

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})
010353924-01	OBS	No	1.625617	132.418256	13.7	8.654	9.2	6.1	1.71	6654	0.67	5652.02
010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
010353924-04	OBS	No	115.147808	171.598167	220.7	5.114	9.4	8.6	1.71	6654	2.85	19.29
010353924-05	OBS	No	458.381648	432.509759	260.1	7.434	9.3	9.8	1.71	6654	3.04	3.06
010353924-06	OBS	No	44.151668	133.469056	82.5	19.725	9.1	6.7	1.71	6654	1.65	69.23
010353924-07	OBS	No	103.673679	222.990038	203.0	7.175	9.7	9.3	1.71	6654	2.72	22.18
010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010353924-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
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010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

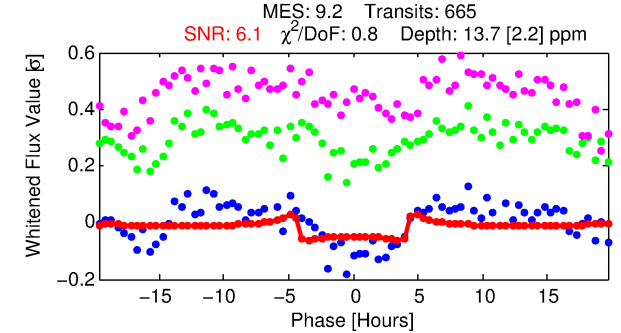
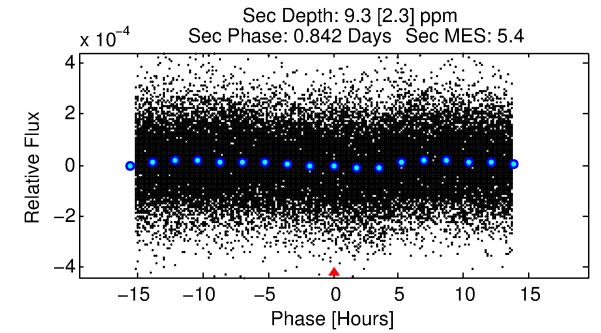
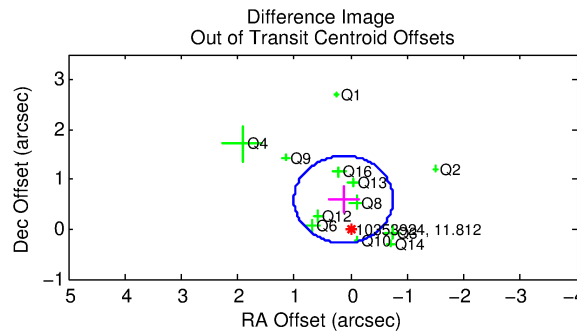
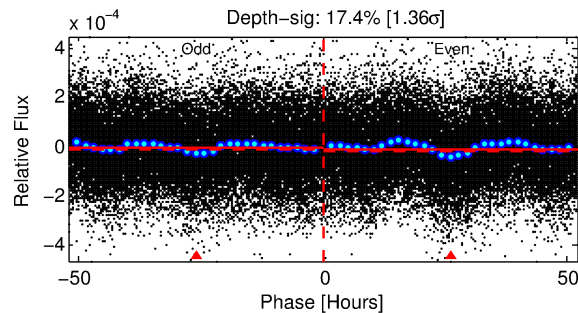
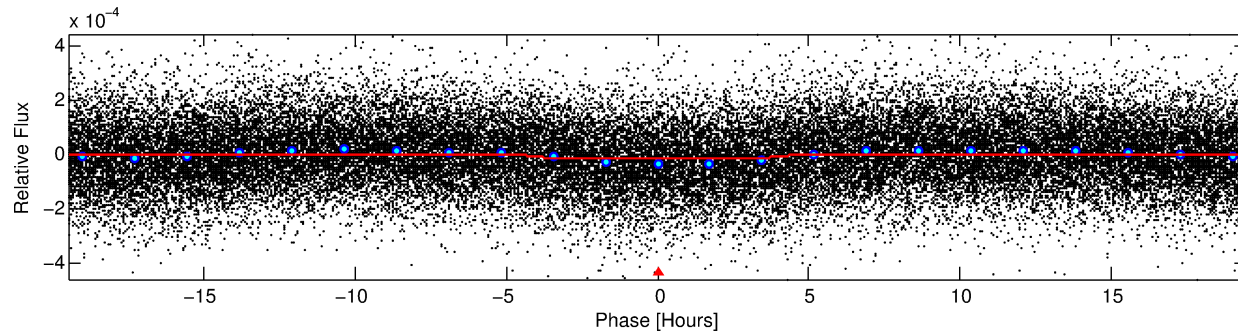
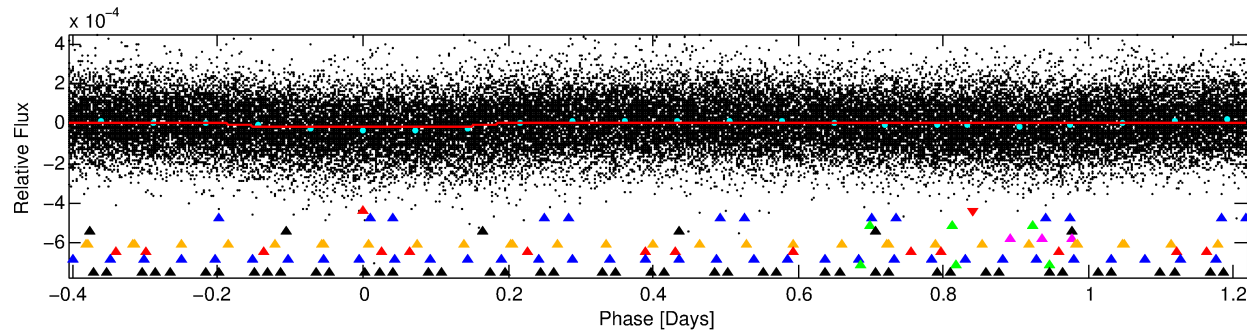
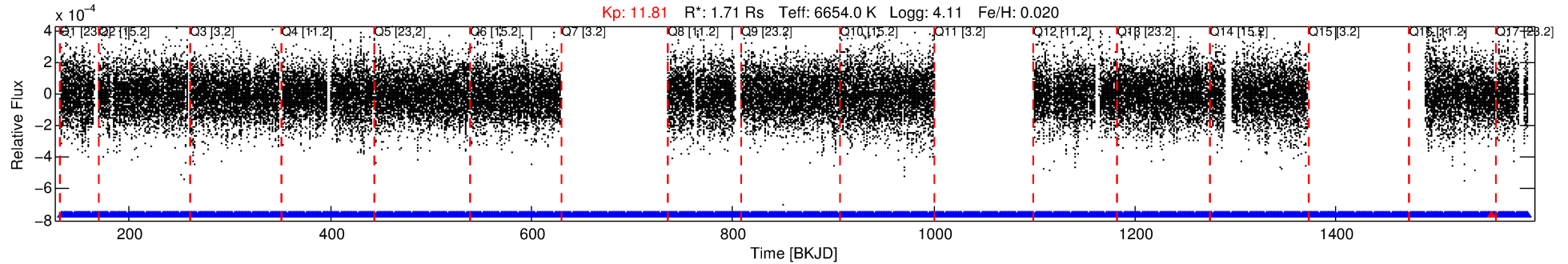
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-01

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 1 of 10 Period: 1.626 d



DV Fit Results:

Period = 1.62562 [0.00003] d
Epoch = 132.4183 [0.0057] BKJD
Rp/R* = 0.0036 [0.0011]
a/R* = 1.36 [1.02]
b = 0.65 [1.46]
Seff = 5652.02 [2298.36]
Teq = 2211 [225] K
Rp = 0.67 [0.29] Re
a = 0.0302 [0.0079] AU
Ag = 10.37 [7.83] [1.20 σ]
Teffp = 6135 [1032] K [3.71 σ]

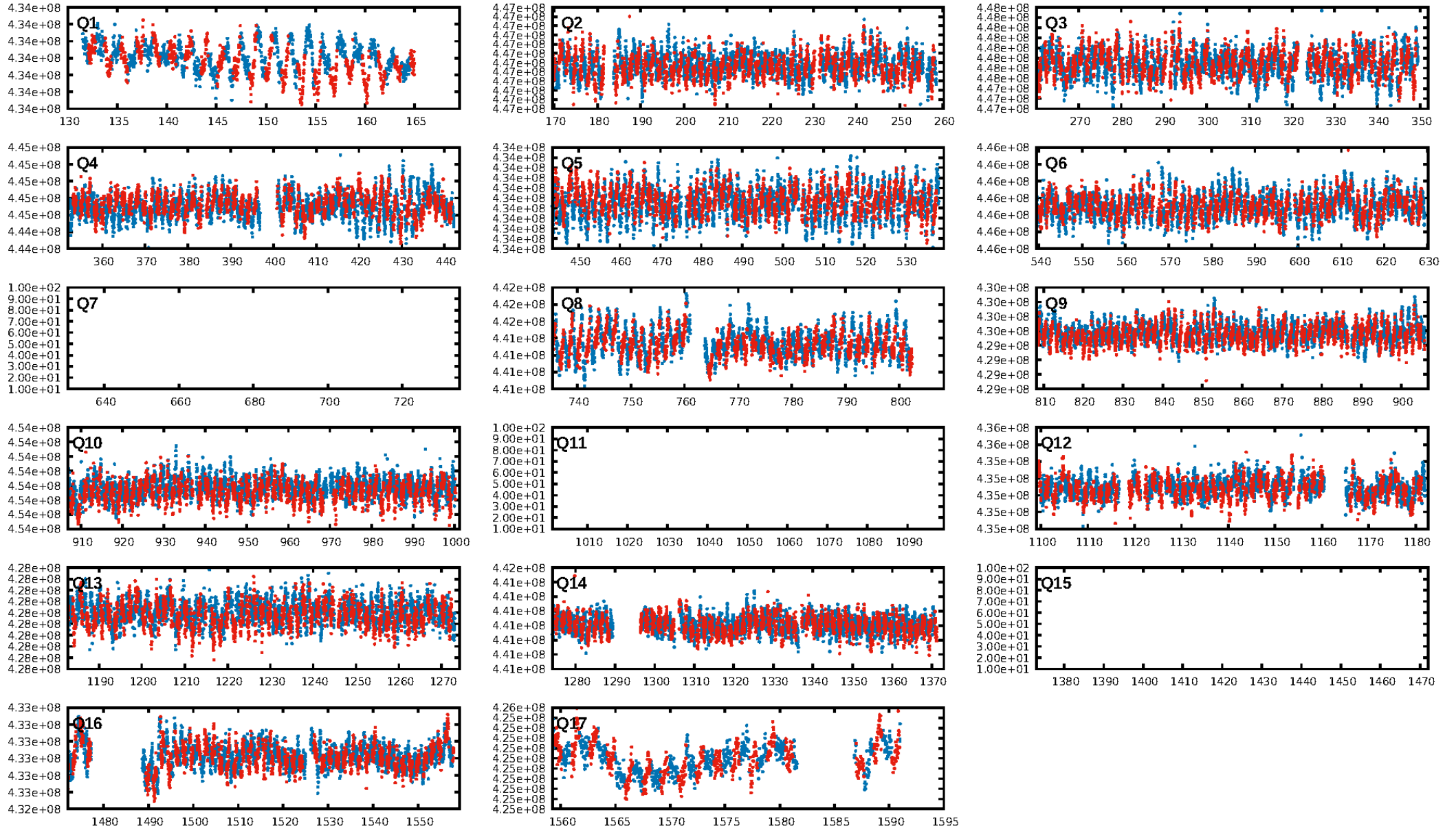
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [71.76 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [626/627]
GhostDiagnostic-chr: 1.759
Centroid-sig: 7.3%
Centroid-so: 1.470 arcsec [1.99 σ]
OotOffset-rm: 0.605 arcsec [2.08 σ]
KicOffset-rm: 0.705 arcsec [2.54 σ]
OotOffset-st: 4/1/4/3 [12]
KicOffset-st: 4/1/4/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [14/14]

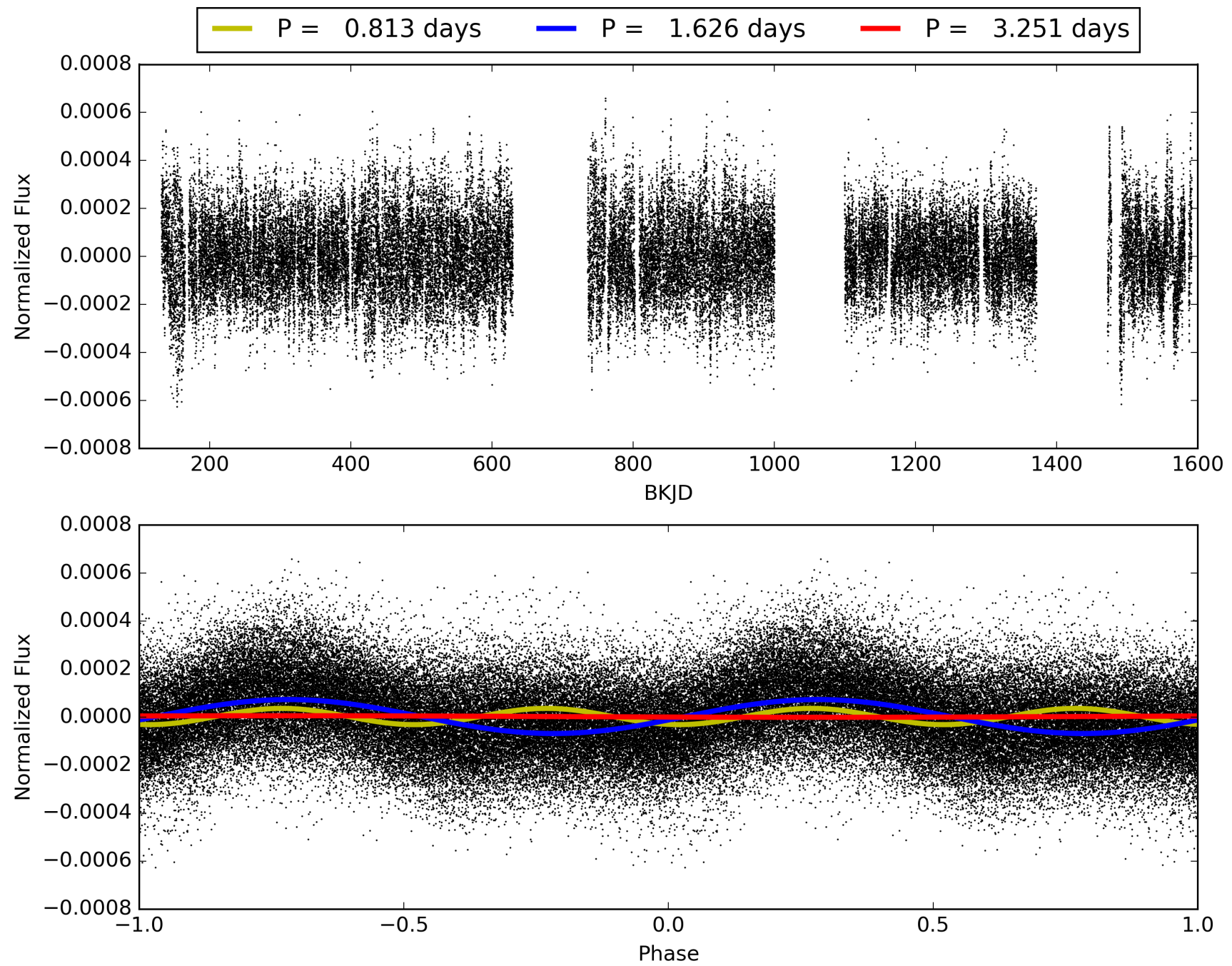
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:38:29 Z

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

TCE 010353924-01, PDC Light Curves

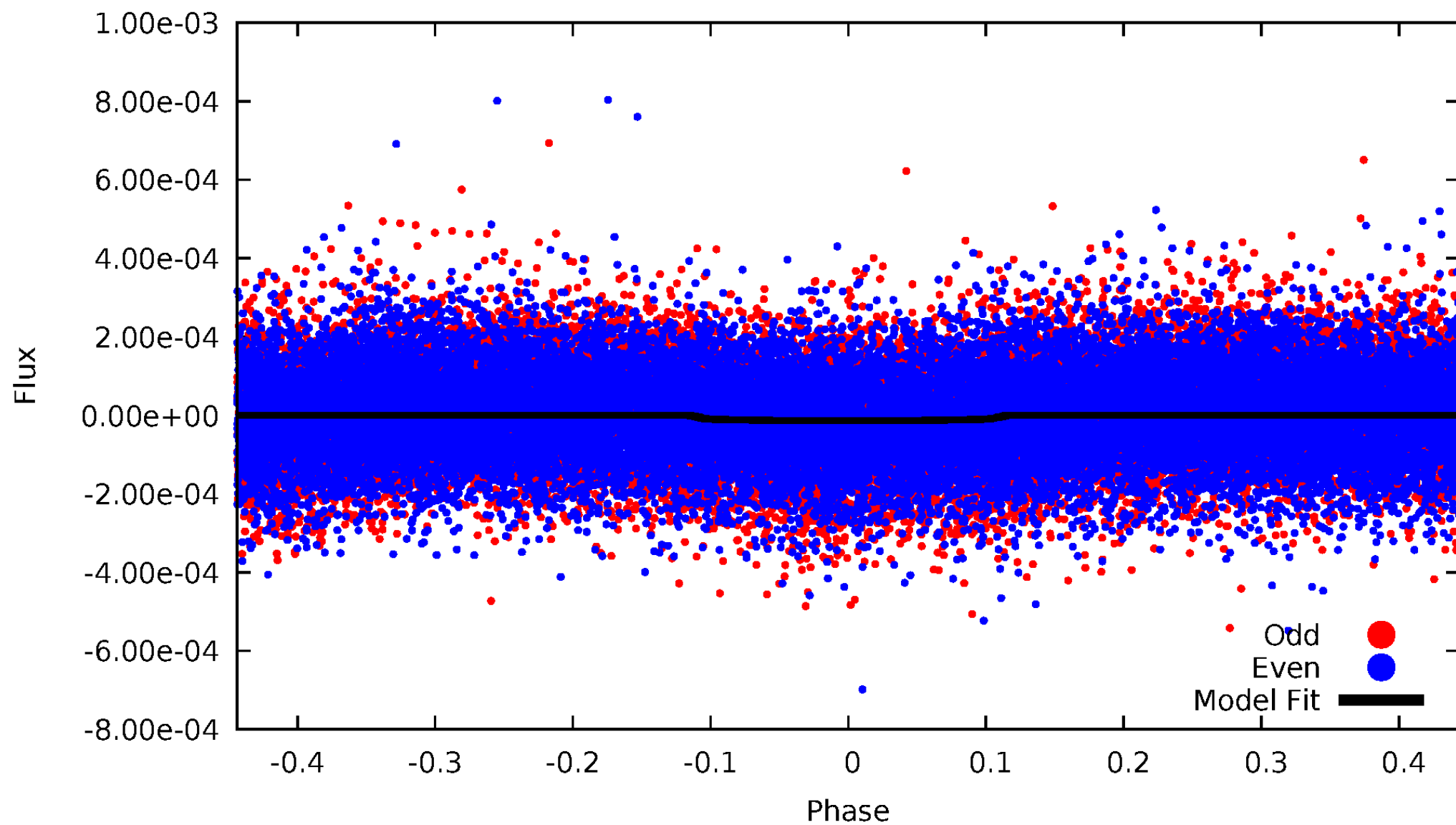


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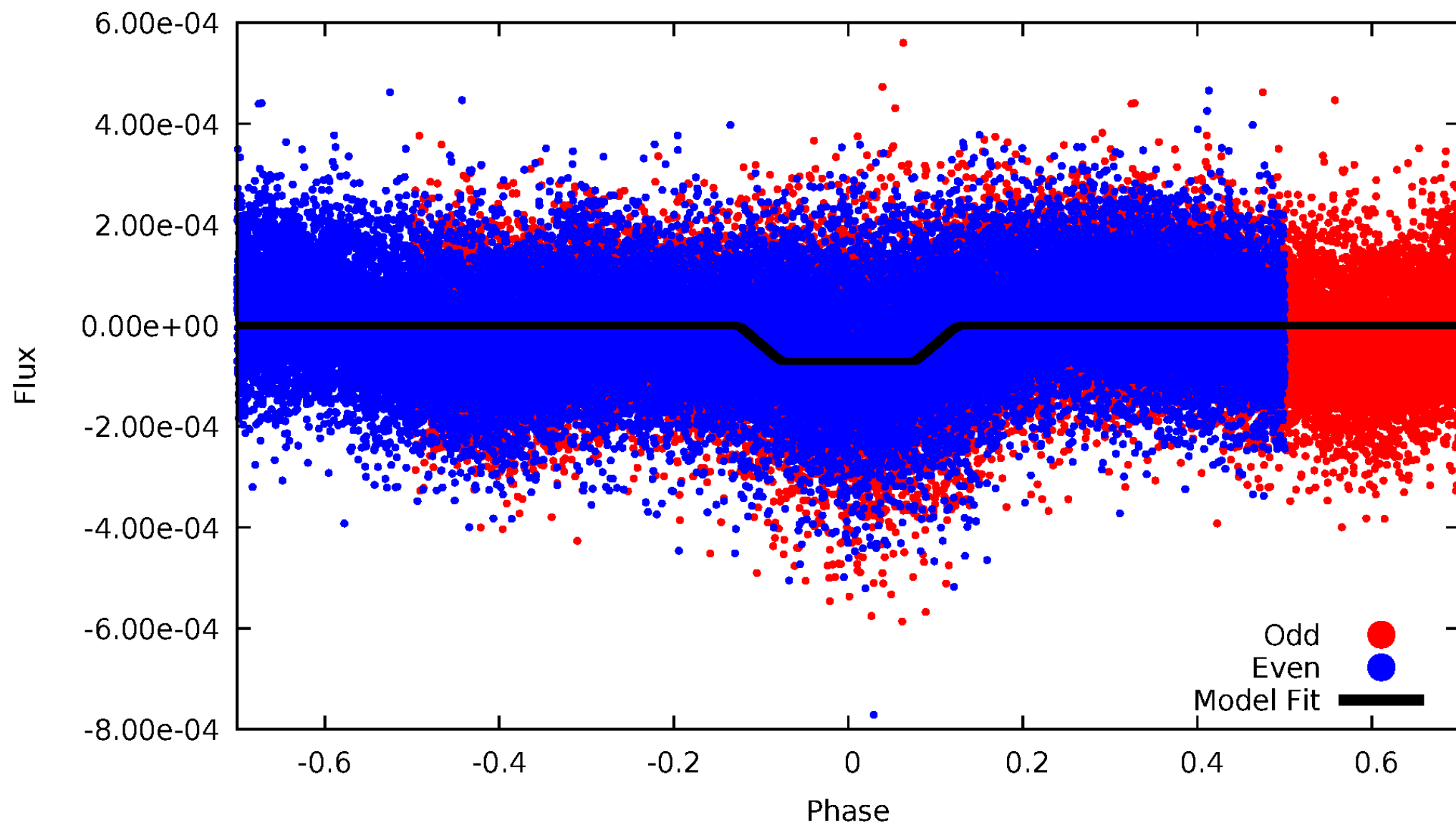
DV Odd/Even

TCE 010353924-01

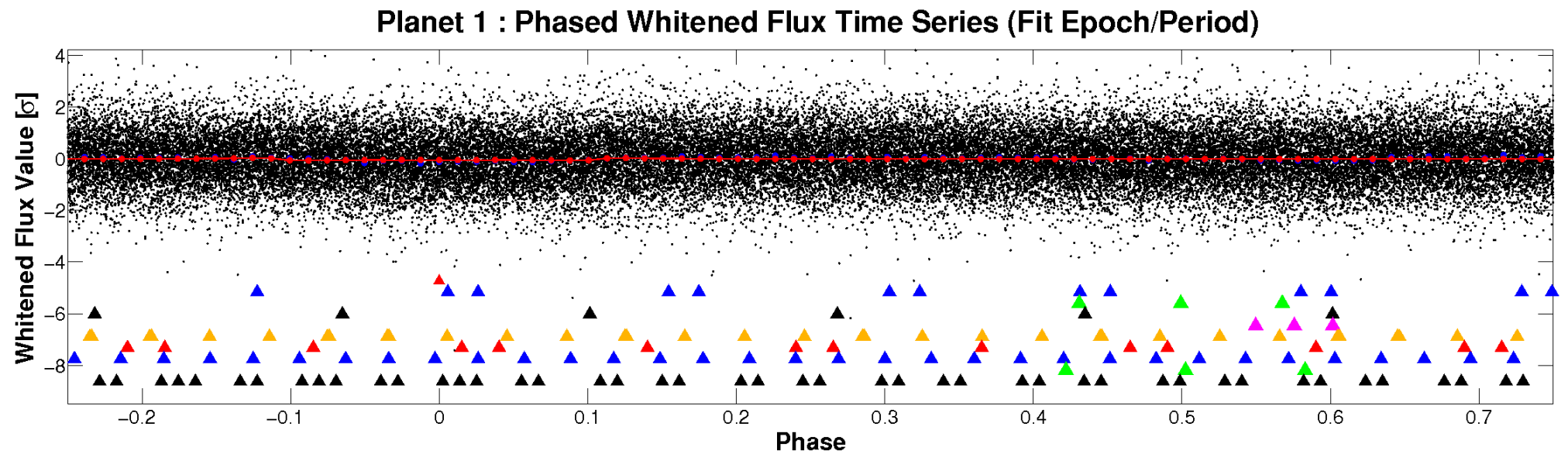
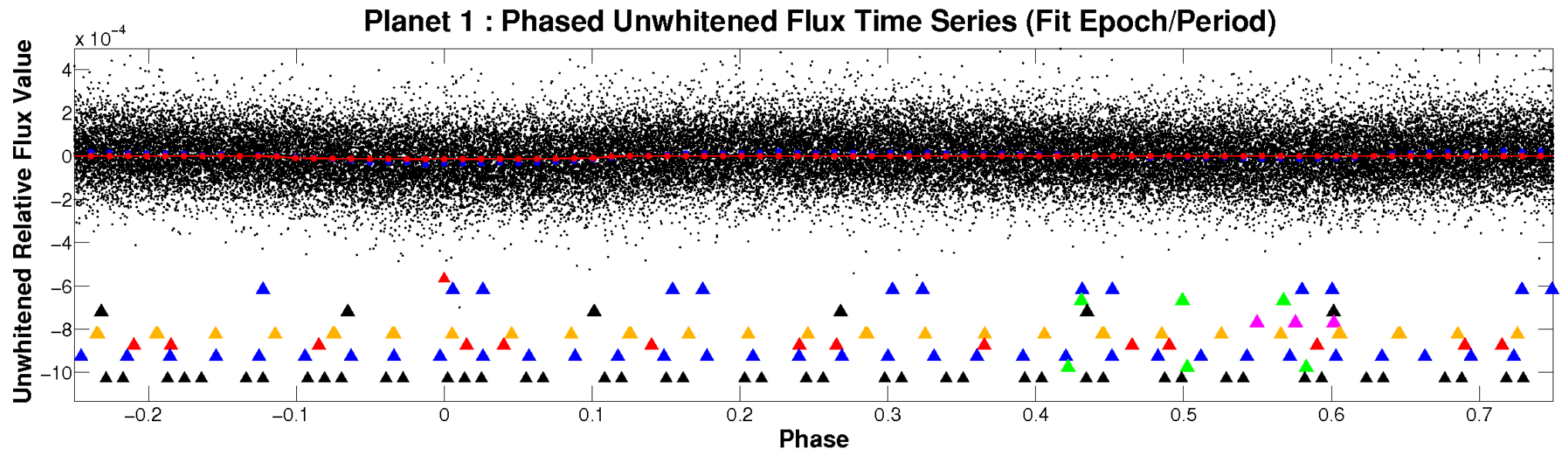


ALT Odd/Even

TCE 010353924-01

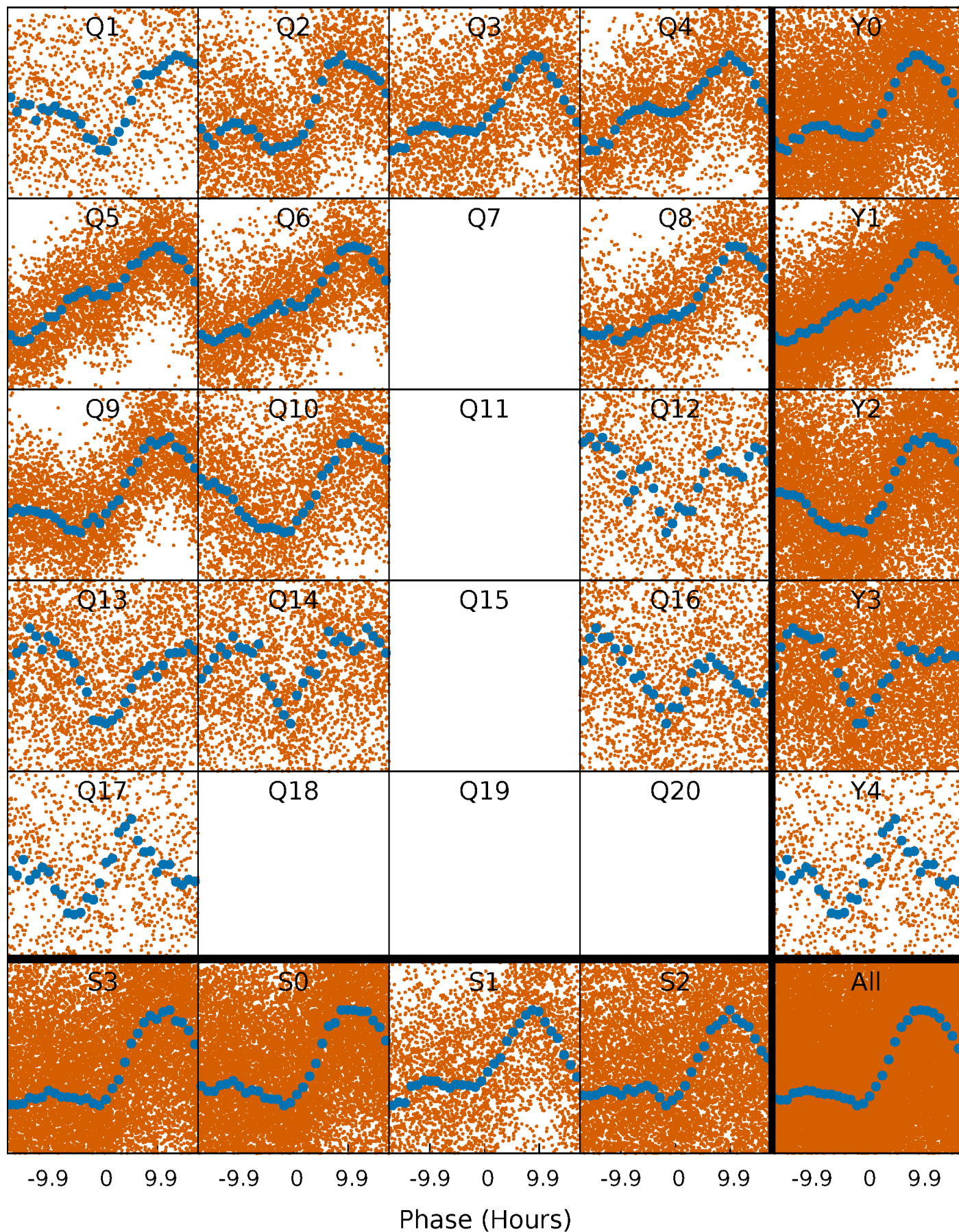


Non-Whitened Vs. Whitened Light Curve



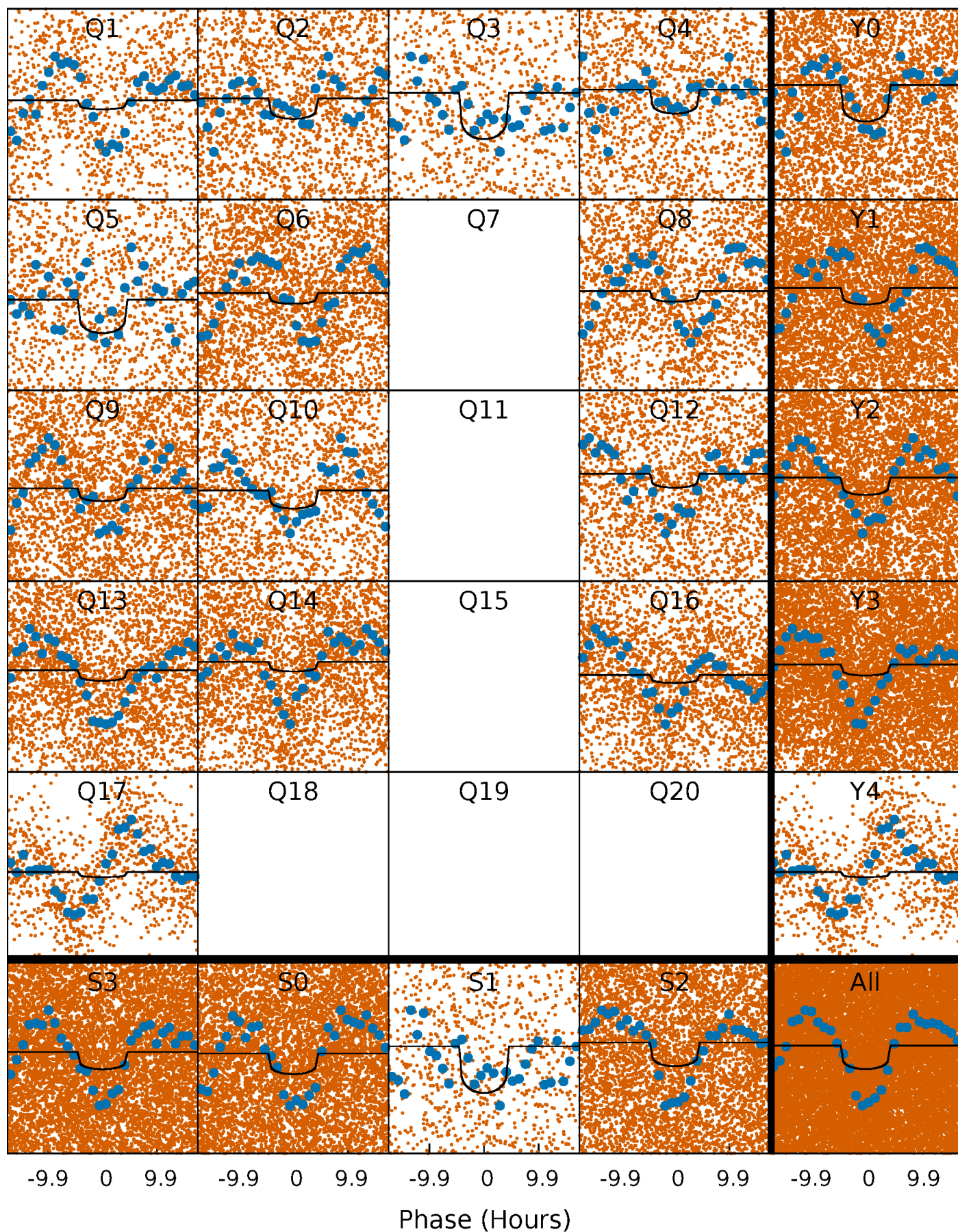
PDC Quarter-Phased Transit Curves

TCE 010353924-01 P= 1.625617 Days $T_0=132.418256$ (BKJD)



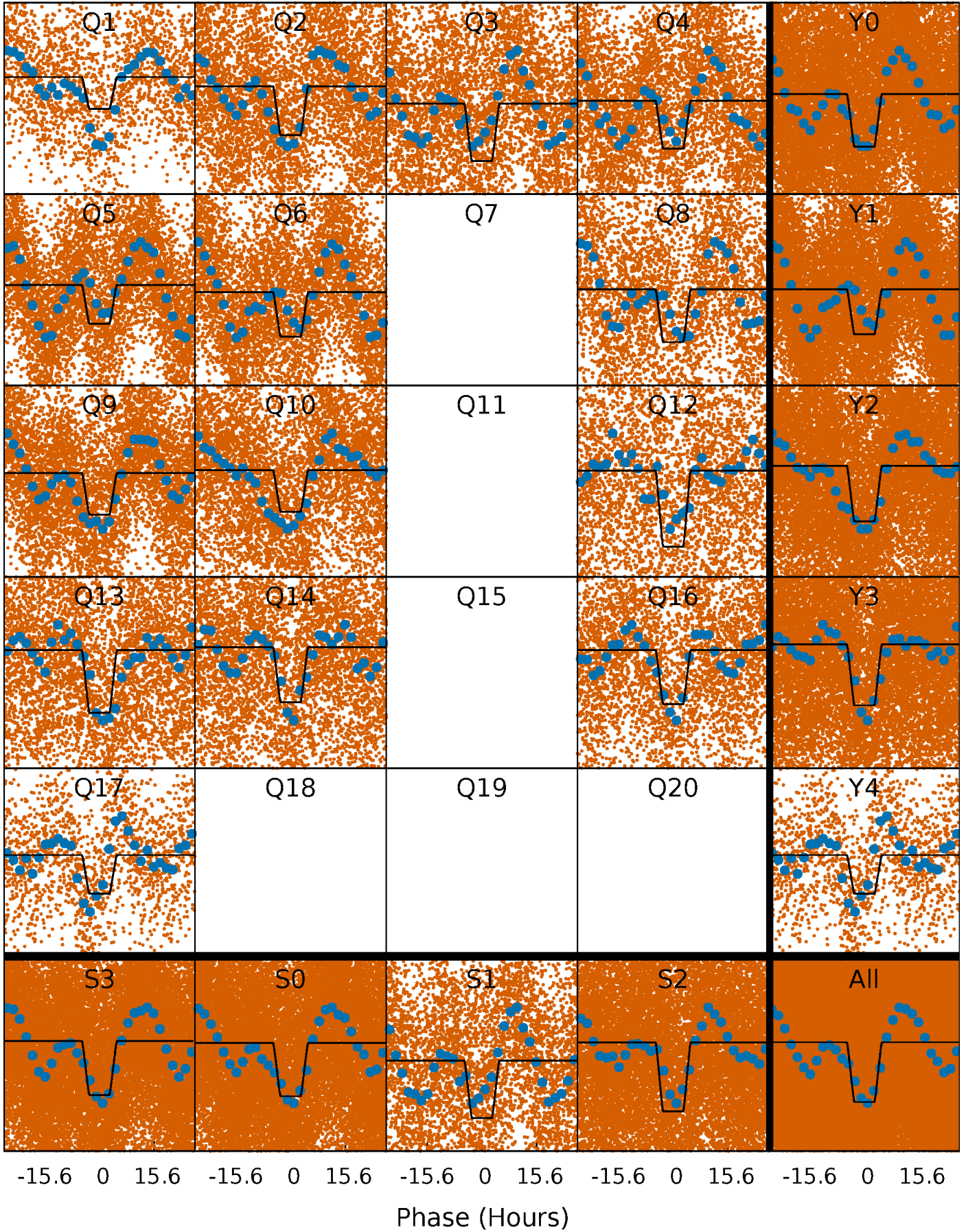
DV Quarter-Phased Transit Curves

TCE 010353924-01 P= 1.625617 Days $T_0=132.418256$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

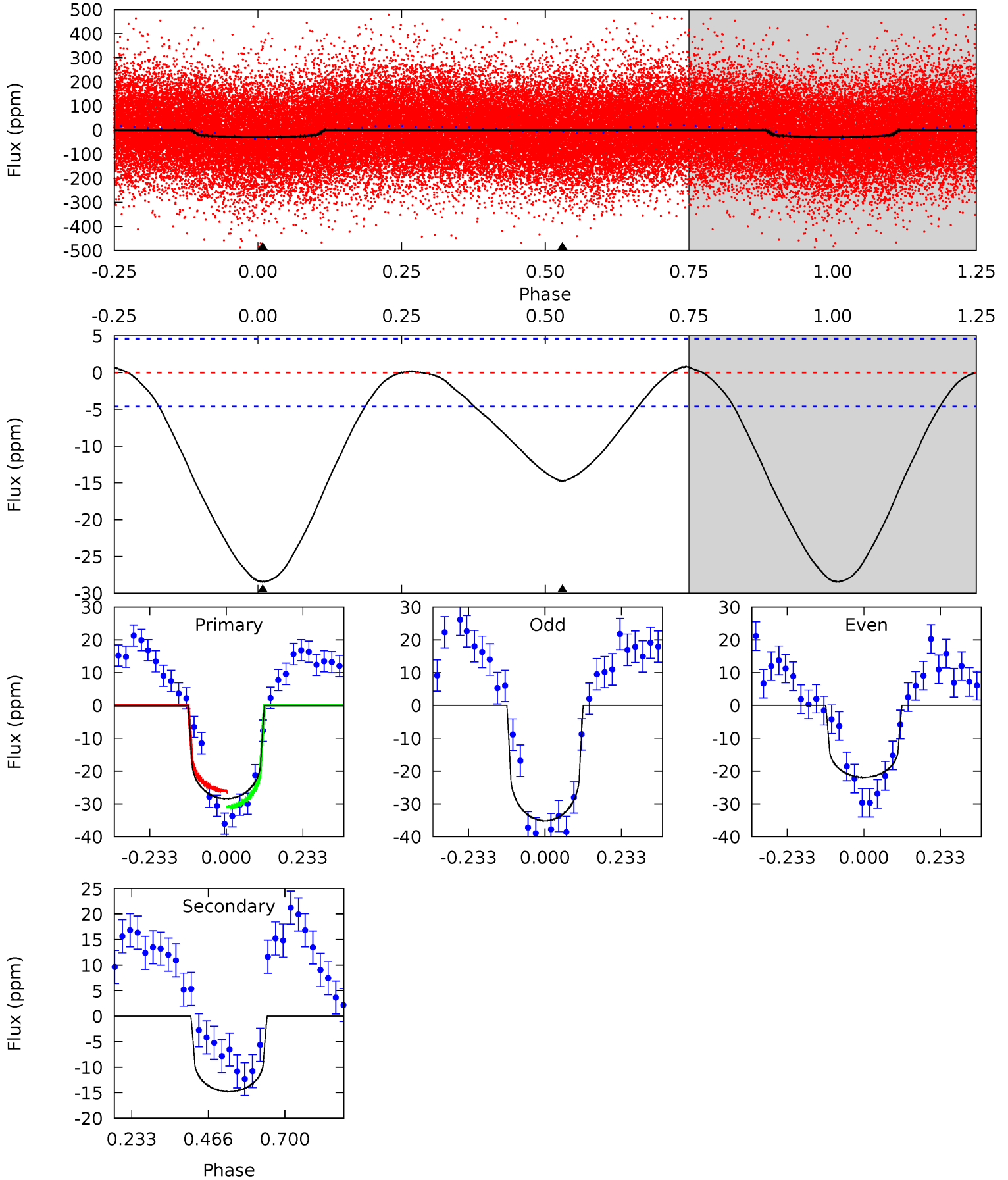
TCE 010353924-01 P= 1.625529 Days $T_0=132.426601$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-01, P = 1.625617 Days, E = 130.792639 Days

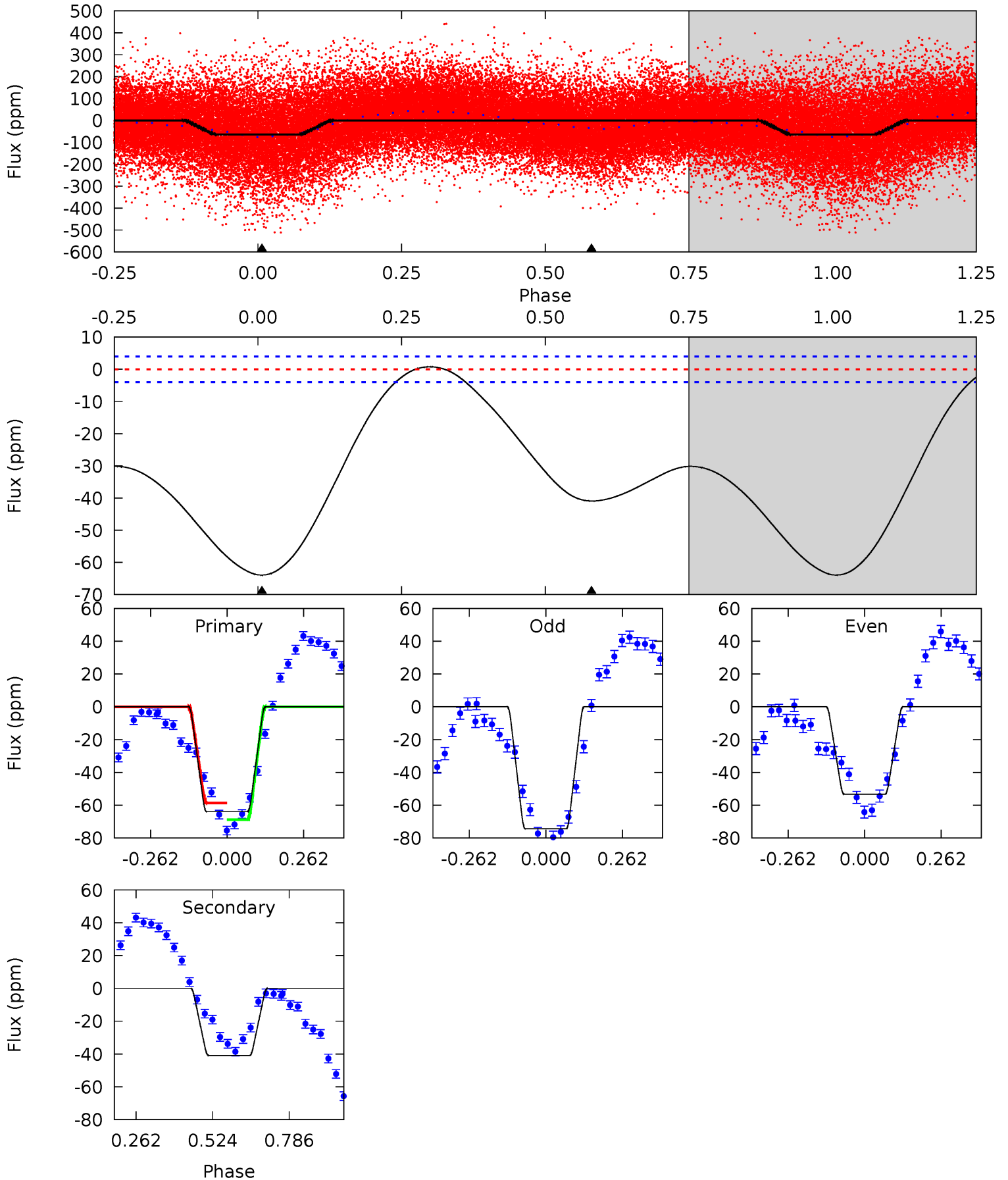
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	14.0	0	0	4.38	1.19	0.23	27.0	27.0	14.0	14.0	6.30	1.13	0.03	2.37



Alt Model-Shift Uniqueness Test

010353924-01, P = 1.625529 Days, E = 130.801072 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
70.0	44.8	0	0	4.36	1.12	1.22	70.0	70.0	44.8	44.8	11.6	1.12	0.01	5.18



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15 ± 1	$0.66^{+0.26}_{-0.23}$	3101^{+253}_{-262}	6809^{+1959}_{-921}	16^{+22}_{-8}
Alt.	-41 ± 1	$1.57^{+0.34}_{-0.30}$	3074^{+245}_{-227}	5704^{+462}_{-351}	$8.324^{+4.020}_{-2.679}$

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

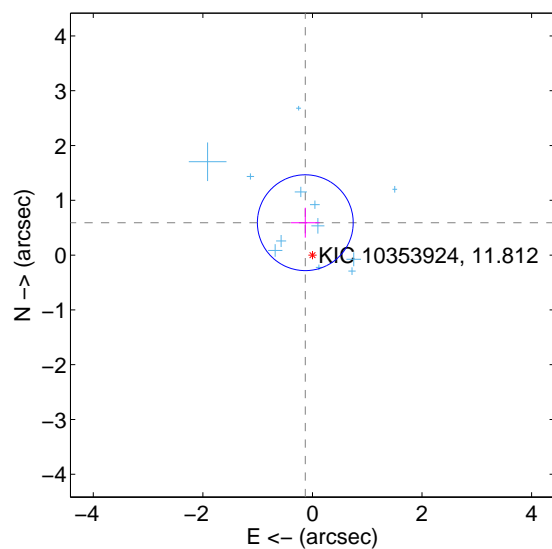
Supplemental centroid analysis for 010353924-01. **Kepler magnitude: 11.81.** Transit SNR 6.12

There are 12 quarters with good PRF difference image offsets

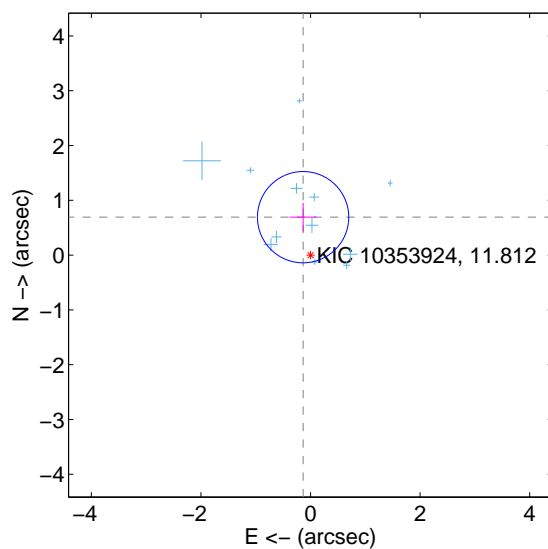
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.605 ± 0.291	2.08	0.130 ± 0.261	0.591 ± 0.273
PRF-fit source offset from KIC position	0.705 ± 0.278	2.54	0.135 ± 0.244	0.692 ± 0.262
photometric centroid source offset	1.47 ± 0.74	1.99	1.45 ± 0.74	0.22 ± 0.77

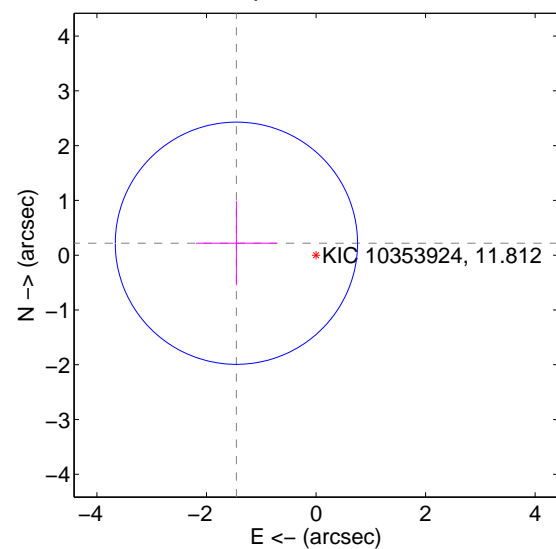
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

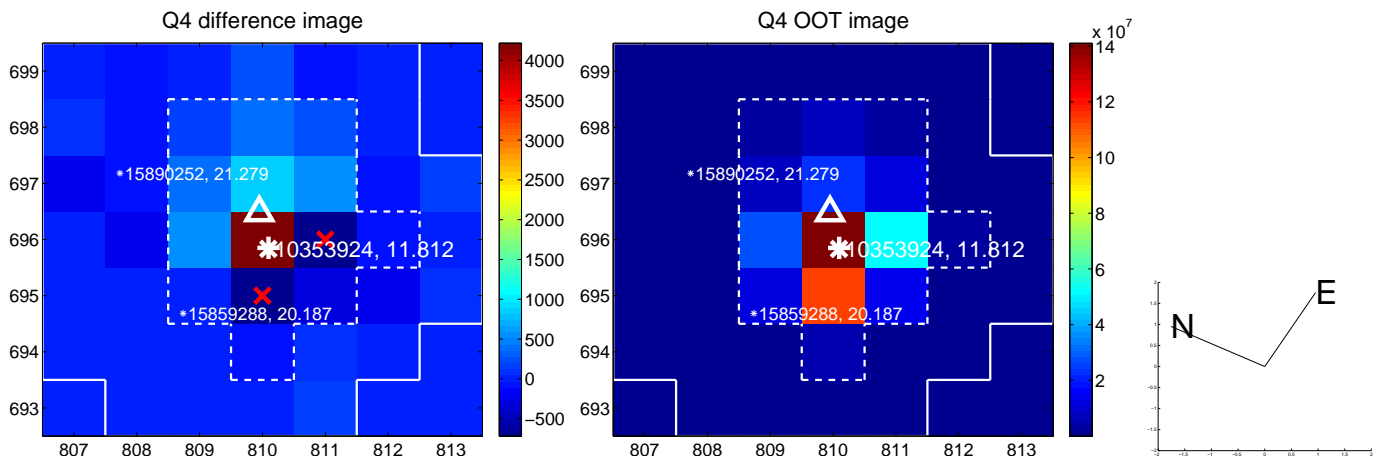
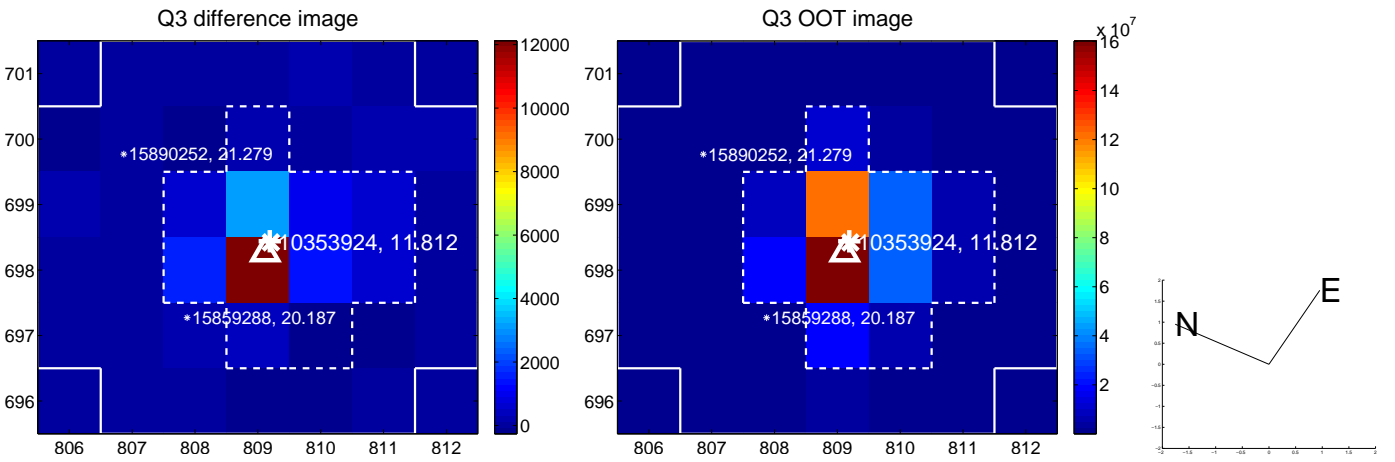
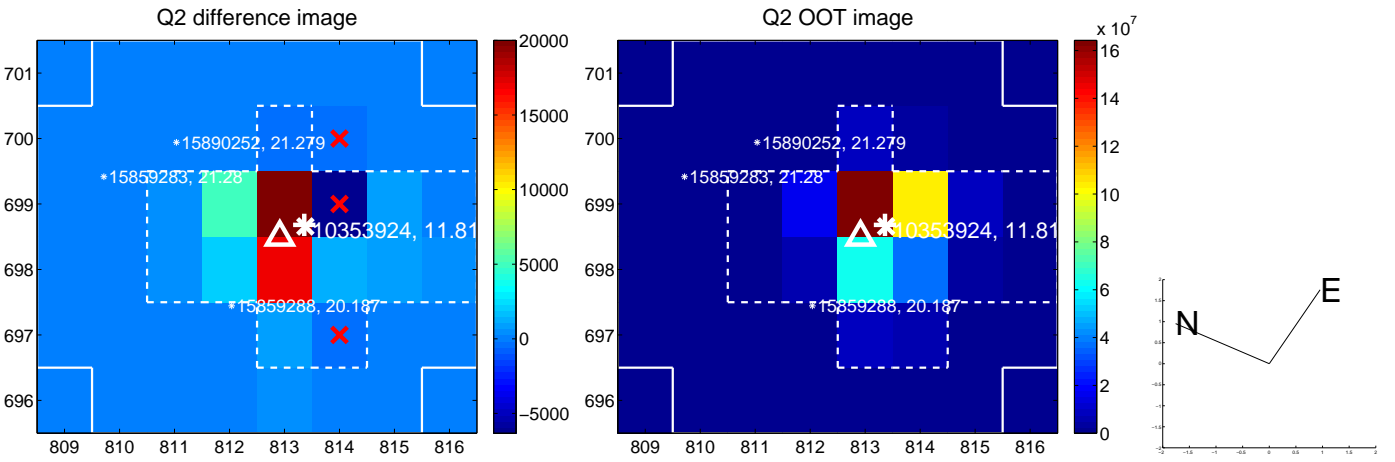
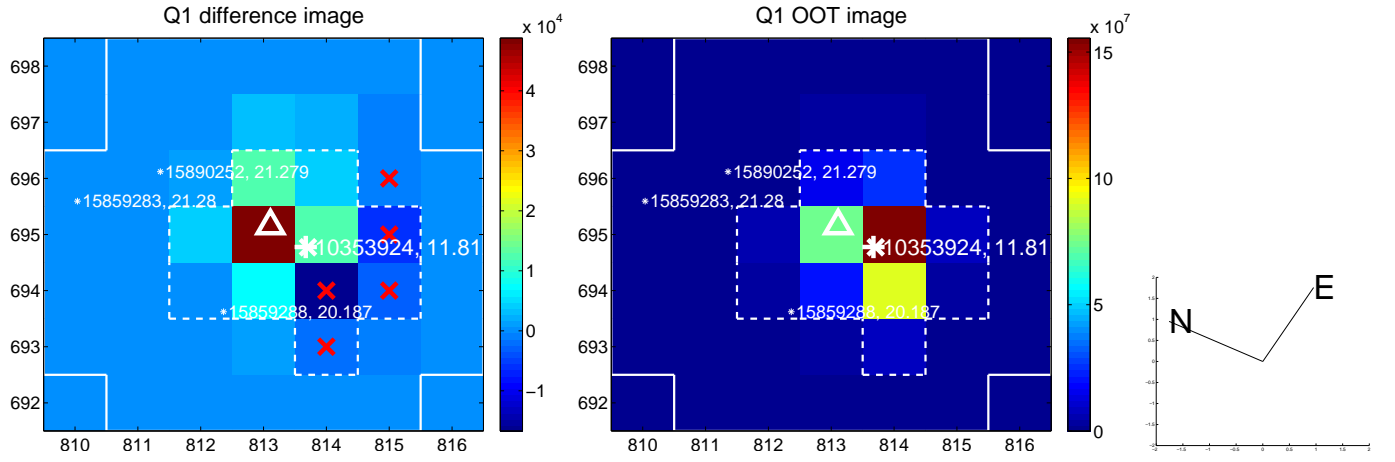


offset from photometric centroids

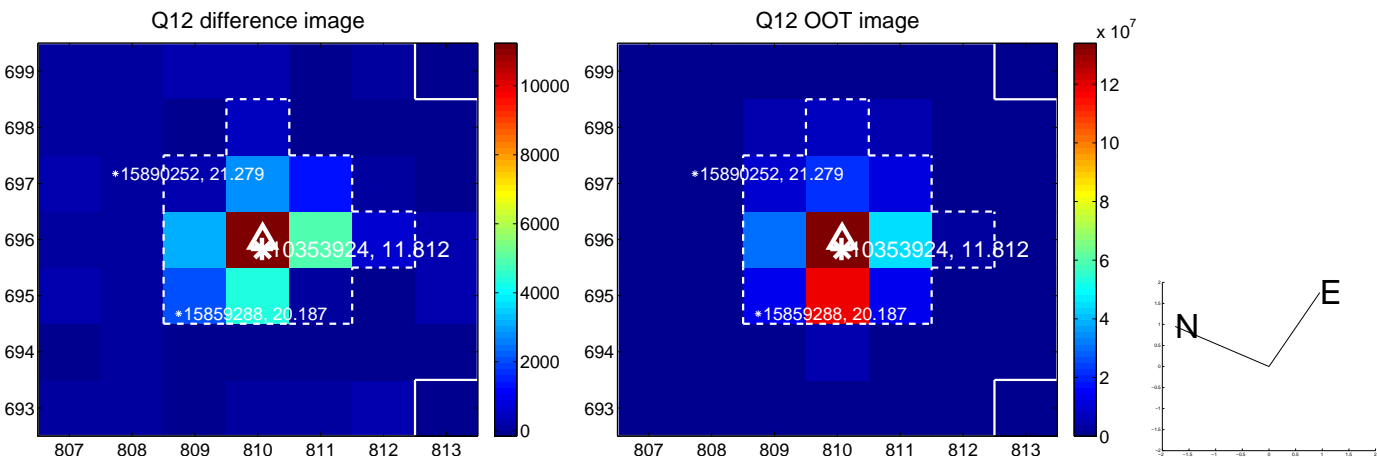
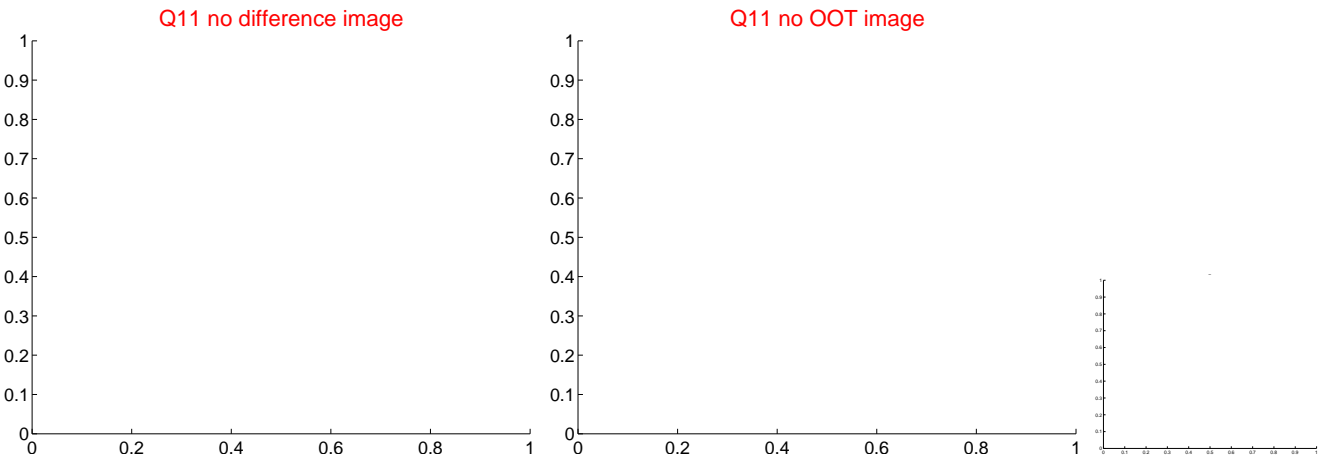
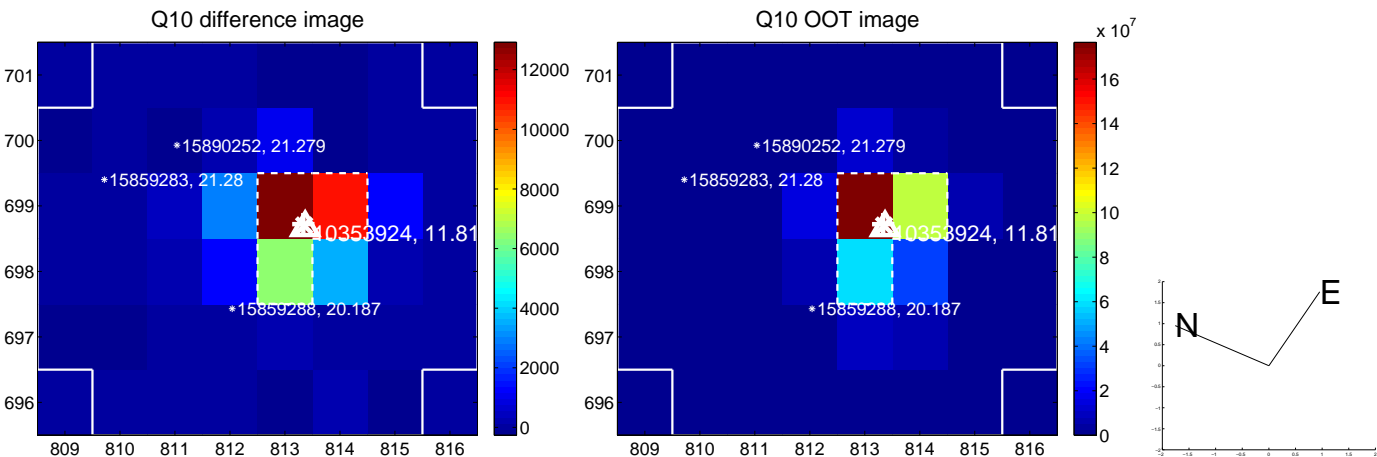
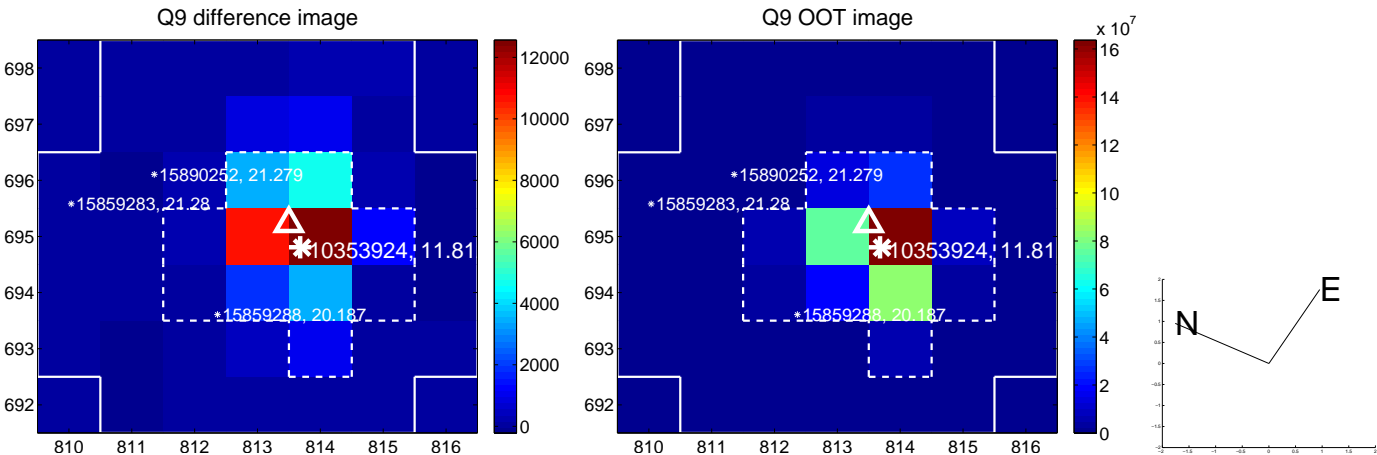


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

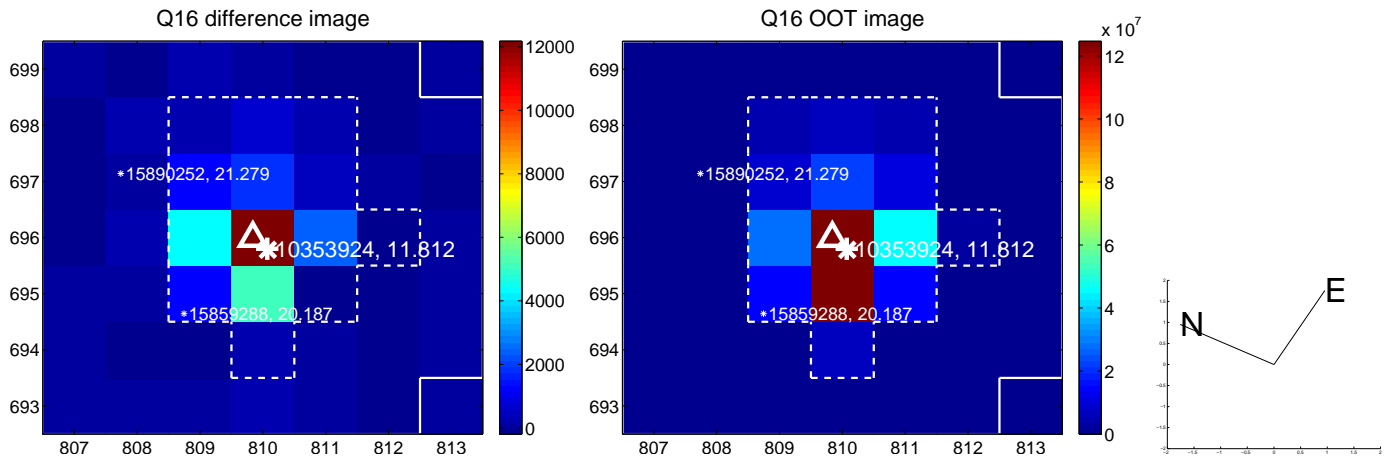
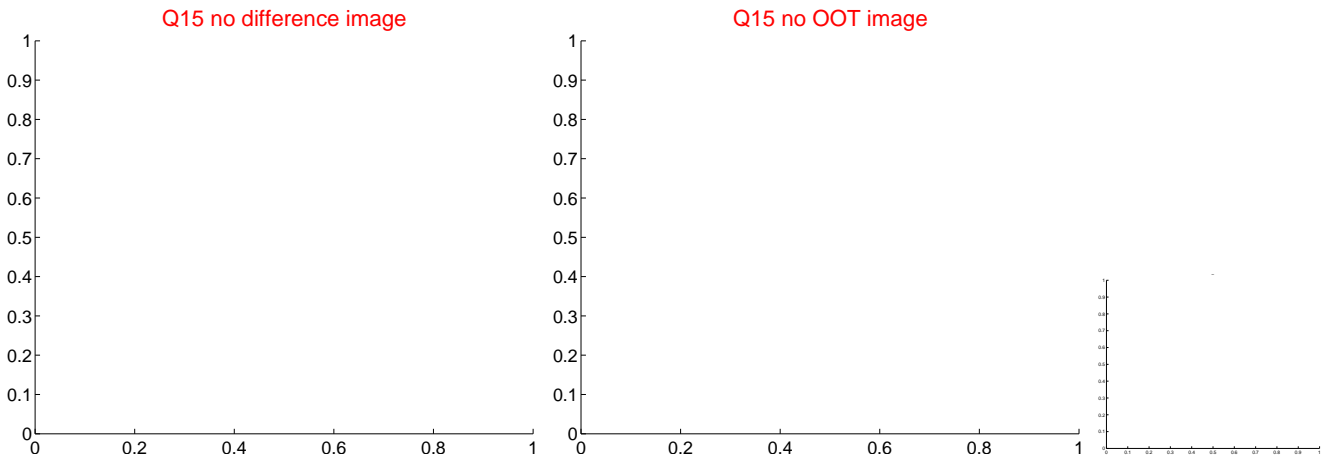
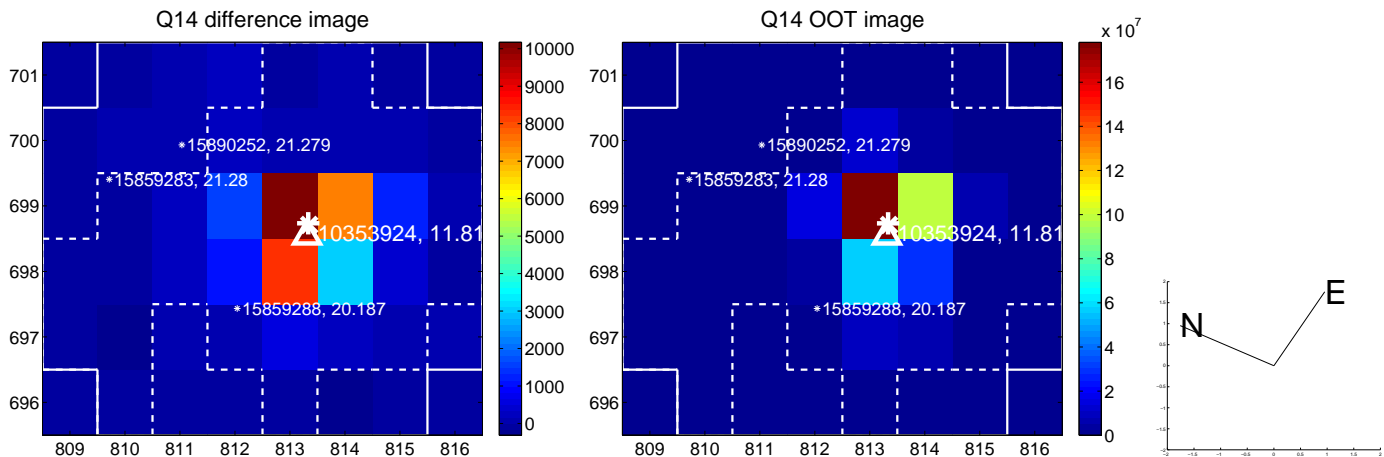
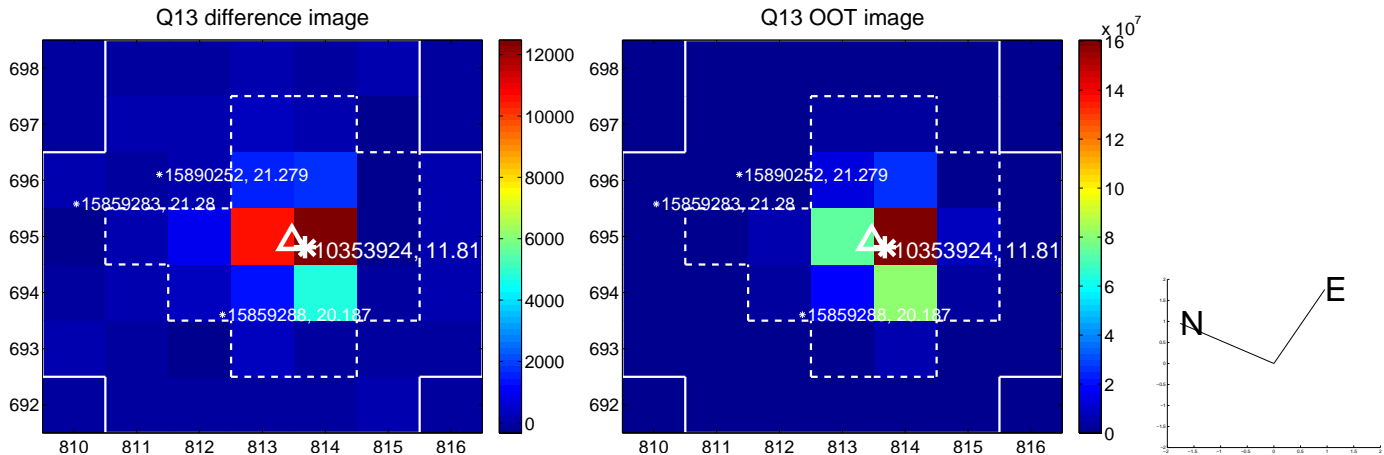
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



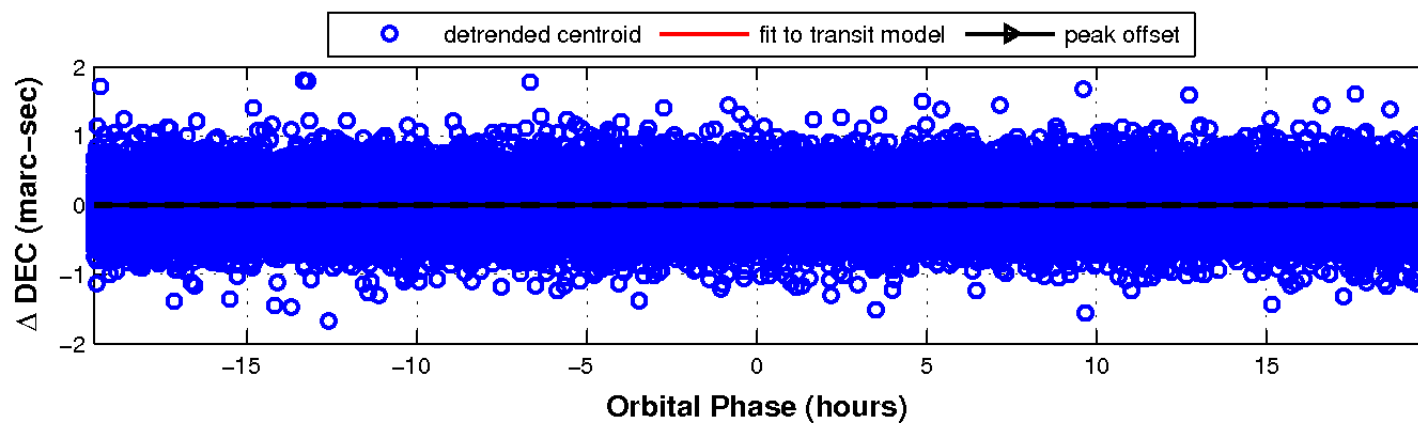
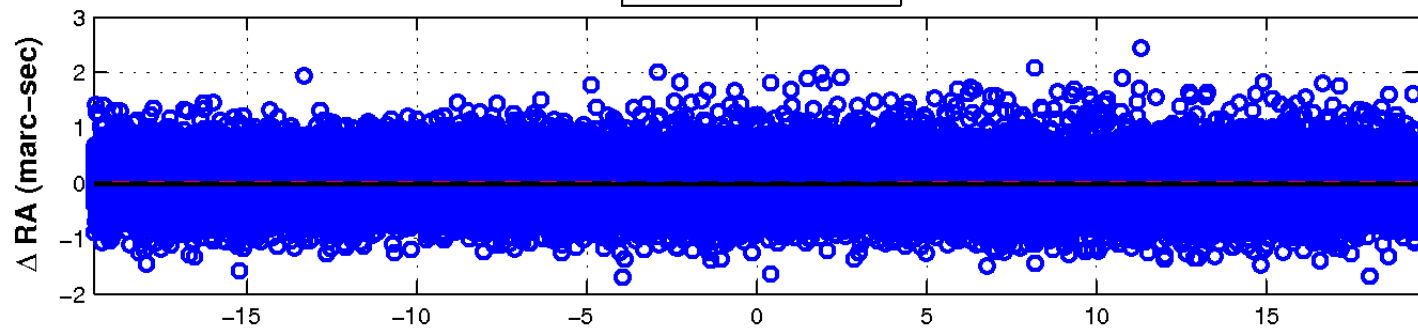
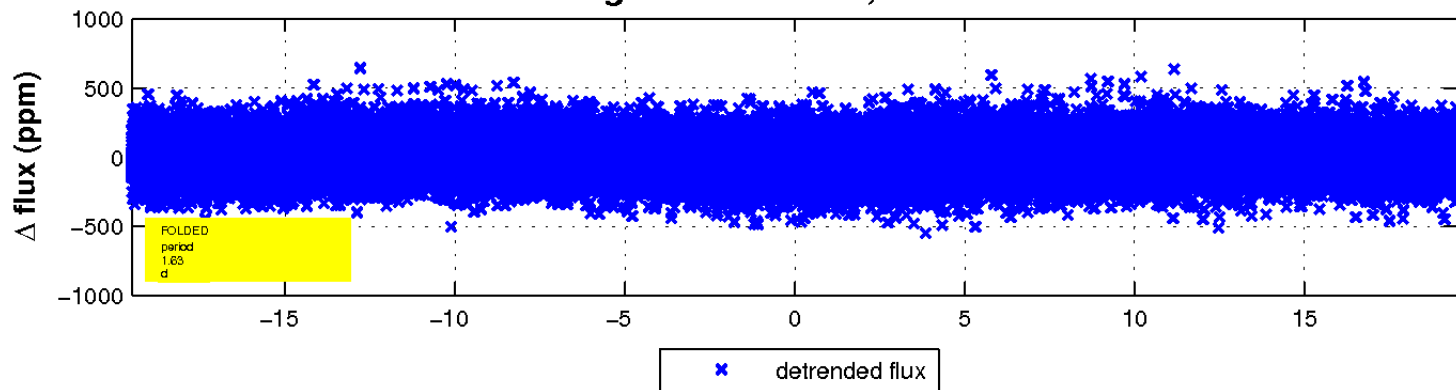
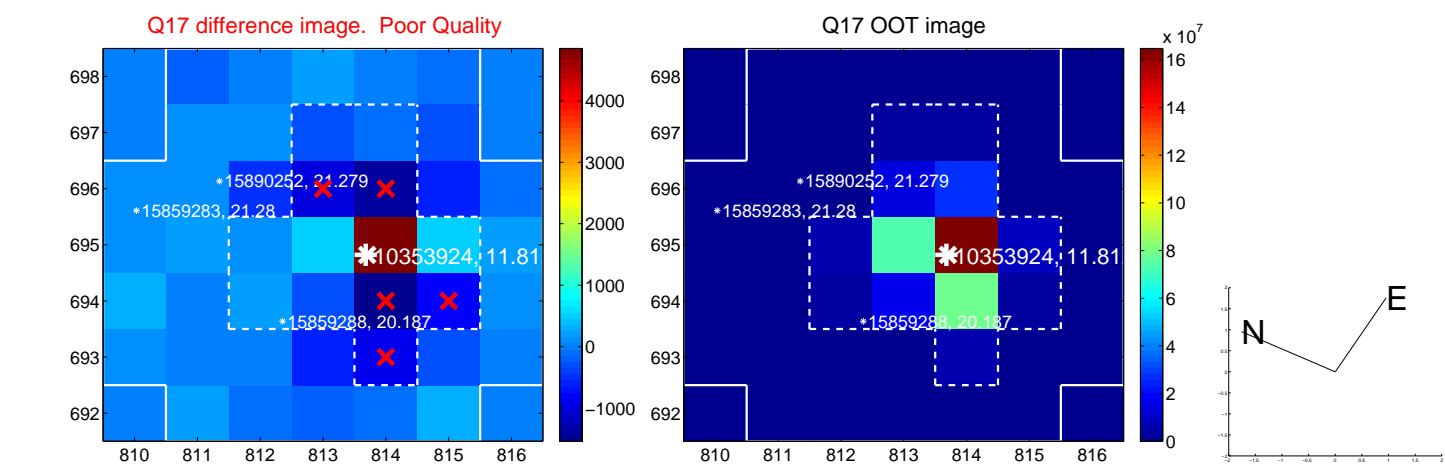
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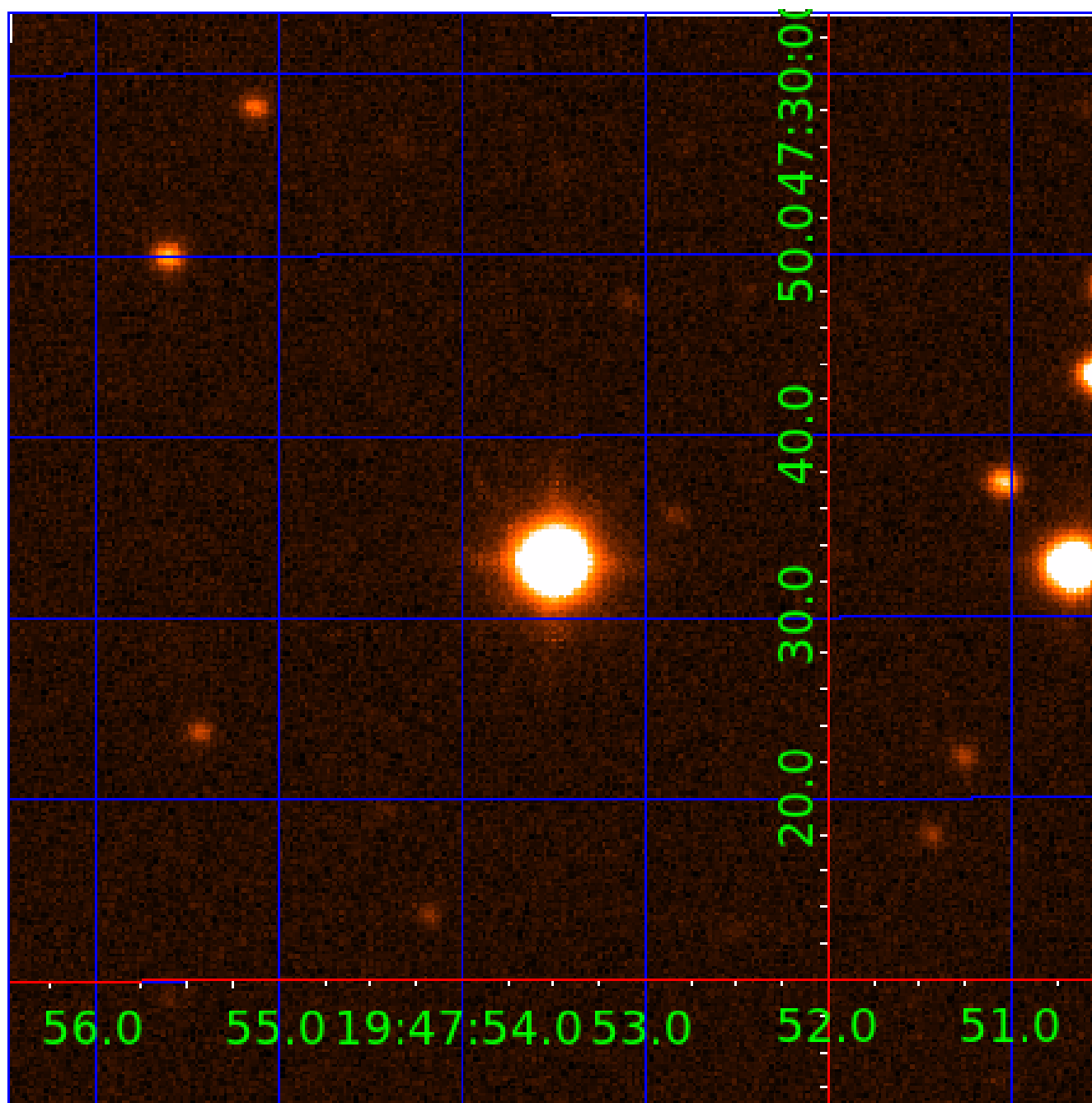


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UKIRT Image

Declination



KIC 010353924

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

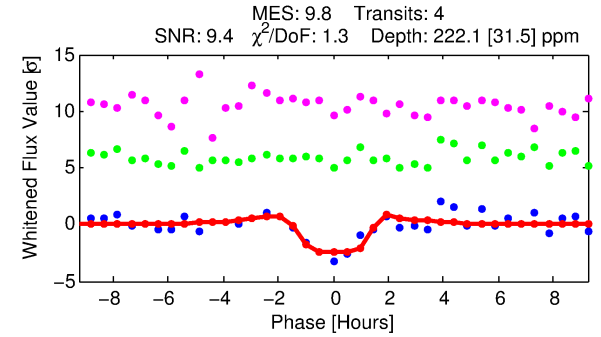
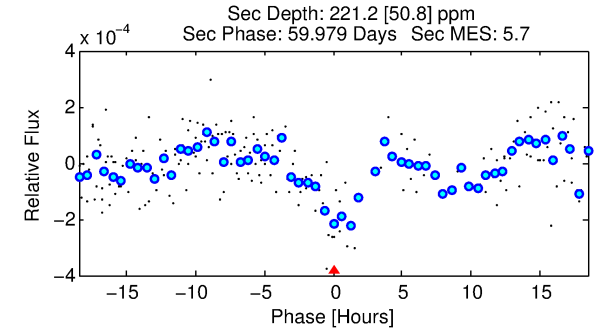
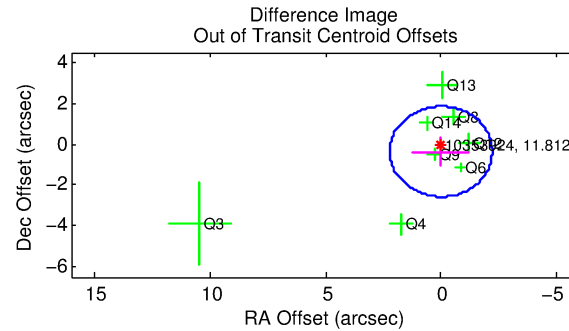
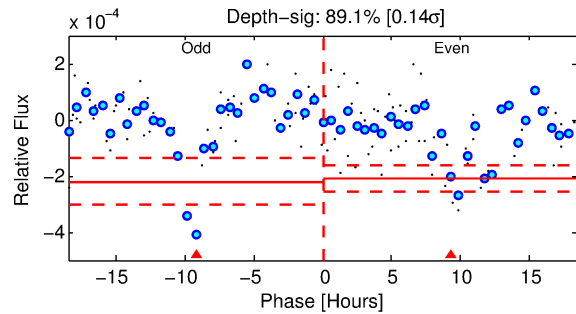
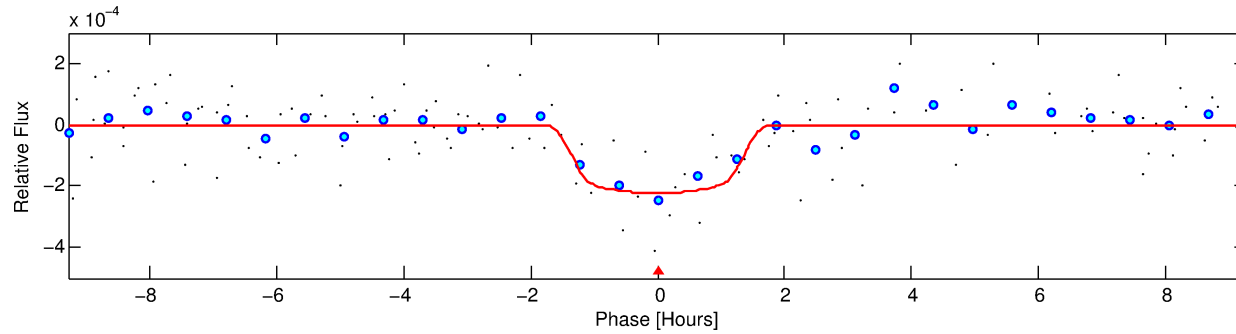
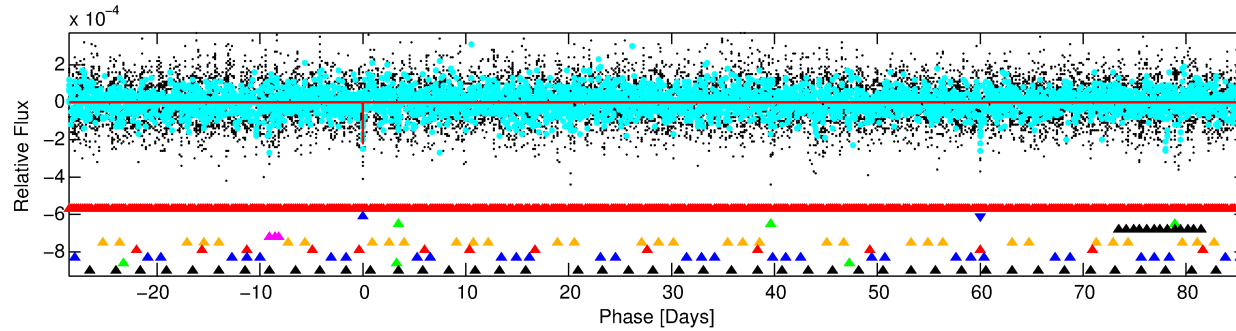
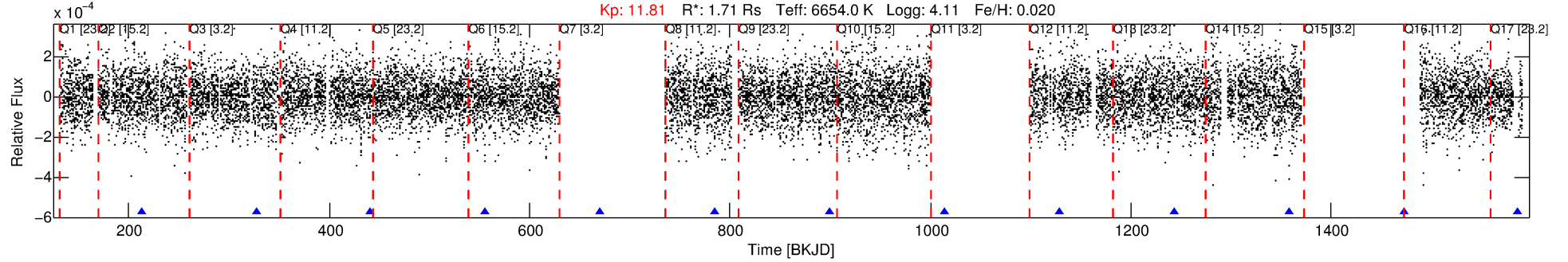
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-02

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 2 of 10 Period: 114.485 d



DV Fit Results:

Period = 114.48512 [0.00112] d
Epoch = 212.5994 [0.0067] BKJD
Rp/R* = 0.0163 [0.0049]
a/R* = 118.88 [196.90]
b = 0.93 [0.26]
Seff = 19.43 [7.90]
Teq = 535 [54] K
Rp = 3.05 [1.32] Re
a = 0.5147 [0.1340] AU
Ag = 3466.07 [2584.98] [1.34 σ]
Teffp = 6351 [1052] K [5.52 σ]

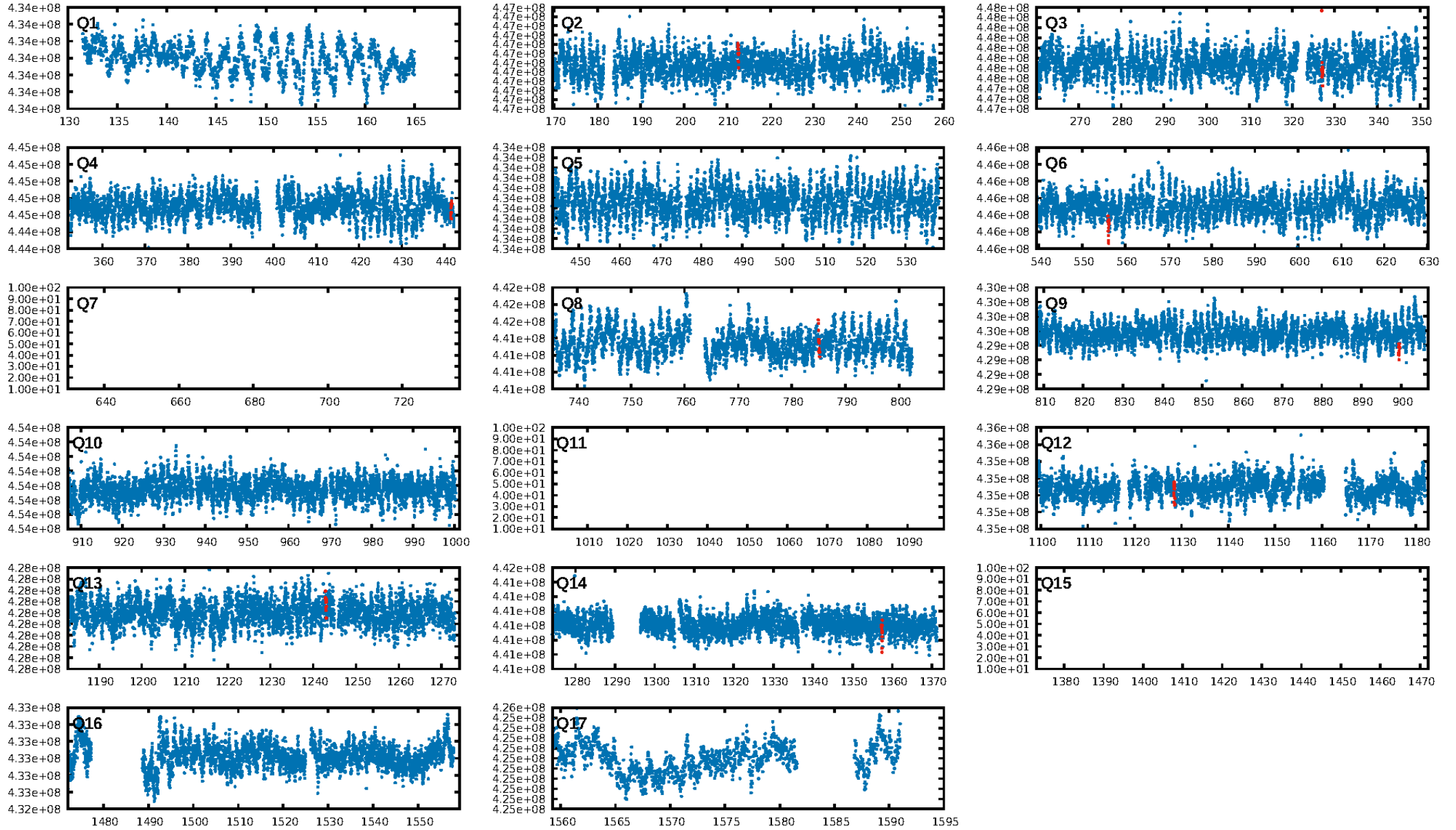
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.22 σ]
LongPeriod-sig: 99.2% [2.66 σ]
ModelChiSquare2-sig: 8.5%
ModelChiSquareGof-sig: 87.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.021
Centroid-sig: 24.6%
Centroid-so: 0.643 arcsec [0.98 σ]
OotOffset-rm: 0.359 arcsec [0.49 σ]
KicOffset-rm: 0.251 arcsec [0.29 σ]
OotOffset-st: 2/1/3/2 [8]
KicOffset-st: 2/1/3/2 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.44 [4/9]

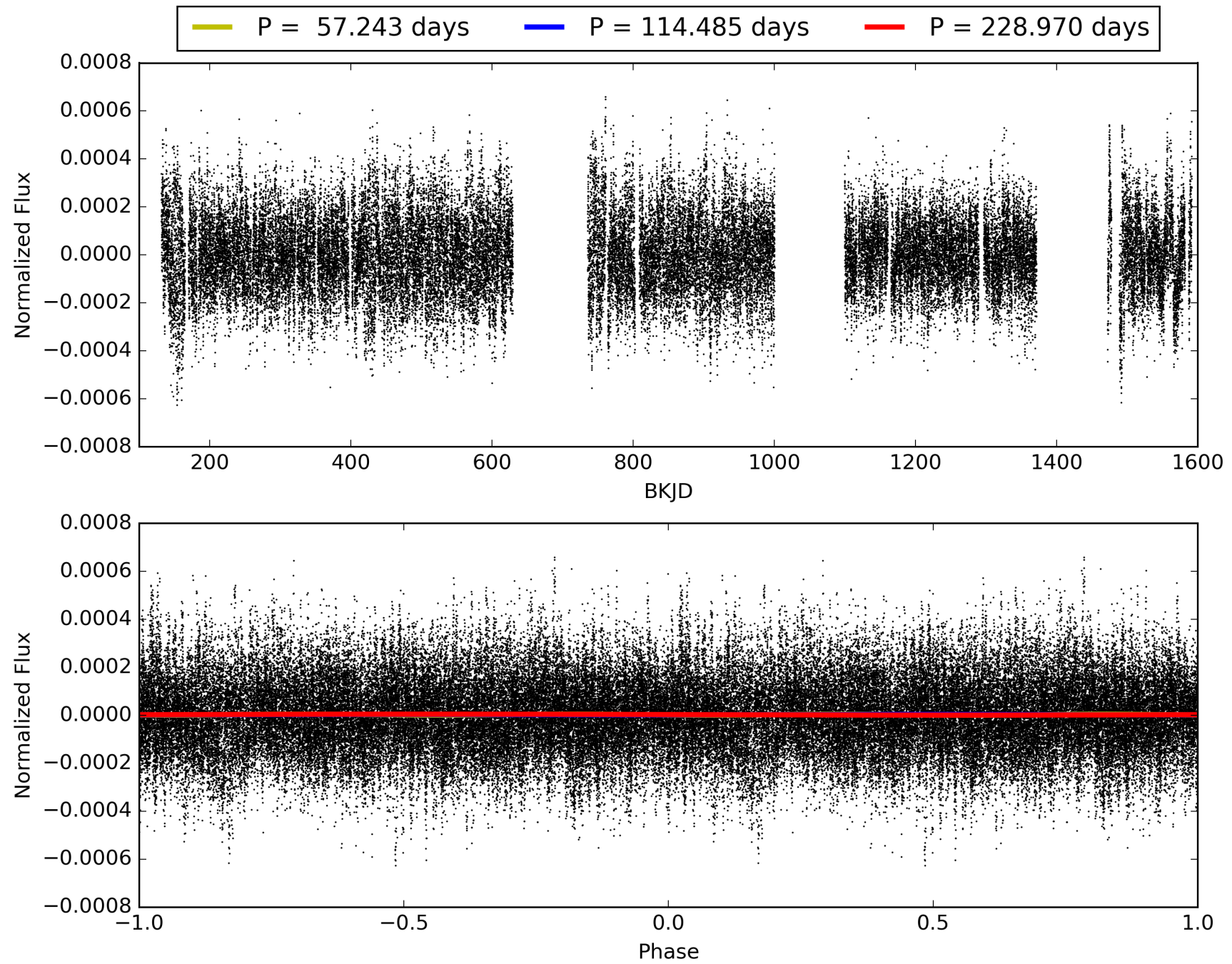
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:38:39 Z

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

TCE 010353924-02, PDC Light Curves

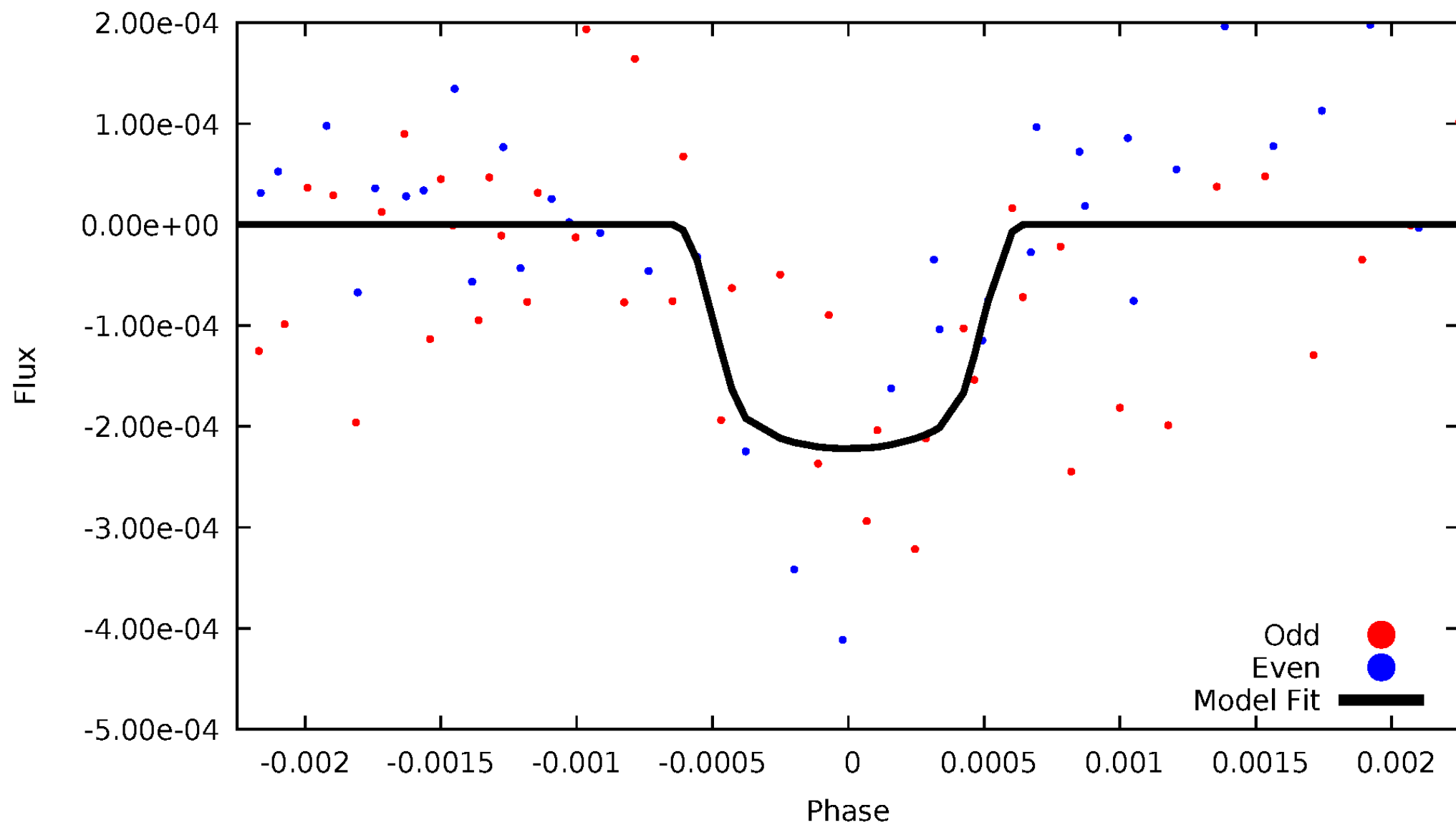


TCE 010353924-02



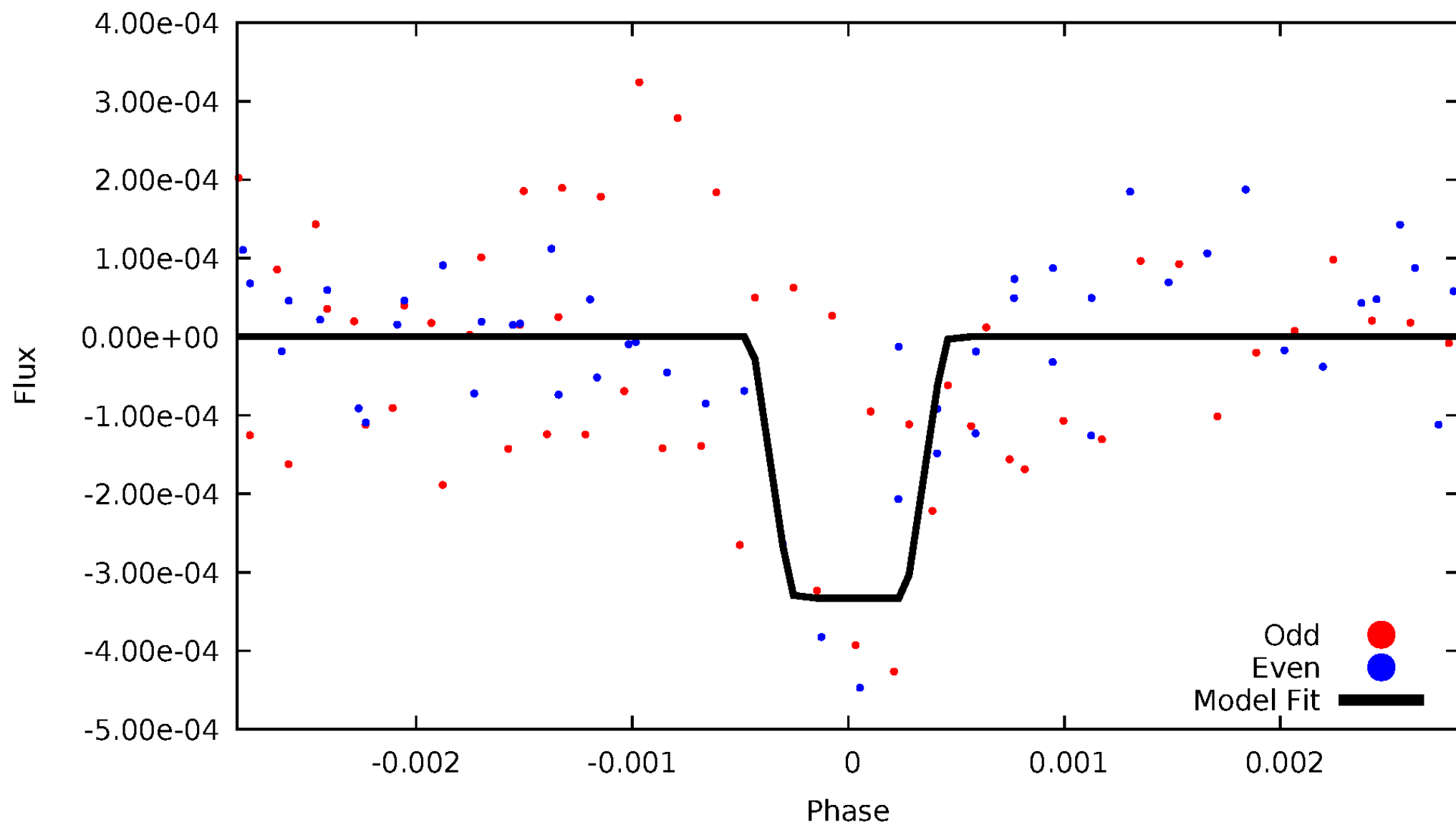
DV Odd/Even

TCE 010353924-02



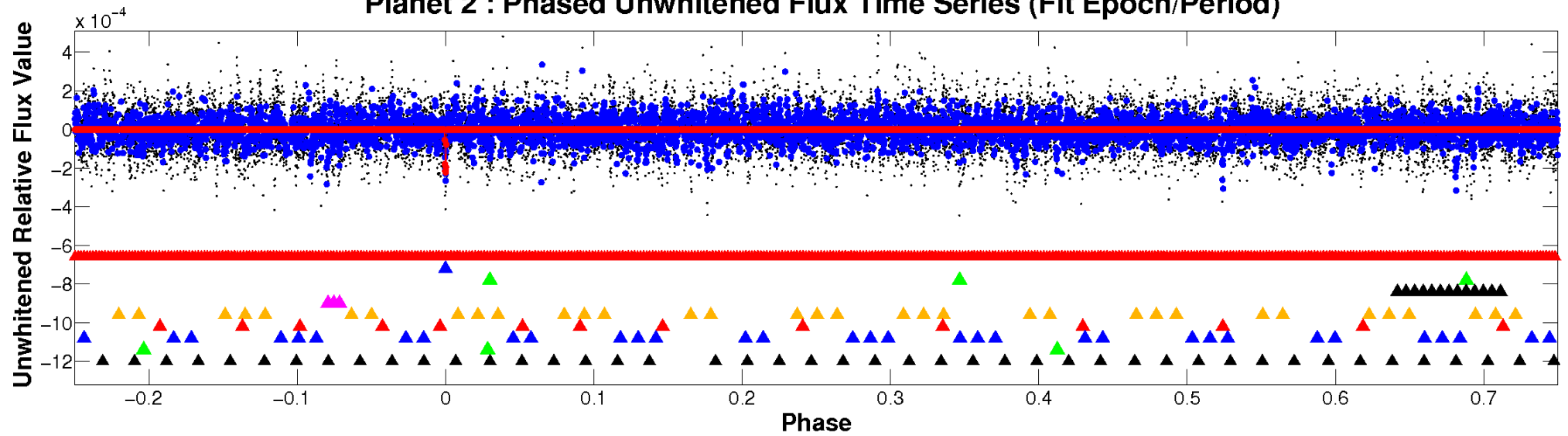
ALT Odd/Even

TCE 010353924-02

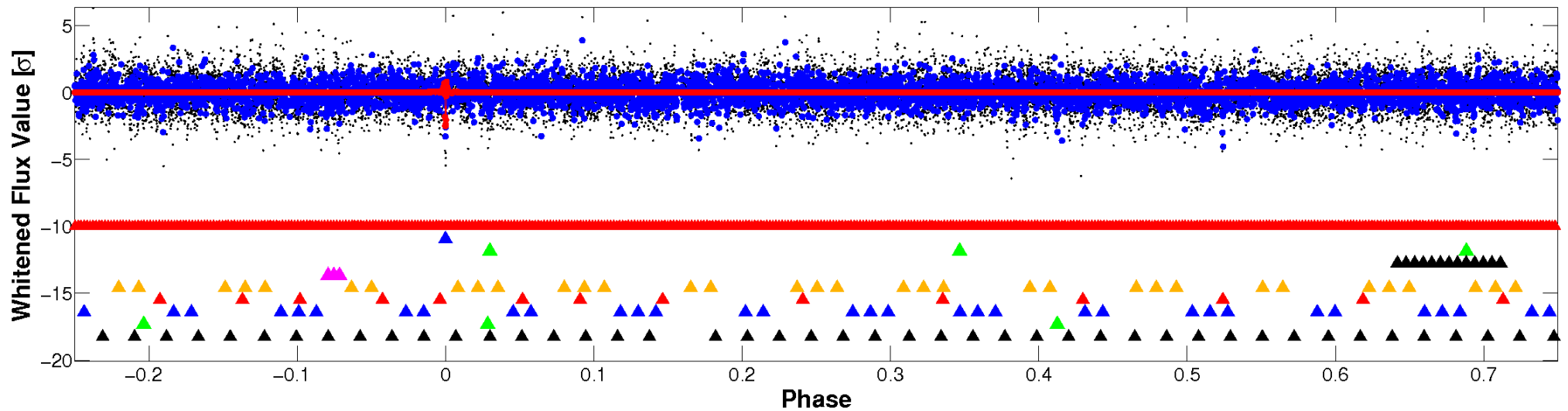


Non-Whitened Vs. Whitened Light Curve

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



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



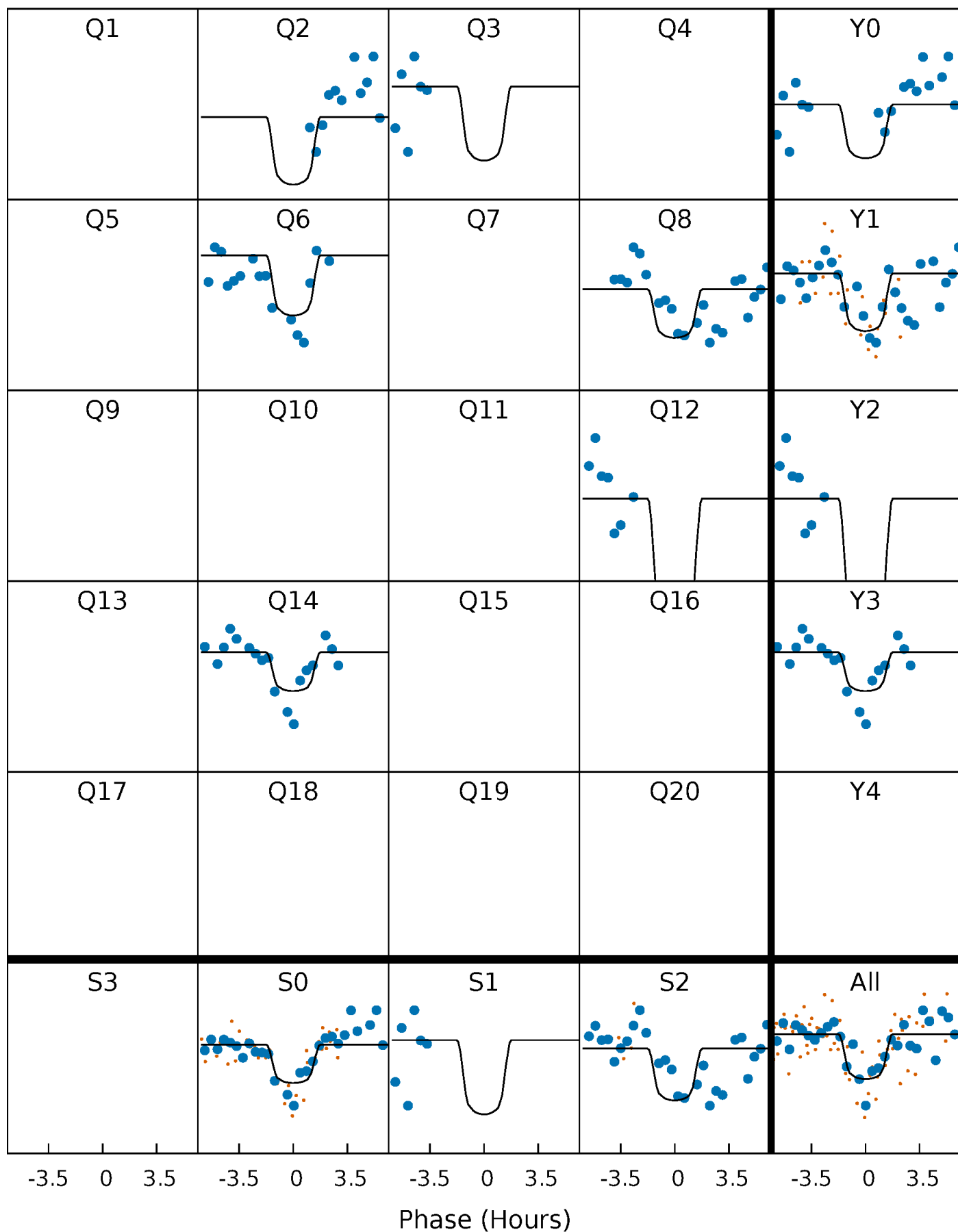
PDC Quarter-Phased Transit Curves

TCE 010353924-02 P=114.485125 Days $T_0=212.599393$ (BKJD)



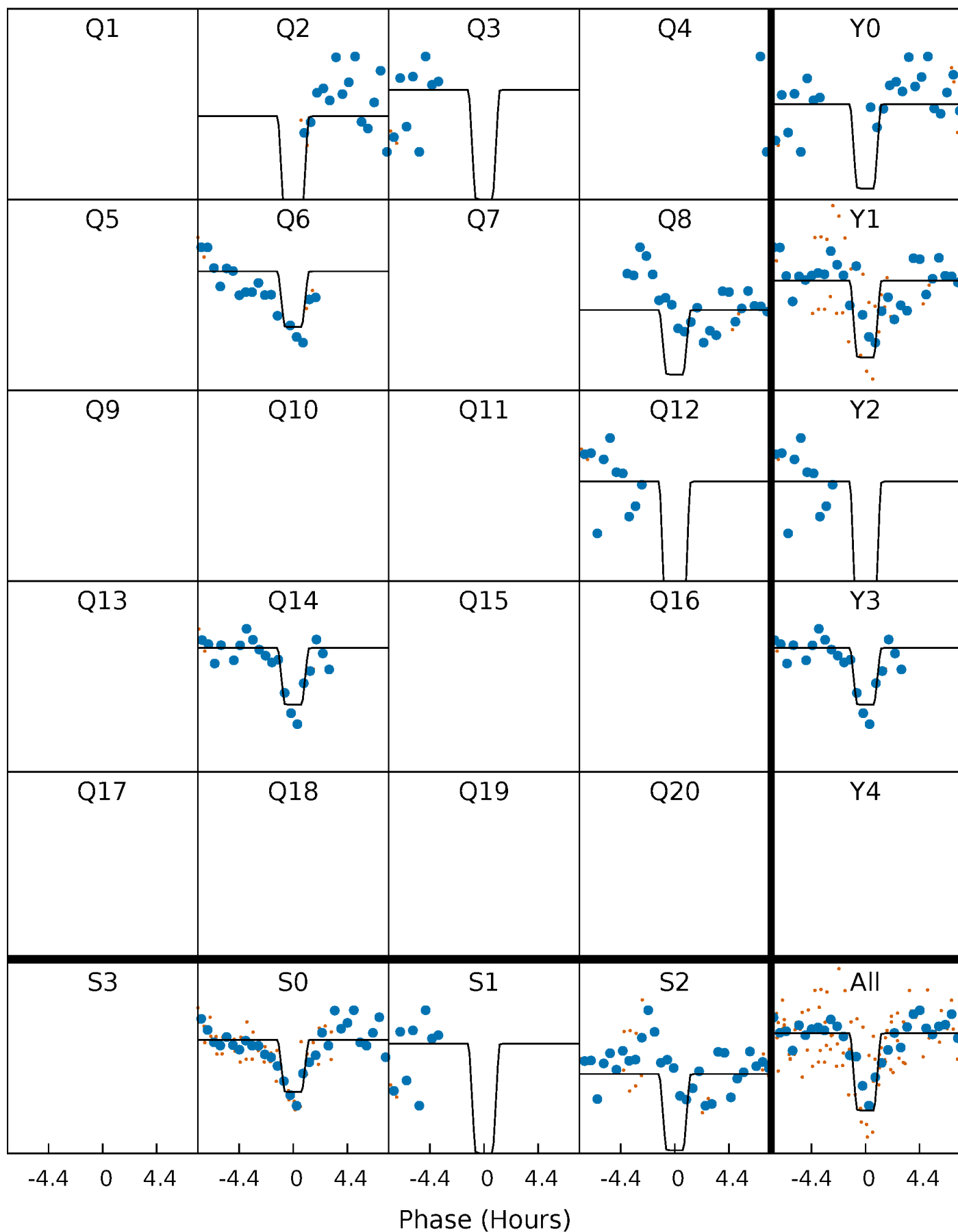
DV Quarter-Phased Transit Curves

TCE 010353924-02 P=114.485125 Days $T_0=212.599393$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

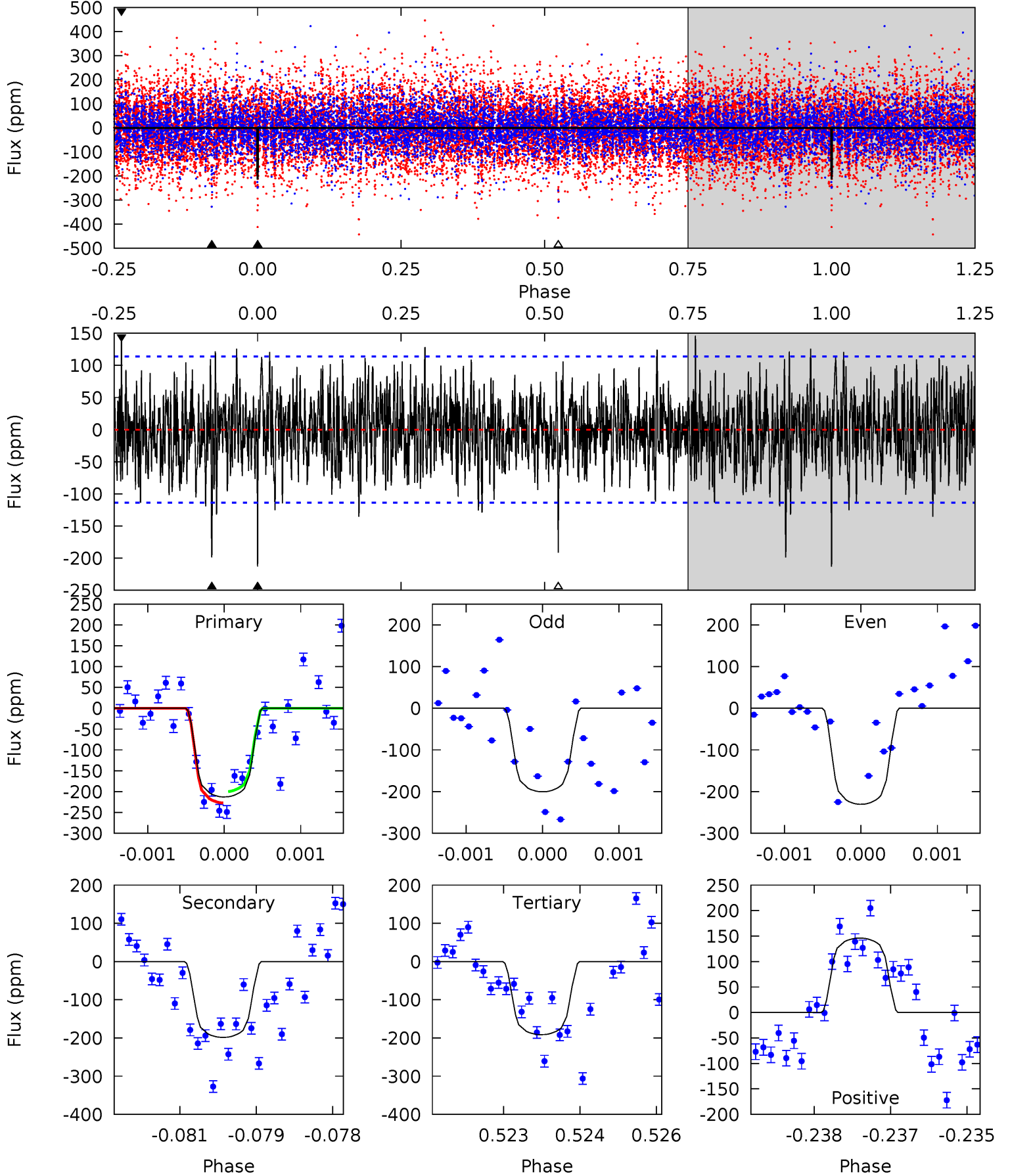
TCE 010353924-02 P=114.483342 Days $T_0=212.608685$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-02, P = 114.485125 Days, E = 98.114268 Days

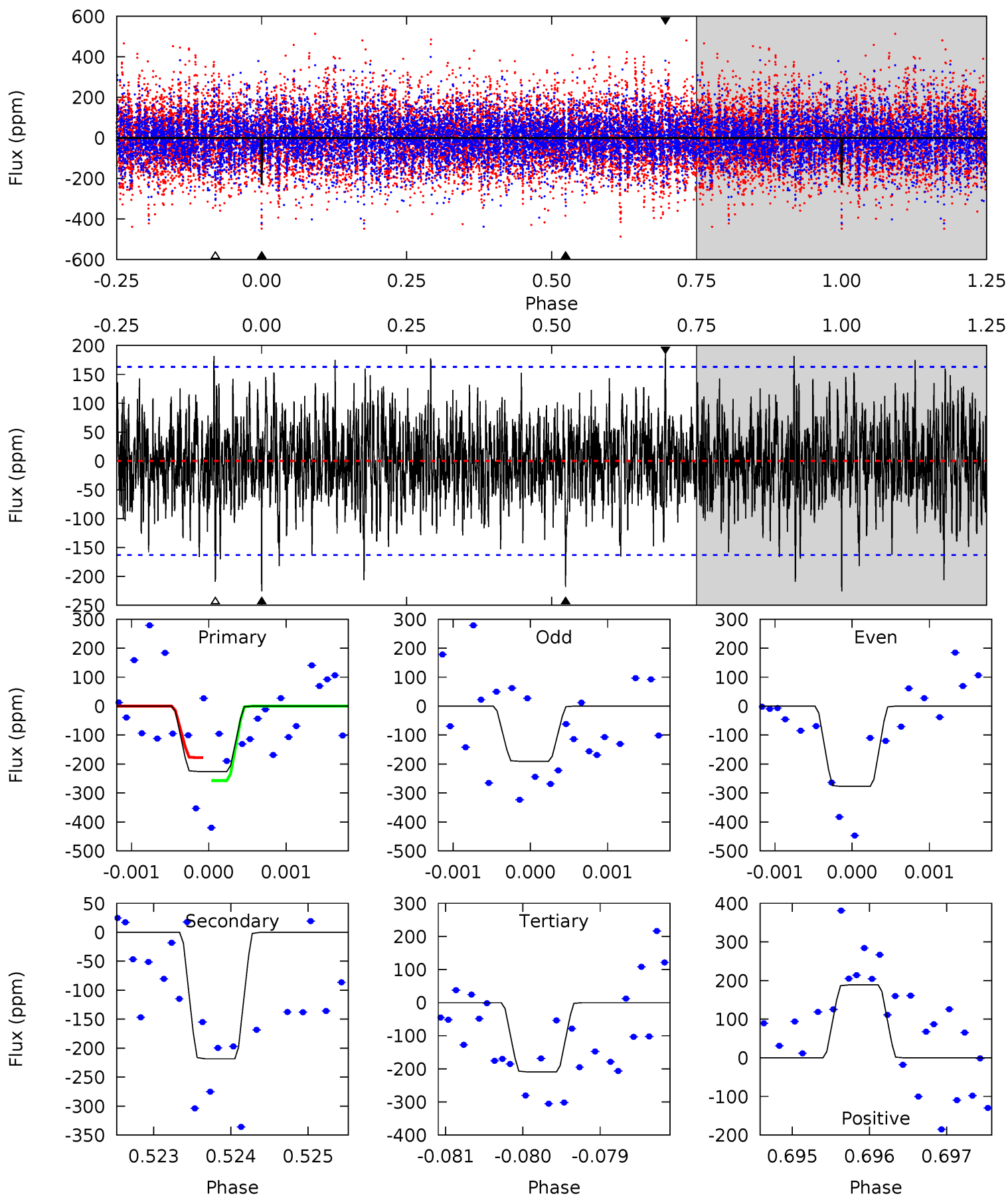
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	9.44	9.10	6.95	5.41	3.22	2.02	1.02	3.17	0.34	2.49	0.70	0.93	0.41	0.64



Alt Model-Shift Uniqueness Test

010353924-02, P = 114.483342 Days, E = 98.125343 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.55	7.31	7.00	6.31	5.45	3.29	1.79	0.55	1.24	0.31	0.99	1.44	1.06	0.46	1.23



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-199 ± 21	$3.03^{+1.09}_{-0.93}$	740^{+65}_{-58}	6104^{+1175}_{-706}	3117^{+3405}_{-1412}
Alt.	-218 ± 30	$3.41^{+1.07}_{-0.96}$	745^{+58}_{-57}	5889^{+1037}_{-614}	2702^{+2466}_{-1138}

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

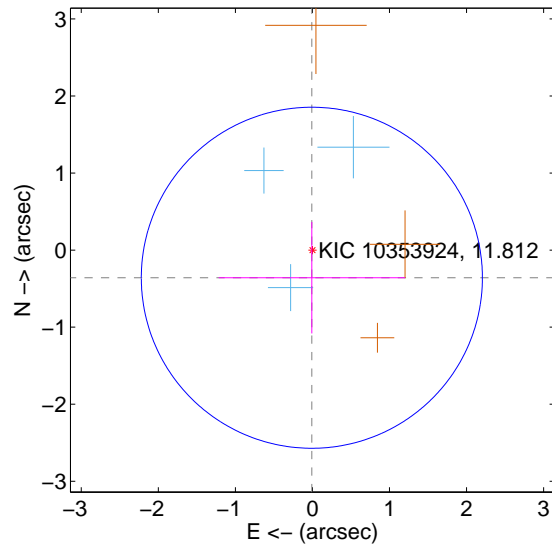
Supplemental centroid analysis for 010353924-02. **Kepler magnitude: 11.81.** Transit SNR 9.40

There are 3 quarters with good PRF difference image offsets

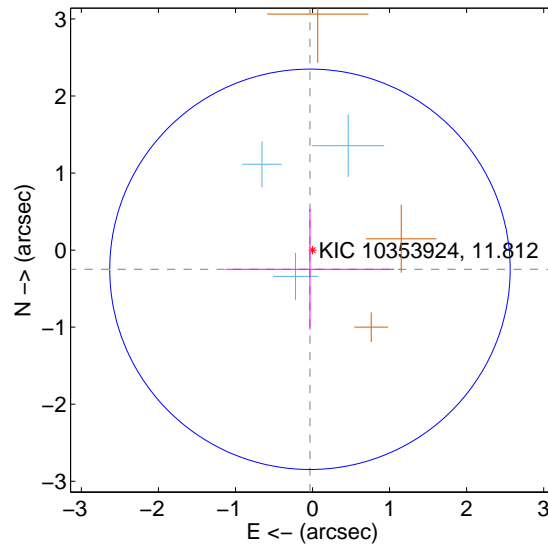
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.359 ± 0.737	0.49	0.008 ± 1.209	-0.359 ± 0.723
PRF-fit source offset from KIC position	0.251 ± 0.866	0.29	0.033 ± 1.094	-0.249 ± 0.783
photometric centroid source offset	0.64 ± 0.66	0.98	0.12 ± 0.58	0.63 ± 0.66

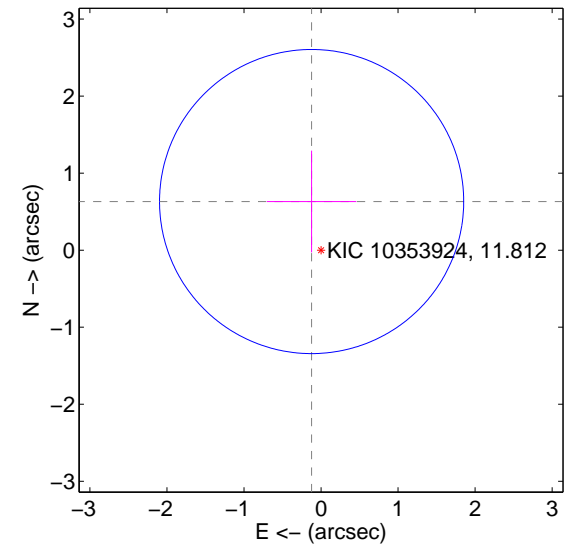
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

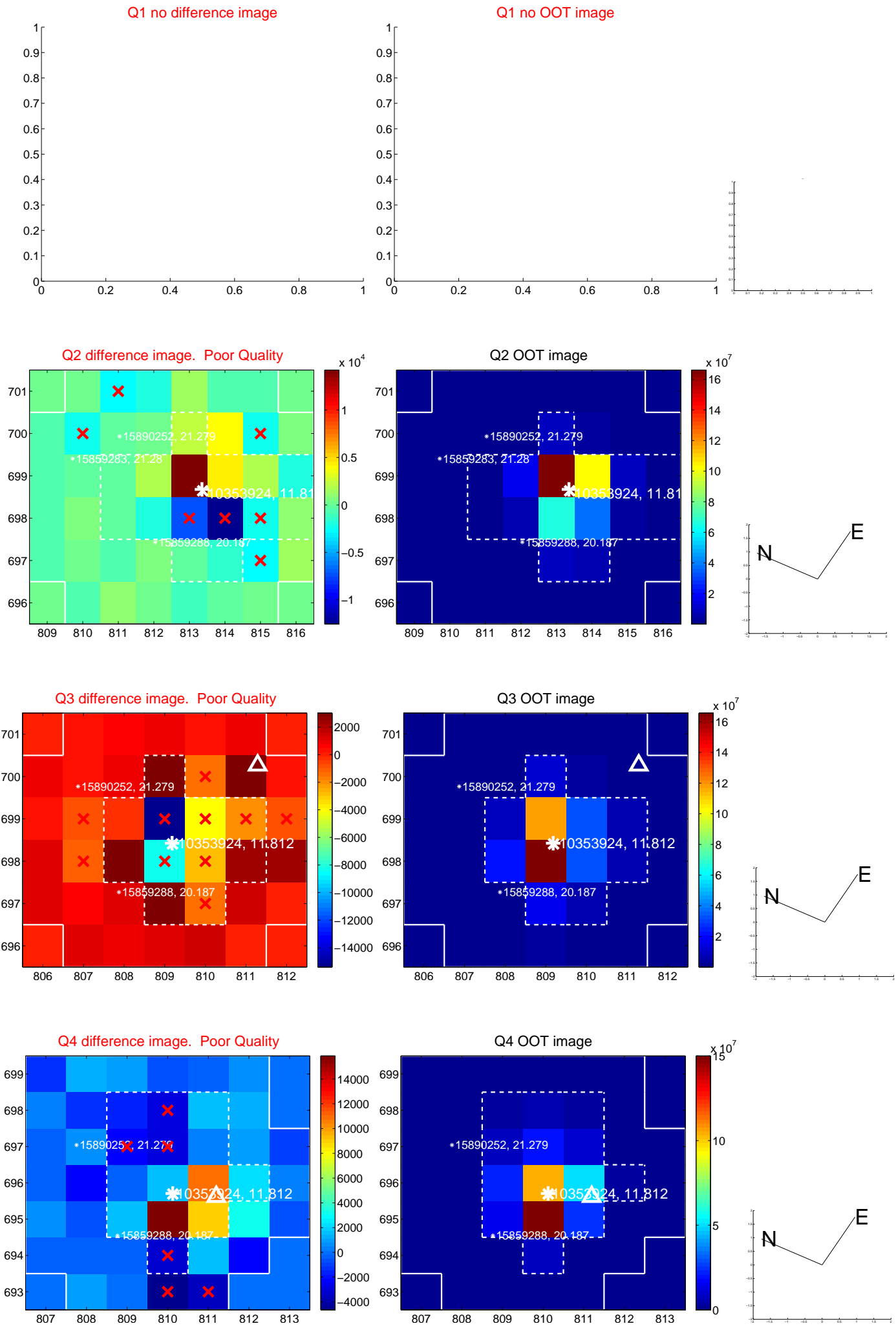


offset from photometric centroids

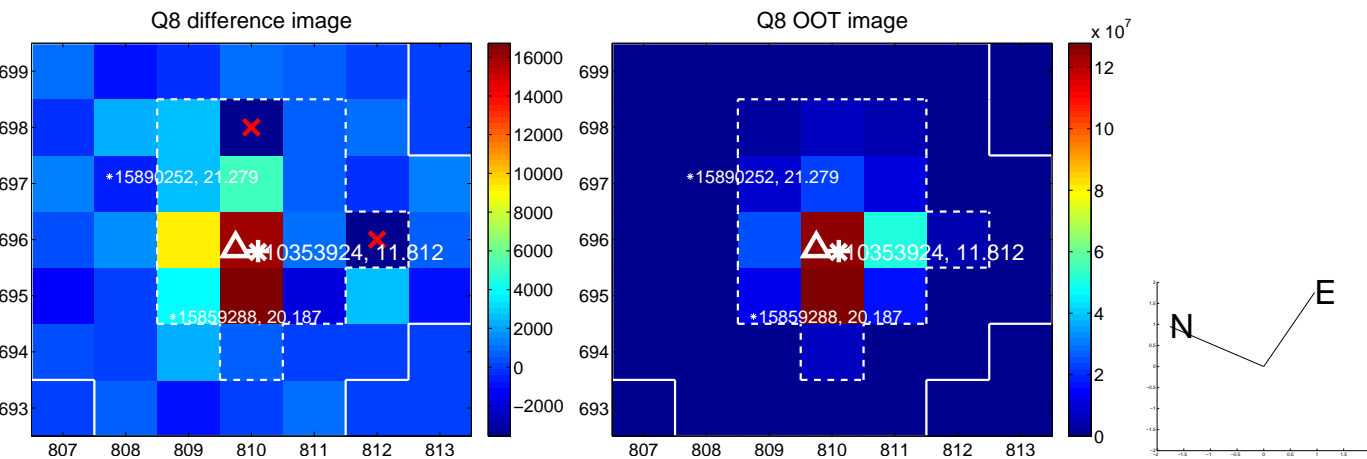
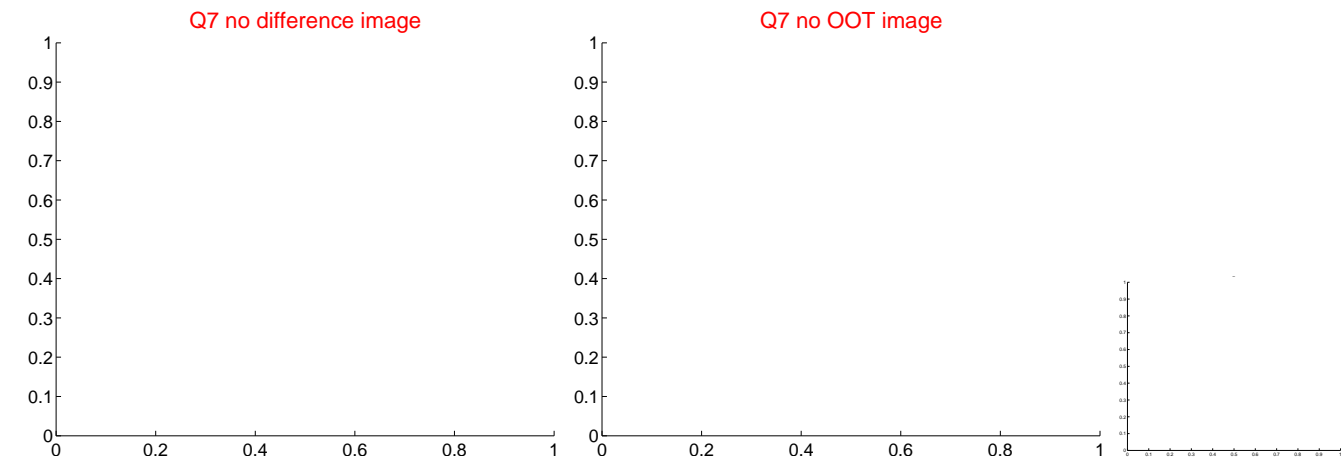
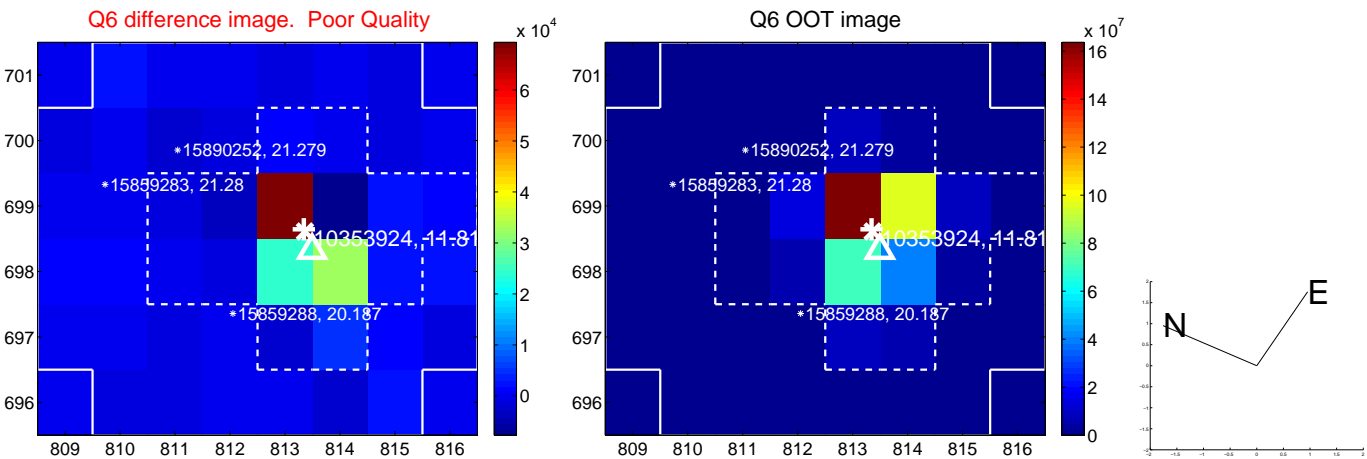


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

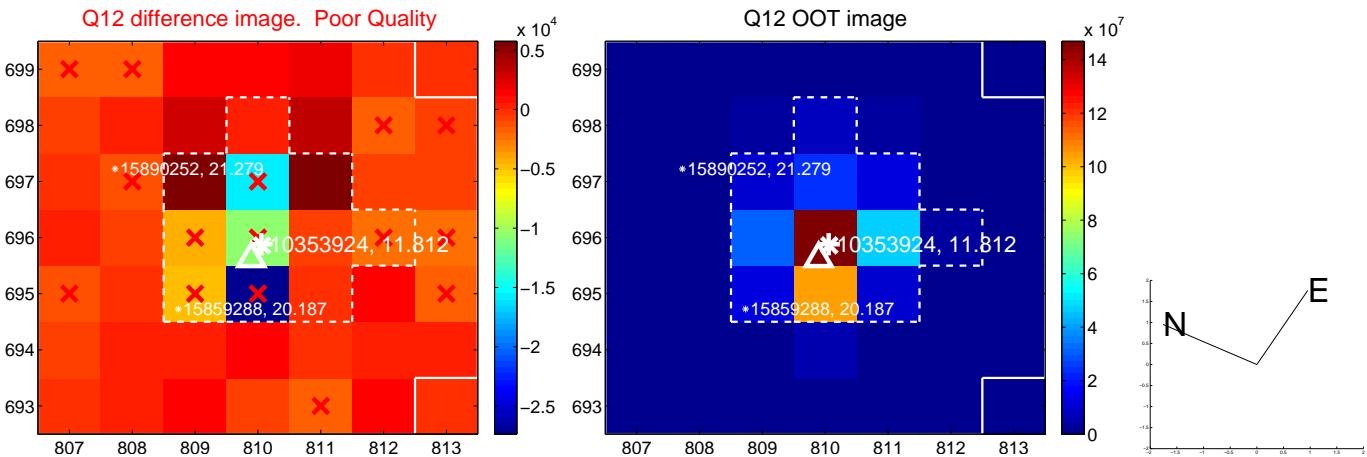
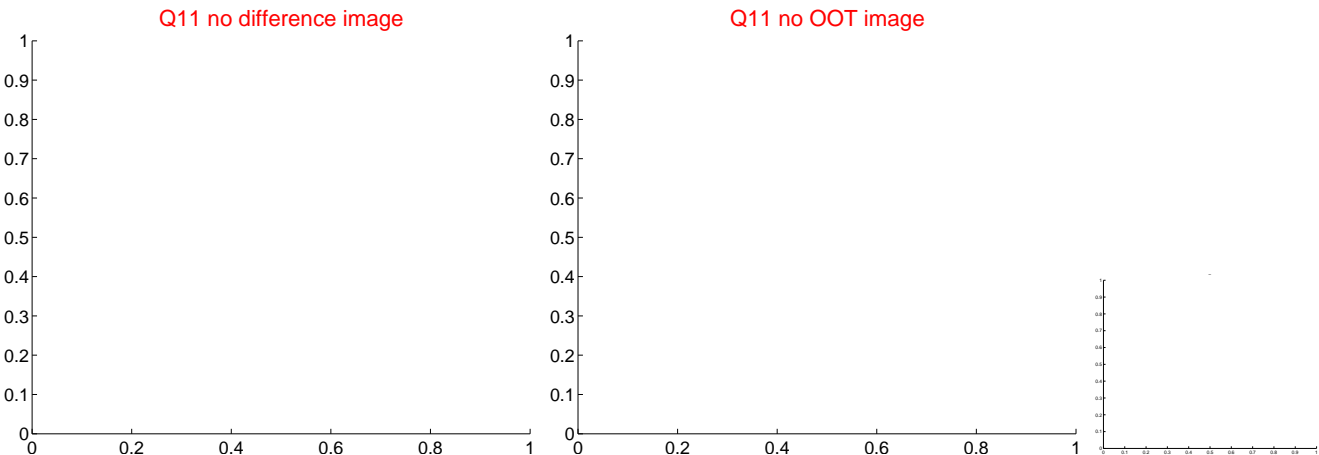
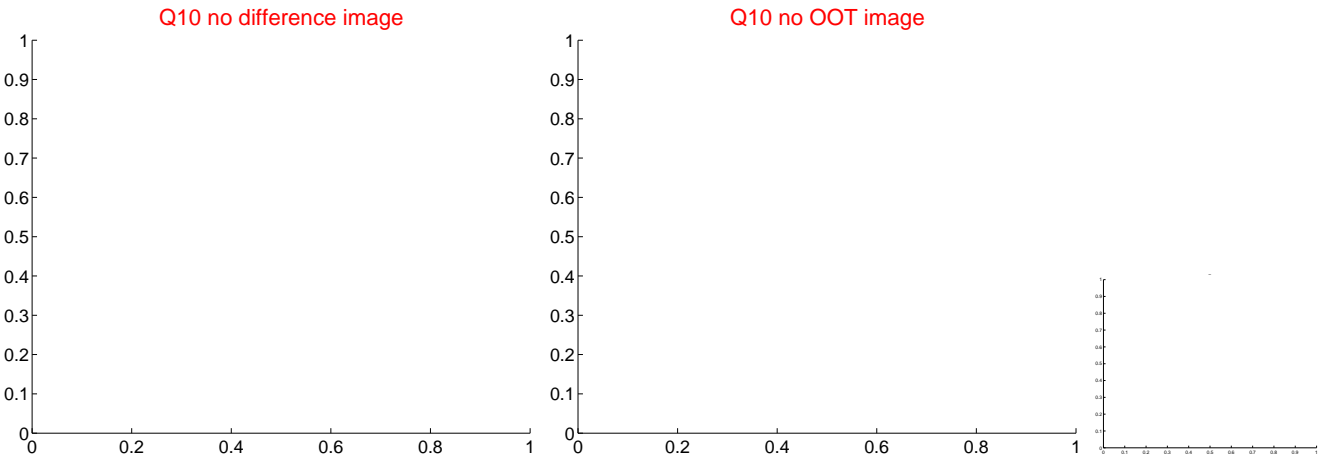
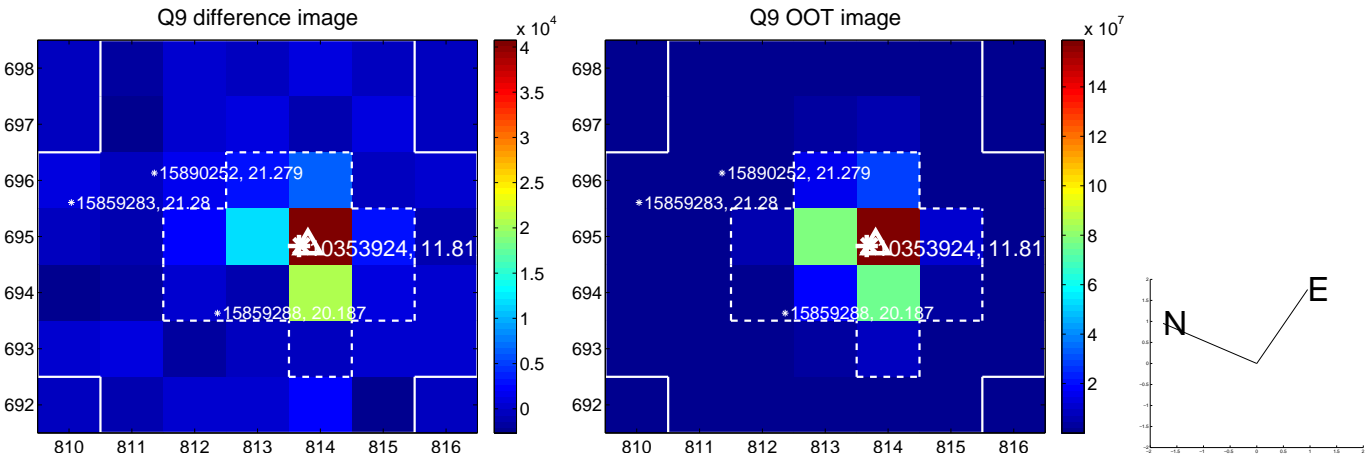
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



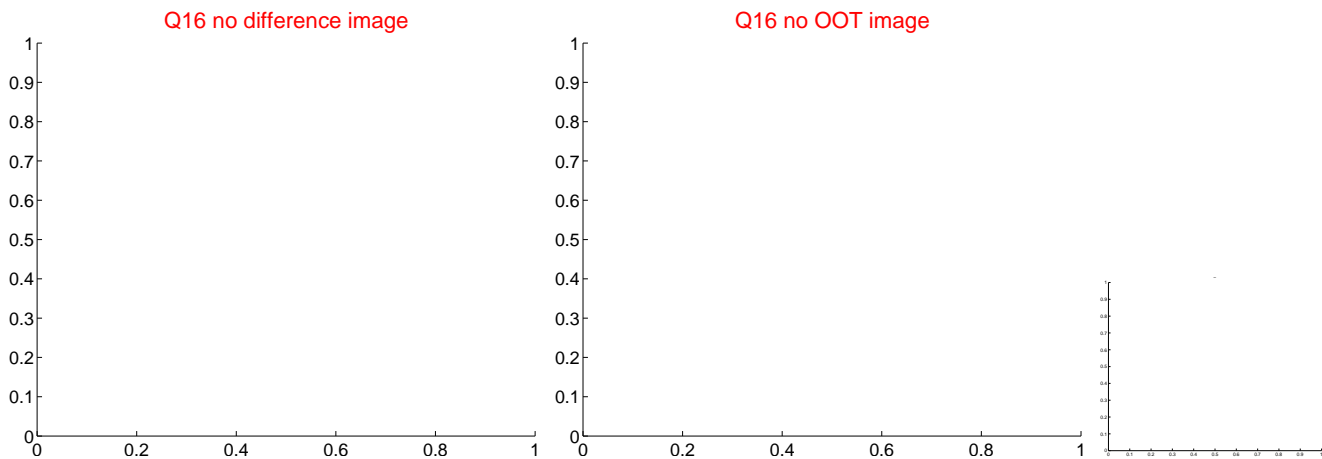
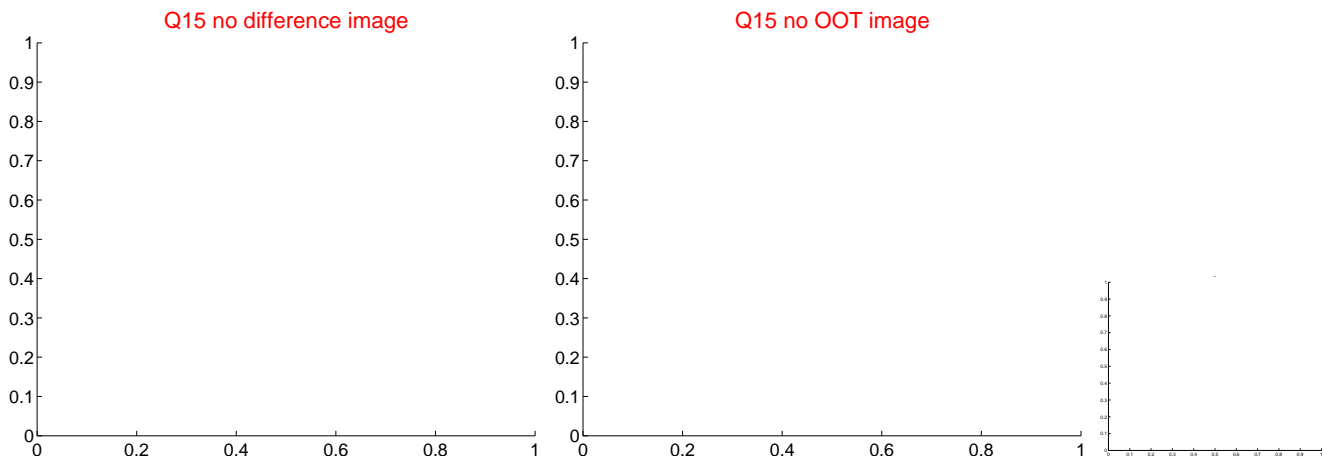
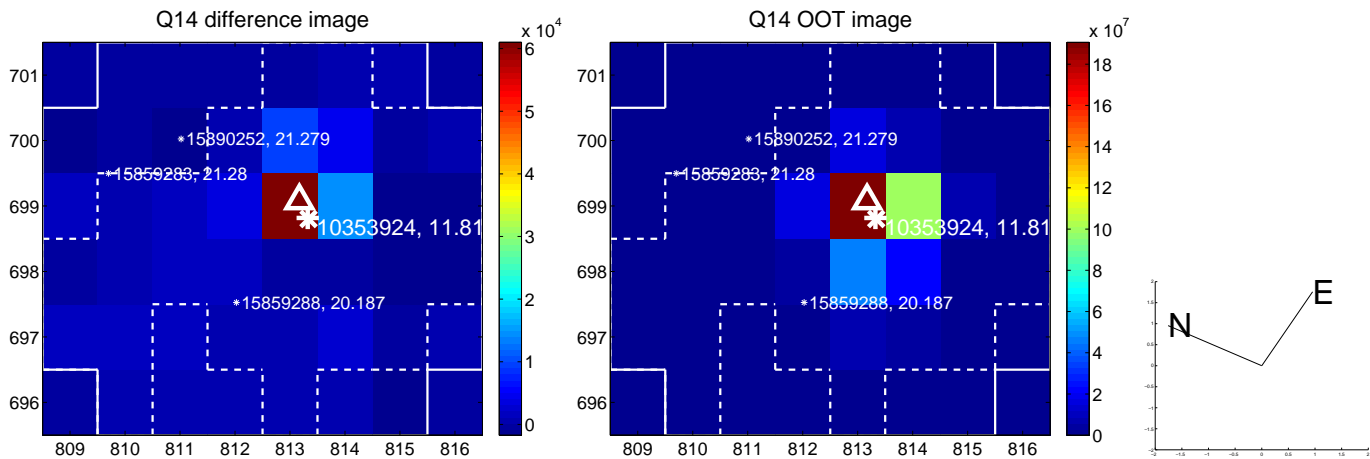
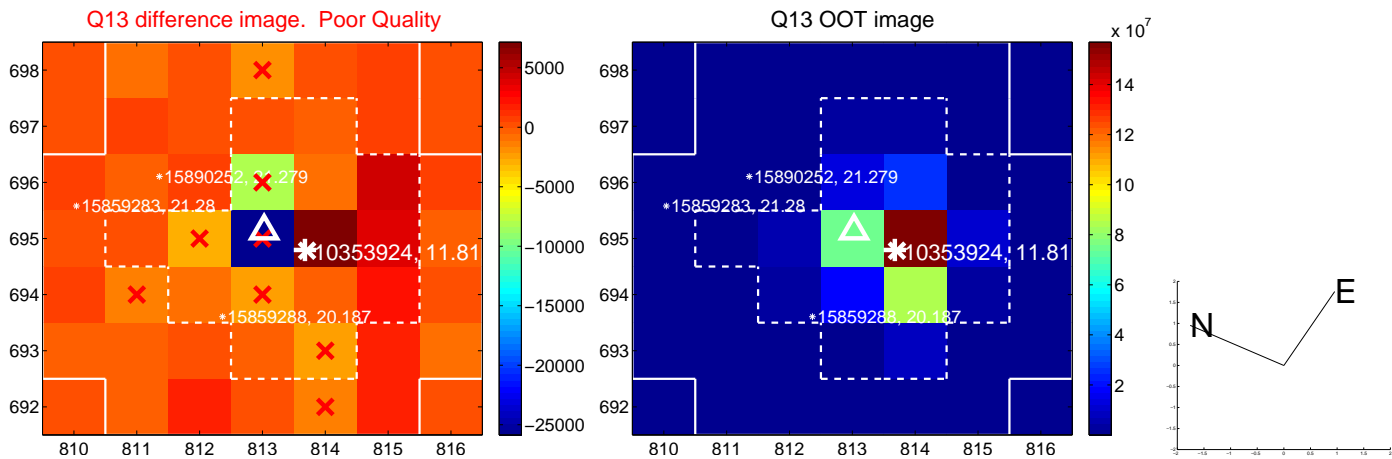
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



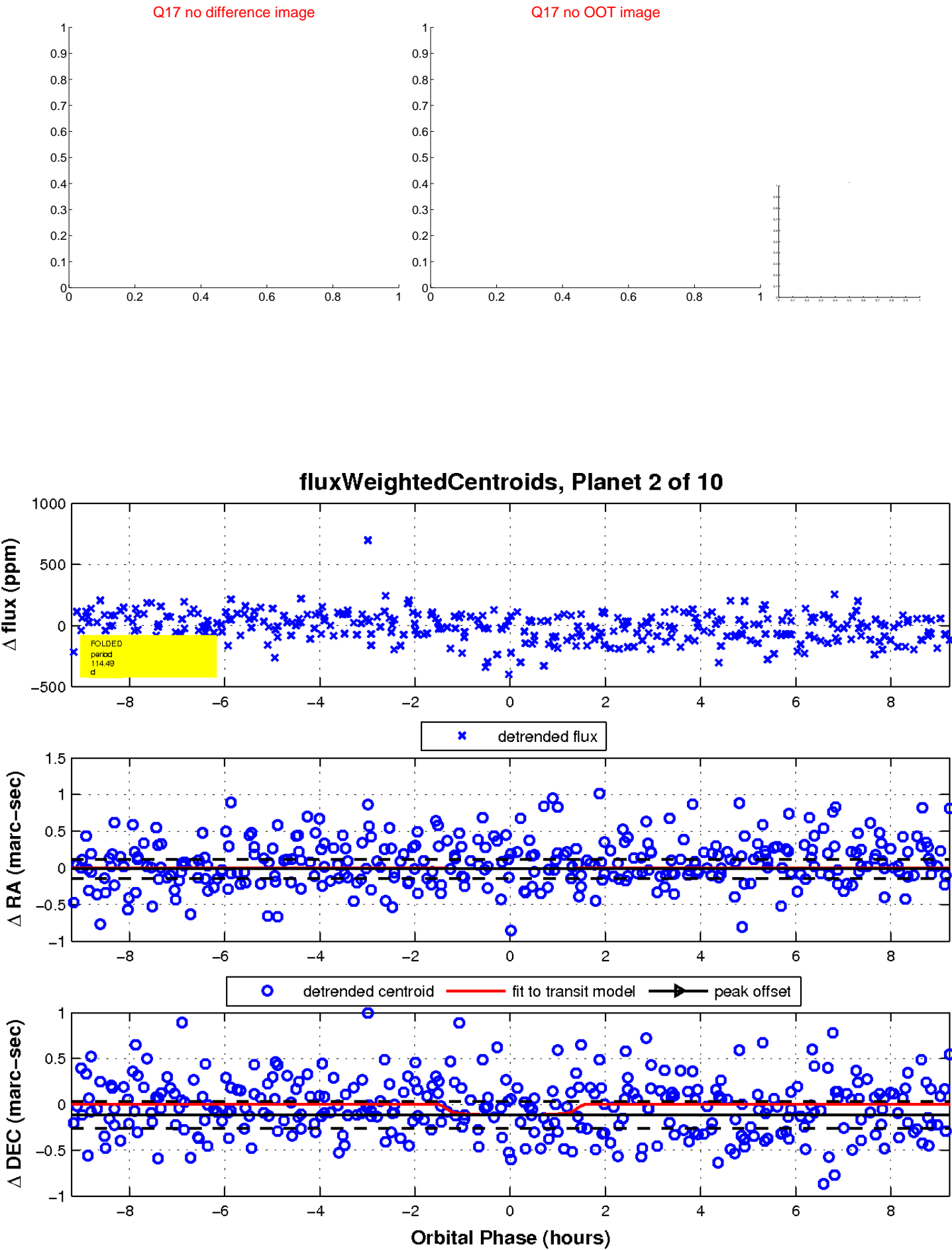
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

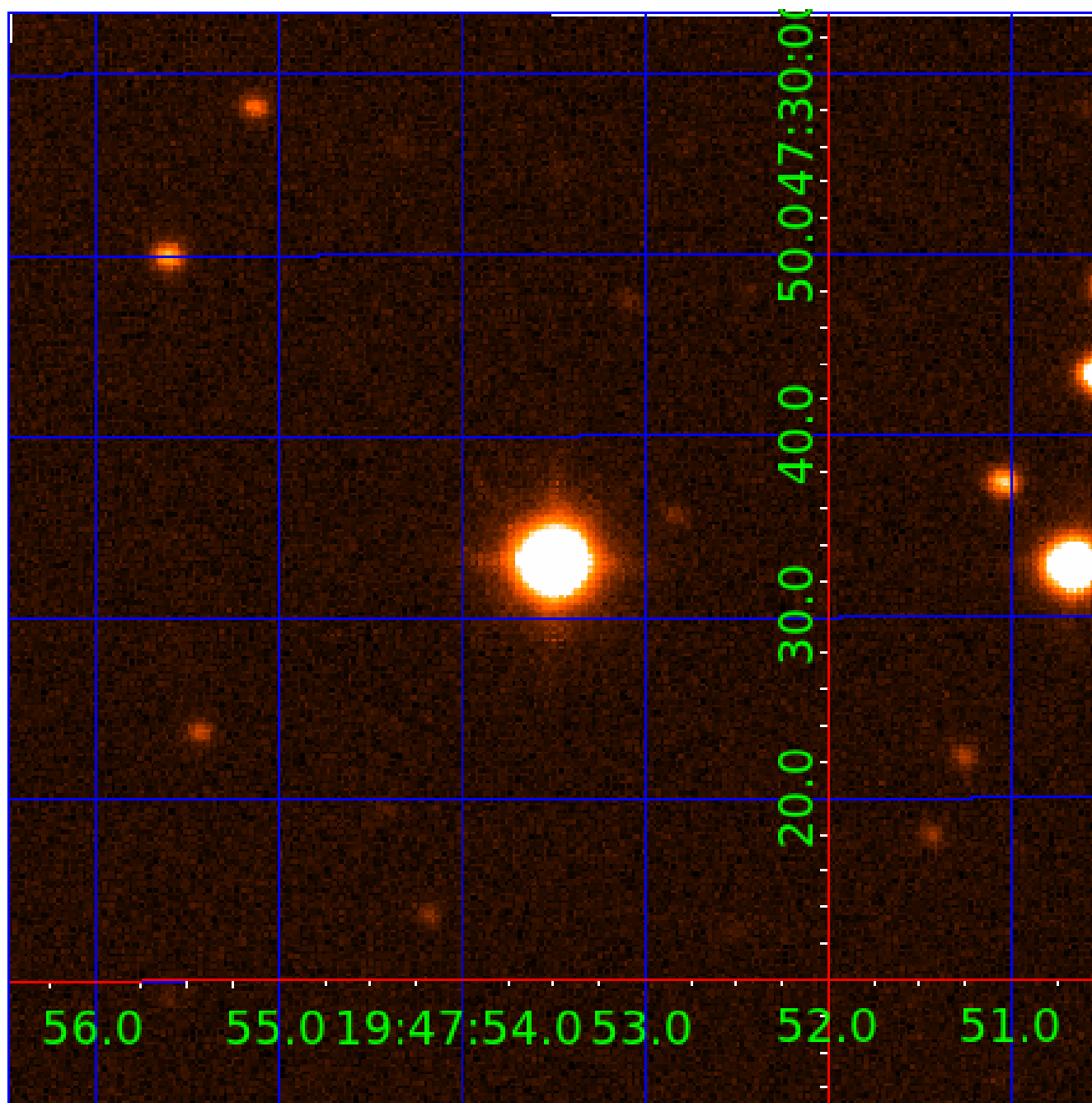


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010353924

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})
010353924-01	OBS	No	1.625617	132.418256	13.7	8.654	9.2	6.1	1.71	6654	0.67	5652.02
010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
010353924-04	OBS	No	115.147808	171.598167	220.7	5.114	9.4	8.6	1.71	6654	2.85	19.29
010353924-05	OBS	No	458.381648	432.509759	260.1	7.434	9.3	9.8	1.71	6654	3.04	3.06
010353924-06	OBS	No	44.151668	133.469056	82.5	19.725	9.1	6.7	1.71	6654	1.65	69.23
010353924-07	OBS	No	103.673679	222.990038	203.0	7.175	9.7	9.3	1.71	6654	2.72	22.18
010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010353924-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010353924-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

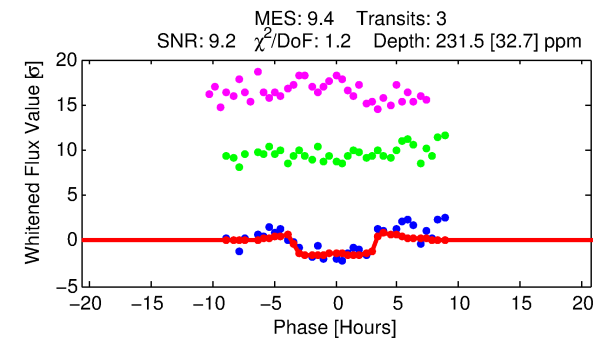
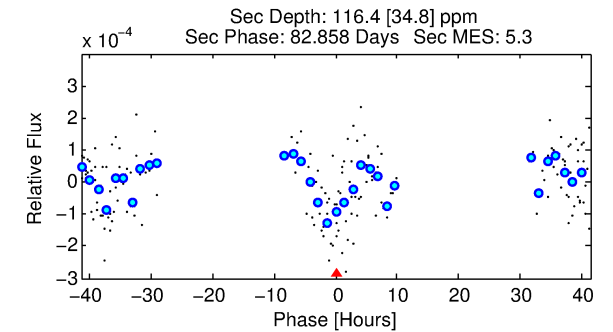
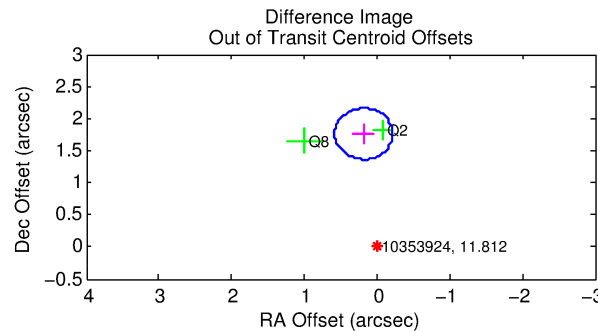
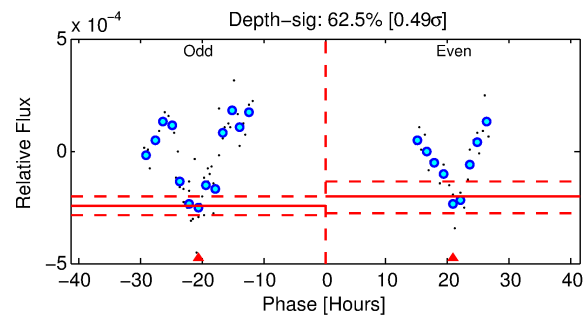
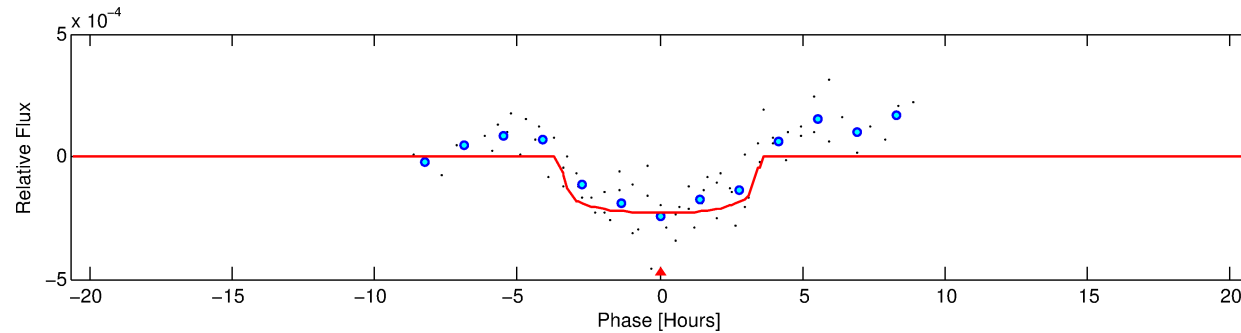
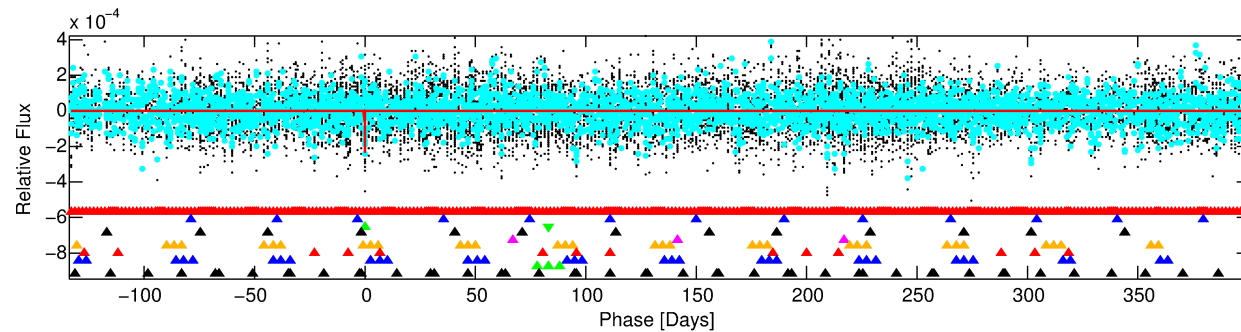
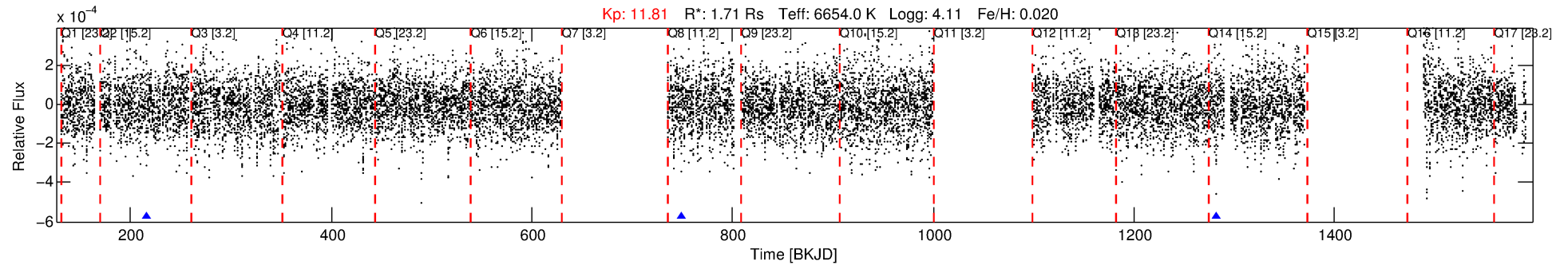
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-03

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 3 of 10 Period: 533.313 d



DV Fit Results:

Period = 533.31333 [0.00615] d
Epoch = 216.0252 [0.0070] BKJD
Rp/R* = 0.0142 [0.0180]
a/R* = 571.82 [3910.07]
b = 0.30 [20.63]
Seff = 2.50 [1.02]
Teq = 321 [33] K
Rp = 2.64 [3.46] Re
a = 1.4356 [0.3737] AU
Ag = 18876.62 [48791.44] [0.39 σ]
Teff = 5810 [3721] K [1.48 σ]

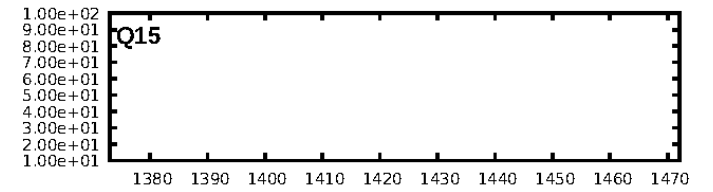
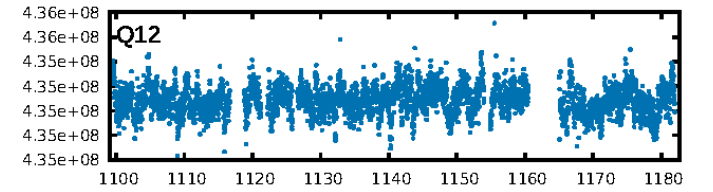
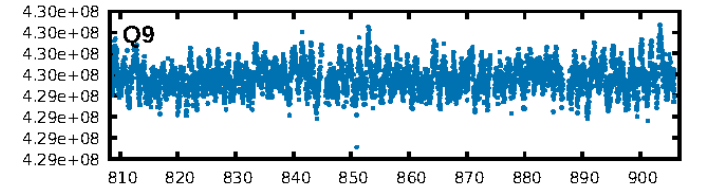
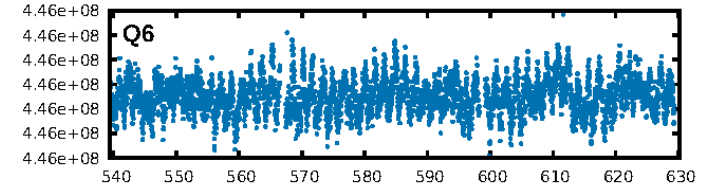
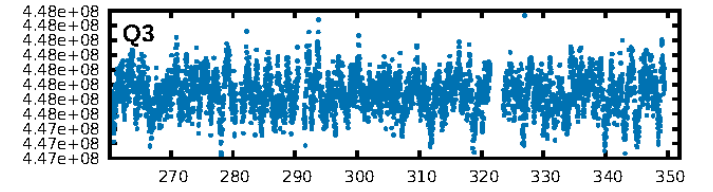
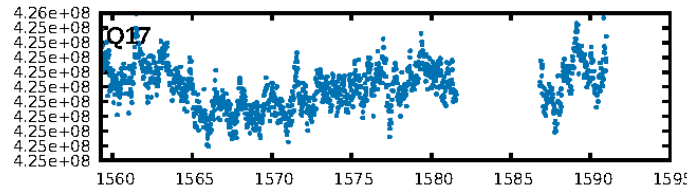
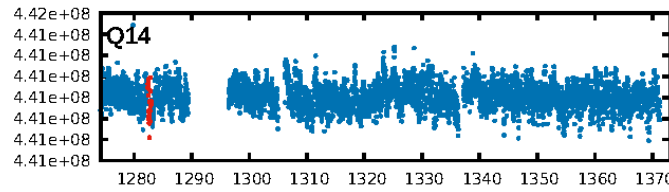
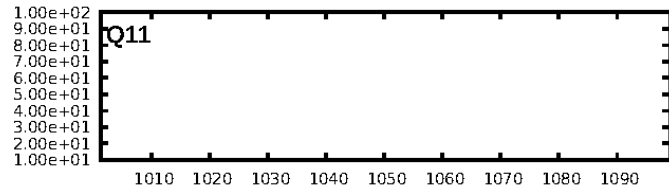
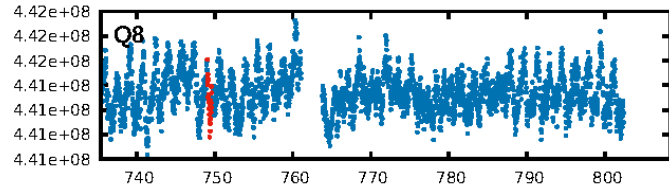
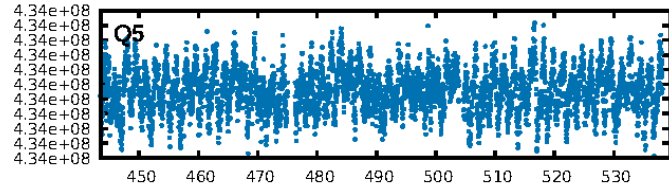
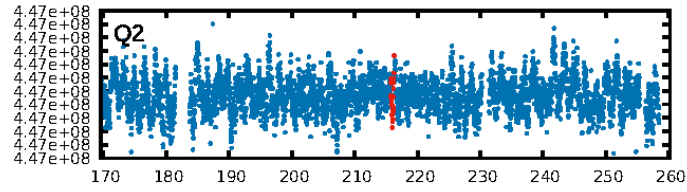
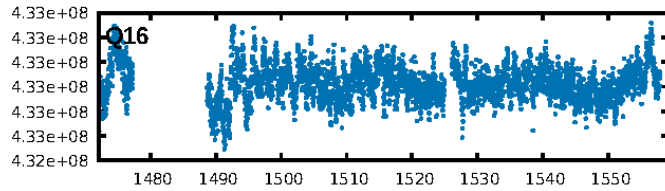
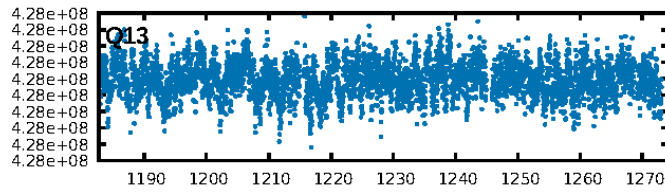
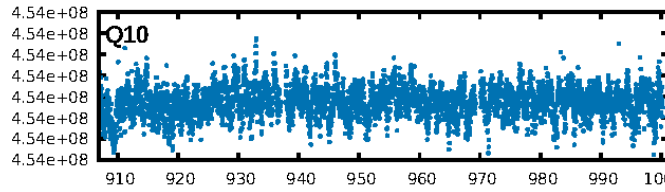
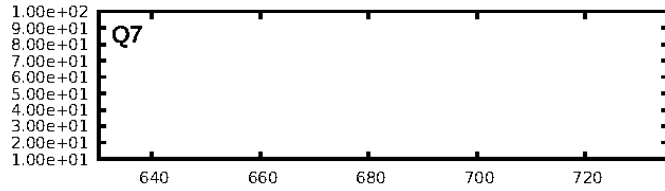
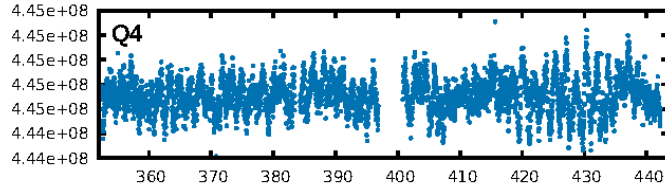
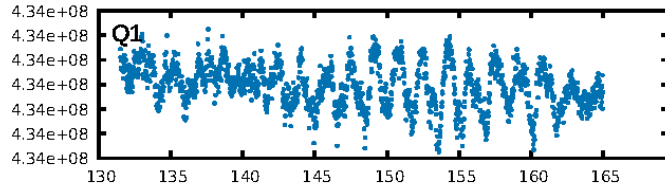
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.03 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 45.0%
ModelChiSquareGof-sig: 86.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 6.741
Centroid-sig: 9.8%
Centroid-so: 1.336 arcsec [1.56 σ]
OotOffset-rm: 1.772 arcsec [13.34 σ]
KicOffset-rm: 1.870 arcsec [10.23 σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.50 [1/2]

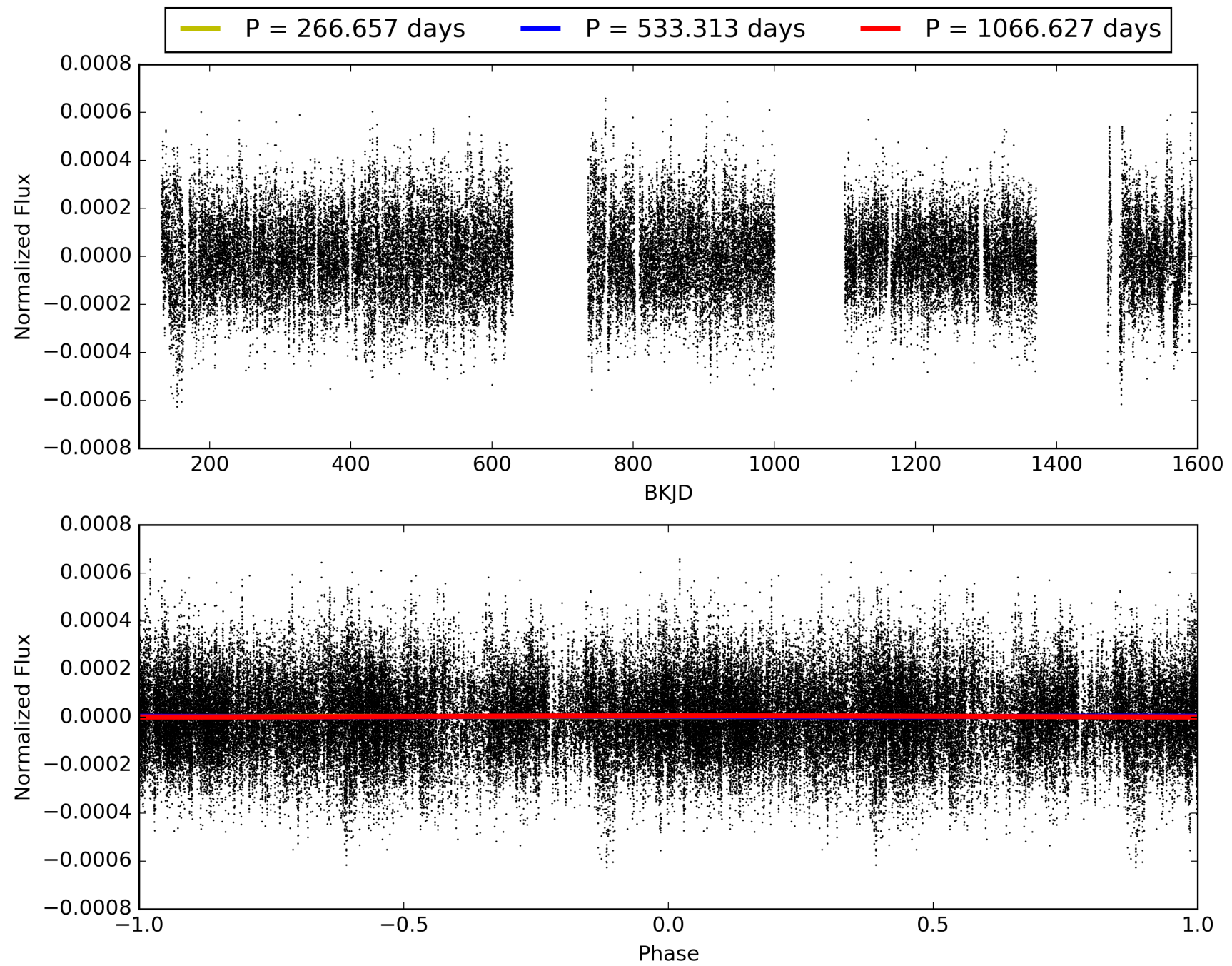
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:38:46 Z

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

TCE 010353924-03, PDC Light Curves

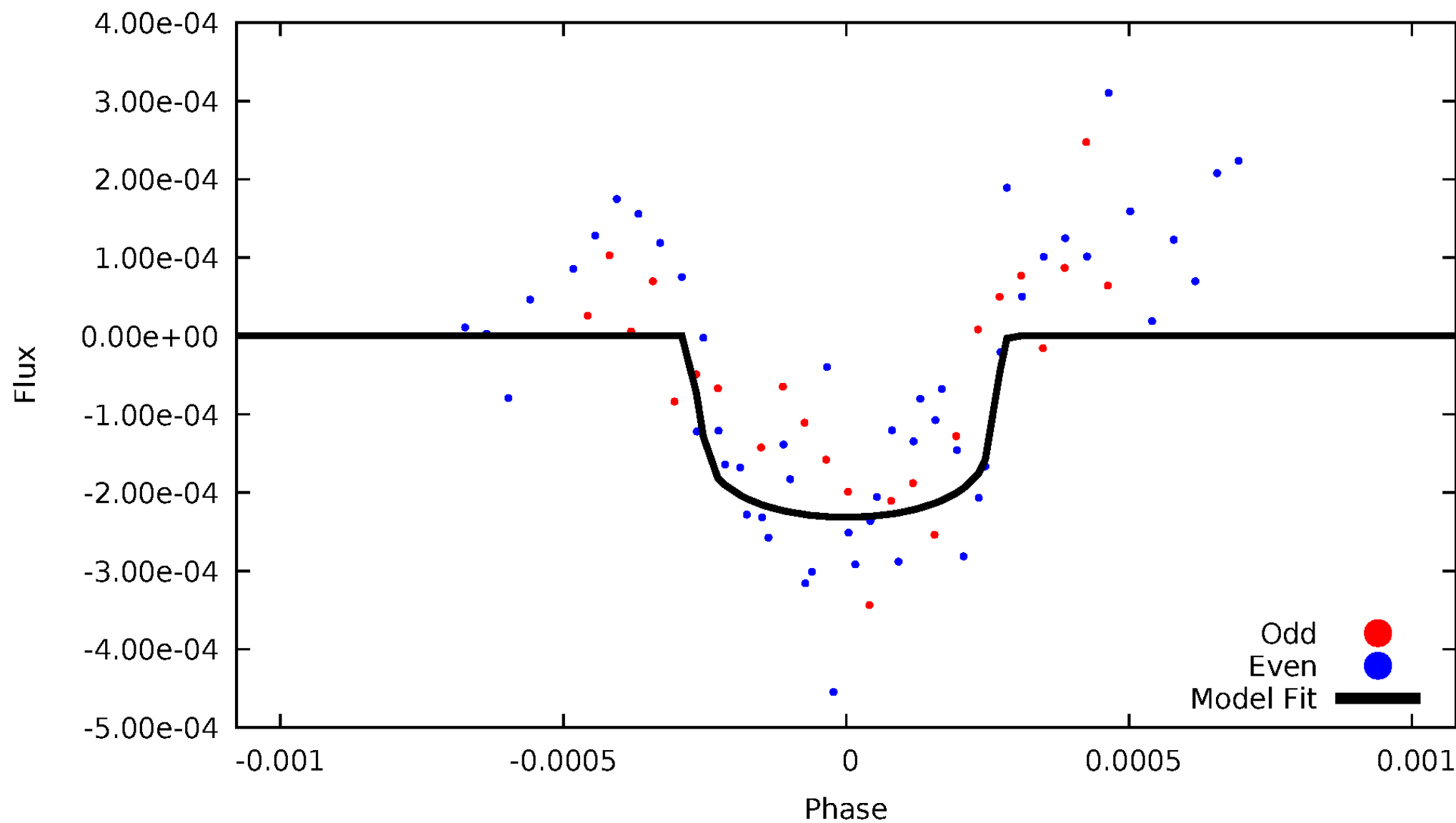


TCE 010353924-03



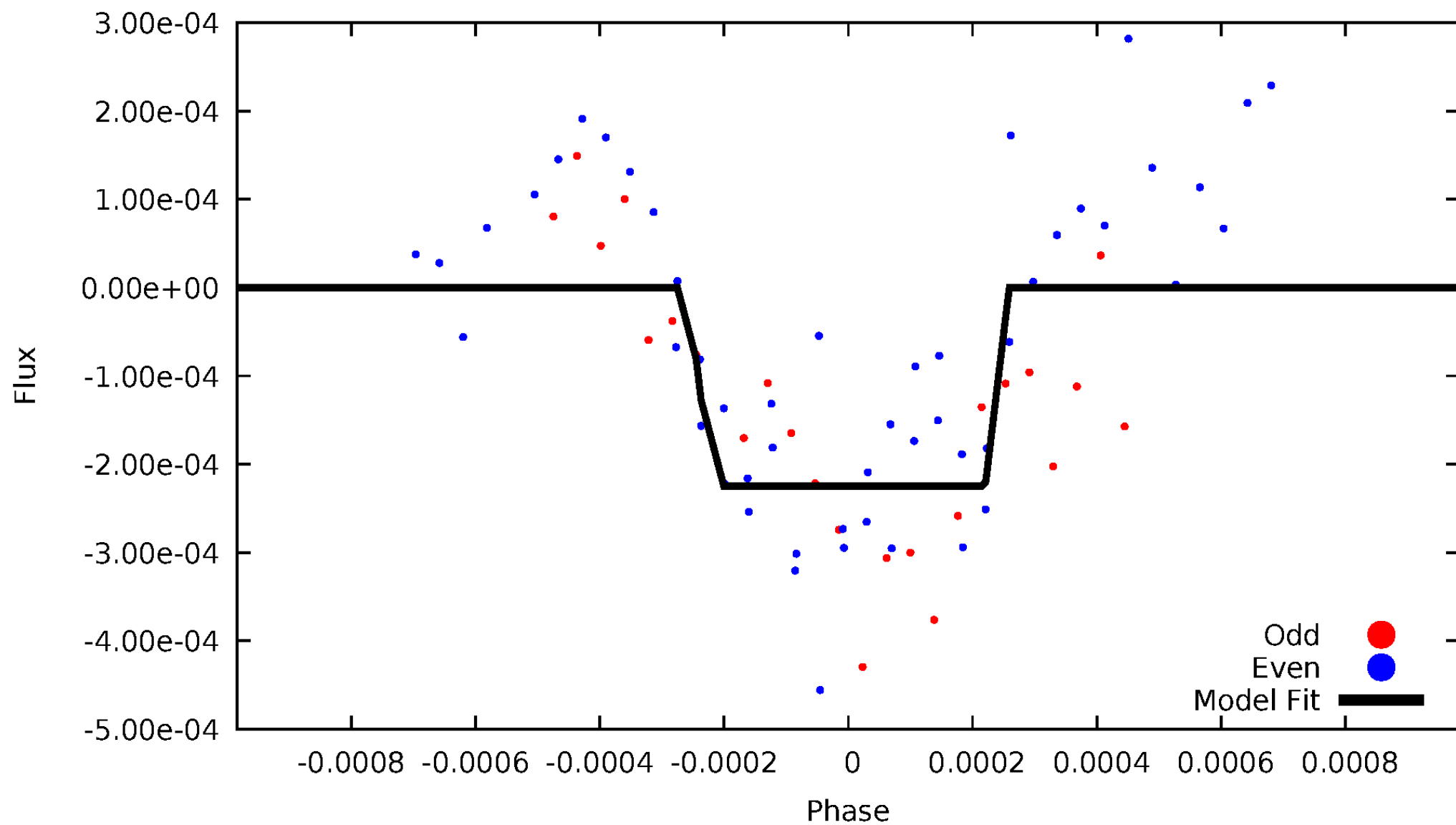
DV Odd/Even

TCE 010353924-03



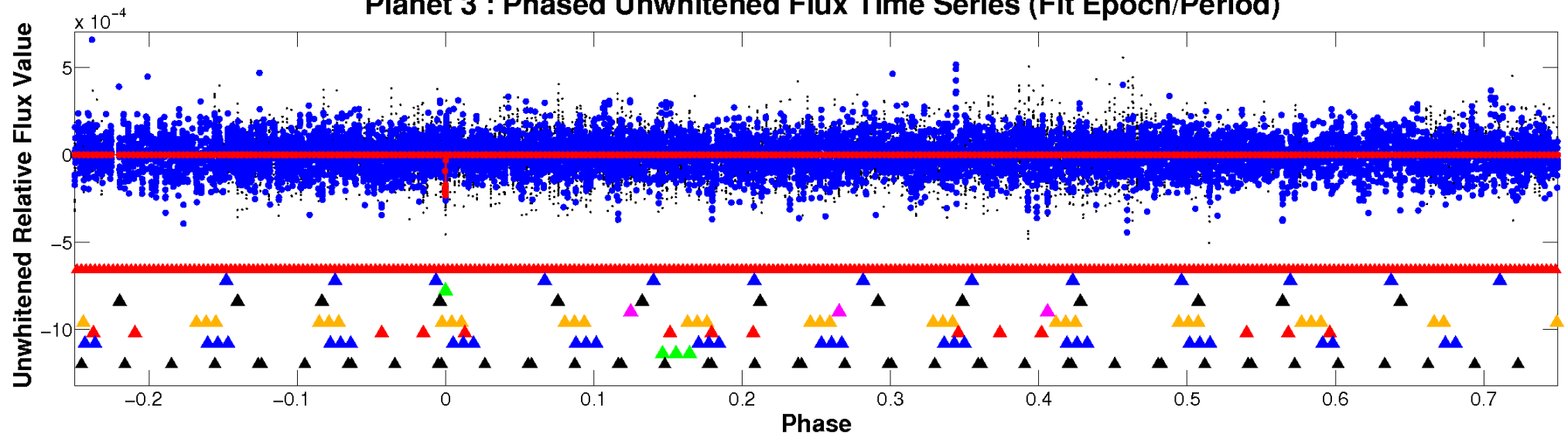
ALT Odd/Even

TCE 010353924-03

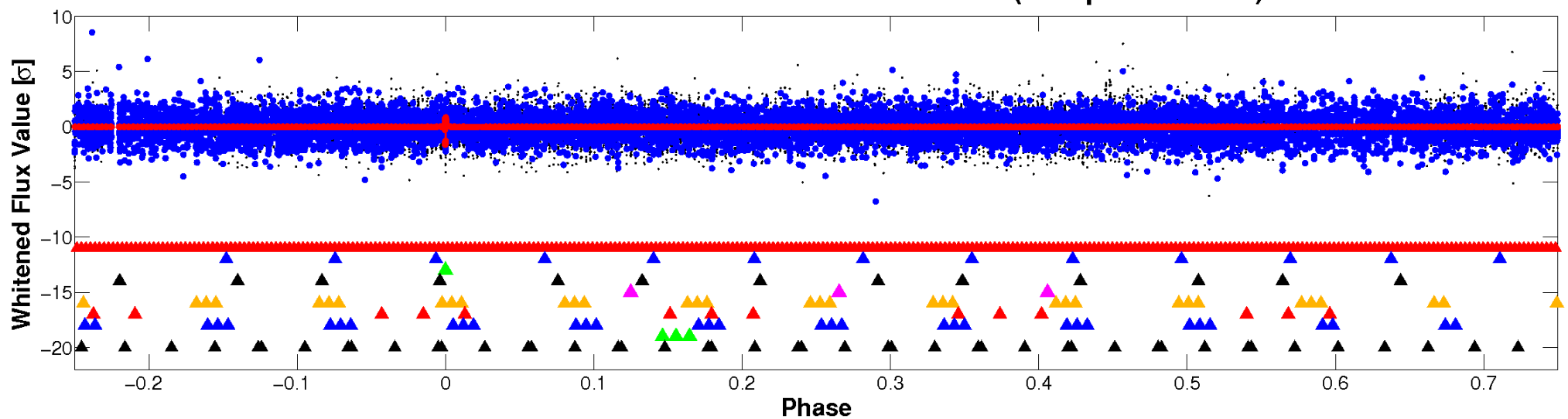


Non-Whitened Vs. Whitened Light Curve

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

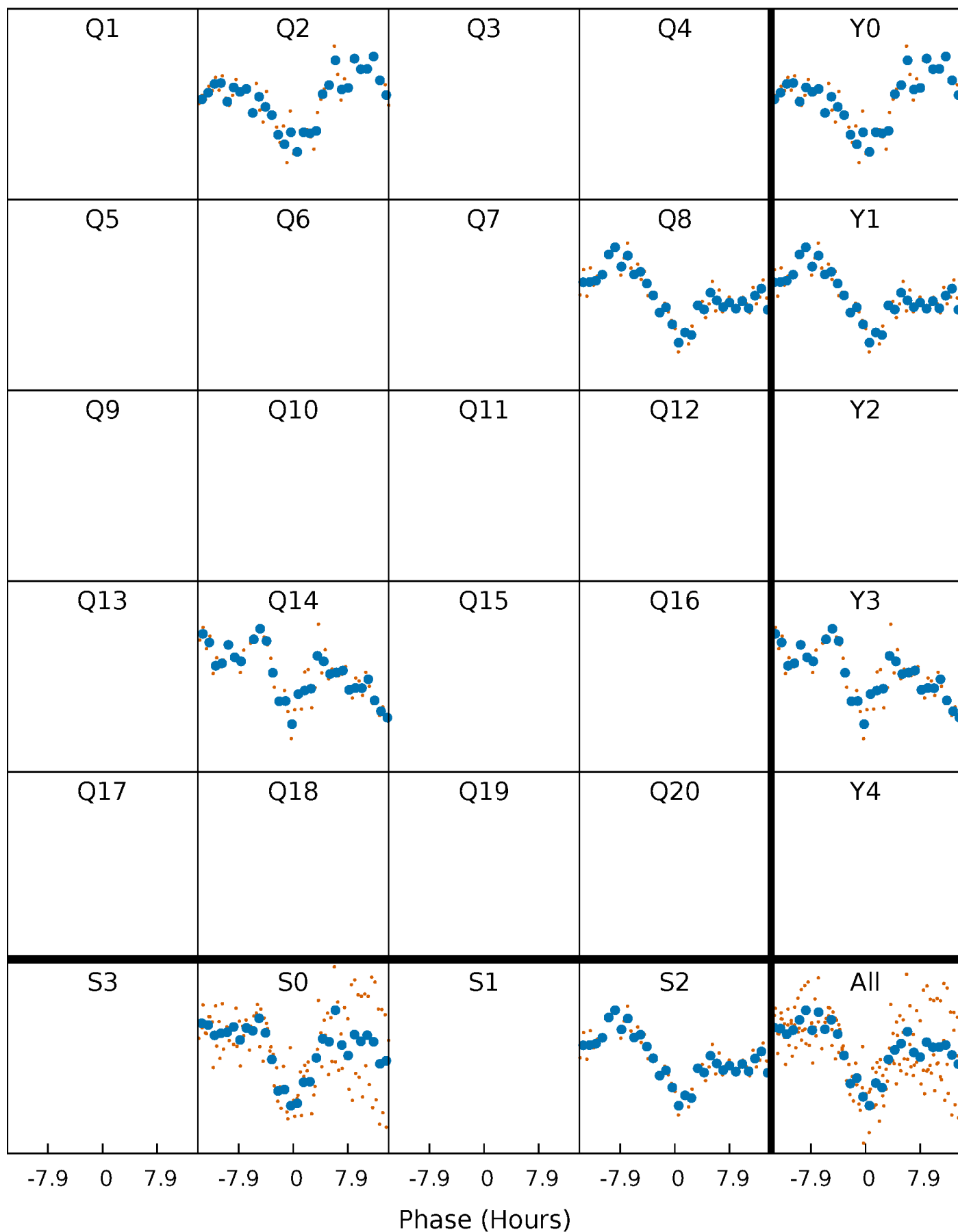


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



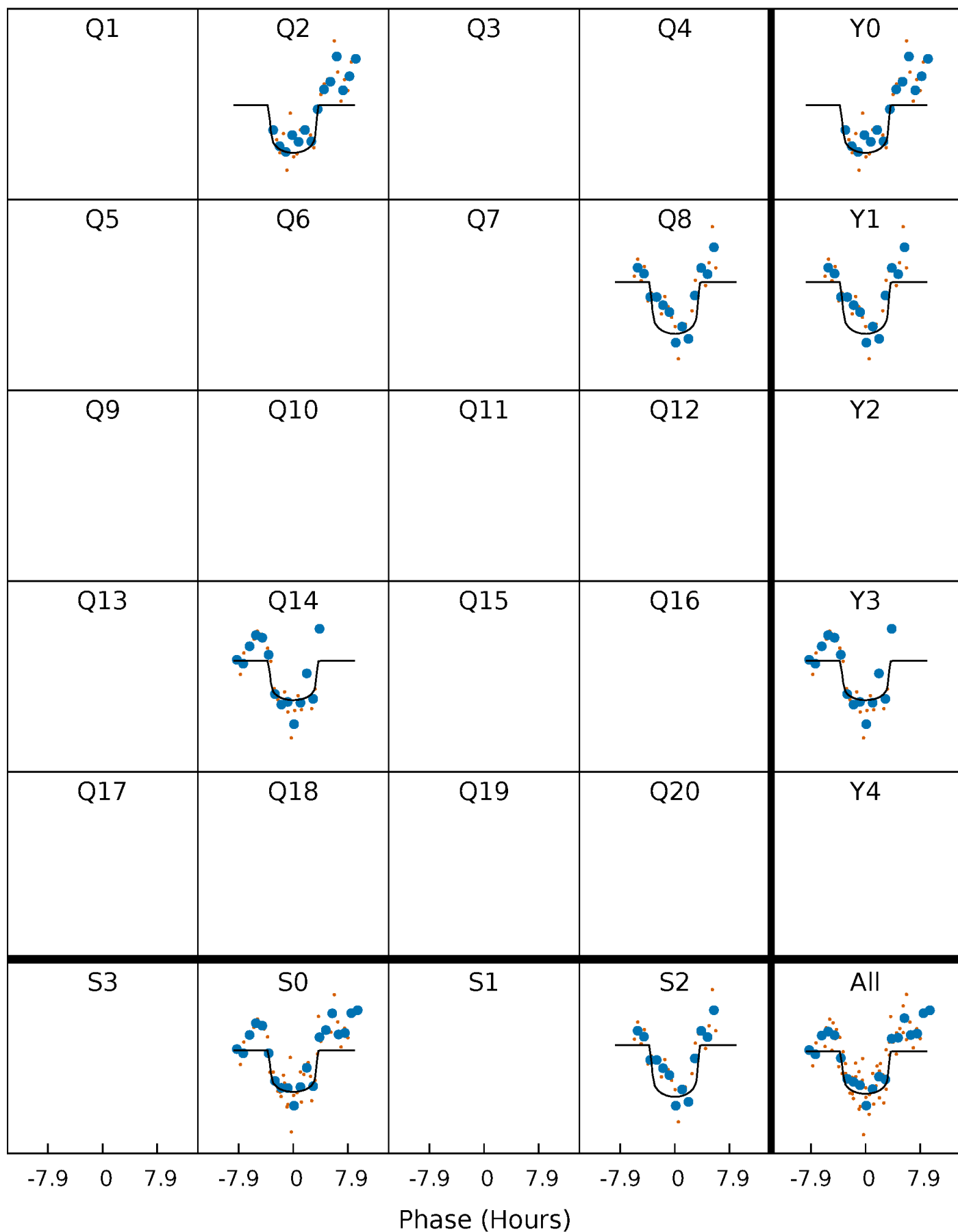
PDC Quarter-Phased Transit Curves

TCE 010353924-03 $P=533.313334$ Days $T_0=216.025213$ (BKJD)



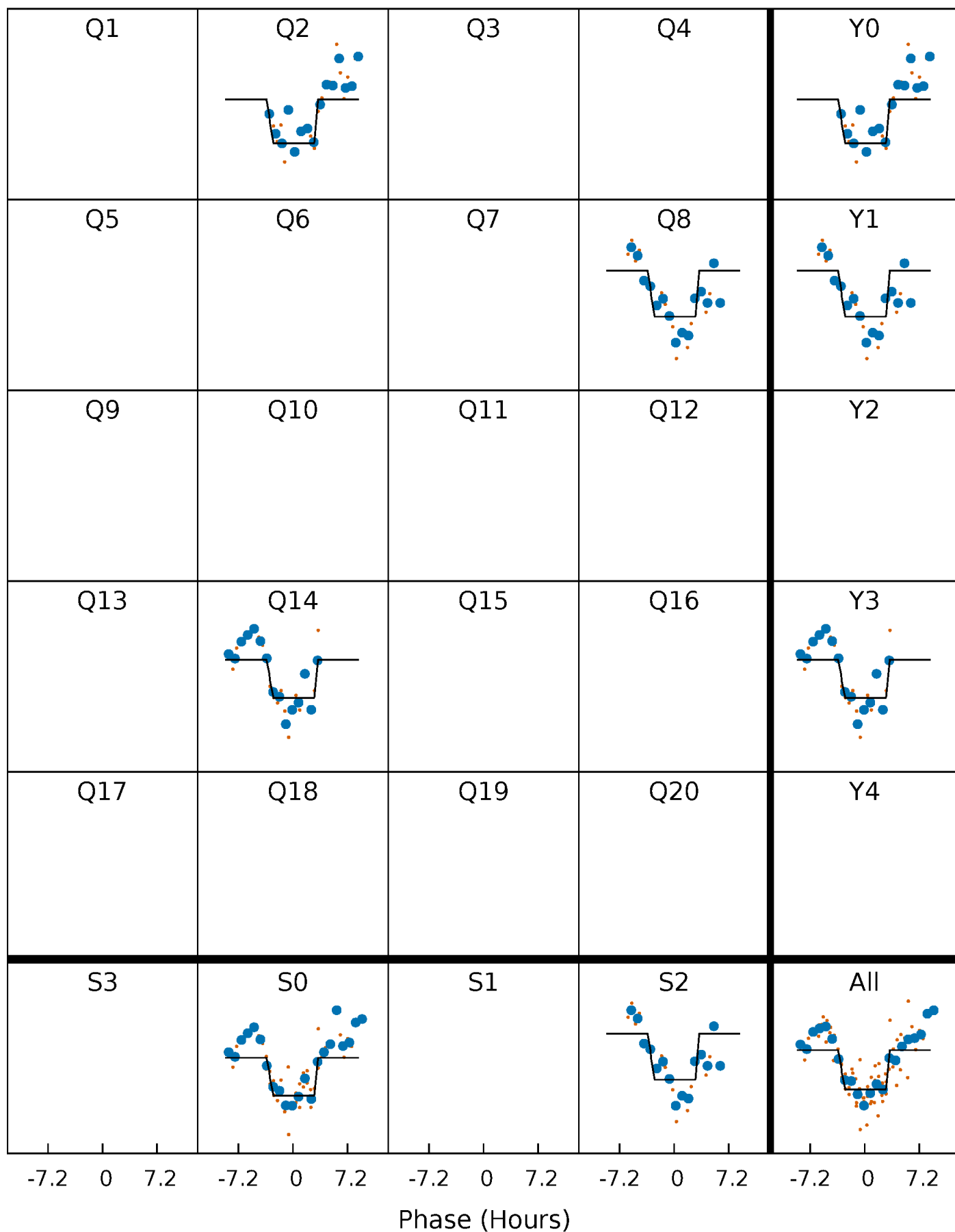
DV Quarter-Phased Transit Curves

TCE 010353924-03 P=533.313334 Days $T_0=216.025213$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

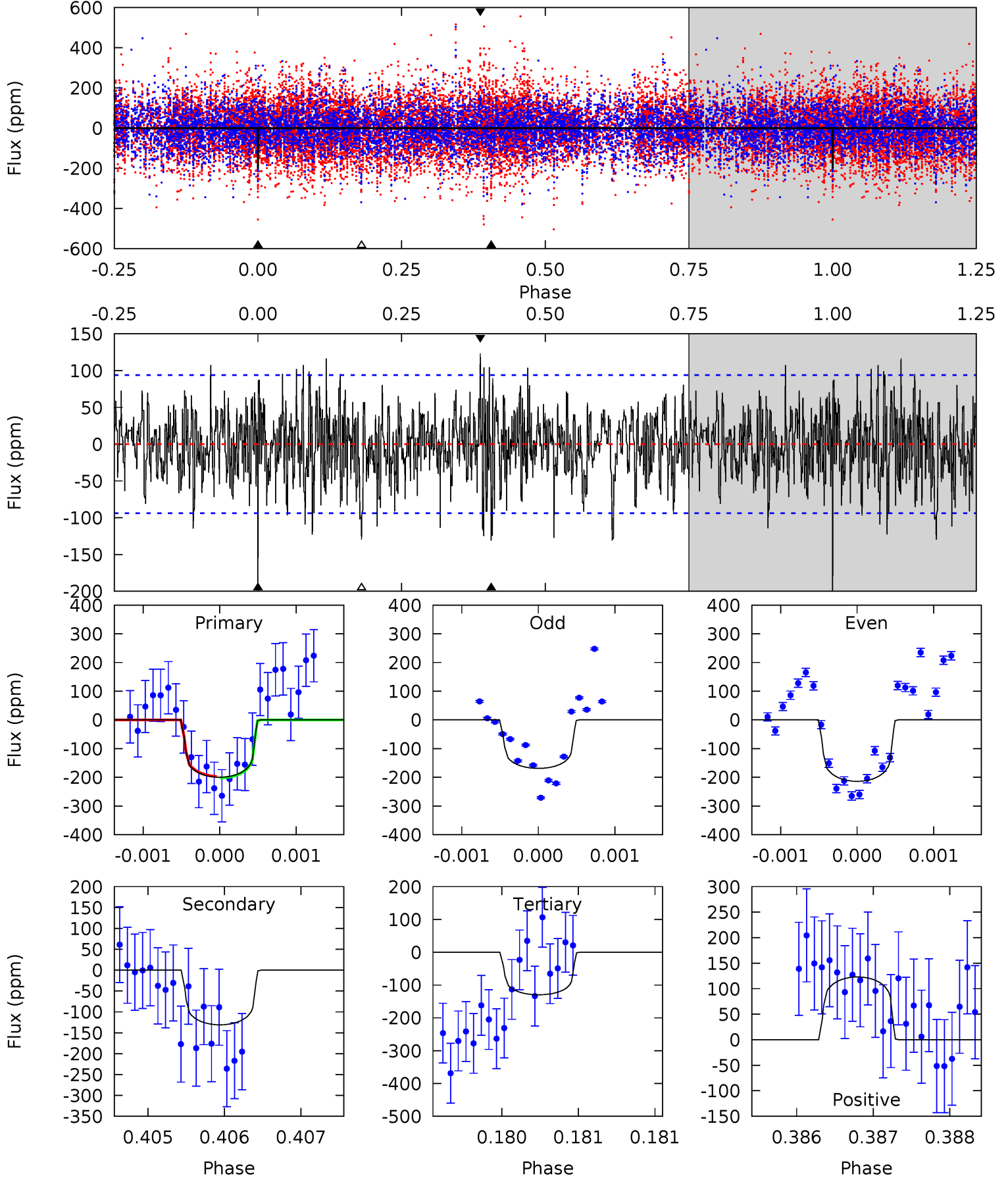
TCE 010353924-03 P=533.315916 Days $T_0=216.032195$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-03, P = 533.313334 Days, E = 216.025213 Days

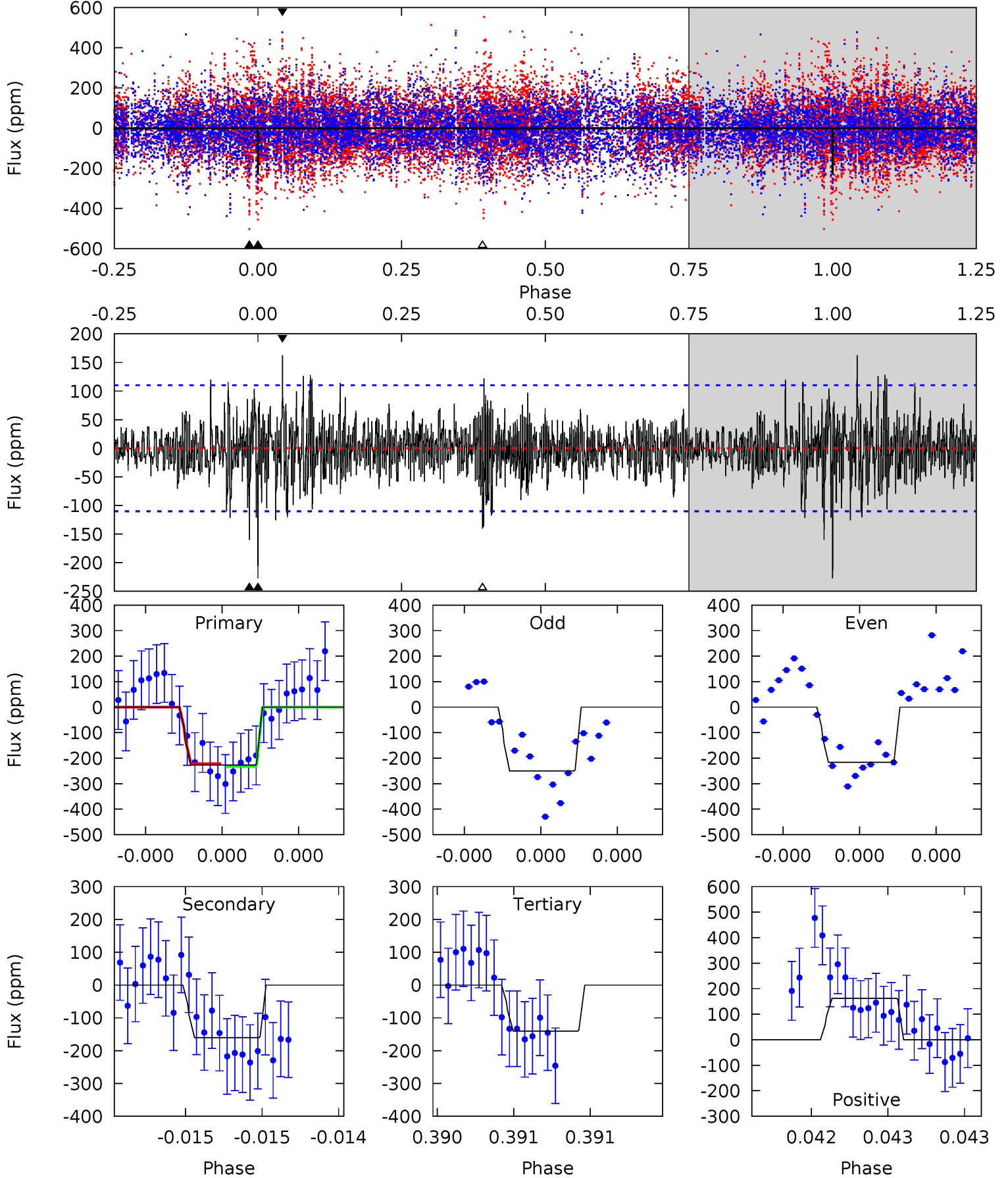
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	7.74	7.66	7.27	5.55	3.44	2.23	4.14	4.54	0.07	0.47	1.23	1.07	0.38	0.15



Alt Model-Shift Uniqueness Test

010353924-03, P = 533.315916 Days, E = 216.032195 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	8.10	7.09	8.22	5.58	3.49	1.77	4.39	3.26	1.01	-0.12	0.76	0.95	0.42	0.23



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-131 ± 17	$3.61^{+3.22}_{-2.42}$	447^{+38}_{-33}	5167^{+4309}_{-1088}	11330^{+95140}_{-8150}
Alt.	-160 ± 20	$3.59^{+3.51}_{-2.24}$	445^{+37}_{-35}	5310^{+4299}_{-1201}	13380^{+88823}_{-9848}

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

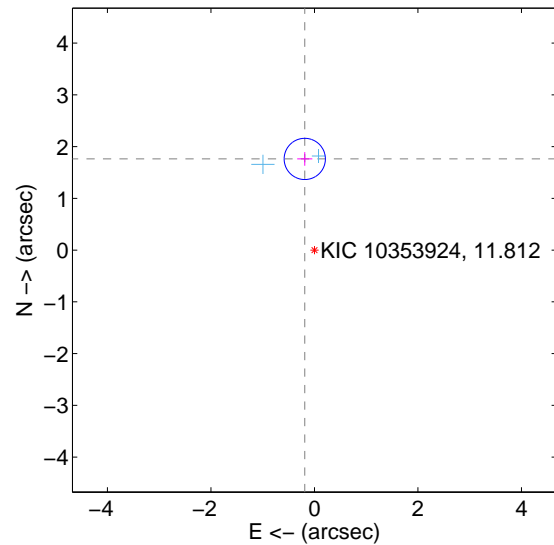
Supplemental centroid analysis for 010353924-03. **Kepler magnitude: 11.81.** Transit SNR 9.24

There are 2 quarters with good PRF difference image offsets

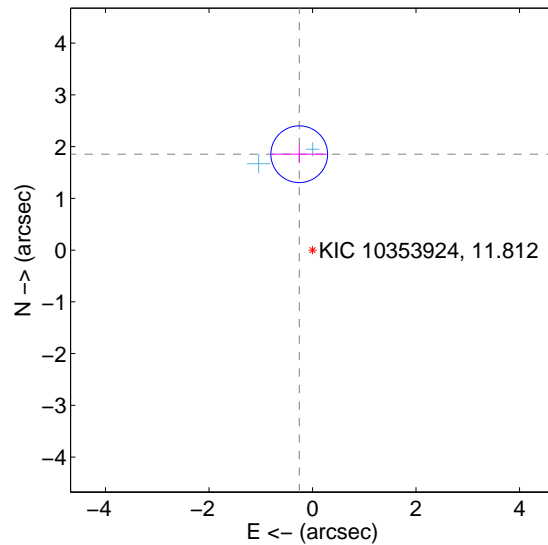
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.772 ± 0.133	13.34	0.187 ± 0.146	1.762 ± 0.133
PRF-fit source offset from KIC position	1.870 ± 0.183	10.23	0.257 ± 0.531	1.853 ± 0.169
photometric centroid source offset	1.34 ± 0.85	1.56	-1.33 ± 0.85	0.11 ± 0.93

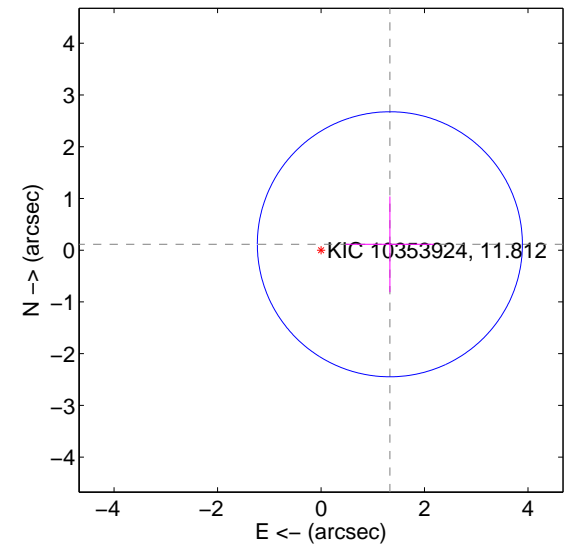
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

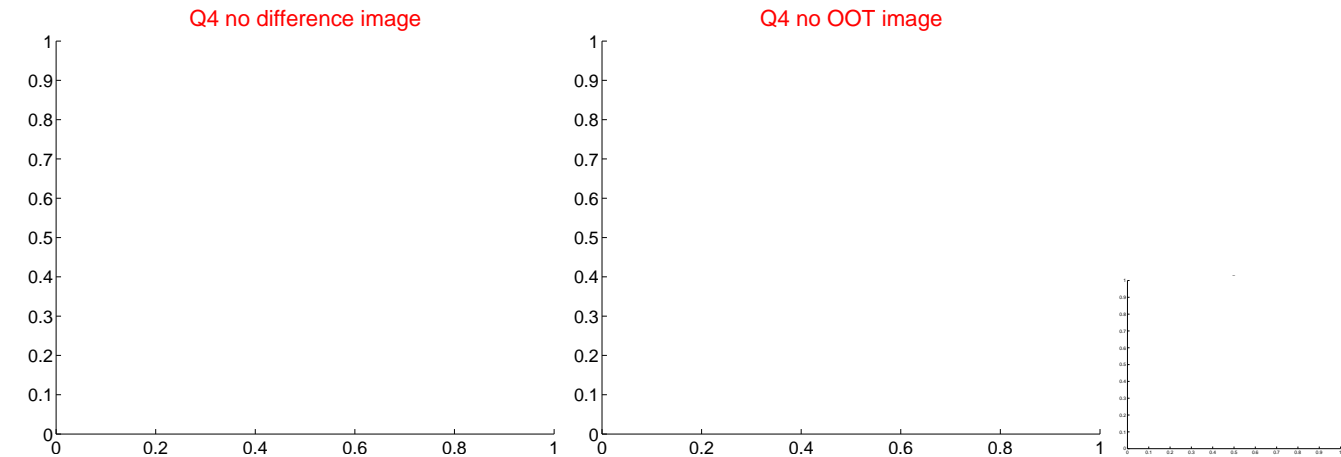
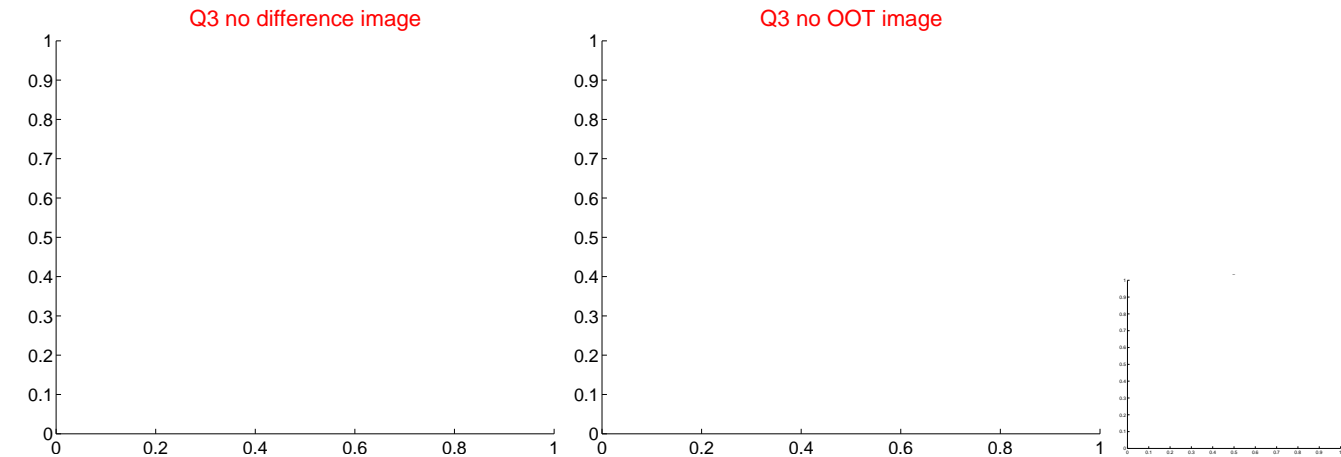
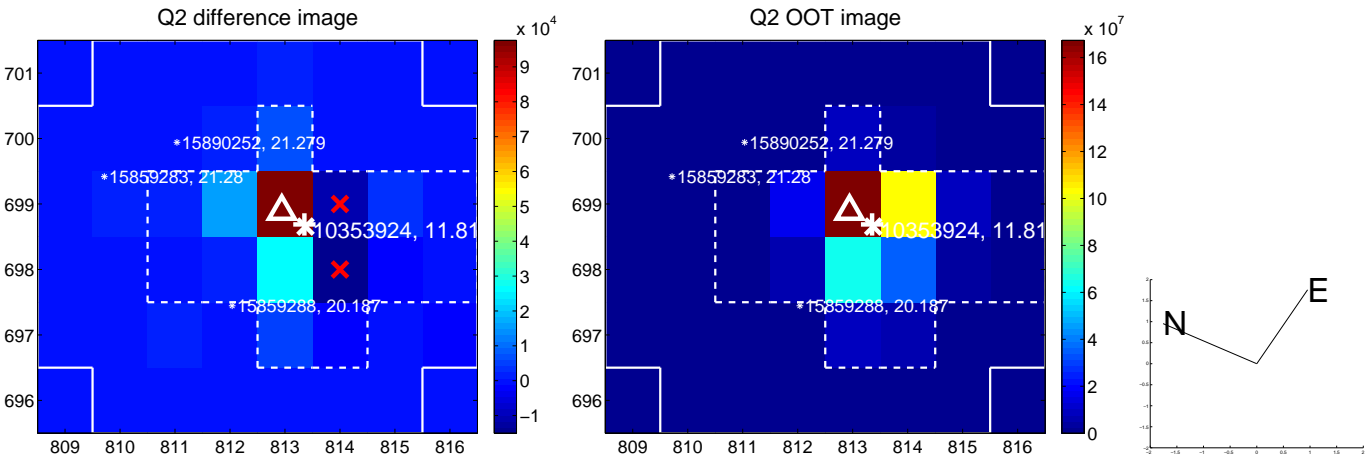


offset from photometric centroids

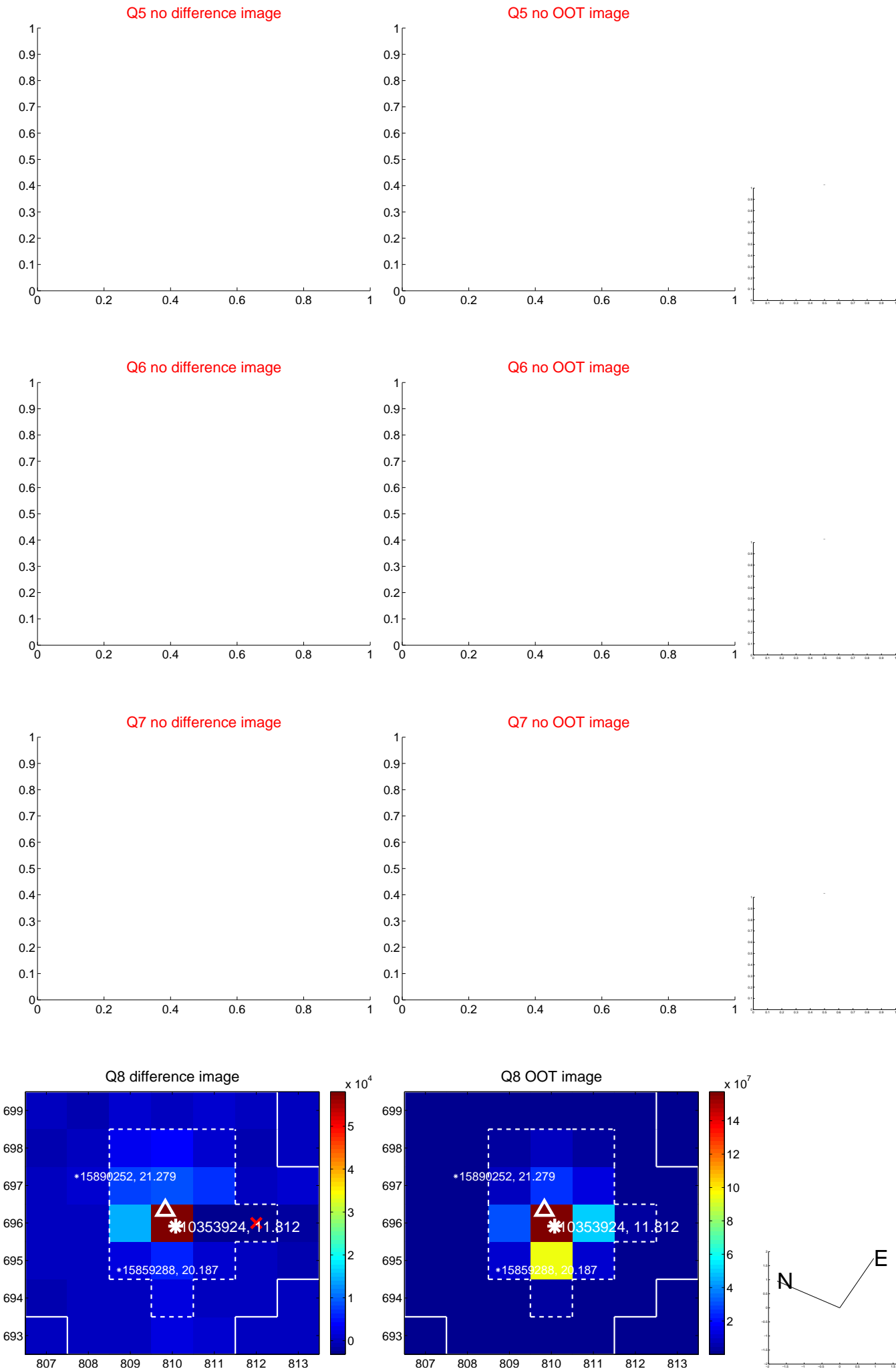


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



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



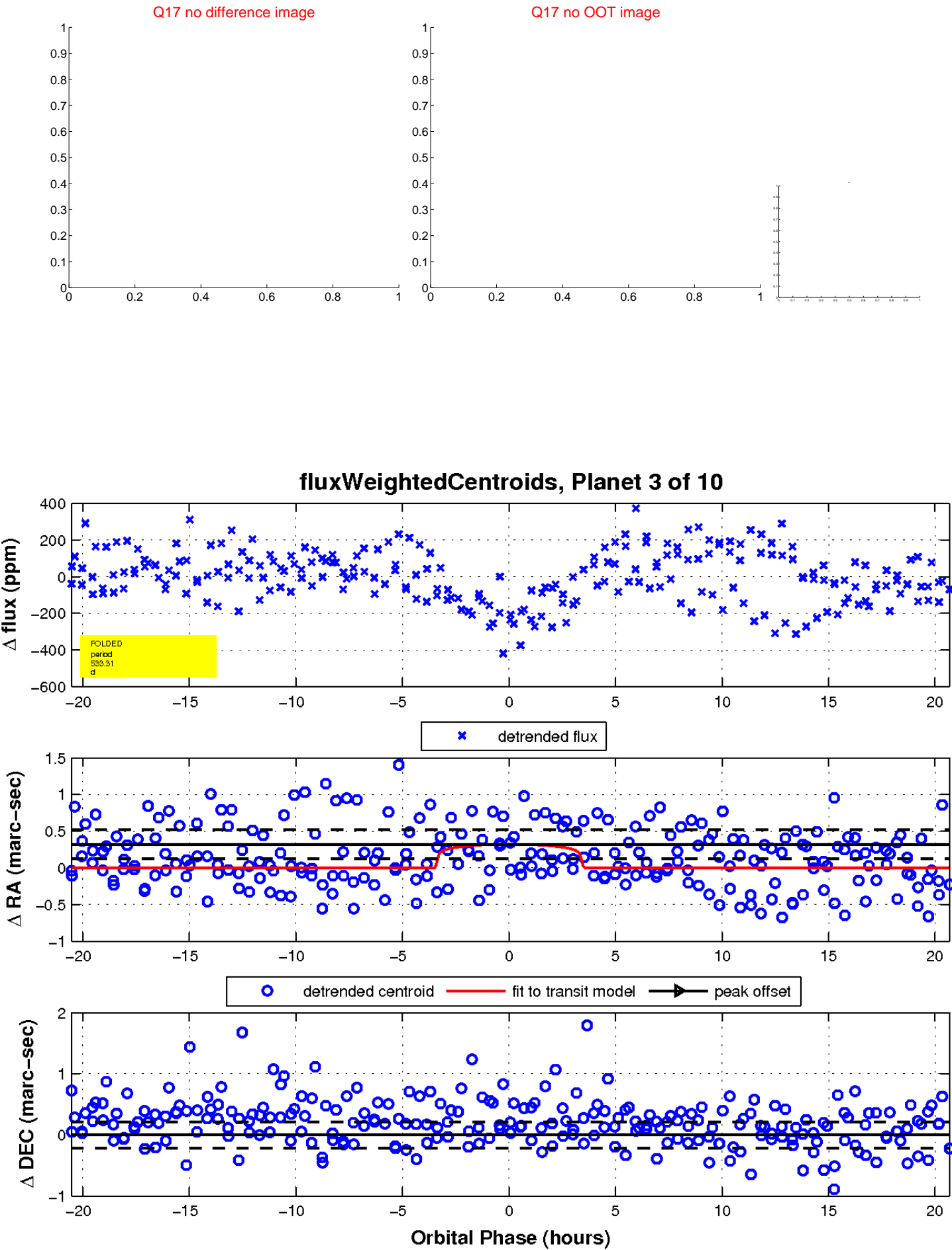
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

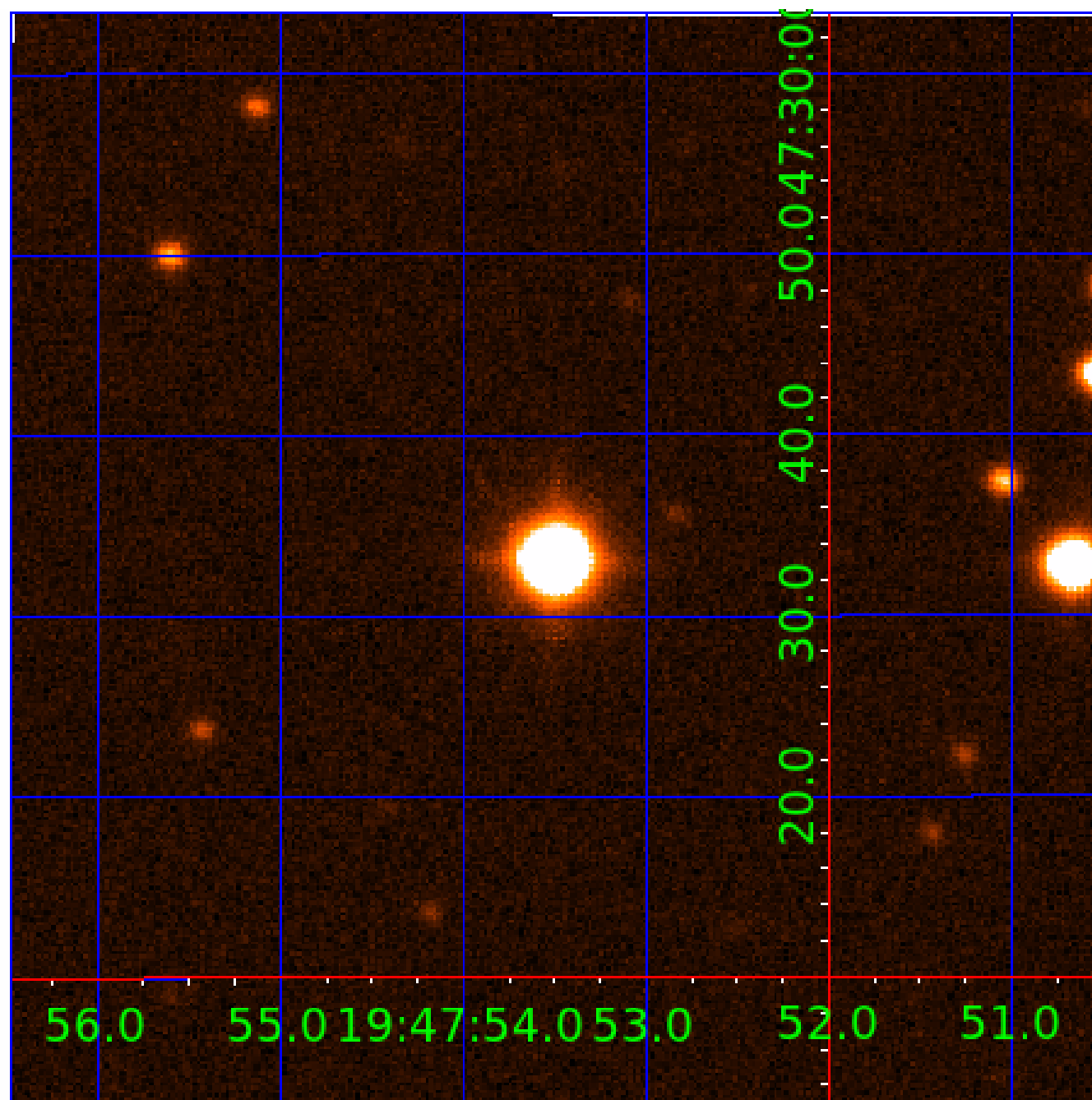


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010353924

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})
010353924-01	OBS	No	1.625617	132.418256	13.7	8.654	9.2	6.1	1.71	6654	0.67	5652.02
010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
010353924-04	OBS	No	115.147808	171.598167	220.7	5.114	9.4	8.6	1.71	6654	2.85	19.29
010353924-05	OBS	No	458.381648	432.509759	260.1	7.434	9.3	9.8	1.71	6654	3.04	3.06
010353924-06	OBS	No	44.151668	133.469056	82.5	19.725	9.1	6.7	1.71	6654	1.65	69.23
010353924-07	OBS	No	103.673679	222.990038	203.0	7.175	9.7	9.3	1.71	6654	2.72	22.18
010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010353924-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010353924-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

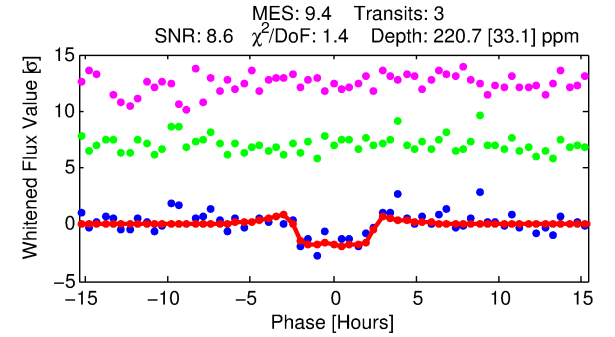
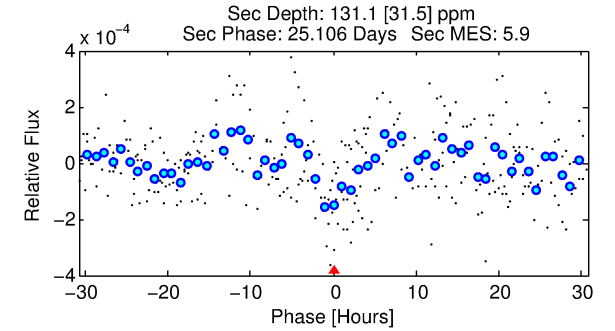
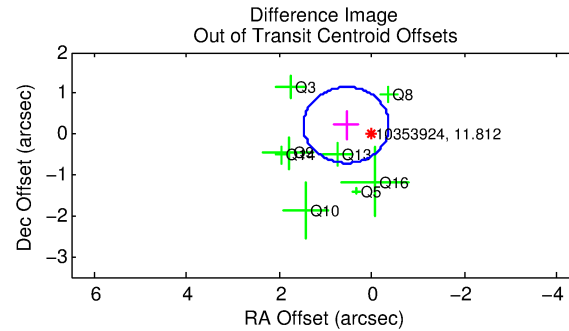
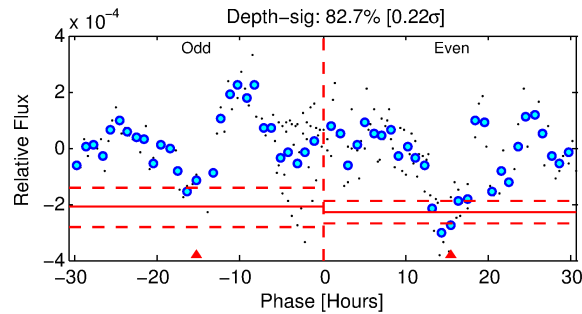
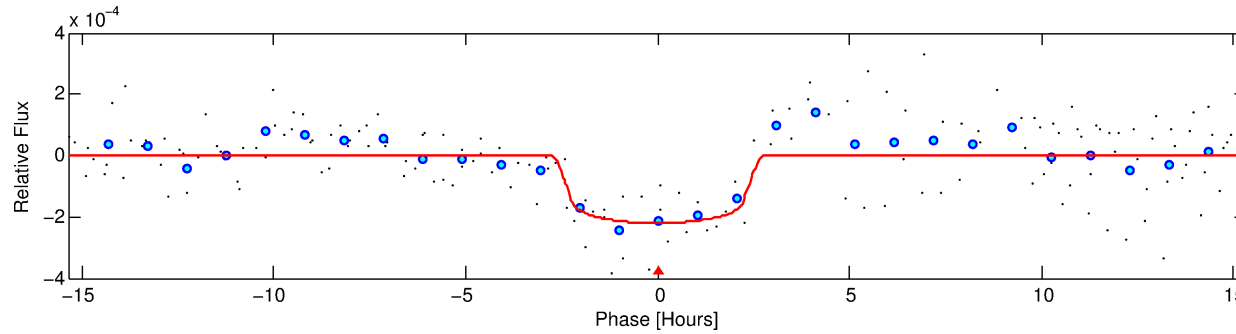
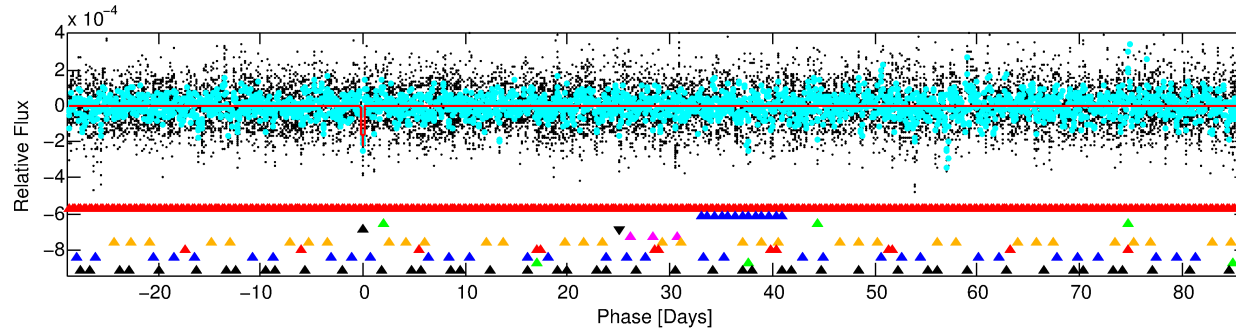
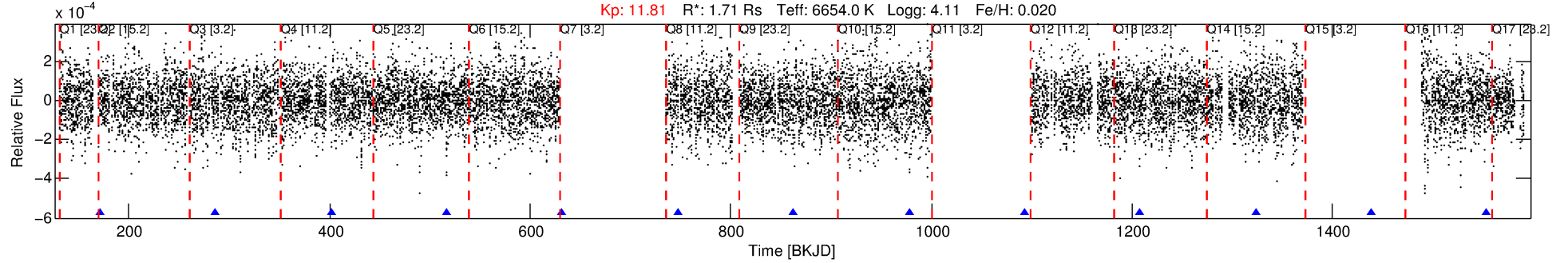
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-04

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 4 of 10 Period: 115.148 d



DV Fit Results:

Period = 115.14781 [0.00180] d
Epoch = 171.5982 [0.0144] BKJD
Rp/R* = 0.0152 [0.0079]
a/R* = 100.14 [292.79]
b = 0.83 [1.09]
Seff = 19.29 [7.84]
Teq = 534 [54] K
Rp = 2.85 [1.73] Re
a = 0.5167 [0.1345] AU
Ag = 2374.81 [2694.84] [0.88 σ]
Teffp = 5767 [1560] K [3.35 σ]

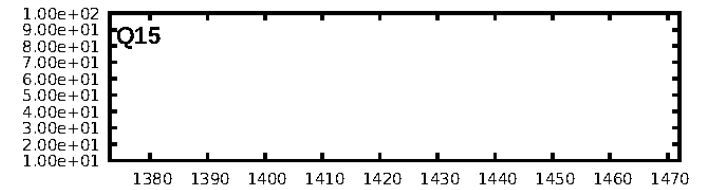
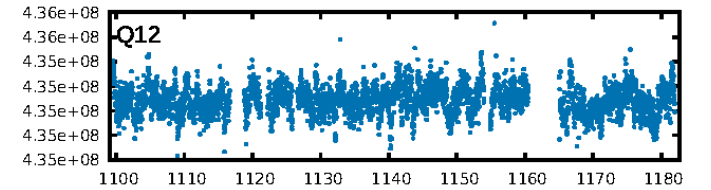
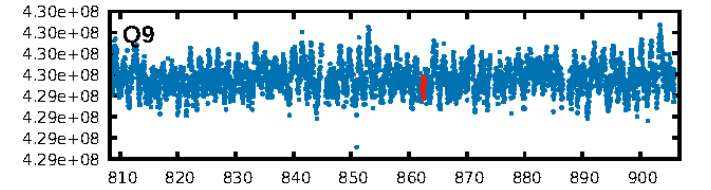
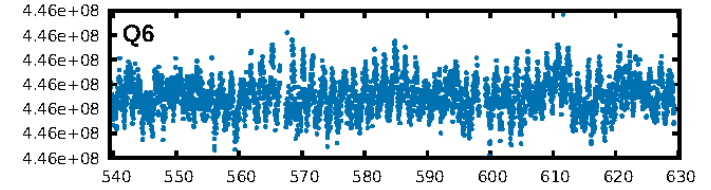
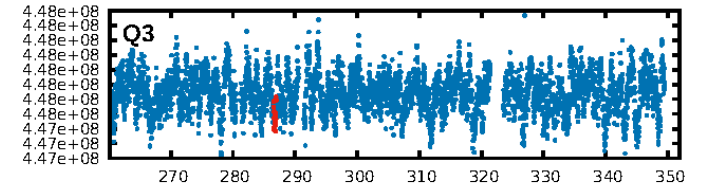
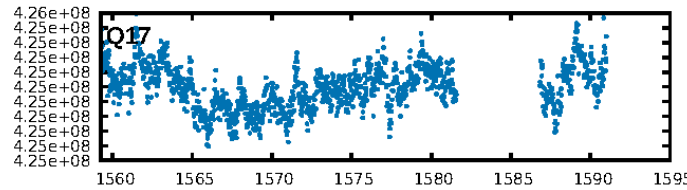
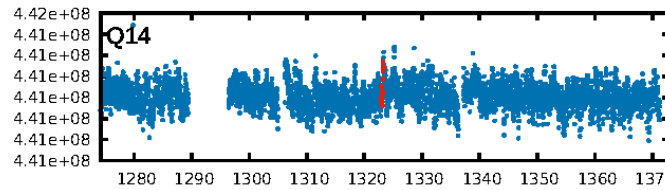
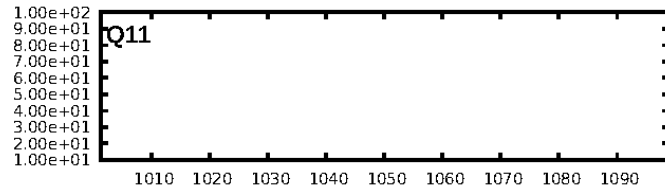
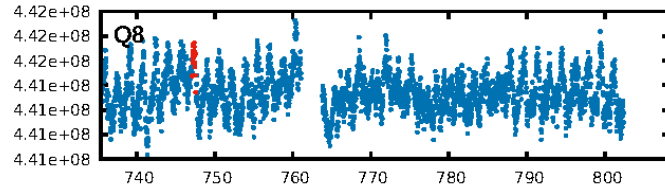
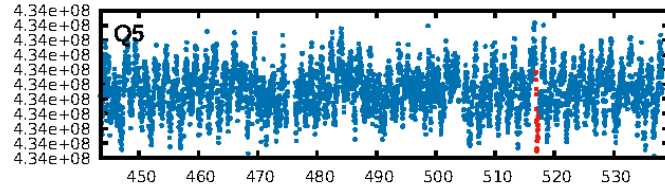
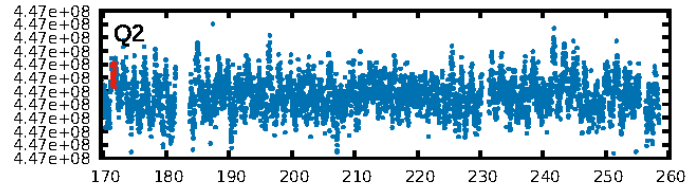
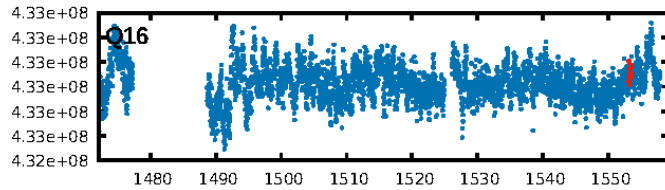
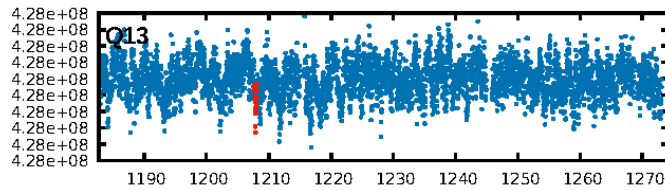
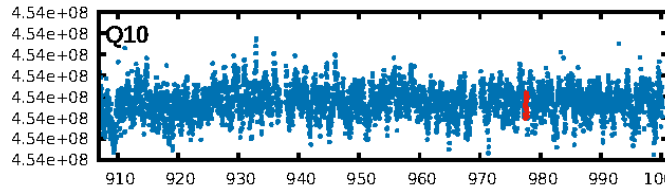
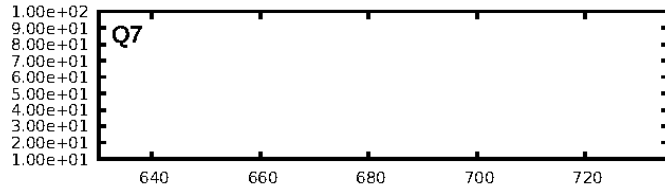
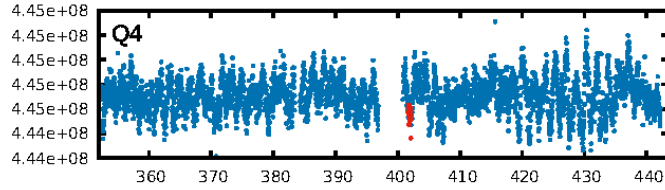
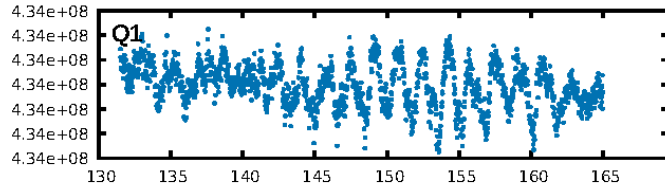
DV Diagnostic Results:

ShortPeriod-sig: 99.2% [2.66 σ]
LongPeriod-sig: 100.0% [912.97 σ]
ModelChiSquare2-sig: 33.2%
ModelChiSquareGof-sig: 92.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2119
Centroid-sig: 6.3%
Centroid-so: 0.843 arcsec [1.85 σ]
OotOffset-rm: 0.594 arcsec [1.92 σ]
KicOffset-rm: 0.451 arcsec [1.32 σ]
OotOffset-st: 2/1/2/3 [8]
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DiffImageOverlap-fno: 0.33 [3/9]

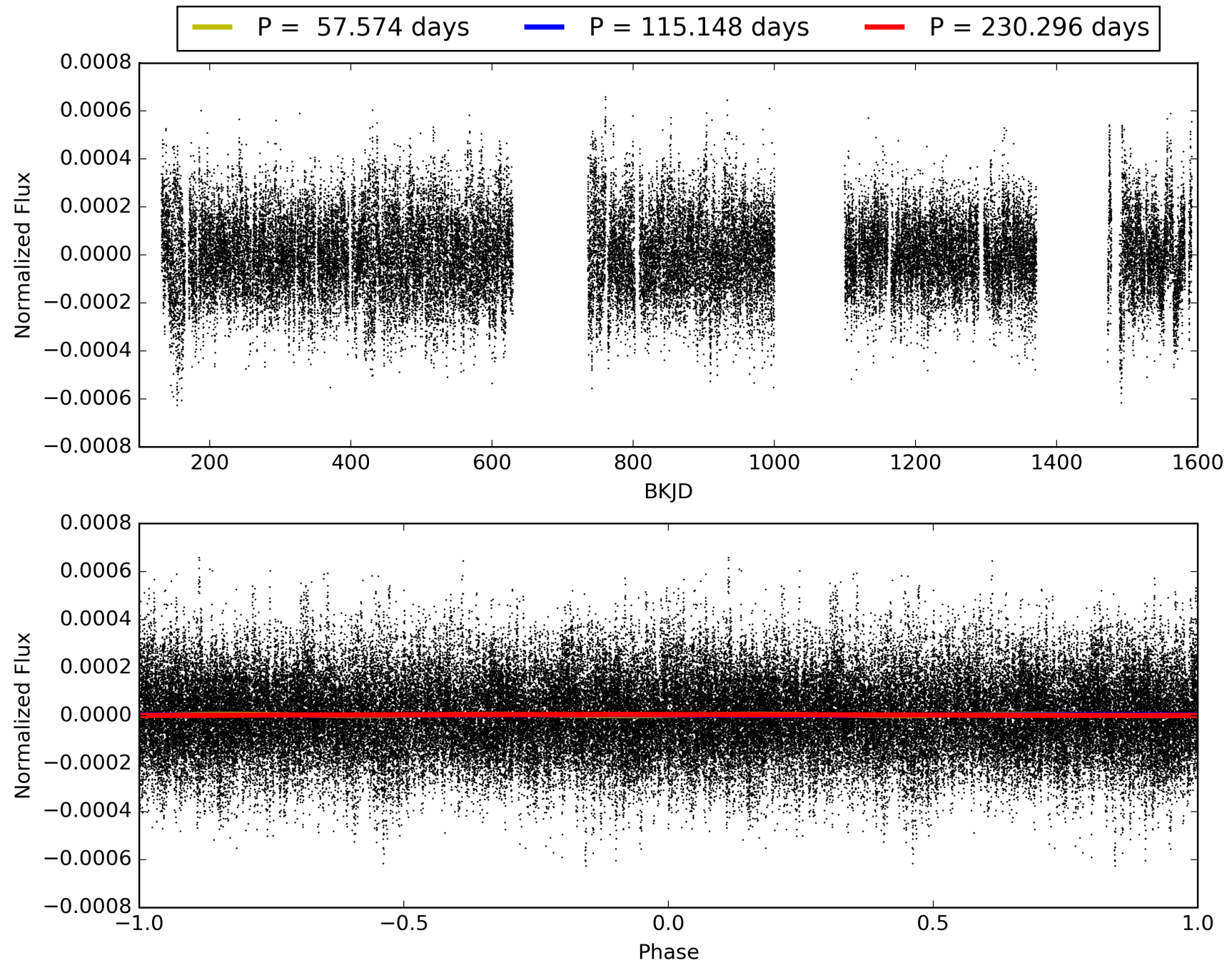
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:38:50 Z

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

TCE 010353924-04, PDC Light Curves

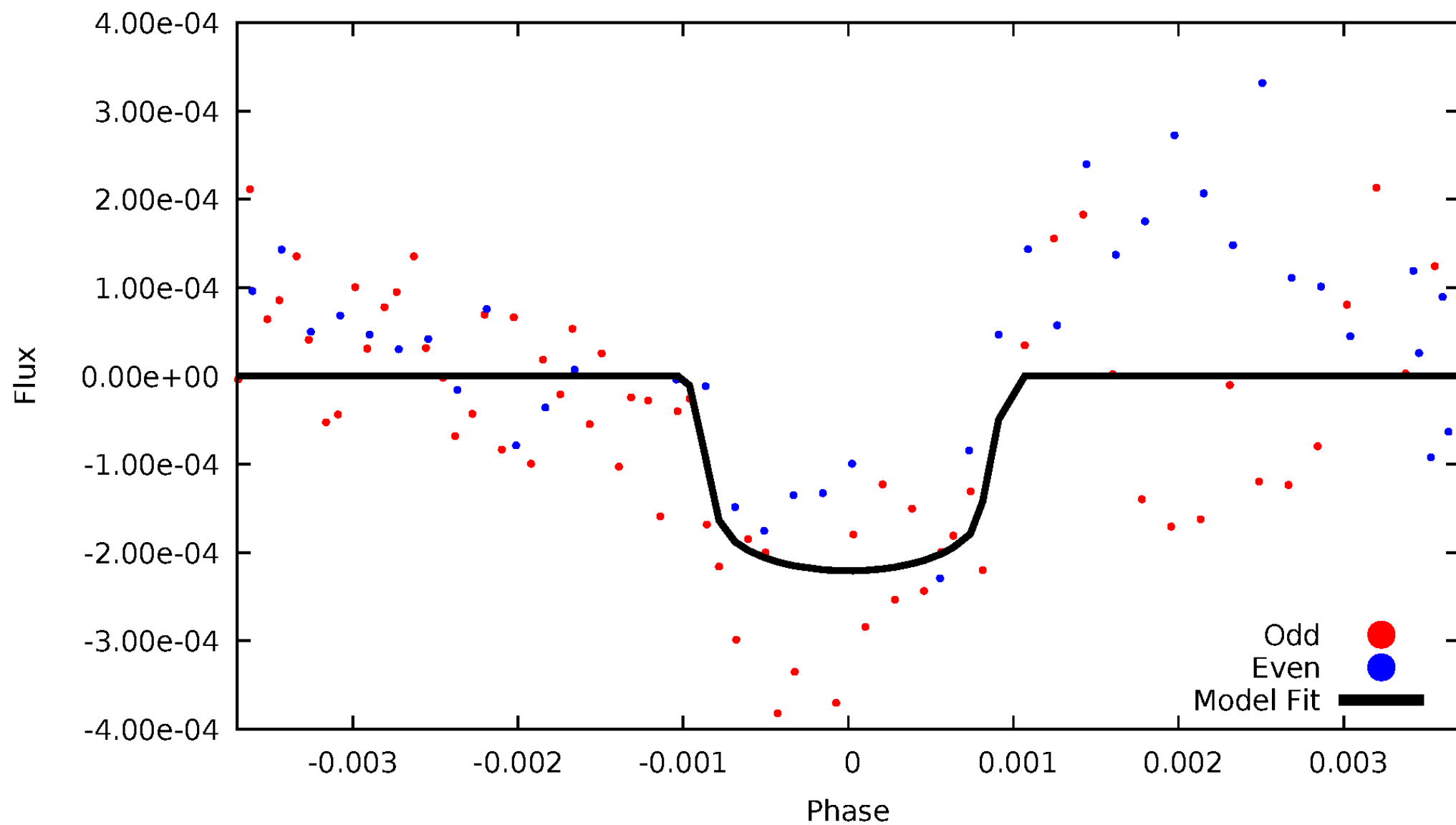


TCE 010353924-04



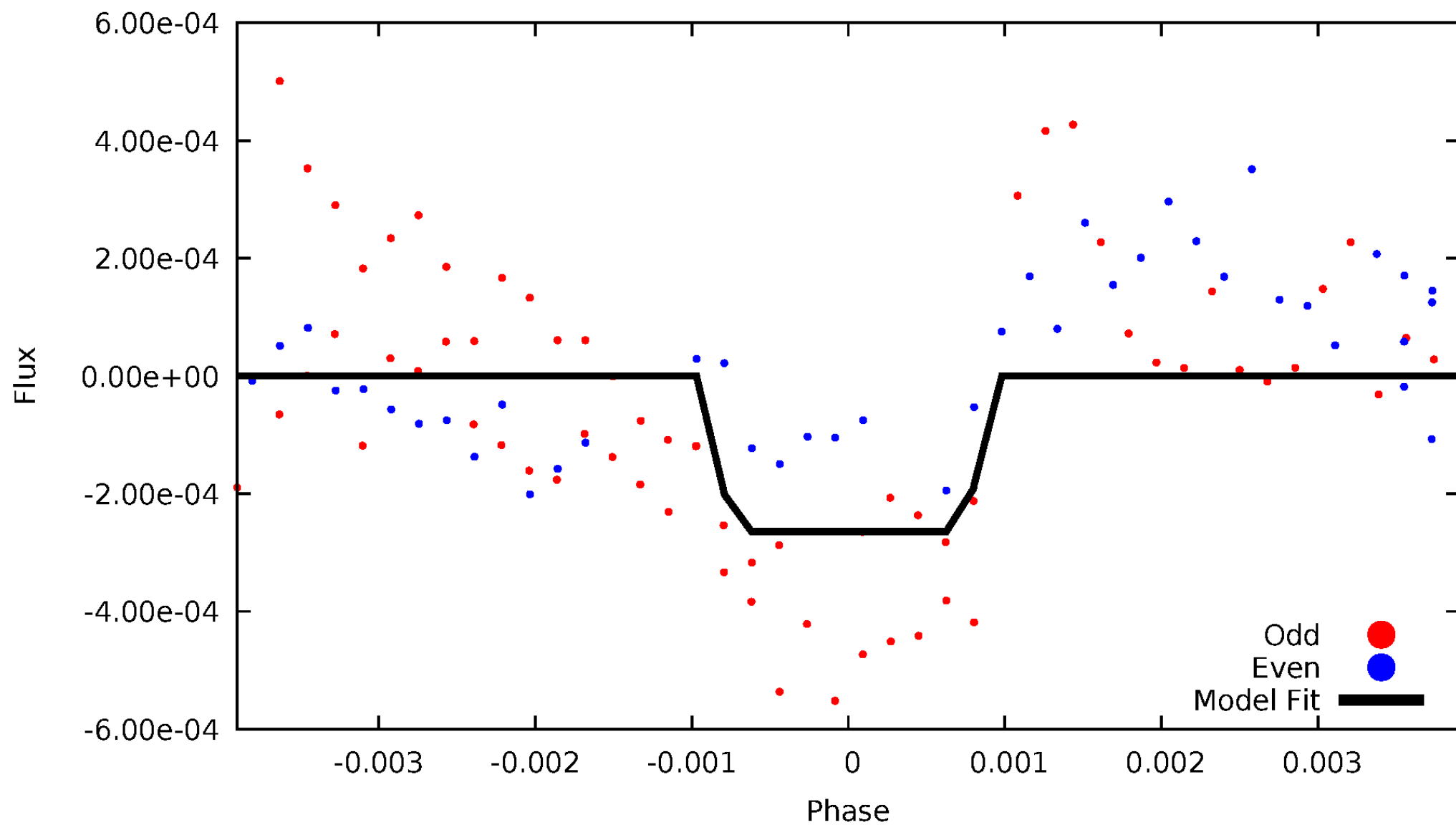
DV Odd/Even

TCE 010353924-04



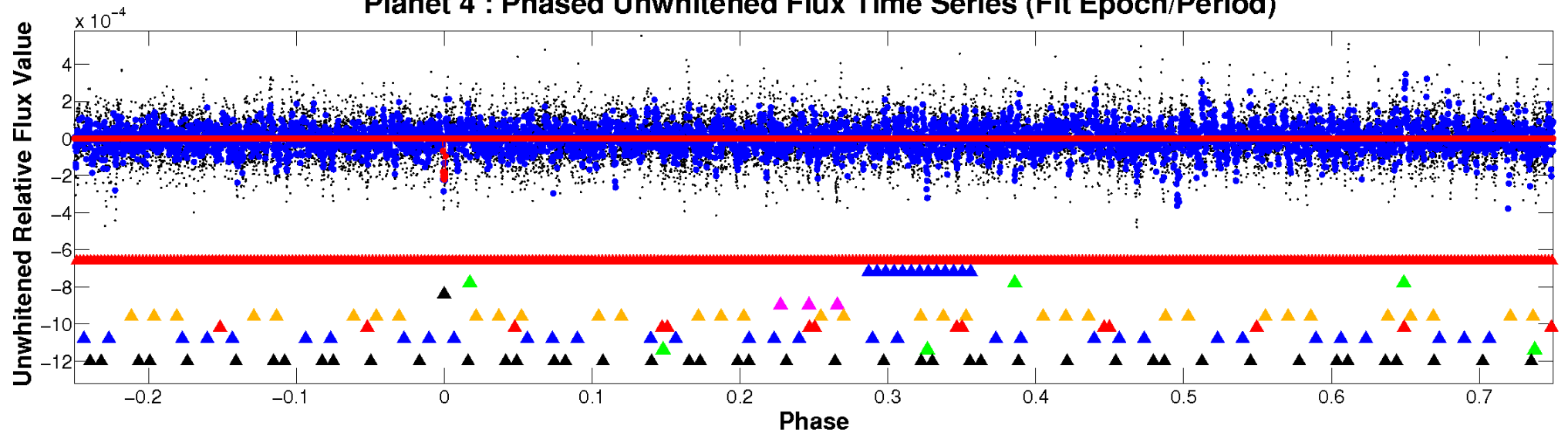
ALT Odd/Even

TCE 010353924-04

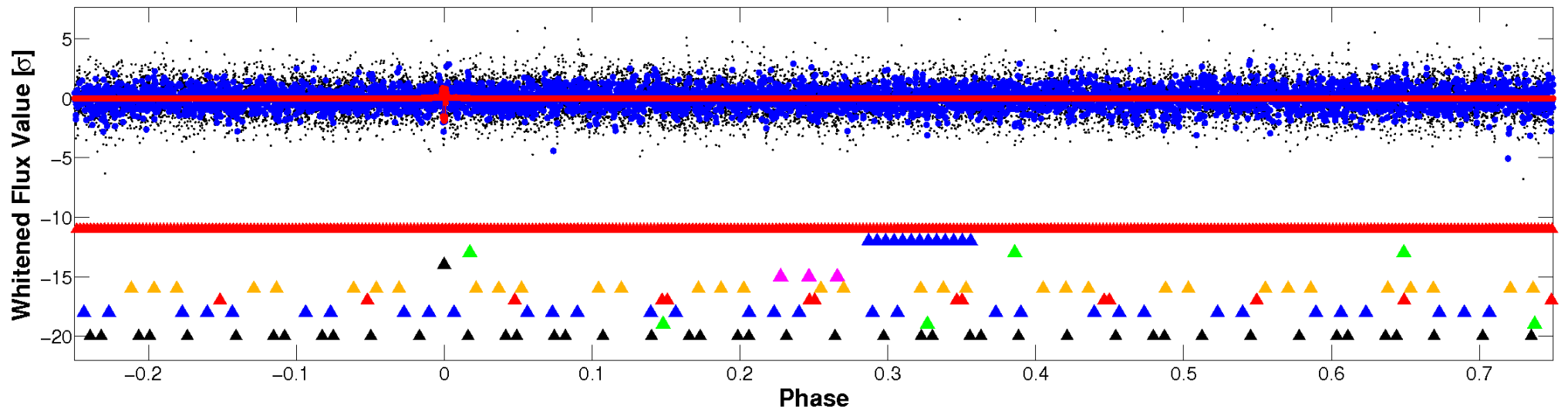


Non-Whitened Vs. Whitened Light Curve

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

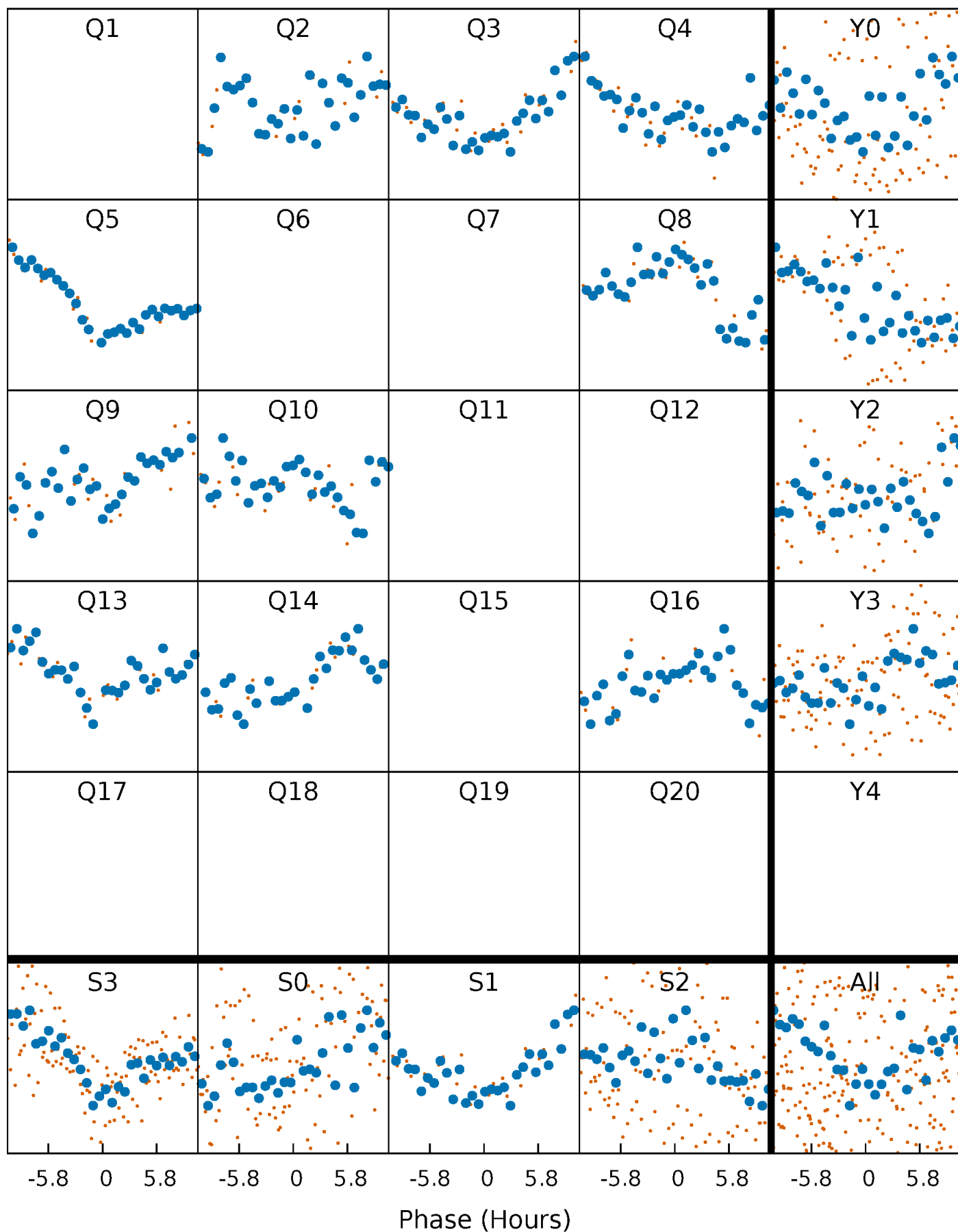


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



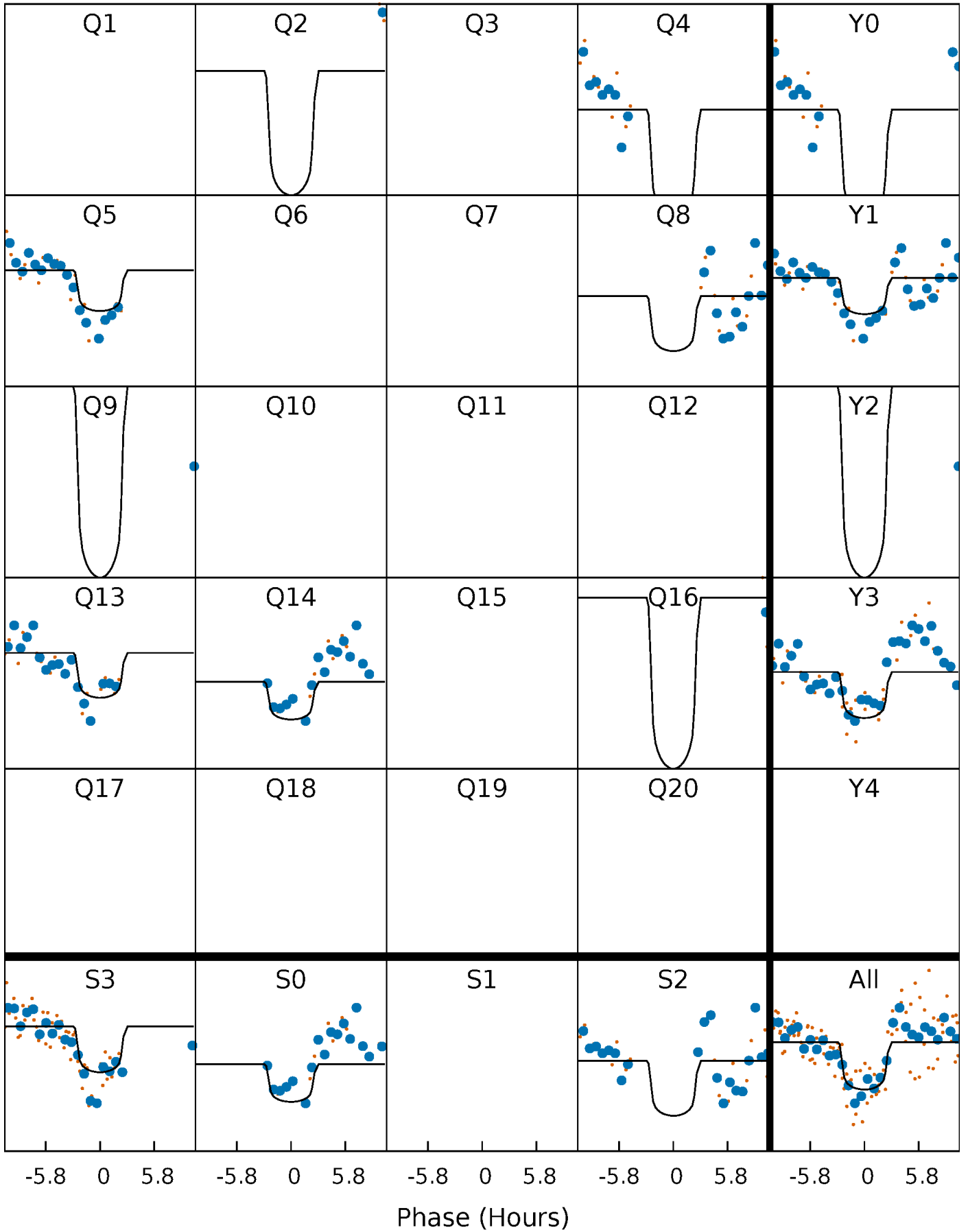
PDC Quarter-Phased Transit Curves

TCE 010353924-04 P=115.147808 Days $T_0=171.598167$ (BKJD)



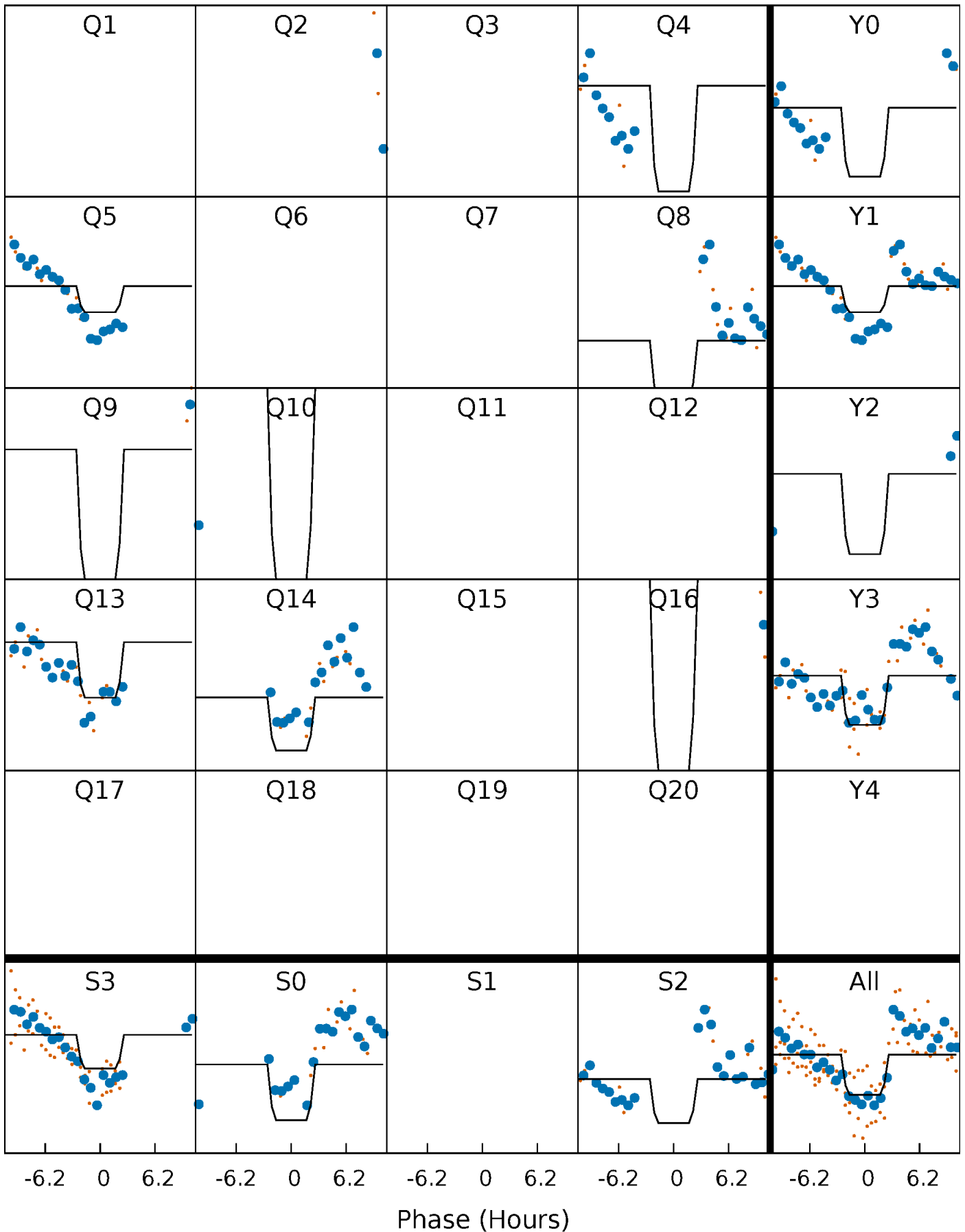
DV Quarter-Phased Transit Curves

TCE 010353924-04 P=115.147808 Days $T_0=171.598167$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

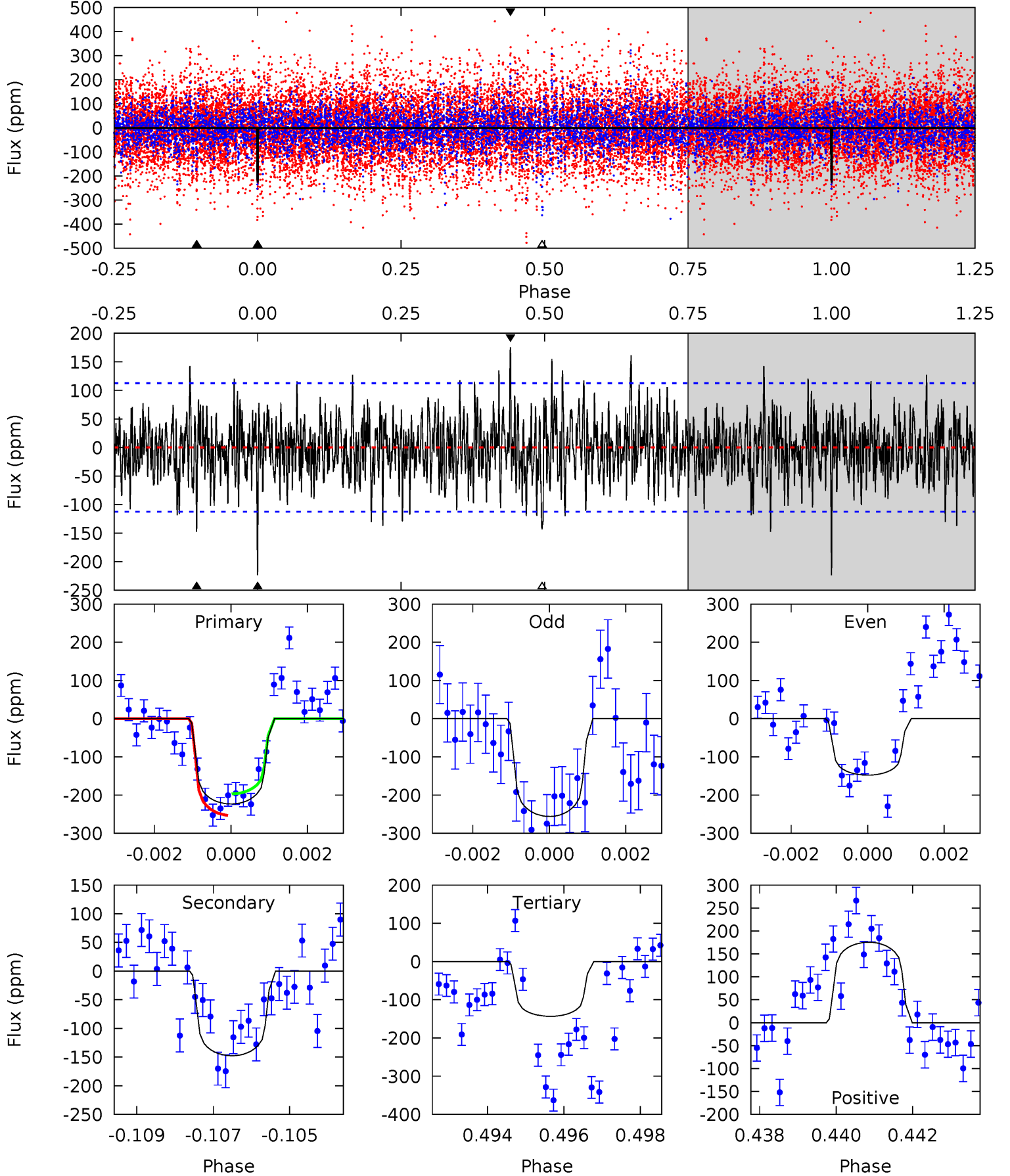
TCE 010353924-04 $P=115.146470$ Days $T_0=171.603353$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-04, P = 115.147808 Days, E = 56.450359 Days

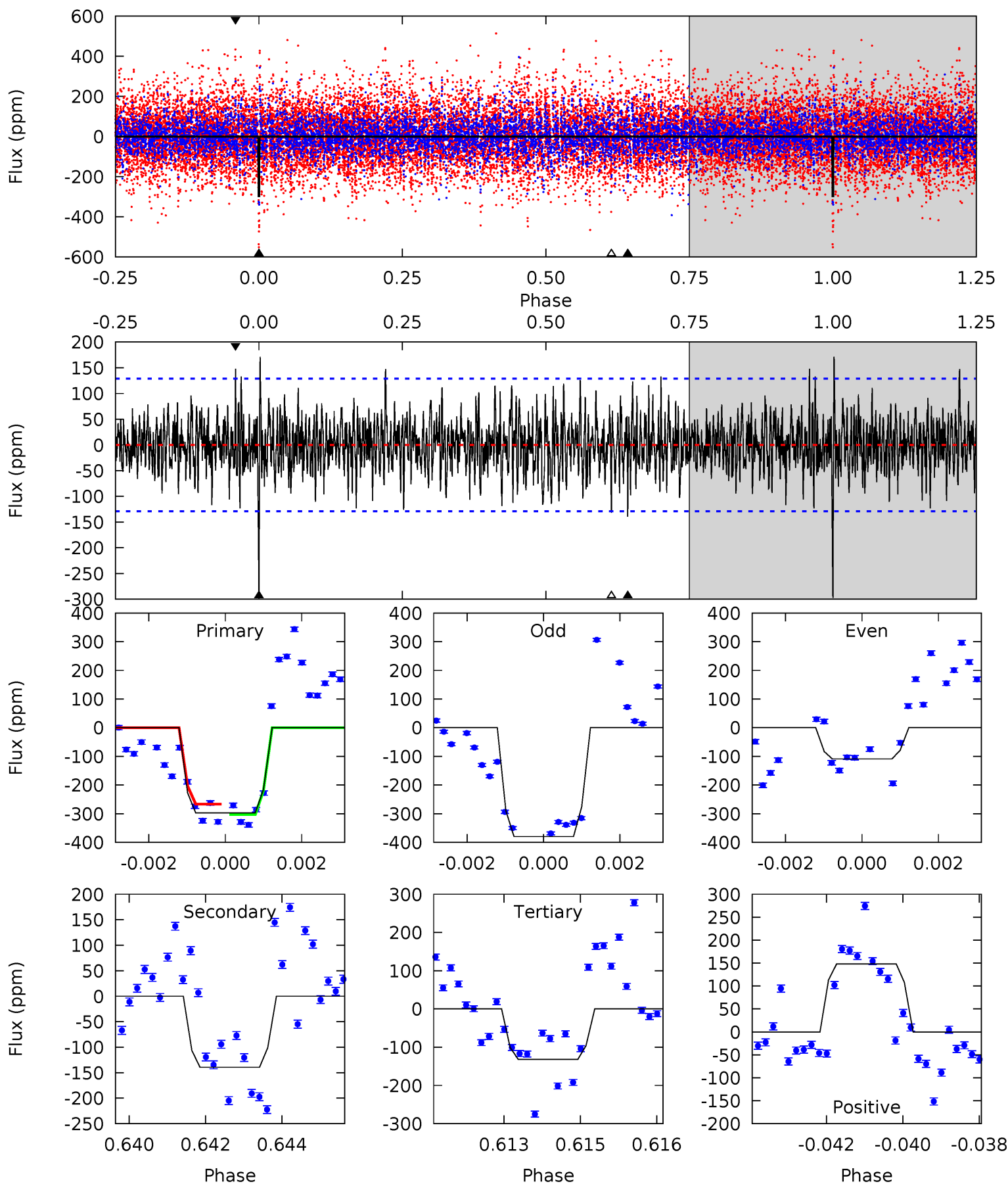
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	7.02	6.81	8.33	5.34	3.11	2.05	3.80	2.28	0.20	-1.32	2.39	1.00	0.44	1.34



Alt Model-Shift Uniqueness Test

010353924-04, $P = 115.146470$ Days, $E = 56.456883$ 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	5.80	5.50	6.17	5.37	3.16	1.70	6.87	6.20	0.30	-0.37	5.20	0.96	0.37	0.75



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-148 ± 21	$2.84^{+1.34}_{-1.30}$	741^{+55}_{-55}	5883^{+2218}_{-966}	2679^{+6413}_{-1478}
Alt.	-139 ± 24	$2.92^{+1.68}_{-1.36}$	740^{+63}_{-53}	5710^{+2303}_{-981}	2431^{+5528}_{-1484}

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

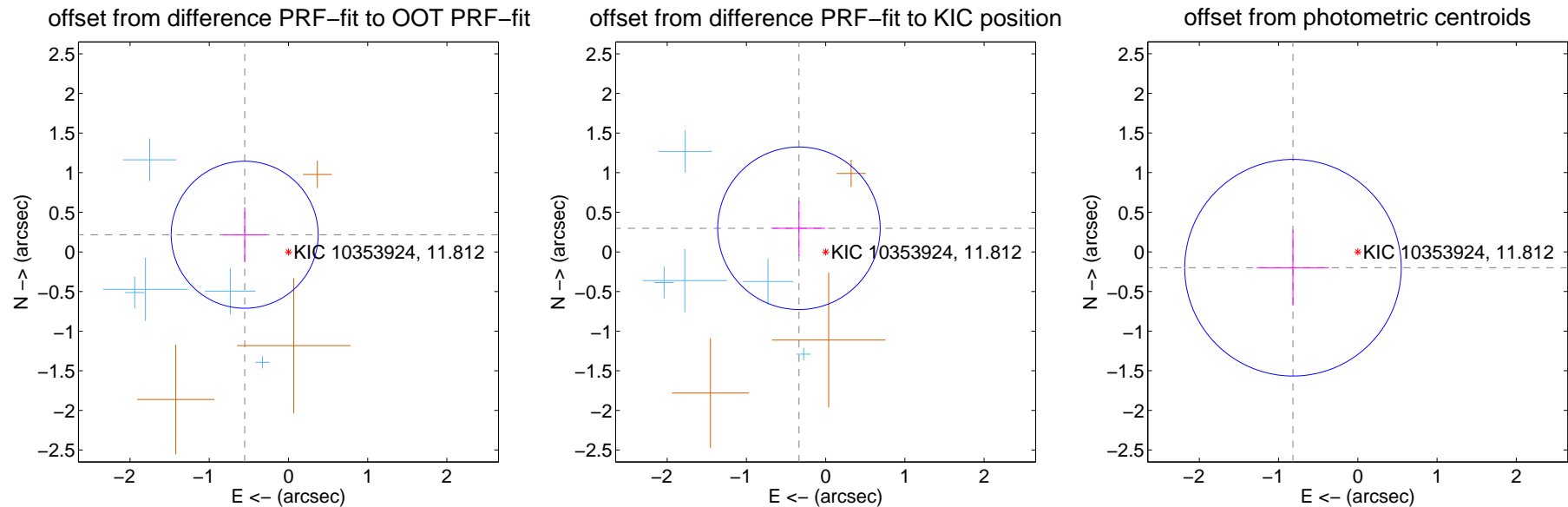
DV Centroid Data

Supplemental centroid analysis for 010353924-04. **Kepler magnitude: 11.81.** Transit SNR 8.58

There are 5 quarters with good PRF difference image offsets

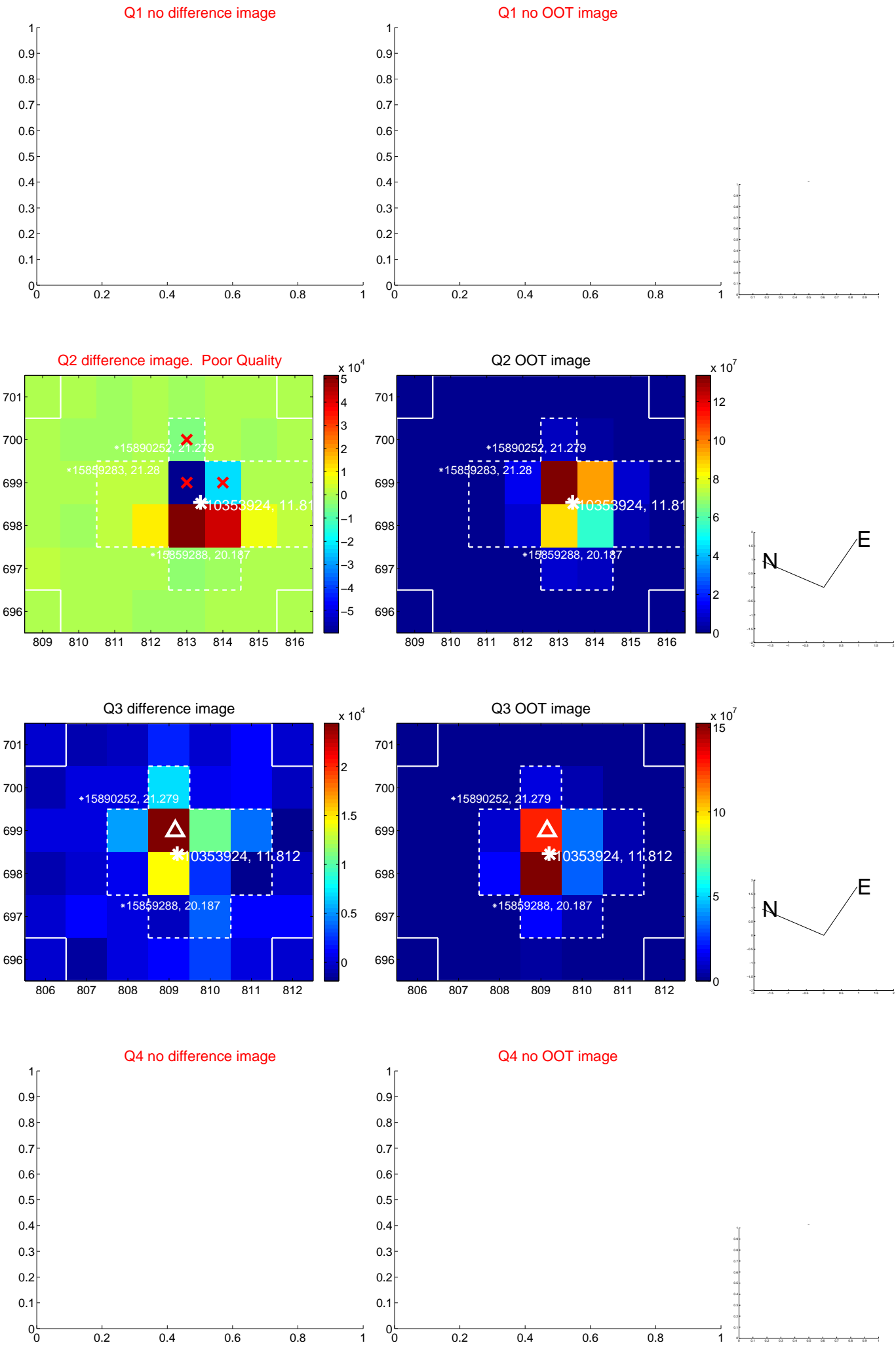
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.594 ± 0.309	1.92	0.553 ± 0.277	0.217 ± 0.345
PRF-fit source offset from KIC position	0.451 ± 0.342	1.32	0.337 ± 0.329	0.299 ± 0.346
photometric centroid source offset	0.84 ± 0.46	1.85	0.82 ± 0.45	-0.20 ± 0.48

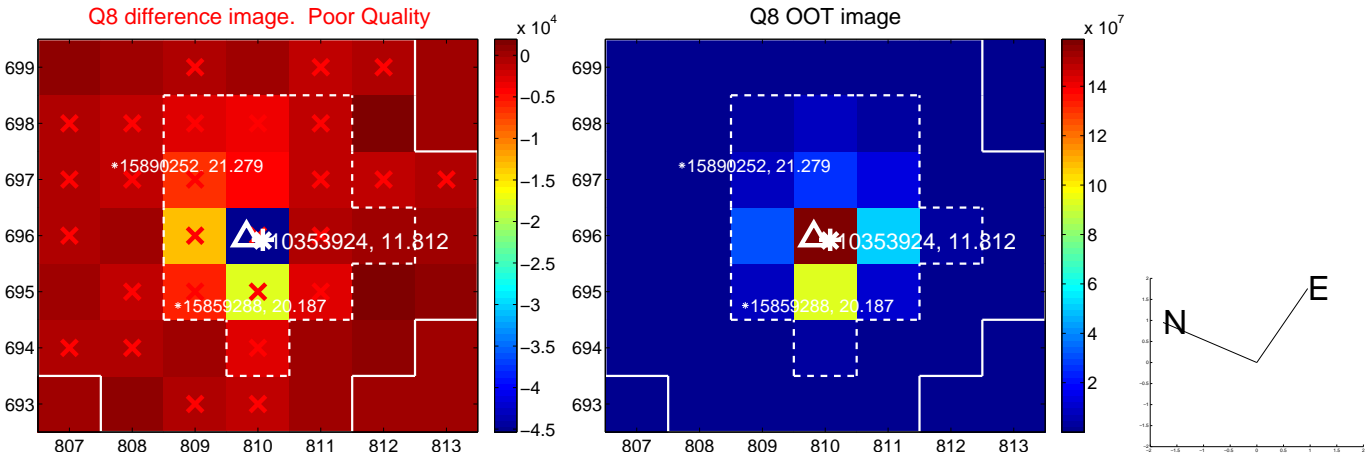
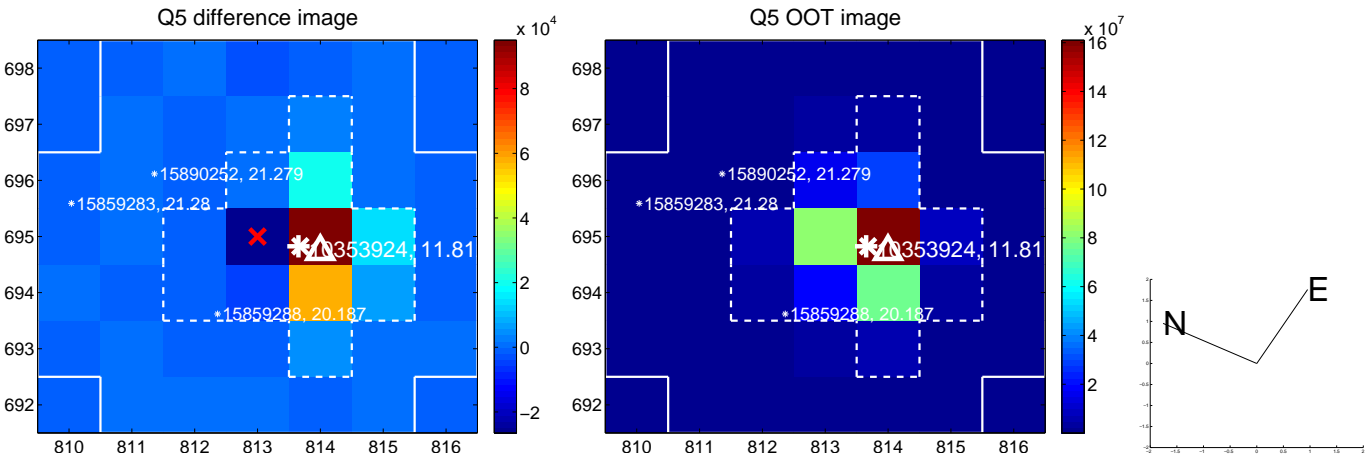


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

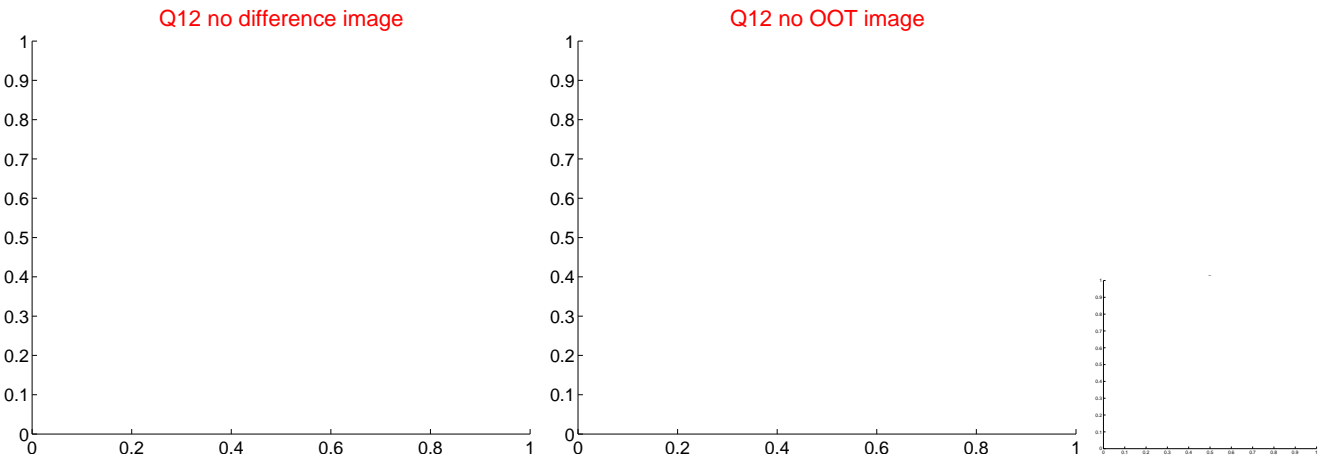
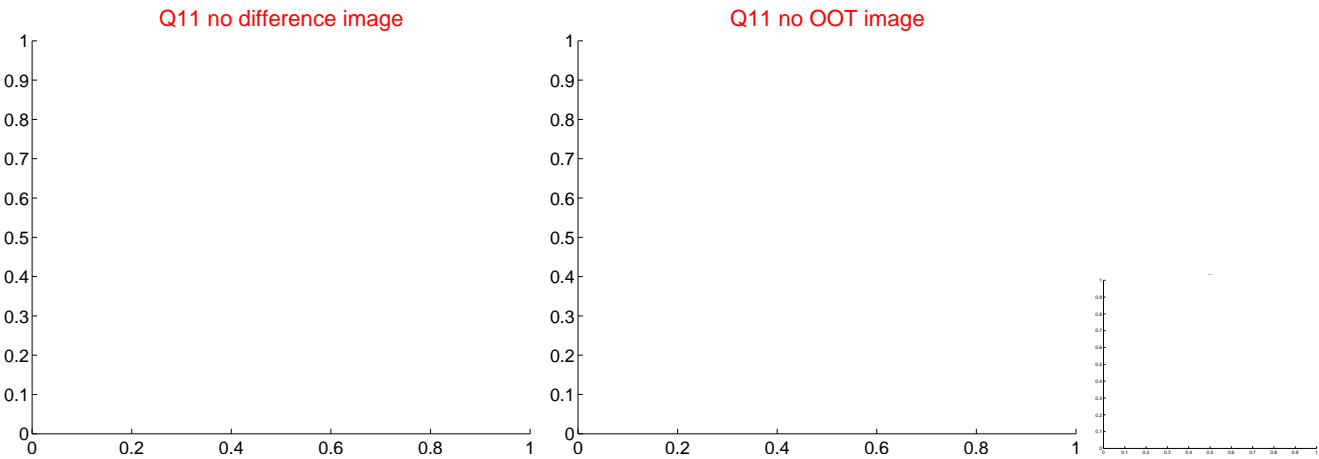
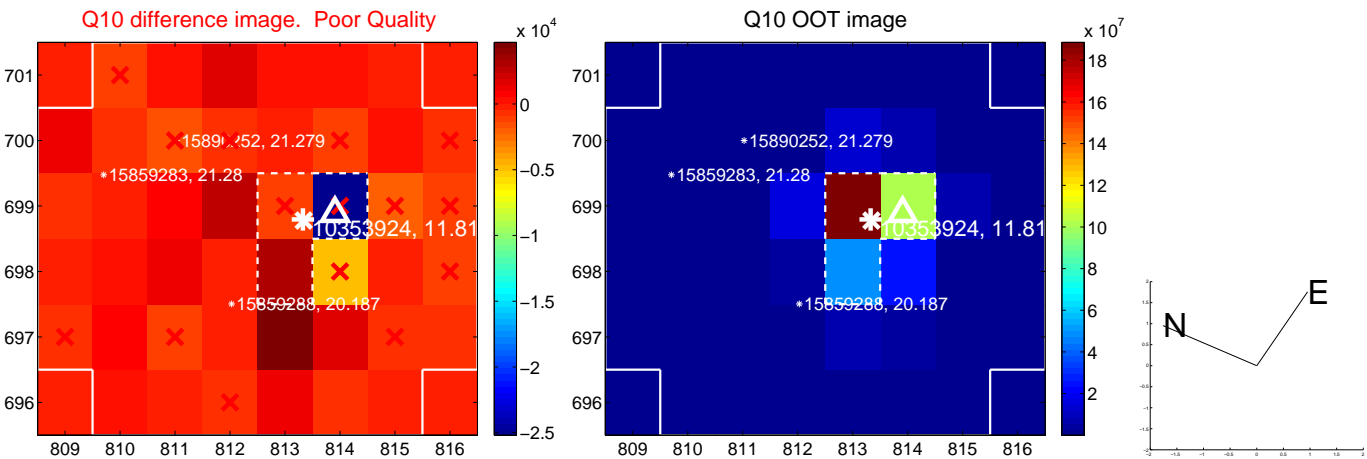
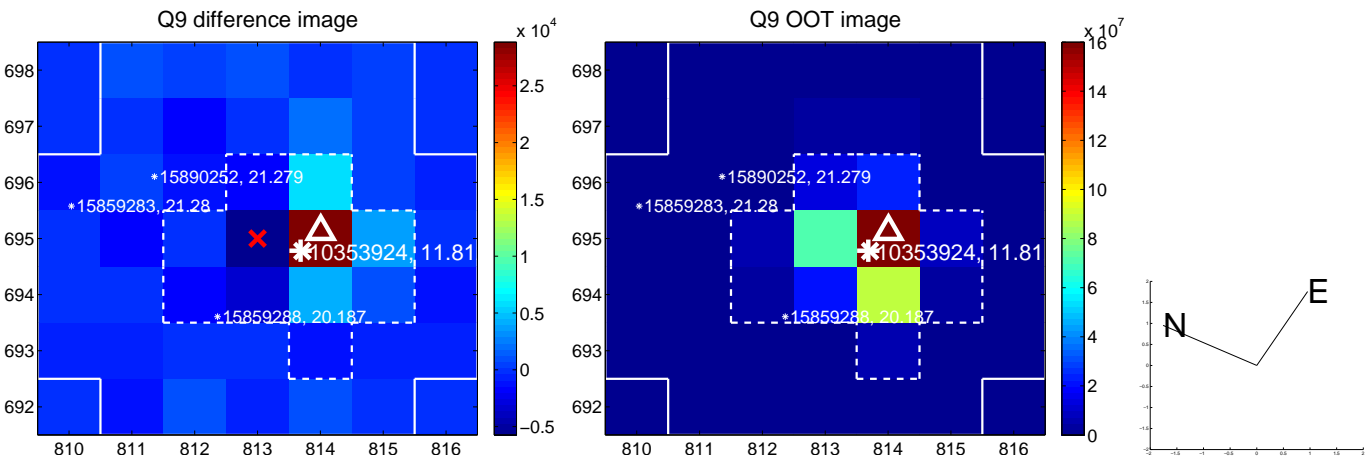
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



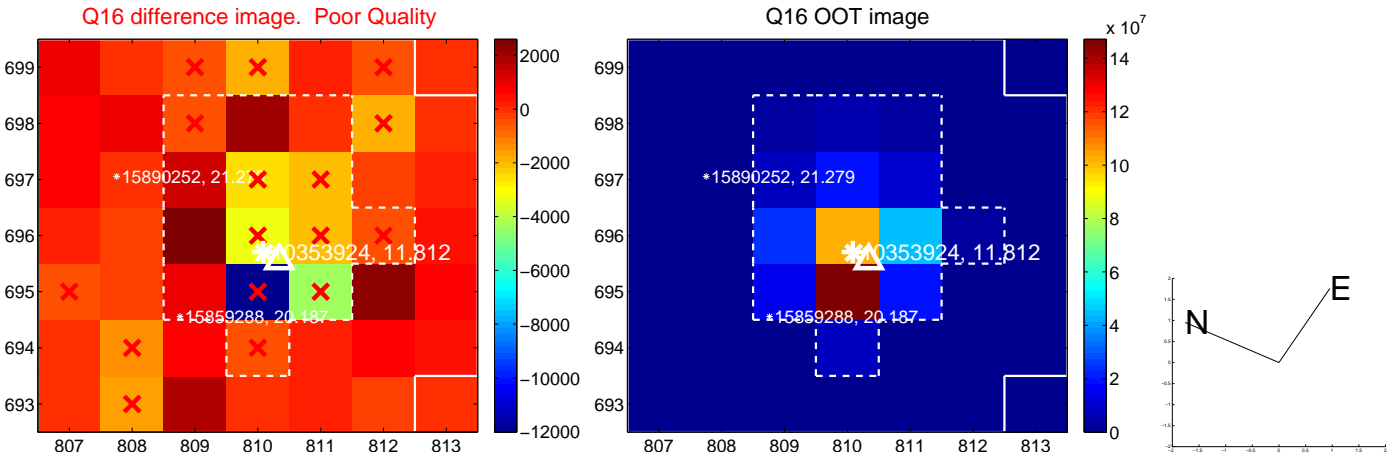
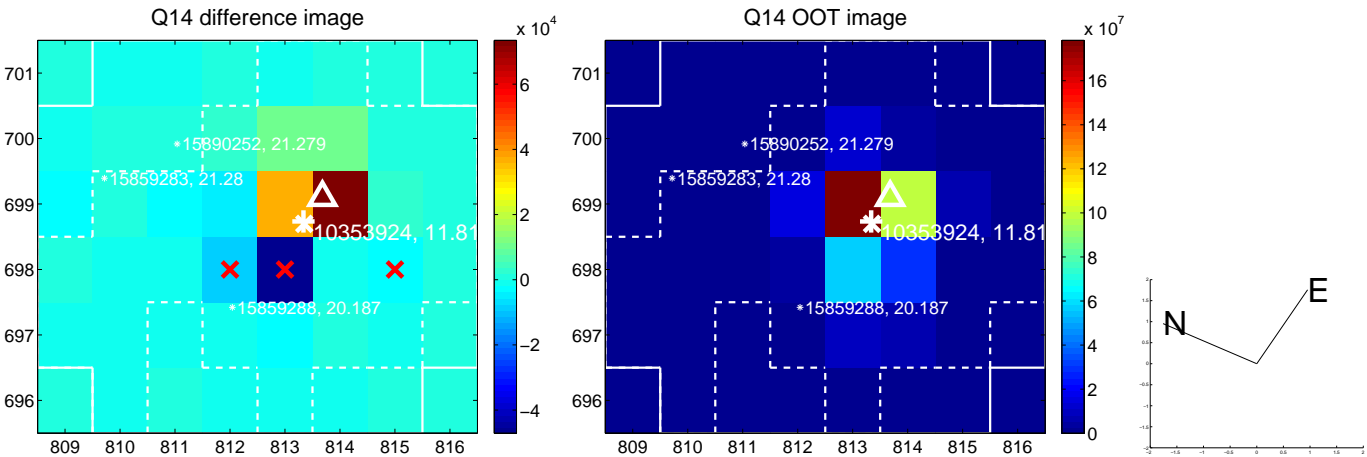
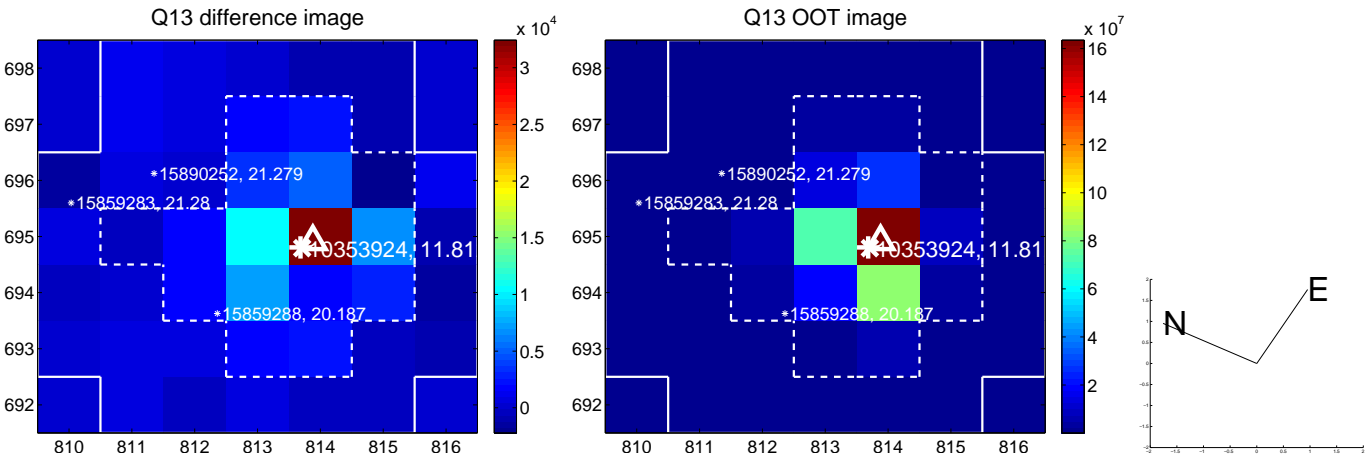
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



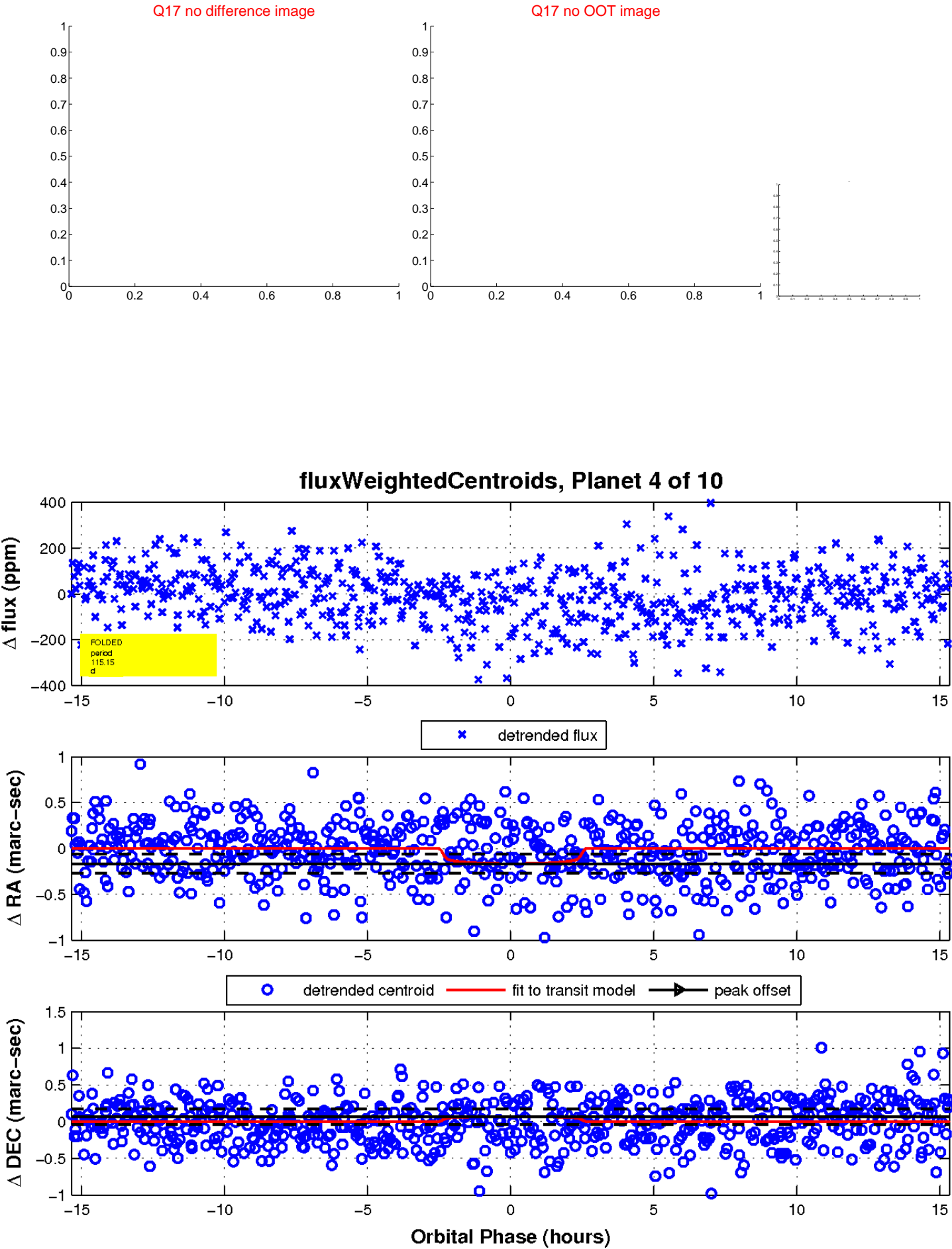
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

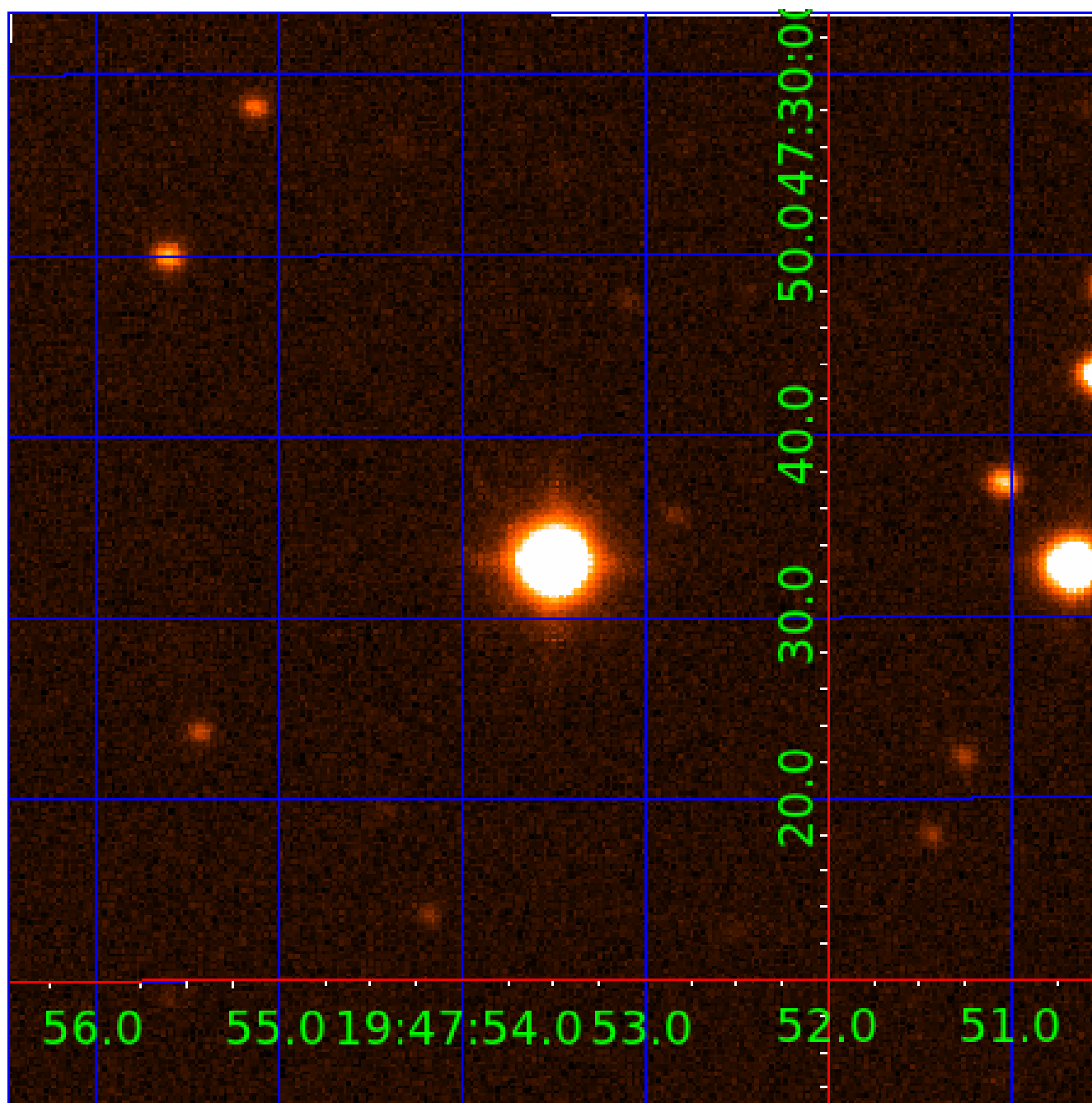


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010353924

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})
010353924-01	OBS	No	1.625617	132.418256	13.7	8.654	9.2	6.1	1.71	6654	0.67	5652.02
010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
010353924-04	OBS	No	115.147808	171.598167	220.7	5.114	9.4	8.6	1.71	6654	2.85	19.29
010353924-05	OBS	No	458.381648	432.509759	260.1	7.434	9.3	9.8	1.71	6654	3.04	3.06
010353924-06	OBS	No	44.151668	133.469056	82.5	19.725	9.1	6.7	1.71	6654	1.65	69.23
010353924-07	OBS	No	103.673679	222.990038	203.0	7.175	9.7	9.3	1.71	6654	2.72	22.18
010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010353924-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010353924-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

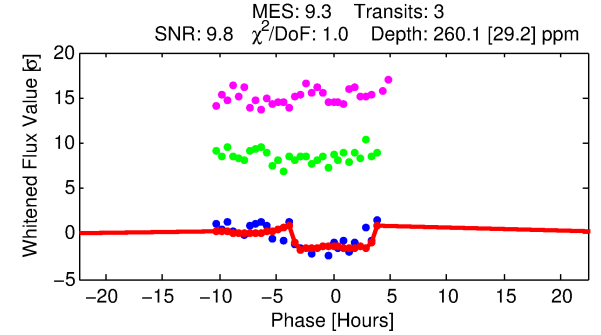
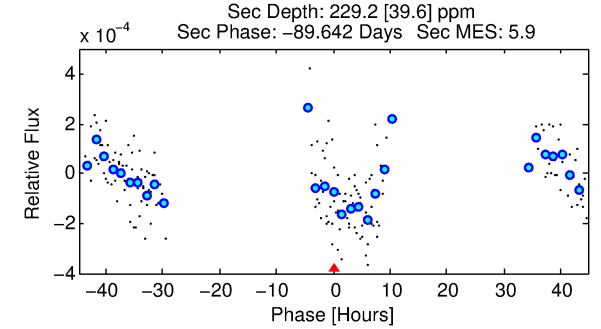
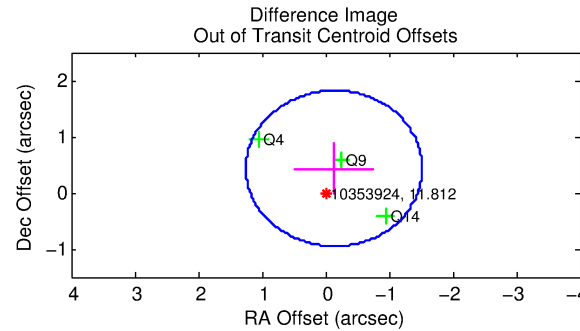
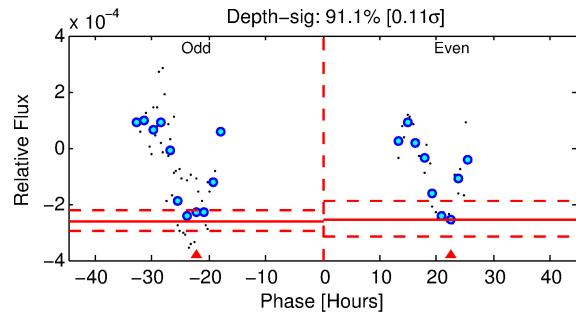
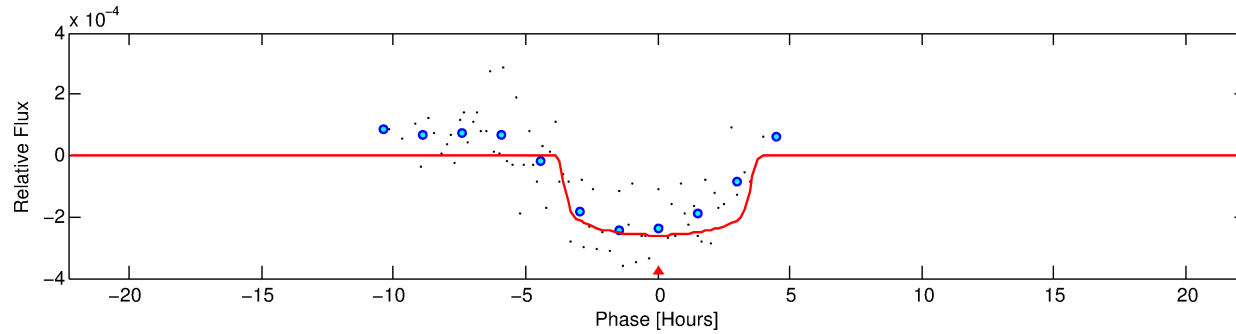
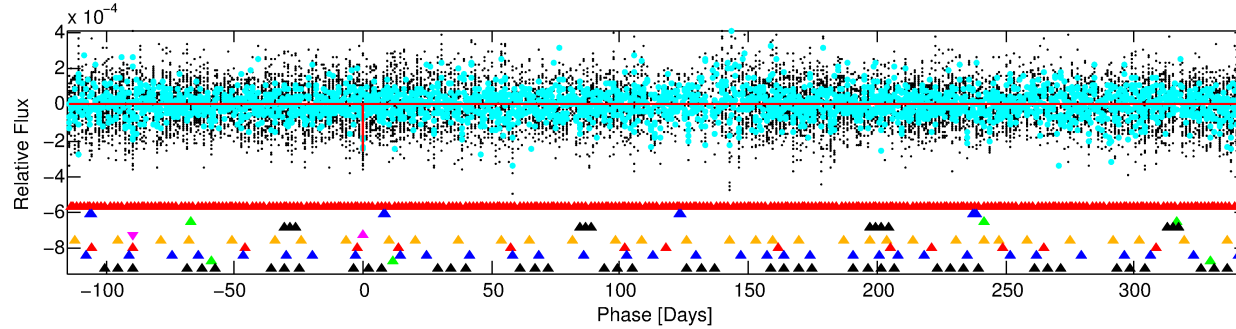
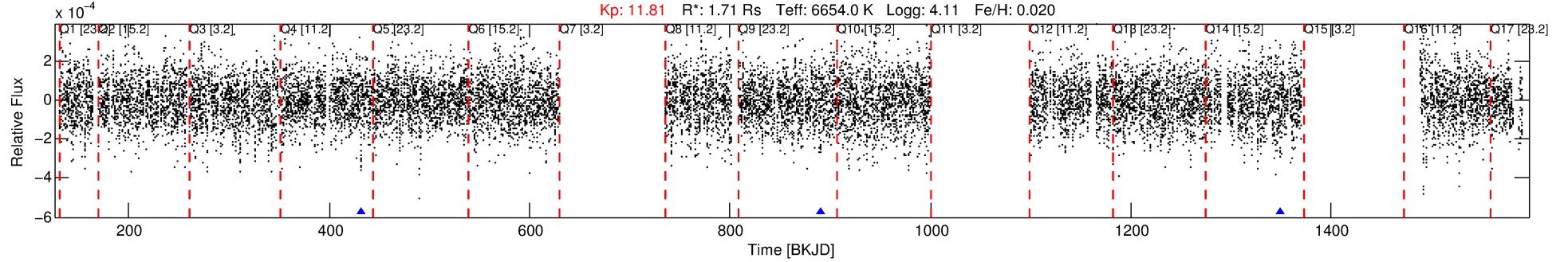
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-05

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 5 of 10 Period: 458.382 d



DV Fit Results:

Period = 458.38165 [0.00679] d
Epoch = 432.5098 [0.0109] BKJD
Rp/R* = 0.0163 [0.0036]
a/R* = 299.83 [351.01]
b = 0.79 [0.55]
Seff = 3.06 [1.24]
Teq = 337 [34] K
Rp = 3.04 [1.17] Re
a = 1.2977 [0.3378] AU
Ag = 22982.84 [14014.53] [1.64 σ]
Teffp = 6418 [810] K [7.50 σ]

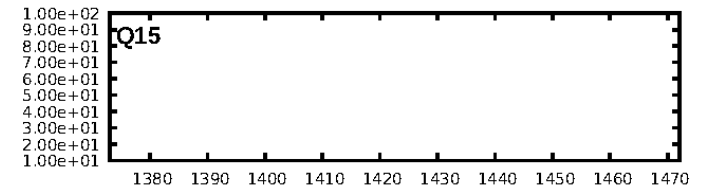
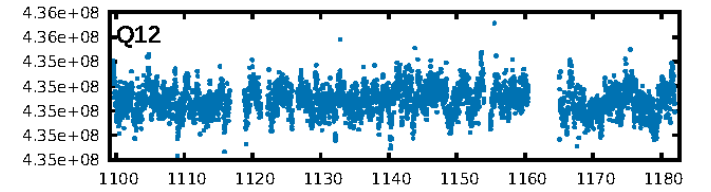
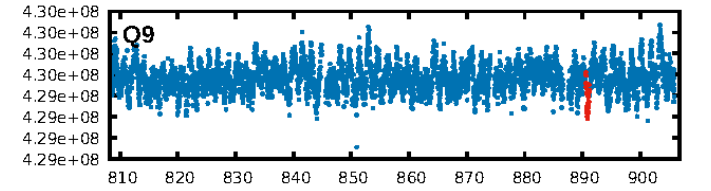
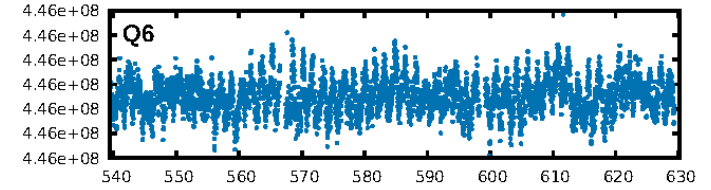
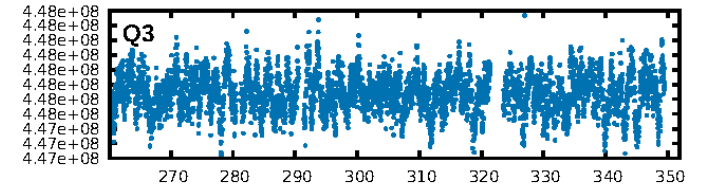
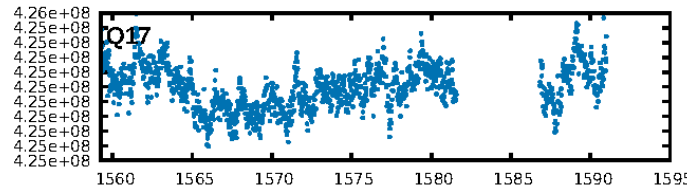
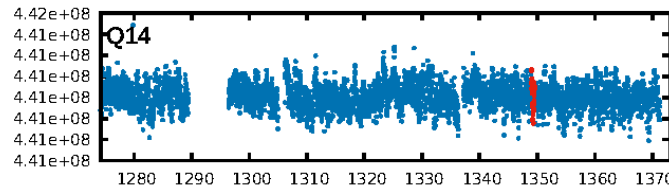
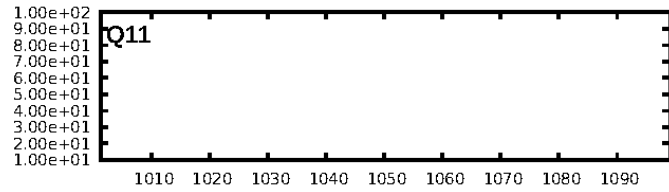
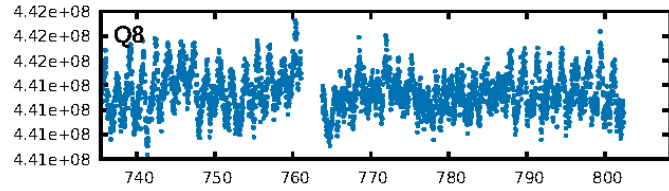
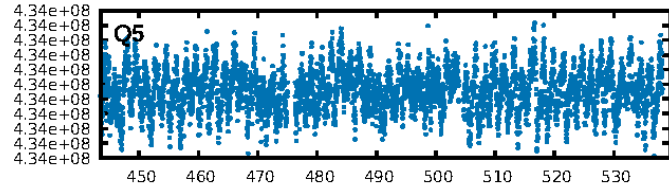
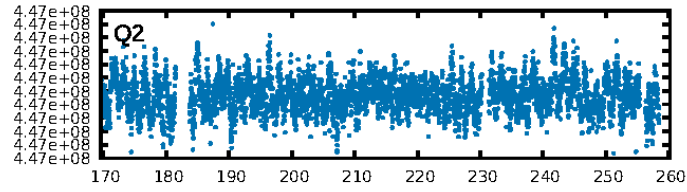
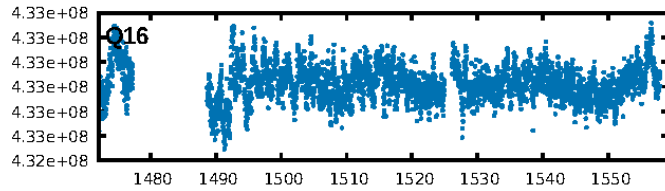
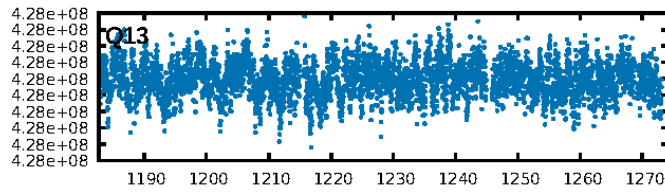
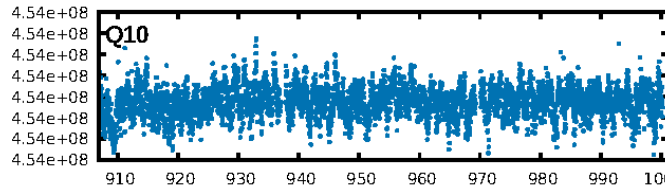
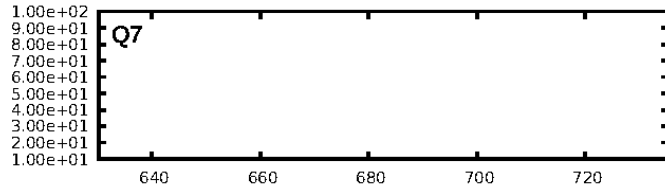
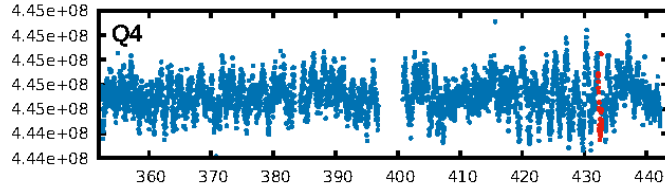
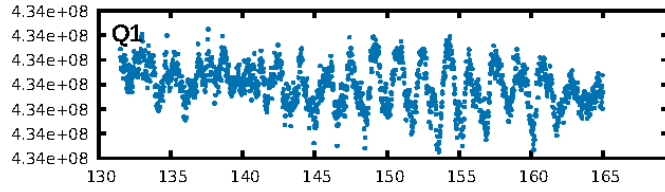
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [912.97 σ]
LongPeriod-sig: 100.0% [127.39 σ]
ModelChiSquare2-sig: 38.4%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.52
Centroid-sig: 3.4%
Centroid-so: 1.361 arcsec [2.15 σ]
OotOffset-rm: 0.453 arcsec [0.98 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.545 arcsec [1.18 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

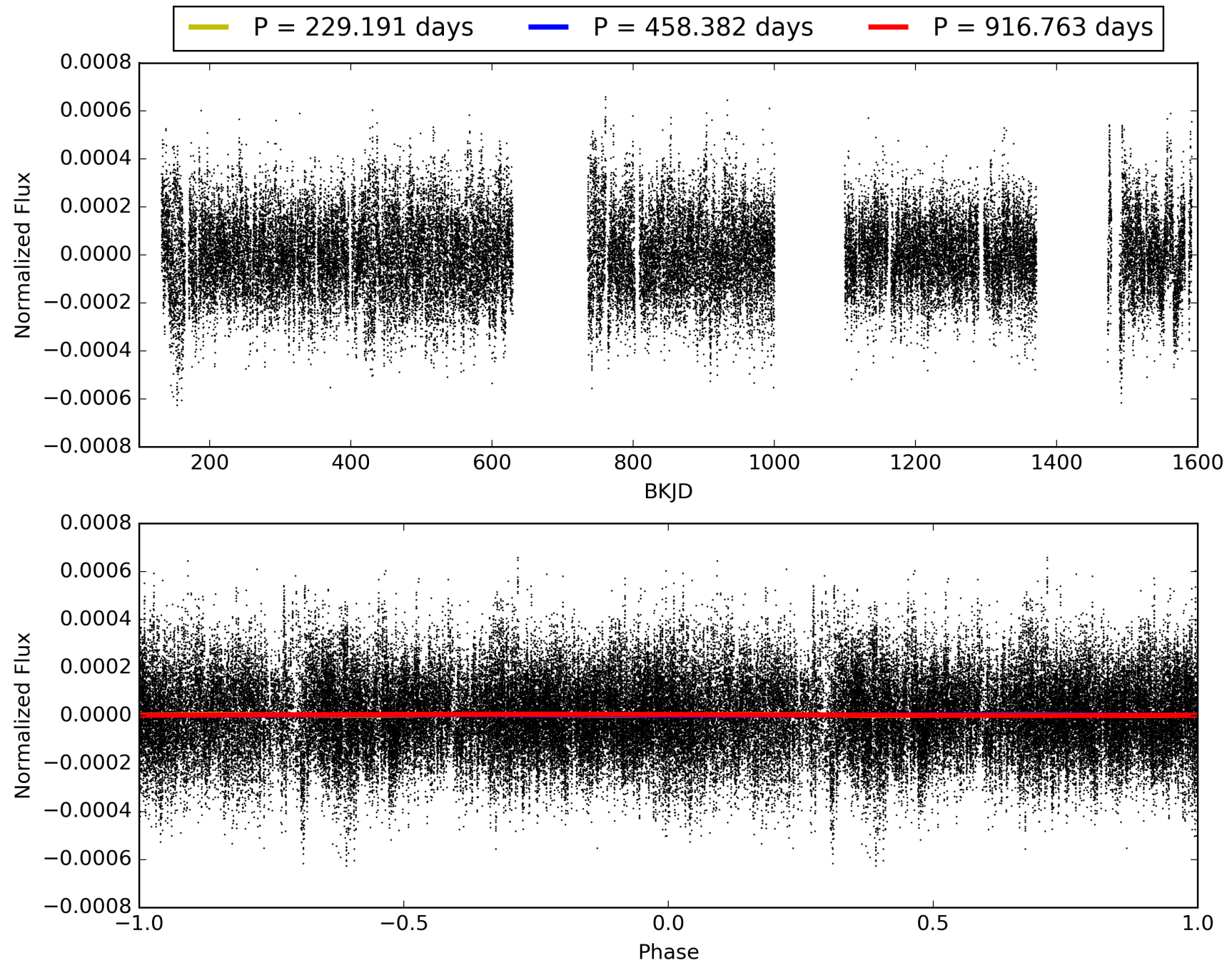
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:38:56 Z

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

TCE 010353924-05, PDC Light Curves

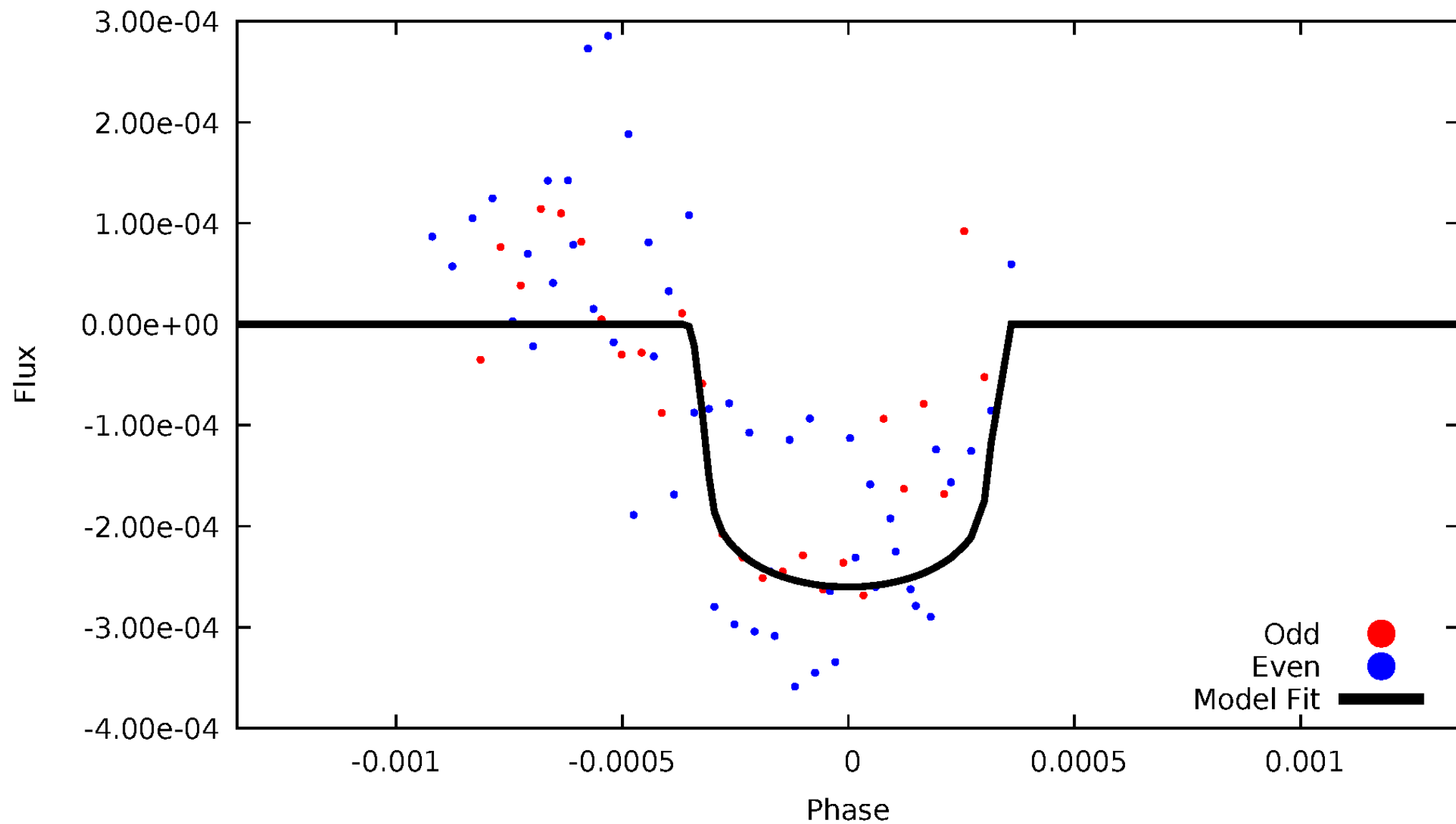


TCE 010353924-05



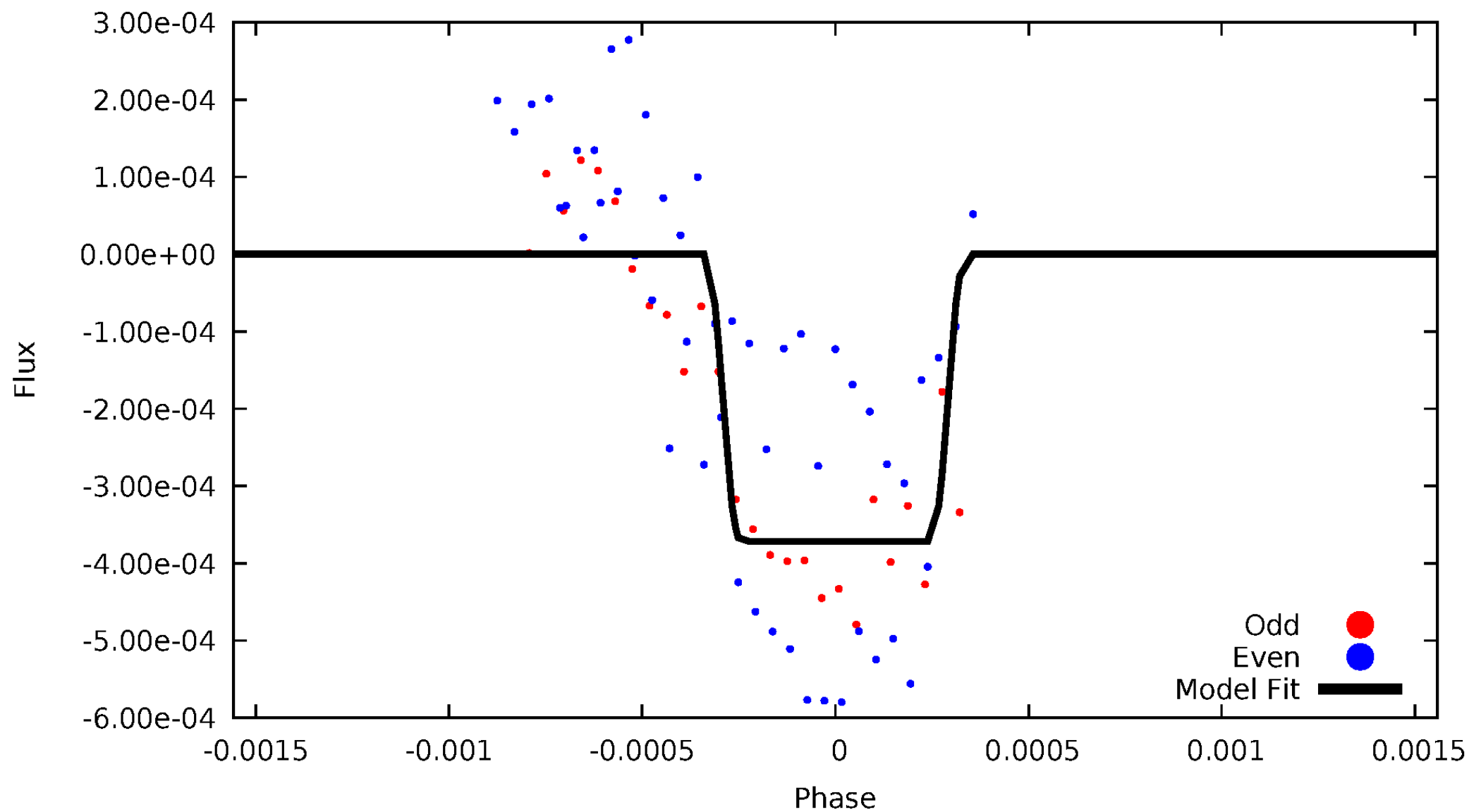
DV Odd/Even

TCE 010353924-05



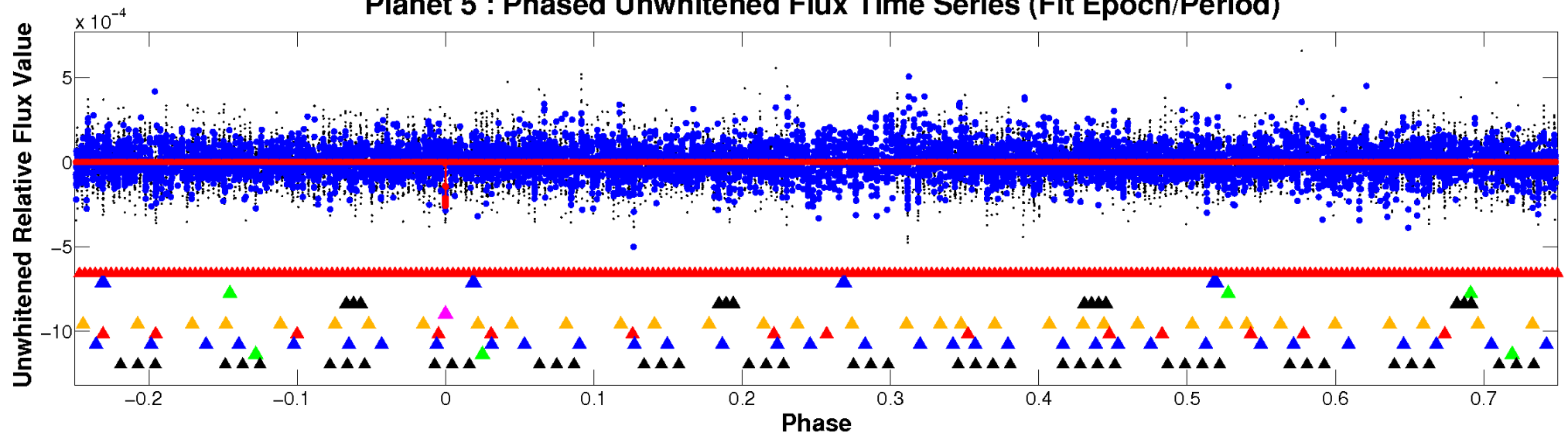
ALT Odd/Even

TCE 010353924-05

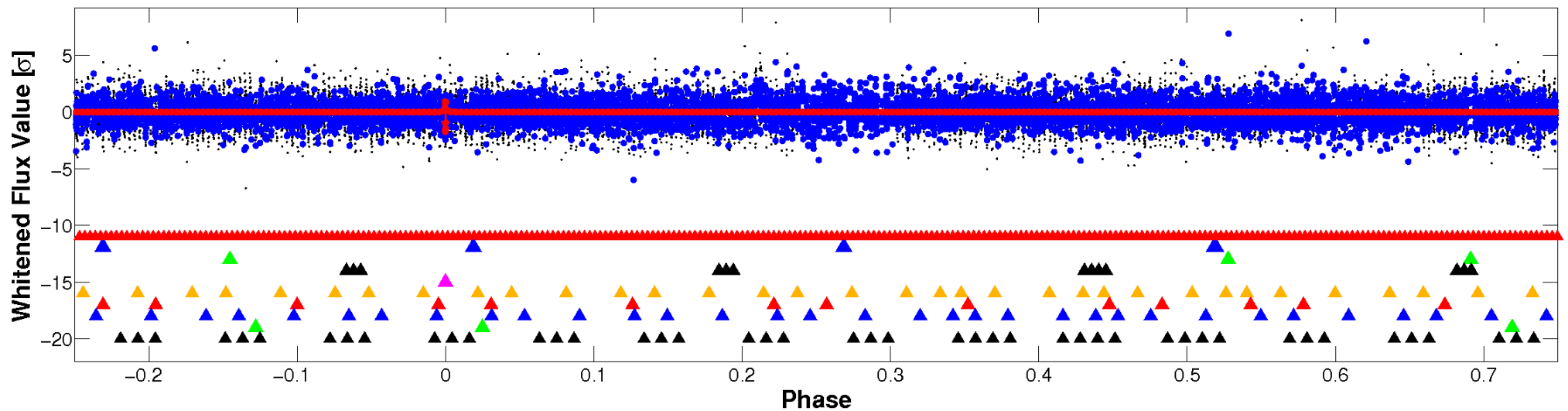


Non-Whitened Vs. Whitened Light Curve

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

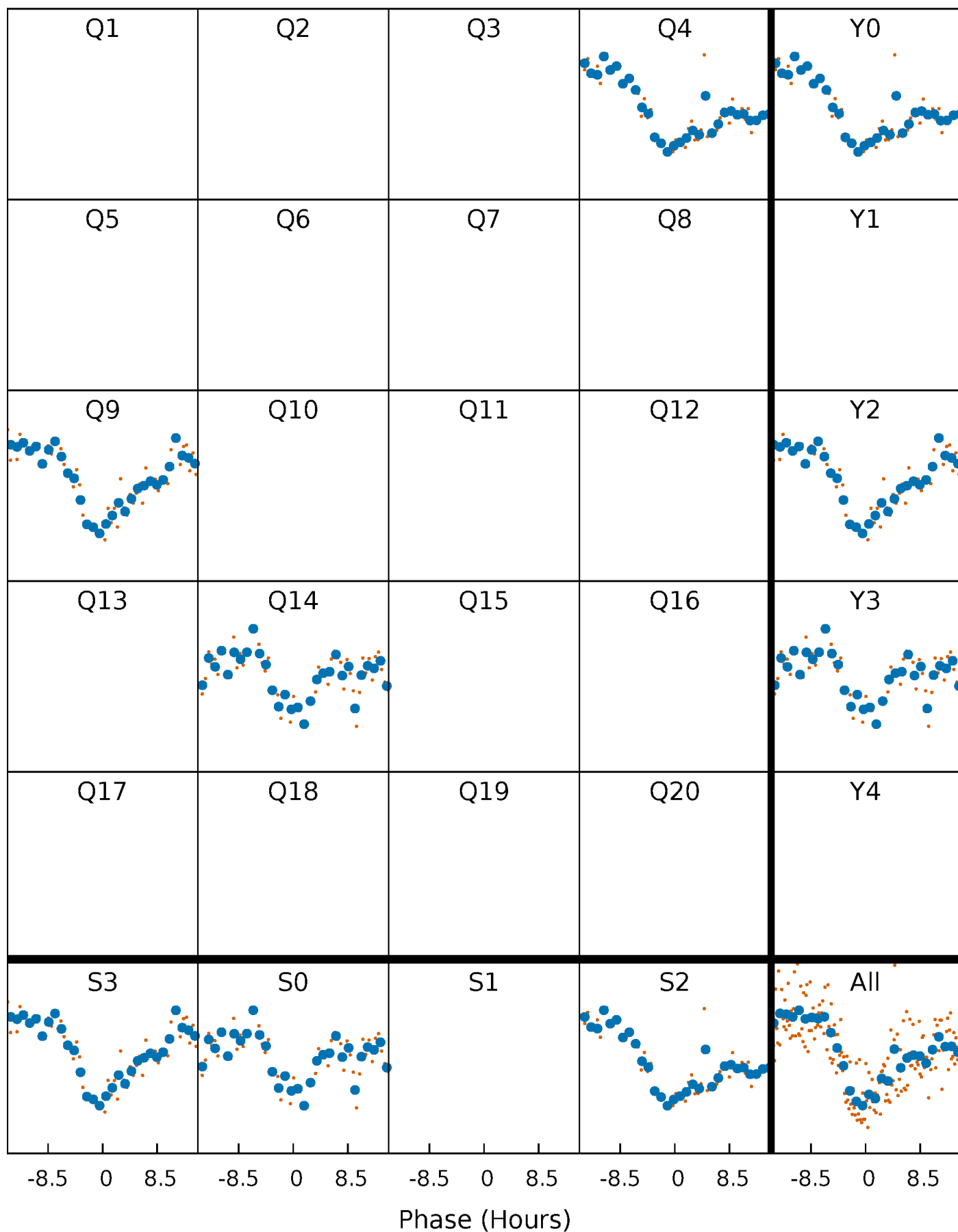


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



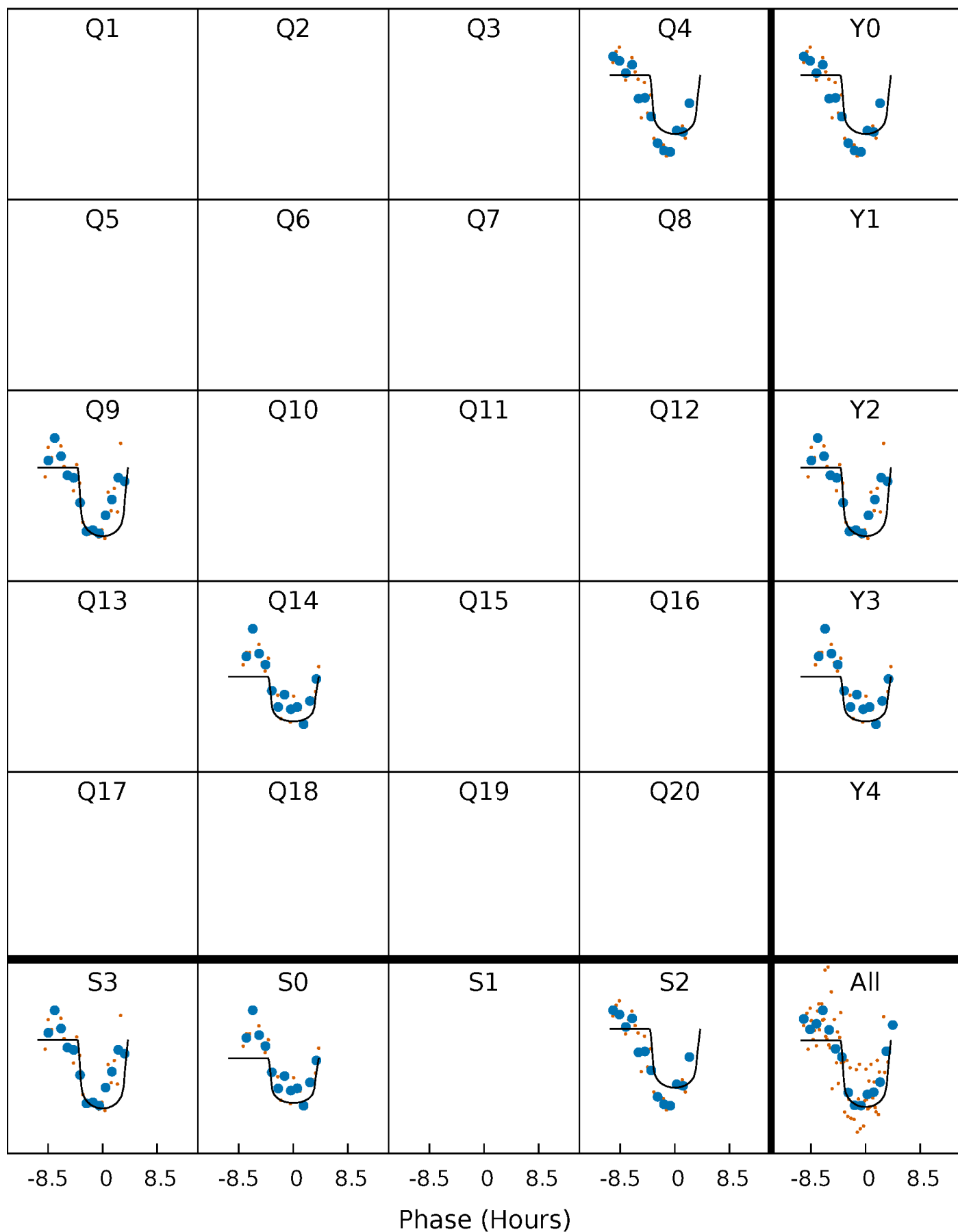
PDC Quarter-Phased Transit Curves

TCE 010353924-05 $P=458.381648$ Days $T_0=432.509759$ (BKJD)



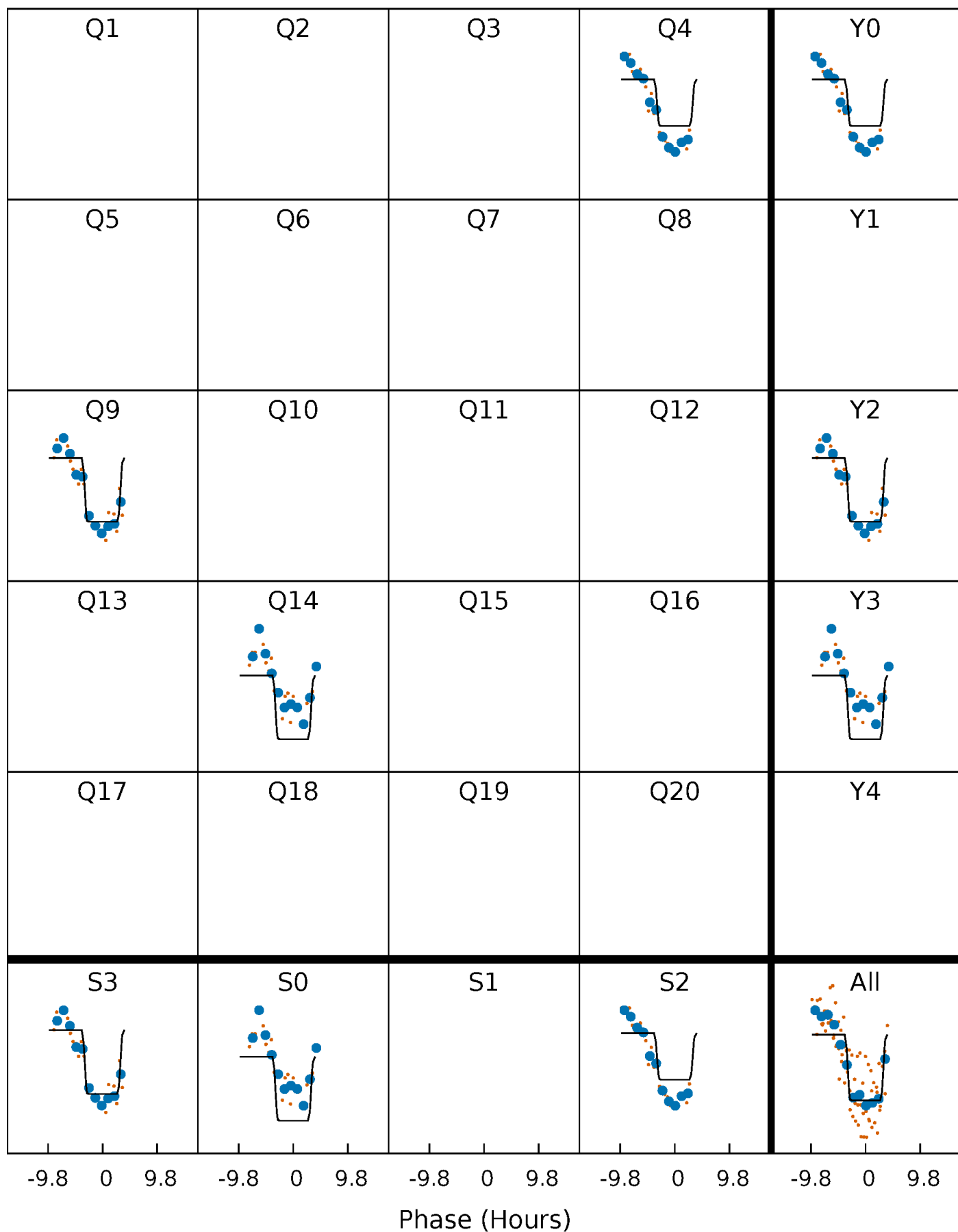
DV Quarter-Phased Transit Curves

TCE 010353924-05 $P=458.381648$ Days $T_0=432.509759$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

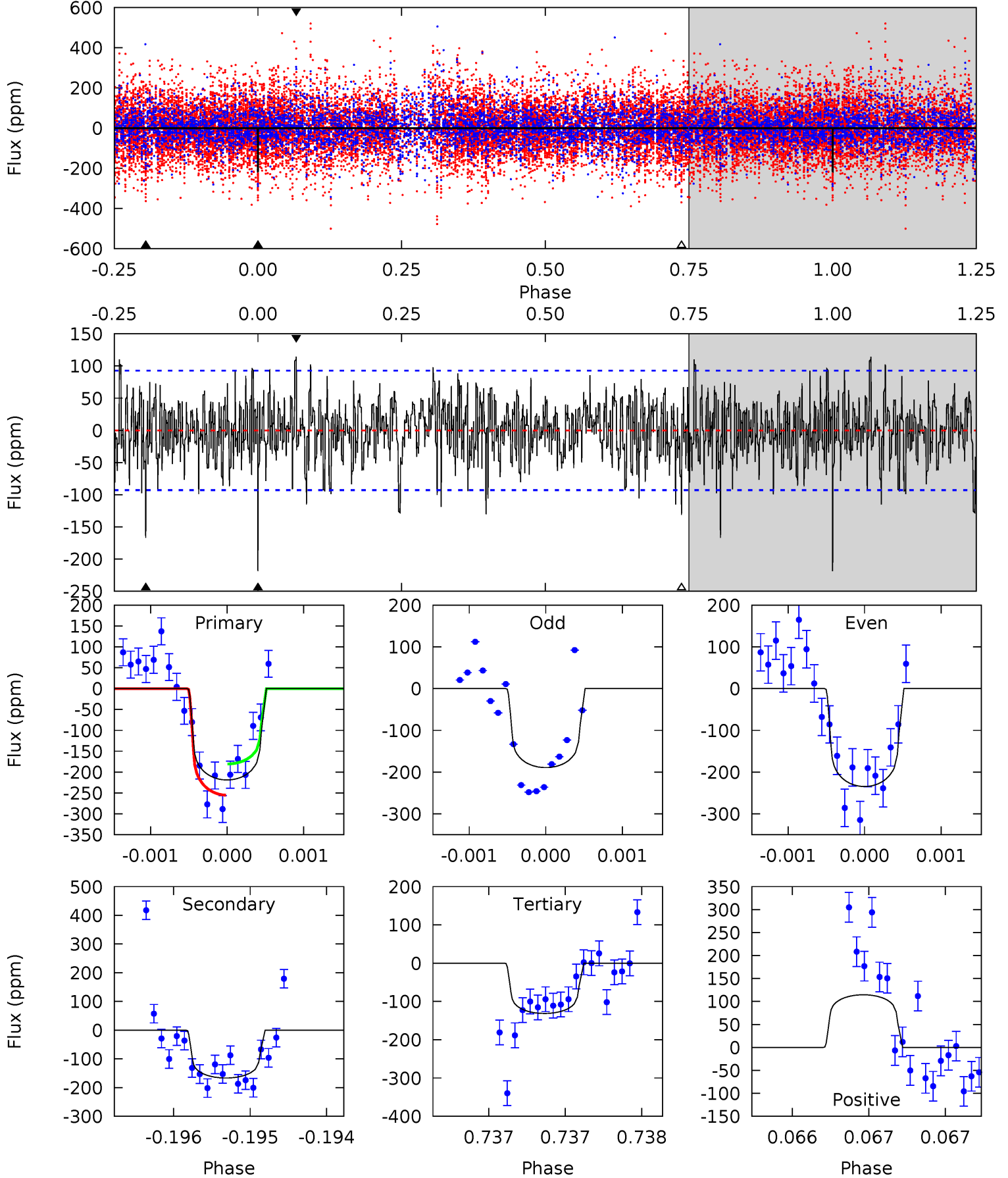
TCE 010353924-05 $P=458.392863$ Days $T_0=432.489137$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-05, P = 458.381648 Days, E = 432.509759 Days

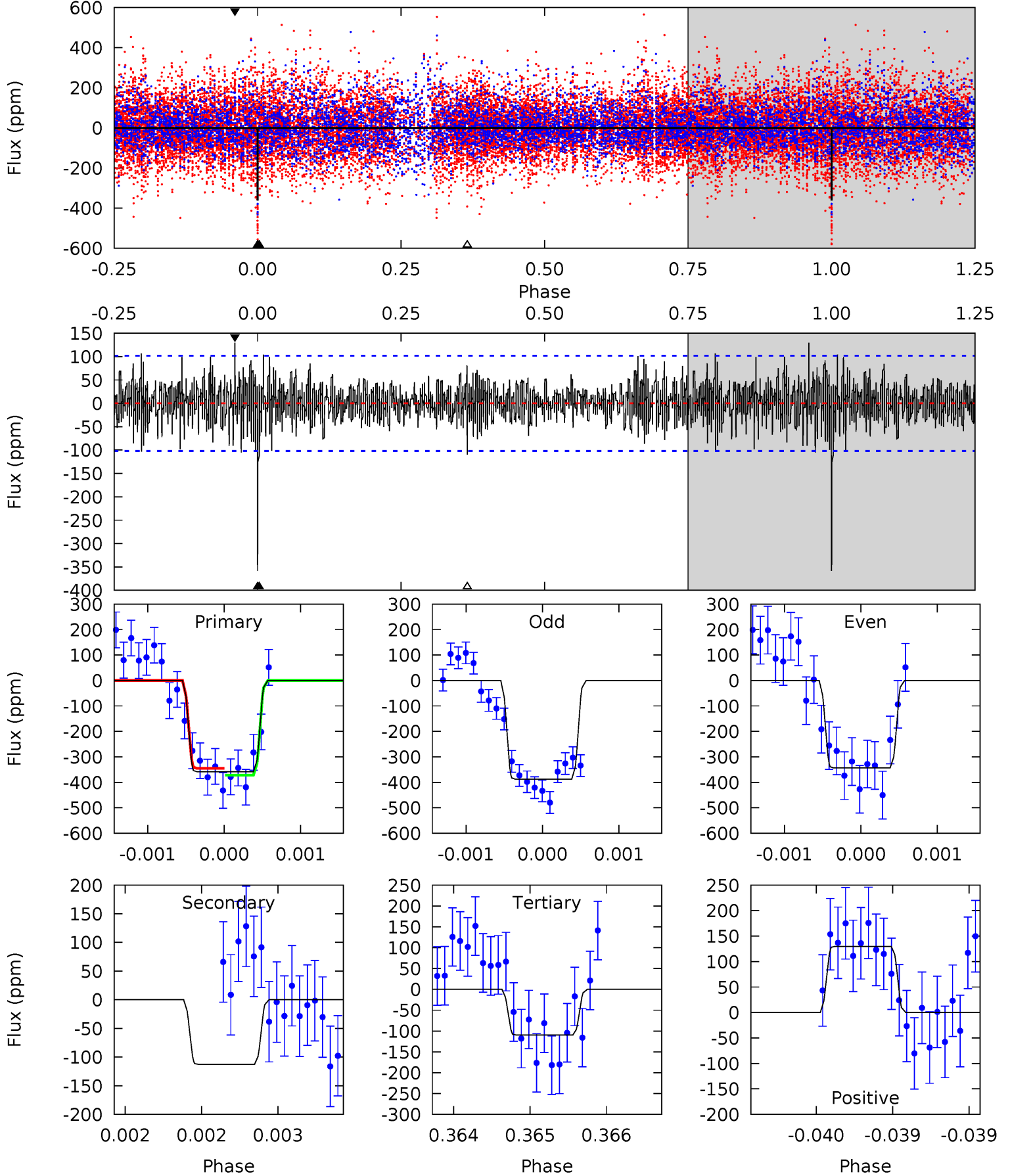
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	9.90	7.81	6.81	5.51	3.39	2.20	5.20	6.20	2.09	3.09	1.28	1.17	0.34	2.21



Alt Model-Shift Uniqueness Test

010353924-05, P = 458.392863 Days, E = 432.489137 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	6.11	5.94	7.04	5.53	3.42	1.78	13.5	12.4	0.16	-0.93	1.09	0.93	0.27	0.72



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-167 ± 17	$3.02^{+0.88}_{-0.81}$	472^{+37}_{-37}	5932^{+823}_{-622}	16766^{+13670}_{-6516}
Alt.	-113 ± 18	$3.53^{+0.91}_{-0.81}$	469^{+38}_{-36}	4992^{+532}_{-403}	8054^{+5656}_{-3098}

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

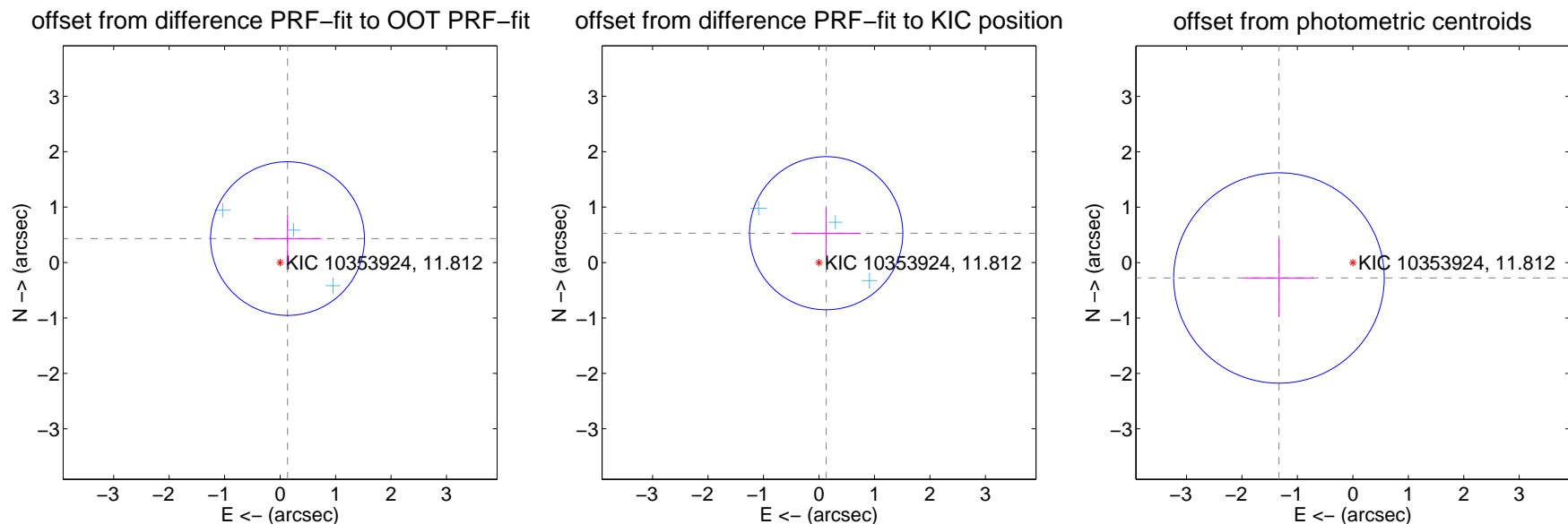
DV Centroid Data

Supplemental centroid analysis for 010353924-05. **Kepler magnitude: 11.81.** Transit SNR 9.80

There are 3 quarters with good PRF difference image offsets

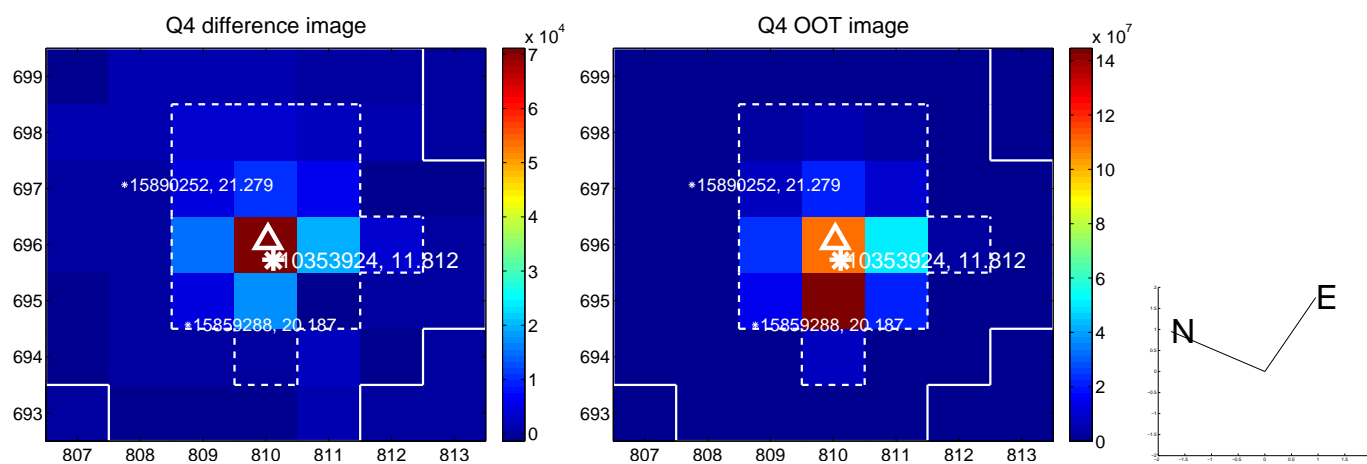
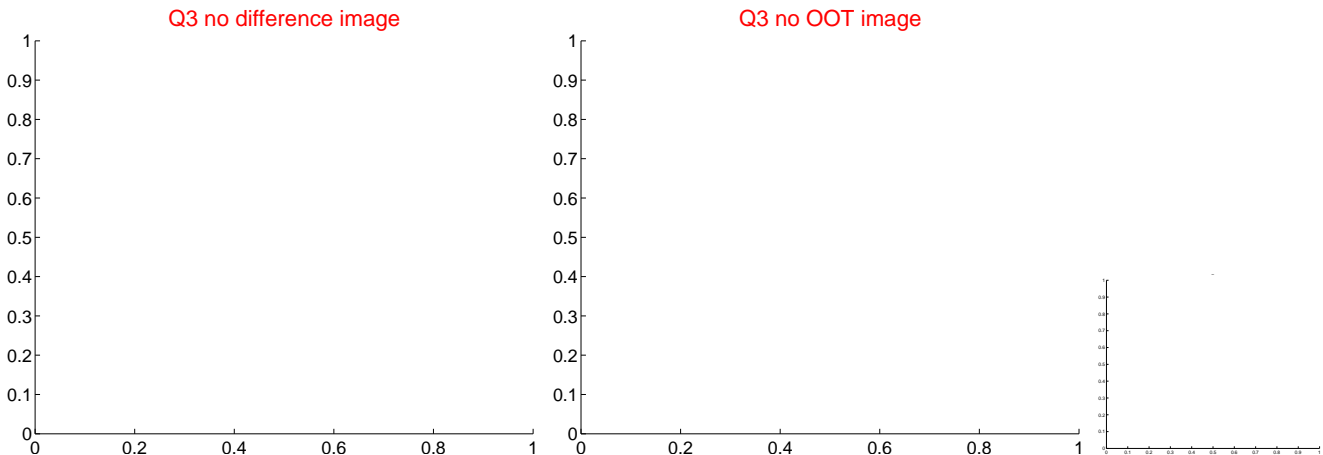
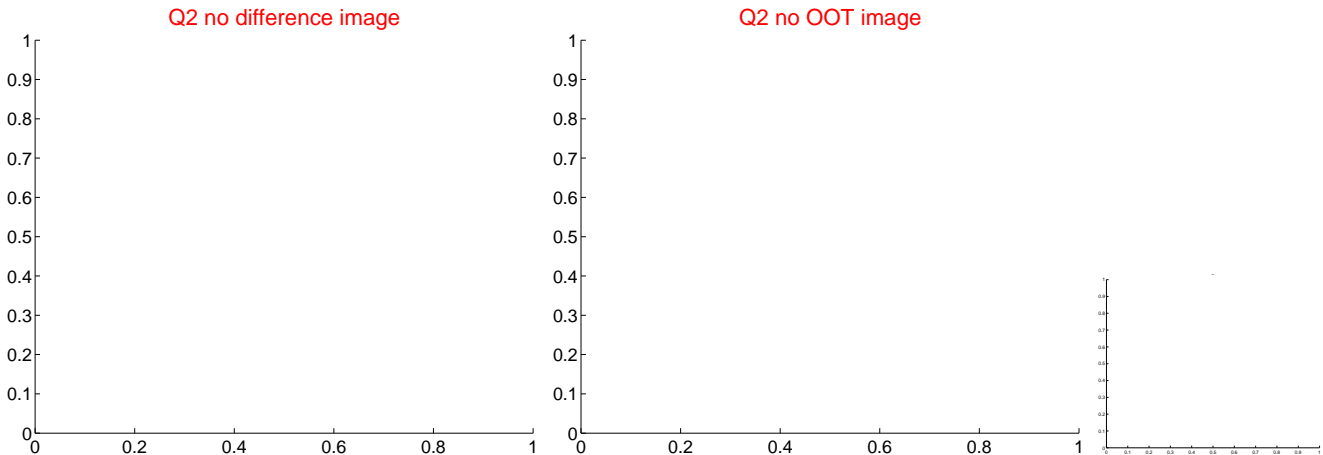
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.453 ± 0.462	0.98	-0.134 ± 0.612	0.432 ± 0.445
PRF-fit source offset from KIC position	0.545 ± 0.460	1.18	-0.130 ± 0.627	0.529 ± 0.449
photometric centroid source offset	1.36 ± 0.63	2.15	1.33 ± 0.63	-0.28 ± 0.70



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

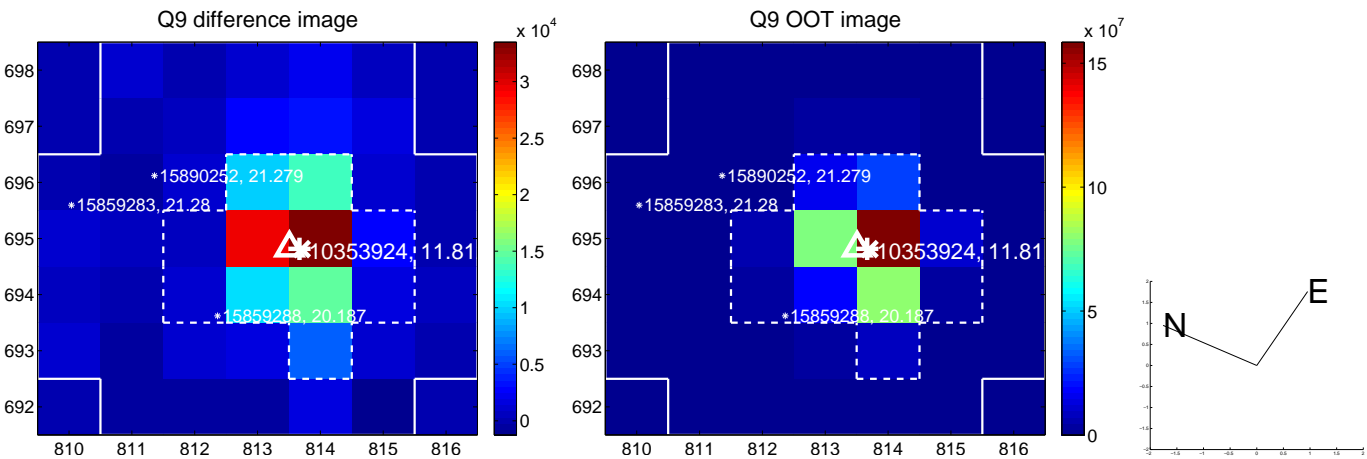
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



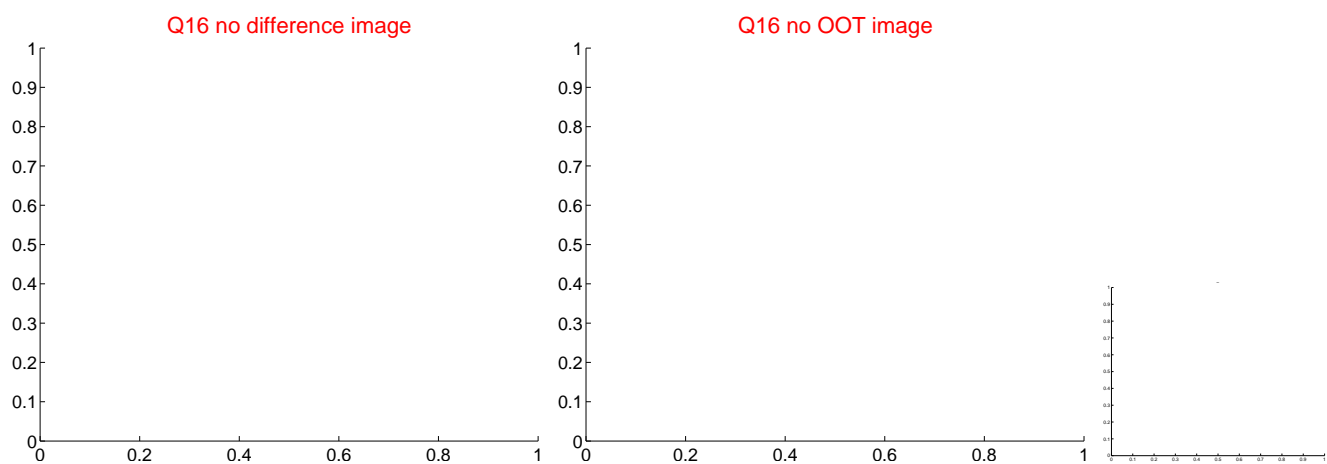
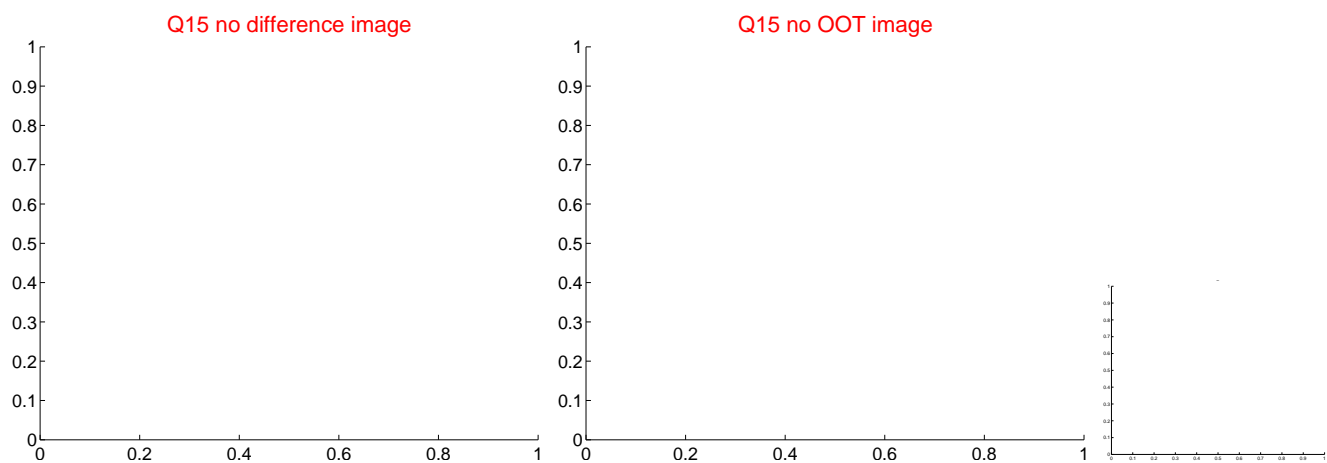
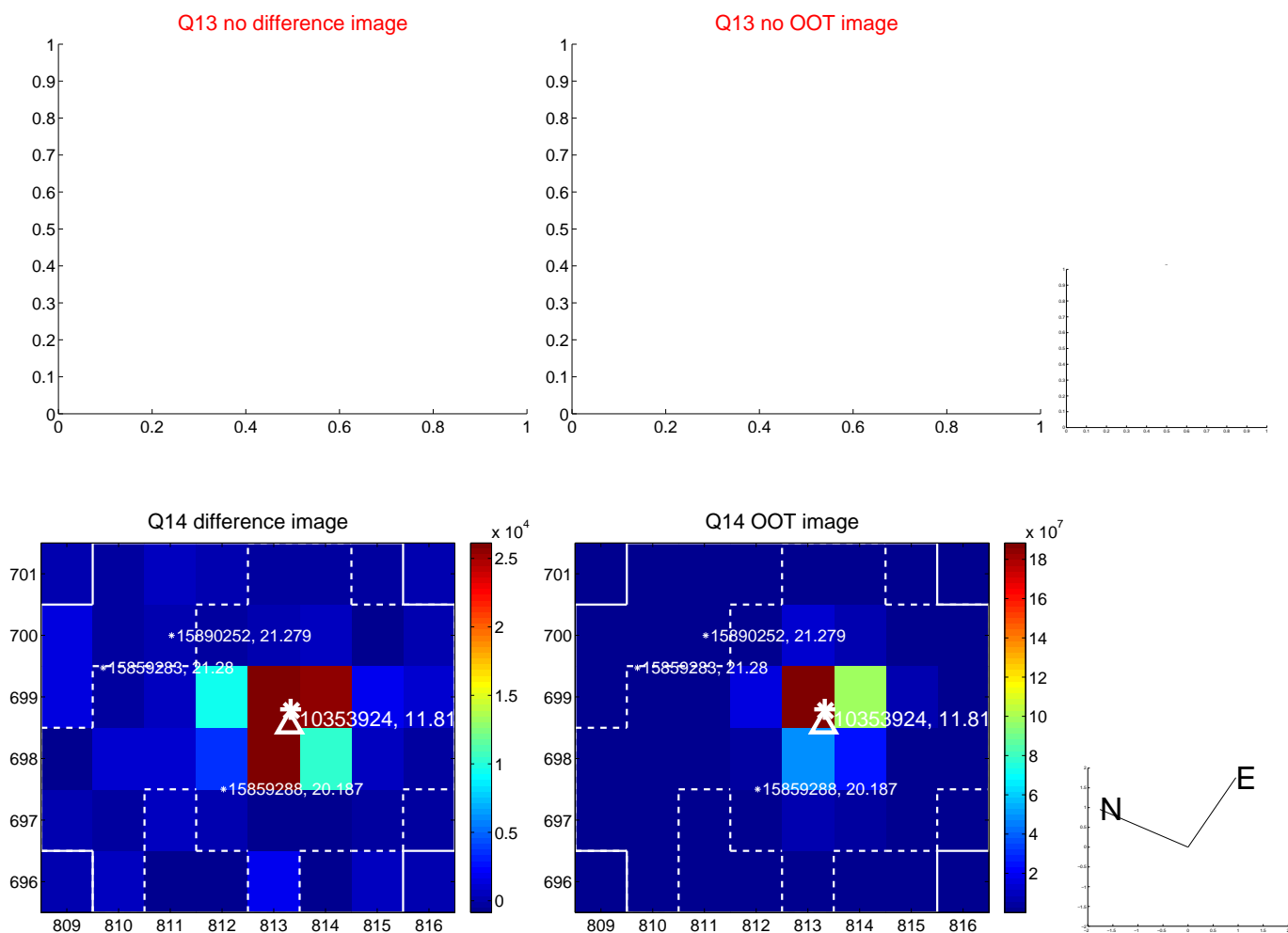
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



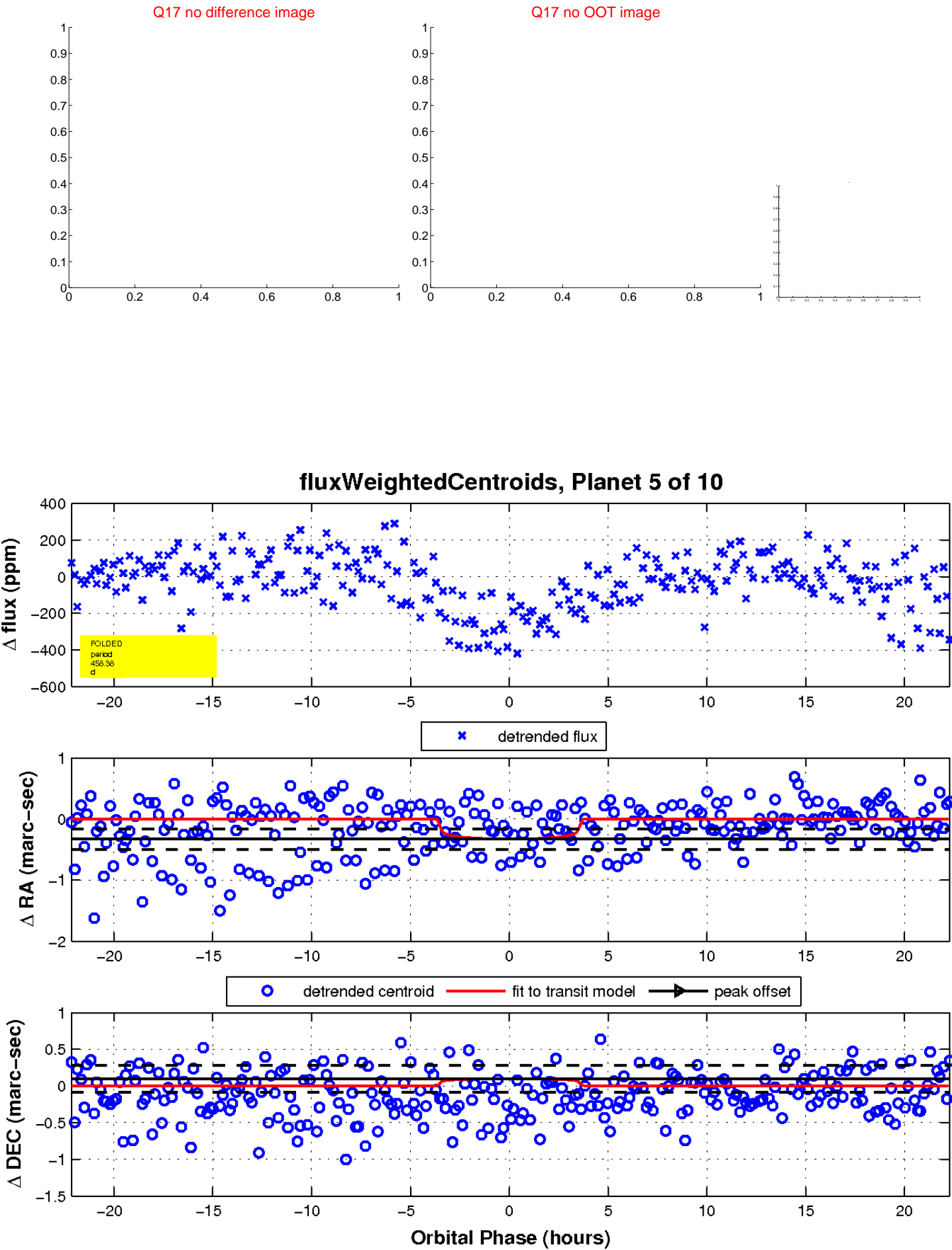
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

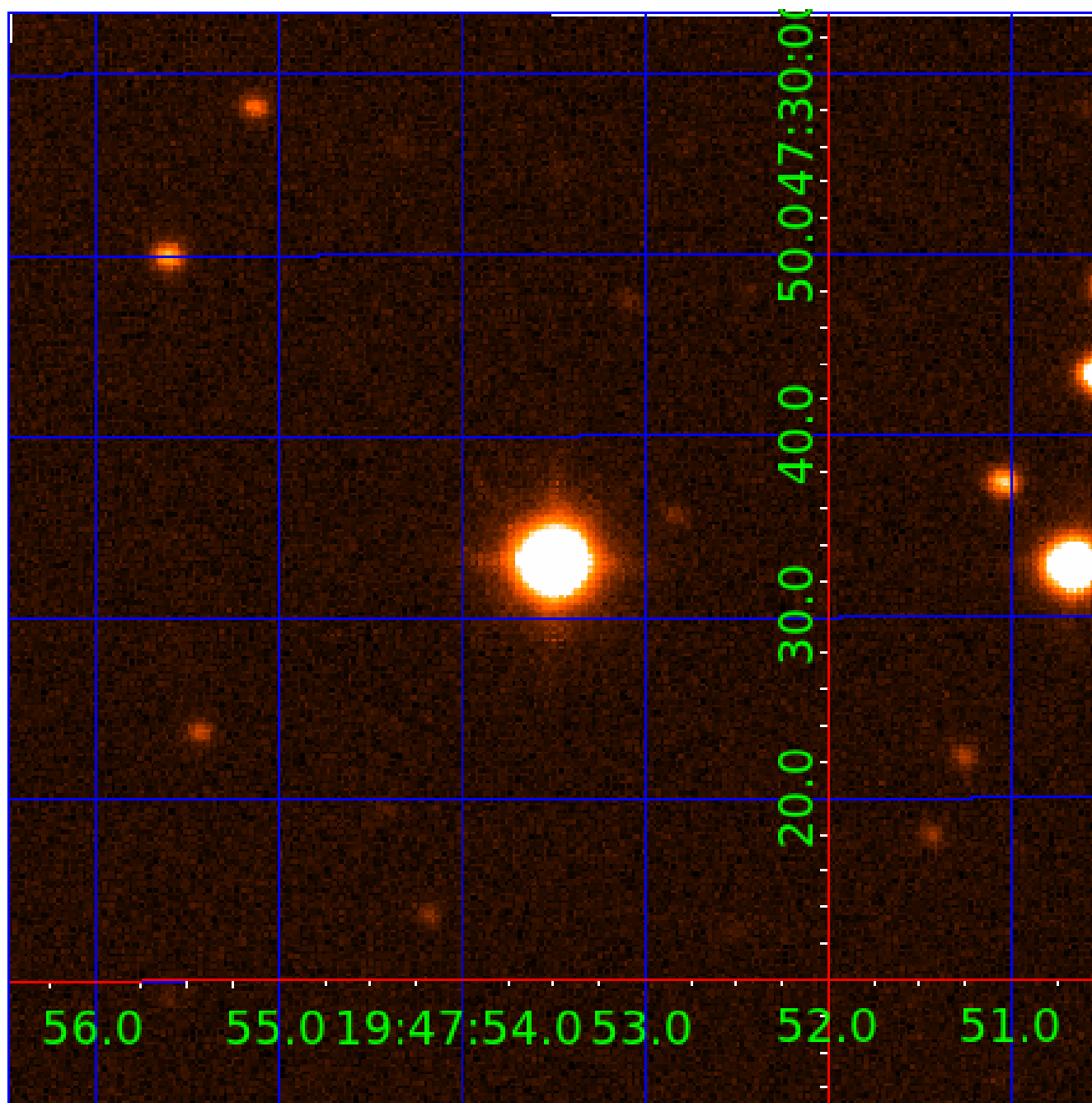


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010353924

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})
010353924-01	OBS	No	1.625617	132.418256	13.7	8.654	9.2	6.1	1.71	6654	0.67	5652.02
010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
010353924-04	OBS	No	115.147808	171.598167	220.7	5.114	9.4	8.6	1.71	6654	2.85	19.29
010353924-05	OBS	No	458.381648	432.509759	260.1	7.434	9.3	9.8	1.71	6654	3.04	3.06
010353924-06	OBS	No	44.151668	133.469056	82.5	19.725	9.1	6.7	1.71	6654	1.65	69.23
010353924-07	OBS	No	103.673679	222.990038	203.0	7.175	9.7	9.3	1.71	6654	2.72	22.18
010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010353924-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010353924-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

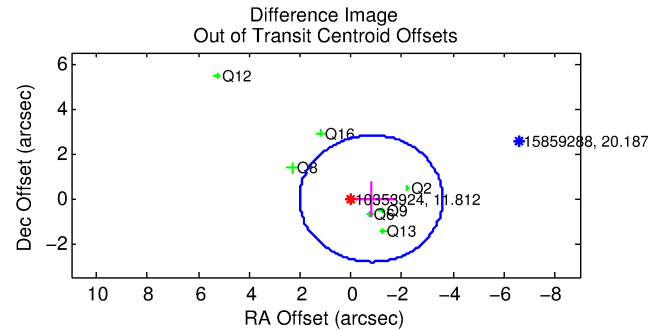
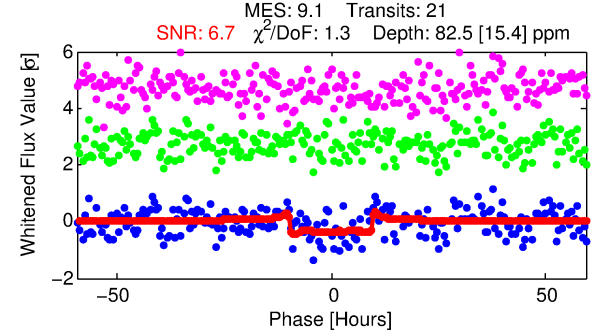
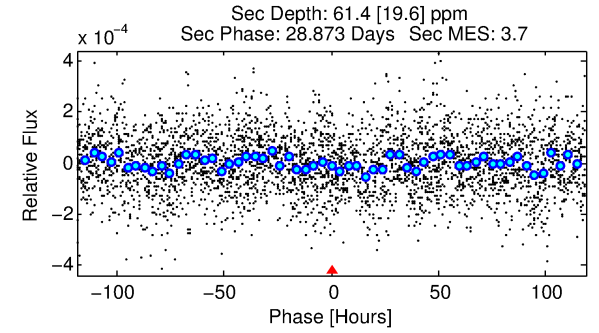
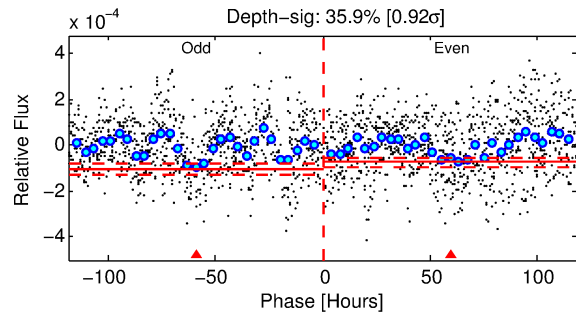
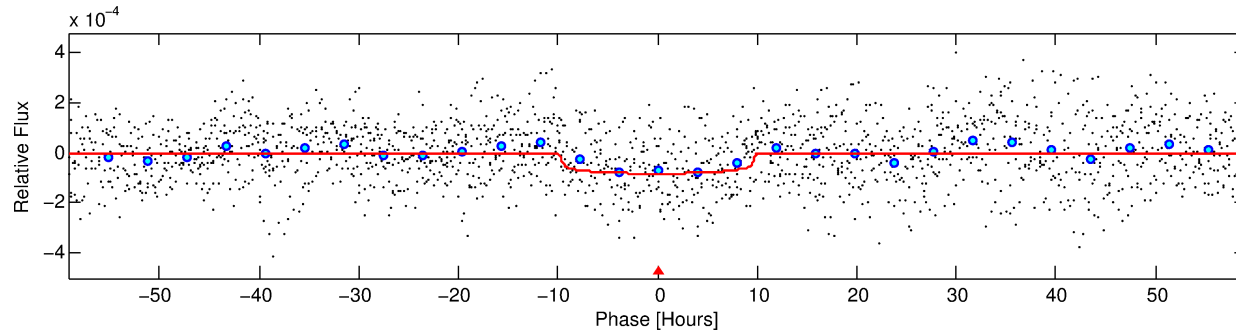
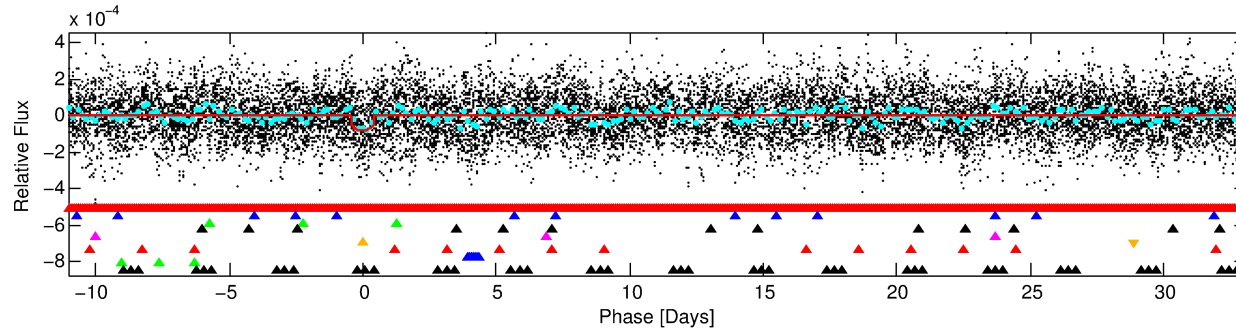
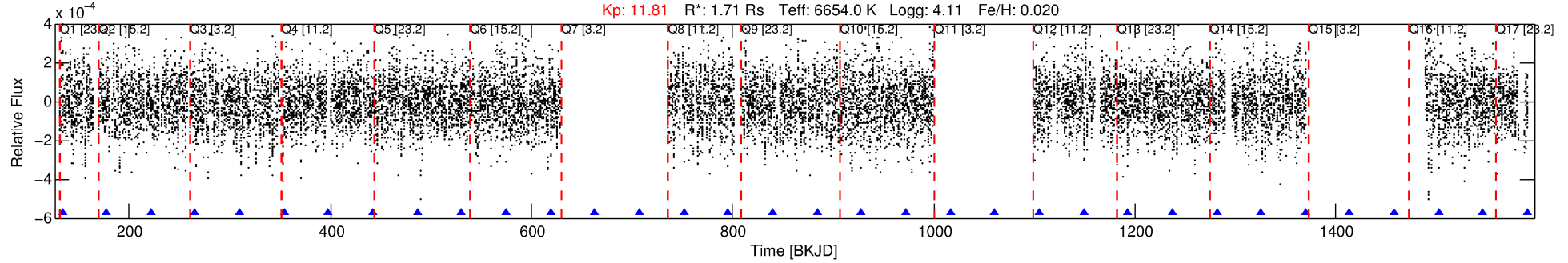
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-06

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 6 of 10 Period: 44.152 d



DV Fit Results:

Period = 44.15167 [0.00088] d
Epoch = 133.4691 [0.0171] BKJD
Rp/R* = 0.0088 [0.0022]
a/R* = 12.92 [16.03]
b = 0.67 [1.03]
Seff = 69.23 [28.15]
Teq = 736 [75] K
Rp = 1.65 [0.66] Re
a = 0.2727 [0.0710] AU
Ag = 919.86 [646.65] [1.42 σ]
Teffp = 6263 [961] K [5.73 σ]

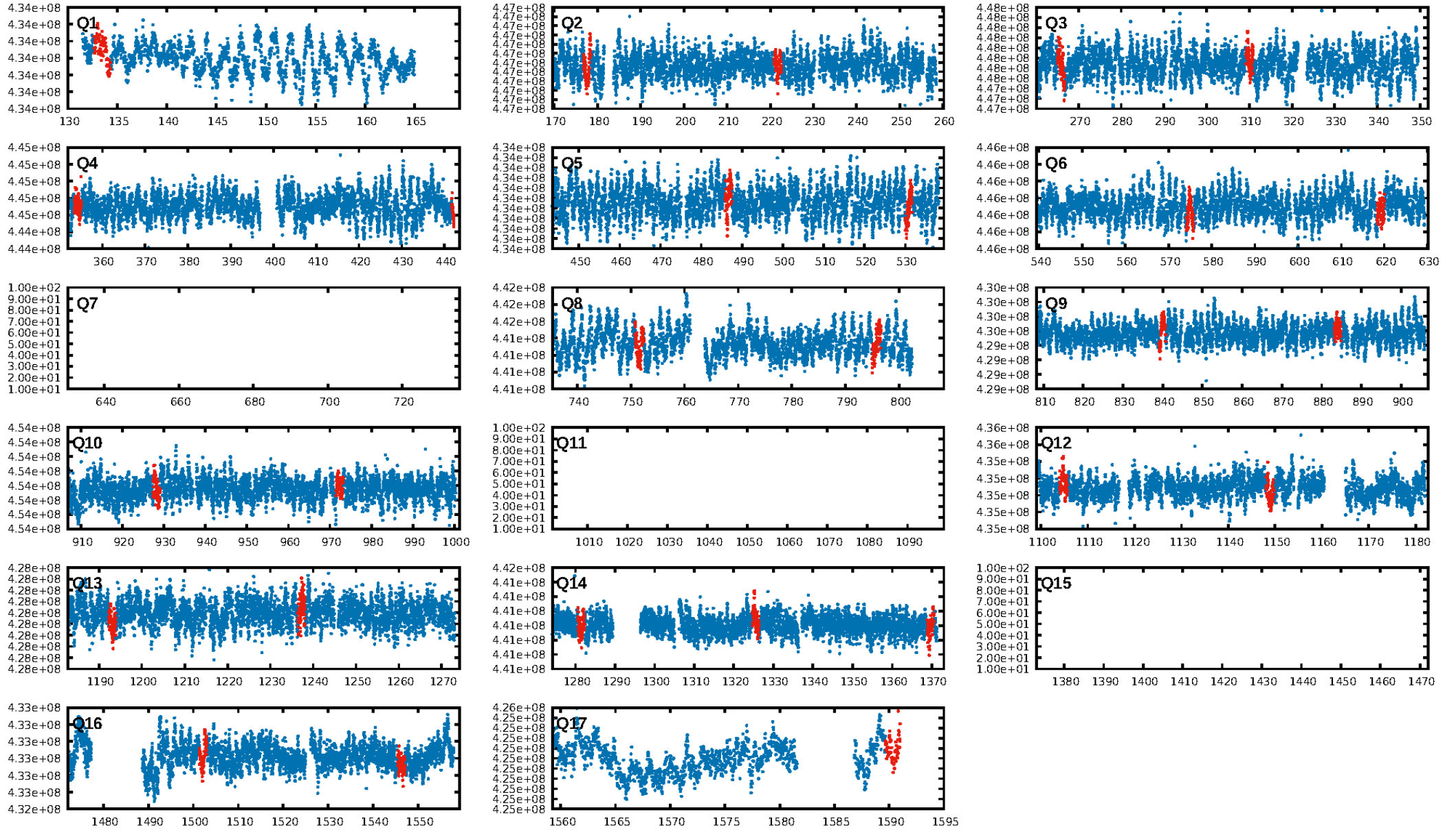
DV Diagnostic Results:

ShortPeriod-sig: 1.3% [0.02 σ]
LongPeriod-sig: 100.0% [68.06 σ]
ModelChiSquare2-sig: 14.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: 0.3
Centroid-sig: 2.6%
Centroid-so: 0.992 arcsec [1.82 σ]
OotOffset-rm: 0.796 arcsec [0.85 σ]
KicOffset-rm: 0.769 arcsec [0.82 σ]
OotOffset-st: 2/0/3/2 [7]
KicOffset-st: 2/0/3/2 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.00 [0/12]

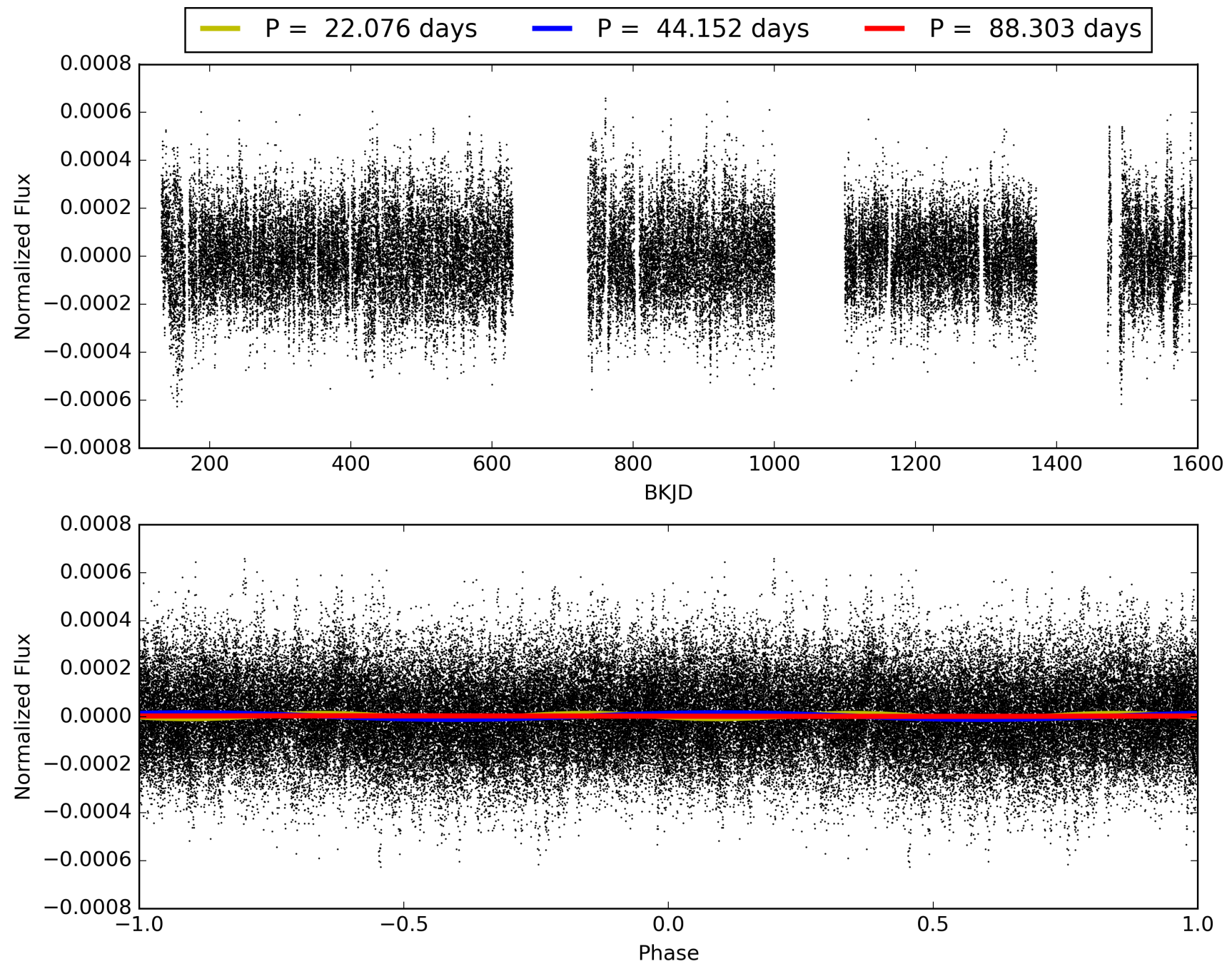
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:39:00 Z

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

TCE 010353924-06, PDC Light Curves

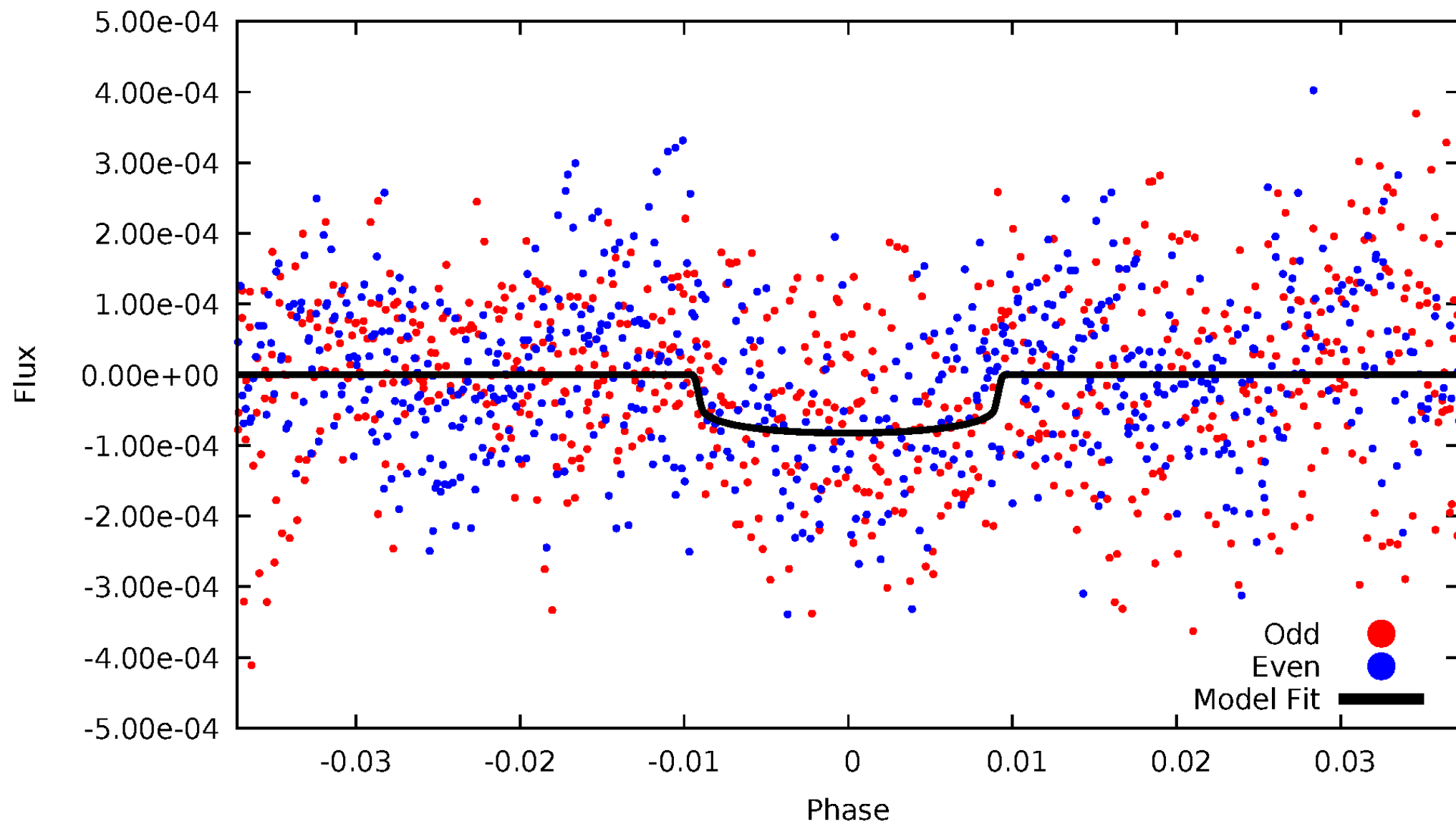


TCE 010353924-06



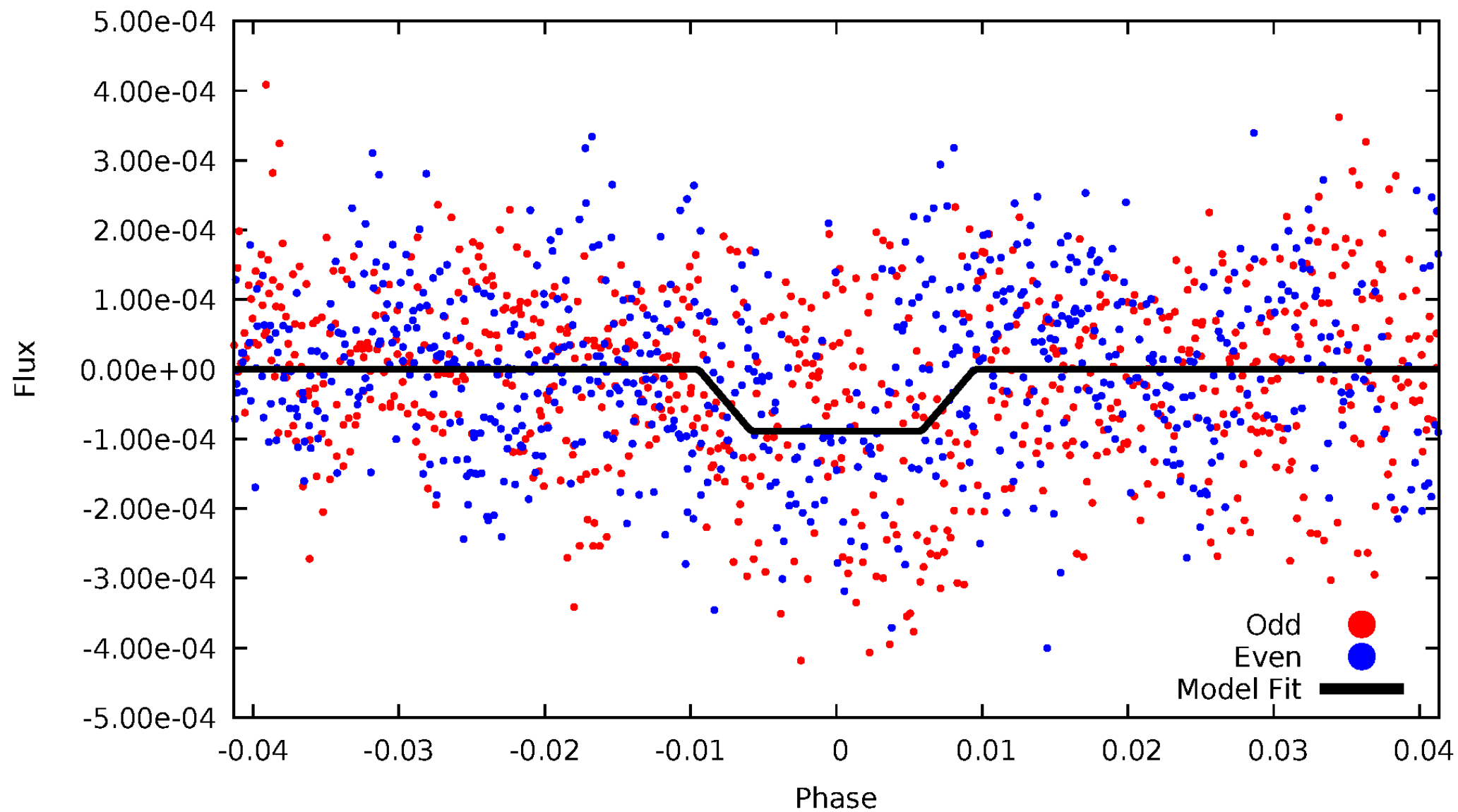
DV Odd/Even

TCE 010353924-06



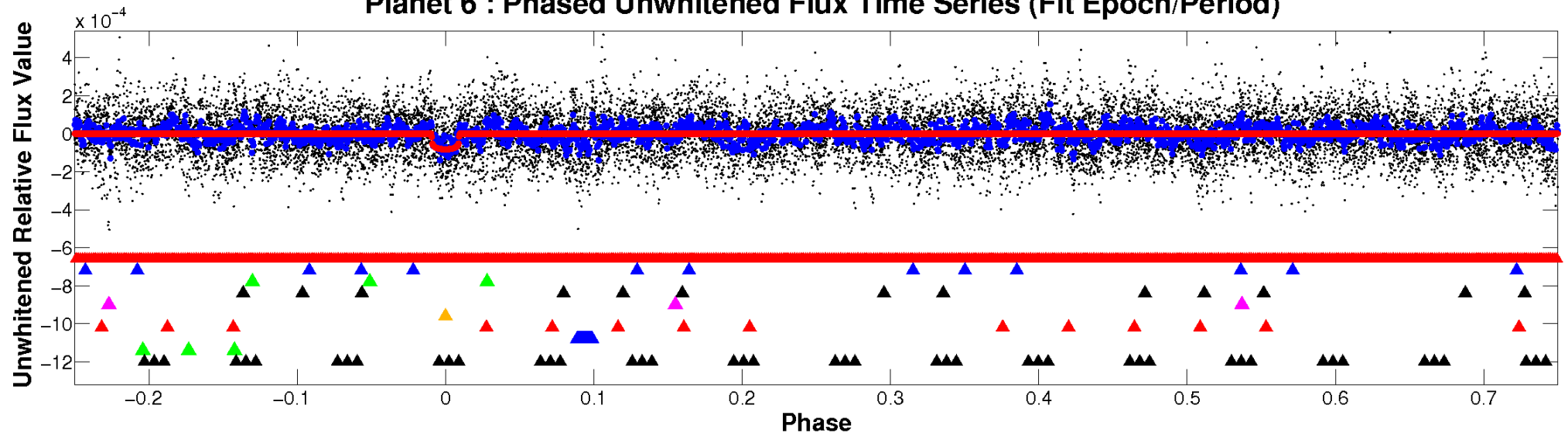
ALT Odd/Even

TCE 010353924-06

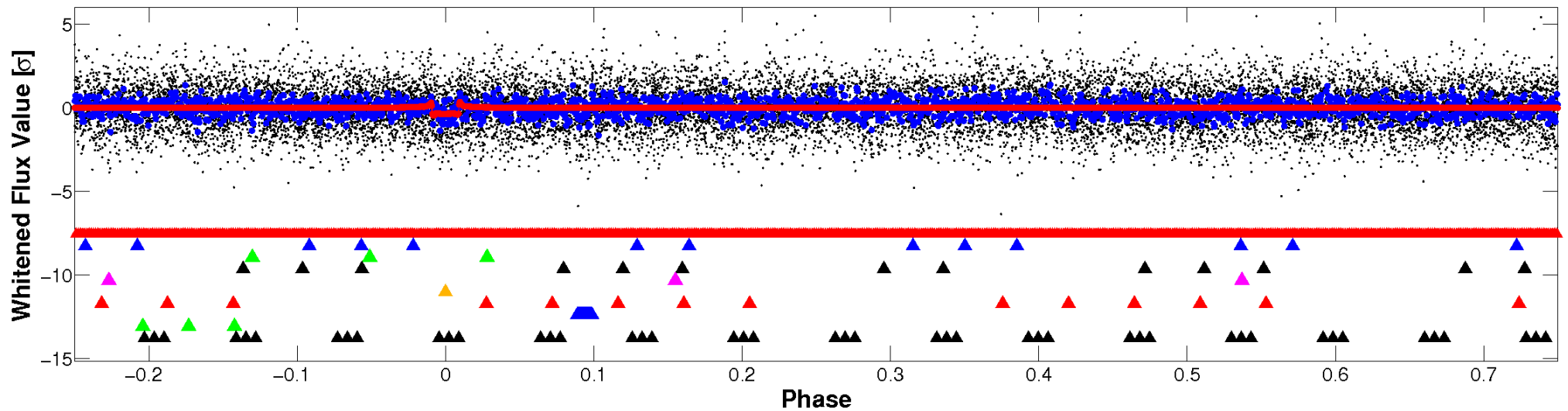


Non-Whitened Vs. Whitened Light Curve

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

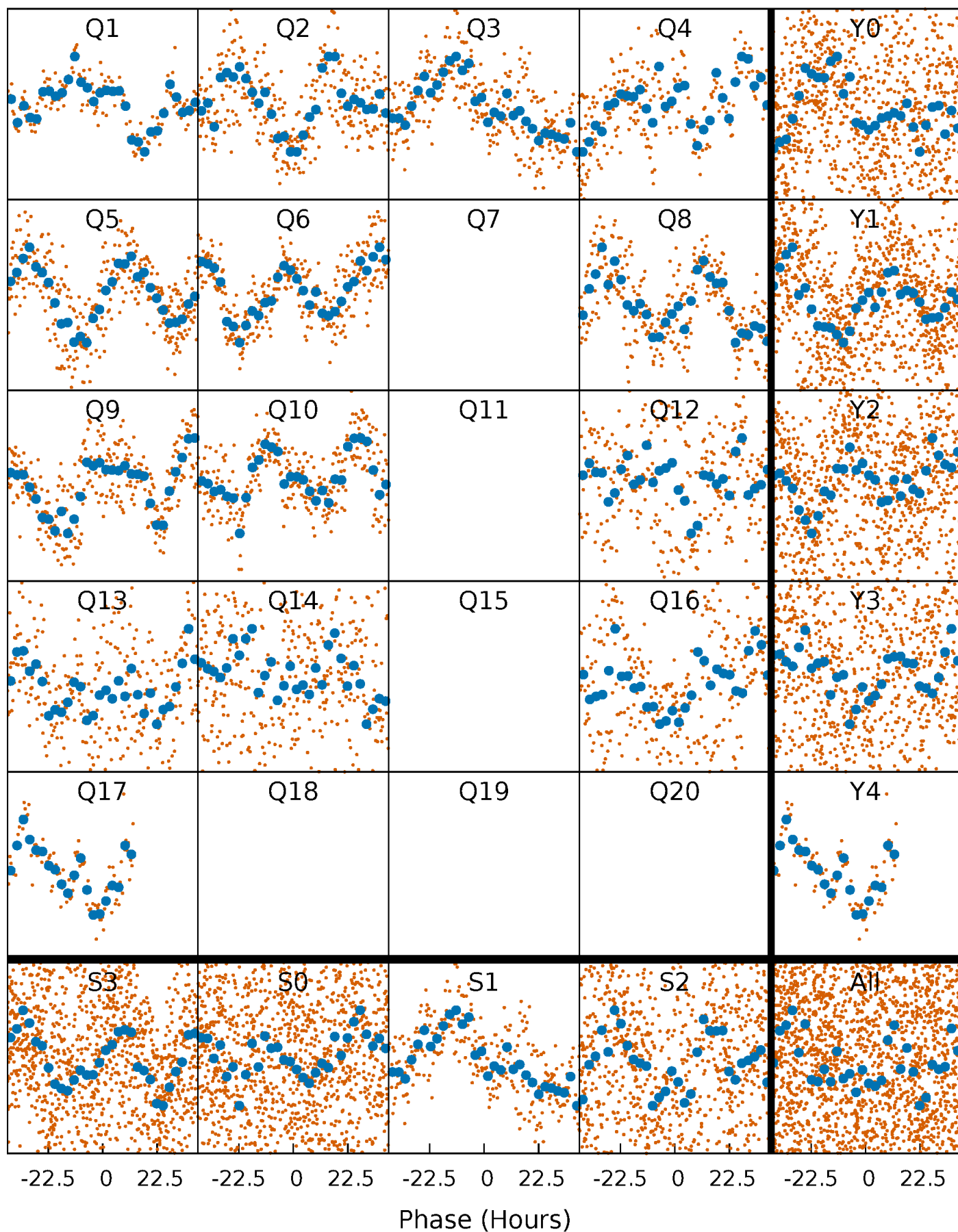


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



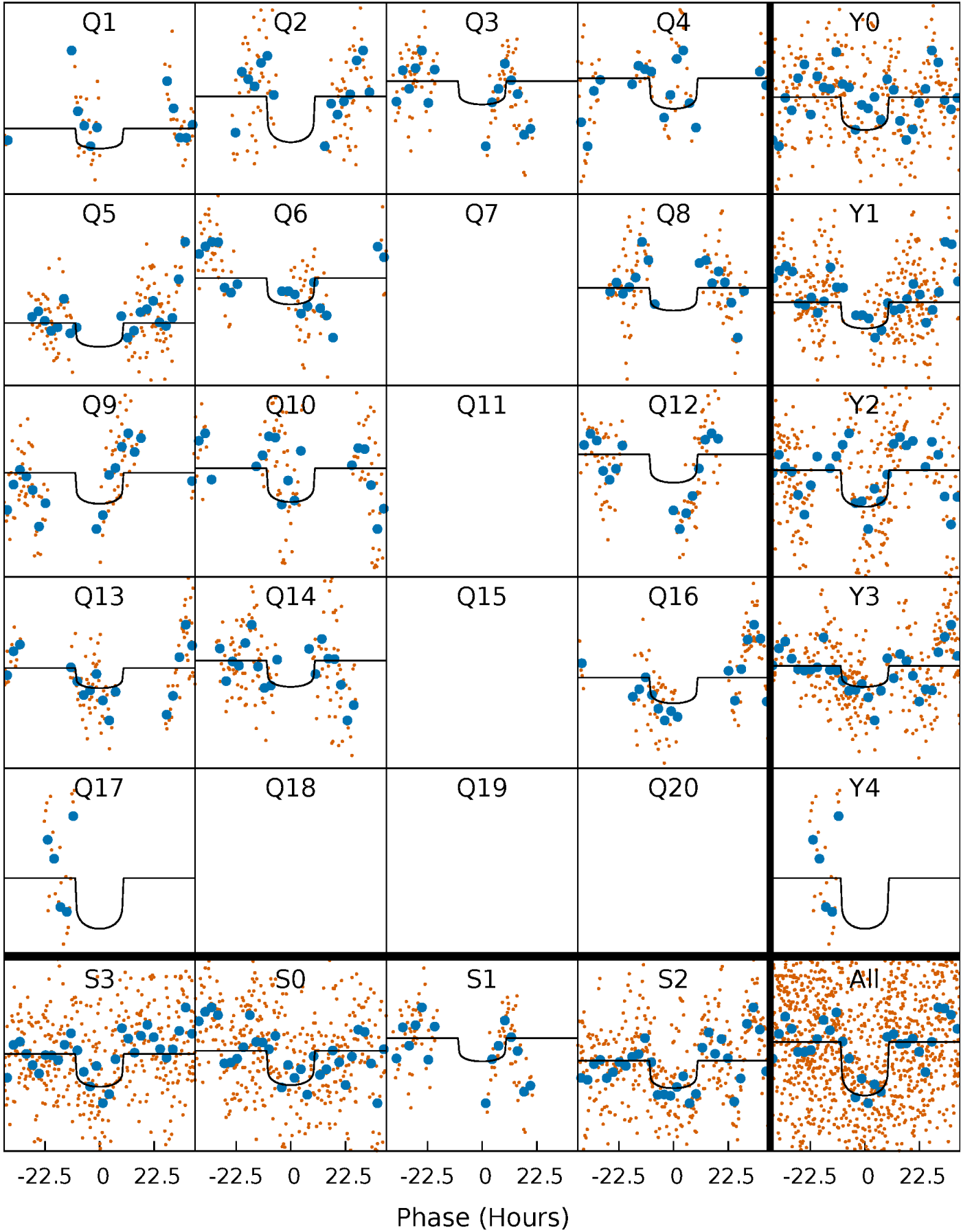
PDC Quarter-Phased Transit Curves

TCE 010353924-06 P= 44.151668 Days $T_0=133.469056$ (BKJD)



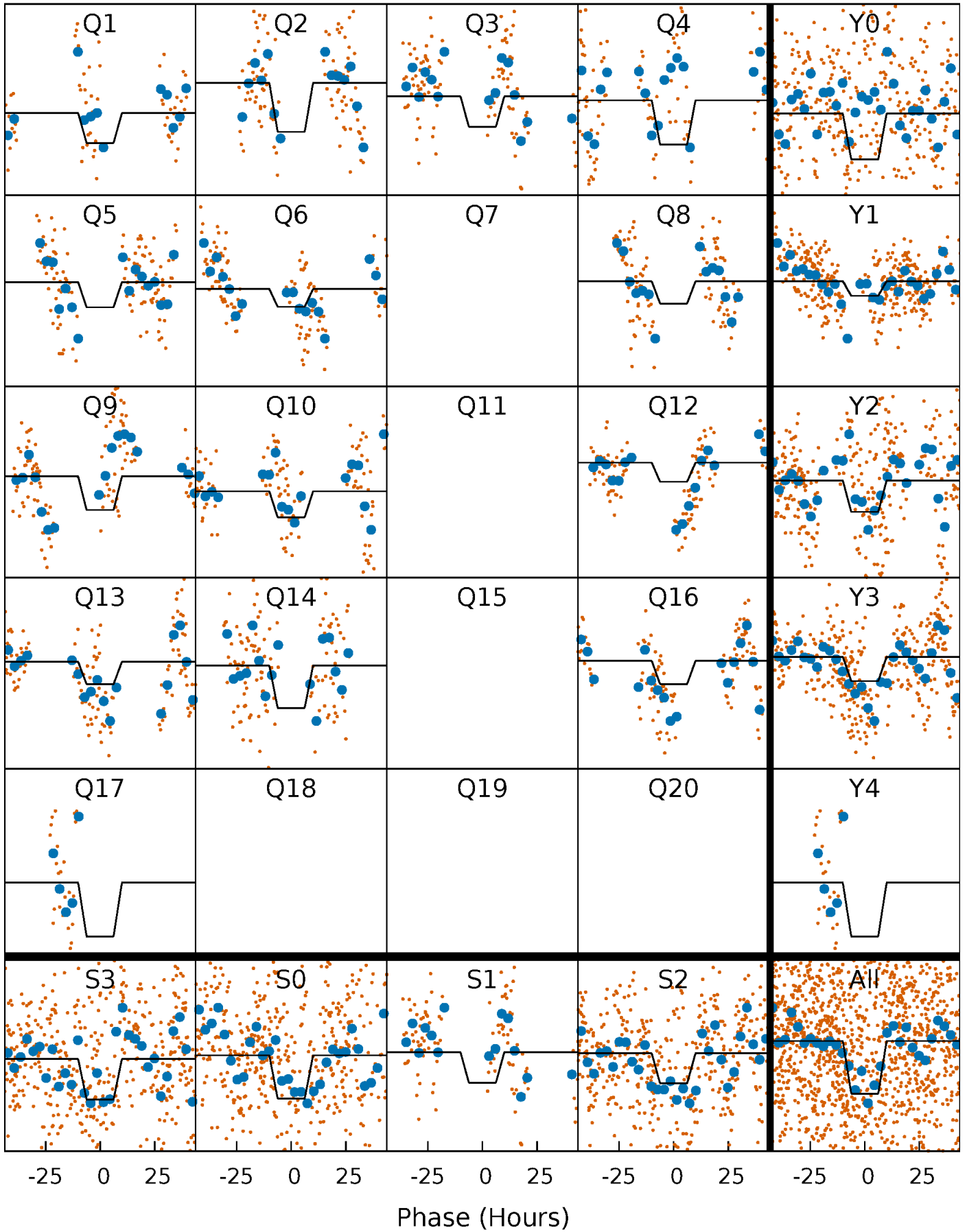
DV Quarter-Phased Transit Curves

TCE 010353924-06 P= 44.151668 Days $T_0=133.469056$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

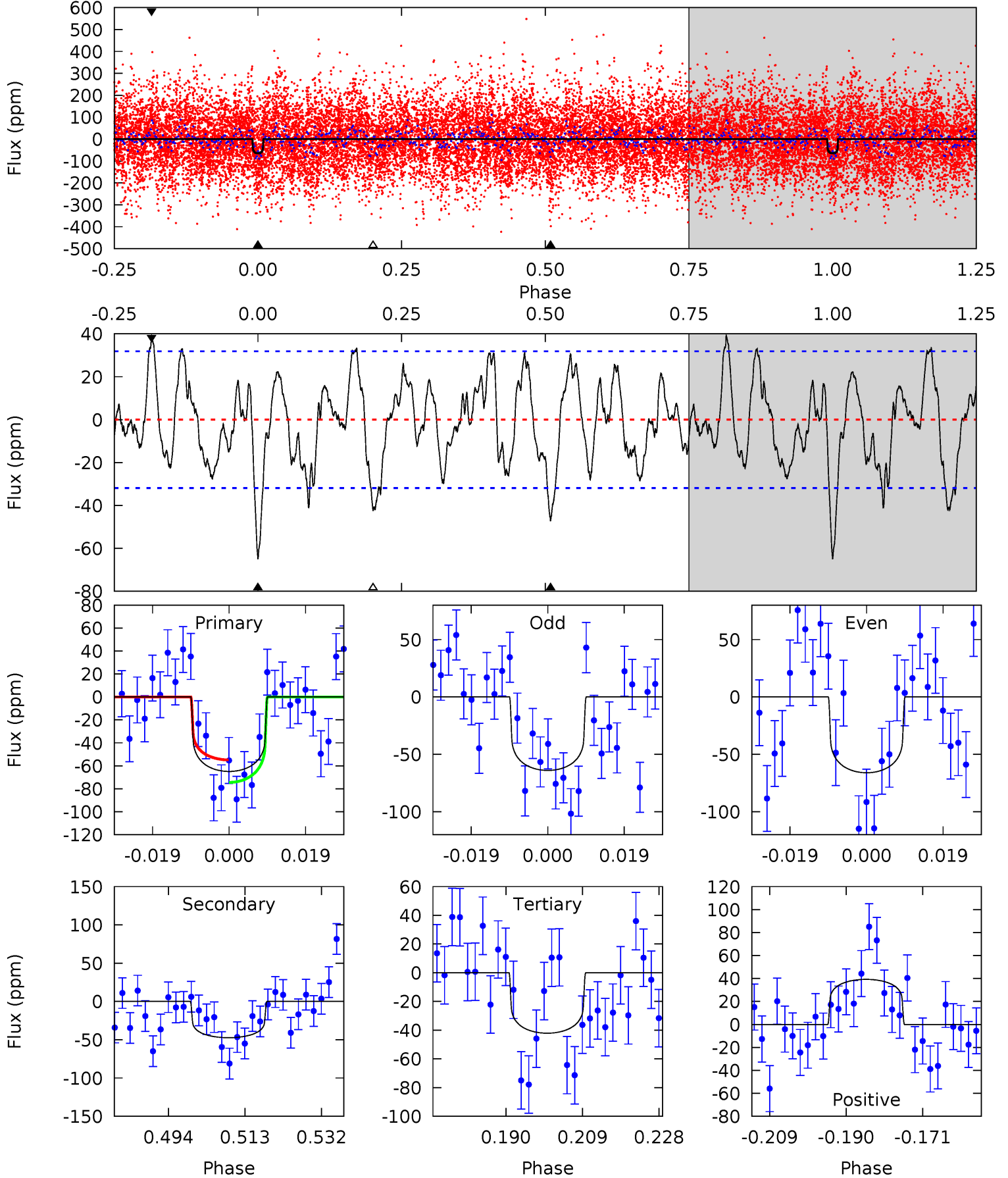
TCE 010353924-06 P= 44.152401 Days $T_0=133.455560$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-06, P = 44.151668 Days, E = 89.317388 Days

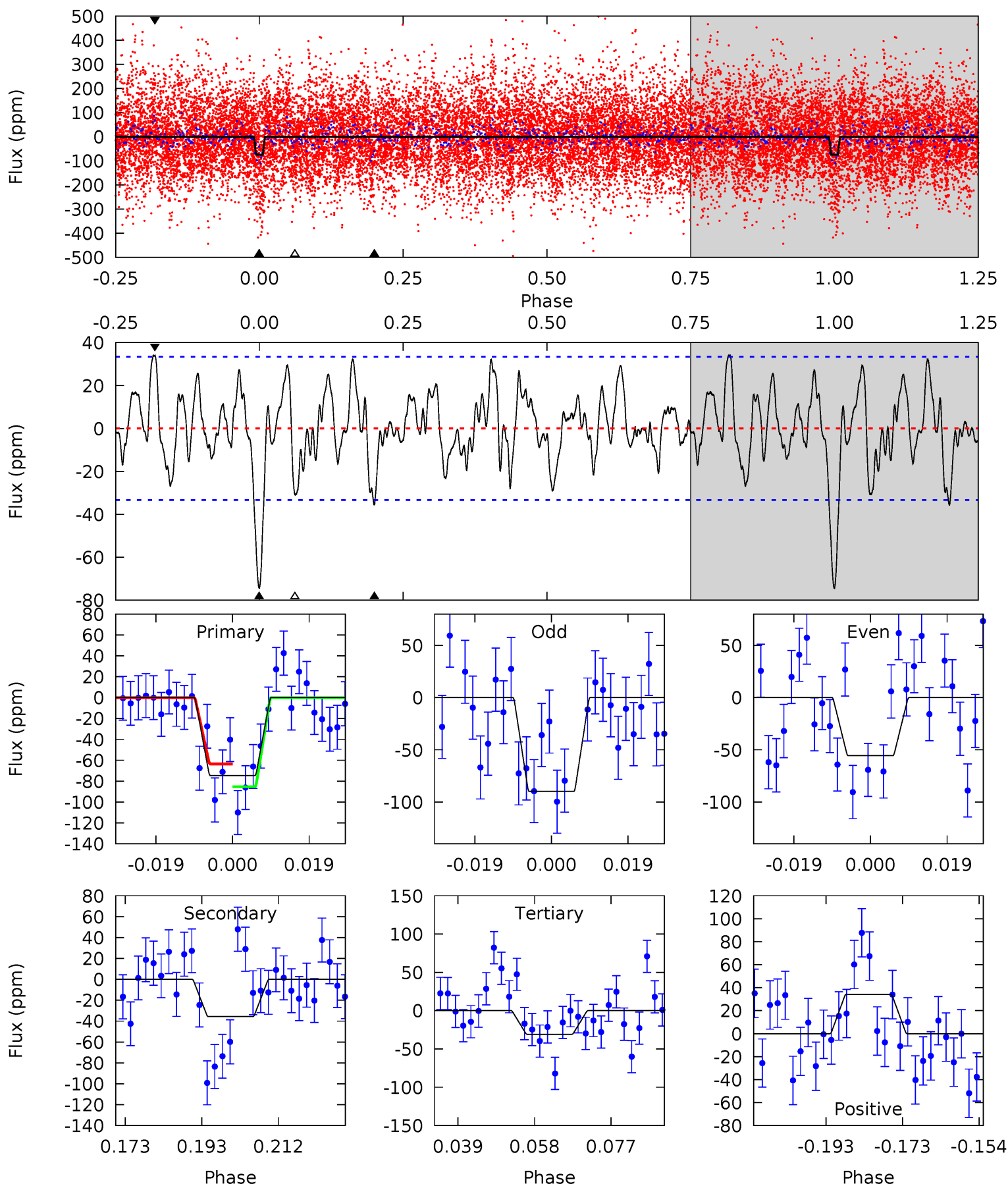
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.98	7.27	6.48	6.03	4.90	2.35	2.55	3.51	3.95	0.80	1.24	0.16	0.66	0.38	1.51



Alt Model-Shift Uniqueness Test

010353924-06, P = 44.152401 Days, E = 89.303159 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	5.23	4.53	5.02	4.90	2.34	1.95	6.43	5.94	0.71	0.22	2.52	1.45	0.31	1.61



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-47 ± 7	$1.62^{+0.51}_{-0.47}$	1020^{+79}_{-75}	5828^{+1073}_{-616}	735^{+721}_{-315}
Alt.	-36 ± 7	$1.72^{+0.54}_{-0.45}$	1023^{+85}_{-73}	5327^{+801}_{-551}	470^{+448}_{-199}

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

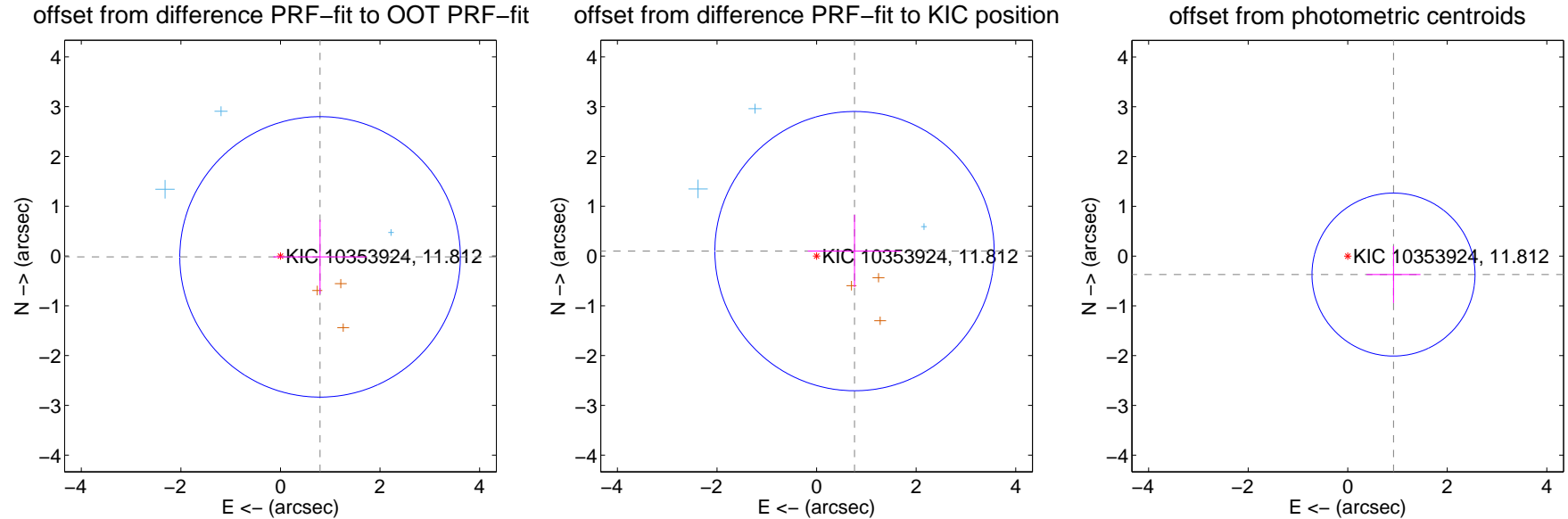
DV Centroid Data

Supplemental centroid analysis for 010353924-06. **Kepler magnitude: 11.81.** Transit SNR 6.72

There are 3 quarters with good PRF difference image offsets

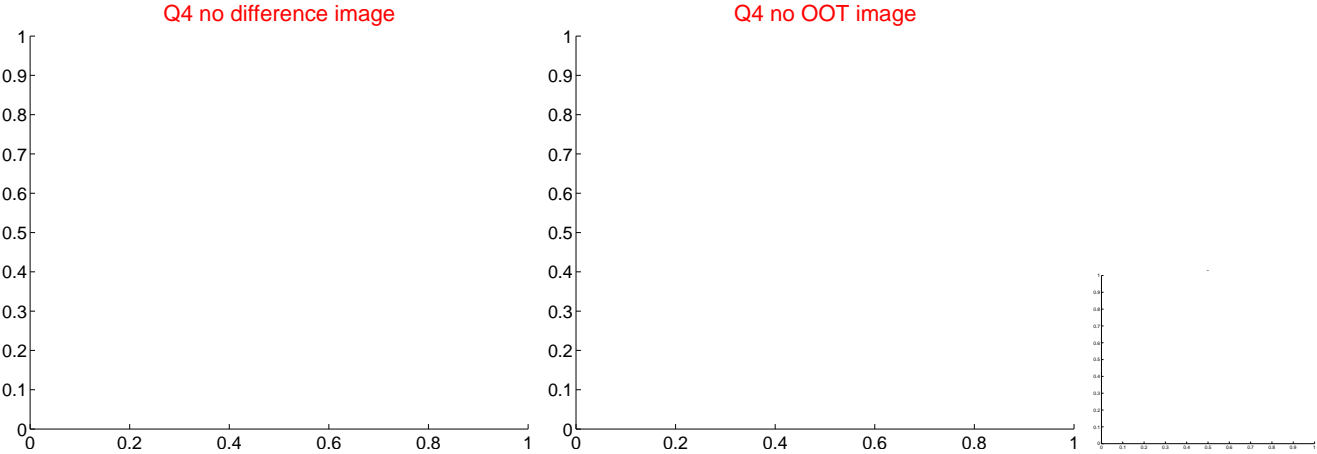
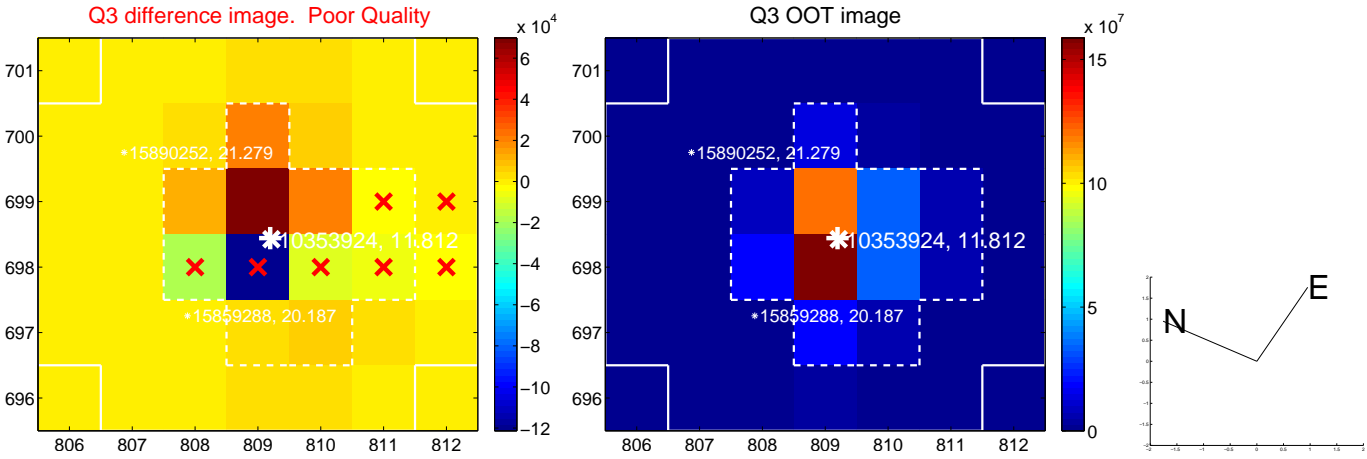
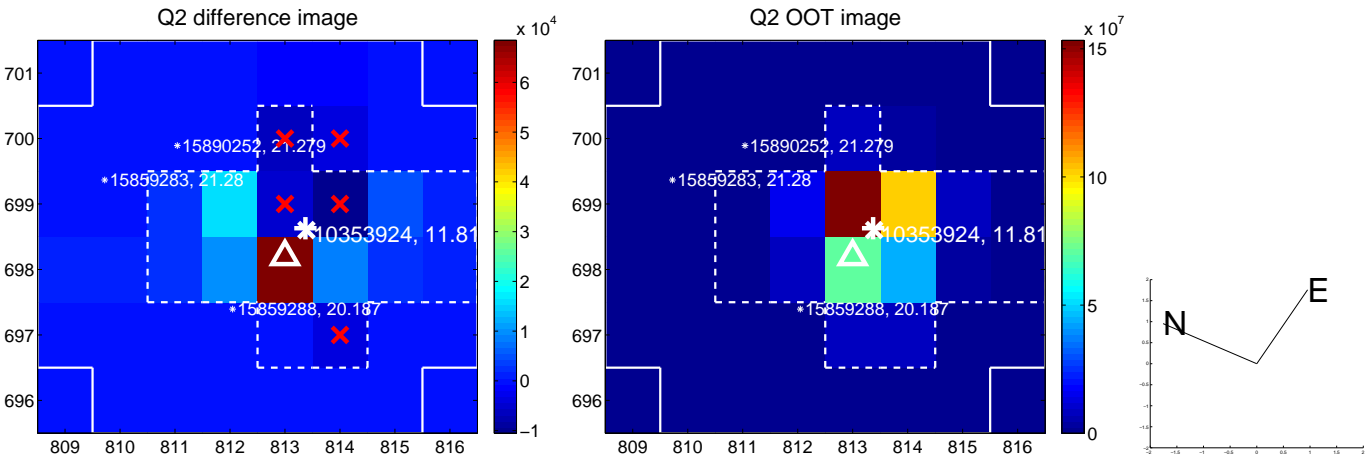
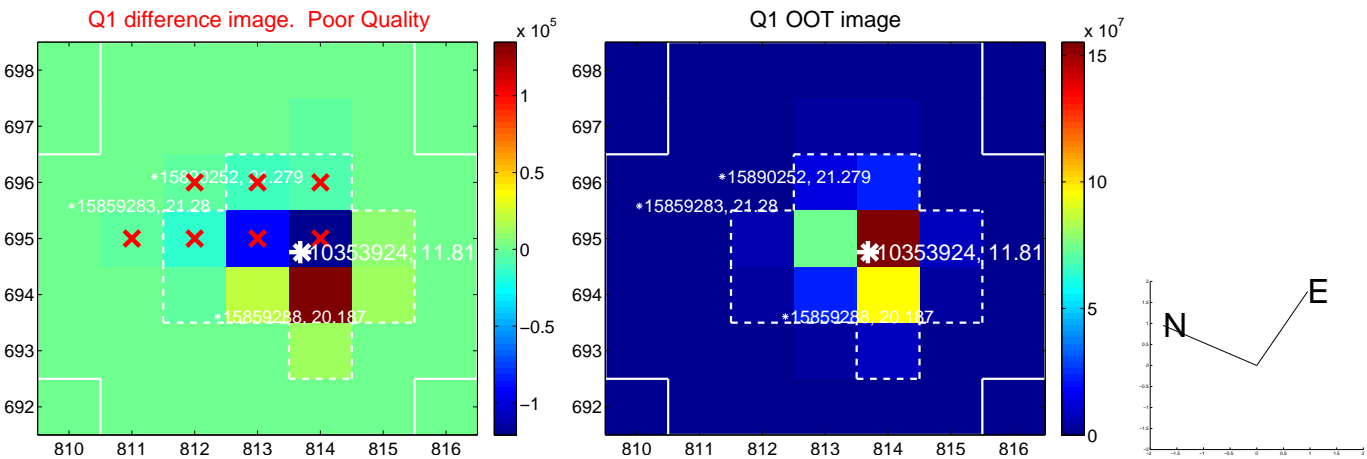
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.796 ± 0.939	0.85	-0.795 ± 0.939	-0.017 ± 0.745
PRF-fit source offset from KIC position	0.769 ± 0.935	0.82	-0.762 ± 0.938	0.099 ± 0.729
photometric centroid source offset	0.99 ± 0.55	1.82	-0.92 ± 0.54	-0.37 ± 0.57

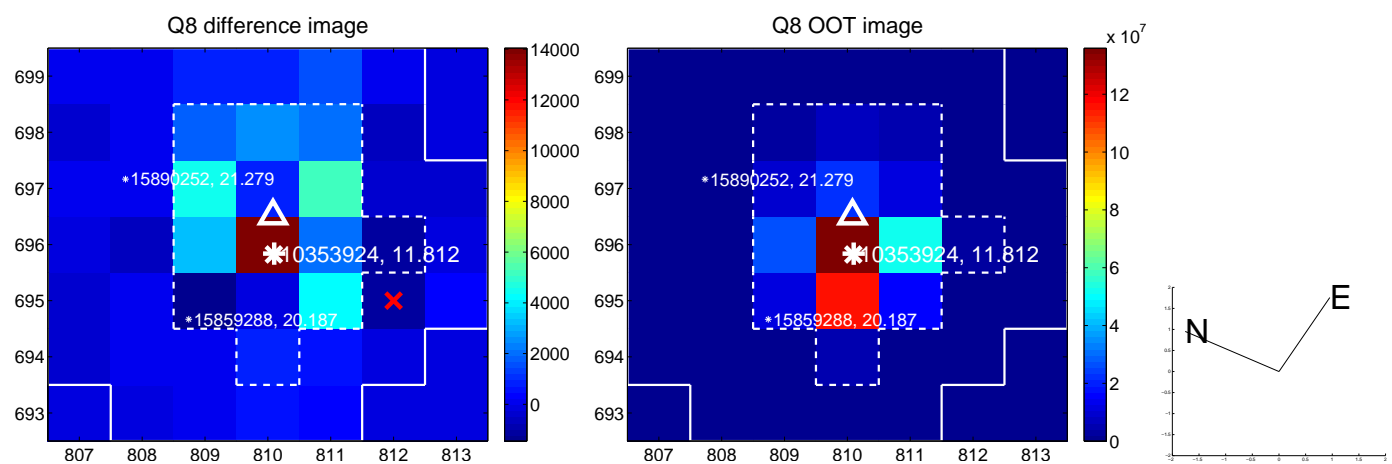
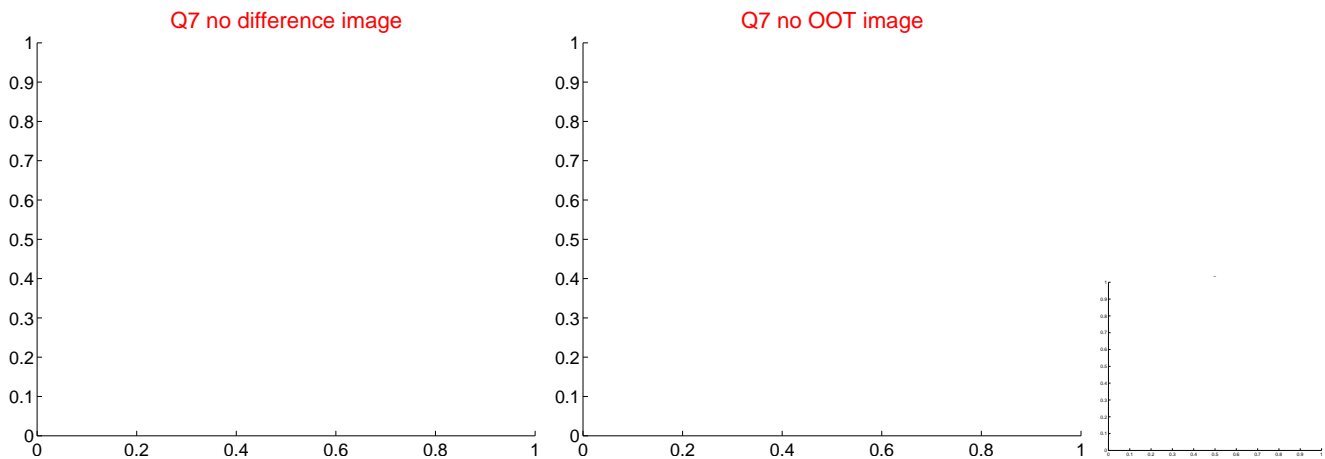
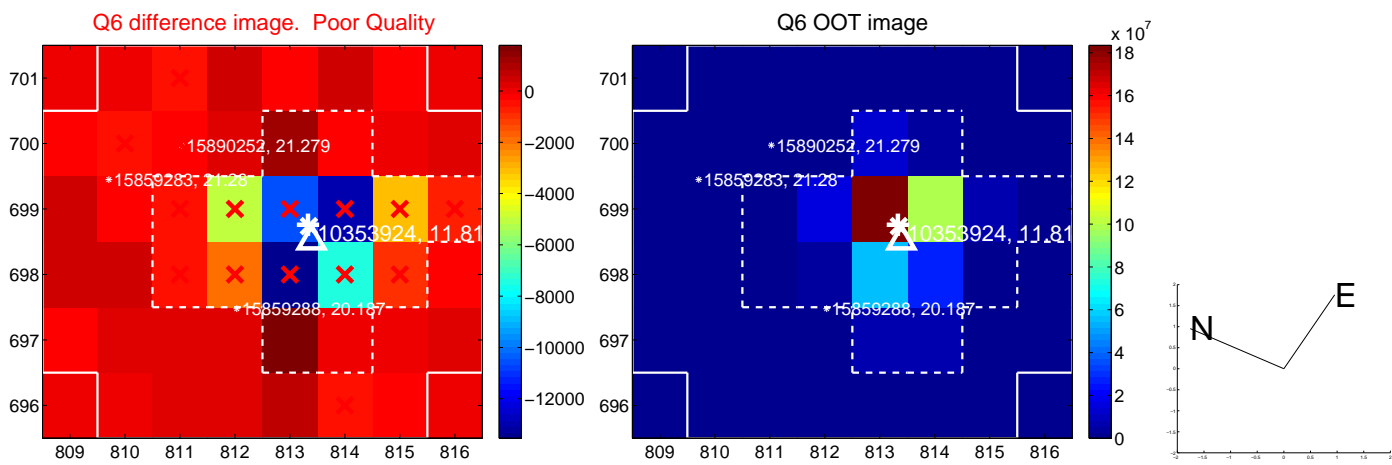
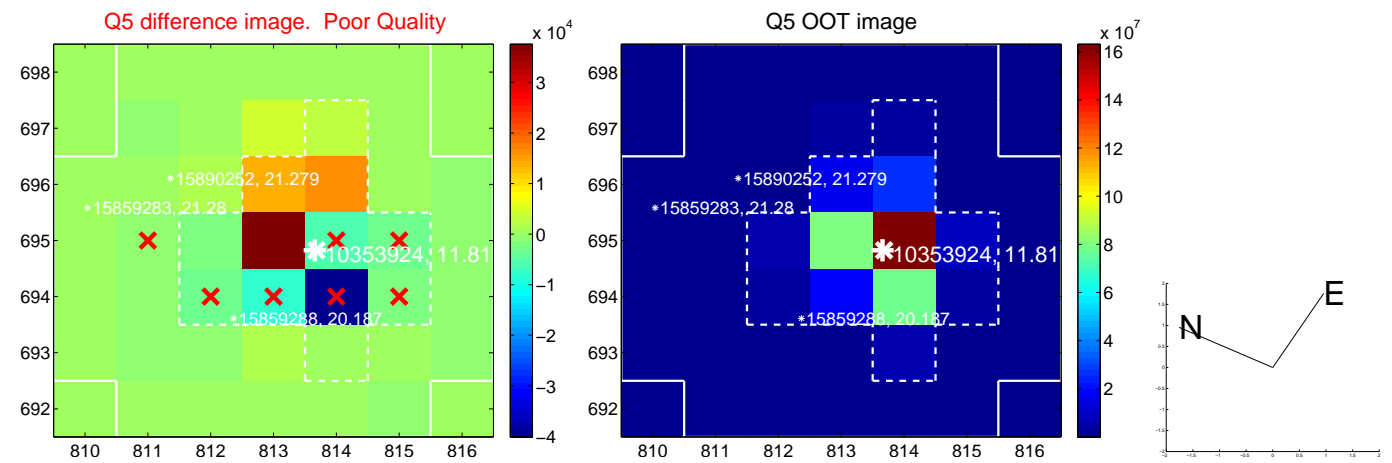


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

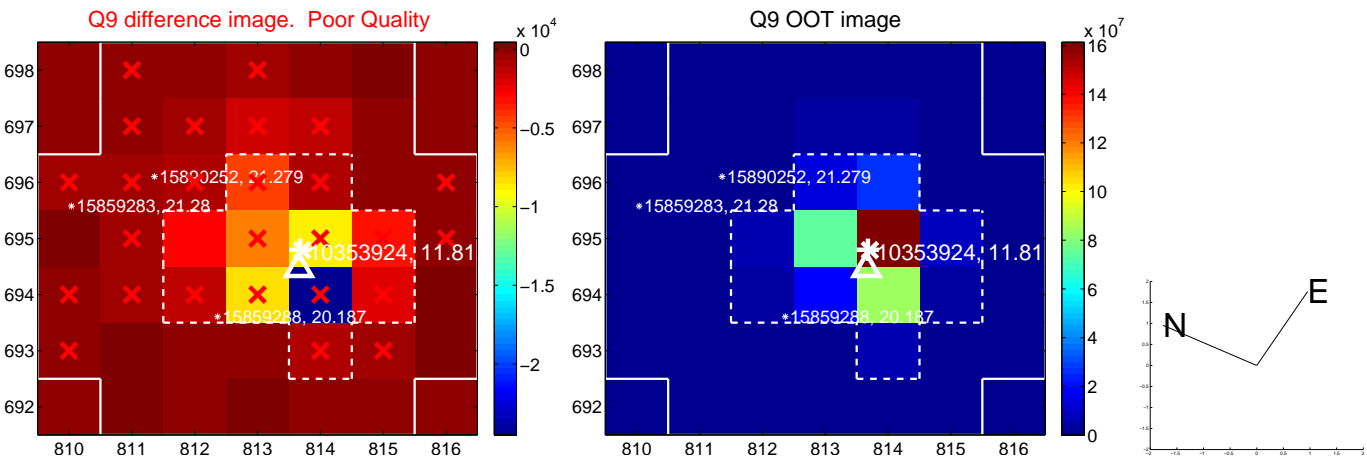
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



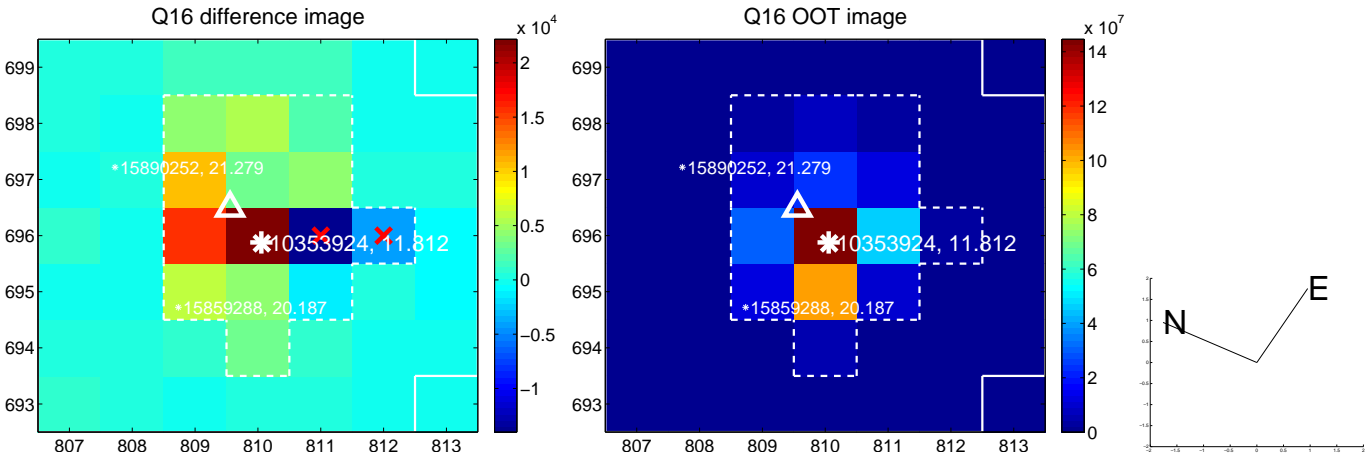
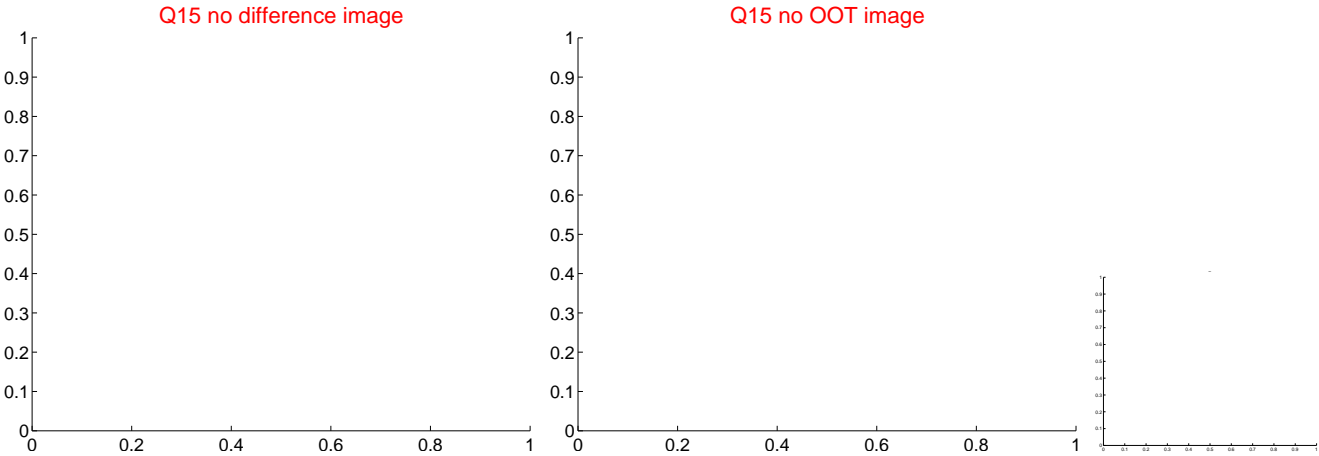
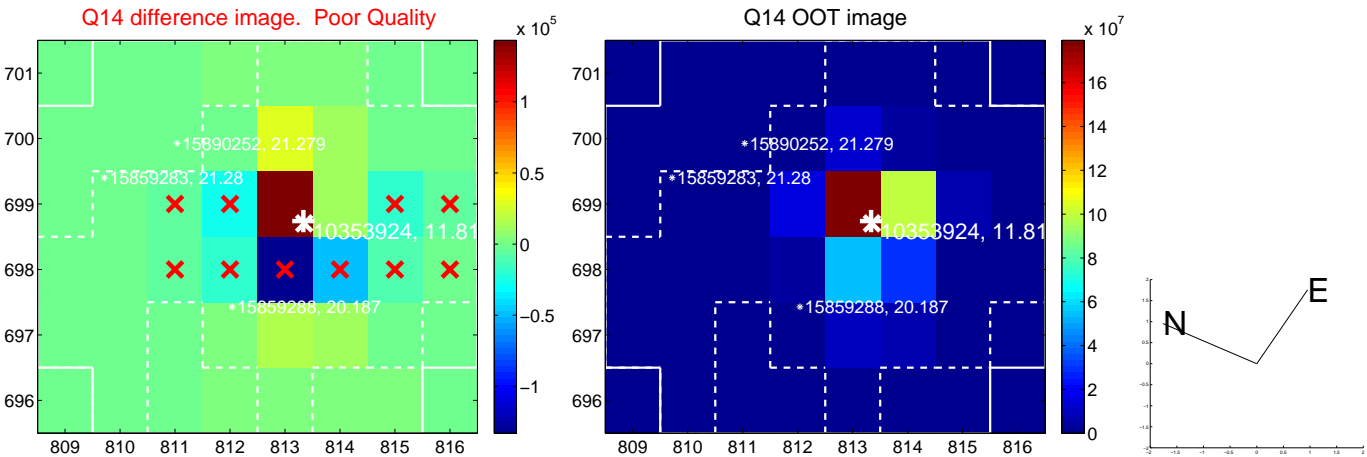
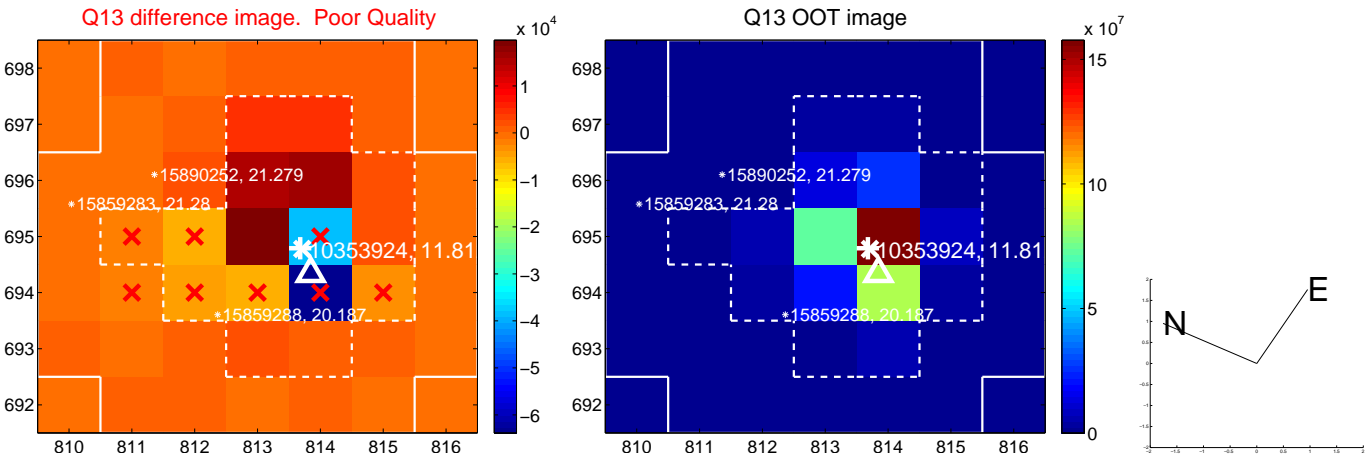
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



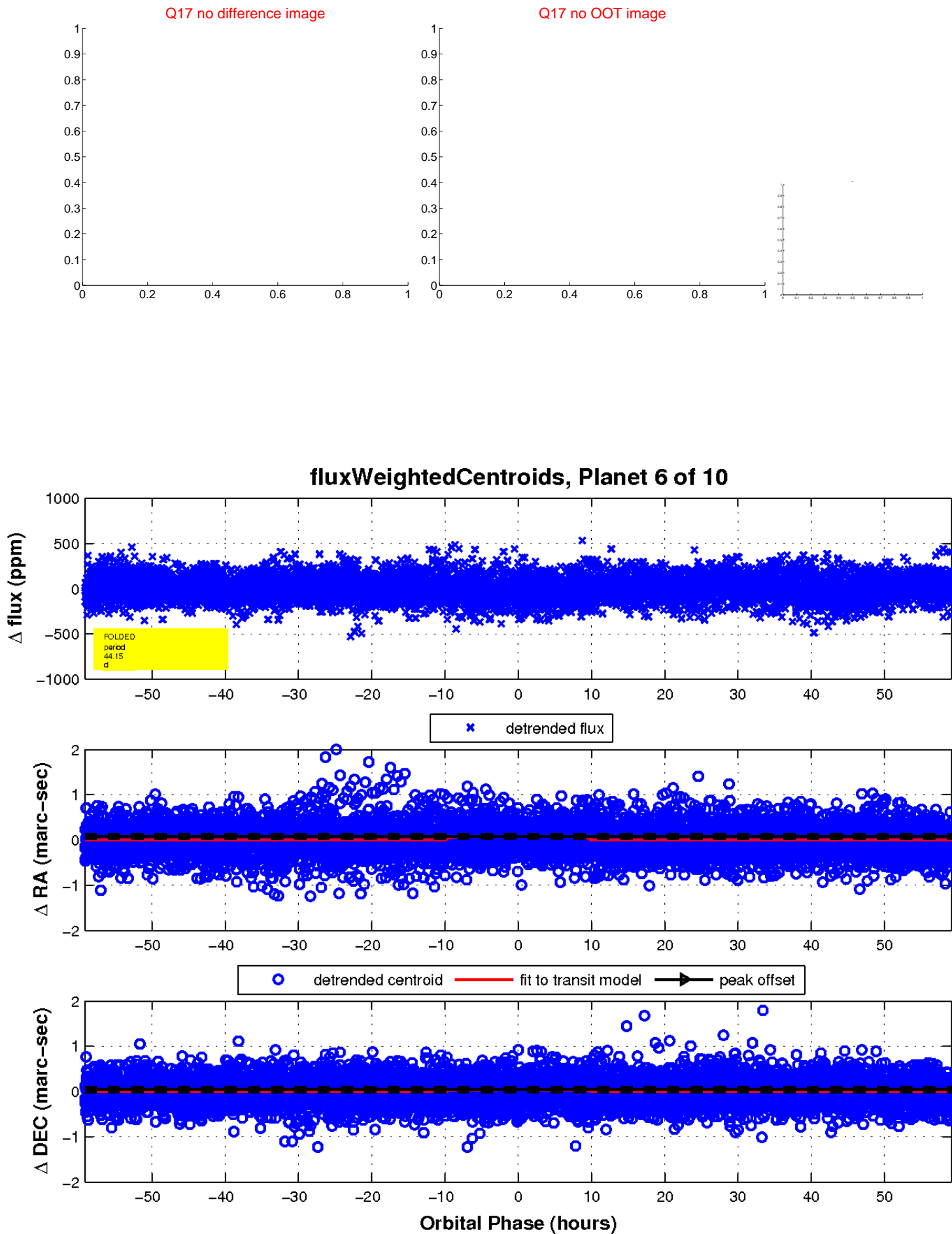
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

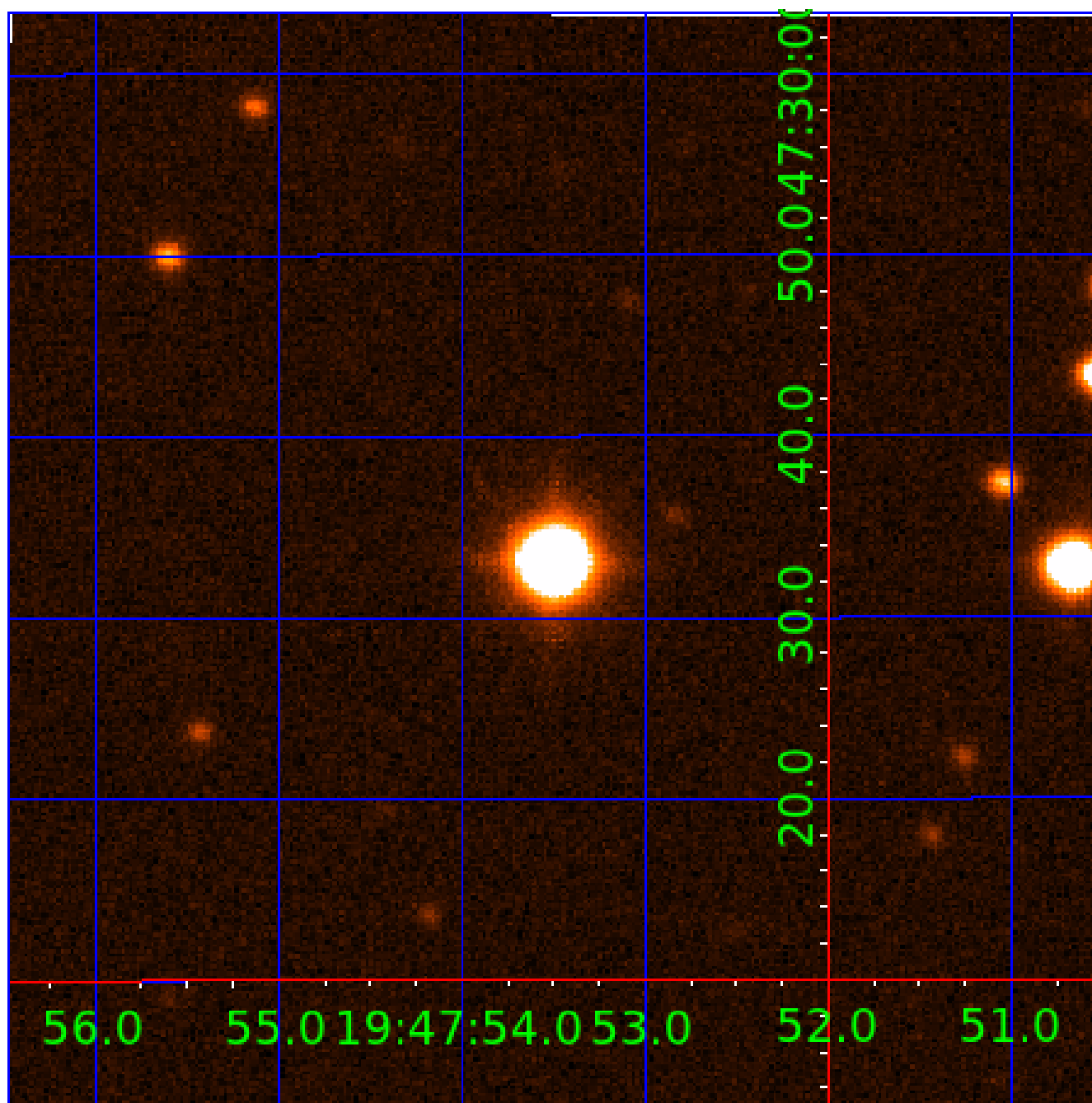


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010353924

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})
010353924-01	OBS	No	1.625617	132.418256	13.7	8.654	9.2	6.1	1.71	6654	0.67	5652.02
010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
010353924-04	OBS	No	115.147808	171.598167	220.7	5.114	9.4	8.6	1.71	6654	2.85	19.29
010353924-05	OBS	No	458.381648	432.509759	260.1	7.434	9.3	9.8	1.71	6654	3.04	3.06
010353924-06	OBS	No	44.151668	133.469056	82.5	19.725	9.1	6.7	1.71	6654	1.65	69.23
010353924-07	OBS	No	103.673679	222.990038	203.0	7.175	9.7	9.3	1.71	6654	2.72	22.18
010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010353924-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010353924-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

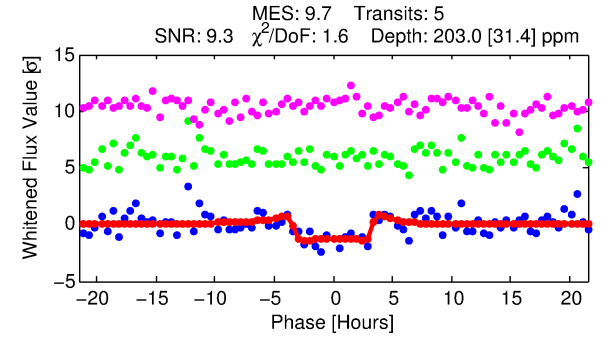
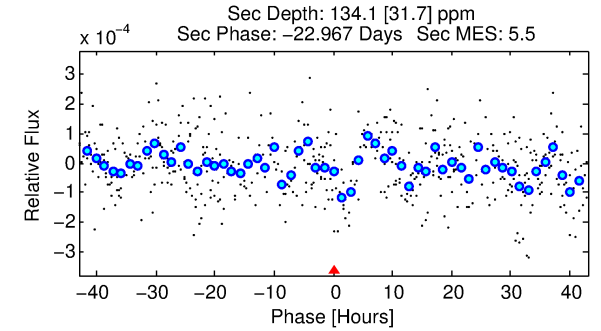
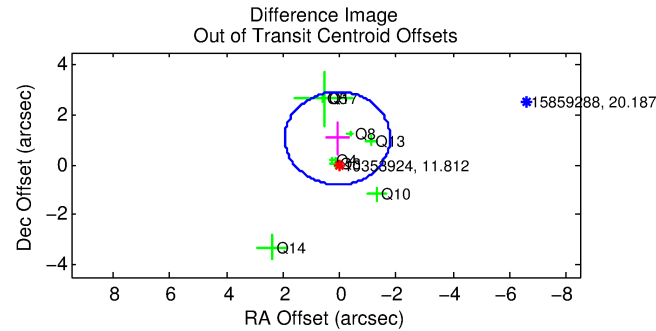
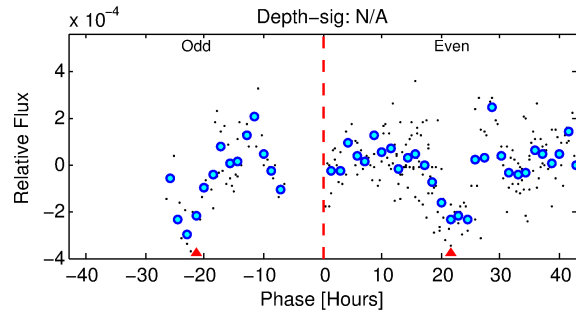
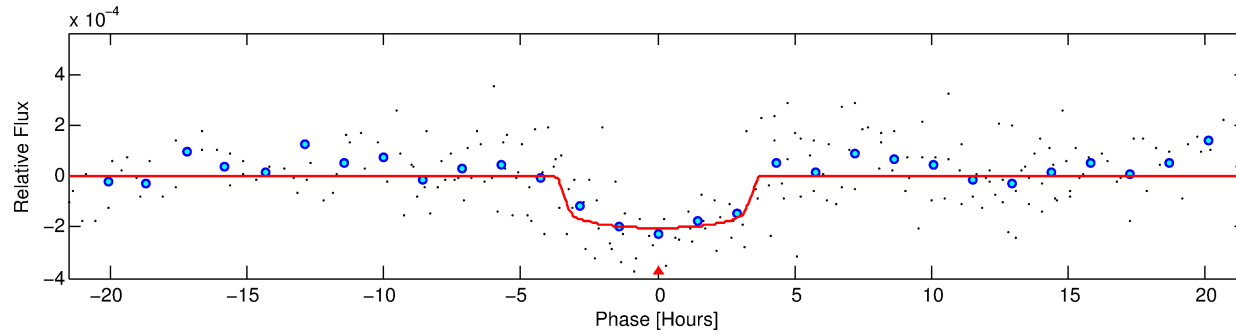
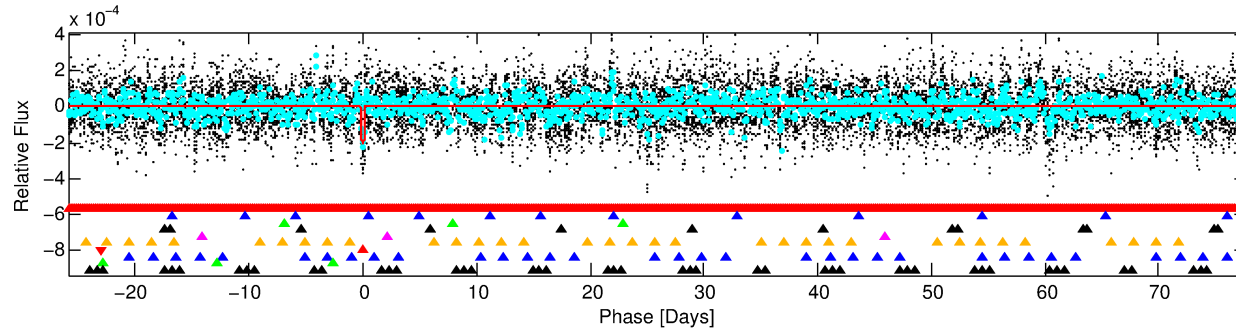
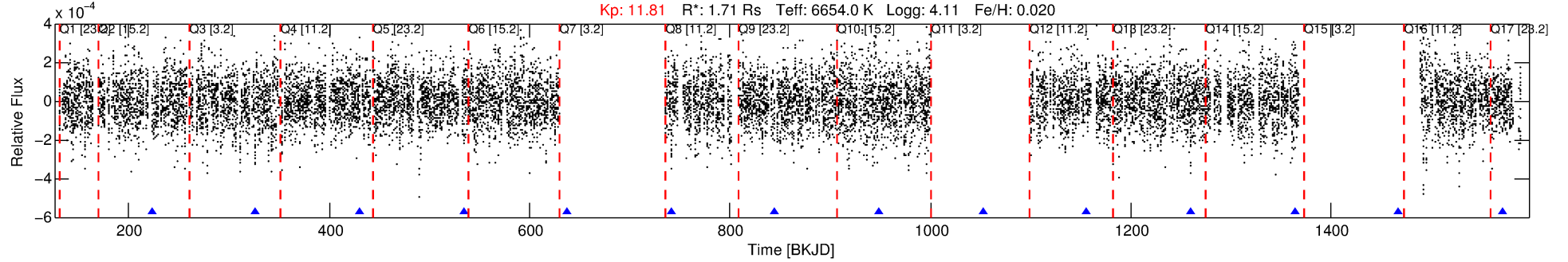
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-07

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 7 of 10 Period: 103.674 d



DV Fit Results:

Period = 103.67368 [0.00156] d
Epoch = 222.9900 [0.0110] BKJD
Rp/R* = 0.0146 [0.0044]
a/R* = 65.36 [102.34]
b = 0.82 [0.61]
Seff = 22.18 [9.02]
Teq = 553 [56] K
Rp = 2.72 [1.18] Re
a = 0.4817 [0.1254] AU
Ag = 2313.90 [1727.00] [1.34σ]
Teffp = 5934 [984] K [5.46σ]

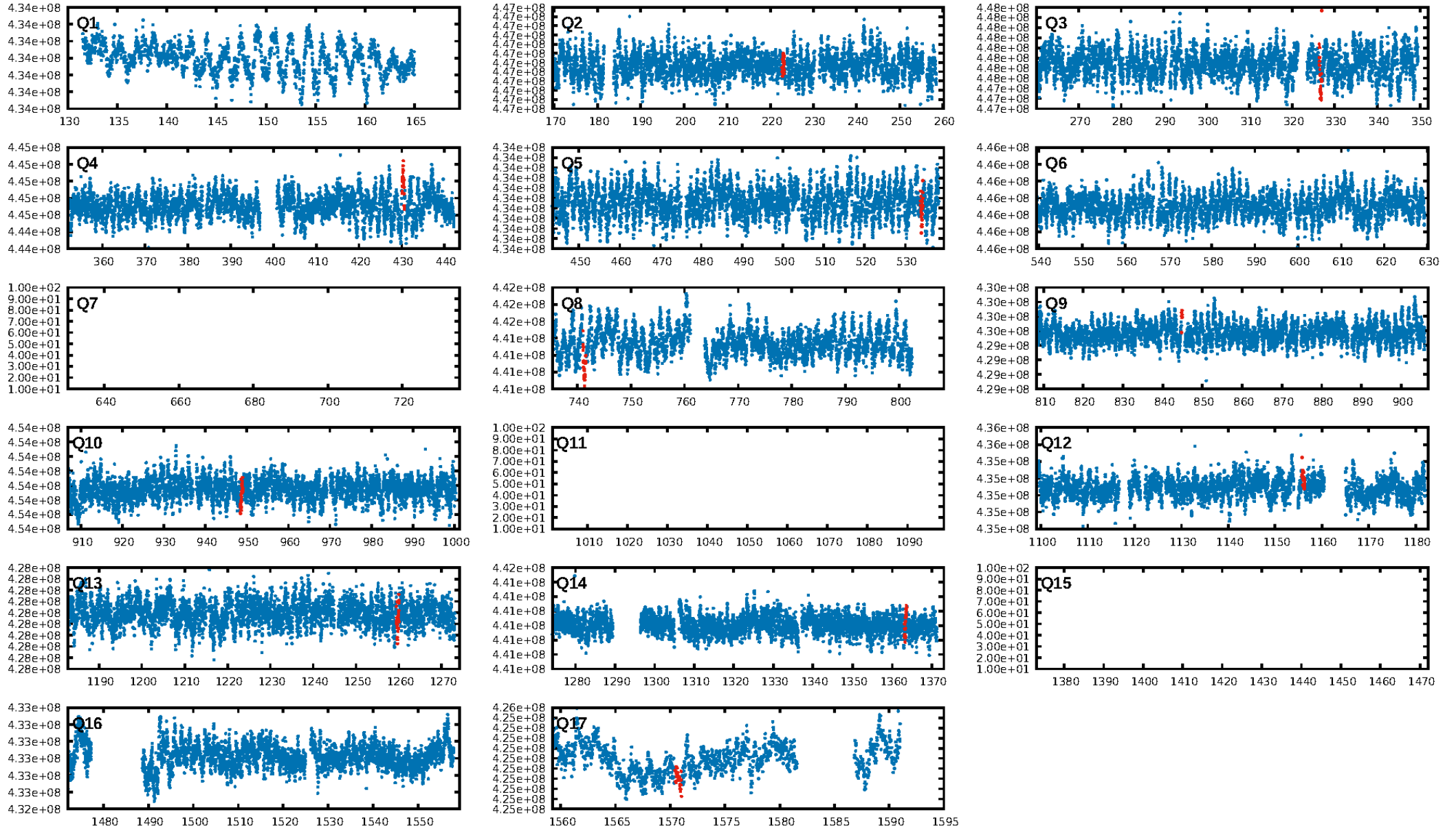
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [68.06σ]
LongPeriod-sig: 100.0% [33.22σ]
ModelChiSquare2-sig: 46.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.8952
Centroid-sig: 8.7%
Centroid-so: 0.411 arcsec [0.88σ]
OotOffset-rm: 1.061 arcsec [1.71σ]
KicOffset-rm: 1.102 arcsec [1.82σ]
OotOffset-st: 2/1/2/3 [8]
KicOffset-st: 2/1/2/3 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 0.00 [0/8]

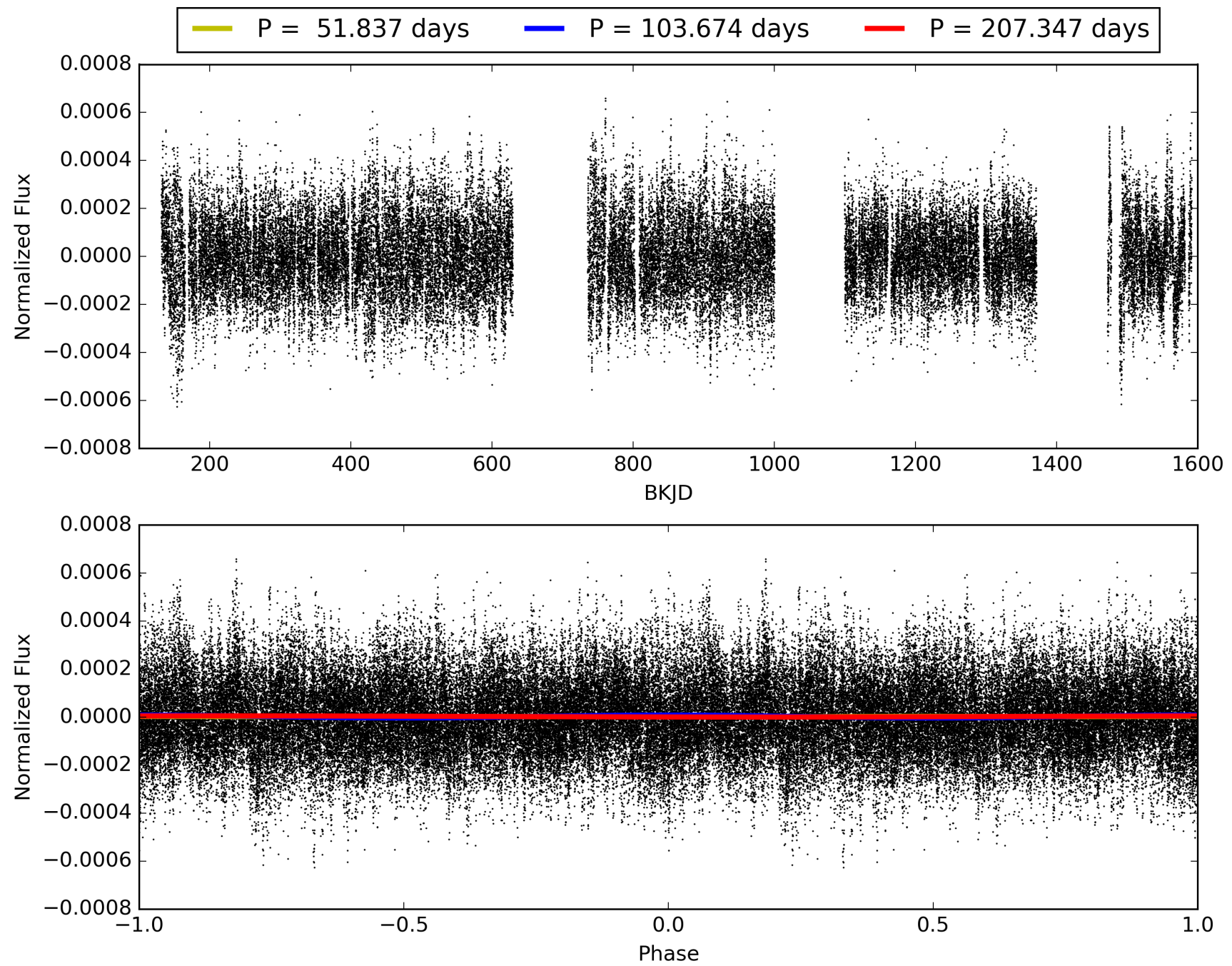
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:39:05 Z

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

TCE 010353924-07, PDC Light Curves

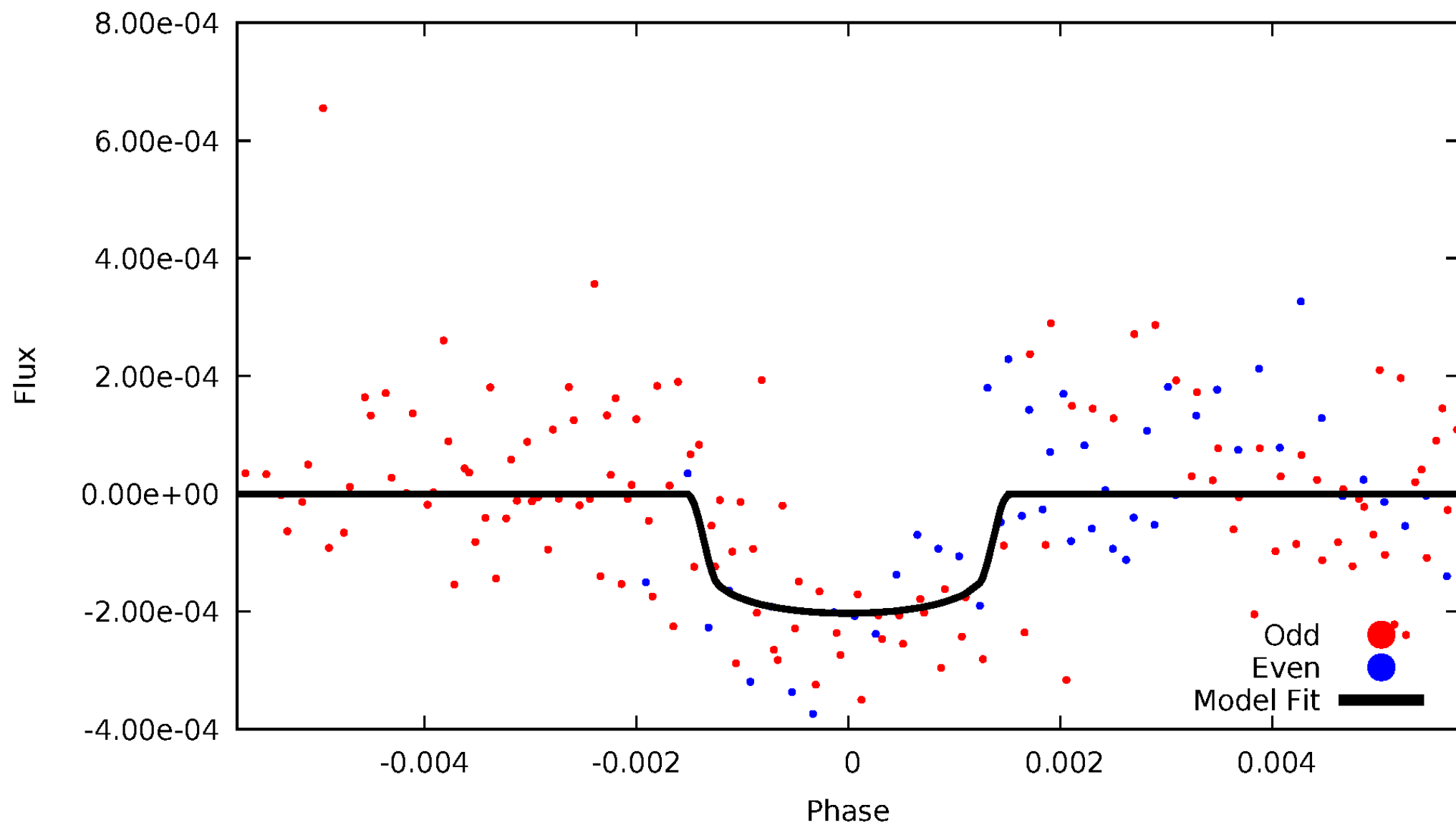


TCE 010353924-07



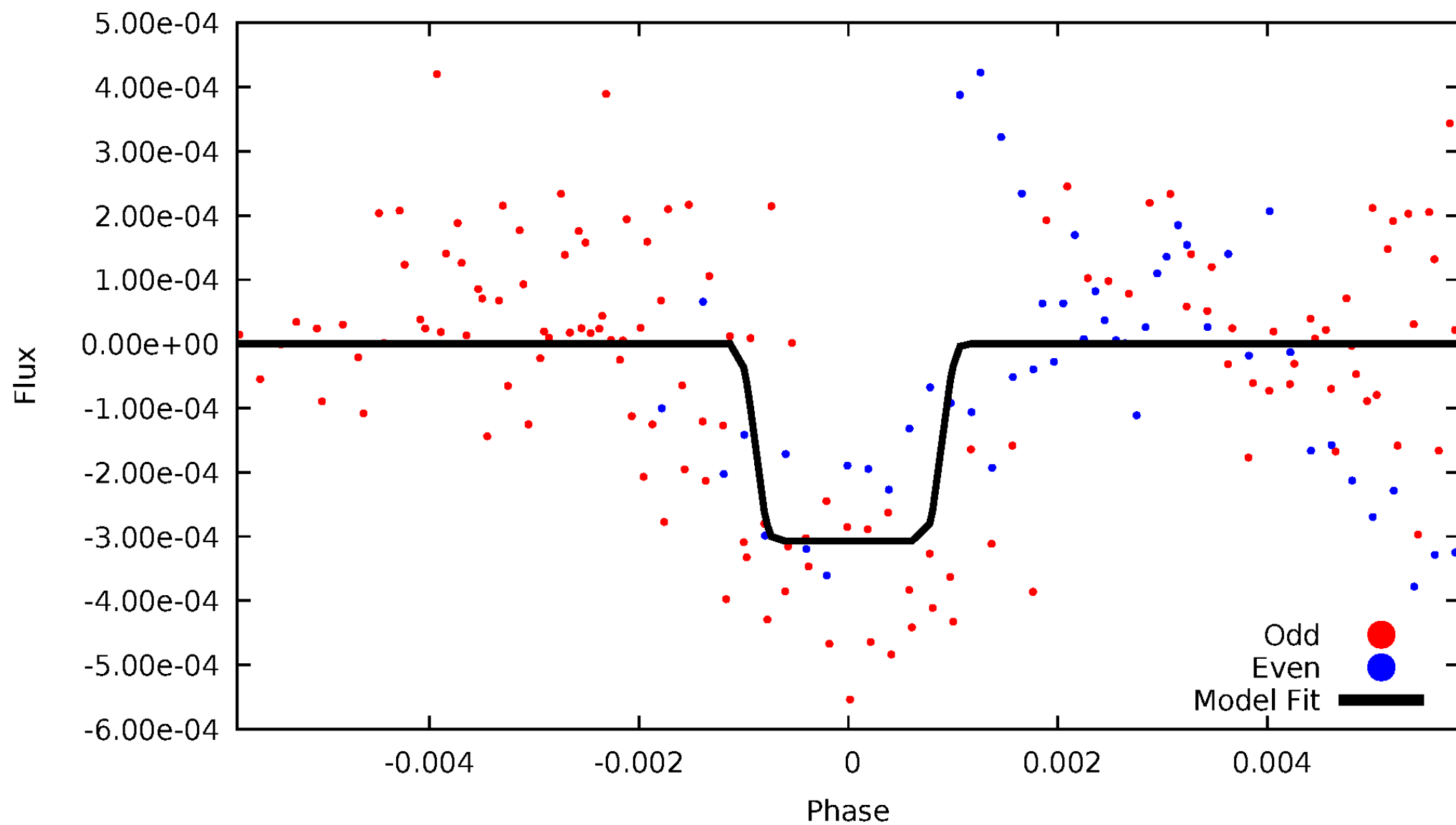
DV Odd/Even

TCE 010353924-07



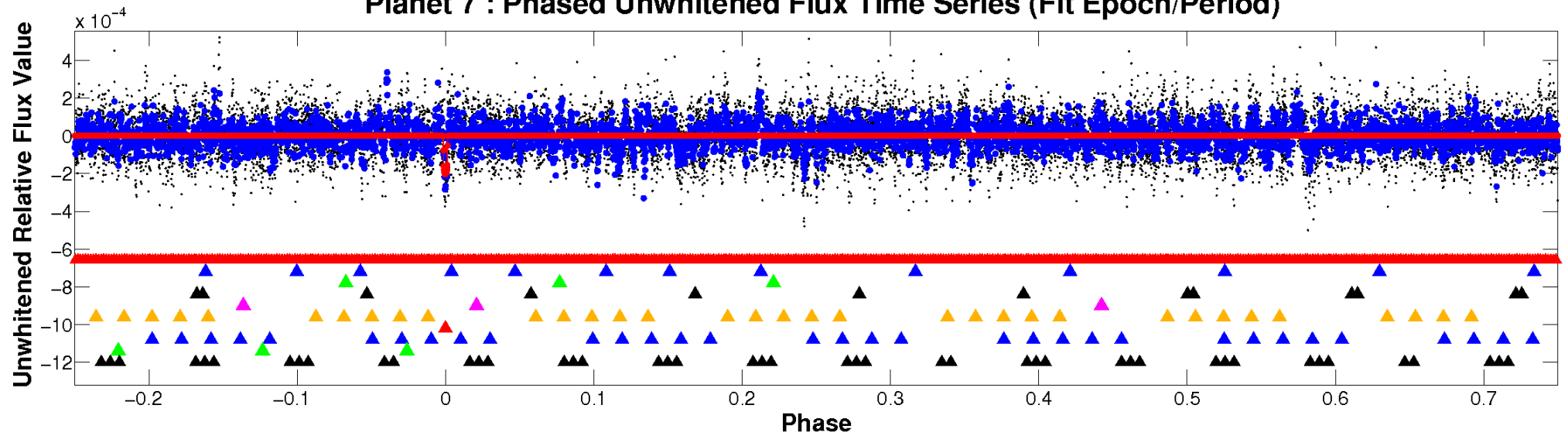
ALT Odd/Even

TCE 010353924-07

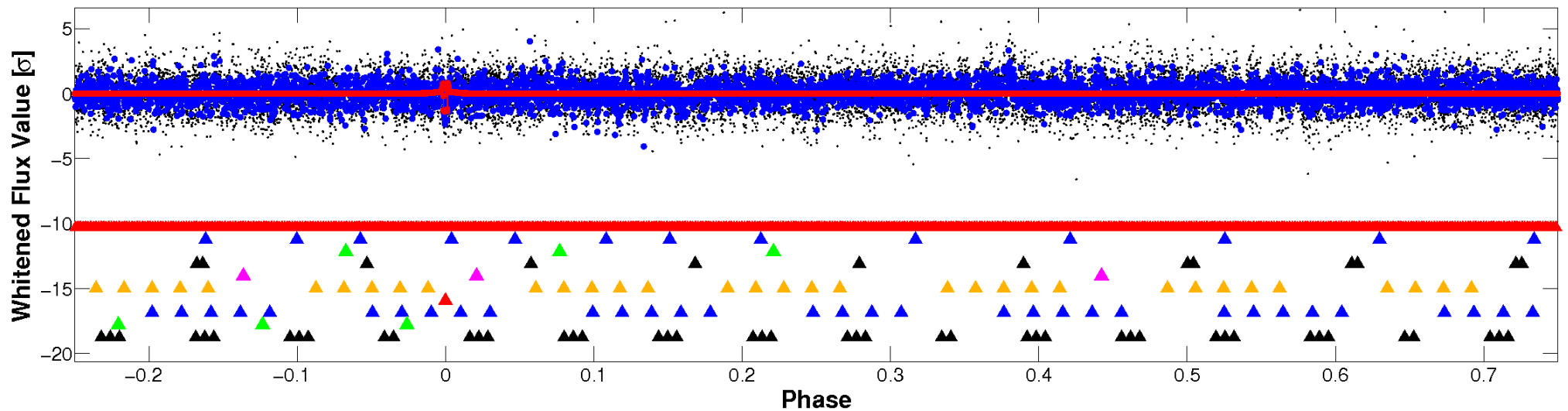


Non-Whitened Vs. Whitened Light Curve

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

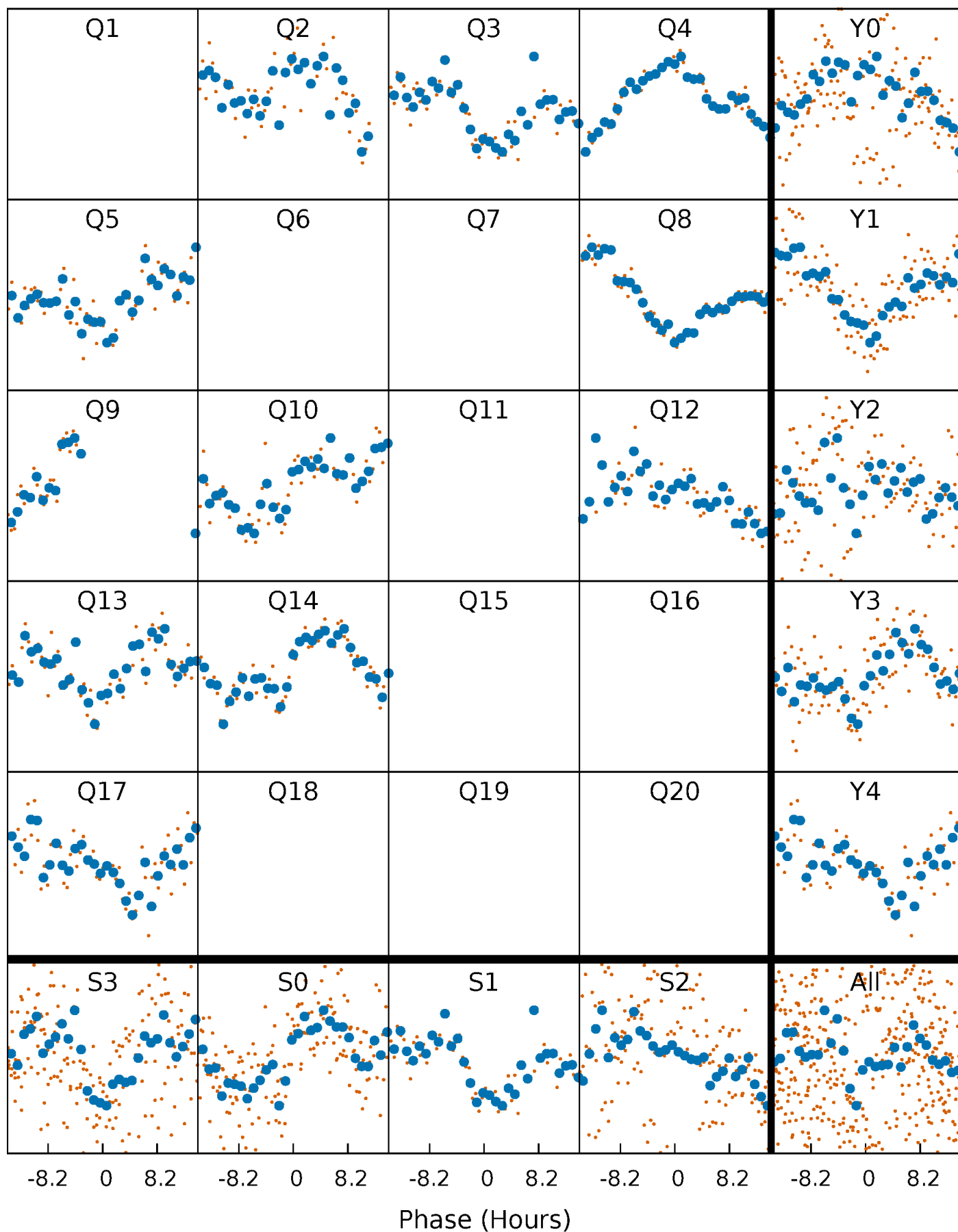


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



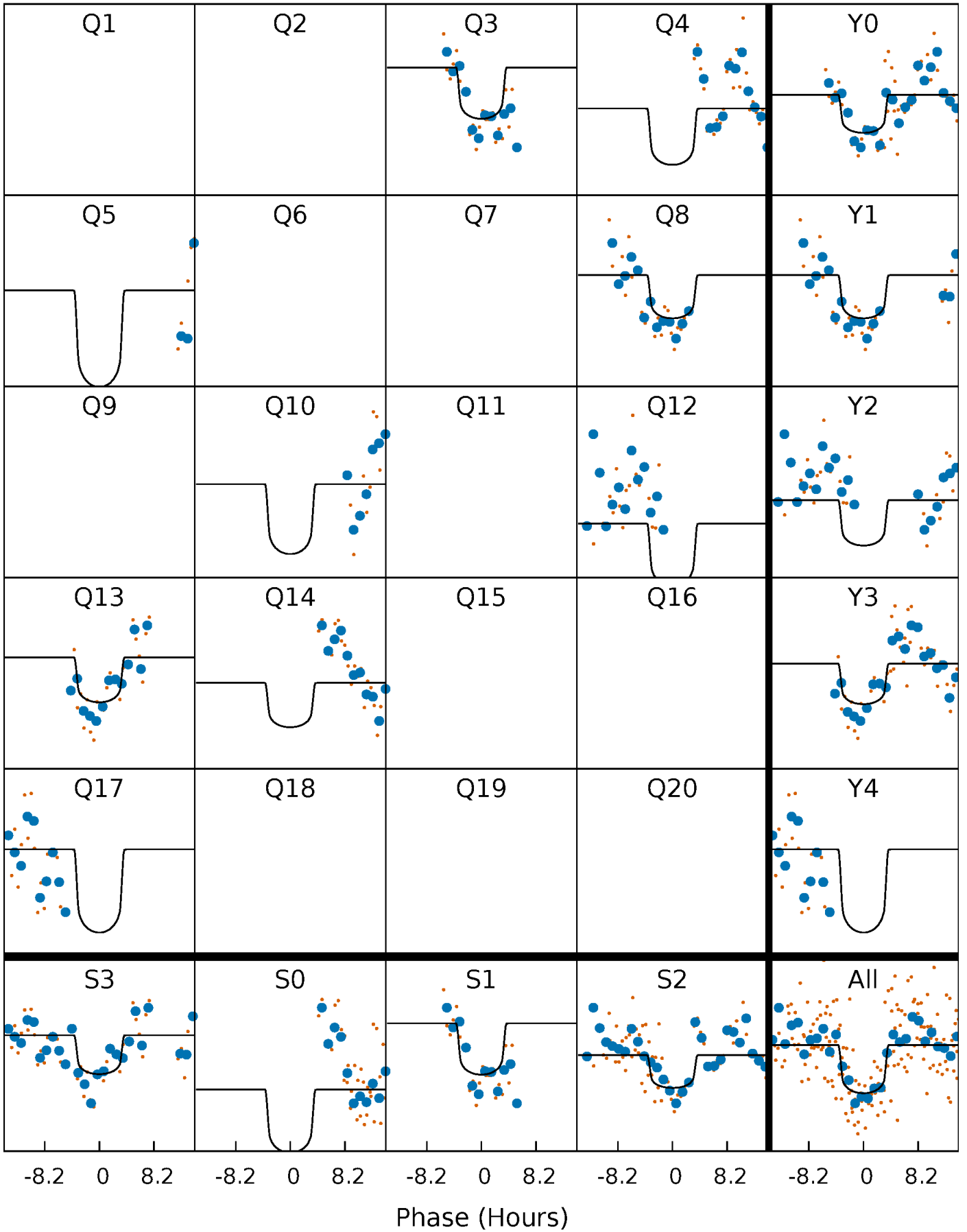
PDC Quarter-Phased Transit Curves

TCE 010353924-07 P=103.673679 Days $T_0=222.990038$ (BKJD)



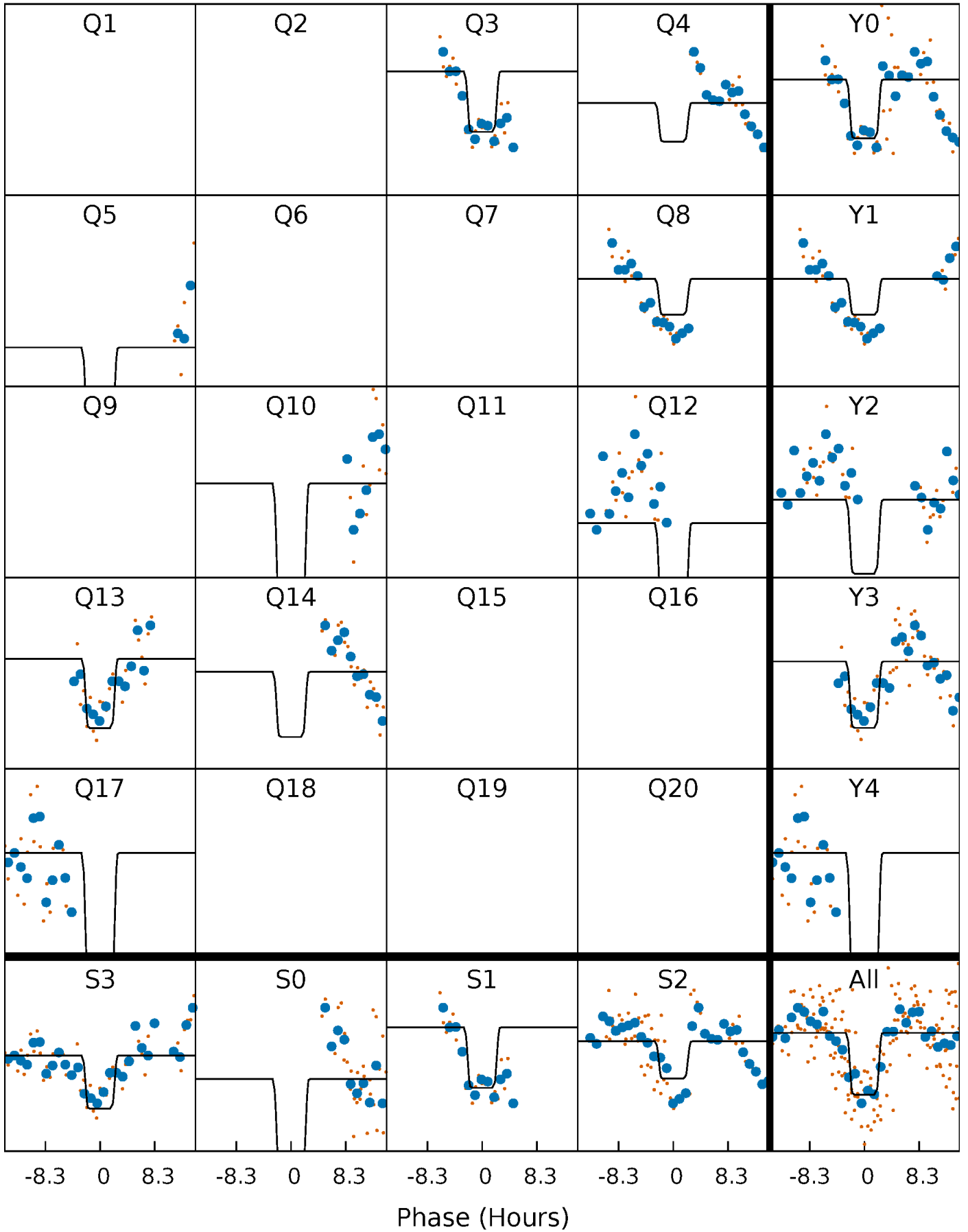
DV Quarter-Phased Transit Curves

TCE 010353924-07 $P=103.673679$ Days $T_0=222.990038$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

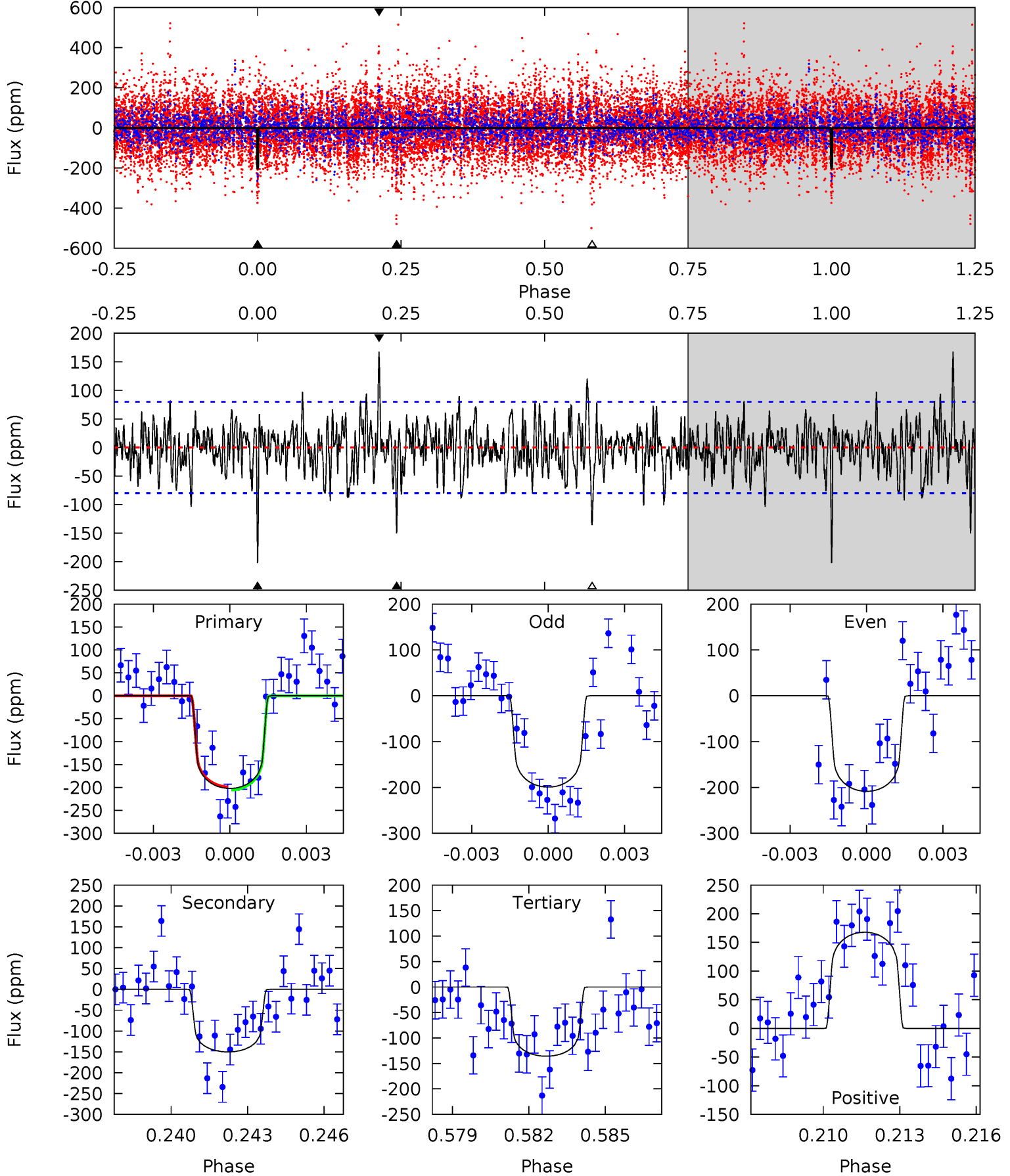
TCE 010353924-07 $P=103.668777$ Days $T_0=223.025598$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-07, P = 103.673679 Days, E = 119.316359 Days

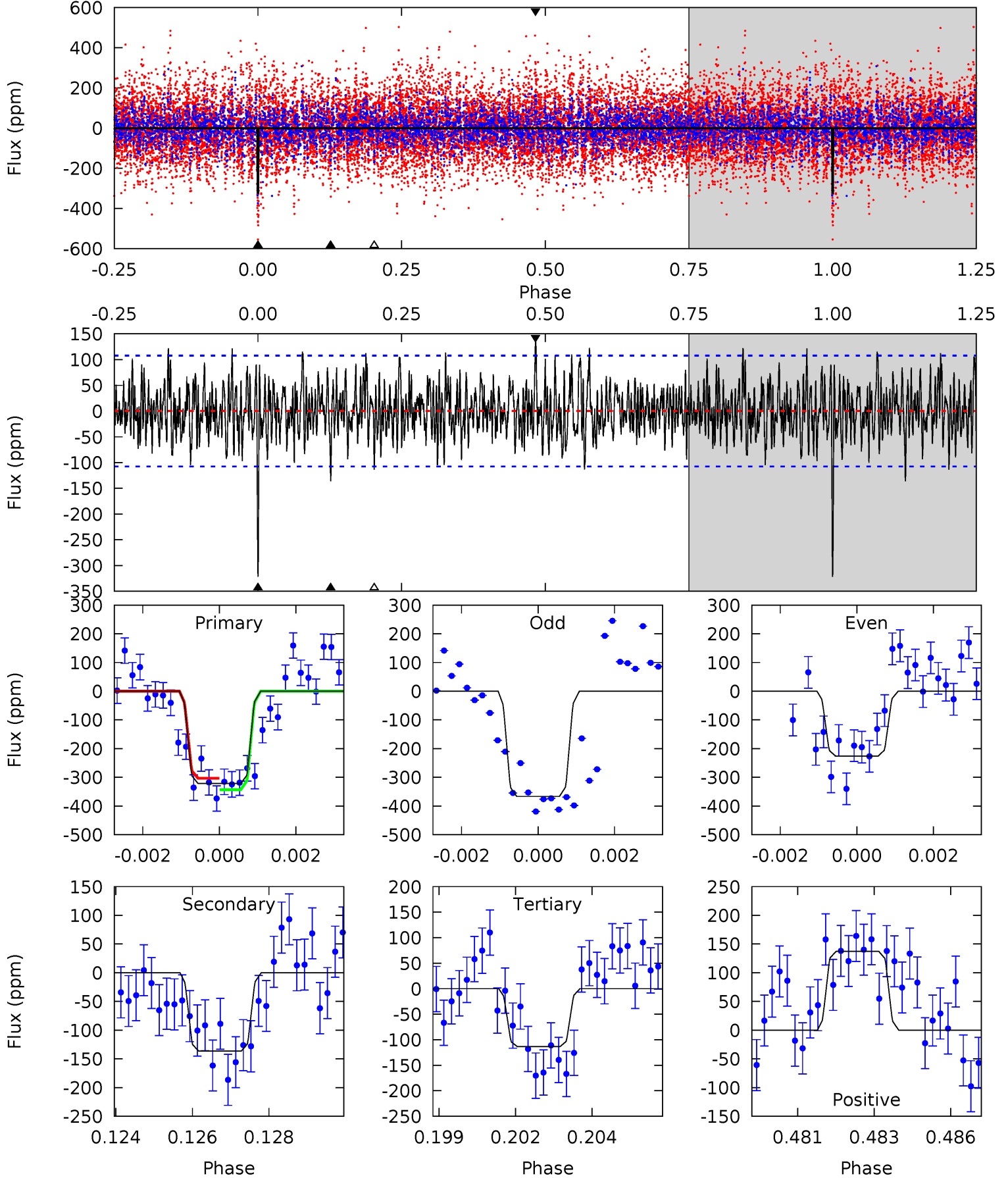
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	9.86	8.92	11.0	5.25	2.97	2.29	4.36	2.26	0.95	-1.16	0.29	0.29	0.45	0.22



Alt Model-Shift Uniqueness Test

010353924-07, P = 103.668777 Days, E = 119.356821 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	6.72	5.60	6.76	5.31	3.07	1.98	10.3	9.10	1.12	-0.04	3.36	0.82	0.30	0.99



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-150 ± 15	$2.68^{+0.93}_{-0.85}$	770^{+64}_{-57}	6099^{+1253}_{-748}	2668^{+2930}_{-1214}
Alt.	-136 ± 20	$3.24^{+1.01}_{-0.94}$	772^{+60}_{-62}	5394^{+865}_{-530}	1590^{+1489}_{-649}

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

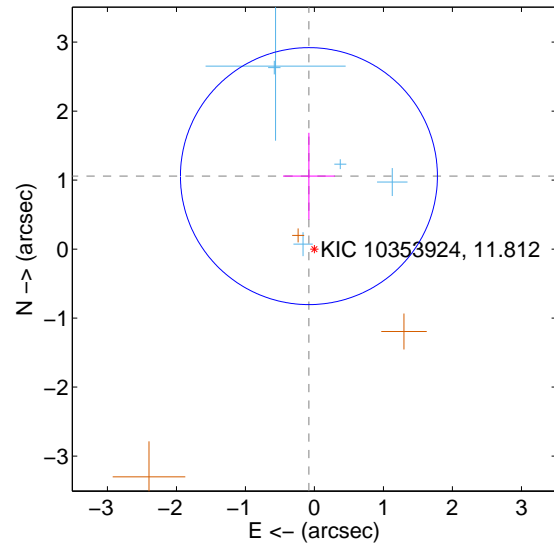
Supplemental centroid analysis for 010353924-07. **Kepler magnitude: 11.81.** Transit SNR 9.26

There are 5 quarters with good PRF difference image offsets

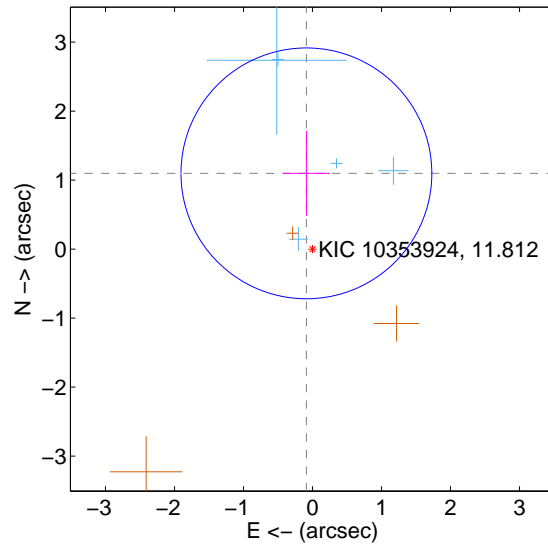
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.061 ± 0.621	1.71	0.080 ± 0.376	1.058 ± 0.628
PRF-fit source offset from KIC position	1.102 ± 0.606	1.82	0.089 ± 0.343	1.098 ± 0.618
photometric centroid source offset	0.41 ± 0.47	0.88	-0.20 ± 0.45	-0.36 ± 0.47

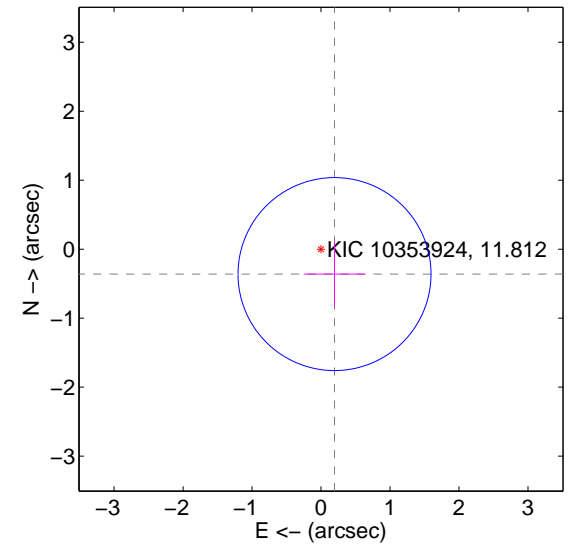
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

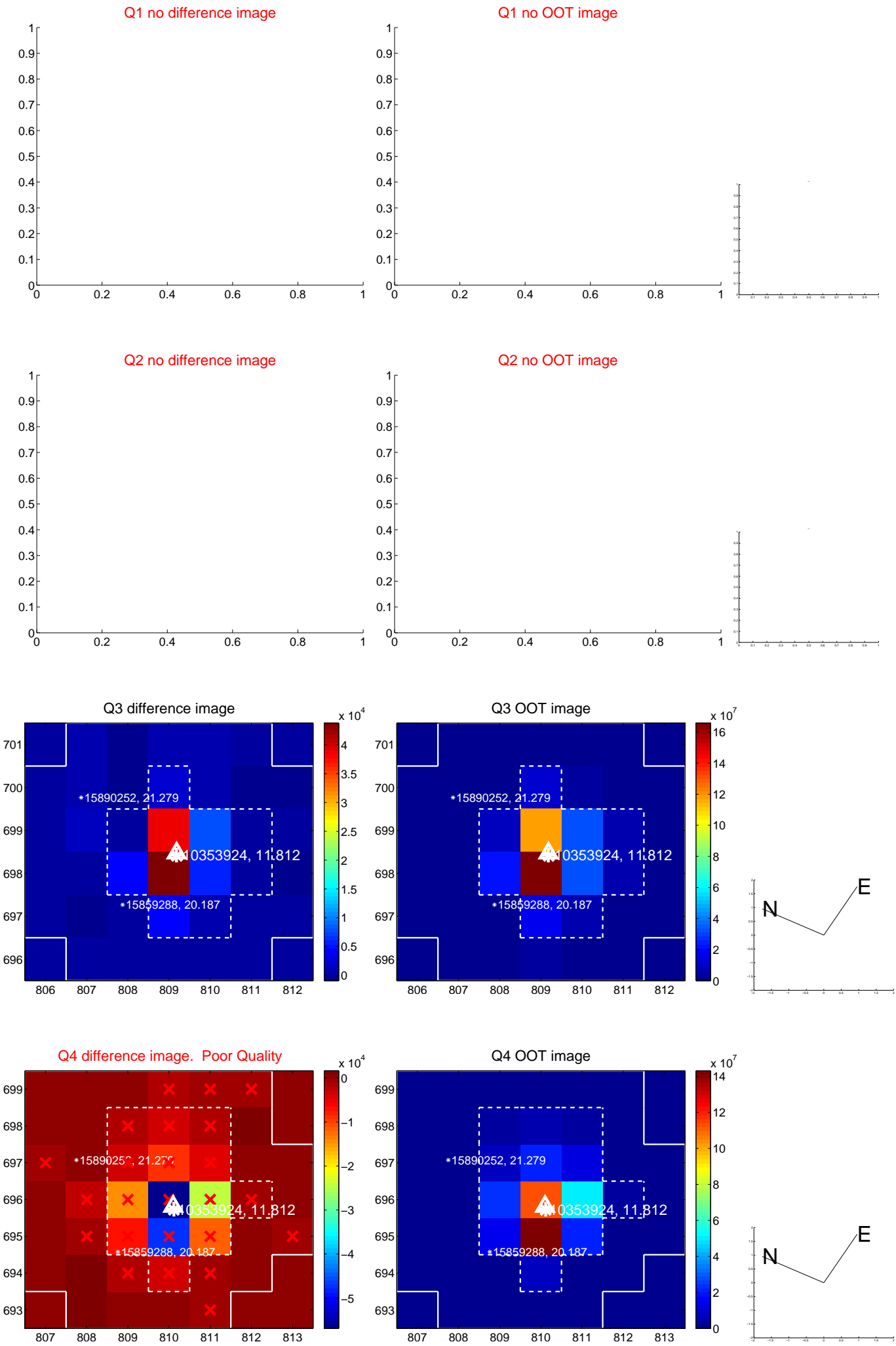


offset from photometric centroids

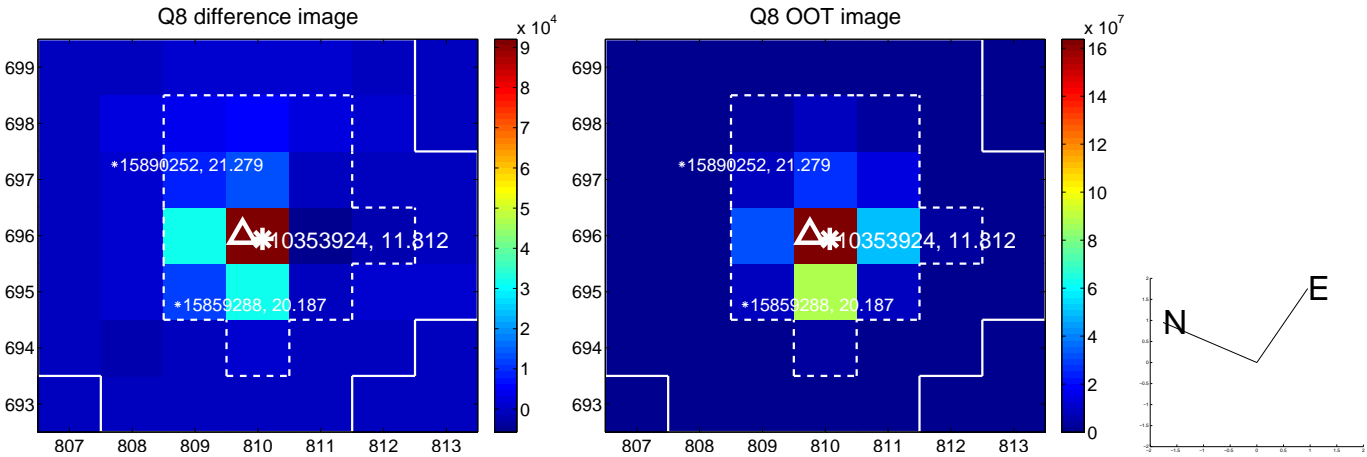
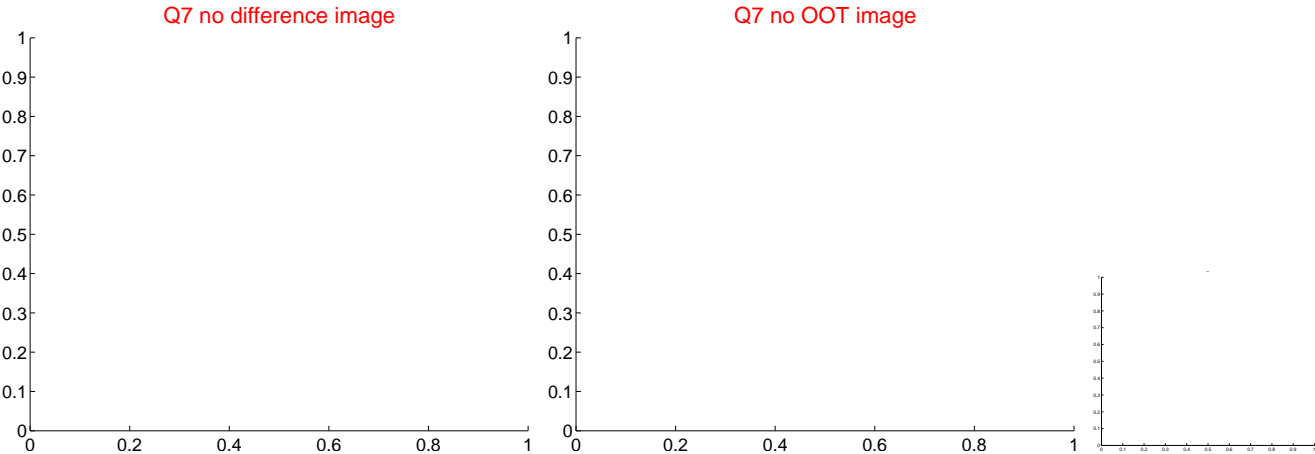
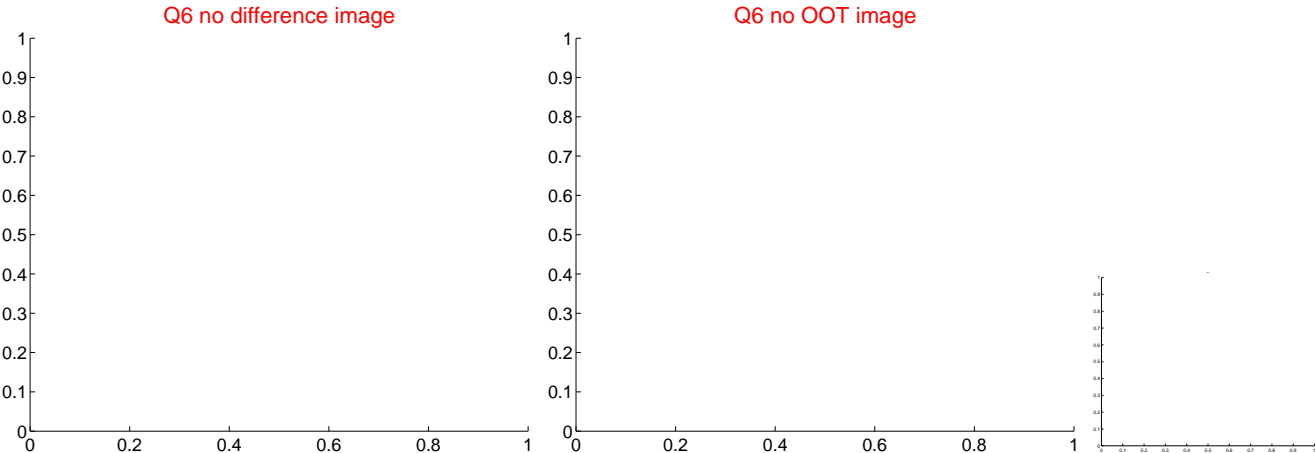
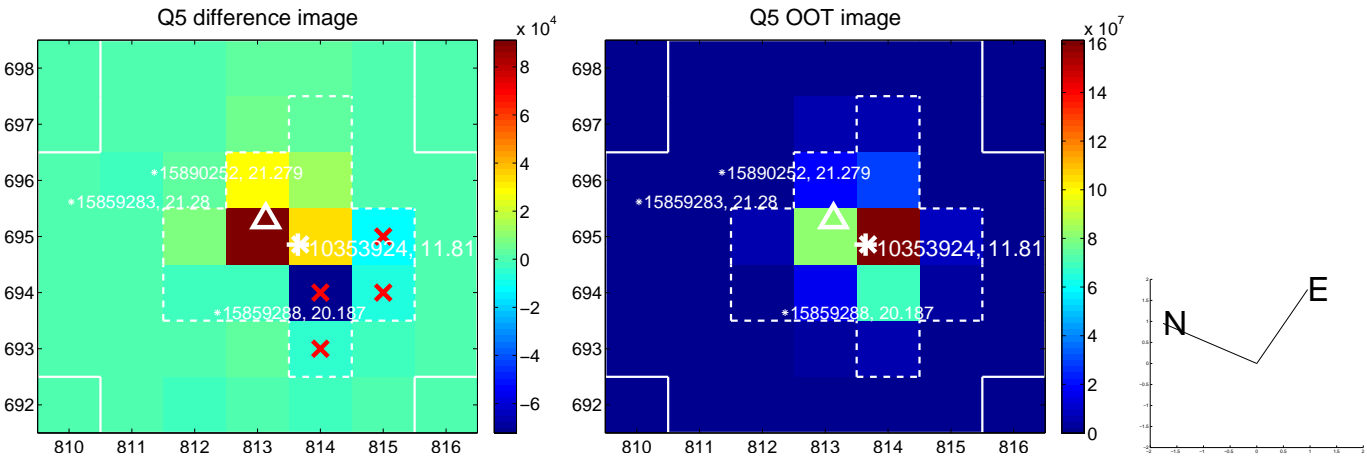


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

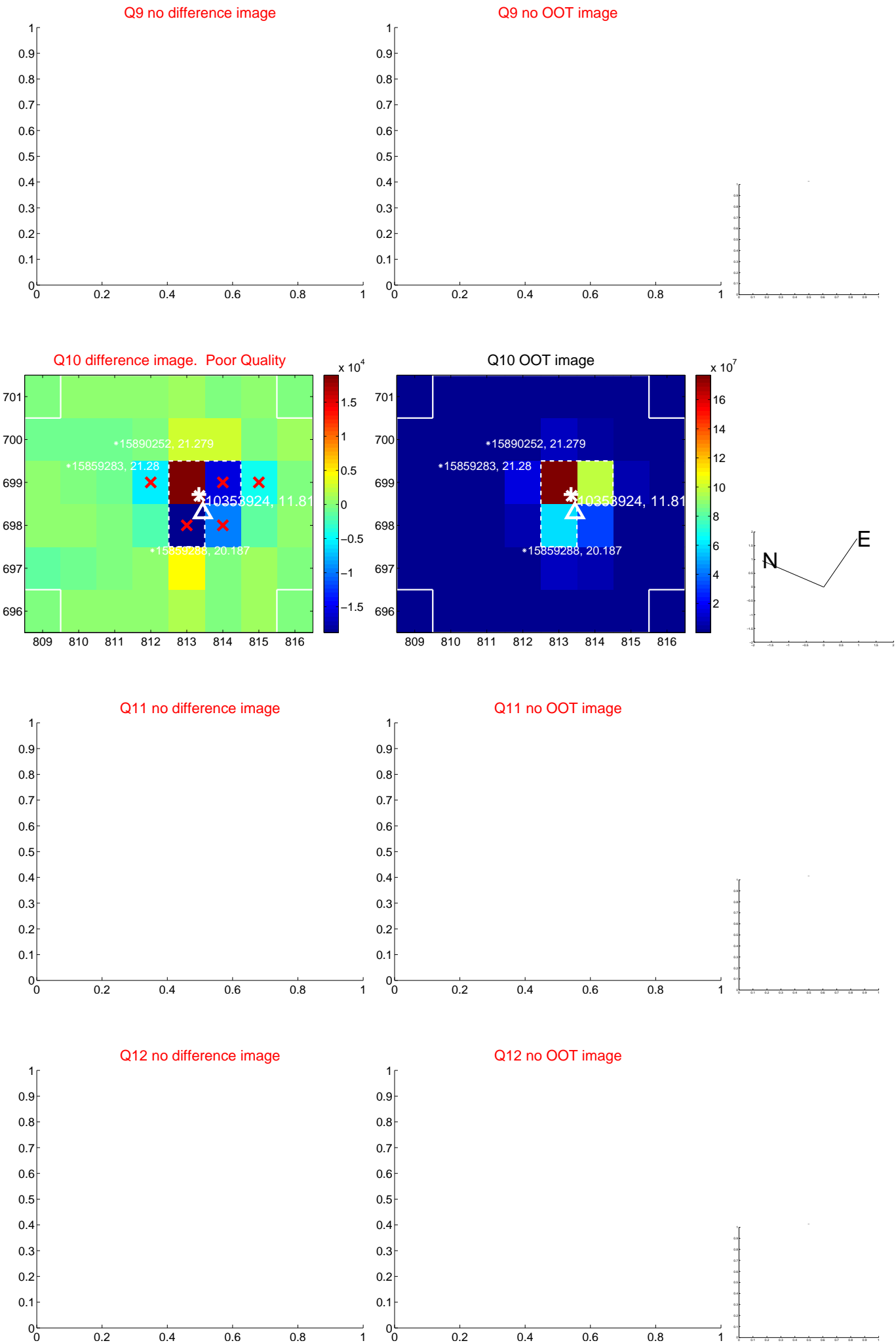
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



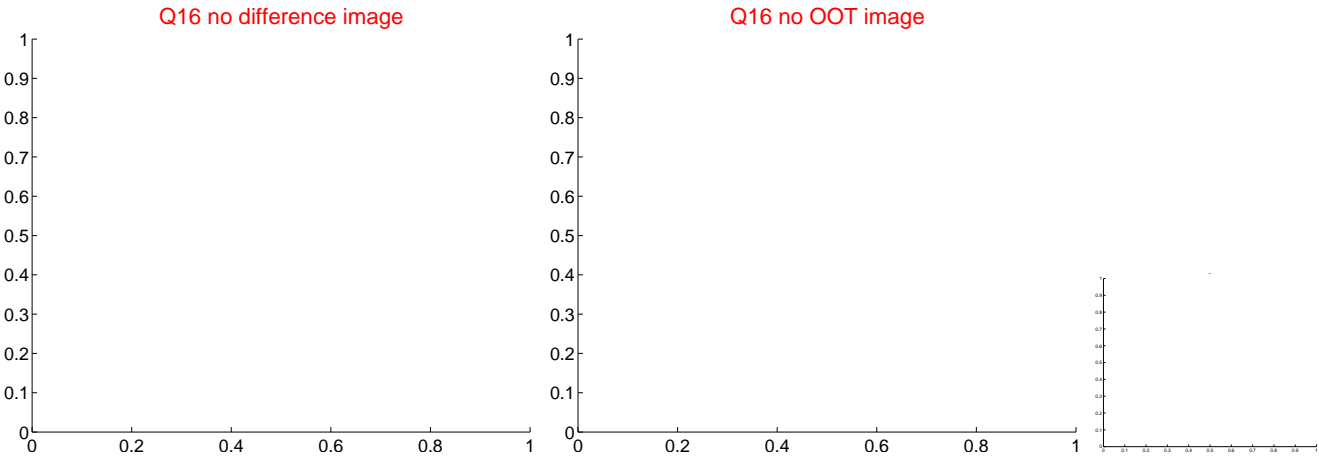
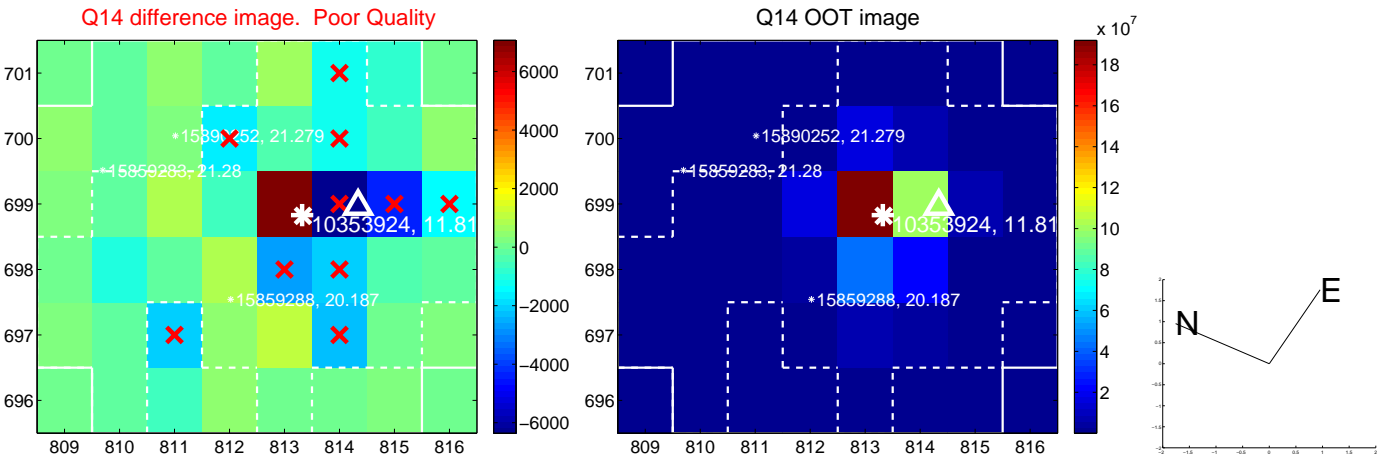
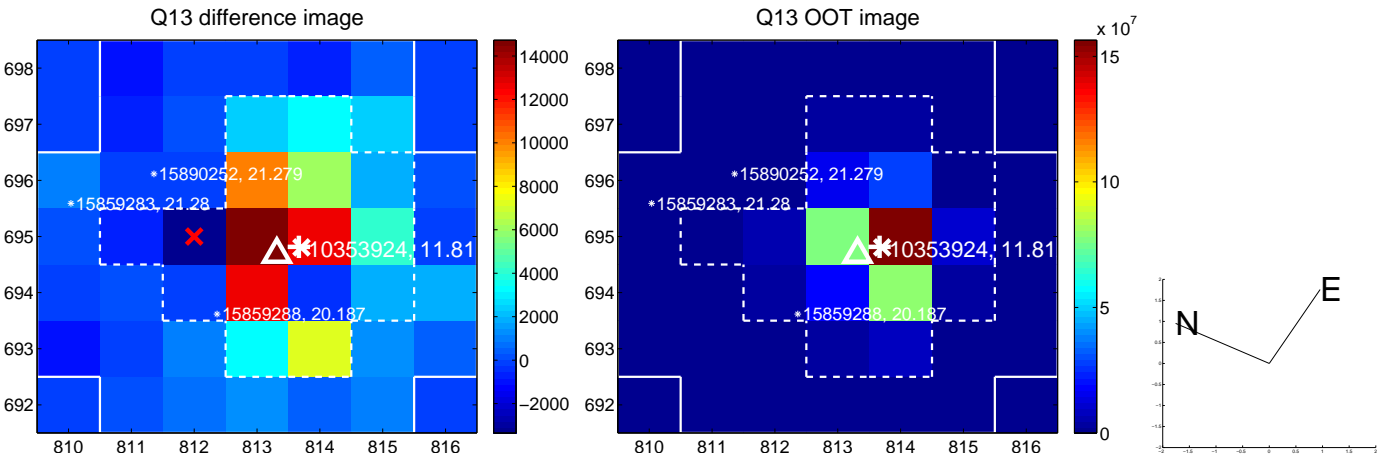
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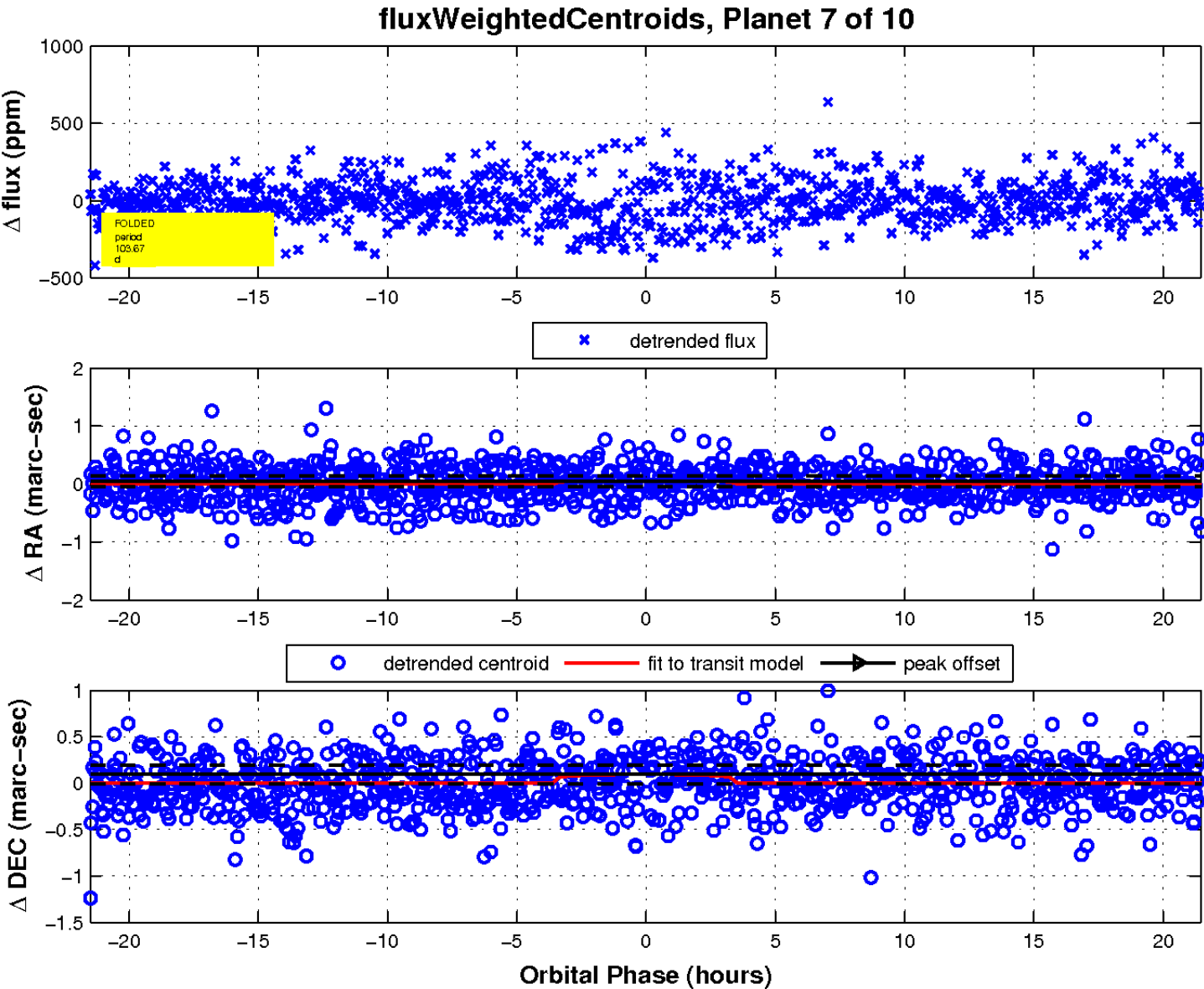
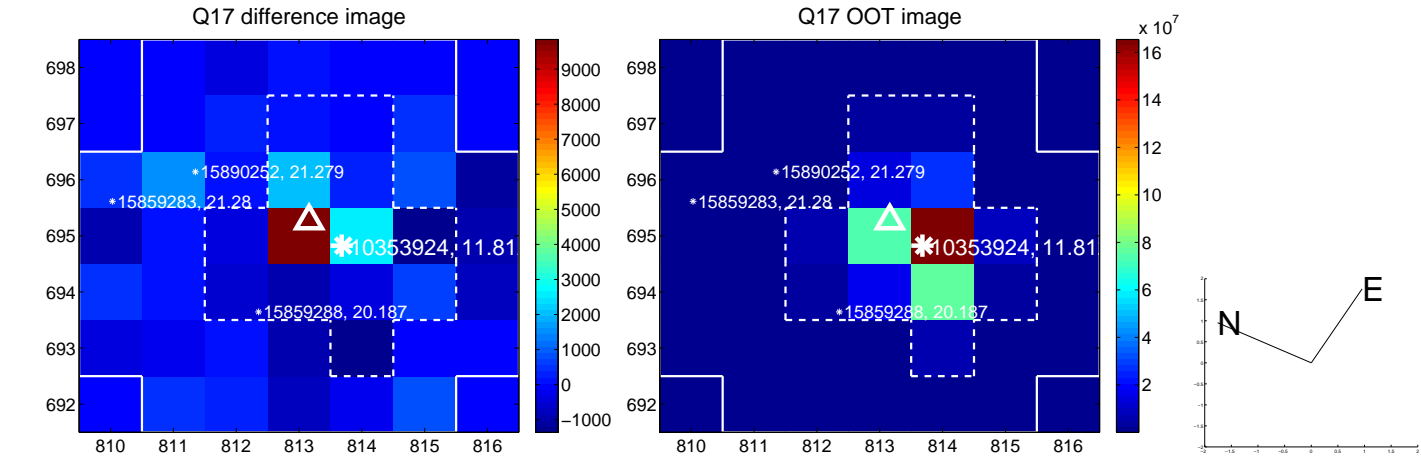
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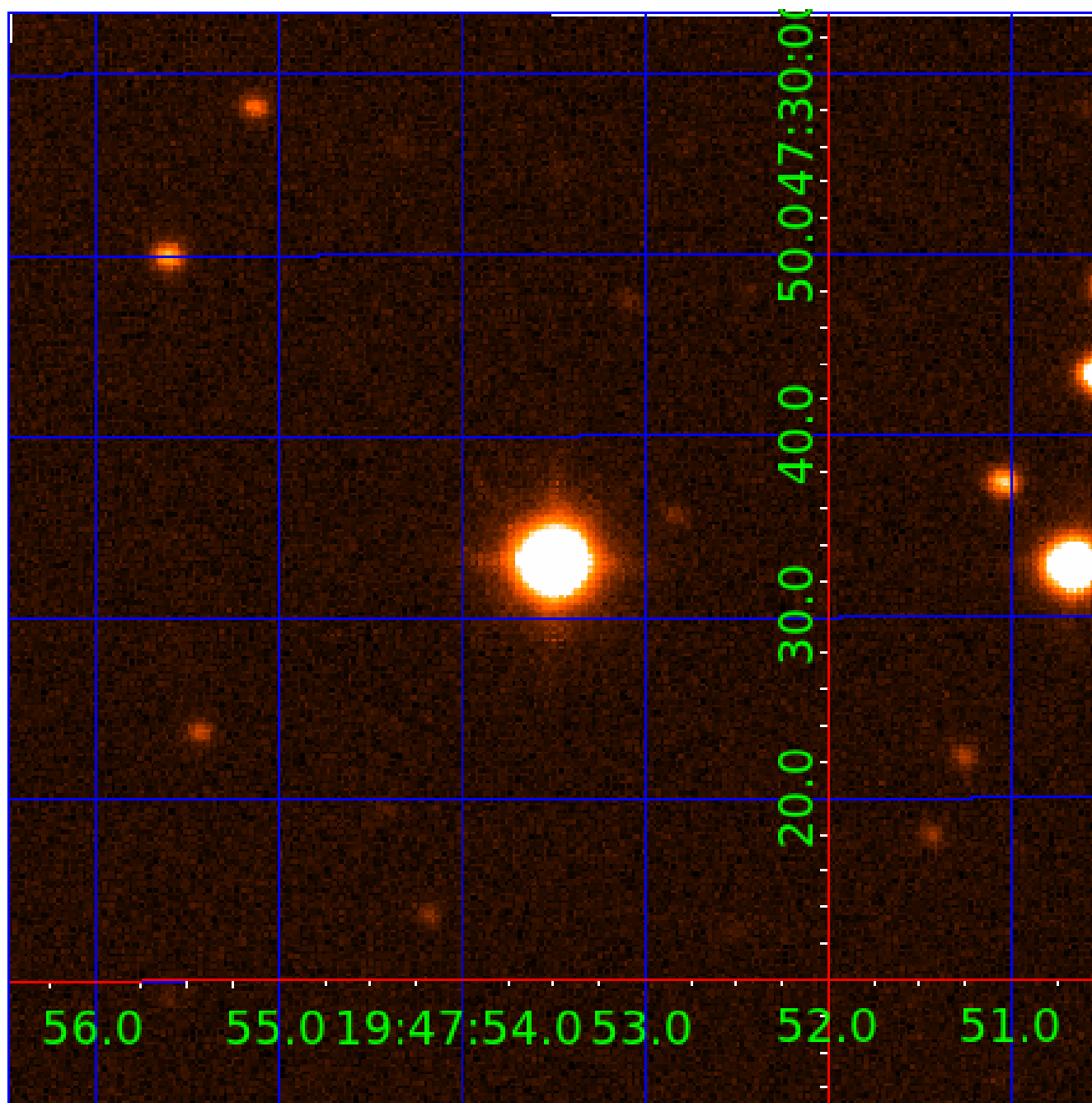


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010353924

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
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010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

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010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010353924-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

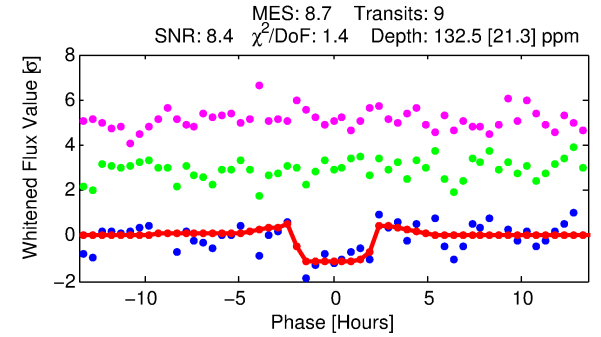
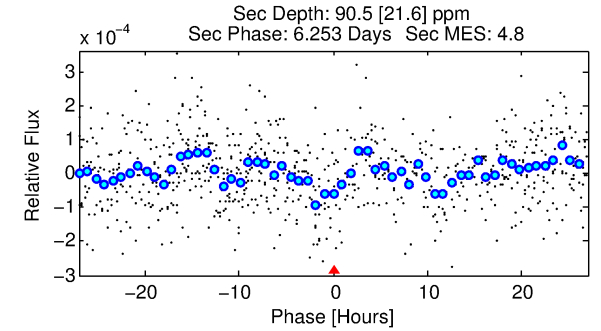
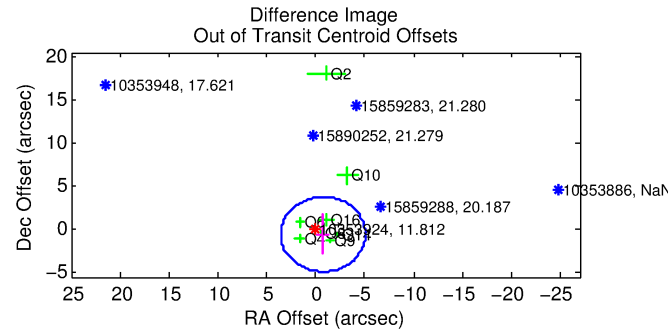
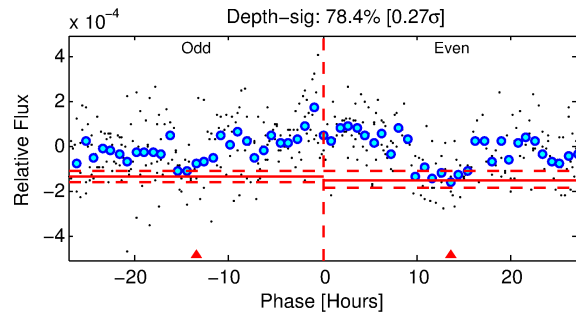
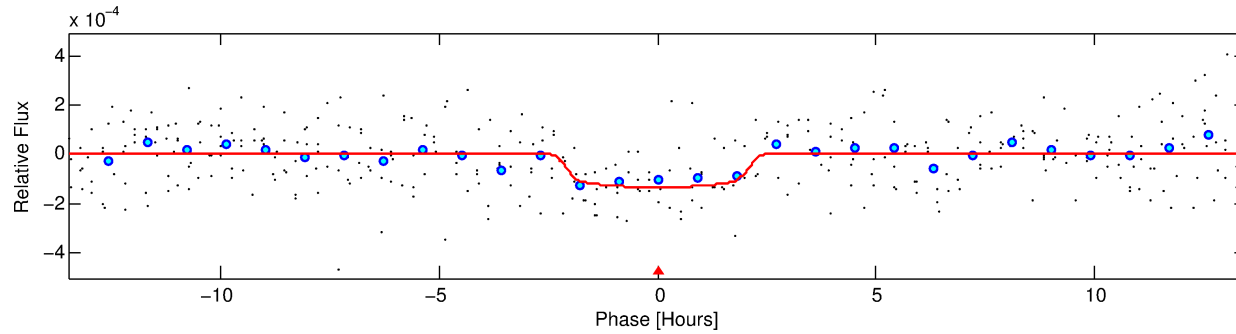
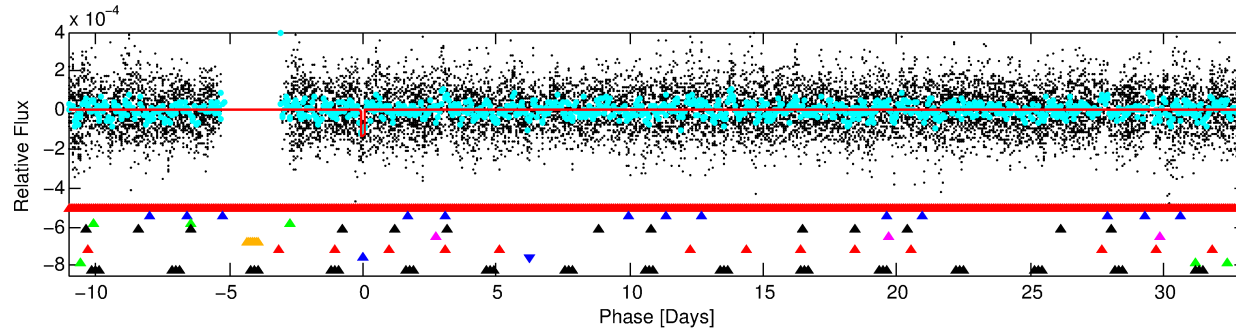
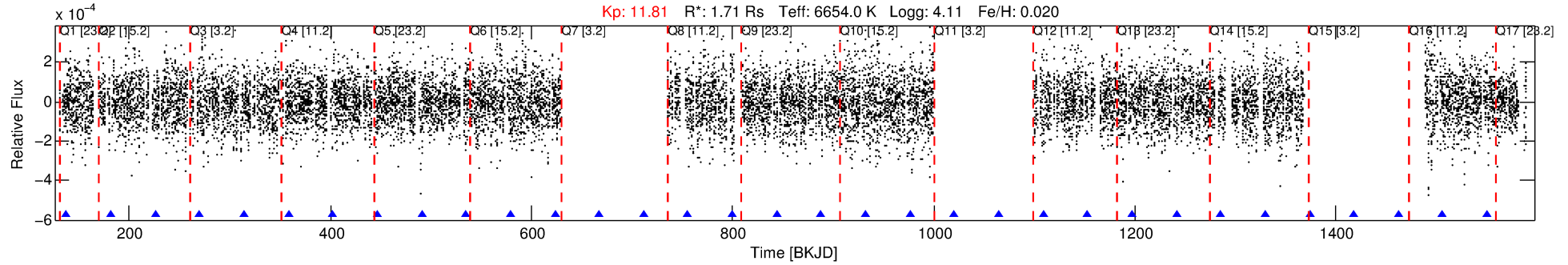
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-08

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 8 of 10 Period: 44.138 d



DV Fit Results:

Period = 44.13785 [0.00067] d
Epoch = 137.8336 [0.0094] BKJD
Rp/R* = 0.0123 [0.0053]
a/R* = 35.00 [84.34]
b = 0.90 [0.53]
Seff = 69.26 [28.16]
Teq = 736 [75] K
Rp = 2.30 [1.22] Re
a = 0.2726 [0.0710] AU
Ag = 702.36 [678.82] [1.03 σ]
Teff = 5855 [1323] K [3.86 σ]

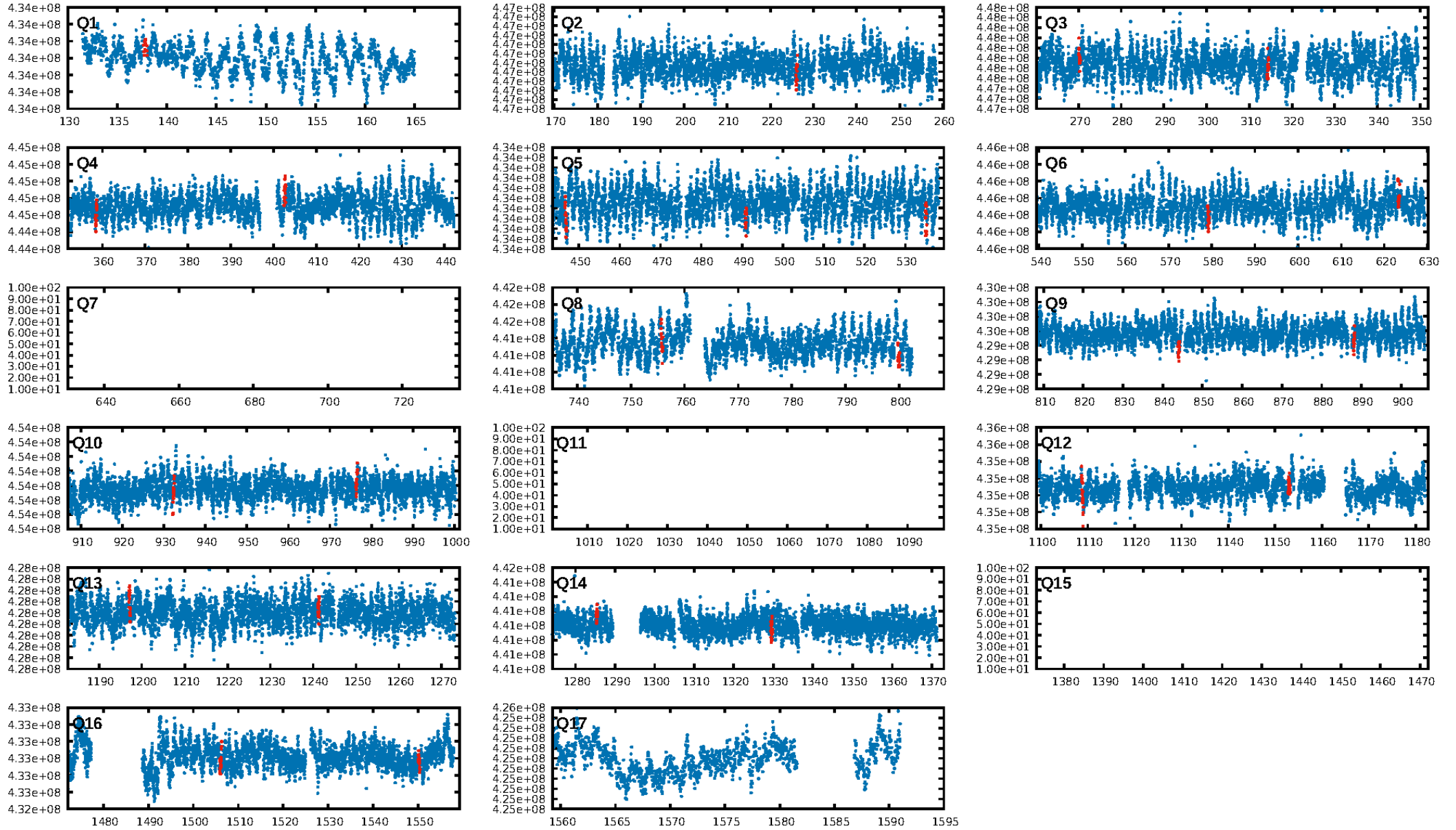
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.57 σ]
LongPeriod-sig: 1.3% [0.02 σ]
ModelChiSquare2-sig: 12.7%
ModelChiSquareGof-sig: 97.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 1.673
Centroid-sig: 16.3%
Centroid-so: 0.611 arcsec [1.18 σ]
OotOffset-rm: 0.931 arcsec [0.65 σ]
OotOffset-st: 4/0/3/1 [8]
KicOffset-rm: 0.857 arcsec [0.68 σ]
KicOffset-st: 4/0/3/1 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.33 [4/12]

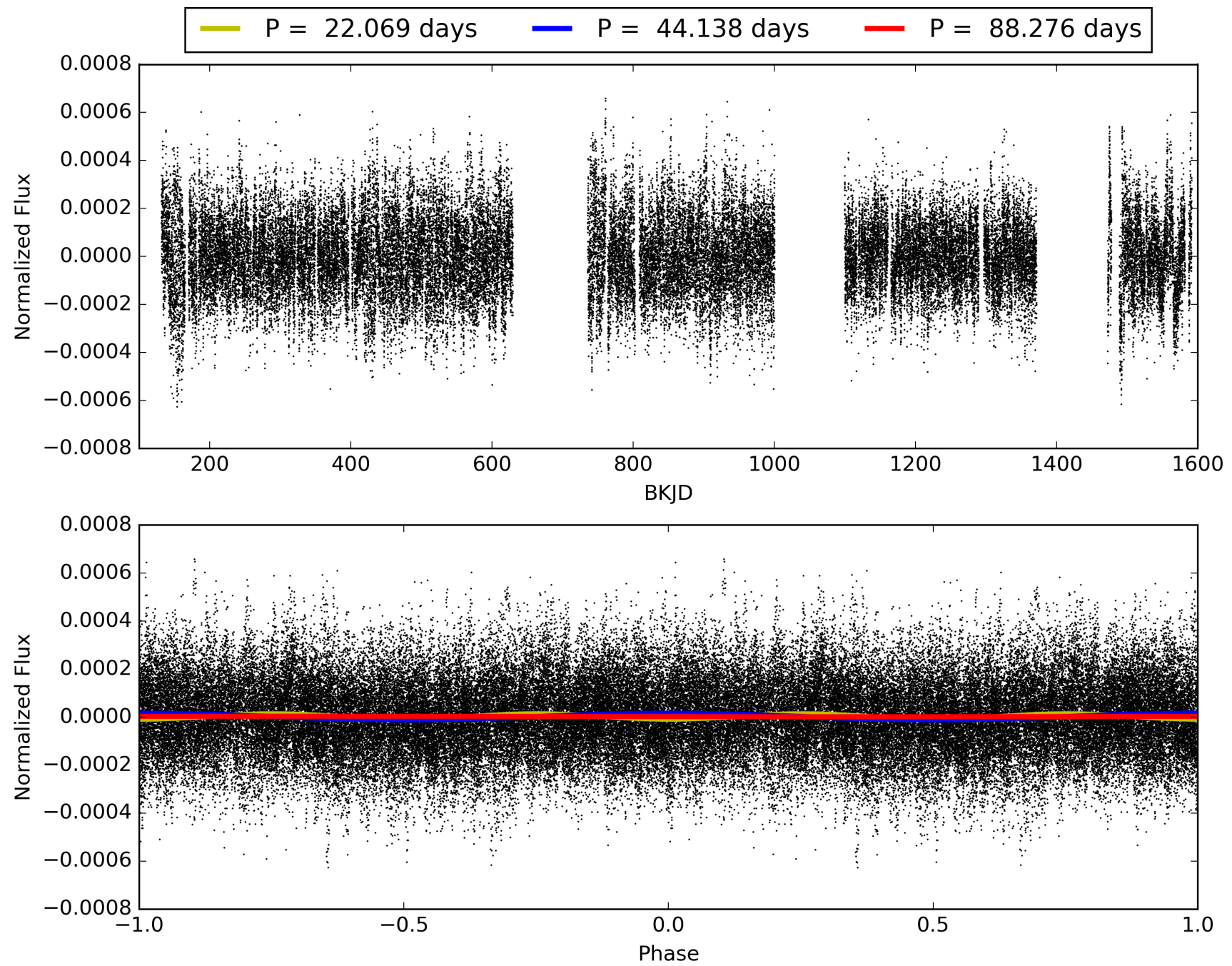
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:39:09 Z

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

TCE 010353924-08, PDC Light Curves

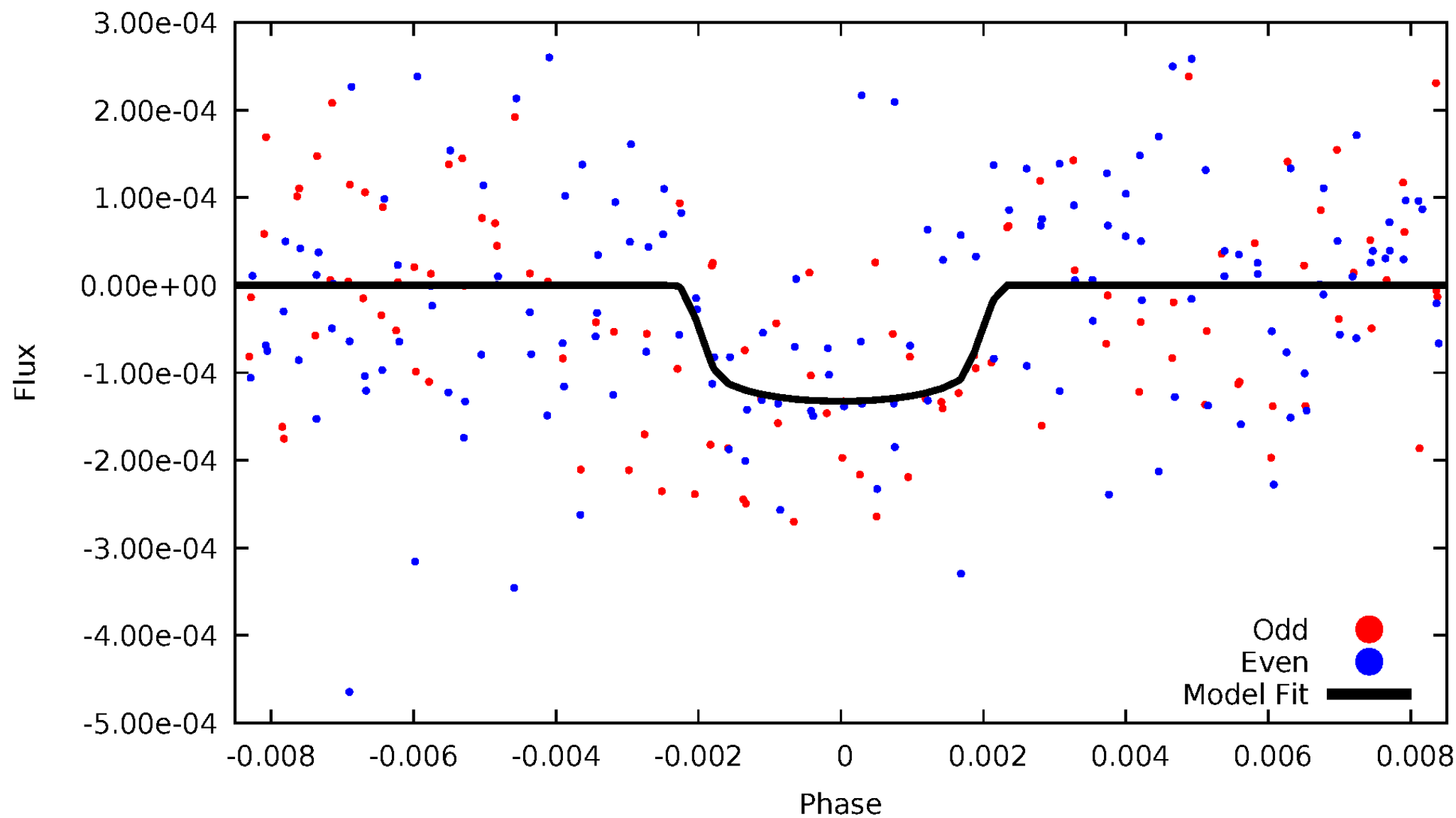


TCE 010353924-08



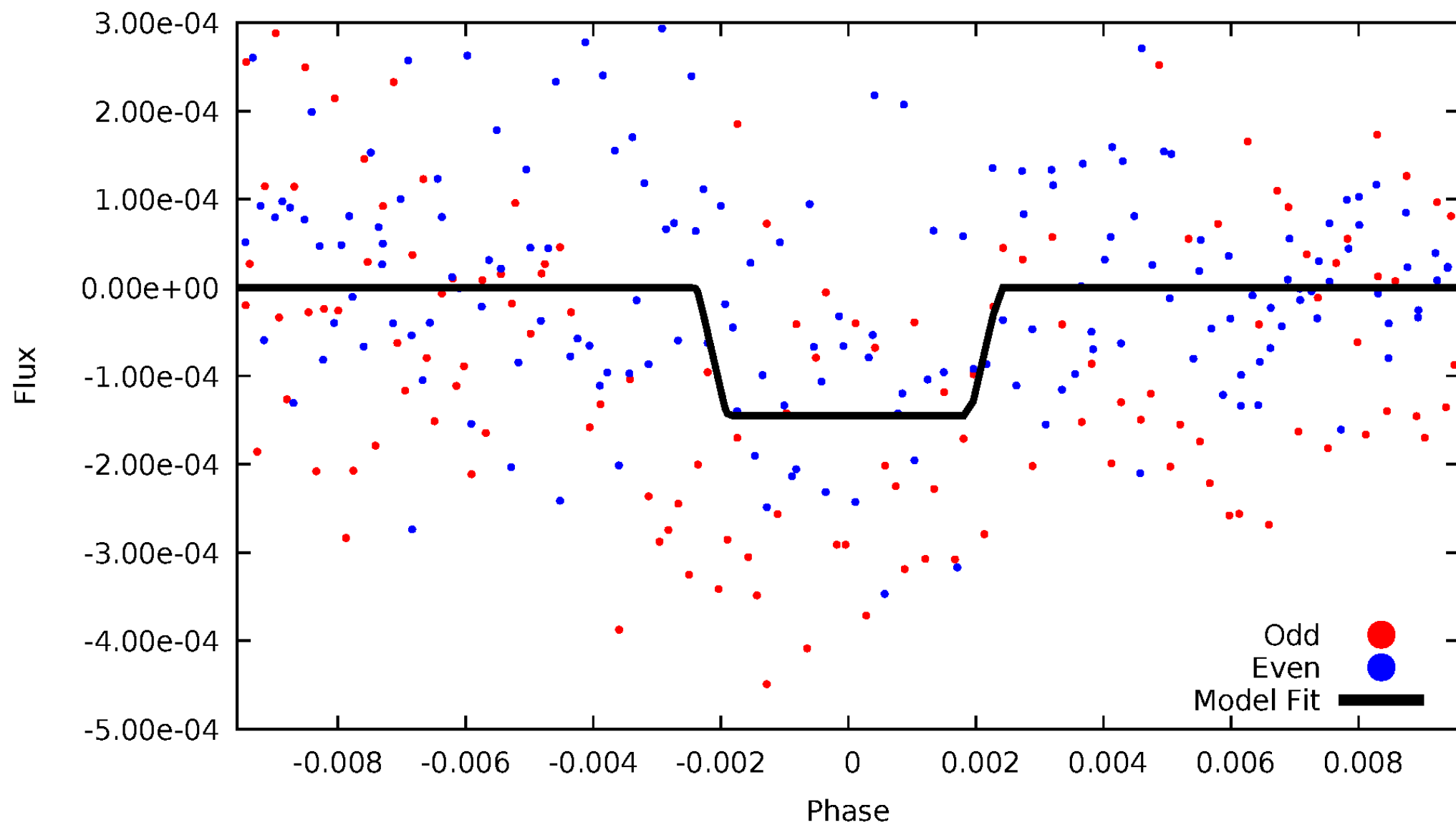
DV Odd/Even

TCE 010353924-08



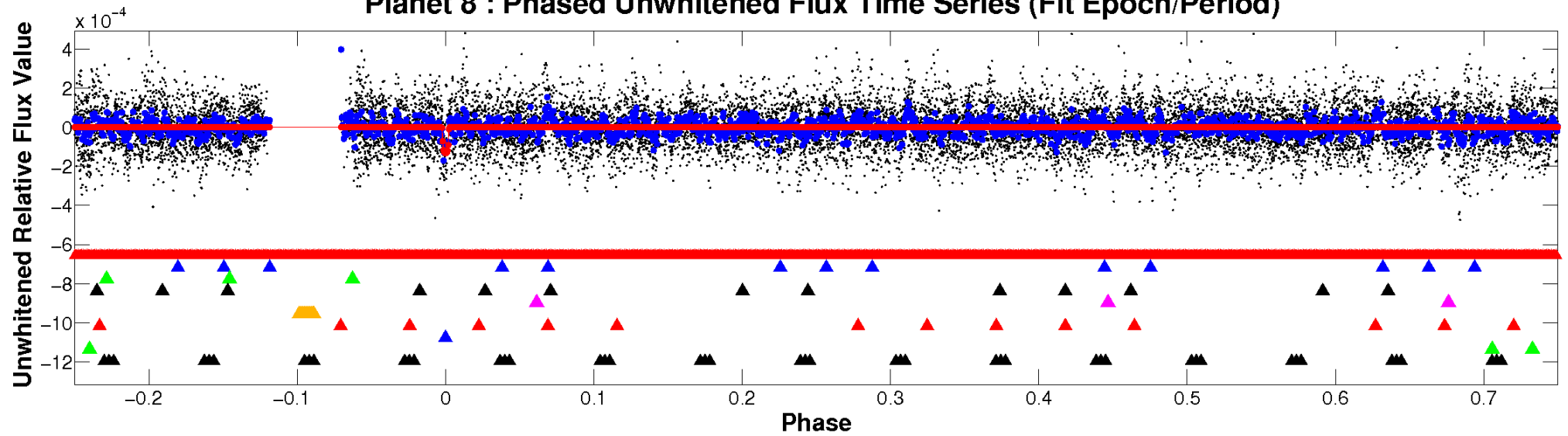
ALT Odd/Even

TCE 010353924-08

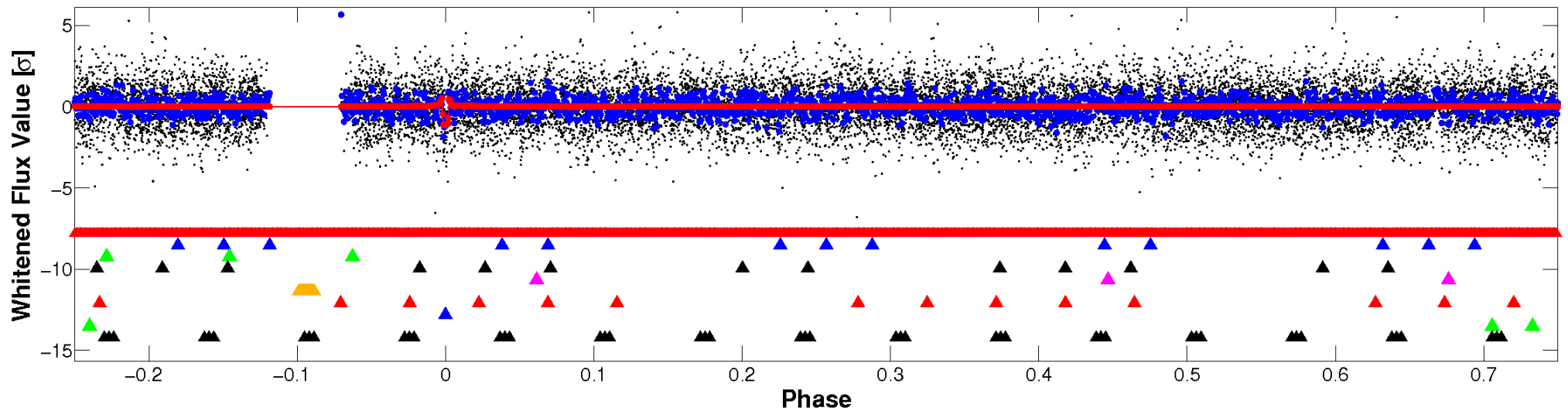


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

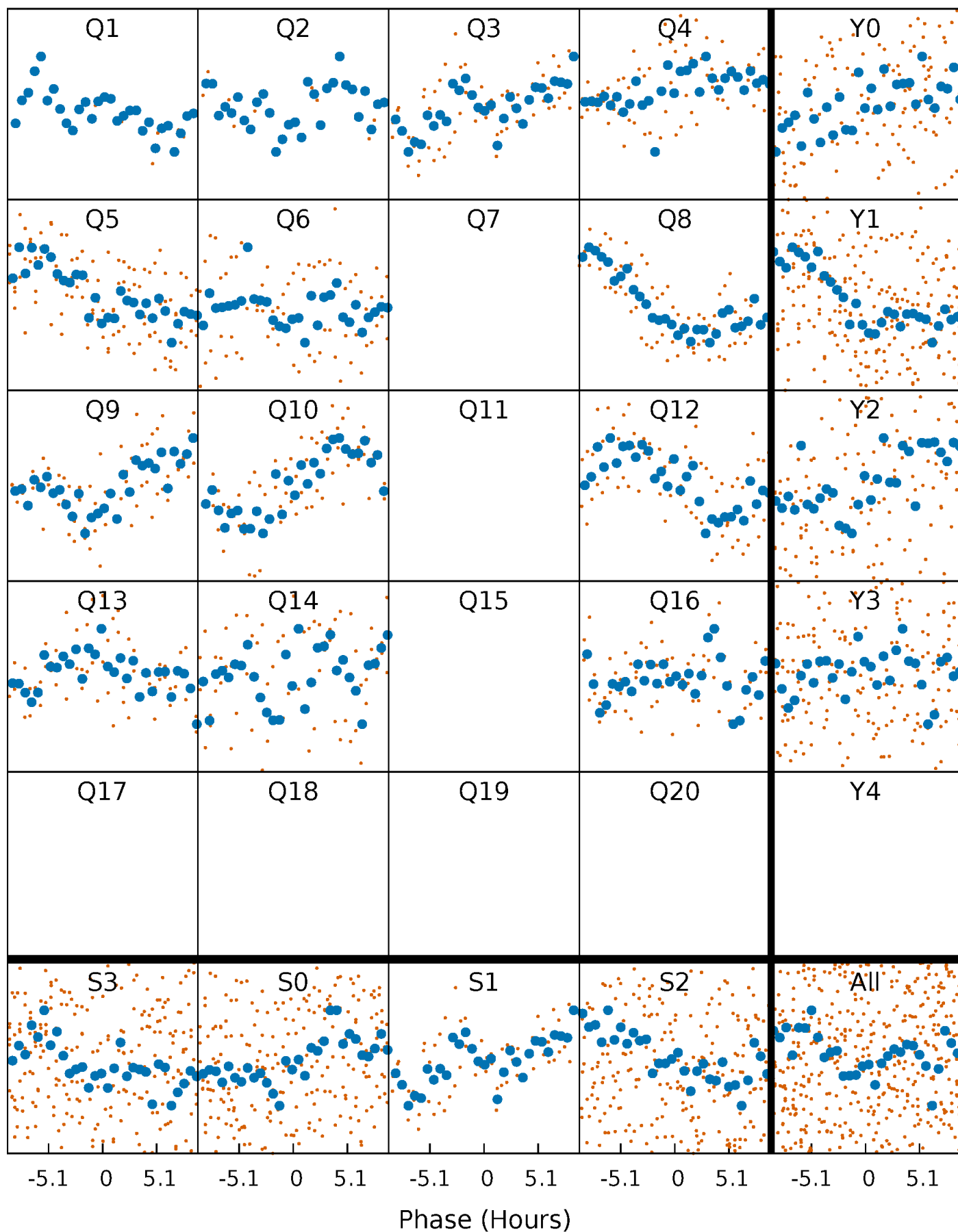


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



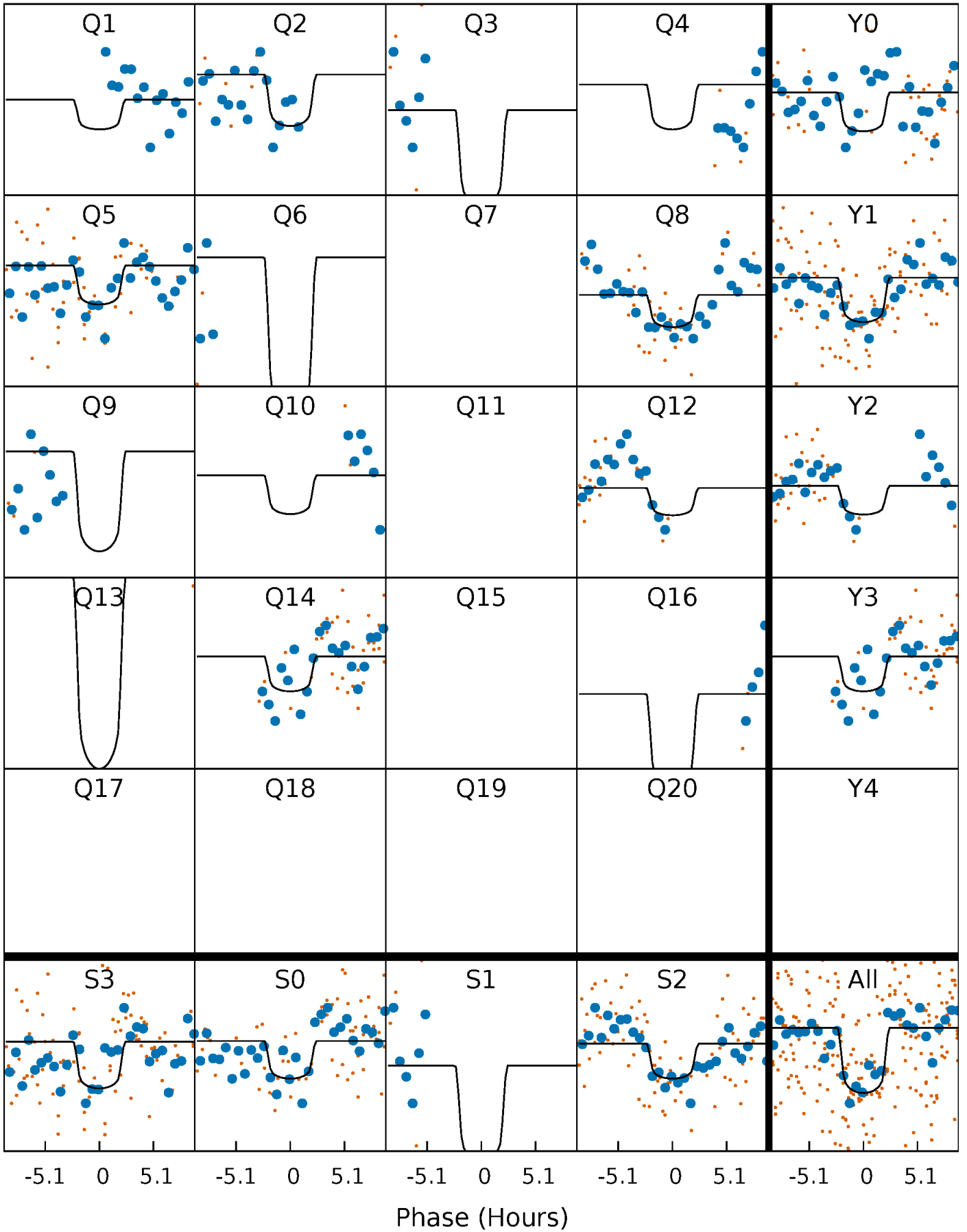
PDC Quarter-Phased Transit Curves

TCE 010353924-08 P= 44.137849 Days $T_0=137.833582$ (BKJD)



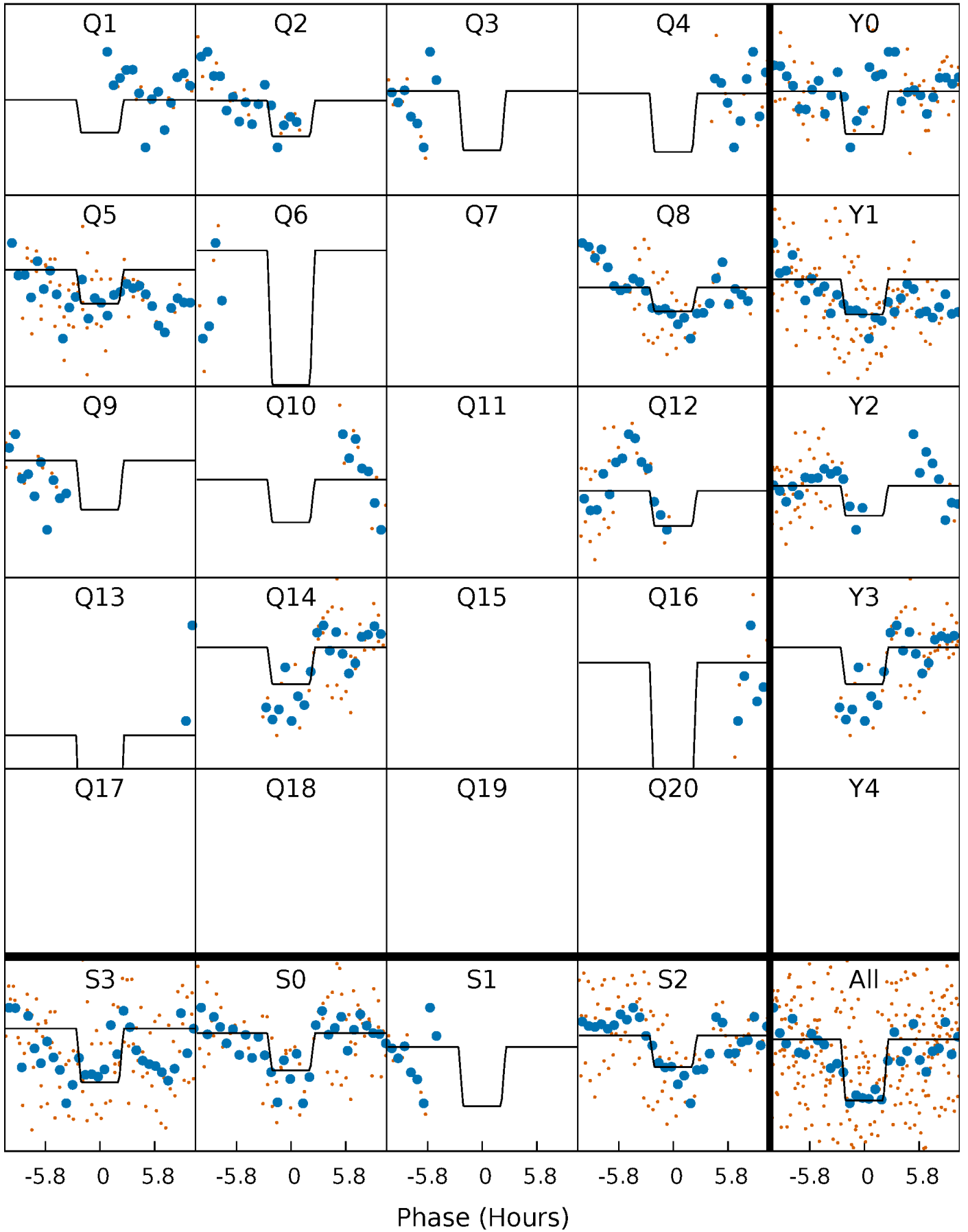
DV Quarter-Phased Transit Curves

TCE 010353924-08 P= 44.137849 Days $T_0=137.833582$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

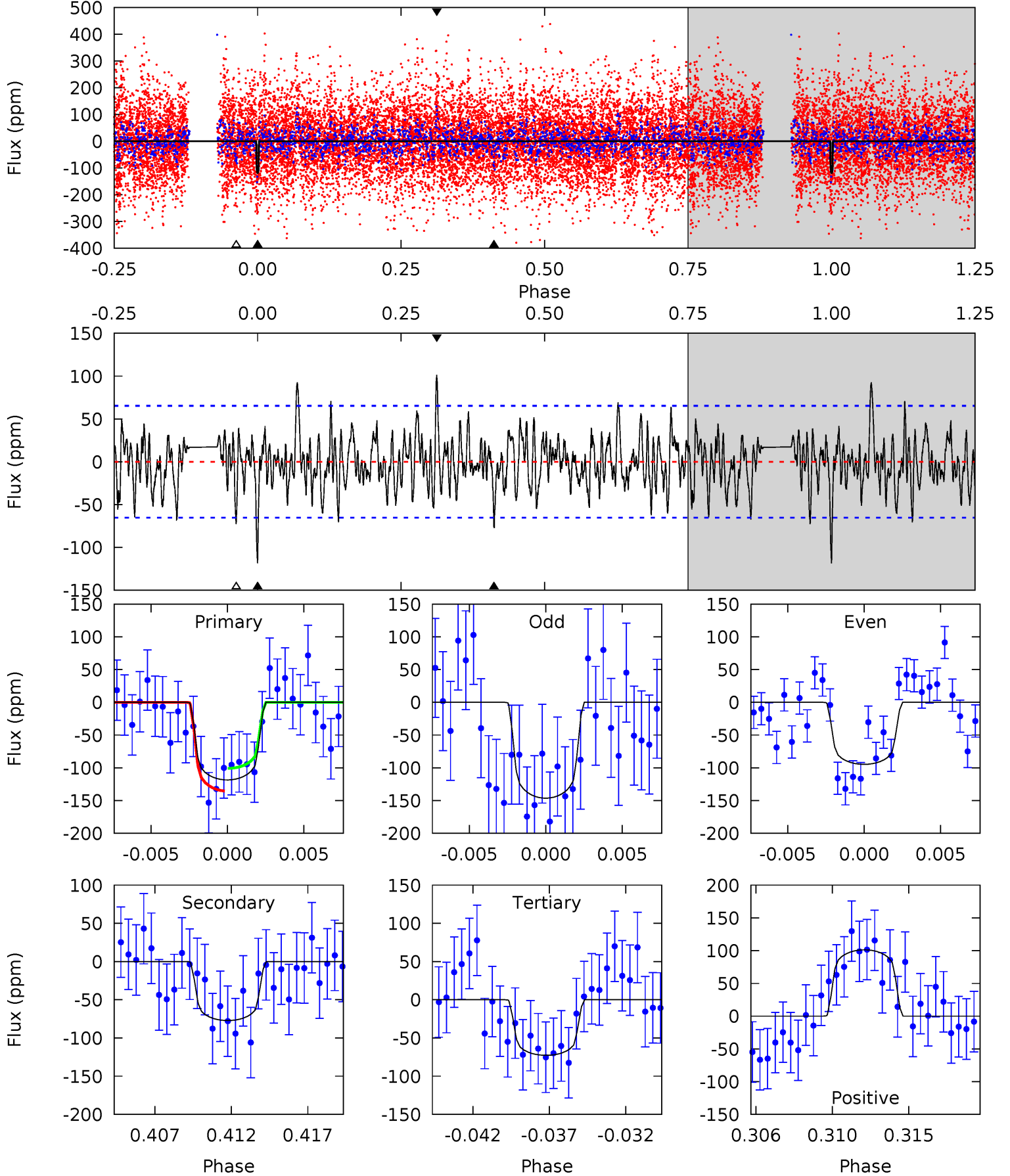
TCE 010353924-08 $P = 44.138144$ Days $T_0 = 137.828438$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-08, P = 44.137849 Days, E = 93.695733 Days

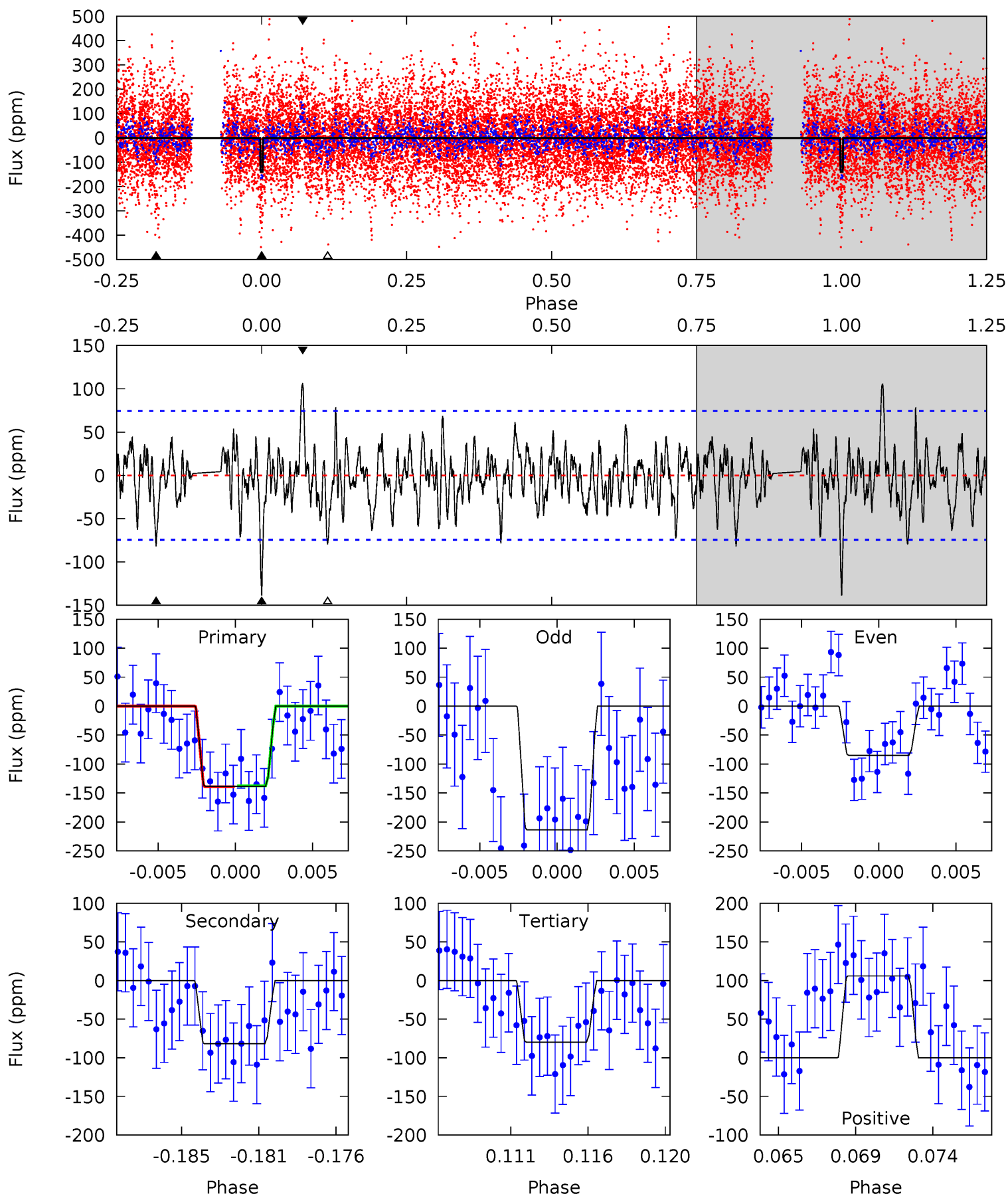
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.39	6.12	5.76	8.02	5.17	2.83	2.02	3.63	1.37	0.36	-1.91	2.04	0.84	0.46	1.37



Alt Model-Shift Uniqueness Test

010353924-08, P = 44.138144 Days, E = 93.690294 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.62	5.69	5.54	7.36	5.17	2.83	1.79	4.09	2.27	0.16	-1.67	4.41	1.22	0.43	0.06



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-77 ± 13	$2.18^{+1.18}_{-0.87}$	1016^{+87}_{-70}	5698^{+1568}_{-940}	646^{+1143}_{-375}
Alt.	-82 ± 14	$2.25^{+1.06}_{-1.03}$	1025^{+84}_{-79}	5736^{+2289}_{-873}	651^{+1716}_{-351}

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

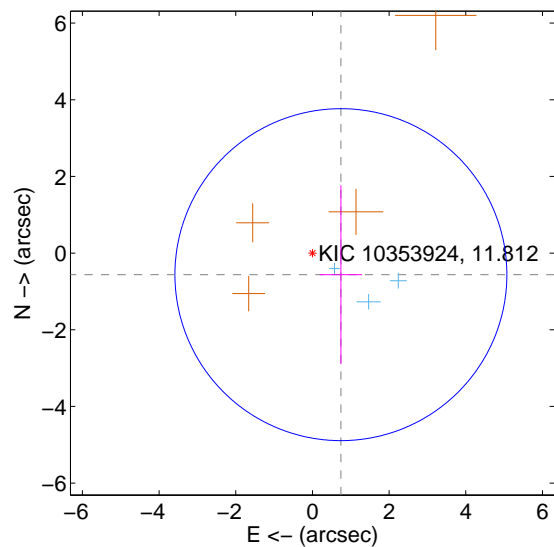
Supplemental centroid analysis for 010353924-08. **Kepler magnitude: 11.81.** Transit SNR 8.35

There are 3 quarters with good PRF difference image offsets

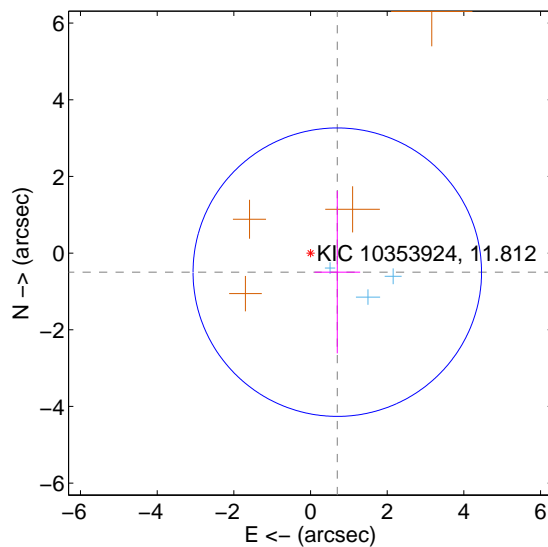
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.931 ± 1.443	0.65	-0.742 ± 0.553	-0.563 ± 2.334
PRF-fit source offset from KIC position	0.857 ± 1.254	0.68	-0.698 ± 0.596	-0.498 ± 2.117
photometric centroid source offset	0.61 ± 0.52	1.18	-0.27 ± 0.49	0.55 ± 0.52

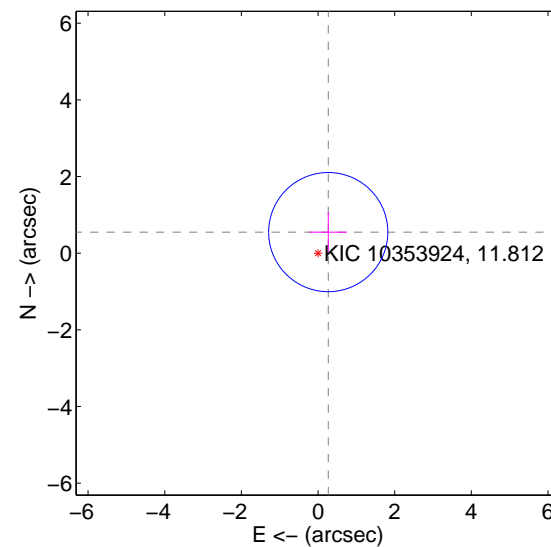
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

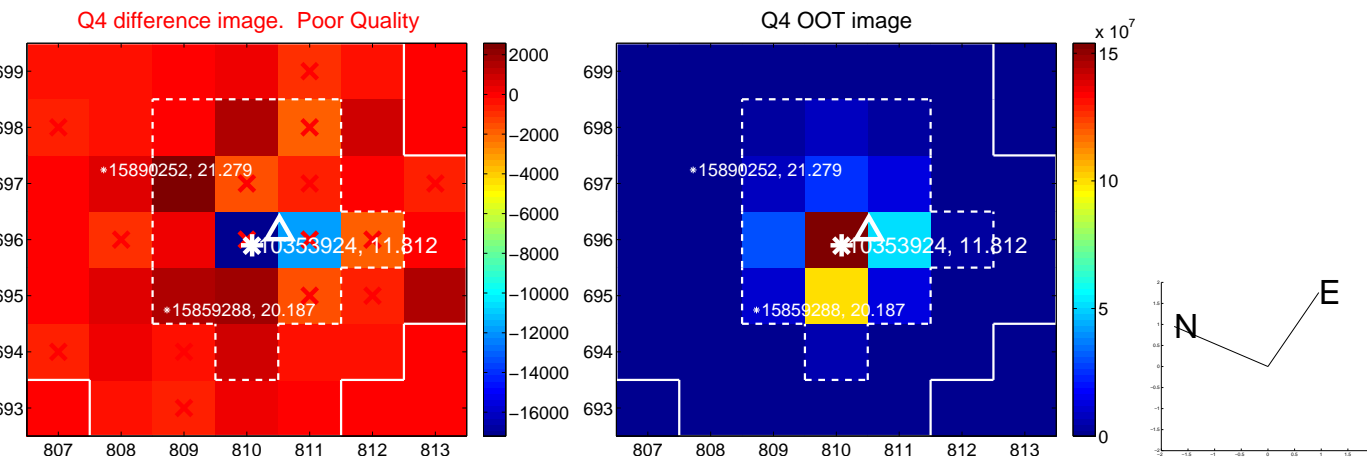
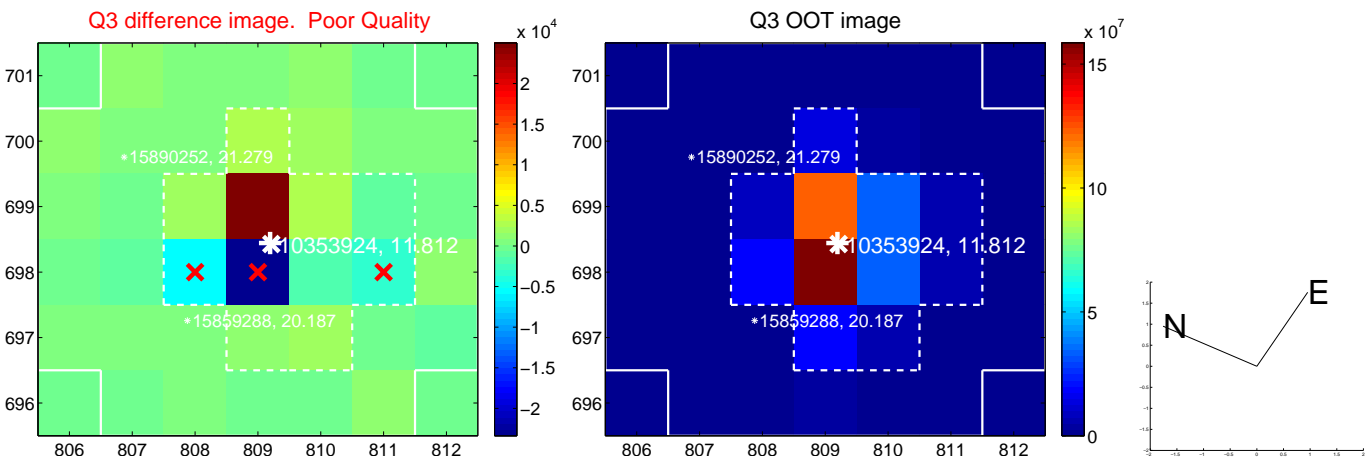
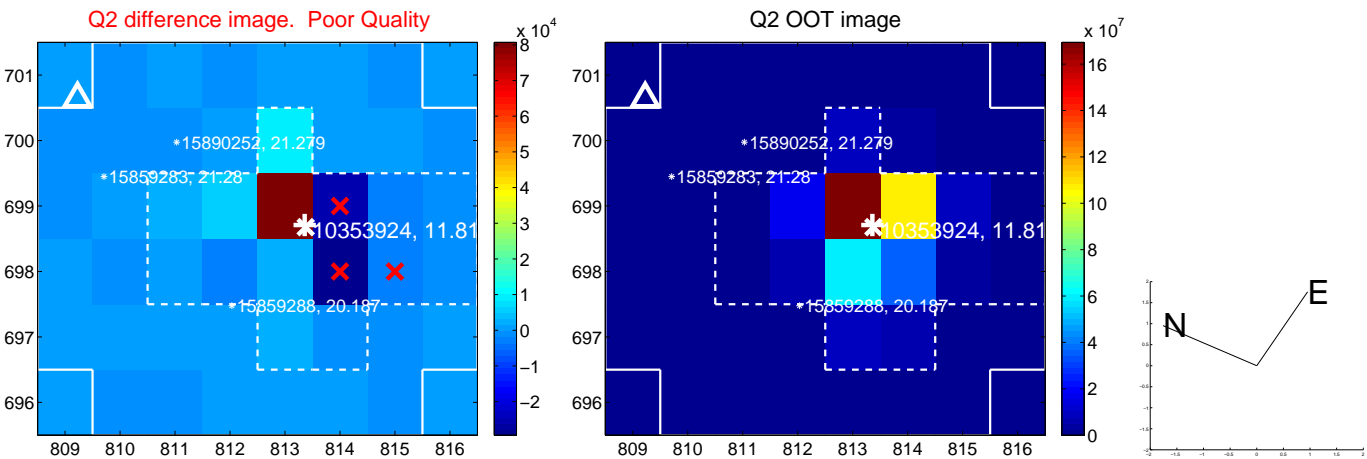
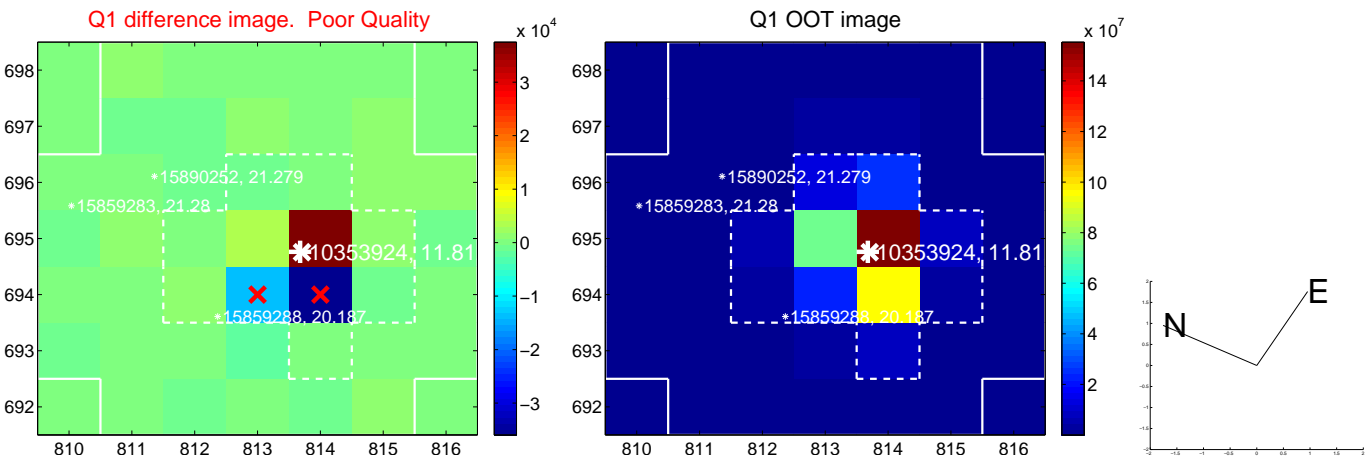


offset from photometric centroids

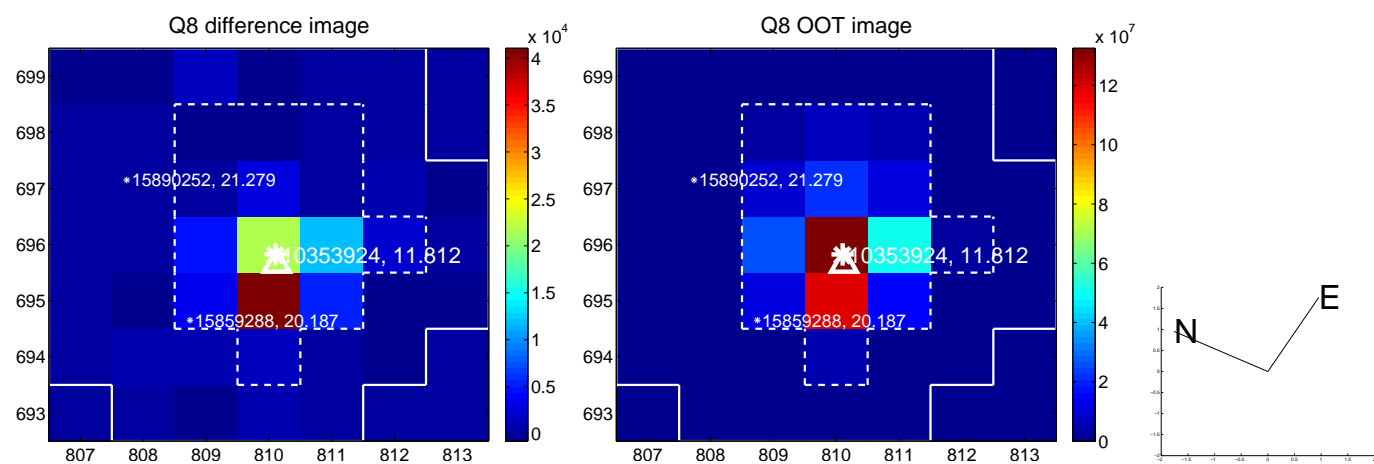
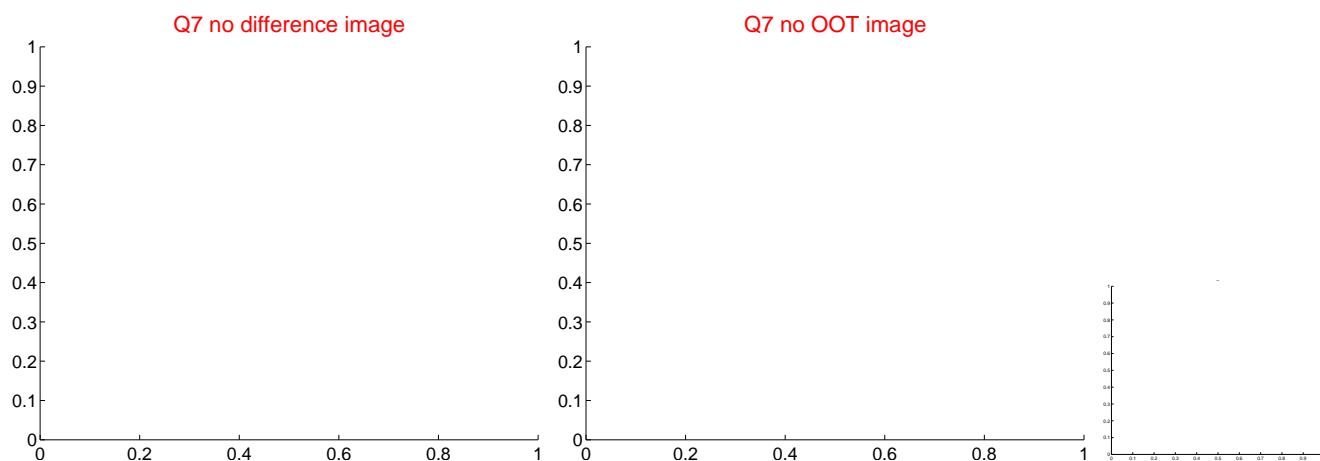
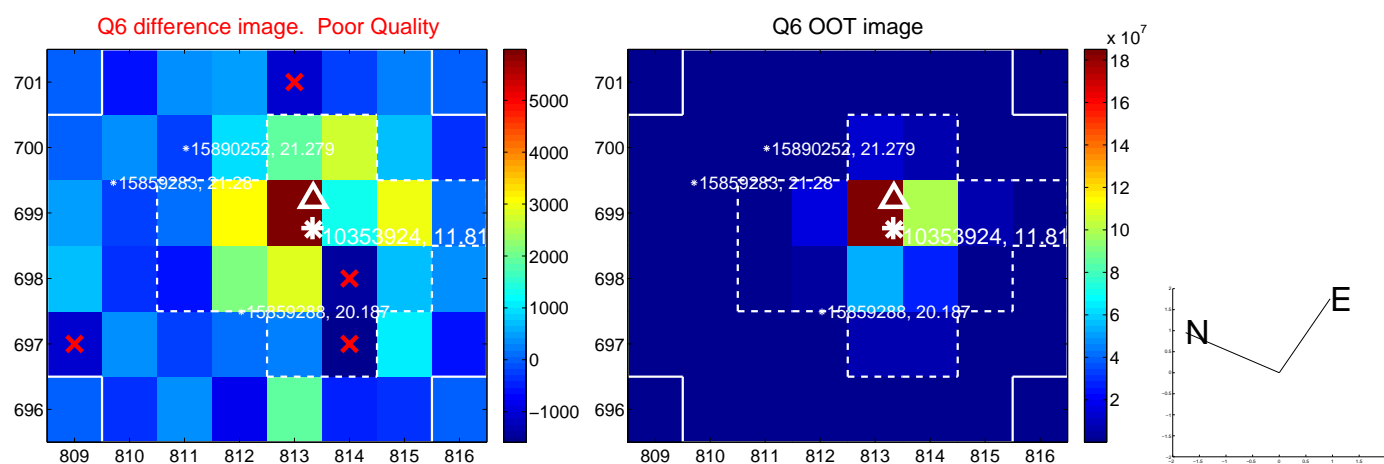
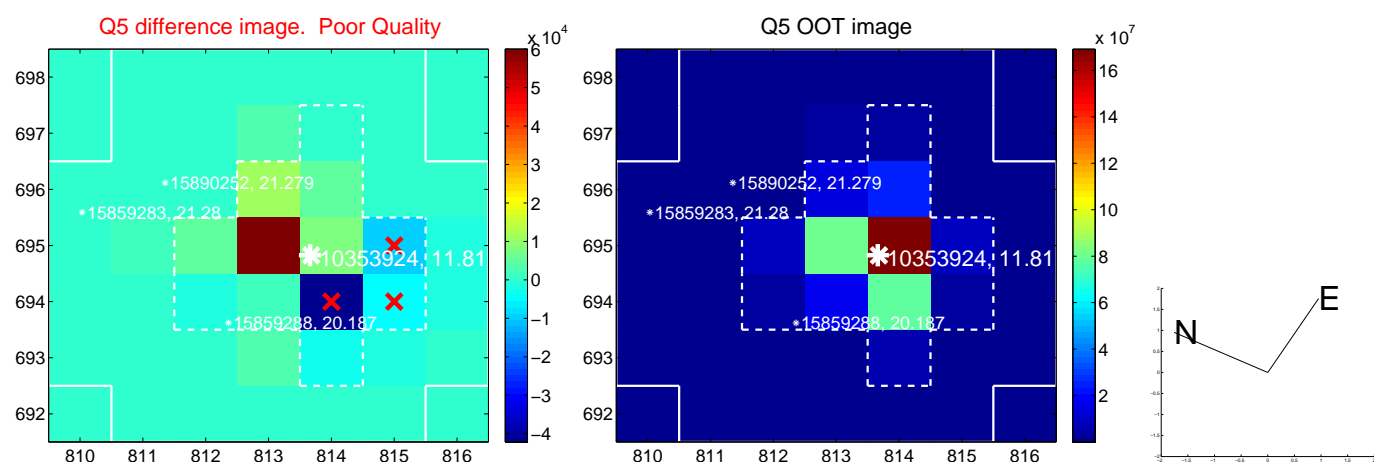


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

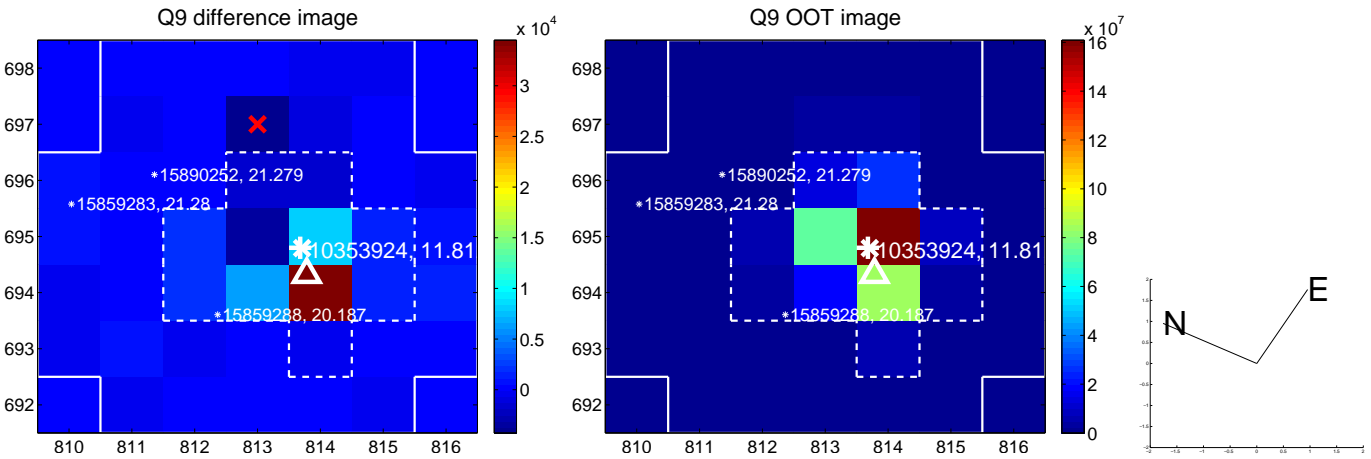
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



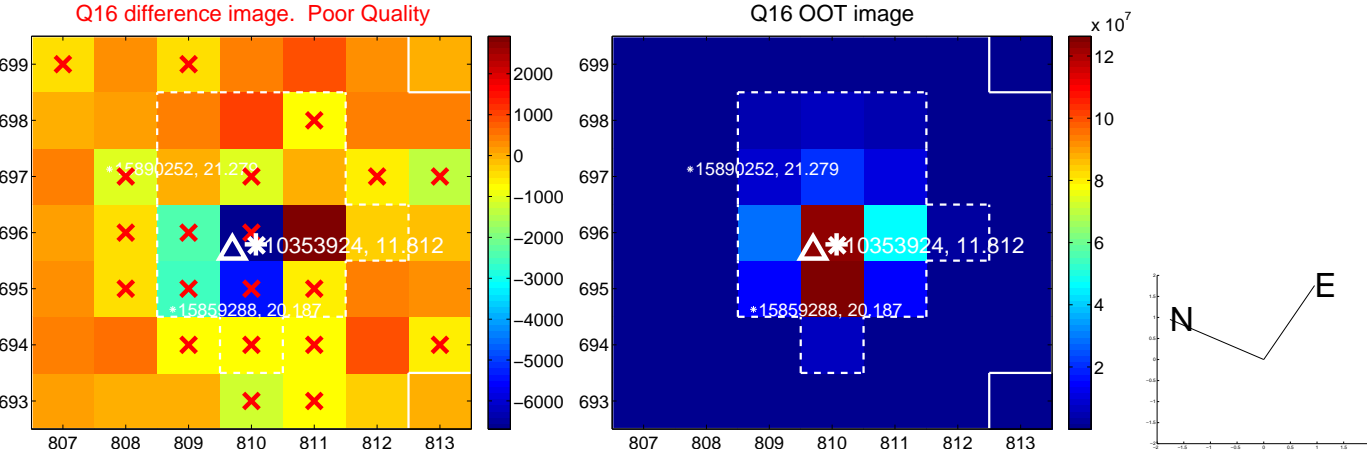
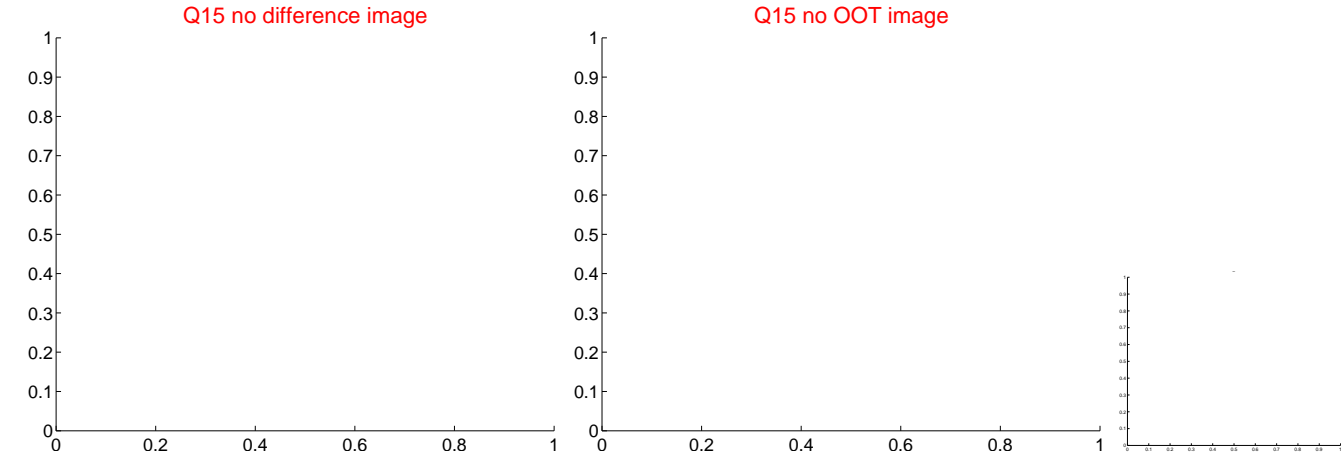
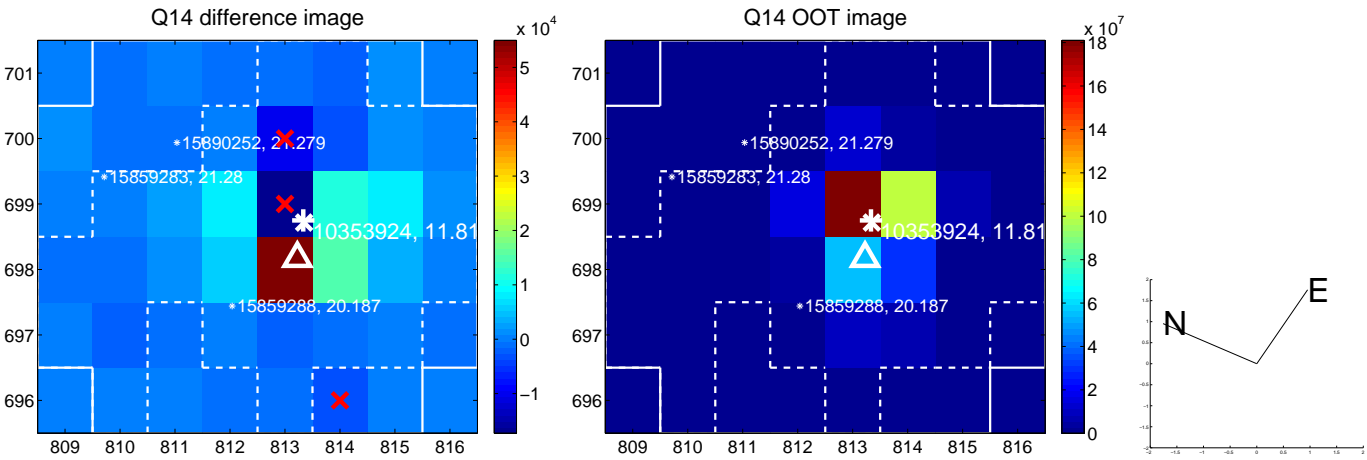
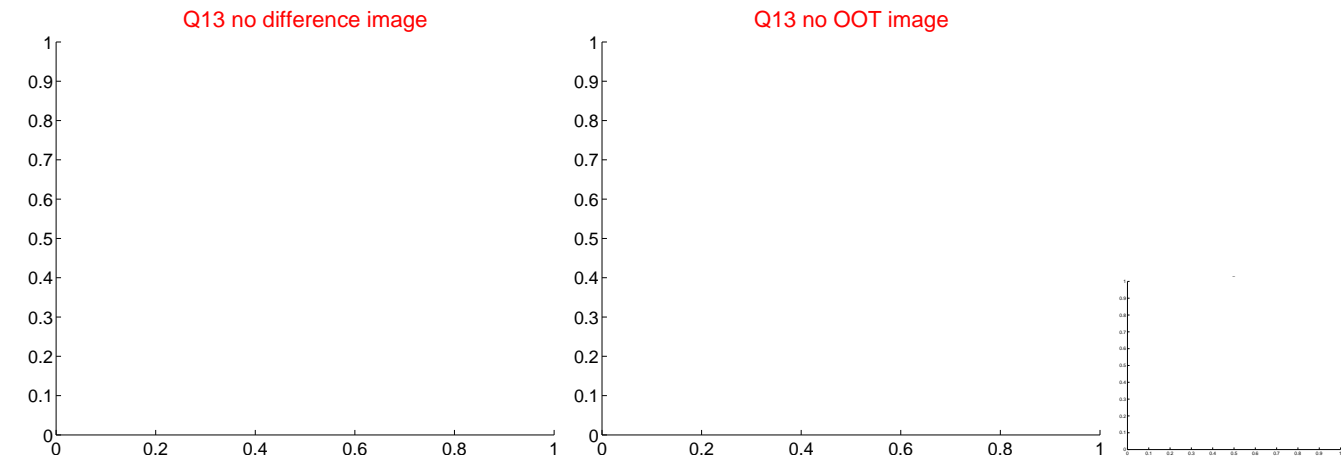
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



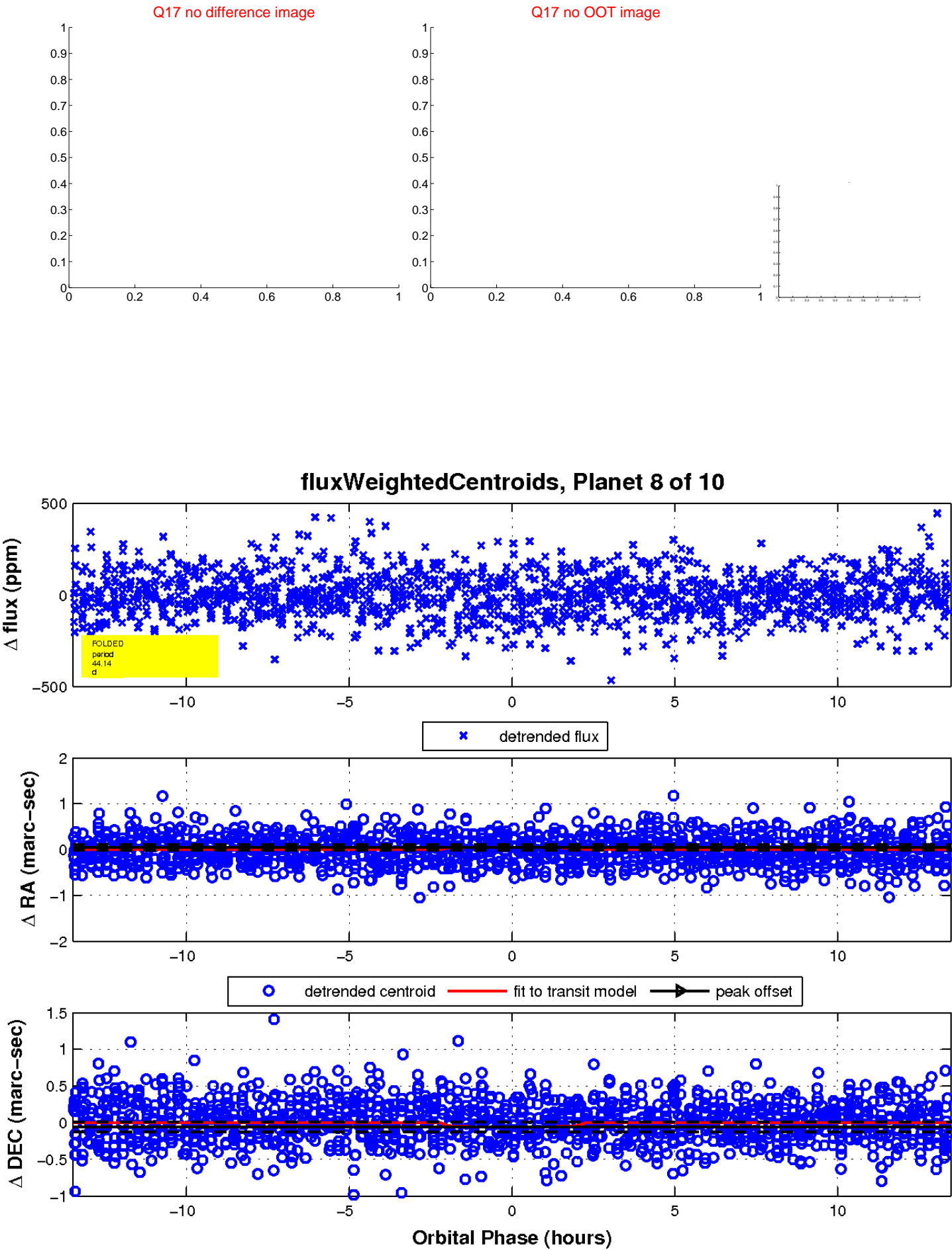
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

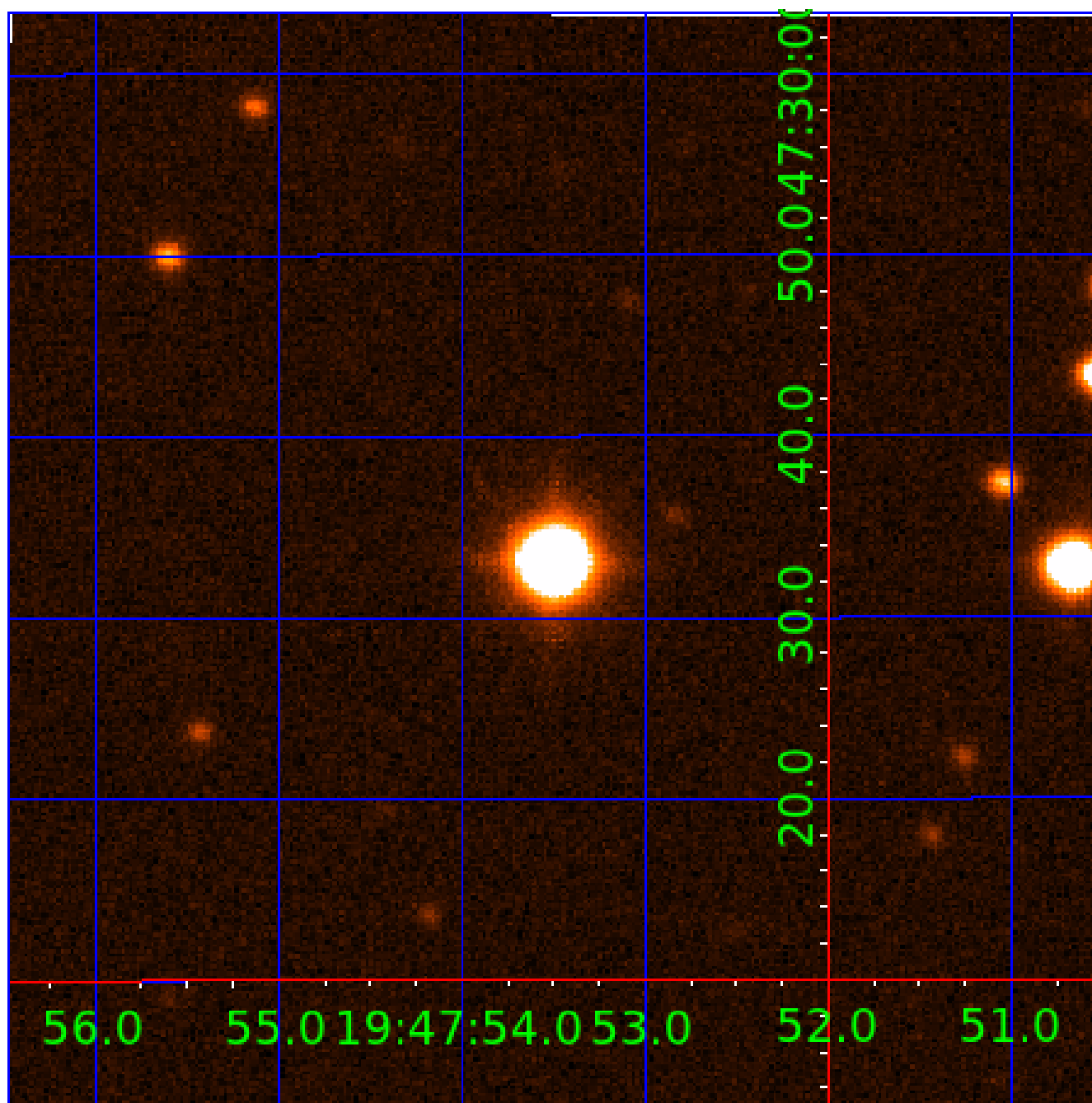


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010353924

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})
010353924-01	OBS	No	1.625617	132.418256	13.7	8.654	9.2	6.1	1.71	6654	0.67	5652.02
010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
010353924-04	OBS	No	115.147808	171.598167	220.7	5.114	9.4	8.6	1.71	6654	2.85	19.29
010353924-05	OBS	No	458.381648	432.509759	260.1	7.434	9.3	9.8	1.71	6654	3.04	3.06
010353924-06	OBS	No	44.151668	133.469056	82.5	19.725	9.1	6.7	1.71	6654	1.65	69.23
010353924-07	OBS	No	103.673679	222.990038	203.0	7.175	9.7	9.3	1.71	6654	2.72	22.18
010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010353924-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010353924-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

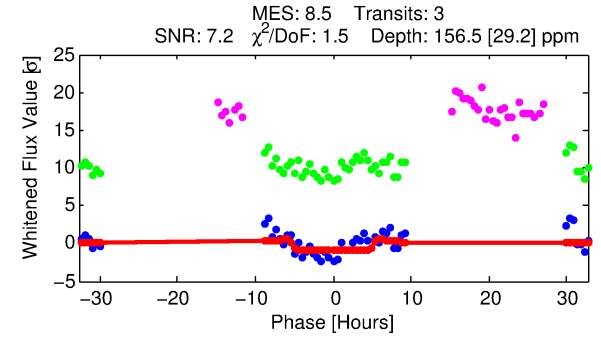
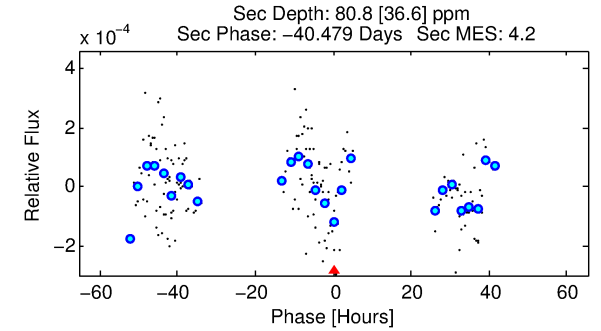
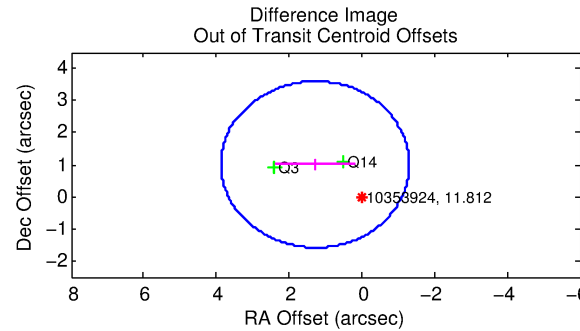
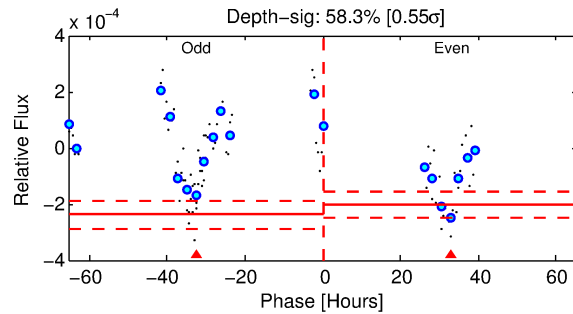
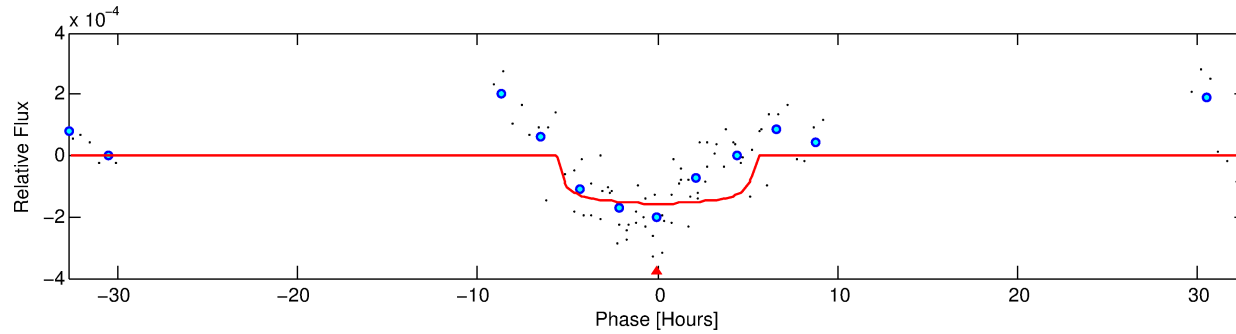
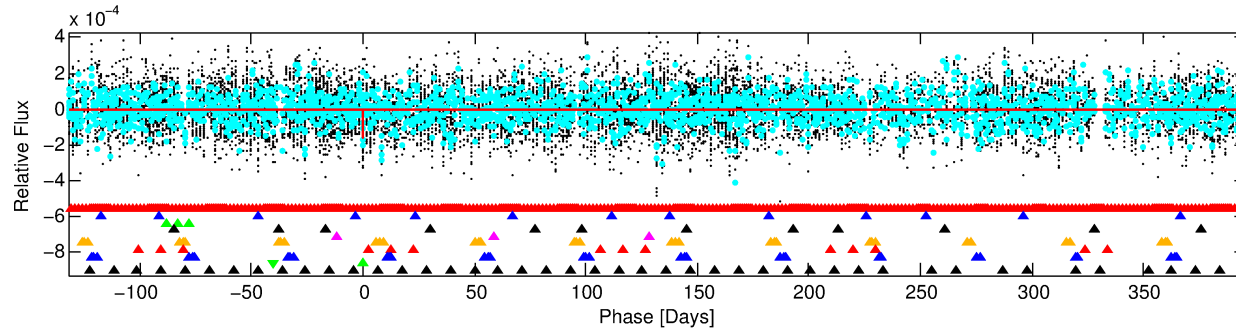
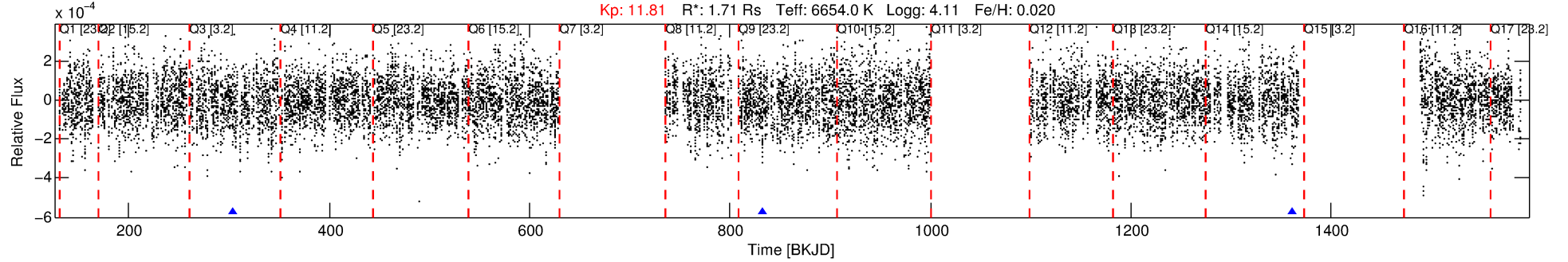
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-09

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 9 of 10 Period: 528.456 d



DV Fit Results:

Period = 528.45624 [0.01897] d
Epoch = 303.7940 [0.0203] BKJD
Rp/R* = 0.0122 [0.0074]
a/R* = 273.07 [900.00]
b = 0.69 [2.46]
Seff = 2.53 [1.03]
Teq = 322 [33] K
Rp = 2.29 [1.56] Re
a = 1.4268 [0.3714] AU
Ag = 17283.36 [23334.75] [0.74 σ]
Teffp = 5700 [1861] K [2.89 σ]

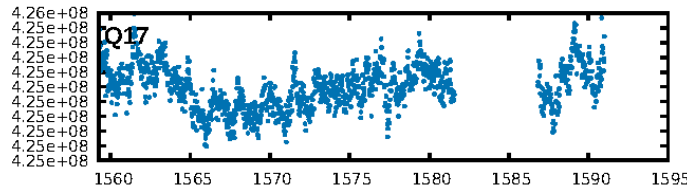
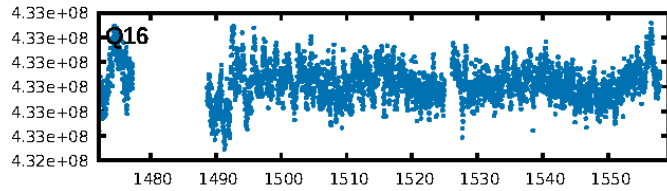
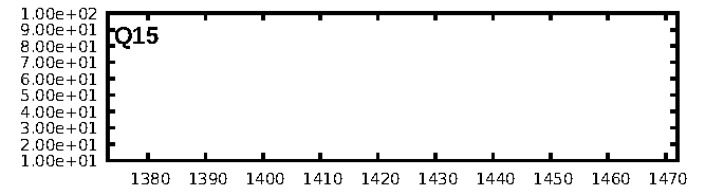
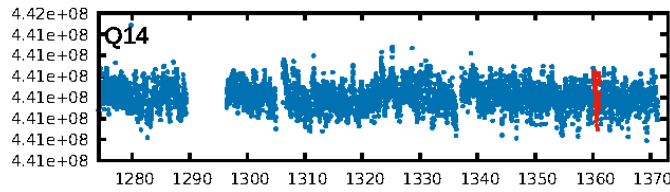
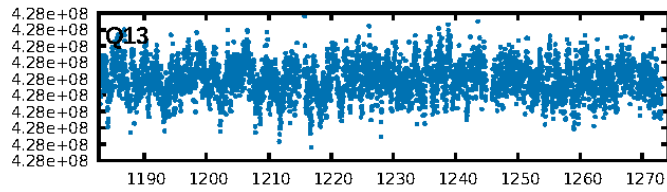
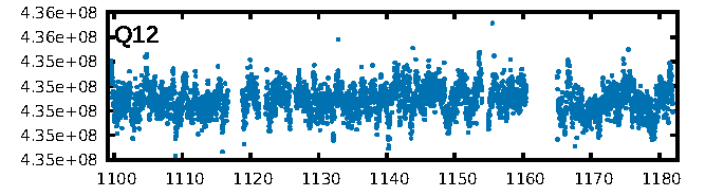
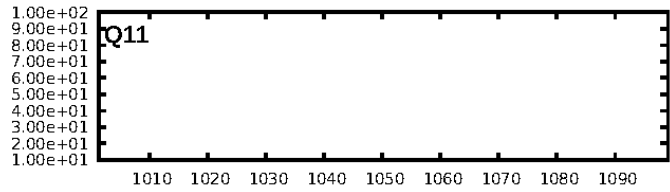
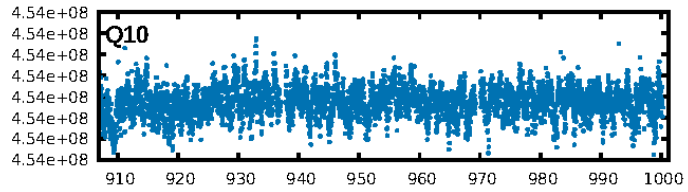
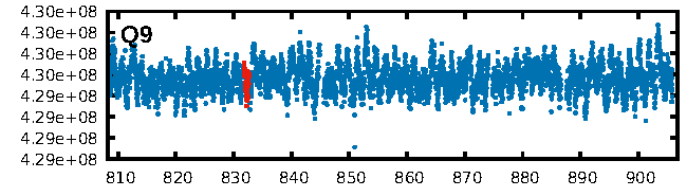
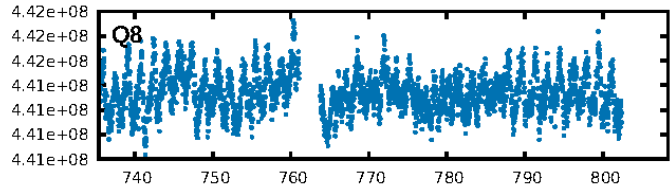
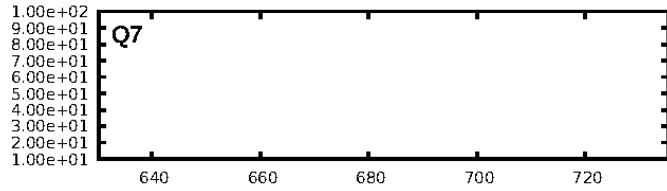
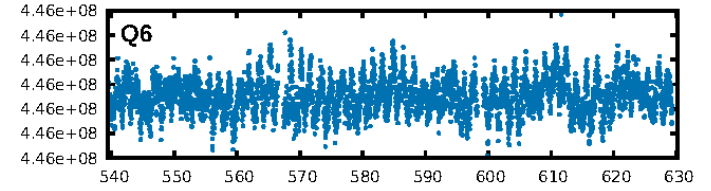
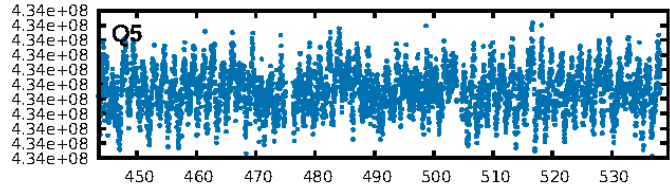
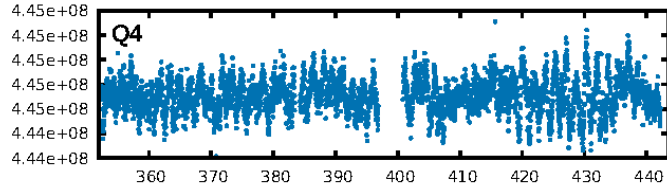
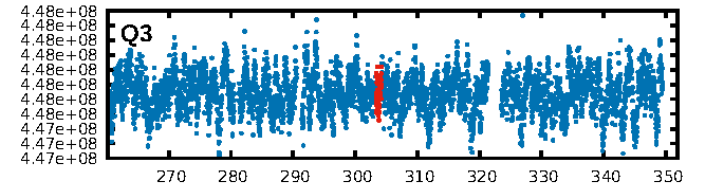
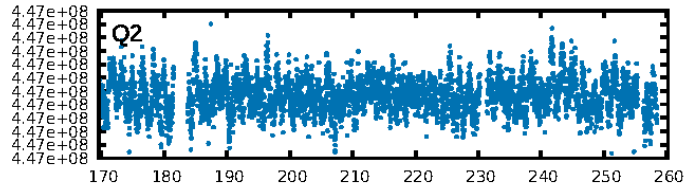
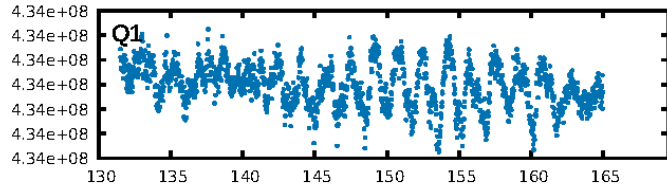
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [127.39 σ]
LongPeriod-sig: 100.0% [9.03 σ]
ModelChiSquare2-sig: 27.9%
ModelChiSquareGof-sig: 53.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.156
Centroid-sig: 56.7%
Centroid-so: 0.756 arcsec [0.80 σ]
OotOffset-rm: 1.632 arcsec [1.89 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 1.704 arcsec [2.01 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/3]

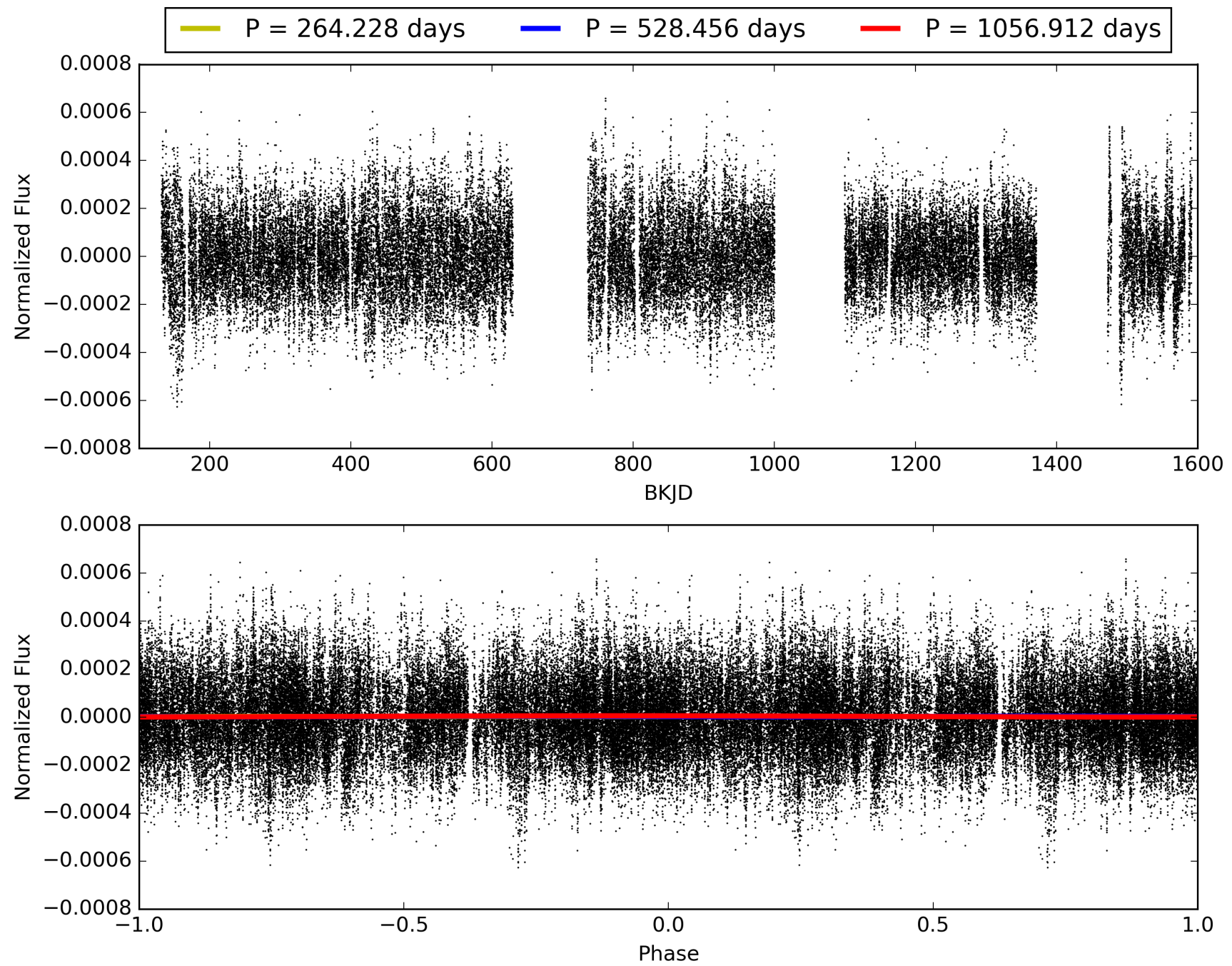
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:39:14 Z

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

TCE 010353924-09, PDC Light Curves

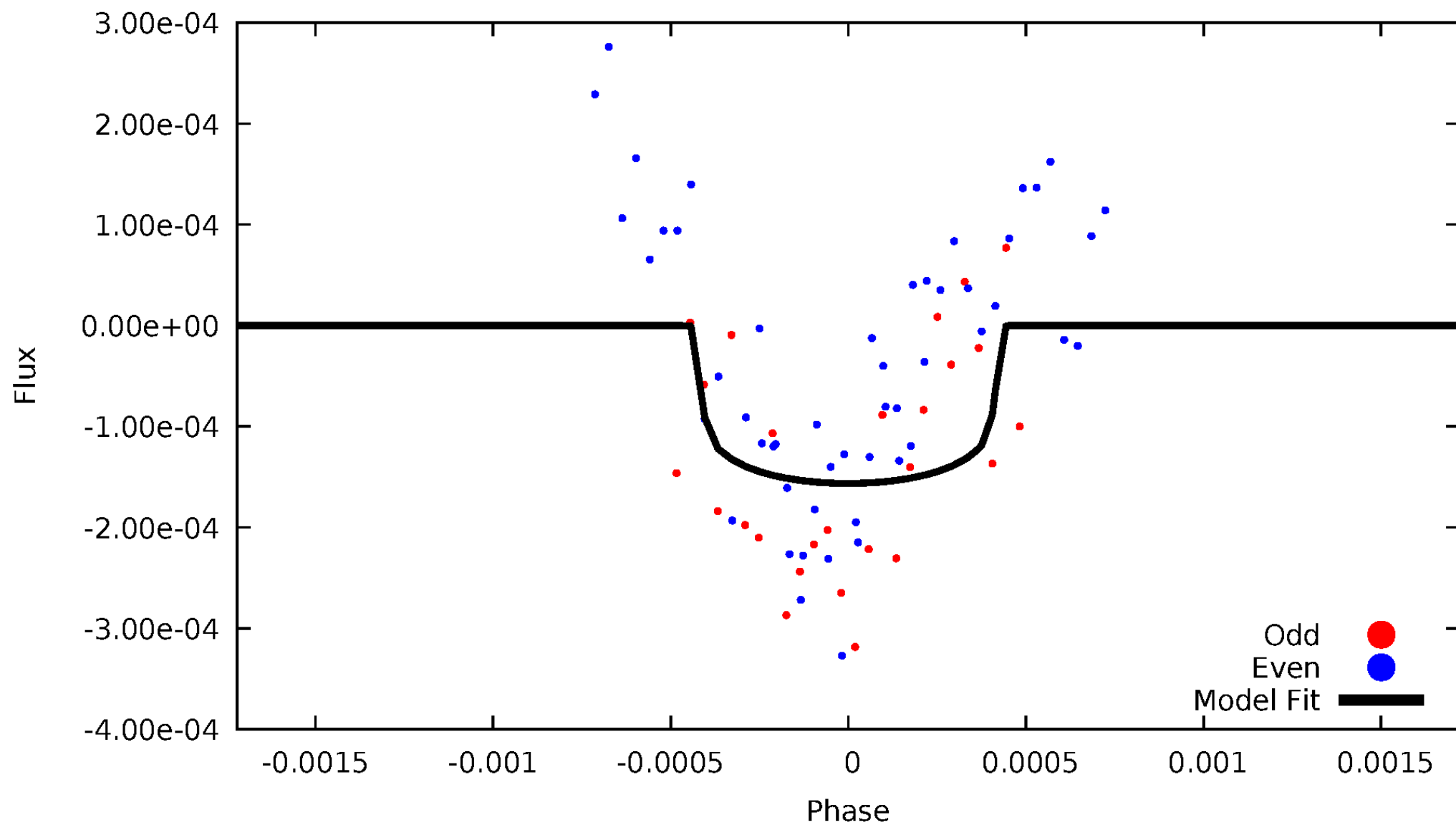


TCE 010353924-09



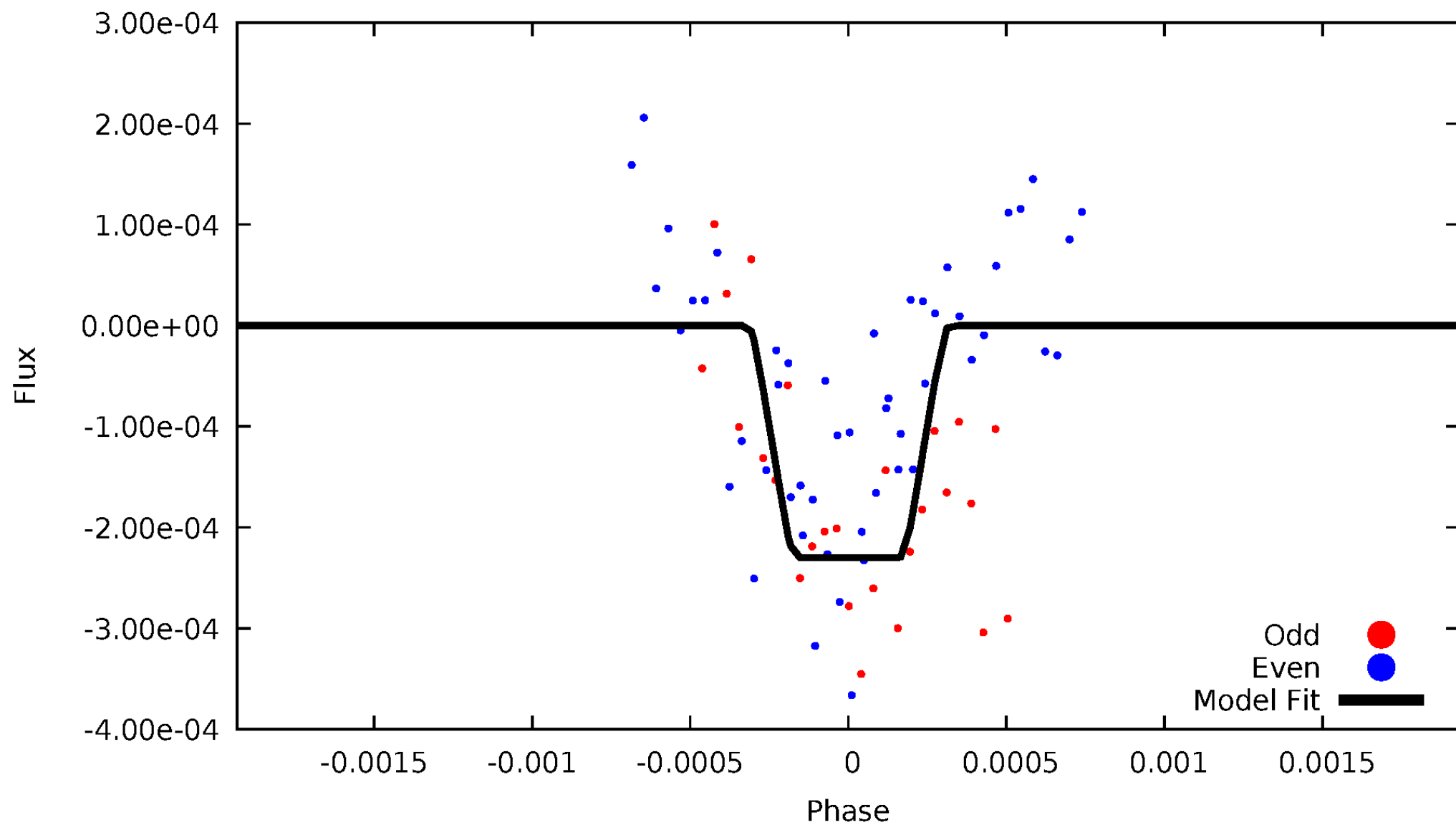
DV Odd/Even

TCE 010353924-09



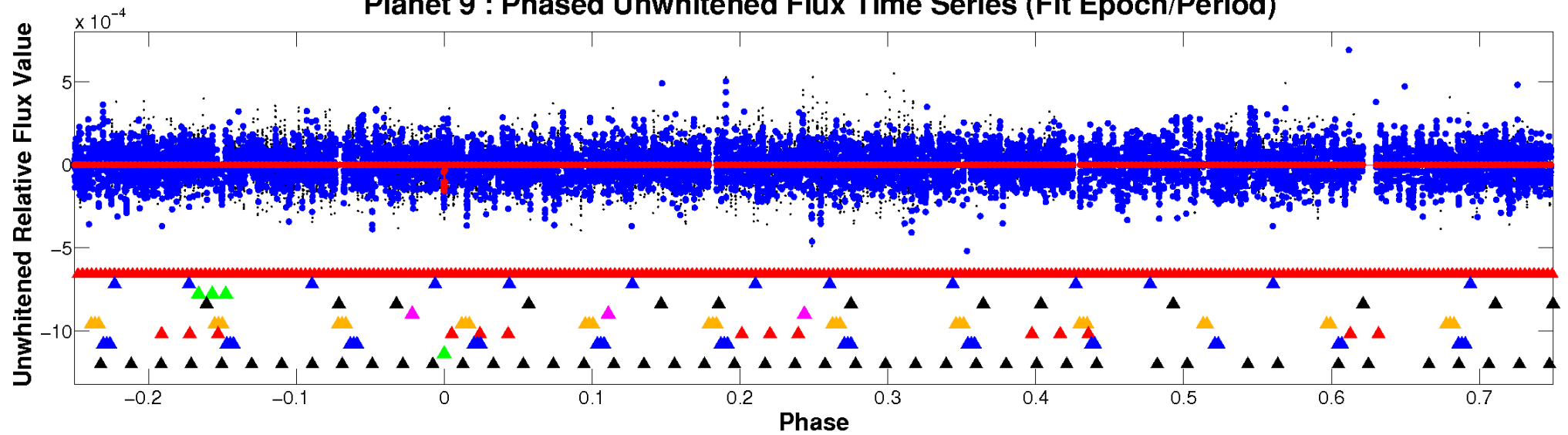
ALT Odd/Even

TCE 010353924-09

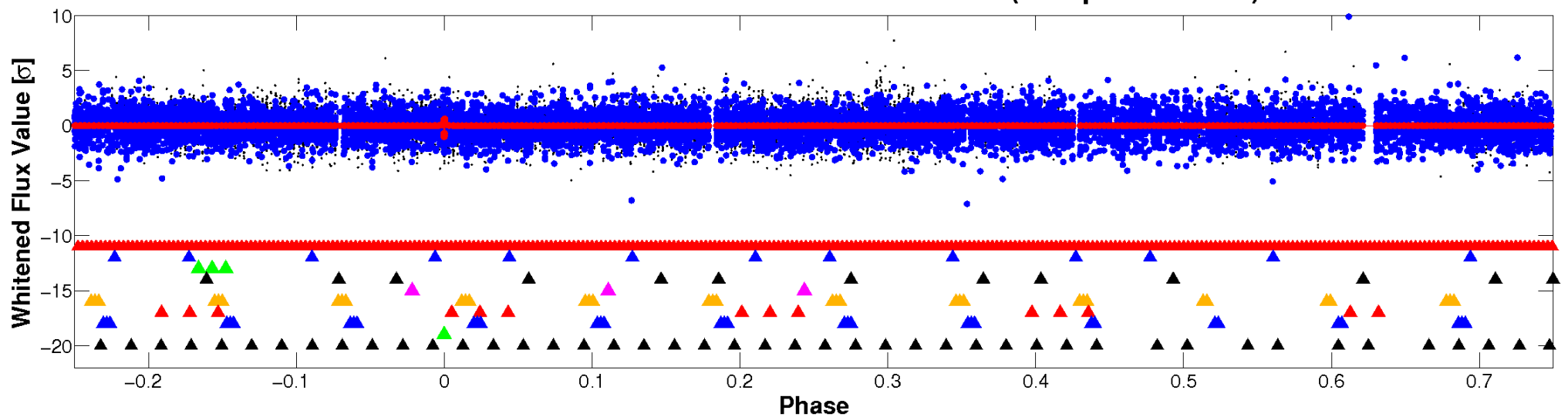


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



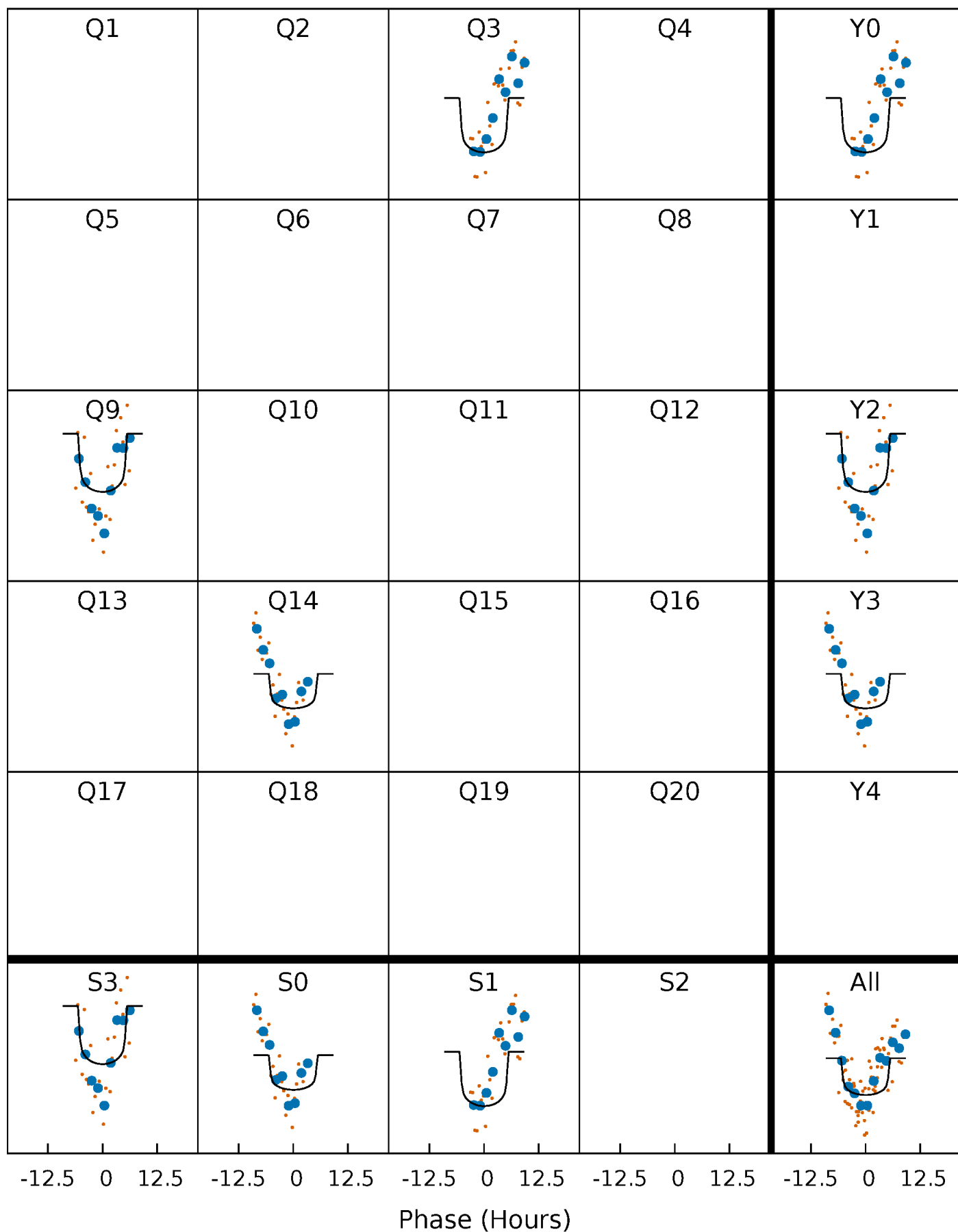
PDC Quarter-Phased Transit Curves

TCE 010353924-09 $P=528.456236$ Days $T_0=303.793981$ (BKJD)



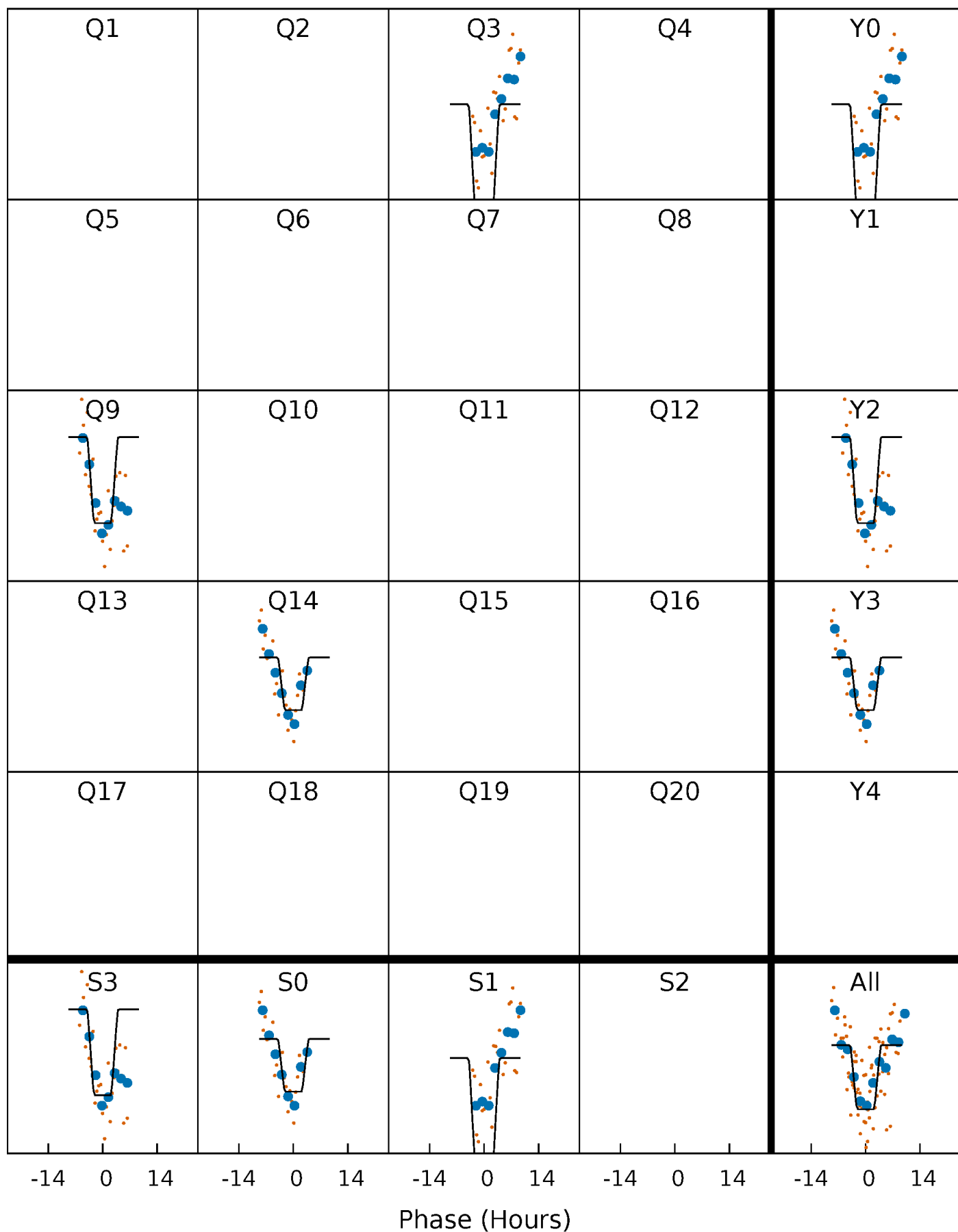
DV Quarter-Phased Transit Curves

TCE 010353924-09 P=528.456236 Days $T_0=303.793981$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

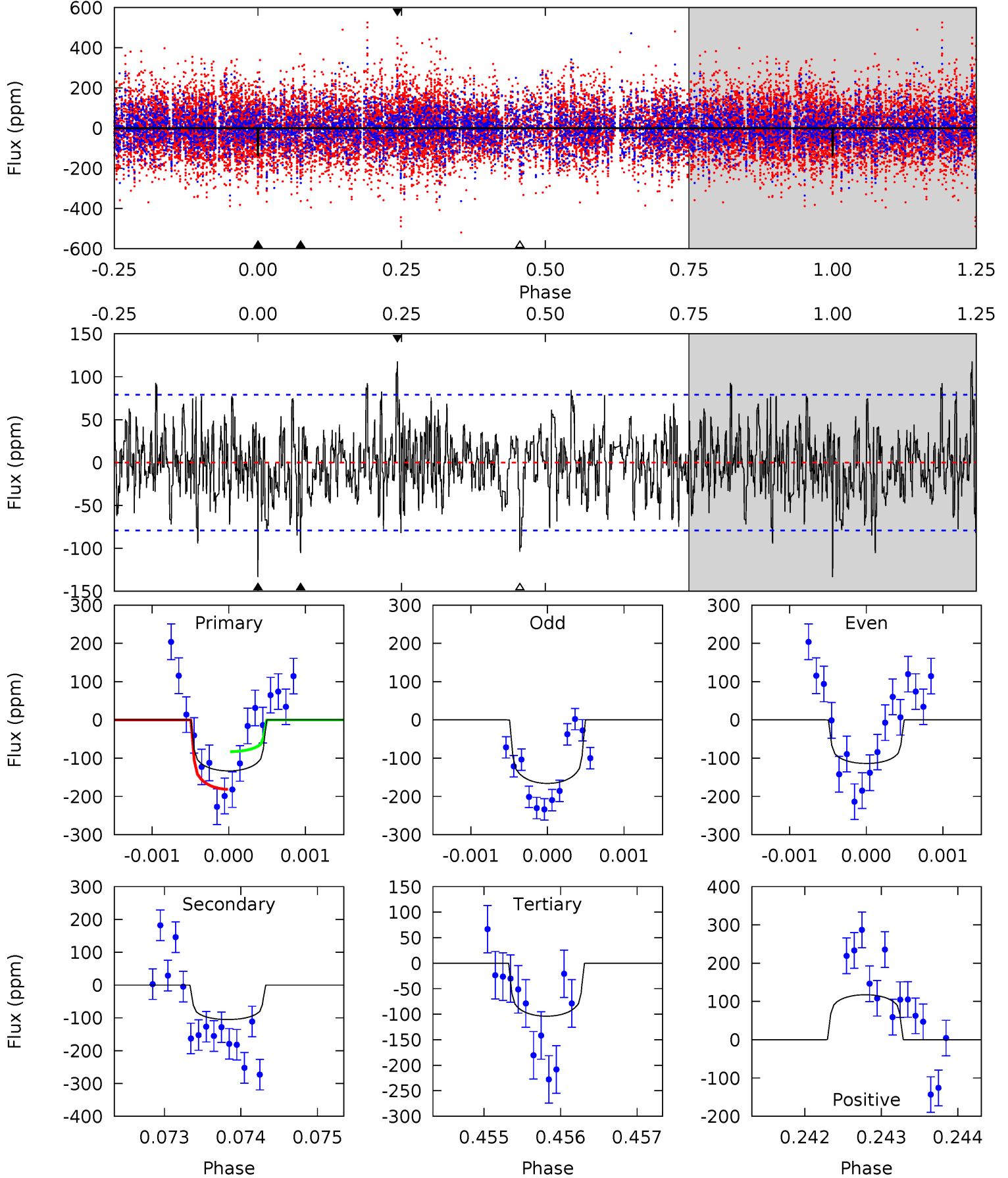
TCE 010353924-09 P=528.452729 Days $T_0=303.785994$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-09, P = 528.456236 Days, E = 303.793981 Days

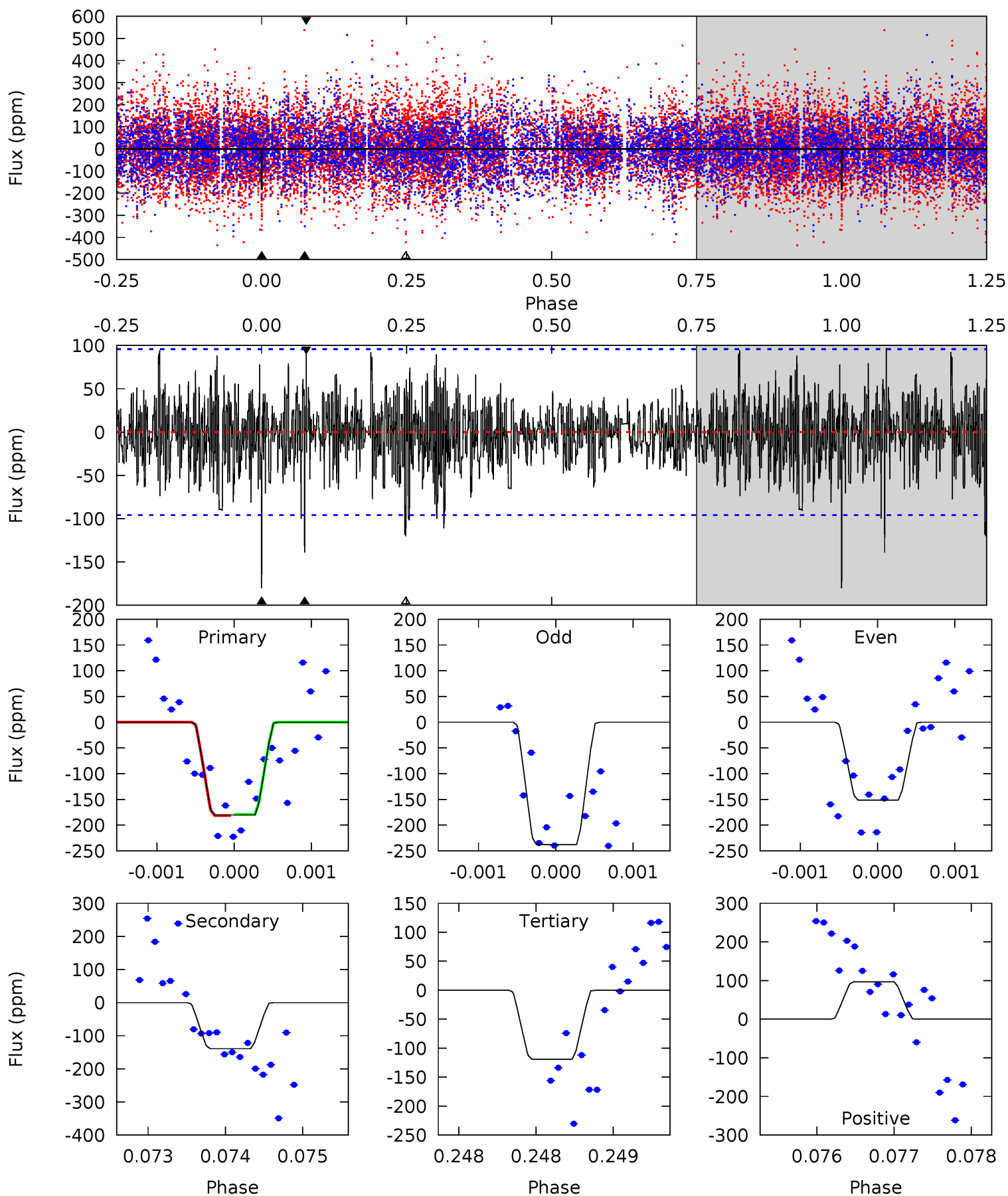
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.22	7.27	7.18	8.13	5.47	3.32	2.11	2.04	1.10	0.09	-0.86	1.73	0.89	0.47	3.40



Alt Model-Shift Uniqueness Test

010353924-09, P = 528.452729 Days, E = 303.785994 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	8.03	6.89	5.60	5.54	3.43	1.70	3.53	4.82	1.14	2.43	2.35	0.86	0.35	0.07



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-105 ± 14	$2.36^{+1.50}_{-1.20}$	448^{+36}_{-34}	5948^{+2965}_{-1100}	20652^{+65223}_{-12501}
Alt.	-139 ± 17	$2.89^{+1.38}_{-1.34}$	449^{+37}_{-33}	5813^{+2204}_{-966}	18572^{+44382}_{-10413}

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

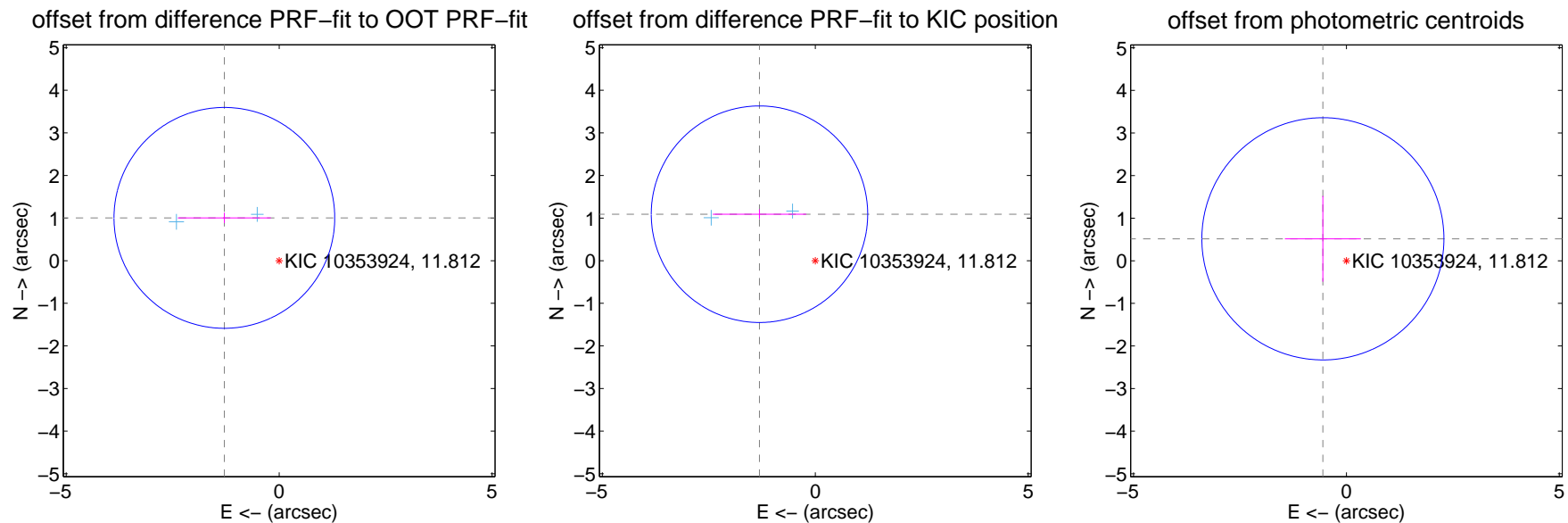
DV Centroid Data

Supplemental centroid analysis for 010353924-09. **Kepler magnitude: 11.81.** Transit SNR 7.24

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.632 ± 0.864	1.89	1.286 ± 1.092	1.005 ± 0.122
PRF-fit source offset from KIC position	1.704 ± 0.847	2.01	1.310 ± 1.098	1.091 ± 0.113
photometric centroid source offset	0.76 ± 0.95	0.80	0.55 ± 0.89	0.52 ± 1.01



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

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

Q1 no difference image



Q1 no OOT image



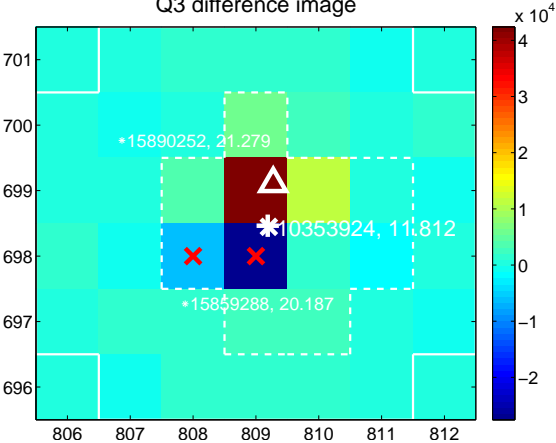
Q2 no difference image



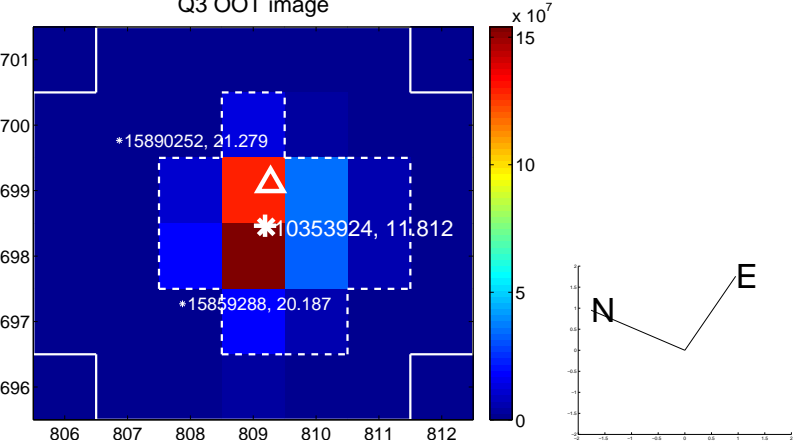
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



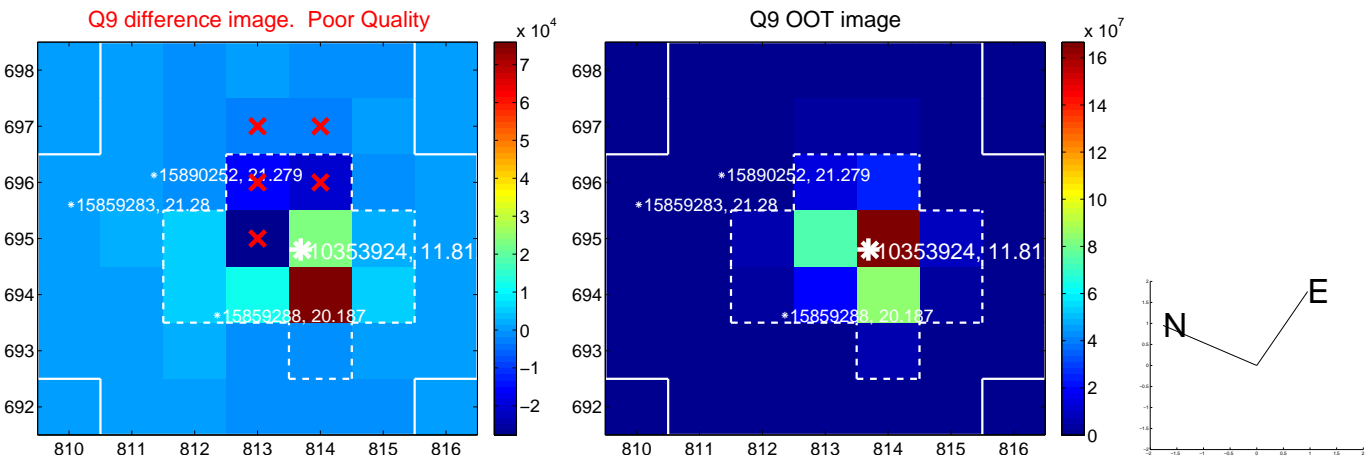
Q4 no OOT image



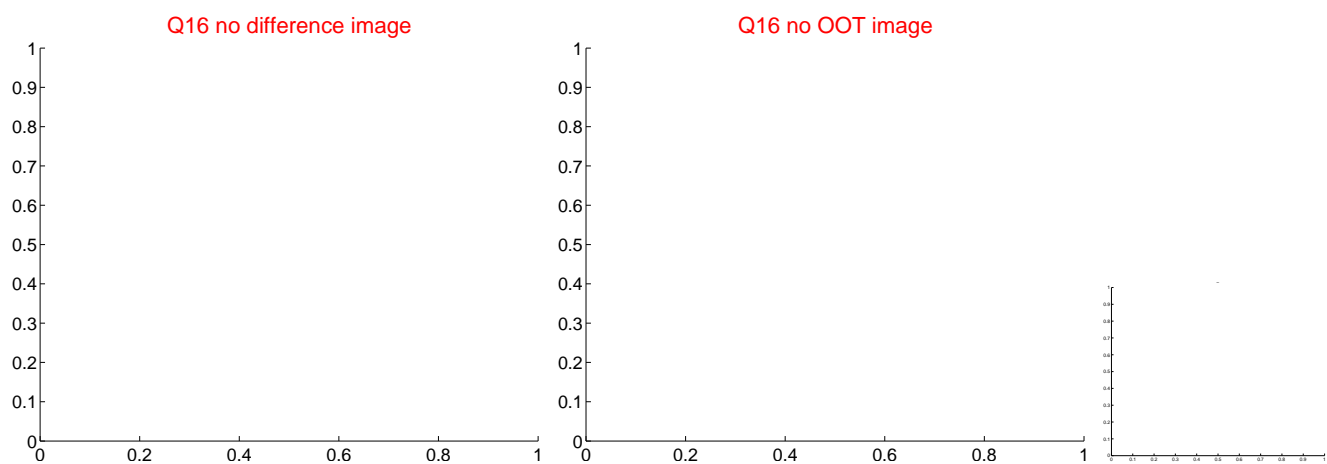
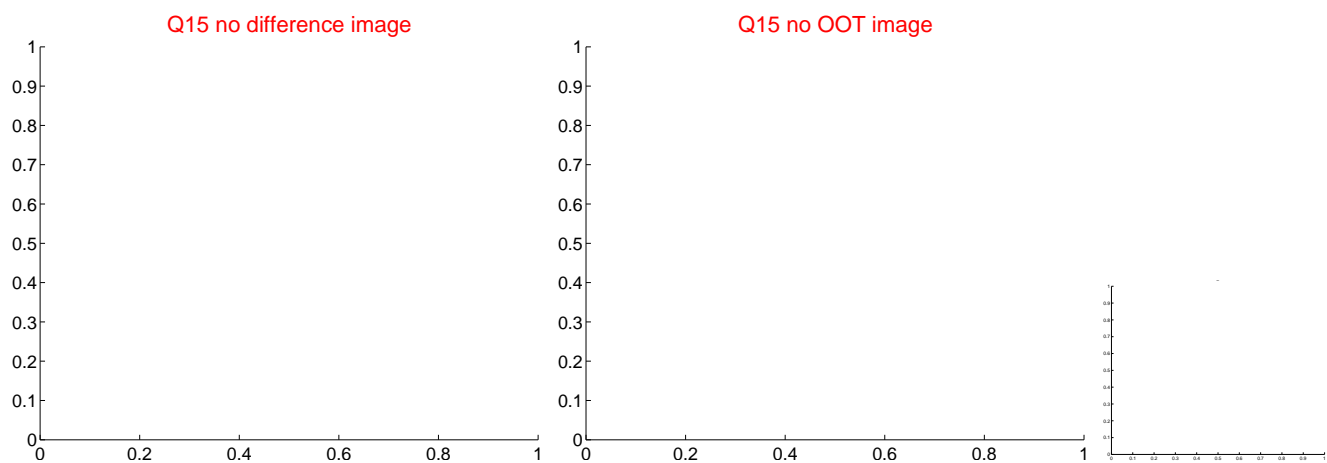
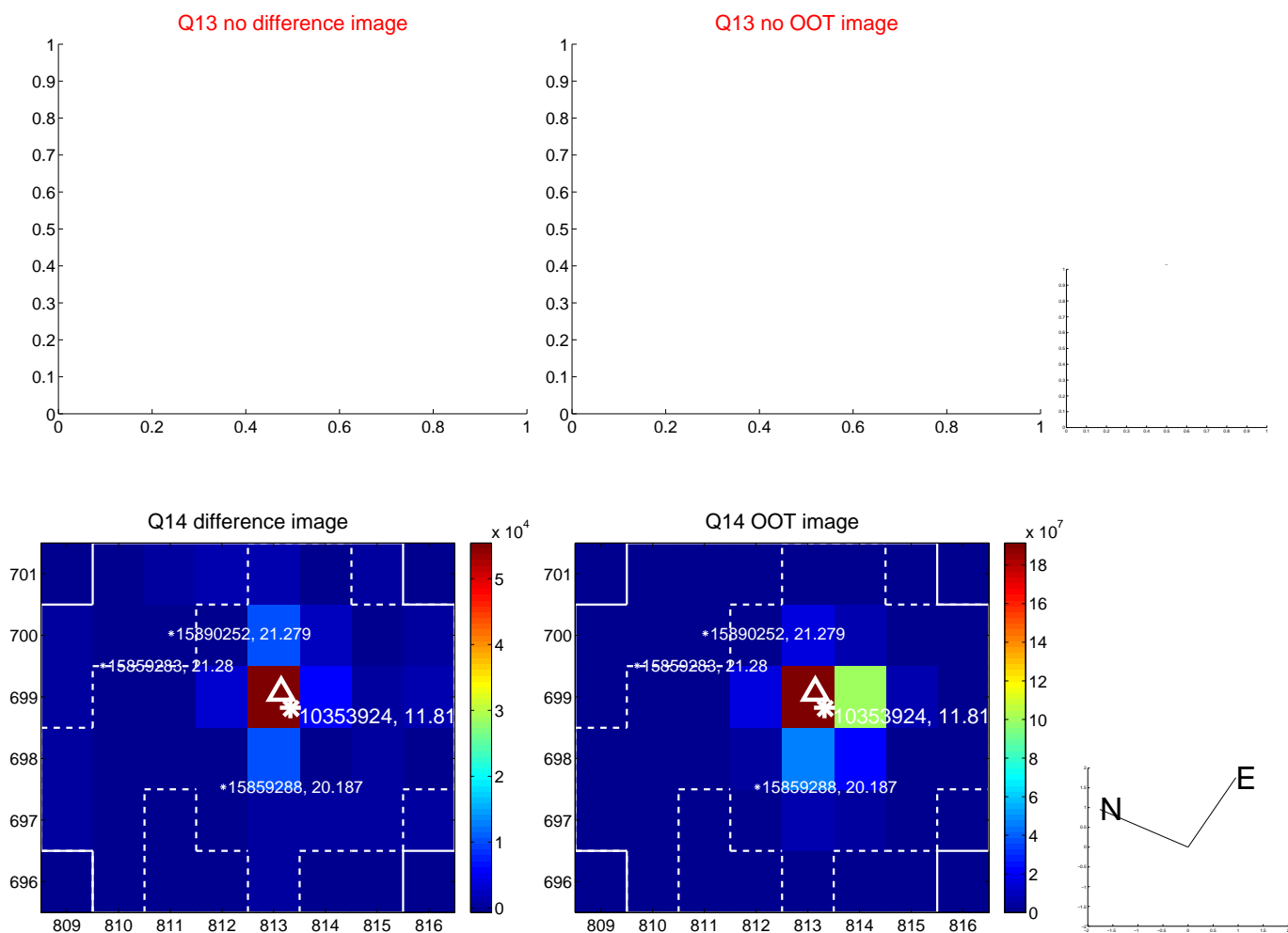
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



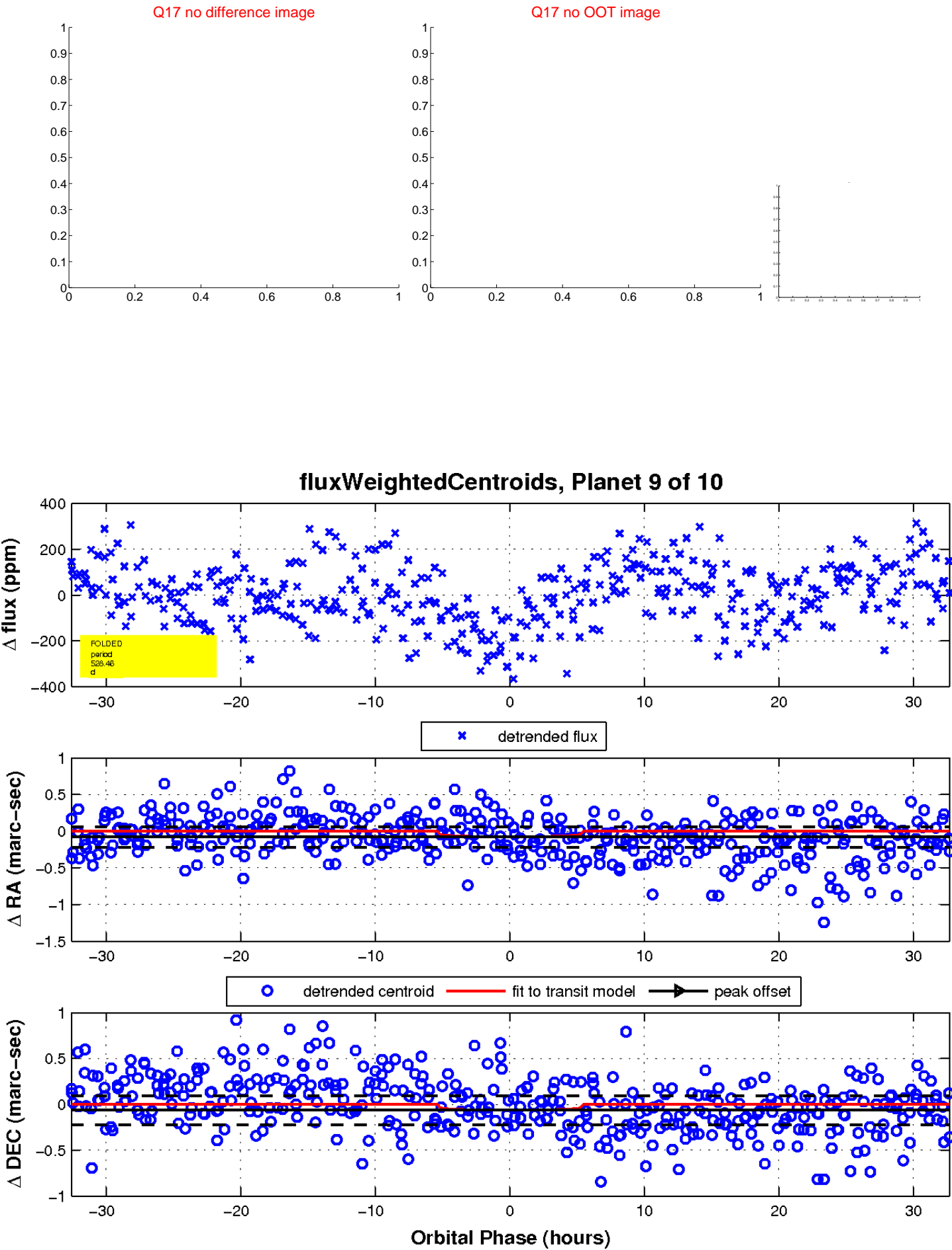
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

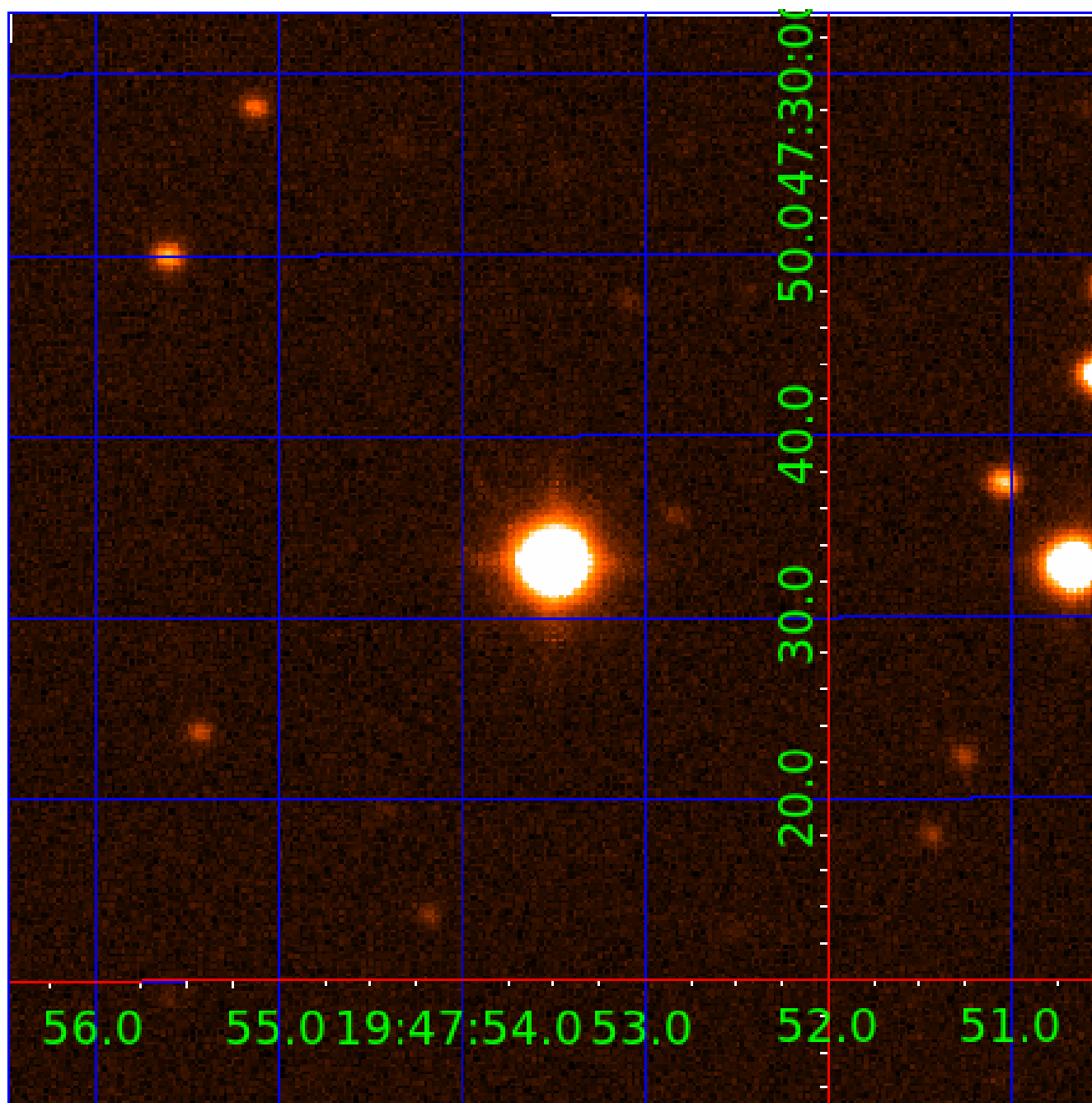


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010353924

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})
010353924-01	OBS	No	1.625617	132.418256	13.7	8.654	9.2	6.1	1.71	6654	0.67	5652.02
010353924-02	OBS	No	114.485125	212.599393	222.1	3.090	9.8	9.4	1.71	6654	3.05	19.43
010353924-03	OBS	No	533.313334	216.025213	231.5	6.896	9.4	9.2	1.71	6654	2.64	2.50
010353924-04	OBS	No	115.147808	171.598167	220.7	5.114	9.4	8.6	1.71	6654	2.85	19.29
010353924-05	OBS	No	458.381648	432.509759	260.1	7.434	9.3	9.8	1.71	6654	3.04	3.06
010353924-06	OBS	No	44.151668	133.469056	82.5	19.725	9.1	6.7	1.71	6654	1.65	69.23
010353924-07	OBS	No	103.673679	222.990038	203.0	7.175	9.7	9.3	1.71	6654	2.72	22.18
010353924-08	OBS	No	44.137849	137.833581	132.5	4.503	8.7	8.4	1.71	6654	2.30	69.26
010353924-09	OBS	No	528.456236	303.793981	156.5	10.910	8.5	7.2	1.71	6654	2.29	2.53
010353924-10	OBS	No	32.358398	148.678267	147.3	5.547	8.4	9.1	1.71	6654	2.31	104.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010353924-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010353924-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010353924-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
010353924-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010353924-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010353924-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010353924-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
010353924-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

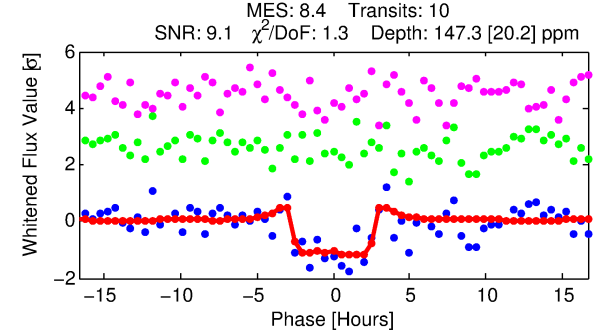
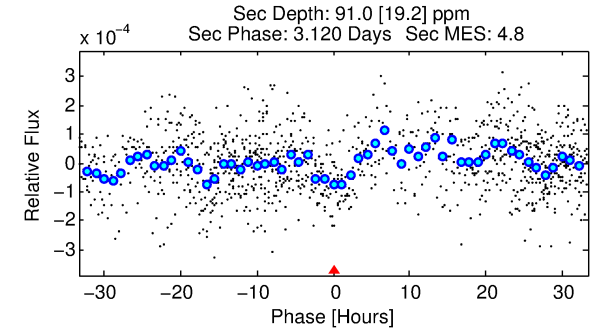
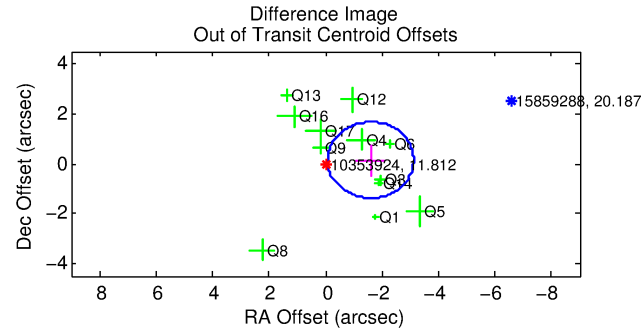
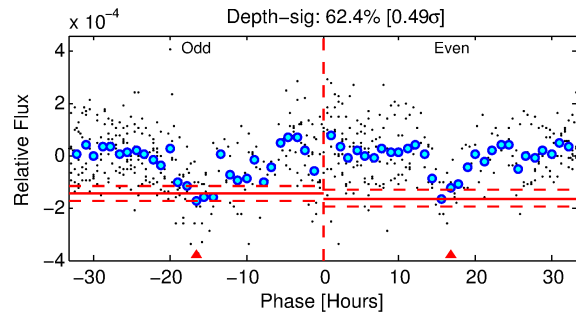
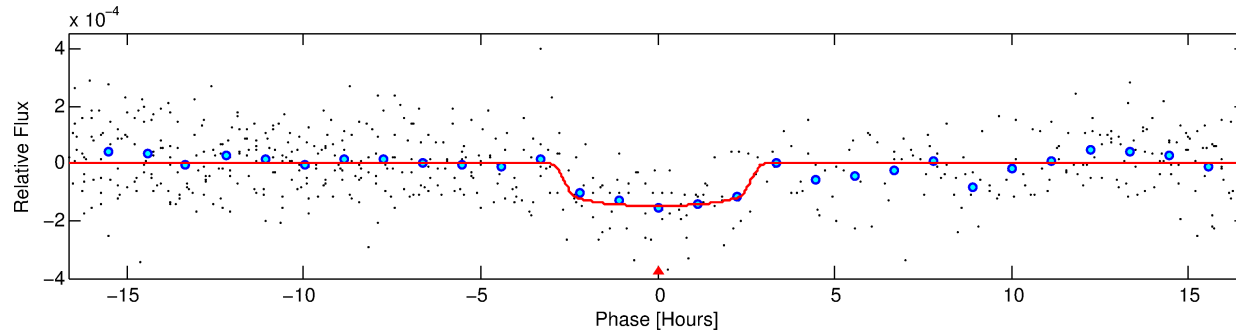
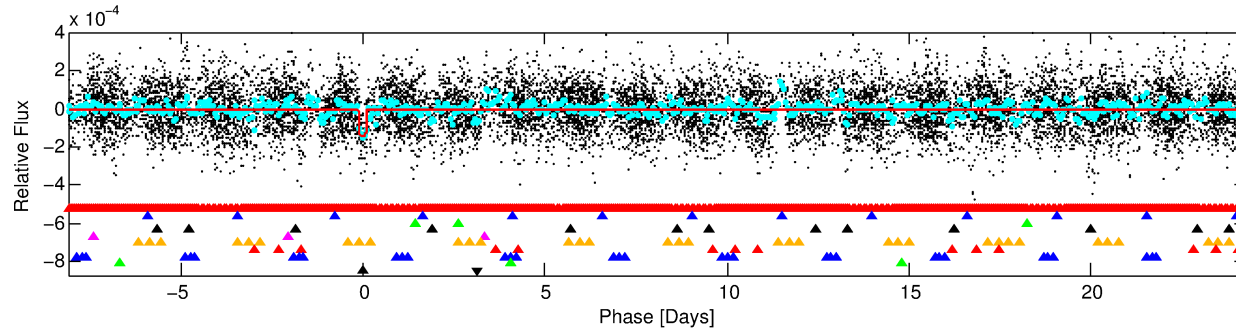
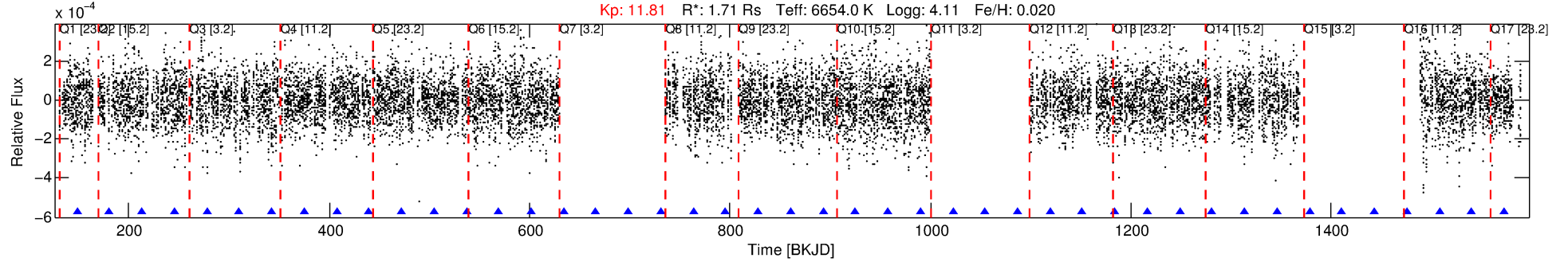
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010353924-10

No Significant Match Found

DV One-Page Summary

KIC: 10353924 Candidate: 10 of 10 Period: 32.358 d



DV Fit Results:

Period = 32.35840 [0.00041] d
Epoch = 148.6783 [0.0087] BKJD
Rp/R* = 0.0124 [0.0159]
a/R* = 26.55 [194.81]
b = 0.82 [2.99]
Seff = 104.77 [42.60]
Teq = 816 [83] K
Rp = 2.31 [3.07] Re
a = 0.2217 [0.0577] AU
Ag = 460.34 [1202.76] [0.38 σ]
Teffp = 5842 [3783] K [1.33 σ]

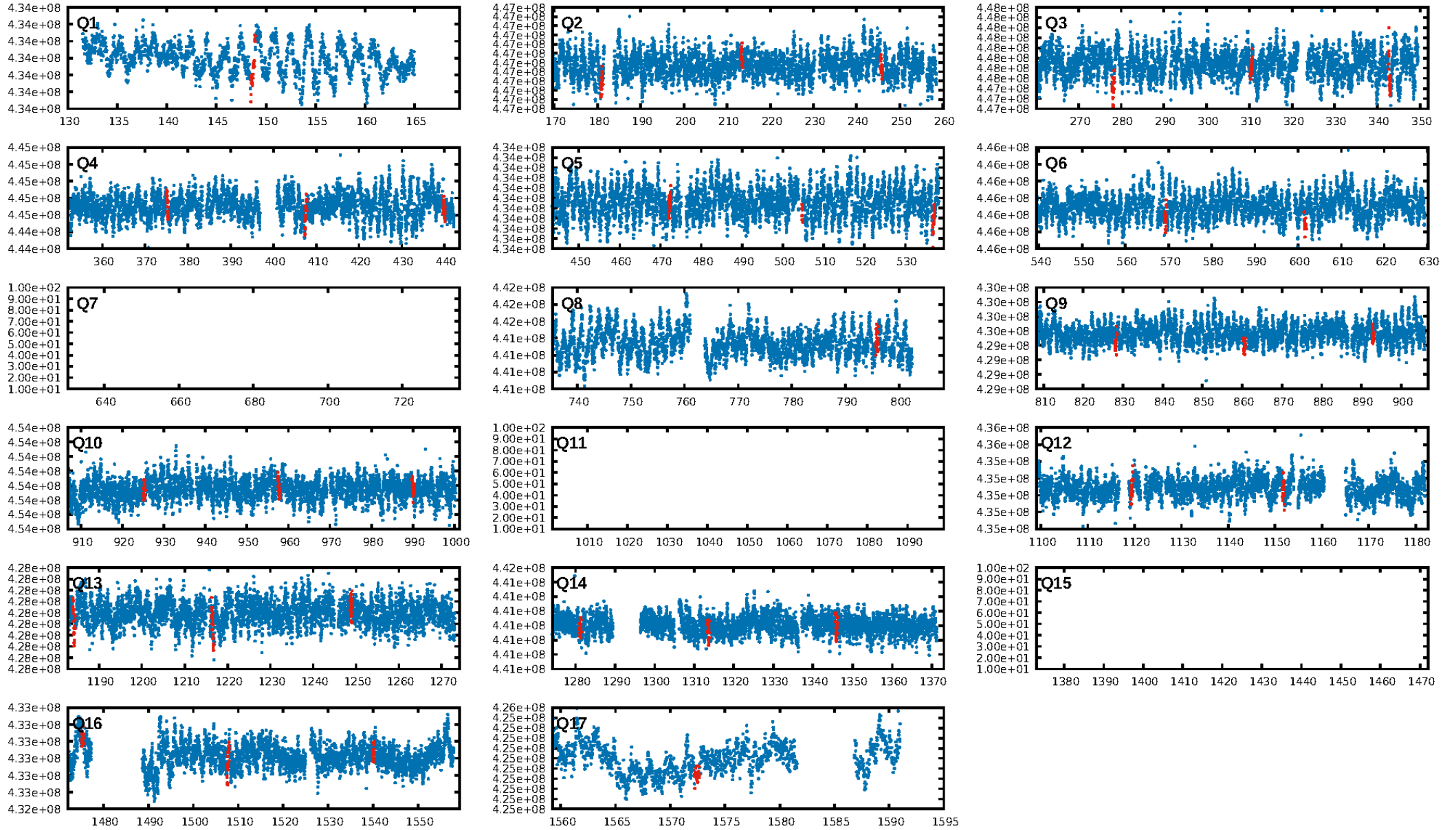
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [71.76 σ]
LongPeriod-sig: 100.0% [39.57 σ]
ModelChiSquare2-sig: 36.8%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -1.234
Centroid-sig: 2.5%
Centroid-so: 0.753 arcsec [2.02 σ]
OotOffset-rm: 1.597 arcsec [3.14 σ]
KicOffset-rm: 1.584 arcsec [3.53 σ]
OotOffset-st: 2/1/4/5 [12]
KicOffset-st: 2/1/4/5 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.21 [3/14]

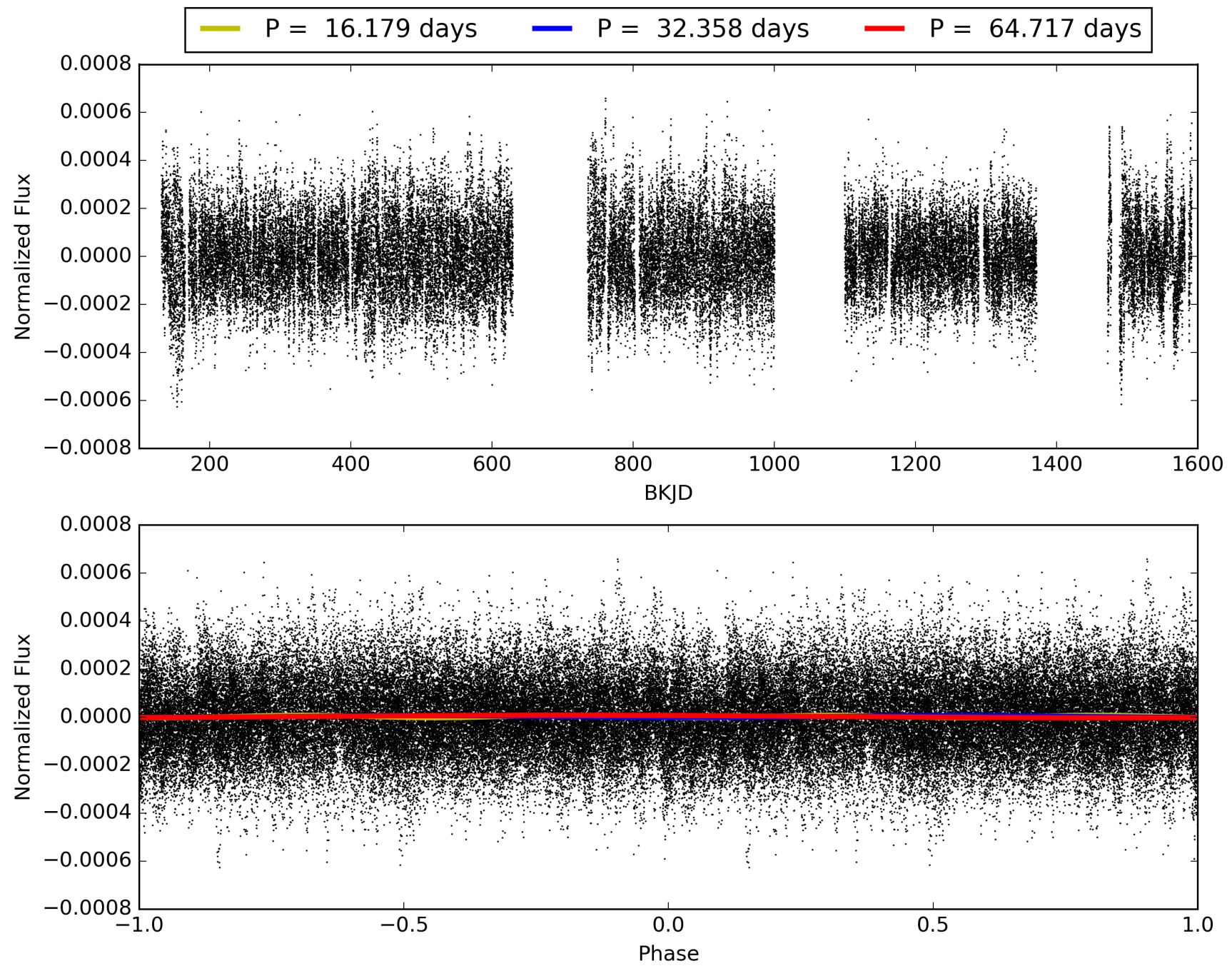
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:39:17 Z

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

TCE 010353924-10, PDC Light Curves

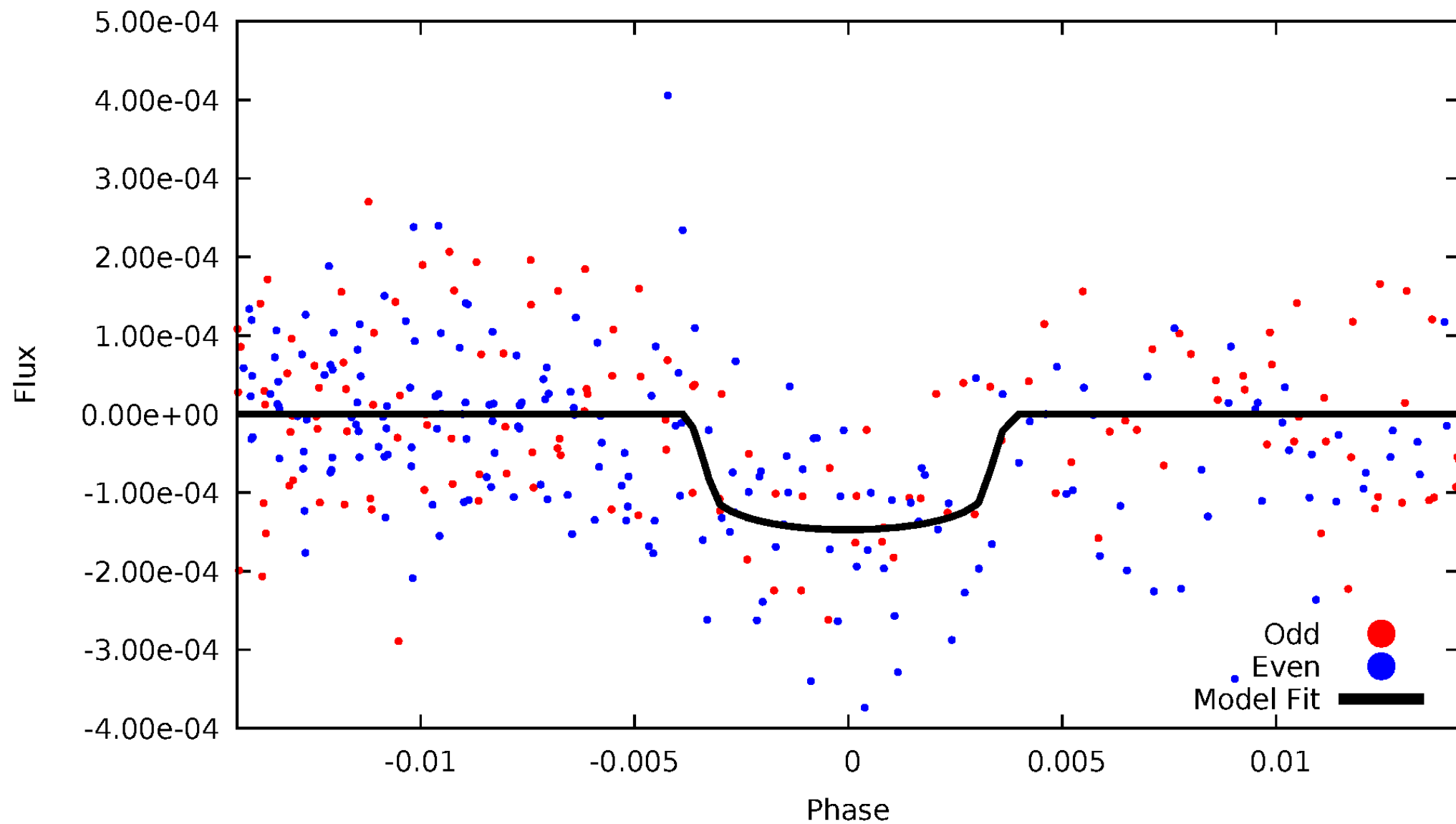


TCE 010353924-10



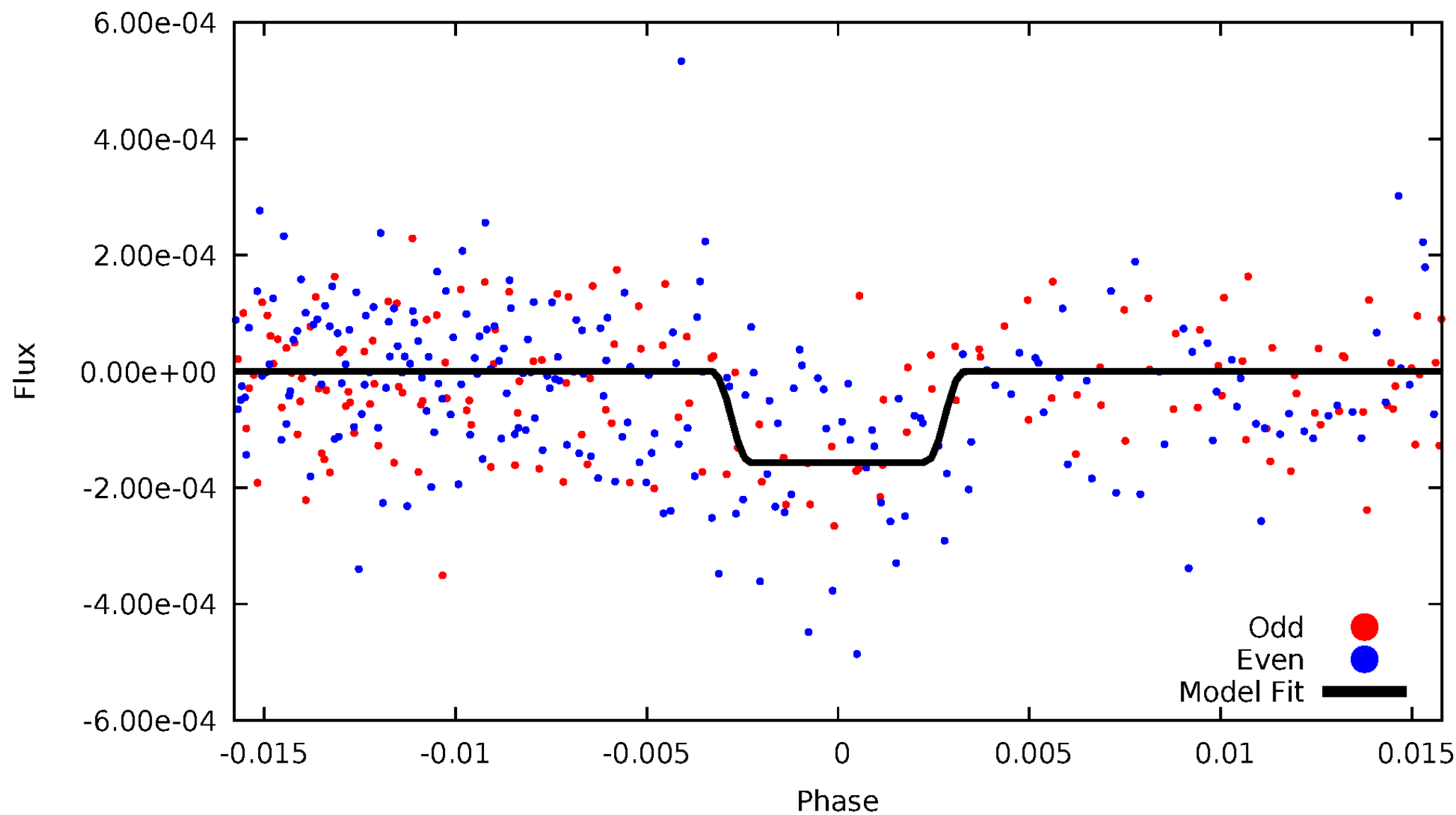
DV Odd/Even

TCE 010353924-10



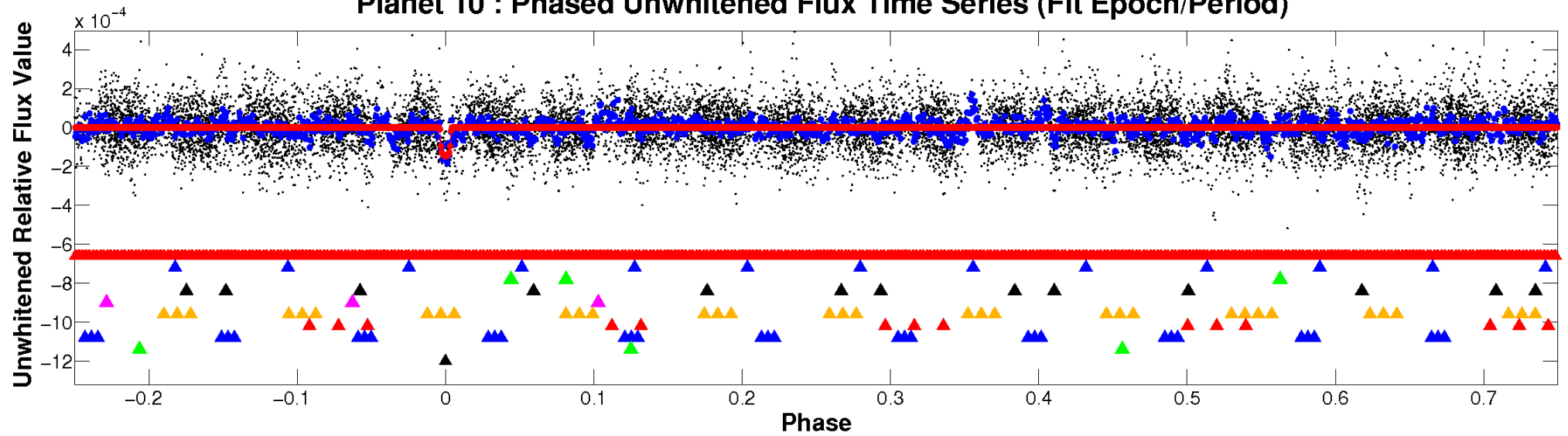
ALT Odd/Even

TCE 010353924-10

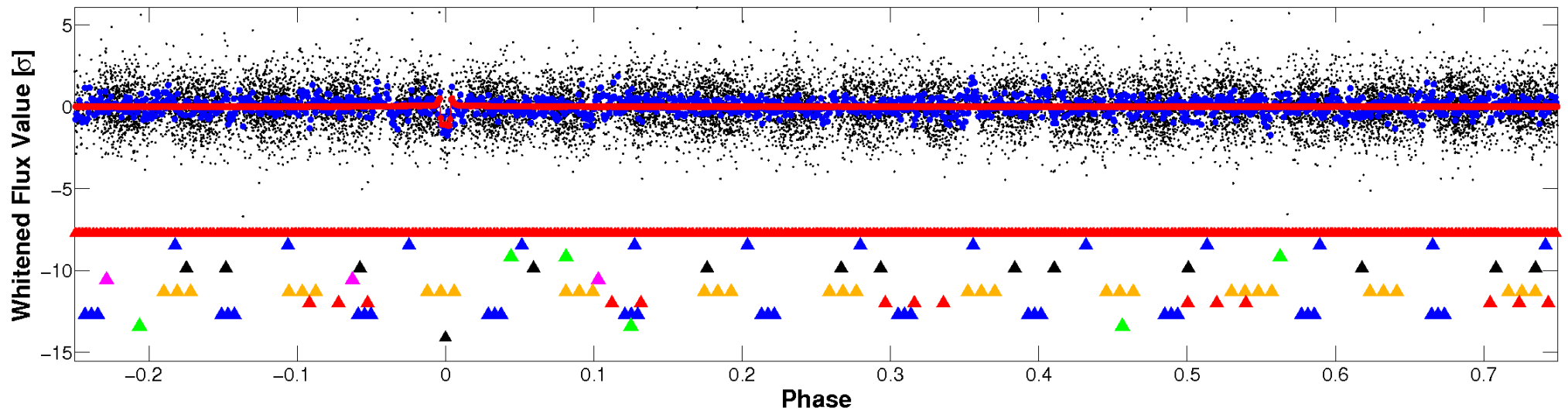


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

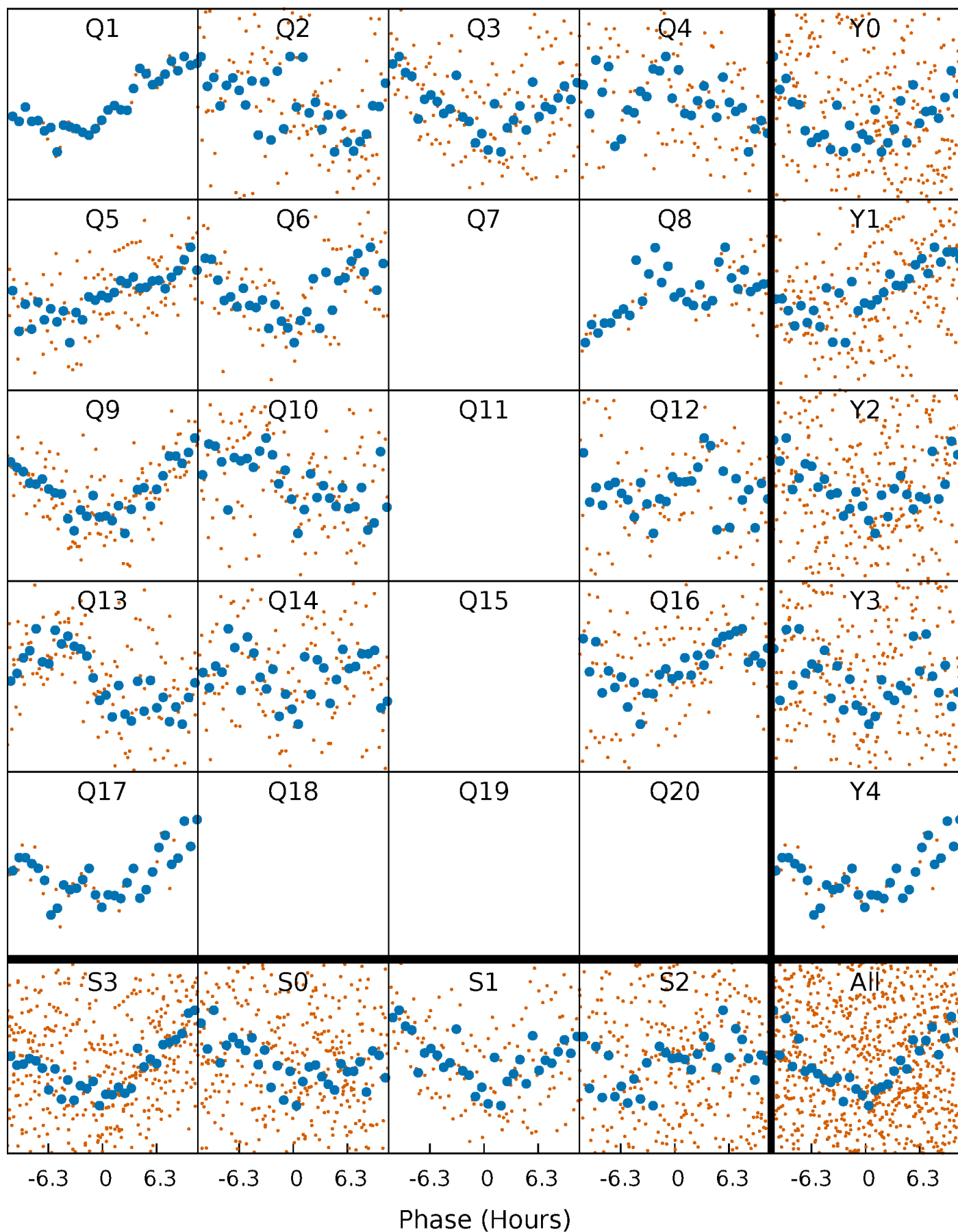


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



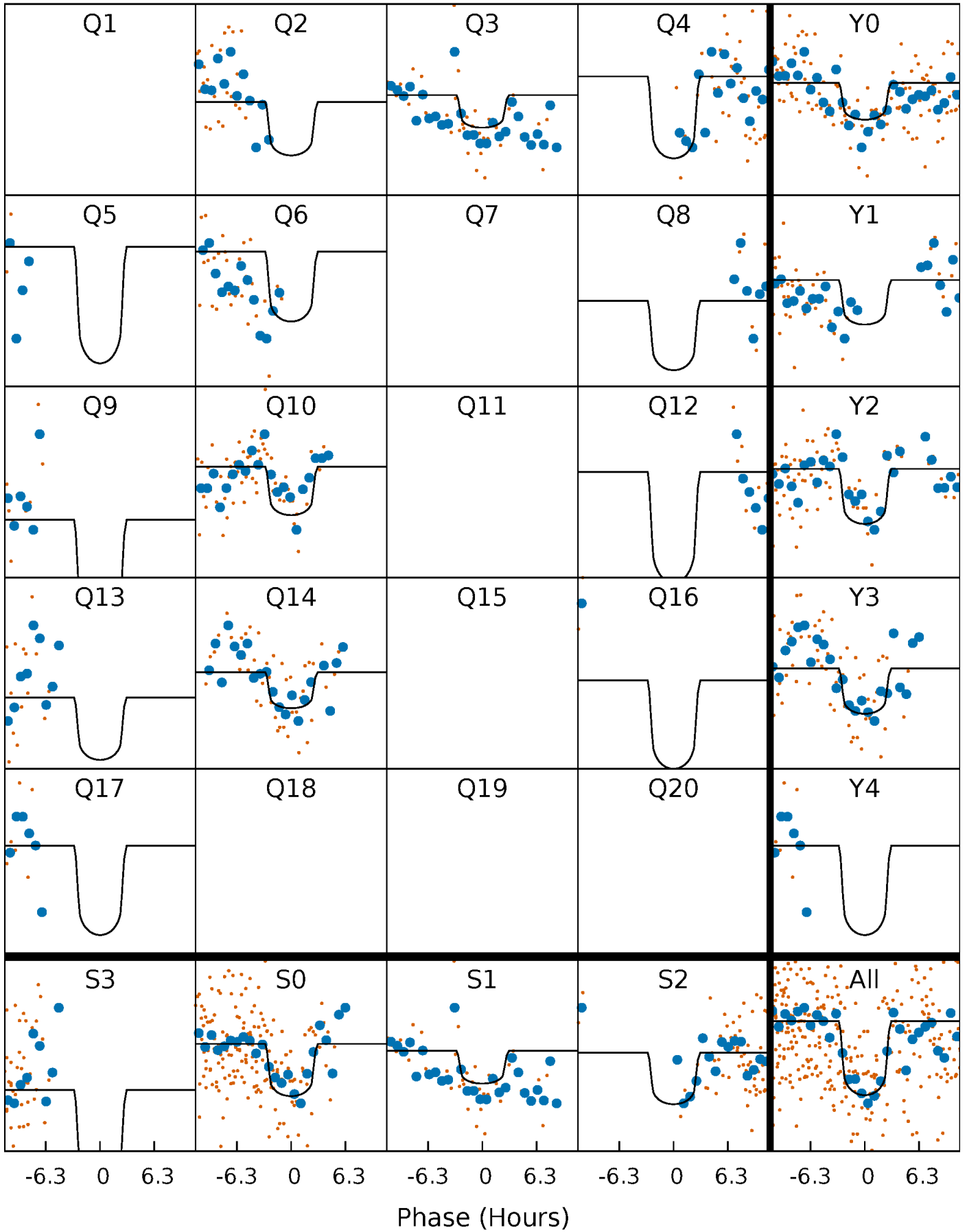
PDC Quarter-Phased Transit Curves

TCE 010353924-10 P= 32.358398 Days $T_0=148.678267$ (BKJD)



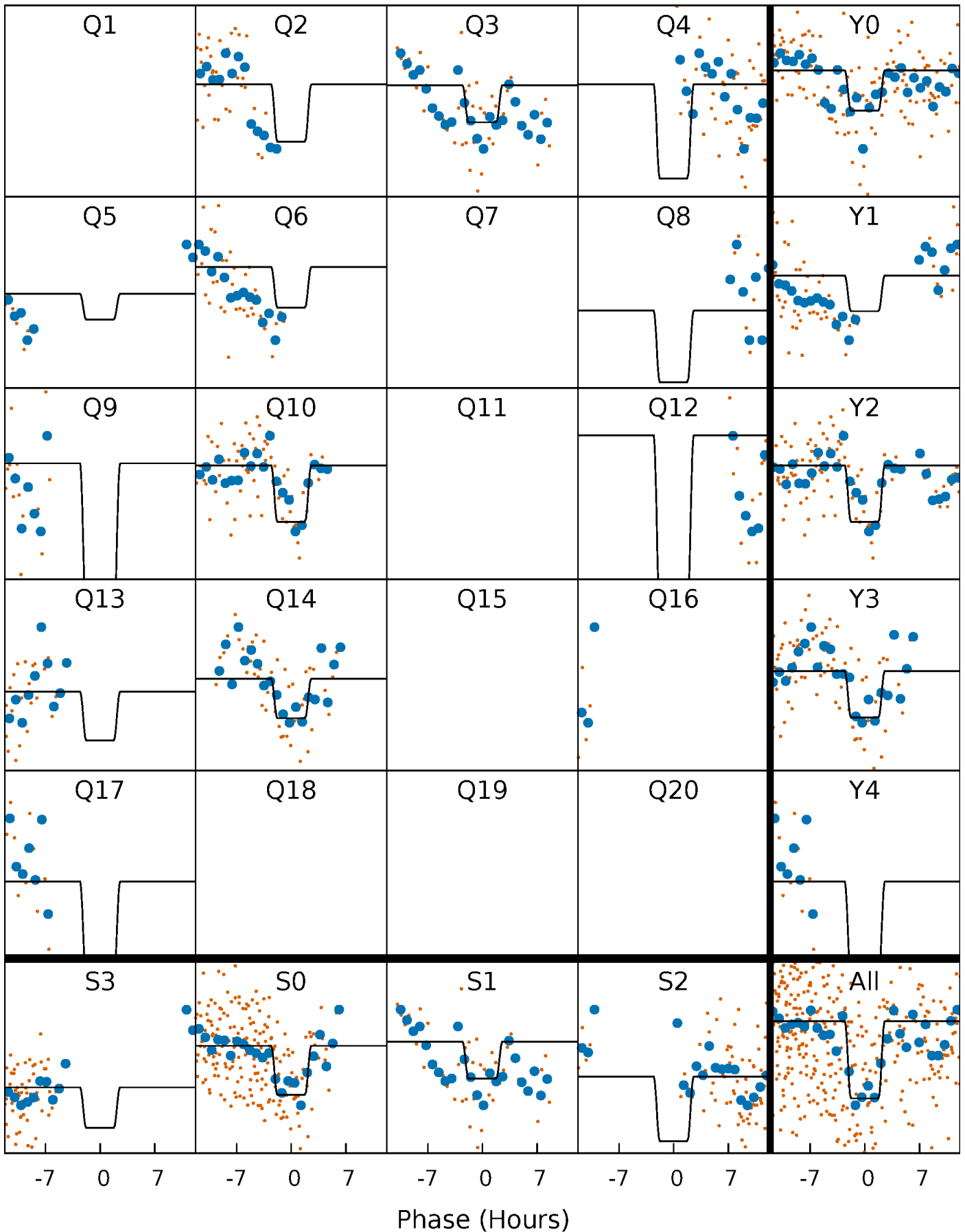
DV Quarter-Phased Transit Curves

TCE 010353924-10 P= 32.358398 Days $T_0=148.678267$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

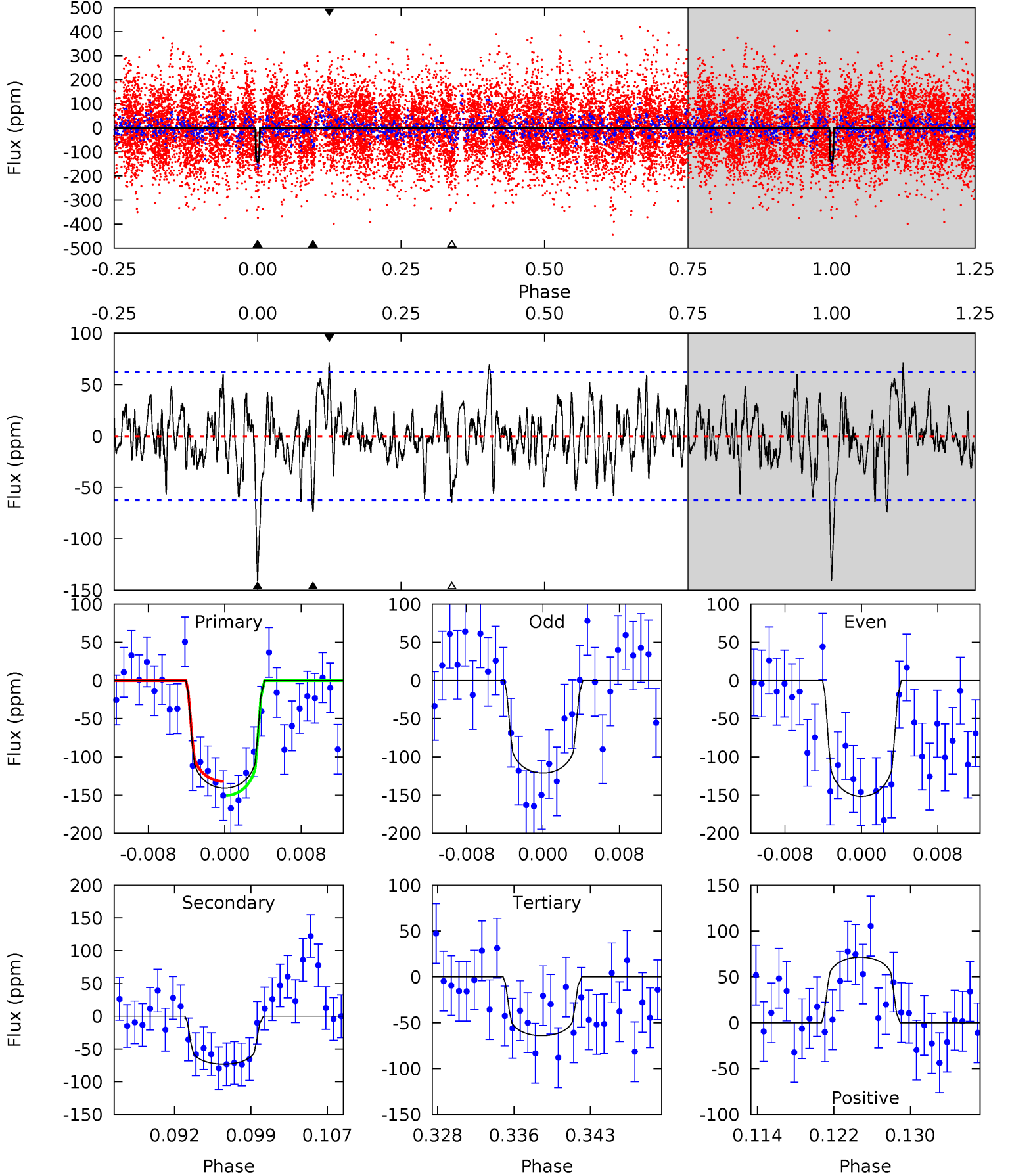
TCE 010353924-10 P= 32.358136 Days $T_0=148.675867$ (BKJD)



DV Model-Shift Uniqueness Test

010353924-10, P = 32.358398 Days, E = 116.319869 Days

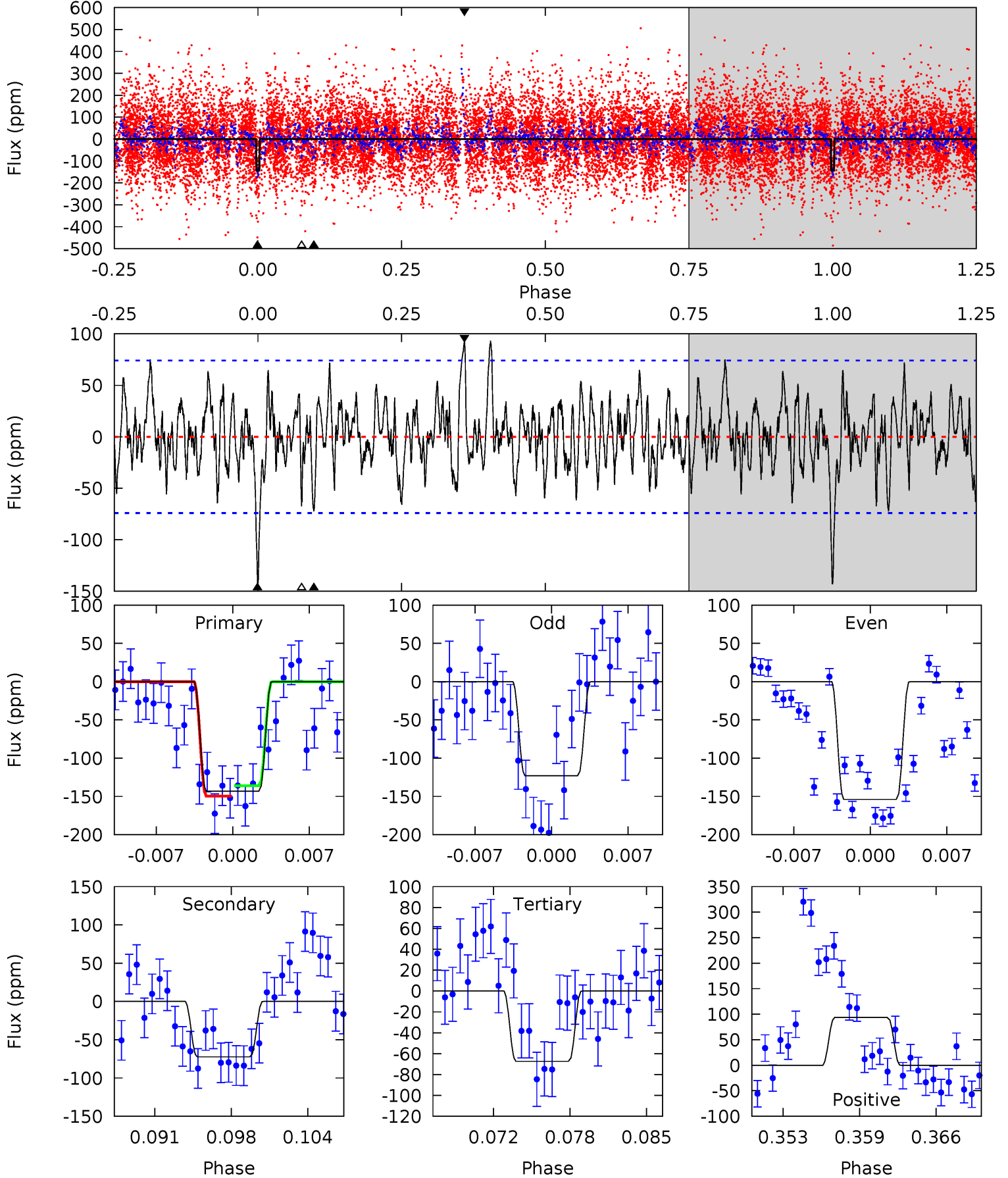
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	5.96	5.22	5.80	5.08	2.67	1.78	6.23	5.65	0.74	0.16	1.21	0.98	0.34	0.75



Alt Model-Shift Uniqueness Test

010353924-10, P = 32.358136 Days, E = 116.317731 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.88	4.99	4.65	6.45	5.11	2.72	1.71	5.23	3.42	0.35	-1.46	1.03	1.16	0.40	0.47



Stellar Parameters For KIC 010353924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6654^{+187}_{-258}	$4.113^{+0.204}_{-0.185}$	$0.020^{+0.250}_{-0.350}$	$1.712^{+0.534}_{-0.437}$	$1.386^{+0.192}_{-0.235}$	$0.389^{+0.450}_{-0.193}$
	+3%/-4%	+5%/-4%	+1250%/-1750%	+31%/-26%	+14%/-17%	+116%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010353924-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-73 ± 12	$3.03^{+2.57}_{-2.00}$	1136^{+92}_{-84}	4852^{+3737}_{-977}	215^{+1616}_{-152}
Alt.	-72 ± 14	$3.23^{+2.64}_{-2.07}$	1133^{+99}_{-88}	4760^{+3244}_{-954}	190^{+1296}_{-136}

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 $A_{obs} \gg 1.0$

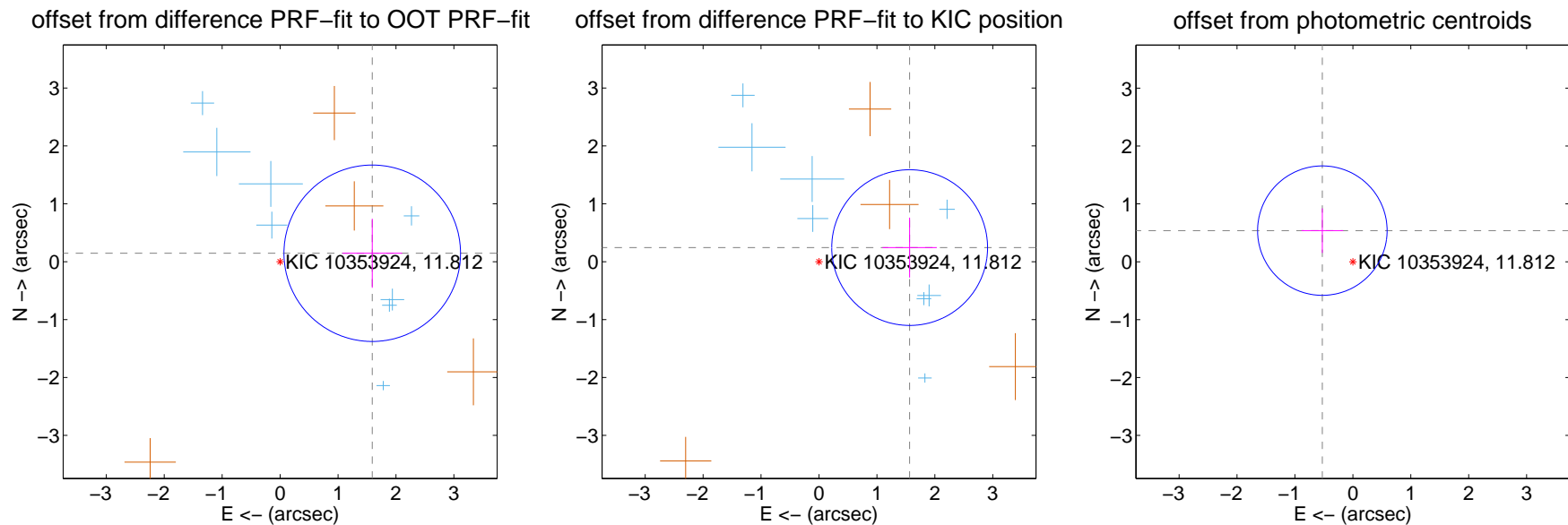
DV Centroid Data

Supplemental centroid analysis for 010353924-10. **Kepler magnitude: 11.81.** Transit SNR 9.05

There are 8 quarters with good PRF difference image offsets

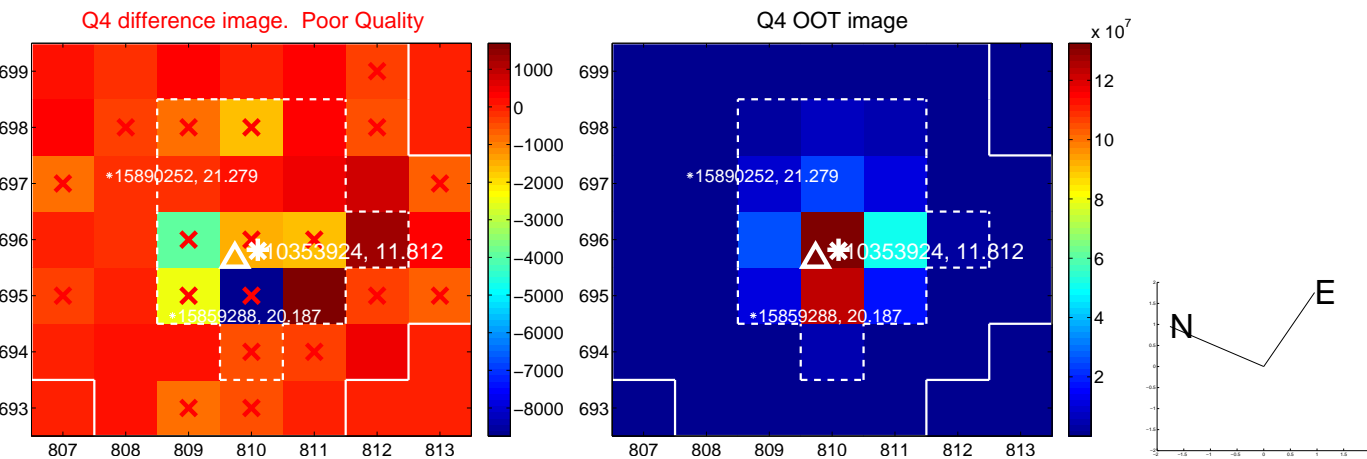
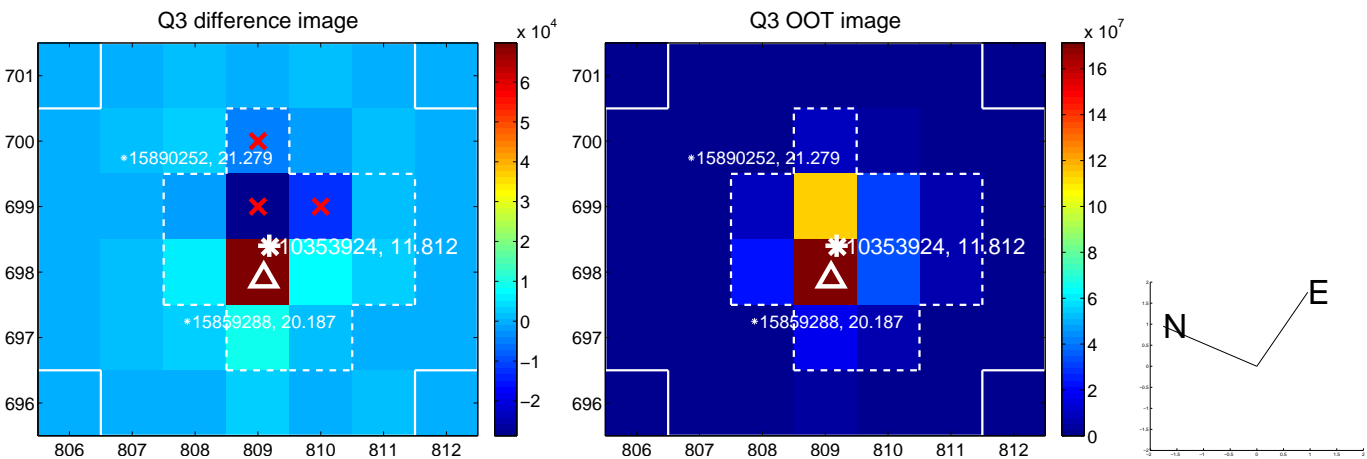
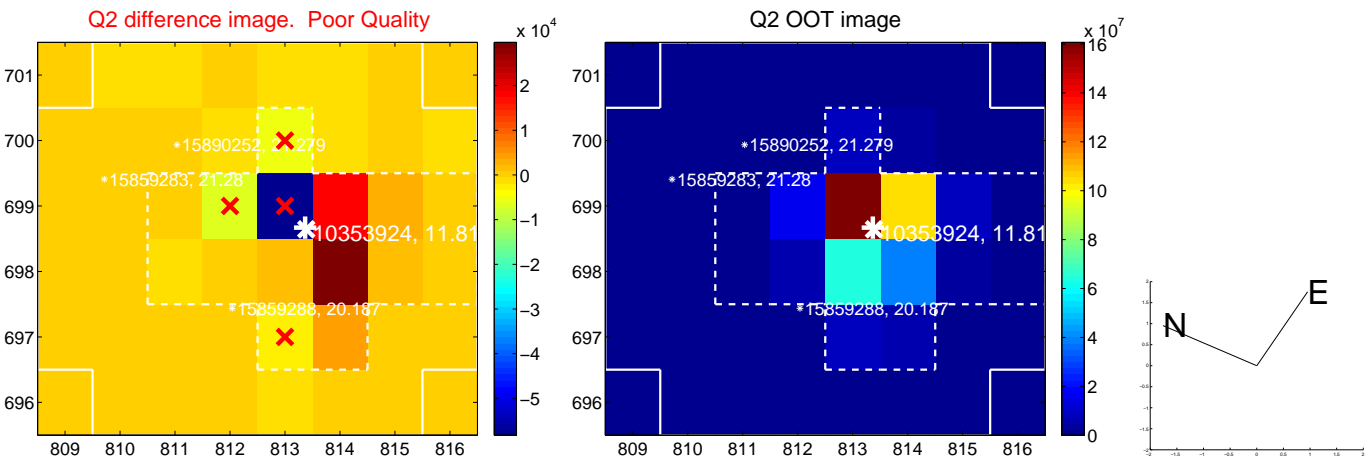
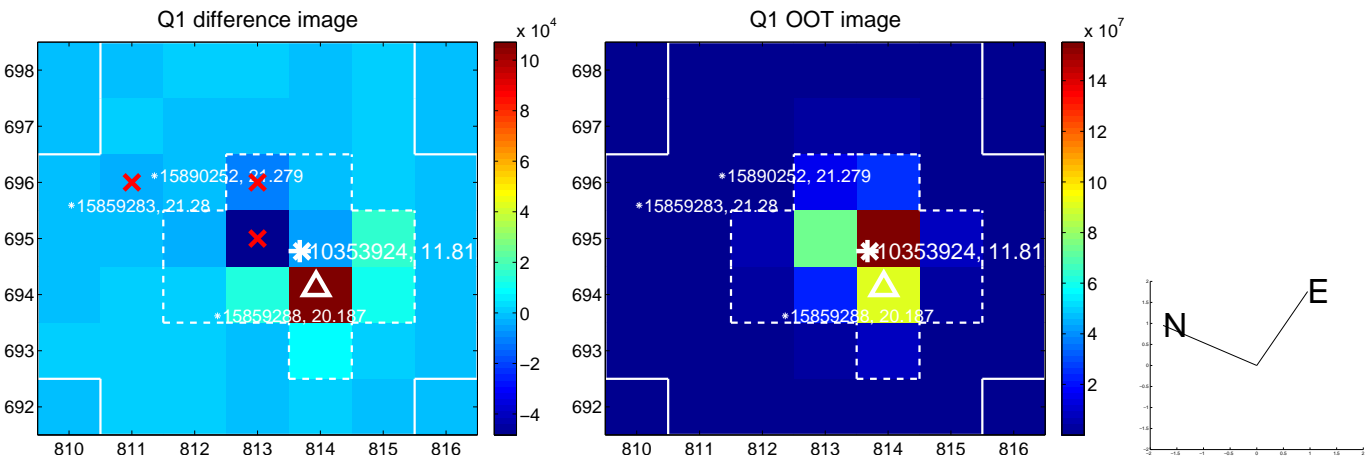
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.597 ± 0.508	3.14	-1.591 ± 0.516	0.146 ± 0.597
PRF-fit source offset from KIC position	1.584 ± 0.448	3.53	-1.565 ± 0.469	0.244 ± 0.517
photometric centroid source offset	0.75 ± 0.37	2.02	0.53 ± 0.36	0.54 ± 0.38

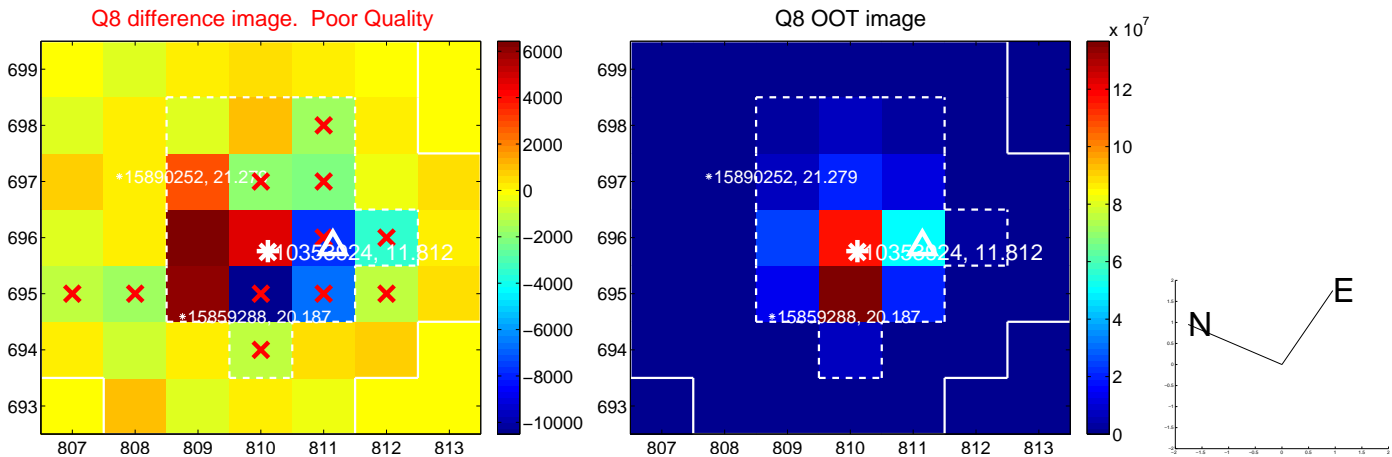
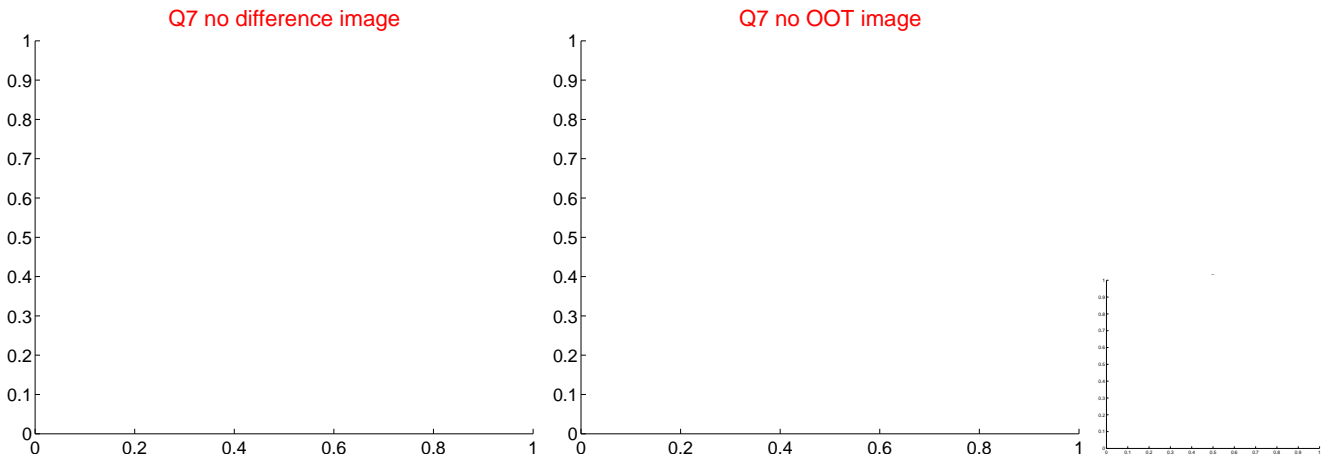
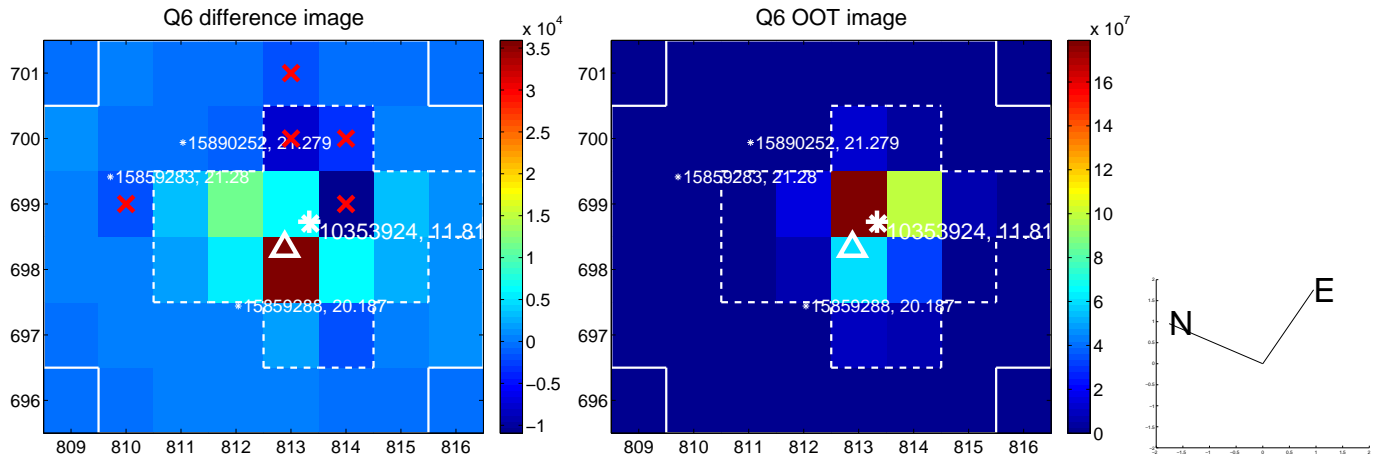
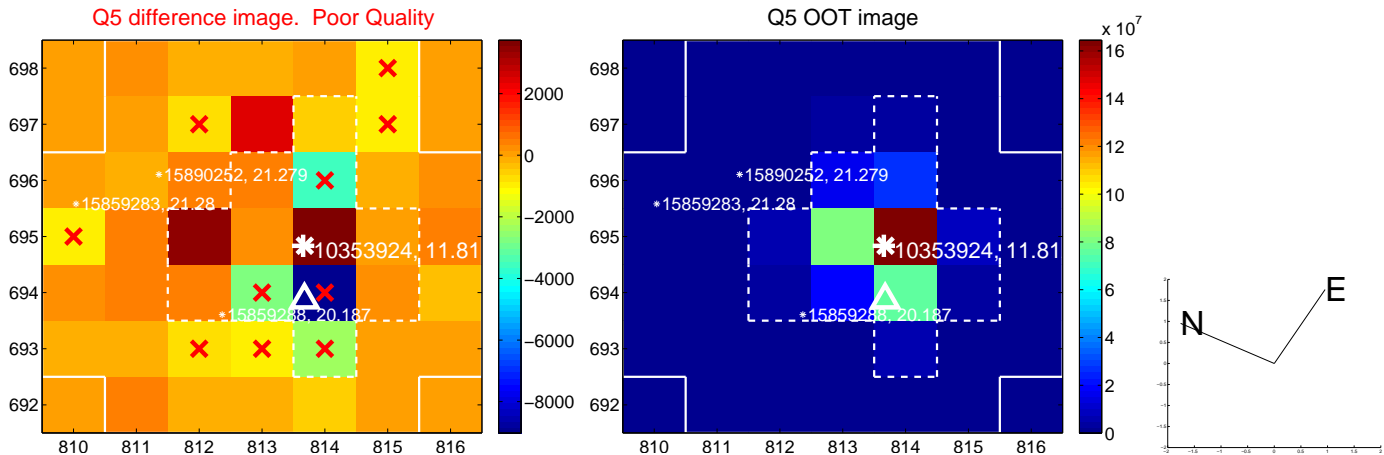


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

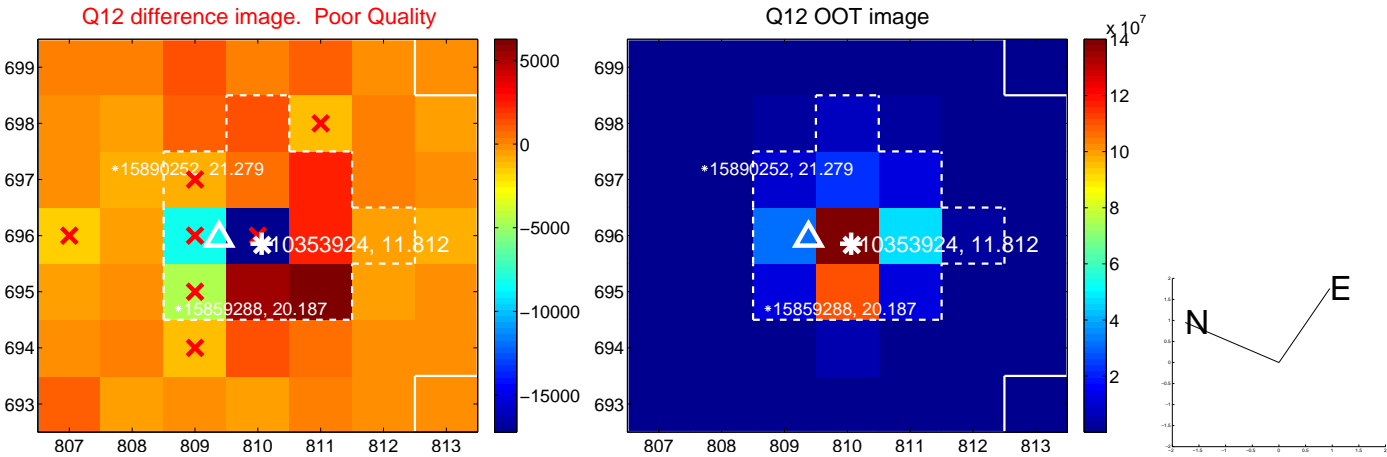
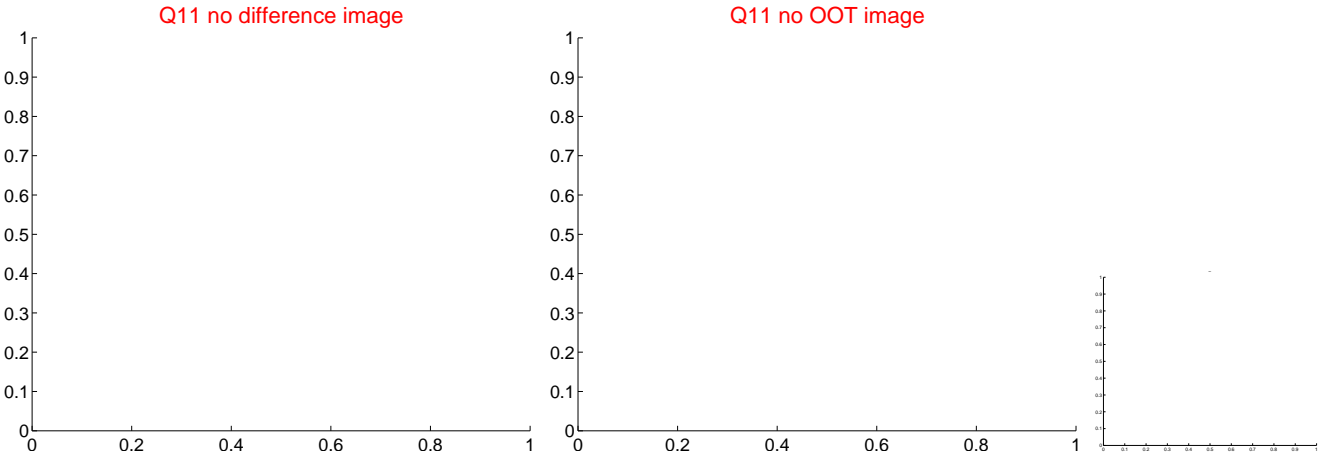
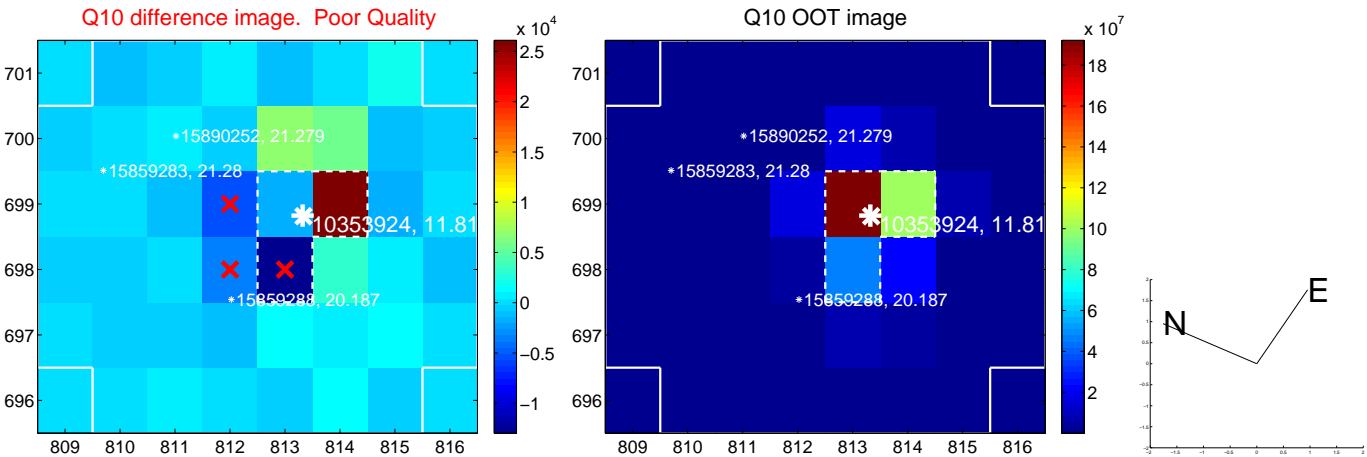
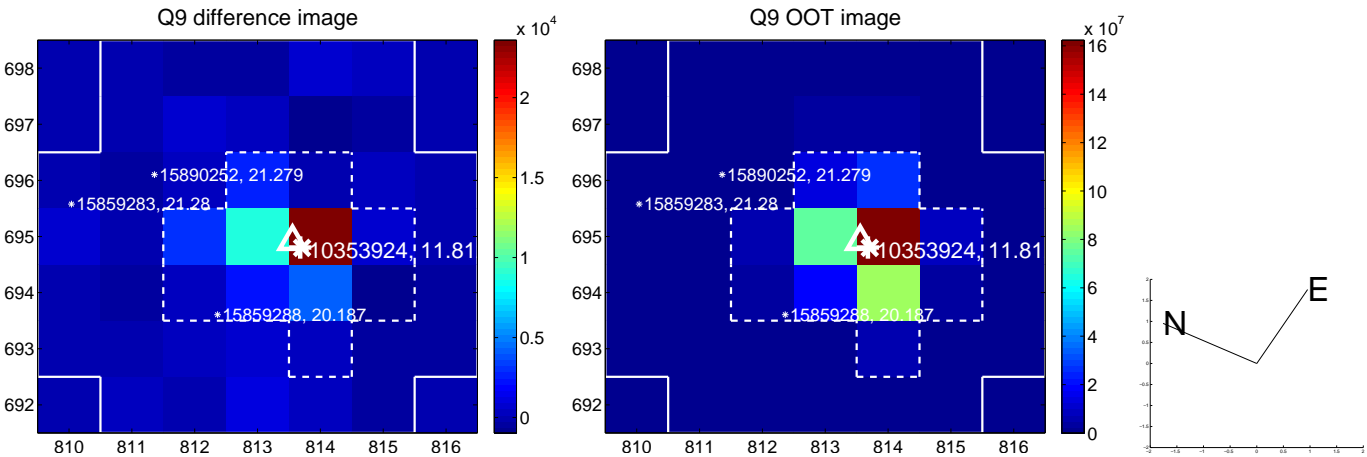
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



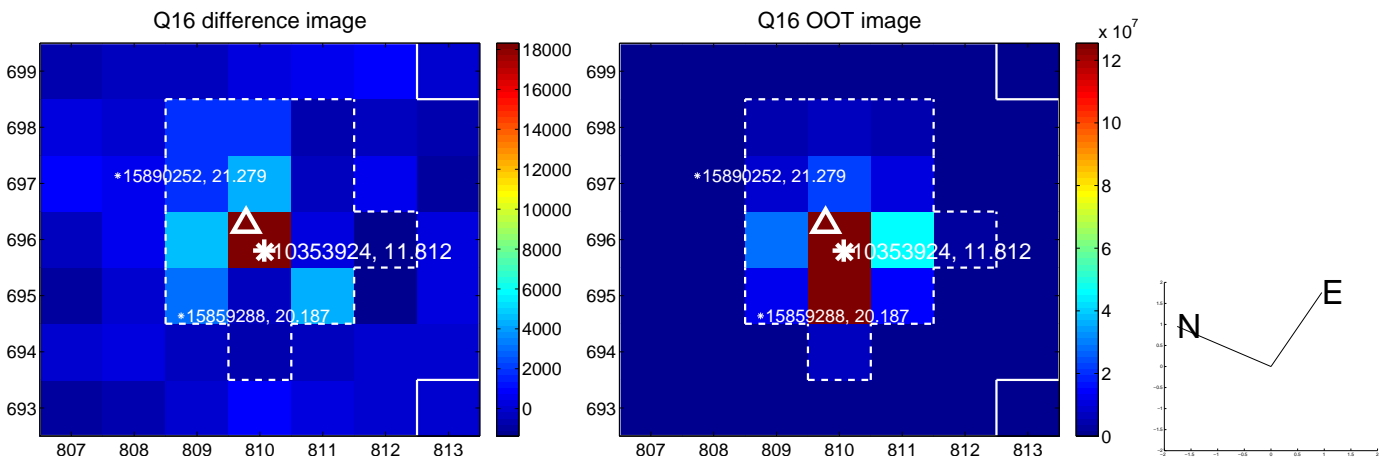
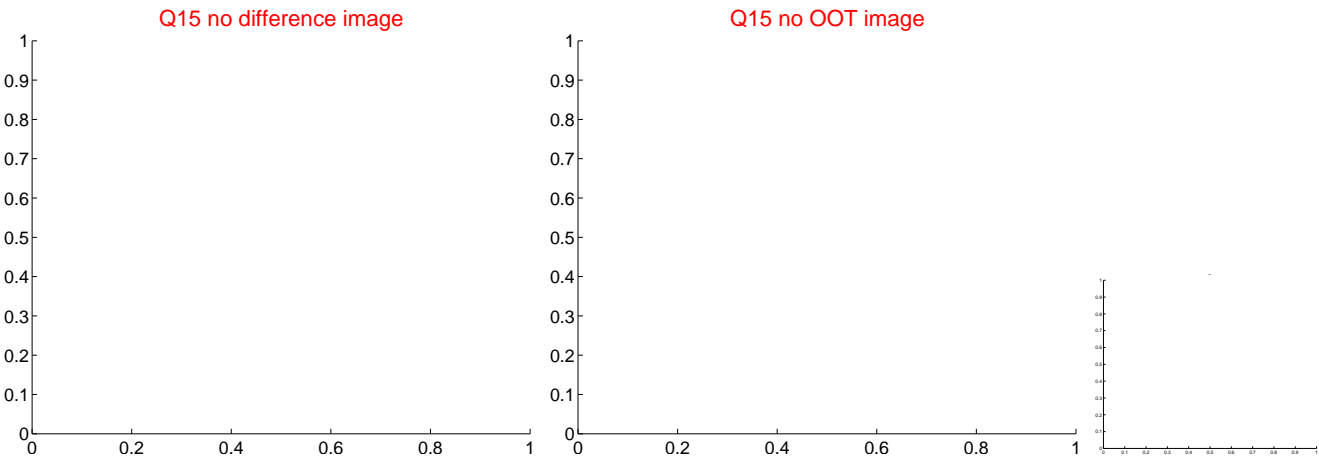
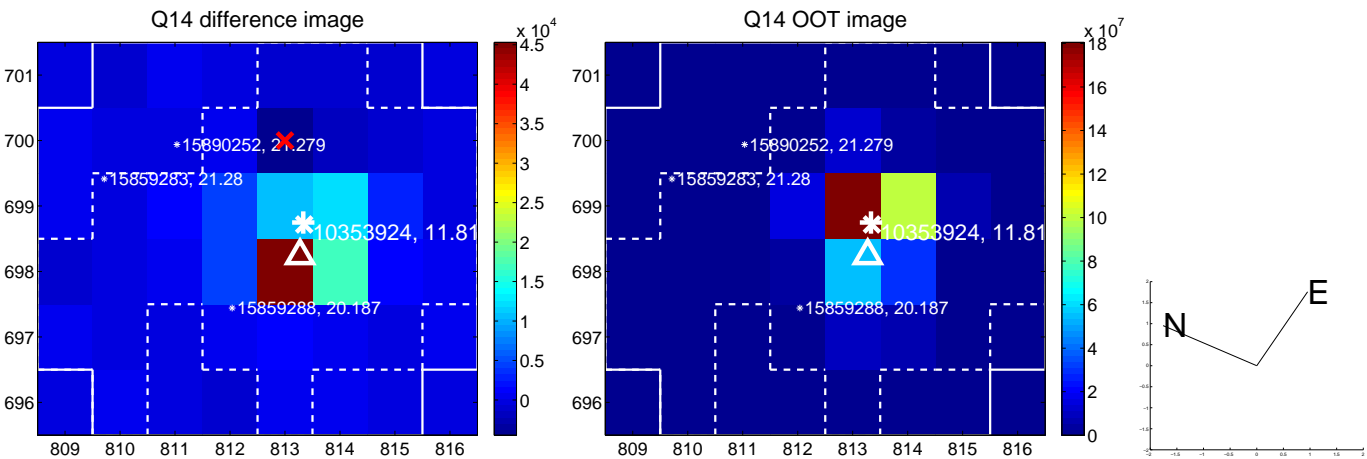
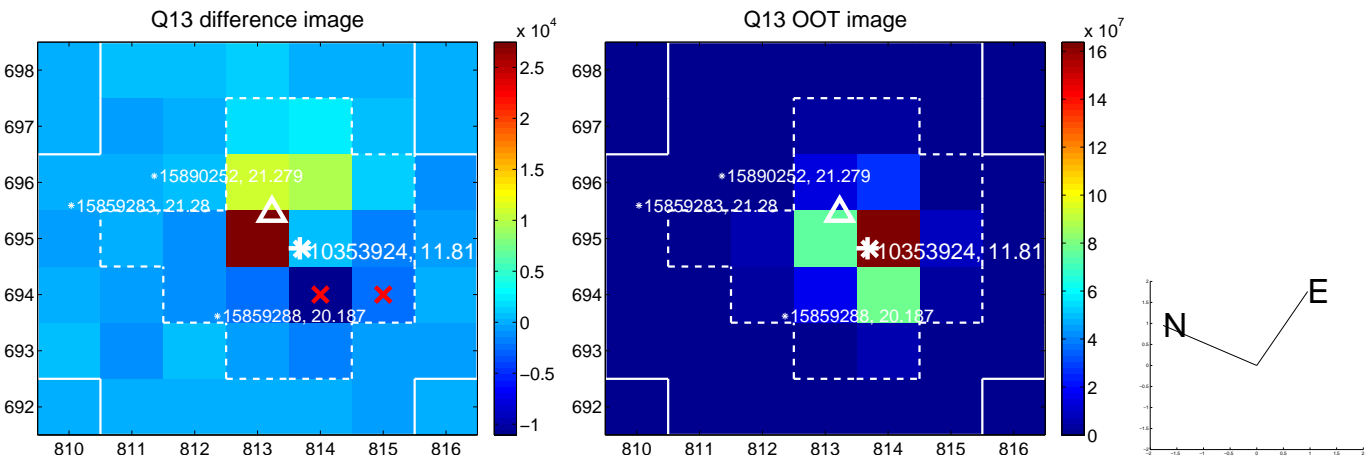
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



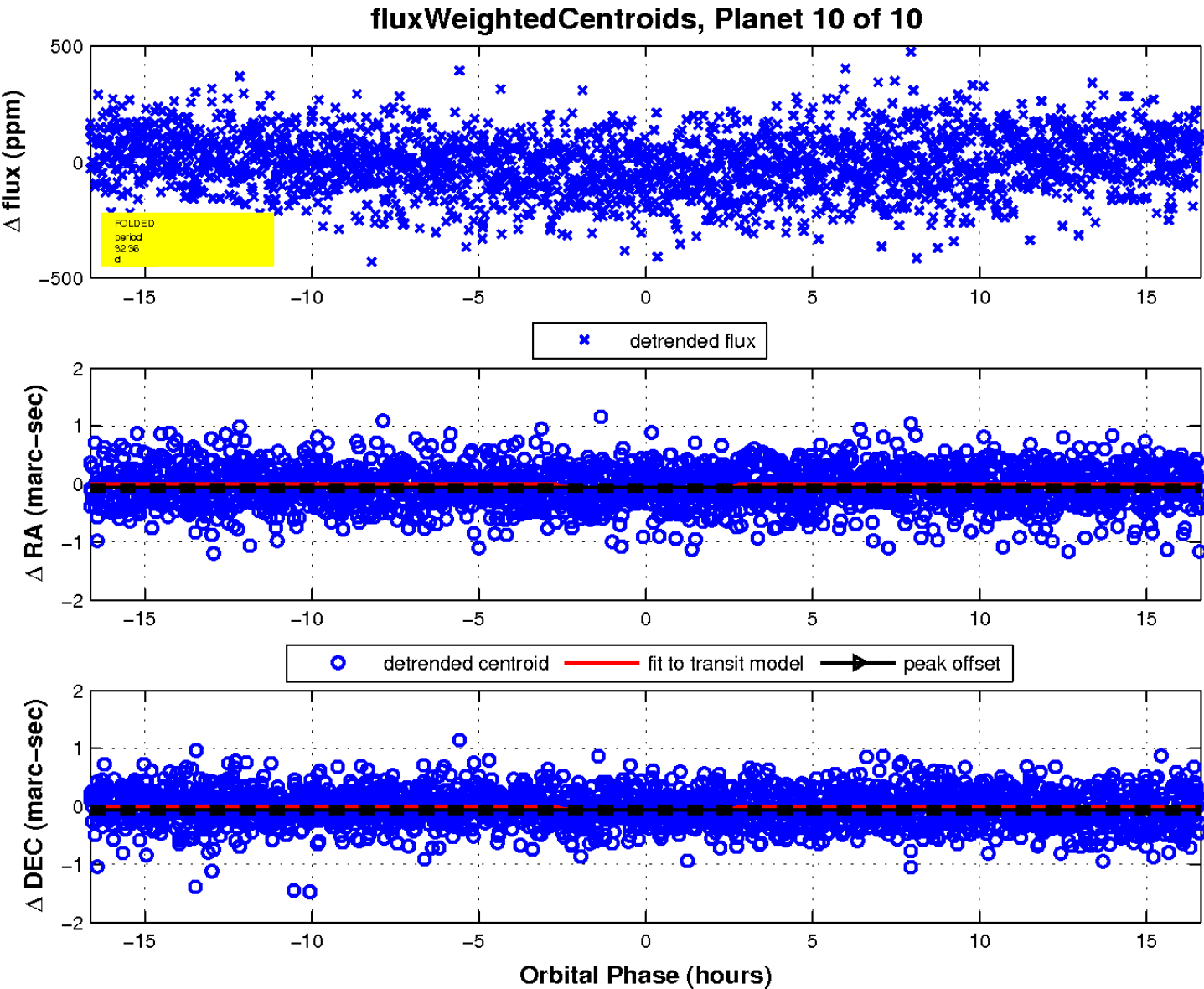
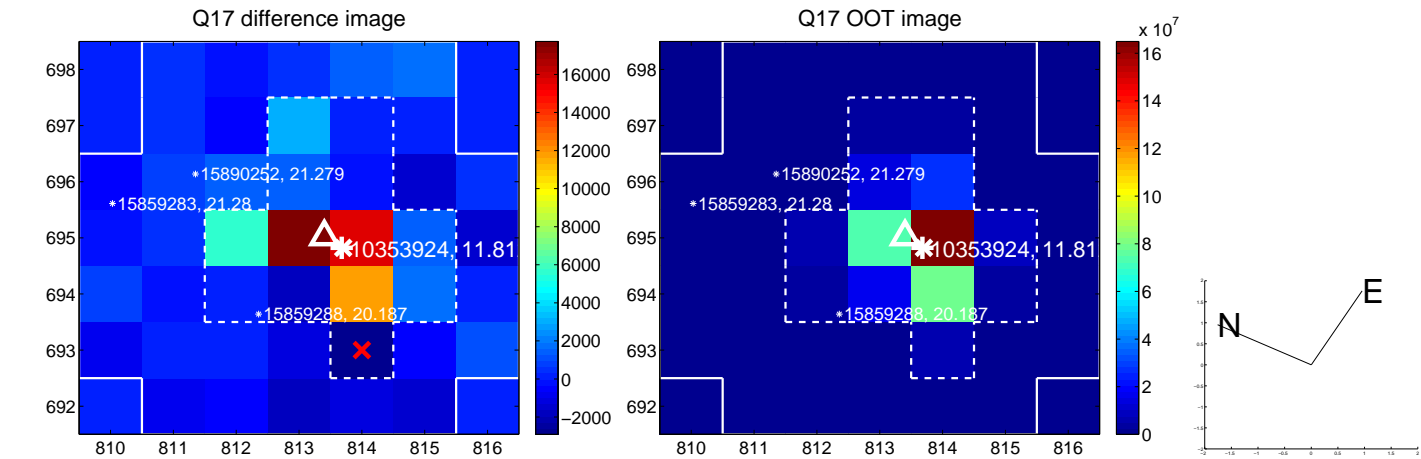
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

