

KIC 006370531

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})
006370531-01	OBS	No	423.153473	197.589268	65.2	17.091	8.8	7.0	1.98	7085	1.73	5.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006370531-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

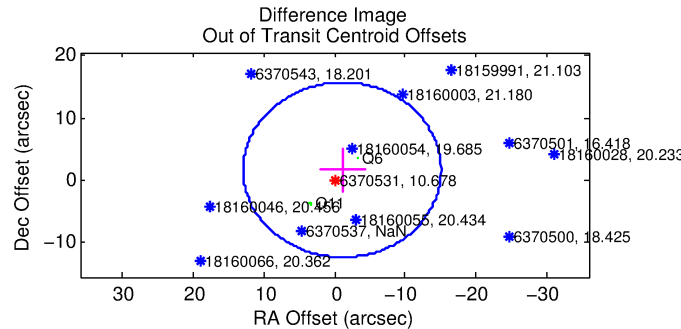
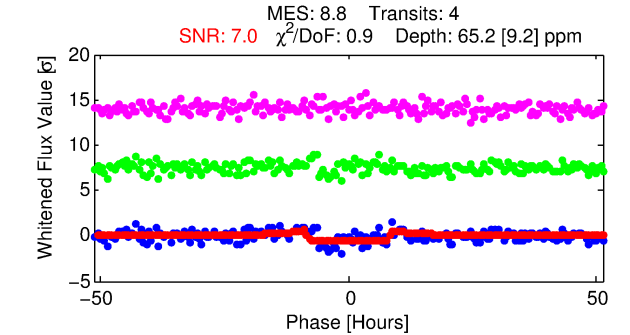
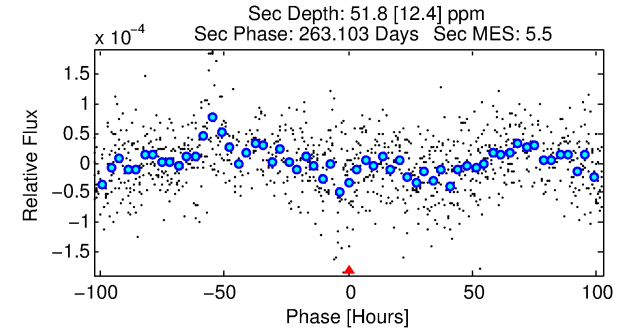
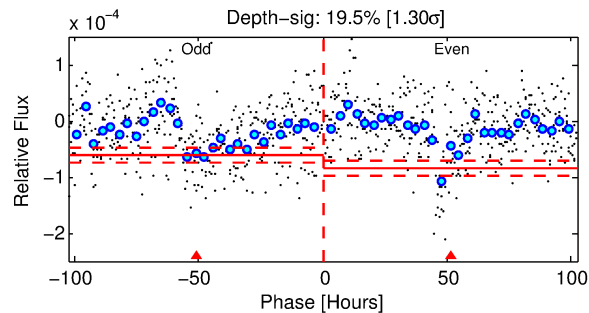
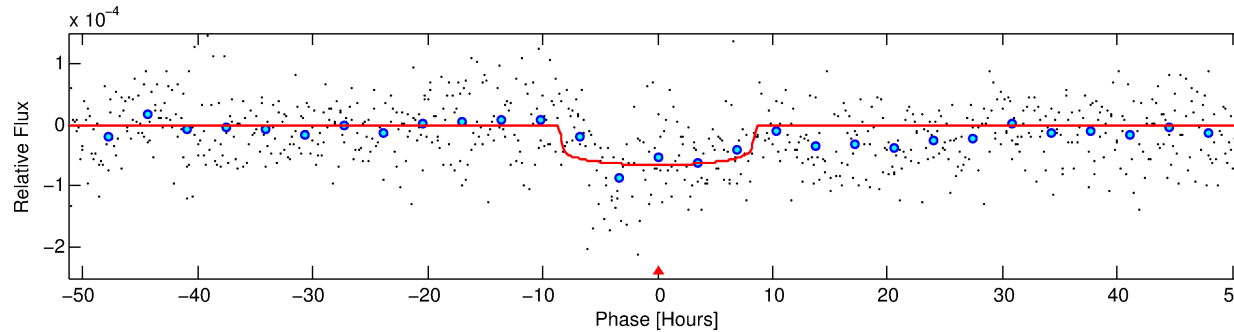
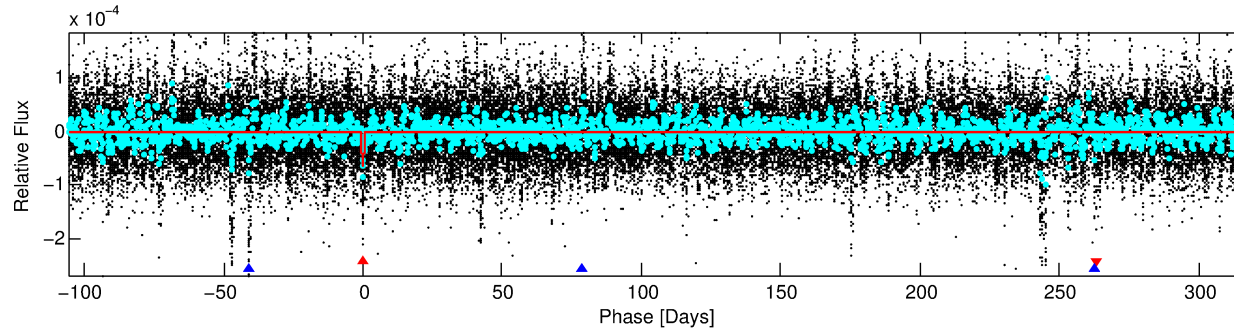
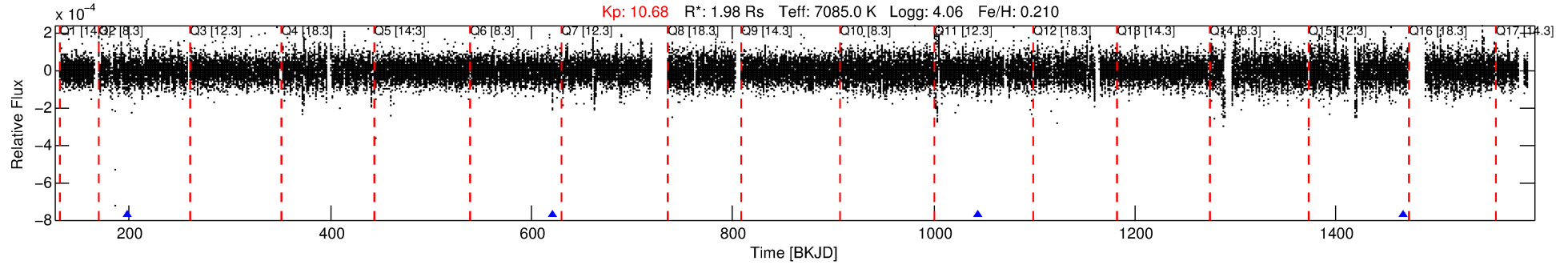
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006370531-01

No Significant Match Found

DV One-Page Summary

KIC: 6370531 Candidate: 1 of 2 Period: 423.153 d



DV Fit Results:

Period = 423.15347 [0.00710] d
Epoch = 197.5893 [0.0146] BKJD
Rp/R* = 0.0080 [0.0017]
a/R* = 127.41 [145.54]
b = 0.75 [0.67]
Seff = 5.19 [2.01]
Teq = 385 [37] K
Rp = 1.73 [0.62] Re
a = 1.3056 [0.3093] AU
Ag = 16169.66 [9489.74] [1.70 σ]
Teffp = 6711 [866] K [7.30 σ]

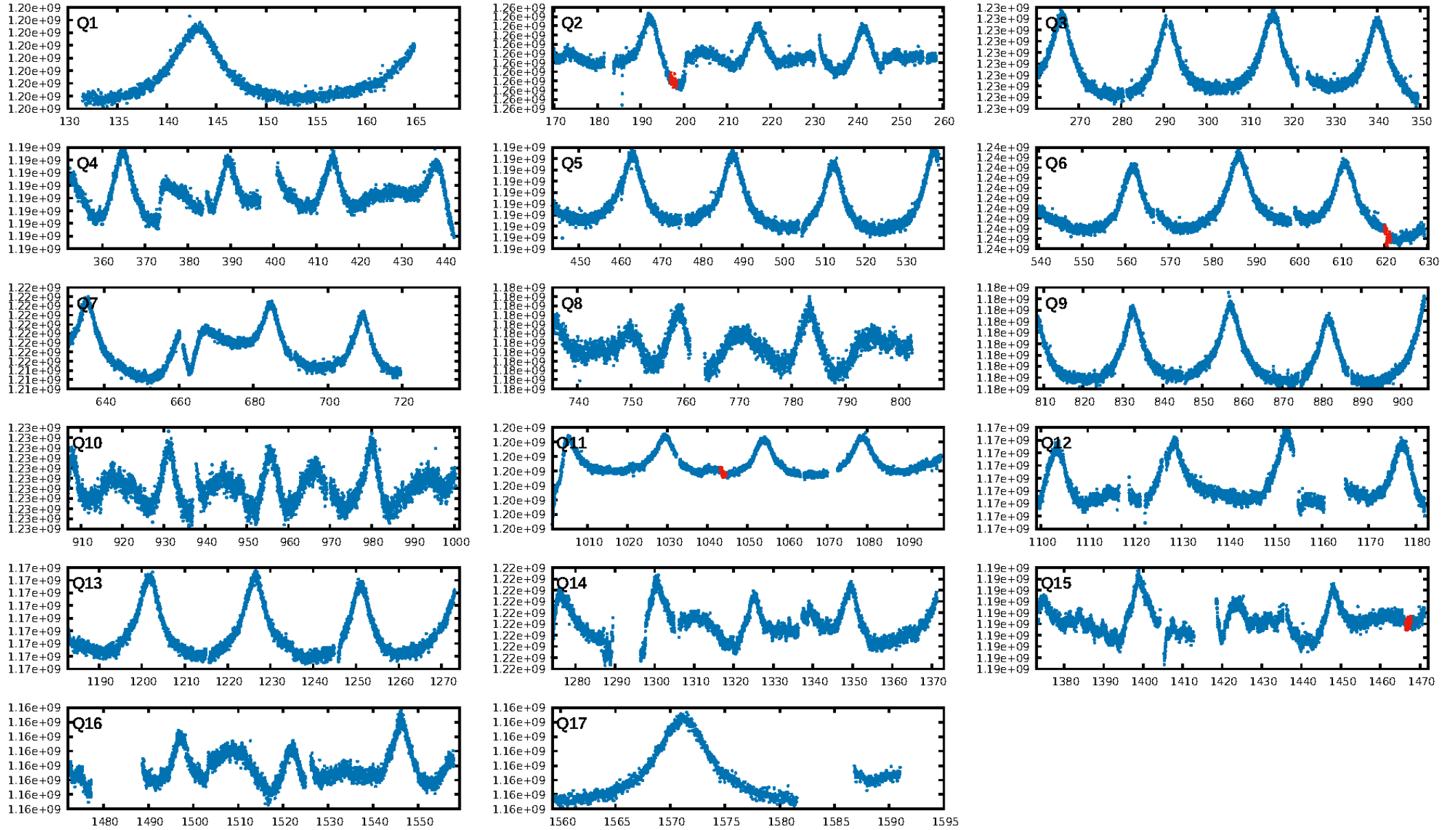
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [161.57 σ]
ModelChiSquare2-sig: 46.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.83e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.9227
Centroid-sig: 3.7%
Centroid-so: 3.122 arcsec [1.94 σ]
OotOffset-rm: 1.981 arcsec [0.42 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 1.352 arcsec [0.32 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [4/4]

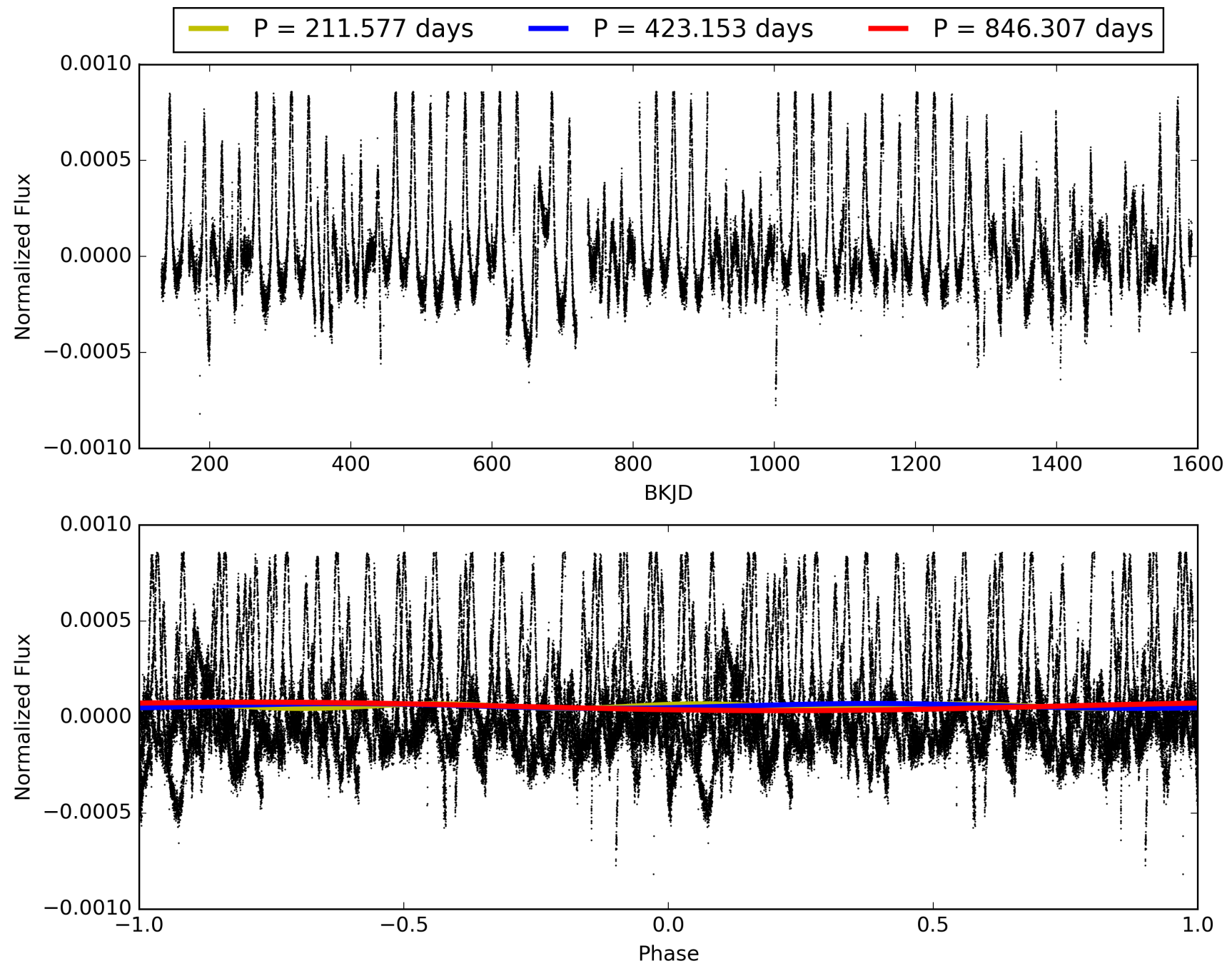
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:47:36 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006370531-01, PDC Light Curves

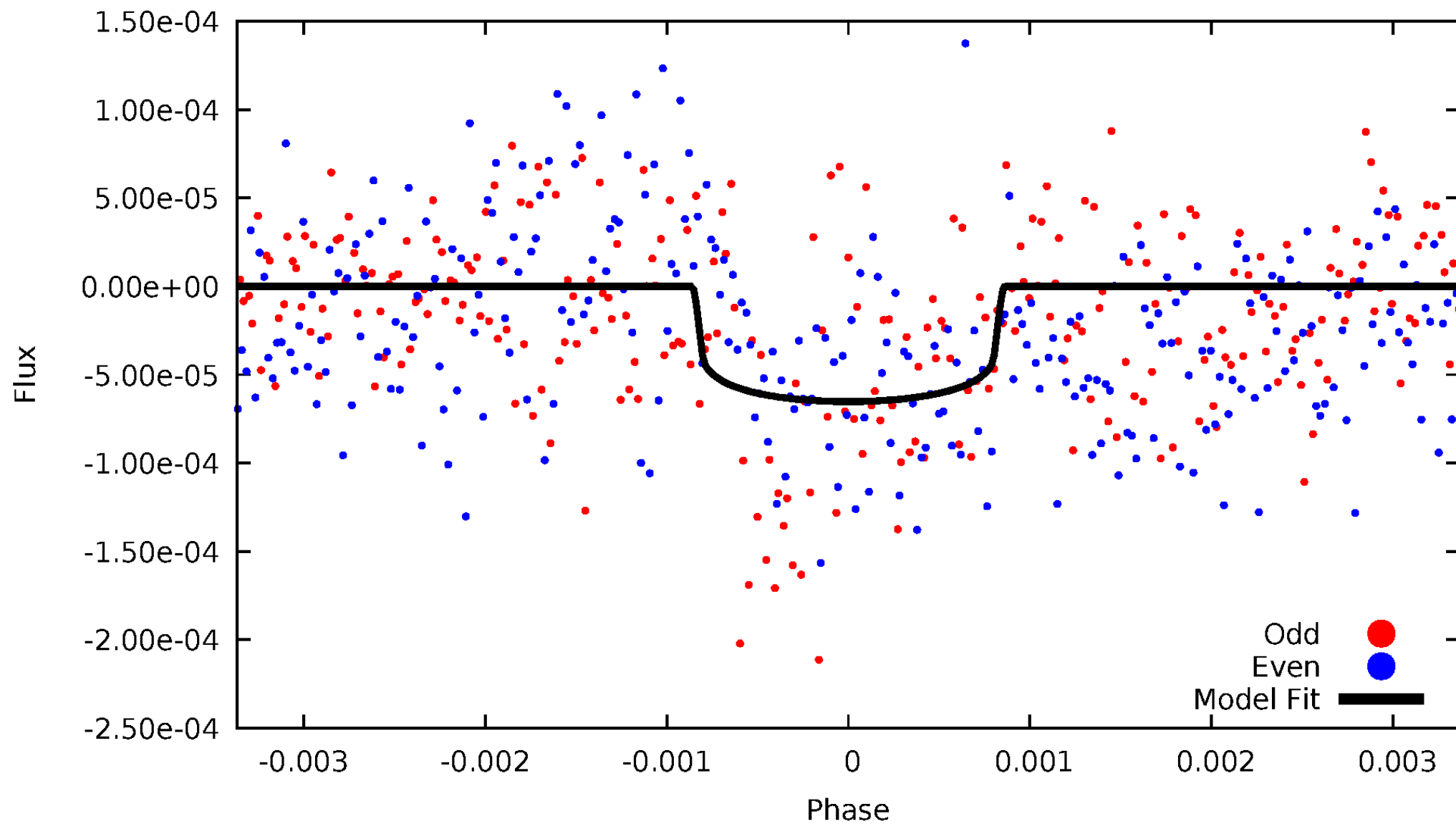


TCE 006370531-01



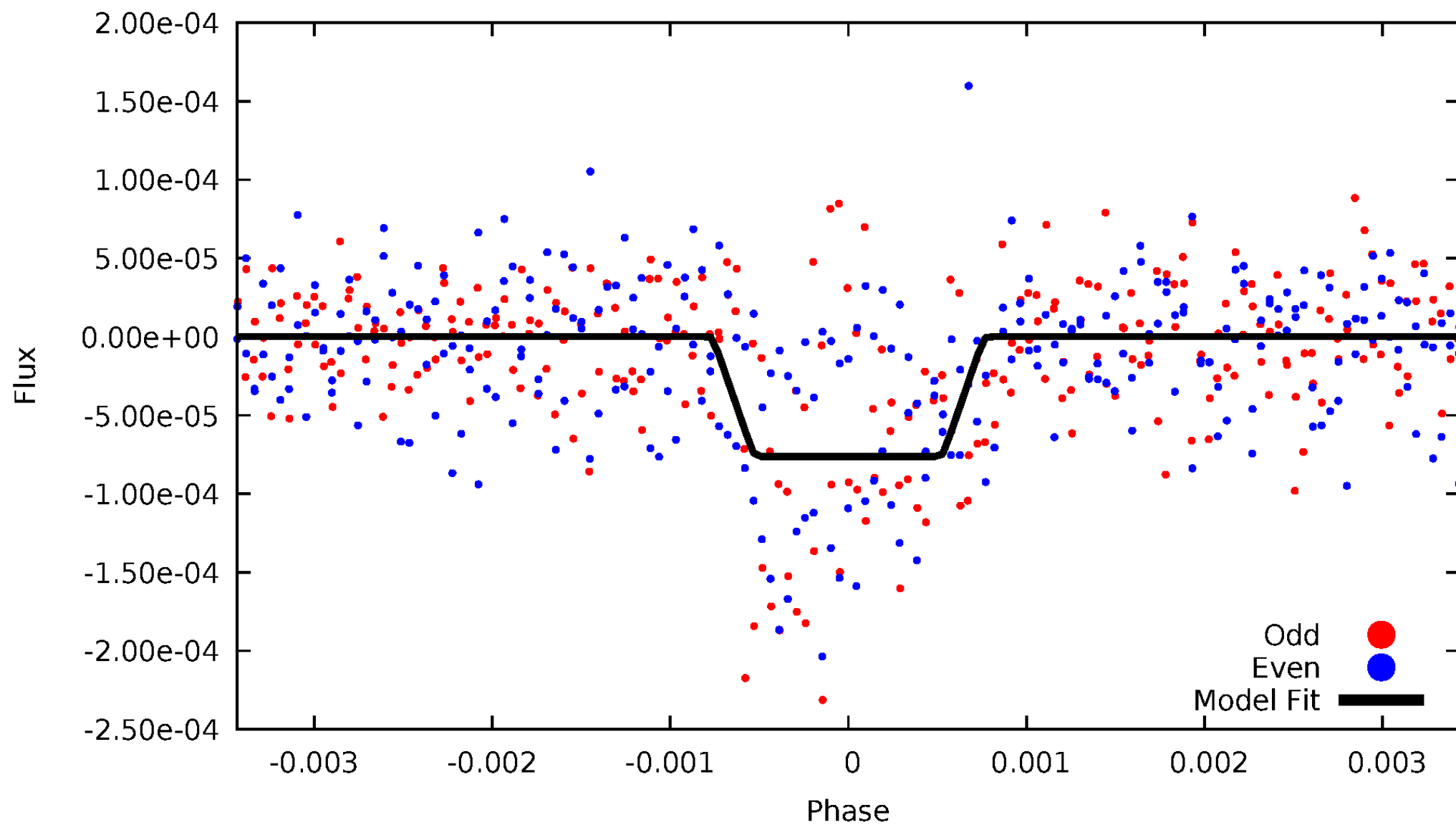
DV Odd/Even

TCE 006370531-01



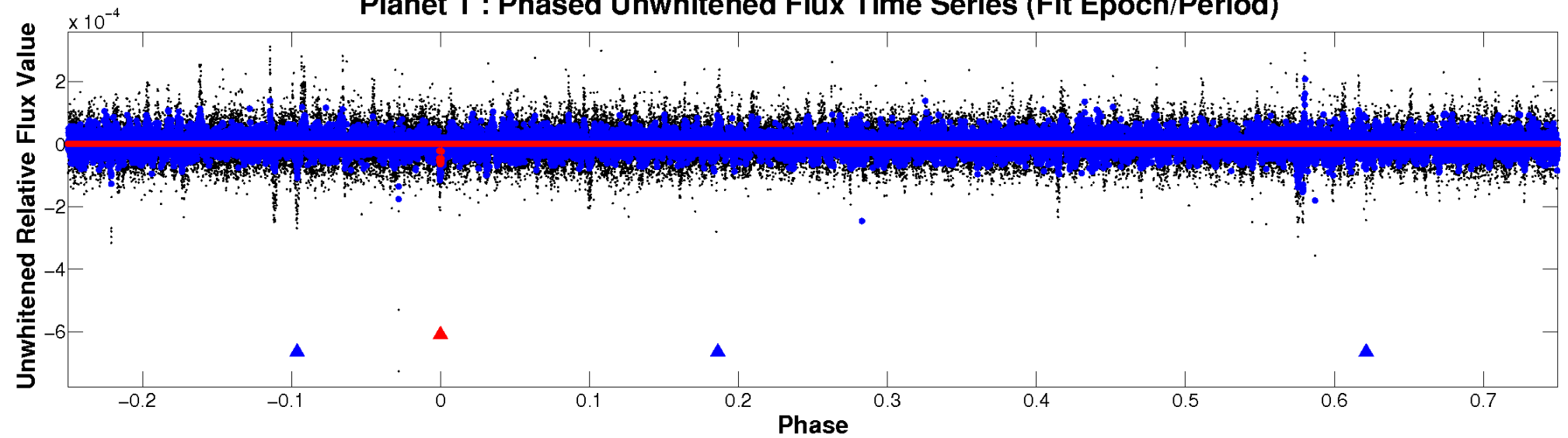
ALT Odd/Even

TCE 006370531-01

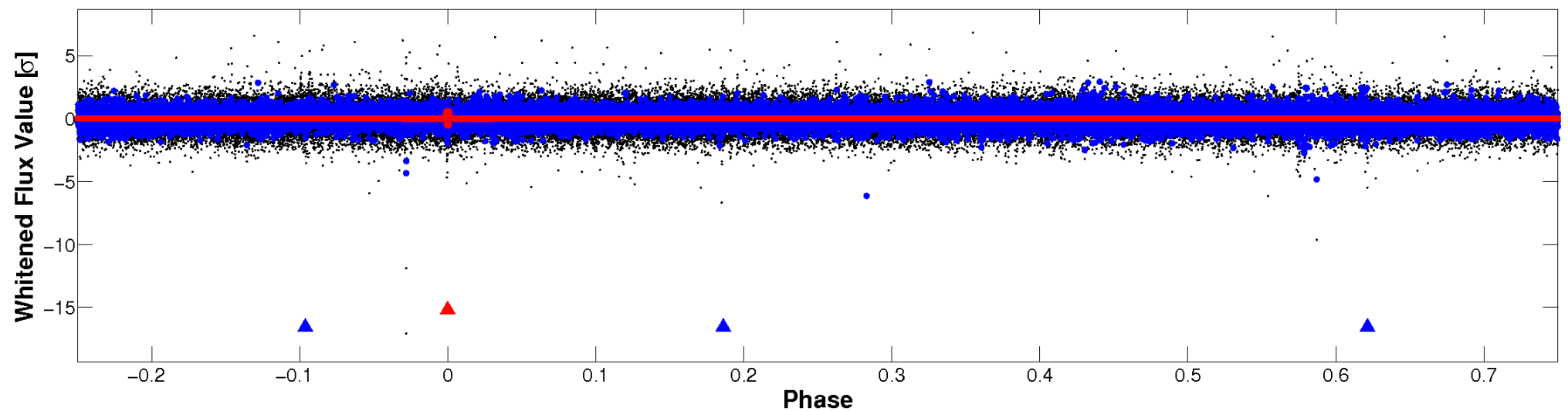


Non-Whitened Vs. Whitened Light Curve

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

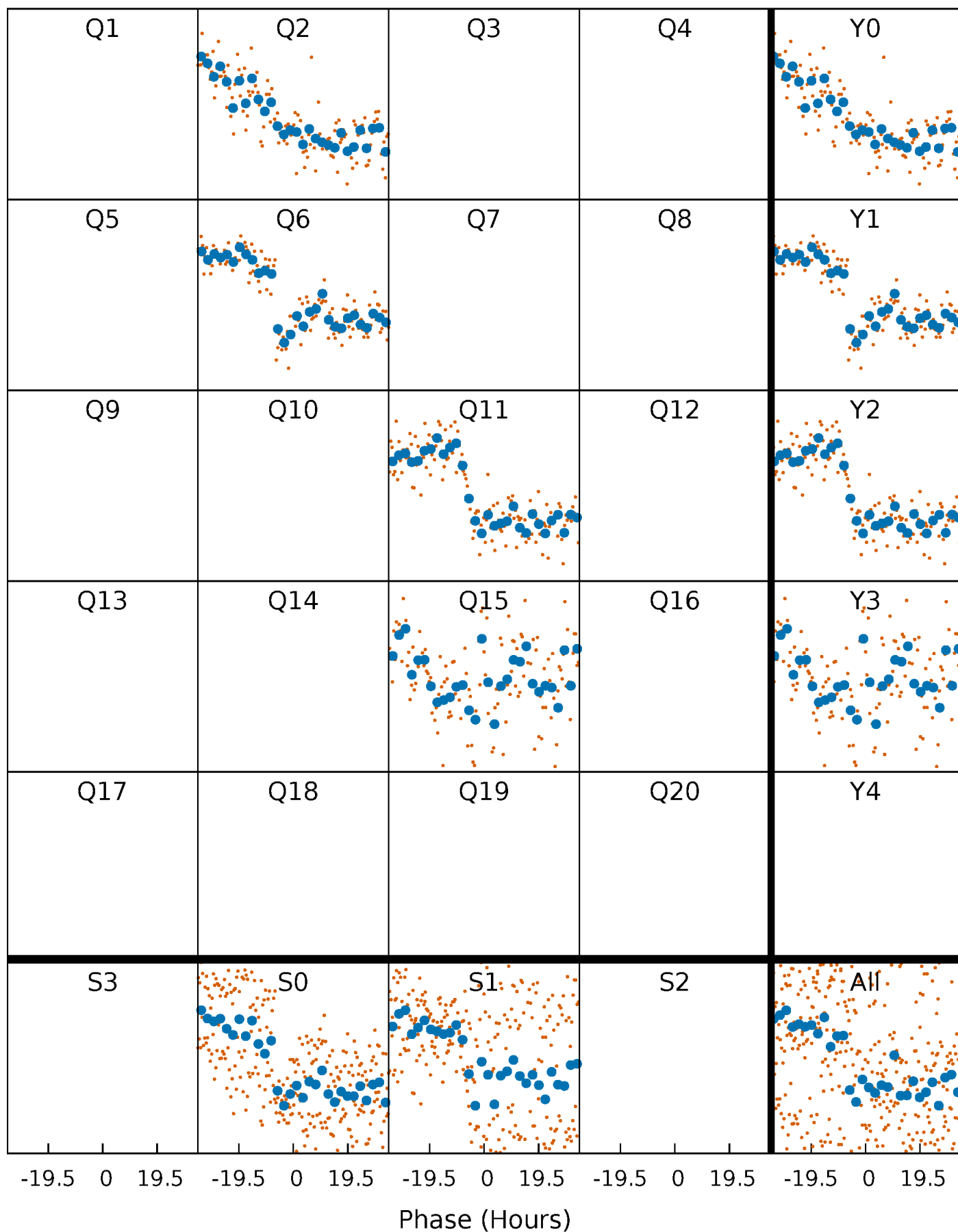


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



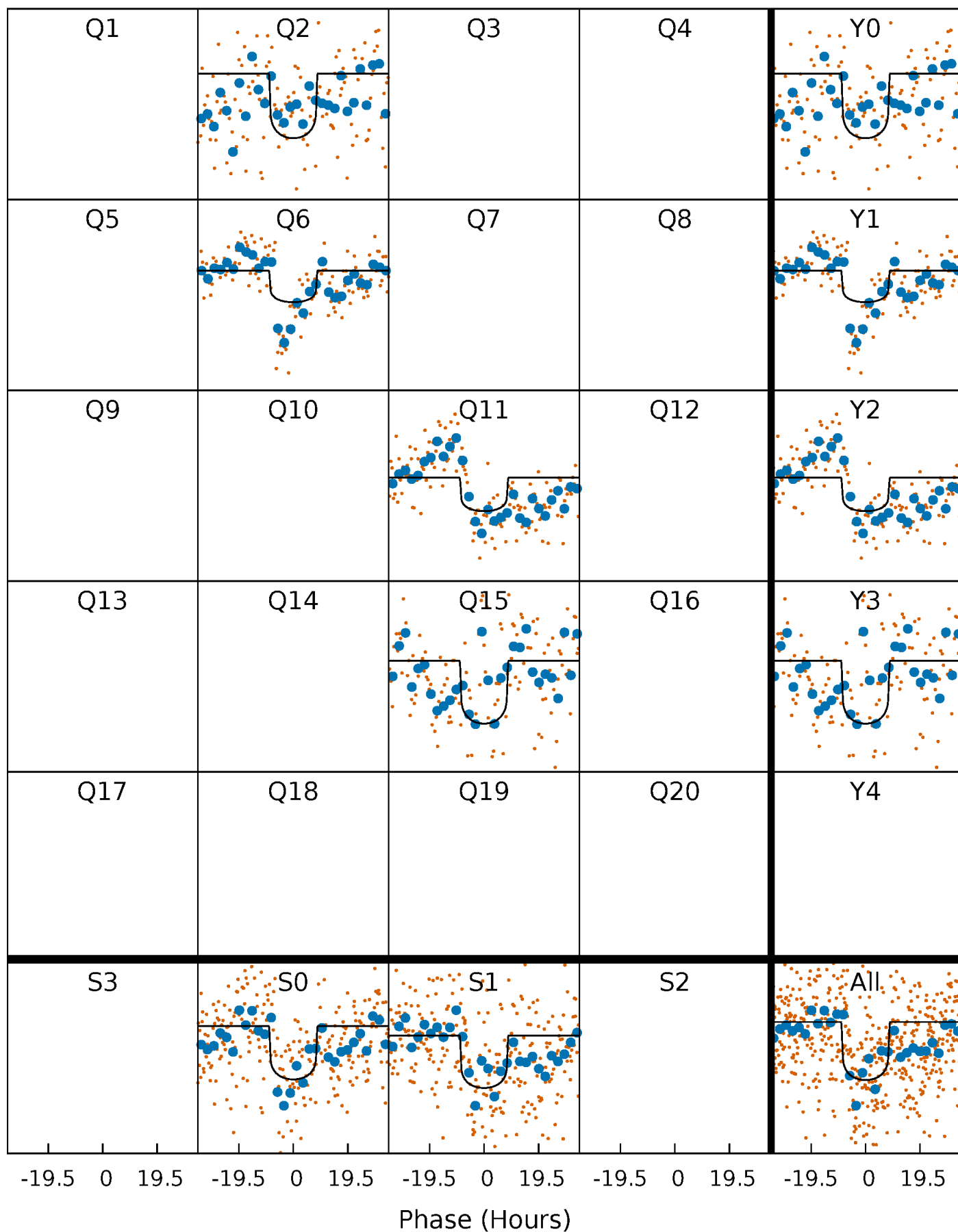
PDC Quarter-Phased Transit Curves

TCE 006370531-01 P=423.153473 Days $T_0=197.589268$ (BKJD)



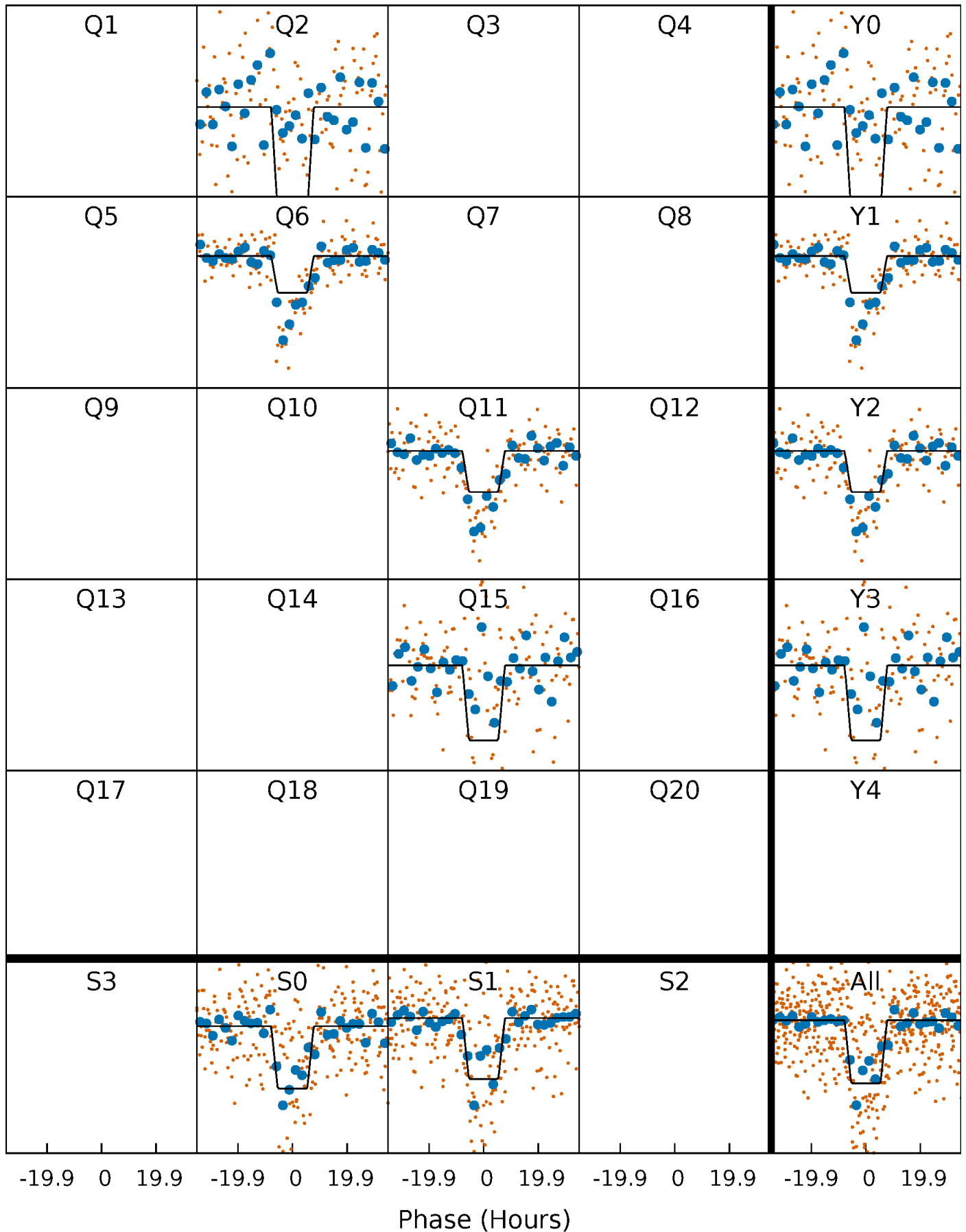
DV Quarter-Phased Transit Curves

TCE 006370531-01 P=423.153473 Days $T_0=197.589268$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

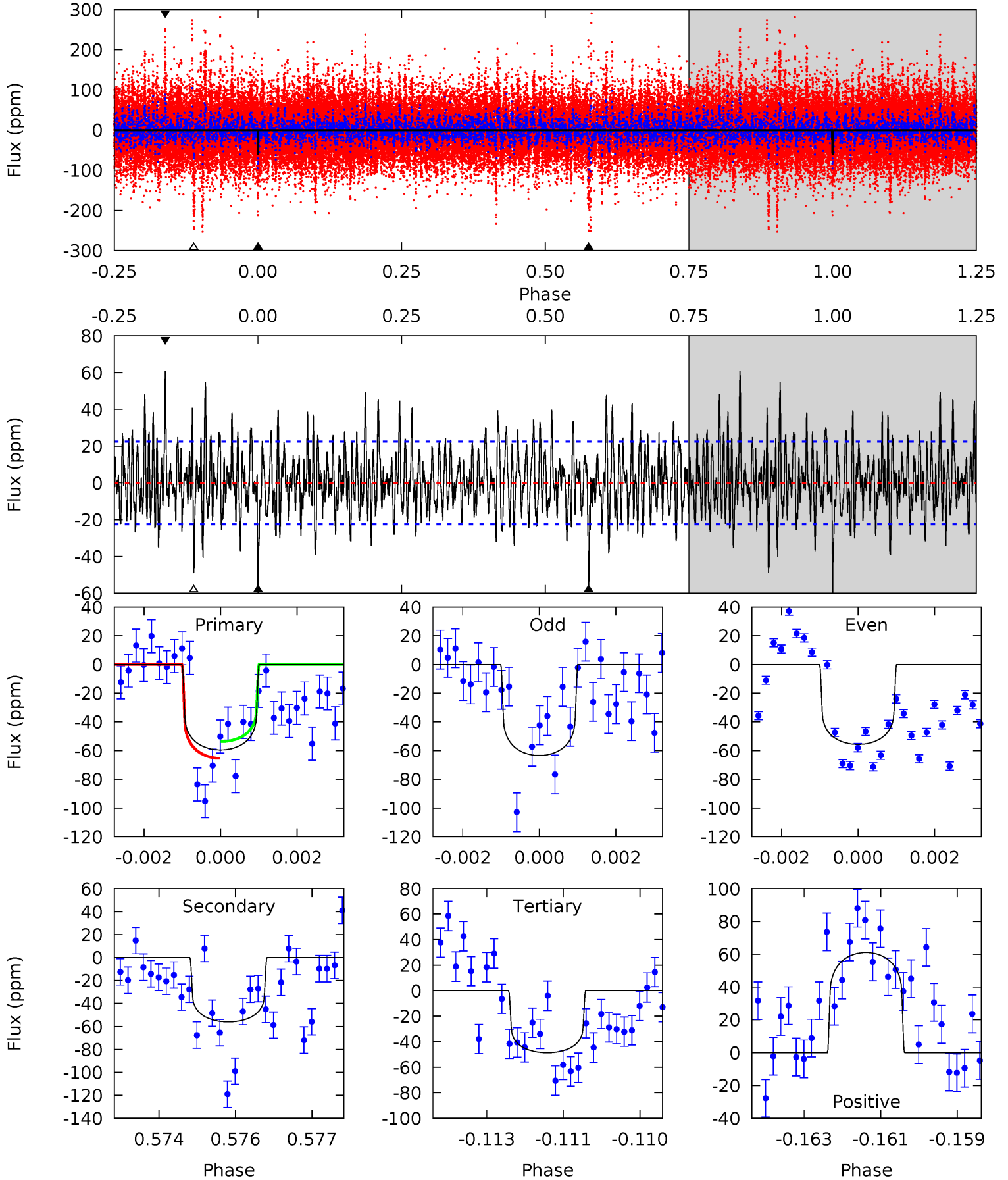
TCE 006370531-01 P=423.158594 Days $T_0=197.576345$ (BKJD)



DV Model-Shift Uniqueness Test

006370531-01, P = 423.153473 Days, E = 197.589268 Days

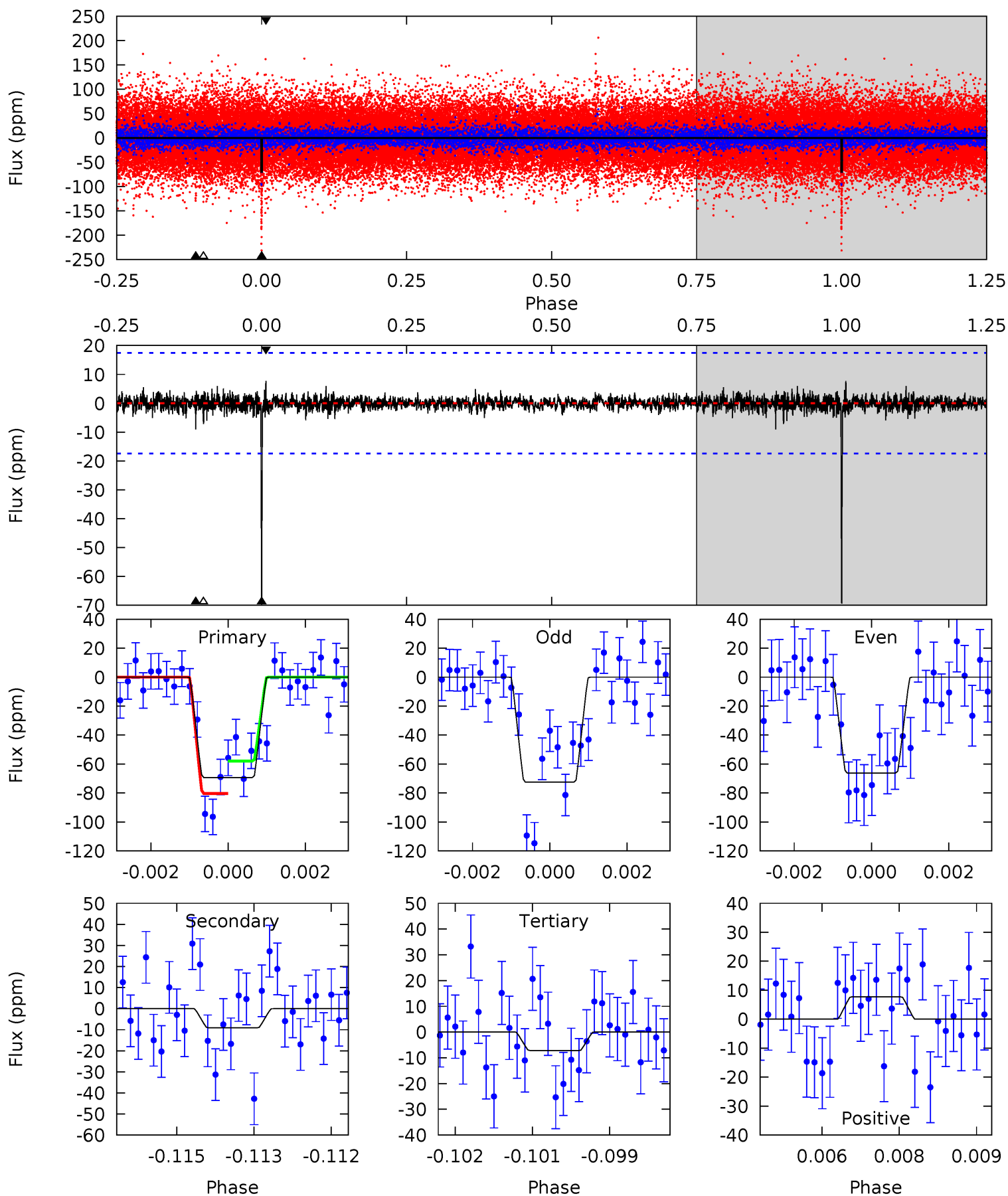
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	13.3	11.6	14.5	5.35	3.14	3.63	2.60	-0.35	1.76	-1.19	0.92	1.07	0.51	1.39



Alt Model-Shift Uniqueness Test

006370531-01, P = 423.158594 Days, E = 197.576345 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	2.80	2.22	2.38	5.37	3.16	0.43	19.2	19.0	0.58	0.42	0.97	1.01	0.10	3.45



Stellar Parameters For KIC 006370531

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7085^{+195}_{-335}	$4.064^{+0.148}_{-0.181}$	$0.210^{+0.150}_{-0.350}$	$1.980^{+0.570}_{-0.467}$	$1.658^{+0.184}_{-0.253}$	$0.301^{+0.268}_{-0.141}$
	+3%/-5%	+4%/-4%	+71%/-167%	+29%/-24%	+11%/-15%	+89%/-47%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006370531-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-56 ± 4	$1.72^{+0.48}_{-0.41}$	536^{+41}_{-38}	6742^{+1136}_{-668}	17283^{+12804}_{-6694}
Alt.	-9 ± 3	$1.90^{+0.44}_{-0.43}$	538^{+41}_{-38}	4329^{+506}_{-467}	2279^{+1724}_{-1090}

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 $A_{obs} \gg 1.0$

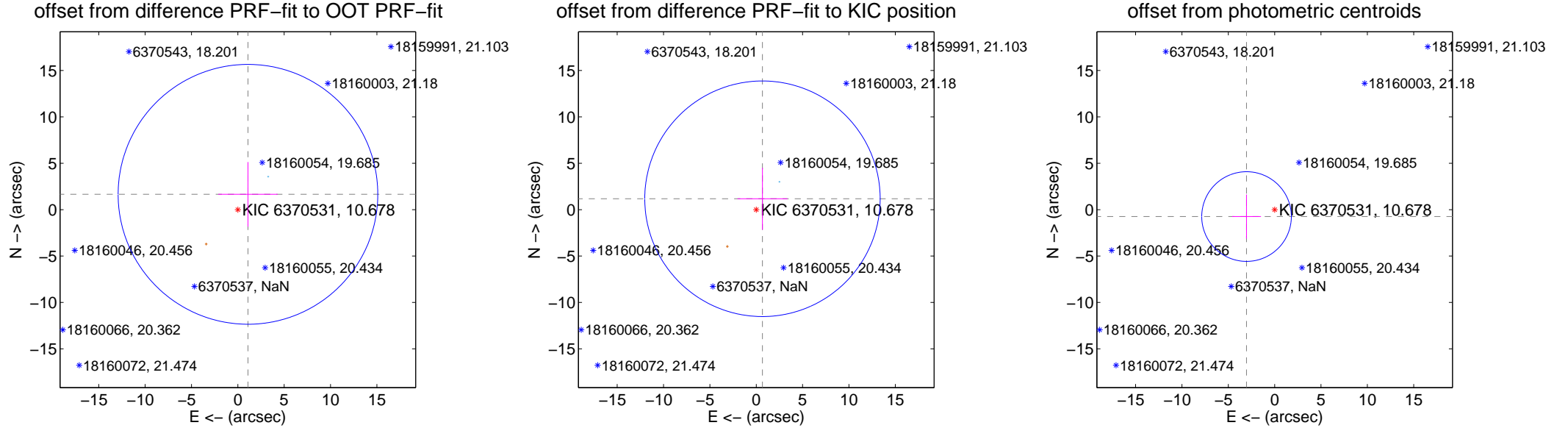
DV Centroid Data

Supplemental centroid analysis for 006370531-01. **Kepler magnitude: 10.68.** Transit SNR 7.02

There are 1 quarters with good PRF difference image offsets

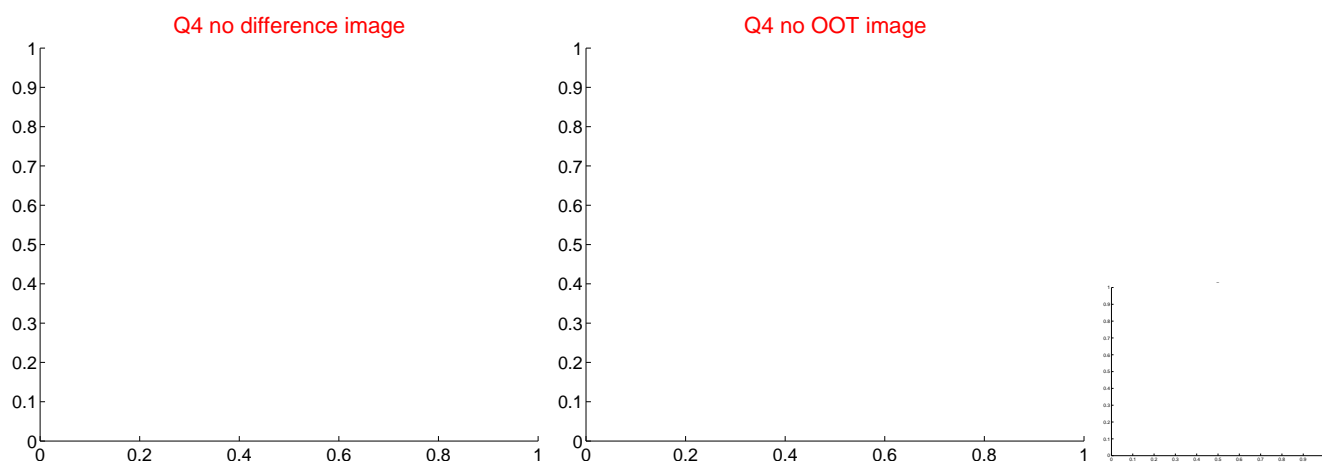
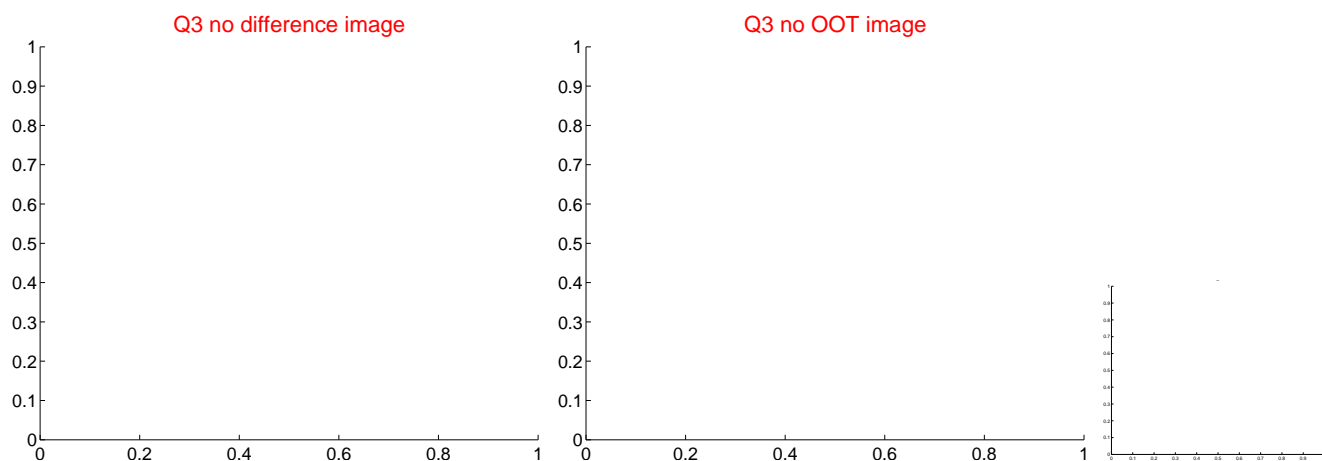
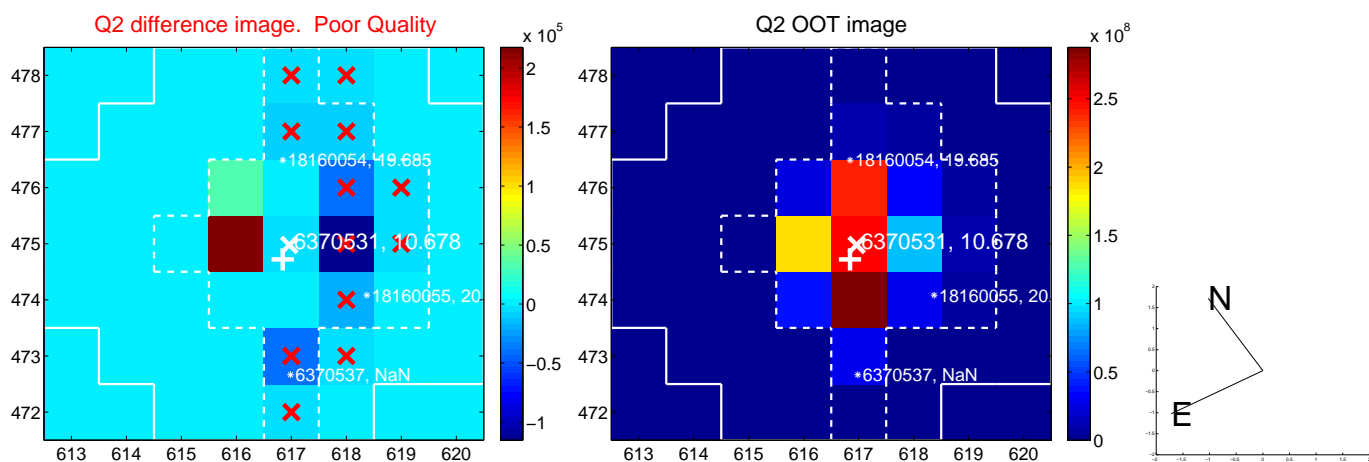
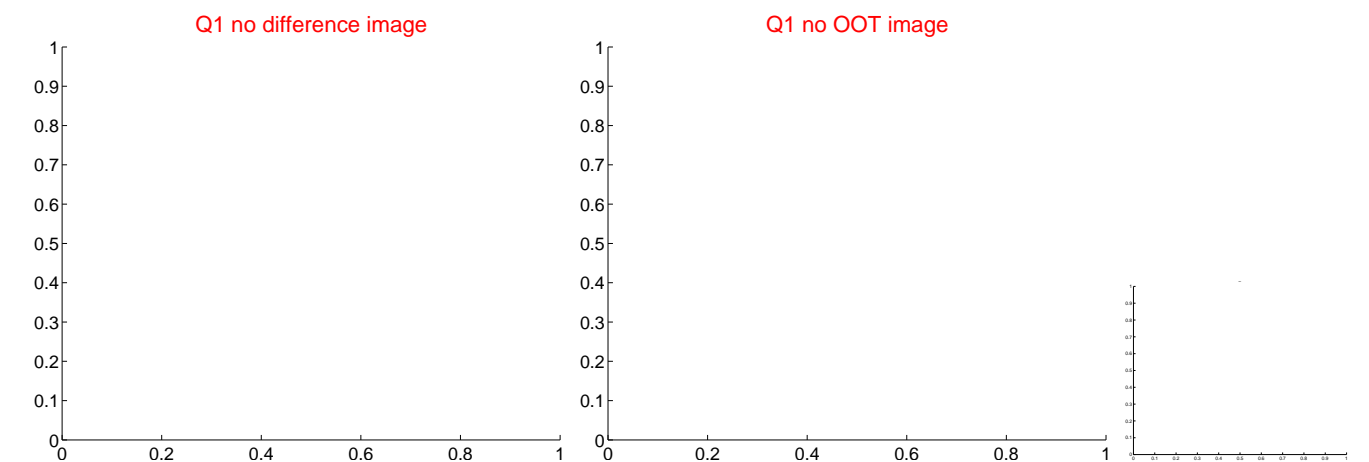
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.981 ± 4.667	0.42	-1.092 ± 3.200	1.652 ± 3.479
PRF-fit source offset from KIC position	1.352 ± 4.231	0.32	-0.670 ± 2.689	1.174 ± 3.337
photometric centroid source offset	3.12 ± 1.61	1.94	3.03 ± 1.55	-0.74 ± 2.37



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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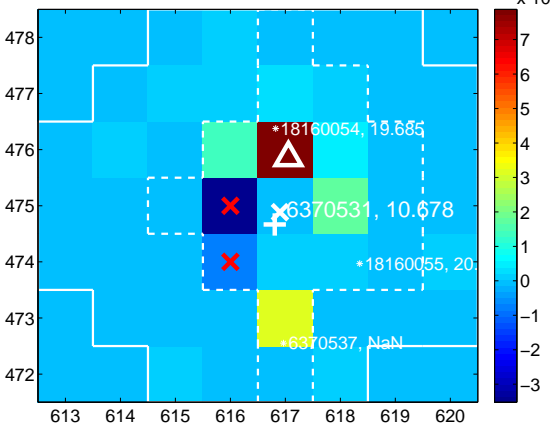
Q5 no difference image



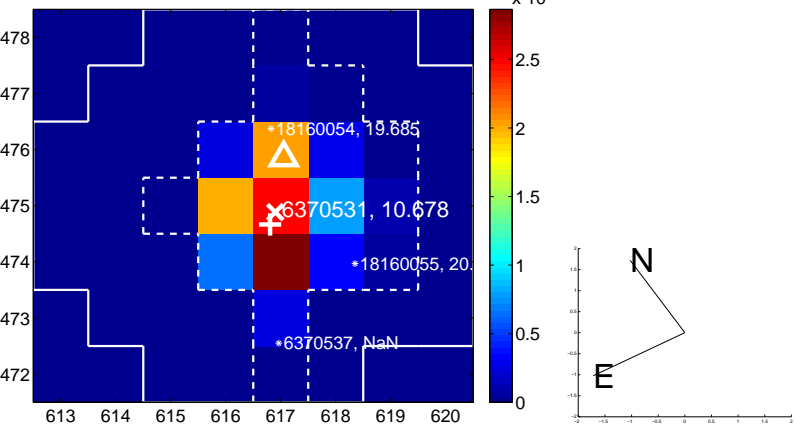
Q5 no OOT image



Q6 difference image



Q6 OOT image



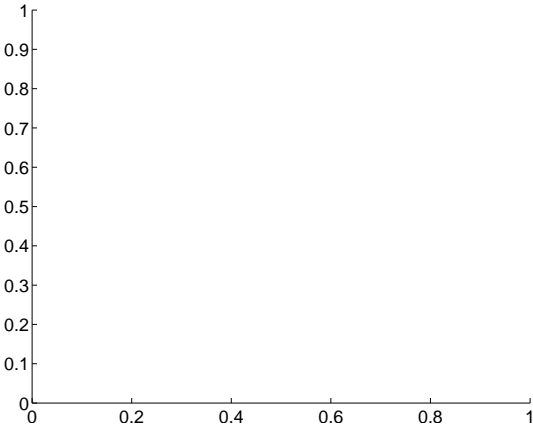
Q7 no difference image



Q7 no OOT image



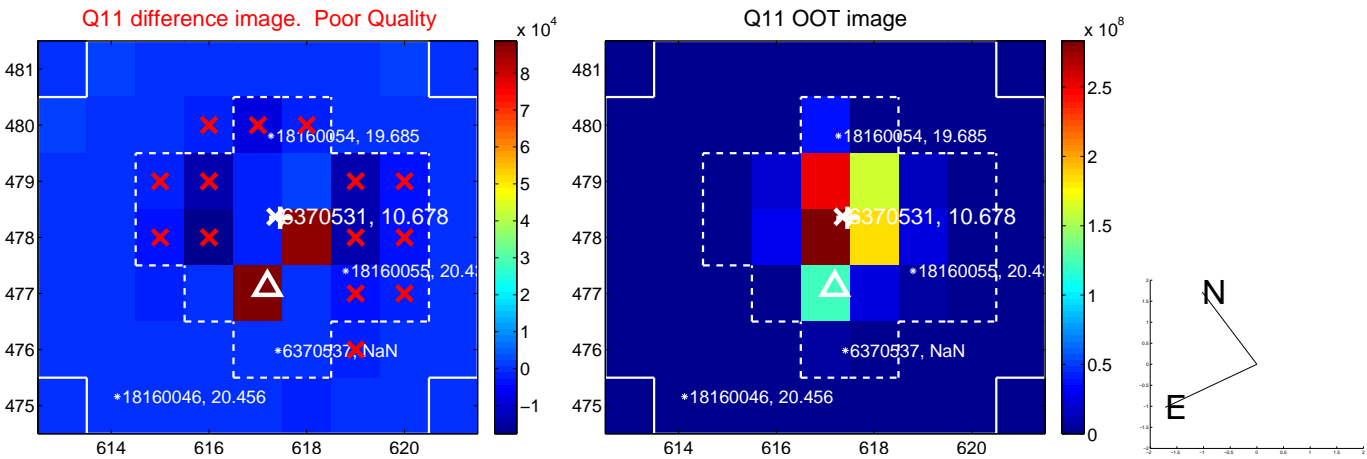
Q8 no difference image



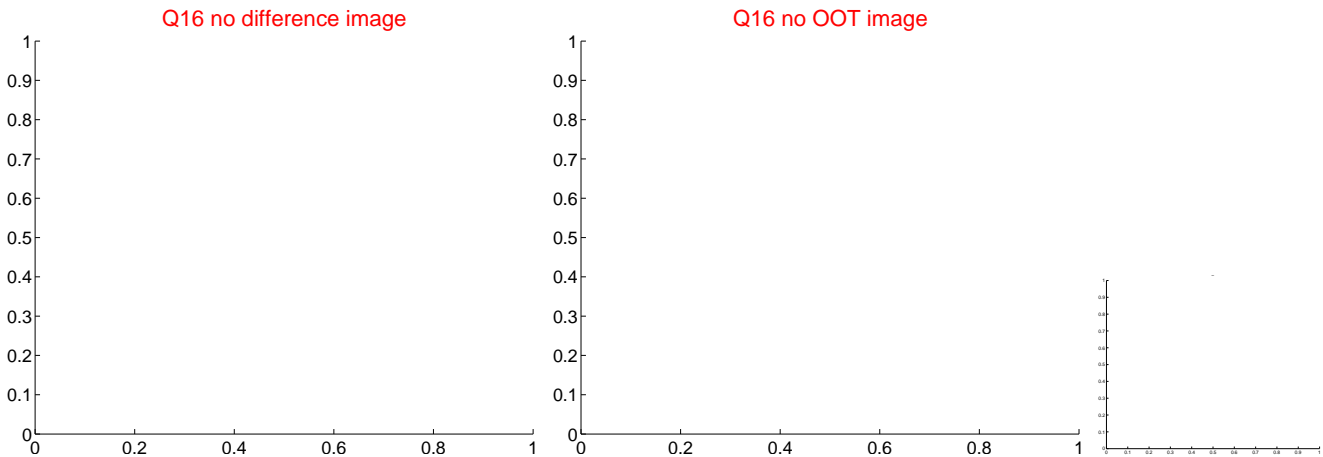
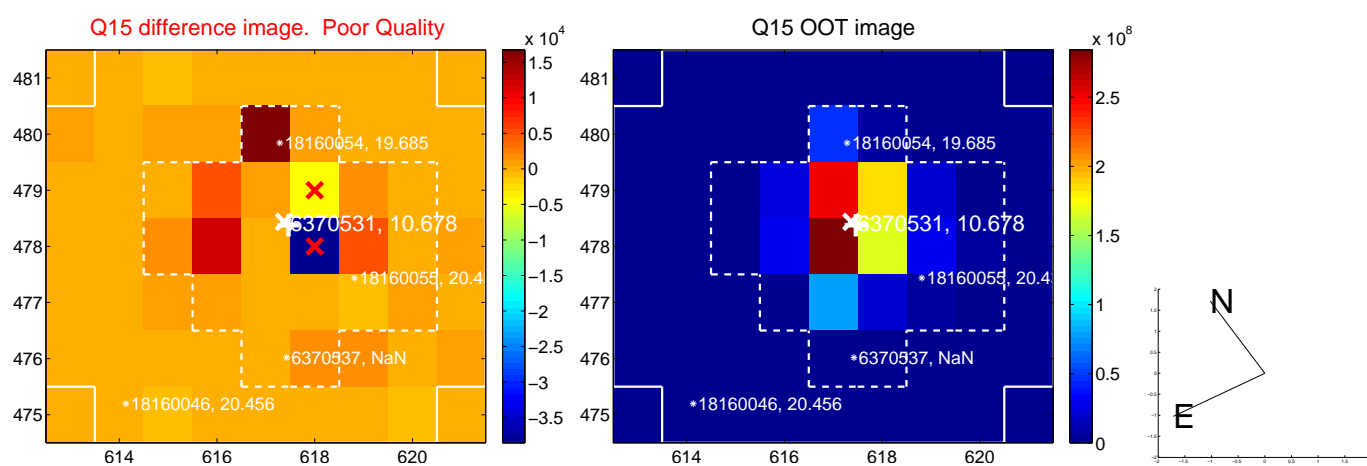
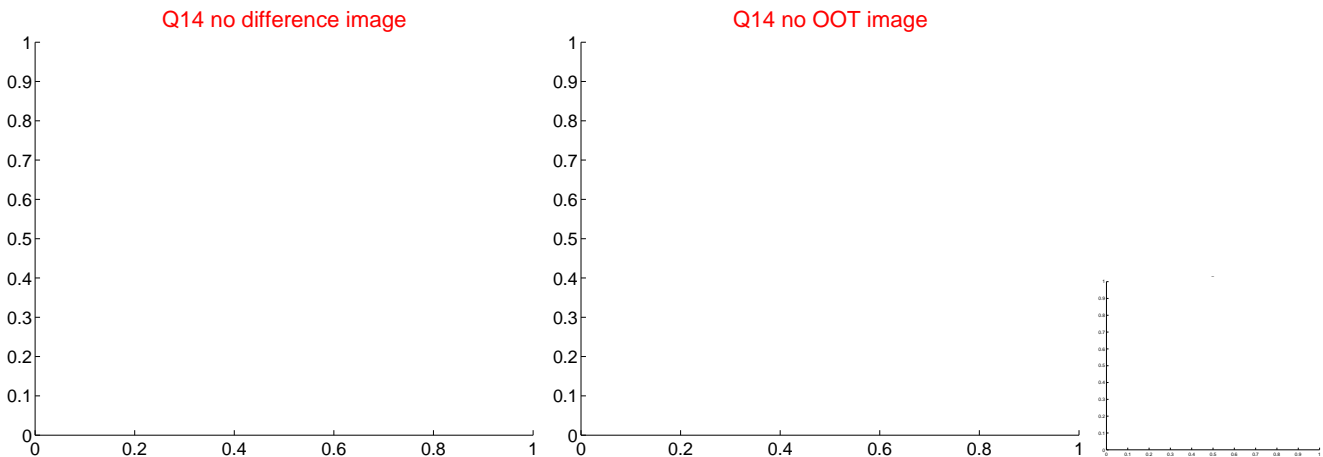
Q8 no OOT image



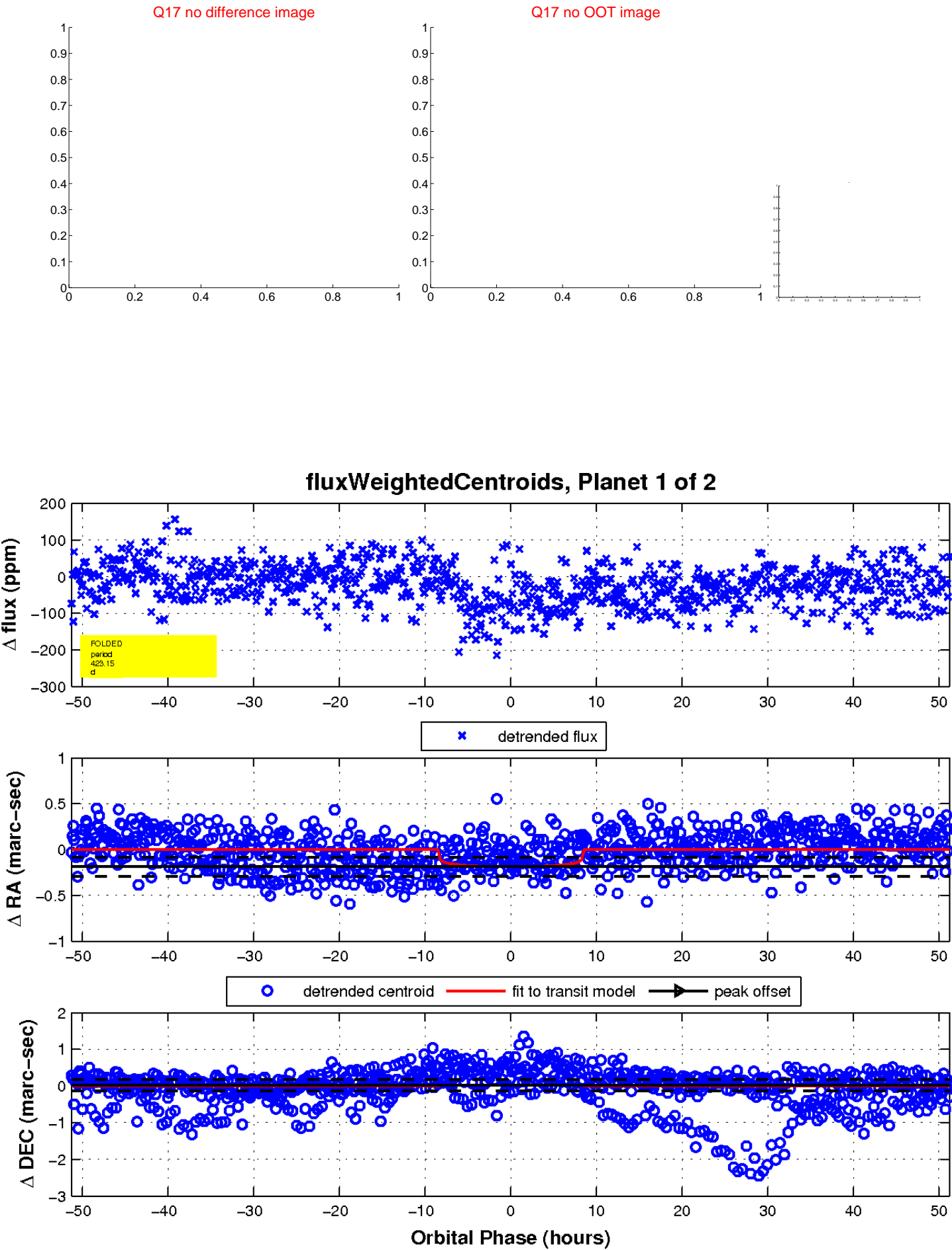
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

