

KIC 010858030

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})
010858030-01	OBS	No	482.455420	603.257738	1595.6	4.860	12.4	5.8	0.60	4530	2.31	0.13
010858030-02	OBS	No	576.438242	163.433490	772.6	1.127	12.2	2.7	0.60	4530	1.70	0.10
010858030-03	OBS	No	576.474259	163.065402	1611.8	6.457	12.1	6.2	0.60	4530	2.49	0.10
010858030-04	OBS	No	308.671336	152.860393	953.4	9.719	10.7	4.7	0.60	4530	1.94	0.24
010858030-05	OBS	No	258.877920	327.766599	1852.1	23.450	10.3	4.5	0.60	4530	3.35	0.30
010858030-06	OBS	No	339.629885	333.266083	1138.7	2.527	10.6	5.3	0.60	4530	2.01	0.21
010858030-07	OBS	No	449.217591	403.281317	1725.3	7.086	10.0	7.2	0.60	4530	2.46	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010858030-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
010858030-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
010858030-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
010858030-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

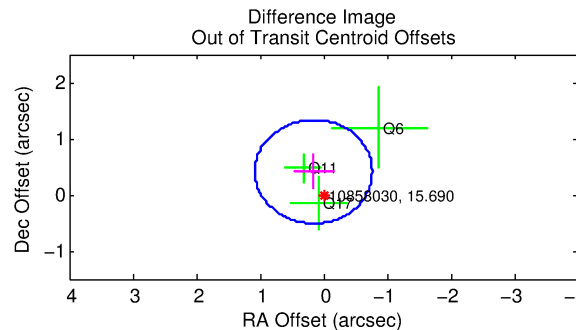
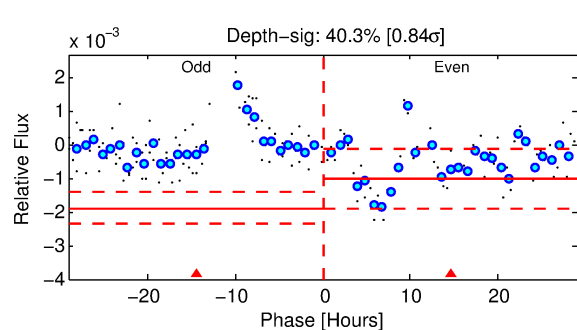
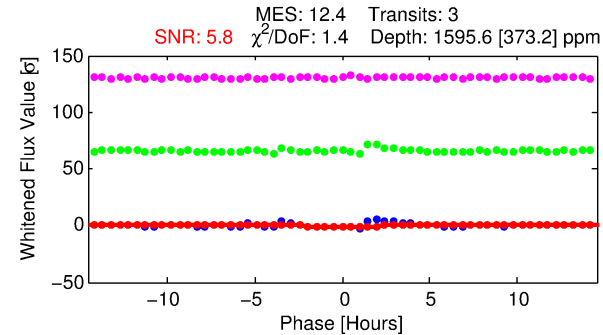
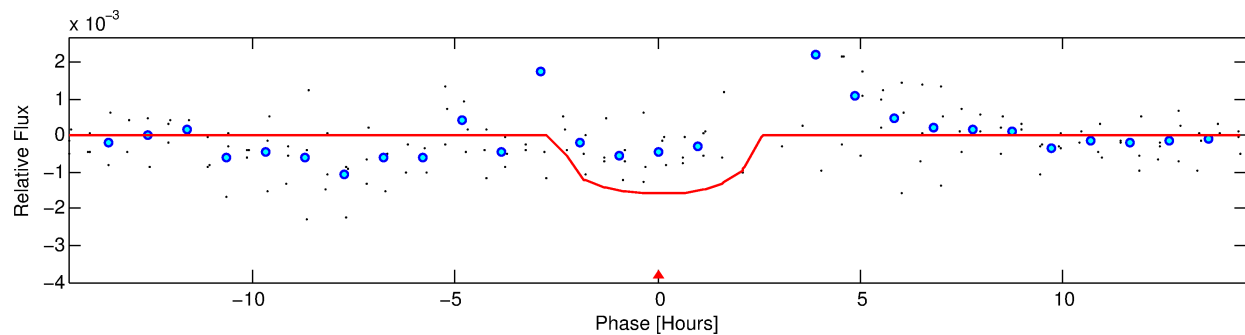
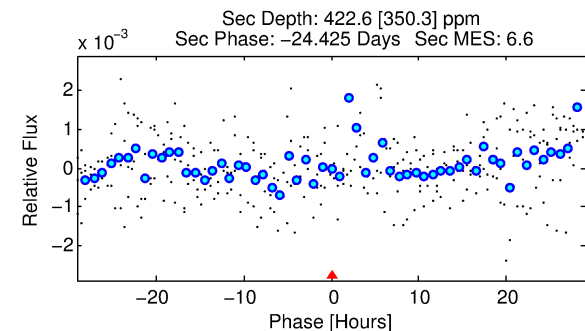
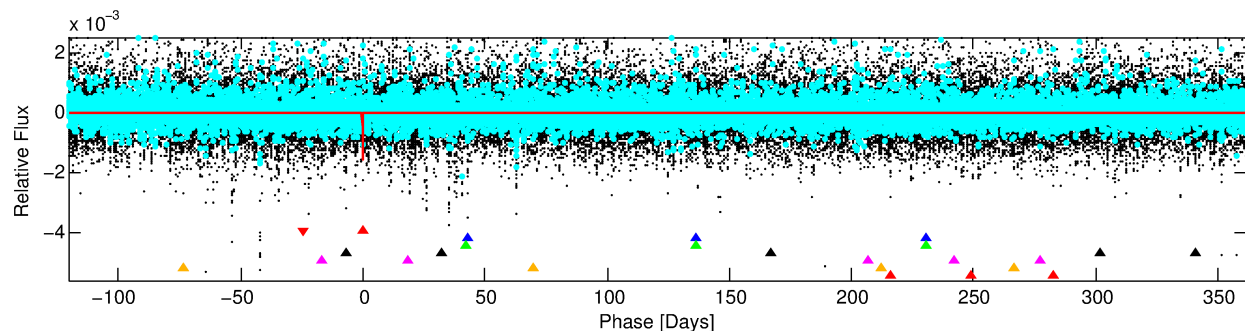
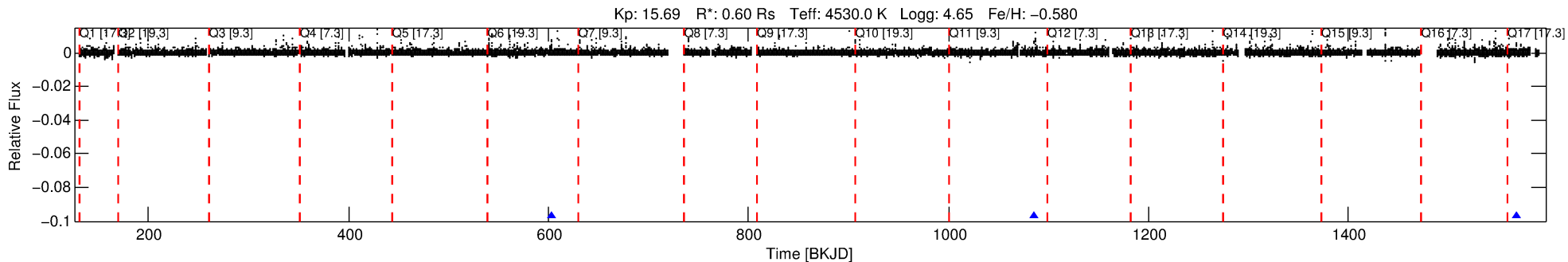
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010858030-01

No Significant Match Found

DV One-Page Summary

KIC: 10858030 Candidate: 1 of 7 Period: 482.455 d



DV Fit Results:

Period = 482.45542 [0.00729] d
Epoch = 603.2577 [0.0102] BKJD
Rp/R* = 0.0355 [0.0985]
a/R* = 764.65 [6701.38]
b = 0.24 [35.68]
Seff = 0.13 [0.02]
Teq = 154 [6] K
Rp = 2.31 [6.41] Re
a = 1.0058 [0.0709] AU
Ag = 44015.91 [246635.43] [0.18σ]
Teffp = 3445 [4826] K [0.68σ]

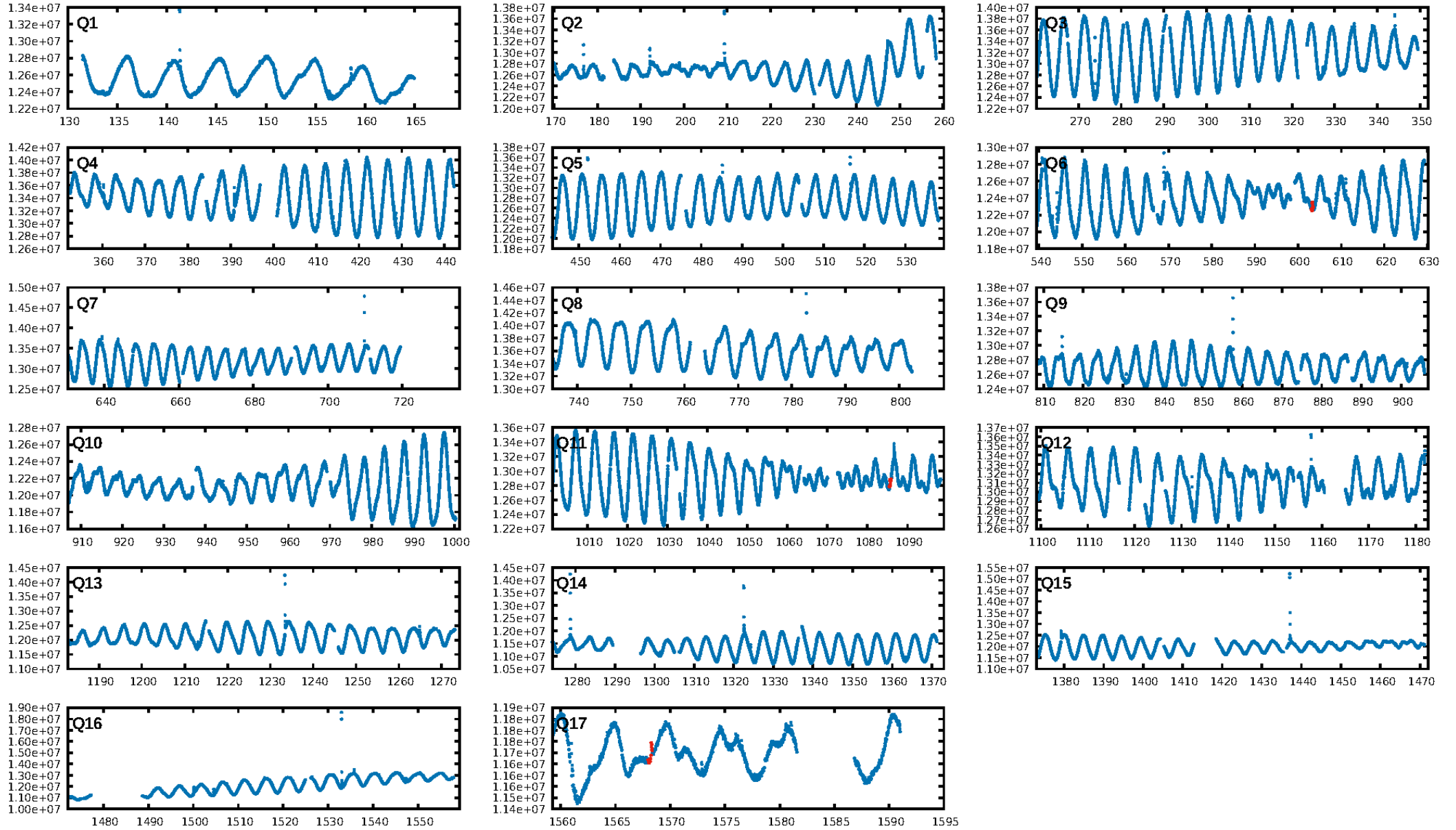
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [92.84σ]
LongPeriod-sig: 100.0% [452.09σ]
ModelChiSquare2-sig: 40.5%
ModelChiSquareGof-sig: 78.0%
Bootstrap-pfa: 7.12e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.176
Centroid-sig: 90.4%
Centroid-so: 0.330 arcsec [0.32σ]
OotOffset-rm: 0.439 arcsec [1.43σ]
KicOffset-rm: 0.376 arcsec [1.22σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

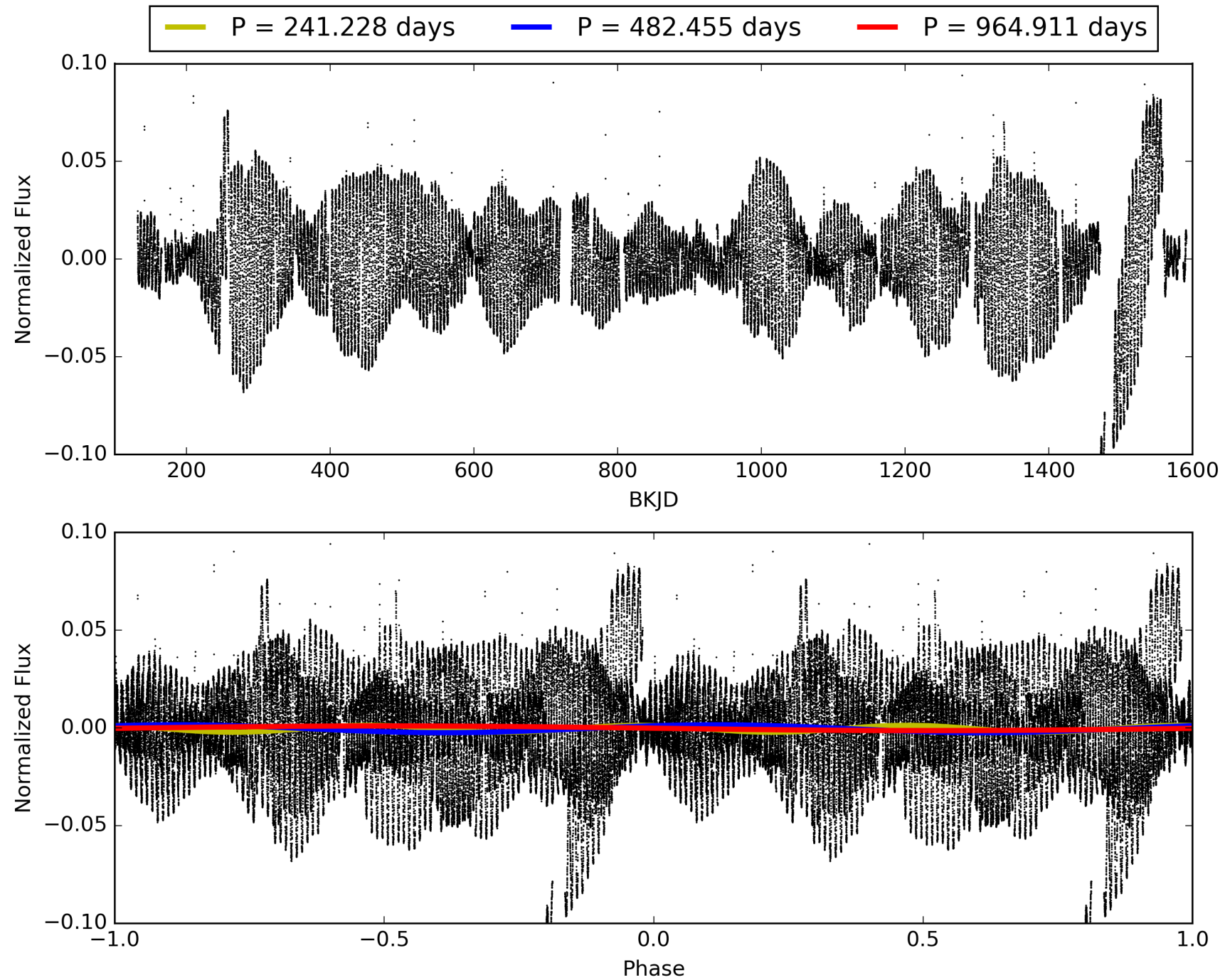
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:44:52 Z

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

TCE 010858030-01, PDC Light Curves

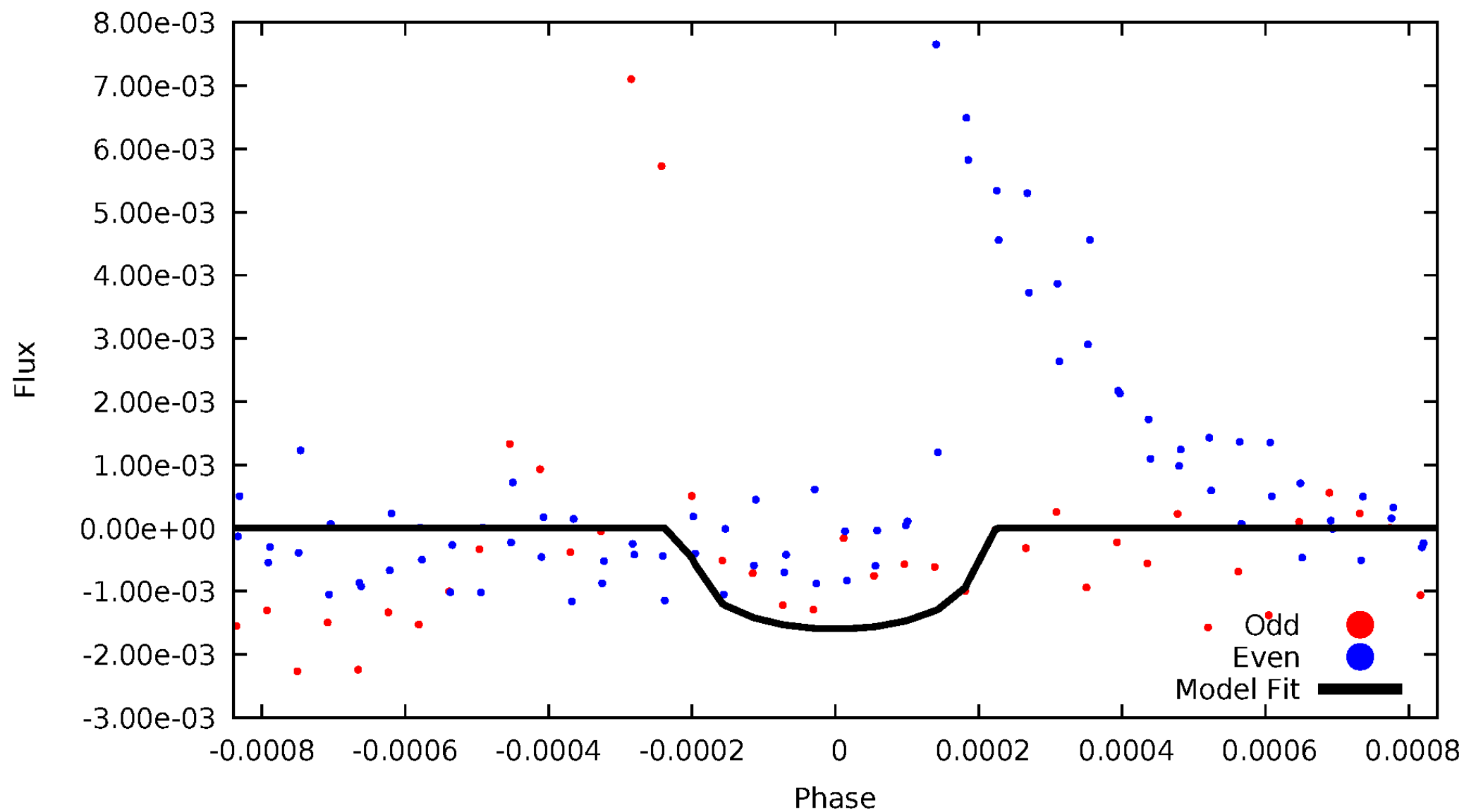


TCE 010858030-01



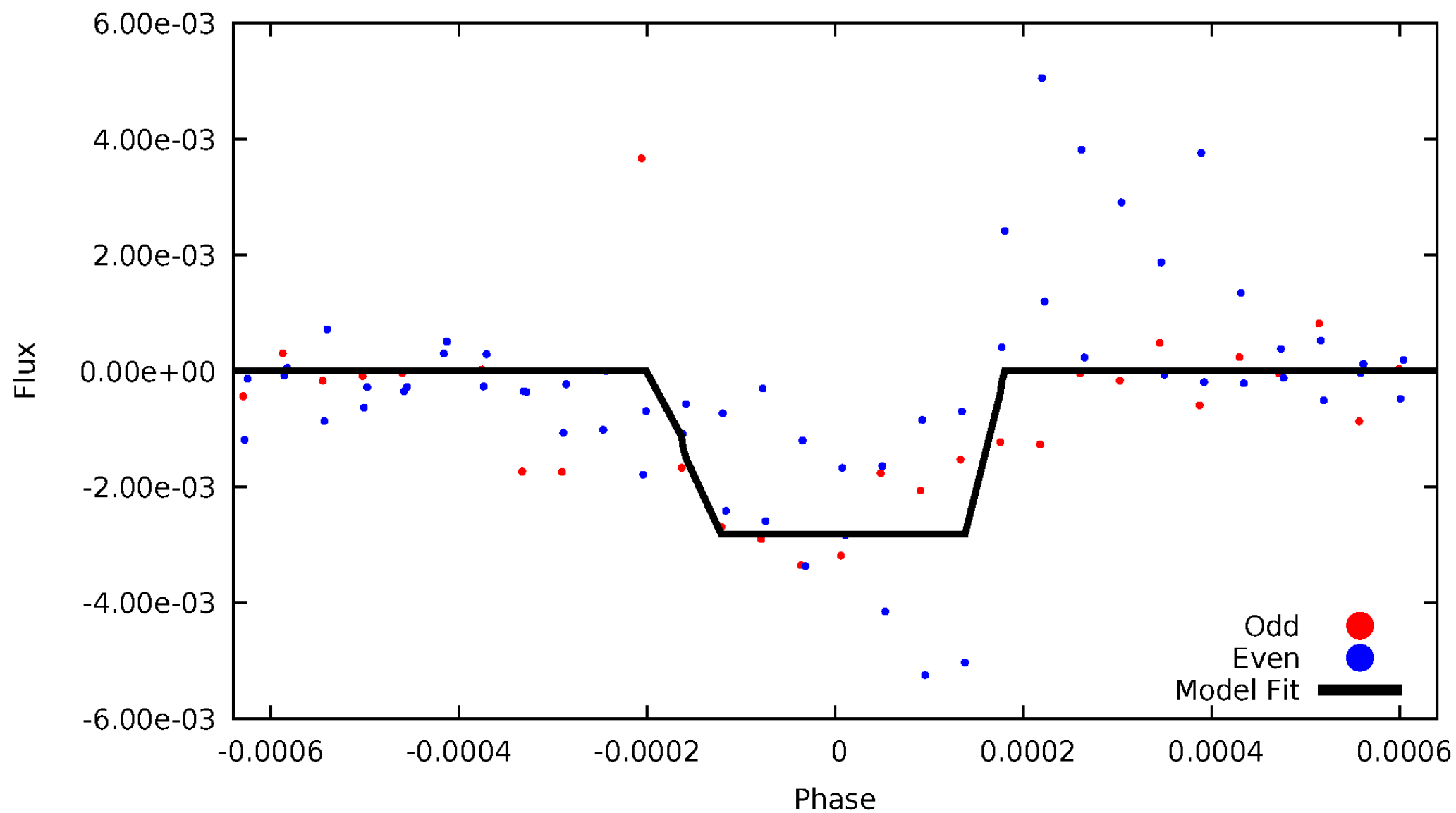
DV Odd/Even

TCE 010858030-01



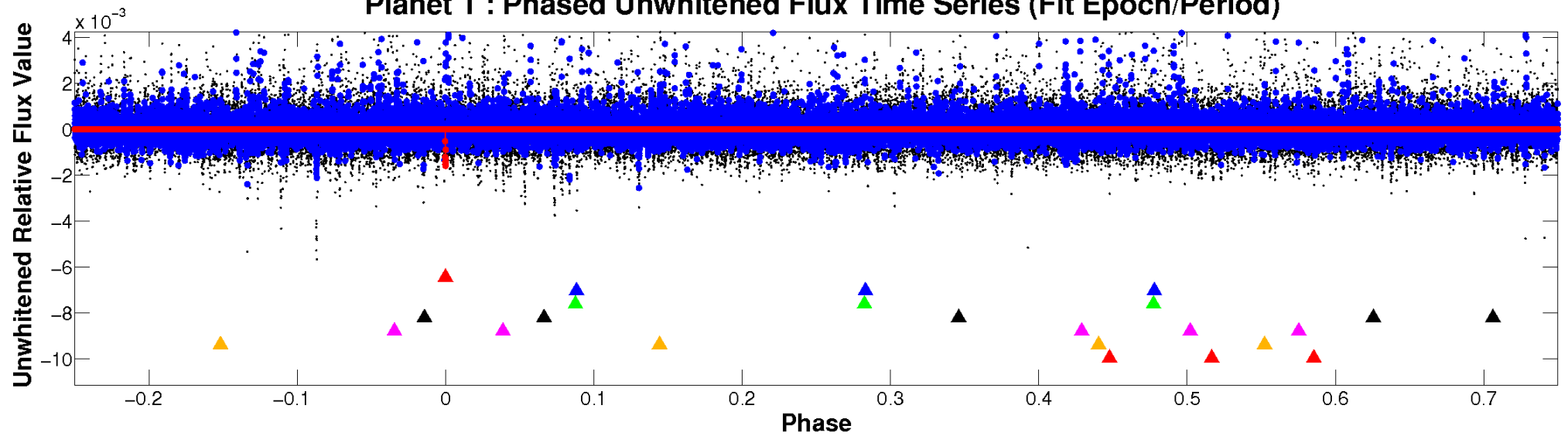
ALT Odd/Even

TCE 010858030-01

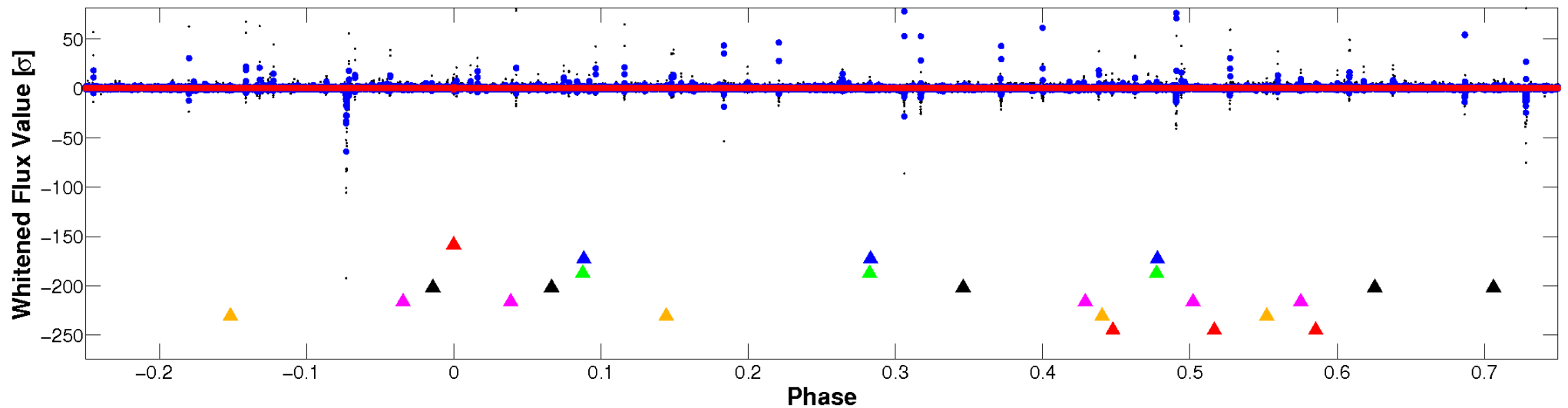


Non-Whitened Vs. Whitened Light Curve

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

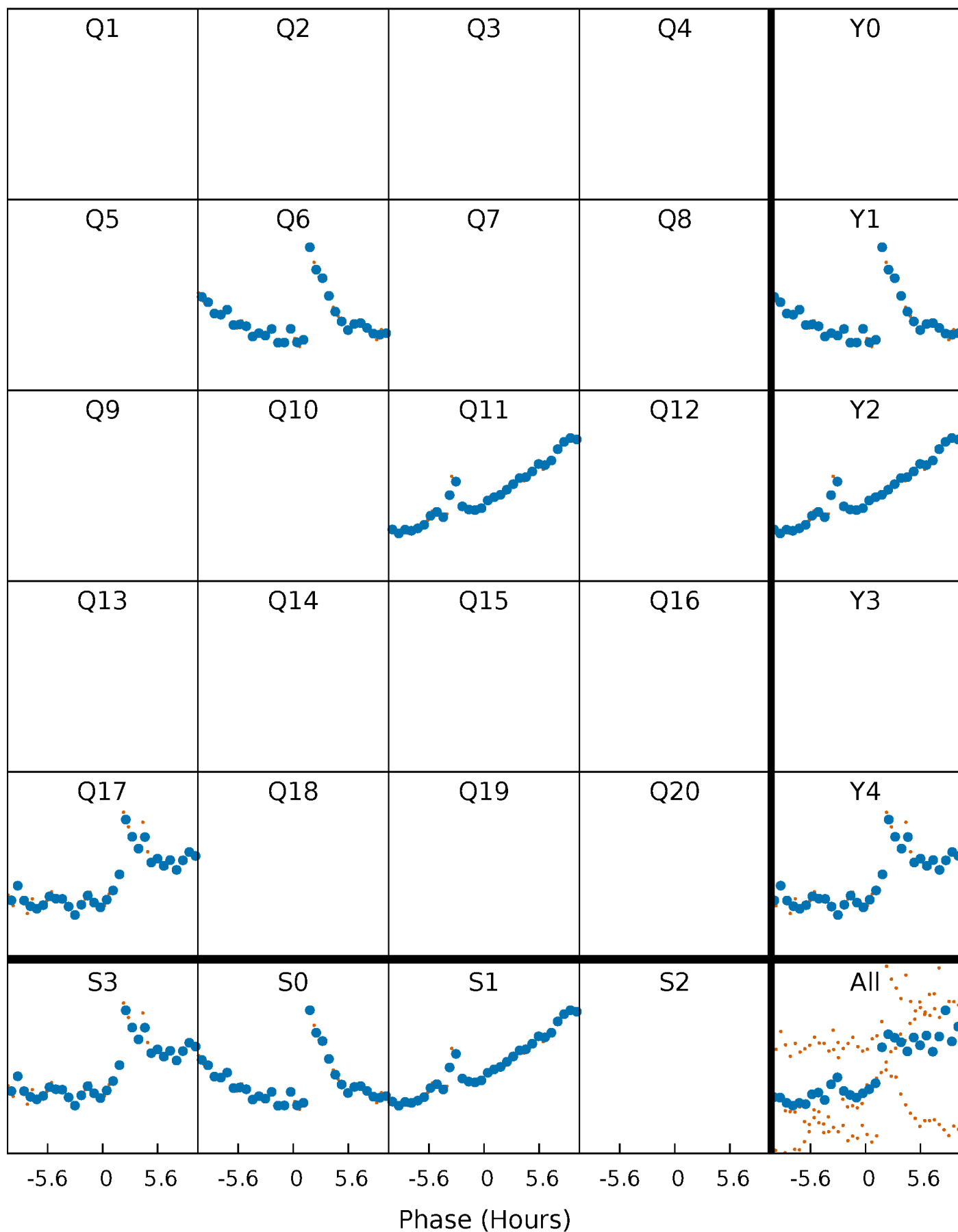


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



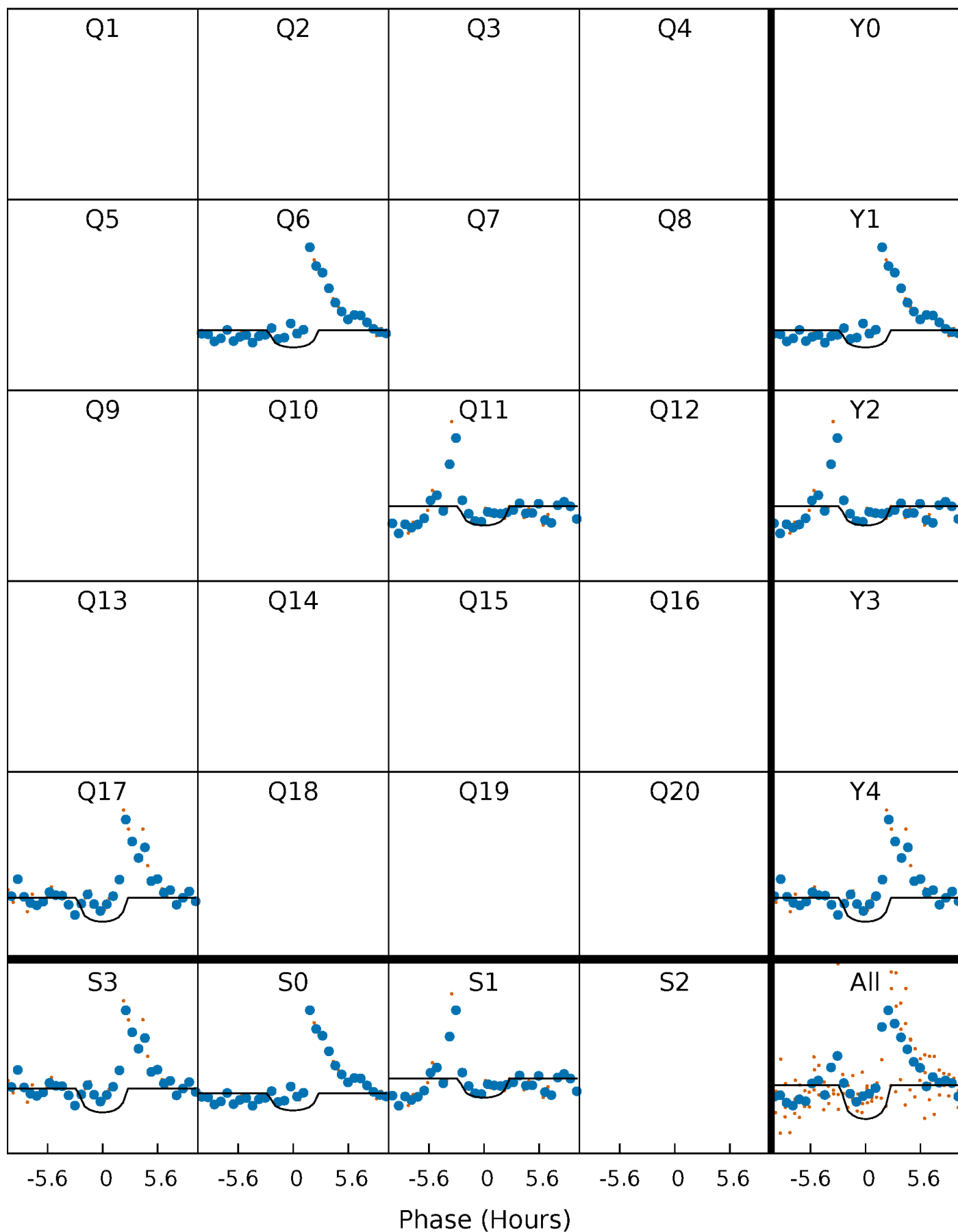
PDC Quarter-Phased Transit Curves

TCE 010858030-01 P=482.455420 Days $T_0=603.257738$ (BKJD)



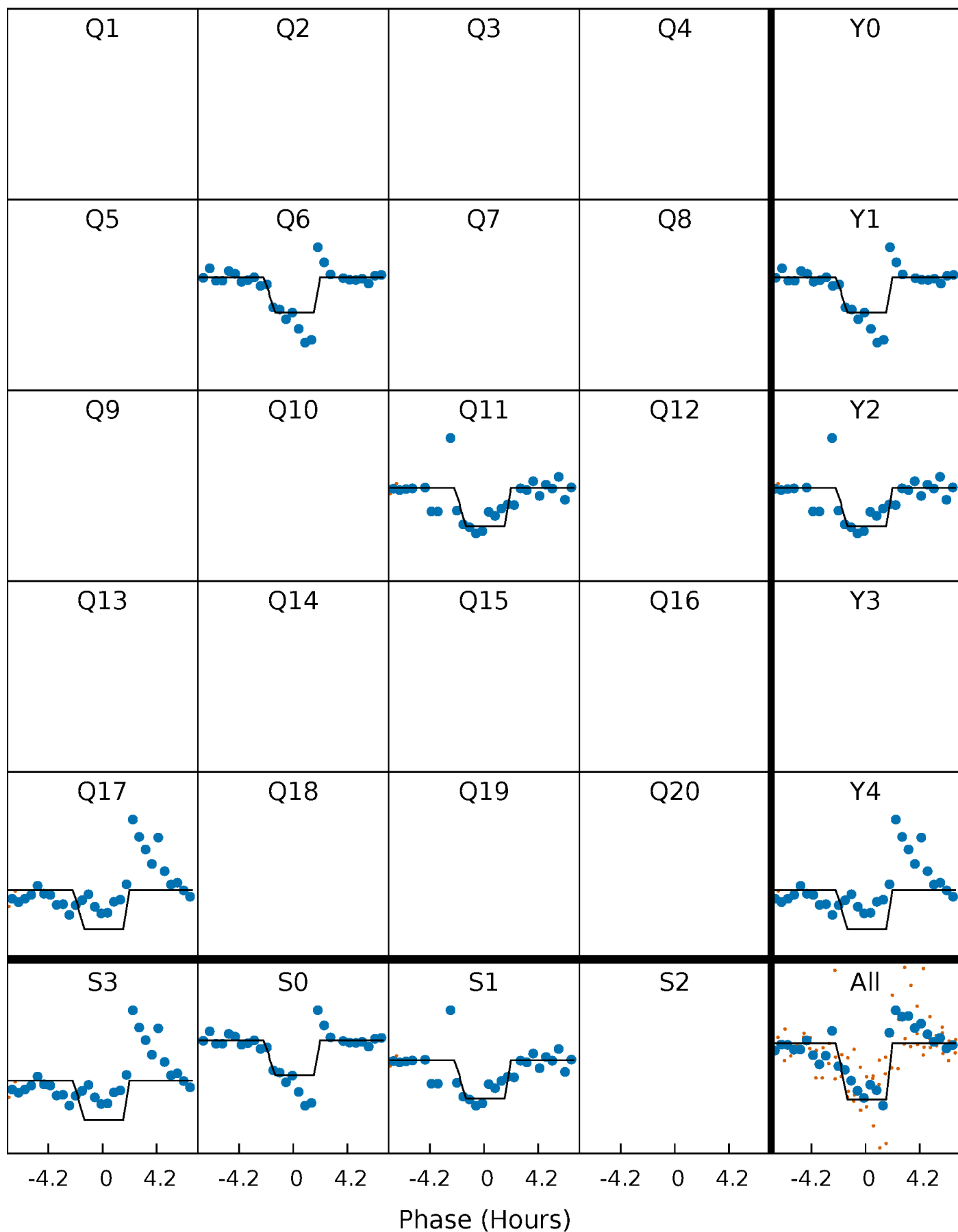
DV Quarter-Phased Transit Curves

TCE 010858030-01 P=482.455420 Days $T_0=603.257738$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

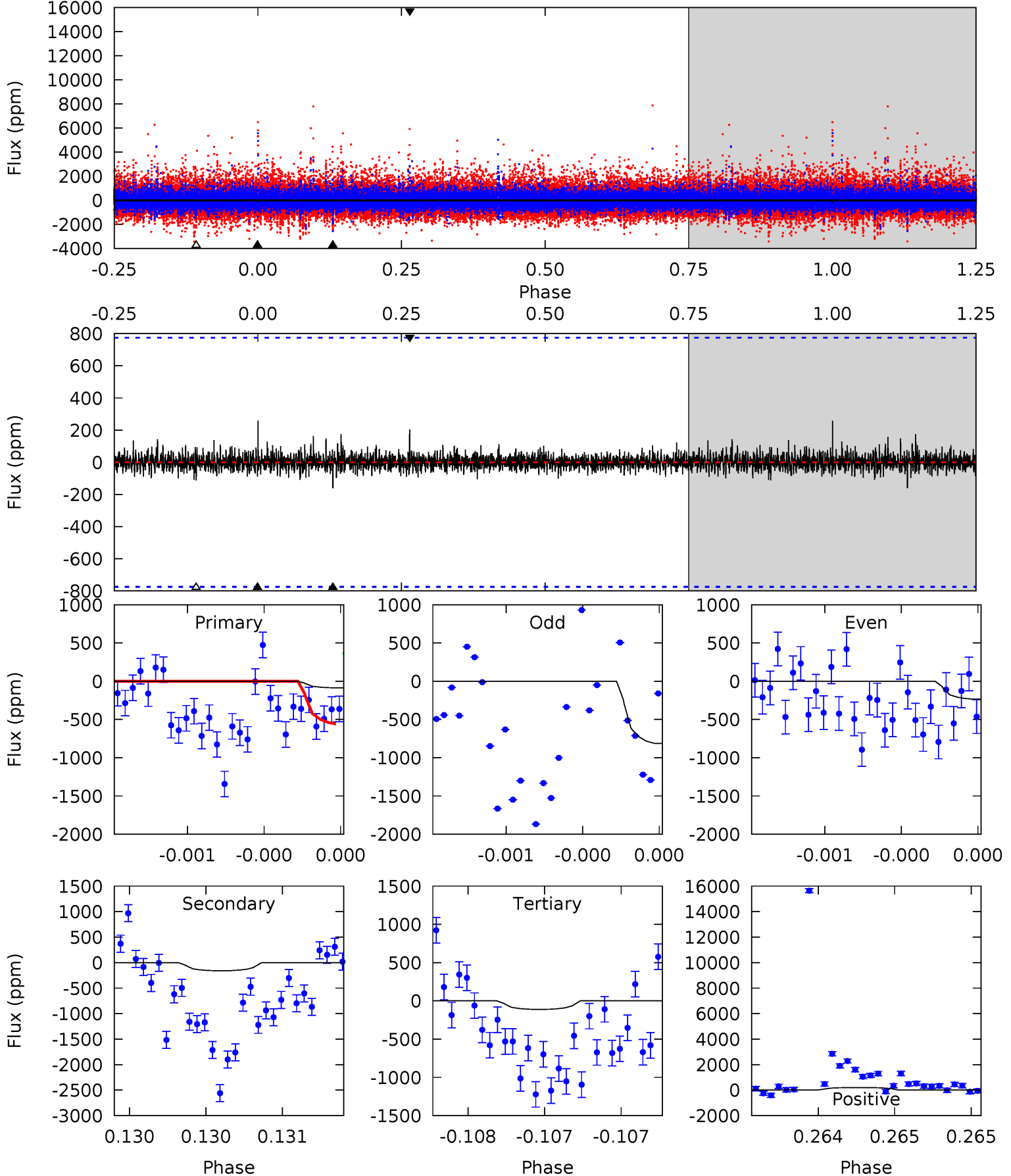
TCE 010858030-01 P=482.456785 Days $T_0=603.238632$ (BKJD)



DV Model-Shift Uniqueness Test

010858030-01, P = 482.455420 Days, E = 120.802318 Days

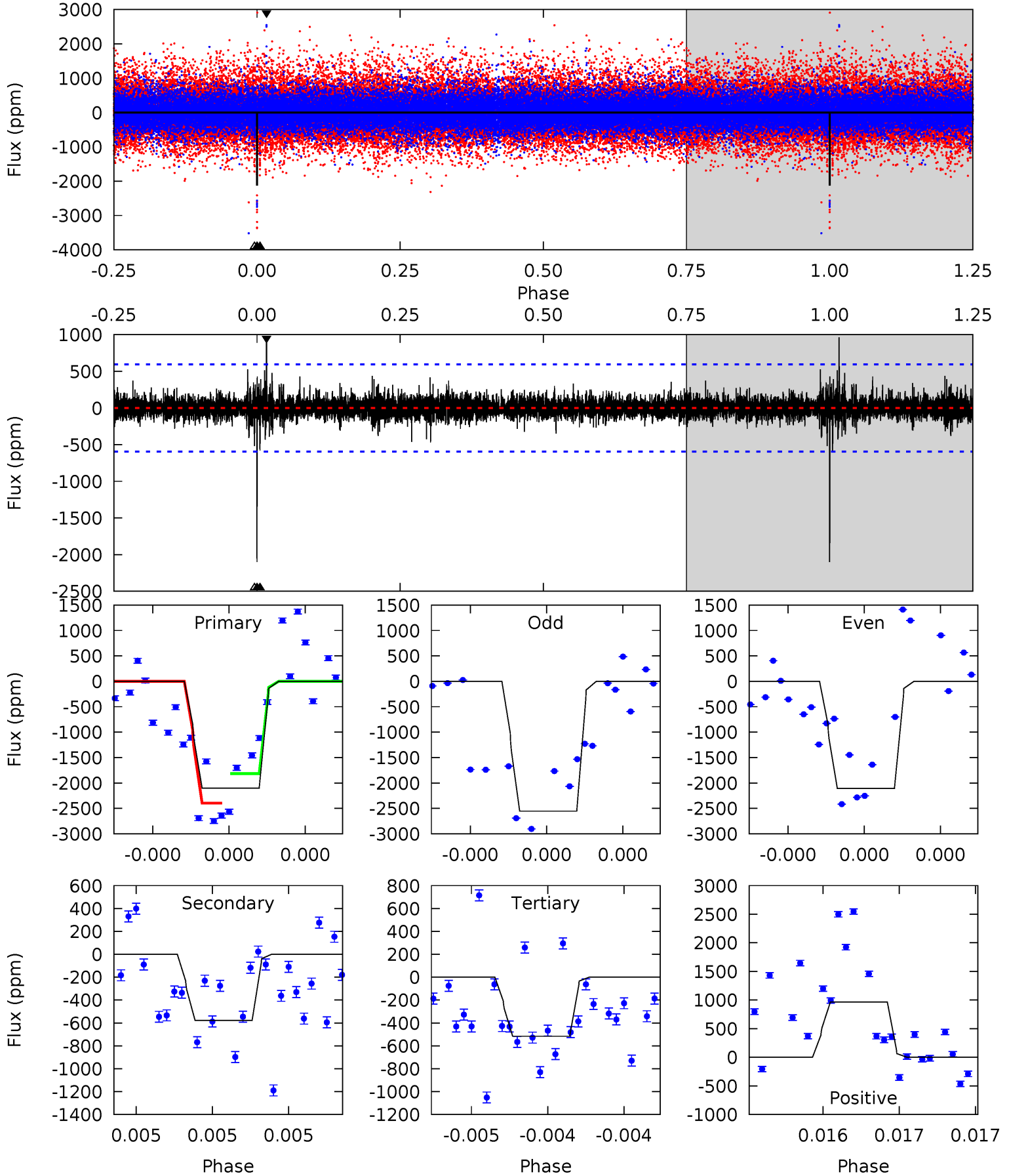
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.63	1.16	0.81	1.48	5.60	3.52	0.23	-0.18	-0.85	0.35	-0.32	1.60	0.66	0.62	0.71



Alt Model-Shift Uniqueness Test

010858030-01, P = 482.456785 Days, E = 120.781847 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	5.48	4.90	9.14	5.64	3.58	0.82	15.0	10.8	0.59	-3.65	2.15	0.94	0.31	2.74



Stellar Parameters For KIC 010858030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4530^{+135}_{-135}	$4.653^{+0.054}_{-0.027}$	$-0.580^{+0.300}_{-0.300}$	$0.596^{+0.046}_{-0.051}$	$0.583^{+0.065}_{-0.038}$	$3.873^{+0.953}_{-0.466}$
	+3%/-3%	+1%/-1%	+52%/-52%	+8%/-9%	+11%/-7%	+25%/-12%
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 010858030-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-160 ± 138	$5.19^{+4.89}_{-3.46}$	214^{+7}_{-8}	2473^{+947}_{-566}	2500^{+23147}_{-2265}
Alt.	-578 ± 105	$6.18^{+5.21}_{-4.46}$	214^{+7}_{-8}	2893^{+1473}_{-424}	$8361^{+101557}_{-5957}$

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

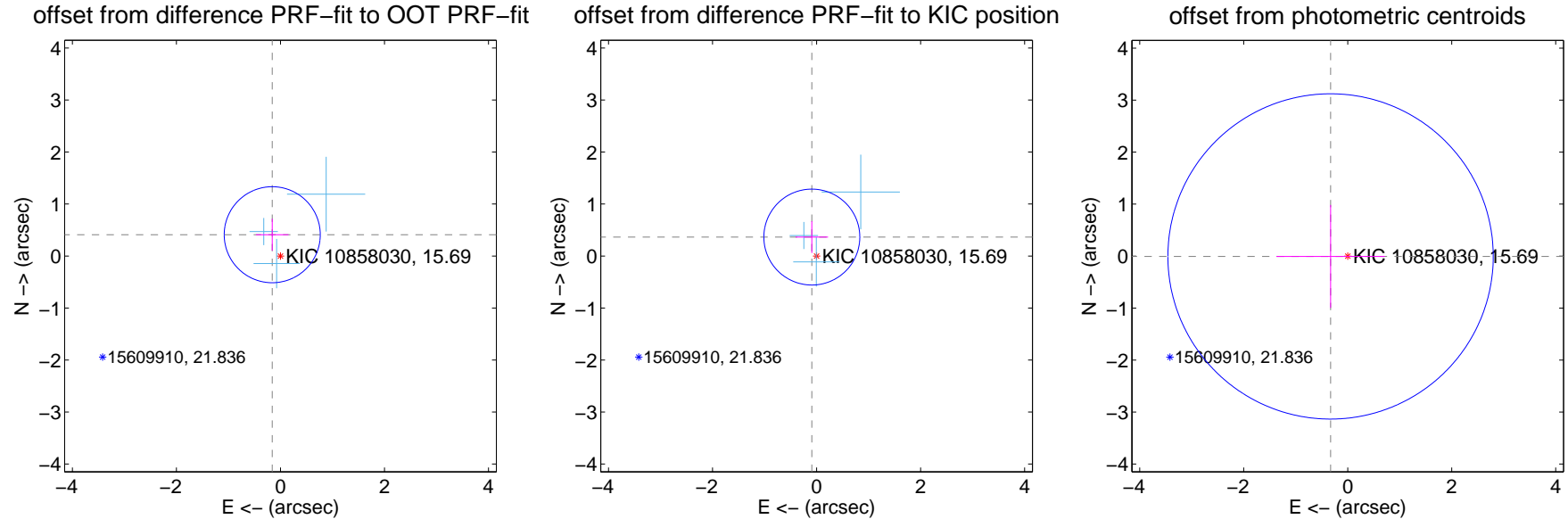
DV Centroid Data

Supplemental centroid analysis for 010858030-01. Kepler magnitude: 15.69. Transit SNR 5.80

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.439 ± 0.308	1.43	0.158 ± 0.312	0.410 ± 0.307
PRF-fit source offset from KIC position	0.376 ± 0.307	1.22	0.091 ± 0.312	0.364 ± 0.307
photometric centroid source offset	0.33 ± 1.04	0.32	0.33 ± 1.04	-0.01 ± 0.99



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

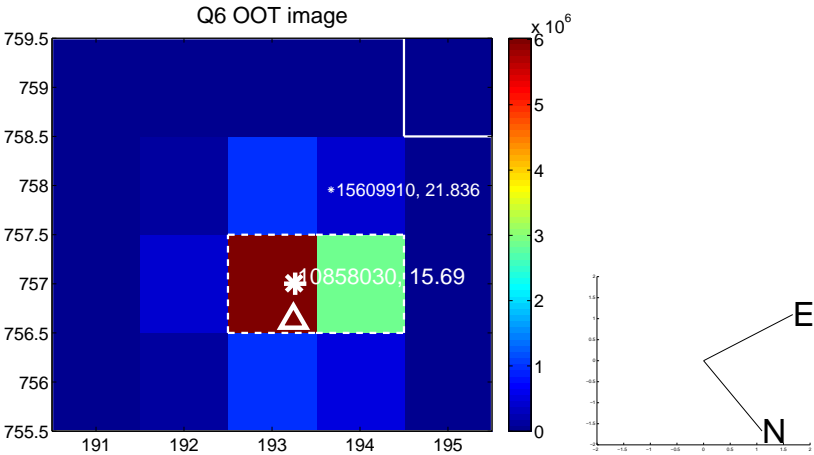
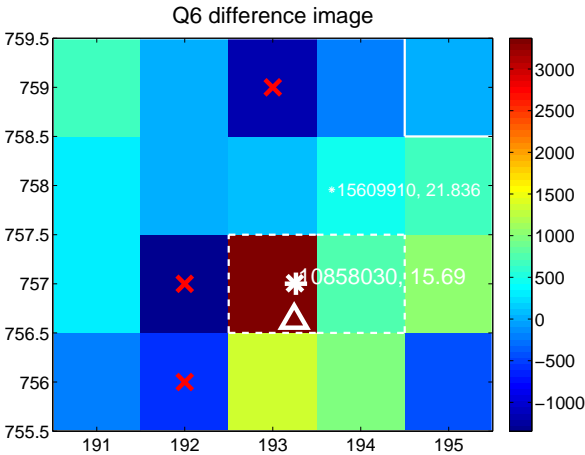


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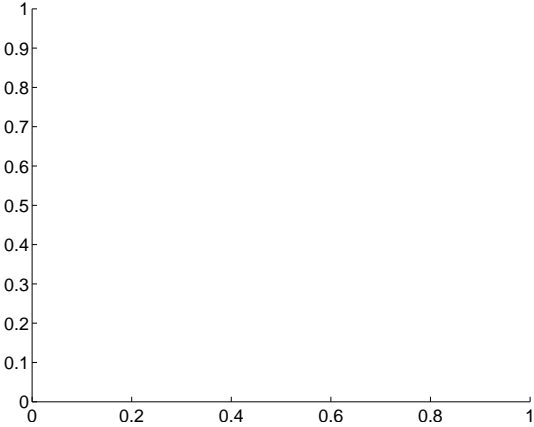
Q5 no difference image



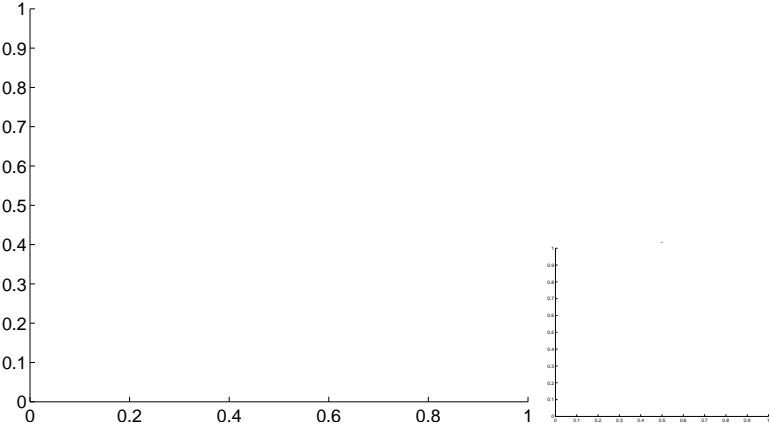
Q5 no OOT image



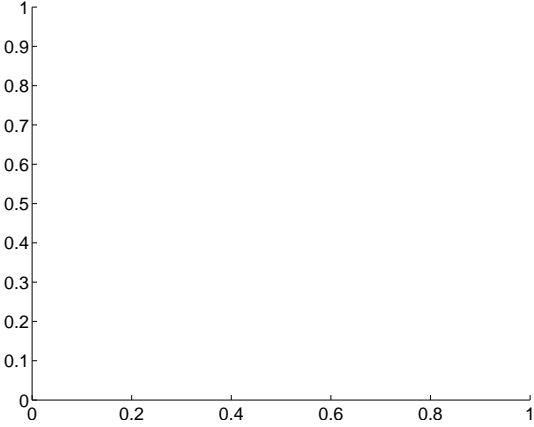
Q7 no difference image



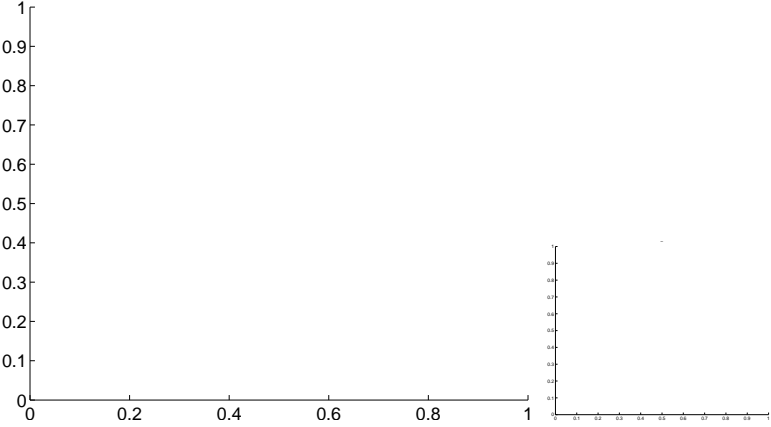
Q7 no OOT image



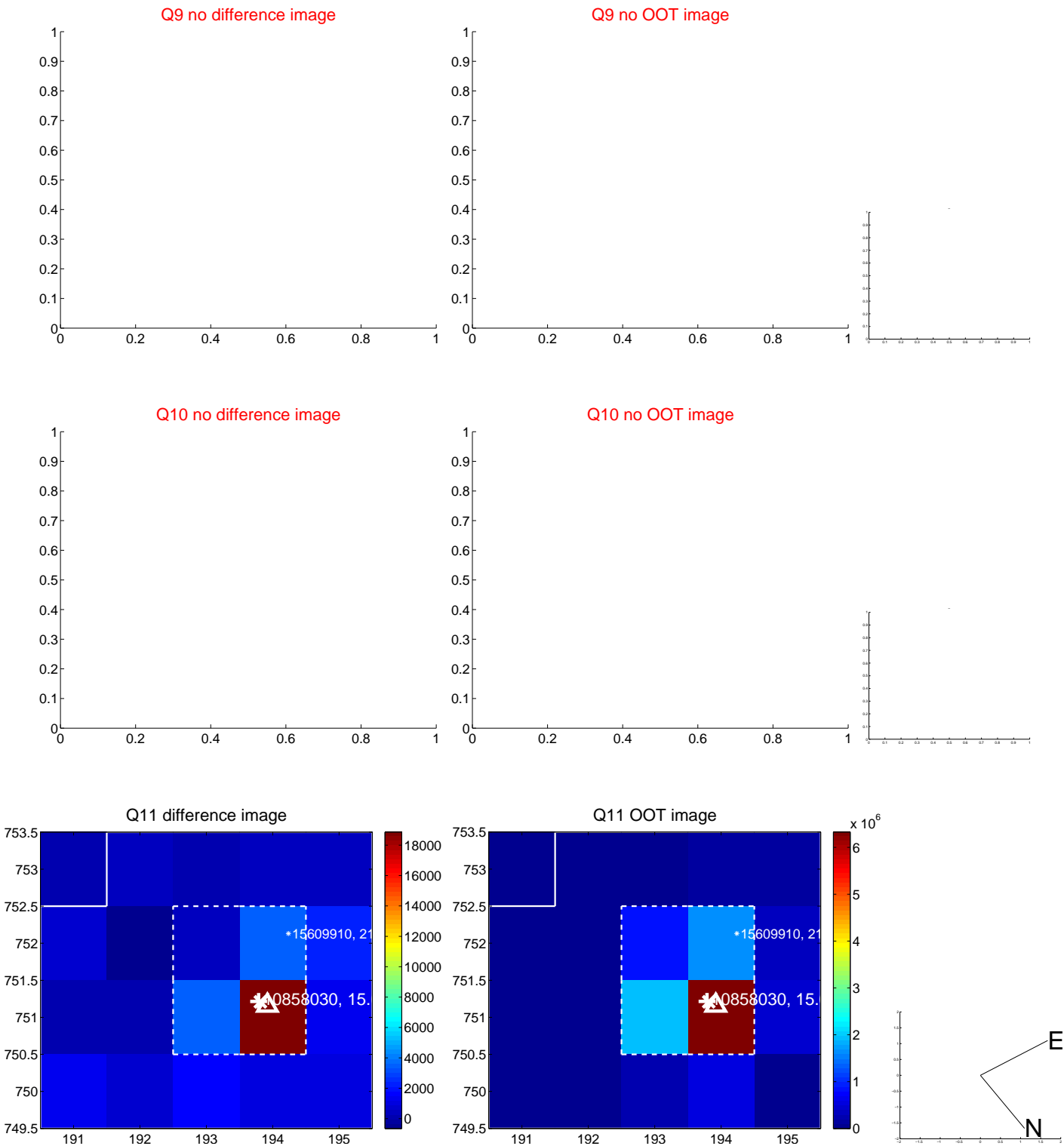
Q8 no difference image



Q8 no OOT image



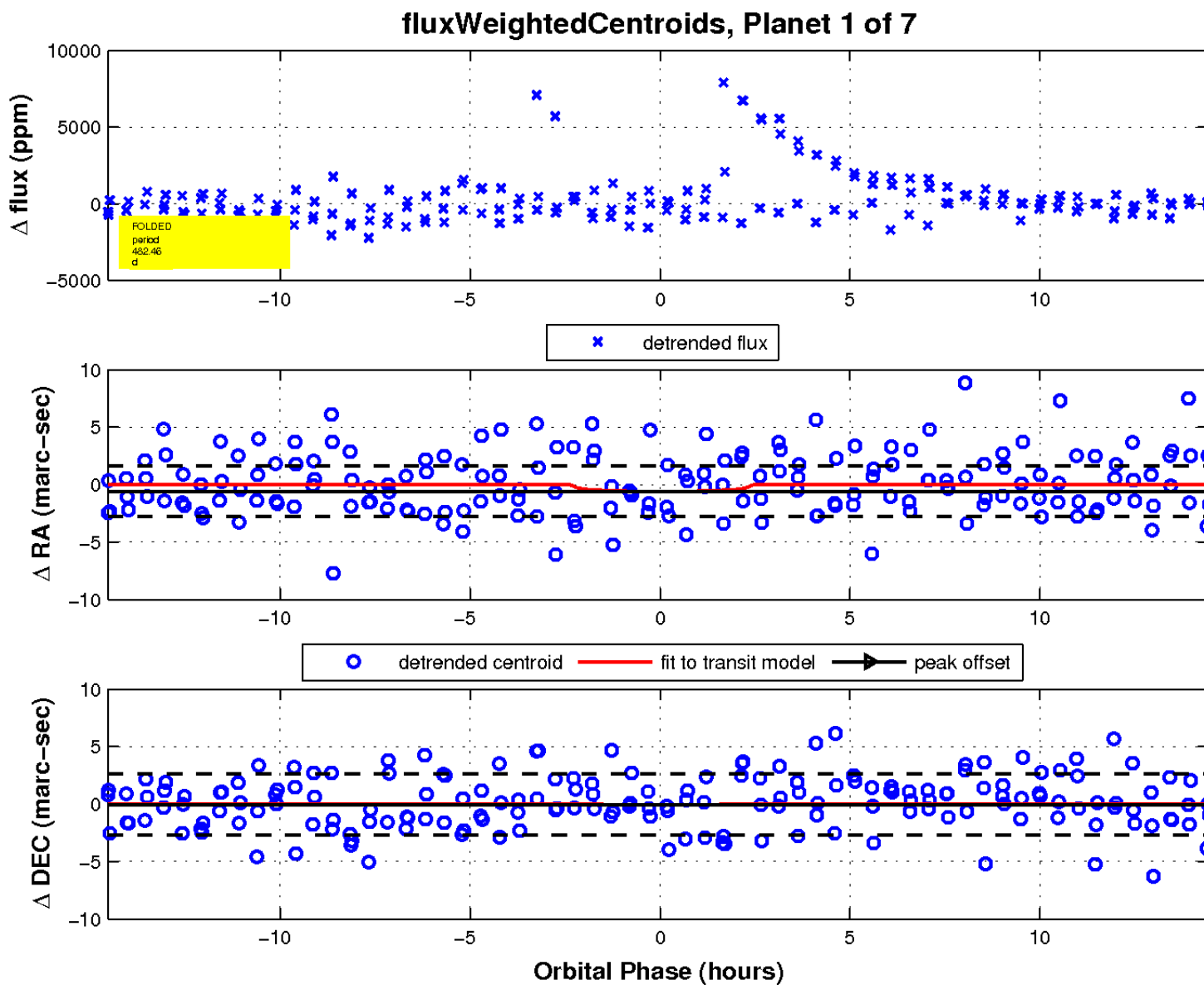
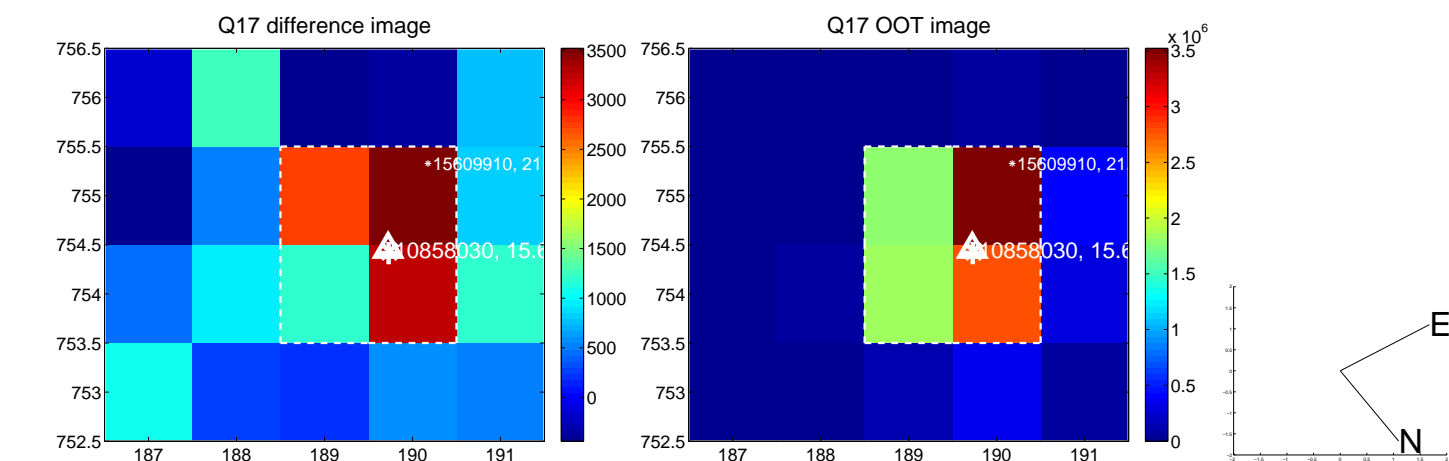
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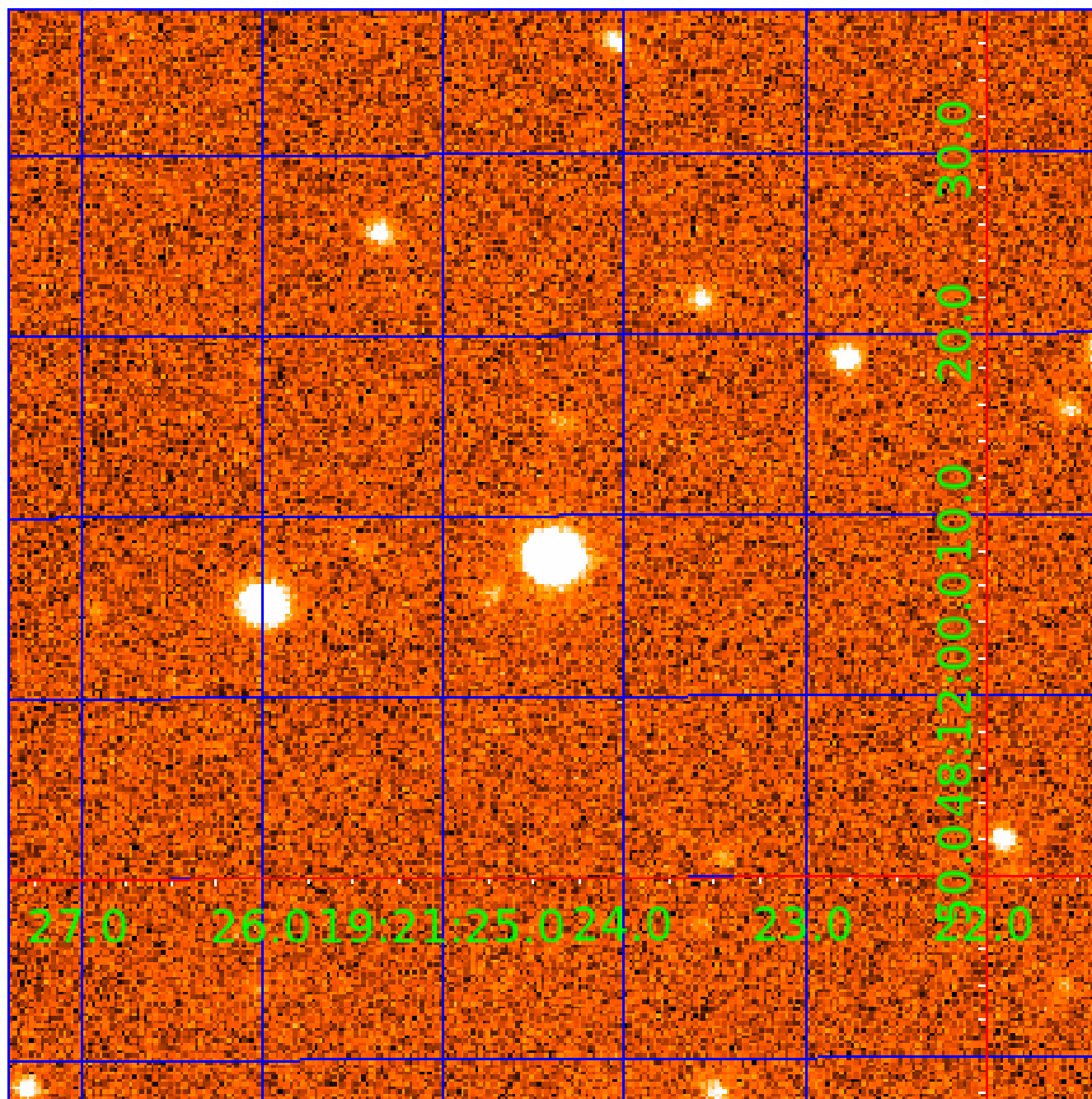


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UKIRT Image

Declination



KIC 010858030

Q1-17 DR25 TCE Parameters

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010858030-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
010858030-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
010858030-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

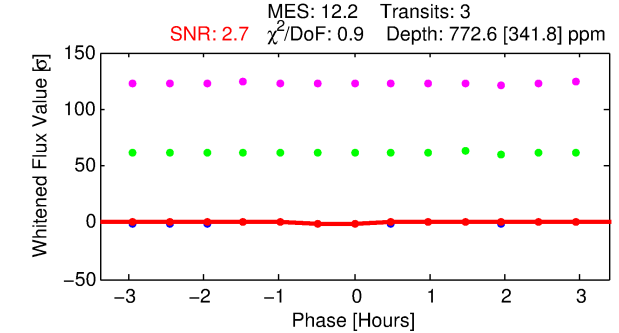
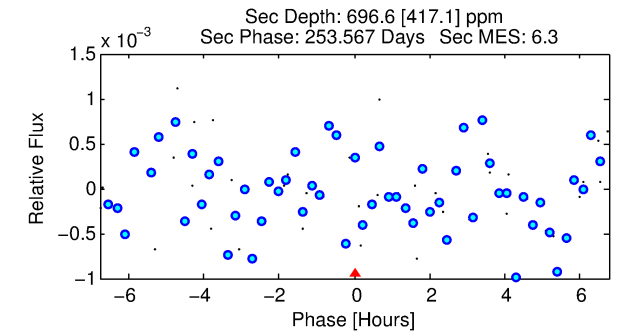
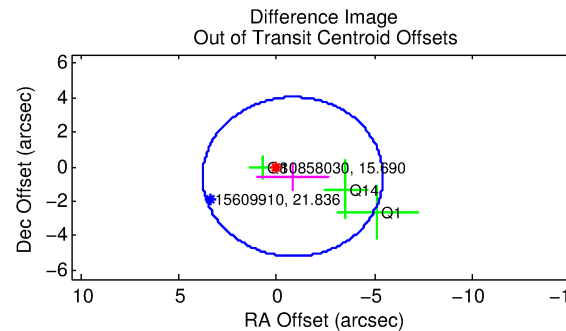
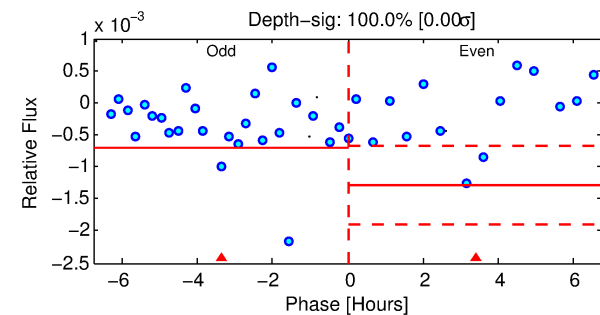
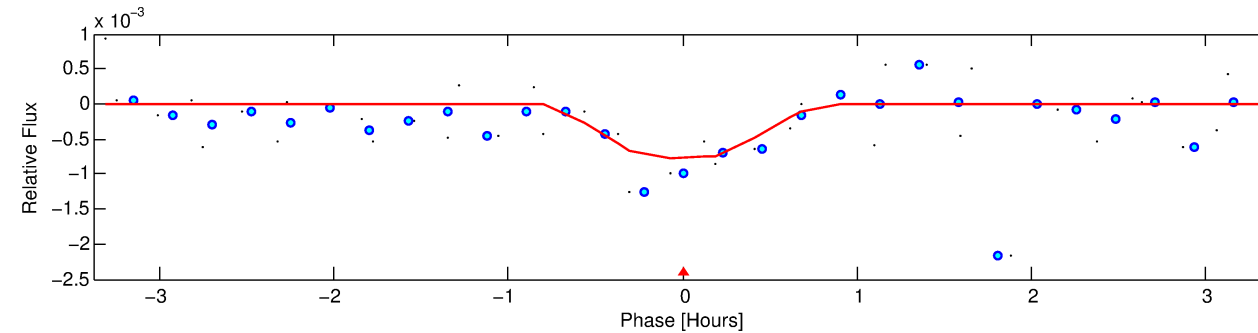
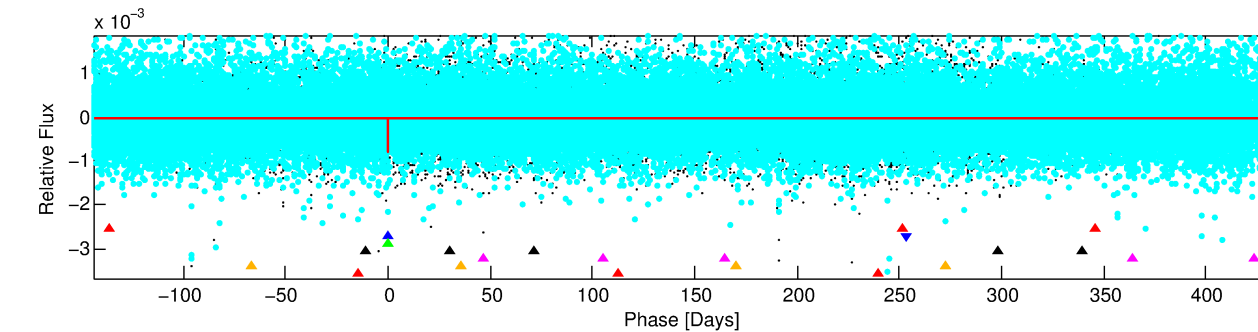
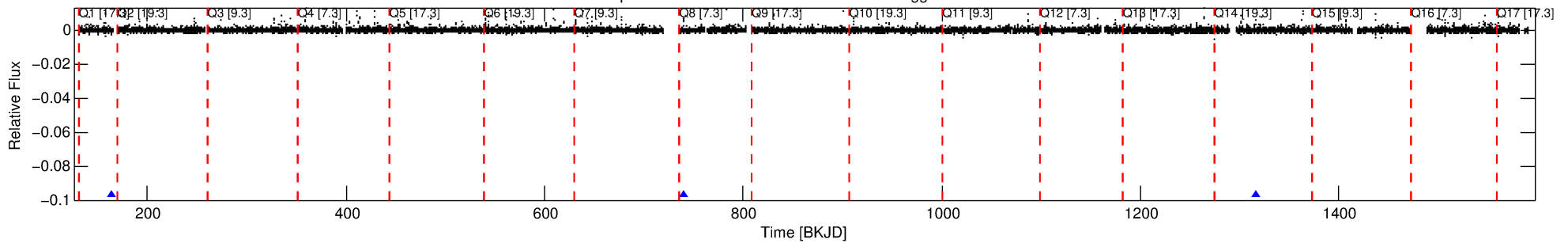
Ephemeris Match Information For 010858030-02

No Significant Match Found

DV One-Page Summary

KIC: 10858030 Candidate: 2 of 7 Period: 576.438 d

Kp: 15.69 R*: 0.60 Rs Teff: 4530.0 K Logg: 4.65 Fe/H: -0.580



DV Fit Results:

Period = 576.43824 [0.00973] d
Epoch = 163.4335 [0.0120] BKJD
Rp/R* = 0.0261 [0.1586]
a/R* = 3440.60 [67293.65]
b = 0.53 [27.33]
Seff = 0.10 [0.02]
Teq = 145 [6] K
Rp = 1.70 [10.32] Re
a = 1.1325 [0.0799] AU
Ag = 170386.68 [2072291.93] [0.08σ]
Teffp = 4554 [13847] K [0.32σ]

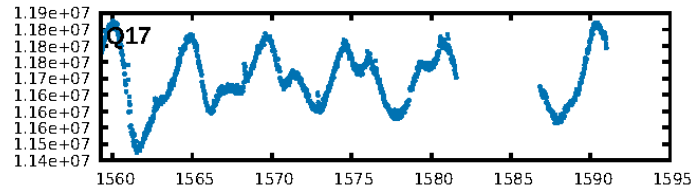
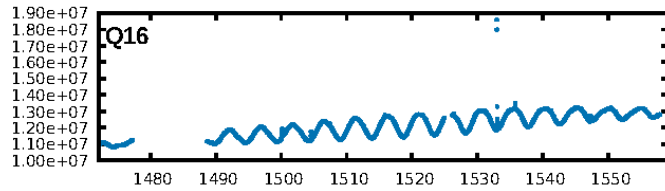
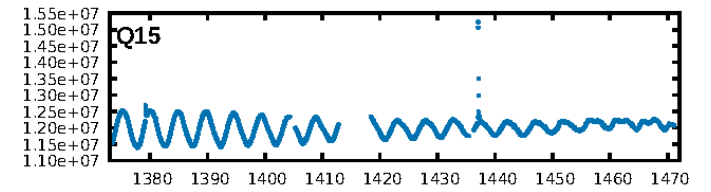
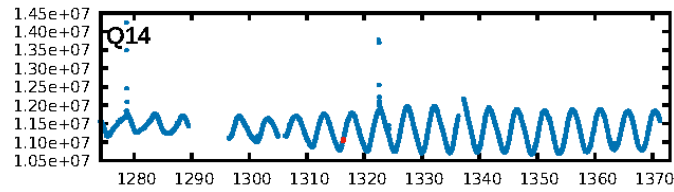
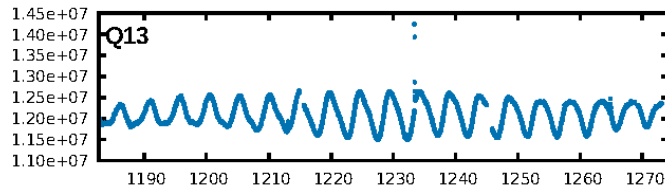
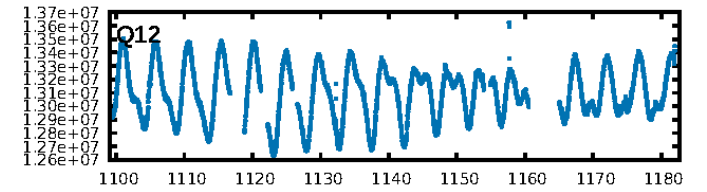
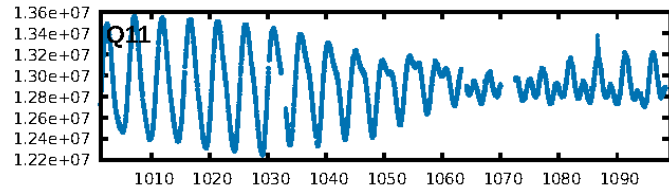
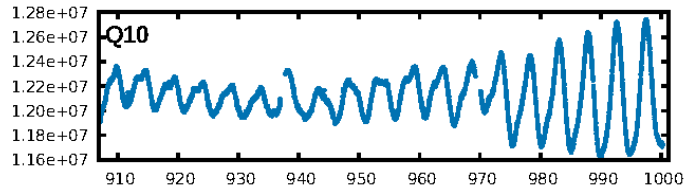
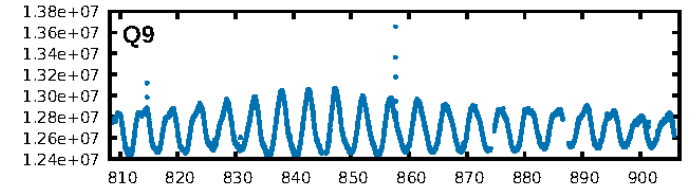
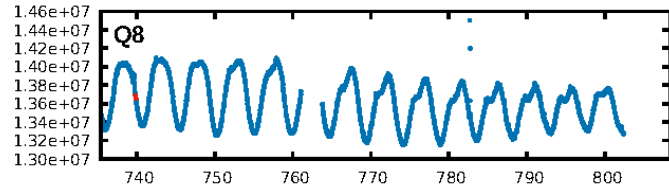
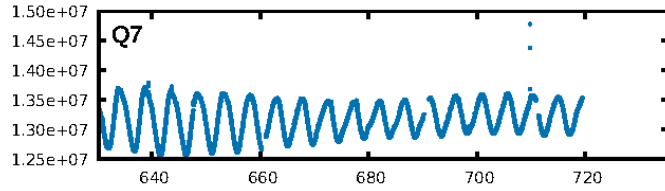
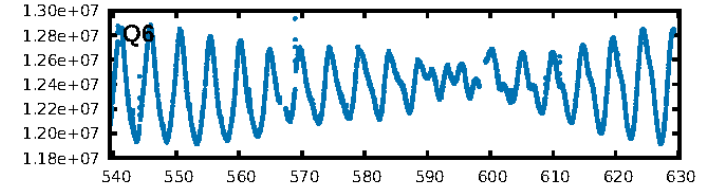
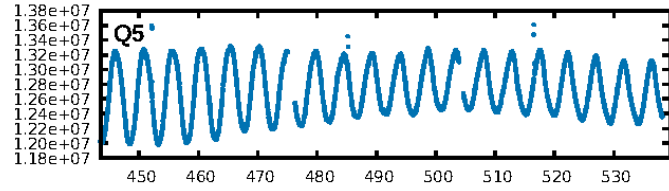
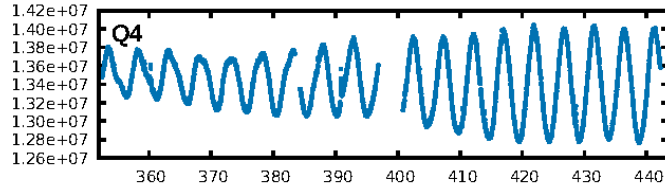
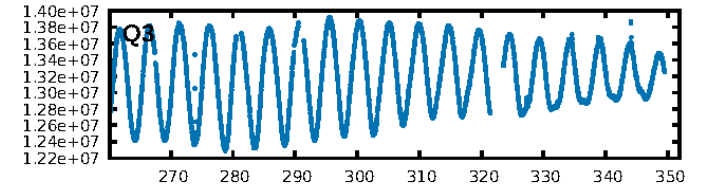
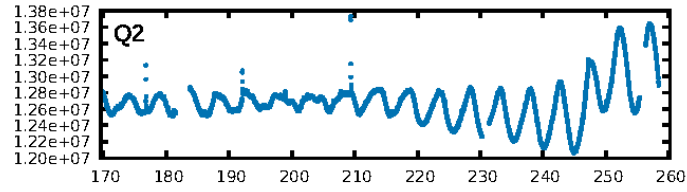
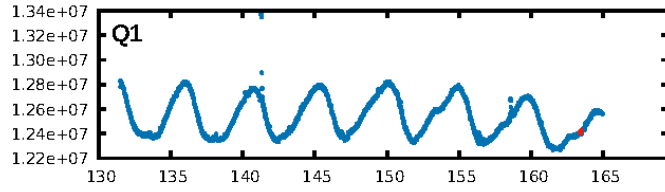
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [452.09σ]
LongPeriod-sig: 10.5% [0.13σ]
ModelChiSquare2-sig: 44.7%
ModelChiSquareGof-sig: 98.1%
Bootstrap-pfa: 4.77e-10
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.092
Centroid-sig: 40.7%
Centroid-so: 4.052 arcsec [0.91σ]
OotOffset-rm: 1.017 arcsec [0.66σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 1.058 arcsec [0.61σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.33 [1/3]

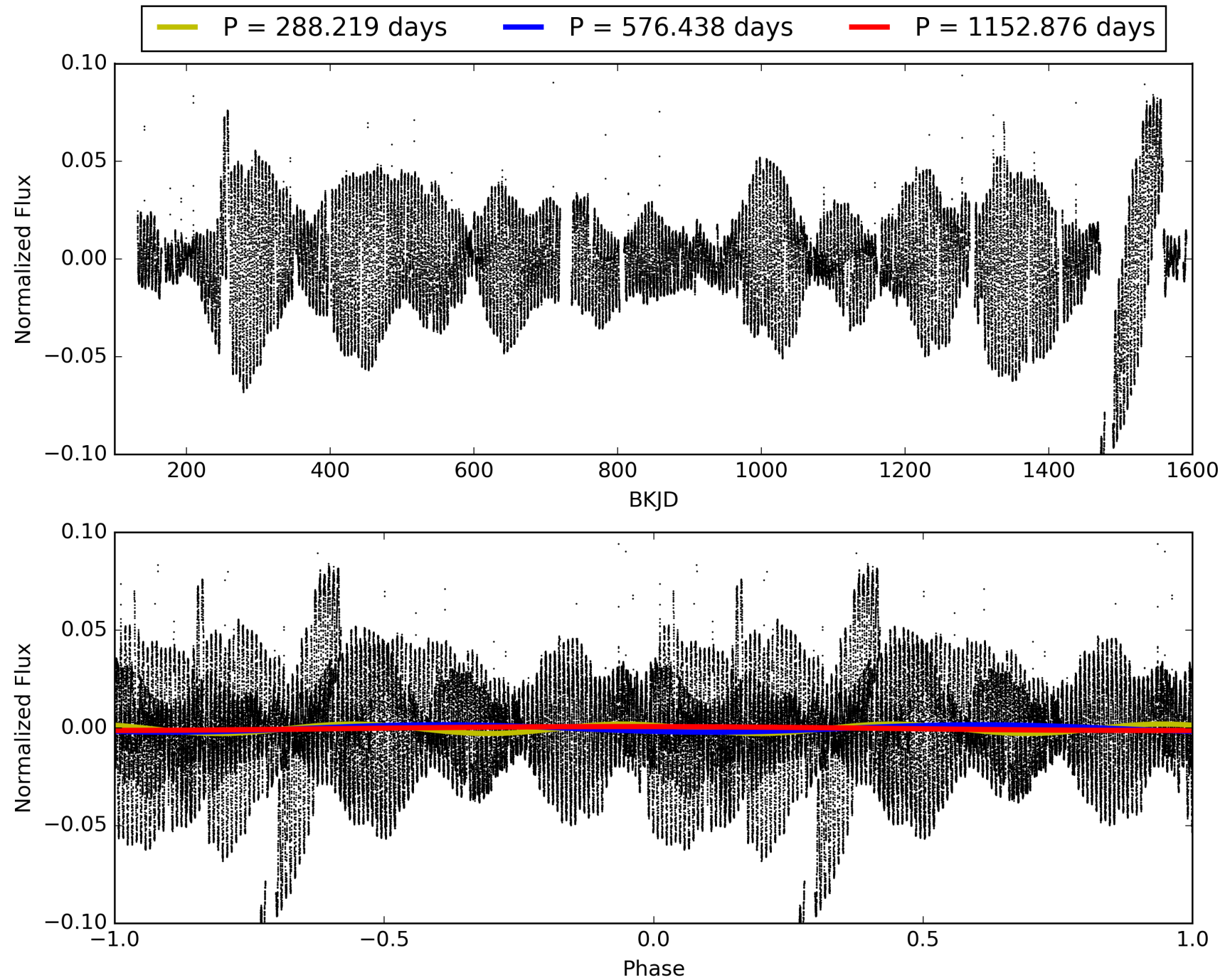
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:45:48 Z

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

TCE 010858030-02, PDC Light Curves

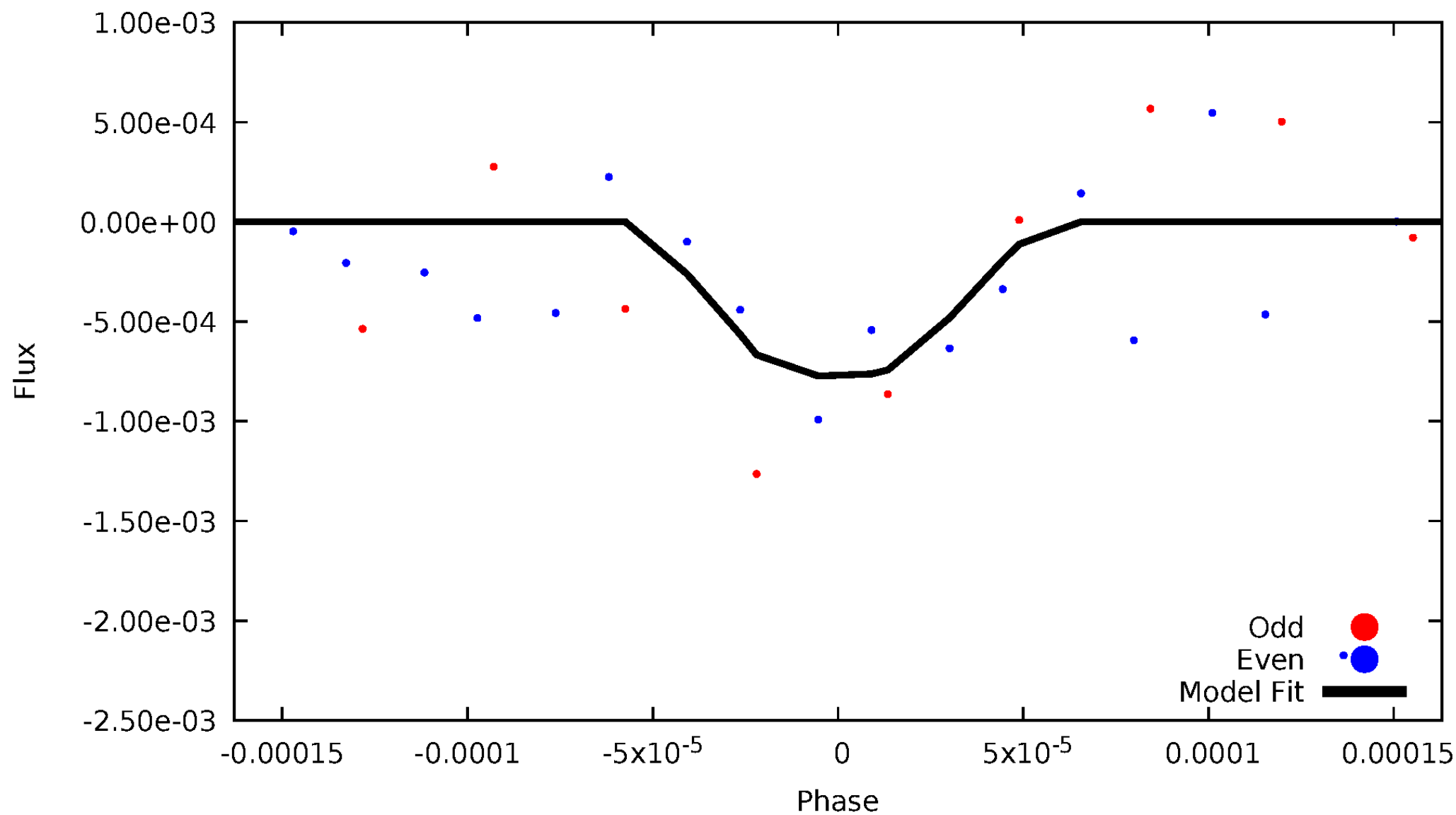


TCE 010858030-02



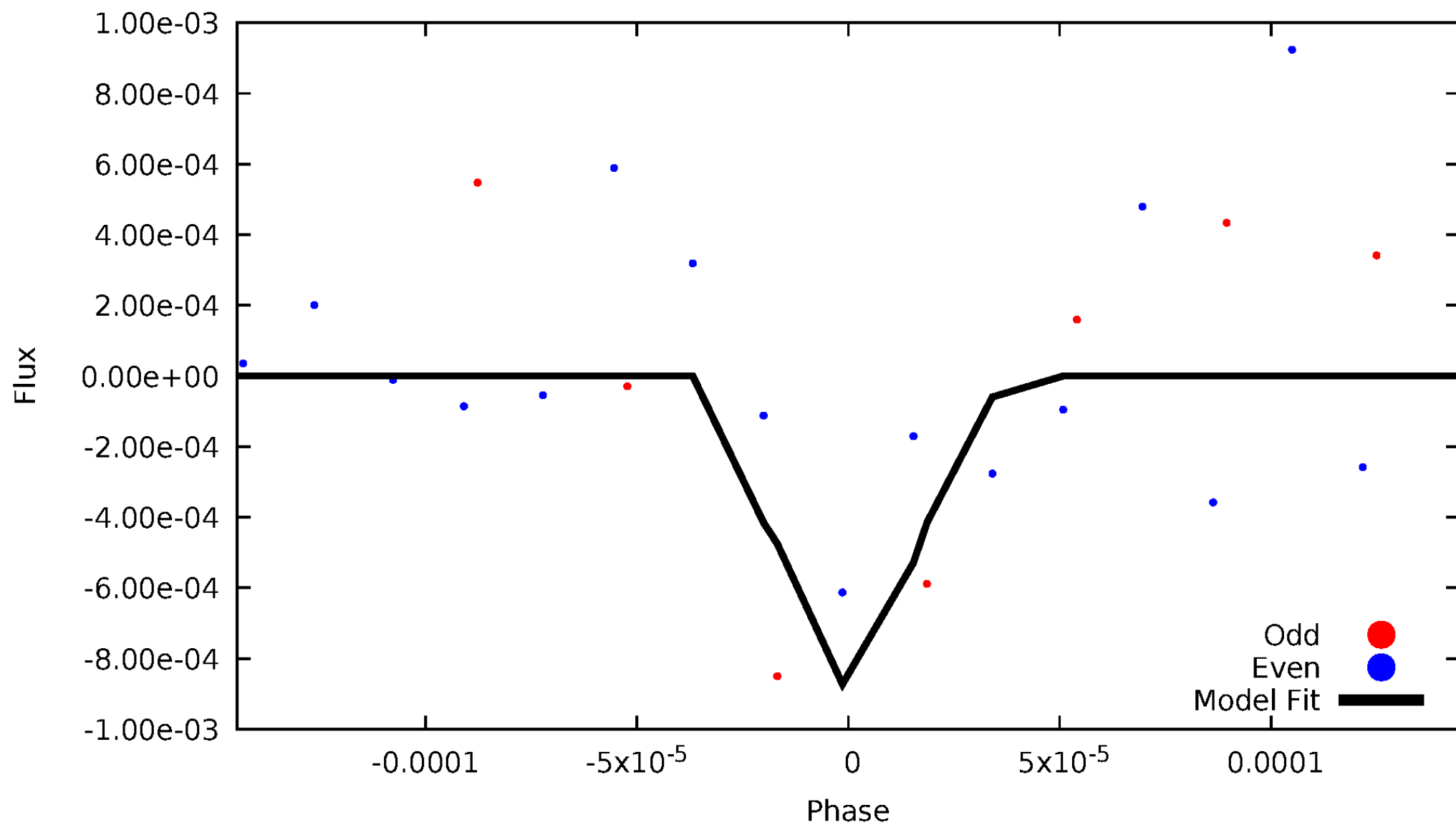
DV Odd/Even

TCE 010858030-02



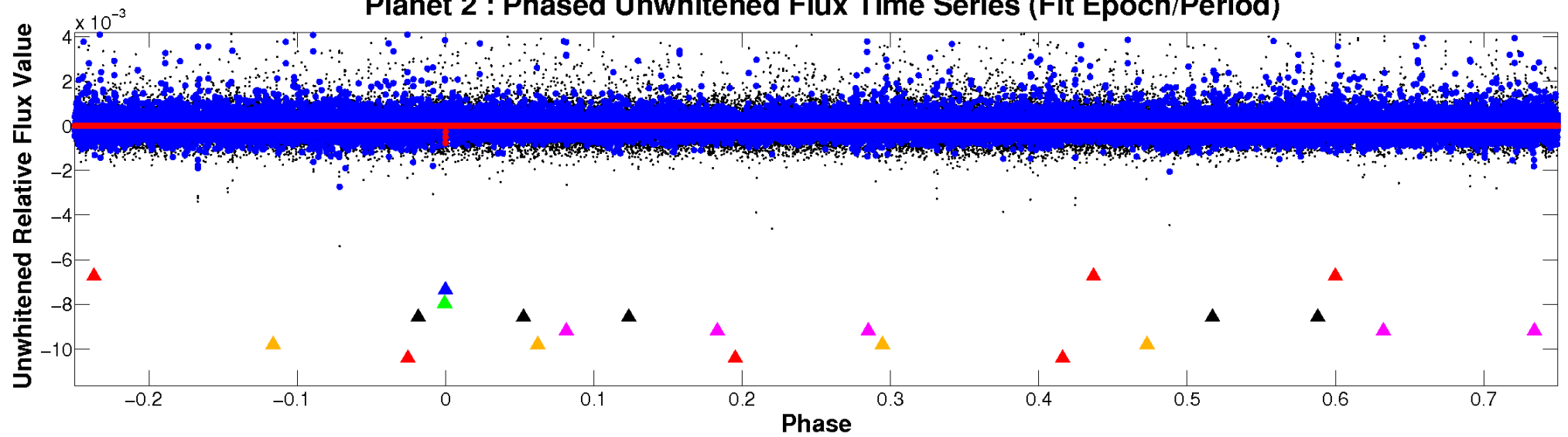
ALT Odd/Even

TCE 010858030-02

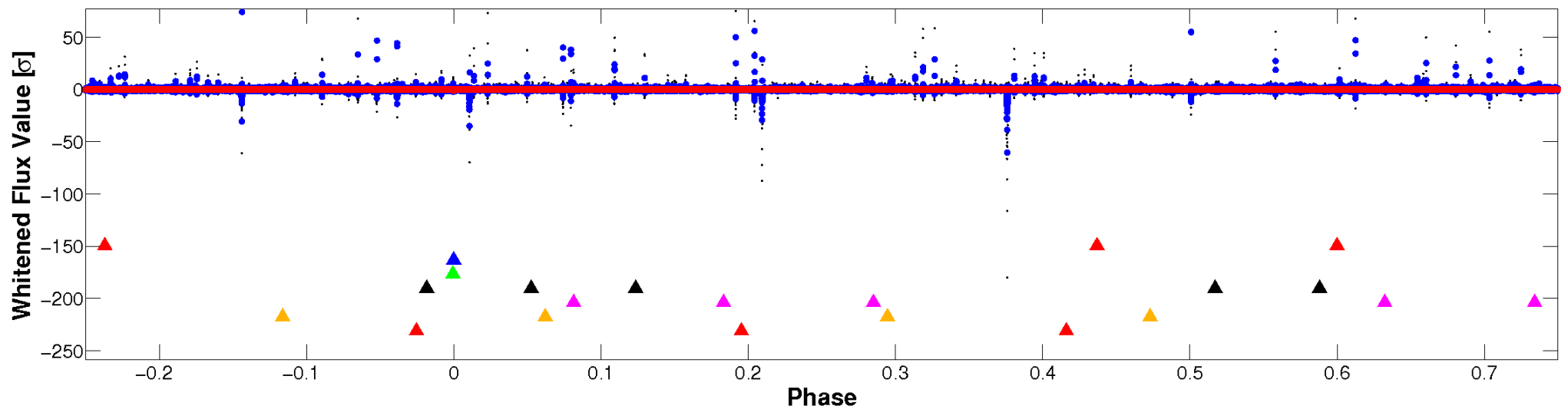


Non-Whitened Vs. Whitened Light Curve

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

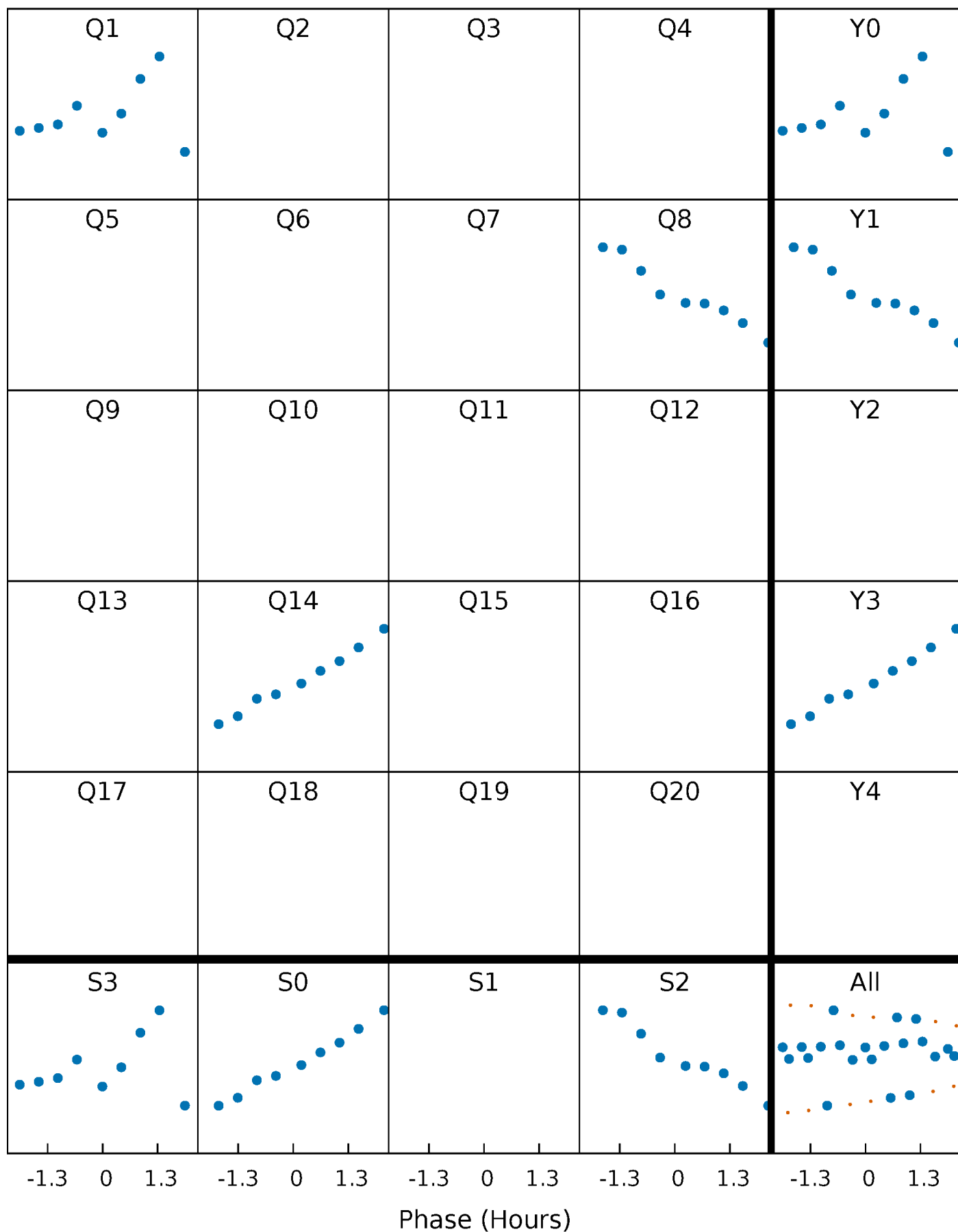


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



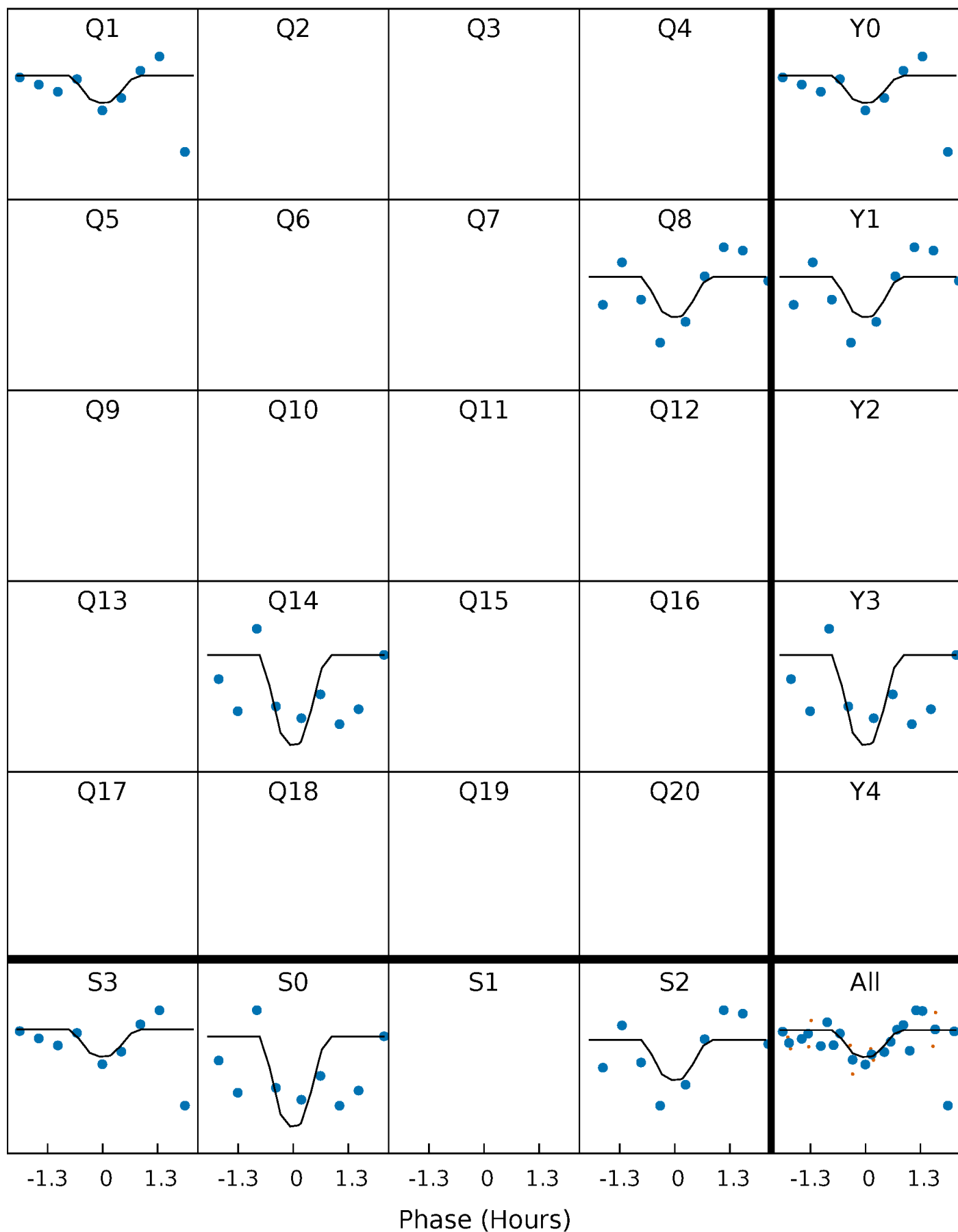
PDC Quarter-Phased Transit Curves

TCE 010858030-02 $P=576.438243$ Days $T_0=163.433490$ (BKJD)



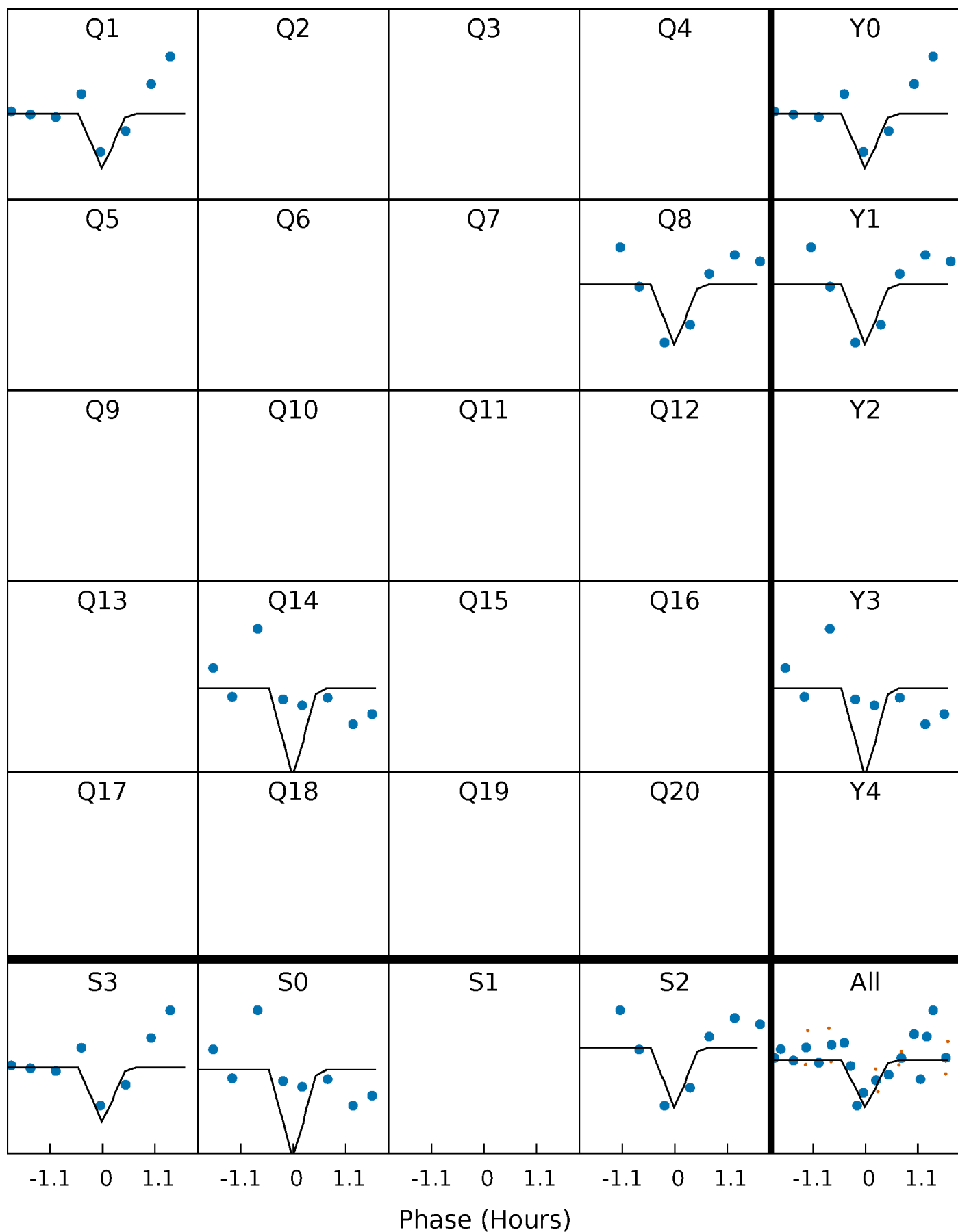
DV Quarter-Phased Transit Curves

TCE 010858030-02 $P=576.438243$ Days $T_0=163.433490$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

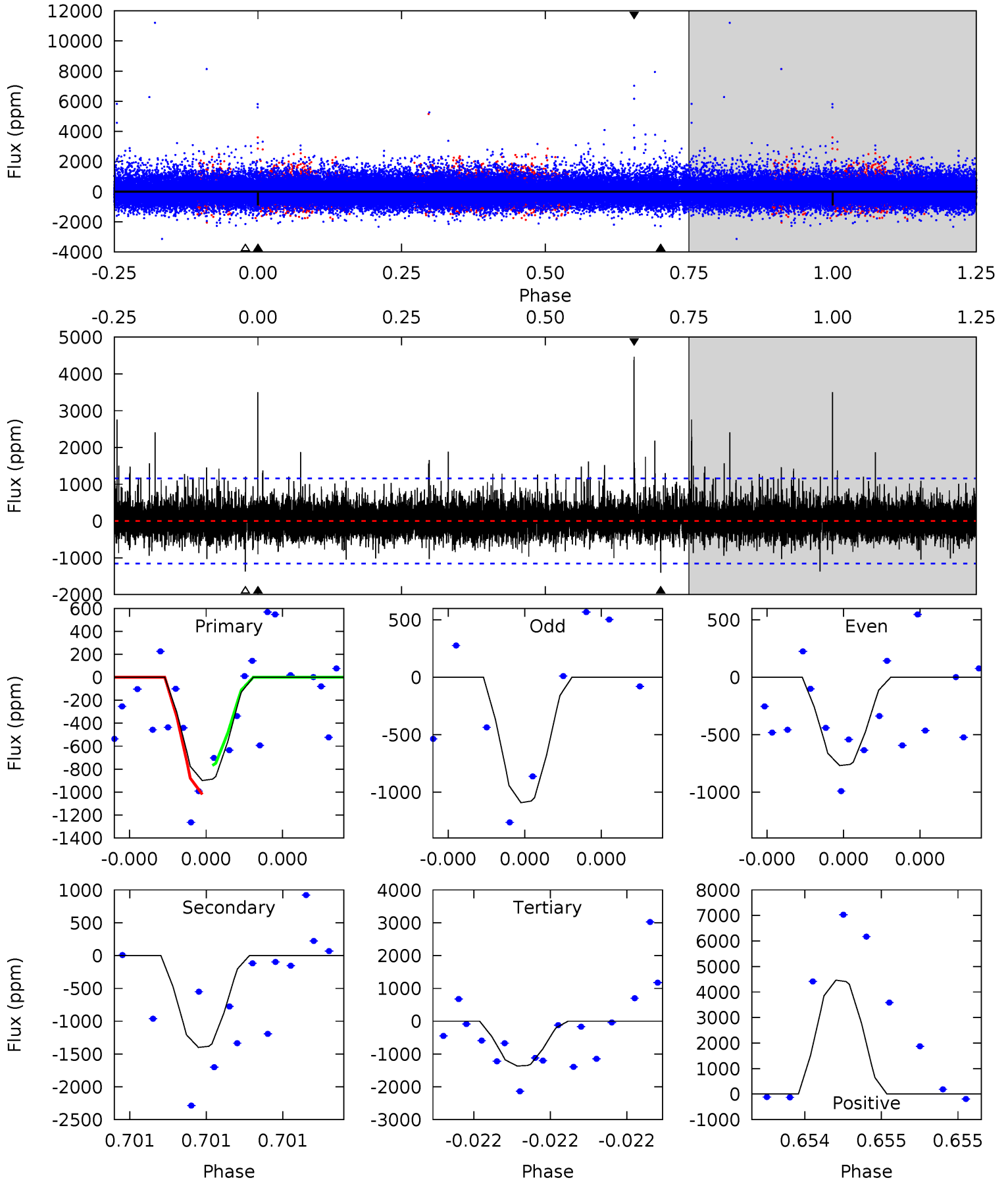
TCE 010858030-02 P=576.437539 Days $T_0=163.431218$ (BKJD)



DV Model-Shift Uniqueness Test

010858030-02, P = 576.438243 Days, E = 163.433490 Days

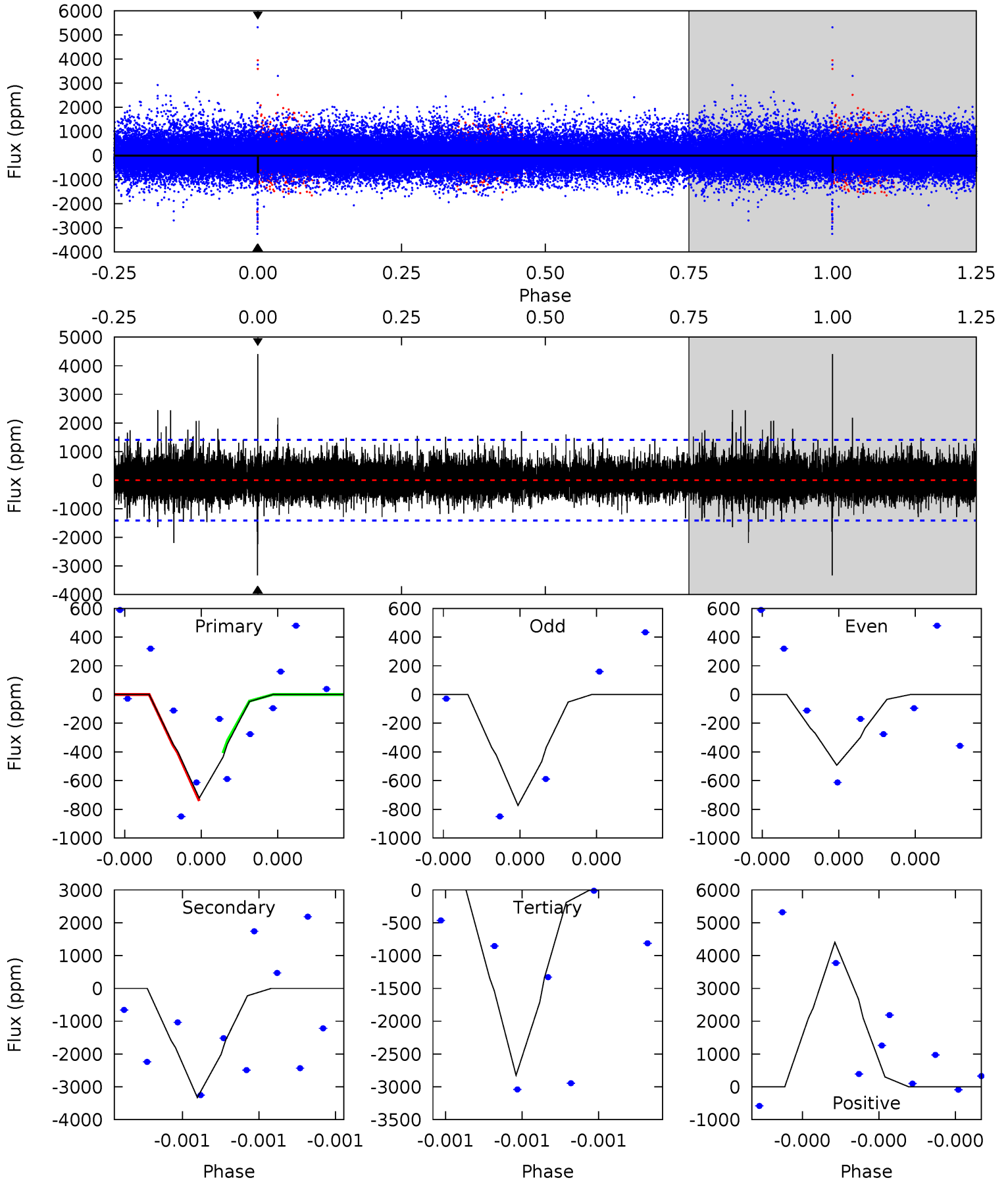
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.53	7.06	6.89	22.5	5.84	3.88	1.36	-2.35	-18.0	0.17	-15.4	0.35	0.95	0.76	0.61



Alt Model-Shift Uniqueness Test

010858030-02, P = 576.437539 Days, E = 163.431218 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.05	14.0	11.9	18.6	5.95	4.04	1.34	-8.87	-15.5	2.12	-4.55	0.52	1.23	0.57	0.70



Stellar Parameters For KIC 010858030

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4530^{+135}_{-135}	$4.653^{+0.054}_{-0.027}$	$-0.580^{+0.300}_{-0.300}$	$0.596^{+0.046}_{-0.051}$	$0.583^{+0.065}_{-0.038}$	$3.873^{+0.953}_{-0.466}$
	+3%/-3%	+1%/-1%	+52%/-52%	+8%/-9%	+11%/-7%	+25%/-12%
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 010858030-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1401 ± 198	$7.62^{+8.00}_{-5.32}$	201^{+6}_{-7}	3108^{+1504}_{-551}	$18280^{+172173}_{-14153}$
Alt.	-3326 ± 237	$7.93^{+7.92}_{-5.58}$	202^{+7}_{-7}	3524^{+1972}_{-669}	$36934^{+374206}_{-27225}$

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

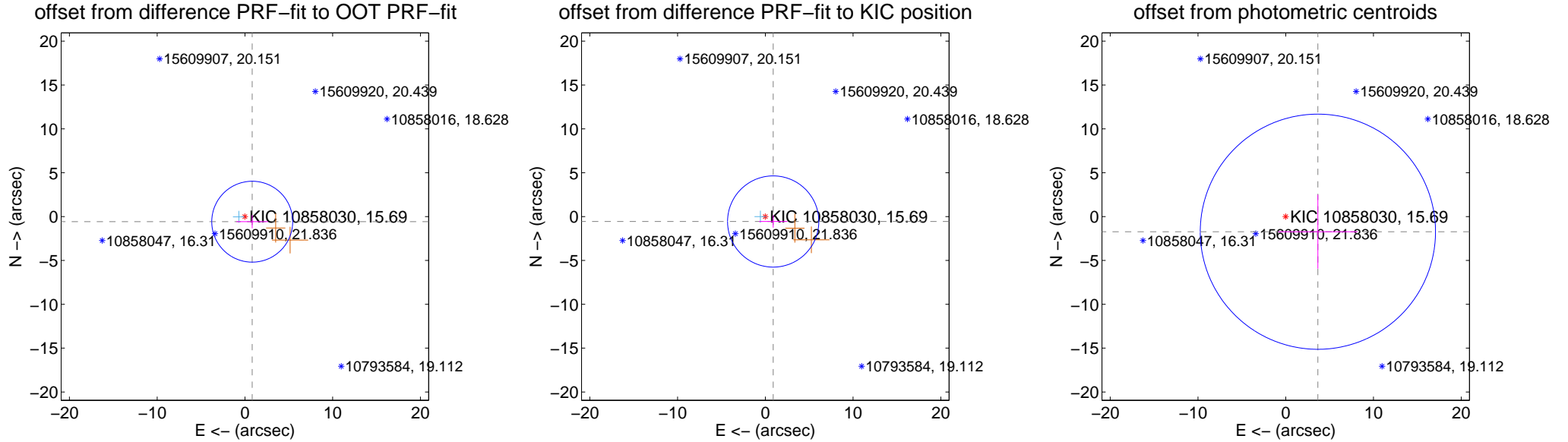
DV Centroid Data

Supplemental centroid analysis for 010858030-02. Kepler magnitude: 15.69. Transit SNR 2.68

There are 1 quarters with good PRF difference image offsets

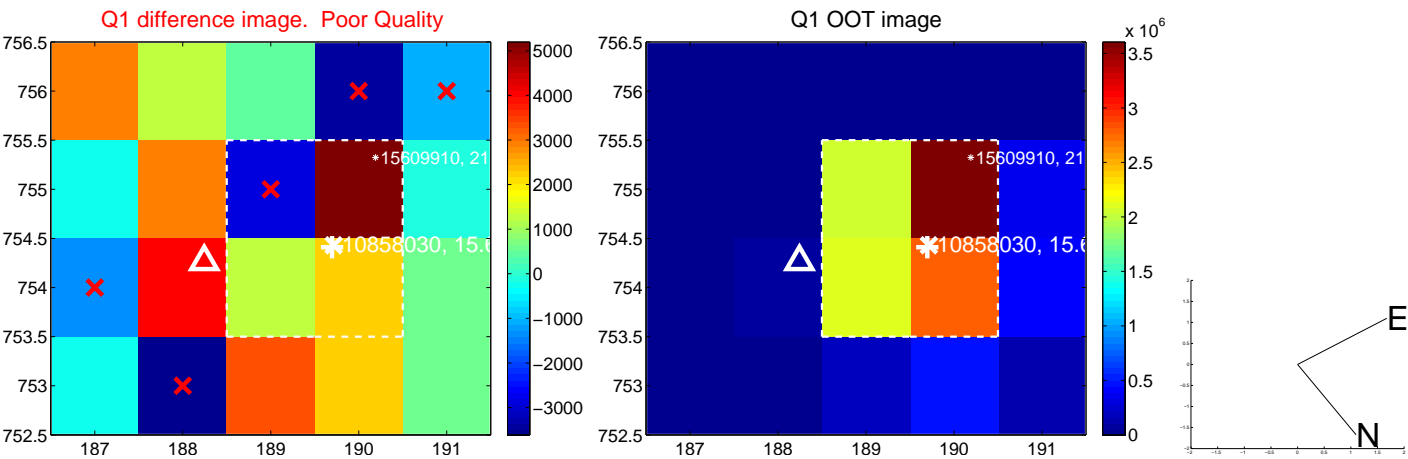
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.017 ± 1.537	0.66	-0.832 ± 1.804	-0.584 ± 0.745
PRF-fit source offset from KIC position	1.058 ± 1.734	0.61	-0.896 ± 1.614	-0.562 ± 0.704
photometric centroid source offset	4.05 ± 4.47	0.91	-3.67 ± 4.52	-1.73 ± 4.22

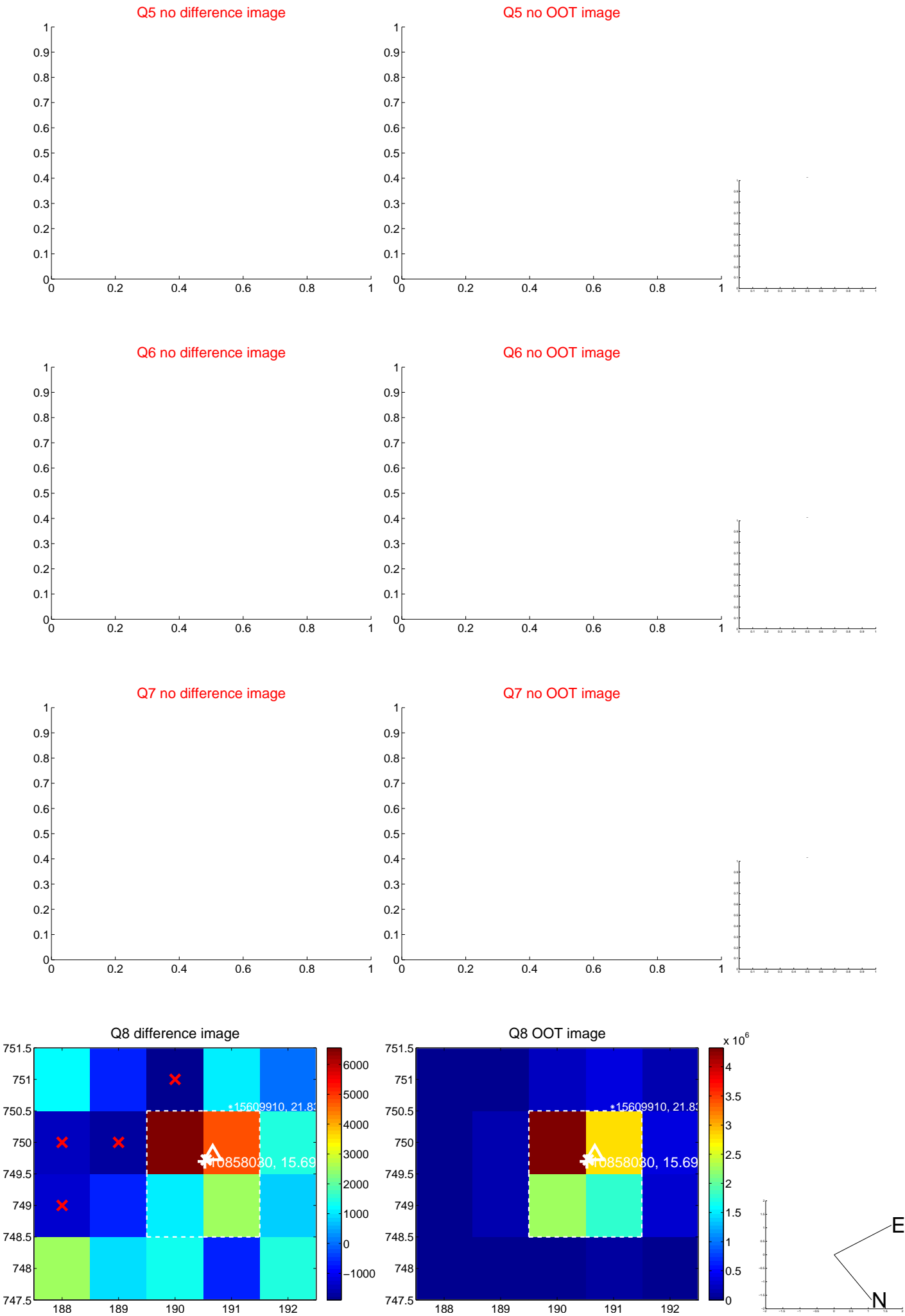


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



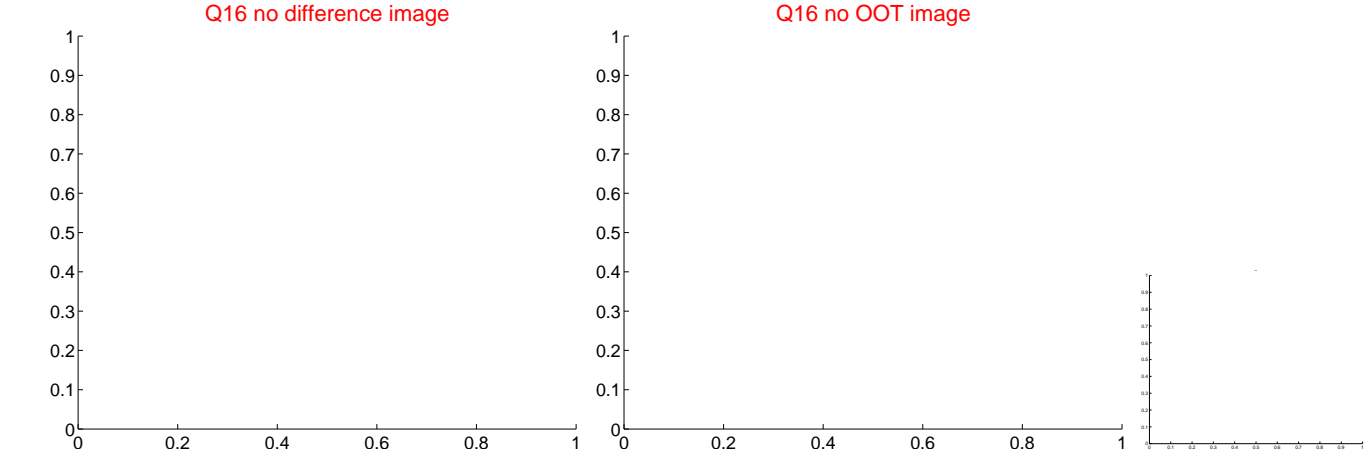
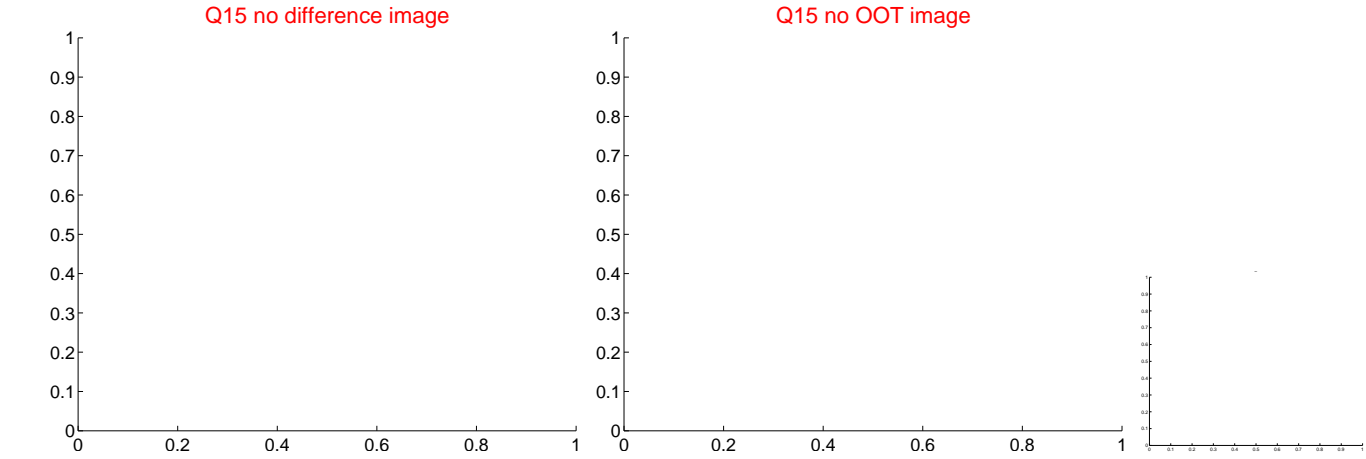
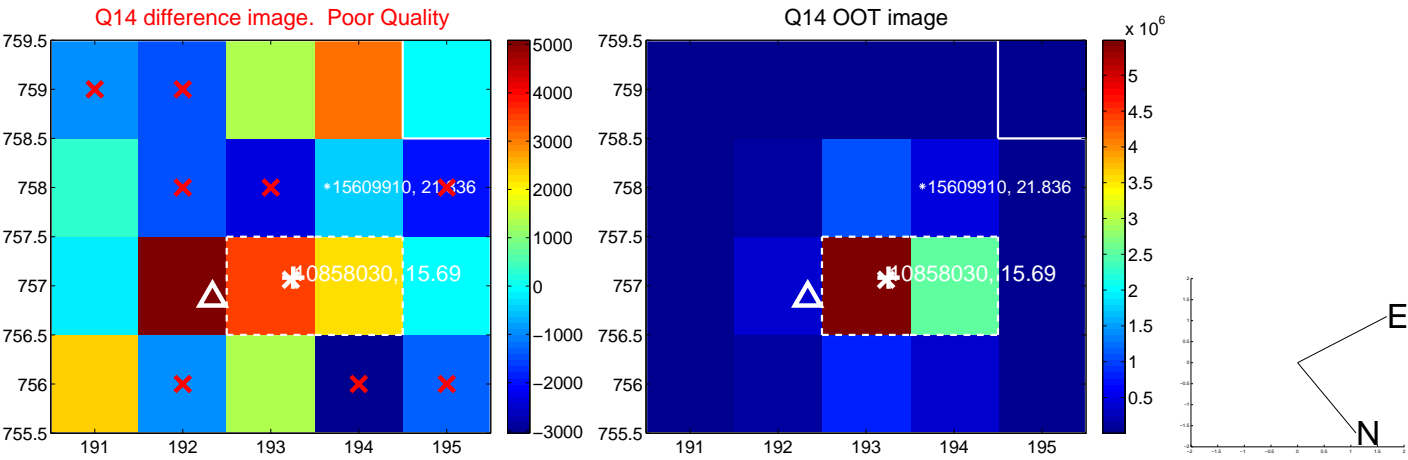
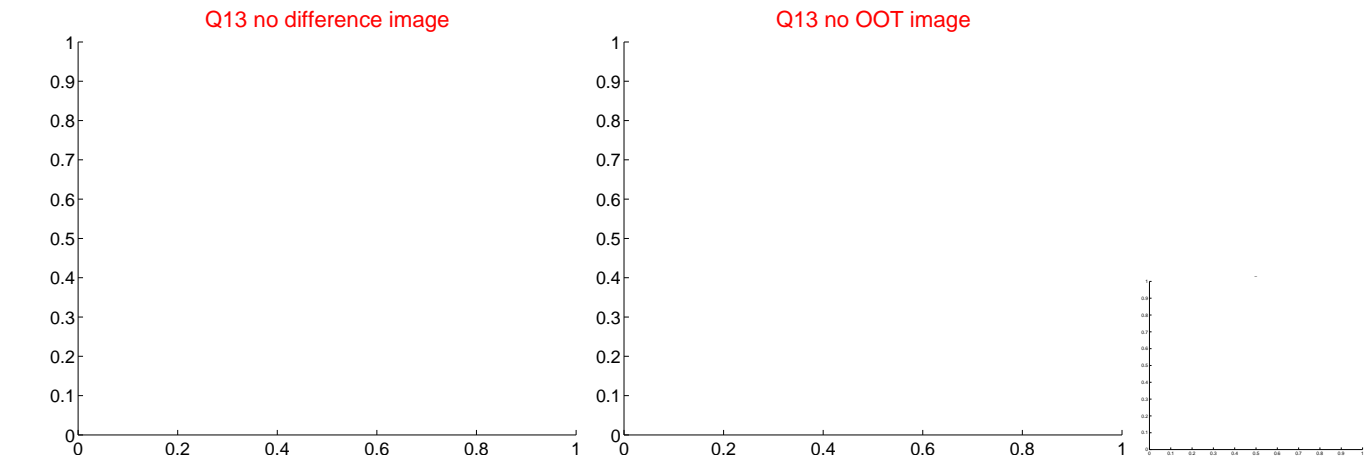
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



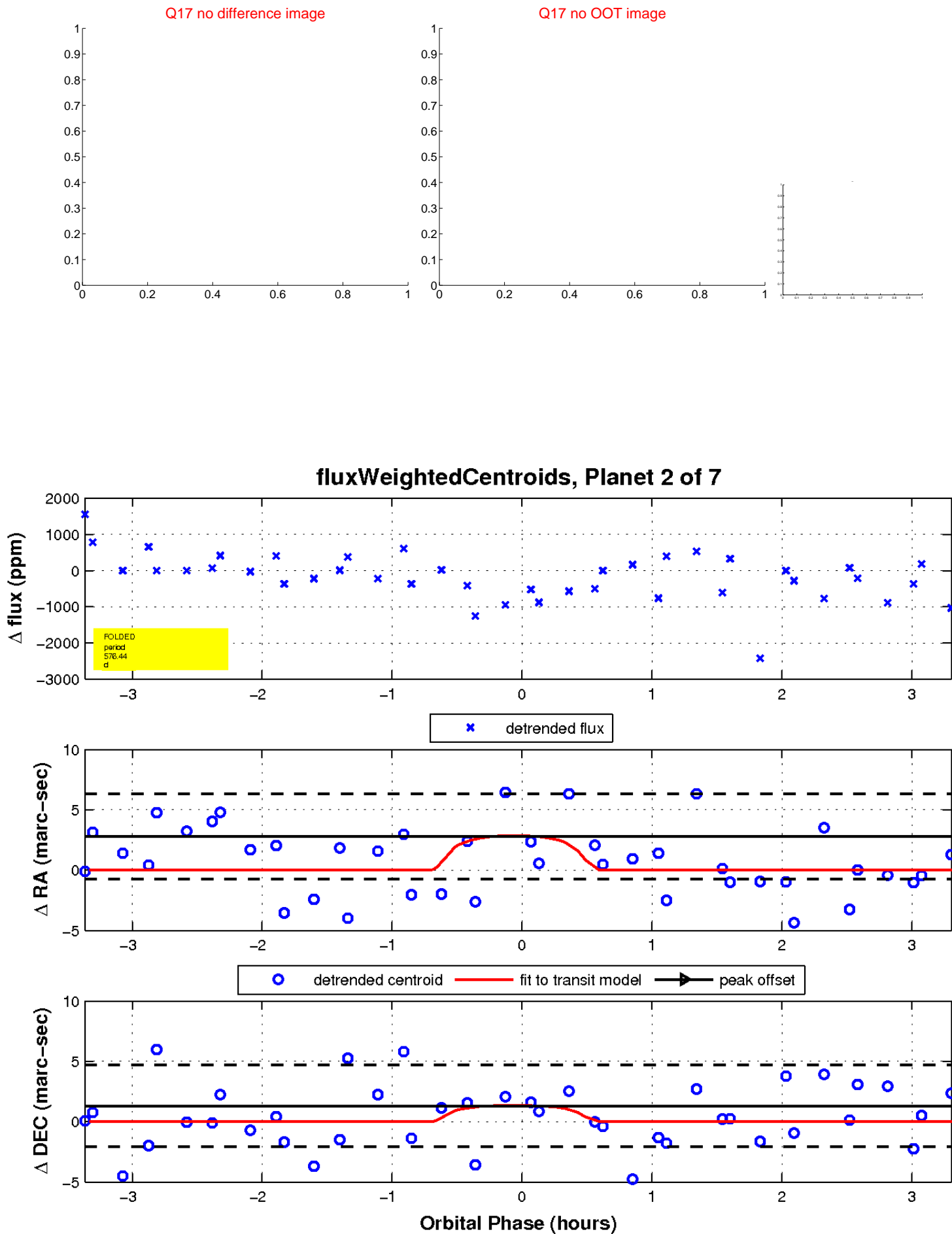
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

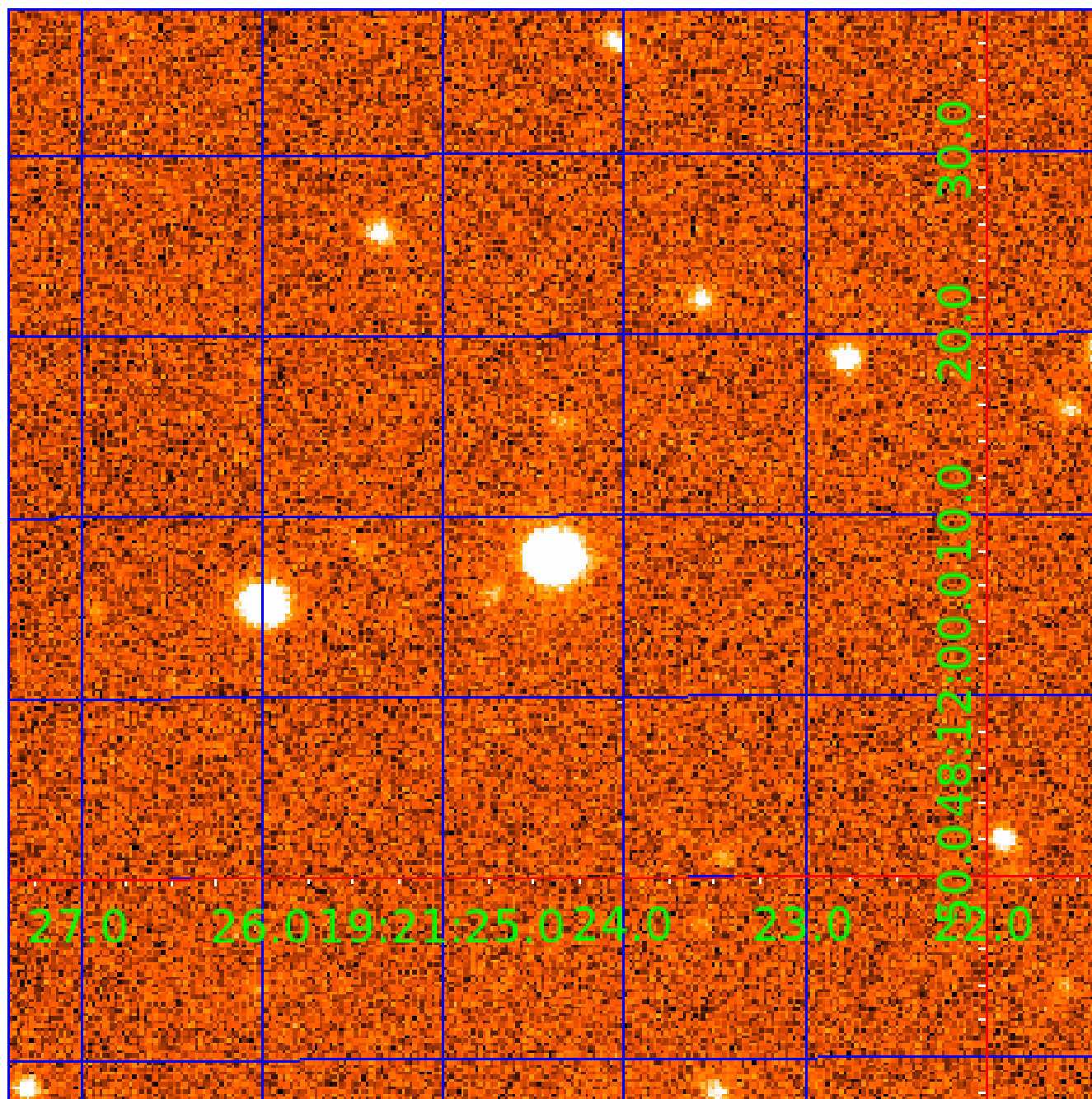


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010858030

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})
010858030-01	OBS	No	482.455420	603.257738	1595.6	4.860	12.4	5.8	0.60	4530	2.31	0.13
010858030-02	OBS	No	576.438242	163.433490	772.6	1.127	12.2	2.7	0.60	4530	1.70	0.10
010858030-03	OBS	No	576.474259	163.065402	1611.8	6.457	12.1	6.2	0.60	4530	2.49	0.10
010858030-04	OBS	No	308.671336	152.860393	953.4	9.719	10.7	4.7	0.60	4530	1.94	0.24
010858030-05	OBS	No	258.877920	327.766599	1852.1	23.450	10.3	4.5	0.60	4530	3.35	0.30
010858030-06	OBS	No	339.629885	333.266083	1138.7	2.527	10.6	5.3	0.60	4530	2.01	0.21
010858030-07	OBS	No	449.217591	403.281317	1725.3	7.086	10.0	7.2	0.60	4530	2.46	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010858030-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
010858030-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
010858030-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
010858030-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

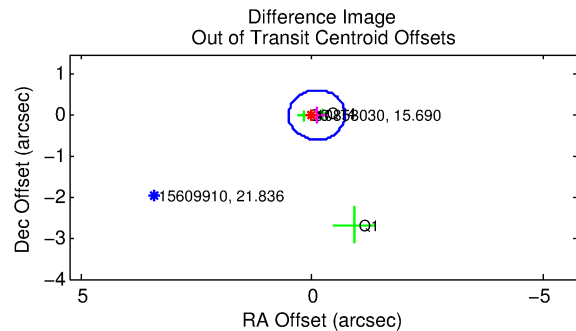
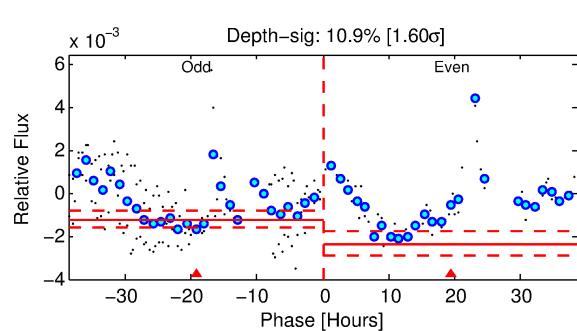
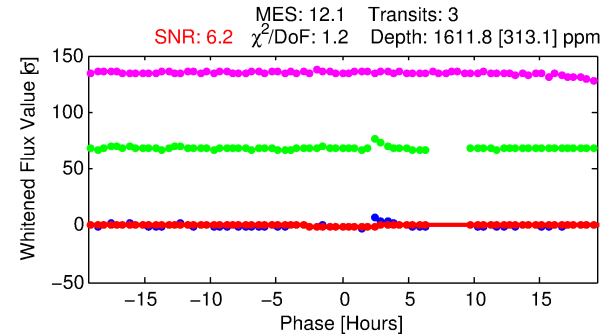
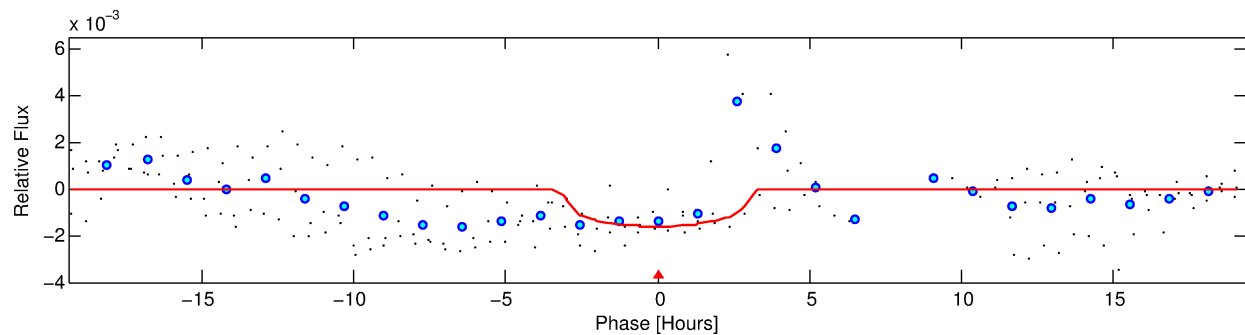
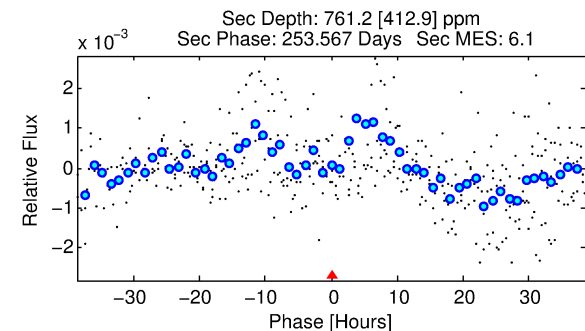
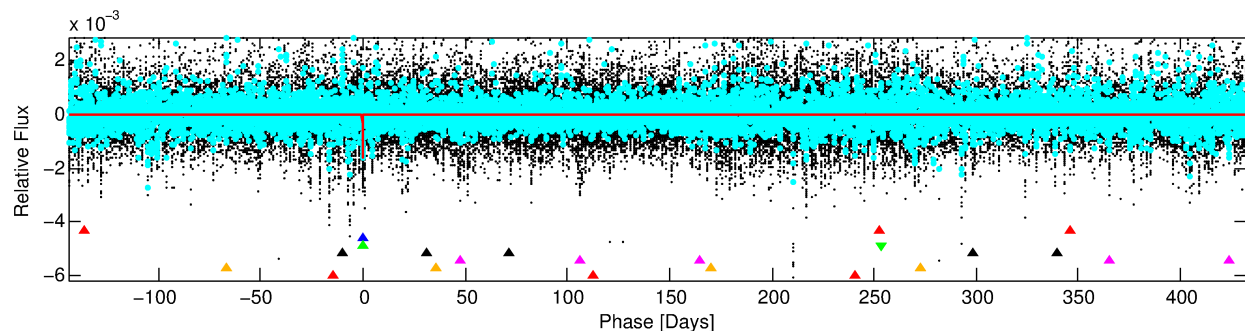
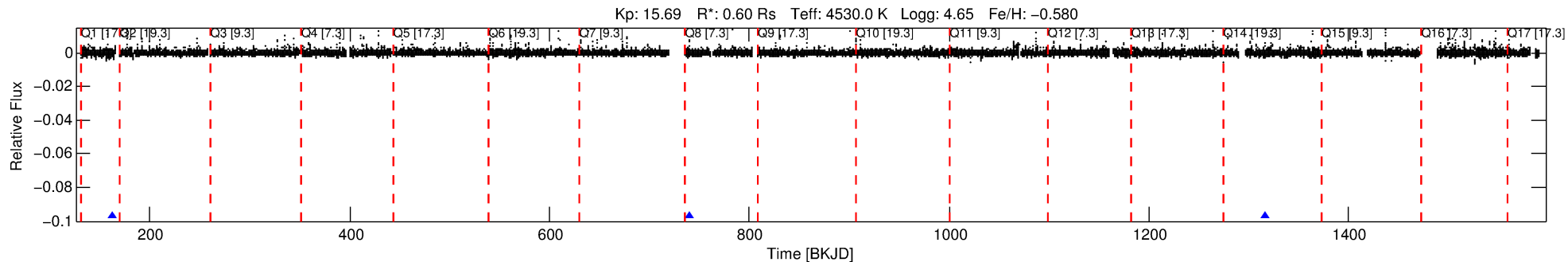
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010858030-03

No Significant Match Found

DV One-Page Summary

KIC: 10858030 Candidate: 3 of 7 Period: 576.474 d



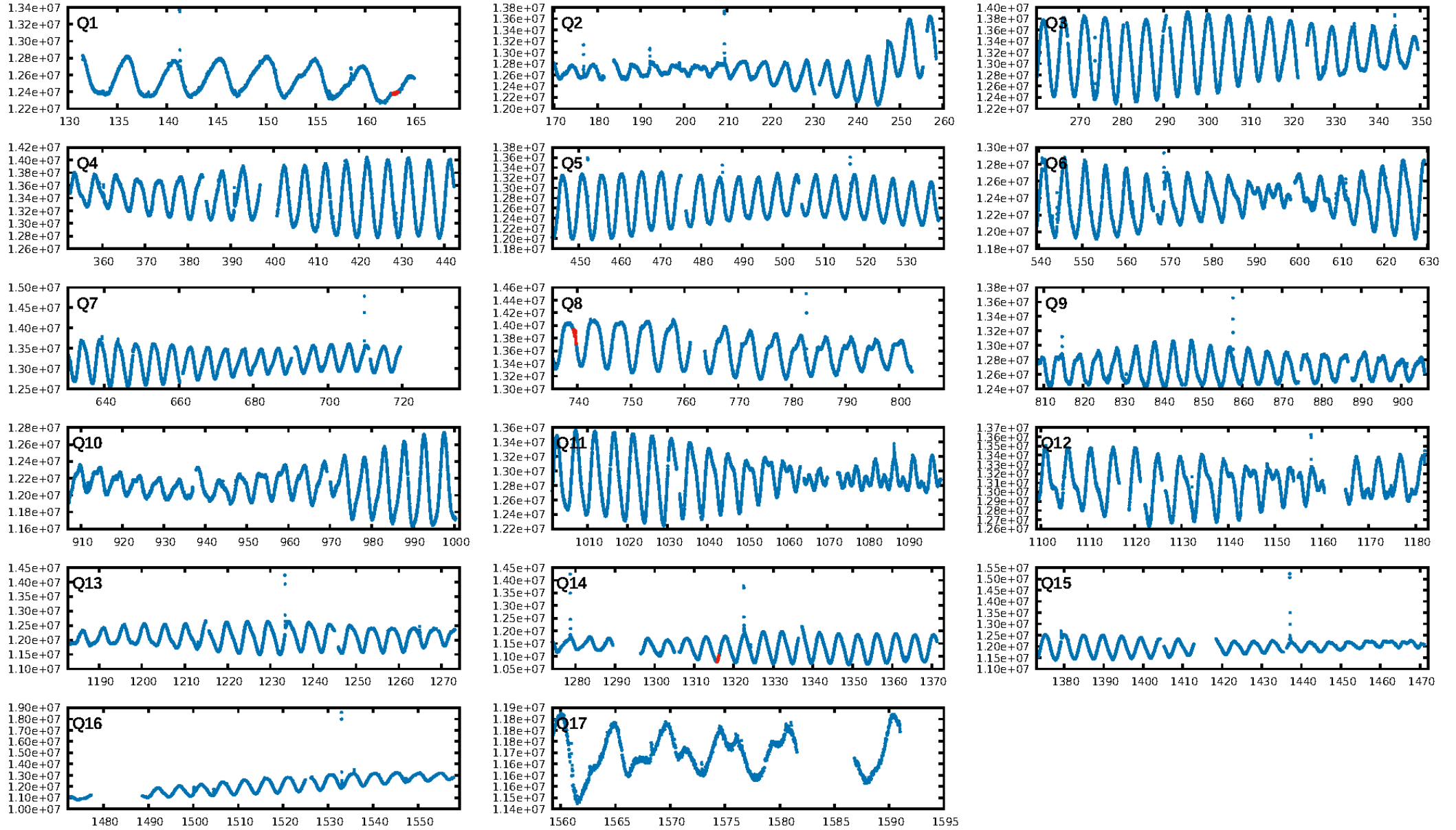
DV Fit Results:

Period = 576.47426 [0.00796] d
Epoch = 163.0654 [0.0101] BKJD
Rp/R* = 0.0382 [0.0277]
a/R* = 563.23 [1293.12]
b = 0.63 [2.24]
Seff = 0.10 [0.02]
Teq = 145 [6] K
Rp = 2.49 [1.81] Re
a = 1.1325 [0.0799] AU
Ag = 86817.03 [134437.45] [0.65σ]
Teffp = 3848 [1491] K [2.48σ]

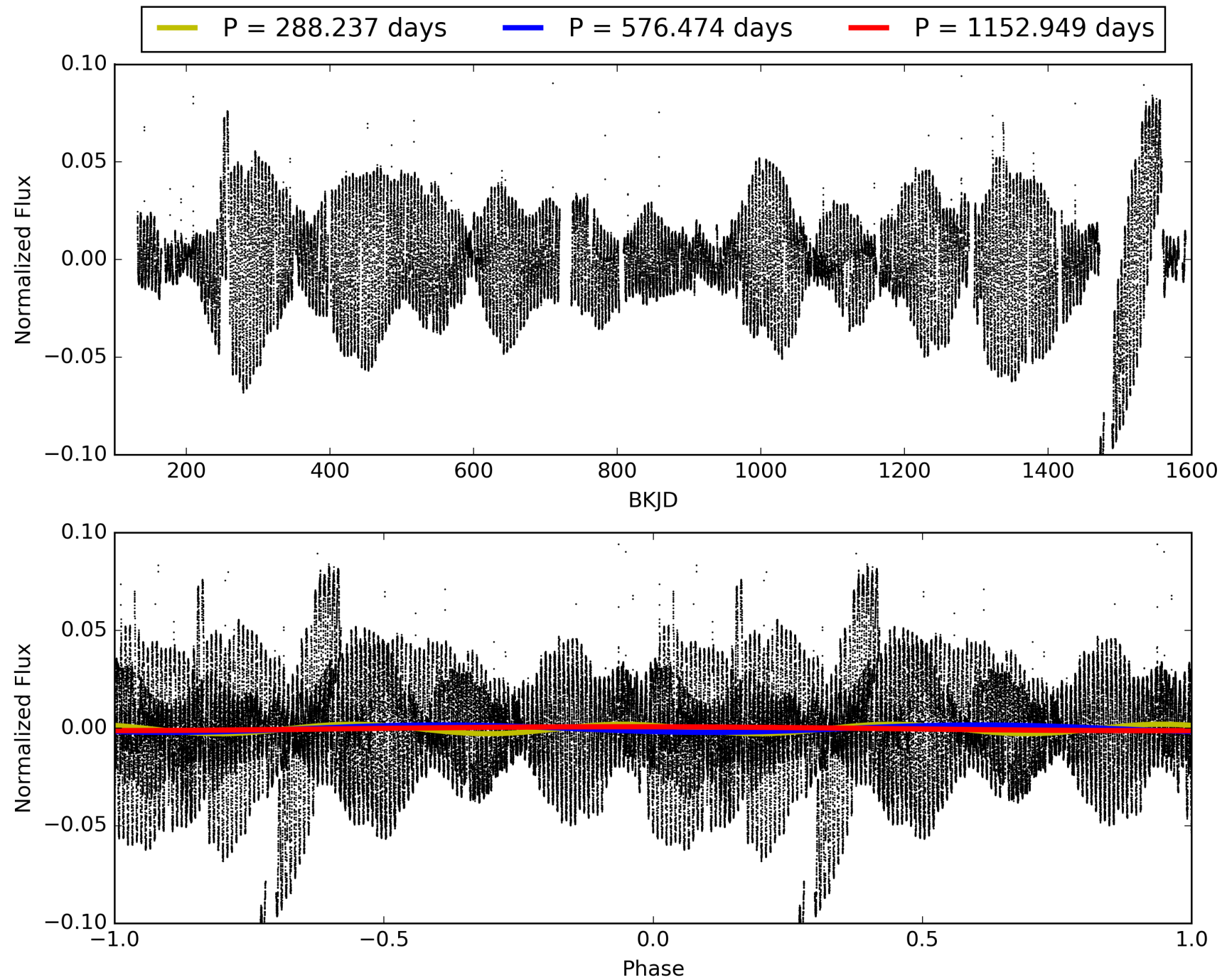
DV Diagnostic Results:

ShortPeriod-sig: 10.5% [0.13σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.4%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 6.59e-10
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.06675
Centroid-sig: 40.2%
Centroid-so: 0.709 arcsec [0.78σ]
OotOffset-rm: 0.105 arcsec [0.52σ]
KicOffset-rm: 0.059 arcsec [0.34σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

TCE 010858030-03, PDC Light Curves

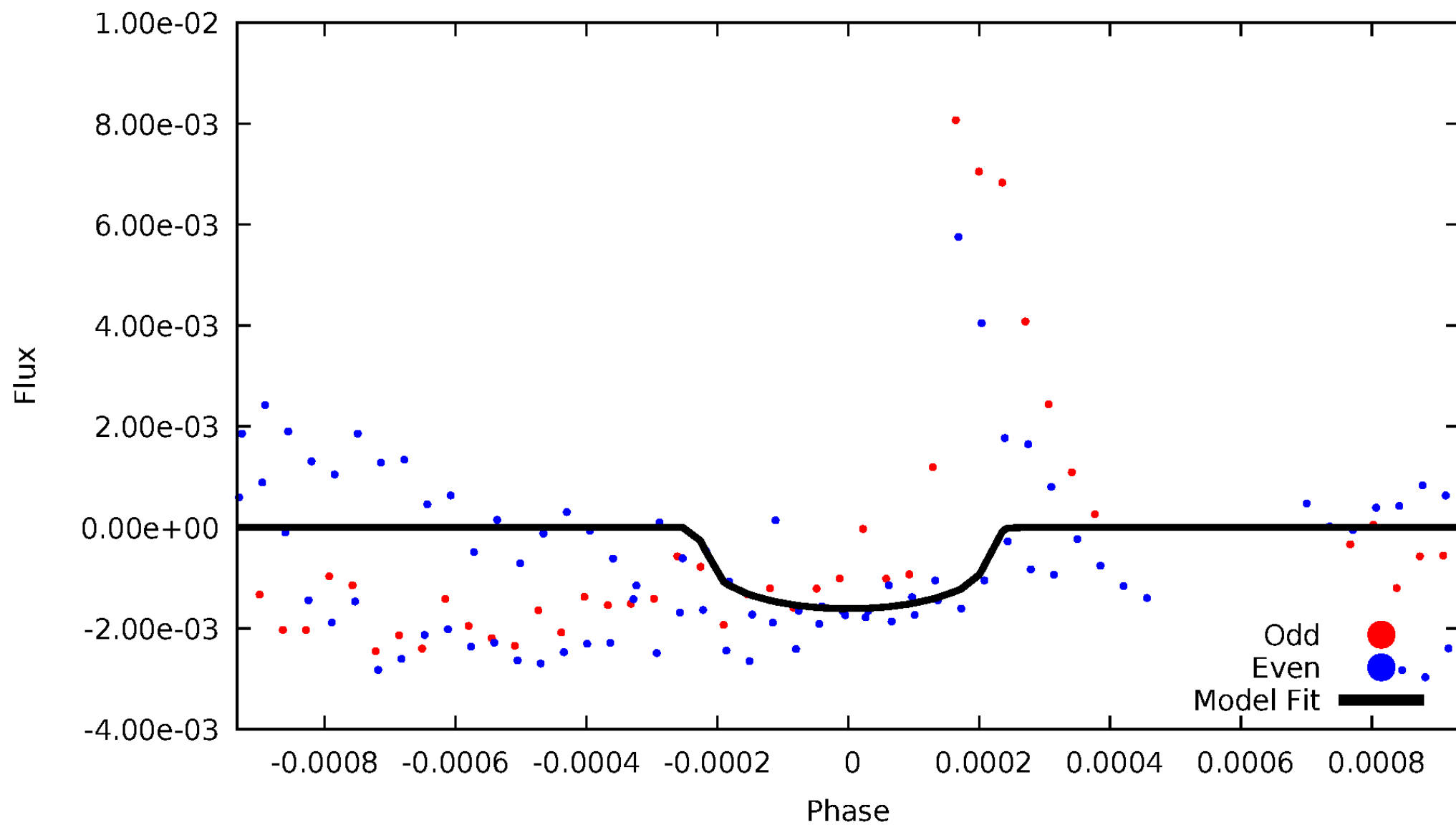


TCE 010858030-03



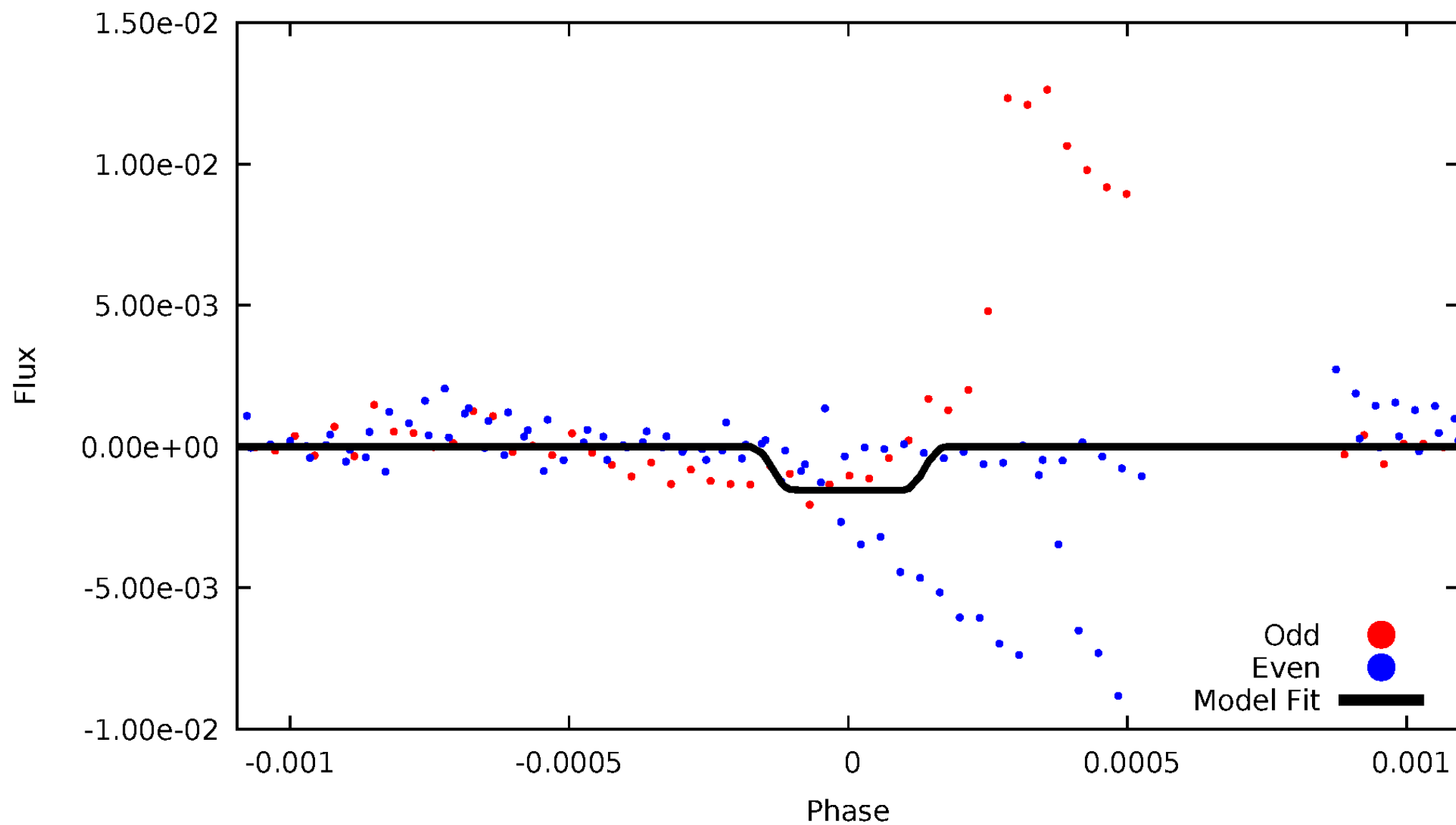
DV Odd/Even

TCE 010858030-03



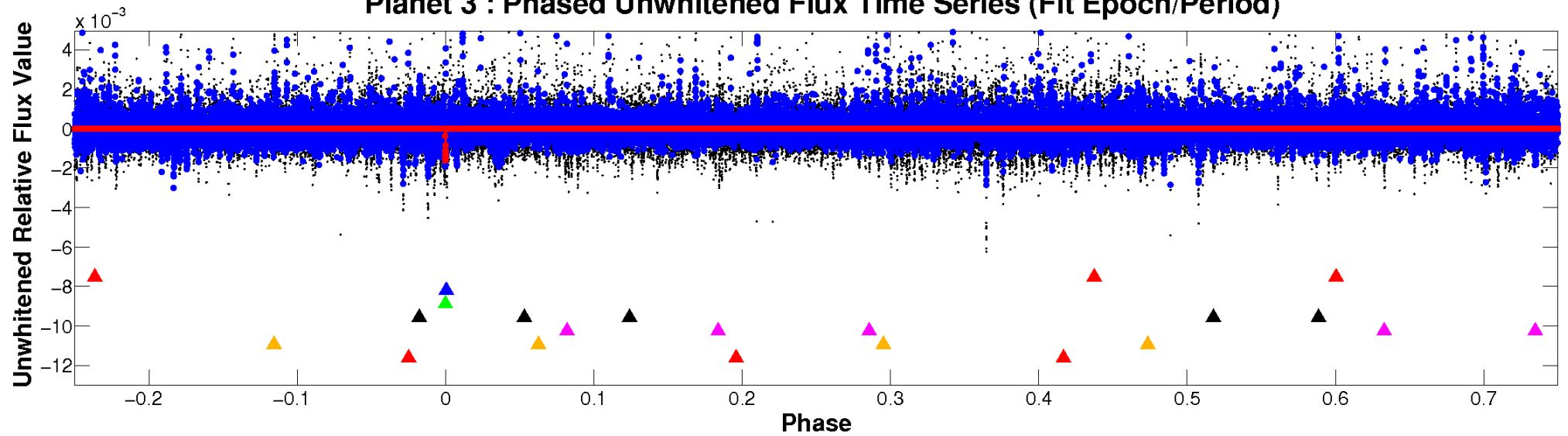
ALT Odd/Even

TCE 010858030-03

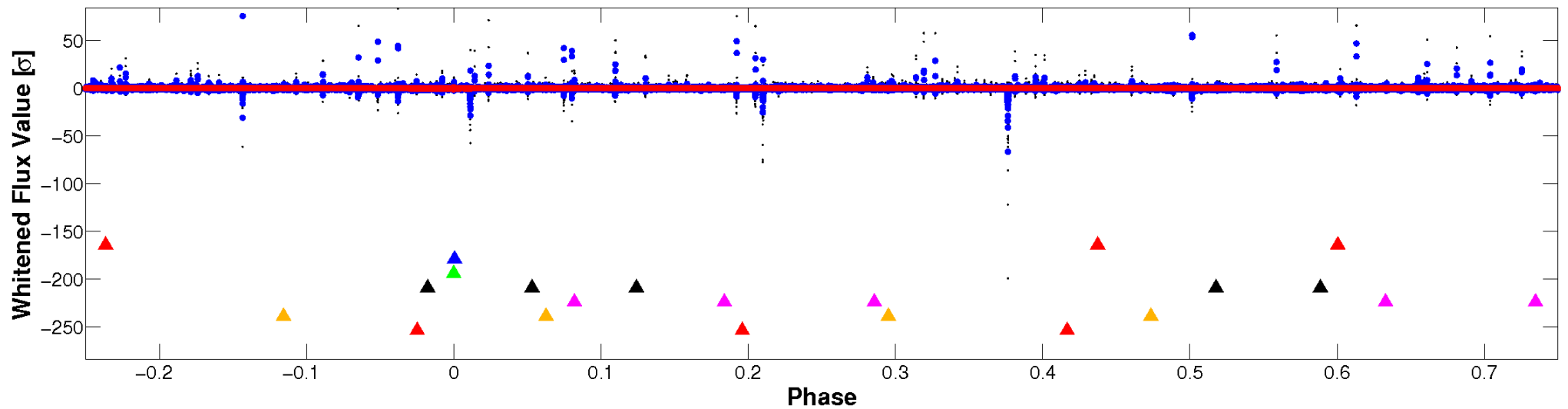


Non-Whitened Vs. Whitened Light Curve

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

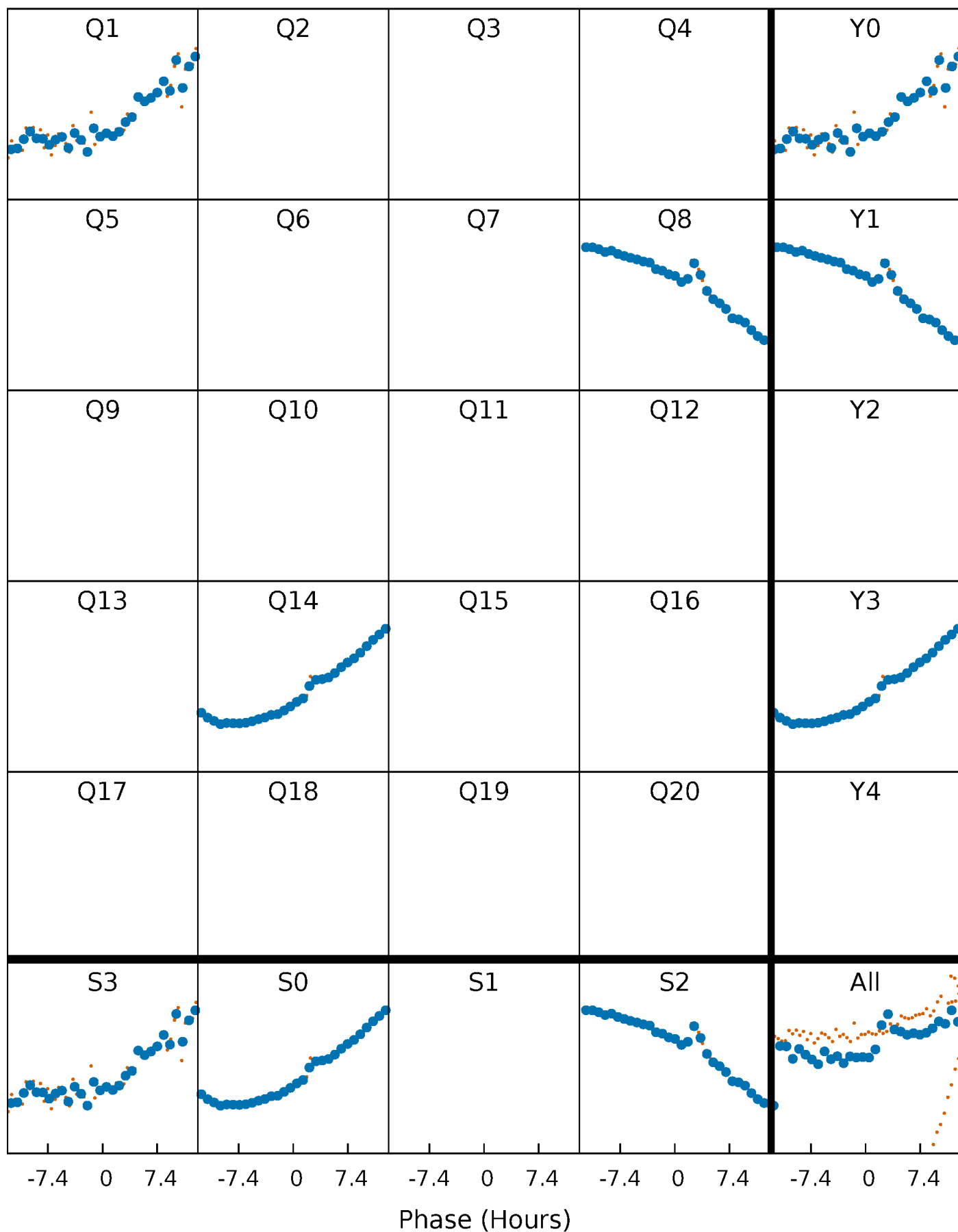


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



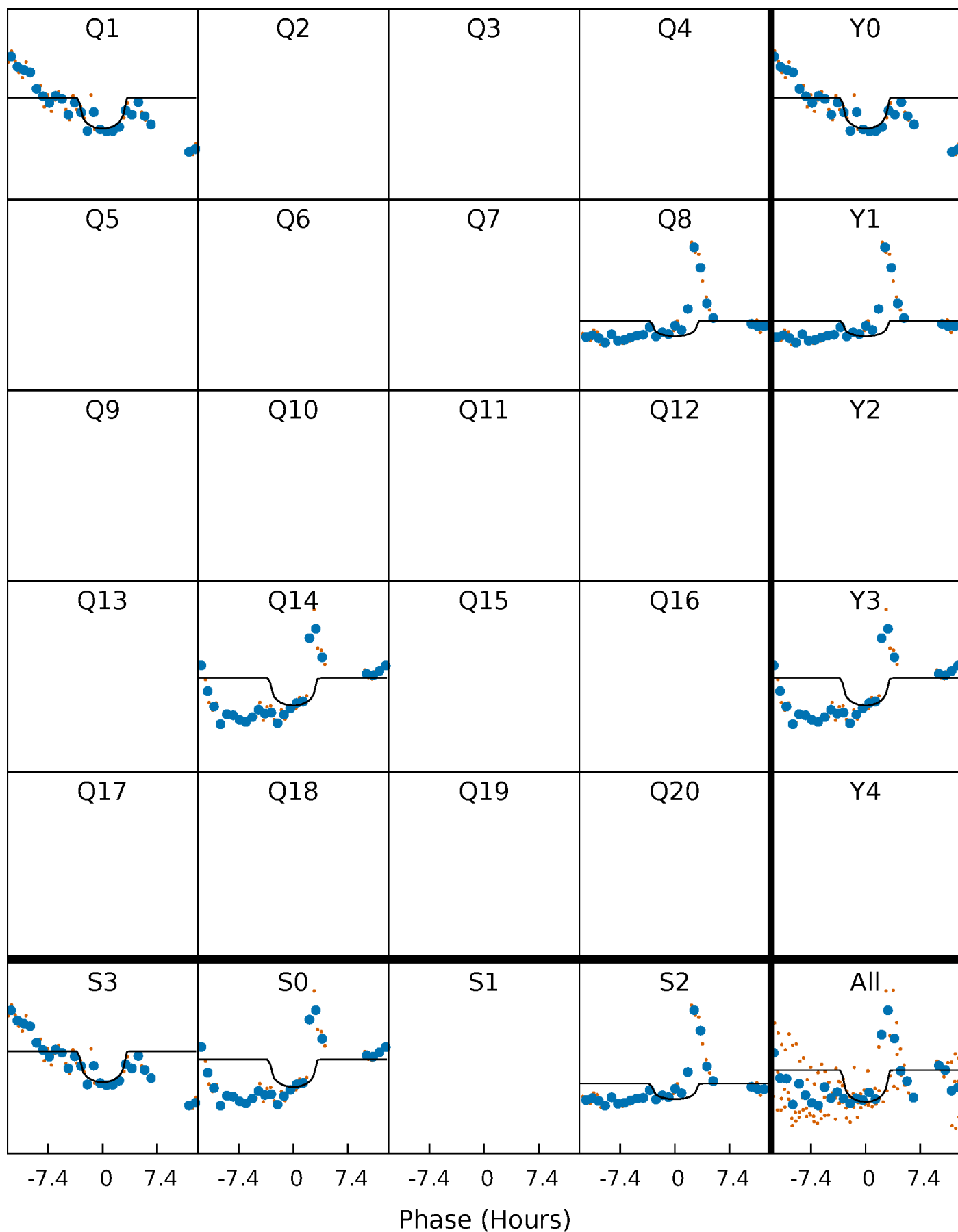
PDC Quarter-Phased Transit Curves

TCE 010858030-03 $P=576.474259$ Days $T_0=163.065402$ (BKJD)



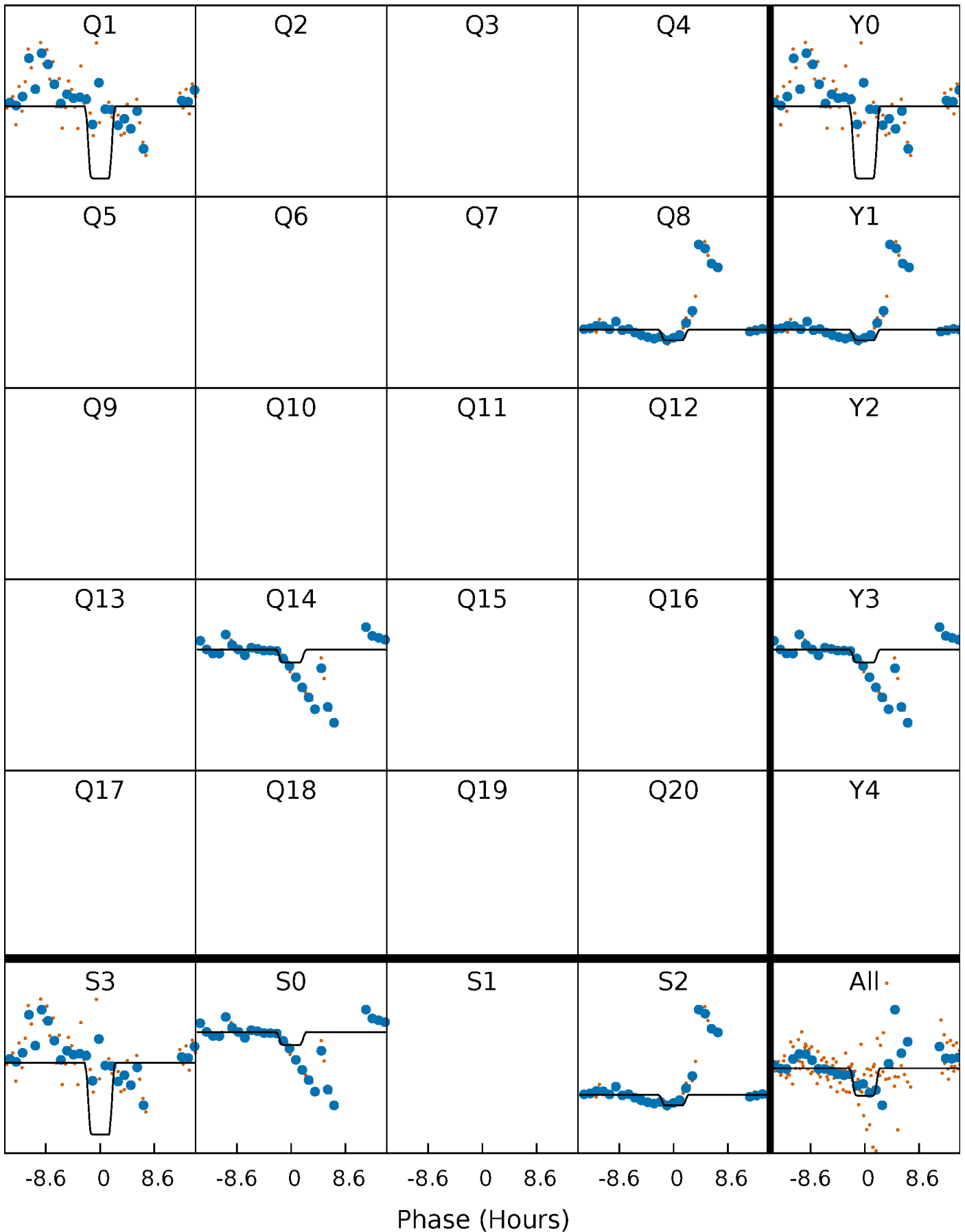
DV Quarter-Phased Transit Curves

TCE 010858030-03 $P=576.474259$ Days $T_0=163.065402$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

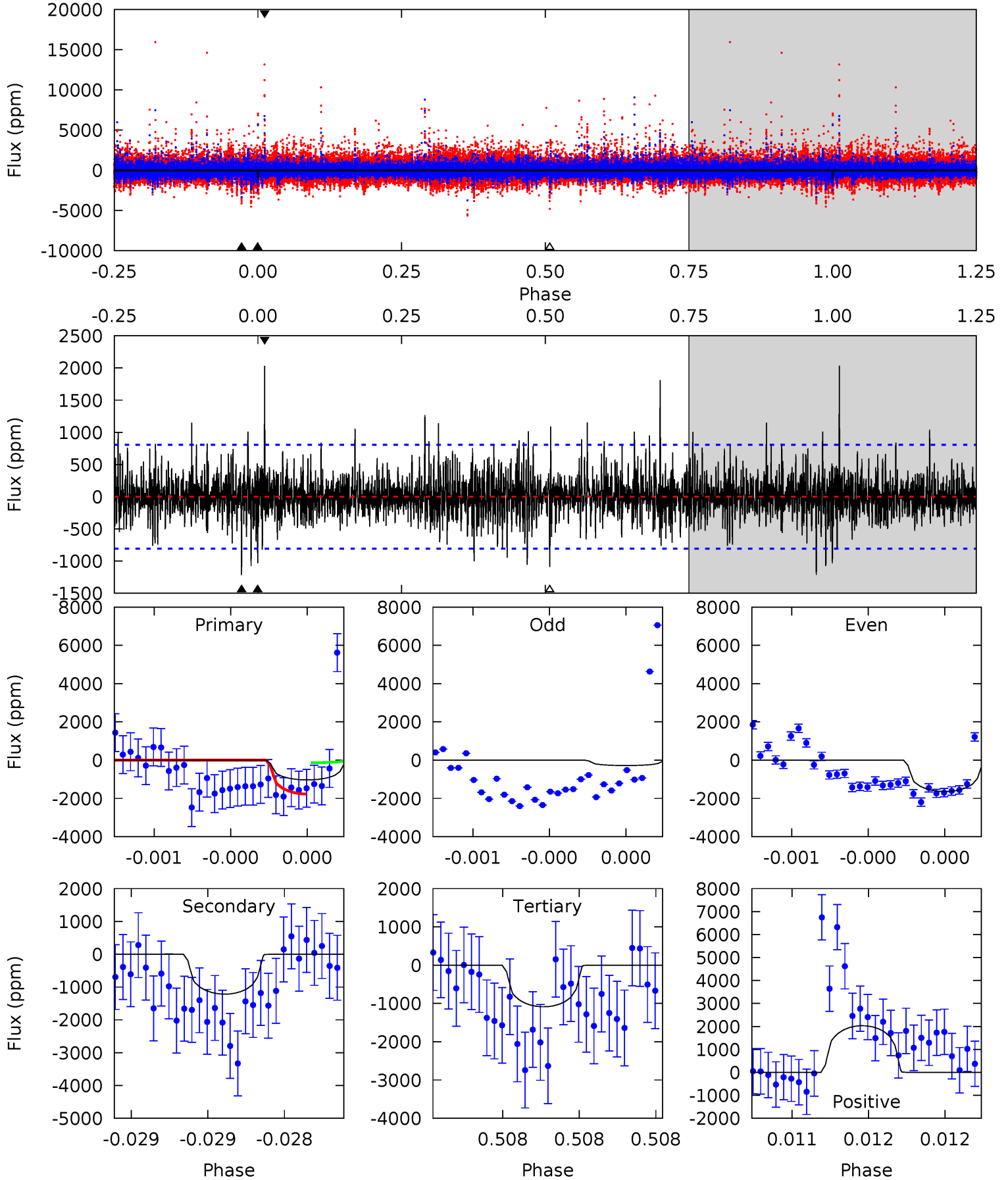
TCE 010858030-03 $P=576.444350$ Days $T_0=163.025474$ (BKJD)



DV Model-Shift Uniqueness Test

010858030-03, P = 576.474259 Days, E = 163.065402 Days

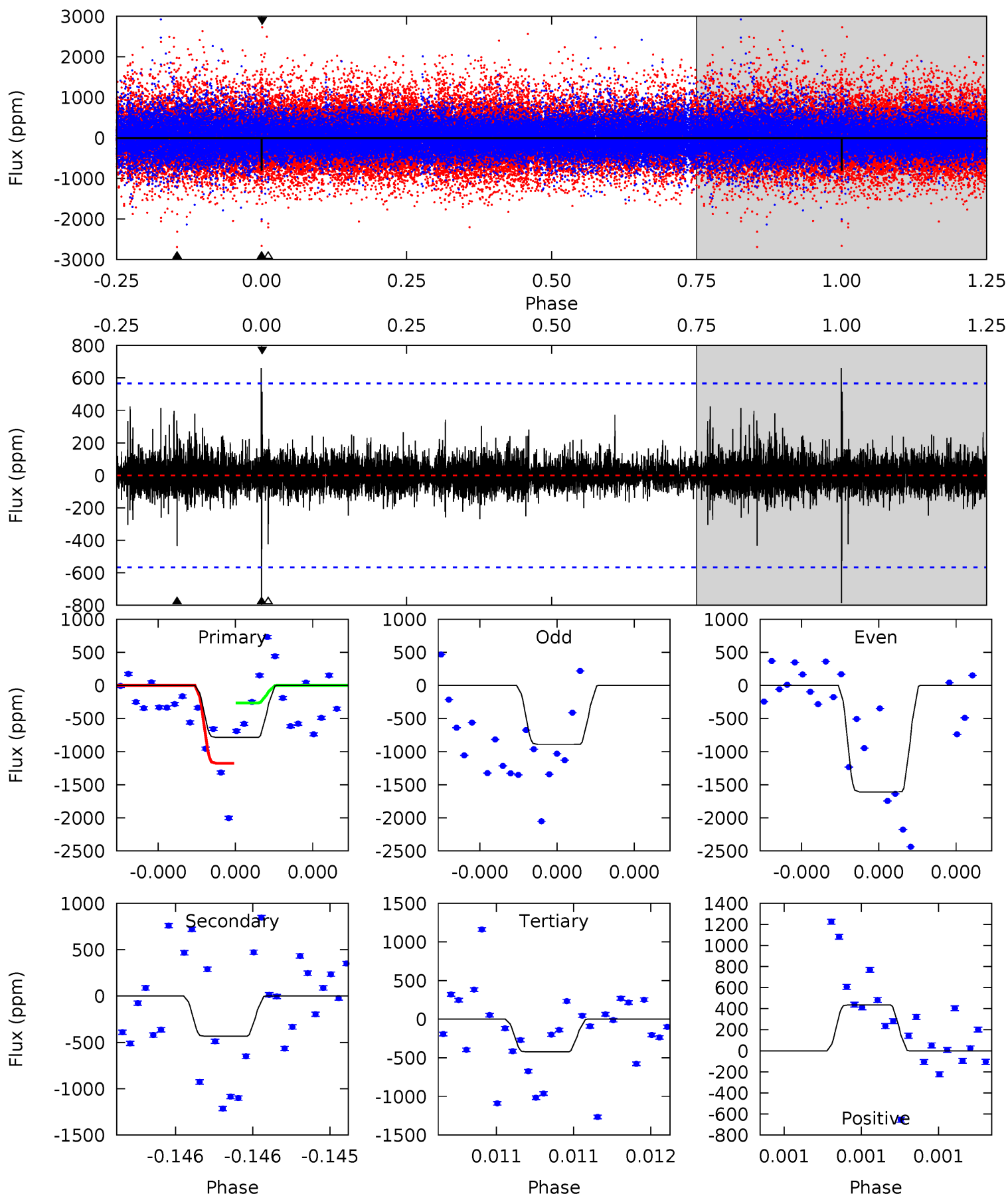
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.15	8.42	7.53	14.1	5.58	3.50	1.80	-0.38	-6.91	0.89	-5.64	2.91	0.74	0.63	5.67



Alt Model-Shift Uniqueness Test

010858030-03, P = 576.444350 Days, E = 163.025474 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.83	4.32	4.22	4.34	5.64	3.59	0.63	3.61	3.48	0.10	-0.02	3.50	1.38	0.46	4.52



Stellar Parameters For KIC 010858030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4530^{+135}_{-135}	$4.653^{+0.054}_{-0.027}$	$-0.580^{+0.300}_{-0.300}$	$0.596^{+0.046}_{-0.051}$	$0.583^{+0.065}_{-0.038}$	$3.873^{+0.953}_{-0.466}$
	+3%/-3%	+1%/-1%	+52%/-52%	+8%/-9%	+11%/-7%	+25%/-12%
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 010858030-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1217 ± 144	$2.68^{+1.63}_{-1.48}$	202^{+7}_{-7}	4228^{+1712}_{-637}	$116392^{+473662}_{-71494}$
Alt.	-433 ± 100	$2.69^{+1.81}_{-1.62}$	201^{+7}_{-7}	3535^{+1442}_{-517}	$42162^{+225126}_{-27462}$

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

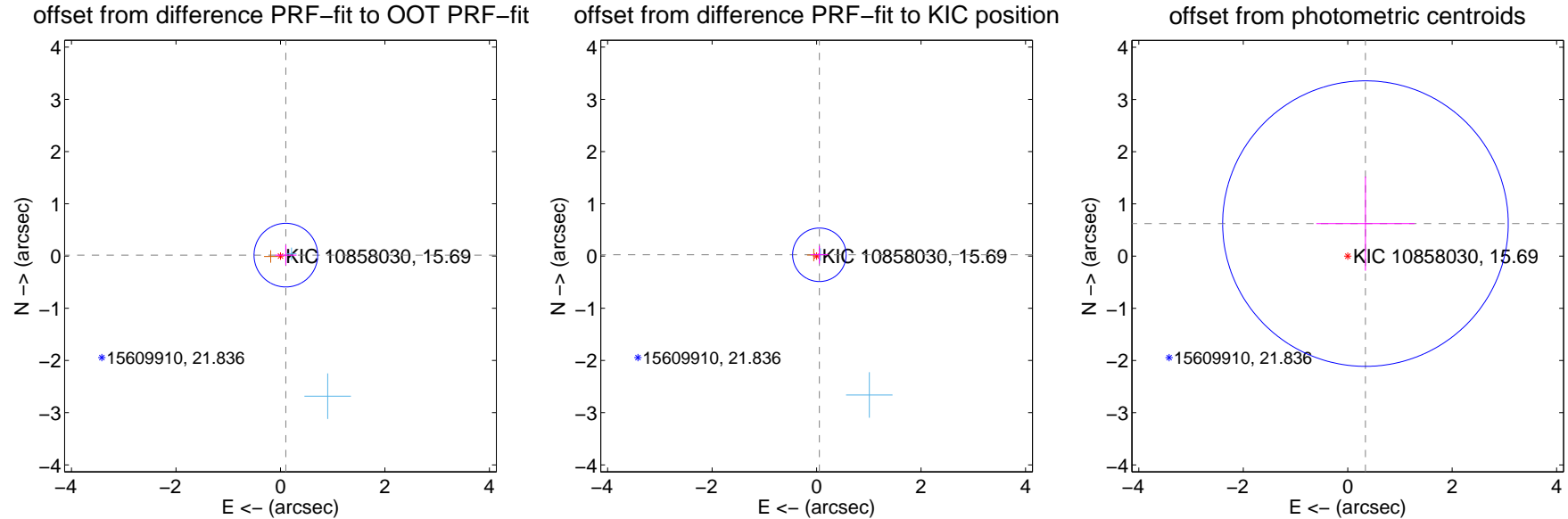
DV Centroid Data

Supplemental centroid analysis for 010858030-03. Kepler magnitude: 15.69. Transit SNR 6.18

There are 2 quarters with good PRF difference image offsets

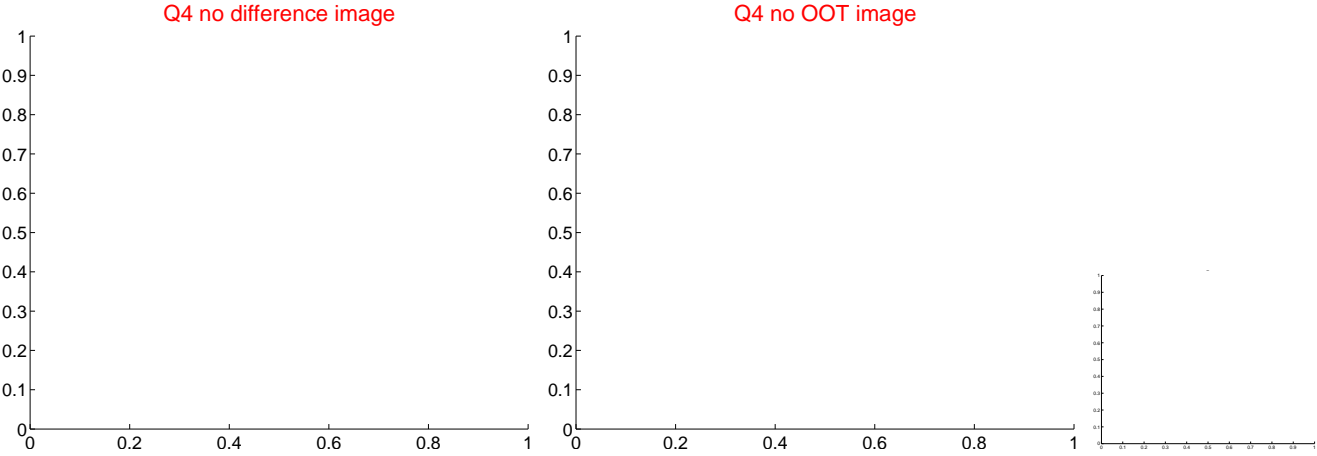
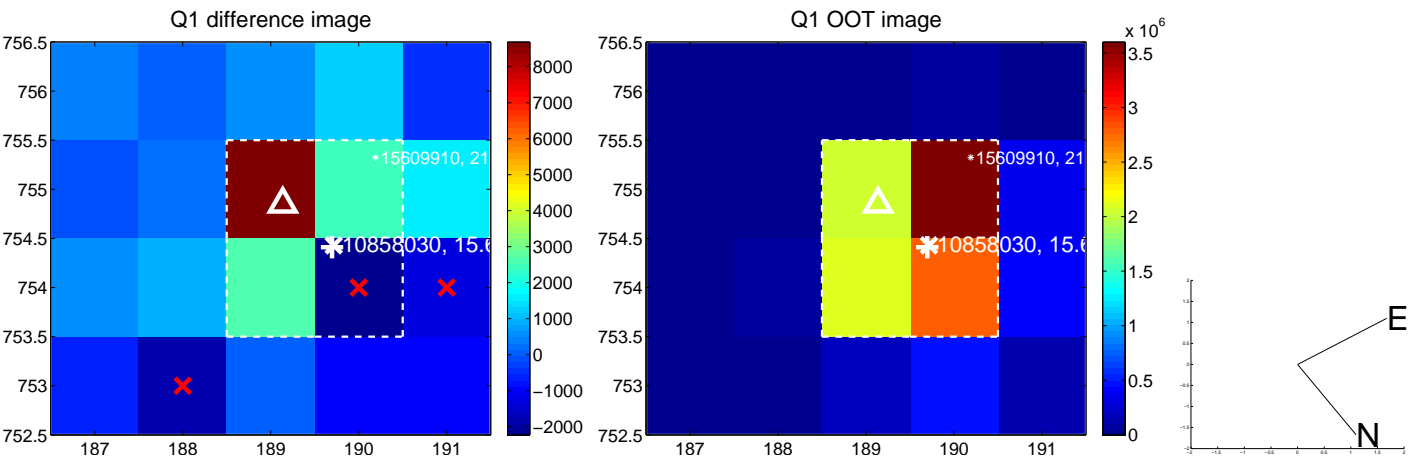
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.105 ± 0.203	0.52	-0.104 ± 0.203	0.017 ± 0.192
PRF-fit source offset from KIC position	0.059 ± 0.171	0.34	-0.054 ± 0.171	0.024 ± 0.169
photometric centroid source offset	0.71 ± 0.91	0.78	-0.34 ± 0.94	0.62 ± 0.90

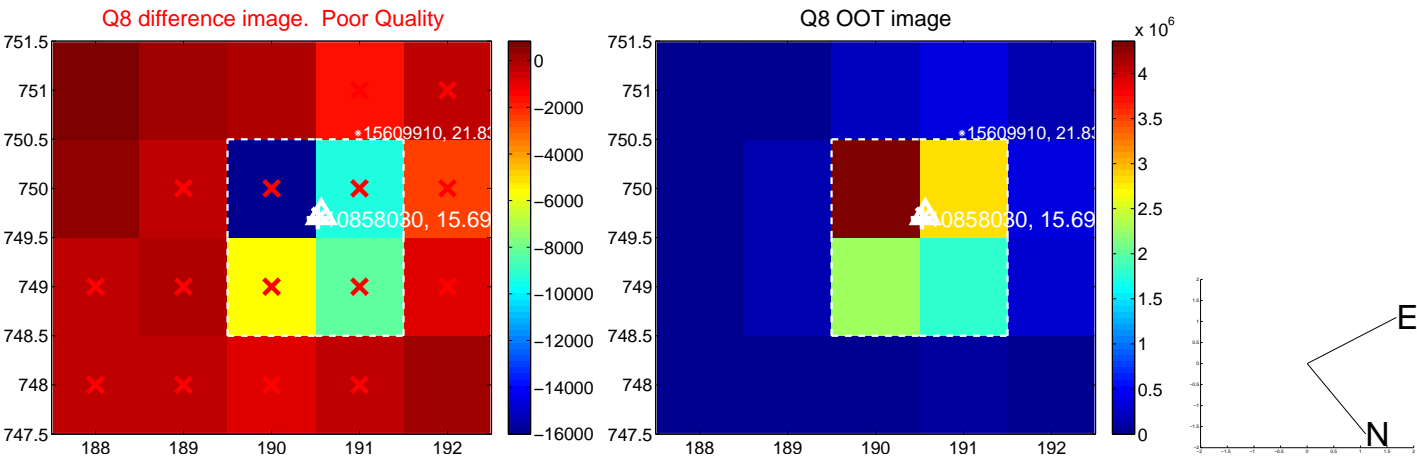


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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

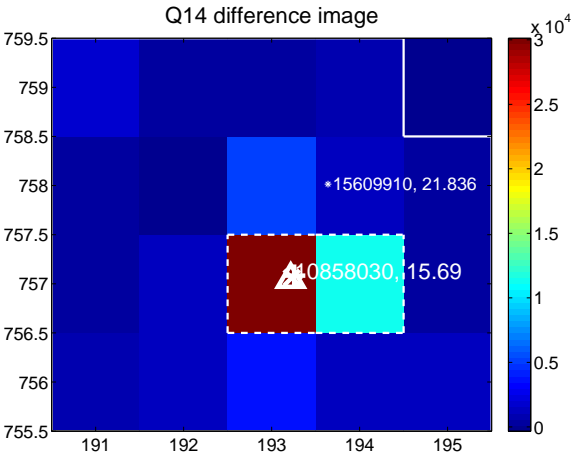
Q13 no difference image



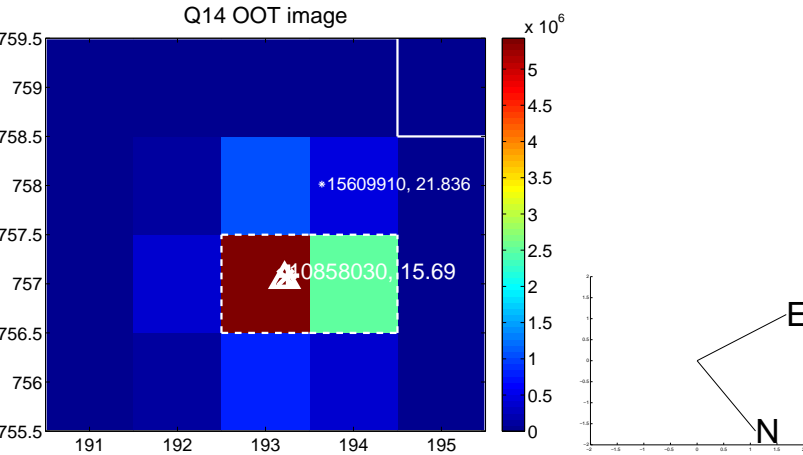
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



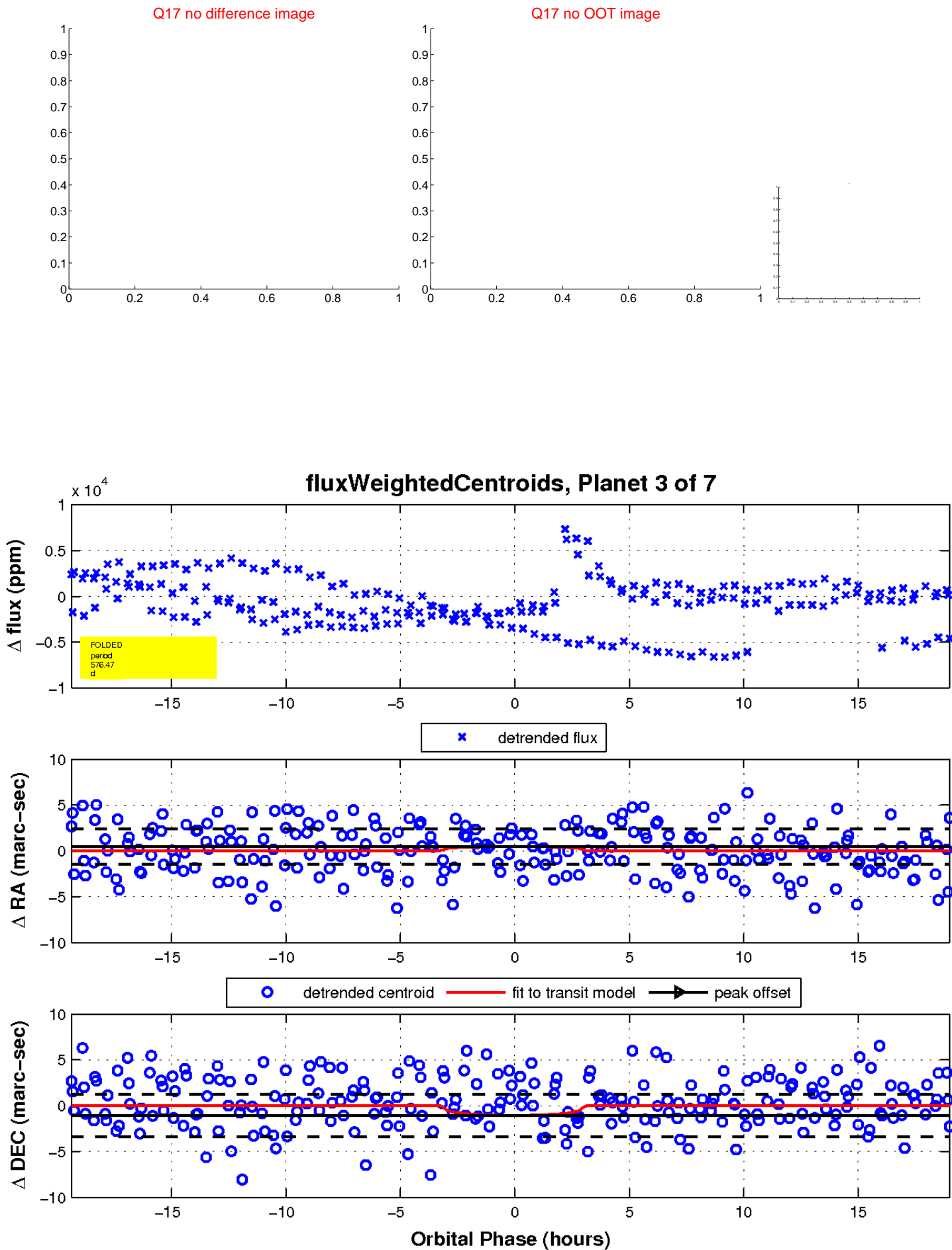
Q16 no difference image



Q16 no OOT image

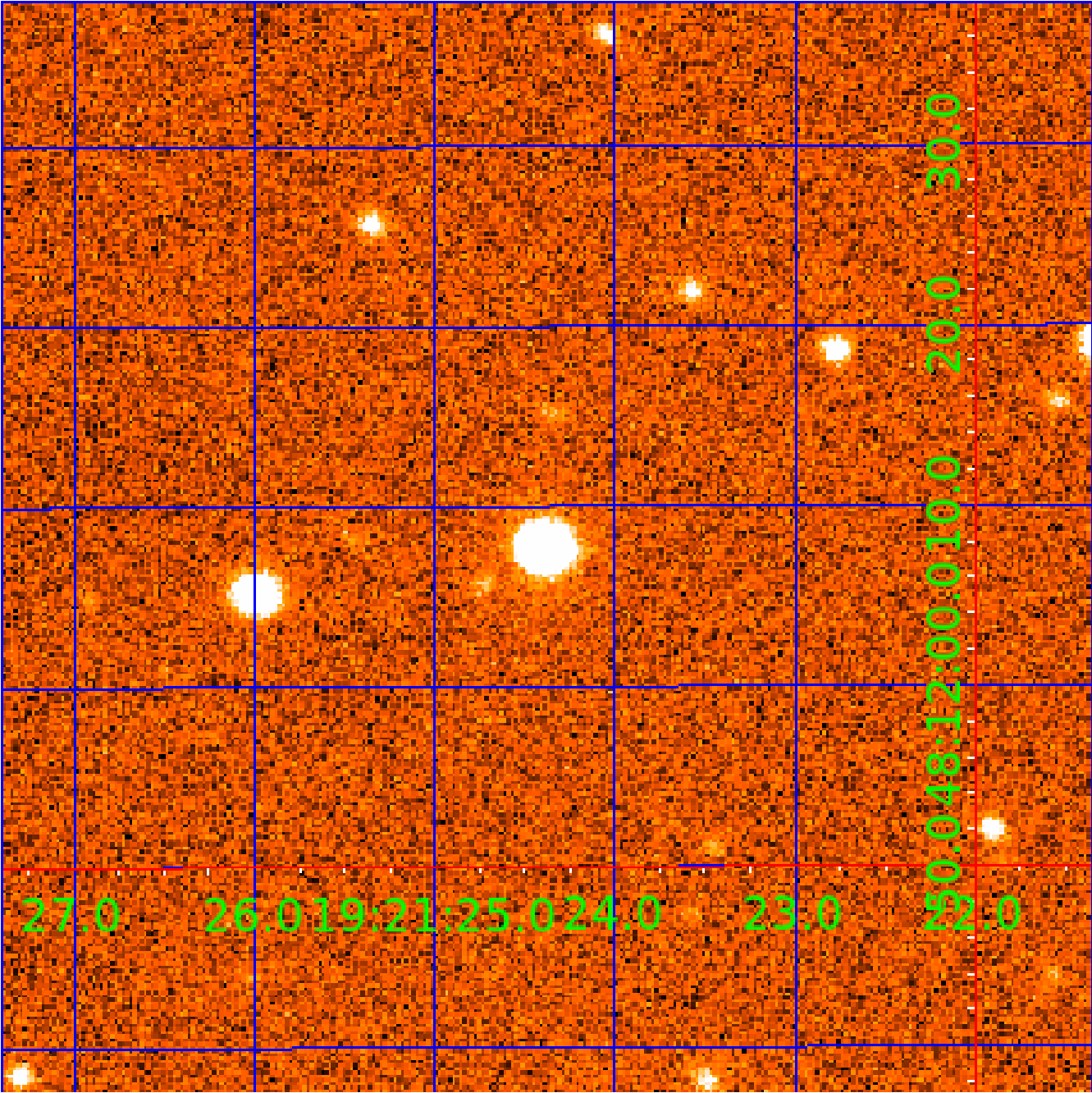


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010858030

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})
010858030-01	OBS	No	482.455420	603.257738	1595.6	4.860	12.4	5.8	0.60	4530	2.31	0.13
010858030-02	OBS	No	576.438242	163.433490	772.6	1.127	12.2	2.7	0.60	4530	1.70	0.10
010858030-03	OBS	No	576.474259	163.065402	1611.8	6.457	12.1	6.2	0.60	4530	2.49	0.10
010858030-04	OBS	No	308.671336	152.860393	953.4	9.719	10.7	4.7	0.60	4530	1.94	0.24
010858030-05	OBS	No	258.877920	327.766599	1852.1	23.450	10.3	4.5	0.60	4530	3.35	0.30
010858030-06	OBS	No	339.629885	333.266083	1138.7	2.527	10.6	5.3	0.60	4530	2.01	0.21
010858030-07	OBS	No	449.217591	403.281317	1725.3	7.086	10.0	7.2	0.60	4530	2.46	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010858030-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
010858030-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
010858030-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
010858030-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

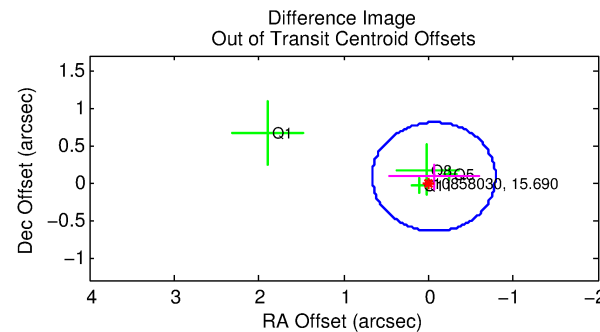
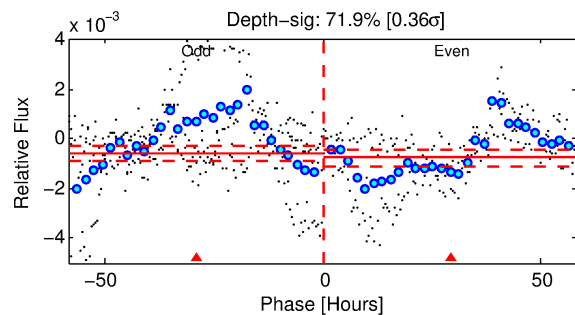
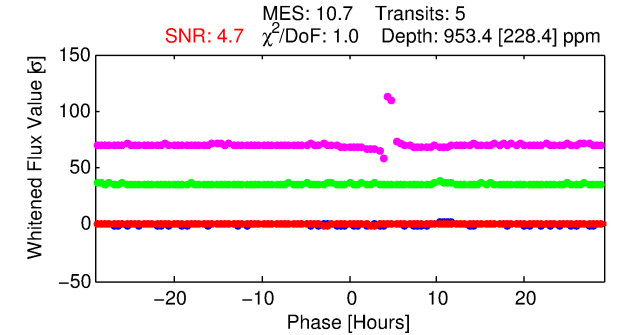
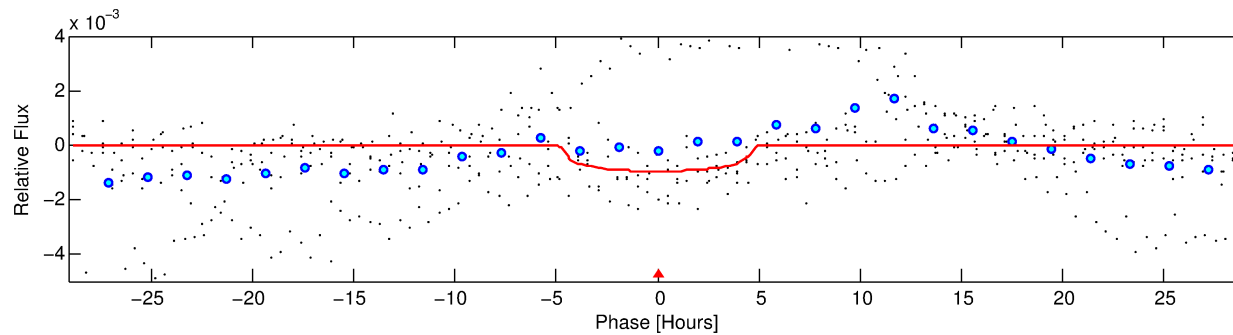
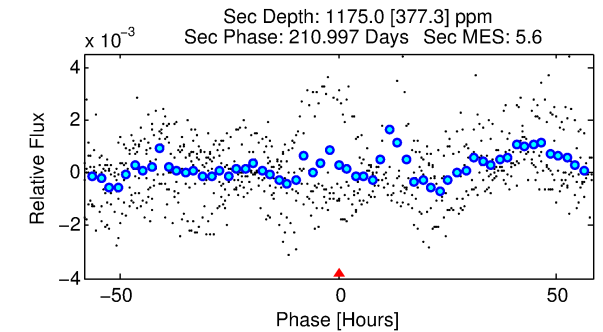
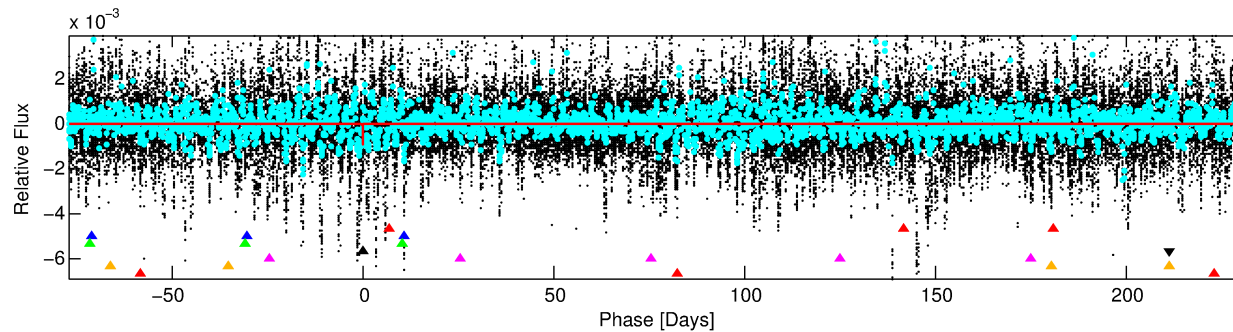
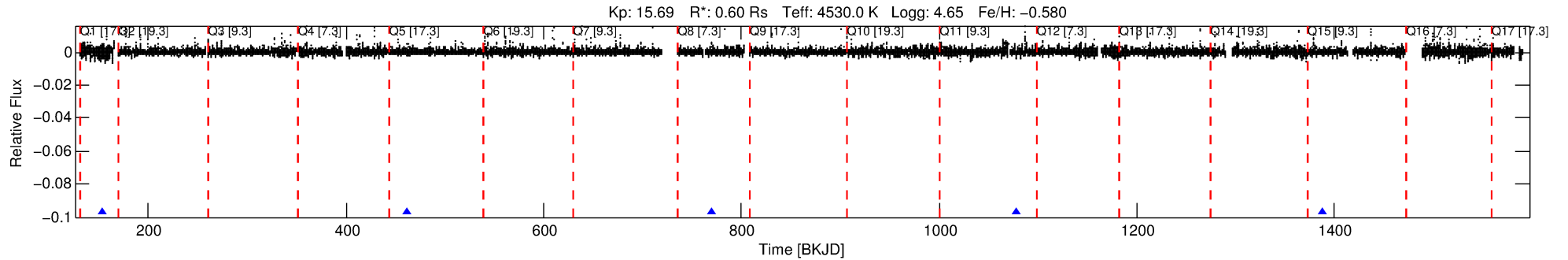
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010858030-04

No Significant Match Found

DV One-Page Summary

KIC: 10858030 Candidate: 4 of 7 Period: 308.671 d



DV Fit Results:

Period = 308.67134 [0.00723] d
Epoch = 152.8604 [0.0176] BKJD
Rp/R* = 0.0298 [0.0154]
a/R* = 189.29 [311.28]
b = 0.67 [1.35]
Seff = 0.24 [0.04]
Teff = 179 [7] K
Rp = 1.94 [1.02] Re
a = 0.7468 [0.0527] AU
Ag = 95729.48 [103985.42] [0.92σ]
Teffp = 4855 [1321] K [3.54σ]

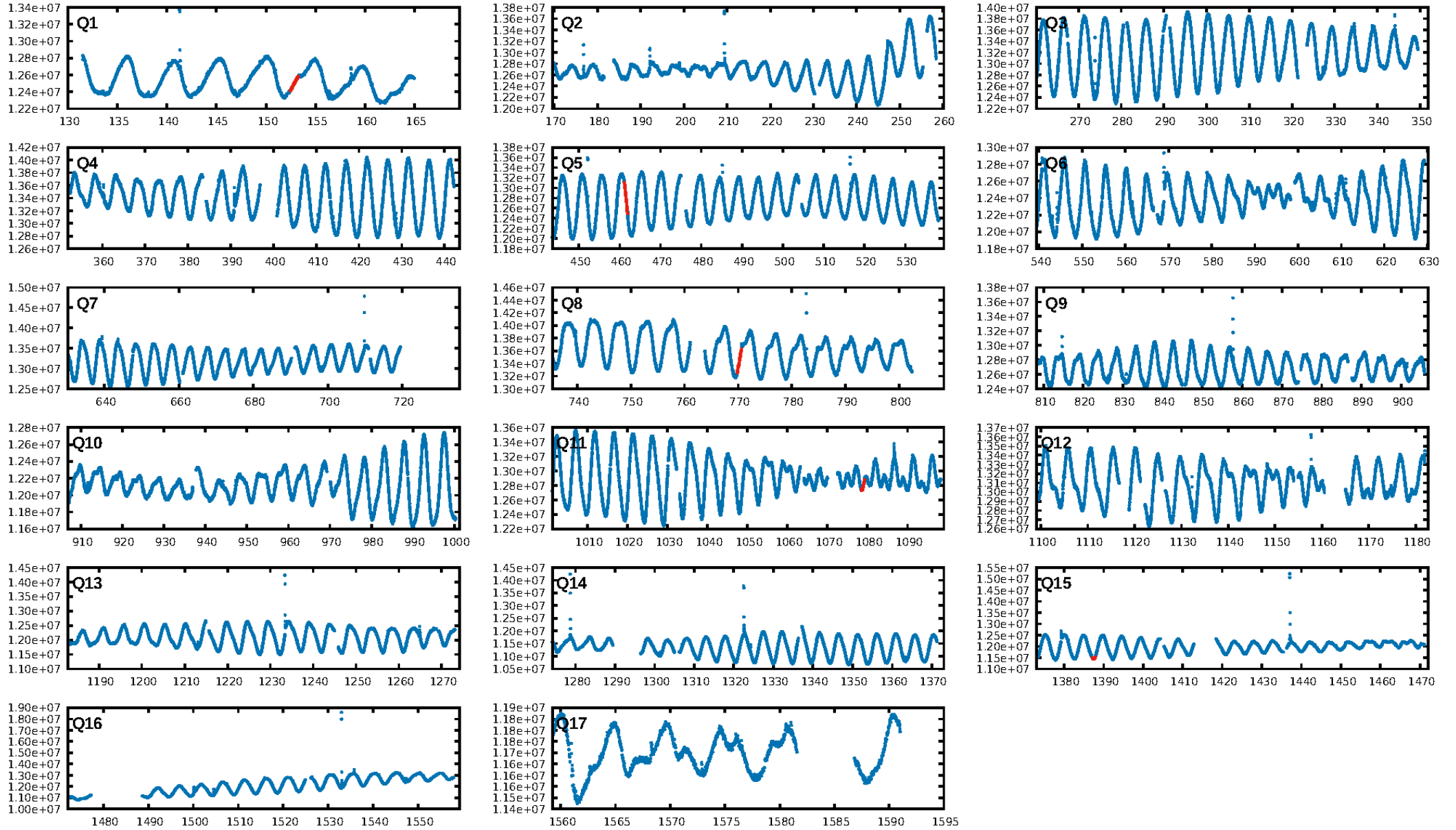
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.08σ]
LongPeriod-sig: 100.0% [73.99σ]
ModelChiSquare2-sig: 50.6%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 8.72e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.107
Centroid-sig: 89.5%
Centroid-so: 0.317 arcsec [0.31σ]
OotOffset-rm: 0.101 arcsec [0.42σ]
OotOffset-st: 0/1/1/2 [4]
KicOffset-rm: 0.161 arcsec [0.48σ]
KicOffset-st: 0/1/1/2 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

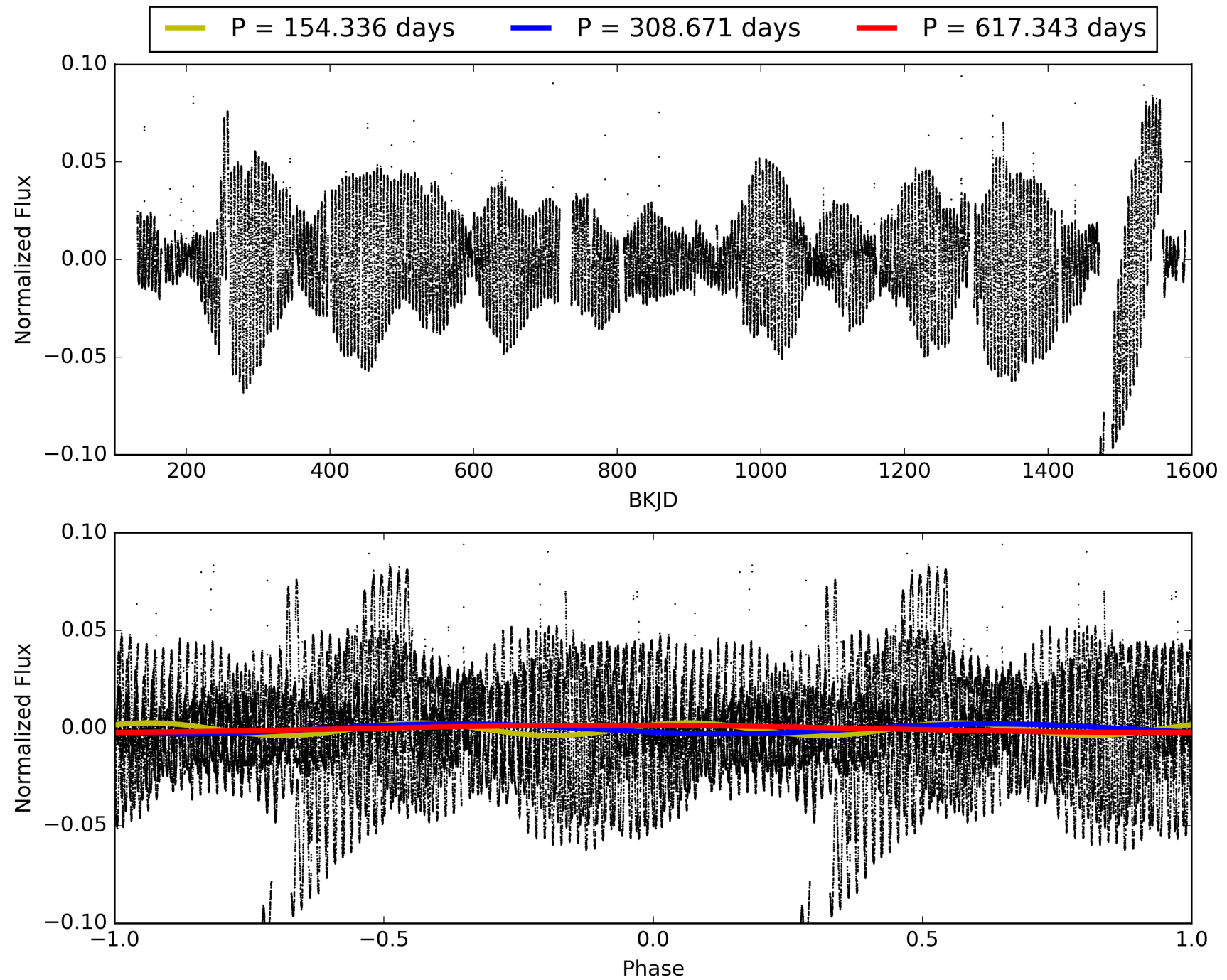
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:13 Z

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

TCE 010858030-04, PDC Light Curves

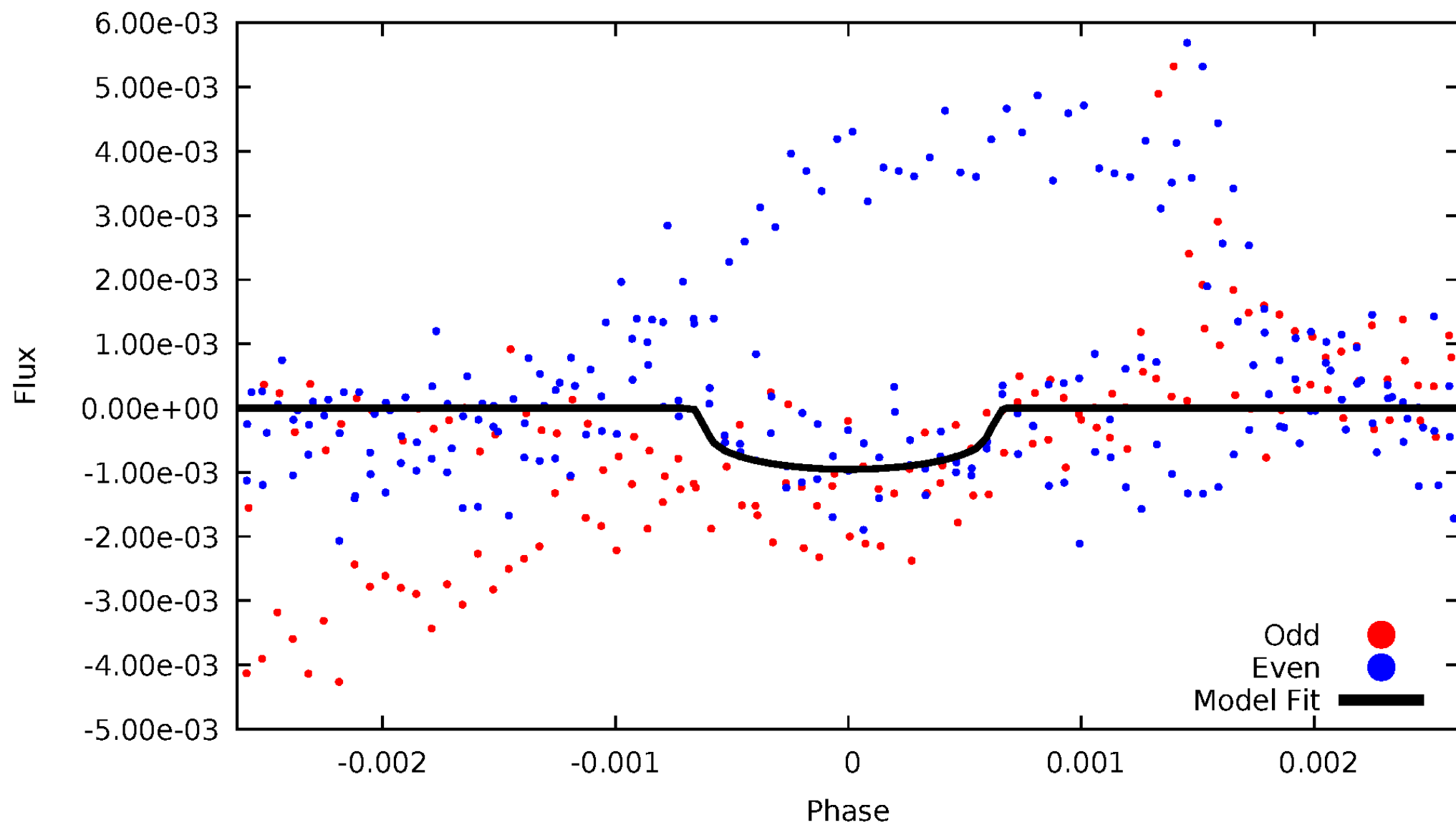


TCE 010858030-04



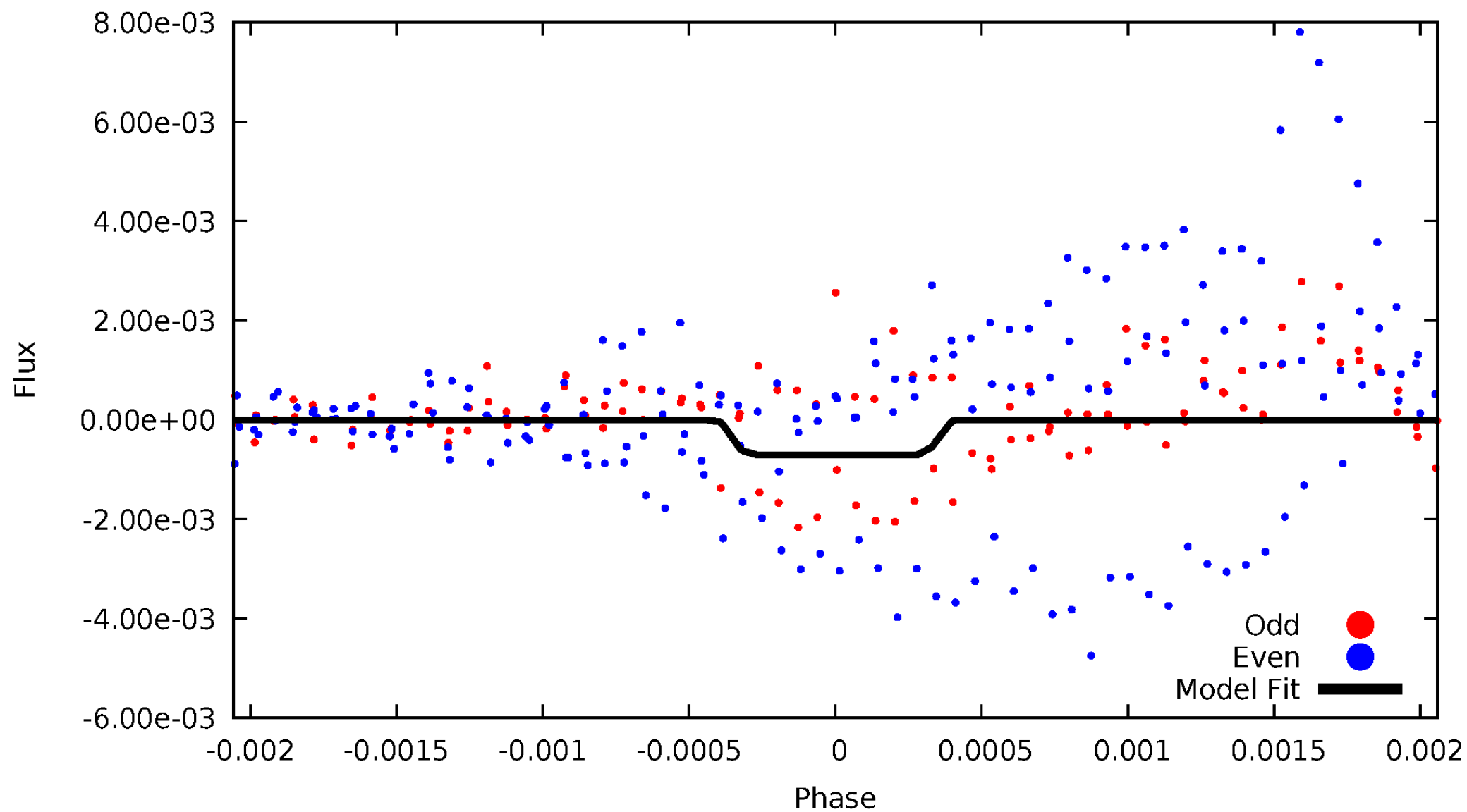
DV Odd/Even

TCE 010858030-04



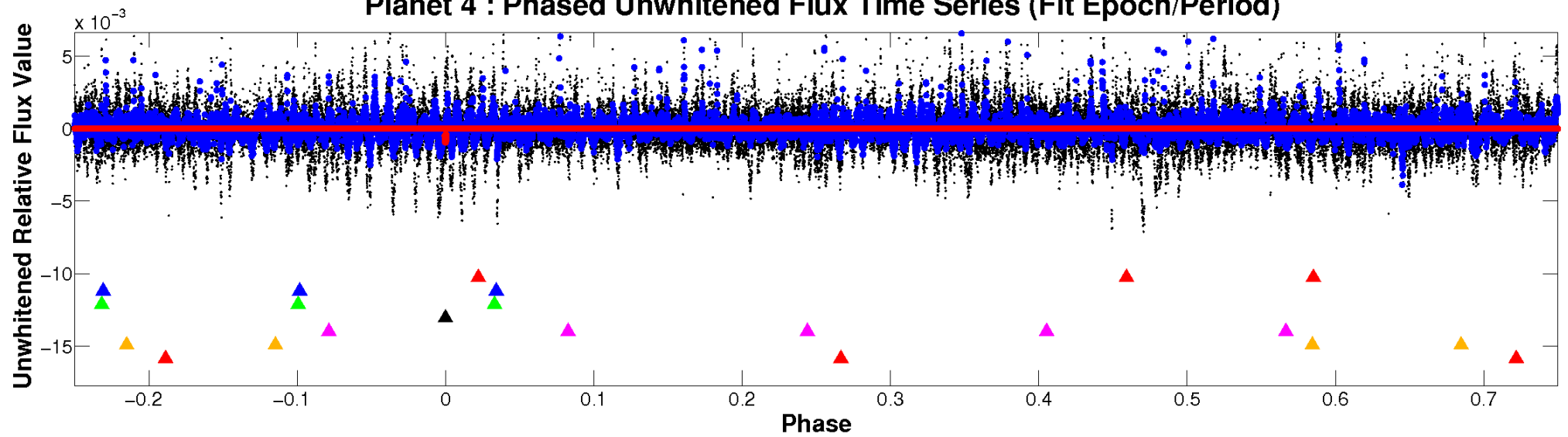
ALT Odd/Even

TCE 010858030-04

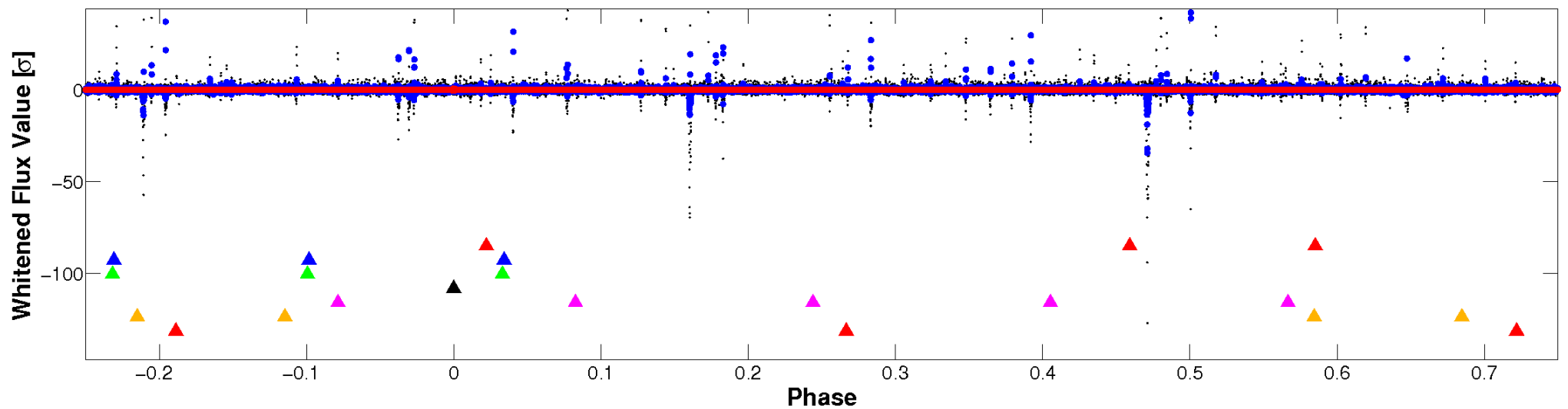


Non-Whitened Vs. Whitened Light Curve

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

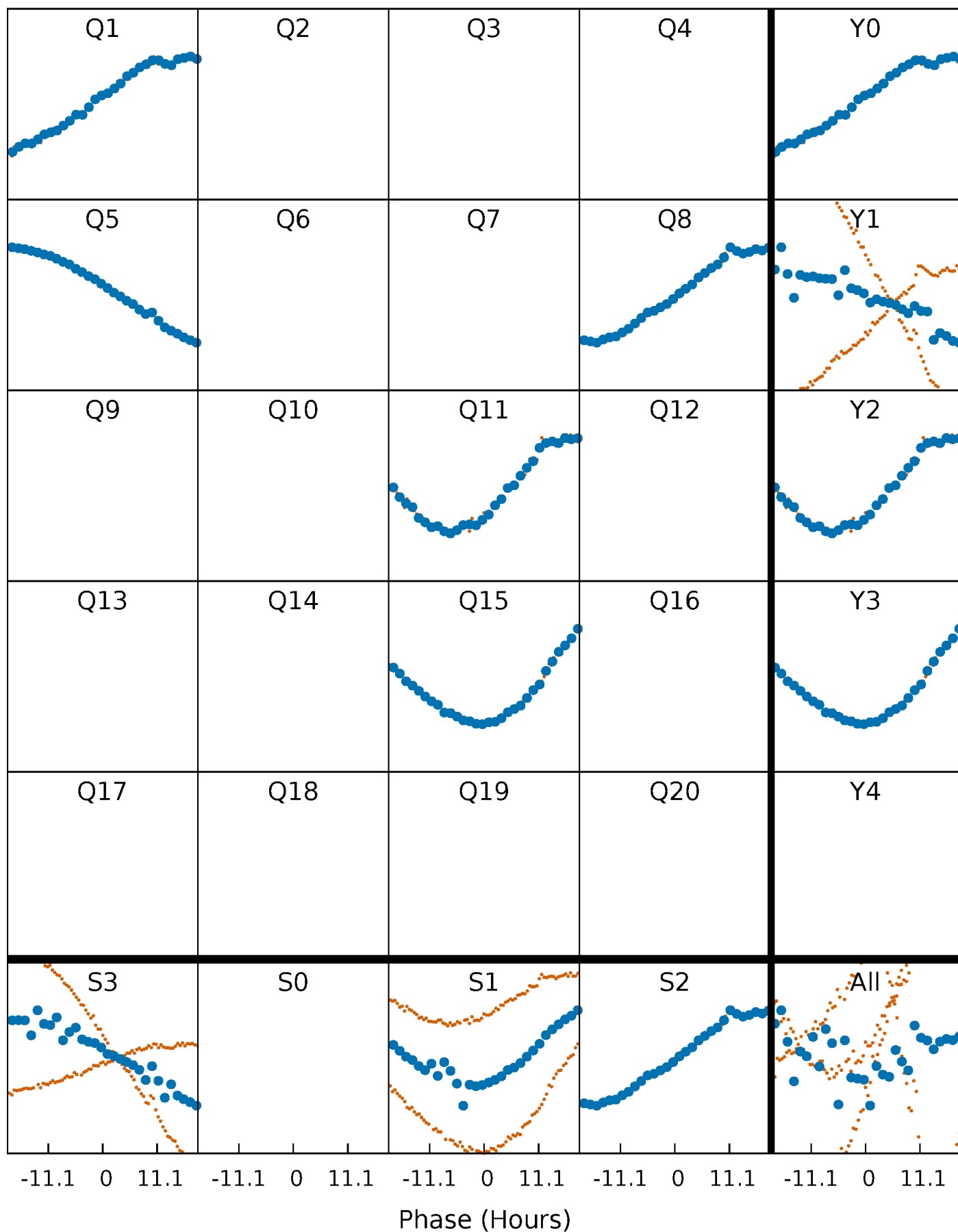


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



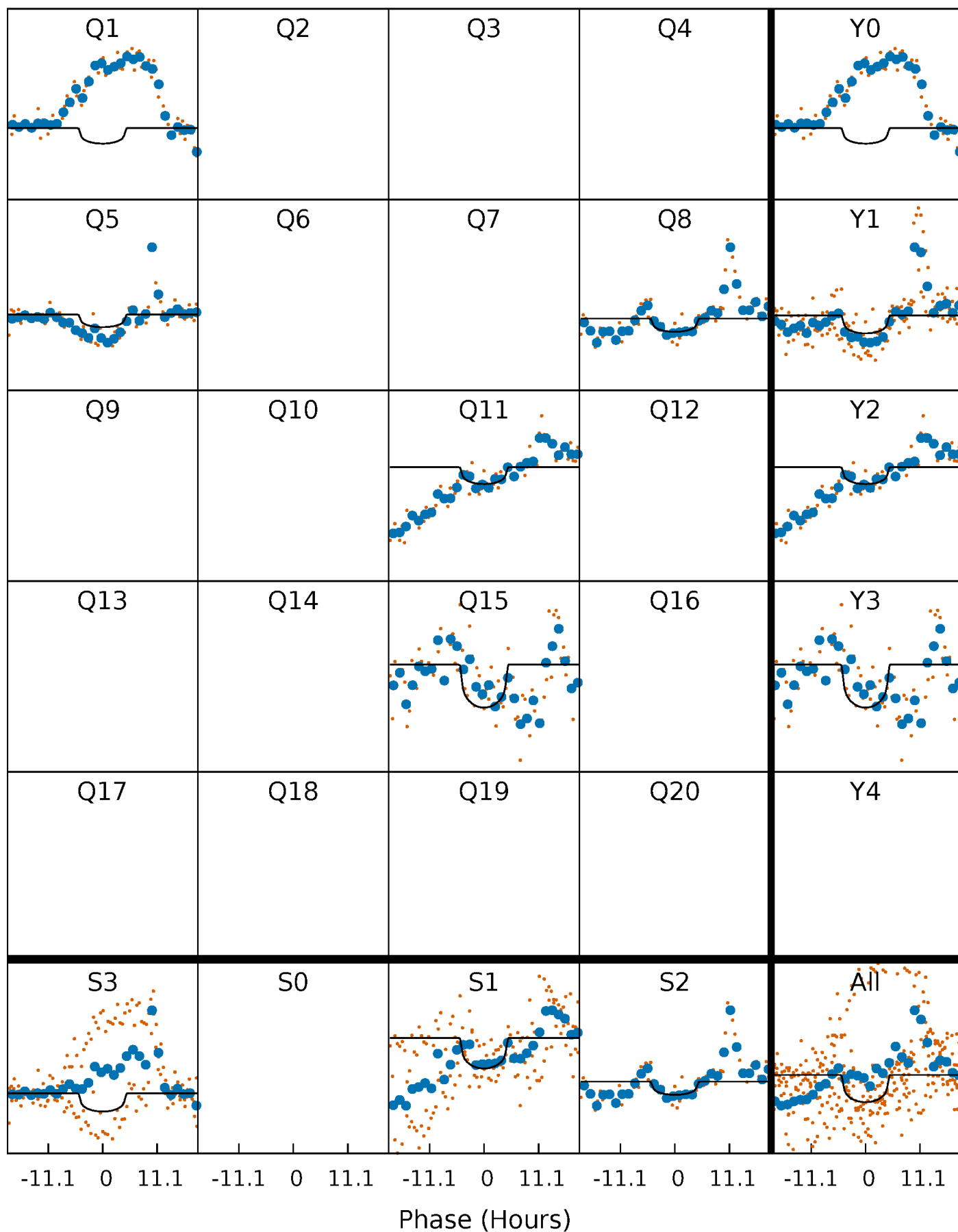
PDC Quarter-Phased Transit Curves

TCE 010858030-04 P=308.671336 Days $T_0=152.860393$ (BKJD)



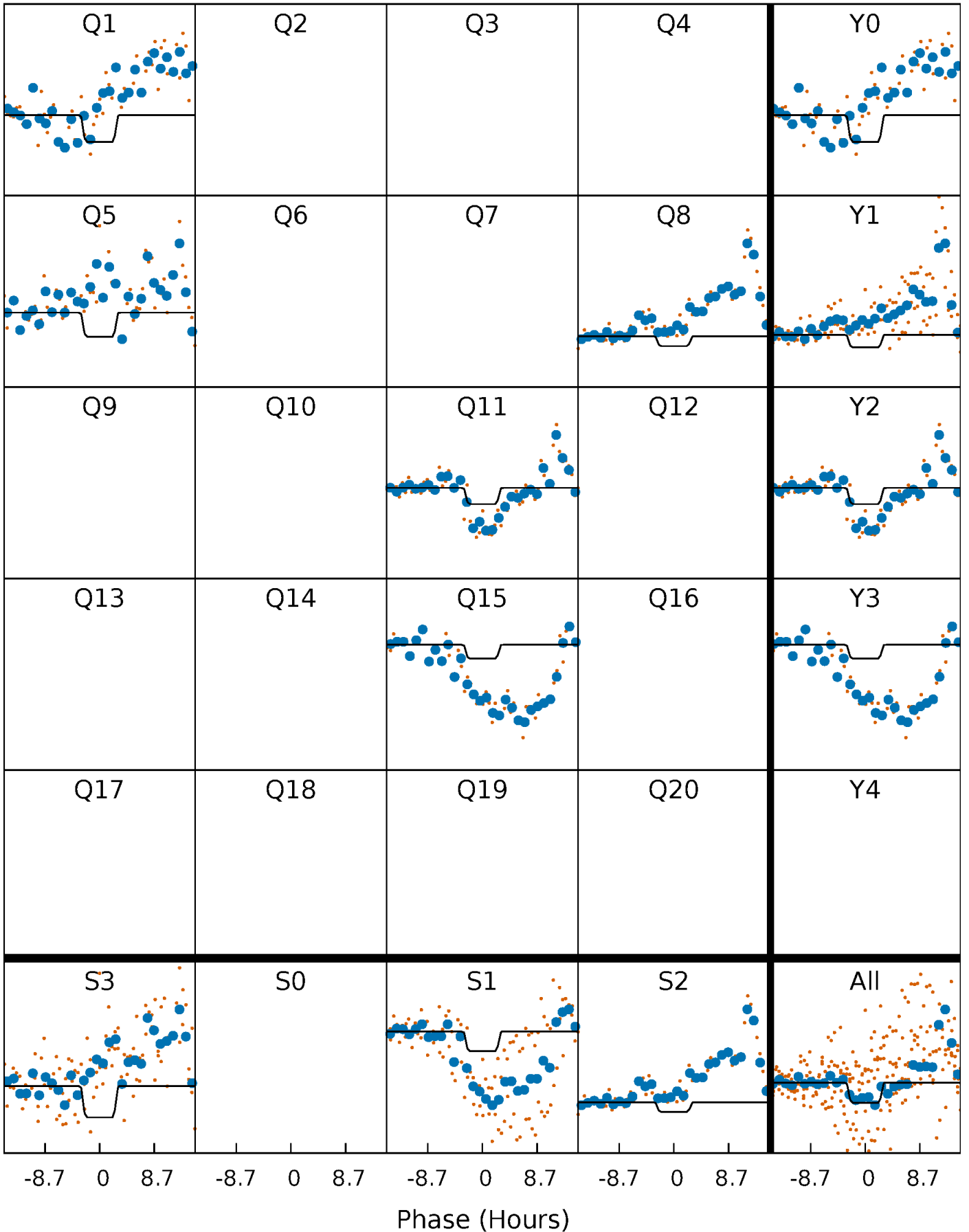
DV Quarter-Phased Transit Curves

TCE 010858030-04 $P=308.671336$ Days $T_0=152.860393$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

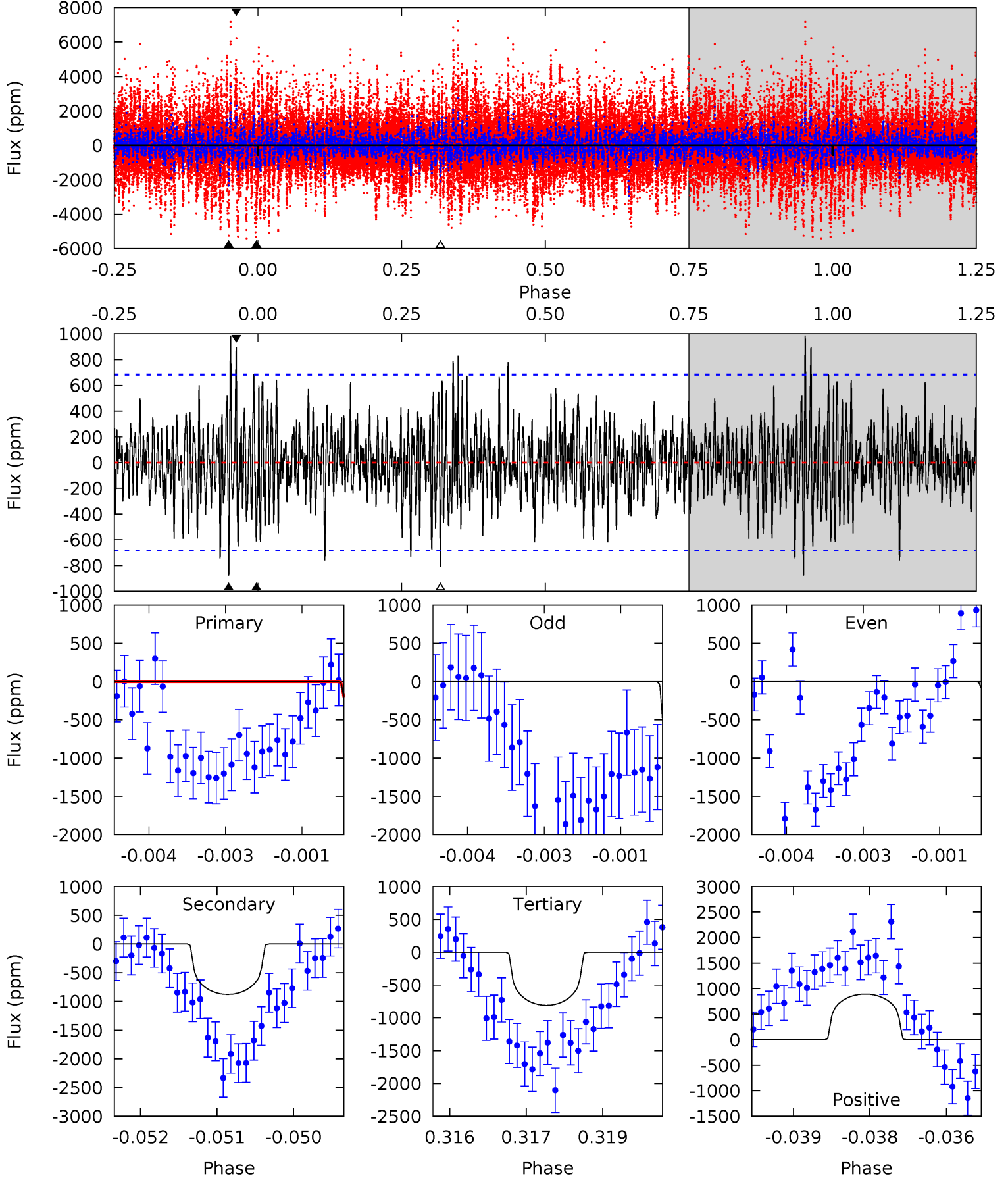
TCE 010858030-04 $P=308.710224$ Days $T_0=152.741641$ (BKJD)



DV Model-Shift Uniqueness Test

010858030-04, P = 308.671336 Days, E = 152.860393 Days

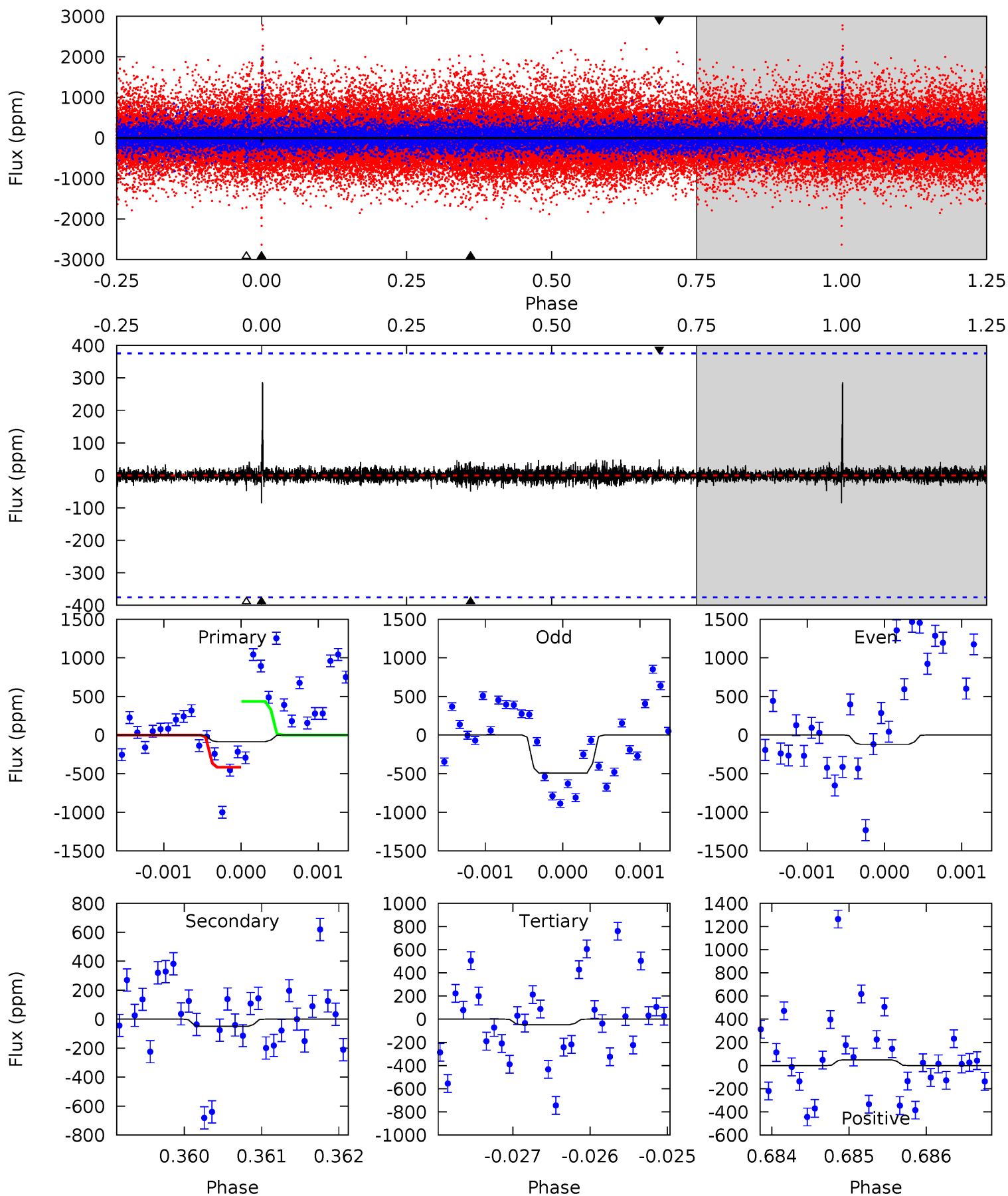
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.52	6.94	6.40	7.07	5.40	3.21	1.91	-1.88	-2.55	0.54	-0.13	4.29	0.07	0.53	2.43



Alt Model-Shift Uniqueness Test

010858030-04, P = 308.710224 Days, E = 152.741641 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.25	0.72	0.70	0.72	5.48	3.33	0.19	0.55	0.53	0.03	0.00	2.82	-2.42	0.77	0.13



Stellar Parameters For KIC 010858030

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4530^{+135}_{-135}	$4.653^{+0.054}_{-0.027}$	$-0.580^{+0.300}_{-0.300}$	$0.596^{+0.046}_{-0.051}$	$0.583^{+0.065}_{-0.038}$	$3.873^{+0.953}_{-0.466}$
	+3%/-3%	+1%/-1%	+52%/-52%	+8%/-9%	+11%/-7%	+25%/-12%
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 010858030-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-878 ± 127	$1.95^{+0.99}_{-0.86}$	248^{+8}_{-8}	4513^{+1332}_{-683}	$73384^{+163996}_{-43559}$
Alt.	-50 ± 69	$1.82^{+0.94}_{-0.96}$	247^{+8}_{-8}	2854^{+683}_{-5409}	4293^{+15174}_{-6064}

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

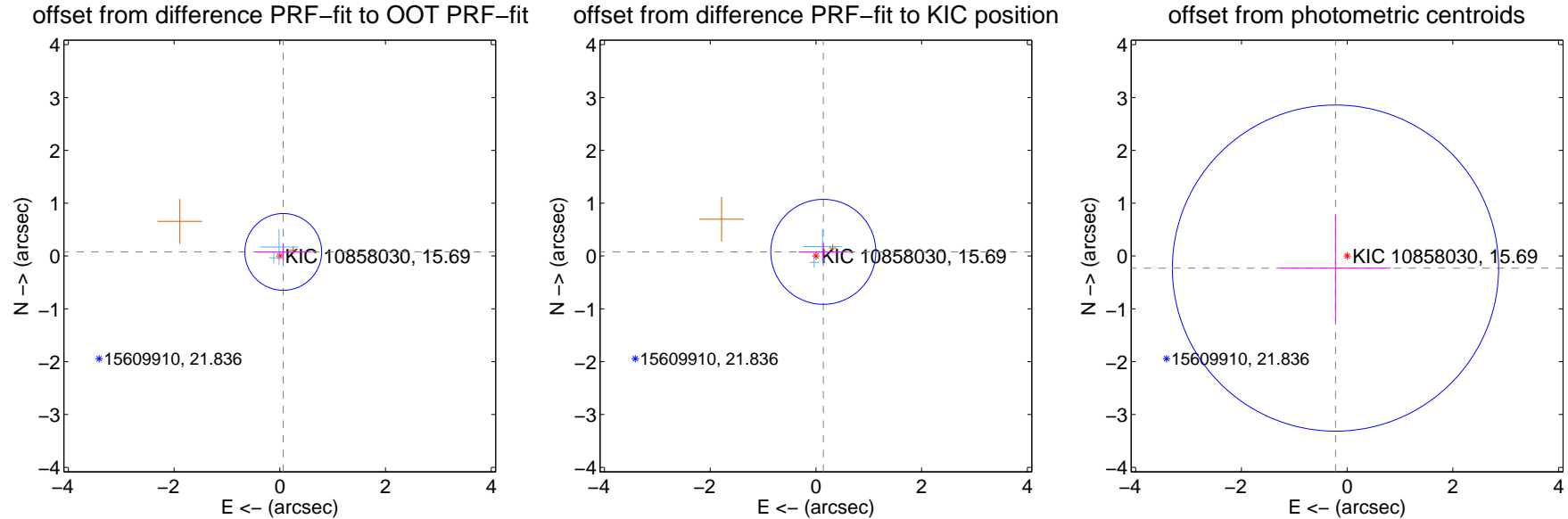
DV Centroid Data

Supplemental centroid analysis for 010858030-04. Kepler magnitude: 15.69. Transit SNR 4.68

There are 2 quarters with good PRF difference image offsets

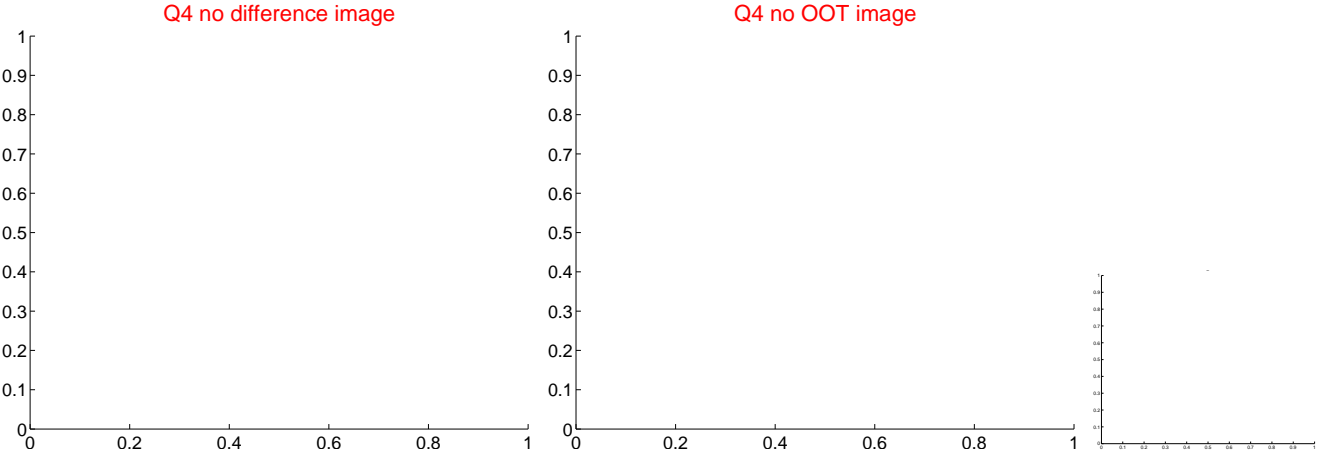
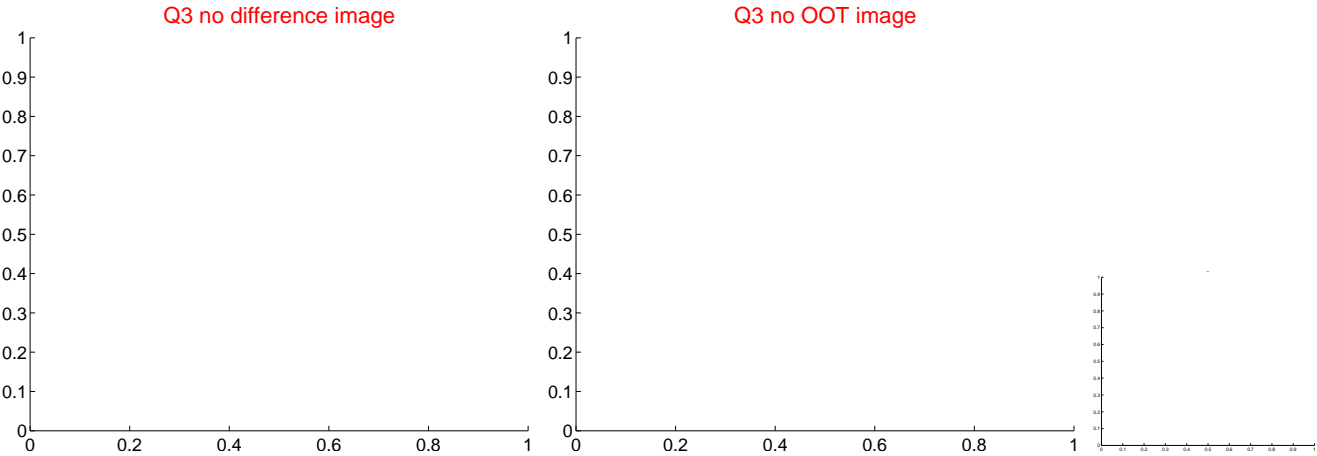
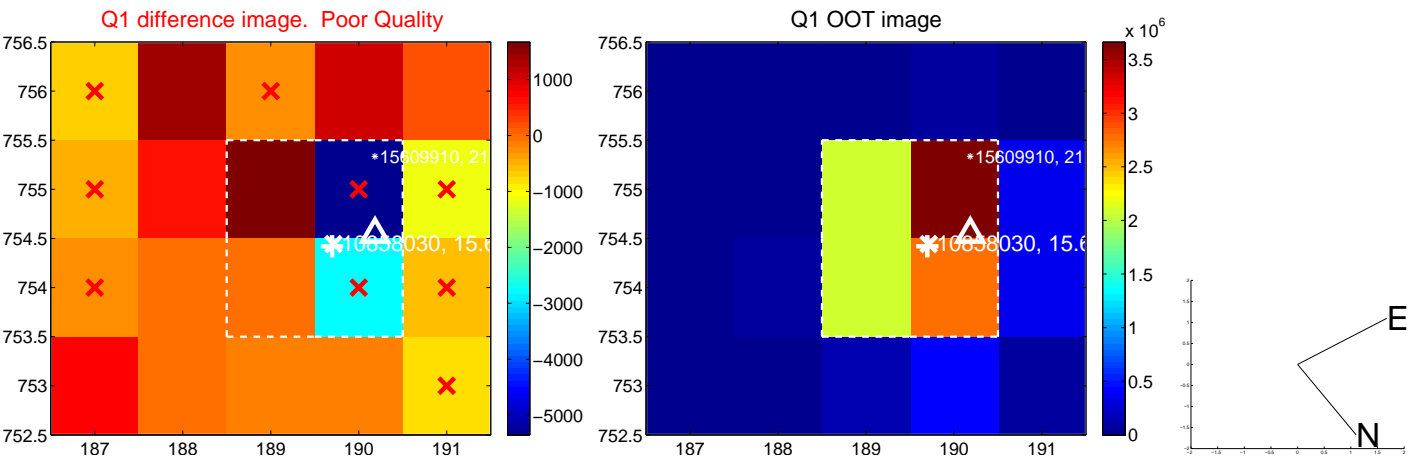
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 0.242	0.42	-0.065 ± 0.525	0.078 ± 0.164
PRF-fit source offset from KIC position	0.161 ± 0.331	0.48	-0.140 ± 0.468	0.079 ± 0.183
photometric centroid source offset	0.32 ± 1.03	0.31	0.22 ± 1.04	-0.23 ± 1.02

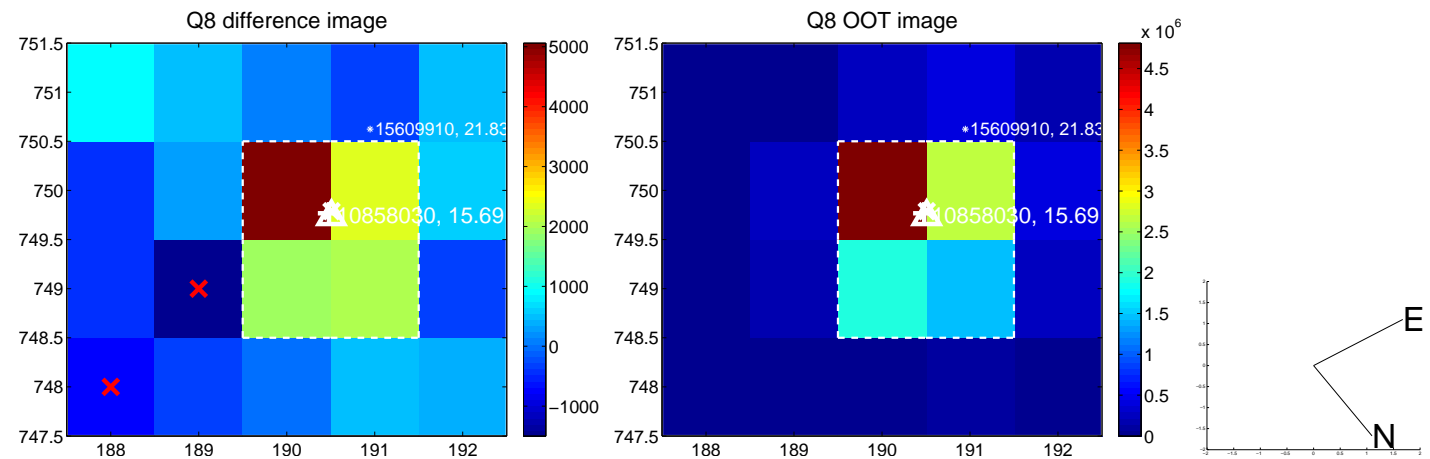
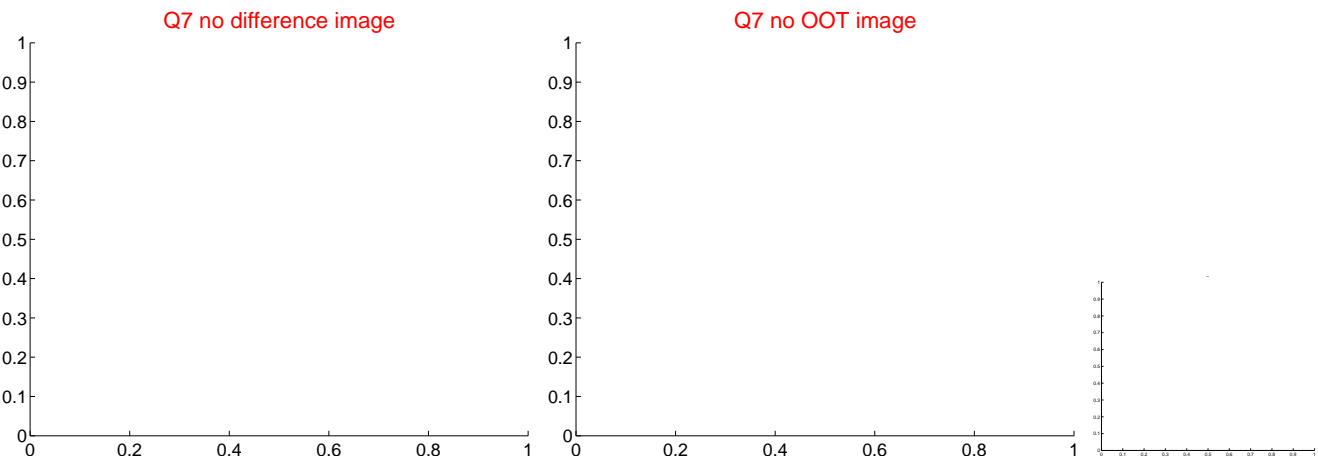
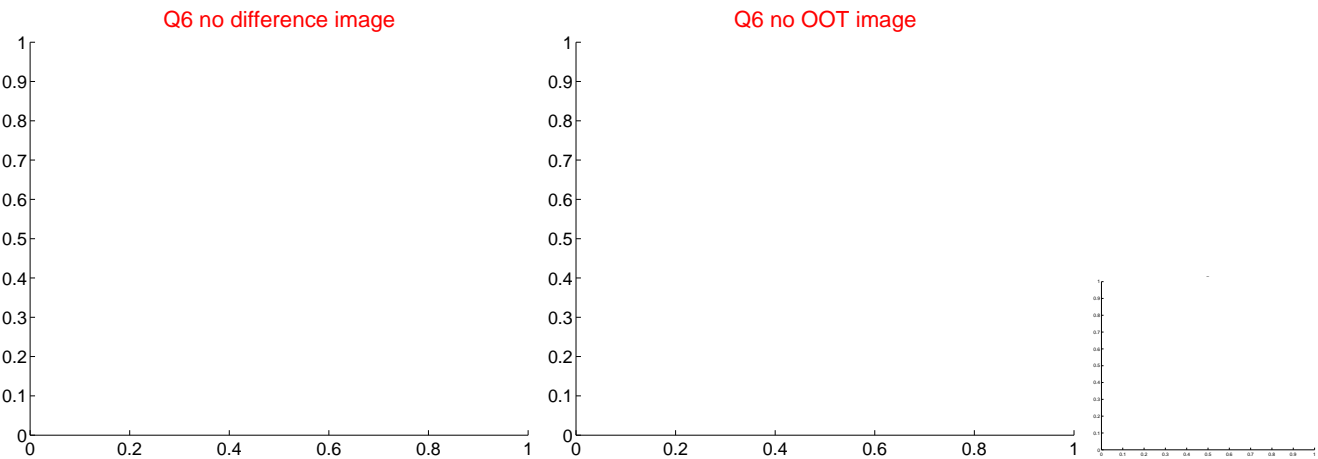
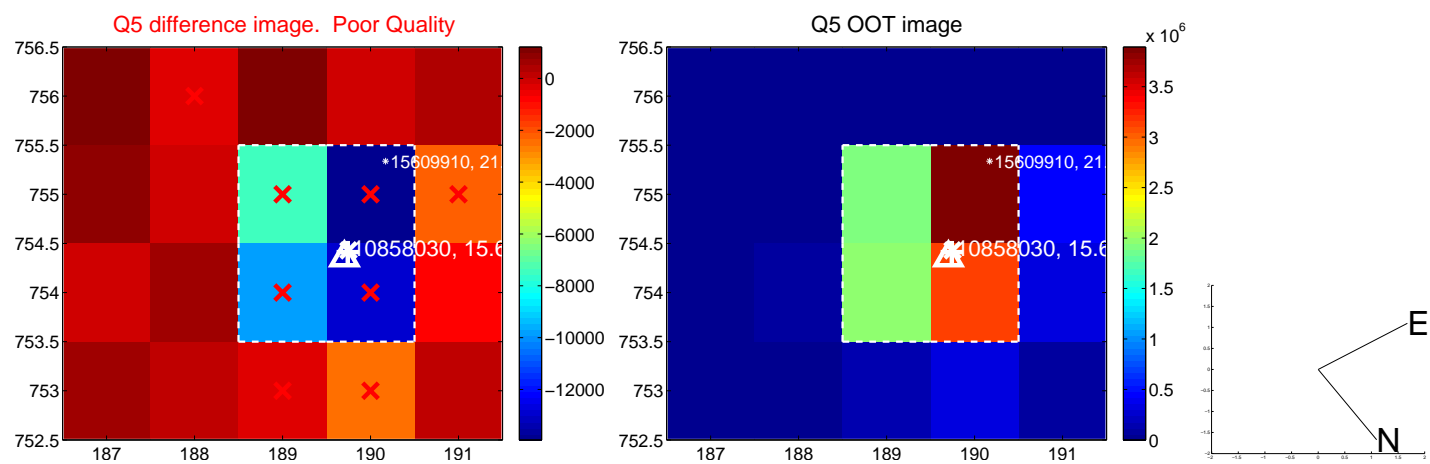


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

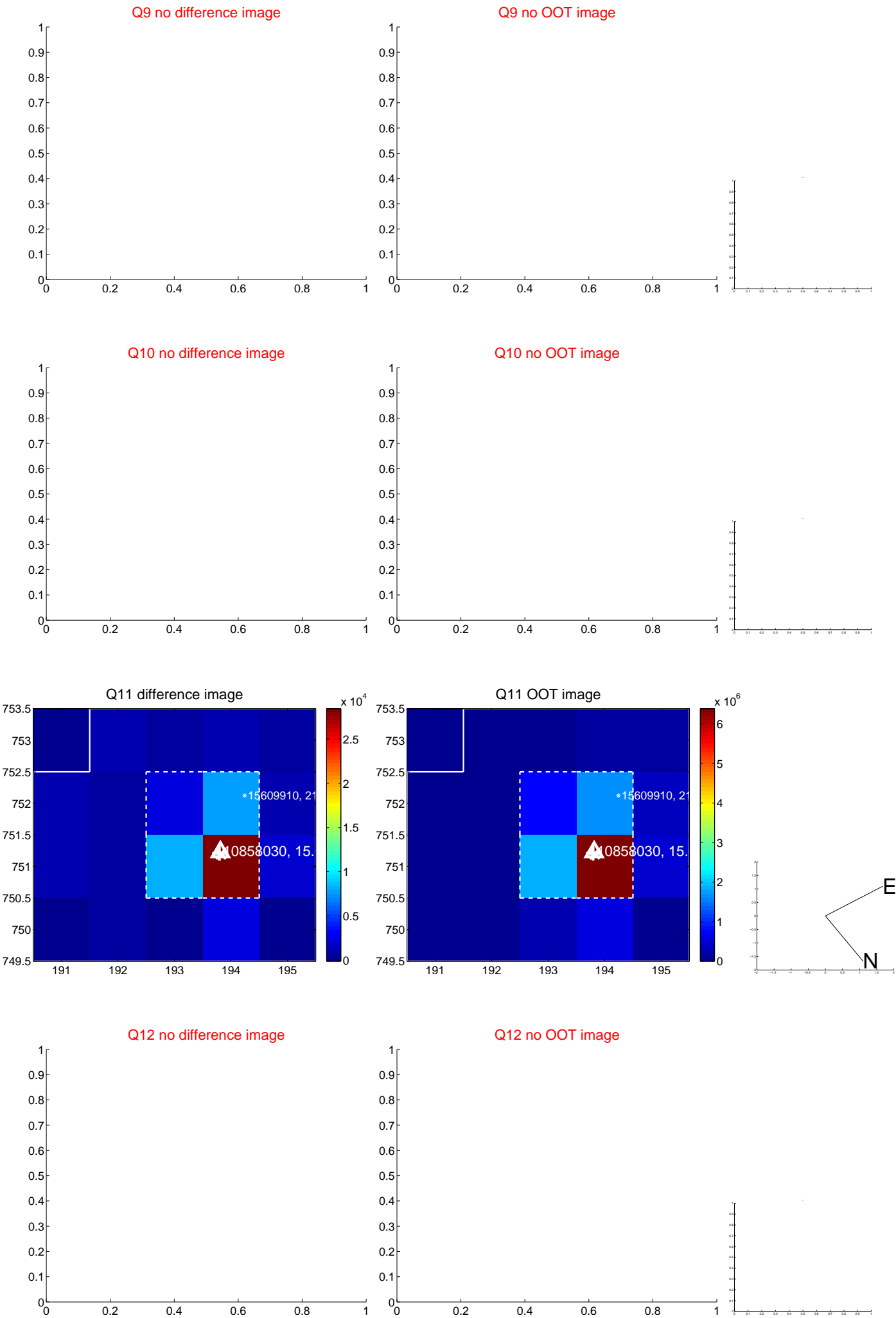
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



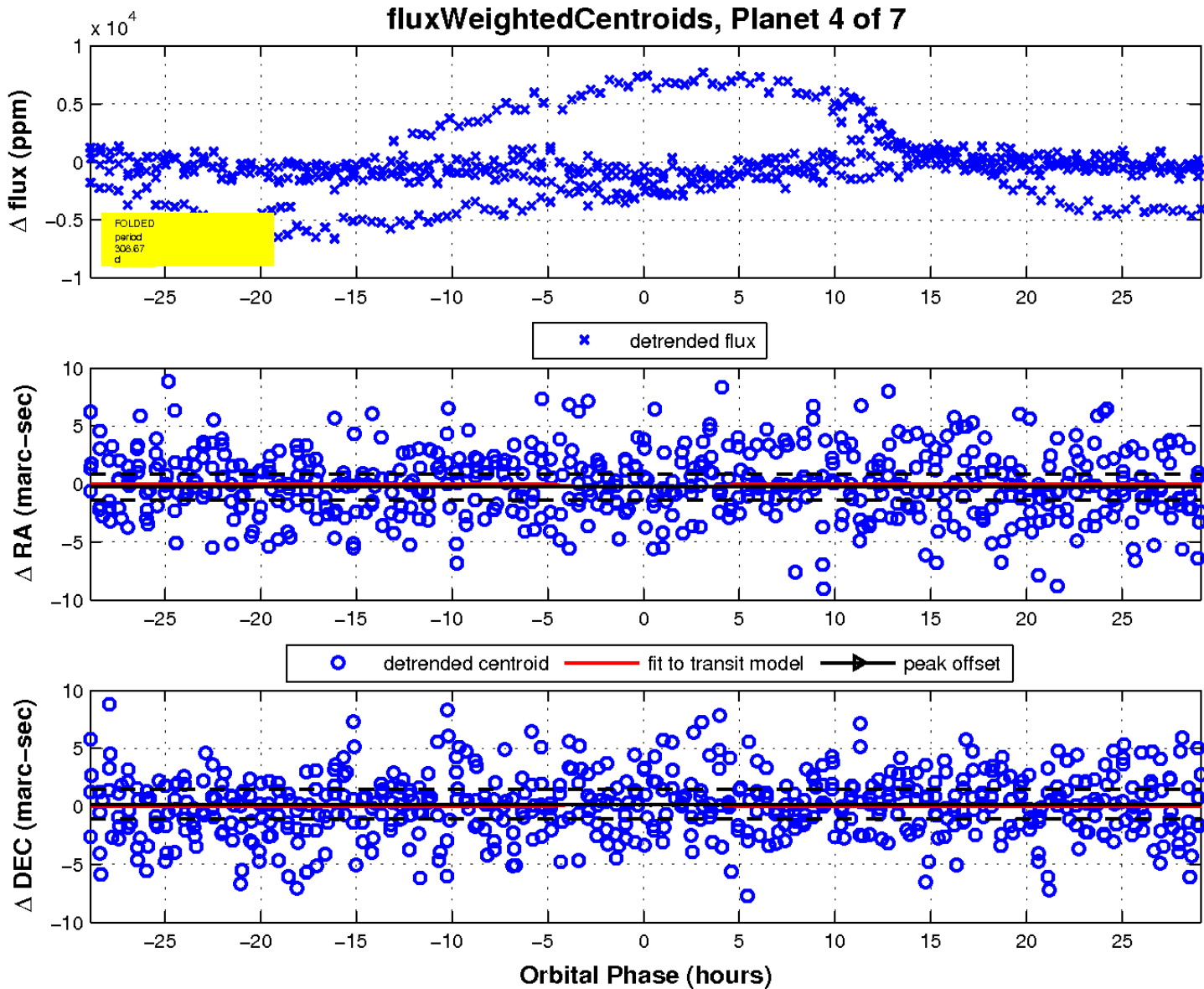
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

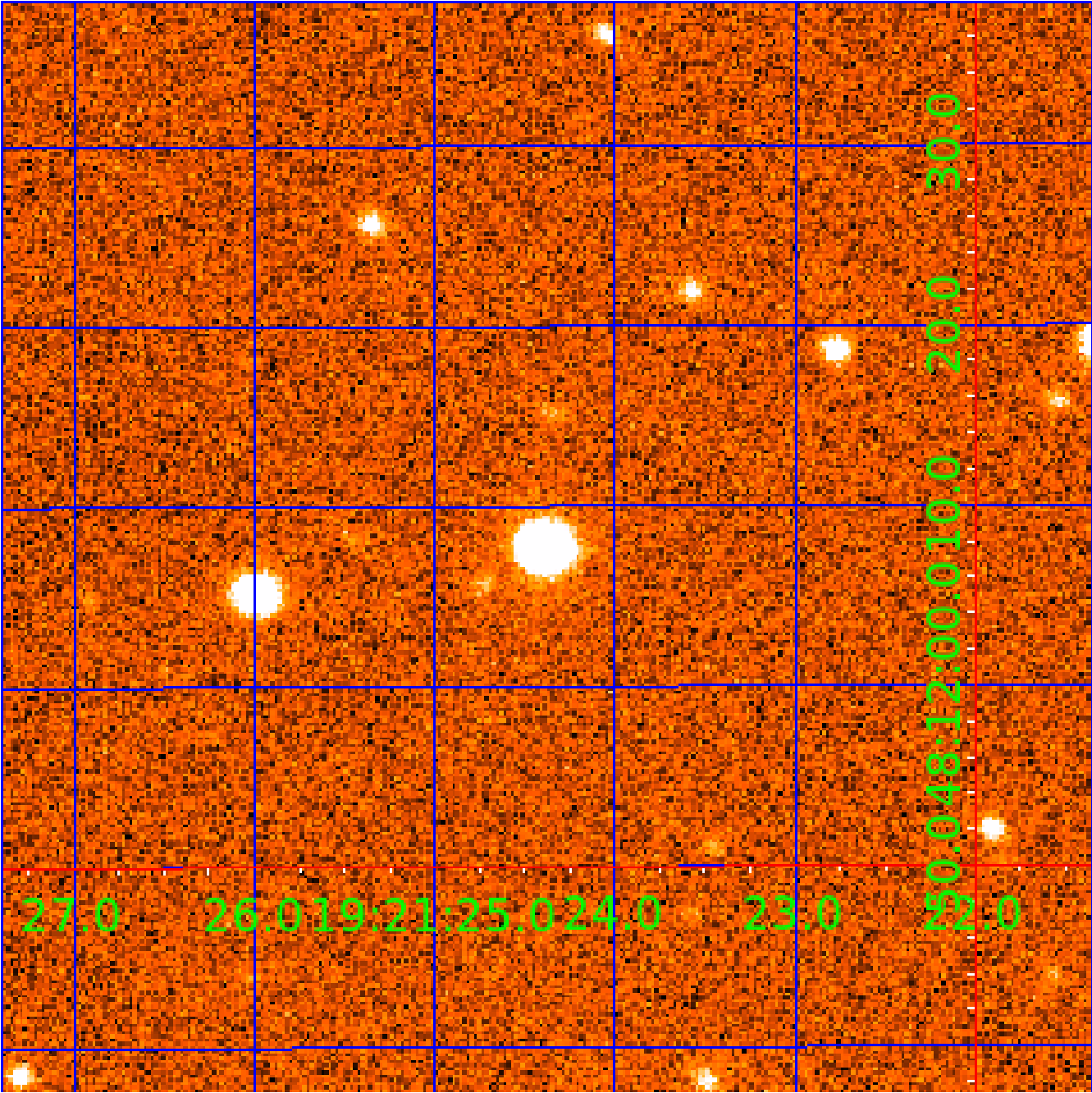
Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination



KIC 010858030

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})
010858030-01	OBS	No	482.455420	603.257738	1595.6	4.860	12.4	5.8	0.60	4530	2.31	0.13
010858030-02	OBS	No	576.438242	163.433490	772.6	1.127	12.2	2.7	0.60	4530	1.70	0.10
010858030-03	OBS	No	576.474259	163.065402	1611.8	6.457	12.1	6.2	0.60	4530	2.49	0.10
010858030-04	OBS	No	308.671336	152.860393	953.4	9.719	10.7	4.7	0.60	4530	1.94	0.24
010858030-05	OBS	No	258.877920	327.766599	1852.1	23.450	10.3	4.5	0.60	4530	3.35	0.30
010858030-06	OBS	No	339.629885	333.266083	1138.7	2.527	10.6	5.3	0.60	4530	2.01	0.21
010858030-07	OBS	No	449.217591	403.281317	1725.3	7.086	10.0	7.2	0.60	4530	2.46	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010858030-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
010858030-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
010858030-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
010858030-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

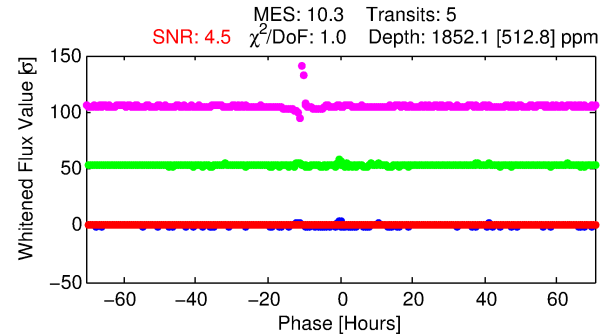
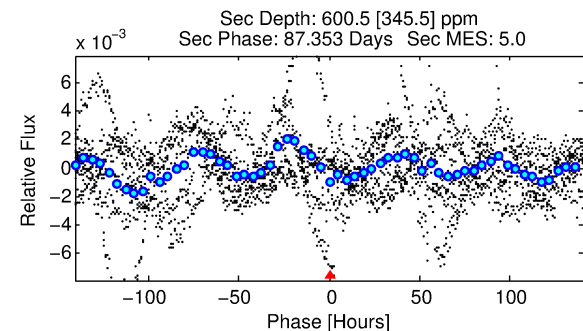
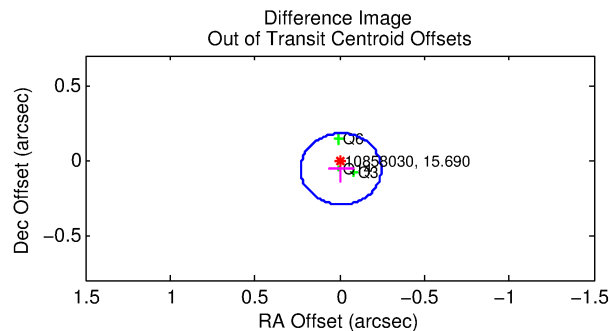
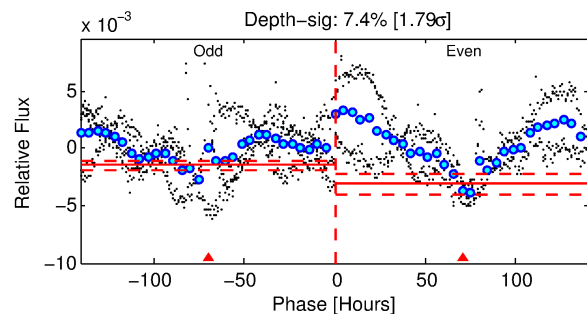
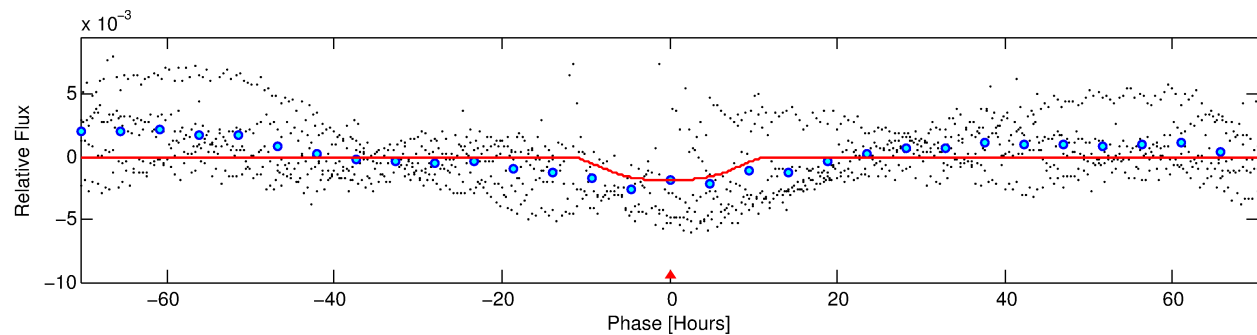
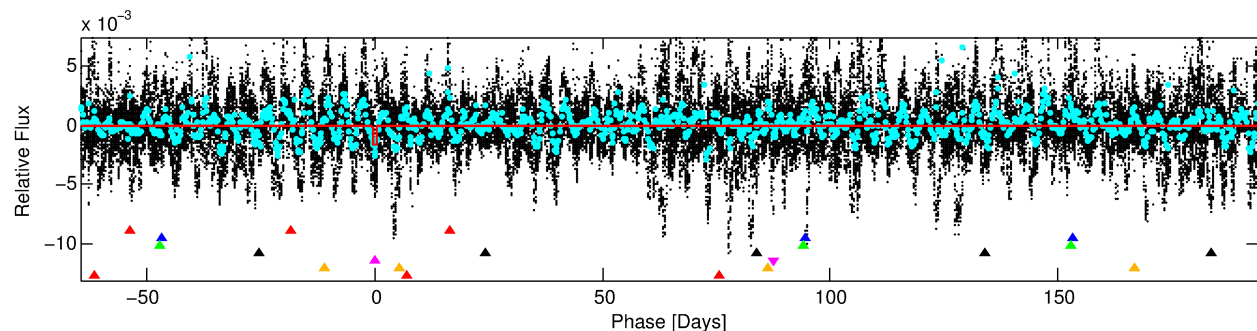
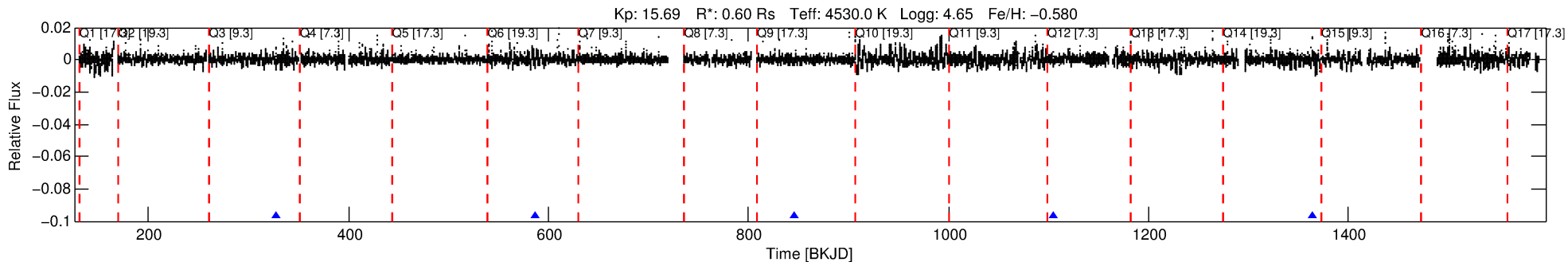
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010858030-05

No Significant Match Found

DV One-Page Summary

KIC: 10858030 Candidate: 5 of 7 Period: 258.878 d



DV Fit Results:

Period = 258.87792 [0.01839] d
Epoch = 327.7666 [0.0446] BKJD
Rp/R* = 0.0515 [0.0078]
a/R* = 39.90 [4.54]
b = 0.94 [0.02]
Seff = 0.30 [0.05]
Teq = 189 [7] K
Rp = 3.35 [0.58] Re
a = 0.6641 [0.0468] AU
Ag = 12973.28 [8529.00] [1.52 σ]
Teffp = 3124 [516] K [5.69 σ]

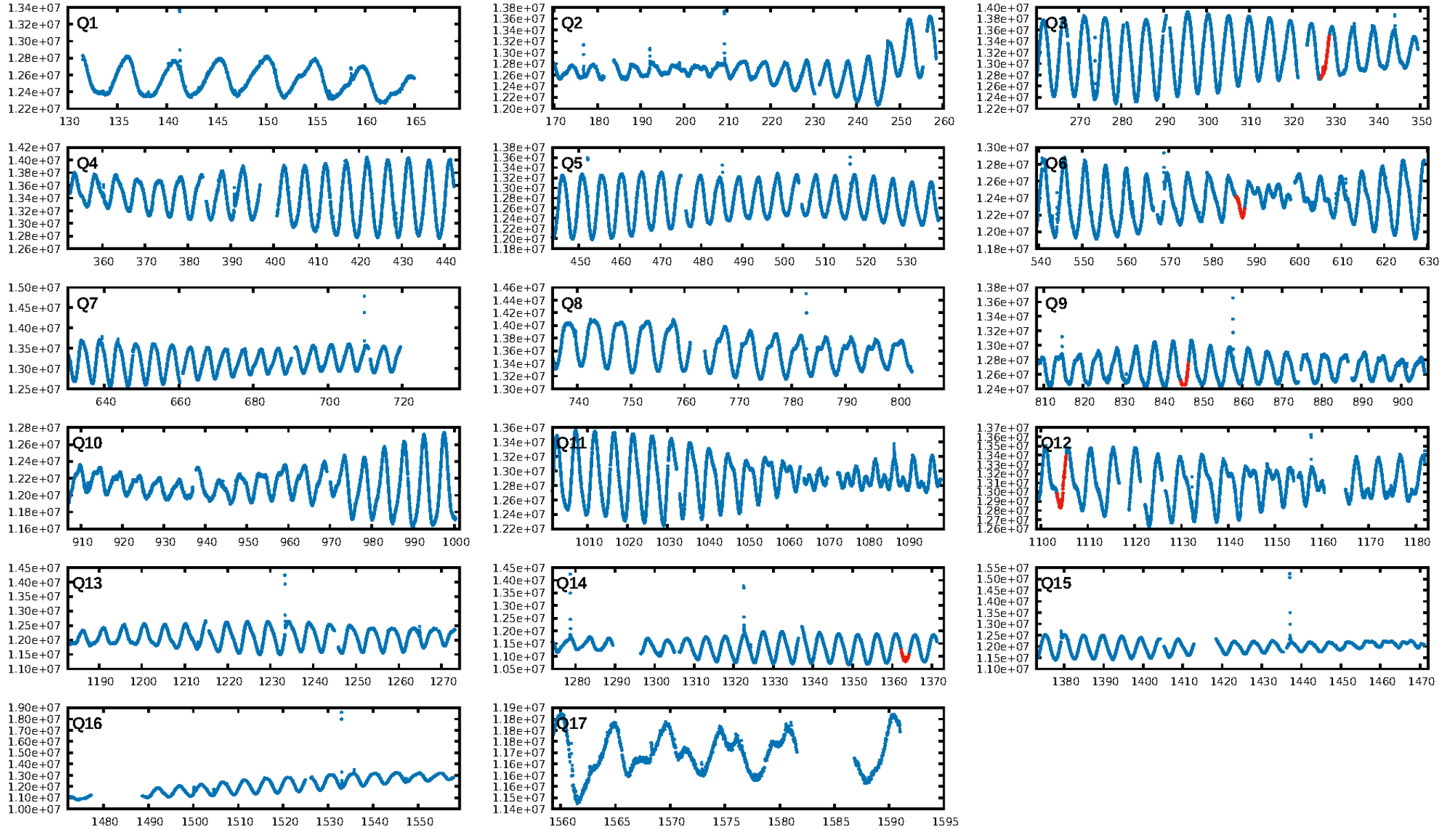
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [47.08 σ]
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.85e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.3643
Centroid-sig: 21.8%
Centroid-so: 0.493 arcsec [1.10 σ]
OotOffset-rm: 0.060 arcsec [0.75 σ]
KicOffset-rm: 0.124 arcsec [1.24 σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

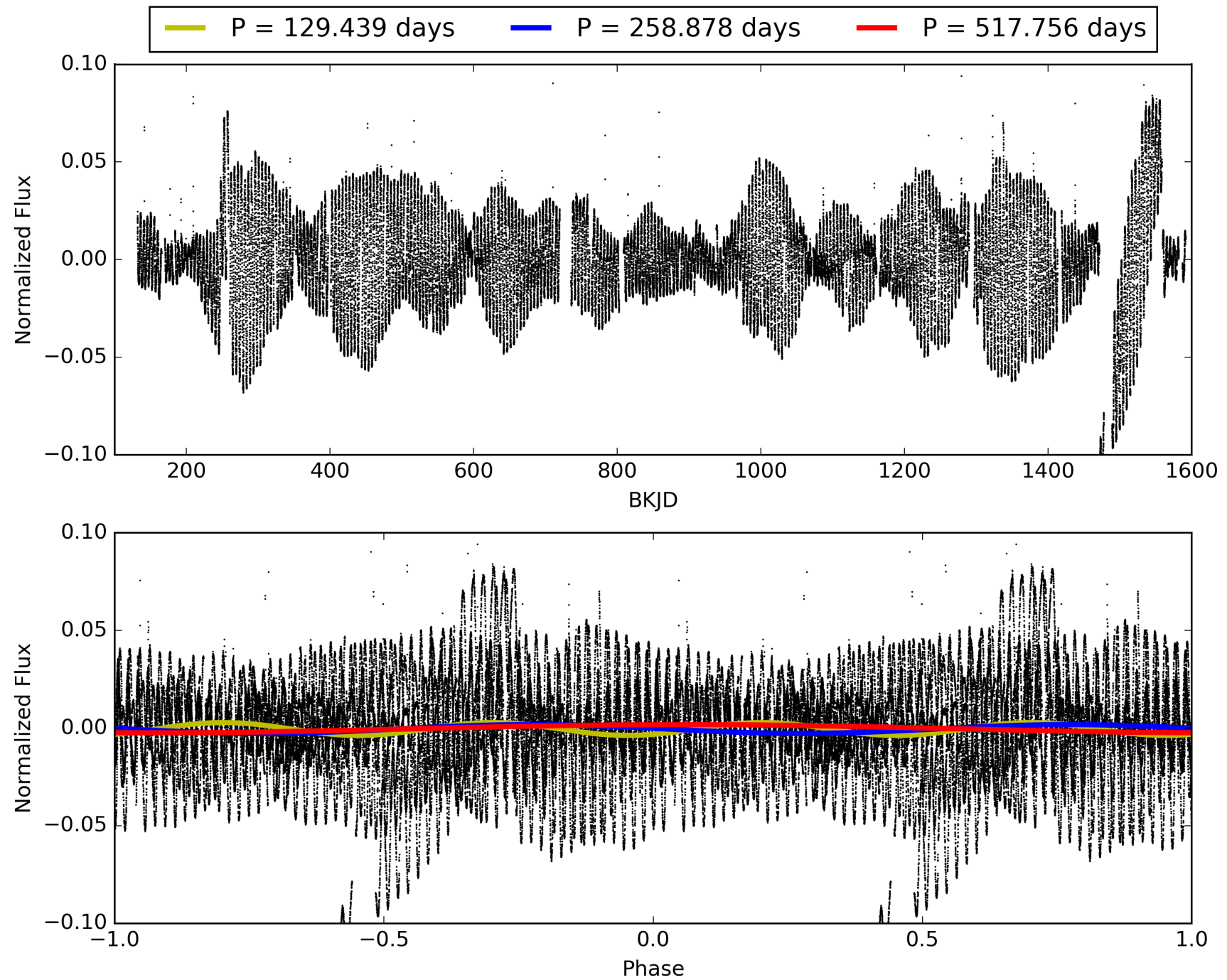
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010858030-05, PDC Light Curves

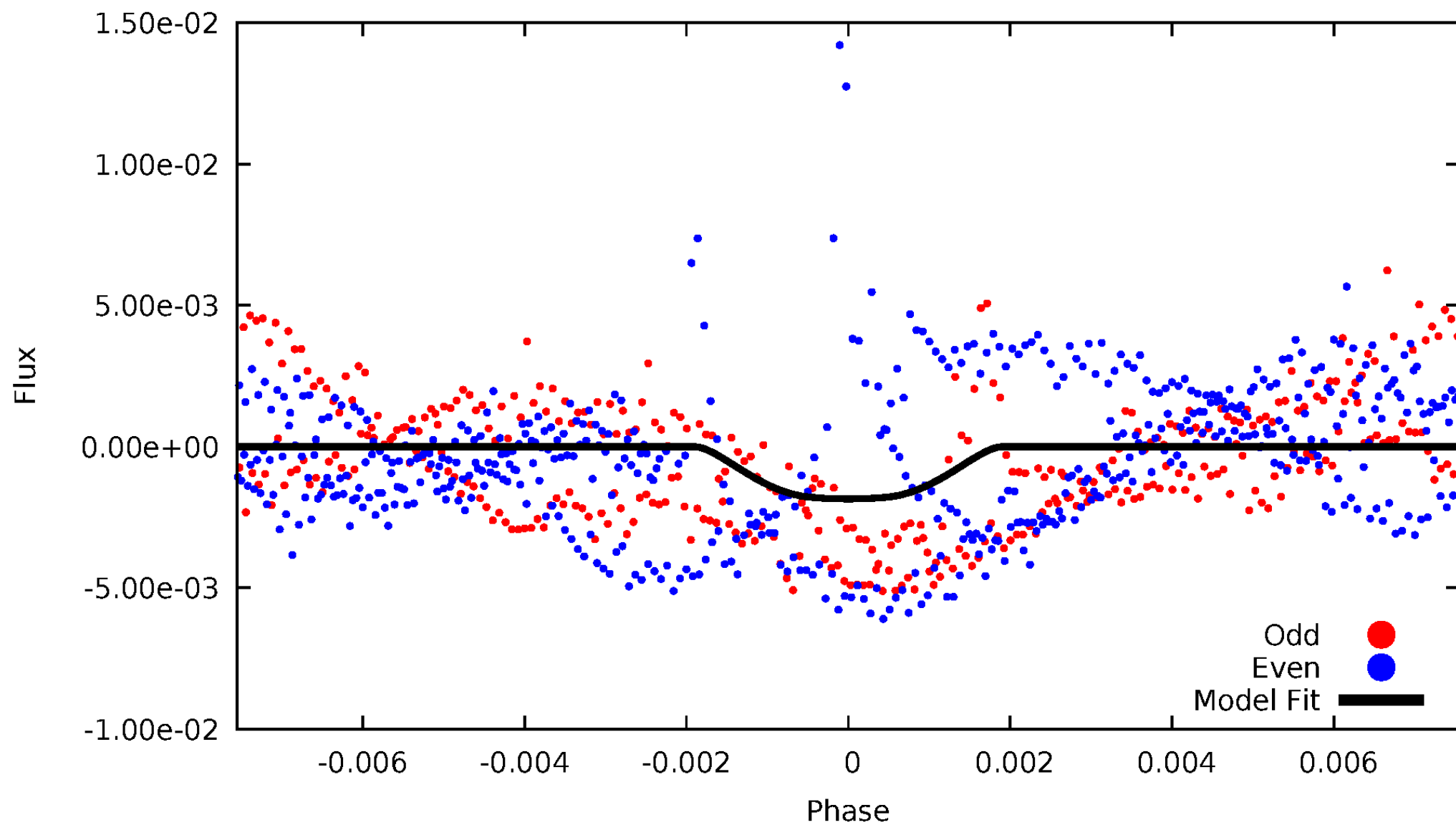


TCE 010858030-05



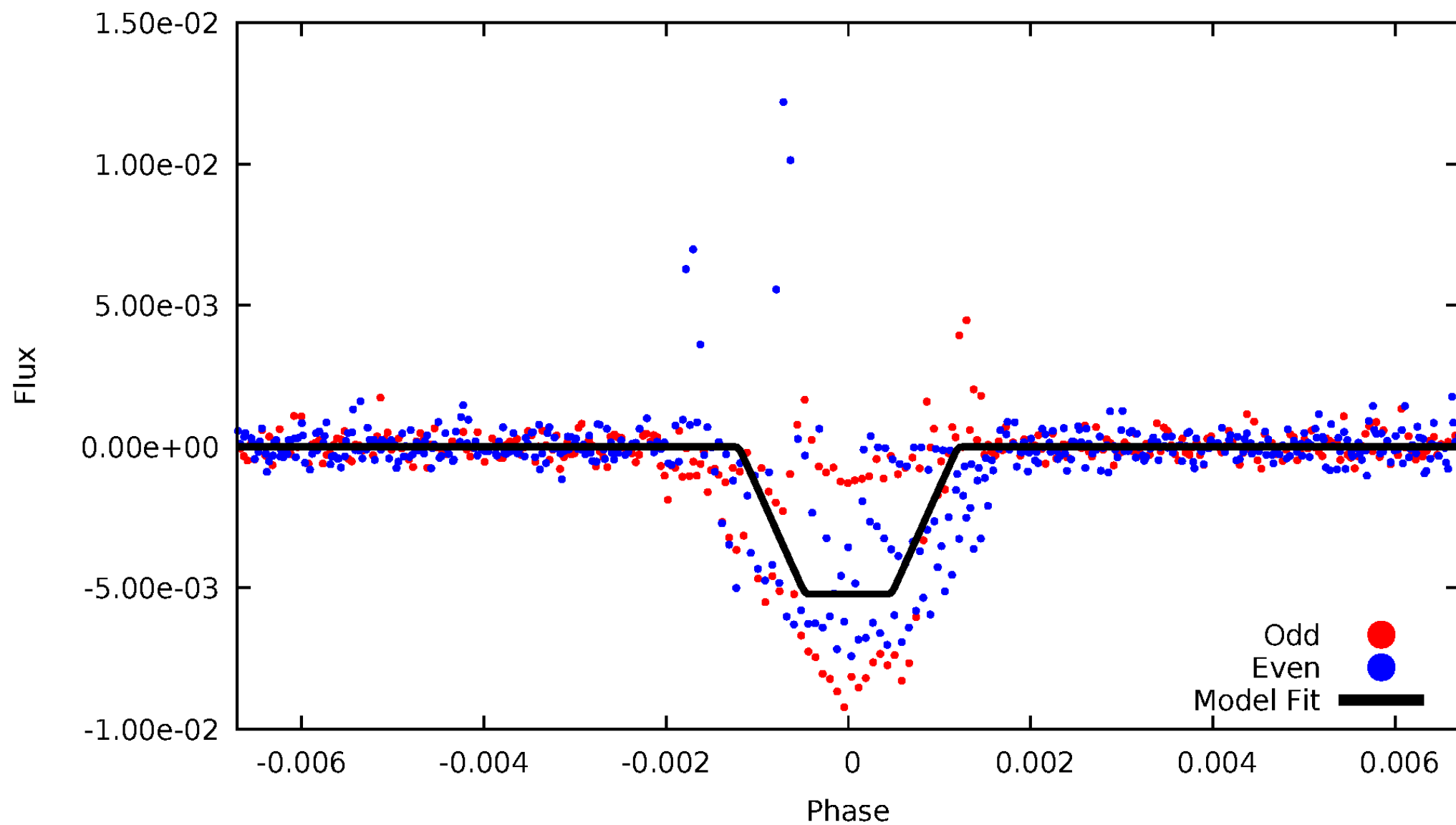
DV Odd/Even

TCE 010858030-05



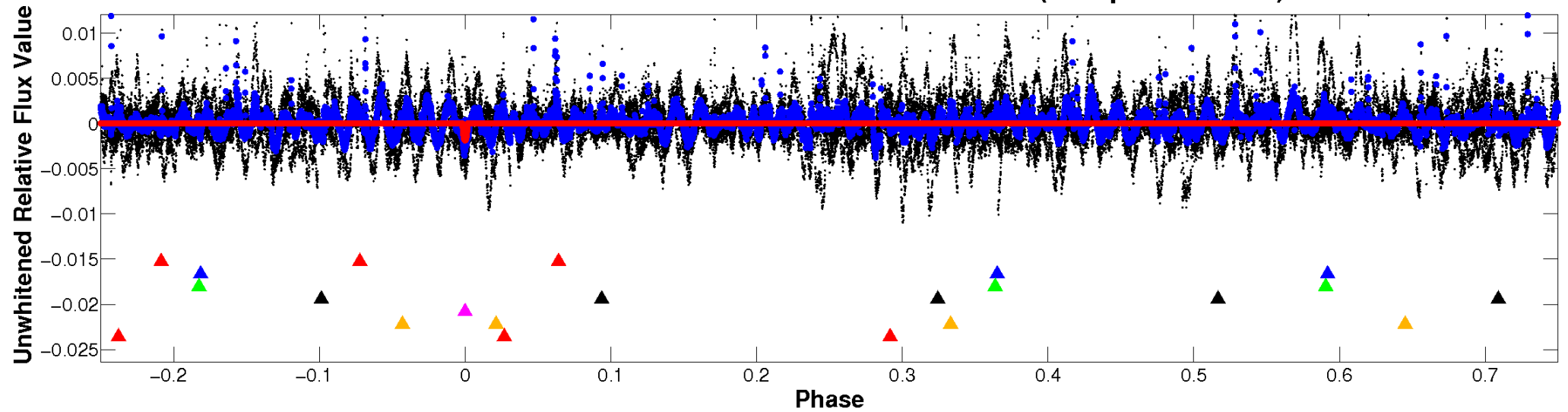
ALT Odd/Even

TCE 010858030-05

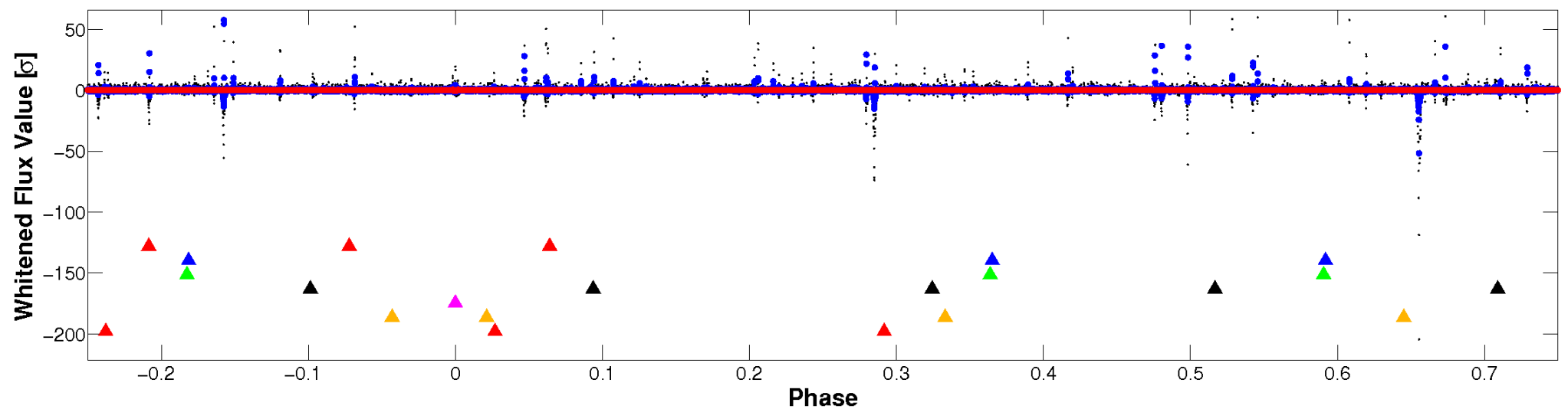


Non-Whitened Vs. Whitened Light Curve

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

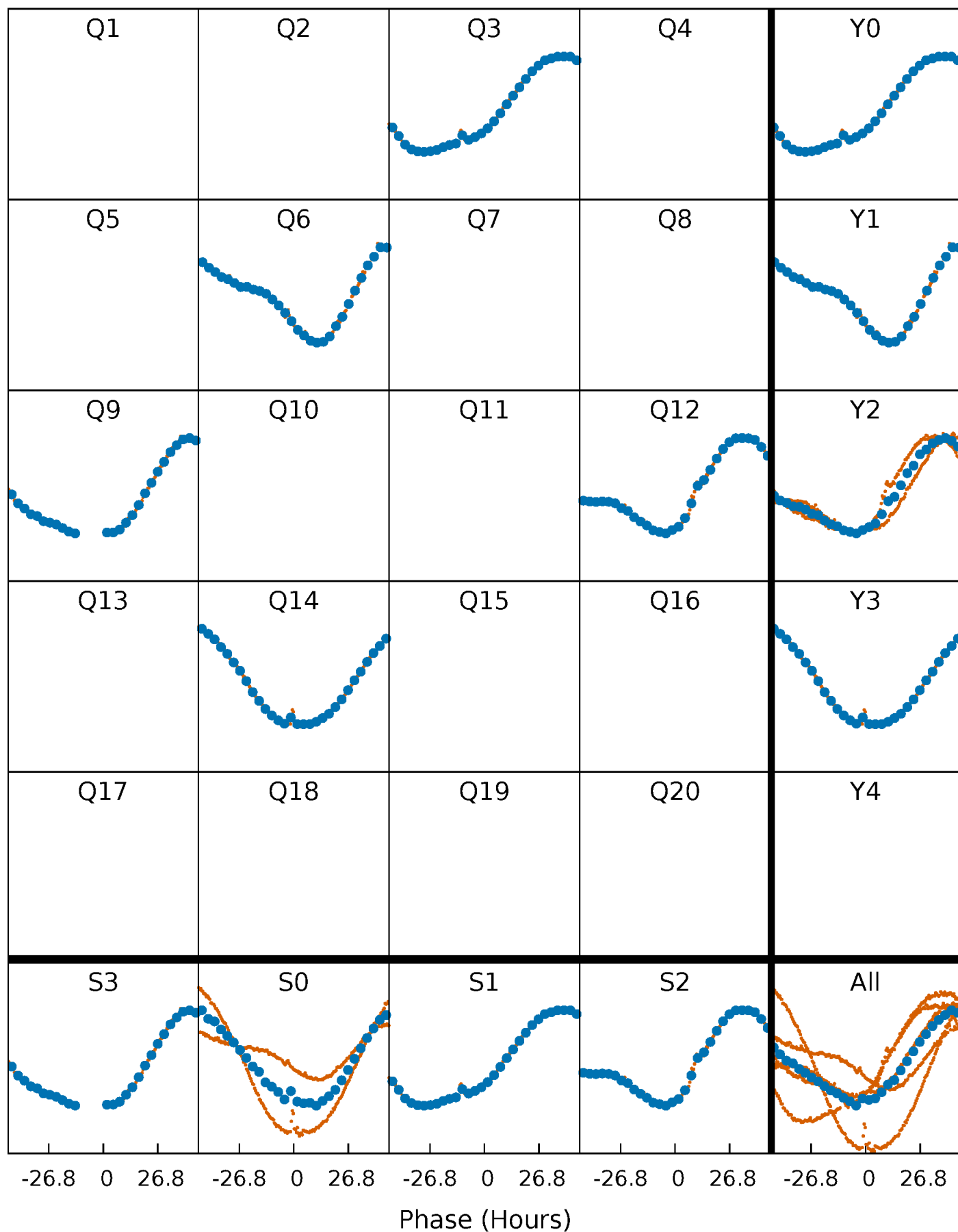


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



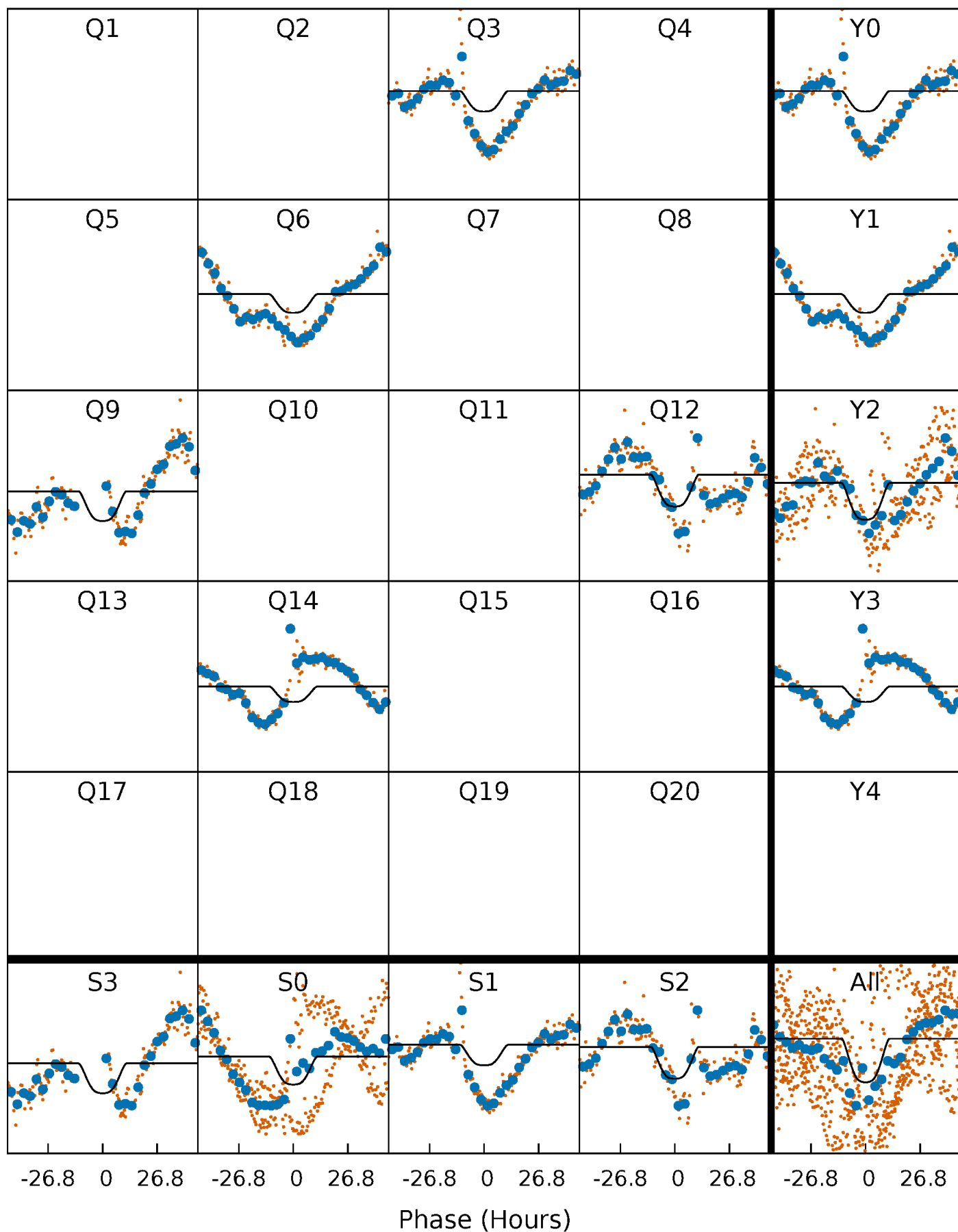
PDC Quarter-Phased Transit Curves

TCE 010858030-05 $P=258.877920$ Days $T_0=327.766599$ (BKJD)



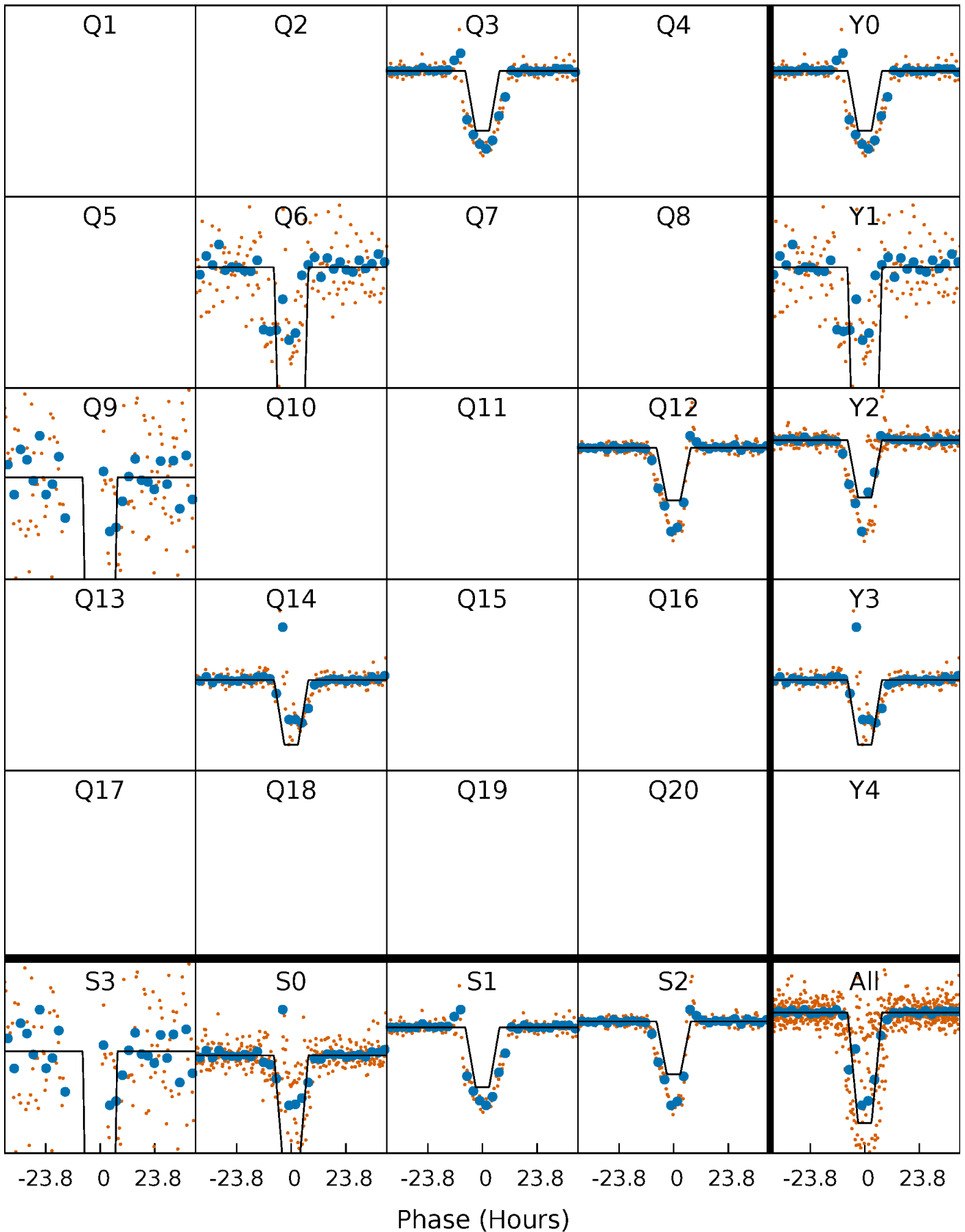
DV Quarter-Phased Transit Curves

TCE 010858030-05 $P=258.877920$ Days $T_0=327.766599$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

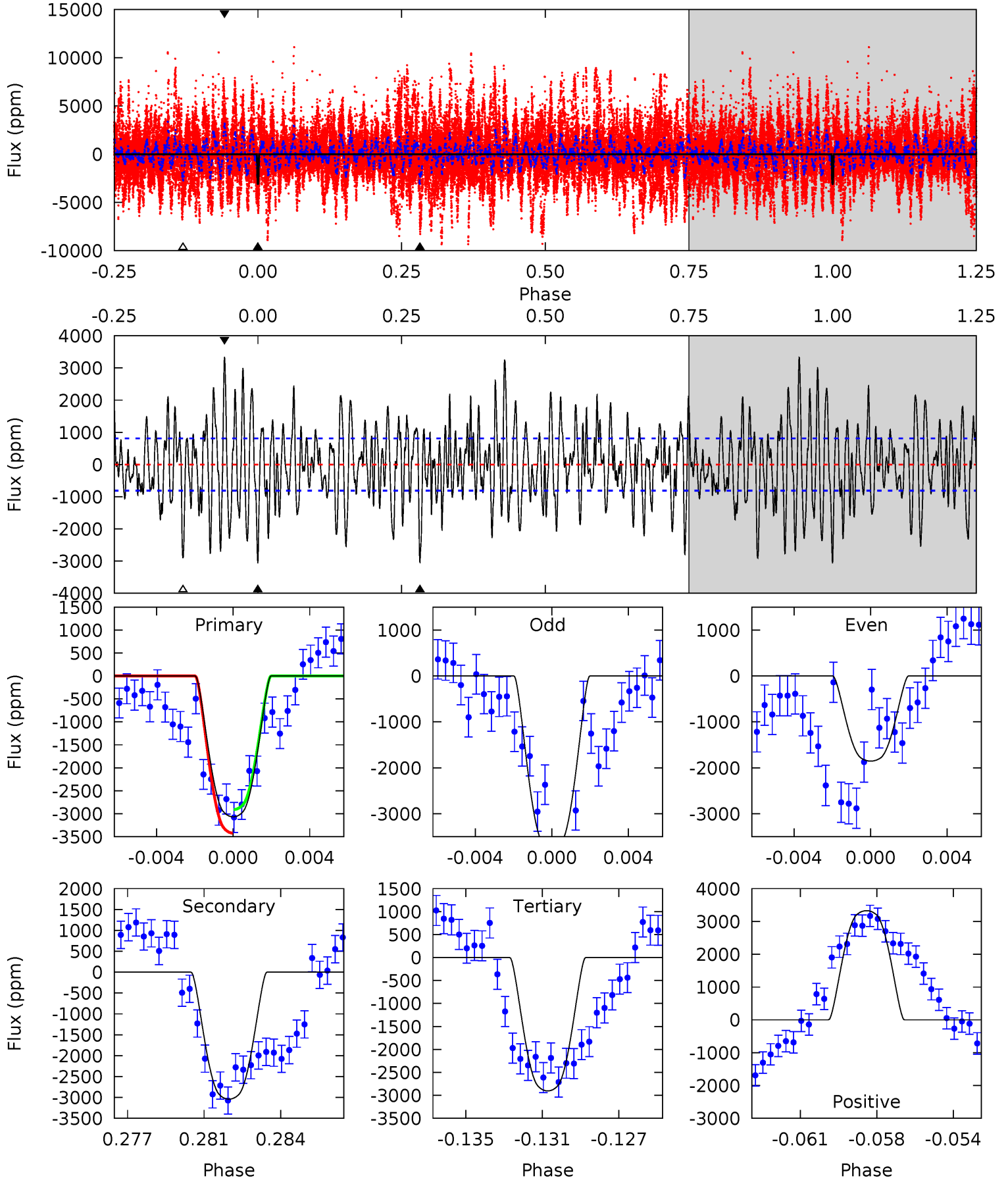
TCE 010858030-05 $P=258.927261$ Days $T_0=327.726392$ (BKJD)



DV Model-Shift Uniqueness Test

010858030-05, $P = 258.877920$ Days, $E = 68.888679$ Days

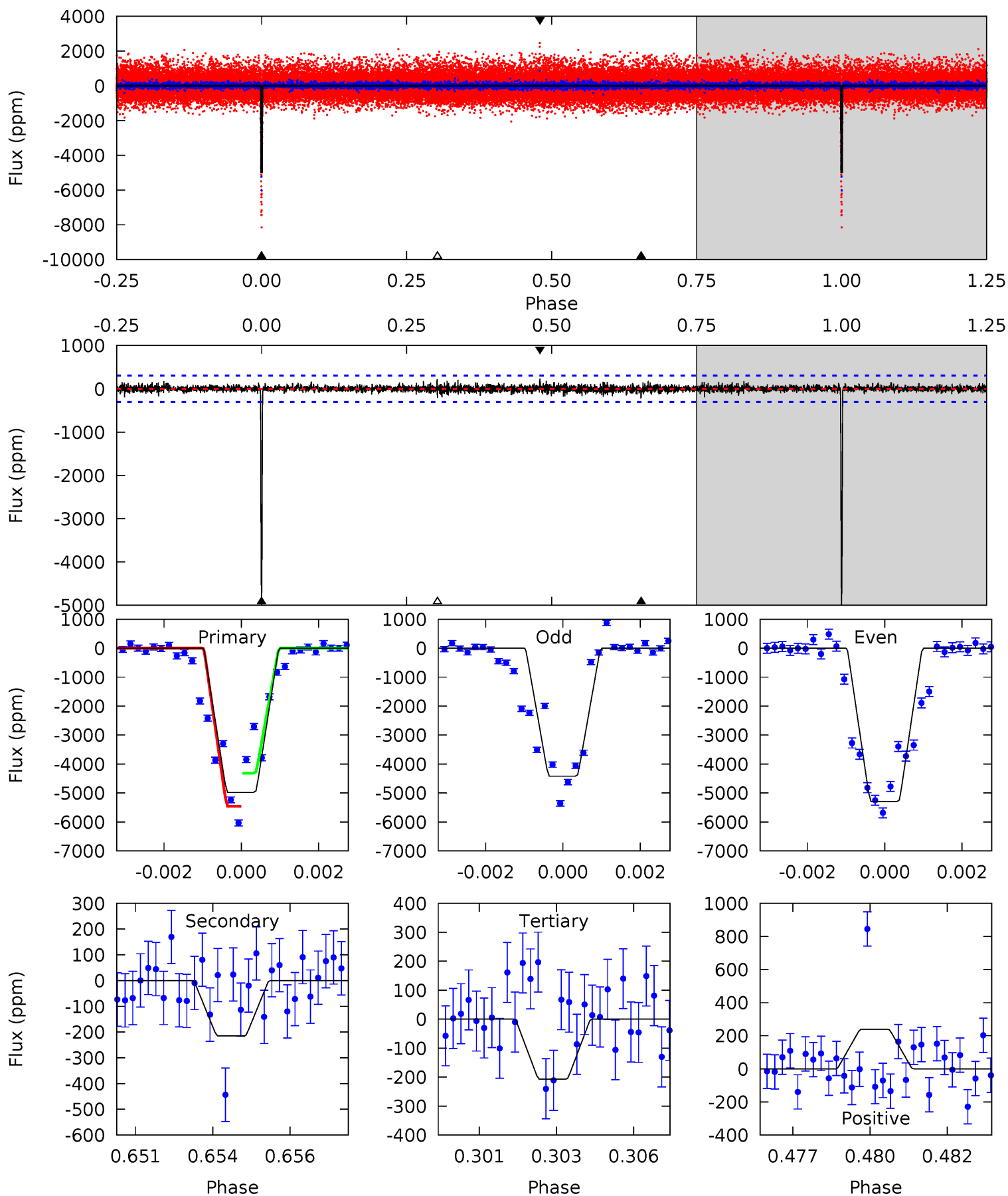
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	19.5	18.6	21.3	5.21	2.89	6.69	1.05	-1.66	0.88	-1.84	5.89	0.95	0.52	1.64



Alt Model-Shift Uniqueness Test

010858030-05, P = 258.927261 Days, E = 68.799131 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
86.7	3.74	3.61	4.16	5.29	3.03	0.79	83.1	82.6	0.13	-0.42	9.13	1.94	0.05	9.95



Stellar Parameters For KIC 010858030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4530^{+135}_{-135}	$4.653^{+0.054}_{-0.027}$	$-0.580^{+0.300}_{-0.300}$	$0.596^{+0.046}_{-0.051}$	$0.583^{+0.065}_{-0.038}$	$3.873^{+0.953}_{-0.466}$
	+3%/-3%	+1%/-1%	+52%/-52%	+8%/-9%	+11%/-7%	+25%/-12%
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 010858030-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3041 ± 156	$3.36^{+0.49}_{-0.53}$	263^{+10}_{-9}	4636^{+364}_{-263}	66032^{+26845}_{-15613}
Alt.	-215 ± 57	$4.66^{+0.52}_{-0.54}$	263^{+9}_{-9}	2727^{+133}_{-138}	2406^{+966}_{-744}

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

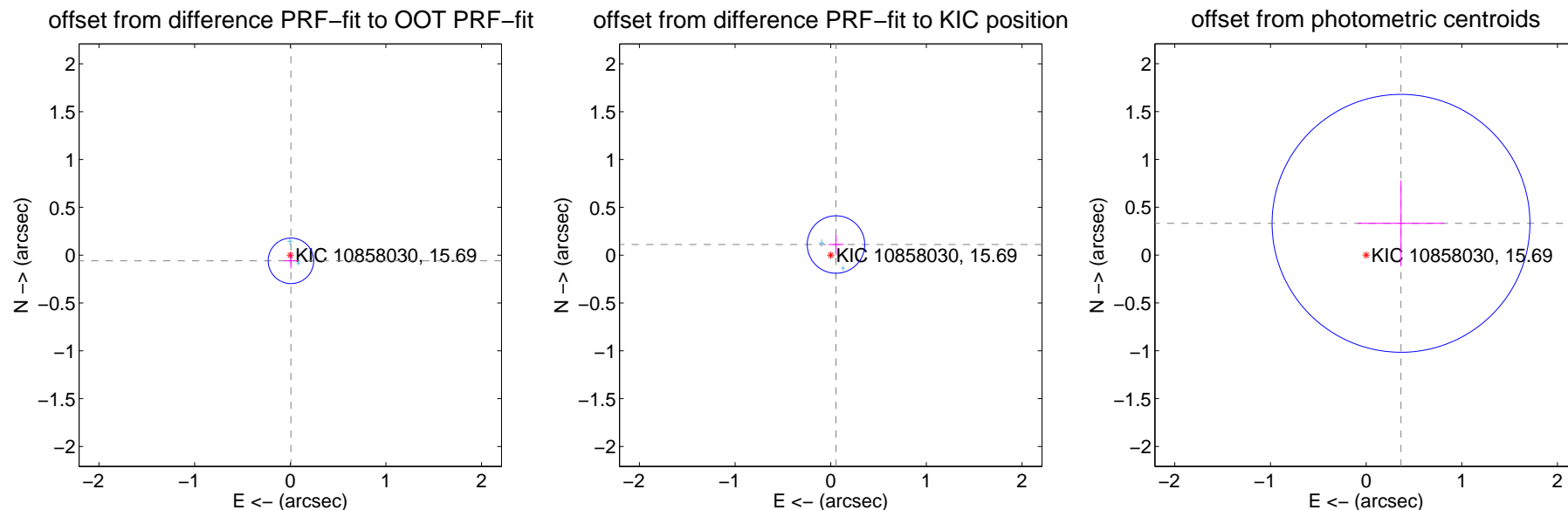
DV Centroid Data

Supplemental centroid analysis for 010858030-05. Kepler magnitude: 15.69. Transit SNR 4.50

There are 3 quarters with good PRF difference image offsets

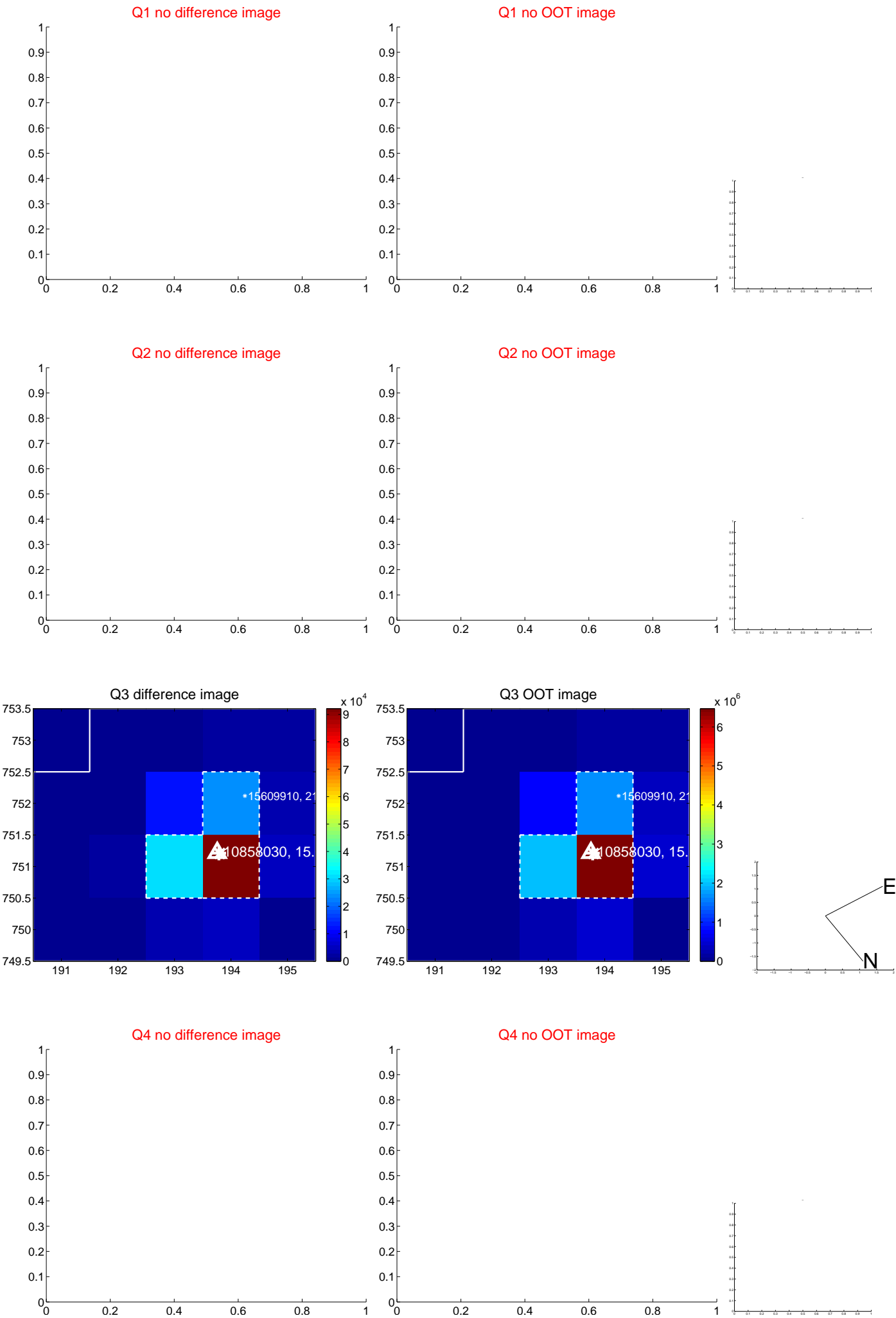
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.060 ± 0.079	0.75	-0.007 ± 0.072	-0.059 ± 0.079
PRF-fit source offset from KIC position	0.124 ± 0.100	1.24	-0.055 ± 0.078	0.111 ± 0.105
photometric centroid source offset	0.49 ± 0.45	1.10	-0.36 ± 0.45	0.33 ± 0.45

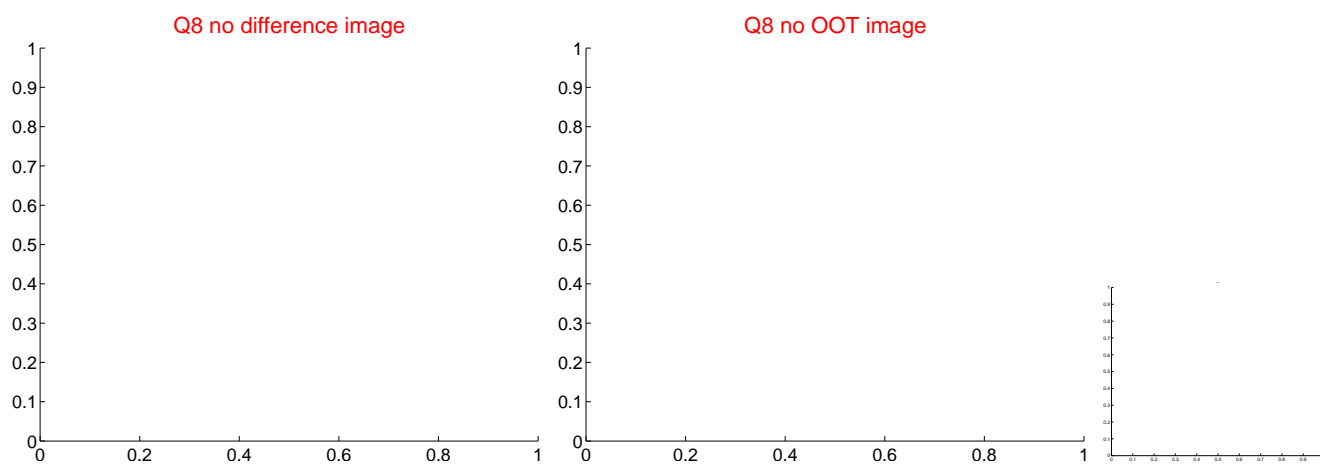
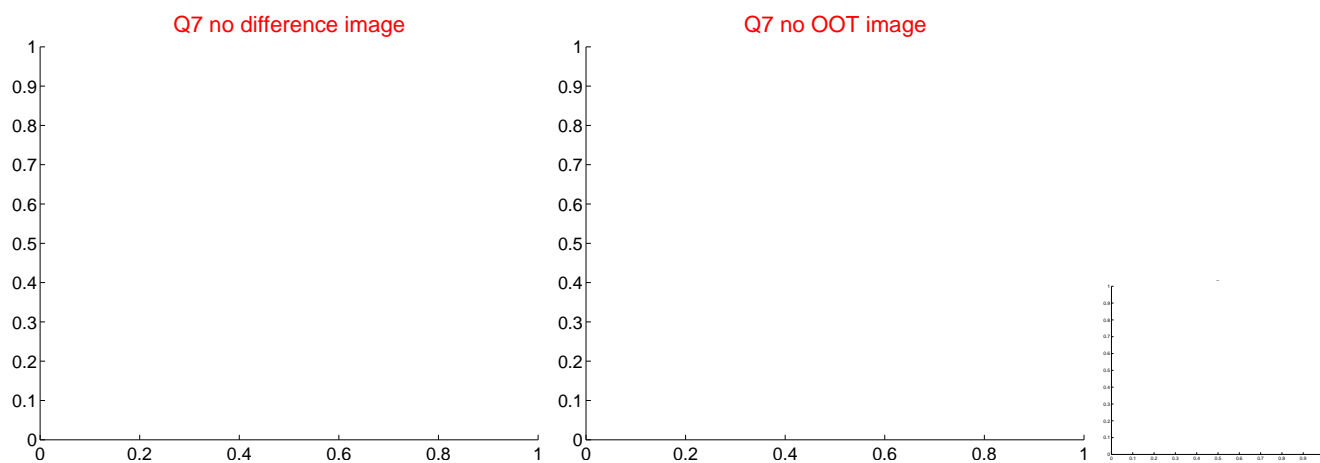
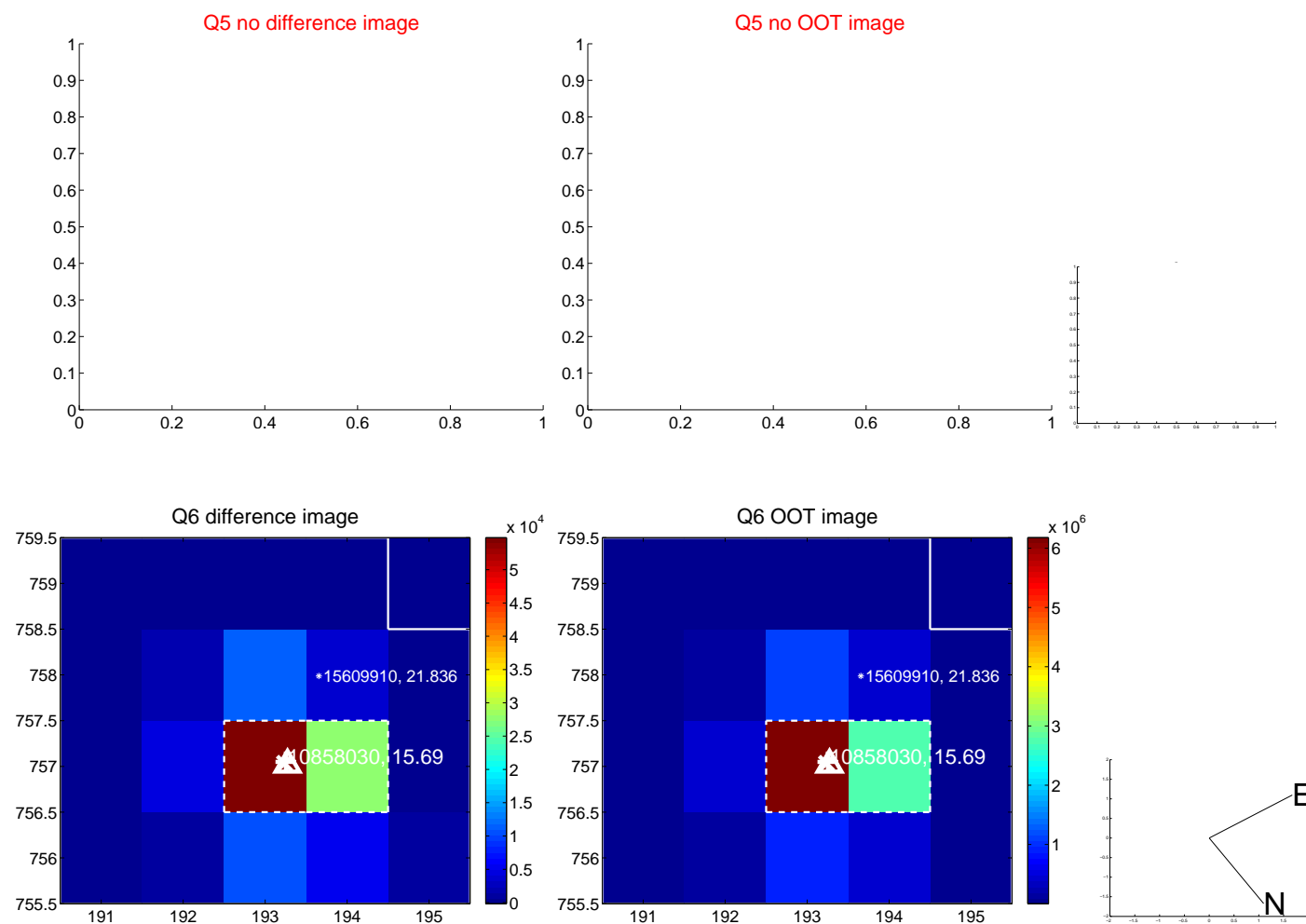


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

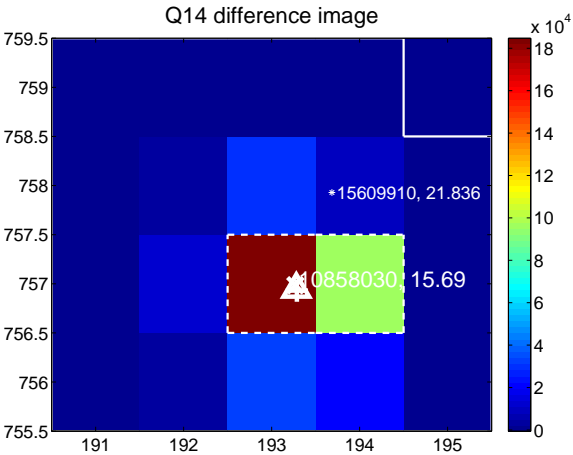
Q13 no difference image



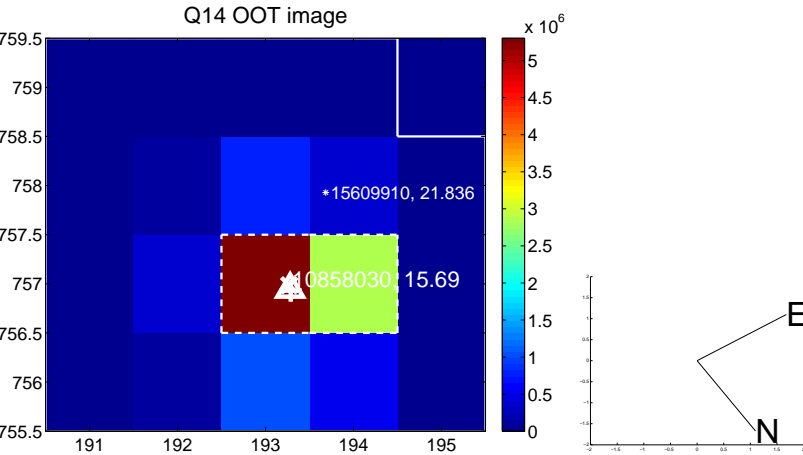
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



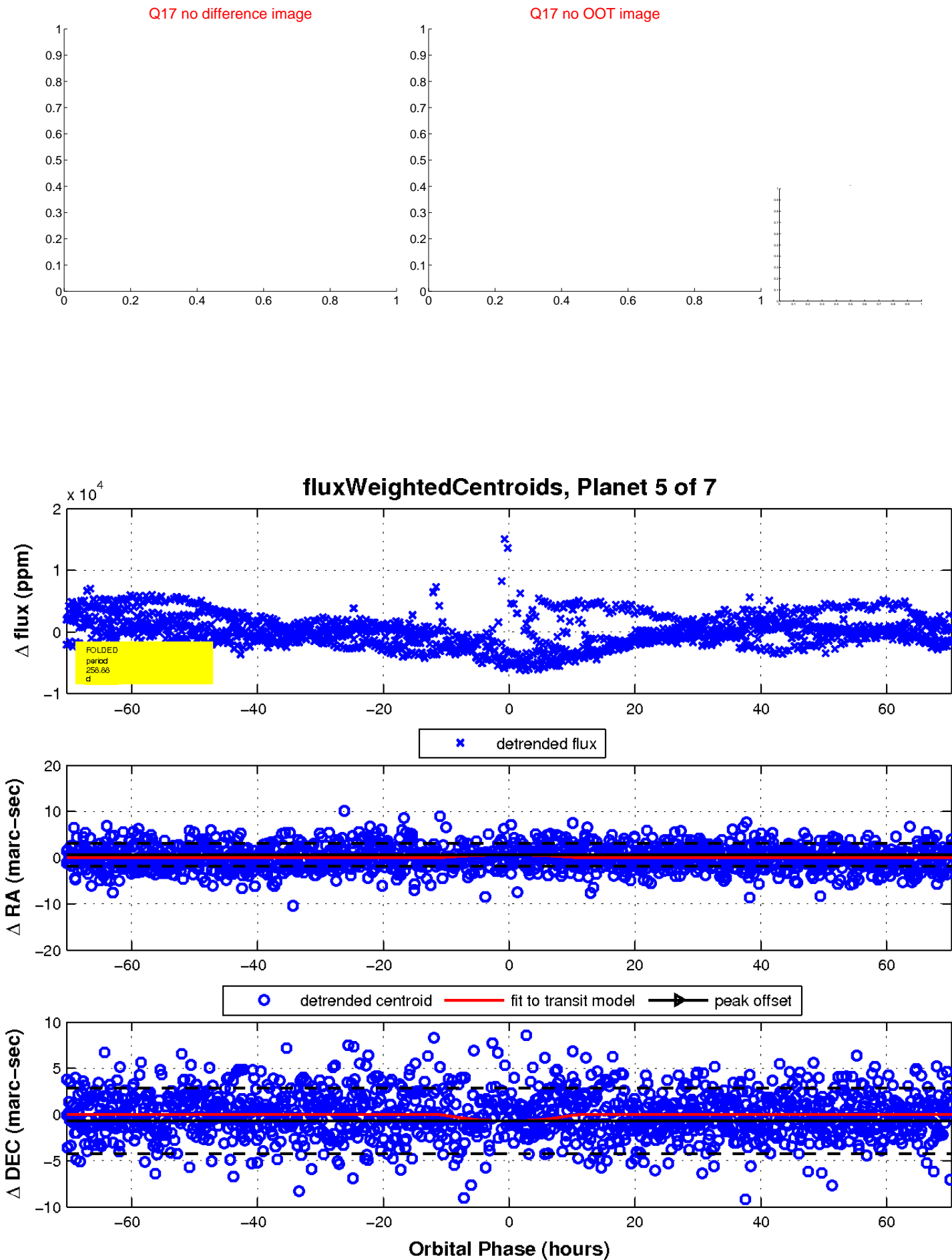
Q16 no difference image



Q16 no OOT image

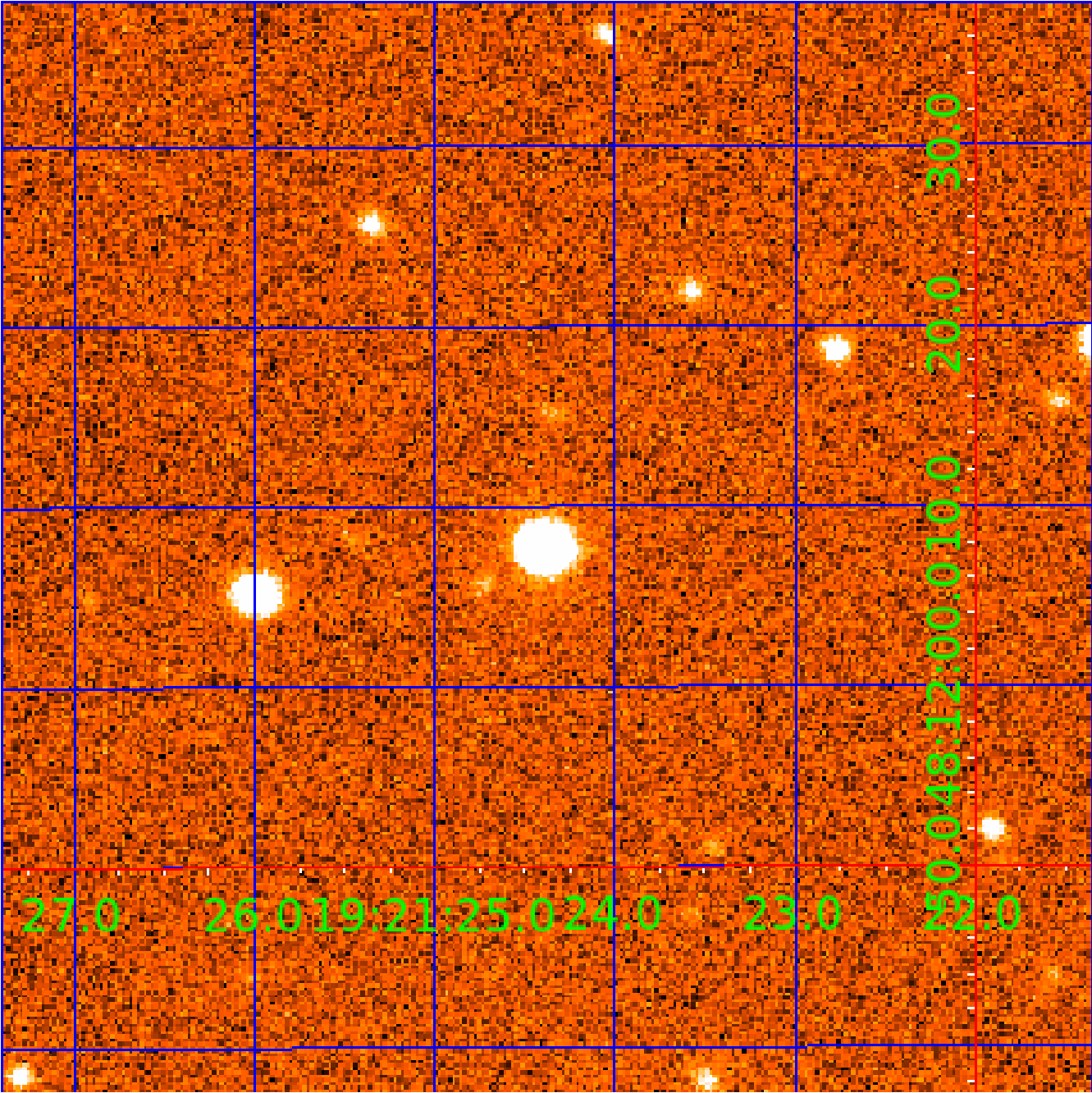


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010858030

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})
010858030-01	OBS	No	482.455420	603.257738	1595.6	4.860	12.4	5.8	0.60	4530	2.31	0.13
010858030-02	OBS	No	576.438242	163.433490	772.6	1.127	12.2	2.7	0.60	4530	1.70	0.10
010858030-03	OBS	No	576.474259	163.065402	1611.8	6.457	12.1	6.2	0.60	4530	2.49	0.10
010858030-04	OBS	No	308.671336	152.860393	953.4	9.719	10.7	4.7	0.60	4530	1.94	0.24
010858030-05	OBS	No	258.877920	327.766599	1852.1	23.450	10.3	4.5	0.60	4530	3.35	0.30
010858030-06	OBS	No	339.629885	333.266083	1138.7	2.527	10.6	5.3	0.60	4530	2.01	0.21
010858030-07	OBS	No	449.217591	403.281317	1725.3	7.086	10.0	7.2	0.60	4530	2.46	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010858030-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
010858030-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
010858030-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
010858030-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

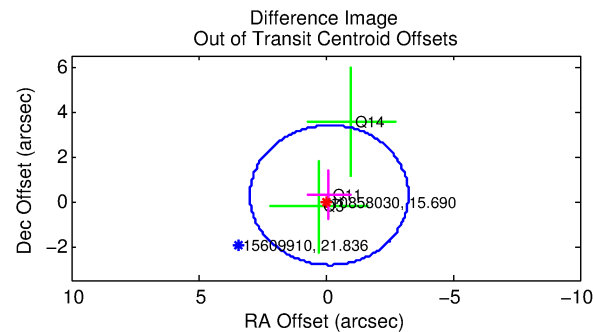
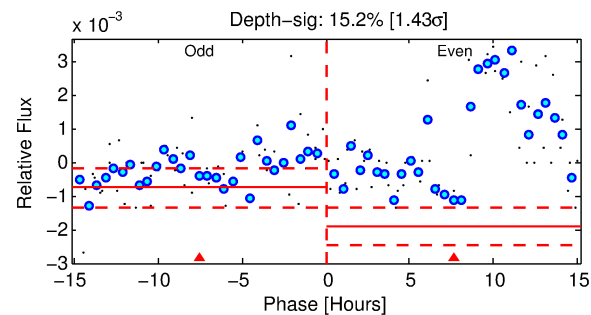
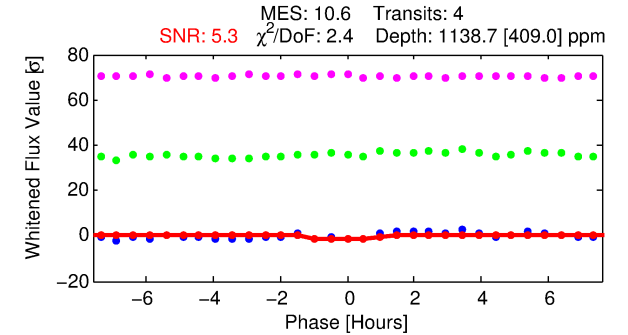
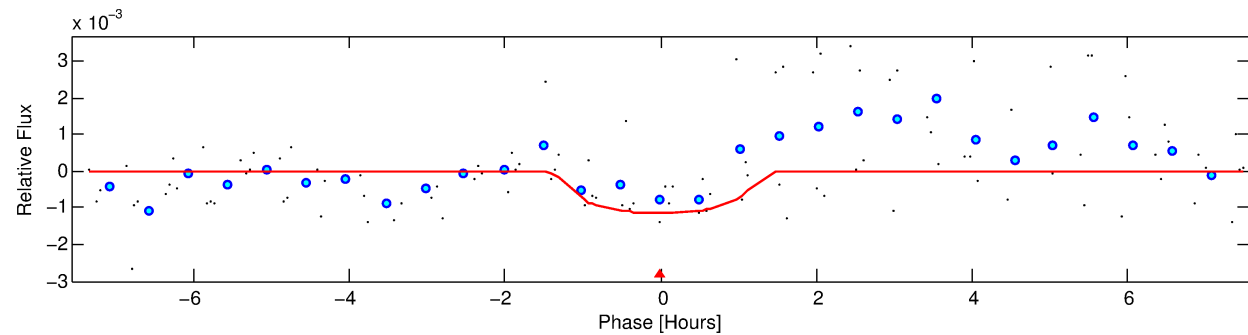
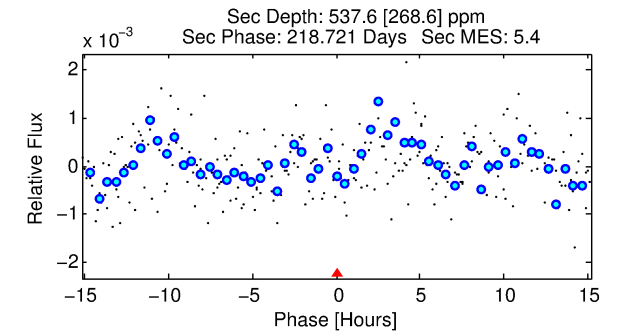
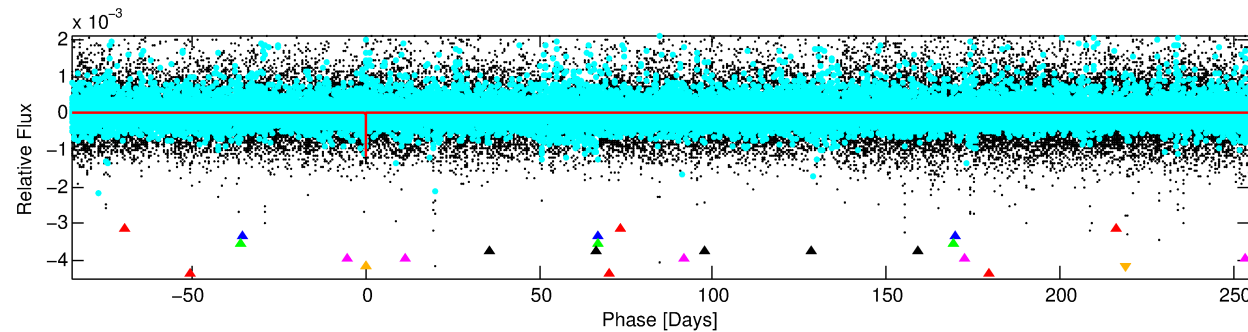
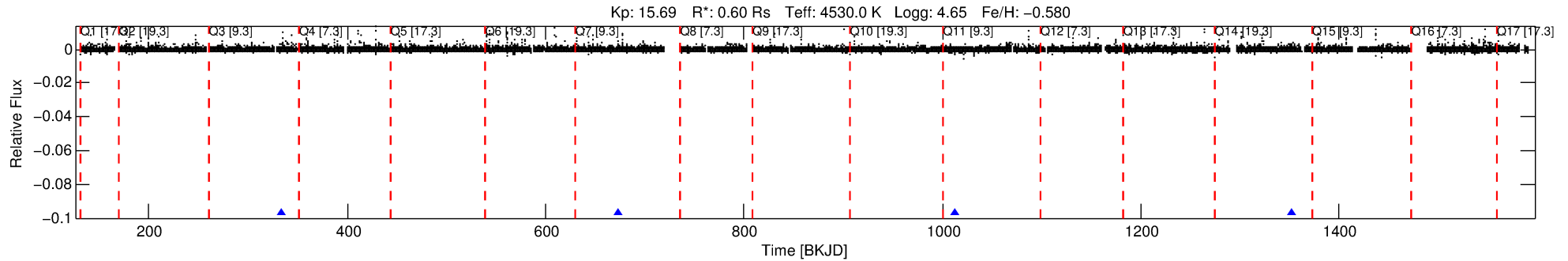
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010858030-06

No Significant Match Found

DV One-Page Summary

KIC: 10858030 Candidate: 6 of 7 Period: 339.630 d



DV Fit Results:

Period = 339.62988 [0.00811] d
Epoch = 333.2661 [0.0140] BKJD
Rp/R* = 0.0309 [0.1820]
a/R* = 944.58 [17734.16]
b = 0.47 [32.36]
Seff = 0.21 [0.03]
Teq = 173 [7] K
Rp = 2.01 [11.84] Re
a = 0.7959 [0.0561] AU
Ag = 46287.99 [545230.74] [0.08σ]
Teffp = 3922 [11549] K [0.32σ]

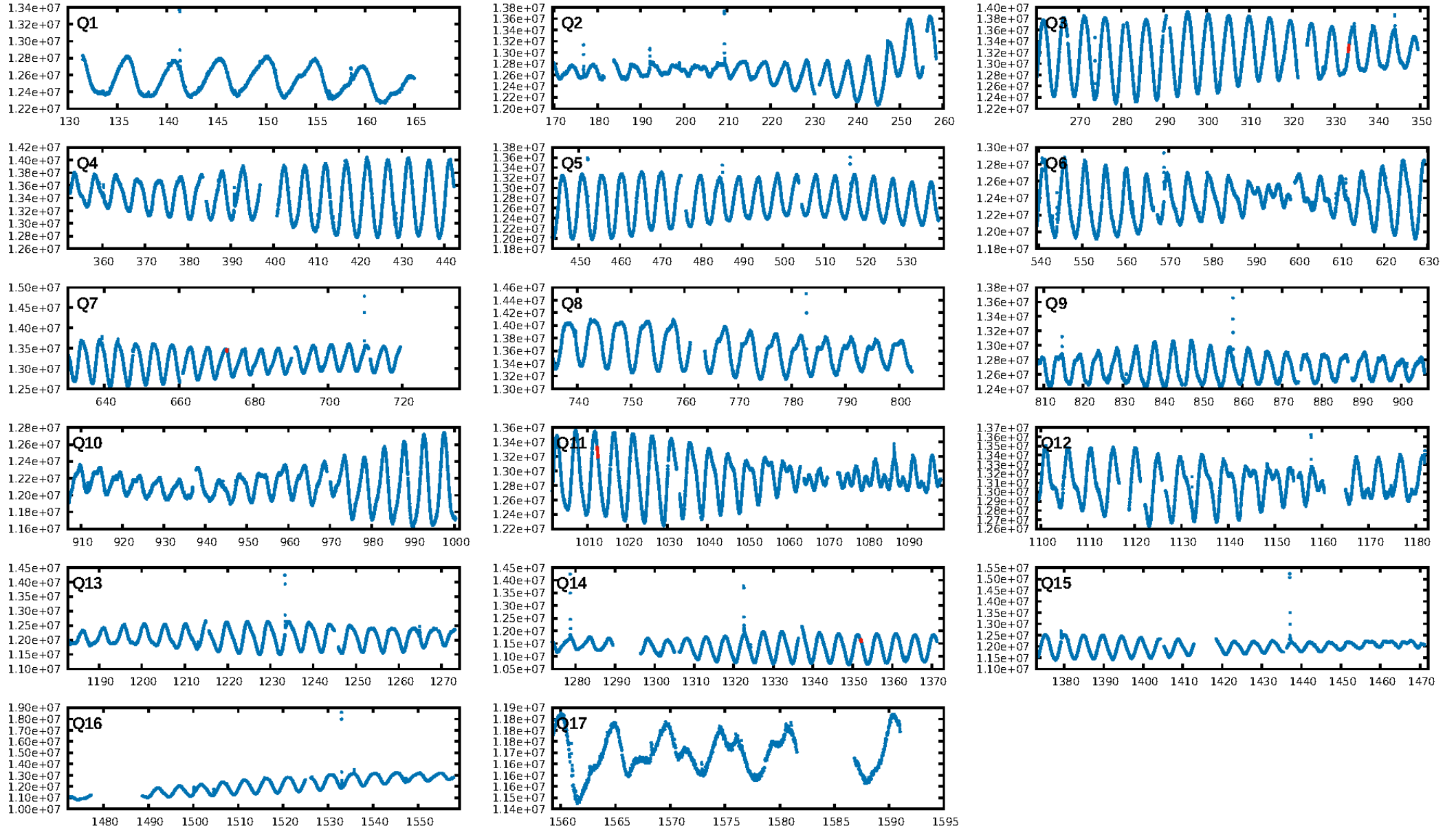
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [73.99σ]
LongPeriod-sig: 100.0% [349.61σ]
ModelChiSquare2-sig: 1.2%
ModelChiSquareGof-sig: 61.4%
Bootstrap-pfa: 4.07e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.2795
Centroid-sig: 77.1%
Centroid-so: 0.517 arcsec [0.33σ]
OotOffset-rm: 0.310 arcsec [0.30σ]
KicOffset-rm: 0.313 arcsec [0.33σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [4/4]

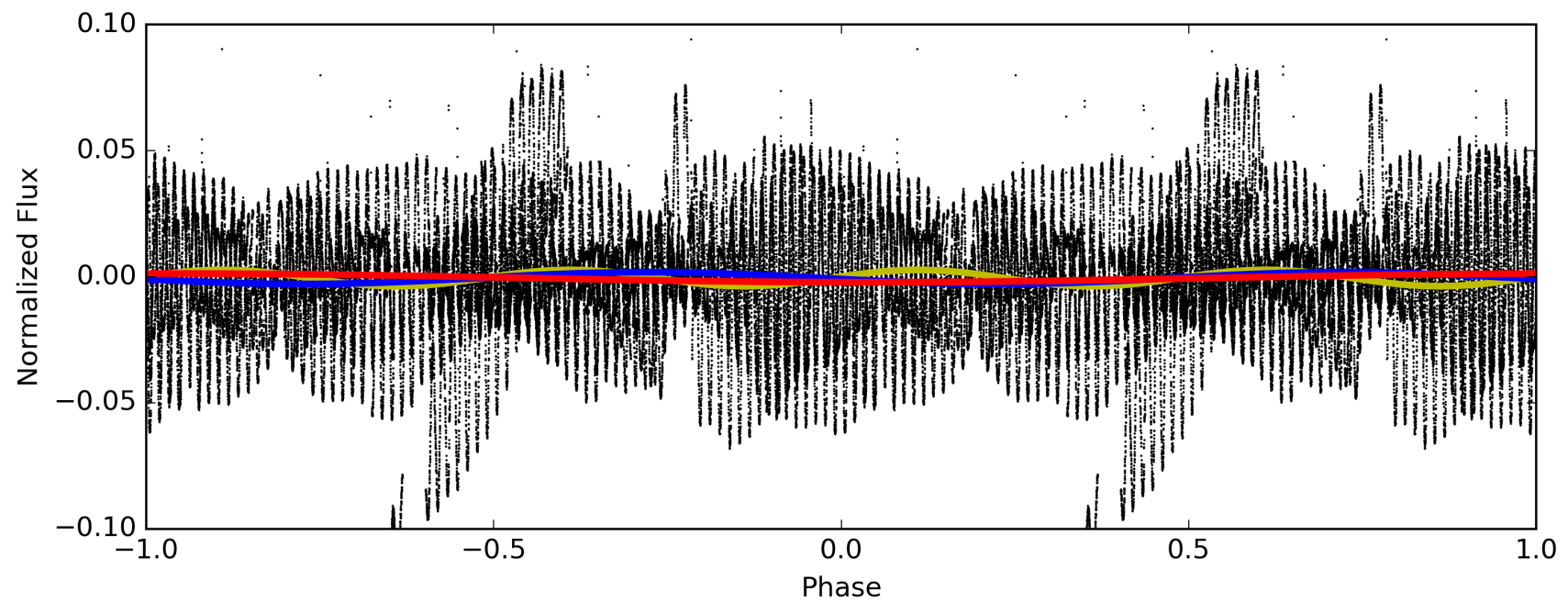
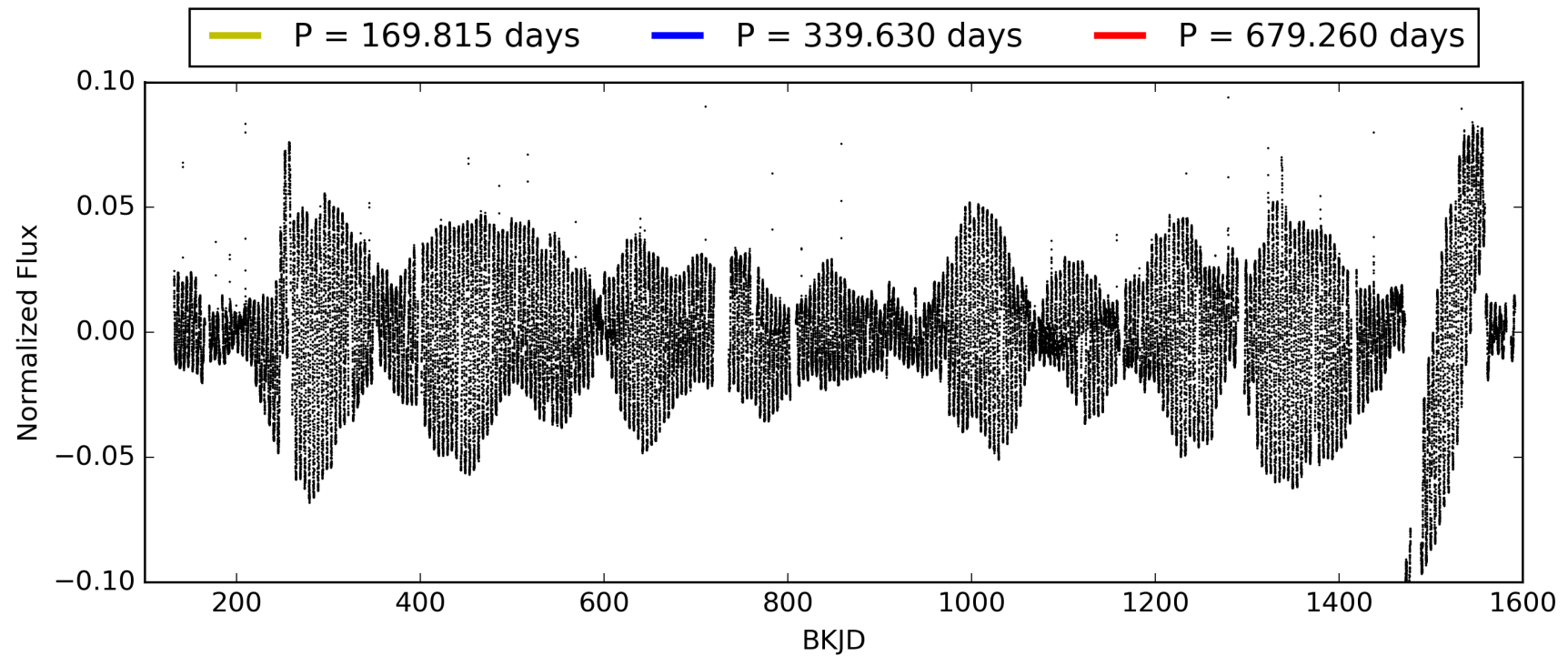
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:37 Z

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

TCE 010858030-06, PDC Light Curves

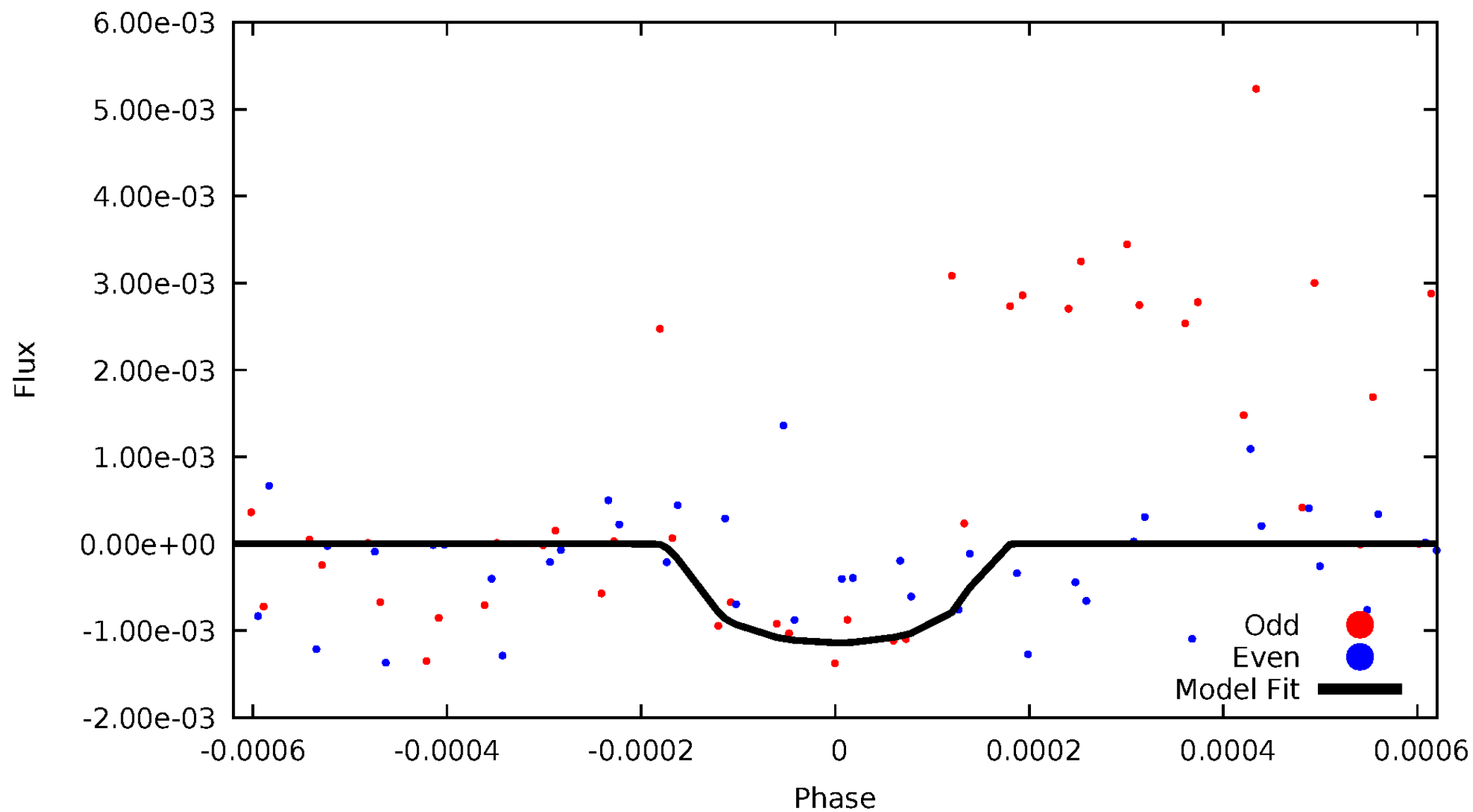


TCE 010858030-06



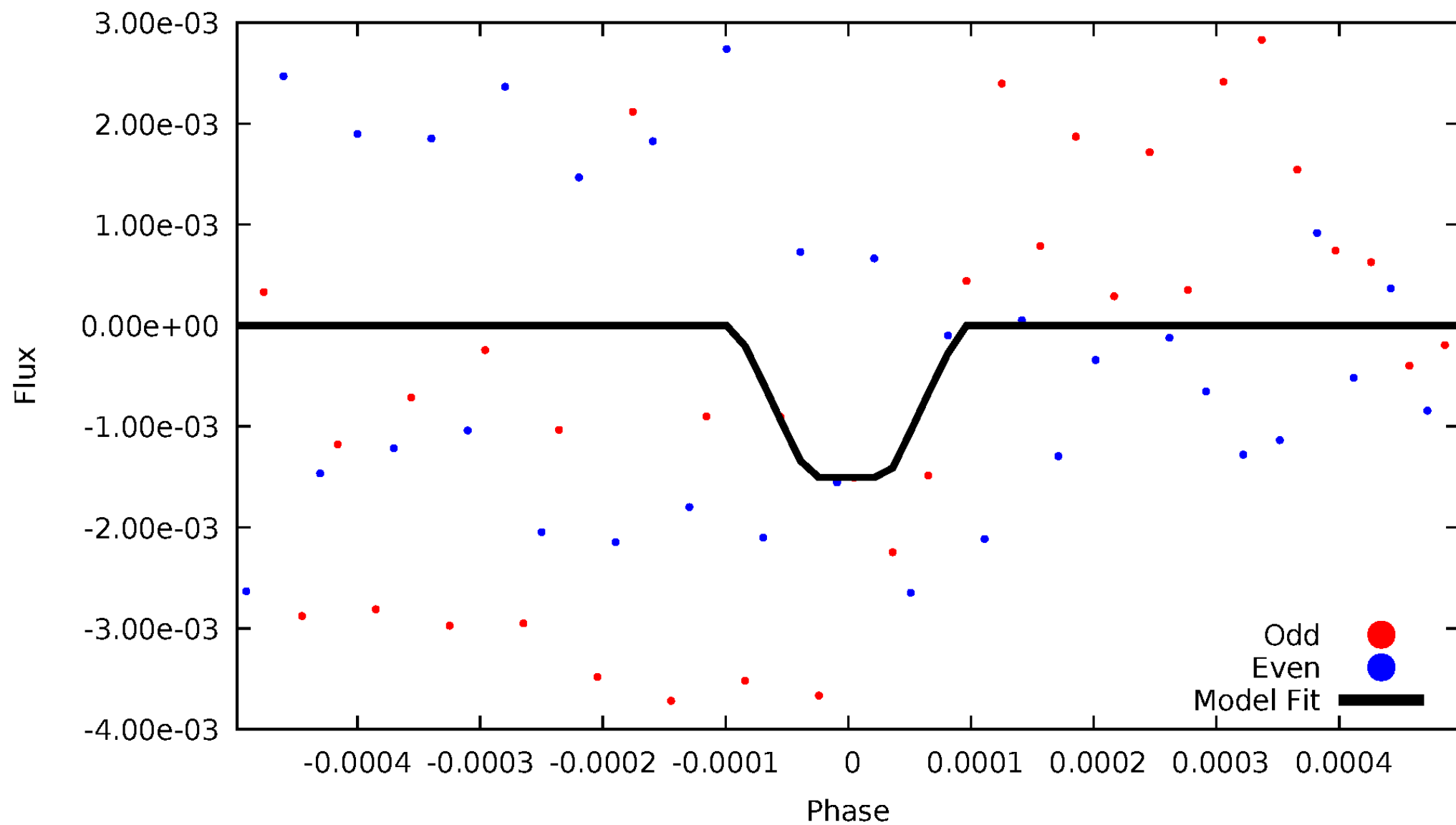
DV Odd/Even

TCE 010858030-06



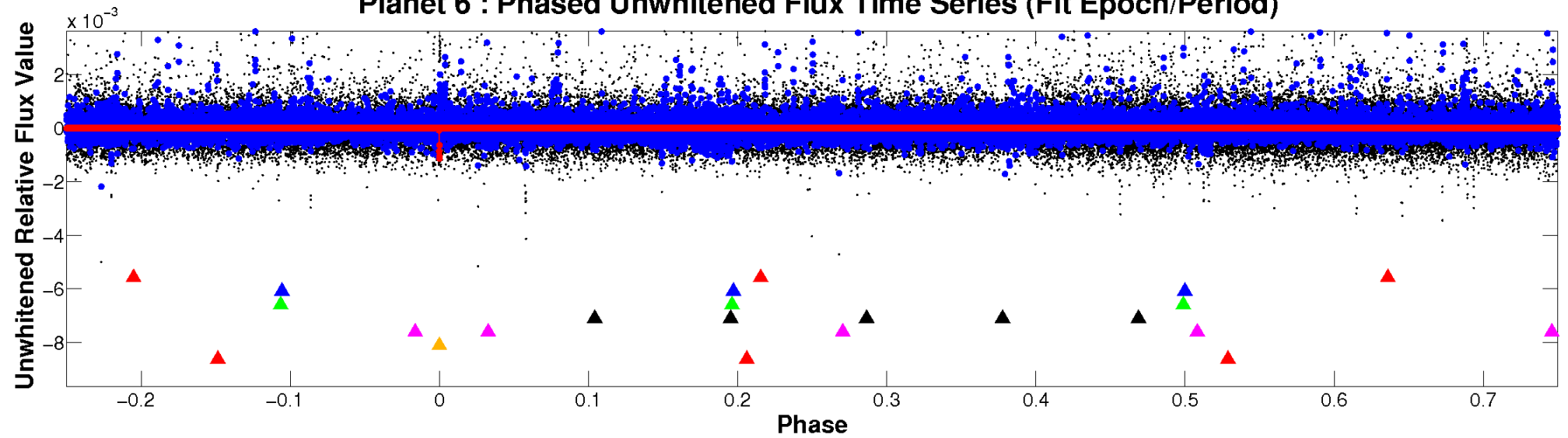
ALT Odd/Even

TCE 010858030-06

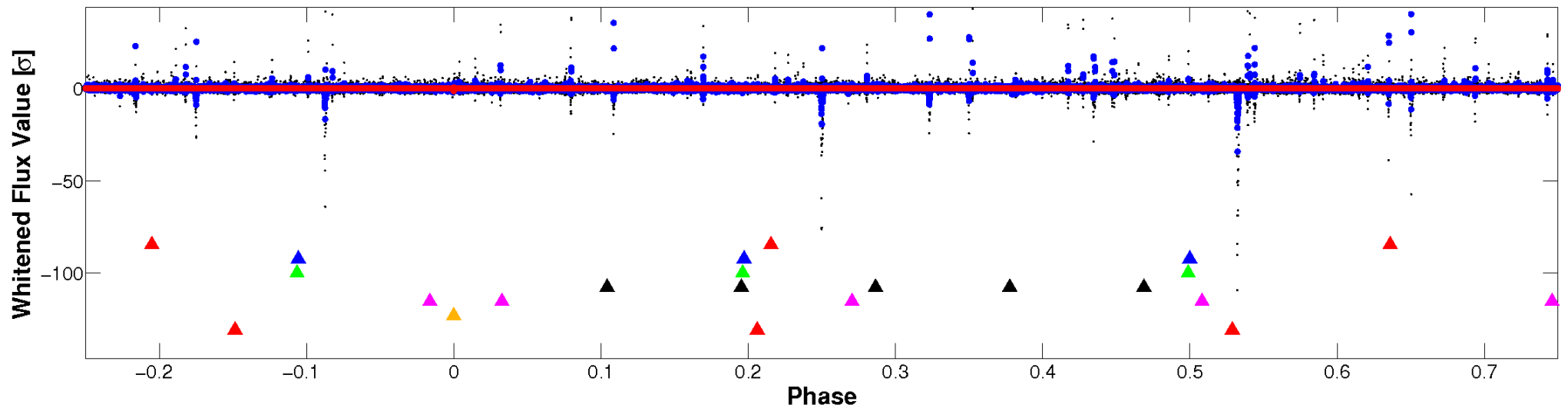


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

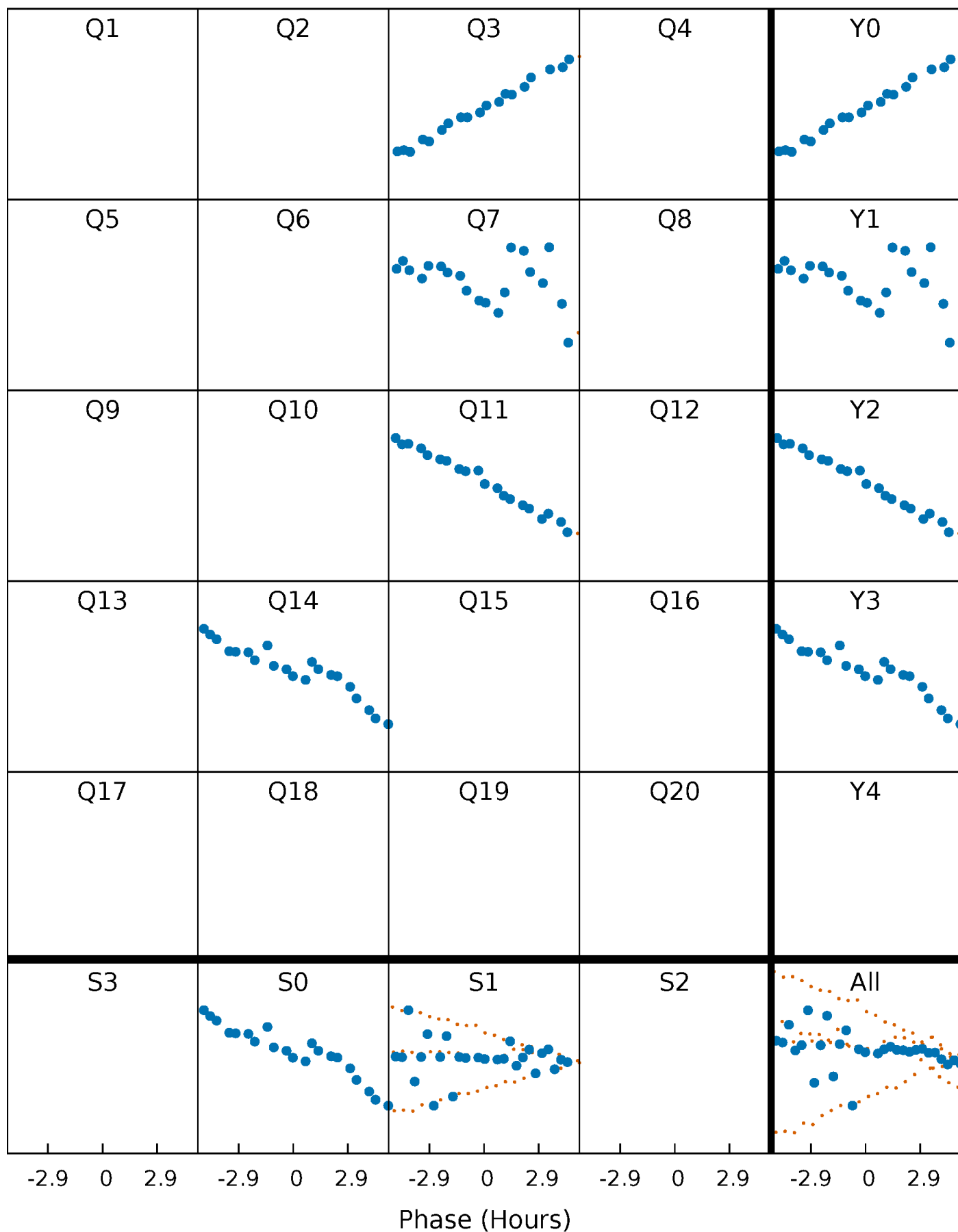


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



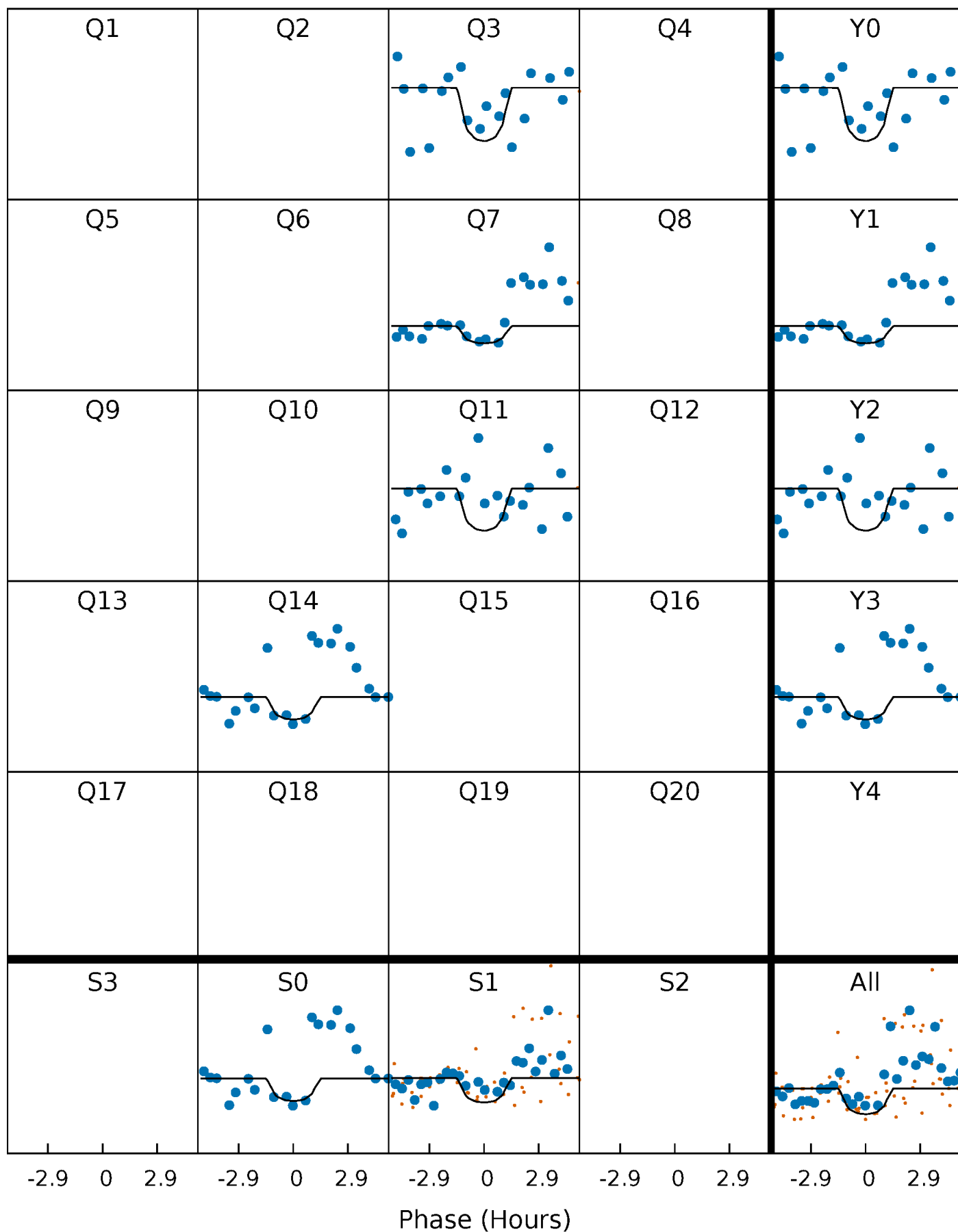
PDC Quarter-Phased Transit Curves

TCE 010858030-06 P=339.629885 Days $T_0=333.266083$ (BKJD)



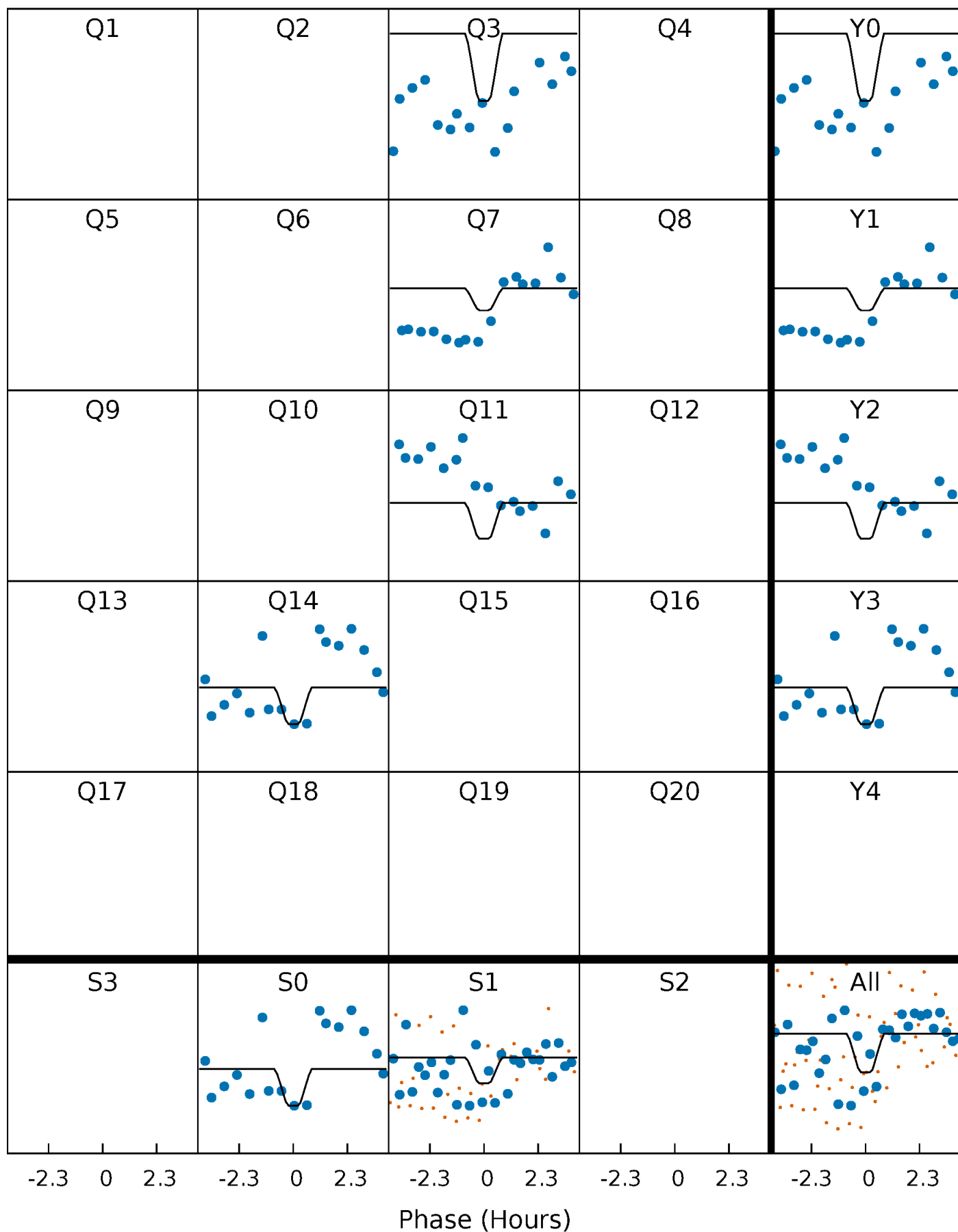
DV Quarter-Phased Transit Curves

TCE 010858030-06 $P=339.629885$ Days $T_0=333.266083$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

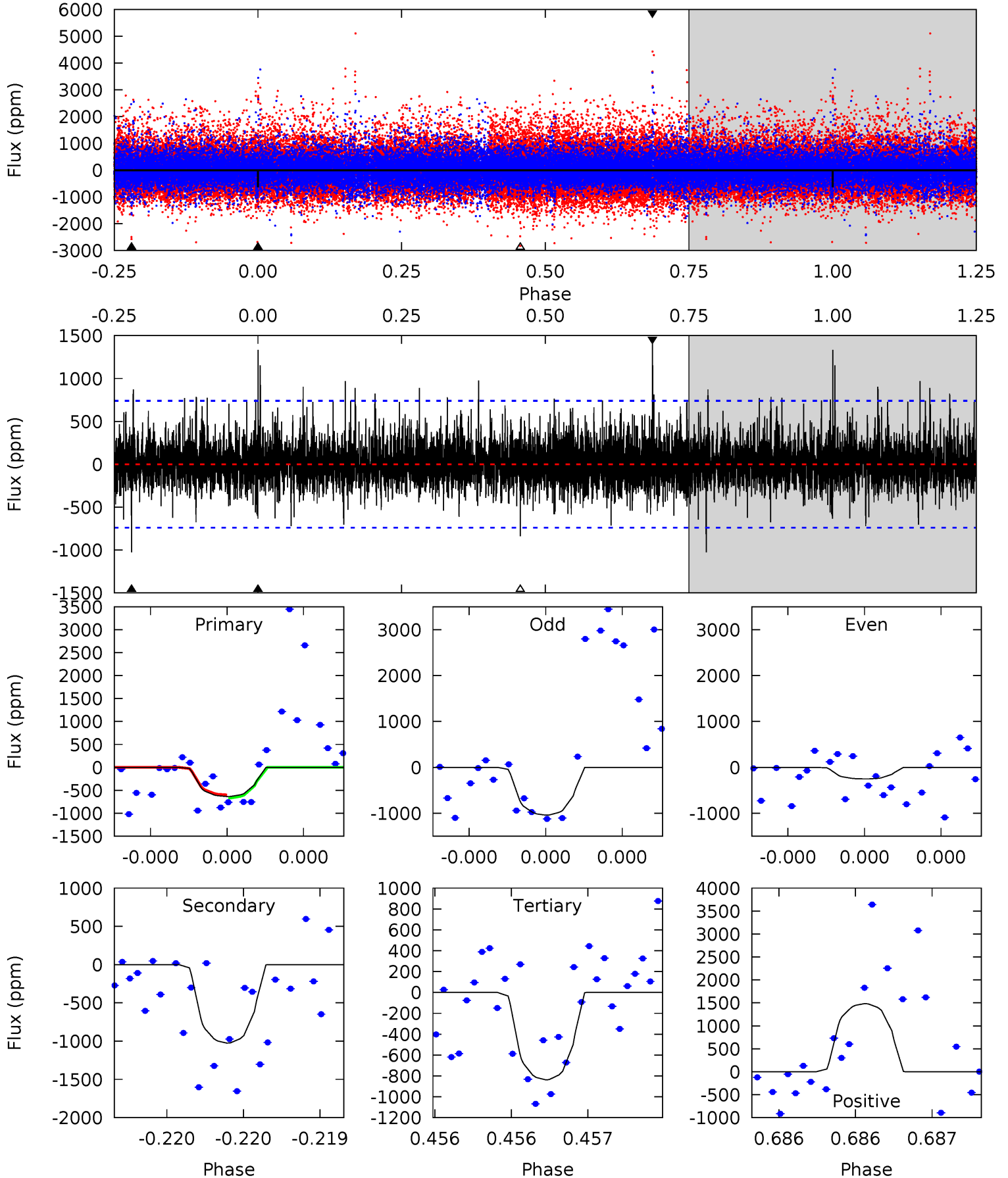
TCE 010858030-06 P=339.612578 Days $T_0=333.316272$ (BKJD)



DV Model-Shift Uniqueness Test

010858030-06, P = 339.629885 Days, E = 333.266083 Days

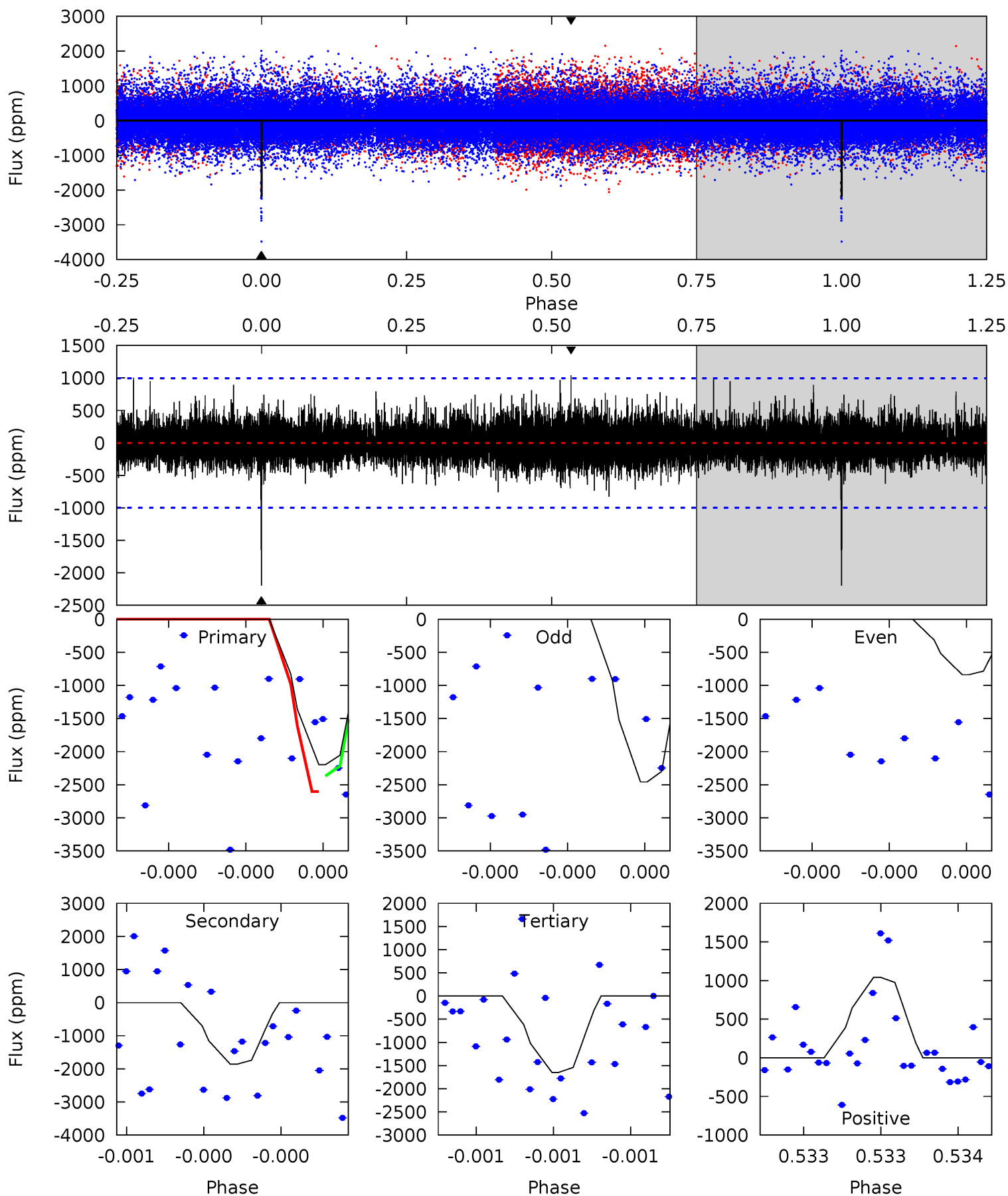
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.84	7.81	6.38	11.3	5.63	3.57	1.48	-1.54	-6.46	1.43	-3.49	2.66	0.84	0.59	0.26



Alt Model-Shift Uniqueness Test

010858030-06, P = 339.612578 Days, E = 333.316272 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	10.8	9.54	6.03	5.76	3.77	1.07	3.17	6.67	1.23	4.73	5.52	0.80	0.32	0.73



Stellar Parameters For KIC 010858030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4530^{+135}_{-135}	$4.653^{+0.054}_{-0.027}$	$-0.580^{+0.300}_{-0.300}$	$0.596^{+0.046}_{-0.051}$	$0.583^{+0.065}_{-0.038}$	$3.873^{+0.953}_{-0.466}$
	+3%/-3%	+1%/-1%	+52%/-52%	+8%/-9%	+11%/-7%	+25%/-12%
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 010858030-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1026 ± 131	$8.20^{+9.80}_{-5.71}$	240^{+8}_{-8}	2864^{+1327}_{-489}	5193^{+51155}_{-4074}
Alt.	-1861 ± 173	$8.66^{+9.39}_{-6.04}$	241^{+8}_{-9}	3097^{+1495}_{-543}	8377^{+87496}_{-6400}

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

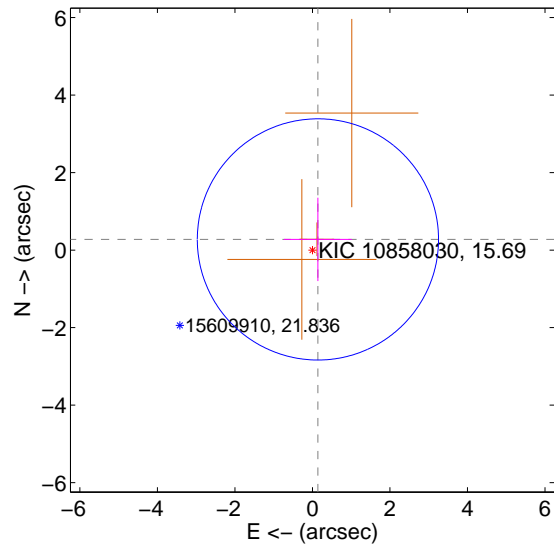
Supplemental centroid analysis for 010858030-06. Kepler magnitude: 15.69. Transit SNR 5.26

There are 0 quarters with good PRF difference image offsets

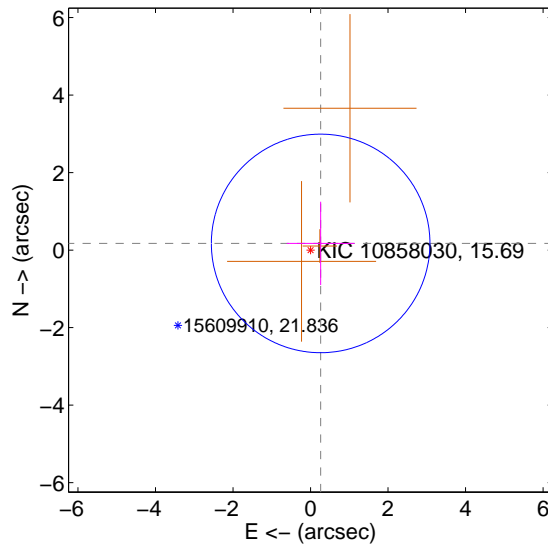
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.310 ± 1.037	0.30	-0.141 ± 0.874	0.276 ± 1.076
PRF-fit source offset from KIC position	0.313 ± 0.940	0.33	-0.261 ± 0.874	0.172 ± 1.076
photometric centroid source offset	0.52 ± 1.56	0.33	0.07 ± 1.74	0.51 ± 1.56

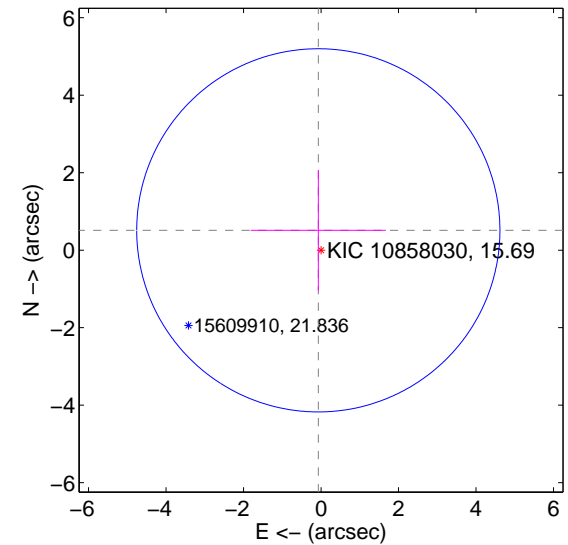
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

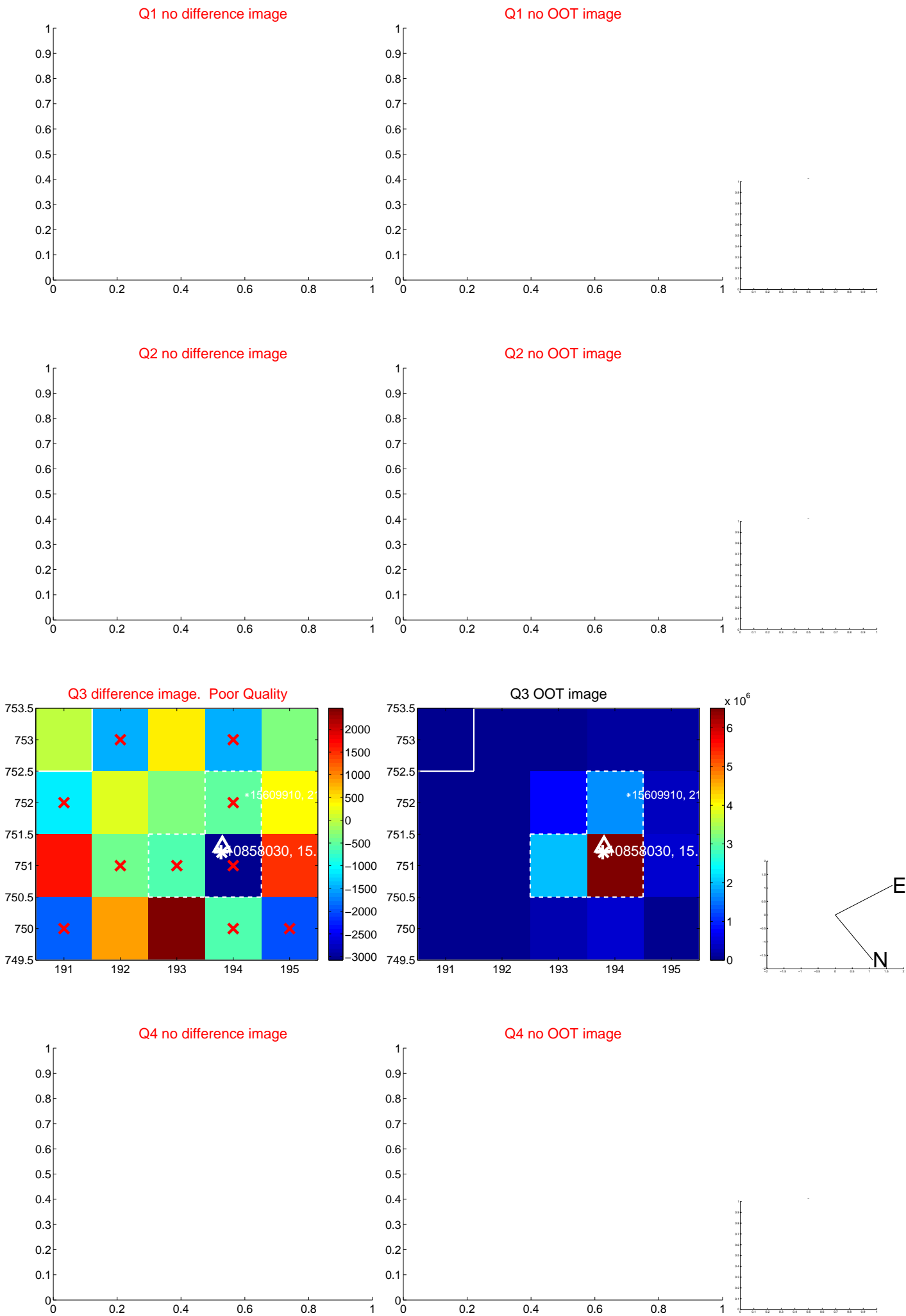


offset from photometric centroids

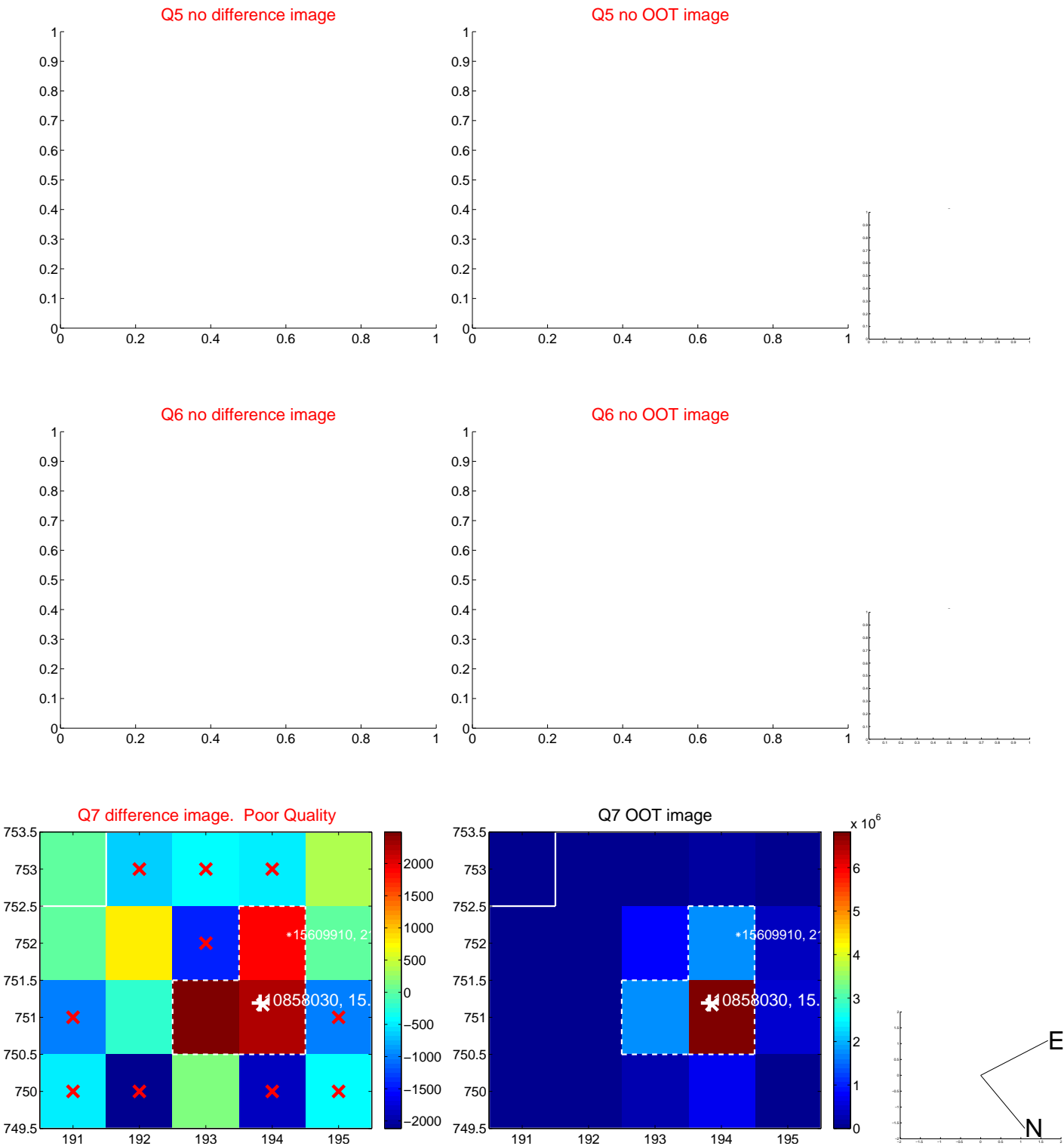


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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



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



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

Q9 no difference image



Q9 no OOT image



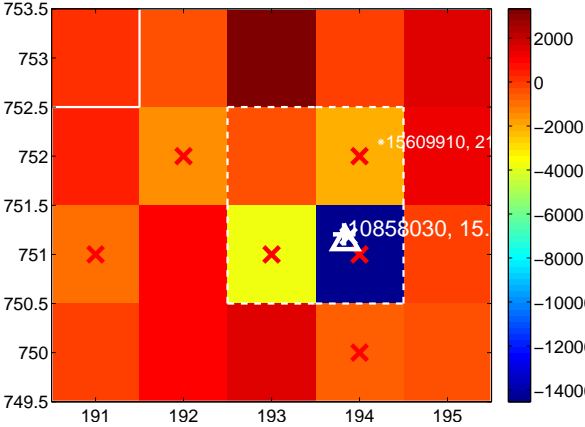
Q10 no difference image



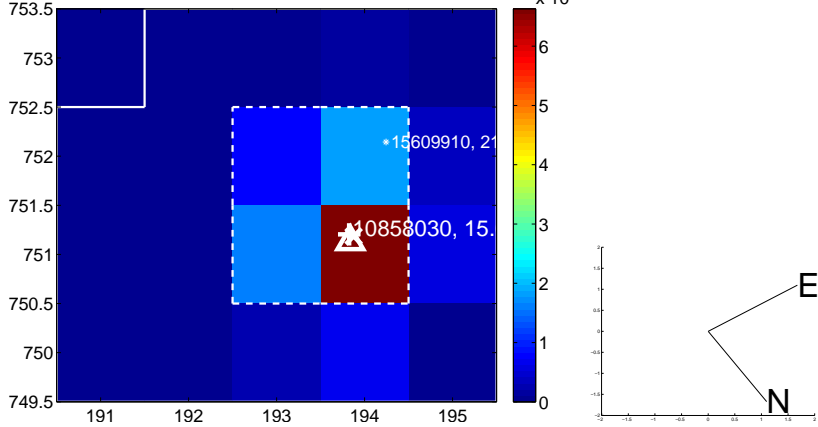
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



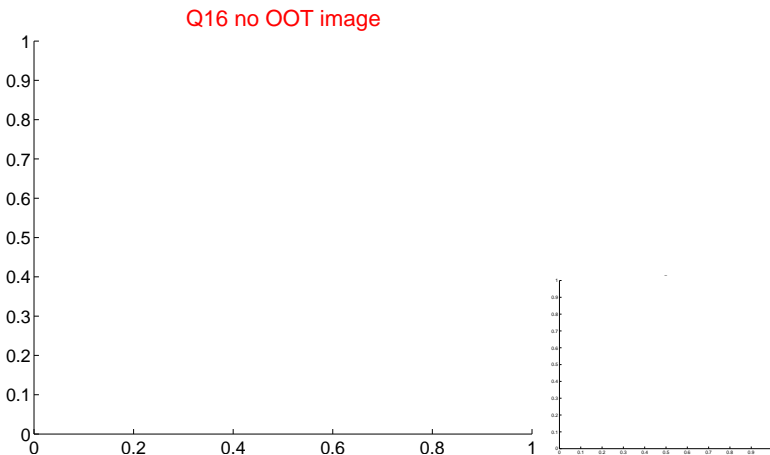
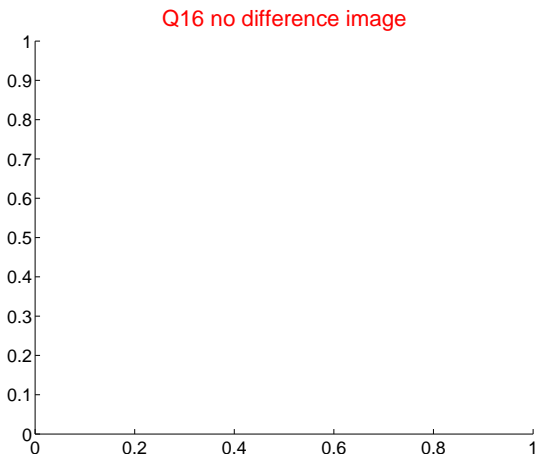
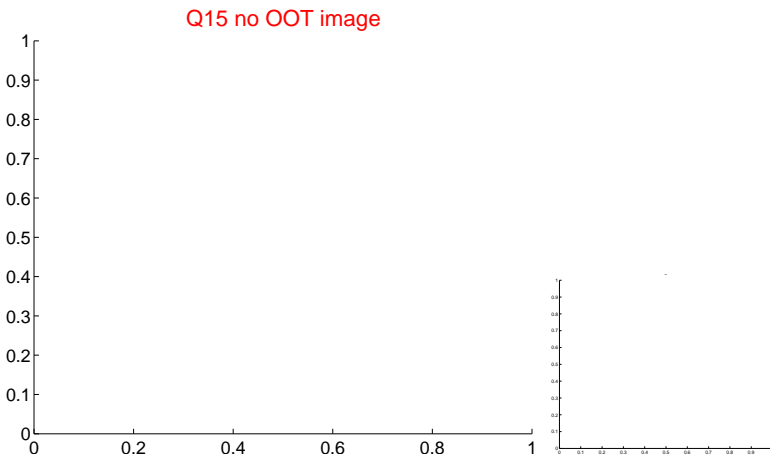
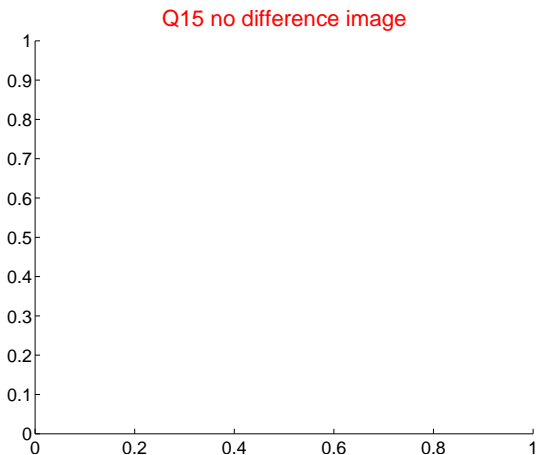
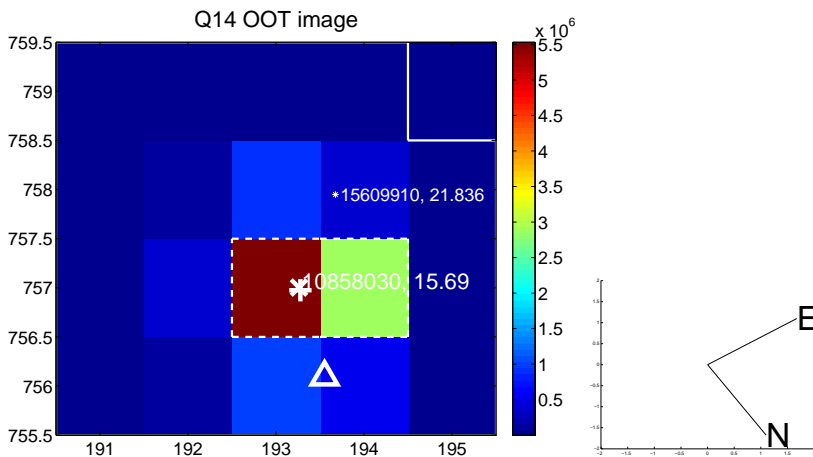
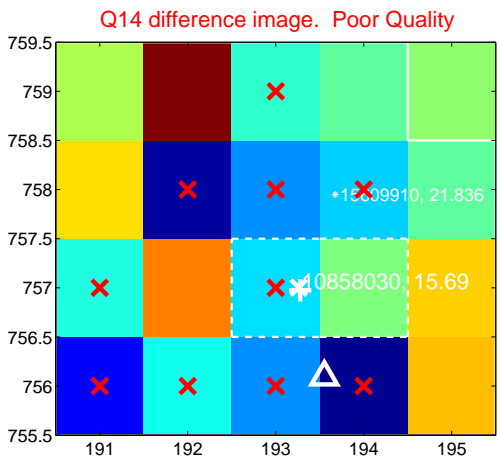
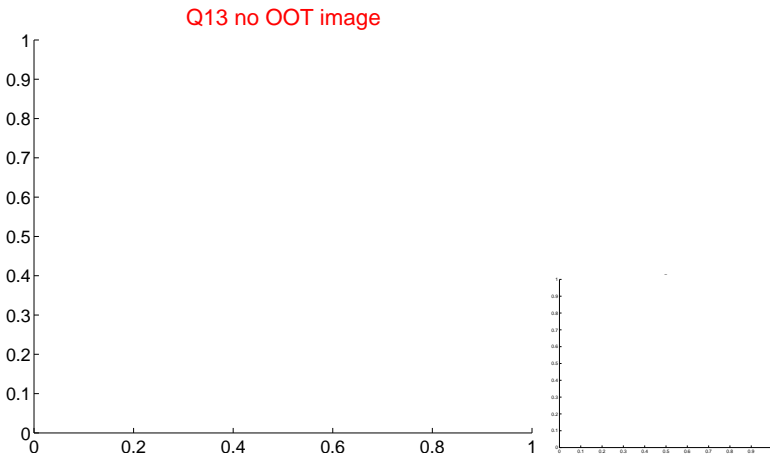
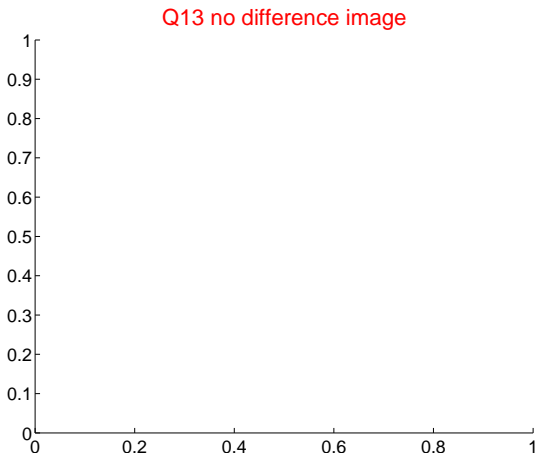
Q12 no difference image



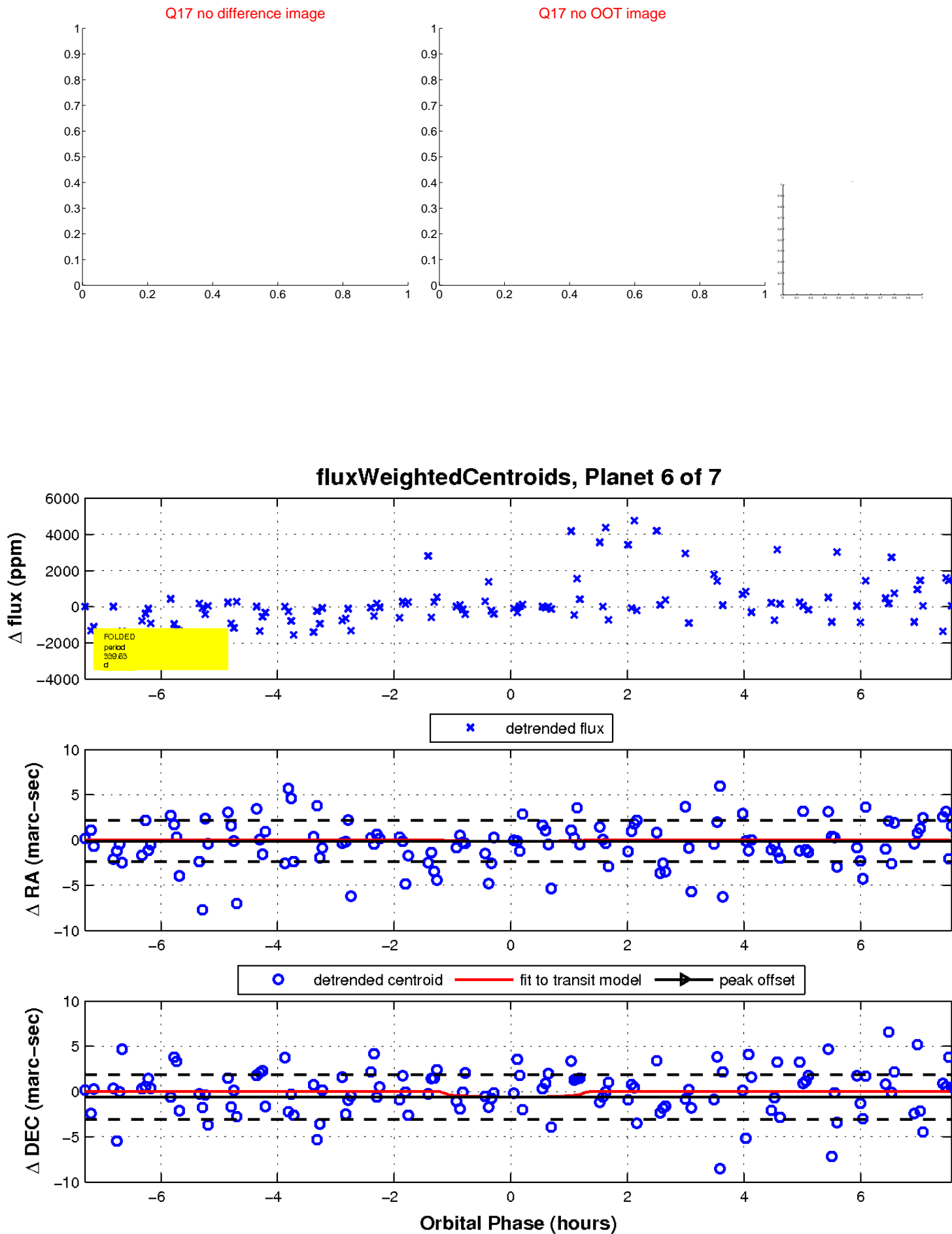
Q12 no OOT image



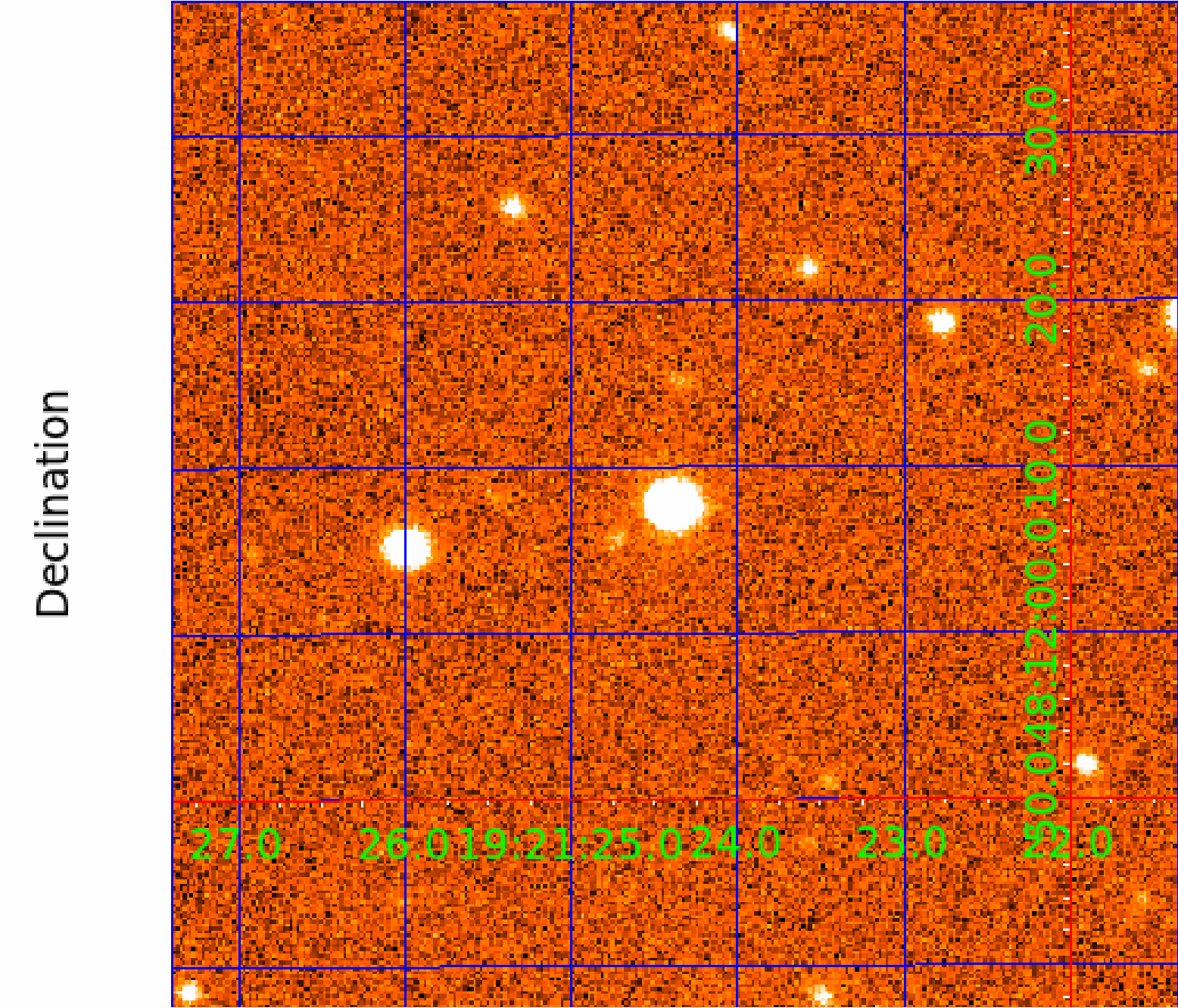
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image



KIC 010858030

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})
010858030-01	OBS	No	482.455420	603.257738	1595.6	4.860	12.4	5.8	0.60	4530	2.31	0.13
010858030-02	OBS	No	576.438242	163.433490	772.6	1.127	12.2	2.7	0.60	4530	1.70	0.10
010858030-03	OBS	No	576.474259	163.065402	1611.8	6.457	12.1	6.2	0.60	4530	2.49	0.10
010858030-04	OBS	No	308.671336	152.860393	953.4	9.719	10.7	4.7	0.60	4530	1.94	0.24
010858030-05	OBS	No	258.877920	327.766599	1852.1	23.450	10.3	4.5	0.60	4530	3.35	0.30
010858030-06	OBS	No	339.629885	333.266083	1138.7	2.527	10.6	5.3	0.60	4530	2.01	0.21
010858030-07	OBS	No	449.217591	403.281317	1725.3	7.086	10.0	7.2	0.60	4530	2.46	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010858030-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
010858030-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
010858030-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
010858030-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010858030-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

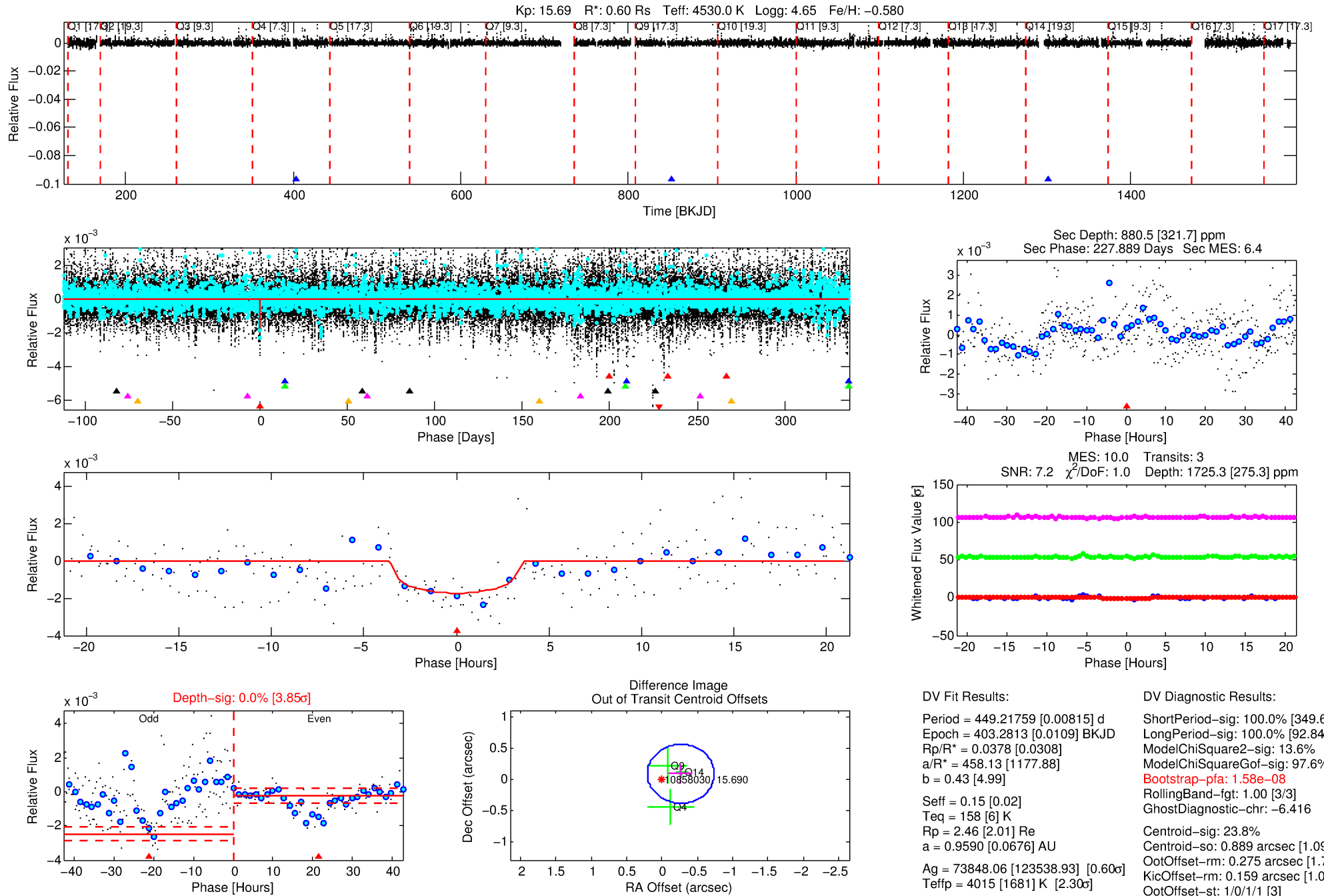
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010858030-07

No Significant Match Found

DV One-Page Summary

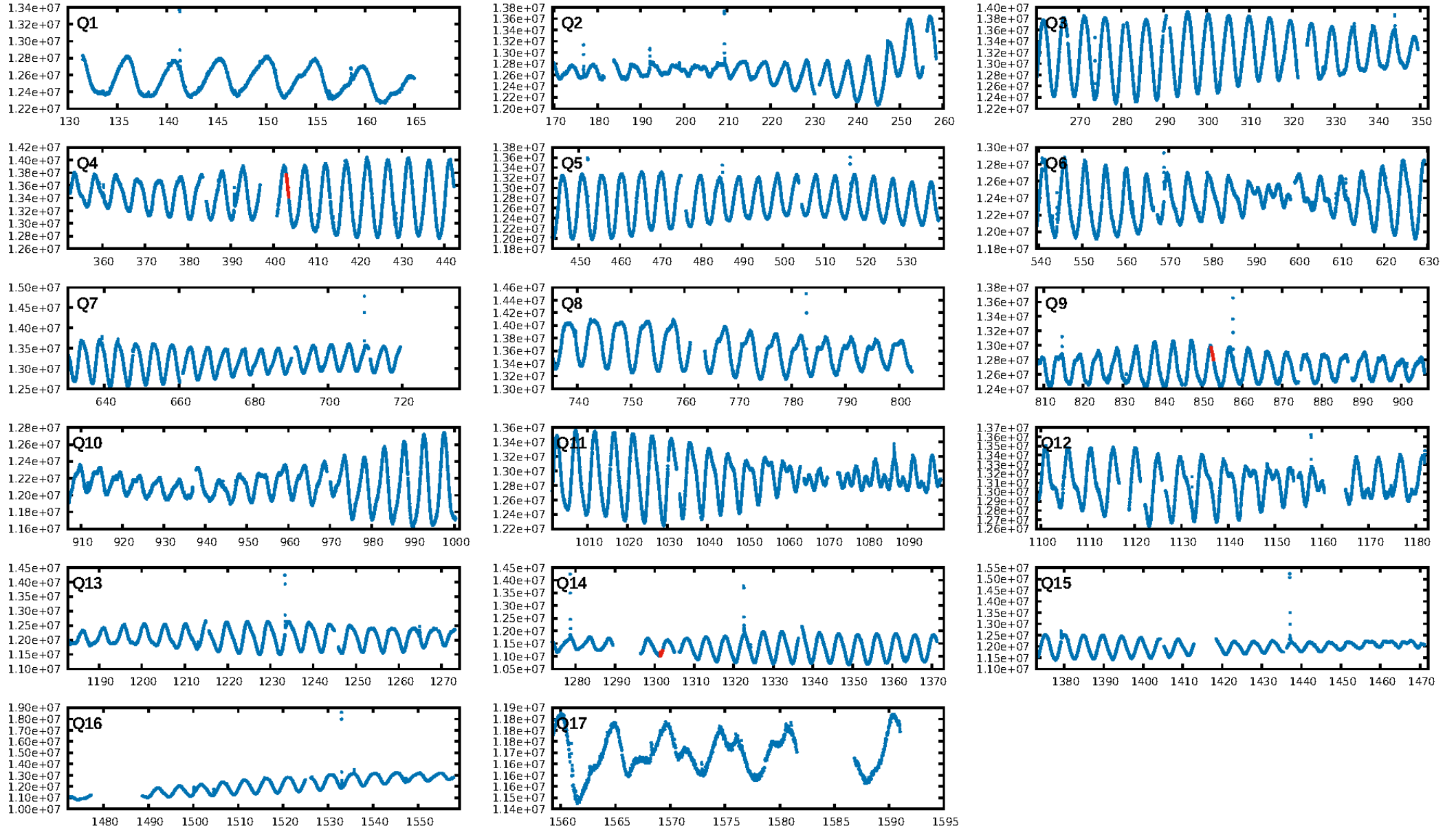
KIC: 10858030 Candidate: 7 of 7 Period: 449.218 d



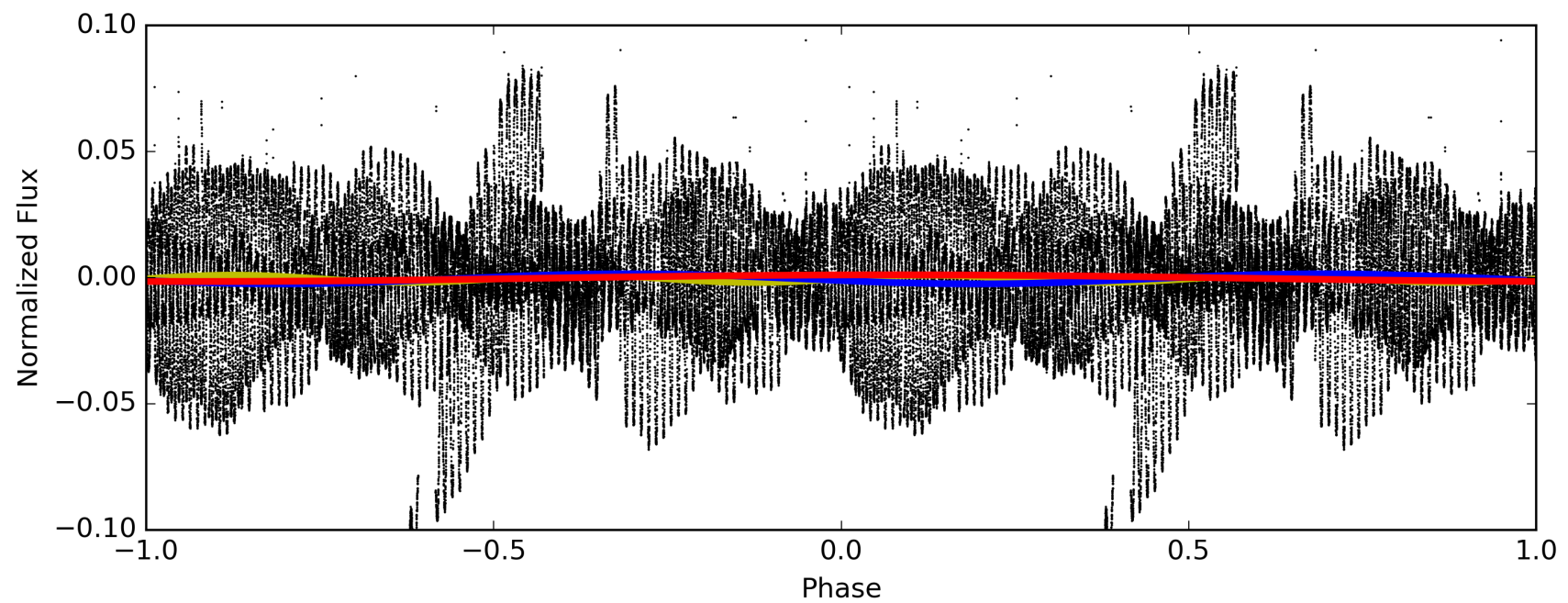
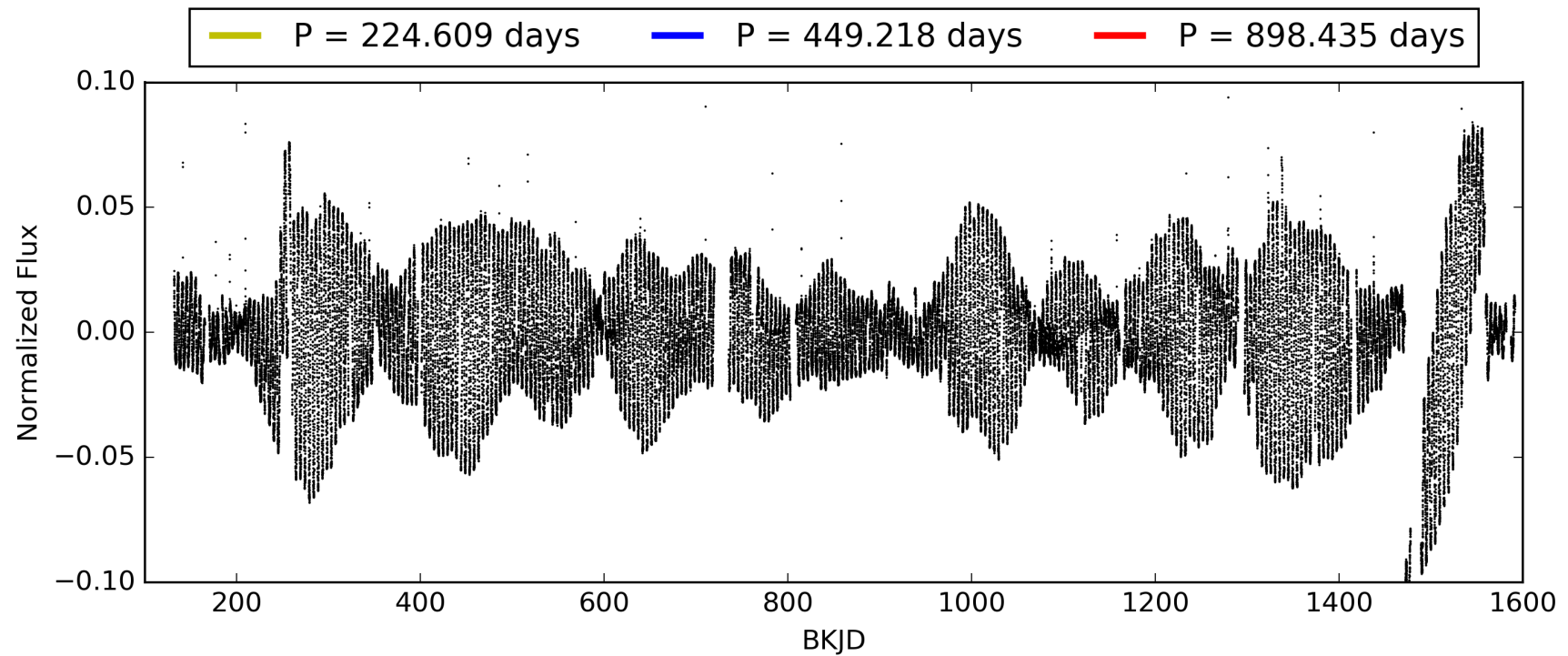
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:49 Z

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

TCE 010858030-07, PDC Light Curves

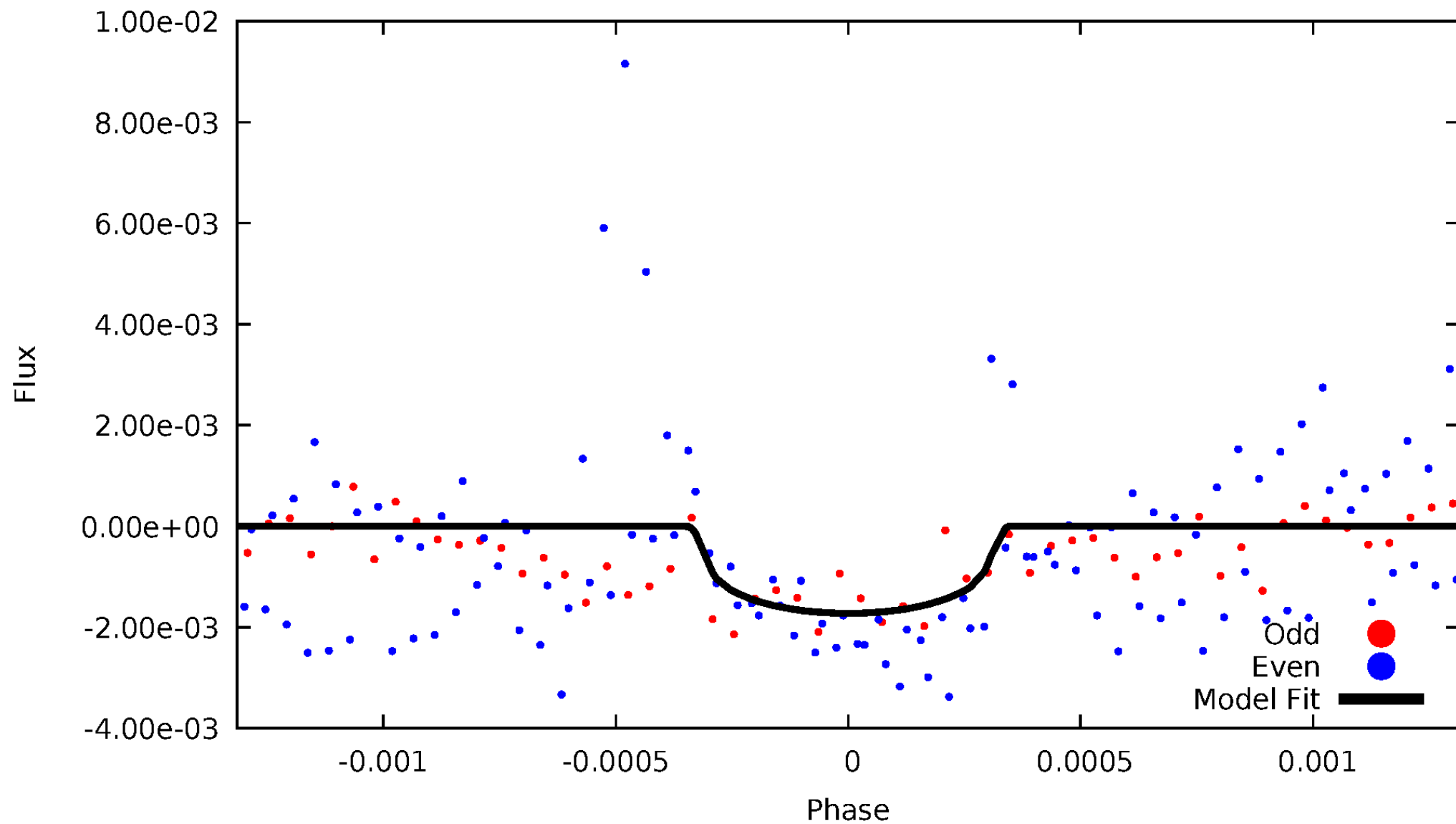


TCE 010858030-07



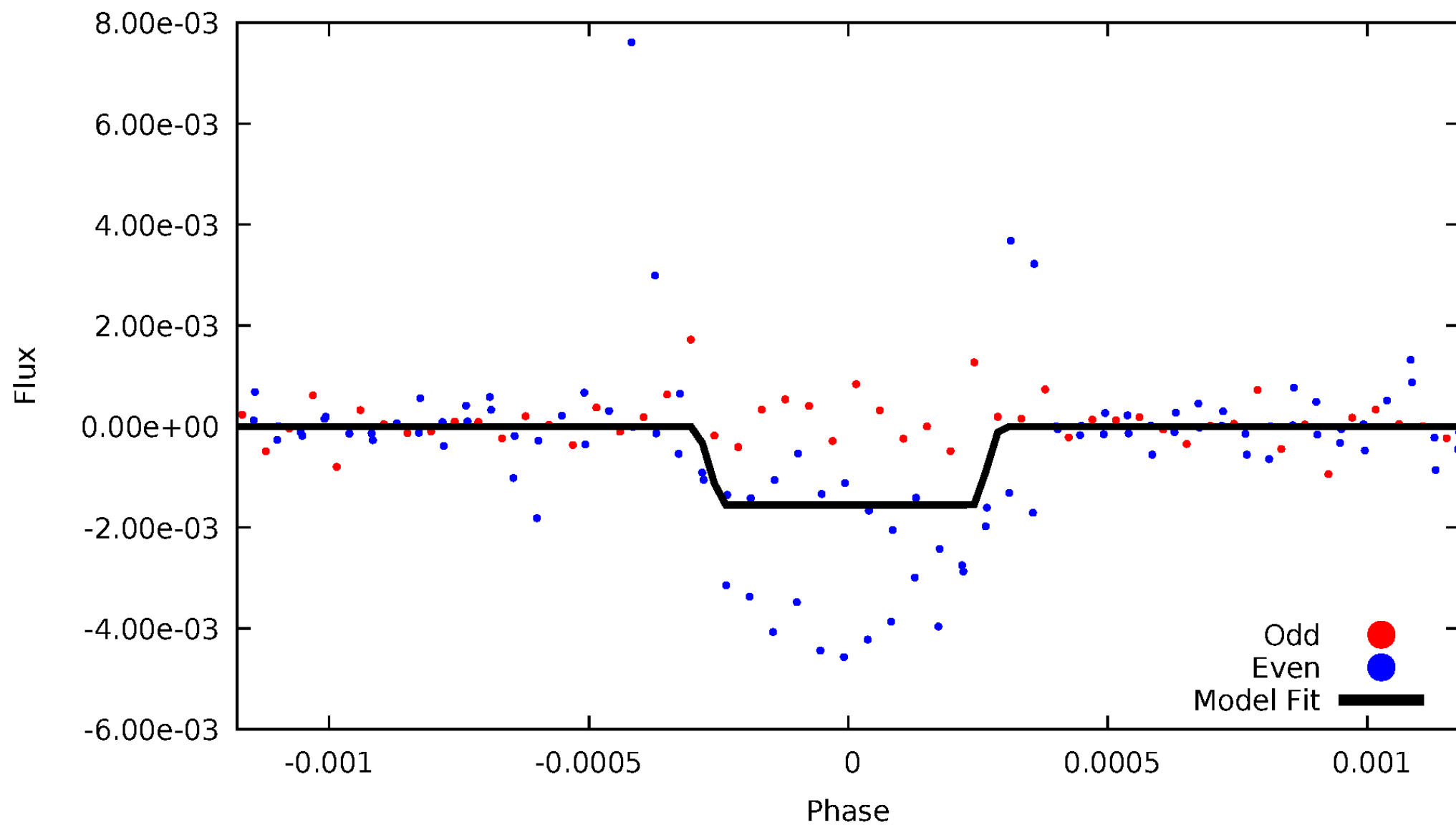
DV Odd/Even

TCE 010858030-07



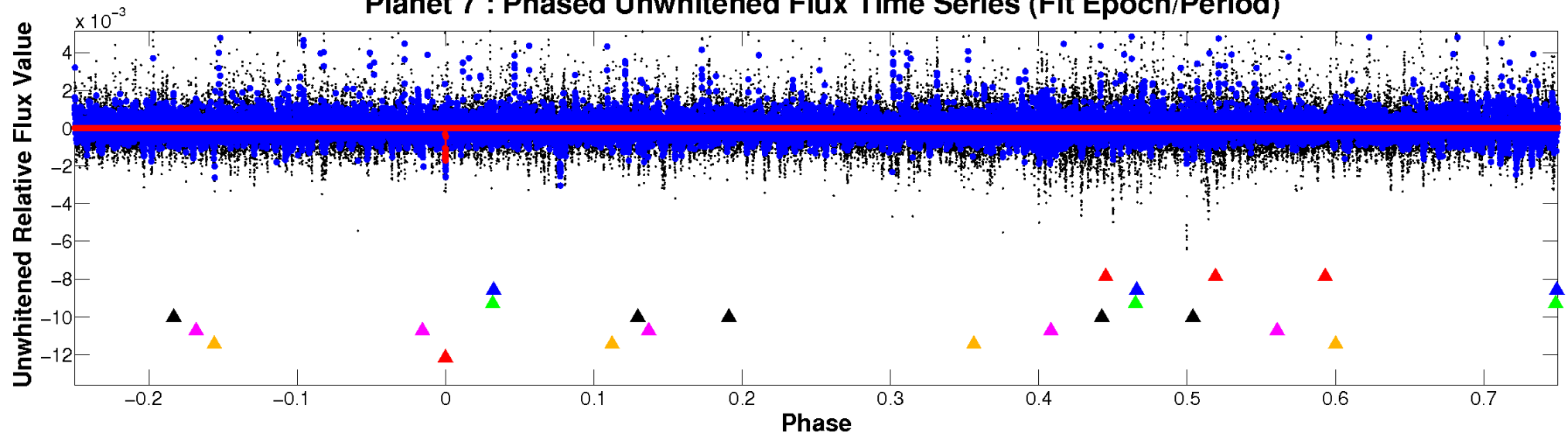
ALT Odd/Even

TCE 010858030-07

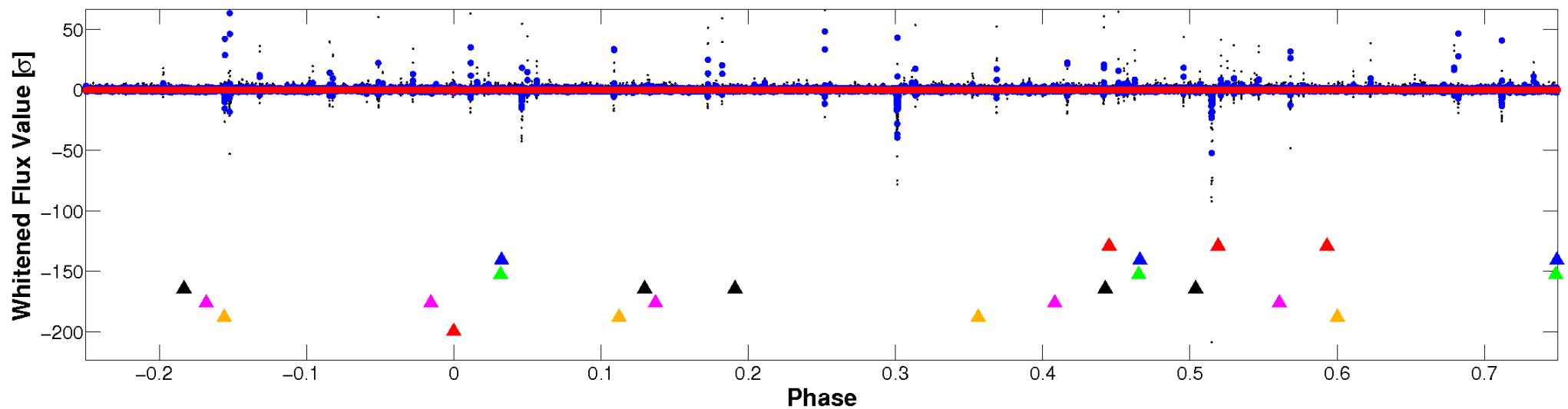


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

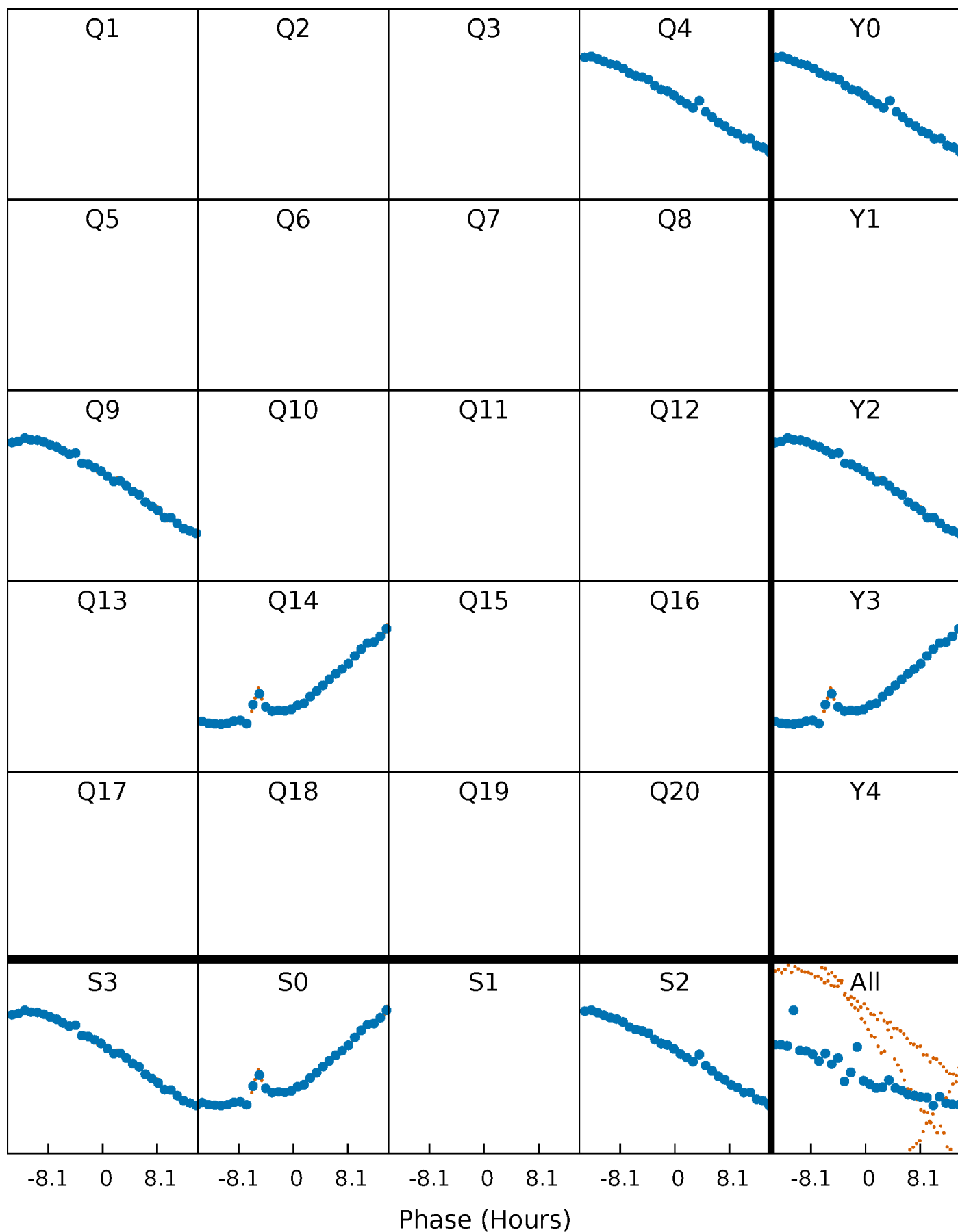


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



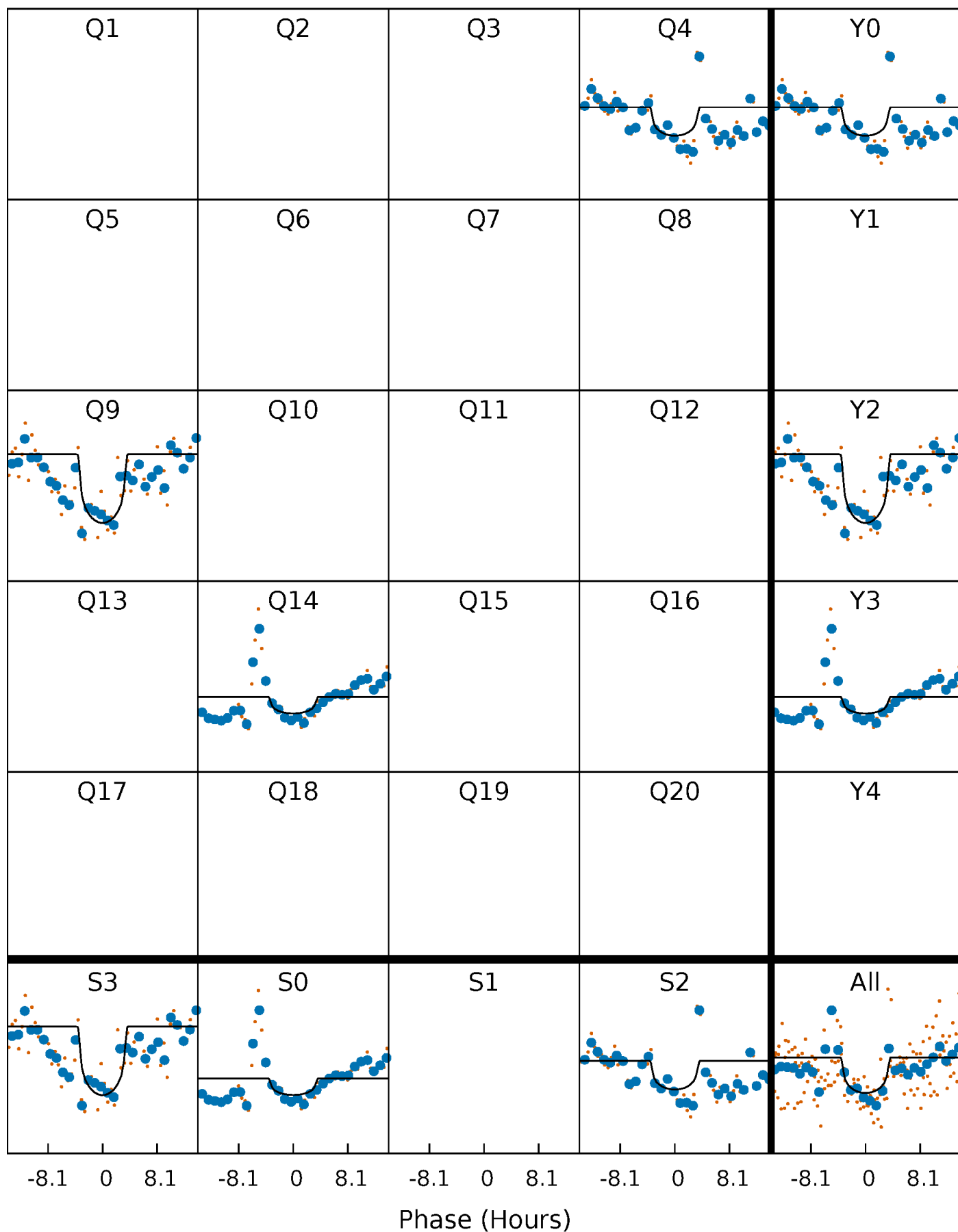
PDC Quarter-Phased Transit Curves

TCE 010858030-07 P=449.217591 Days $T_0=403.281317$ (BKJD)



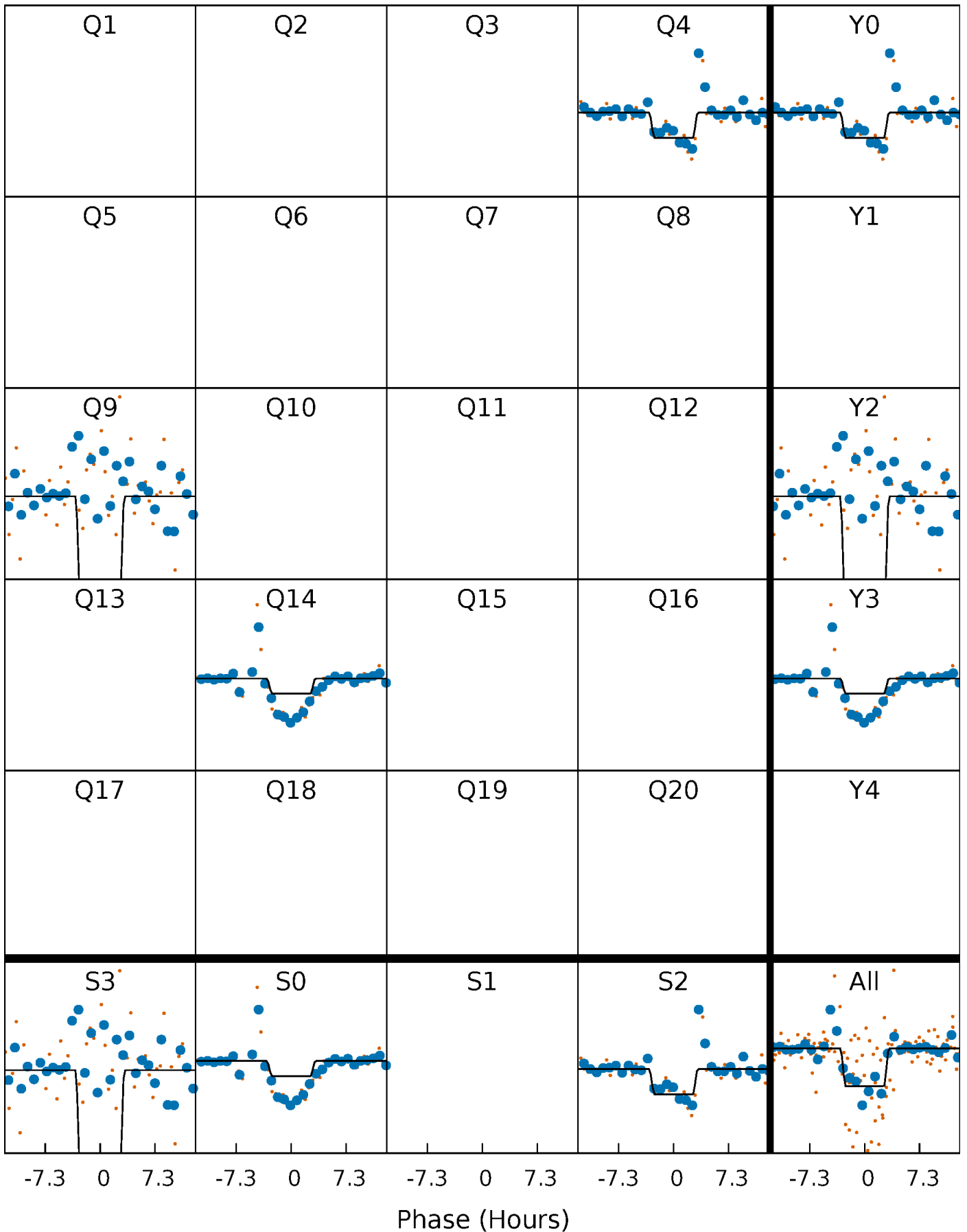
DV Quarter-Phased Transit Curves

TCE 010858030-07 P=449.217591 Days $T_0=403.281317$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

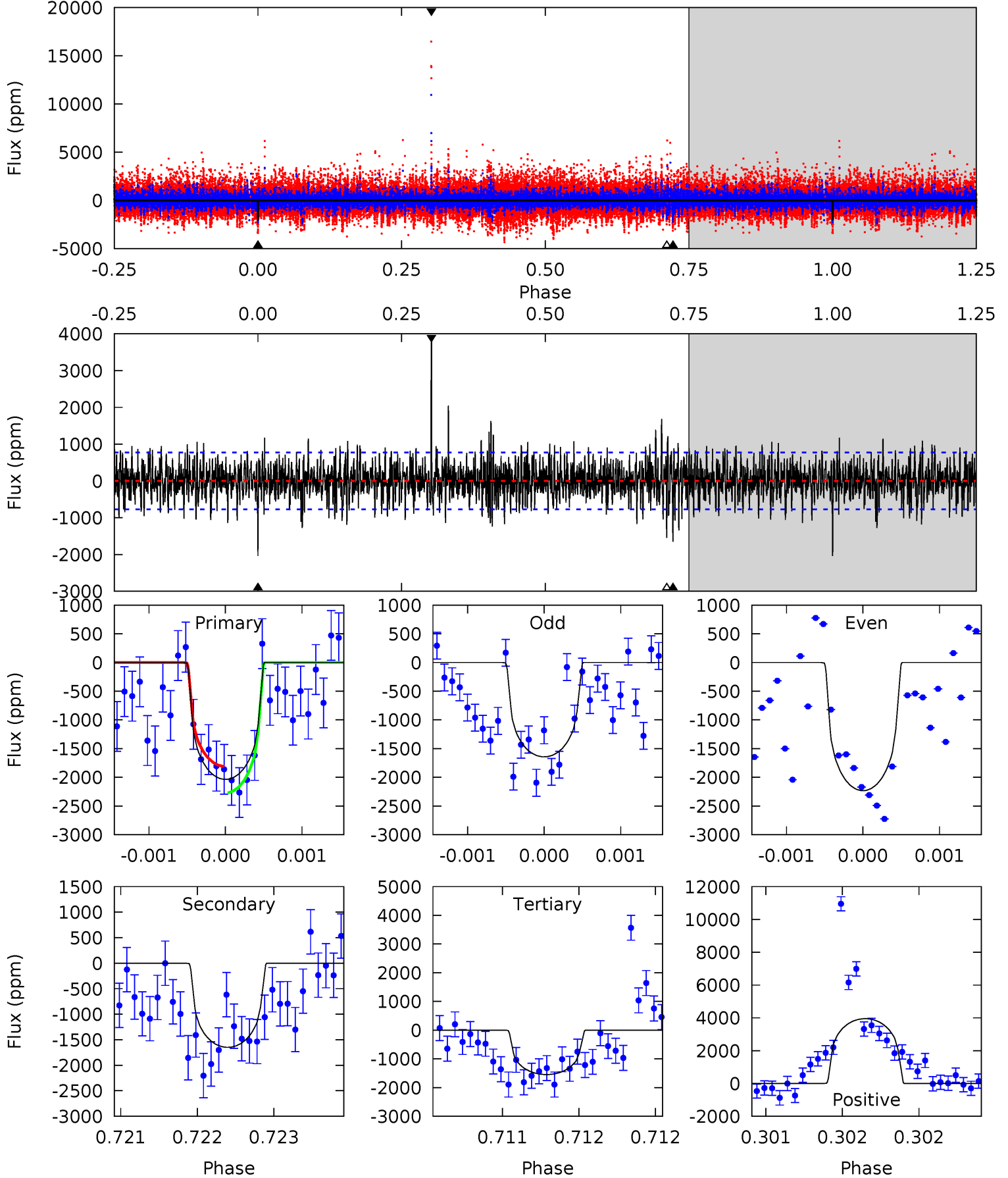
TCE 010858030-07 $P=449.204572$ Days $T_0=403.279173$ (BKJD)



DV Model-Shift Uniqueness Test

010858030-07, P = 449.217591 Days, E = 403.281317 Days

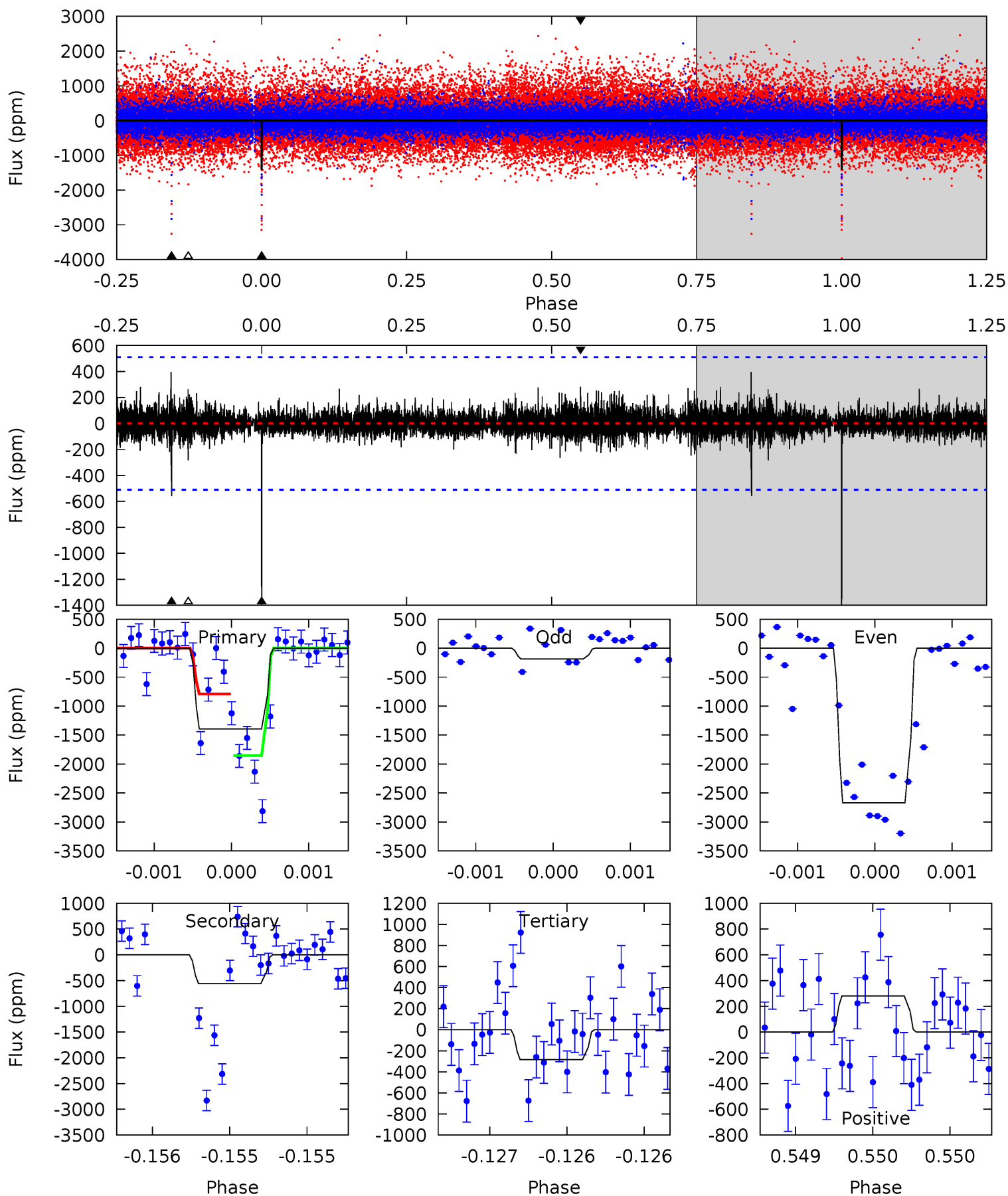
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	11.8	11.0	28.2	5.52	3.40	2.78	3.50	-13.7	0.73	-16.4	1.28	0.93	0.66	1.65



Alt Model-Shift Uniqueness Test

010858030-07, P = 449.204572 Days, E = 403.279173 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	6.07	3.09	3.05	5.55	3.45	0.64	12.1	12.1	2.98	3.02	15.5	1.06	0.22	5.92



Stellar Parameters For KIC 010858030

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4530^{+135}_{-135}	$4.653^{+0.054}_{-0.027}$	$-0.580^{+0.300}_{-0.300}$	$0.596^{+0.046}_{-0.051}$	$0.583^{+0.065}_{-0.038}$	$3.873^{+0.953}_{-0.466}$
	+3%/-3%	+1%/-1%	+52%/-52%	+8%/-9%	+11%/-7%	+25%/-12%
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 010858030-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1648 ± 140	$2.73^{+1.91}_{-1.56}$	219^{+8}_{-8}	4475^{+2074}_{-815}	$114084^{+529076}_{-75304}$
Alt.	-558 ± 92	$2.84^{+1.97}_{-1.67}$	219^{+8}_{-7}	3627^{+1449}_{-543}	$34954^{+178203}_{-22802}$

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

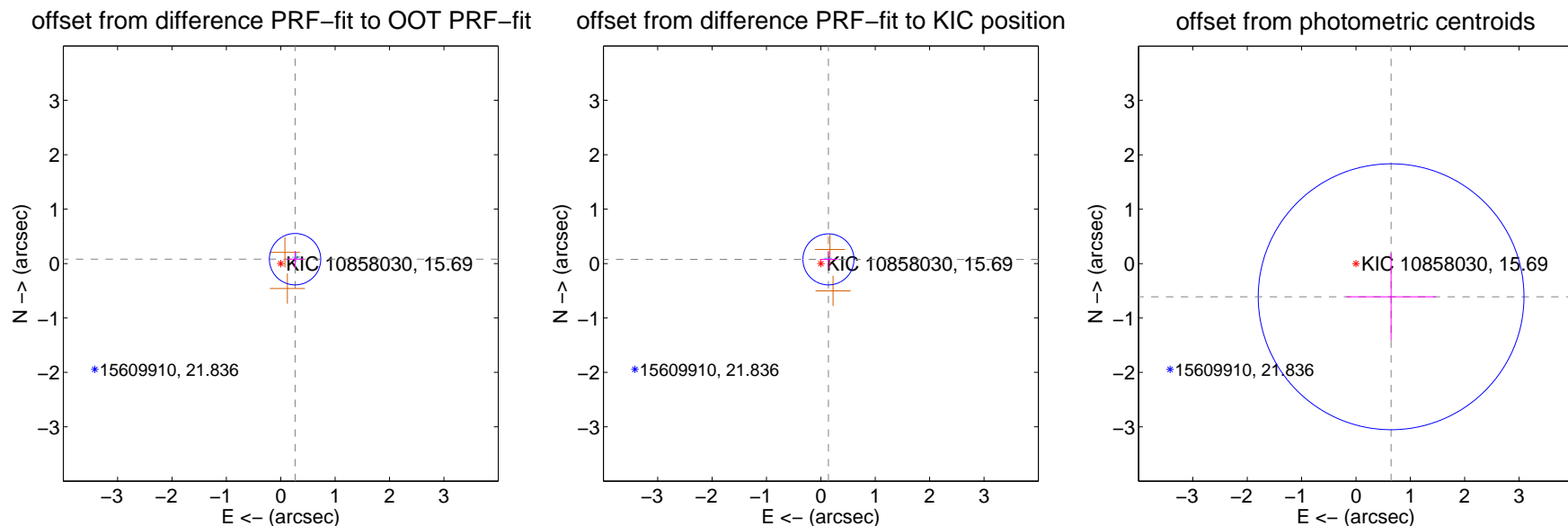
DV Centroid Data

Supplemental centroid analysis for 010858030-07. Kepler magnitude: 15.69. Transit SNR 7.16

There are 1 quarters with good PRF difference image offsets

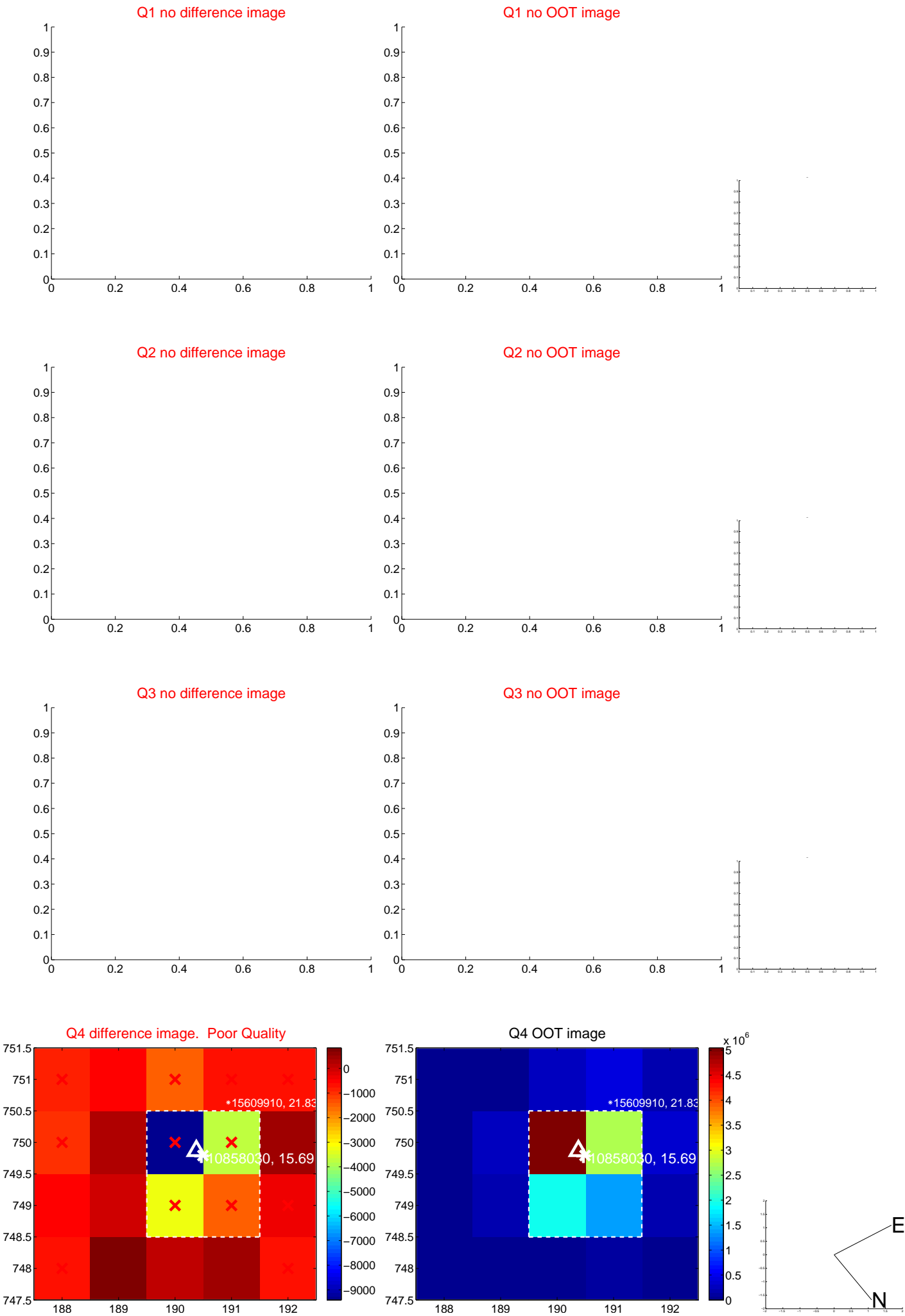
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.275 ± 0.157	1.75	-0.264 ± 0.158	0.080 ± 0.151
PRF-fit source offset from KIC position	0.159 ± 0.156	1.02	-0.139 ± 0.158	0.077 ± 0.151
photometric centroid source offset	0.89 ± 0.81	1.09	-0.65 ± 0.83	-0.61 ± 0.80



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.

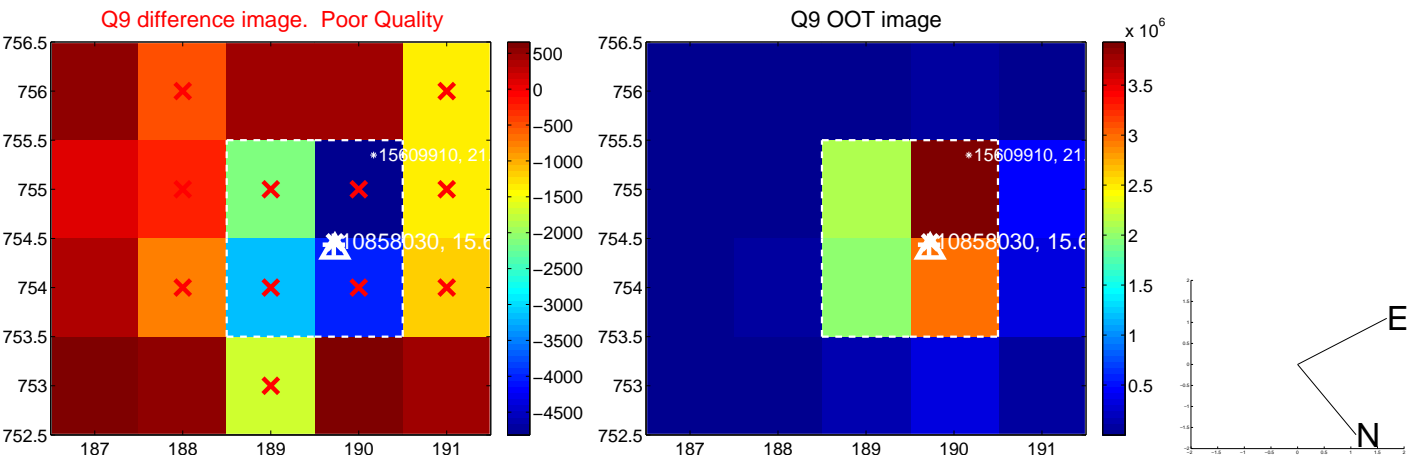
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

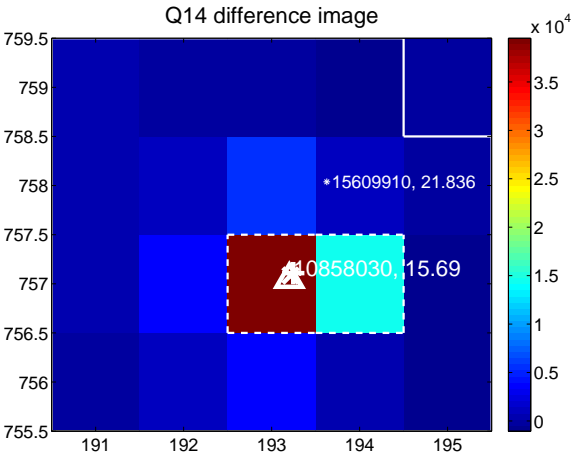
Q13 no difference image



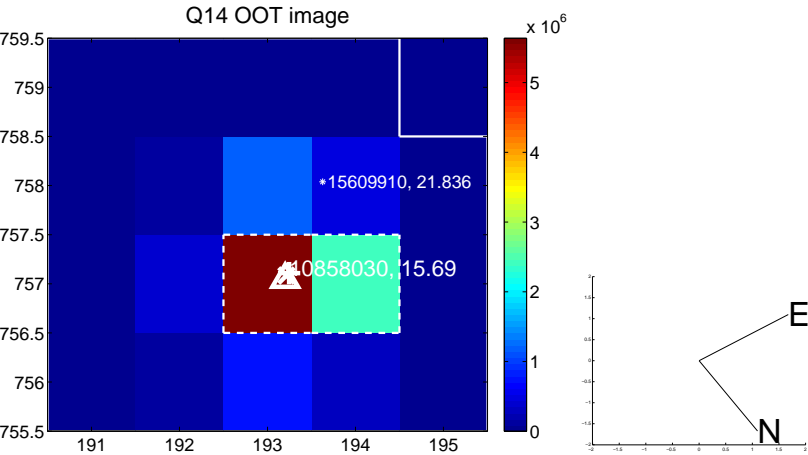
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



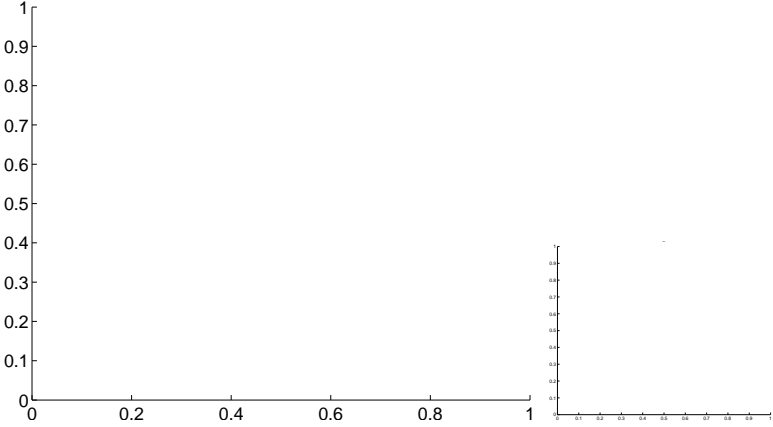
Q15 no OOT image



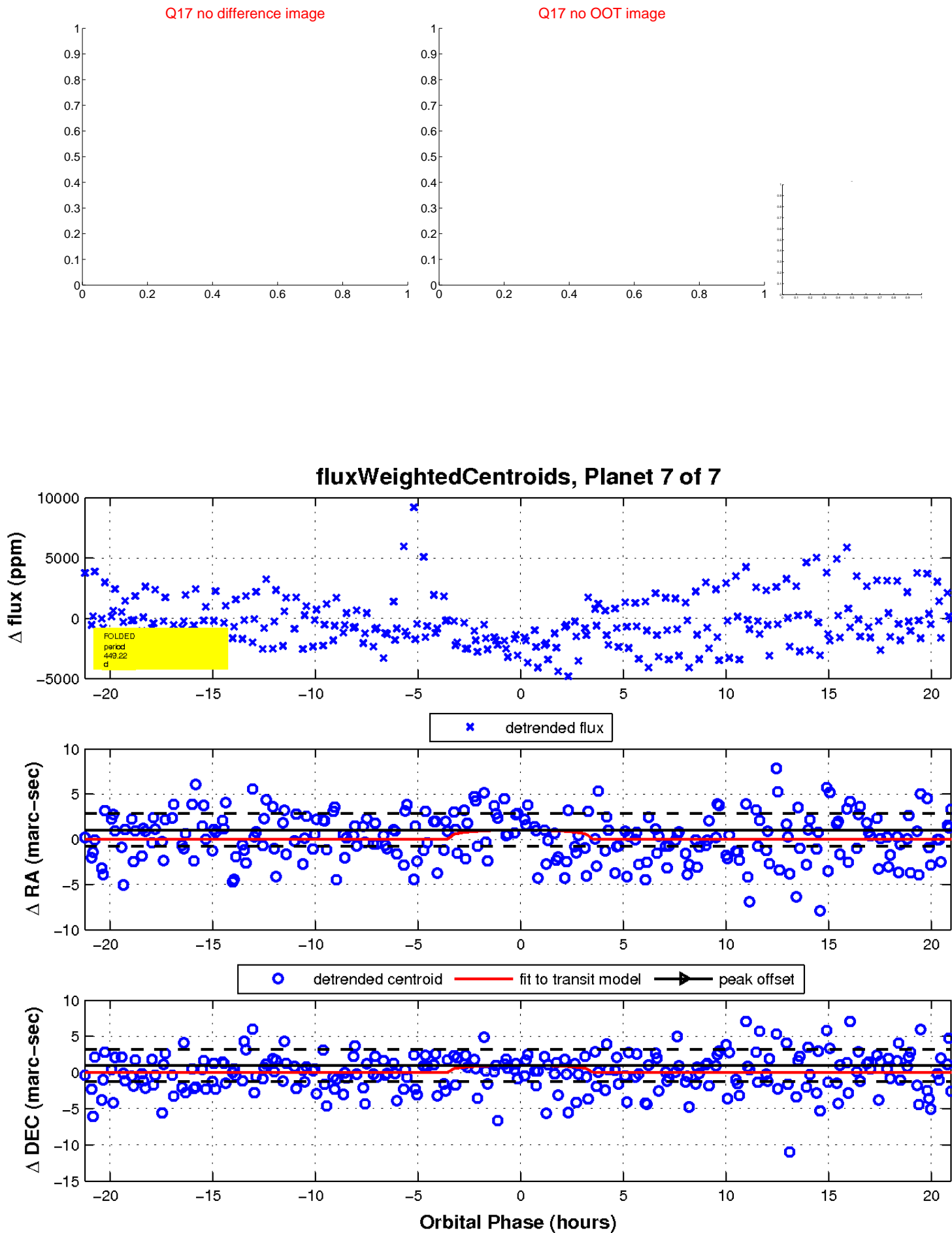
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

