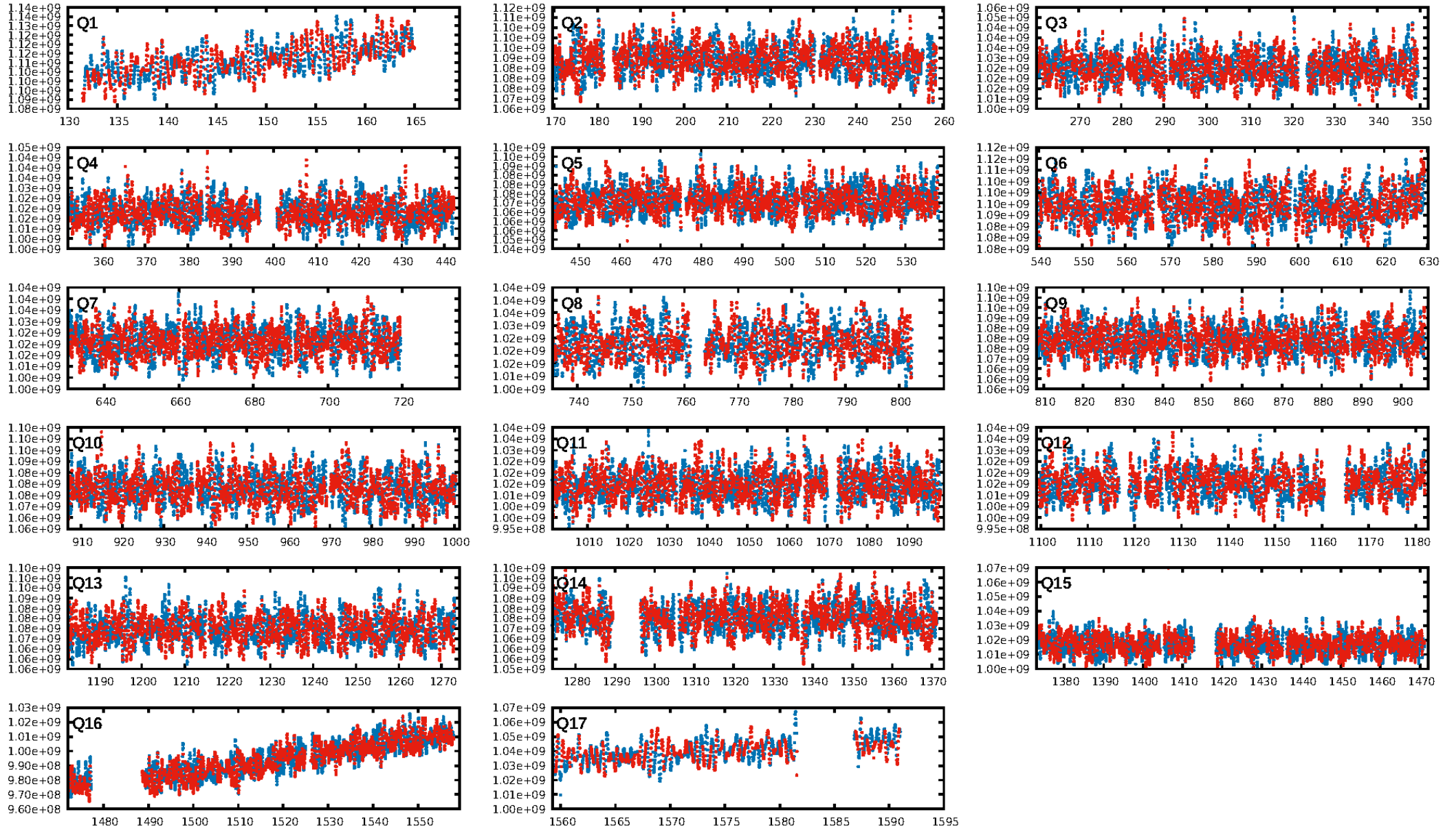
DV Fit Results:

Period = 0.53728 [0.00014] d
Epoch = 131.5552 [0.0136] BKJD
Rp/R* = 0.0017 [0.0019]
a/R* = 1.29 [1.24]
b = 0.70 [1.75]
Seff = 5975.01 [2.03]
Teff = 2242 [0] K
Rp = 0.19 [0.20] Re
a = 0.0129 [0.0000] AU
Ag = 106.56 [231.27] [0.46σ]
Teffp = 11137 [6043] K [1.47σ]

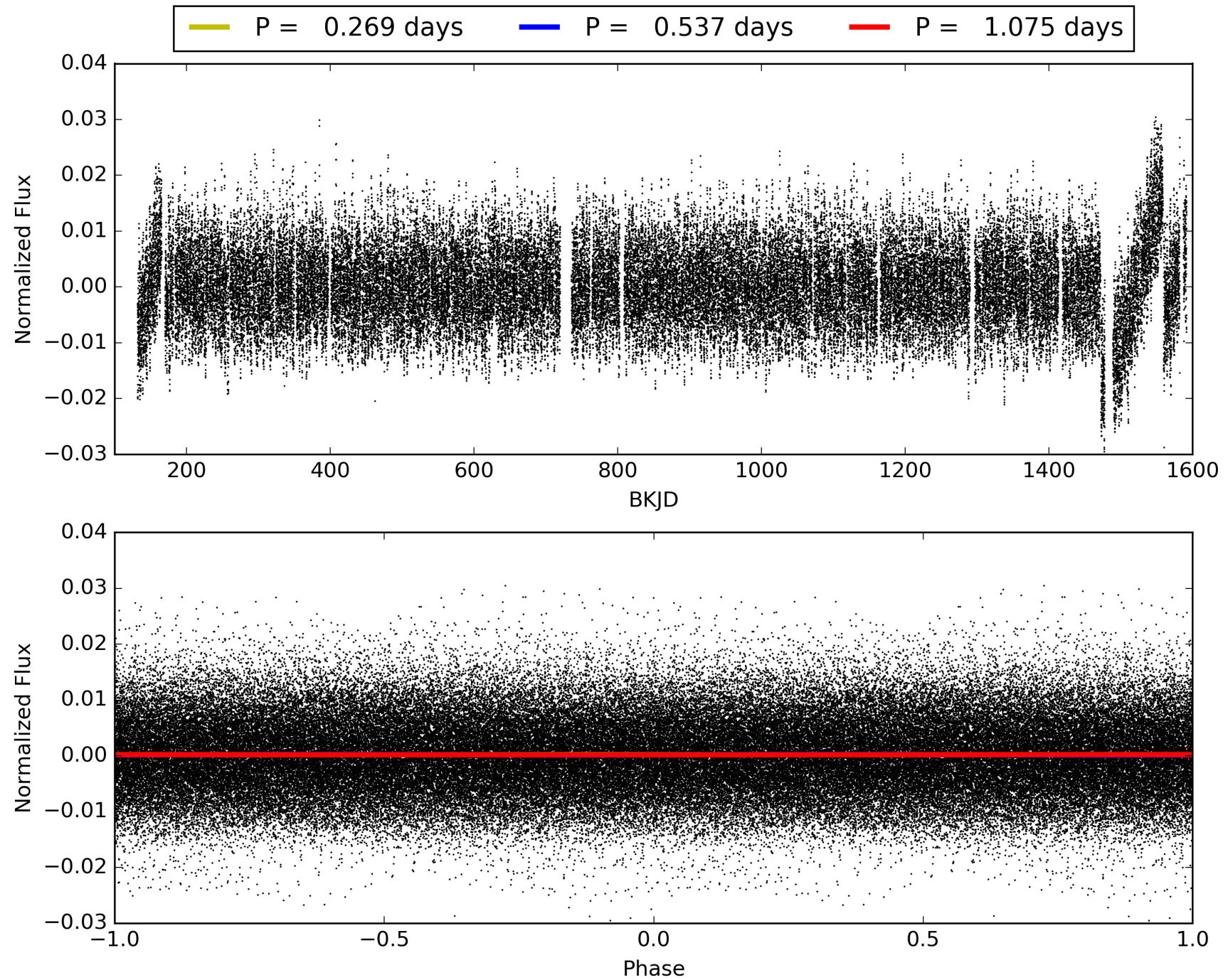
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.78e-34
RollingBand-fgt: 1.00 [2379/2385]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.597 arcsec [2.99σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-rm: 1.637 arcsec [3.01σ]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.19 [3/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012218729-01, PDC Light Curves

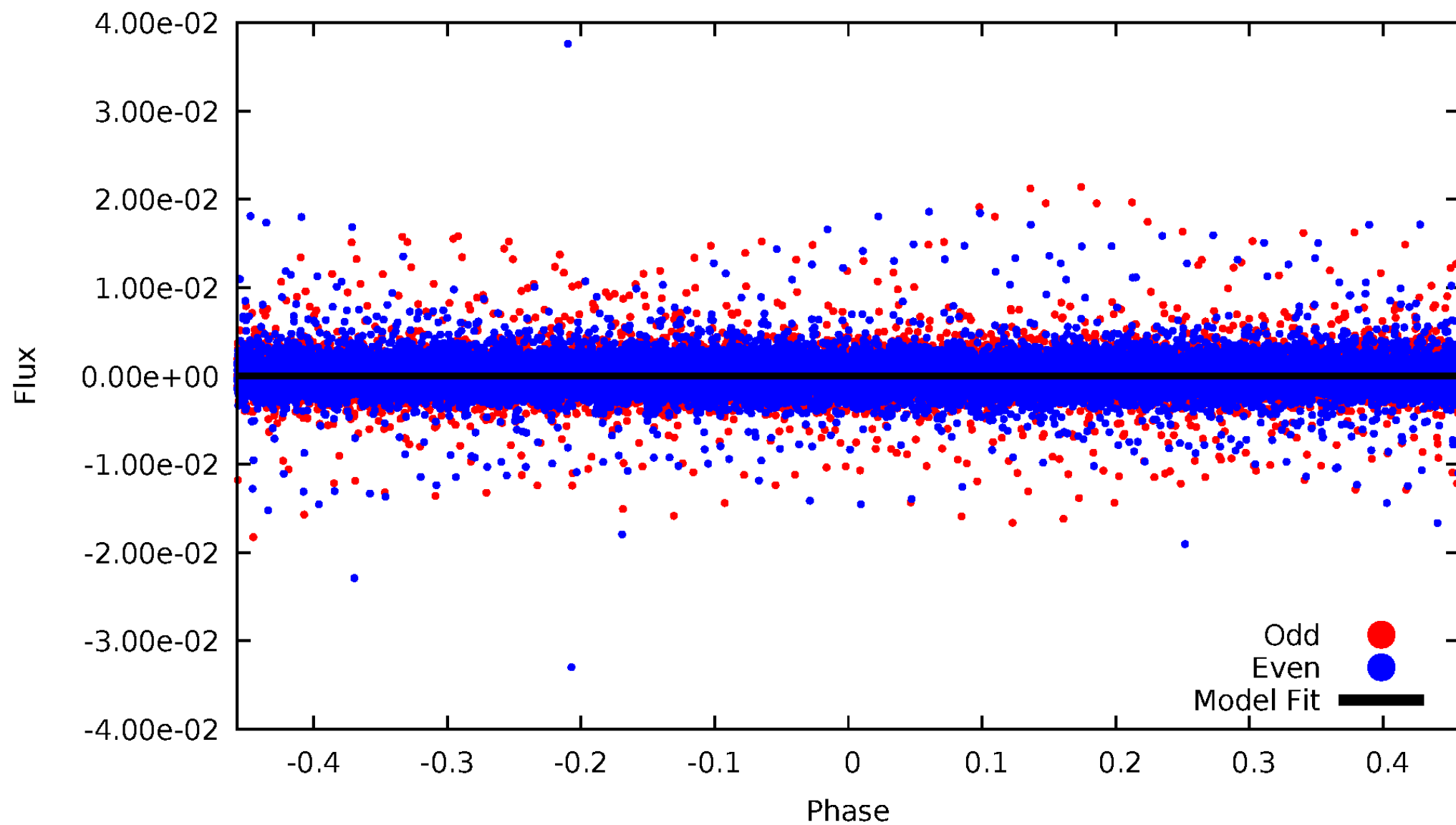


TCE 012218729-01



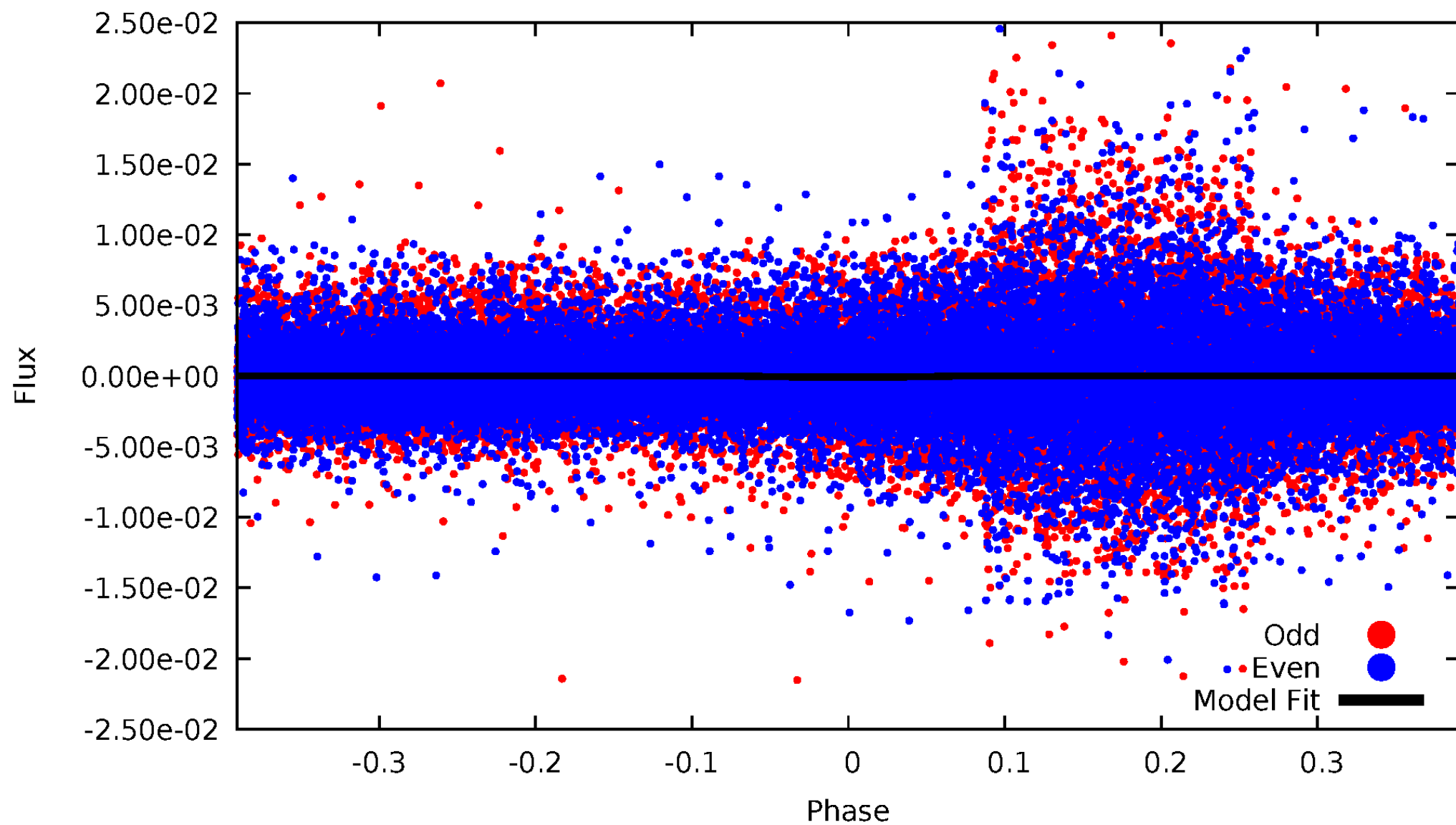
DV Odd/Even

TCE 012218729-01



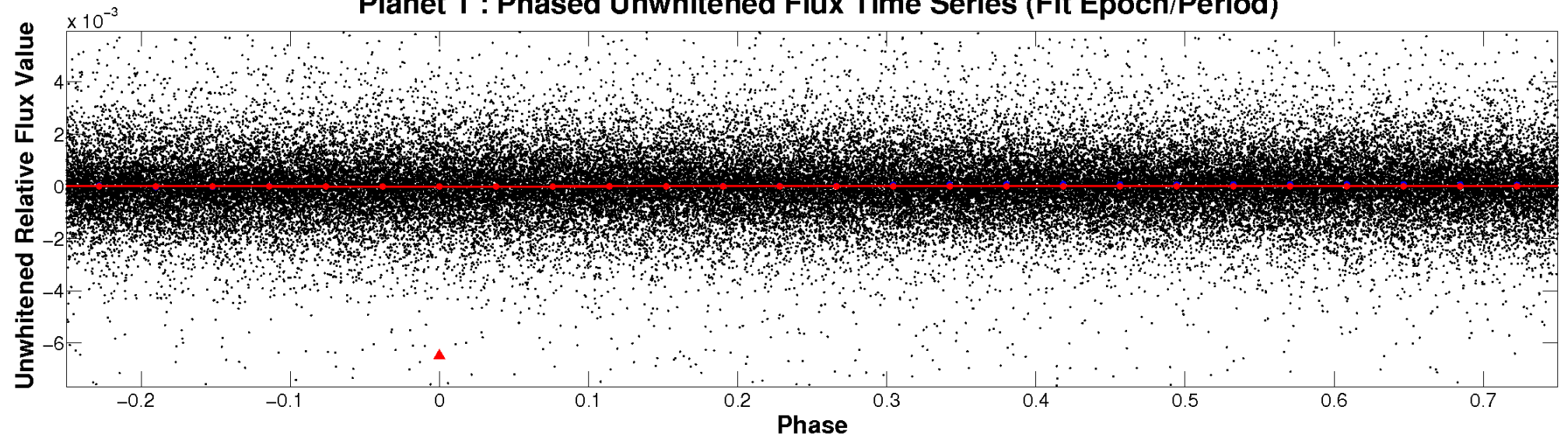
ALT Odd/Even

TCE 012218729-01

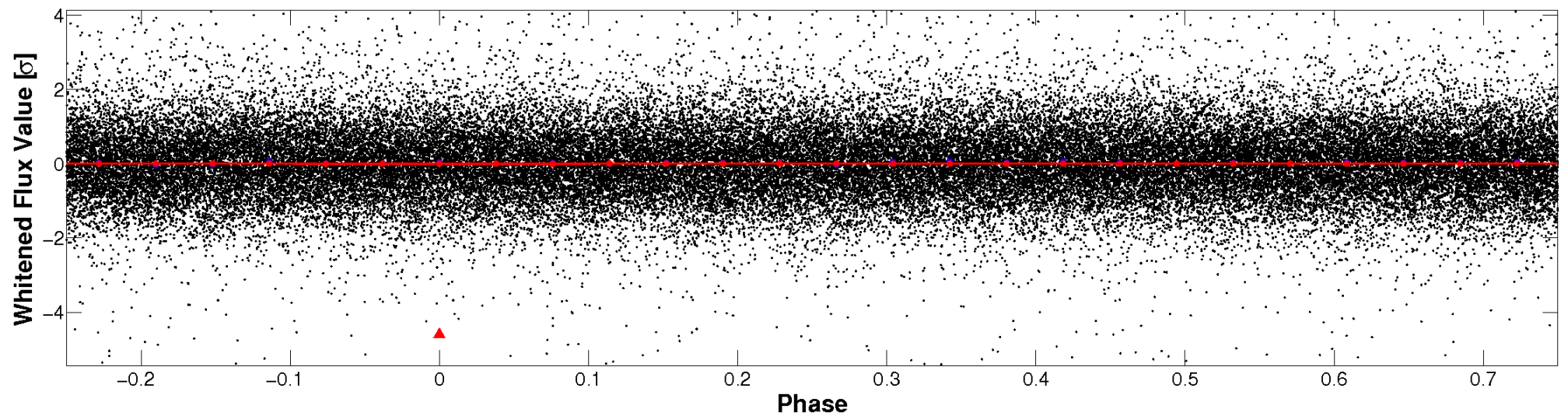


Non-Whitened Vs. Whitened Light Curve

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

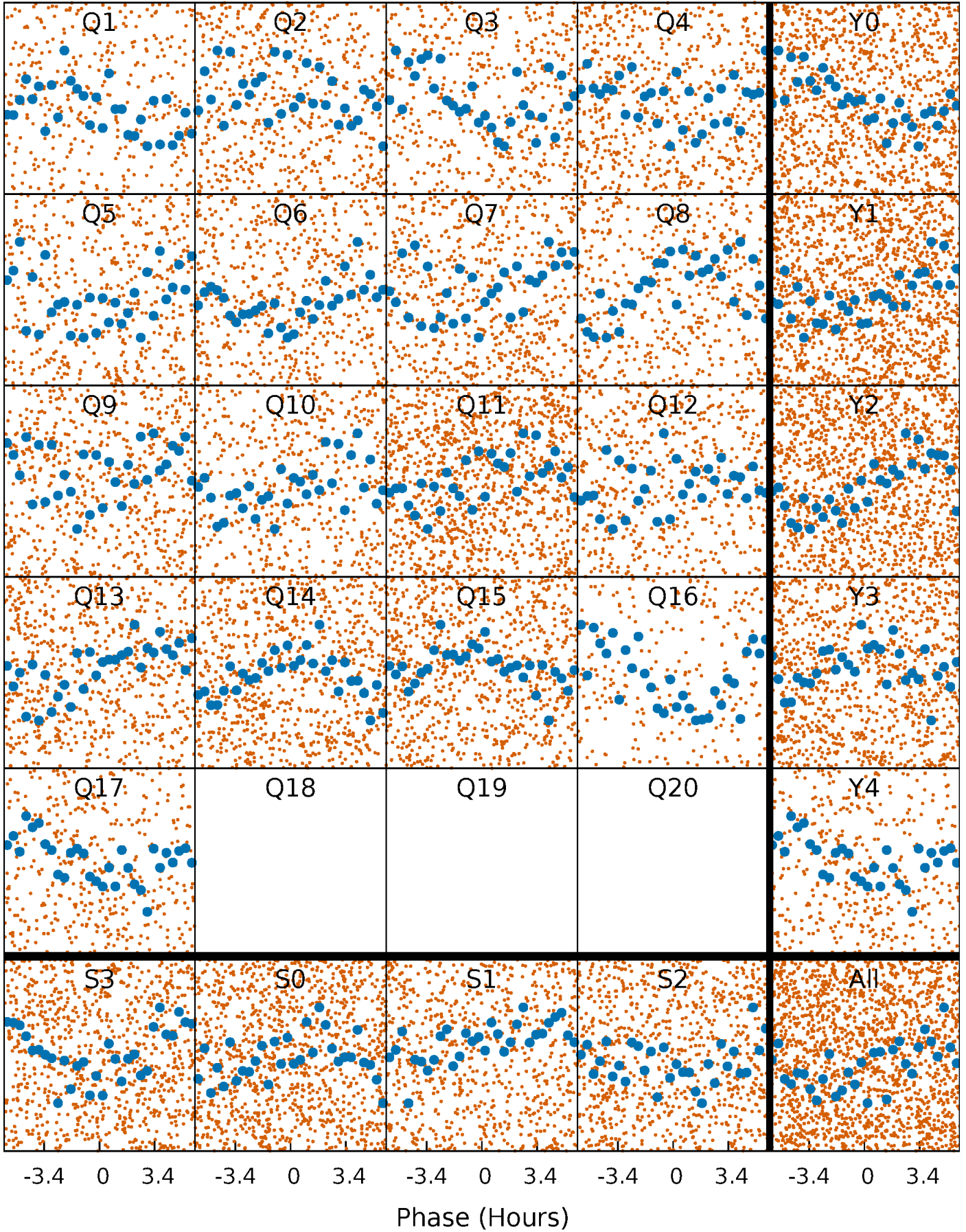


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



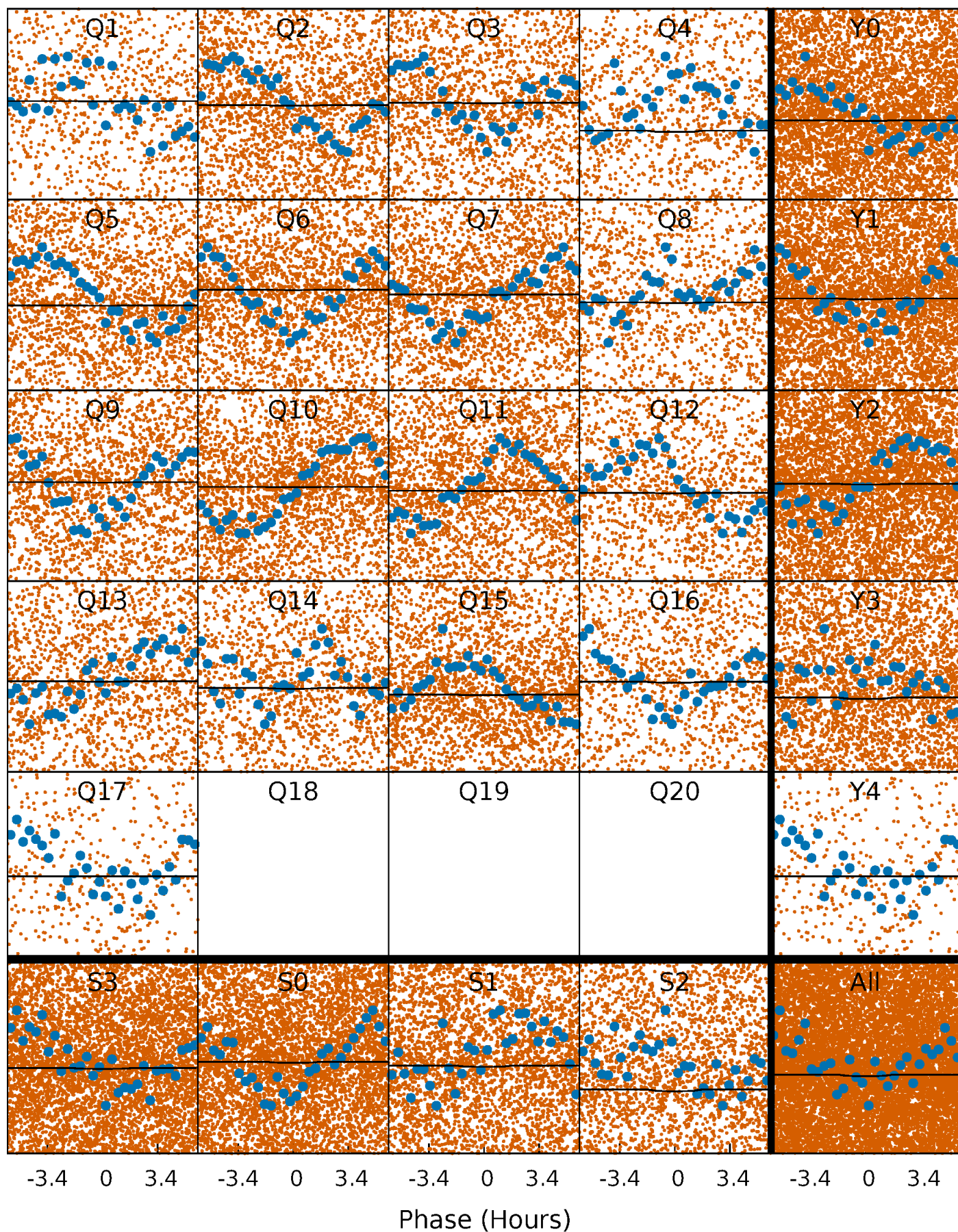
PDC Quarter-Phased Transit Curves

TCE 012218729-01 P= 0.537279 Days $T_0=131.555239$ (BKJD)



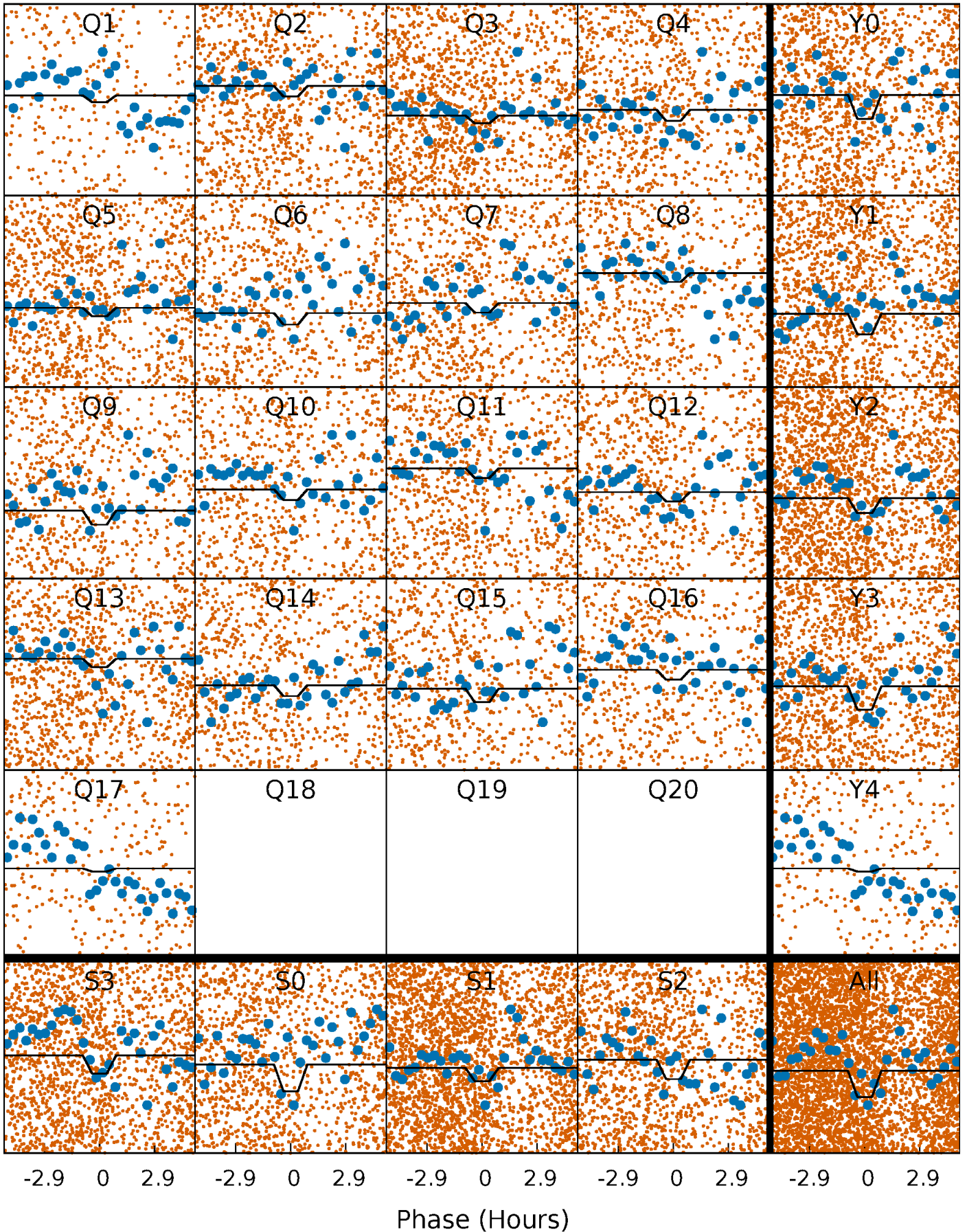
DV Quarter-Phased Transit Curves

TCE 012218729-01 P= 0.537279 Days $T_0=131.555239$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

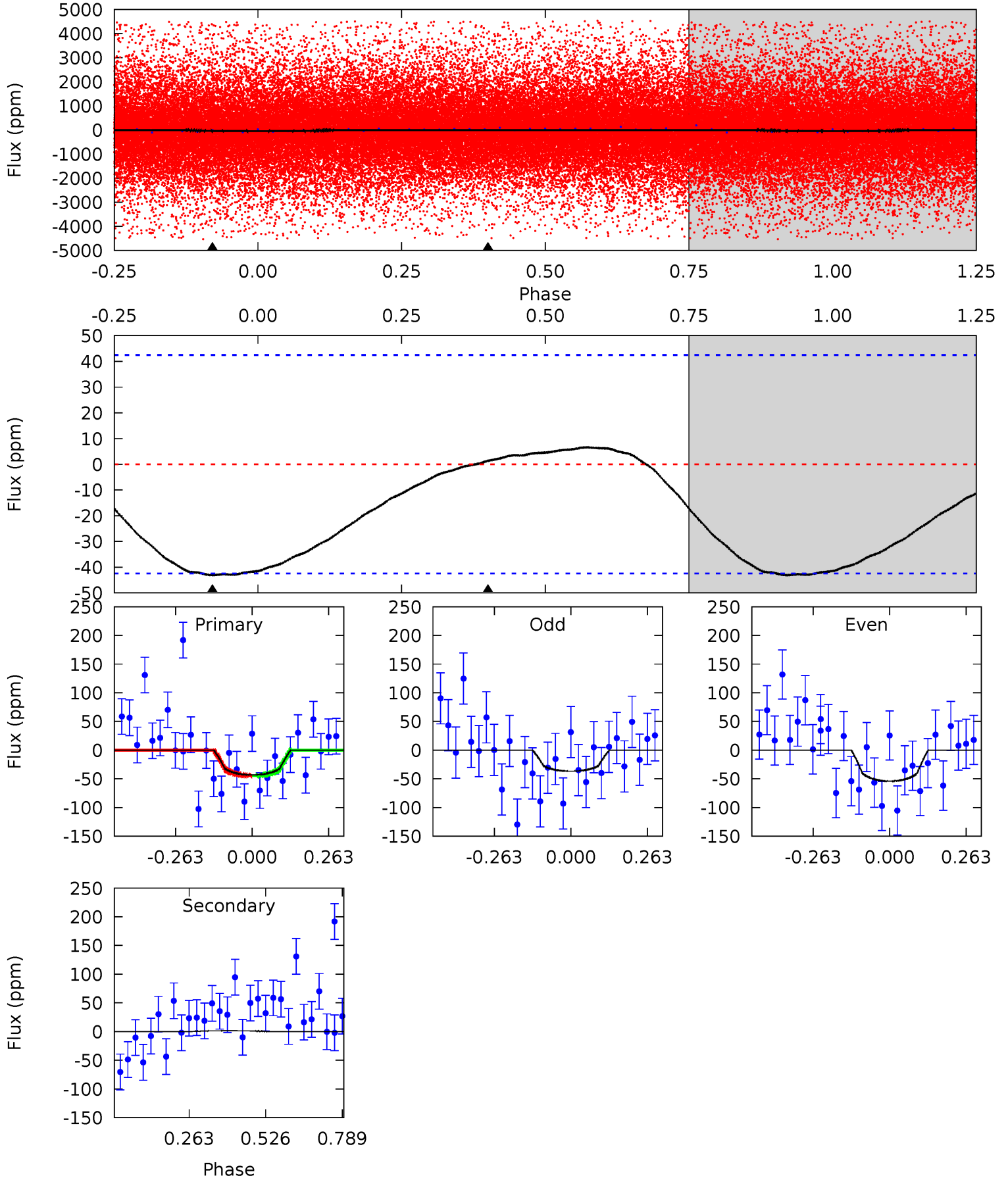
TCE 012218729-01 P= 0.537441 Days $T_0=131.561109$ (BKJD)



DV Model-Shift Uniqueness Test

012218729-01, P = 0.537279 Days, E = 131.017960 Days

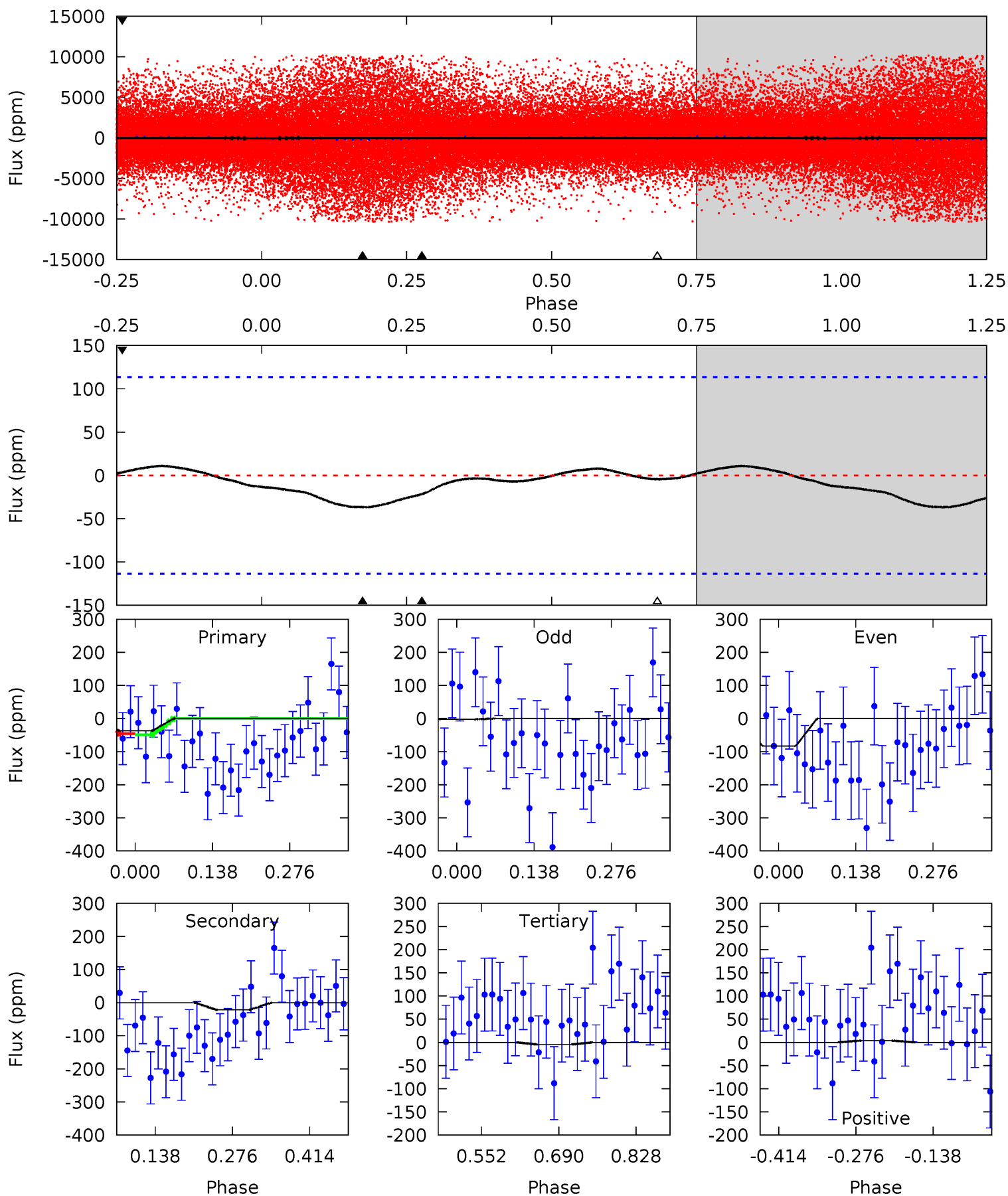
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.43	-0.13	0	0	4.36	1.12	1.21	4.43	4.43	-0.13	-0.13	0.91	0.19	0.13	0.01



Alt Model-Shift Uniqueness Test

012218729-01, P = 0.537441 Days, E = 131.023668 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.46	0.86	0.18	0.15	4.50	1.48	0.28	1.28	1.32	0.68	0.72	1.30	0.65	0.23	0.07



Stellar Parameters For KIC 012218729

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 012218729-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	1 ± 10	$0.24^{+0.18}_{-0.14}$	3137^{+156}_{-148}	-4105^{+11246}_{-4850}	$-1.192^{+19.647}_{-35.233}$
Alt.	-22 ± 25	$0.95^{+0.23}_{-0.21}$	3135^{+140}_{-144}	4223^{+1045}_{-7872}	$2.050^{+3.443}_{-2.458}$

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 $A_{obs} \gg 1.0$

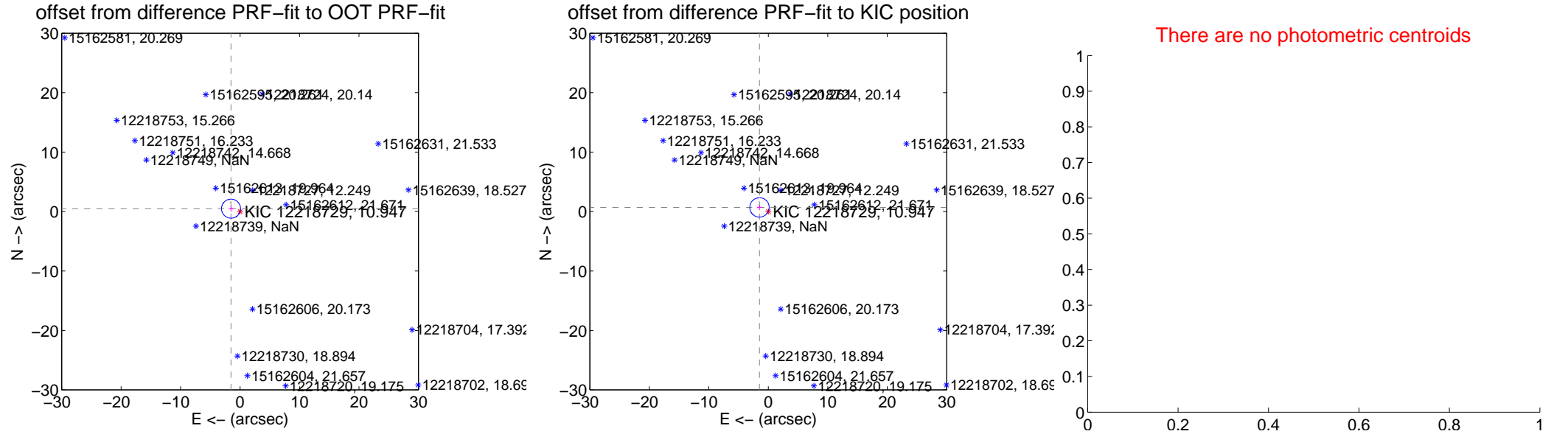
DV Centroid Data

Supplemental centroid analysis for 012218729-01. **Kepler magnitude: 10.95.** Transit SNR 0.66

There are 3 quarters with good PRF difference image offsets

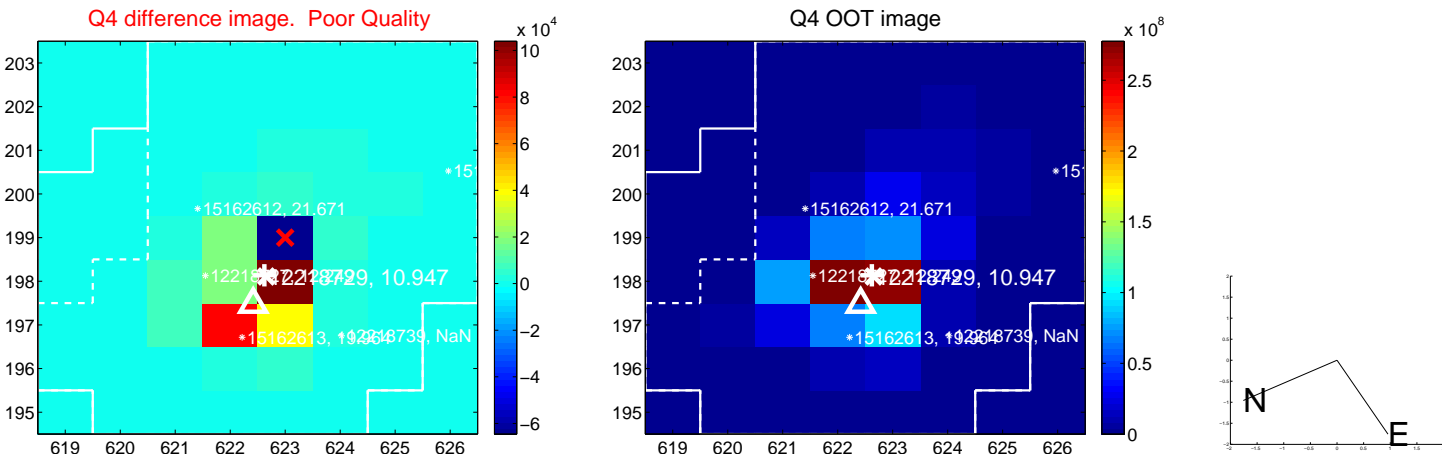
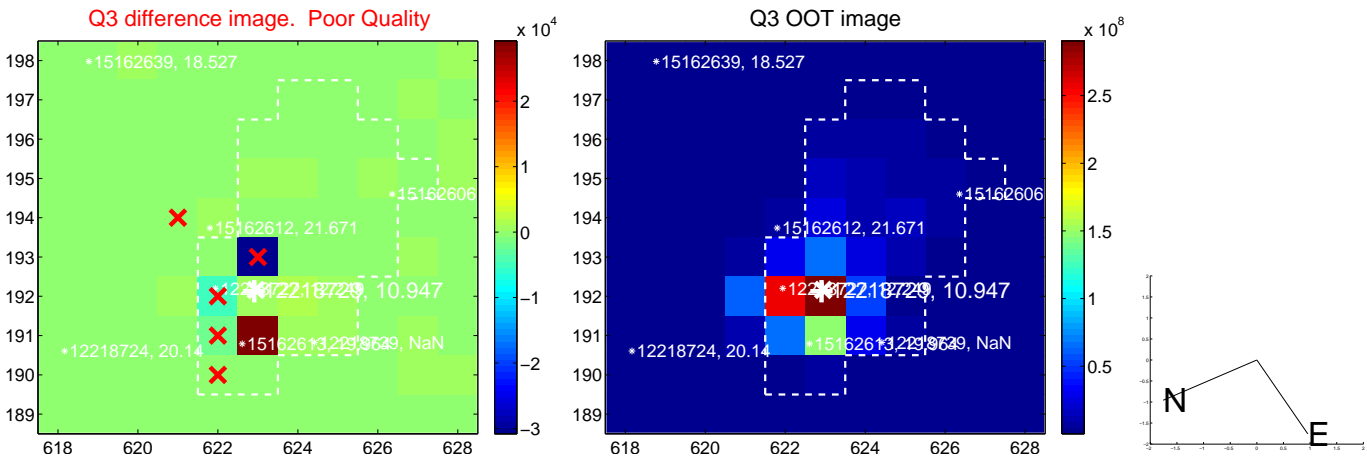
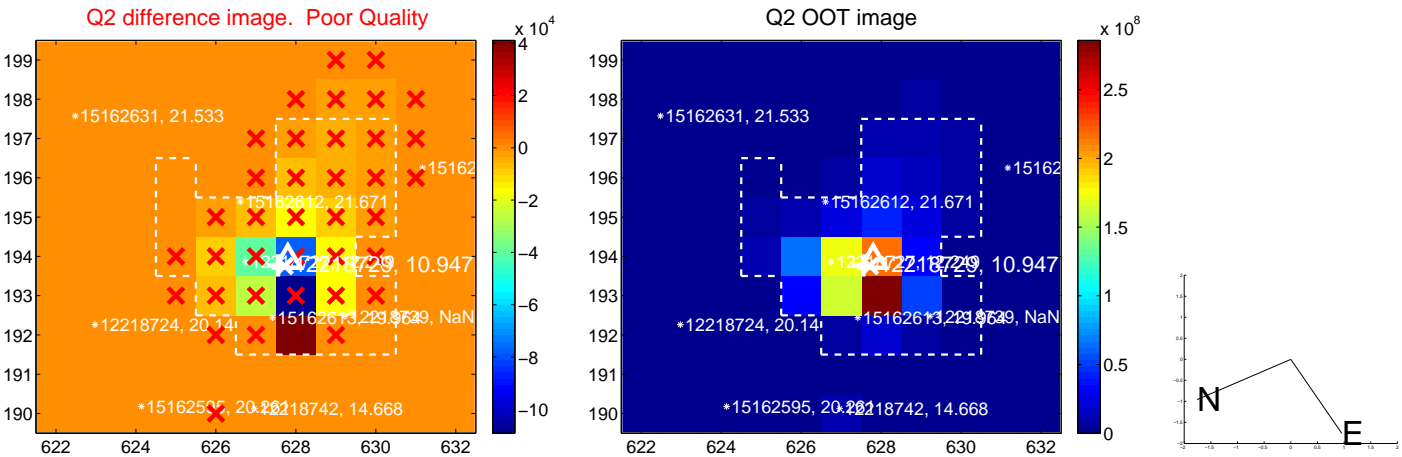
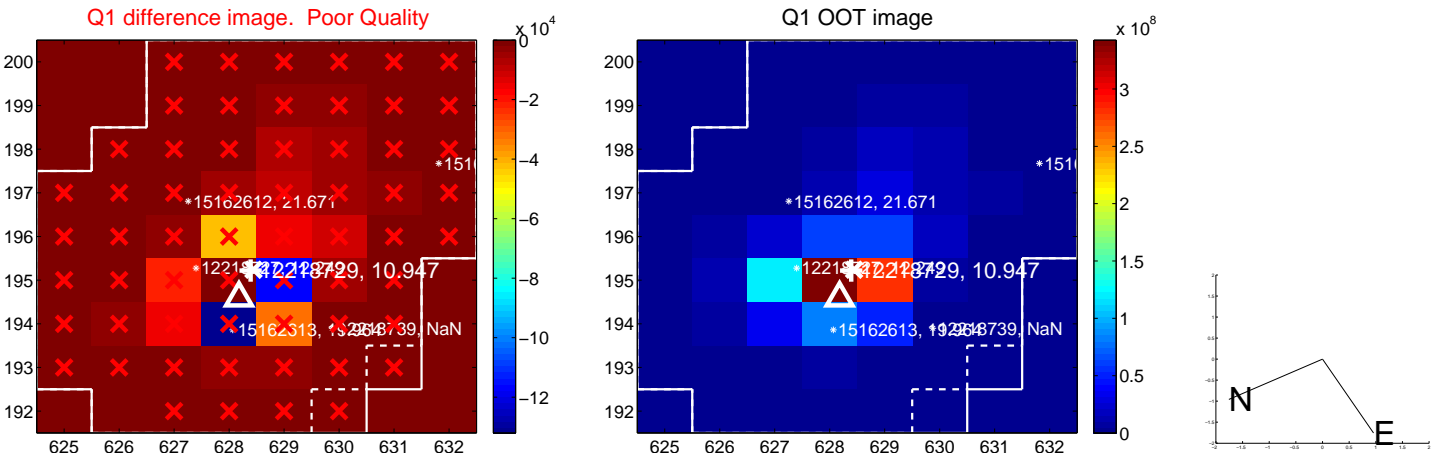
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.597 ± 0.534	2.99	1.521 ± 0.424	0.487 ± 0.491
PRF-fit source offset from KIC position	1.637 ± 0.543	3.01	1.482 ± 0.413	0.694 ± 0.442
photometric centroid source offset	—	—	—	—

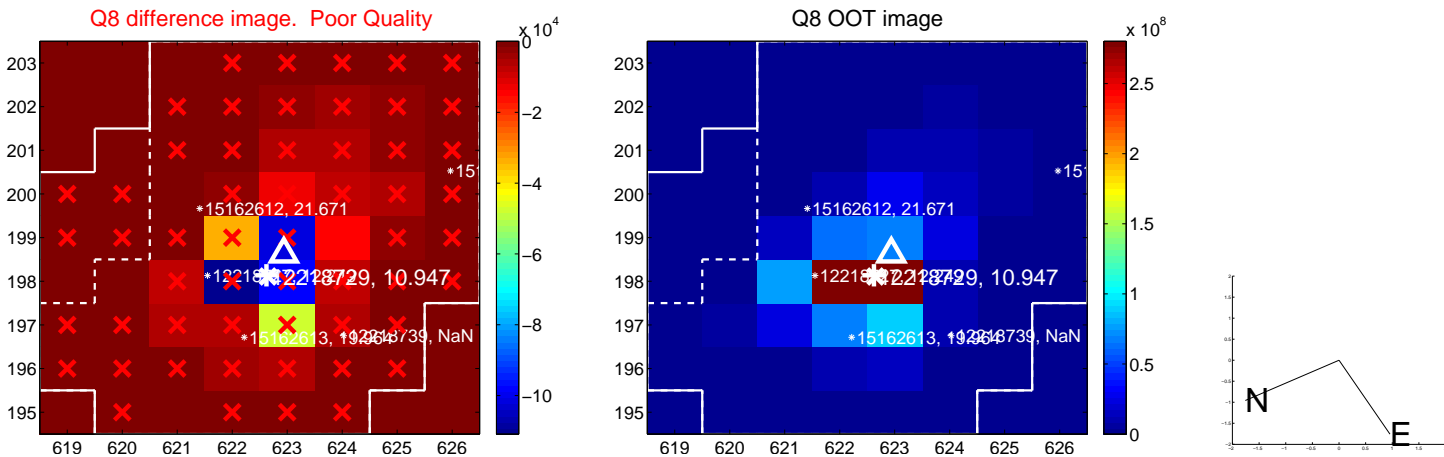
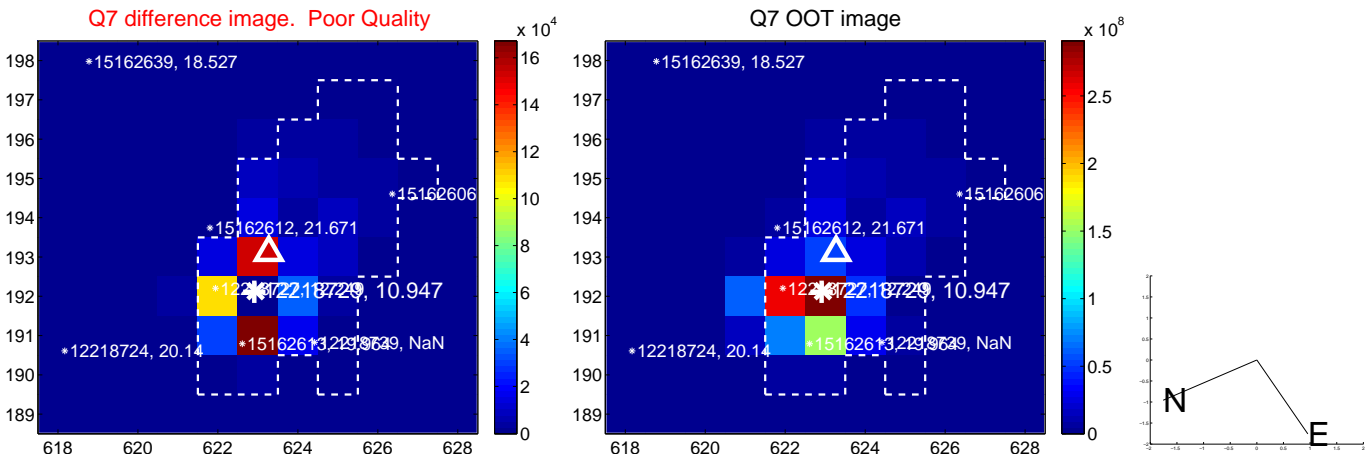
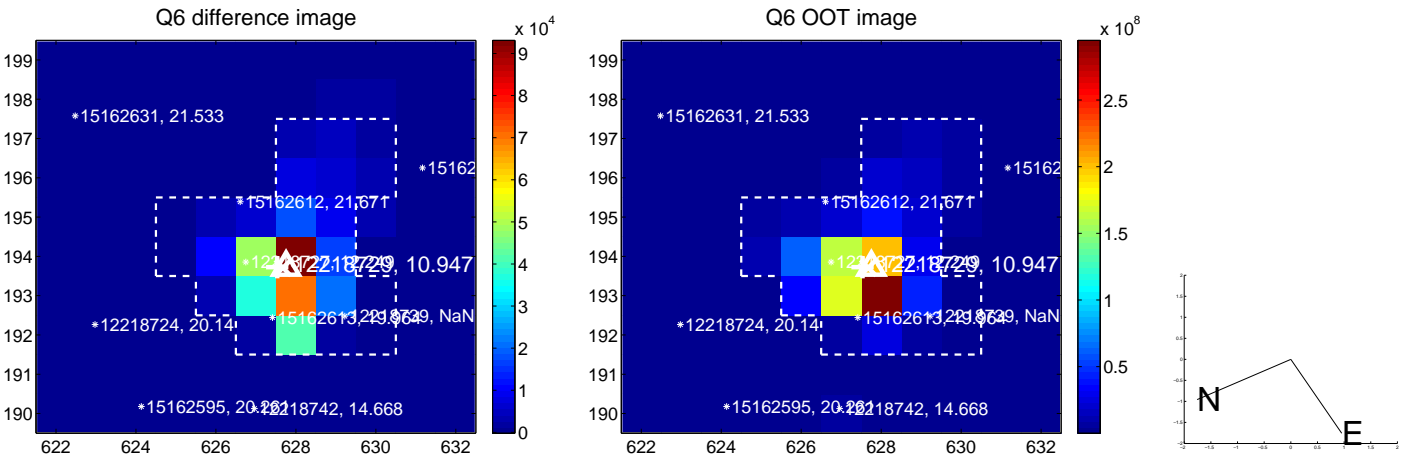
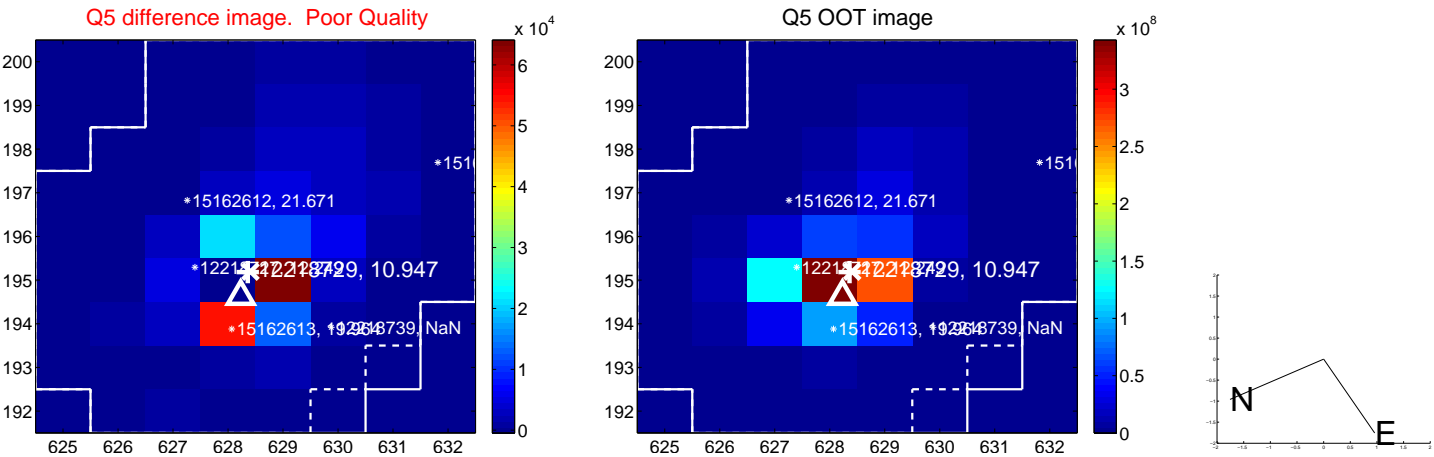


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

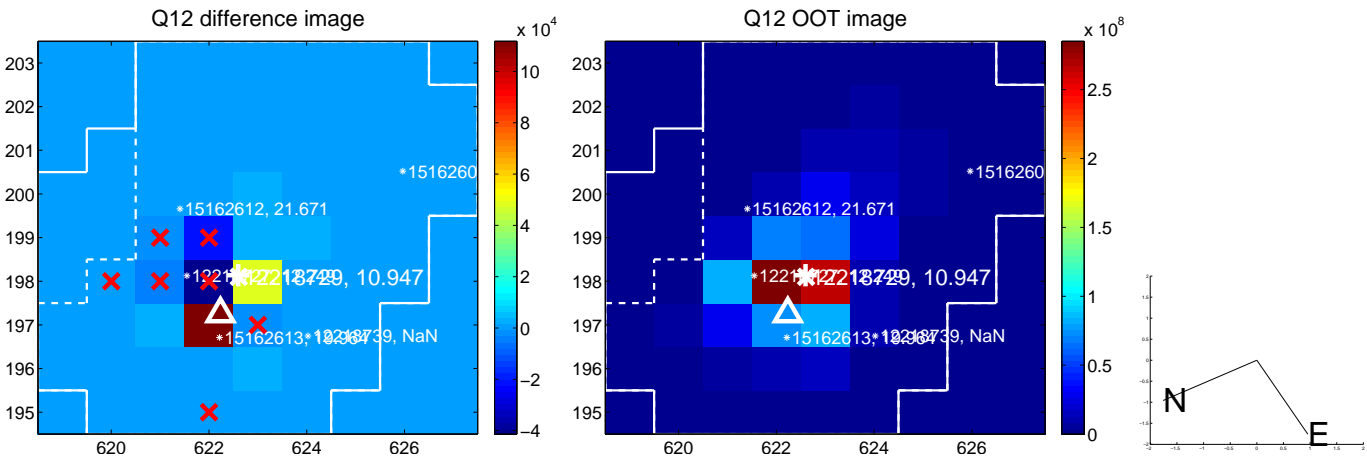
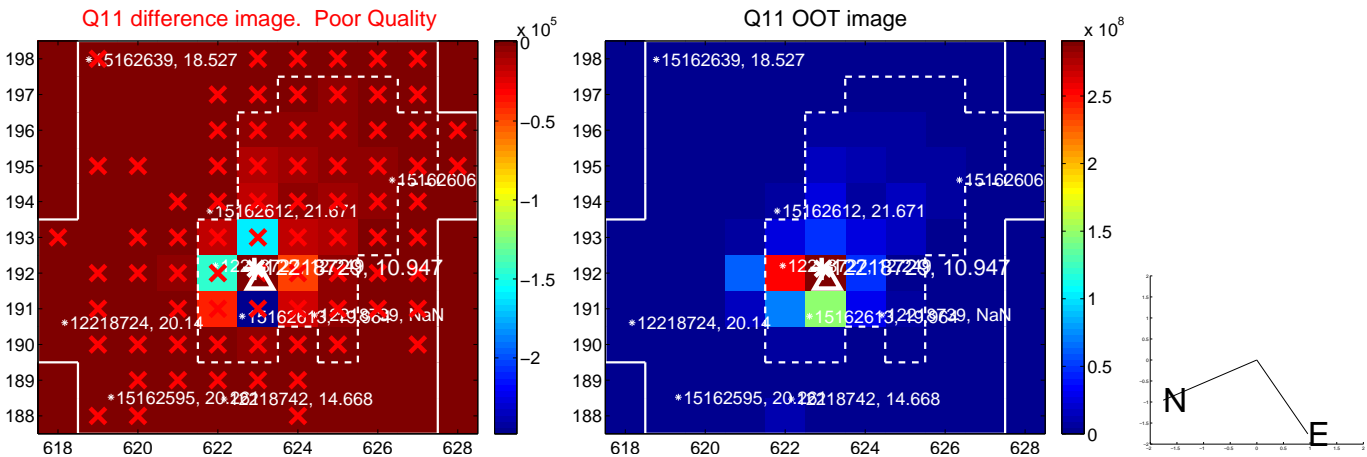
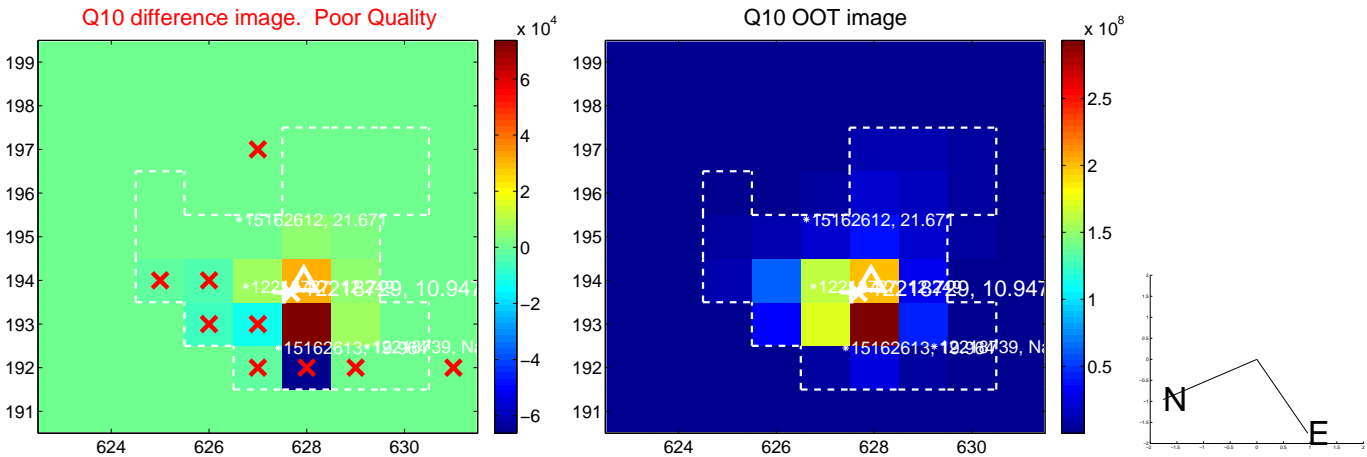
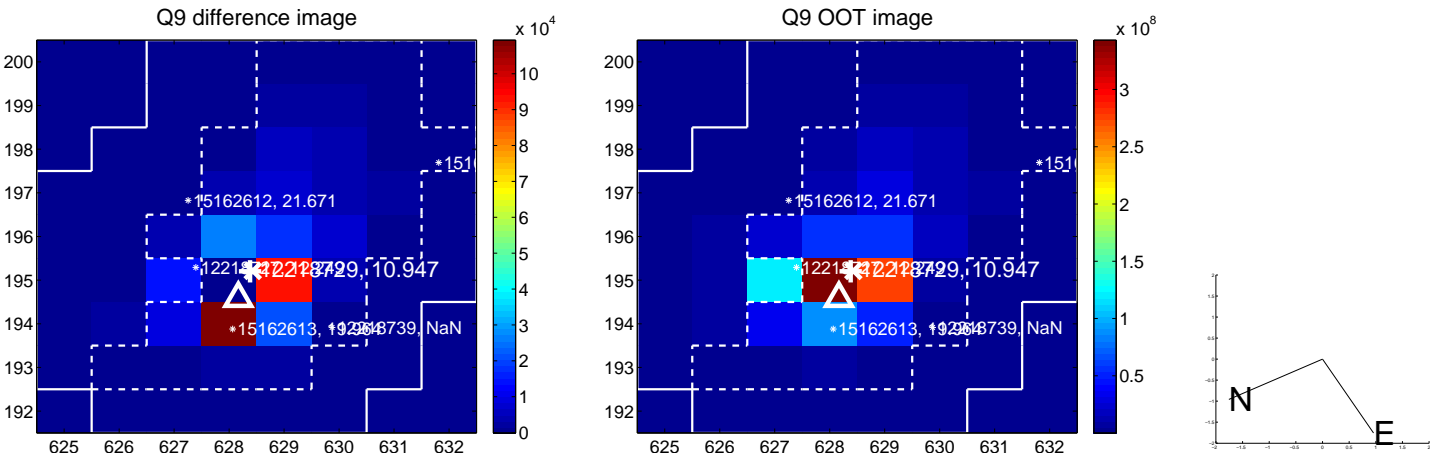
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



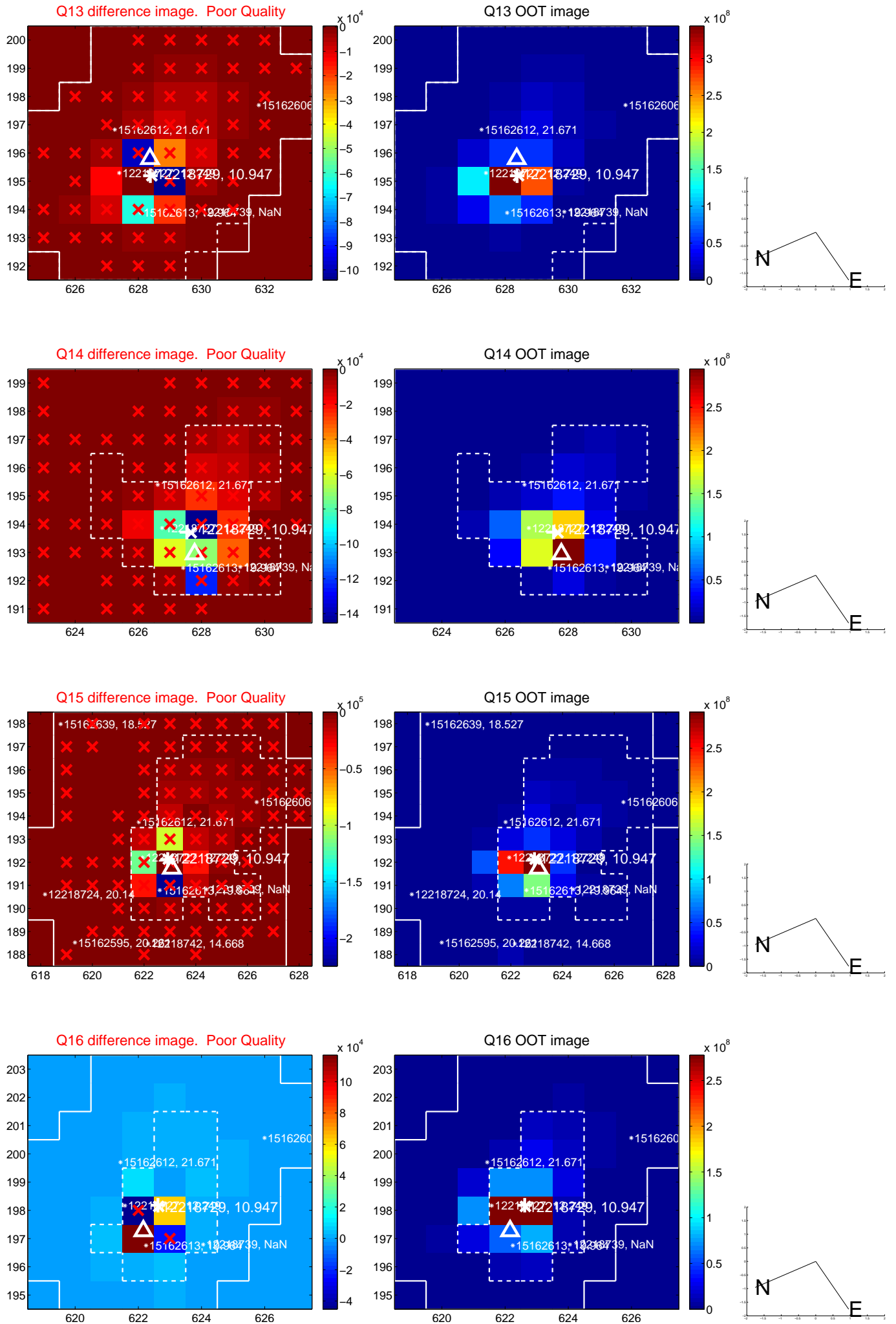
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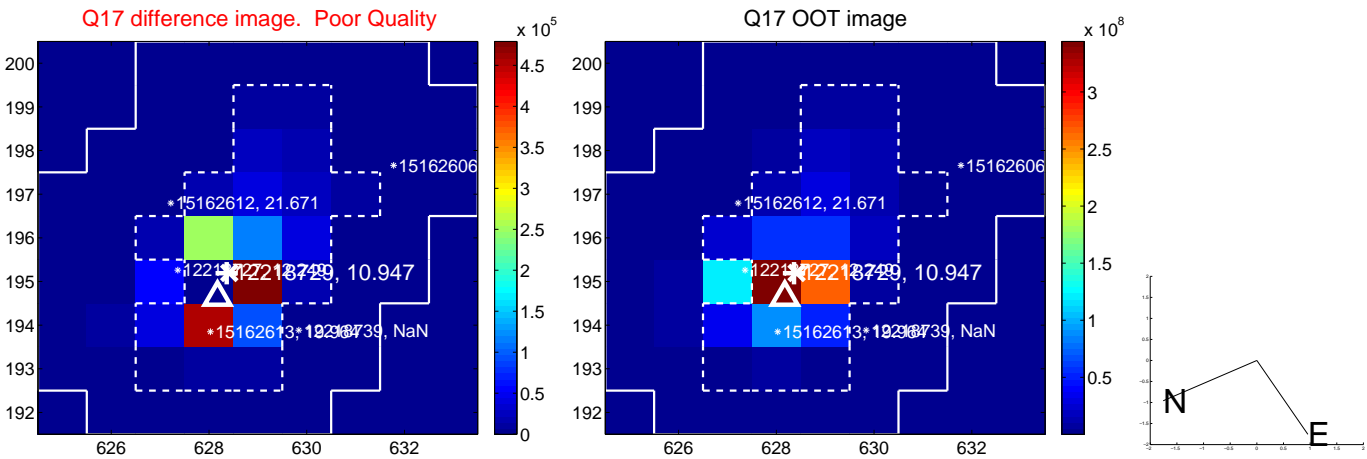
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination

