

KIC 005475645

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})
005475645-01	OBS	No	264.449607	309.032191	230.4	2.871	18.8	5.6	0.70	5513	1.19	0.75
005475645-02	OBS	No	465.624121	431.572991	487.3	21.871	19.2	5.2	0.70	5513	1.67	0.35
005475645-03	OBS	No	496.336906	584.765769	463.8	7.924	15.5	7.8	0.70	5513	1.77	0.32
005475645-04	OBS	No	411.601584	517.453354	142.0	4.013	13.8	2.7	0.70	5513	0.87	0.42
005475645-05	OBS	No	411.564945	518.063228	525.8	1.643	13.8	11.1	0.70	5513	1.65	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005475645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005475645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005475645-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

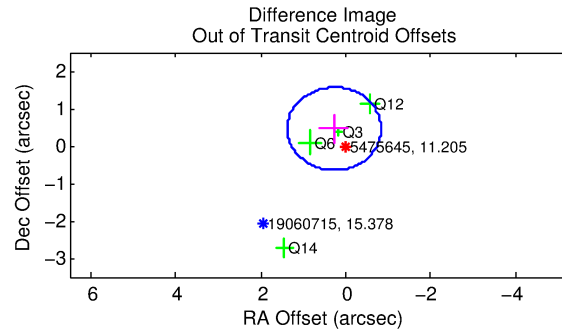
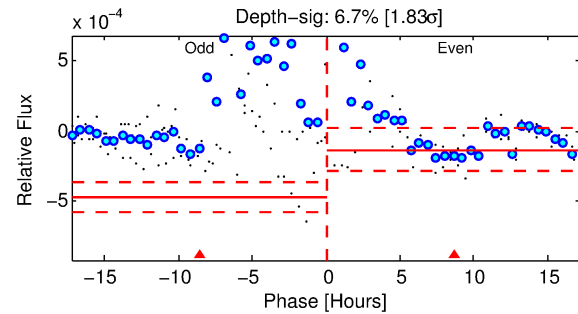
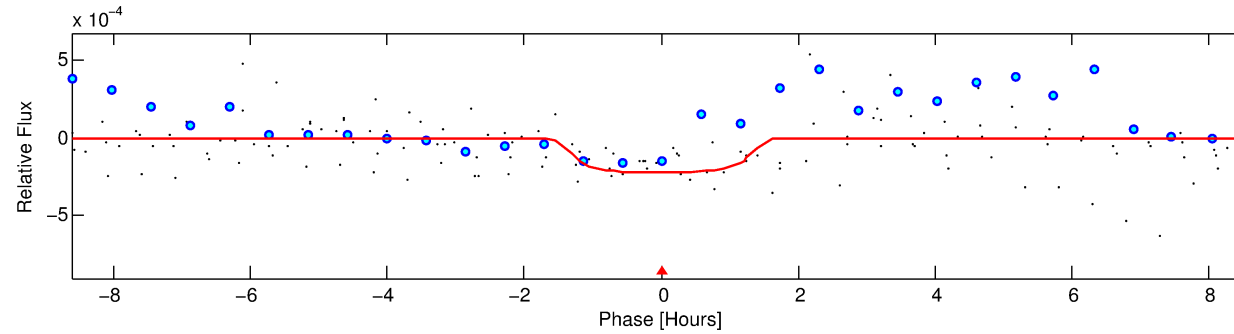
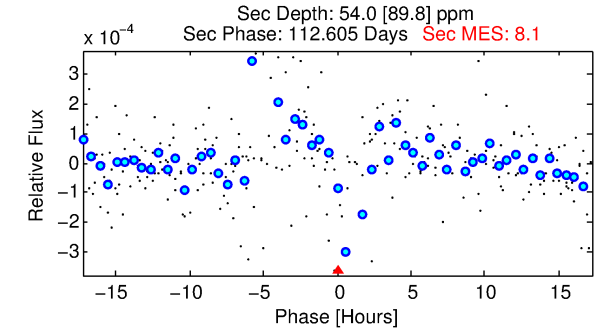
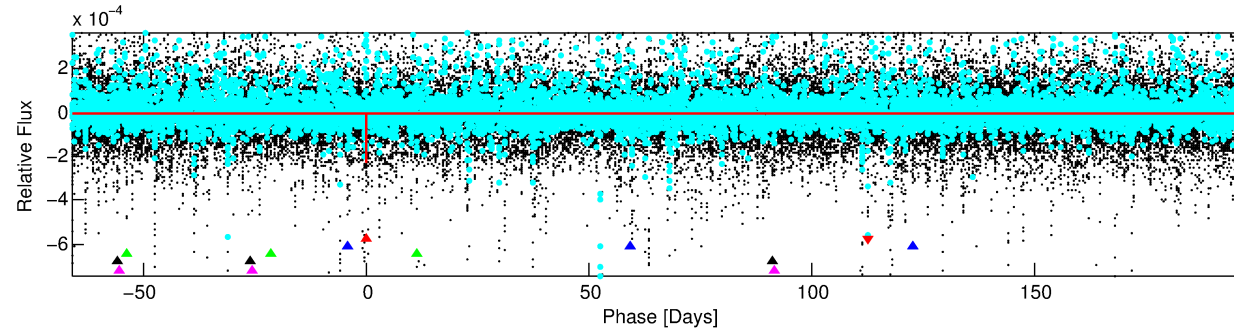
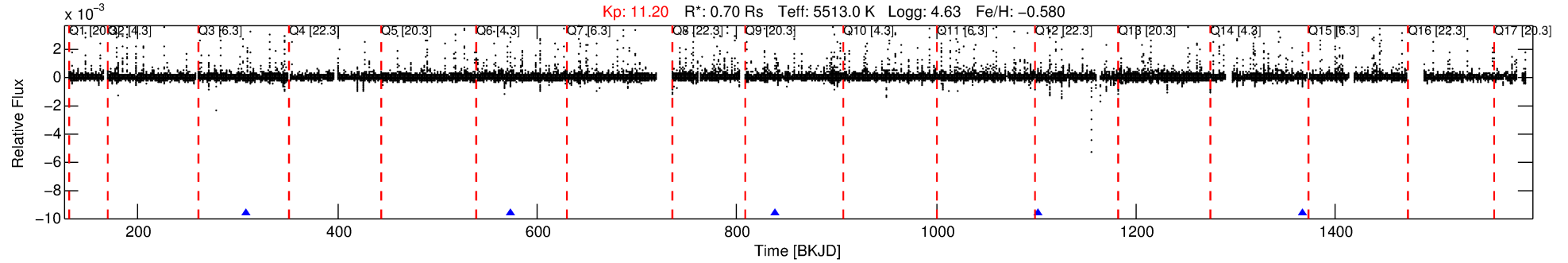
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005475645-01

No Significant Match Found

DV One-Page Summary

KIC: 5475645 Candidate: 1 of 5 Period: 264.450 d



DV Fit Results:

Period = 264.44961 [0.00427] d
Epoch = 309.0322 [0.0102] BKJD
 $R_p/R^* = 0.0155$ [0.0301]
 $a/R^* = 434.58$ [3860.61]
 $b = 0.81$ [3.92]
 $S_{\text{eff}} = 0.75$ [0.17]
 $T_{\text{eq}} = 237$ [14] K
 $R_p = 1.19$ [2.32] R_e
 $a = 0.7396$ [0.1037] AU
 $A_g = 11474.89$ [48630.65] [0.24 σ]
 $T_{\text{eff}} = 3797$ [4020] K [0.89 σ]

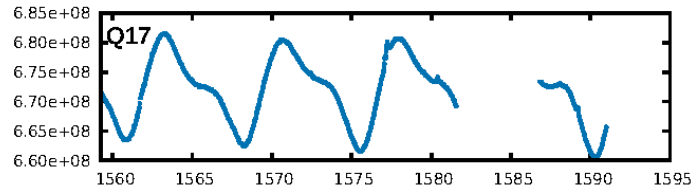
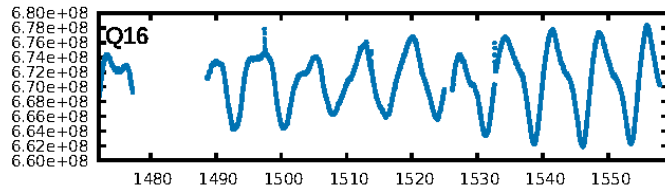
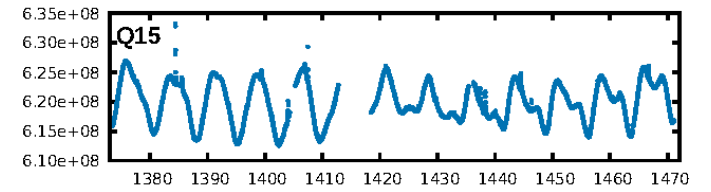
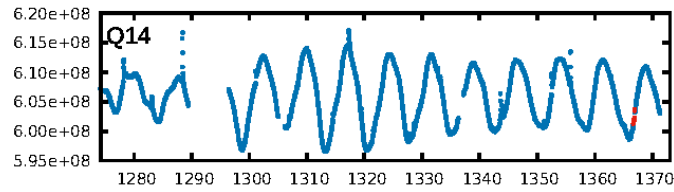
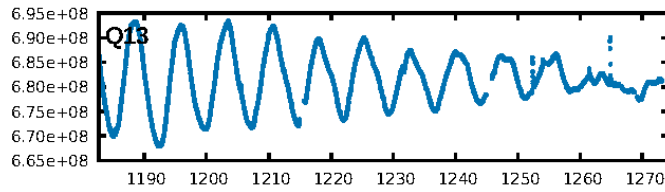
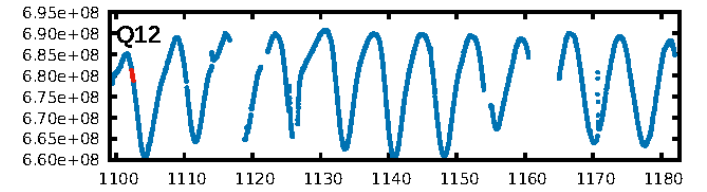
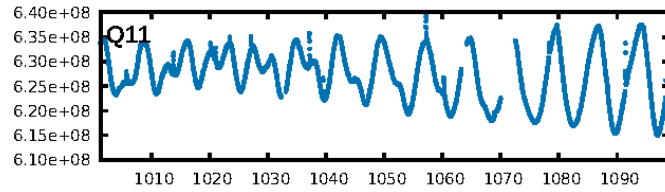
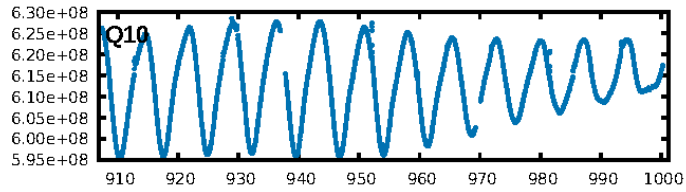
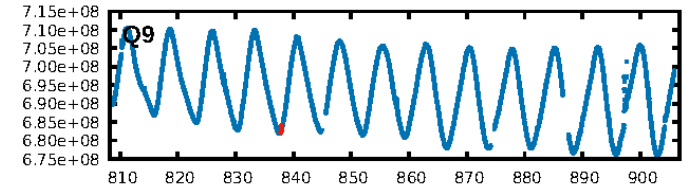
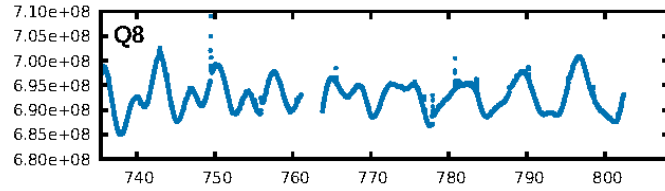
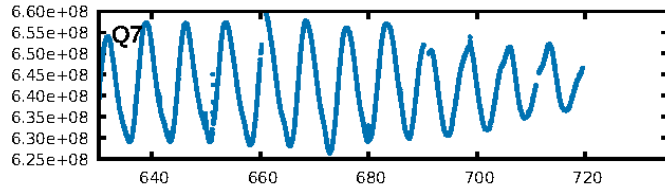
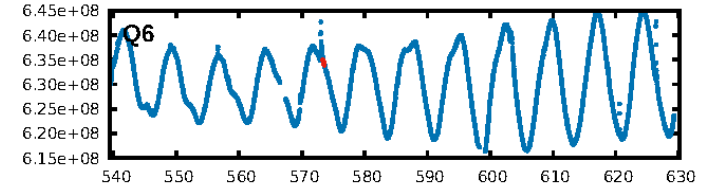
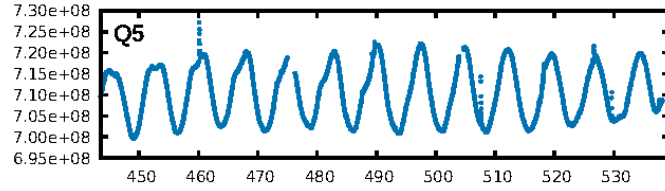
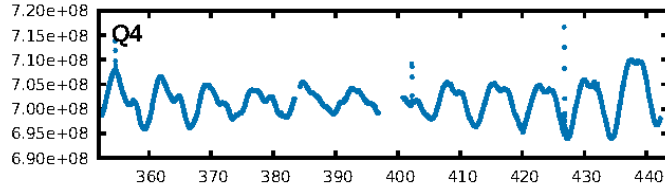
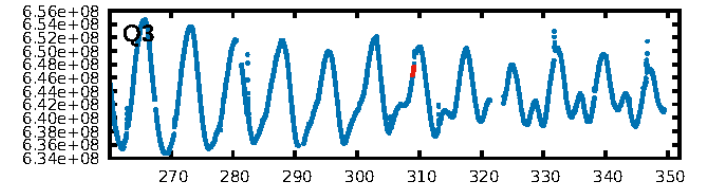
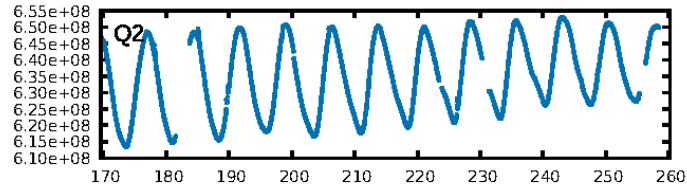
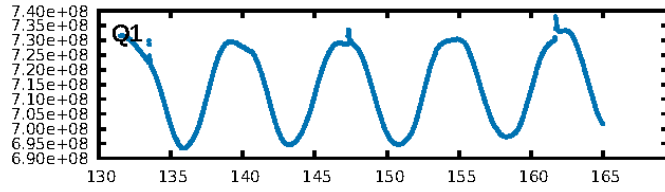
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1067.42 σ]
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 71.4%
Bootstrap-pfa: 1.56e-11
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.73
Centroid-sig: 46.9%
Centroid-so: 1.681 arcsec [0.36 σ]
OotOffset-rm: 0.530 arcsec [1.44 σ]
OotOffset-st: 2/1/1/0 [4]
KicOffset-rm: 0.461 arcsec [1.03 σ]
KicOffset-st: 2/1/1/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [5/5]

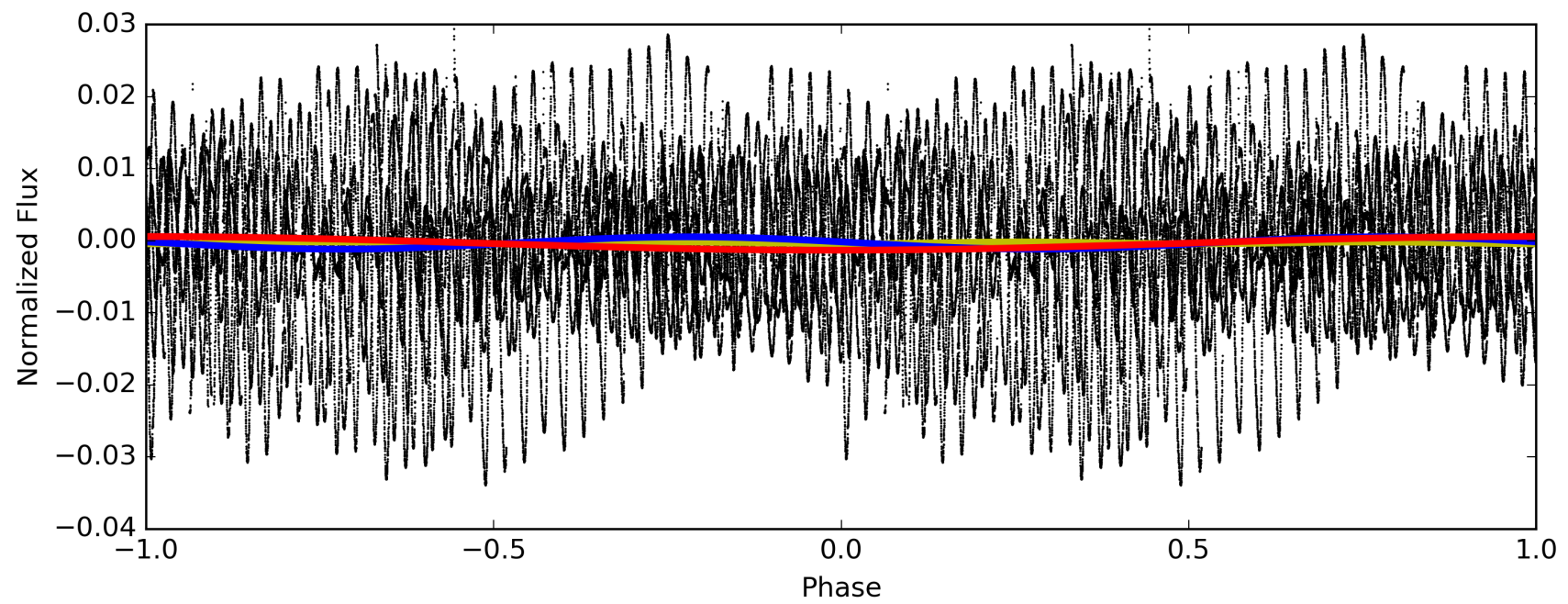
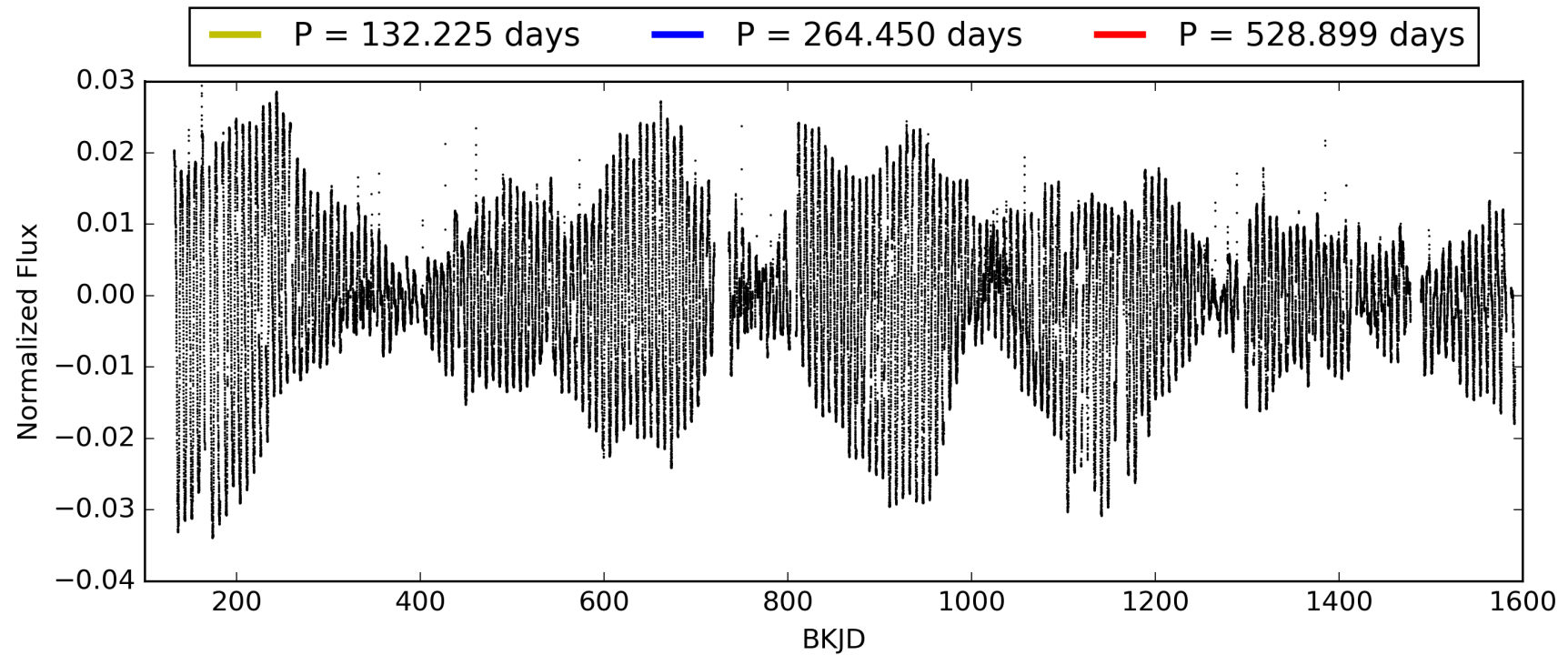
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:31:33 Z

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

TCE 005475645-01, PDC Light Curves

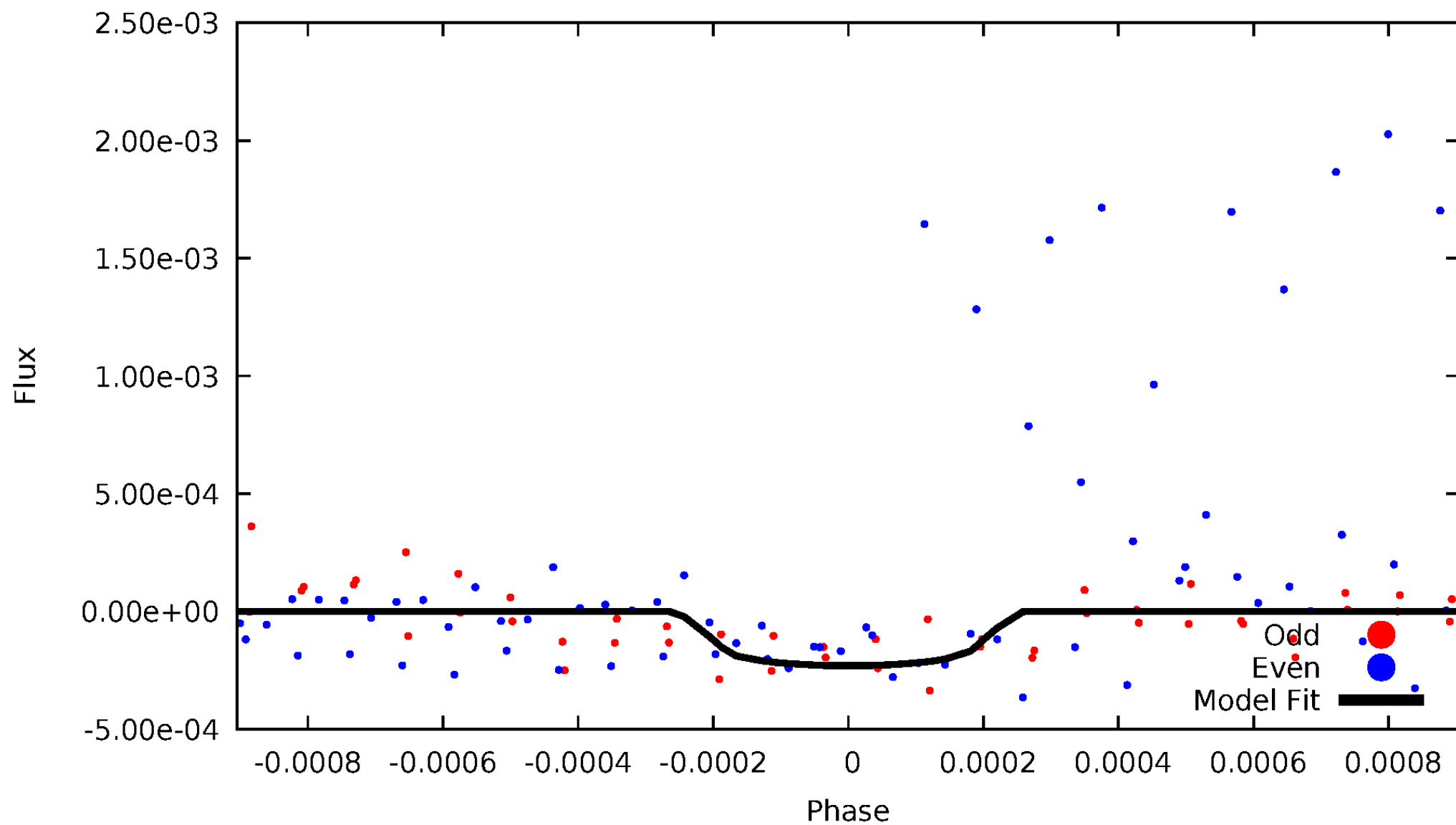


TCE 005475645-01



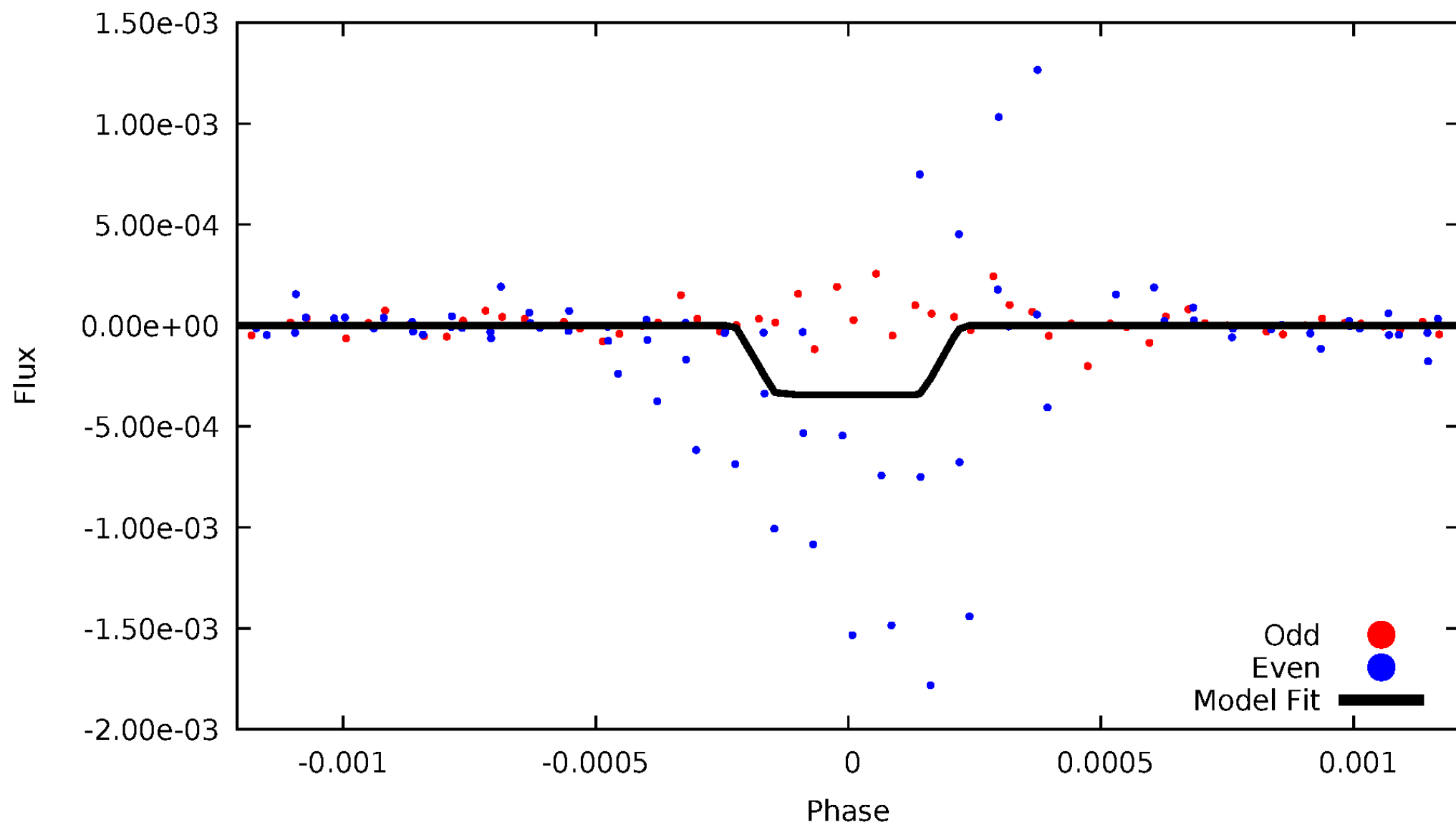
DV Odd/Even

TCE 005475645-01



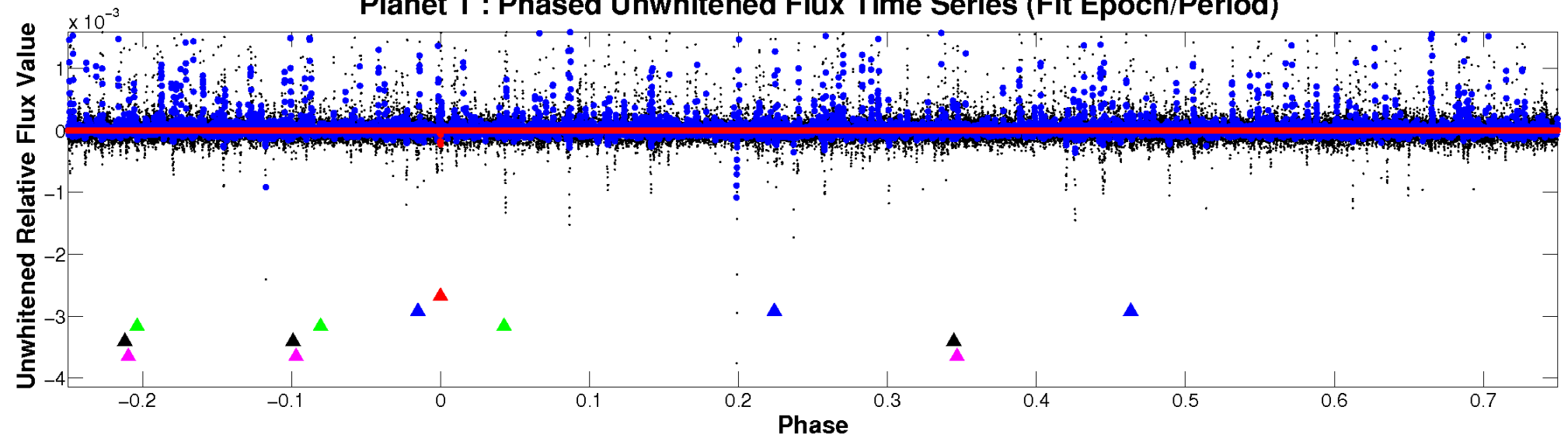
ALT Odd/Even

TCE 005475645-01

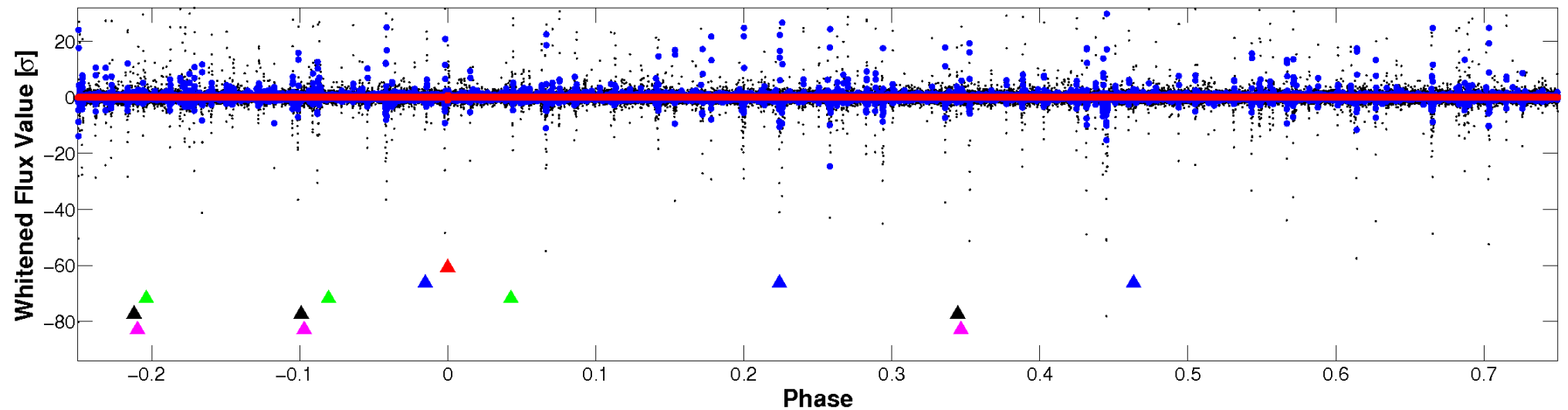


Non-Whitened Vs. Whitened Light Curve

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

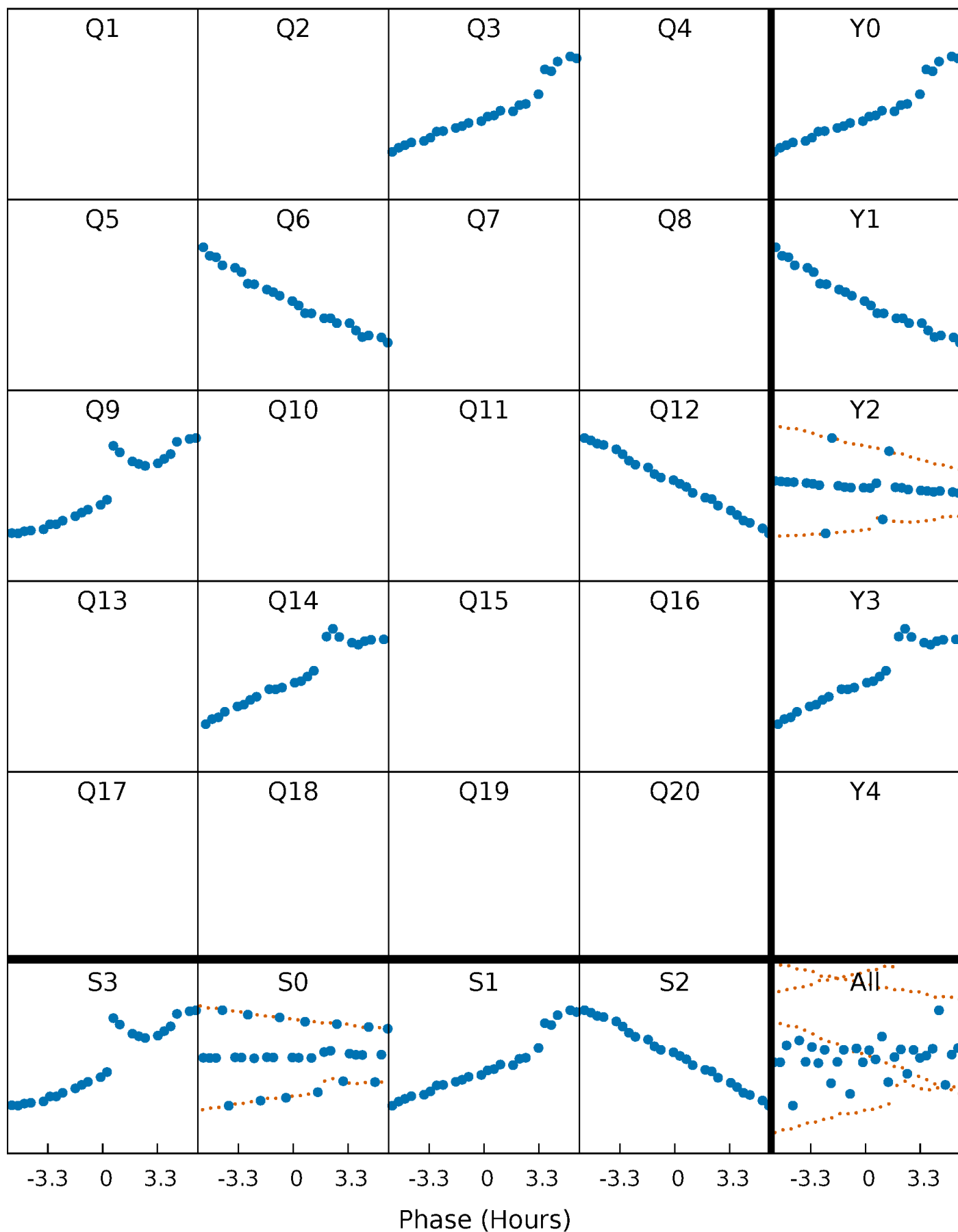


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



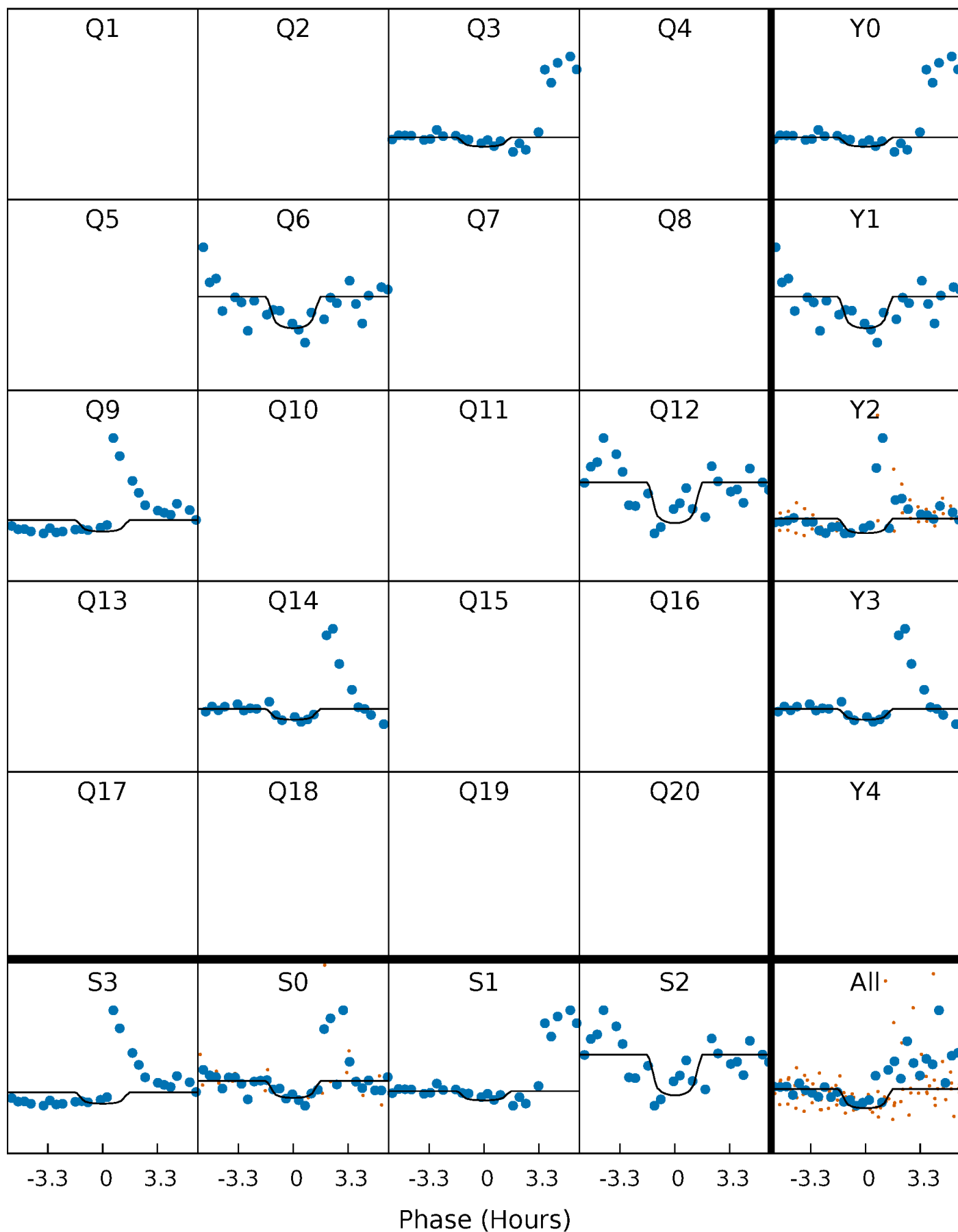
PDC Quarter-Phased Transit Curves

TCE 005475645-01 P=264.449607 Days $T_0=309.032192$ (BKJD)



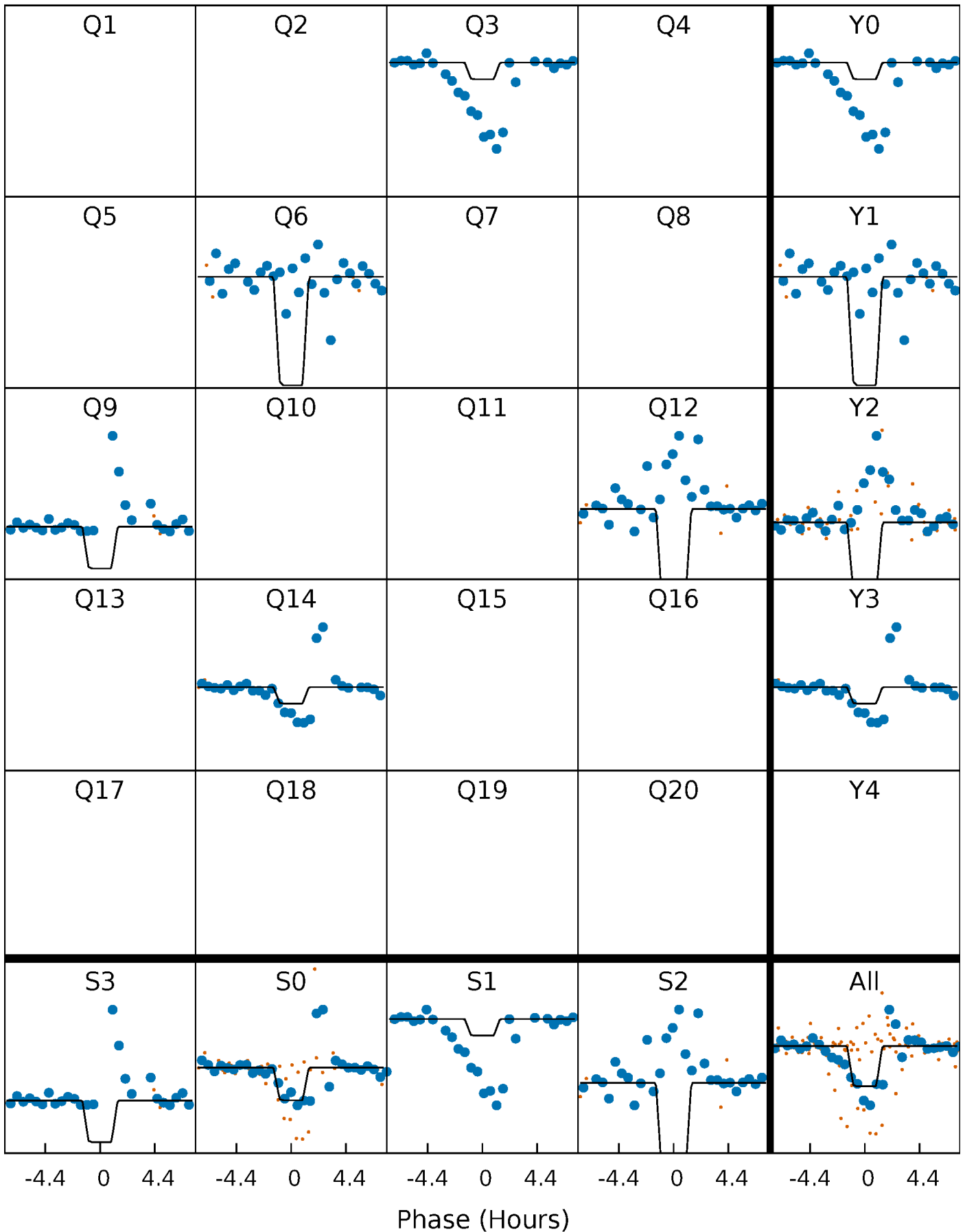
DV Quarter-Phased Transit Curves

TCE 005475645-01 P=264.449607 Days $T_0=309.032192$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

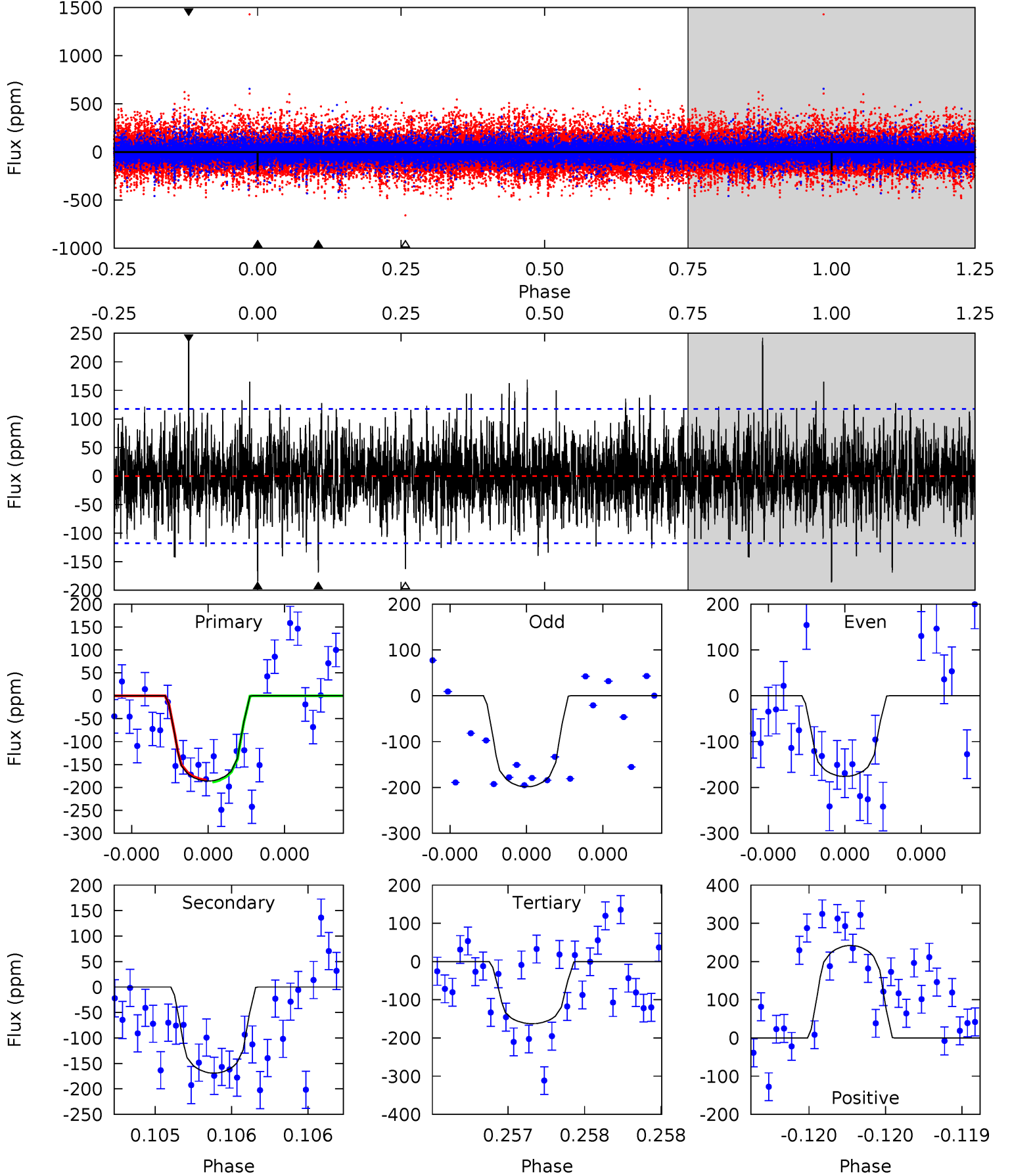
TCE 005475645-01 P=264.433084 Days $T_0=309.098389$ (BKJD)



DV Model-Shift Uniqueness Test

005475645-01, P = 264.449607 Days, E = 44.582585 Days

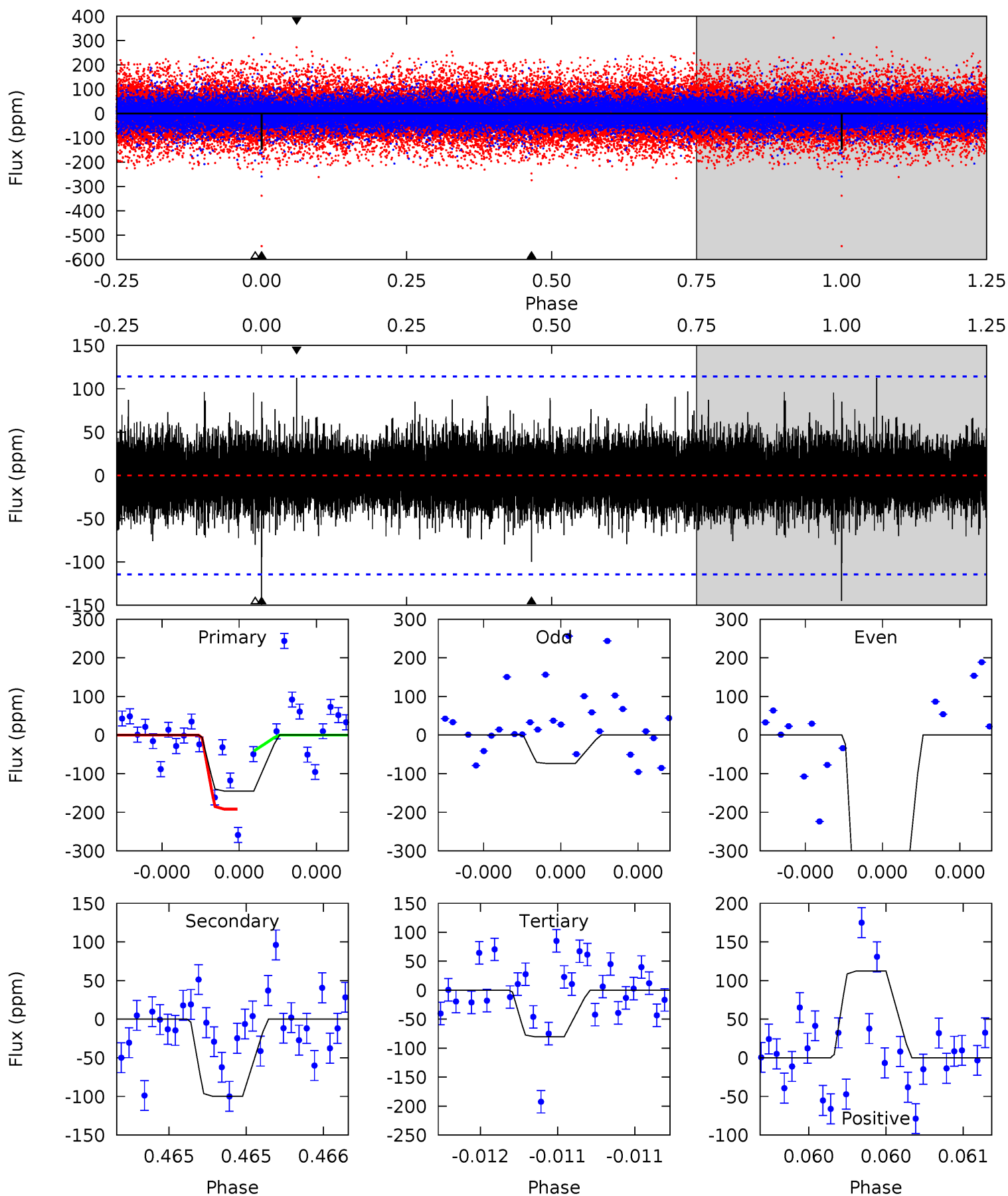
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.83	8.02	7.71	11.5	5.58	3.50	1.90	1.11	-2.65	0.30	-3.46	0.43	0.38	0.57	0.10



Alt Model-Shift Uniqueness Test

005475645-01, P = 264.433084 Days, E = 44.665305 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.09	4.88	3.92	5.50	5.59	3.50	0.98	3.17	1.59	0.96	-0.62	17.4	17.7	0.44	3.22



Stellar Parameters For KIC 005475645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5513^{+147}_{-147}	$4.630^{+0.035}_{-0.112}$	$-0.580^{+0.300}_{-0.300}$	$0.704^{+0.117}_{-0.050}$	$0.770^{+0.081}_{-0.066}$	$3.111^{+0.463}_{-1.059}$
	+3%/-3%	+1%/-2%	+52%/-52%	+17%/-7%	+11%/-9%	+15%/-34%
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 005475645-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-169 ± 21	$2.18^{+1.98}_{-1.38}$	335^{+14}_{-12}	4087^{+2229}_{-797}	11002^{+70104}_{-8070}
Alt.	-100 ± 20	$2.31^{+2.04}_{-1.50}$	335^{+16}_{-12}	3646^{+1775}_{-649}	5461^{+38016}_{-3929}

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 $A_{obs} \gg 1.0$

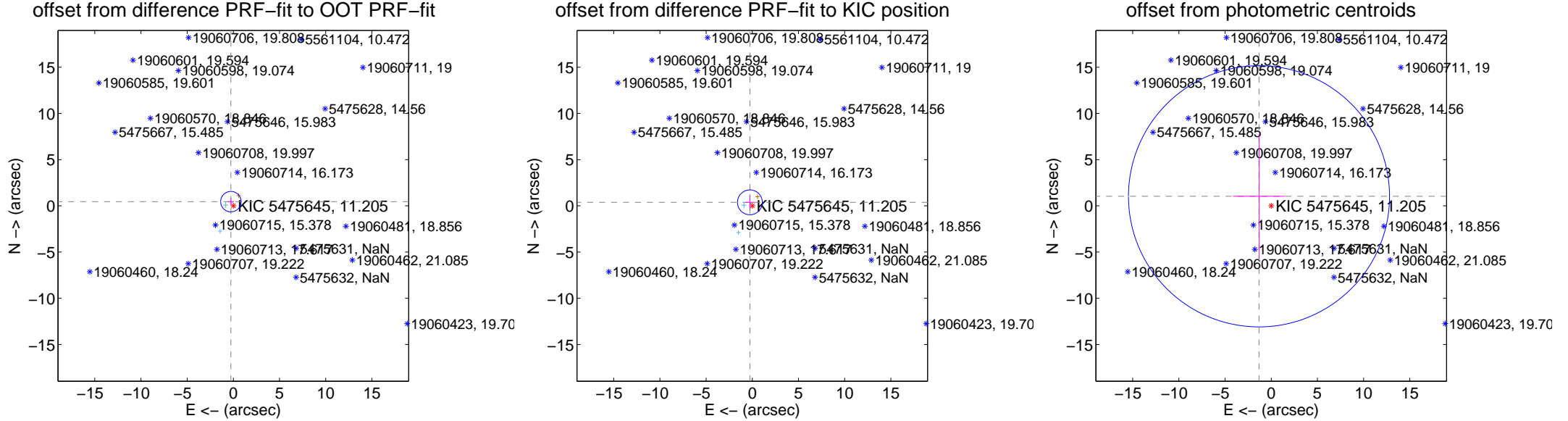
DV Centroid Data

Supplemental centroid analysis for 005475645-01. **Kepler magnitude: 11.21.** Transit SNR 5.56

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.530 ± 0.369	1.44	0.267 ± 0.339	0.458 ± 0.378
PRF-fit source offset from KIC position	0.461 ± 0.448	1.03	0.259 ± 0.499	0.381 ± 0.847
photometric centroid source offset	1.68 ± 4.71	0.36	1.33 ± 2.81	1.03 ± 6.75



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



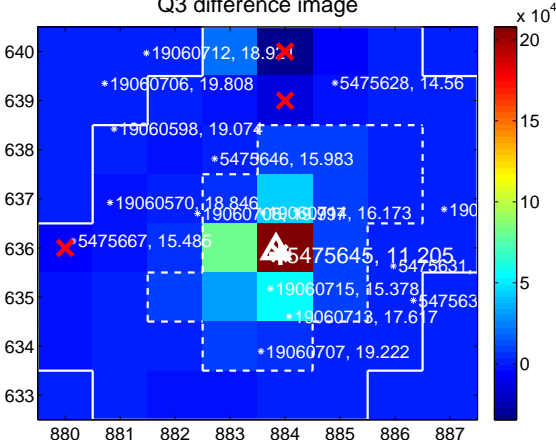
Q2 no difference image



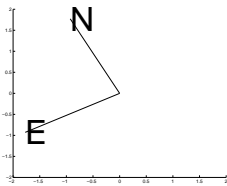
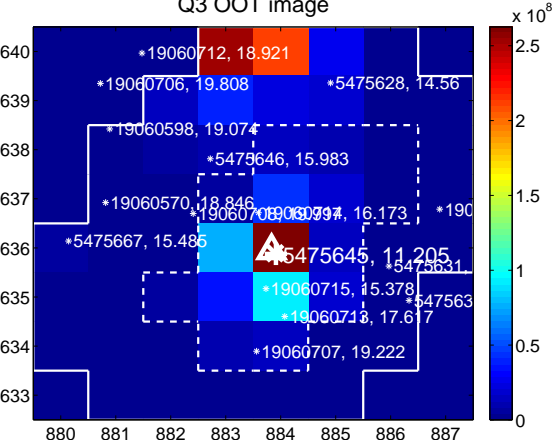
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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

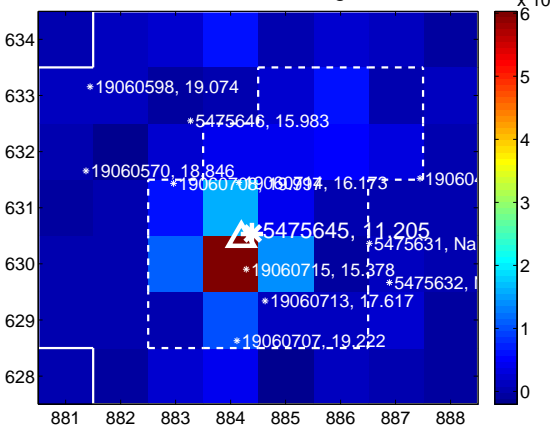
Q5 no difference image



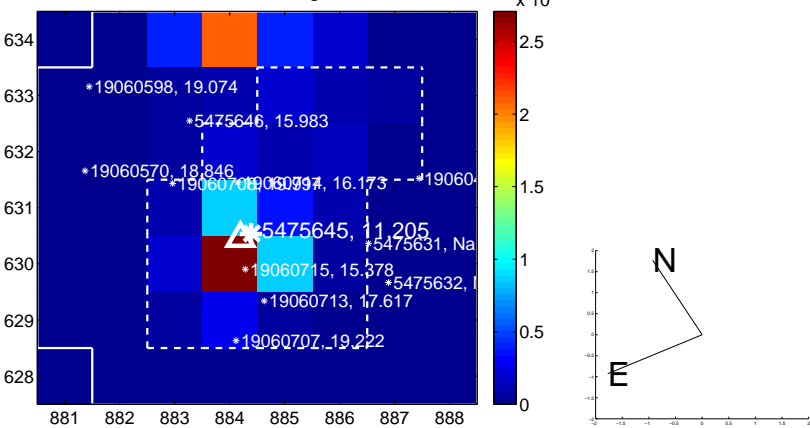
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



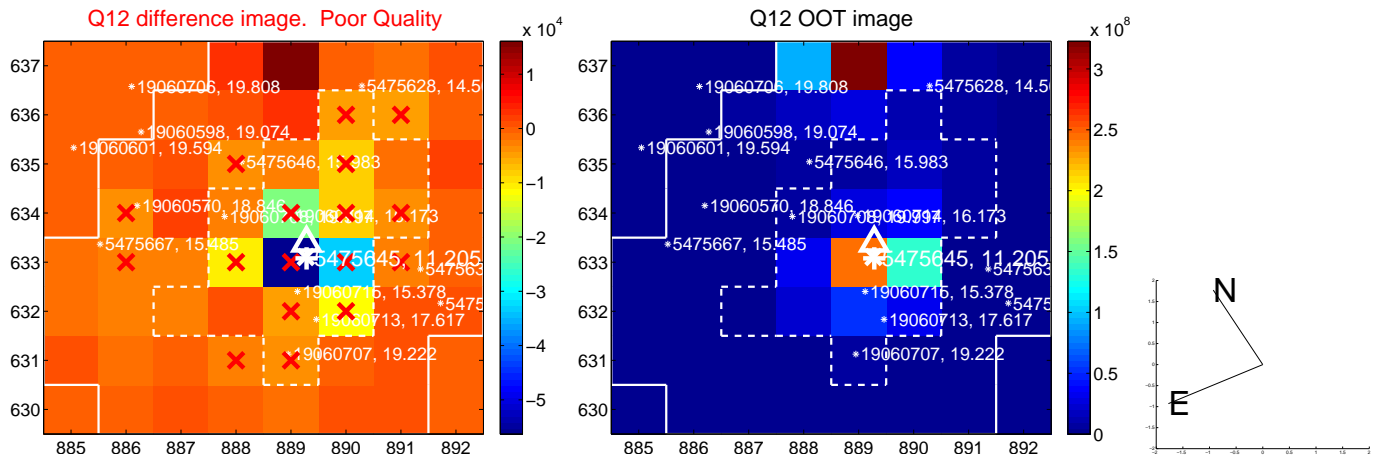
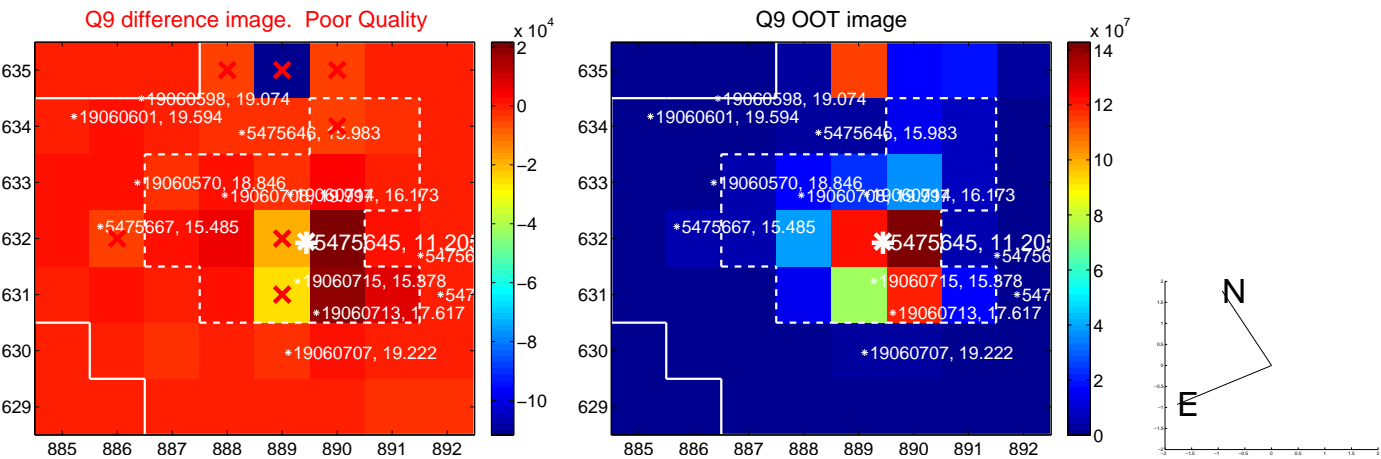
Q8 no difference image



Q8 no OOT image

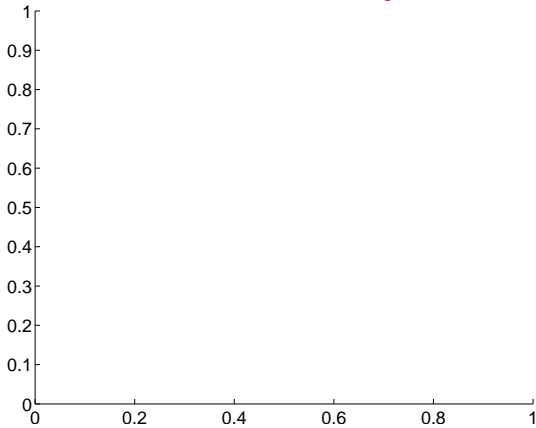


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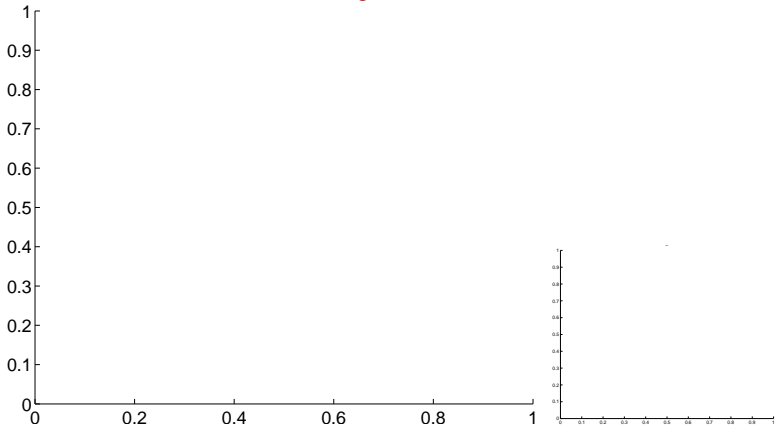


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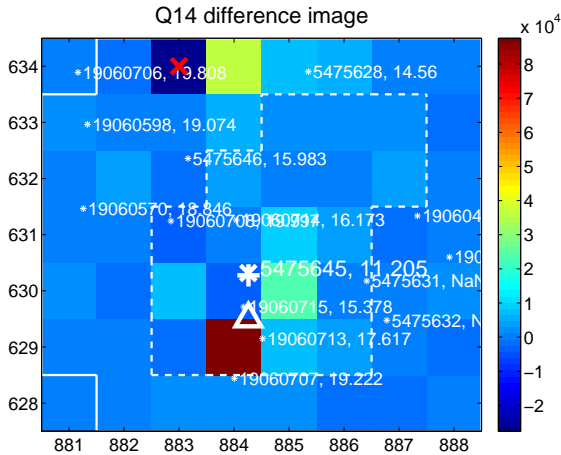
Q13 no difference image



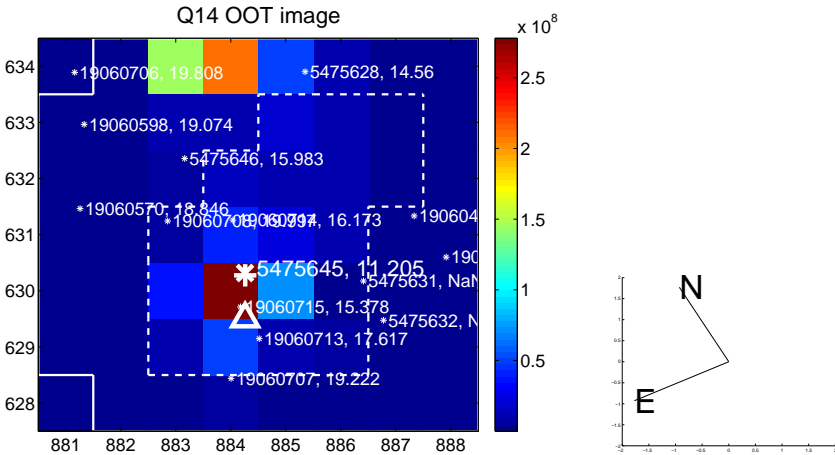
Q13 no OOT image



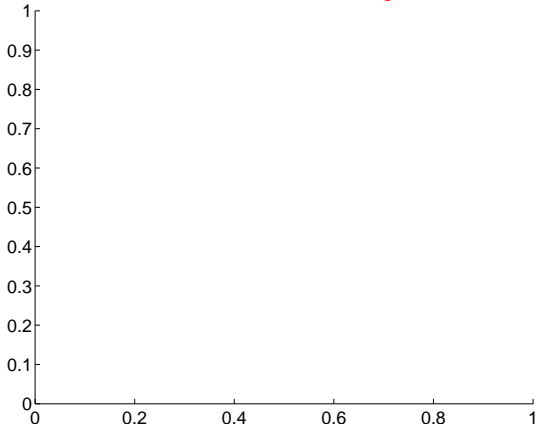
Q14 difference image



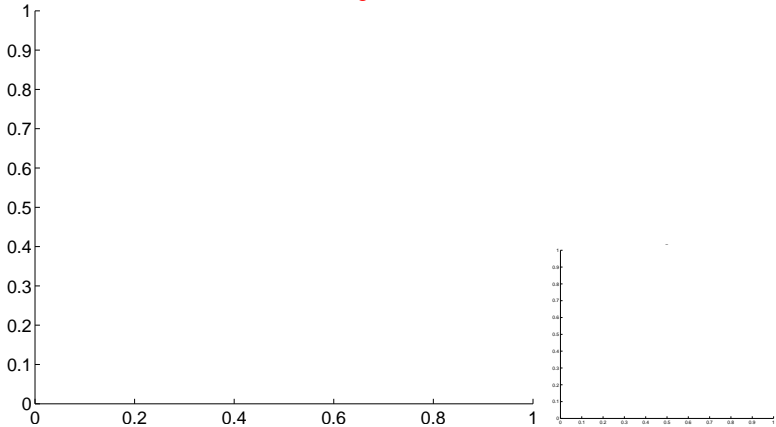
Q14 OOT image



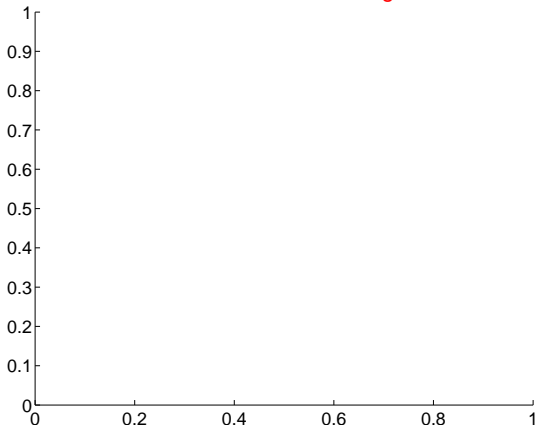
Q15 no difference image



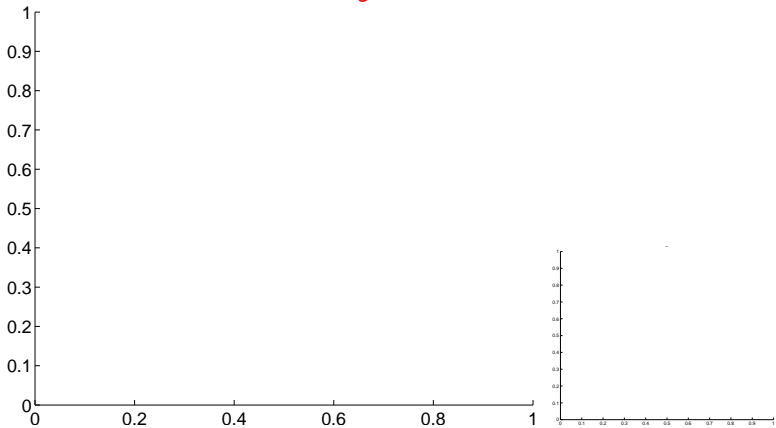
Q15 no OOT image



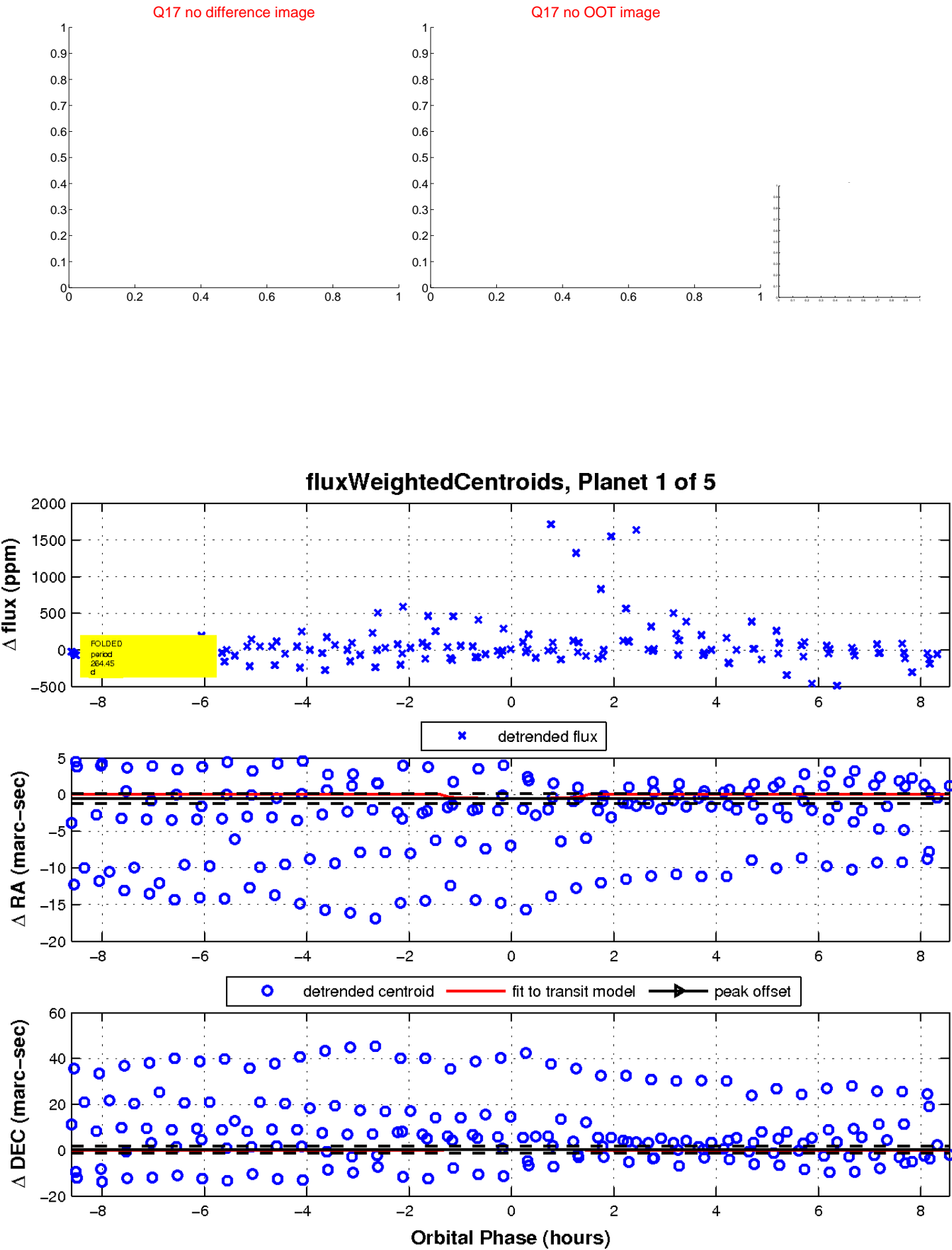
Q16 no difference image



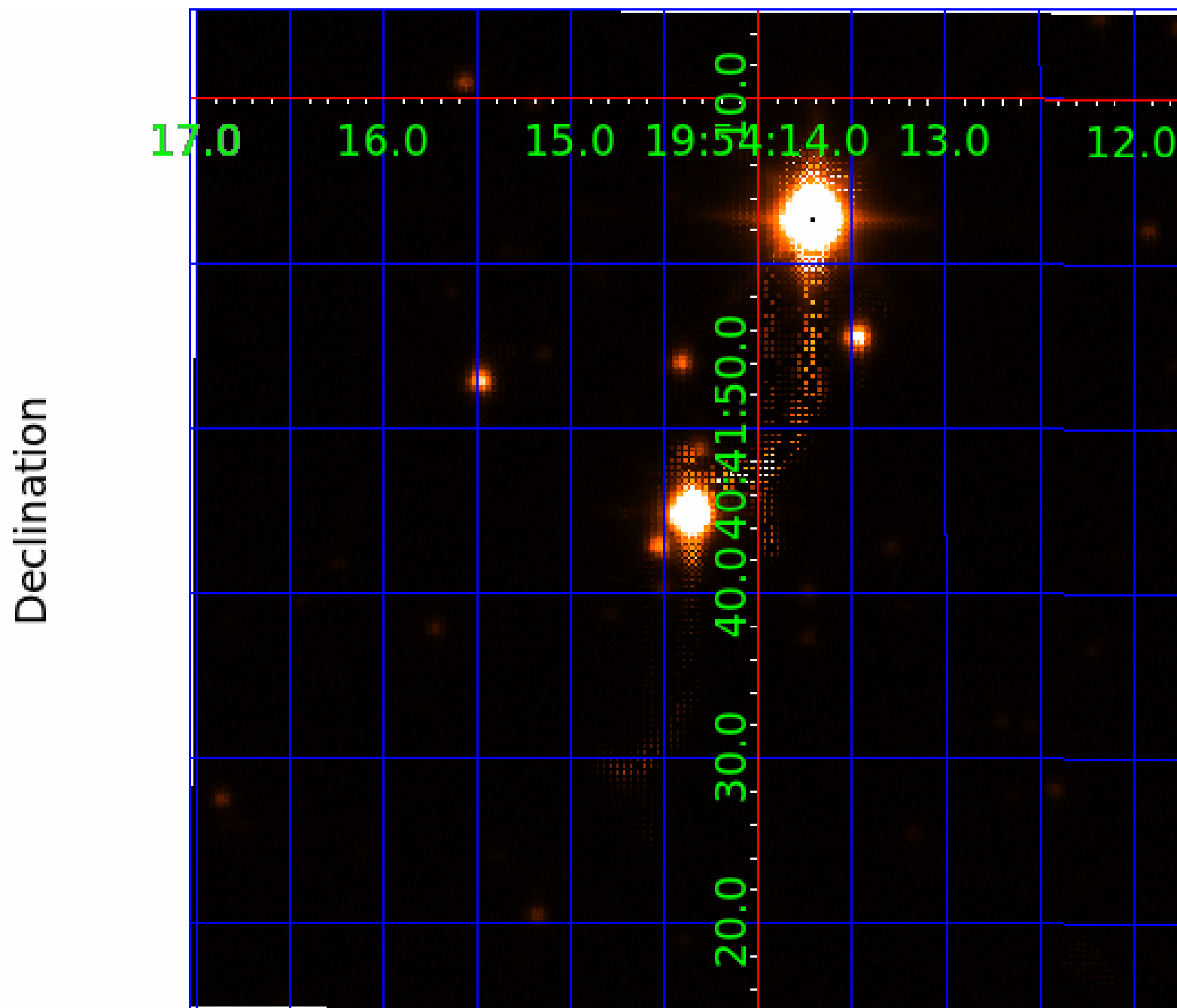
Q16 no OOT image



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



UKIRT Image



KIC 005475645

Q1-17 DR25 TCE Parameters

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Robovetter Results

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005475645-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005475645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005475645-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

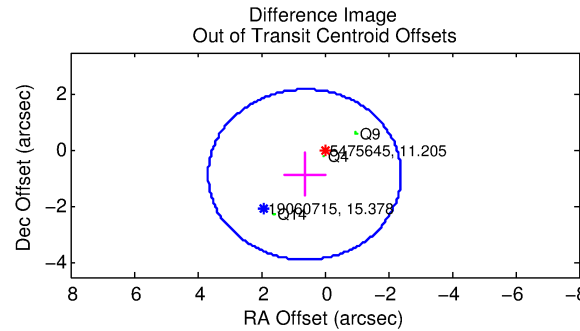
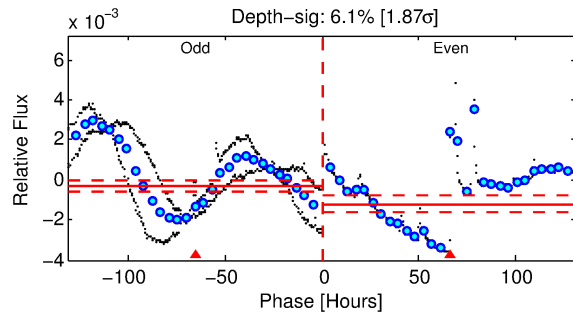
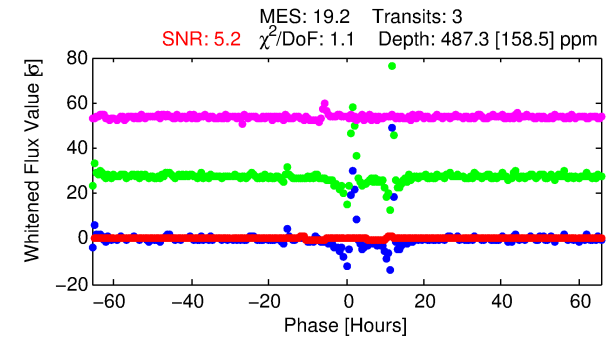
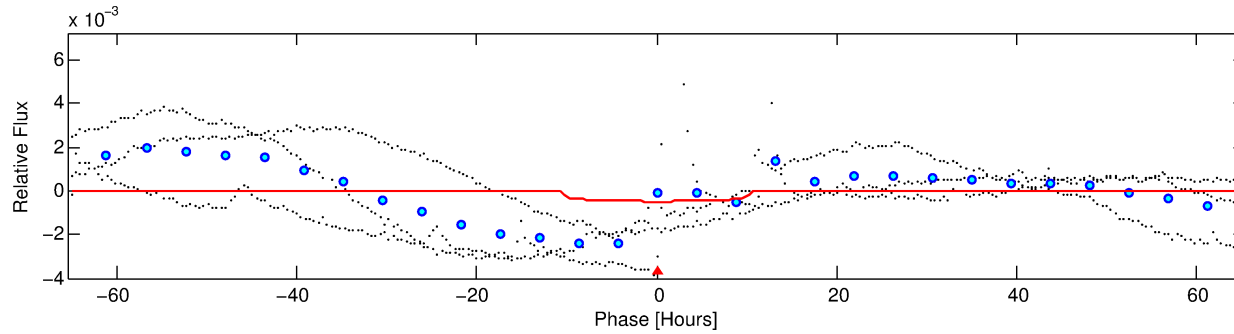
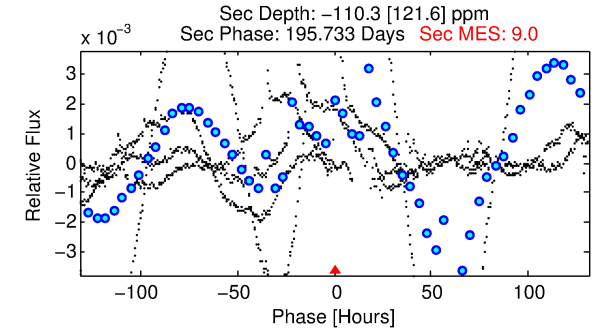
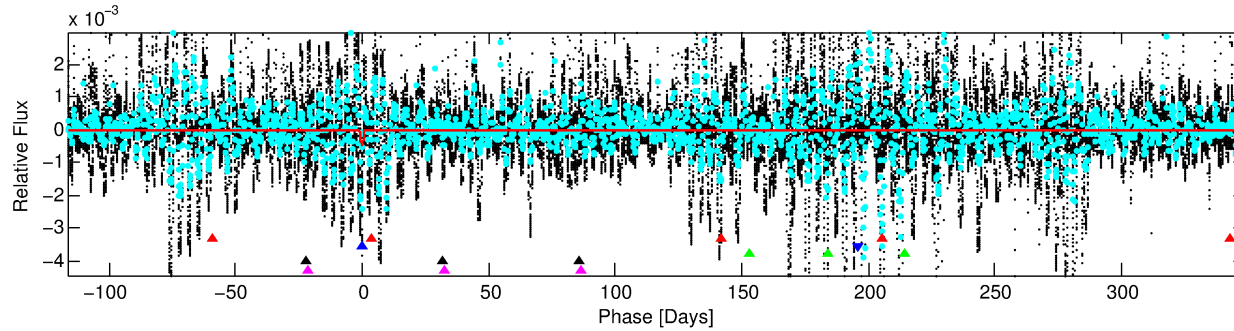
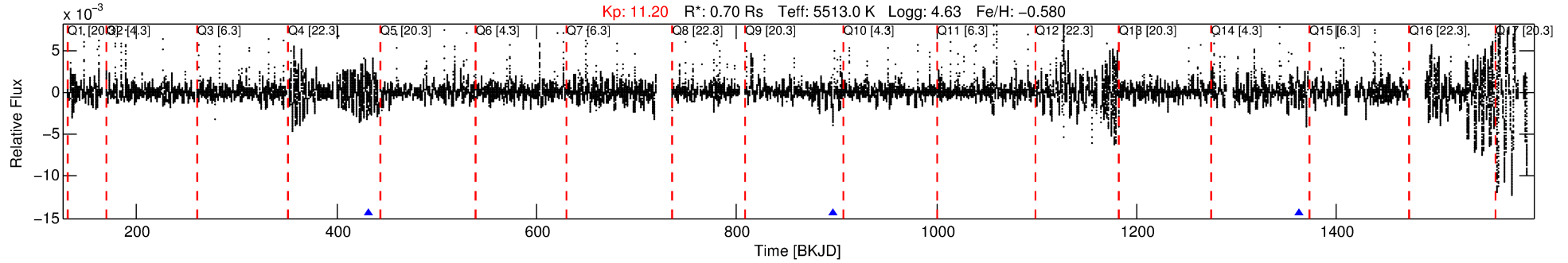
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005475645-02

No Significant Match Found

DV One-Page Summary

KIC: 5475645 Candidate: 2 of 5 Period: 465.624 d



DV Fit Results:

Period = 465.62412 [0.00955] d
Epoch = 431.5730 [0.0125] BKJD
 $R_p/R^* = 0.0218$ [0.0042]
 $a/R^* = 117.34$ [39.67]
 $b = 0.72$ [0.22]
 $\text{Seff} = 0.35$ [0.08]
 $T_{\text{eq}} = 197$ [11] K
 $R_p = 1.67$ [0.43] R_e
 $a = 1.0784$ [0.1512] AU
 $A_g = \text{N/A}$
 $T_{\text{eff}} = \text{N/A}$

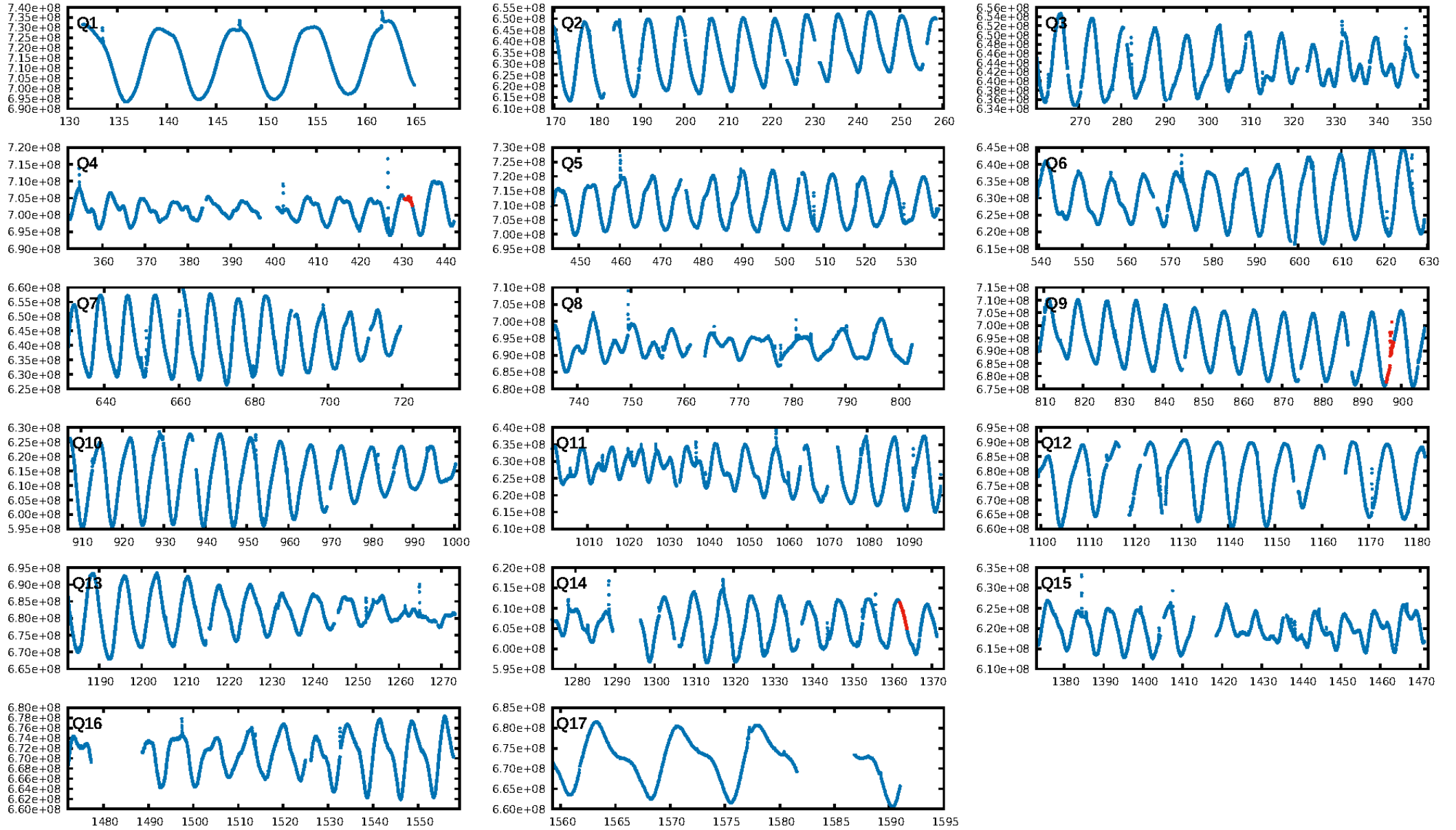
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [58.31 σ]
LongPeriod-sig: 100.0% [31.69 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 86.9%
Bootstrap-pfa: 7.37e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.03814
Centroid-sig: 36.4%
Centroid-so: 2.377 arcsec [1.07 σ]
OotOffset-rm: 1.059 arcsec [1.05 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 1.169 arcsec [1.19 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

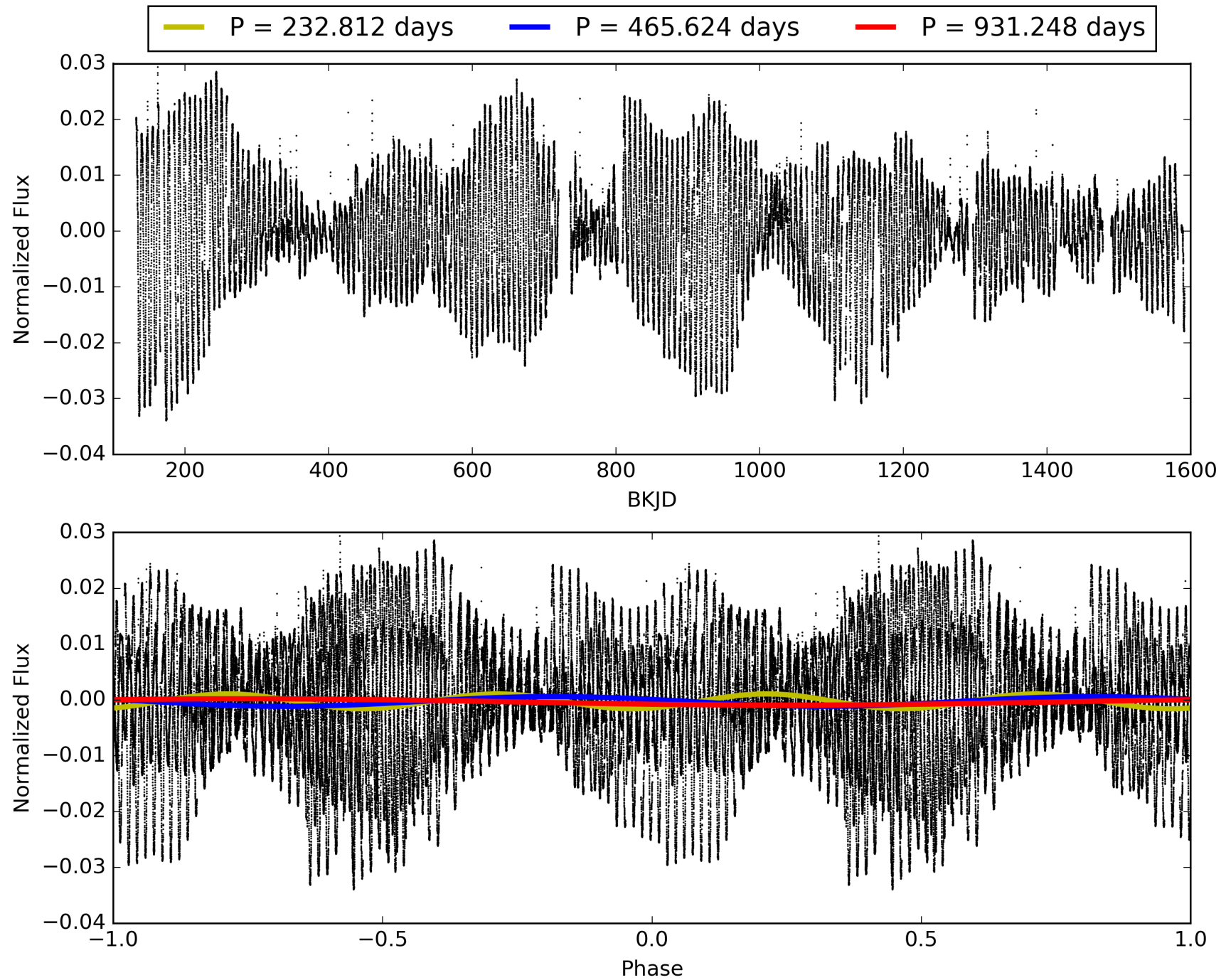
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:31:41 Z

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

TCE 005475645-02, PDC Light Curves

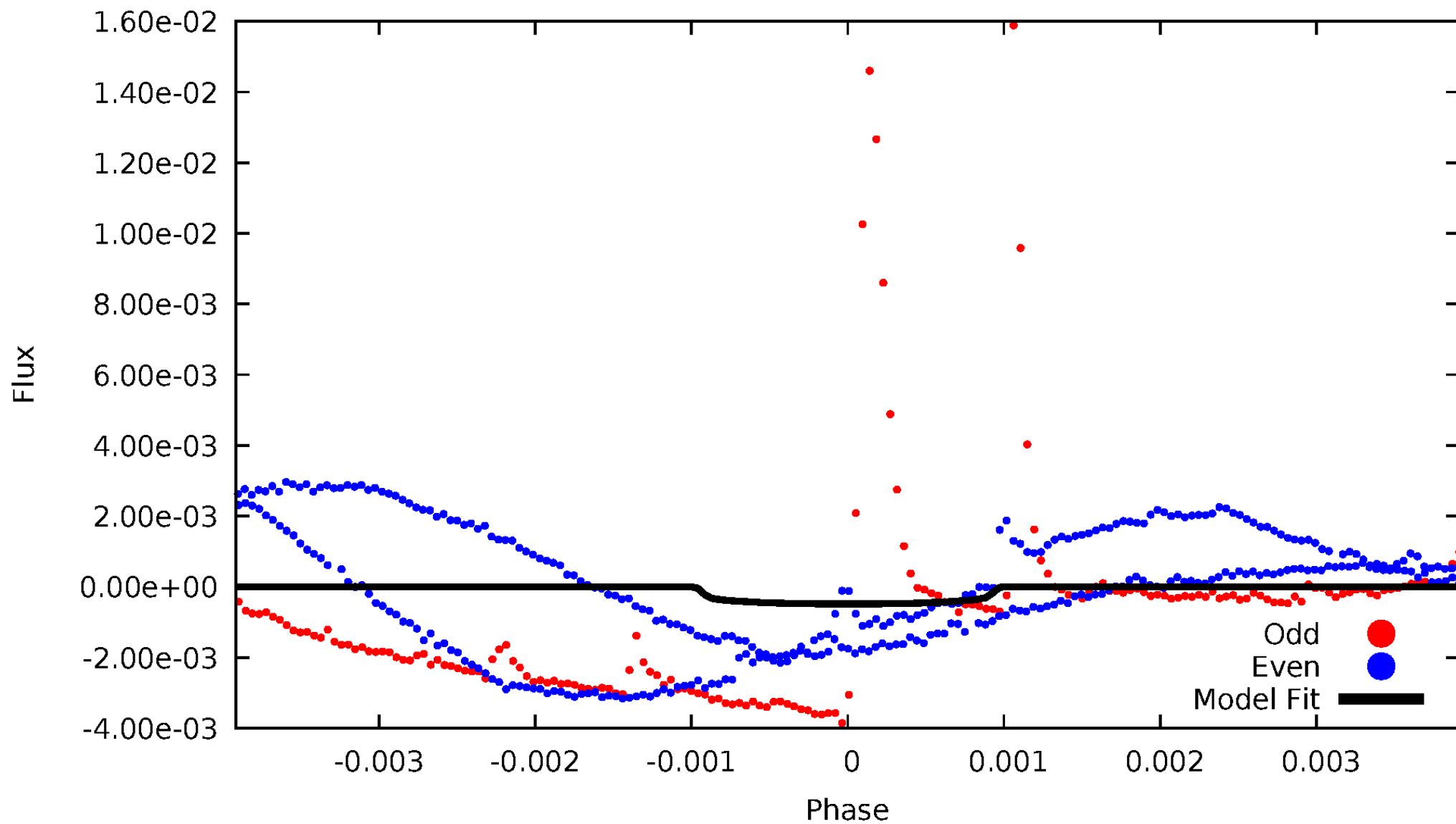


TCE 005475645-02



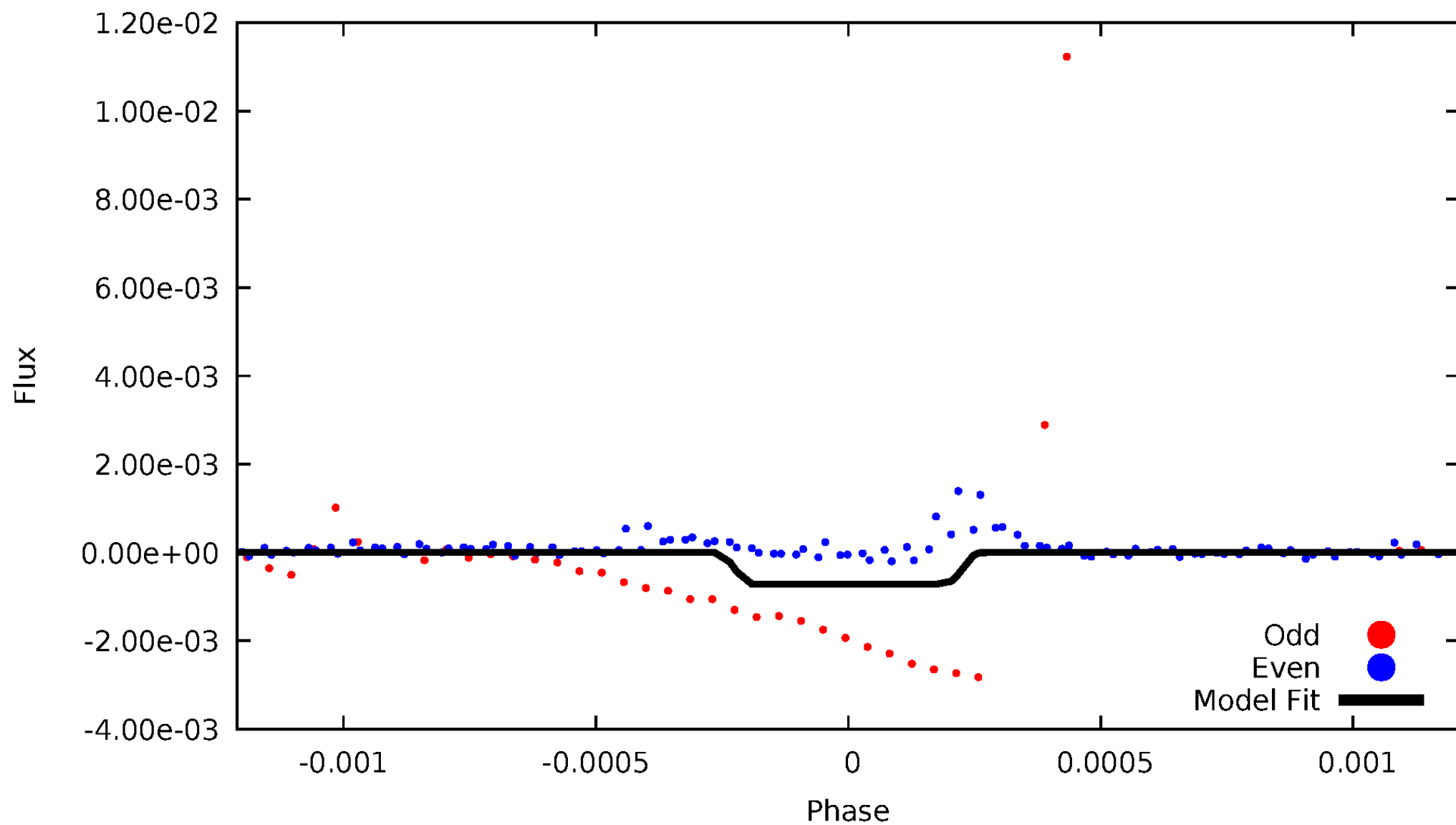
DV Odd/Even

TCE 005475645-02



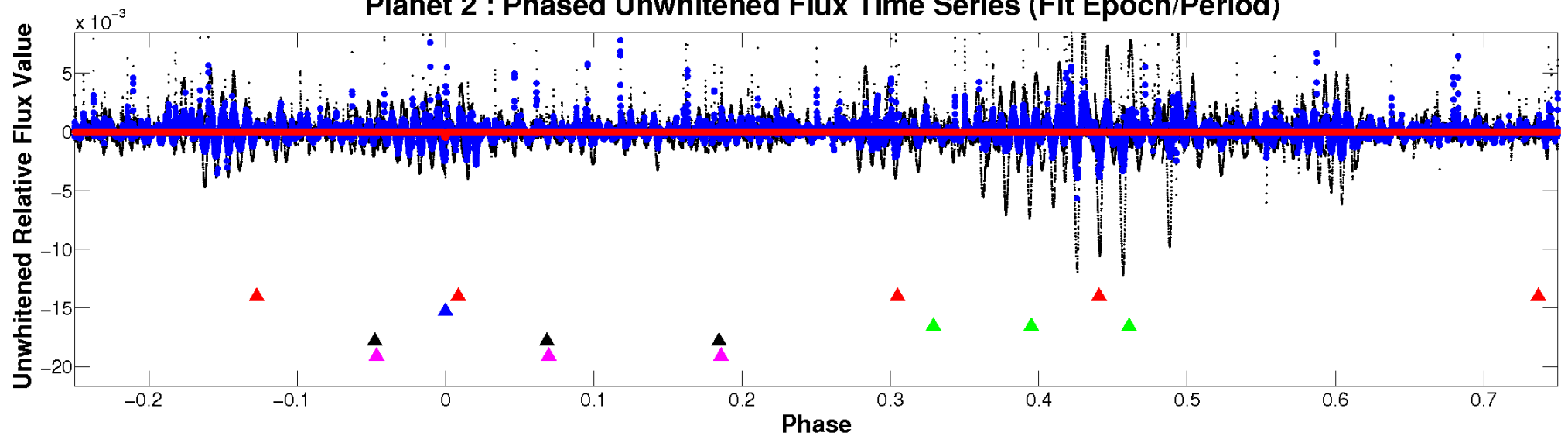
ALT Odd/Even

TCE 005475645-02

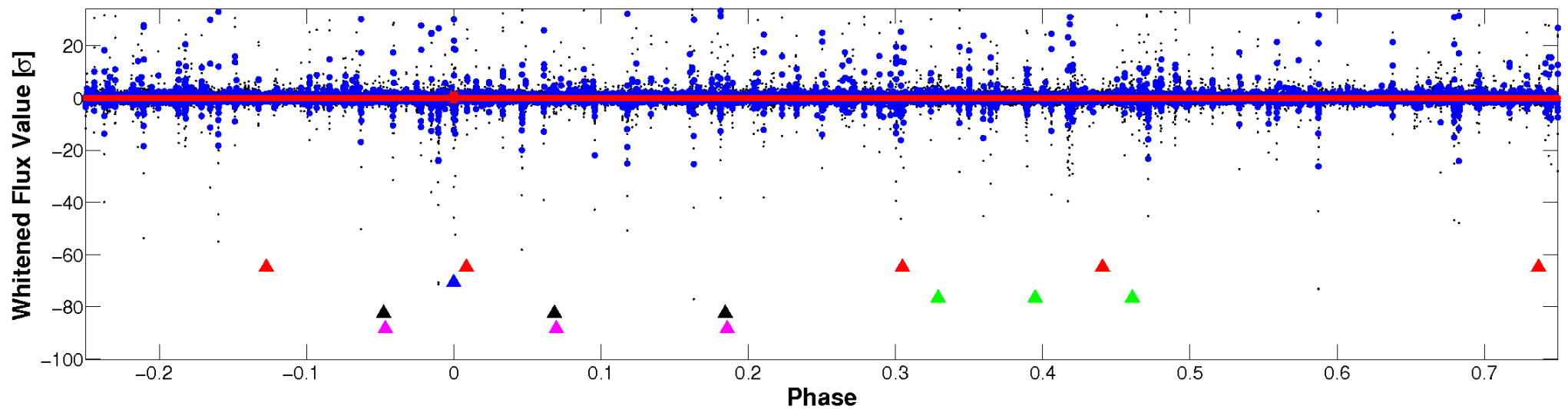


Non-Whitened Vs. Whitened Light Curve

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



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



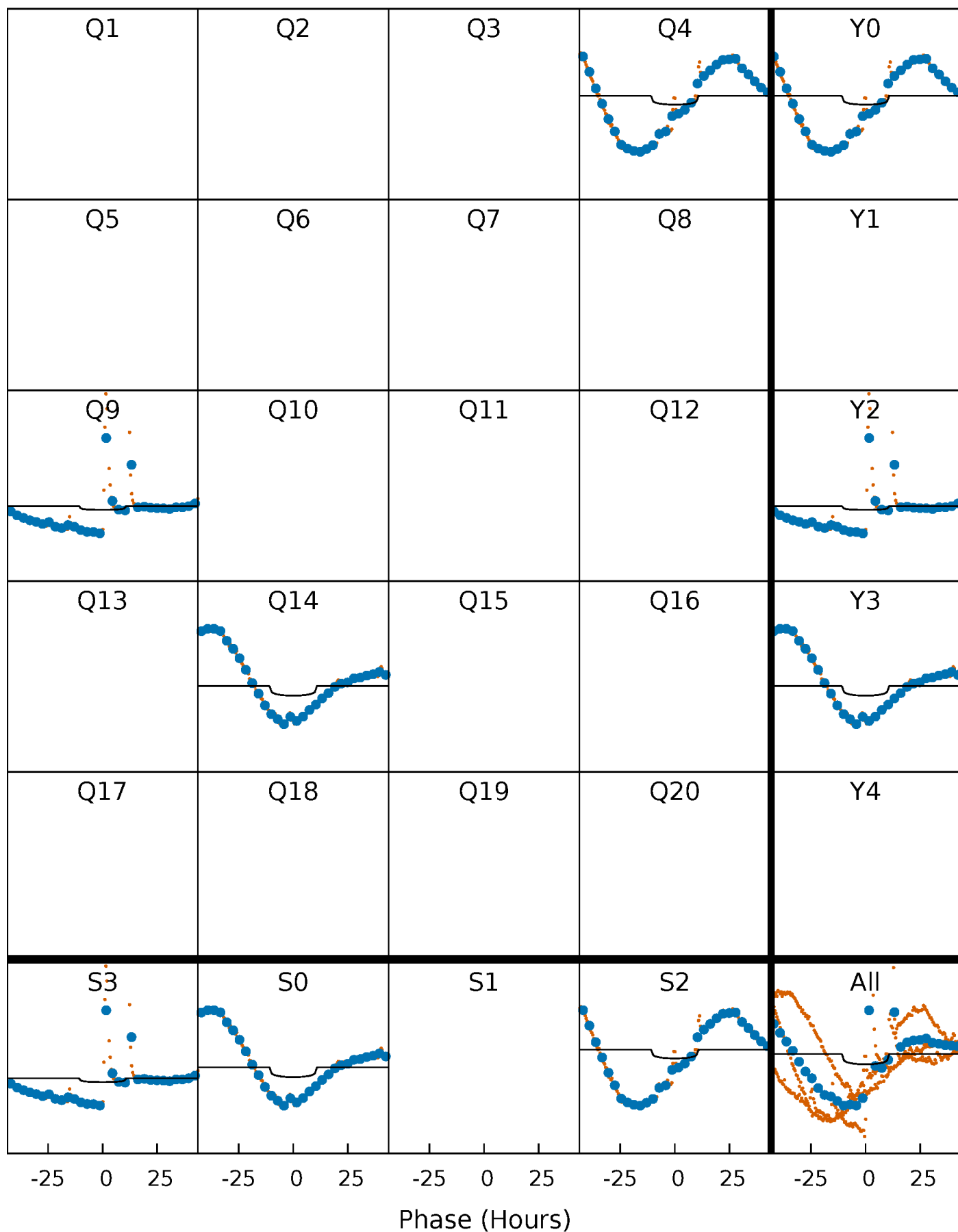
PDC Quarter-Phased Transit Curves

TCE 005475645-02 P=465.624121 Days $T_0=431.572991$ (BKJD)



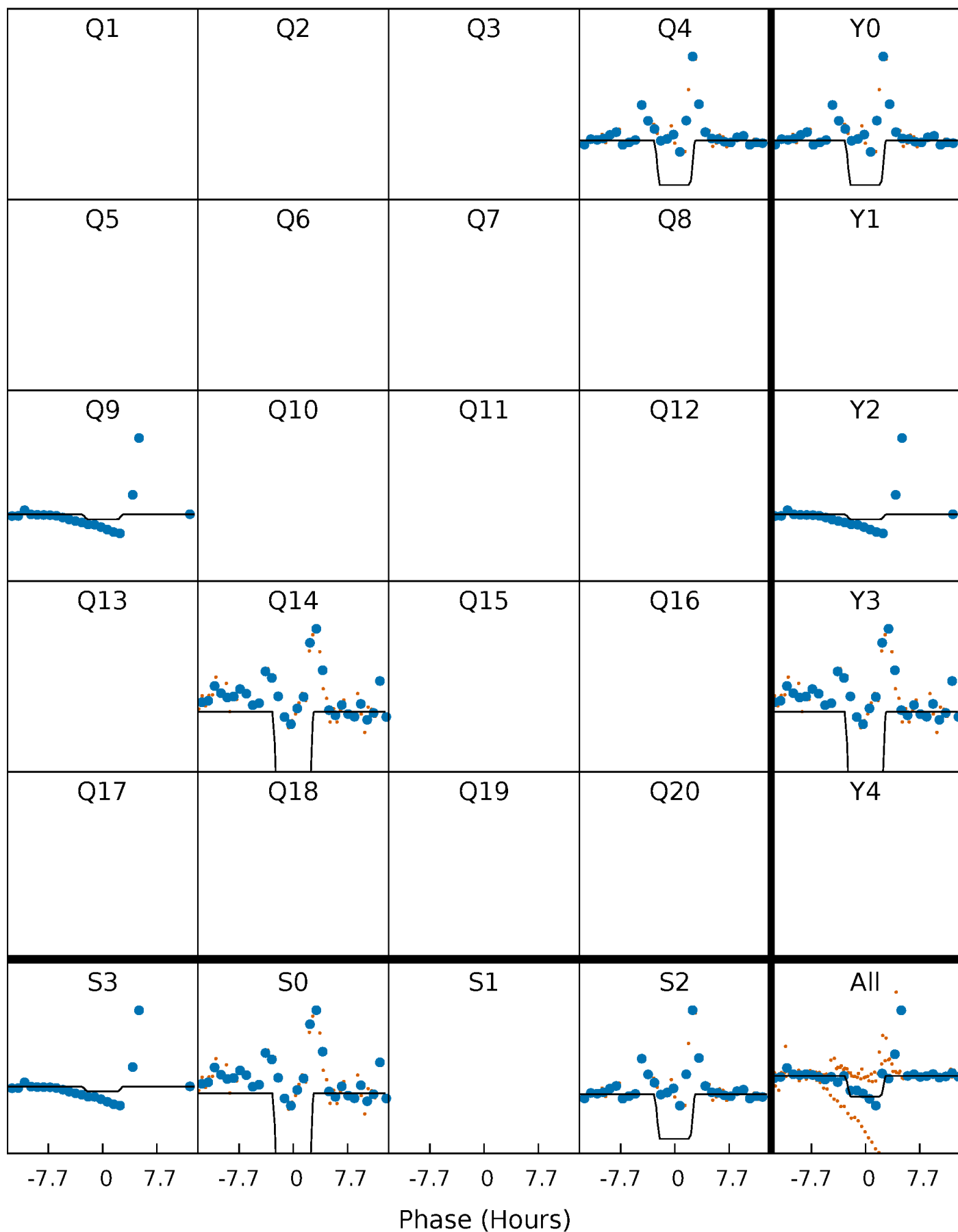
DV Quarter-Phased Transit Curves

TCE 005475645-02 P=465.624121 Days $T_0=431.572991$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

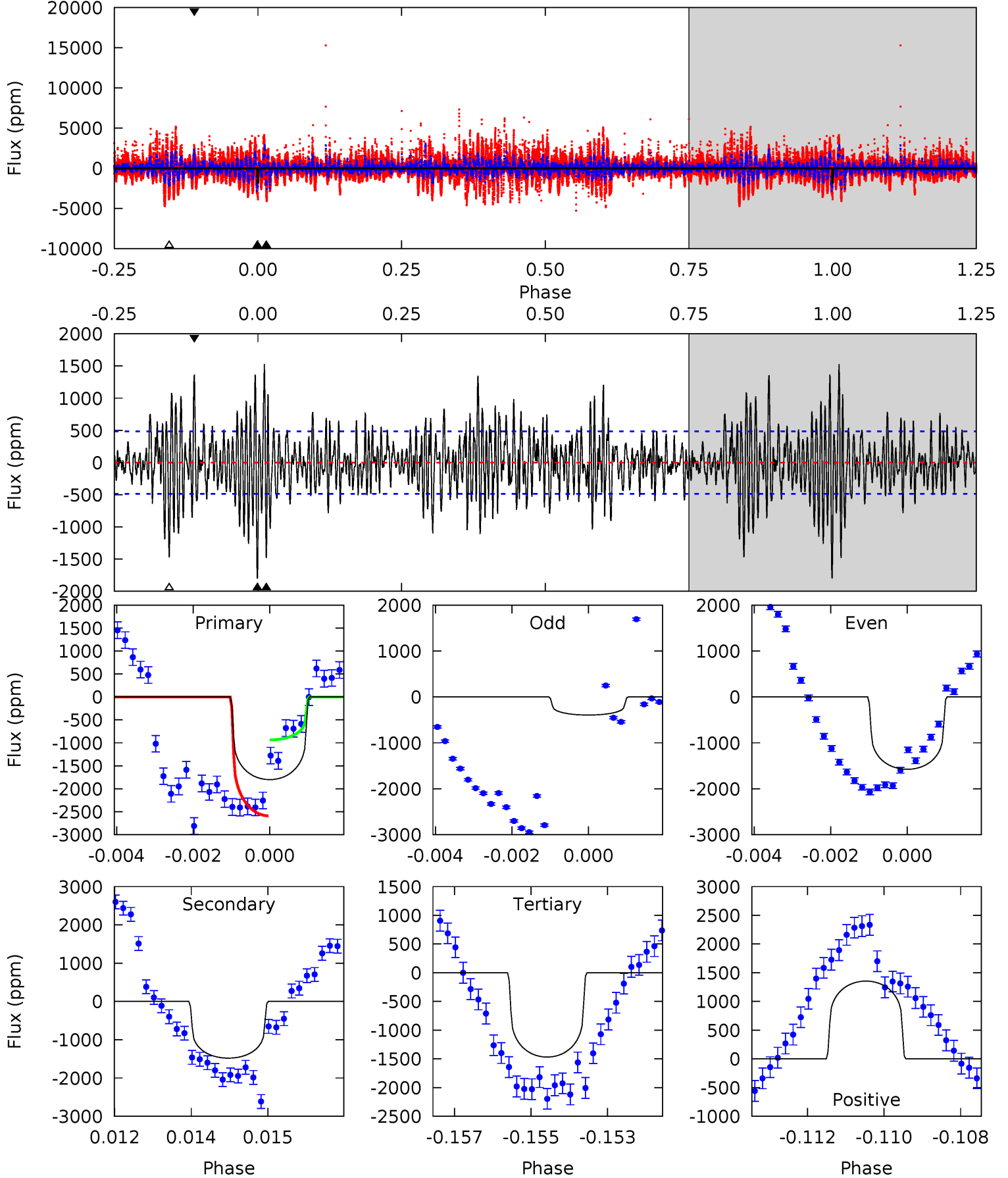
TCE 005475645-02 P=465.585476 Days $T_0=431.454744$ (BKJD)



DV Model-Shift Uniqueness Test

005475645-02, P = 465.624121 Days, E = 431.572991 Days

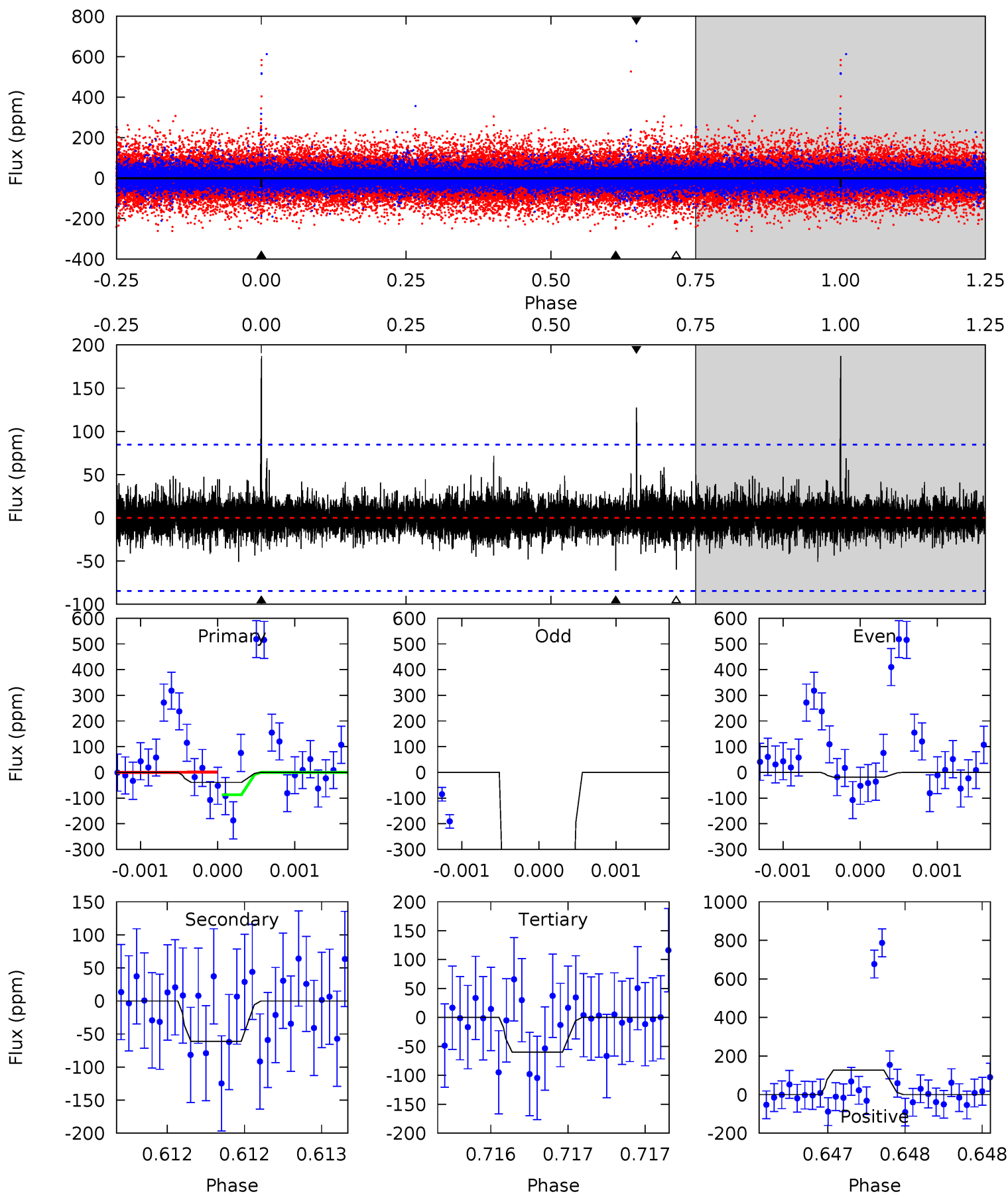
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	16.3	16.1	14.9	5.33	3.10	4.40	3.65	4.91	0.14	1.39	5.28	0.83	0.46	9.17



Alt Model-Shift Uniqueness Test

005475645-02, P = 465.585476 Days, E = 431.454744 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.57	4.01	3.94	8.38	5.57	3.47	0.74	-1.37	-5.81	0.08	-4.37	79.8	-10.2	0.75	2.85



Stellar Parameters For KIC 005475645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5513^{+147}_{-147}	$4.630^{+0.035}_{-0.112}$	$-0.580^{+0.300}_{-0.300}$	$0.704^{+0.117}_{-0.050}$	$0.770^{+0.081}_{-0.066}$	$3.111^{+0.463}_{-1.059}$
	+3%/-3%	+1%/-2%	+52%/-52%	+17%/-7%	+11%/-9%	+15%/-34%
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 005475645-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1481 ± 91	$1.74^{+0.36}_{-0.35}$	278^{+13}_{-10}	7376^{+1051}_{-739}	$312596^{+168635}_{-97664}$
Alt.	-61 ± 15	$2.12^{+0.34}_{-0.34}$	278^{+12}_{-10}	3441^{+254}_{-208}	8471^{+4241}_{-2959}

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

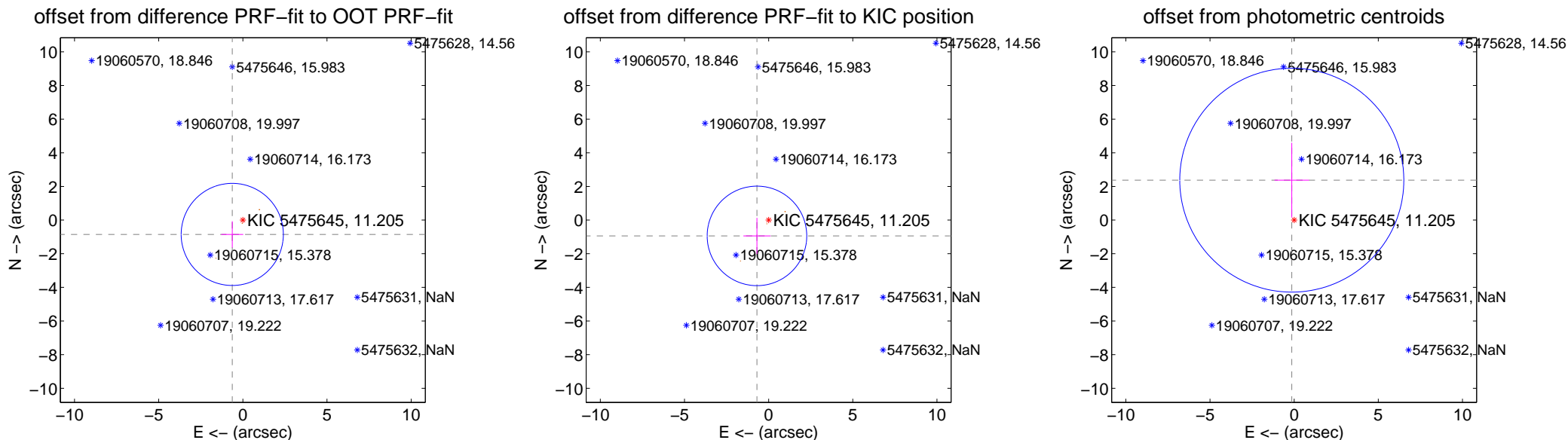
DV Centroid Data

Supplemental centroid analysis for 005475645-02. **Kepler magnitude: 11.21.** Transit SNR 5.19

There are 0 quarters with good PRF difference image offsets

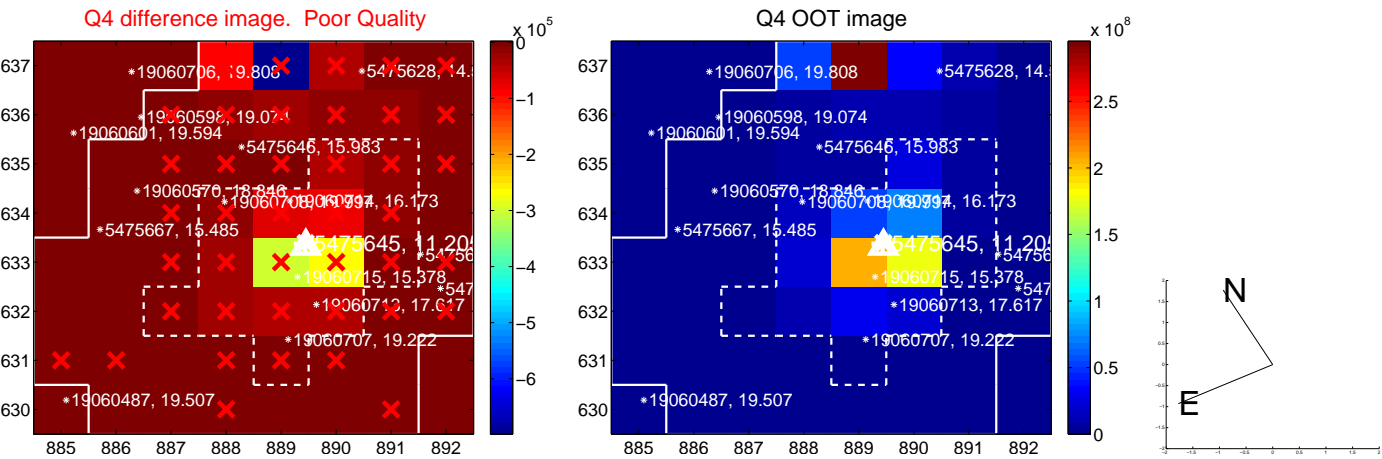
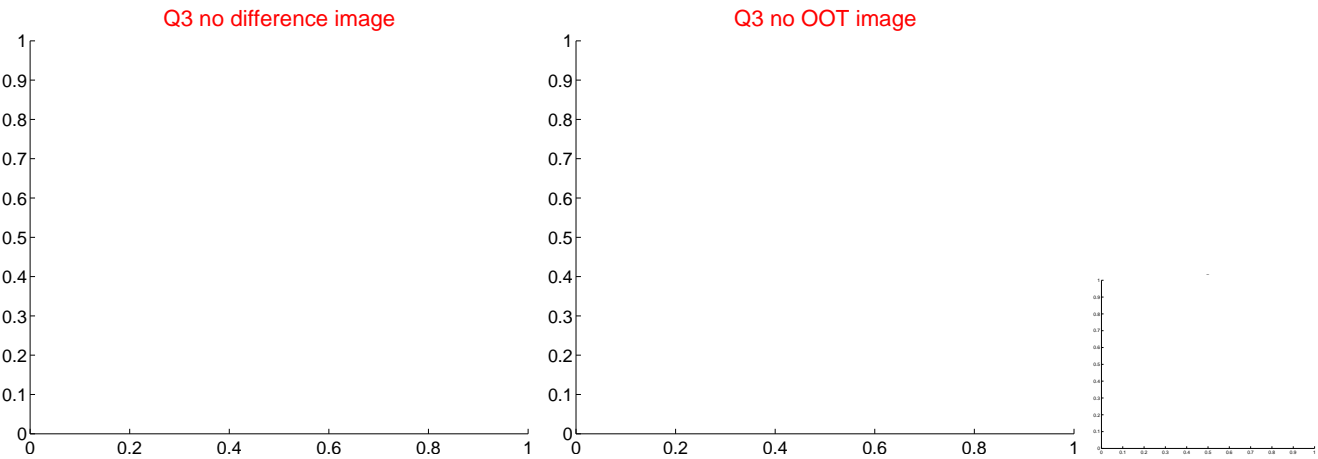
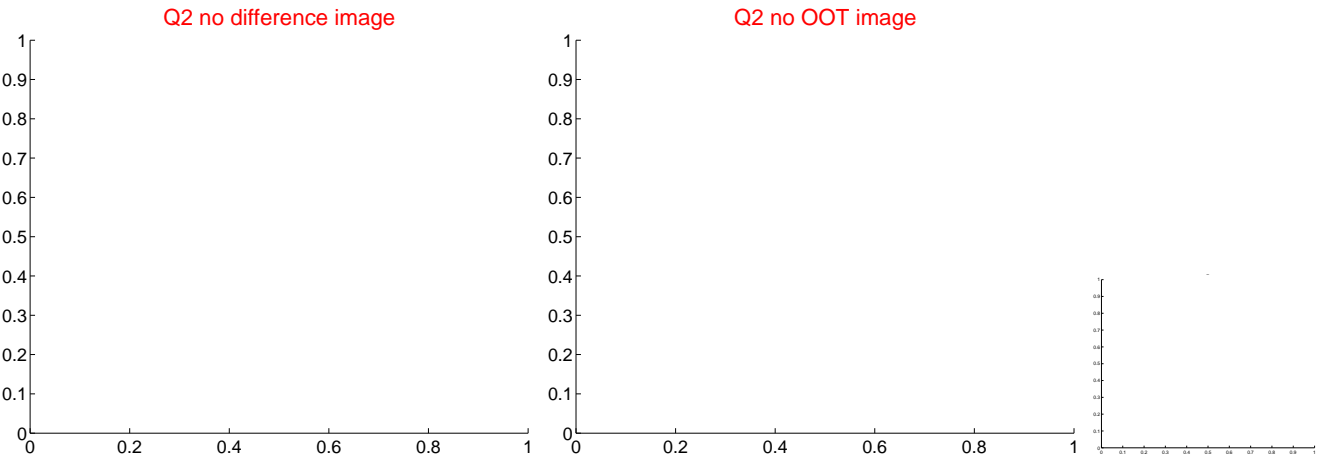
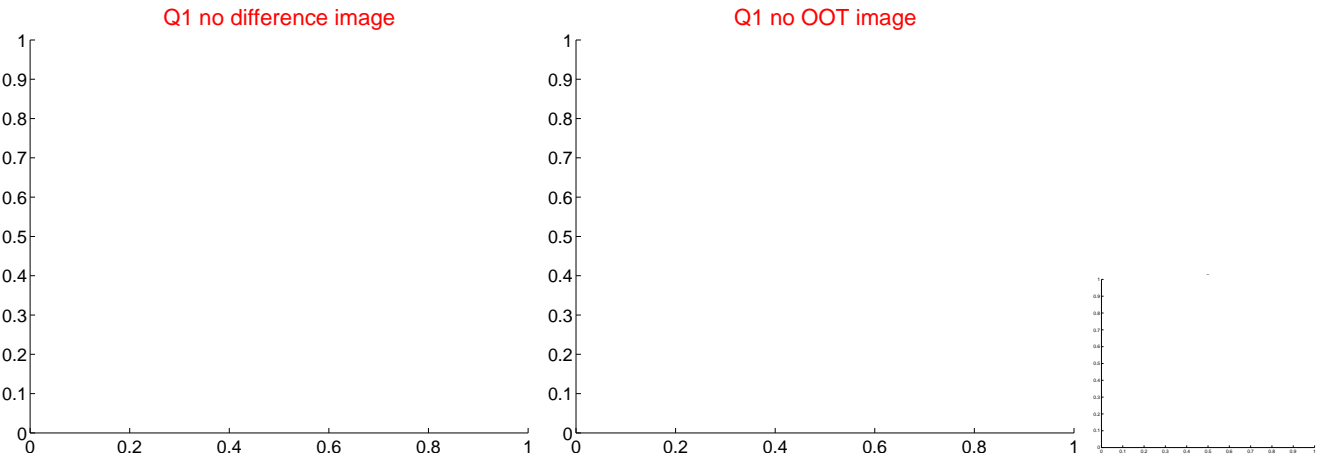
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.059 ± 1.012	1.05	0.629 ± 0.650	-0.852 ± 0.781
PRF-fit source offset from KIC position	1.169 ± 0.986	1.19	0.694 ± 0.808	-0.940 ± 1.071
photometric centroid source offset	2.38 ± 2.22	1.07	0.14 ± 1.03	2.37 ± 2.22

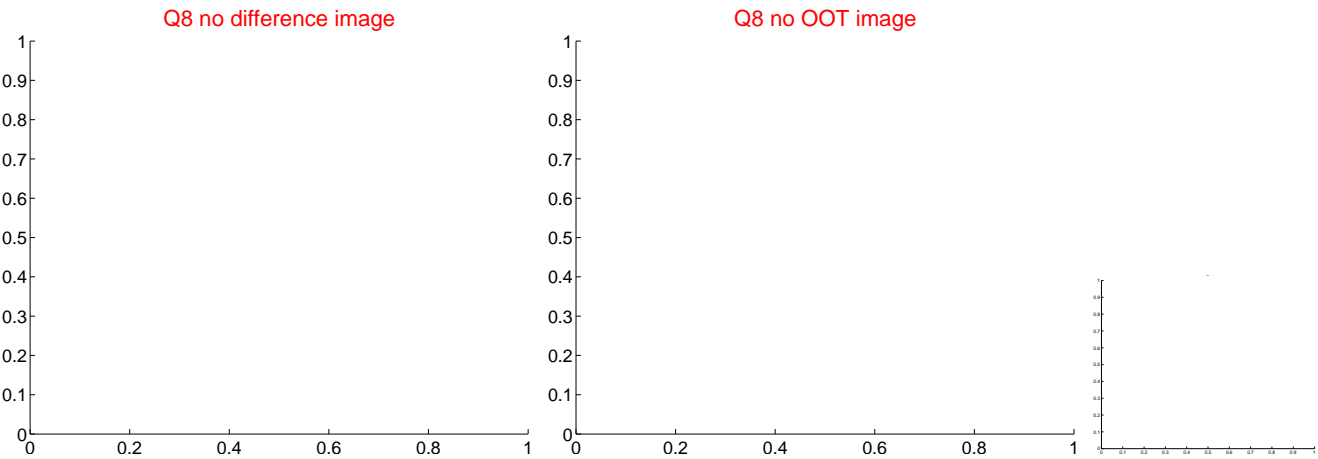
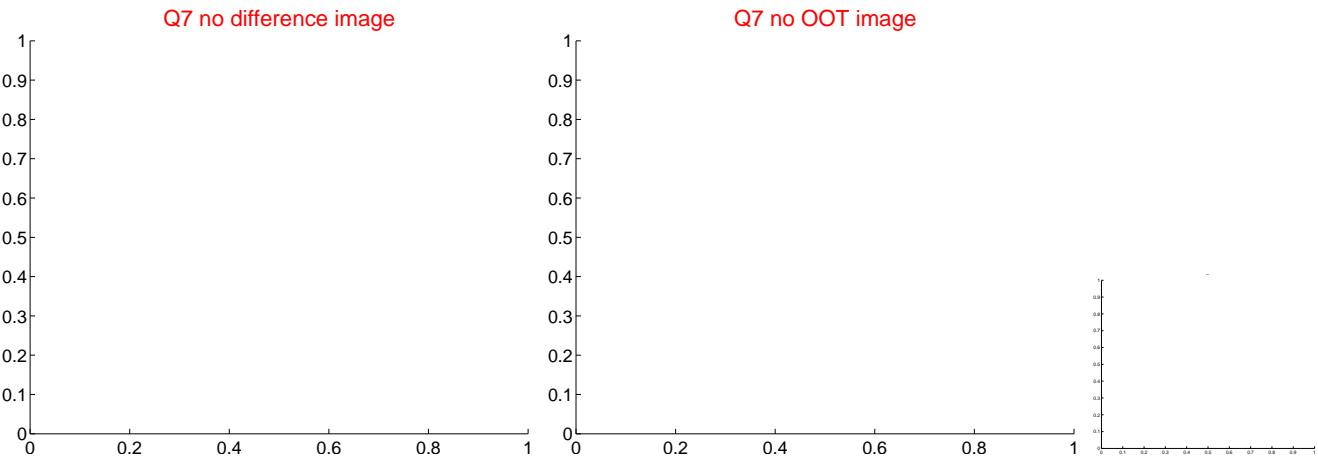
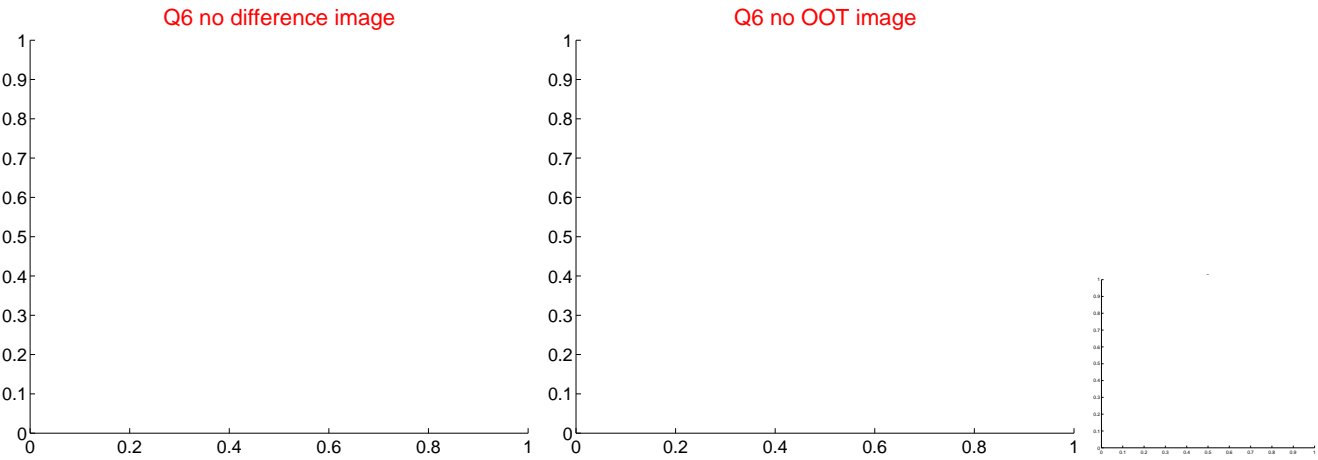
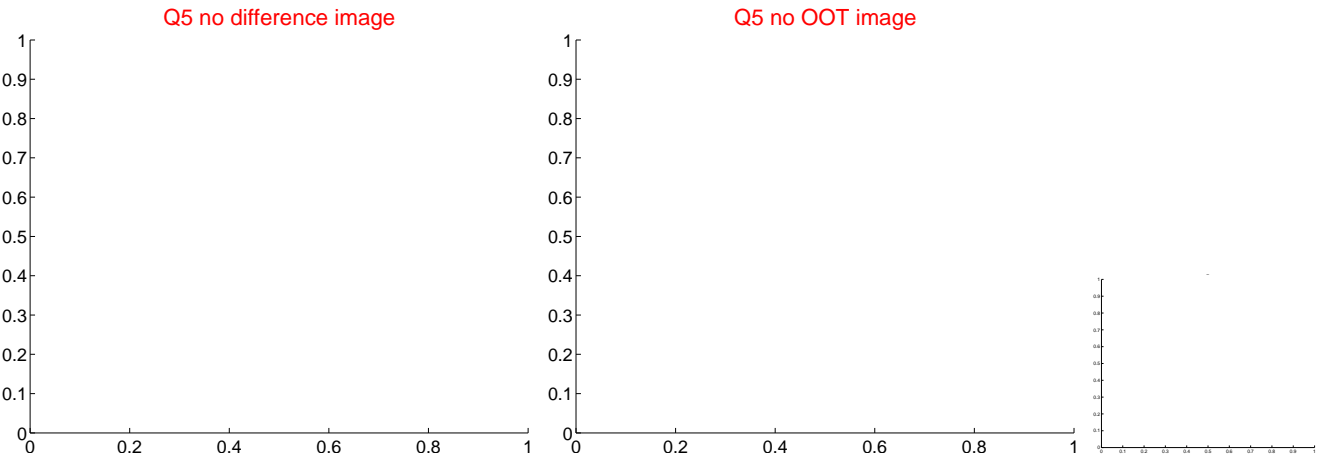


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

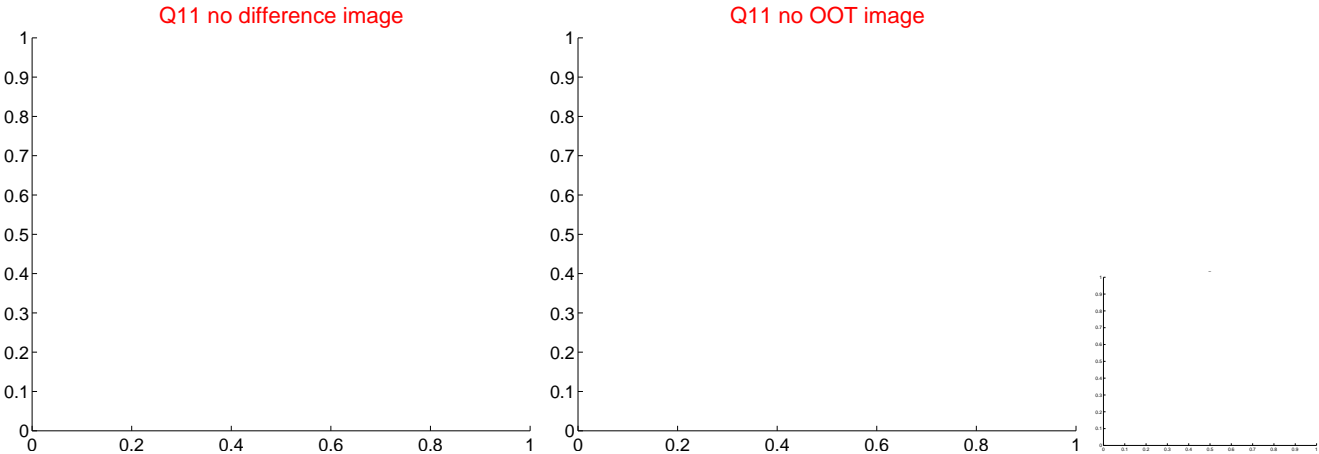
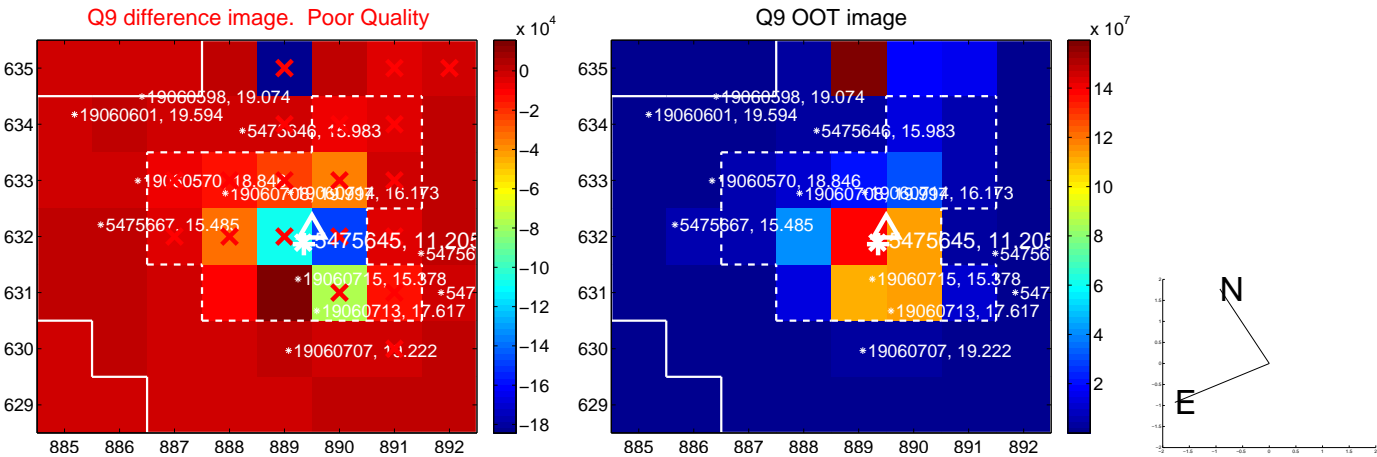
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

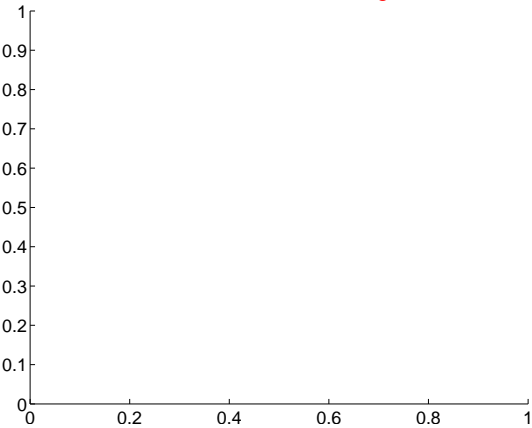


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

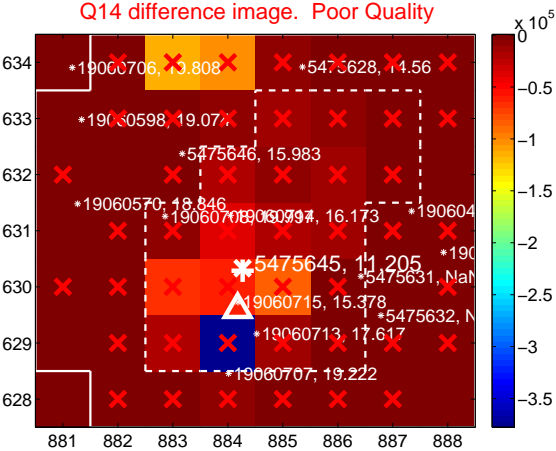
Q13 no difference image



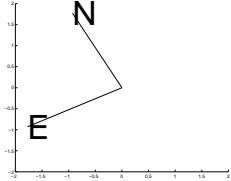
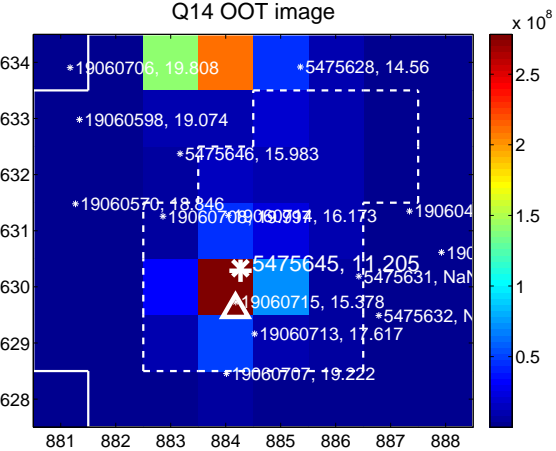
Q13 no OOT image



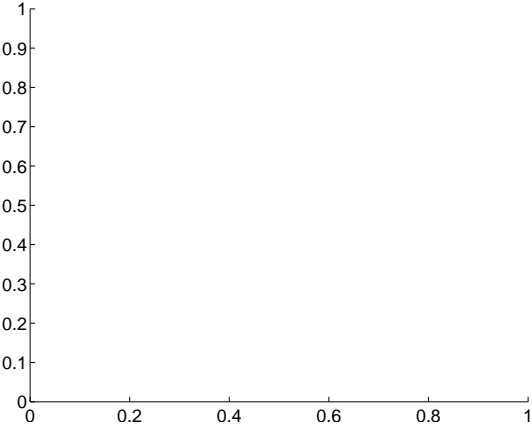
Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



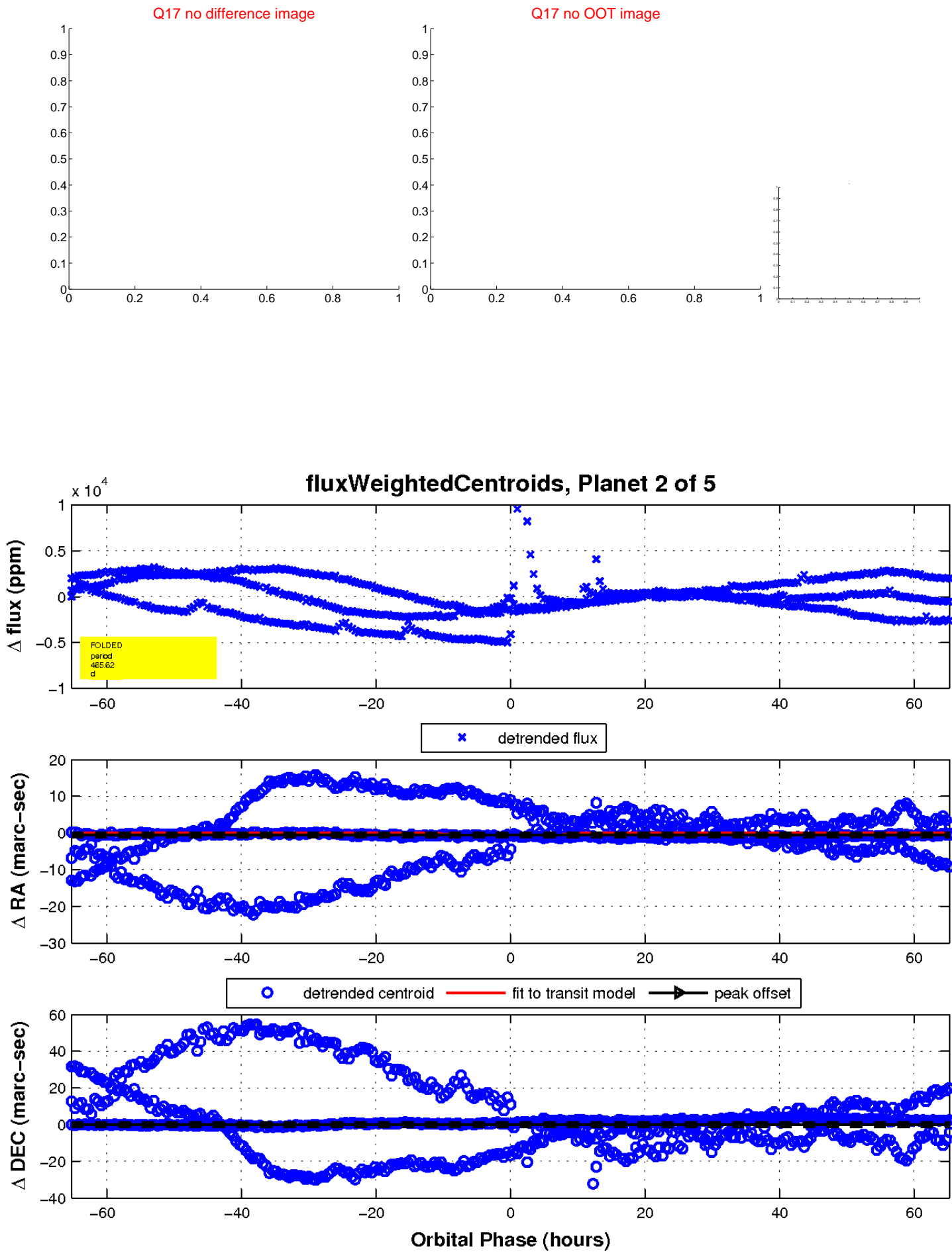
Q16 no difference image



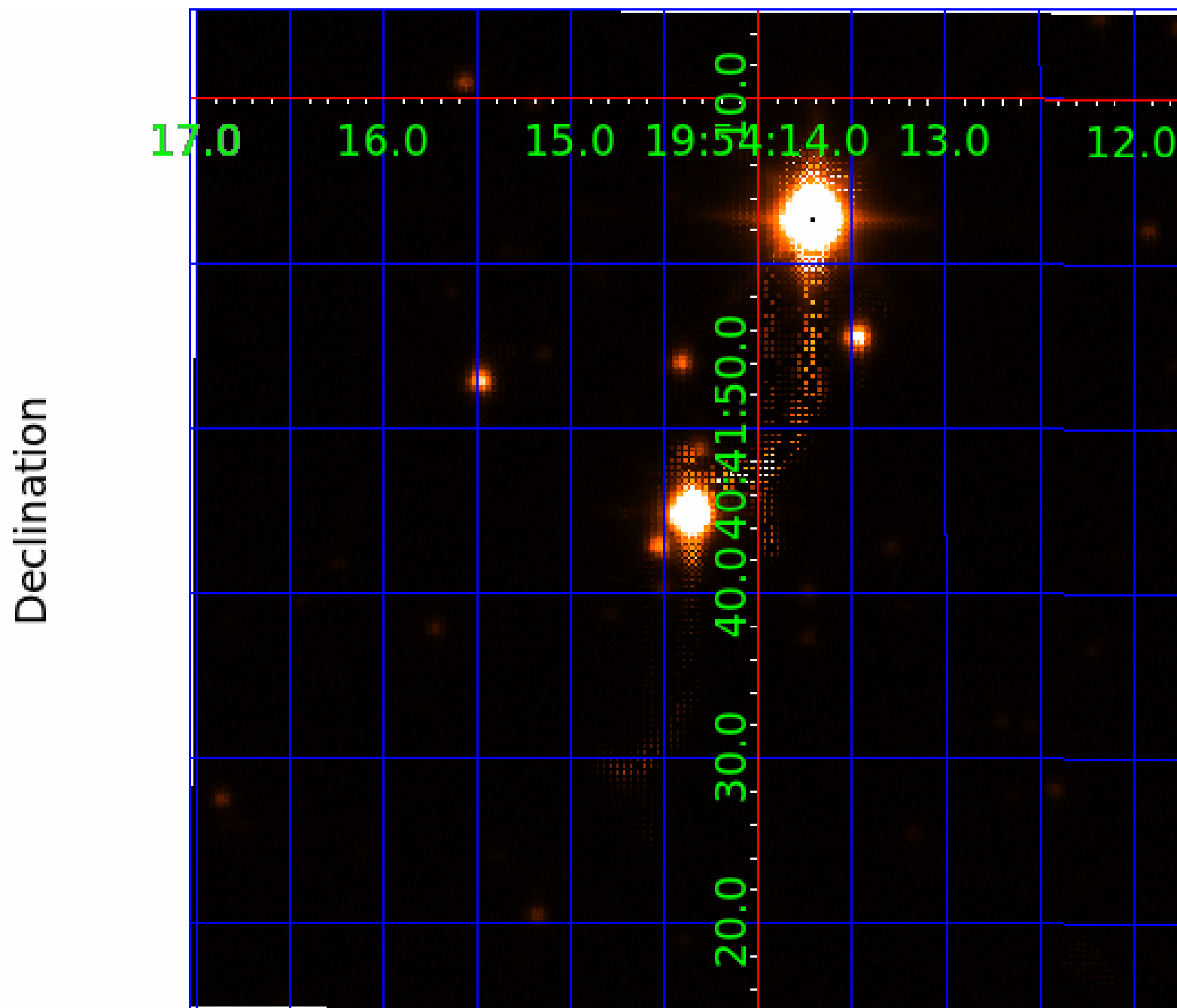
Q16 no OOT image



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



UKIRT Image



KIC 005475645

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})
005475645-01	OBS	No	264.449607	309.032191	230.4	2.871	18.8	5.6	0.70	5513	1.19	0.75
005475645-02	OBS	No	465.624121	431.572991	487.3	21.871	19.2	5.2	0.70	5513	1.67	0.35
005475645-03	OBS	No	496.336906	584.765769	463.8	7.924	15.5	7.8	0.70	5513	1.77	0.32
005475645-04	OBS	No	411.601584	517.453354	142.0	4.013	13.8	2.7	0.70	5513	0.87	0.42
005475645-05	OBS	No	411.564945	518.063228	525.8	1.643	13.8	11.1	0.70	5513	1.65	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005475645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005475645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005475645-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

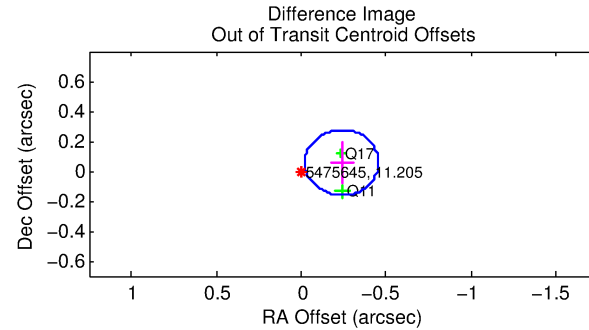
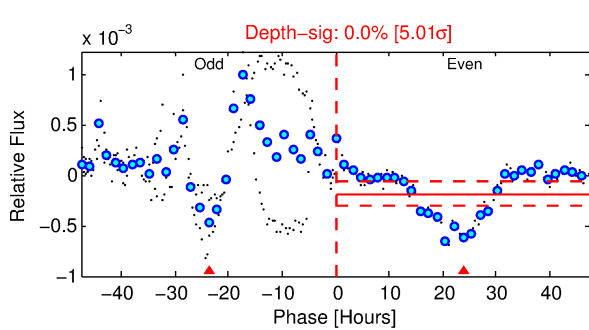
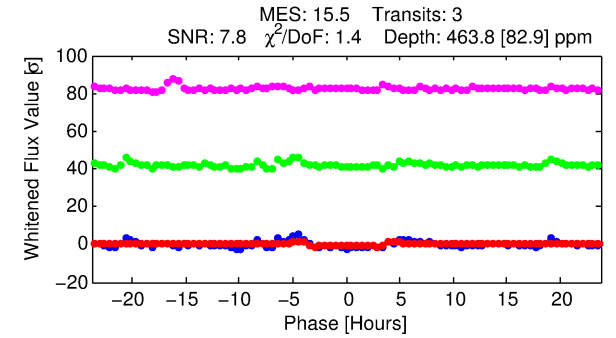
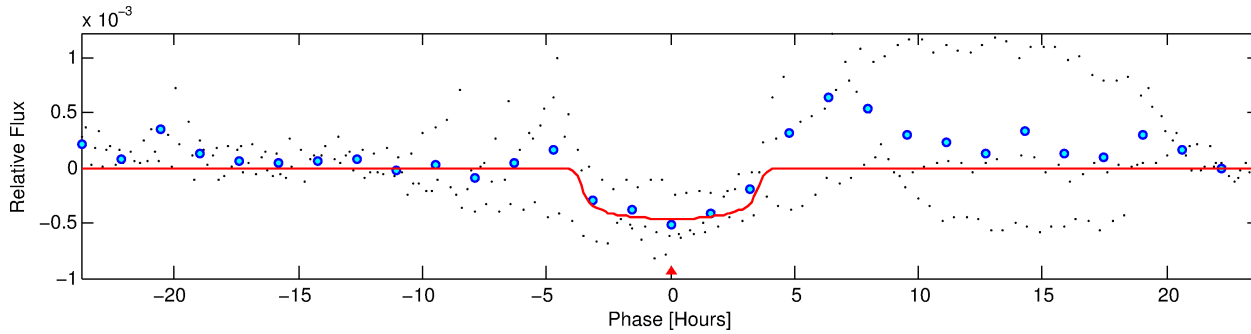
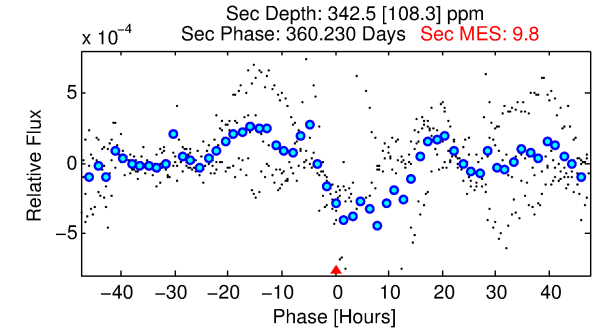
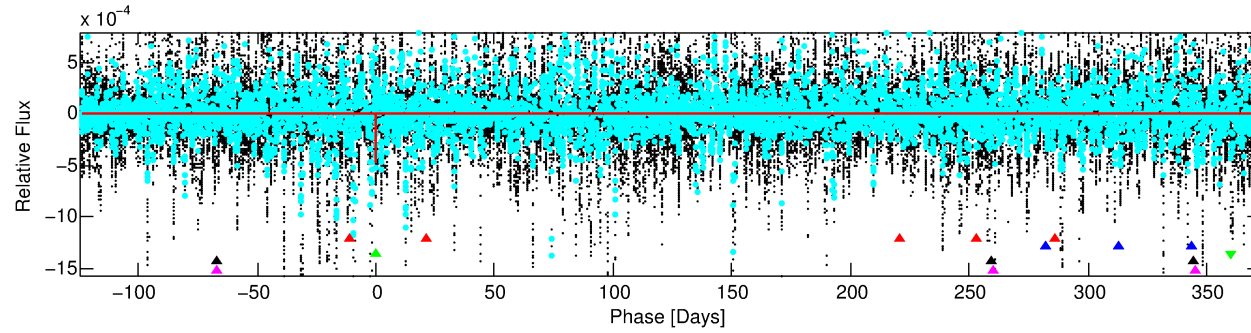
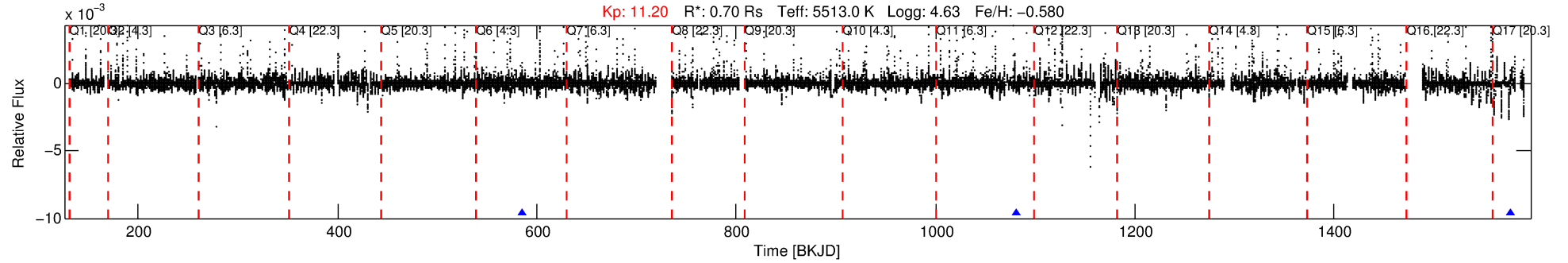
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005475645-03

No Significant Match Found

DV One-Page Summary

KIC: 5475645 Candidate: 3 of 5 Period: 496.337 d



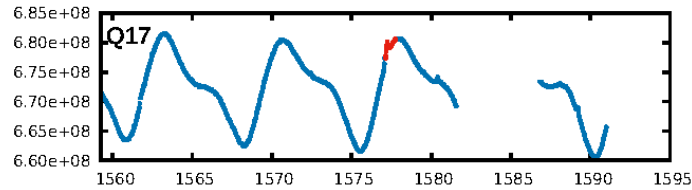
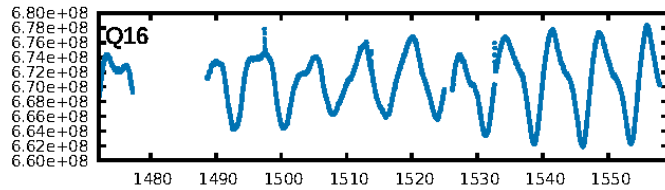
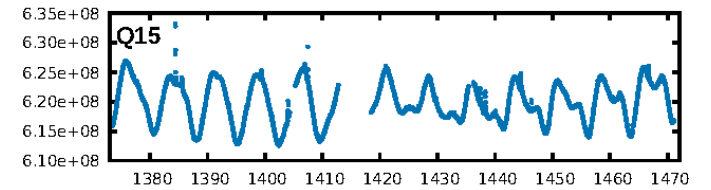
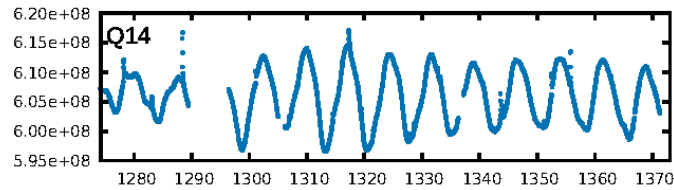
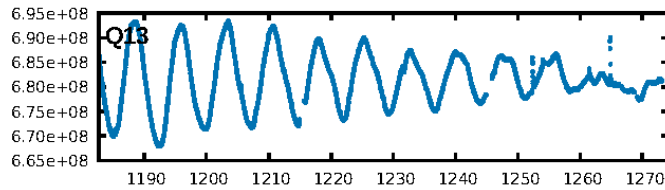
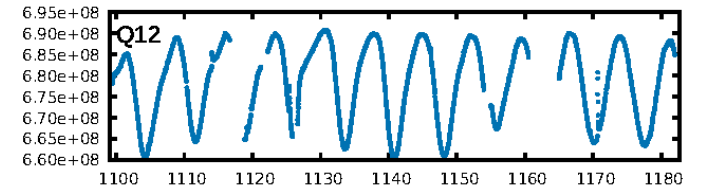
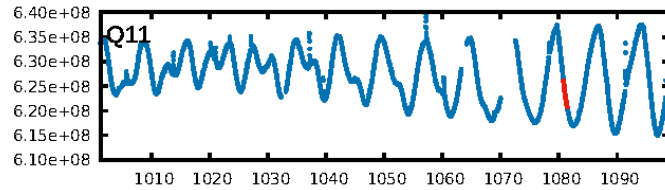
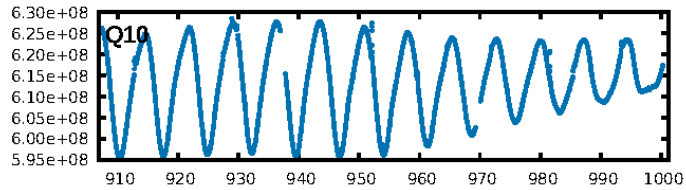
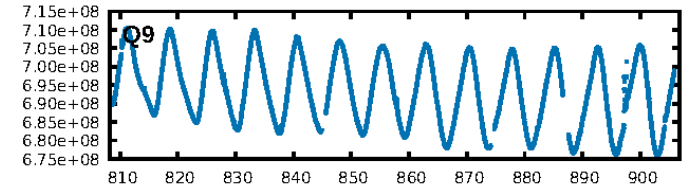
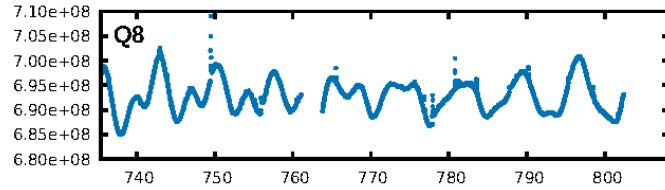
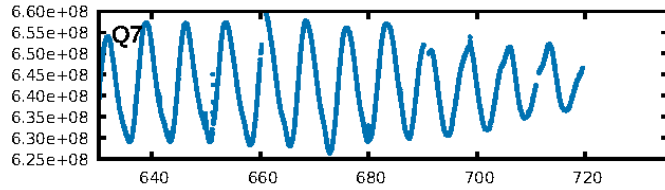
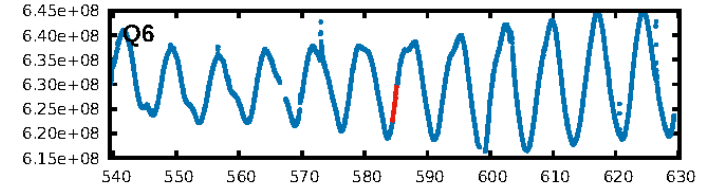
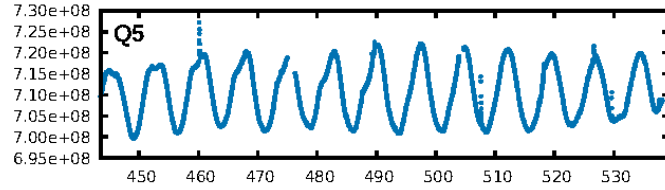
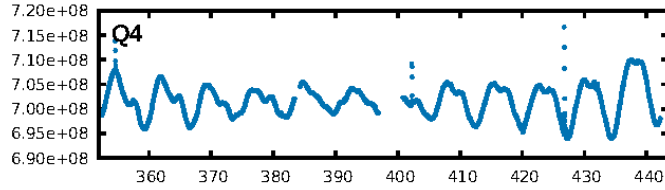
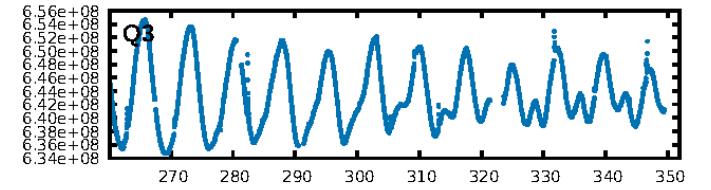
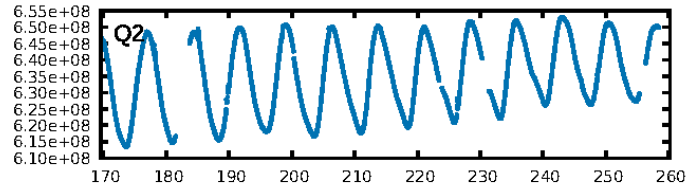
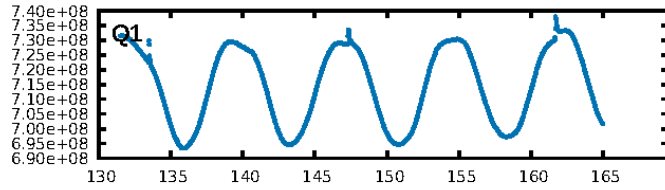
DV Fit Results:

Period = 496.33691 [0.00573] d
Epoch = 584.7658 [0.0072] BKJD
Rp/R* = 0.0230 [0.0030]
a/R* = 250.09 [87.58]
b = 0.88 [0.09]
Seff = 0.32 [0.07]
Teff = 192 [11] K
Rp = 1.77 [0.37] Re
a = 1.1253 [0.1578] AU
Ag = 76459.04 [34911.43] [2.19σ]
Teffp = 4946 [522] K [9.11σ]

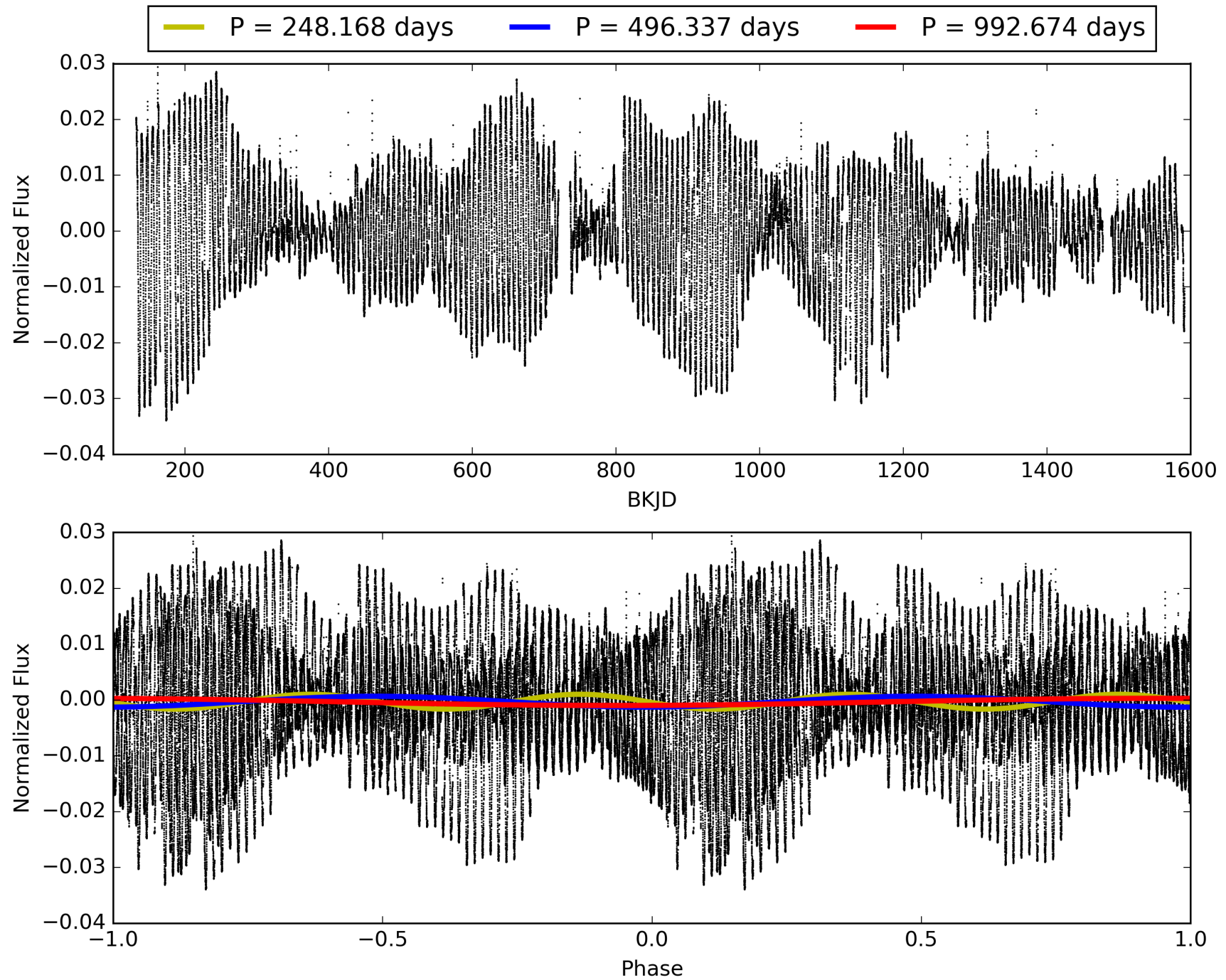
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.69σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 74.0%
Bootstrap-pfa: 3.97e-08
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.9907
Centroid-sig: 21.6%
Centroid-so: 0.802 arcsec [0.20σ]
OotOffset-rm: 0.246 arcsec [3.39σ]
KicOffset-rm: 0.219 arcsec [2.93σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 005475645-03, PDC Light Curves

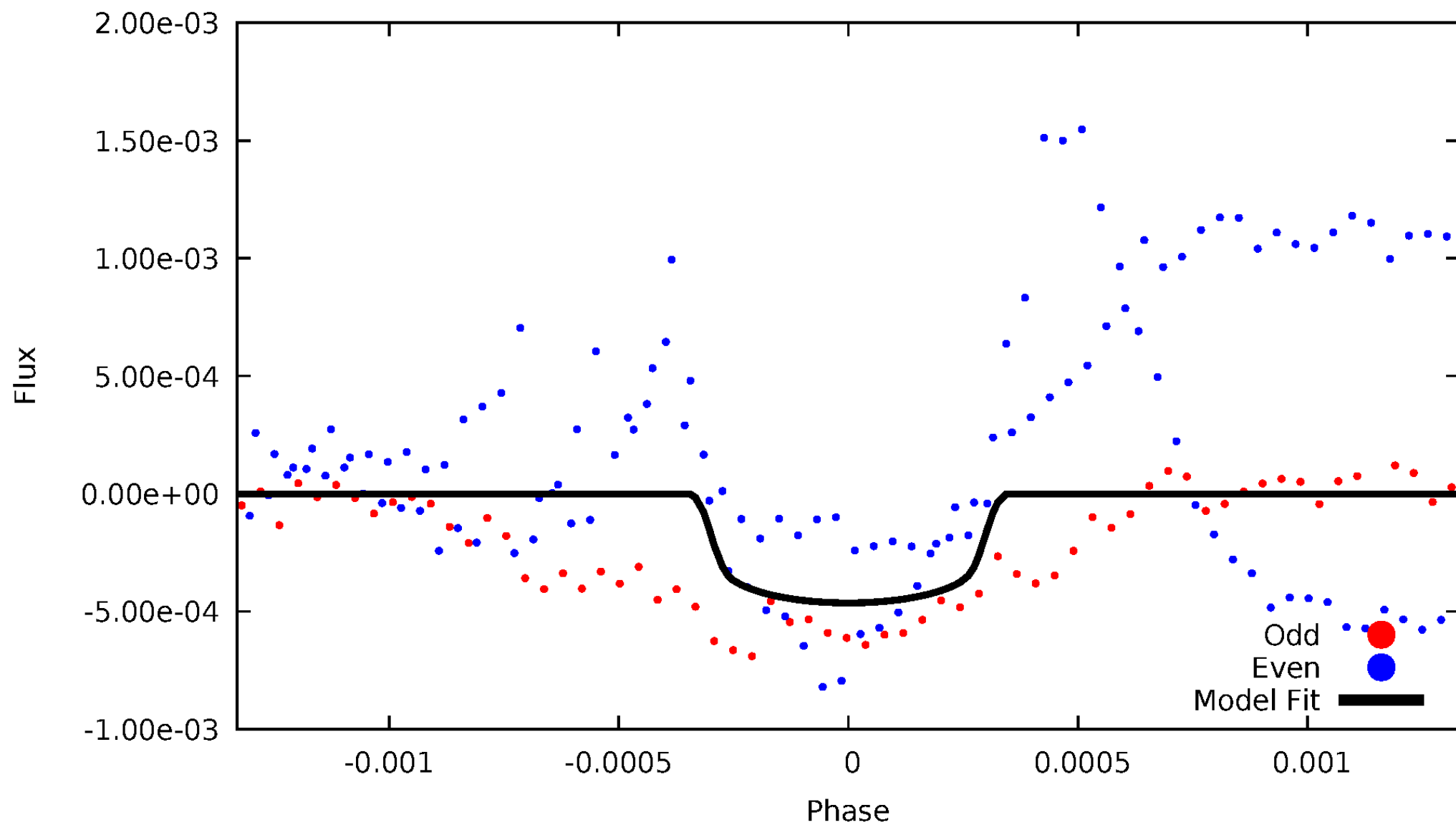


TCE 005475645-03



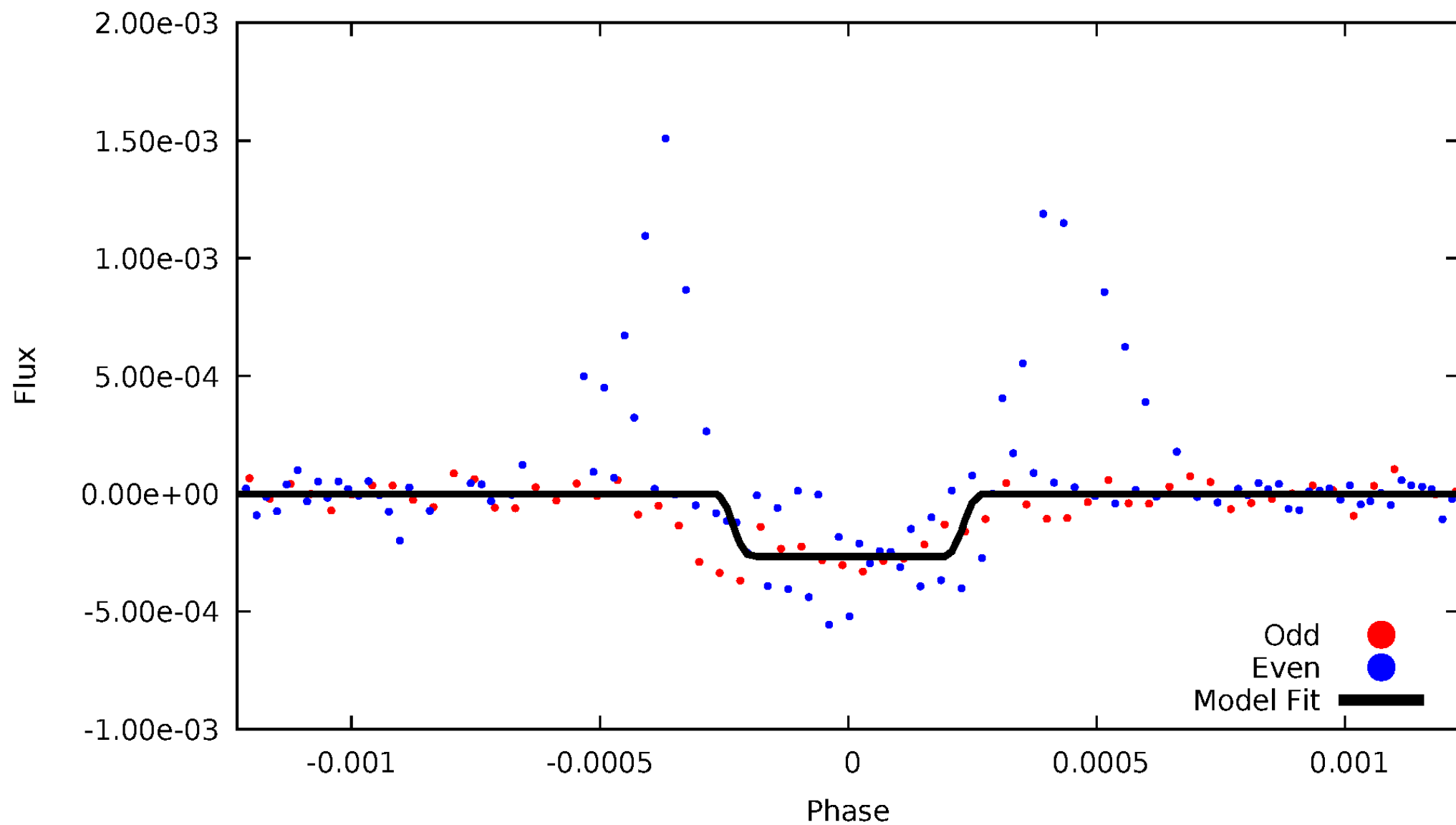
DV Odd/Even

TCE 005475645-03



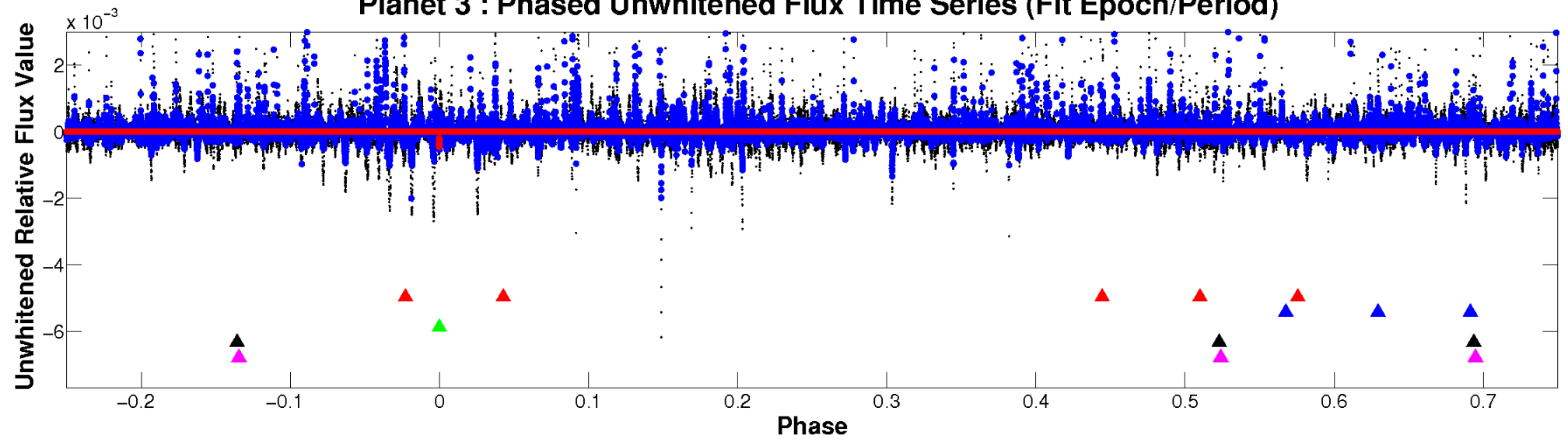
ALT Odd/Even

TCE 005475645-03

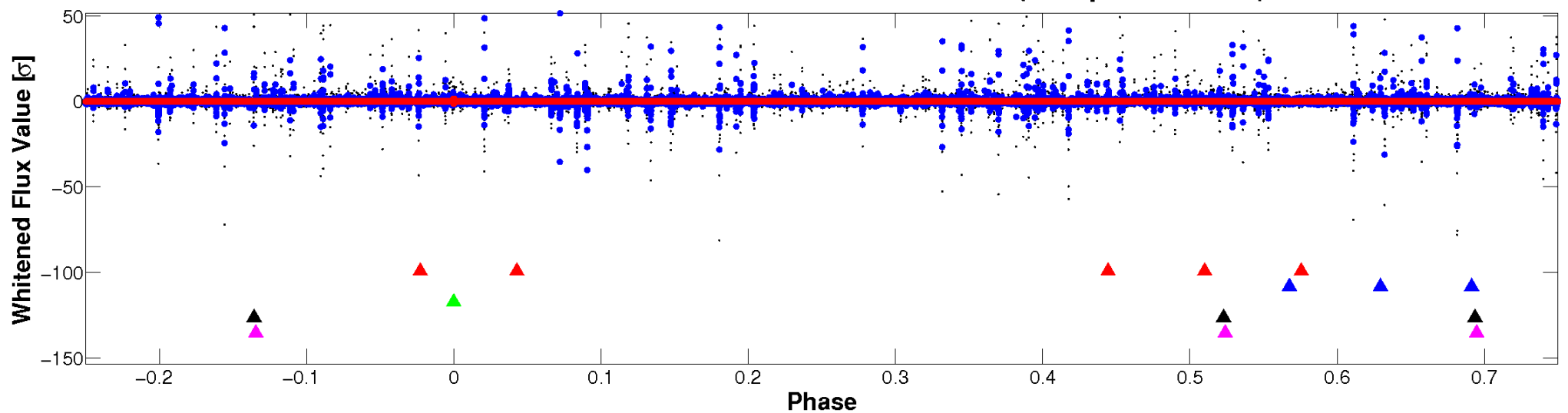


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

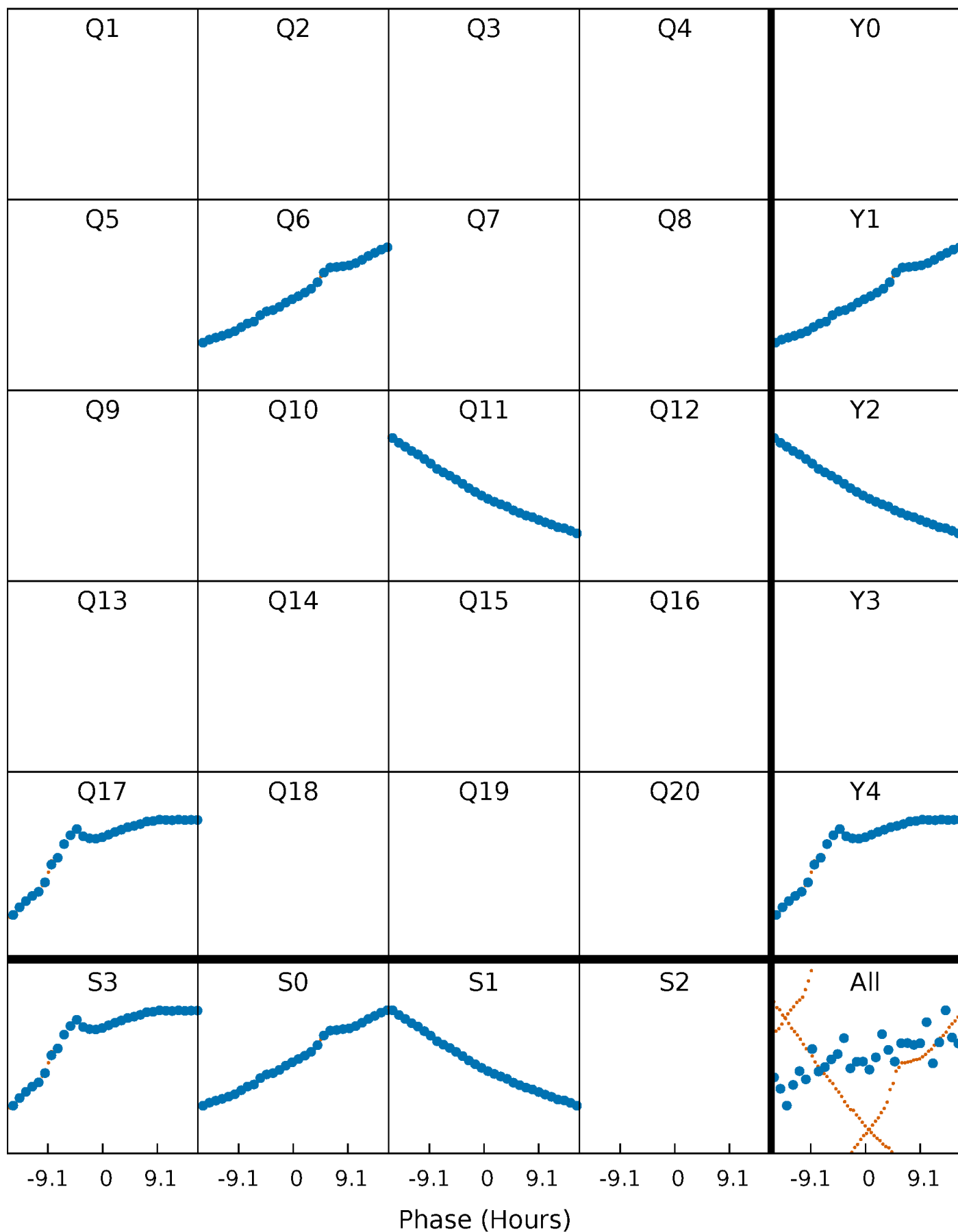


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



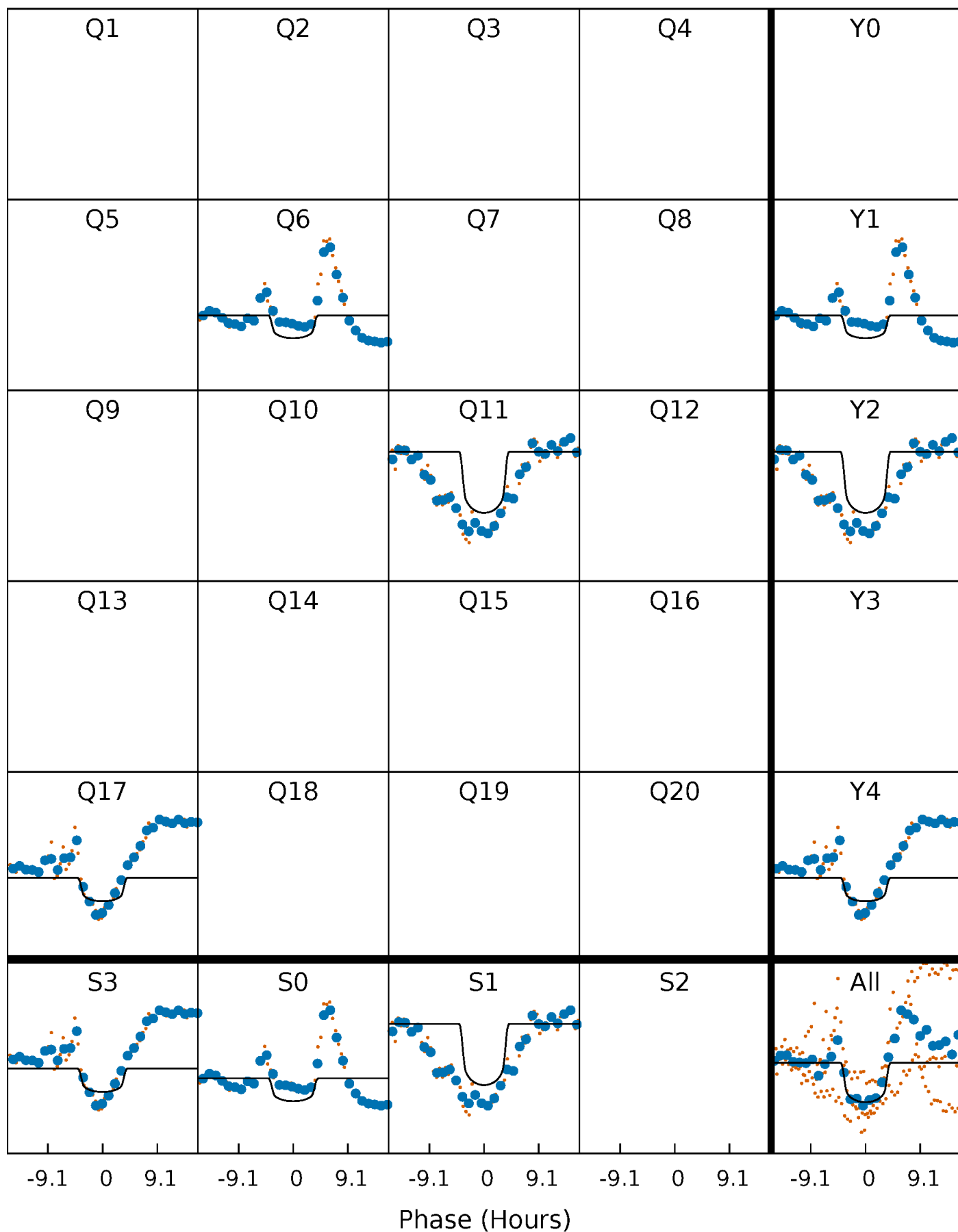
PDC Quarter-Phased Transit Curves

TCE 005475645-03 $P=496.336906$ Days $T_0=584.765769$ (BKJD)



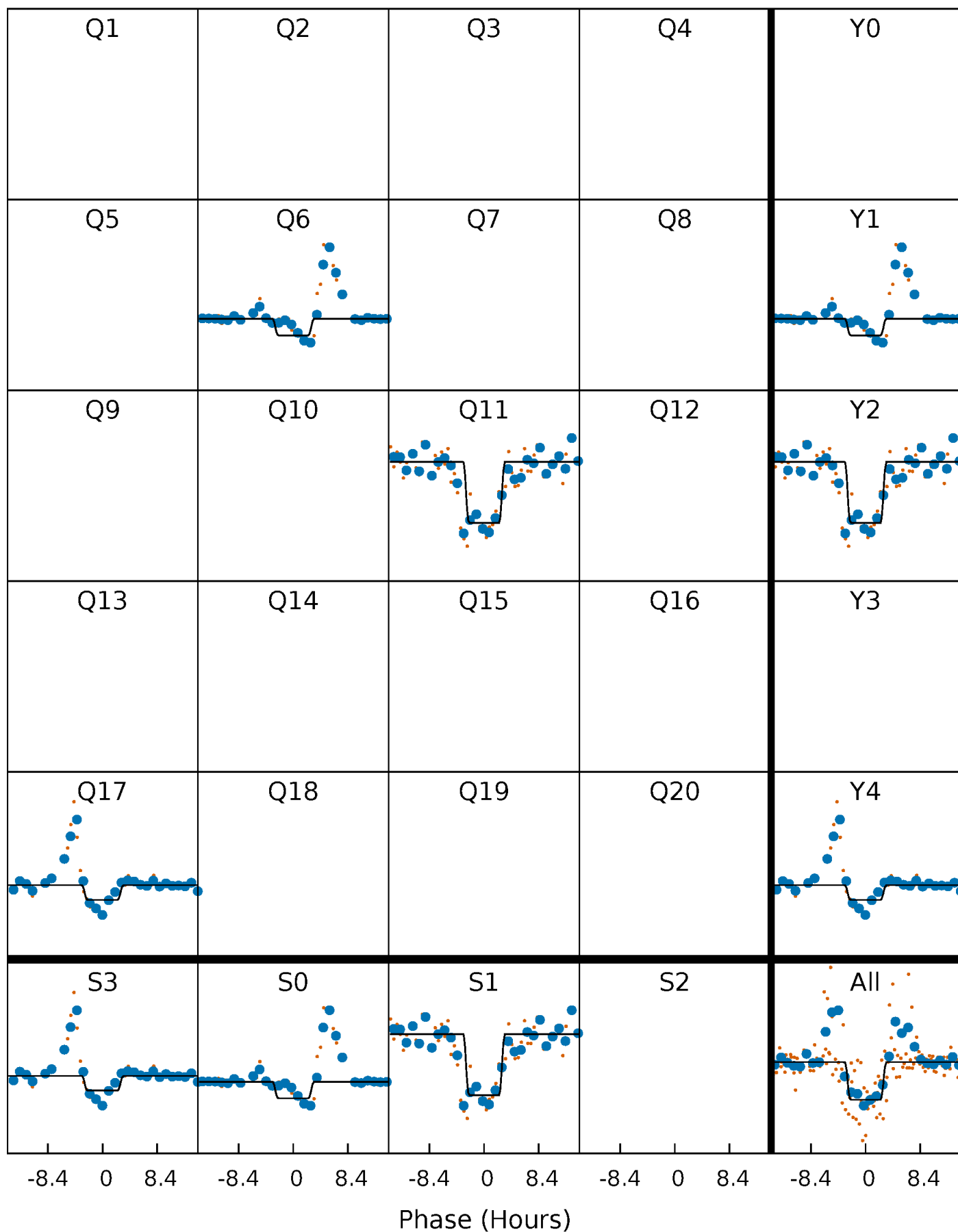
DV Quarter-Phased Transit Curves

TCE 005475645-03 P=496.336906 Days $T_0=584.765769$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

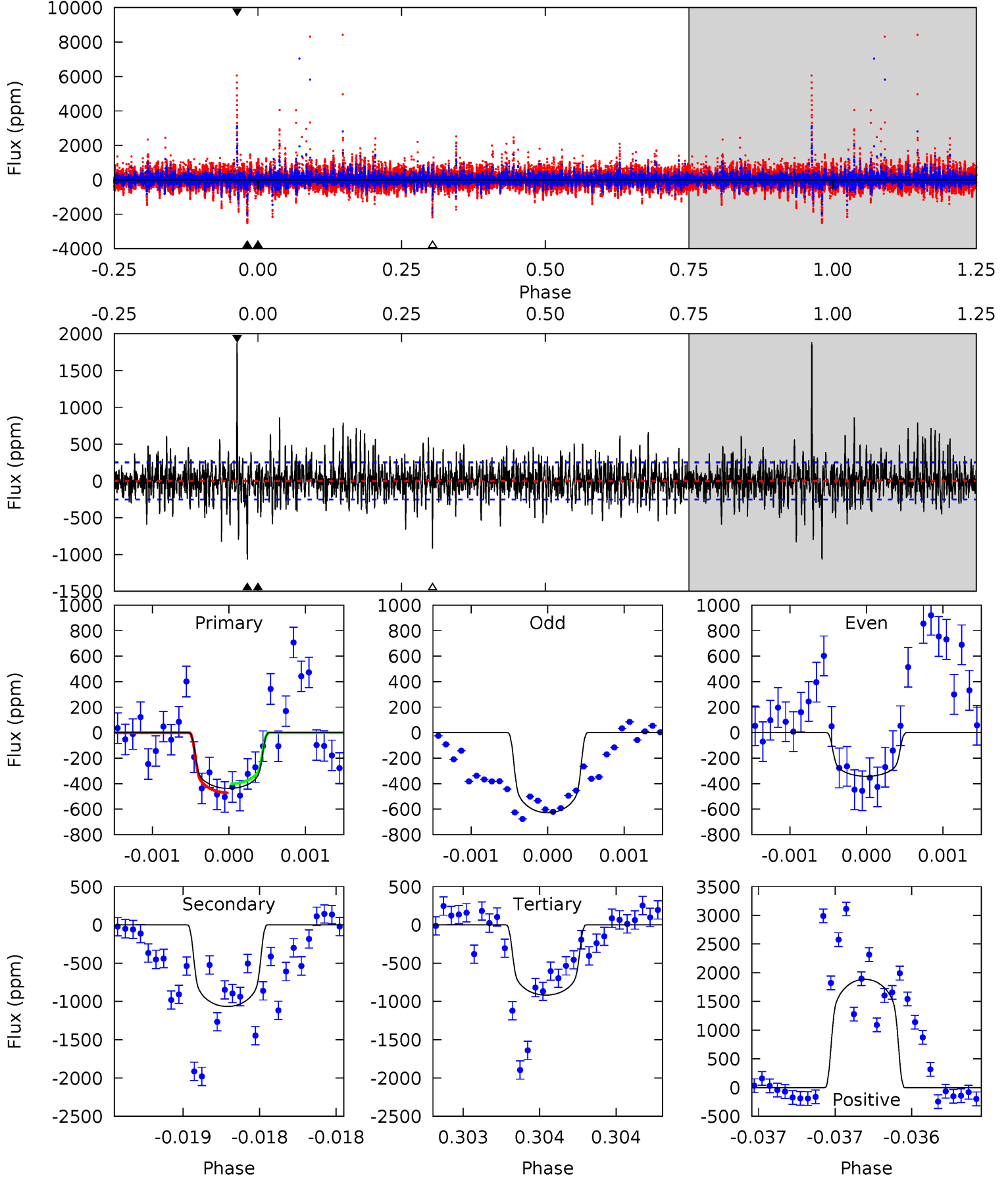
TCE 005475645-03 P=496.324361 Days $T_0=584.782398$ (BKJD)



DV Model-Shift Uniqueness Test

005475645-03, P = 496.336906 Days, E = 88.428863 Days

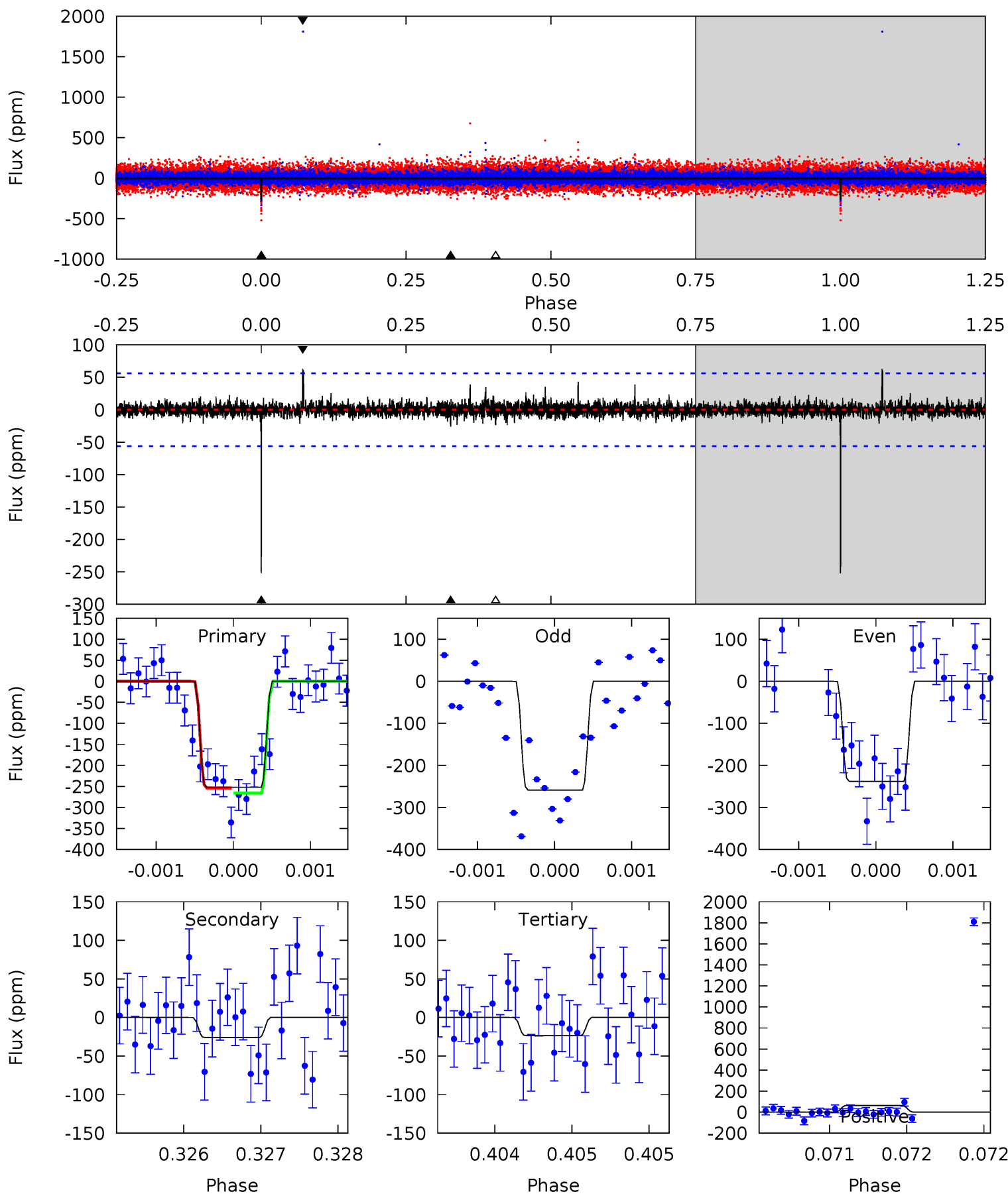
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	23.3	20.1	41.2	5.52	3.40	4.06	-10.5	-31.7	3.25	-17.9	1.99	0.86	0.64	0.77



Alt Model-Shift Uniqueness Test

005475645-03, P = 496.324361 Days, E = 88.458037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.9	2.58	2.33	6.25	5.56	3.46	0.57	22.6	18.7	0.24	-3.67	0.92	0.98	0.20	0.59



Stellar Parameters For KIC 005475645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5513^{+147}_{-147}	$4.630^{+0.035}_{-0.112}$	$-0.580^{+0.300}_{-0.300}$	$0.704^{+0.117}_{-0.050}$	$0.770^{+0.081}_{-0.066}$	$3.111^{+0.463}_{-1.059}$
	+3%/-3%	+1%/-2%	+52%/-52%	+17%/-7%	+11%/-9%	+15%/-34%
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 005475645-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1066 ± 46	$1.81^{+0.27}_{-0.25}$	272^{+13}_{-9}	6546^{+585}_{-437}	226067^{+78239}_{-54653}
Alt.	-26 ± 10	$1.32^{+0.23}_{-0.26}$	273^{+12}_{-11}	3518^{+342}_{-330}	10381^{+7355}_{-4966}

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 $A_{obs} \gg 1.0$

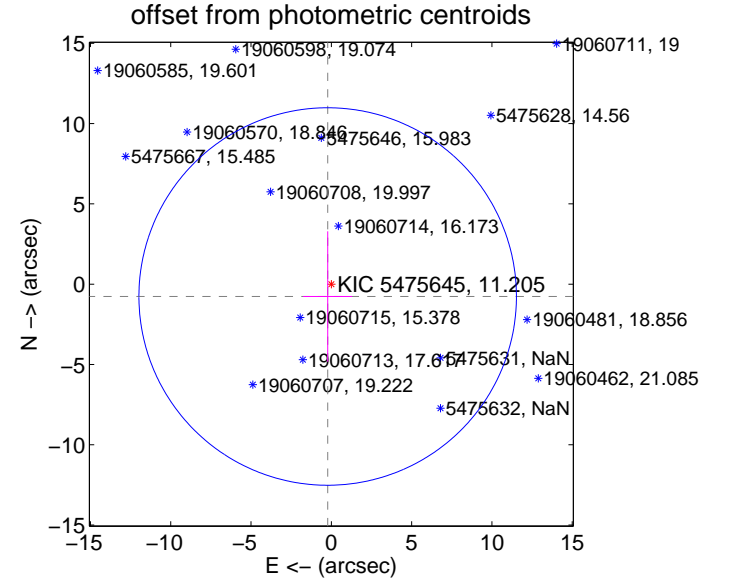
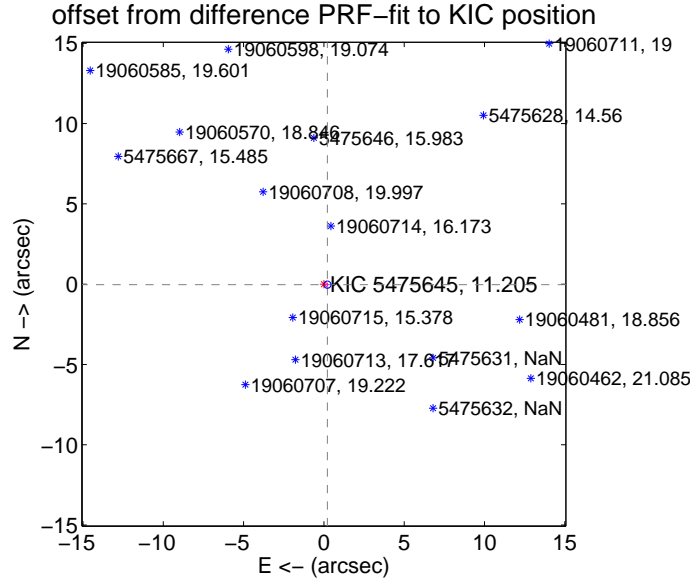
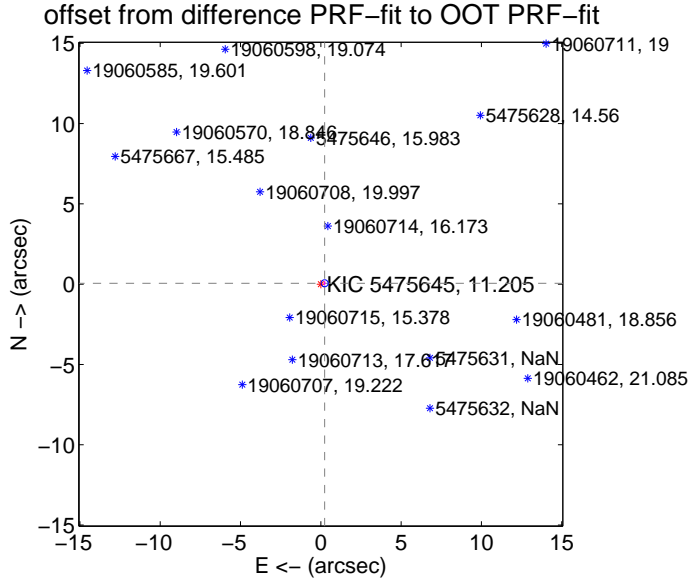
DV Centroid Data

Supplemental centroid analysis for 005475645-03. **Kepler magnitude: 11.21.** Transit SNR 7.80

There are 1 quarters with good PRF difference image offsets

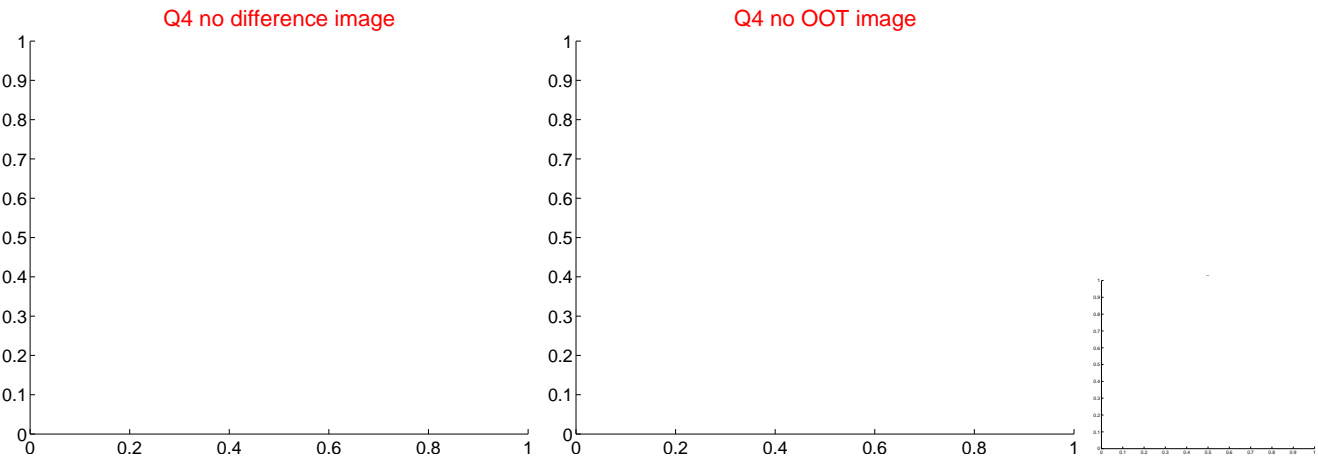
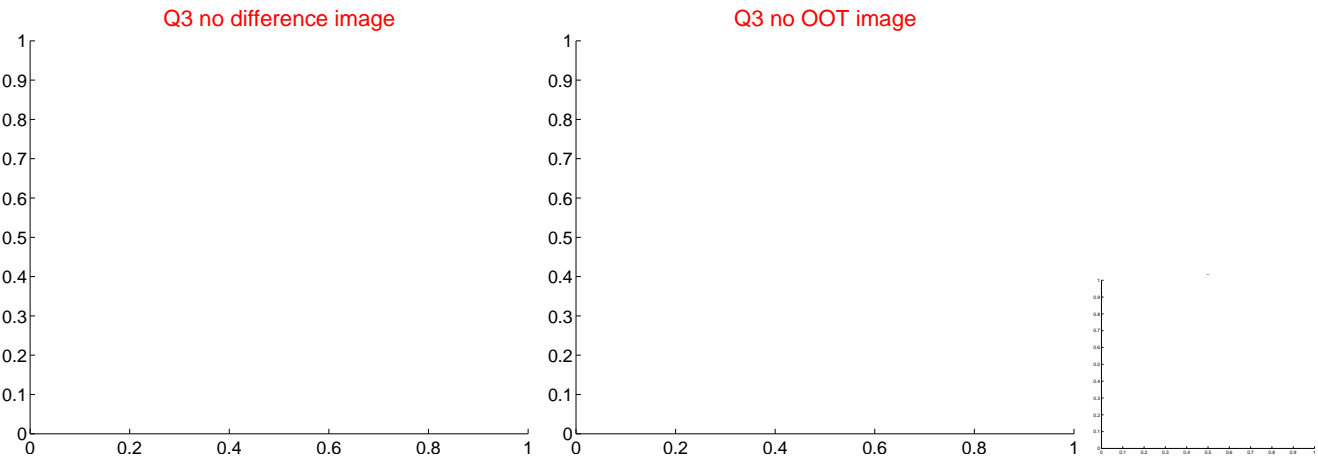
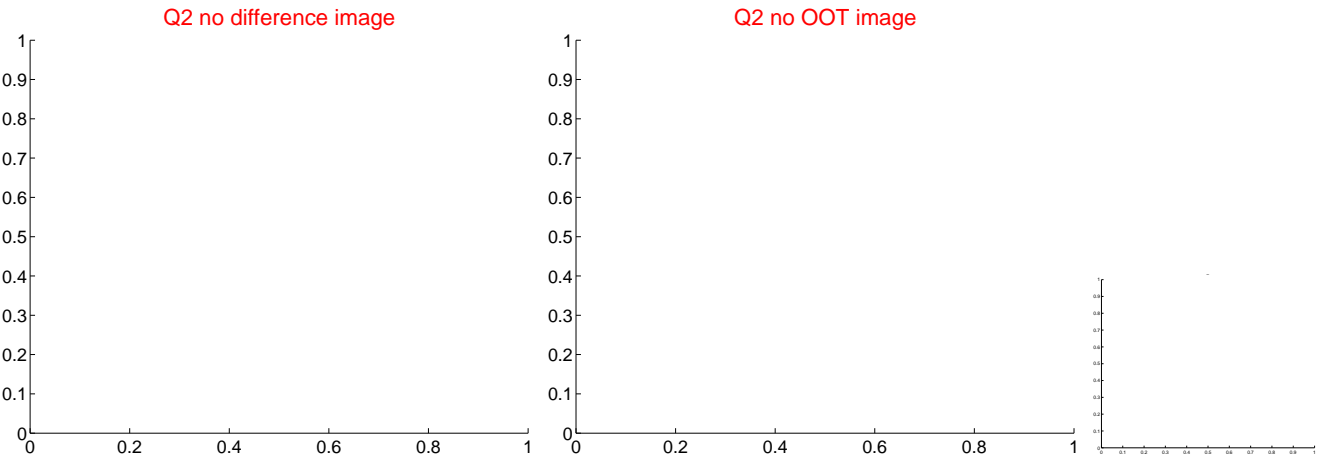
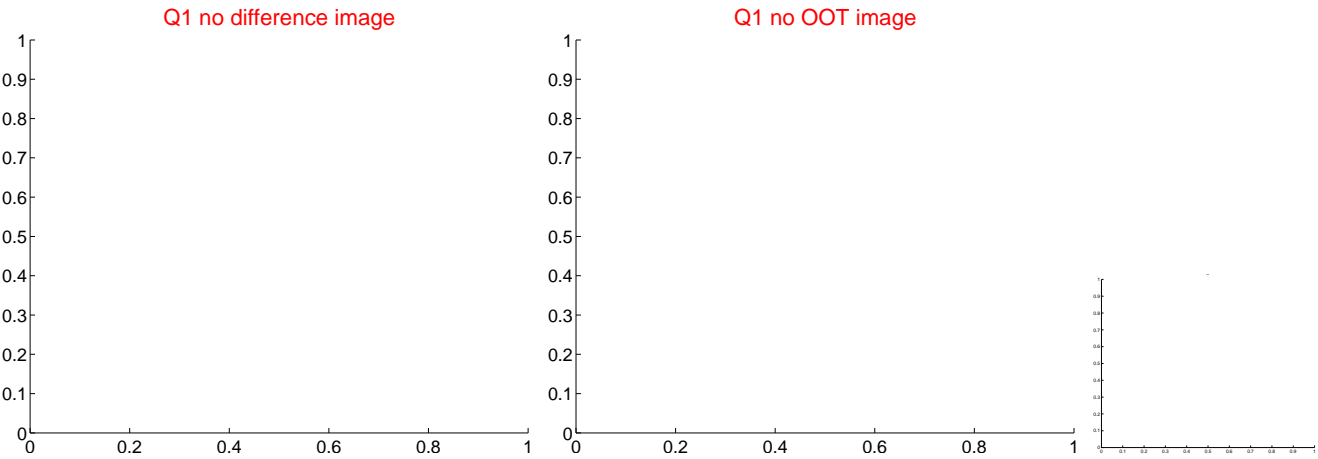
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.246 ± 0.073	3.39	-0.240 ± 0.067	0.057 ± 0.141
PRF-fit source offset from KIC position	0.219 ± 0.075	2.93	-0.217 ± 0.069	-0.031 ± 0.130
photometric centroid source offset	0.80 ± 3.92	0.20	0.23 ± 1.52	-0.77 ± 4.06



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.

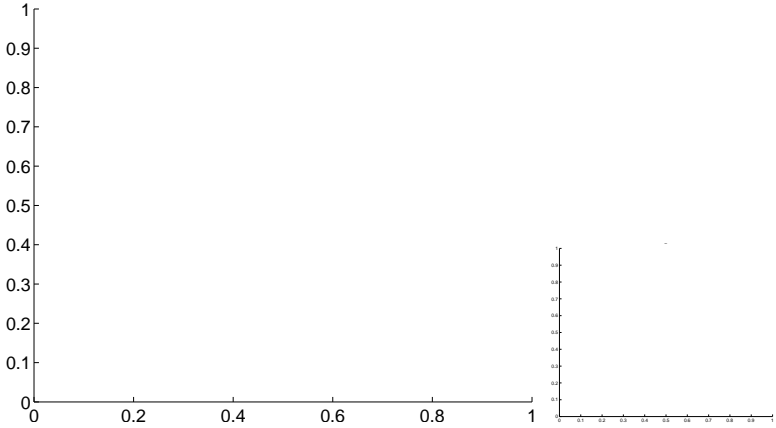


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

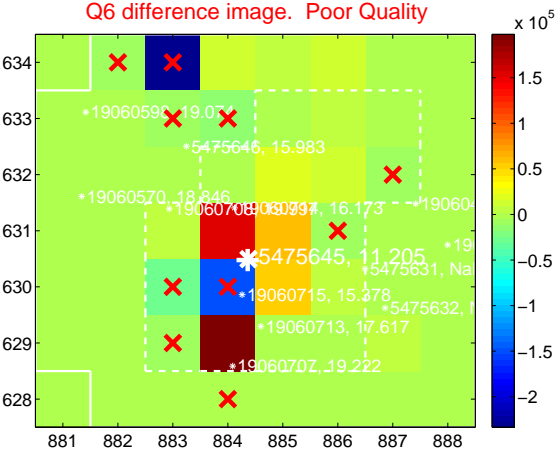
Q5 no difference image



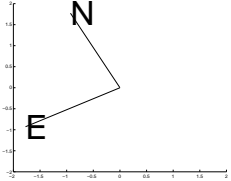
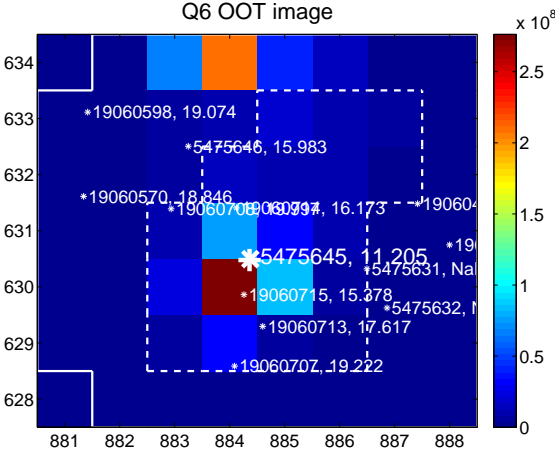
Q5 no OOT image



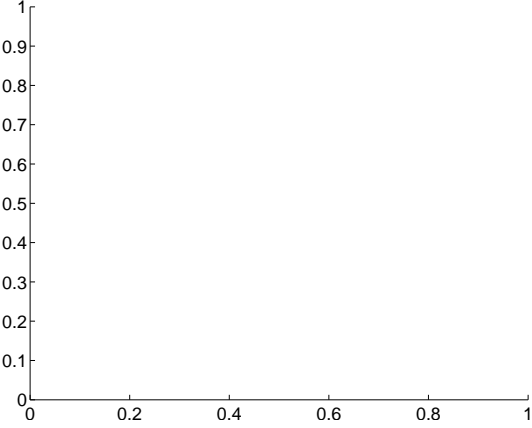
Q6 difference image. Poor Quality



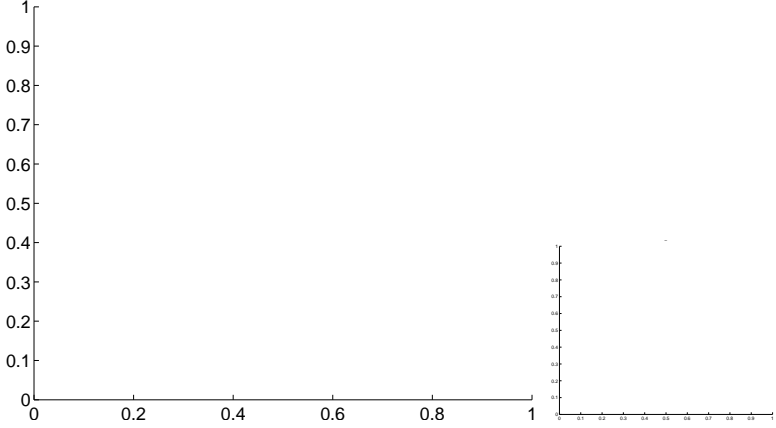
Q6 OOT image



Q7 no difference image



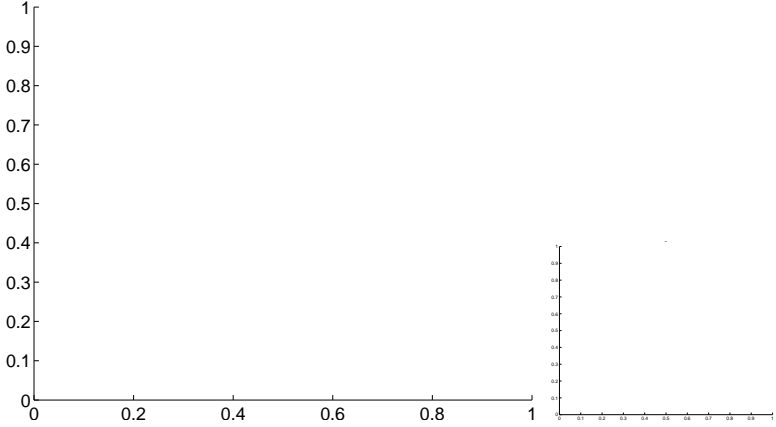
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



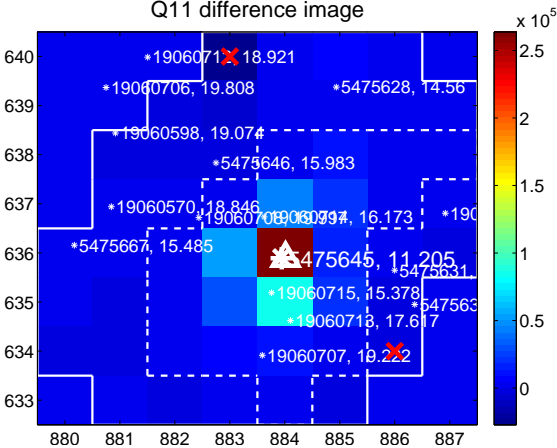
Q10 no difference image



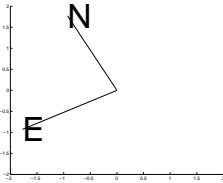
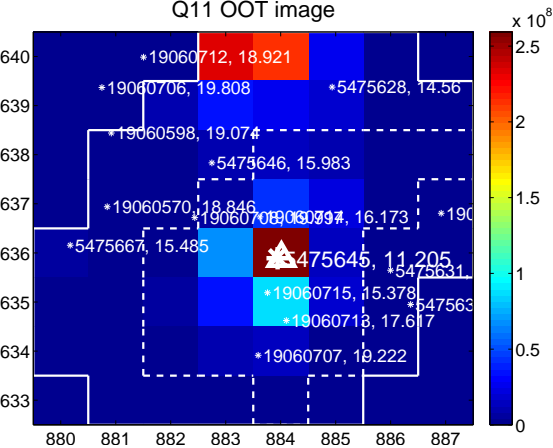
Q10 no OOT image



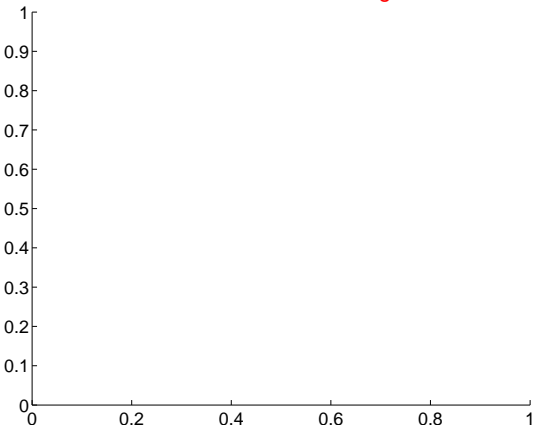
Q11 difference image



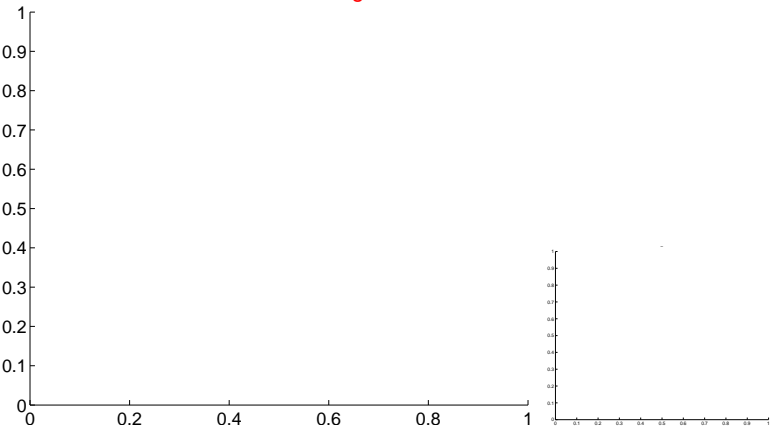
Q11 OOT image



Q12 no difference image



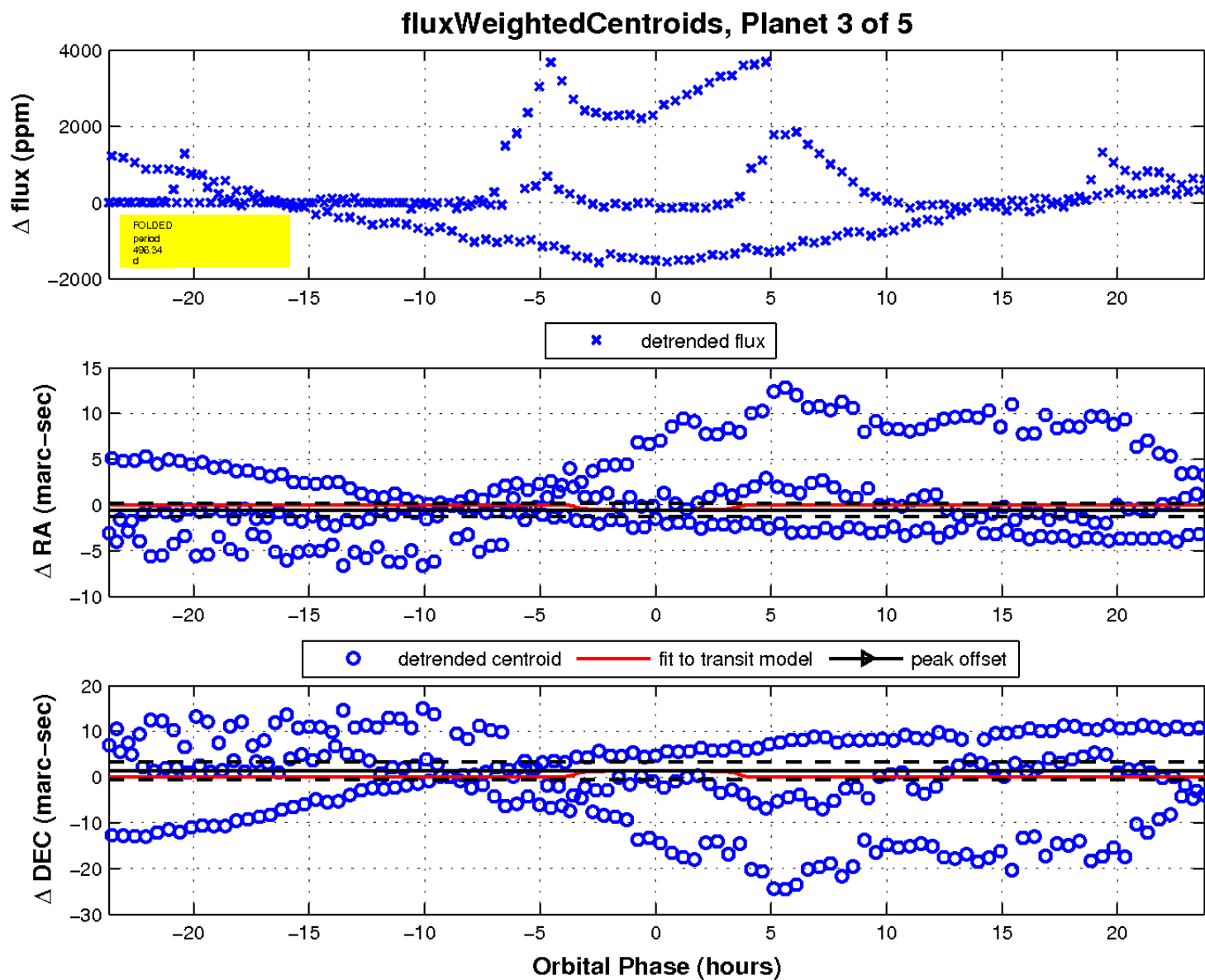
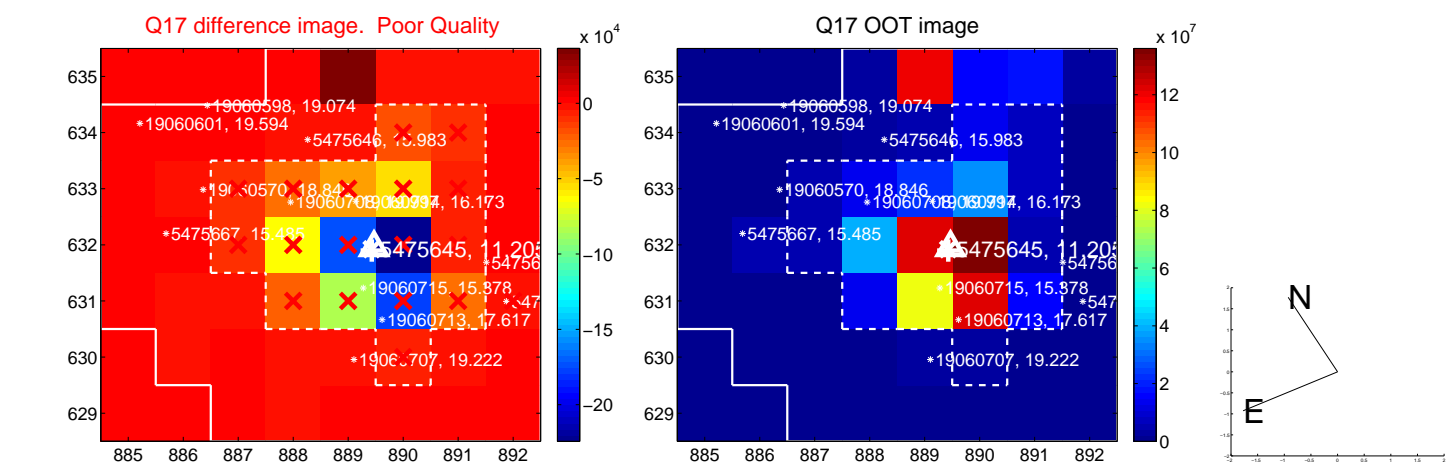
Q12 no OOT image



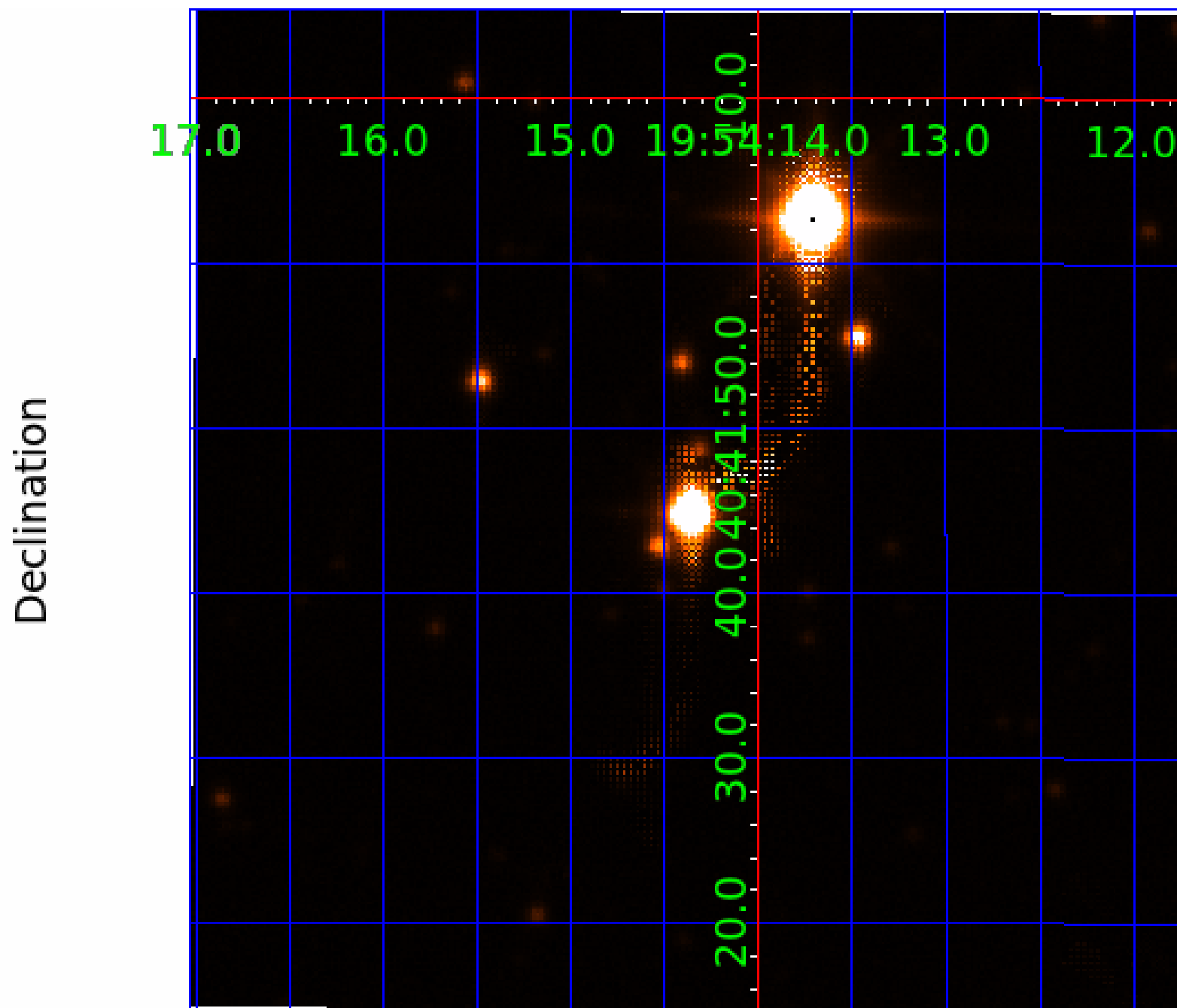
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005475645

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})
005475645-01	OBS	No	264.449607	309.032191	230.4	2.871	18.8	5.6	0.70	5513	1.19	0.75
005475645-02	OBS	No	465.624121	431.572991	487.3	21.871	19.2	5.2	0.70	5513	1.67	0.35
005475645-03	OBS	No	496.336906	584.765769	463.8	7.924	15.5	7.8	0.70	5513	1.77	0.32
005475645-04	OBS	No	411.601584	517.453354	142.0	4.013	13.8	2.7	0.70	5513	0.87	0.42
005475645-05	OBS	No	411.564945	518.063228	525.8	1.643	13.8	11.1	0.70	5513	1.65	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005475645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005475645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005475645-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

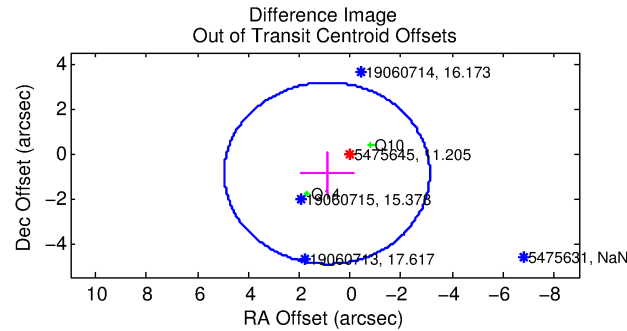
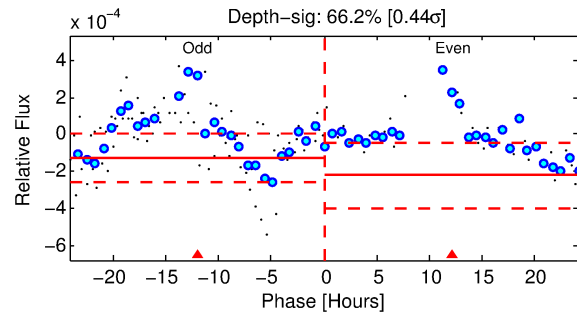
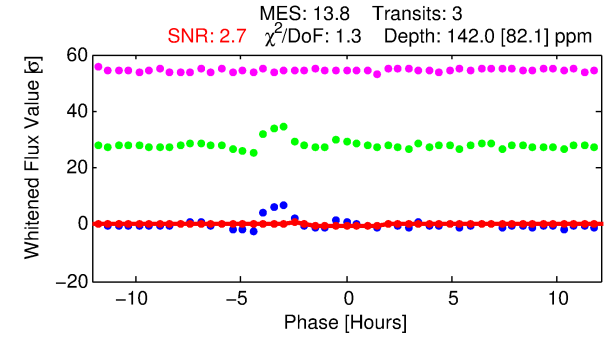
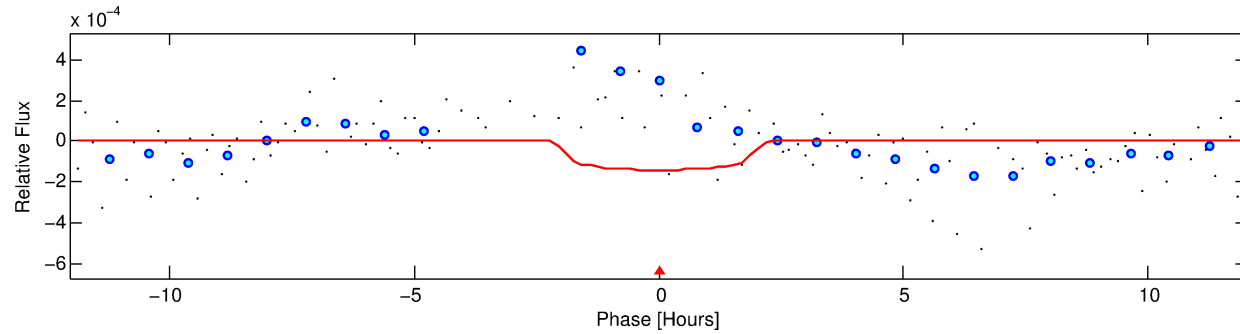
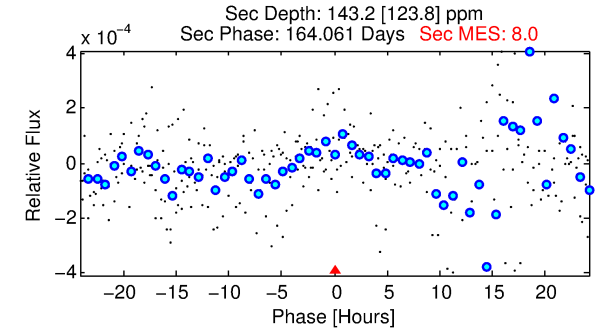
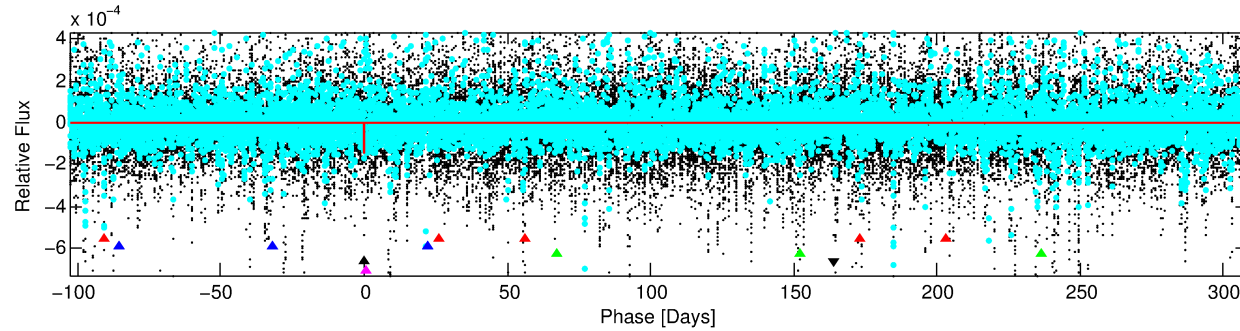
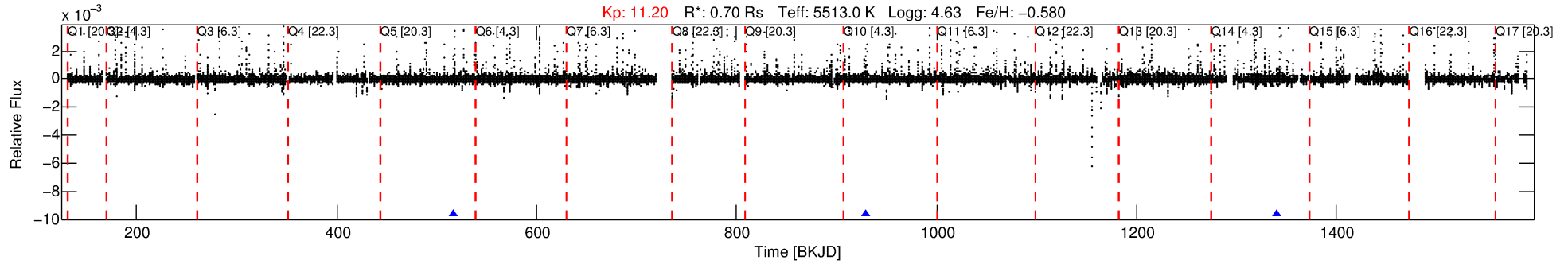
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005475645-04

No Significant Match Found

DV One-Page Summary

KIC: 5475645 Candidate: 4 of 5 Period: 411.602 d



DV Fit Results:

Period = 411.60158 [0.01459] d
Epoch = 517.4534 [0.0195] BKJD
Rp/R* = 0.0114 [0.0565]
a/R* = 640.57 [14348.31]
b = 0.60 [24.59]
Seff = 0.42 [0.10]
Teq = 205 [12] K
Rp = 0.87 [4.35] Re
a = 0.9933 [0.1393] AU
Ag = 102010.84 [1019330.61] [0.10 σ]
Teffp = 5658 [14131] K [0.39 σ]

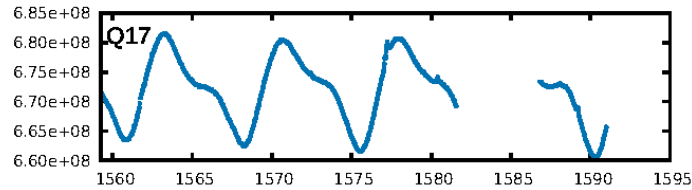
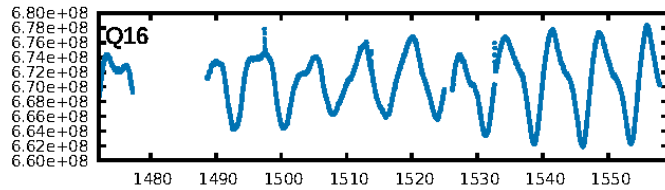
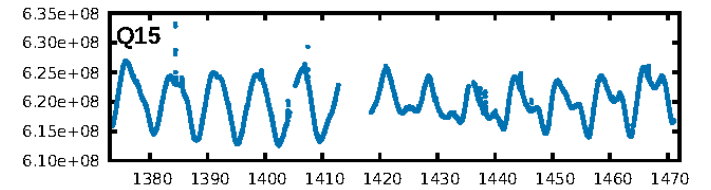
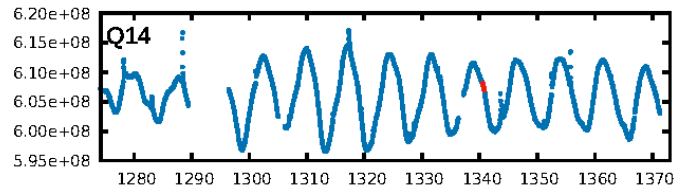
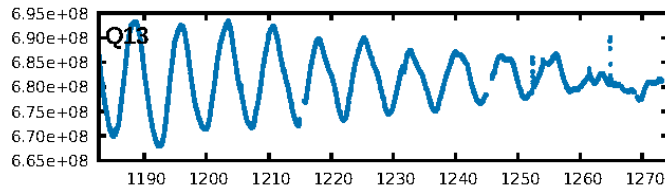
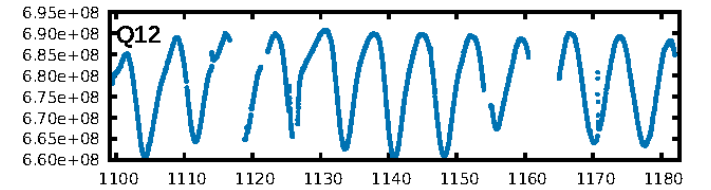
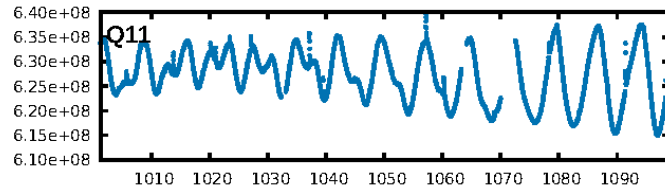
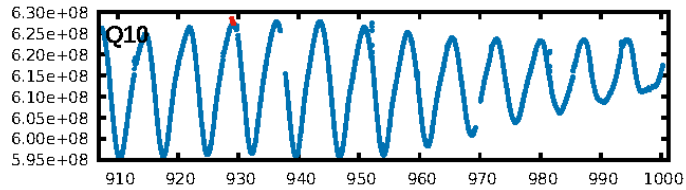
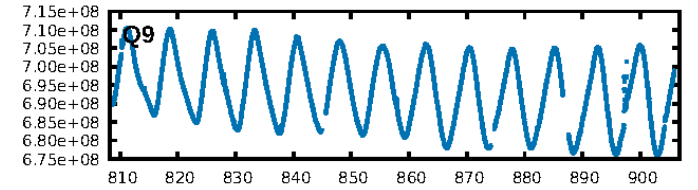
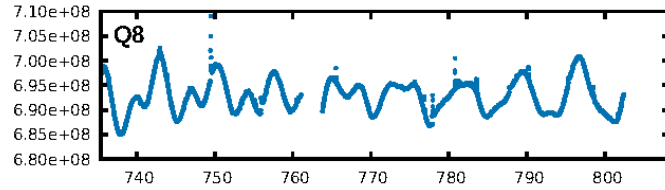
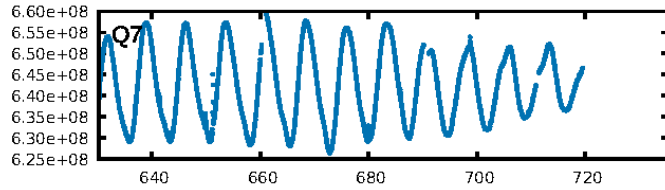
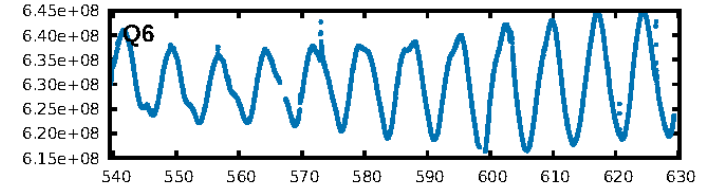
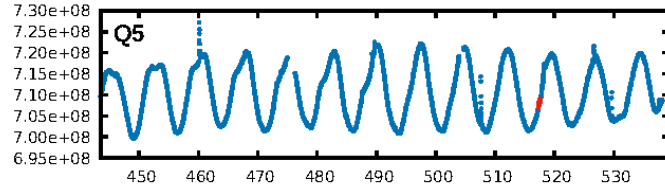
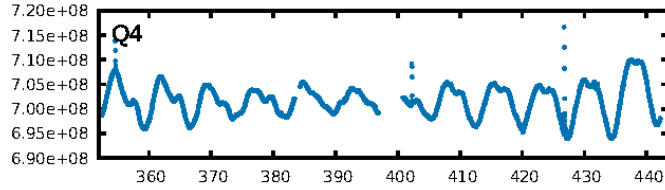
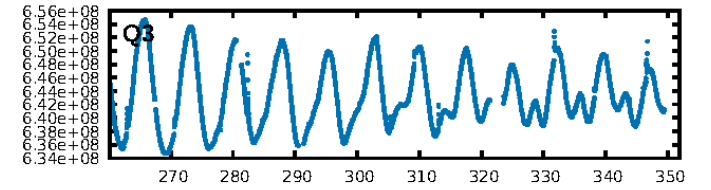
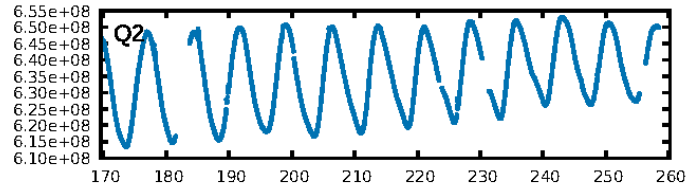
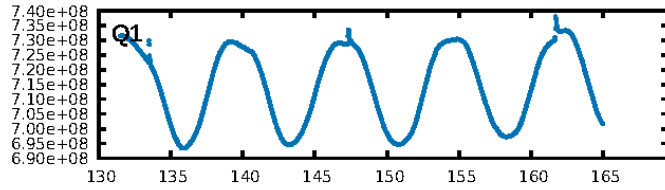
DV Diagnostic Results:

ShortPeriod-sig: 16.1% [0.20 σ]
LongPeriod-sig: 100.0% [58.31 σ]
ModelChiSquare2-sig: 43.3%
ModelChiSquareGof-sig: 77.7%
Bootstrap-pfa: 5.77e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -16.12
Centroid-sig: 45.3%
Centroid-so: 12.209 arcsec [0.52 σ]
OotOffset-rm: 1.266 arcsec [0.94 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-rm: 1.371 arcsec [1.00 σ]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

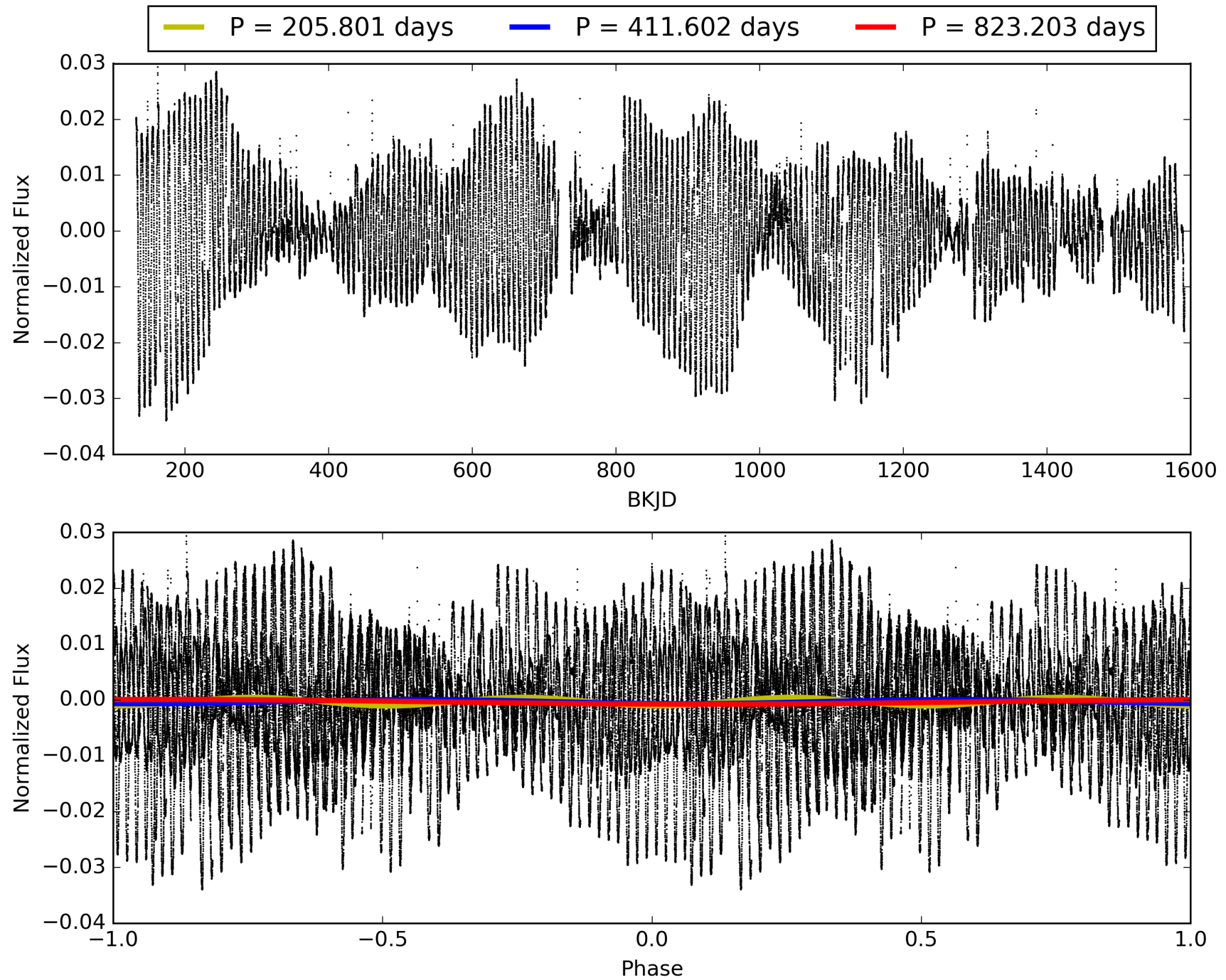
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:32:08 Z

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

TCE 005475645-04, PDC Light Curves

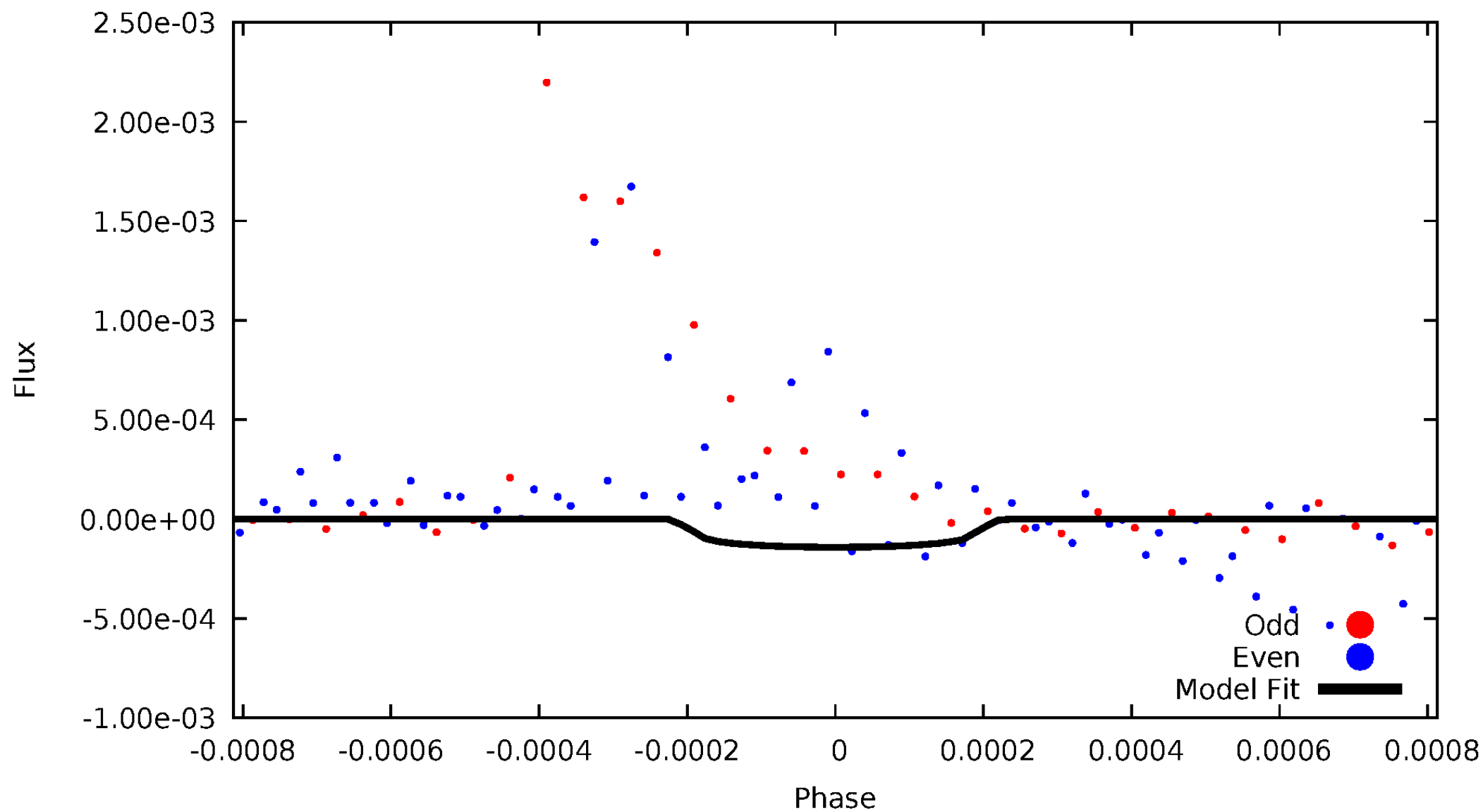


TCE 005475645-04



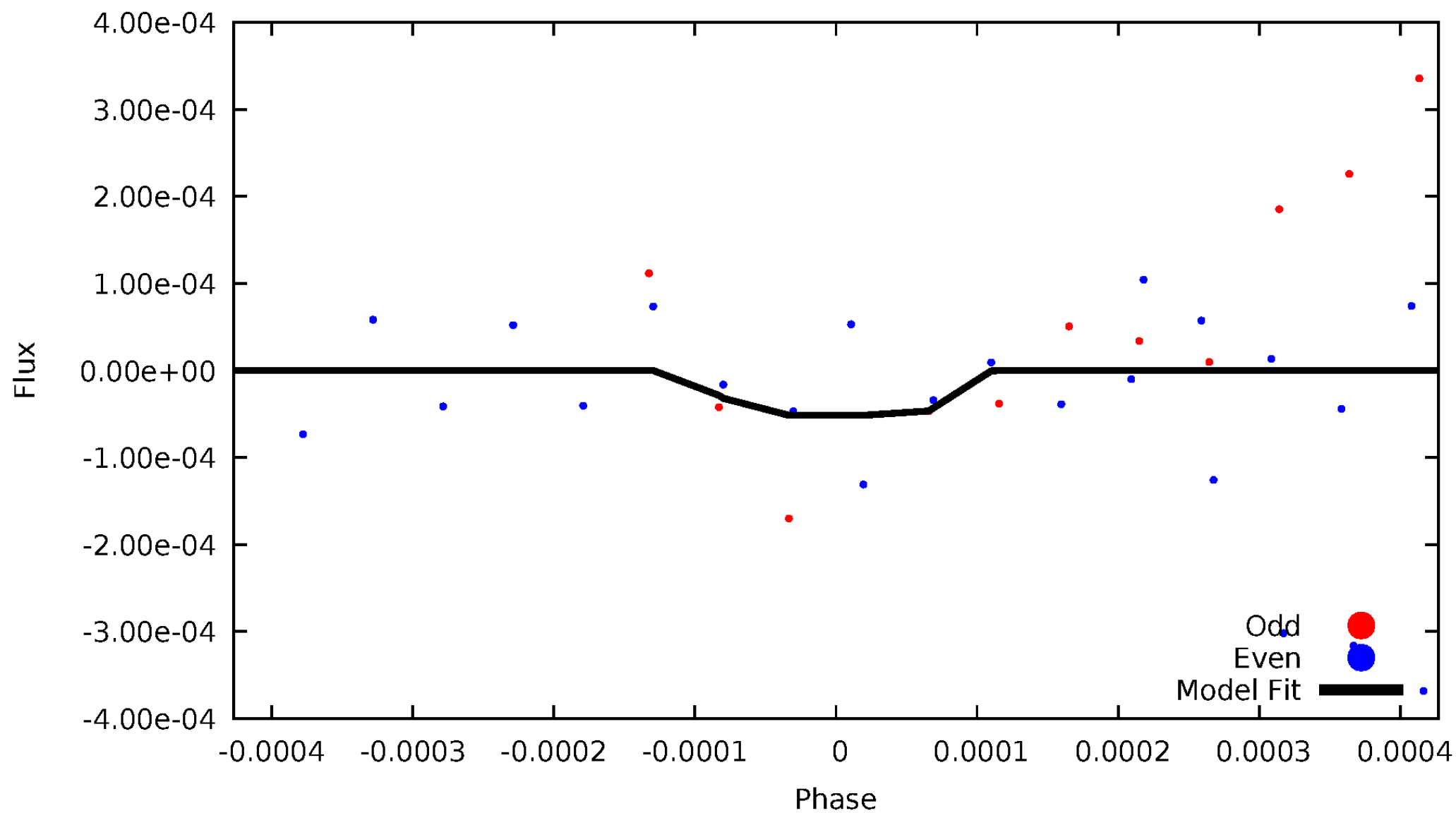
DV Odd/Even

TCE 005475645-04



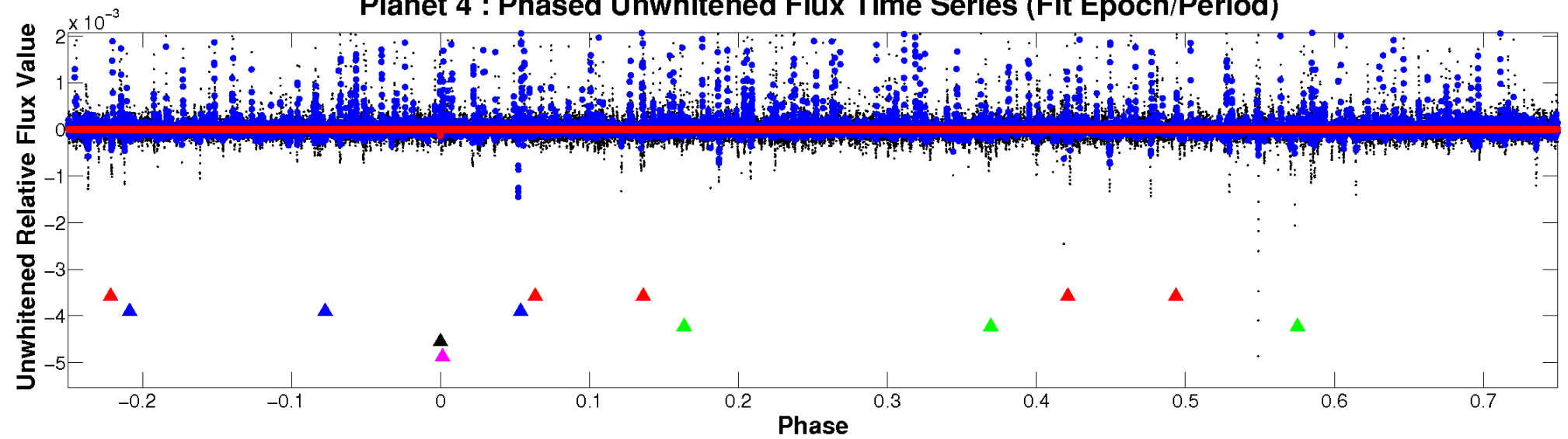
ALT Odd/Even

TCE 005475645-04

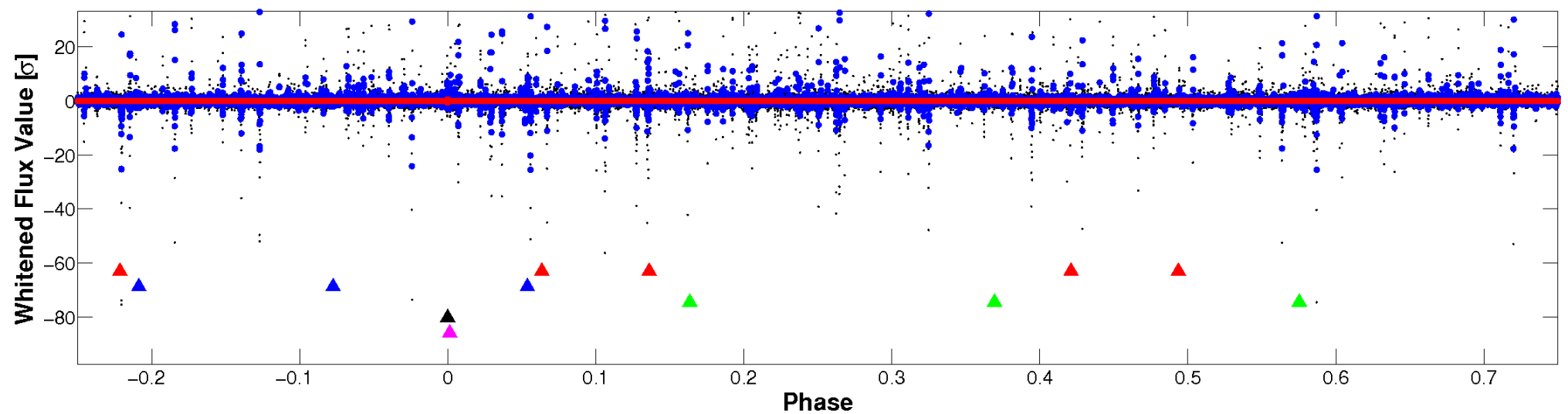


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

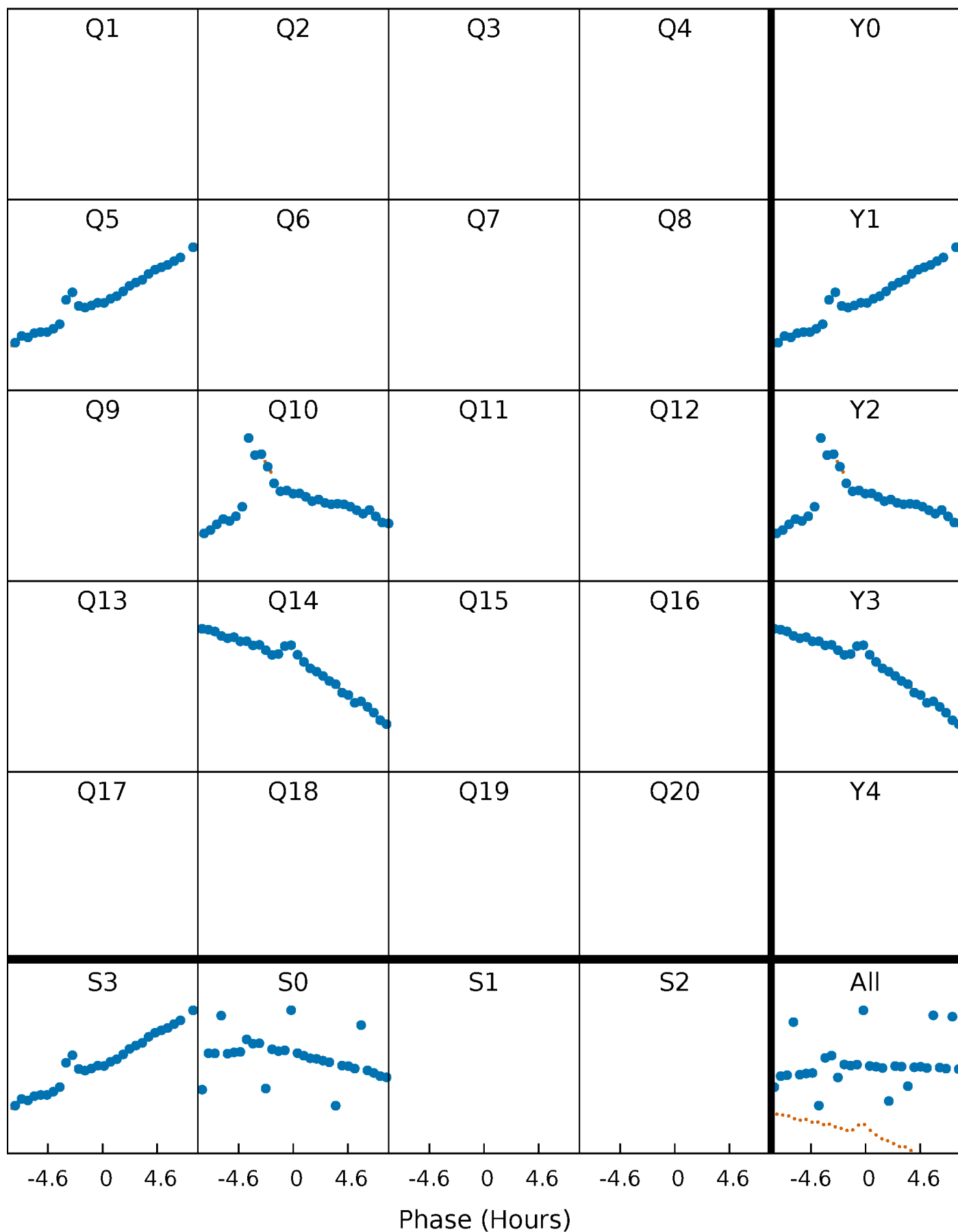


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



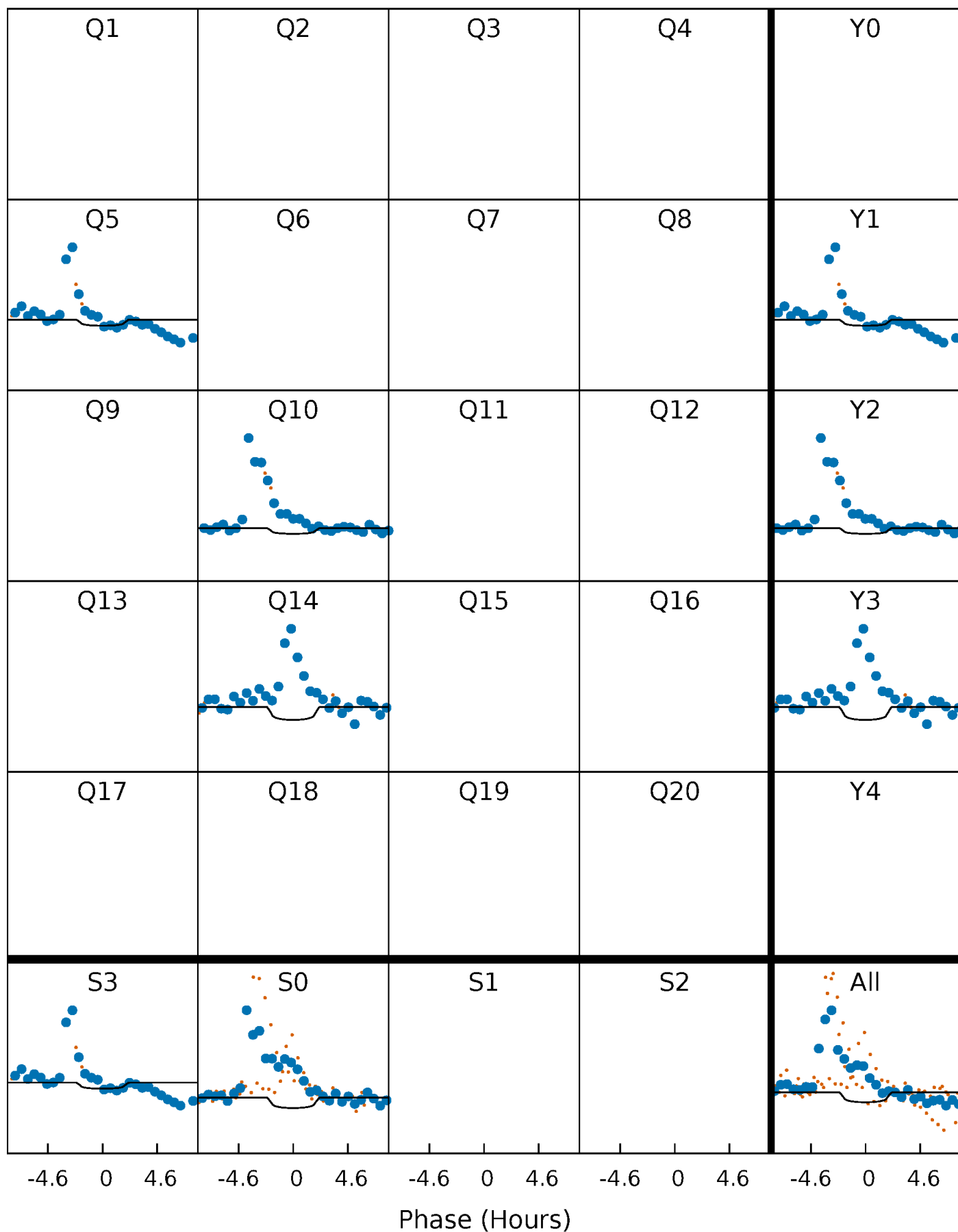
PDC Quarter-Phased Transit Curves

TCE 005475645-04 P=411.601584 Days $T_0=517.453354$ (BKJD)



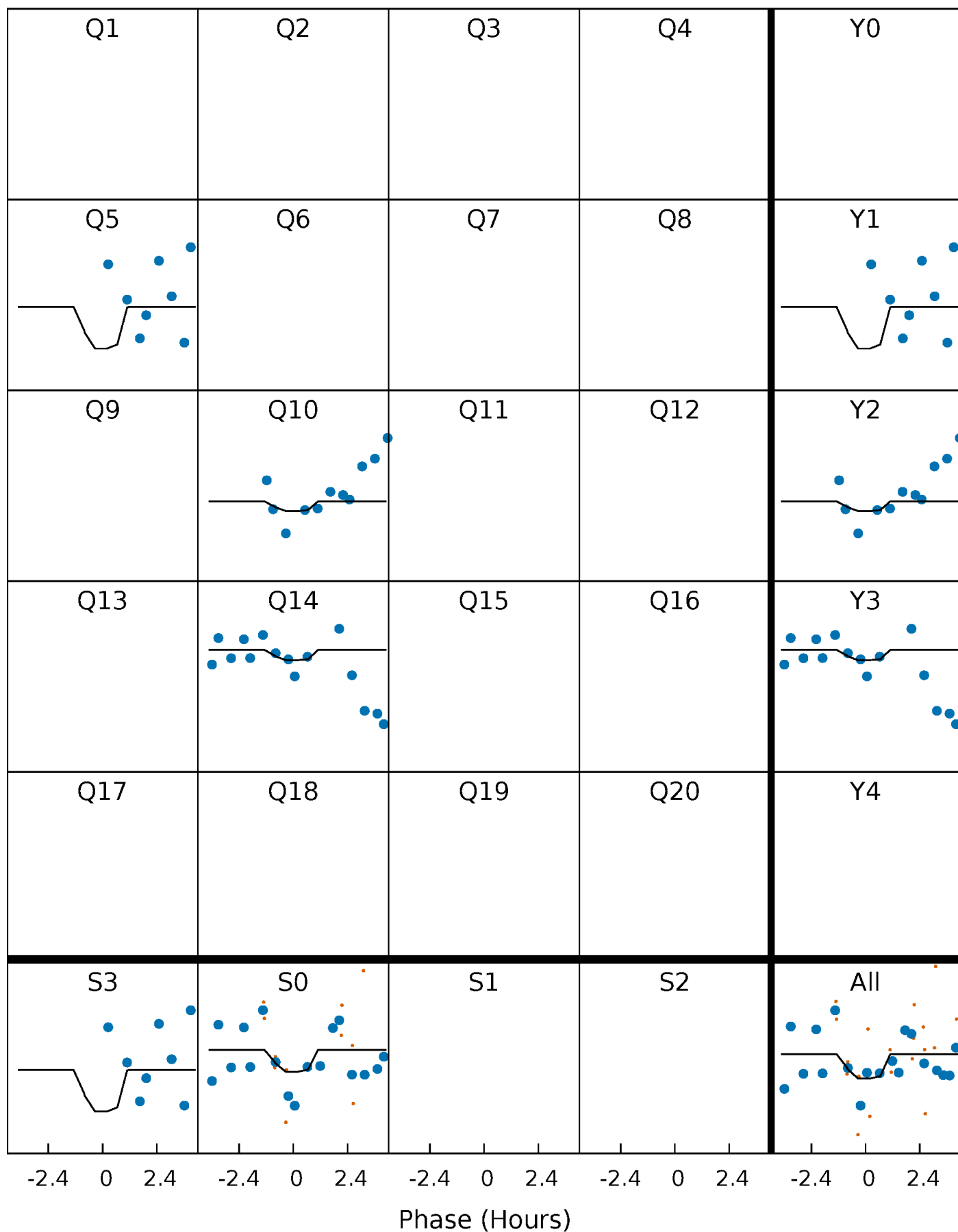
DV Quarter-Phased Transit Curves

TCE 005475645-04 $P=411.601584$ Days $T_0=517.453354$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

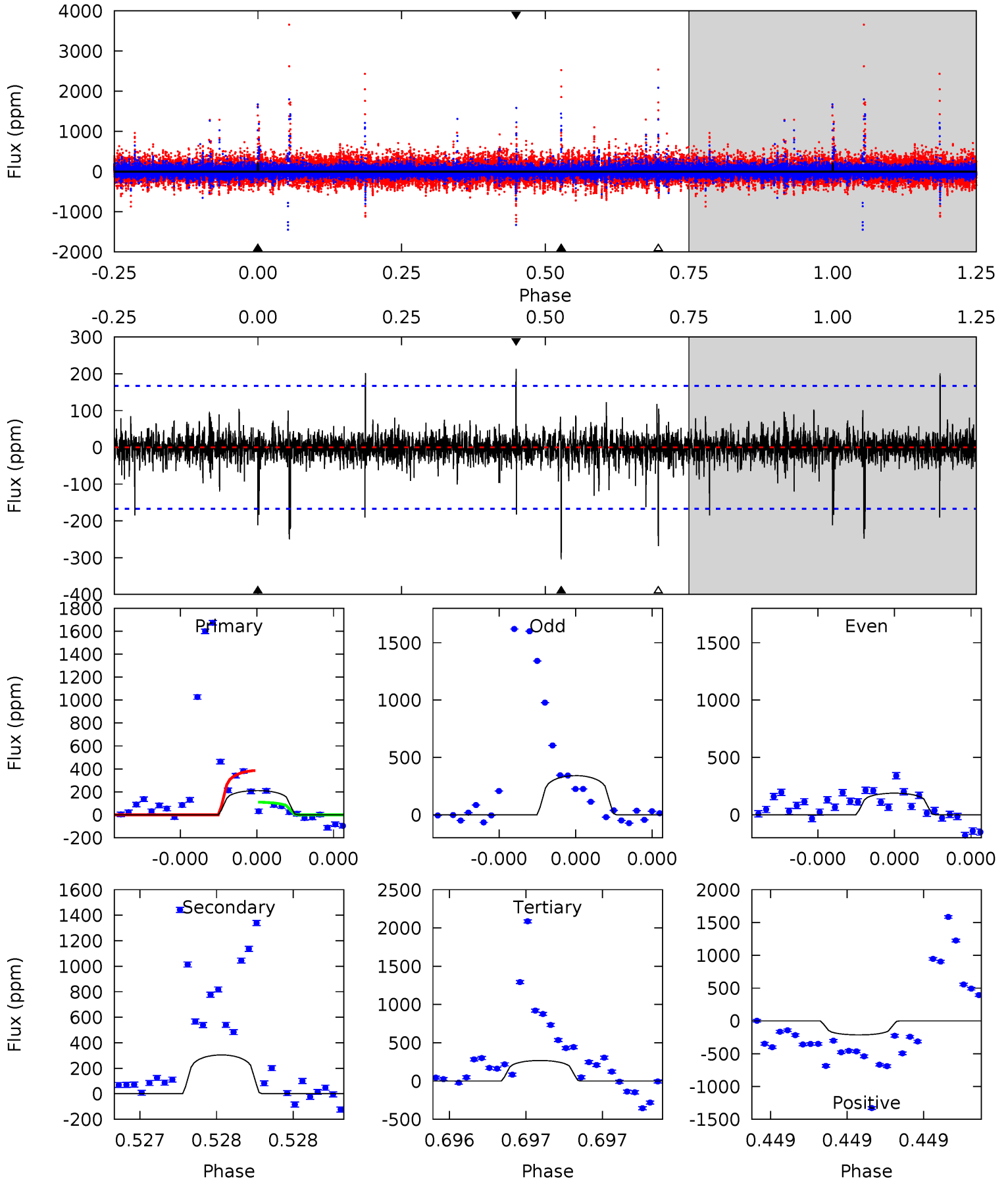
TCE 005475645-04 P=411.572766 Days $T_0=517.437697$ (BKJD)



DV Model-Shift Uniqueness Test

005475645-04, P = 411.601584 Days, E = 105.851770 Days

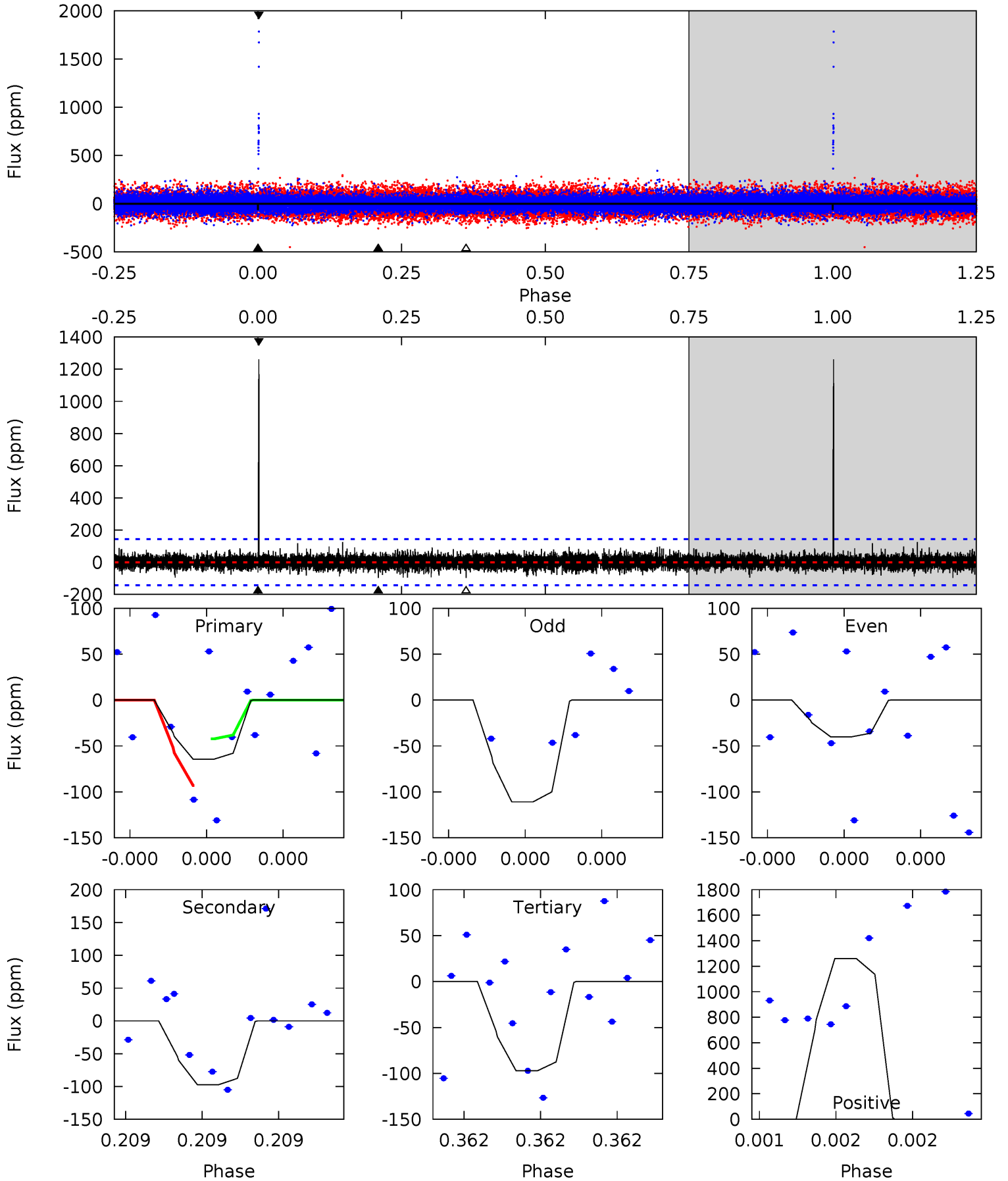
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.07	10.2	8.97	7.14	5.59	3.51	0.87	-1.90	-0.07	1.22	3.05	1.59	0.78	0.41	4.75



Alt Model-Shift Uniqueness Test

005475645-04, P = 411.572766 Days, E = 105.864931 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.57	3.89	3.88	50.4	5.74	3.73	1.07	-1.32	-47.8	0.00	-46.5	1.01	0.61	0.93	0.97



Stellar Parameters For KIC 005475645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5513^{+147}_{-147}	$4.630^{+0.035}_{-0.112}$	$-0.580^{+0.300}_{-0.300}$	$0.704^{+0.117}_{-0.050}$	$0.770^{+0.081}_{-0.066}$	$3.111^{+0.463}_{-1.059}$
	+3%/-3%	+1%/-2%	+52%/-52%	+17%/-7%	+11%/-9%	+15%/-34%
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 005475645-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-305 ± 30	$3.46^{+3.54}_{-2.53}$	289^{+13}_{-10}	3827^{+2733}_{-762}	$13576^{+170778}_{-10275}$
Alt.	-97 ± 25	$3.21^{+3.37}_{-2.21}$	290^{+13}_{-10}	3269^{+1631}_{-637}	4872^{+48427}_{-3764}

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

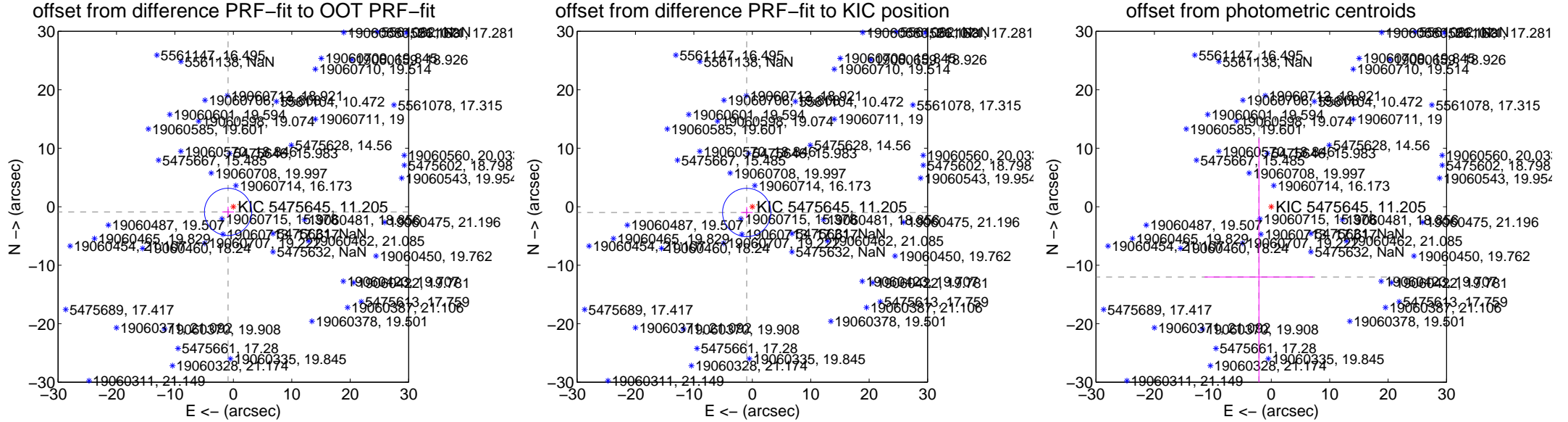
DV Centroid Data

Supplemental centroid analysis for 005475645-04. **Kepler magnitude: 11.21.** Transit SNR 2.68

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.266 ± 1.346	0.94	0.907 ± 1.015	-0.883 ± 0.890
PRF-fit source offset from KIC position	1.371 ± 1.377	1.00	0.957 ± 1.016	-0.981 ± 0.935
photometric centroid source offset	12.21 ± 23.39	0.52	2.11 ± 9.31	-12.02 ± 23.70

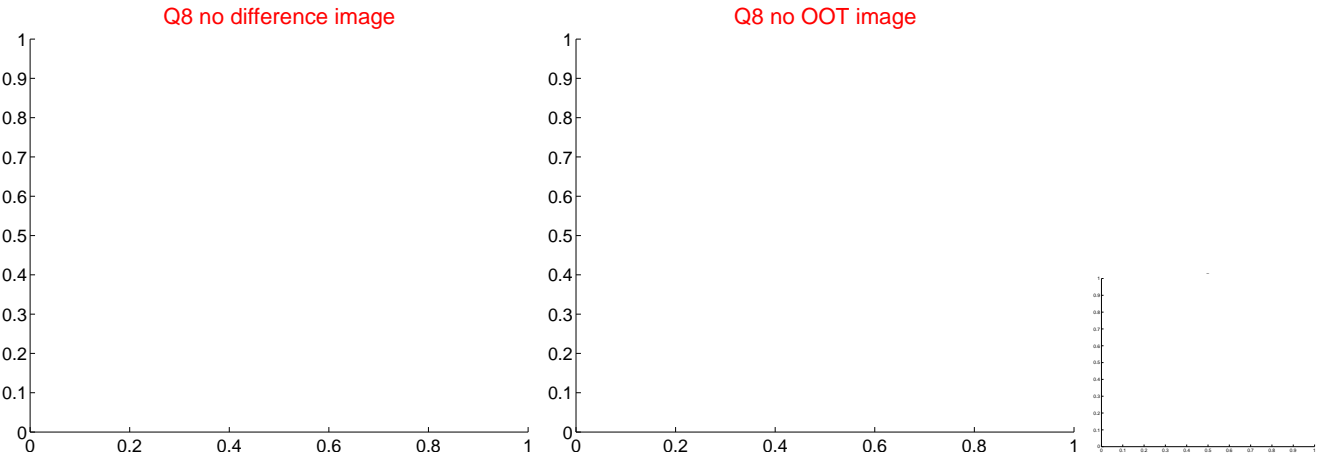
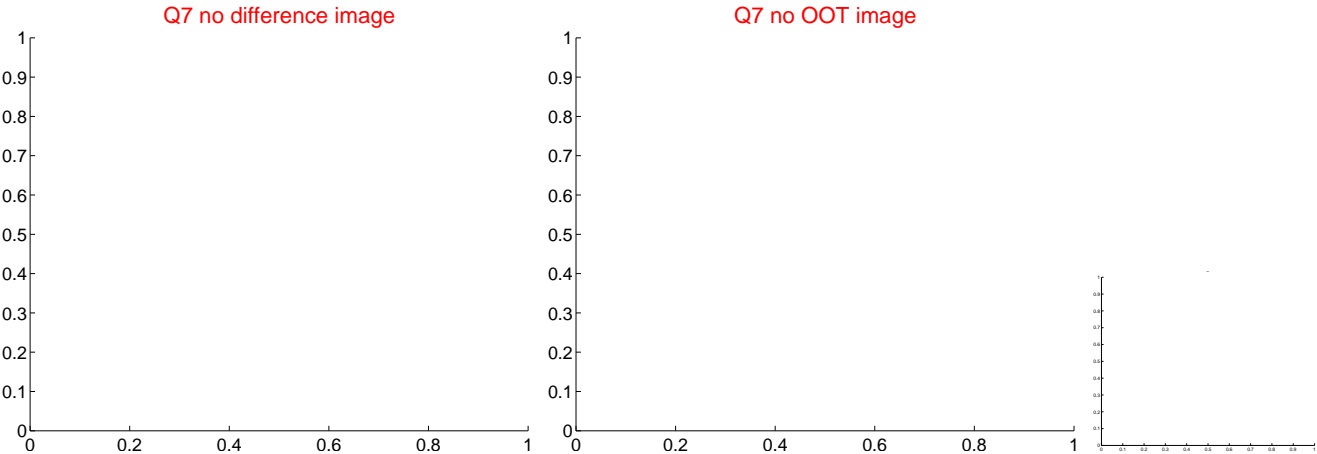
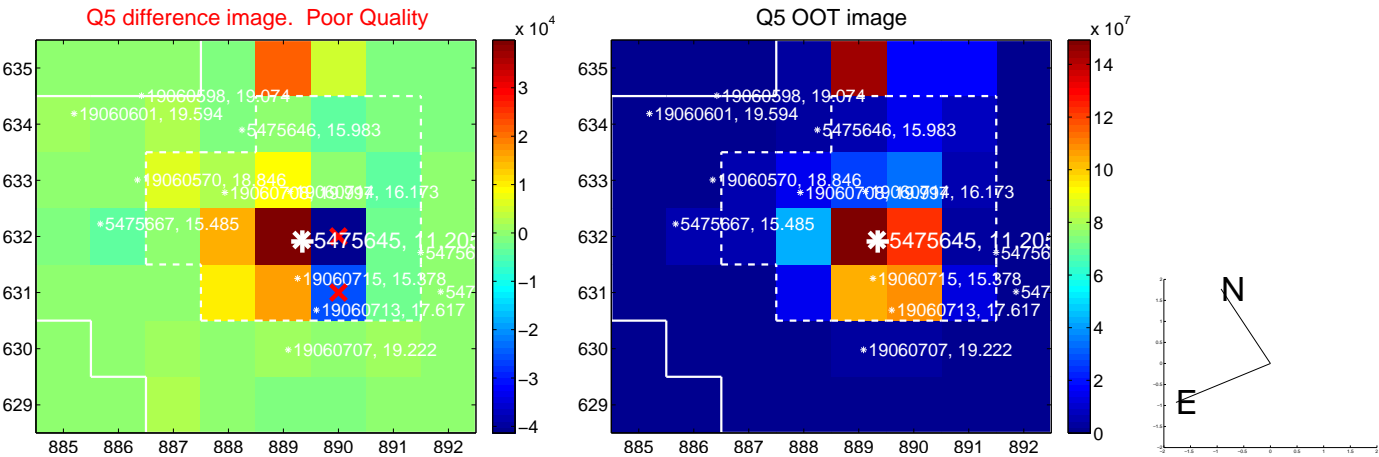


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

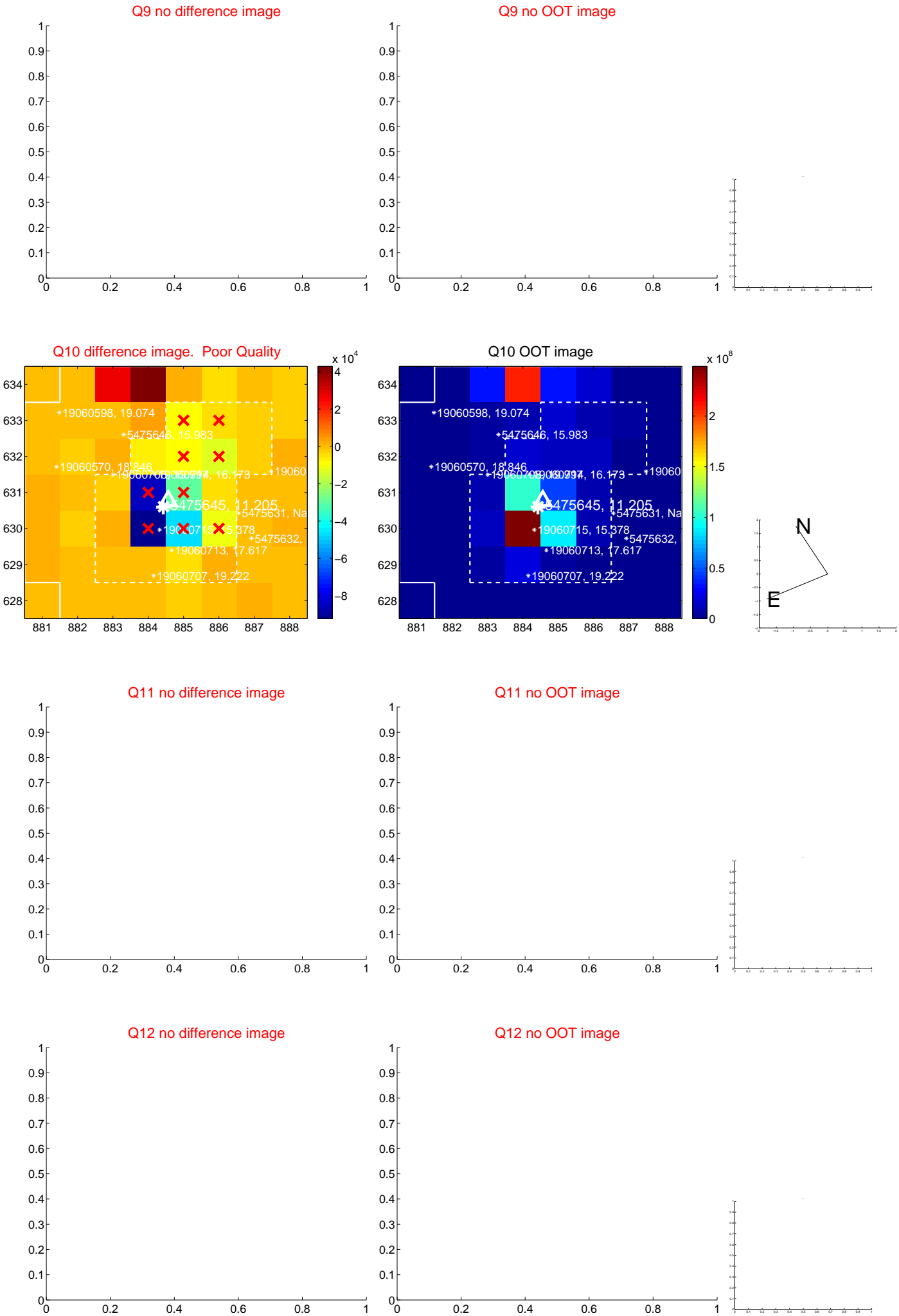
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

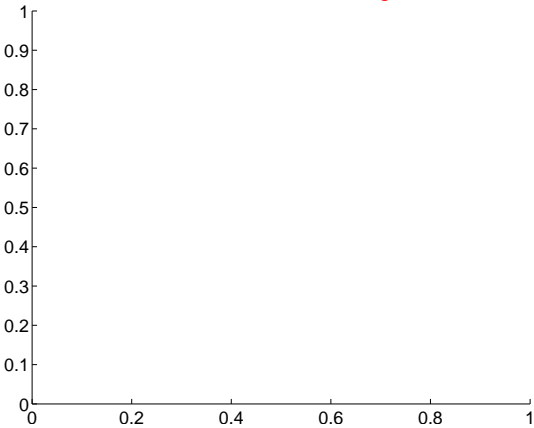


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

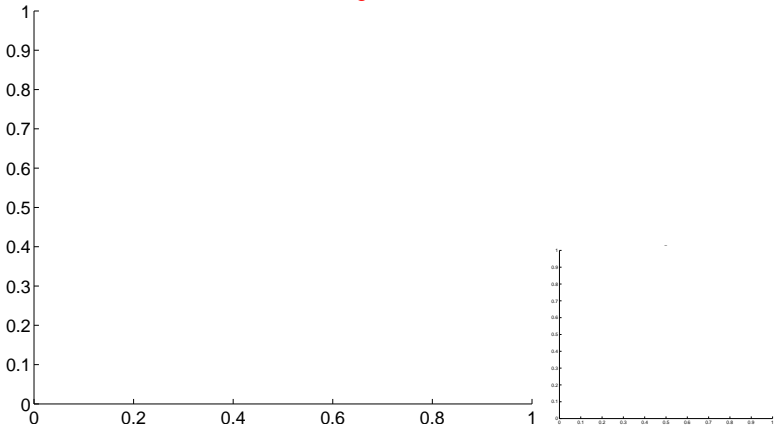


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

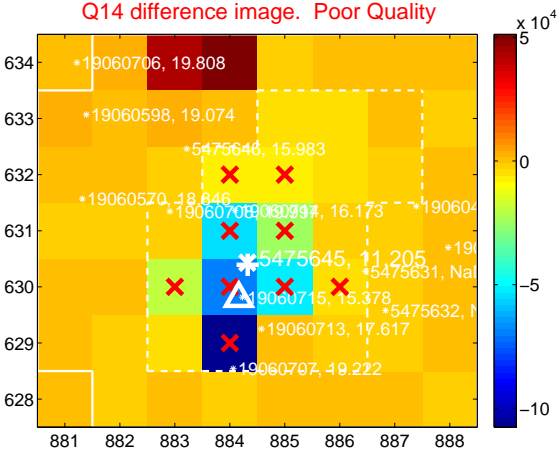
Q13 no difference image



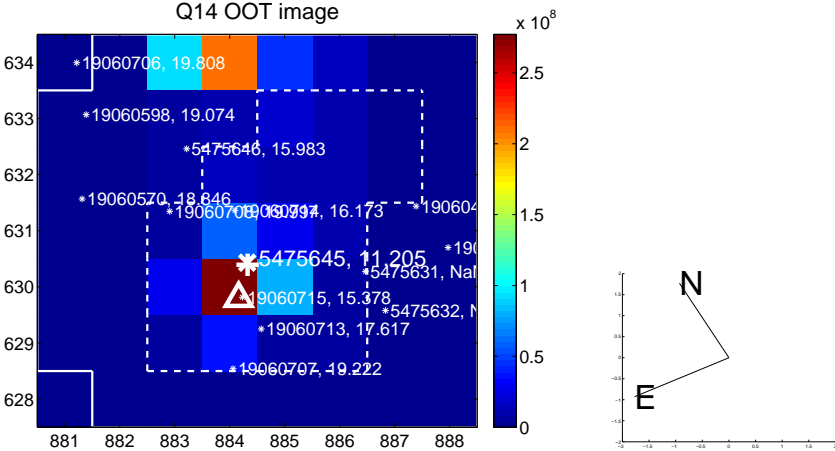
Q13 no OOT image



Q14 difference image. Poor Quality



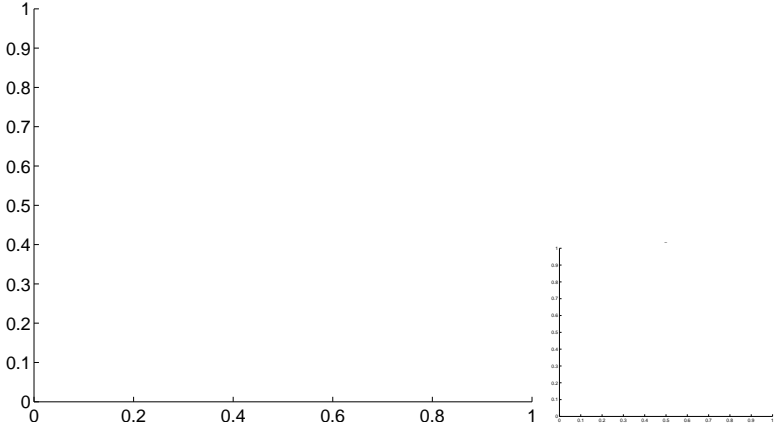
Q14 OOT image



Q15 no difference image



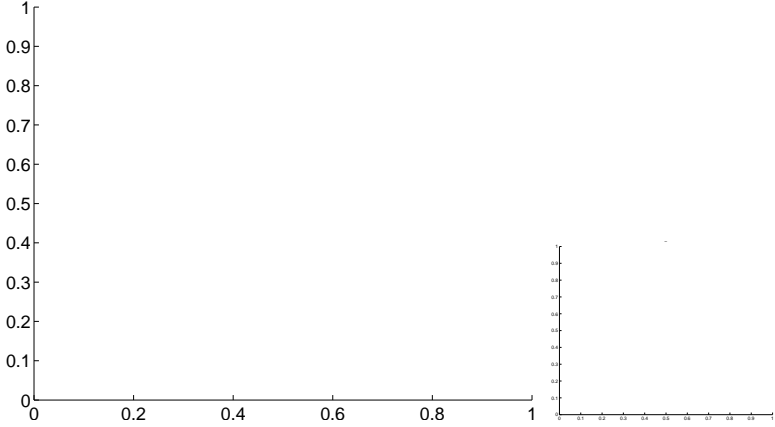
Q15 no OOT image



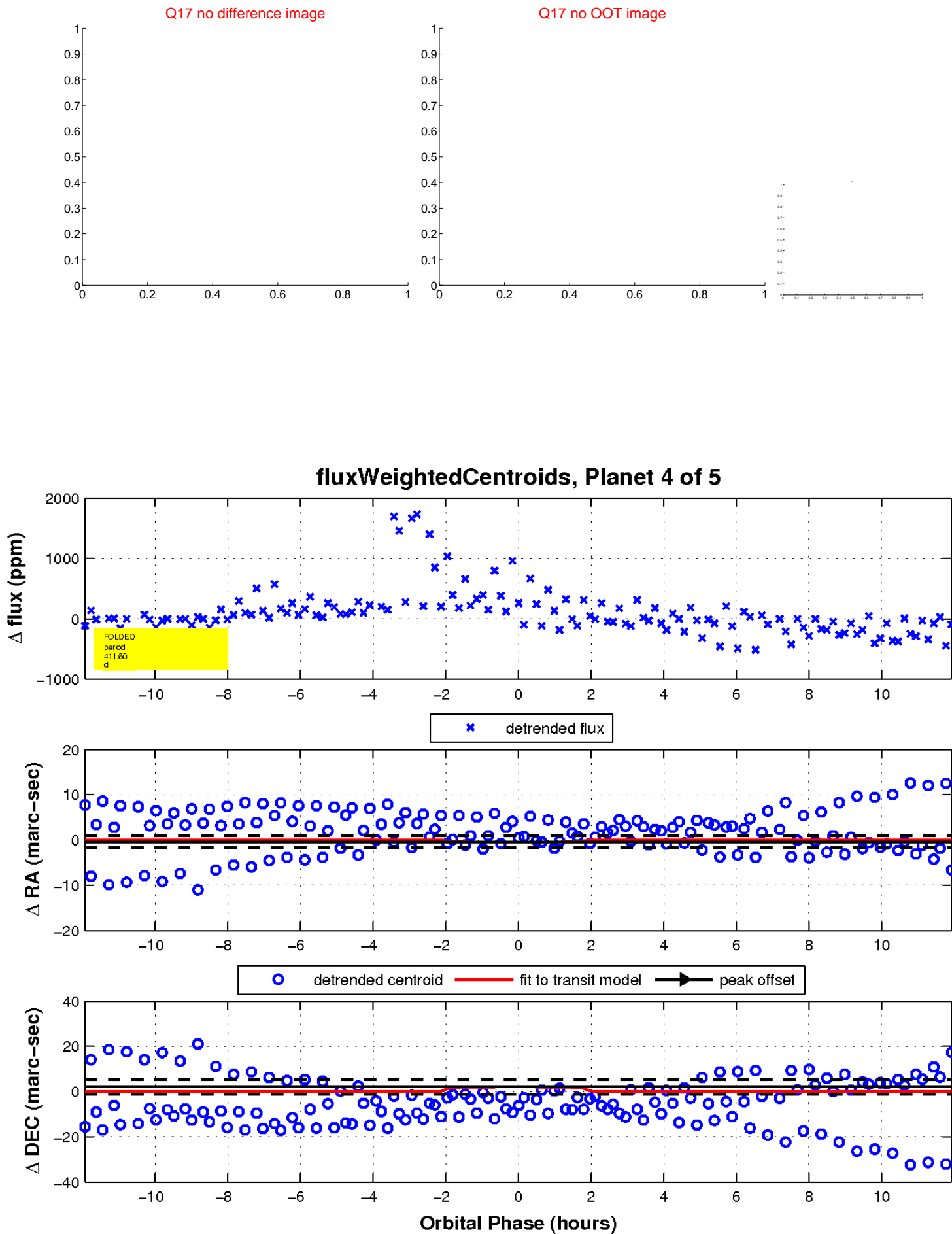
Q16 no difference image



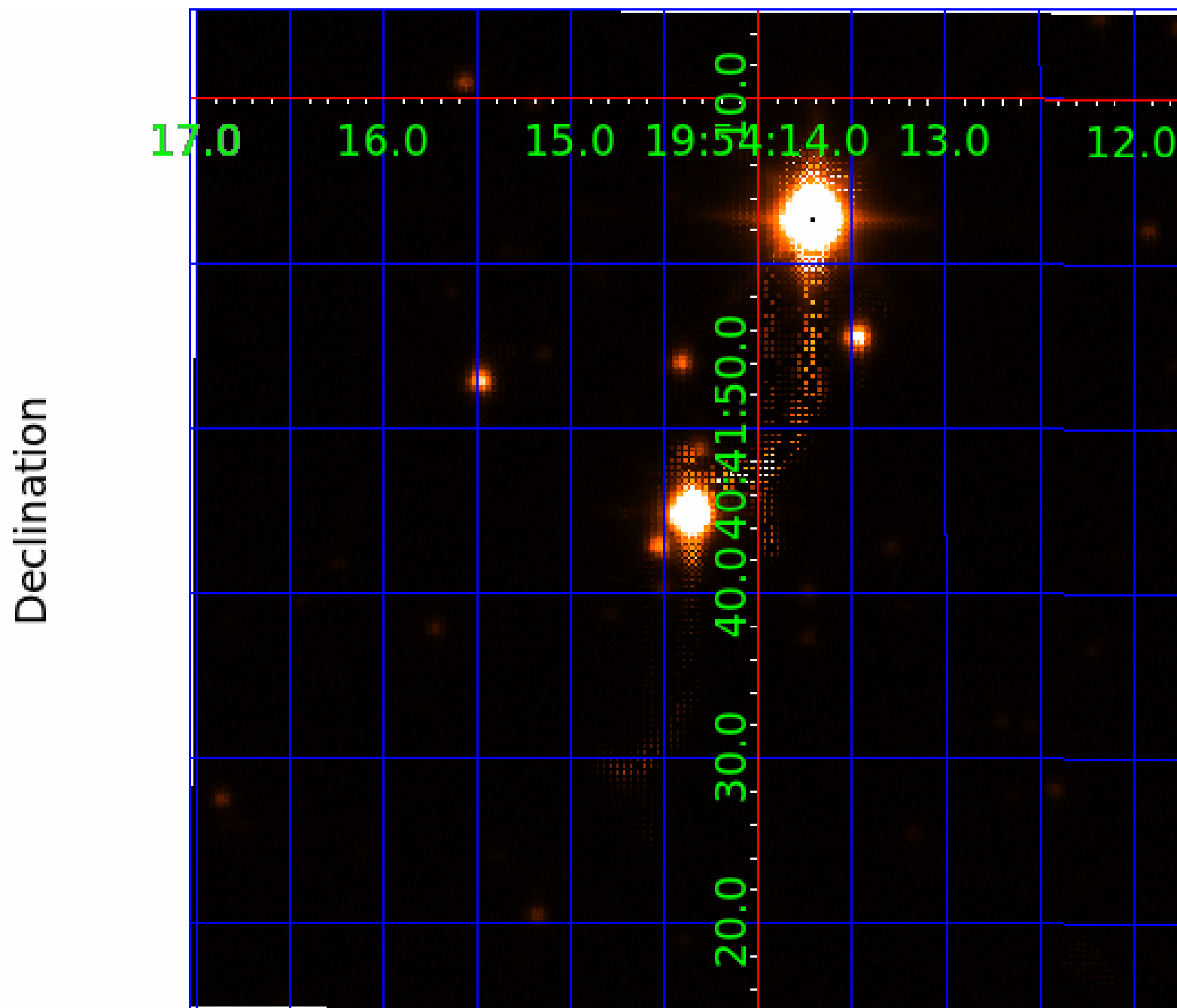
Q16 no OOT image



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



UKIRT Image



KIC 005475645

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})
005475645-01	OBS	No	264.449607	309.032191	230.4	2.871	18.8	5.6	0.70	5513	1.19	0.75
005475645-02	OBS	No	465.624121	431.572991	487.3	21.871	19.2	5.2	0.70	5513	1.67	0.35
005475645-03	OBS	No	496.336906	584.765769	463.8	7.924	15.5	7.8	0.70	5513	1.77	0.32
005475645-04	OBS	No	411.601584	517.453354	142.0	4.013	13.8	2.7	0.70	5513	0.87	0.42
005475645-05	OBS	No	411.564945	518.063228	525.8	1.643	13.8	11.1	0.70	5513	1.65	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005475645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005475645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005475645-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005475645-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

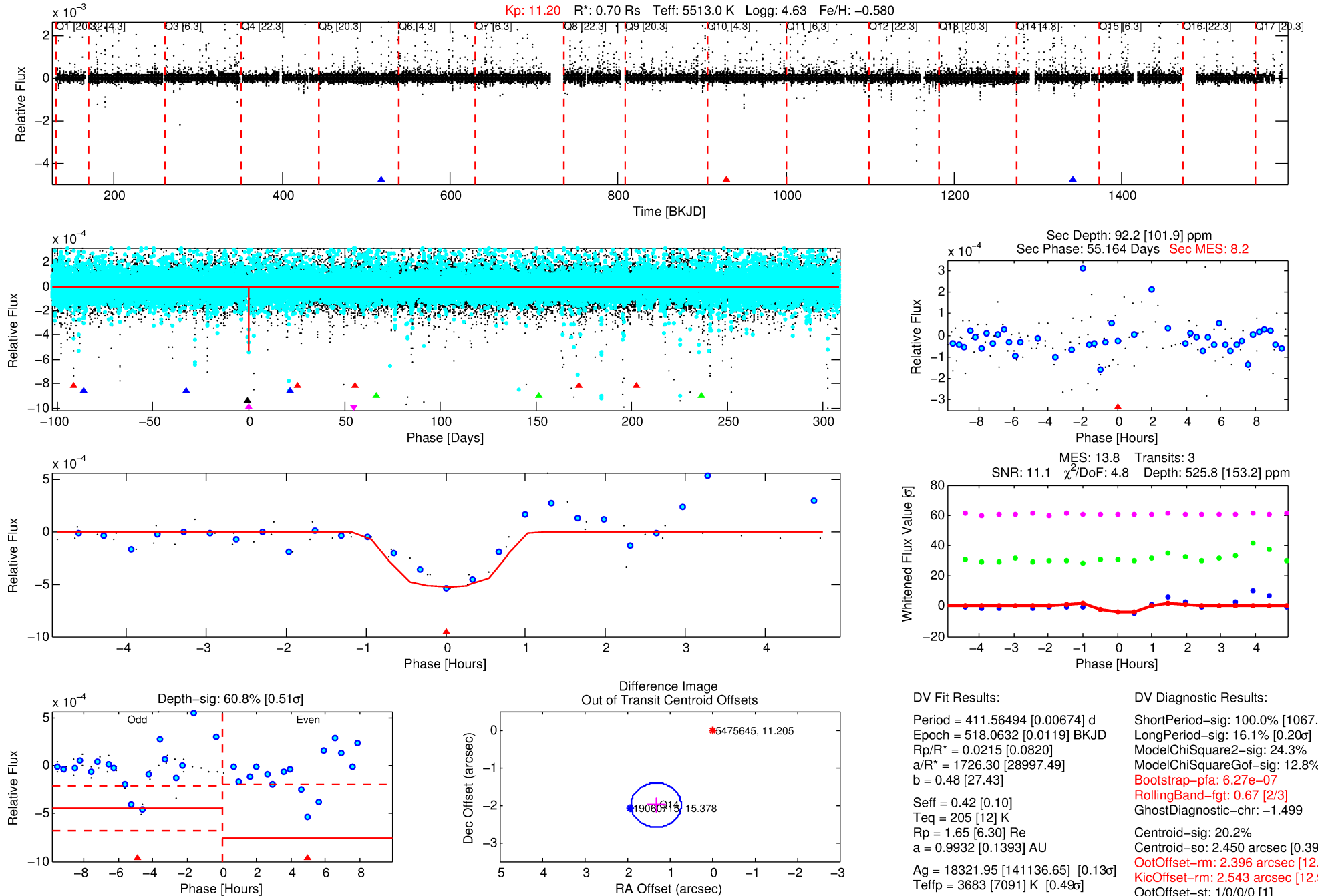
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005475645-05

No Significant Match Found

DV One-Page Summary

KIC: 5475645 Candidate: 5 of 5 Period: 411.565 d



DV Fit Results:

Period = 411.56494 [0.00674] d
Epoch = 518.0632 [0.0119] BKJD
Rp/R* = 0.0215 [0.0820]
a/R* = 1726.30 [28997.49]
b = 0.48 [27.43]
Seff = 0.42 [0.10]
Teq = 205 [12] K
Rp = 1.65 [6.30] Re
a = 0.9932 [0.1393] AU
Ag = 18321.95 [141136.65] [0.13 σ]
Teffp = 3683 [7091] K [0.49 σ]

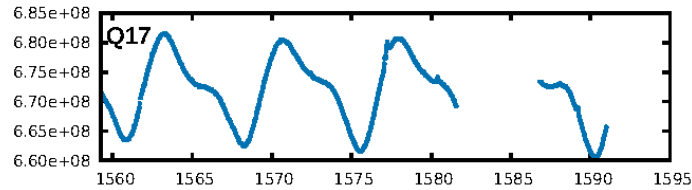
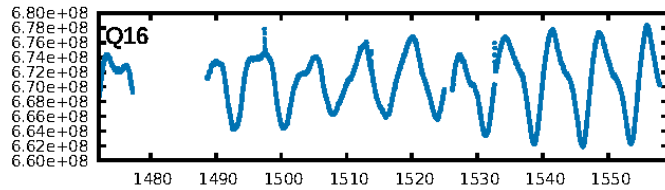
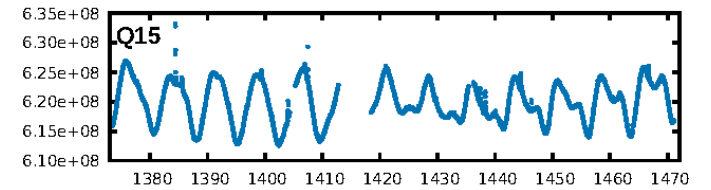
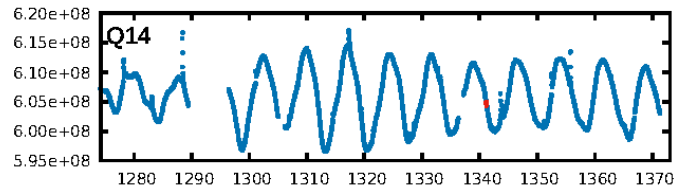
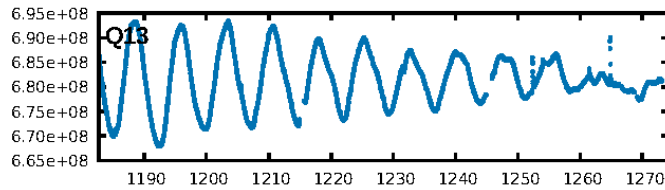
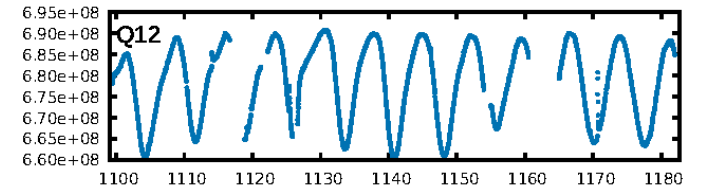
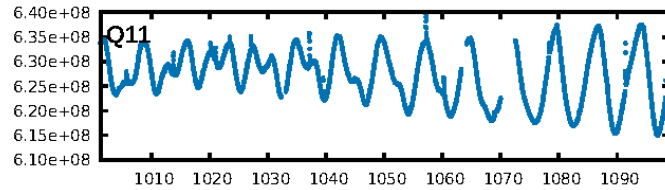
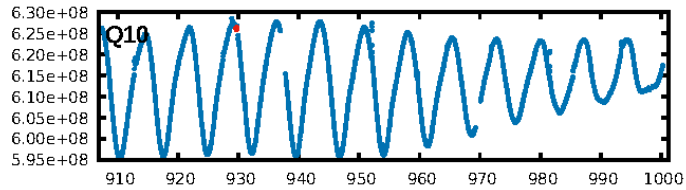
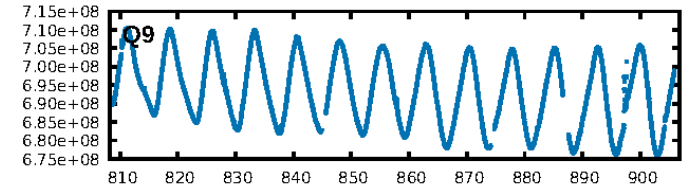
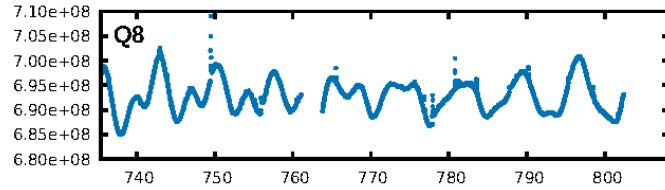
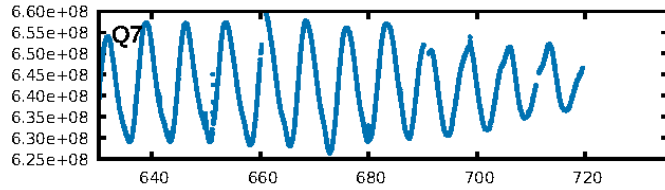
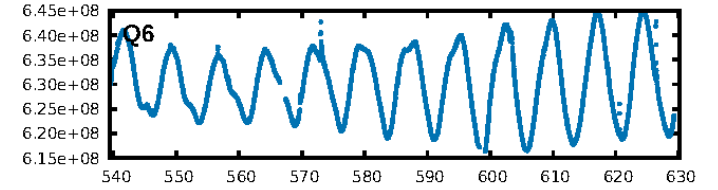
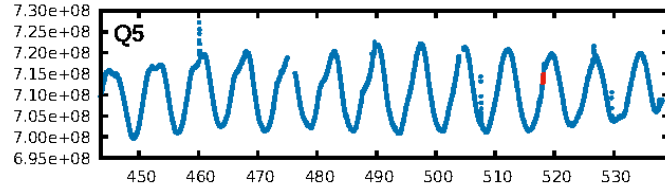
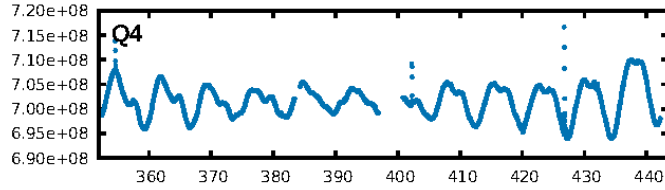
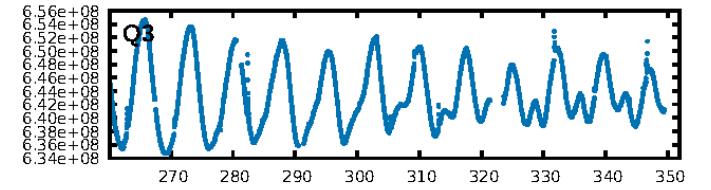
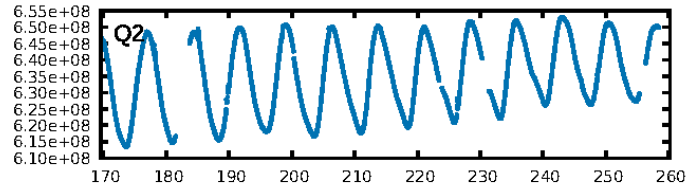
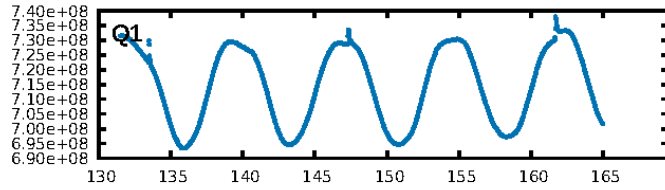
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1067.42 σ]
LongPeriod-sig: 16.1% [0.20 σ]
ModelChiSquare2-sig: 24.3%
ModelChiSquareGof-sig: 12.8%
Bootstrap-pfa: 6.27e-07
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: -1.499
Centroid-sig: 20.2%
Centroid-so: 2.450 arcsec [0.39 σ]
OotOffset-rm: 2.396 arcsec [12.16 σ]
KicOffset-rm: 2.543 arcsec [12.92 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

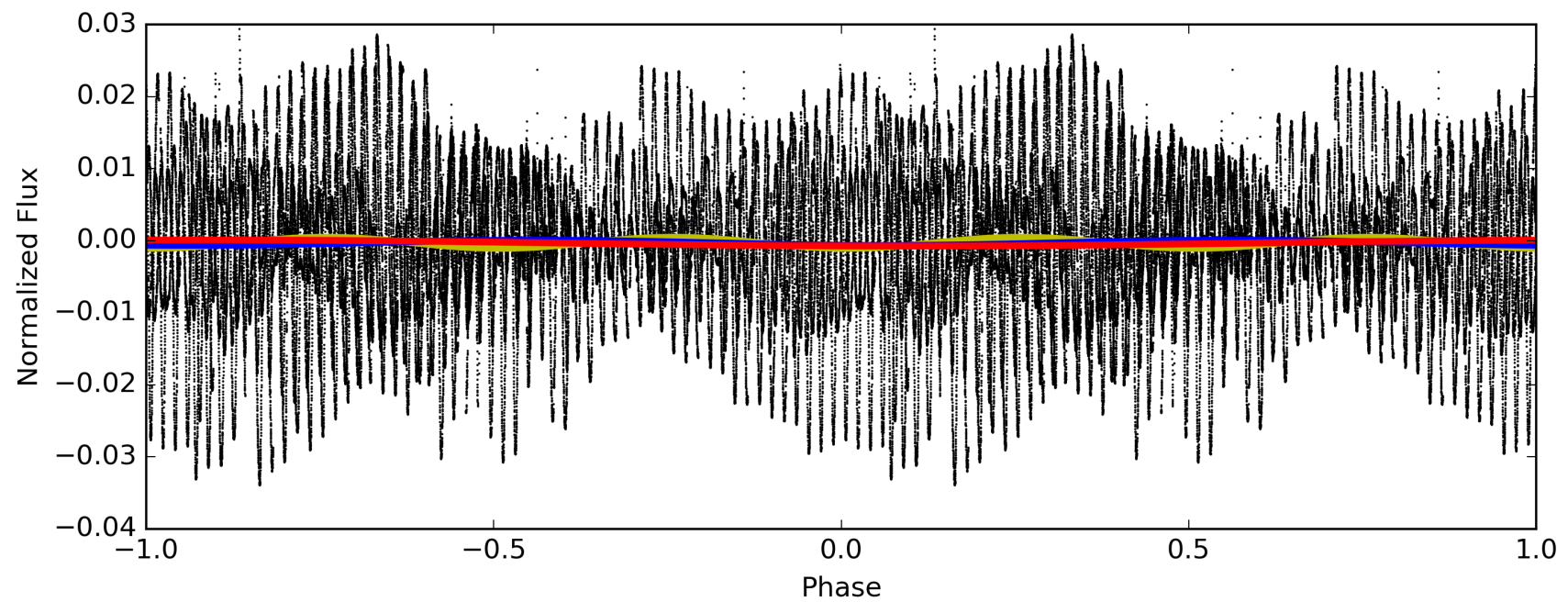
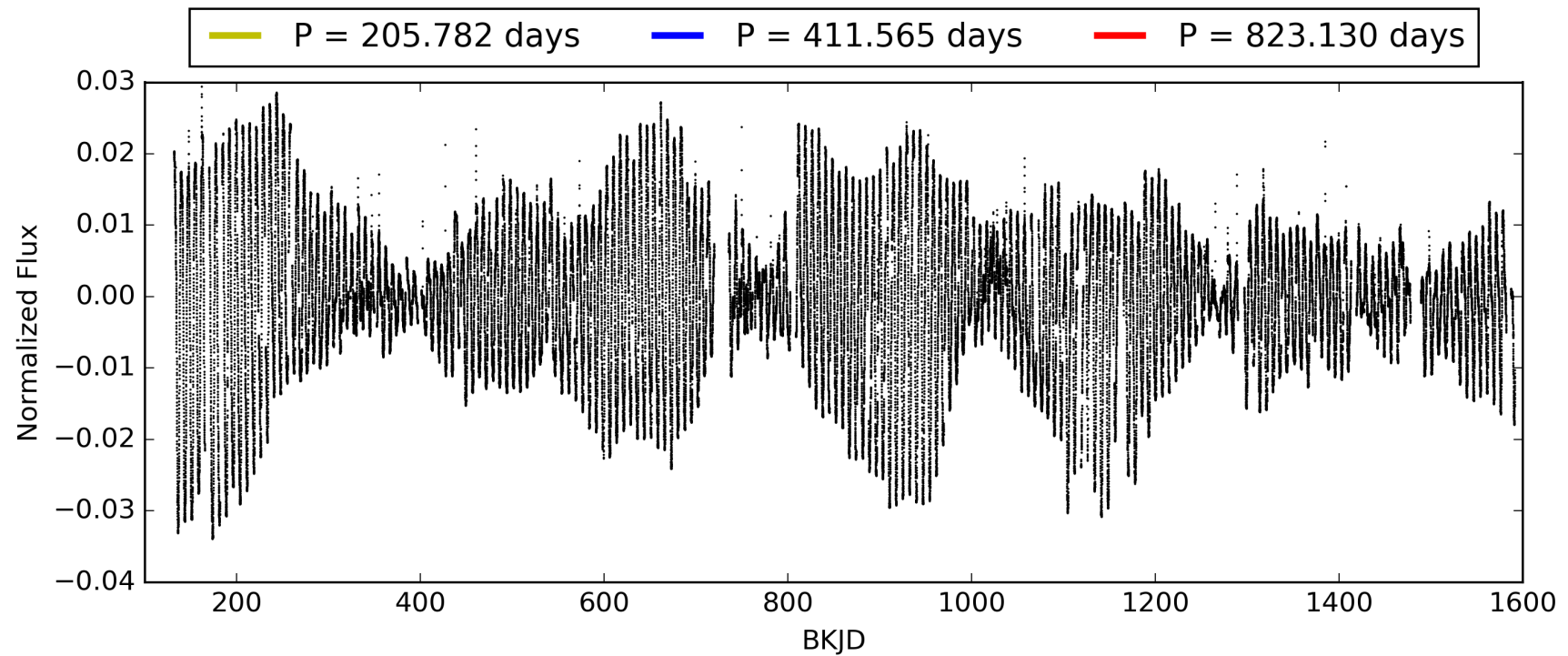
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:32:38 Z

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

TCE 005475645-05, PDC Light Curves

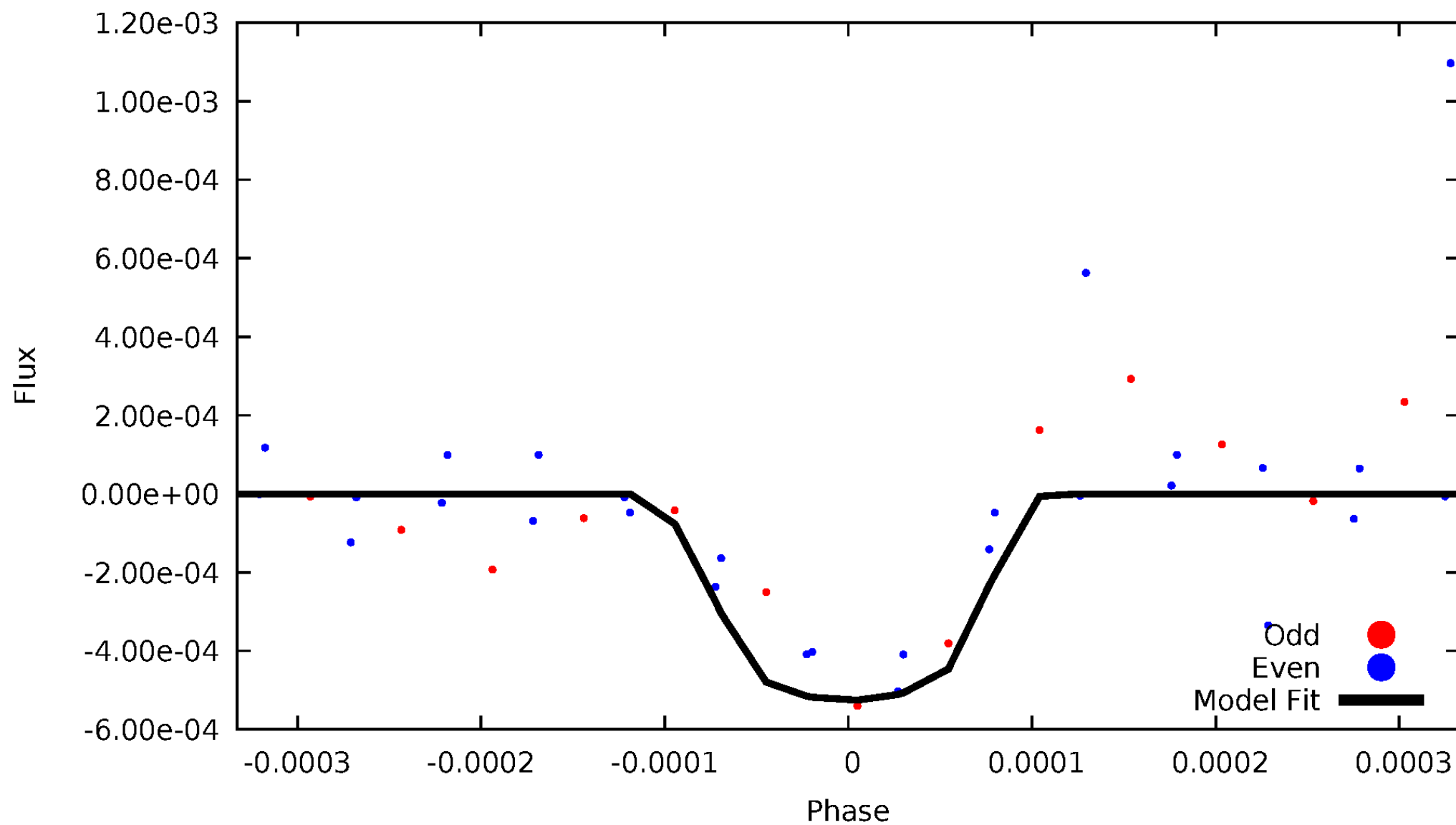


TCE 005475645-05



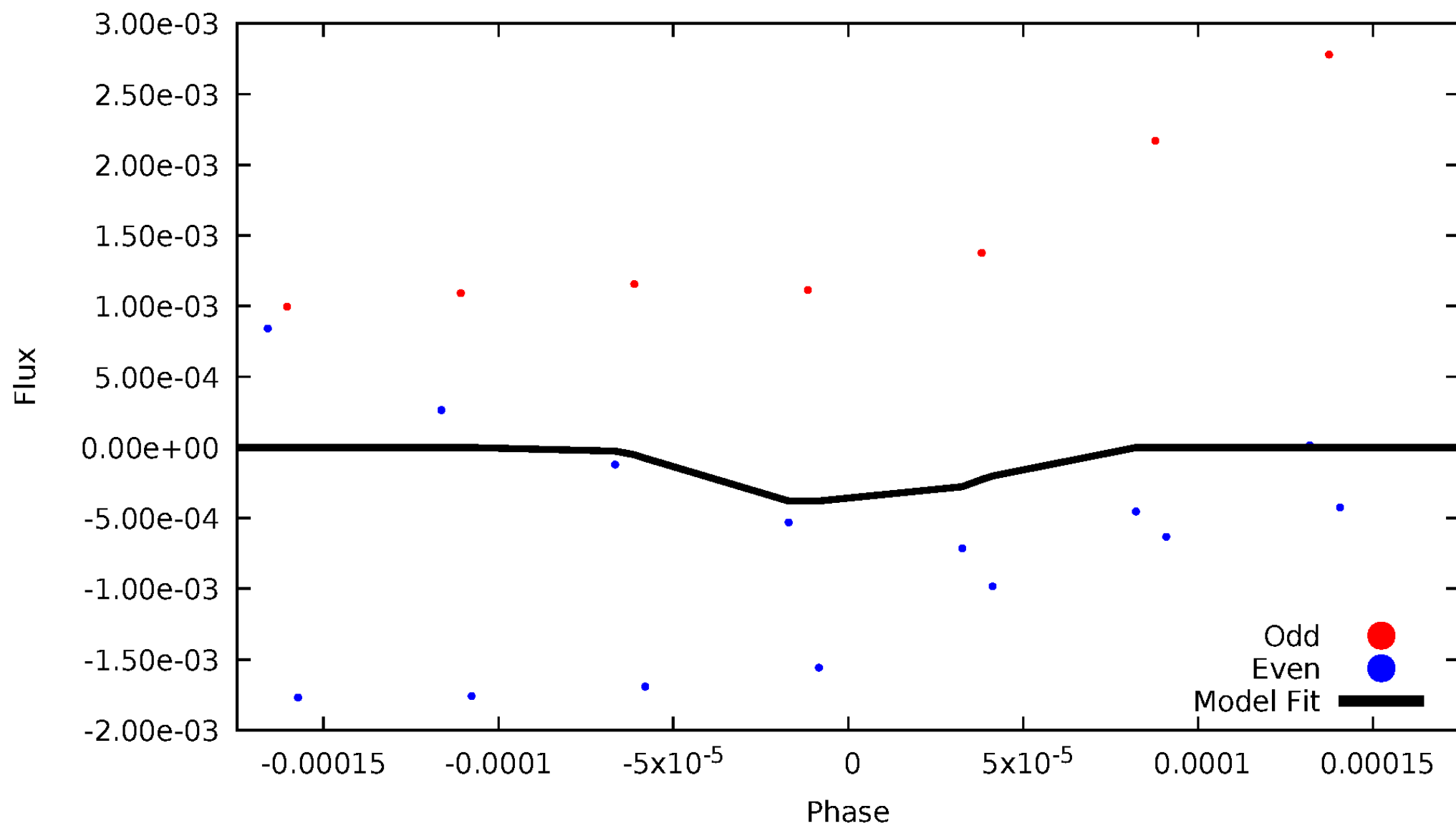
DV Odd/Even

TCE 005475645-05



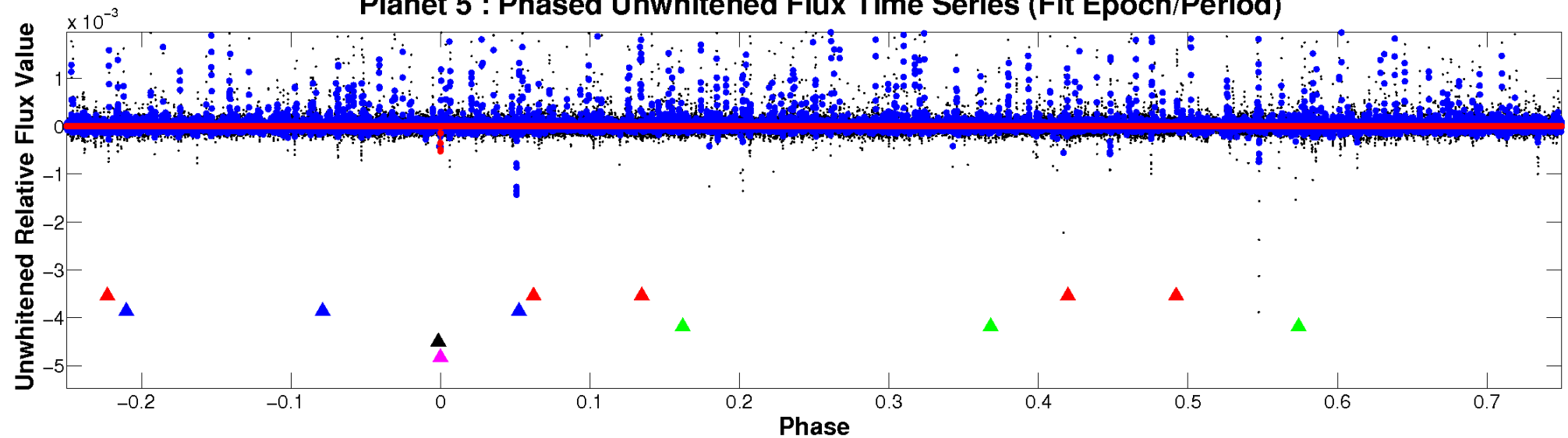
ALT Odd/Even

TCE 005475645-05

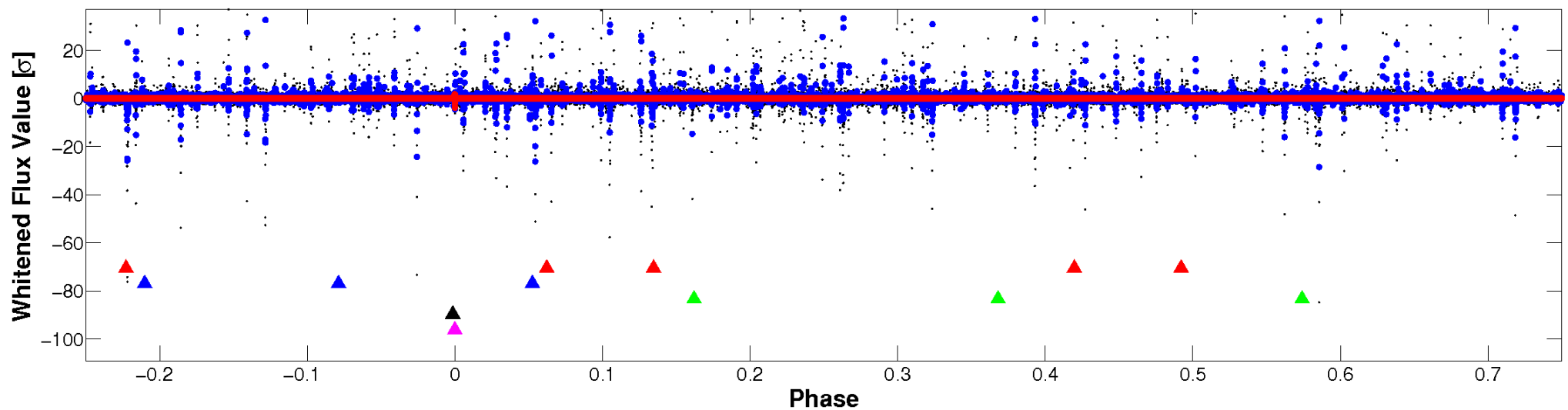


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

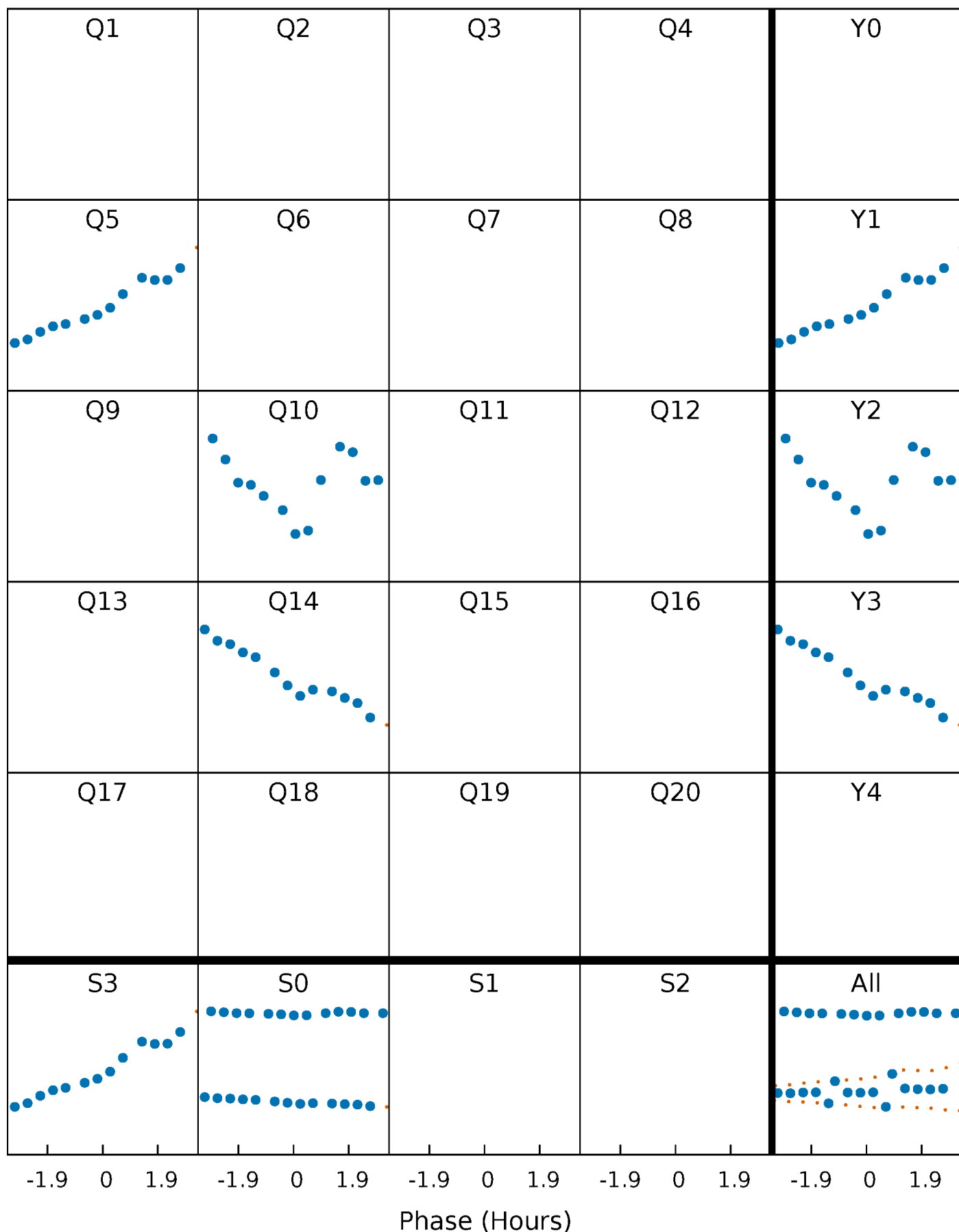


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



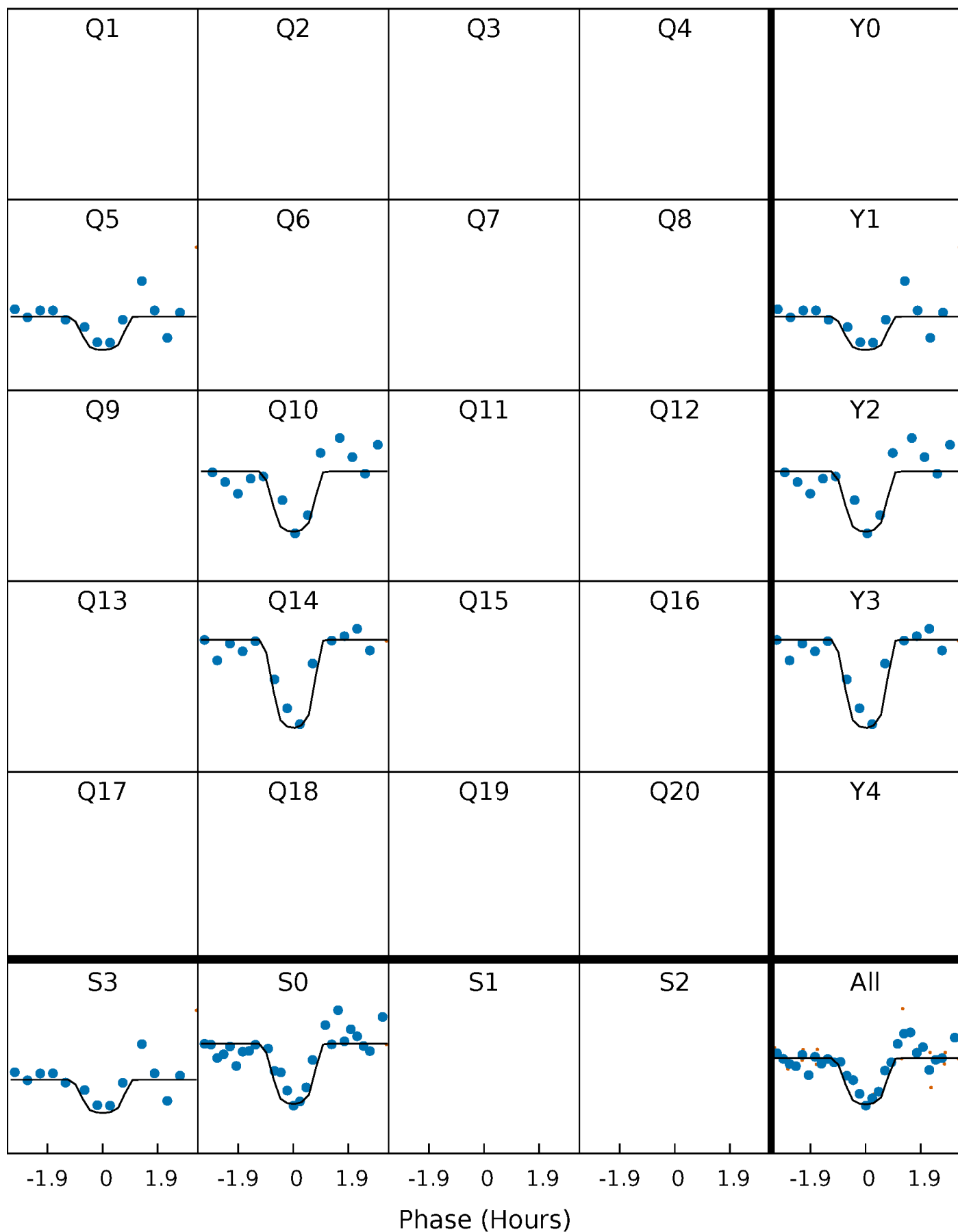
PDC Quarter-Phased Transit Curves

TCE 005475645-05 P=411.564945 Days $T_0=518.063228$ (BKJD)



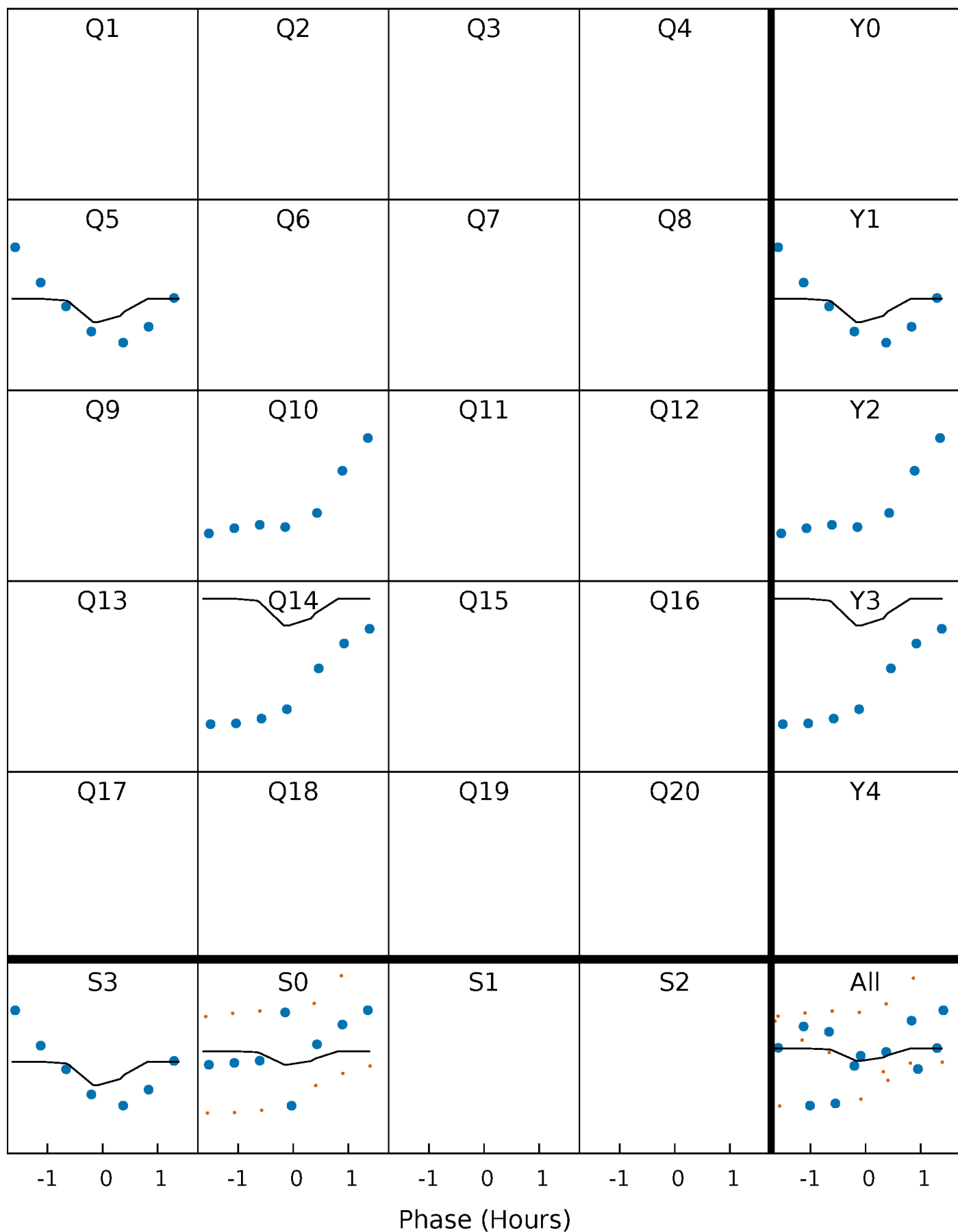
DV Quarter-Phased Transit Curves

TCE 005475645-05 P=411.564945 Days $T_0=518.063228$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

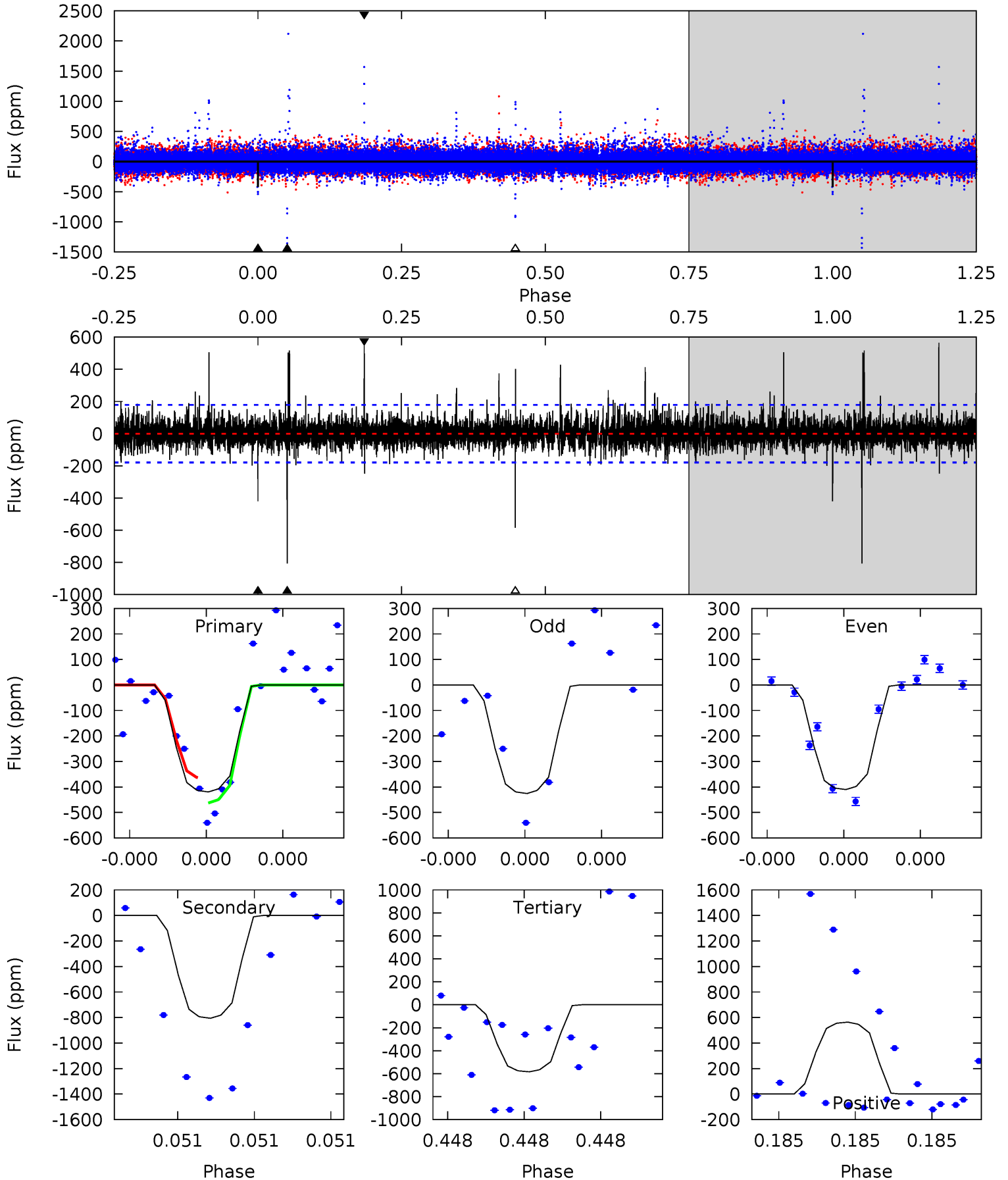
TCE 005475645-05 P=411.572766 Days $T_0=518.062161$ (BKJD)



DV Model-Shift Uniqueness Test

005475645-05, P = 411.564945 Days, E = 106.498283 Days

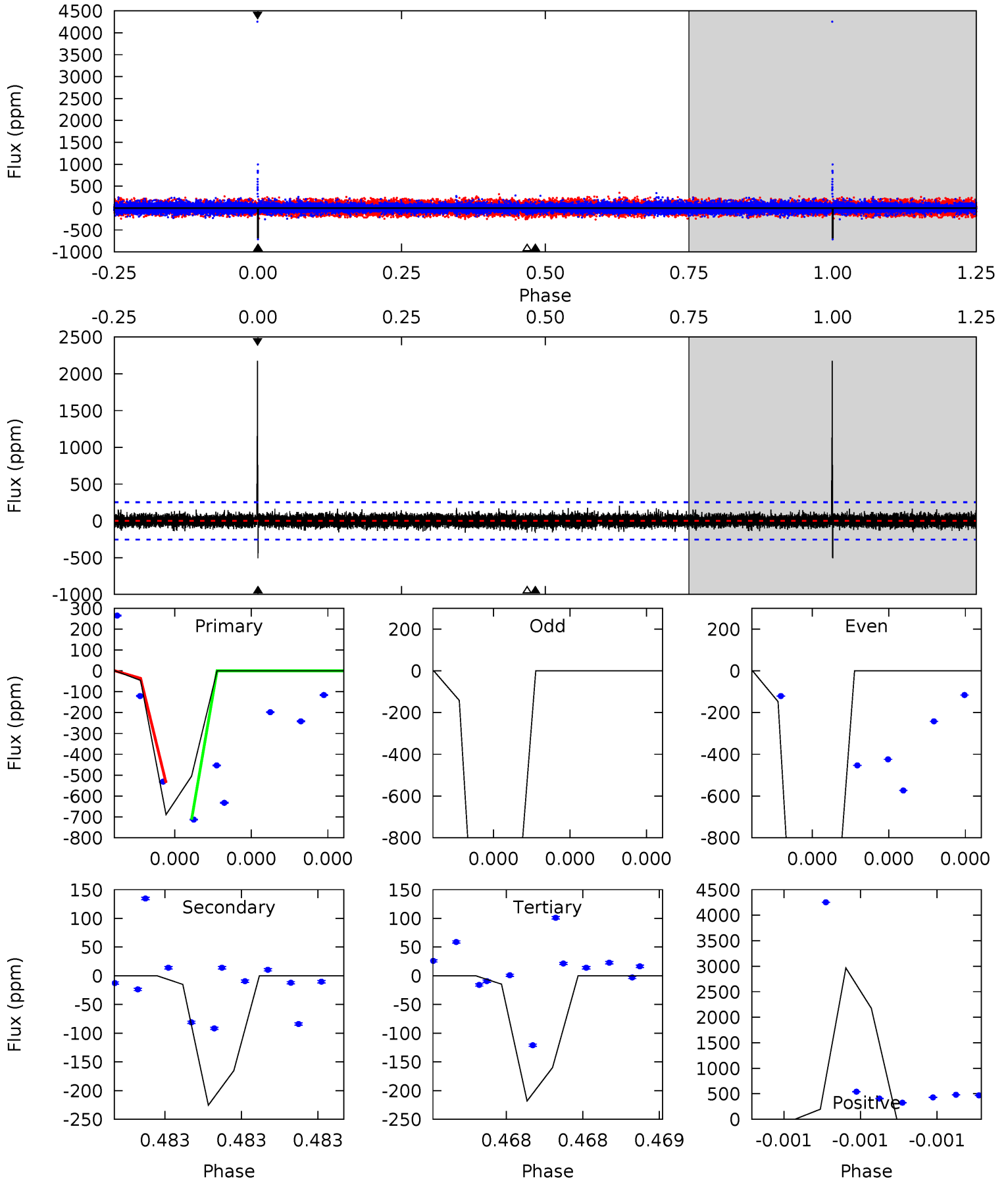
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	25.9	18.8	18.1	5.75	3.75	1.62	-5.28	-4.65	7.14	7.78	0.11	0.98	0.41	1.57



Alt Model-Shift Uniqueness Test

005475645-05, P = 411.572766 Days, E = 106.489395 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	3.76	3.64	49.5	5.78	3.79	0.84	7.85	-38.0	0.12	-45.7	1.04	0.48	0.81	0



Stellar Parameters For KIC 005475645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5513^{+147}_{-147}	$4.630^{+0.035}_{-0.112}$	$-0.580^{+0.300}_{-0.300}$	$0.704^{+0.117}_{-0.050}$	$0.770^{+0.081}_{-0.066}$	$3.111^{+0.463}_{-1.059}$
	+3%/-3%	+1%/-2%	+52%/-52%	+17%/-7%	+11%/-9%	+15%/-34%
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 005475645-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-806 ± 31	$5.19^{+4.89}_{-3.46}$	289^{+13}_{-10}	3958^{+2156}_{-749}	$15996^{+124778}_{-11540}$
Alt.	-165 ± 44	$4.78^{+5.59}_{-3.14}$	290^{+12}_{-10}	3137^{+1373}_{-571}	3873^{+30626}_{-3048}

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 $A_{obs} \gg 1.0$

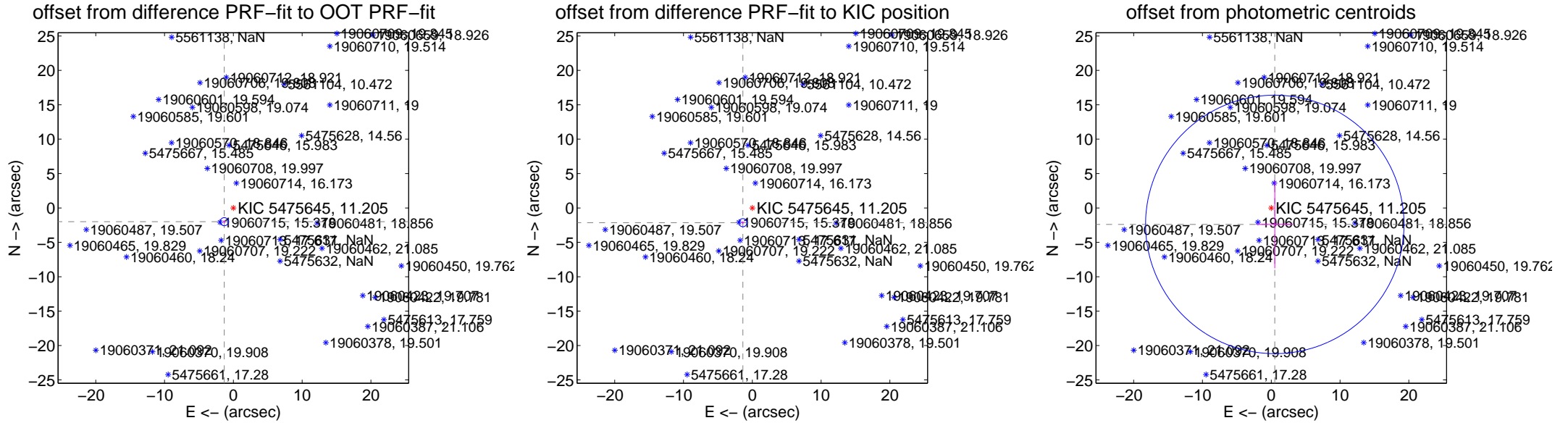
DV Centroid Data

Supplemental centroid analysis for 005475645-05. **Kepler magnitude: 11.21.** Transit SNR 11.12

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.396 \pm 0.197	12.16	1.319 \pm 0.209	-2.000 \pm 0.192
PRF-fit source offset from KIC position	2.543 \pm 0.197	12.92	1.369 \pm 0.209	-2.143 \pm 0.192
photometric centroid source offset	2.45 \pm 6.26	0.39	-0.51 \pm 2.62	-2.40 \pm 6.38

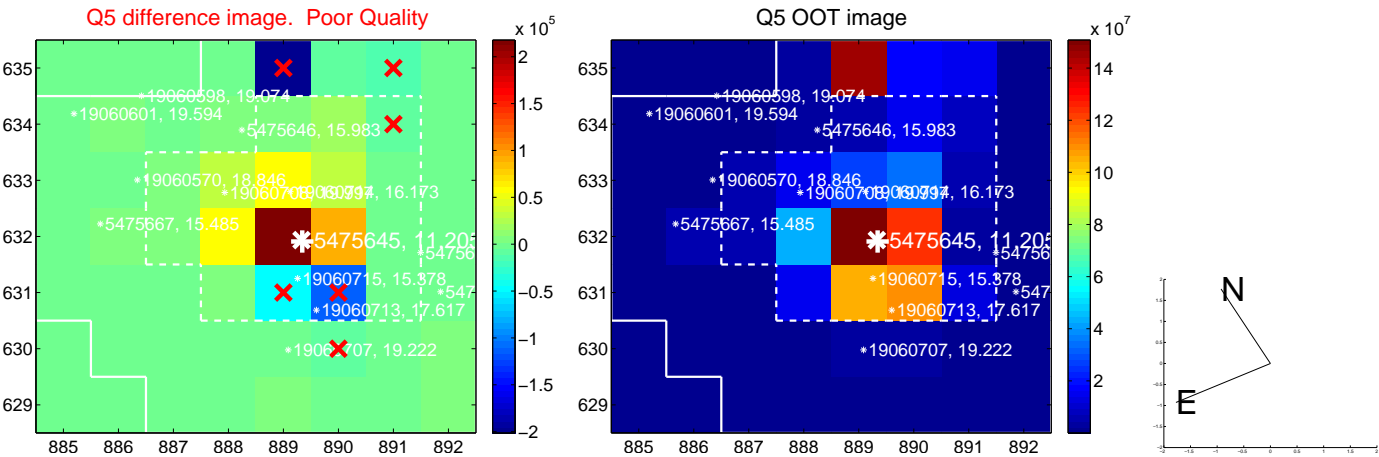


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

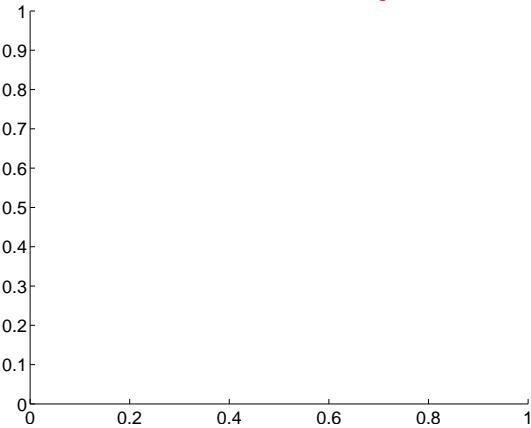


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

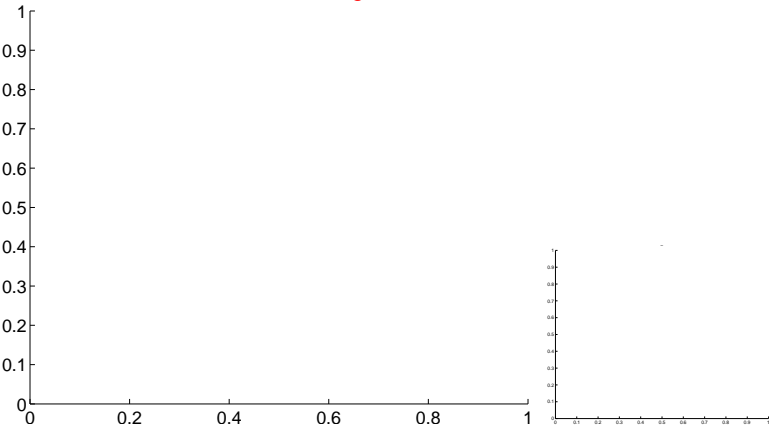


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

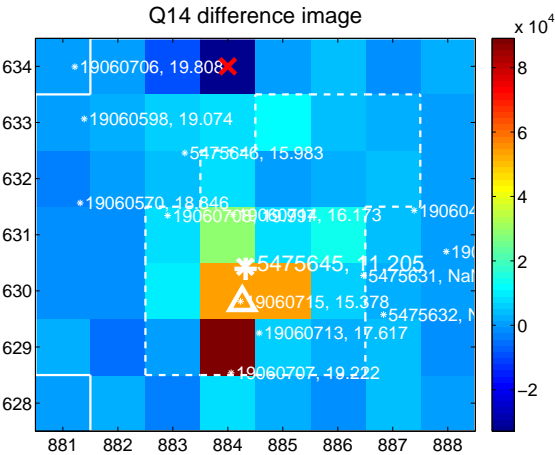
Q13 no difference image



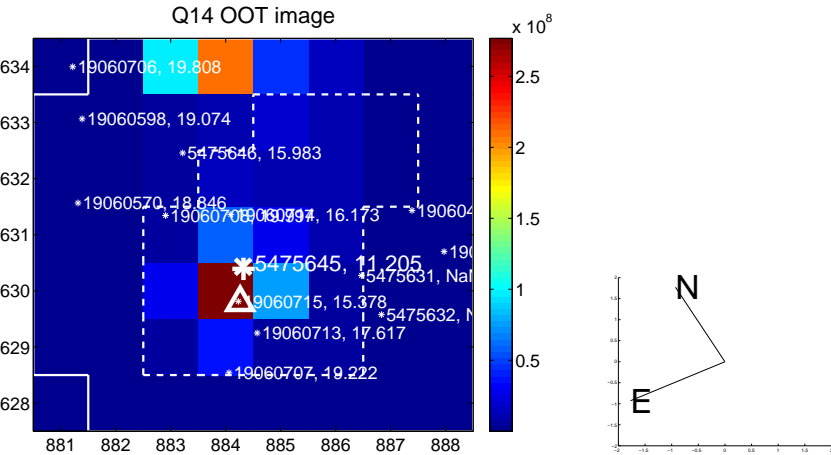
Q13 no OOT image



Q14 difference image



Q14 OOT image



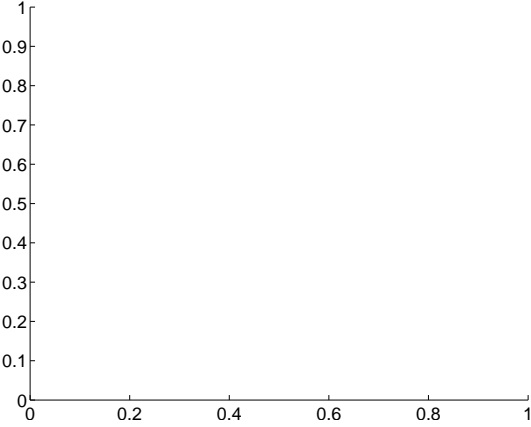
Q15 no difference image



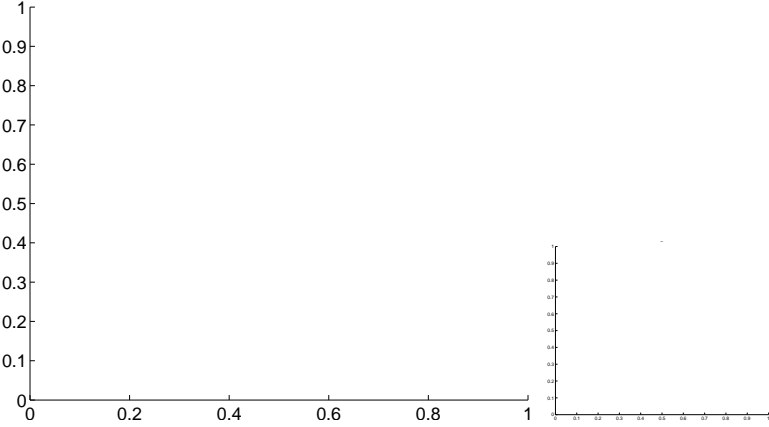
Q15 no OOT image



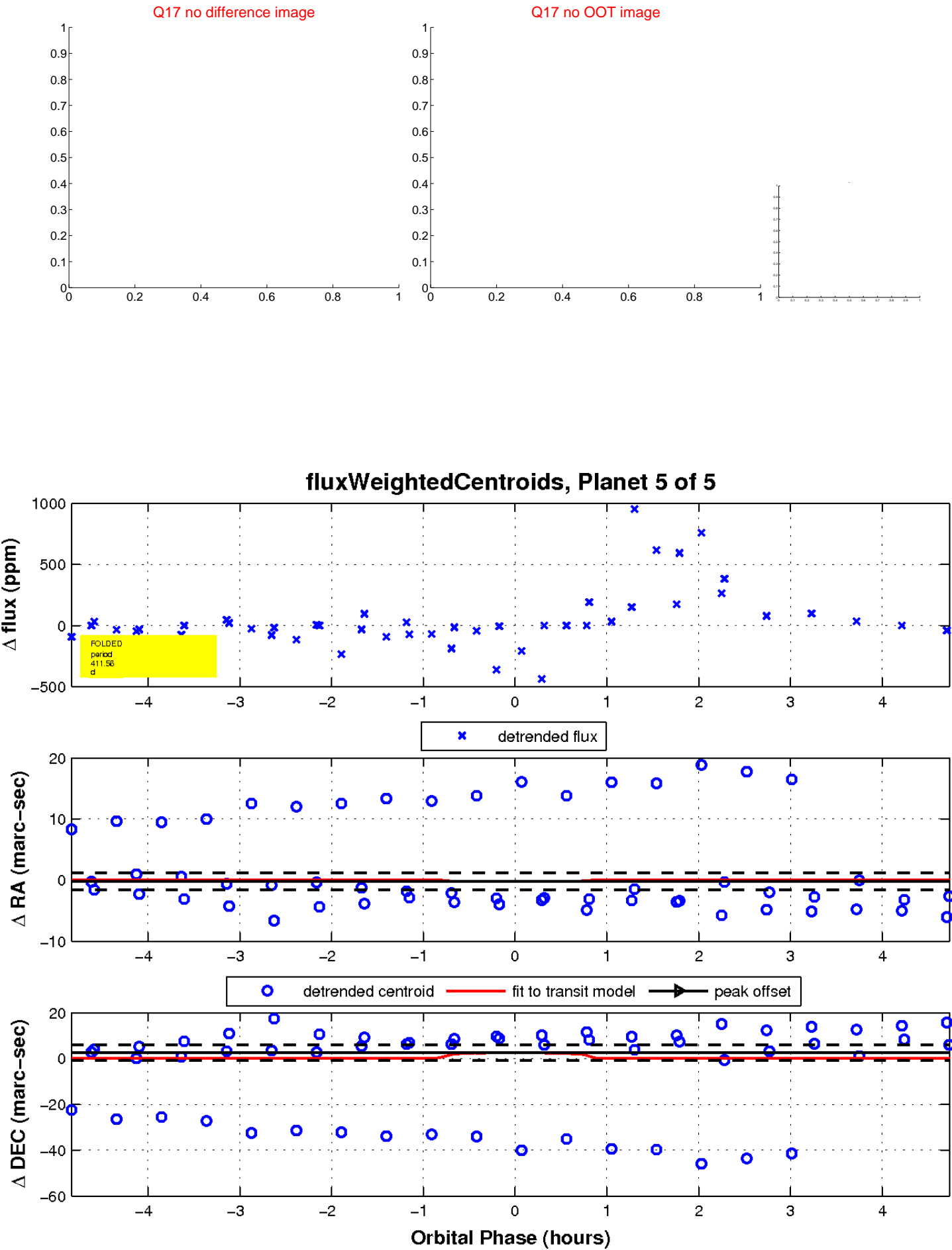
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

