

KIC 002708286

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
002708286-01	OBS	4071.01	1.891240	132.700295	122.2	4.667	15.8	17.4	1.12	5706	1.46	1513.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002708286-01	OBS	FP	0.00	0	0	0	1	CENT_FEW_DIFFS—EPHEM_MATCH

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.

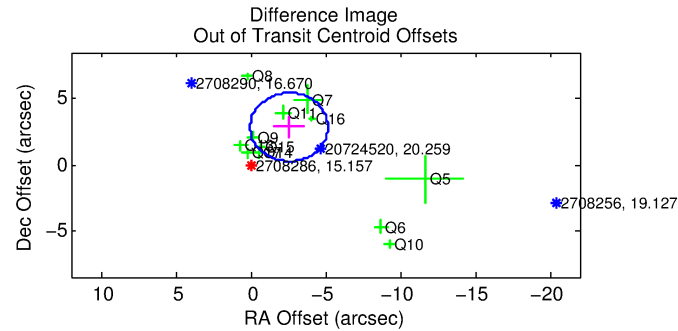
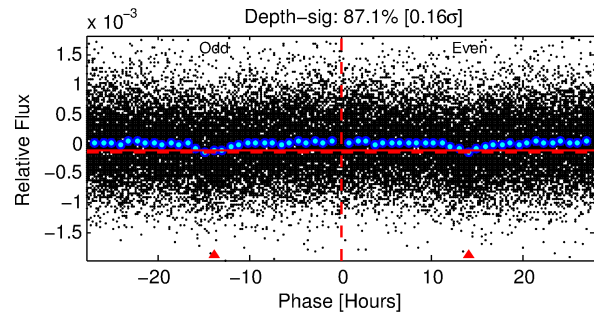
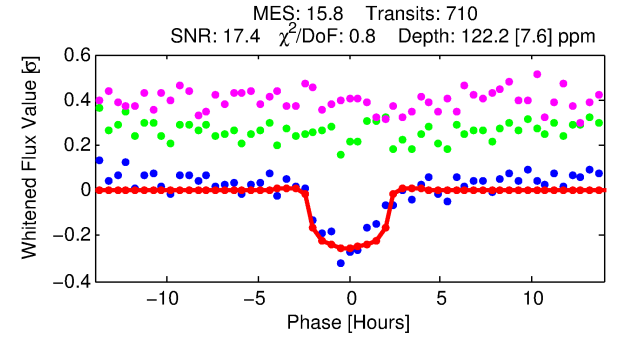
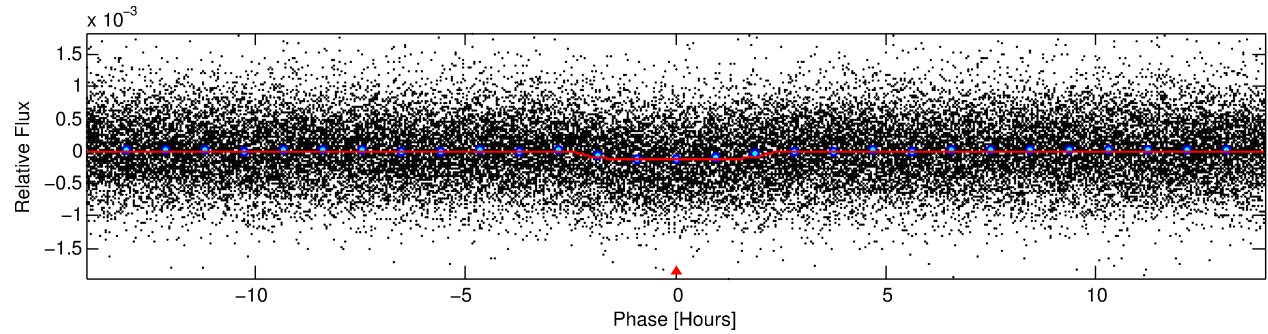
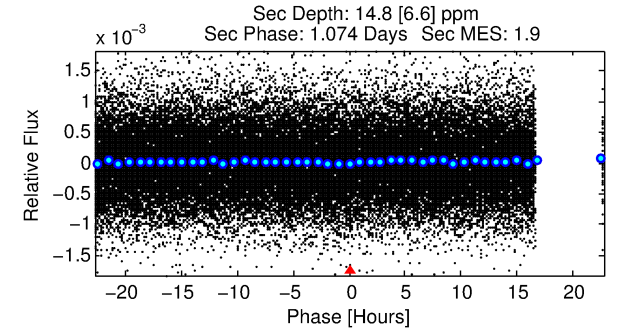
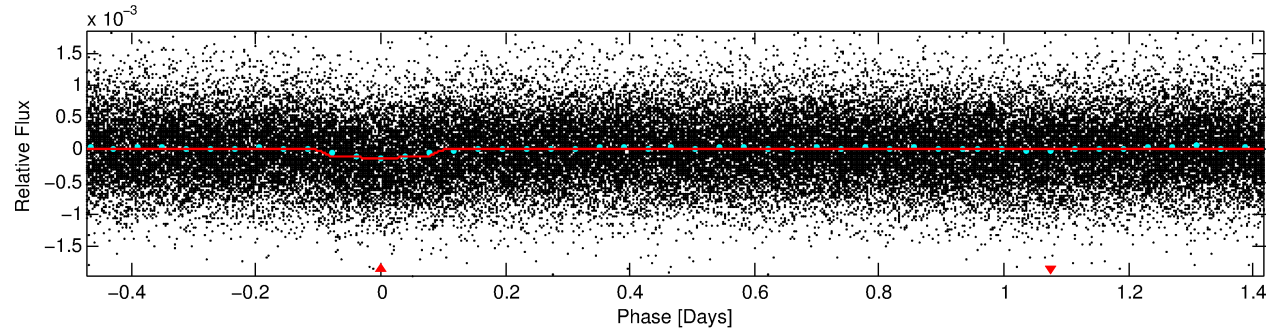
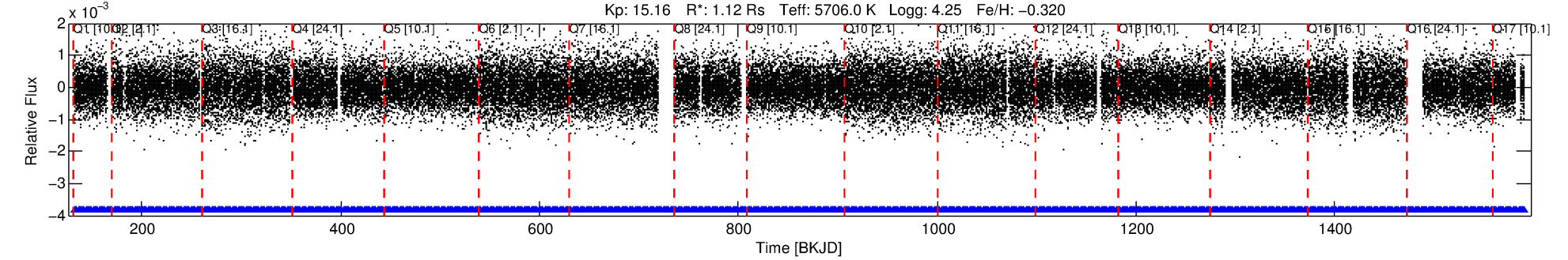
Ephemeris Match Information For 002708286-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
002708286-01	2708286	6286.01	2708156	1:1	127.6	31	6	10.67	15.15	5253.40	Direct-PRF	0	1.10	0.98

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant σ_P < 5.0 and σ_T < 5.0. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 2708286 Candidate: 1 of 1 Period: 1.891 d
KOI: K04071.01 Corr: 0.887



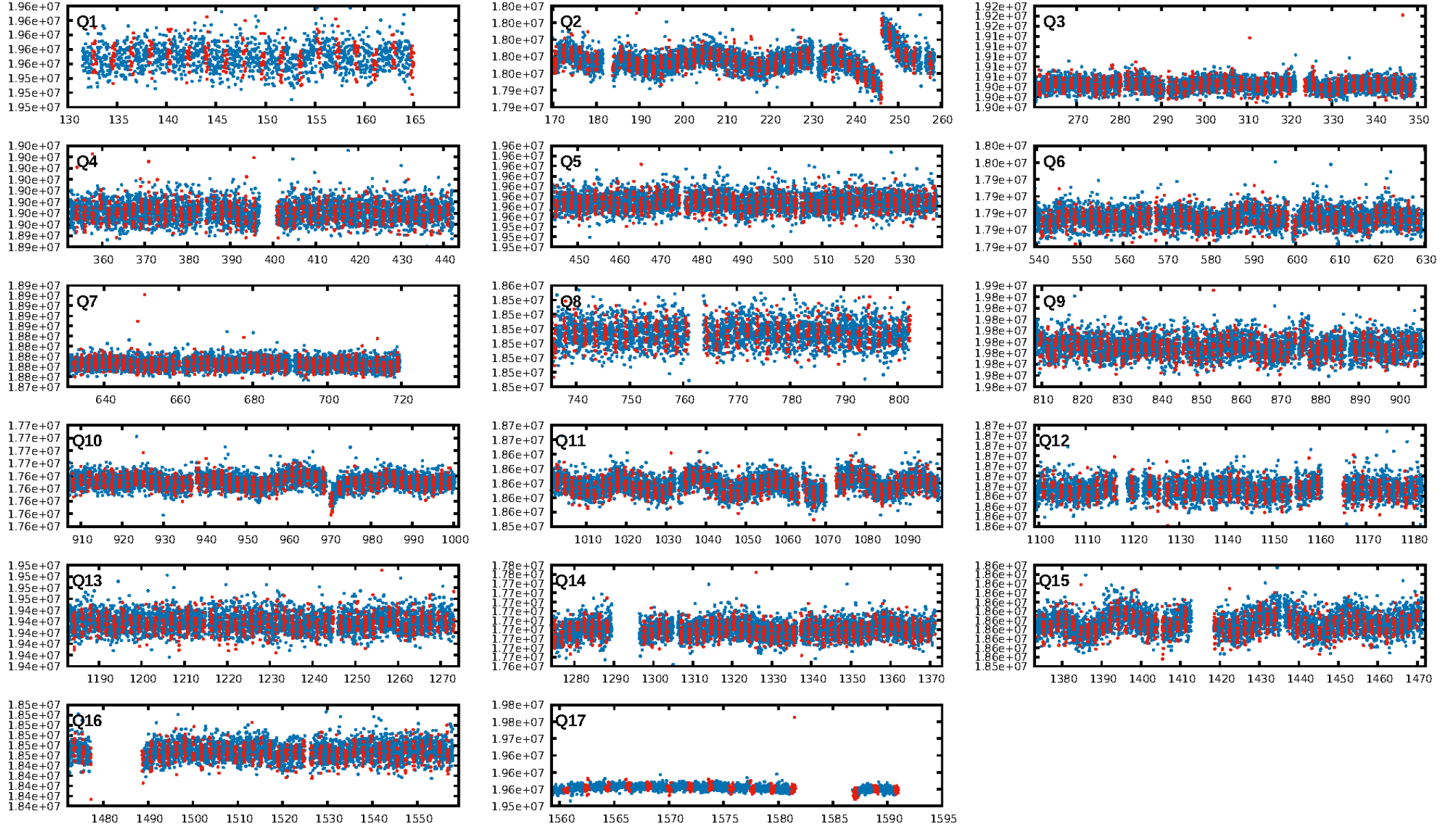
DV Fit Results:

Period = 1.89124 [0.00001] d
Epoch = 132.7003 [0.0035] BKJD
Rp/R* = 0.0119 [0.0035]
a/R* = 1.74 [1.66]
b = 0.89 [0.33]
Seff = 1513.69 [506.53]
Teq = 1591 [133] K
Rp = 1.46 [0.51] Re
a = 0.0281 [0.0056] AU
Ag = 3.00 [2.41] [0.83σ]
Teffp = 3237 [595] K [2.70σ]

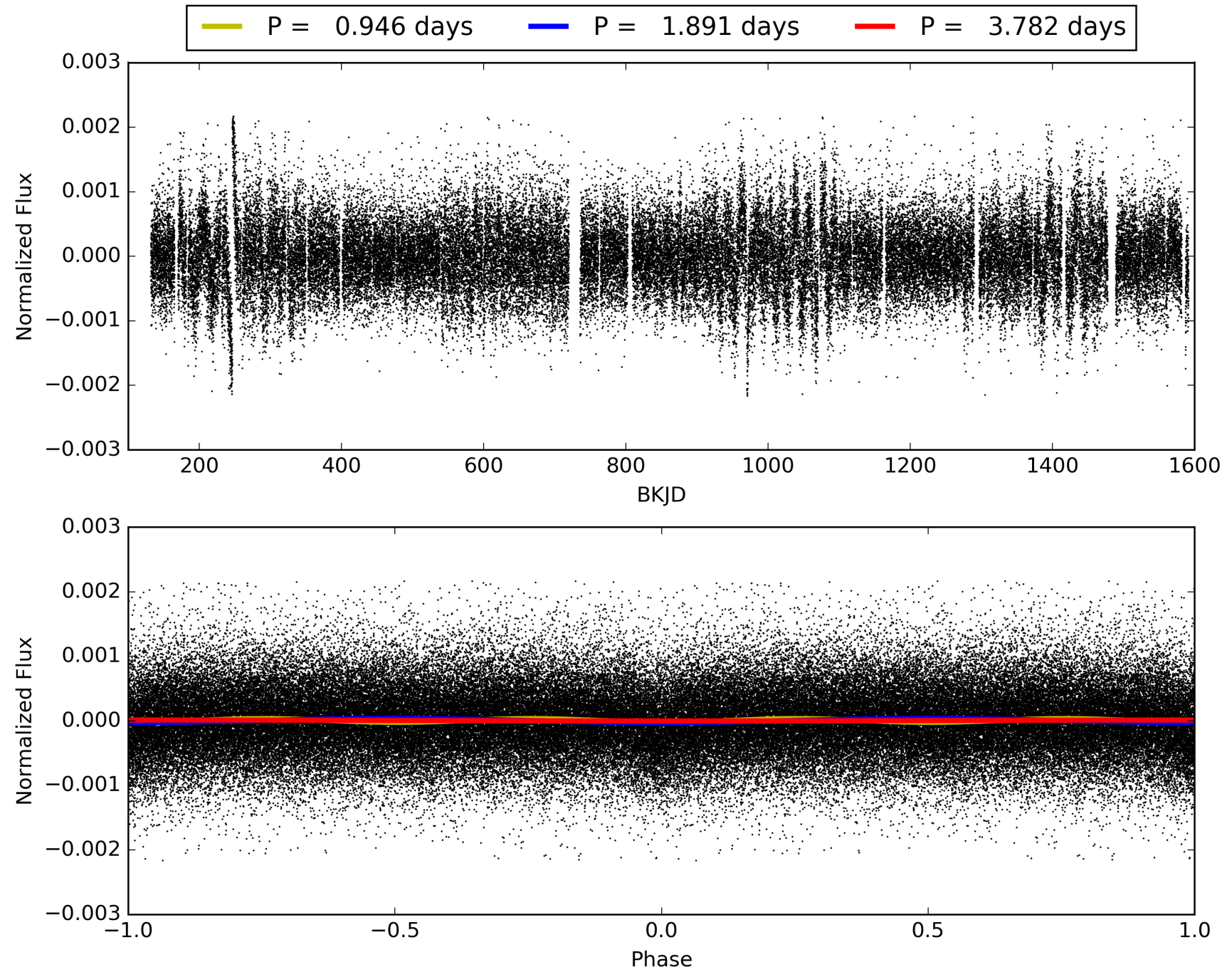
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.33e-52
RollingBand-fgt: 1.00 [677/677]
GhostDiagnostic-chr: 0.6429
Centroid-sig: 0.0%
Centroid-so: 2.265 arcsec [3.34σ]
OotOffset-rm: 3.827 arcsec [4.43σ]
KicOffset-rm: 3.800 arcsec [4.43σ]
OotOffset-st: 3/3/2/4 [12]
KicOffset-st: 3/3/2/4 [12]
DiffImageQuality-fgm: 0.00 [0/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002708286-01, PDC Light Curves

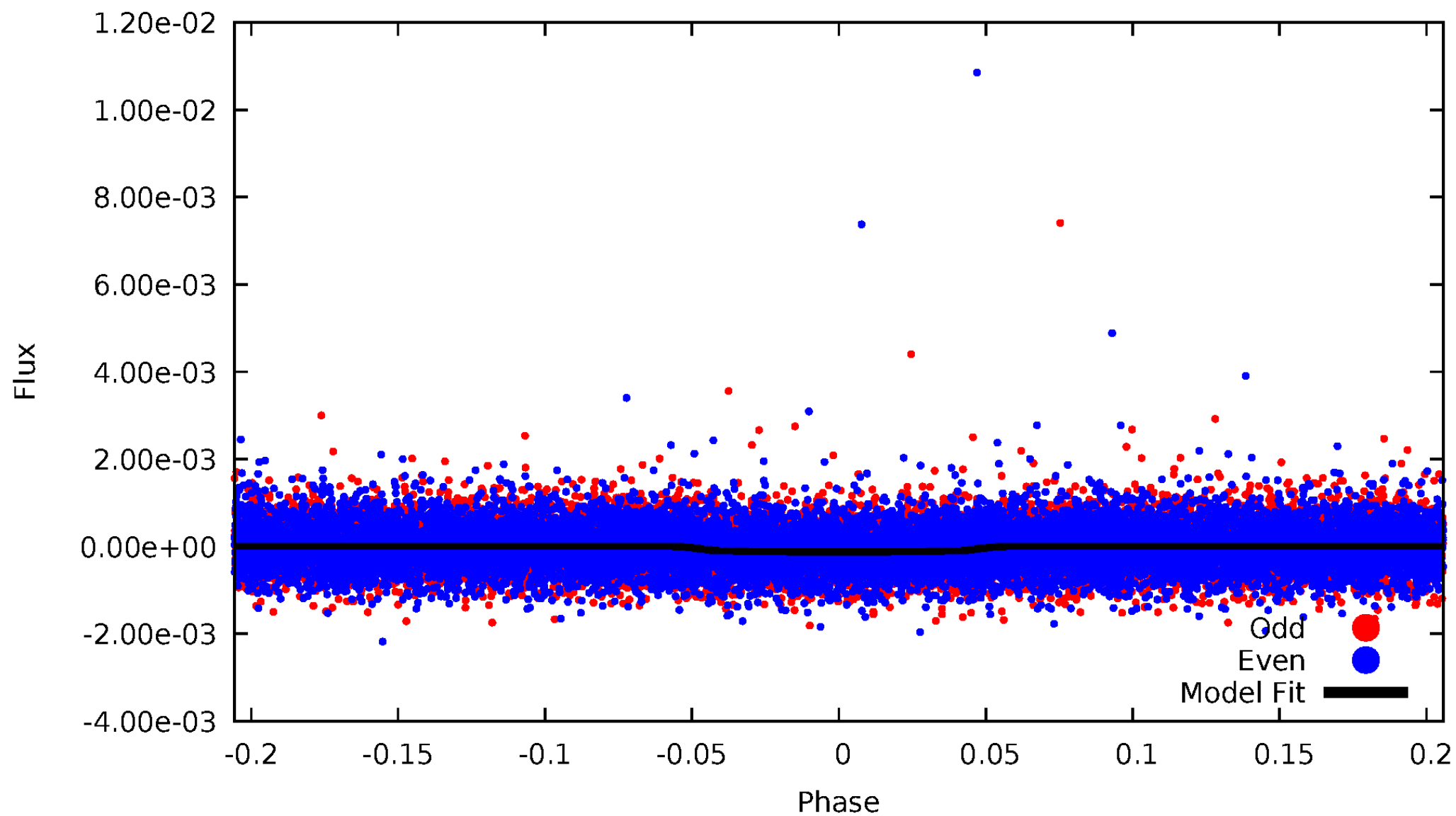


TCE 002708286-01



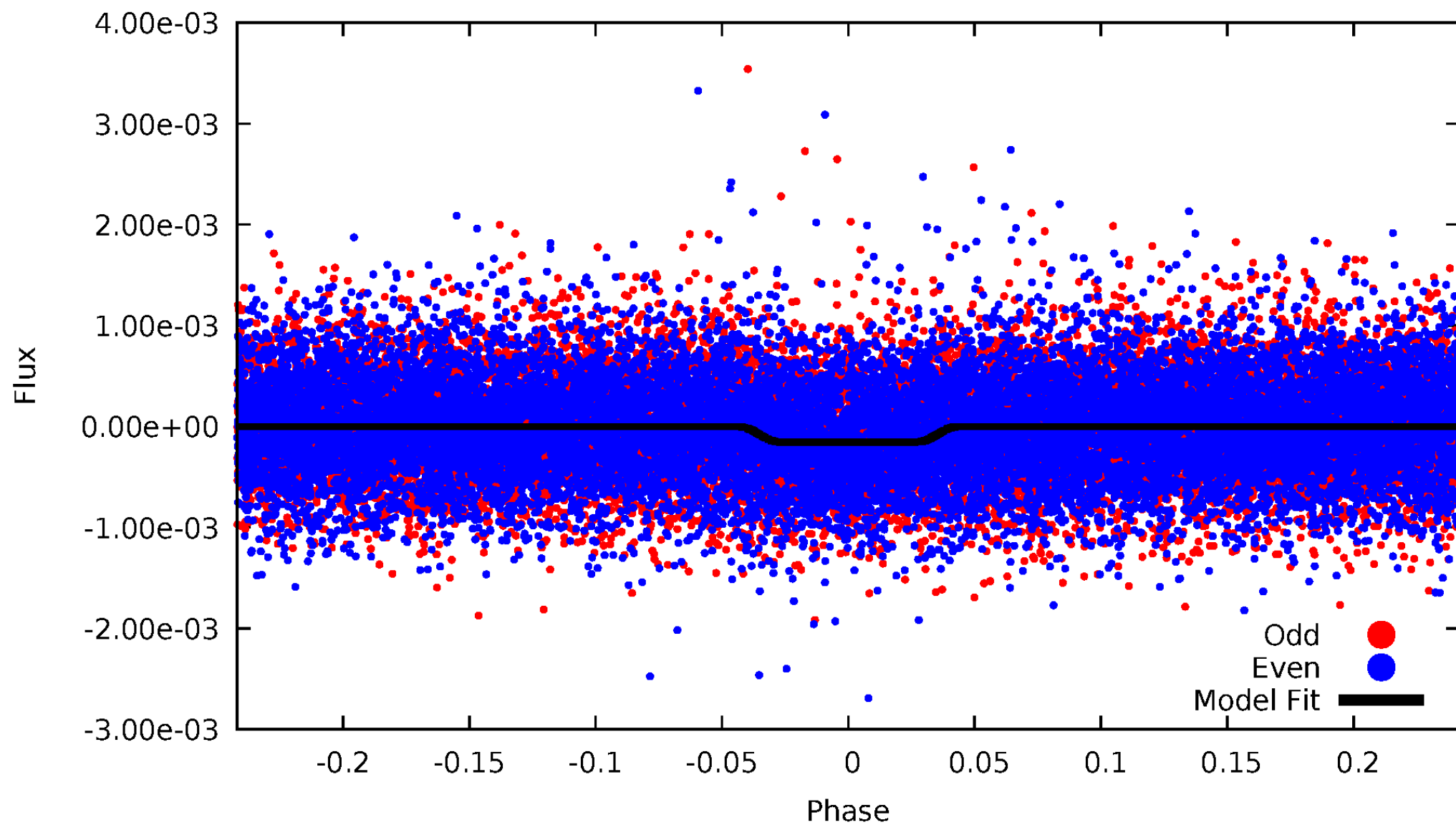
DV Odd/Even

TCE 002708286-01



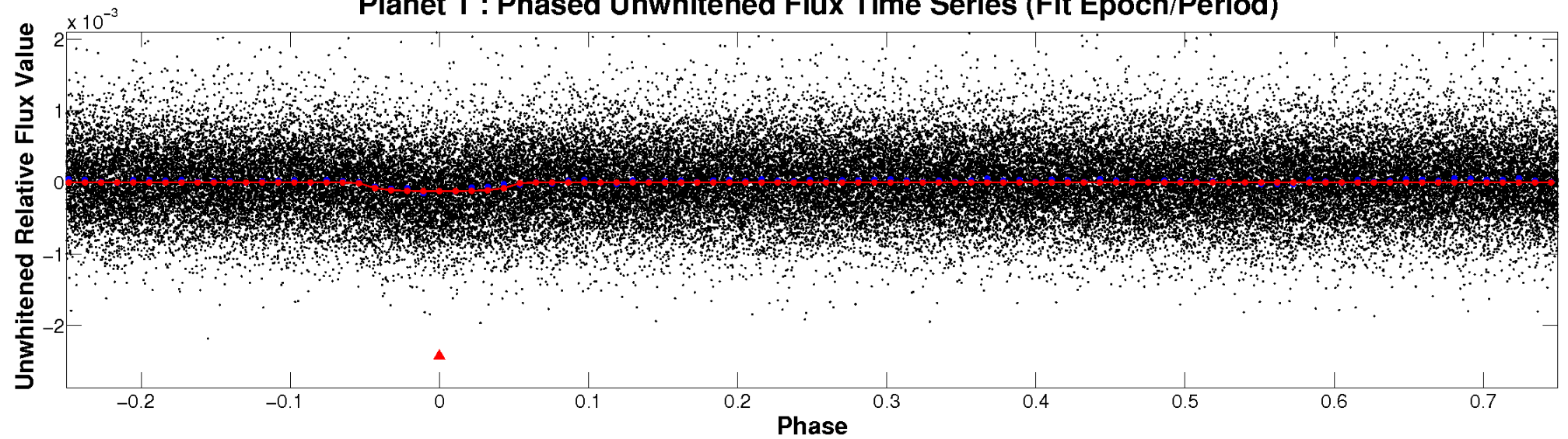
ALT Odd/Even

TCE 002708286-01

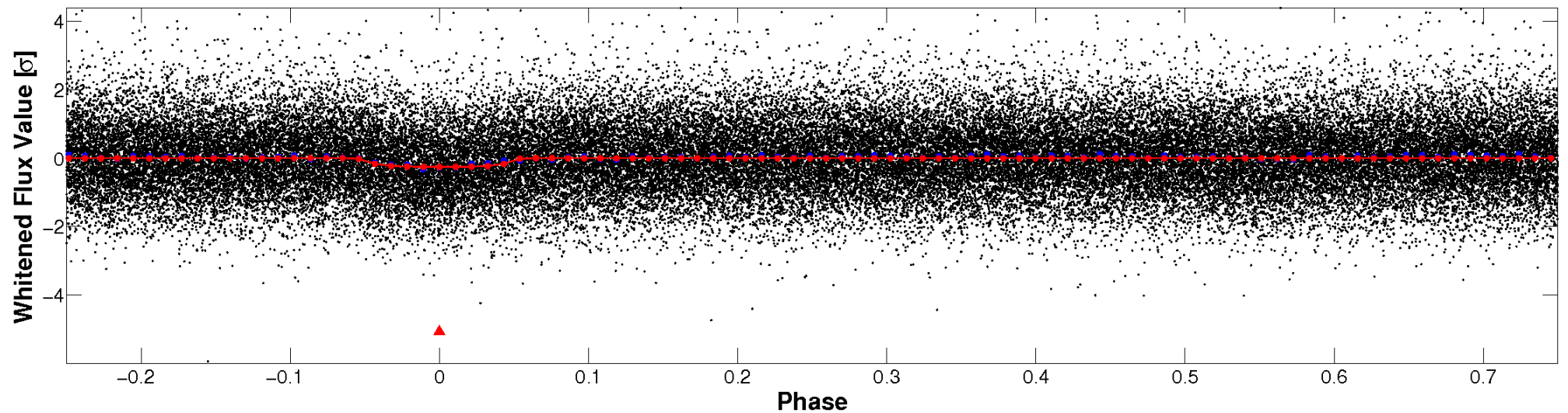


Non-Whitened Vs. Whitened Light Curve

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

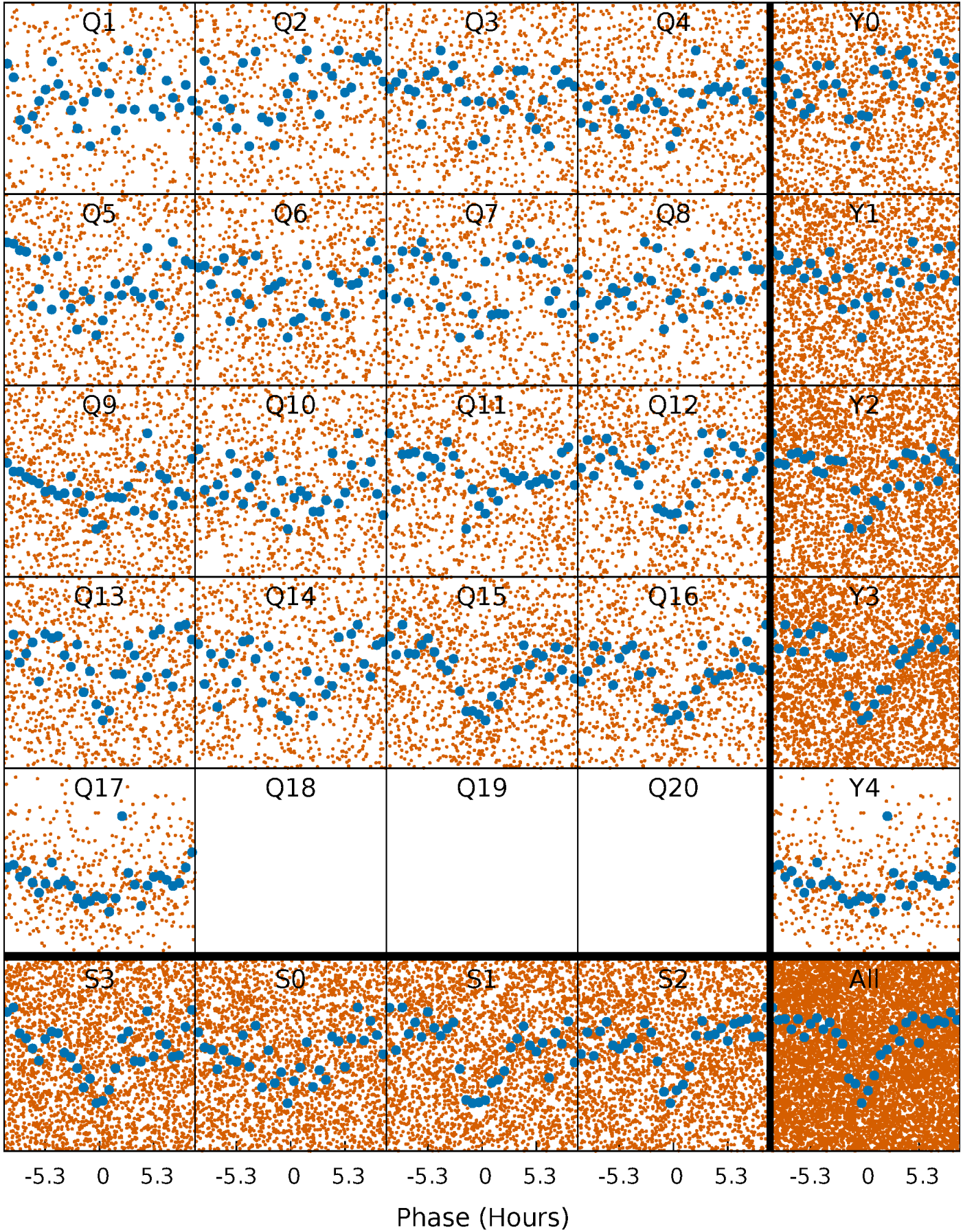


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



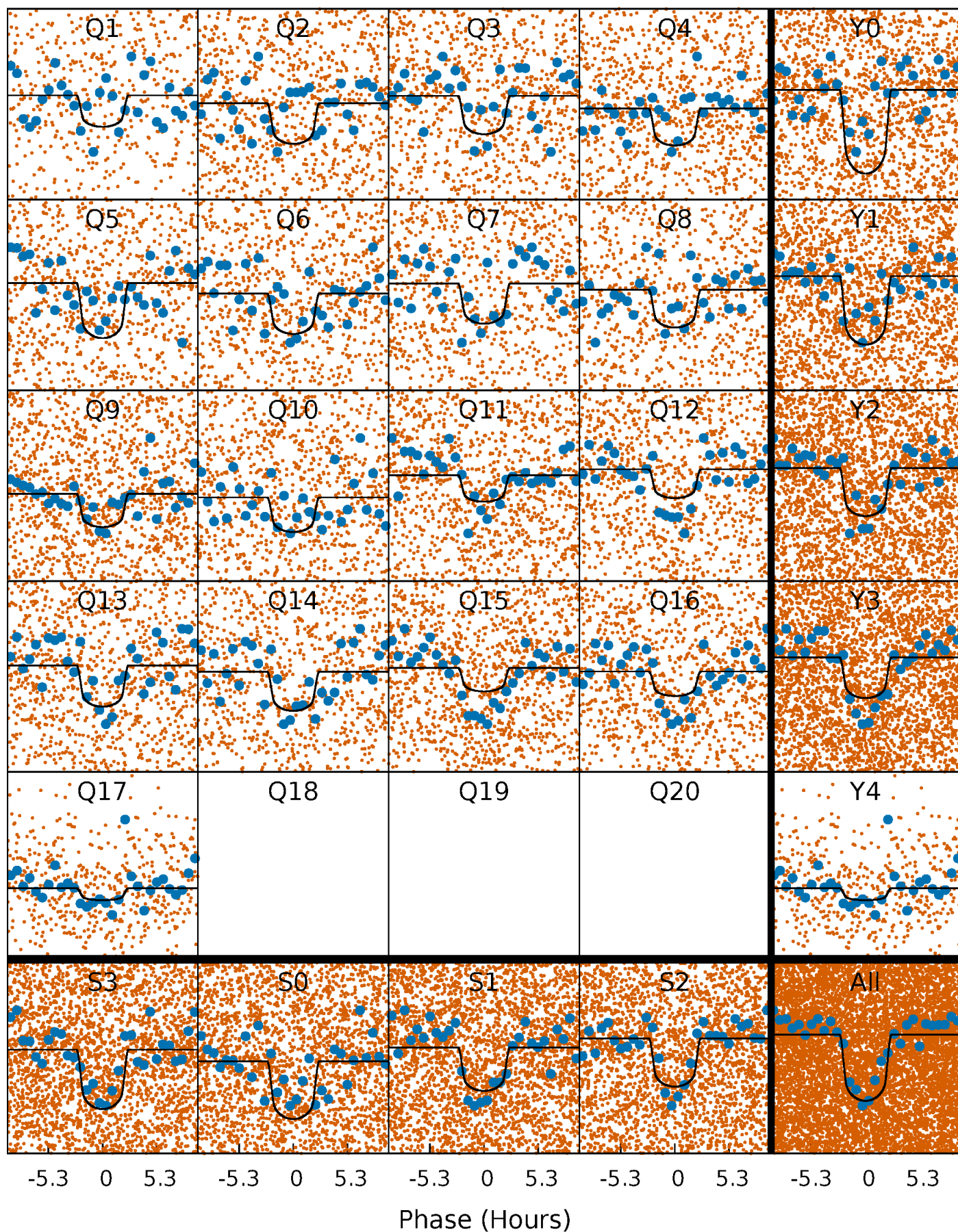
PDC Quarter-Phased Transit Curves

TCE 002708286-01 P= 1.891240 Days $T_0=132.700295$ (BKJD)



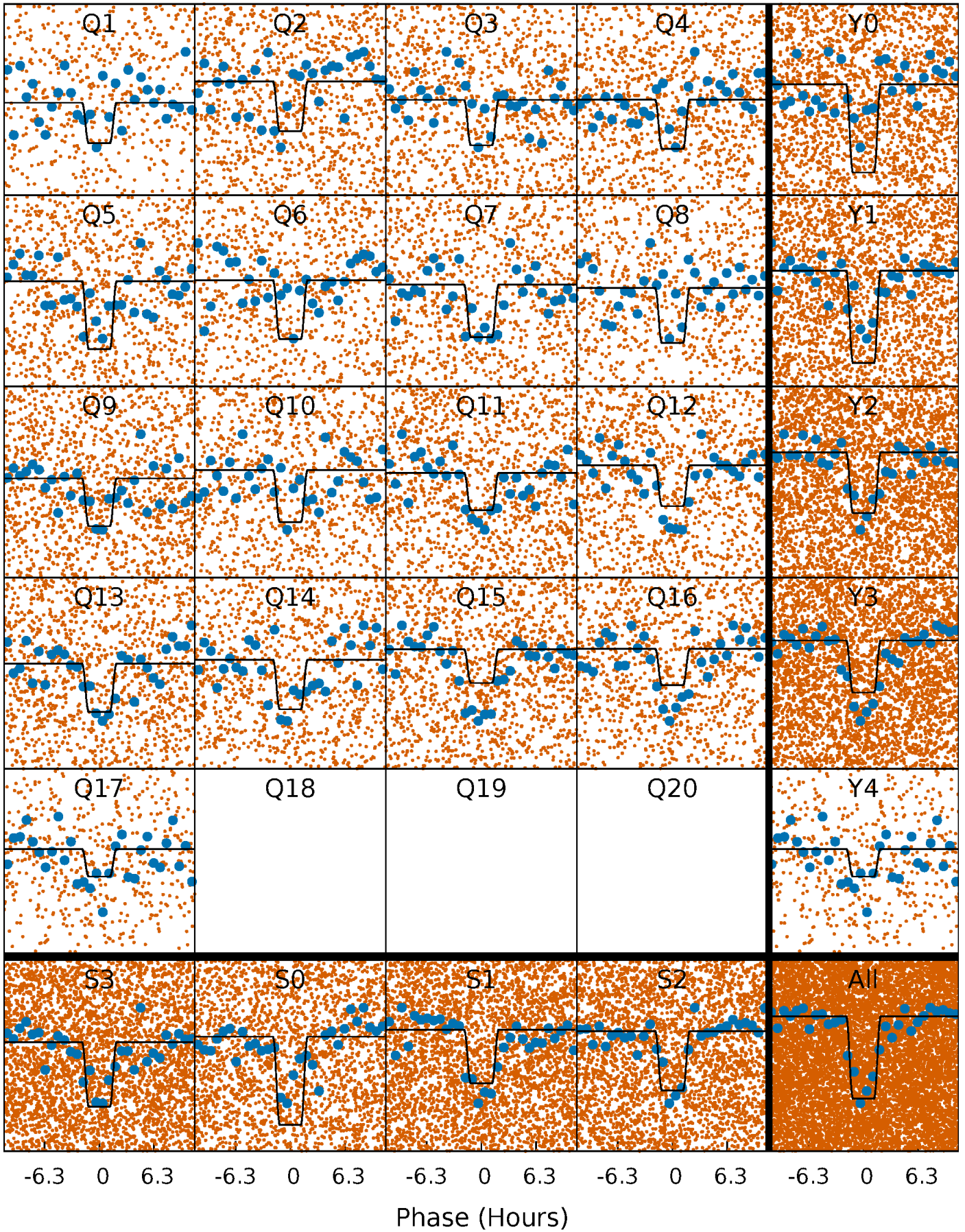
DV Quarter-Phased Transit Curves

TCE 002708286-01 P= 1.891240 Days $T_0=132.700295$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

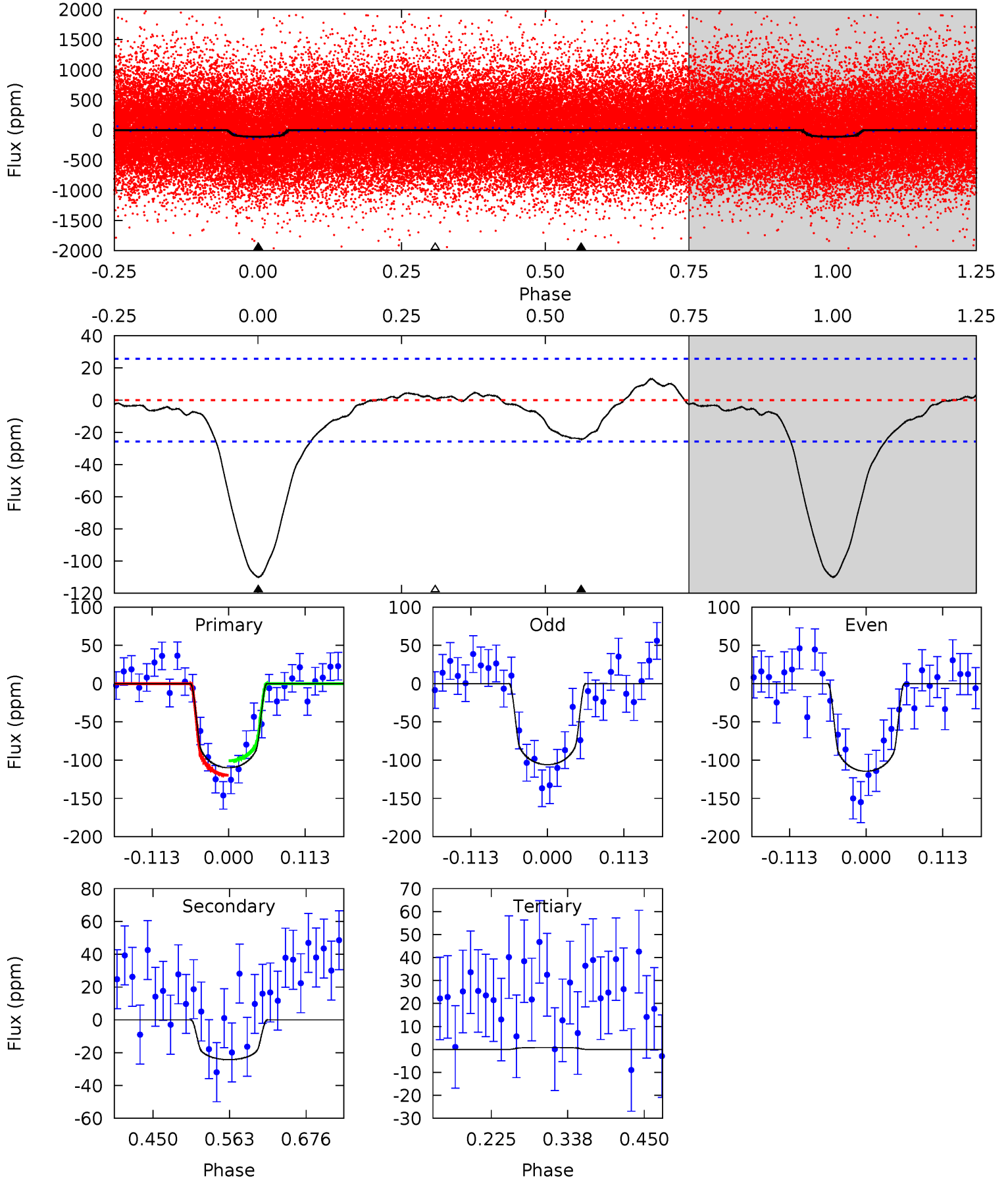
TCE 002708286-01 P= 1.891287 Days $T_0=132.674863$ (BKJD)



DV Model-Shift Uniqueness Test

002708286-01, P = 1.891240 Days, E = 130.809055 Days

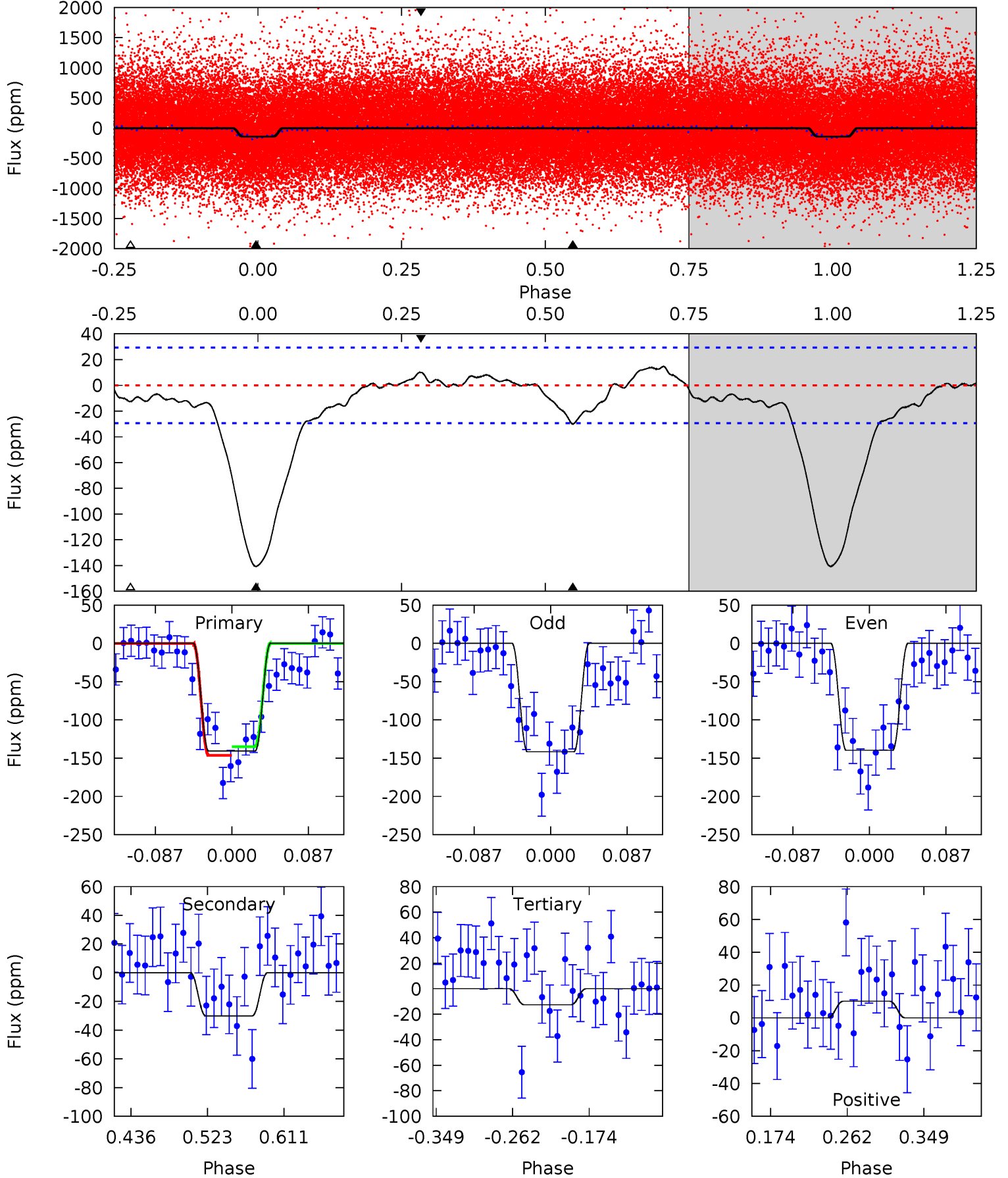
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	4.28	-0.15	0	4.54	1.59	1.05	19.5	19.4	4.43	4.28	0.76	0.94	0.11	1.67



Alt Model-Shift Uniqueness Test

002708286-01, P = 1.891287 Days, E = 130.783576 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.0	4.70	1.98	1.59	4.59	1.71	1.56	20.0	20.4	2.73	3.11	0.15	0.99	0.09	0.90



Stellar Parameters For KIC 002708286

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5706^{+79}_{-68}	$4.255^{+0.198}_{-0.132}$	$-0.320^{+0.150}_{-0.100}$	$1.120^{+0.216}_{-0.216}$	$0.824^{+0.075}_{-0.034}$	$0.826^{+0.803}_{-0.301}$
	+1%/-1%	+5%/-3%	+47%/-31%	+19%/-19%	+9%/-4%	+97%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 002708286-01 / KOI 4071.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-24 ± 6	$1.45^{+0.45}_{-0.45}$	2217^{+116}_{-125}	3942^{+551}_{-388}	$5.035^{+5.350}_{-2.303}$
Alt.	-30 ± 6	$1.52^{+0.50}_{-0.42}$	2226^{+111}_{-127}	4017^{+551}_{-390}	$5.612^{+5.638}_{-2.487}$

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

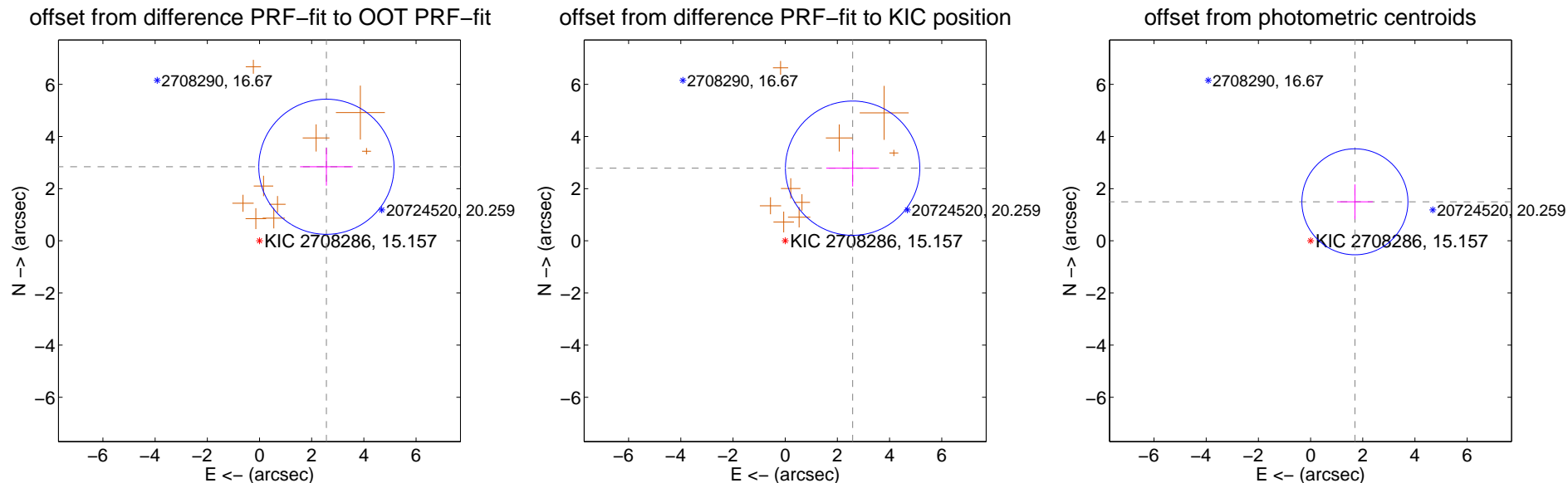
DV Centroid Data

Supplemental centroid analysis for 002708286-01. Kepler magnitude: 15.16. Transit SNR 17.39

There are 0 quarters with good PRF difference image offsets

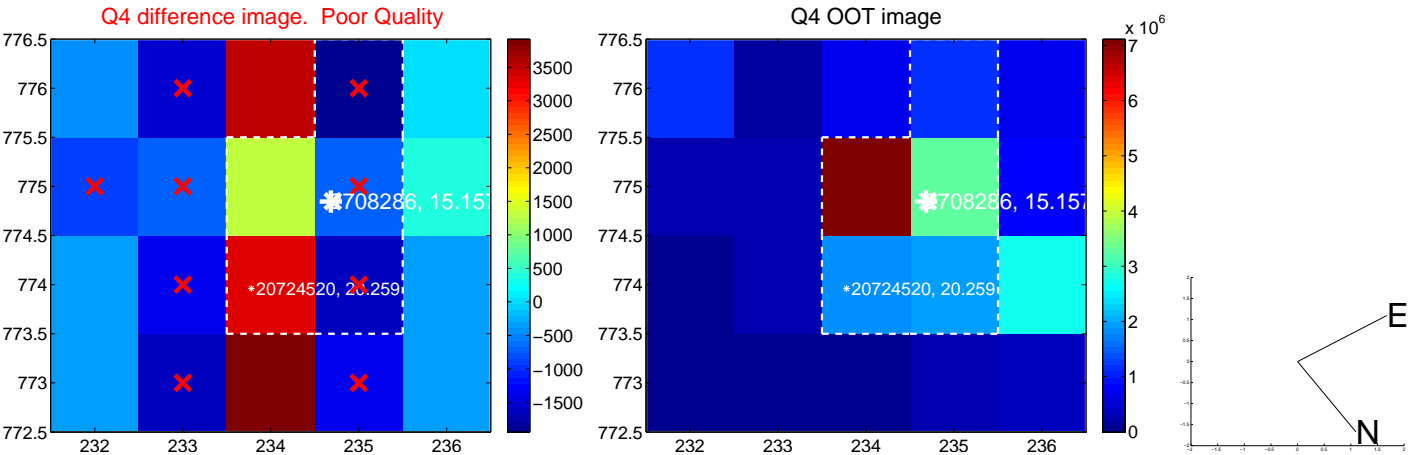
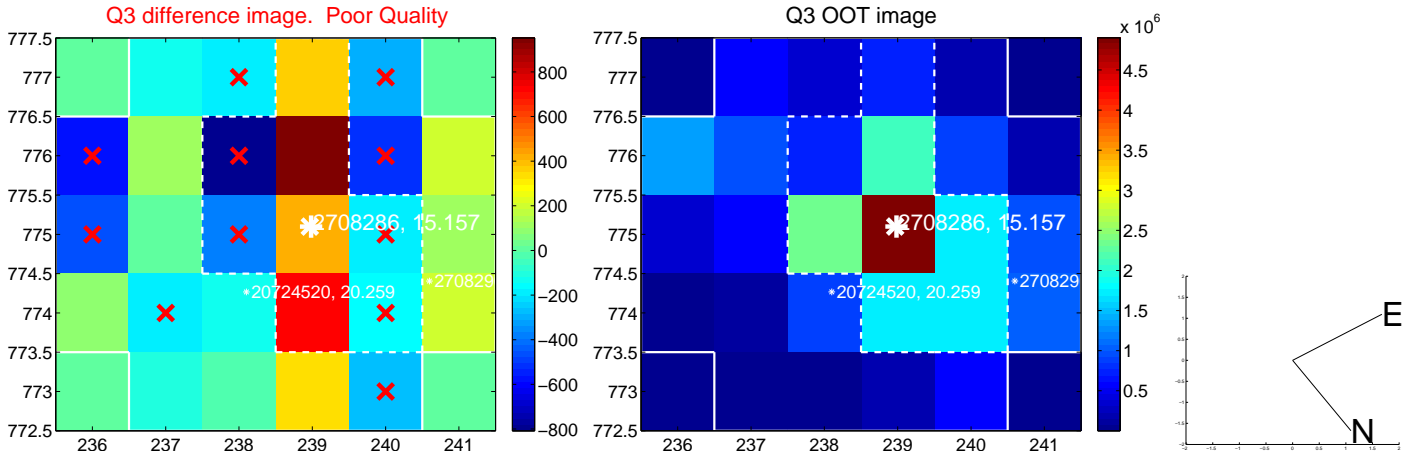
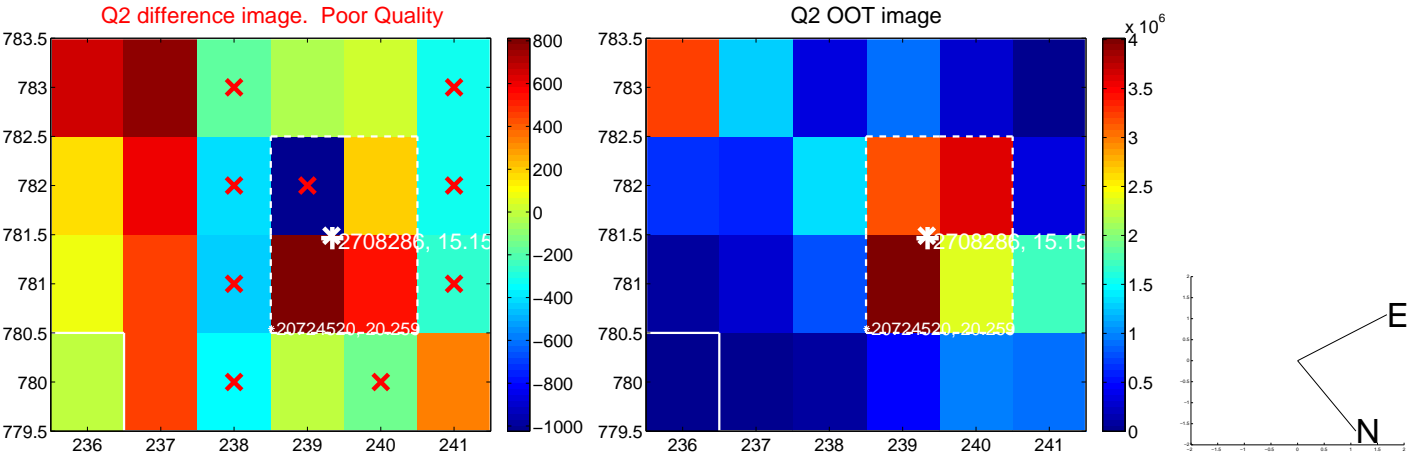
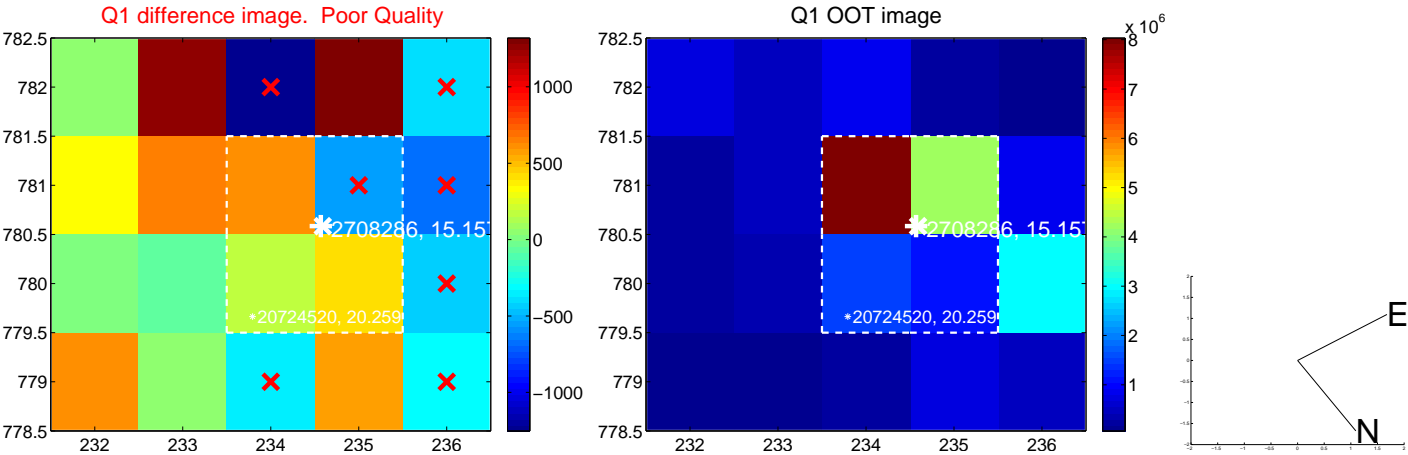
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.827 ± 0.864	4.43	-2.564 ± 1.009	2.841 ± 0.724
PRF-fit source offset from KIC position	3.800 ± 0.858	4.43	-2.584 ± 1.011	2.786 ± 0.701
photometric centroid source offset	2.26 ± 0.68	3.34	-1.70 ± 0.69	1.50 ± 0.67

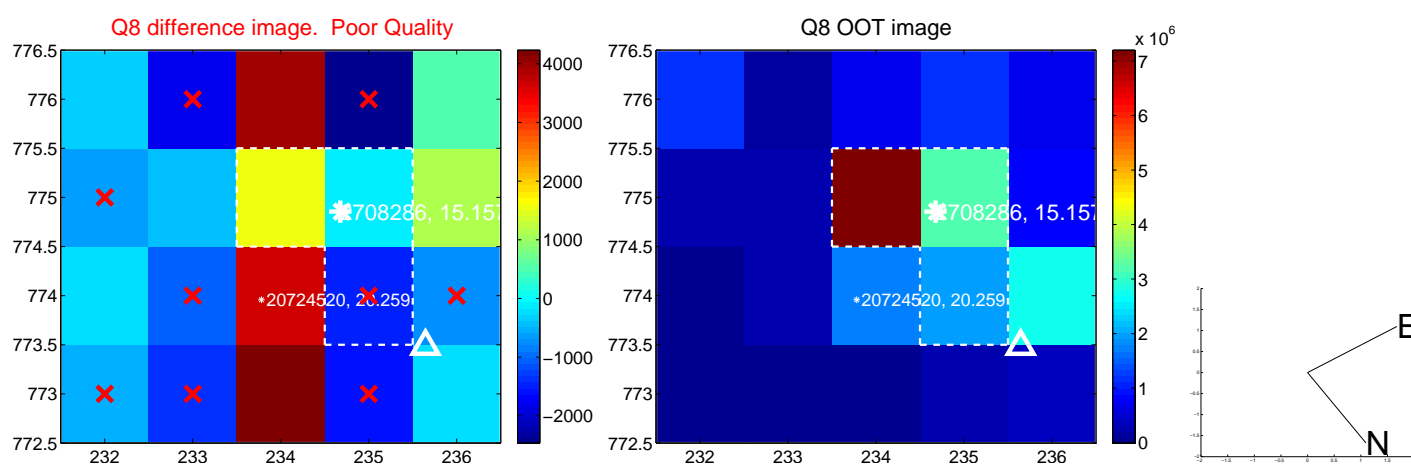
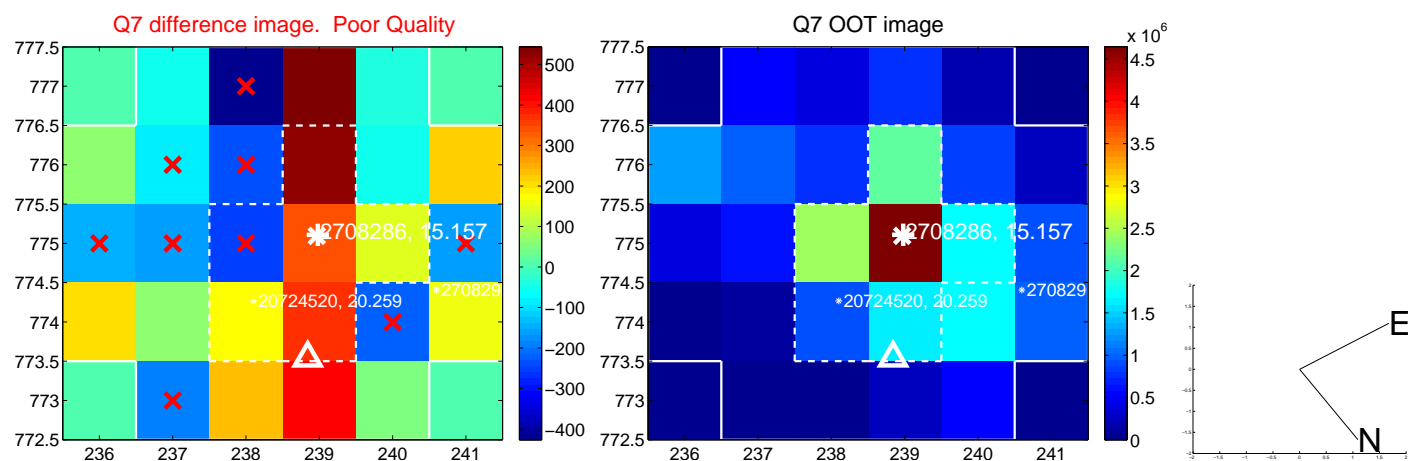
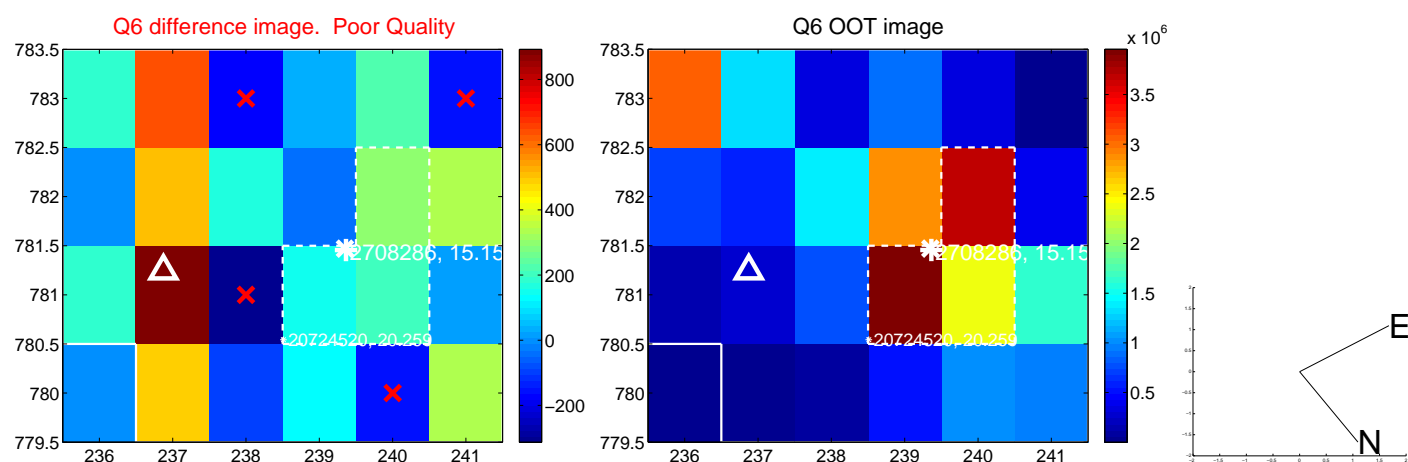
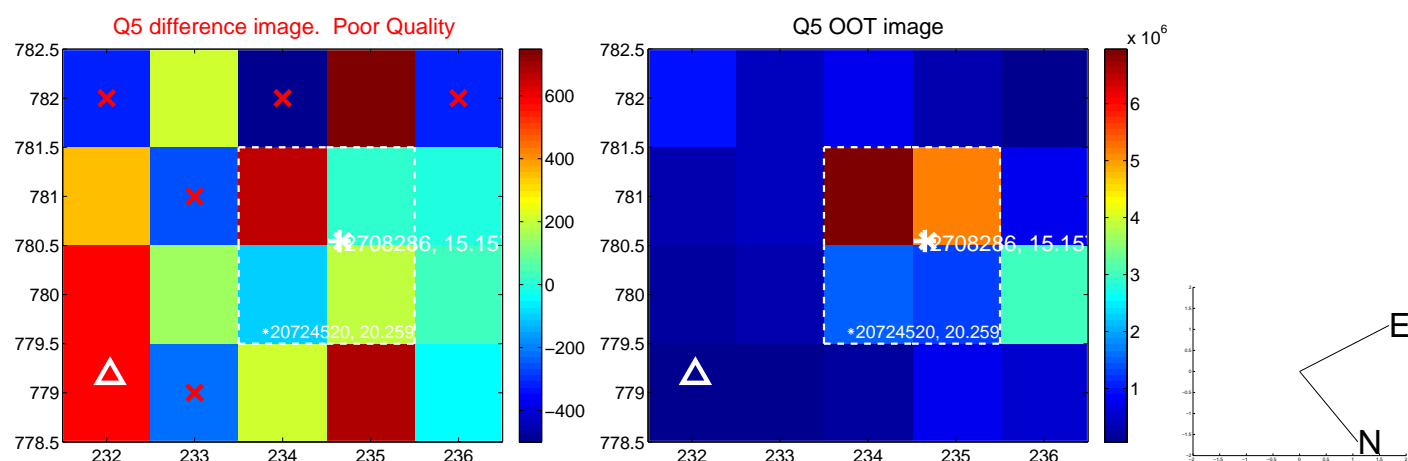


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

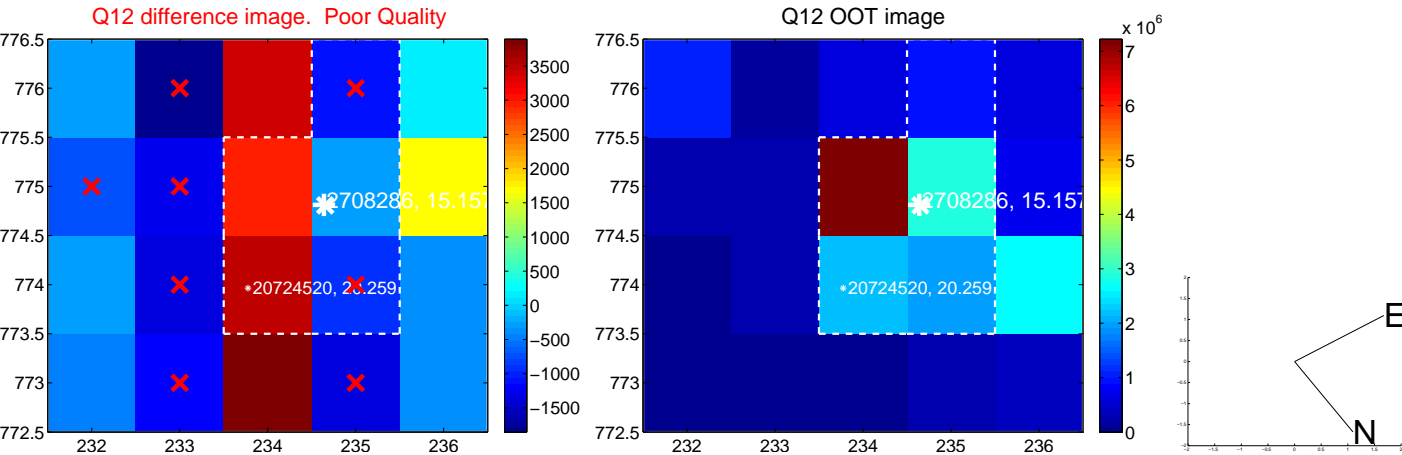
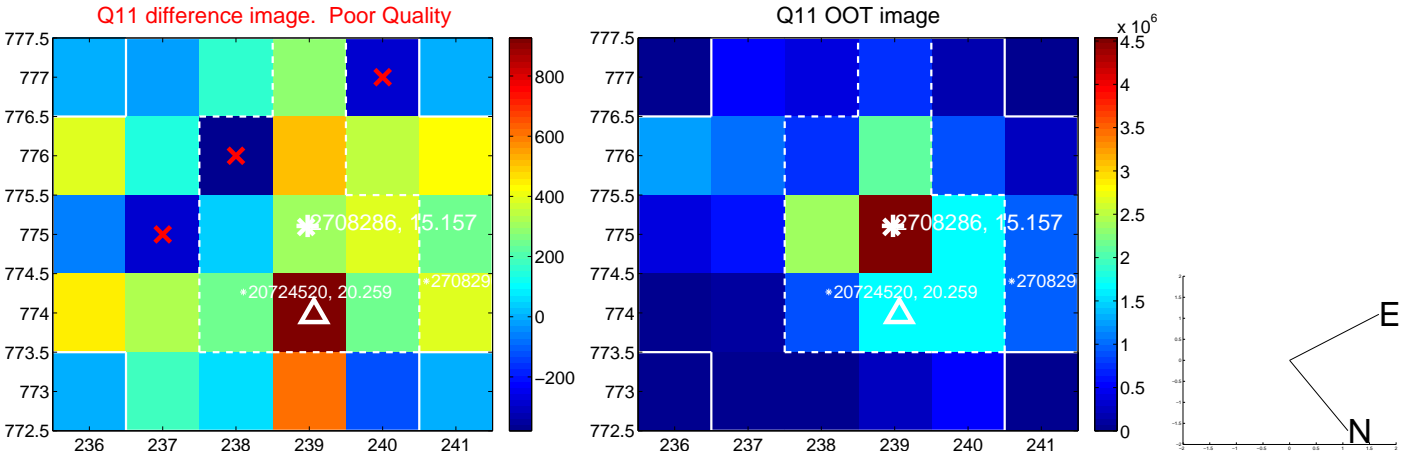
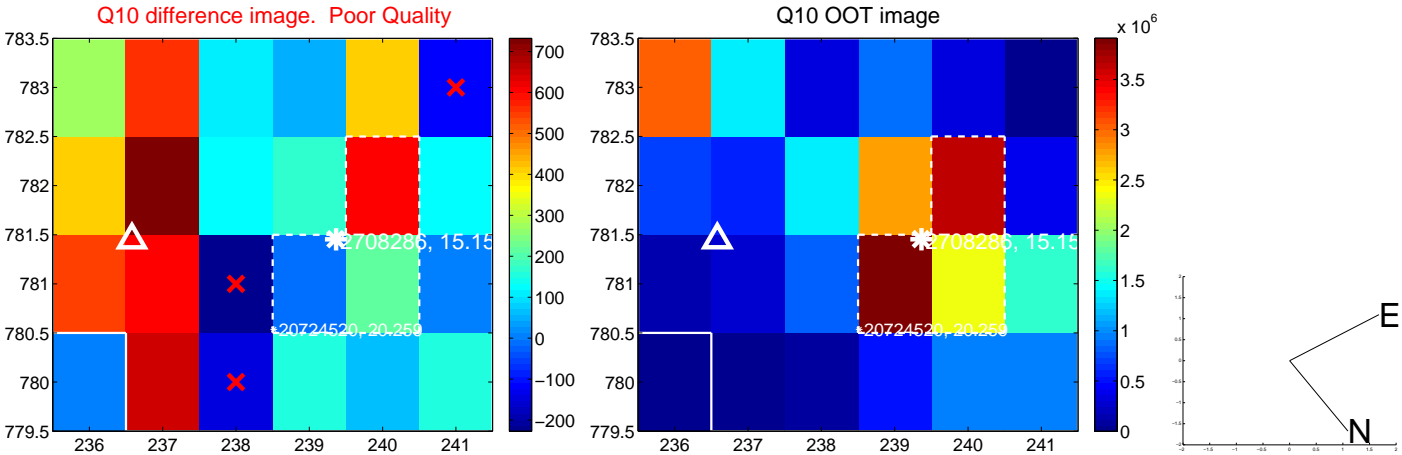
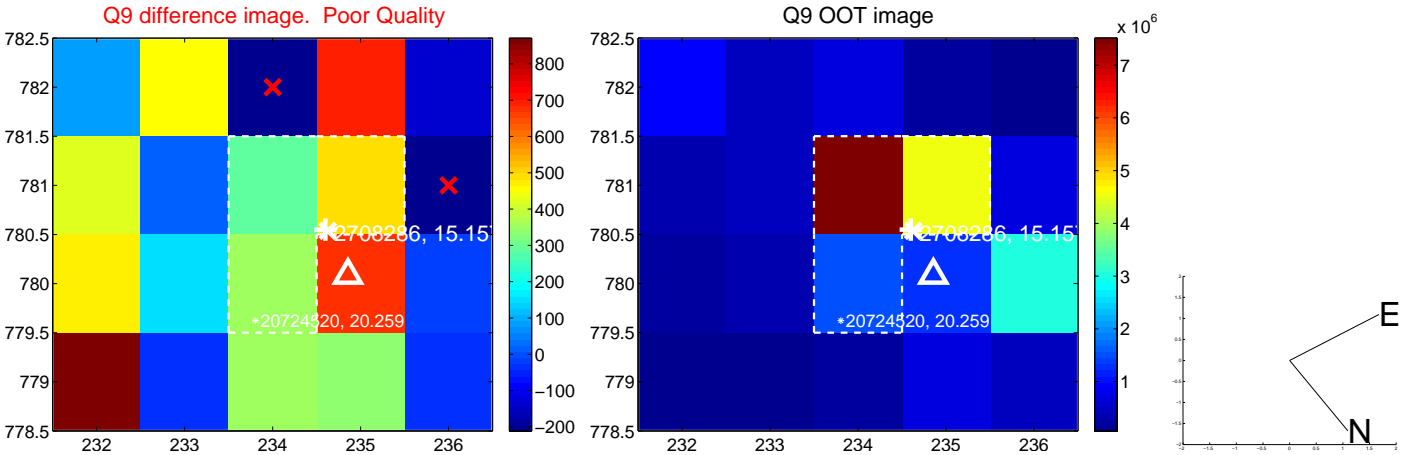
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



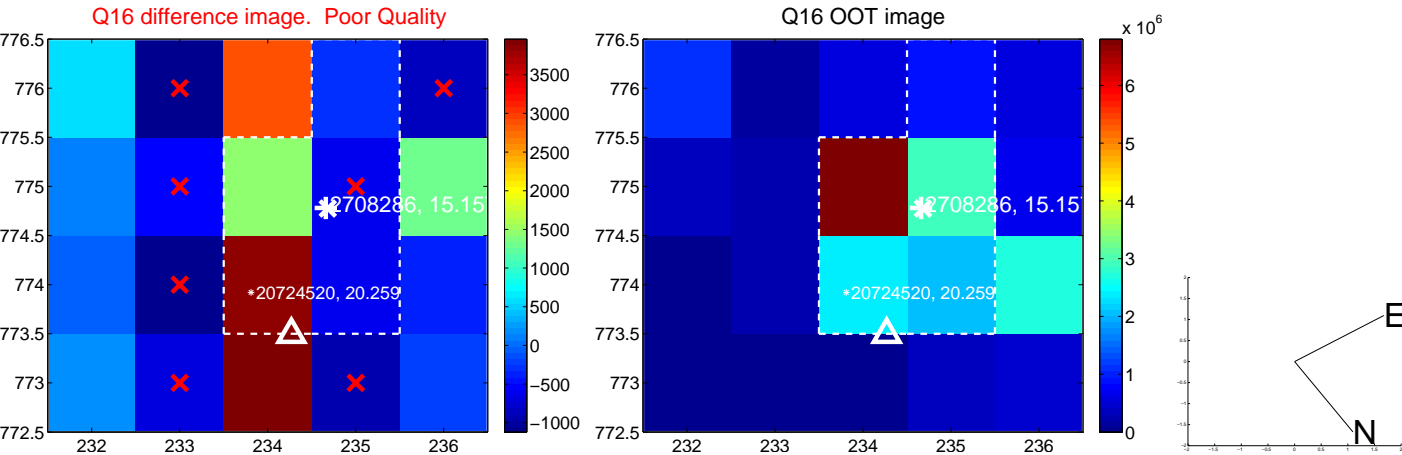
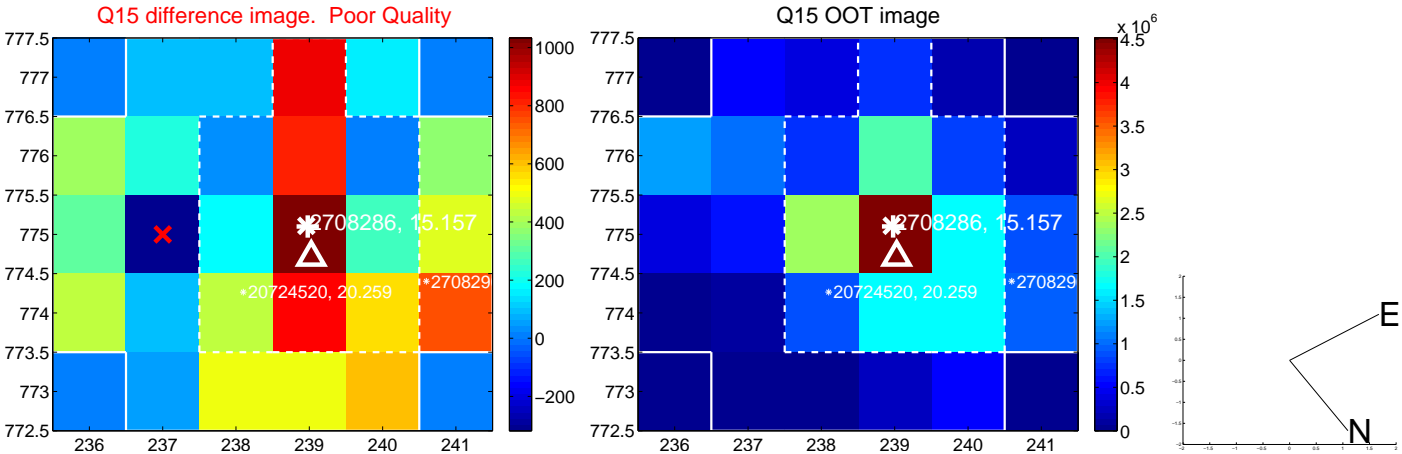
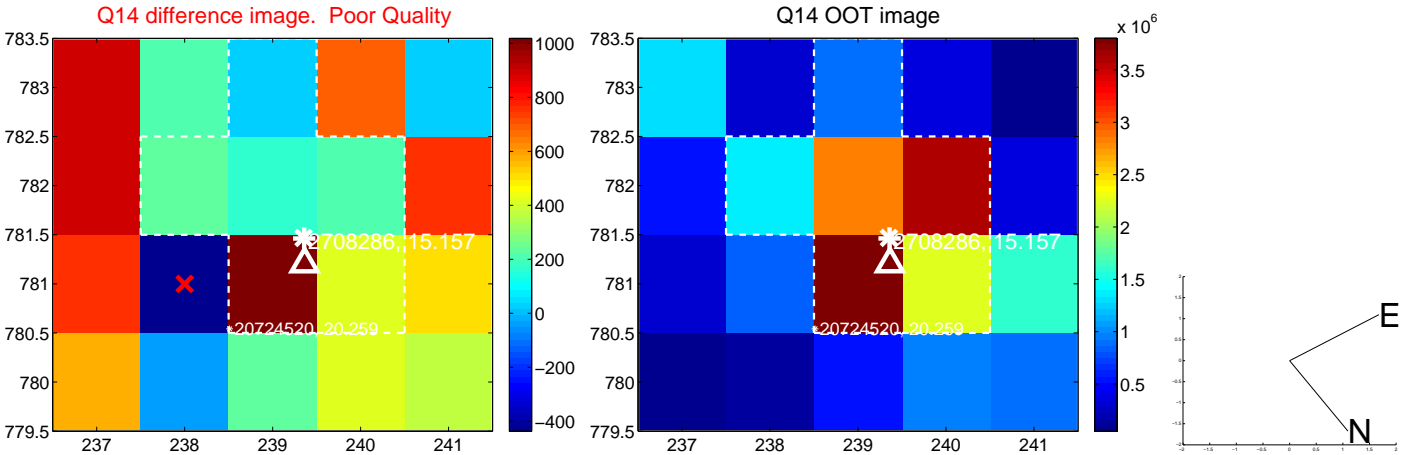
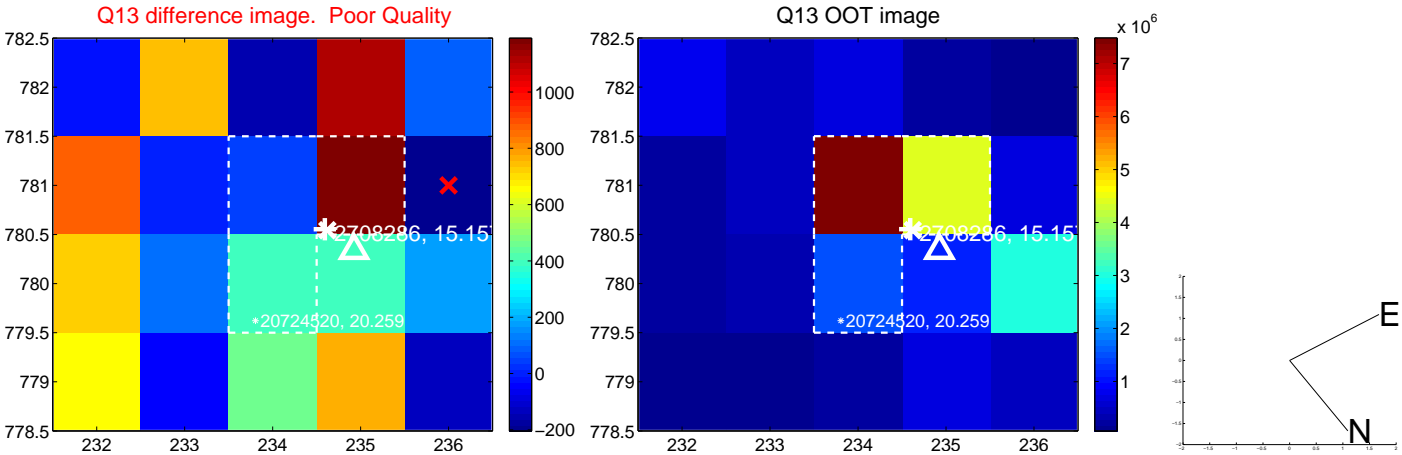
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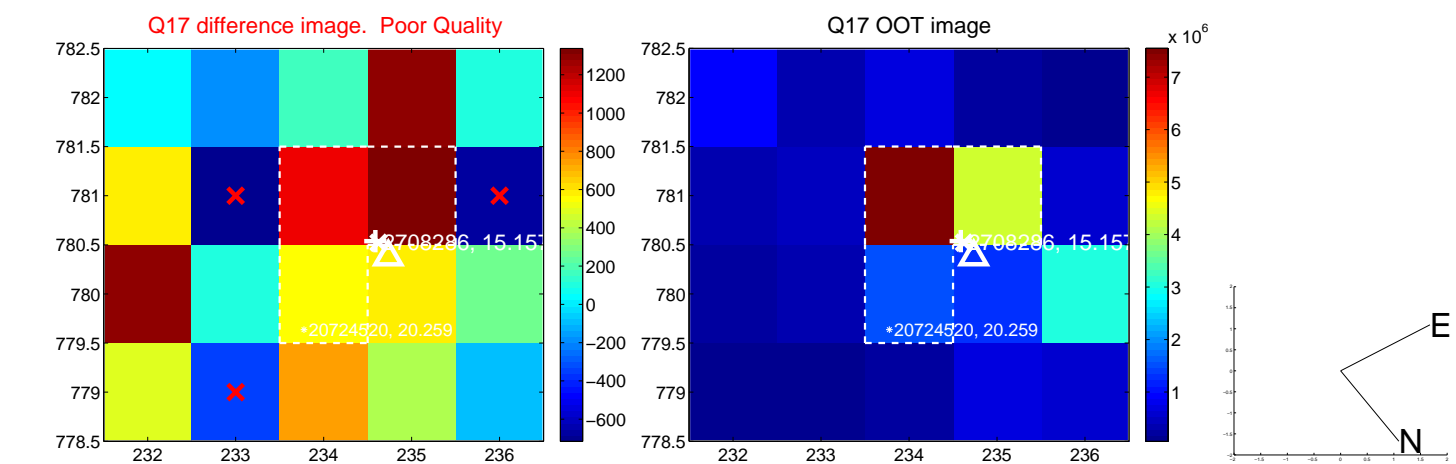
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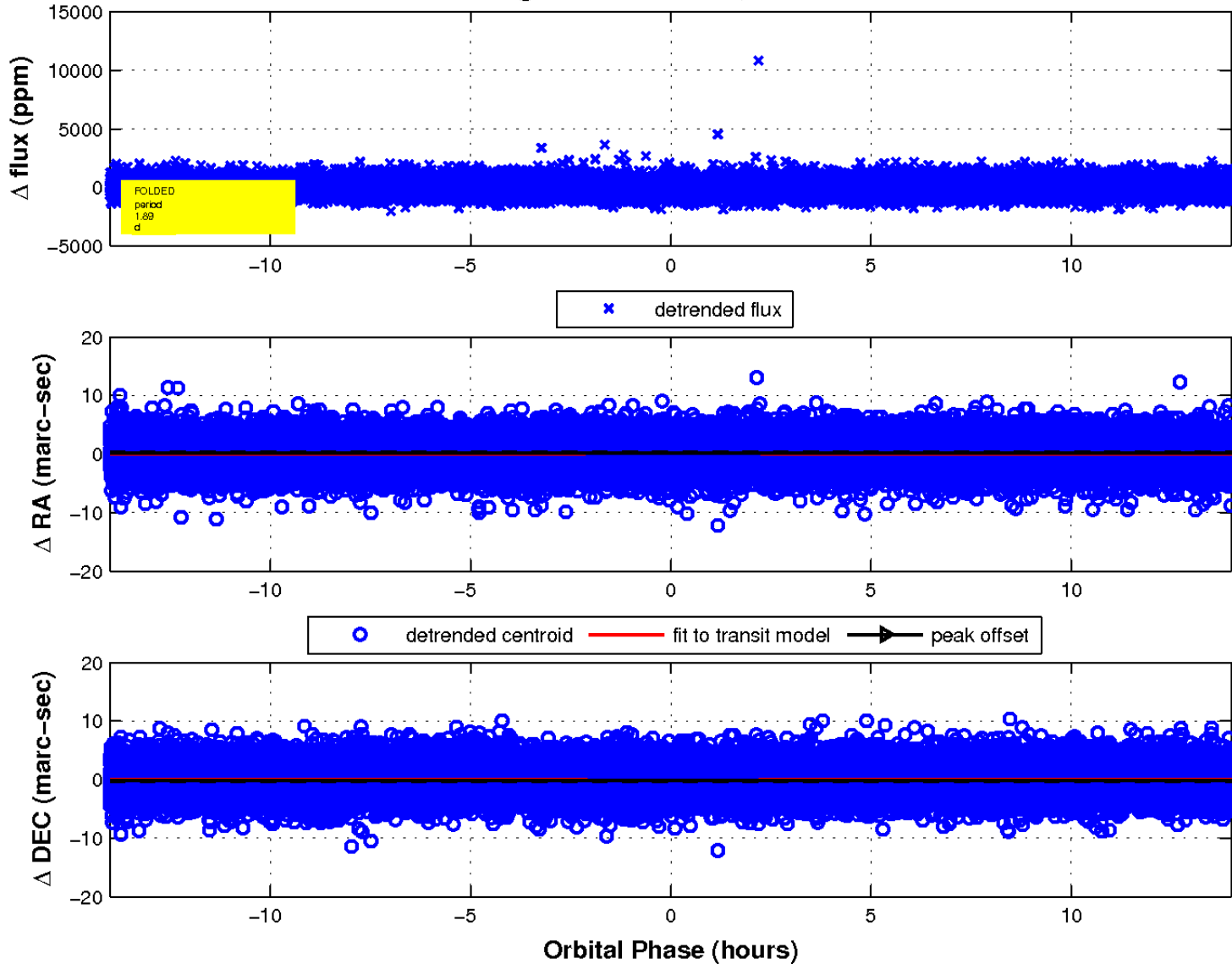
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

