

KIC 007116226

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 _⊕)
007116226-01	OBS	6827.01	0.566746	131.860952	22.1	3.696	12.9	6.2	1.02	6273	0.49	7637.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116226-01	OBS	FP	0.00	1	0	0	1	LPP_DV—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 007116226-01

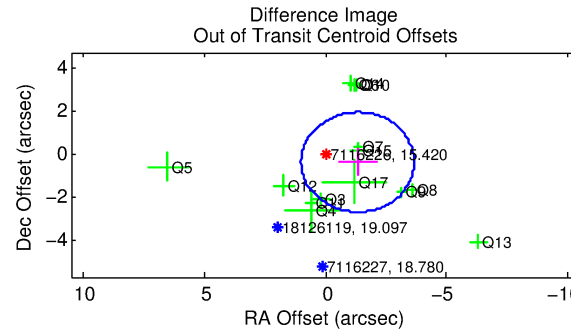
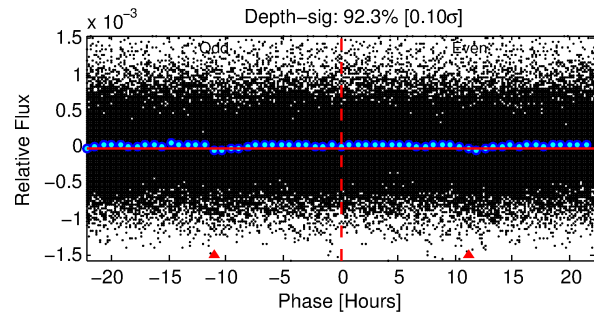
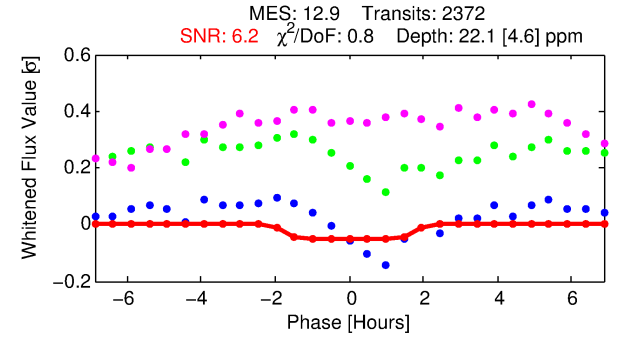
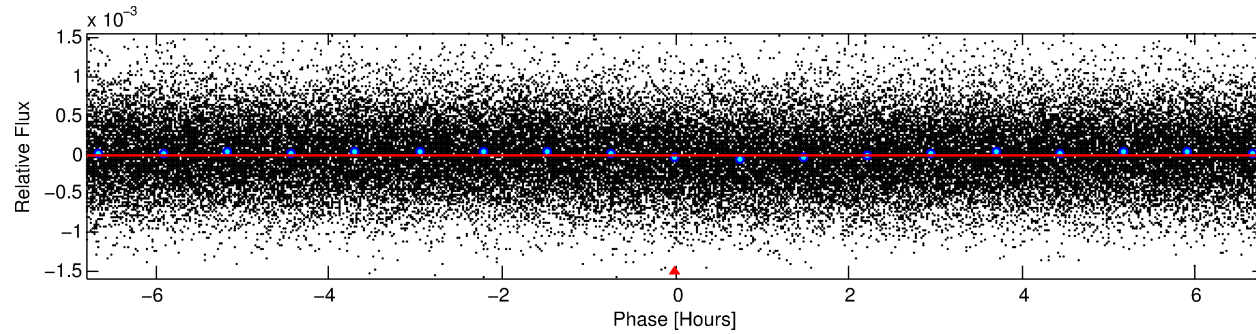
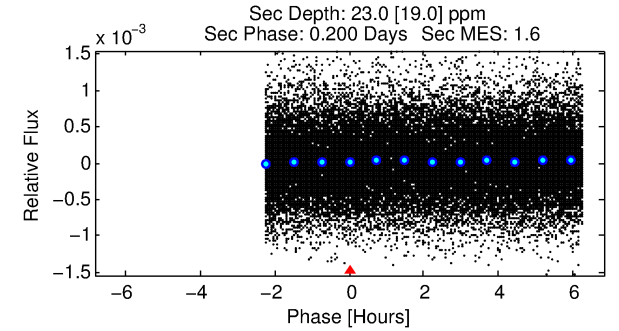
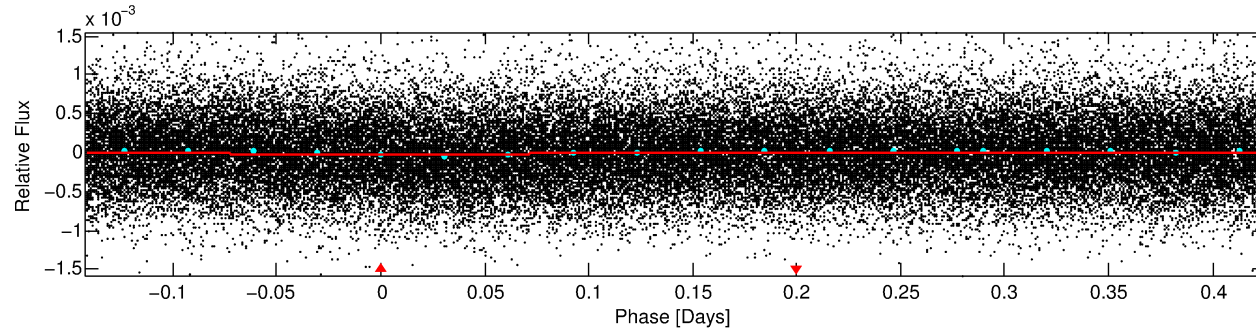
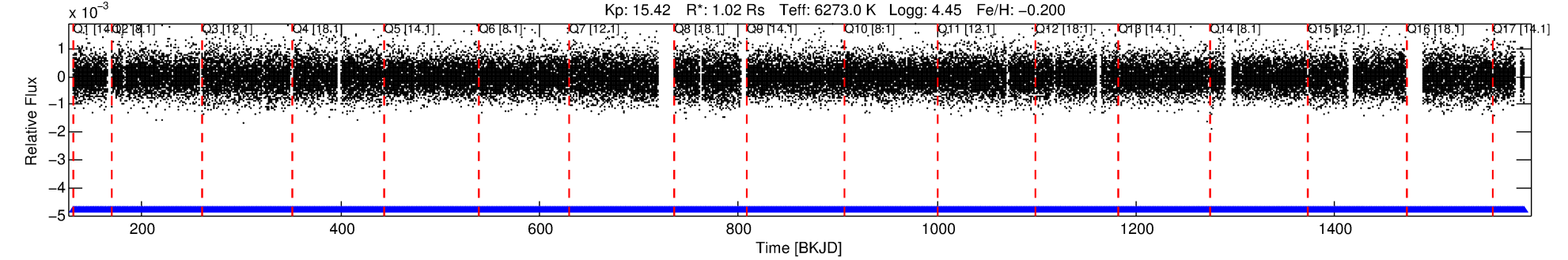
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
007116226-01	7116226	RR-Lyr-pri	7198959	1:1	622.6	108	-114	7.86	15.42	28332.00	Direct-PRF	0	0.40	22.27

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: 7116226 Candidate: 1 of 1 Period: 0.567 d

KOI: K06827 Corr: No Ephemeris Match



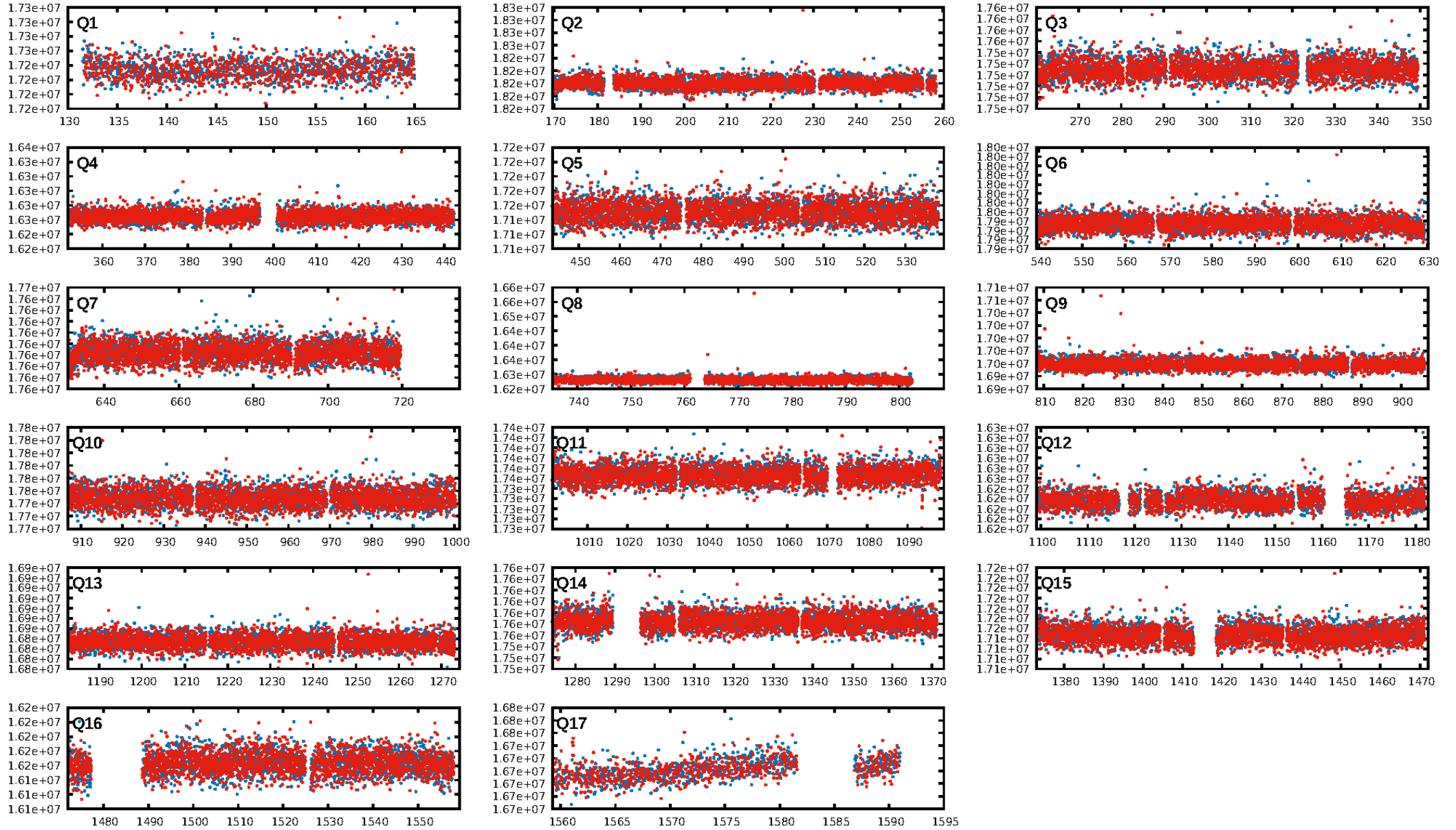
DV Fit Results:

Period = 0.56675 [0.00002] d
Epoch = 131.8610 [0.0074] BKJD
Rp/R* = 0.0044 [0.0063]
a/R* = 1.28 [3.61]
b = 0.44 [13.47]
Seff = 7637.68 [3058.82]
Teq = 2384 [239] K
Rp = 0.49 [0.72] Re
a = 0.0138 [0.0036] AU
Ag = 9.88 [29.73] [0.30σ]
Teffp = 6535 [4883] K [0.85σ]

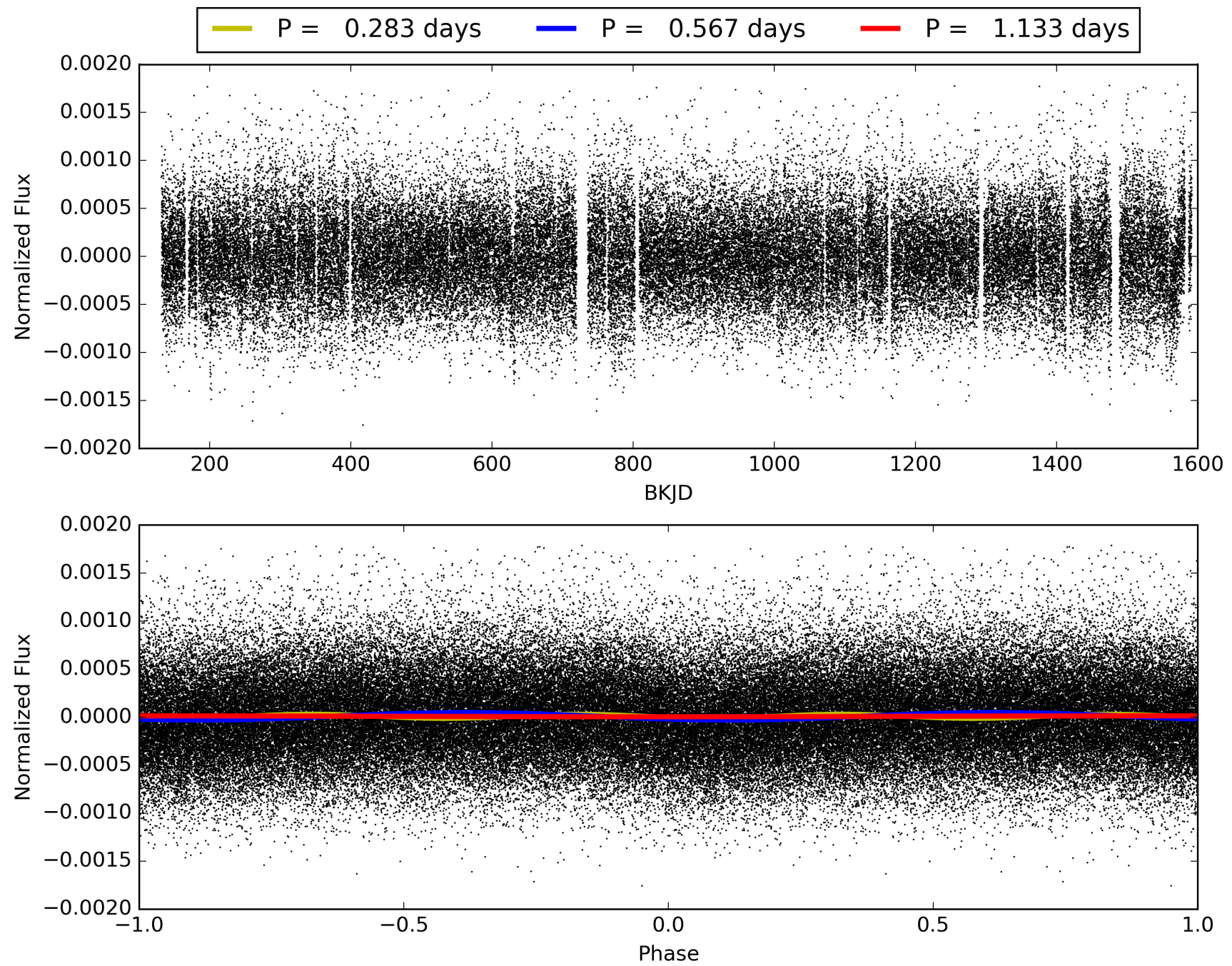
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.55e-24
RollingBand-fgt: 1.00 [2266/2266]
GhostDiagnostic-chr: 0.3428
Centroid-sig: 32.0%
Centroid-so: 1.833 arcsec [0.79σ]
OotOffset-rm: 1.380 arcsec [1.77σ]
KicOffset-rm: 1.149 arcsec [1.49σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007116226-01, PDC Light Curves

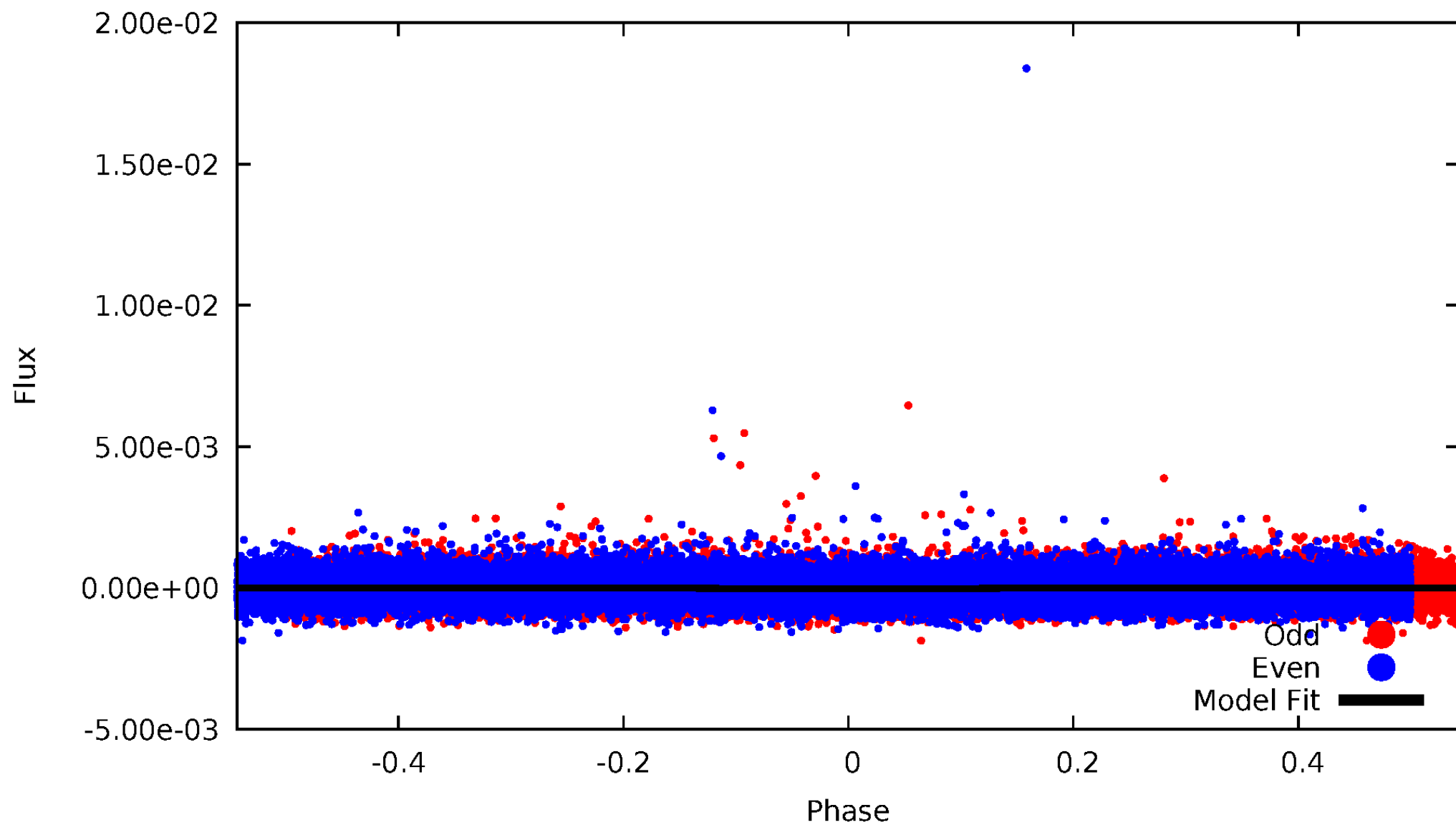


TCE 007116226-01



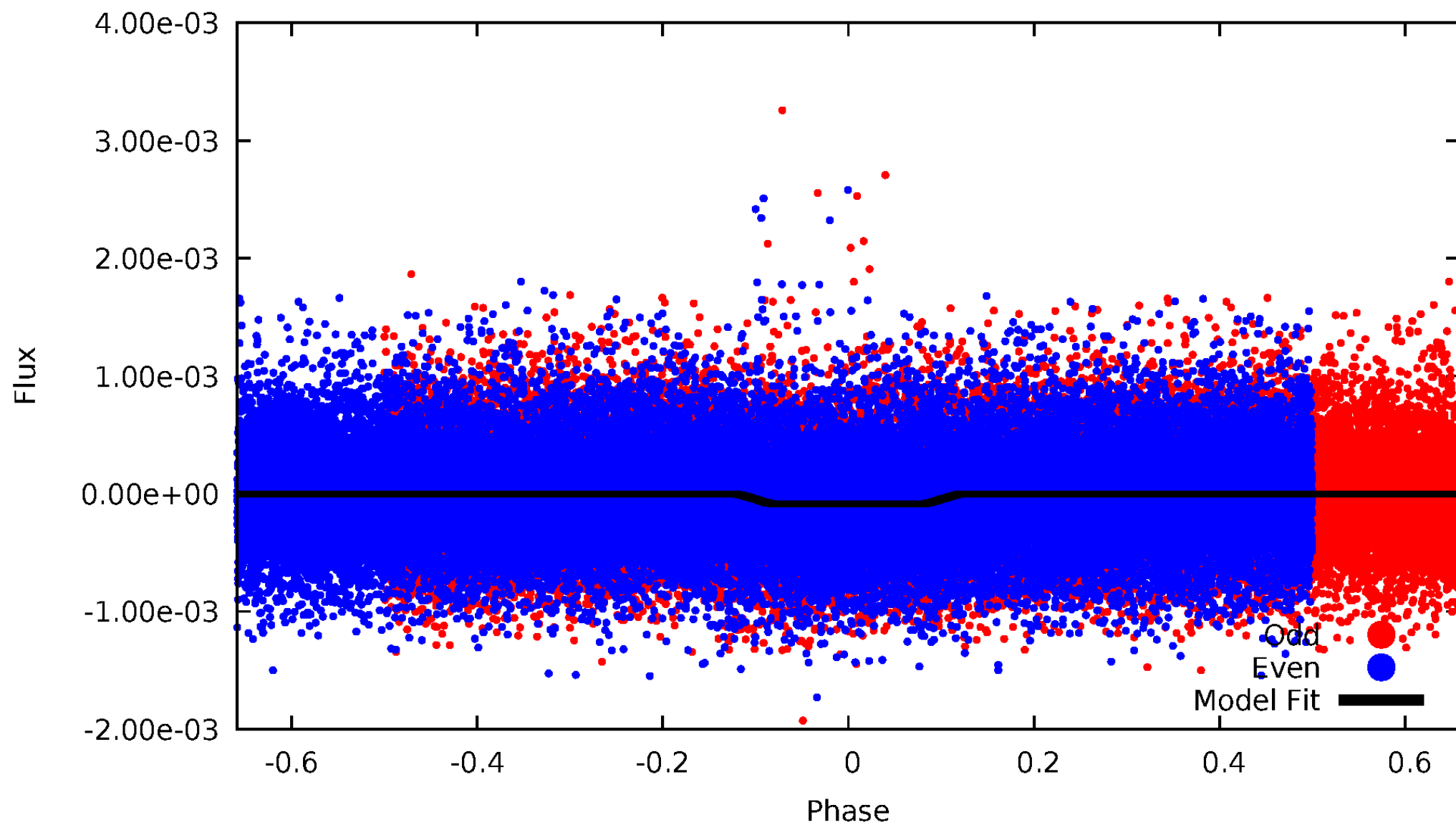
DV Odd/Even

TCE 007116226-01



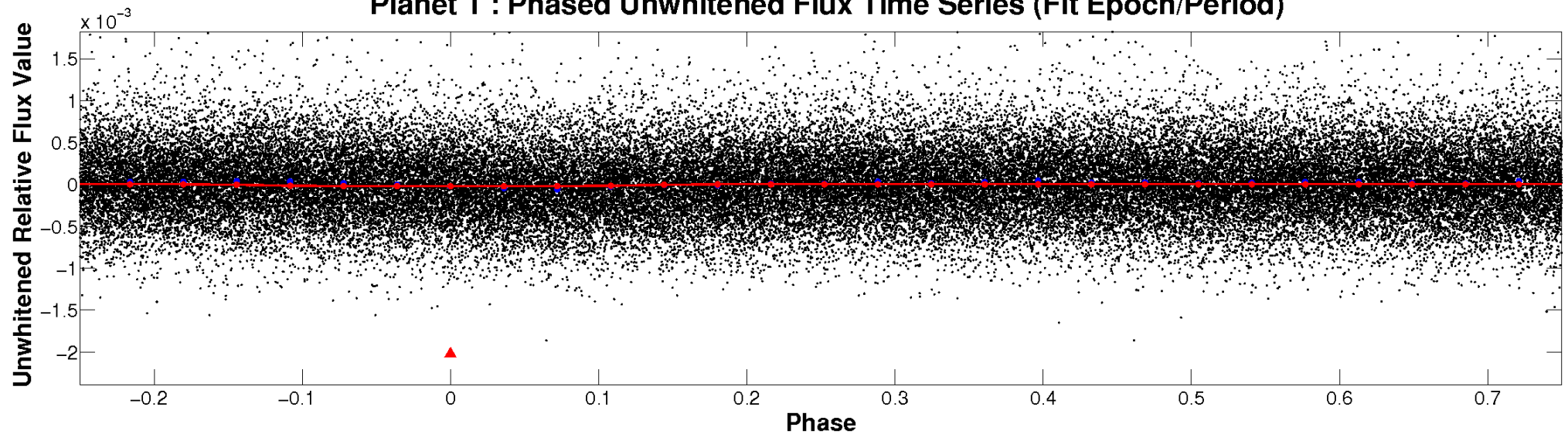
ALT Odd/Even

TCE 007116226-01

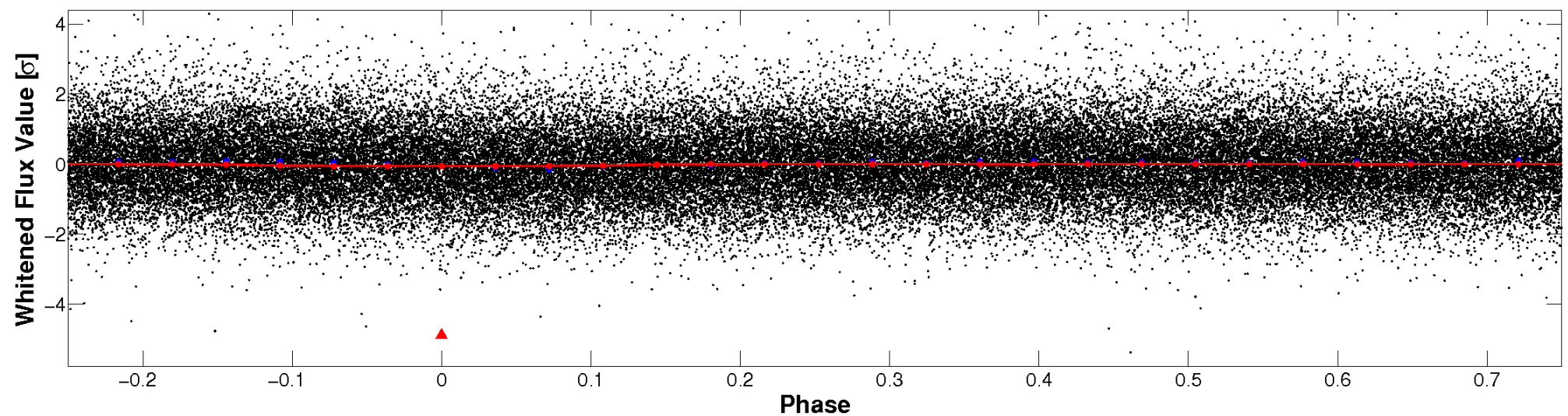


Non-Whitened Vs. Whitened Light Curve

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

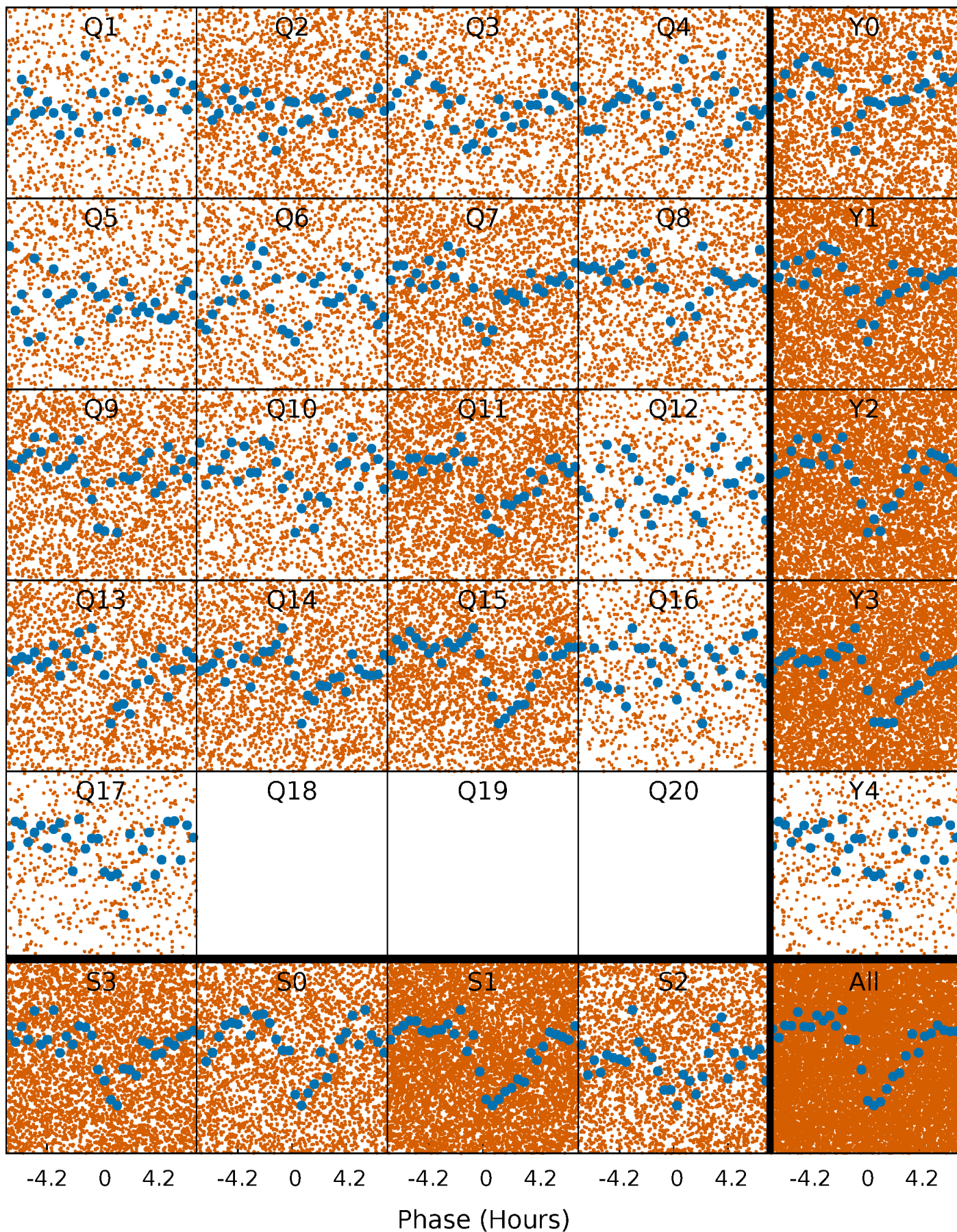


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



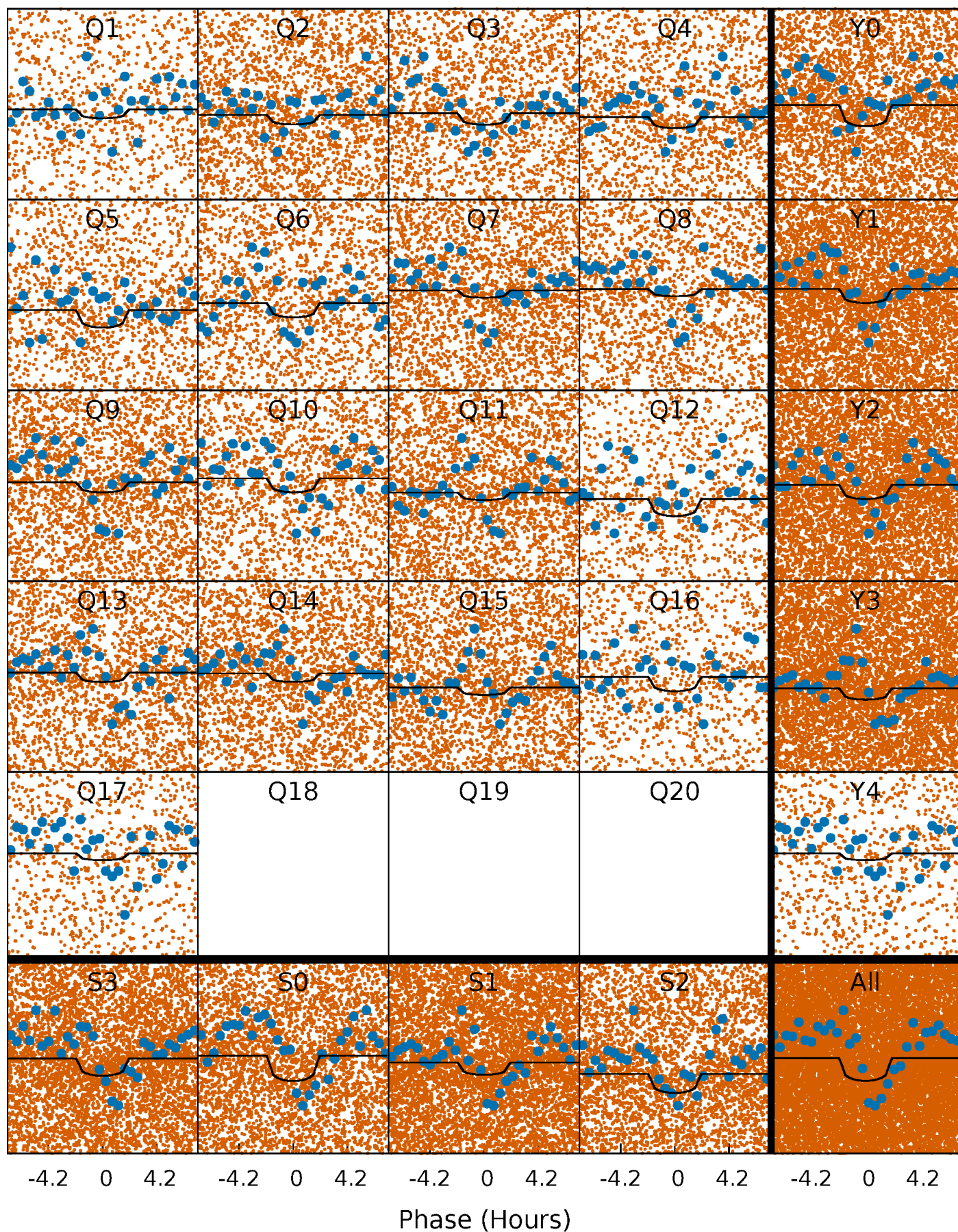
PDC Quarter-Phased Transit Curves

TCE 007116226-01 P= 0.566746 Days $T_0=131.860952$ (BKJD)



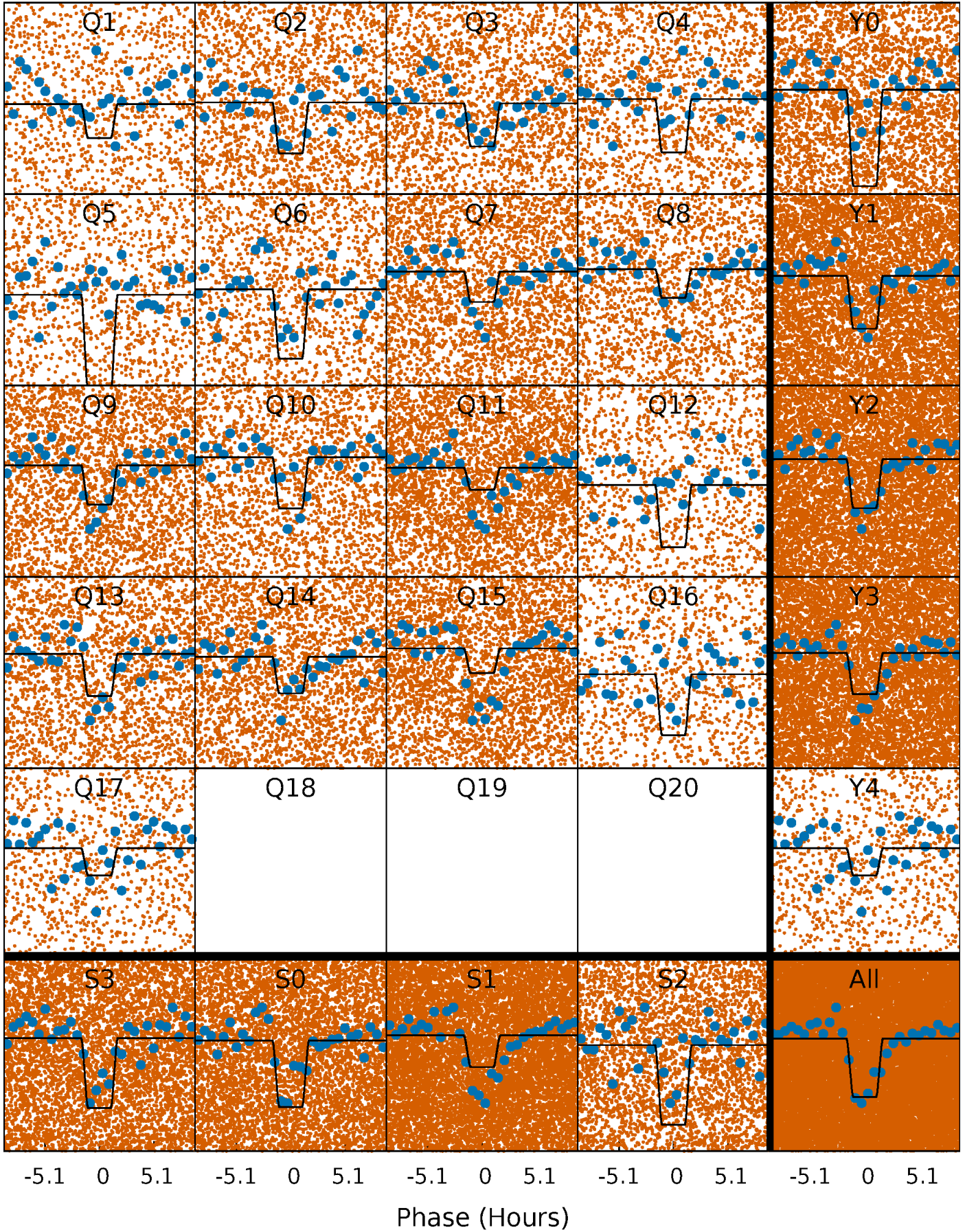
DV Quarter-Phased Transit Curves

TCE 007116226-01 P= 0.566746 Days $T_0=131.860952$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

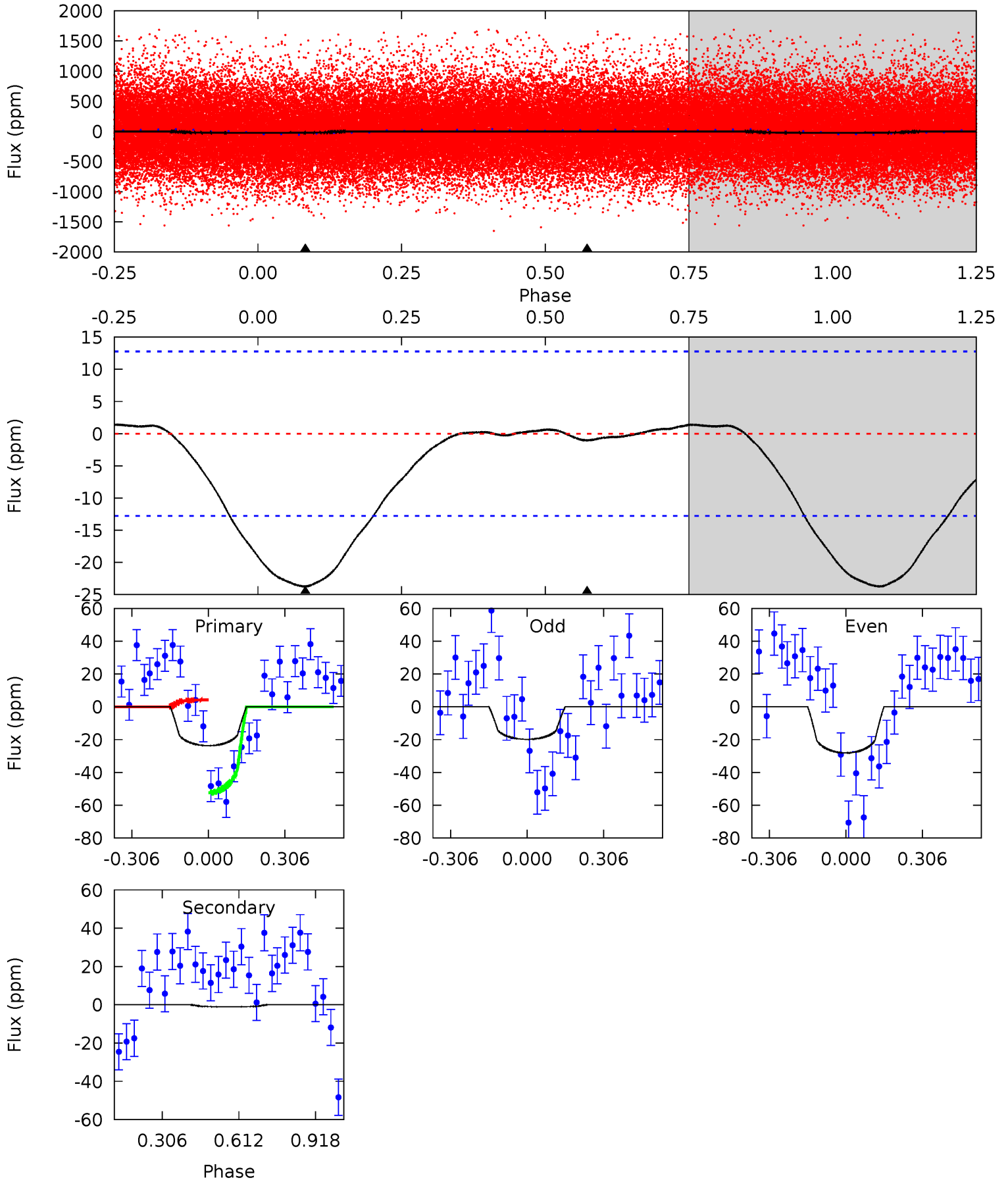
TCE 007116226-01 P= 0.566795 Days $T_0=131.826736$ (BKJD)



DV Model-Shift Uniqueness Test

007116226-01, P = 0.566746 Days, E = 131.294206 Days

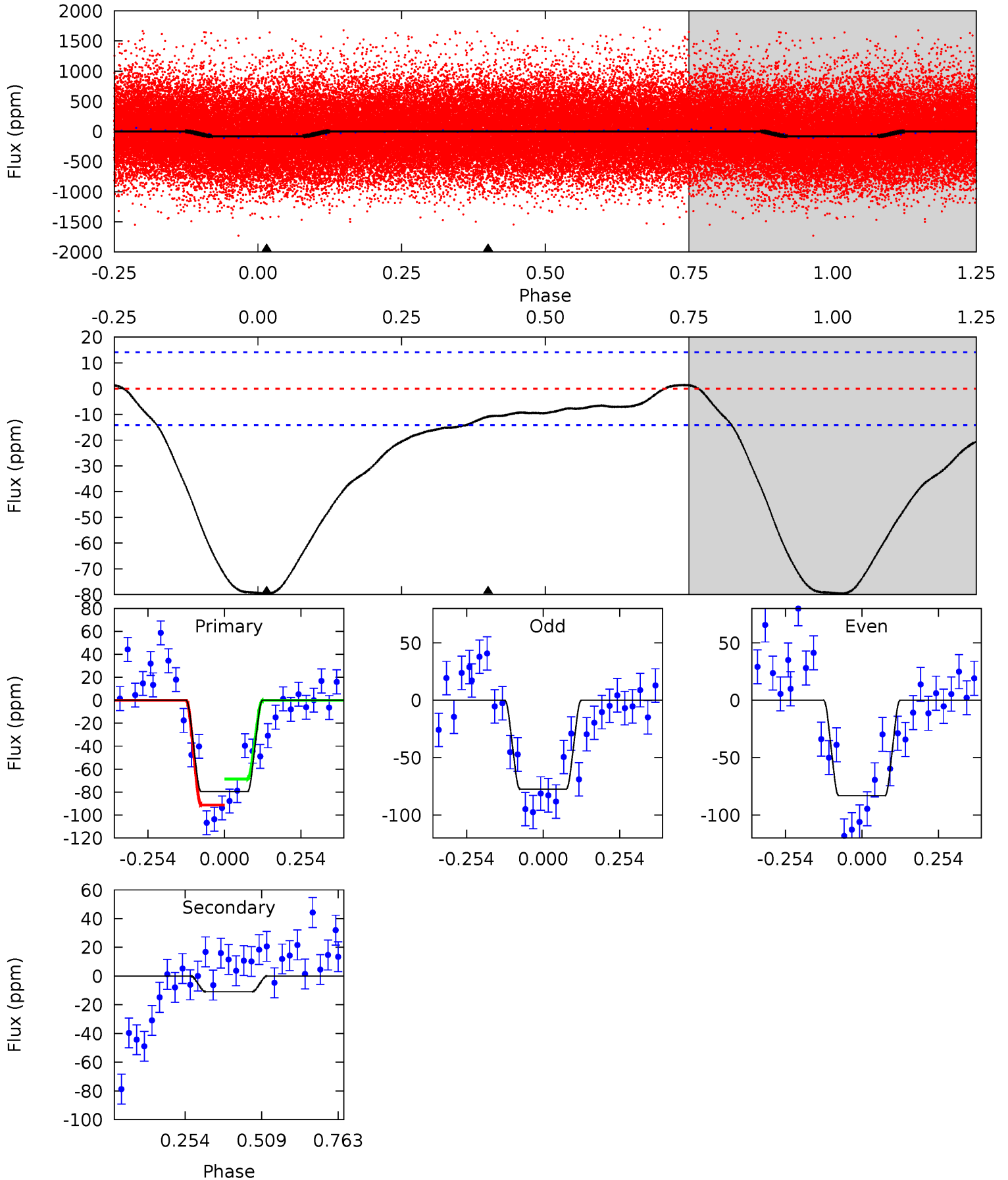
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.04	0.36	0	0	4.32	1.02	0.34	8.04	8.04	0.36	0.36	1.40	0.67	0.06	8.14



Alt Model-Shift Uniqueness Test

007116226-01, P = 0.566795 Days, E = 131.259941 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	3.37	0	0	4.36	1.14	0.87	24.6	24.6	3.37	3.37	0.90	1.00	0.02	3.54



Stellar Parameters For KIC 007116226

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6273^{+169}_{-225}	$4.454^{+0.054}_{-0.202}$	$-0.200^{+0.250}_{-0.350}$	$1.021^{+0.320}_{-0.107}$	$1.077^{+0.144}_{-0.144}$	$1.426^{+0.399}_{-0.744}$
	+3%/-4%	+1%/-5%	+125%/-175%	+31%/-10%	+13%/-13%	+28%/-52%
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 007116226-01 / KOI 6827.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 3	$0.74^{+0.63}_{-0.49}$	3404^{+227}_{-165}	-3101^{+7454}_{-745}	$0.113^{+1.545}_{-0.483}$
Alt.	-11 ± 3	$1.13^{+0.70}_{-0.65}$	3390^{+226}_{-161}	3675^{+1697}_{-5641}	$0.864^{+3.551}_{-0.567}$

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

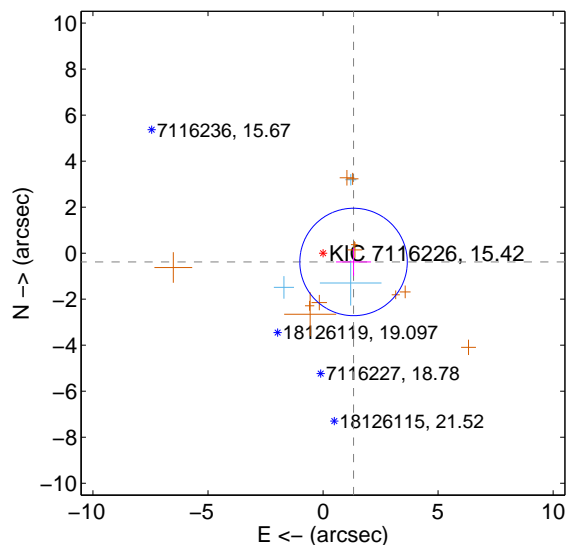
Supplemental centroid analysis for 007116226-01. Kepler magnitude: 15.42. Transit SNR 6.16

There are 3 quarters with good PRF difference image offsets

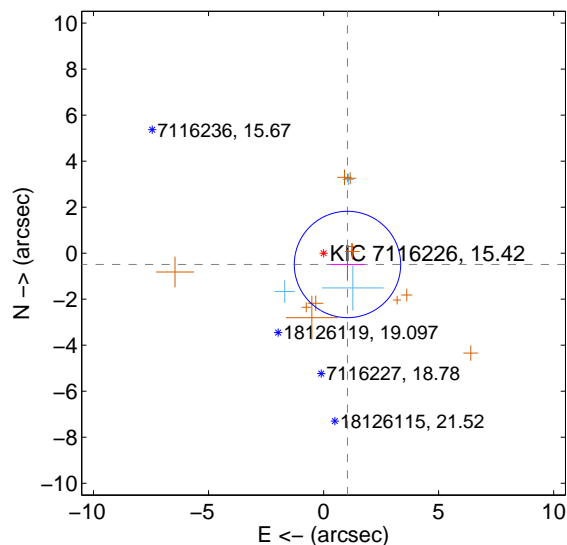
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.380 ± 0.778	1.77	-1.326 ± 0.760	-0.382 ± 0.603
PRF-fit source offset from KIC position	1.149 ± 0.770	1.49	-1.039 ± 0.733	-0.491 ± 0.646
photometric centroid source offset	1.83 ± 2.31	0.79	-1.83 ± 2.31	0.15 ± 2.03

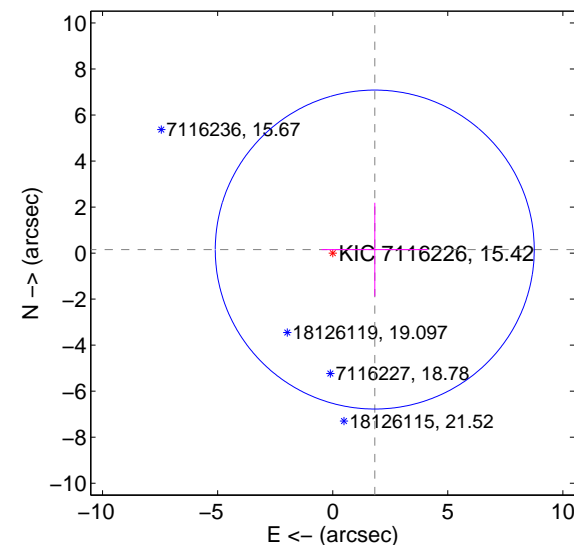
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

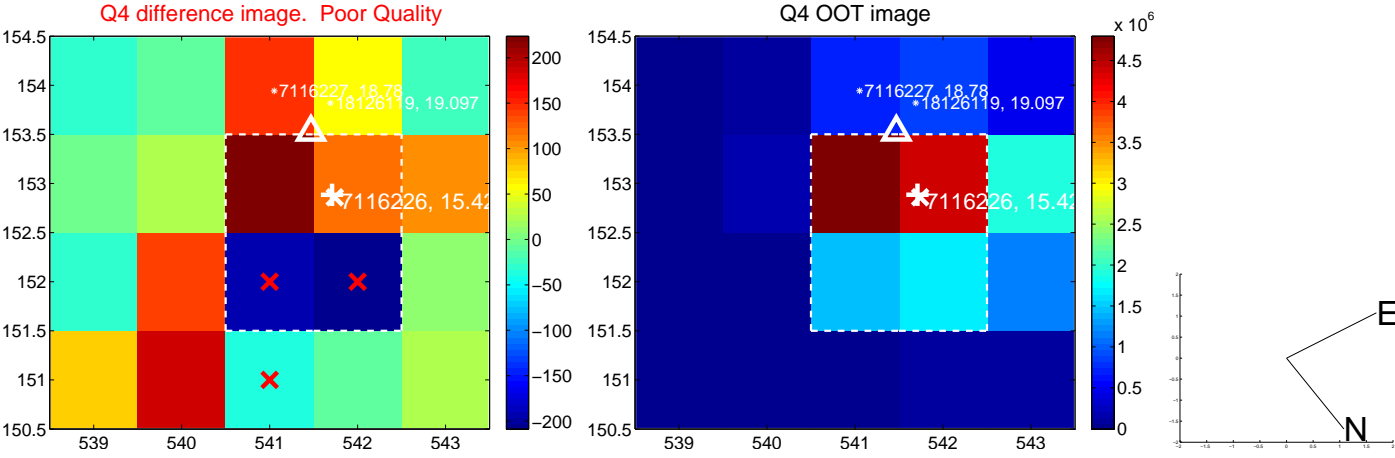
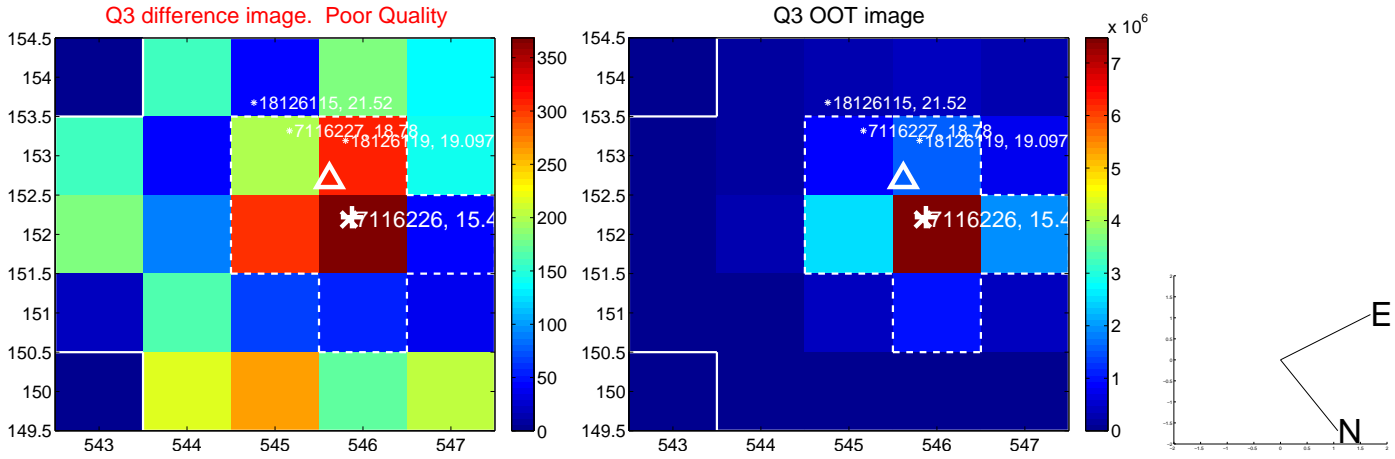
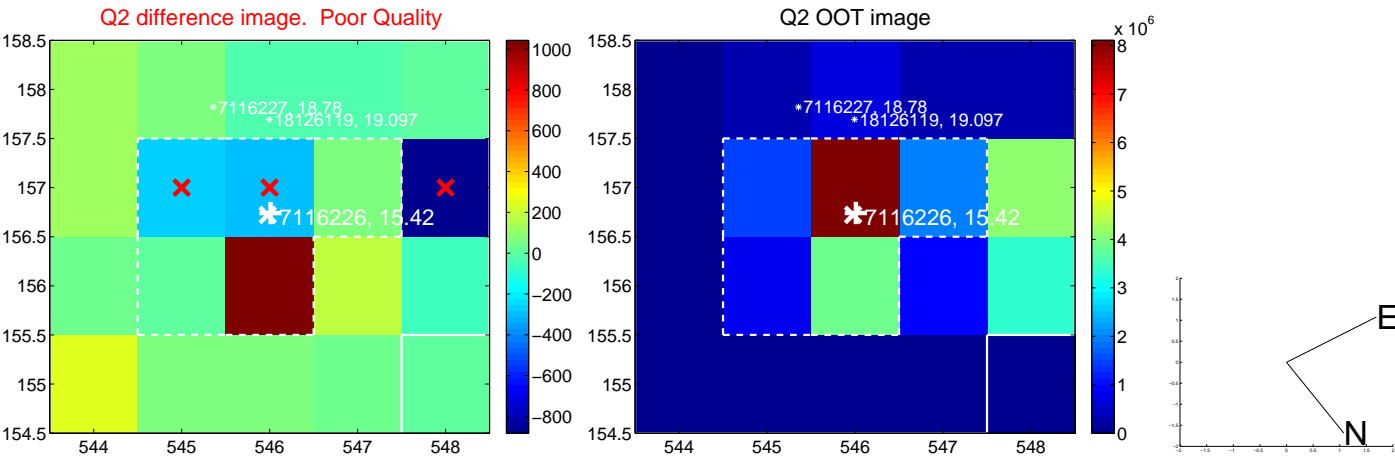
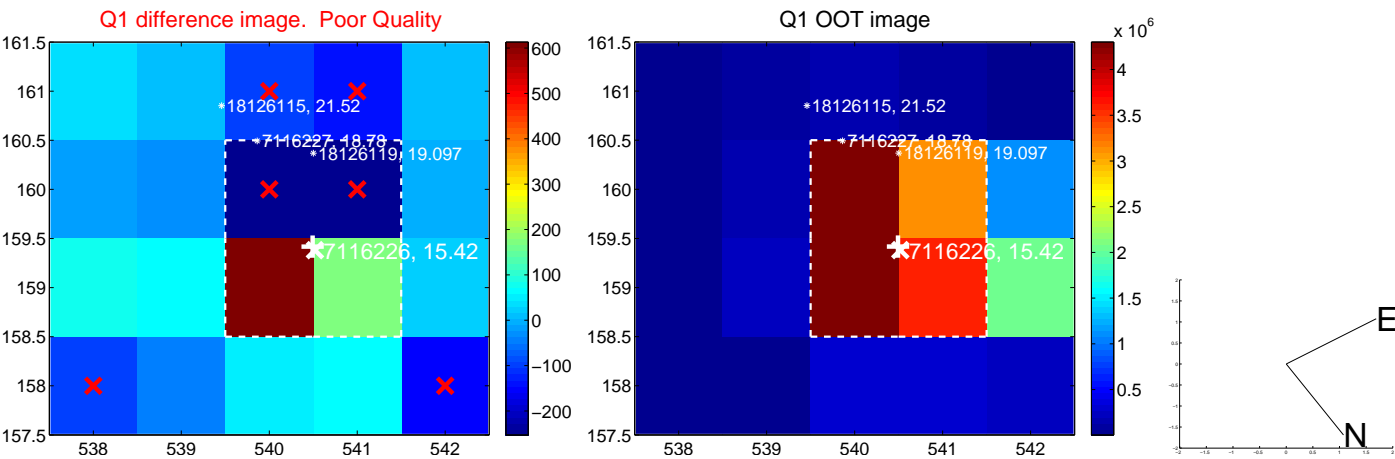


offset from photometric centroids

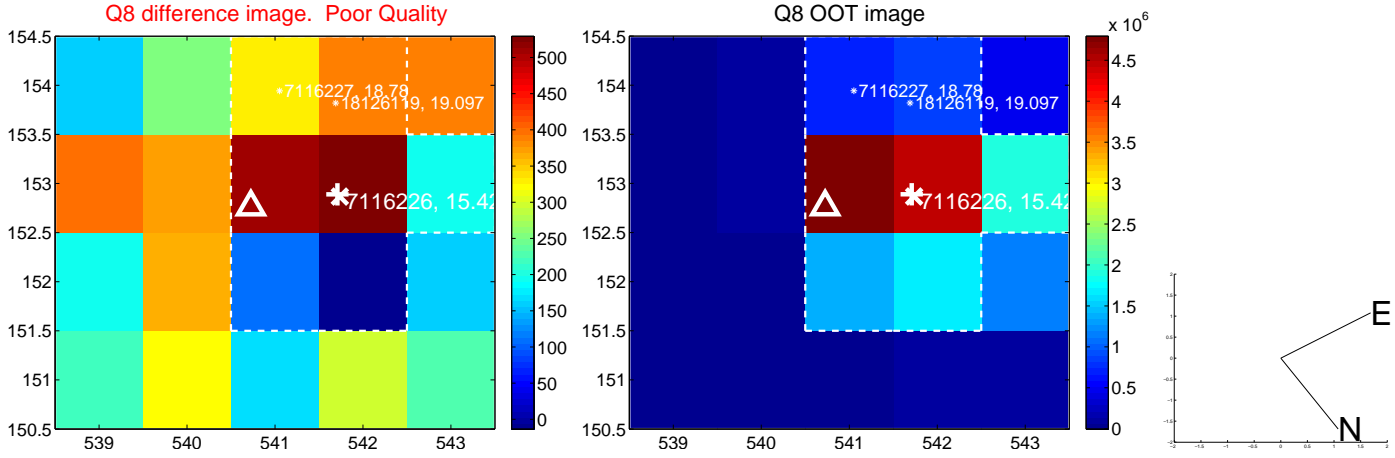
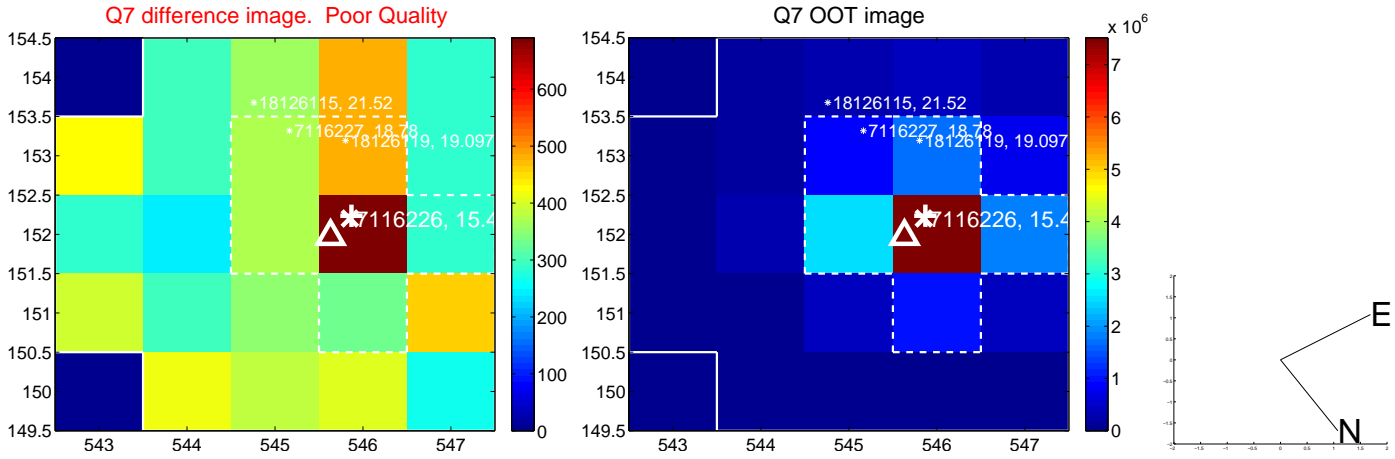
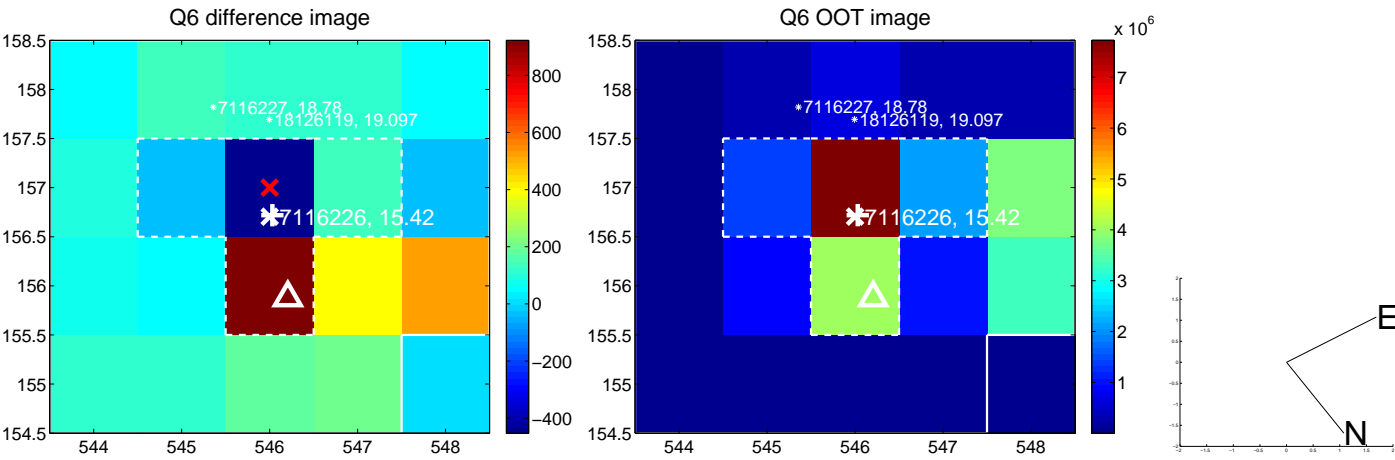
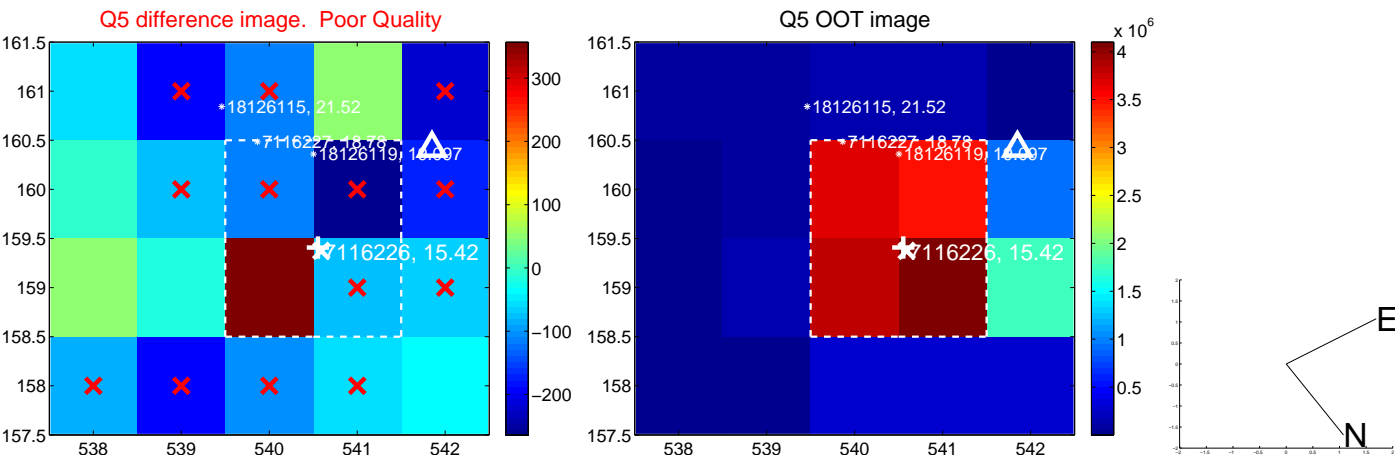


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

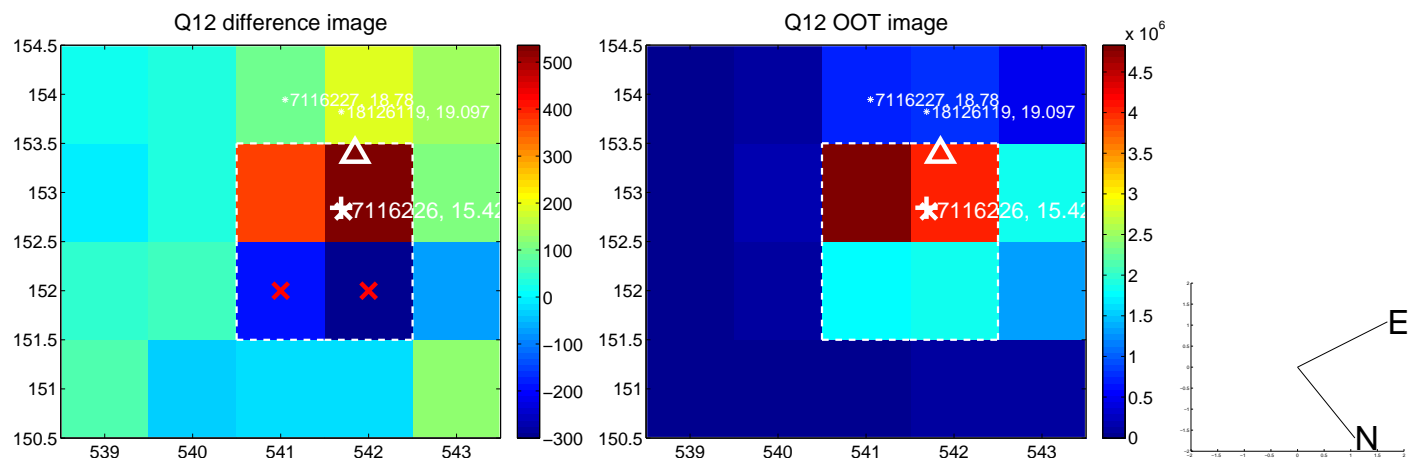
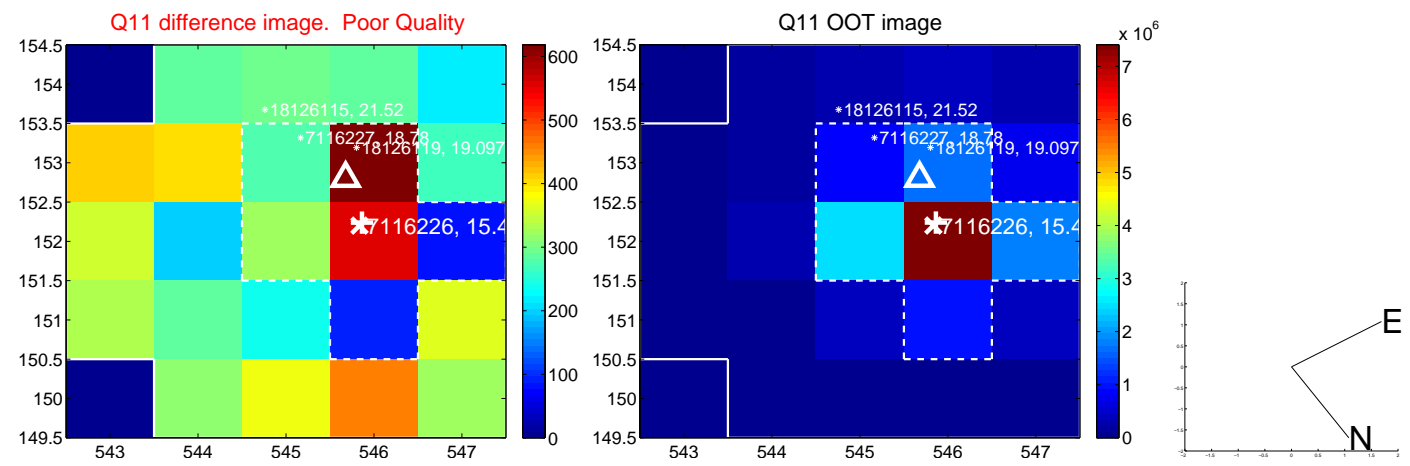
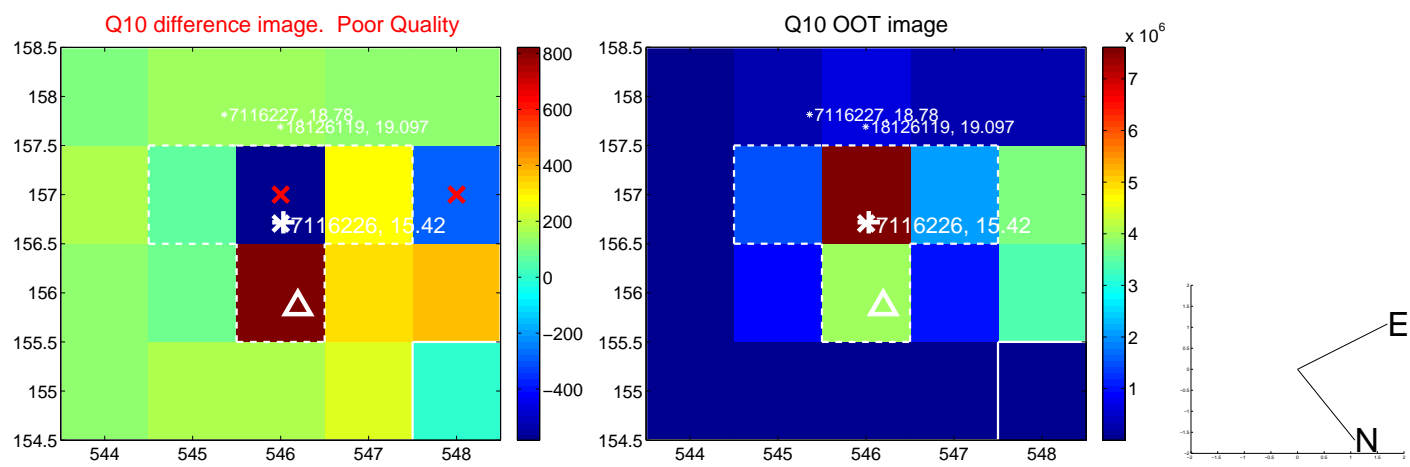
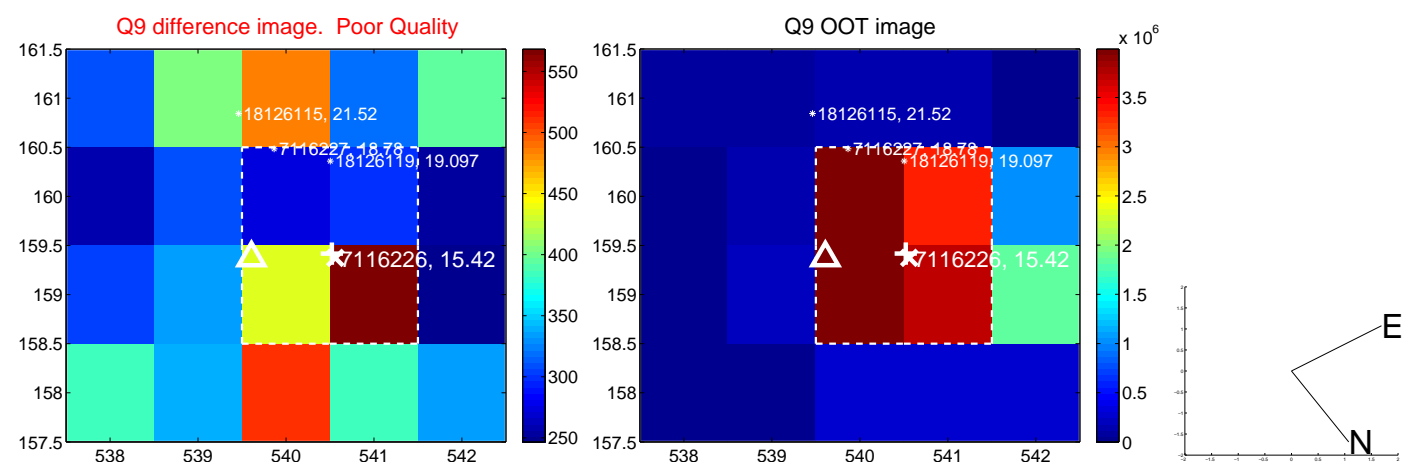
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



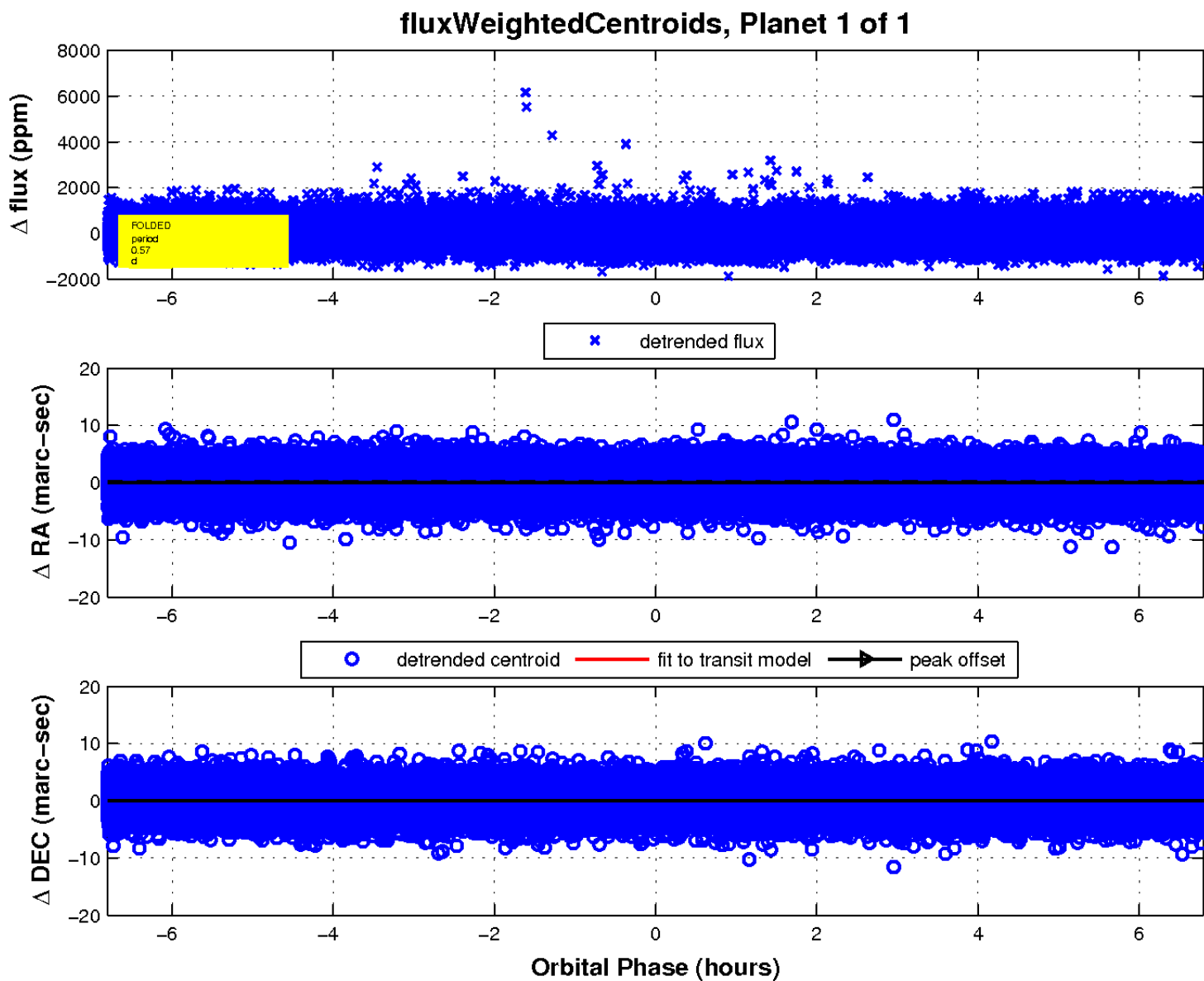
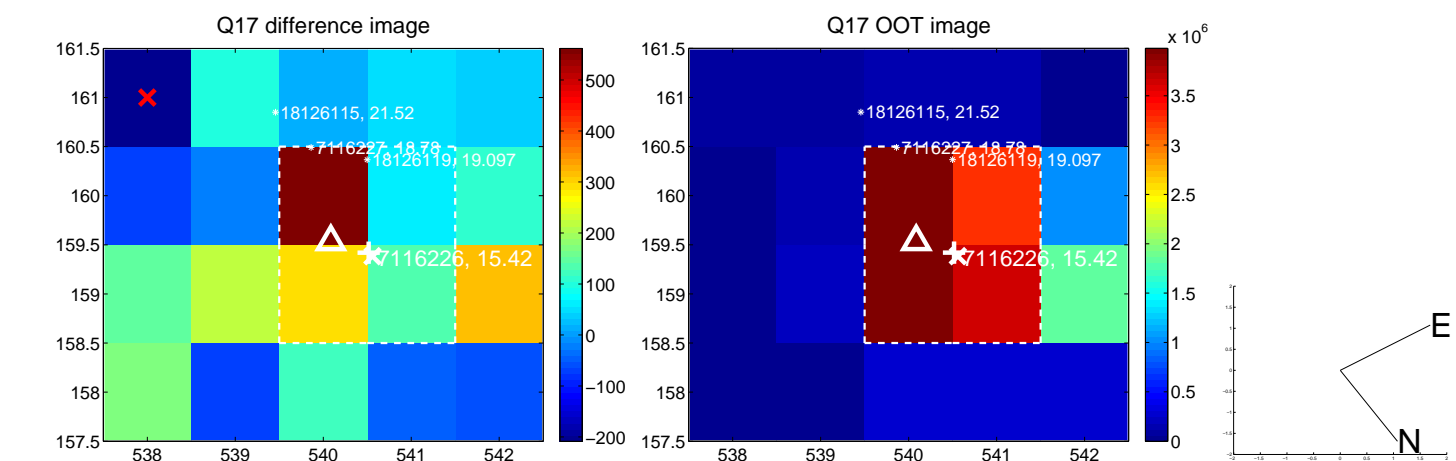
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UKIRT Image

