

KIC 009508655

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})
009508655-01	OBS	No	1.188989	131.549712	17.5	2.213	164.8	0.0	2.09	7549	0.93	19972.13
009508655-02	OBS	No	0.594237	131.723494	6269.0	1.500	258.9	-1.0	2.09	7549	16.82	50355.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009508655-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV
009508655-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_NOFITS

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

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

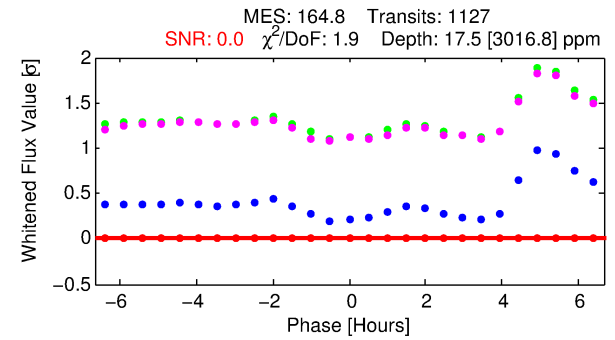
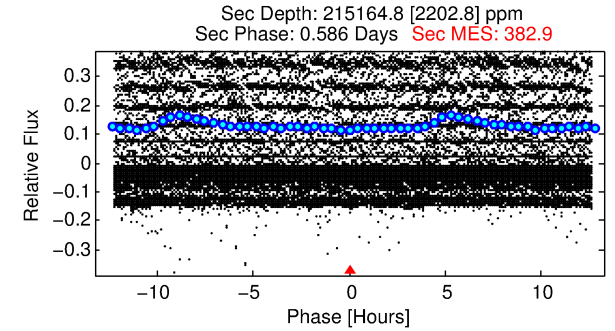
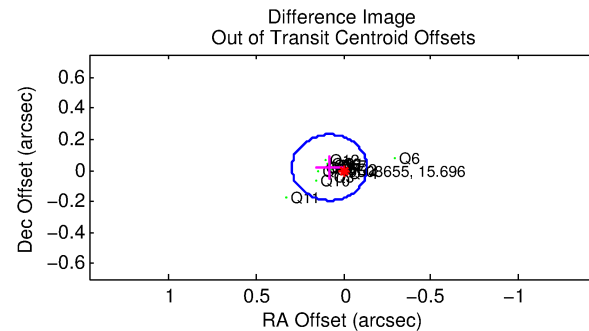
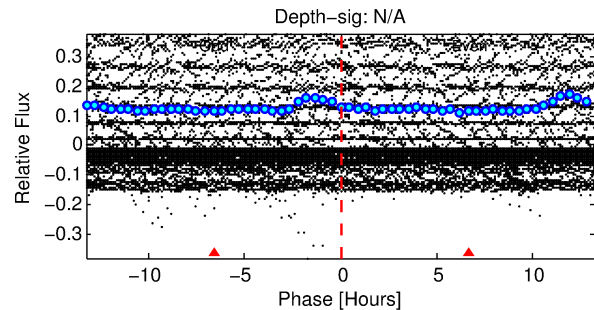
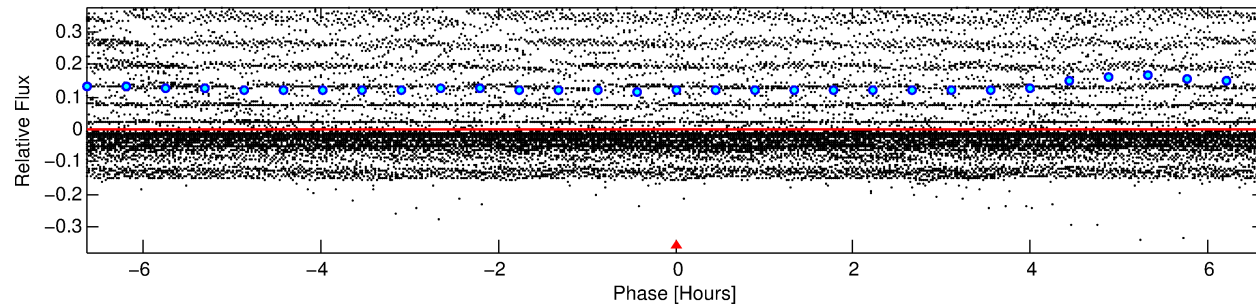
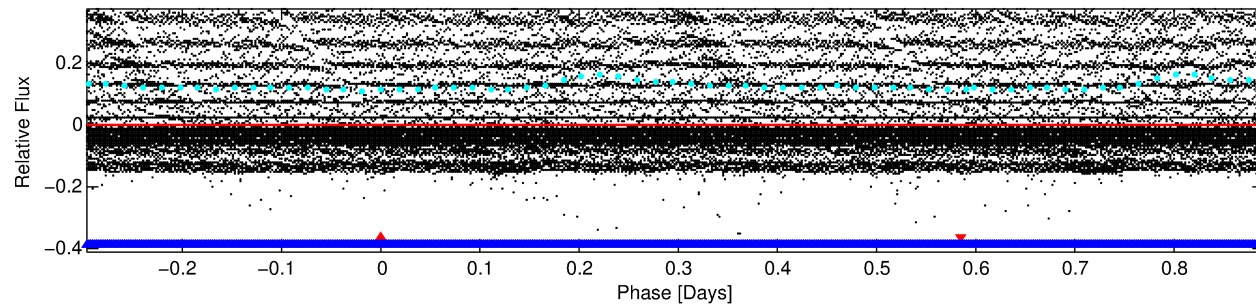
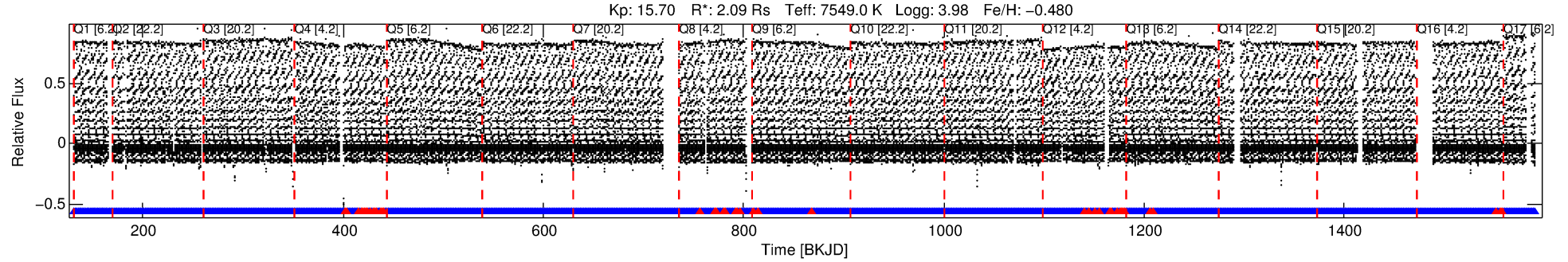
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009508655-01

No Significant Match Found

DV One-Page Summary

KIC: 9508655 Candidate: 1 of 2 Period: 1.189 d



DV Fit Results:

Period = 1.18899 [0.01484] d
Epoch = 131.5497 [2.3030] BKJD
Rp/R* = 0.0041 [0.5330]
a/R* = 3.10 [1684.22]
b = 0.69 [459.99]
Seff = 19972.13 [11018.68]
Teff = 3031 [418] K
Rp = 0.93 [121.33] Re
a = 0.0252 [0.0086] AU
Ag = 86018.77 [22346953.29] [0.00σ]
Teffp = 80264 [5213137] K [0.01σ]

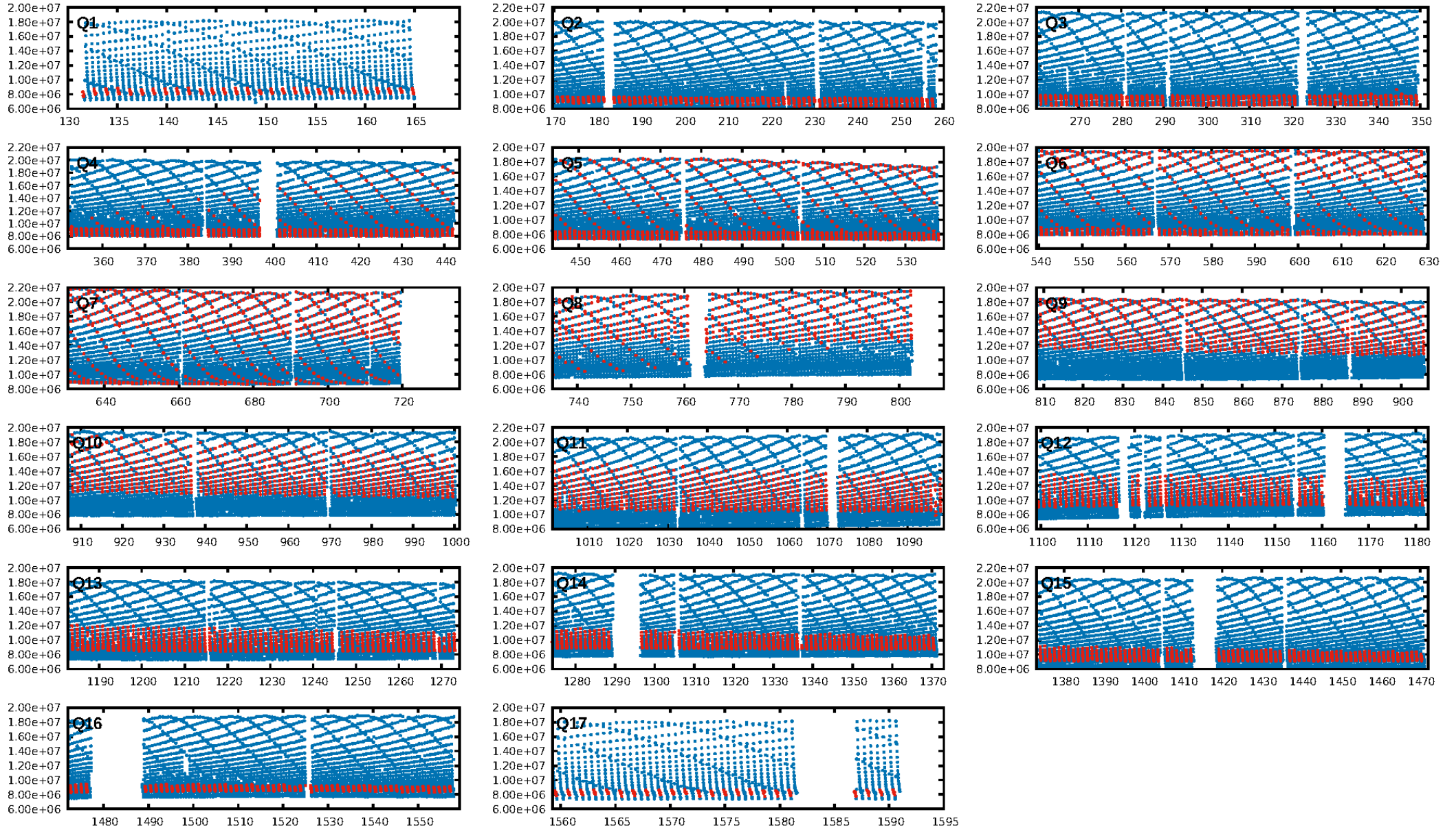
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.34σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [1030/1075]
GhostDiagnostic-chr: 1.451
Centroid-sig: 0.8%
Centroid-so: 21.731 arcsec [1.92σ]
OotOffset-rm: 0.082 arcsec [1.16σ]
KicOffset-rm: 0.069 arcsec [1.01σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 0.00 [0/17]

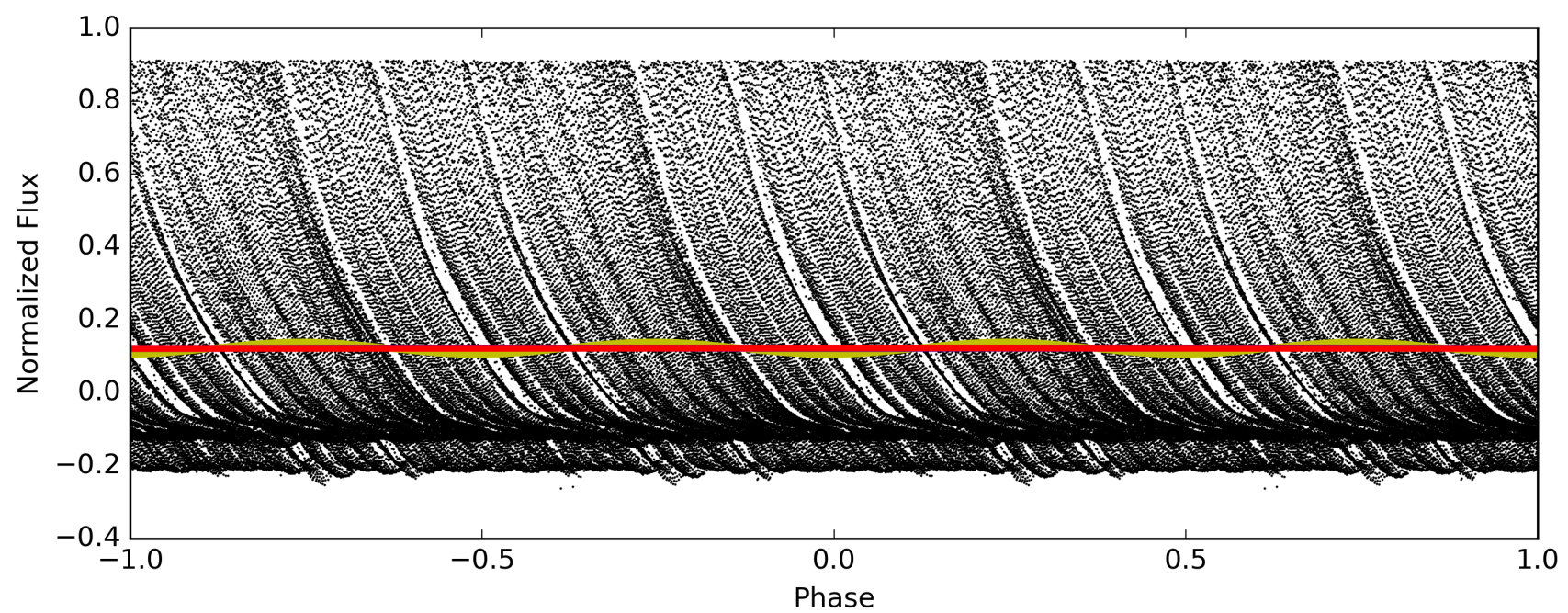
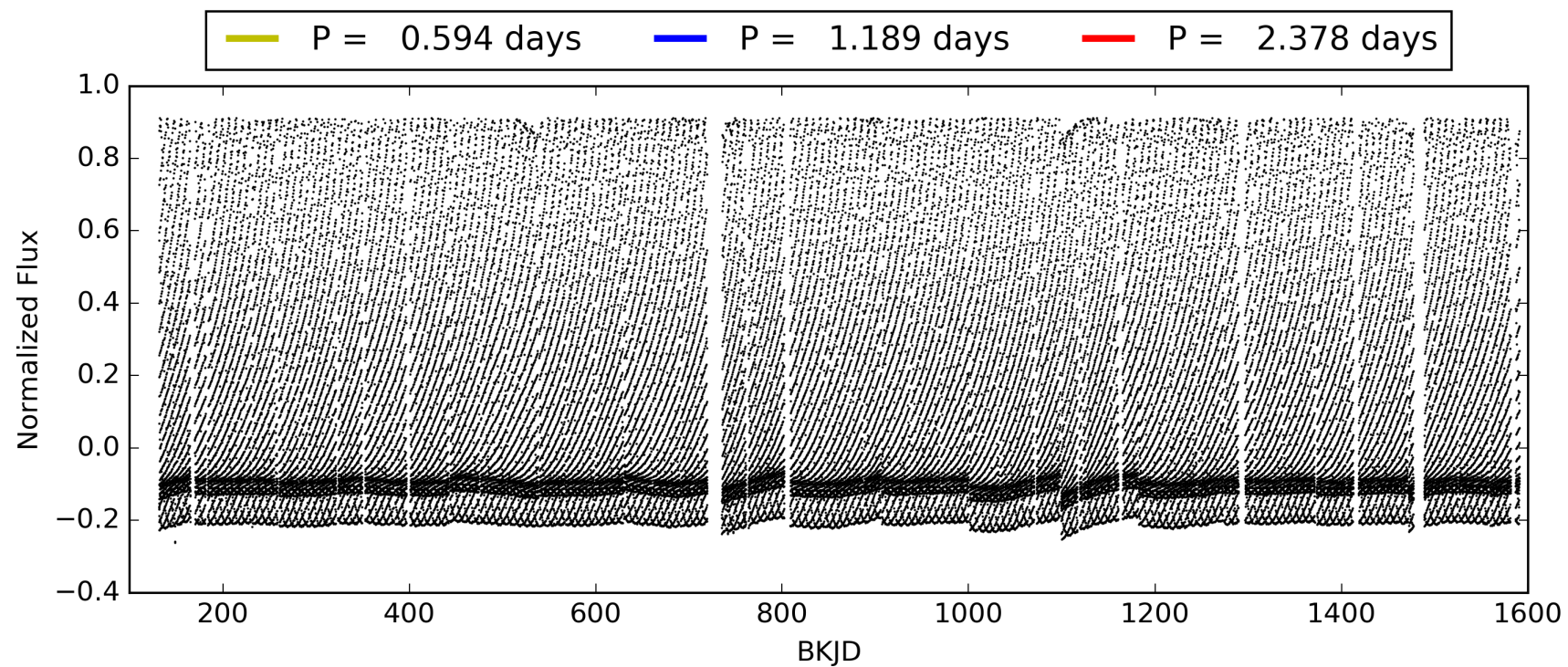
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009508655-01, PDC Light Curves

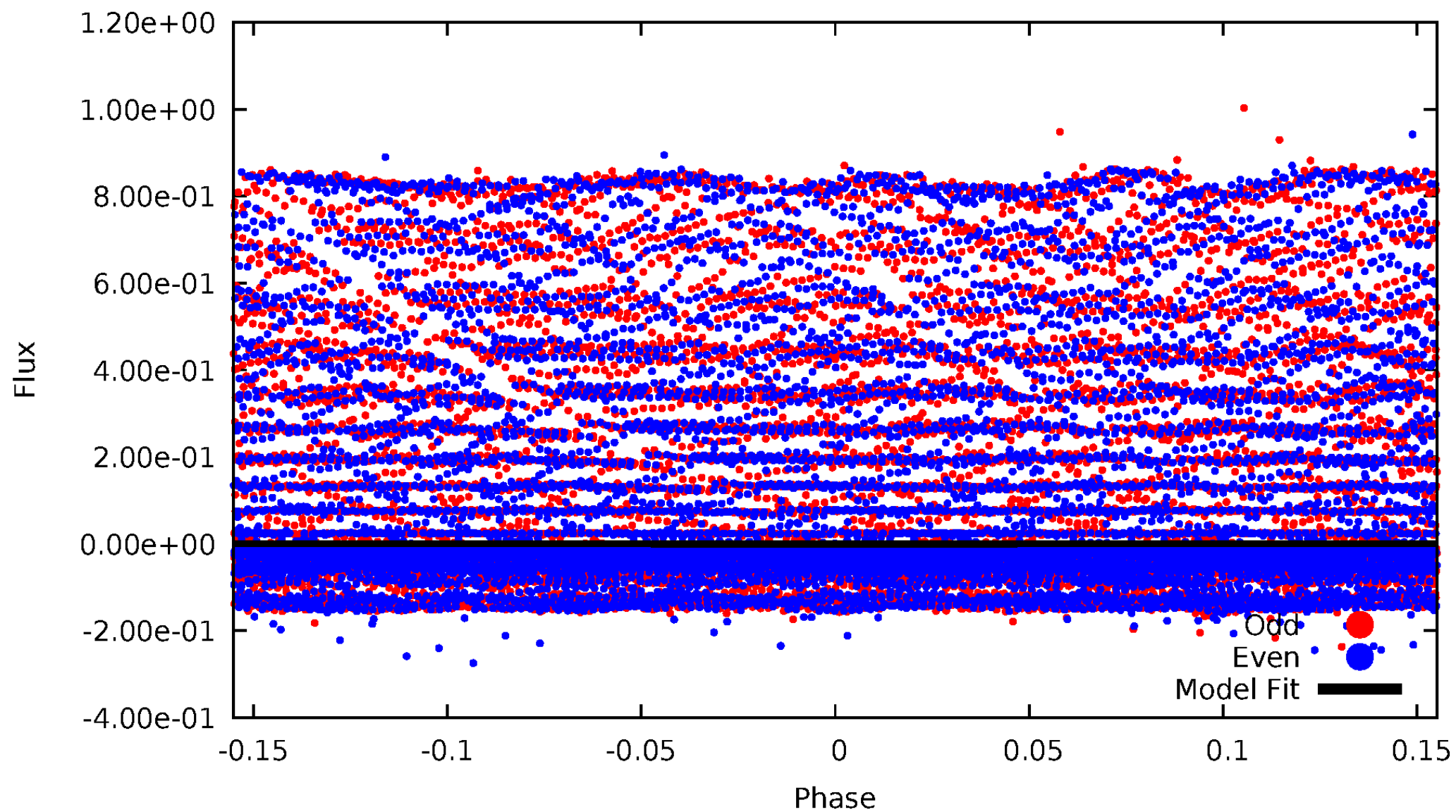


TCE 009508655-01



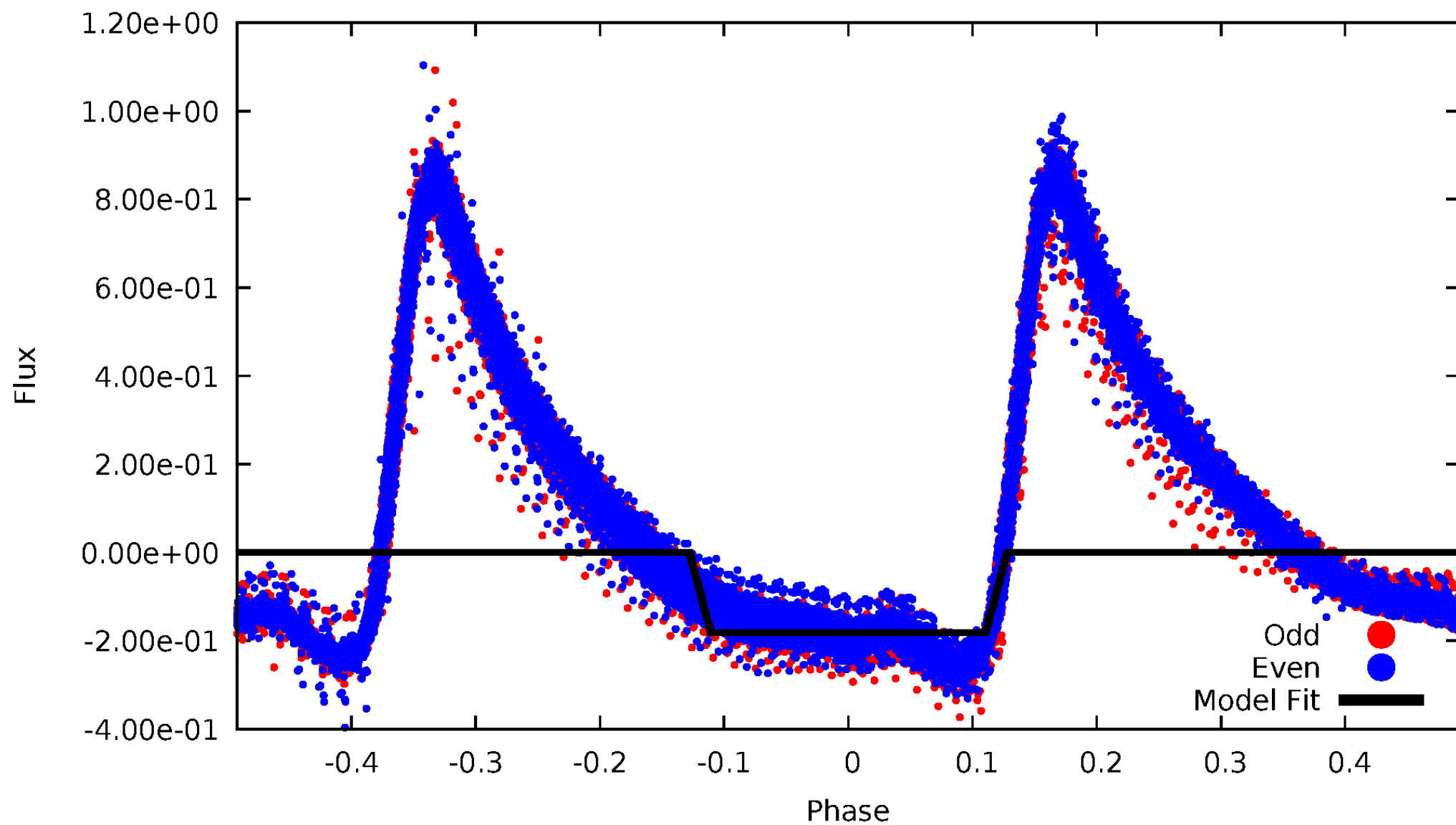
DV Odd/Even

TCE 009508655-01



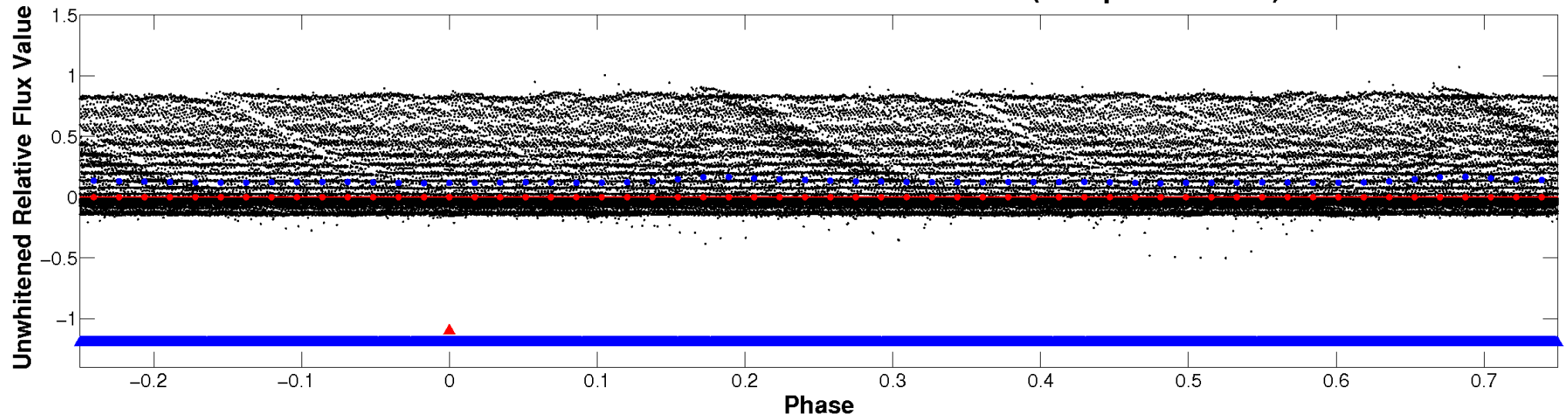
ALT Odd/Even

TCE 009508655-01

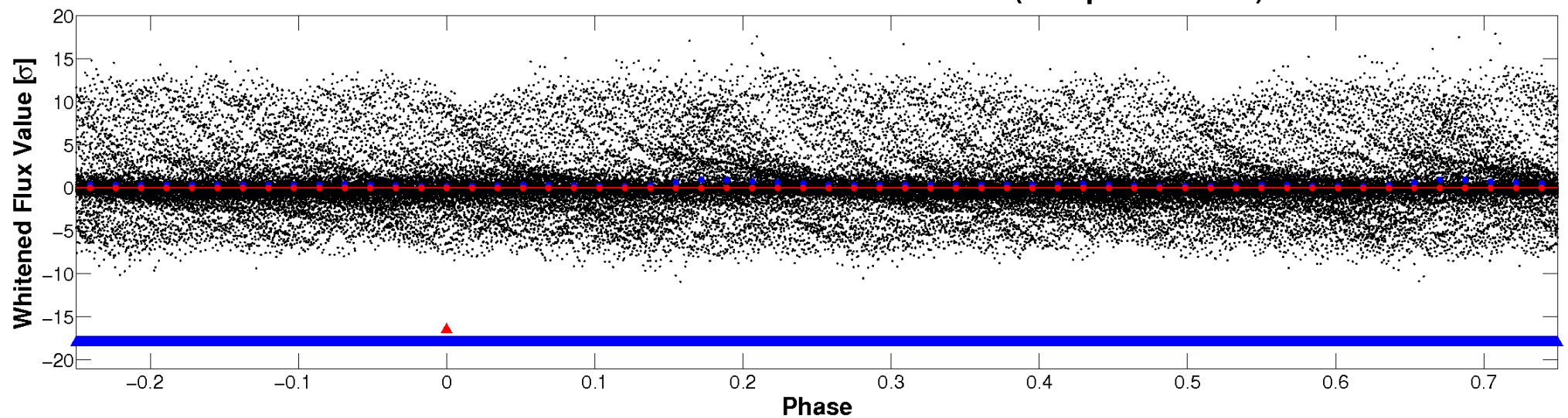


Non-Whitened Vs. Whitened Light Curve

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

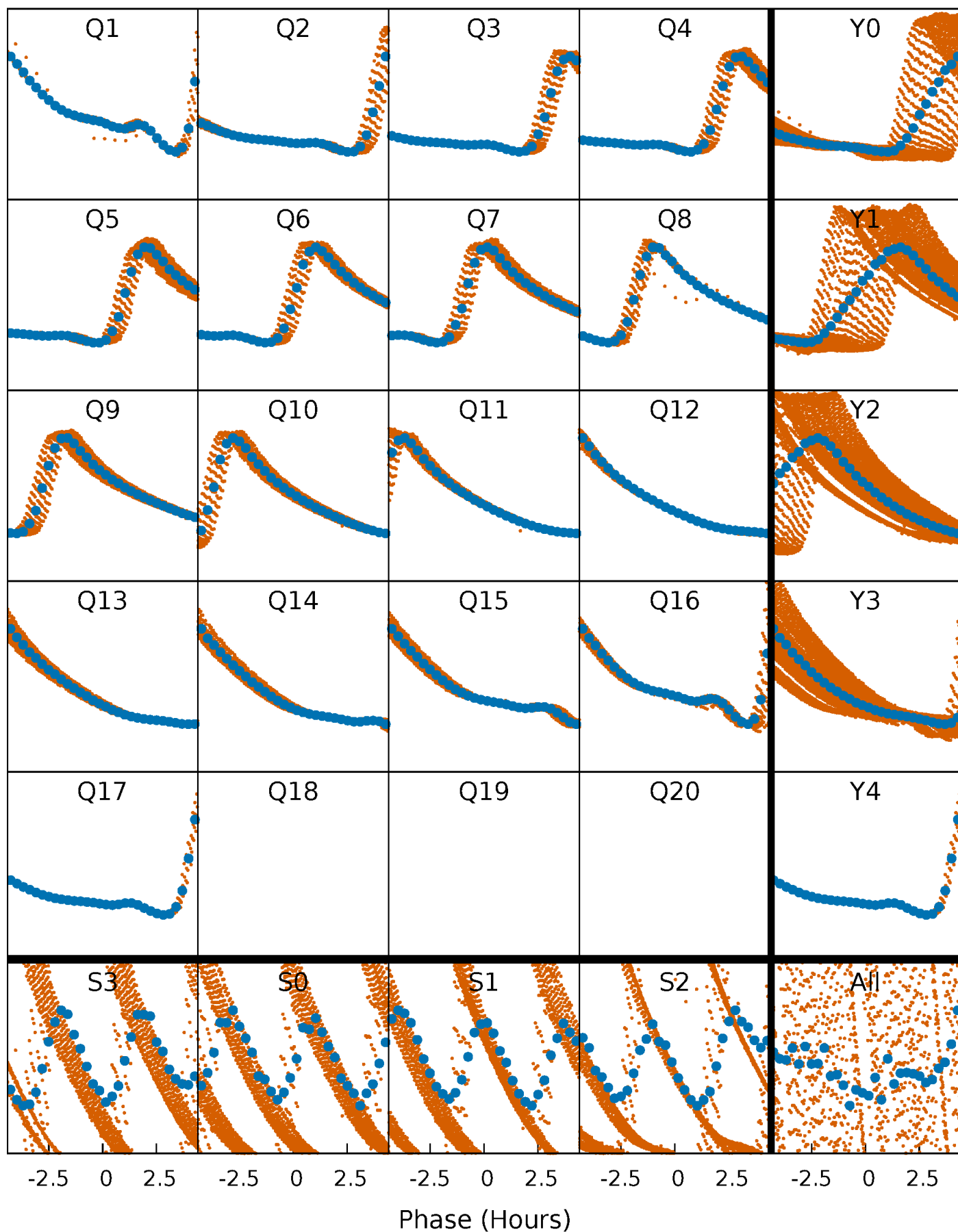


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



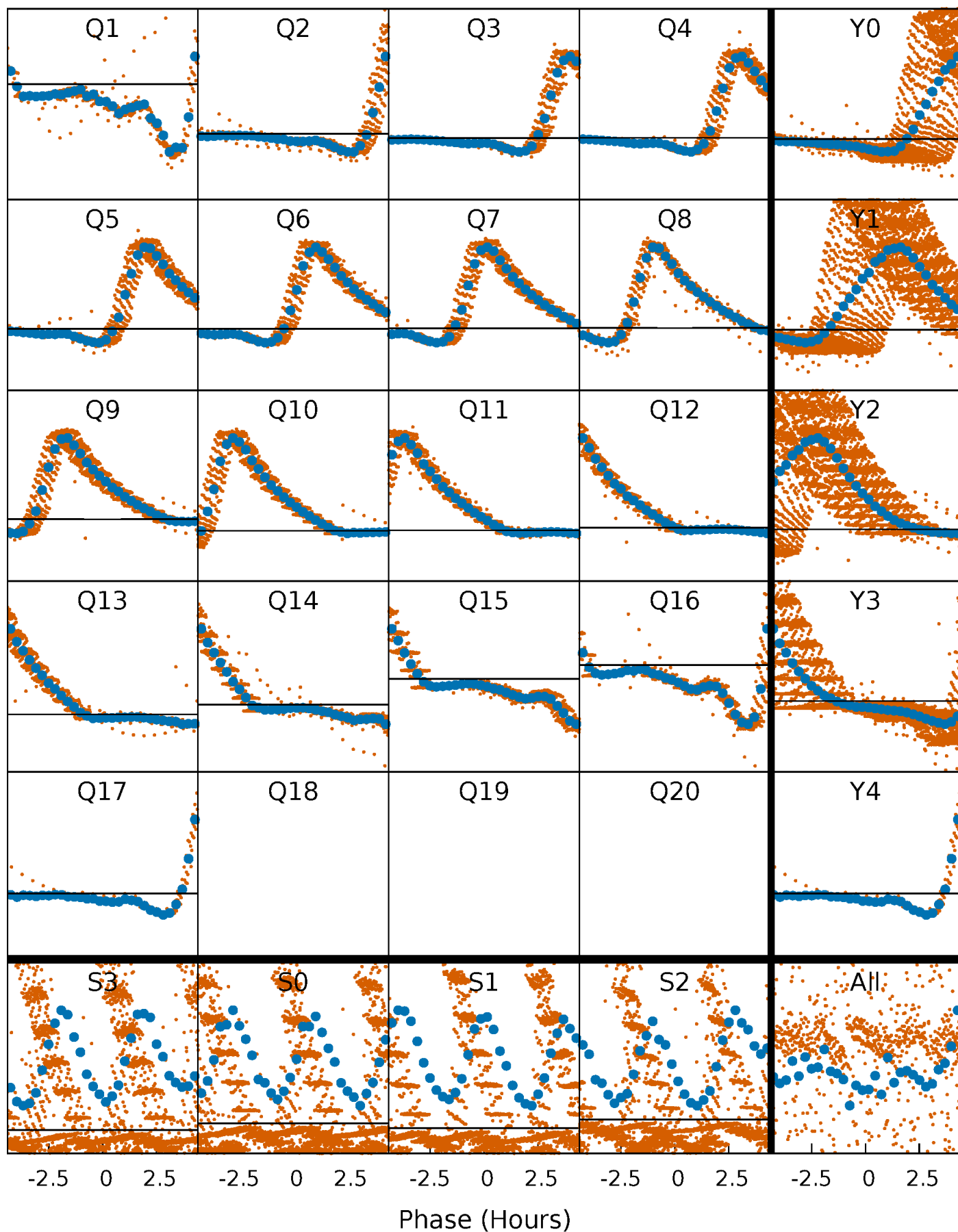
PDC Quarter-Phased Transit Curves

TCE 009508655-01 P= 1.188989 Days $T_0=131.549712$ (BKJD)



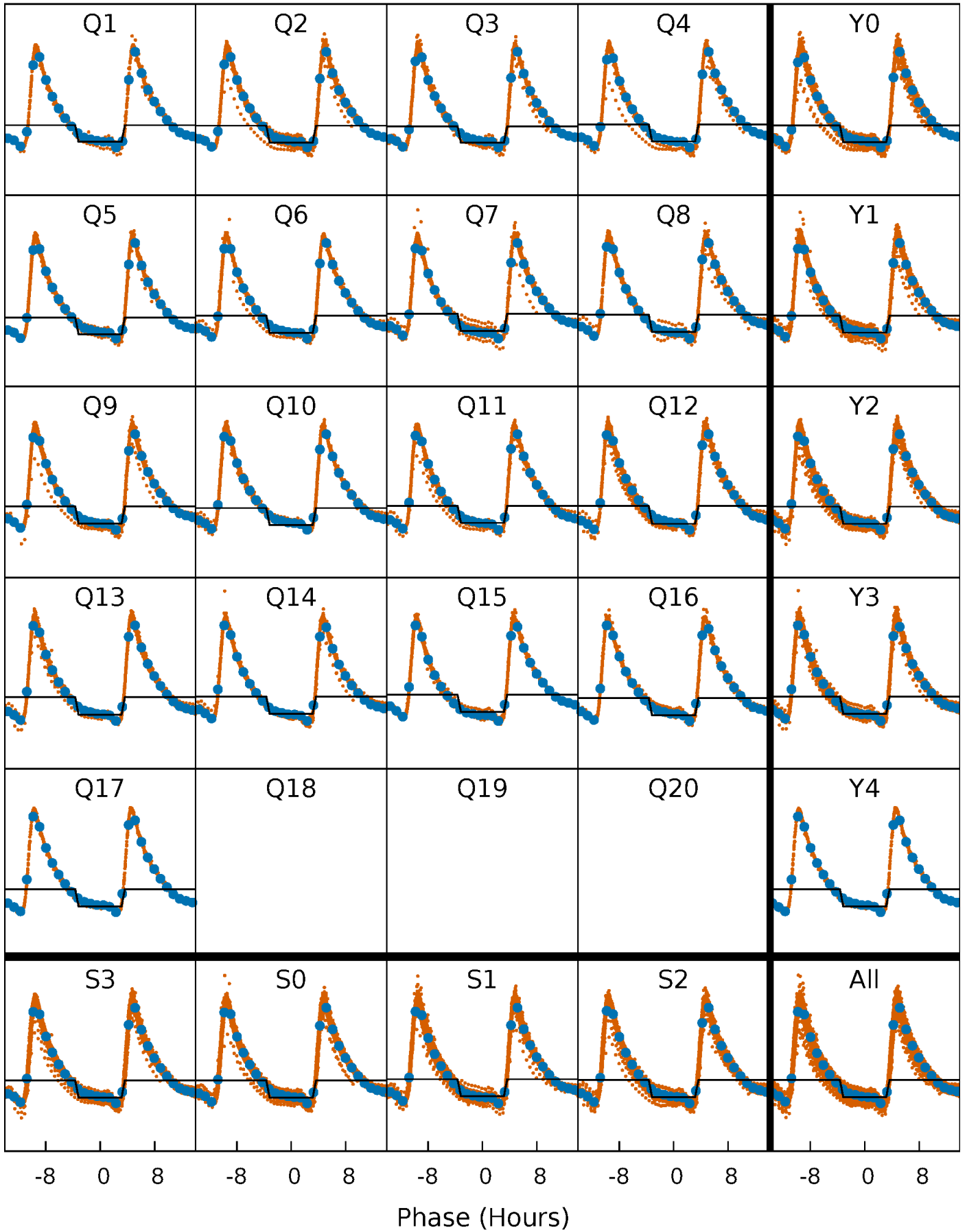
DV Quarter-Phased Transit Curves

TCE 009508655-01 P= 1.188989 Days $T_0=131.549712$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

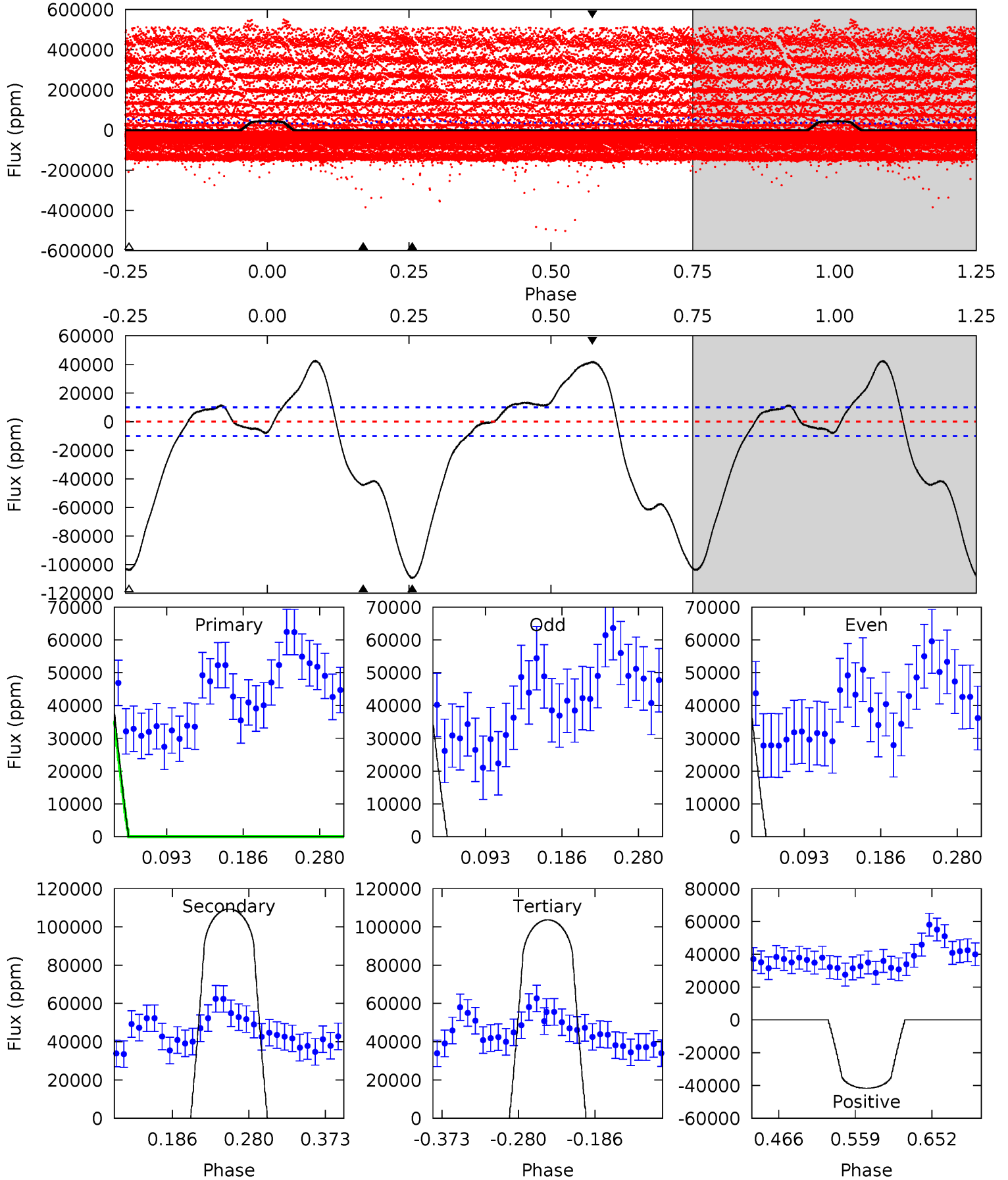
TCE 009508655-01 P= 1.188485 Days $T_0=131.582259$ (BKJD)



DV Model-Shift Uniqueness Test

009508655-01, P = 1.188989 Days, E = 130.360723 Days

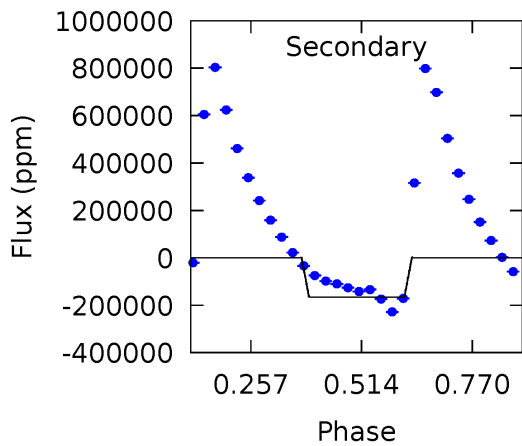
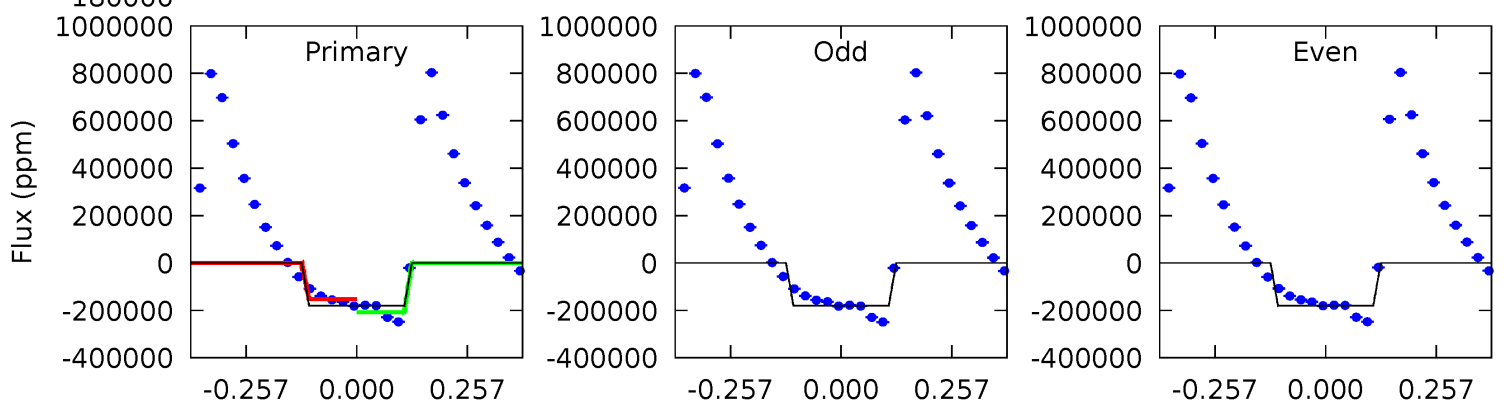
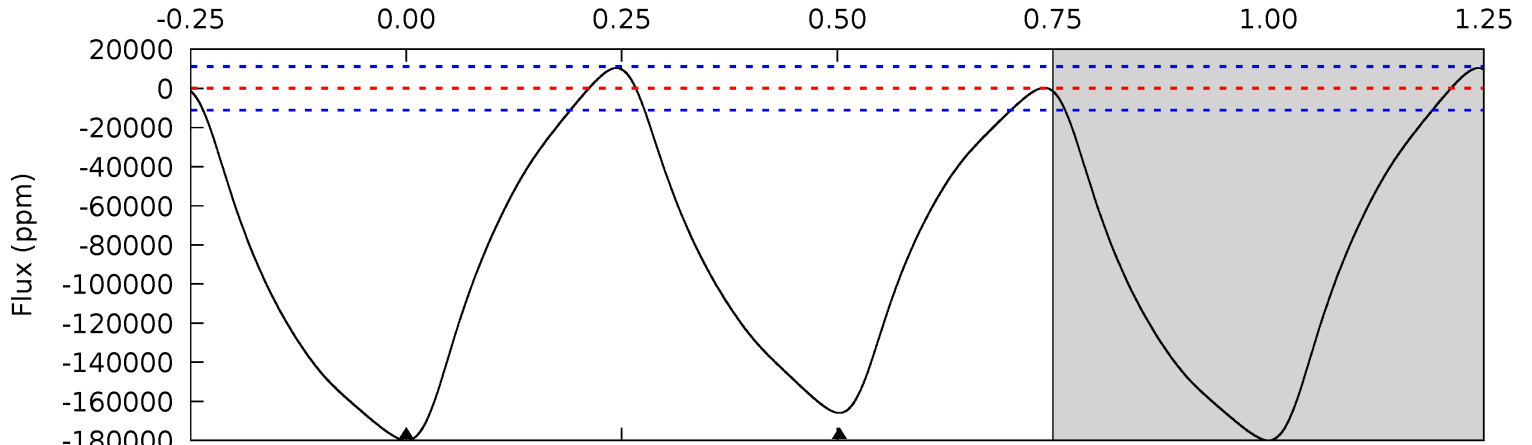
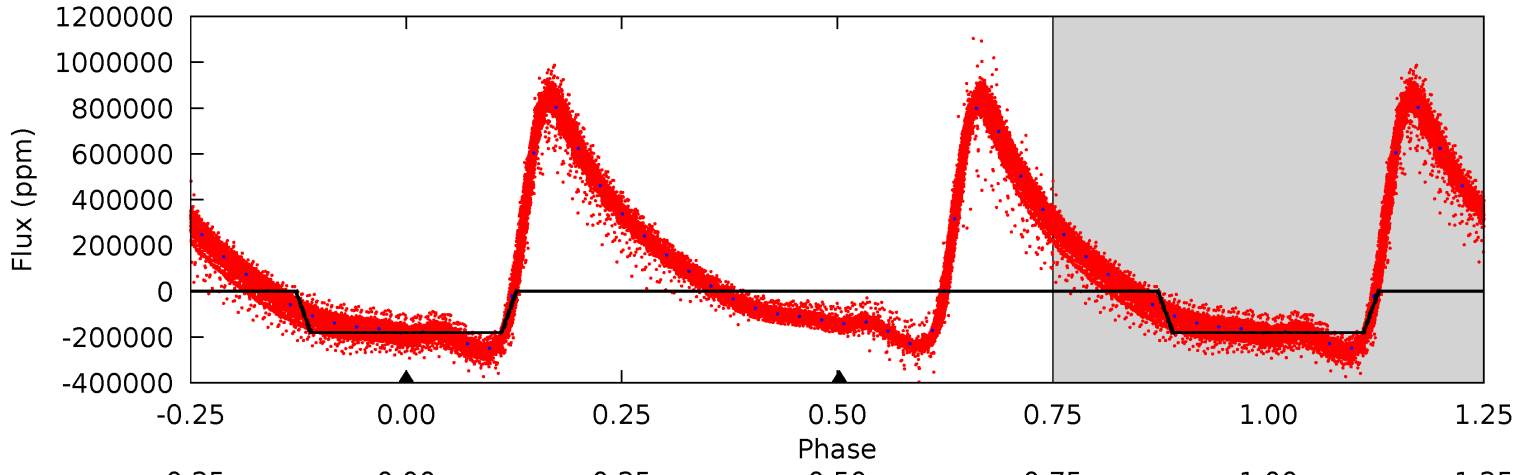
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	49.7	47.1	19.0	4.58	1.68	17.4	-27.0	1.18	2.55	30.7	0.62	-8.00	0.28	0.45



Alt Model-Shift Uniqueness Test

009508655-01, P = 1.188485 Days, E = 130.393774 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
70.4	64.9	0	0	4.36	1.13	3.32	70.4	70.4	64.9	64.9	0.14	1.02	0.05	12.0



Stellar Parameters For KIC 009508655

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7549^{+234}_{-313}	$3.977^{+0.301}_{-0.129}$	$-0.480^{+0.250}_{-0.300}$	$2.086^{+0.483}_{-0.786}$	$1.504^{+0.182}_{-0.311}$	$0.233^{+0.469}_{-0.095}$
	+3%/-4%	+8%/-3%	+52%/-62%	+23%/-38%	+12%/-21%	+201%/-41%
Source	KIC0	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 009508655-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-109308 ± 2200	$65.71^{+90.82}_{-46.78}$	4168^{+300}_{-396}	7898^{+16709}_{-2890}	$9.823^{+105.334}_{-8.083}$
Alt.	-165918 ± 2557	$114.84^{+110.84}_{-77.06}$	4173^{+301}_{-390}	6613^{+7614}_{-1874}	$5.100^{+41.054}_{-3.732}$

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 $A_{obs} \gg 1.0$

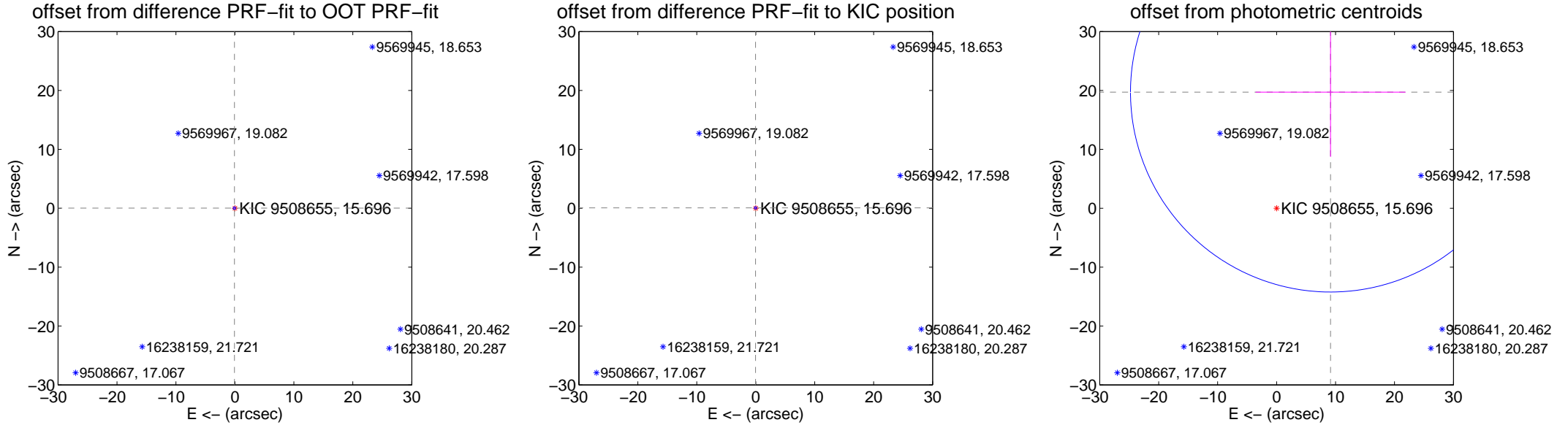
DV Centroid Data

Supplemental centroid analysis for 009508655-01. Kepler magnitude: 15.70. Transit SNR 0.01

There are 12 quarters with good PRF difference image offsets

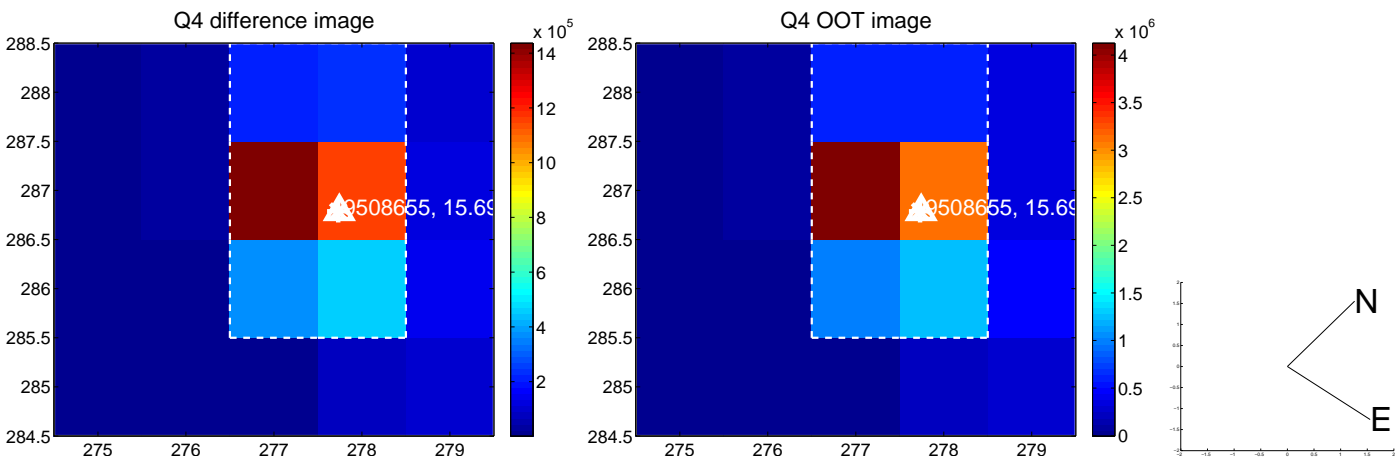
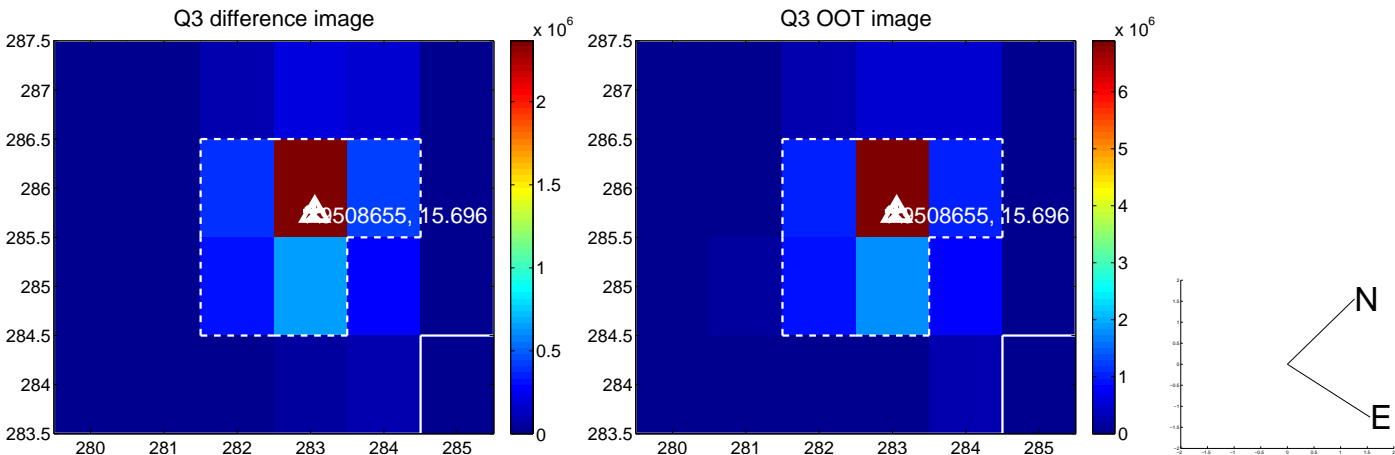
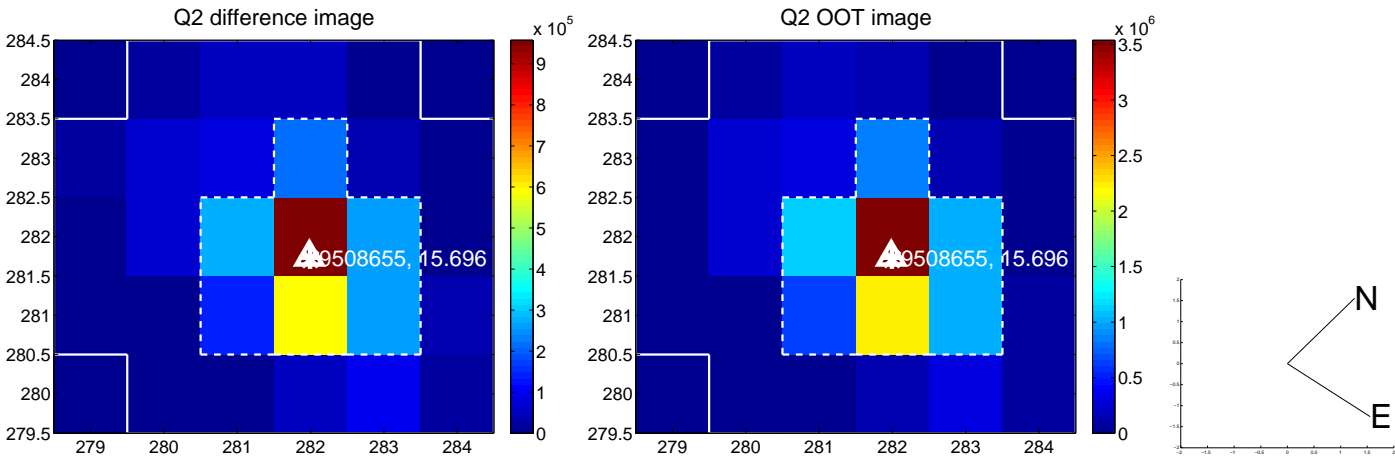
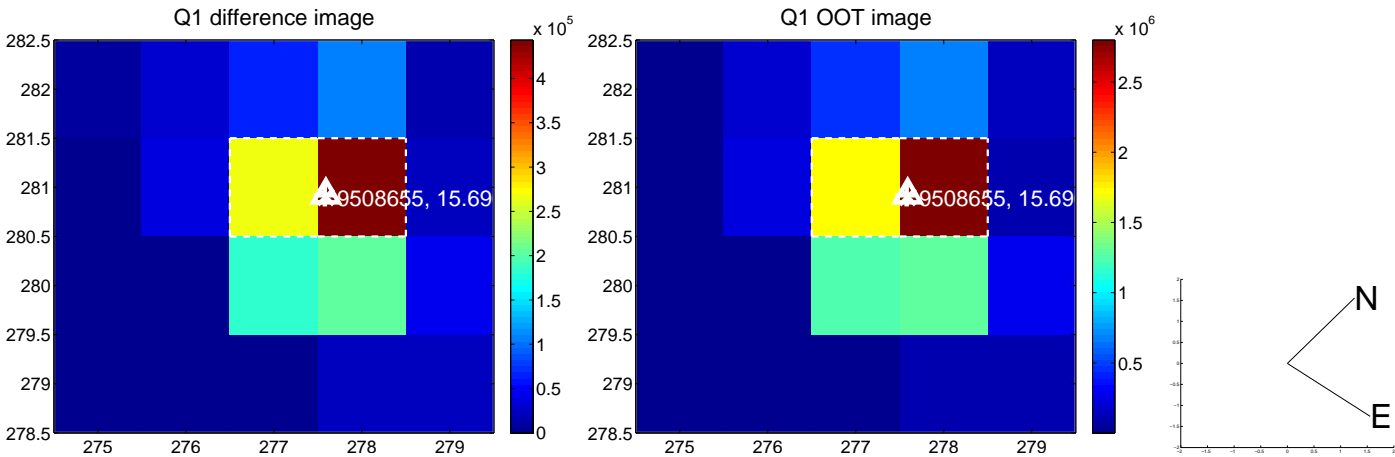
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.082 ± 0.071	1.16	0.080 ± 0.072	0.019 ± 0.068
PRF-fit source offset from KIC position	0.069 ± 0.068	1.01	0.032 ± 0.072	0.061 ± 0.068
photometric centroid source offset	21.73 ± 11.31	1.92	-9.16 ± 12.72	19.71 ± 10.98

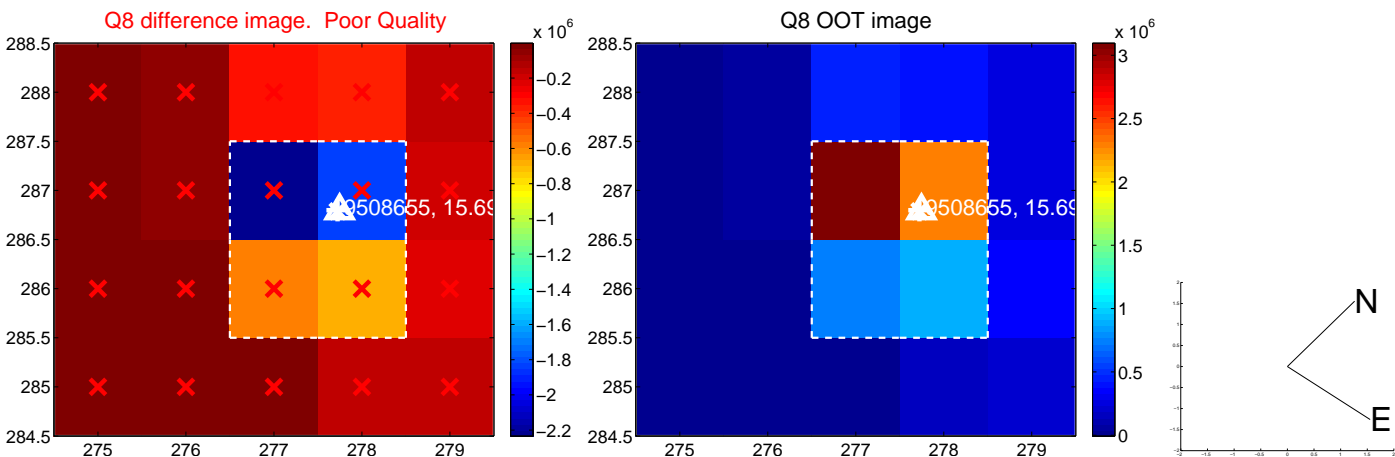
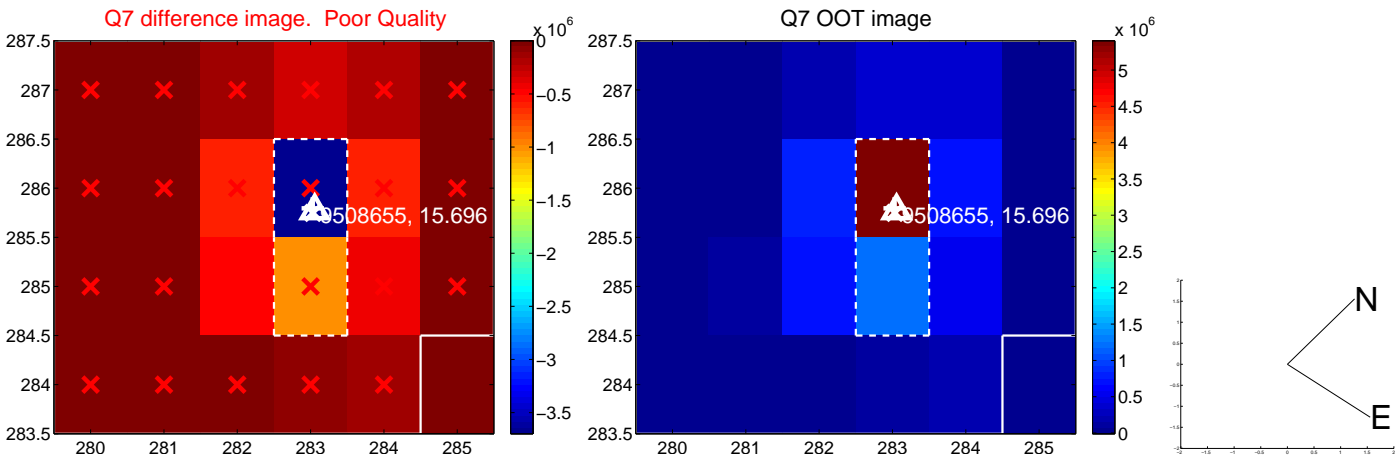
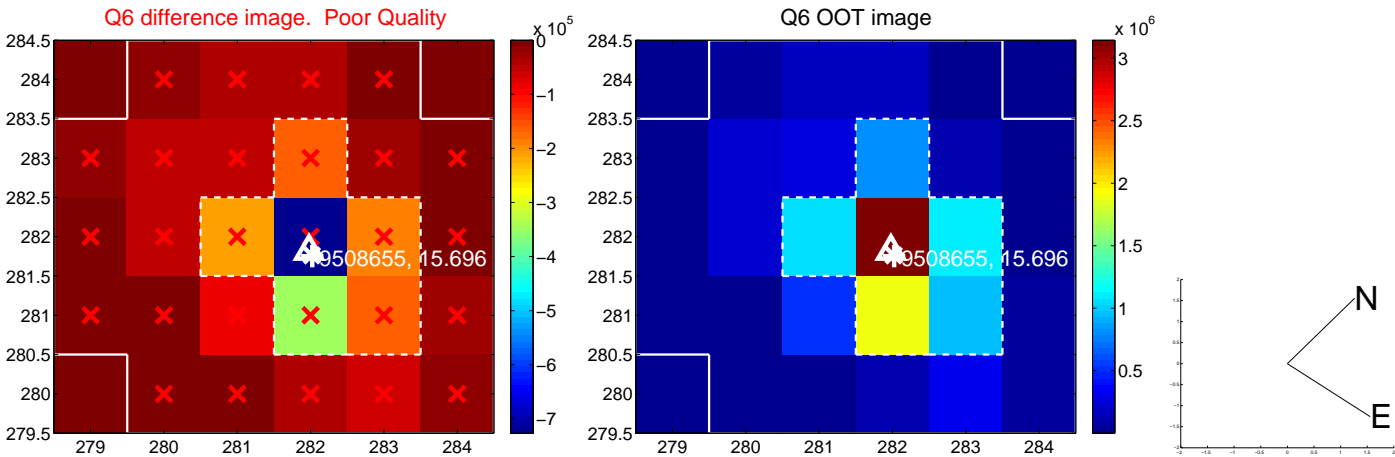
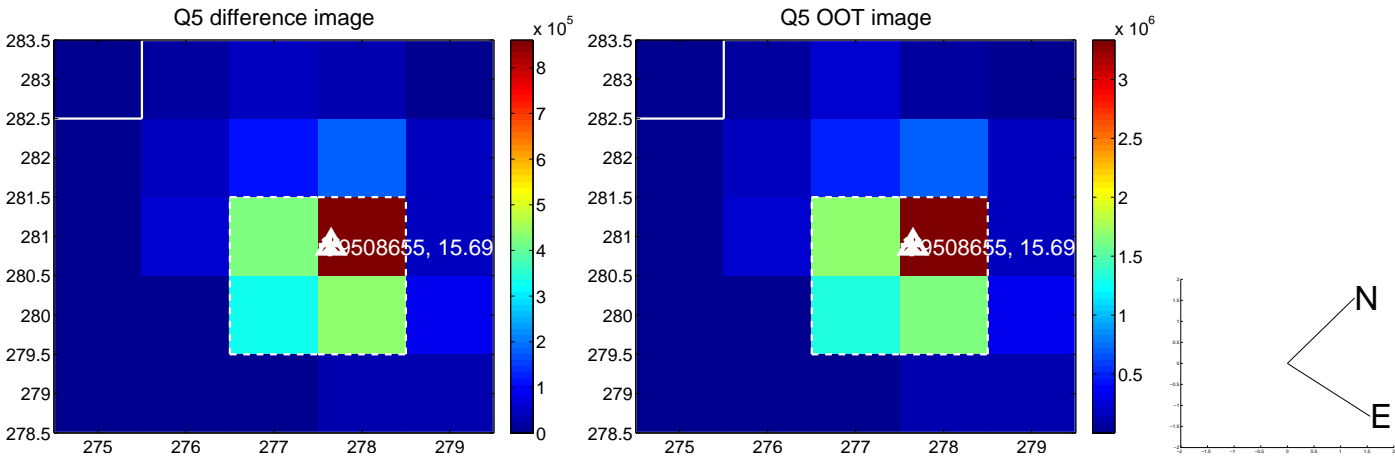


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

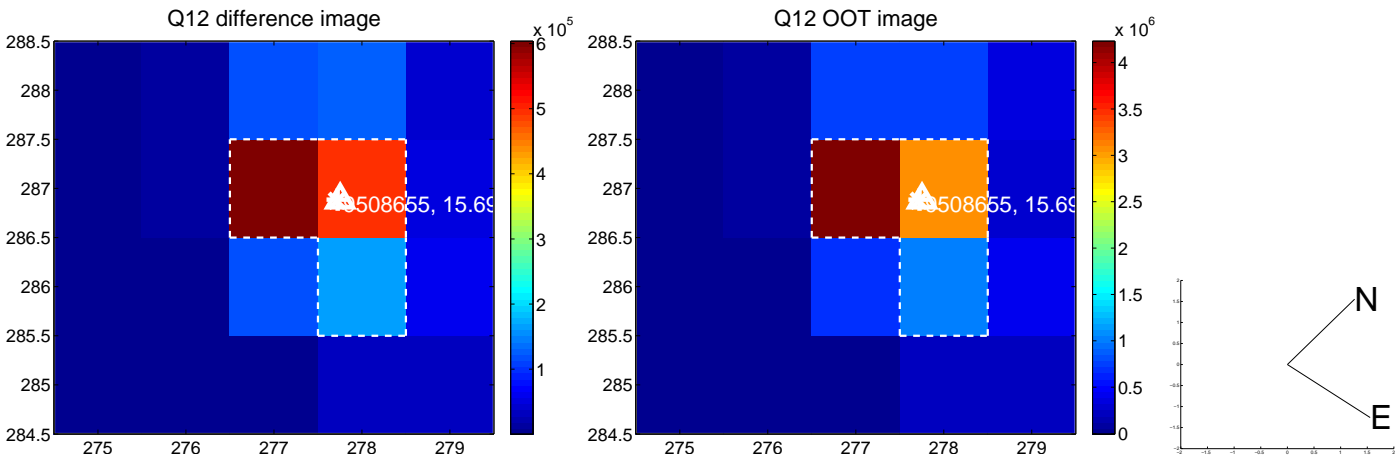
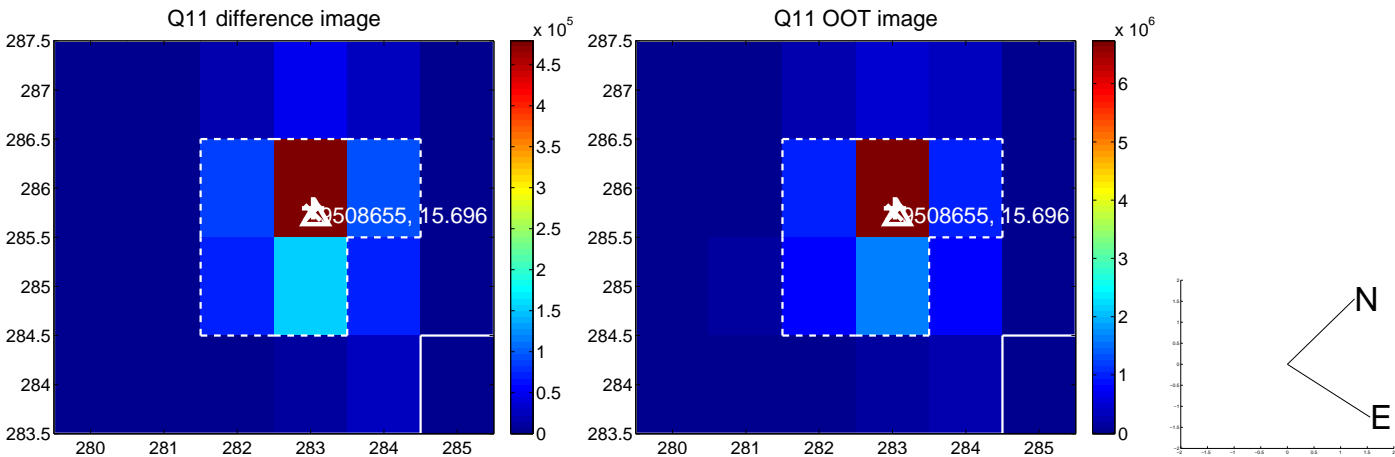
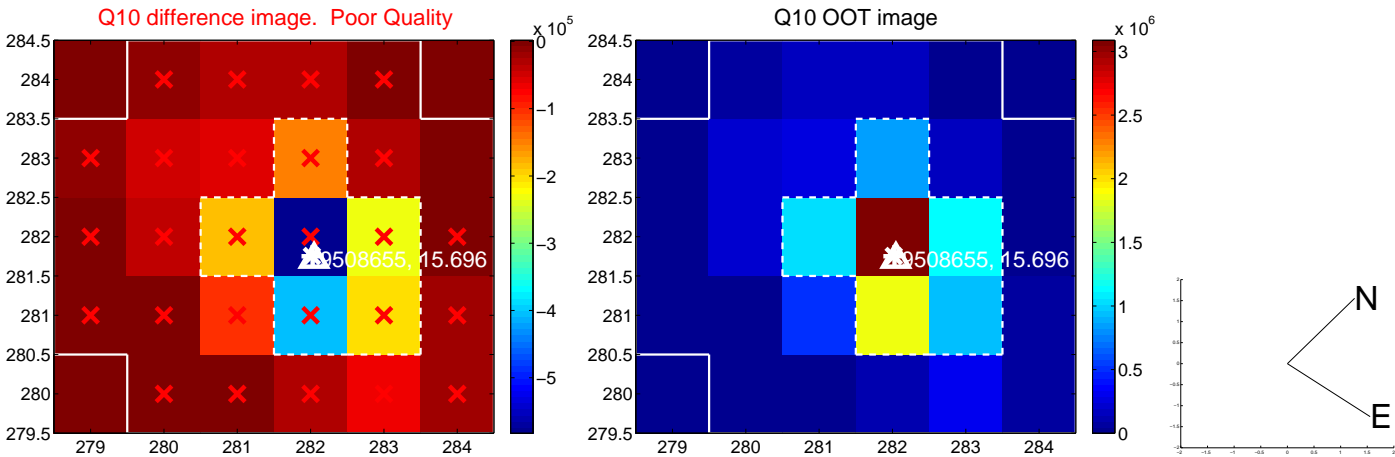
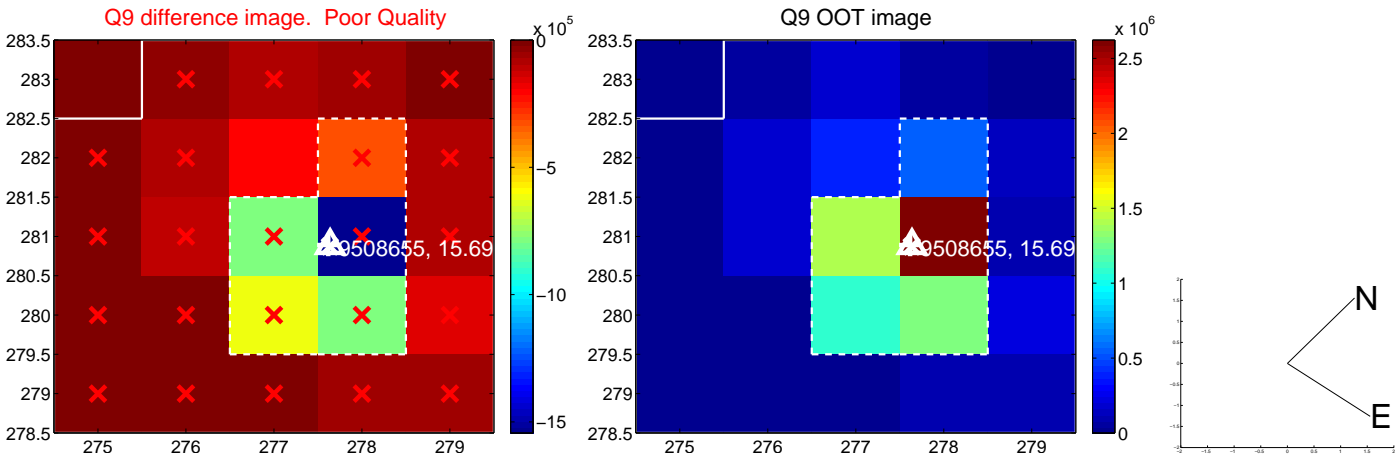
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



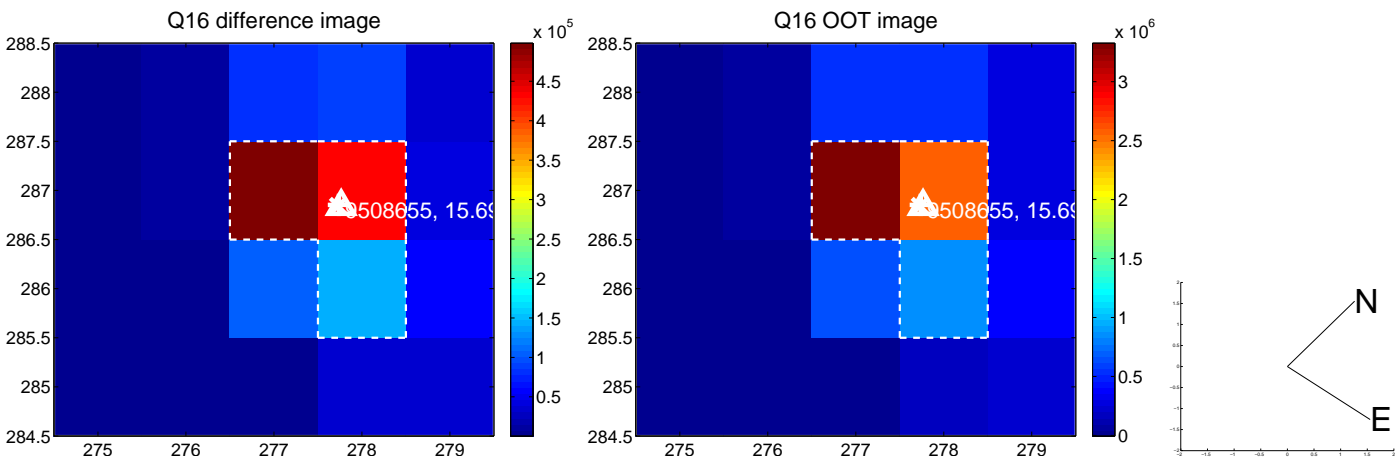
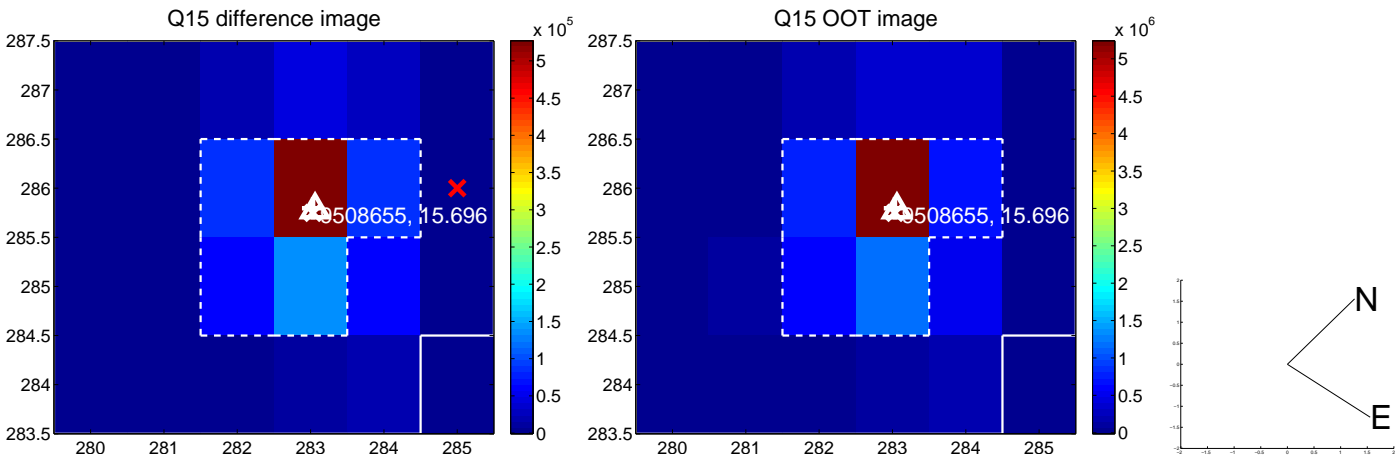
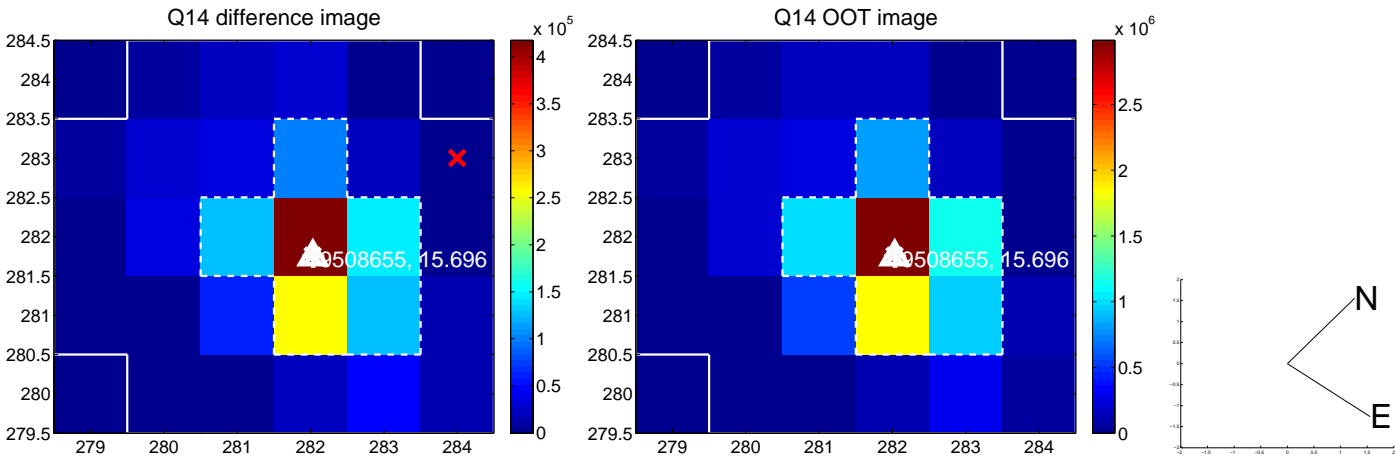
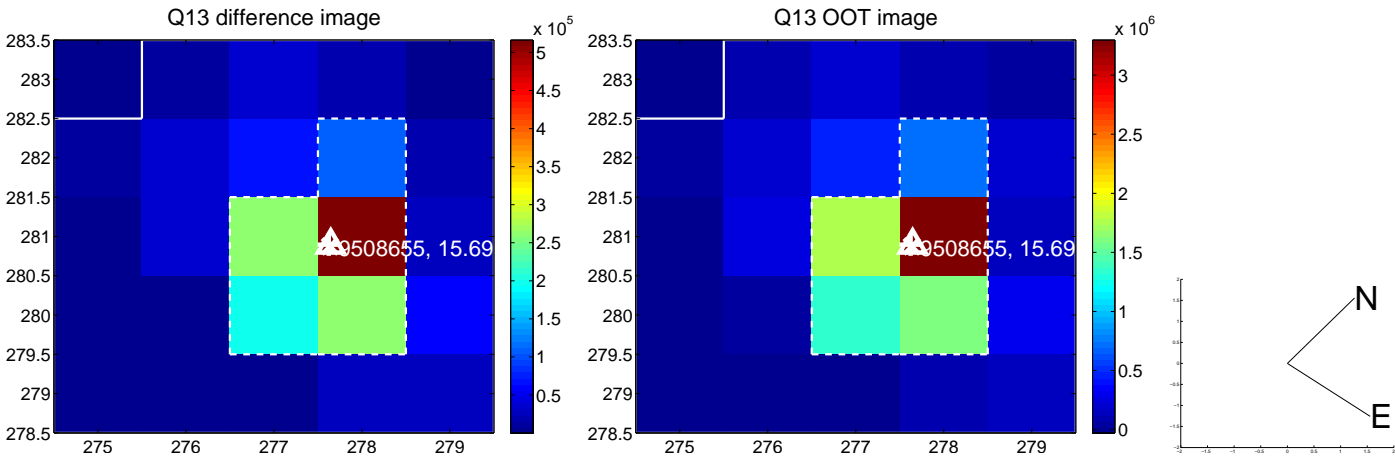
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



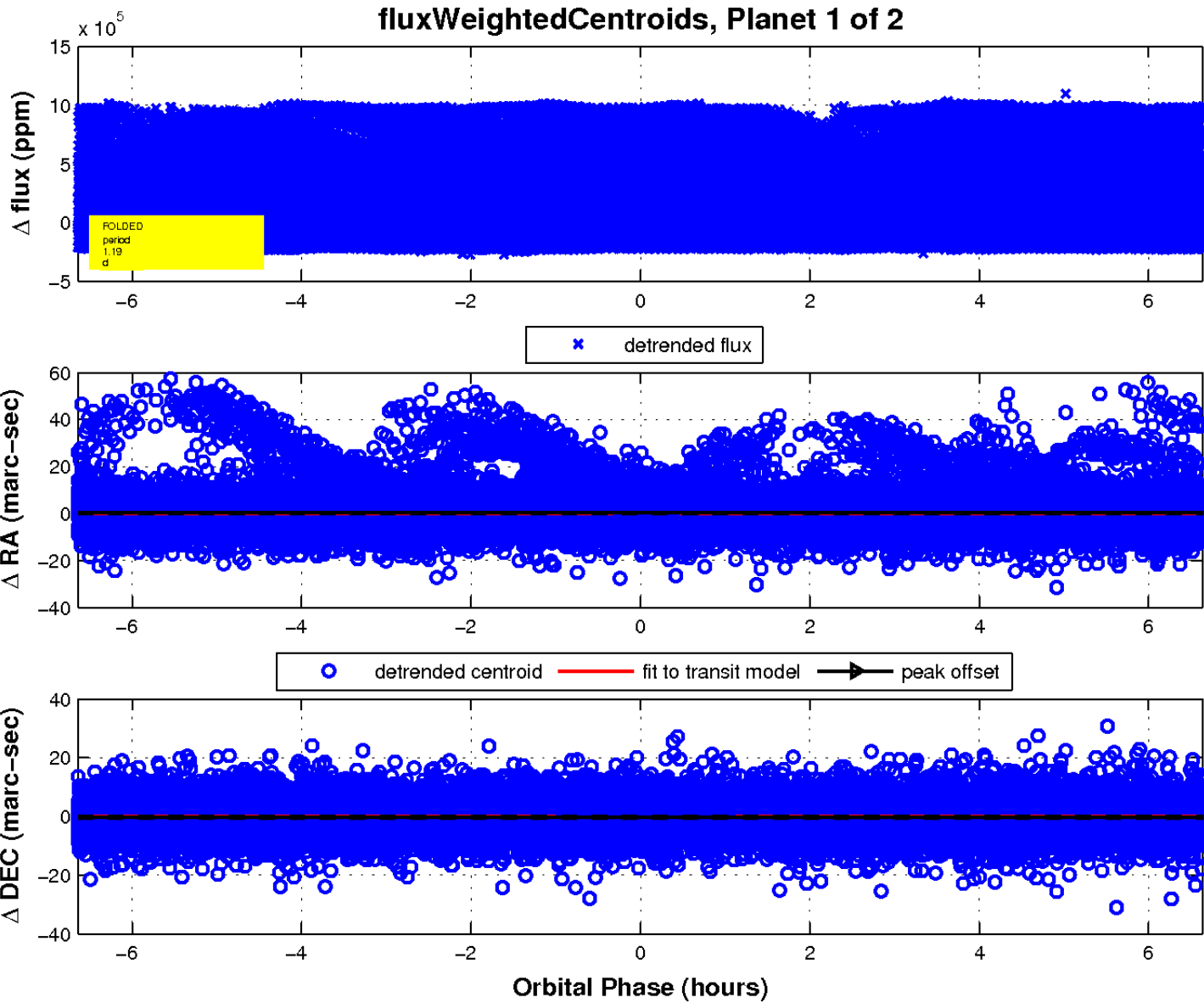
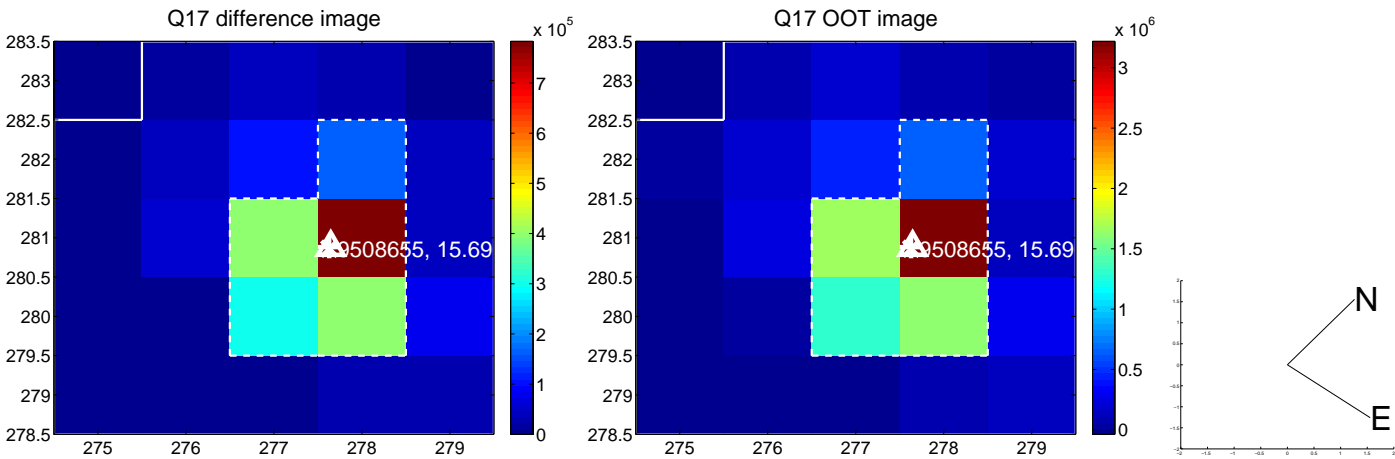
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

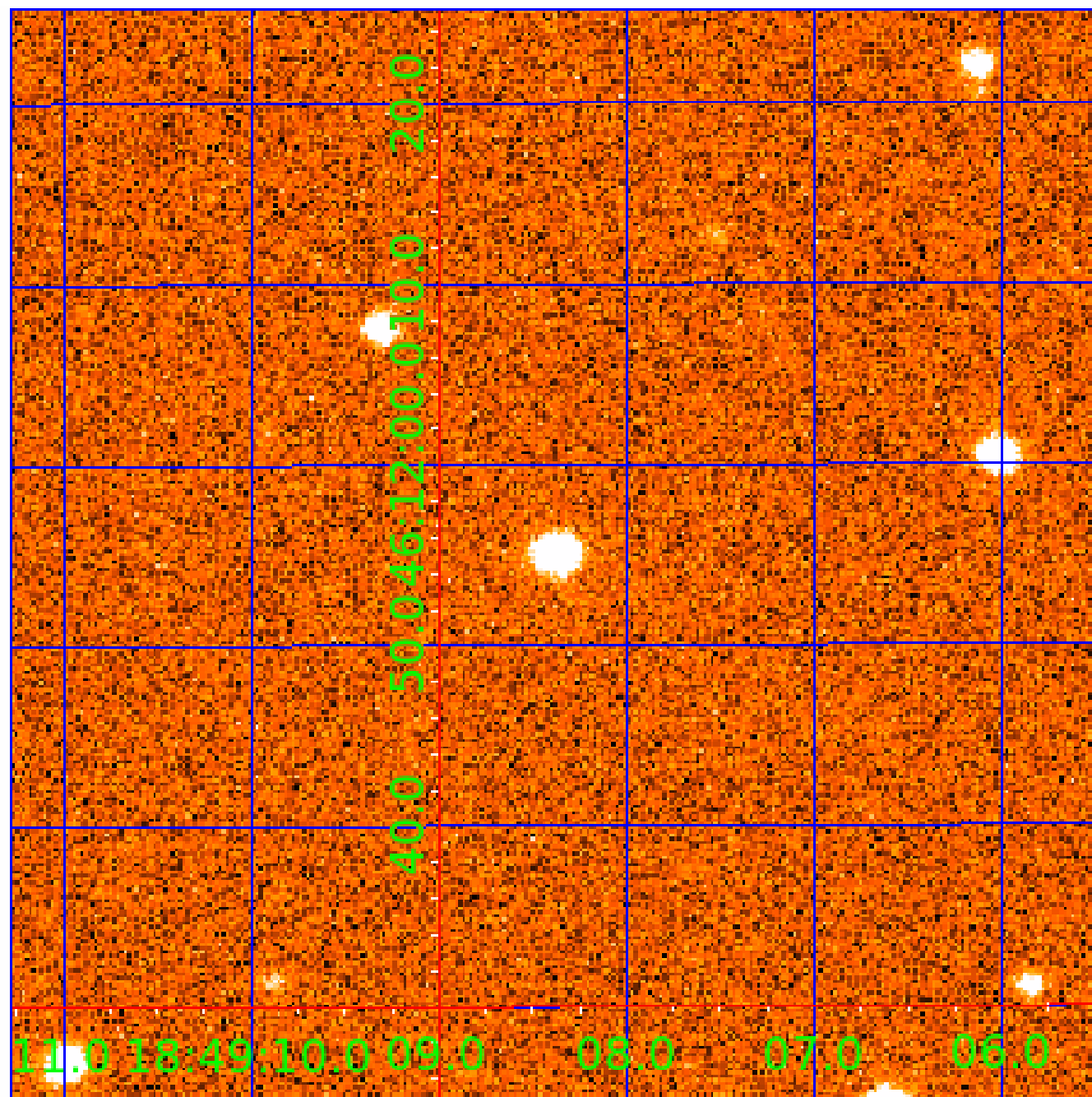


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009508655

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009508655-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV
009508655-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_NOFITS

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

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

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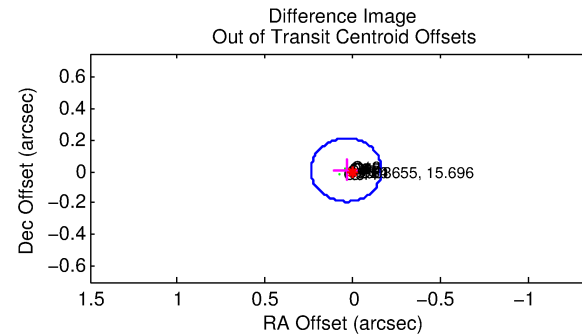
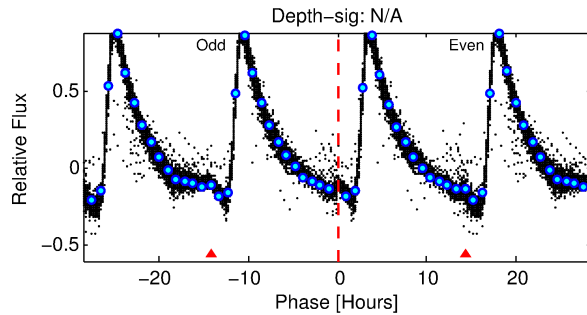
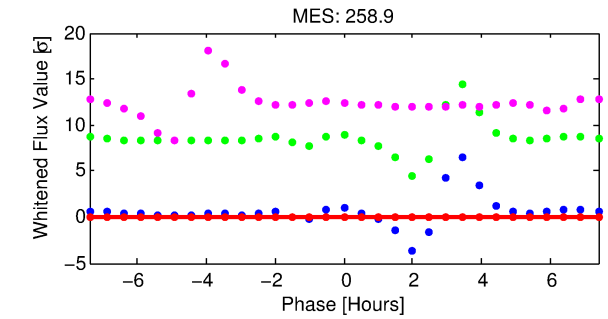
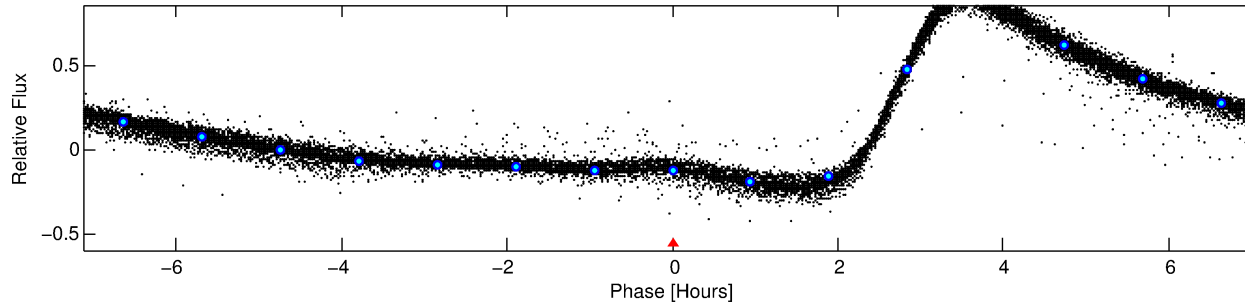
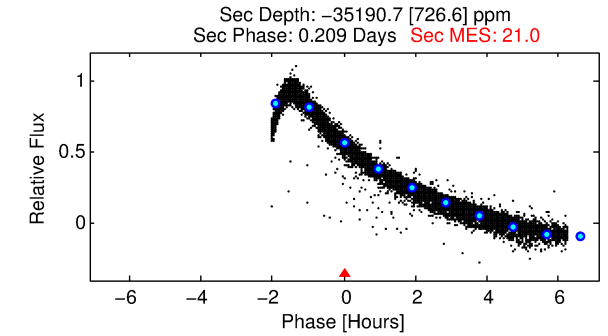
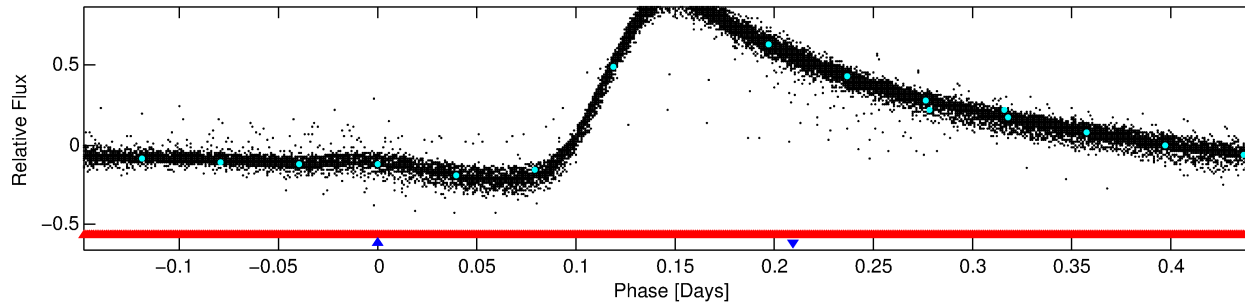
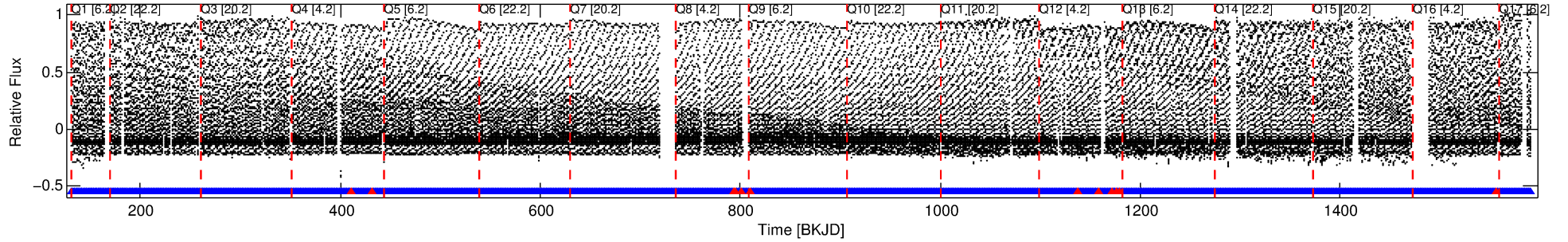
Ephemeris Match Information For 009508655-02

No Significant Match Found

DV One-Page Summary

KIC: 9508655 Candidate: 2 of 2 Period: 0.594 d

Kp: 15.70 R*: 2.09 Rs Teff: 7549.0 K Logg: 3.98 Fe/H: -0.480



TPS TCE Results:

Period = 0.59424 d
Epoch = 131.7235 BKJD

DV fit results are unavailable

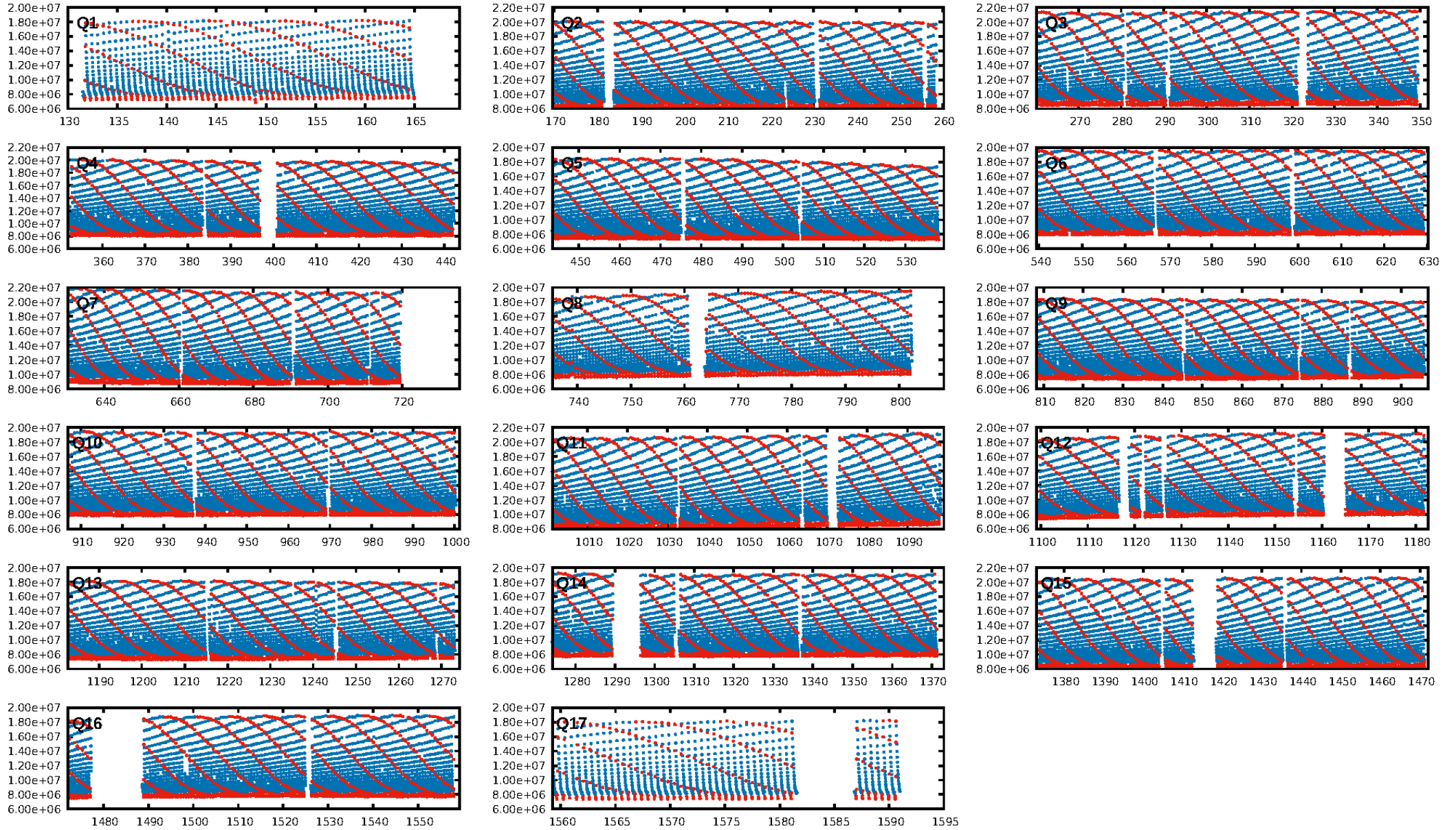
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [5.34σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1964/1977]
GhostDiagnostic-chr: 0.9523
Centroid-sig: 0.0%
Centroid-so: 0.141 arcsec [155.78σ]
OotOffset-rm: 0.041 arcsec [0.61σ]
KicOffset-rm: 0.045 arcsec [0.66σ]
OotOffset-st: 4/4/4/5 [17]
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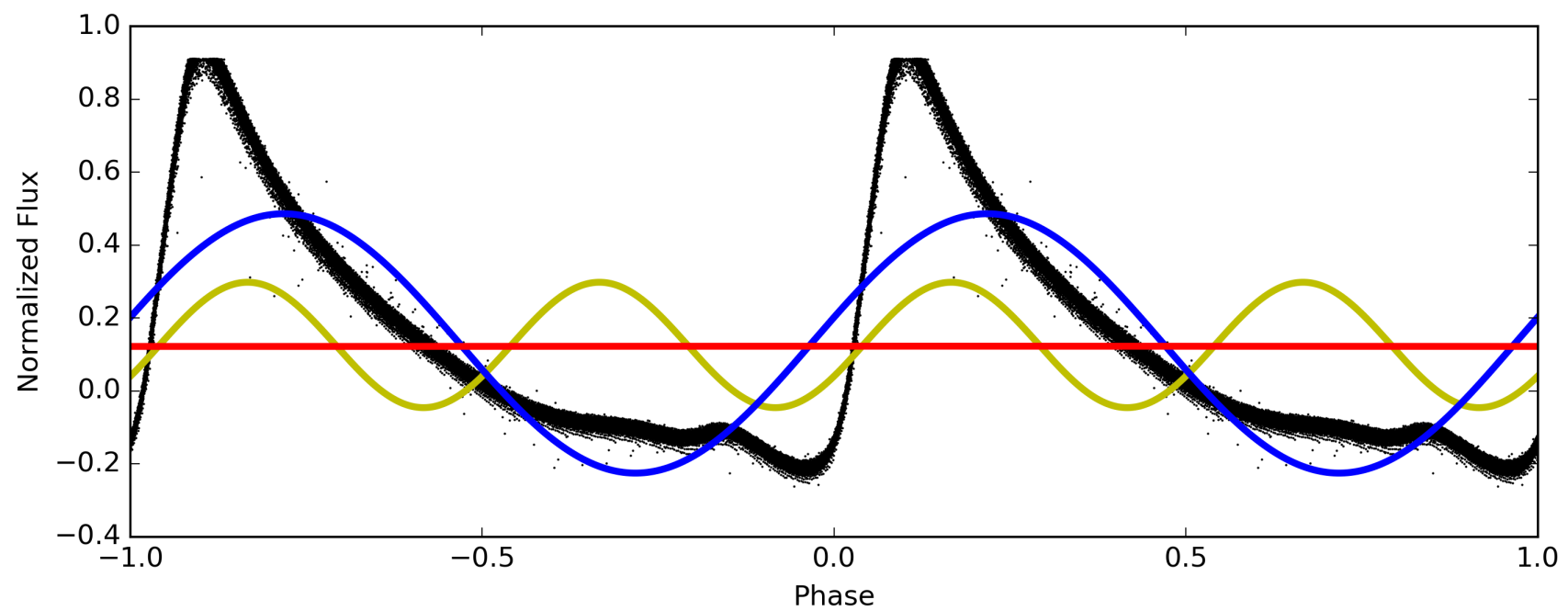
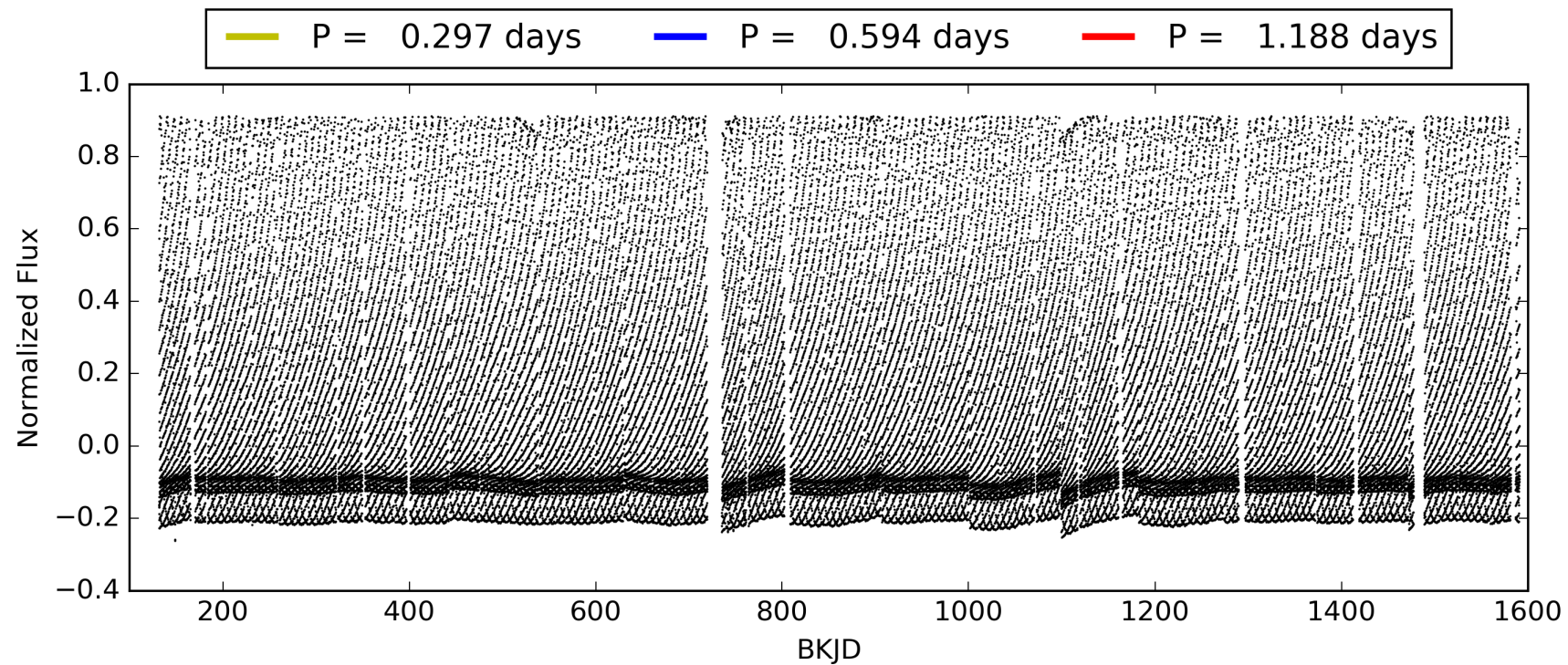
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009508655-02, PDC Light Curves

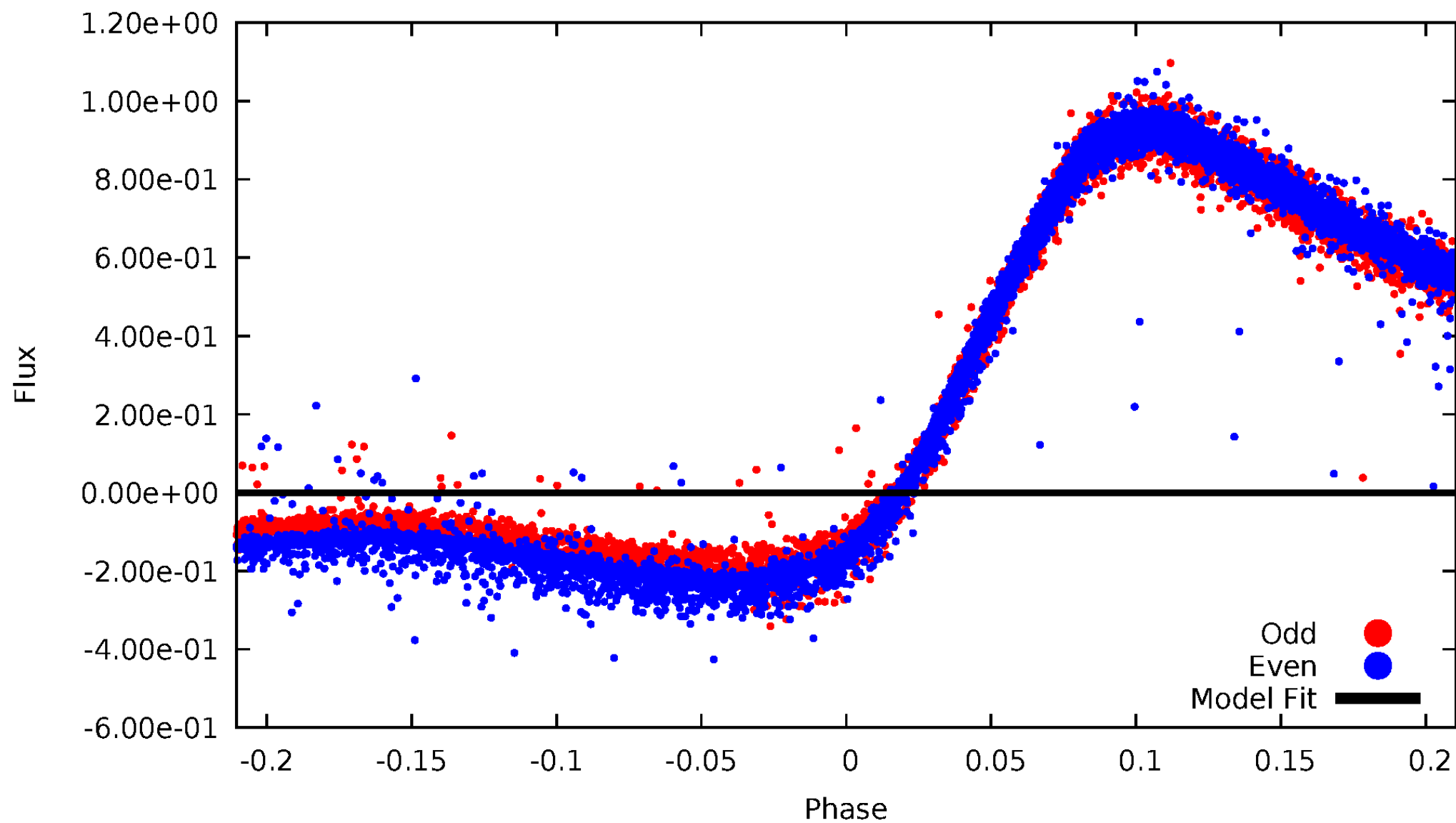


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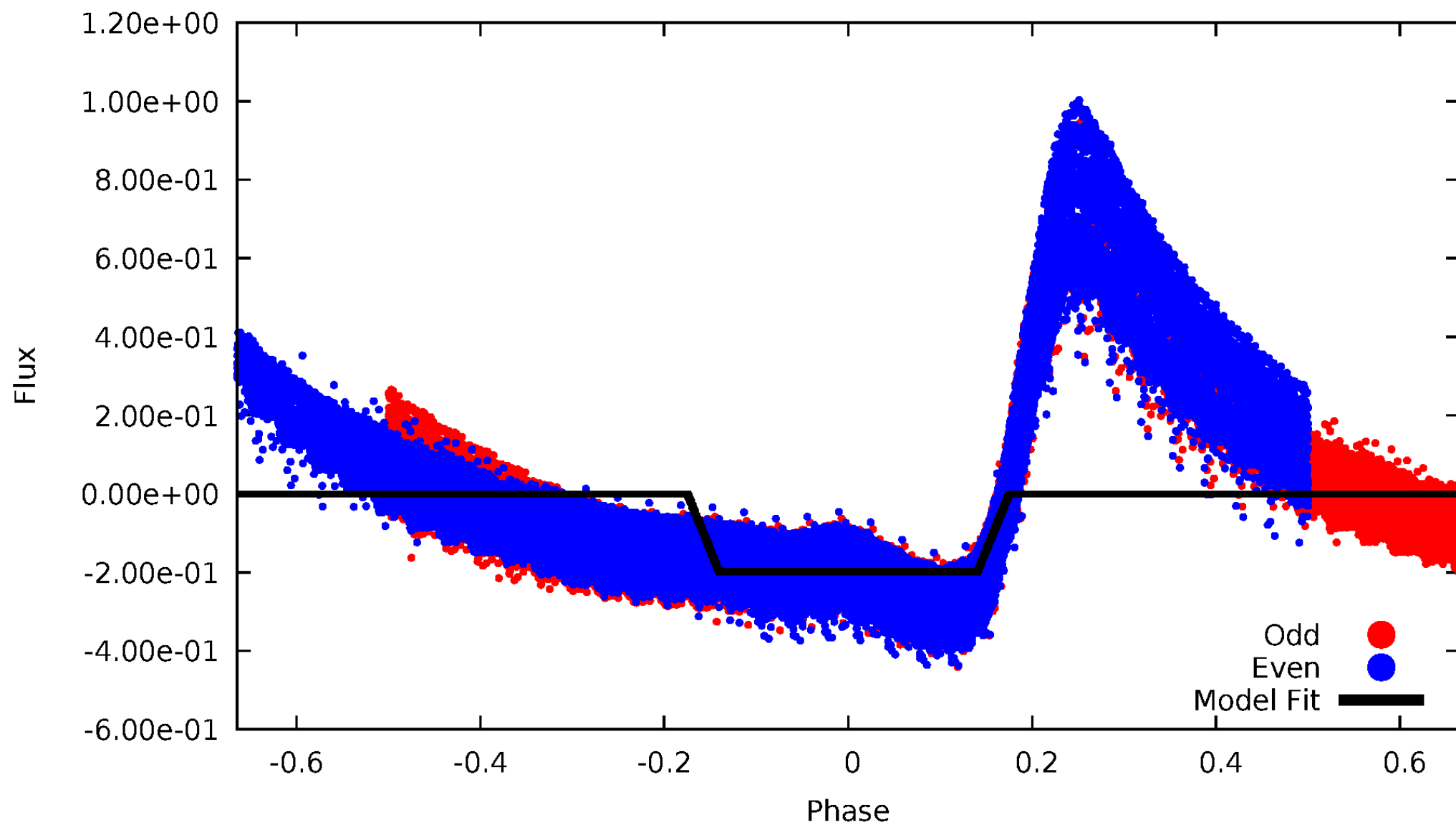
DV Odd/Even

TCE 009508655-02



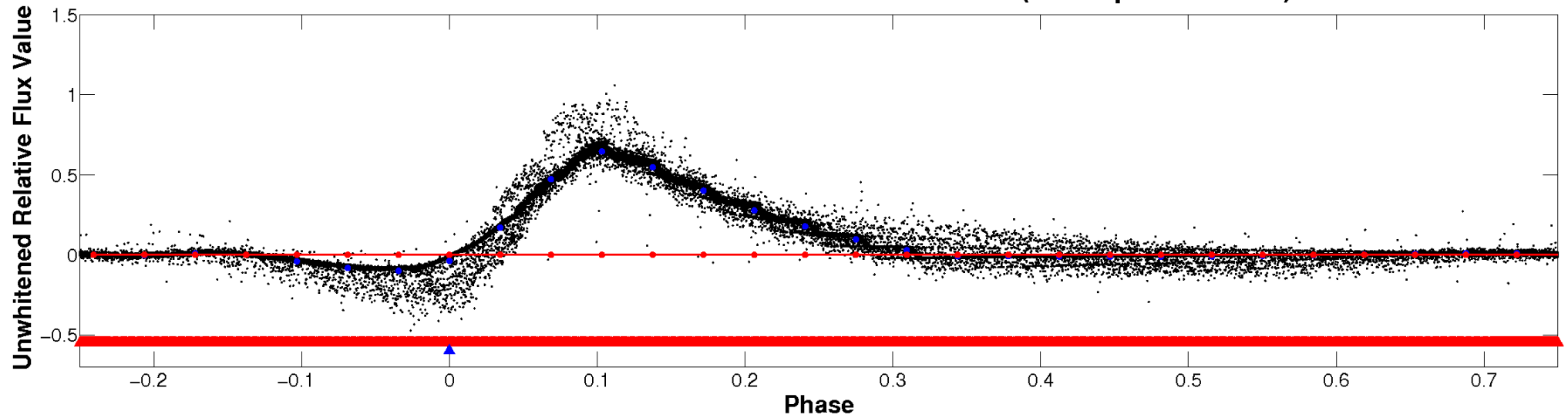
ALT Odd/Even

TCE 009508655-02

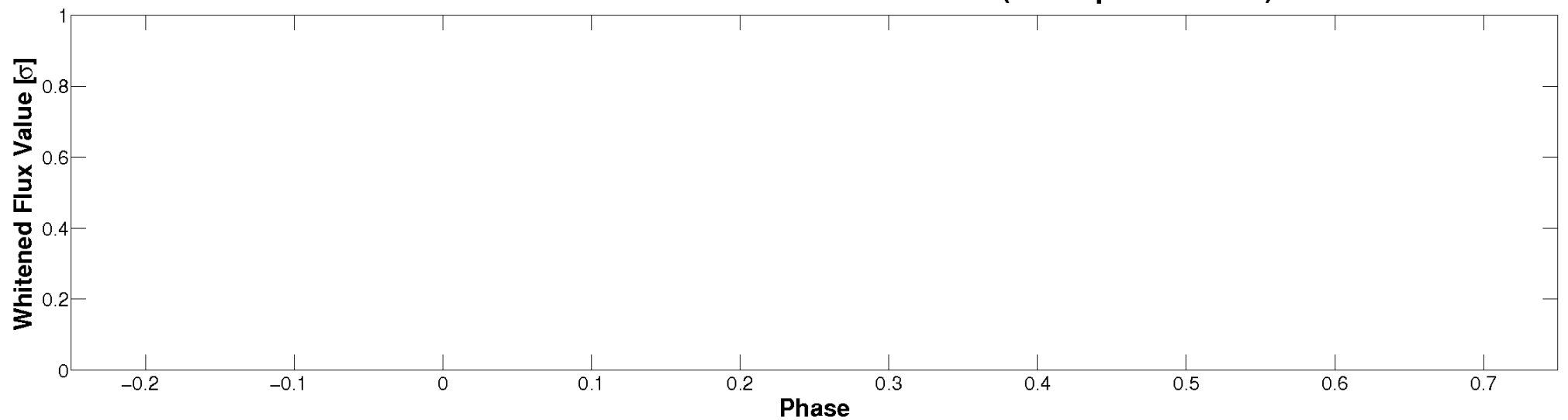


Non-Whitened Vs. Whitened Light Curve

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

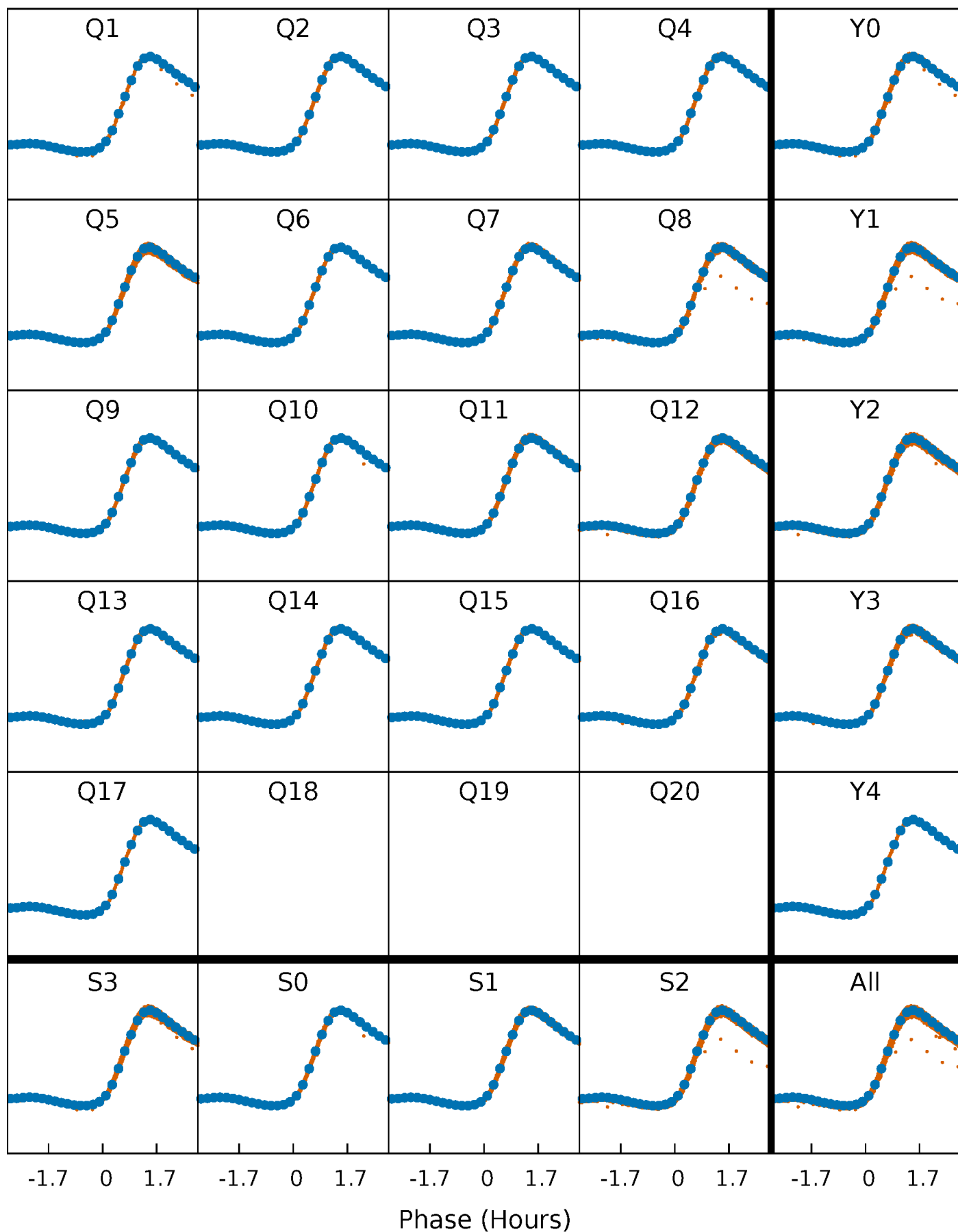


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



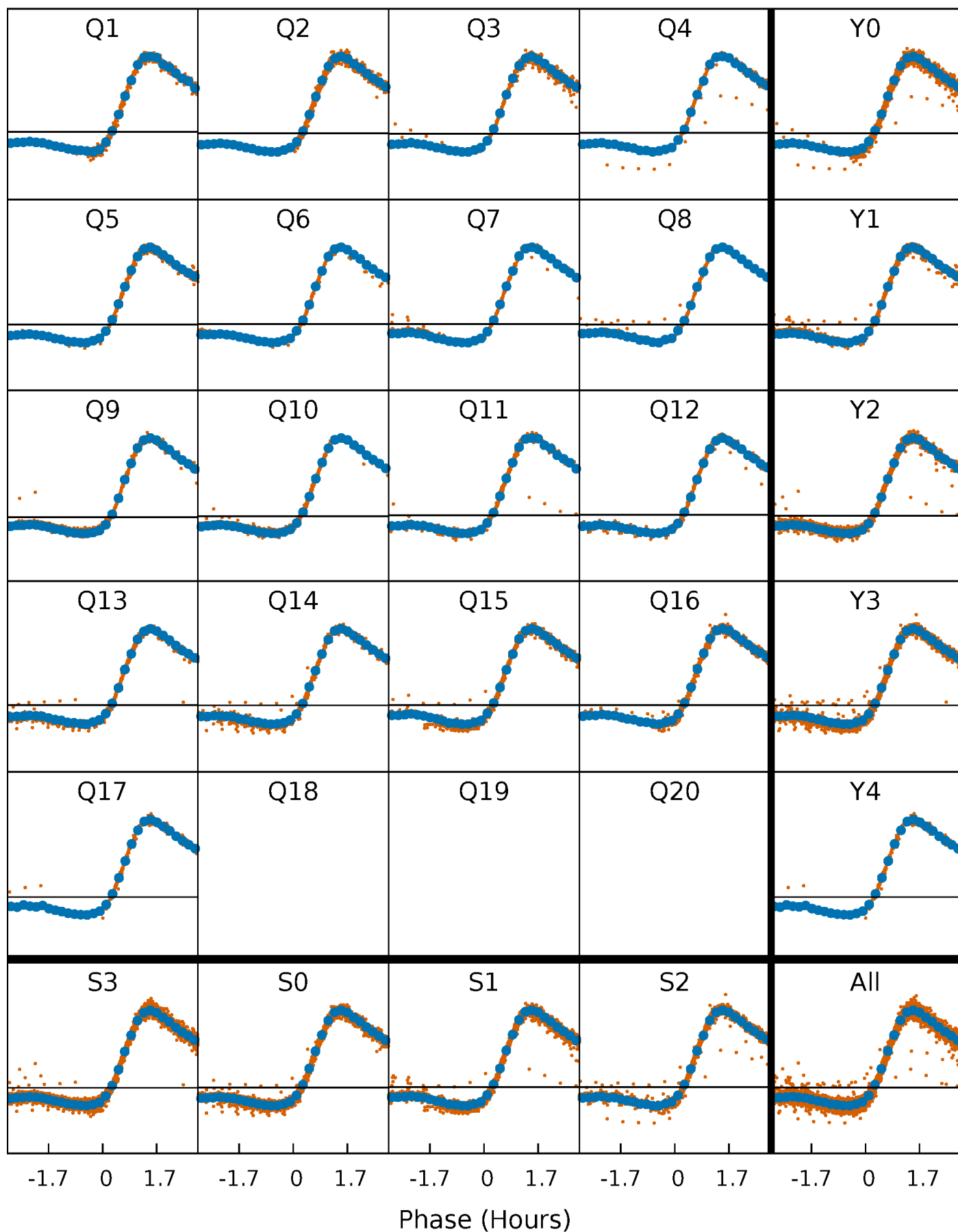
PDC Quarter-Phased Transit Curves

TCE 009508655-02 P= 0.594237 Days $T_0=131.723494$ (BKJD)



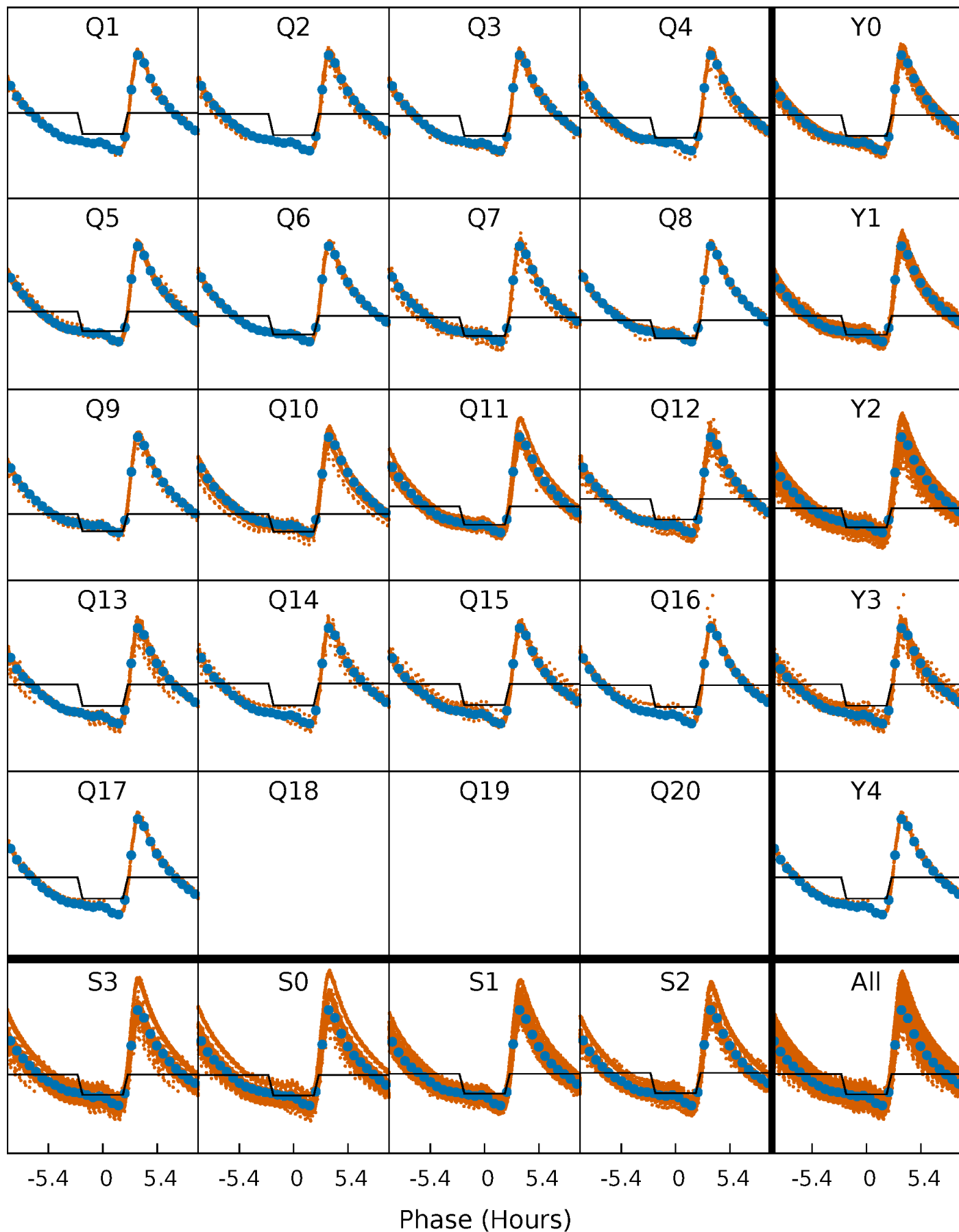
DV Quarter-Phased Transit Curves

TCE 009508655-02 P= 0.594237 Days $T_0=131.723494$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

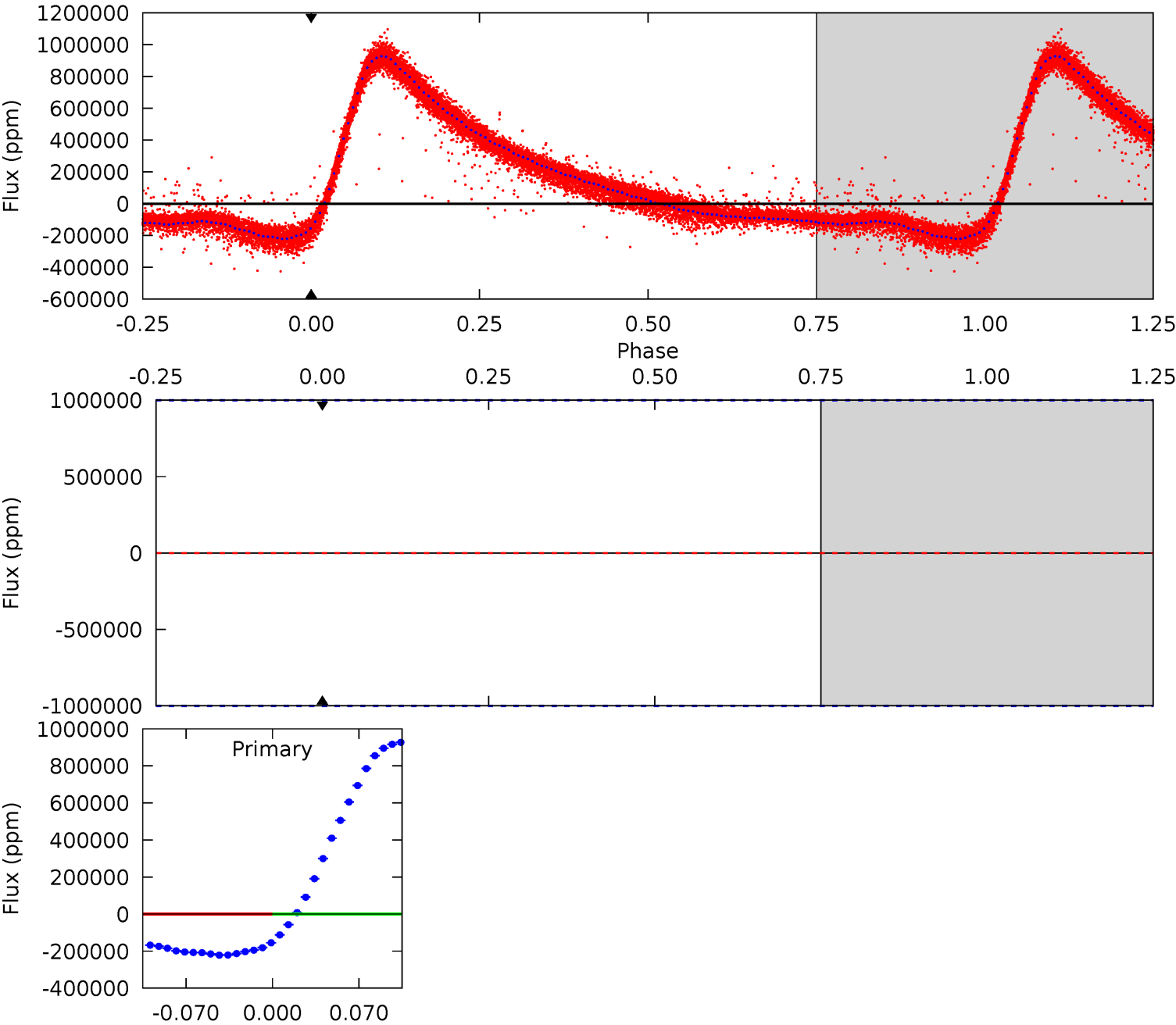
TCE 009508655-02 P= 0.594237 Days $T_0=131.636877$ (BKJD)



DV Model-Shift Uniqueness Test

009508655-02, P = 0.594237 Days, E = 131.129257 Days

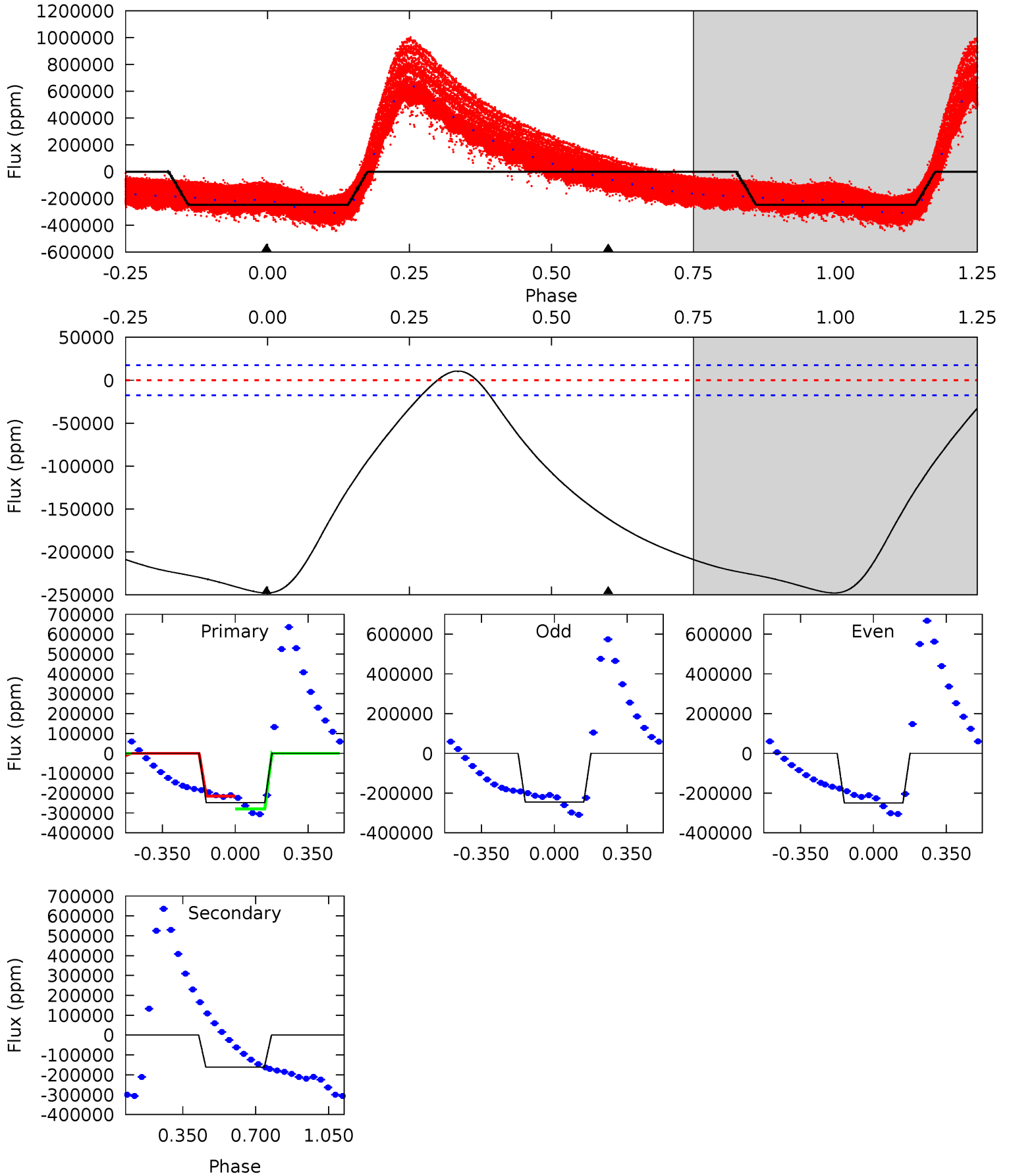
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009508655-02, P = 0.594237 Days, E = 131.636877 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.8	39.5	0	0	4.29	0.93	3.44	60.8	60.8	39.5	39.5	0.64	0.96	0.04	8.93



Stellar Parameters For KIC 009508655

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7549^{+234}_{-313}	$3.977^{+0.301}_{-0.129}$	$-0.480^{+0.250}_{-0.300}$	$2.086^{+0.483}_{-0.786}$	$1.504^{+0.182}_{-0.311}$	$0.233^{+0.469}_{-0.095}$
	+3%/-4%	+8%/-3%	+52%/-62%	+23%/-38%	+12%/-21%	+201%/-41%
Source	KIC0	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 009508655-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$23.39^{+20.69}_{-15.47}$	5262^{+369}_{-481}	4666^{+18795}_{-25329}	$0.803^{+40.833}_{-34.536}$
Alt.	-161242 ± 4077	$96.50^{+28.78}_{-25.87}$	5229^{+389}_{-482}	7162^{+1331}_{-873}	$2.826^{+2.164}_{-1.132}$

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

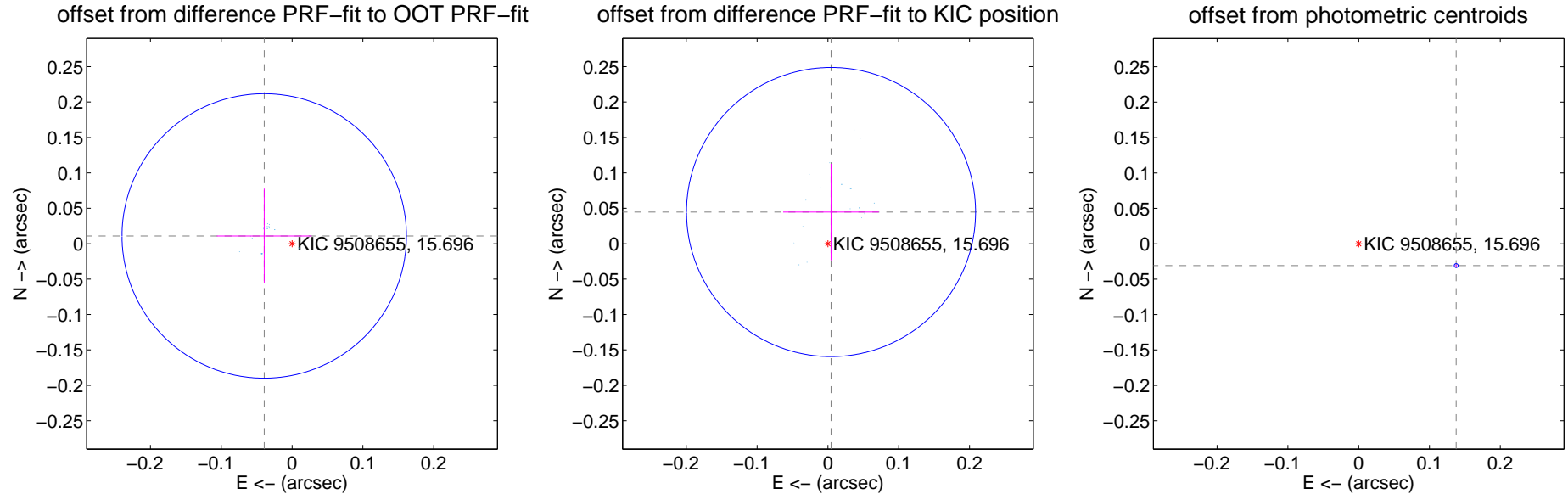
DV Centroid Data

Supplemental centroid analysis for 009508655-02. Kepler magnitude: 15.70. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

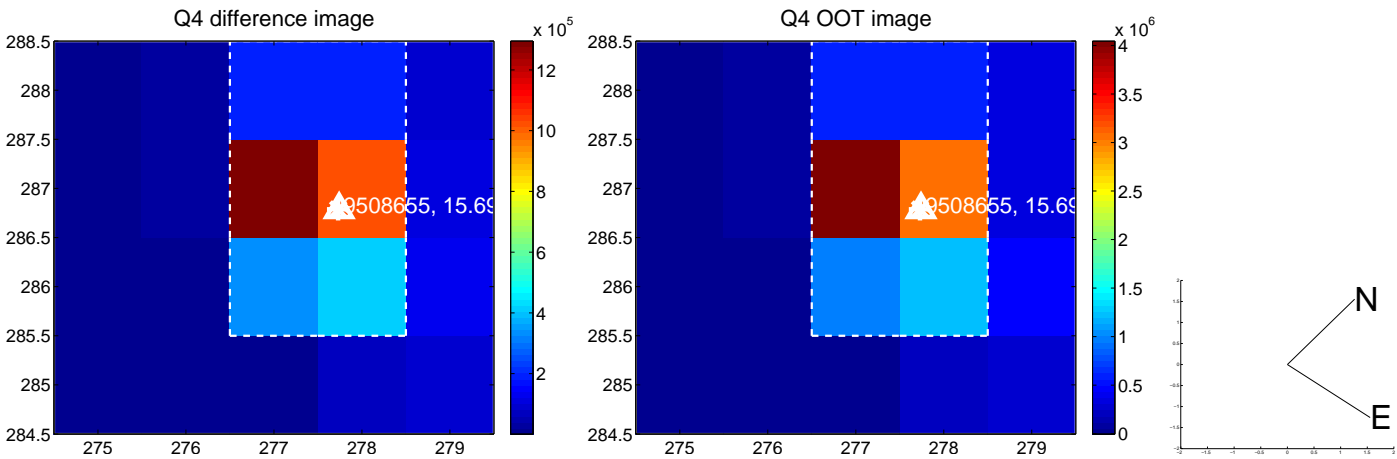
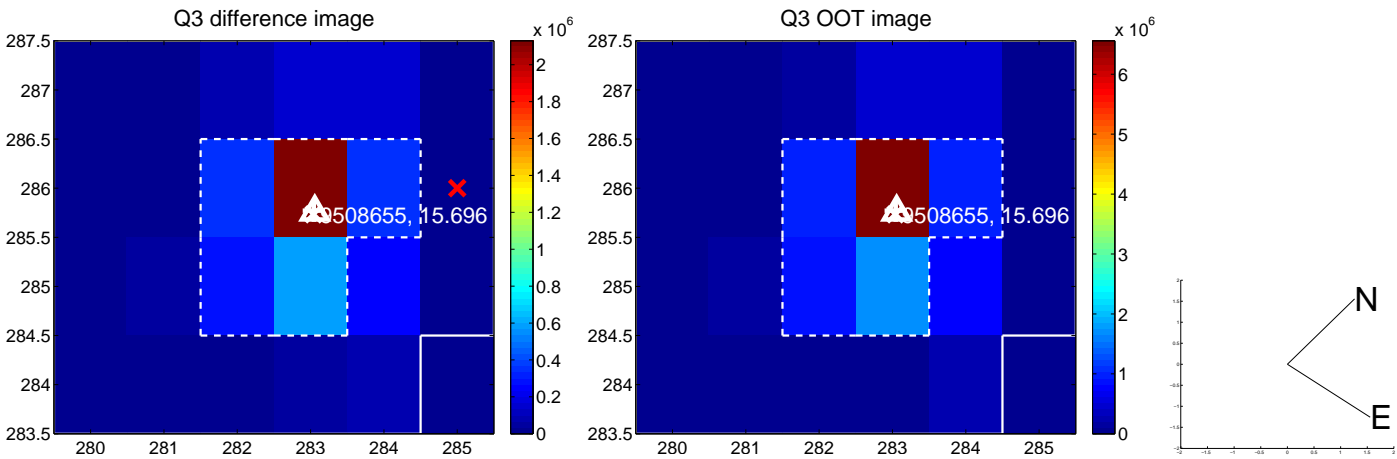
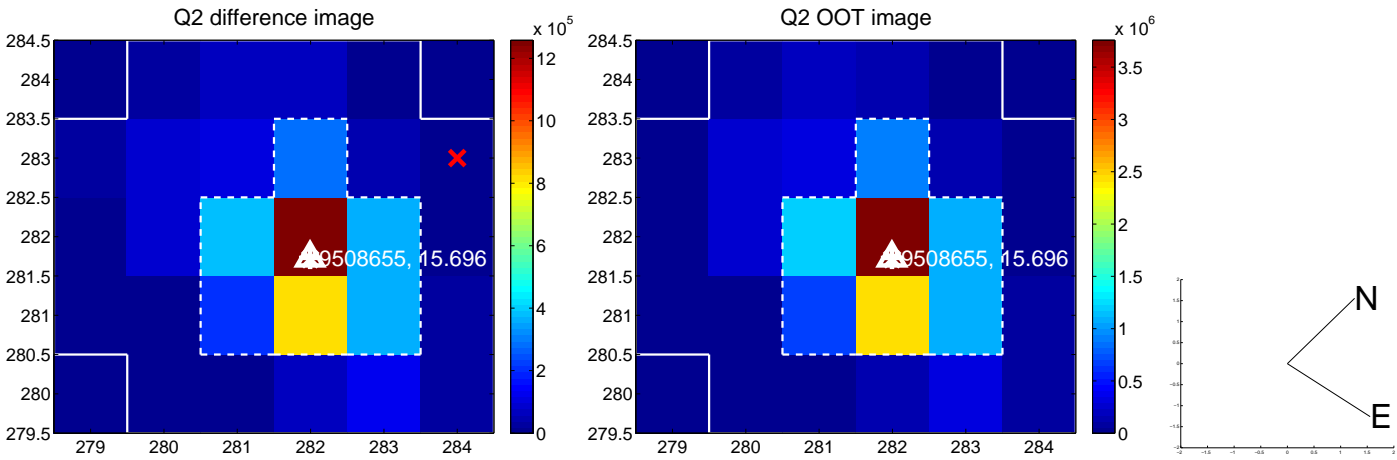
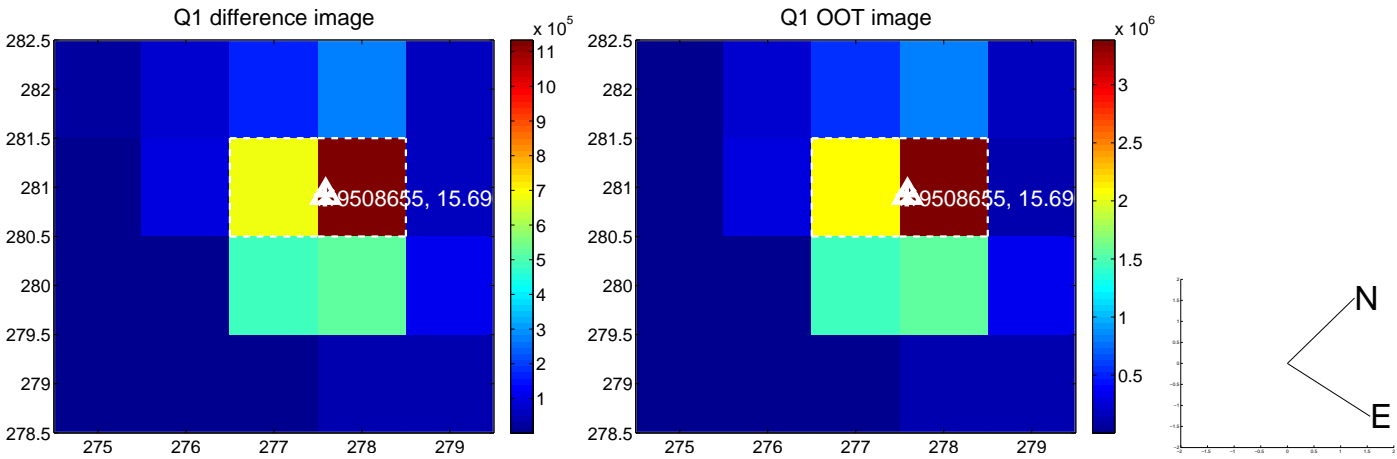
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.041 ± 0.067	0.61	0.039 ± 0.067	0.011 ± 0.067
PRF-fit source offset from KIC position	0.045 ± 0.068	0.66	-0.004 ± 0.068	0.045 ± 0.068
photometric centroid source offset	0.14 ± 0.00	155.78	-0.14 ± 0.00	-0.03 ± 0.00

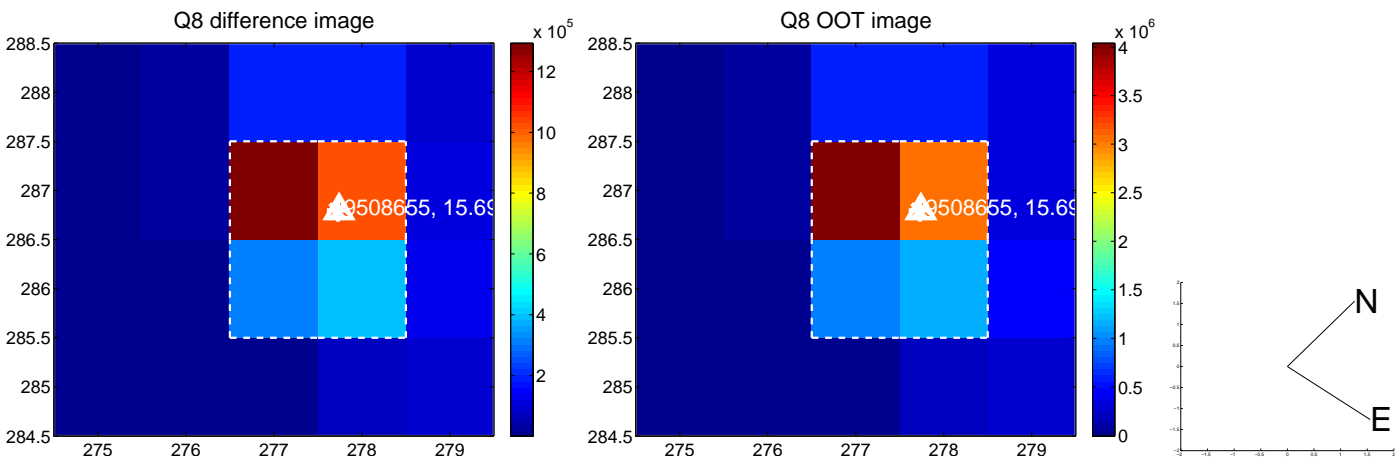
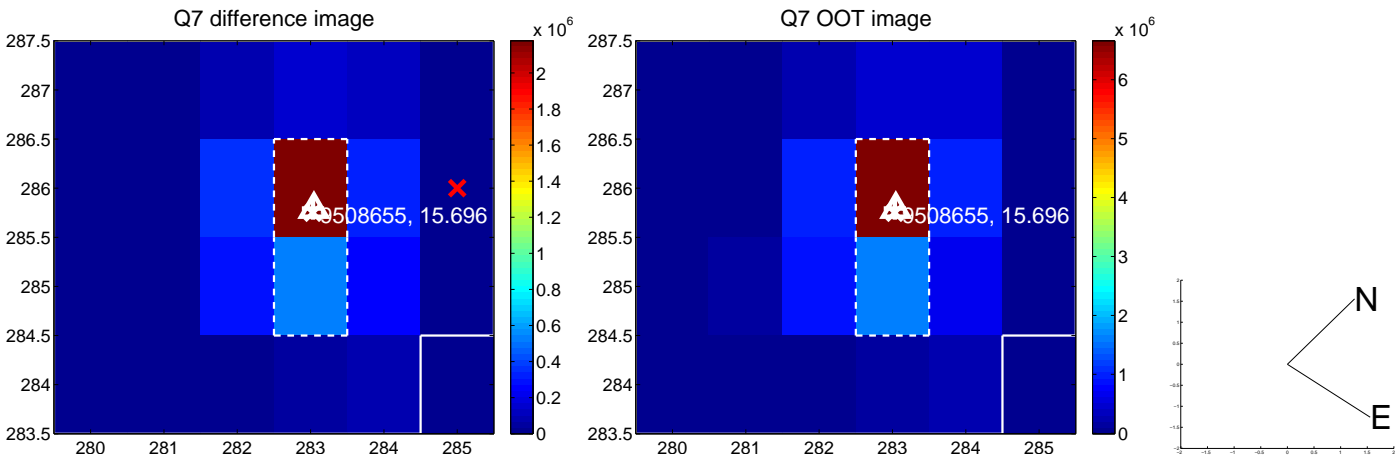
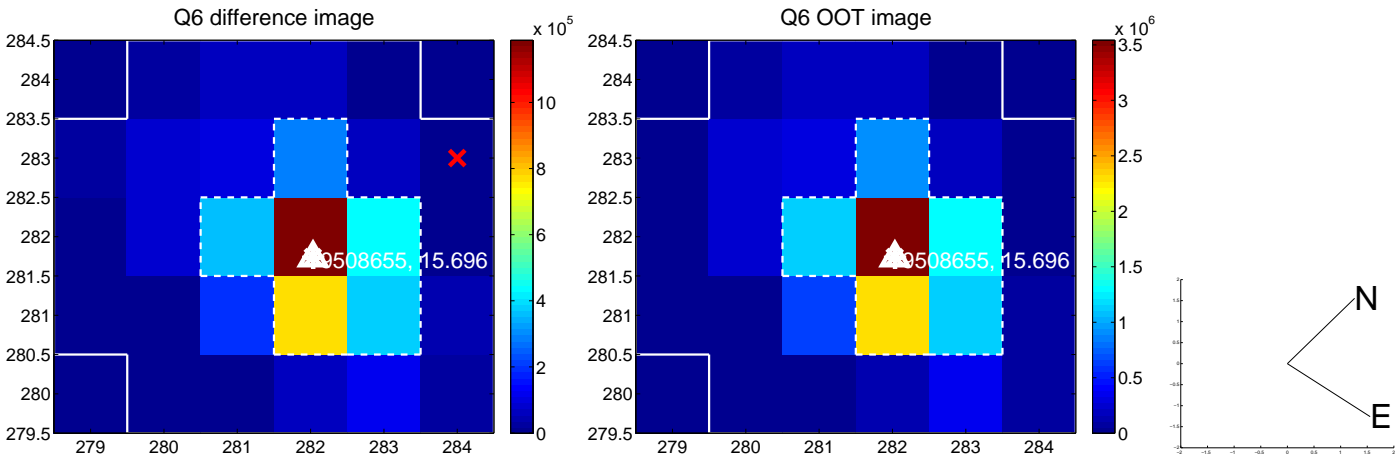
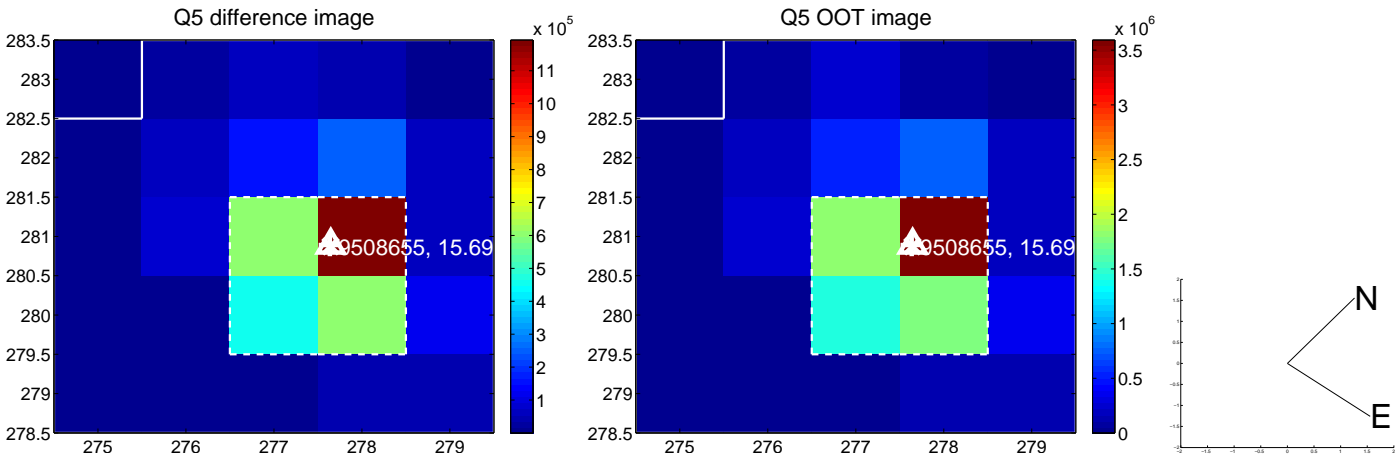


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

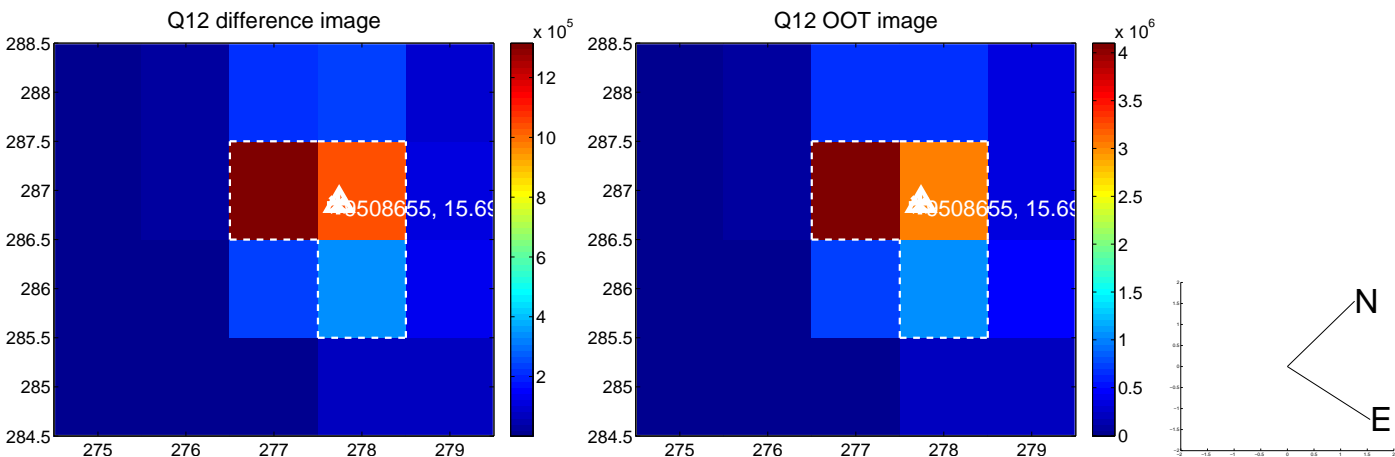
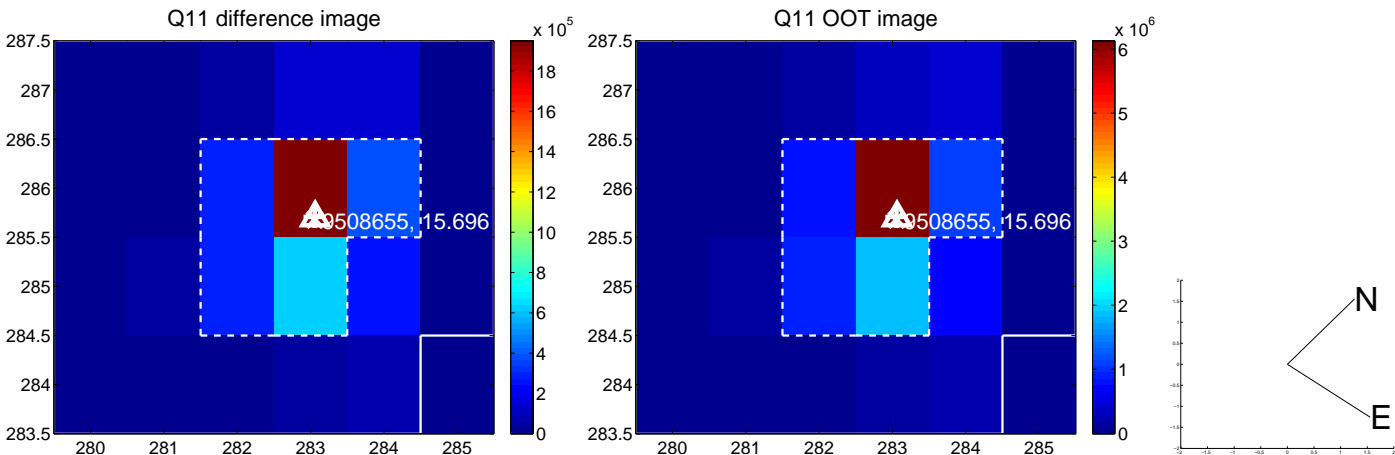
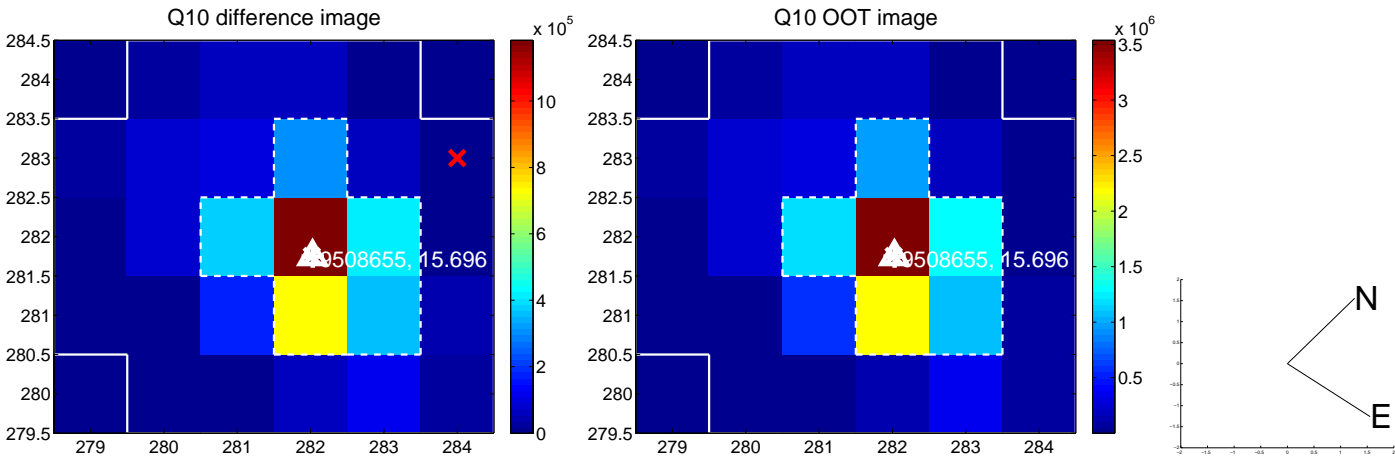
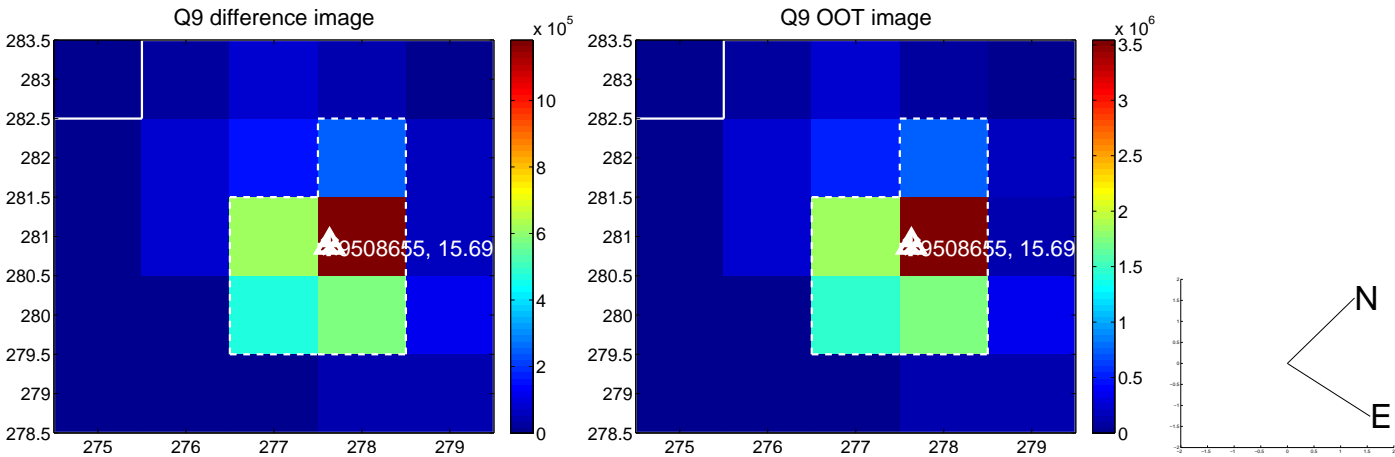
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



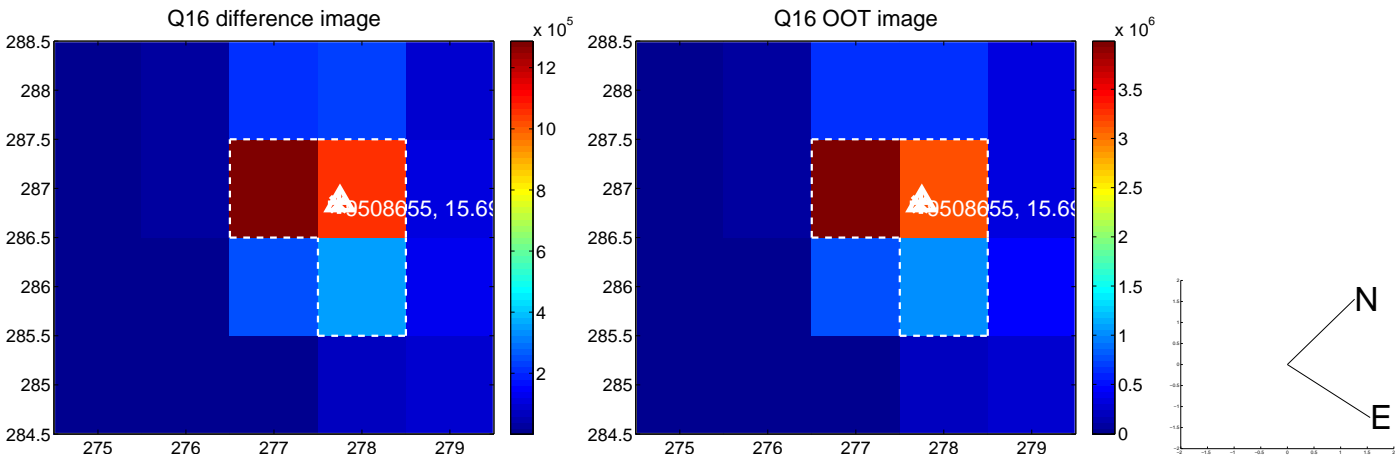
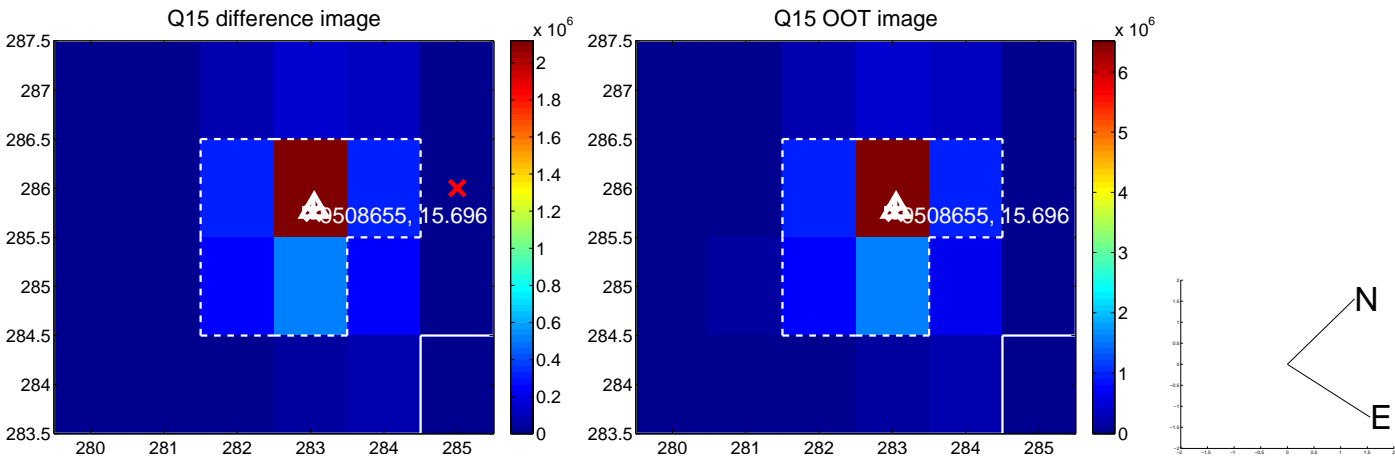
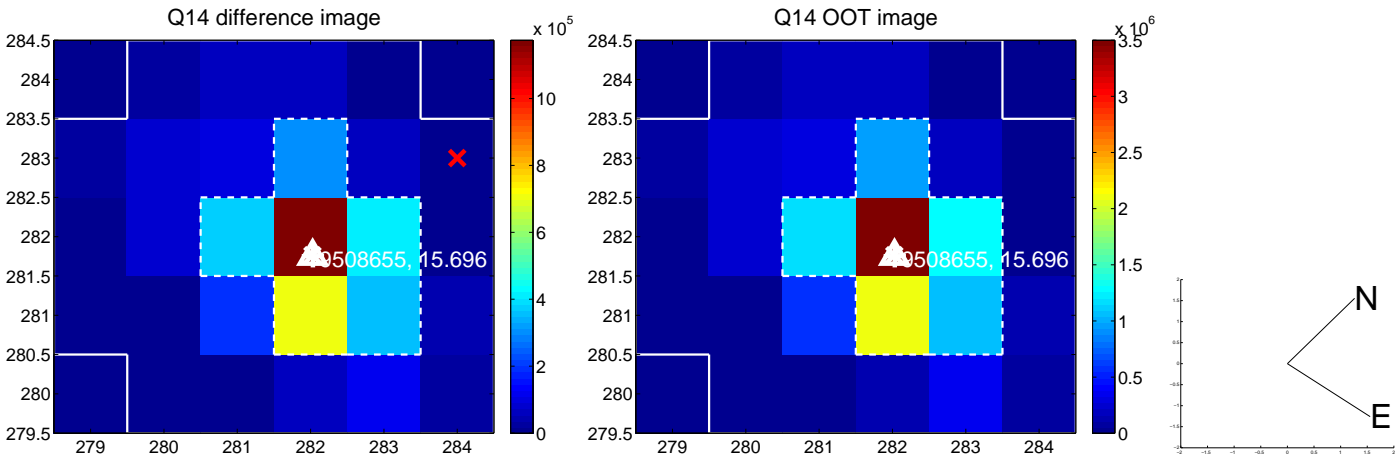
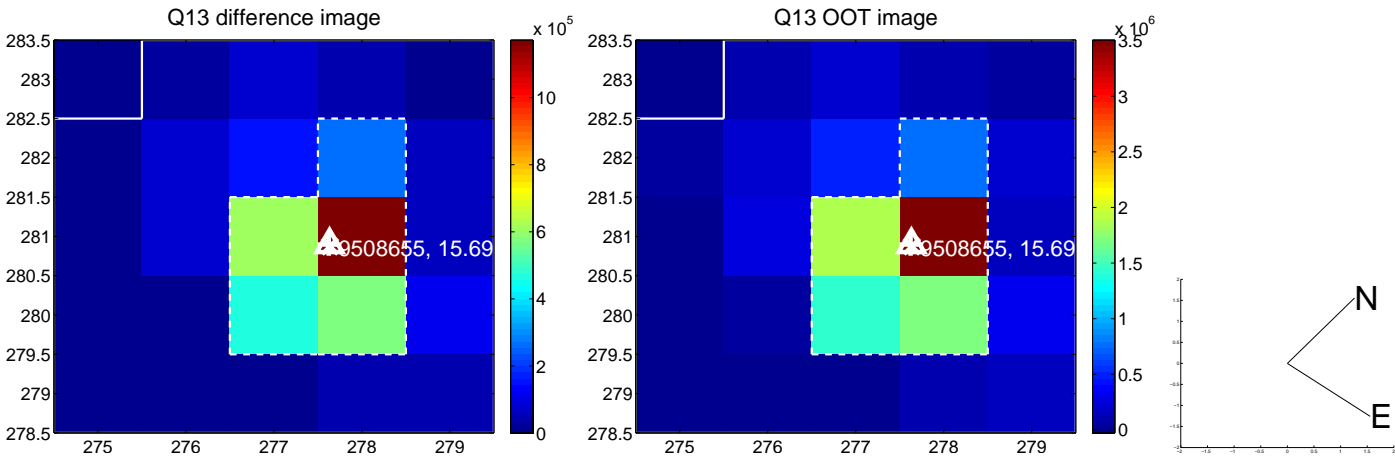
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



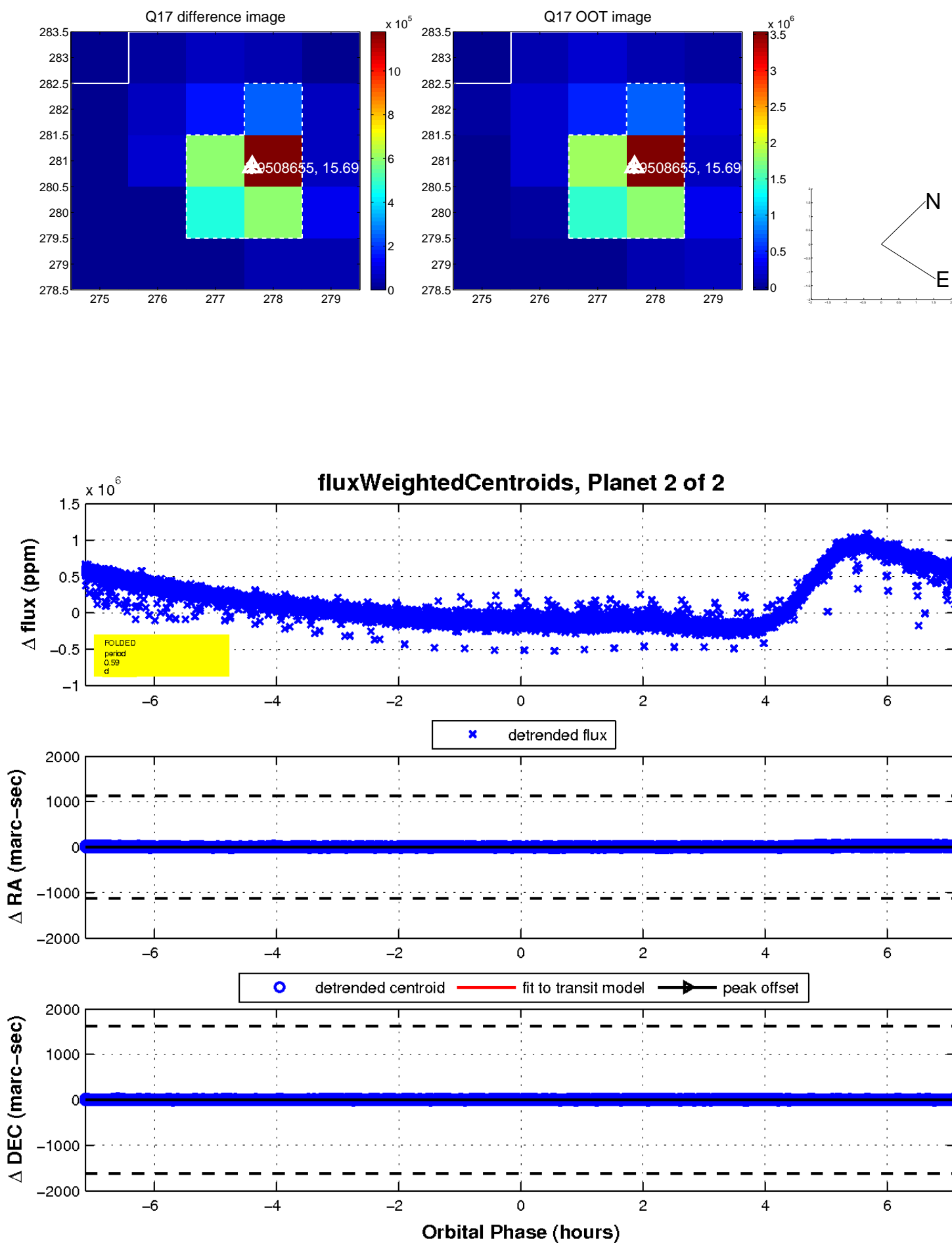
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

