

KIC 008254901

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})
008254901-01	OBS	No	129.981555	203.514514	538.8	1.170	37.6	37.2	114.69	3331	263.82	0.00
008254901-02	OBS	No	473.777469	146.219717	77.6	3.649	15.4	6.1	114.69	3331	100.39	1060.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008254901-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
008254901-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_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.

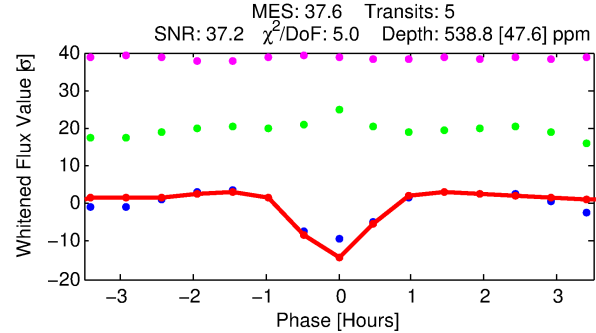
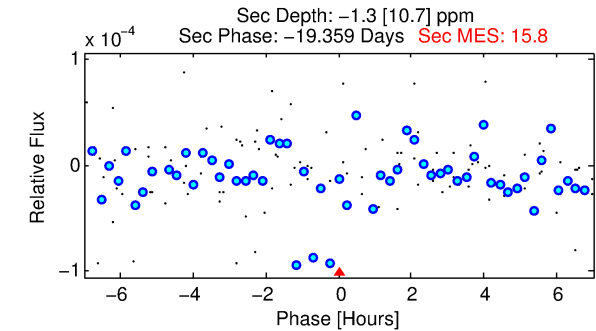
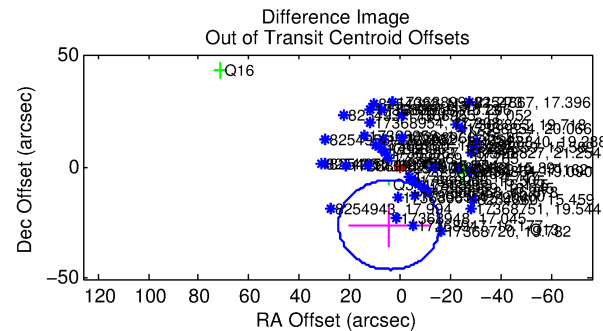
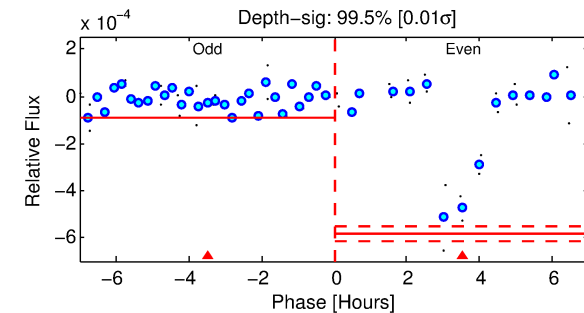
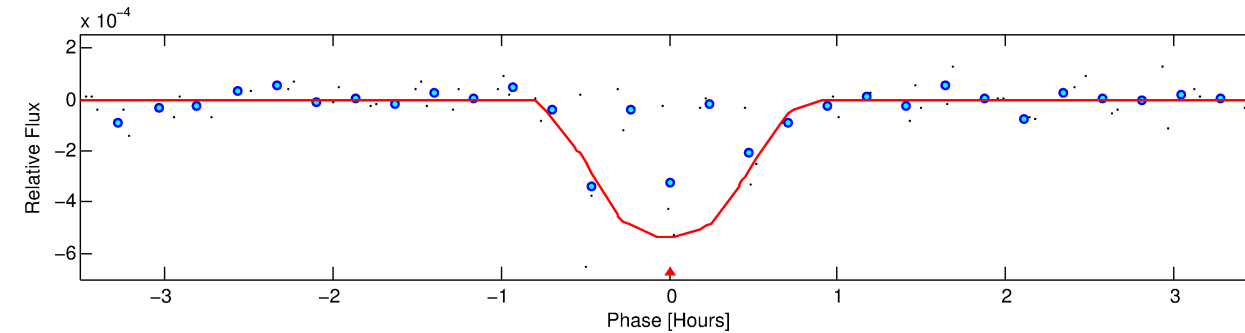
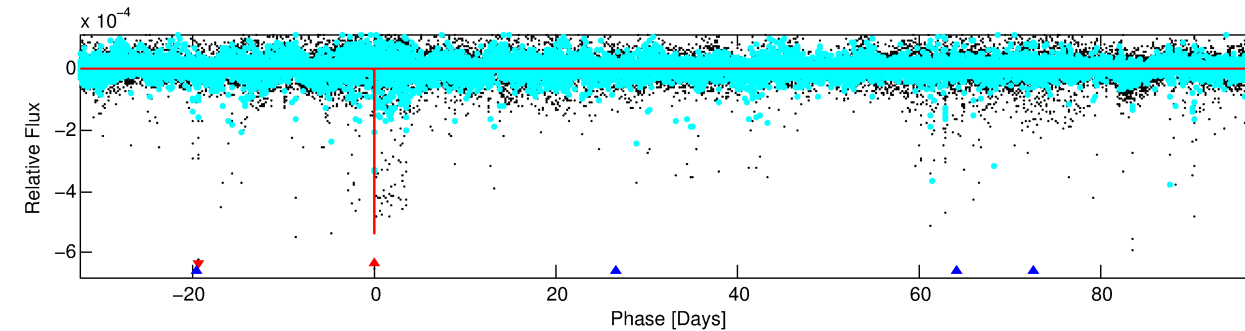
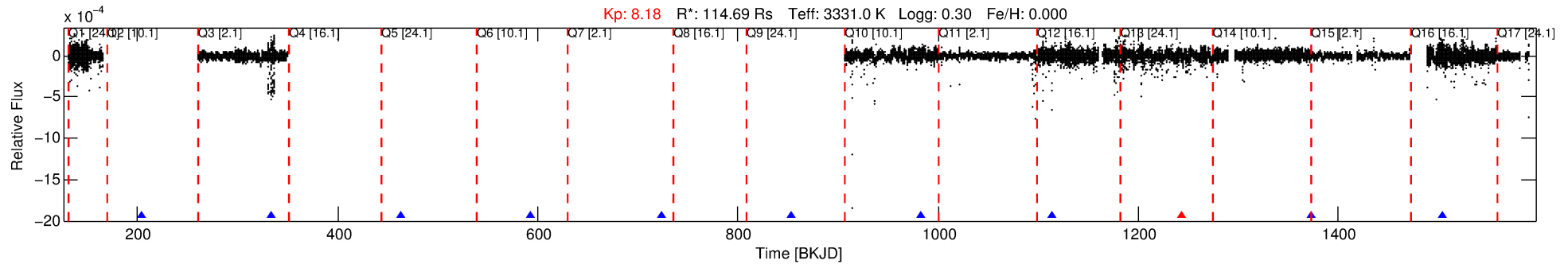
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008254901-01

No Significant Match Found

DV One-Page Summary

KIC: 8254901 Candidate: 1 of 2 Period: 129.982 d



DV Fit Results:

Period = 129.98155 [0.00041] d
Epoch = 203.5145 [0.0030] BKJD
Rp/R* = 0.0211 [0.0314]
a/R* = 763.74 [2272.35]
b = 0.48 [5.12]
Seff = N/A
Teq = N/A
Rp = 263.82 [399.89] Re
a = N/A
Ag = N/A
Teffp = N/A

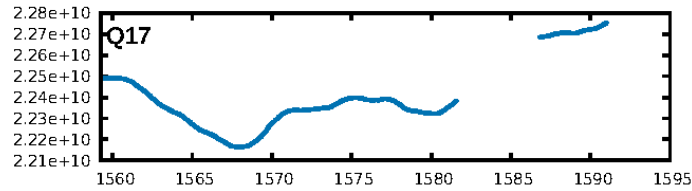
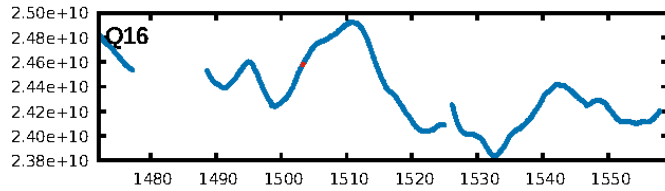
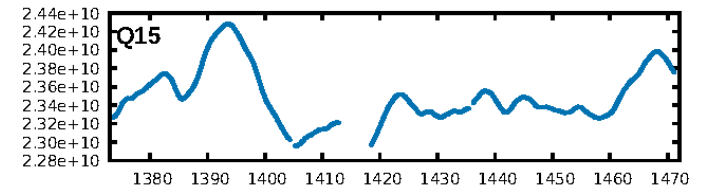
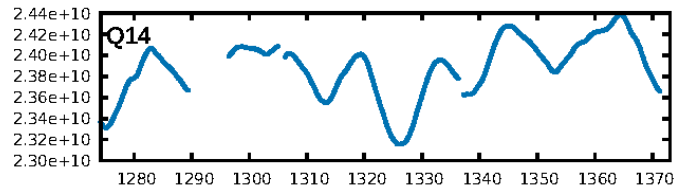
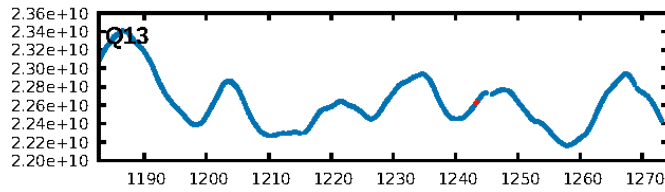
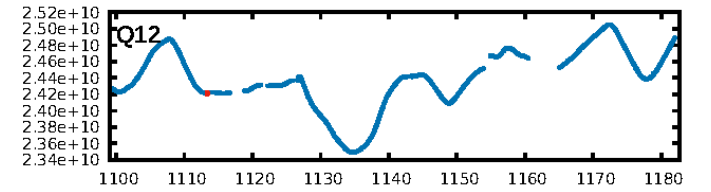
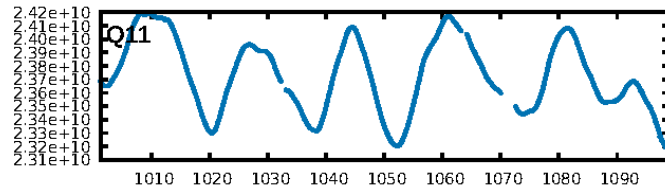
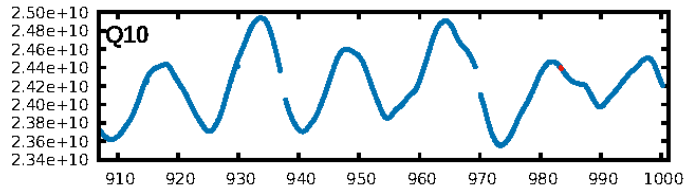
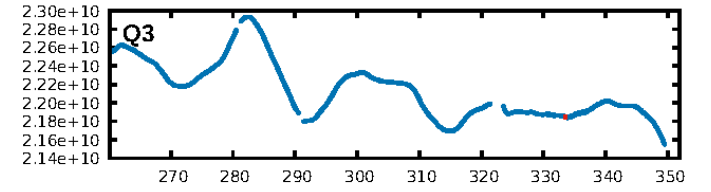
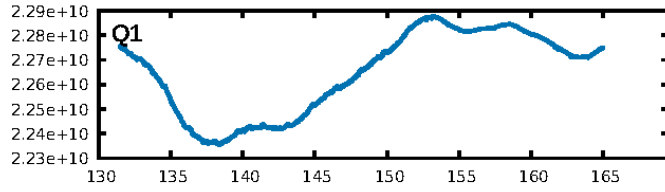
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [2153.22 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.4%
Bootstrap-pfa: 2.58e-21
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: N/A
Centroid-sig: 57.8%
Centroid-so: 2.743 arcsec [1.02 σ]
OotOffset-rm: 26.549 arcsec [3.96 σ]
KicOffset-rm: 27.584 arcsec [2.99 σ]
OotOffset-st: 1/1/2/1 [5]
KicOffset-st: 1/1/2/1 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 1.00 [5/5]

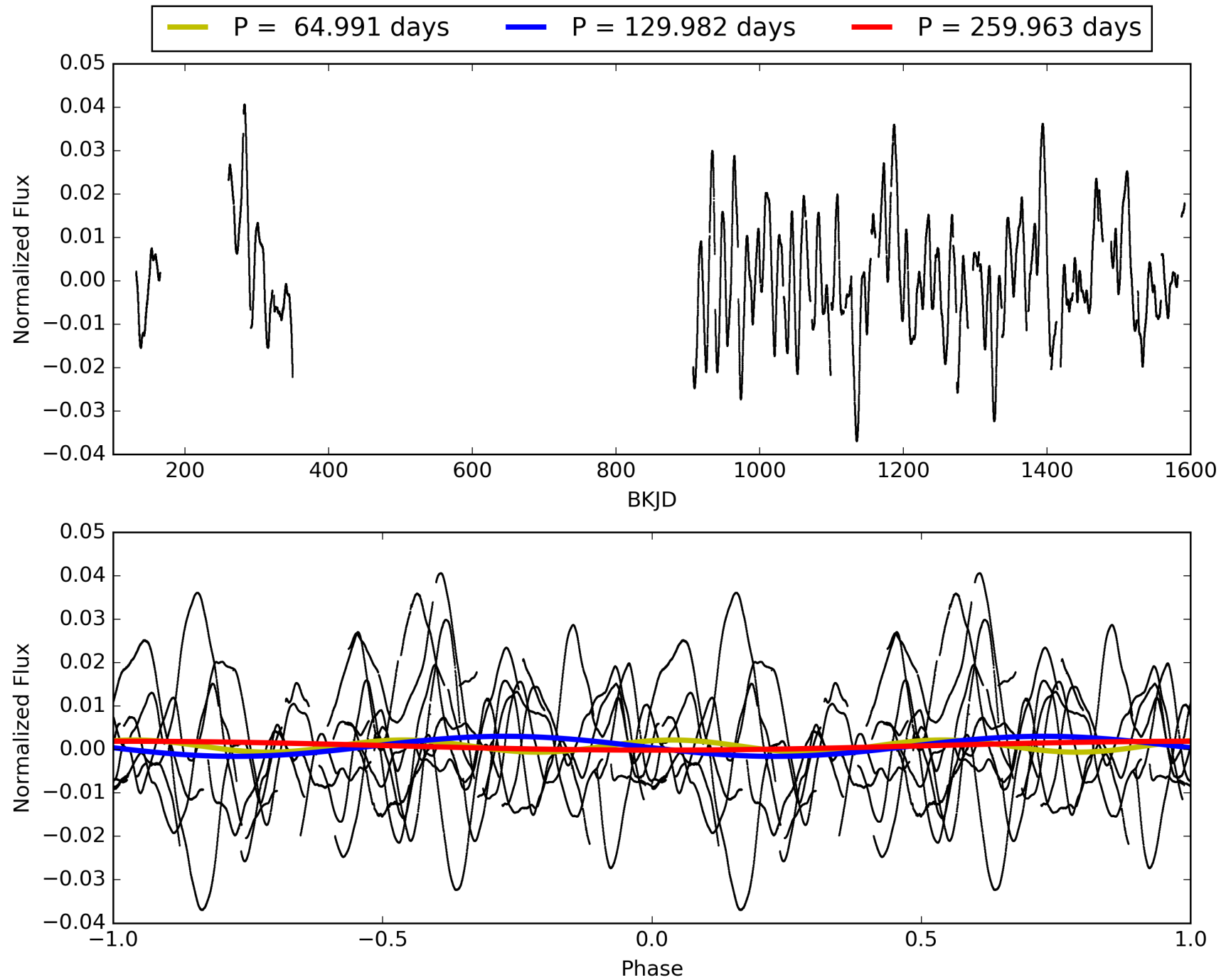
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008254901-01, PDC Light Curves

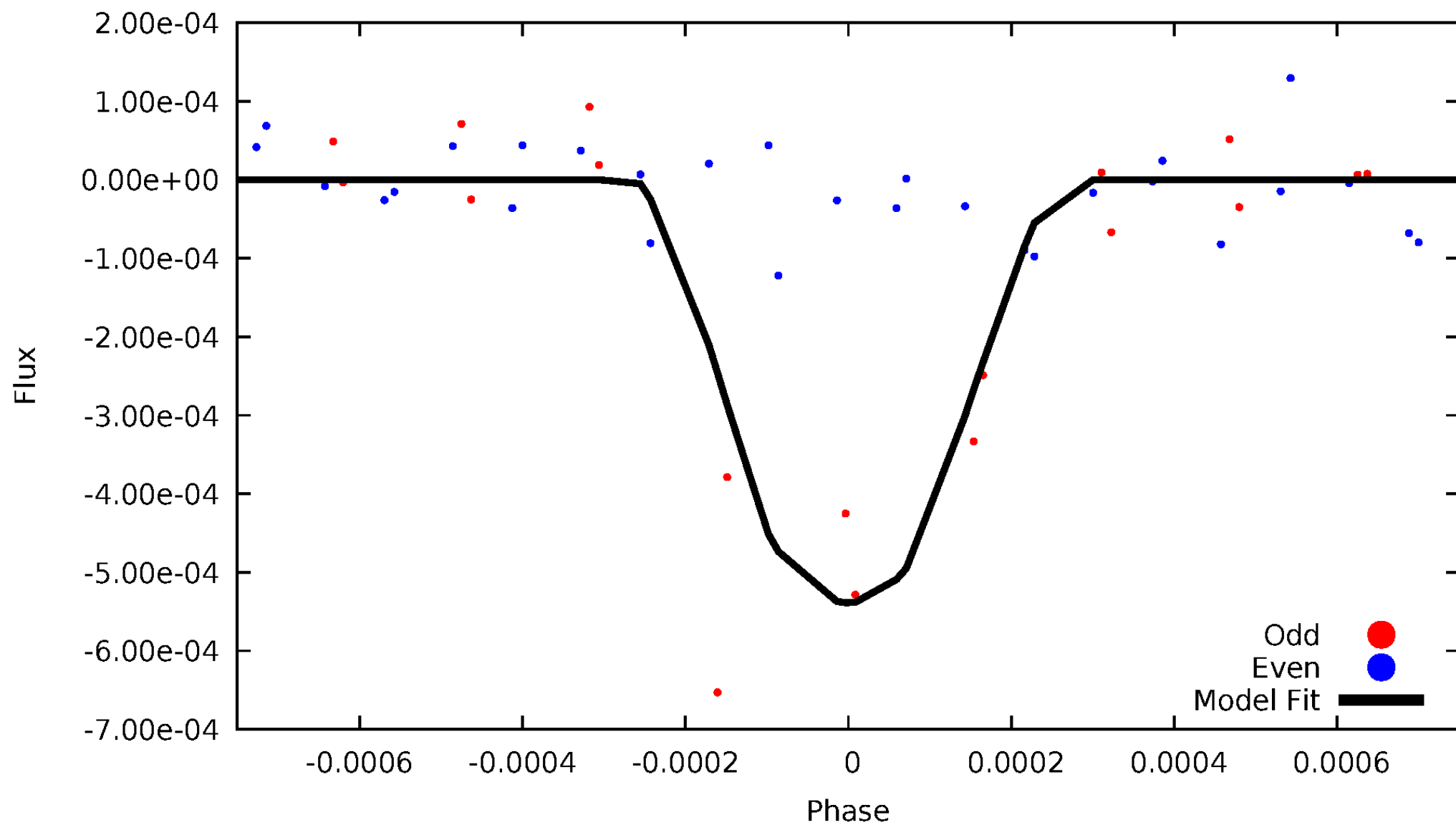


TCE 008254901-01



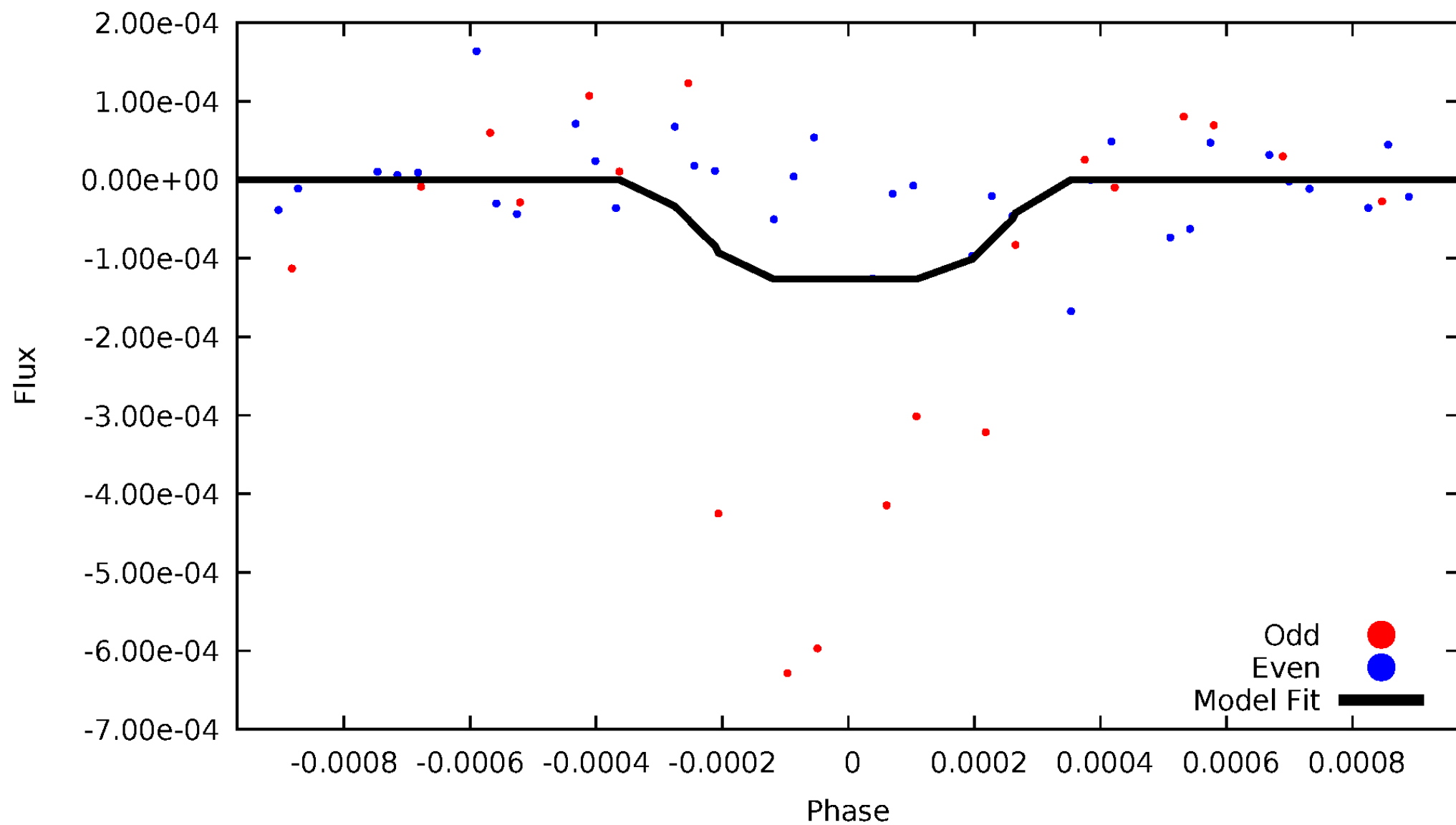
DV Odd/Even

TCE 008254901-01



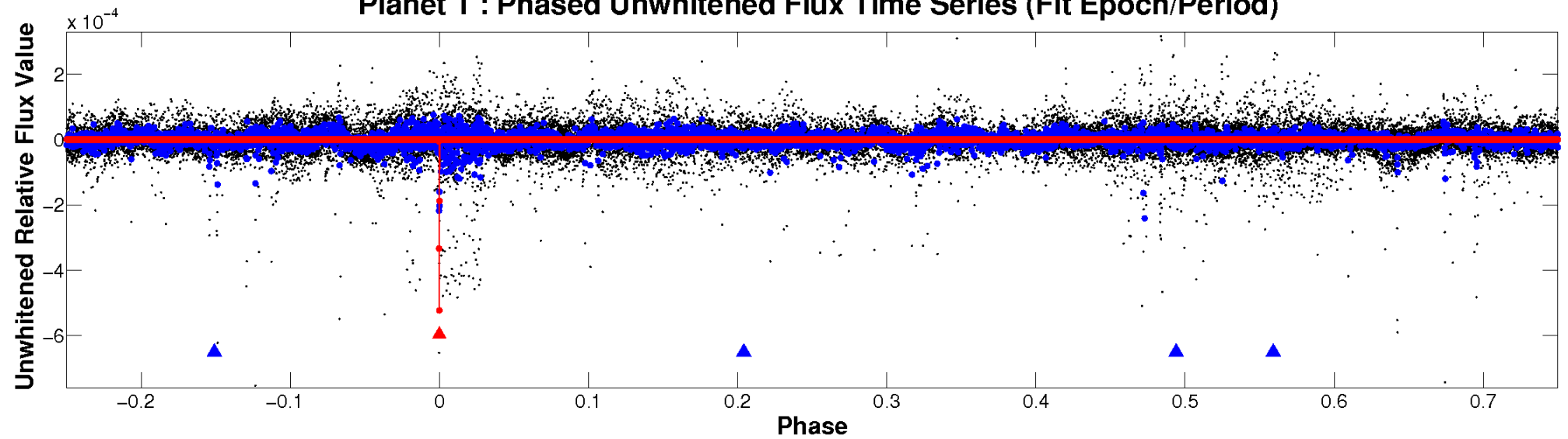
ALT Odd/Even

TCE 008254901-01

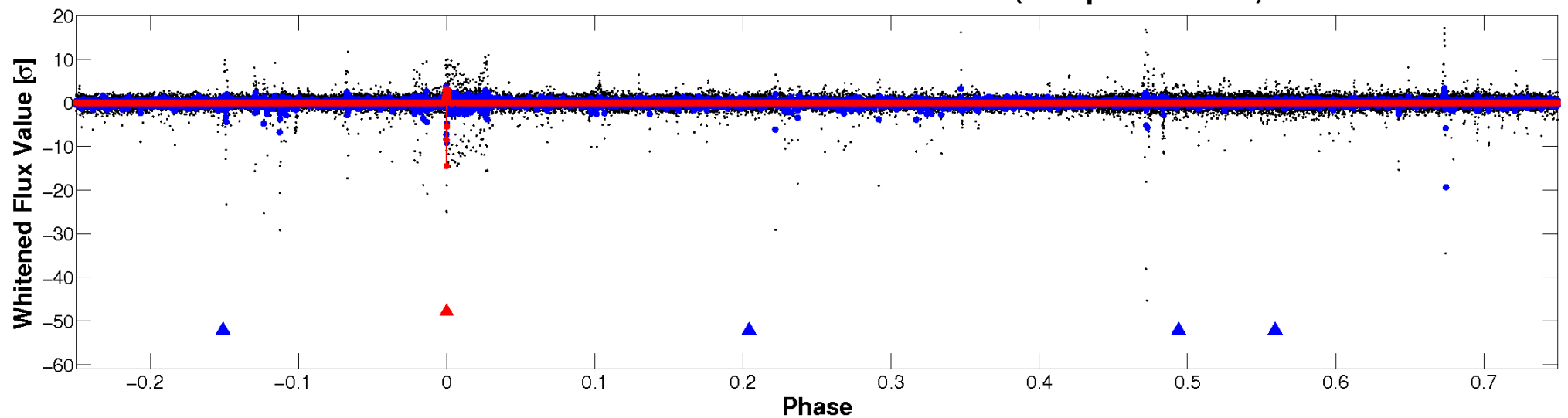


Non-Whitened Vs. Whitened Light Curve

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

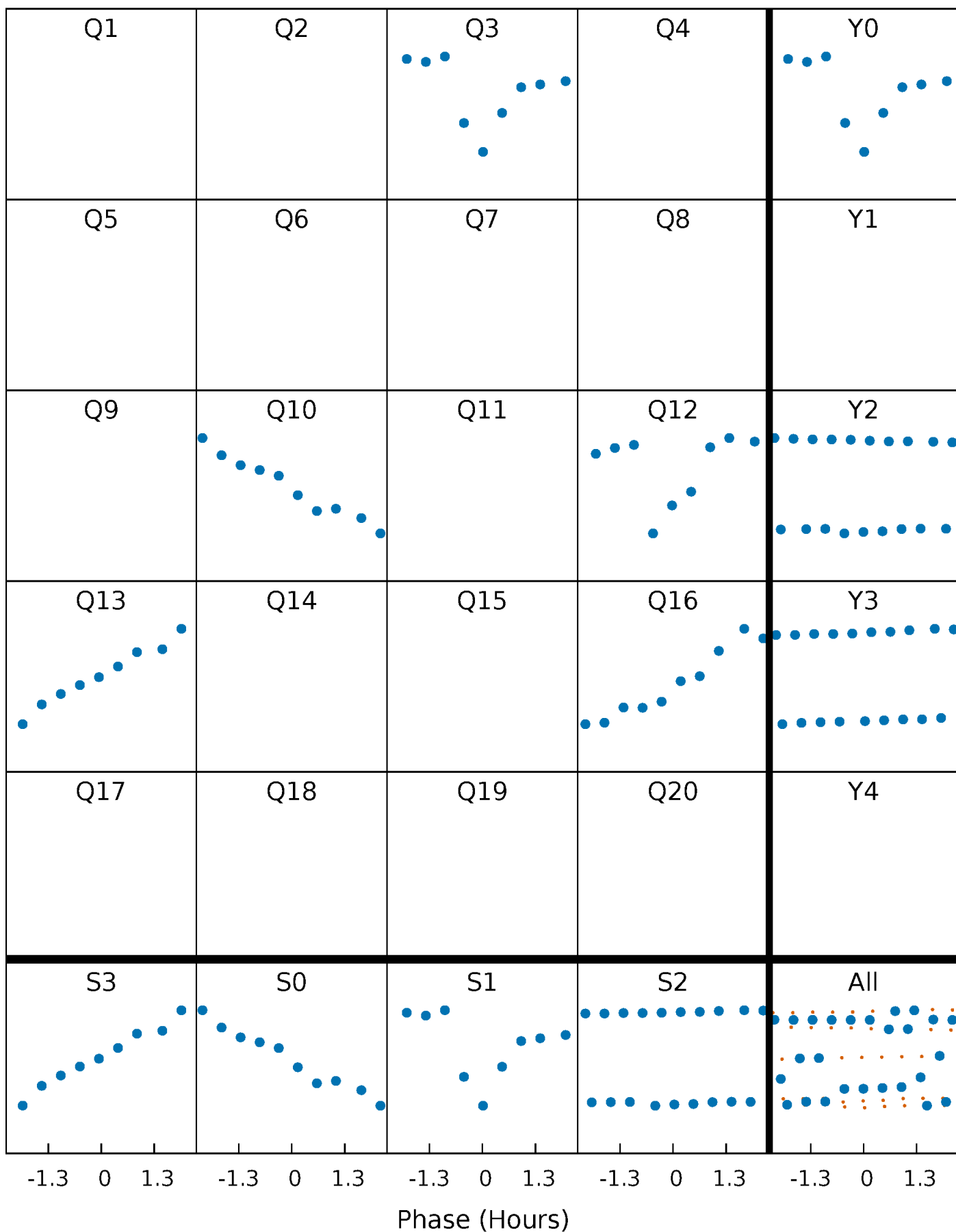


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



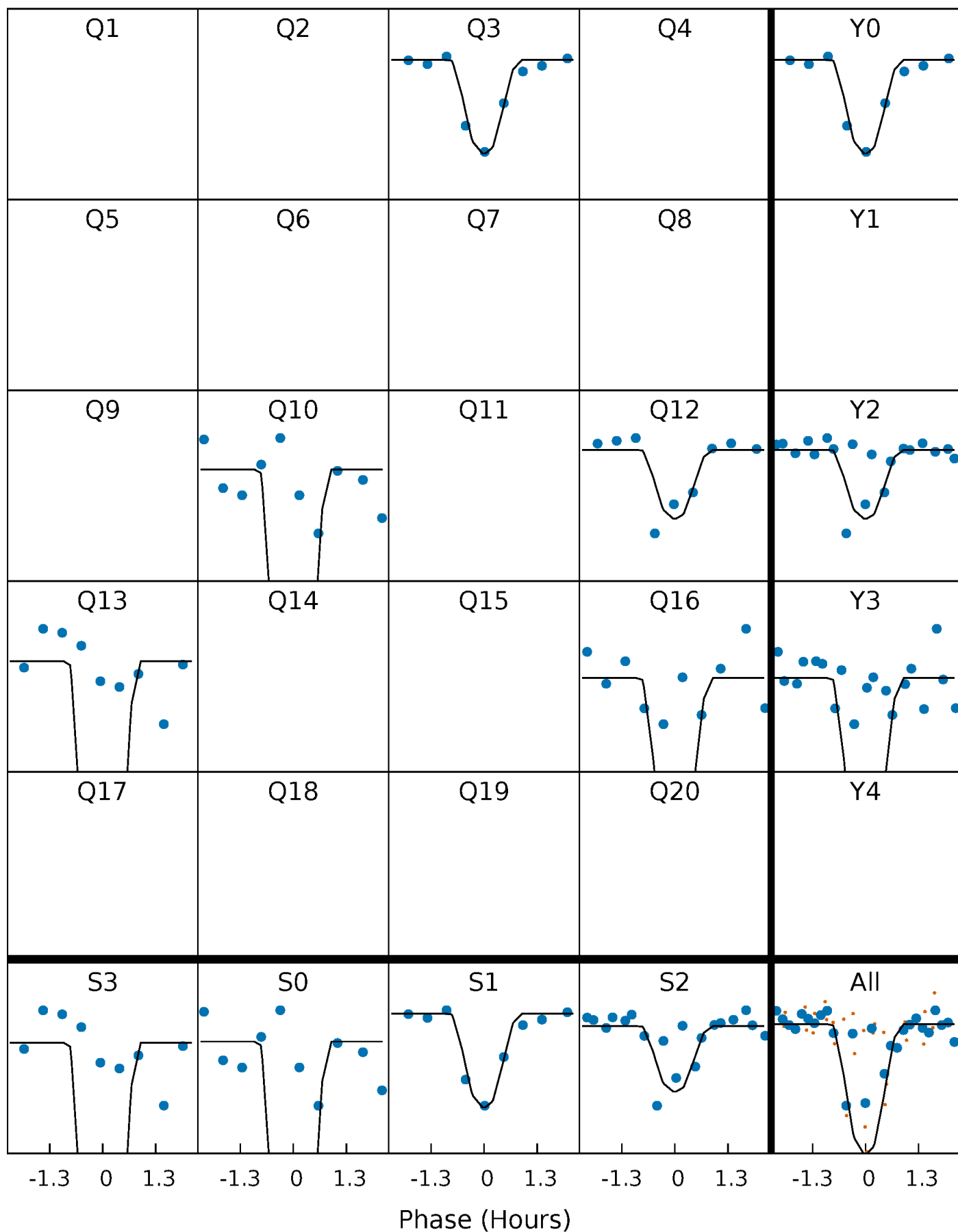
PDC Quarter-Phased Transit Curves

TCE 008254901-01 P=129.981555 Days $T_0=203.514514$ (BKJD)



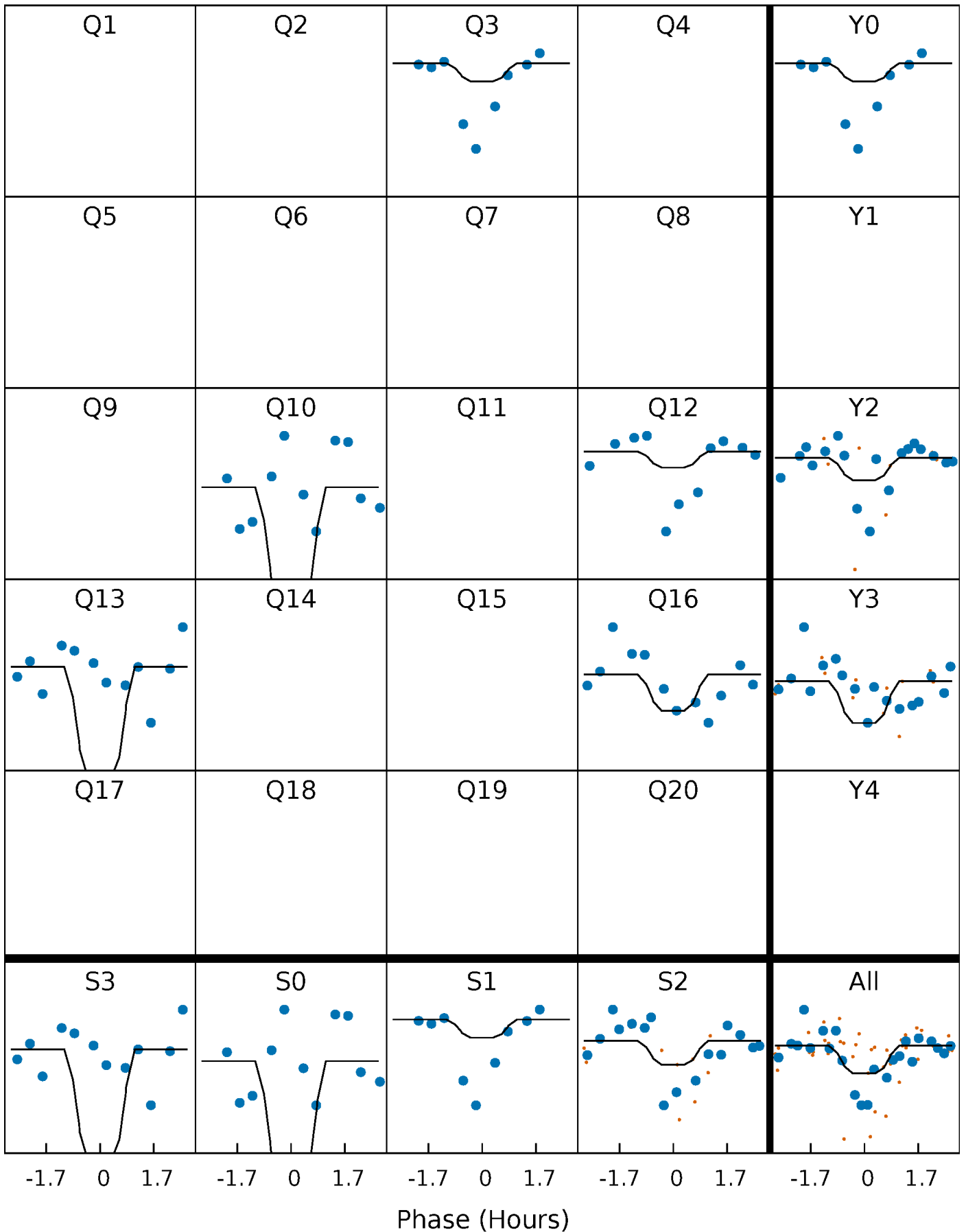
DV Quarter-Phased Transit Curves

TCE 008254901-01 P=129.981555 Days $T_0=203.514514$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

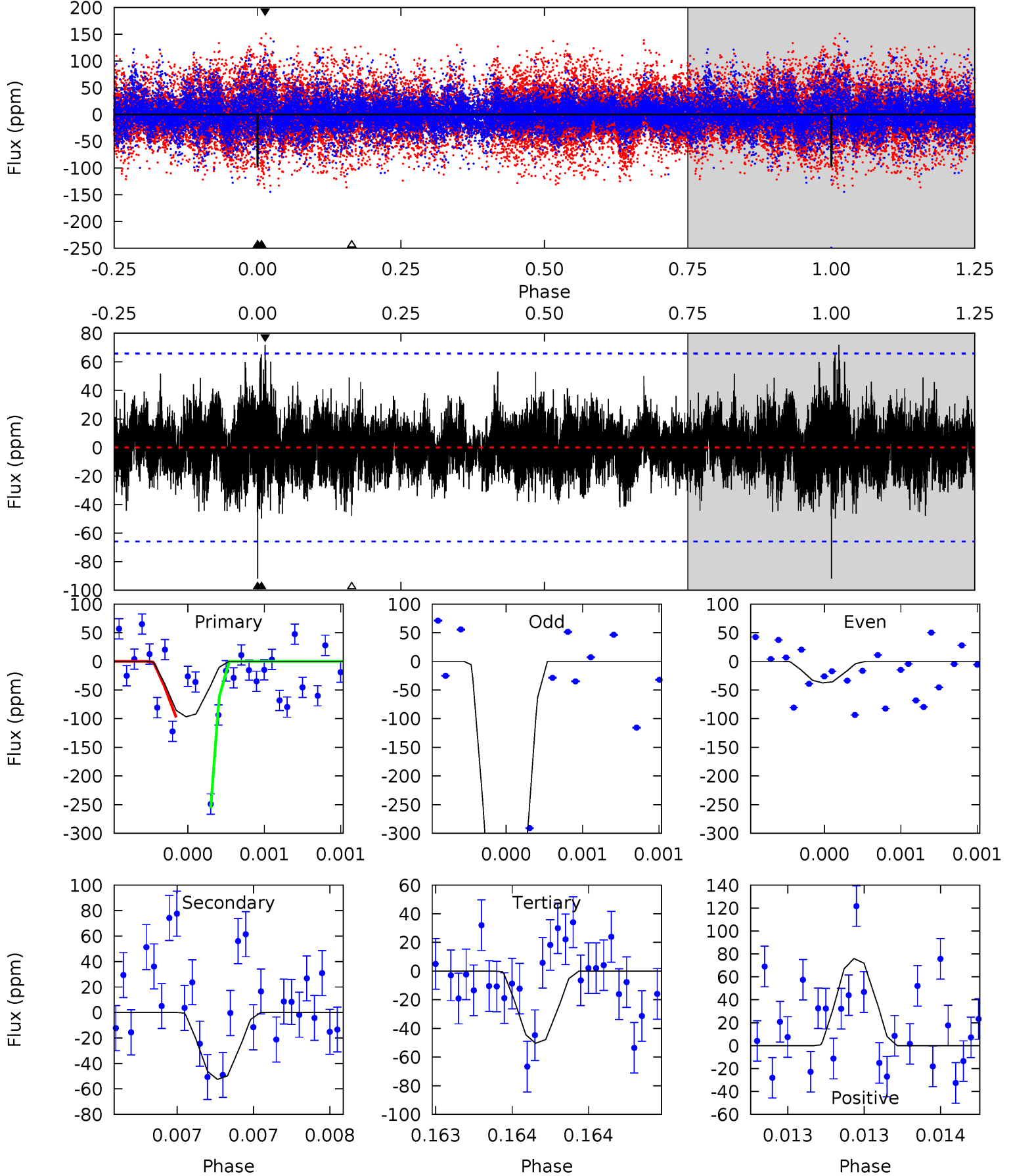
TCE 008254901-01 P=129.978922 Days $T_0=203.524614$ (BKJD)



DV Model-Shift Uniqueness Test

008254901-01, P = 129.981555 Days, E = 73.532959 Days

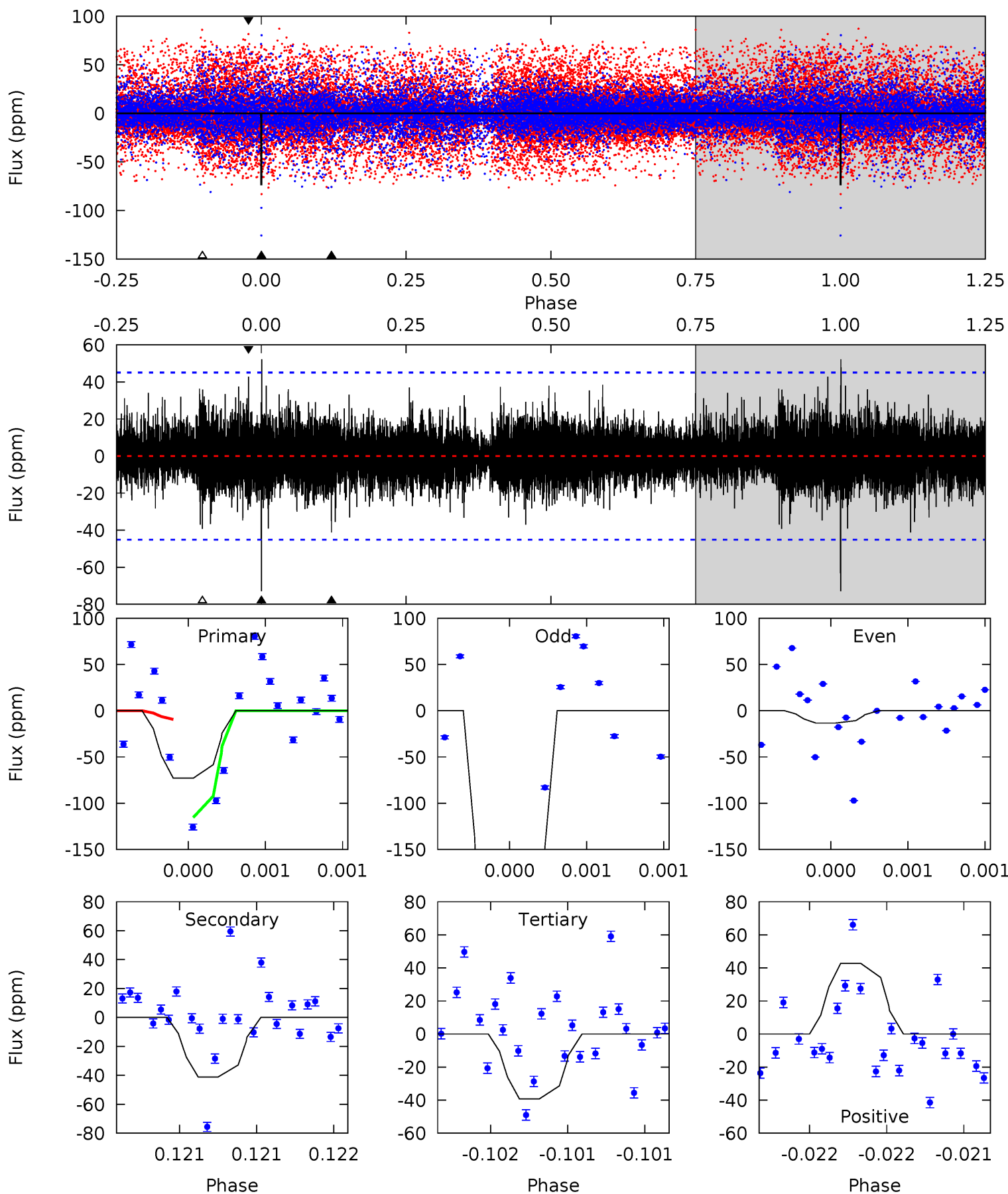
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.74	4.20	4.03	6.07	5.55	3.45	1.07	3.71	1.67	0.17	-1.87	28.7	3.50	0.44	0



Alt Model-Shift Uniqueness Test

008254901-01, P = 129.978922 Days, E = 73.545692 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.96	5.05	4.82	5.25	5.54	3.43	1.13	4.14	3.71	0.23	-0.20	42.4	2.33	0.42	0



Stellar Parameters For KIC 008254901

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3331^{+79}_{-72}	$0.297^{+0.204}_{-0.119}$	$0.000^{+0.250}_{-0.150}$	$114.685^{+31.979}_{-21.319}$	$0.950^{+0.371}_{-0.041}$	$0.000^{+0.000}_{-0.000}$
	+2%/-2%	+69%/-40%	+inf%/-inf%	+28%/-19%	+39%/-4%	+93%/-42%
Source	SPE14	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 008254901-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-50 ± 12	$393.59^{+312.78}_{-257.53}$	3096^{+193}_{-202}	-2743^{+5099}_{-146}	$0.047^{+0.327}_{-0.033}$
Alt.	-41 ± 8	$335.44^{+326.41}_{-218.68}$	3079^{+196}_{-201}	-2722^{+5204}_{-152}	$0.054^{+0.363}_{-0.040}$

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 $A_{obs} \gg 1.0$

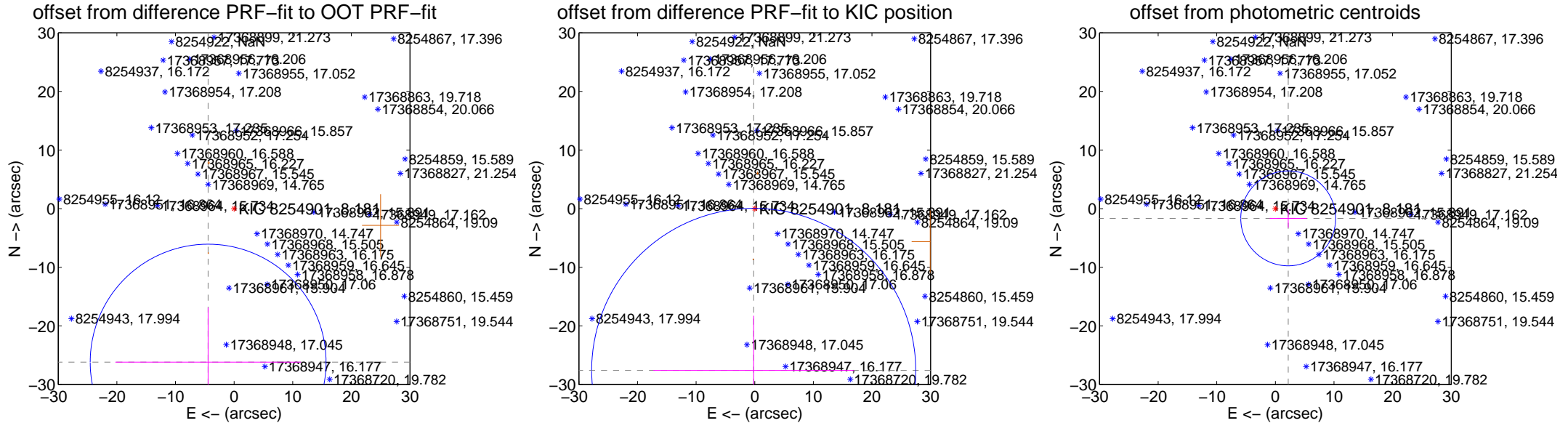
DV Centroid Data

Supplemental centroid analysis for 008254901-01. **Kepler magnitude: 8.18.** Transit SNR 37.16

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 5.12 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	26.549 \pm 6.706	3.96	4.431 \pm 15.829	-26.177 \pm 9.301
PRF-fit source offset from KIC position	27.584 \pm 9.214	2.99	0.180 \pm 17.123	-27.584 \pm 9.321
photometric centroid source offset	2.74 \pm 2.70	1.02	-2.19 \pm 3.16	-1.65 \pm 1.58



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.

Q1 no difference image



Q1 no OOT image



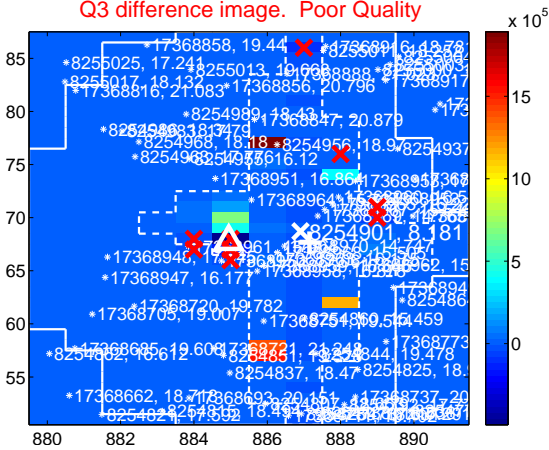
Q2 no difference image



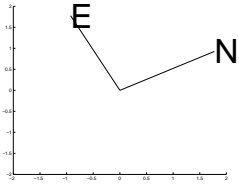
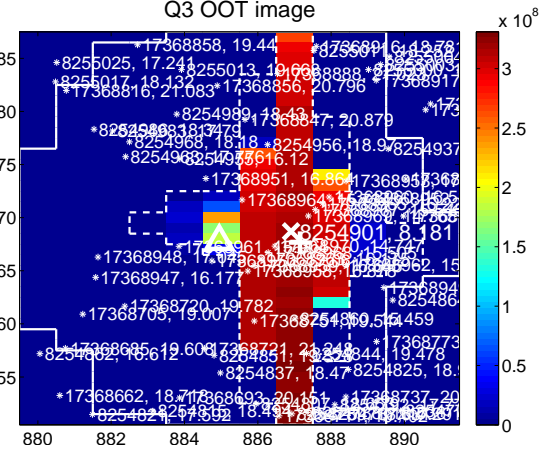
Q2 no OOT image



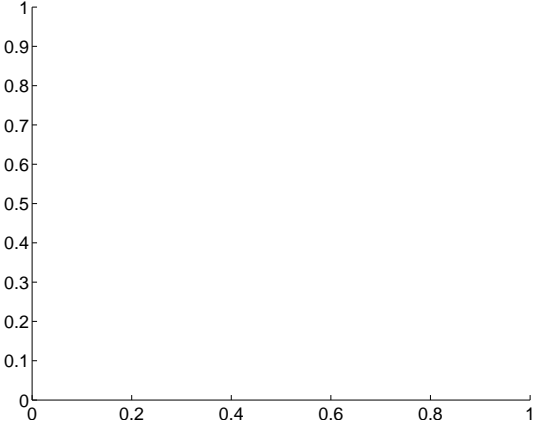
Q3 difference image. Poor Quality



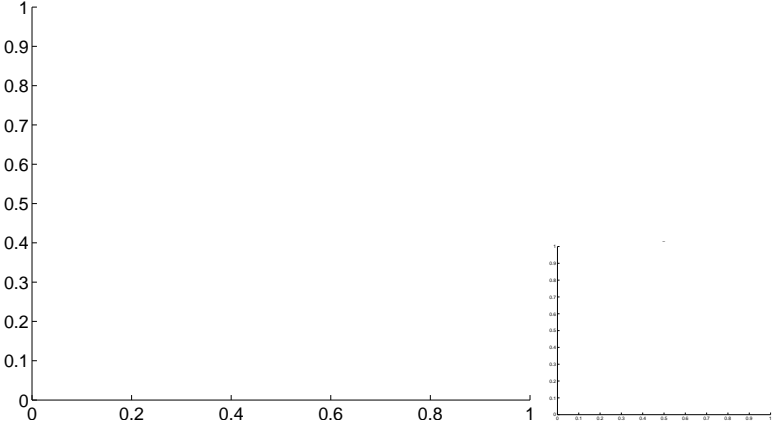
Q3 OOT image



Q4 no difference image



Q4 no OOT image



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.

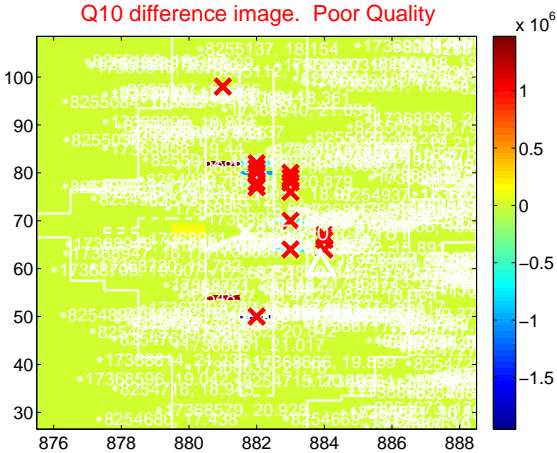
Q9 no difference image



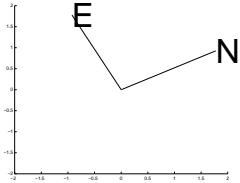
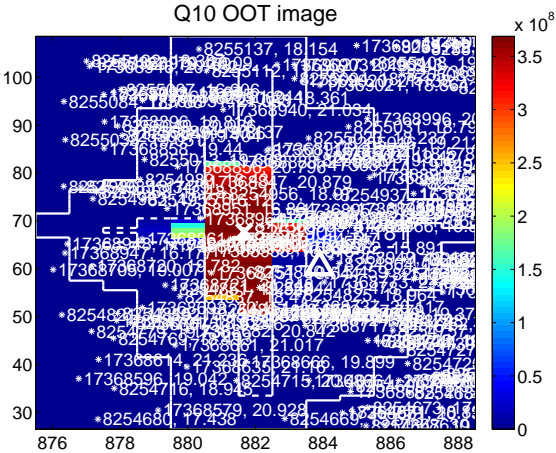
Q9 no OOT image



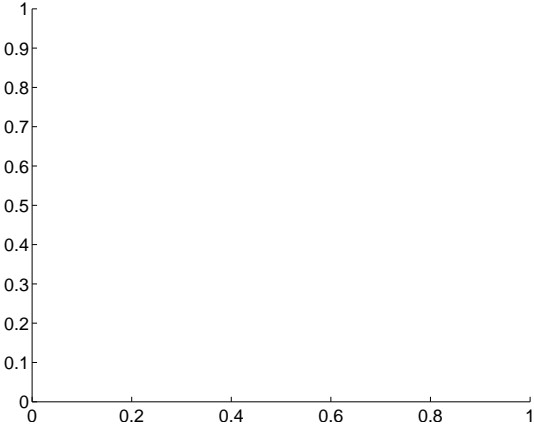
Q10 difference image. Poor Quality



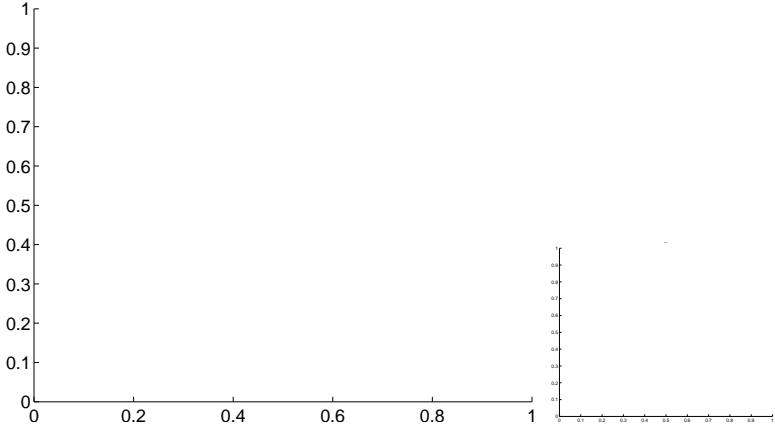
Q10 OOT image



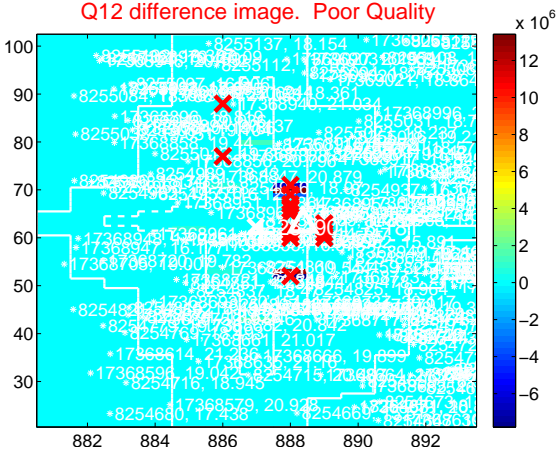
Q11 no difference image



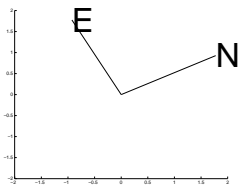
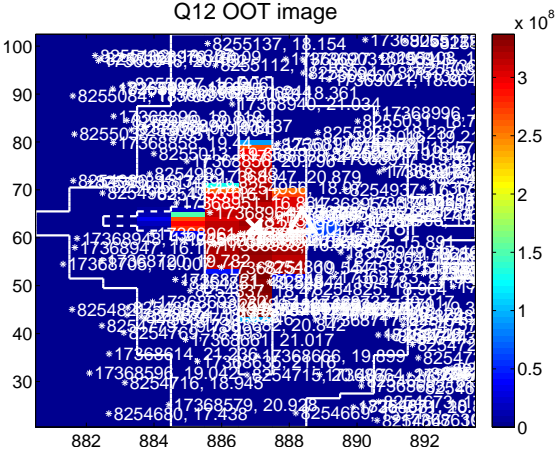
Q11 no OOT image



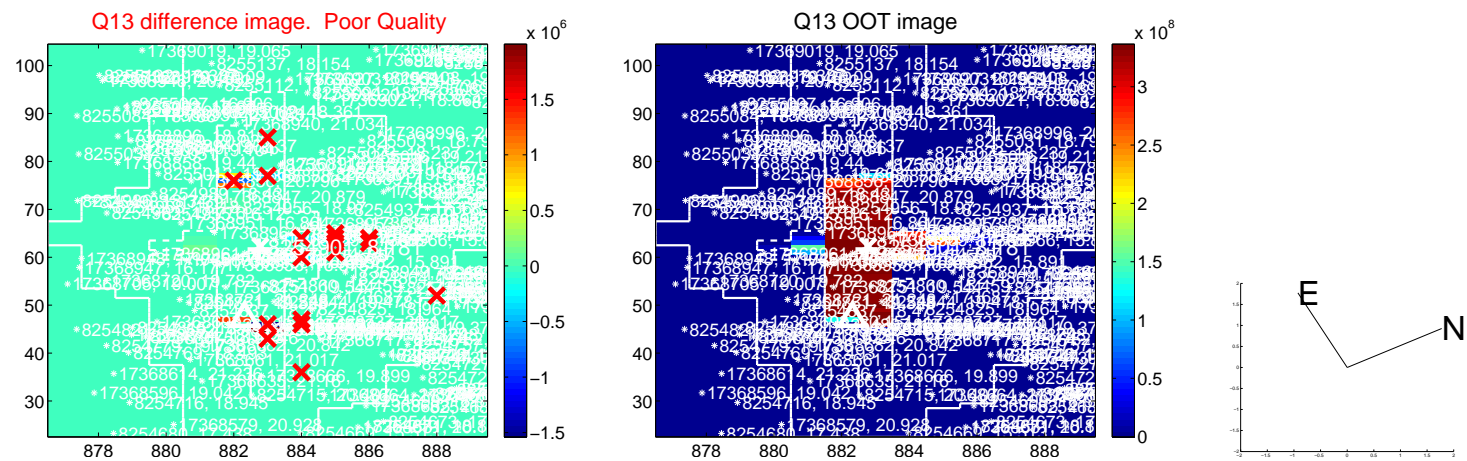
Q12 difference image. Poor Quality



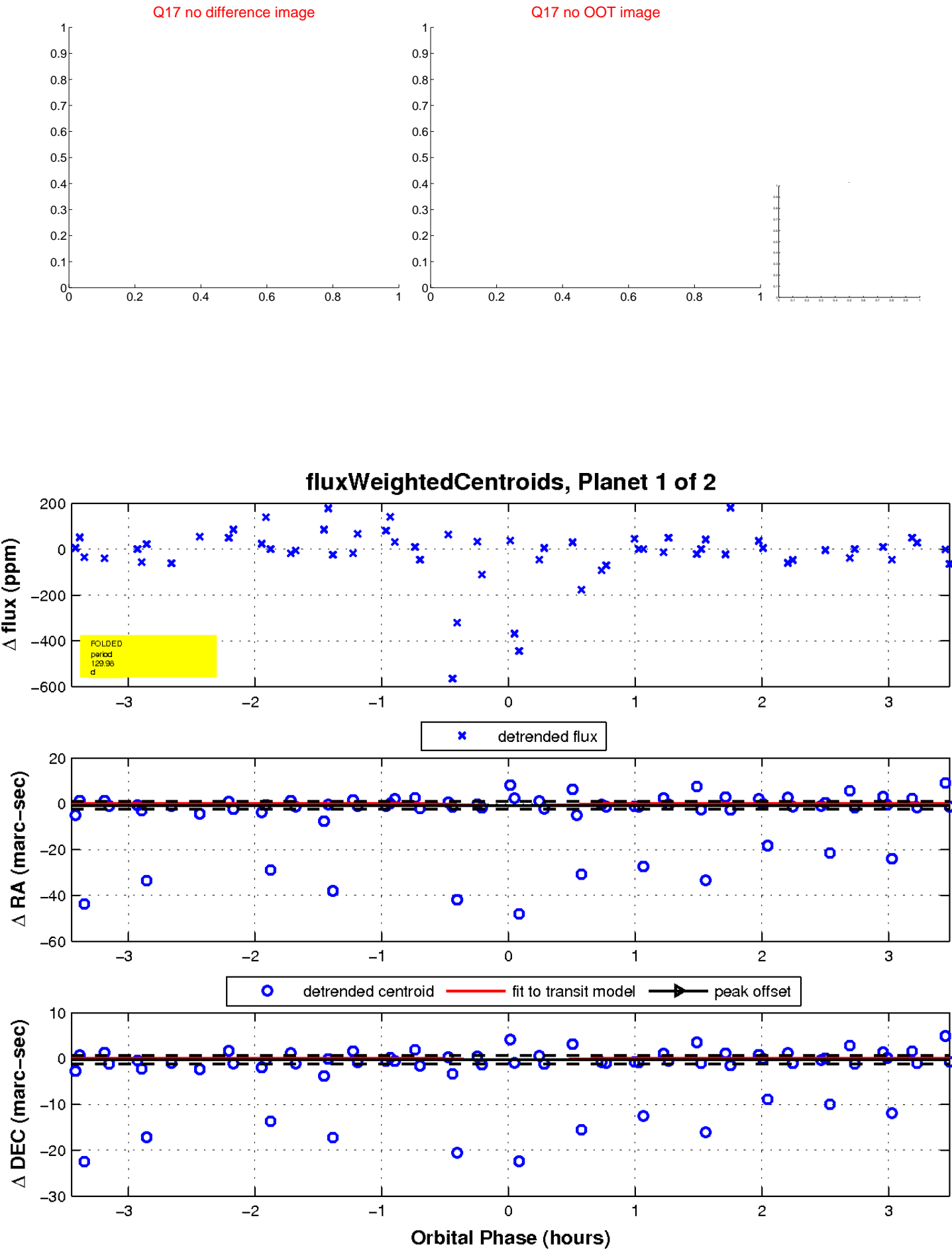
Q12 OOT image



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

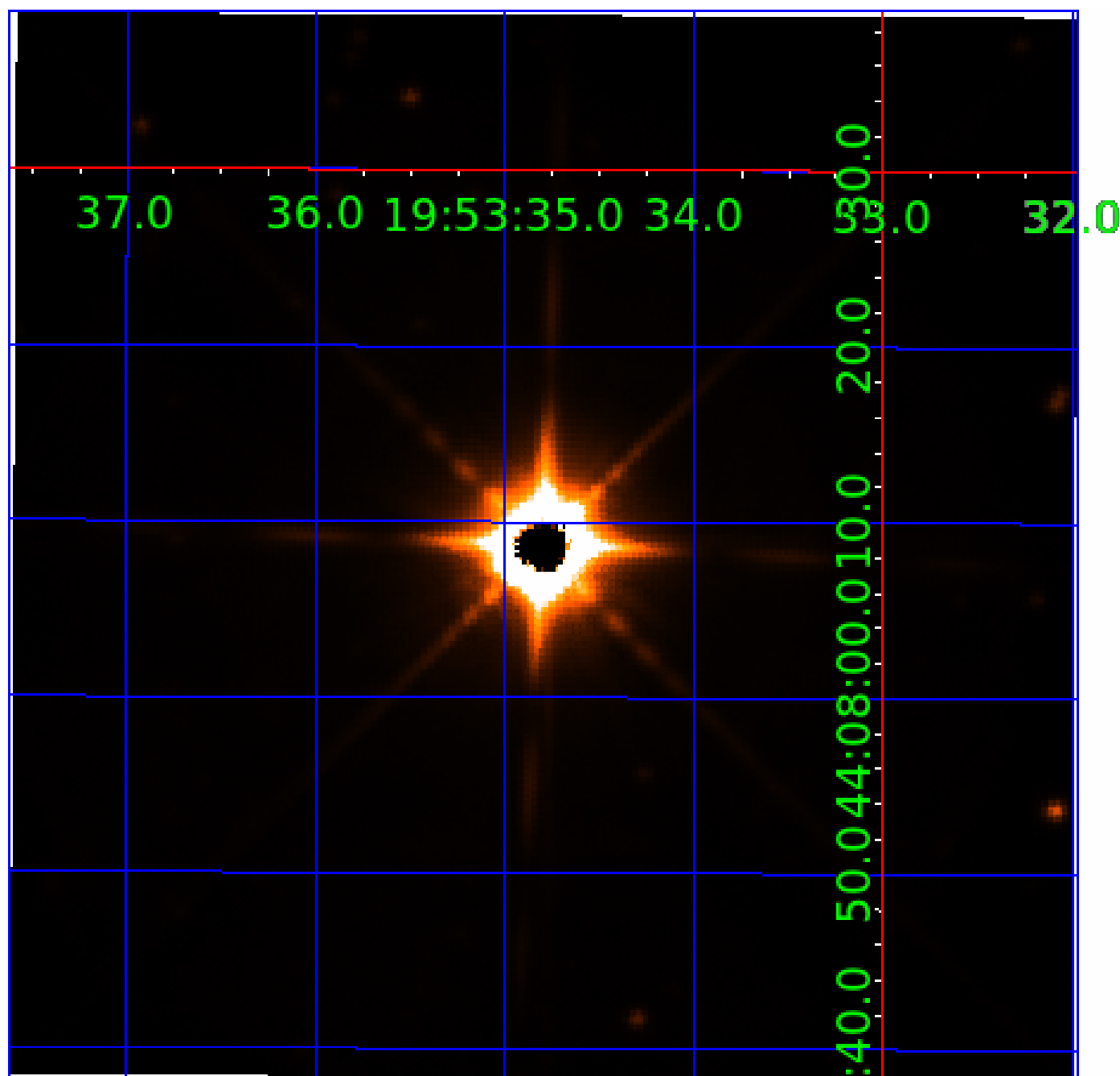


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008254901

Q1-17 DR25 TCE Parameters

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008254901-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_SATURATED

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

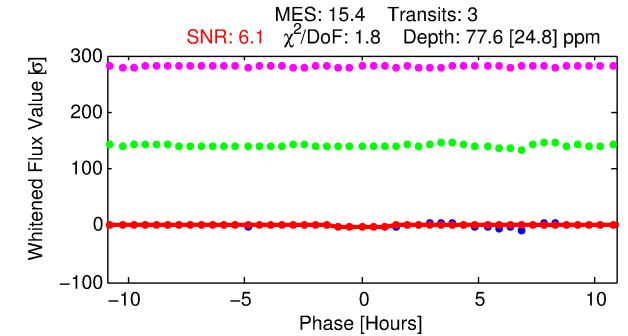
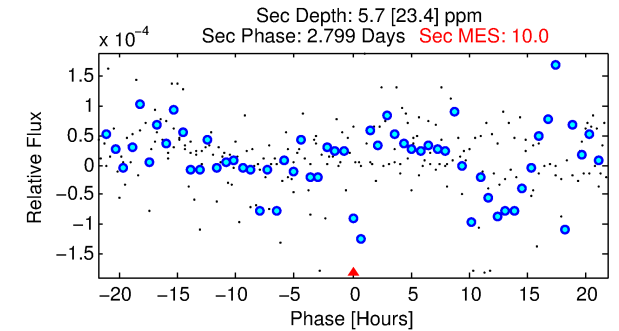
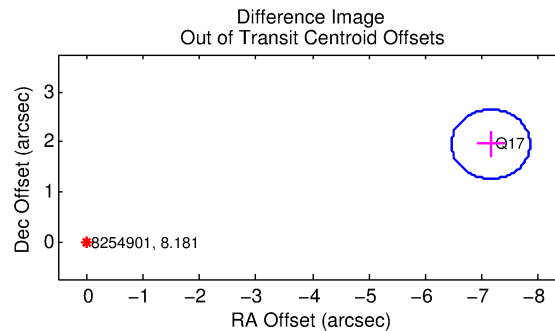
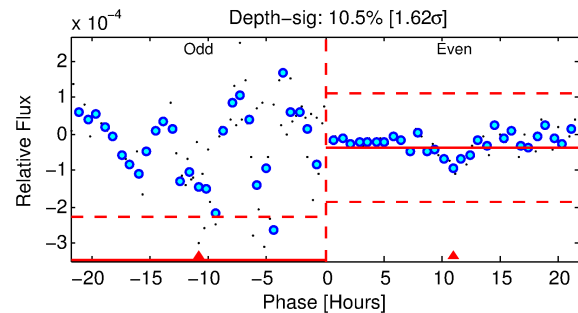
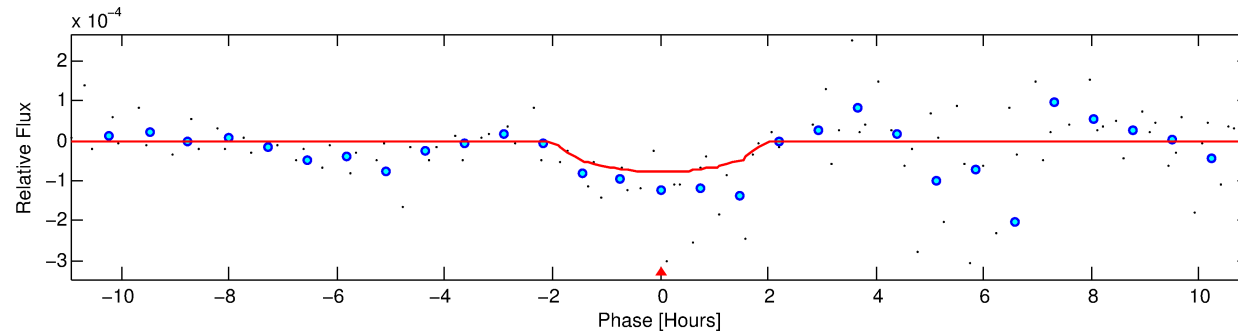
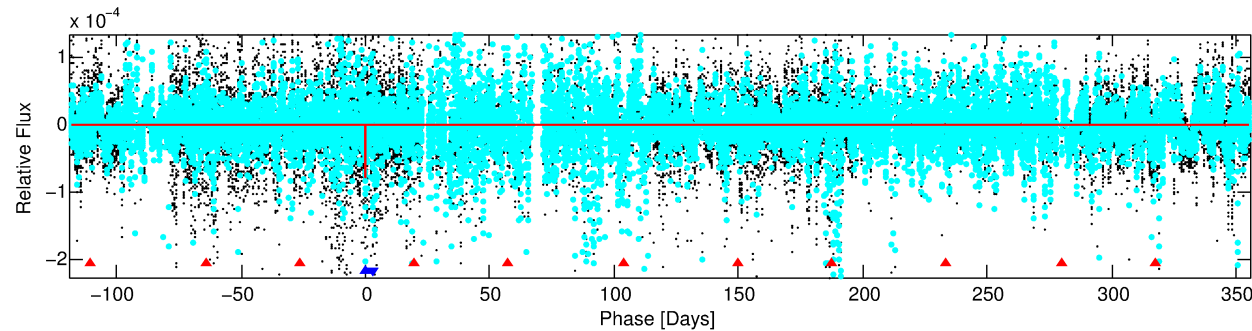
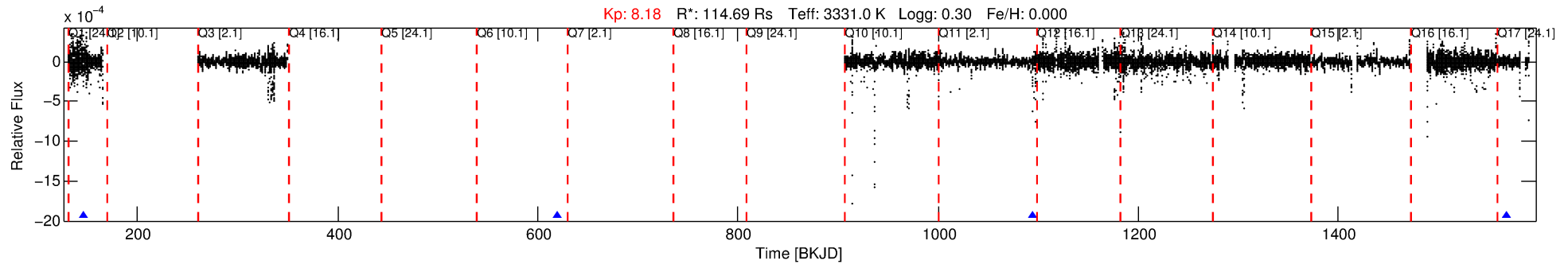
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008254901-02

No Significant Match Found

DV One-Page Summary

KIC: 8254901 Candidate: 2 of 2 Period: 473.777 d



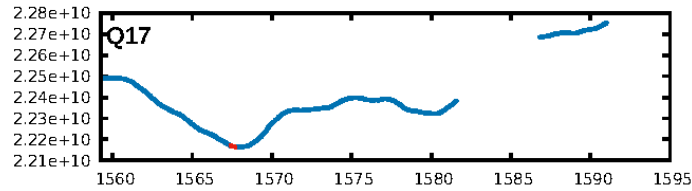
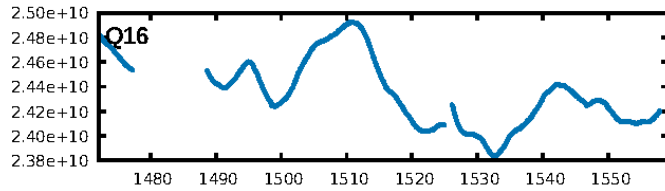
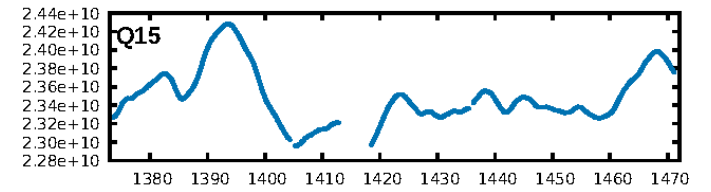
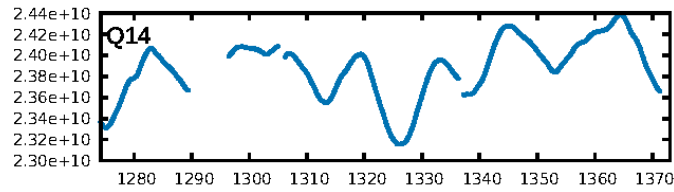
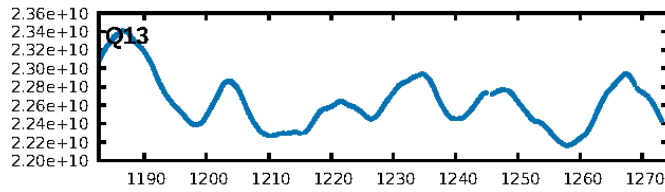
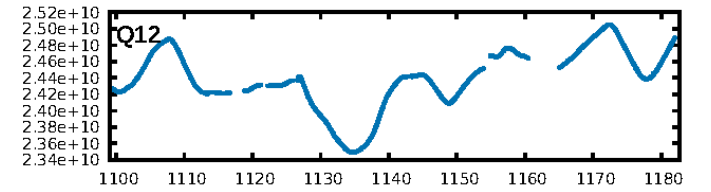
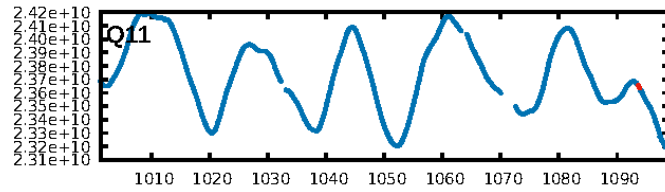
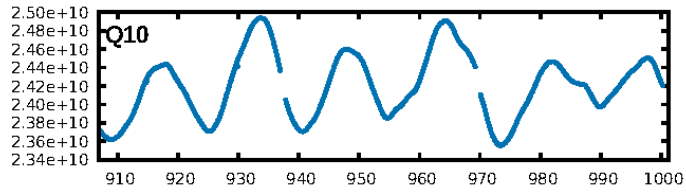
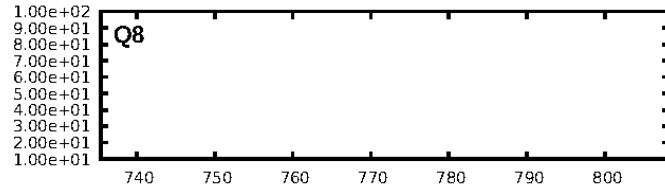
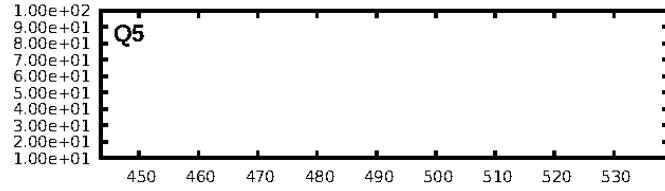
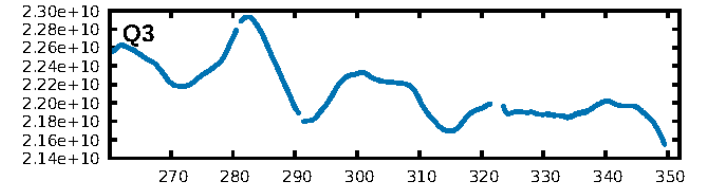
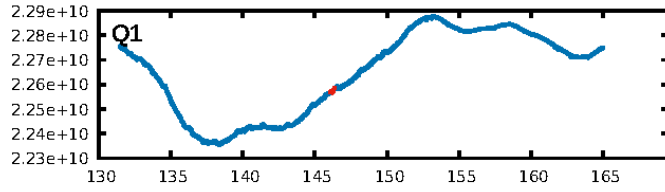
DV Fit Results:

Period = 473.77747 [0.01098] d
Epoch = 146.2197 [0.0308] BKJD
Rp/R* = 0.0080 [0.0137]
a/R* = 849.01 [3046.10]
b = 0.53 [5.10]
Seff = 1060.31 [399.02]
Teq = 1455 [137] K
Rp = 100.39 [173.54] Re
a = 1.1697 [0.2843] AU
Ag = 0.42 [2.27] [-0.25 σ]
Teffp = 1814 [2432] K [0.15 σ]

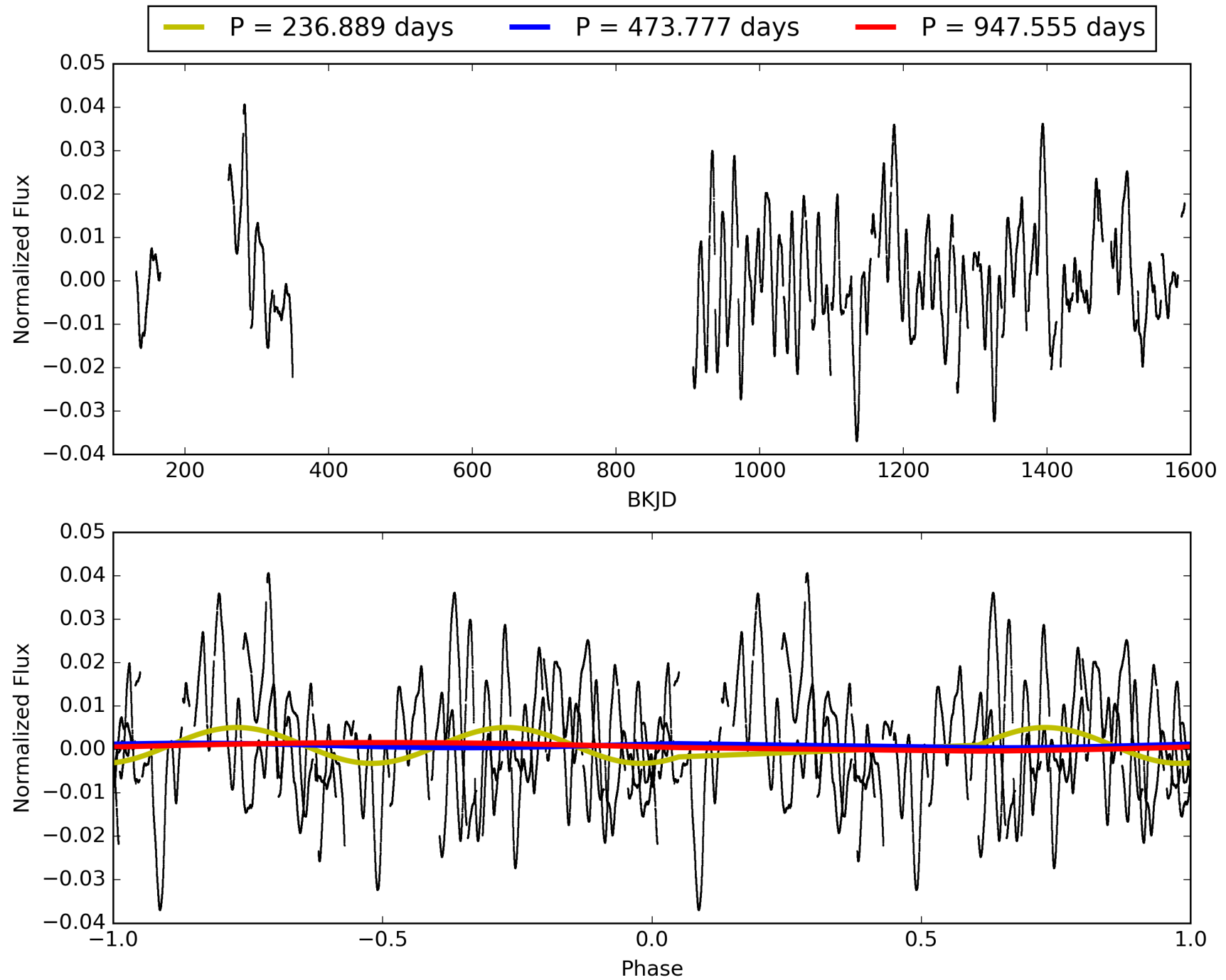
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [2153.22 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 22.9%
Bootstrap-pfa: 6.67e-06
RollingBand-fgt: 1.00 [1/1]
GhostDiagnostic-chr: N/A
Centroid-sig: 13.0%
Centroid-so: 52.714 arcsec [1.19 σ]
OotOffset-rm: 7.413 arcsec [32.09 σ]
KicOffset-rm: 9.615 arcsec [41.69 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 008254901-02, PDC Light Curves

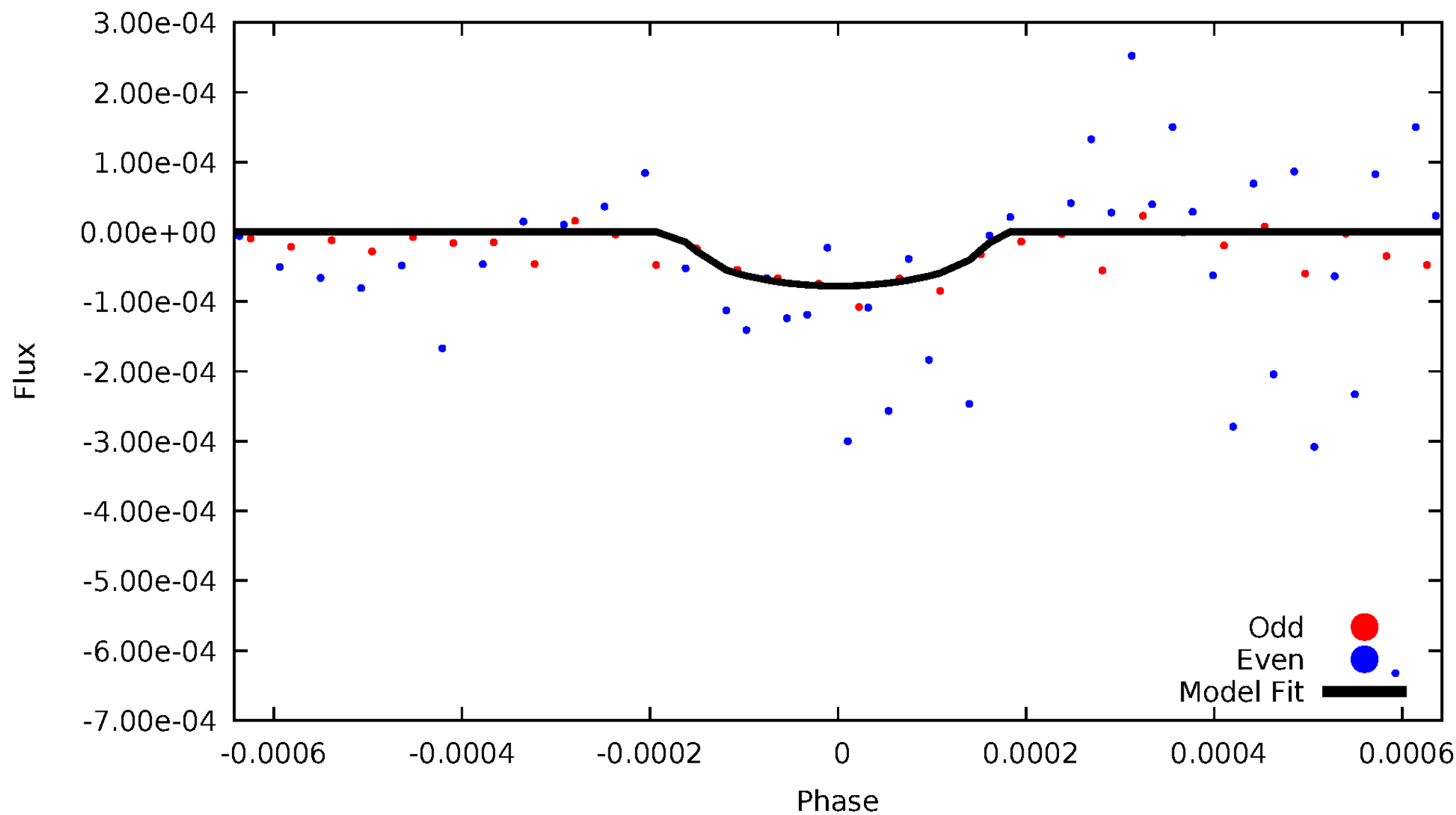


TCE 008254901-02



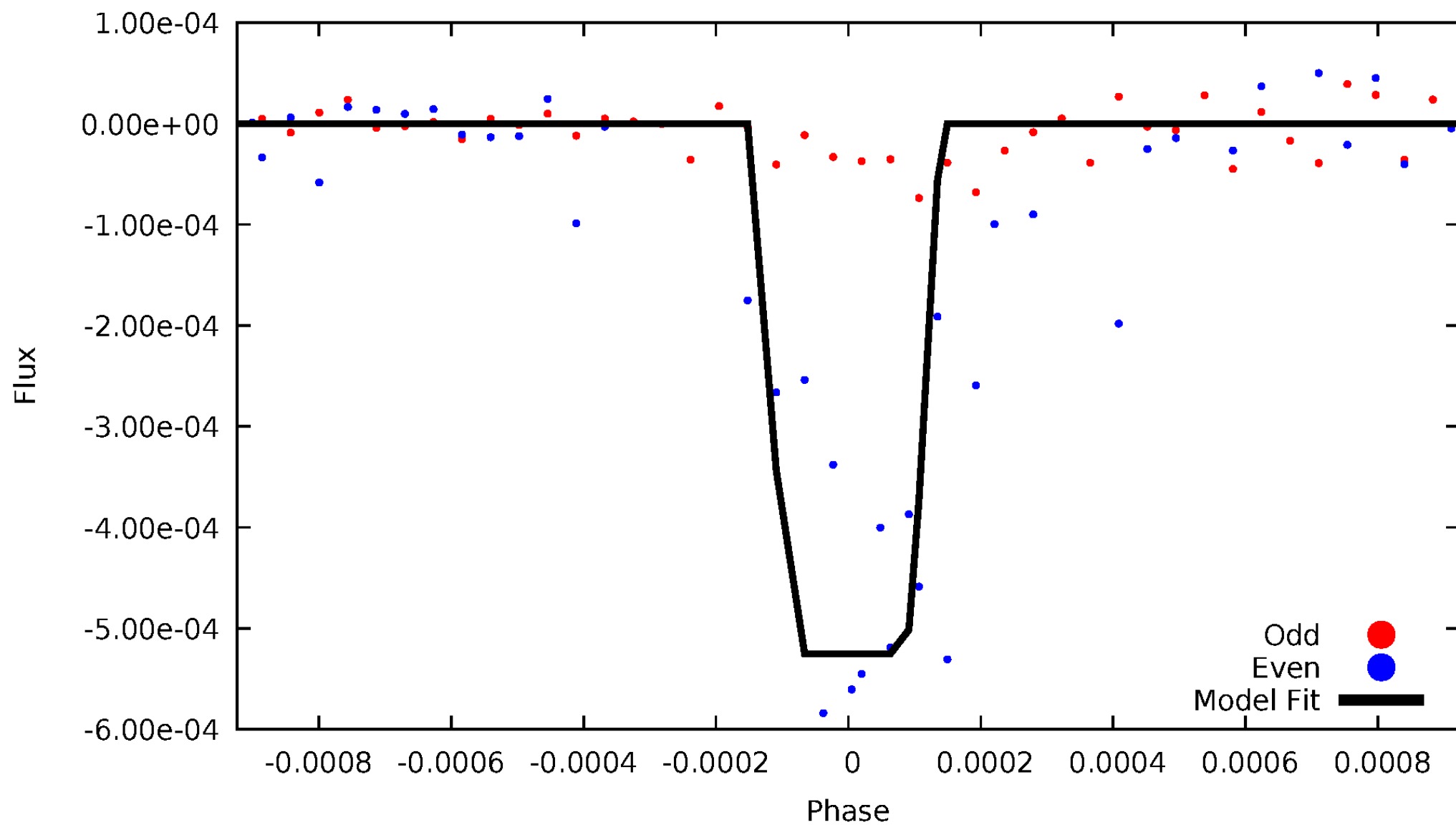
DV Odd/Even

TCE 008254901-02



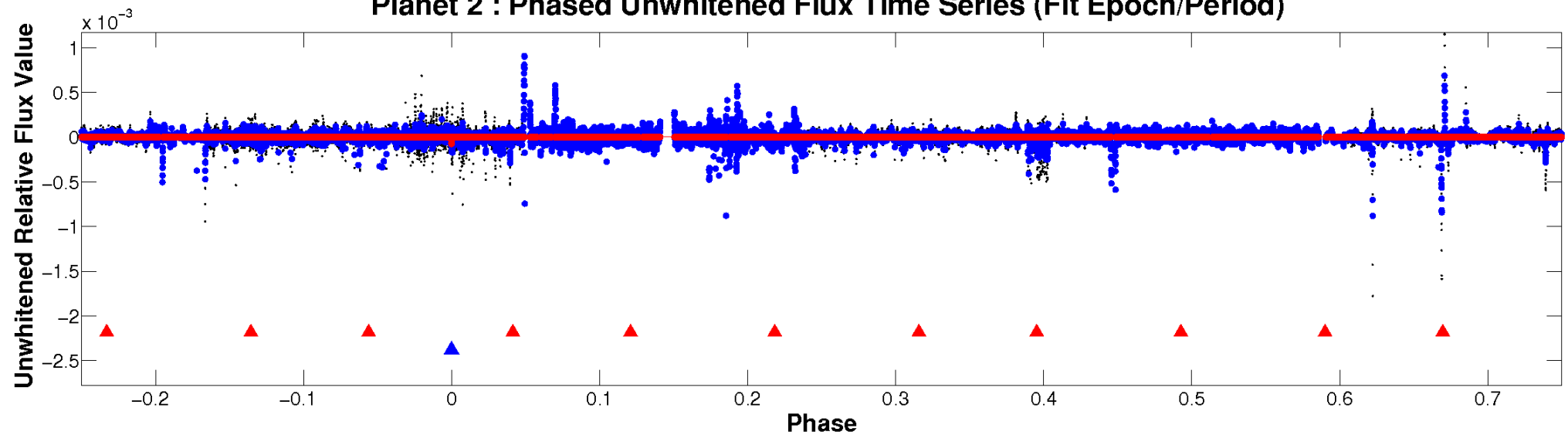
ALT Odd/Even

TCE 008254901-02

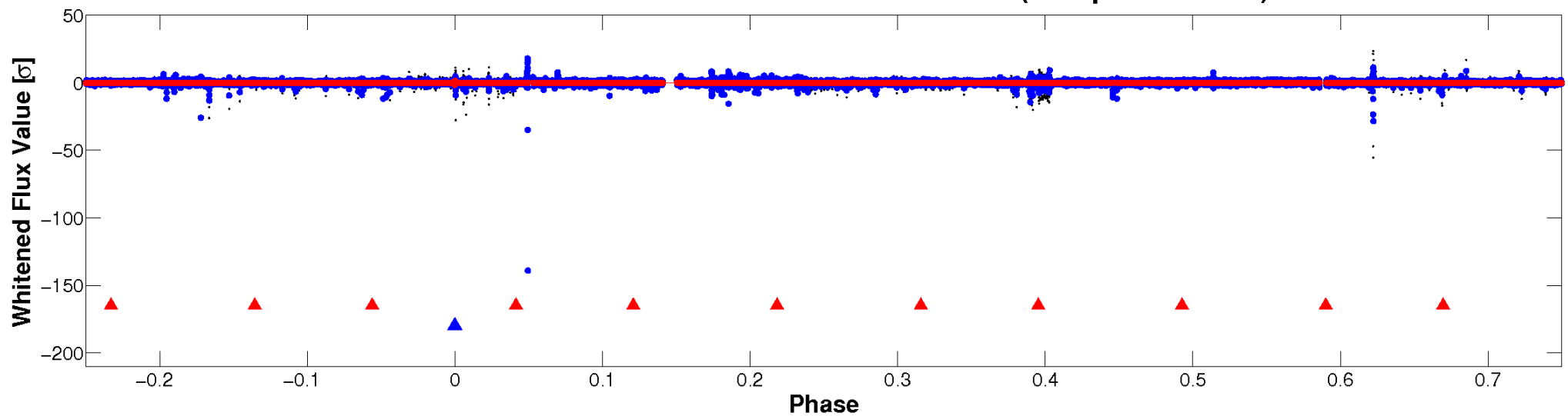


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

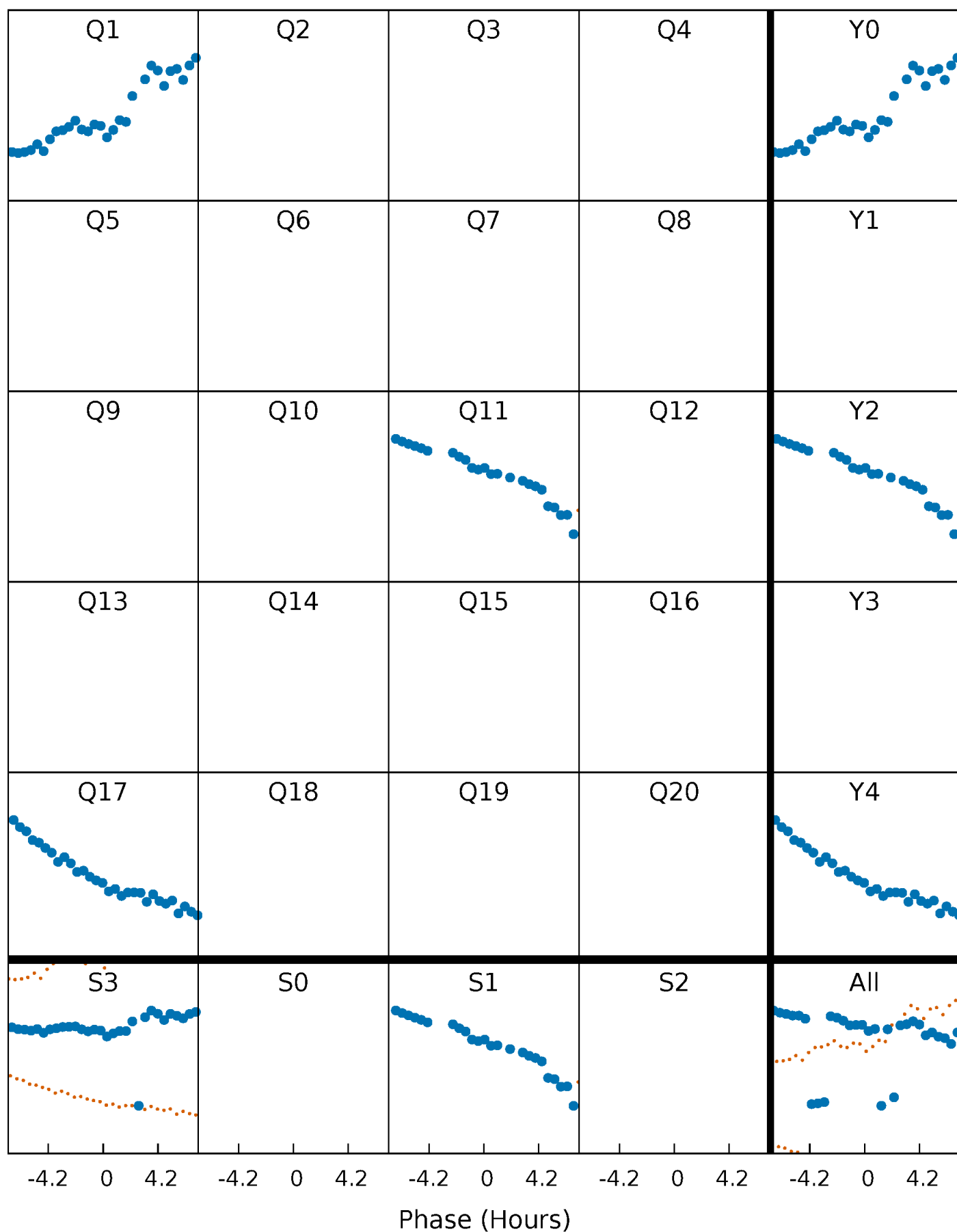


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



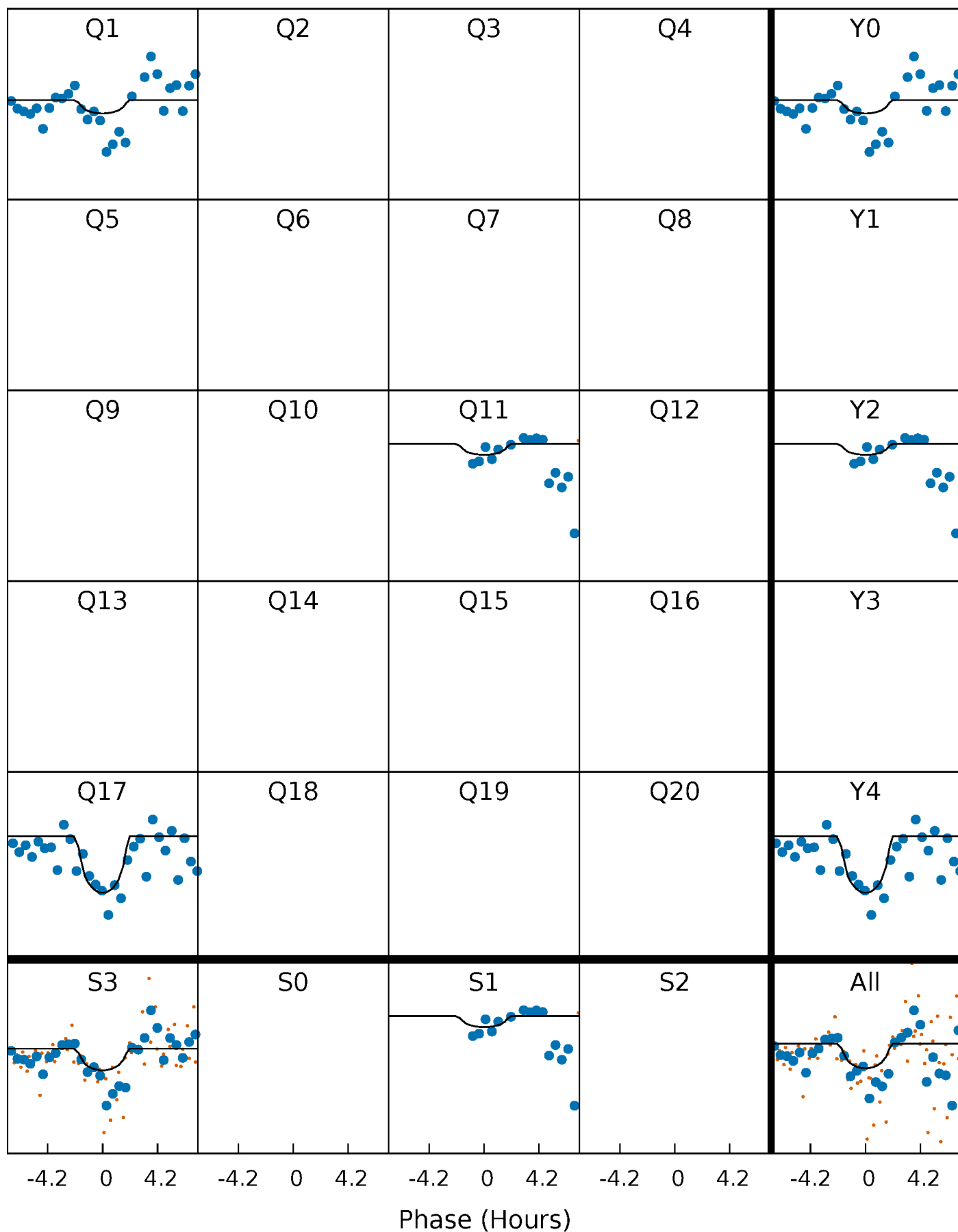
PDC Quarter-Phased Transit Curves

TCE 008254901-02 $P=473.777469$ Days $T_0=146.219718$ (BKJD)



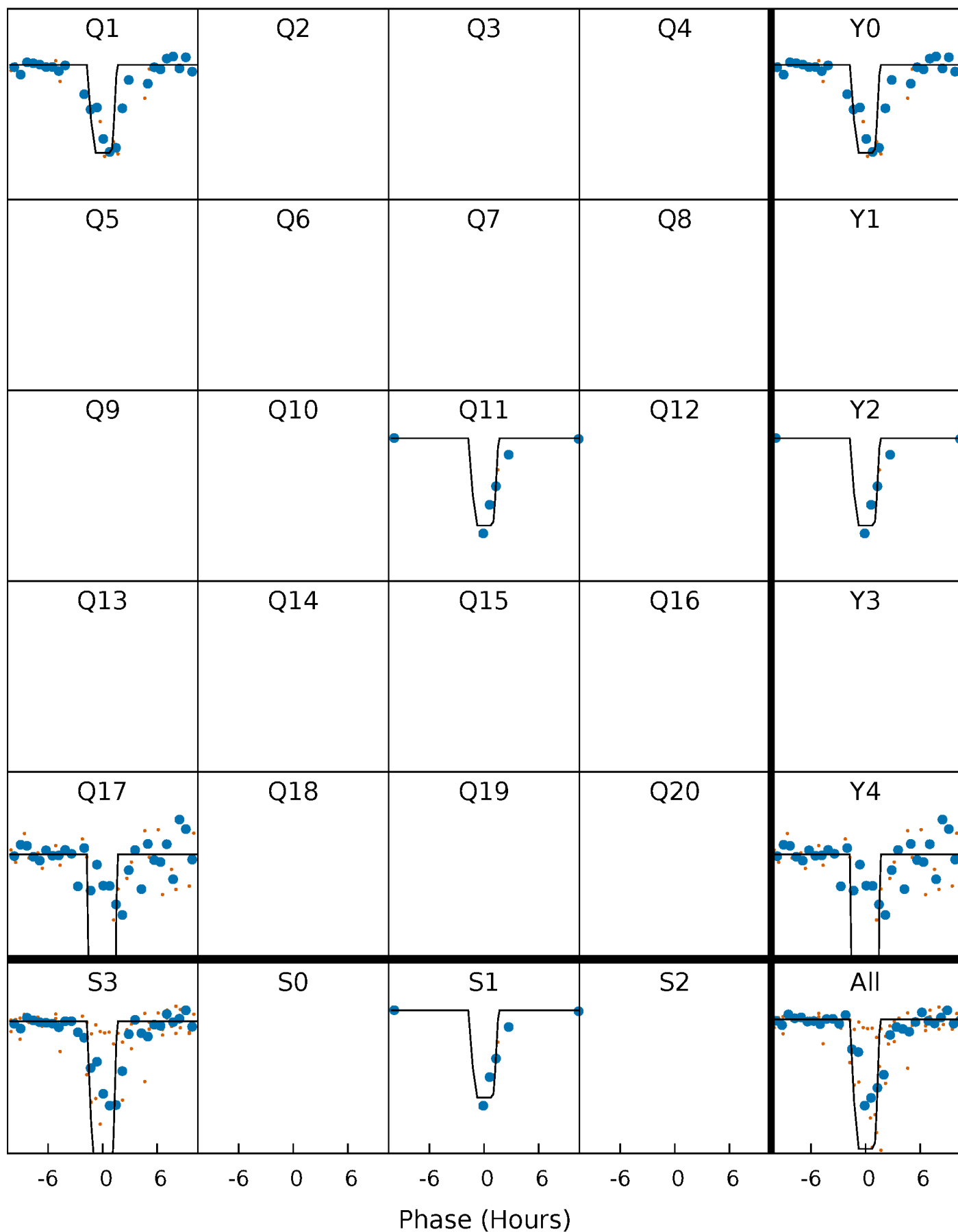
DV Quarter-Phased Transit Curves

TCE 008254901-02 $P=473.777469$ Days $T_0=146.219718$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

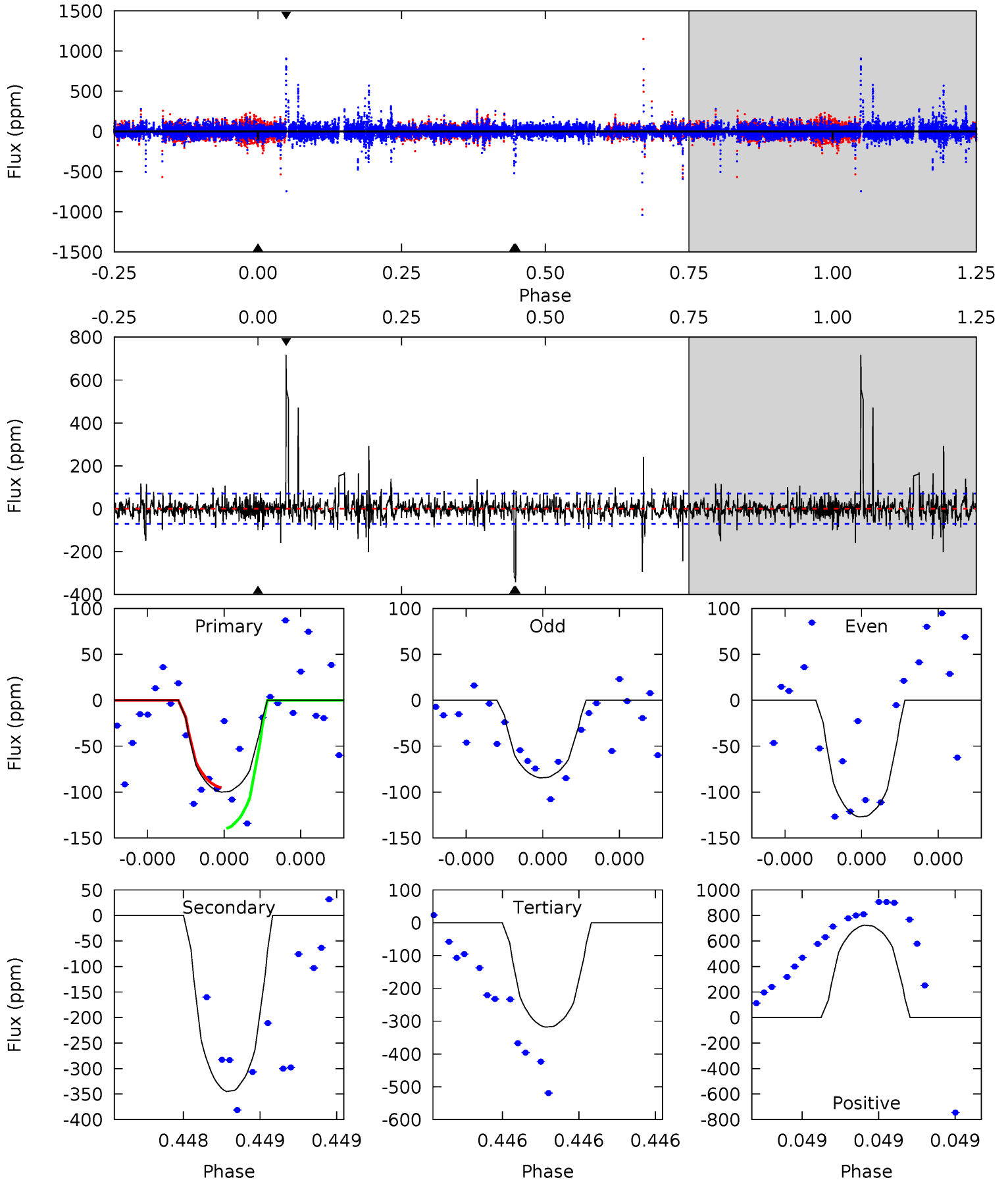
TCE 008254901-02 $P=473.765711$ Days $T_0=146.215034$ (BKJD)



DV Model-Shift Uniqueness Test

008254901-02, P = 473.777469 Days, E = 146.219718 Days

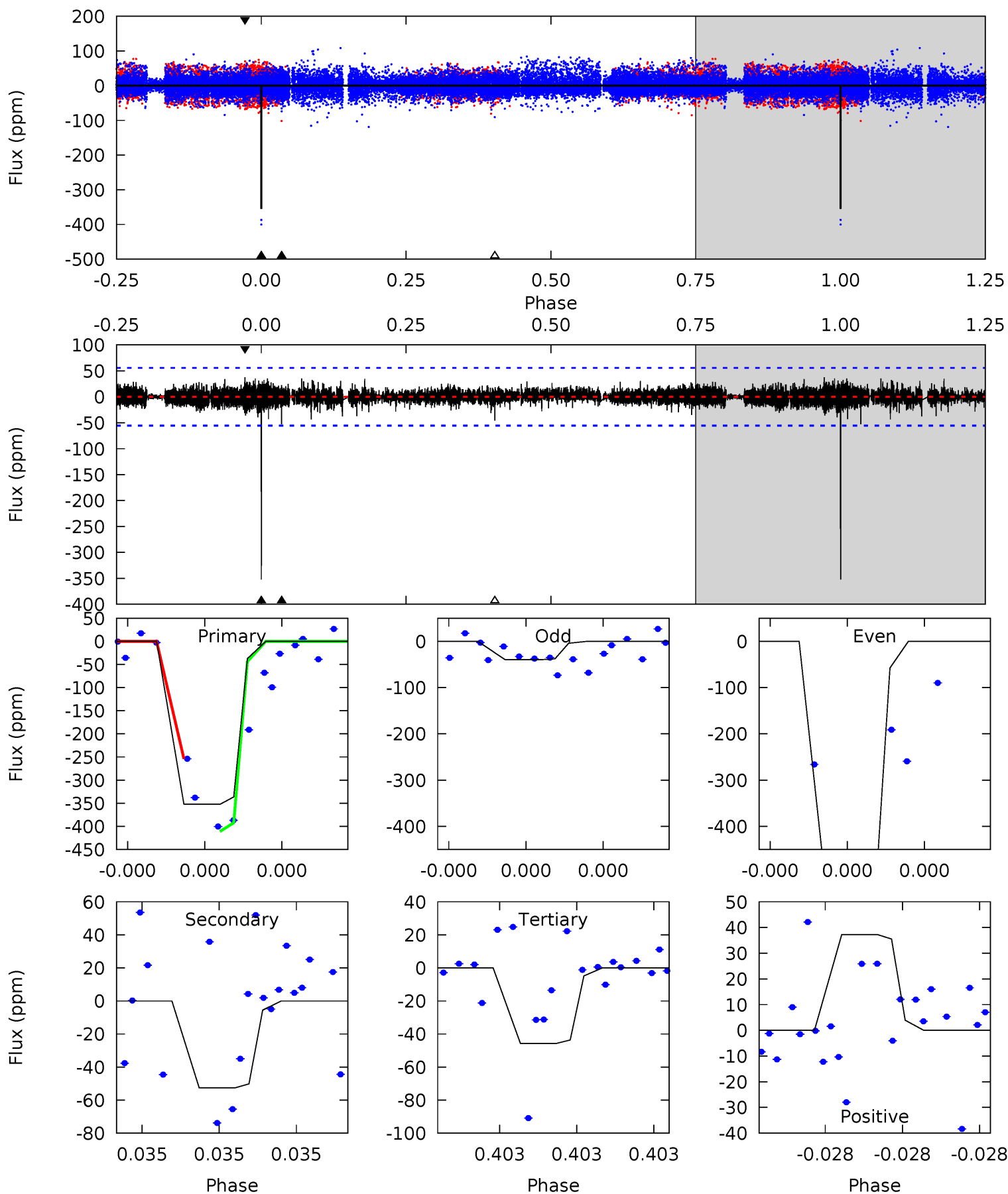
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.93	27.4	25.2	57.4	5.65	3.60	2.60	-17.3	-49.4	2.13	-30.0	1.66	1.42	0.68	1.82



Alt Model-Shift Uniqueness Test

008254901-02, P = 473.765711 Days, E = 146.215034 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.1	5.38	4.68	3.81	5.70	3.67	0.78	31.4	32.3	0.71	1.57	39.8	0.74	0.10	0



Stellar Parameters For KIC 008254901

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3331^{+79}_{-72}	$0.297^{+0.204}_{-0.119}$	$0.000^{+0.250}_{-0.150}$	$114.685^{+31.979}_{-21.319}$	$0.950^{+0.371}_{-0.041}$	$0.000^{+0.000}_{-0.000}$
	+2%/-2%	+69%/-40%	+inf%/-inf%	+28%/-19%	+39%/-4%	+93%/-42%
Source	SPE14	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 008254901-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-343 ± 13	$162.25^{+144.24}_{-111.11}$	2005^{+136}_{-126}	3707^{+2282}_{-692}	10^{+91}_{-8}
Alt.	-53 ± 10	$284.66^{+188.05}_{-156.45}$	2010^{+134}_{-129}	2195^{+753}_{-4271}	$0.499^{+2.159}_{-0.316}$

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 $A_{obs} \gg 1.0$

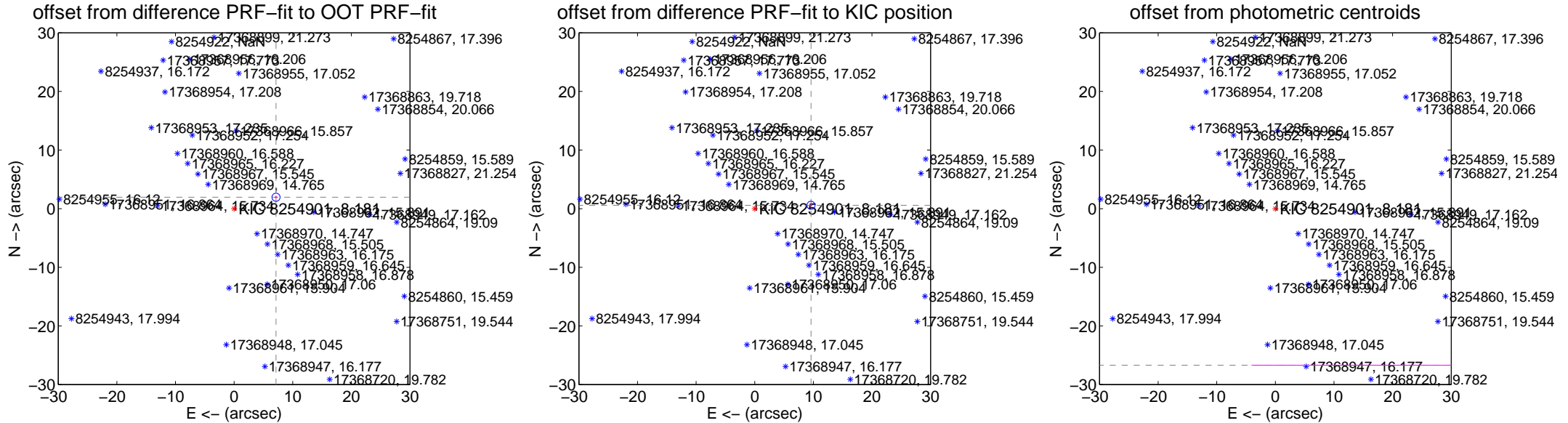
DV Centroid Data

Supplemental centroid analysis for 008254901-02. **Kepler magnitude: 8.18.** Transit SNR 6.06

There are 0 quarters with good PRF difference image offsets

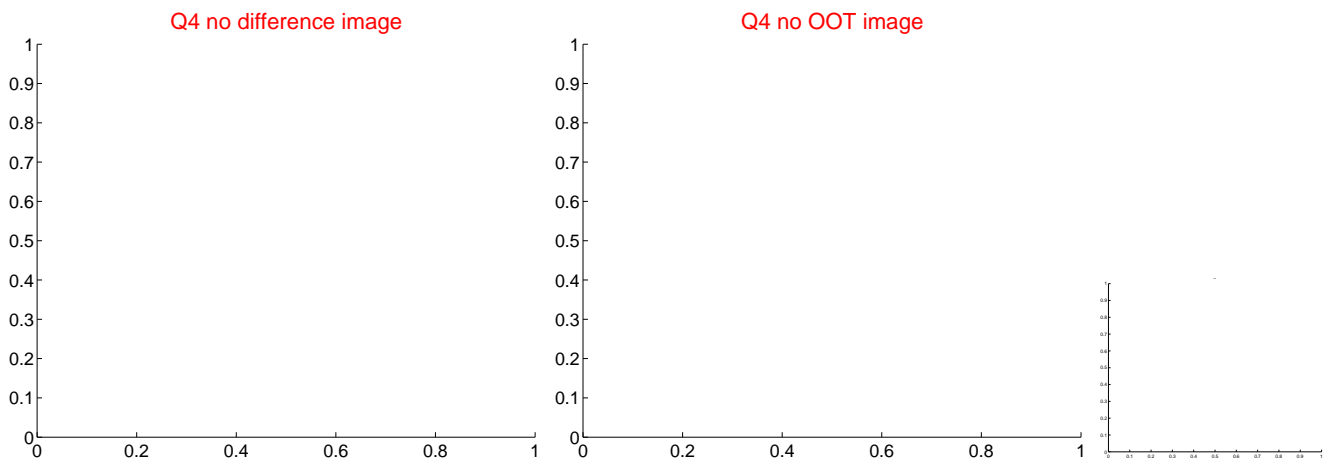
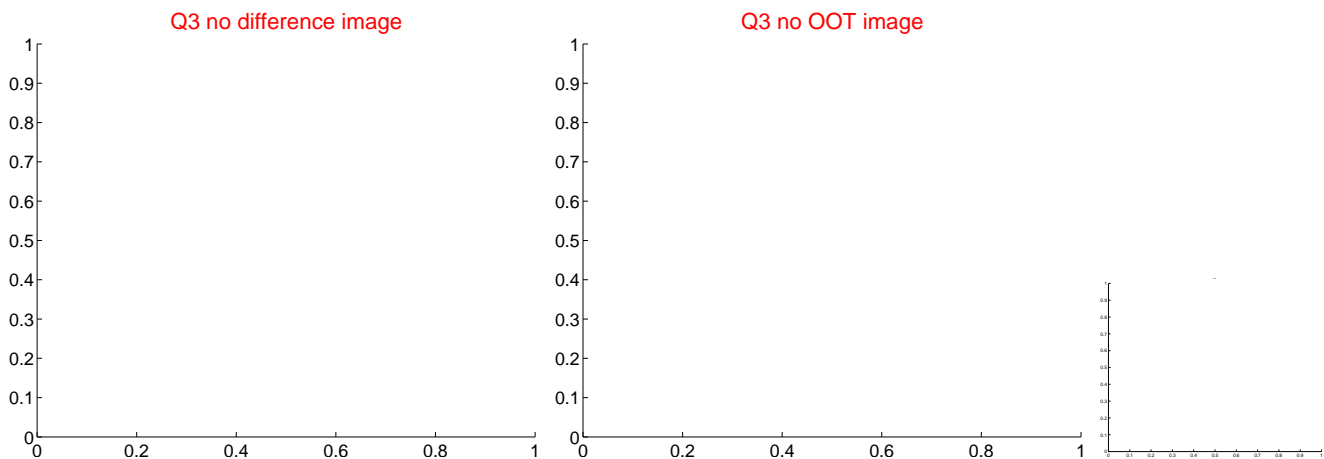
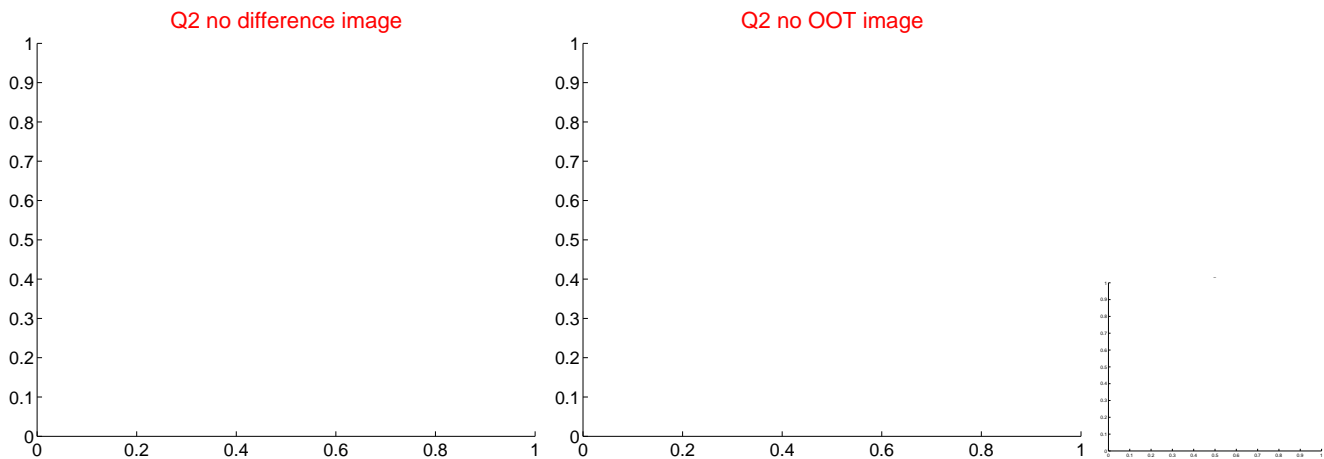
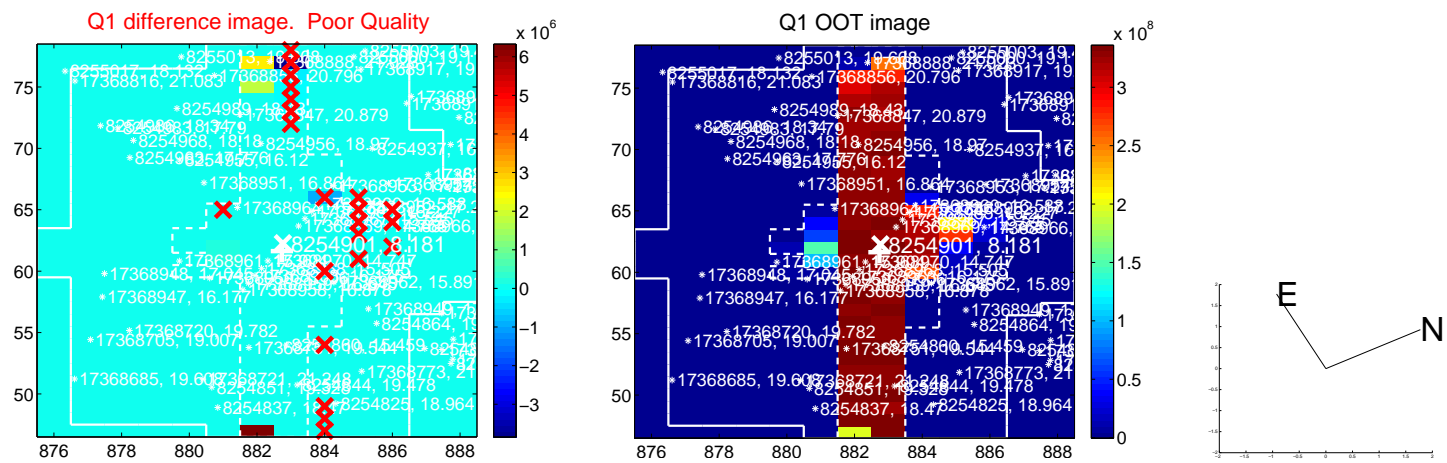
The OOT PRF centroid is offset from the target star catalog position by about 2.81 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.413 ± 0.231	32.09	-7.151 ± 0.231	1.950 ± 0.236
PRF-fit source offset from KIC position	9.615 ± 0.231	41.69	-9.598 ± 0.231	0.574 ± 0.236
photometric centroid source offset	52.72 ± 44.37	1.19	-45.45 ± 49.52	-26.70 ± 23.83



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



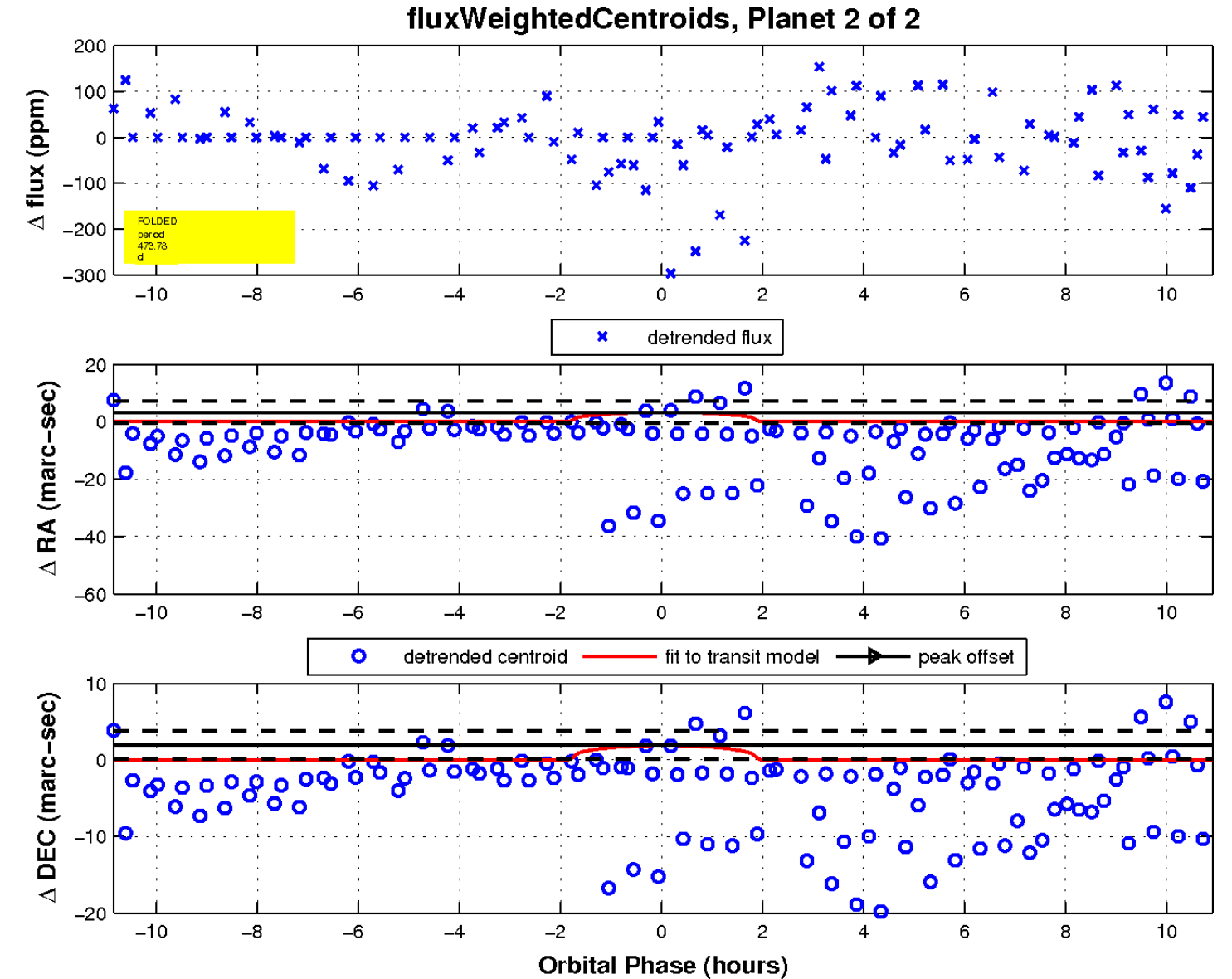
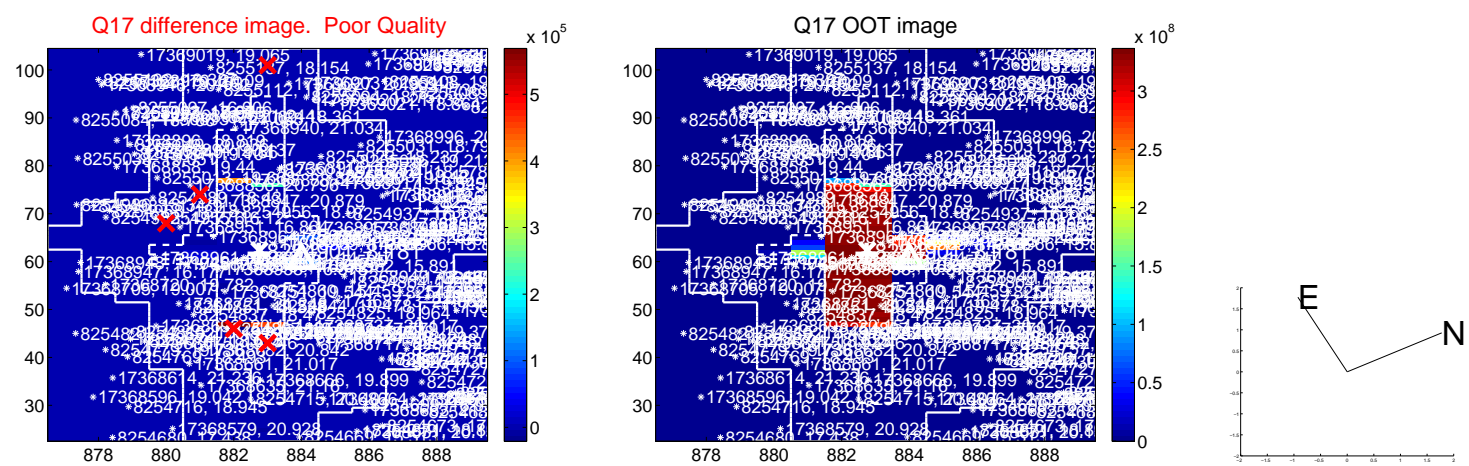
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

