

KIC 005812648

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})
005812648-01	OBS	No	4.042919	134.344921	23.7	18.890	9.4	8.2	3.31	6565	1.93	5648.72
005812648-02	OBS	No	238.090282	279.667447	245.4	12.267	10.8	9.6	3.31	6565	5.87	24.65
005812648-03	OBS	No	376.168378	325.477919	208.8	15.177	10.0	7.3	3.31	6565	5.18	13.40
005812648-04	OBS	No	158.756548	168.687344	355.3	5.962	8.3	8.1	3.31	6565	7.95	42.32
005812648-05	OBS	No	420.455993	139.042771	234.1	55.553	8.5	6.3	3.31	6565	5.82	11.55
005812648-06	OBS	8108.01	238.567393	273.235937	136.3	10.890	8.2	7.2	3.31	6565	4.28	24.59
005812648-07	OBS	No	120.885747	152.961688	140.8	6.905	8.0	6.0	3.31	6565	4.53	60.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005812648-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005812648-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT
005812648-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
005812648-06	OBS	FP	0.08	1	0	0	0	MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005812648-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

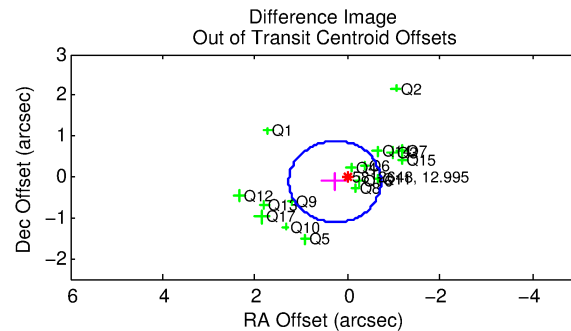
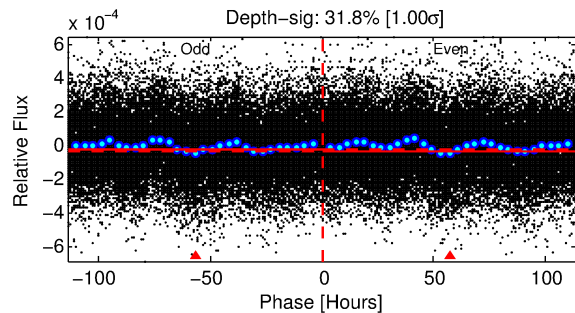
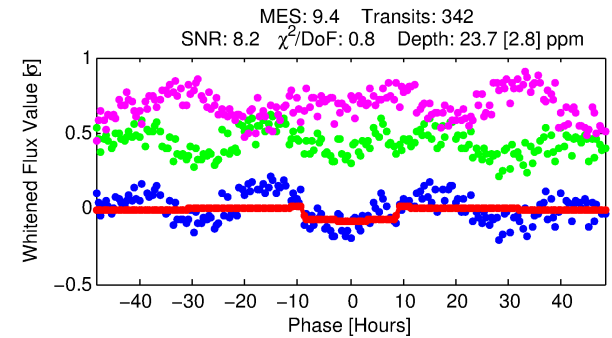
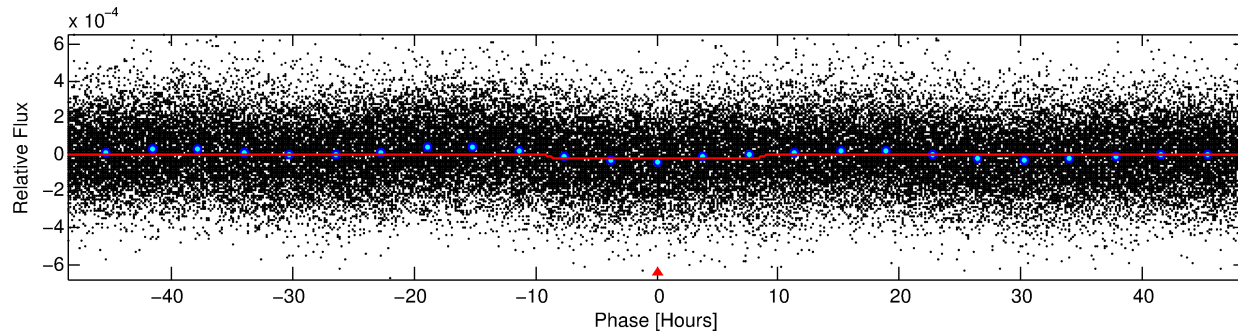
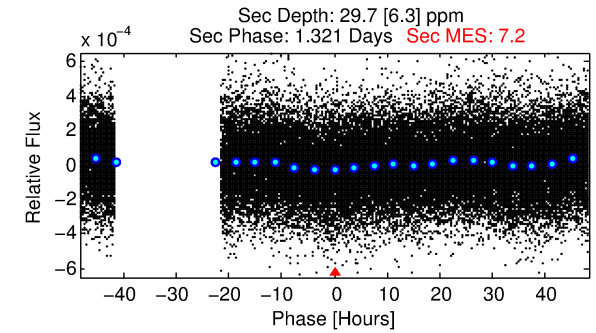
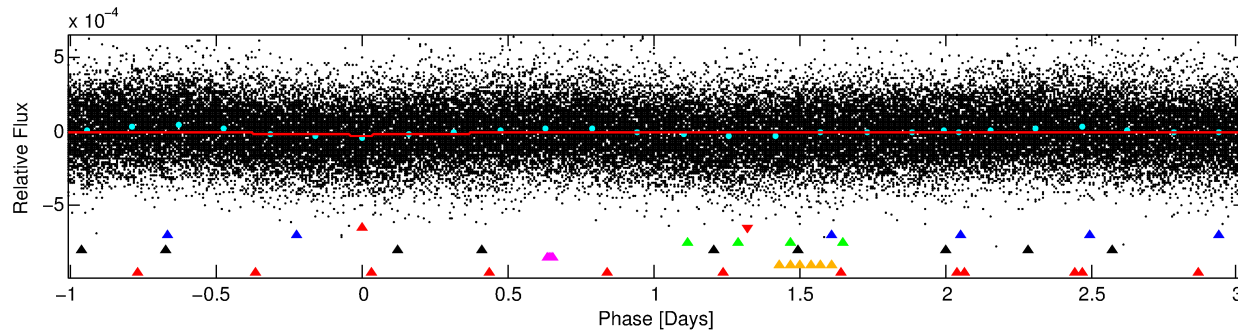
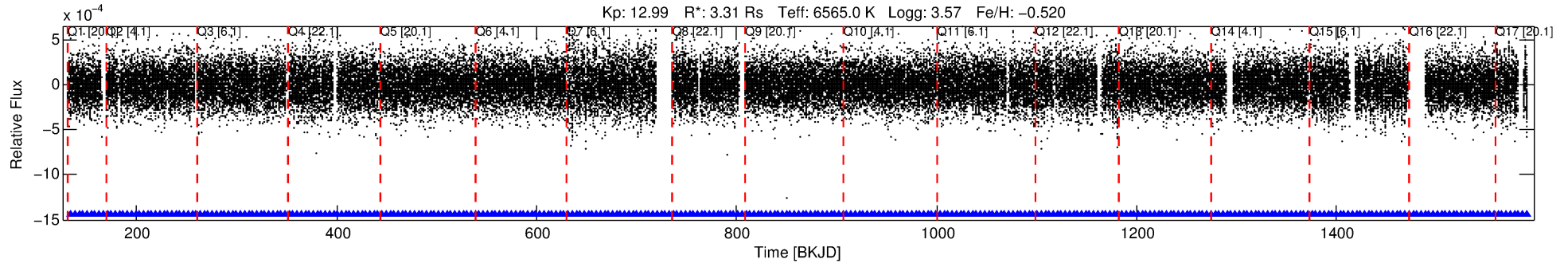
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005812648-01

No Significant Match Found

DV One-Page Summary

KIC: 5812648 Candidate: 1 of 7 Period: 4.043 d



DV Fit Results:

Period = 4.04292 [0.00010] d
Epoch = 134.3449 [0.0163] BKJD
Rp/R* = 0.0054 [0.0006]
a/R* = 1.14 [0.16]
b = 0.93 [0.08]
Seff = 5648.72 [3464.87]
Teq = 2211 [339] K
Rp = 1.93 [0.84] Re
a = 0.0568 [0.0219] AU
Ag = 14.11 [9.51] [1.38σ]
Teffp = 6624 [558] K [6.76σ]

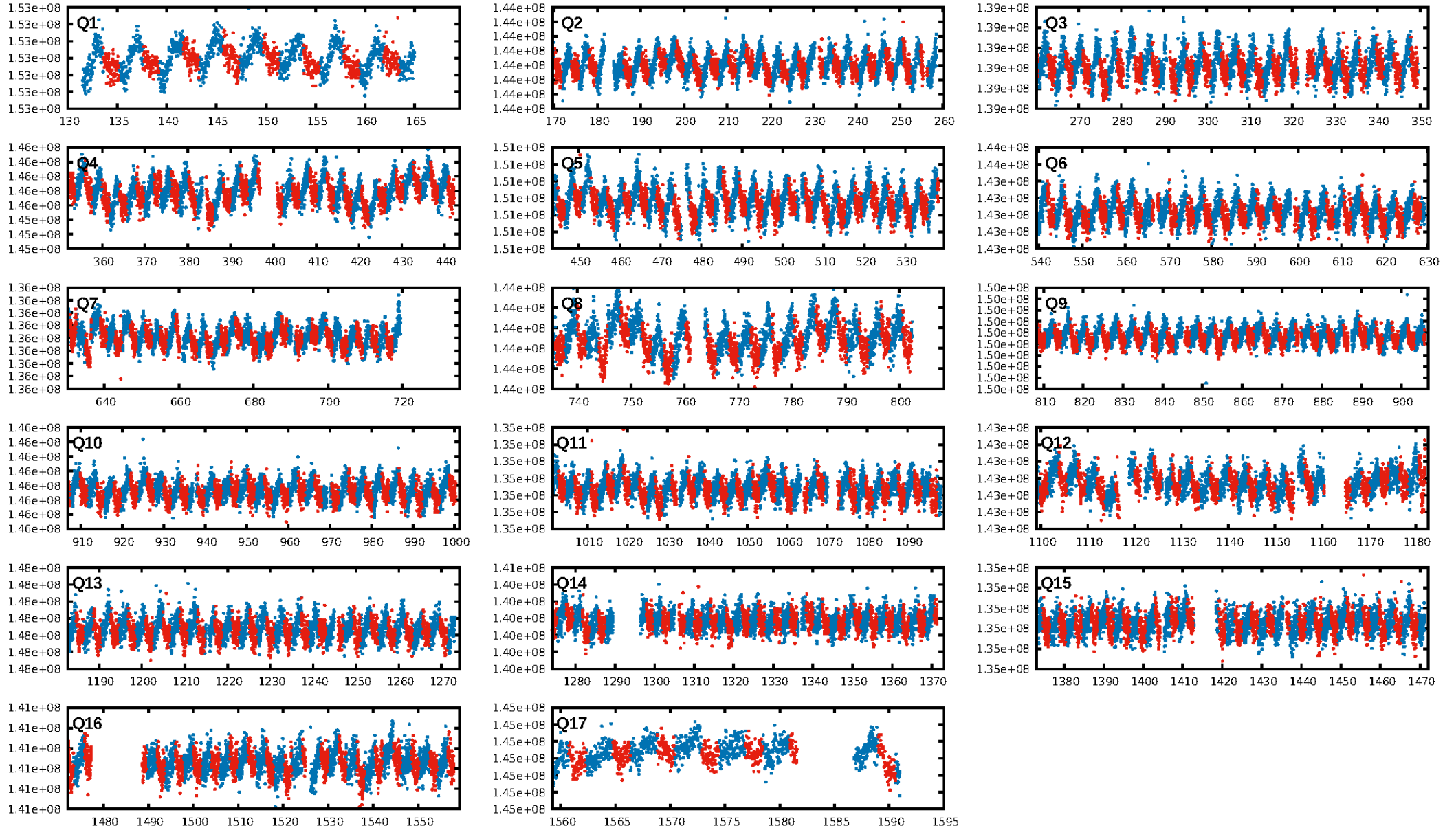
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [139.42σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.33e-15
RollingBand-fgt: 1.00 [327/327]
GhostDiagnostic-chr: 0.8306
Centroid-sig: 14.1%
Centroid-so: 0.720 arcsec [0.88σ]
OotOffset-rm: 0.300 arcsec [0.90σ]
KicOffset-rm: 0.385 arcsec [1.26σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

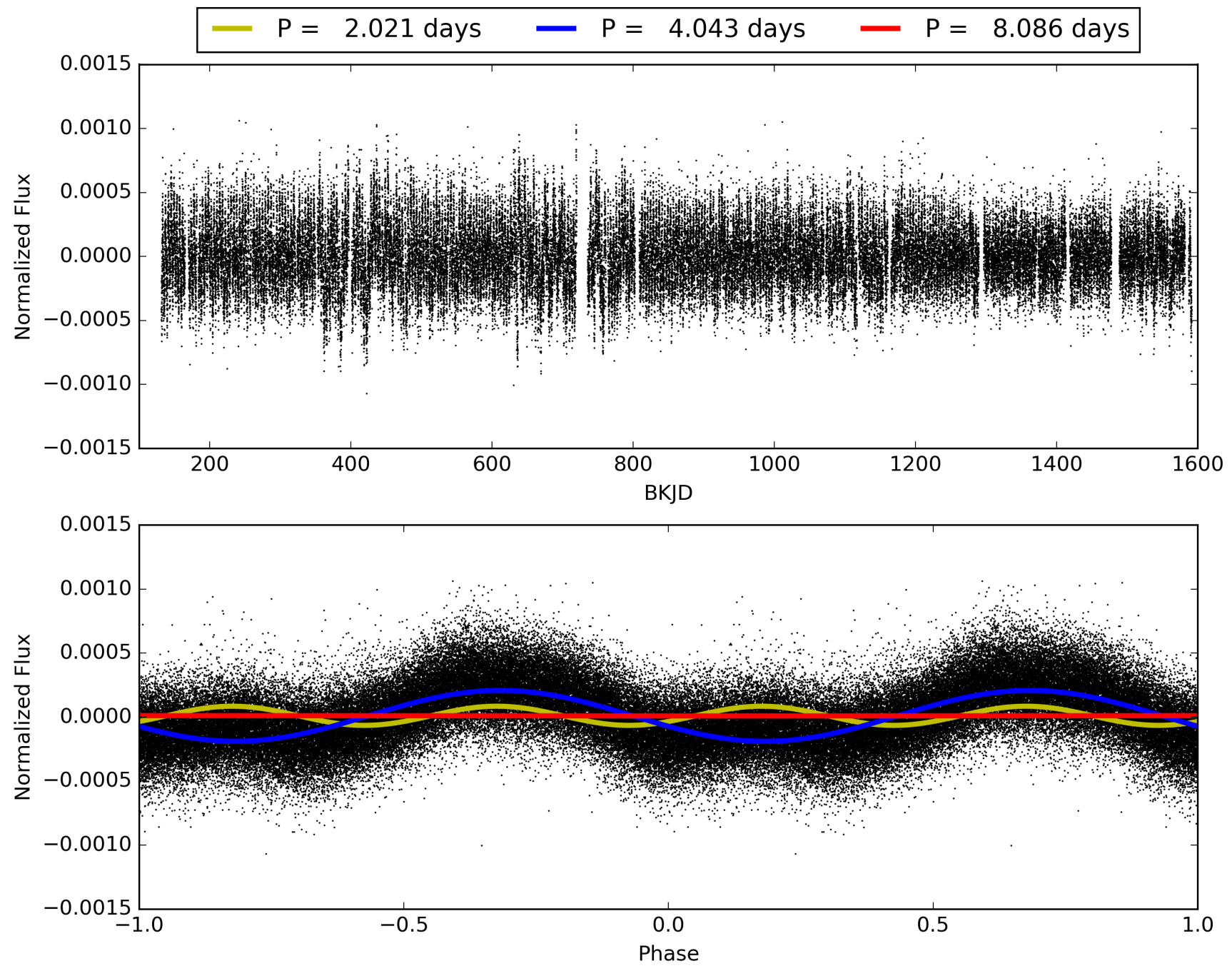
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005812648-01, PDC Light Curves

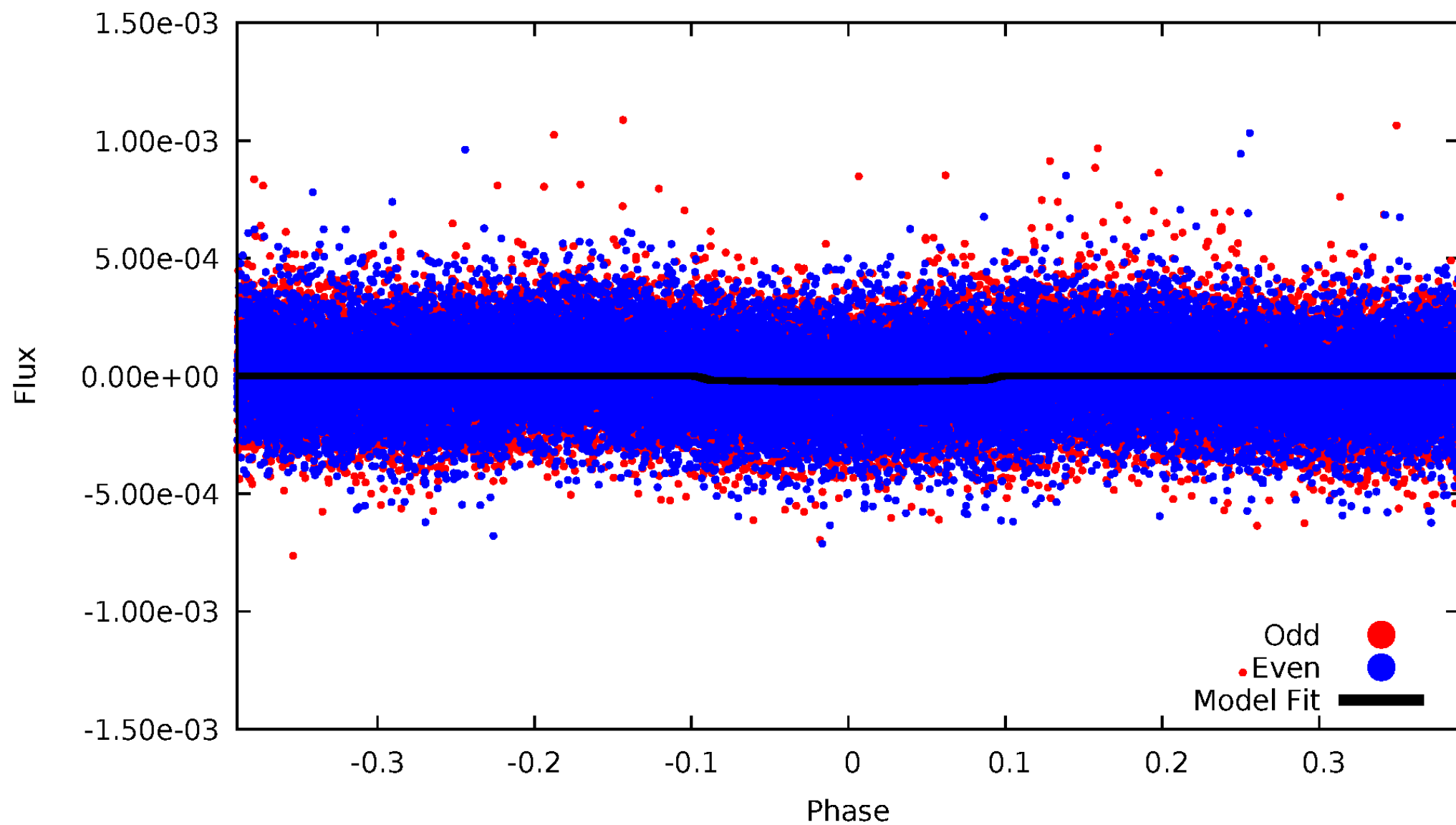


TCE 005812648-01



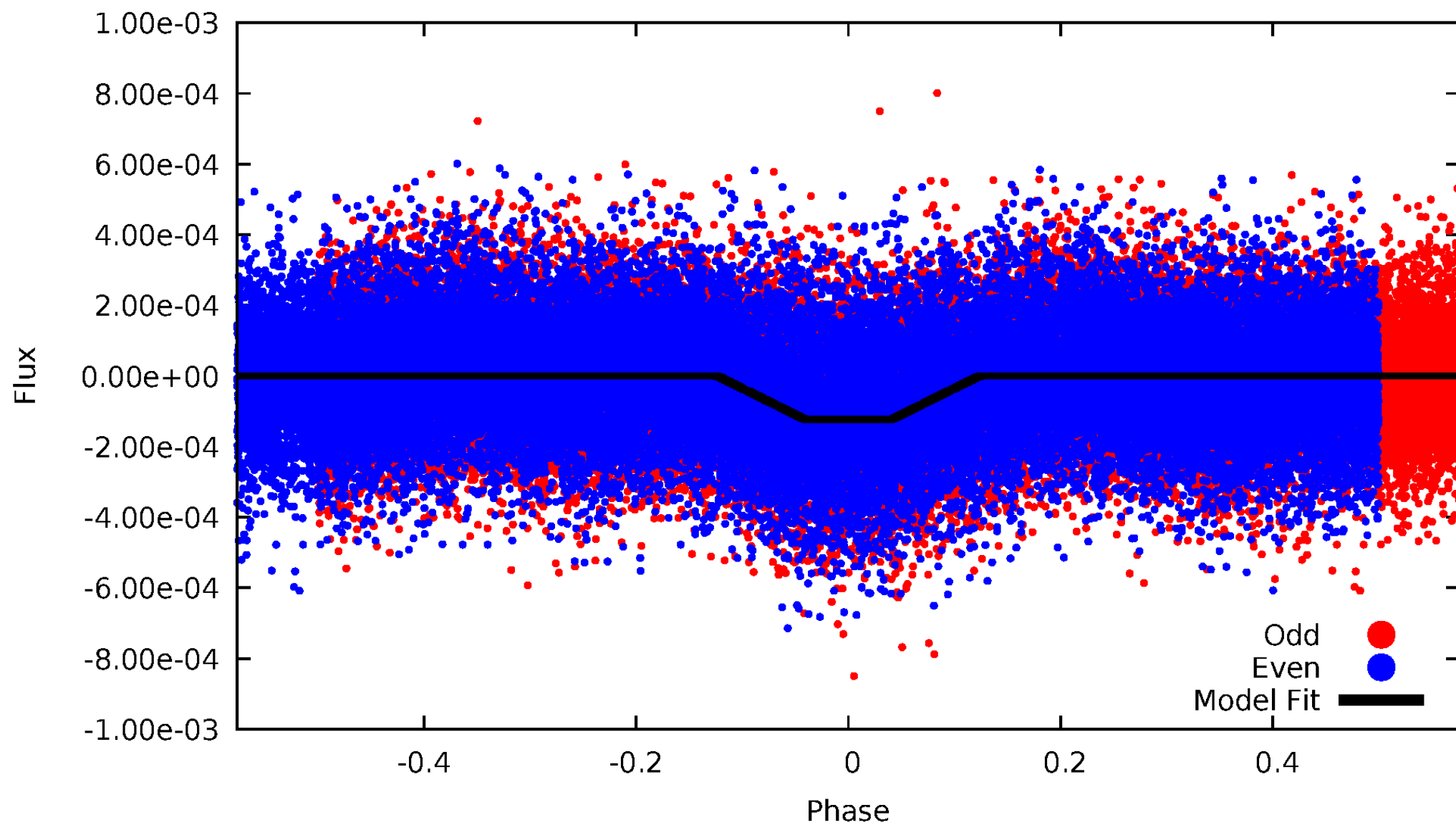
DV Odd/Even

TCE 005812648-01

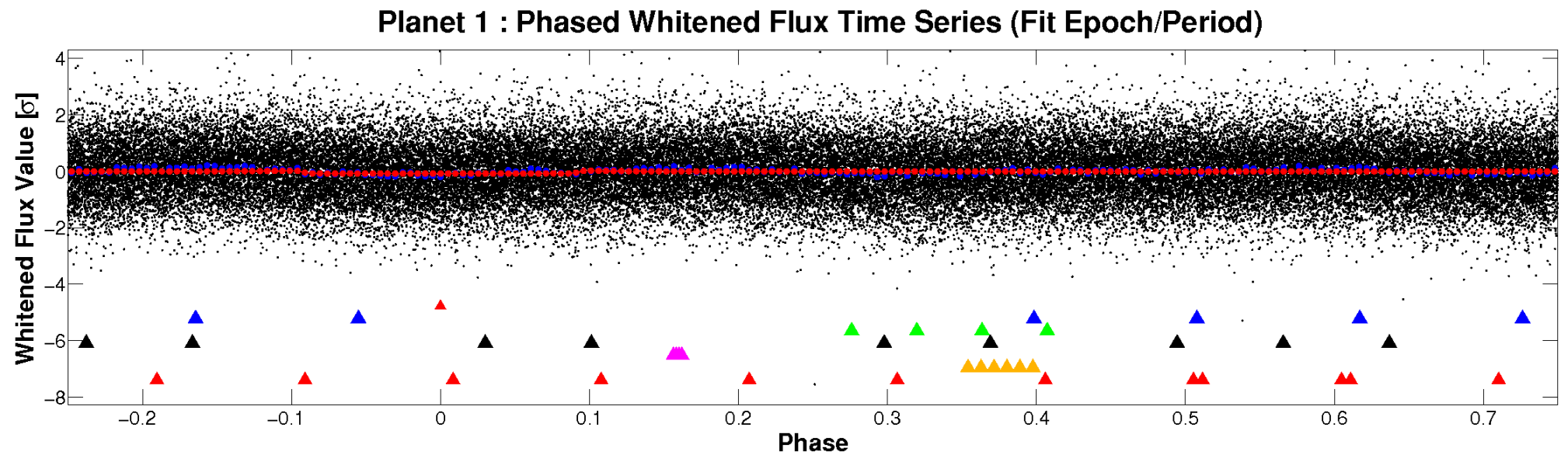
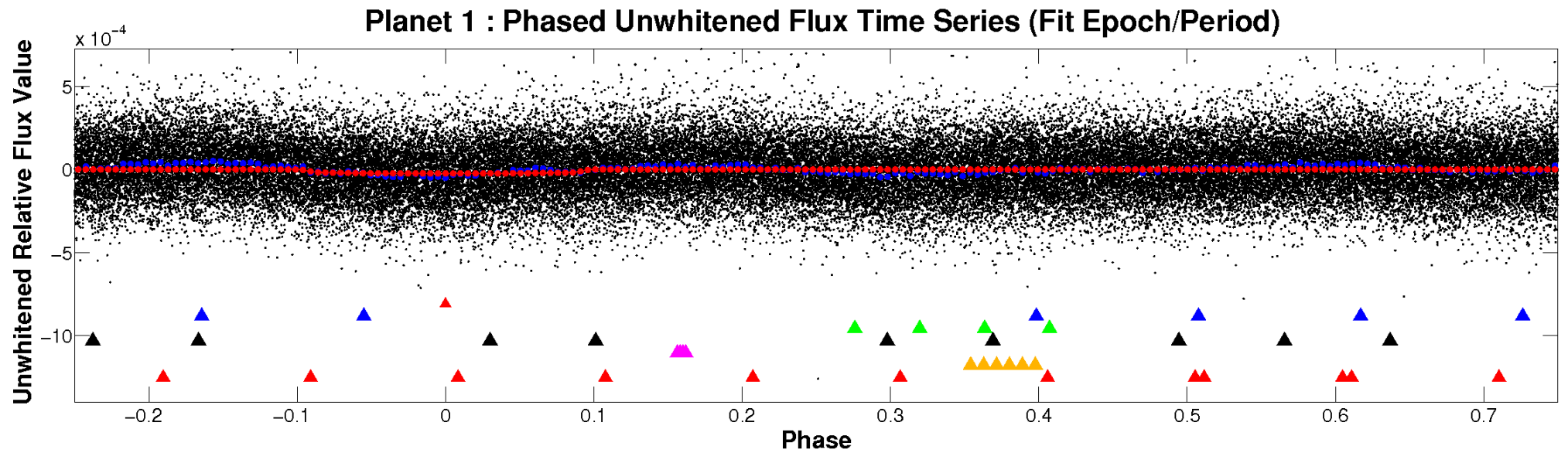


ALT Odd/Even

TCE 005812648-01

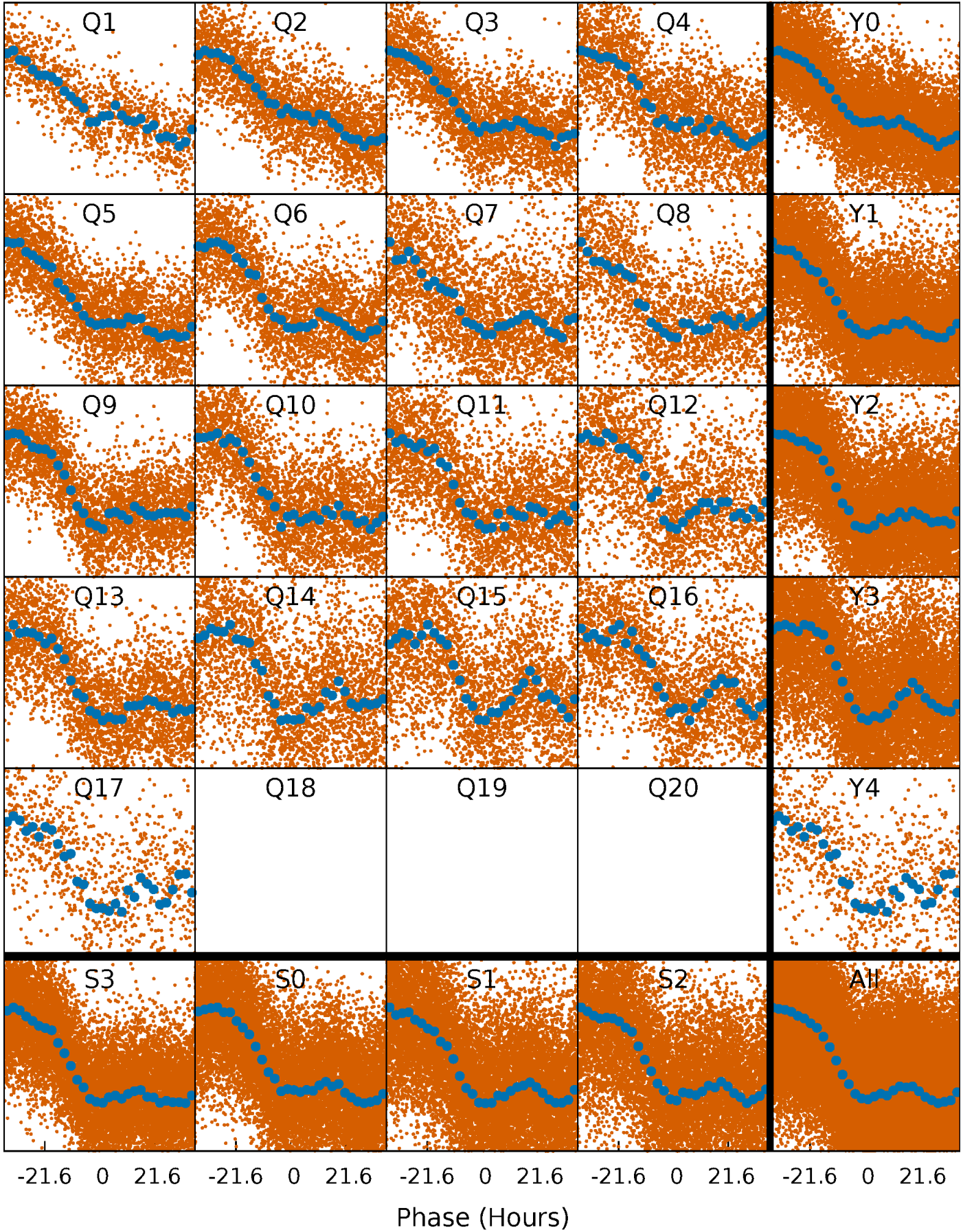


Non-Whitened Vs. Whitened Light Curve



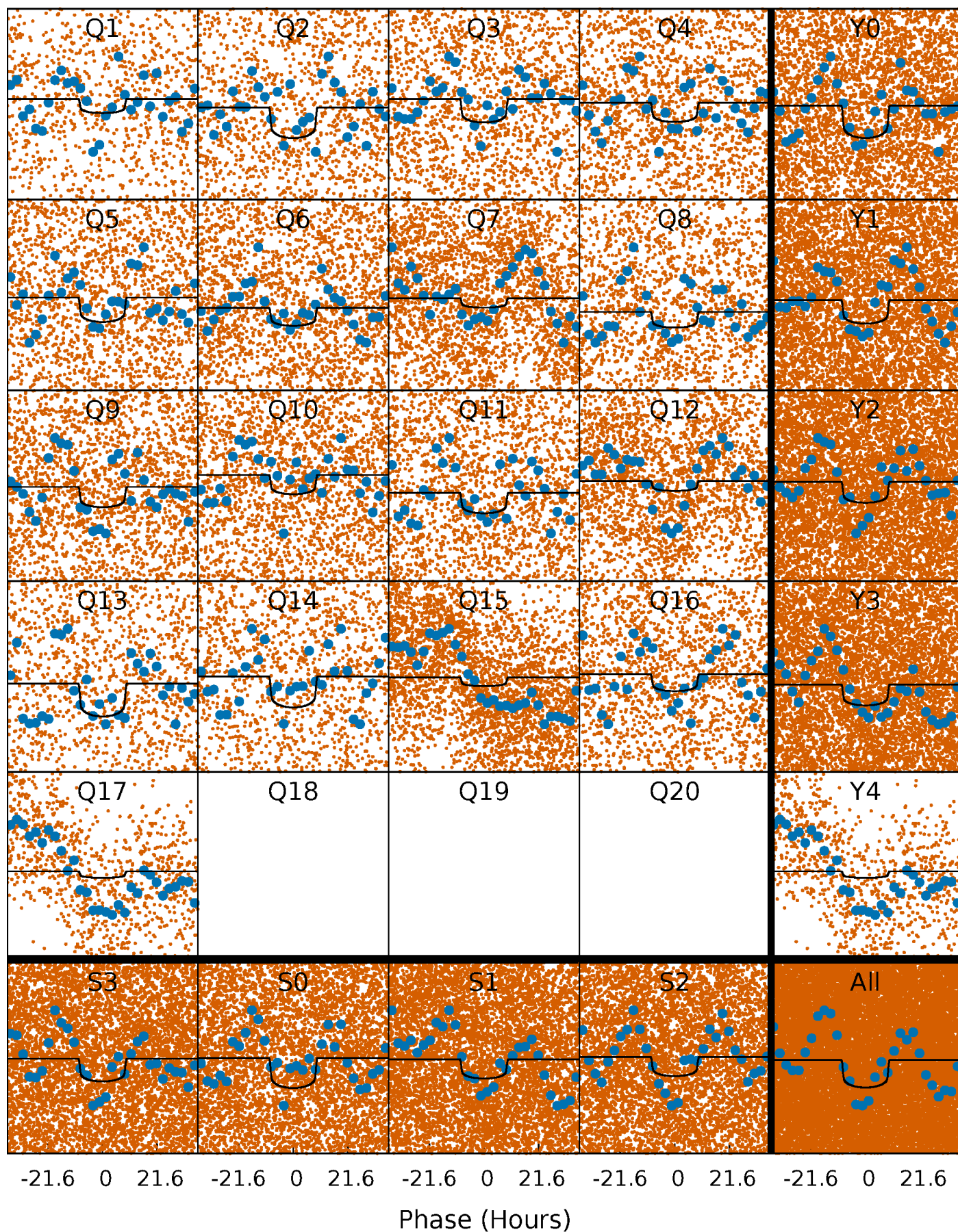
PDC Quarter-Phased Transit Curves

TCE 005812648-01 P= 4.042919 Days $T_0=134.344921$ (BKJD)



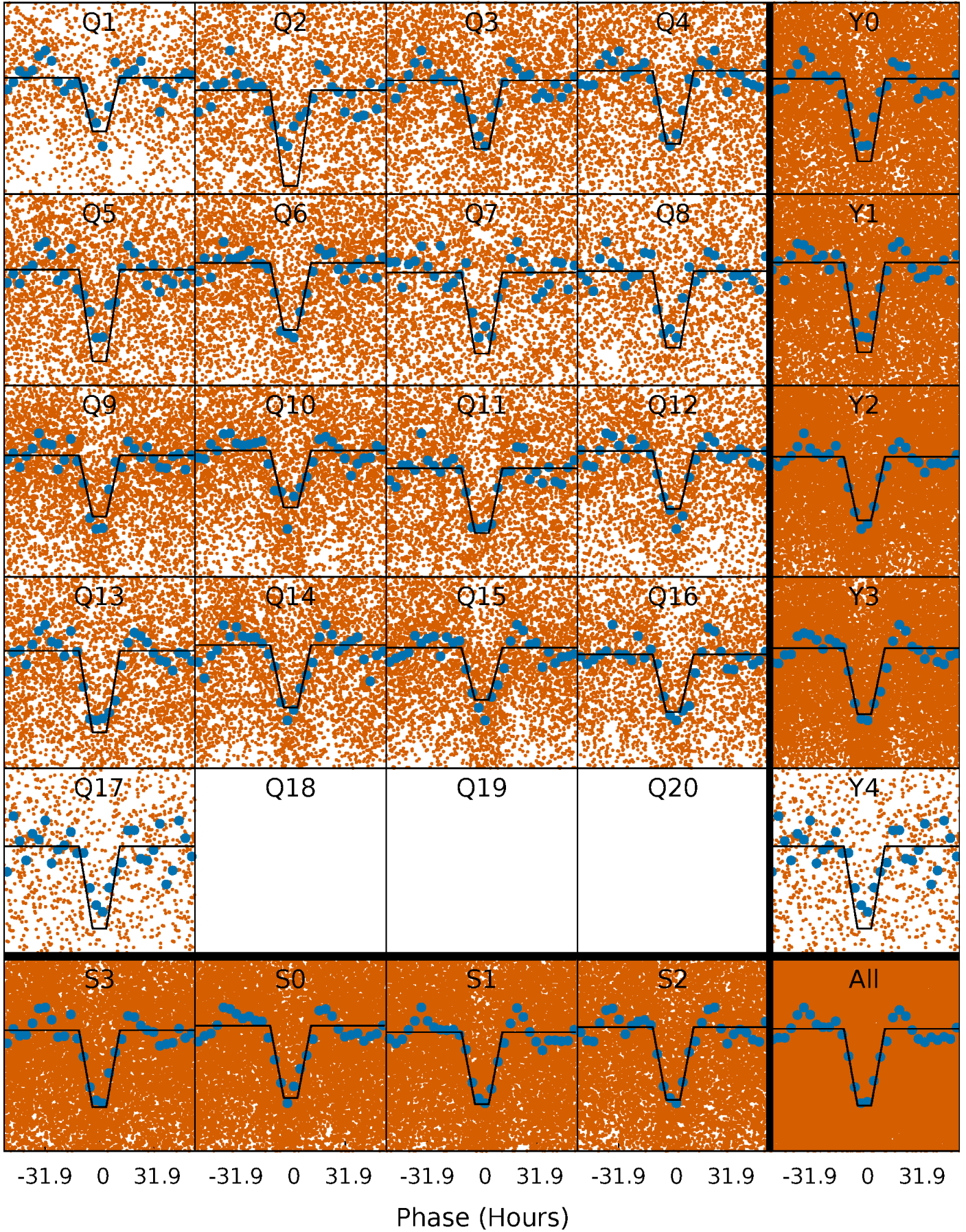
DV Quarter-Phased Transit Curves

TCE 005812648-01 P= 4.042919 Days $T_0=134.344921$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

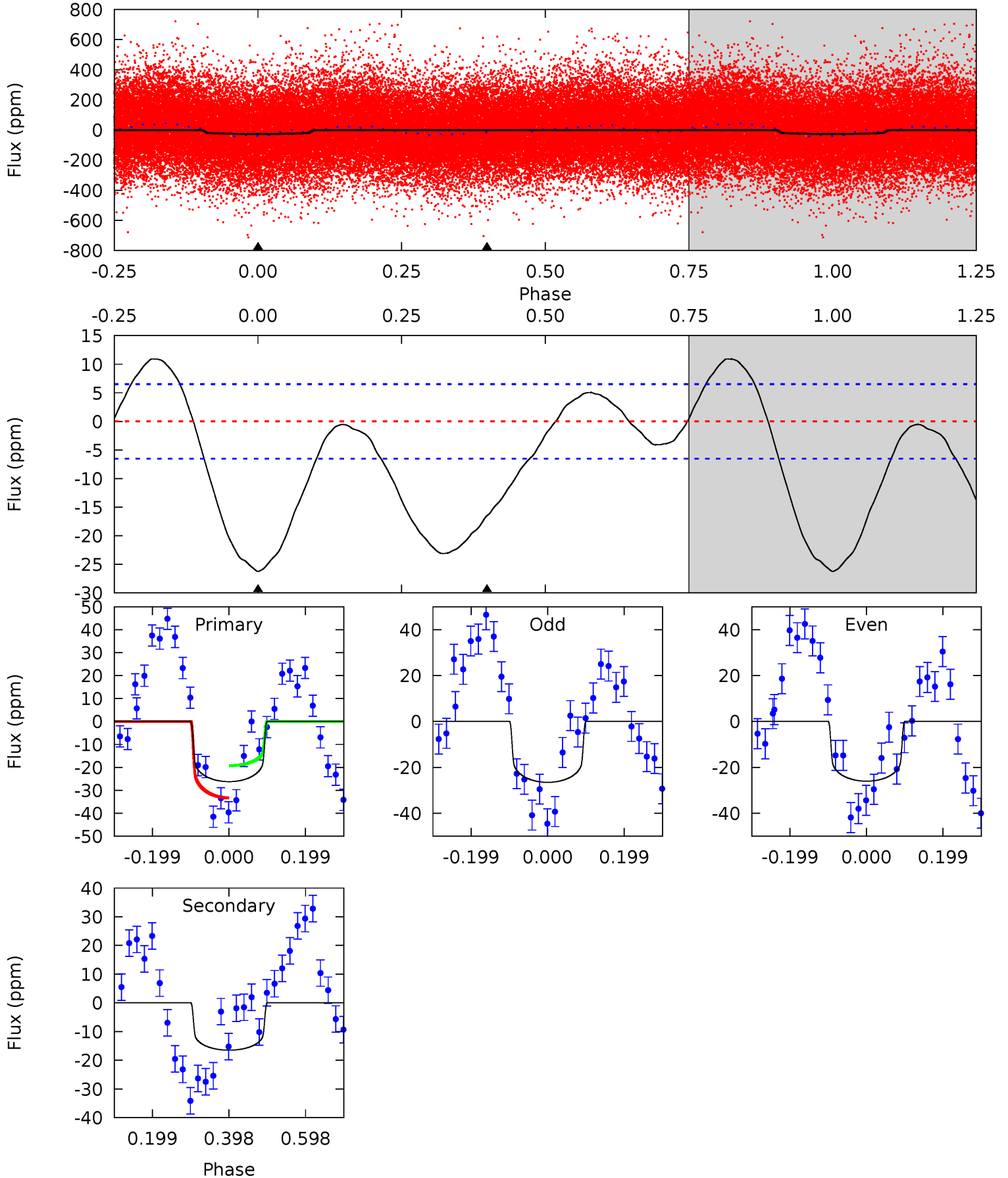
TCE 005812648-01 P= 4.043124 Days $T_0=134.197391$ (BKJD)



DV Model-Shift Uniqueness Test

005812648-01, P = 4.042919 Days, E = 130.302002 Days

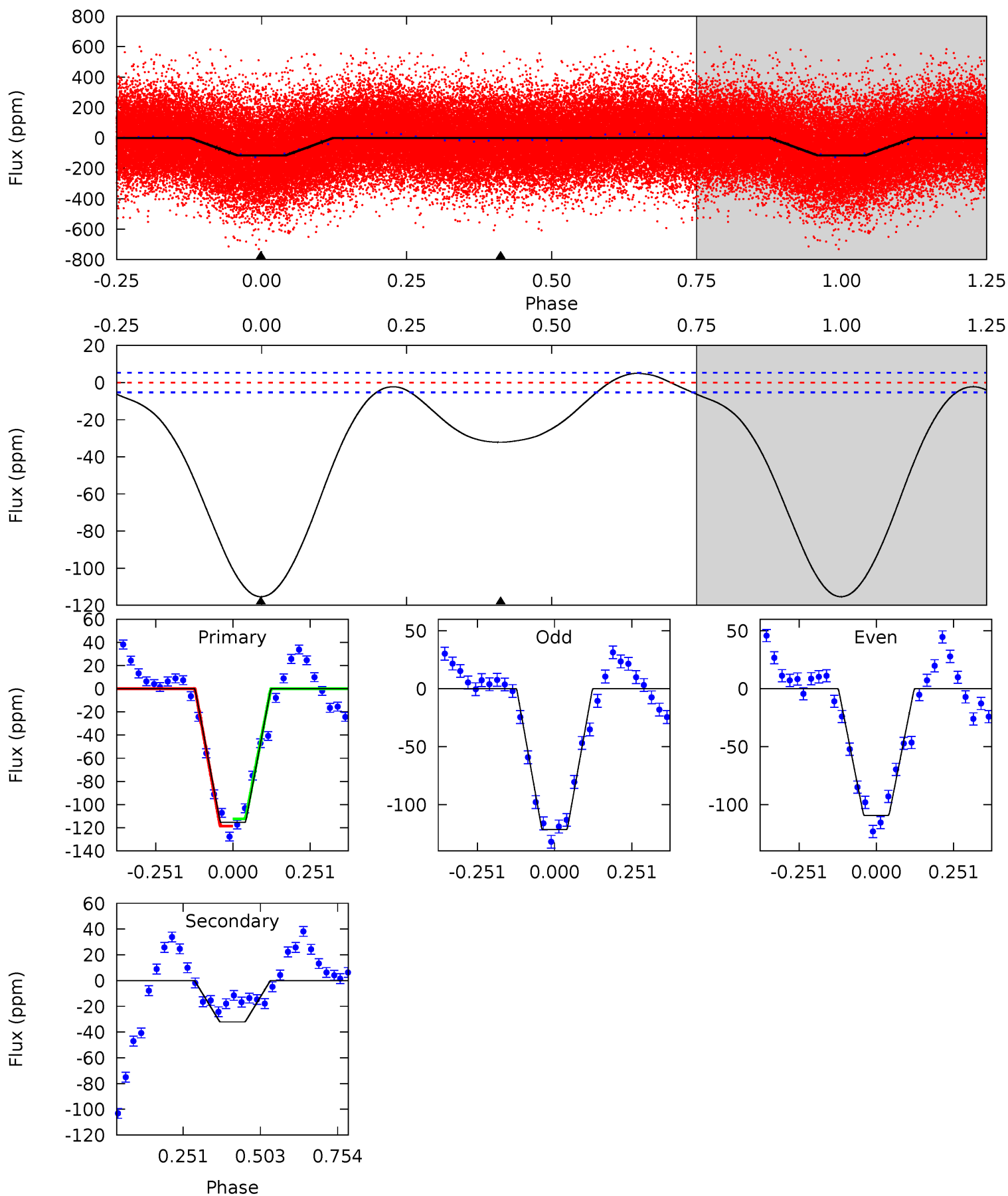
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	11.2	0	0	4.42	1.28	2.65	17.8	17.8	11.2	11.2	0.17	1.17	0.29	4.76



Alt Model-Shift Uniqueness Test

005812648-01, P = 4.043124 Days, E = 130.154267 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
95.1	26.5	0	0	4.37	1.15	3.10	95.1	95.1	26.5	26.5	5.06	0.97	0.04	2.56



Stellar Parameters For KIC 005812648

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6565^{+178}_{-218}	$3.573^{+0.345}_{-0.115}$	$-0.520^{+0.350}_{-0.300}$	$3.308^{+0.555}_{-1.387}$	$1.493^{+0.237}_{-0.355}$	$0.058^{+0.152}_{-0.021}$
	+3%/-3%	+10%/-3%	+67%/-58%	+17%/-42%	+16%/-24%	+261%/-35%
Source	PHO1	FLK73	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 005812648-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16 ± 1	$1.88^{+0.33}_{-0.40}$	3045^{+203}_{-294}	5666^{+420}_{-353}	$8.401^{+4.552}_{-2.270}$
Alt.	-32 ± 1	$3.95^{+0.52}_{-0.87}$	3052^{+180}_{-302}	4725^{+184}_{-156}	$3.725^{+2.105}_{-0.766}$

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

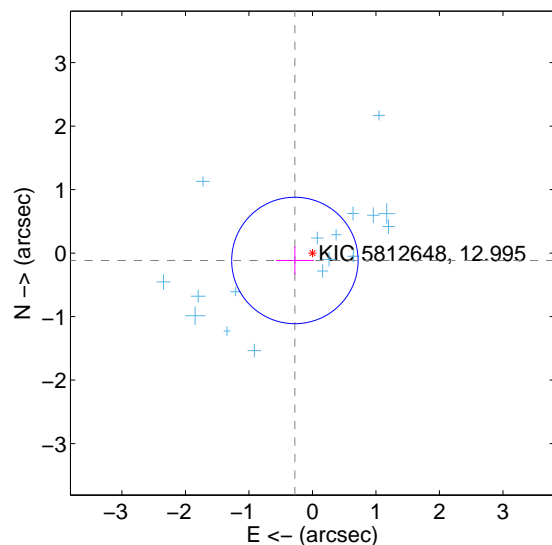
Supplemental centroid analysis for 005812648-01. Kepler magnitude: 12.99. Transit SNR 8.22

There are 17 quarters with good PRF difference image offsets

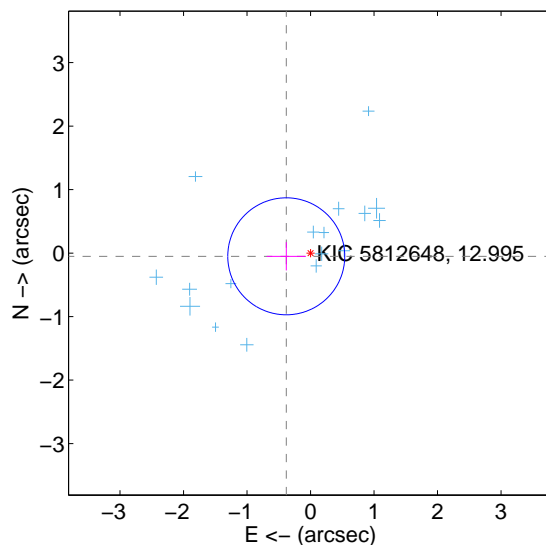
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.300 ± 0.332	0.90	0.276 ± 0.299	-0.116 ± 0.221
PRF-fit source offset from KIC position	0.385 ± 0.307	1.26	0.382 ± 0.308	-0.051 ± 0.223
photometric centroid source offset	0.72 ± 0.82	0.88	-0.68 ± 0.82	-0.24 ± 0.77

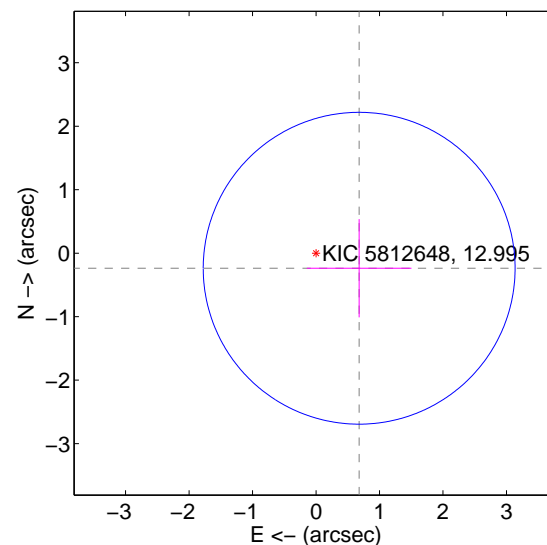
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

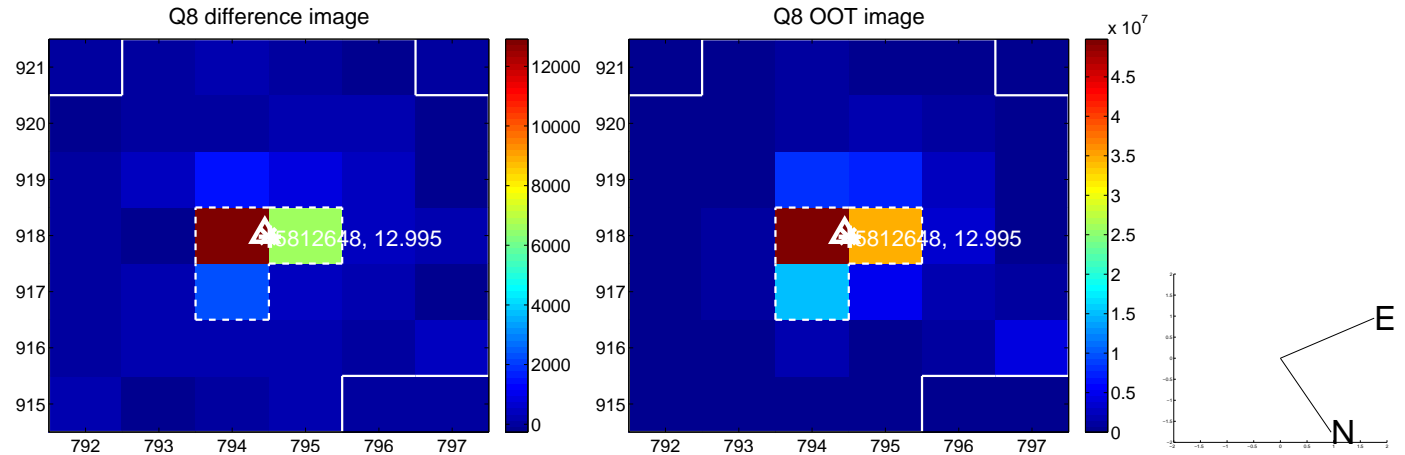
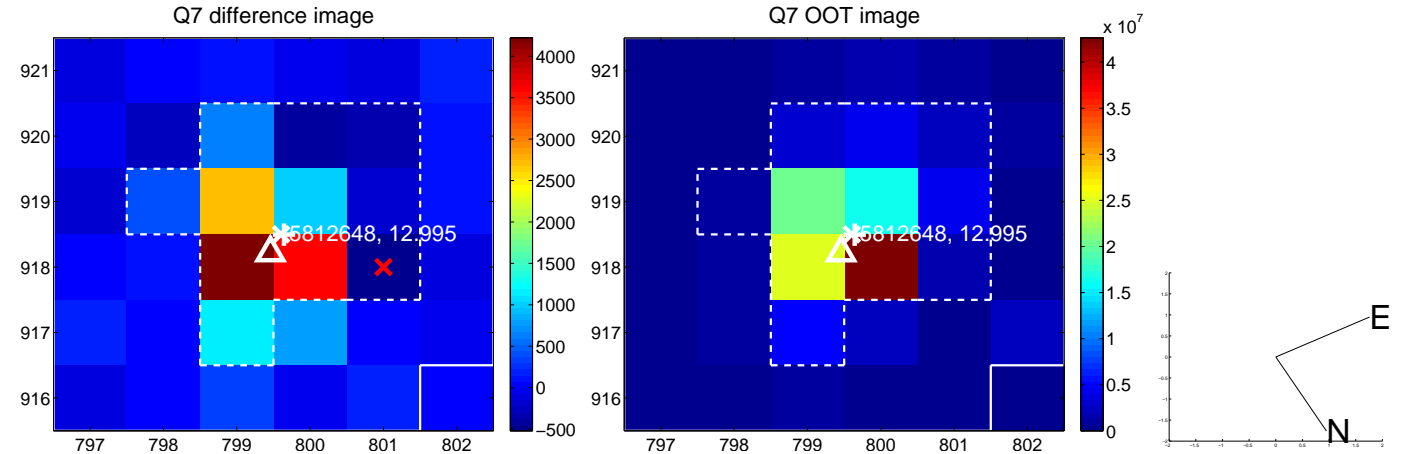
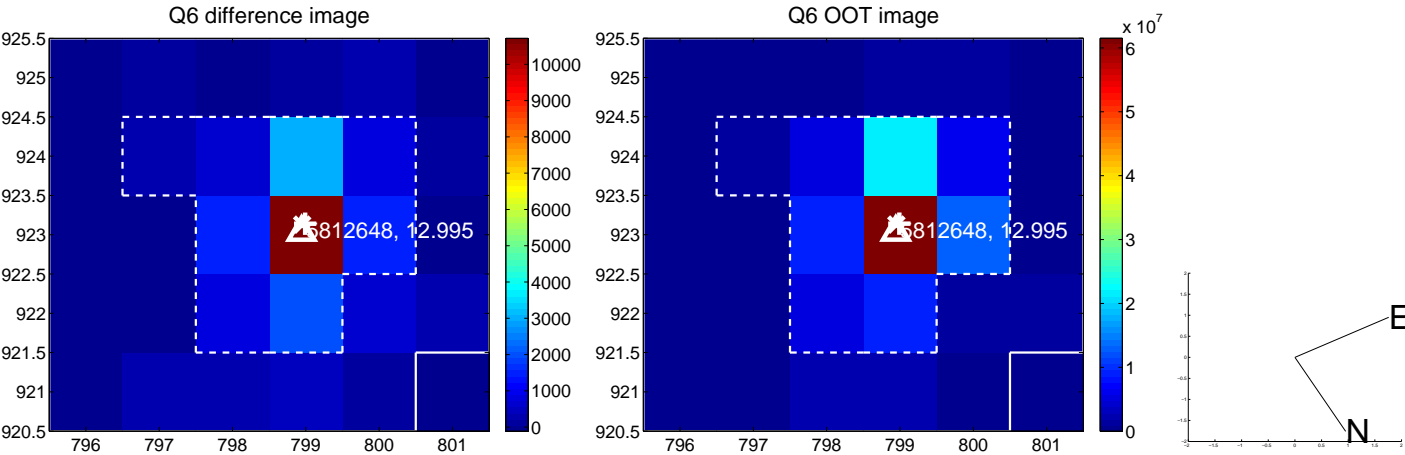
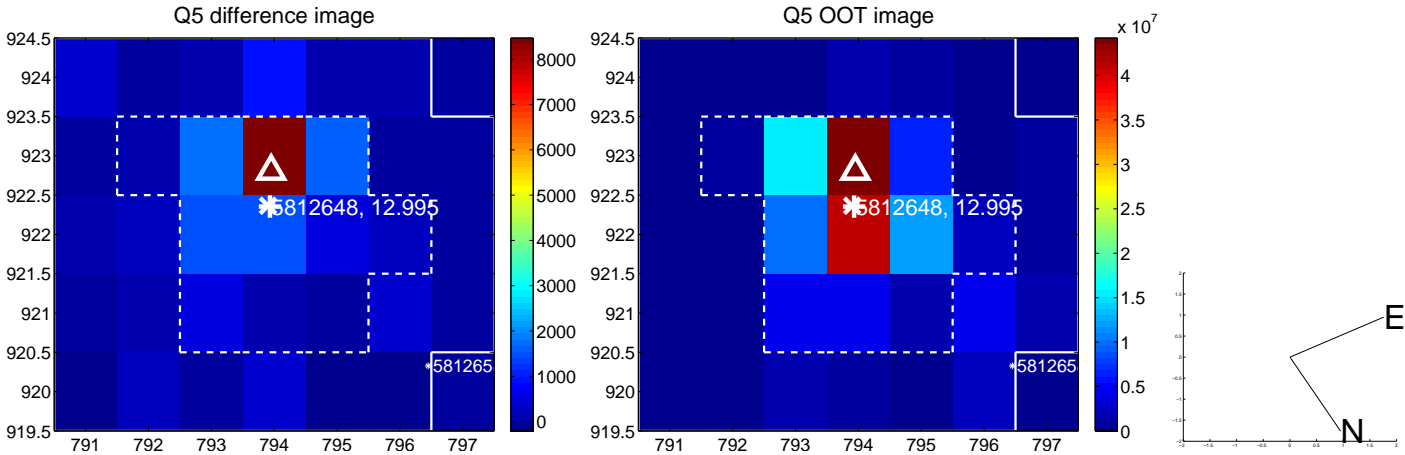


offset from photometric centroids

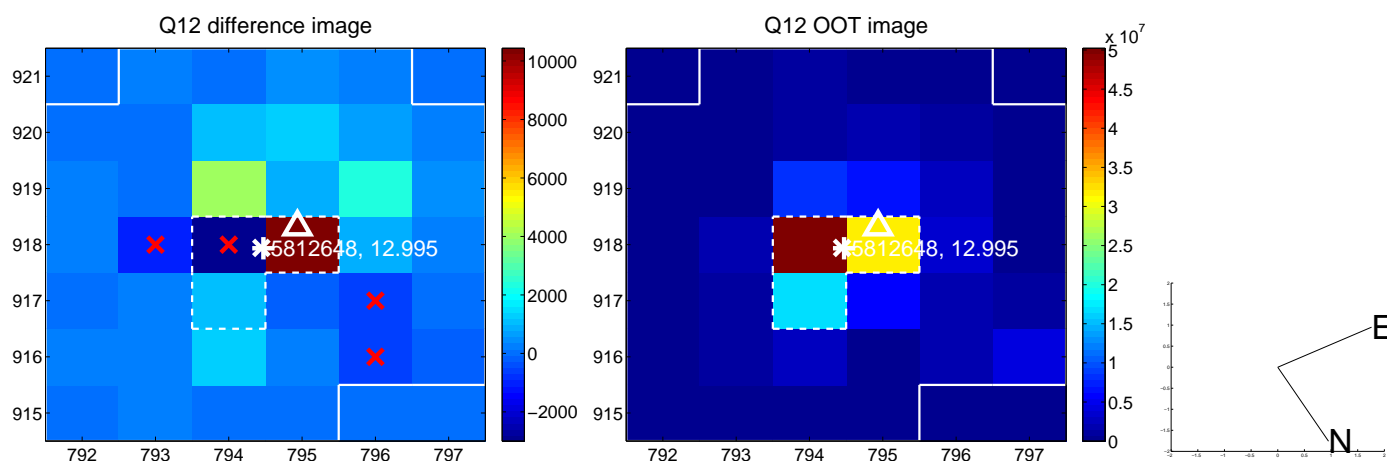
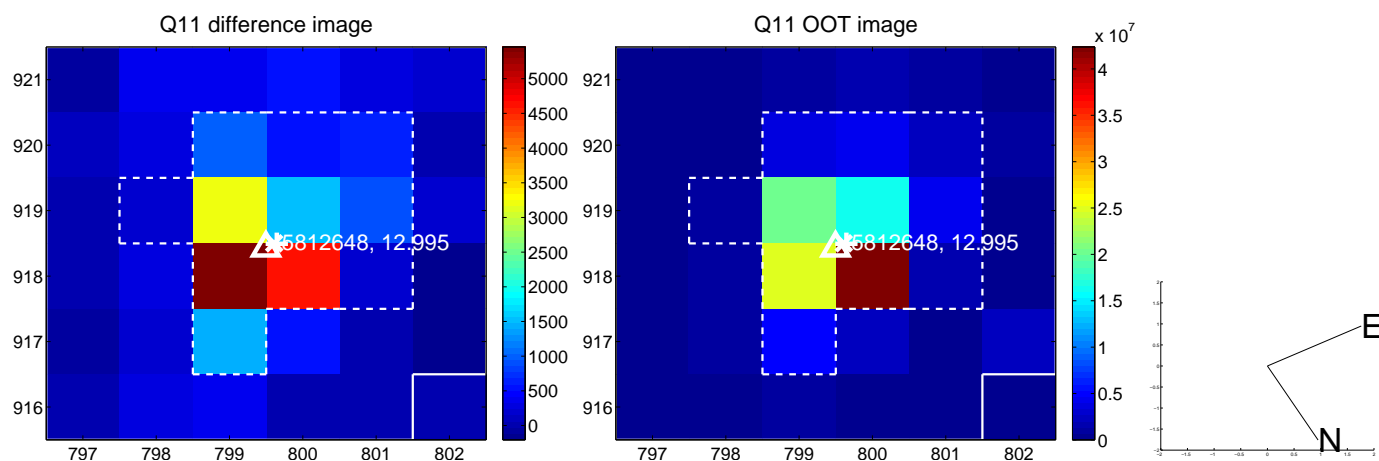
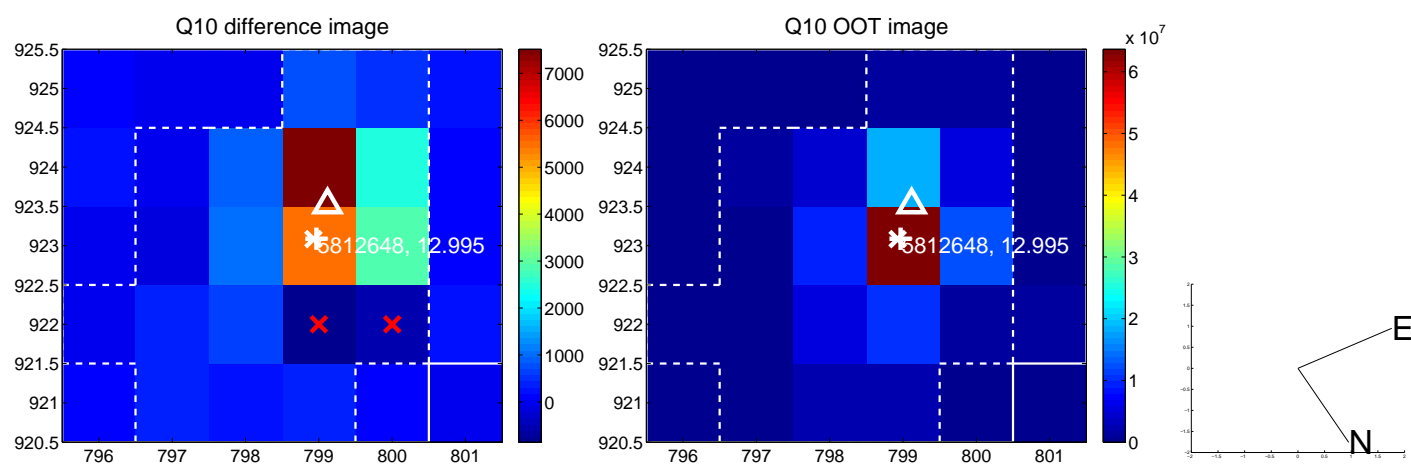
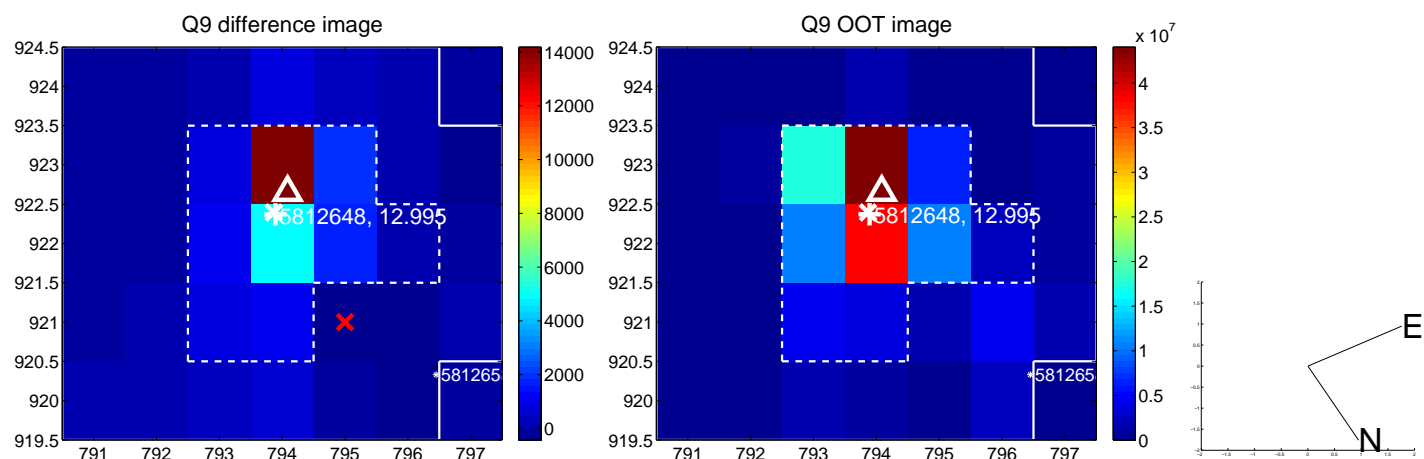


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

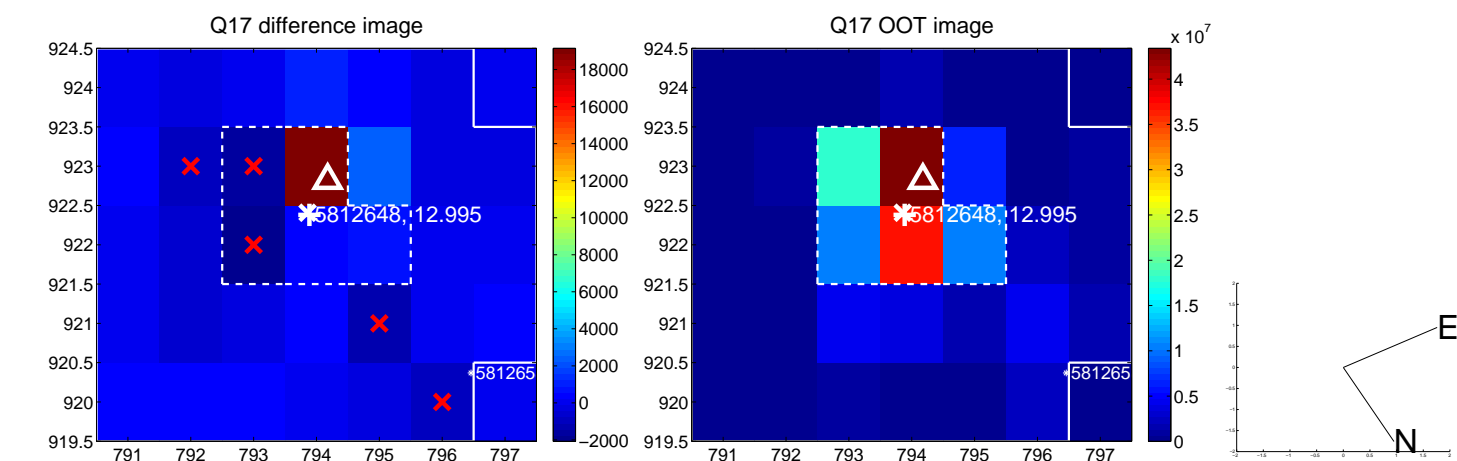
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



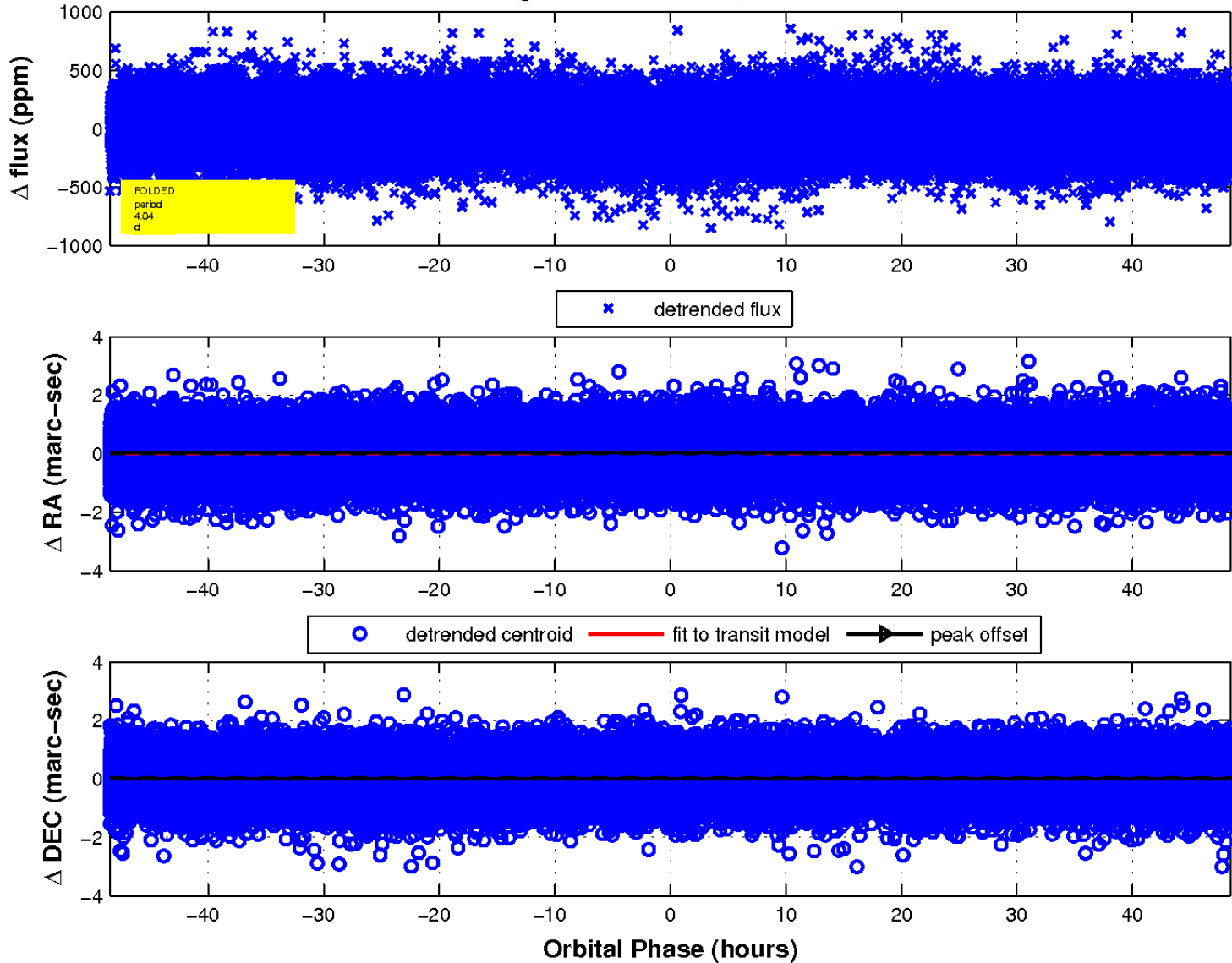
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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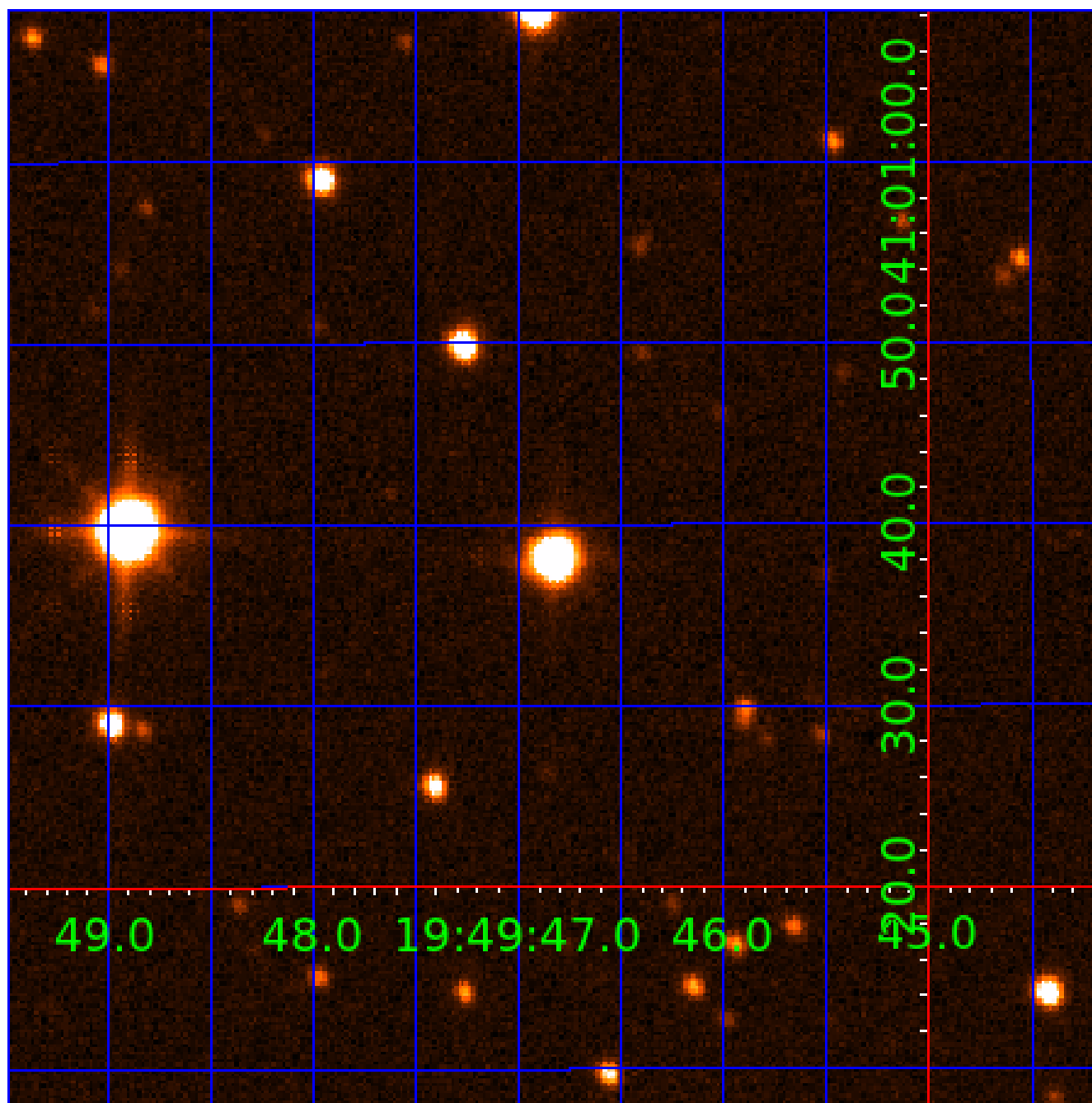


fluxWeightedCentroids, Planet 1 of 7



UKIRT Image

Declination



KIC 005812648

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})
005812648-01	OBS	No	4.042919	134.344921	23.7	18.890	9.4	8.2	3.31	6565	1.93	5648.72
005812648-02	OBS	No	238.090282	279.667447	245.4	12.267	10.8	9.6	3.31	6565	5.87	24.65
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005812648-07	OBS	No	120.885747	152.961688	140.8	6.905	8.0	6.0	3.31	6565	4.53	60.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005812648-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005812648-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT
005812648-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
005812648-06	OBS	FP	0.08	1	0	0	0	MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005812648-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

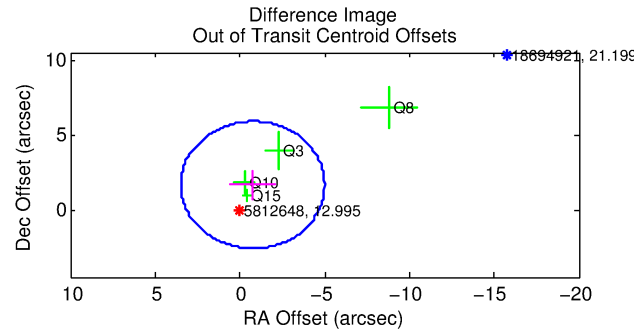
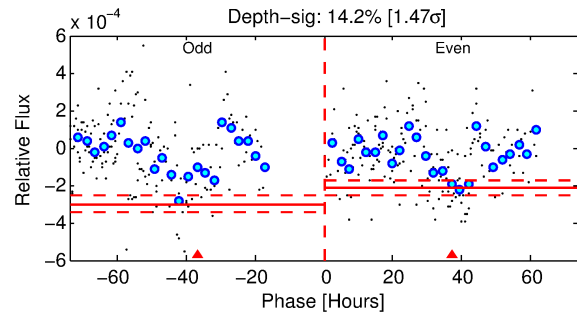
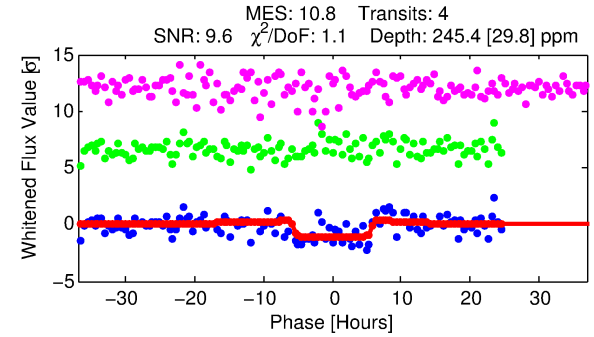
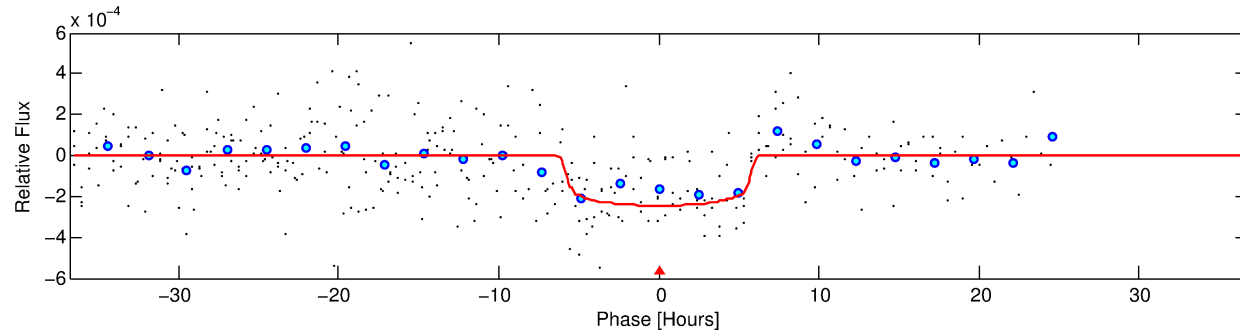
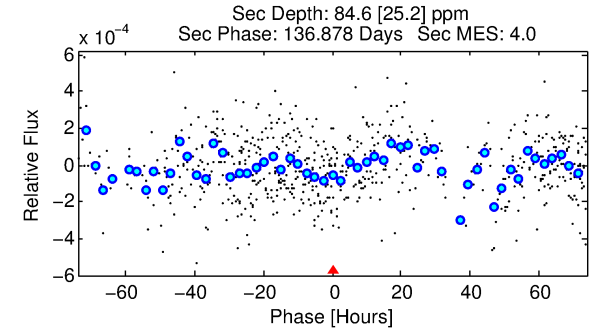
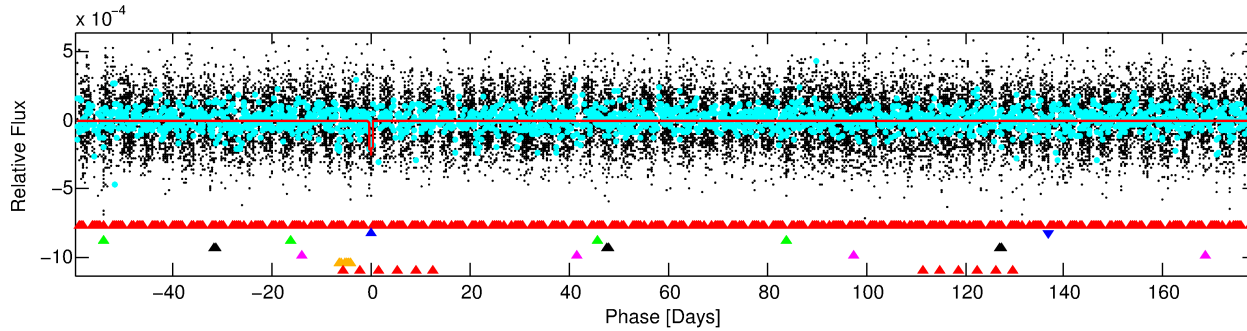
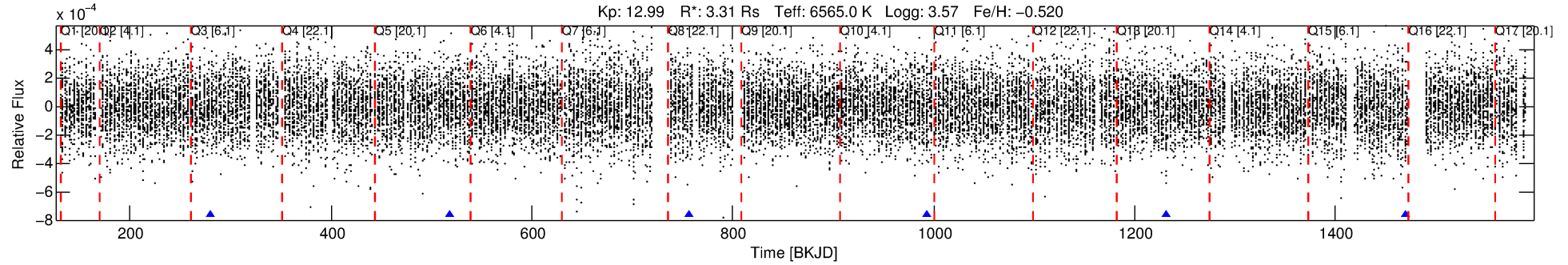
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005812648-02

No Significant Match Found

DV One-Page Summary

KIC: 5812648 Candidate: 2 of 7 Period: 238.090 d



DV Fit Results:

Period = 238.09028 [0.00988] d
Epoch = 279.6674 [0.0385] BKJD
Rp/R* = 0.0163 [0.0028]
a/R* = 81.20 [73.59]
b = 0.86 [0.29]
Seff = 24.65 [15.12]
Teq = 568 [87] K
Rp = 5.87 [2.66] Re
a = 0.8595 [0.3309] AU
Ag = 998.41 [749.72] [1.33σ]
Teffp = 4938 [583] K [7.41σ]

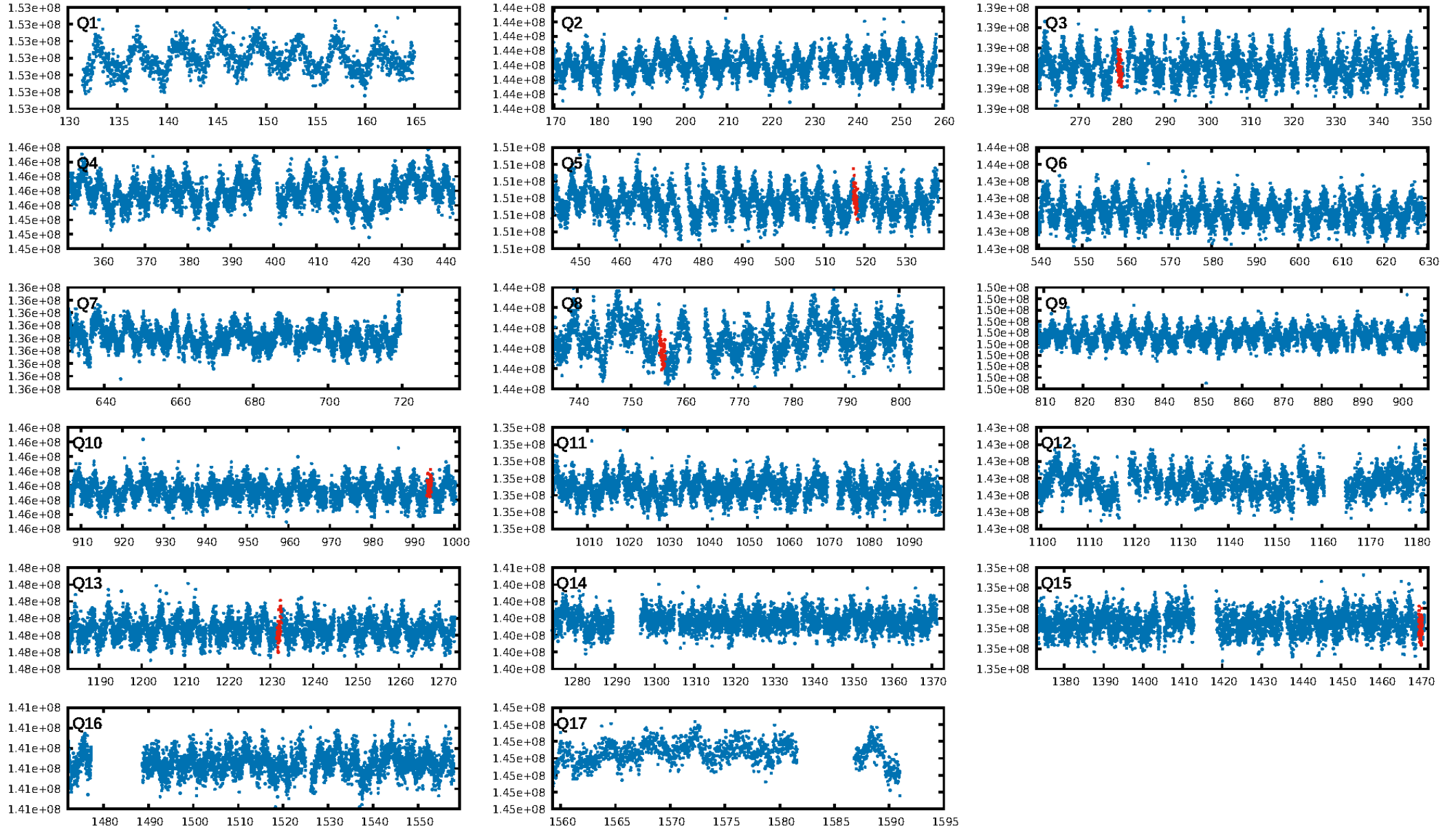
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [139.60σ]
LongPeriod-sig: 51.5% [0.70σ]
ModelChiSquare2-sig: 15.5%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.48e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 9.302
Centroid-sig: 52.2%
Centroid-so: 0.617 arcsec [0.89σ]
OotOffset-rm: 1.811 arcsec [1.28σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-rm: 1.840 arcsec [1.17σ]
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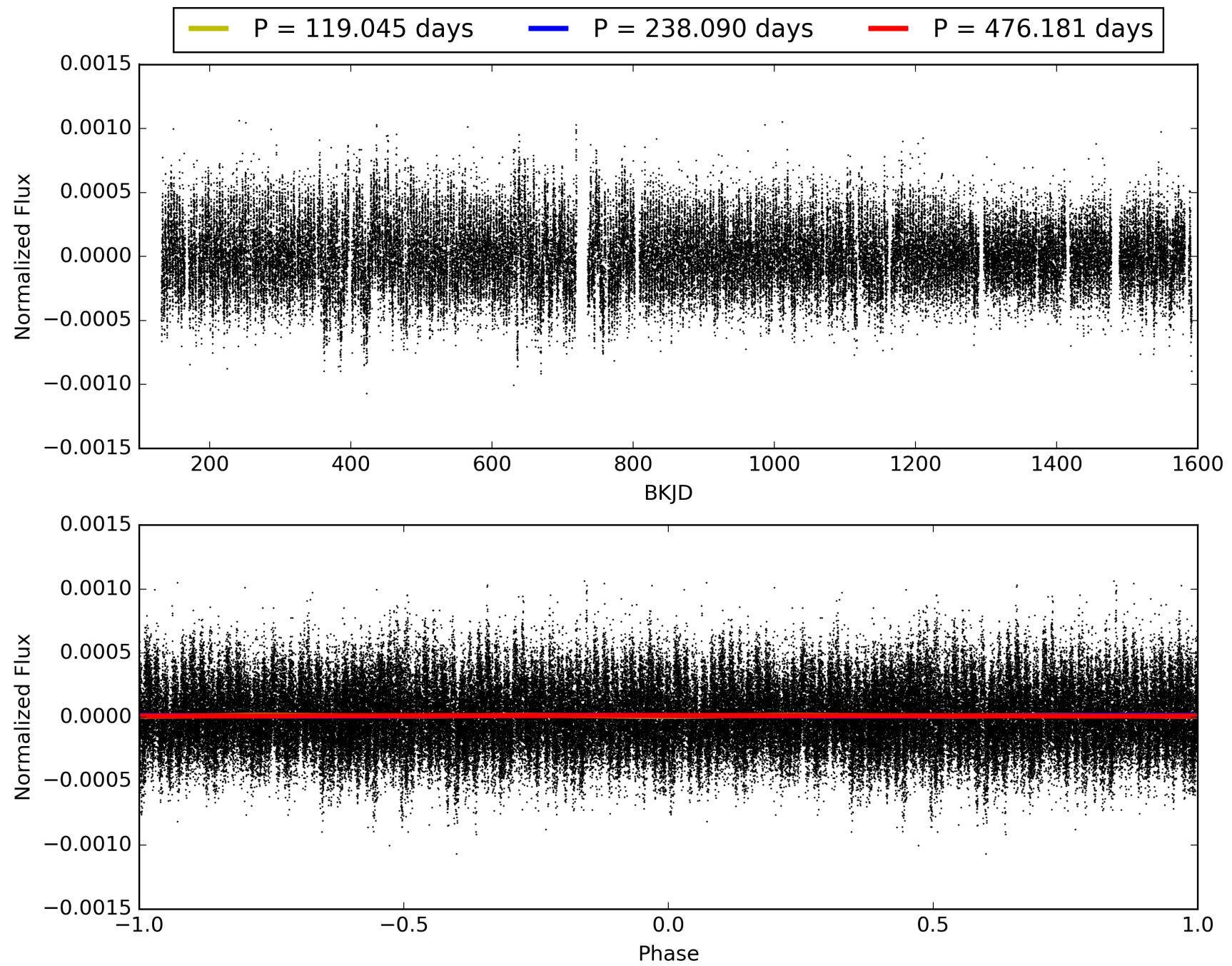
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005812648-02, PDC Light Curves

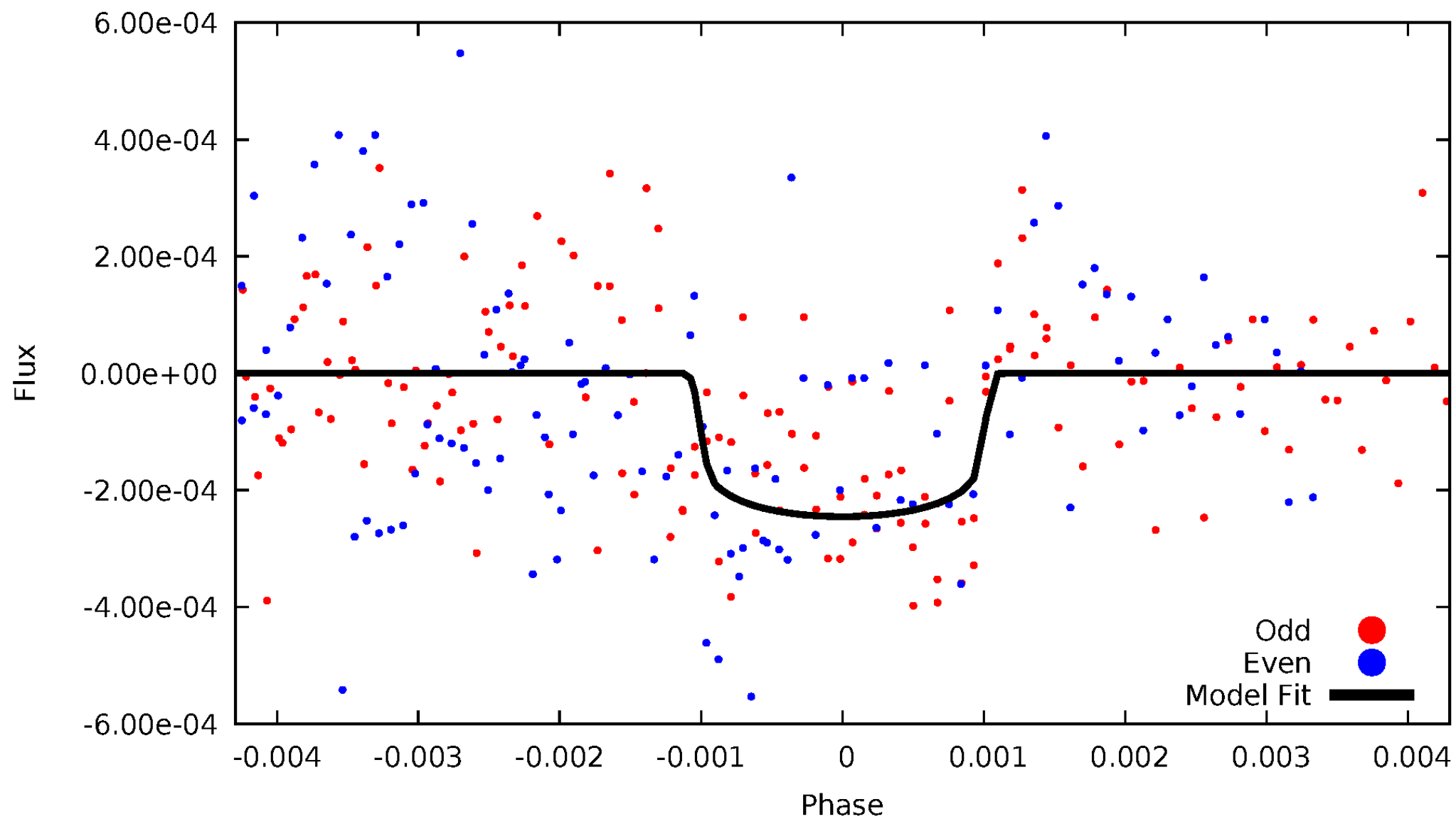


TCE 005812648-02



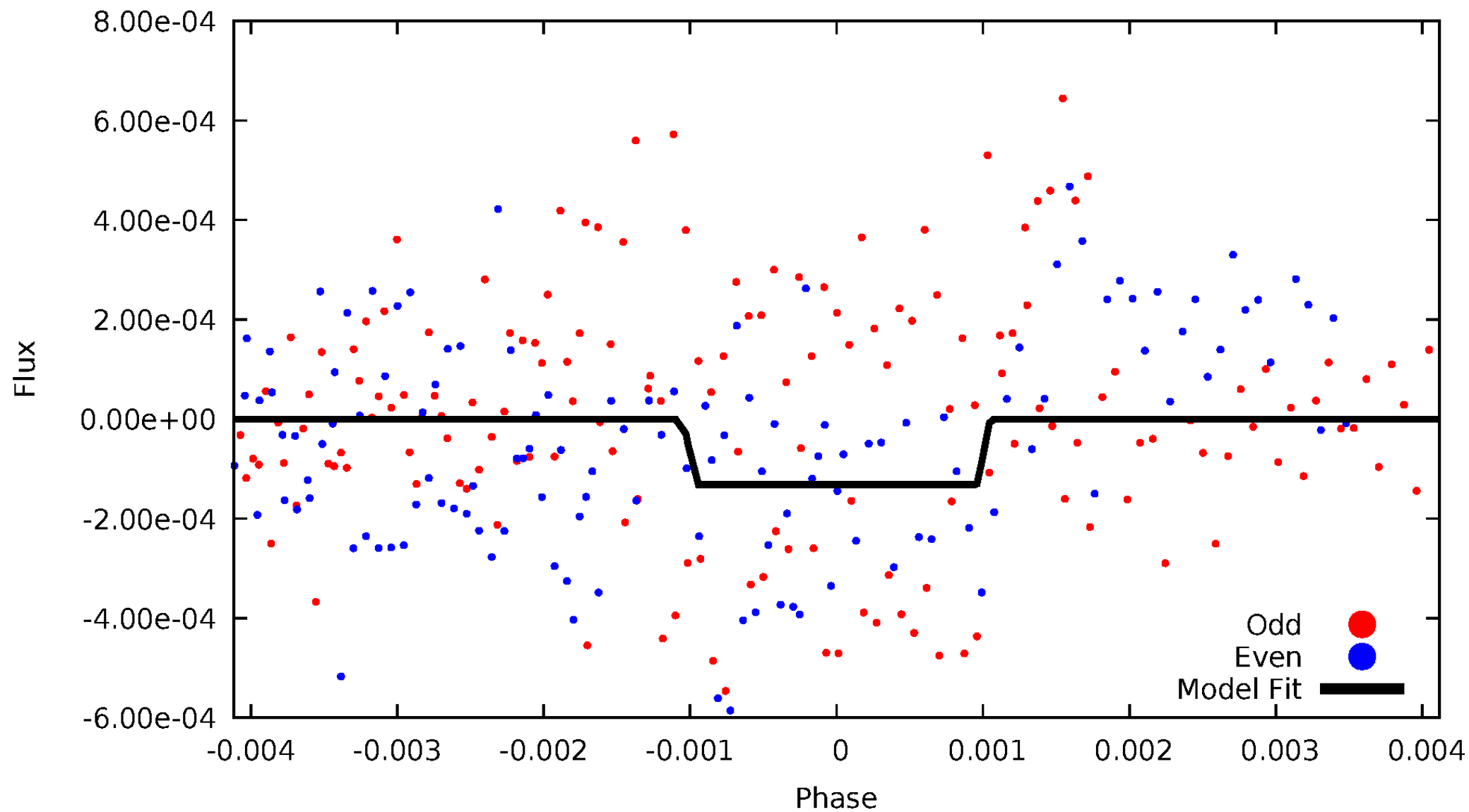
DV Odd/Even

TCE 005812648-02



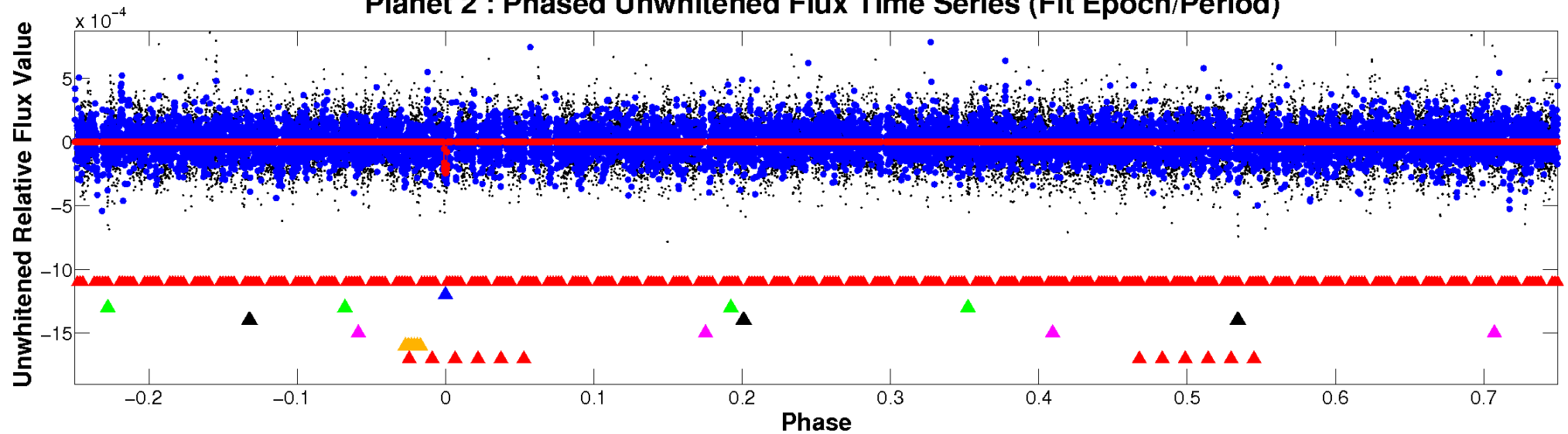
ALT Odd/Even

TCE 005812648-02

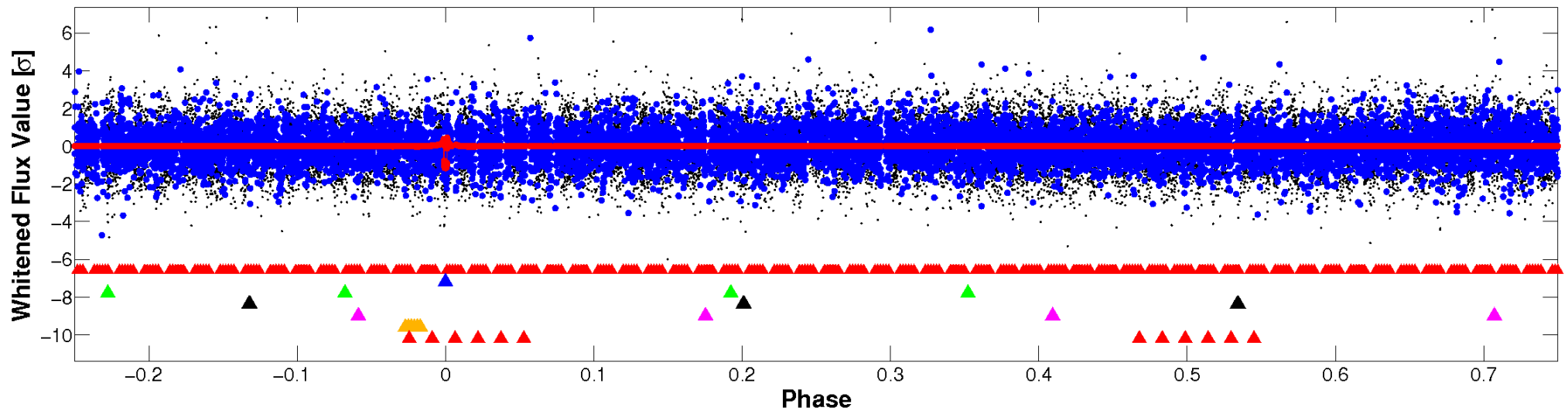


Non-Whitened Vs. Whitened Light Curve

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

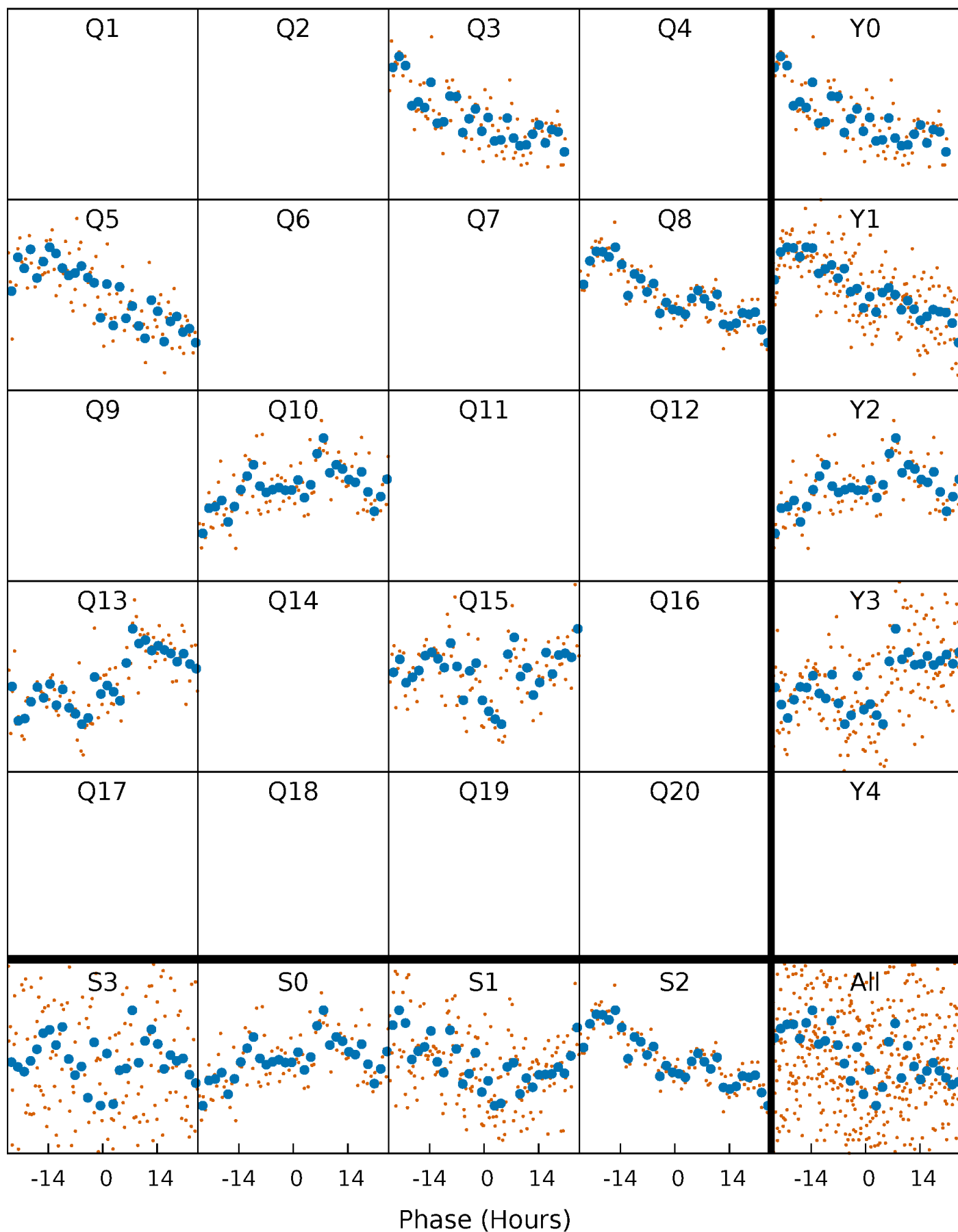


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



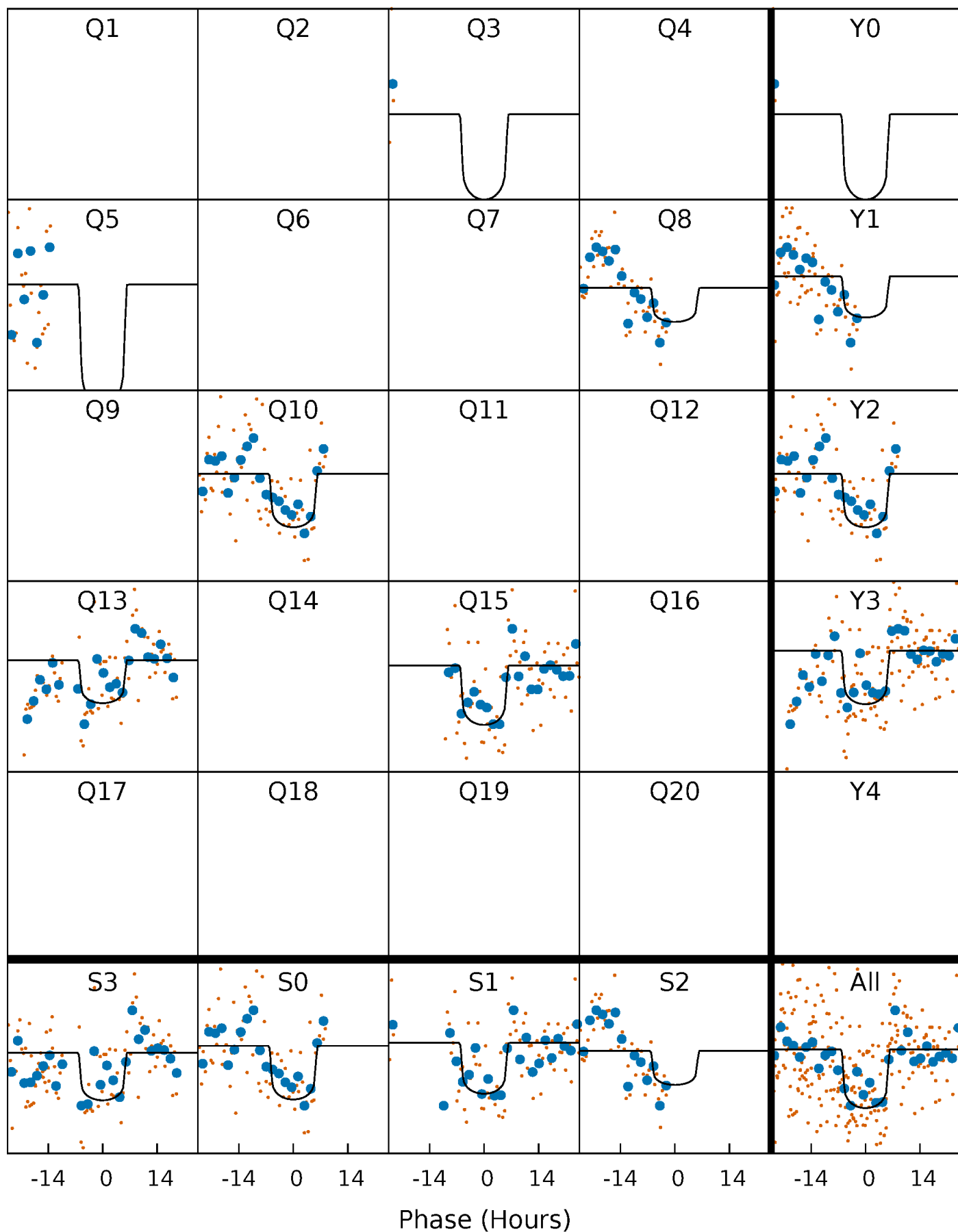
PDC Quarter-Phased Transit Curves

TCE 005812648-02 $P=238.090282$ Days $T_0=279.667447$ (BKJD)



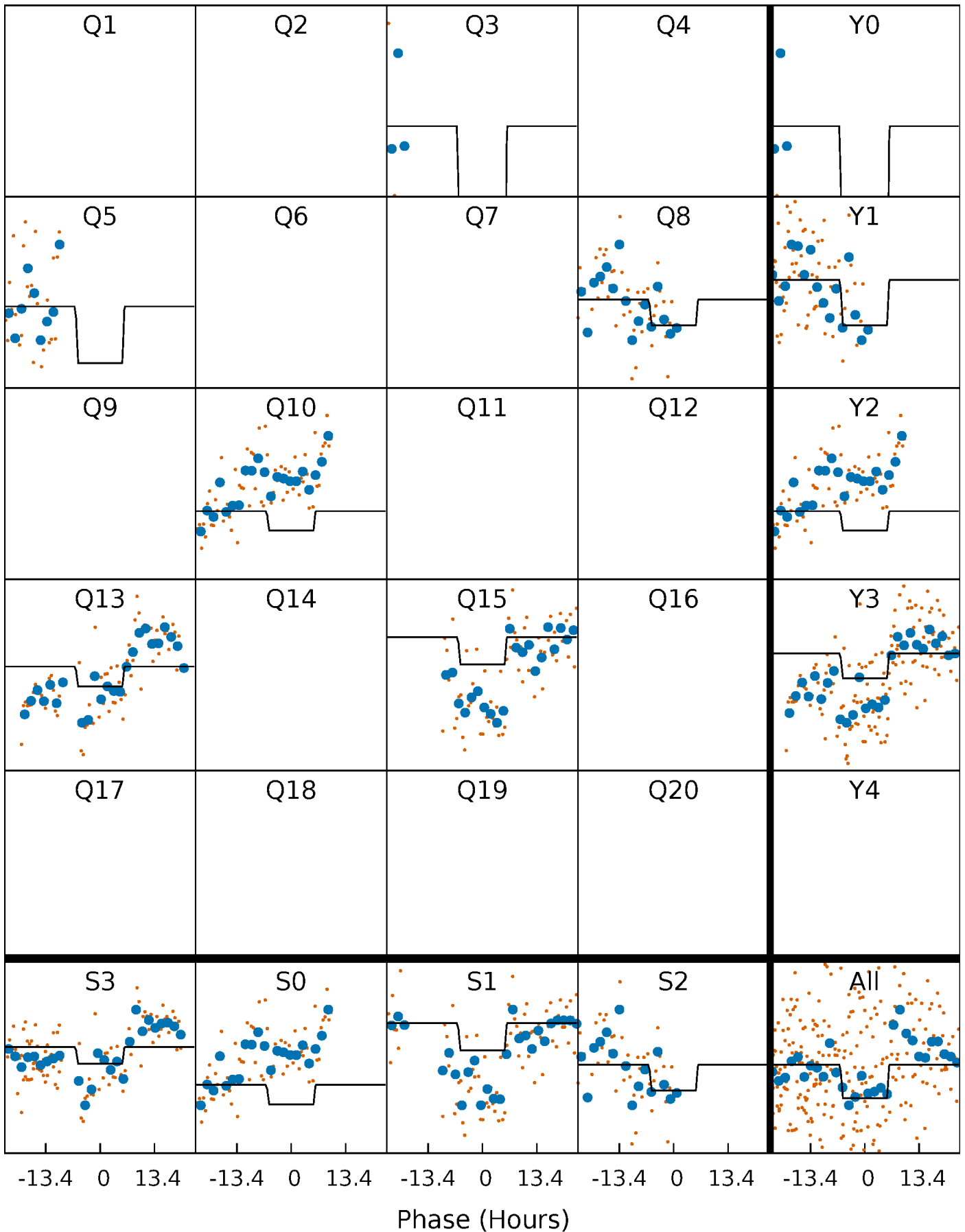
DV Quarter-Phased Transit Curves

TCE 005812648-02 $P=238.090282$ Days $T_0=279.667447$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

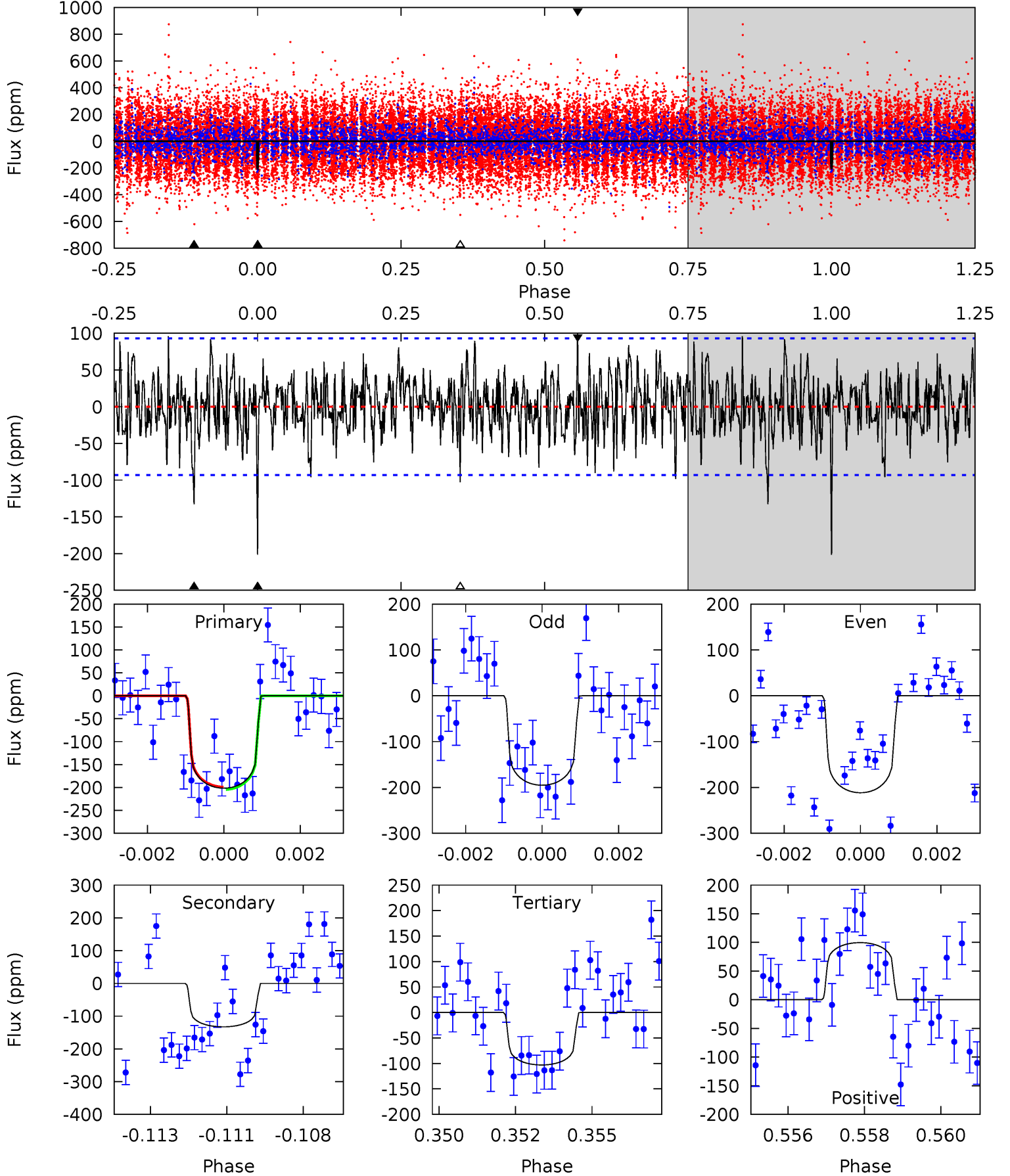
TCE 005812648-02 P=238.119086 Days $T_0=279.516109$ (BKJD)



DV Model-Shift Uniqueness Test

005812648-02, P = 238.090282 Days, E = 41.577165 Days

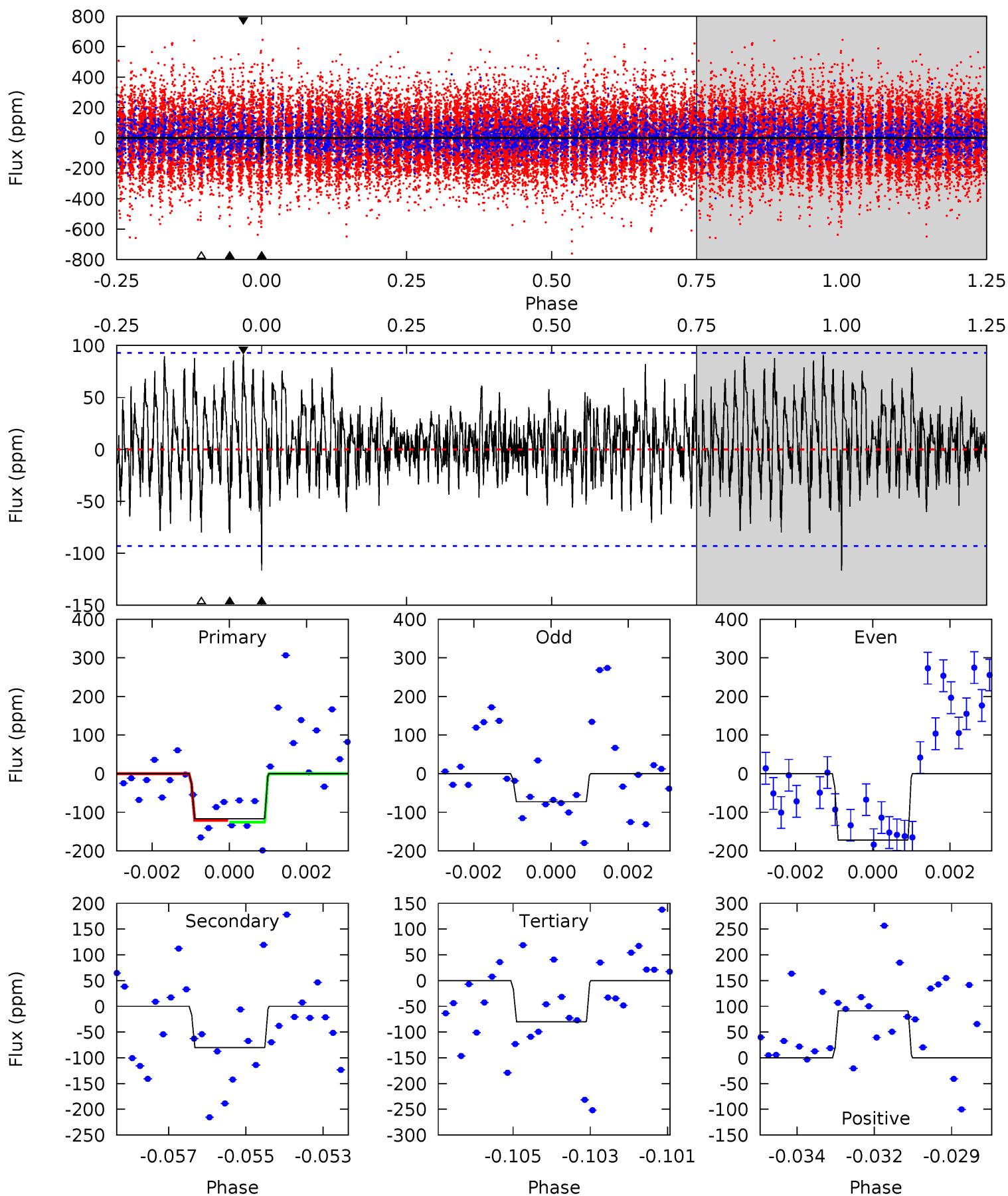
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	7.56	5.87	5.68	5.30	3.05	1.77	5.62	5.81	1.69	1.88	0.47	1.15	0.33	0.15



Alt Model-Shift Uniqueness Test

005812648-02, P = 238.119086 Days, E = 41.397023 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.67	4.60	4.57	5.22	5.32	3.08	1.49	2.11	1.46	0.03	-0.62	2.82	0.74	0.44	0.15



Stellar Parameters For KIC 005812648

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6565^{+178}_{-218}	$3.573^{+0.345}_{-0.115}$	$-0.520^{+0.350}_{-0.300}$	$3.308^{+0.555}_{-1.387}$	$1.493^{+0.237}_{-0.355}$	$0.058^{+0.152}_{-0.021}$
	+3%/-3%	+10%/-3%	+67%/-58%	+17%/-42%	+16%/-24%	+261%/-35%
Source	PHO1	FLK73	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 005812648-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-133 ± 18	$5.60^{+1.37}_{-1.34}$	784^{+46}_{-78}	5549^{+555}_{-429}	1750^{+1228}_{-614}
Alt.	-80 ± 17	$3.88^{+1.27}_{-1.18}$	778^{+51}_{-79}	5749^{+963}_{-586}	2169^{+2258}_{-954}

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 $A_{obs} \gg 1.0$

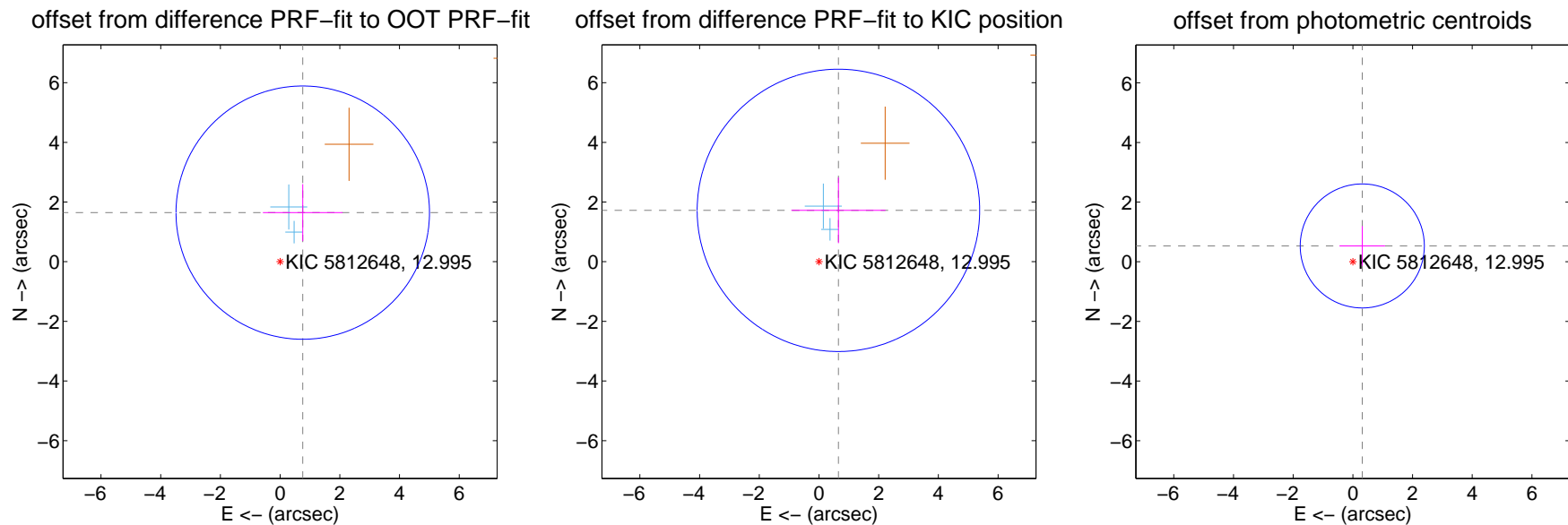
DV Centroid Data

Supplemental centroid analysis for 005812648-02. Kepler magnitude: 12.99. Transit SNR 9.62

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	1.811 ± 1.415	1.28	-0.759 ± 1.335	1.645 ± 0.954
PRF-fit source offset from KIC position	1.840 ± 1.577	1.17	-0.651 ± 1.577	1.721 ± 1.100
photometric centroid source offset	0.62 ± 0.69	0.89	-0.32 ± 0.76	0.53 ± 0.67



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

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

Q1 no difference image



Q1 no OOT image



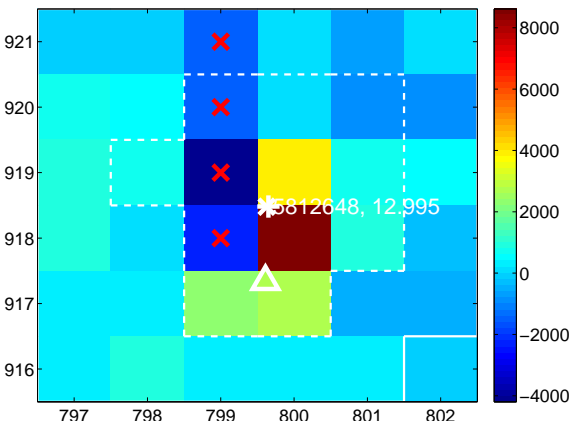
Q2 no difference image



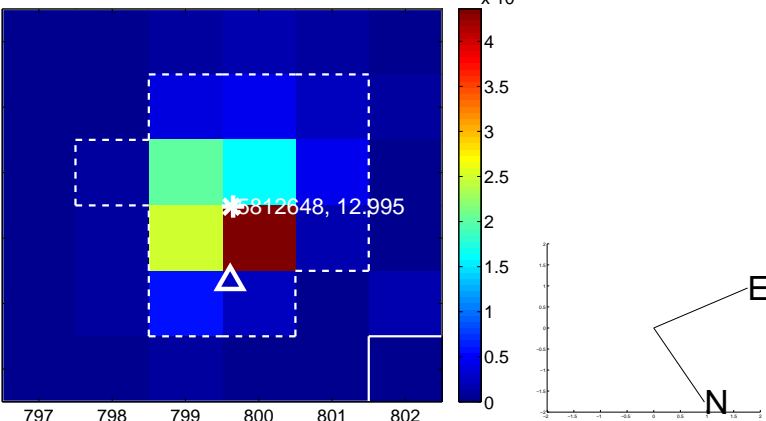
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



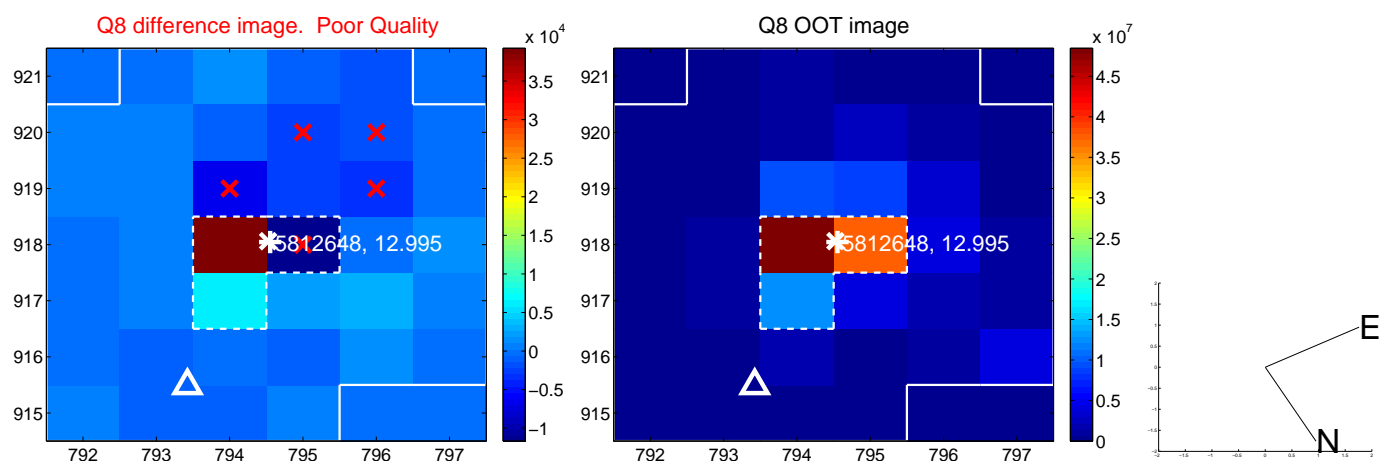
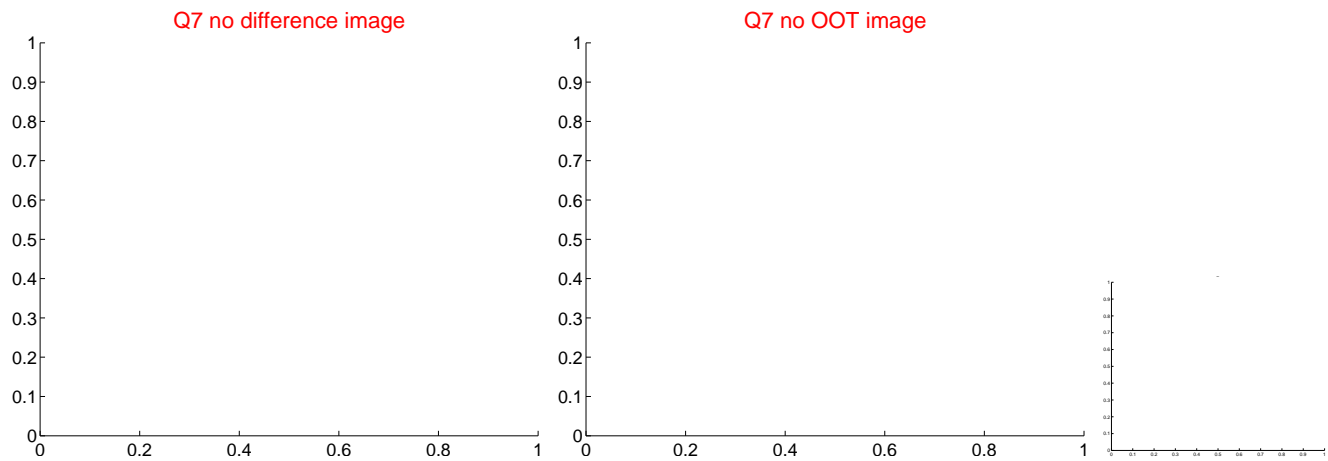
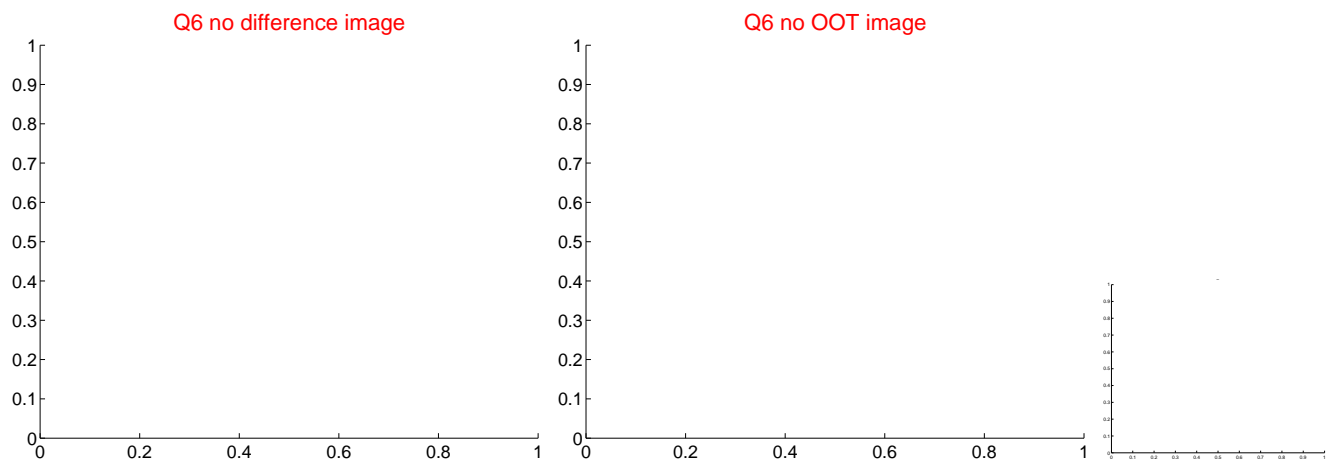
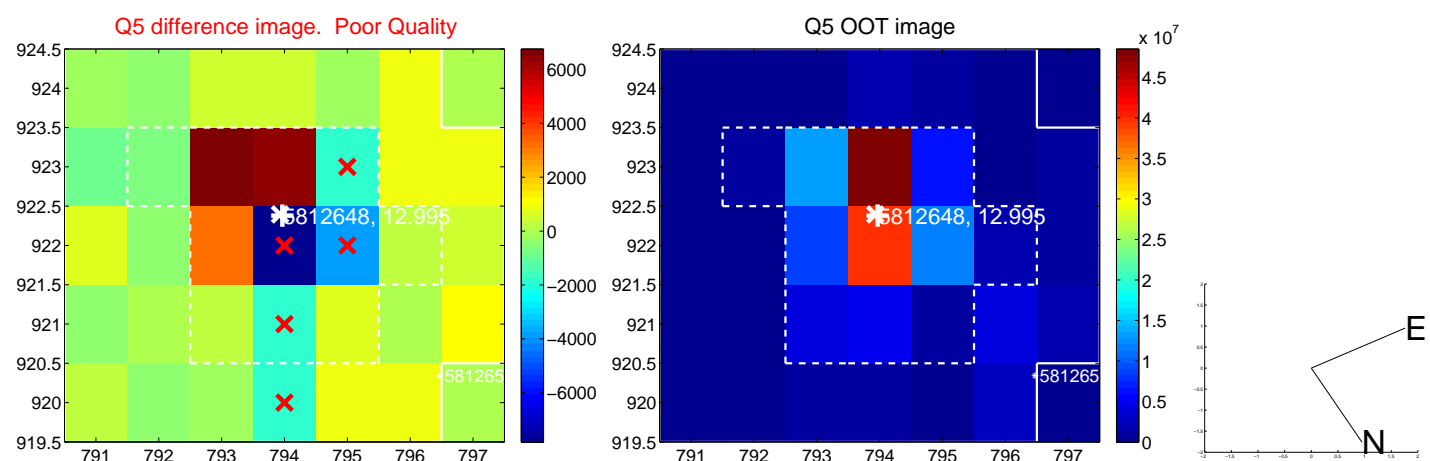
Q4 no difference image



Q4 no OOT image



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

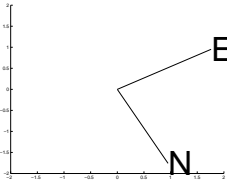
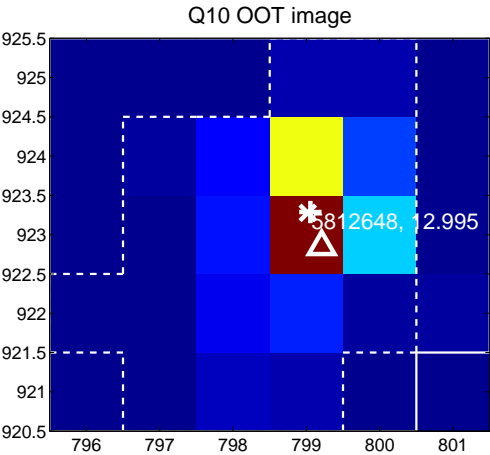
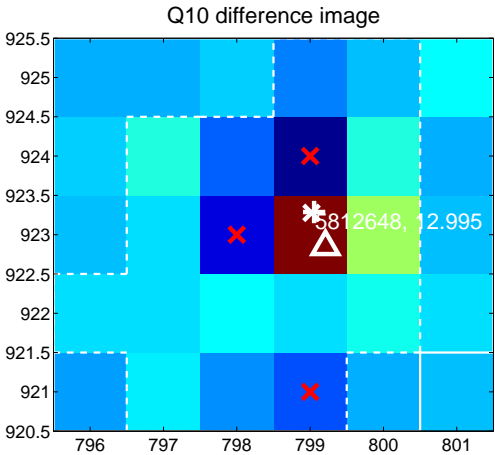


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

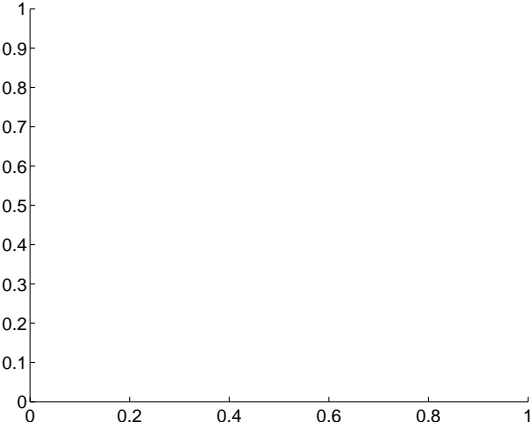
Q9 no difference image



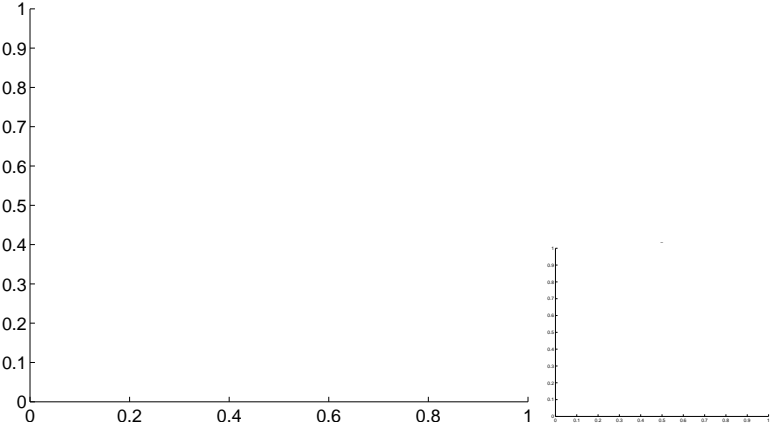
Q9 no OOT image



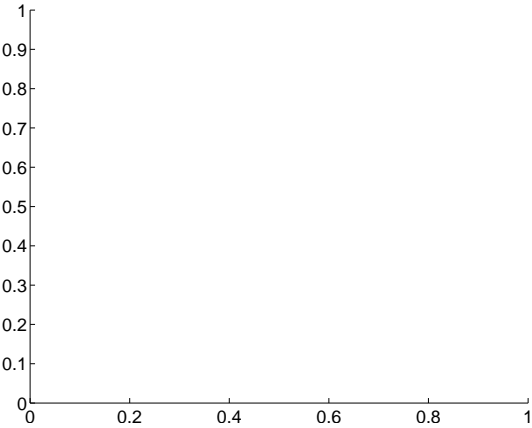
Q11 no difference image



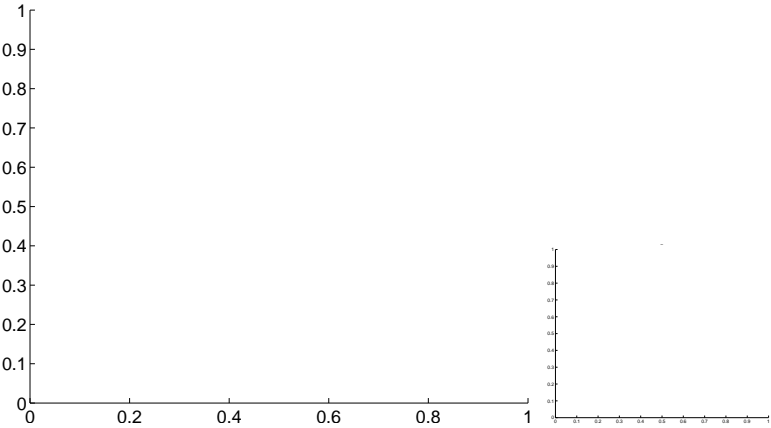
Q11 no OOT image



Q12 no difference image

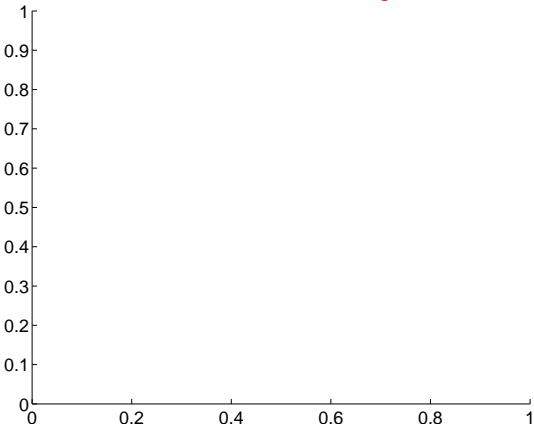


Q12 no OOT image

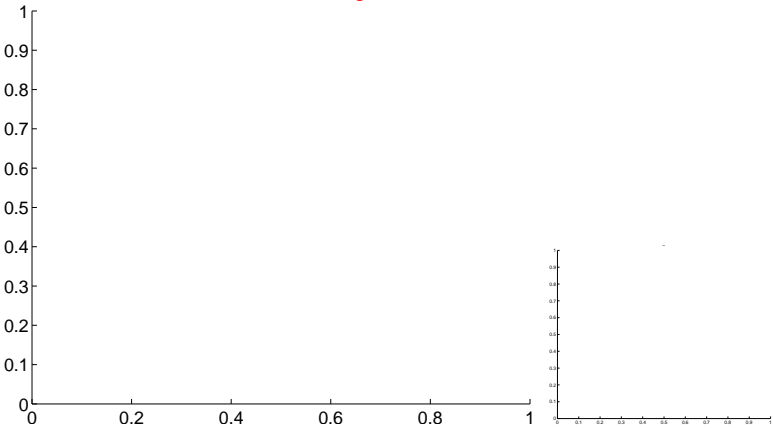


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q13 no difference image



Q13 no OOT image



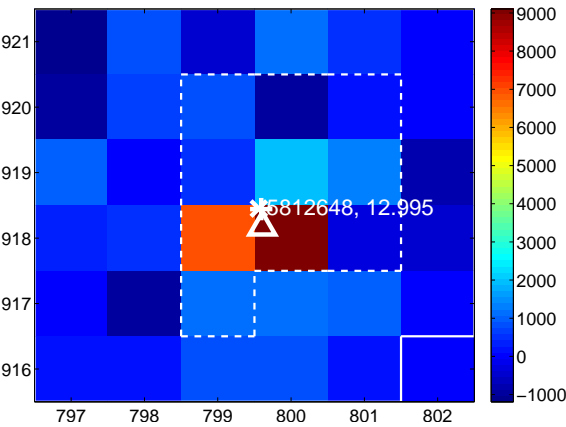
Q14 no difference image



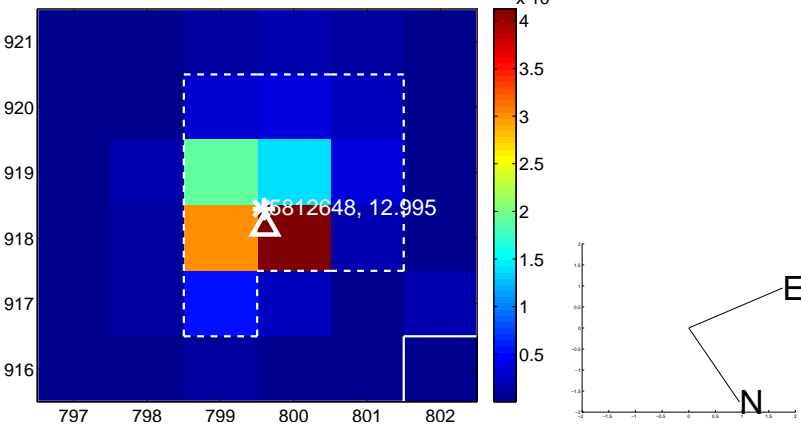
Q14 no OOT image



Q15 difference image



Q15 OOT image



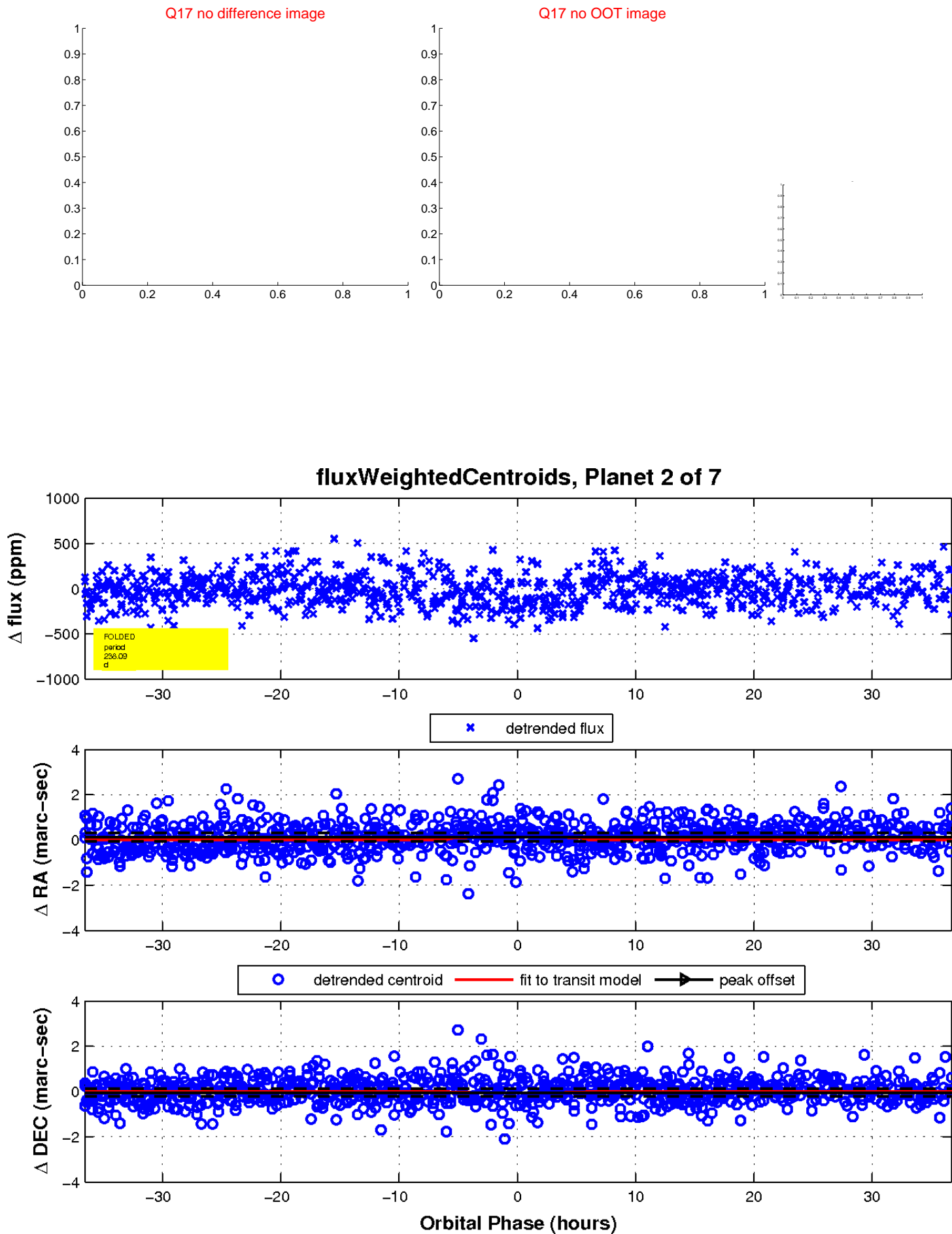
Q16 no difference image



Q16 no OOT image

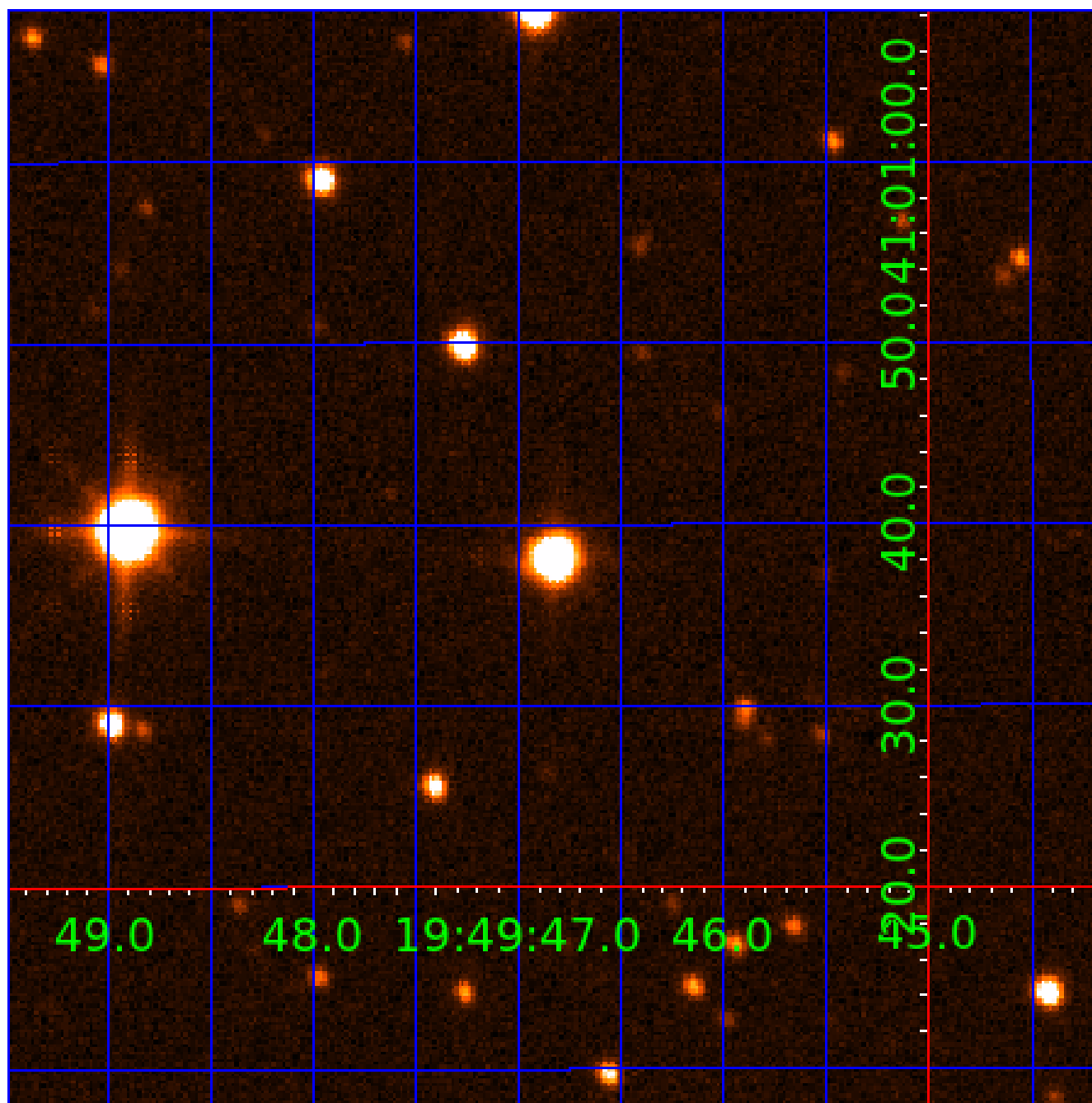


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005812648

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})
005812648-01	OBS	No	4.042919	134.344921	23.7	18.890	9.4	8.2	3.31	6565	1.93	5648.72
005812648-02	OBS	No	238.090282	279.667447	245.4	12.267	10.8	9.6	3.31	6565	5.87	24.65
005812648-03	OBS	No	376.168378	325.477919	208.8	15.177	10.0	7.3	3.31	6565	5.18	13.40
005812648-04	OBS	No	158.756548	168.687344	355.3	5.962	8.3	8.1	3.31	6565	7.95	42.32
005812648-05	OBS	No	420.455993	139.042771	234.1	55.553	8.5	6.3	3.31	6565	5.82	11.55
005812648-06	OBS	8108.01	238.567393	273.235937	136.3	10.890	8.2	7.2	3.31	6565	4.28	24.59
005812648-07	OBS	No	120.885747	152.961688	140.8	6.905	8.0	6.0	3.31	6565	4.53	60.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005812648-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005812648-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT
005812648-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
005812648-06	OBS	FP	0.08	1	0	0	0	MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005812648-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

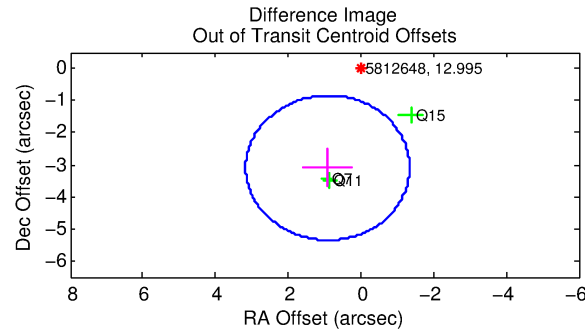
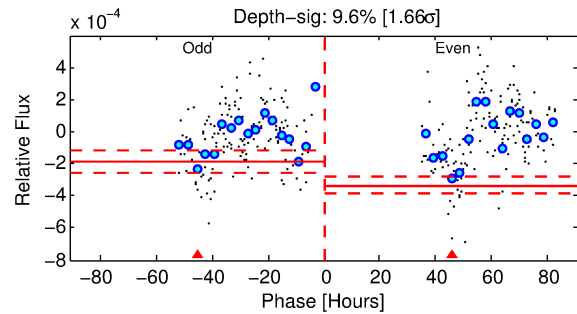
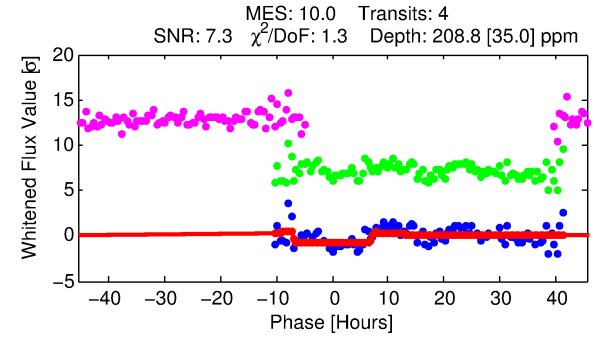
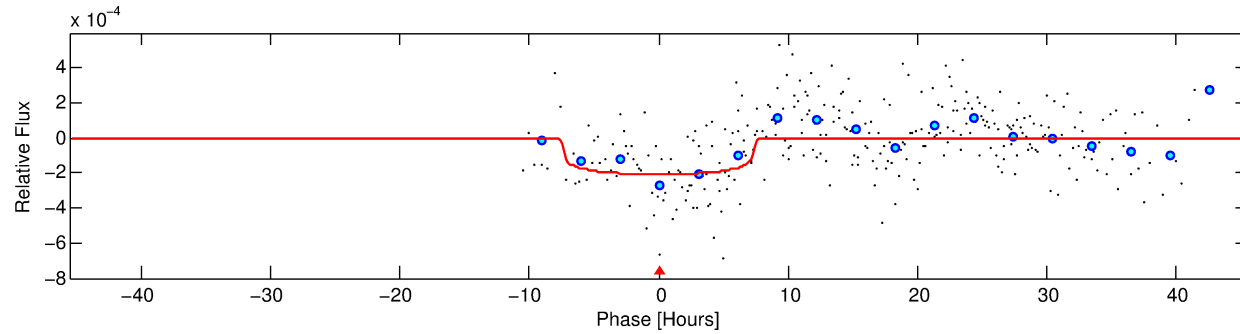
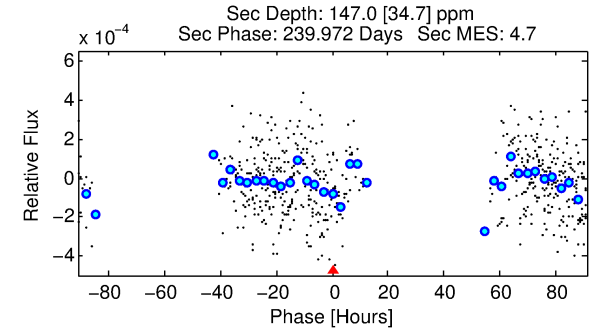
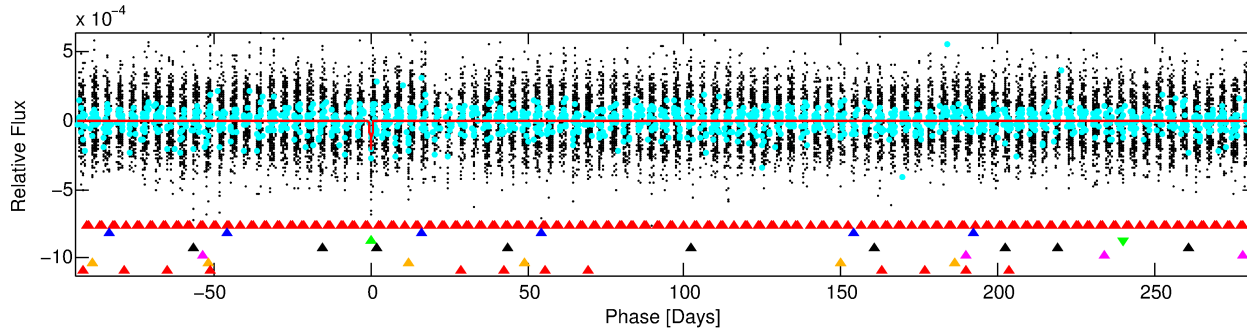
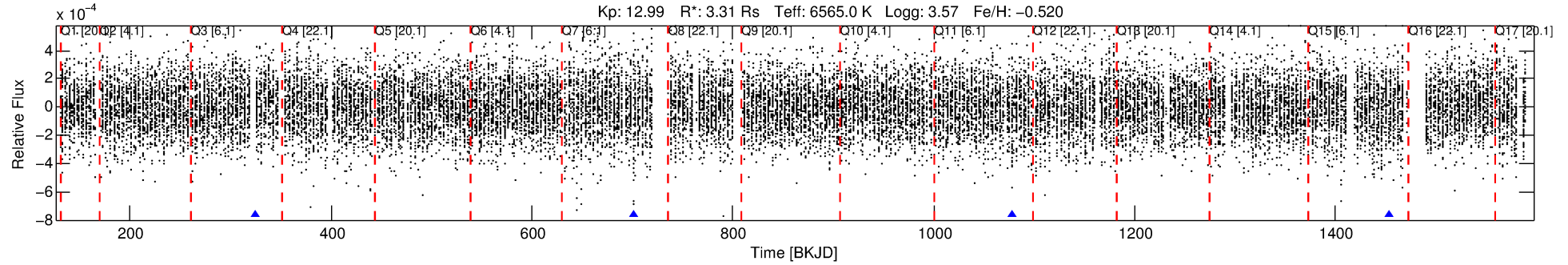
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005812648-03

No Significant Match Found

DV One-Page Summary

KIC: 5812648 Candidate: 3 of 7 Period: 376.168 d



DV Fit Results:

Period = 376.16838 [0.01408] d
Epoch = 325.4779 [0.0361] BKJD
Rp/R* = 0.0143 [0.0043]
a/R* = 130.90 [212.67]
b = 0.74 [0.97]
Seff = 13.40 [8.22]
Teq = 488 [75] K
Rp = 5.18 [2.67] Re
a = 1.1659 [0.4489] AU
Ag = 4102.88 [3617.62] [1.13σ]
Teffp = 6037 [997] K [5.55σ]

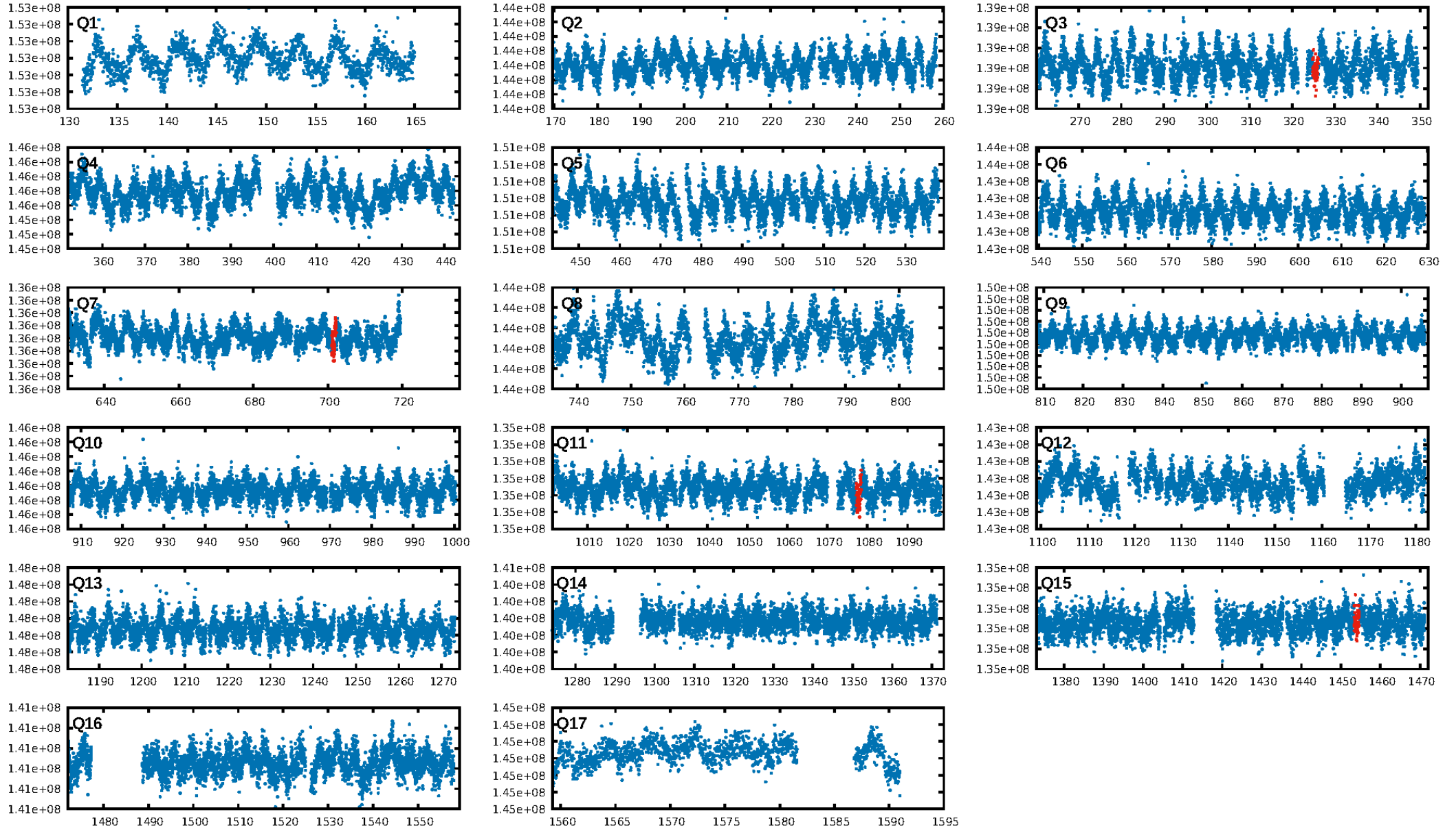
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [176.79σ]
LongPeriod-sig: 100.0% [18.46σ]
ModelChiSquare2-sig: 1.3%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 1.27e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.5496
Centroid-sig: 0.0%
Centroid-so: 3.354 arcsec [3.18σ]
OotOffset-rm: 3.231 arcsec [4.30σ]
KicOffset-rm: 3.149 arcsec [4.16σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.33 [1/3]

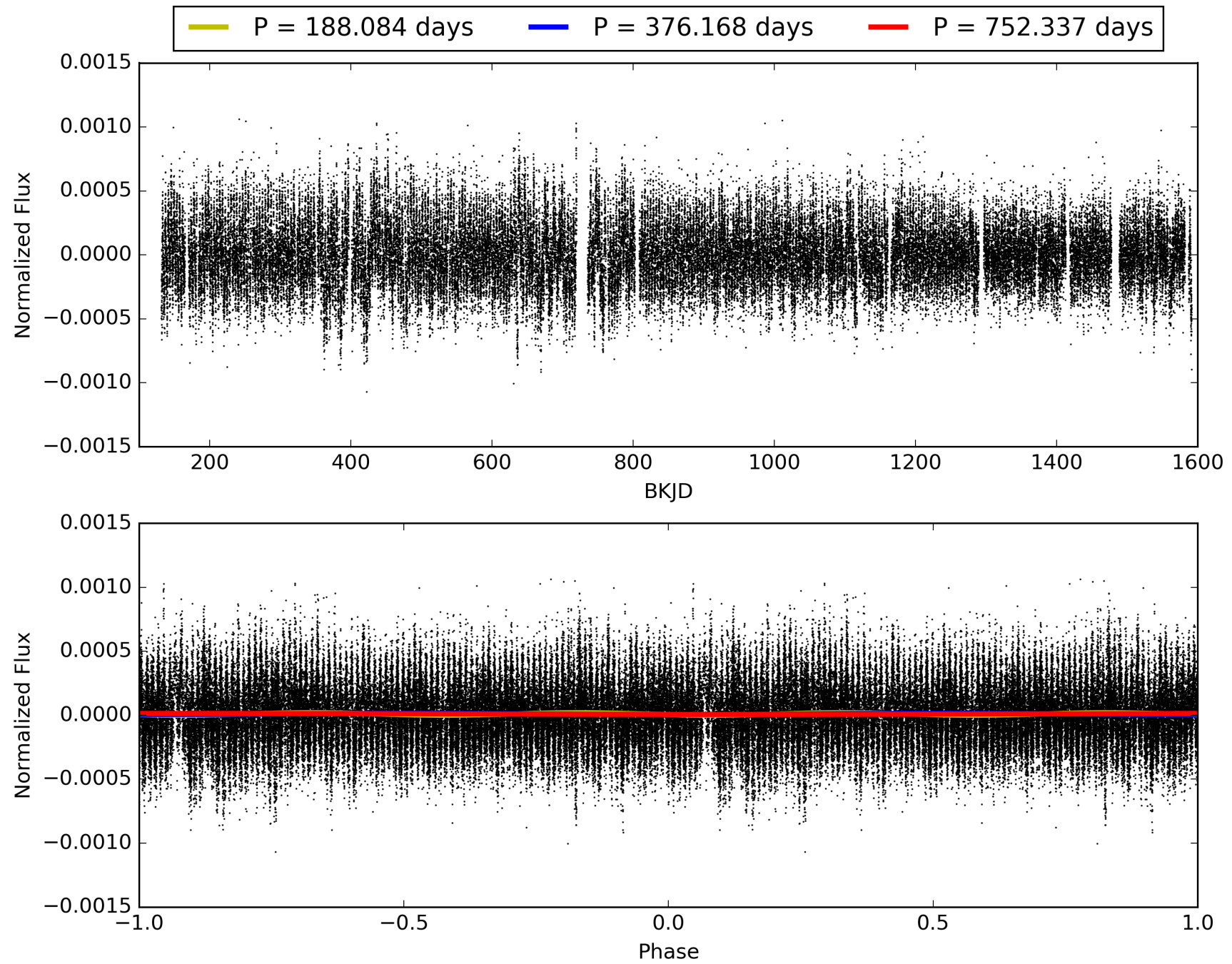
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:55:12 Z

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

TCE 005812648-03, PDC Light Curves

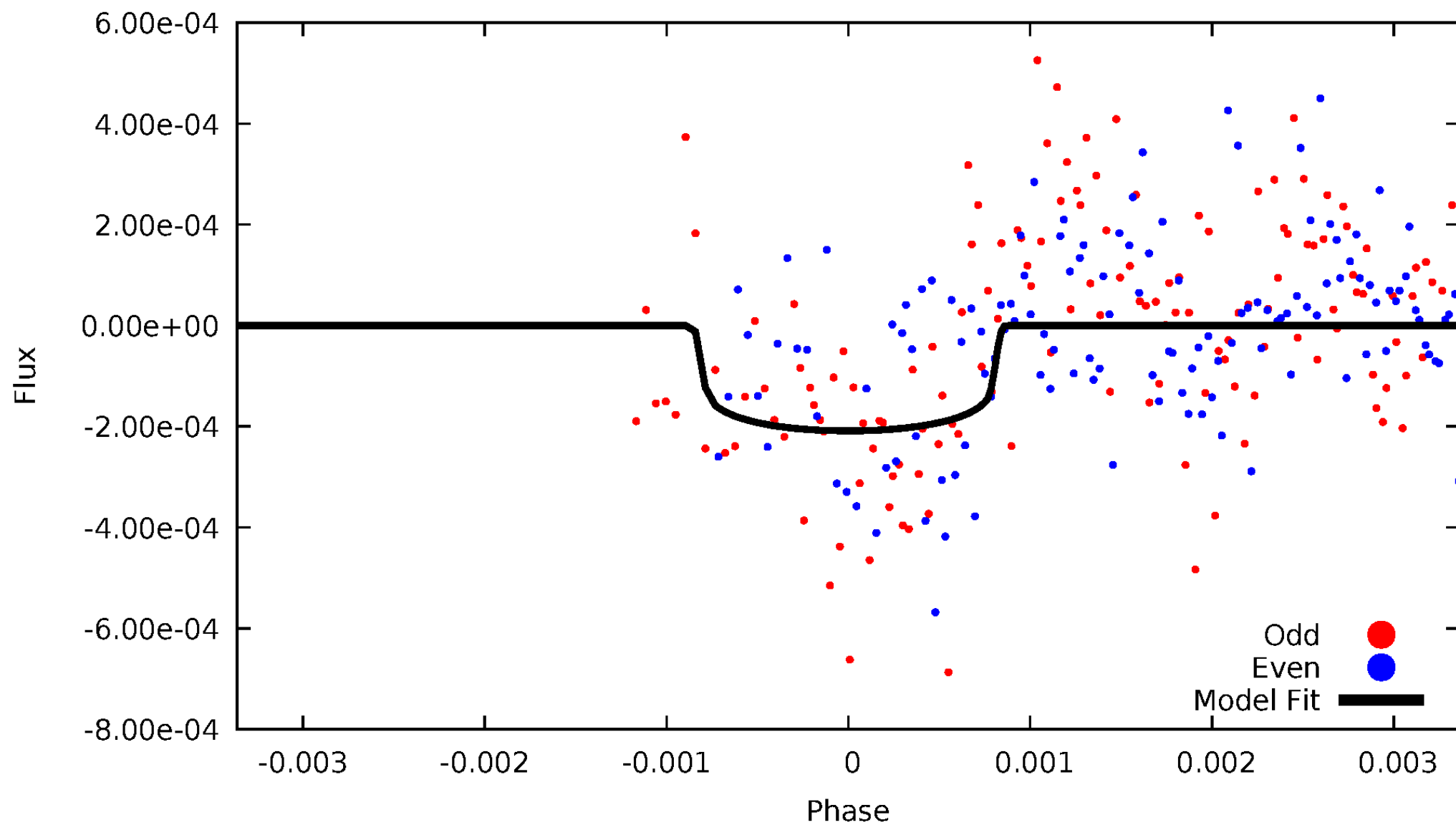


TCE 005812648-03



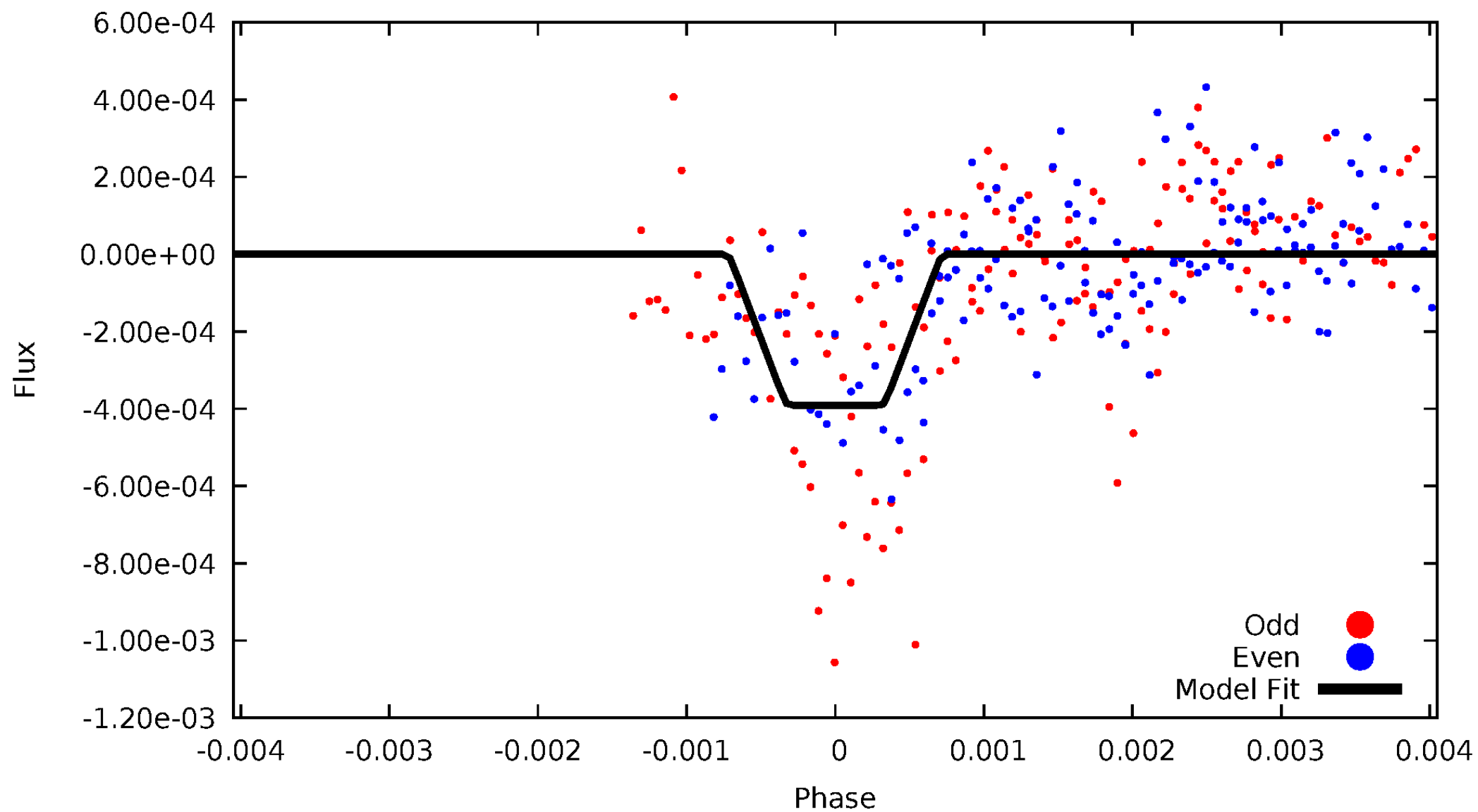
DV Odd/Even

TCE 005812648-03



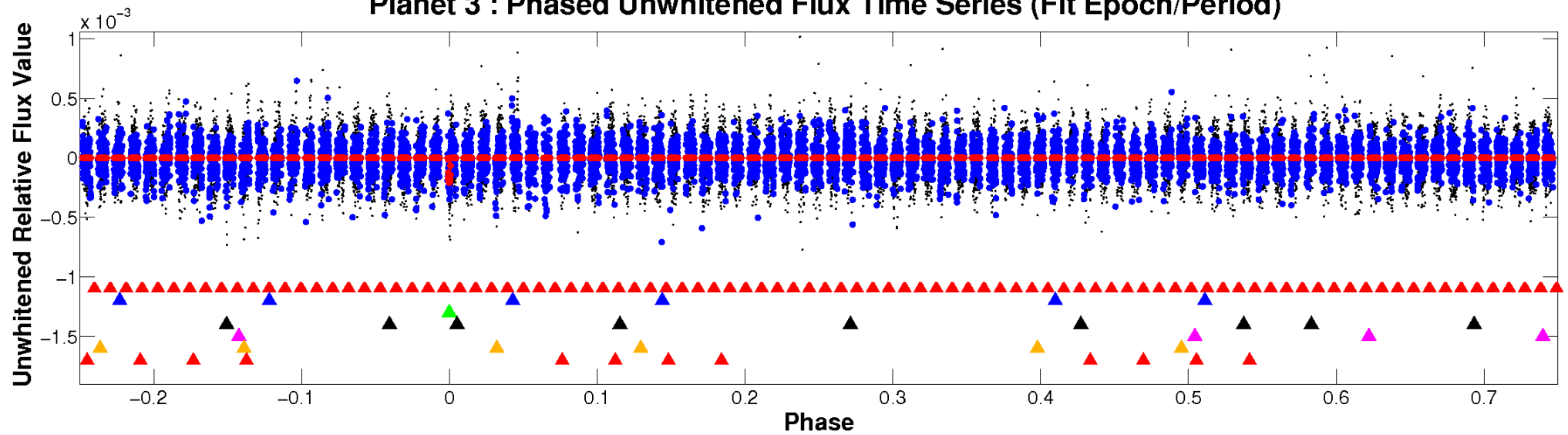
ALT Odd/Even

TCE 005812648-03

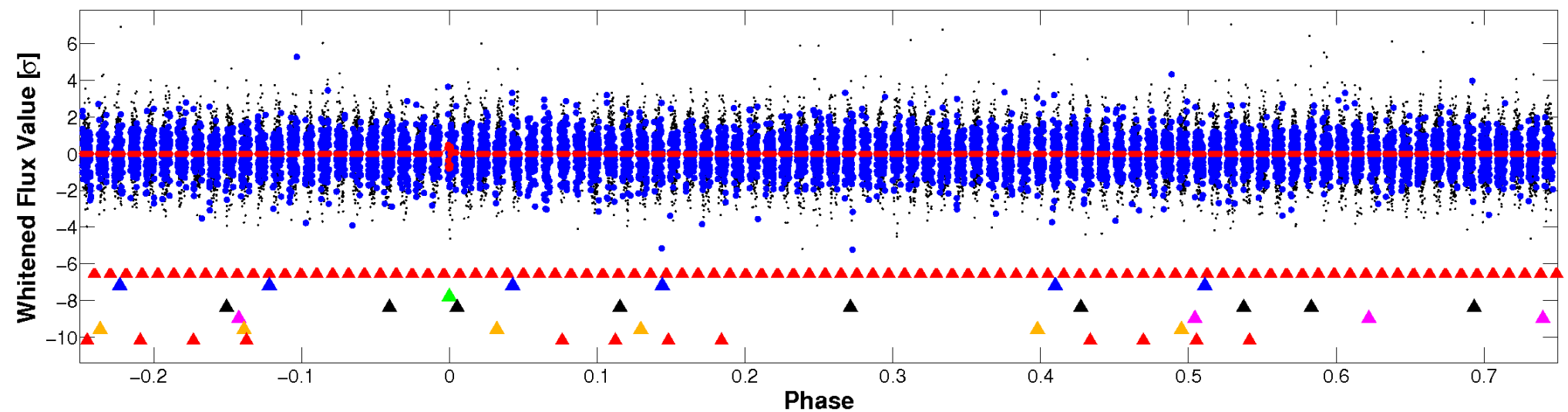


Non-Whitened Vs. Whitened Light Curve

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

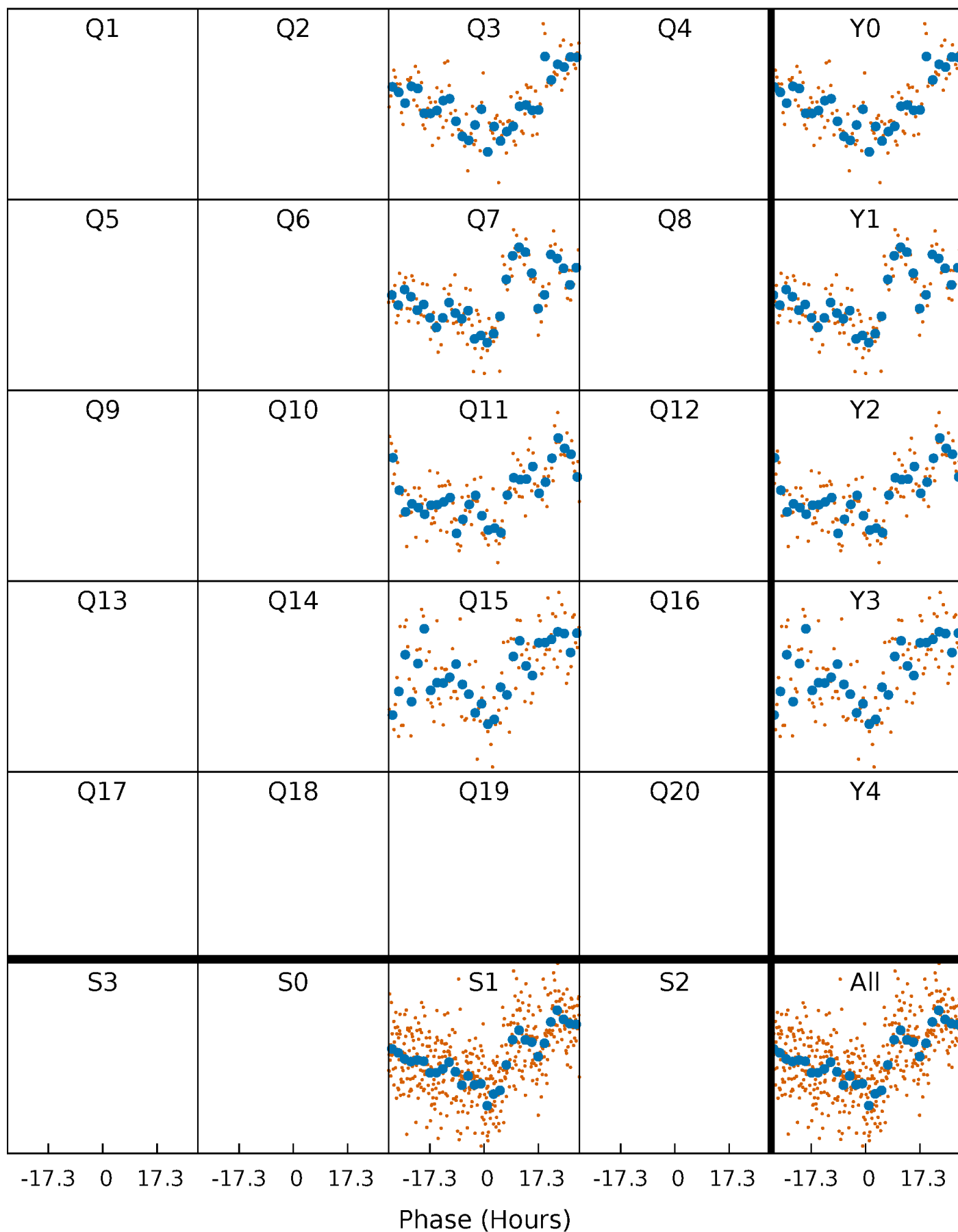


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



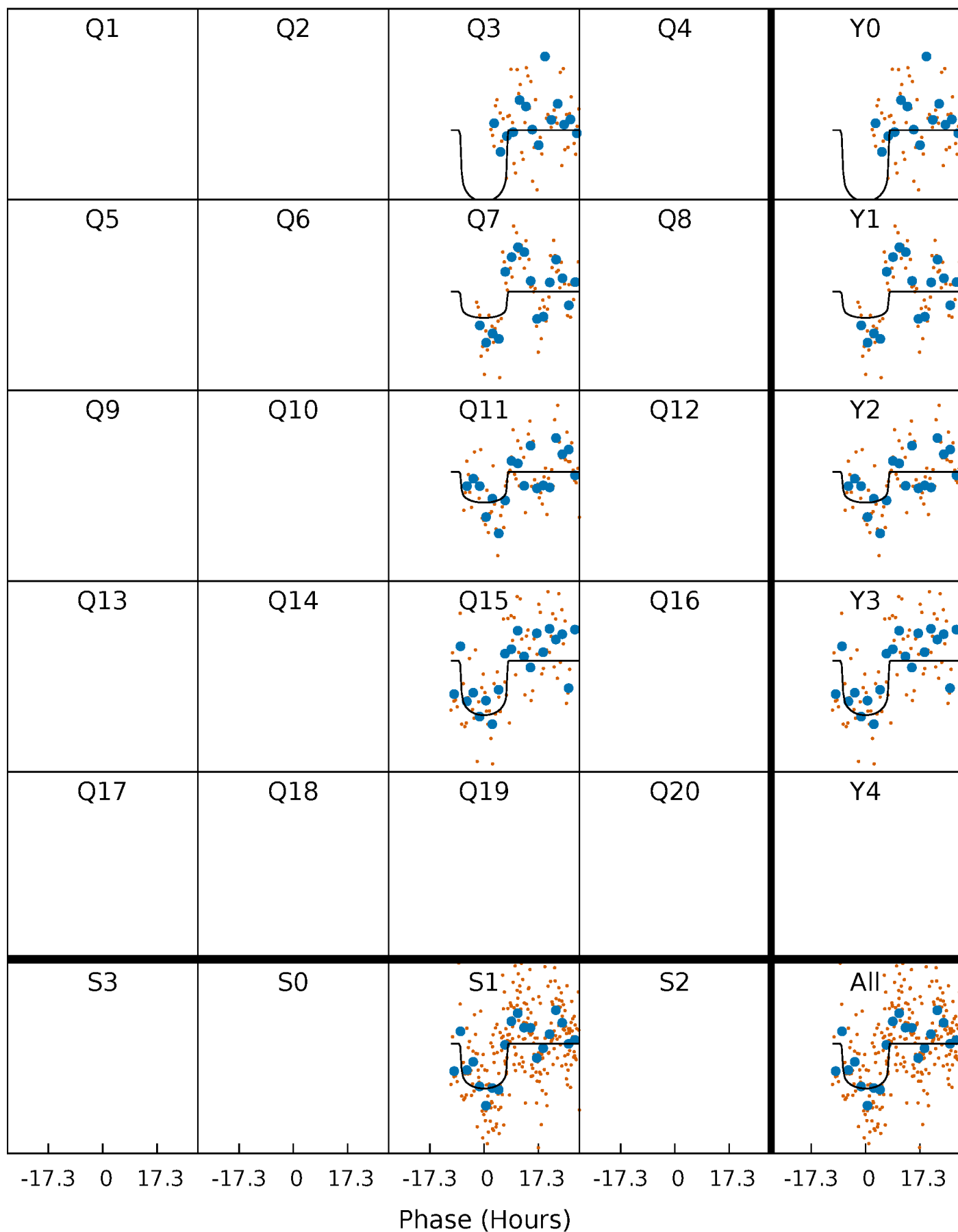
PDC Quarter-Phased Transit Curves

TCE 005812648-03 $P=376.168378$ Days $T_0=325.477919$ (BKJD)



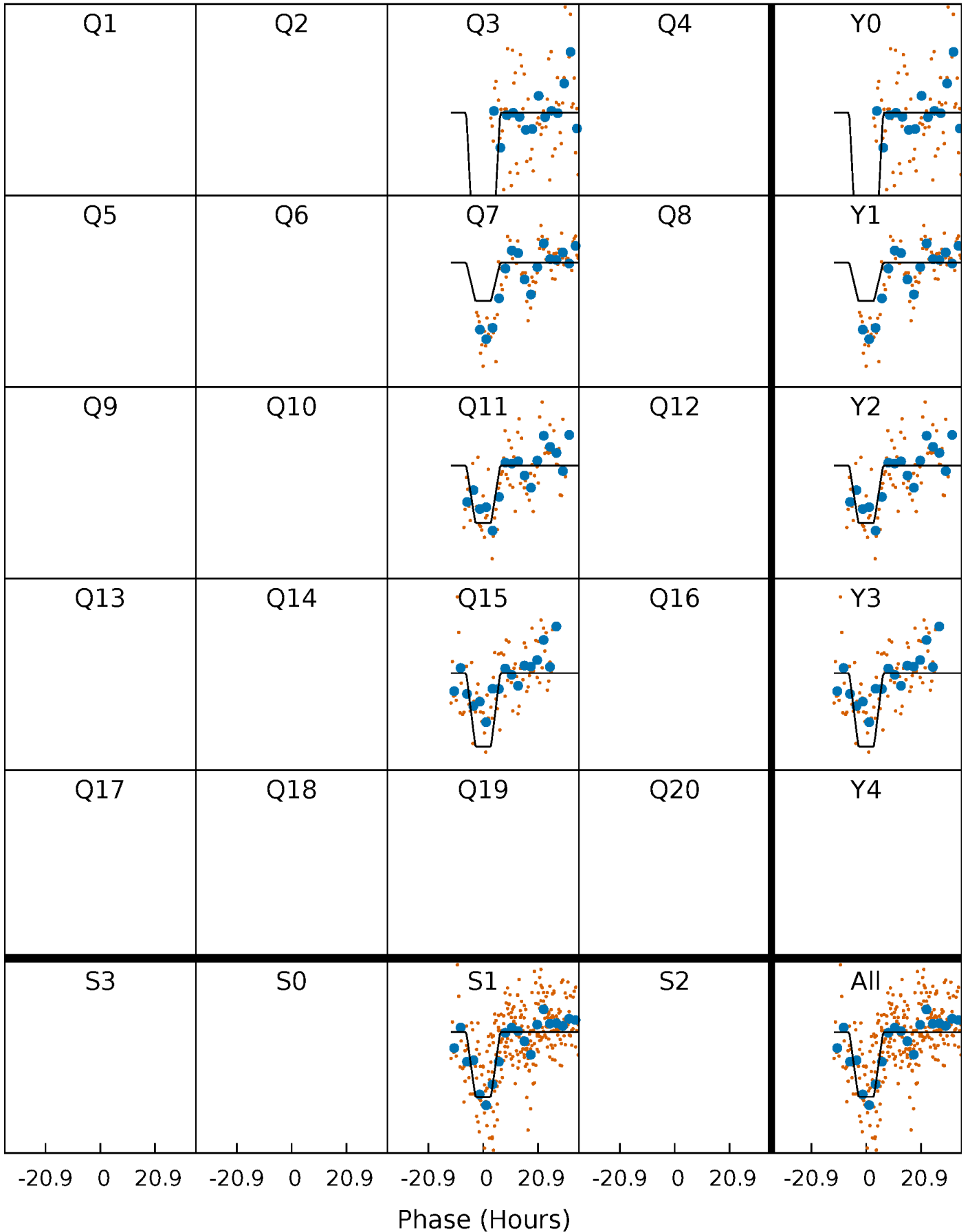
DV Quarter-Phased Transit Curves

TCE 005812648-03 P=376.168378 Days $T_0=325.477919$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

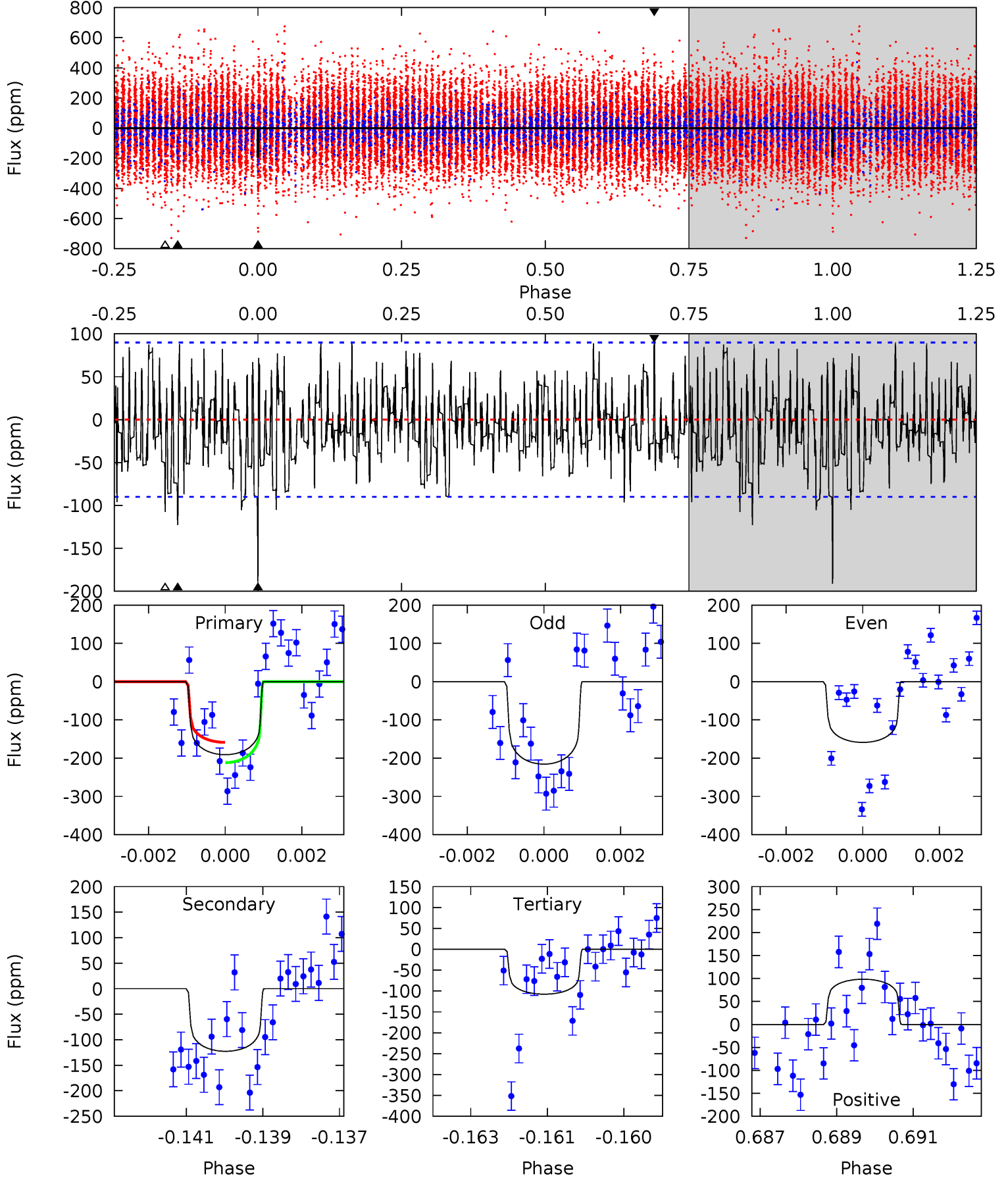
TCE 005812648-03 $P=376.202273$ Days $T_0=325.448582$ (BKJD)



DV Model-Shift Uniqueness Test

005812648-03, P = 376.168378 Days, E = 325.477919 Days

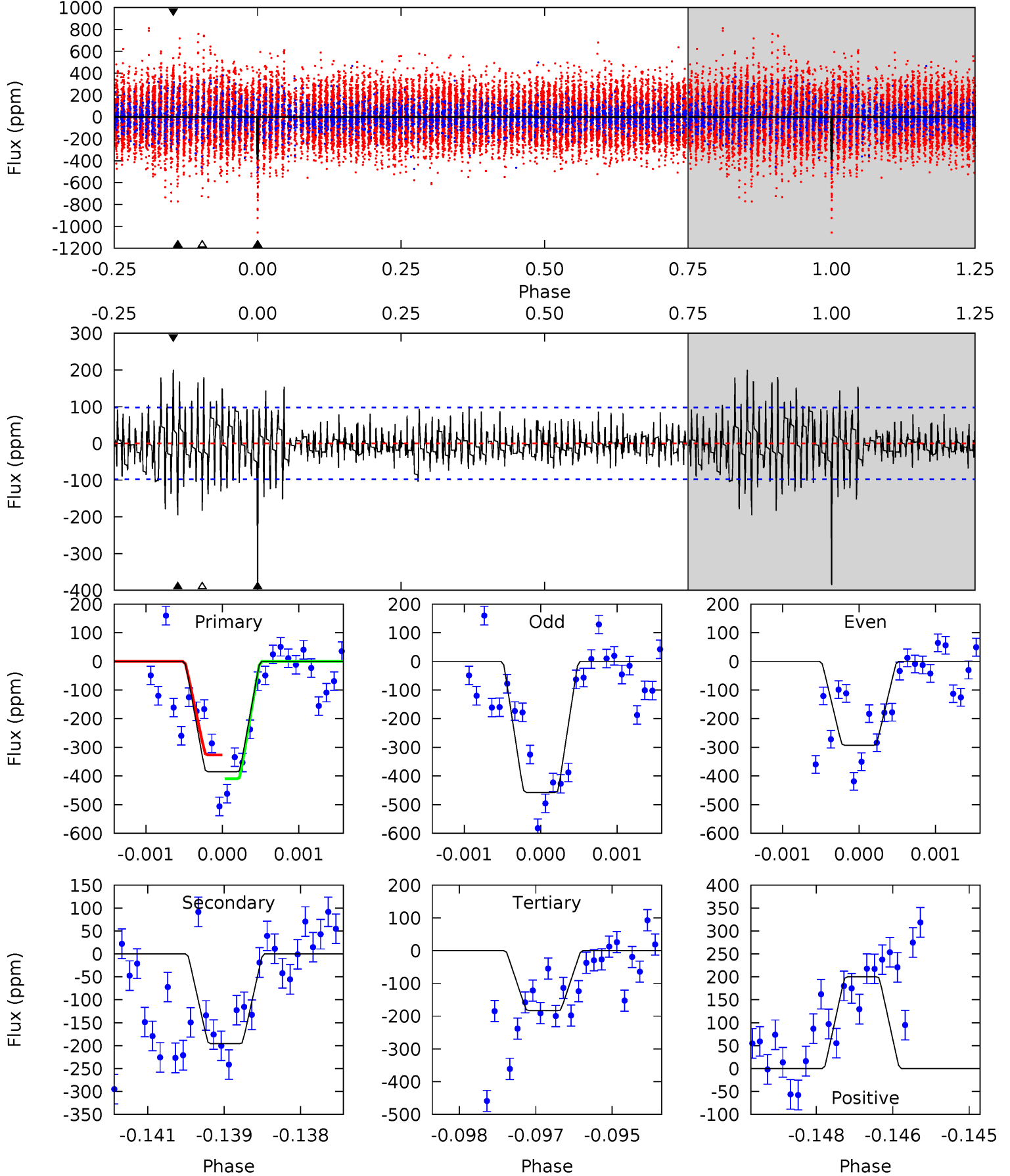
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	7.30	6.40	5.86	5.35	3.13	2.04	4.96	5.51	0.90	1.44	1.68	0.93	0.34	1.52



Alt Model-Shift Uniqueness Test

005812648-03, P = 376.202273 Days, E = 325.448582 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	10.8	10.1	11.0	5.38	3.18	2.53	11.1	10.2	0.70	-0.24	4.50	1.26	0.34	2.22



Stellar Parameters For KIC 005812648

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6565^{+178}_{-218}	$3.573^{+0.345}_{-0.115}$	$-0.520^{+0.350}_{-0.300}$	$3.308^{+0.555}_{-1.387}$	$1.493^{+0.237}_{-0.355}$	$0.058^{+0.152}_{-0.021}$
	+3%/-3%	+10%/-3%	+67%/-58%	+17%/-42%	+16%/-24%	+261%/-35%
Source	PHO1	FLK73	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 005812648-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-123 ± 17	$4.89^{+1.89}_{-1.75}$	671^{+41}_{-68}	5710^{+1207}_{-626}	3896^{+5029}_{-1894}
Alt.	-196 ± 18	$6.78^{+1.88}_{-1.87}$	670^{+45}_{-68}	5521^{+724}_{-508}	3210^{+2759}_{-1225}

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

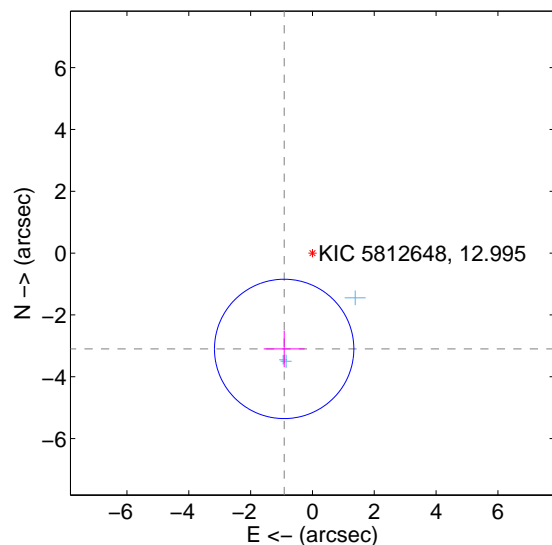
Supplemental centroid analysis for 005812648-03. Kepler magnitude: 12.99. Transit SNR 7.26

There are 3 quarters with good PRF difference image offsets

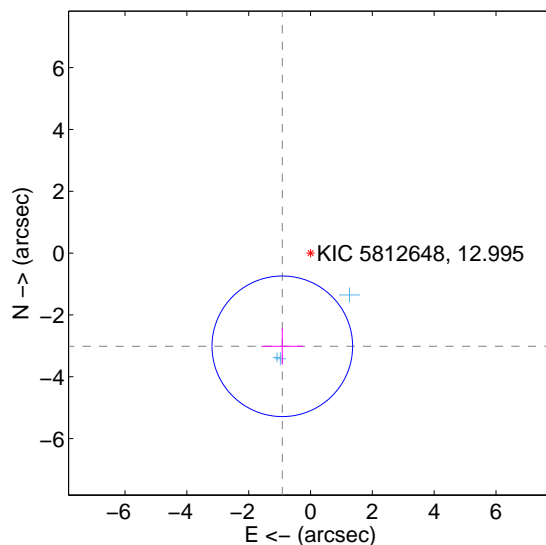
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.231 ± 0.751	4.30	0.915 ± 0.662	-3.099 ± 0.590
PRF-fit source offset from KIC position	3.149 ± 0.758	4.16	0.913 ± 0.676	-3.014 ± 0.589
photometric centroid source offset	3.35 ± 1.06	3.18	-3.12 ± 1.07	-1.22 ± 0.98

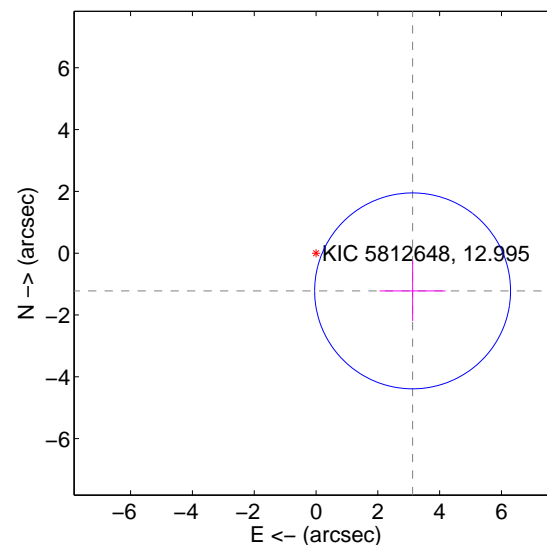
offset from difference PRF-fit to OOT PRF-fit



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.

Q5 no difference image



Q5 no OOT image



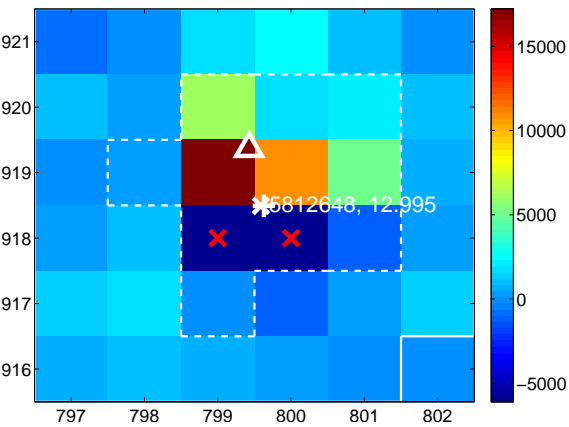
Q6 no difference image



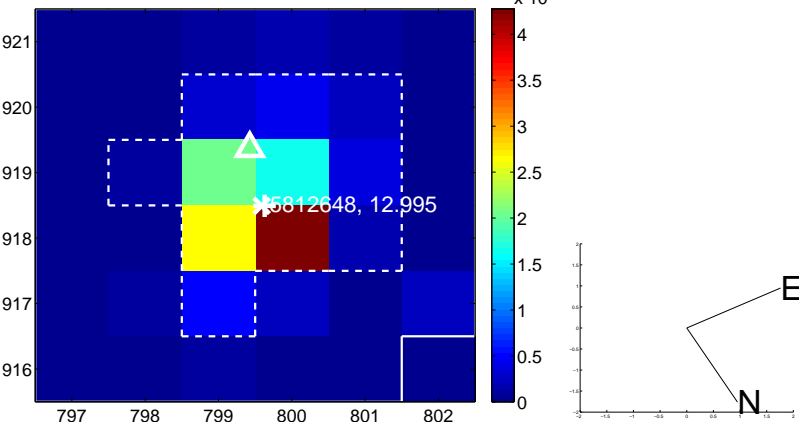
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



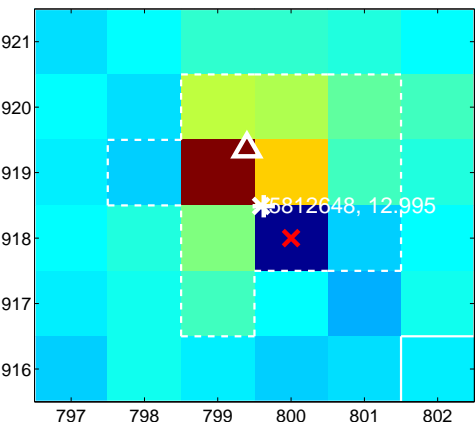
Q10 no difference image



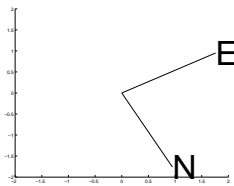
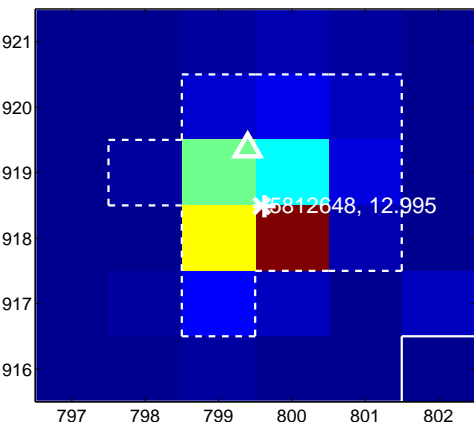
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



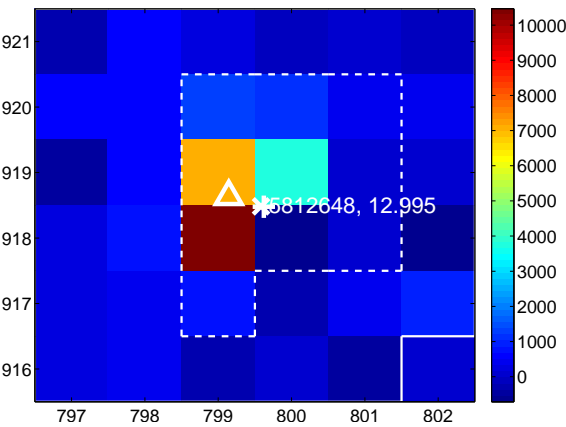
Q14 no difference image



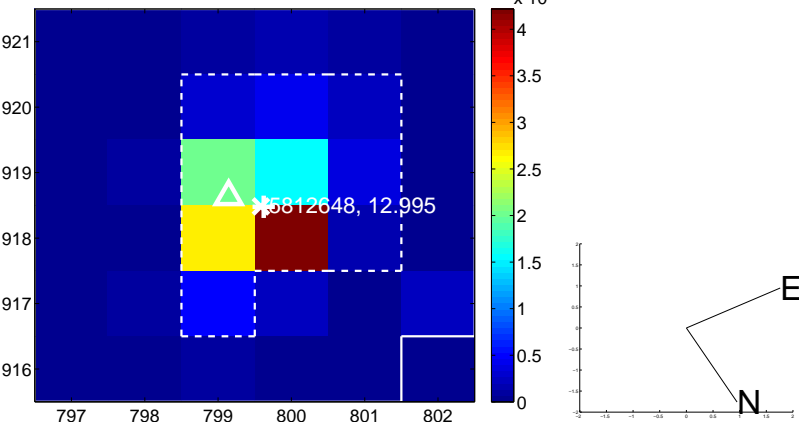
Q14 no OOT image



Q15 difference image



Q15 OOT image



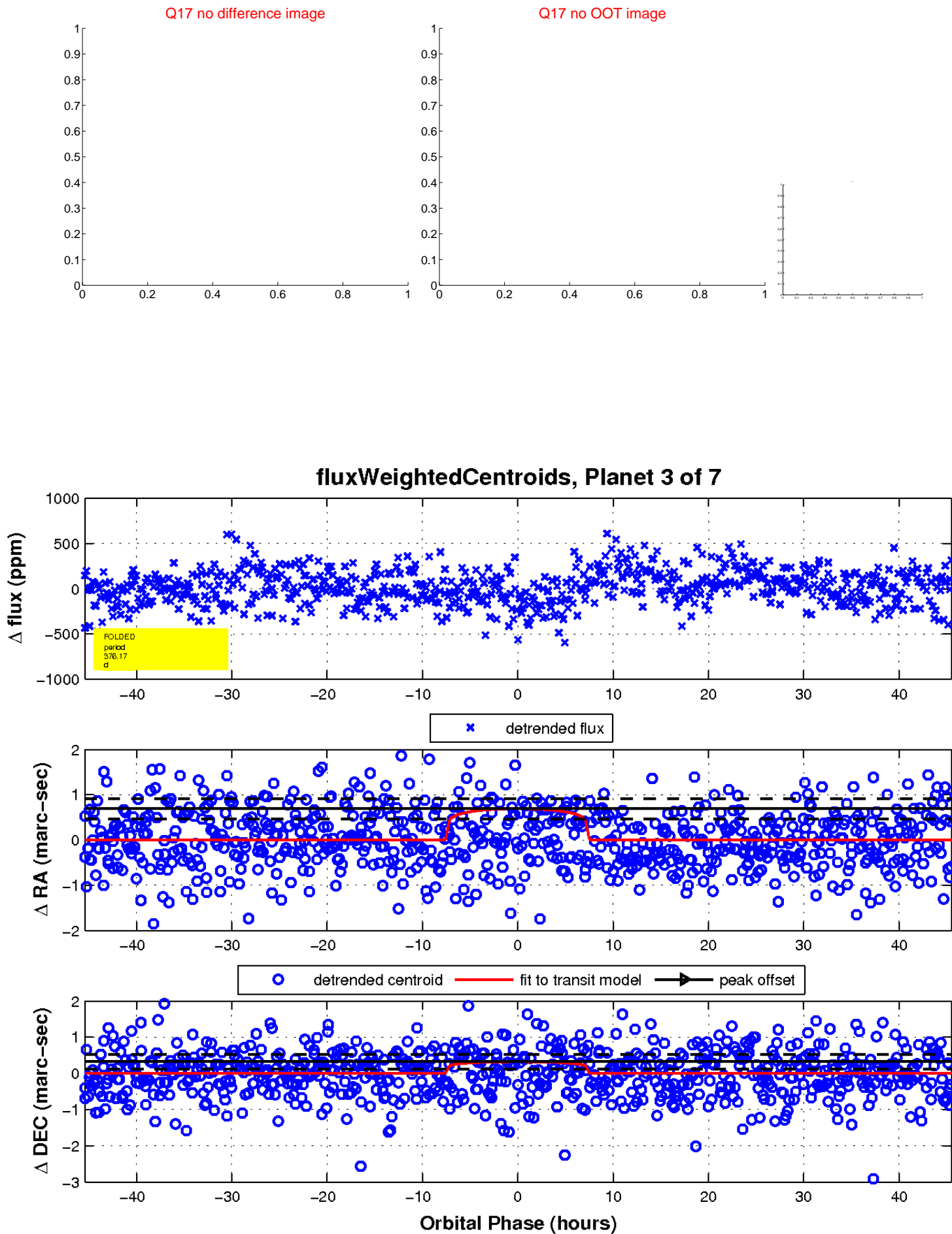
Q16 no difference image



Q16 no OOT image

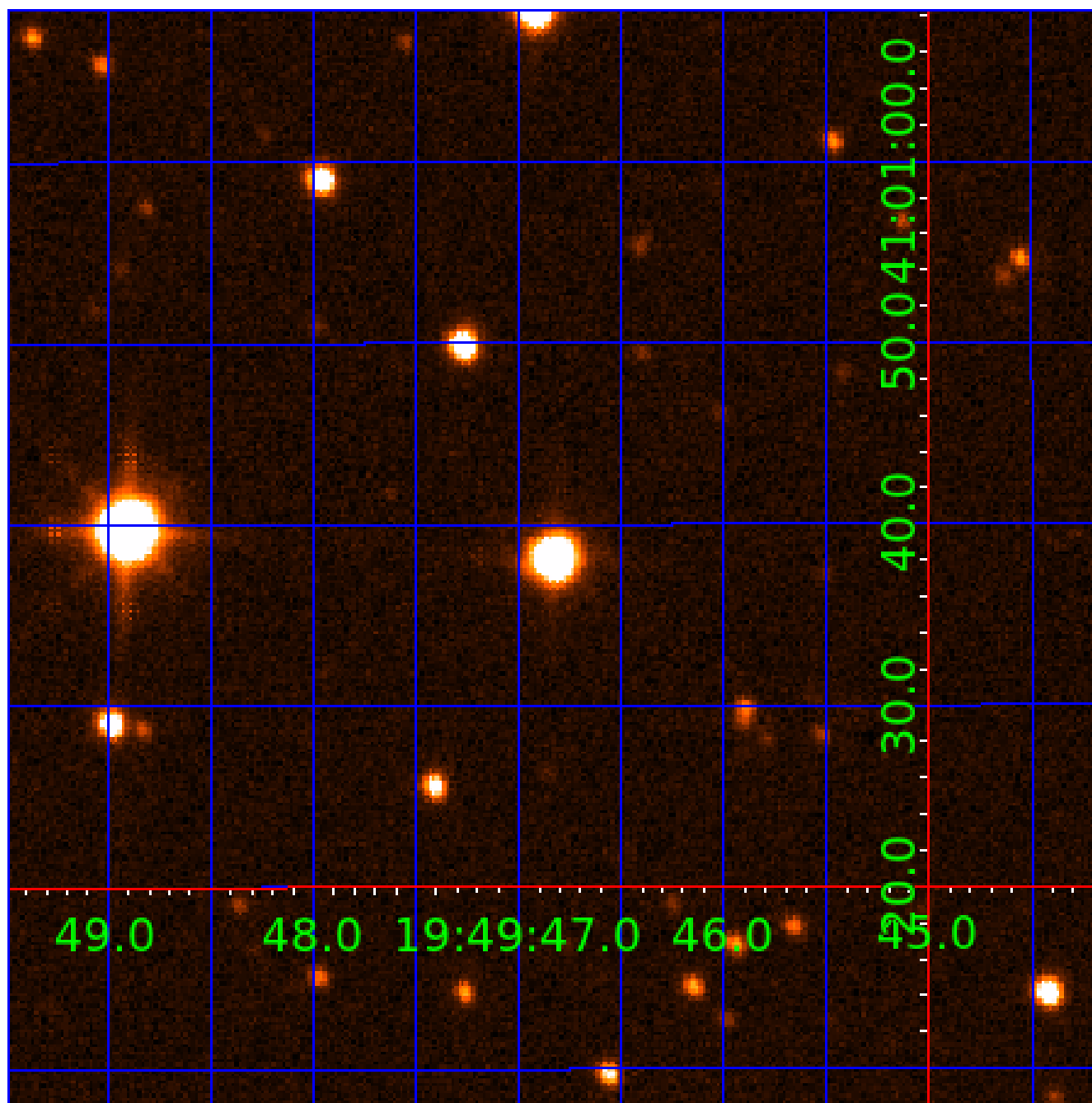


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005812648

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})
005812648-01	OBS	No	4.042919	134.344921	23.7	18.890	9.4	8.2	3.31	6565	1.93	5648.72
005812648-02	OBS	No	238.090282	279.667447	245.4	12.267	10.8	9.6	3.31	6565	5.87	24.65
005812648-03	OBS	No	376.168378	325.477919	208.8	15.177	10.0	7.3	3.31	6565	5.18	13.40
005812648-04	OBS	No	158.756548	168.687344	355.3	5.962	8.3	8.1	3.31	6565	7.95	42.32
005812648-05	OBS	No	420.455993	139.042771	234.1	55.553	8.5	6.3	3.31	6565	5.82	11.55
005812648-06	OBS	8108.01	238.567393	273.235937	136.3	10.890	8.2	7.2	3.31	6565	4.28	24.59
005812648-07	OBS	No	120.885747	152.961688	140.8	6.905	8.0	6.0	3.31	6565	4.53	60.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005812648-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005812648-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT
005812648-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
005812648-06	OBS	FP	0.08	1	0	0	0	MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005812648-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

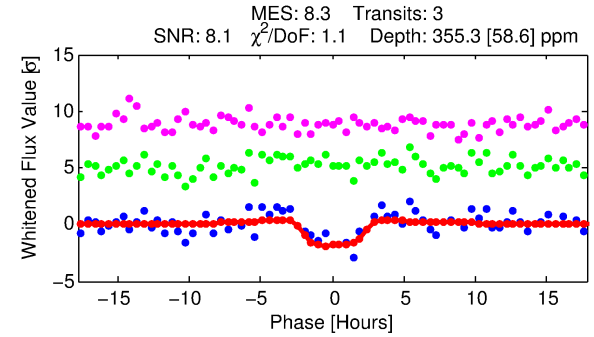
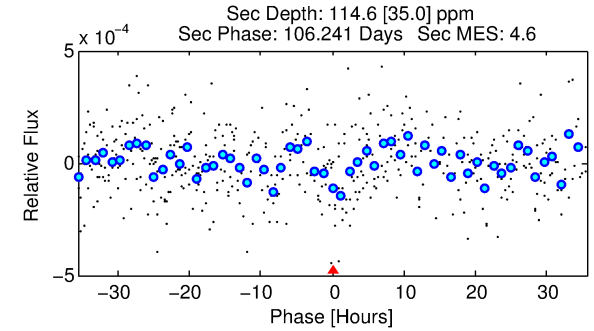
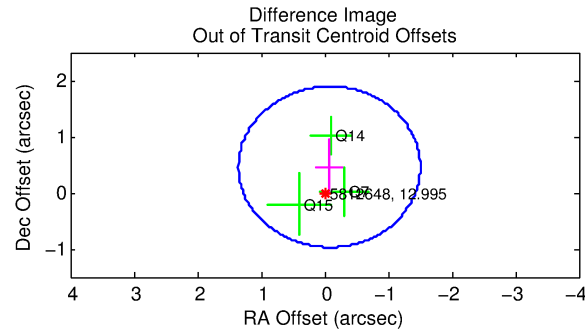
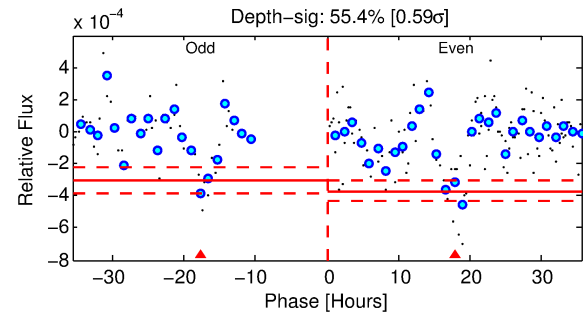
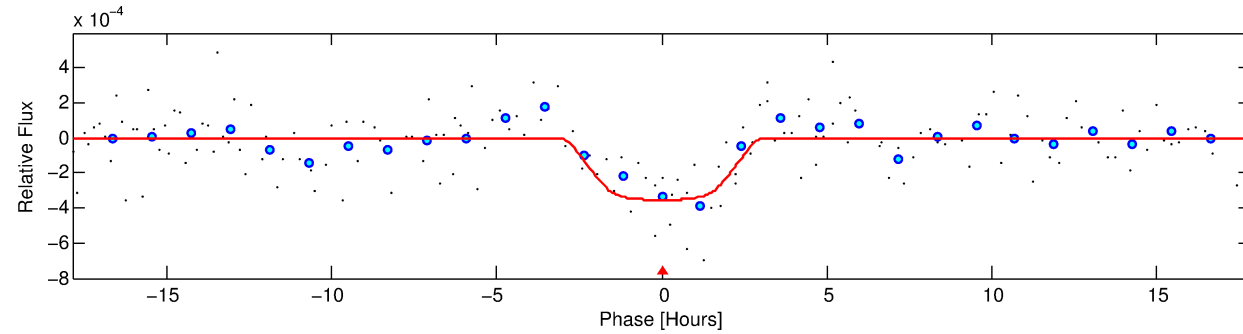
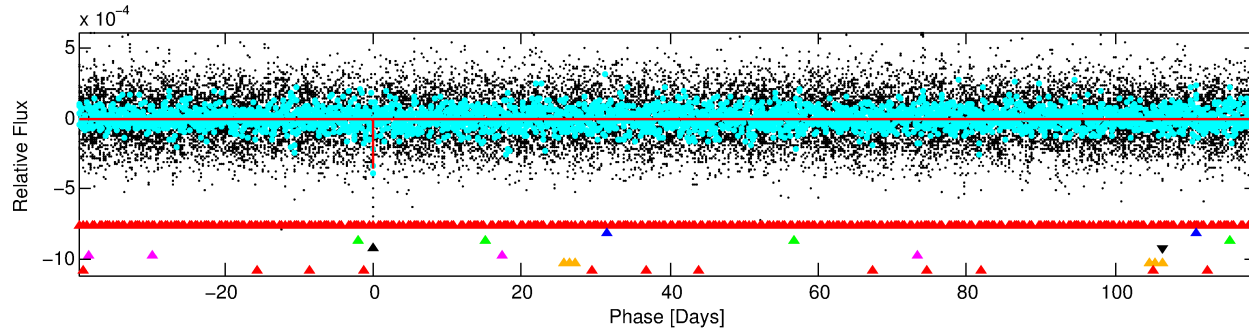
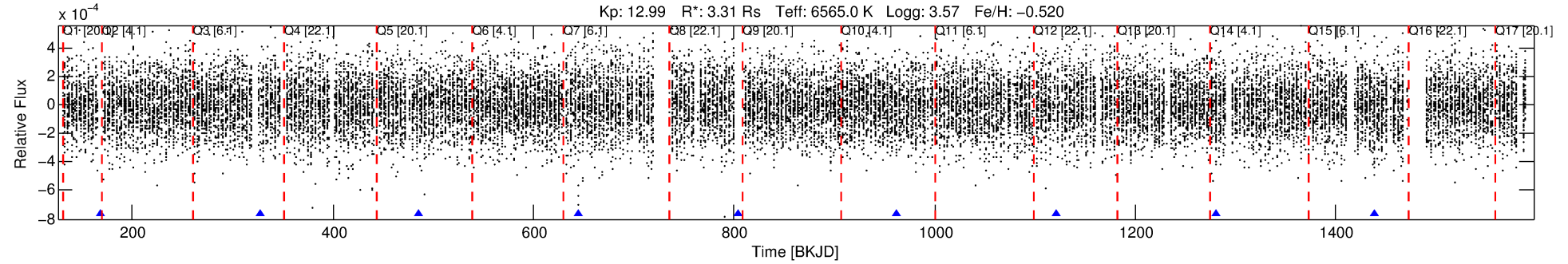
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005812648-04

No Significant Match Found

DV One-Page Summary

KIC: 5812648 Candidate: 4 of 7 Period: 158.757 d



DV Fit Results:

Period = 158.75655 [0.00542] d
Epoch = 168.6873 [0.0382] BKJD
Rp/R* = 0.0220 [0.0025]
a/R* = 67.07 [22.37]
b = 0.97 [0.02]
Seff = 42.32 [25.96]
Teq = 650 [100] K
Rp = 7.95 [3.45] Re
a = 0.6560 [0.2526] AU
Ag = 429.66 [305.09] [1.41σ]
Teffp = 4578 [462] K [8.30σ]

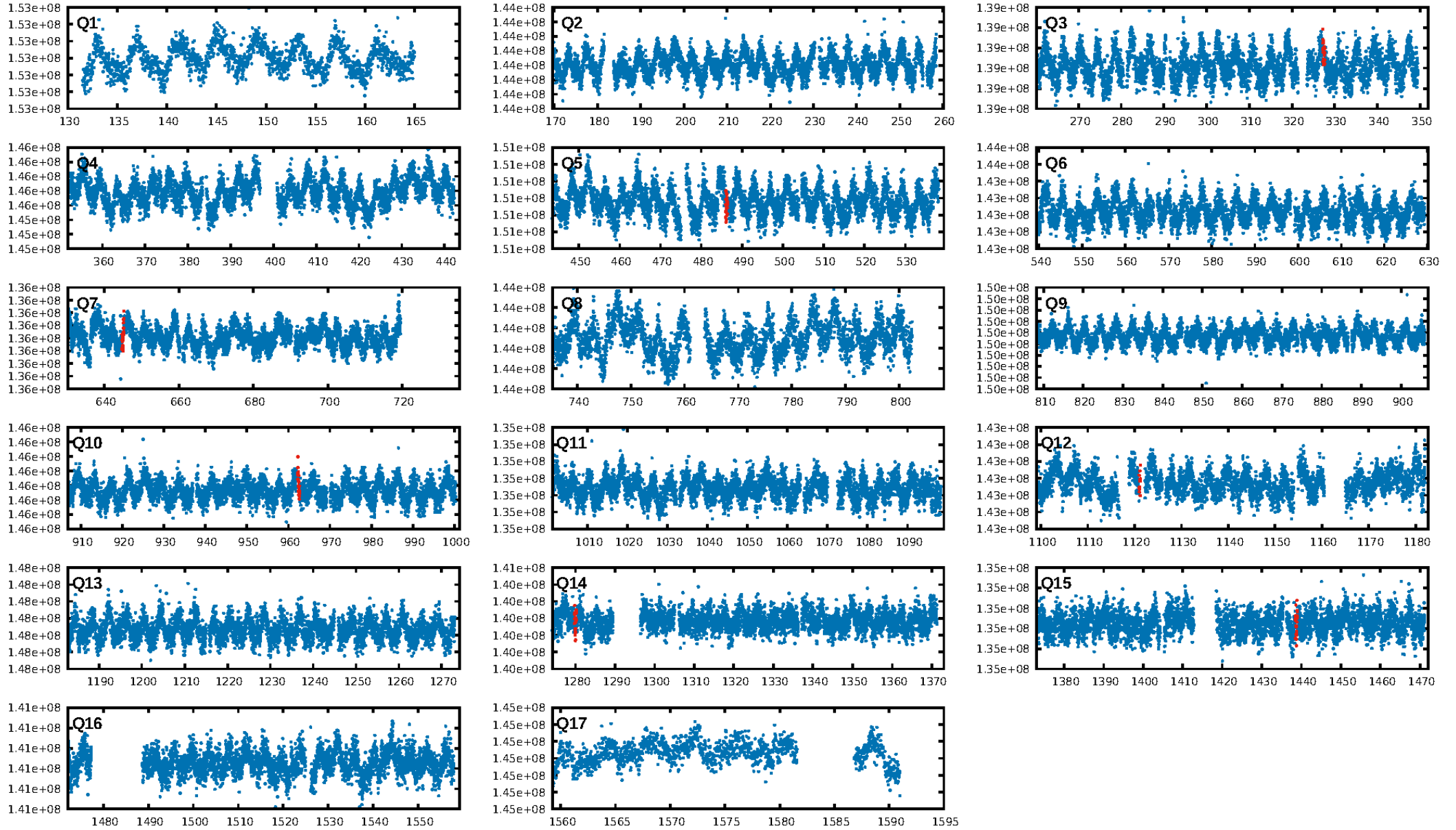
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [99.63σ]
LongPeriod-sig: 100.0% [139.60σ]
ModelChiSquare2-sig: 12.1%
ModelChiSquareGof-sig: 97.1%
Bootstrap-pfa: 1.08e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.302
Centroid-sig: 8.8%
Centroid-so: 0.810 arcsec [1.11σ]
OotOffset-rm: 0.466 arcsec [0.98σ]
KicOffset-rm: 0.557 arcsec [1.14σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [4/6]

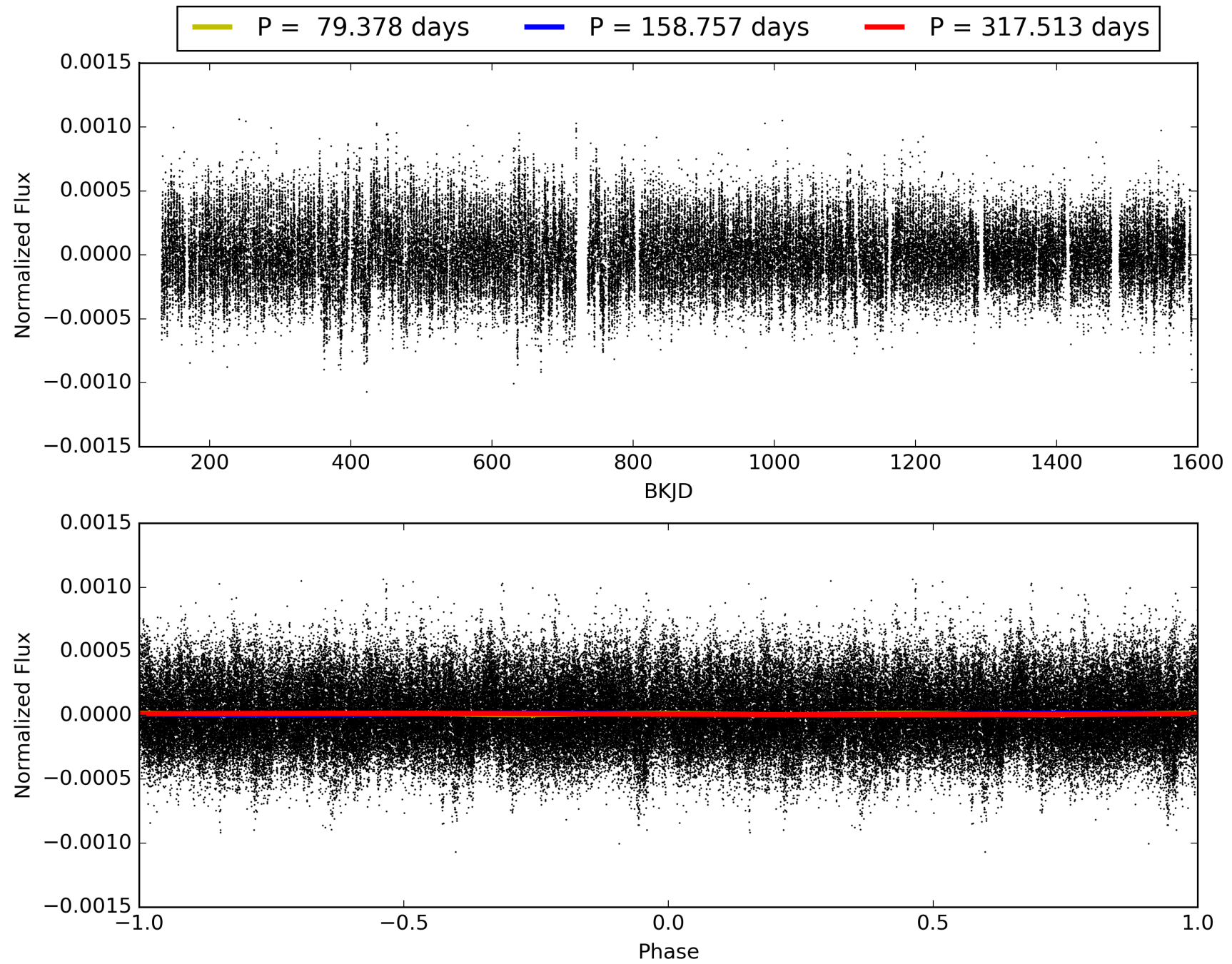
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:55:17 Z

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

TCE 005812648-04, PDC Light Curves

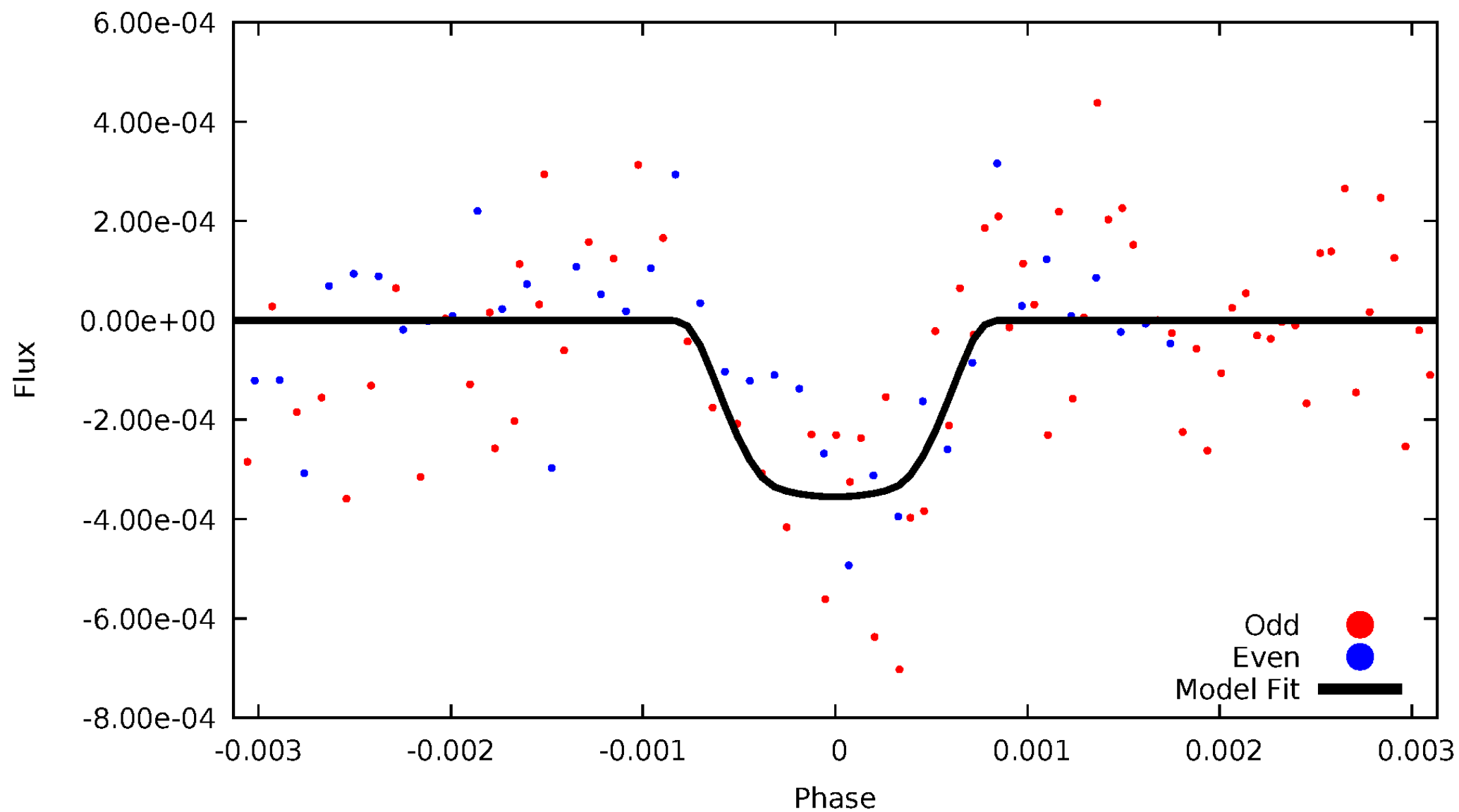


TCE 005812648-04



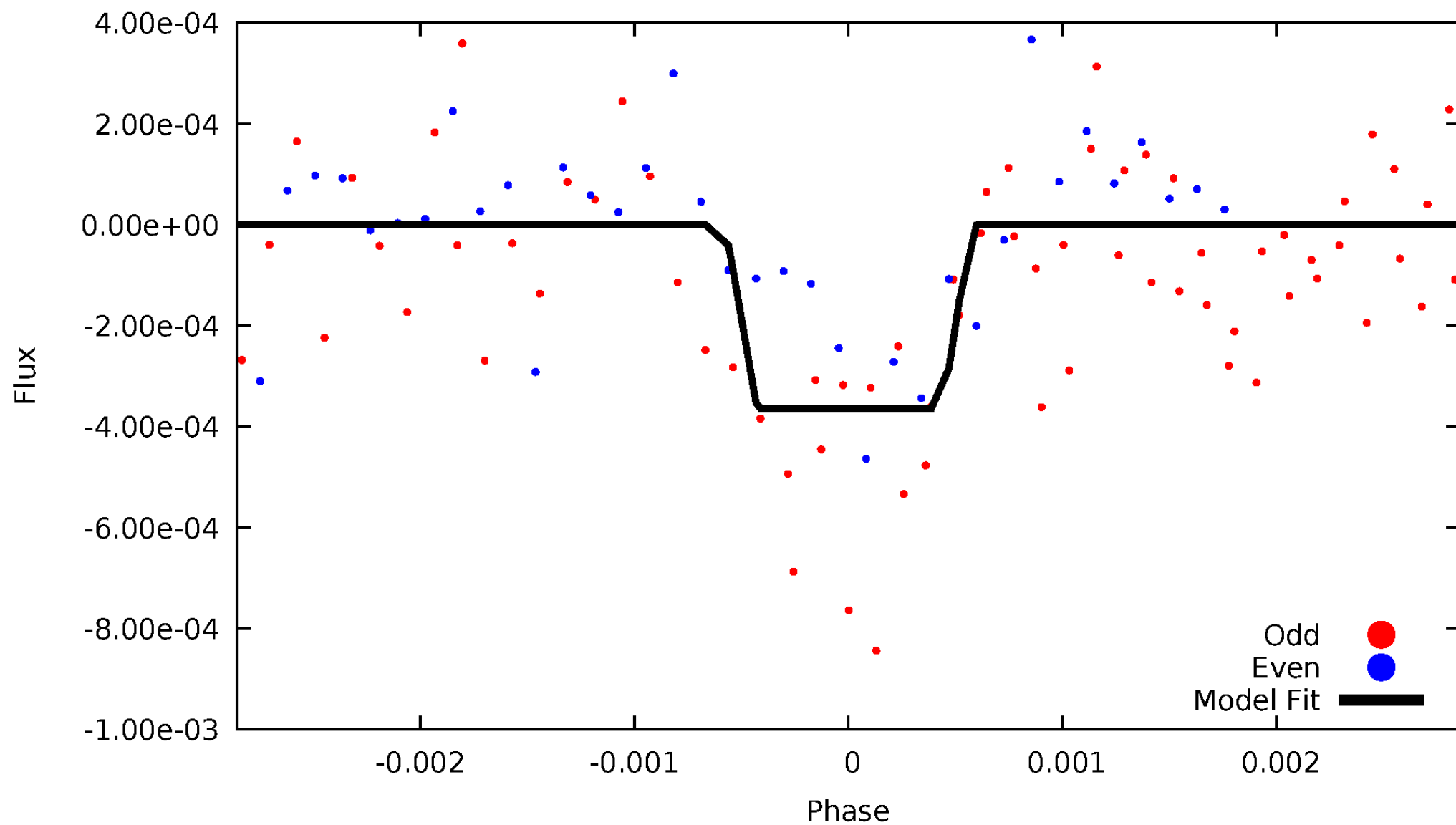
DV Odd/Even

TCE 005812648-04



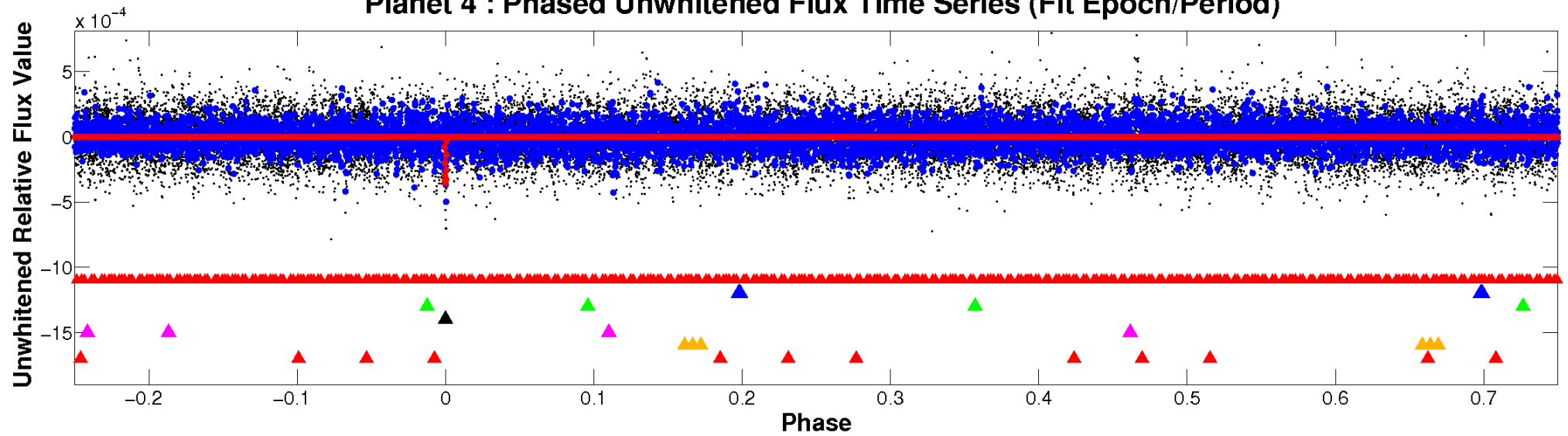
ALT Odd/Even

TCE 005812648-04

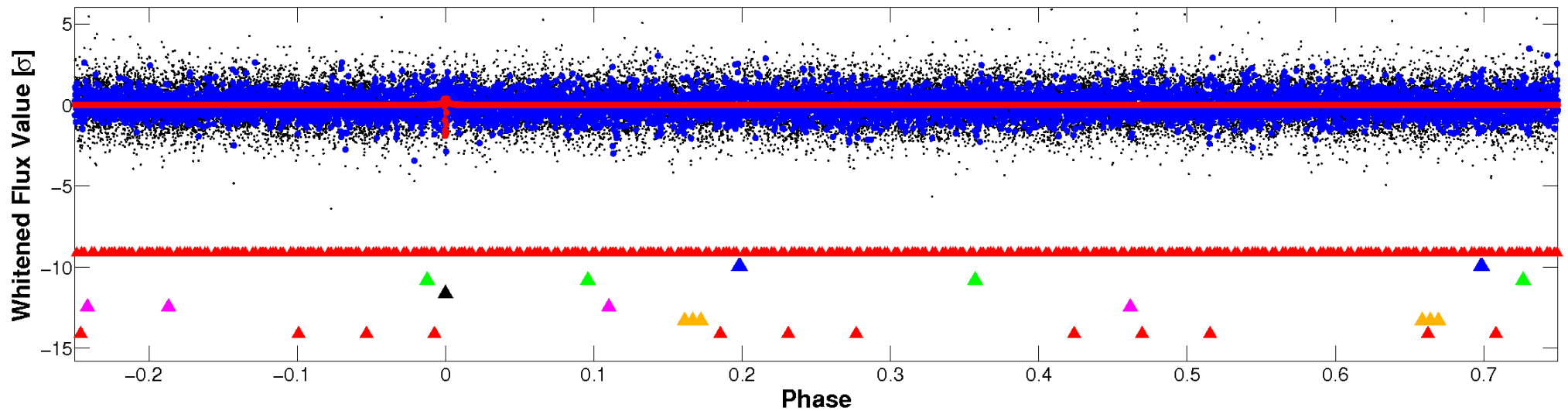


Non-Whitened Vs. Whitened Light Curve

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

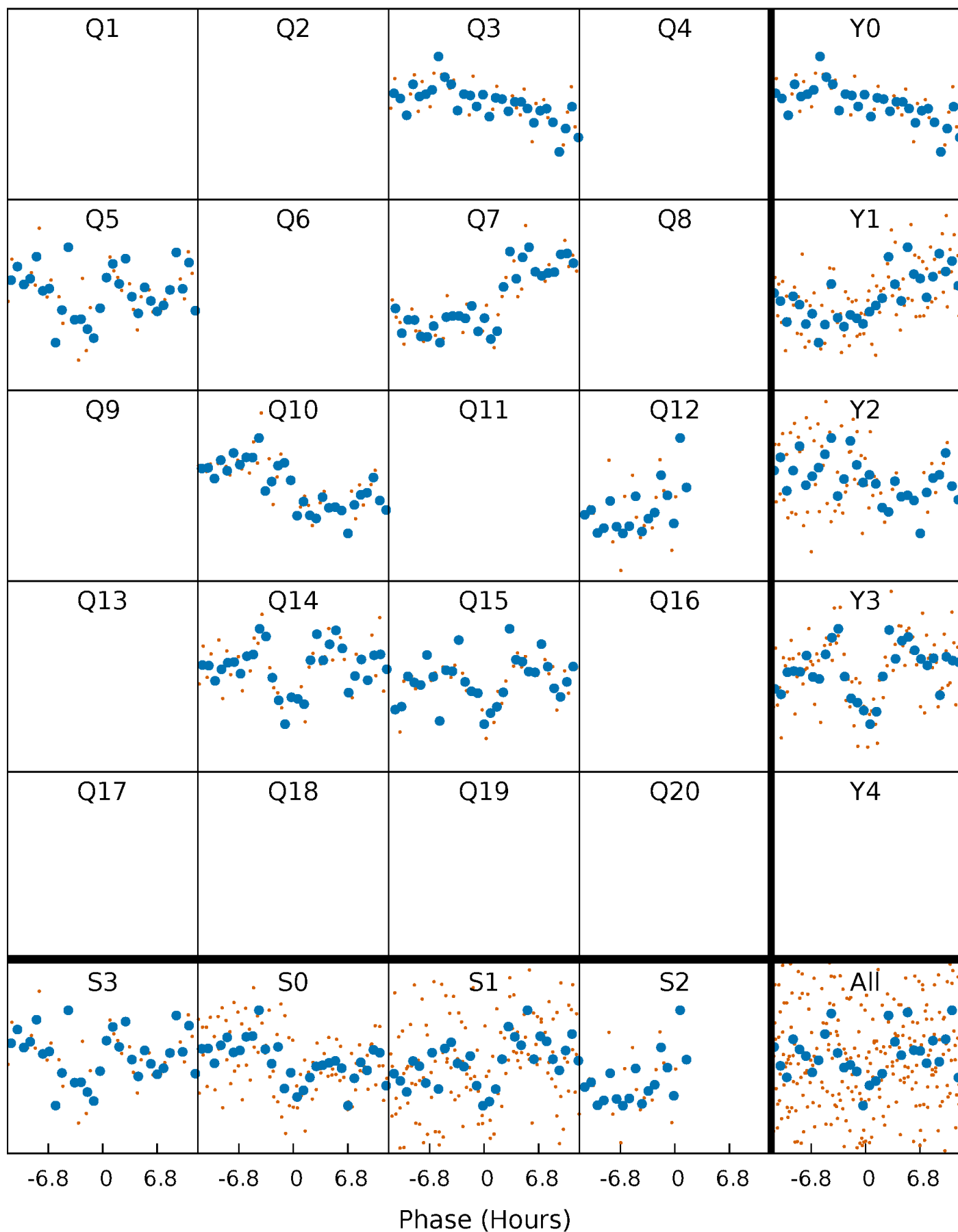


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



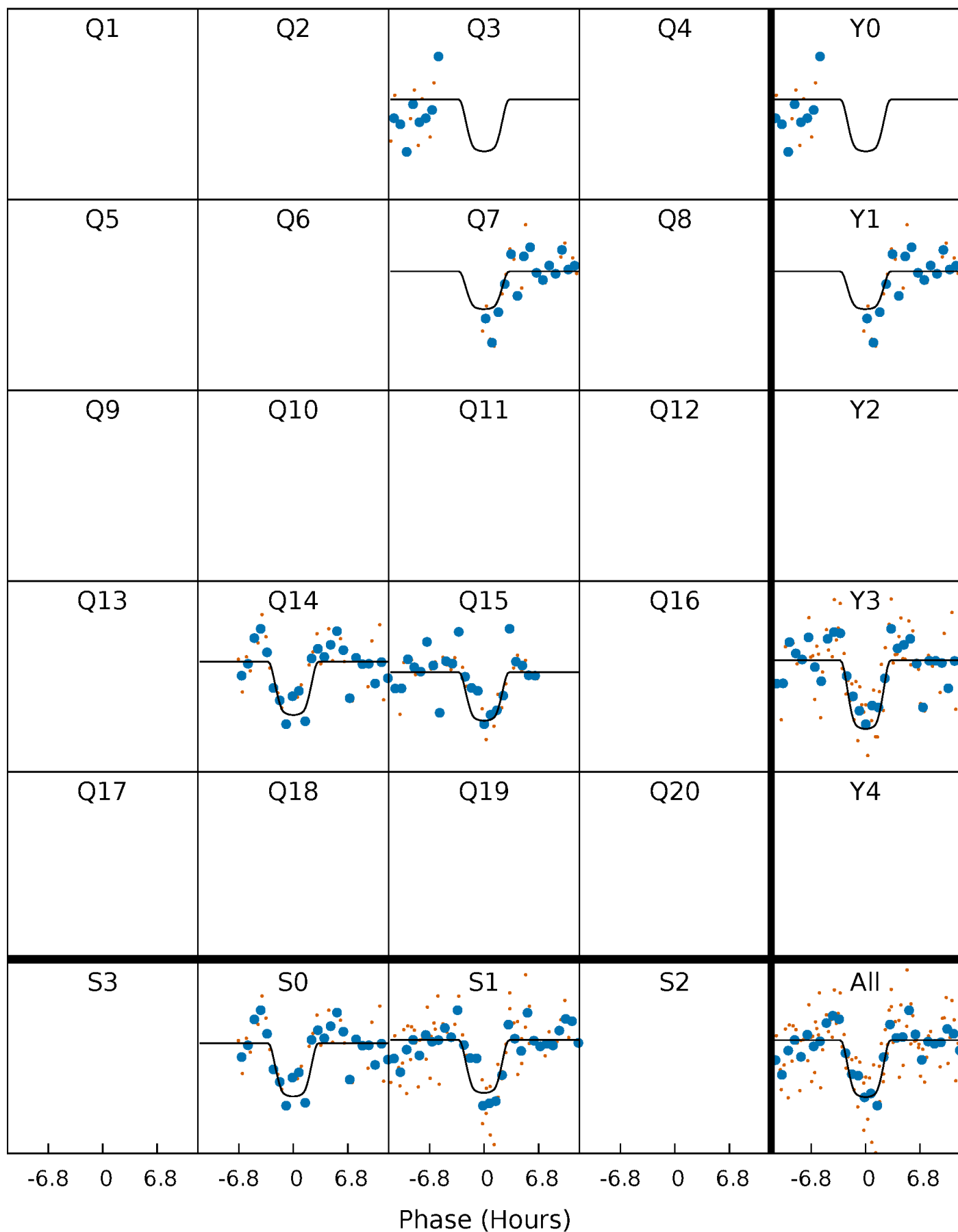
PDC Quarter-Phased Transit Curves

TCE 005812648-04 P=158.756548 Days $T_0=168.687344$ (BKJD)



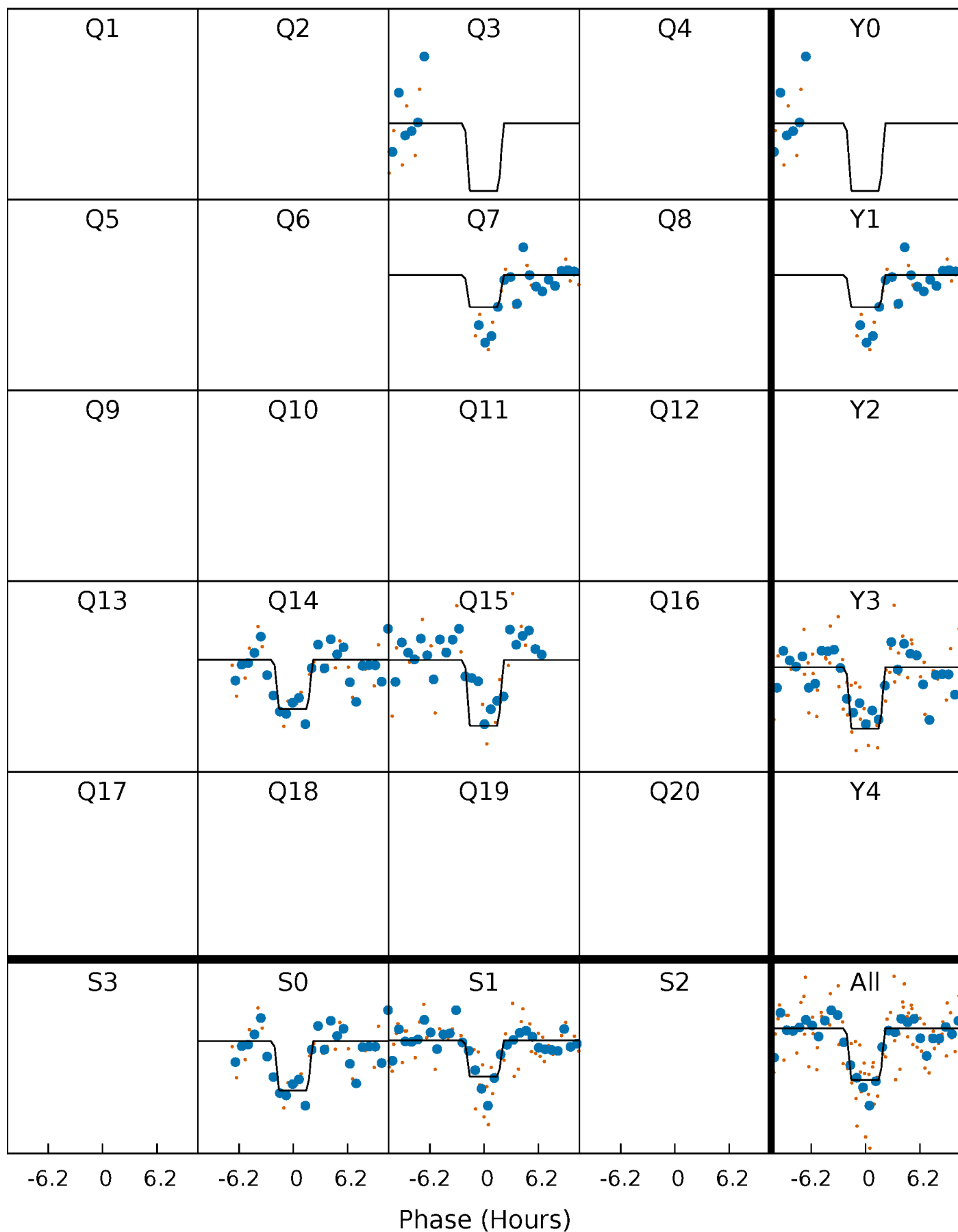
DV Quarter-Phased Transit Curves

TCE 005812648-04 $P=158.756548$ Days $T_0=168.687344$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

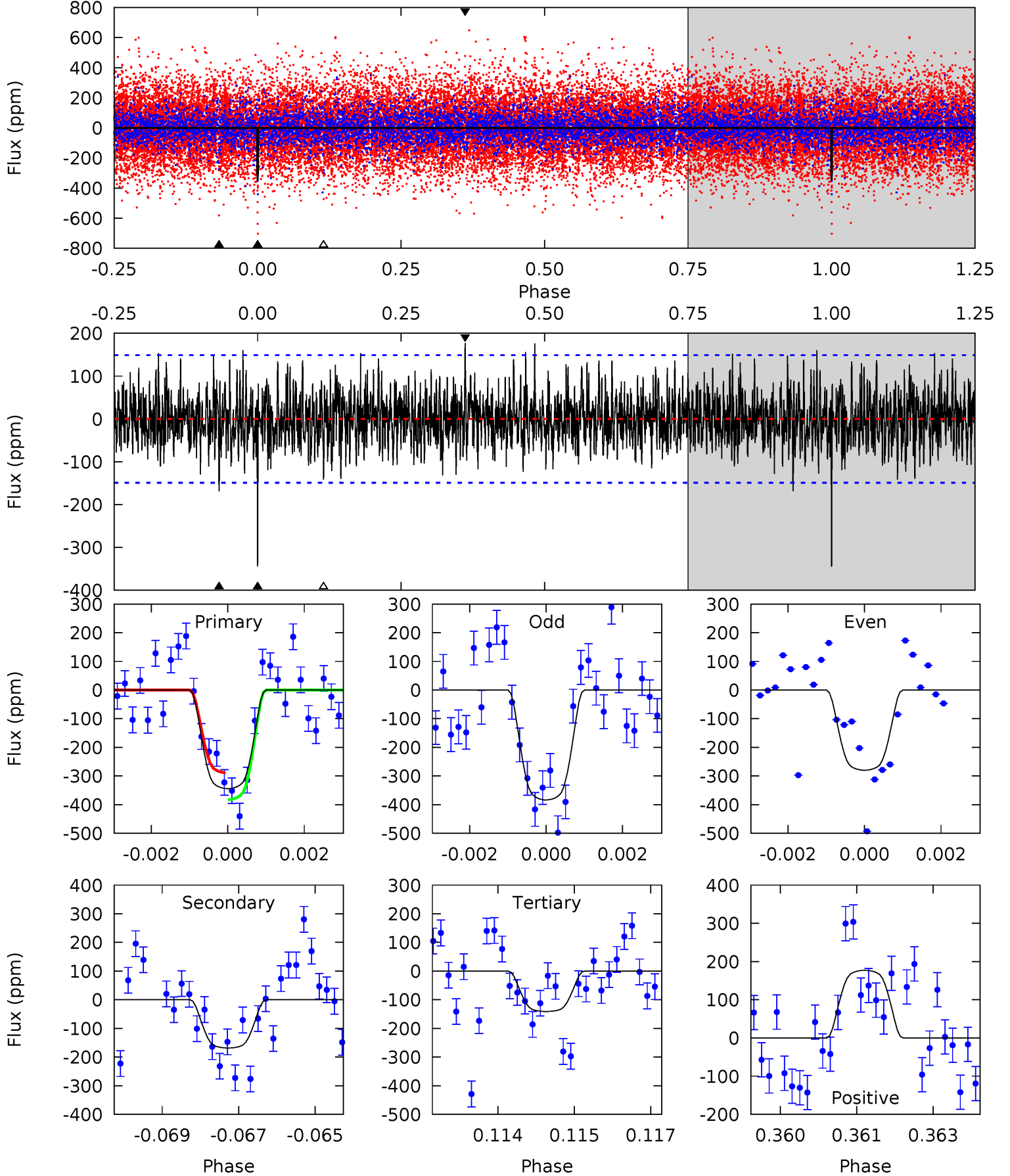
TCE 005812648-04 P=158.749655 Days $T_0=168.740287$ (BKJD)



DV Model-Shift Uniqueness Test

005812648-04, P = 158.756548 Days, E = 9.930796 Days

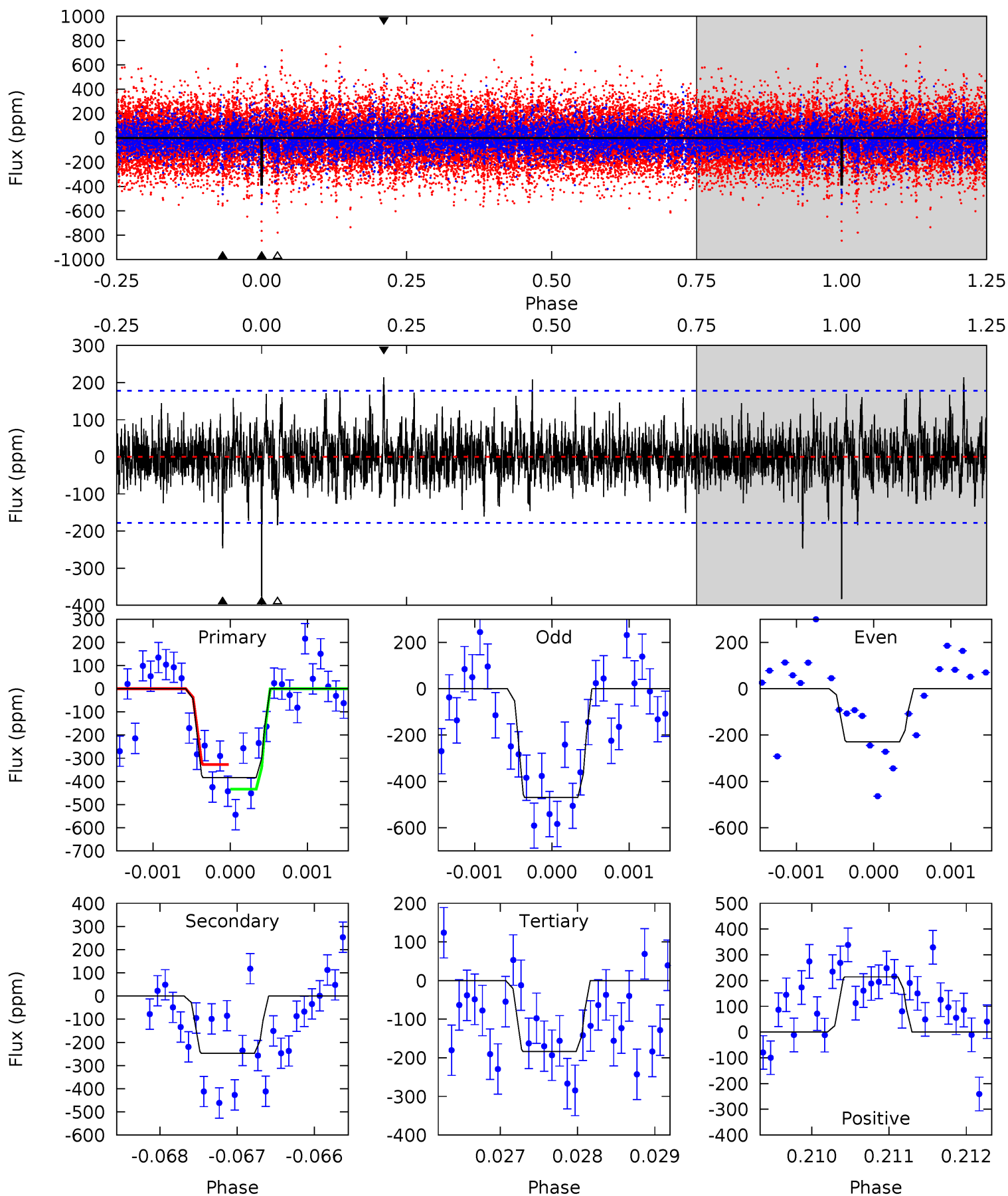
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	6.06	5.07	6.37	5.36	3.14	1.71	7.31	6.01	0.98	-0.32	1.85	1.32	0.34	1.66



Alt Model-Shift Uniqueness Test

005812648-04, P = 158.749655 Days, E = 9.990632 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	7.51	5.59	6.52	5.43	3.25	1.45	6.08	5.16	1.92	0.99	3.49	1.10	0.36	1.62



Stellar Parameters For KIC 005812648

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6565^{+178}_{-218}	$3.573^{+0.345}_{-0.115}$	$-0.520^{+0.350}_{-0.300}$	$3.308^{+0.555}_{-1.387}$	$1.493^{+0.237}_{-0.355}$	$0.058^{+0.152}_{-0.021}$
	+3%/-3%	+10%/-3%	+67%/-58%	+17%/-42%	+16%/-24%	+261%/-35%
Source	PHO1	FLK73	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 005812648-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-168 ± 28	$7.72^{+1.50}_{-1.72}$	896^{+57}_{-84}	5105^{+360}_{-323}	680^{+403}_{-208}
Alt.	-247 ± 33	$6.62^{+1.33}_{-1.55}$	894^{+57}_{-90}	5916^{+512}_{-399}	1341^{+805}_{-433}

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 $A_{obs} \gg 1.0$

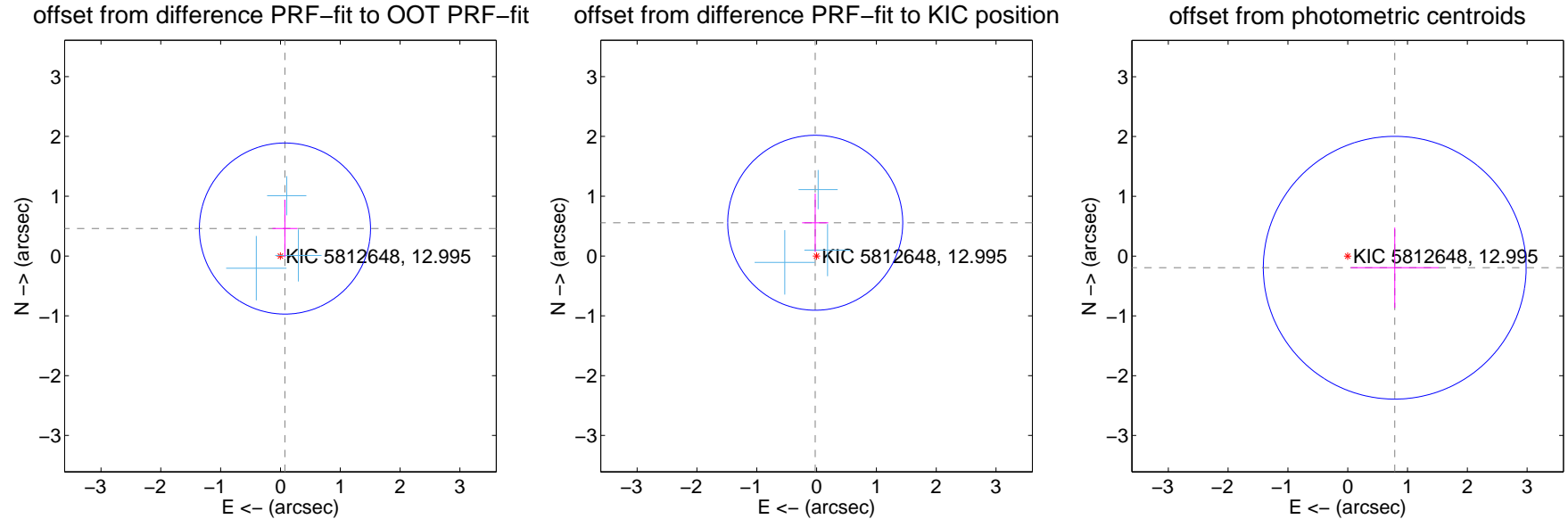
DV Centroid Data

Supplemental centroid analysis for 005812648-04. Kepler magnitude: 12.99. Transit SNR 8.05

There are 3 quarters with good PRF difference image offsets

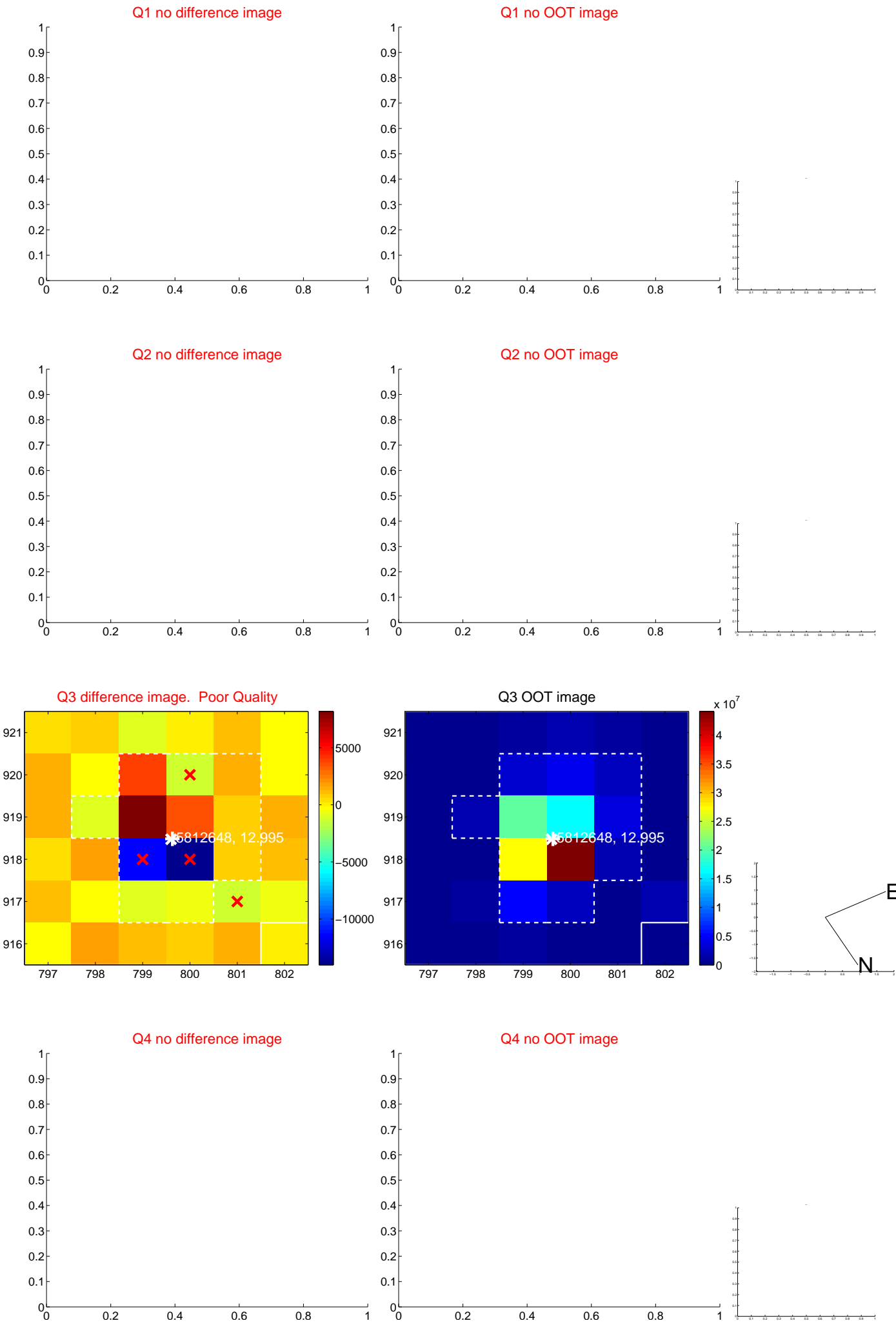
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.466 ± 0.477	0.98	-0.075 ± 0.209	0.459 ± 0.482
PRF-fit source offset from KIC position	0.557 ± 0.488	1.14	0.023 ± 0.219	0.556 ± 0.488
photometric centroid source offset	0.81 ± 0.73	1.11	-0.79 ± 0.74	-0.19 ± 0.67

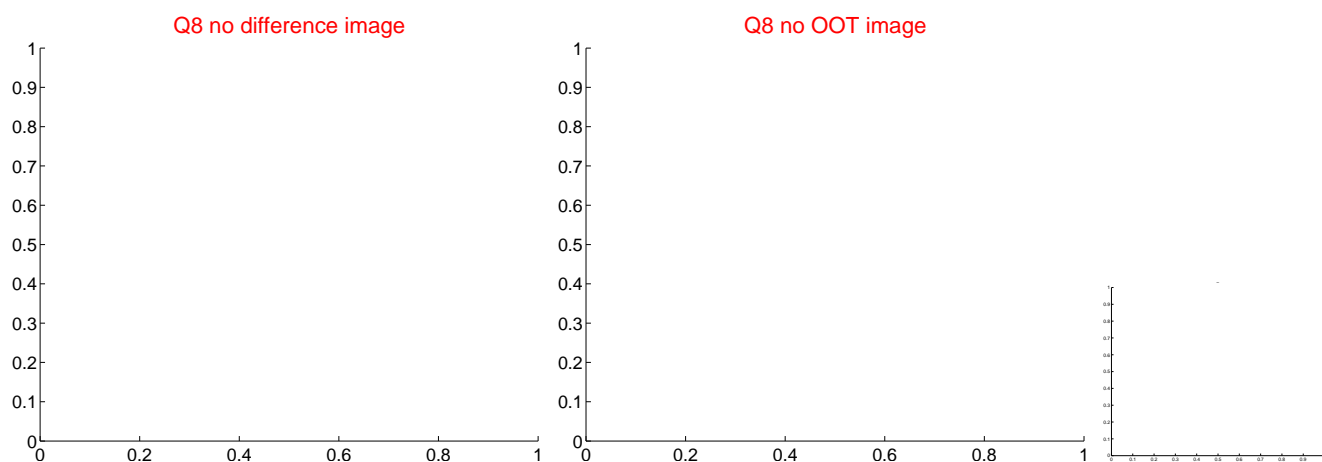
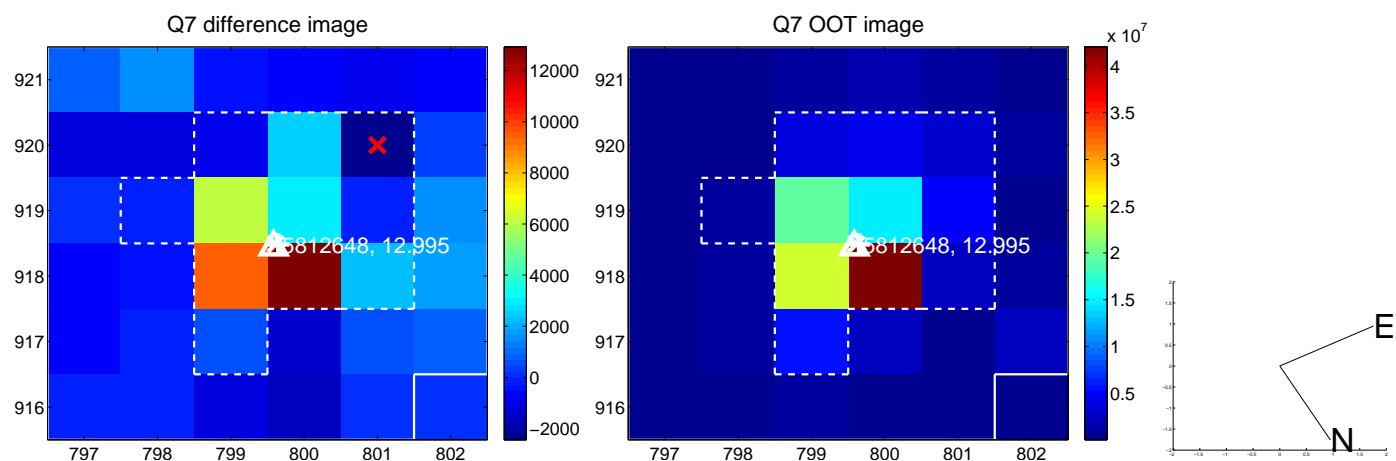
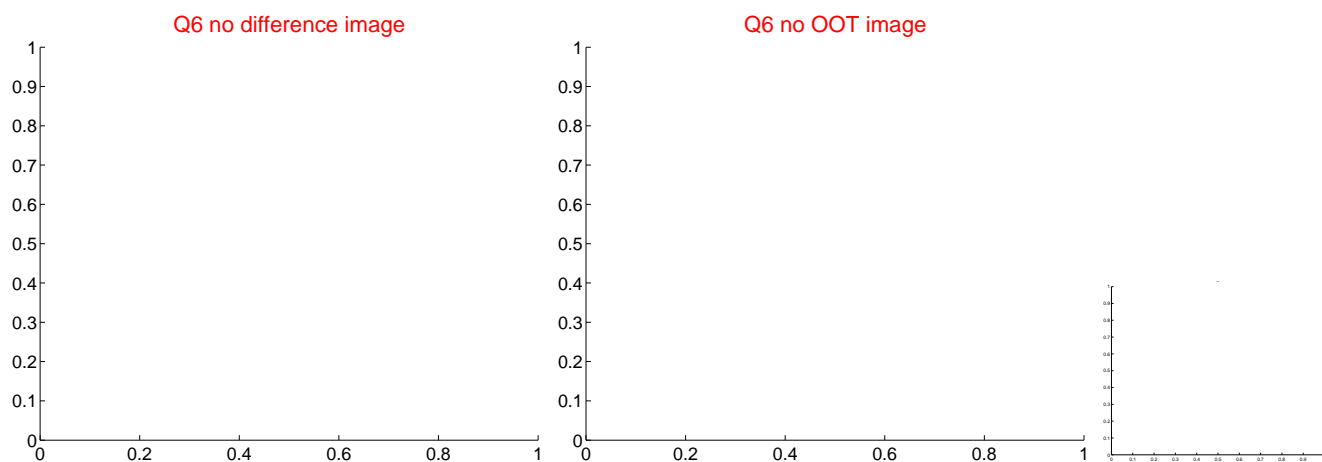
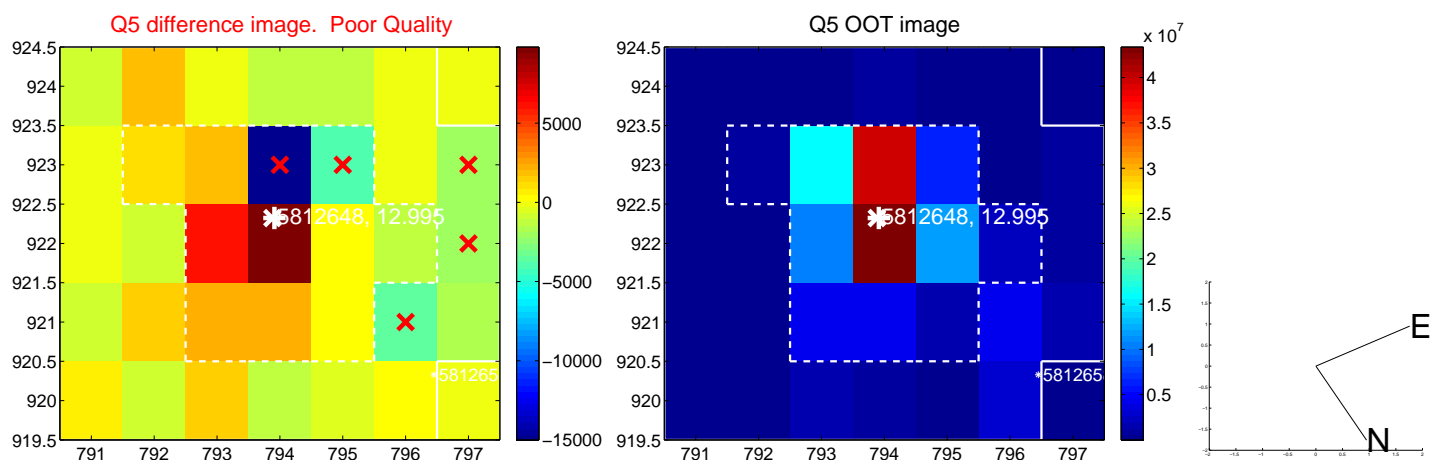


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

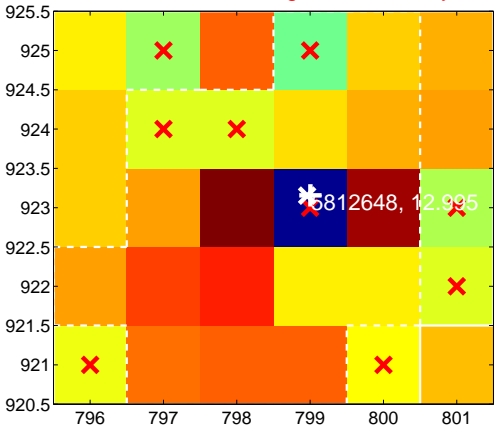
Q9 no difference image



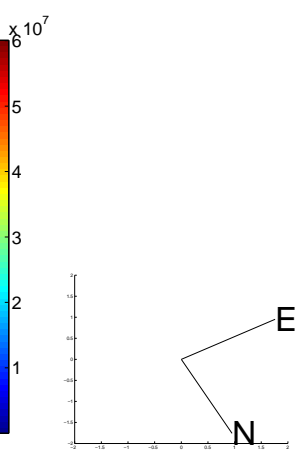
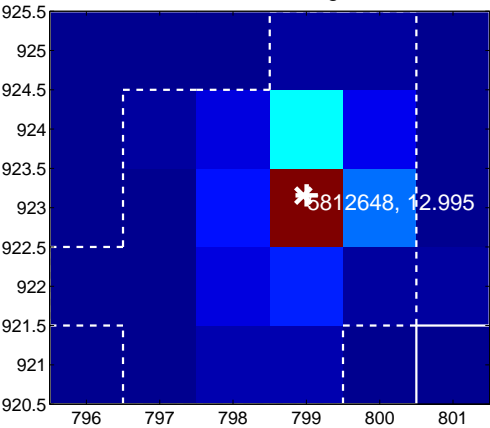
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



Q12 no OOT image

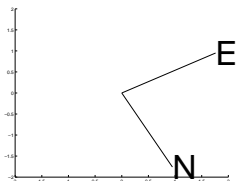
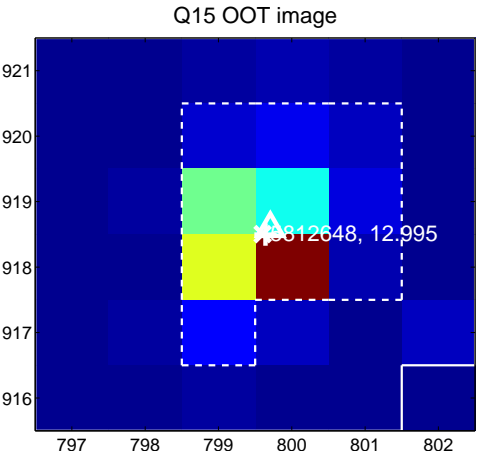
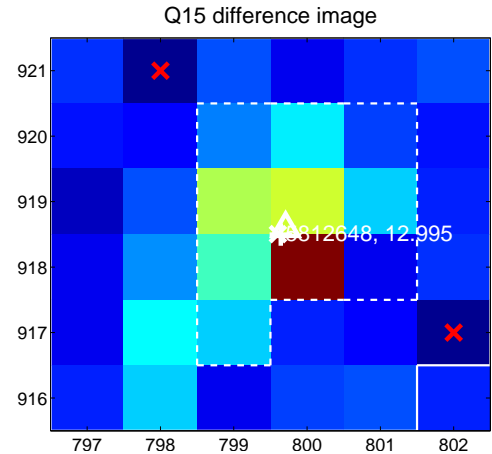
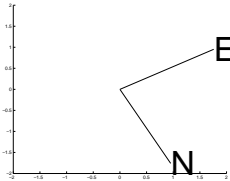
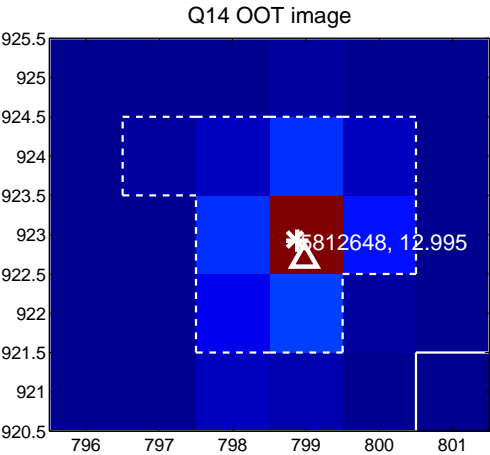
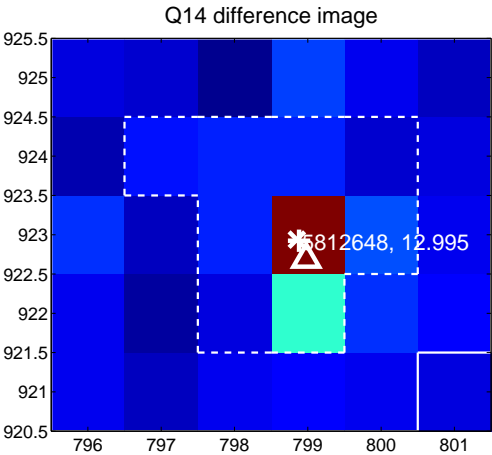


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

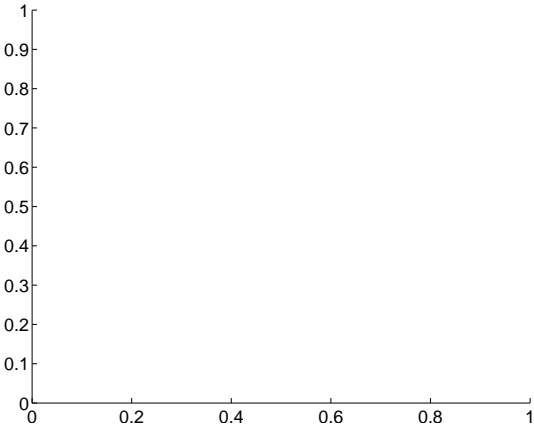
Q13 no difference image



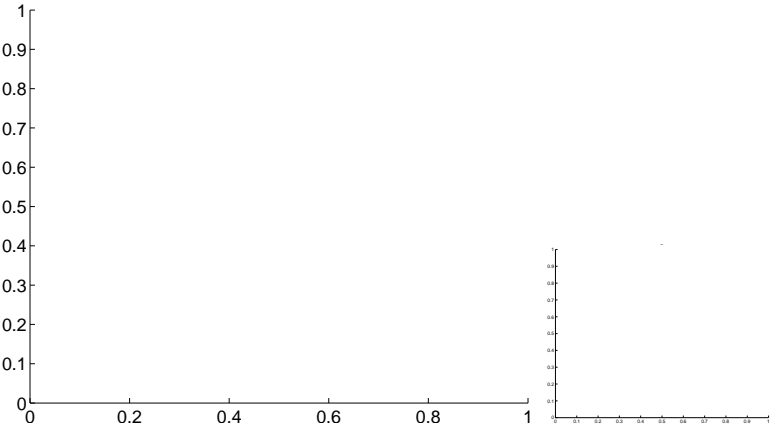
Q13 no OOT image



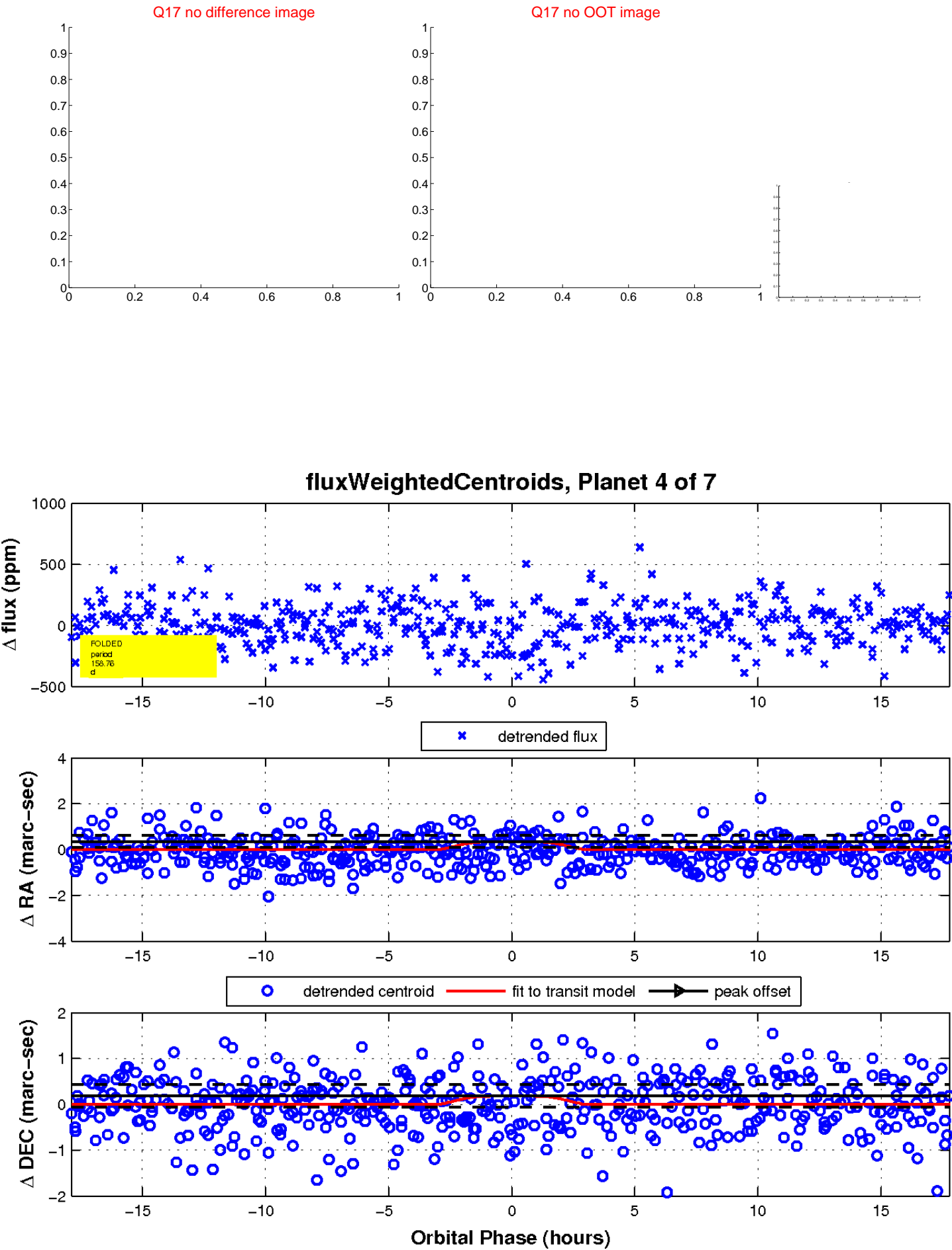
Q16 no difference image



Q16 no OOT image

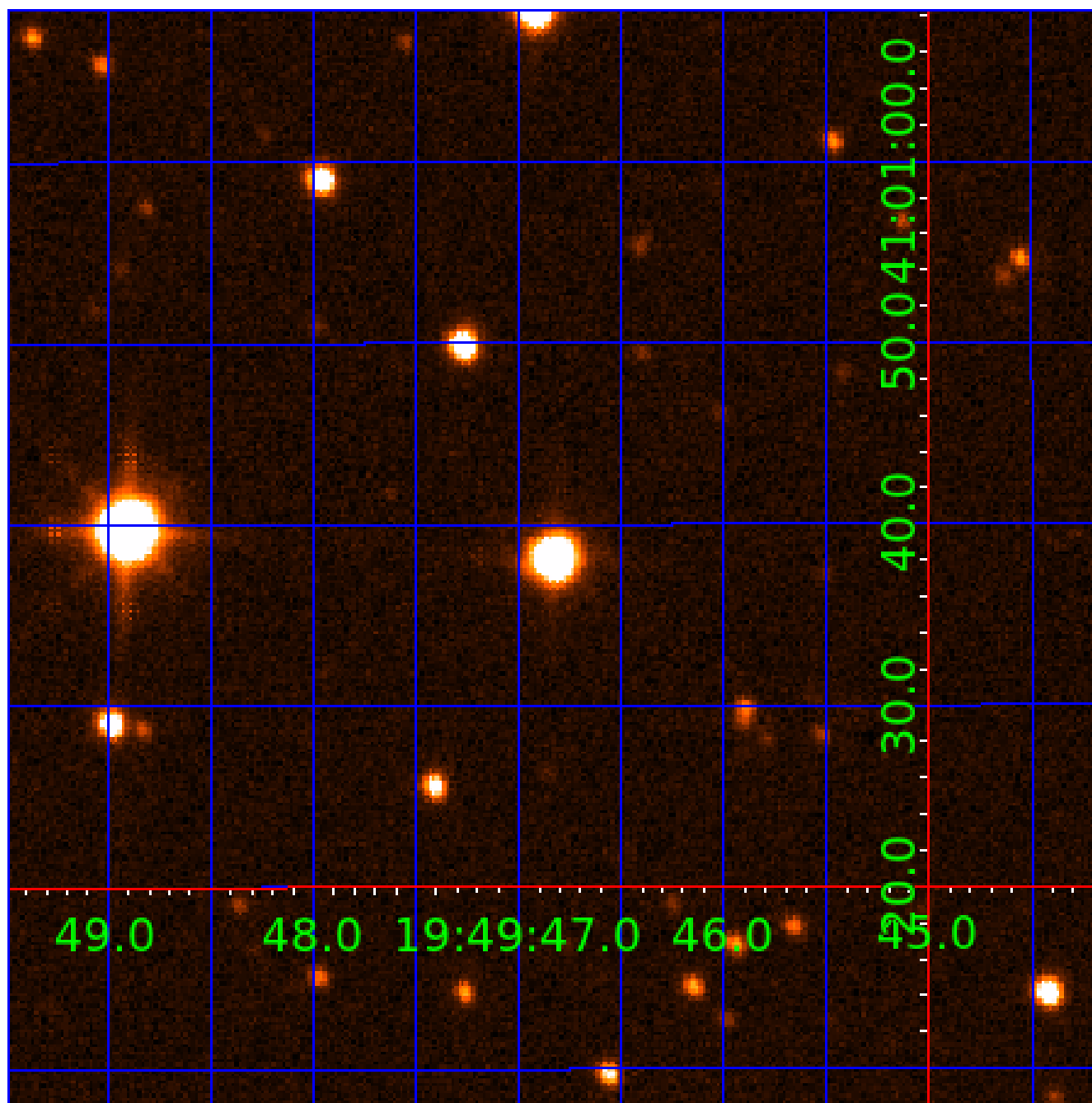


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005812648

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})
005812648-01	OBS	No	4.042919	134.344921	23.7	18.890	9.4	8.2	3.31	6565	1.93	5648.72
005812648-02	OBS	No	238.090282	279.667447	245.4	12.267	10.8	9.6	3.31	6565	5.87	24.65
005812648-03	OBS	No	376.168378	325.477919	208.8	15.177	10.0	7.3	3.31	6565	5.18	13.40
005812648-04	OBS	No	158.756548	168.687344	355.3	5.962	8.3	8.1	3.31	6565	7.95	42.32
005812648-05	OBS	No	420.455993	139.042771	234.1	55.553	8.5	6.3	3.31	6565	5.82	11.55
005812648-06	OBS	8108.01	238.567393	273.235937	136.3	10.890	8.2	7.2	3.31	6565	4.28	24.59
005812648-07	OBS	No	120.885747	152.961688	140.8	6.905	8.0	6.0	3.31	6565	4.53	60.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005812648-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005812648-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT
005812648-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
005812648-06	OBS	FP	0.08	1	0	0	0	MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005812648-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

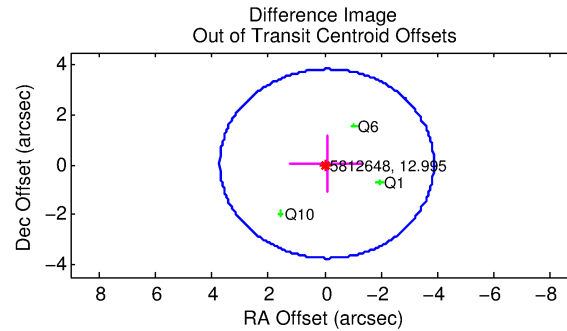
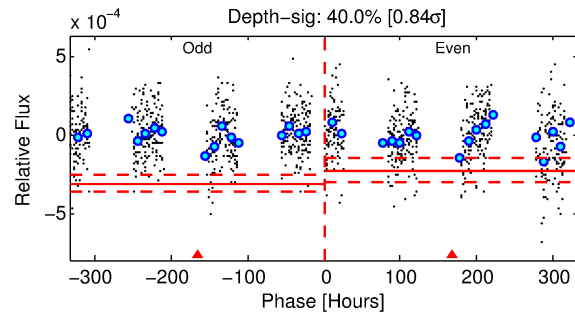
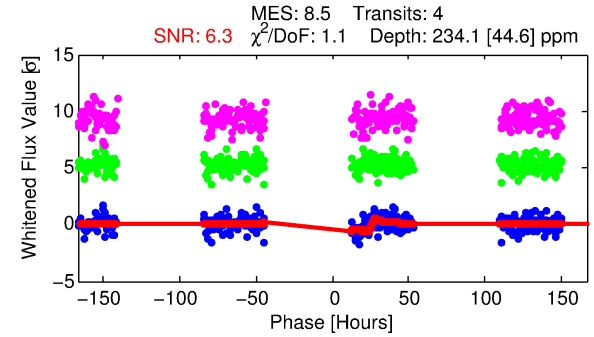
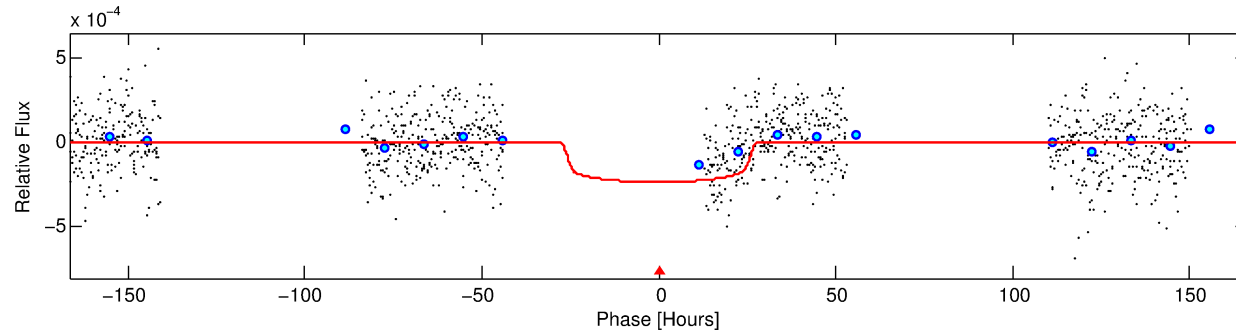
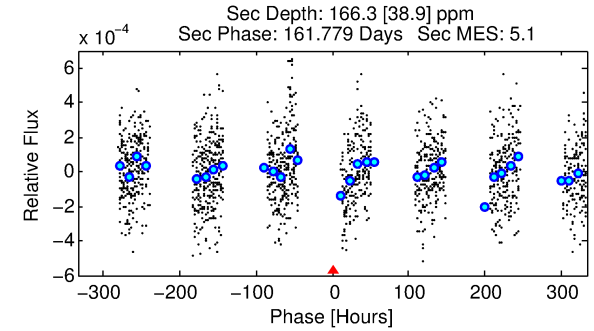
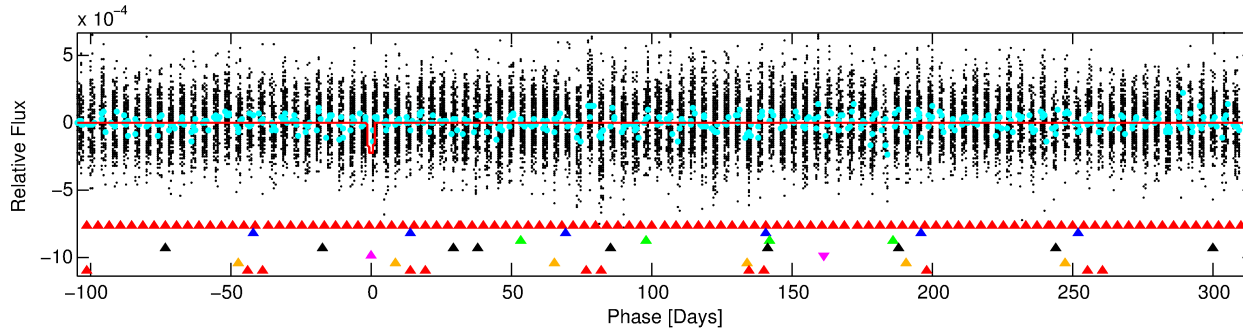
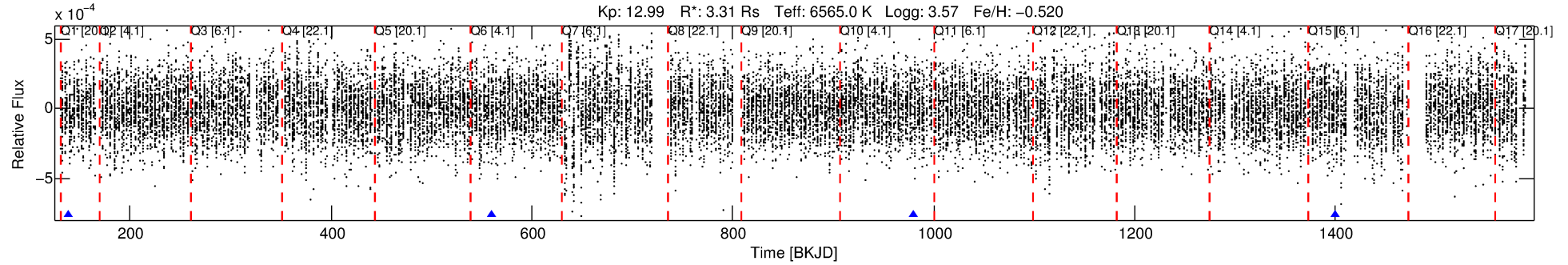
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005812648-05

No Significant Match Found

DV One-Page Summary

KIC: 5812648 Candidate: 5 of 7 Period: 420.456 d



DV Fit Results:

Period = 420.45599 [0.02703] d
Epoch = 139.0428 [0.2863] BKJD
Rp/R* = 0.0161 [0.0019]
a/R* = 29.35 [12.09]
b = 0.88 [0.08]
Seff = 11.55 [7.08]
Teq = 470 [72] K
Rp = 5.82 [2.53] Re
a = 1.2557 [0.4835] AU
Ag = 4264.27 [2916.96] [1.46σ]
Teffp = 5873 [523] K [10.23σ]

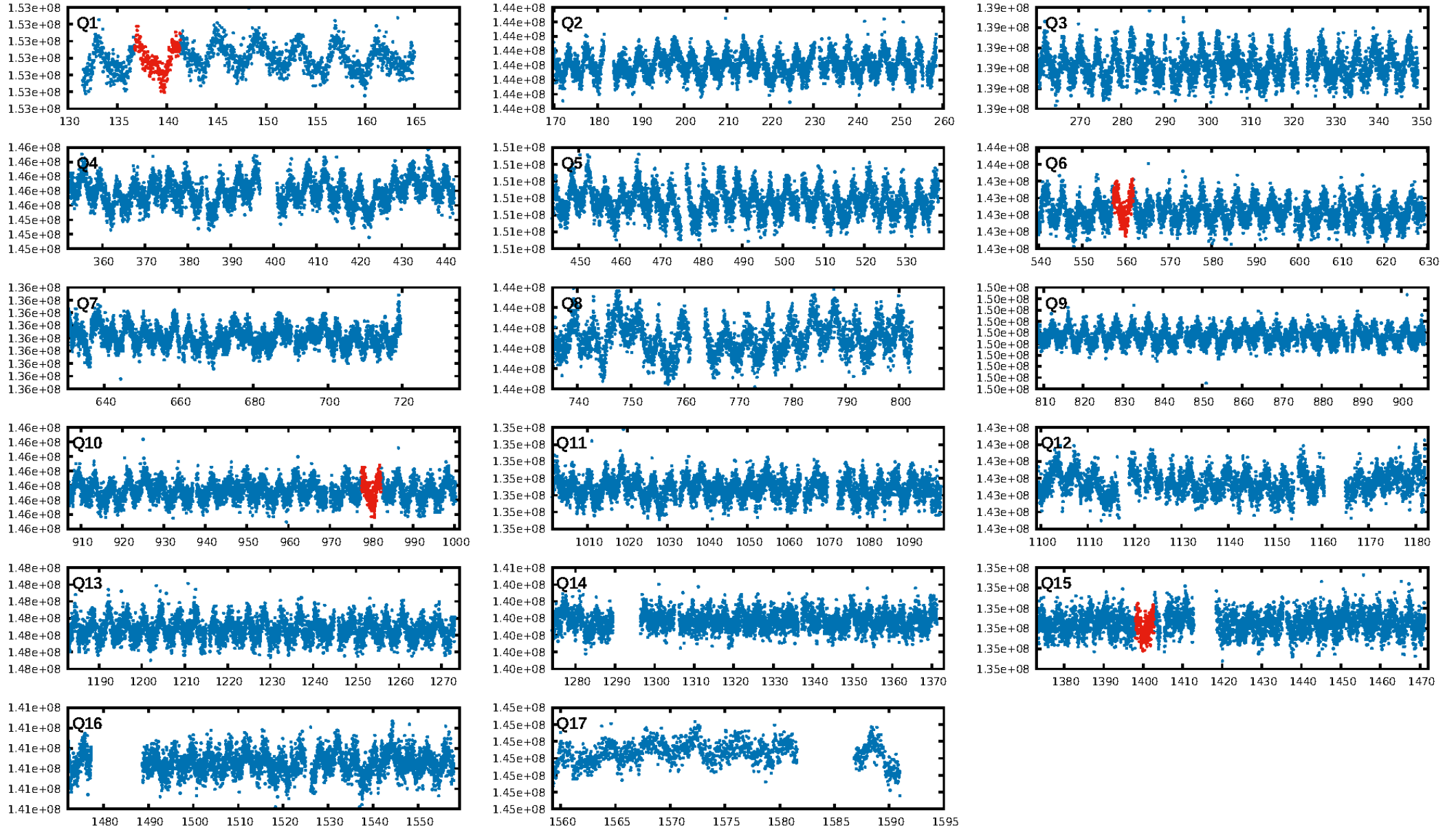
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.46σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 83.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.08e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -21.41
Centroid-sig: 0.1%
Centroid-so: 0.802 arcsec [1.47σ]
OotOffset-rm: 0.088 arcsec [0.07σ]
KicOffset-rm: 0.113 arcsec [0.10σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

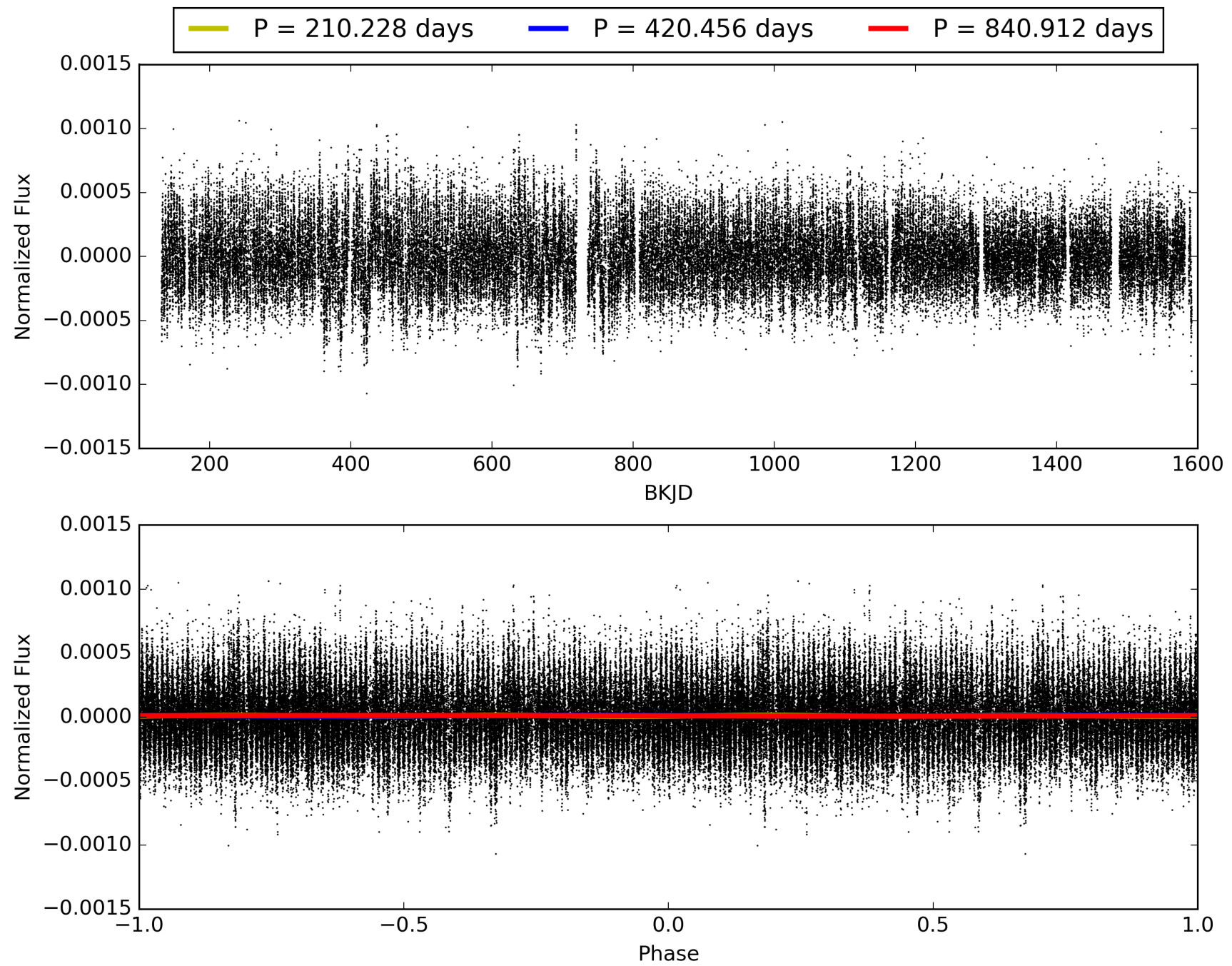
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:55:24 Z

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

TCE 005812648-05, PDC Light Curves

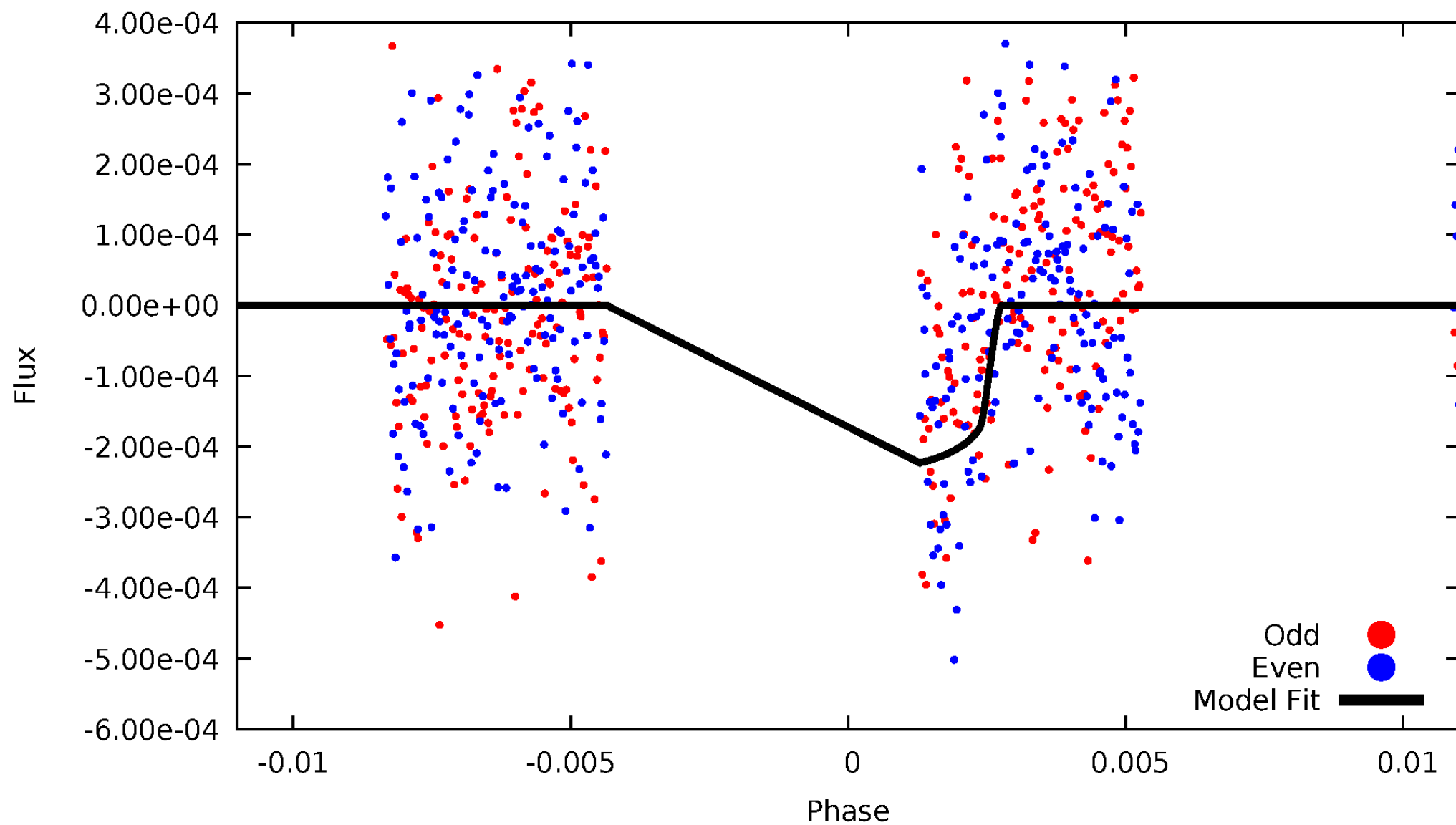


TCE 005812648-05



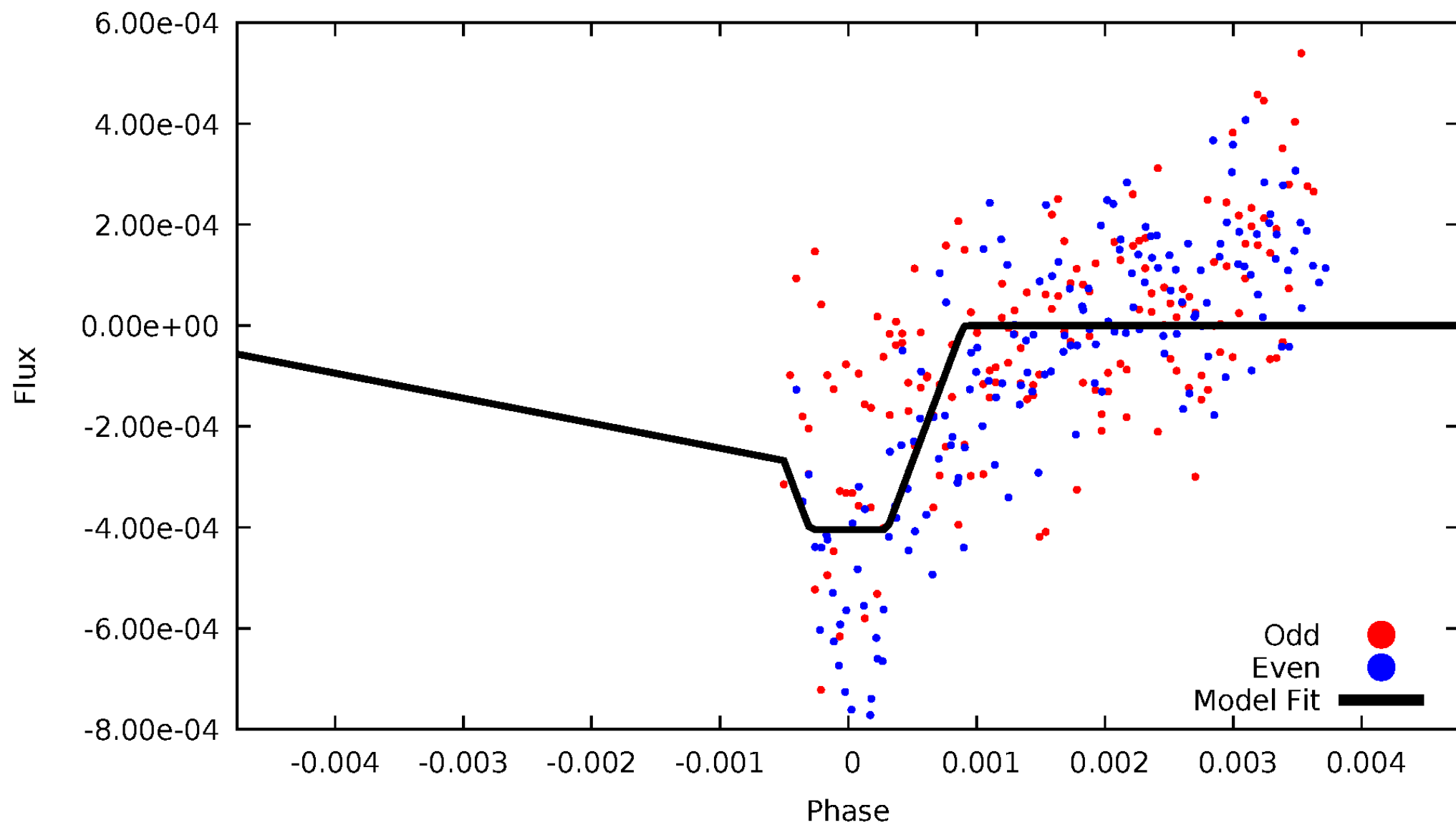
DV Odd/Even

TCE 005812648-05



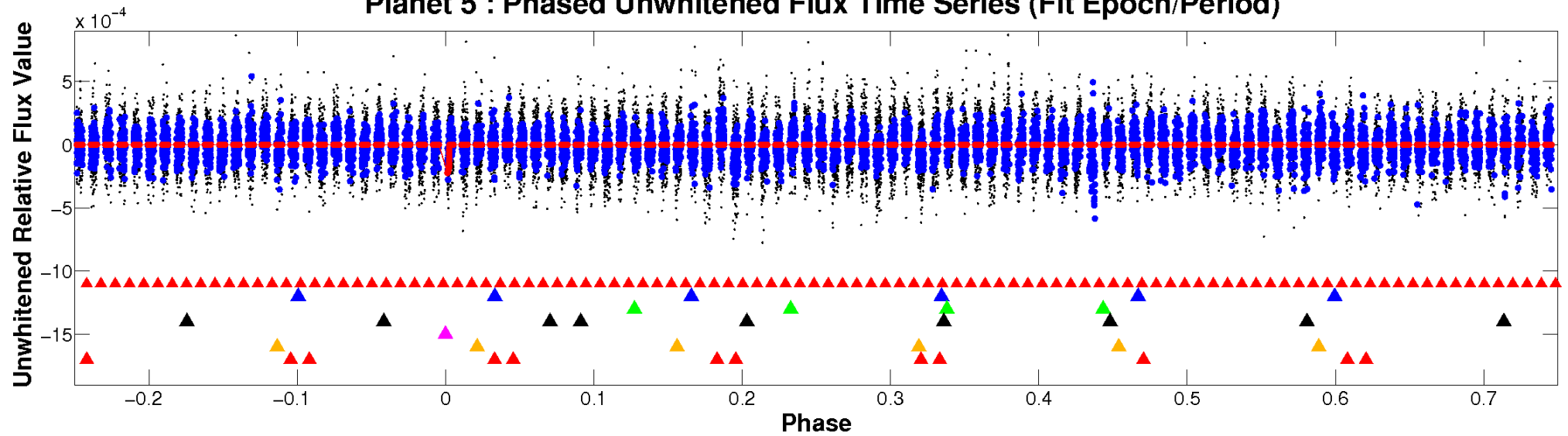
ALT Odd/Even

TCE 005812648-05

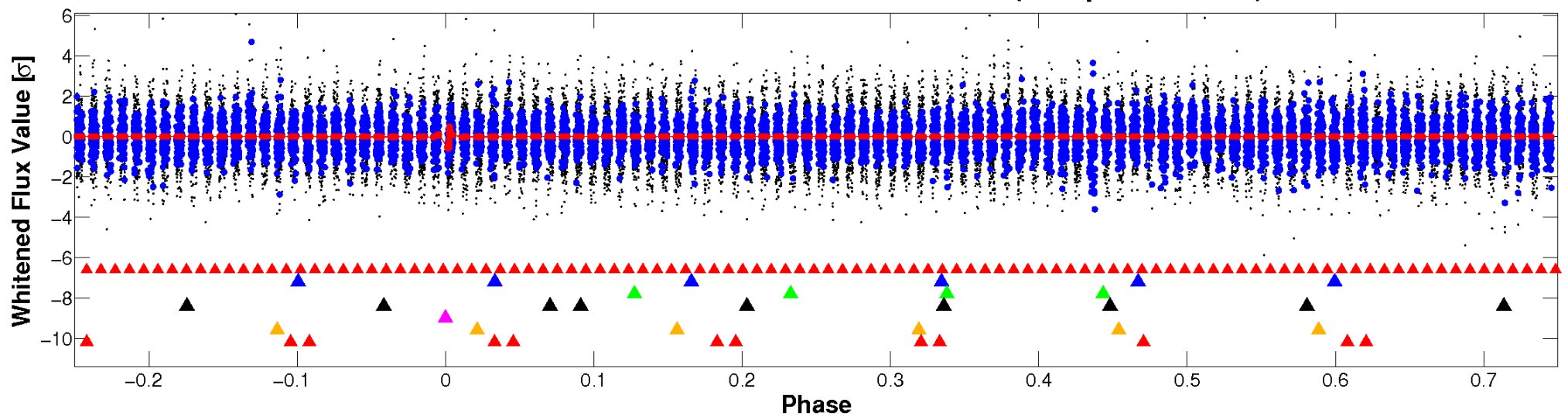


Non-Whitened Vs. Whitened Light Curve

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

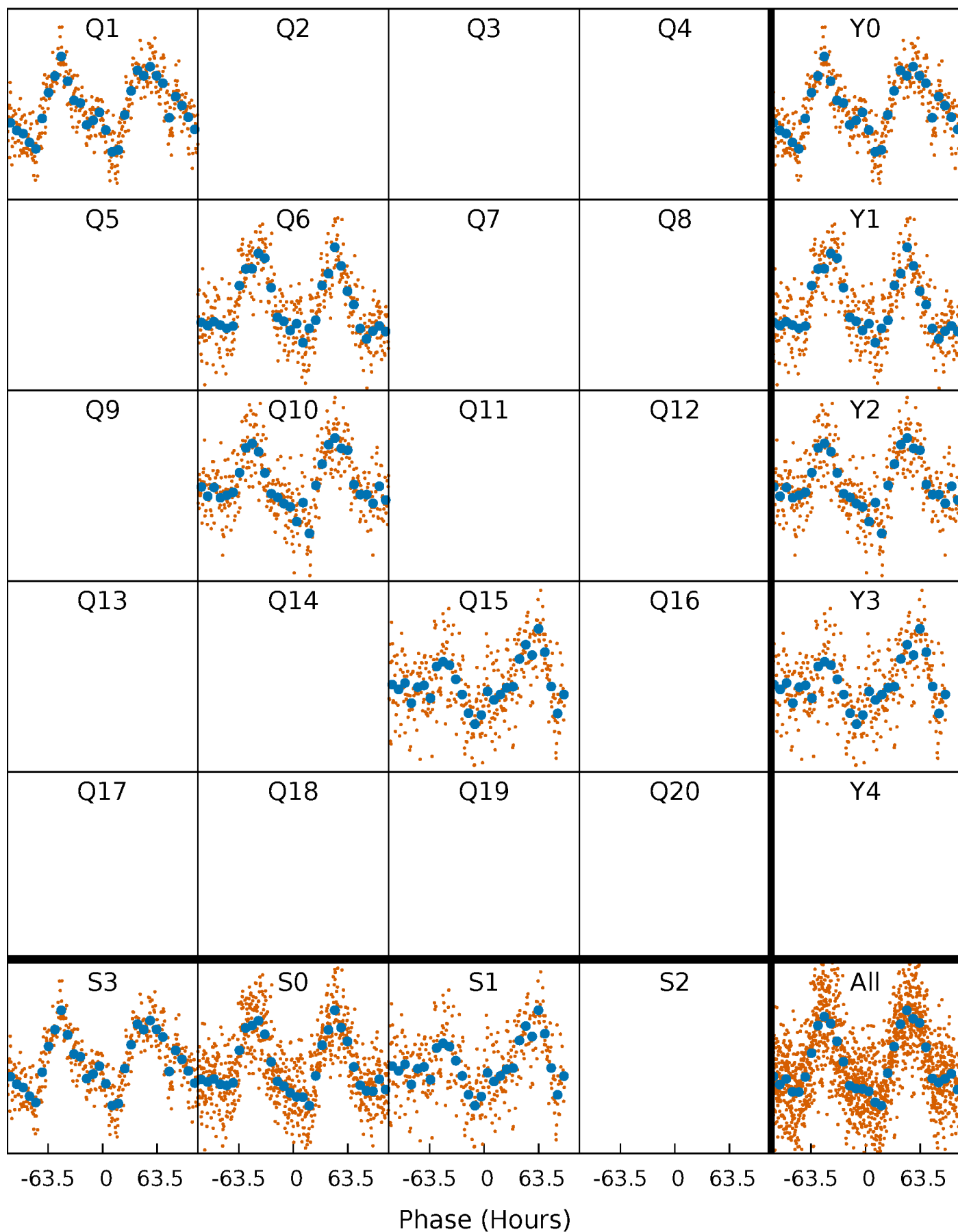


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



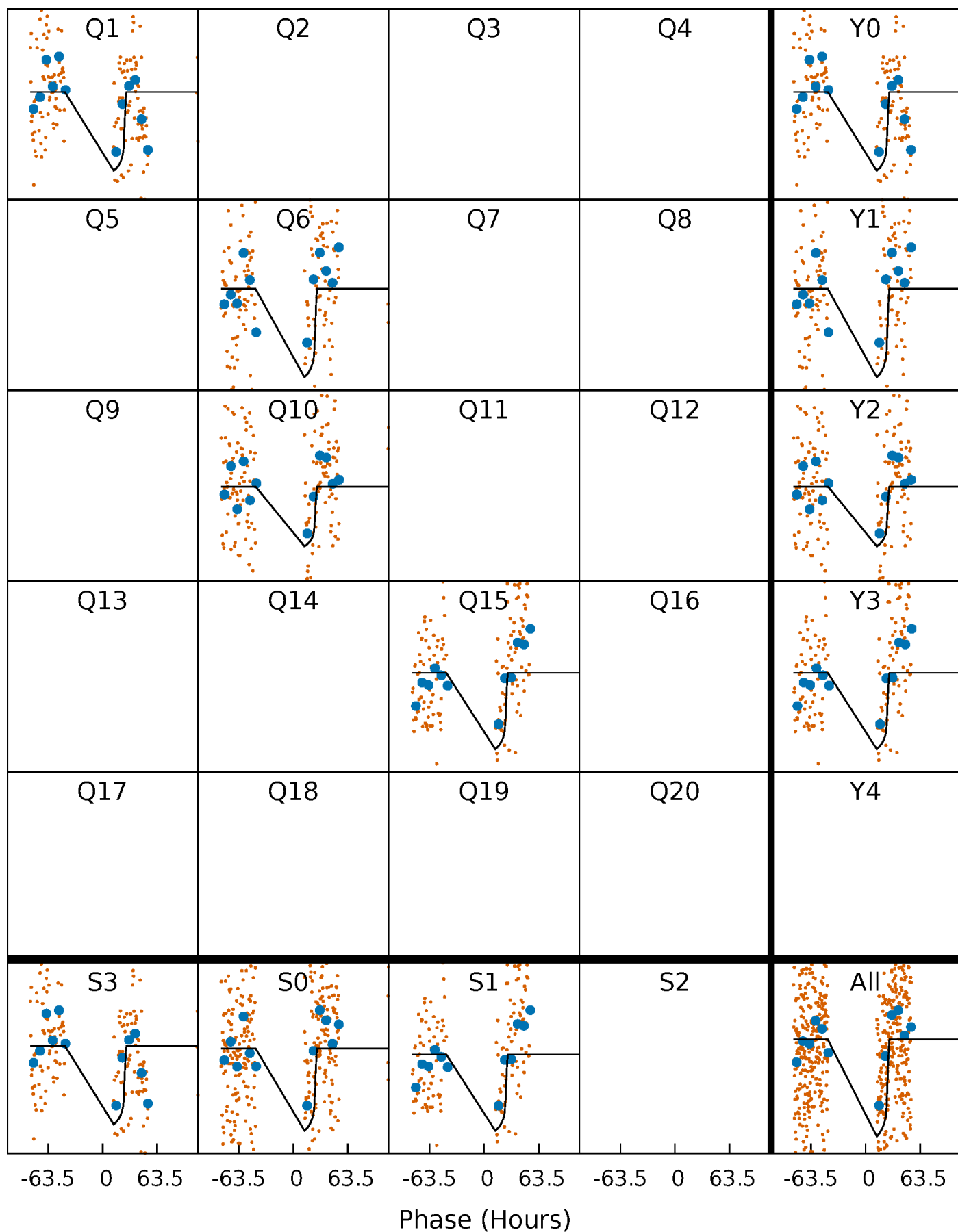
PDC Quarter-Phased Transit Curves

TCE 005812648-05 $P=420.455993$ Days $T_0=139.042771$ (BKJD)



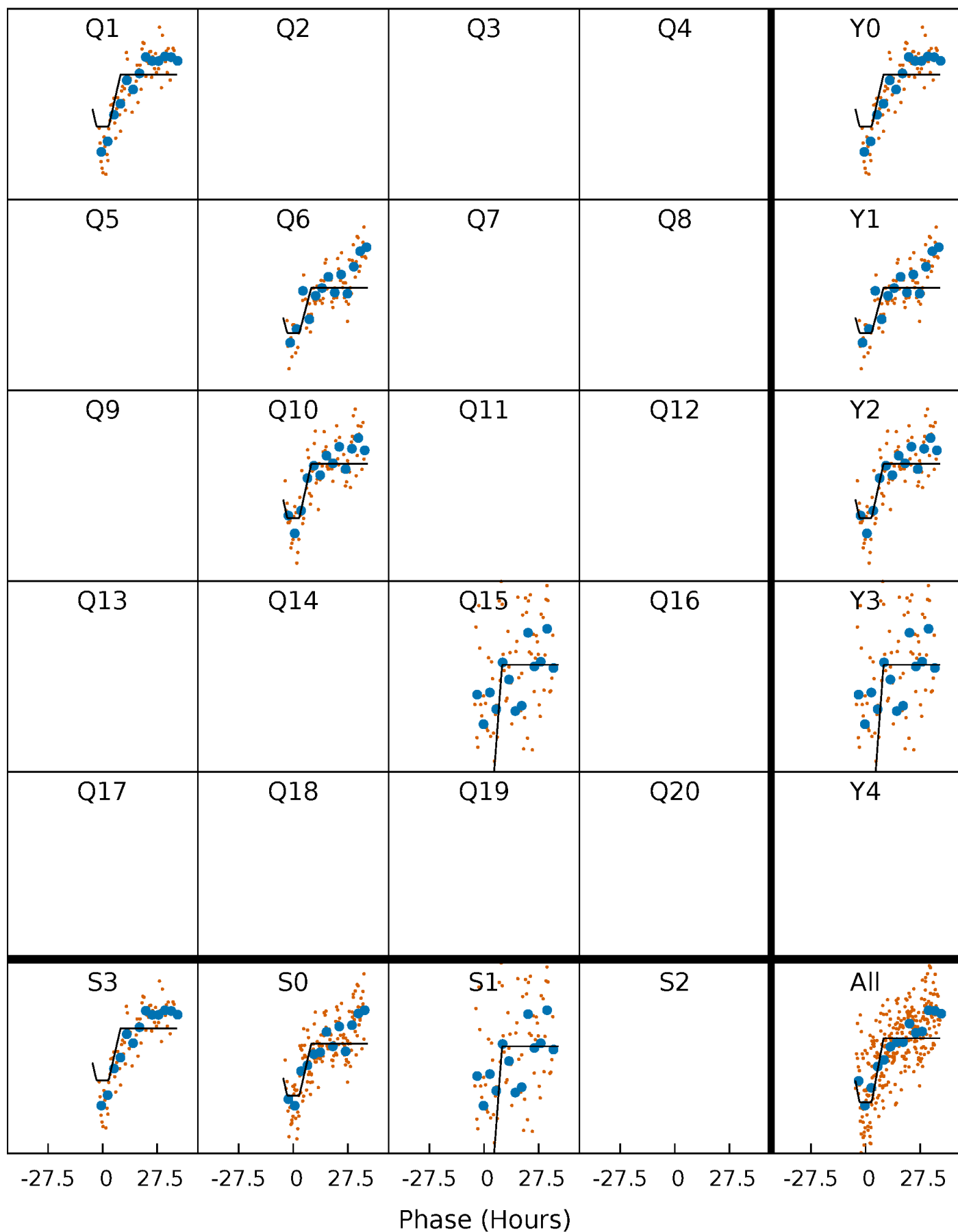
DV Quarter-Phased Transit Curves

TCE 005812648-05 P=420.455993 Days $T_0=139.042771$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

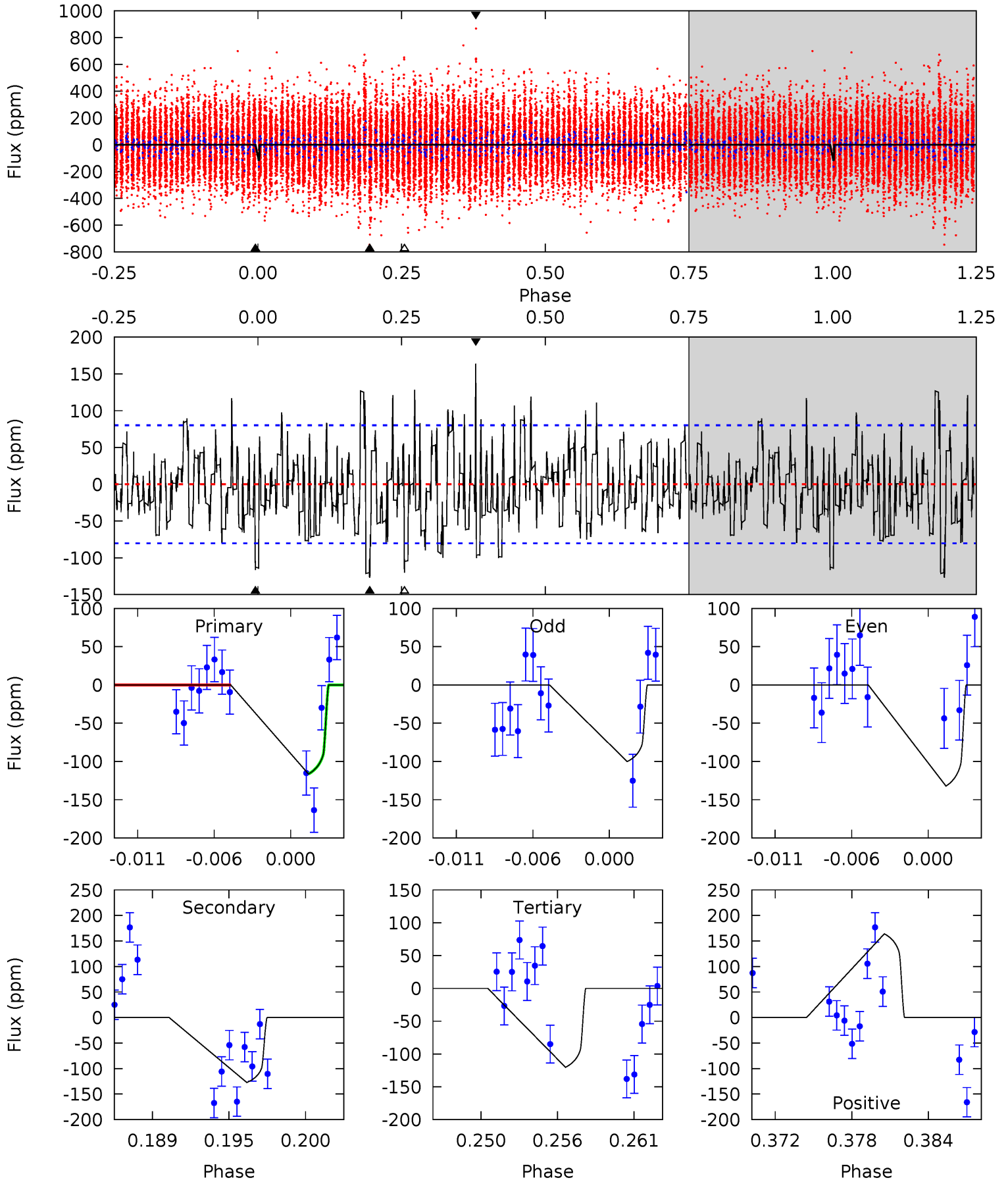
TCE 005812648-05 P=420.502231 Days $T_0=139.675792$ (BKJD)



DV Model-Shift Uniqueness Test

005812648-05, P = 420.455993 Days, E = 139.042771 Days

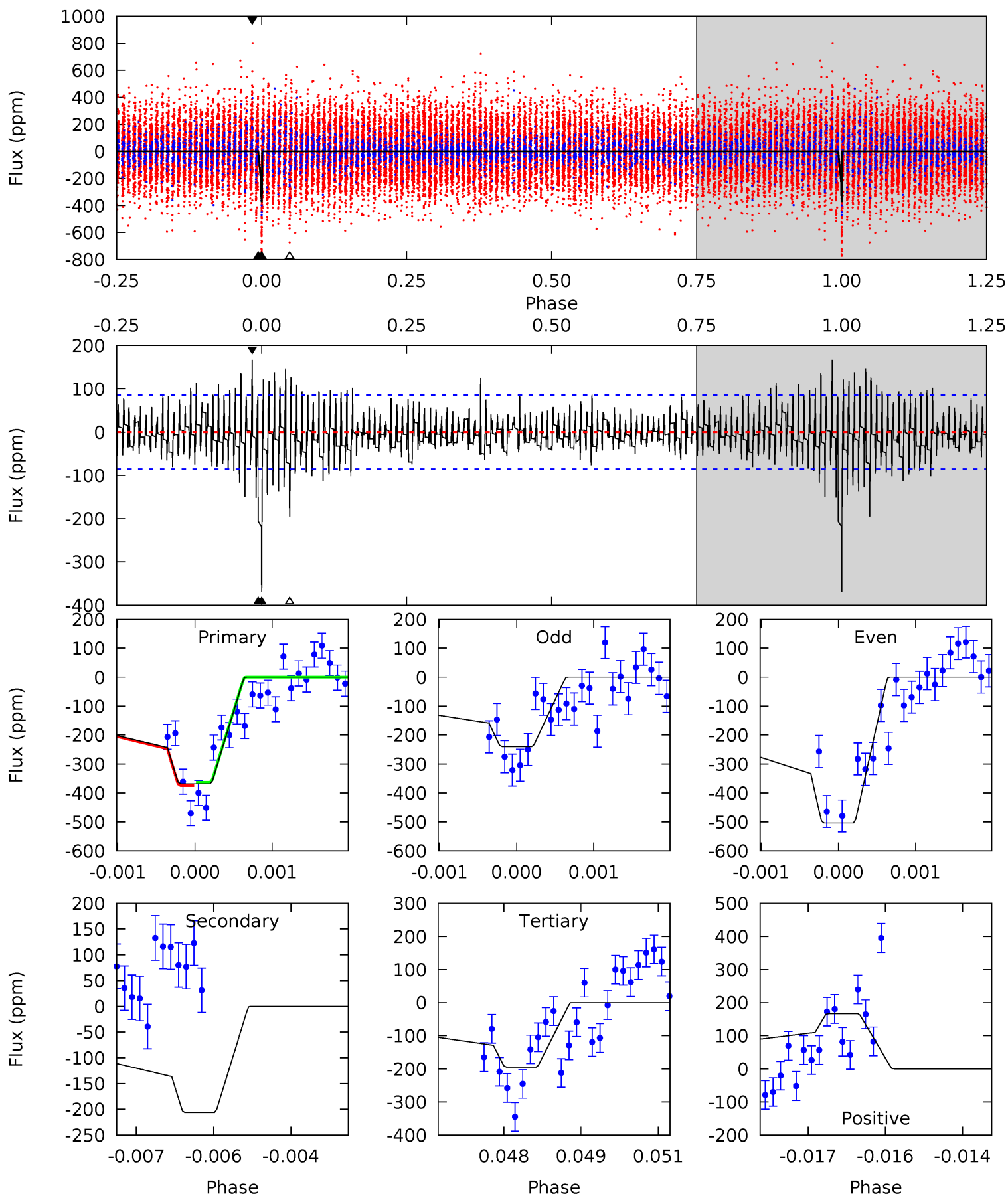
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.46	8.16	7.71	10.5	5.14	2.77	2.62	-0.24	-3.05	0.45	-2.36	1.04	0.90	0.56	0



Alt Model-Shift Uniqueness Test

005812648-05, P = 420.502231 Days, E = 139.675792 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	13.0	12.3	10.5	5.39	3.19	2.65	10.9	12.7	0.71	2.49	8.34	0.92	0.31	0.31



Stellar Parameters For KIC 005812648

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6565^{+178}_{-218}	$3.573^{+0.345}_{-0.115}$	$-0.520^{+0.350}_{-0.300}$	$3.308^{+0.555}_{-1.387}$	$1.493^{+0.237}_{-0.355}$	$0.058^{+0.152}_{-0.021}$
	+3%/-3%	+10%/-3%	+67%/-58%	+17%/-42%	+16%/-24%	+261%/-35%
Source	PHO1	FLK73	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 005812648-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-127 ± 16	$5.61^{+1.09}_{-1.22}$	644^{+44}_{-61}	5495^{+387}_{-367}	3536^{+1983}_{-1091}
Alt.	-206 ± 16	$7.15^{+1.20}_{-1.52}$	646^{+41}_{-56}	5533^{+306}_{-274}	3614^{+1963}_{-984}

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 $A_{obs} \gg 1.0$

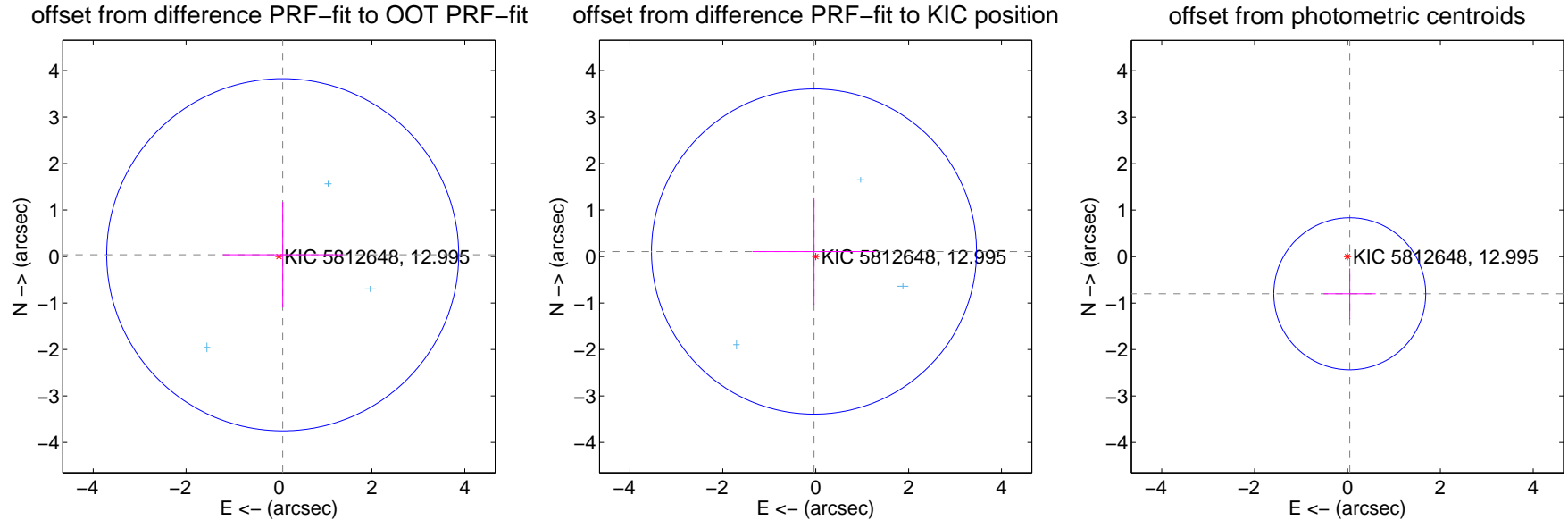
DV Centroid Data

Supplemental centroid analysis for 005812648-05. Kepler magnitude: 12.99. Transit SNR 6.26

There are 3 quarters with good PRF difference image offsets

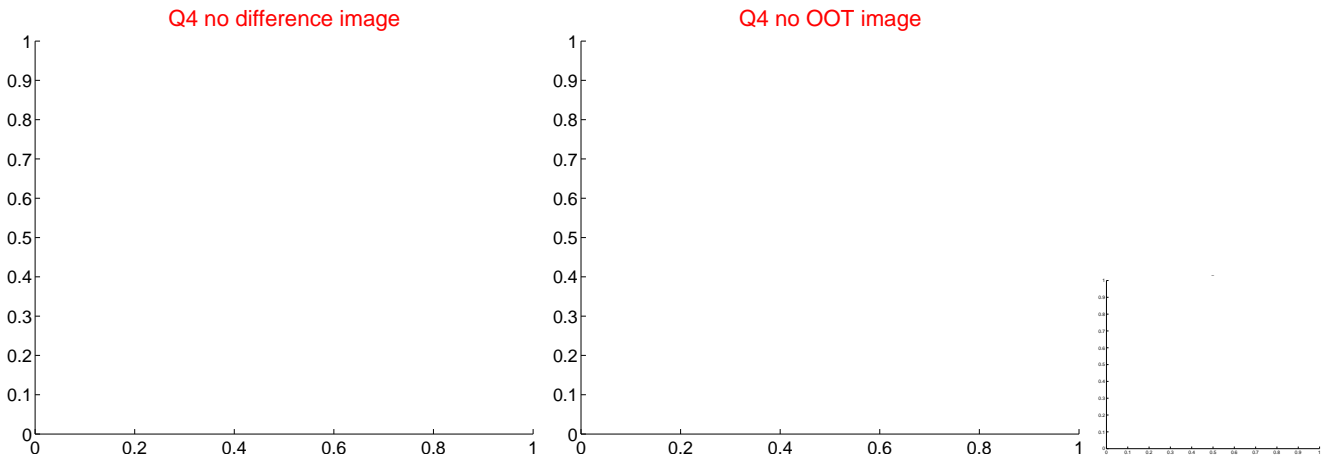
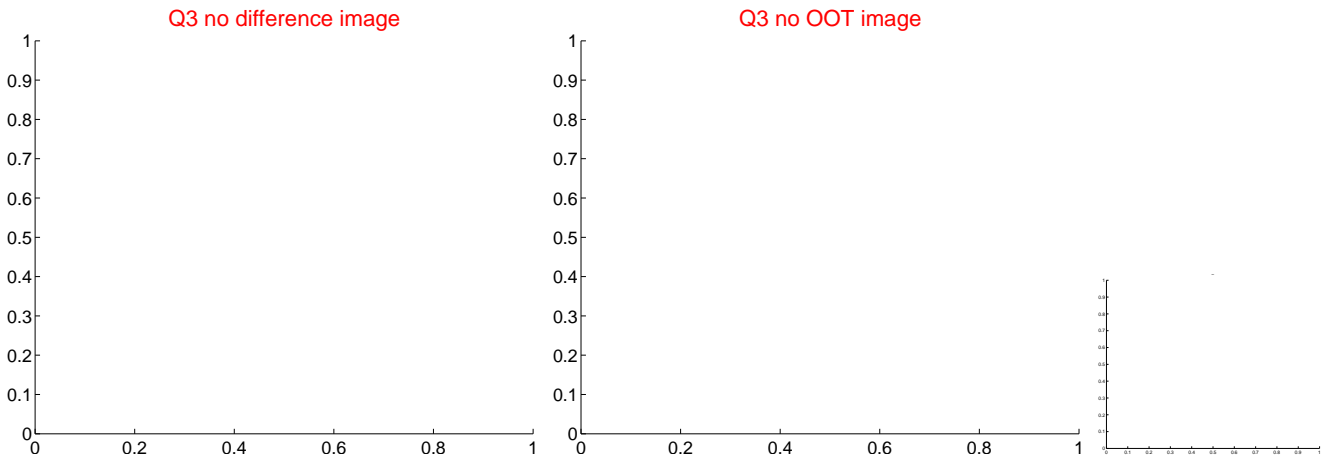
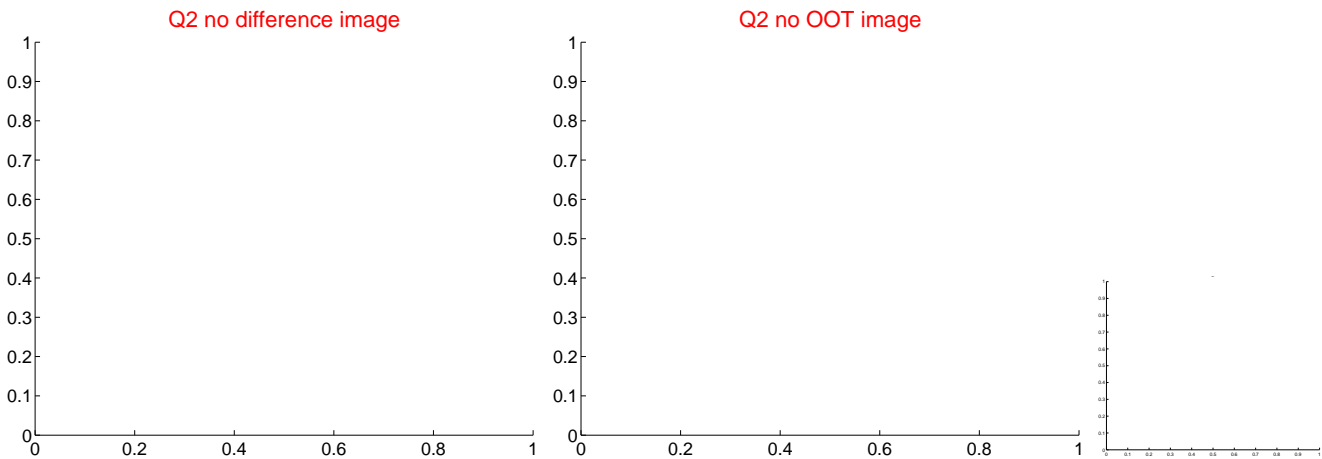
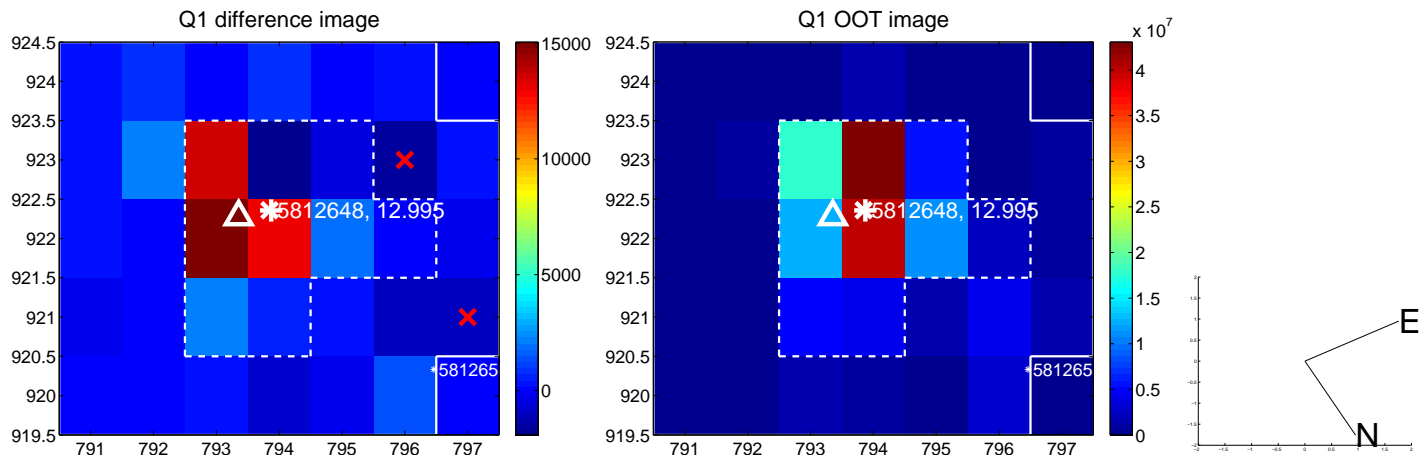
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.088 ± 1.263	0.07	-0.080 ± 1.290	0.038 ± 1.134
PRF-fit source offset from KIC position	0.113 ± 1.166	0.10	0.037 ± 1.324	0.107 ± 1.146
photometric centroid source offset	0.80 ± 0.55	1.47	-0.05 ± 0.56	-0.80 ± 0.55

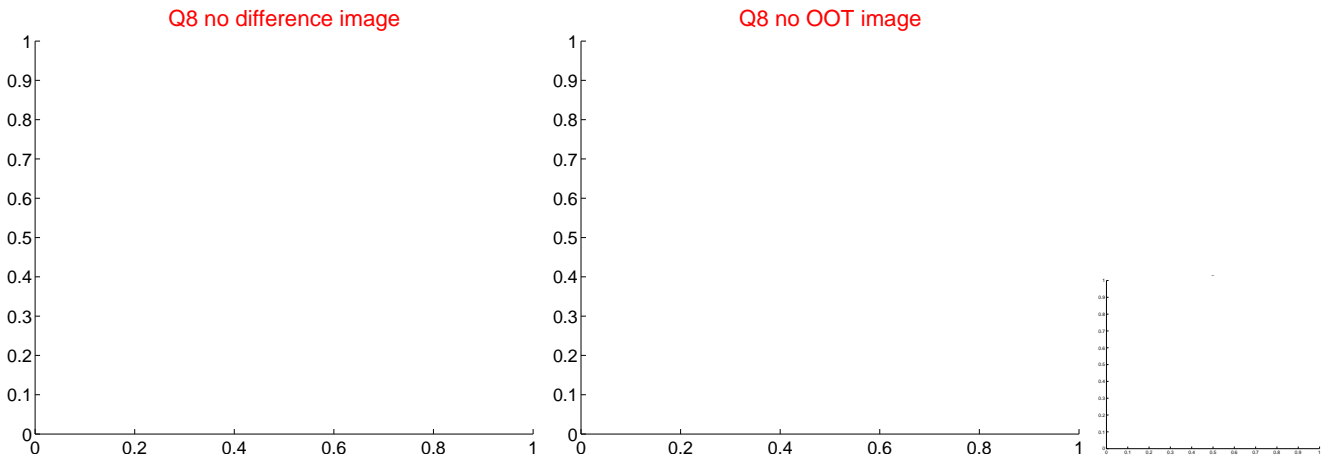
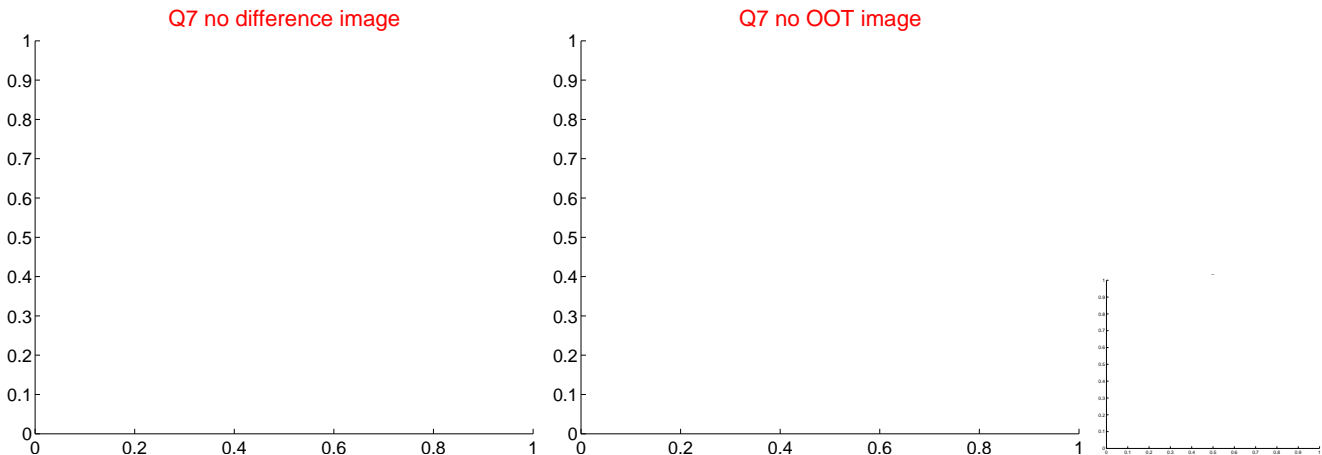
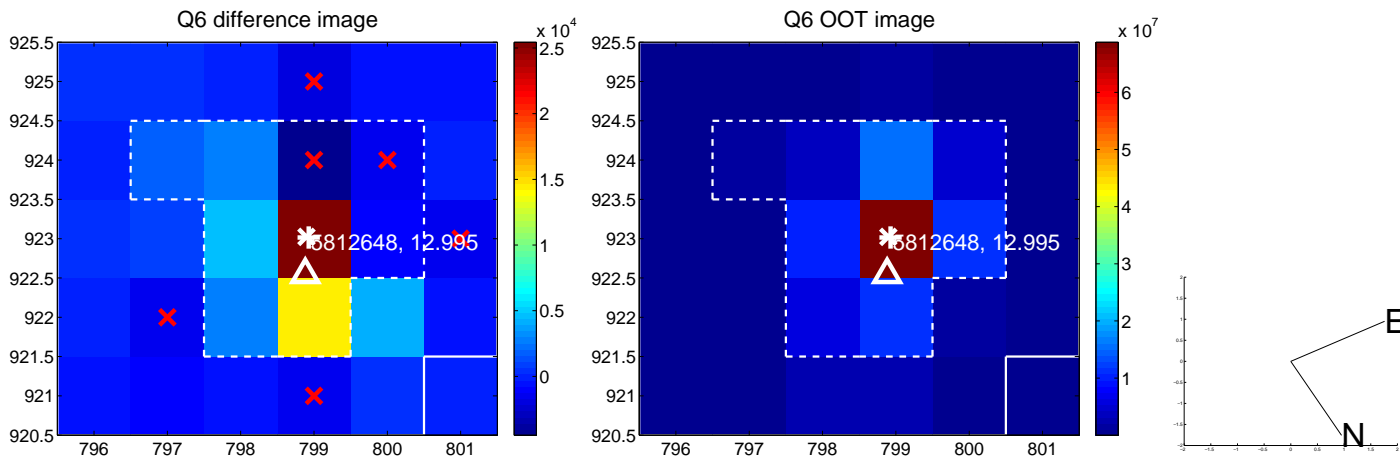
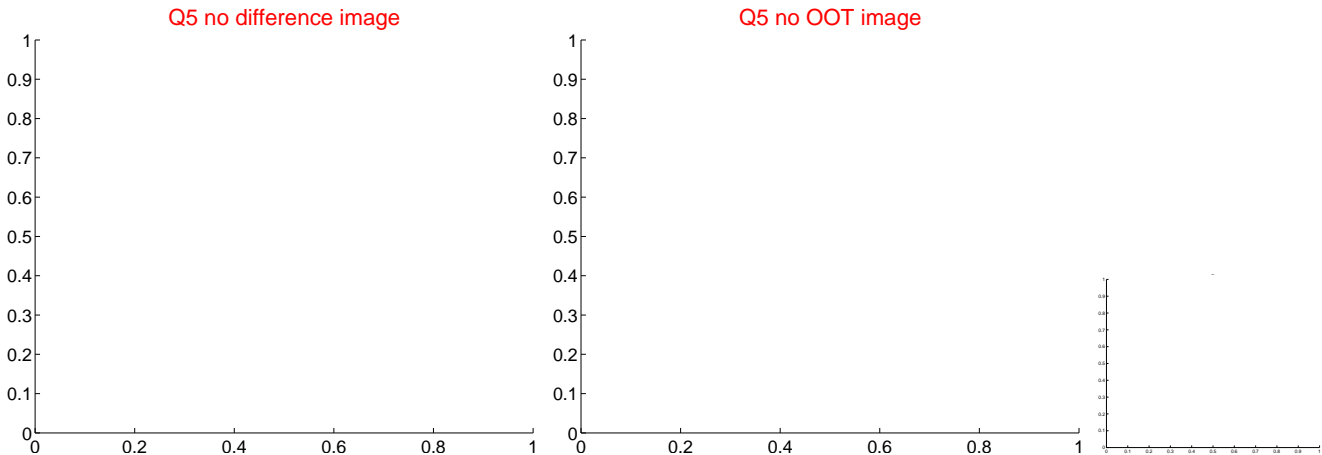


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

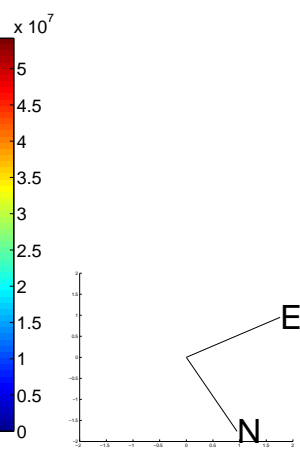
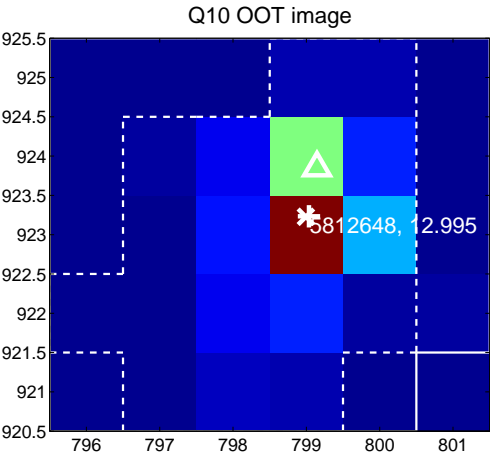
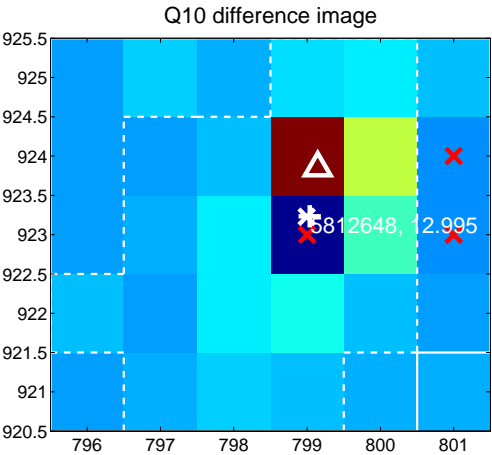


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

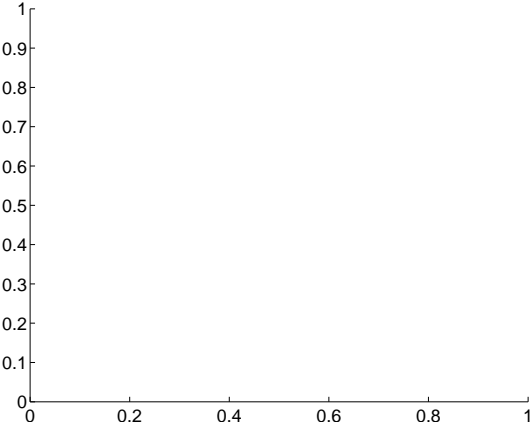
Q9 no difference image



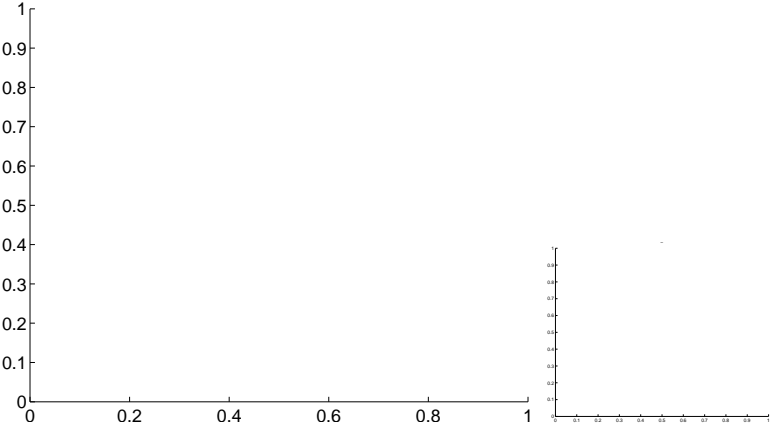
Q9 no OOT image



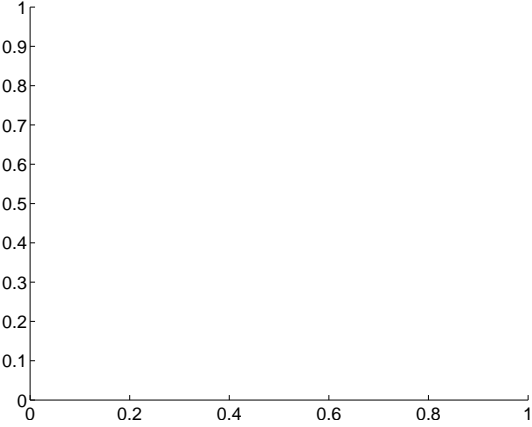
Q11 no difference image



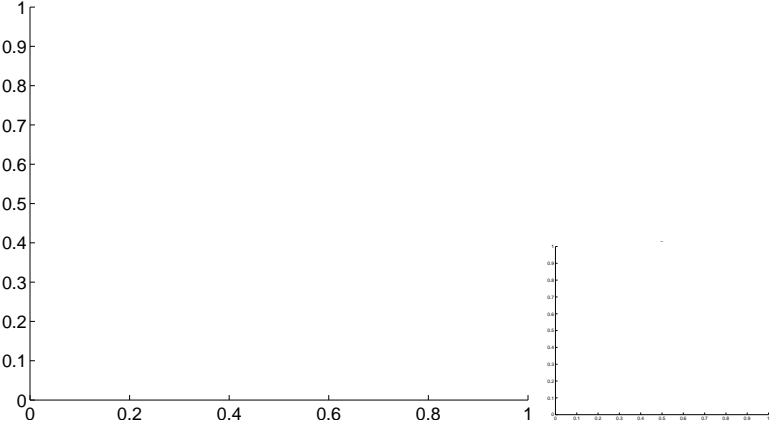
Q11 no OOT image



Q12 no difference image



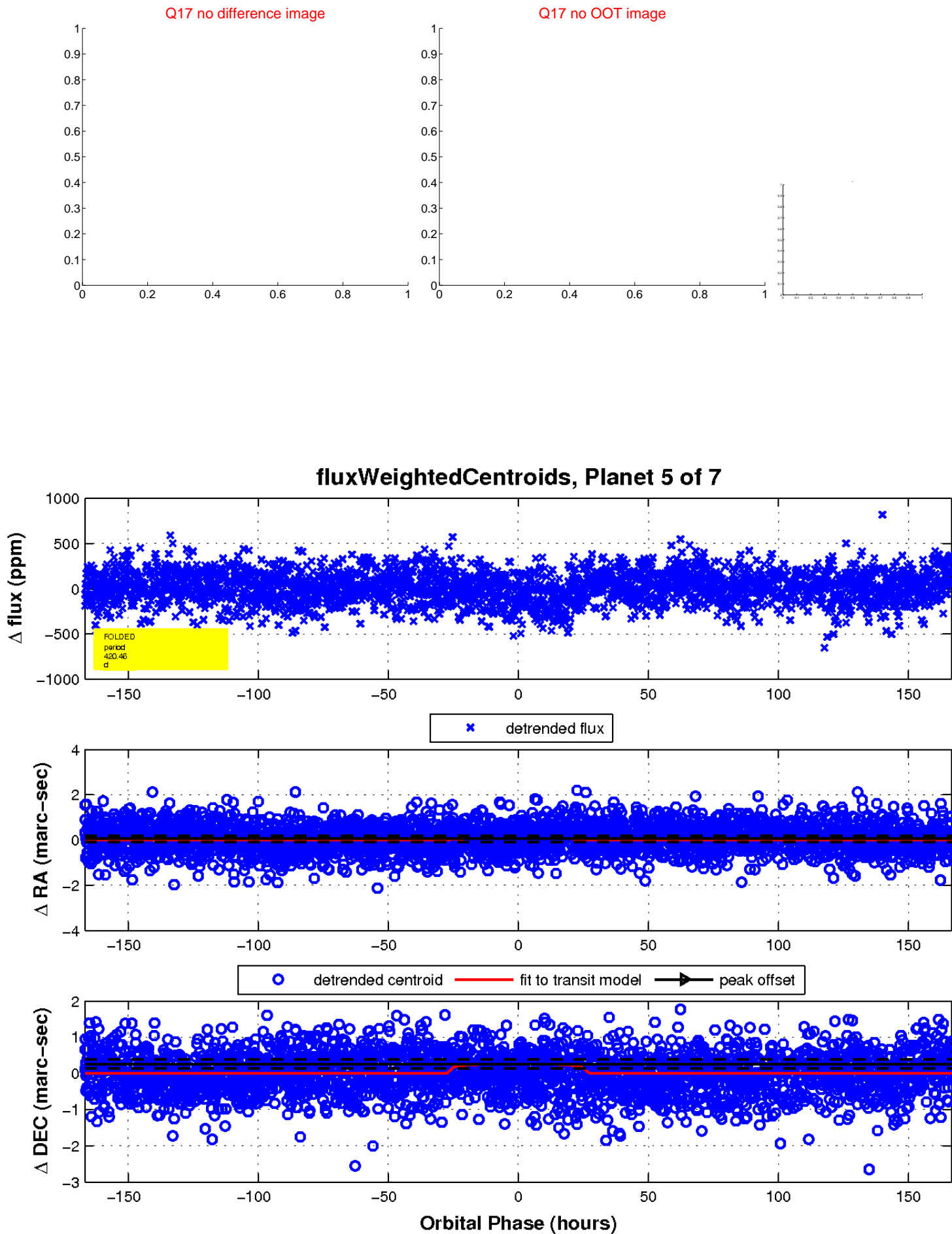
Q12 no OOT image



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

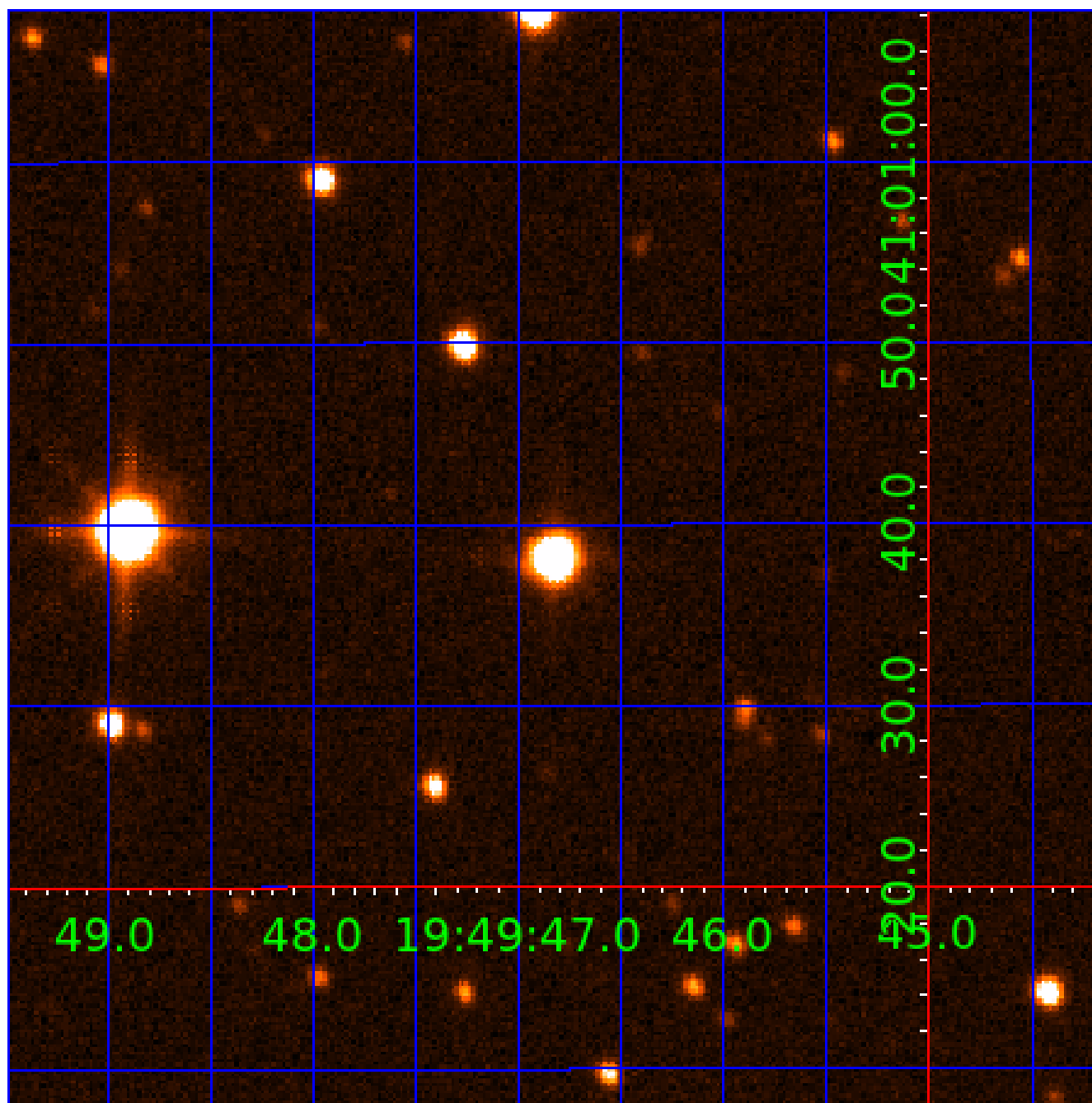


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005812648

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})
005812648-01	OBS	No	4.042919	134.344921	23.7	18.890	9.4	8.2	3.31	6565	1.93	5648.72
005812648-02	OBS	No	238.090282	279.667447	245.4	12.267	10.8	9.6	3.31	6565	5.87	24.65
005812648-03	OBS	No	376.168378	325.477919	208.8	15.177	10.0	7.3	3.31	6565	5.18	13.40
005812648-04	OBS	No	158.756548	168.687344	355.3	5.962	8.3	8.1	3.31	6565	7.95	42.32
005812648-05	OBS	No	420.455993	139.042771	234.1	55.553	8.5	6.3	3.31	6565	5.82	11.55
005812648-06	OBS	8108.01	238.567393	273.235937	136.3	10.890	8.2	7.2	3.31	6565	4.28	24.59
005812648-07	OBS	No	120.885747	152.961688	140.8	6.905	8.0	6.0	3.31	6565	4.53	60.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005812648-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005812648-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT
005812648-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
005812648-06	OBS	FP	0.08	1	0	0	0	MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005812648-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

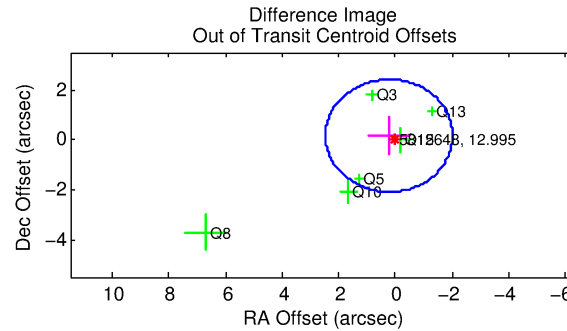
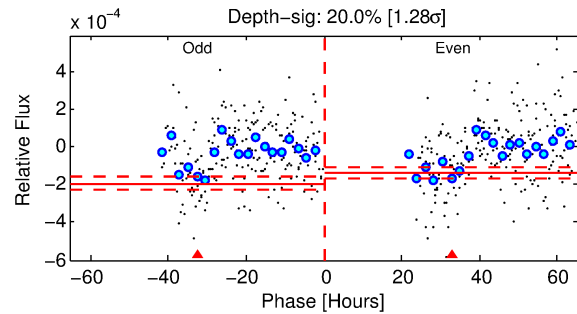
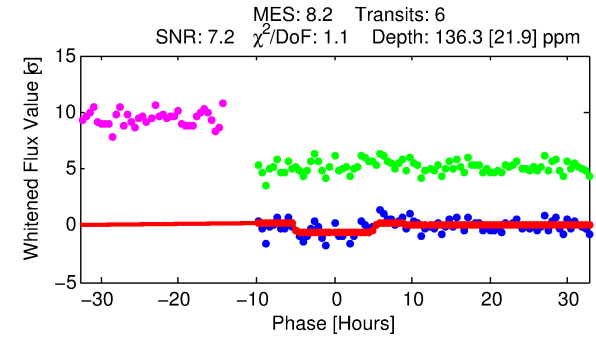
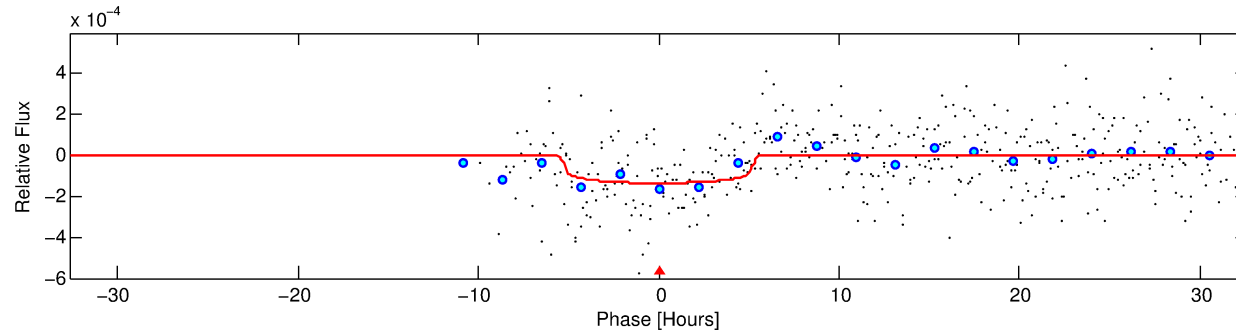
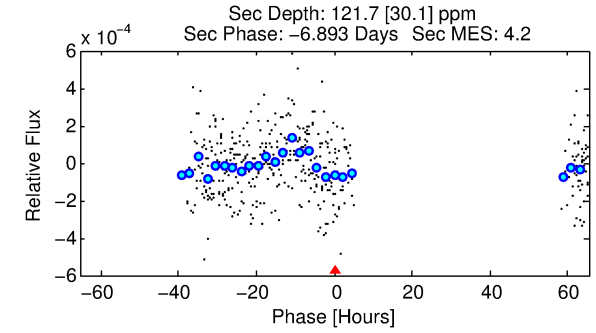
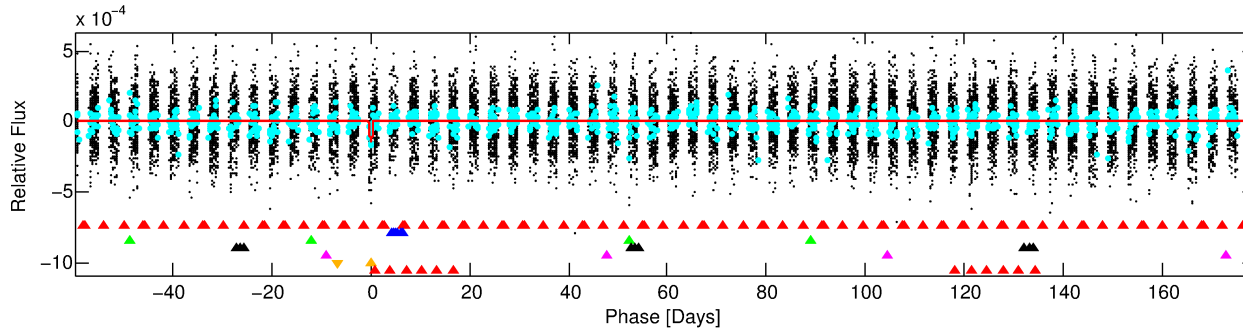
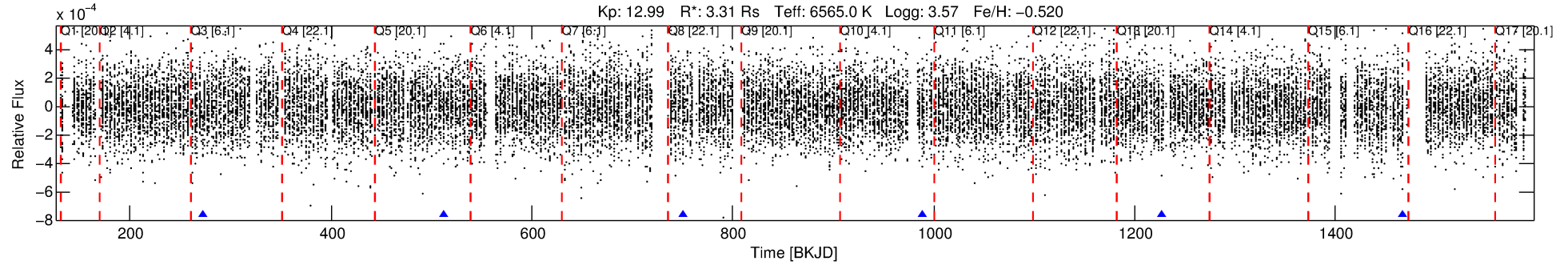
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005812648-06

No Significant Match Found

DV One-Page Summary

KIC: 5812648 Candidate: 6 of 7 Period: 238.567 d



DV Fit Results:

Period = 238.56739 [0.00589] d
Epoch = 273.2359 [0.0173] BKJD
Rp/R* = 0.0119 [0.0041]
a/R* = 100.98 [191.64]
b = 0.81 [0.80]
Seff = 24.59 [15.08]
Teq = 568 [87] K
Rp = 4.28 [2.32] Re
a = 0.8606 [0.3314] AU
Ag = 2703.02 [2554.03] [1.06σ]
Teffp = 6330 [1176] K [4.89σ]

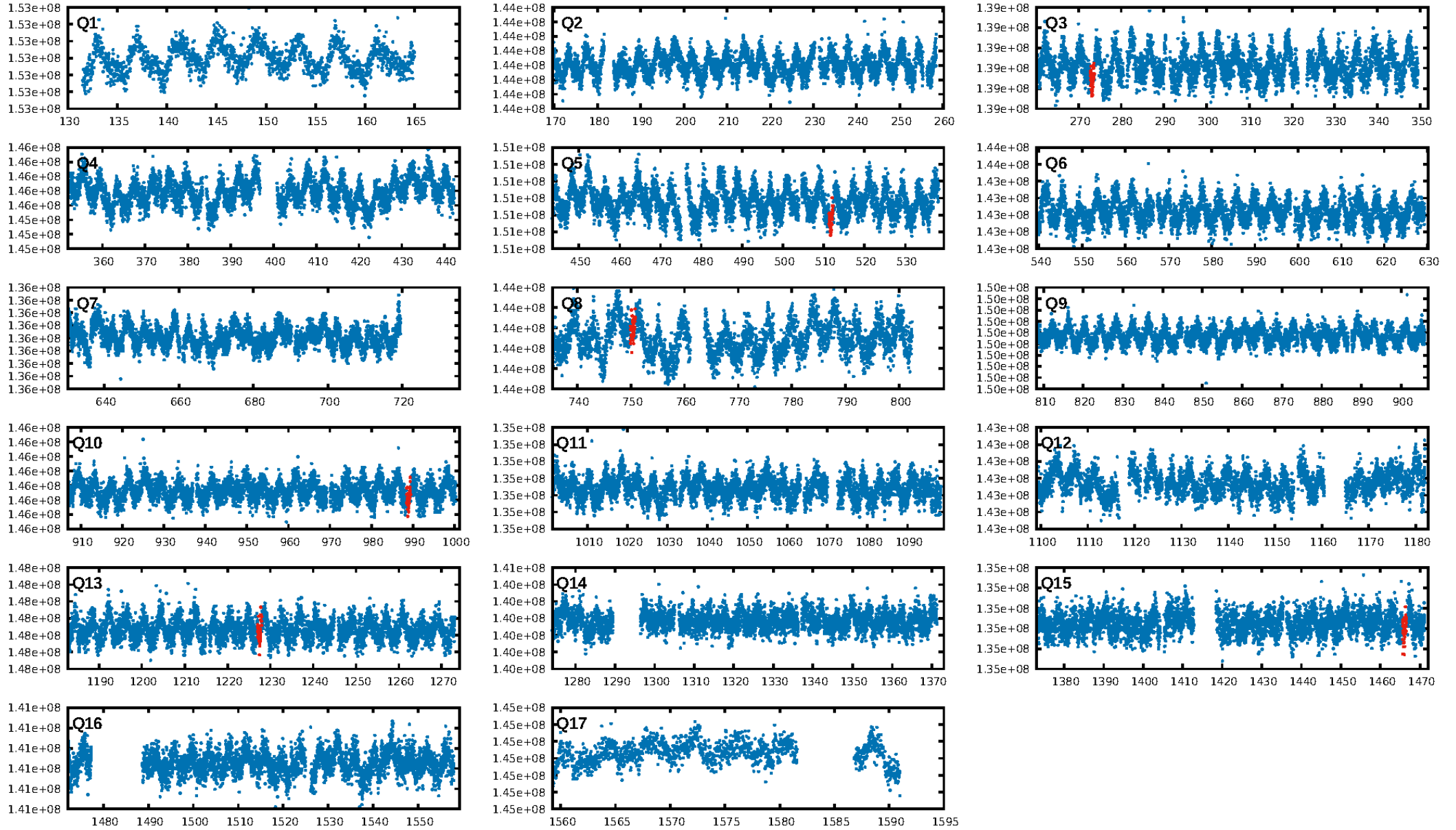
DV Diagnostic Results:

ShortPeriod-sig: 51.5% [0.70σ]
LongPeriod-sig: 100.0% [176.79σ]
ModelChiSquare2-sig: 22.6%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.88e-08
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 4.798
Centroid-sig: 97.1%
Centroid-so: 0.201 arcsec [0.15σ]
OotOffset-rm: 0.275 arcsec [0.37σ]
KicOffset-rm: 0.385 arcsec [0.52σ]
OotOffset-st: 1/2/1/2 [6]
KicOffset-st: 1/2/1/2 [6]
DiffImageQuality-fgm: 0.67 [4/6]
DiffImageOverlap-fno: 0.83 [5/6]

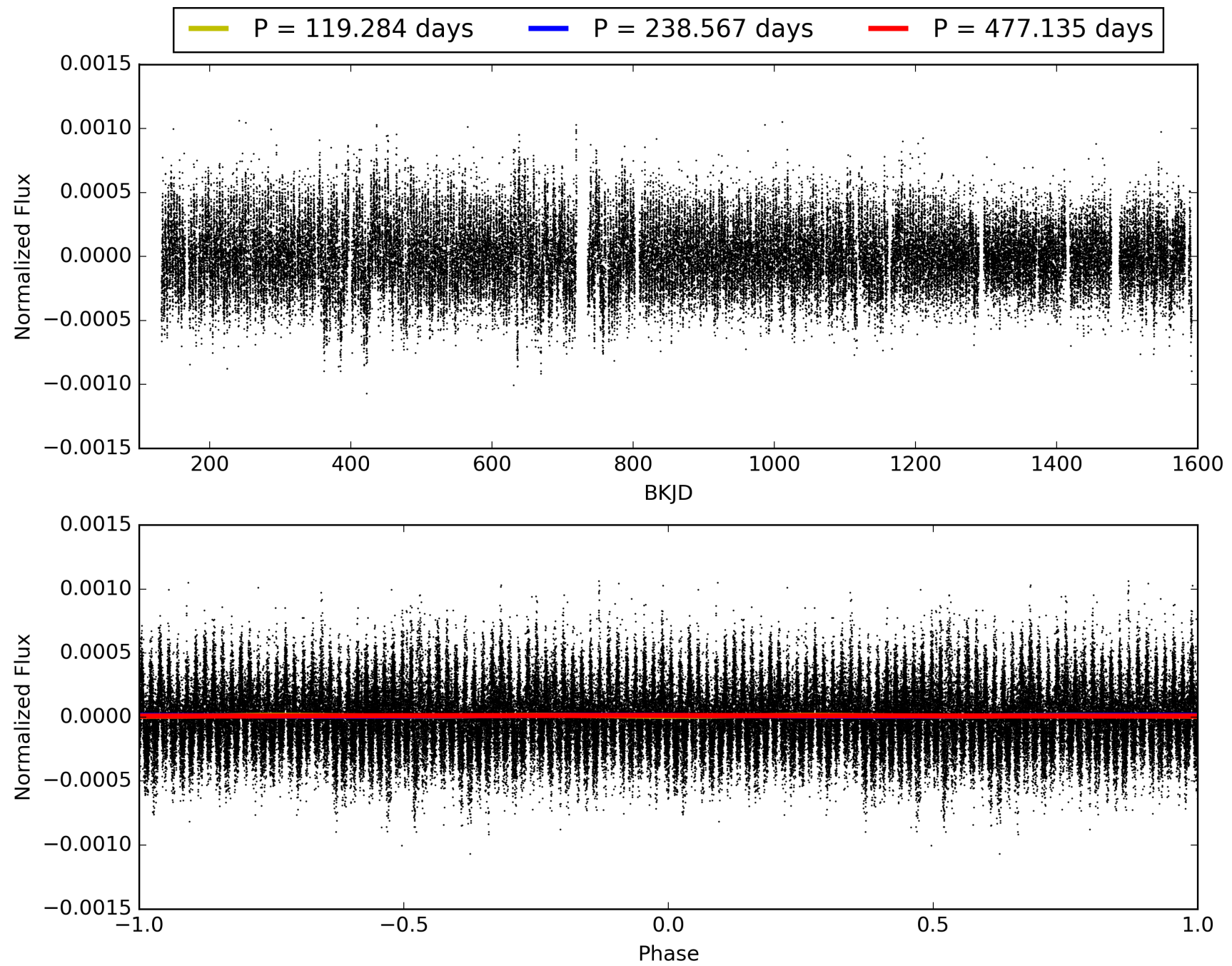
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:55:29 Z

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

TCE 005812648-06, PDC Light Curves

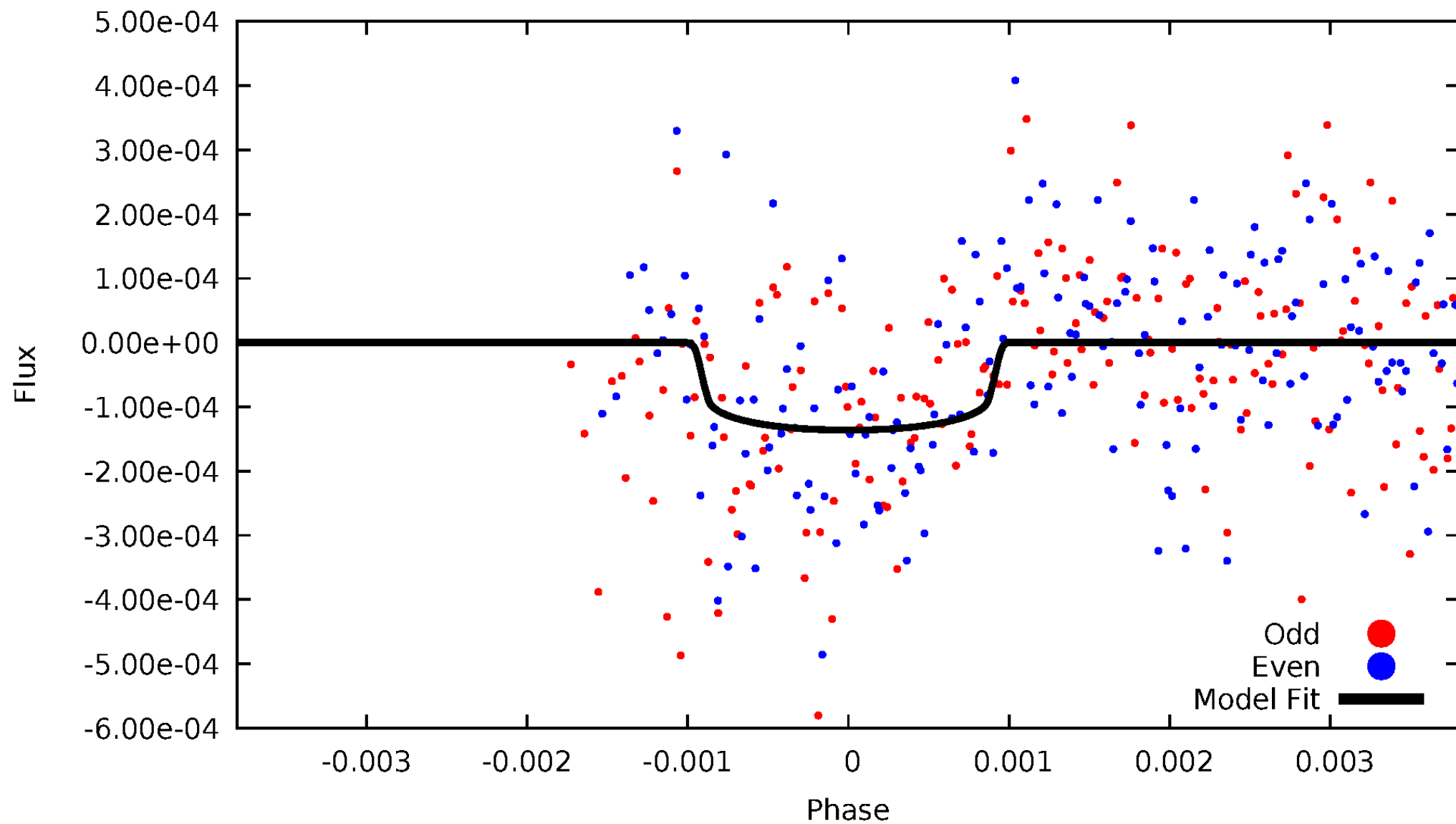


TCE 005812648-06



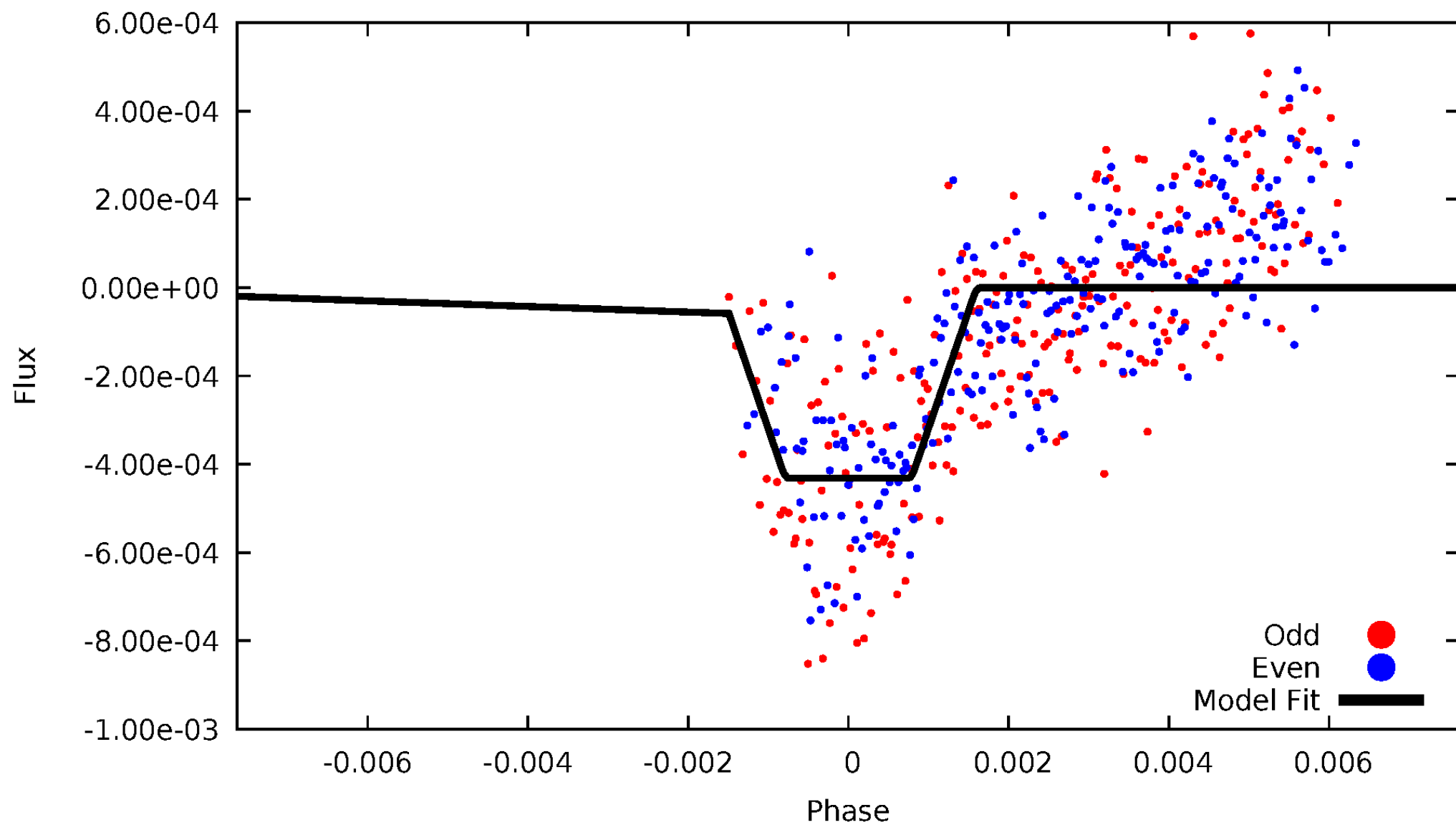
DV Odd/Even

TCE 005812648-06



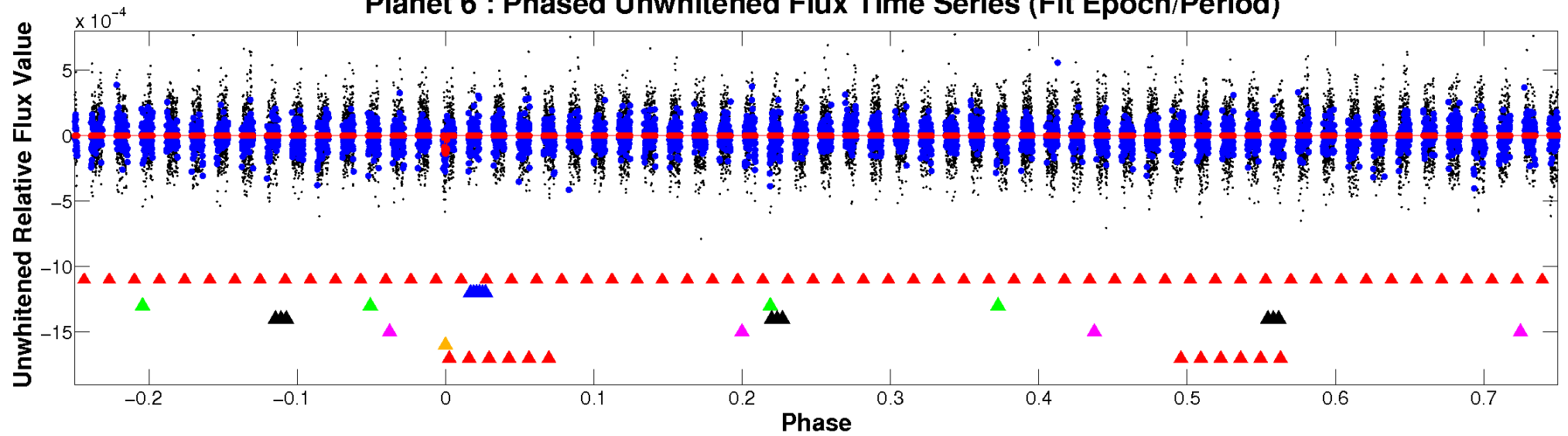
ALT Odd/Even

TCE 005812648-06

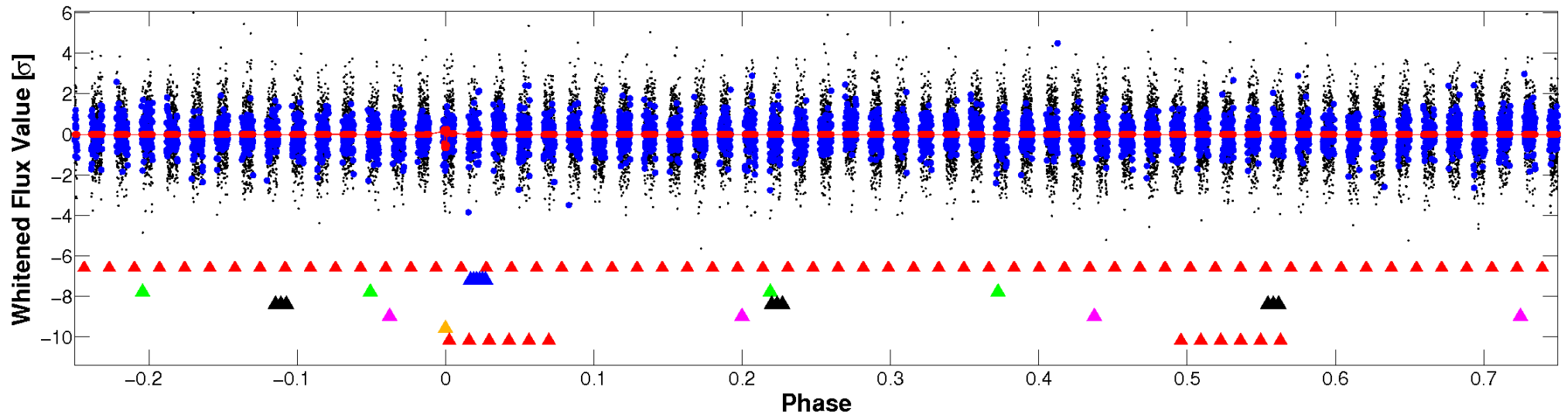


Non-Whitened Vs. Whitened Light Curve

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

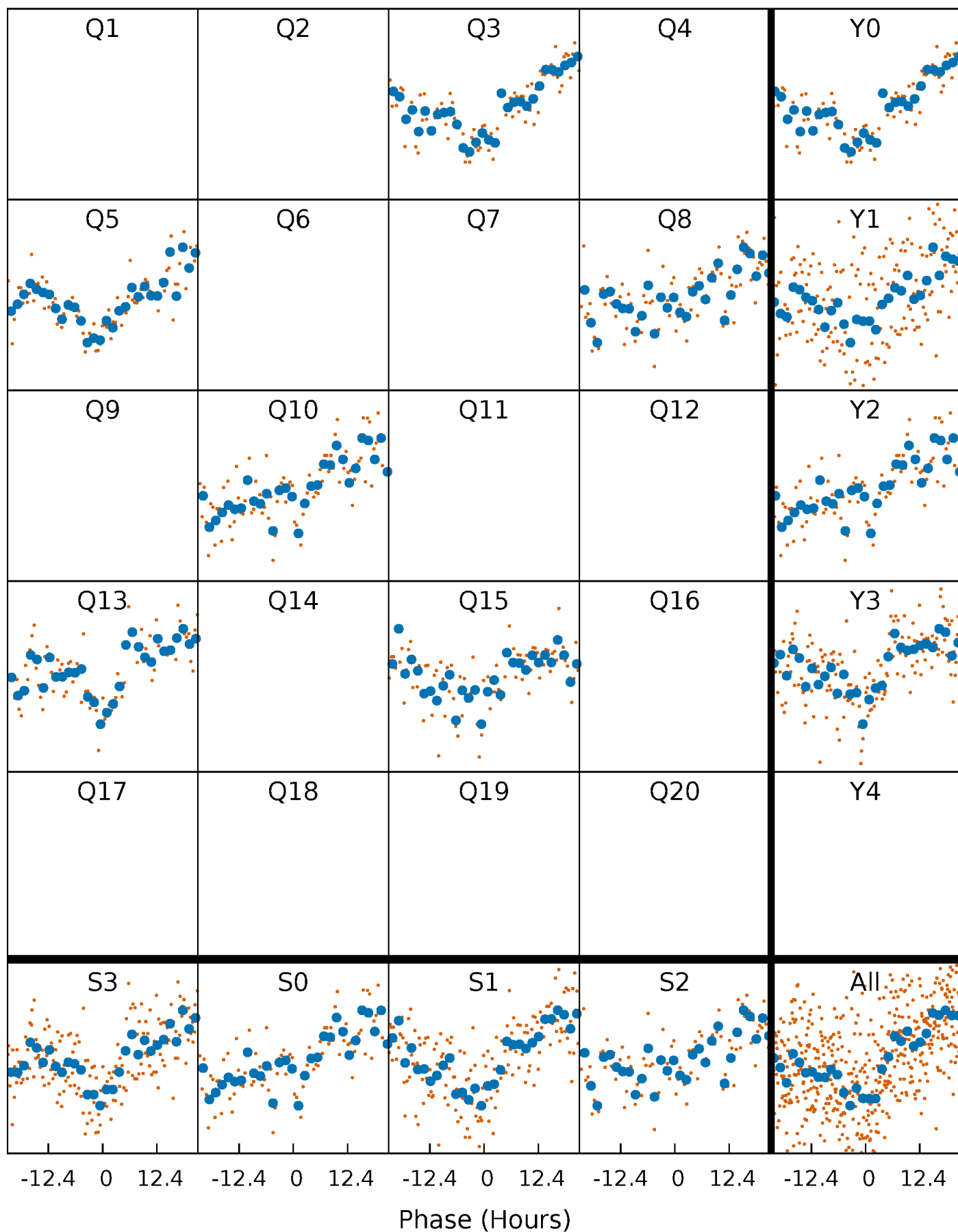


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



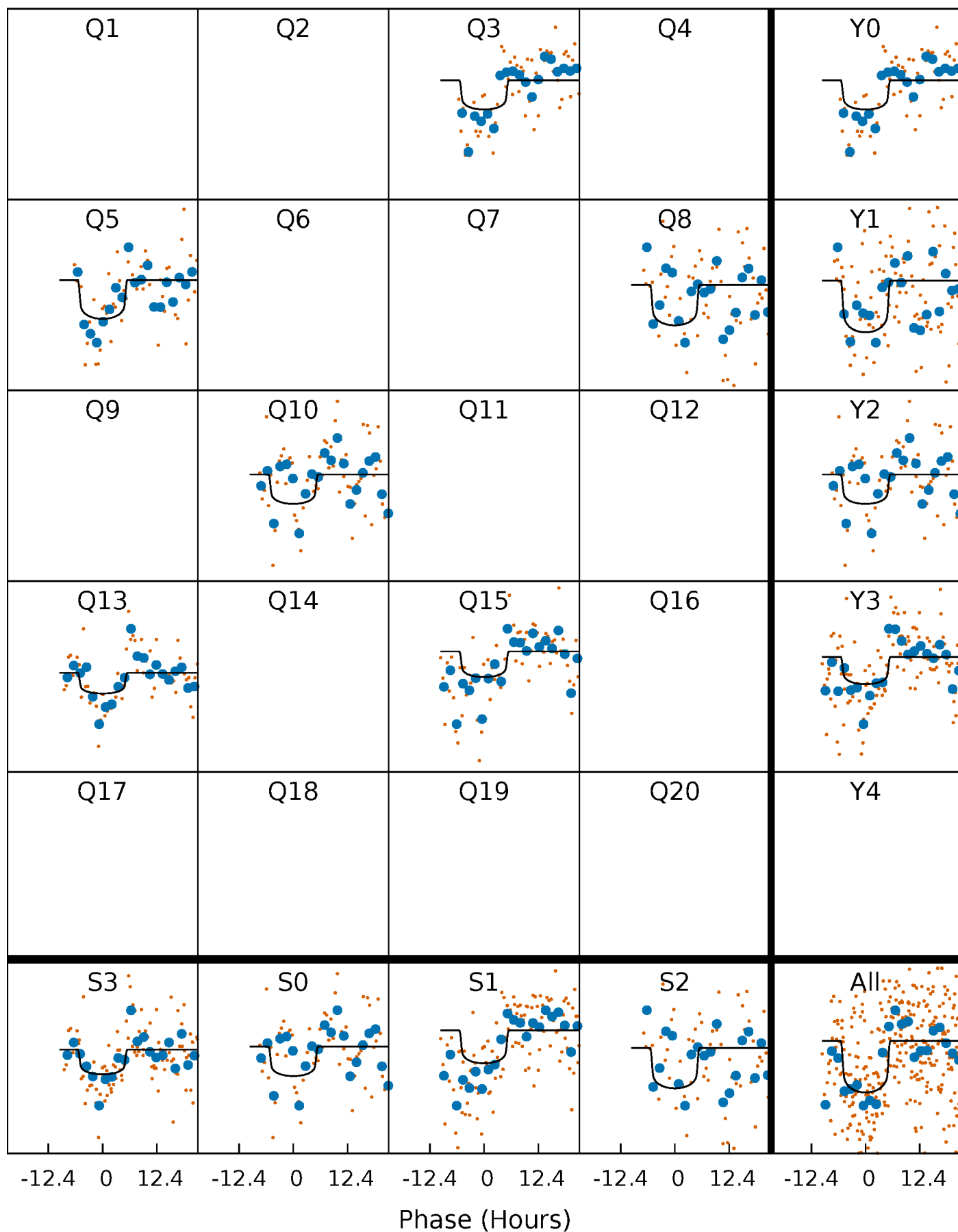
PDC Quarter-Phased Transit Curves

TCE 005812648-06 P=238.567393 Days $T_0=273.235937$ (BKJD)



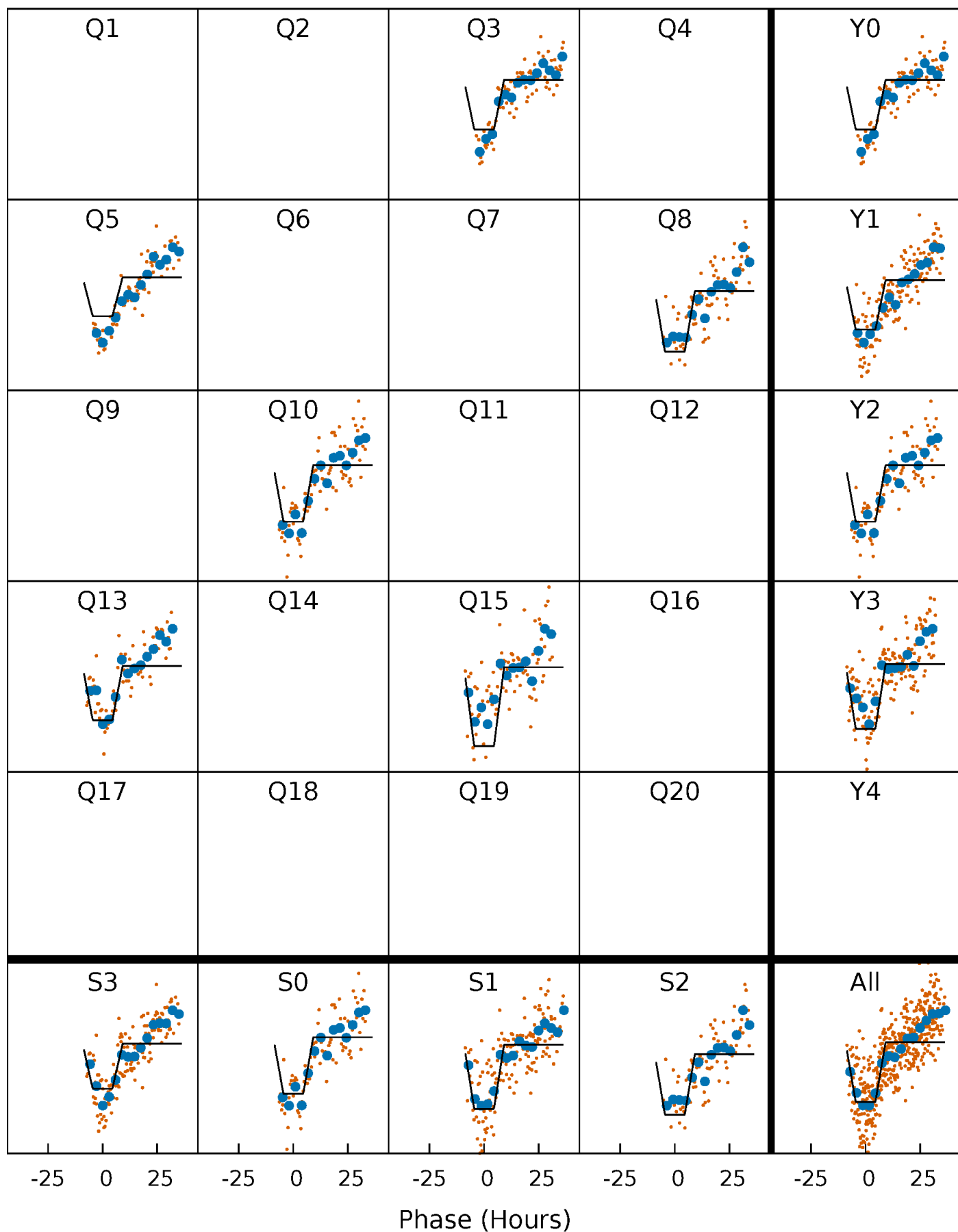
DV Quarter-Phased Transit Curves

TCE 005812648-06 $P=238.567393$ Days $T_0=273.235937$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

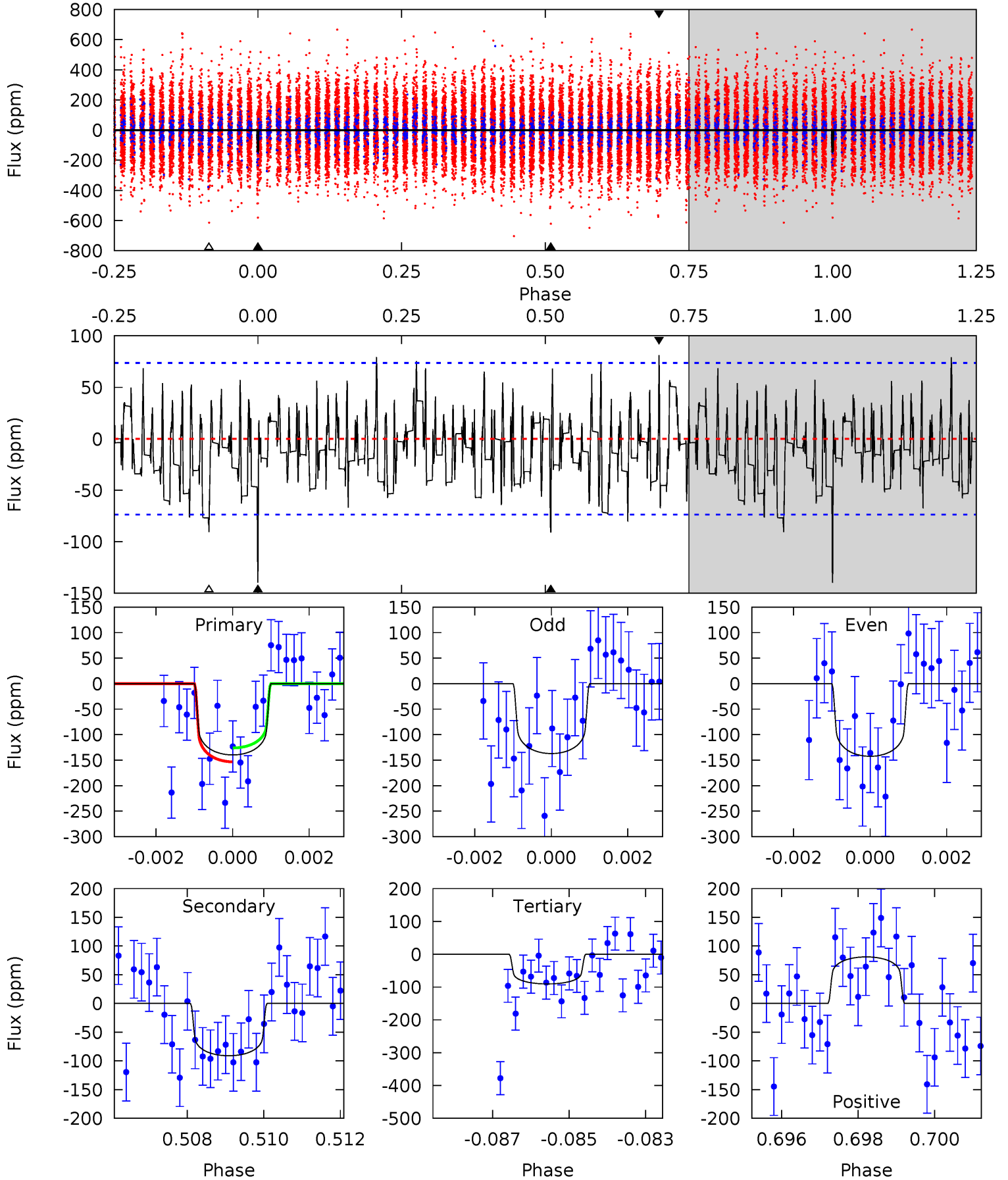
TCE 005812648-06 P=238.575435 Days $T_0=273.138994$ (BKJD)



DV Model-Shift Uniqueness Test

005812648-06, P = 238.567393 Days, E = 34.668544 Days

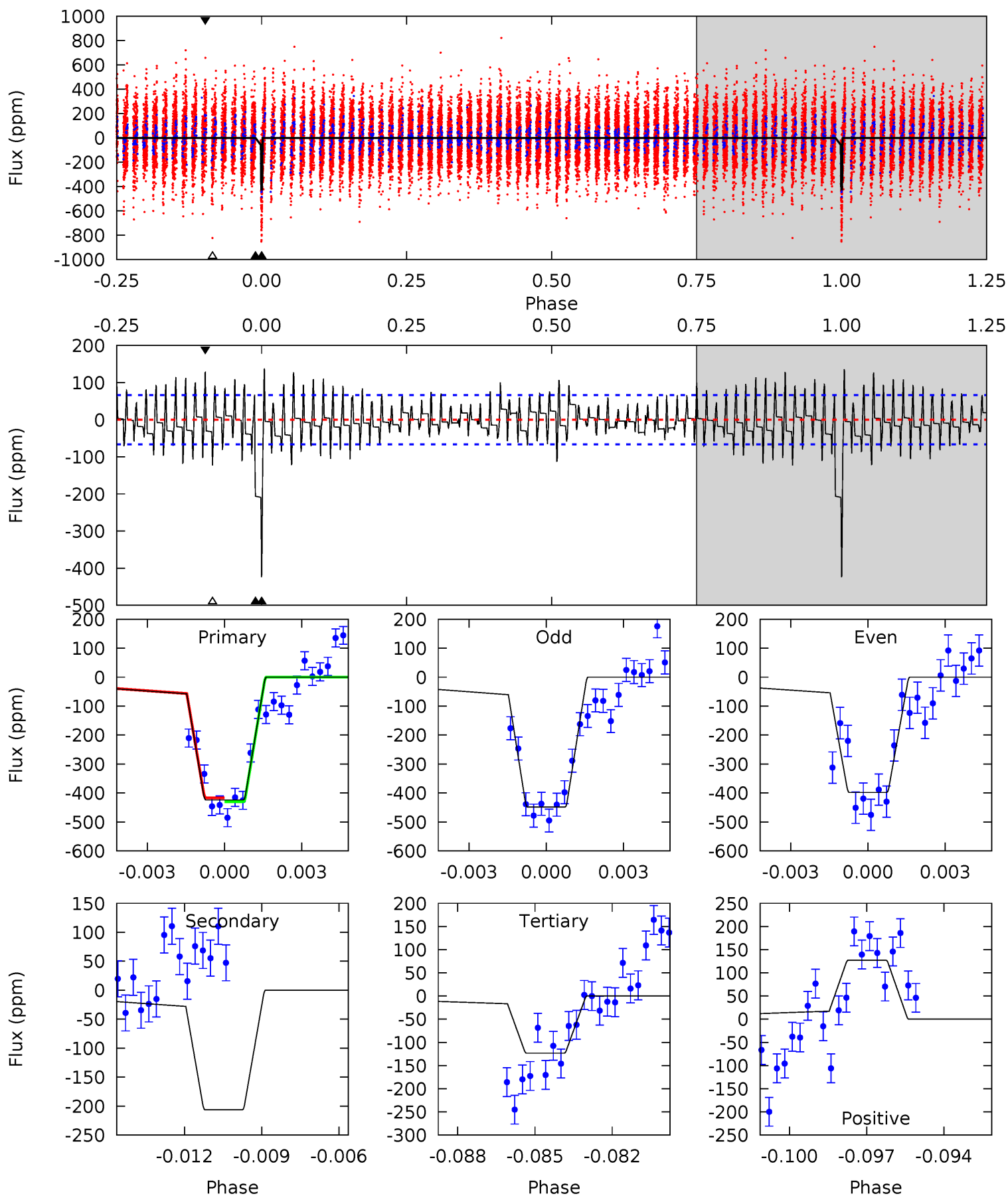
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	6.59	6.55	5.87	5.33	3.09	2.05	3.56	4.25	0.04	0.72	0.20	0.87	0.37	0.98



Alt Model-Shift Uniqueness Test

005812648-06, P = 238.575435 Days, E = 34.563559 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.6	16.3	9.76	10.1	5.25	2.96	3.70	23.8	23.5	6.57	6.25	2.00	1.03	0.24	0.50



Stellar Parameters For KIC 005812648

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6565^{+178}_{-218}	$3.573^{+0.345}_{-0.115}$	$-0.520^{+0.350}_{-0.300}$	$3.308^{+0.555}_{-1.387}$	$1.493^{+0.237}_{-0.355}$	$0.058^{+0.152}_{-0.021}$
	+3%/-3%	+10%/-3%	+67%/-58%	+17%/-42%	+16%/-24%	+261%/-35%
Source	PHO1	FLK73	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 005812648-06 / KOI 8108.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-91 ± 14	$3.98^{+1.76}_{-1.44}$	779^{+54}_{-82}	5870^{+1366}_{-764}	2309^{+3283}_{-1159}
Alt.	-206 ± 13	$7.25^{+1.83}_{-2.18}$	779^{+53}_{-81}	5494^{+556}_{-482}	1635^{+1587}_{-576}

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

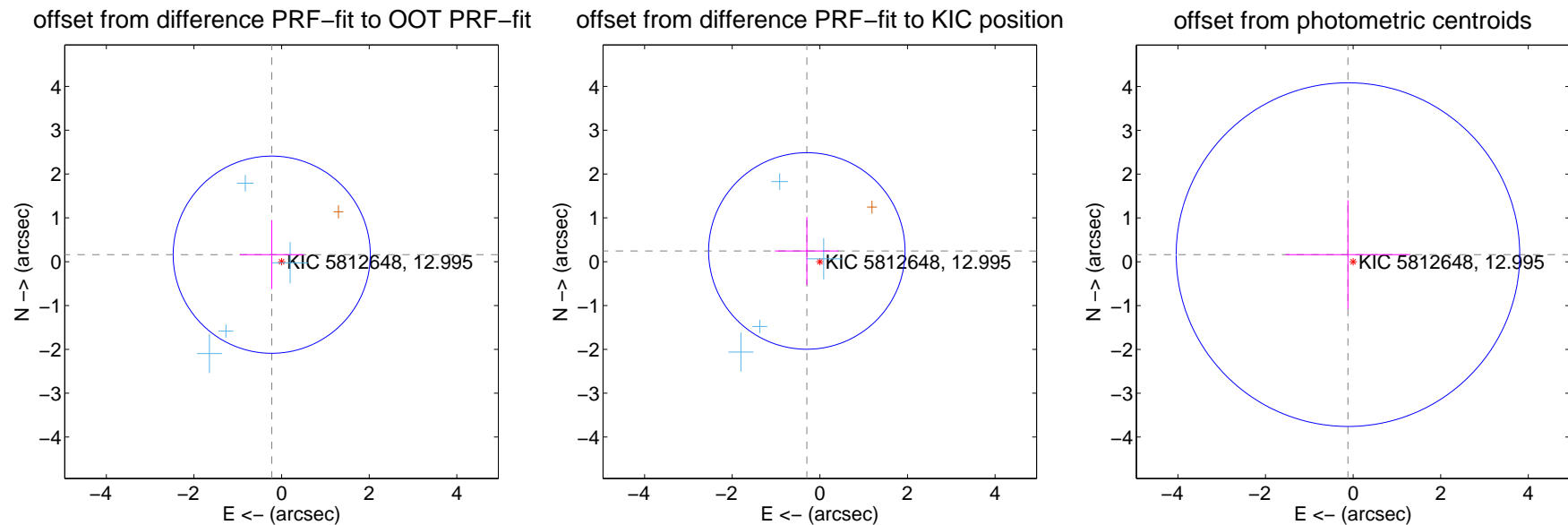
DV Centroid Data

Supplemental centroid analysis for 005812648-06. Kepler magnitude: 12.99. Transit SNR 7.16

There are 4 quarters with good PRF difference image offsets

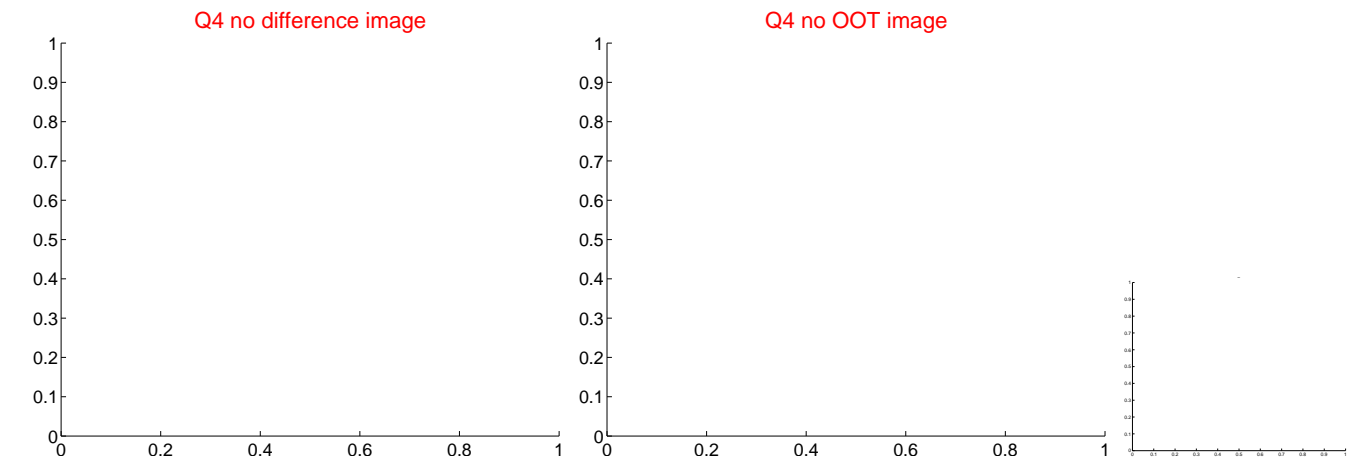
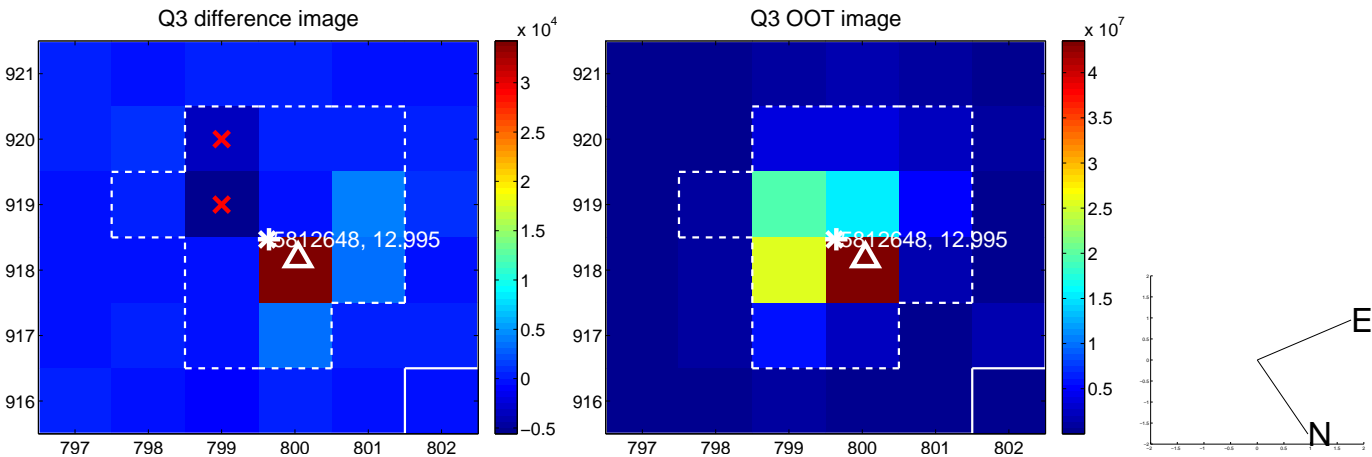
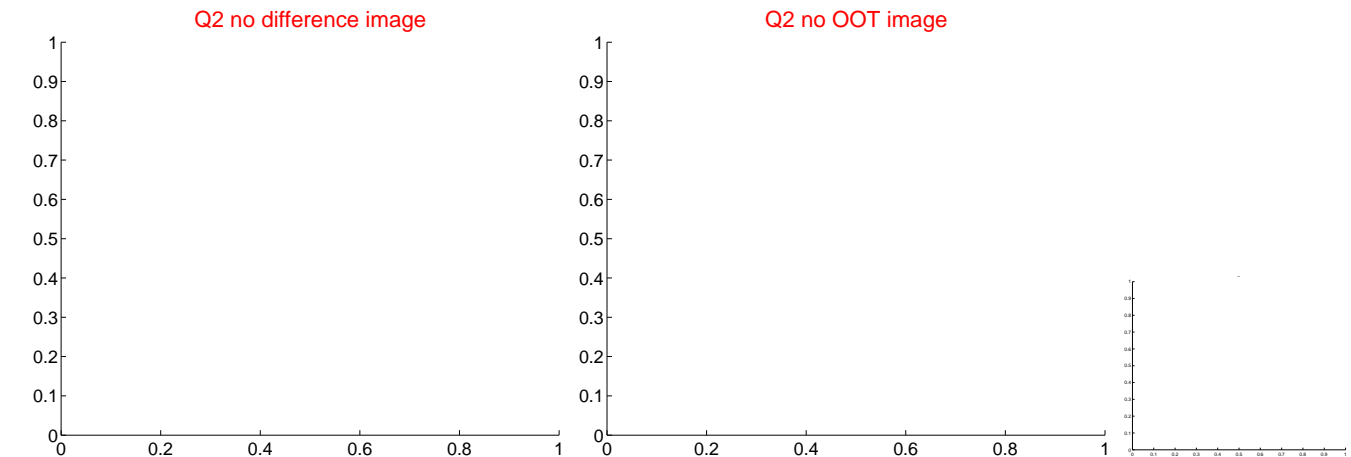
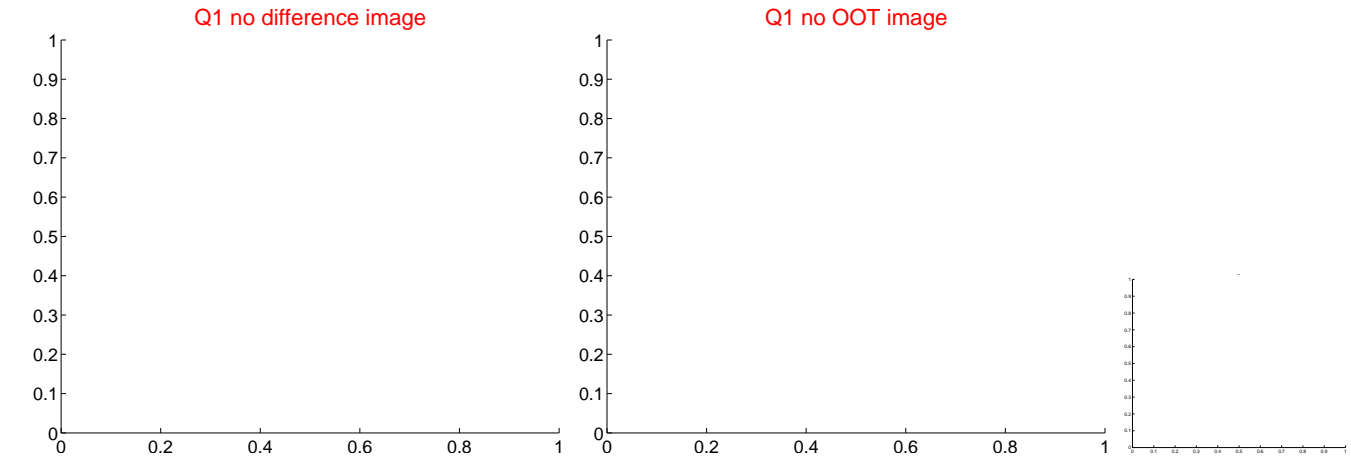
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.275 ± 0.750	0.37	0.224 ± 0.732	0.160 ± 0.784
PRF-fit source offset from KIC position	0.385 ± 0.747	0.52	0.297 ± 0.727	0.245 ± 0.776
photometric centroid source offset	0.20 ± 1.31	0.15	0.12 ± 1.43	0.16 ± 1.24

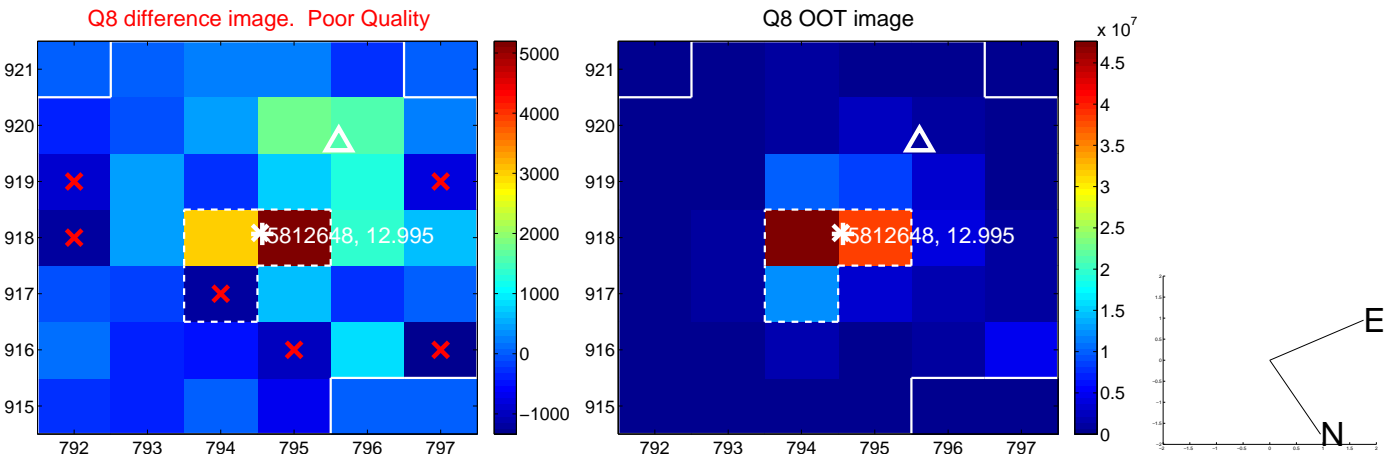
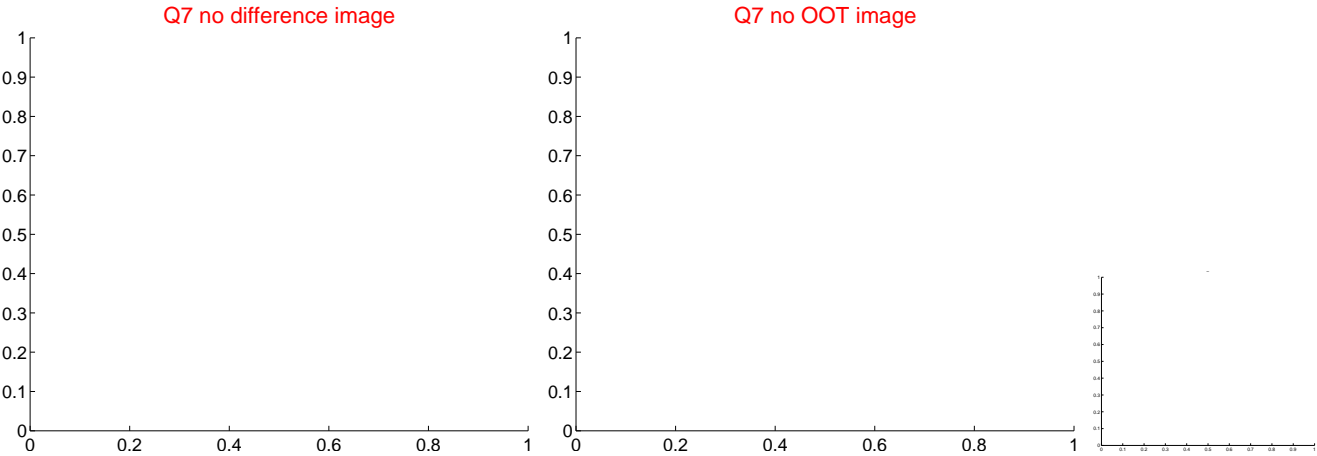
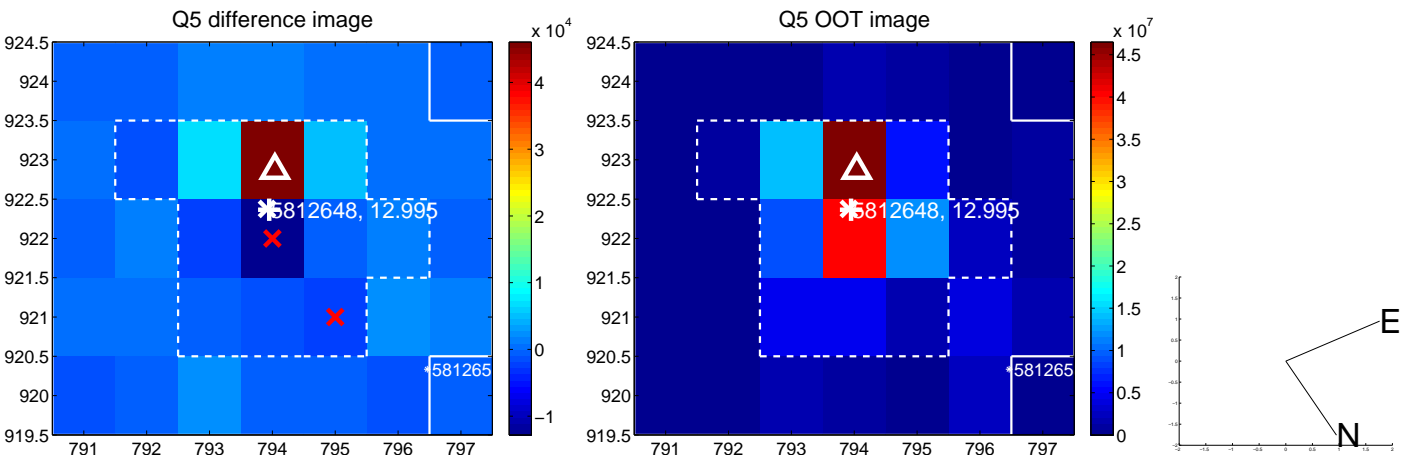


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

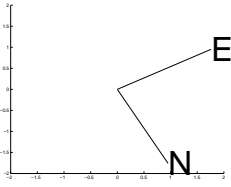
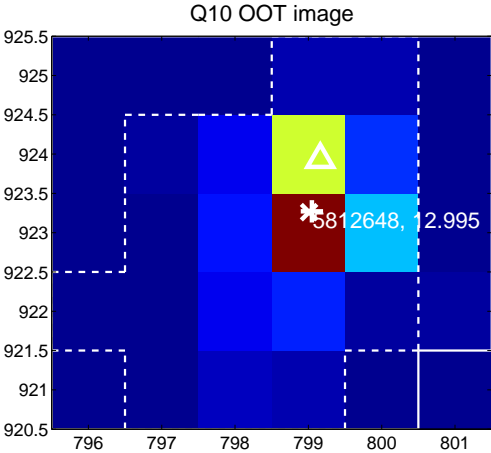
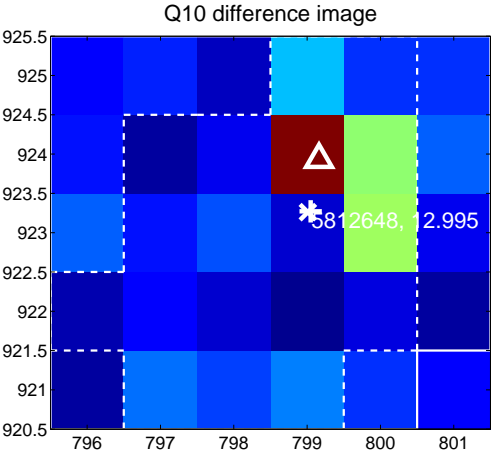
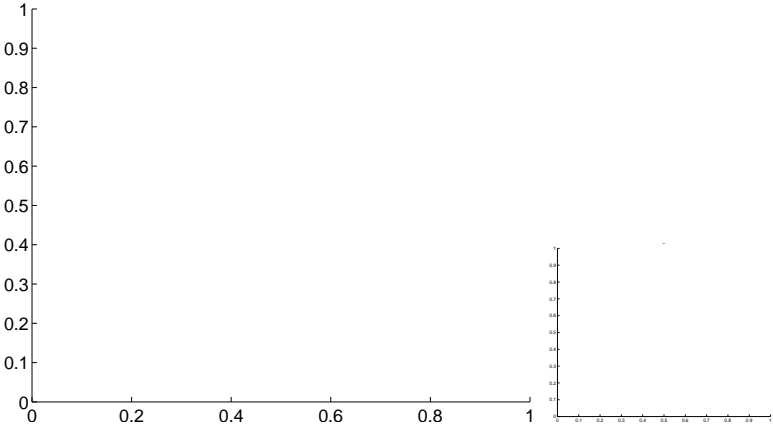


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

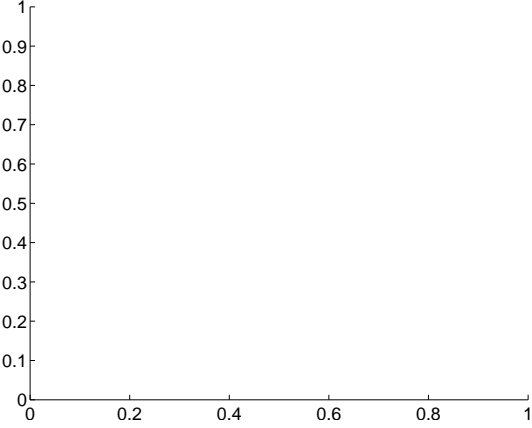
Q9 no difference image



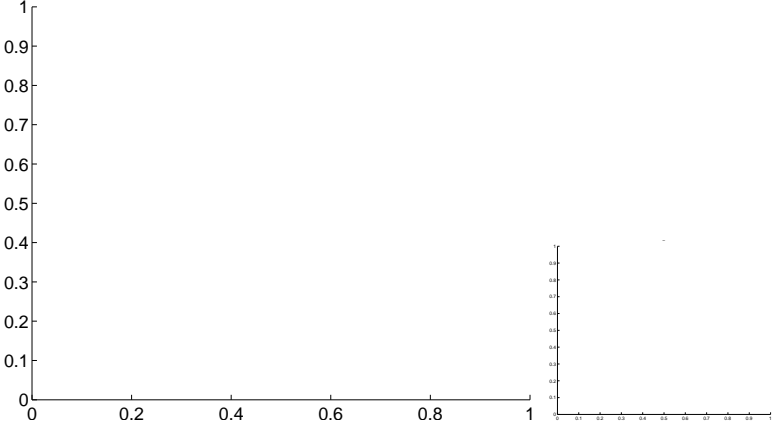
Q9 no OOT image



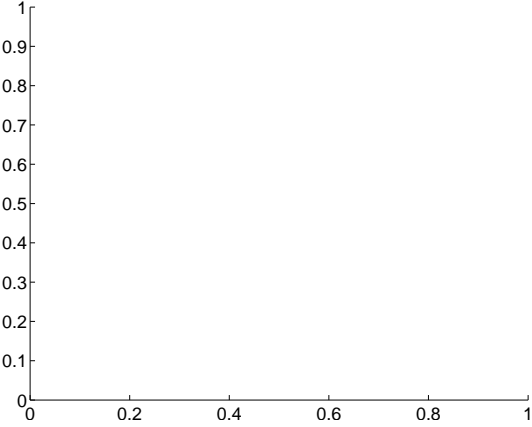
Q11 no difference image



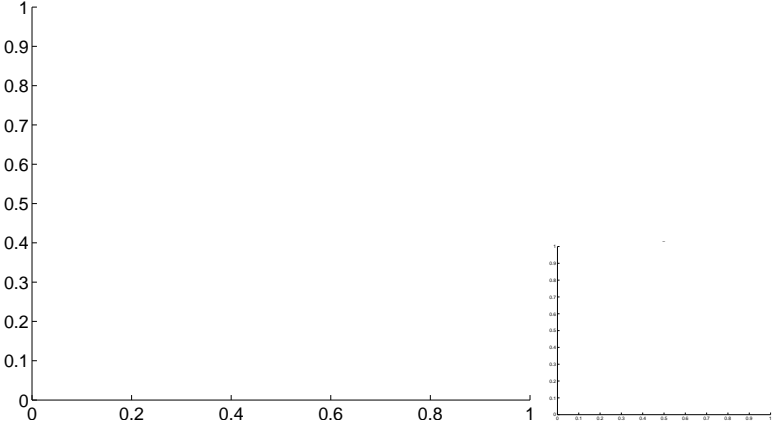
Q11 no OOT image



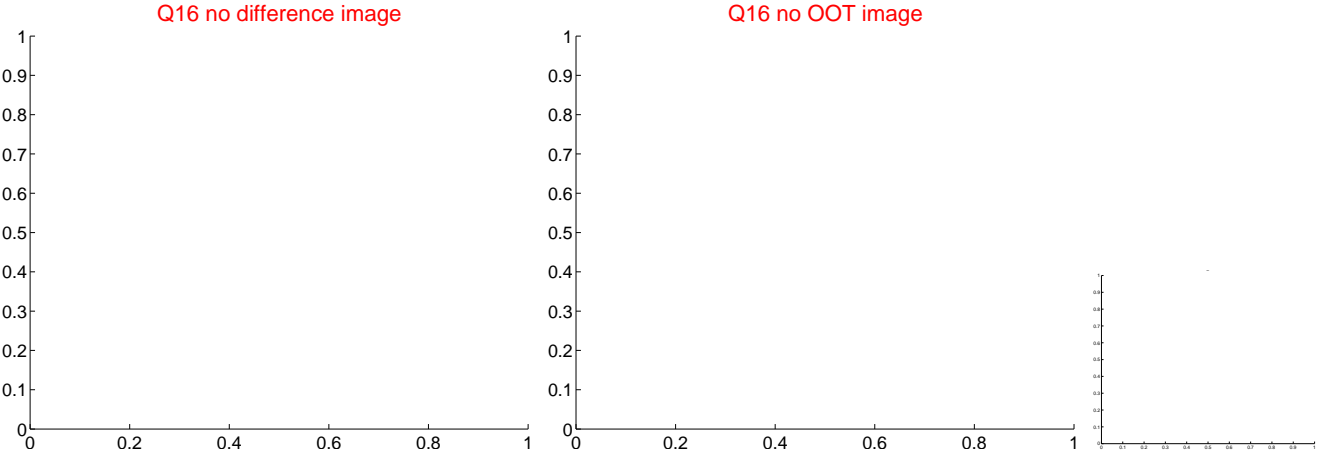
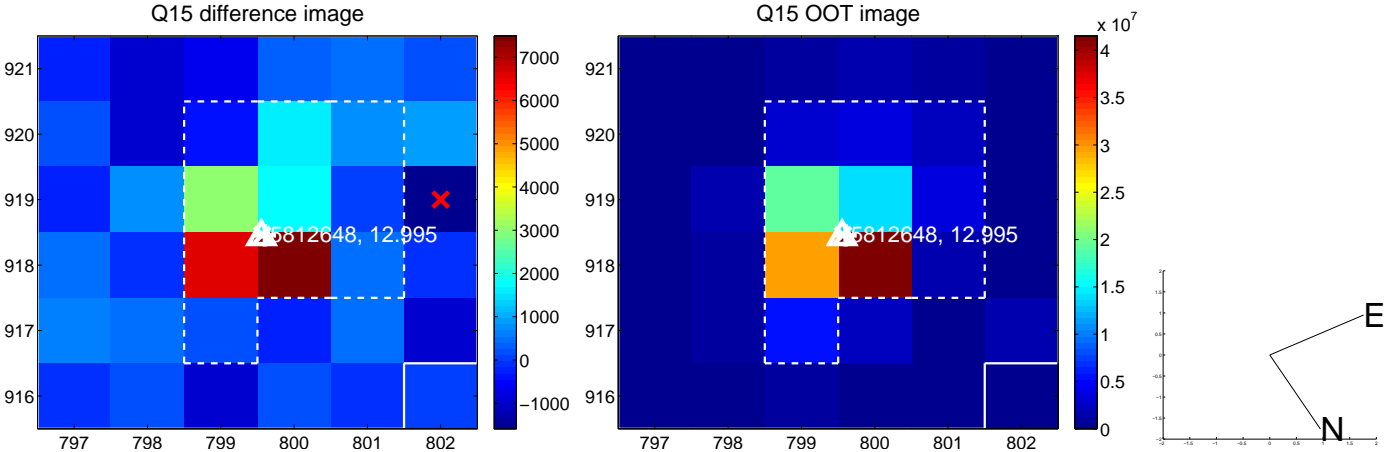
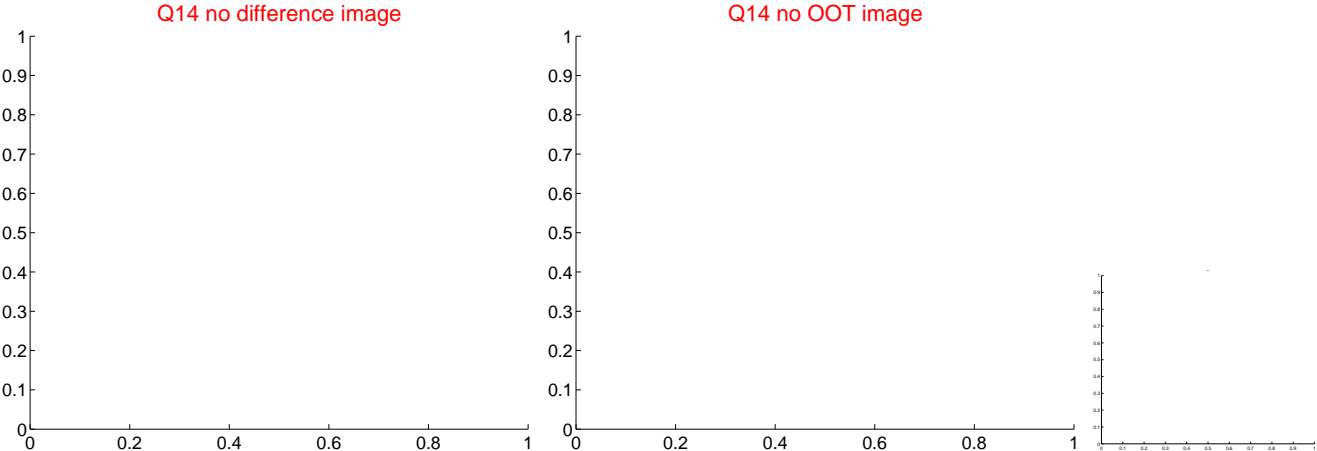
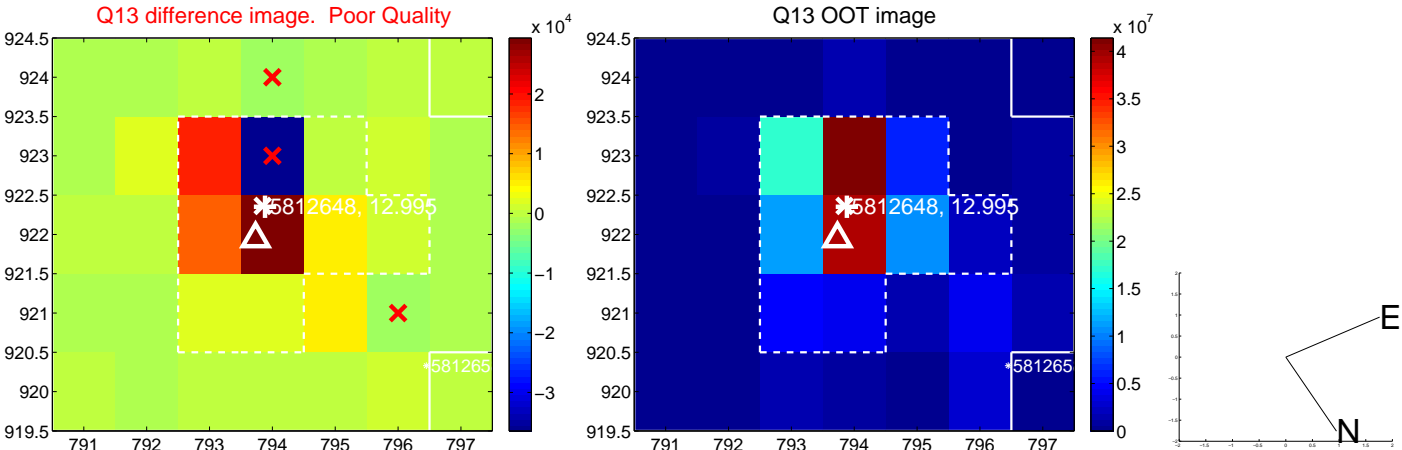
Q12 no difference image



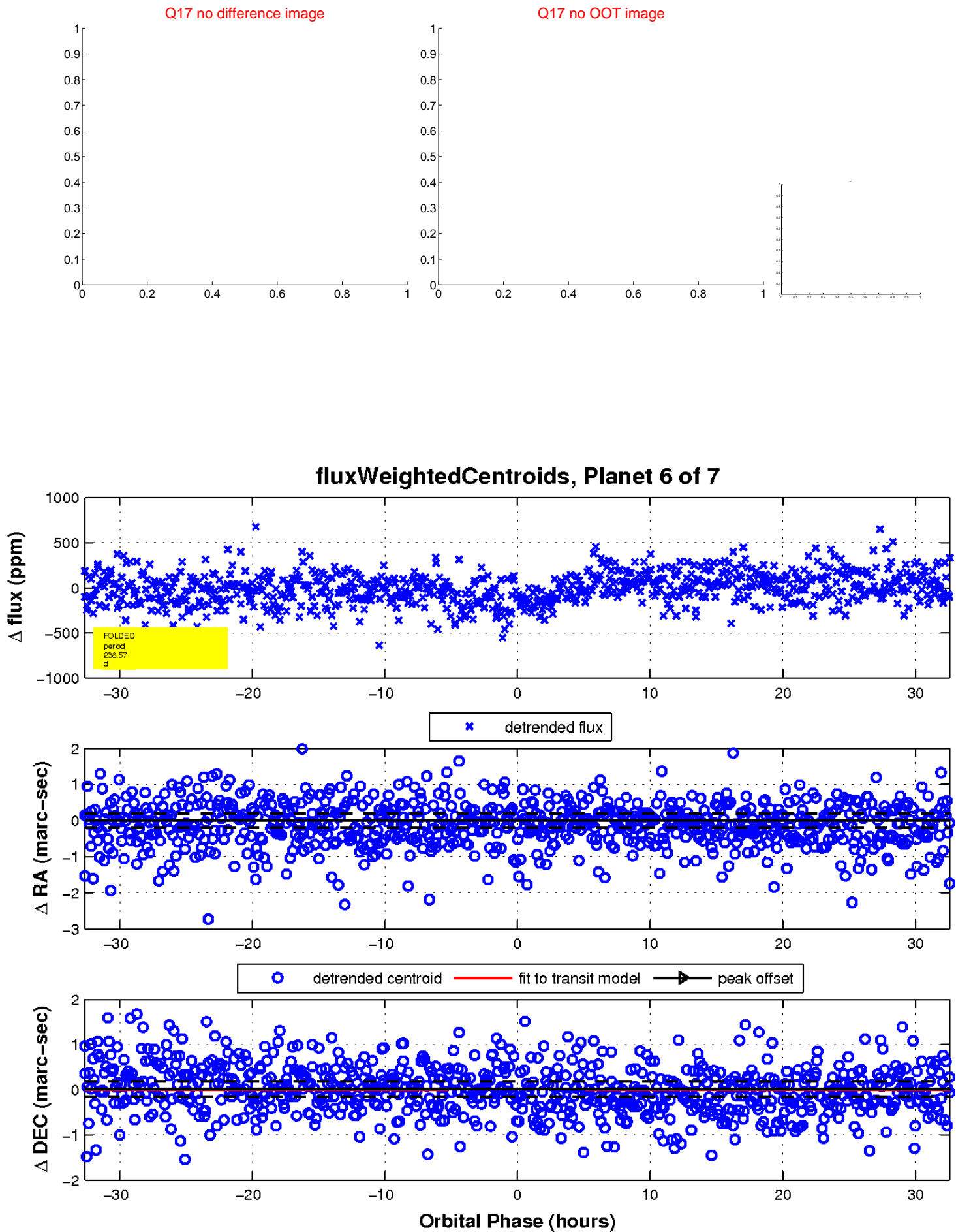
Q12 no OOT image



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

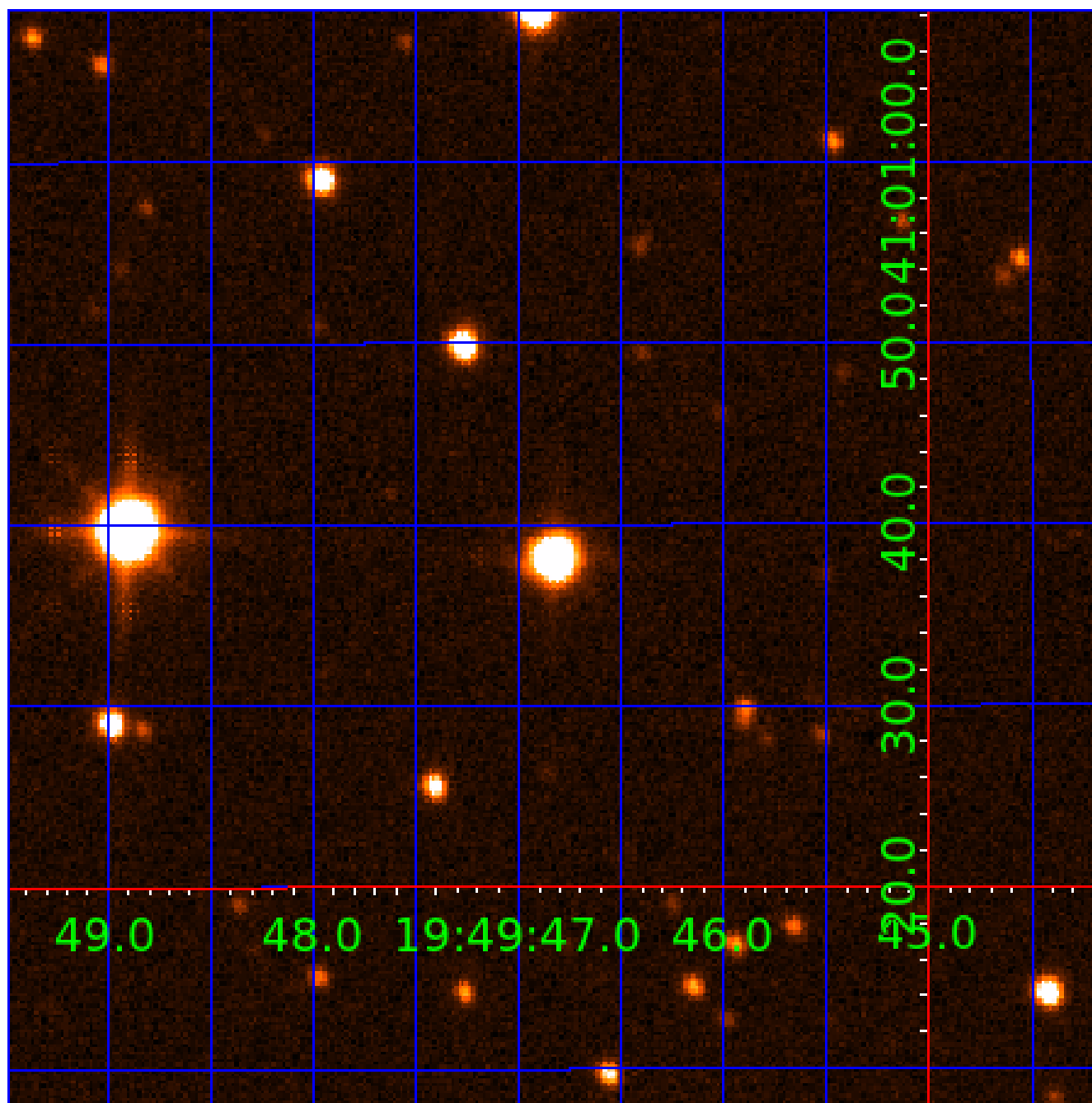


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005812648

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})
005812648-01	OBS	No	4.042919	134.344921	23.7	18.890	9.4	8.2	3.31	6565	1.93	5648.72
005812648-02	OBS	No	238.090282	279.667447	245.4	12.267	10.8	9.6	3.31	6565	5.87	24.65
005812648-03	OBS	No	376.168378	325.477919	208.8	15.177	10.0	7.3	3.31	6565	5.18	13.40
005812648-04	OBS	No	158.756548	168.687344	355.3	5.962	8.3	8.1	3.31	6565	7.95	42.32
005812648-05	OBS	No	420.455993	139.042771	234.1	55.553	8.5	6.3	3.31	6565	5.82	11.55
005812648-06	OBS	8108.01	238.567393	273.235937	136.3	10.890	8.2	7.2	3.31	6565	4.28	24.59
005812648-07	OBS	No	120.885747	152.961688	140.8	6.905	8.0	6.0	3.31	6565	4.53	60.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005812648-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005812648-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005812648-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT
005812648-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
005812648-06	OBS	FP	0.08	1	0	0	0	MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005812648-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

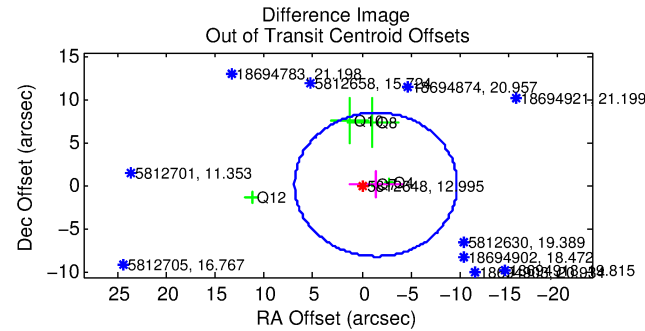
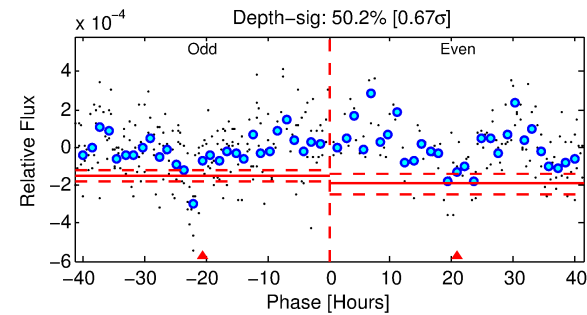
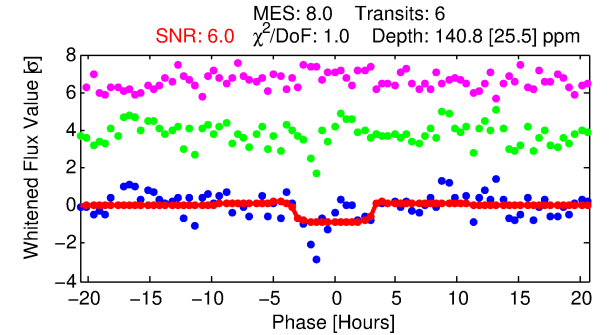
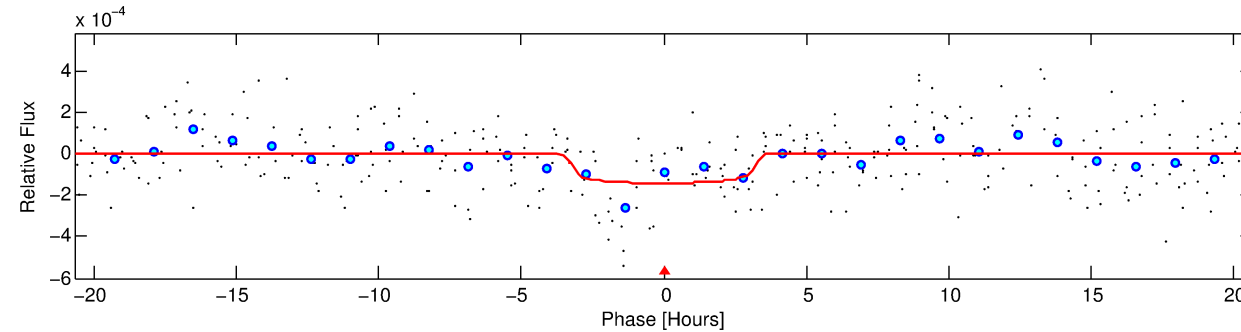
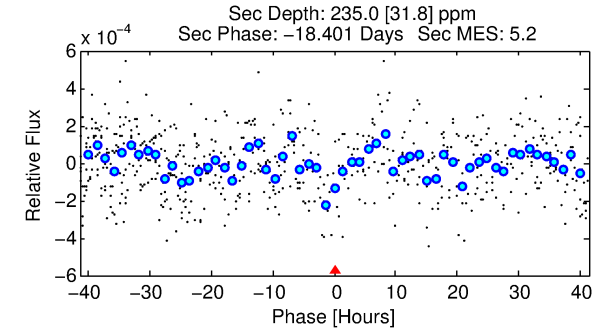
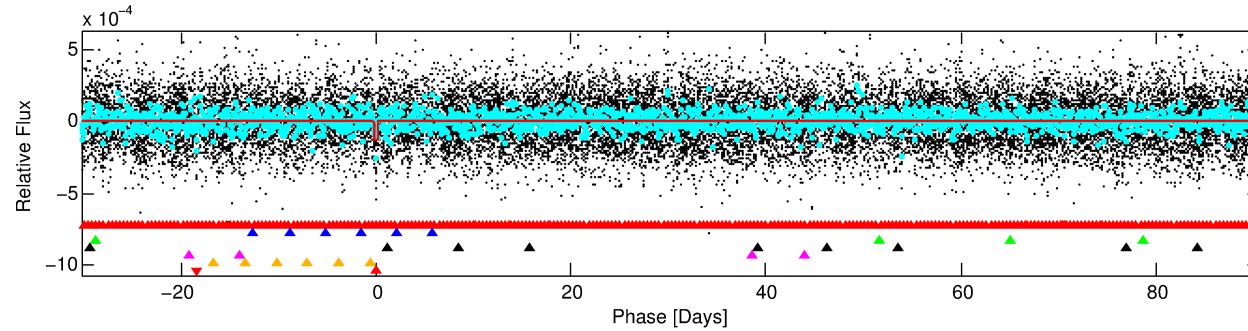
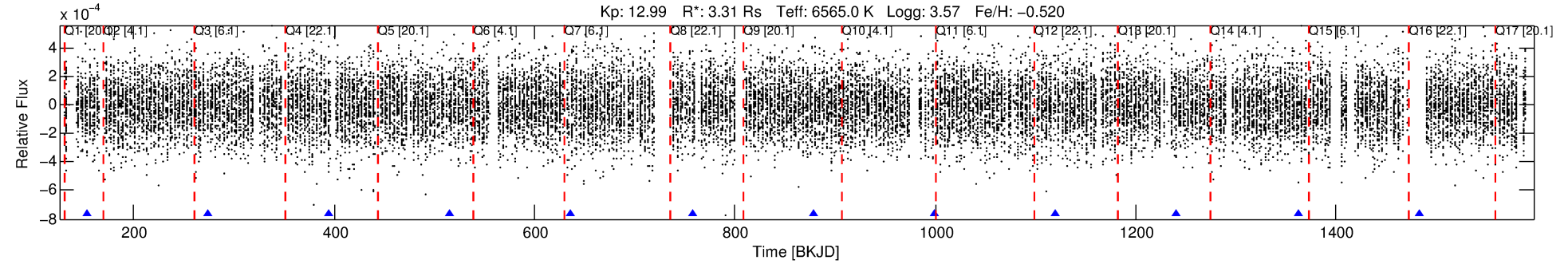
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005812648-07

No Significant Match Found

DV One-Page Summary

KIC: 5812648 Candidate: 7 of 7 Period: 120.886 d



DV Fit Results:

Period = 120.88575 [0.00243] d
Epoch = 152.9617 [0.0151] BKJD
Rp/R* = 0.0125 [0.0046]
a/R* = 65.46 [132.14]
b = 0.89 [0.49]
Seff = 60.87 [37.33]
Teq = 712 [109] K
Rp = 4.53 [2.52] Re
a = 0.5470 [0.2106] AU
Ag = 1884.60 [1794.96] [1.05σ]
Teffp = 7255 [1365] K [4.78σ]

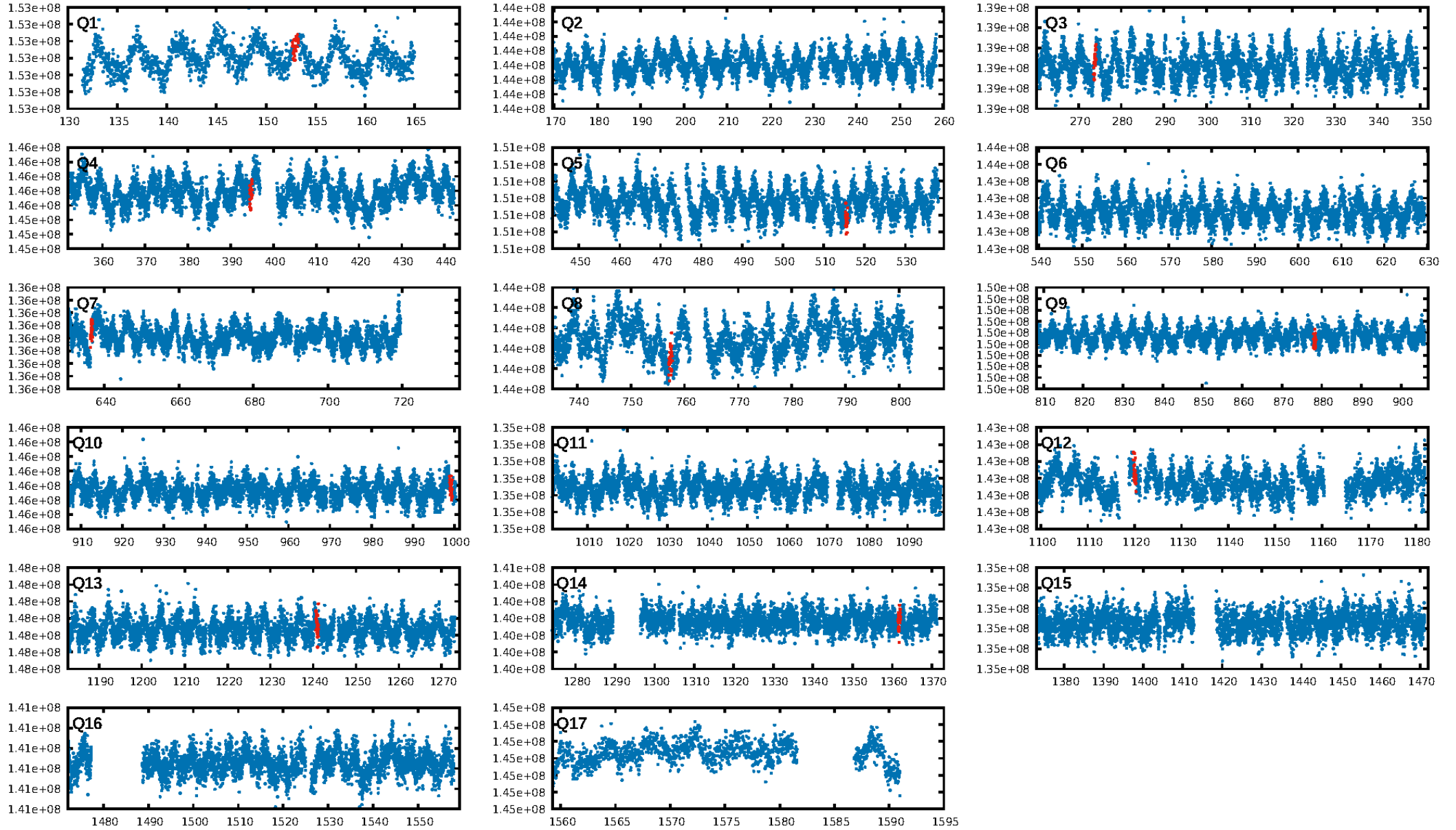
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [139.42σ]
LongPeriod-sig: 100.0% [99.63σ]
ModelChiSquare2-sig: 65.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.34e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -76.58
Centroid-sig: 7.5%
Centroid-so: 0.752 arcsec [0.77σ]
OotOffset-rm: 1.417 arcsec [0.51σ]
OotOffset-st: 1/1/3/0 [5]
KicOffset-rm: 1.328 arcsec [0.56σ]
KicOffset-st: 1/1/3/0 [5]
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DiffImageOverlap-fno: 0.40 [4/10]

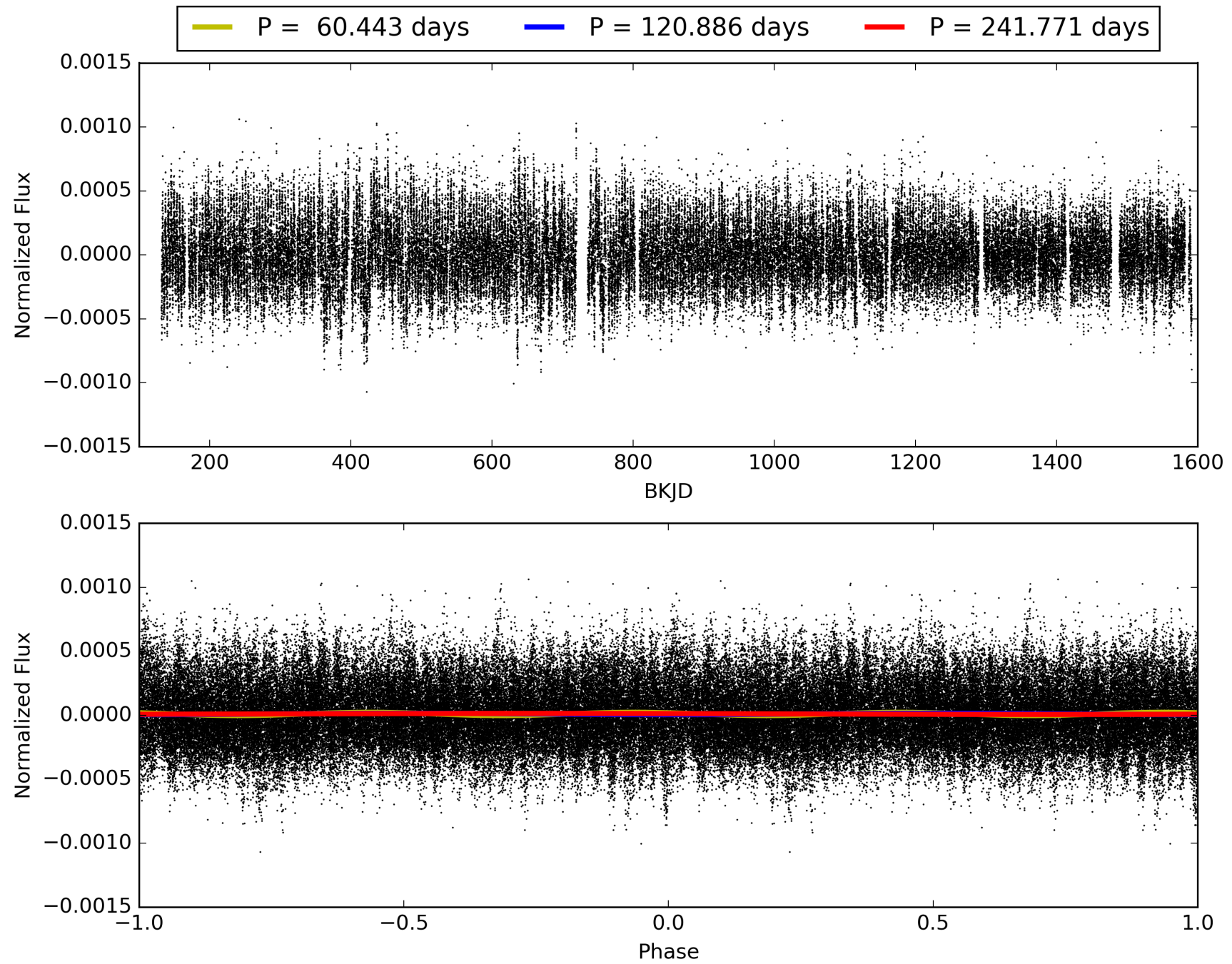
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:55:33 Z

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

TCE 005812648-07, PDC Light Curves

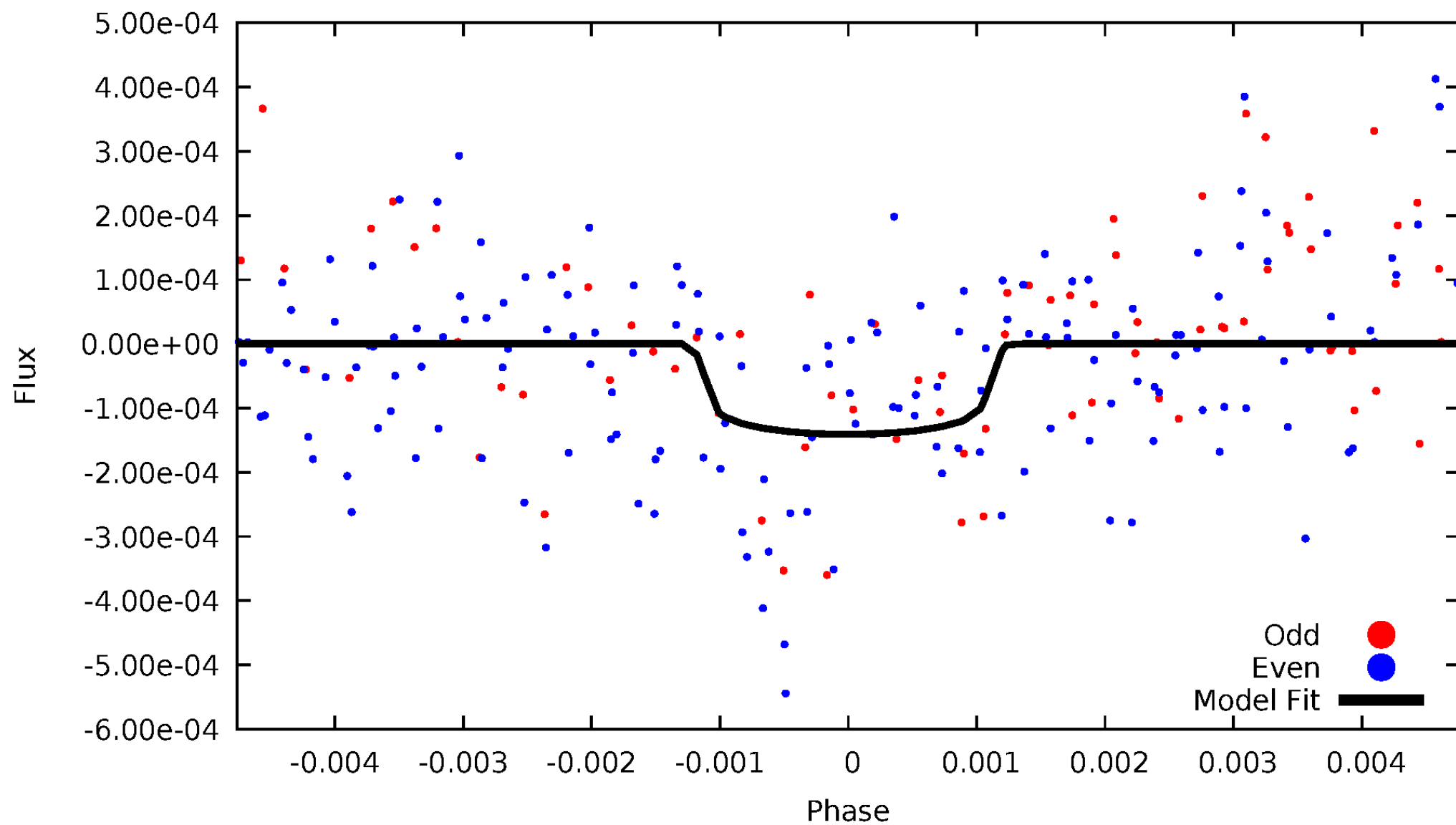


TCE 005812648-07



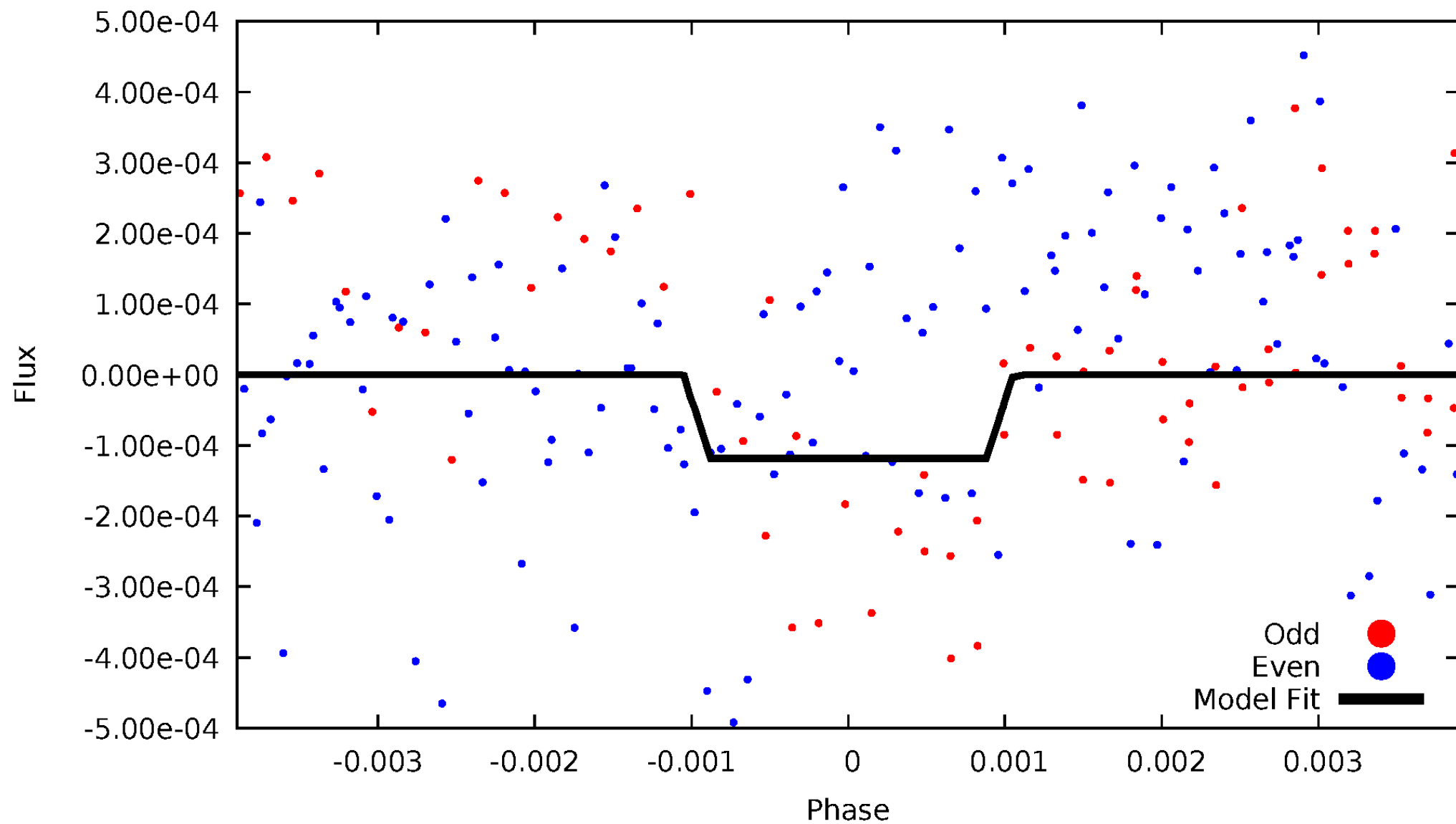
DV Odd/Even

TCE 005812648-07

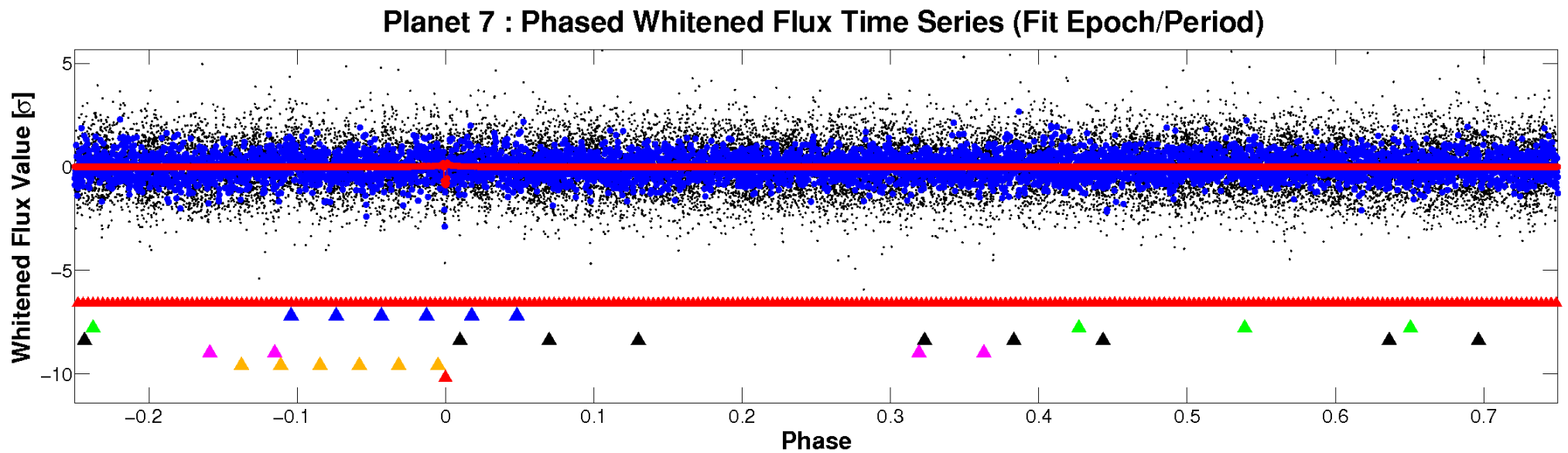
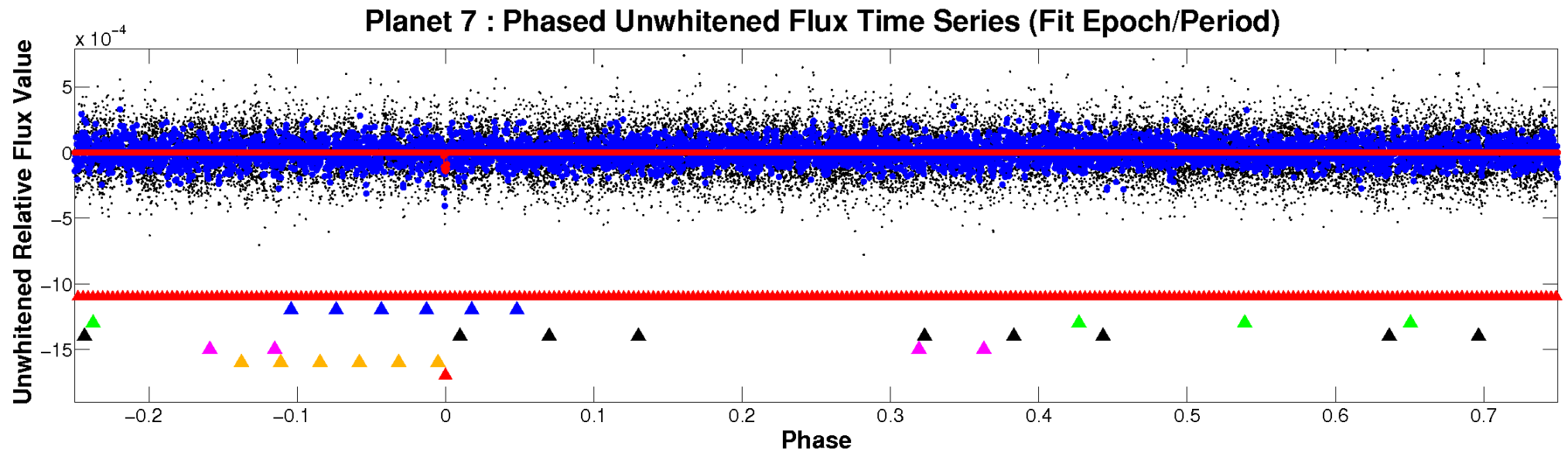


ALT Odd/Even

TCE 005812648-07

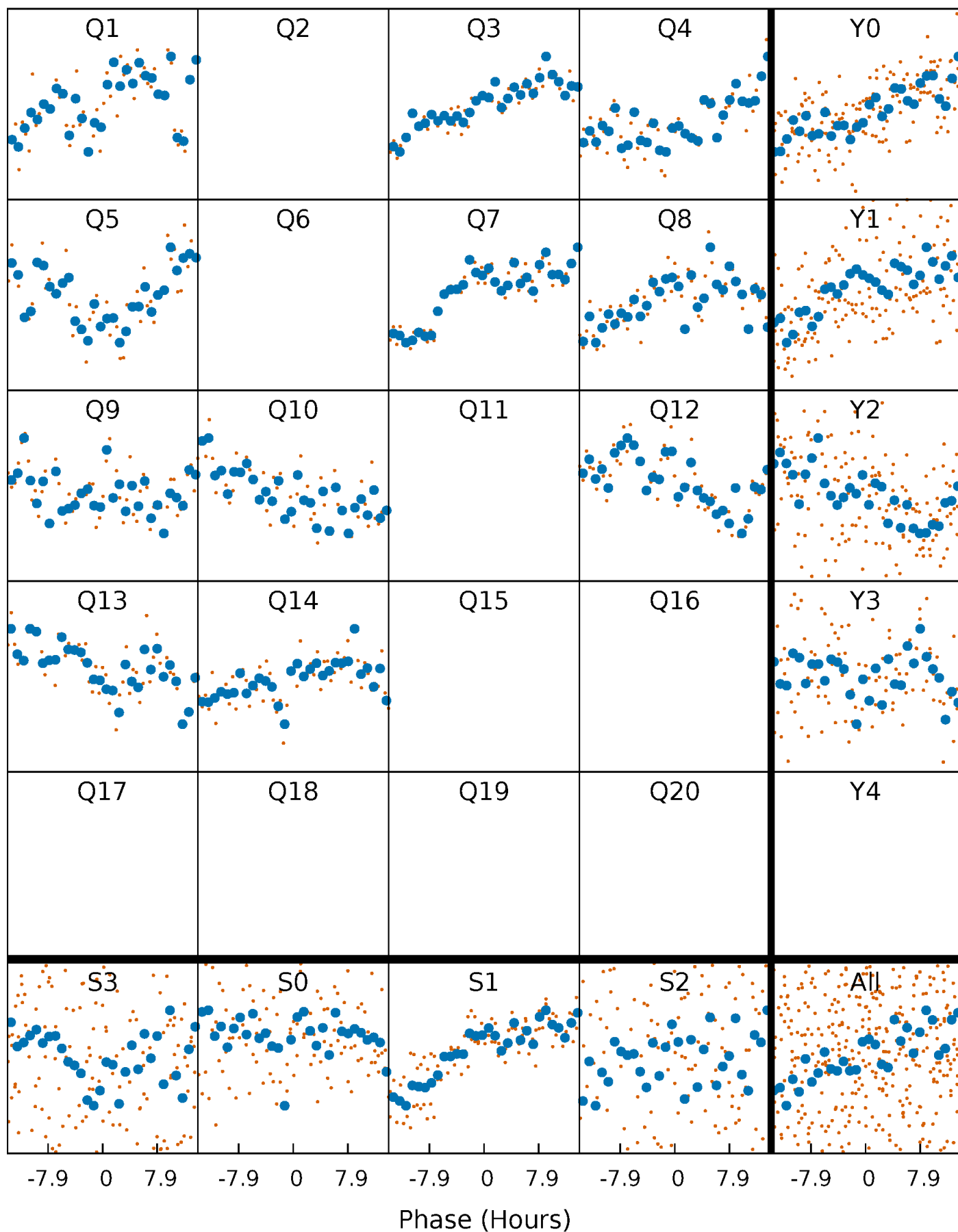


Non-Whitened Vs. Whitened Light Curve



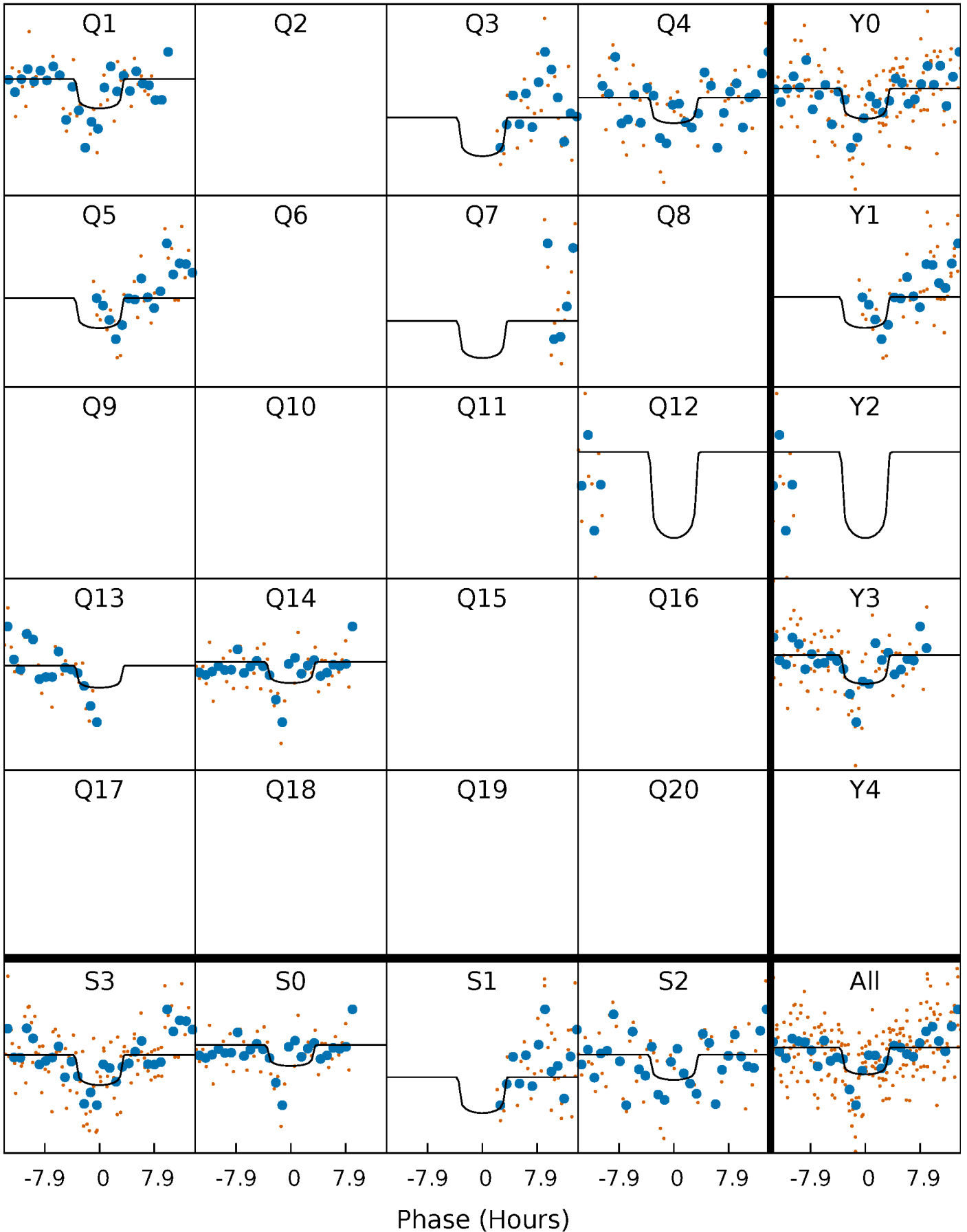
PDC Quarter-Phased Transit Curves

TCE 005812648-07 P=120.885747 Days $T_0=152.961688$ (BKJD)



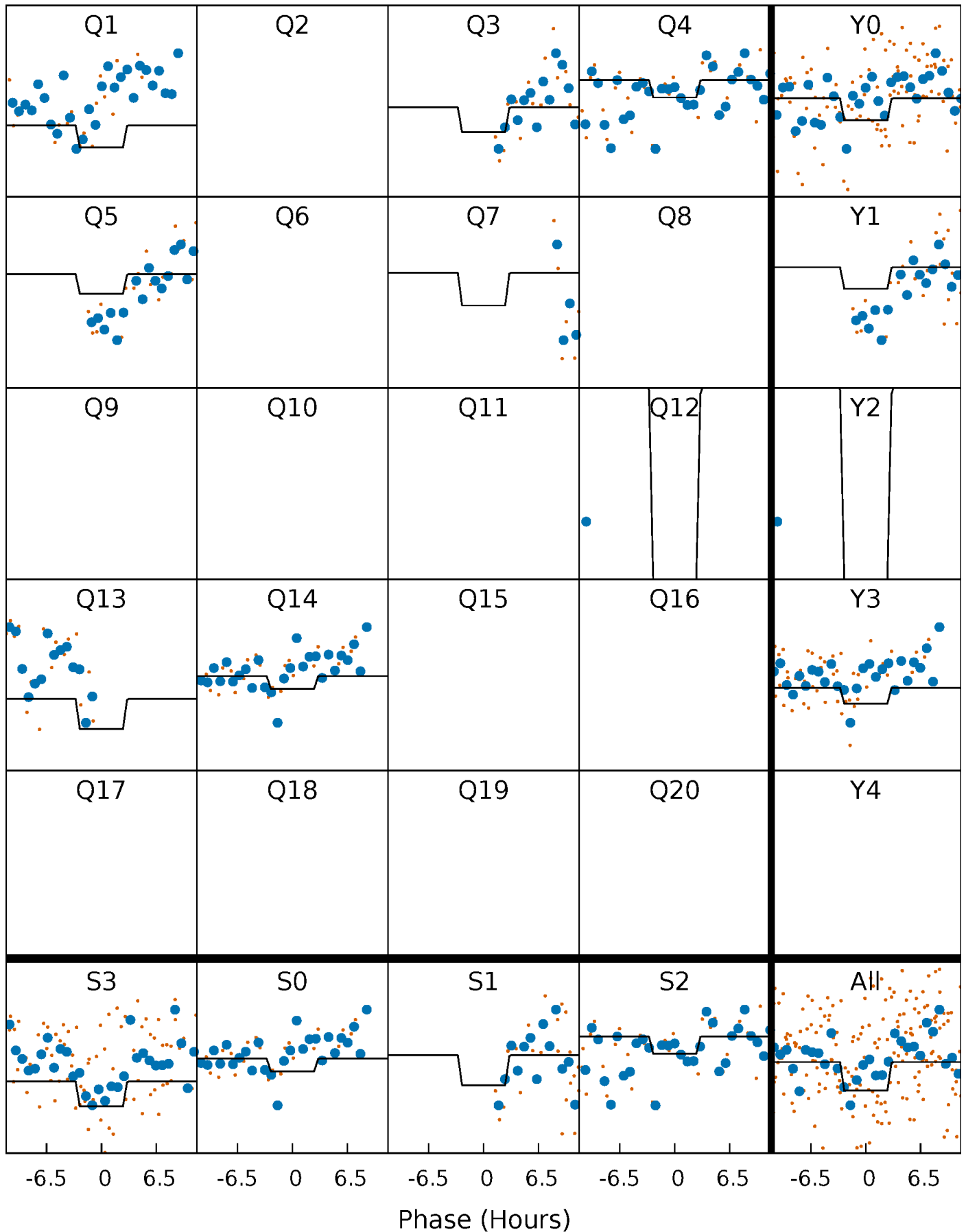
DV Quarter-Phased Transit Curves

TCE 005812648-07 $P=120.885747$ Days $T_0=152.961688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

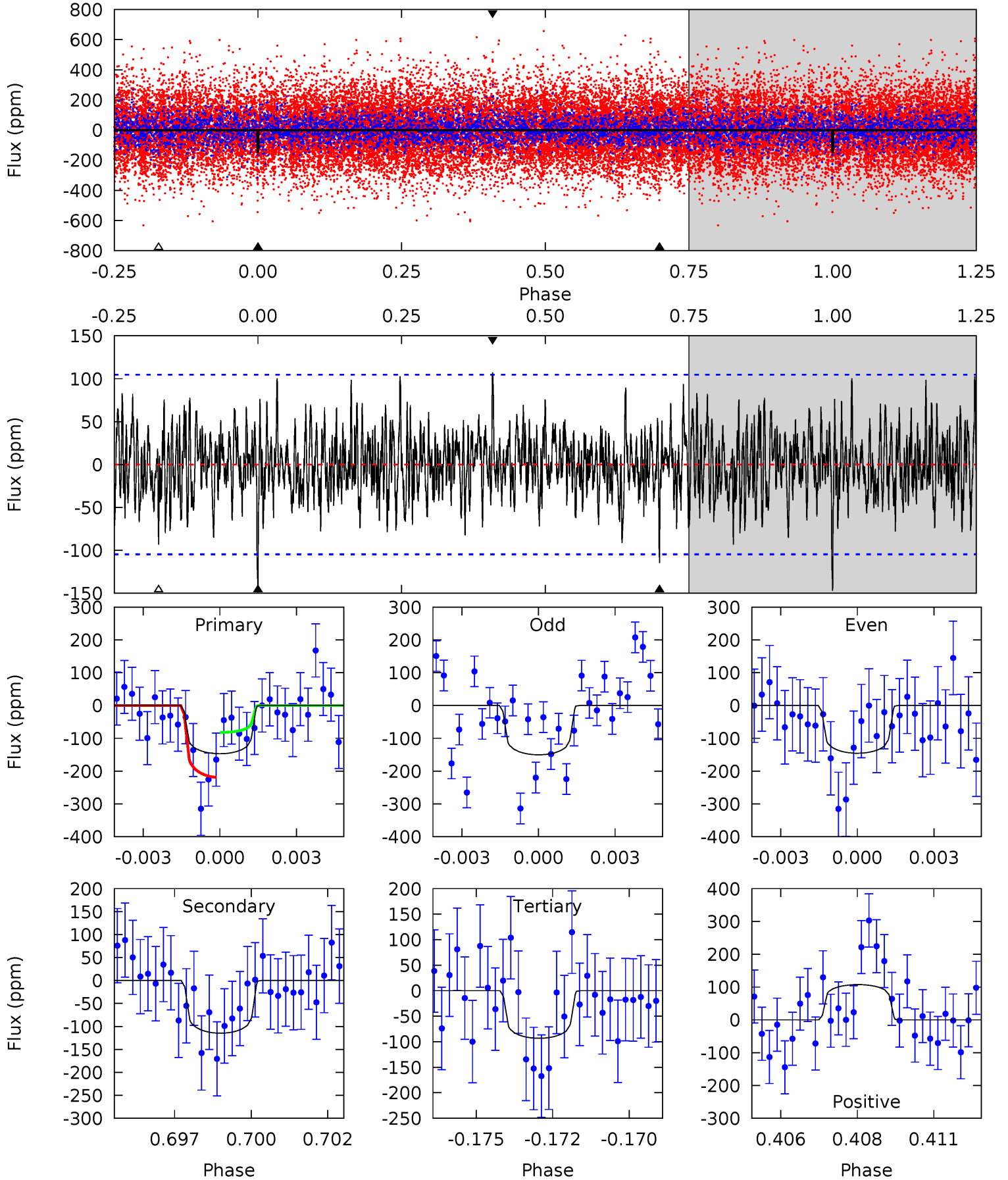
TCE 005812648-07 P=120.884502 Days $T_0=152.992853$ (BKJD)



DV Model-Shift Uniqueness Test

005812648-07, P = 120.885747 Days, E = 32.075941 Days

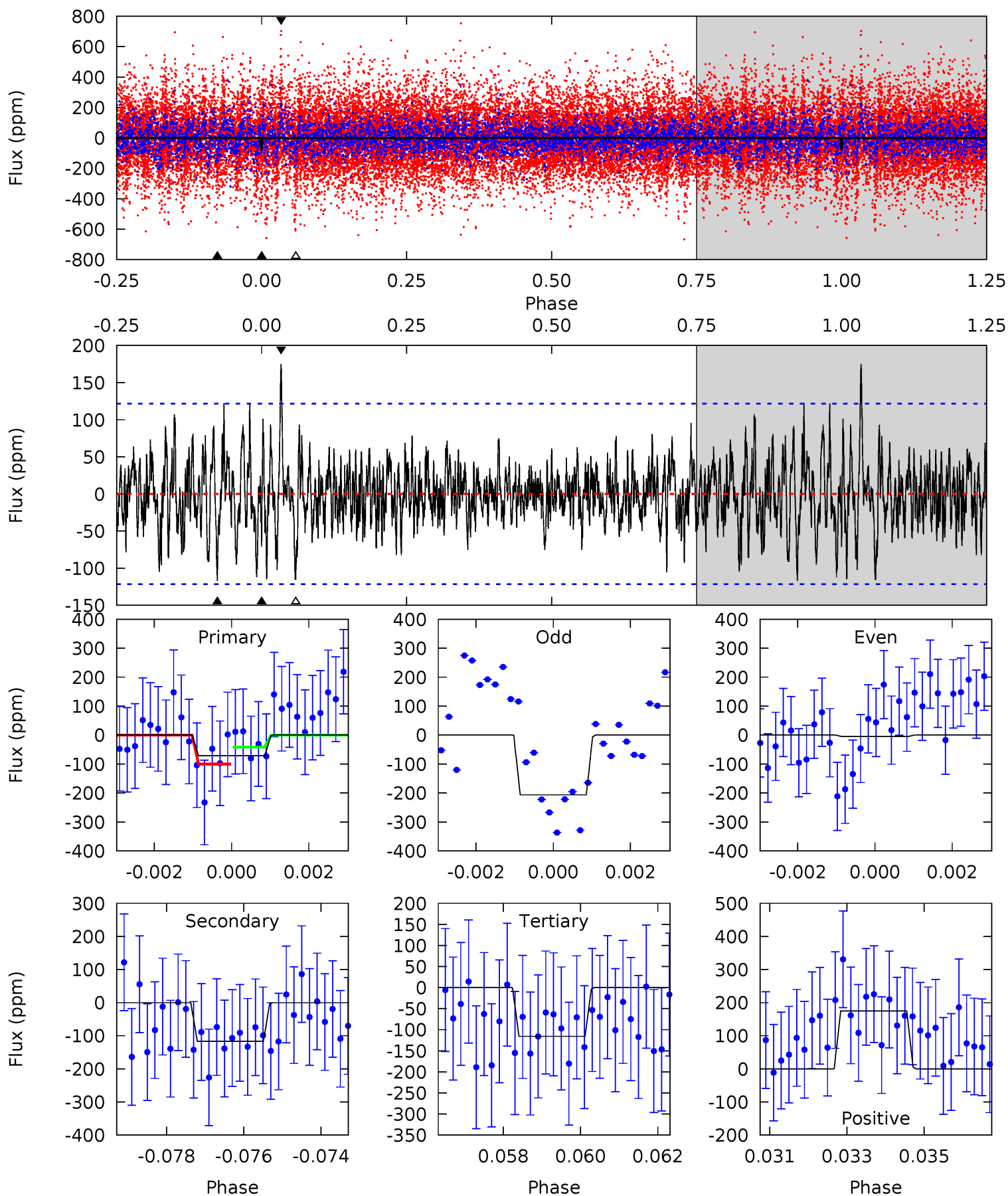
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.42	5.79	4.71	5.42	5.28	3.02	1.58	2.72	2.00	1.08	0.37	0.11	1.08	0.42	3.43



Alt Model-Shift Uniqueness Test

005812648-07, P = 120.884502 Days, E = 32.108351 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.12	5.11	5.07	7.64	5.32	3.08	1.54	-1.95	-4.53	0.04	-2.53	4.15	0.94	0.60	1.28



Stellar Parameters For KIC 005812648

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6565^{+178}_{-218}	$3.573^{+0.345}_{-0.115}$	$-0.520^{+0.350}_{-0.300}$	$3.308^{+0.555}_{-1.387}$	$1.493^{+0.237}_{-0.355}$	$0.058^{+0.152}_{-0.021}$
	+3%/-3%	+10%/-3%	+67%/-58%	+17%/-42%	+16%/-24%	+261%/-35%
Source	PHO1	FLK73	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 005812648-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-115 ± 20	$4.25^{+1.93}_{-1.70}$	981^{+62}_{-97}	6076^{+1576}_{-922}	1057^{+1796}_{-555}
Alt.	-117 ± 23	$3.80^{+1.84}_{-1.62}$	978^{+64}_{-92}	6419^{+2305}_{-1081}	1324^{+2681}_{-714}

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

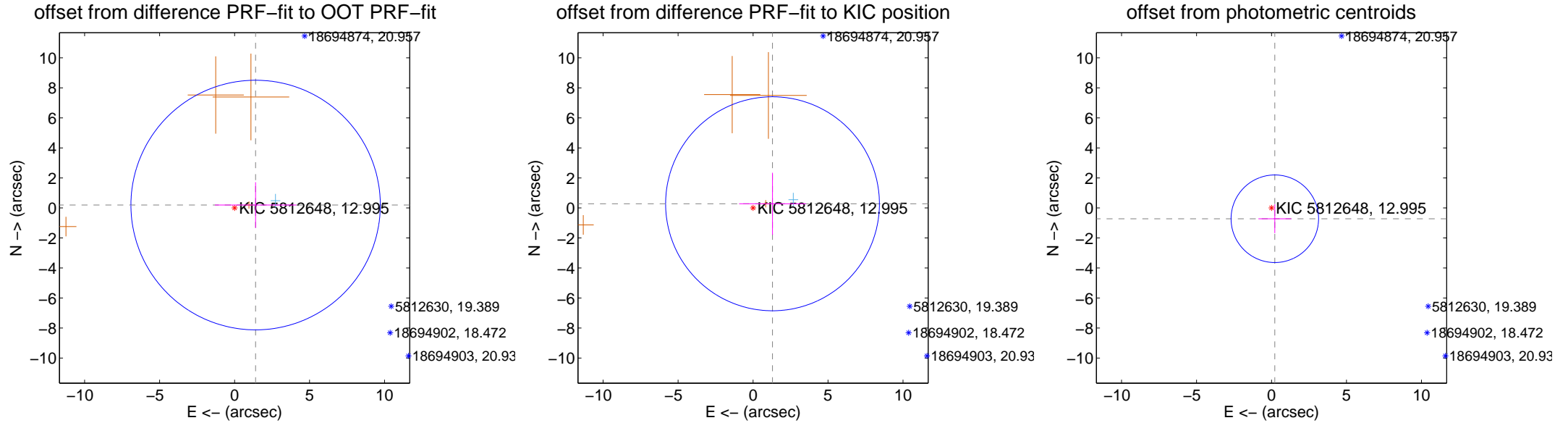
DV Centroid Data

Supplemental centroid analysis for 005812648-07. Kepler magnitude: 12.99. Transit SNR 6.04

There are 1 quarters with good PRF difference image offsets

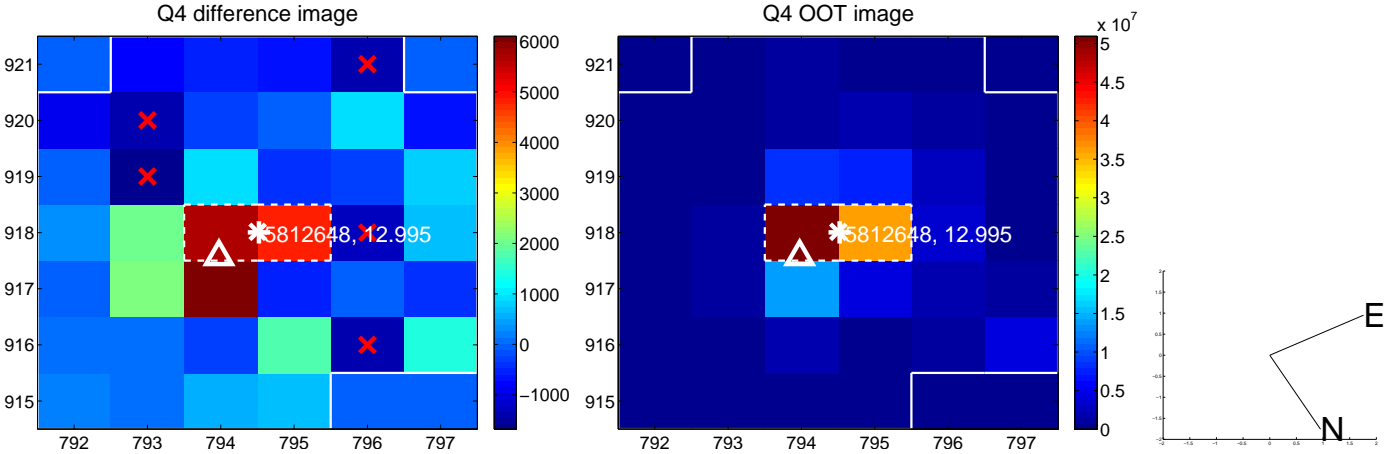
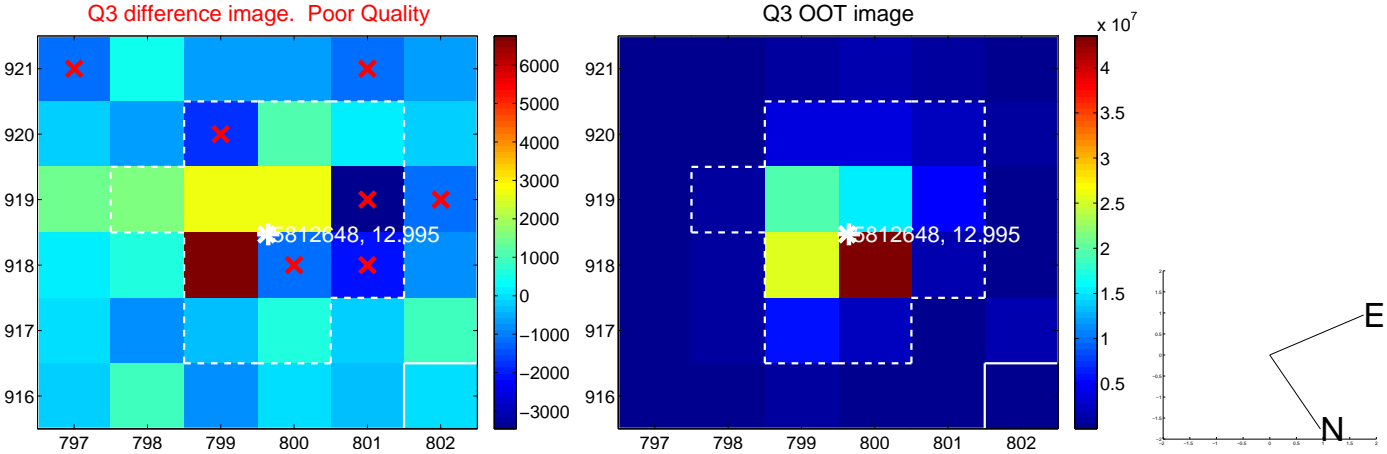
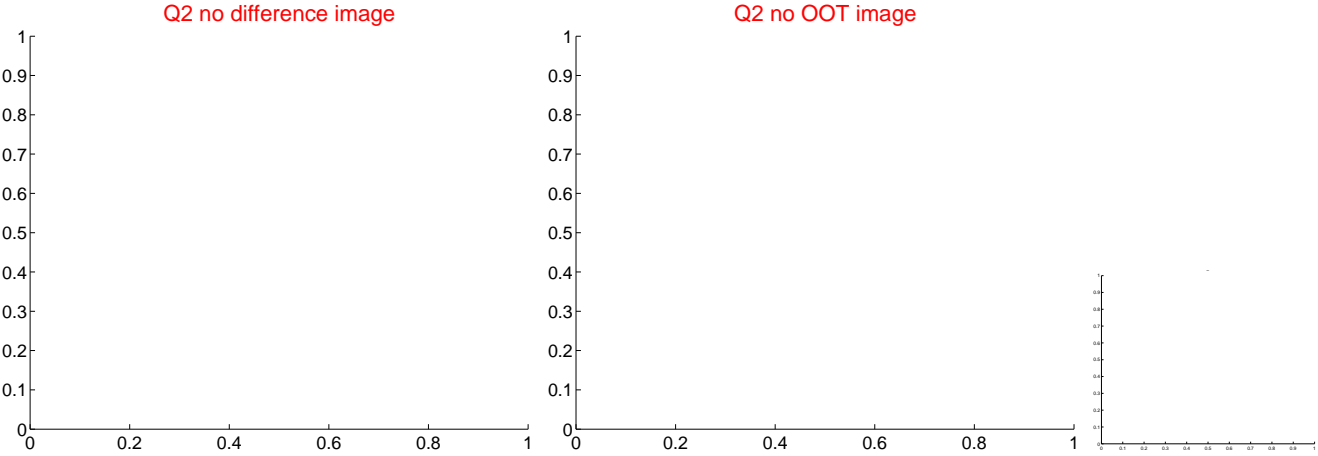
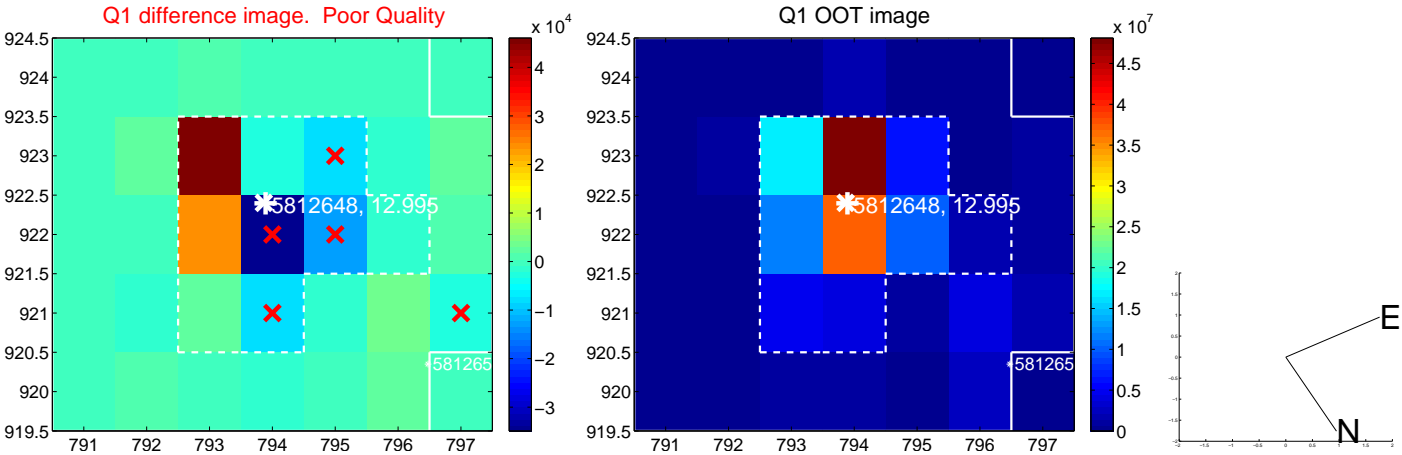
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.417 ± 2.772	0.51	-1.403 ± 2.718	0.194 ± 1.524
PRF-fit source offset from KIC position	1.328 ± 2.376	0.56	-1.298 ± 2.228	0.278 ± 2.066
photometric centroid source offset	0.75 ± 0.97	0.77	-0.22 ± 1.10	-0.72 ± 0.96

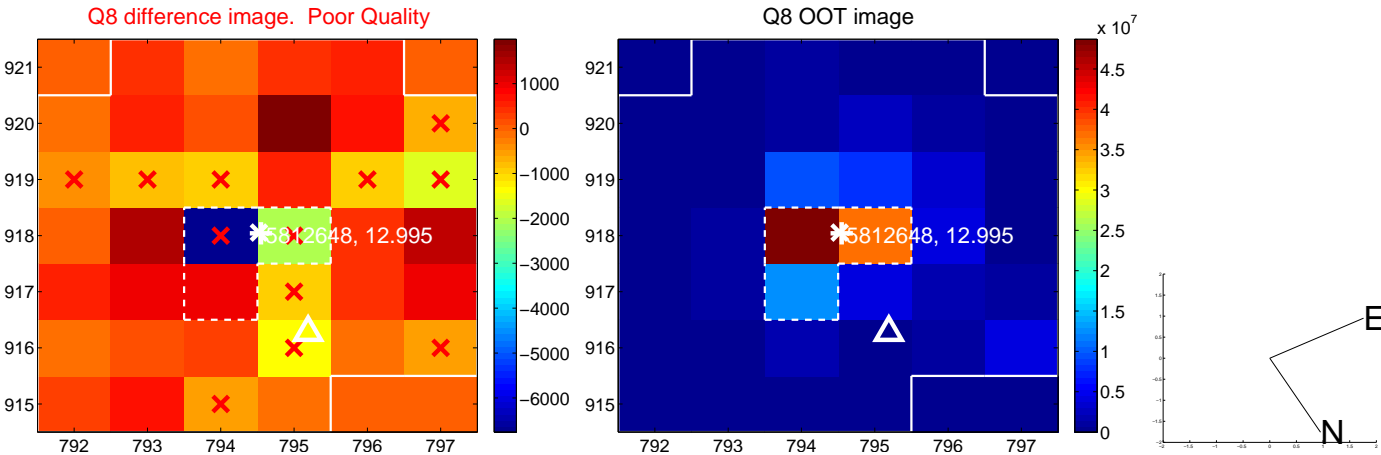
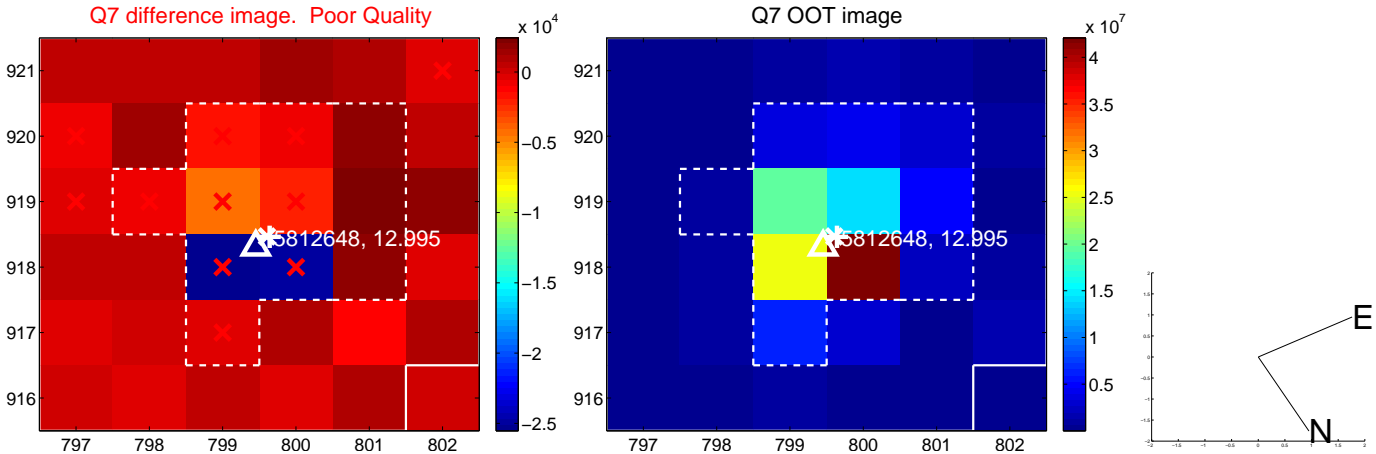
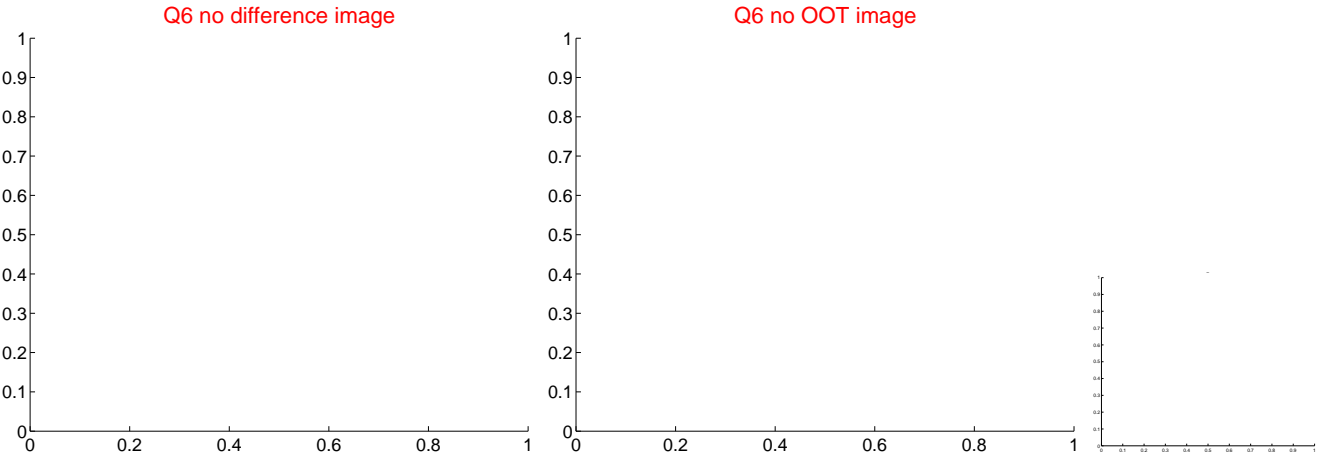
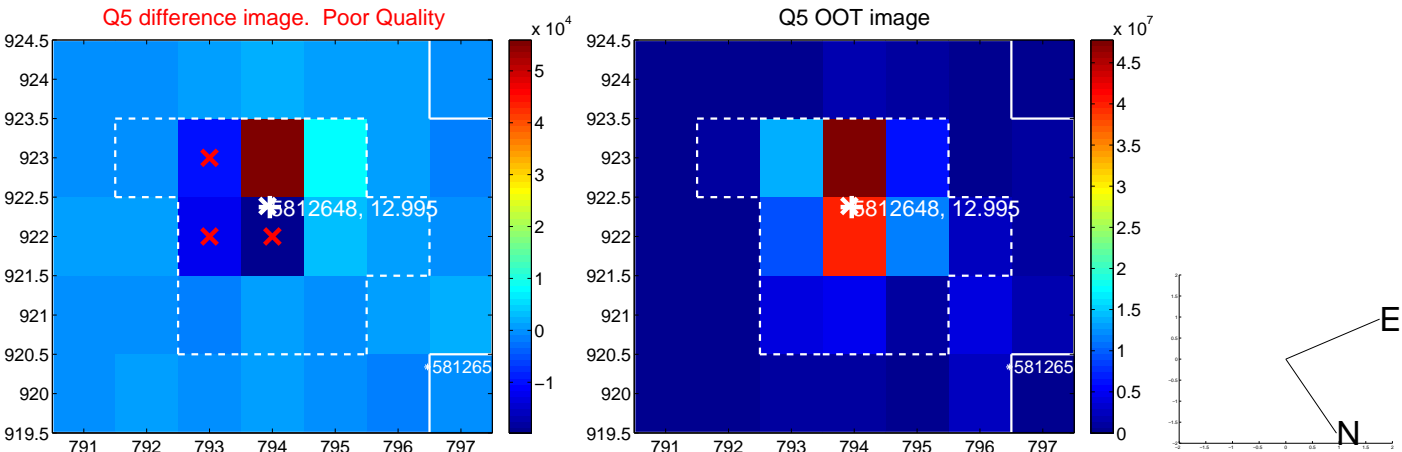


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

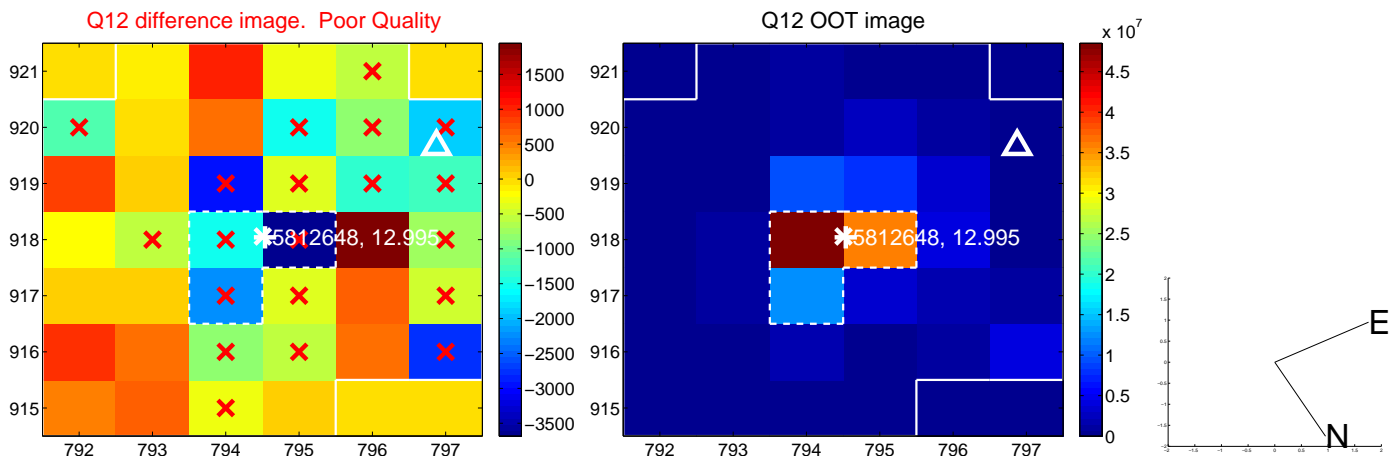
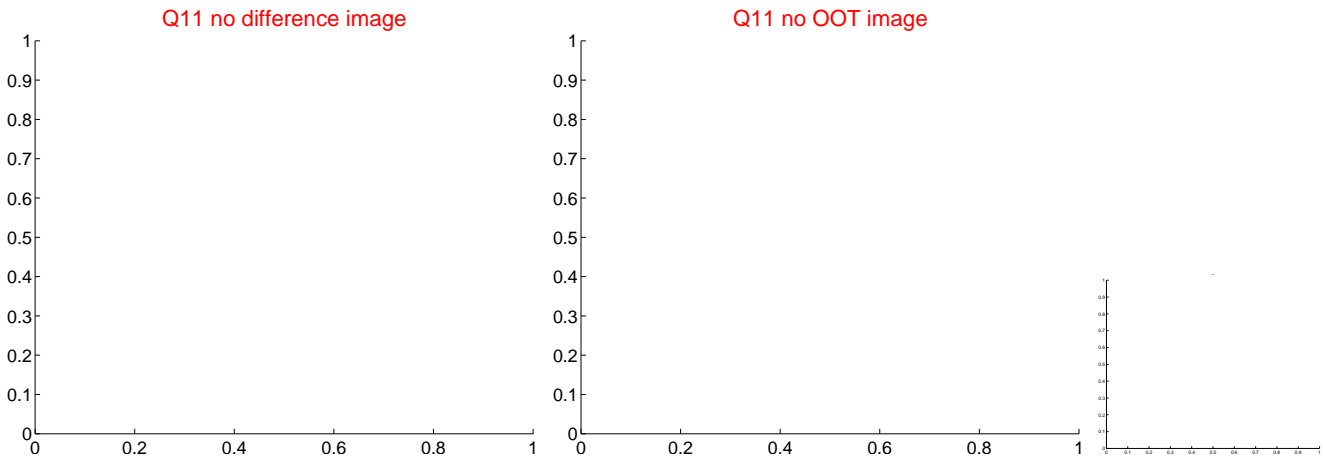
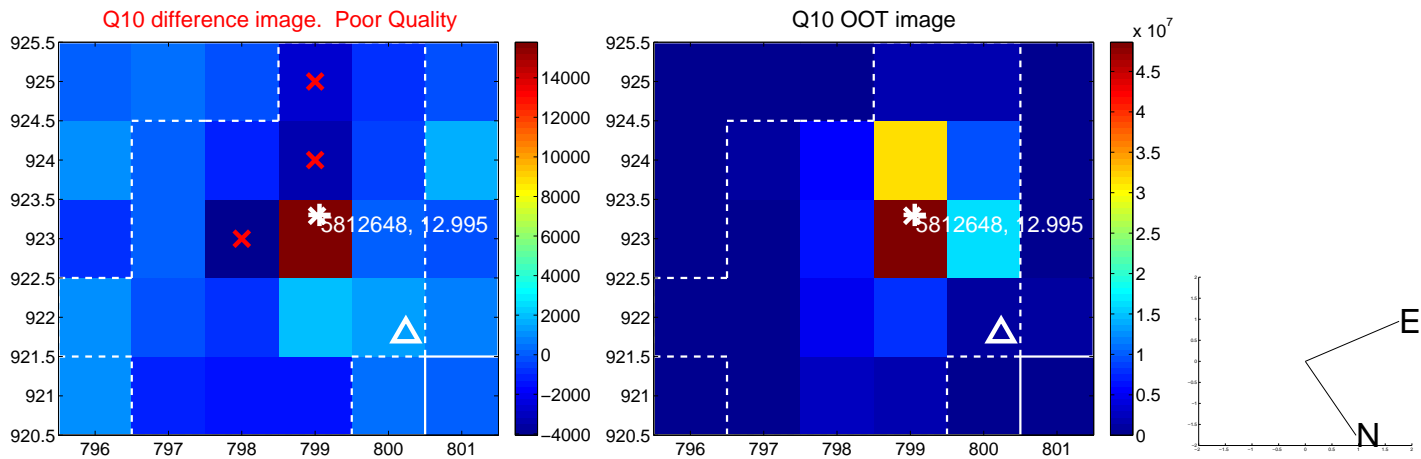
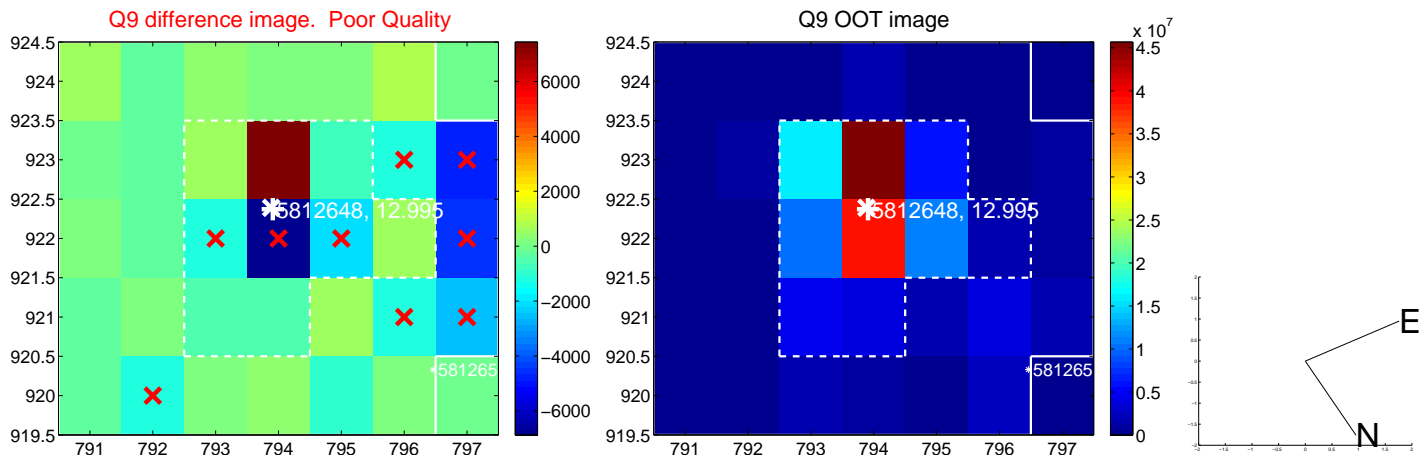
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

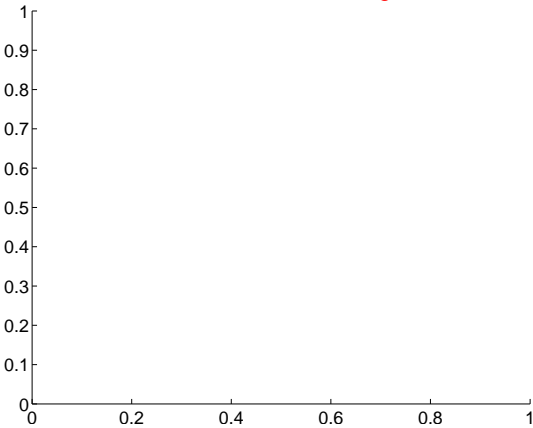


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

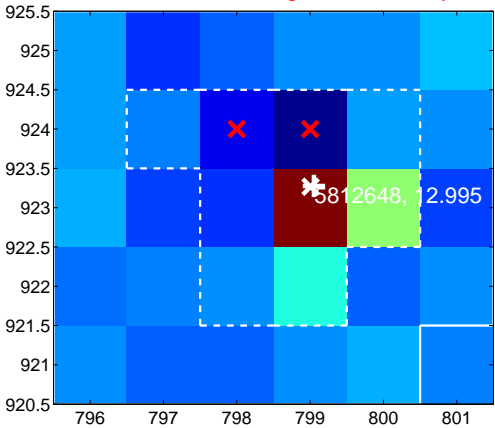
Q13 no difference image



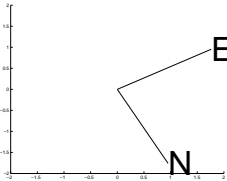
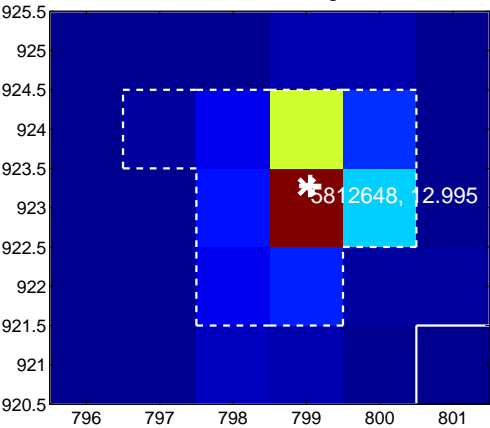
Q13 no OOT image



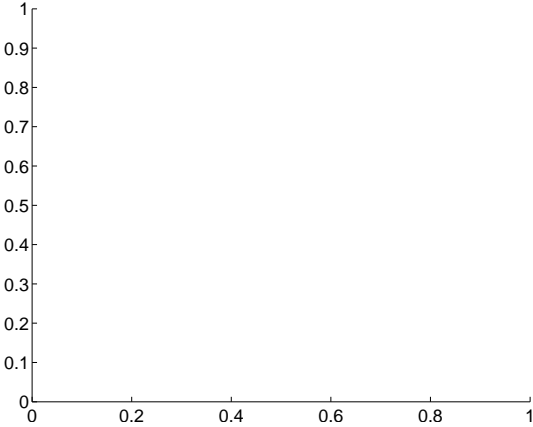
Q14 difference image. Poor Quality



Q14 OOT image



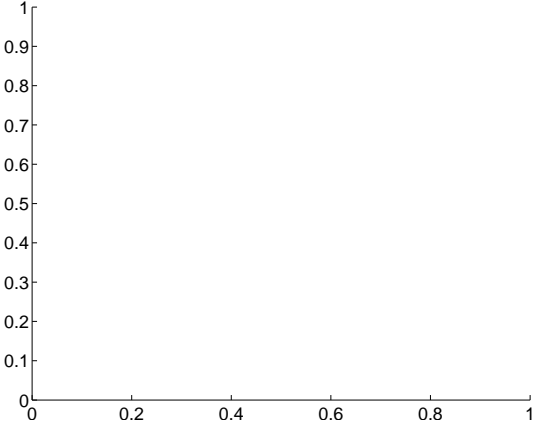
Q15 no difference image



Q15 no OOT image



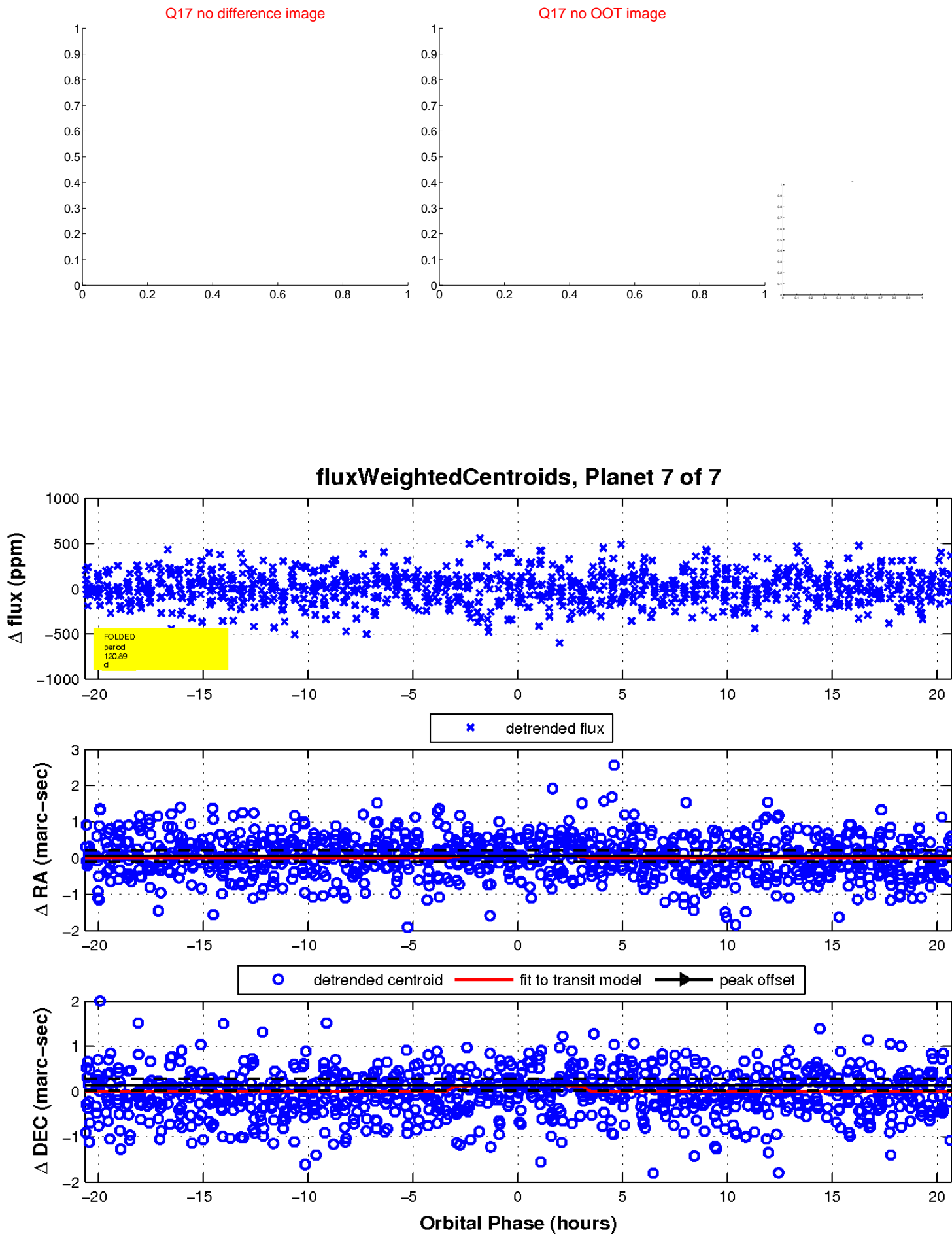
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

