

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})
004484251-01	OBS	No	1.927596	133.409729	62.5	11.096	10.7	13.4	1.61	6796	2.44	4419.88
004484251-02	OBS	No	187.518566	143.631143	246.3	20.390	11.4	6.7	1.61	6796	2.70	9.88
004484251-03	OBS	No	131.156980	172.932168	354.5	3.277	9.8	9.3	1.61	6796	3.72	15.91
004484251-04	OBS	No	212.126737	208.397966	52.3	128.241	9.8	1.4	1.61	6796	1.22	8.38
004484251-05	OBS	No	157.257304	150.611824	337.5	20.471	13.4	7.2	1.61	6796	3.14	12.49
004484251-06	OBS	No	23.480828	137.485920	112.3	23.308	8.4	6.3	1.61	6796	1.84	157.69
004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

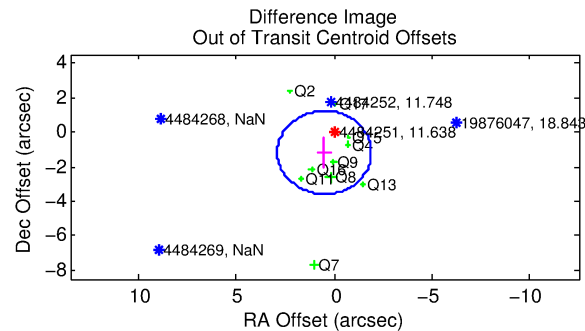
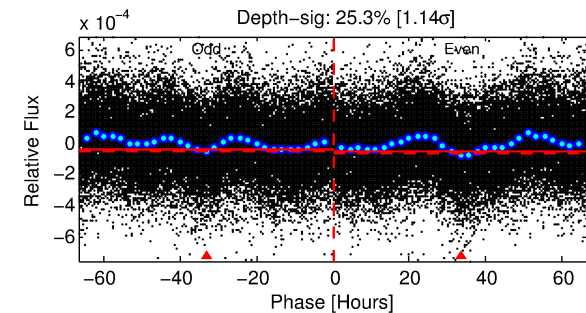
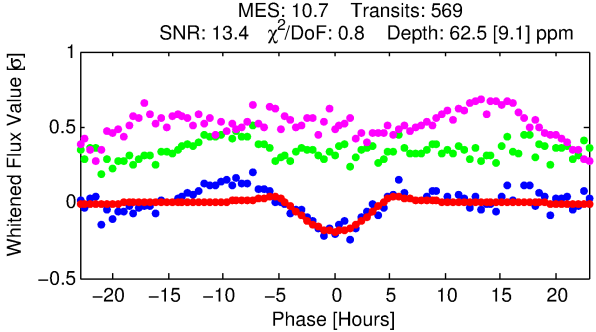
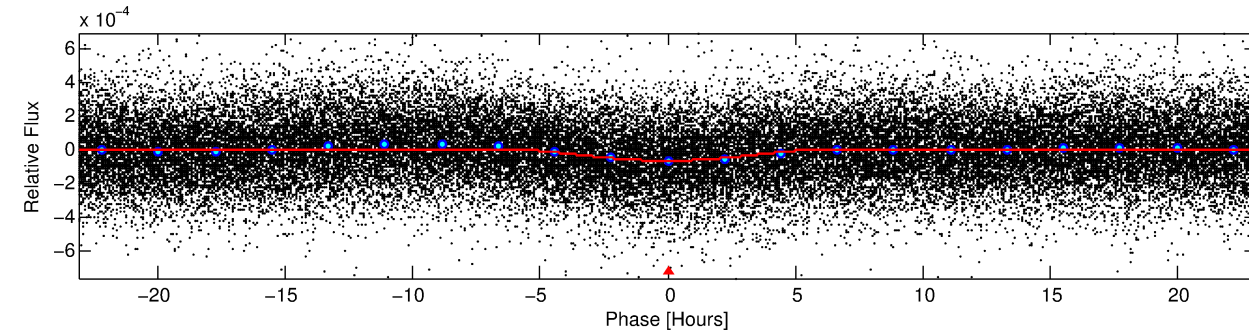
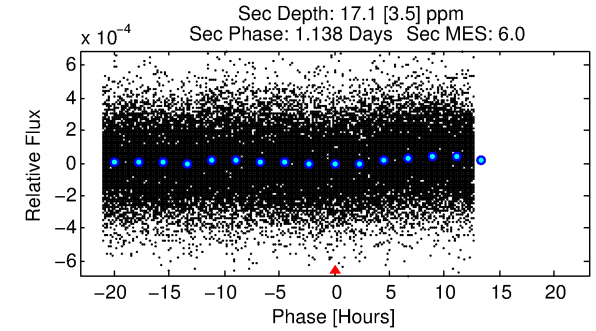
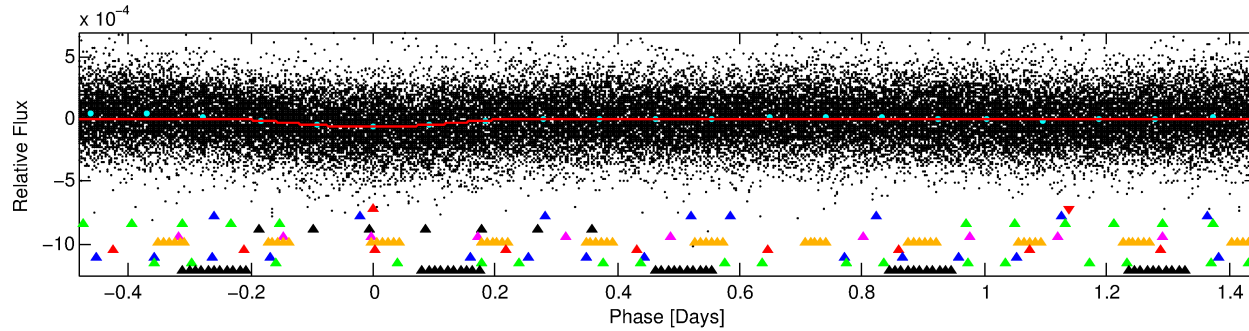
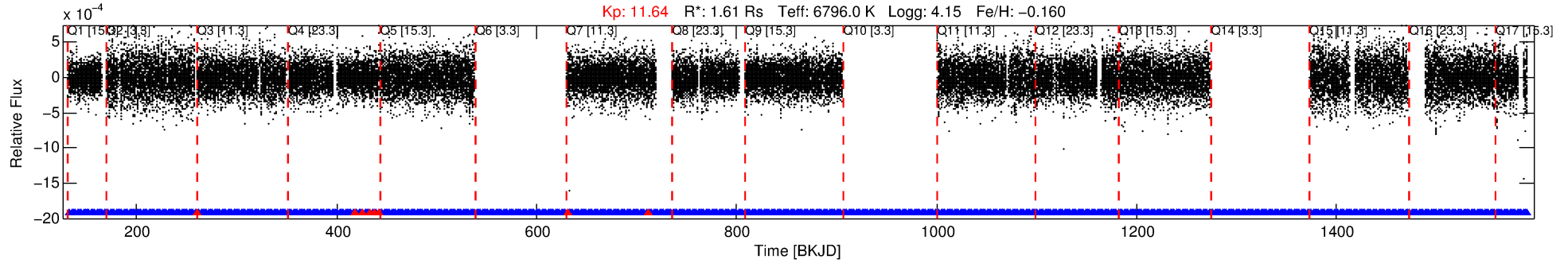
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-01

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 1 of 10 Period: 1.928 d



DV Fit Results:

Period = 1.92760 [0.00004] d
Epoch = 133.4097 [0.0135] BKJD
Rp/R* = 0.0139 [0.0160]
a/R* = 1.03 [0.00]
b = 1.00 [0.03]
Seff = 4419.88 [971.26]
Teq = 2079 [114] K
Rp = 2.44 [2.85] Re
a = 0.0334 [0.0050] AU
Ag = 1.77 [4.11] [0.19σ]
Teffp = 3705 [2147] K [0.76σ]

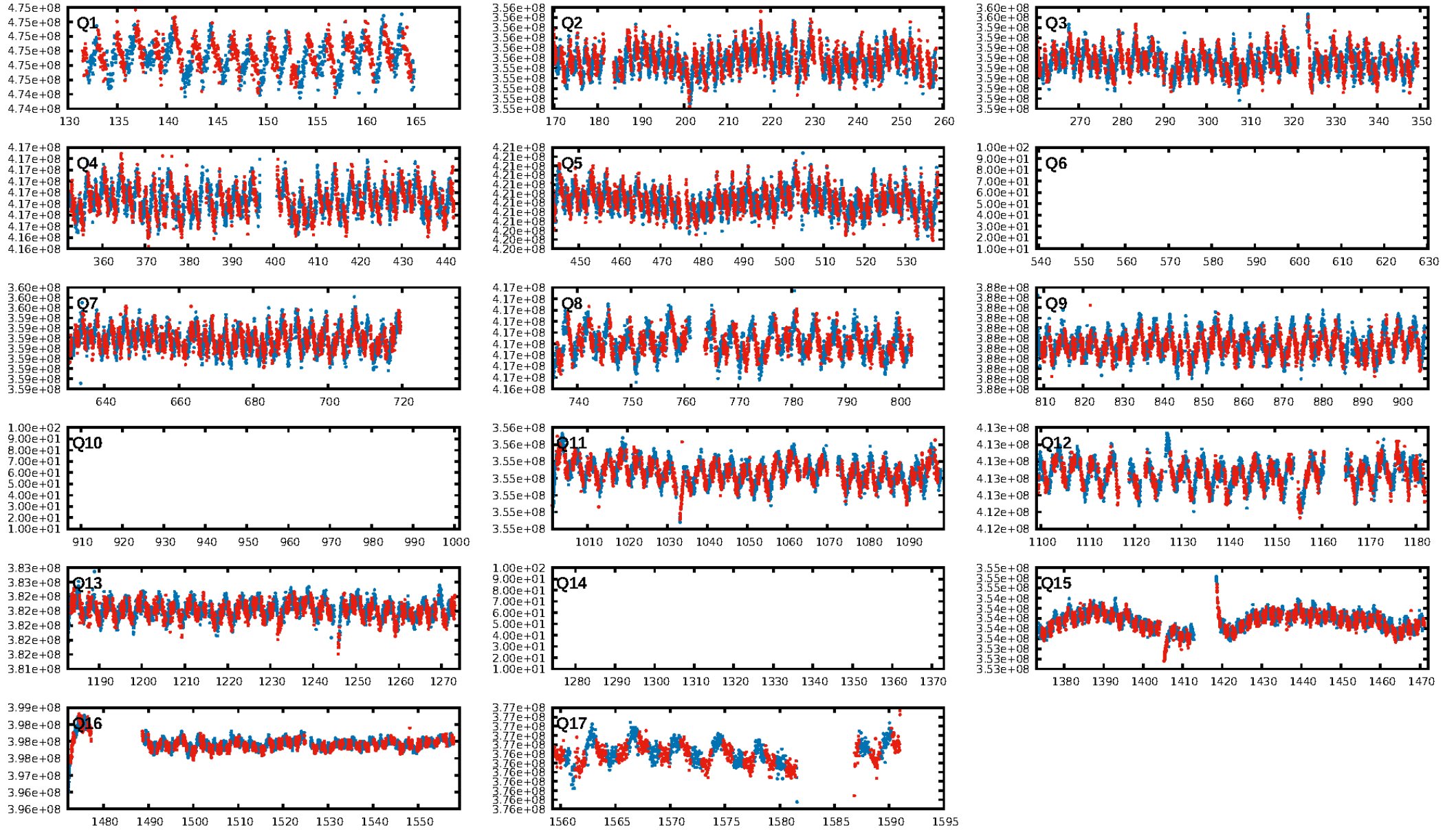
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [20.04σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [528/536]
GhostDiagnostic-chr: 4.421
Centroid-sig: N/A
Centroid-so: 0.879 arcsec [3.83σ]
OotOffset-rm: 1.288 arcsec [1.61σ]
KicOffset-rm: 1.243 arcsec [1.94σ]
OotOffset-st: 1/3/3/3 [10]
KicOffset-st: 1/3/3/3 [10]
DiffImageQuality-fgm: 0.80 [8/10]
DiffImageOverlap-fno: 1.00 [14/14]

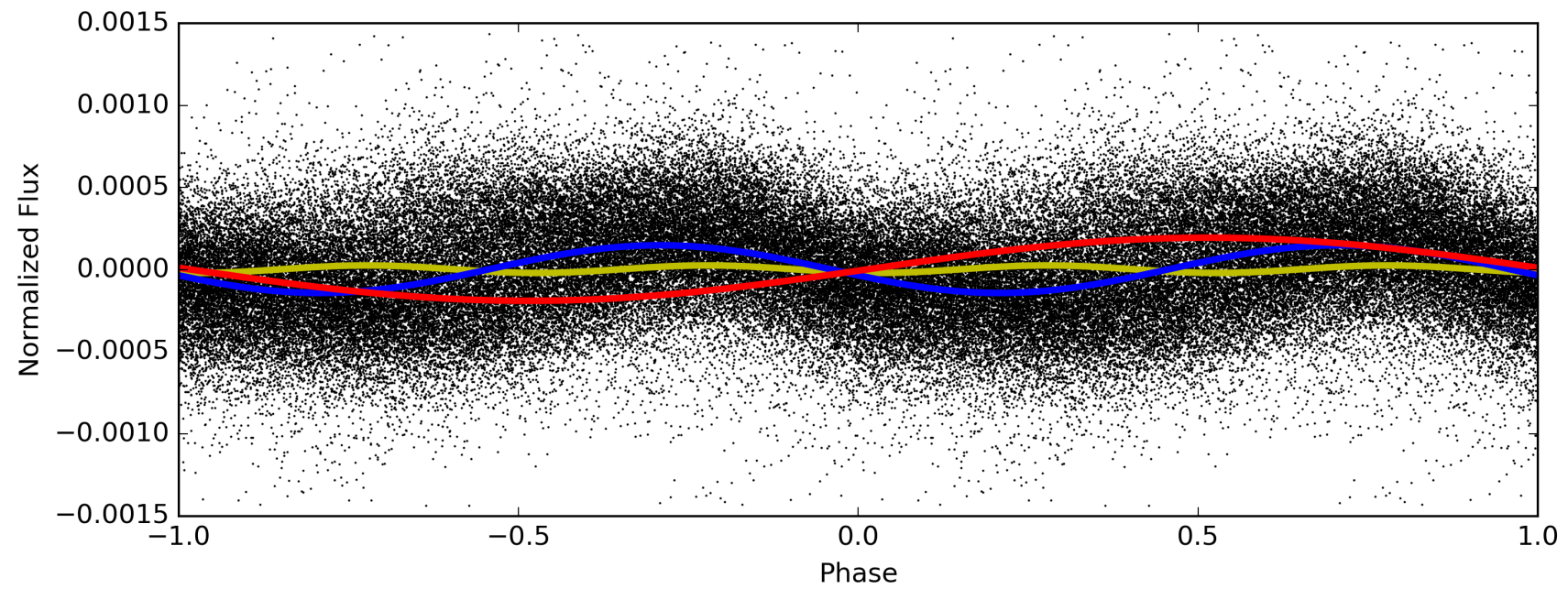
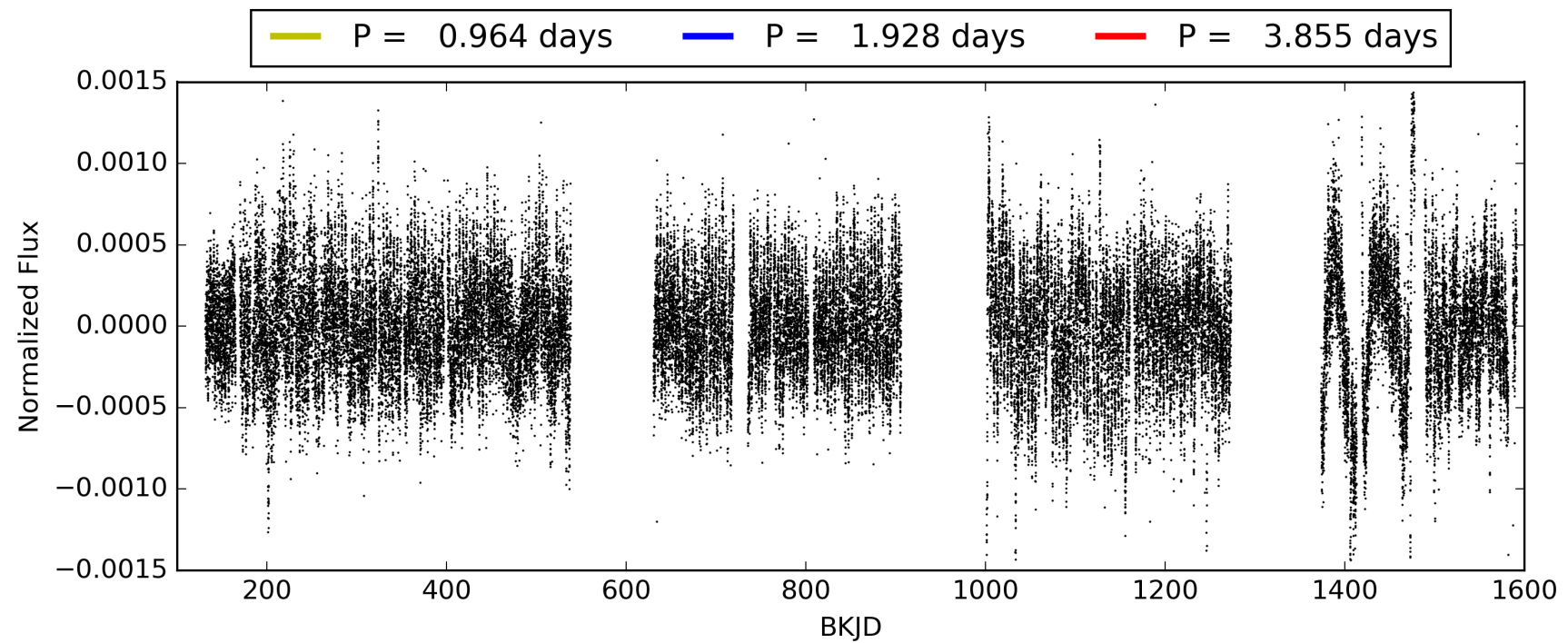
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:12:34 Z

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

TCE 004484251-01, PDC Light Curves

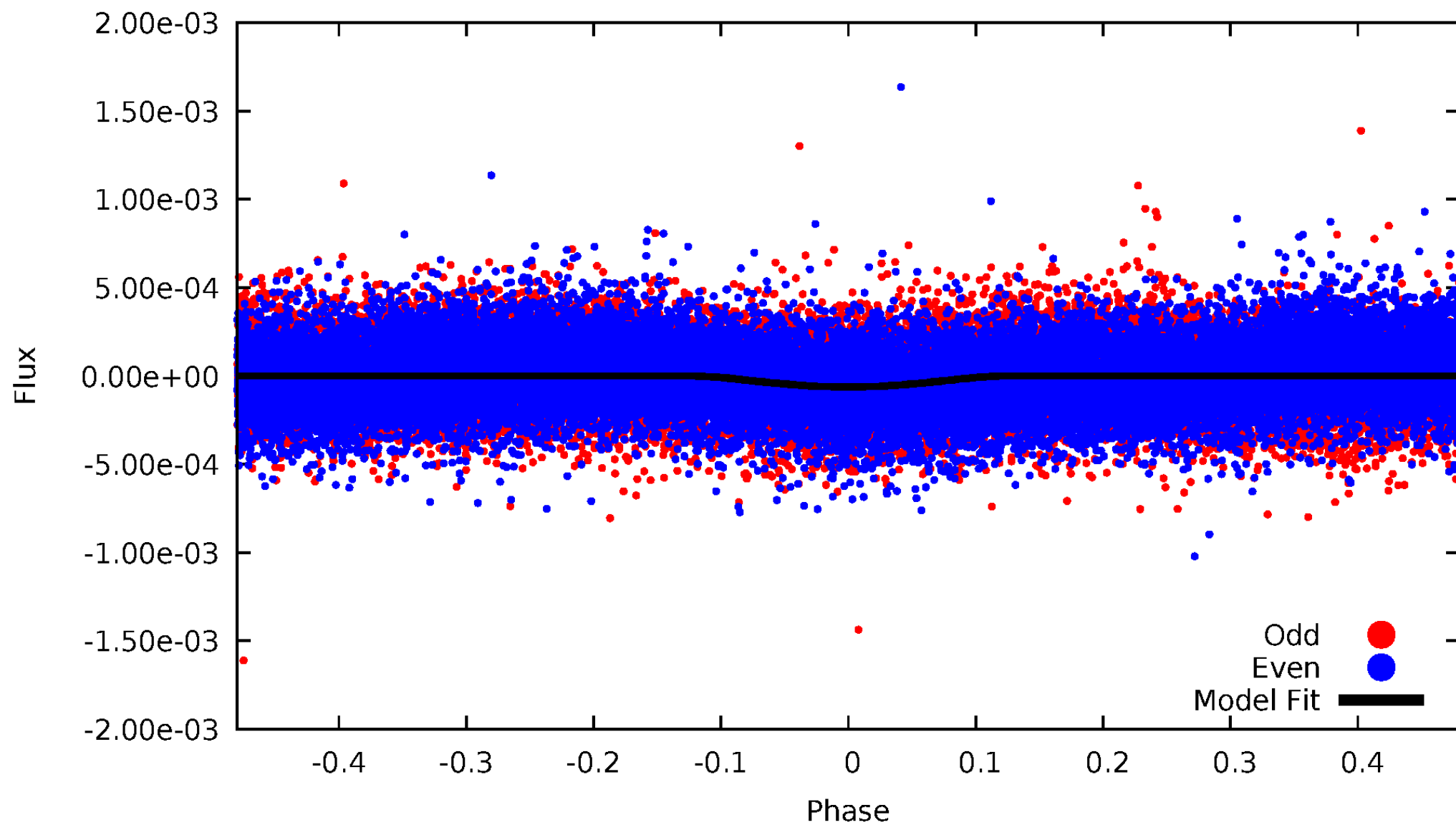


TCE 004484251-01



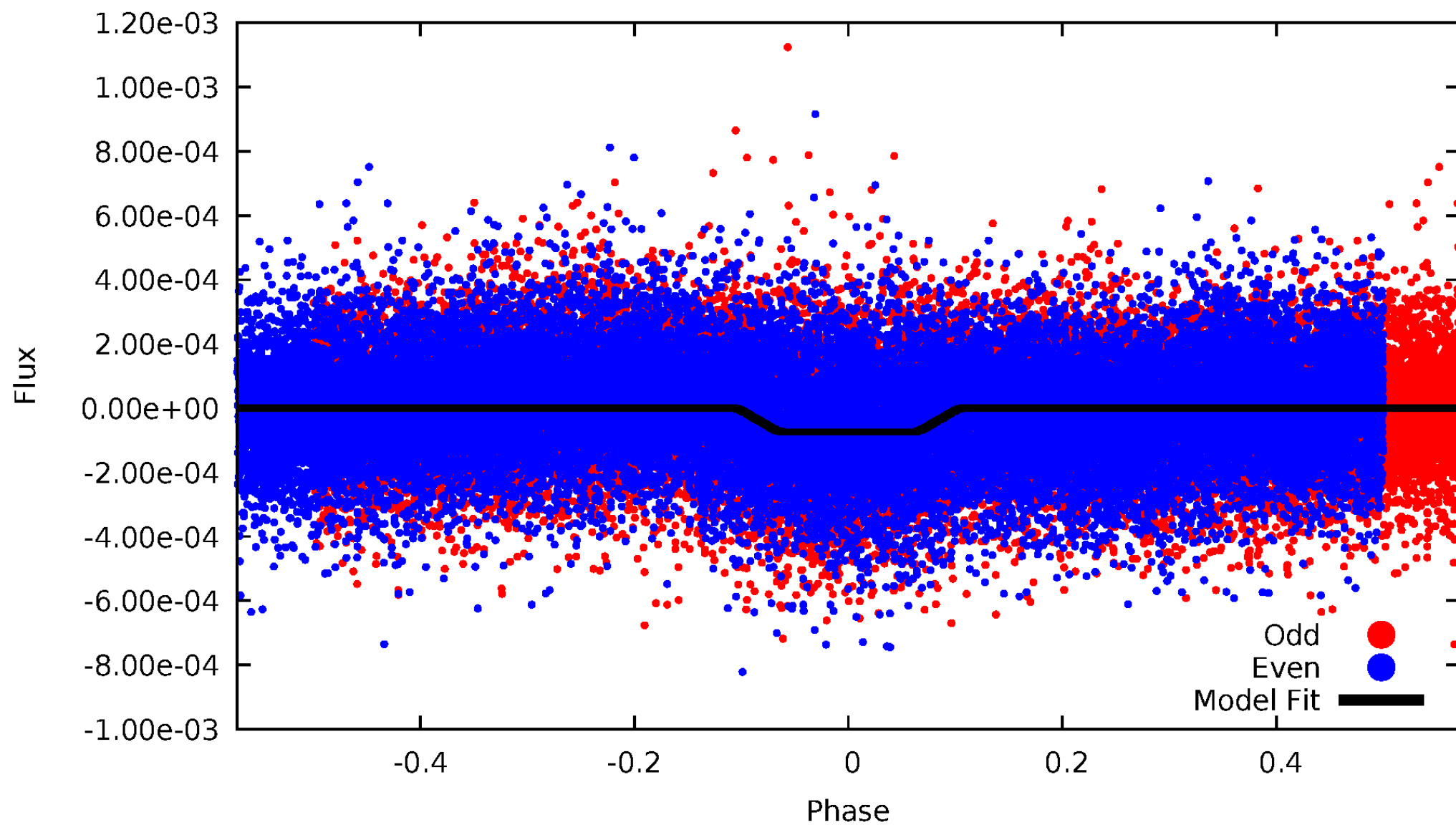
DV Odd/Even

TCE 004484251-01



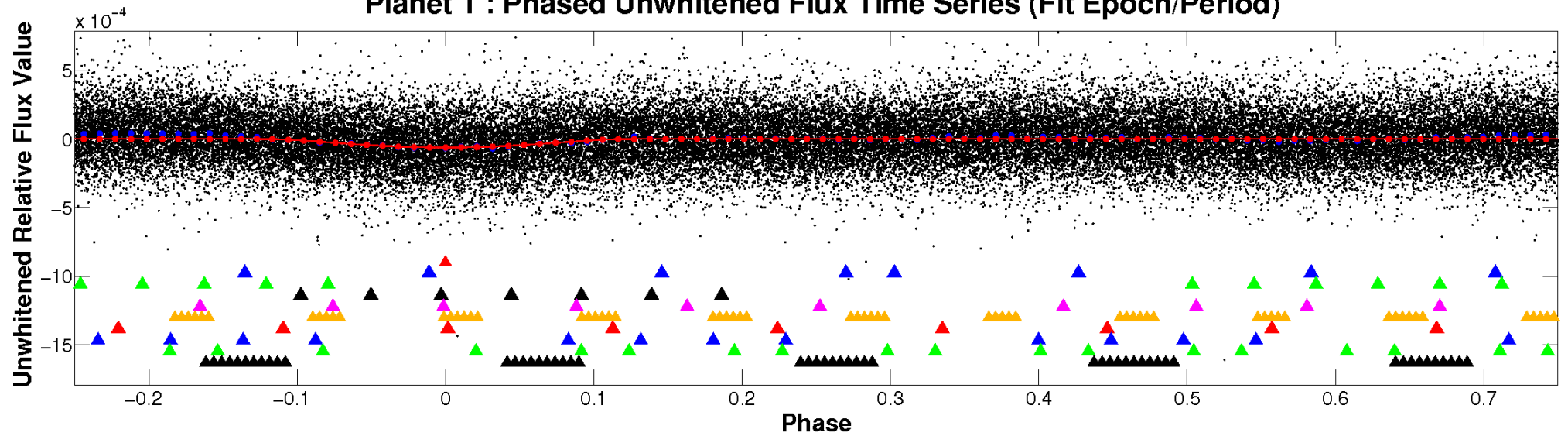
ALT Odd/Even

TCE 004484251-01

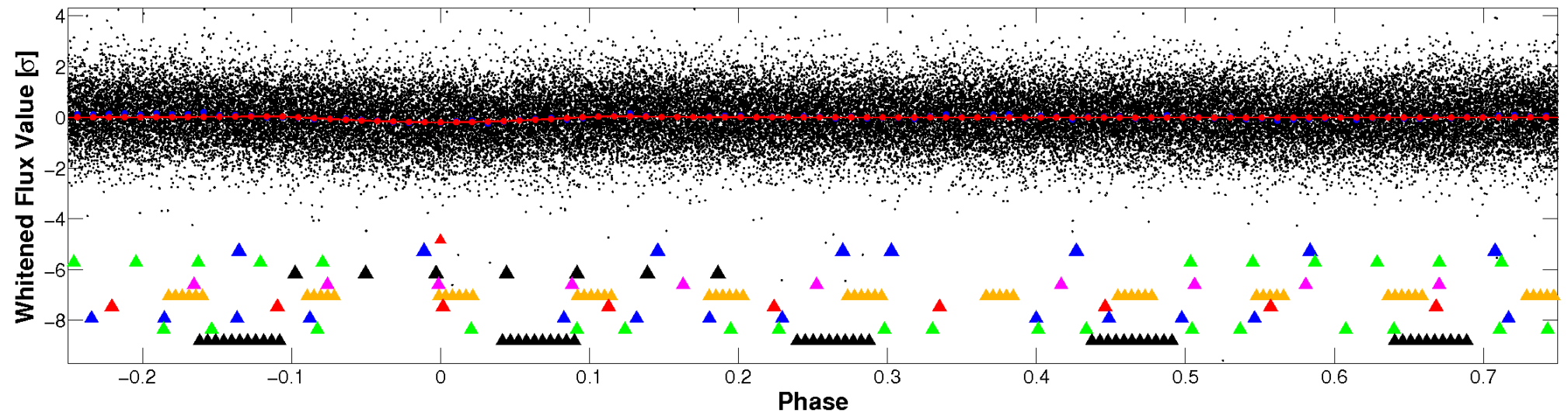


Non-Whitened Vs. Whitened Light Curve

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

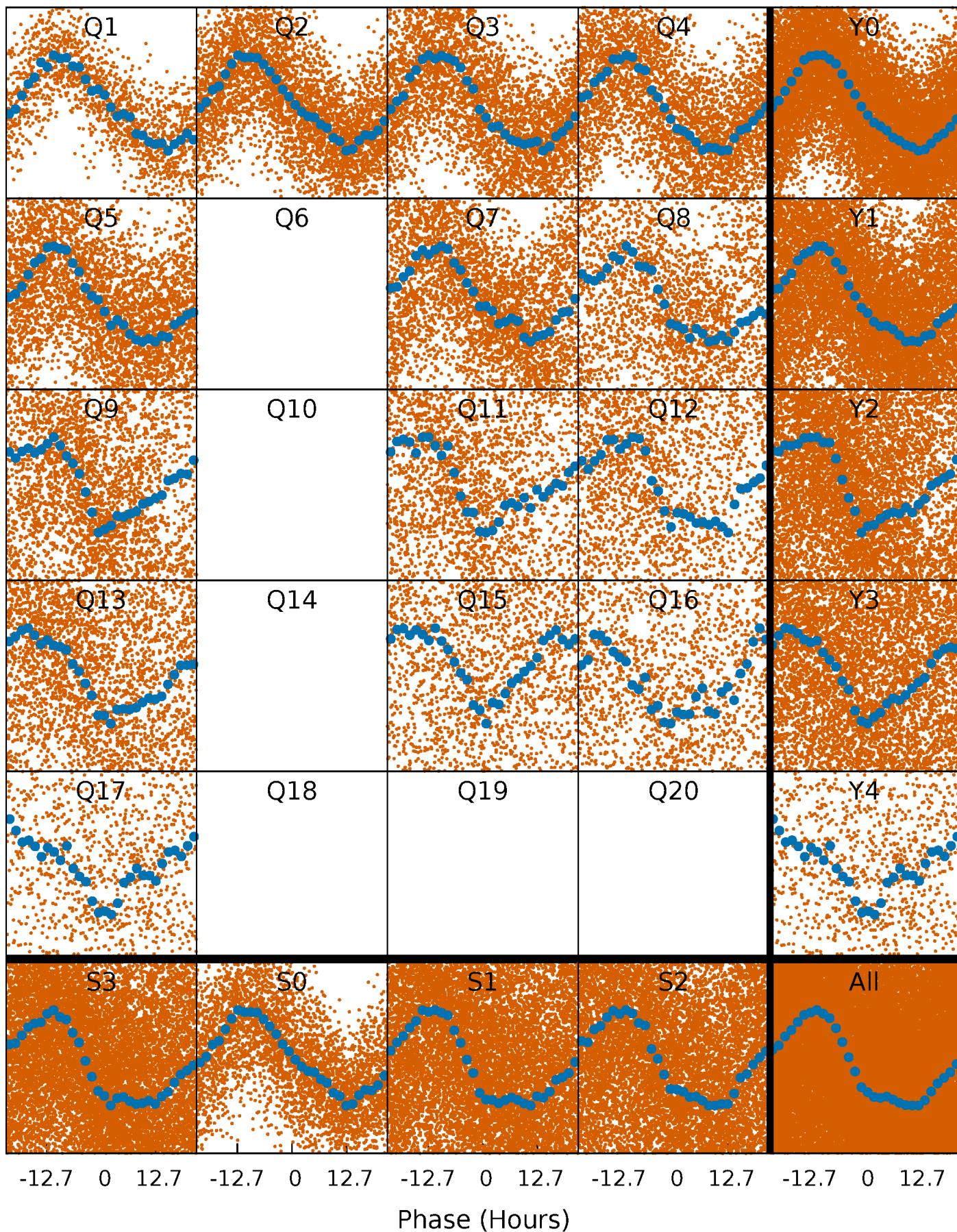


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



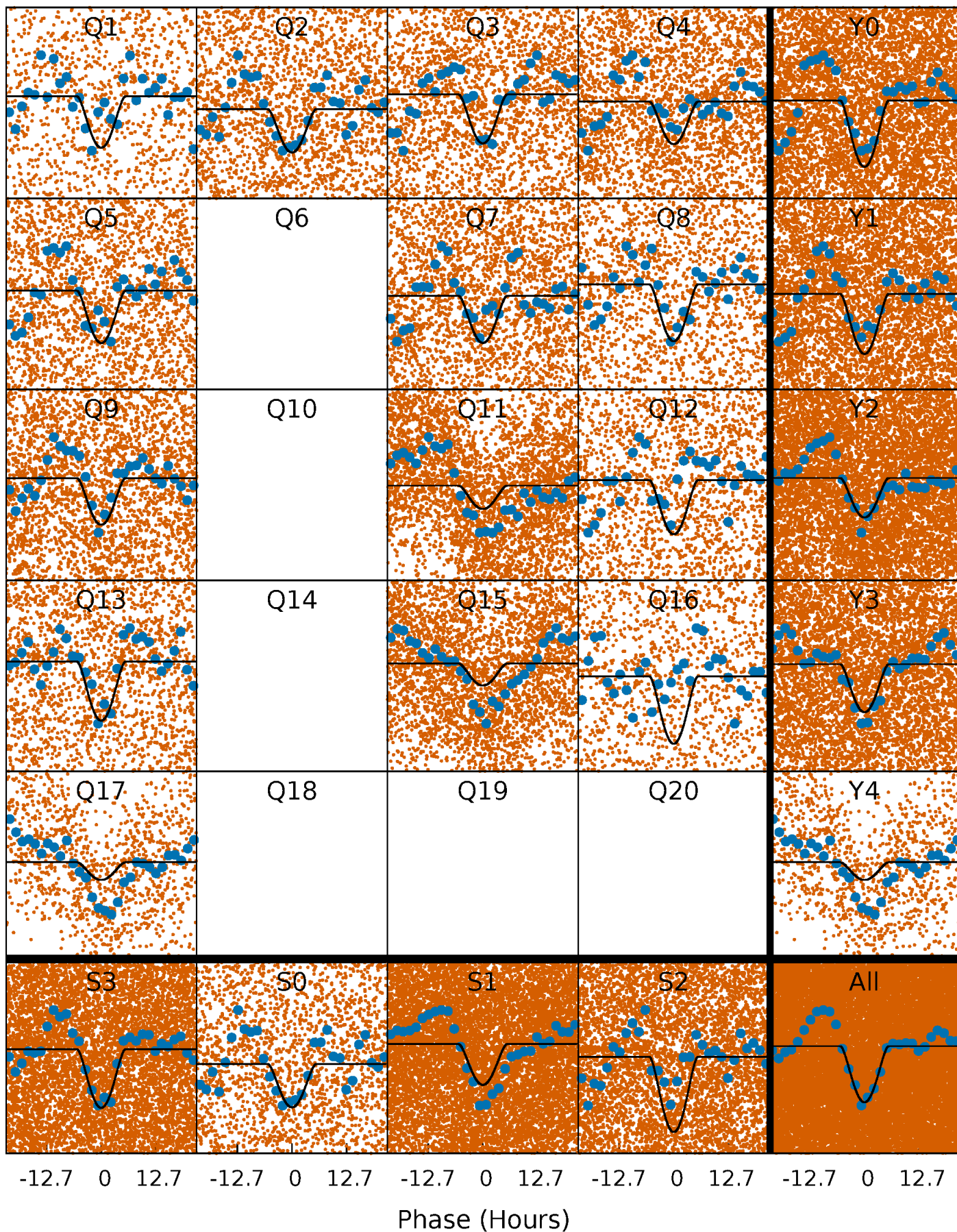
PDC Quarter-Phased Transit Curves

TCE 004484251-01 P= 1.927596 Days $T_0=133.409729$ (BKJD)



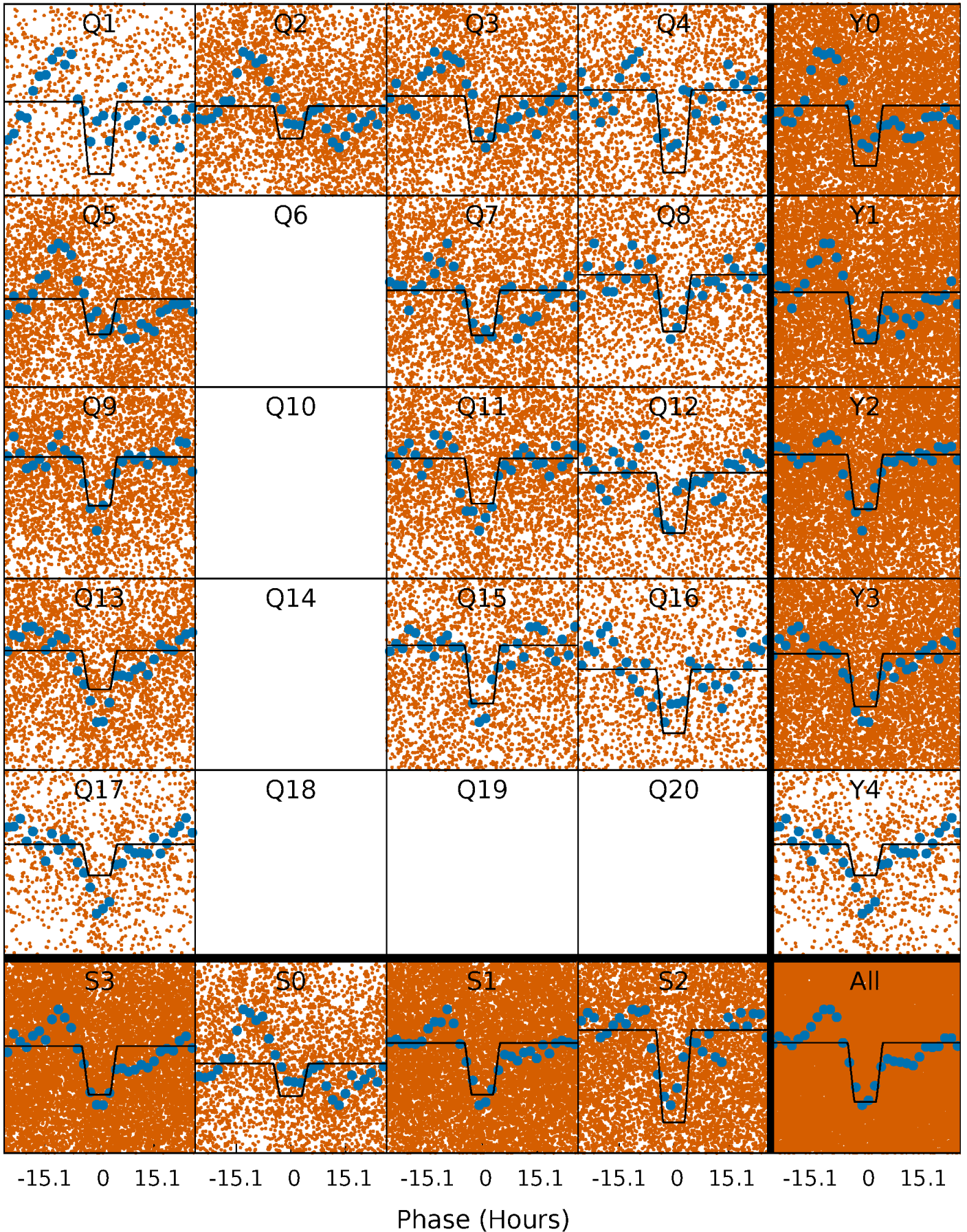
DV Quarter-Phased Transit Curves

TCE 004484251-01 P= 1.927596 Days $T_0=133.409729$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

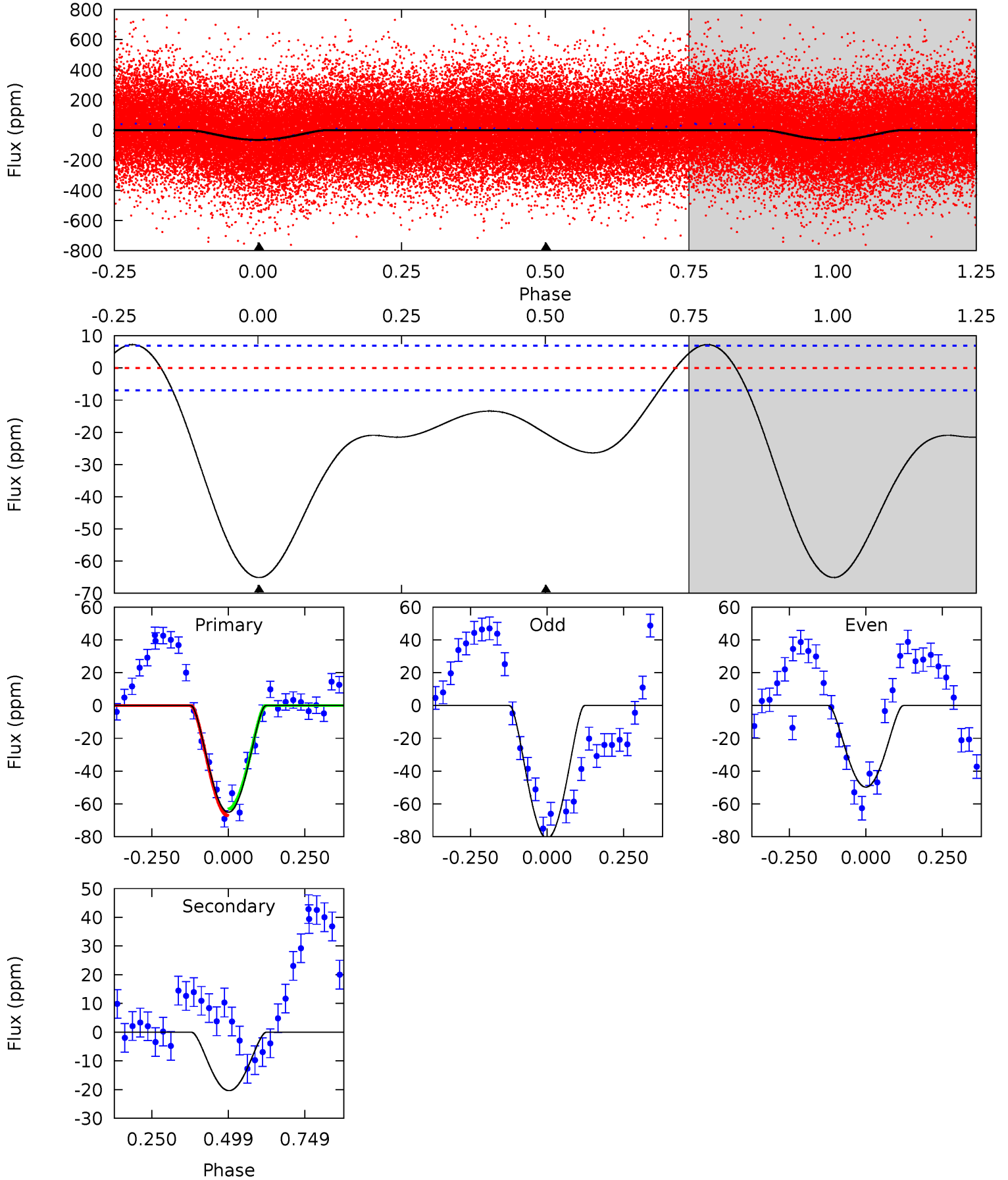
TCE 004484251-01 P= 1.927643 Days $T_0=133.410429$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-01, P = 1.927596 Days, E = 131.482133 Days

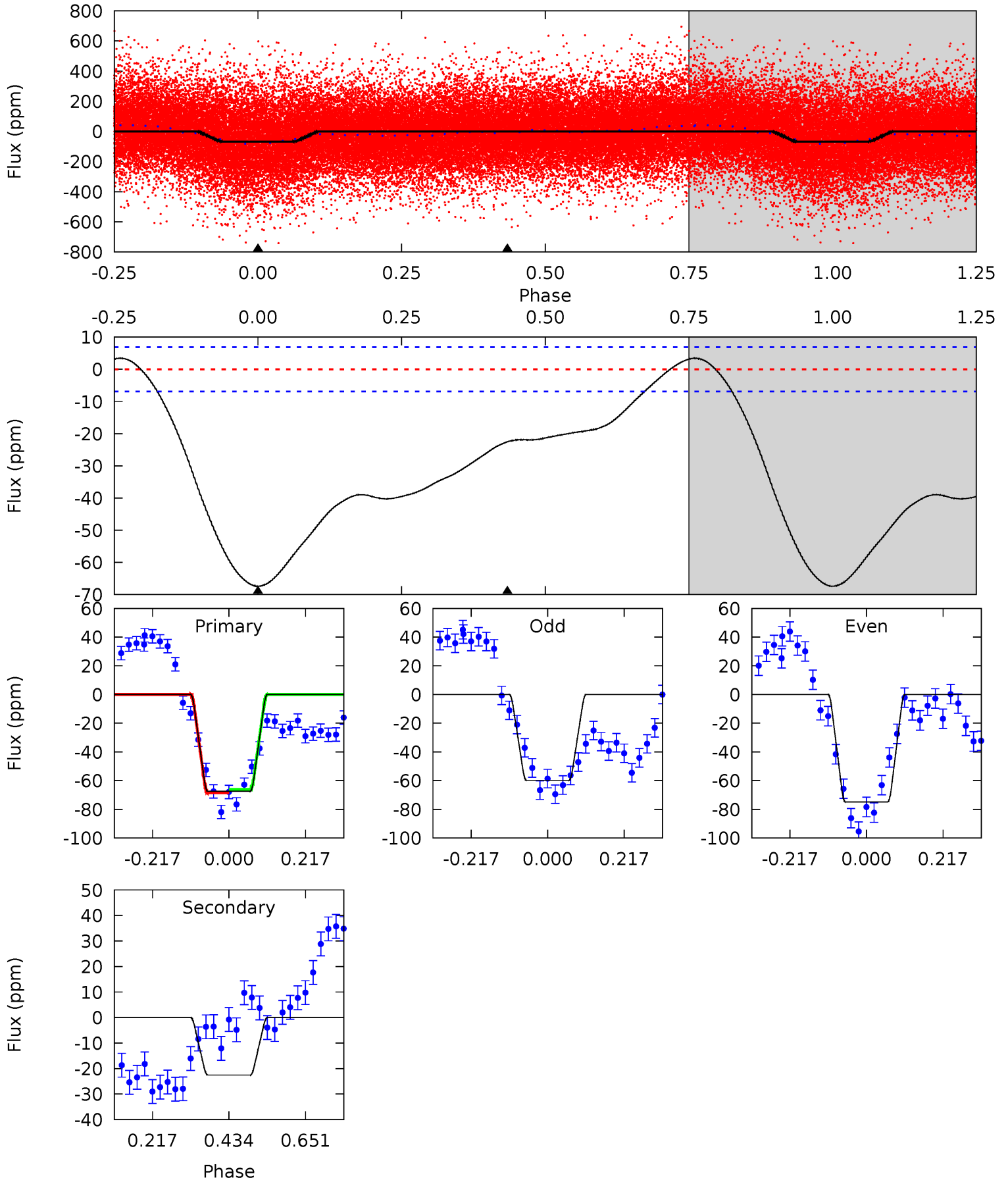
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.1	12.9	0	0	4.37	1.15	8.17	41.1	41.1	12.9	12.9	9.75	1.05	0.10	1.28



Alt Model-Shift Uniqueness Test

004484251-01, P = 1.927643 Days, E = 131.482786 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.1	14.4	0	0	4.40	1.23	2.80	43.1	43.1	14.4	14.4	4.85	0.93	0.05	0.81



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-20 ± 2	$3.19^{+2.58}_{-2.06}$	2903^{+133}_{-120}	3598^{+2017}_{-1031}	$1.239^{+8.697}_{-0.861}$
Alt.	-23 ± 2	$2.64^{+2.37}_{-1.77}$	2899^{+124}_{-118}	3962^{+2701}_{-1034}	$2.030^{+16.621}_{-1.490}$

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

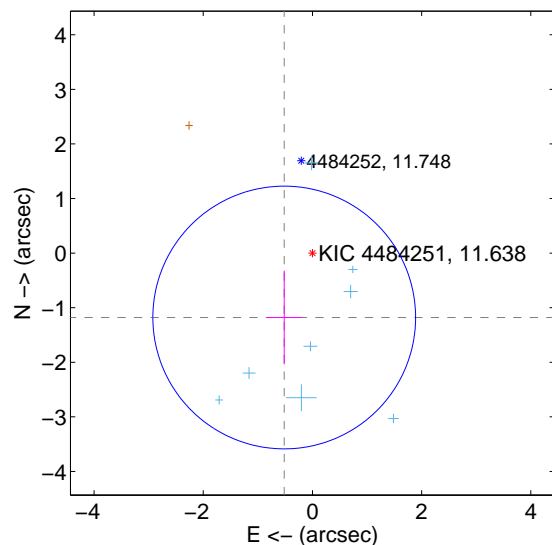
Supplemental centroid analysis for 004484251-01. **Kepler magnitude: 11.64.** Transit SNR 13.38

There are 8 quarters with good PRF difference image offsets

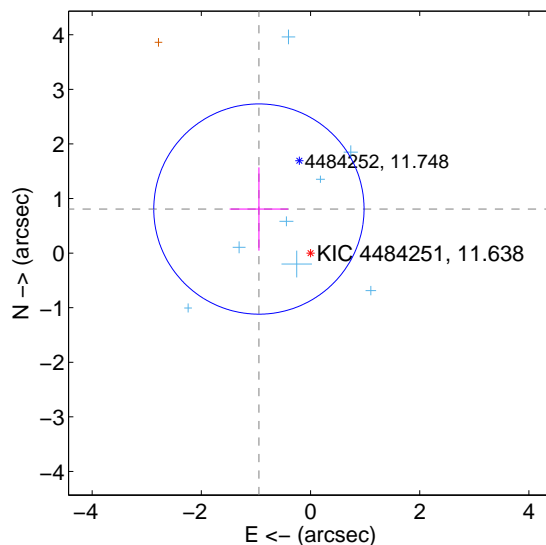
The OOT PRF centroid is offset from the target star catalog position by about 2.34 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.288 ± 0.802	1.61	0.517 ± 0.325	-1.180 ± 0.858
PRF-fit source offset from KIC position	1.243 ± 0.642	1.94	0.945 ± 0.537	0.807 ± 0.763
photometric centroid source offset	0.88 ± 0.23	3.83	0.54 ± 0.16	0.69 ± 0.26

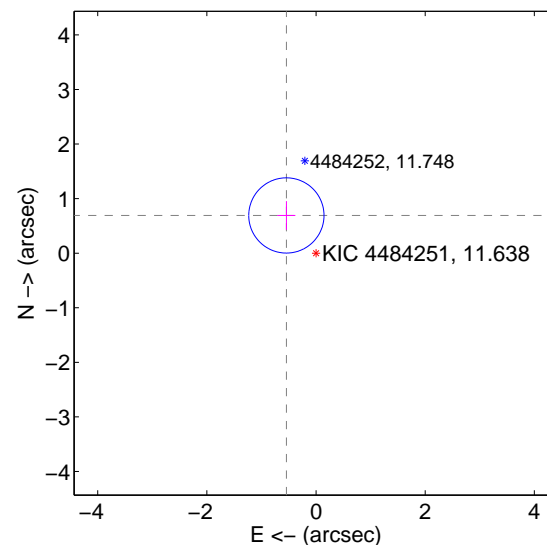
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

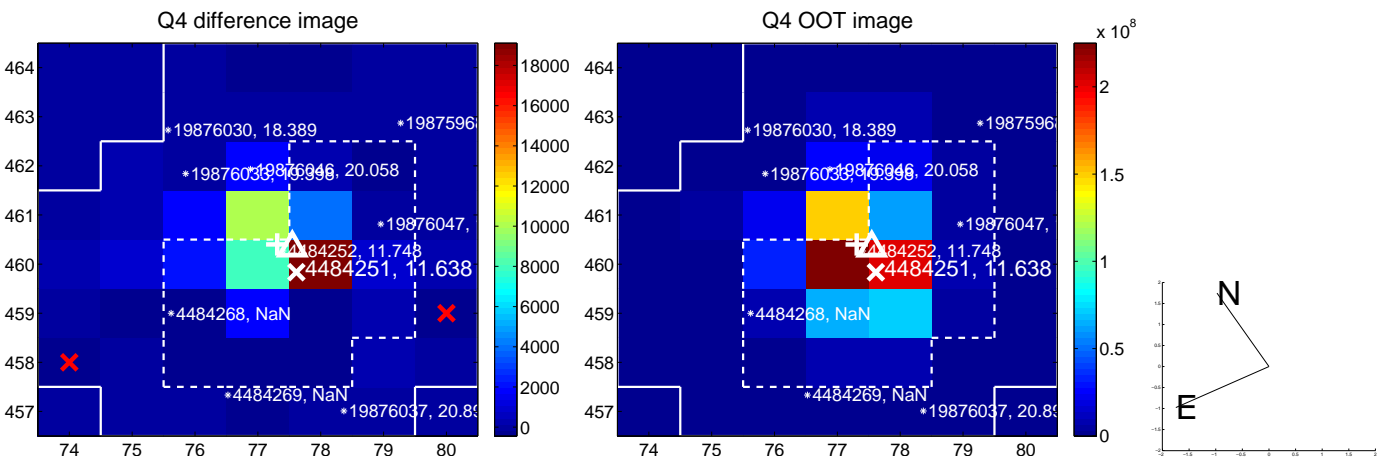
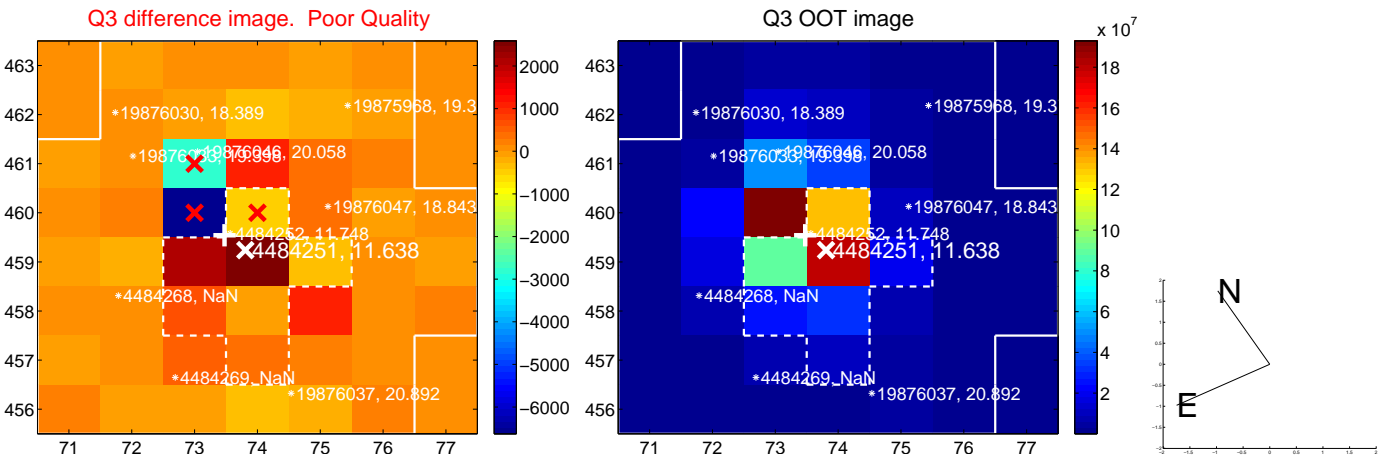
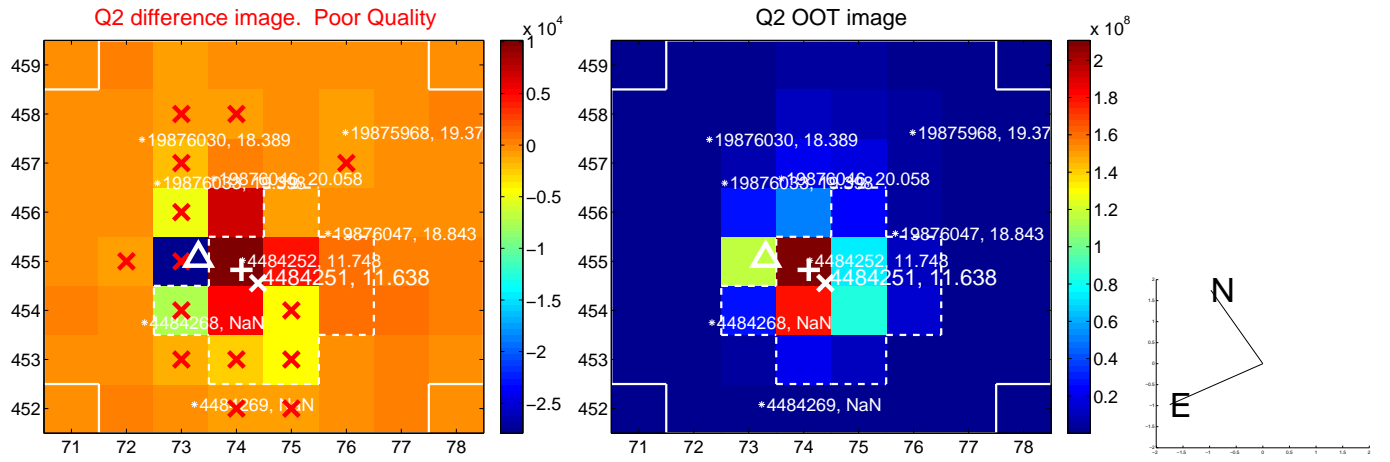
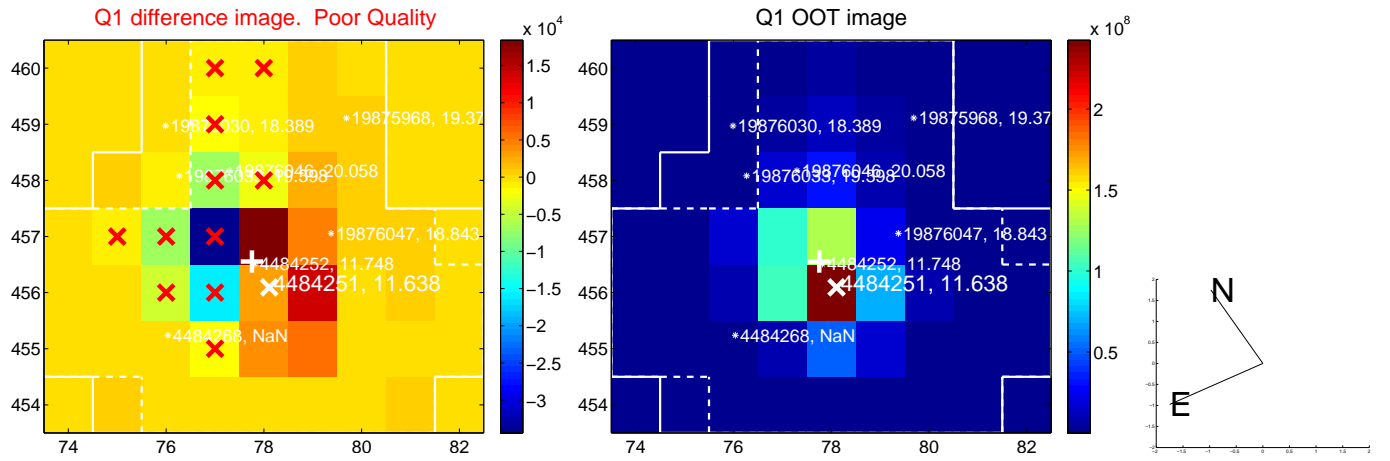


offset from photometric centroids

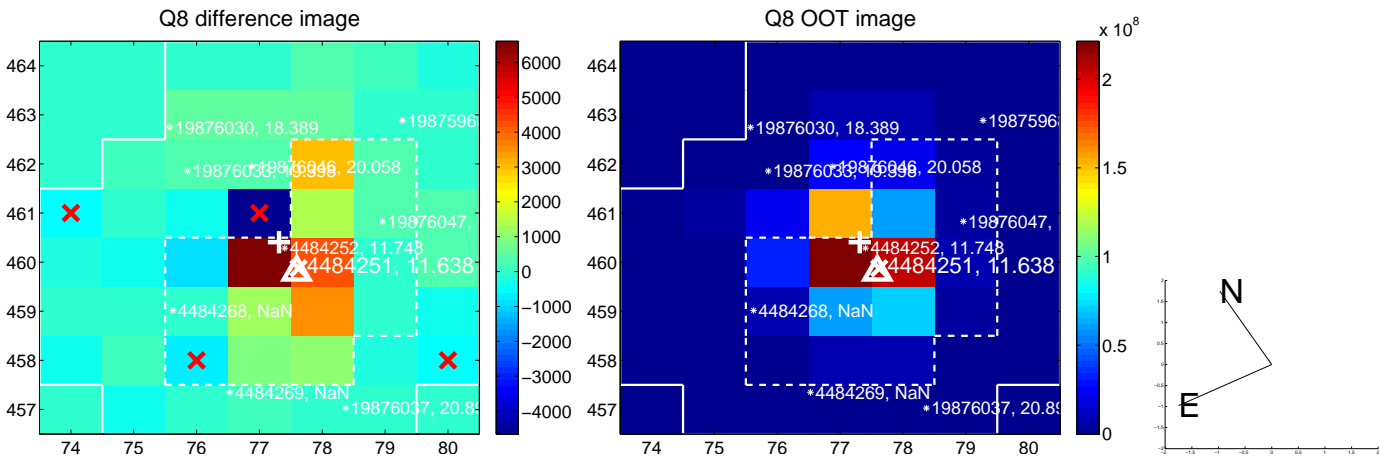
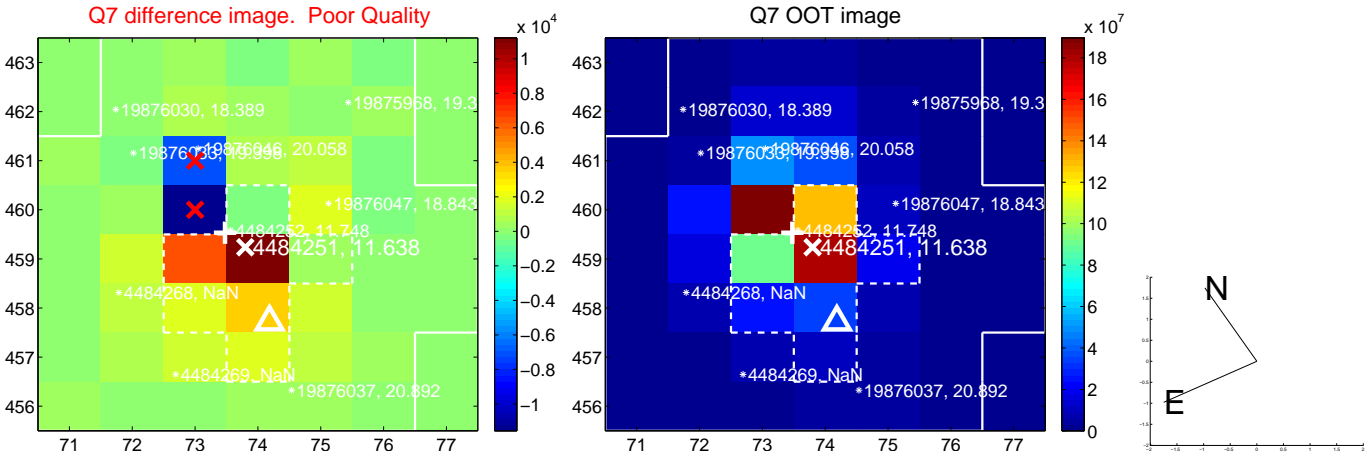
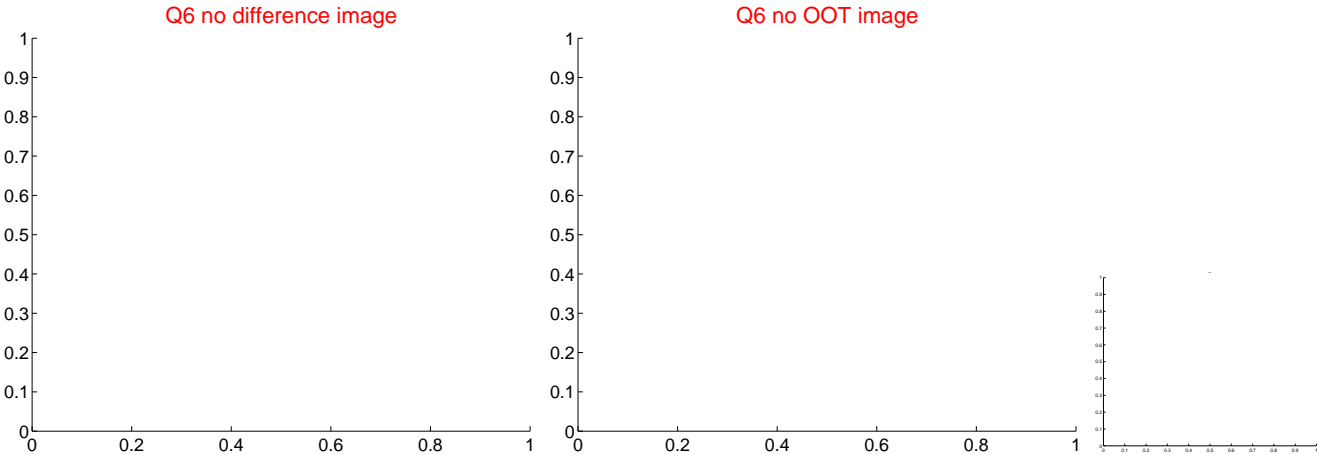
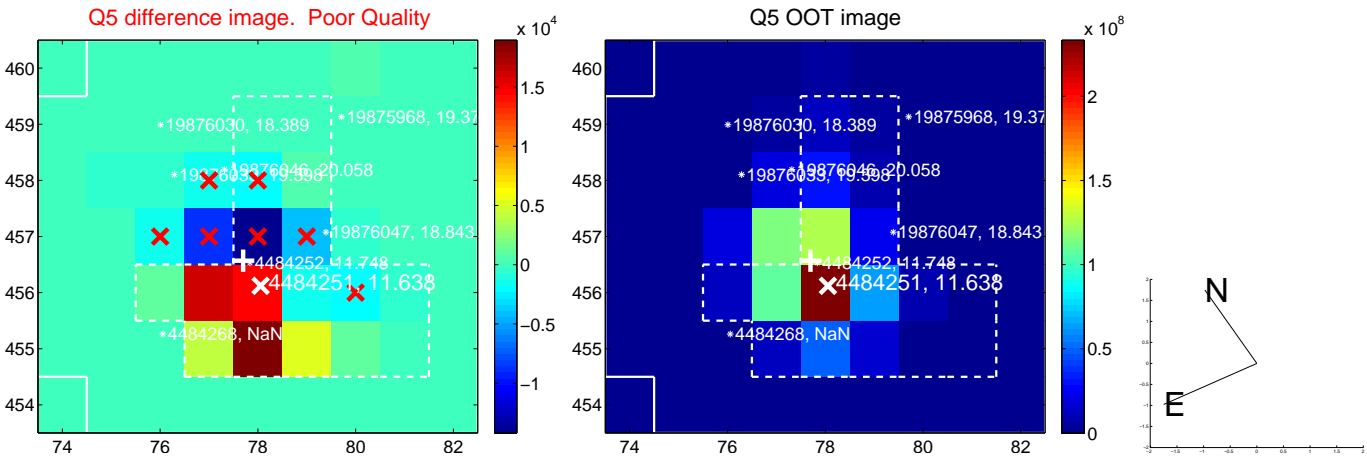


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

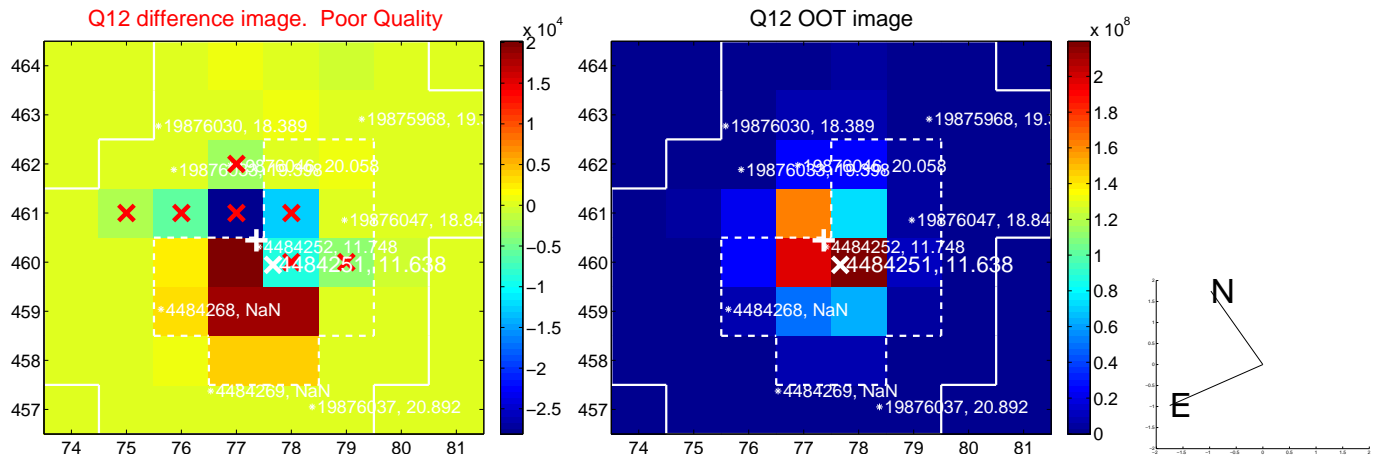
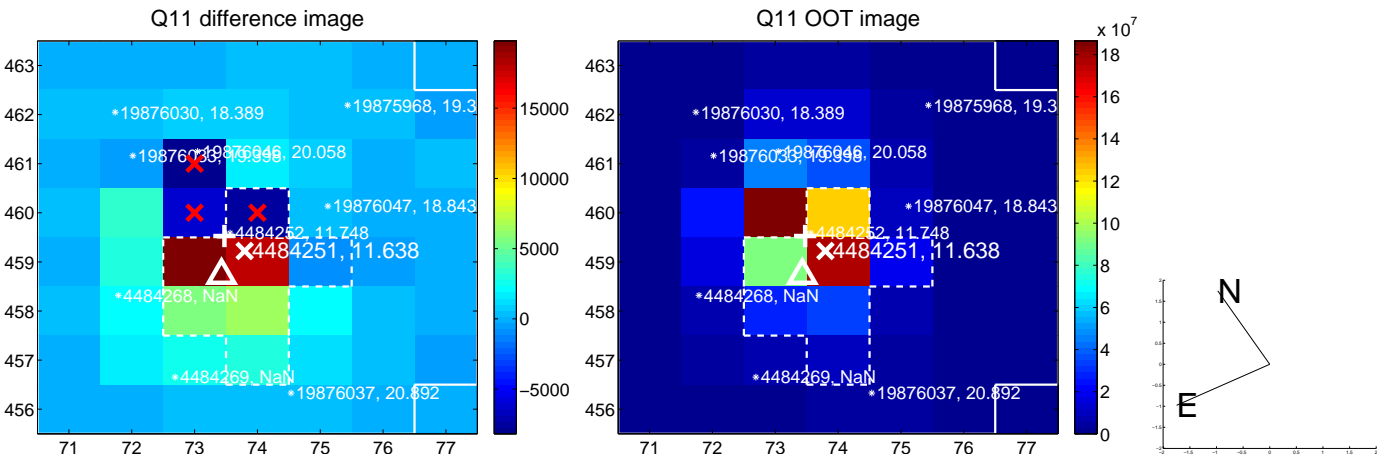
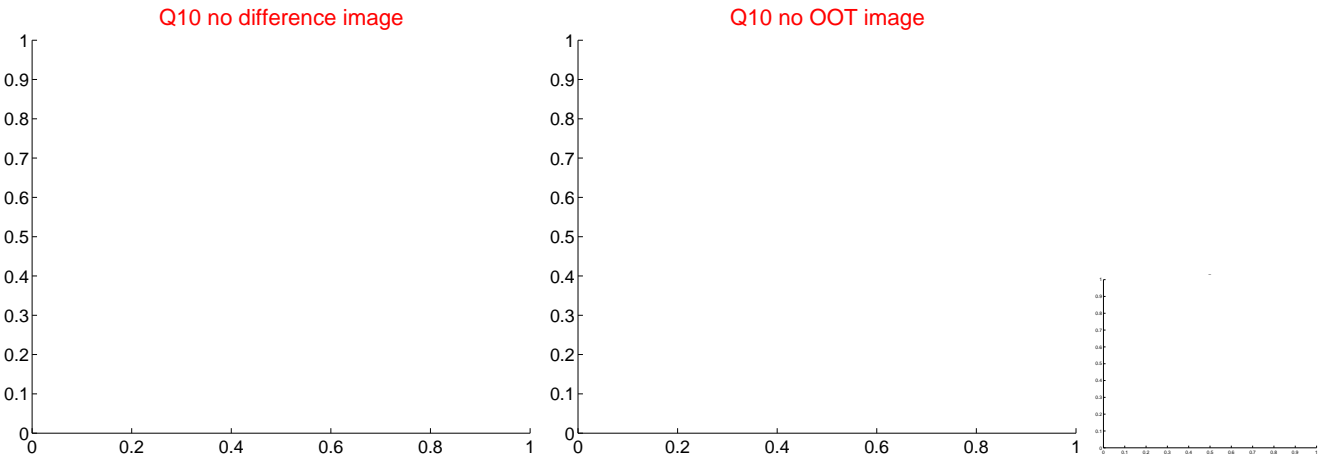
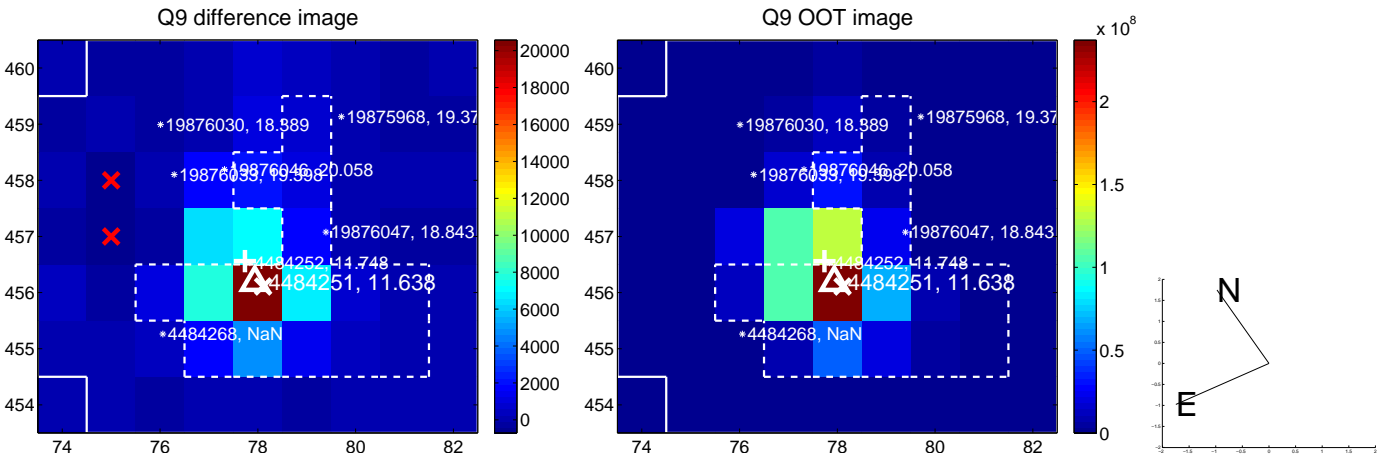
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



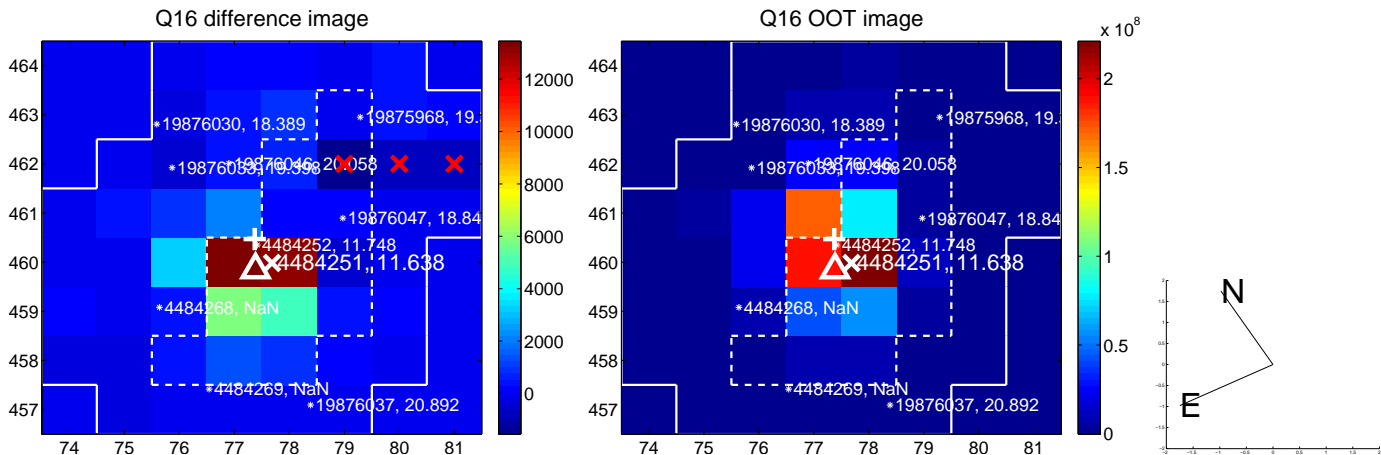
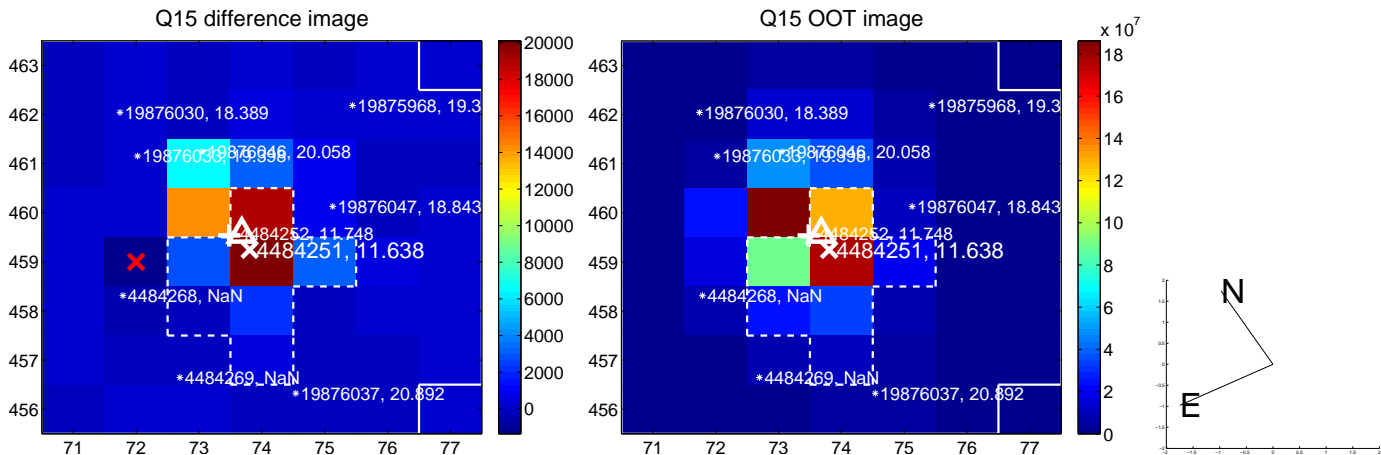
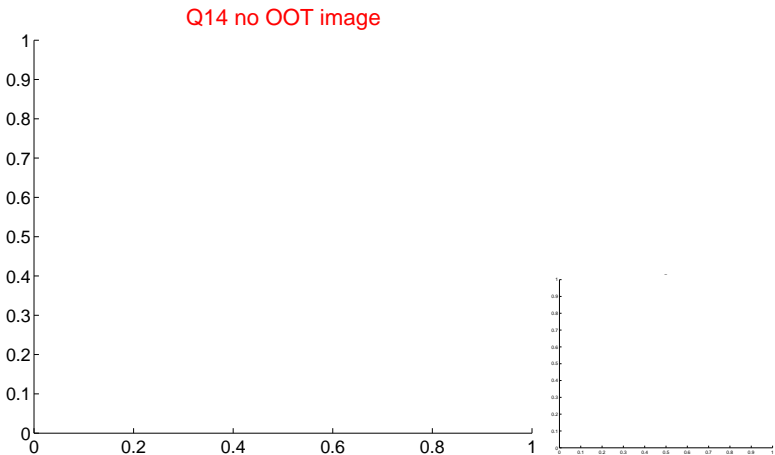
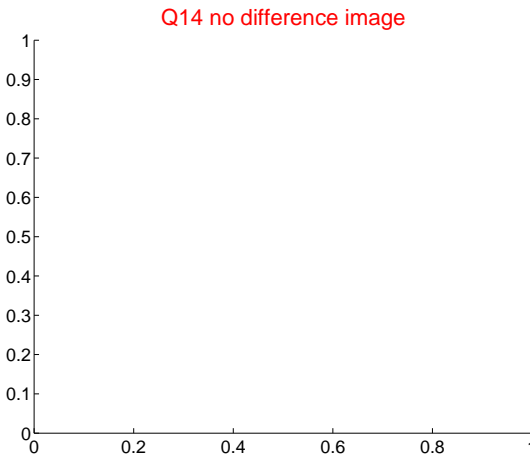
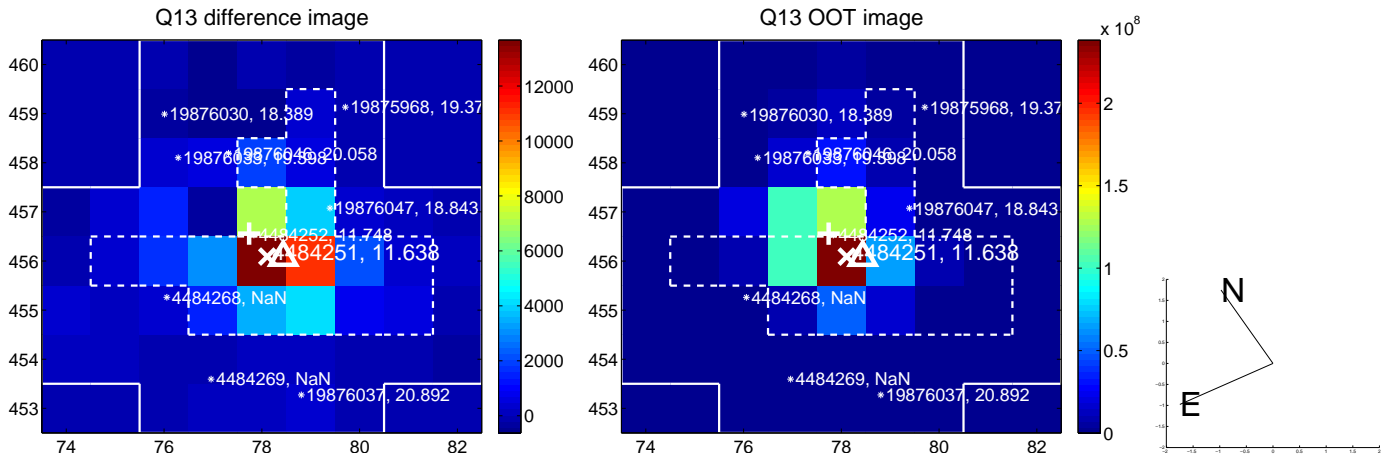
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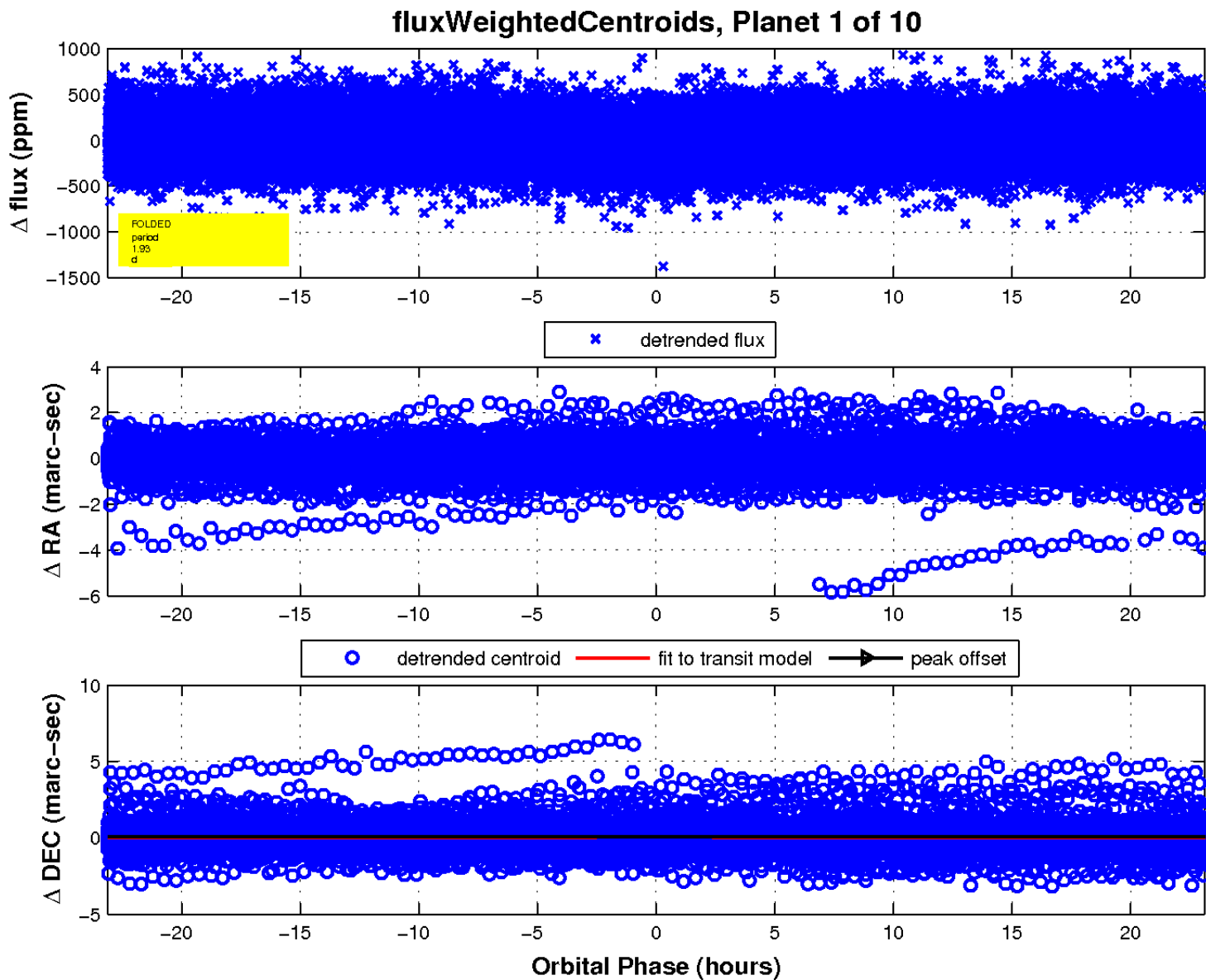
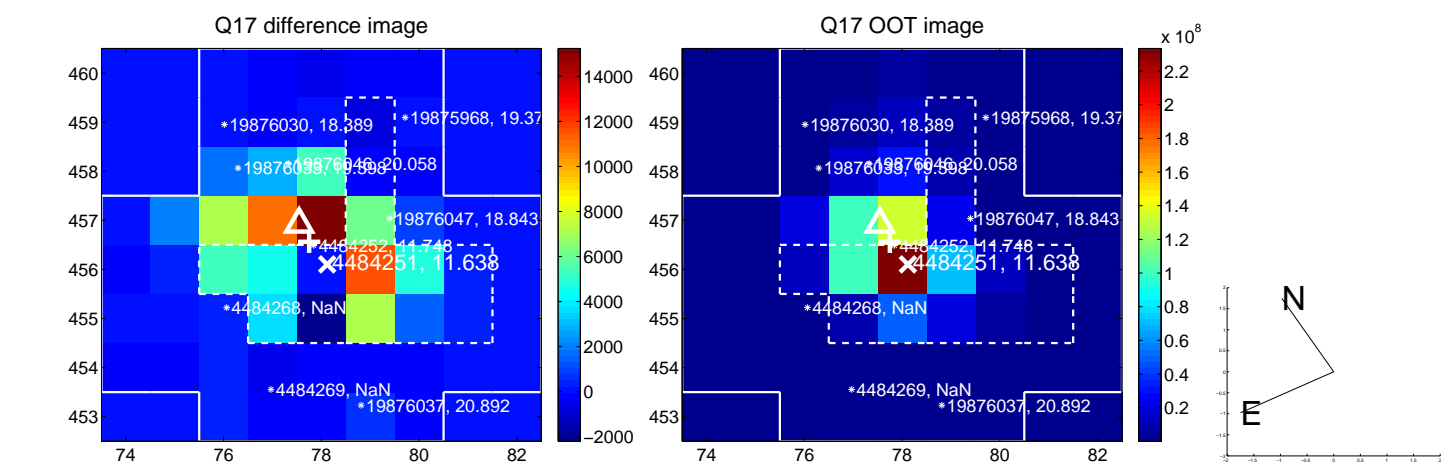
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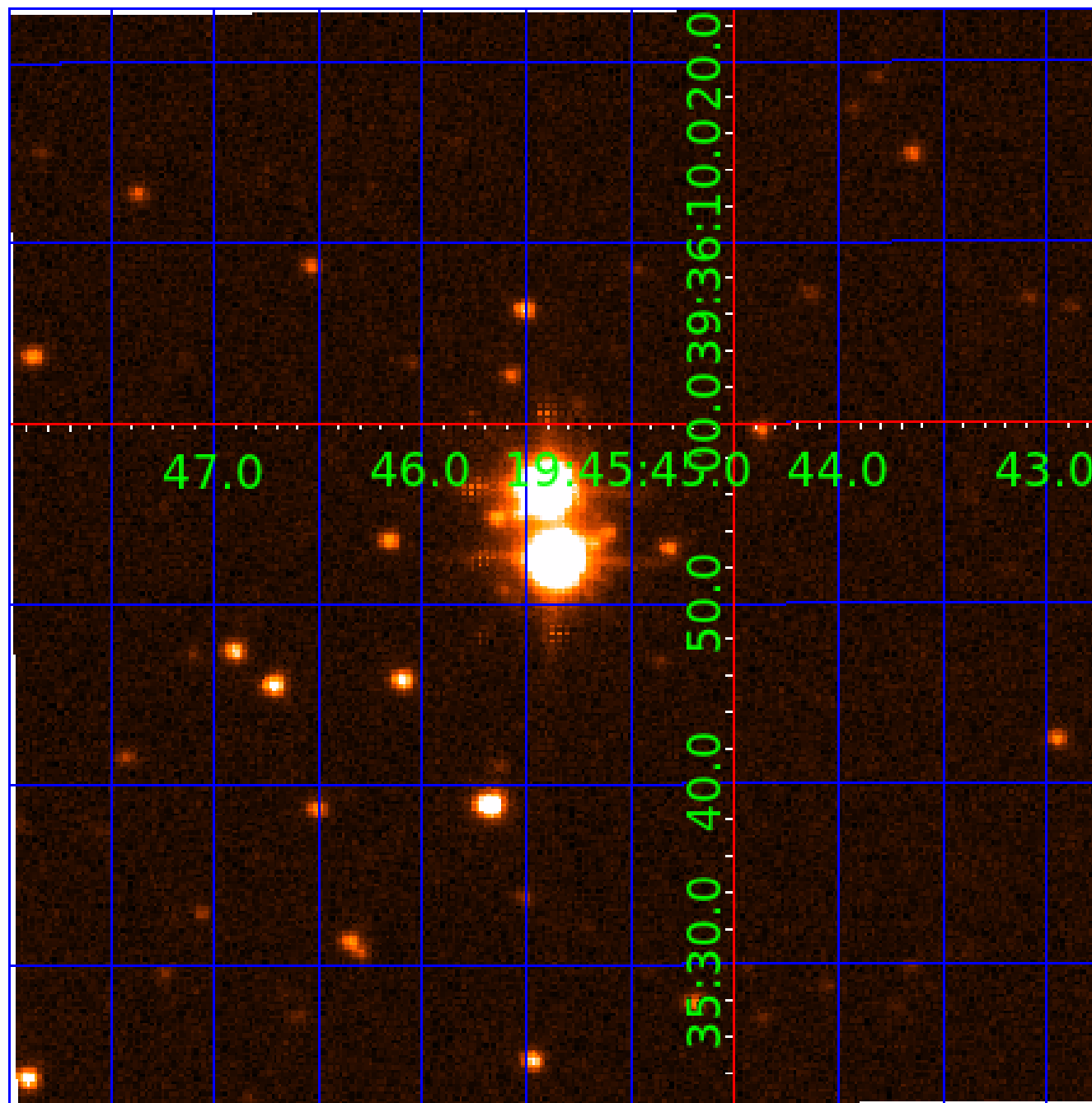


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

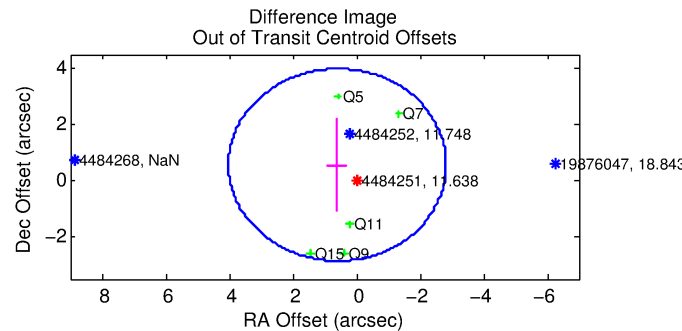
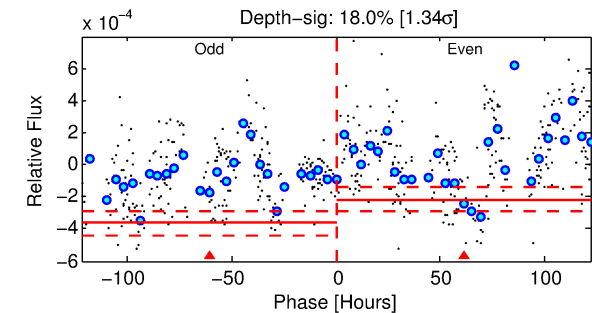
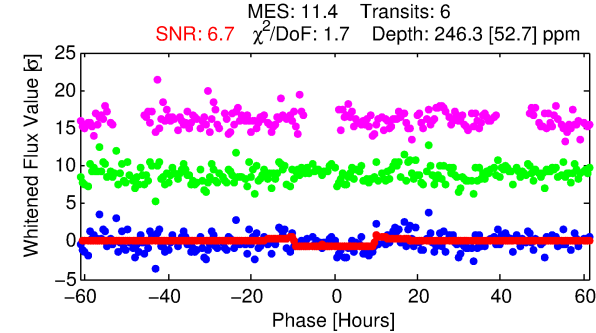
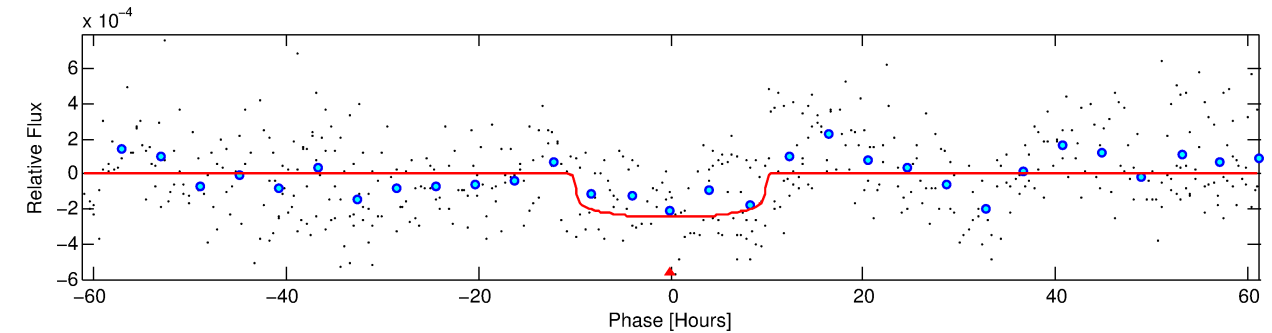
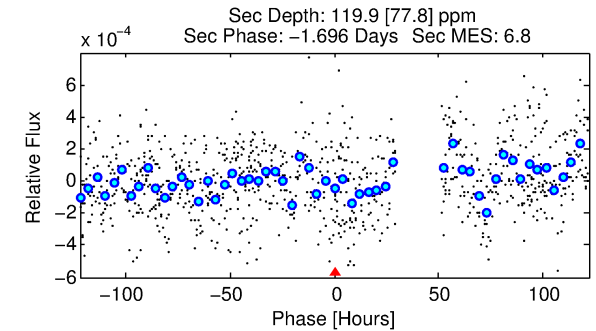
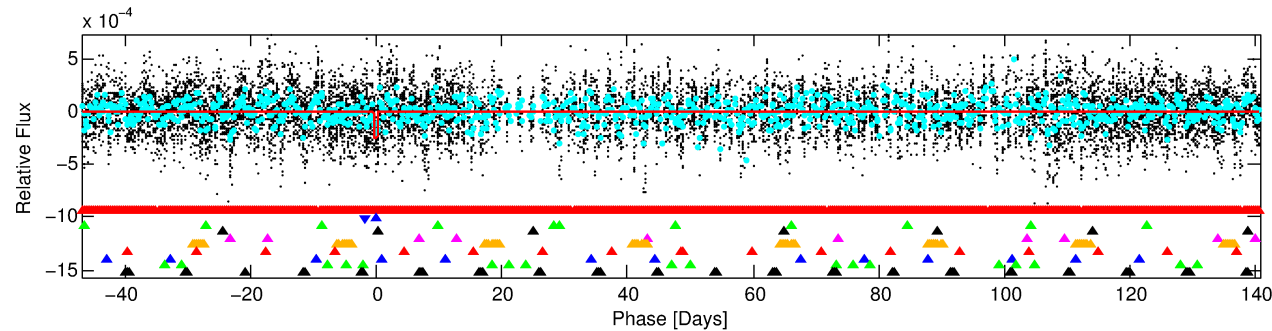
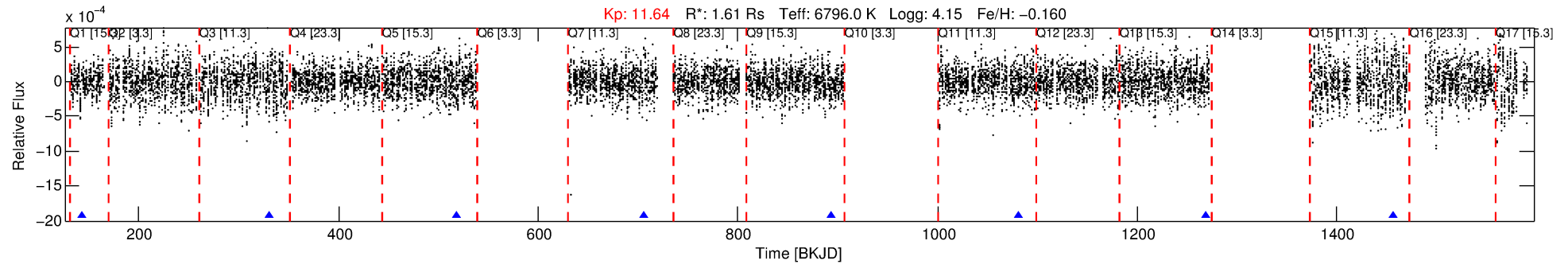
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-02

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 2 of 10 Period: 187.519 d



DV Fit Results:

Period = 187.51857 [0.00500] d
Epoch = 143.6311 [0.0196] BKJD
Rp/R* = 0.0154 [0.0047]
a/R* = 51.86 [82.02]
b = 0.70 [1.16]
Seff = 9.88 [2.17]
Teq = 452 [25] K
Rp = 2.70 [0.95] Re
a = 0.7073 [0.1050] AU
Ag = 4527.86 [4129.98] [1.10σ]
Teffp = 5733 [1274] K [4.15σ]

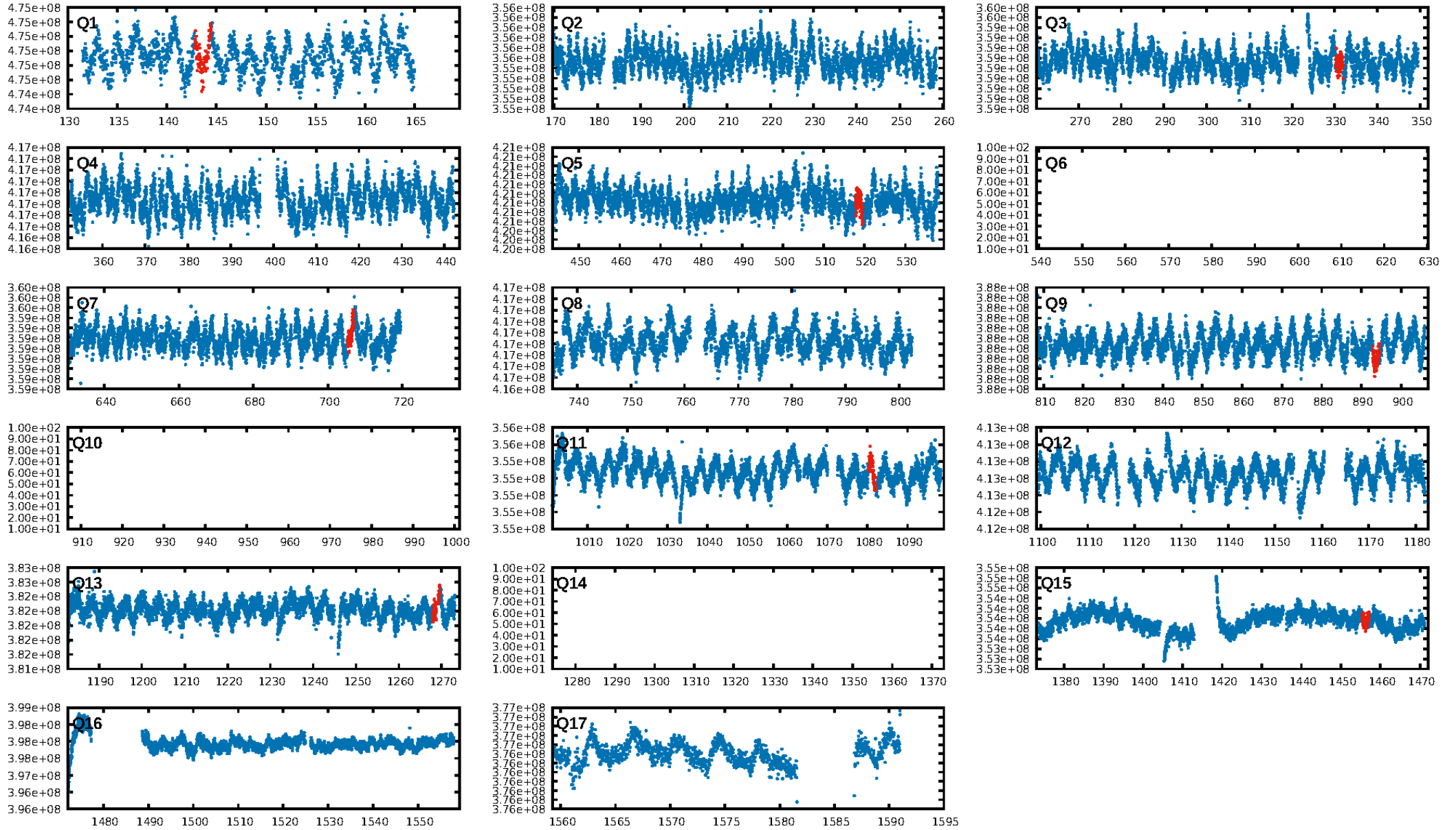
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [25.14σ]
LongPeriod-sig: 100.0% [4.55σ]
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 3.034
Centroid-sig: N/A
Centroid-so: 1.650 arcsec [4.25σ]
OotOffset-rm: 0.822 arcsec [0.72σ]
KicOffset-rm: 2.701 arcsec [1.80σ]
OotOffset-st: 0/3/0/2 [5]
KicOffset-st: 0/3/0/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/7]

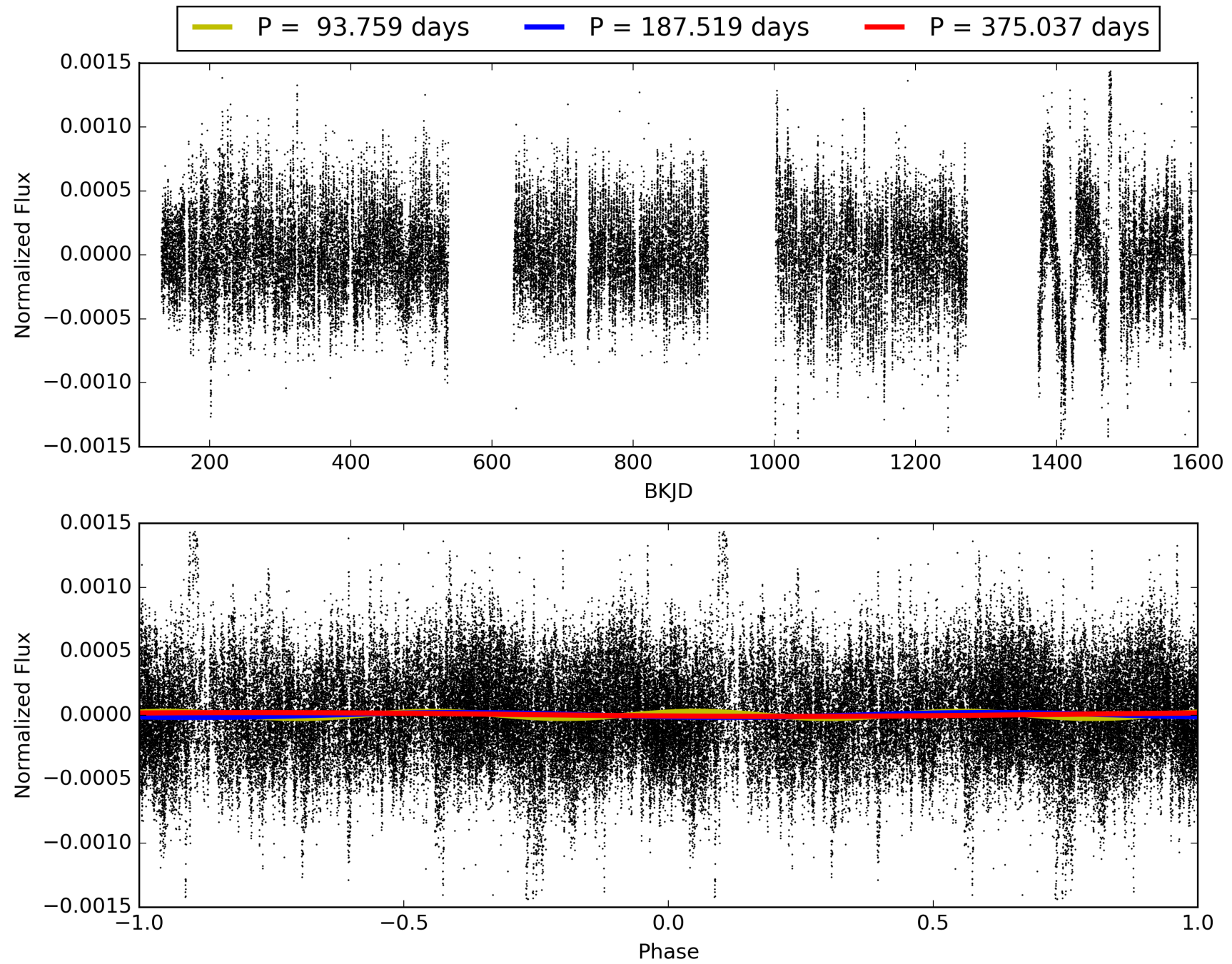
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:12:44 Z

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

TCE 004484251-02, PDC Light Curves

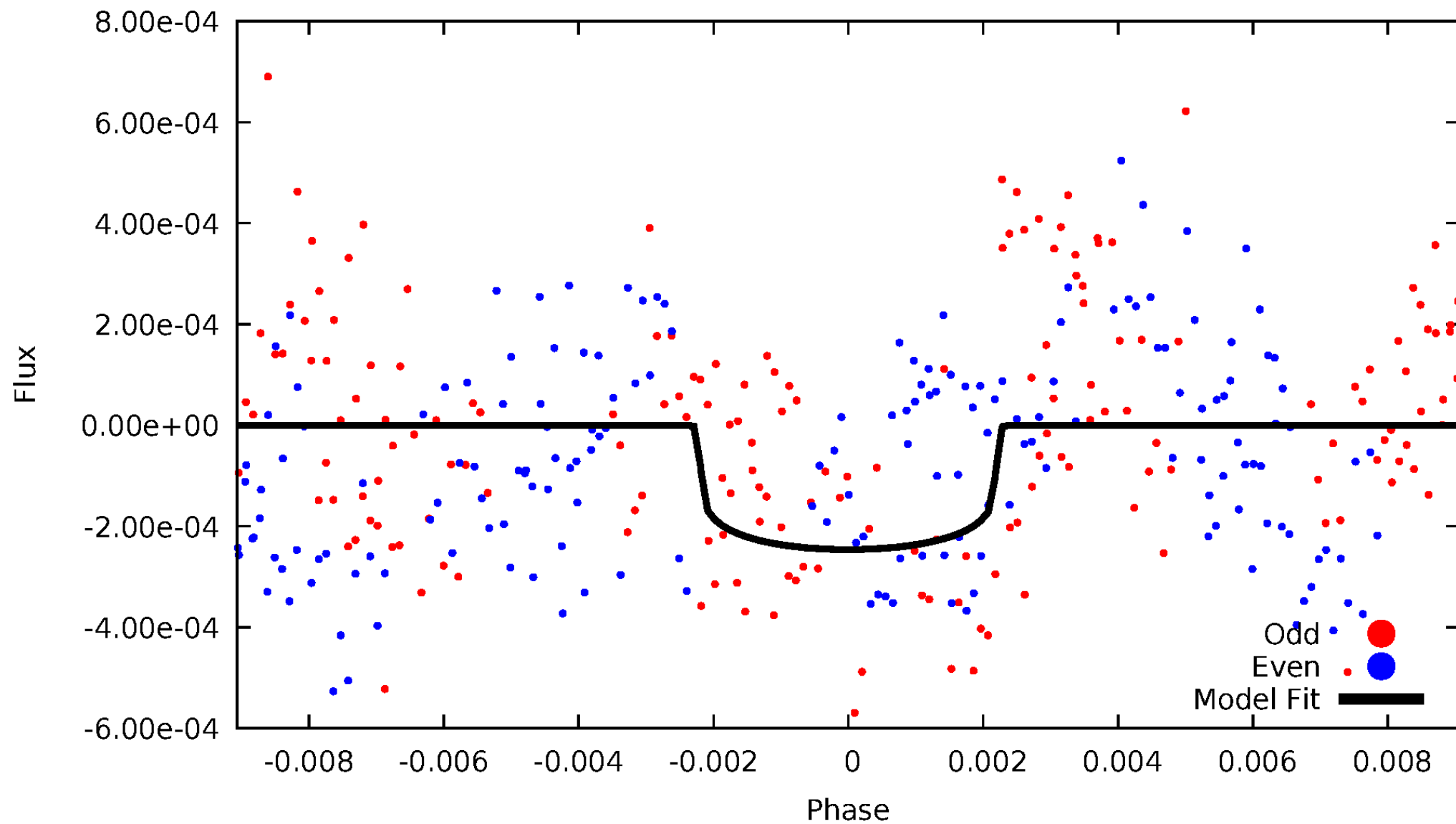


TCE 004484251-02



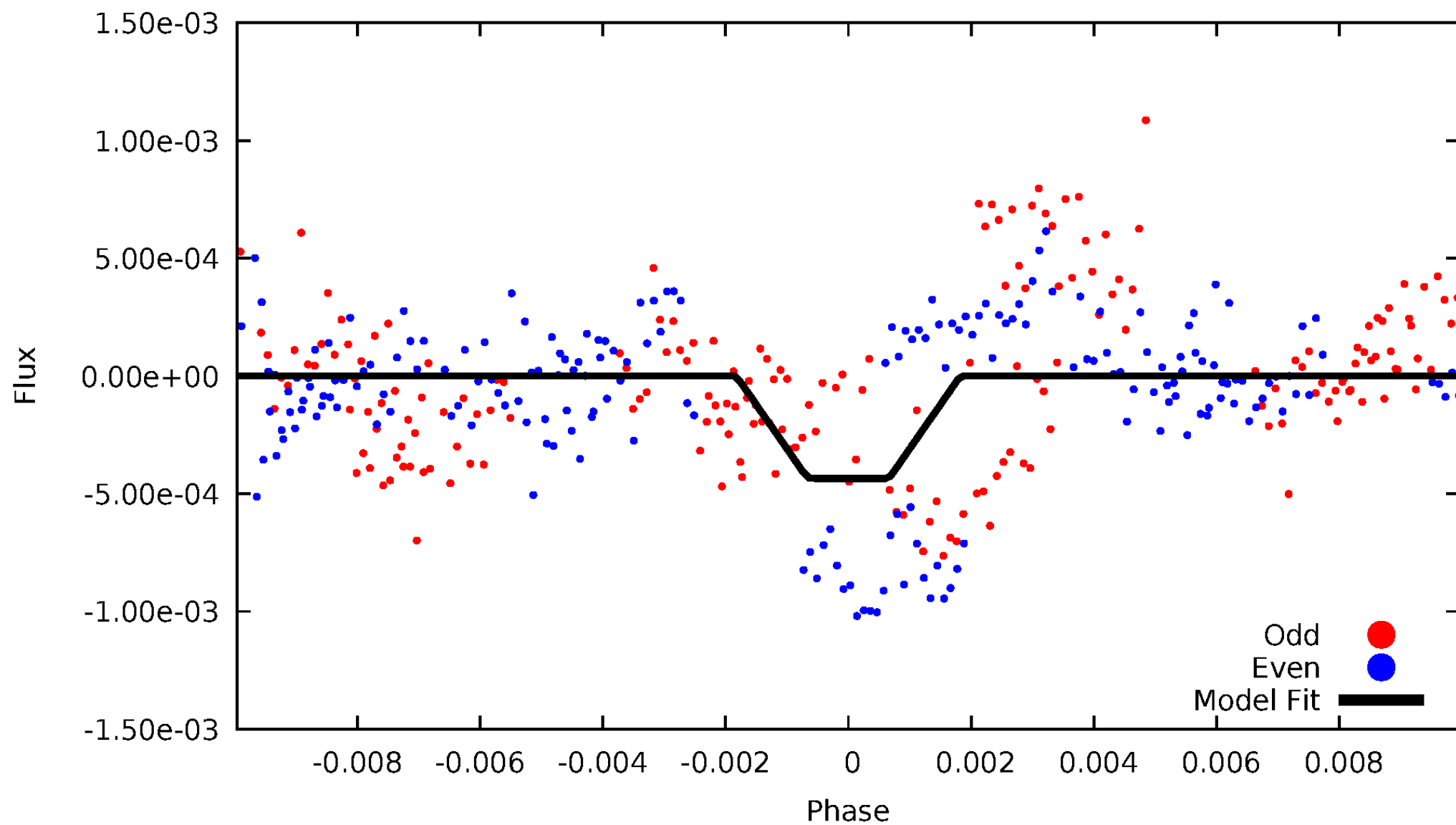
DV Odd/Even

TCE 004484251-02



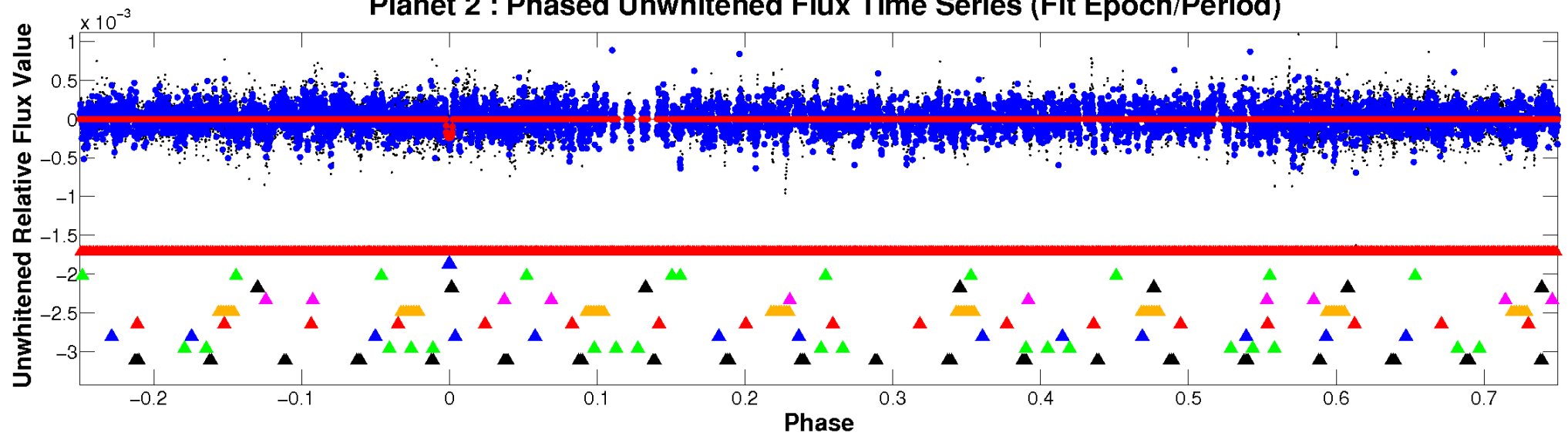
ALT Odd/Even

TCE 004484251-02

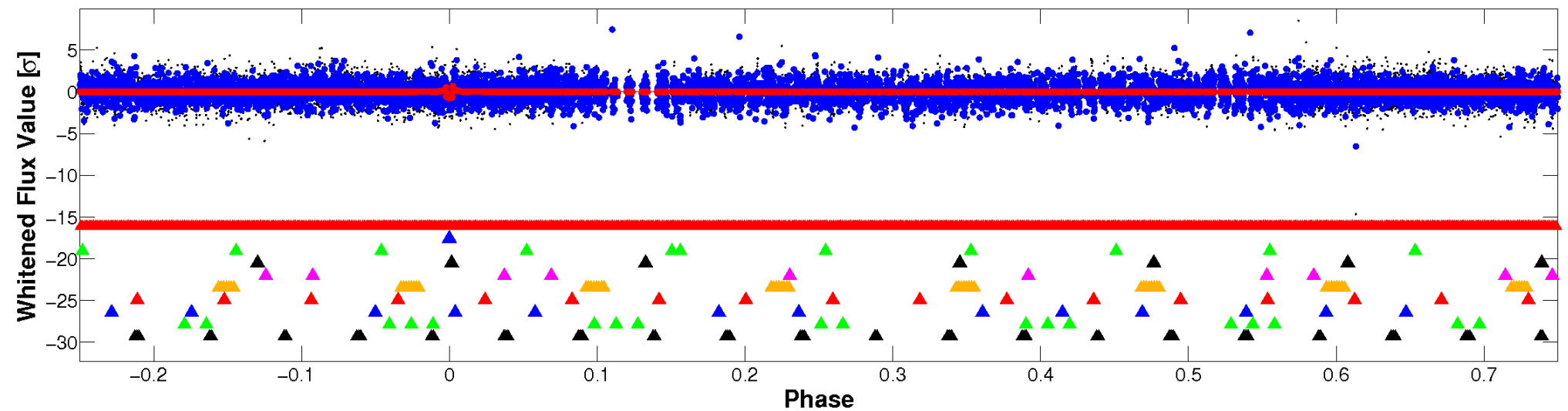


Non-Whitened Vs. Whitened Light Curve

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

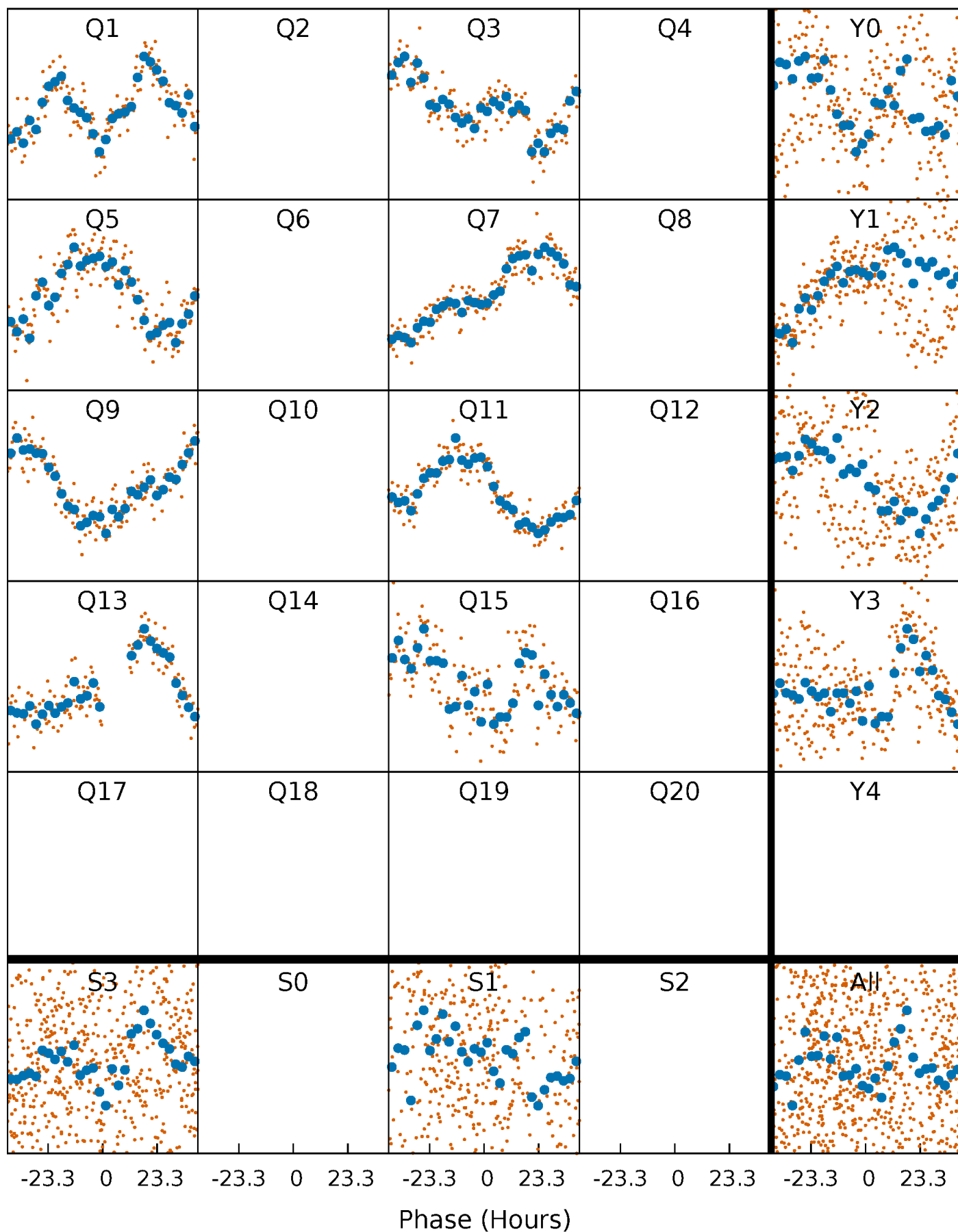


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



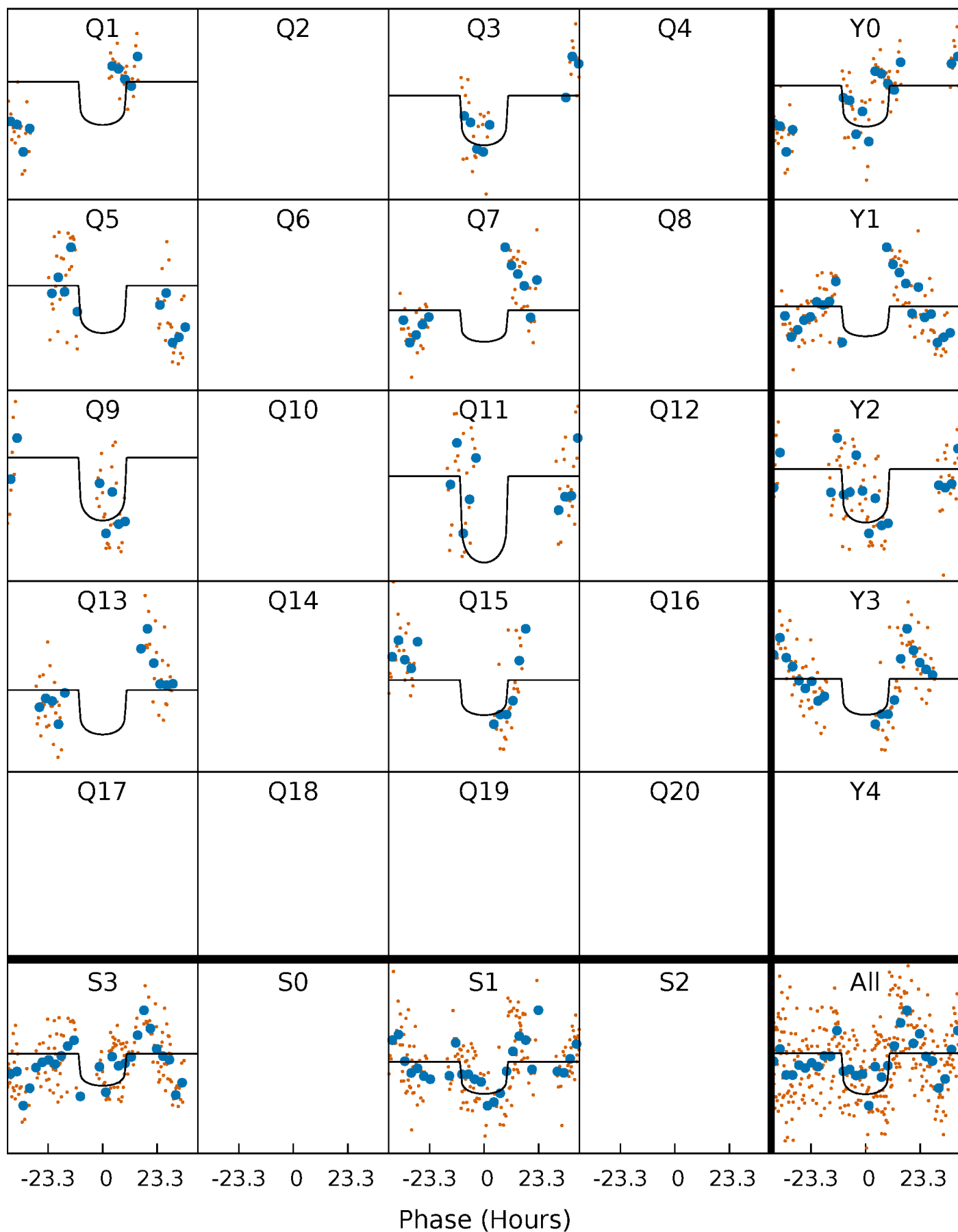
PDC Quarter-Phased Transit Curves

TCE 004484251-02 P=187.518565 Days $T_0=143.631143$ (BKJD)



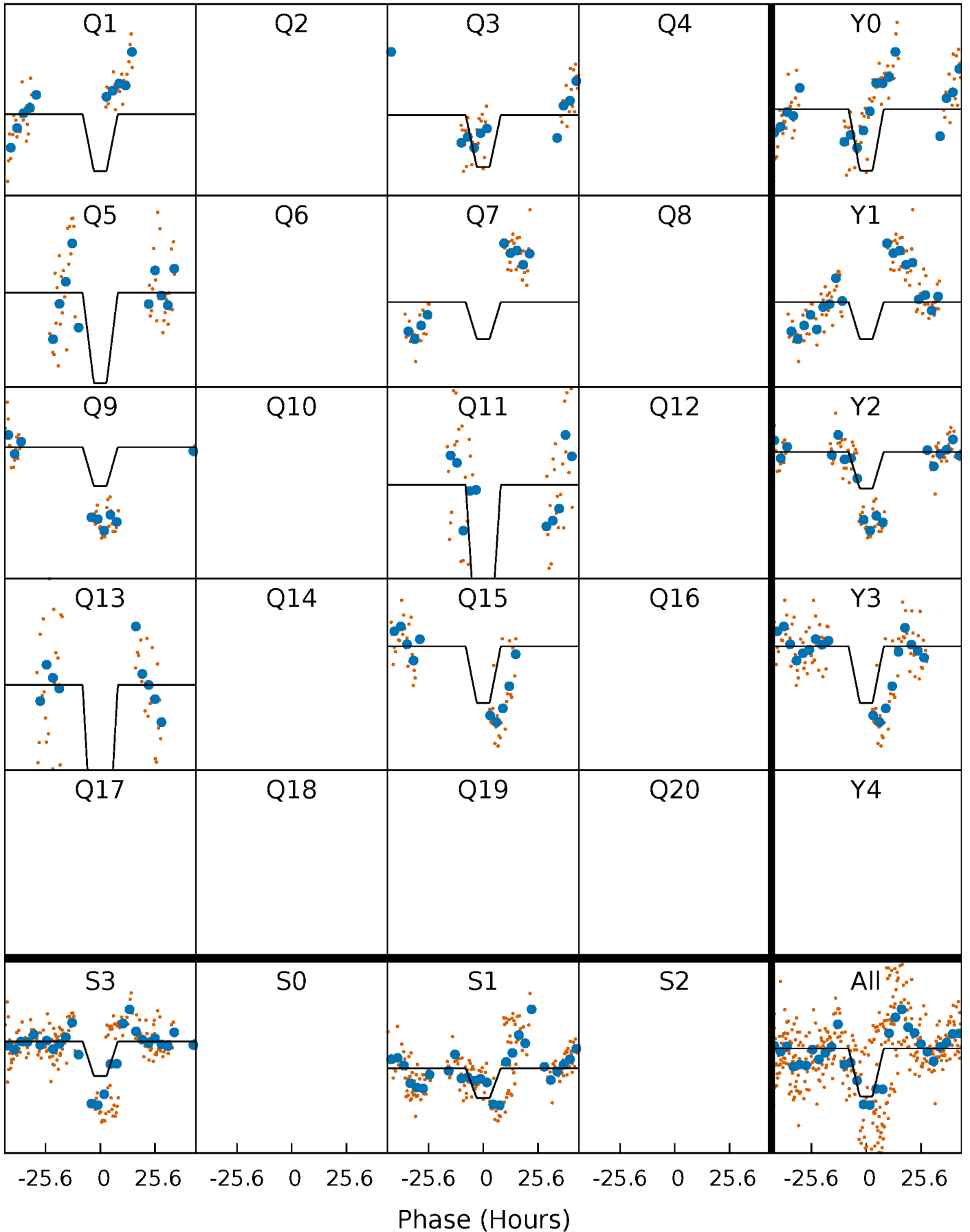
DV Quarter-Phased Transit Curves

TCE 004484251-02 $P=187.518565$ Days $T_0=143.631143$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

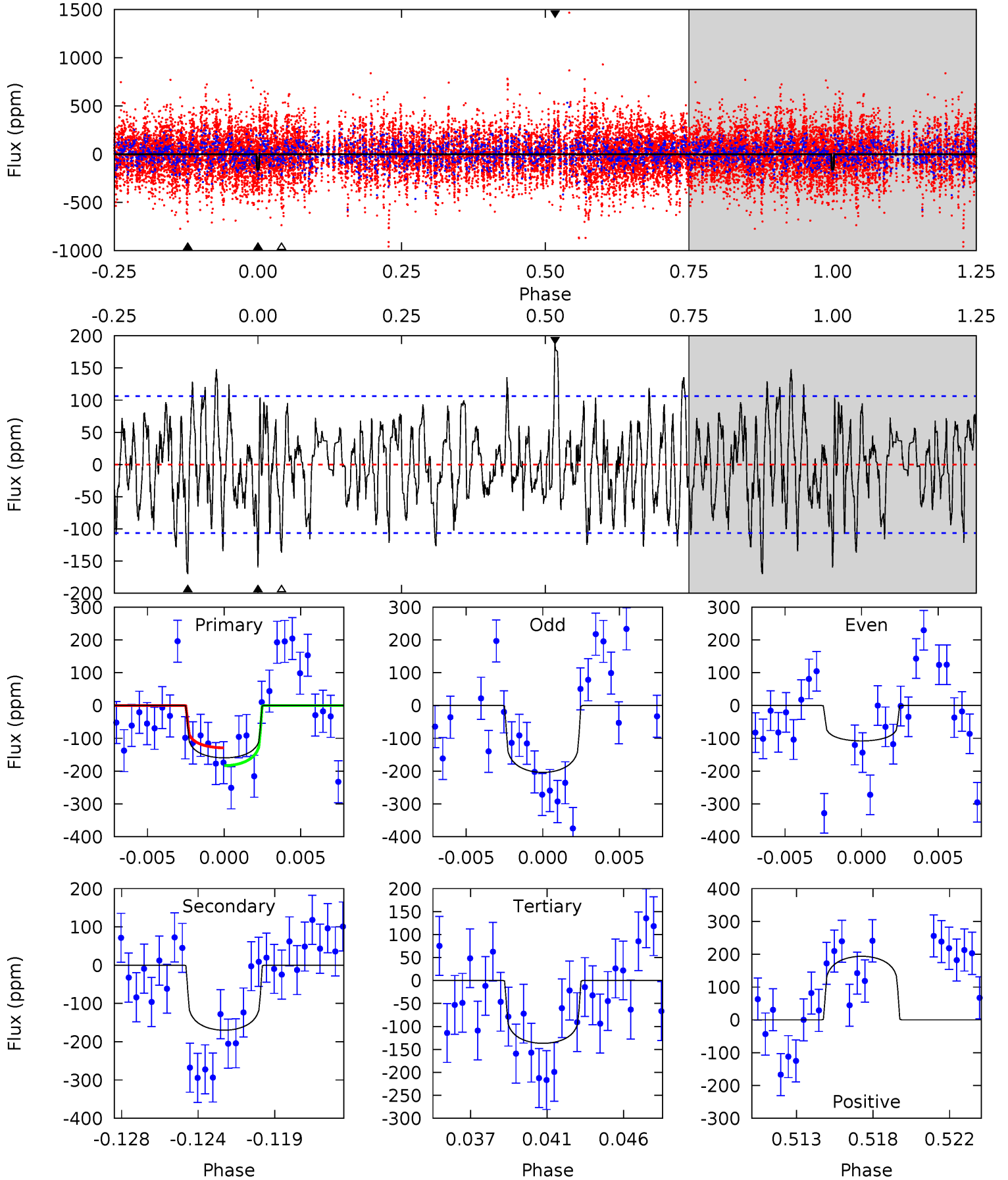
TCE 004484251-02 P=187.525591 Days $T_0=143.639396$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-02, P = 187.518565 Days, E = 143.631143 Days

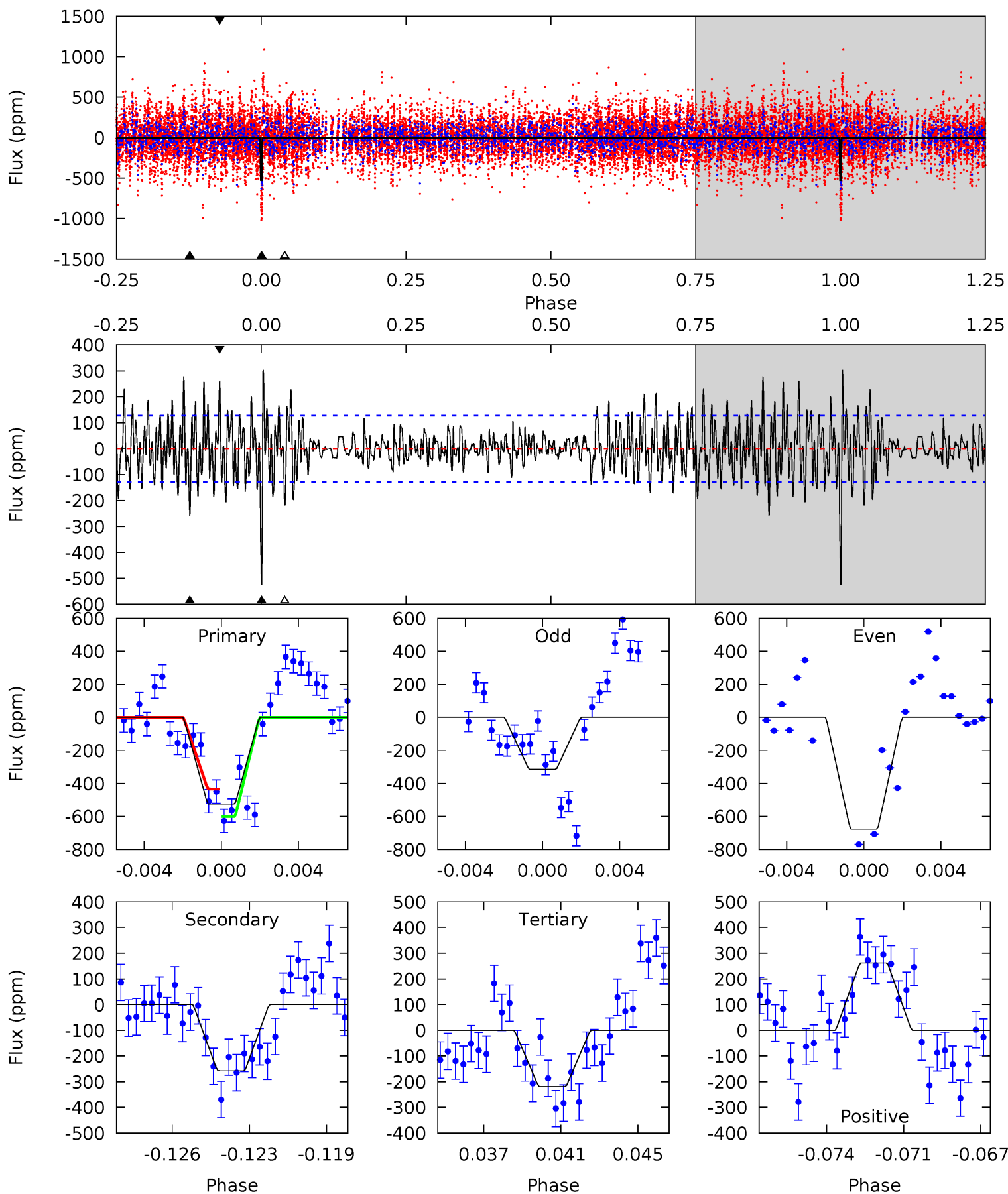
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.77	8.26	6.66	9.42	5.17	2.84	2.69	1.11	-1.65	1.61	-1.16	2.34	0.73	0.53	1.31



Alt Model-Shift Uniqueness Test

004484251-02, P = 187.525591 Days, E = 143.639396 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	10.5	8.94	10.7	5.21	2.90	3.16	12.5	10.7	1.59	-0.19	7.68	1.63	0.37	3.35



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-170 ± 21	$2.68^{+0.93}_{-0.78}$	631^{+30}_{-28}	6233^{+1294}_{-772}	6534^{+6644}_{-2957}
Alt.	-258 ± 24	$3.62^{+0.91}_{-0.83}$	630^{+29}_{-25}	5958^{+804}_{-560}	5385^{+3760}_{-1993}

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

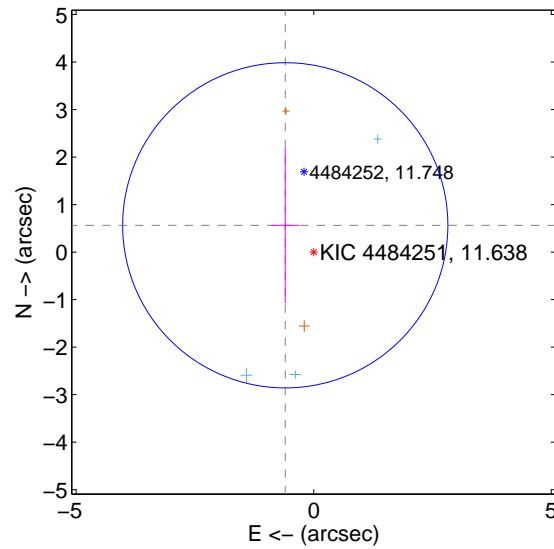
Supplemental centroid analysis for 004484251-02. **Kepler magnitude: 11.64.** Transit SNR 6.65

There are 3 quarters with good PRF difference image offsets

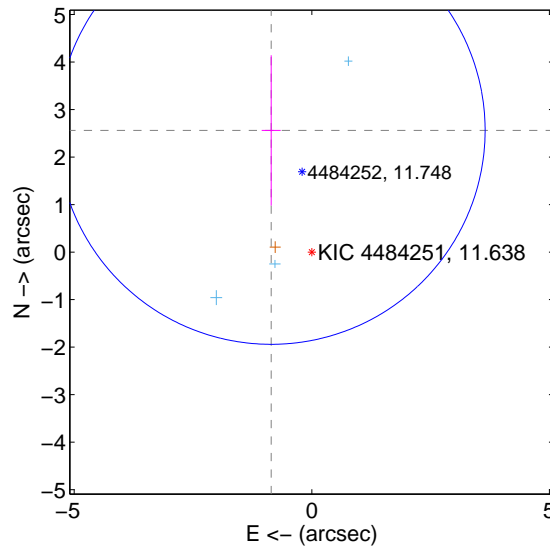
The direct PRF centroid is offset from the target star catalog position by about 1.74 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.822 ± 1.141	0.72	0.599 ± 0.293	0.564 ± 1.635
PRF-fit source offset from KIC position	2.701 ± 1.501	1.80	0.855 ± 0.199	2.562 ± 1.581
photometric centroid source offset	1.65 ± 0.39	4.25	0.10 ± 0.26	1.65 ± 0.39

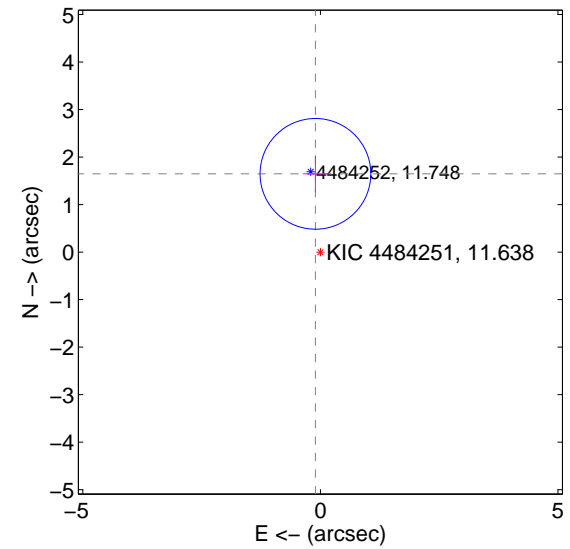
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

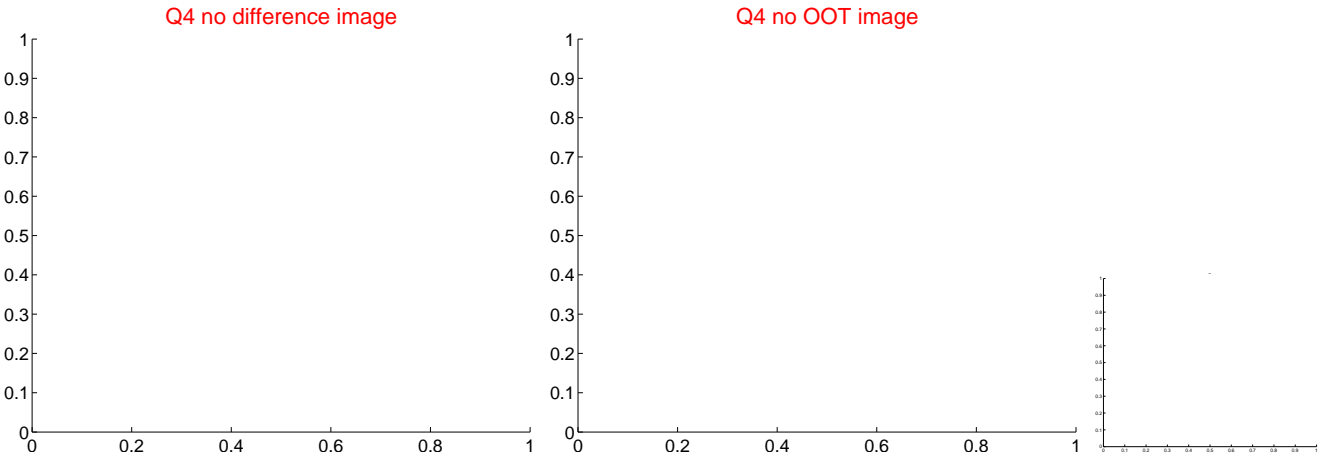
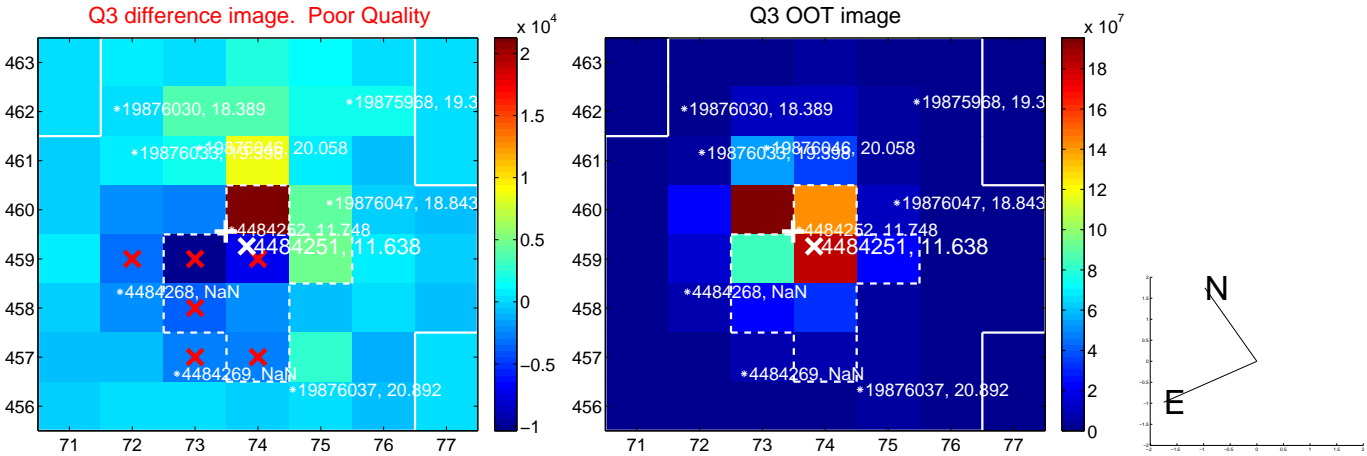
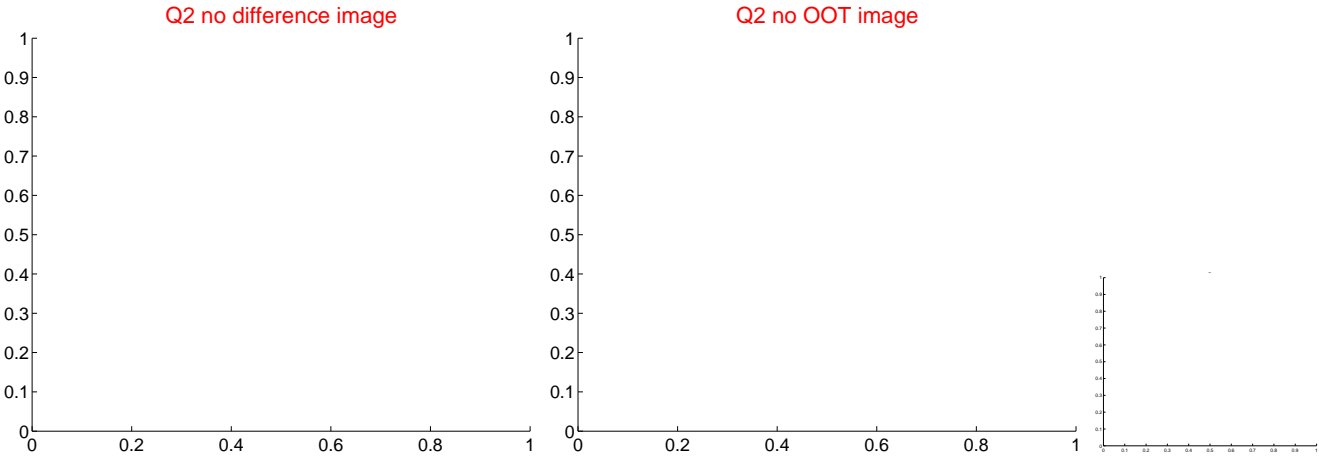
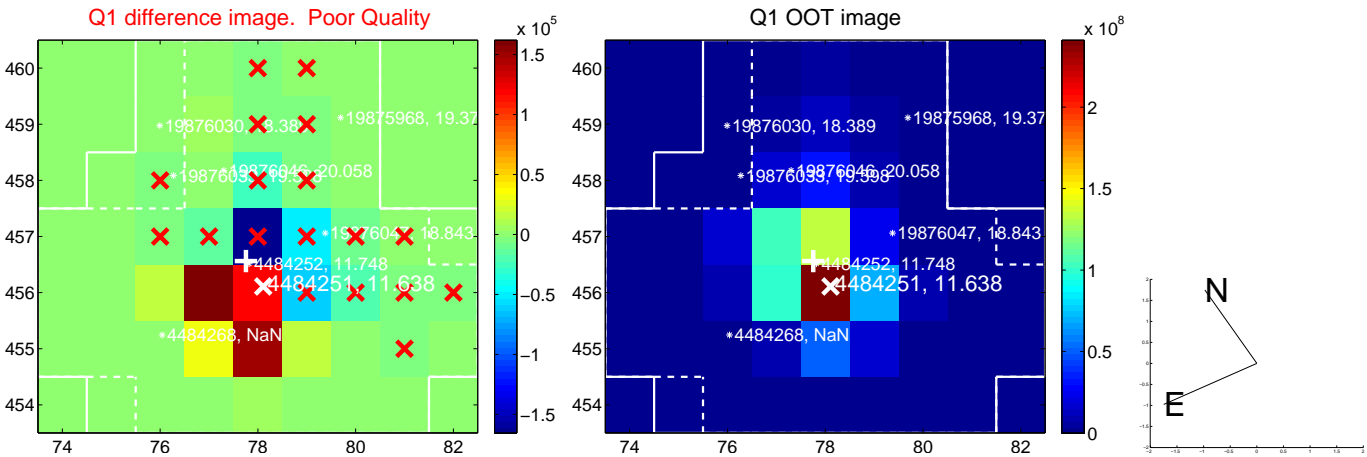


offset from photometric centroids

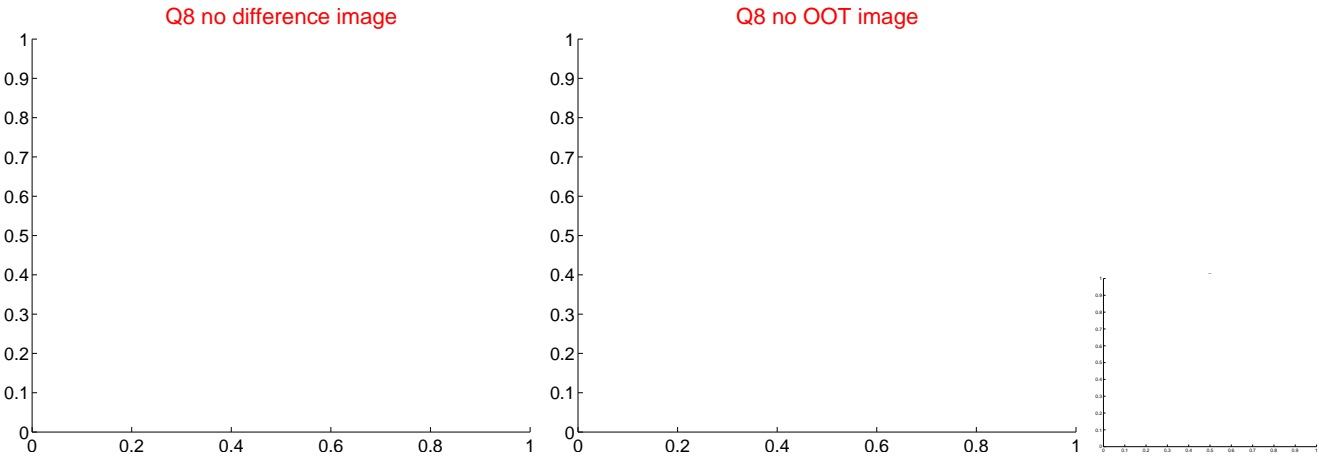
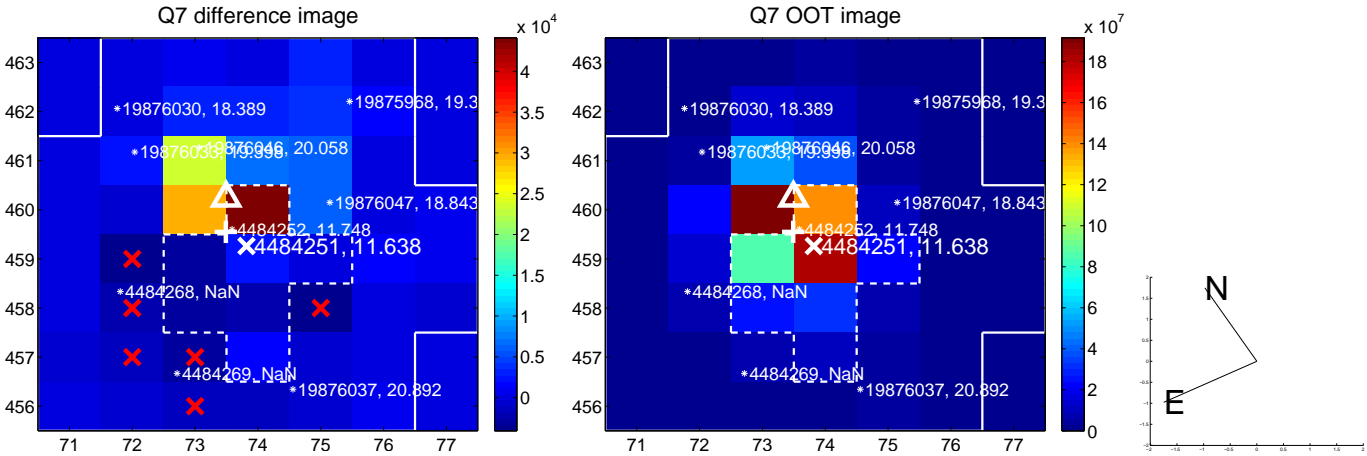
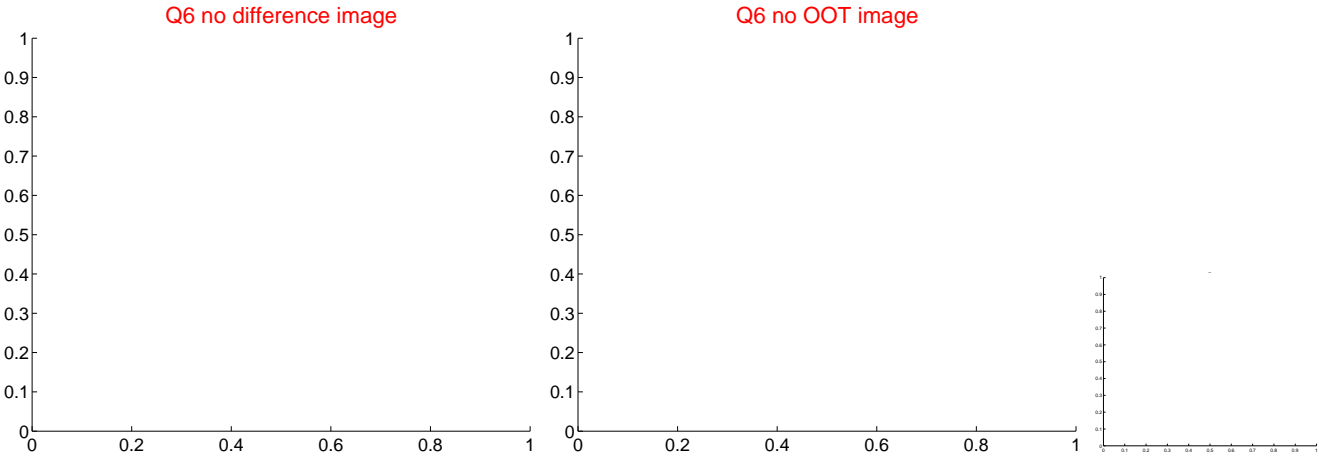
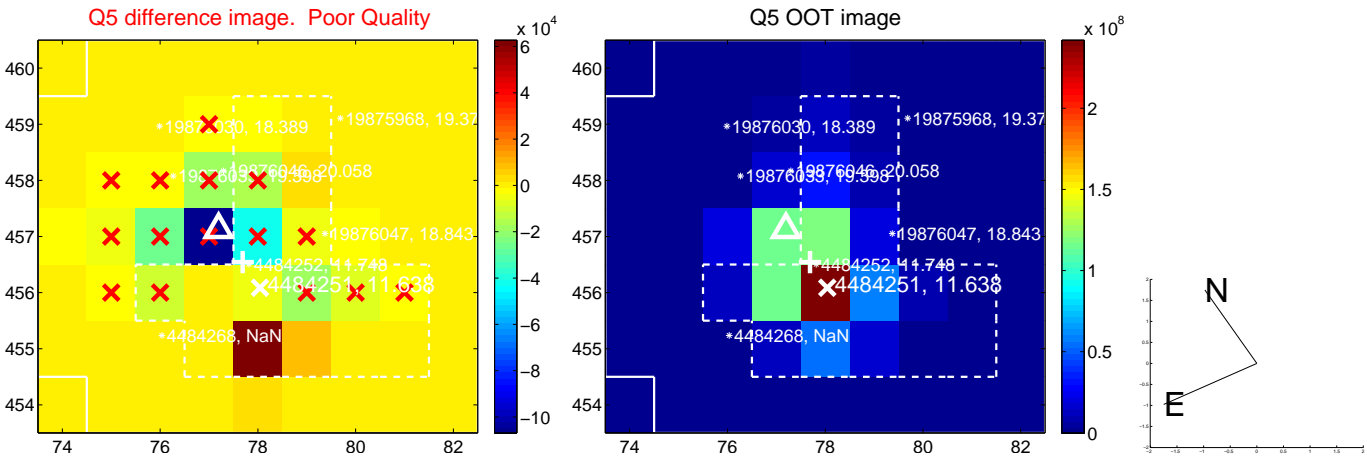


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

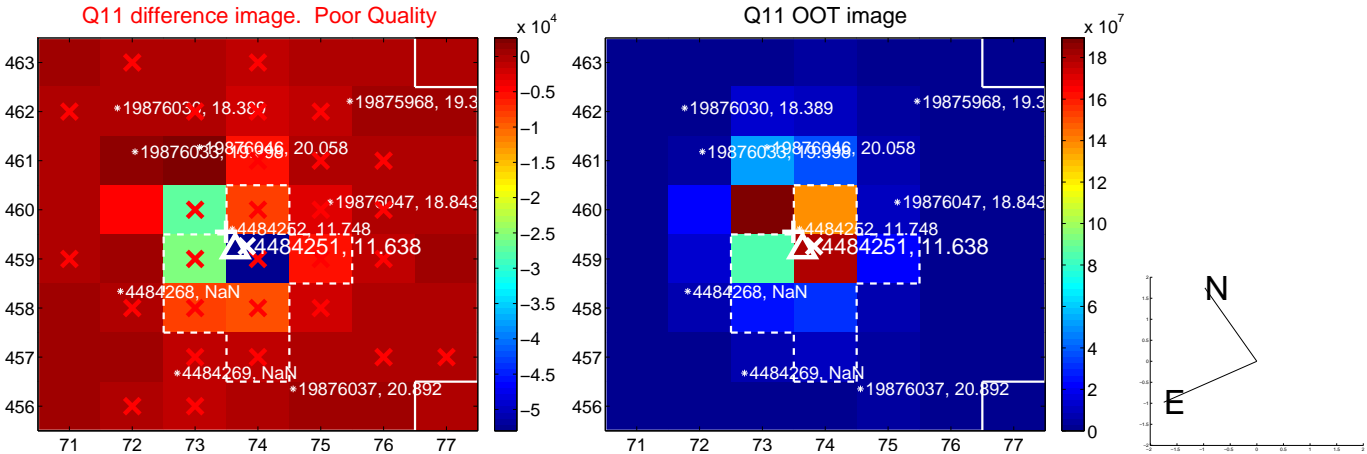
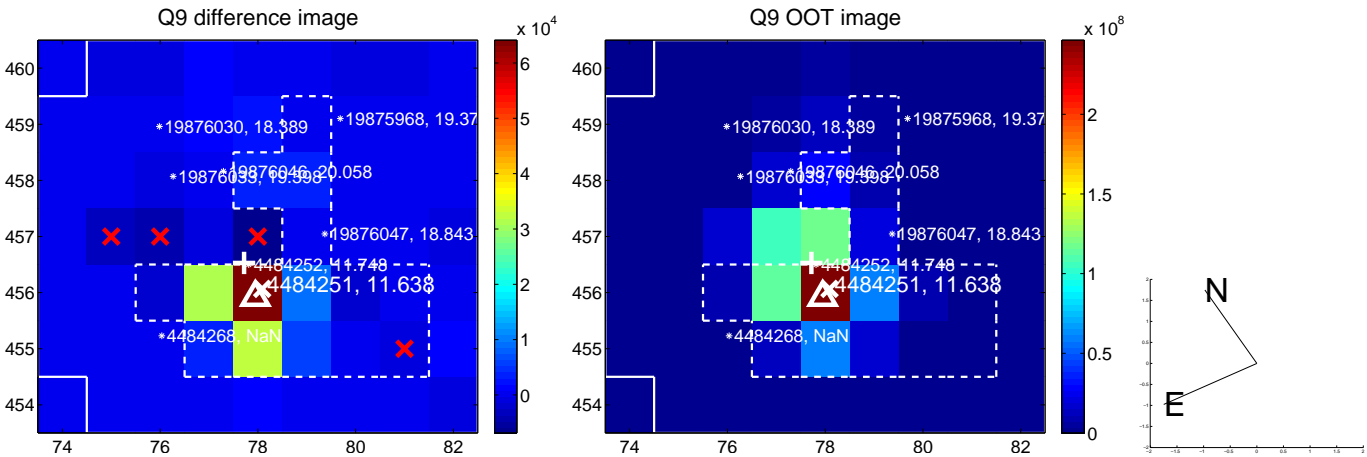
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



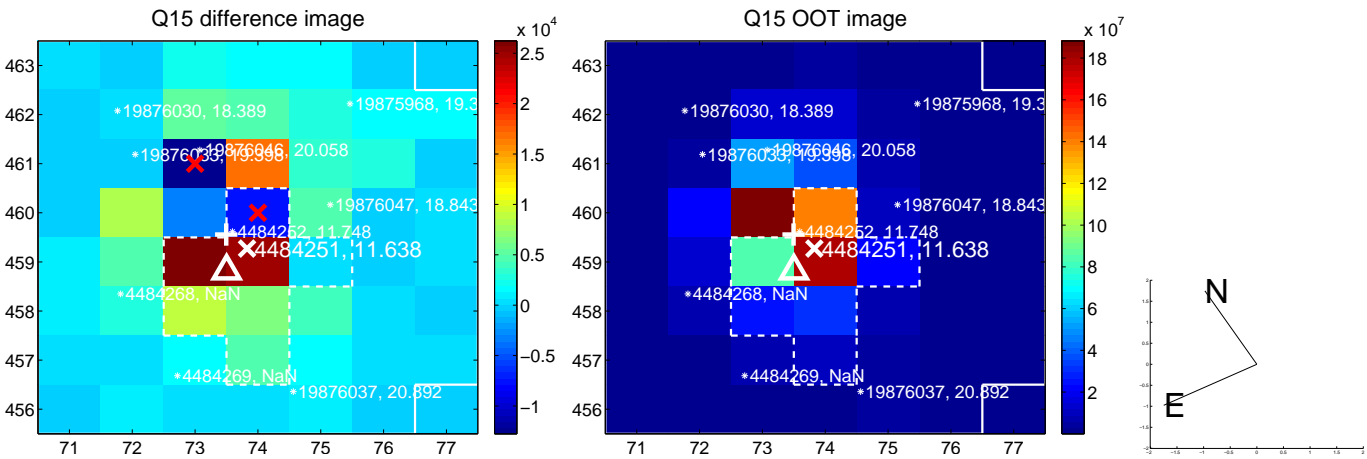
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



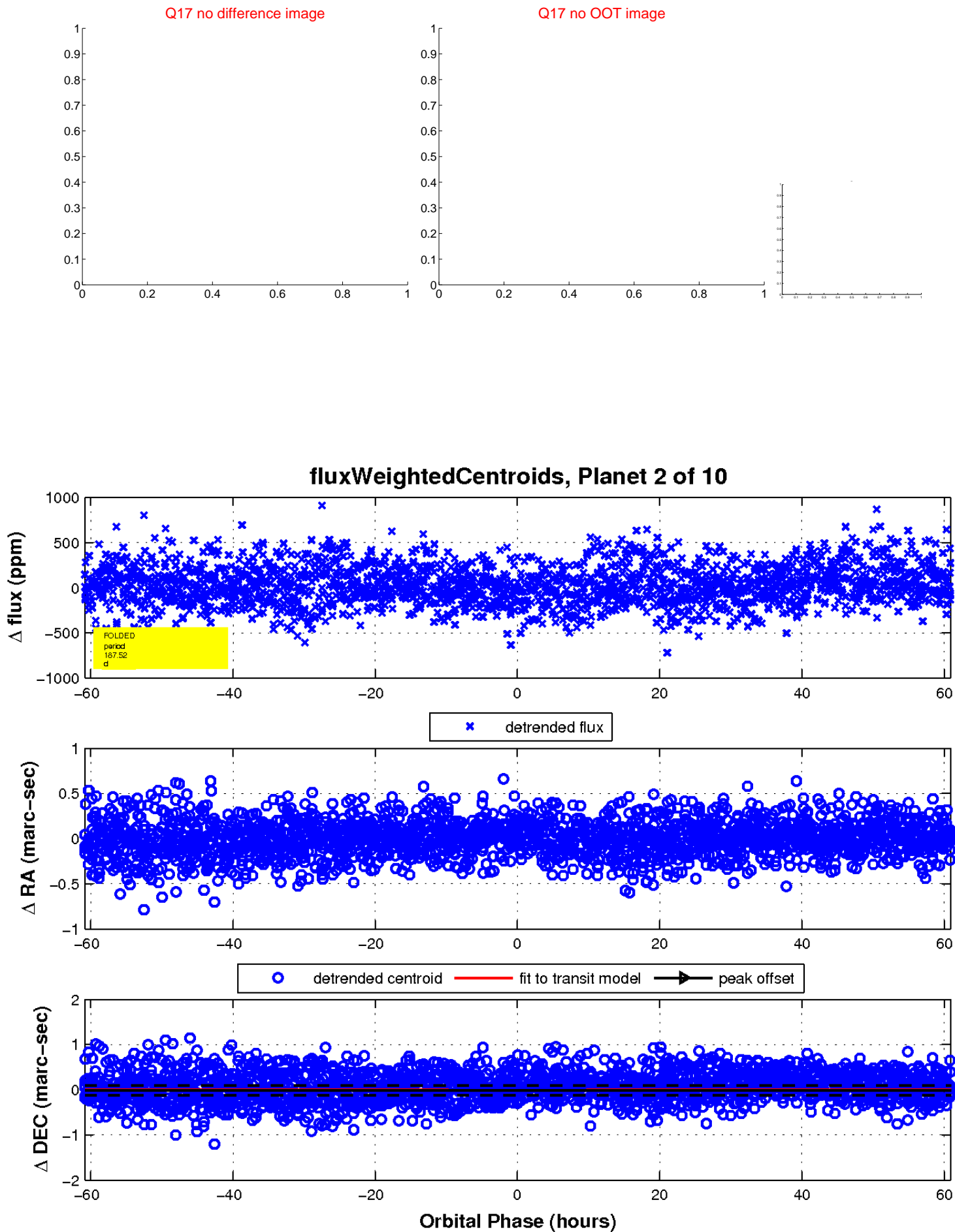
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

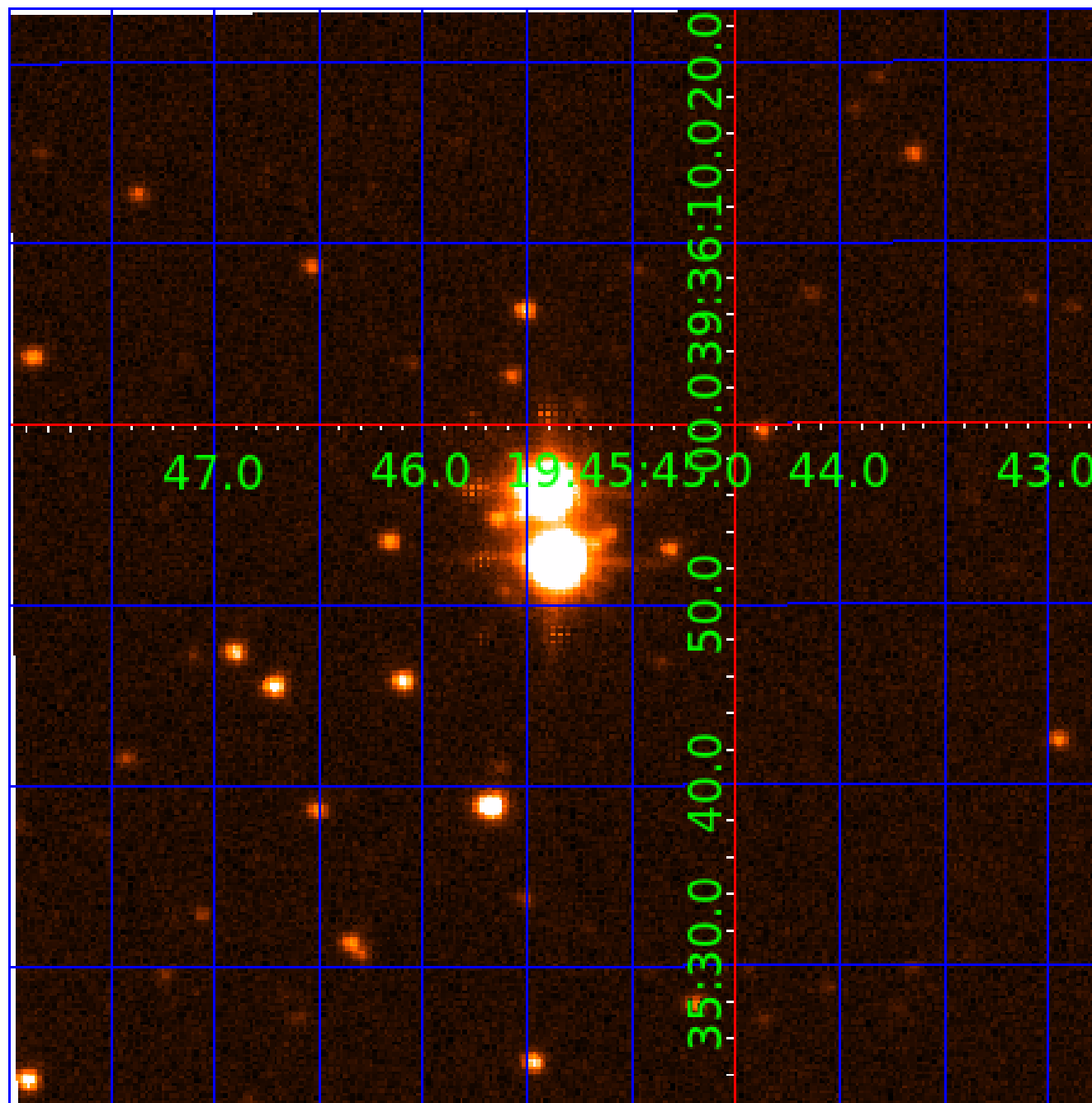


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
004484251-01	OBS	No	1.927596	133.409729	62.5	11.096	10.7	13.4	1.61	6796	2.44	4419.88
004484251-02	OBS	No	187.518566	143.631143	246.3	20.390	11.4	6.7	1.61	6796	2.70	9.88
004484251-03	OBS	No	131.156980	172.932168	354.5	3.277	9.8	9.3	1.61	6796	3.72	15.91
004484251-04	OBS	No	212.126737	208.397966	52.3	128.241	9.8	1.4	1.61	6796	1.22	8.38
004484251-05	OBS	No	157.257304	150.611824	337.5	20.471	13.4	7.2	1.61	6796	3.14	12.49
004484251-06	OBS	No	23.480828	137.485920	112.3	23.308	8.4	6.3	1.61	6796	1.84	157.69
004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

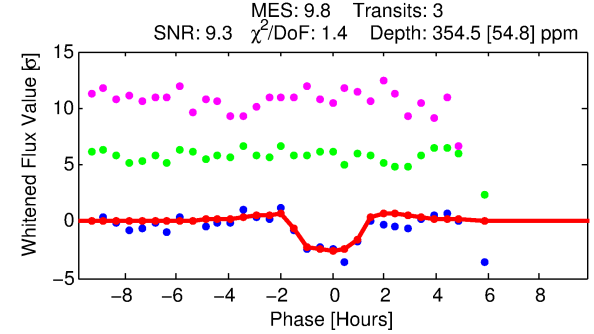
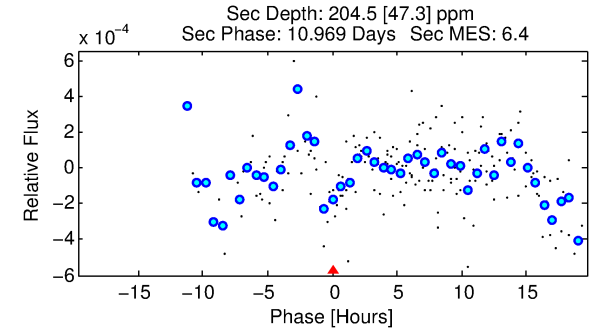
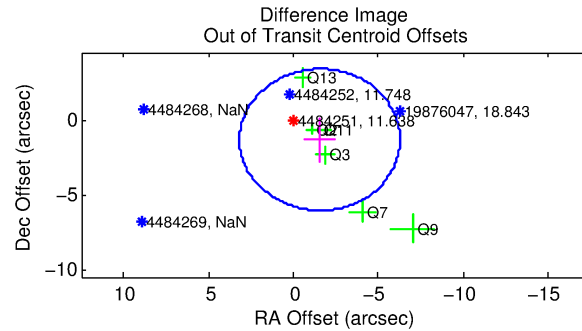
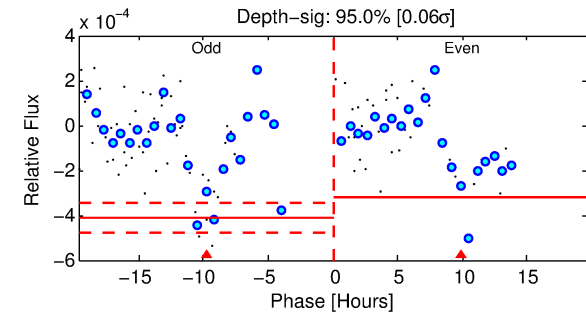
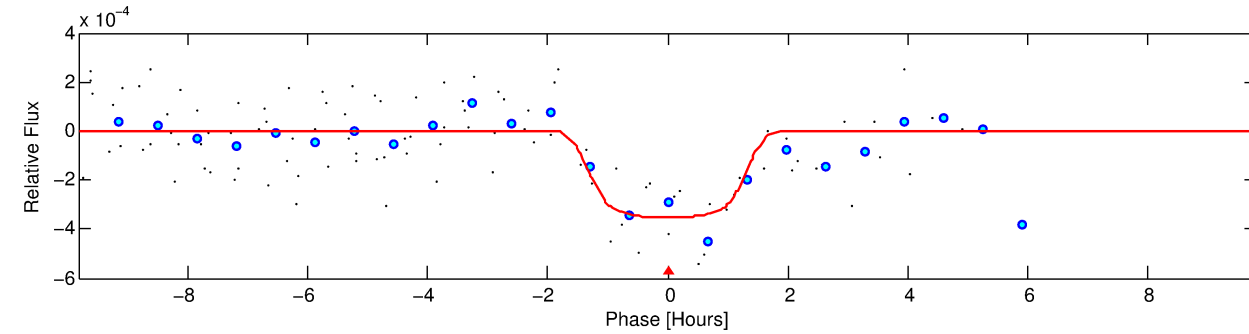
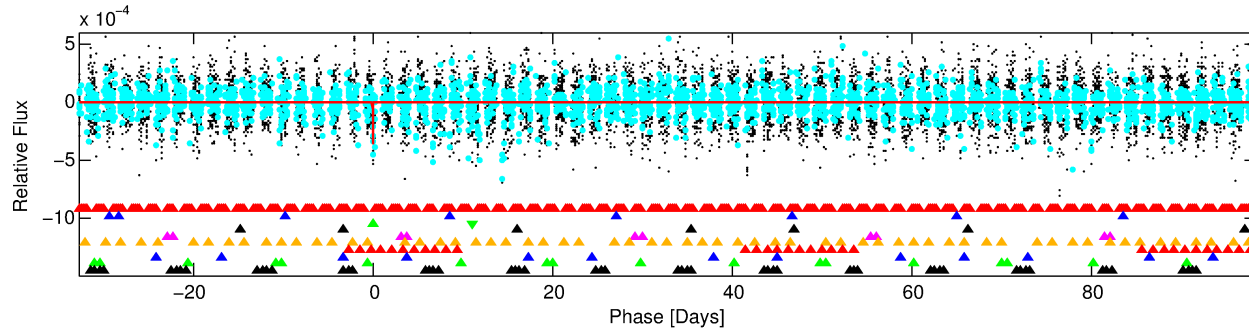
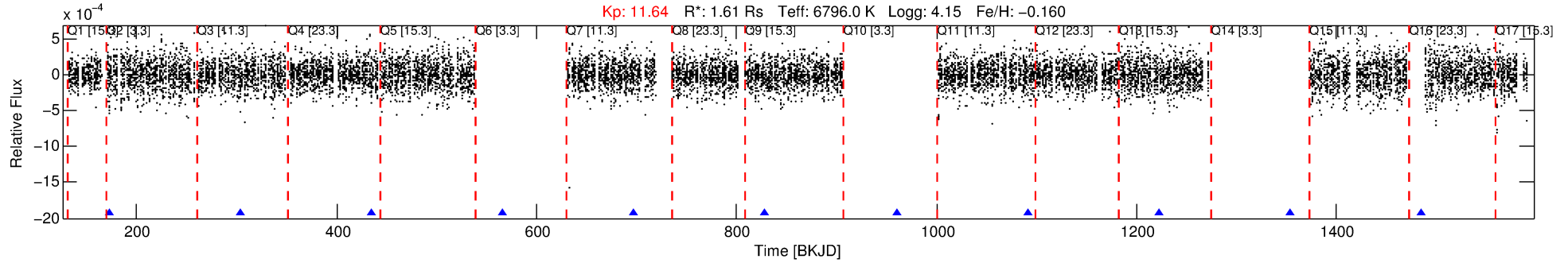
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-03

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 3 of 10 Period: 131.157 d



DV Fit Results:

Period = 131.15698 [0.00574] d
Epoch = 172.9322 [0.0072] BKJD
Rp/R* = 0.0212 [0.0034]
a/R* = 114.84 [85.16]
b = 0.95 [0.08]
Seff = 15.91 [3.50]
Teq = 509 [28] K
Rp = 3.72 [0.90] Re
a = 0.5573 [0.0827] AU
Ag = 2523.89 [1141.49] [2.21σ]
Teffp = 5581 [562] K [9.02σ]

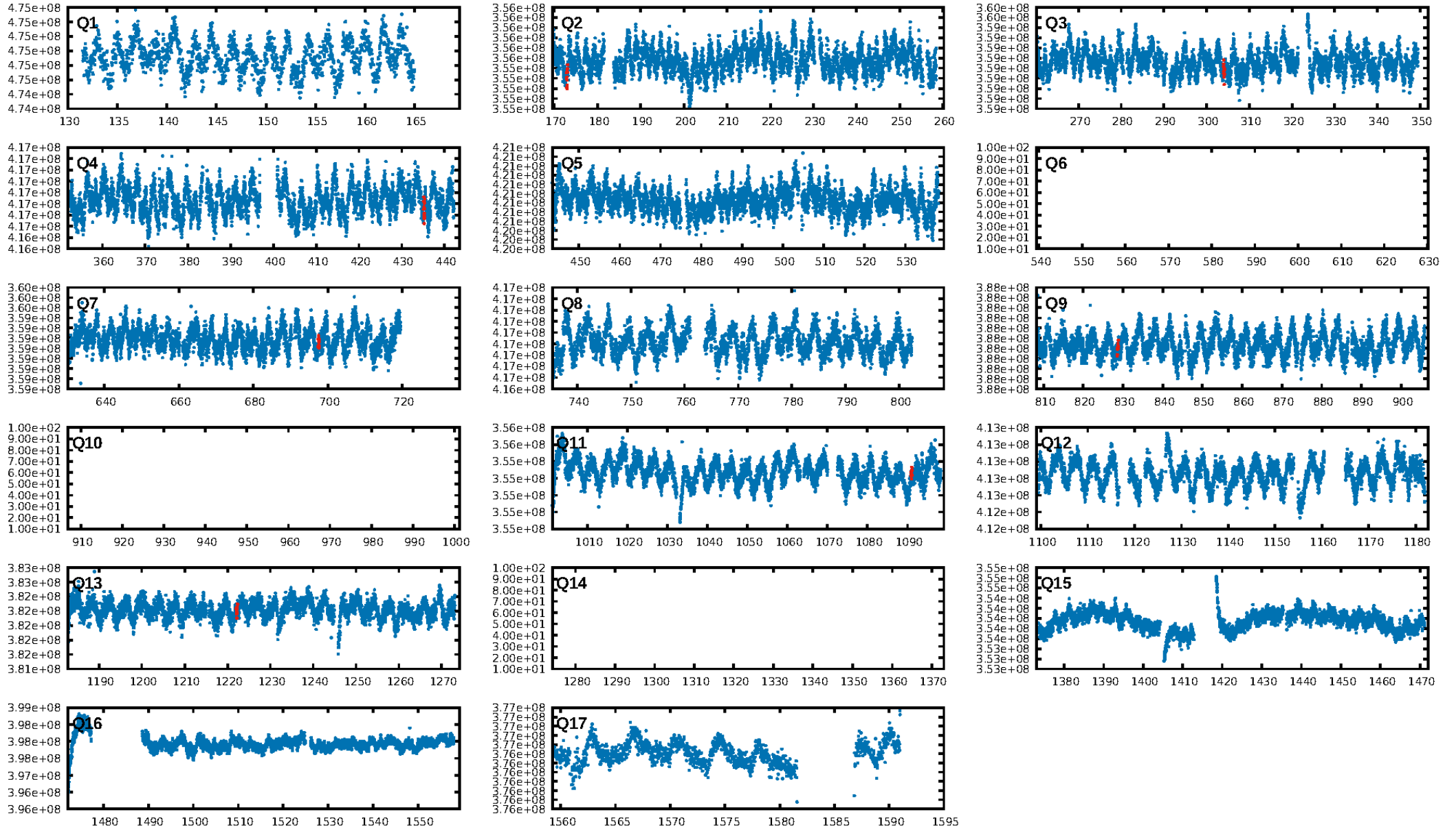
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [138.25σ]
LongPeriod-sig: 100.0% [30.21σ]
ModelChiSquare2-sig: 9.2%
ModelChiSquareGof-sig: 85.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.726
Centroid-sig: N/A
Centroid-so: 2.177 arcsec [5.19σ]
OotOffset-rm: 2.055 arcsec [1.30σ]
KicOffset-rm: 1.011 arcsec [1.45σ]
OotOffset-st: 1/3/0/2 [6]
KicOffset-st: 1/3/0/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.43 [3/7]

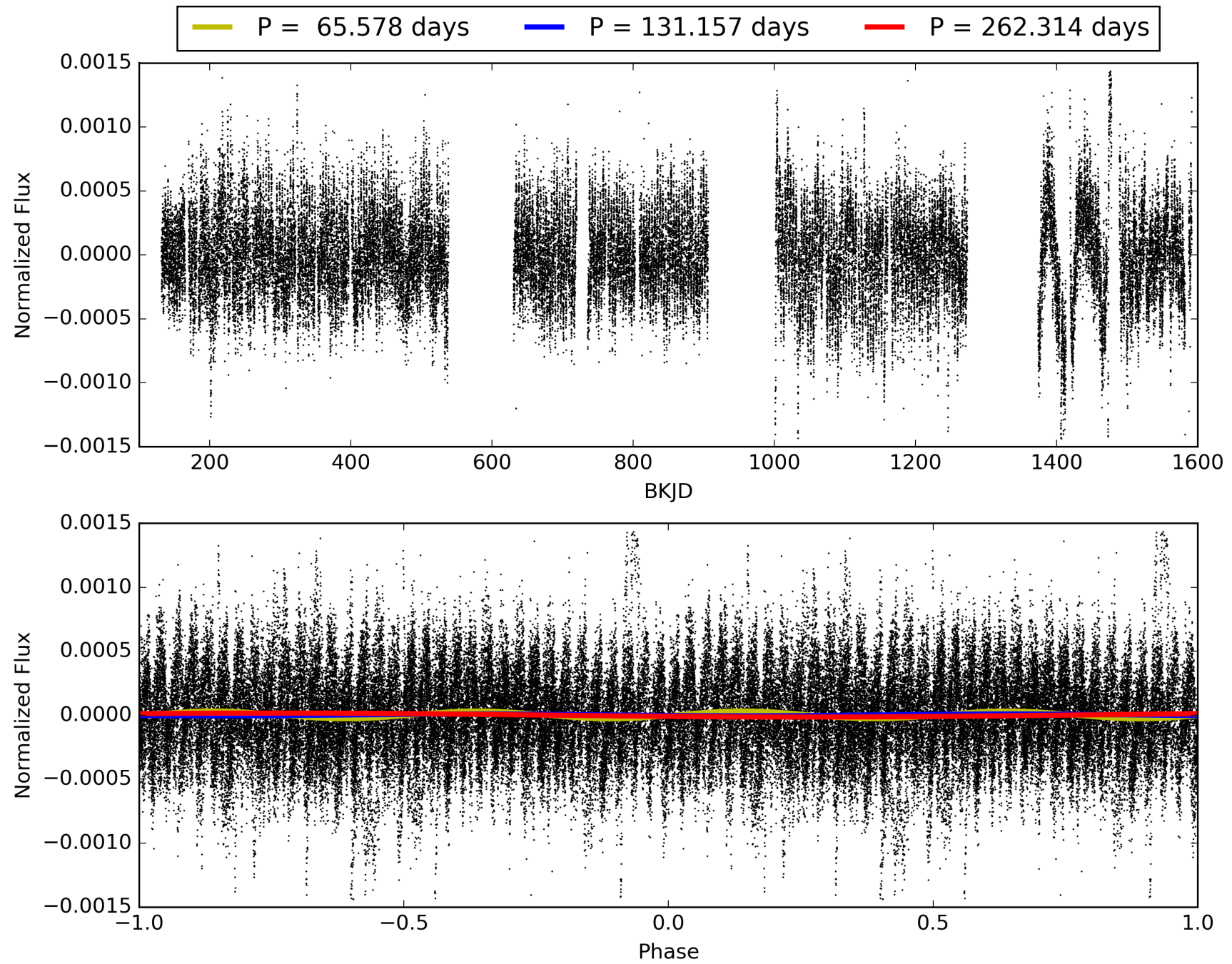
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:12:49 Z

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

TCE 004484251-03, PDC Light Curves

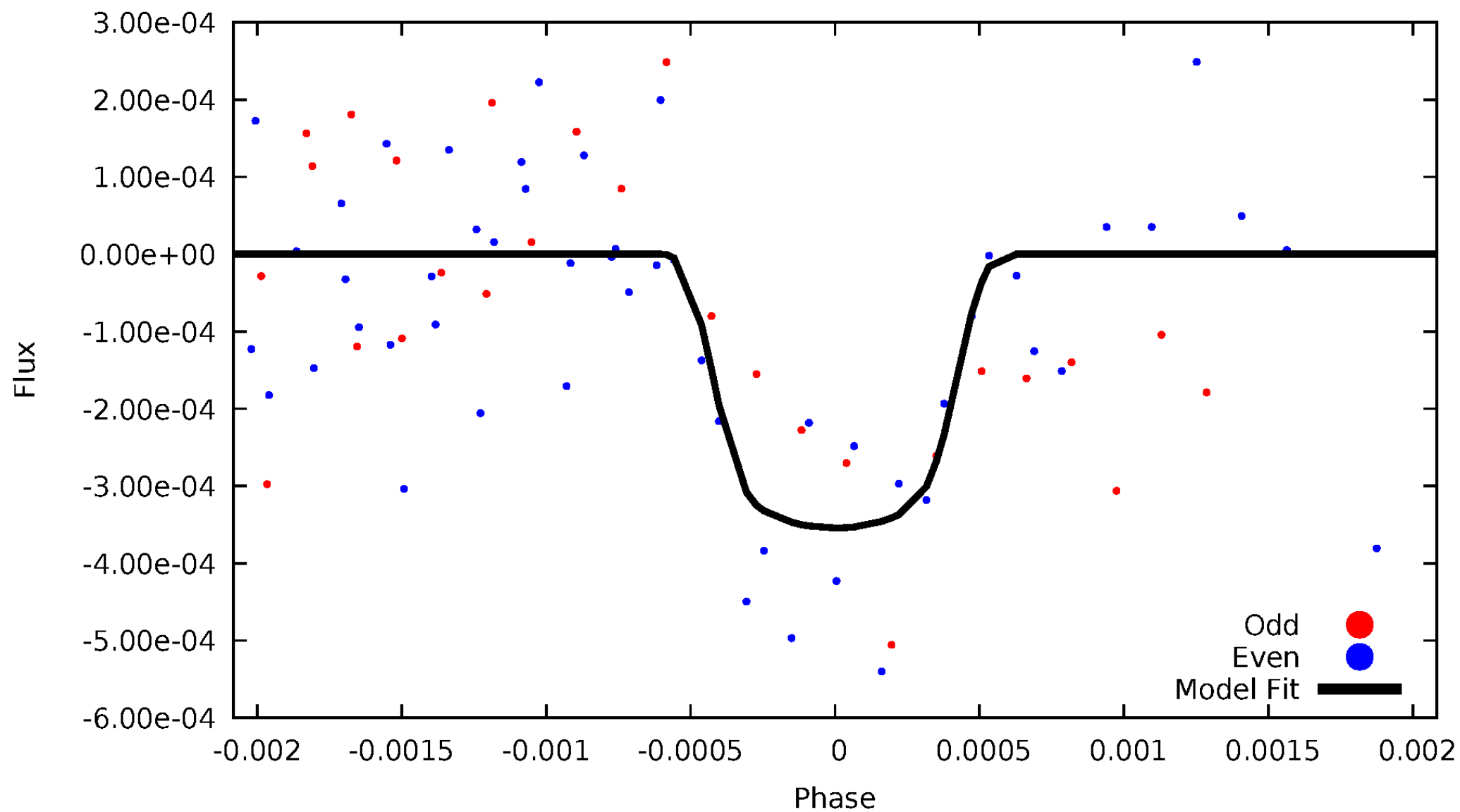


TCE 004484251-03



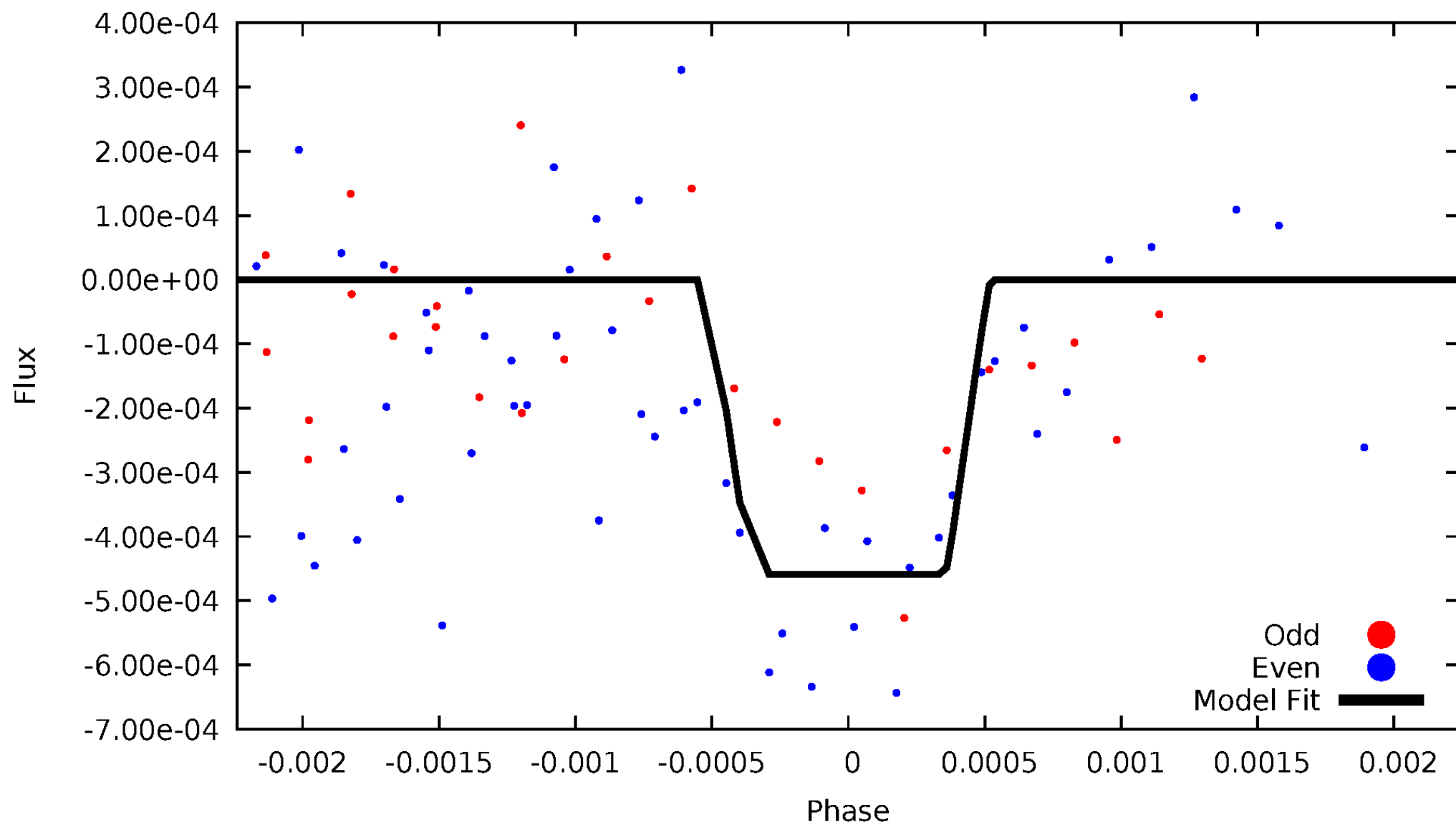
DV Odd/Even

TCE 004484251-03



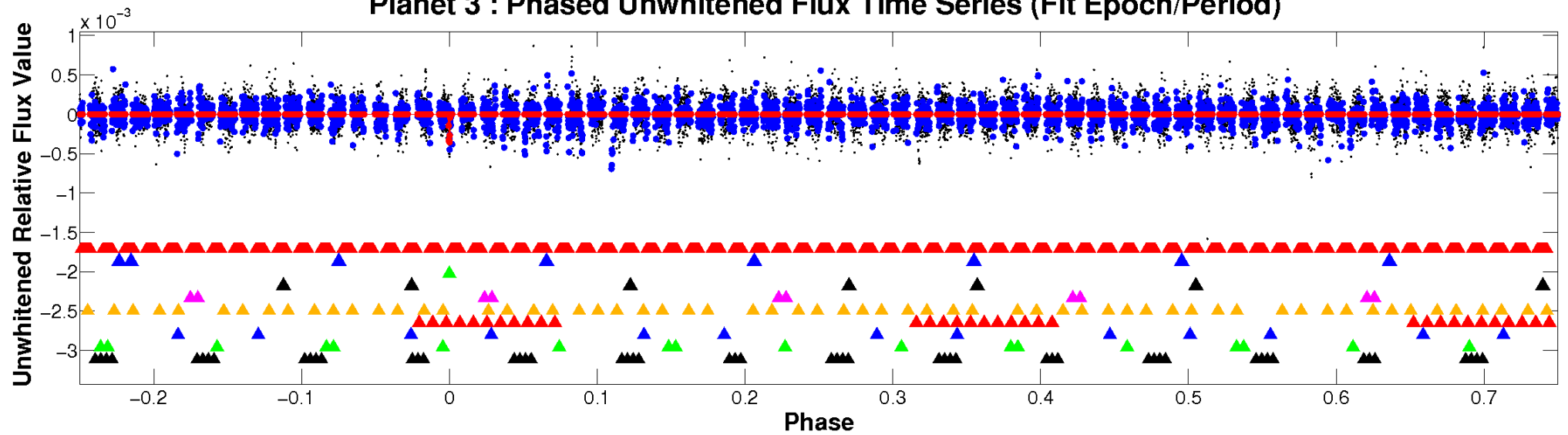
ALT Odd/Even

TCE 004484251-03

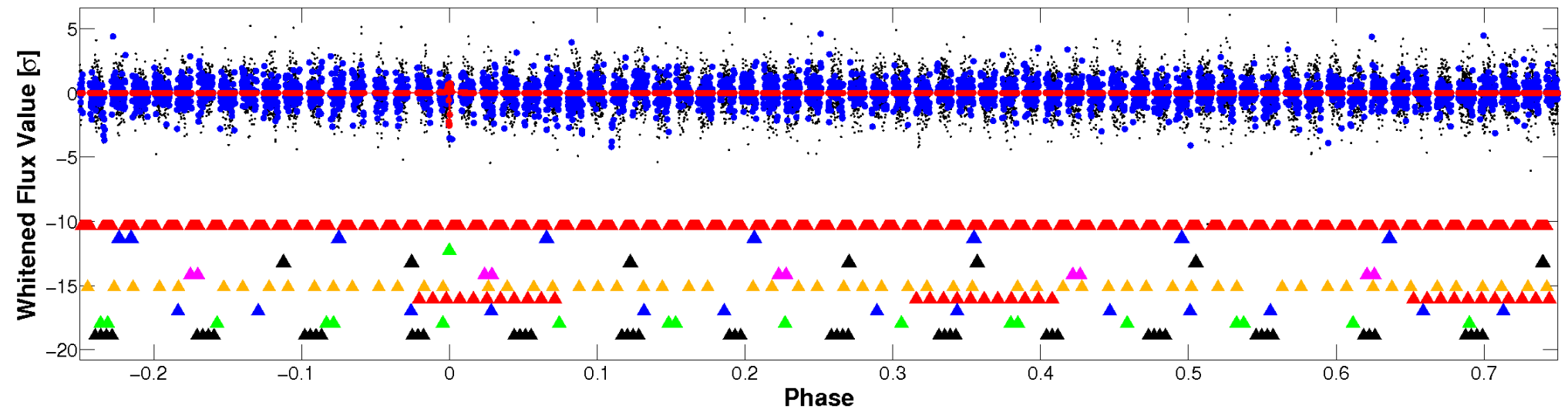


Non-Whitened Vs. Whitened Light Curve

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

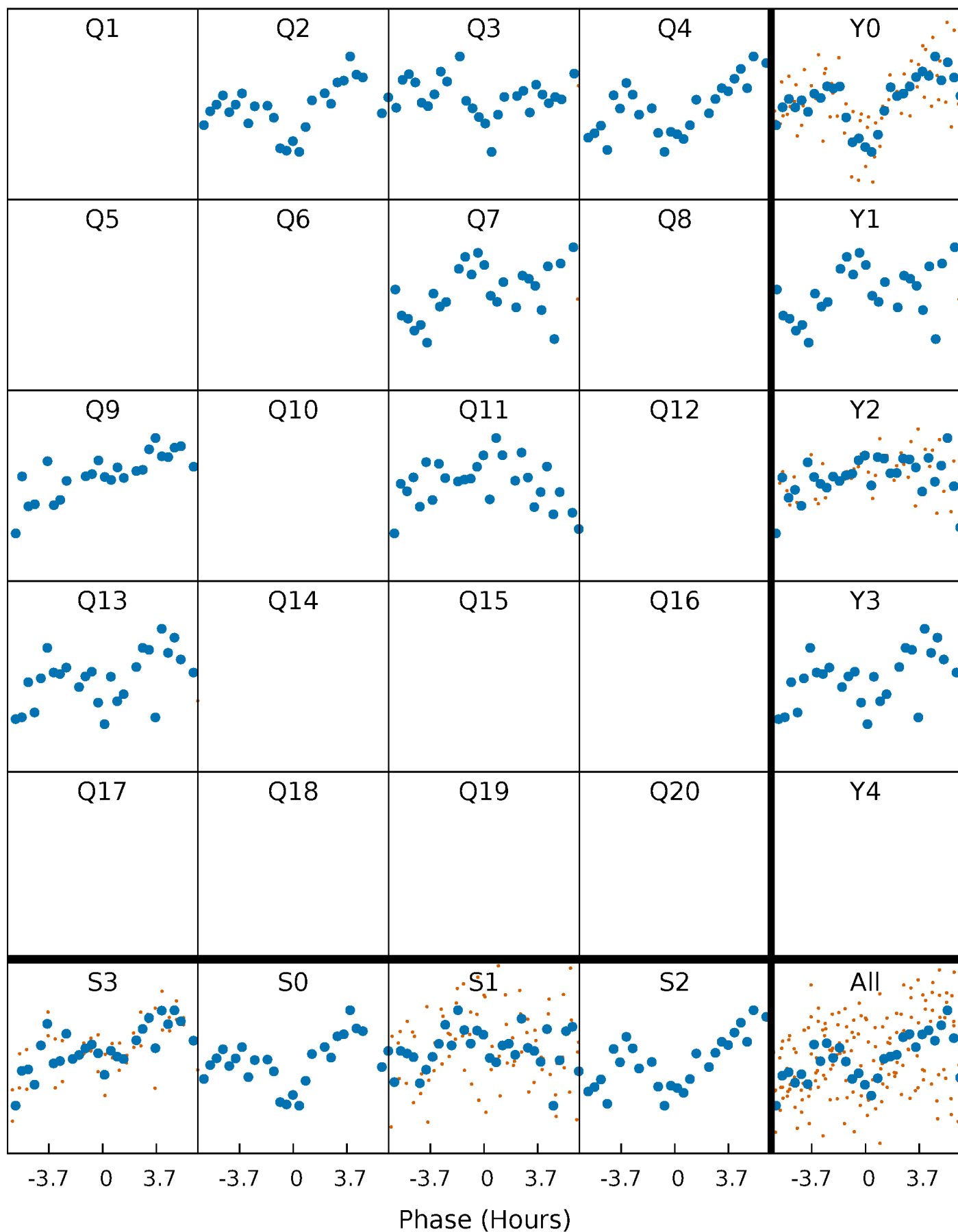


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



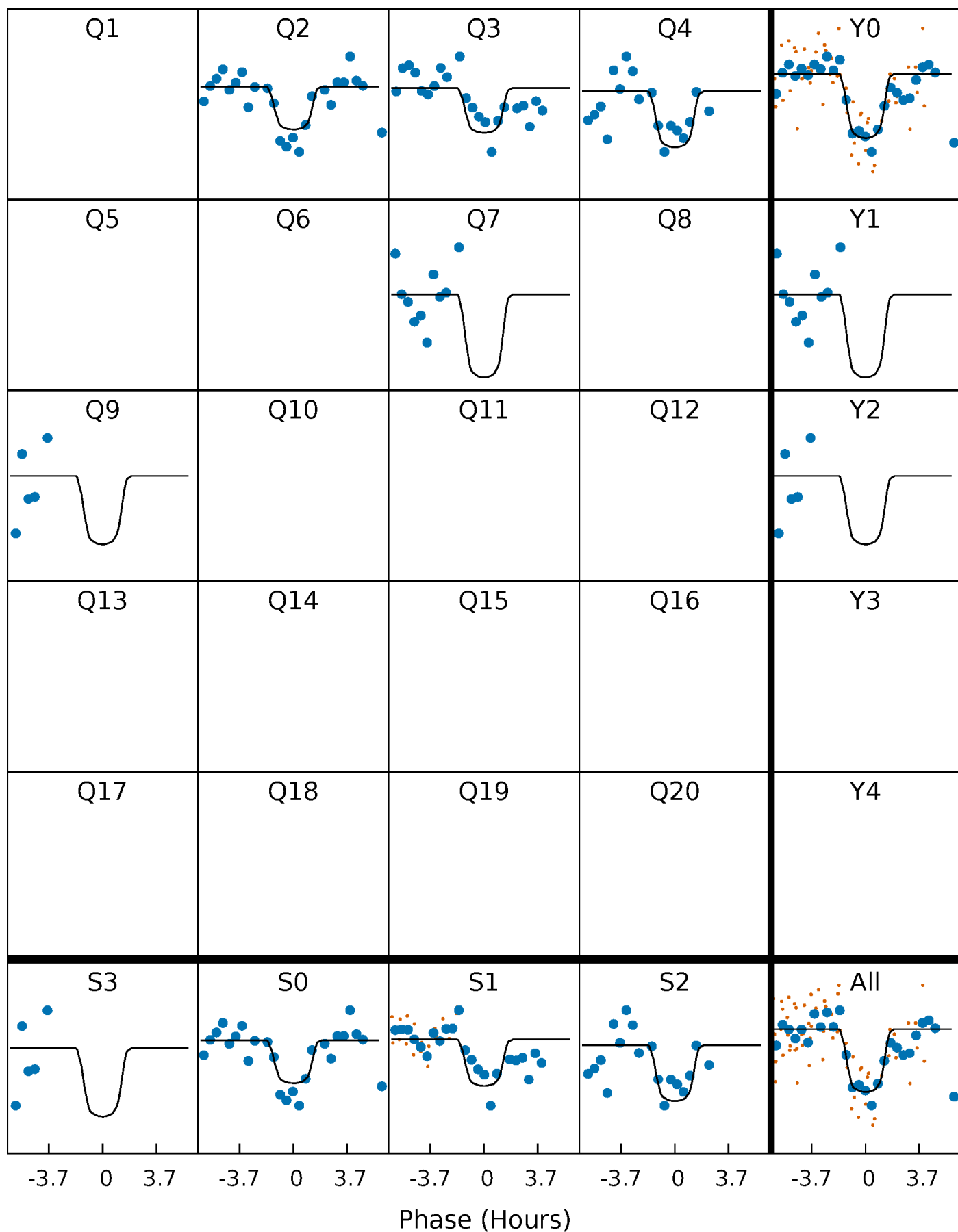
PDC Quarter-Phased Transit Curves

TCE 004484251-03 $P=131.156980$ Days $T_0=172.932168$ (BKJD)



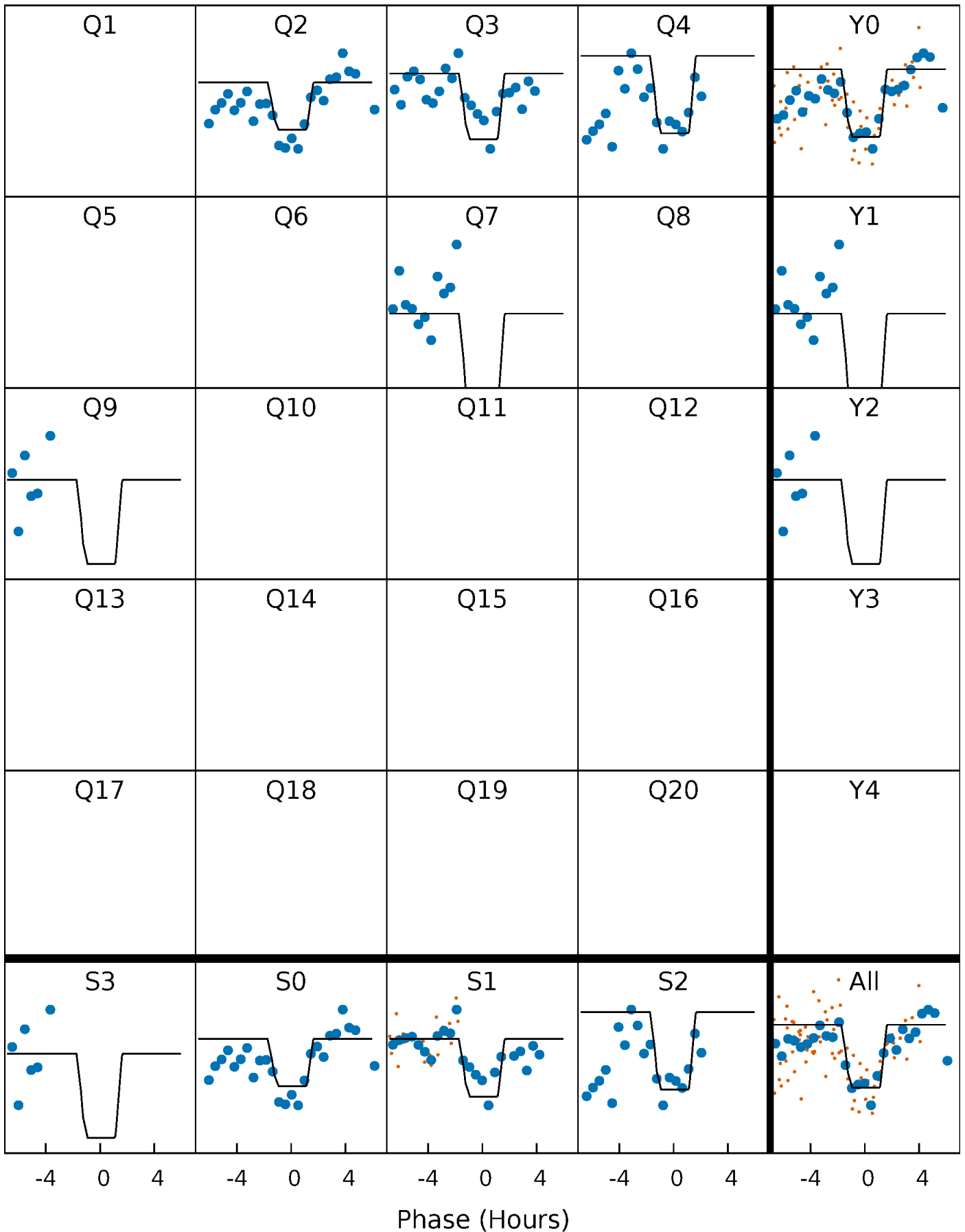
DV Quarter-Phased Transit Curves

TCE 004484251-03 P=131.156980 Days $T_0=172.932168$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

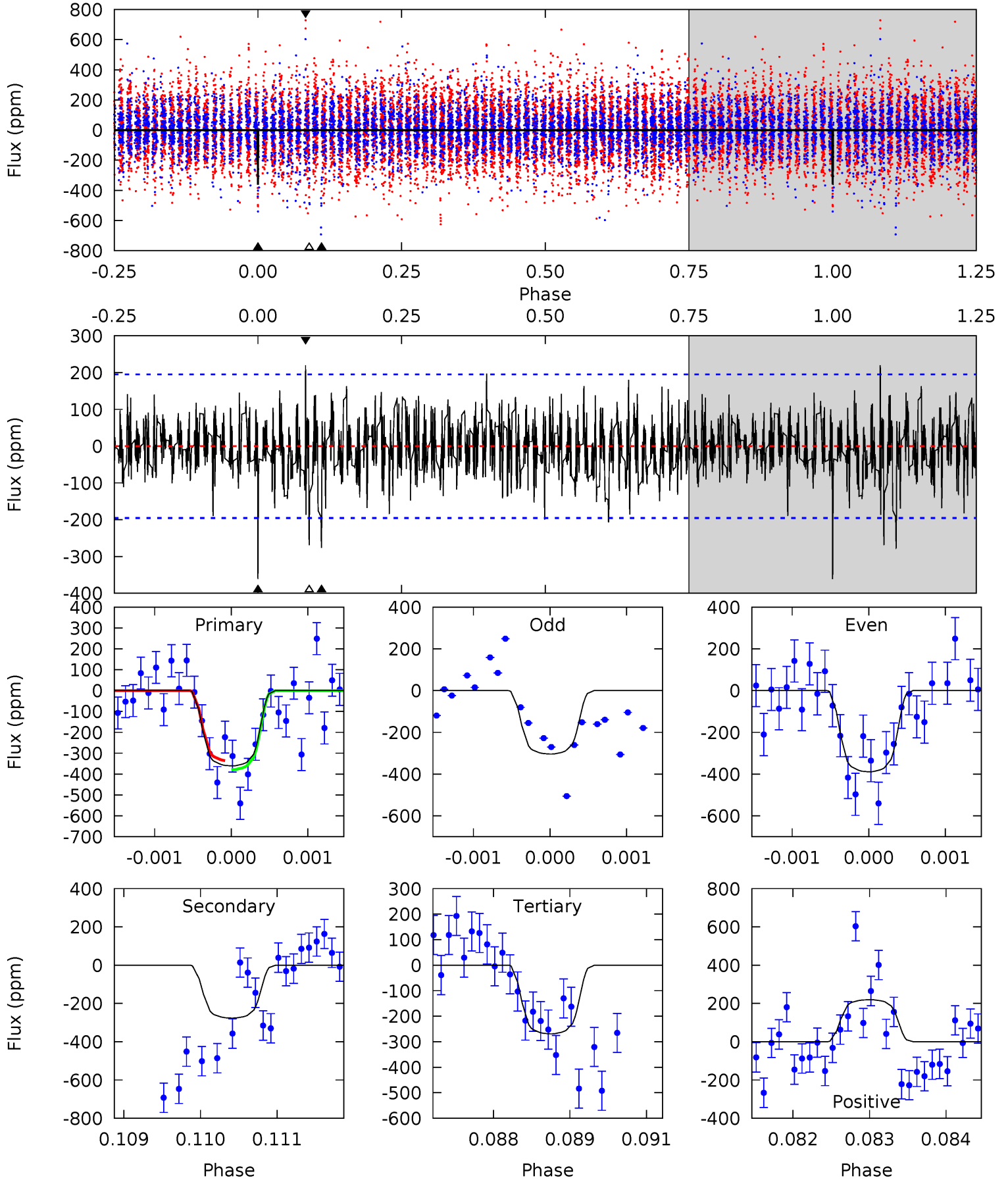
TCE 004484251-03 P=131.157742 Days $T_0=172.930140$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-03, P = 131.156980 Days, E = 41.775188 Days

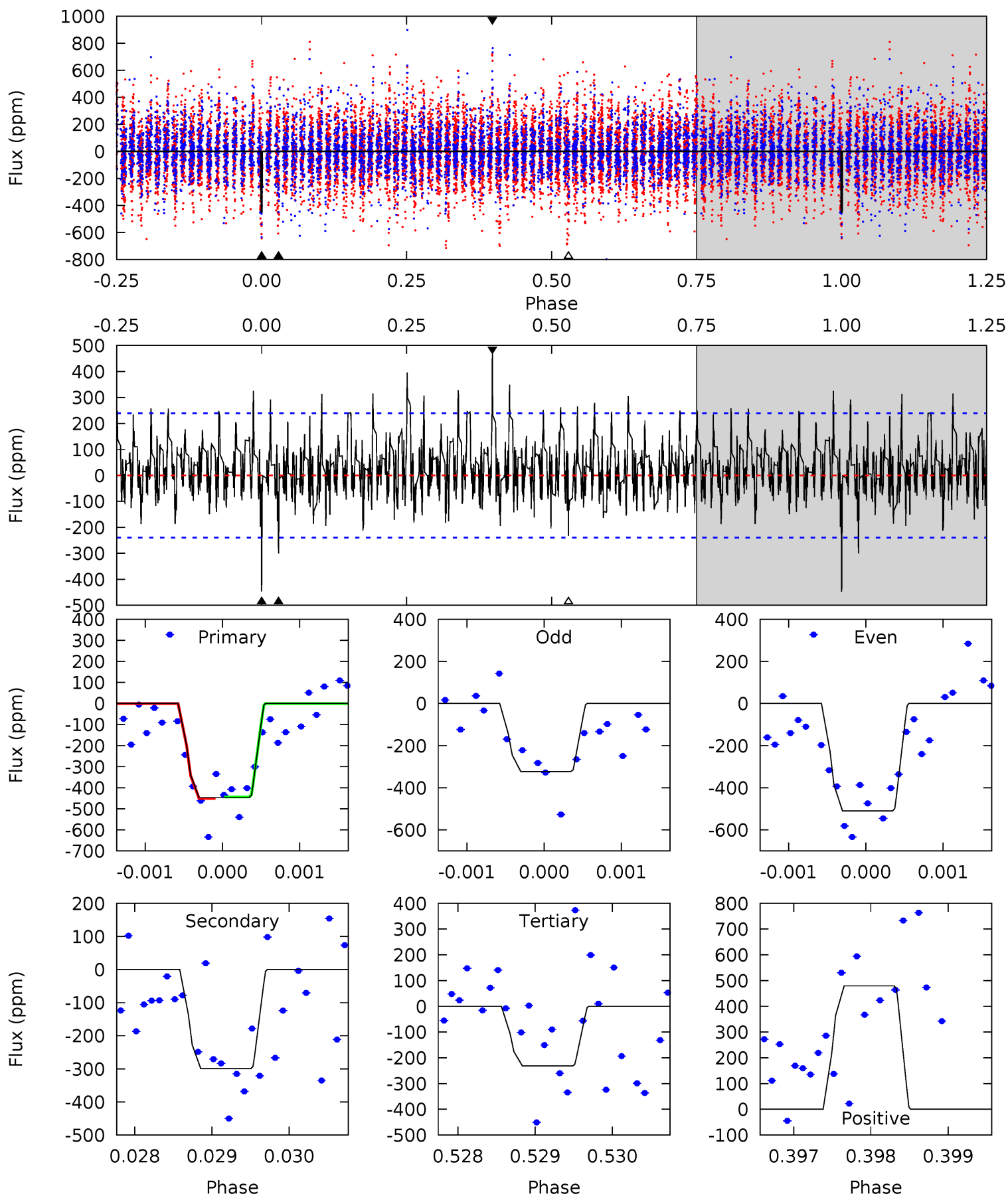
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	7.70	7.50	6.12	5.44	3.27	1.62	2.56	3.94	0.20	1.58	1.15	1.19	0.38	0.60



Alt Model-Shift Uniqueness Test

004484251-03, P = 131.157742 Days, E = 41.772398 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	6.83	5.28	10.9	5.46	3.30	1.88	4.91	-0.73	1.55	-4.10	2.03	1.00	0.52	0.09



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-276 ± 36	$3.74^{+0.72}_{-0.71}$	710^{+31}_{-29}	6003^{+628}_{-513}	3440^{+1725}_{-1125}
Alt.	-300 ± 44	$3.75^{+0.71}_{-0.63}$	711^{+36}_{-26}	6089^{+582}_{-486}	3621^{+1555}_{-1155}

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

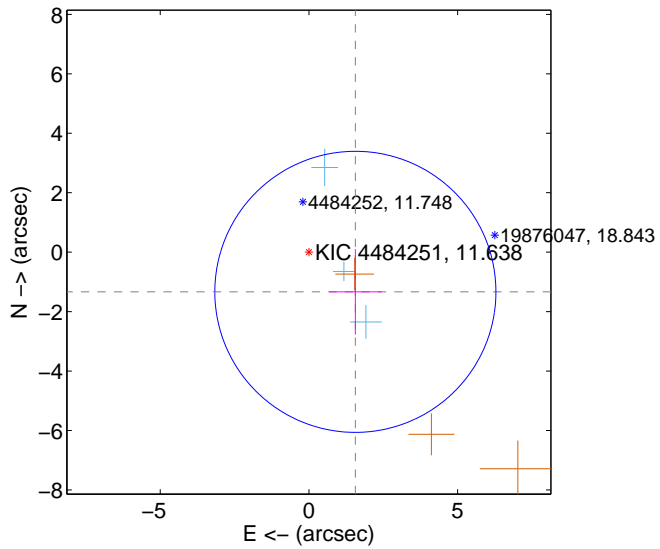
Supplemental centroid analysis for 004484251-03. **Kepler magnitude: 11.64.** Transit SNR 9.32

There are 3 quarters with good PRF difference image offsets

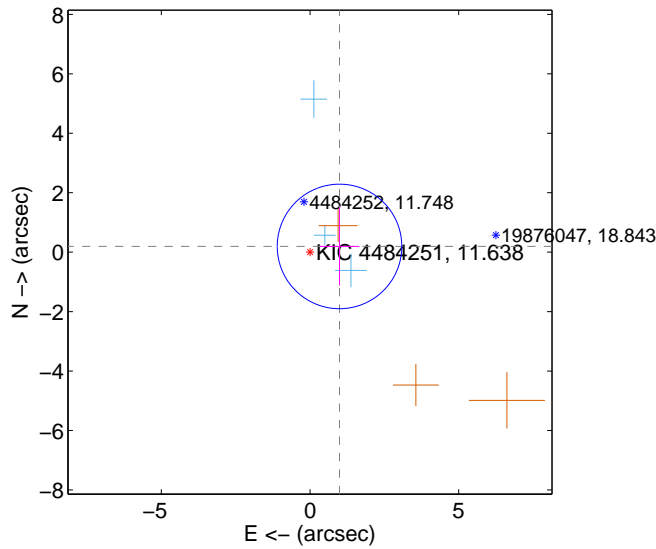
The OOT PRF centroid is offset from the target star catalog position by about 2.33 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.055 ± 1.576	1.30	-1.562 ± 0.883	-1.335 ± 1.436
PRF-fit source offset from KIC position	1.011 ± 0.698	1.45	-0.993 ± 0.664	0.193 ± 1.314
photometric centroid source offset	2.18 ± 0.42	5.19	0.80 ± 0.30	2.03 ± 0.44

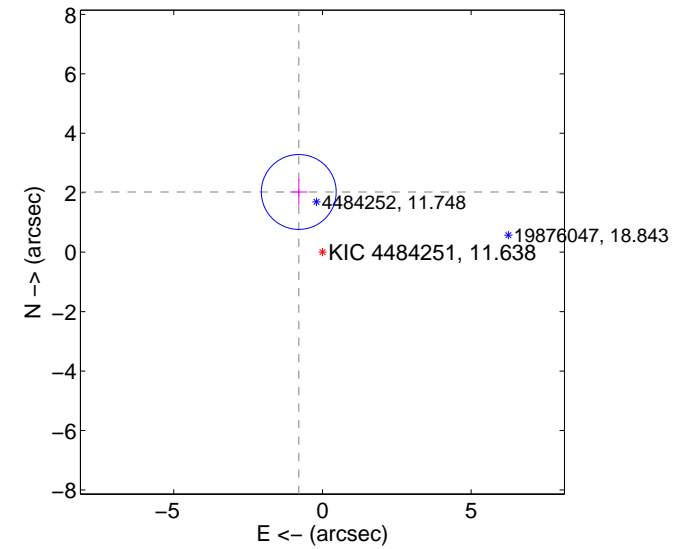
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

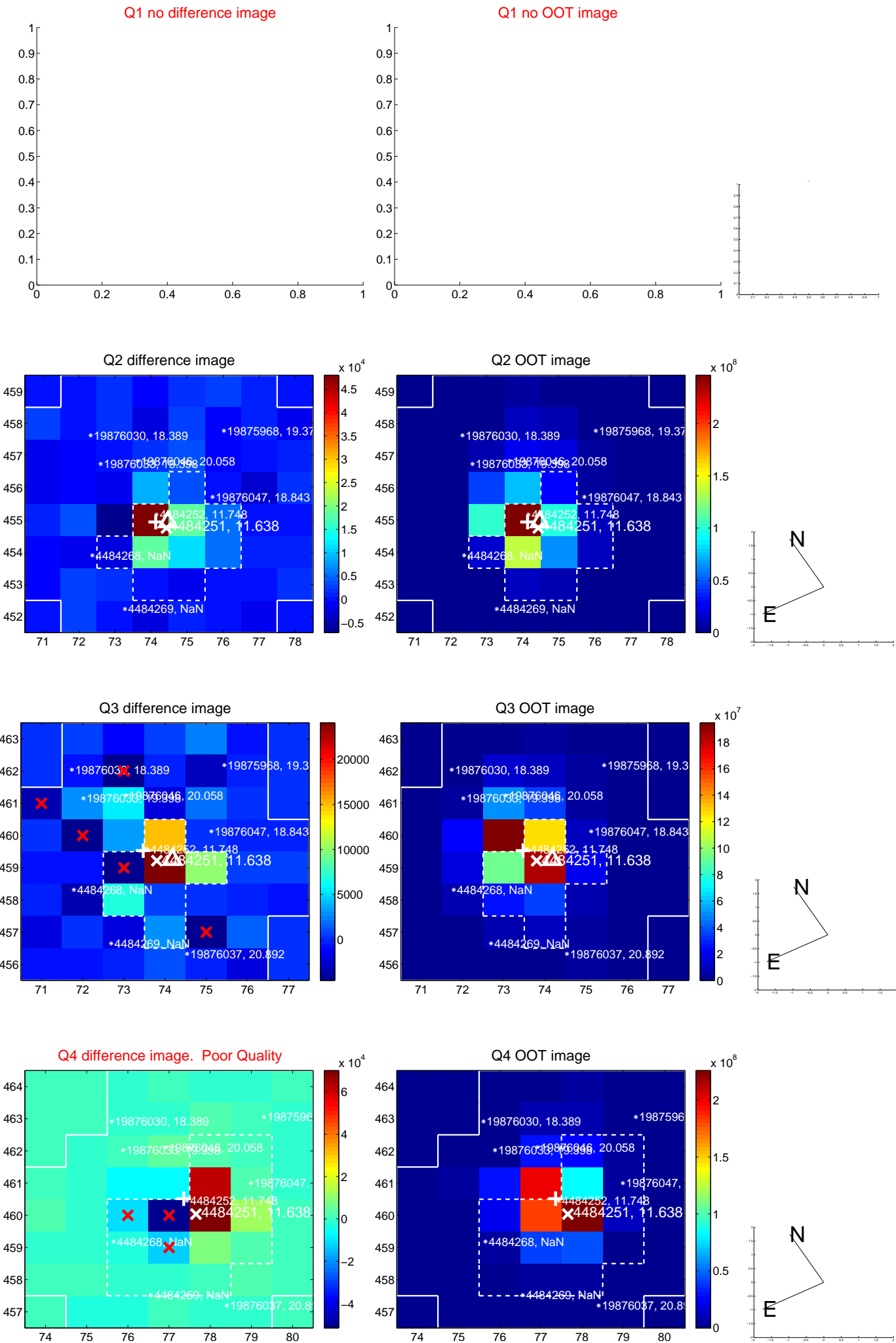


offset from photometric centroids



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

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



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

Q5 no difference image



Q5 no OOT image



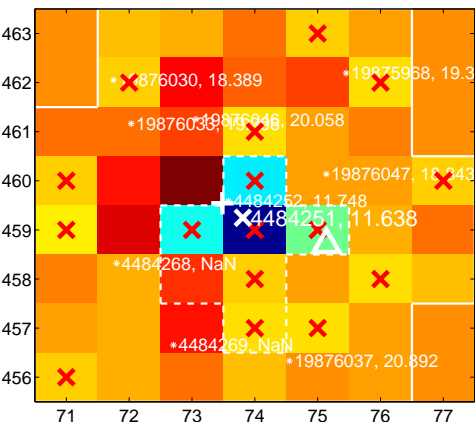
Q6 no difference image



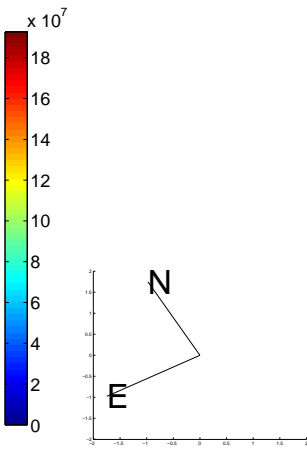
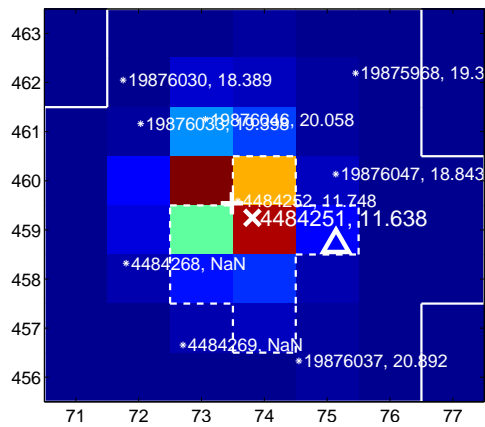
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



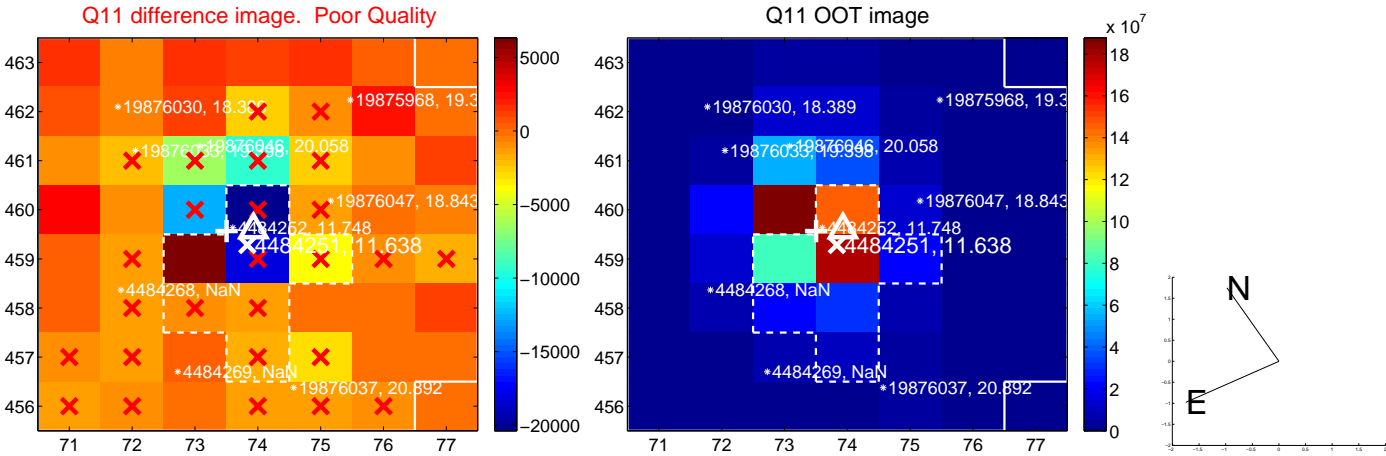
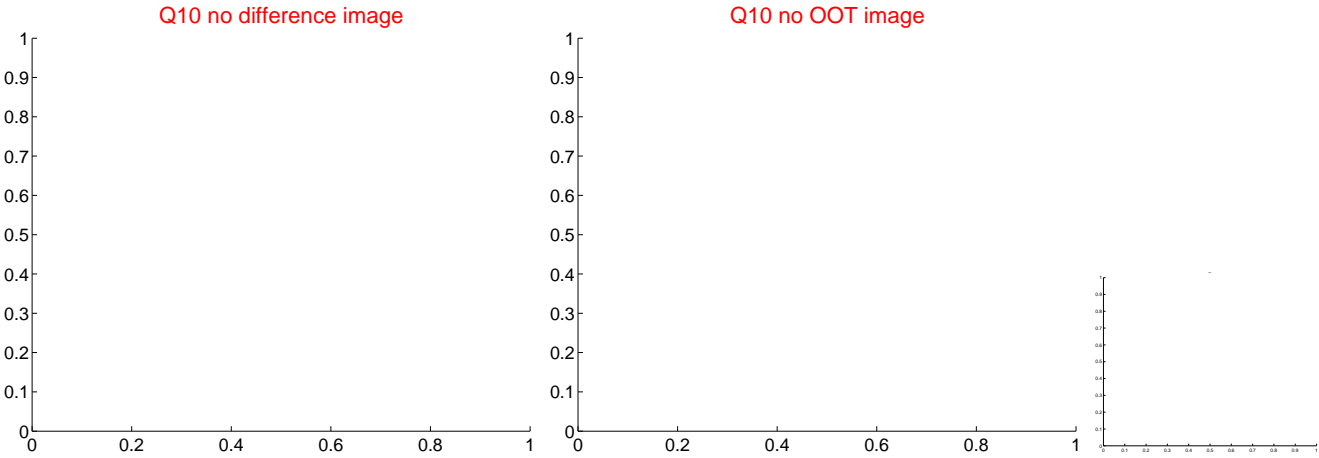
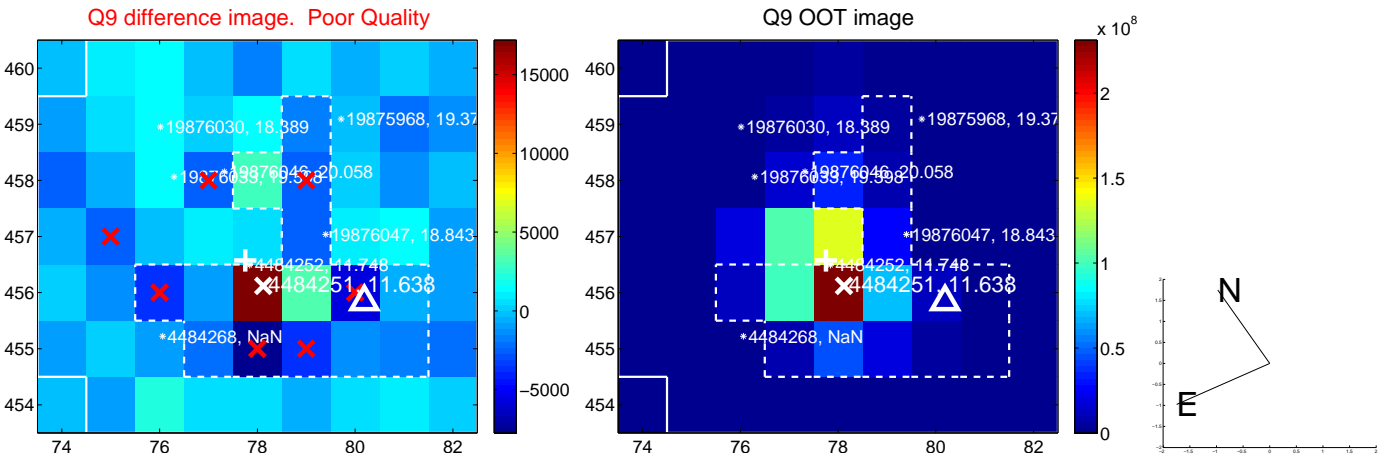
Q8 no difference image



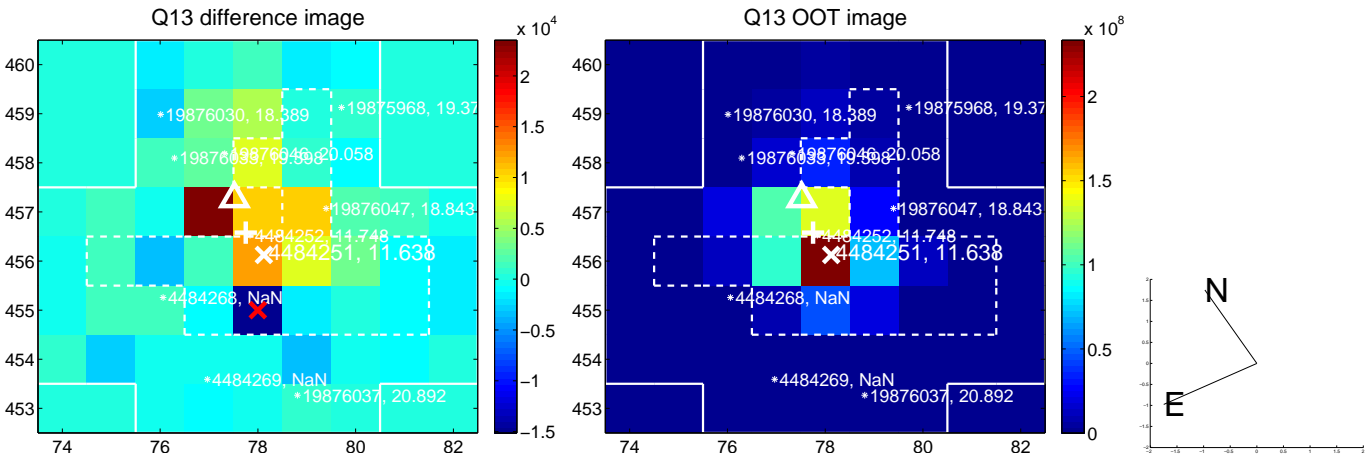
Q8 no OOT image



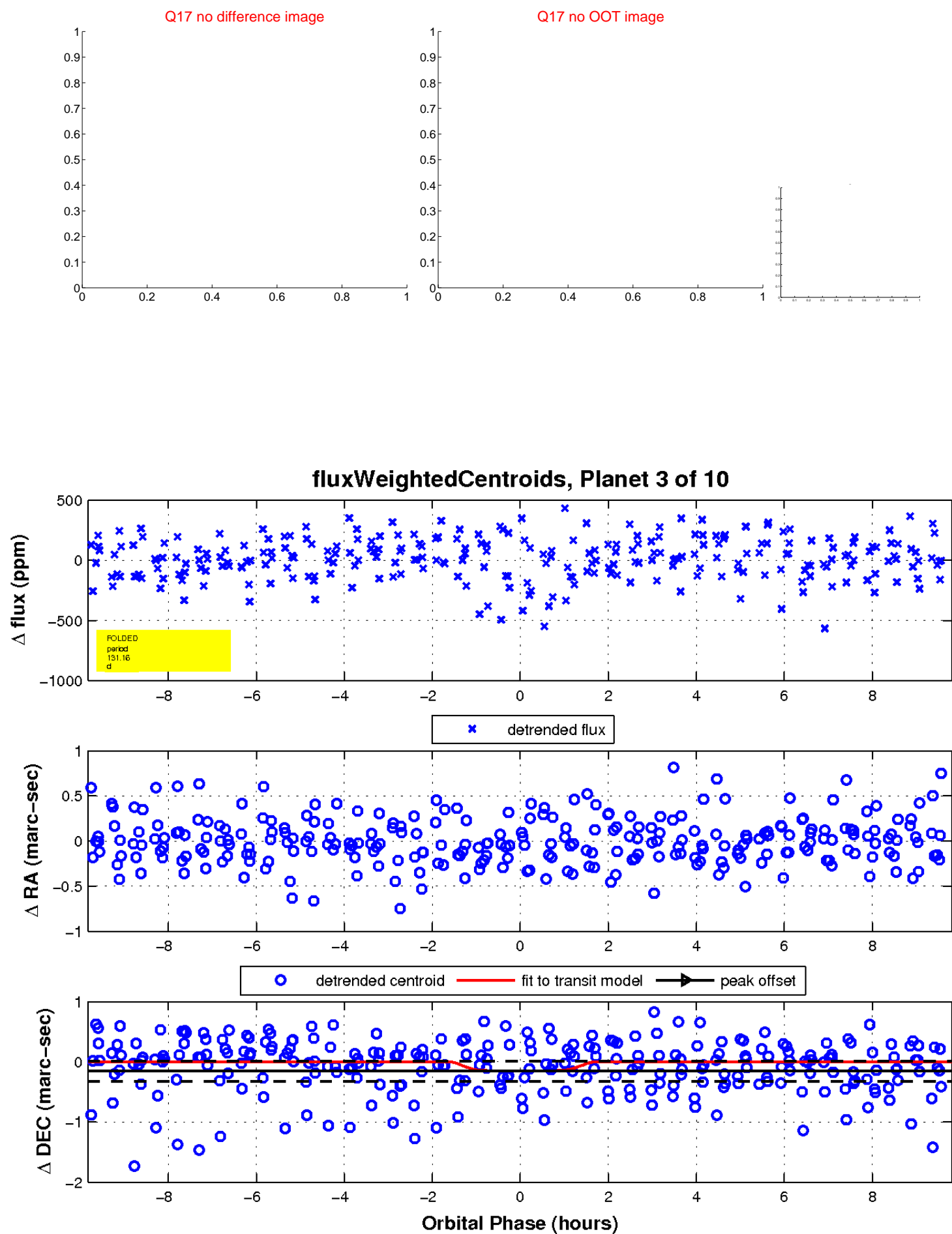
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

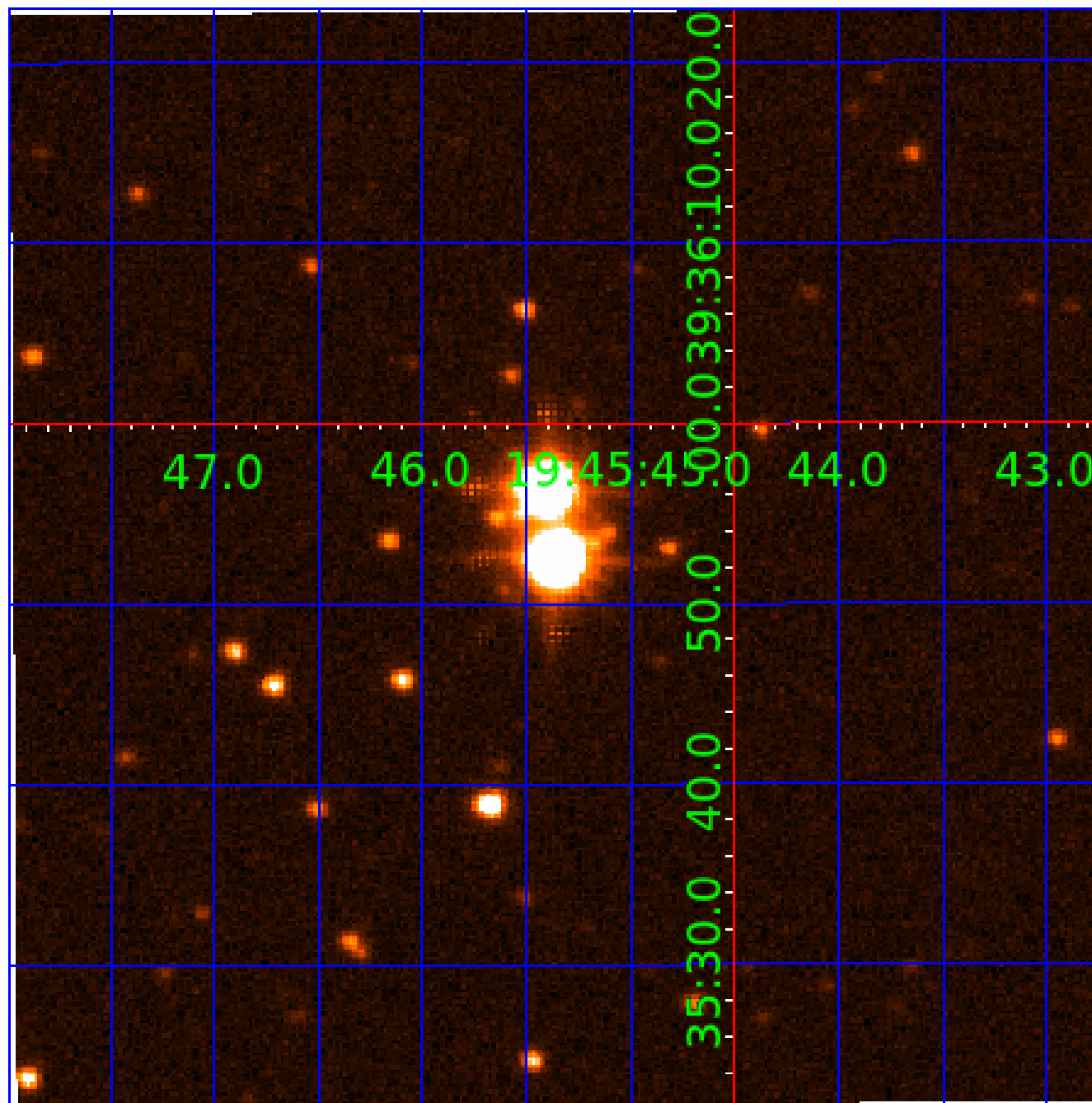


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
004484251-01	OBS	No	1.927596	133.409729	62.5	11.096	10.7	13.4	1.61	6796	2.44	4419.88
004484251-02	OBS	No	187.518566	143.631143	246.3	20.390	11.4	6.7	1.61	6796	2.70	9.88
004484251-03	OBS	No	131.156980	172.932168	354.5	3.277	9.8	9.3	1.61	6796	3.72	15.91
004484251-04	OBS	No	212.126737	208.397966	52.3	128.241	9.8	1.4	1.61	6796	1.22	8.38
004484251-05	OBS	No	157.257304	150.611824	337.5	20.471	13.4	7.2	1.61	6796	3.14	12.49
004484251-06	OBS	No	23.480828	137.485920	112.3	23.308	8.4	6.3	1.61	6796	1.84	157.69
004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

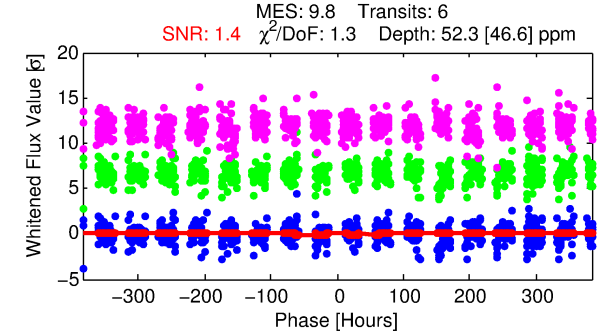
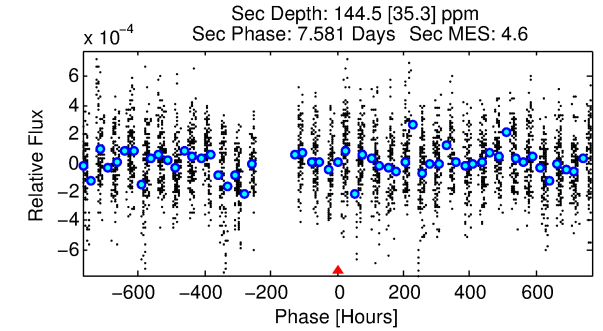
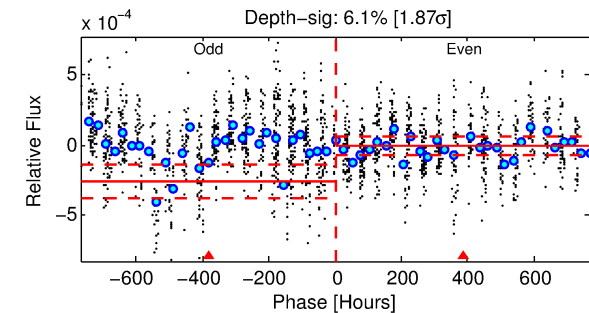
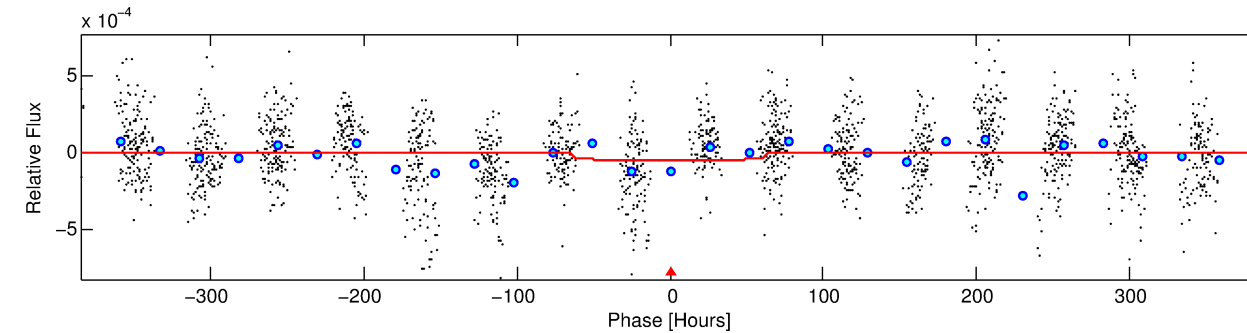
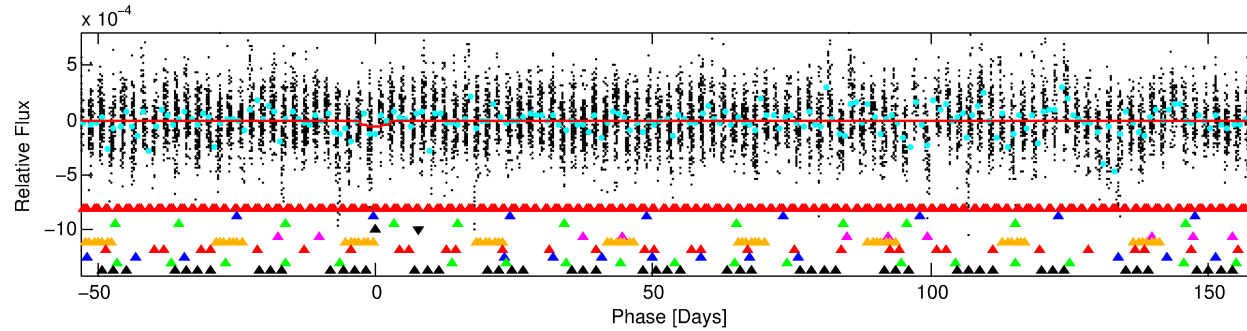
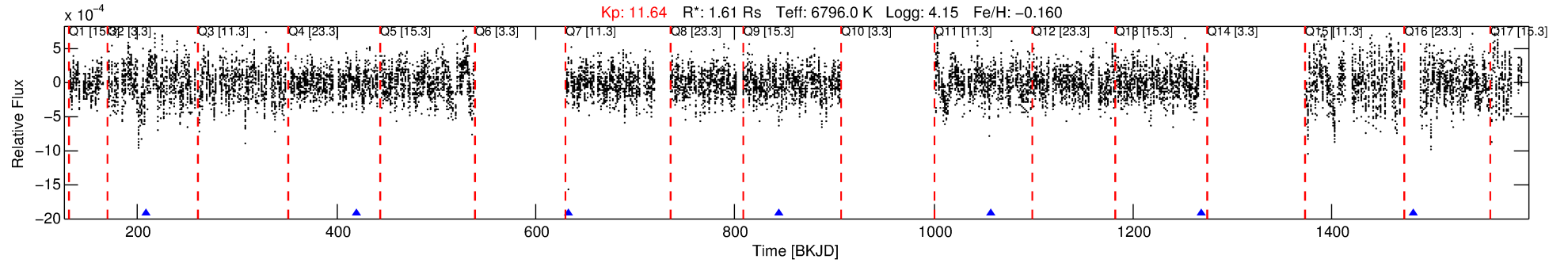
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-04

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 4 of 10 Period: 212.127 d



DV Fit Results:

Period = 212.12674 [0.09248] d
Epoch = 208.3980 [0.2192] BKJD
Rp/R* = 0.0070 [0.0036]
a/R* = 10.21 [10.18]
b = 0.60 [1.08]
Seff = 8.38 [1.84]
Teq = 434 [24] K
Rp = 1.22 [0.66] Re
a = 0.7679 [0.1140] AU
Ag = 31395.33 [33777.44] [0.93 σ]
Teffp = 8929 [2357] K [3.60 σ]

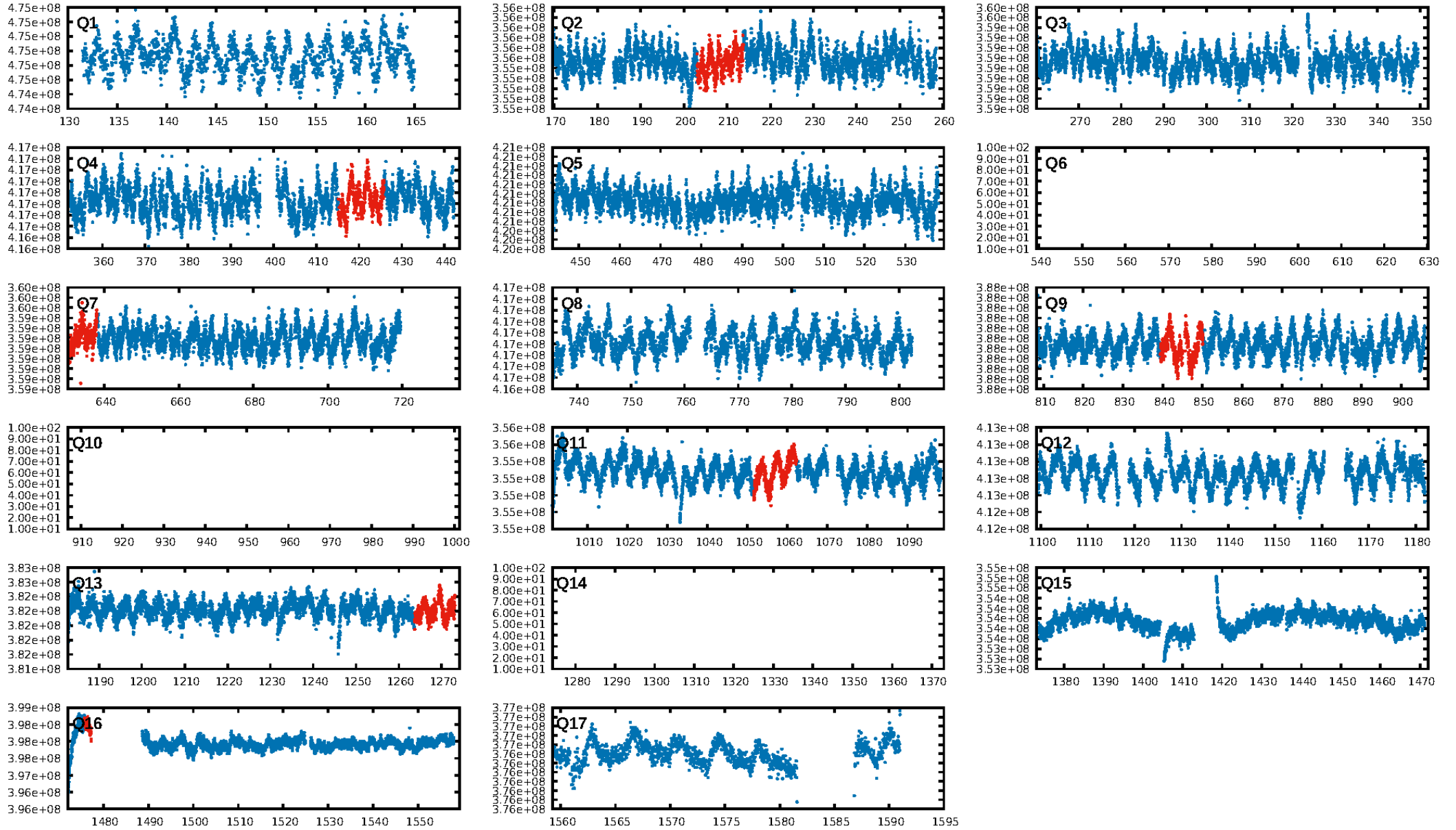
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.55 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 37.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.5233
Centroid-sig: N/A
Centroid-so: 1.727 arcsec [1.54 σ]
OotOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-rm: N/A
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/1]

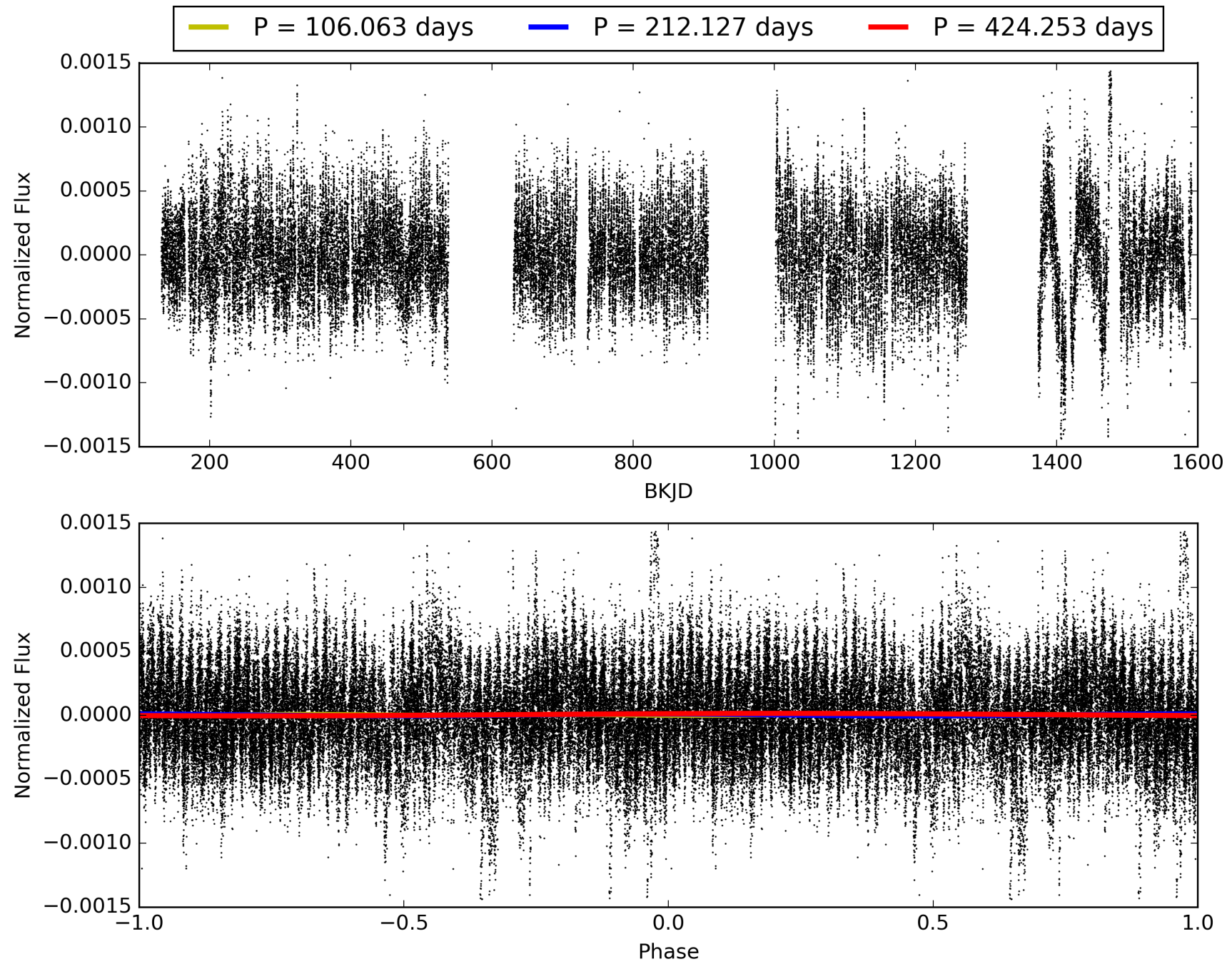
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:12:58 Z

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

TCE 004484251-04, PDC Light Curves

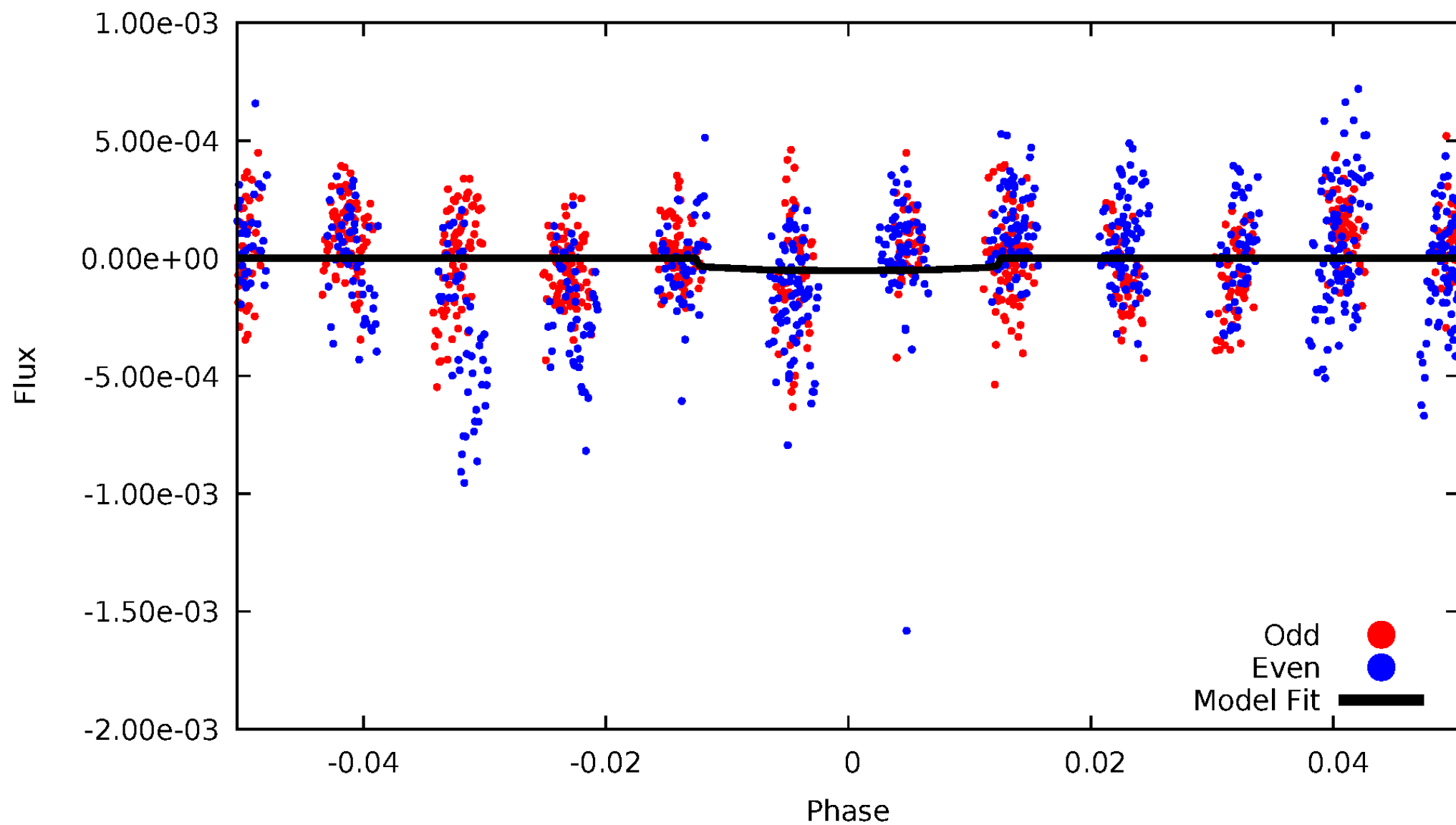


TCE 004484251-04



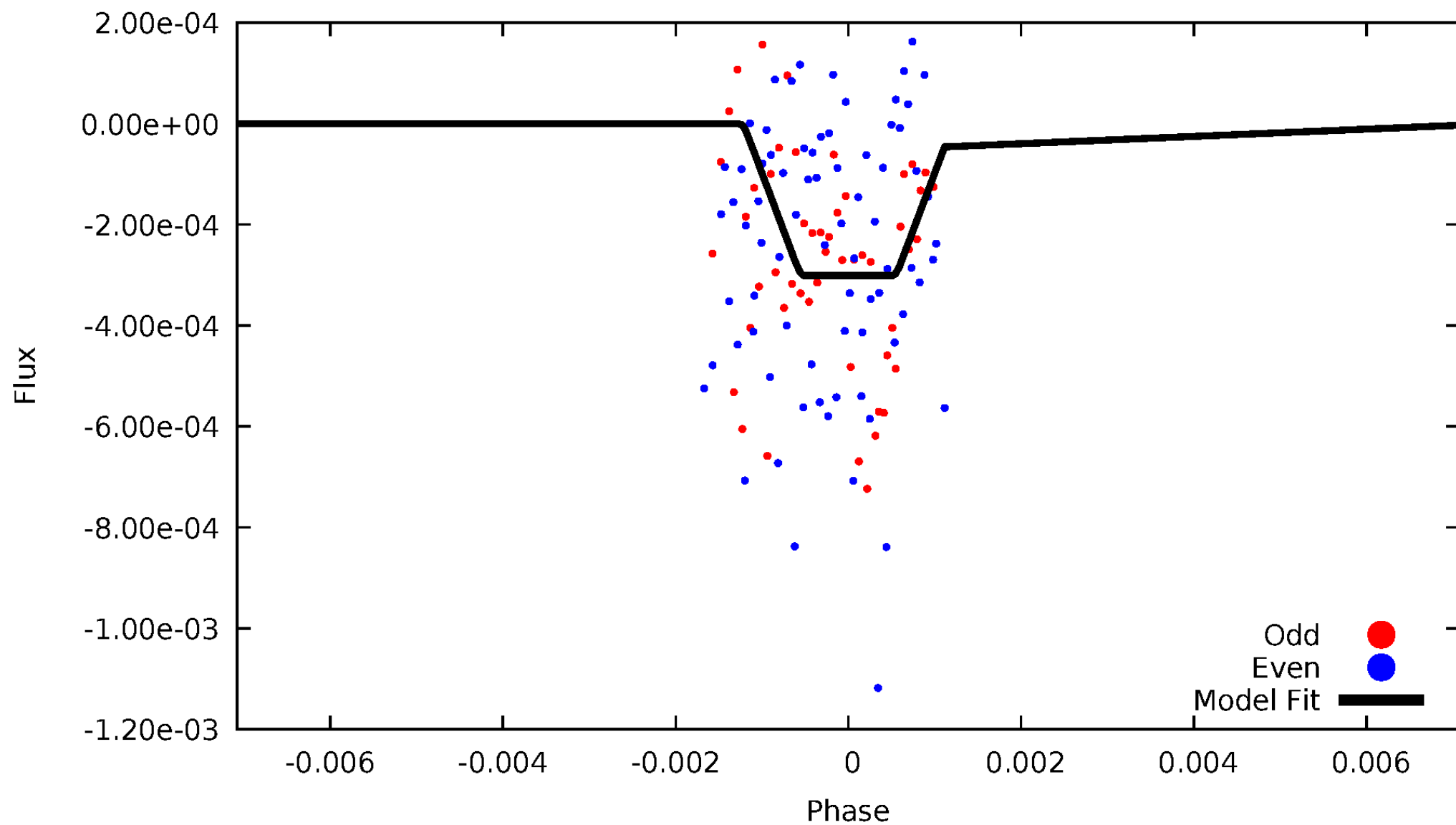
DV Odd/Even

TCE 004484251-04



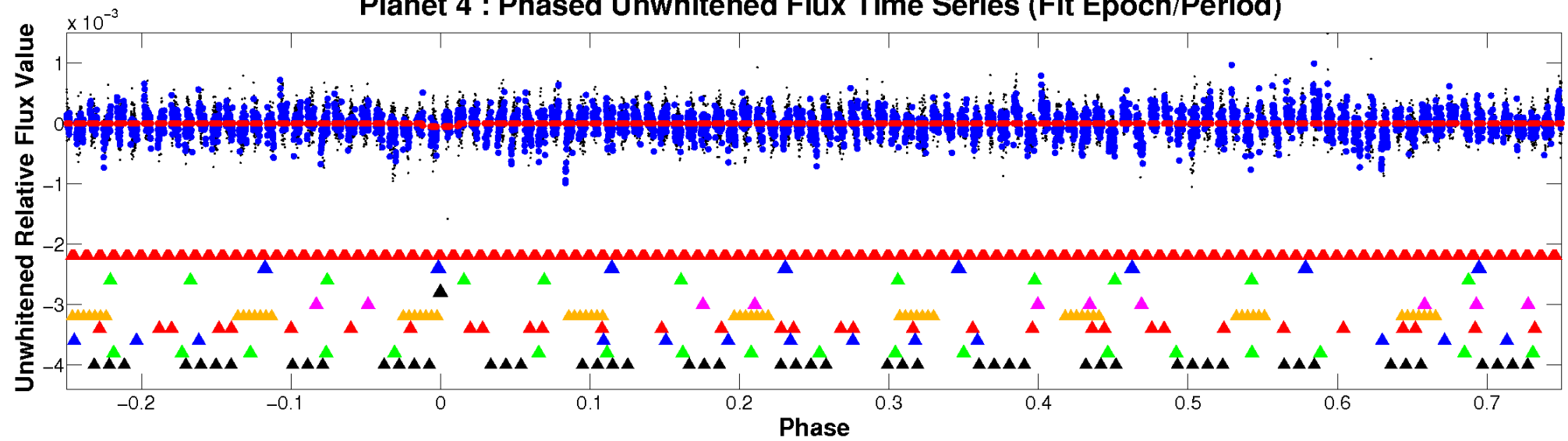
ALT Odd/Even

TCE 004484251-04

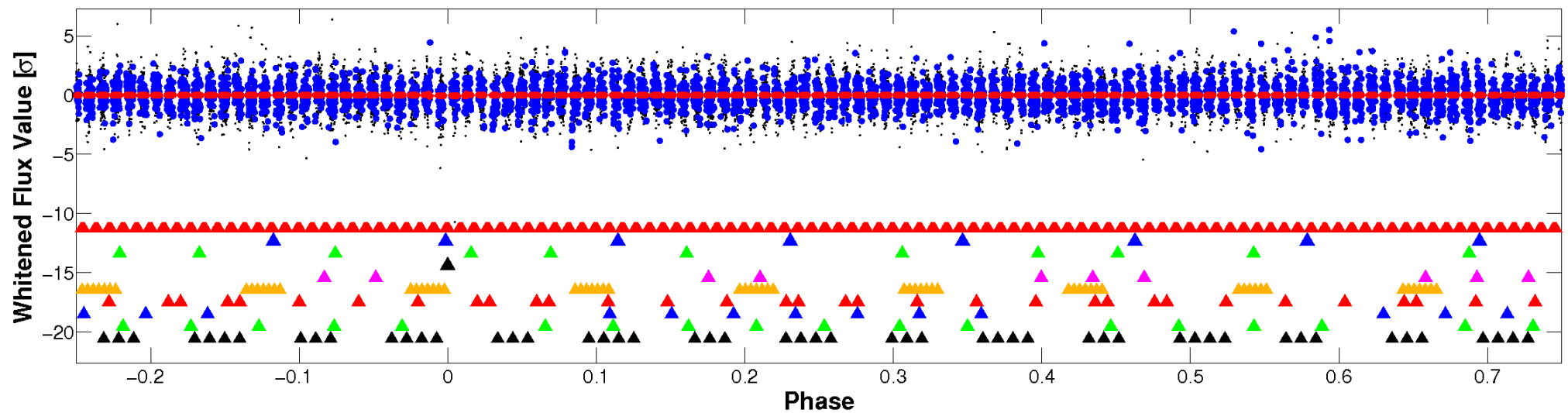


Non-Whitened Vs. Whitened Light Curve

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

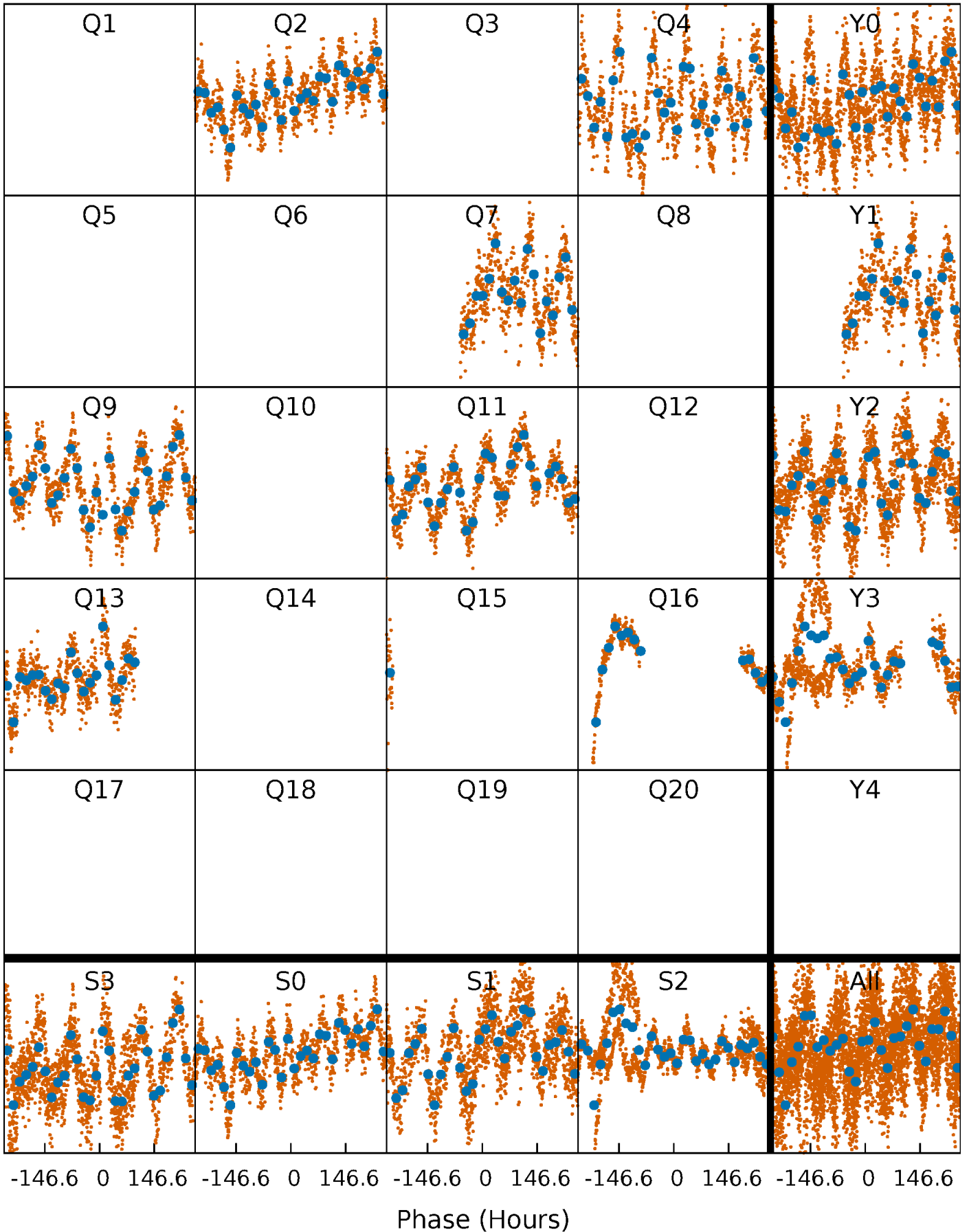


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



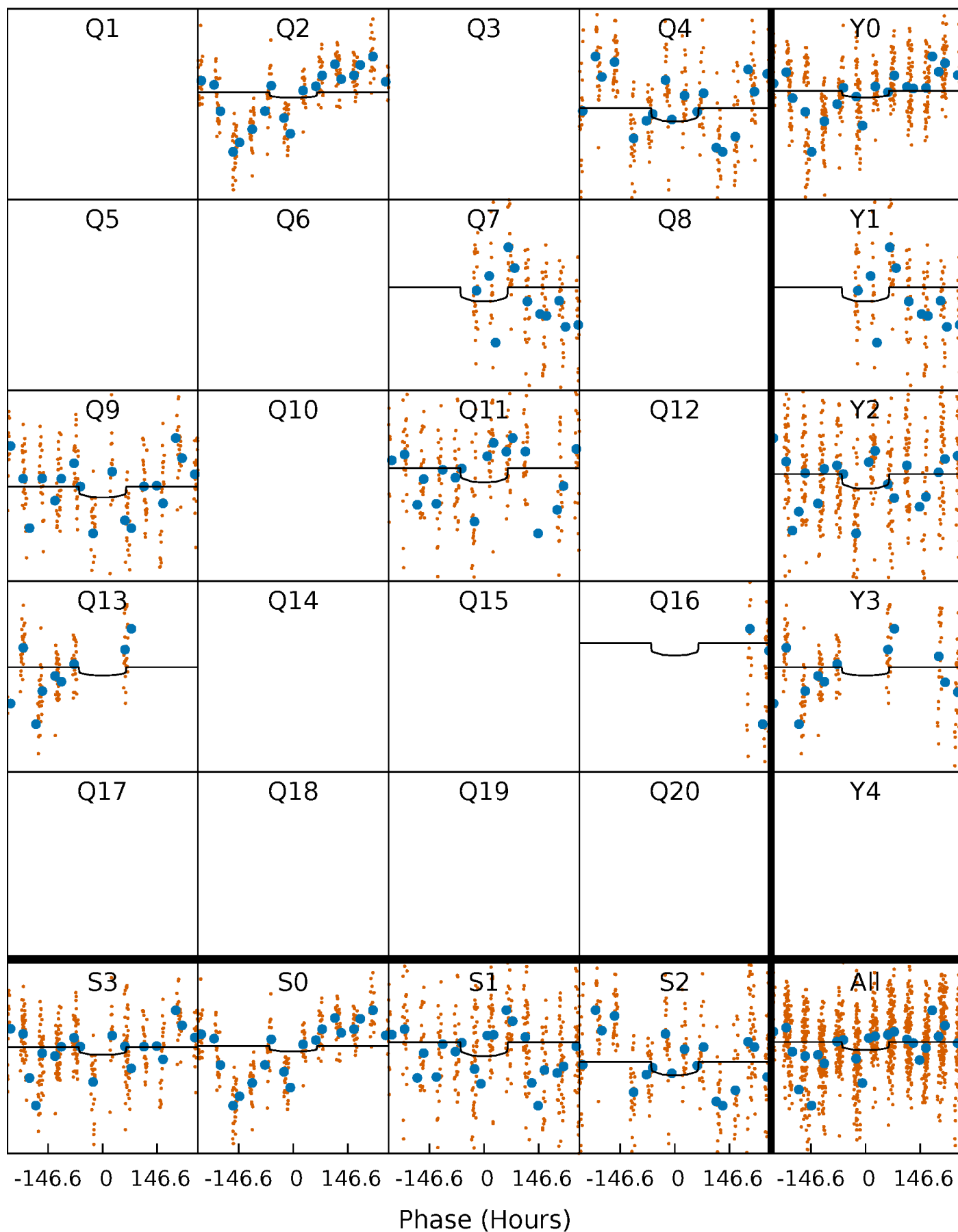
PDC Quarter-Phased Transit Curves

TCE 004484251-04 P=212.126737 Days $T_0=208.397966$ (BKJD)



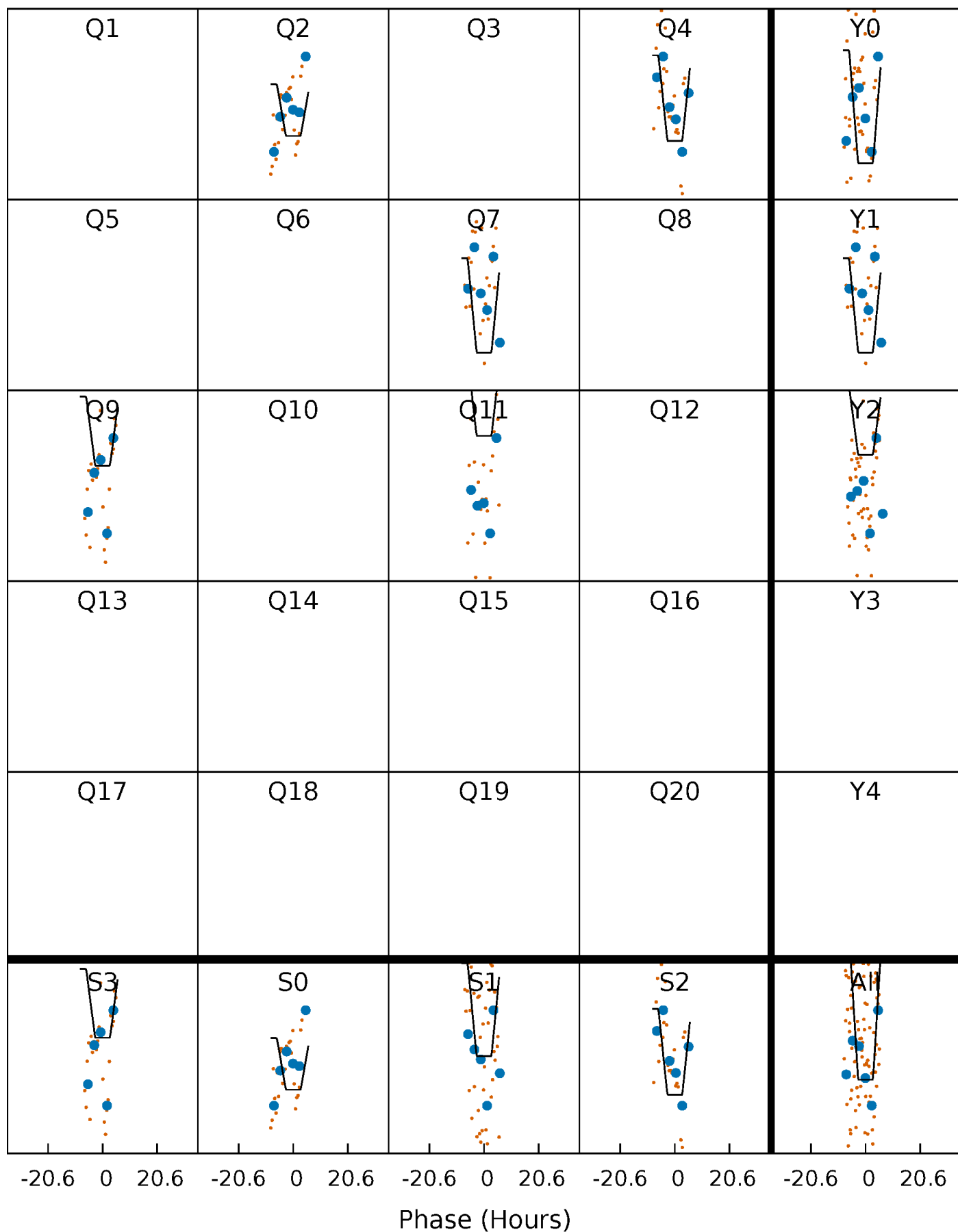
DV Quarter-Phased Transit Curves

TCE 004484251-04 P=212.126737 Days $T_0=208.397966$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

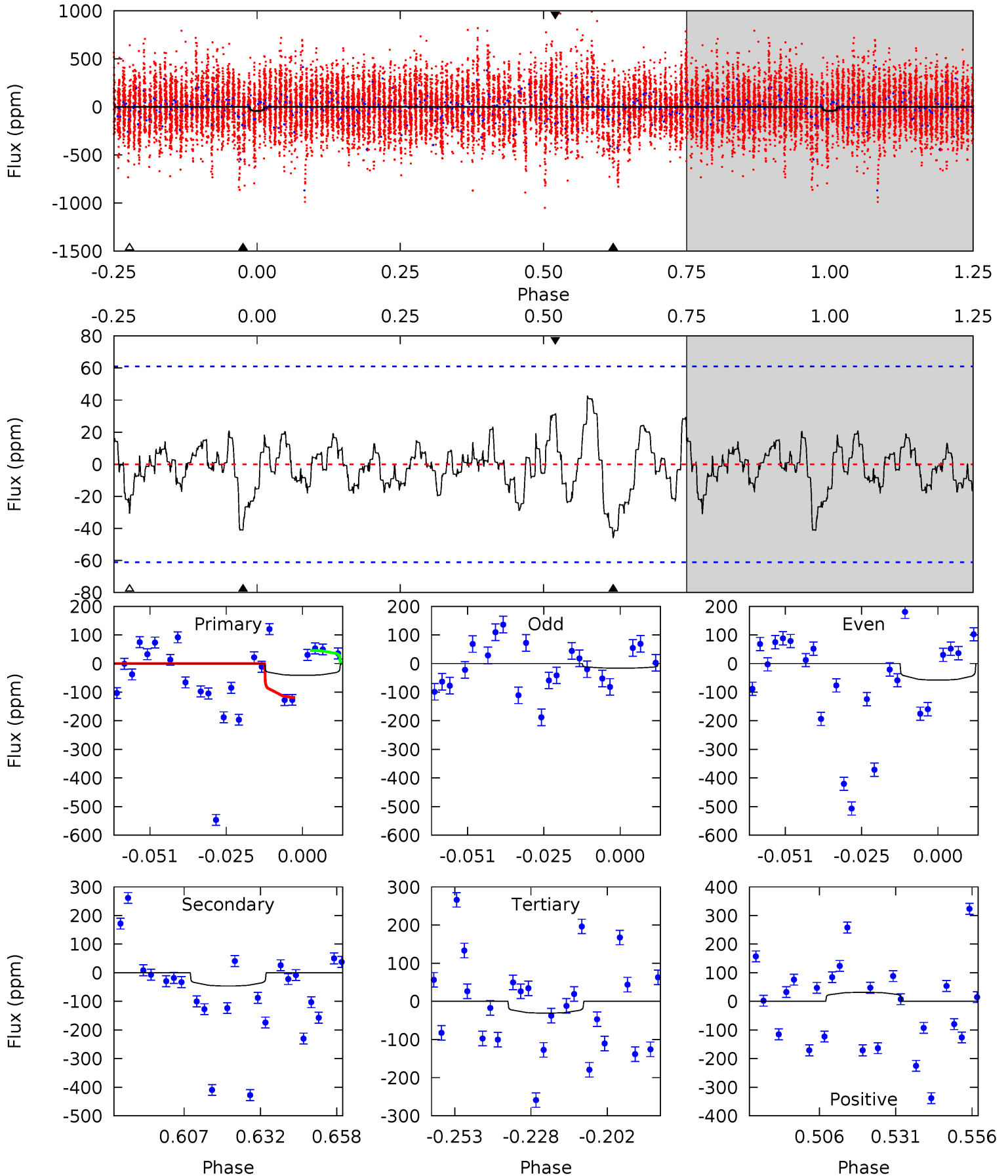
TCE 004484251-04 P=212.013865 Days $T_0=207.717634$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-04, P = 212.126737 Days, E = 208.397966 Days

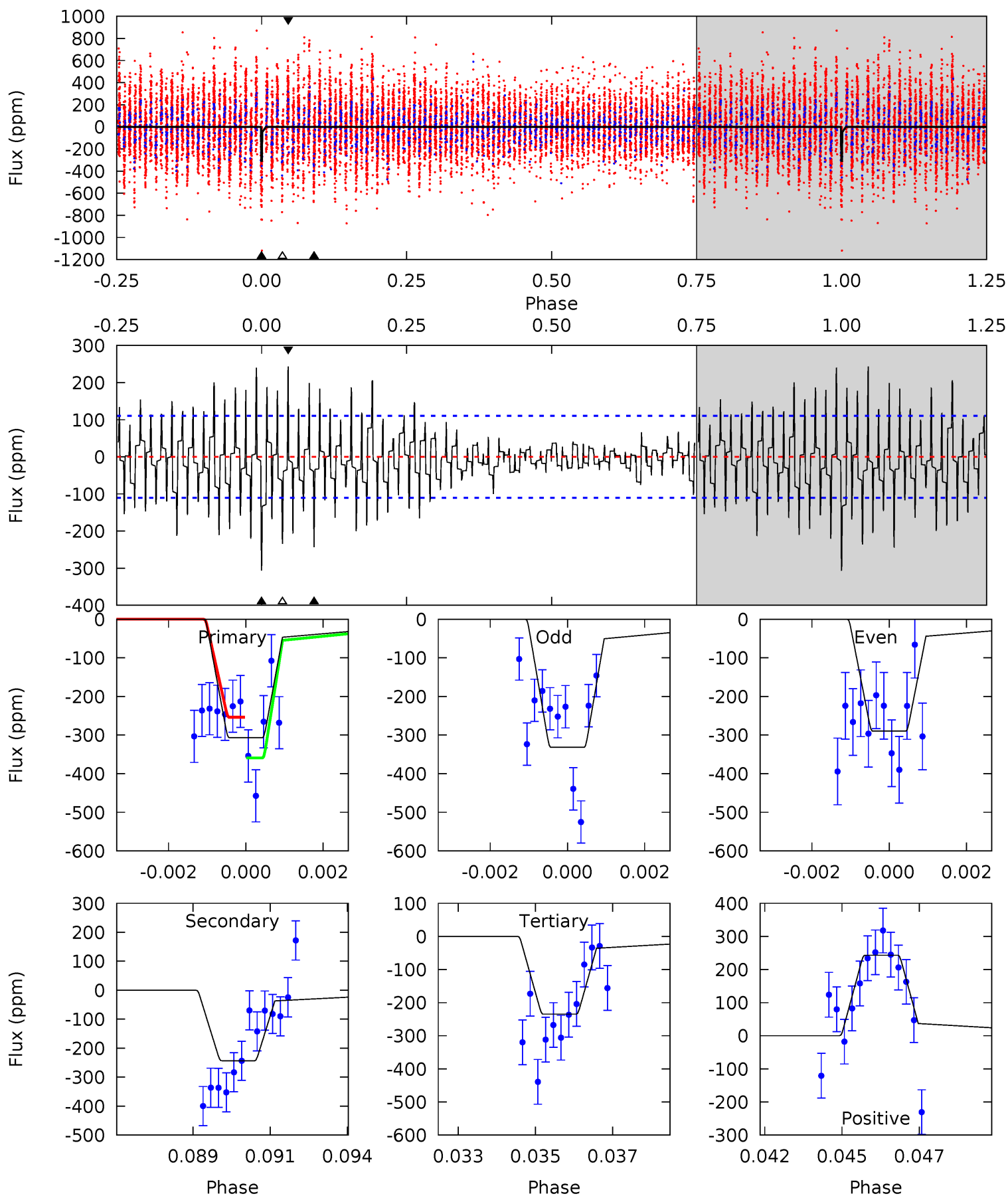
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.26	3.65	2.44	2.50	4.85	2.24	0.98	0.82	0.76	1.22	1.15	1.68	0.82	0.48	2.90



Alt Model-Shift Uniqueness Test

004484251-04, P = 212.013865 Days, E = 207.717634 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	11.7	11.3	11.7	5.30	3.04	4.03	3.45	3.05	0.41	0.02	1.00	1.28	0.44	2.53



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-46 ± 13	$1.22^{+0.61}_{-0.59}$	606^{+29}_{-25}	6719^{+3202}_{-1314}	9967^{+25292}_{-5923}
Alt.	-243 ± 21	$3.05^{+0.70}_{-0.65}$	607^{+30}_{-25}	6437^{+902}_{-578}	8530^{+5529}_{-2951}

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

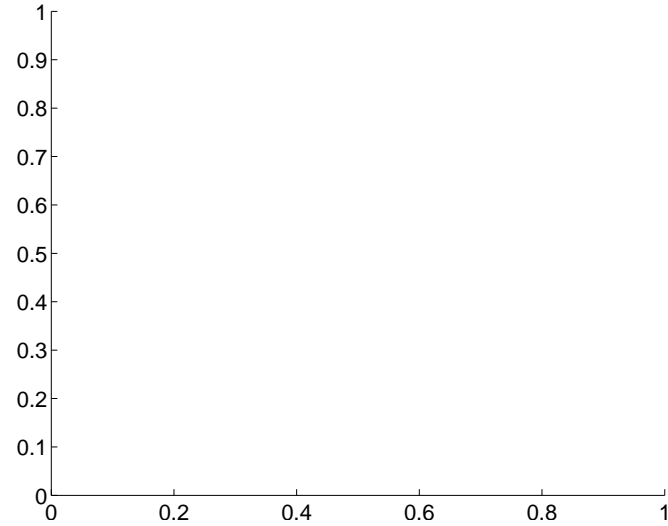
Supplemental centroid analysis for 004484251-04. **Kepler magnitude: 11.64.** Transit SNR 1.43

There are 0 quarters with good PRF difference image offsets

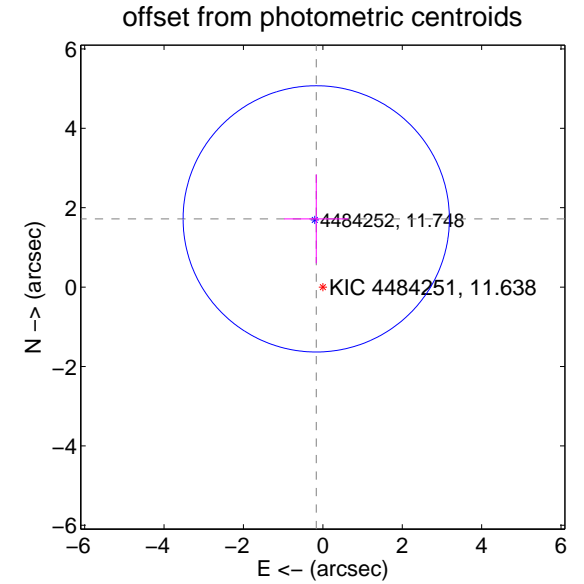
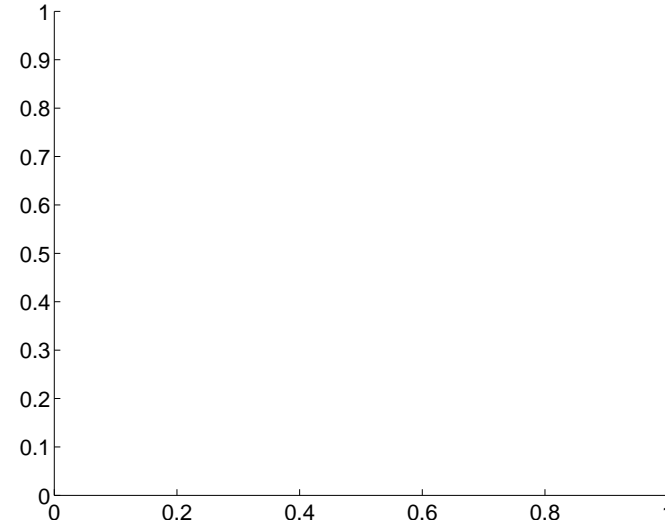
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.73 ± 1.12	1.54	0.17 ± 0.81	1.72 ± 1.12

There is no PRF-fit offset from OOT-fit

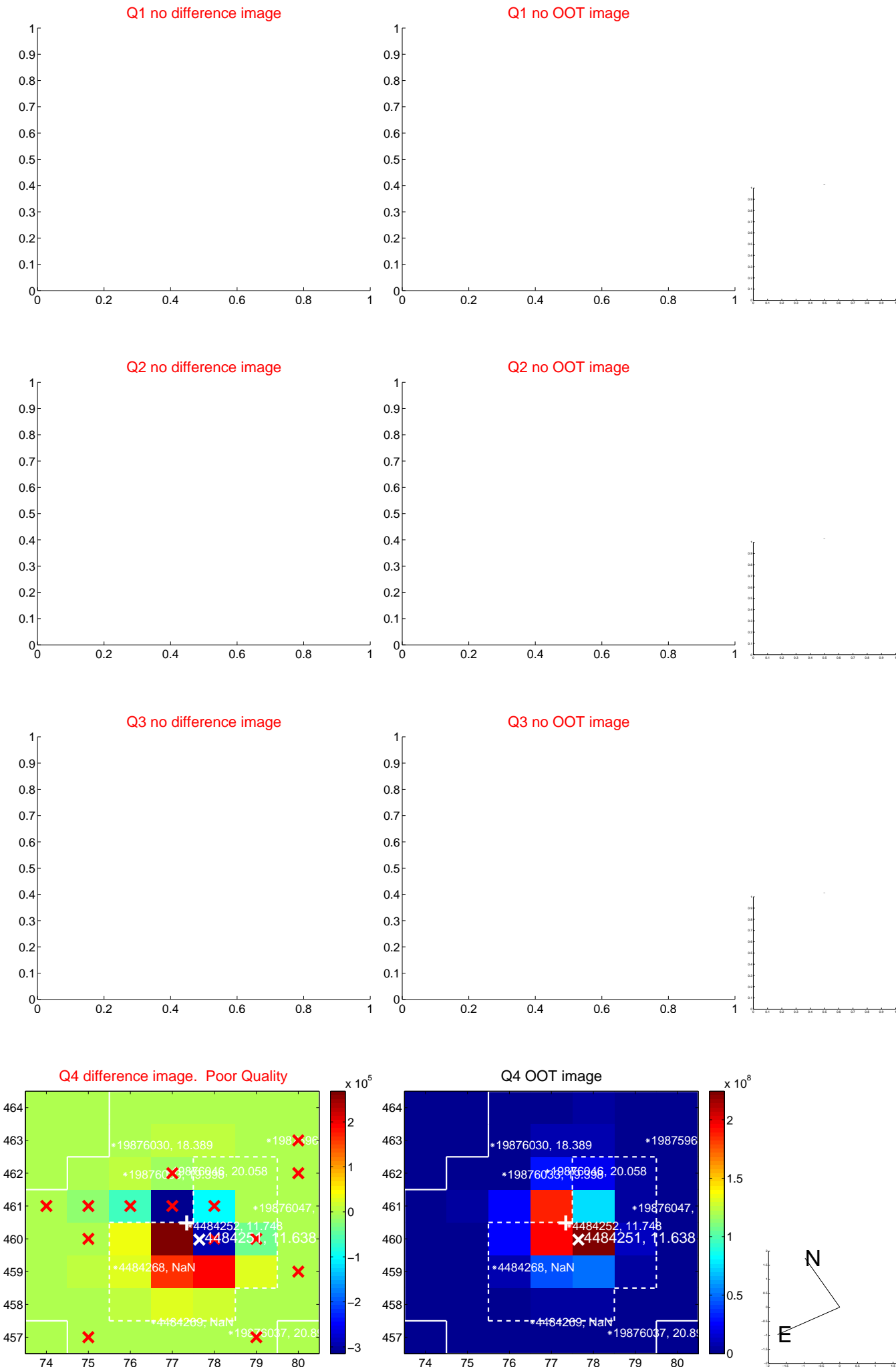


There is no PRF-fit offset from KIC



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.



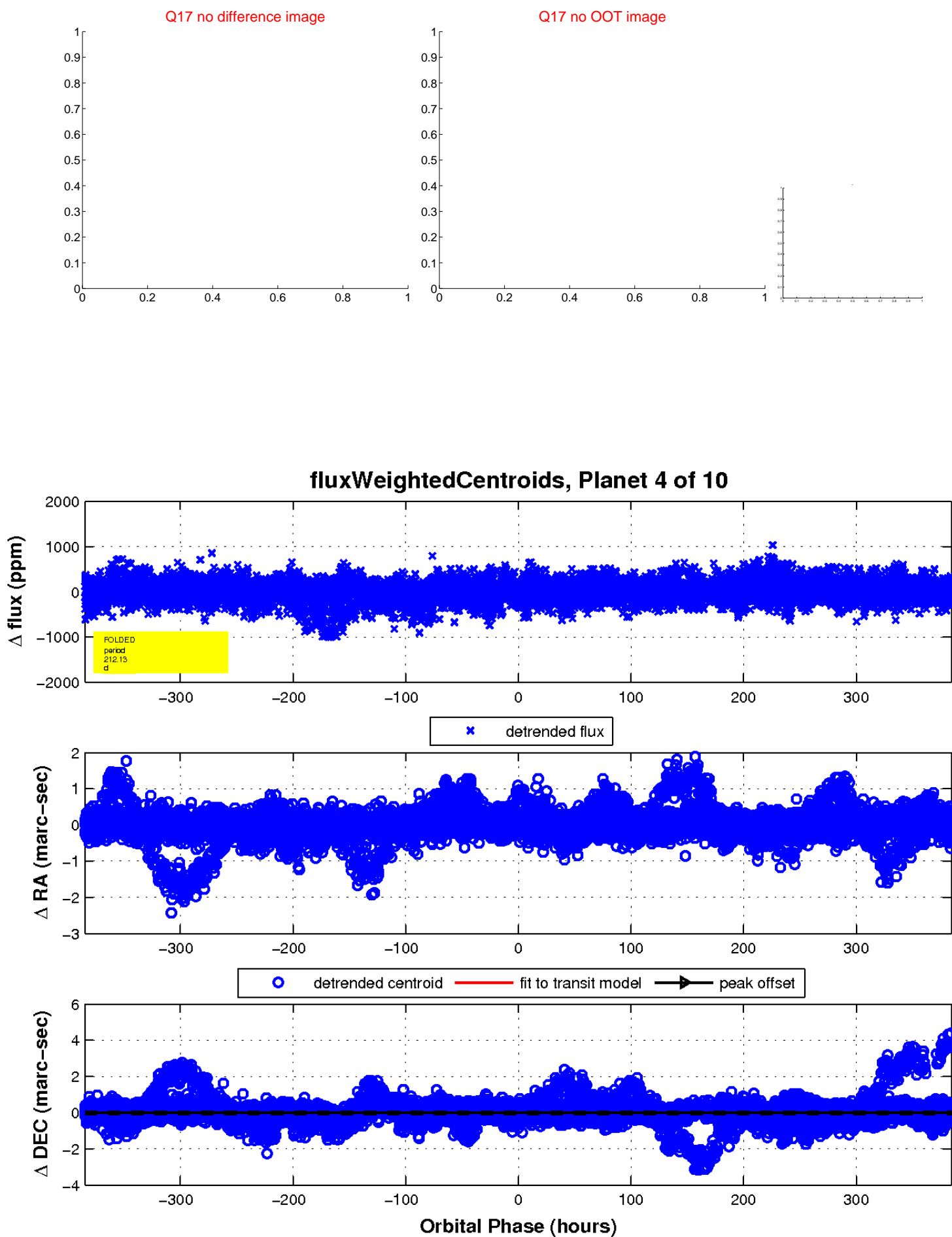
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

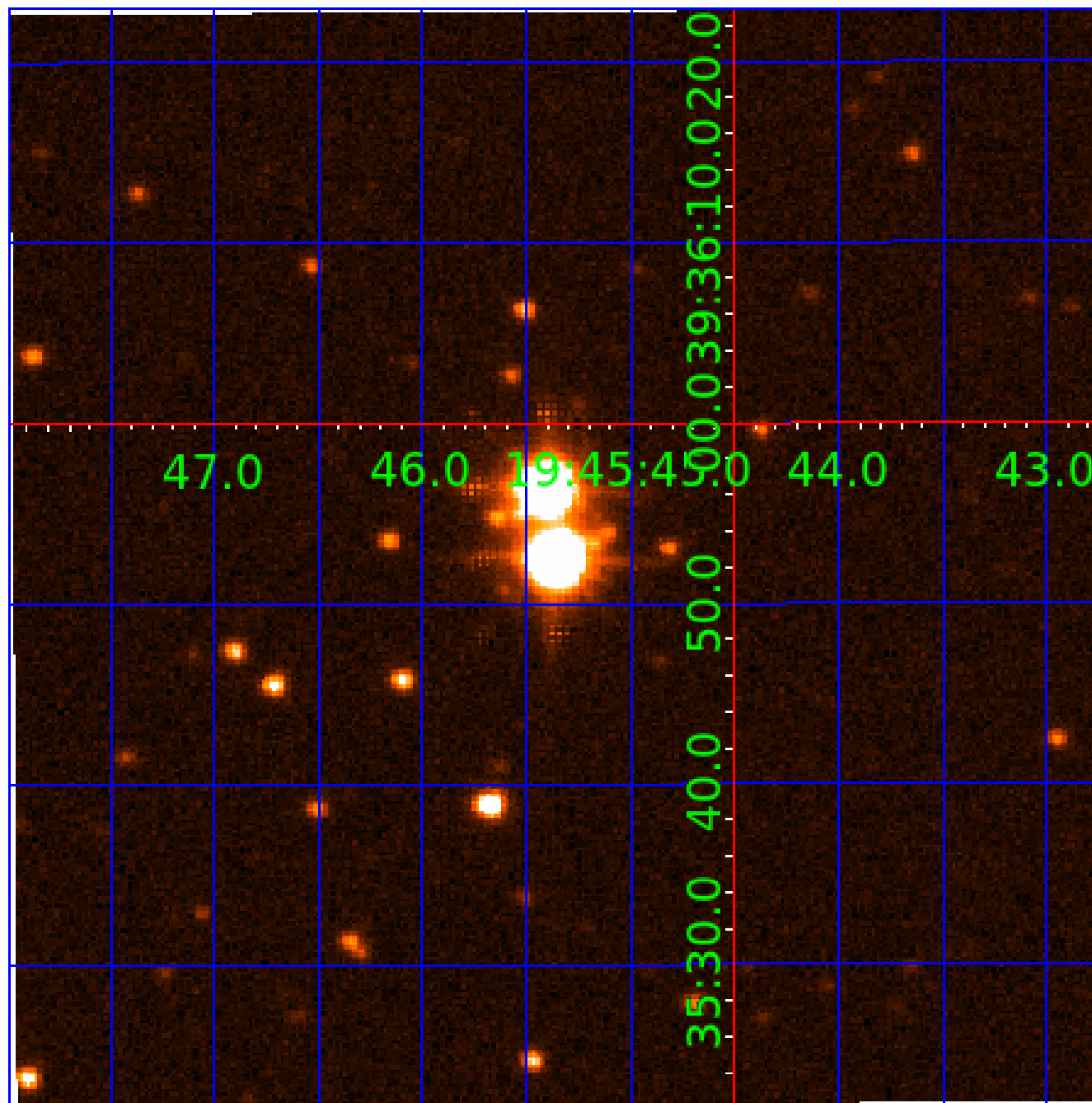


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
004484251-01	OBS	No	1.927596	133.409729	62.5	11.096	10.7	13.4	1.61	6796	2.44	4419.88
004484251-02	OBS	No	187.518566	143.631143	246.3	20.390	11.4	6.7	1.61	6796	2.70	9.88
004484251-03	OBS	No	131.156980	172.932168	354.5	3.277	9.8	9.3	1.61	6796	3.72	15.91
004484251-04	OBS	No	212.126737	208.397966	52.3	128.241	9.8	1.4	1.61	6796	1.22	8.38
004484251-05	OBS	No	157.257304	150.611824	337.5	20.471	13.4	7.2	1.61	6796	3.14	12.49
004484251-06	OBS	No	23.480828	137.485920	112.3	23.308	8.4	6.3	1.61	6796	1.84	157.69
004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

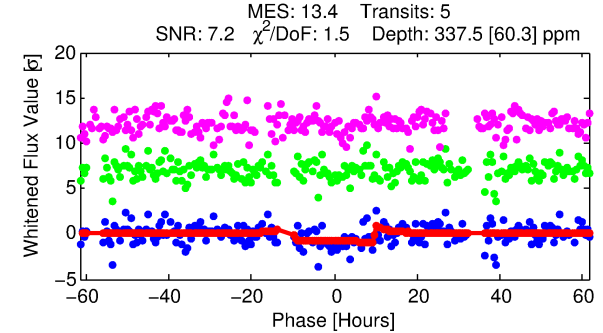
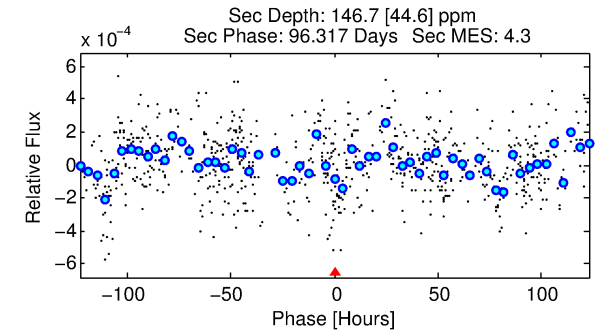
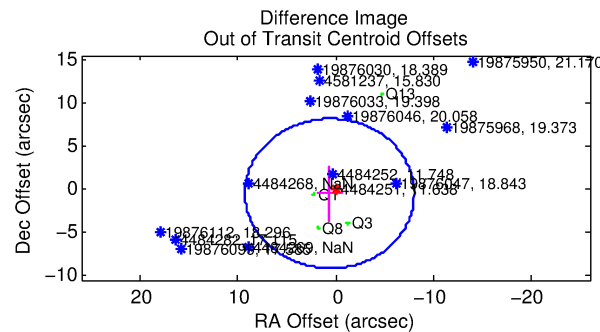
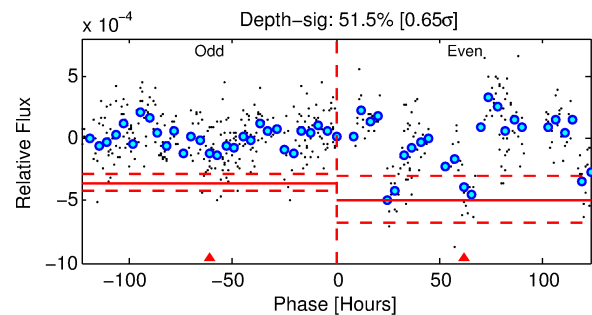
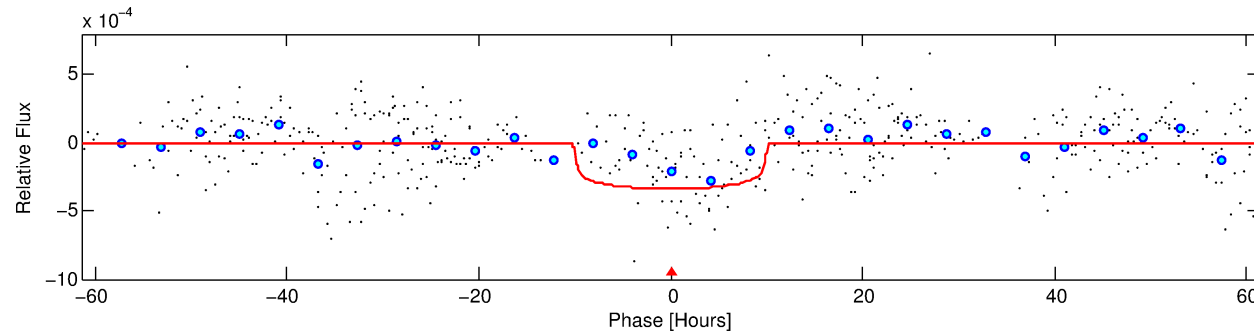
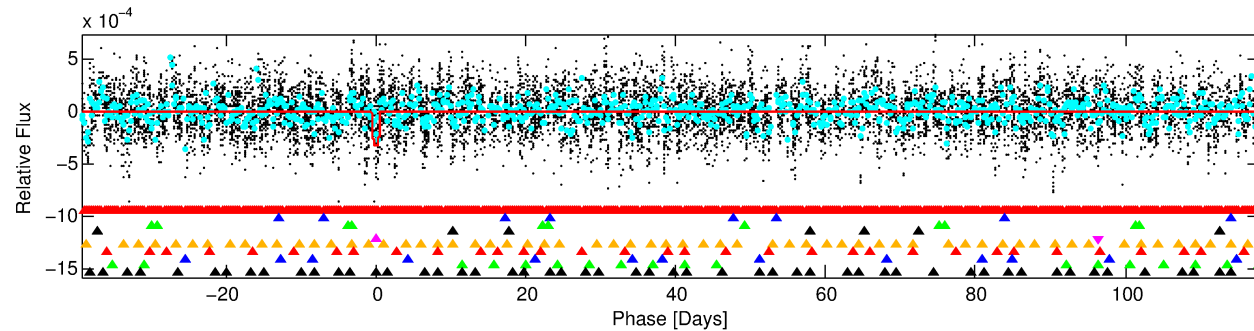
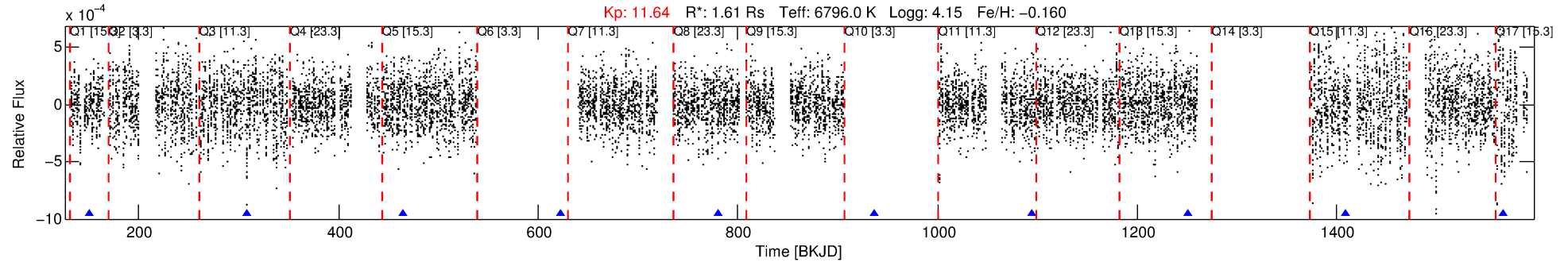
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-05

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 5 of 10 Period: 157.257 d



DV Fit Results:

Period = 157.25730 [0.00608] d
Epoch = 150.6118 [0.0470] BKJD
Rp/R* = 0.0179 [0.0069]
a/R* = 45.09 [95.28]
b = 0.67 [1.73]
Seff = 12.49 [2.75]
Teq = 479 [26] K
Rp = 3.14 [1.33] Re
a = 0.6290 [0.0934] AU
Ag = 3238.25 [2758.53] [1.17 σ]
Teff = 5591 [1155] K [4.42 σ]

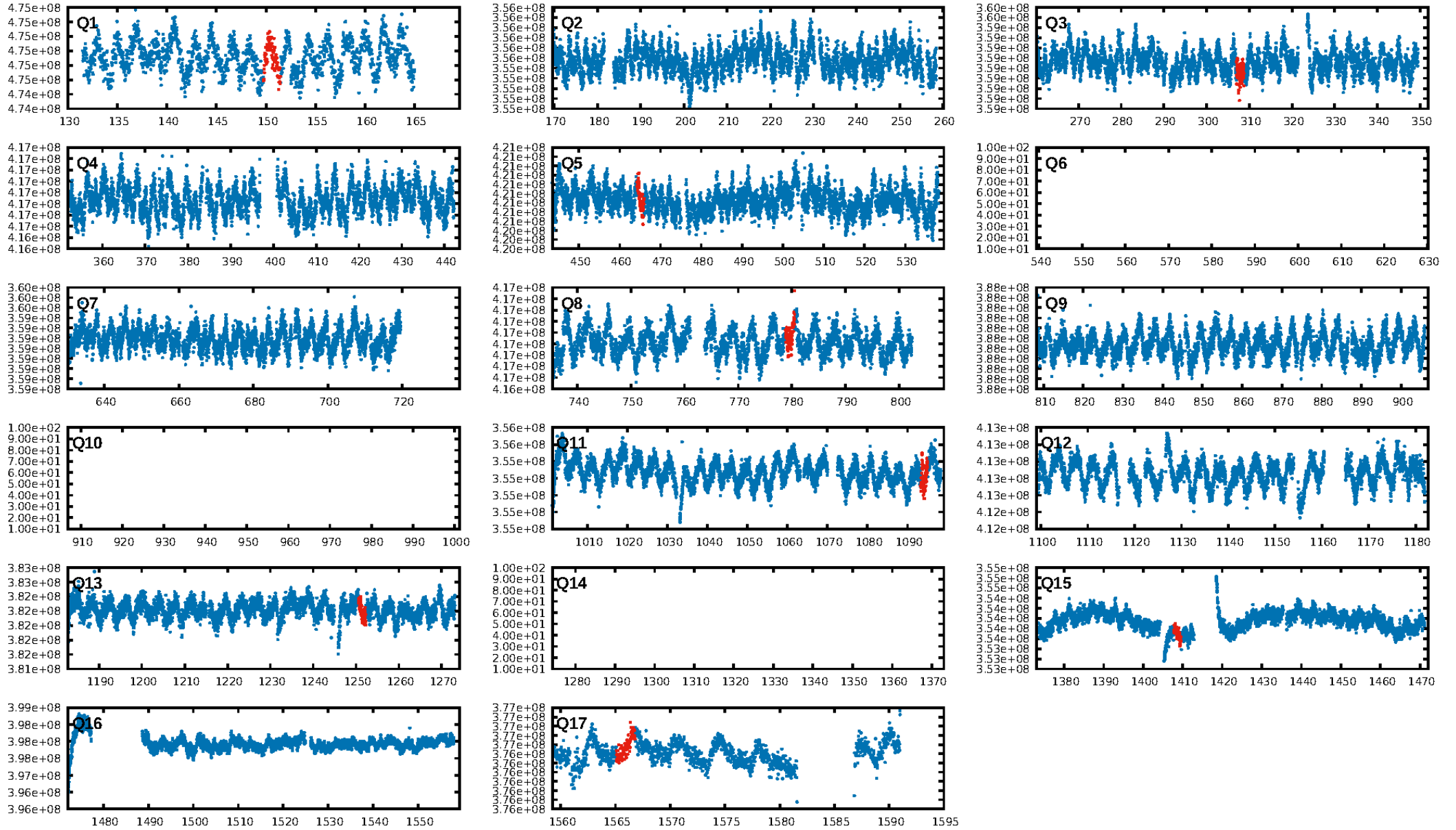
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [30.21 σ]
LongPeriod-sig: 100.0% [25.14 σ]
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.293
Centroid-sig: N/A
Centroid-so: 1.261 arcsec [4.61 σ]
OotOffset-rm: 0.777 arcsec [0.27 σ]
KicOffset-rm: 2.006 arcsec [0.60 σ]
OotOffset-st: 0/1/1/2 [4]
KicOffset-st: 0/1/1/2 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/6]

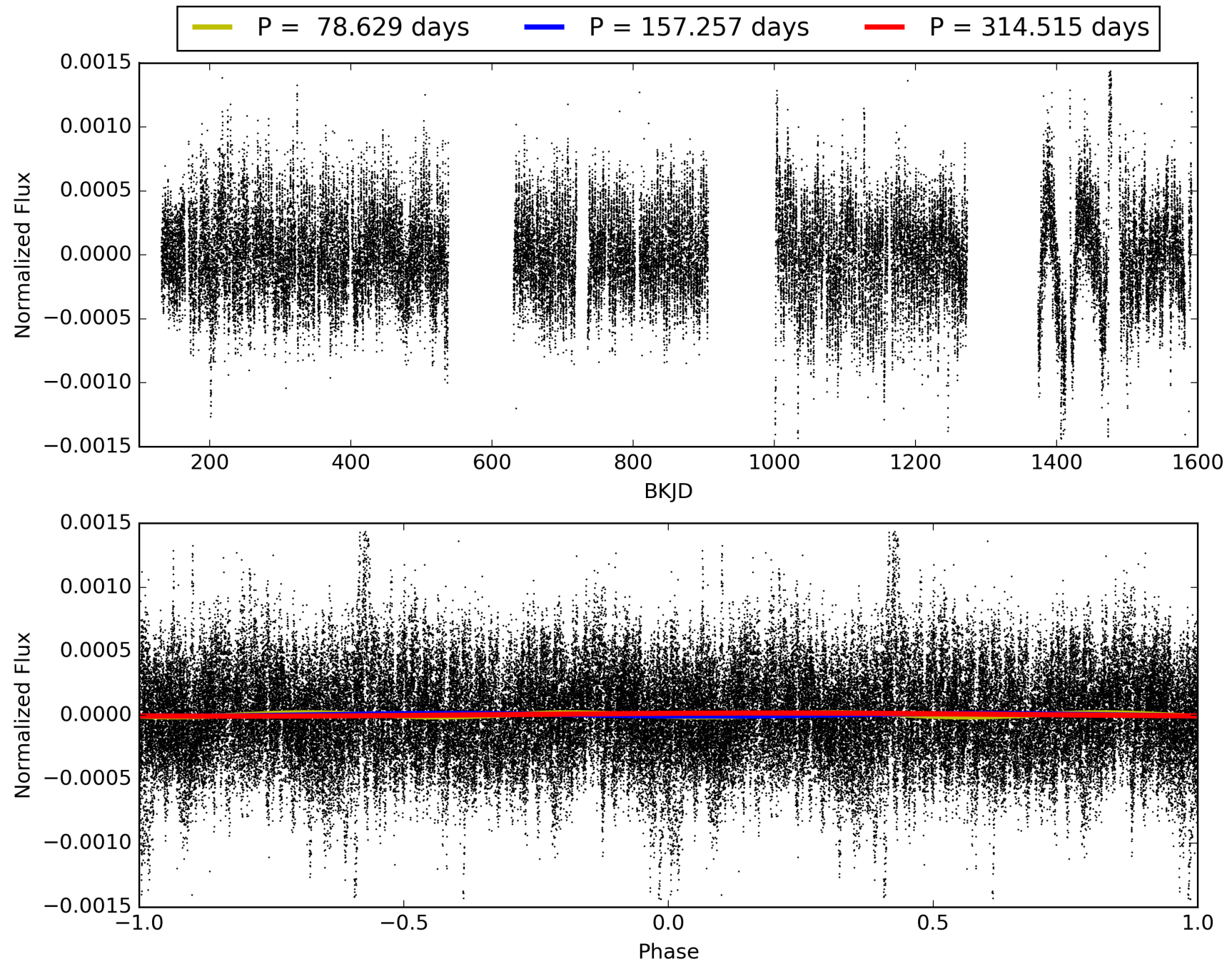
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:13:02 Z

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

TCE 004484251-05, PDC Light Curves

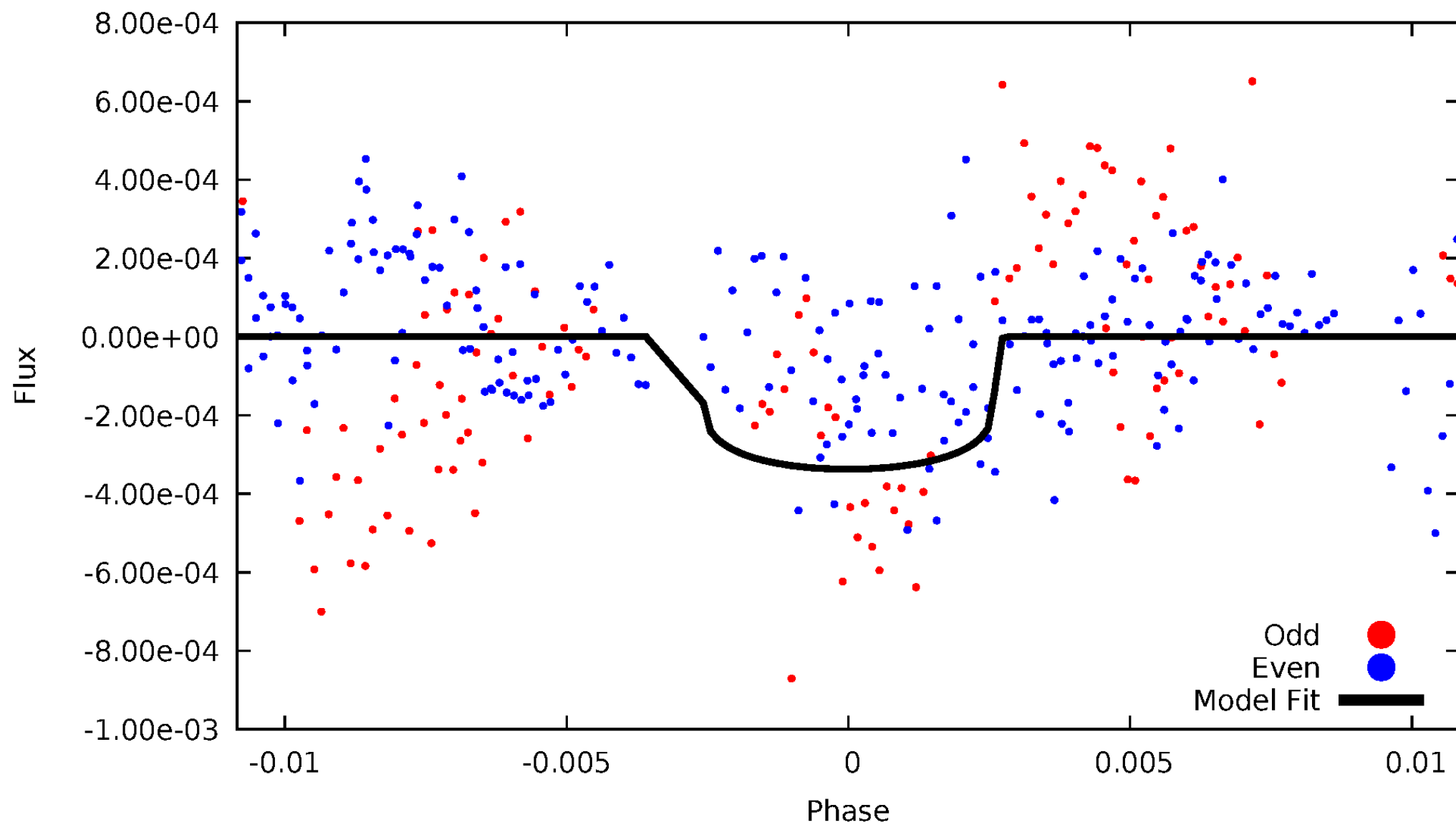


TCE 004484251-05



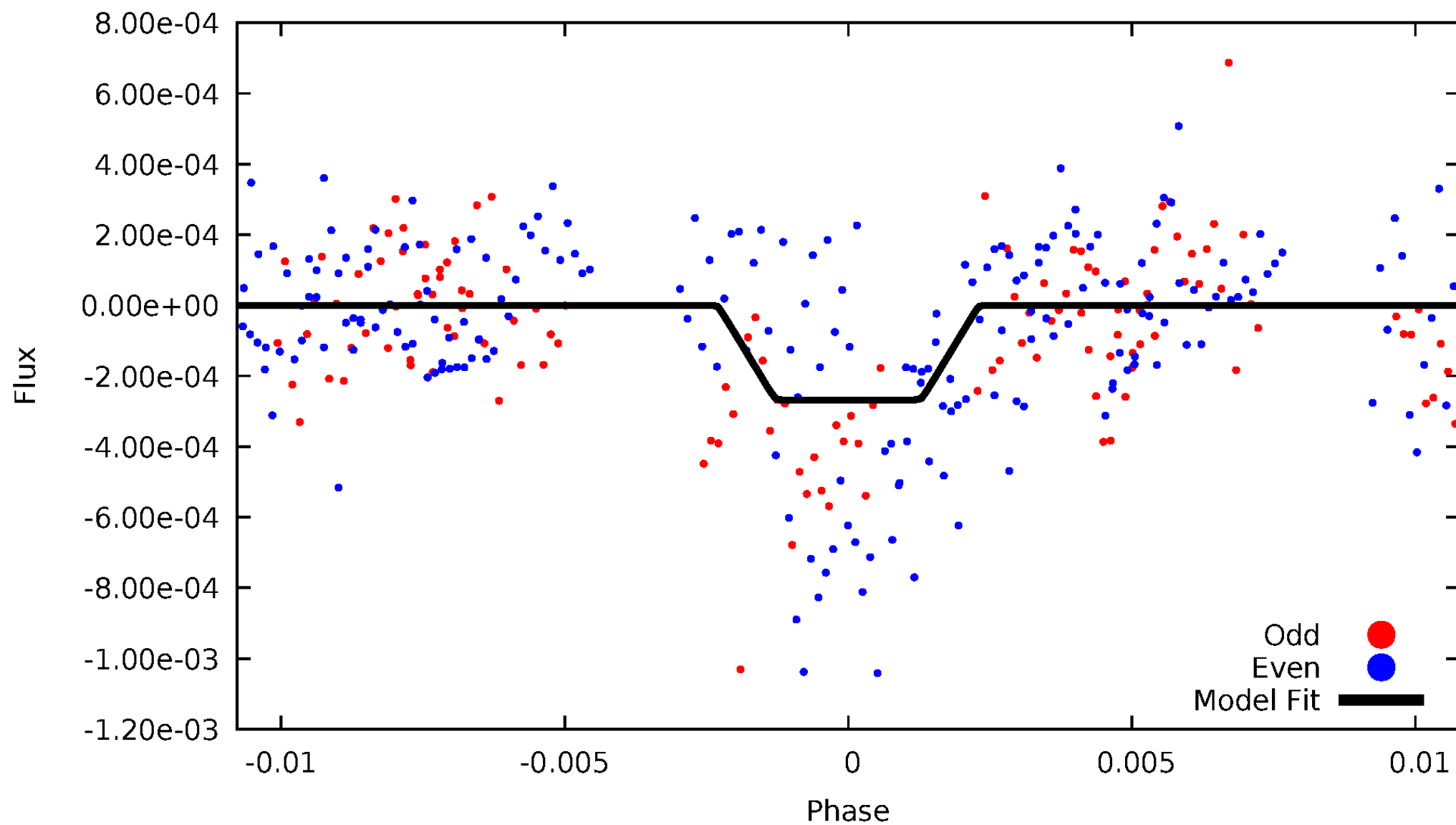
DV Odd/Even

TCE 004484251-05



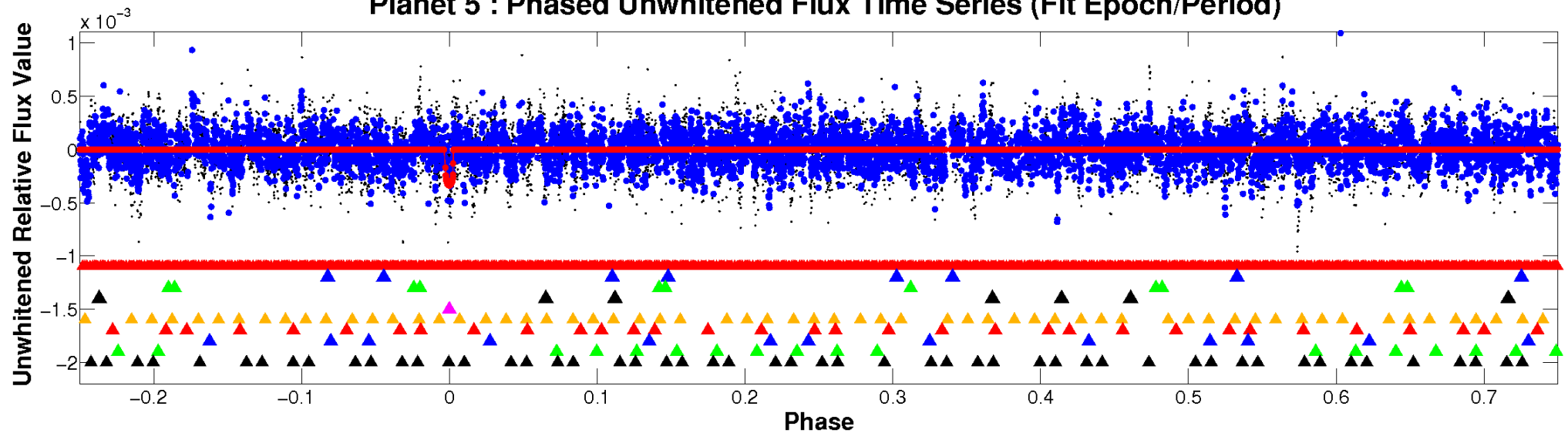
ALT Odd/Even

TCE 004484251-05

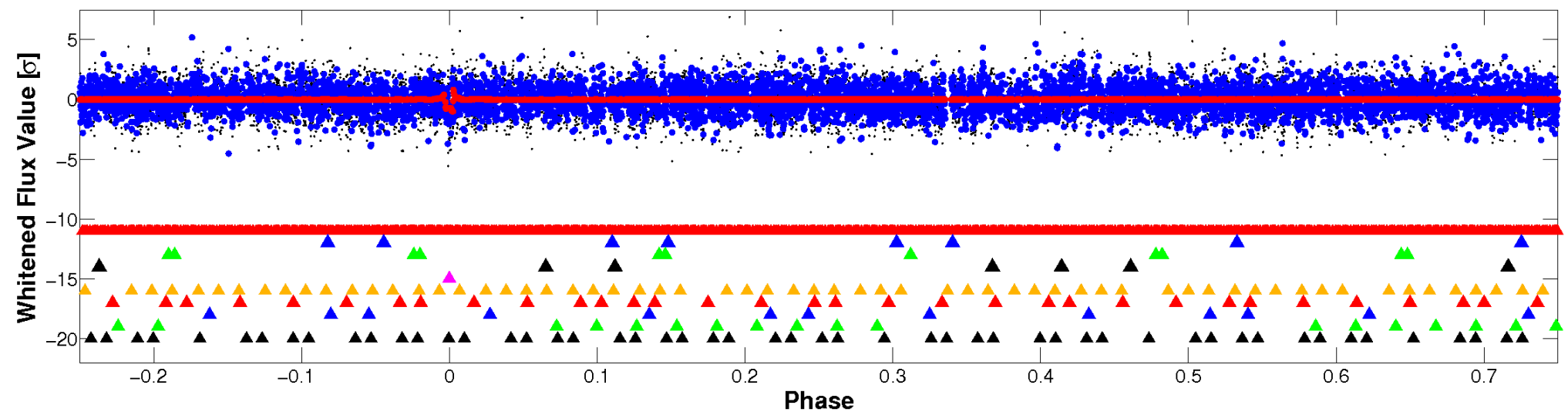


Non-Whitened Vs. Whitened Light Curve

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



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



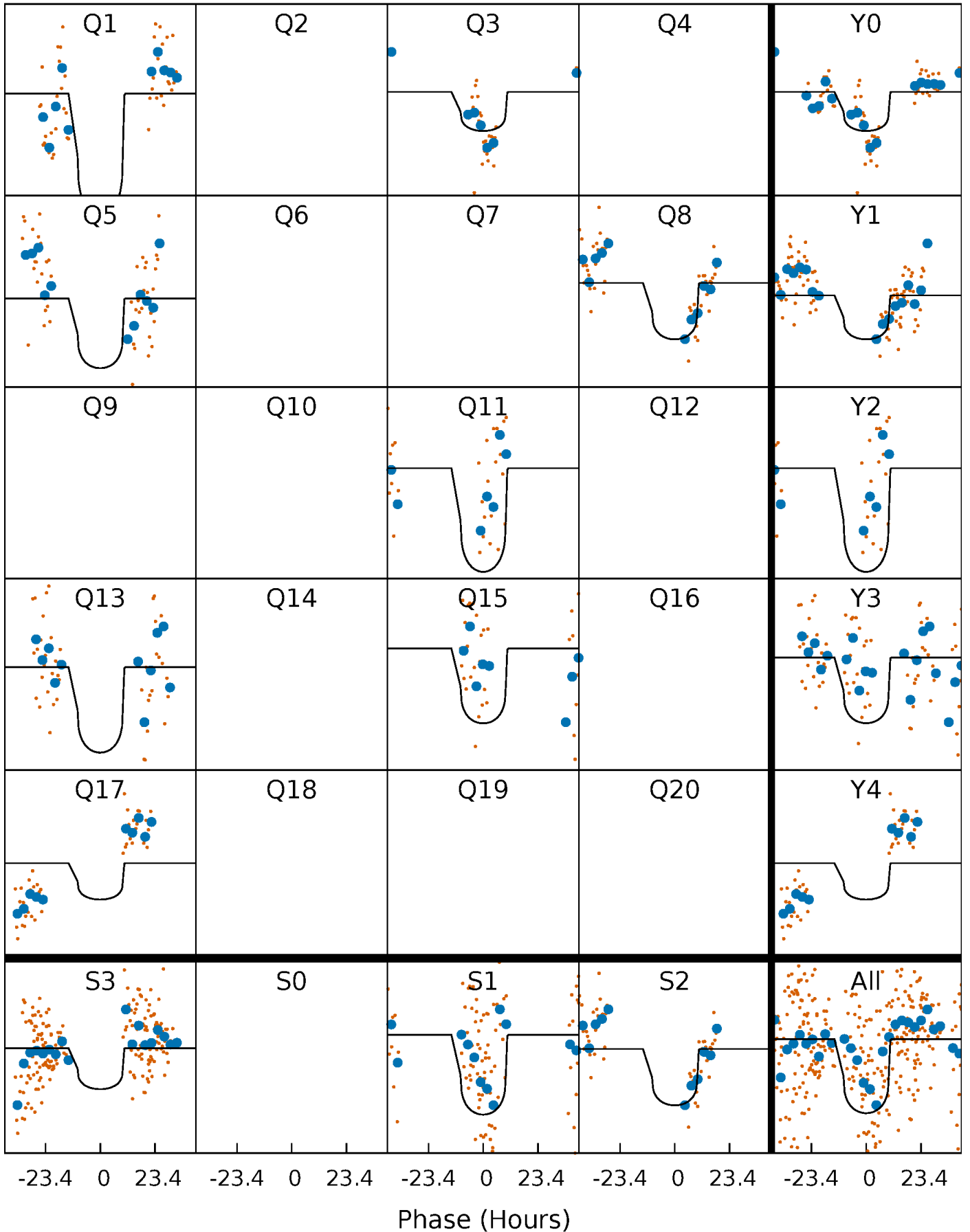
PDC Quarter-Phased Transit Curves

TCE 004484251-05 $P=157.257304$ Days $T_0=150.611824$ (BKJD)



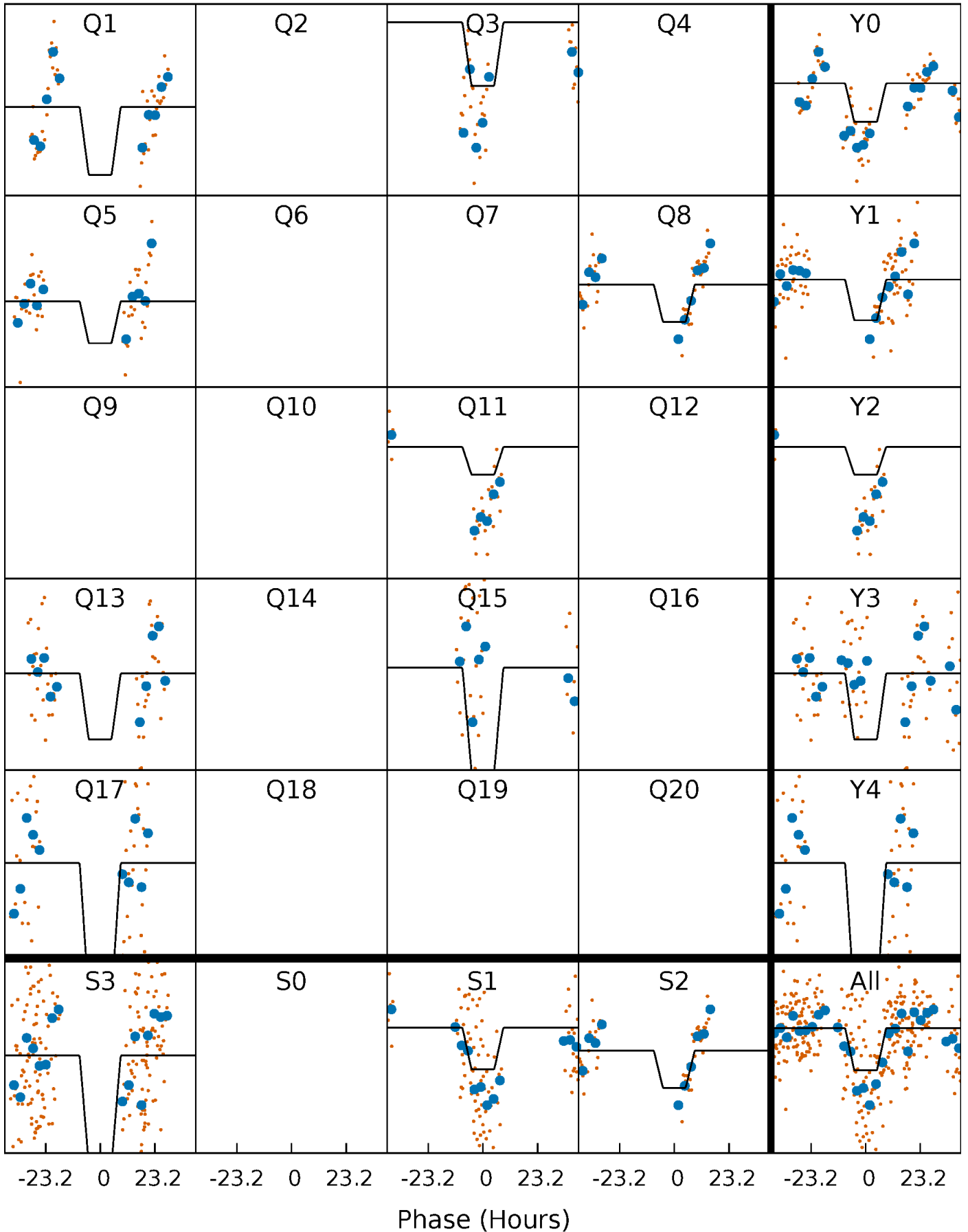
DV Quarter-Phased Transit Curves

TCE 004484251-05 $P=157.257304$ Days $T_0=150.611824$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

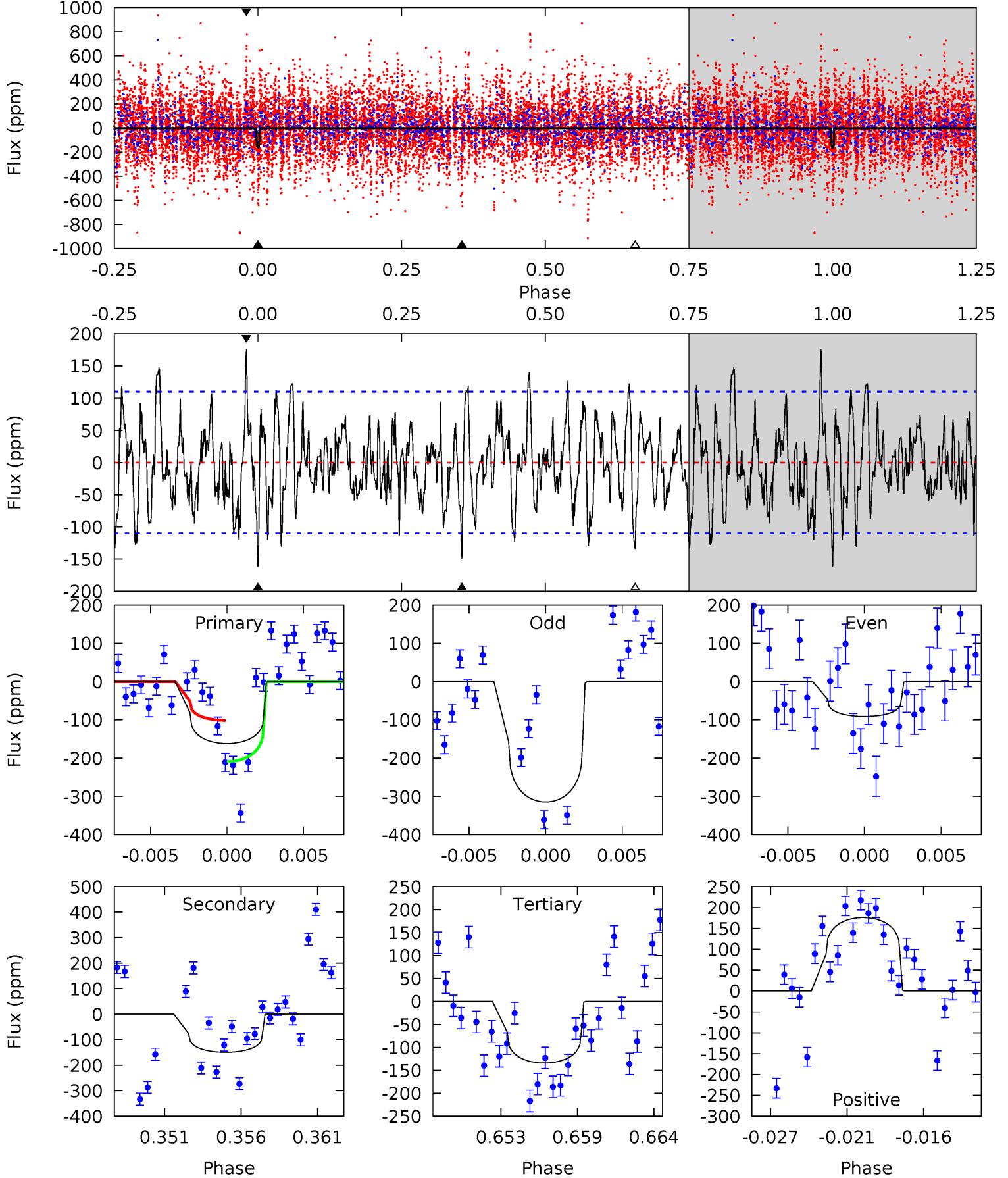
TCE 004484251-05 $P=157.246032$ Days $T_0=150.763645$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-05, P = 157.257304 Days, E = 150.611824 Days

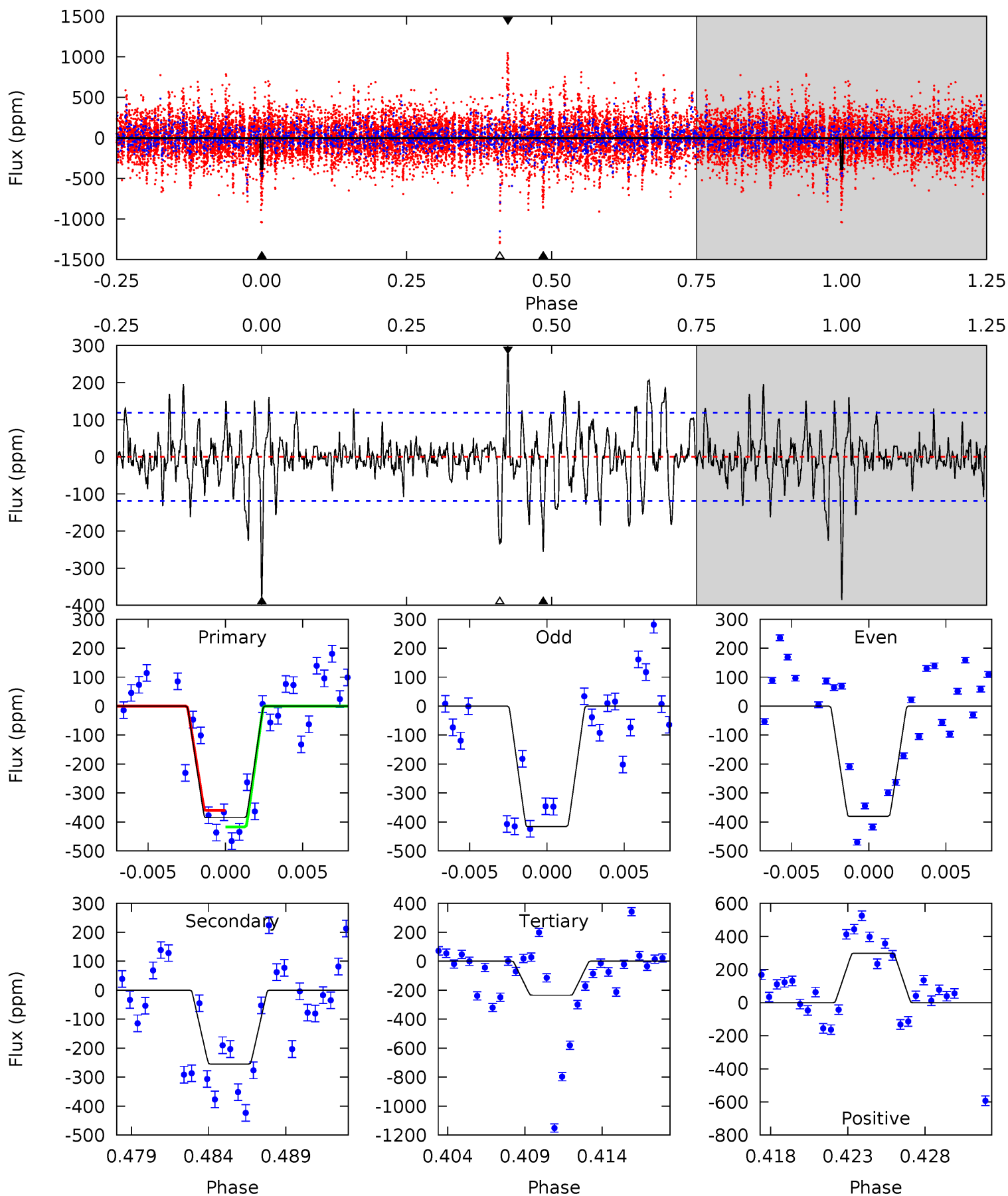
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.56	6.97	6.26	8.22	5.15	2.79	2.48	1.30	-0.66	0.71	-1.25	4.79	1.29	0.52	2.48



Alt Model-Shift Uniqueness Test

004484251-05, P = 157.246032 Days, E = 150.763645 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	11.1	10.2	13.0	5.17	2.83	2.74	6.57	3.80	0.89	-1.87	0.71	0.98	0.44	1.25



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-149 ± 21	$3.12^{+1.15}_{-1.15}$	668^{+29}_{-28}	5634^{+1441}_{-764}	3383^{+5019}_{-1625}
Alt.	-255 ± 23	$2.86^{+1.22}_{-1.10}$	668^{+30}_{-27}	6680^{+2296}_{-1080}	6760^{+11334}_{-3497}

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 $A_{obs} \gg 1.0$

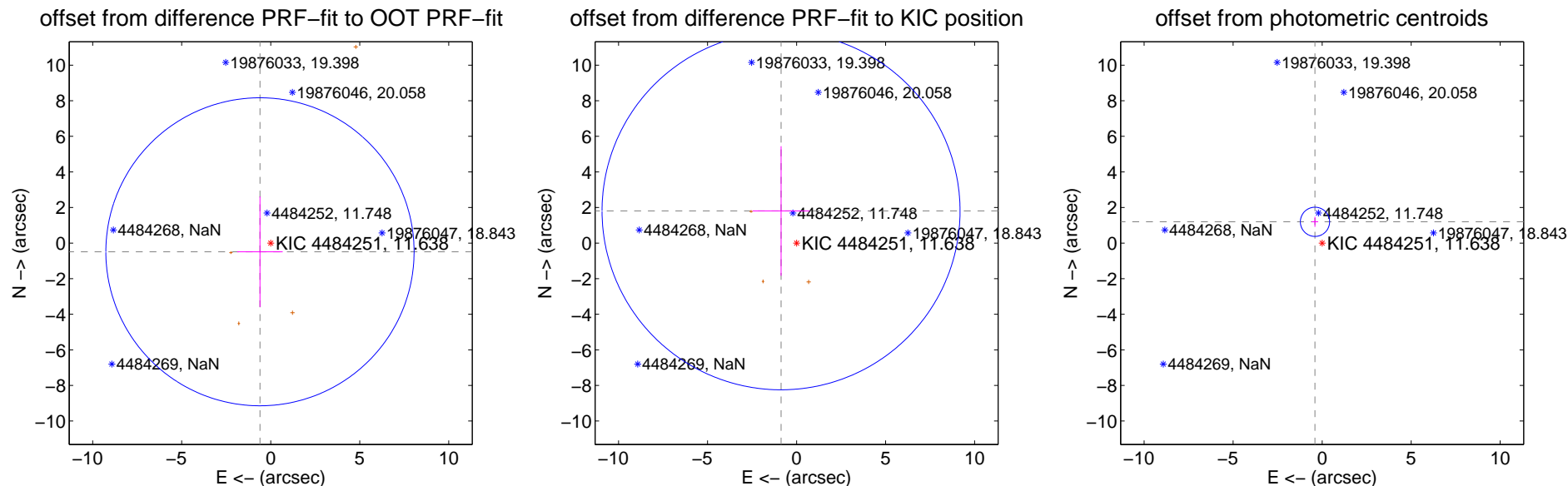
DV Centroid Data

Supplemental centroid analysis for 004484251-05. **Kepler magnitude: 11.64.** Transit SNR 7.19

There are 0 quarters with good PRF difference image offsets

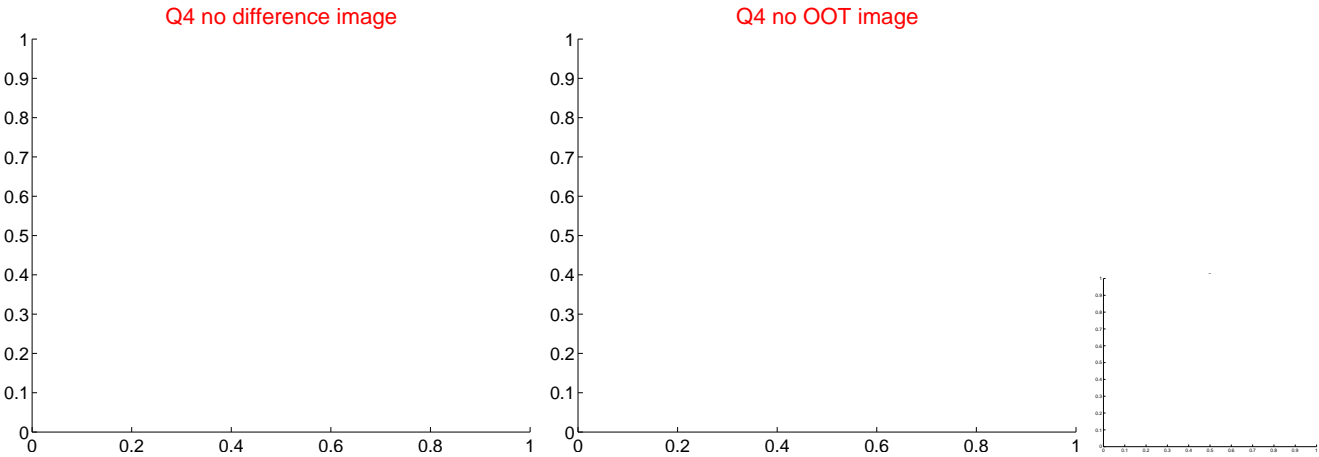
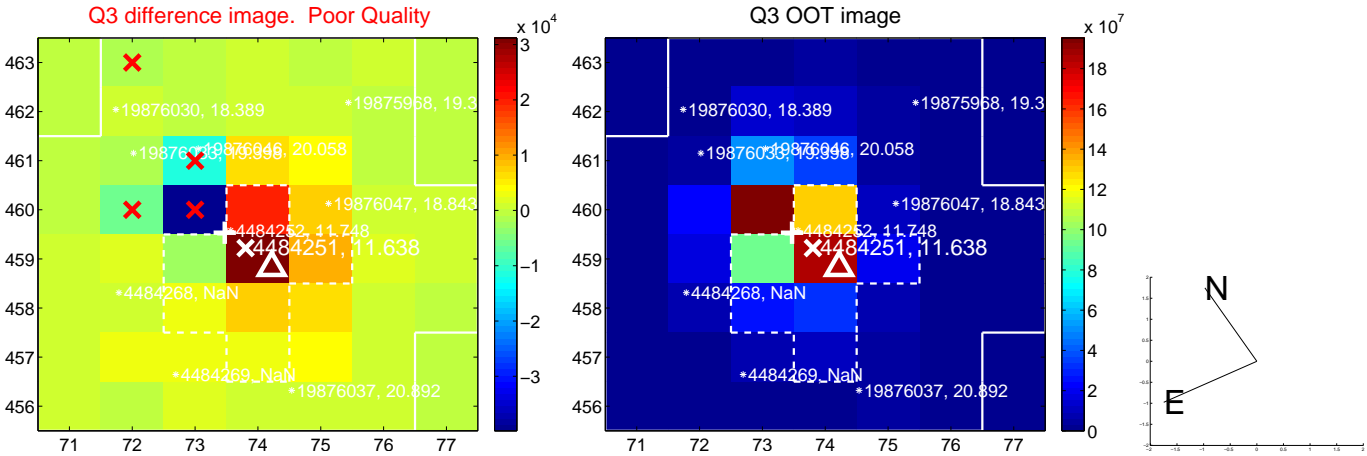
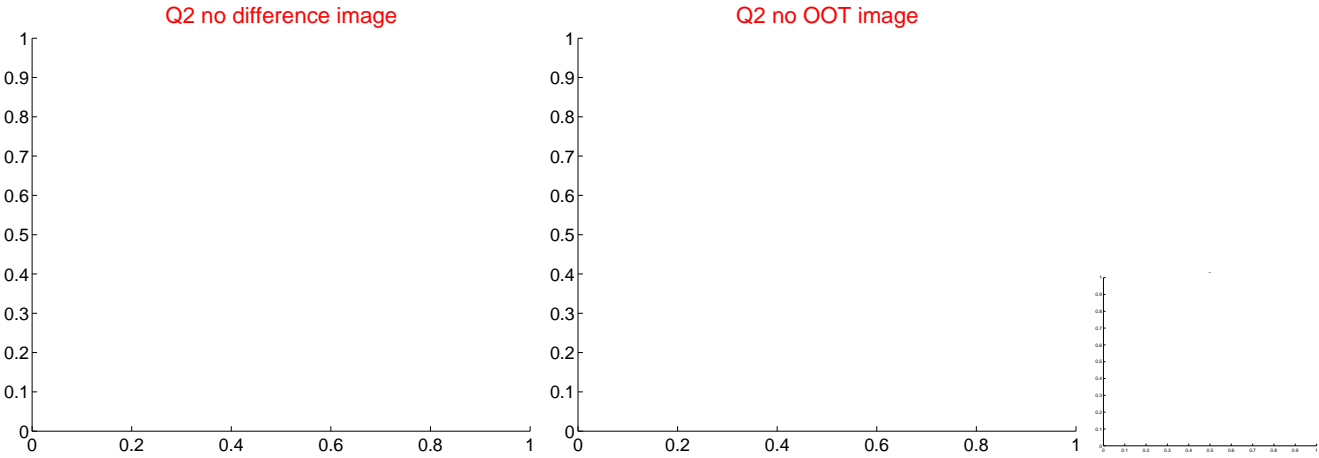
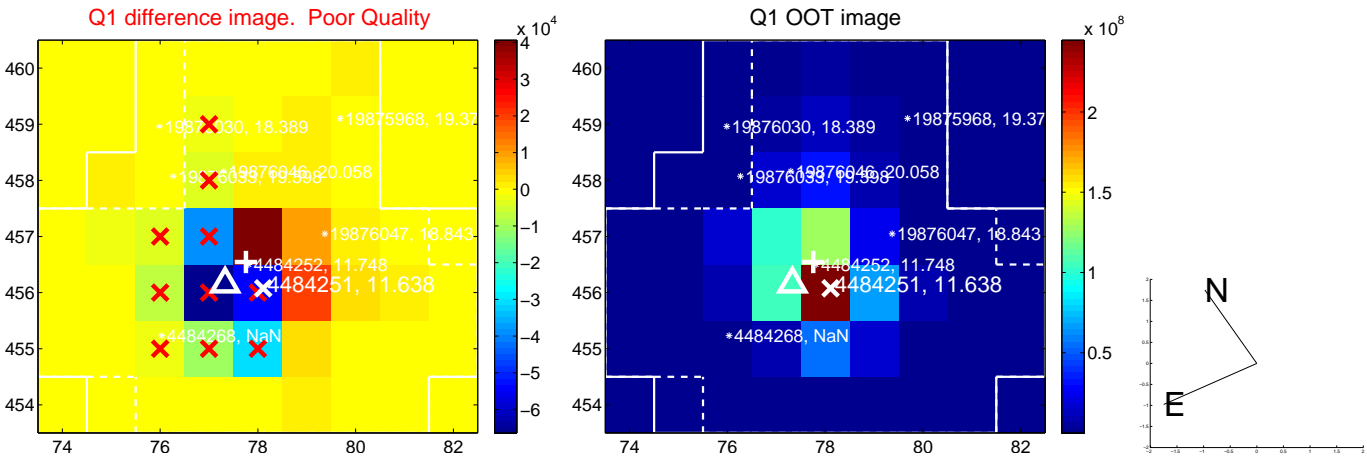
The OOT PRF centroid is offset from the target star catalog position by about 2.37 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.777 ± 2.885	0.27	0.604 ± 1.277	-0.489 ± 3.105
PRF-fit source offset from KIC position	2.006 ± 3.351	0.60	0.873 ± 1.601	1.807 ± 3.640
photometric centroid source offset	1.26 ± 0.27	4.61	0.40 ± 0.18	1.20 ± 0.28

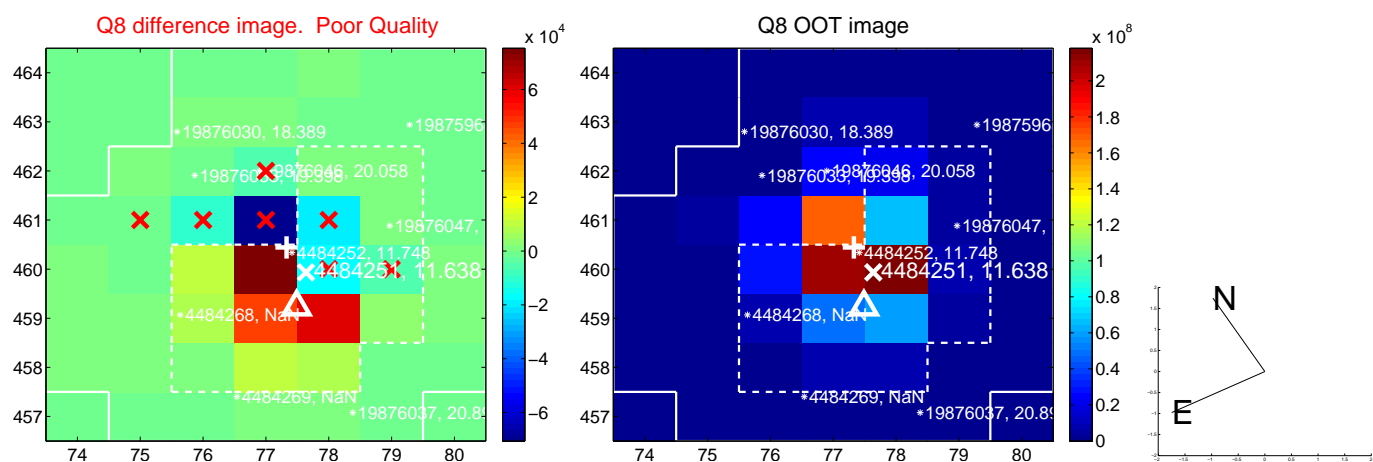
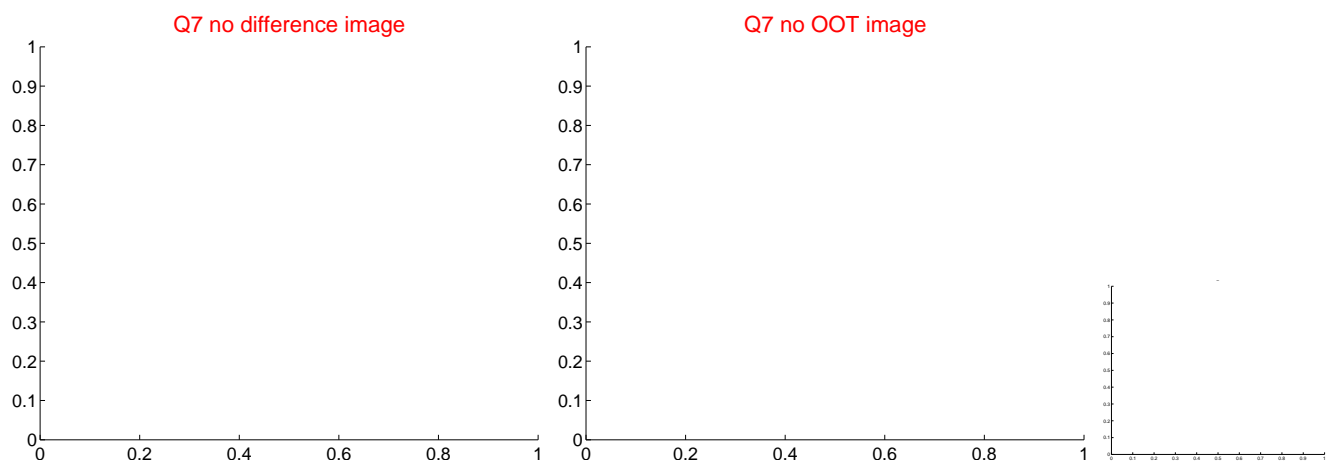
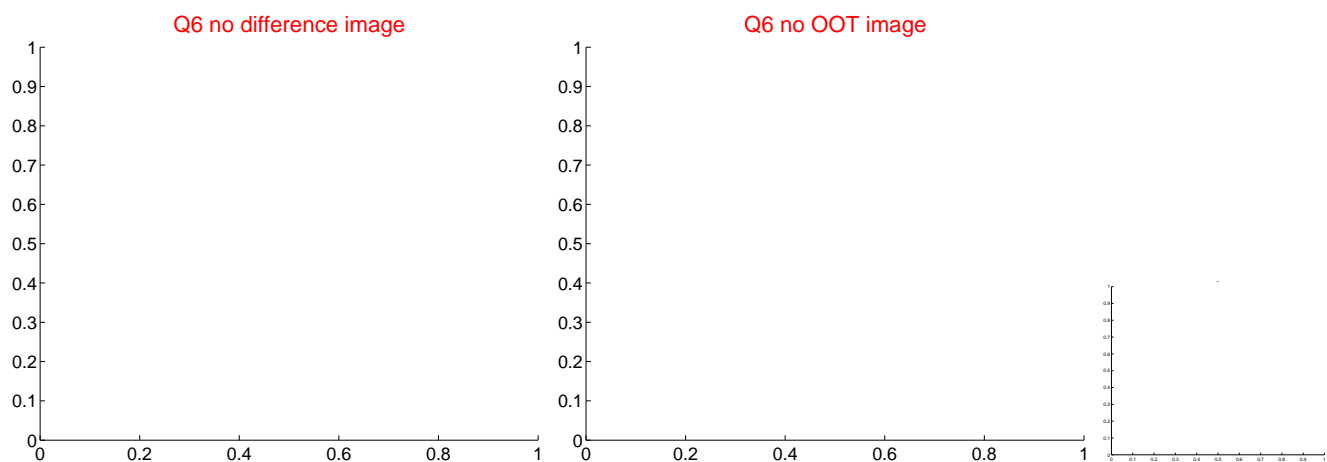
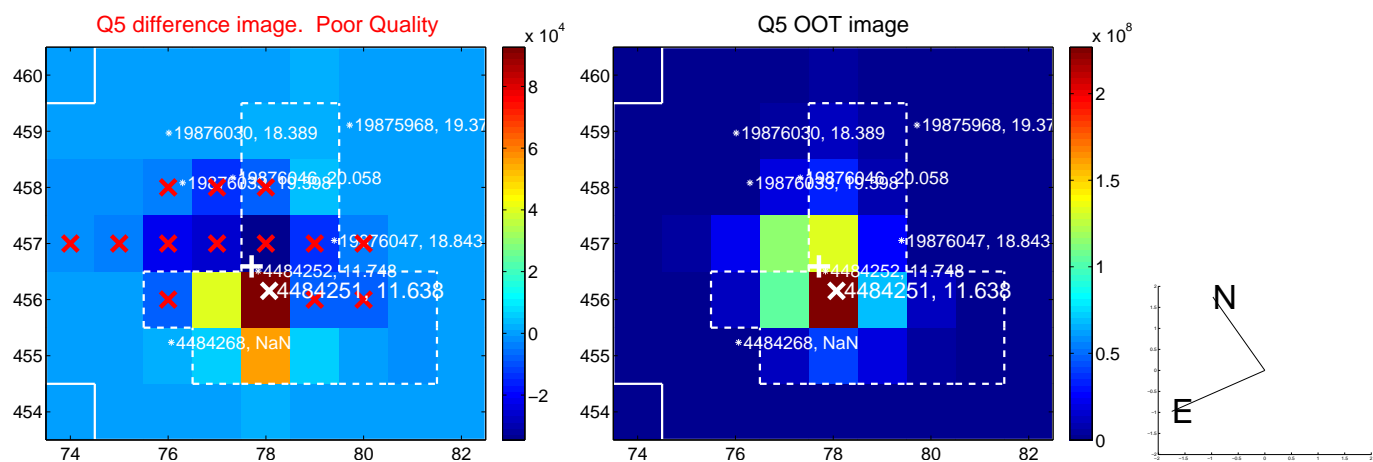


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



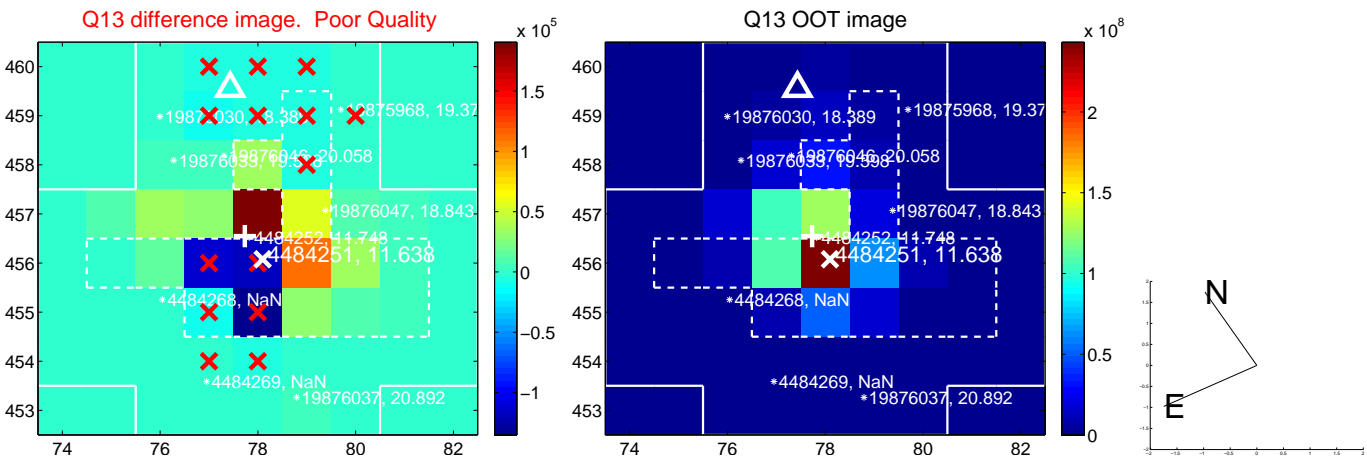
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



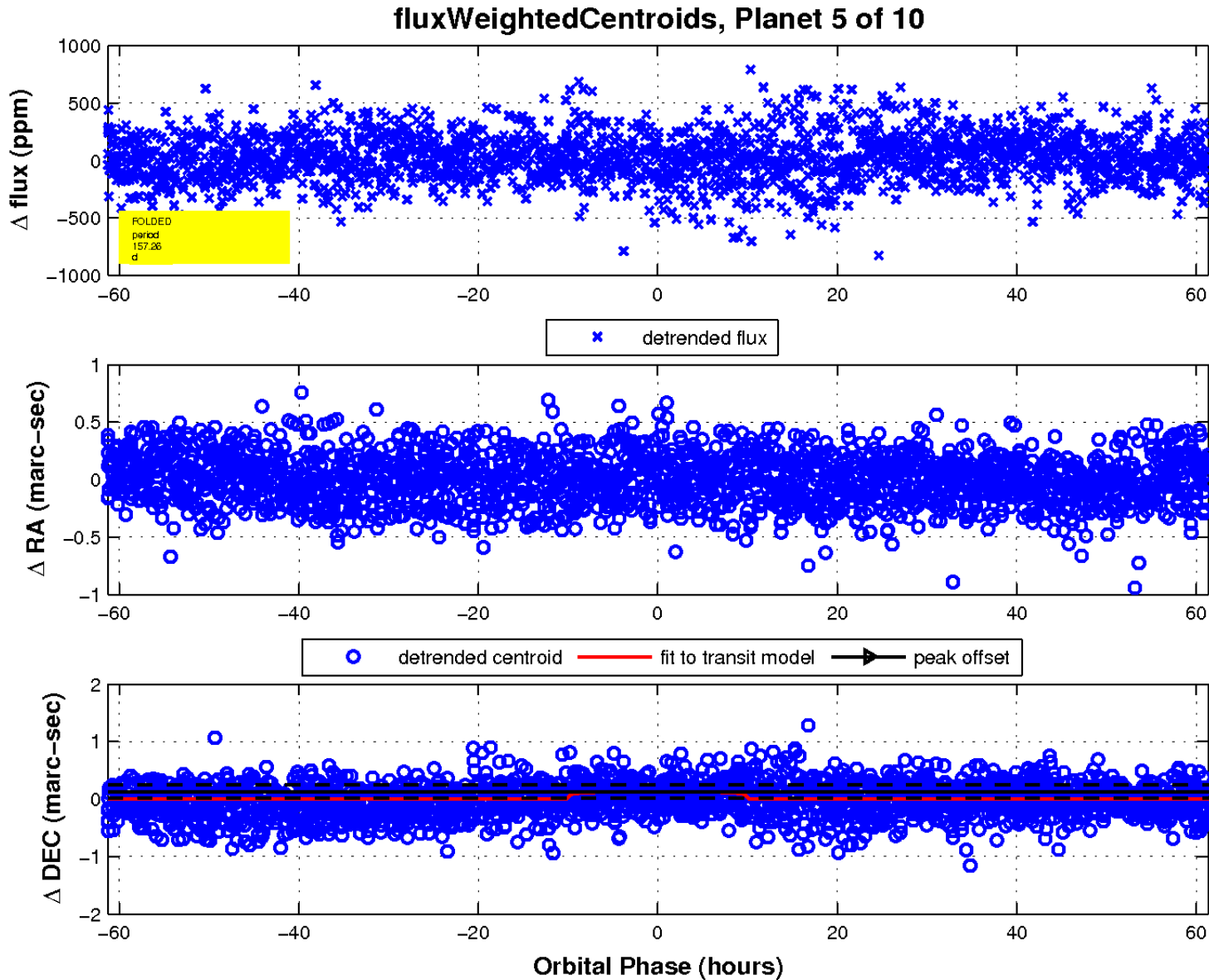
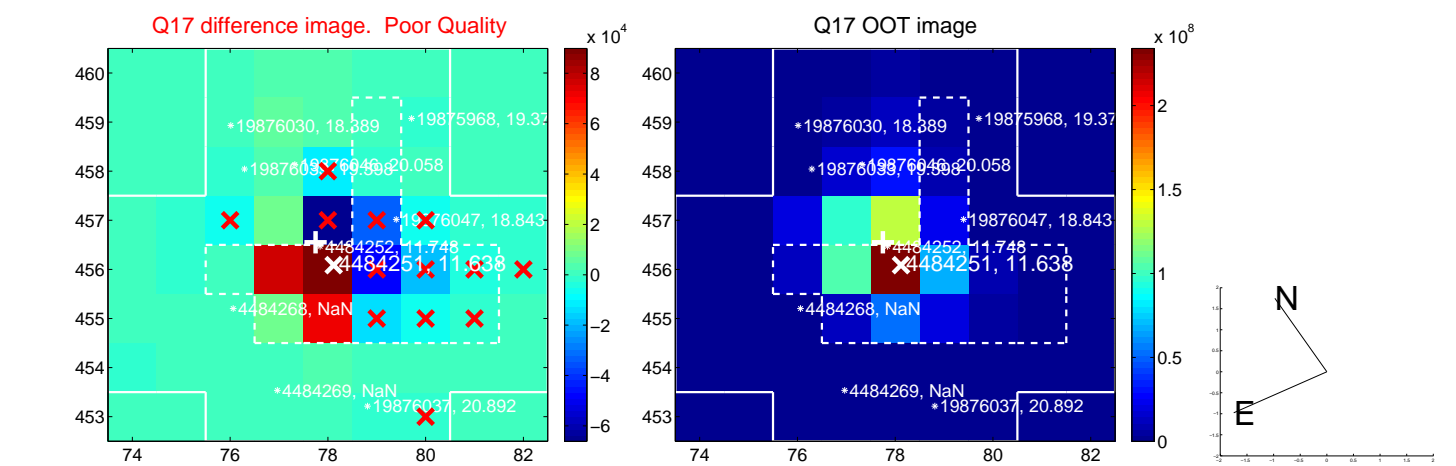
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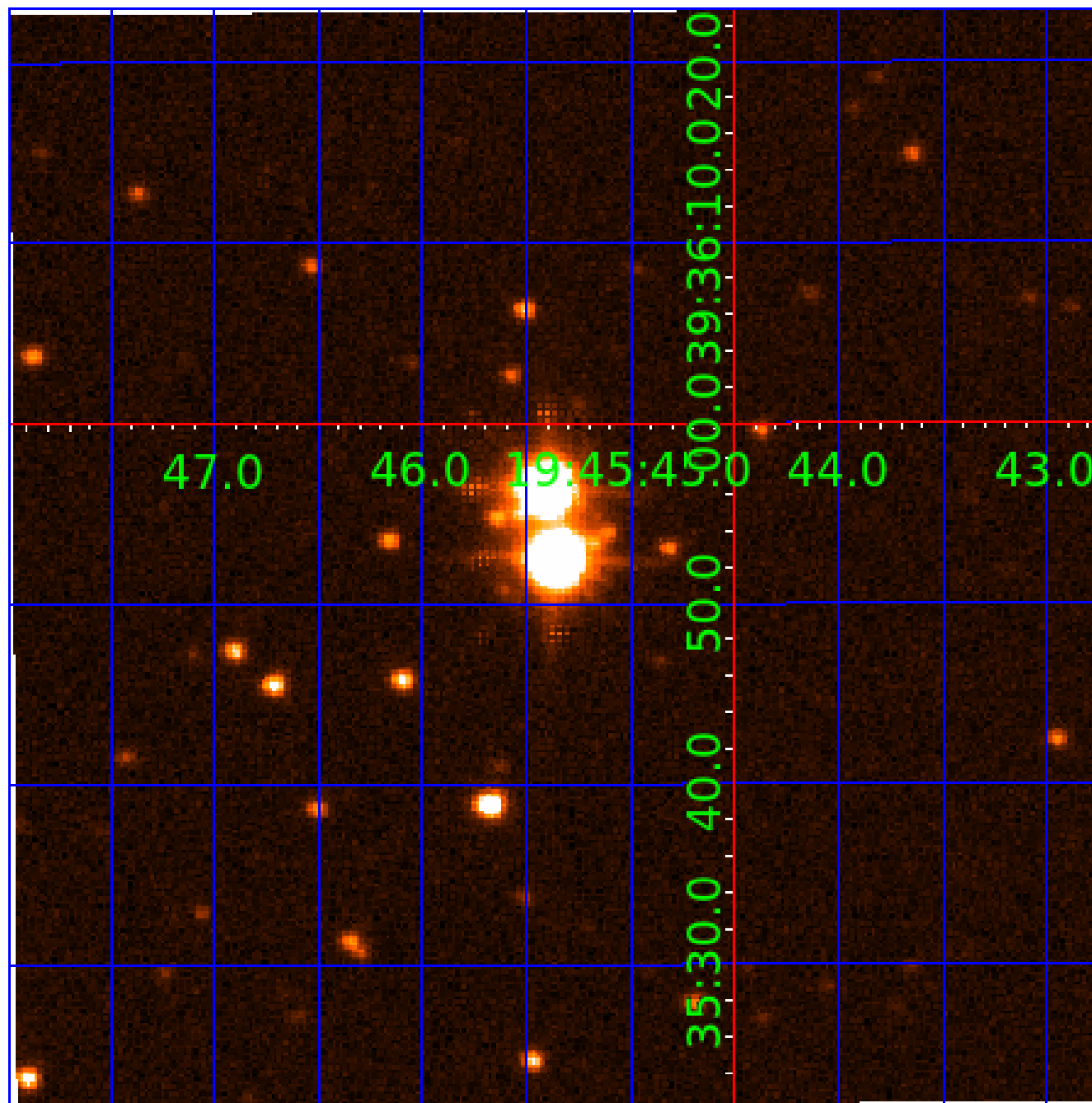


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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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004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

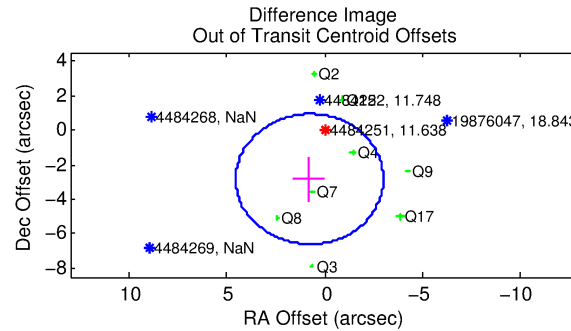
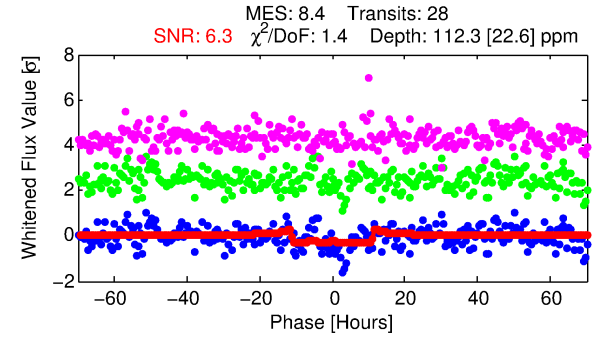
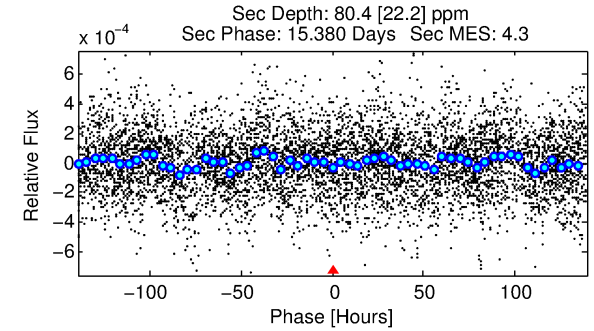
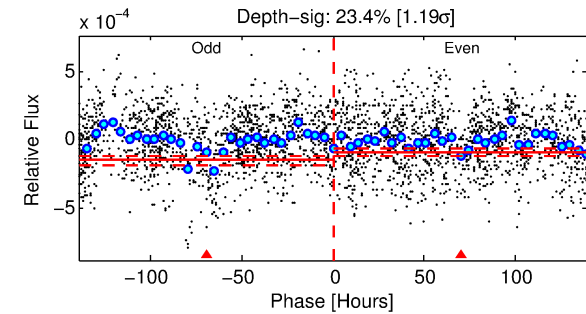
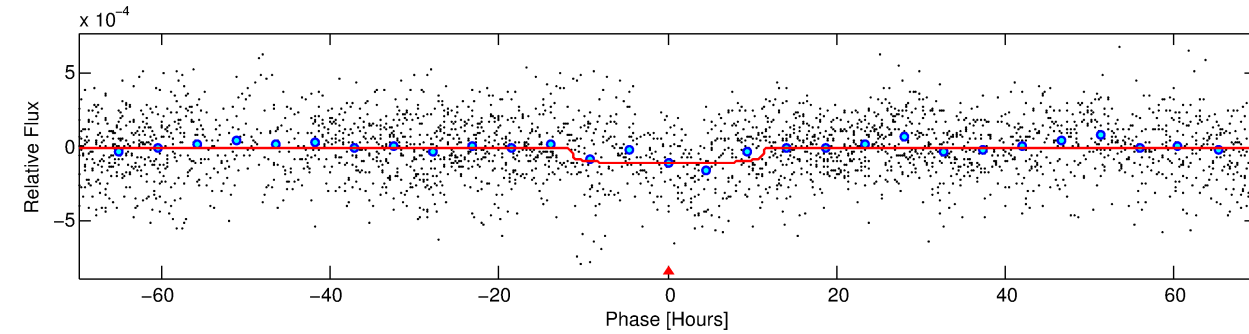
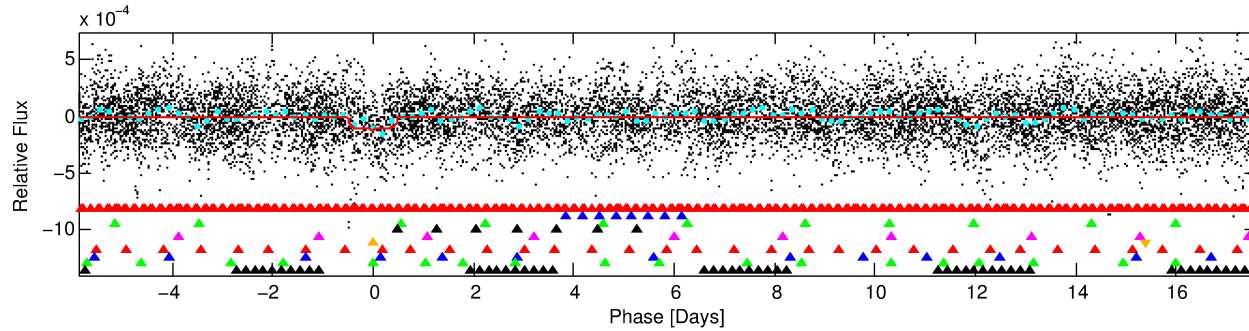
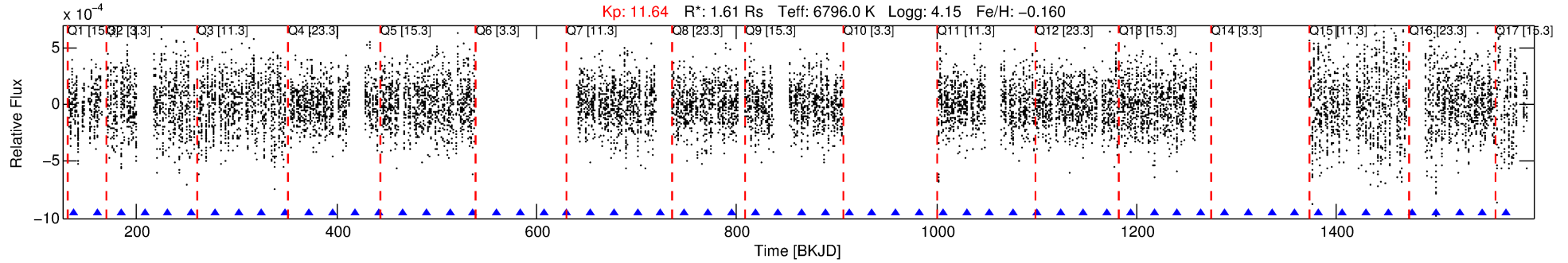
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-06

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 6 of 10 Period: 23.481 d



DV Fit Results:

Period = 23.48083 [0.00068] d
Epoch = 137.4859 [0.0248] BKJD
Rp/R* = 0.0105 [0.0020]
a/R* = 5.40 [4.58]
b = 0.73 [0.55]
Seff = 157.69 [34.65]
Teq = 904 [50] K
Rp = 1.84 [0.48] Re
a = 0.1770 [0.0263] AU
Ag = 409.19 [212.58] [1.92 σ]
Teffp = 6283 [749] K [7.17 σ]

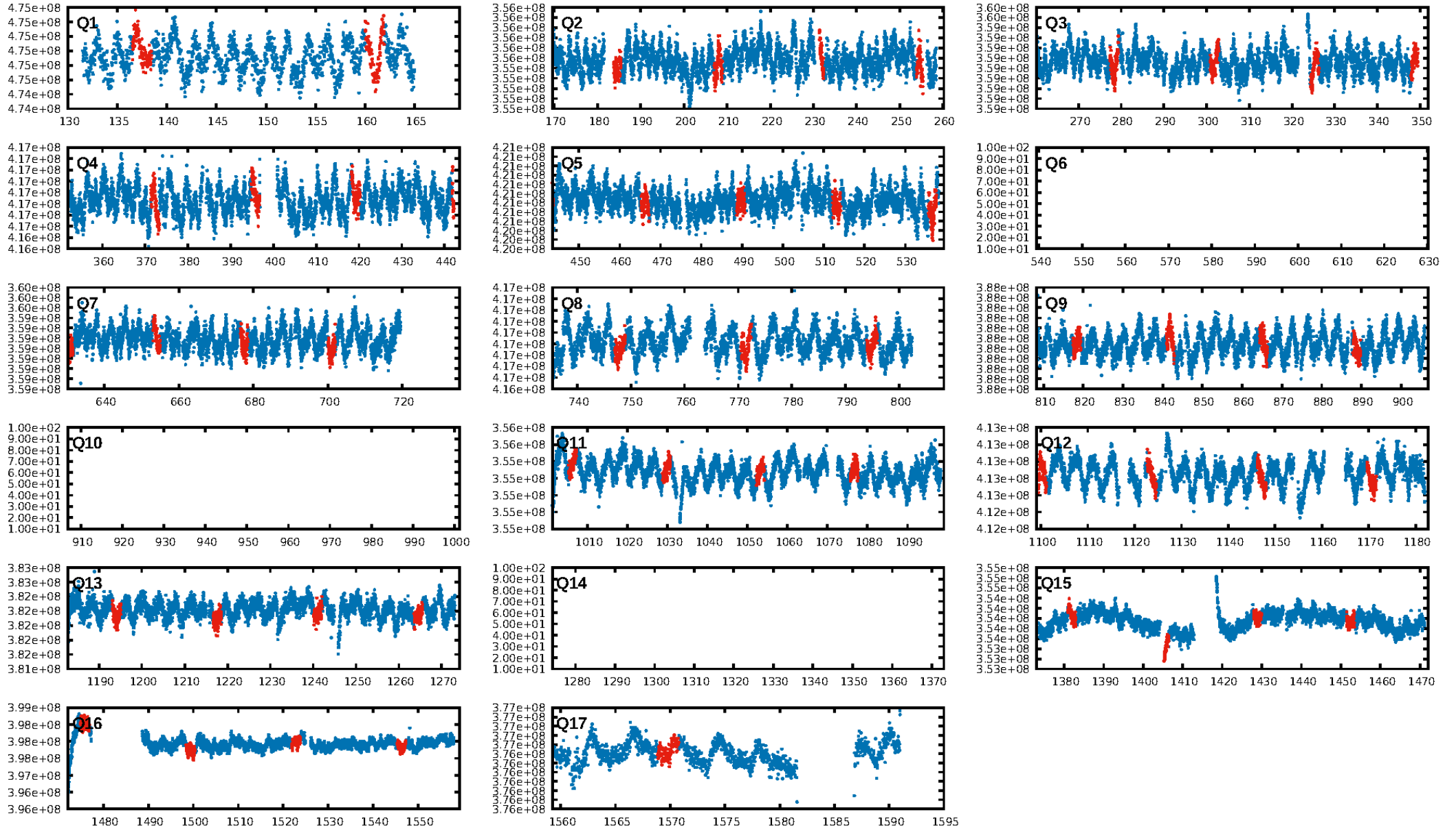
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.04 σ]
LongPeriod-sig: 100.0% [4.73 σ]
ModelChiSquare2-sig: 1.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [25/25]
GhostDiagnostic-chr: -1.243
Centroid-sig: N/A
Centroid-so: 1.279 arcsec [3.25 σ]
OotOffset-rm: 2.938 arcsec [2.34 σ]
KicOffset-rm: 1.354 arcsec [1.44 σ]
OotOffset-st: 1/2/3/2 [8]
KicOffset-st: 1/2/3/2 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.00 [0/14]

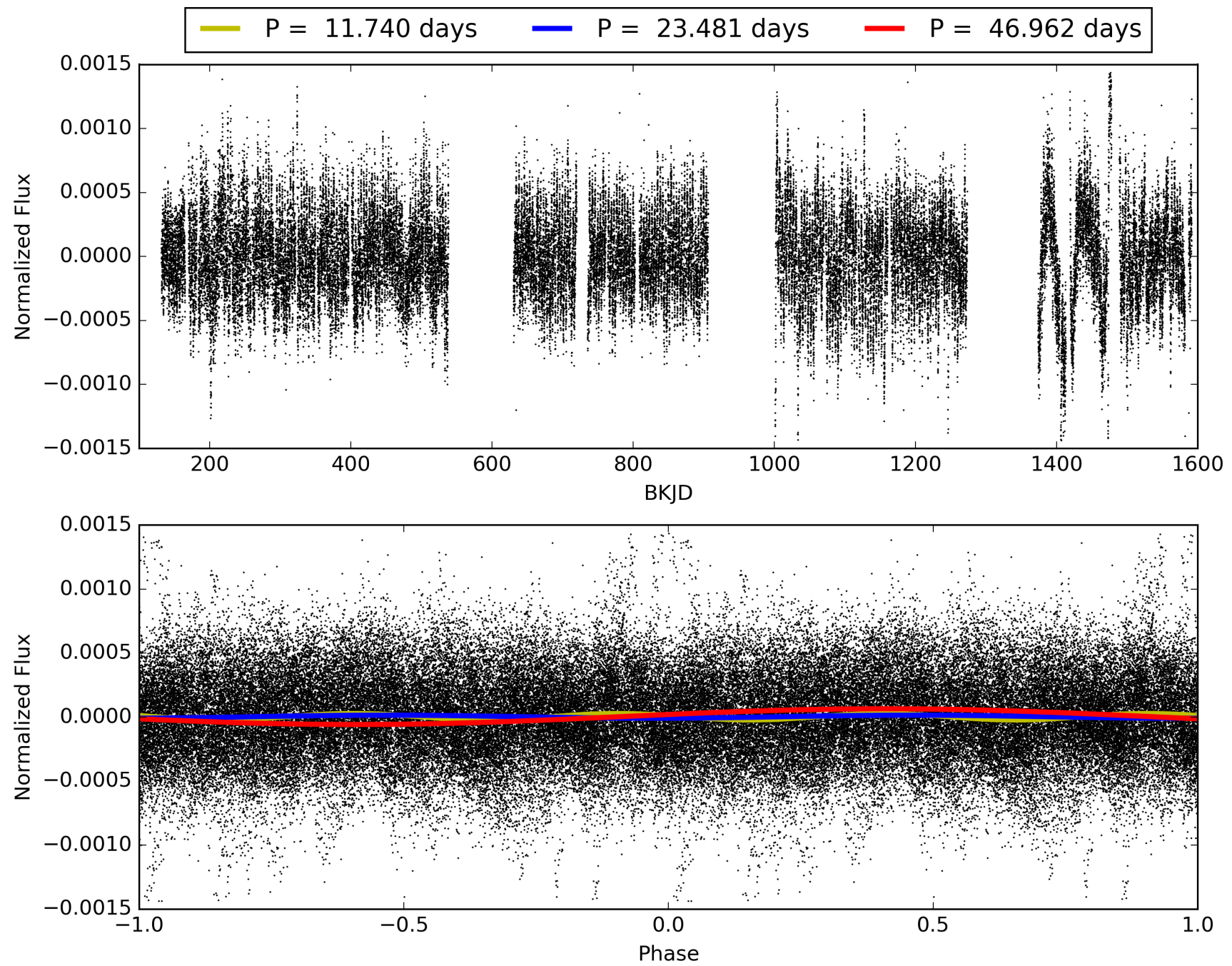
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:13:07 Z

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

TCE 004484251-06, PDC Light Curves

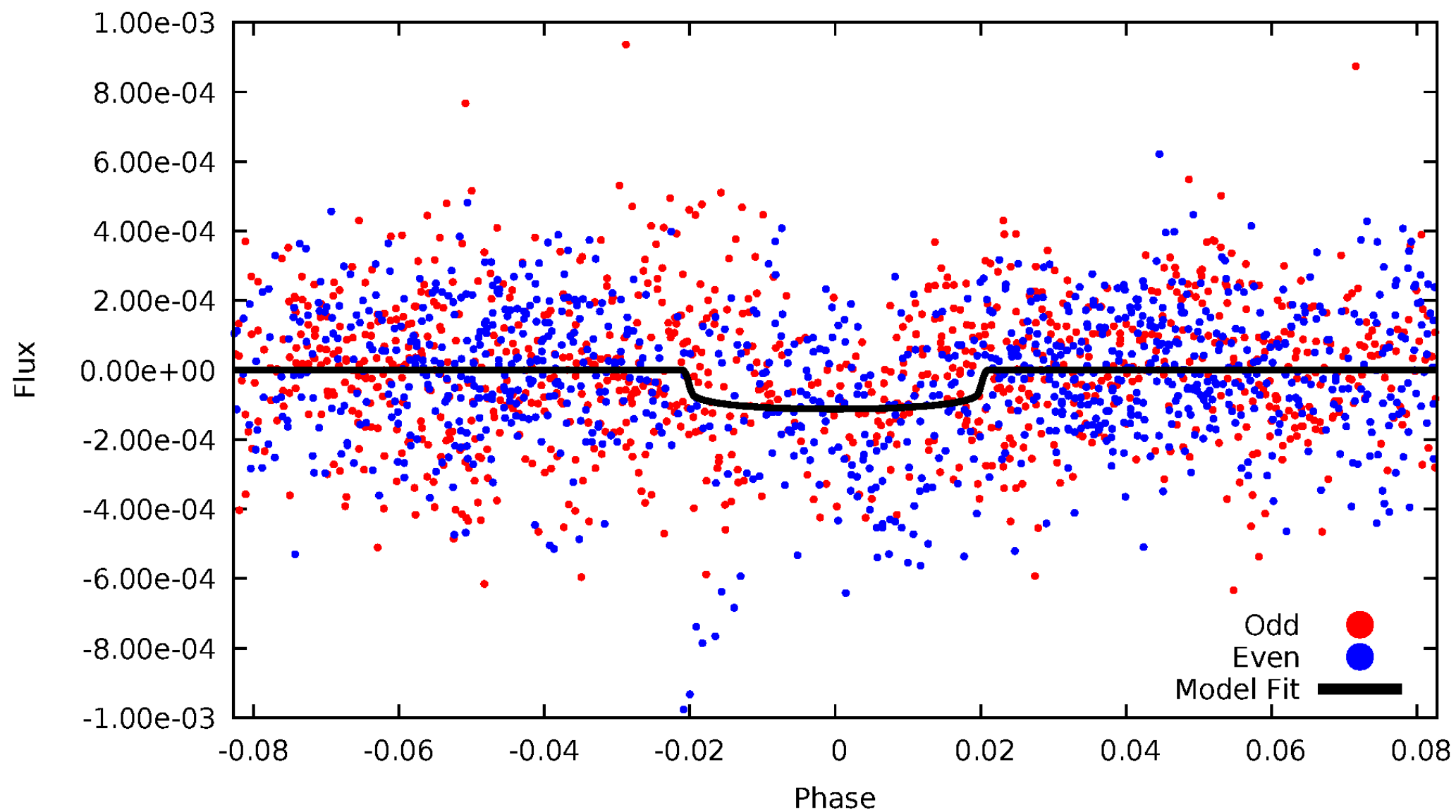


TCE 004484251-06



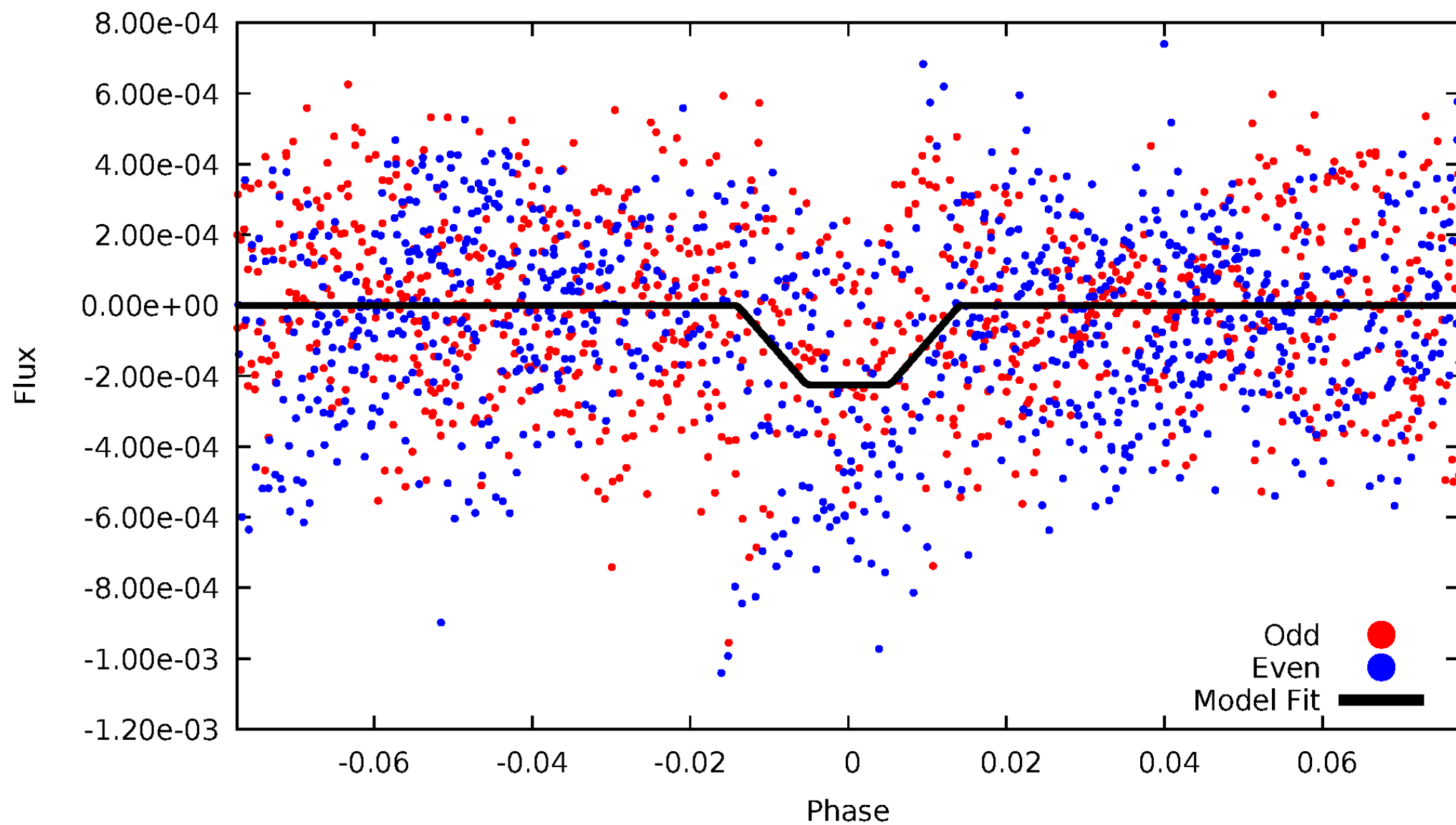
DV Odd/Even

TCE 004484251-06



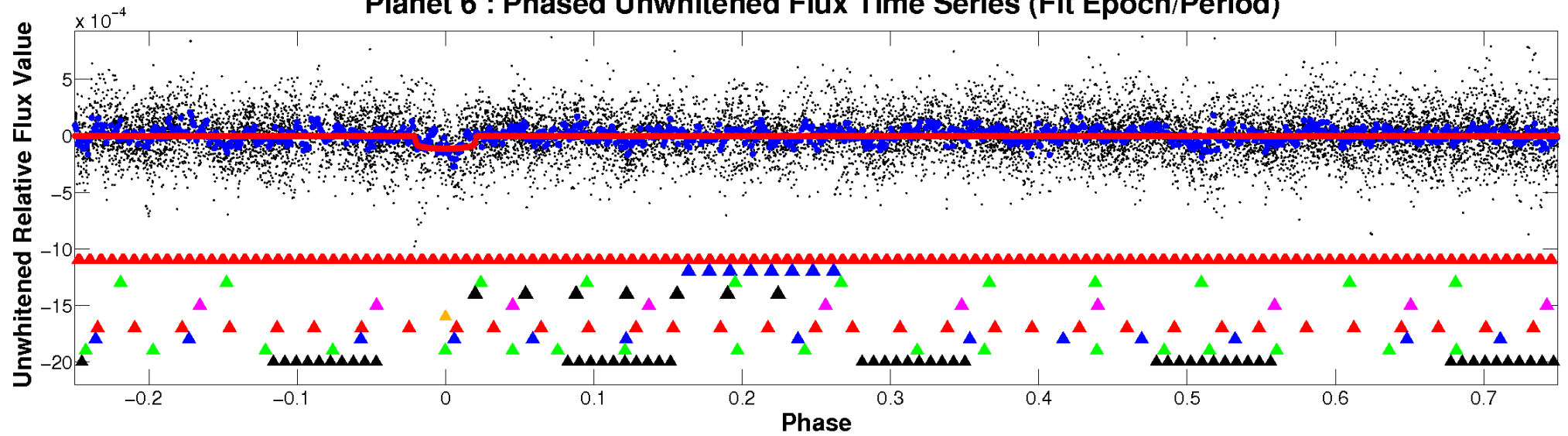
ALT Odd/Even

TCE 004484251-06

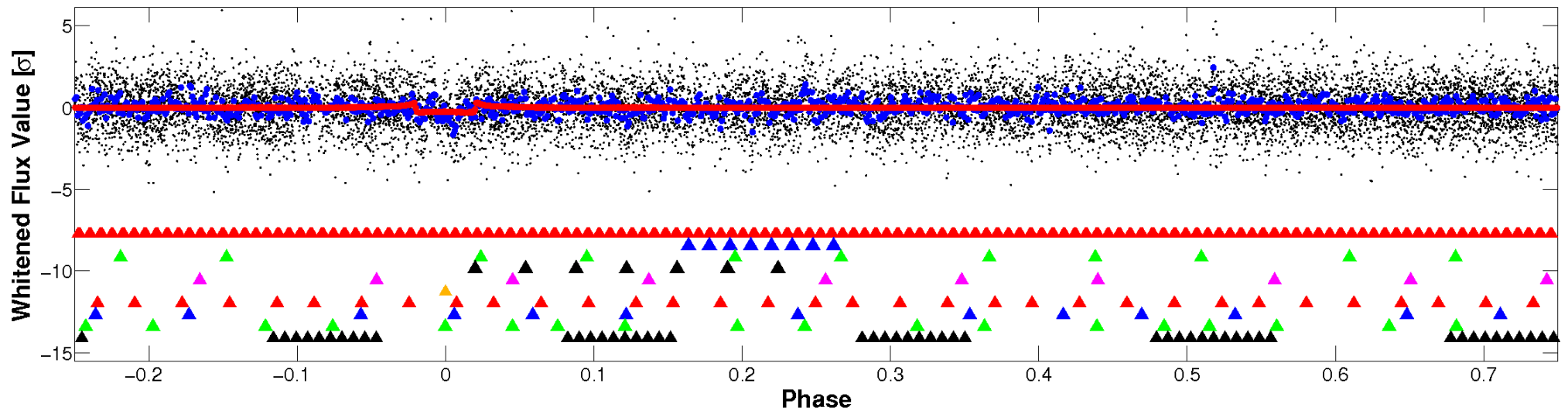


Non-Whitened Vs. Whitened Light Curve

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

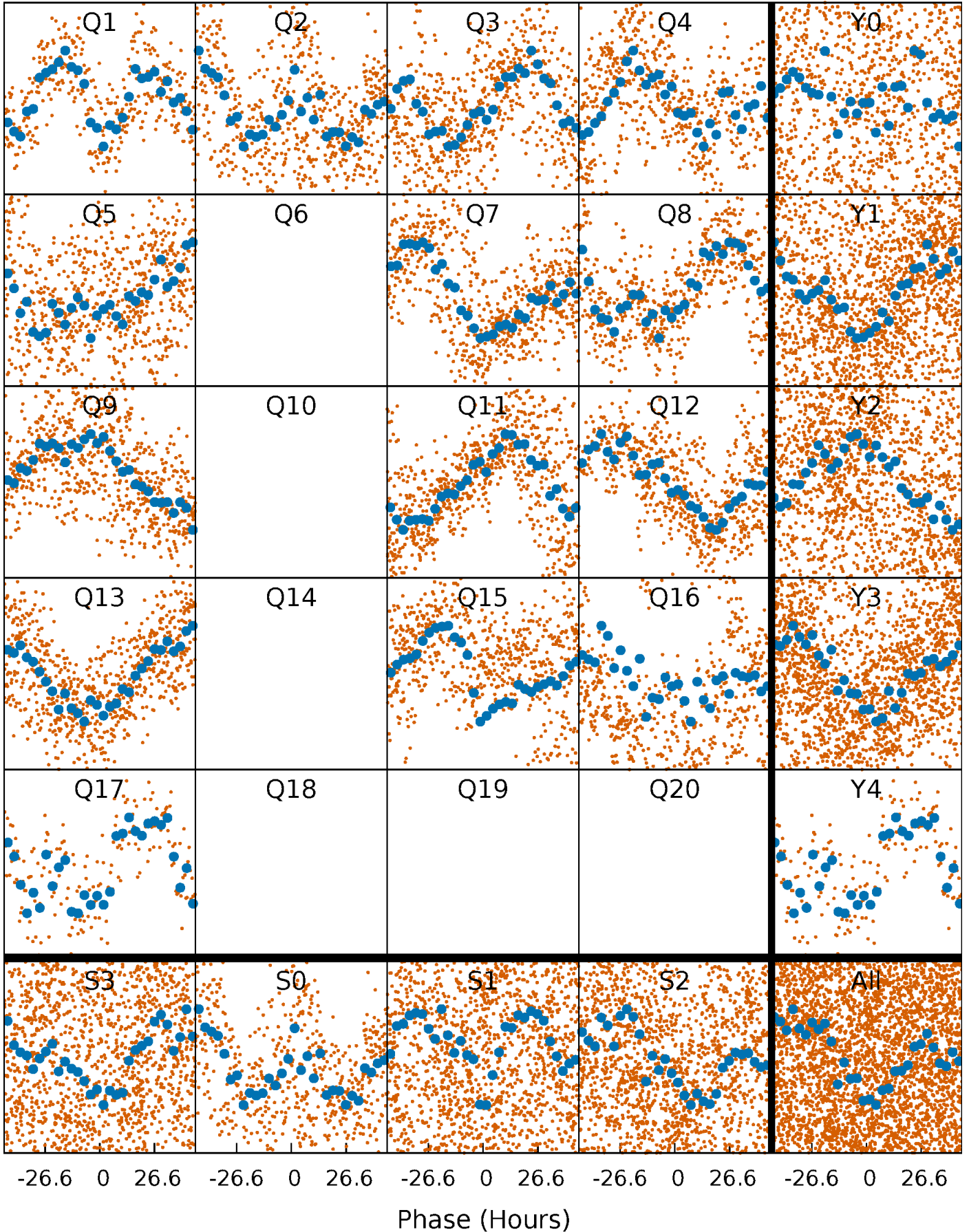


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



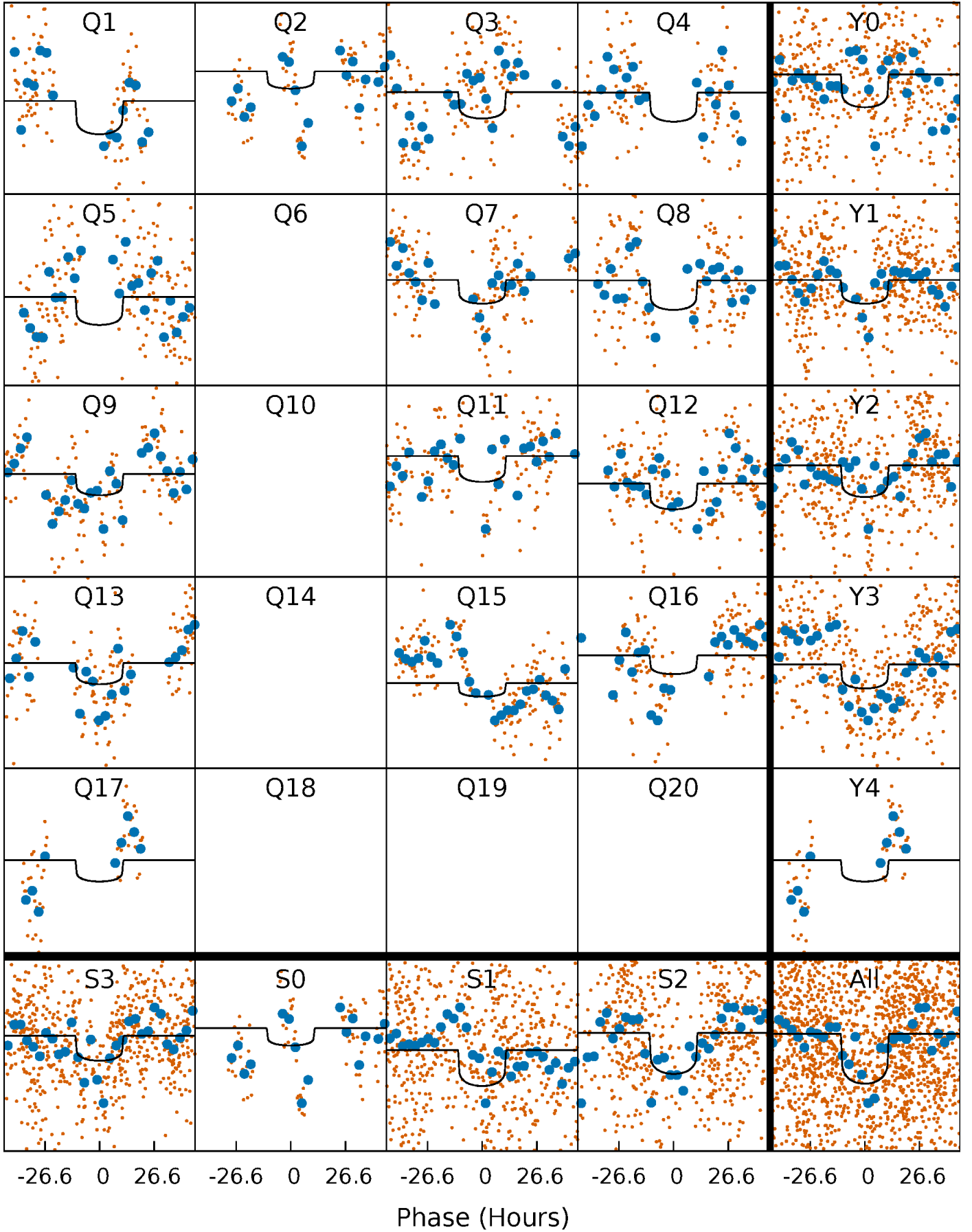
PDC Quarter-Phased Transit Curves

TCE 004484251-06 P= 23.480828 Days $T_0=137.485920$ (BKJD)



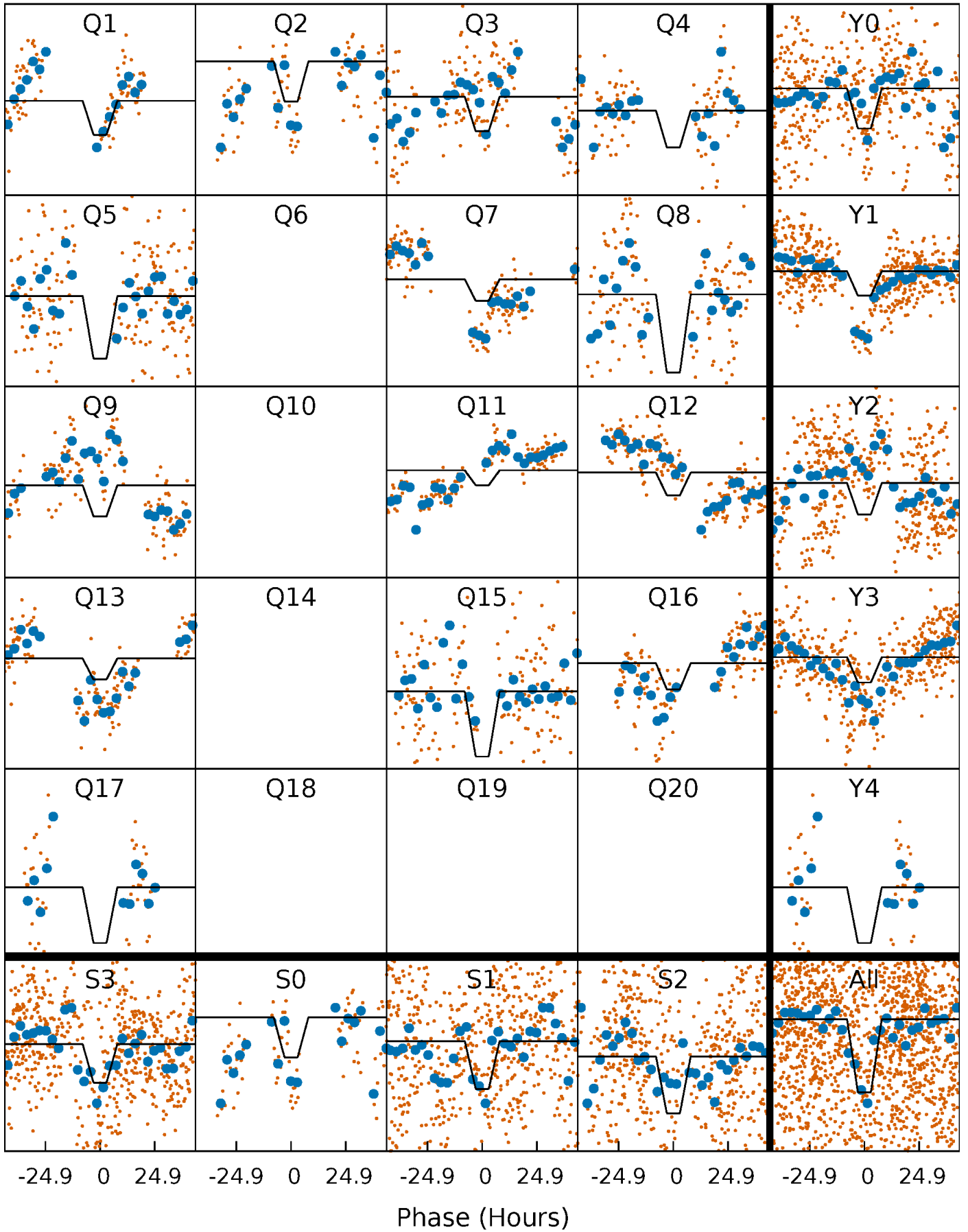
DV Quarter-Phased Transit Curves

TCE 004484251-06 P= 23.480828 Days $T_0=137.485920$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

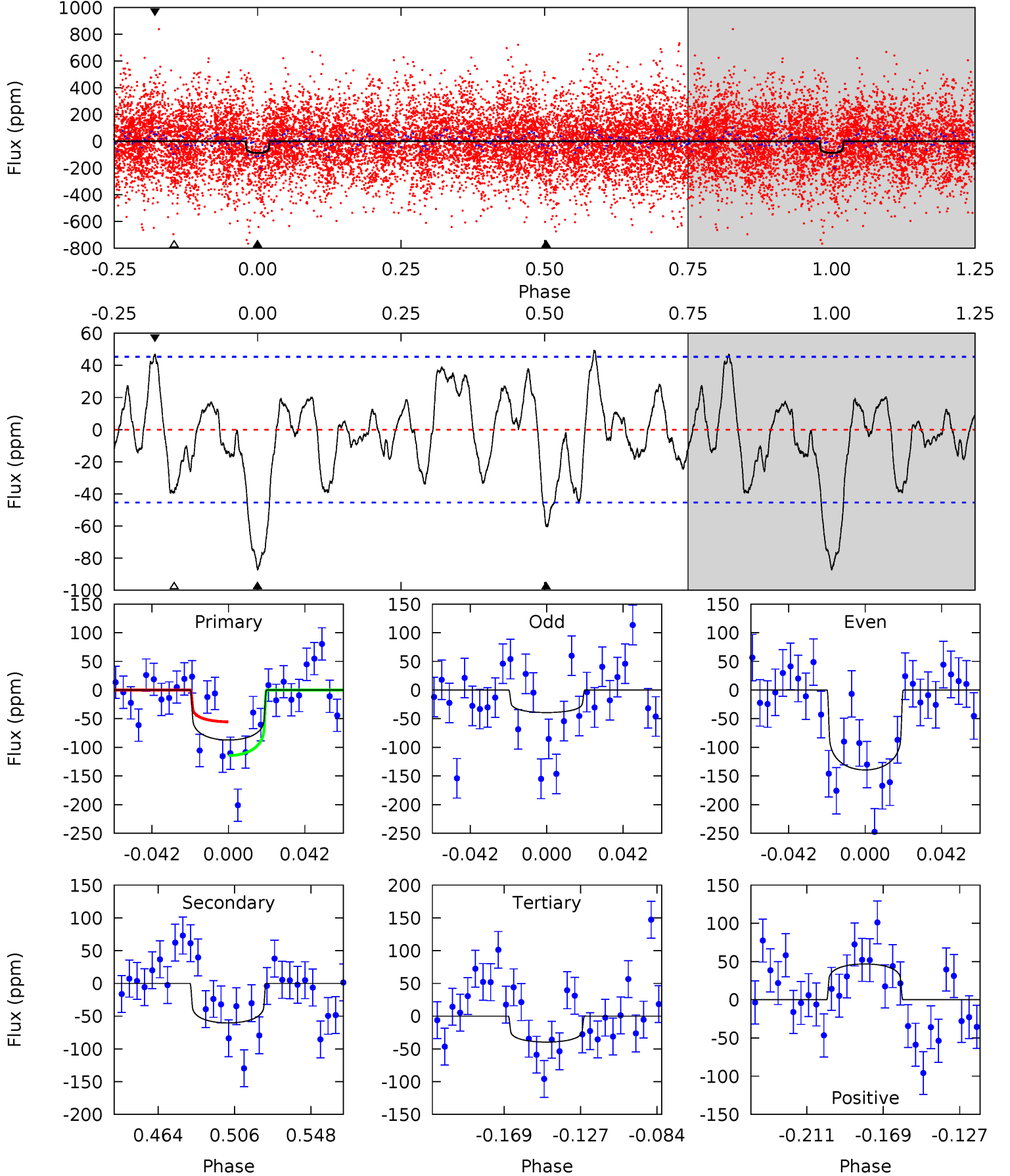
TCE 004484251-06 P= 23.476224 Days $T_0=137.640805$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-06, P = 23.480828 Days, E = 114.005092 Days

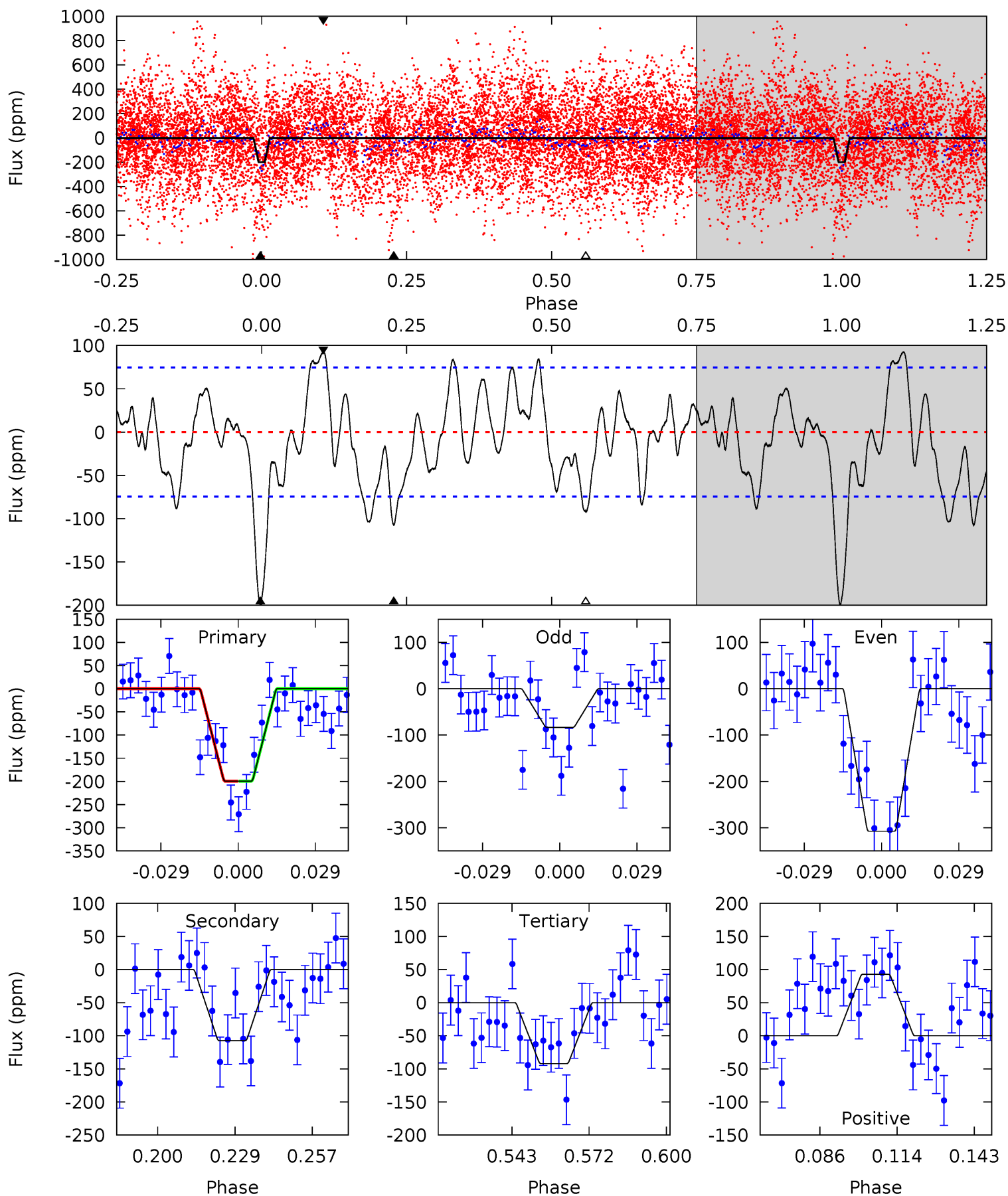
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.12	6.31	4.14	4.90	4.74	2.03	2.13	4.99	4.23	2.17	1.41	5.22	1.72	0.36	3.07



Alt Model-Shift Uniqueness Test

004484251-06, P = 23.476224 Days, E = 114.164581 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	6.95	5.96	5.99	4.82	2.19	2.63	6.93	6.90	1.00	0.96	7.27	0.70	0.32	0.00



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-60 ± 10	$1.83^{+0.40}_{-0.37}$	1260^{+59}_{-54}	5815^{+723}_{-477}	314^{+181}_{-117}
Alt.	-108 ± 15	$2.62^{+0.46}_{-0.41}$	1259^{+60}_{-52}	5630^{+480}_{-386}	272^{+122}_{-86}

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

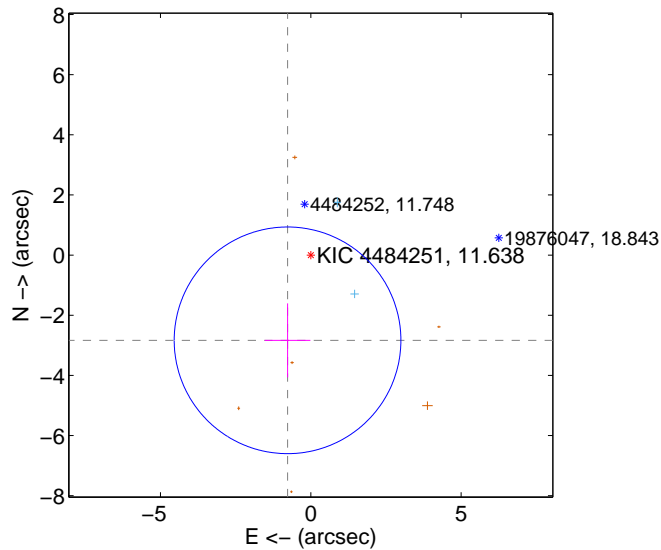
Supplemental centroid analysis for 004484251-06. **Kepler magnitude: 11.64.** Transit SNR 6.30

There are 2 quarters with good PRF difference image offsets

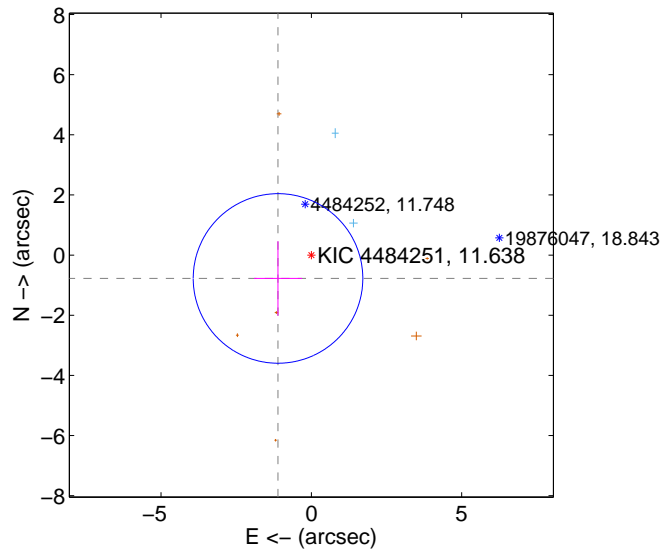
The OOT PRF centroid is offset from the target star catalog position by about 2.35 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.938 ± 1.257	2.34	0.773 ± 0.760	-2.835 ± 1.231
PRF-fit source offset from KIC position	1.354 ± 0.940	1.44	1.109 ± 0.799	-0.777 ± 1.241
photometric centroid source offset	1.28 ± 0.39	3.25	0.50 ± 0.26	1.18 ± 0.41

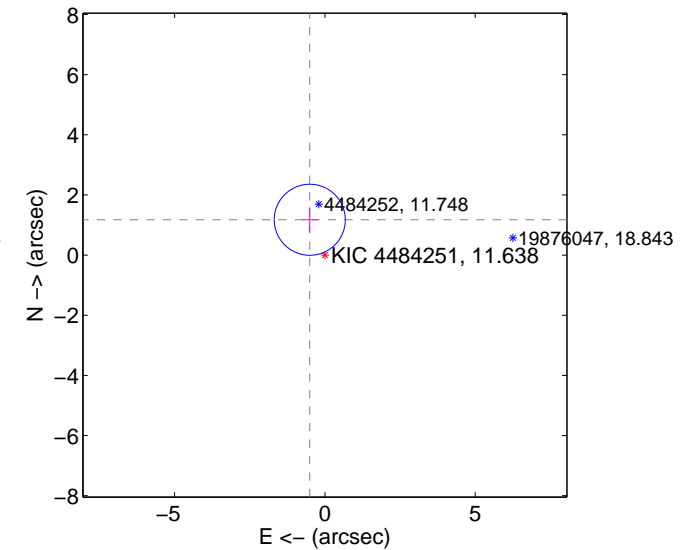
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

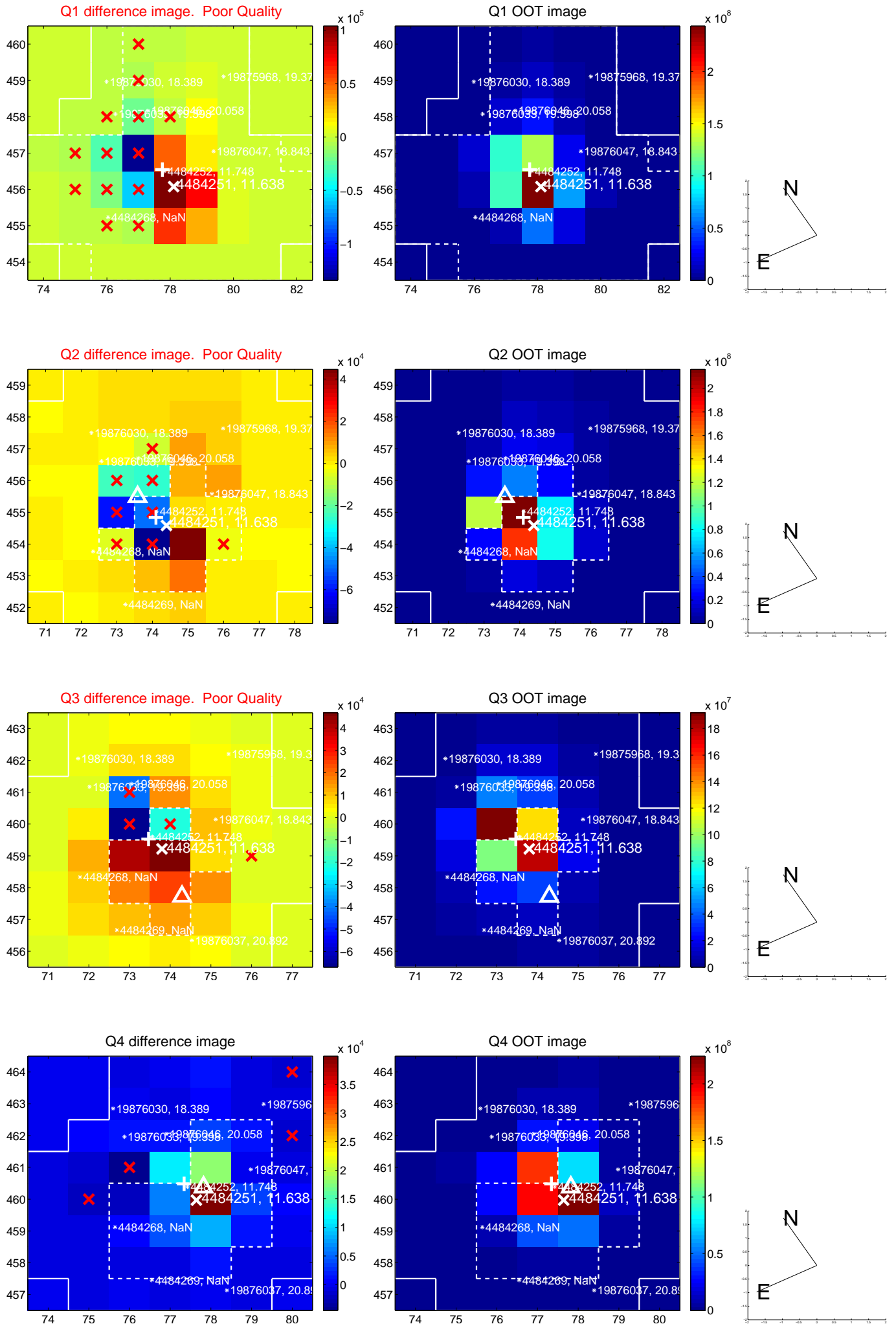


offset from photometric centroids

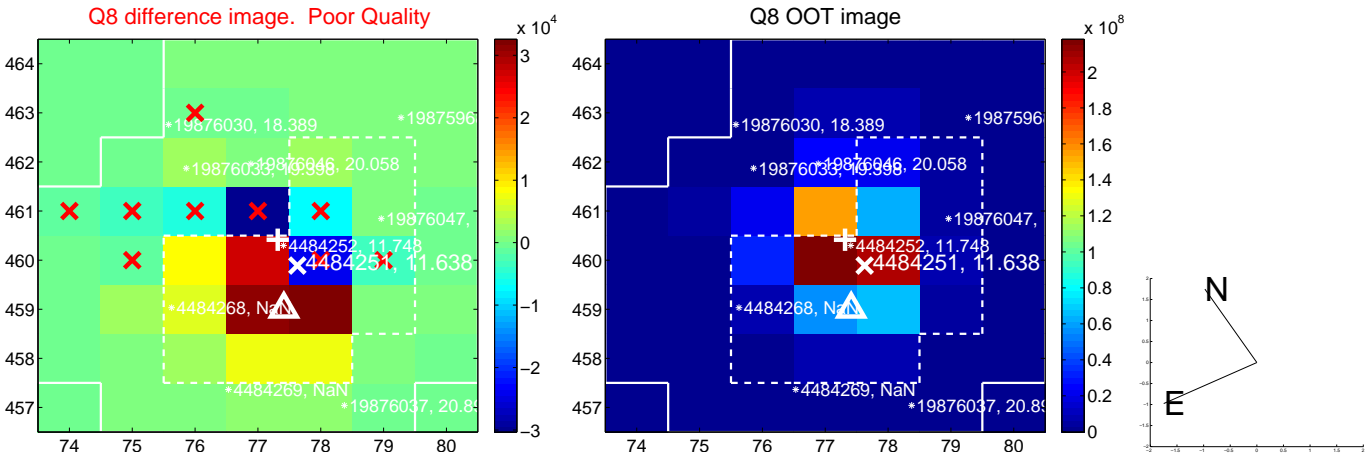
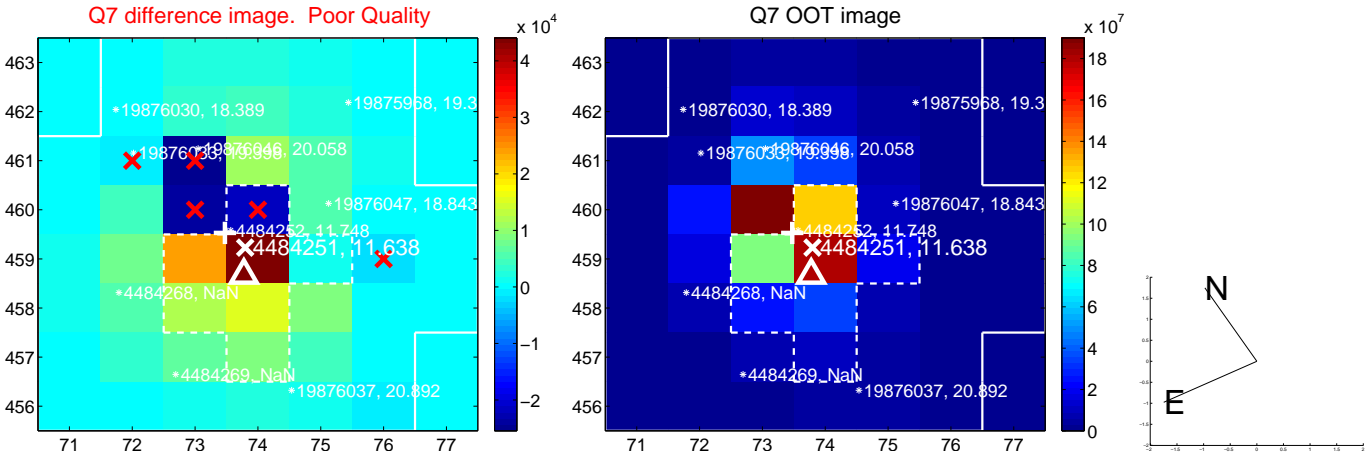
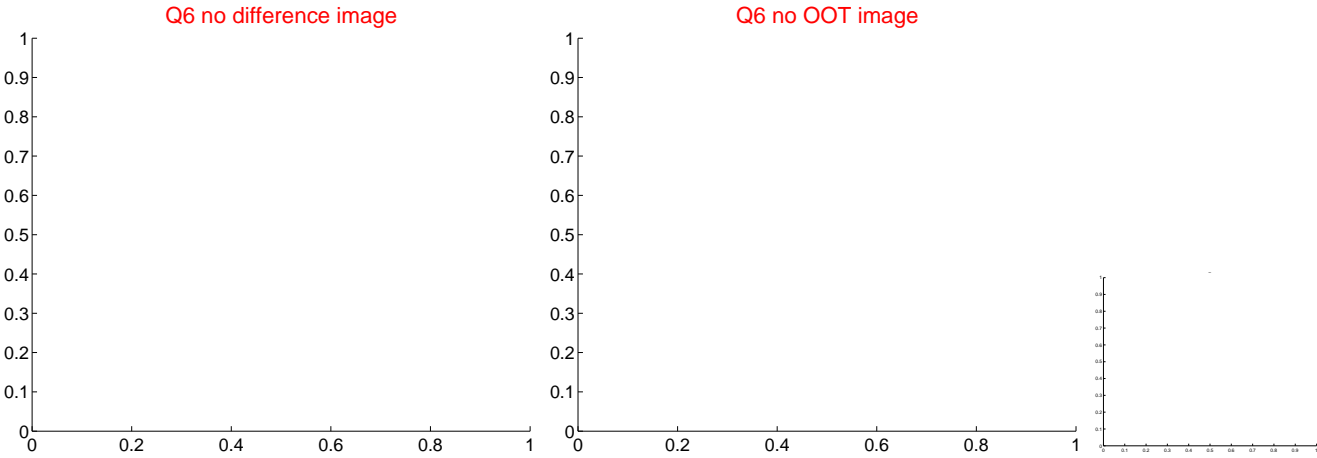
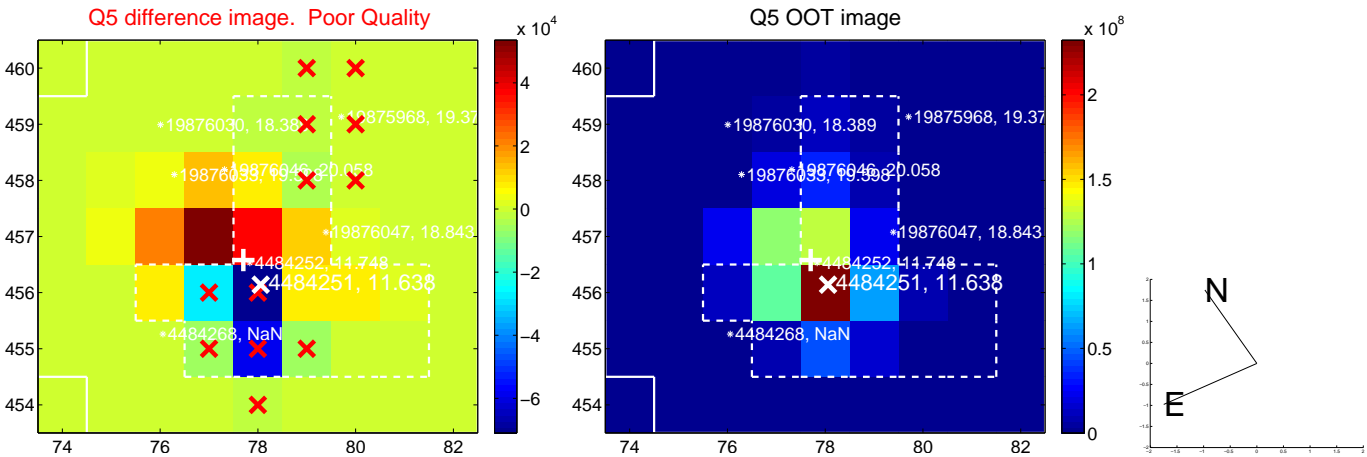


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

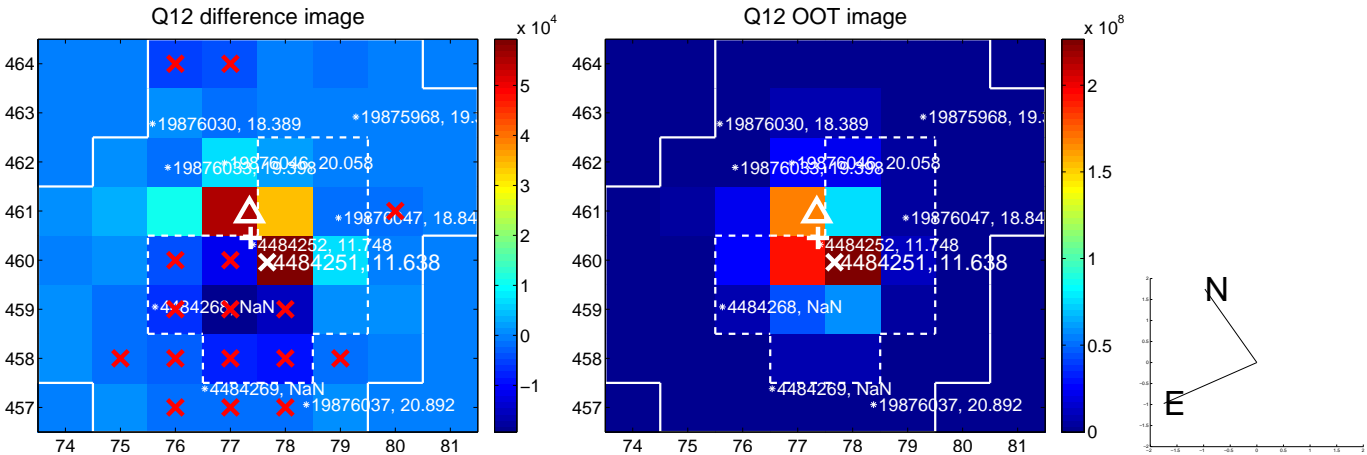
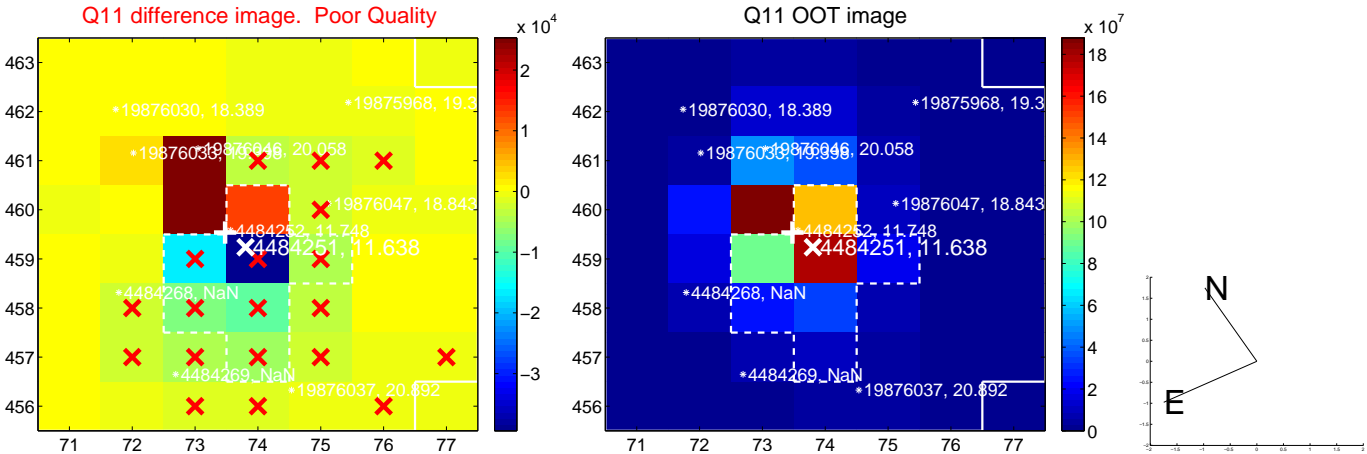
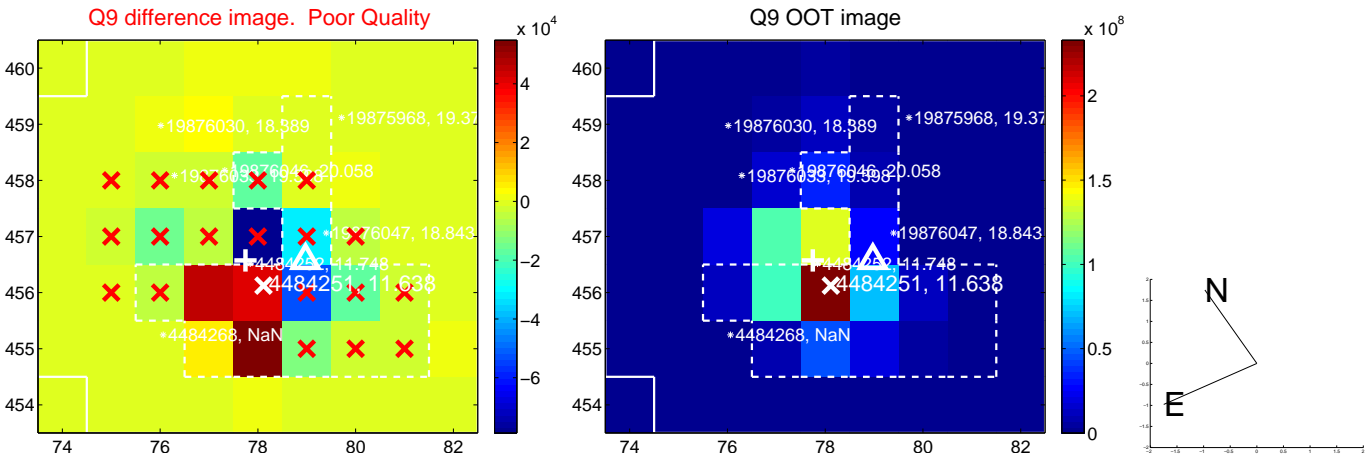
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



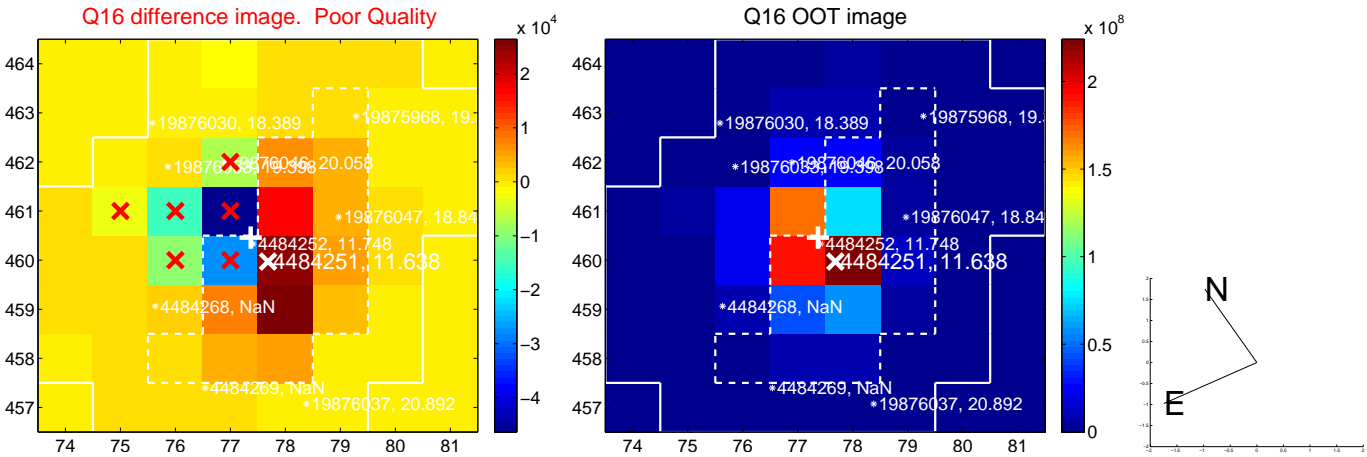
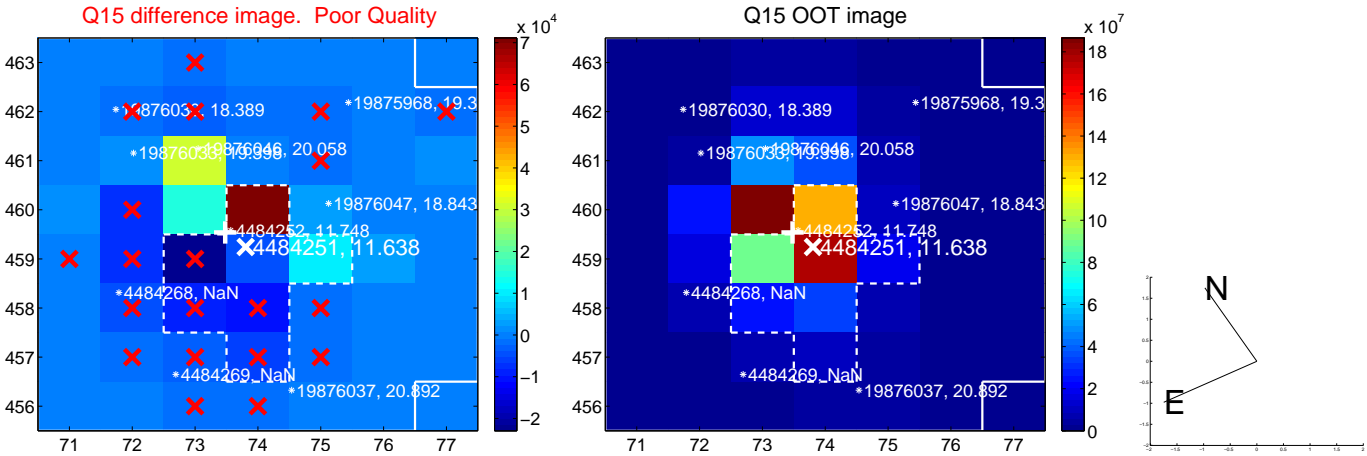
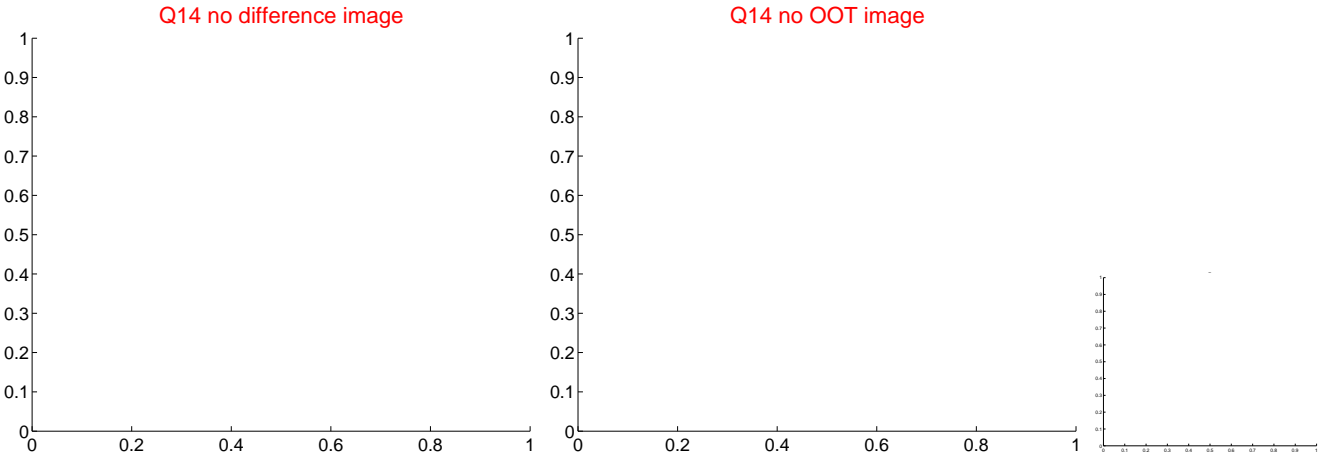
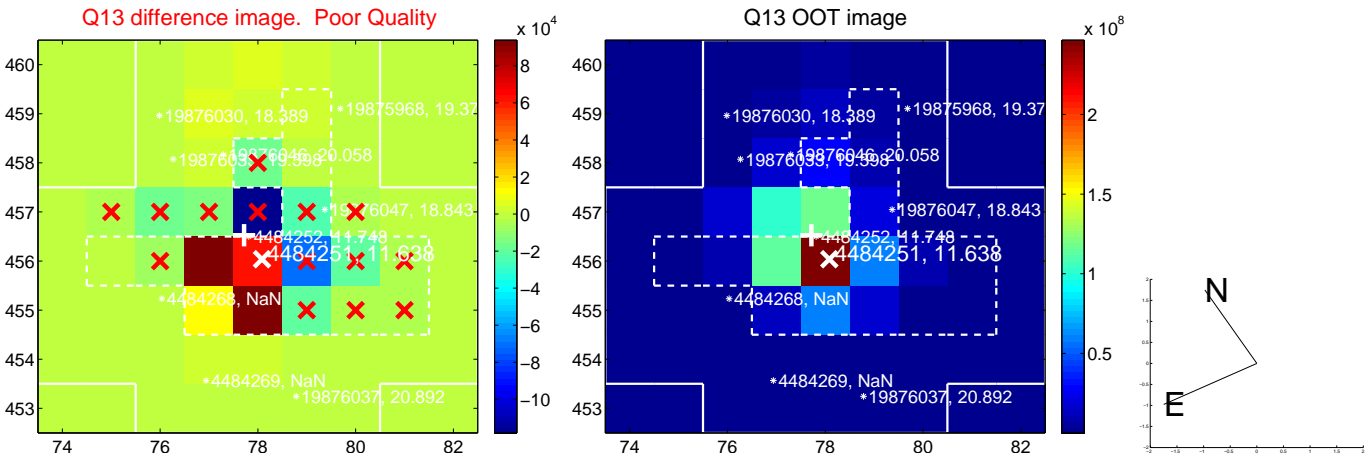
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



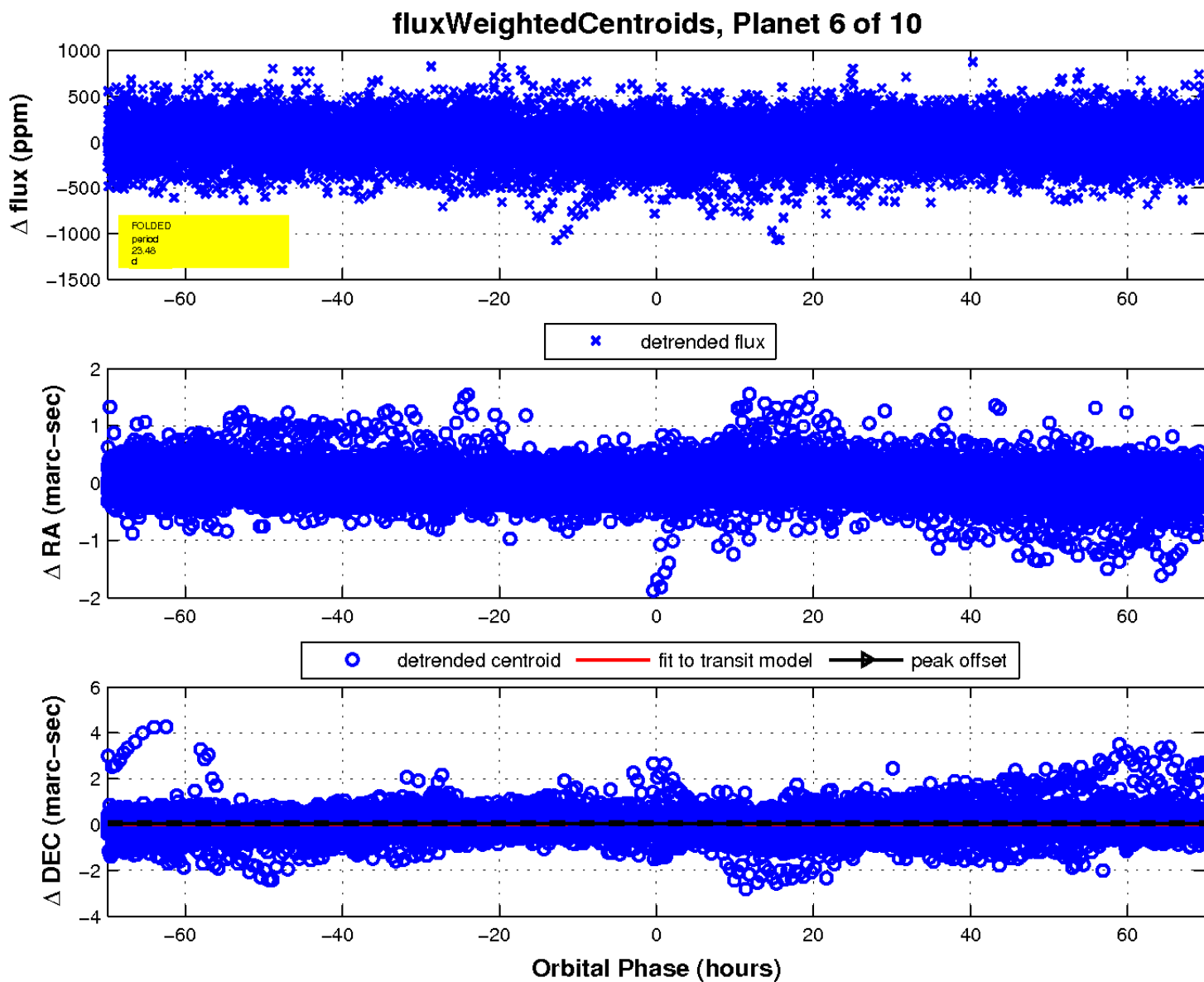
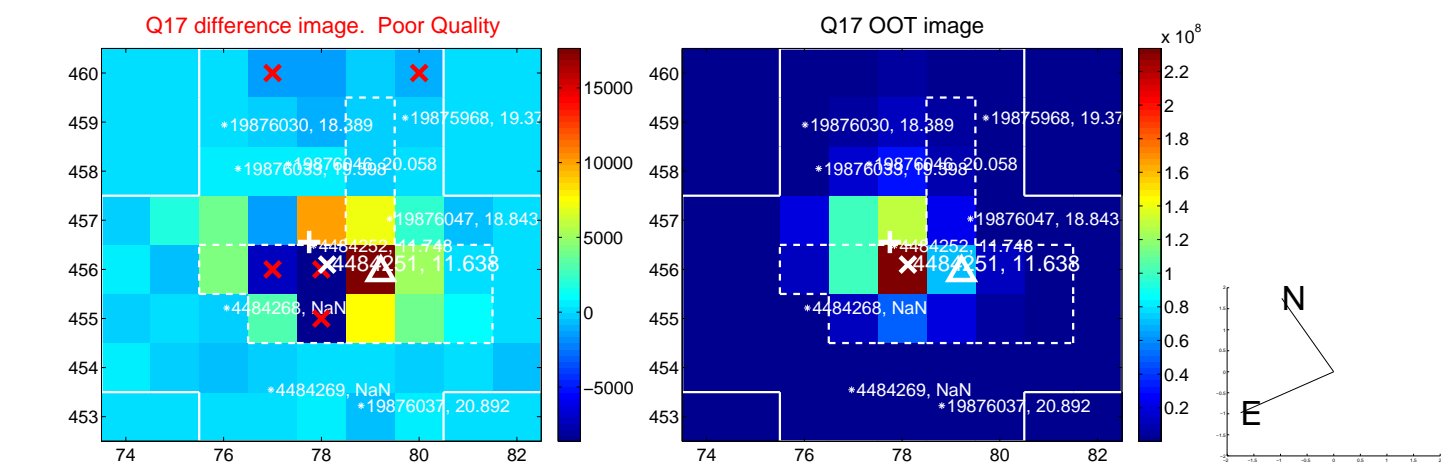
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

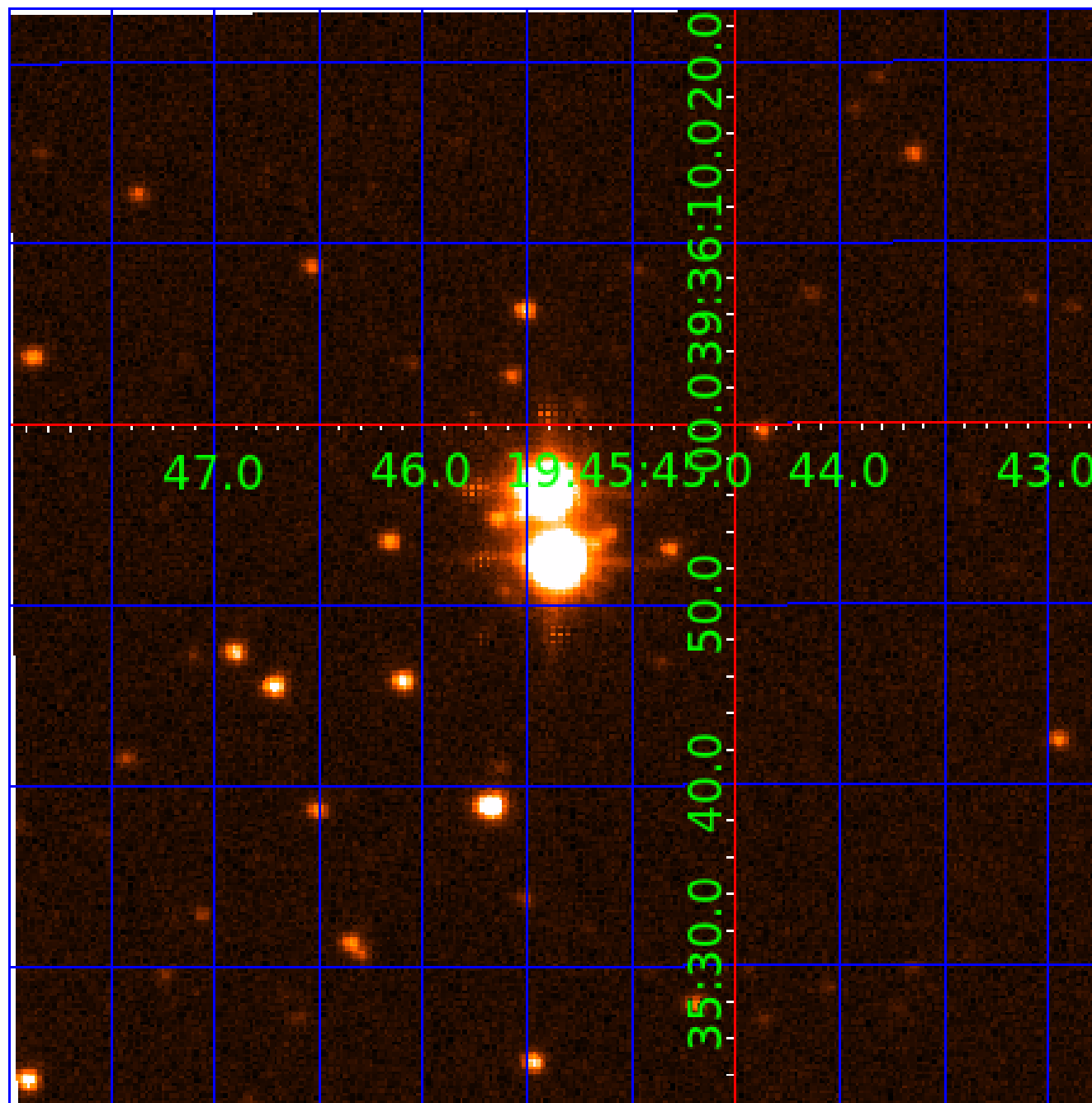


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
004484251-01	OBS	No	1.927596	133.409729	62.5	11.096	10.7	13.4	1.61	6796	2.44	4419.88
004484251-02	OBS	No	187.518566	143.631143	246.3	20.390	11.4	6.7	1.61	6796	2.70	9.88
004484251-03	OBS	No	131.156980	172.932168	354.5	3.277	9.8	9.3	1.61	6796	3.72	15.91
004484251-04	OBS	No	212.126737	208.397966	52.3	128.241	9.8	1.4	1.61	6796	1.22	8.38
004484251-05	OBS	No	157.257304	150.611824	337.5	20.471	13.4	7.2	1.61	6796	3.14	12.49
004484251-06	OBS	No	23.480828	137.485920	112.3	23.308	8.4	6.3	1.61	6796	1.84	157.69
004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

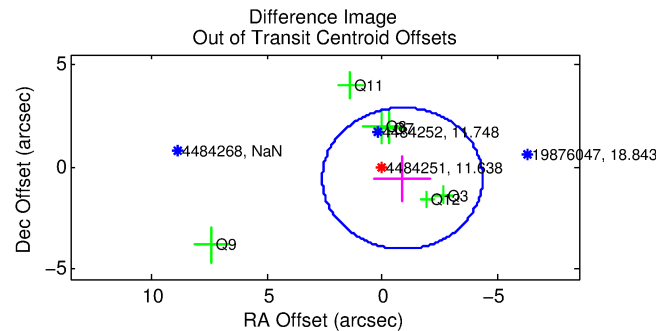
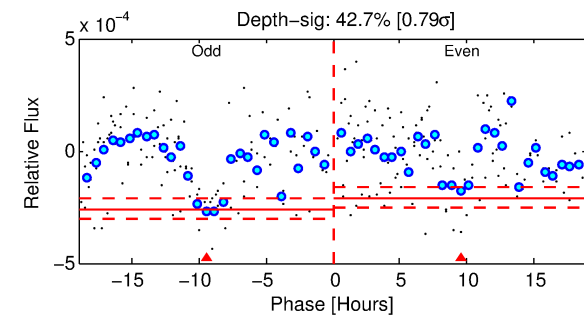
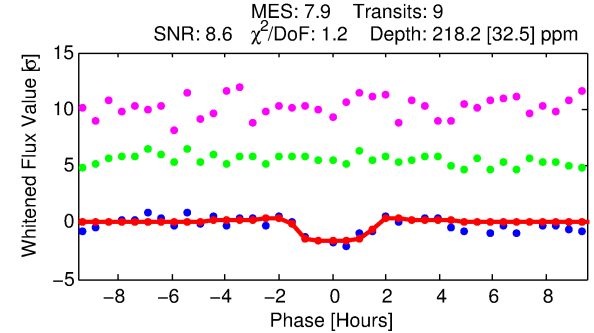
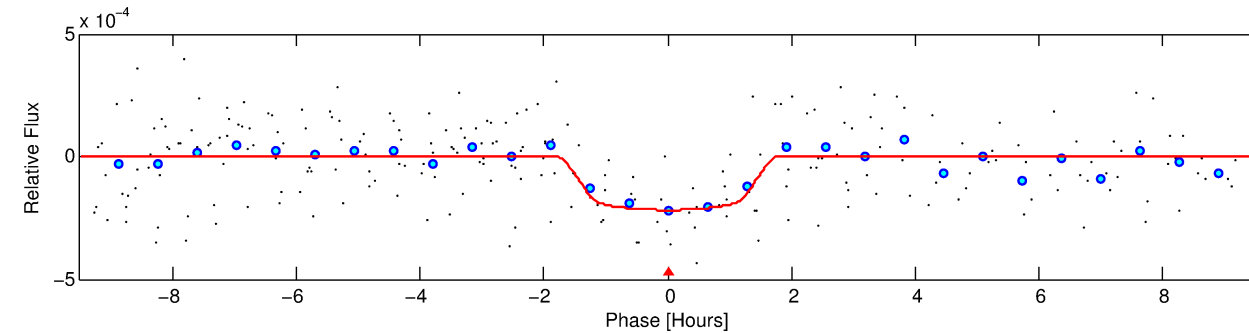
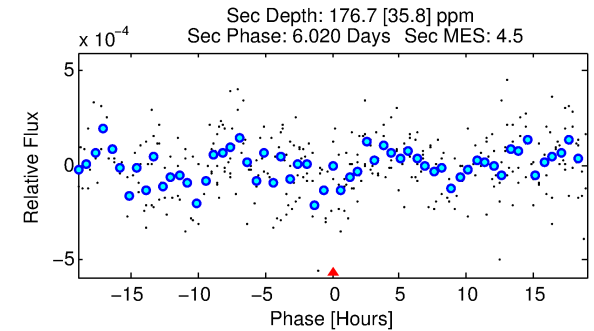
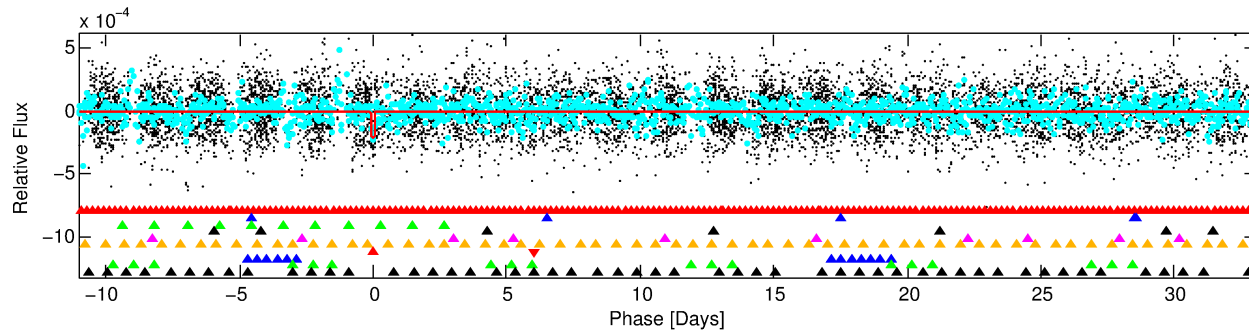
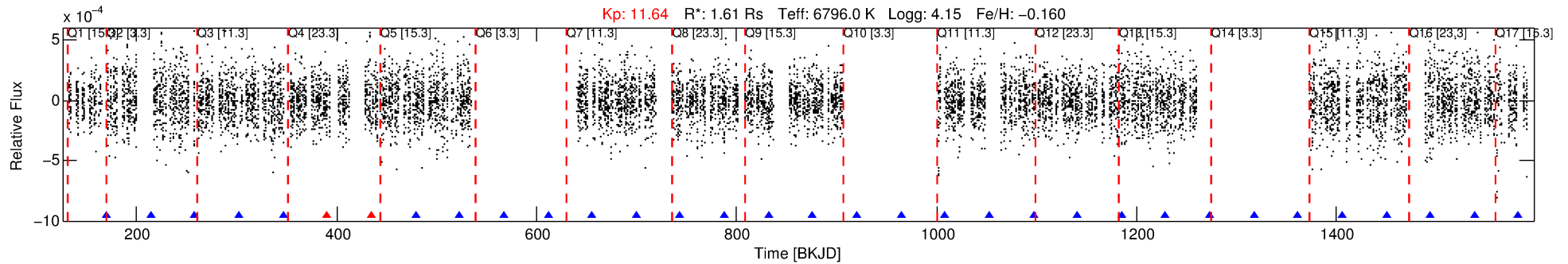
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-07

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 7 of 10 Period: 44.120 d



DV Fit Results:

Period = 44.12050 [0.00059] d
Epoch = 170.2520 [0.0095] BKJD
Rp/R* = 0.0157 [0.0104]
a/R* = 50.57 [197.43]
b = 0.90 [0.86]
Seff = 68.01 [14.95]
Teq = 732 [40] K
Rp = 2.76 [1.89] Re
a = 0.2696 [0.0400] AU
Ag = 926.60 [1254.31] [0.74σ]
Teffp = 6246 [2089] K [2.64σ]

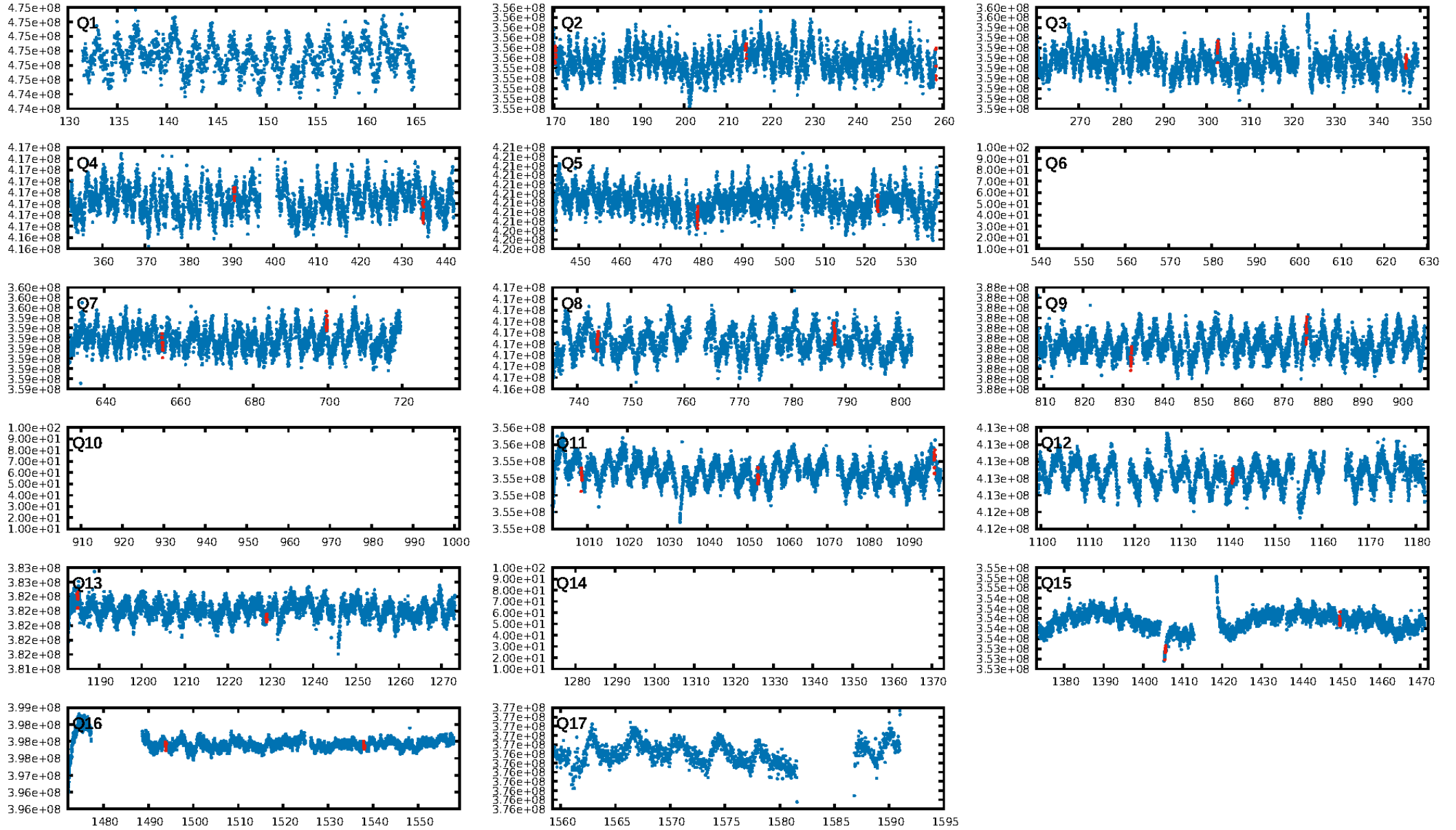
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [74.25σ]
LongPeriod-sig: 100.0% [136.69σ]
ModelChiSquare2-sig: 43.8%
ModelChiSquareGof-sig: 98.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.78 [7/9]
GhostDiagnostic-chr: 1.676
Centroid-sig: N/A
Centroid-so: 1.682 arcsec [4.52σ]
OotOffset-rm: 1.035 arcsec [0.90σ]
KicOffset-rm: 1.551 arcsec [1.26σ]
OotOffset-st: 0/3/2/1 [6]
KicOffset-st: 0/3/2/1 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.64 [7/11]

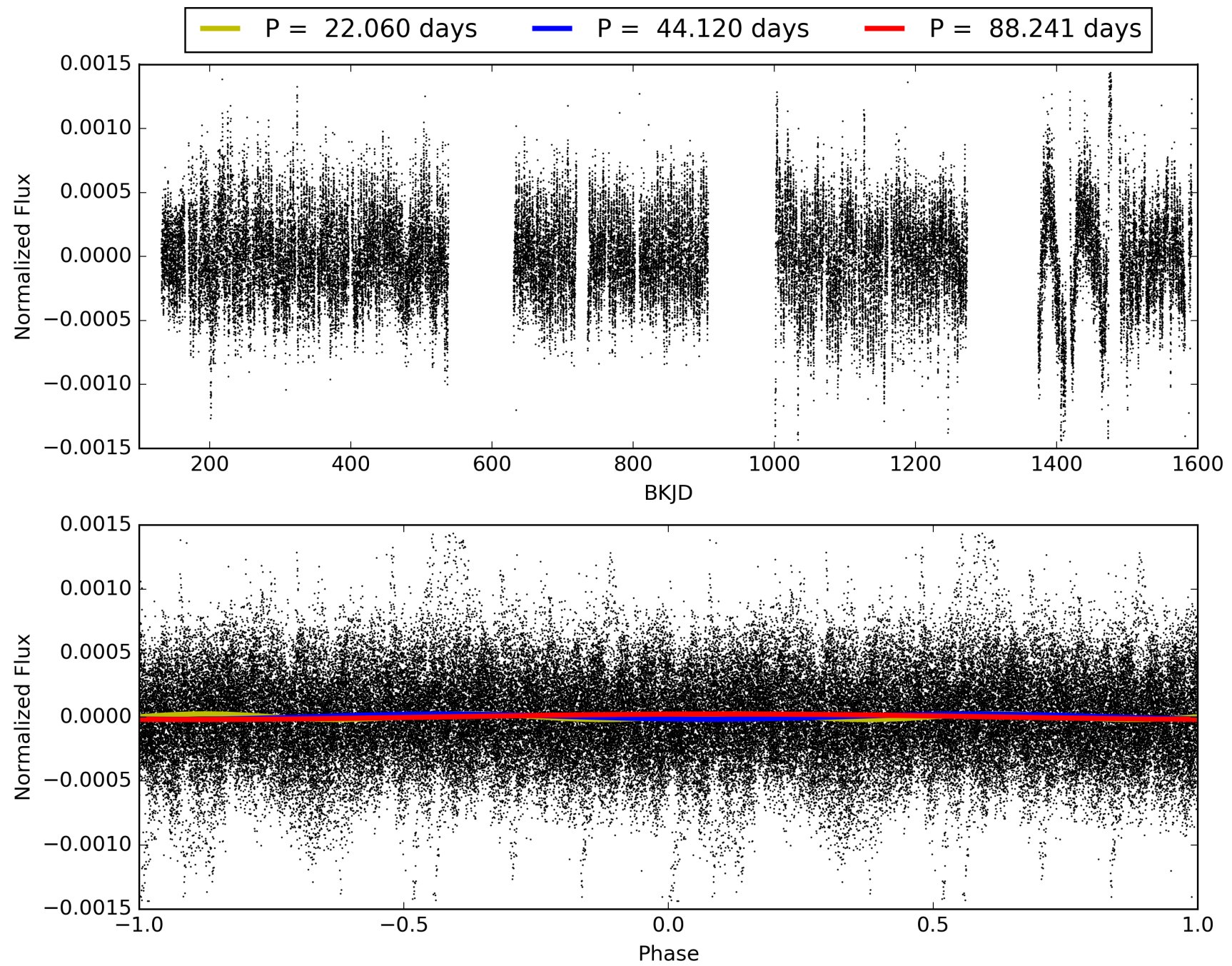
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:13:11 Z

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

TCE 004484251-07, PDC Light Curves

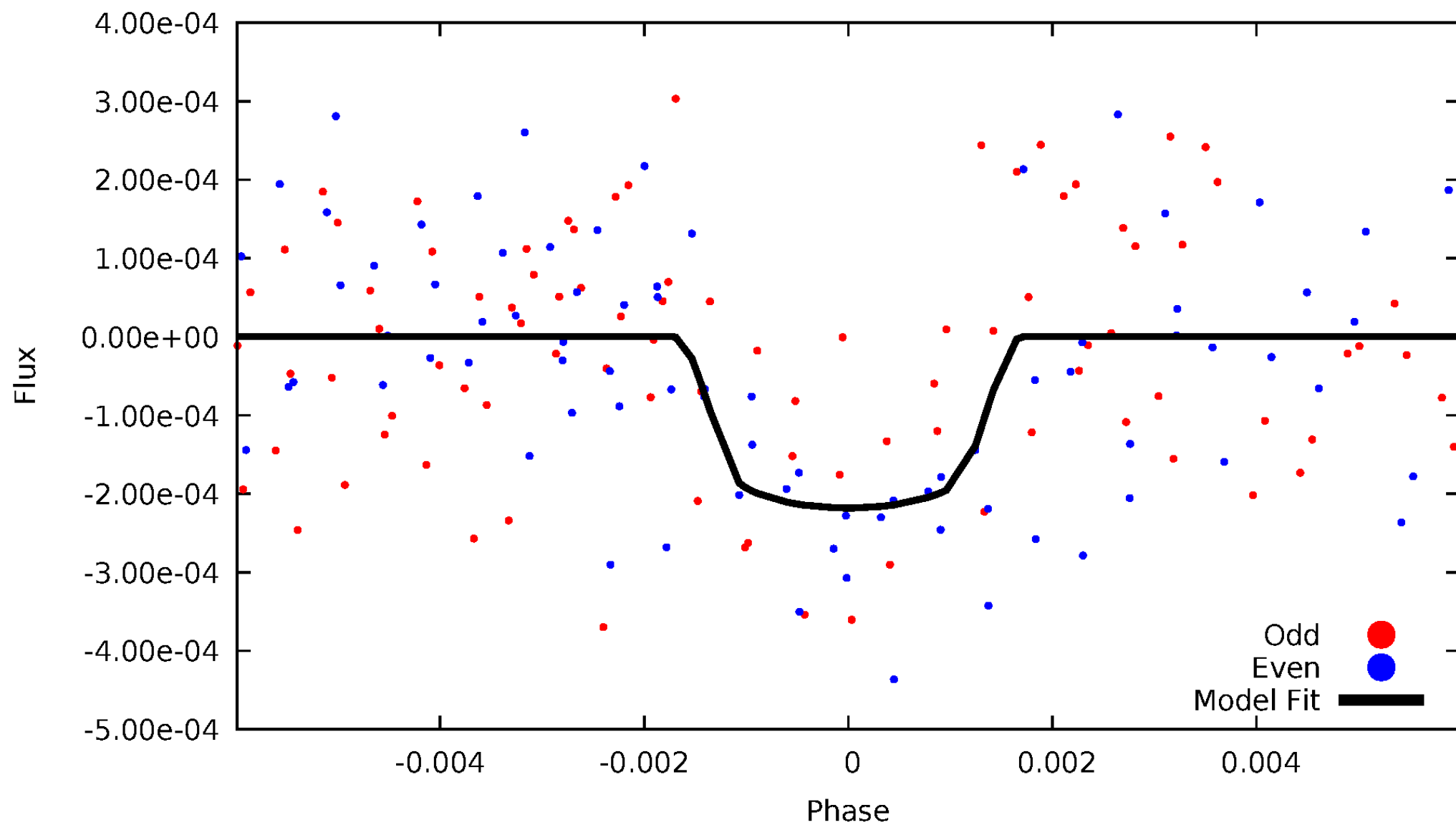


TCE 004484251-07



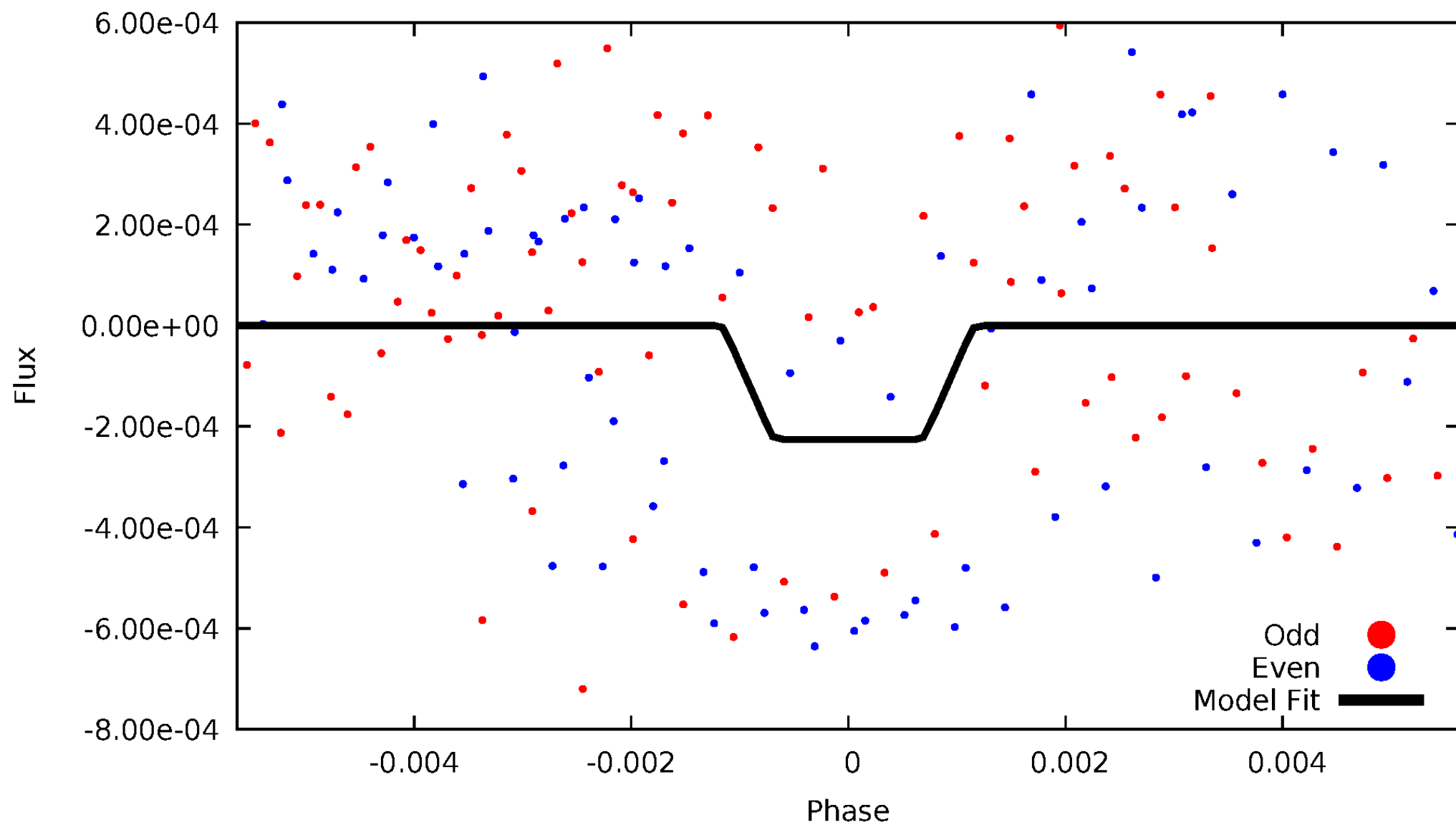
DV Odd/Even

TCE 004484251-07

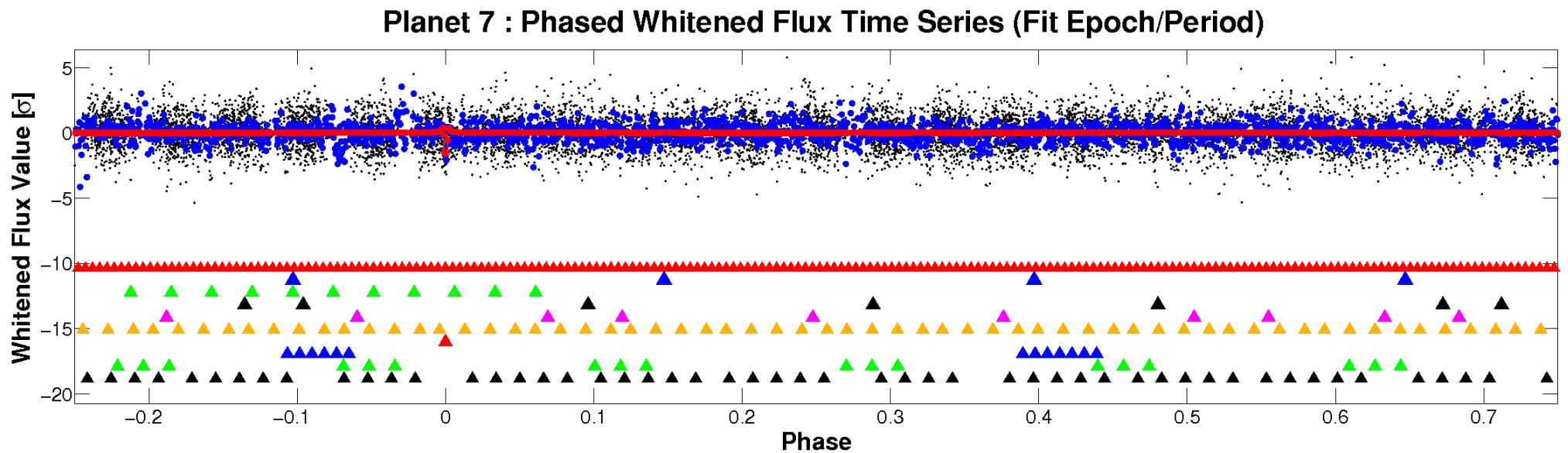
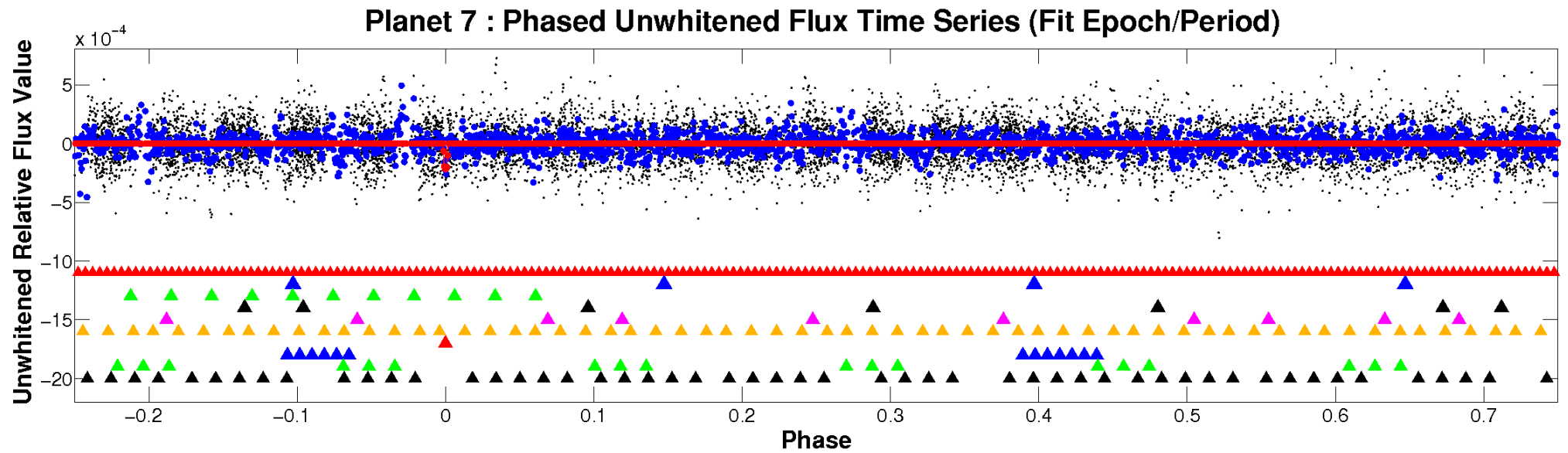


ALT Odd/Even

TCE 004484251-07

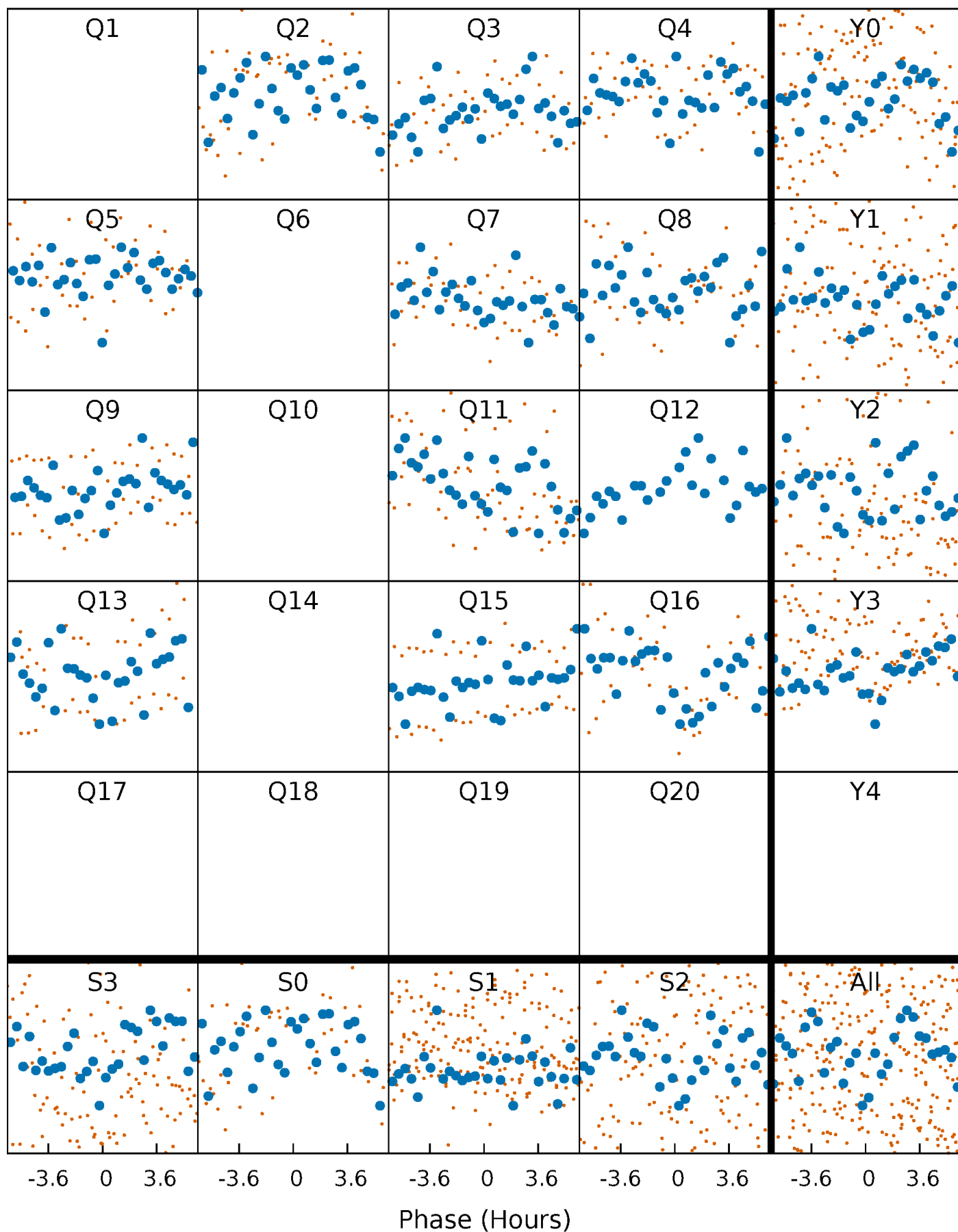


Non-Whitened Vs. Whitened Light Curve



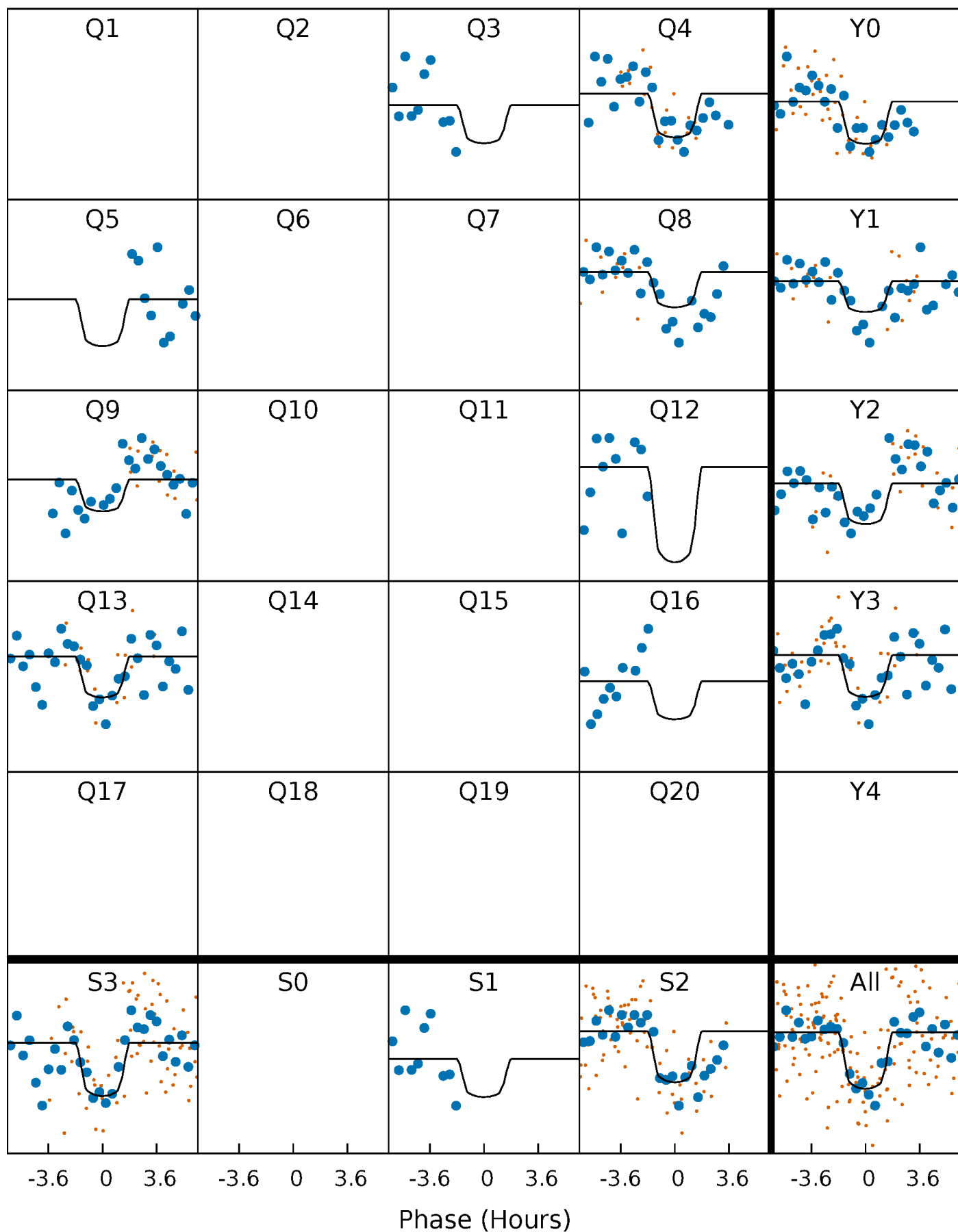
PDC Quarter-Phased Transit Curves

TCE 004484251-07 P= 44.120496 Days $T_0=170.252040$ (BKJD)



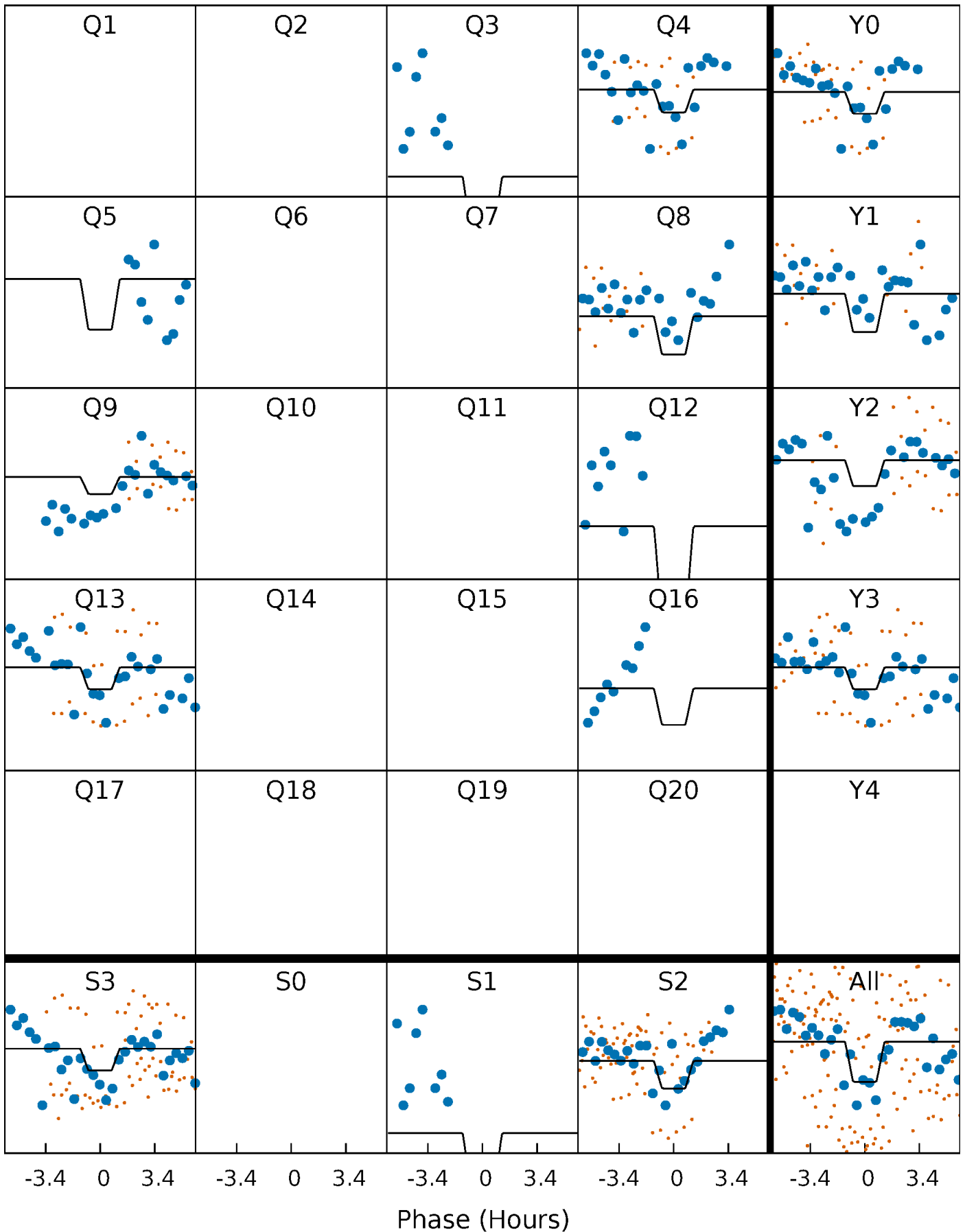
DV Quarter-Phased Transit Curves

TCE 004484251-07 $P = 44.120496$ Days $T_0 = 170.252040$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

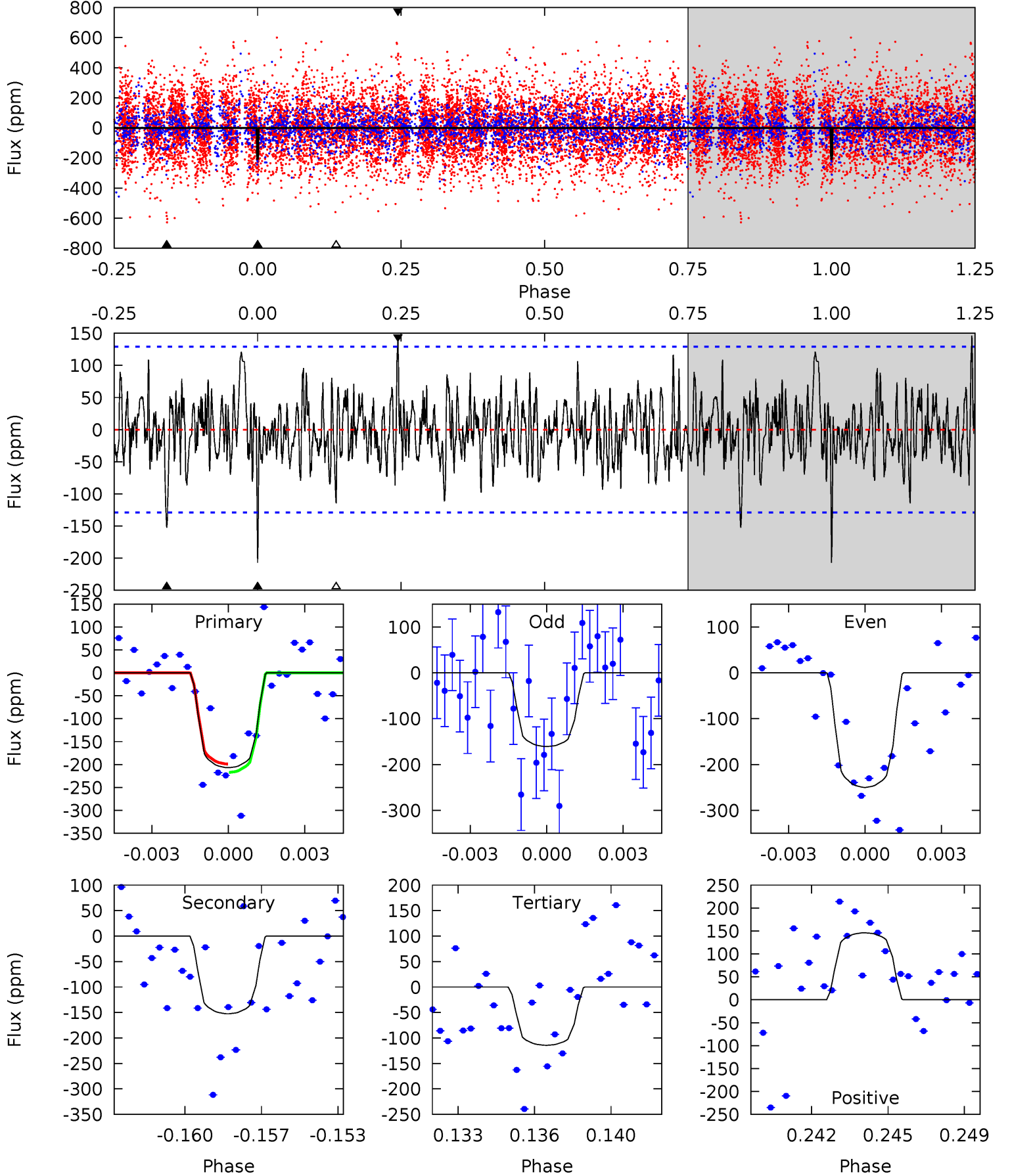
TCE 004484251-07 P= 44.119905 Days $T_0=170.262879$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-07, P = 44.120496 Days, E = 126.131544 Days

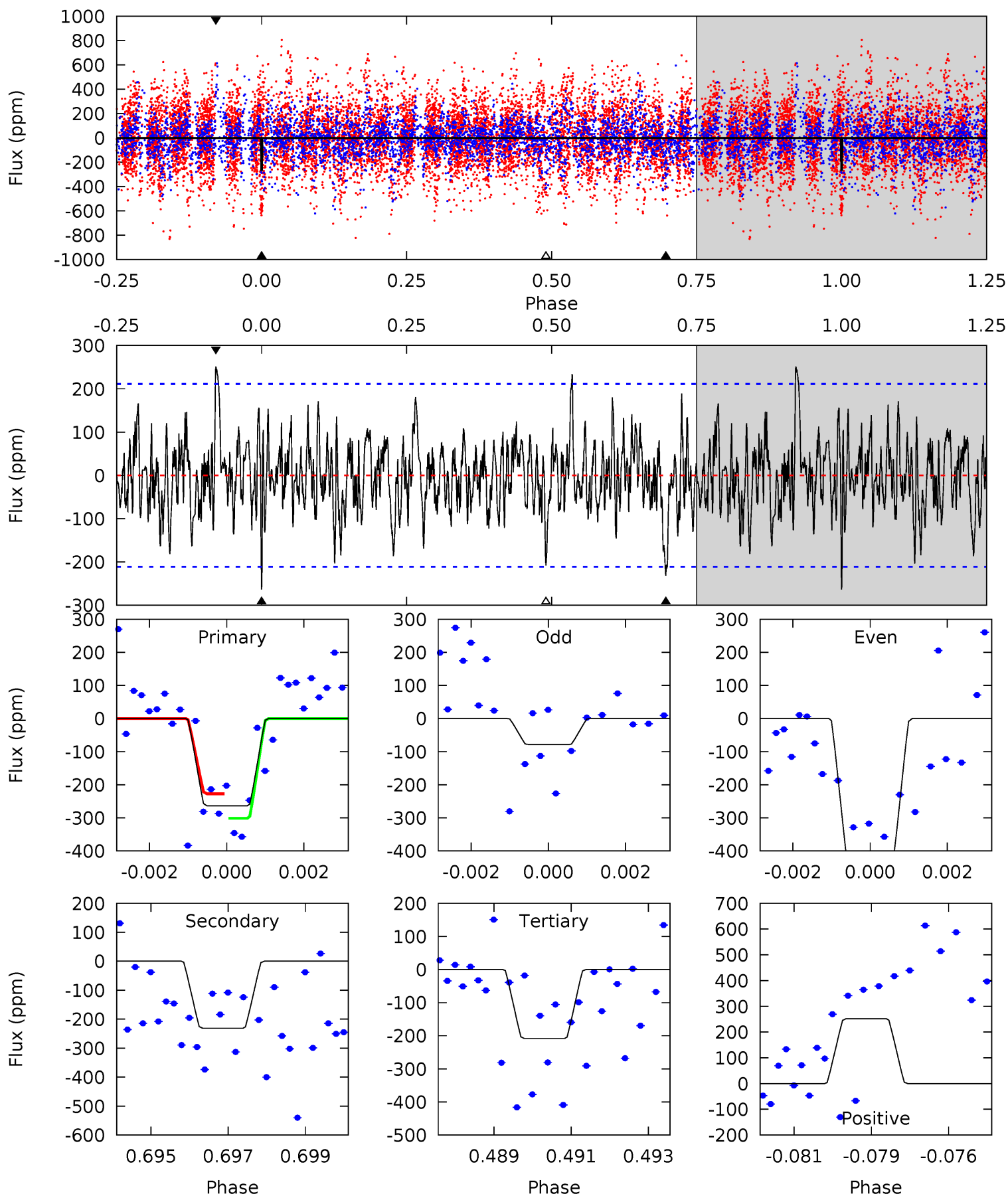
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.39	6.18	4.63	5.92	5.23	2.93	1.56	3.75	2.47	1.55	0.26	1.80	1.06	0.41	0.37



Alt Model-Shift Uniqueness Test

004484251-07, P = 44.119905 Days, E = 126.142974 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.62	5.80	5.23	6.32	5.30	3.05	1.63	1.40	0.30	0.58	-0.51	4.50	0.85	0.49	0.93



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-153 ± 25	$2.87^{+1.71}_{-1.61}$	1022^{+49}_{-45}	5884^{+3397}_{-1176}	762^{+3102}_{-487}
Alt.	-231 ± 40	$2.83^{+1.88}_{-1.55}$	1023^{+46}_{-42}	6561^{+4363}_{-1428}	1133^{+4331}_{-727}

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 $A_{obs} \gg 1.0$

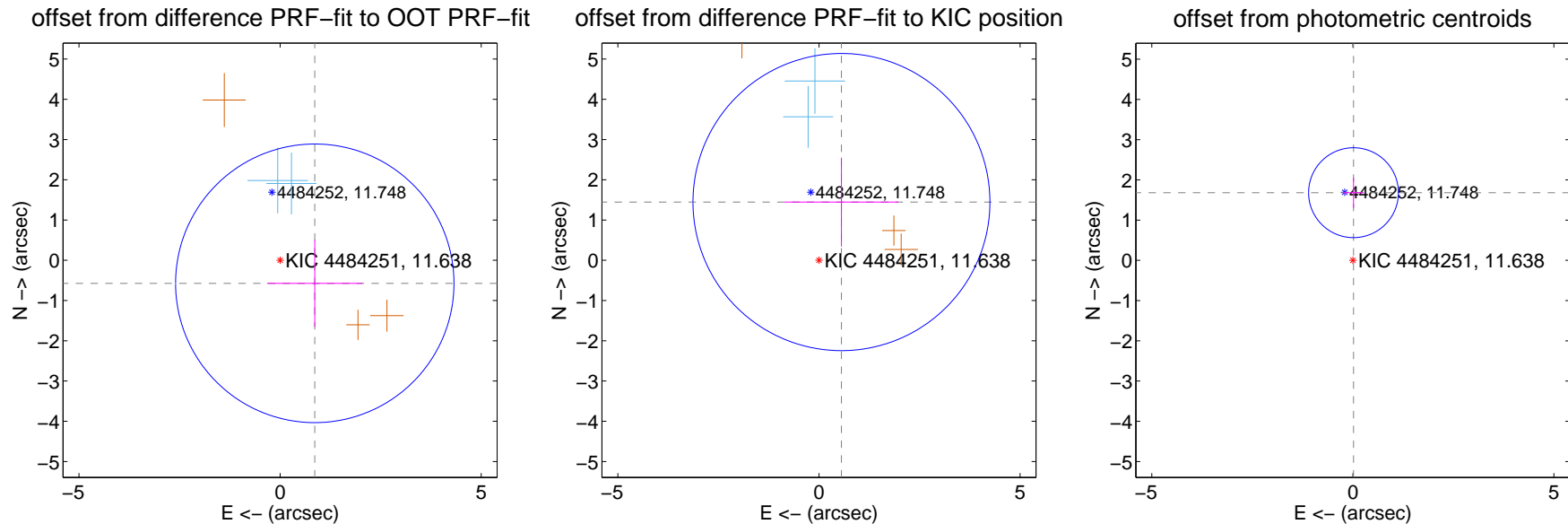
DV Centroid Data

Supplemental centroid analysis for 004484251-07. **Kepler magnitude: 11.64.** Transit SNR 8.63

There are 2 quarters with good PRF difference image offsets

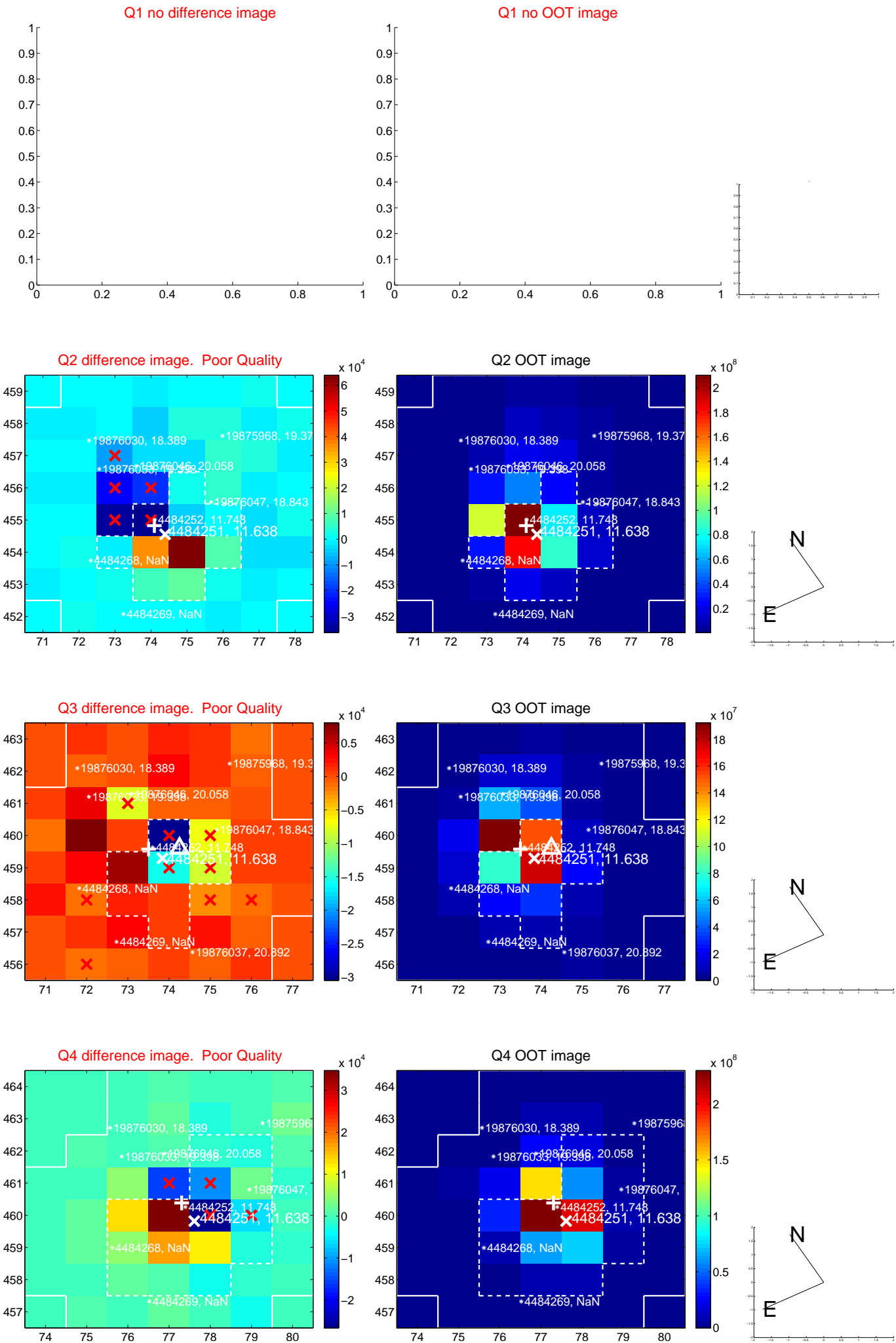
The OOT PRF centroid is offset from the target star catalog position by about 2.34 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.035 ± 1.154	0.90	-0.862 ± 1.185	-0.572 ± 1.079
PRF-fit source offset from KIC position	1.551 ± 1.231	1.26	-0.558 ± 1.413	1.447 ± 1.102
photometric centroid source offset	1.68 ± 0.37	4.52	-0.02 ± 0.26	1.68 ± 0.37

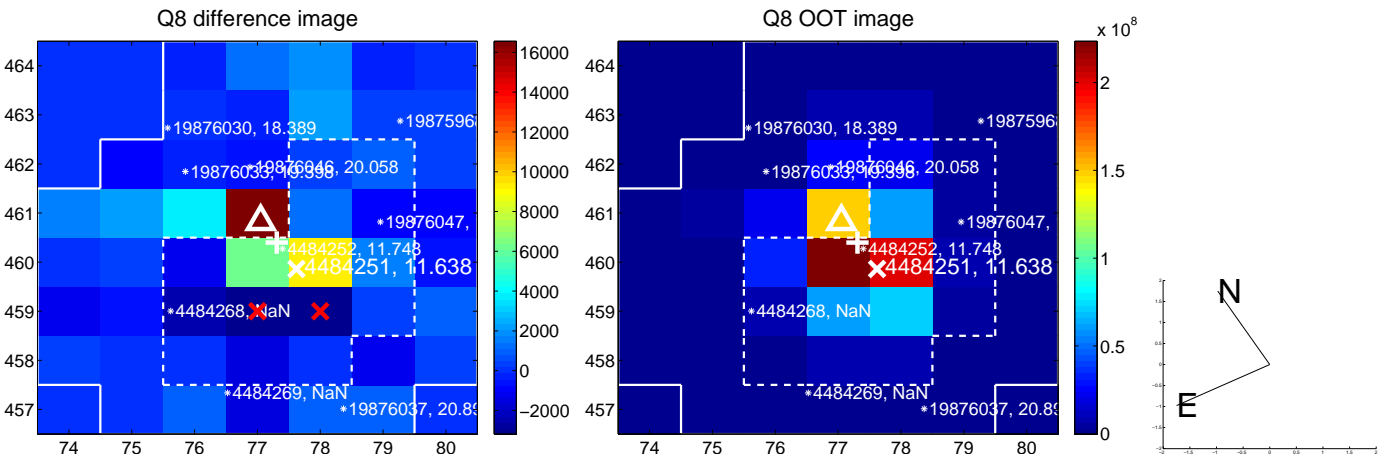
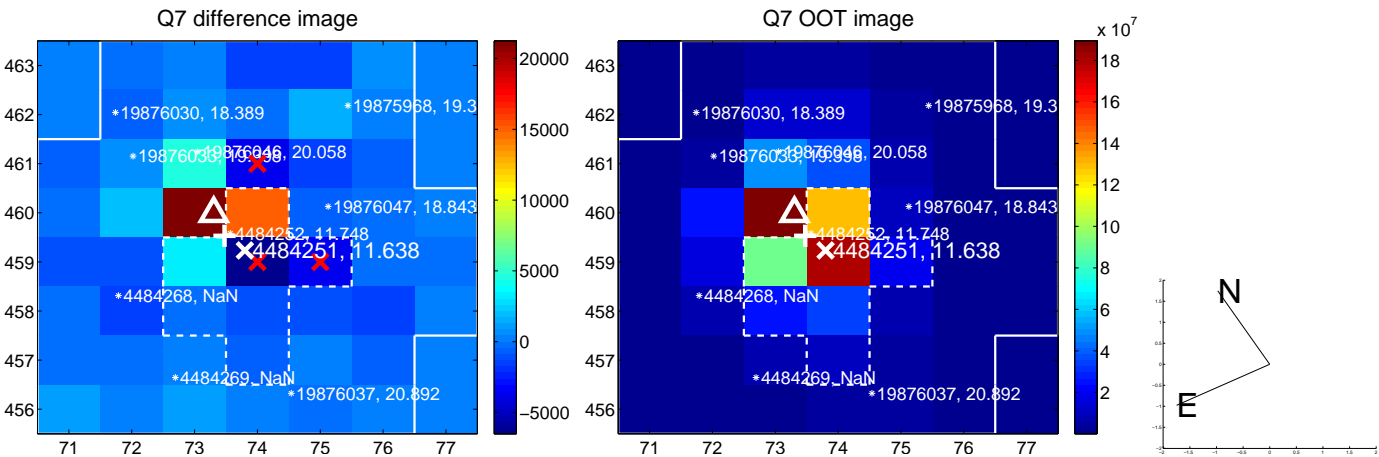
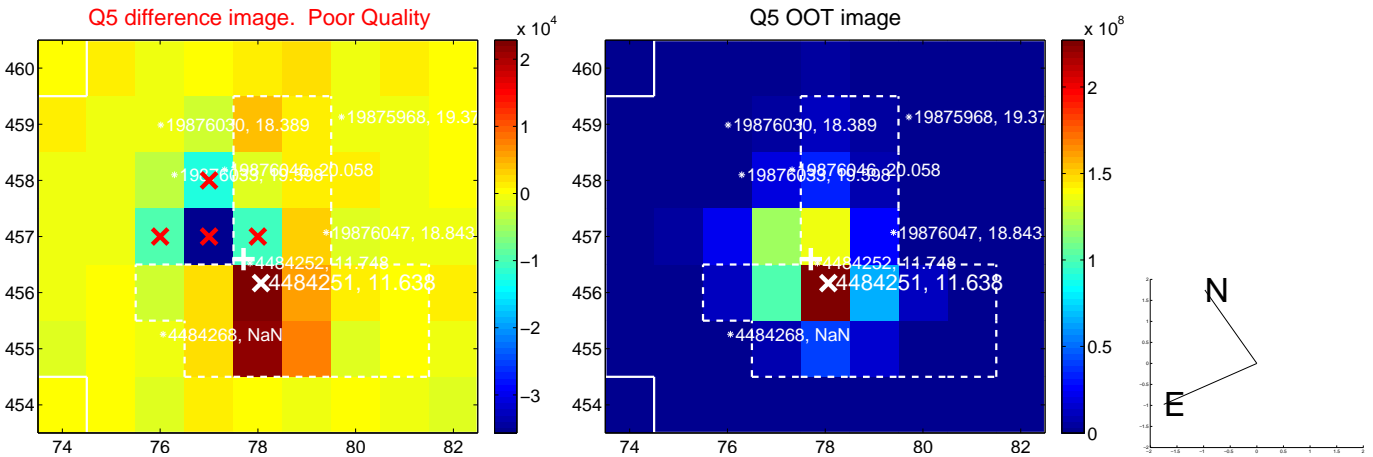


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

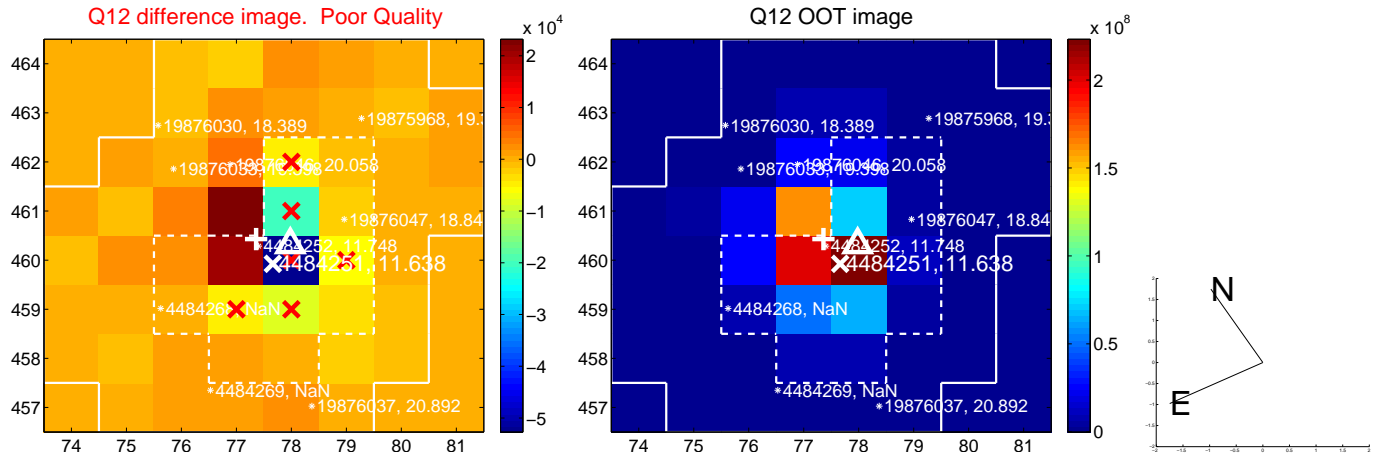
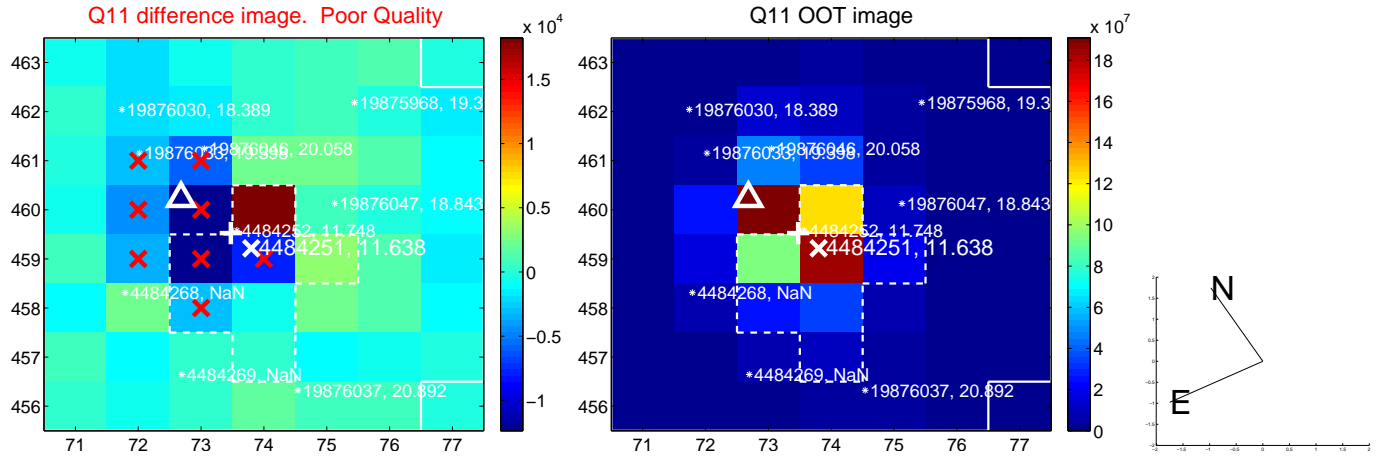
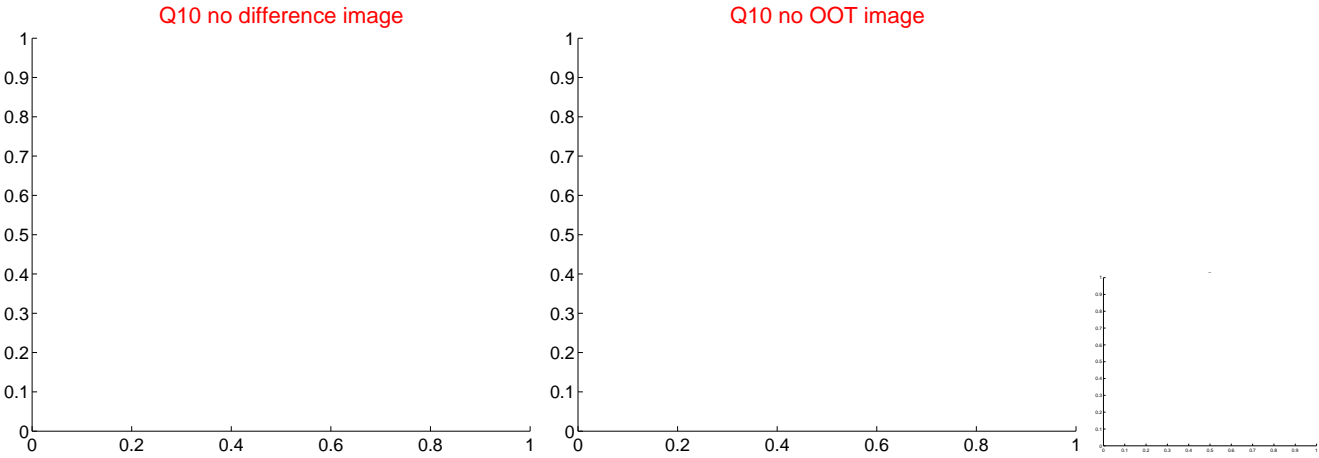
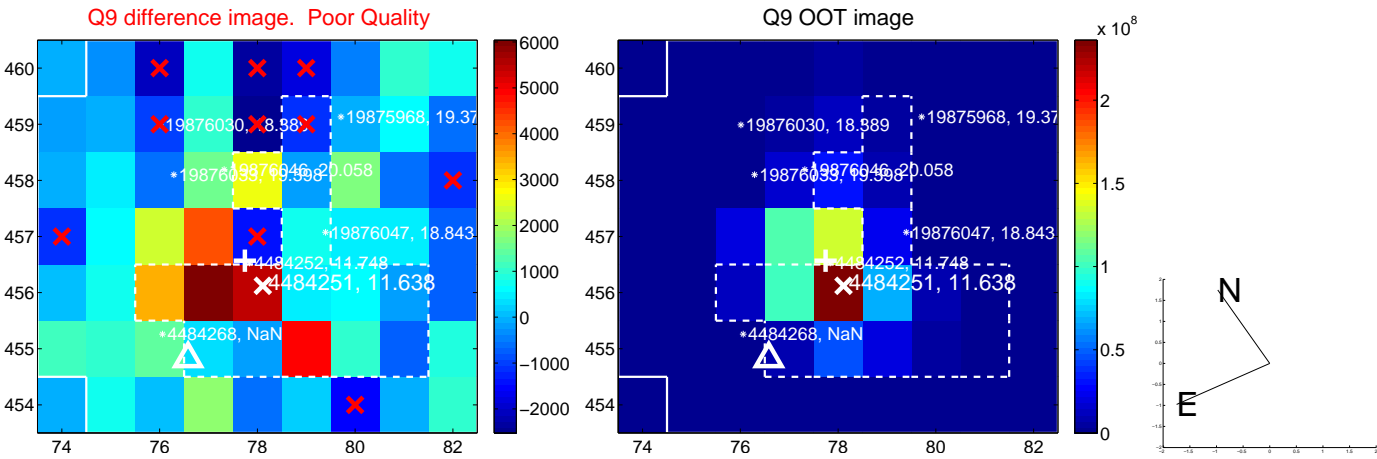
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



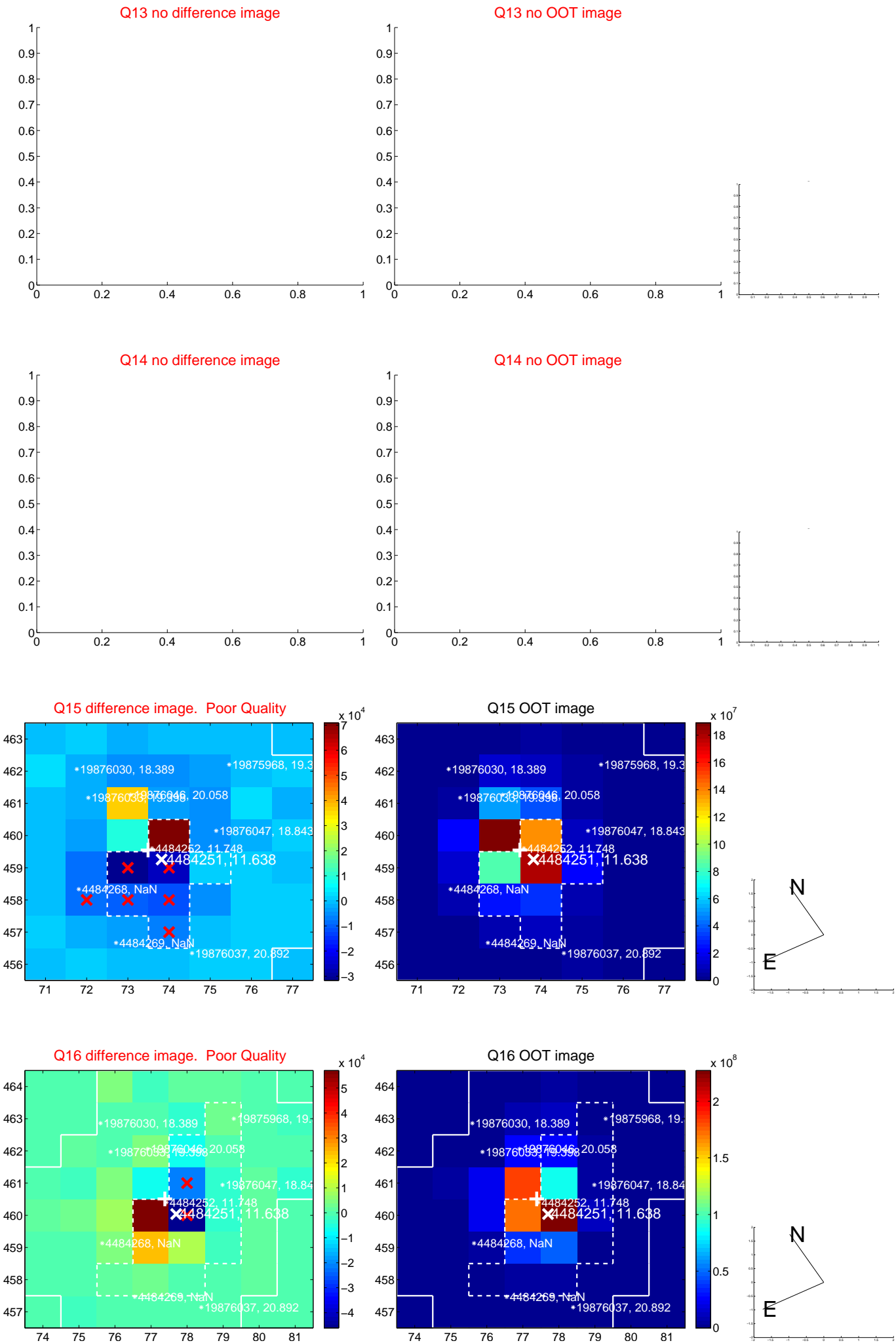
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



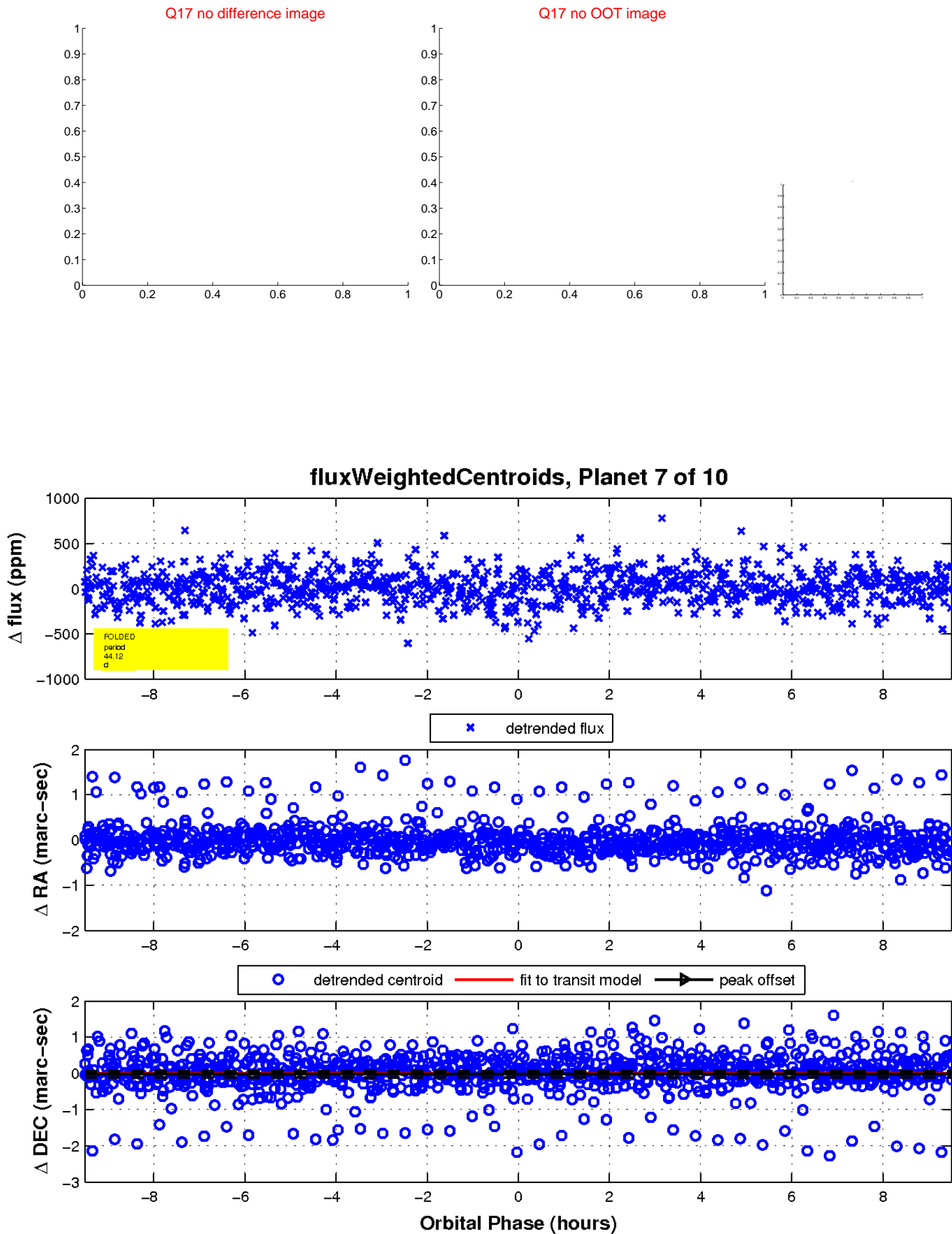
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

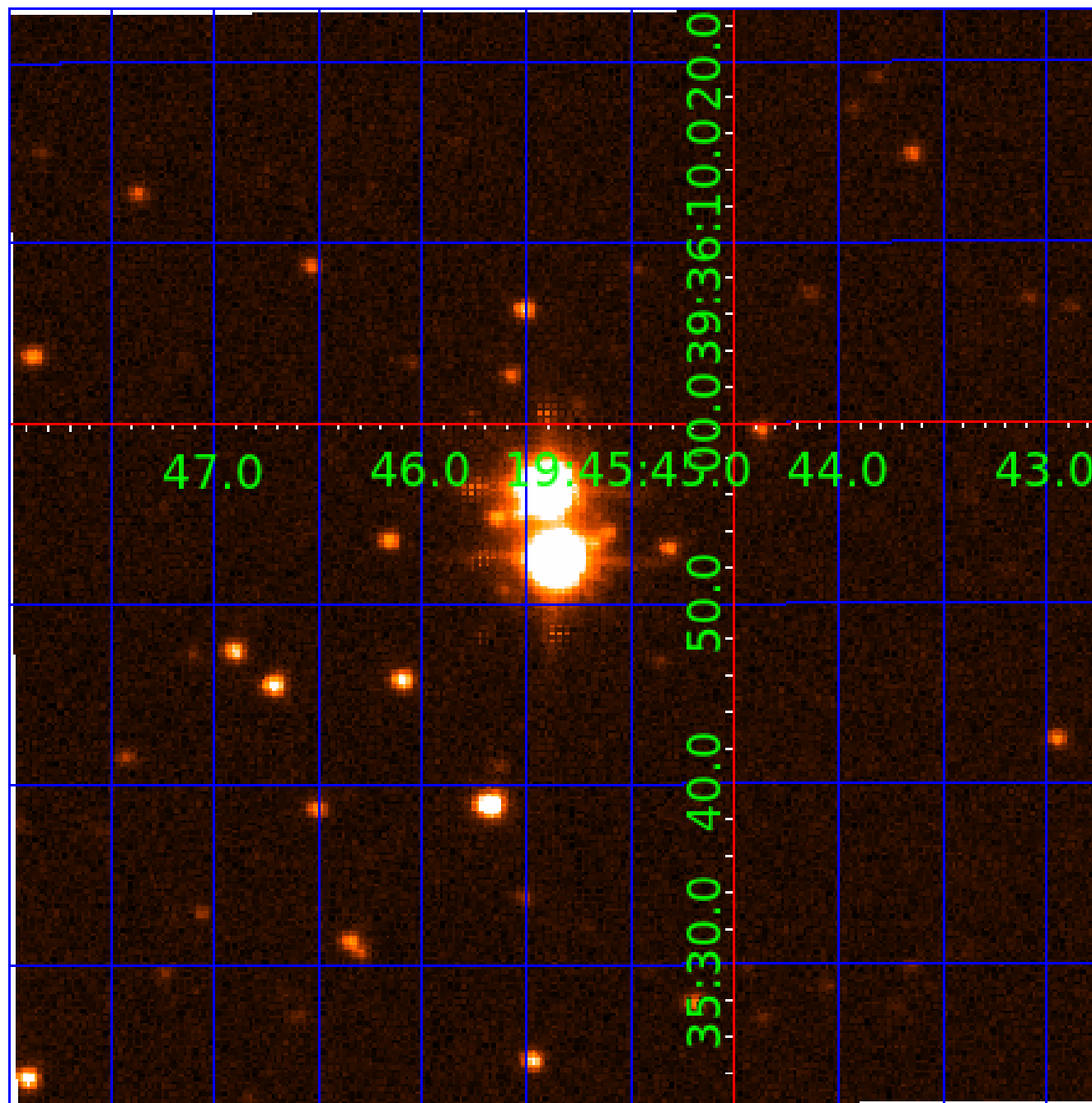


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
004484251-01	OBS	No	1.927596	133.409729	62.5	11.096	10.7	13.4	1.61	6796	2.44	4419.88
004484251-02	OBS	No	187.518566	143.631143	246.3	20.390	11.4	6.7	1.61	6796	2.70	9.88
004484251-03	OBS	No	131.156980	172.932168	354.5	3.277	9.8	9.3	1.61	6796	3.72	15.91
004484251-04	OBS	No	212.126737	208.397966	52.3	128.241	9.8	1.4	1.61	6796	1.22	8.38
004484251-05	OBS	No	157.257304	150.611824	337.5	20.471	13.4	7.2	1.61	6796	3.14	12.49
004484251-06	OBS	No	23.480828	137.485920	112.3	23.308	8.4	6.3	1.61	6796	1.84	157.69
004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

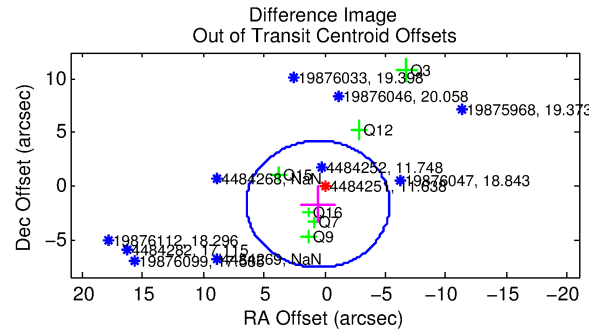
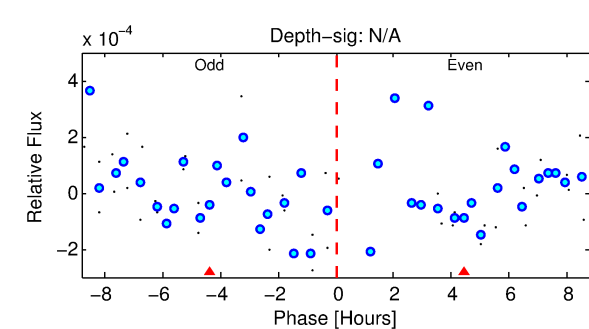
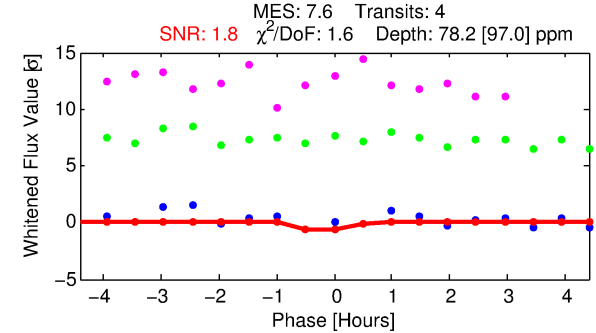
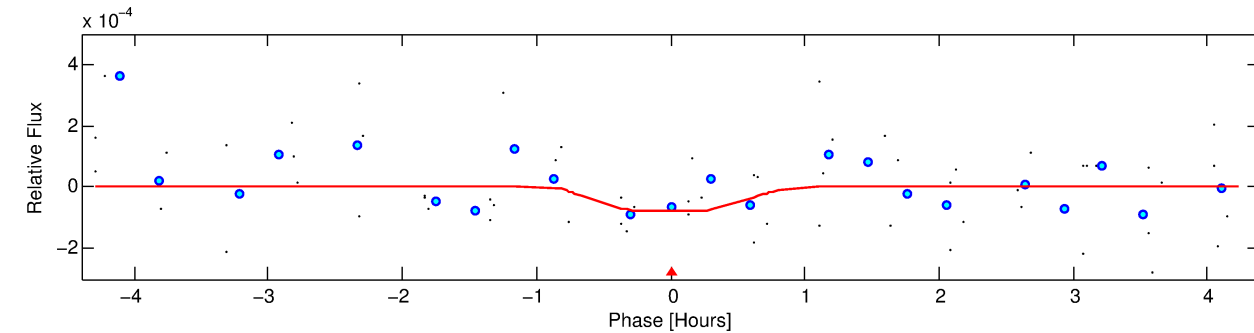
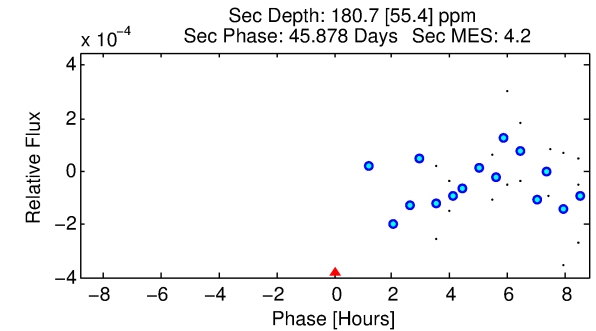
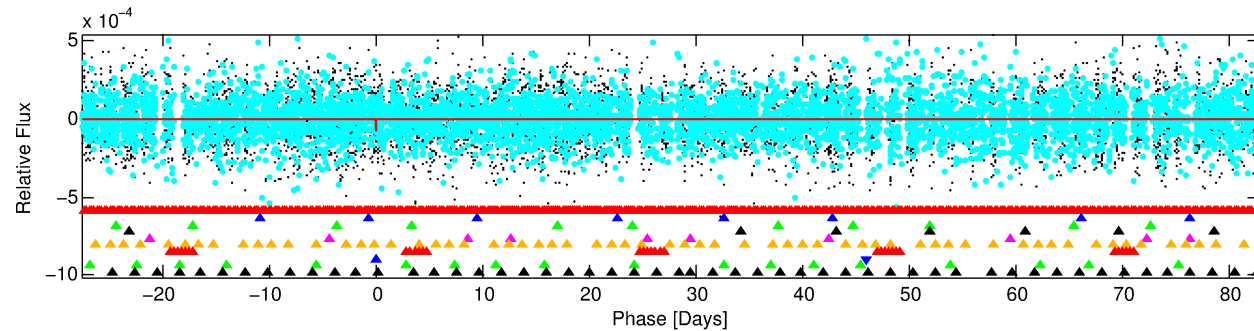
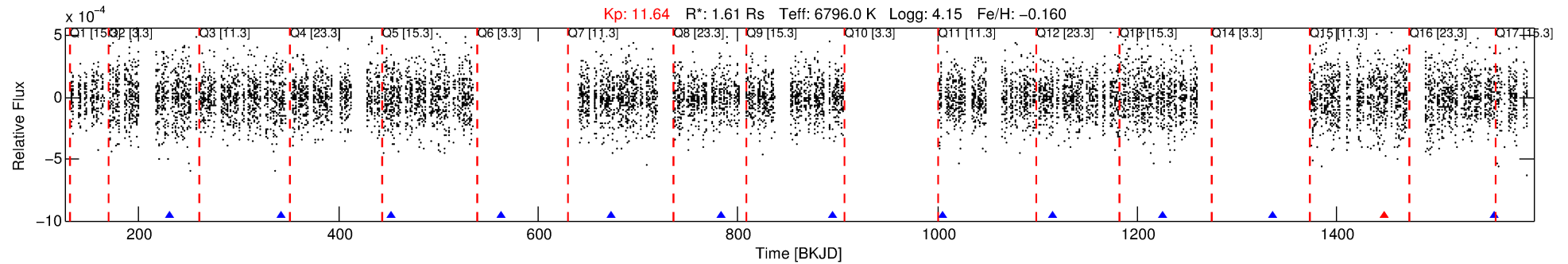
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-08

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 8 of 10 Period: 110.484 d



DV Fit Results:

Period = 110.48412 [0.00500] d
Epoch = 231.5482 [0.0374] BKJD
Rp/R* = 0.0105 [0.0190]
a/R* = 156.44 [1567.14]
b = 0.97 [0.56]
Seff = 20.00 [4.39]
Teq = 539 [30] K
Rp = 1.84 [3.35] Re
a = 0.4971 [0.0738] AU
Ag = 7236.73 [26313.35] [0.27σ]
Teffp = 7690 [6979] K [1.02σ]

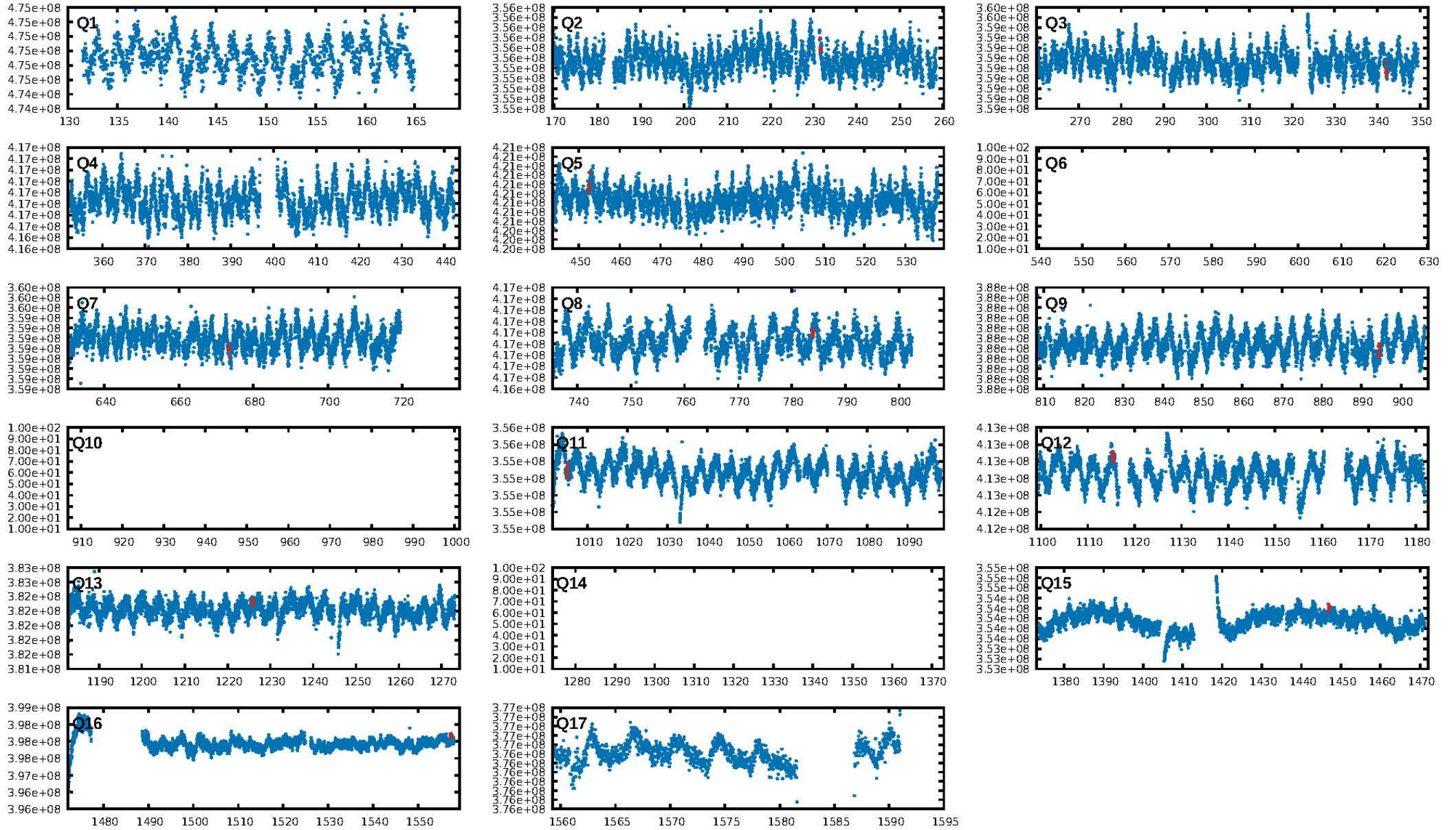
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [123.30σ]
LongPeriod-sig: 100.0% [138.25σ]
ModelChiSquare2-sig: 18.5%
ModelChiSquareGof-sig: 69.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: 8.186
Centroid-sig: N/A
Centroid-so: 2.286 arcsec [1.43σ]
OotOffset-rm: 1.786 arcsec [0.90σ]
KicOffset-rm: 0.954 arcsec [0.68σ]
OotOffset-st: 0/3/2/1 [6]
KicOffset-st: 0/3/2/1 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.40 [4/10]

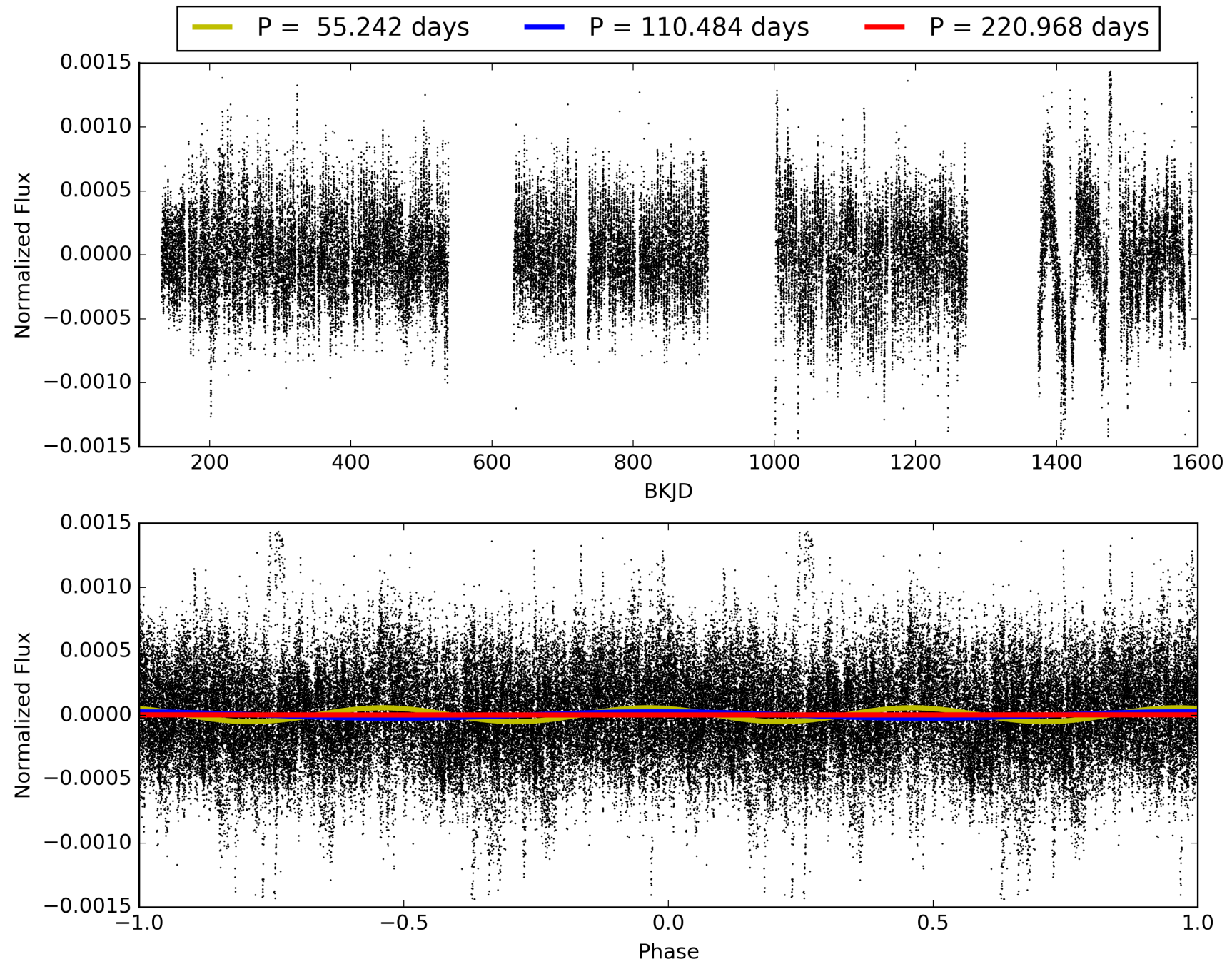
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:13:15 Z

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

TCE 004484251-08, PDC Light Curves

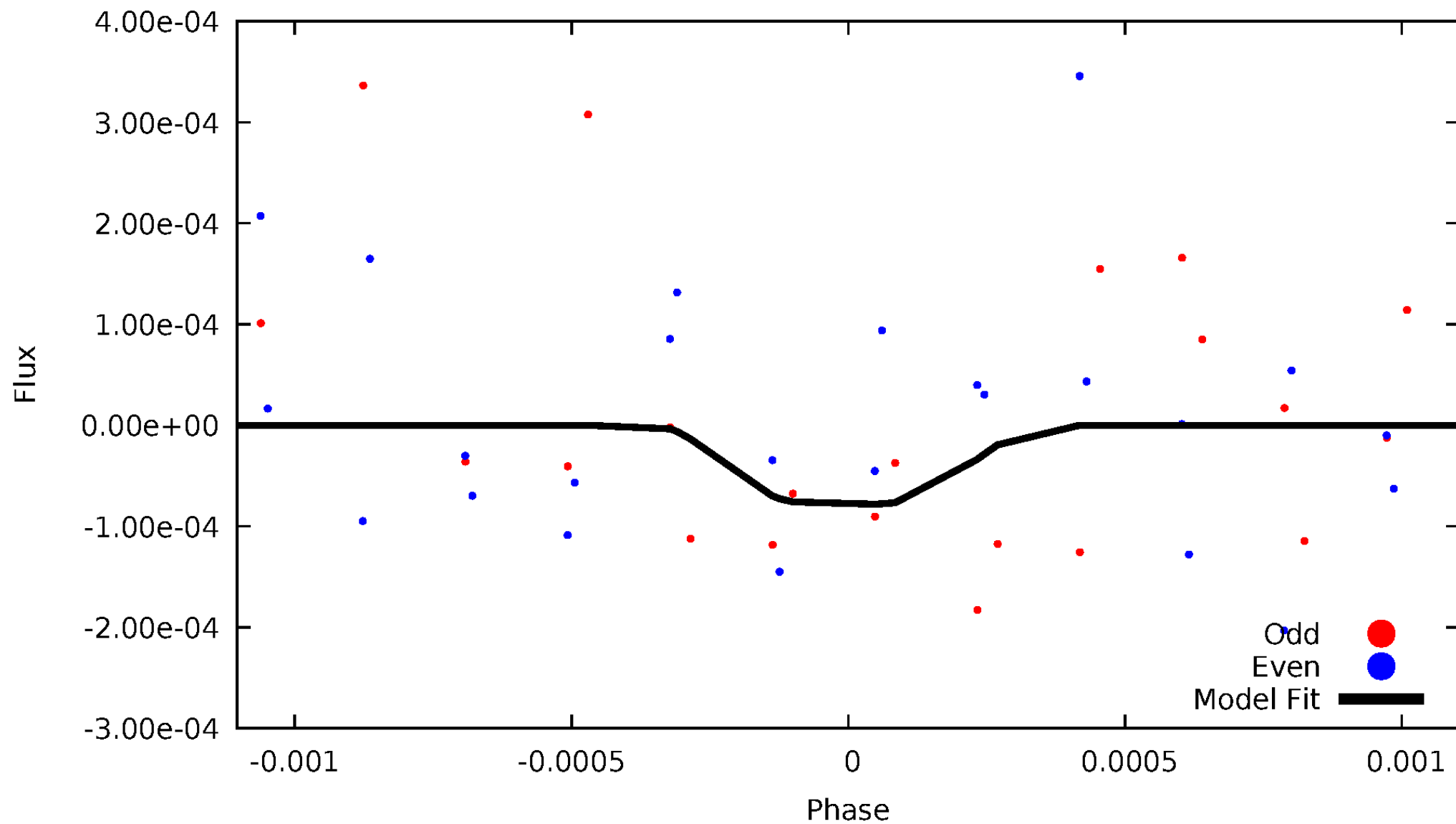


TCE 004484251-08



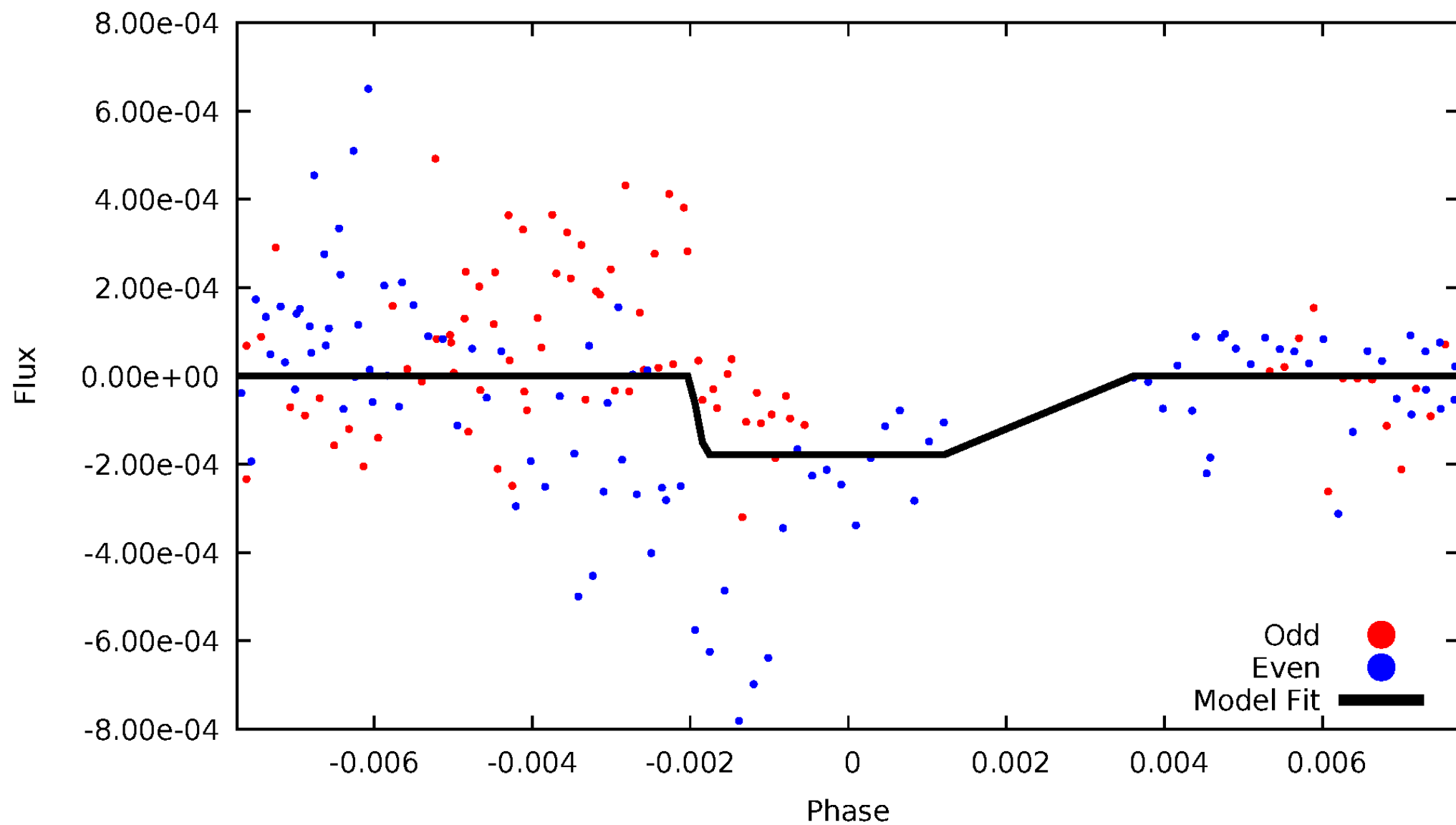
DV Odd/Even

TCE 004484251-08



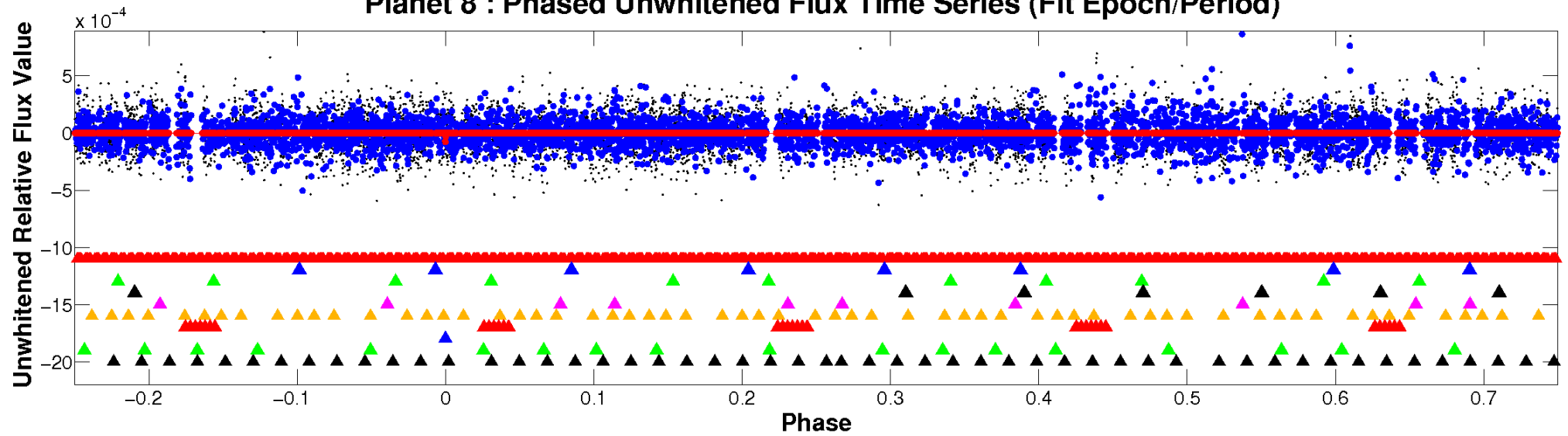
ALT Odd/Even

TCE 004484251-08

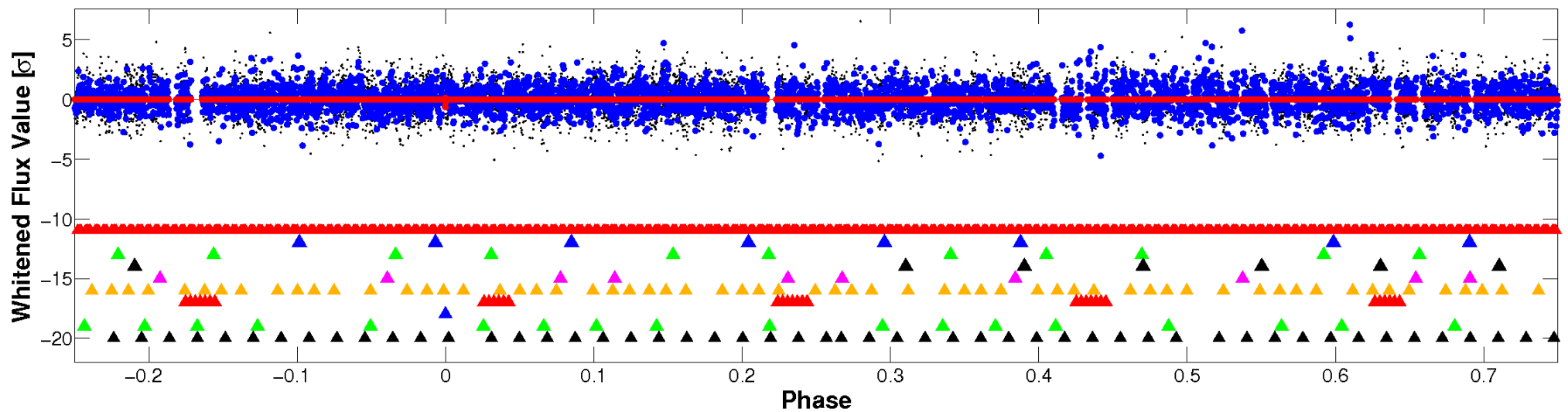


Non-Whitened Vs. Whitened Light Curve

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

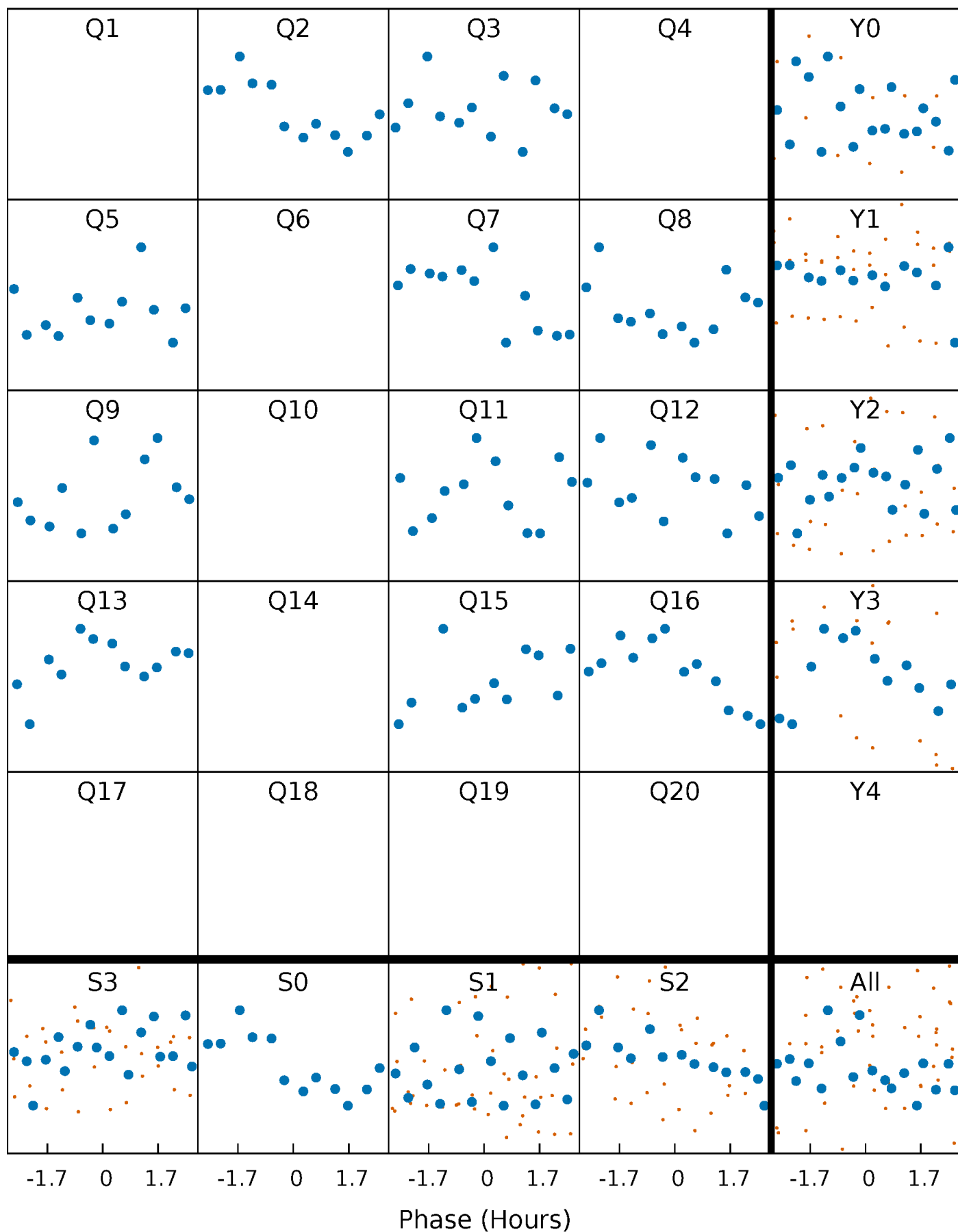


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 004484251-08 P=110.484116 Days $T_0=231.548195$ (BKJD)



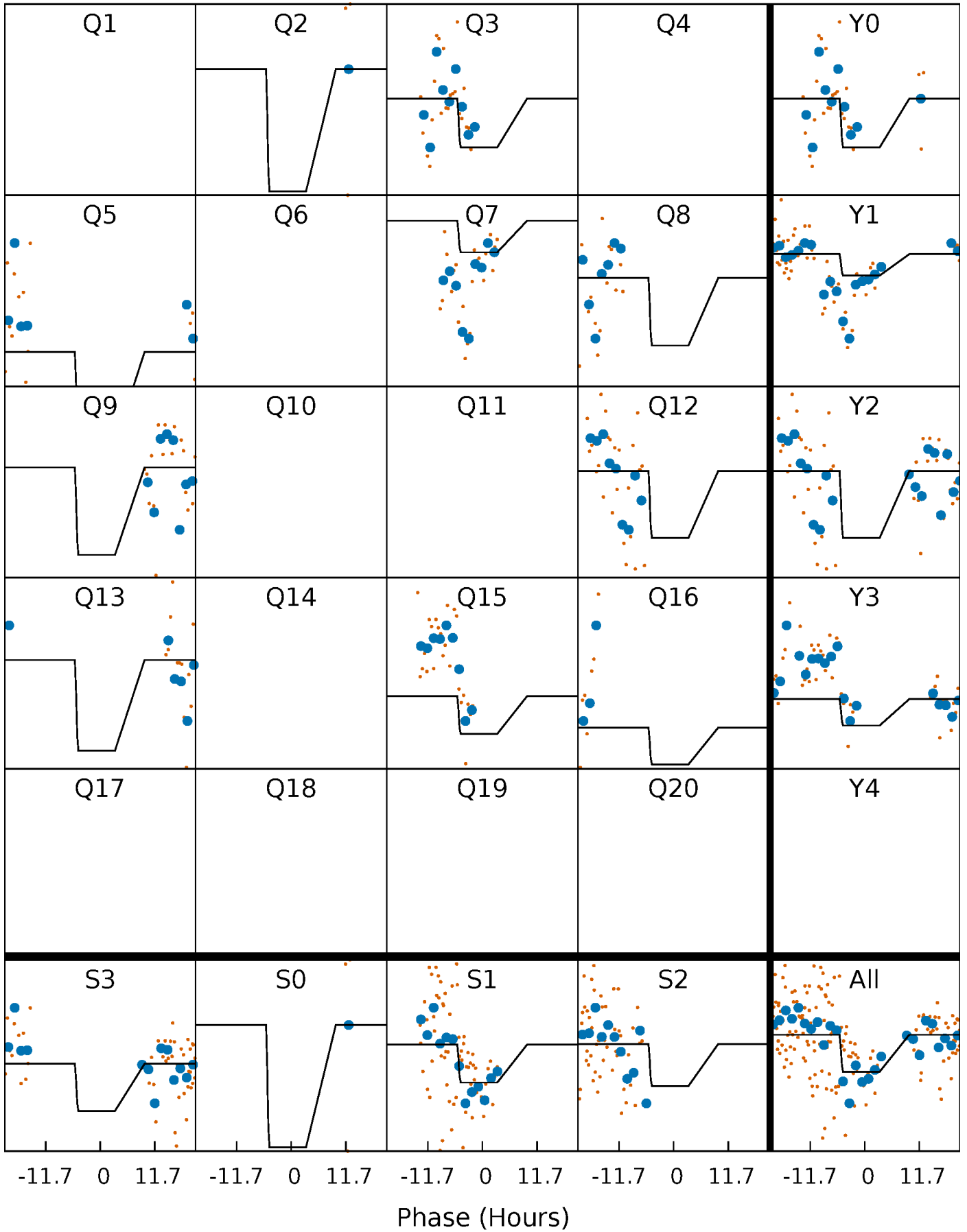
DV Quarter-Phased Transit Curves

TCE 004484251-08 $P=110.484116$ Days $T_0=231.548195$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

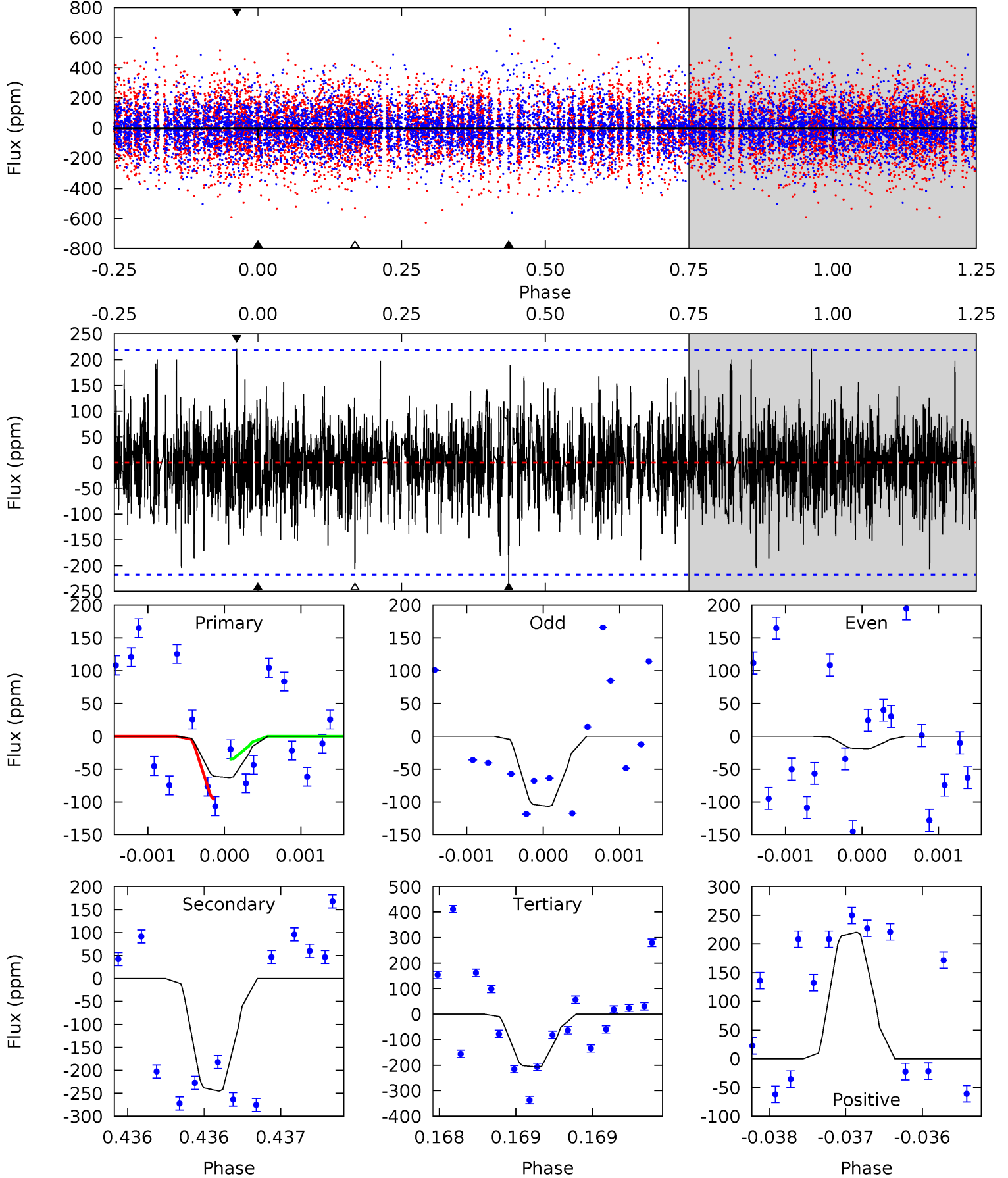
TCE 004484251-08 $P=110.454409$ Days $T_0=232.400277$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-08, P = 110.484116 Days, E = 121.064079 Days

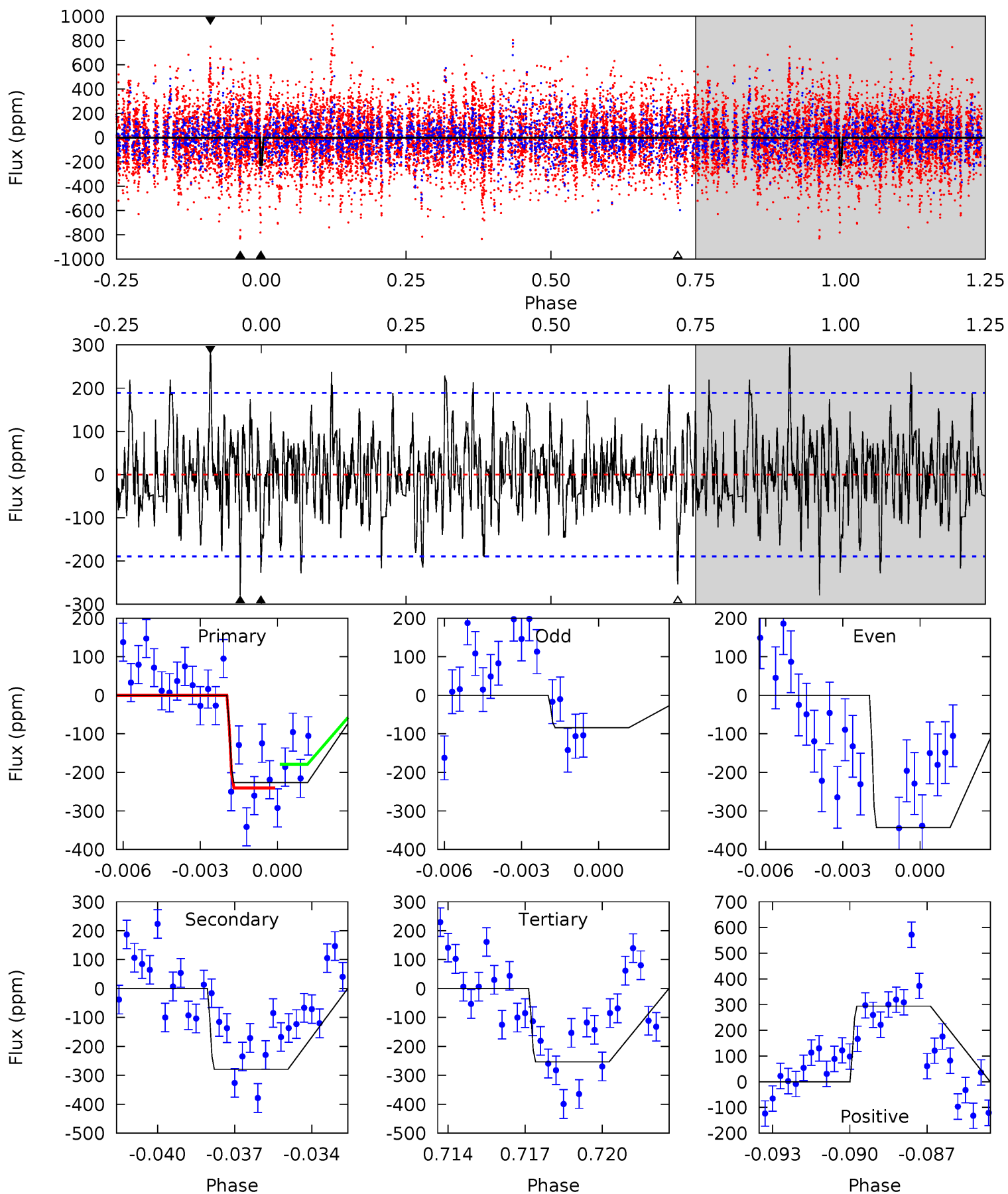
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.59	6.20	5.25	5.58	5.50	3.37	1.38	-3.66	-3.99	0.96	0.62	1.12	1.22	0.47	0.77



Alt Model-Shift Uniqueness Test

004484251-08, P = 110.454409 Days, E = 121.945868 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.28	7.75	7.03	8.15	5.25	2.96	1.97	-0.75	-1.87	0.72	-0.40	3.62	1.91	0.51	0.68



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-245 ± 40	$3.09^{+2.95}_{-2.03}$	753^{+34}_{-32}	6314^{+7070}_{-1574}	3448^{+27371}_{-2508}
Alt.	-280 ± 36	$3.46^{+2.95}_{-2.29}$	754^{+34}_{-31}	6254^{+6817}_{-1499}	3288^{+25612}_{-2376}

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

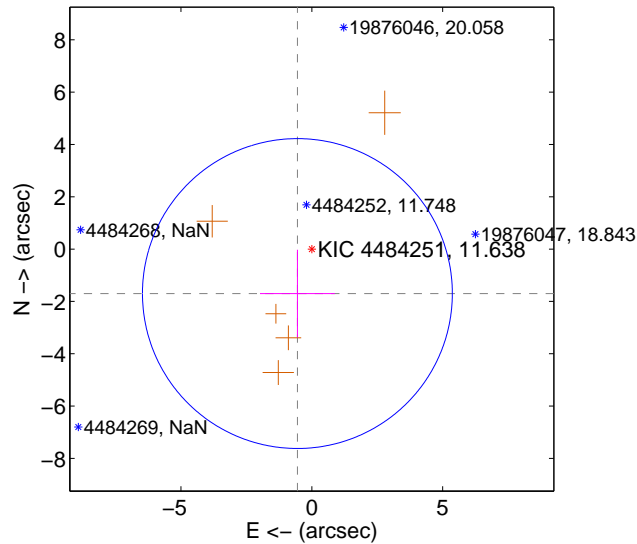
Supplemental centroid analysis for 004484251-08. **Kepler magnitude: 11.64.** Transit SNR 1.78

There are 0 quarters with good PRF difference image offsets

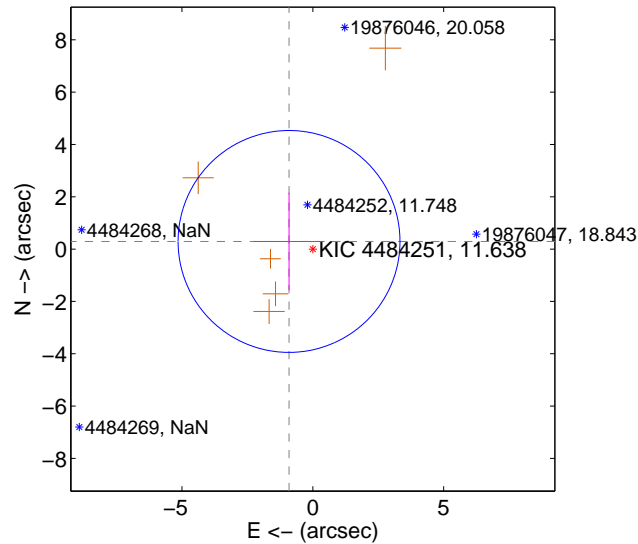
The OOT PRF centroid is offset from the target star catalog position by about 2.11 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.786 ± 1.973	0.90	0.551 ± 1.428	-1.699 ± 1.675
PRF-fit source offset from KIC position	0.954 ± 1.413	0.68	0.908 ± 1.358	0.292 ± 1.864
photometric centroid source offset	2.29 ± 1.60	1.43	2.04 ± 1.48	1.04 ± 2.01

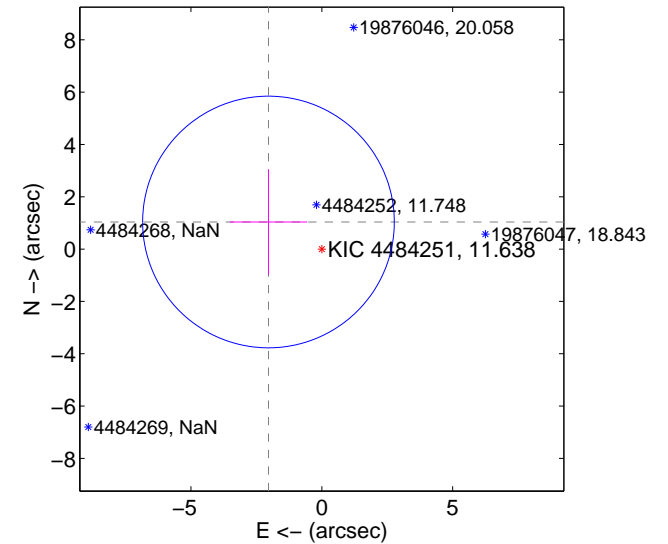
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

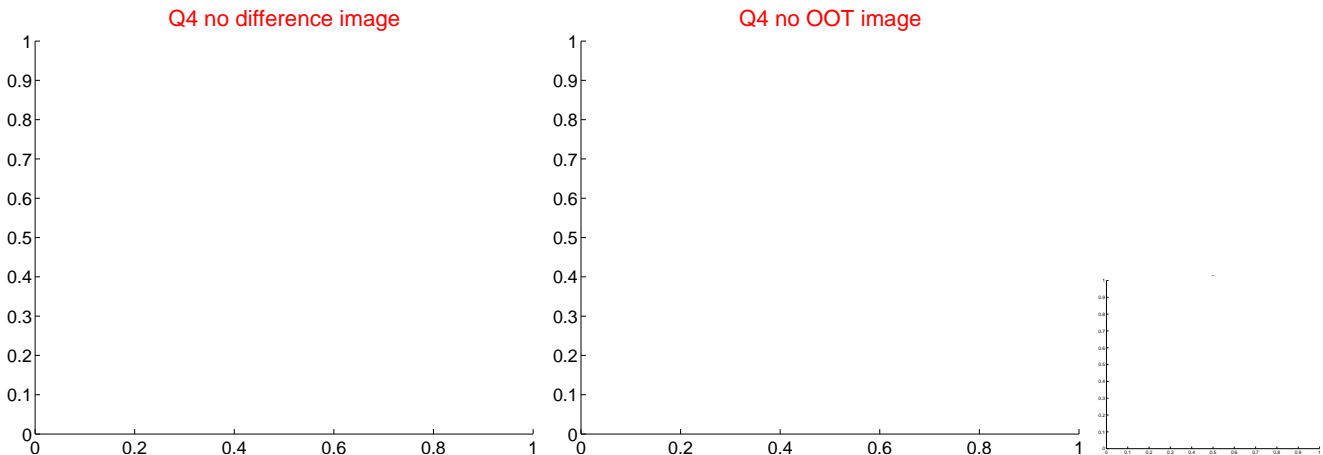
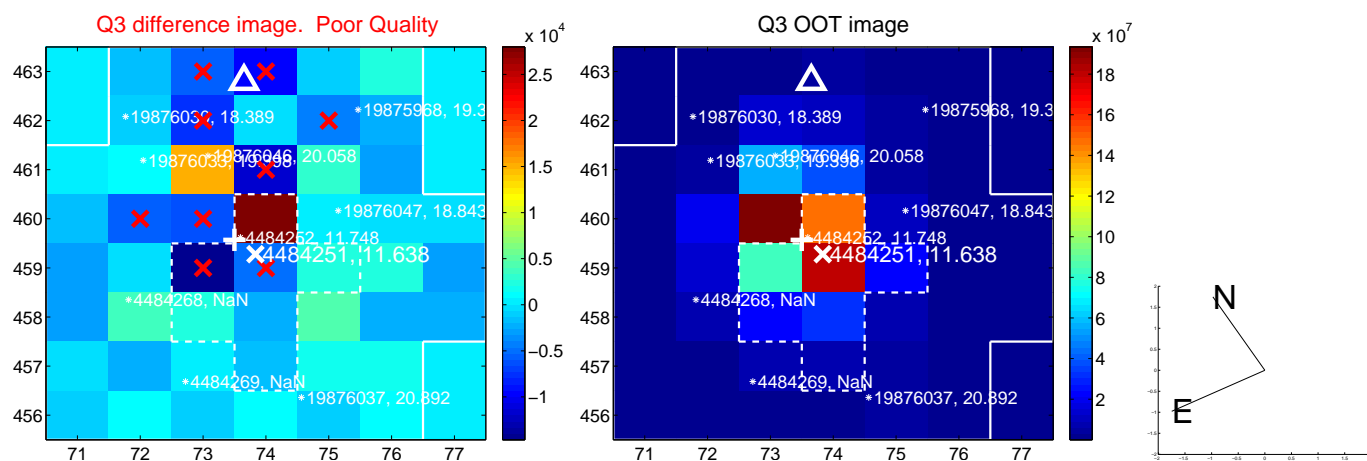
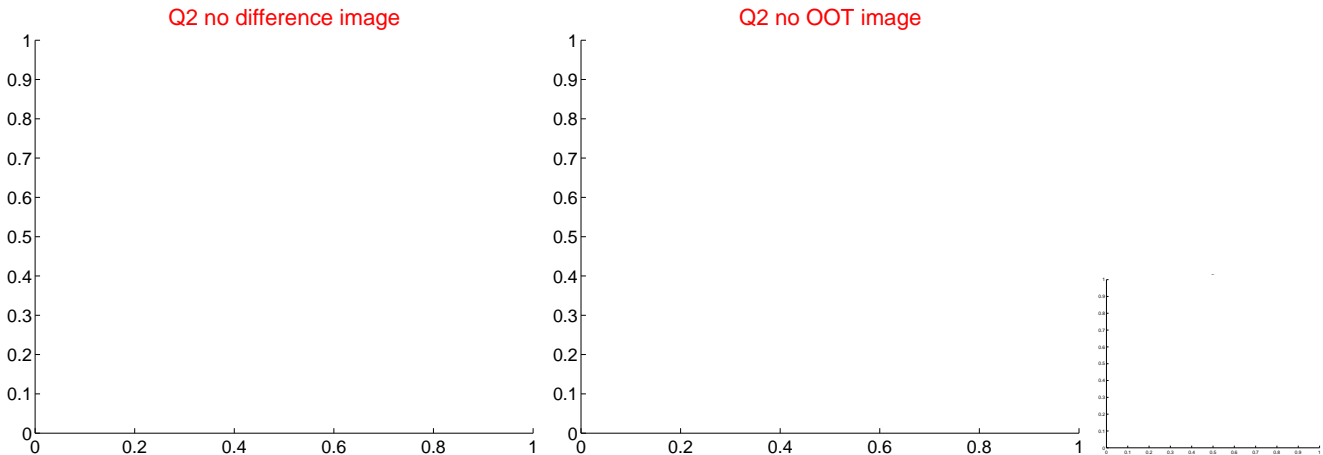
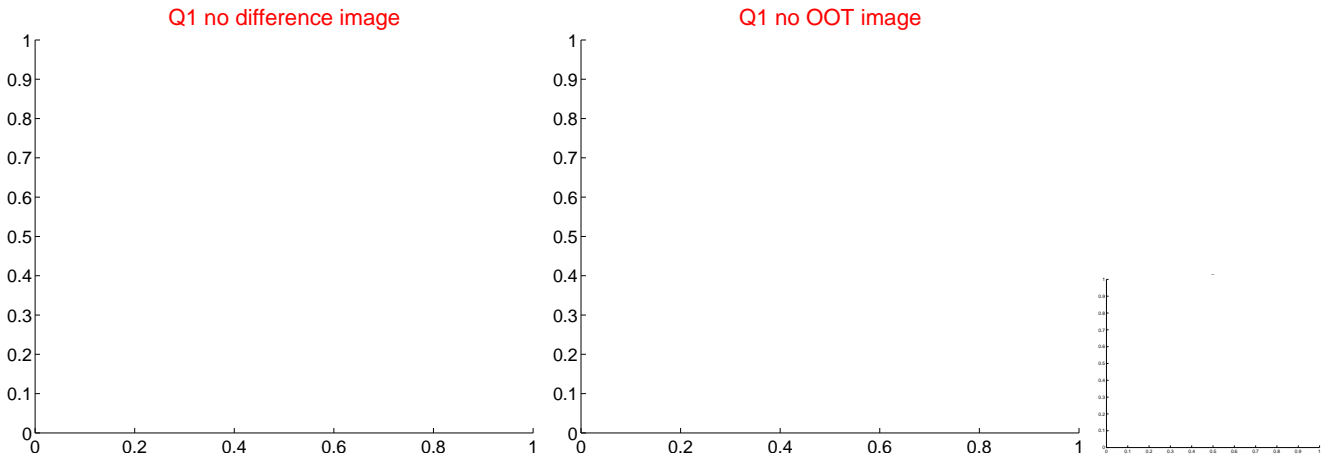


offset from photometric centroids

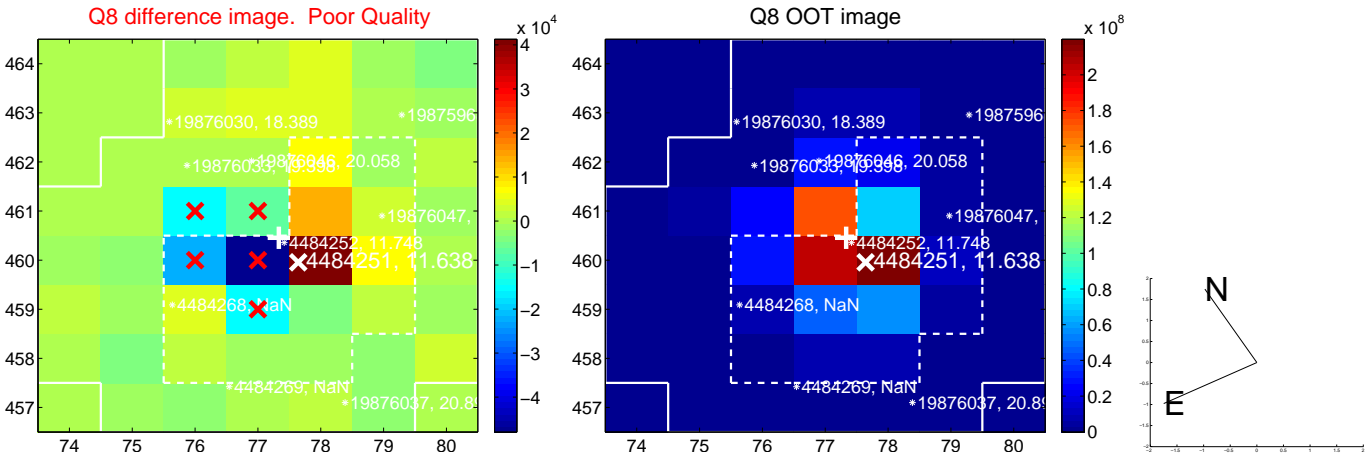
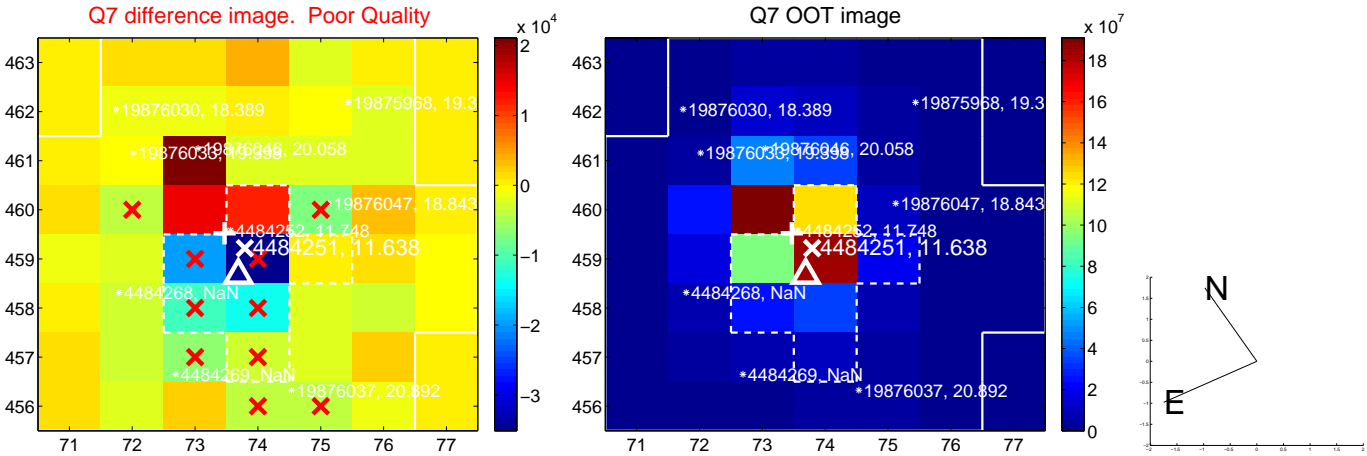
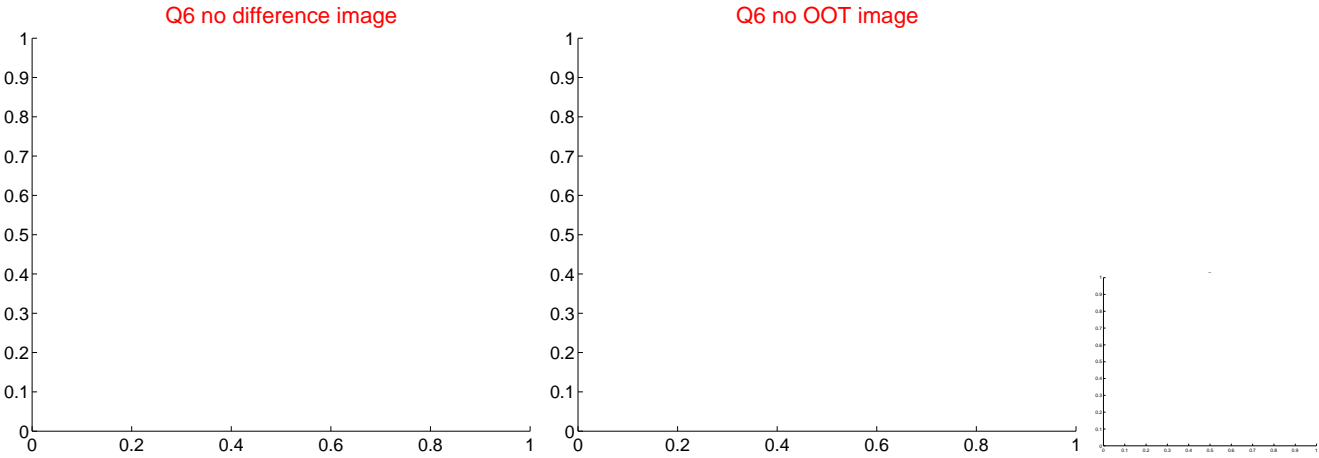
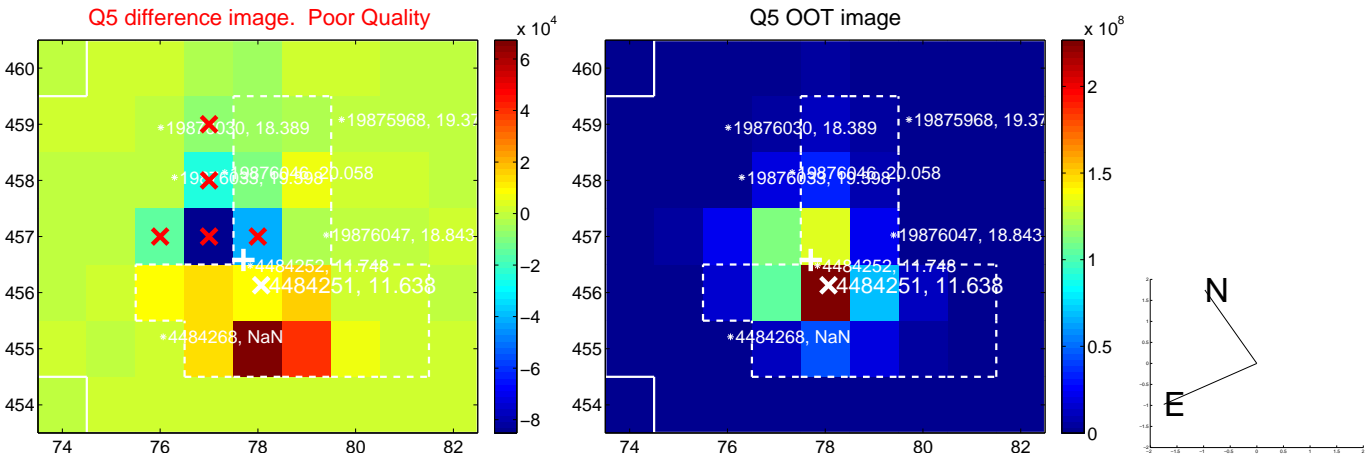


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

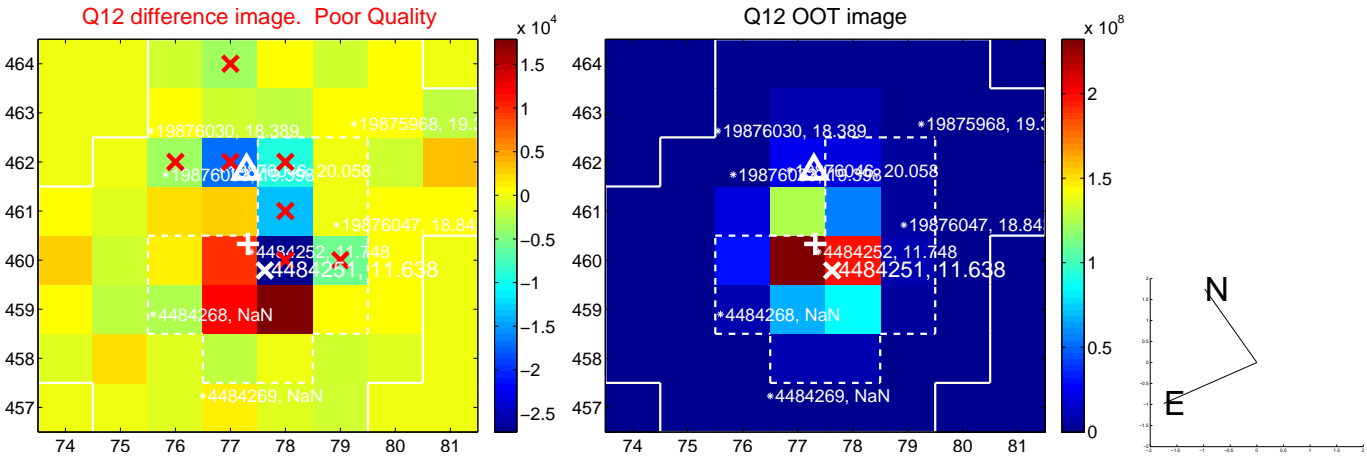
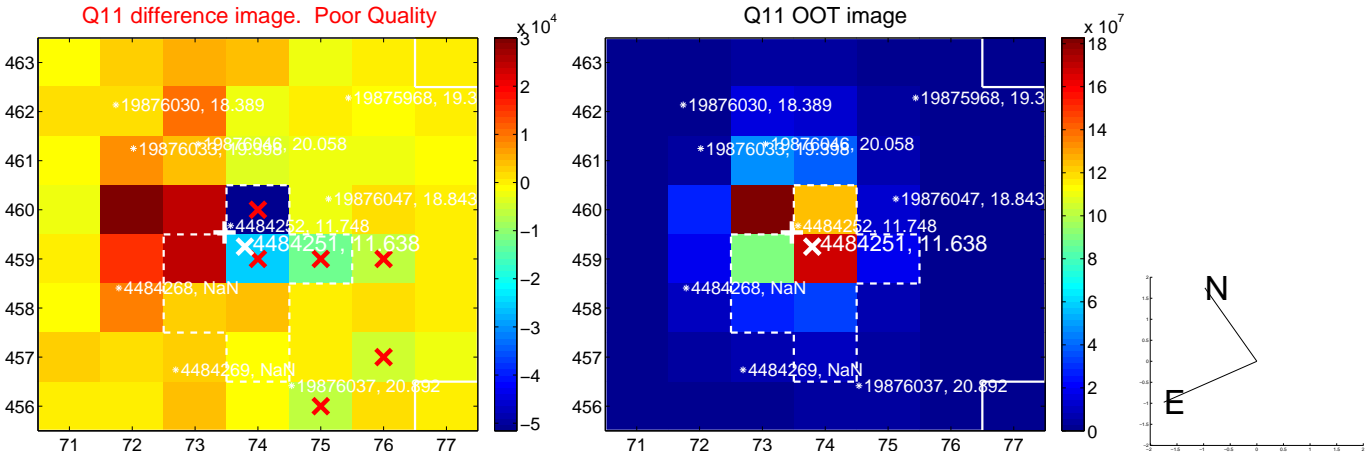
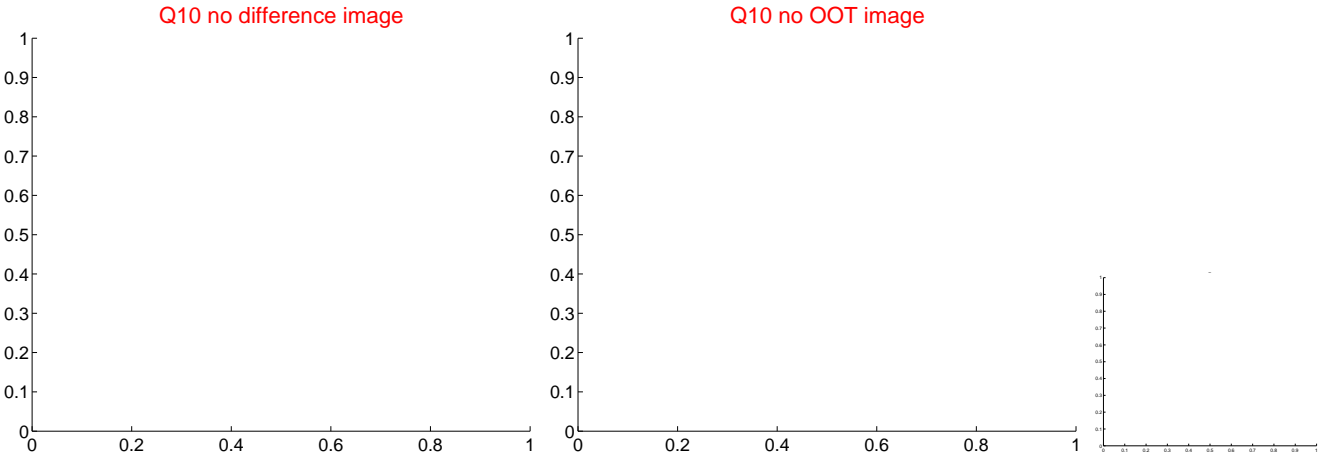
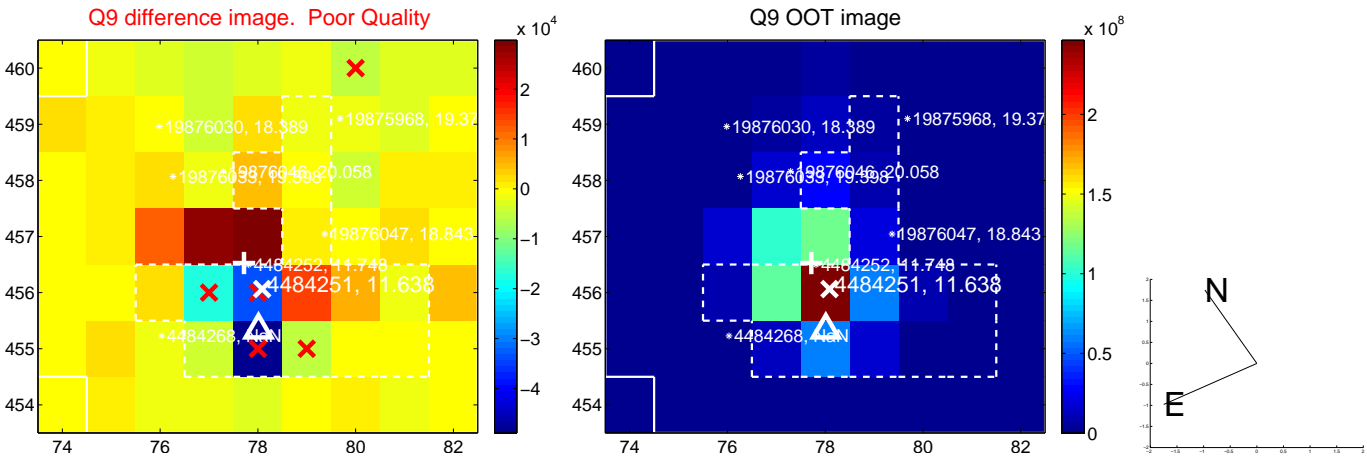
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



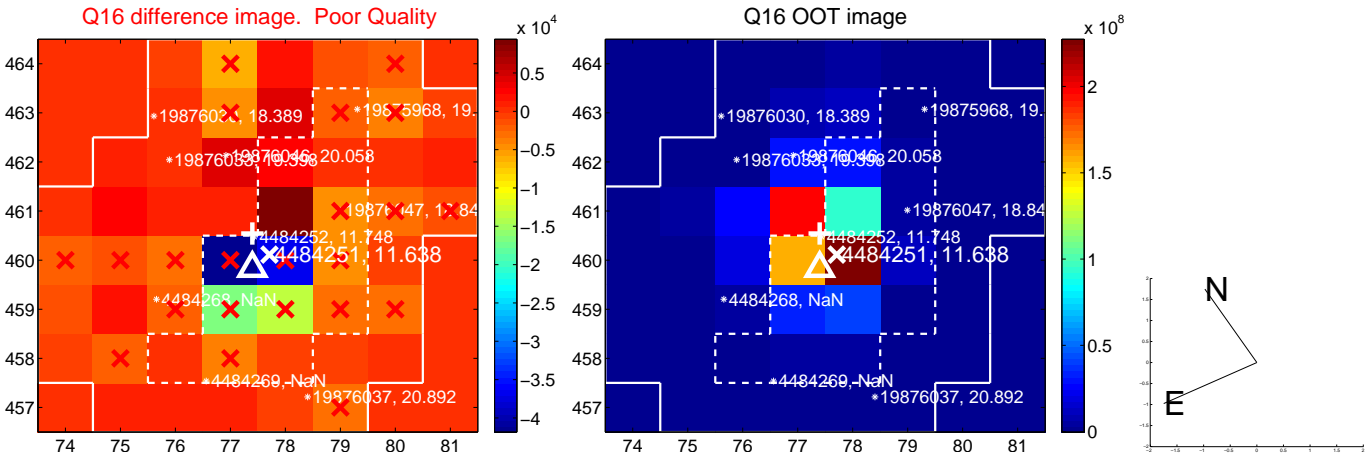
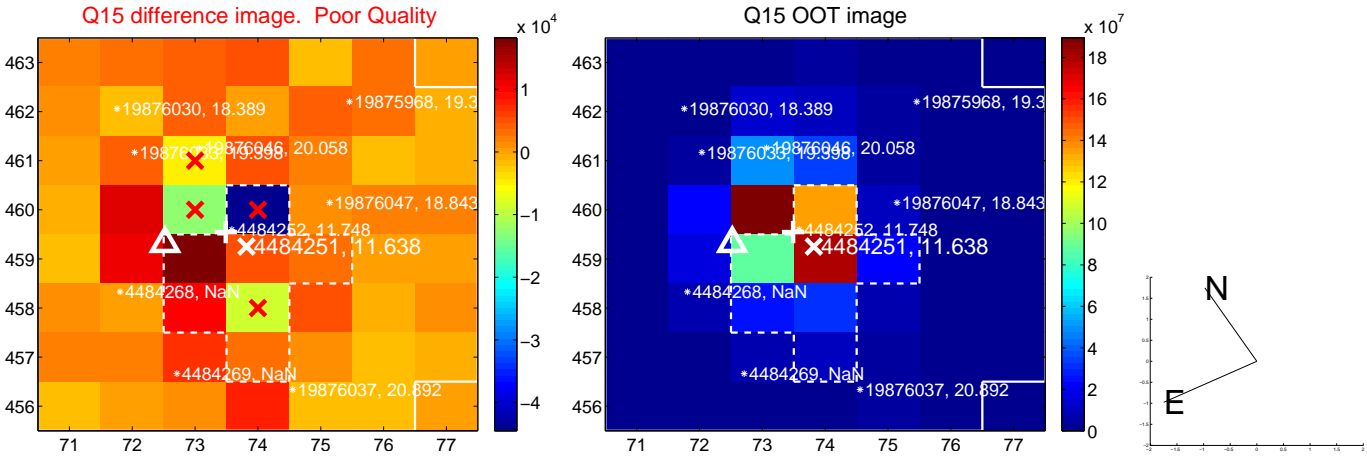
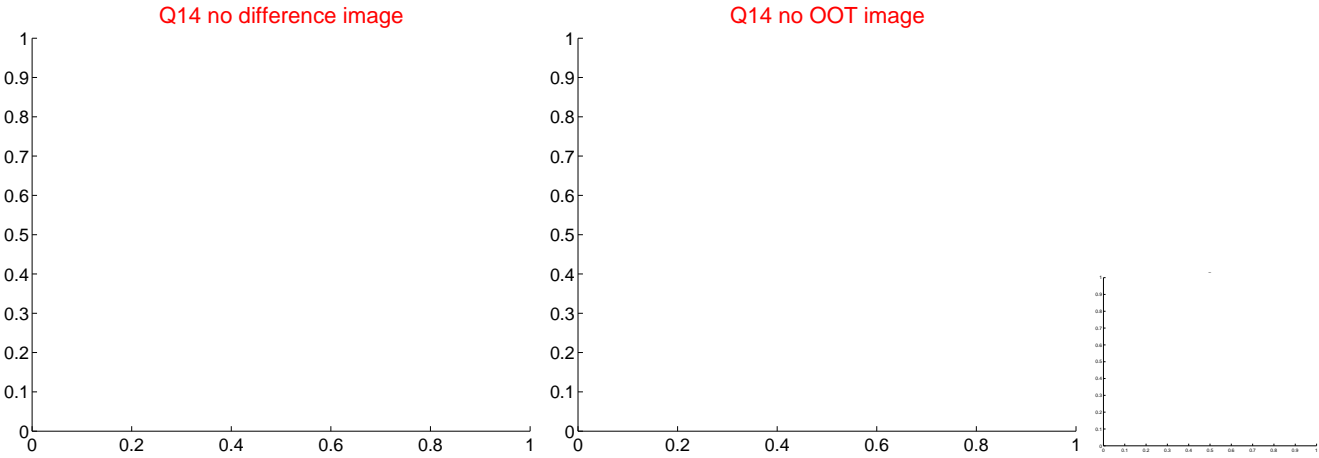
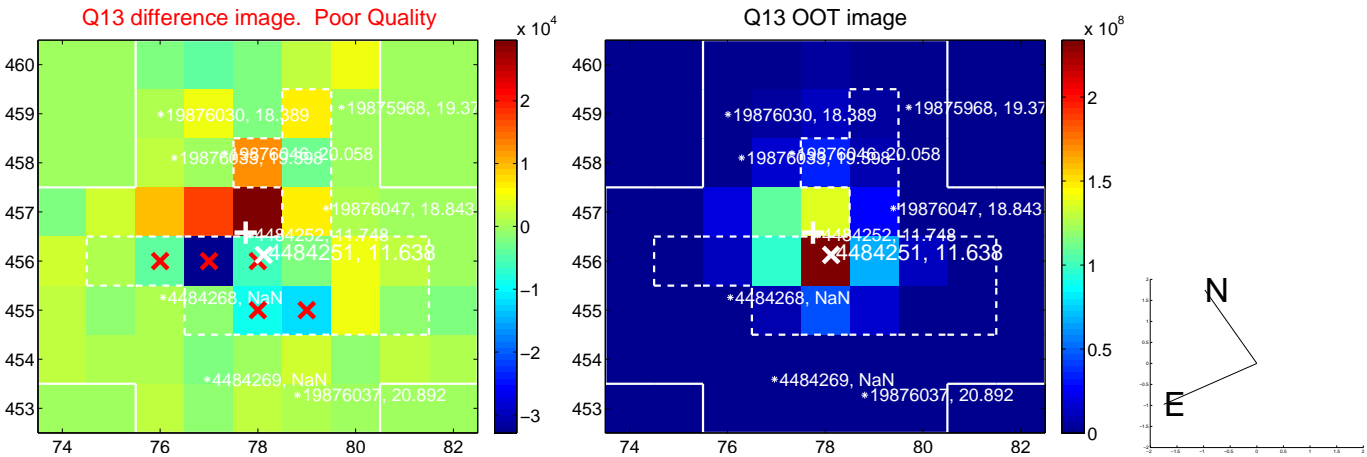
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



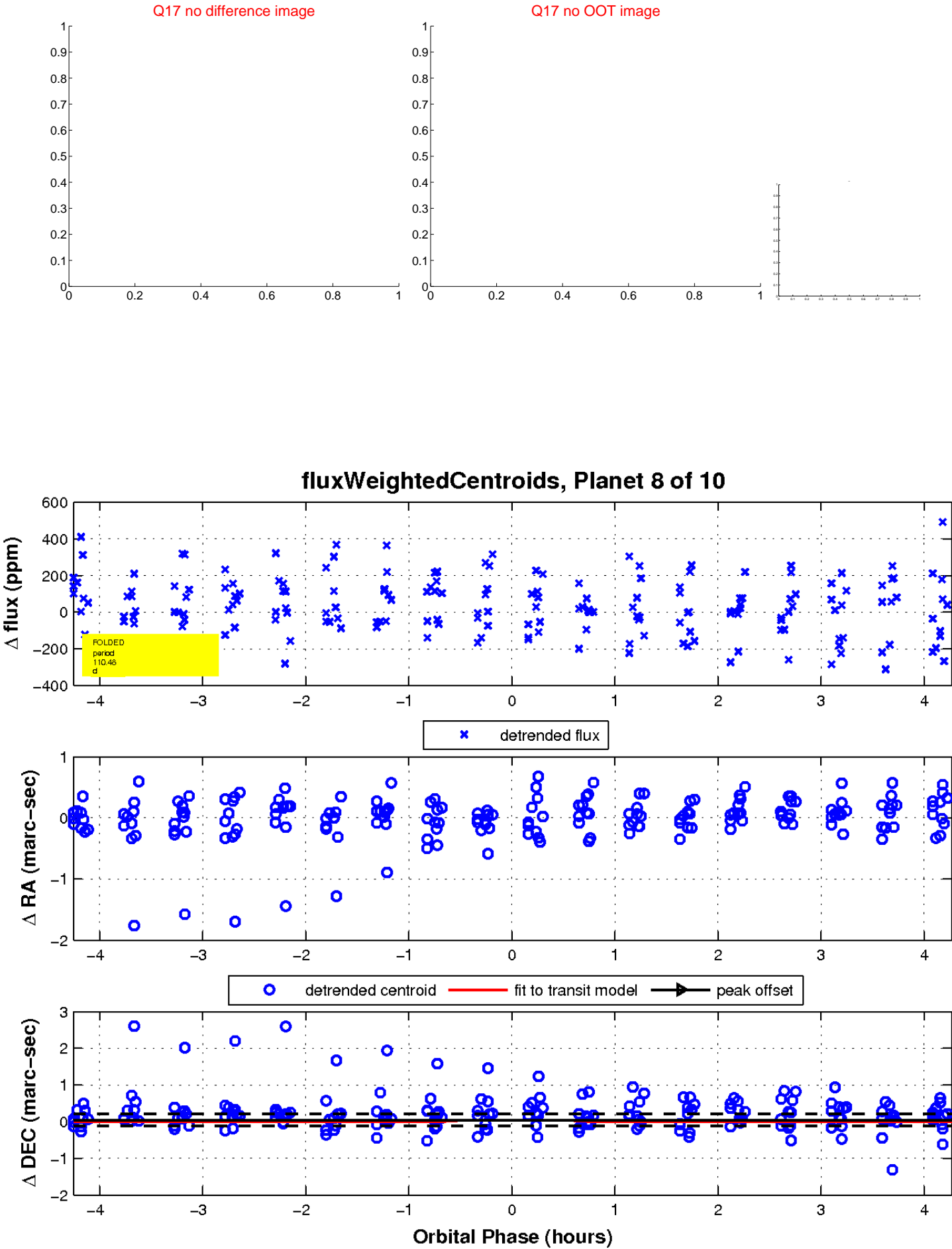
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

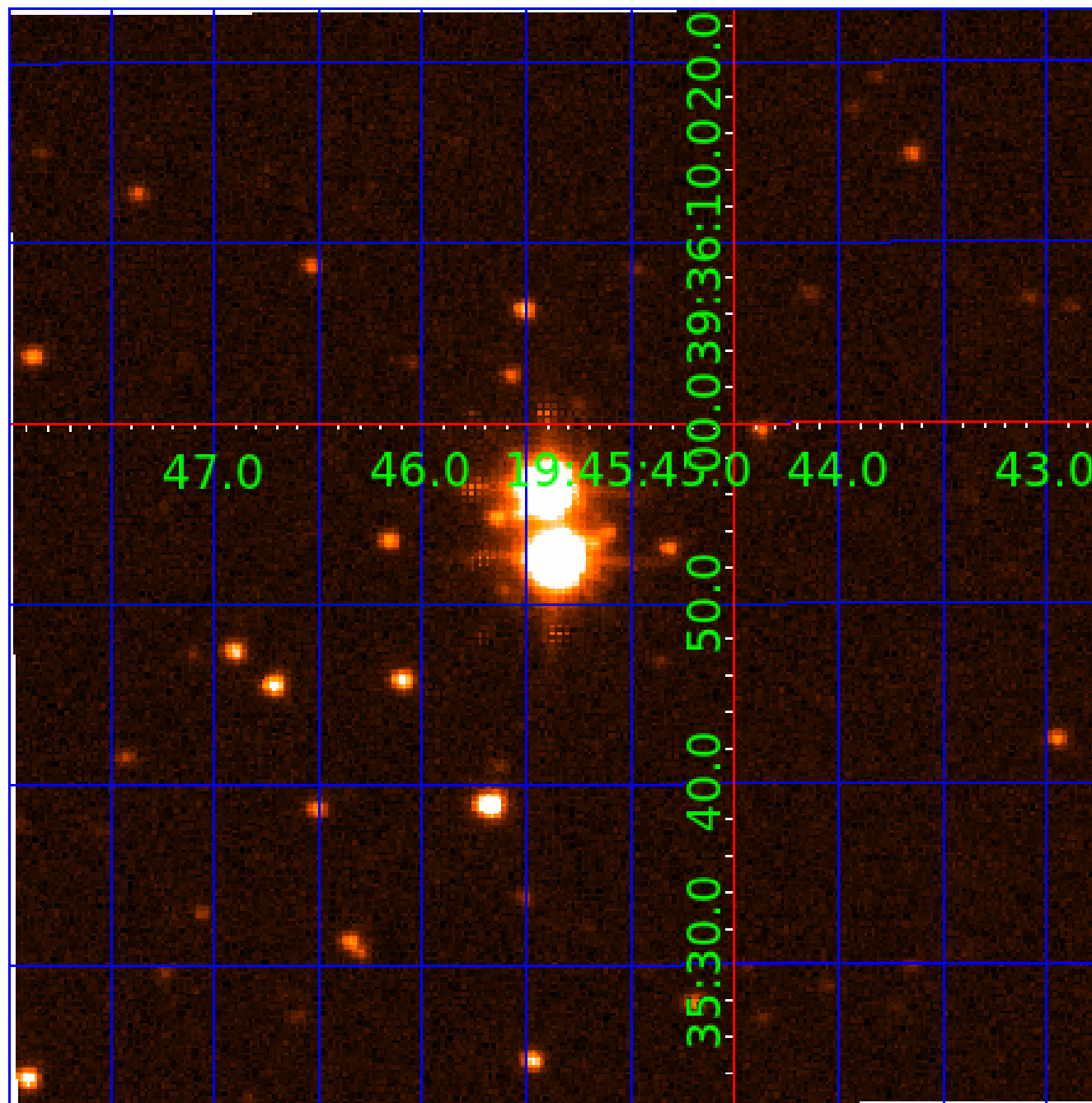


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
004484251-01	OBS	No	1.927596	133.409729	62.5	11.096	10.7	13.4	1.61	6796	2.44	4419.88
004484251-02	OBS	No	187.518566	143.631143	246.3	20.390	11.4	6.7	1.61	6796	2.70	9.88
004484251-03	OBS	No	131.156980	172.932168	354.5	3.277	9.8	9.3	1.61	6796	3.72	15.91
004484251-04	OBS	No	212.126737	208.397966	52.3	128.241	9.8	1.4	1.61	6796	1.22	8.38
004484251-05	OBS	No	157.257304	150.611824	337.5	20.471	13.4	7.2	1.61	6796	3.14	12.49
004484251-06	OBS	No	23.480828	137.485920	112.3	23.308	8.4	6.3	1.61	6796	1.84	157.69
004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

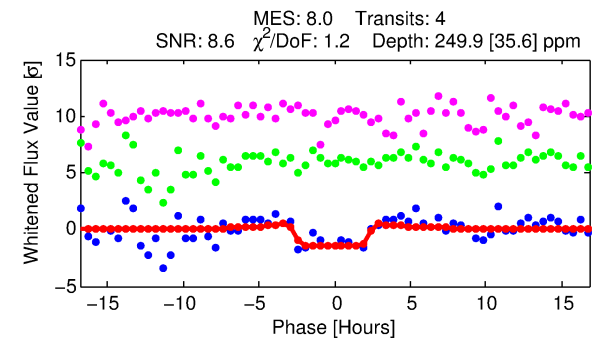
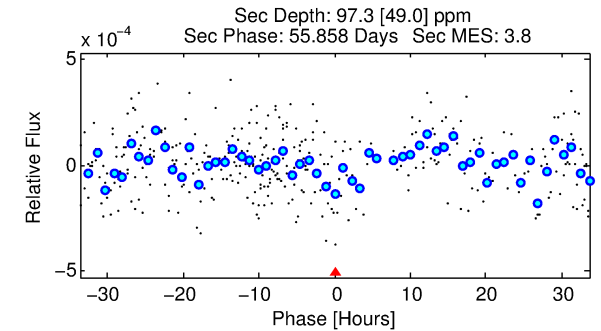
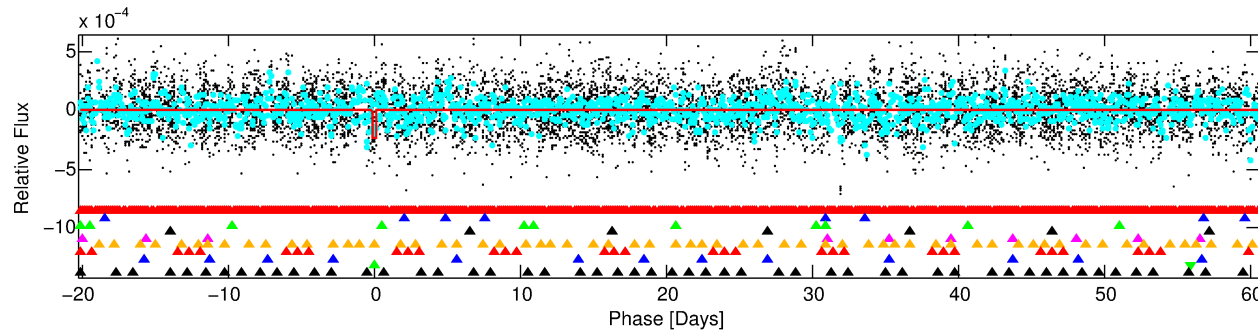
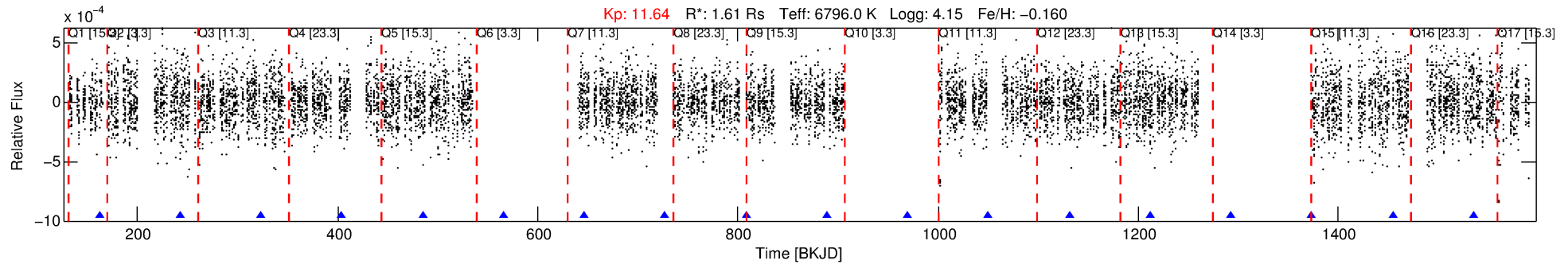
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-09

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 9 of 10 Period: 80.760 d

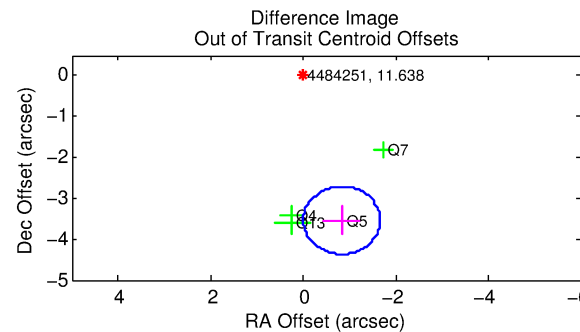
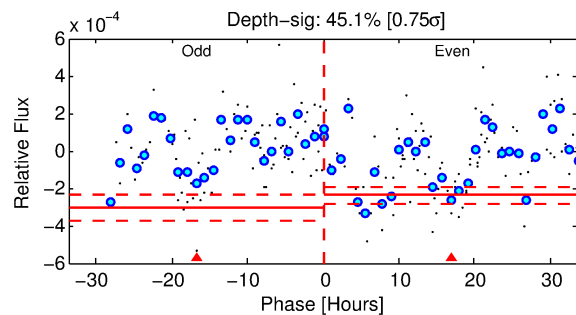
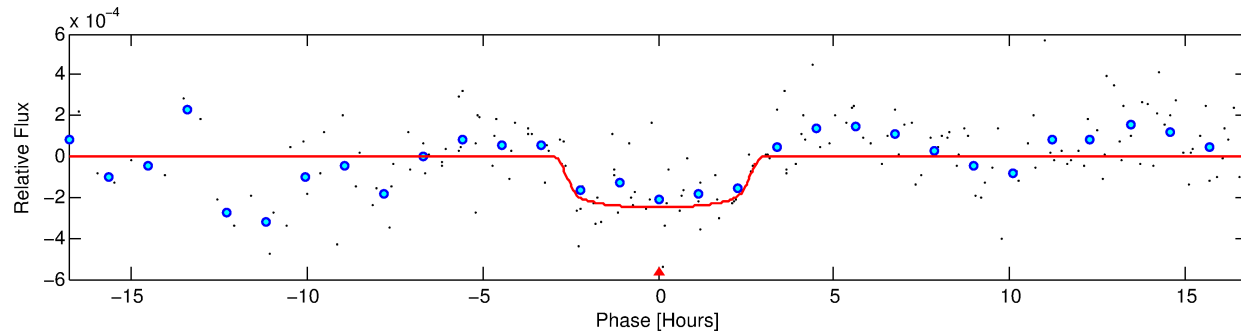


DV Fit Results:

Period = 80.76006 [0.00134] d
Epoch = 162.0276 [0.0114] BKJD
 $R_p/R^* = 0.0165$ [0.0099]
 $a/R^* = 59.01$ [205.50]
 $b = 0.86$ [1.04]
 $S_{\text{eff}} = 30.37$ [6.67]
 $T_{\text{eq}} = 599$ [33] K
 $R_p = 2.89$ [1.81] R_e
 $a = 0.4034$ [0.0599] AU
 $A_g = 1043.49$ [1374.03] [0.76σ]
 $T_{\text{eff}} = 5260$ [1710] K [2.73σ]

DV Diagnostic Results:

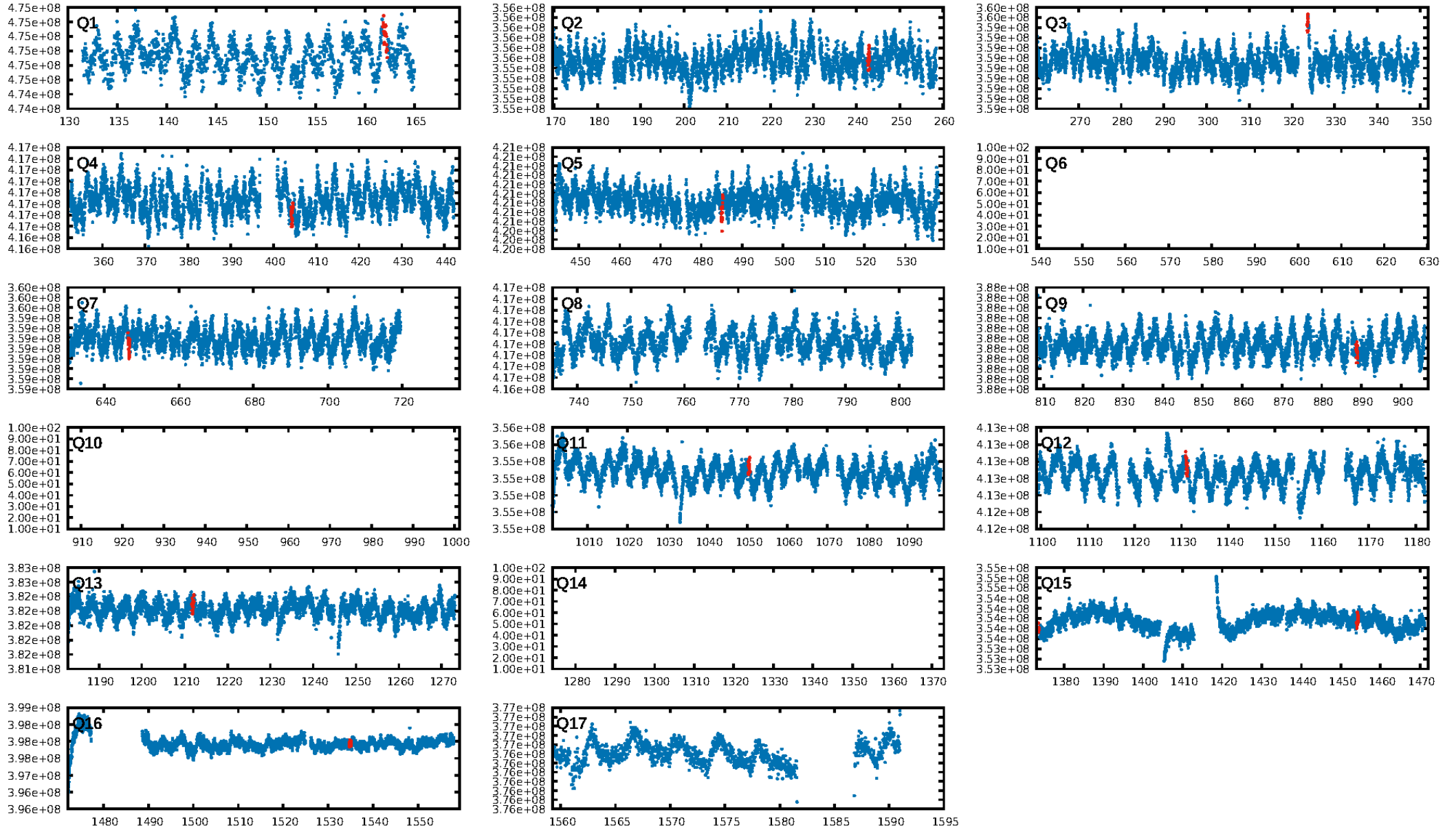
ShortPeriod-sig: 100.0% [136.69σ]
LongPeriod-sig: 100.0% [123.30σ]
ModelChiSquare2-sig: 80.6%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.03329
Centroid-sig: N/A
Centroid-so: 1.754 arcsec [4.41σ]
OotOffset-rm: 3.635 arcsec [13.14σ]
KicOffset-rm: 1.254 arcsec [4.45σ]
OotOffset-st: 0/1/1/2 [4]
KicOffset-st: 0/1/1/2 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.27 [3/11]



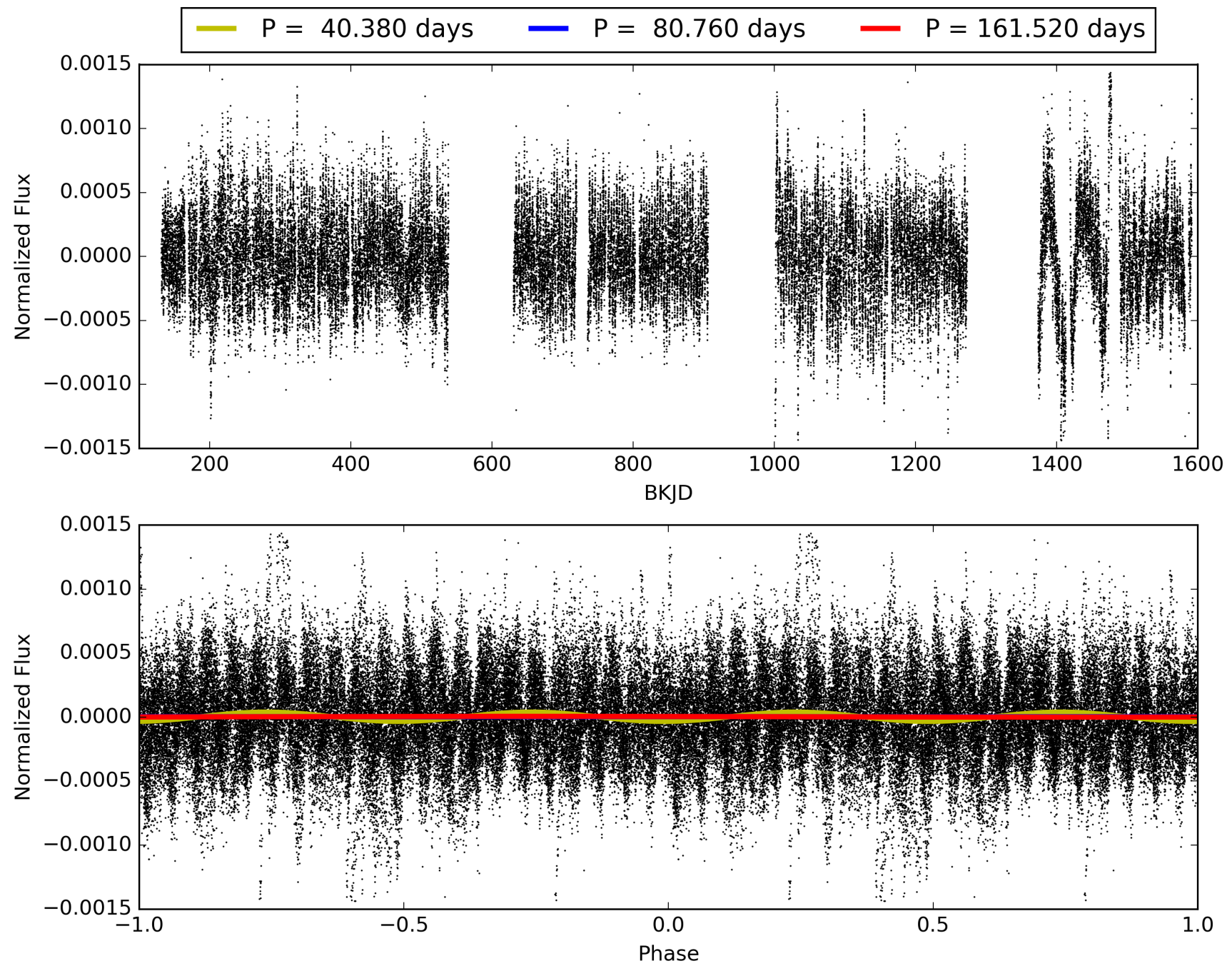
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:13:19 Z

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

TCE 004484251-09, PDC Light Curves

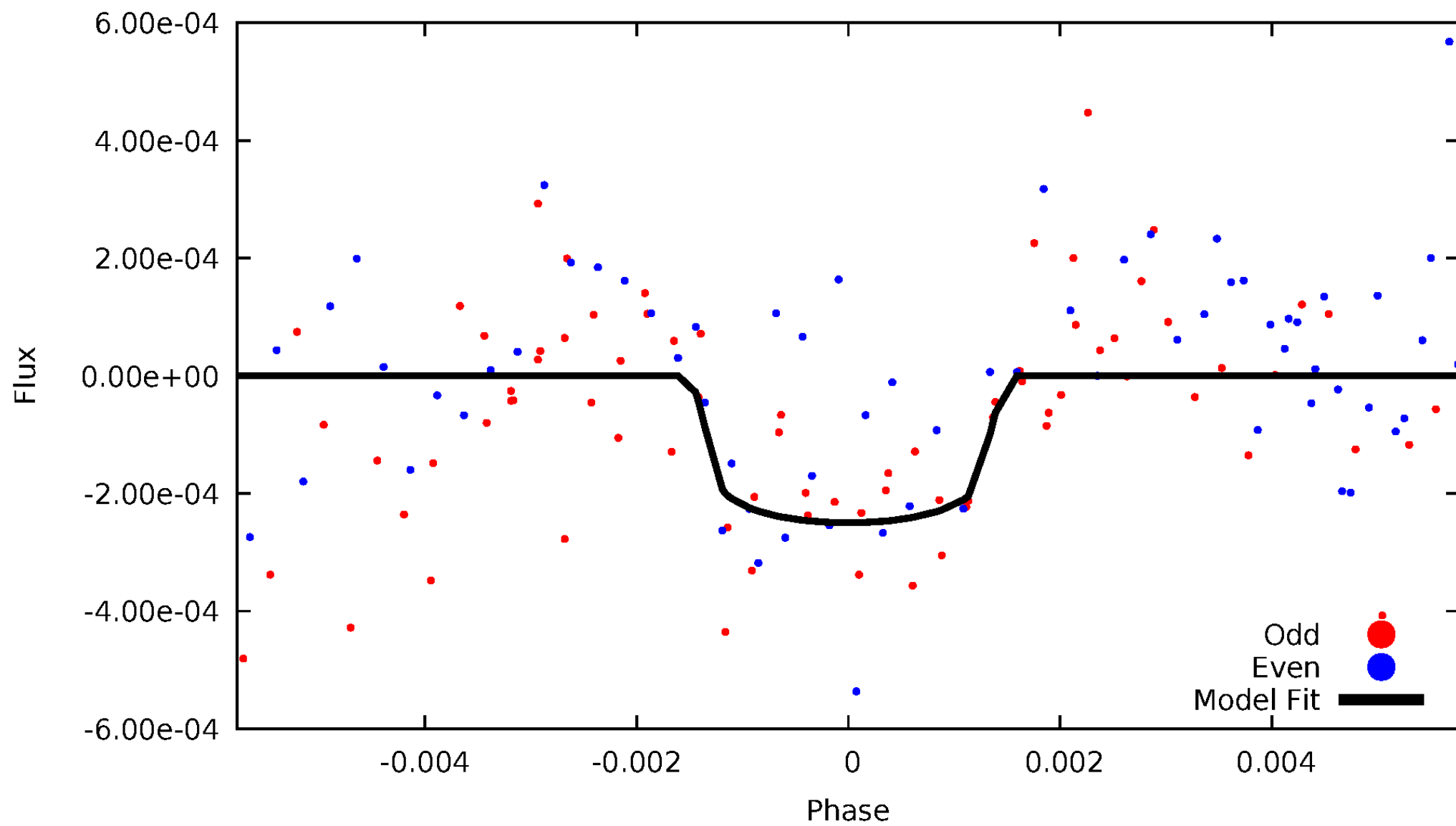


TCE 004484251-09



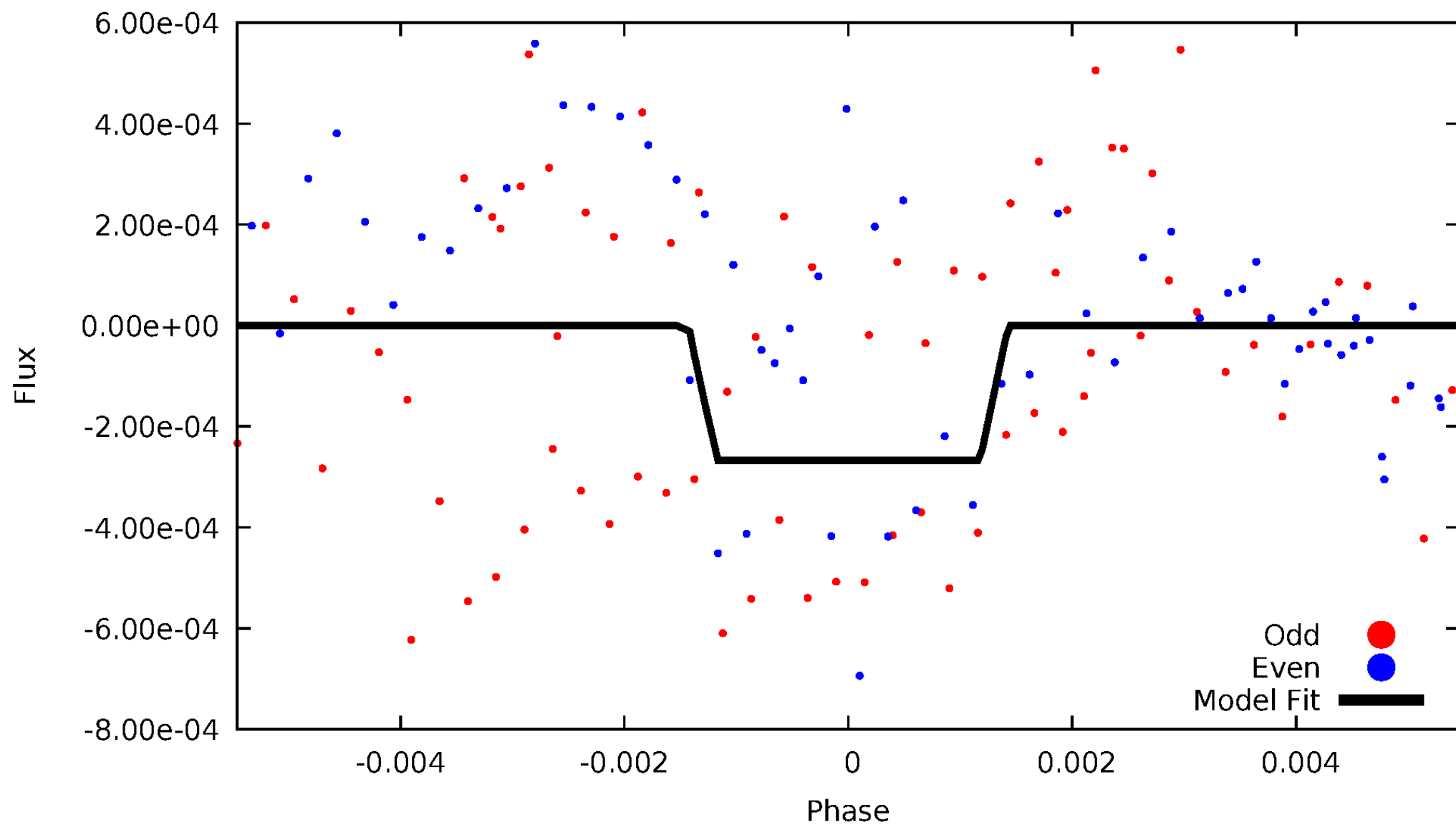
DV Odd/Even

TCE 004484251-09



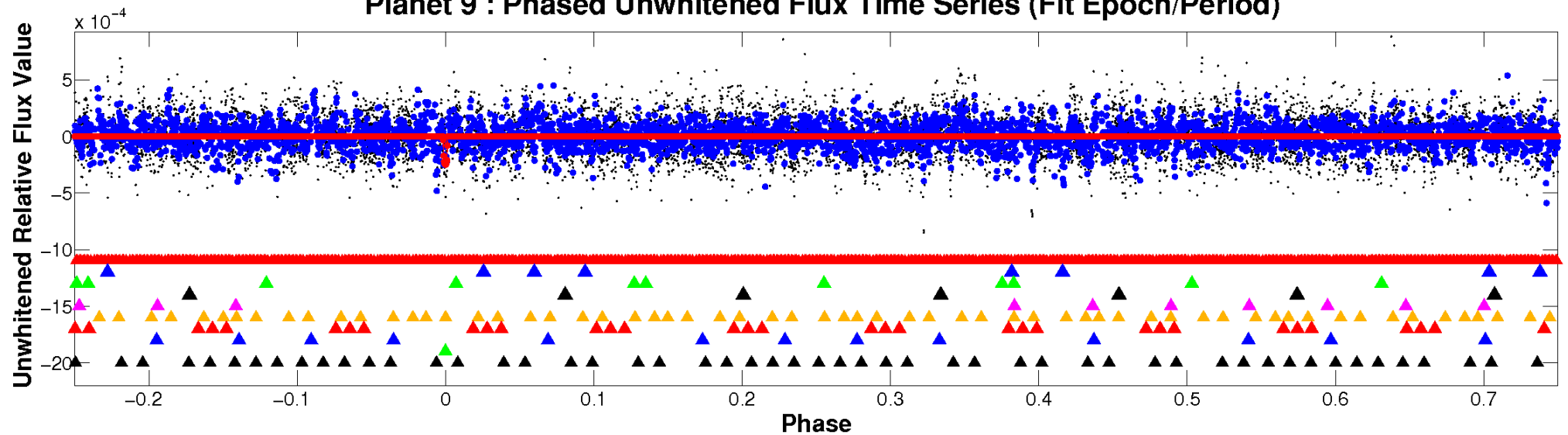
ALT Odd/Even

TCE 004484251-09

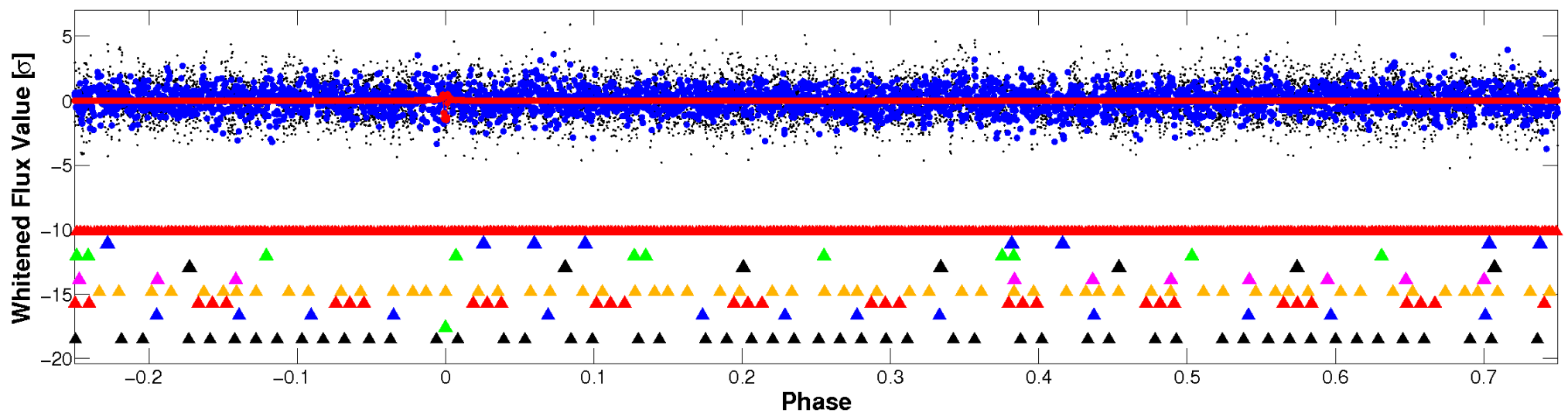


Non-Whitened Vs. Whitened Light Curve

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

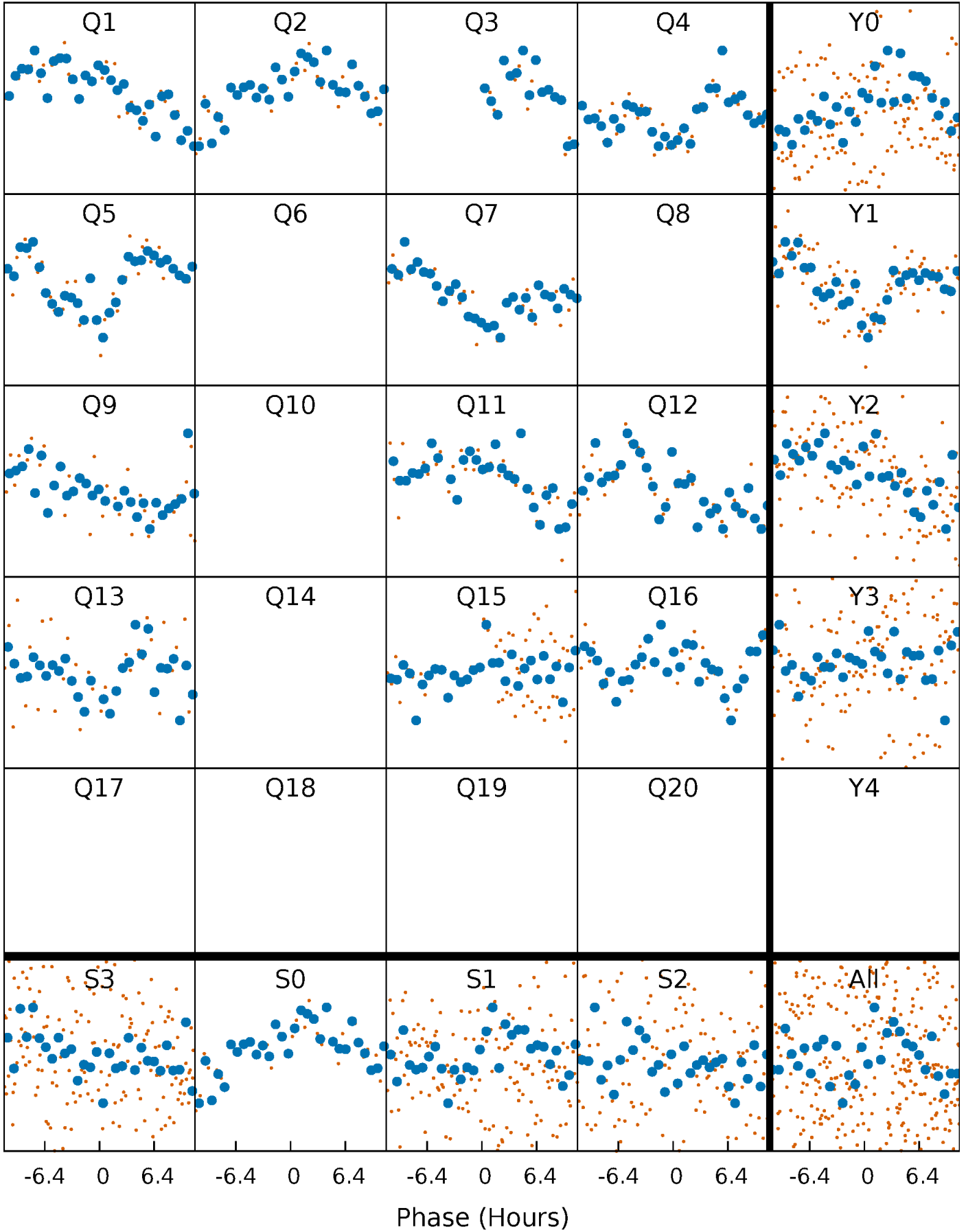


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



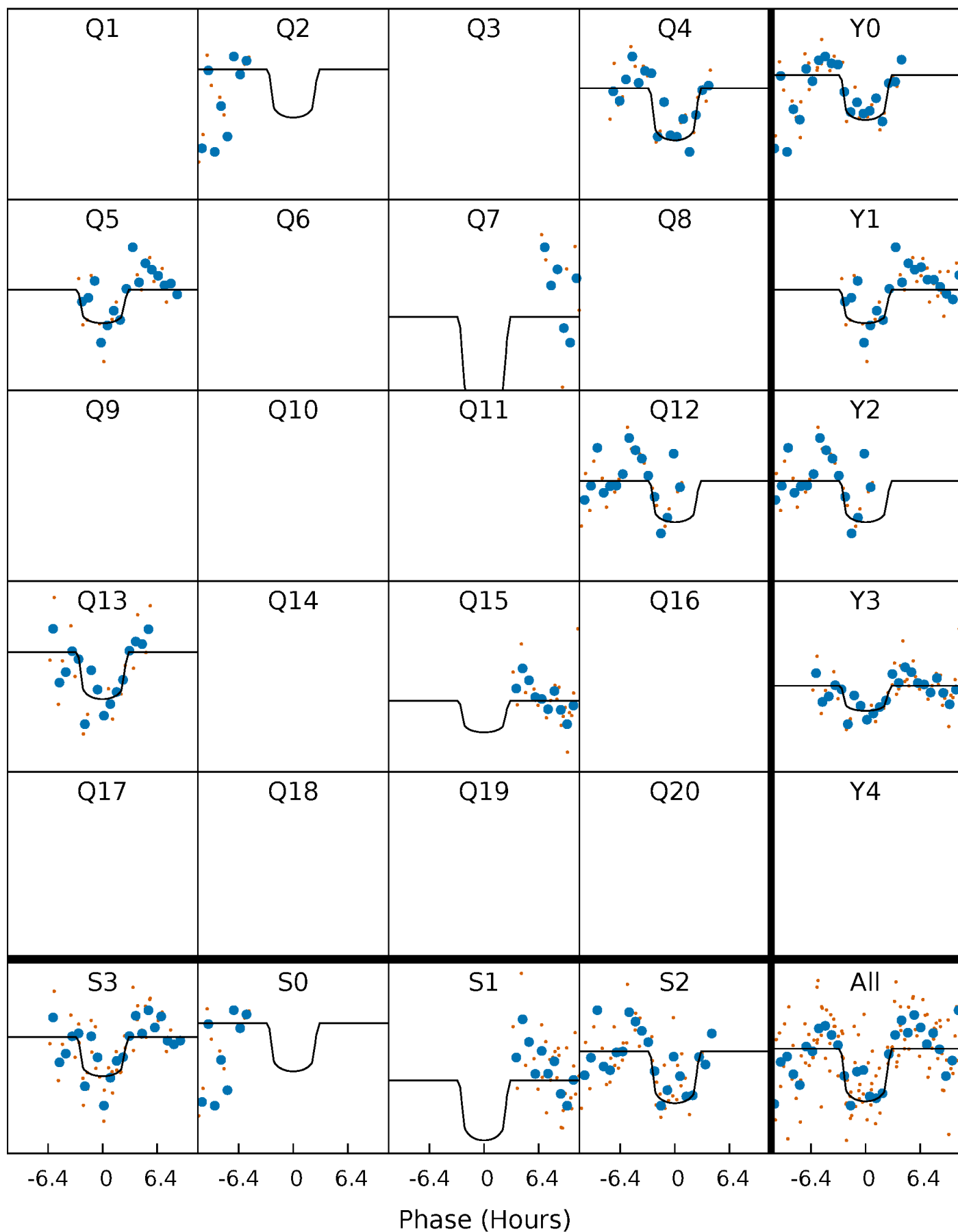
PDC Quarter-Phased Transit Curves

TCE 004484251-09 P= 80.760059 Days $T_0=162.027606$ (BKJD)



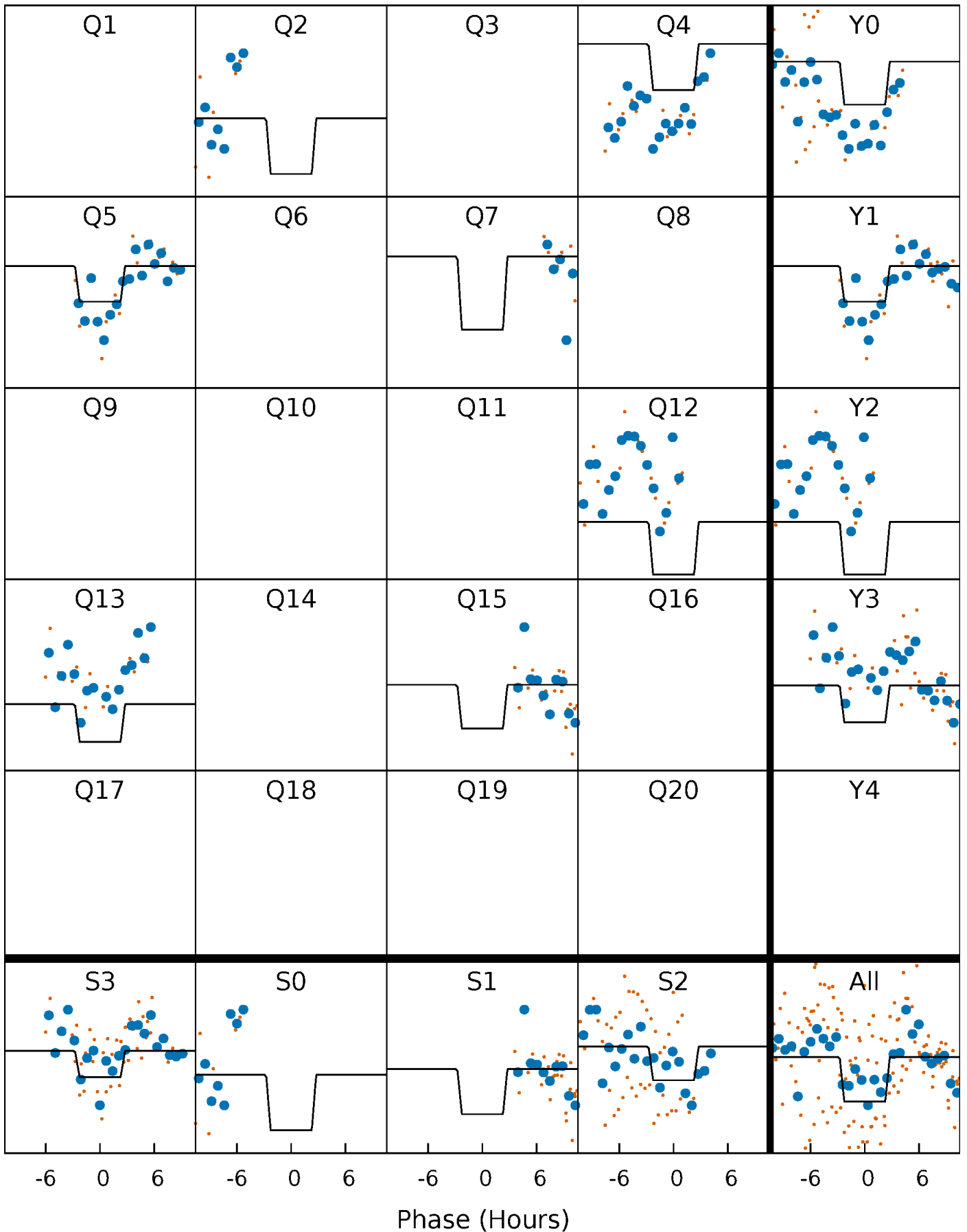
DV Quarter-Phased Transit Curves

TCE 004484251-09 $P = 80.760059$ Days $T_0 = 162.027606$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

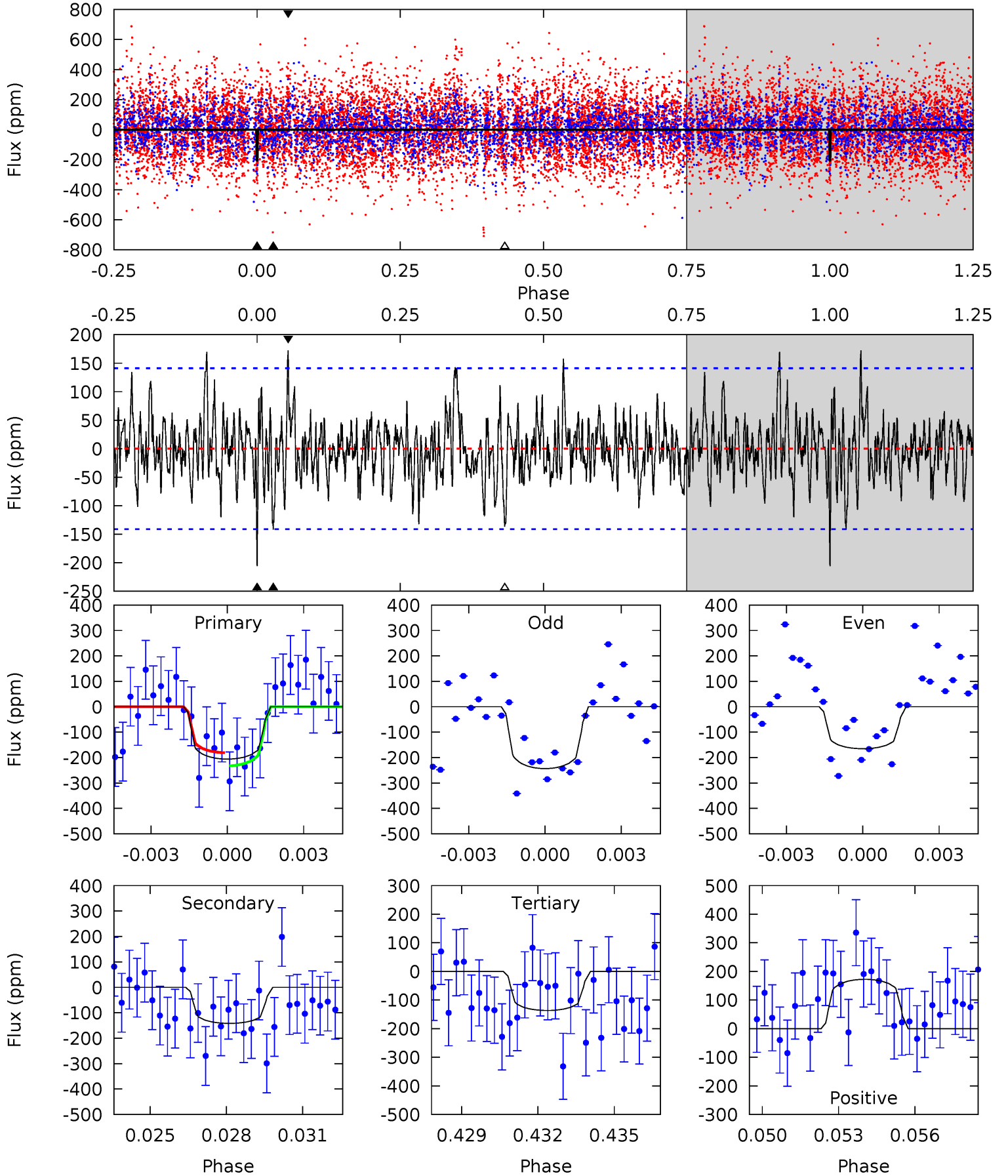
TCE 004484251-09 $P = 80.759565$ Days $T_0 = 162.027461$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-09, P = 80.760059 Days, E = 81.267547 Days

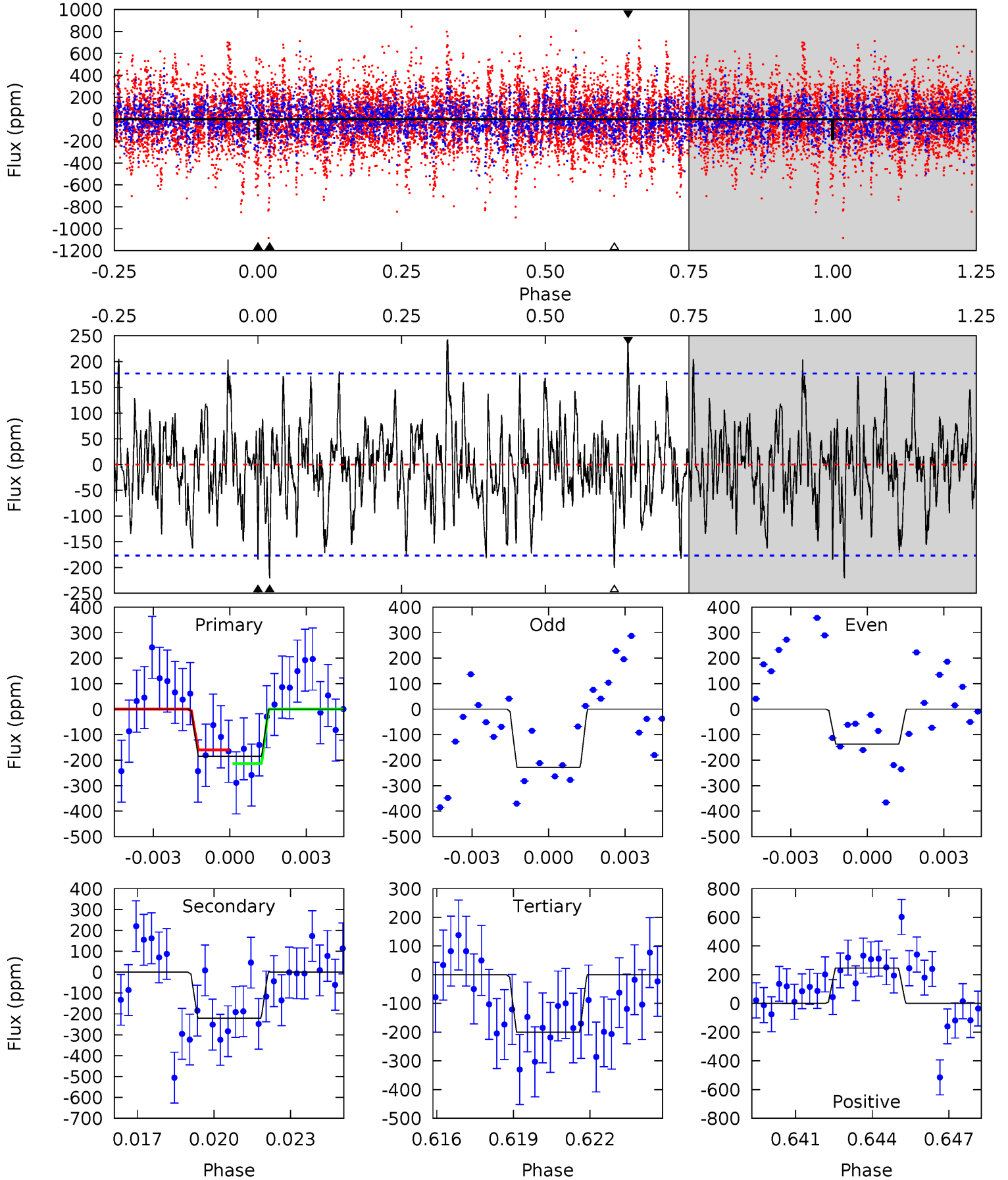
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.68	5.28	5.09	6.43	5.26	2.99	1.67	2.59	1.25	0.19	-1.15	1.46	0.99	0.46	0.95



Alt Model-Shift Uniqueness Test

004484251-09, P = 80.759565 Days, E = 81.267896 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.50	6.57	5.96	7.34	5.26	2.99	2.05	-0.45	-1.84	0.61	-0.78	1.35	1.06	0.53	0.79



Stellar Parameters For KIC 004484251

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-142 ± 27	$2.88^{+1.60}_{-1.62}$	834^{+41}_{-38}	5762^{+3433}_{-1071}	1537^{+6525}_{-942}
Alt.	-221 ± 34	$2.89^{+1.68}_{-1.49}$	836^{+39}_{-33}	6370^{+3548}_{-1192}	2343^{+7167}_{-1413}

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

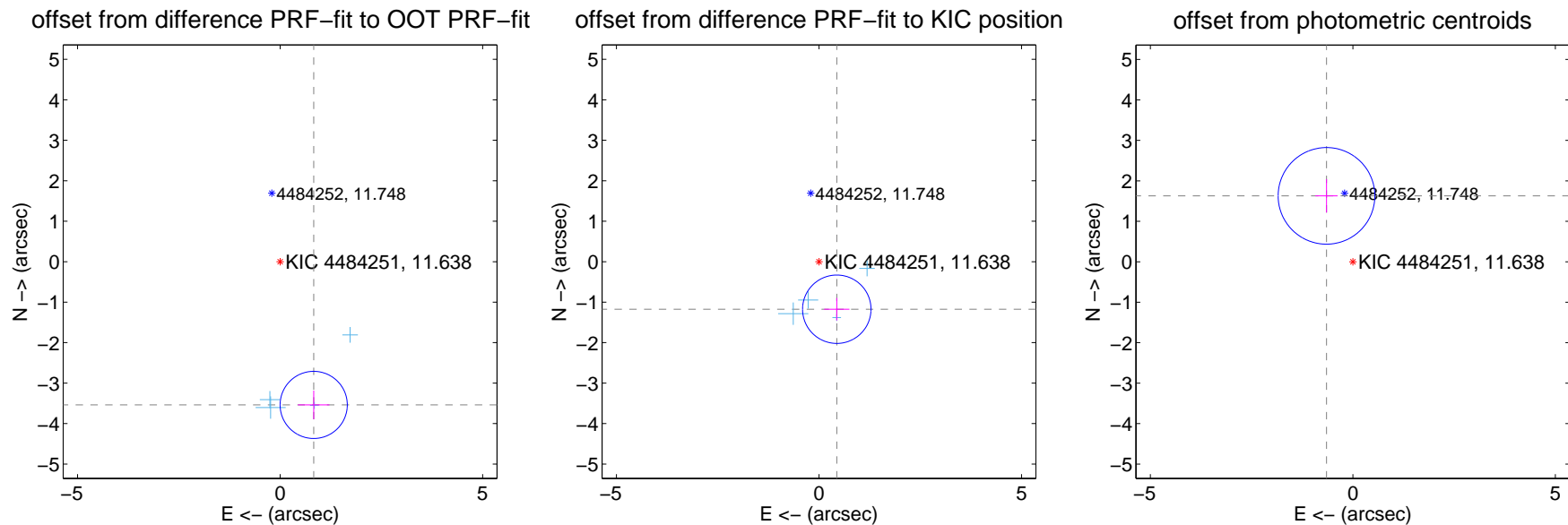
DV Centroid Data

Supplemental centroid analysis for 004484251-09. **Kepler magnitude: 11.64.** Transit SNR 8.56

There are 4 quarters with good PRF difference image offsets

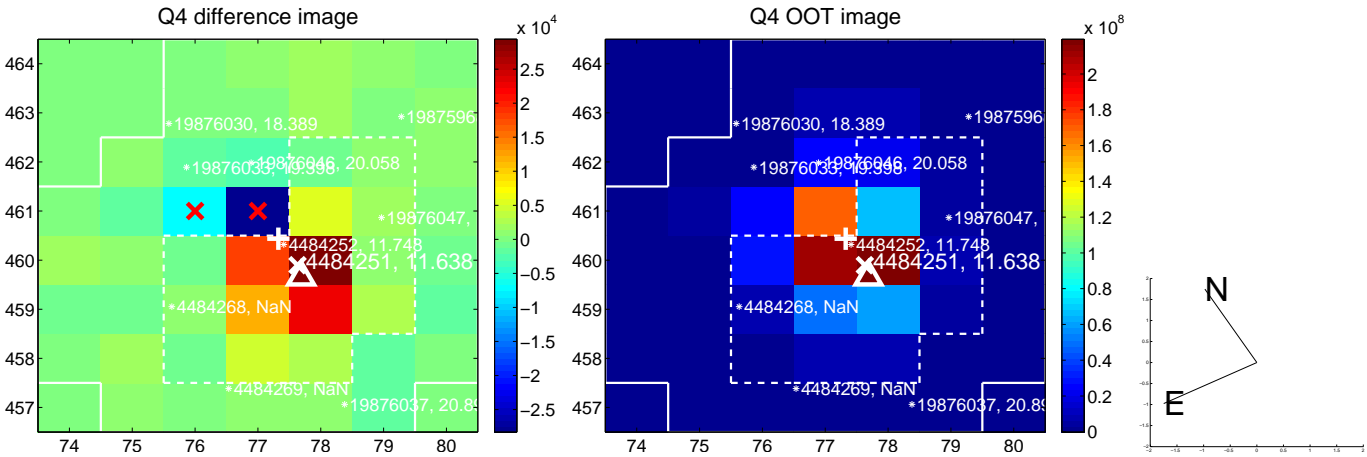
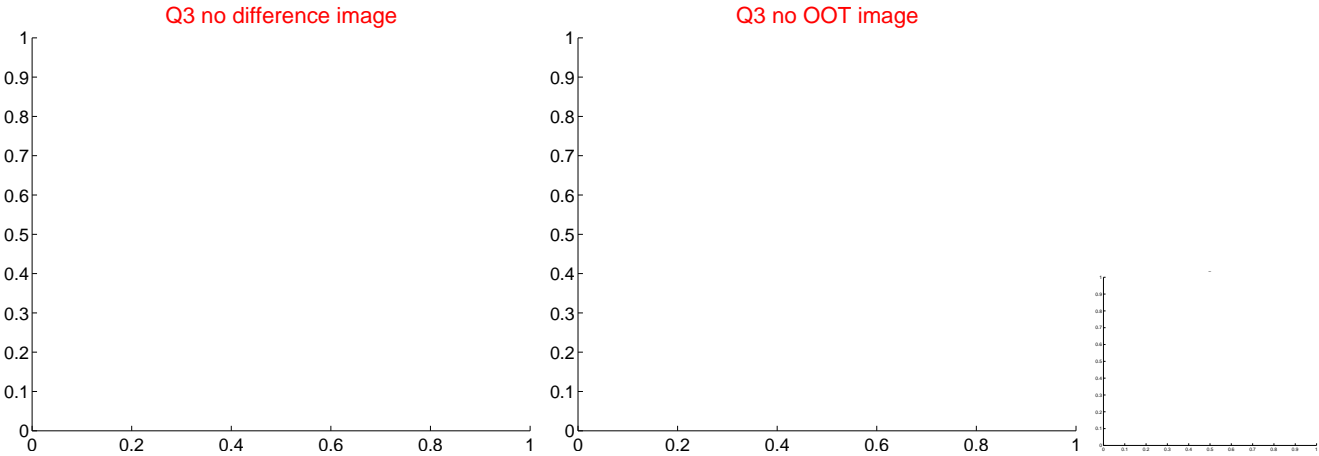
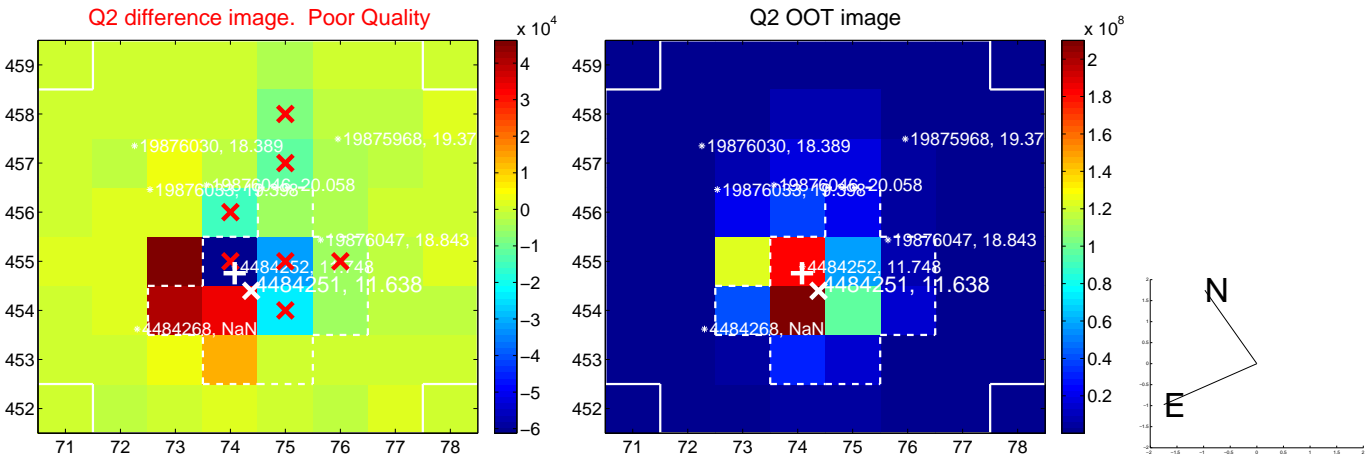
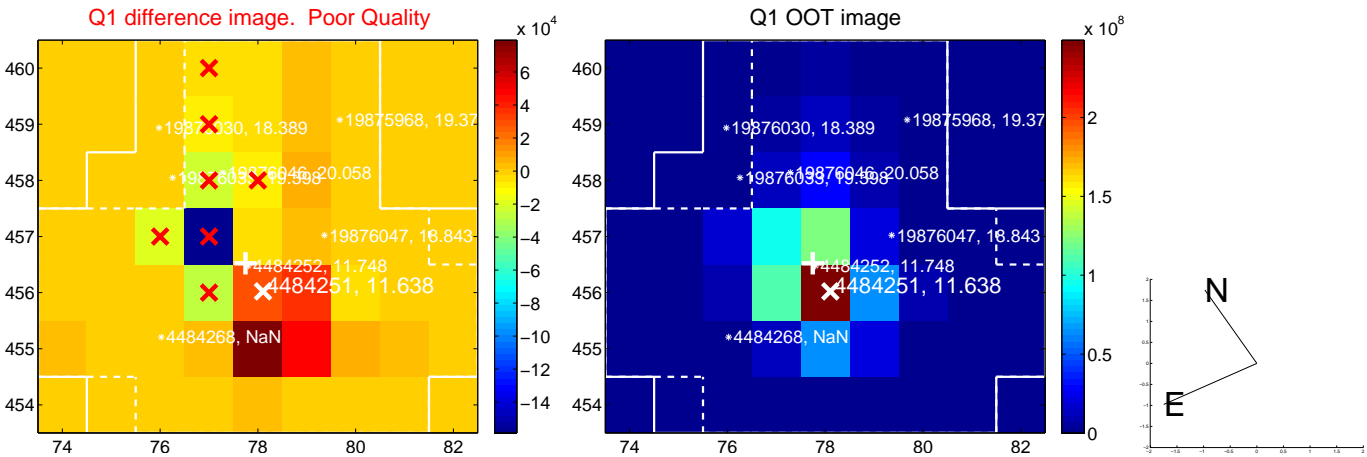
The OOT PRF centroid is offset from the target star catalog position by about 2.36 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.635 ± 0.277	13.14	-0.829 ± 0.389	-3.539 ± 0.354
PRF-fit source offset from KIC position	1.254 ± 0.282	4.45	-0.439 ± 0.312	-1.175 ± 0.277
photometric centroid source offset	1.75 ± 0.40	4.41	0.65 ± 0.28	1.63 ± 0.41

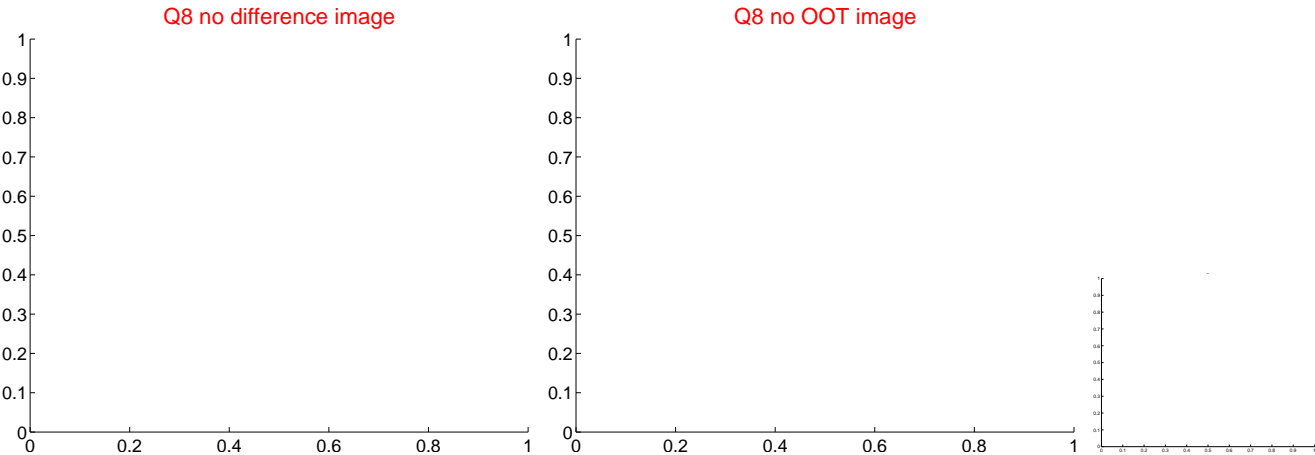
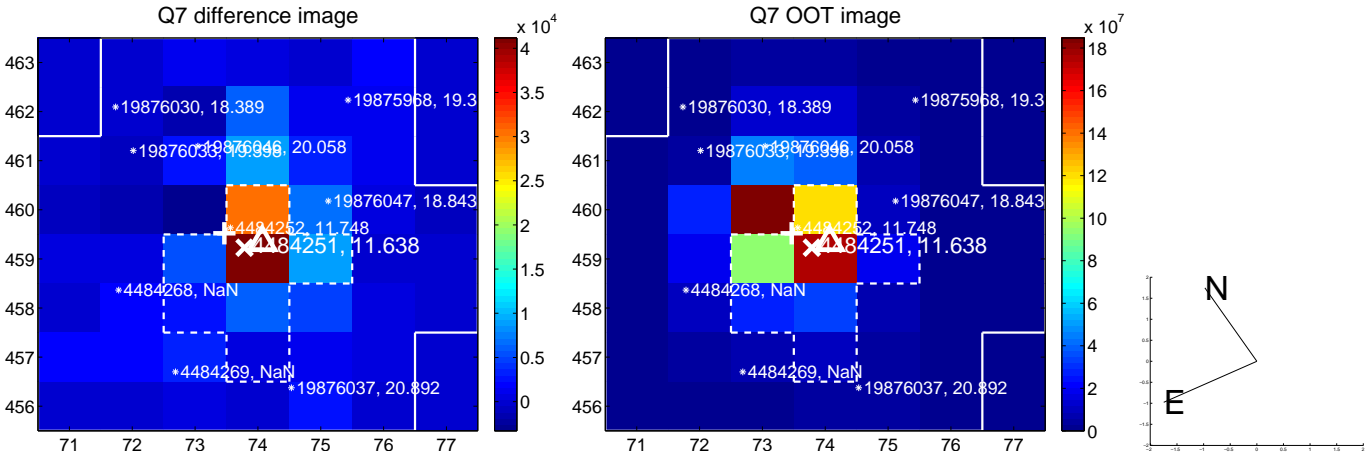
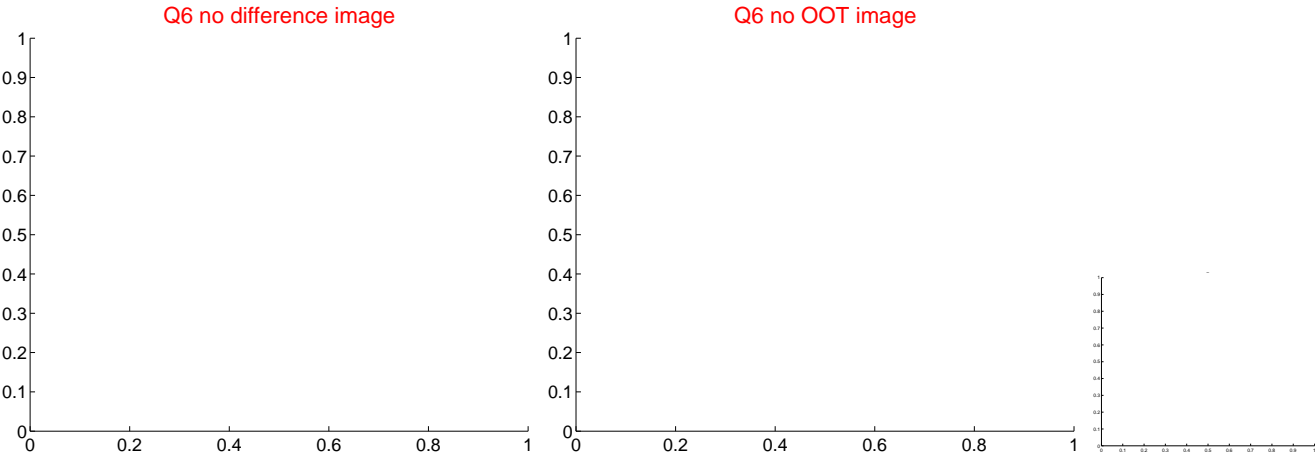
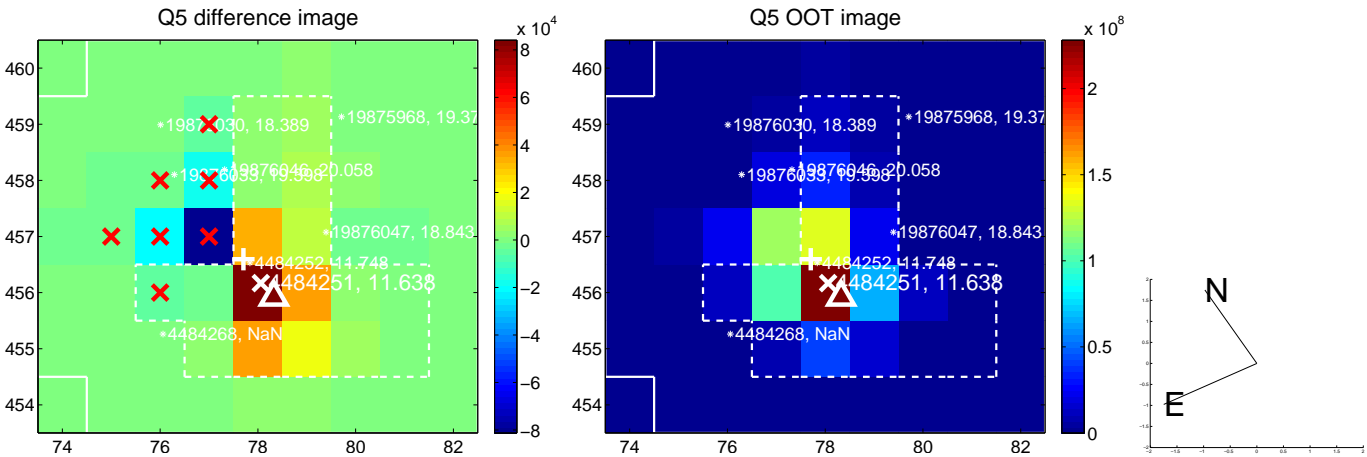


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

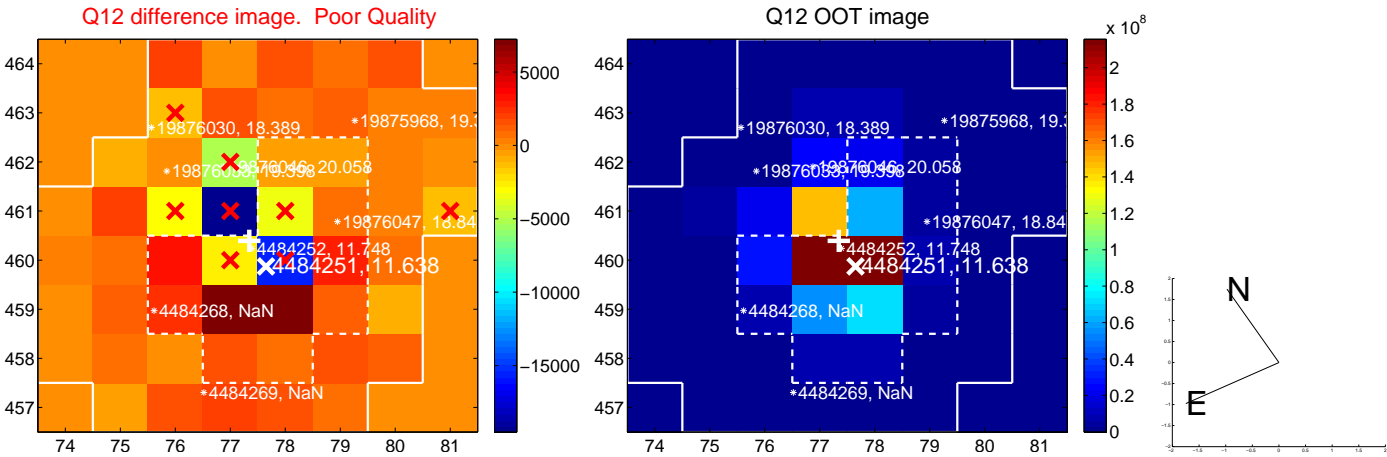
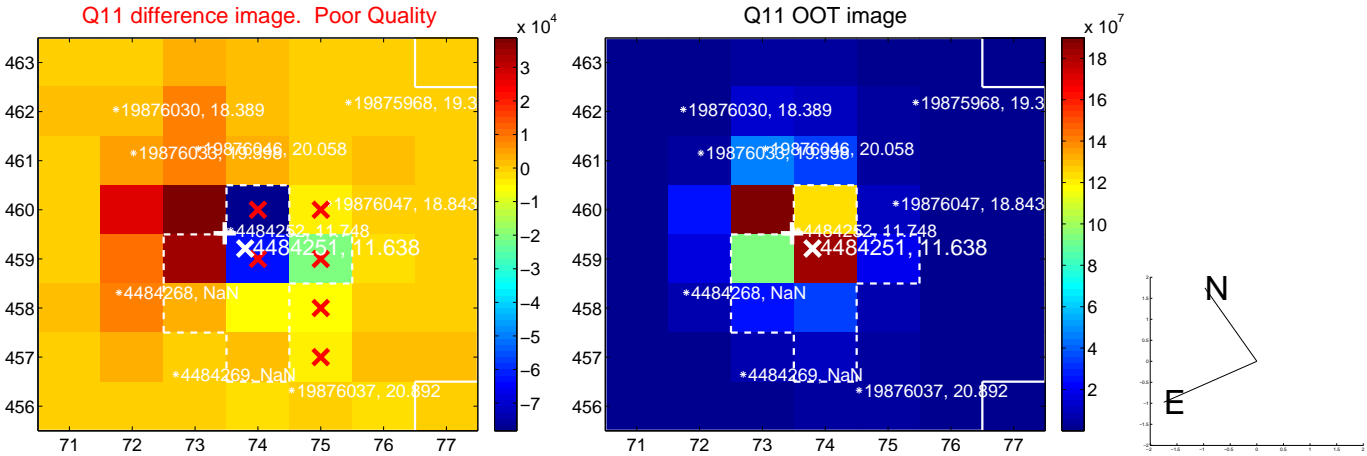
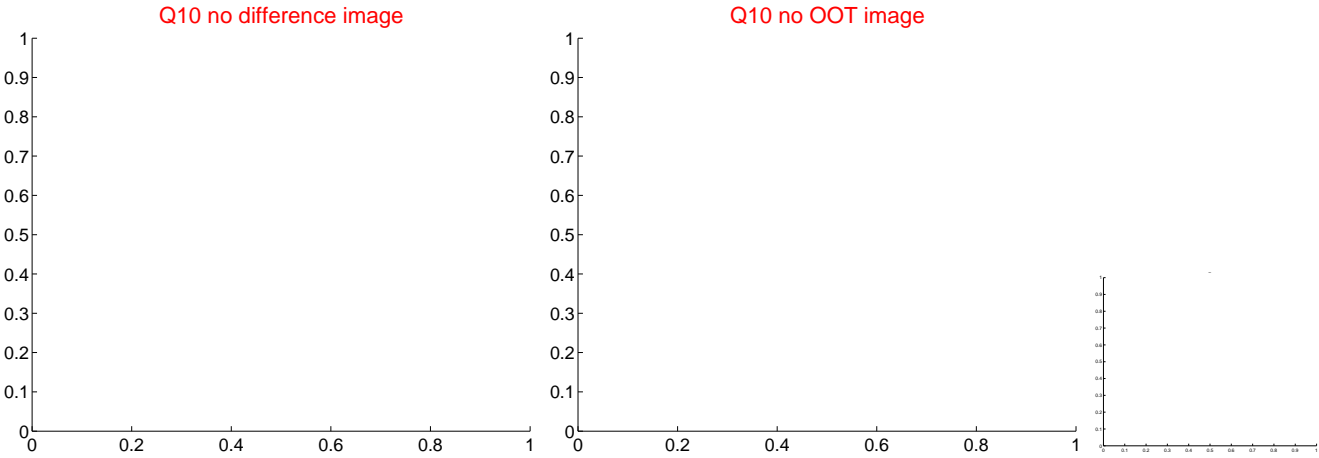
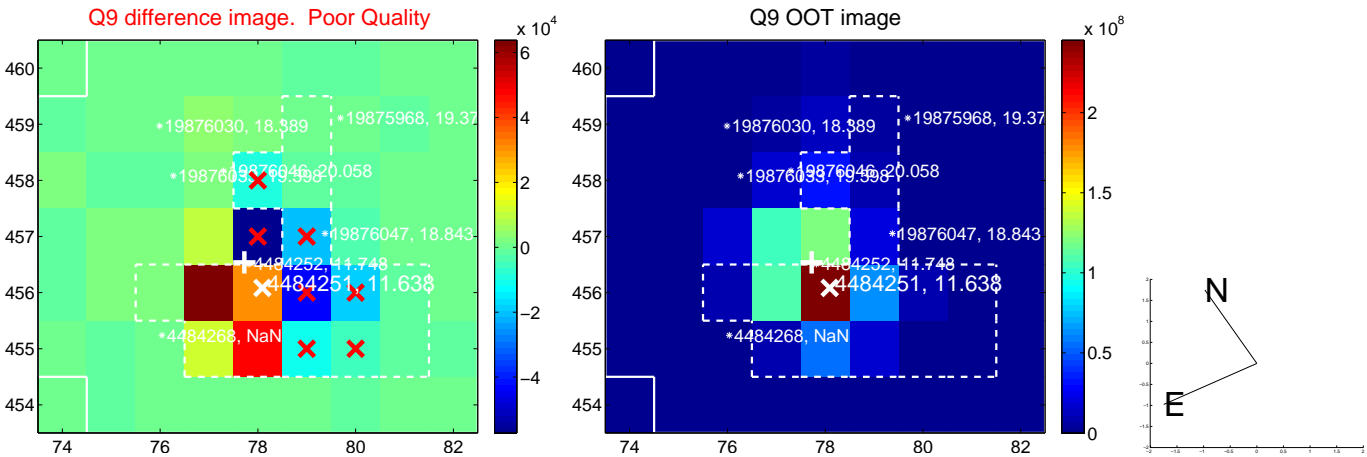
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



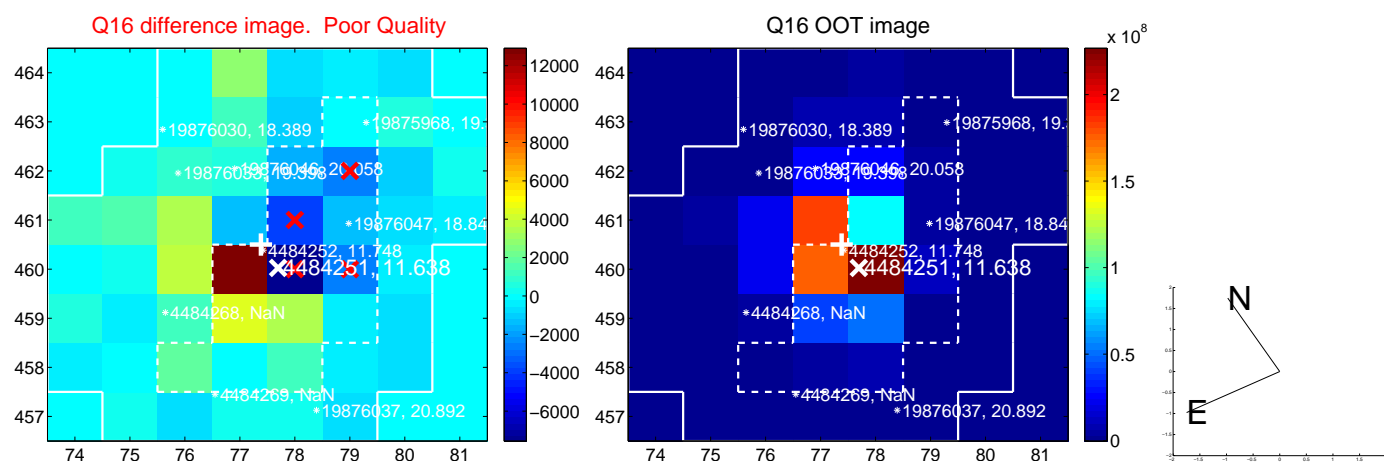
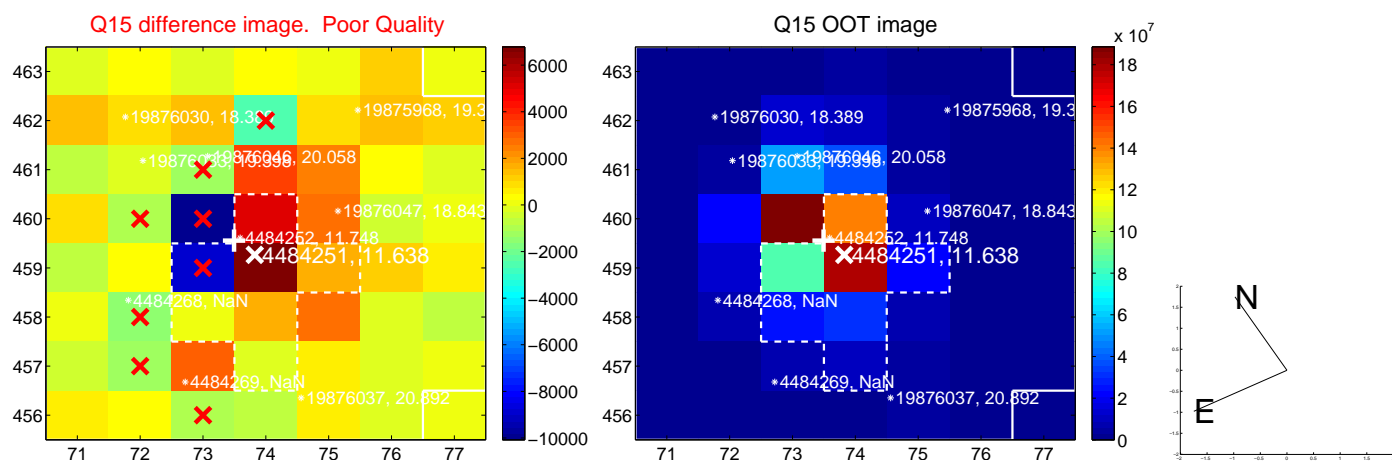
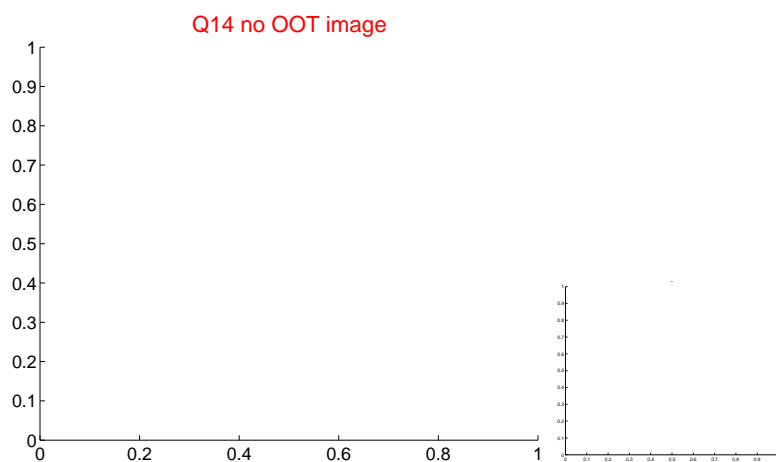
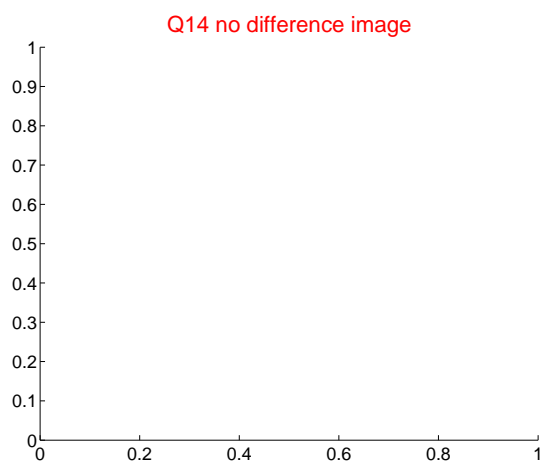
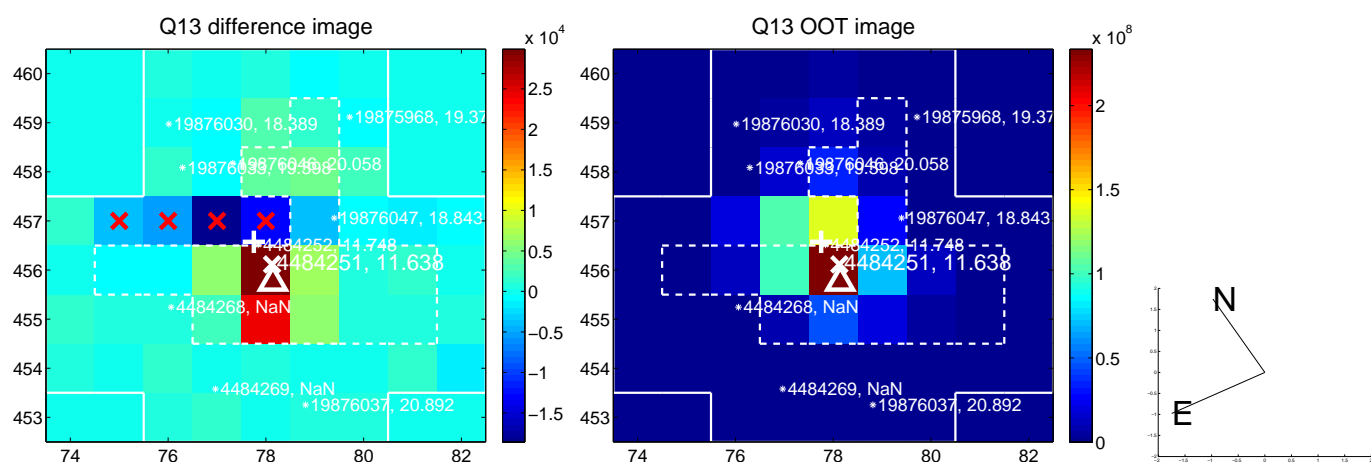
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



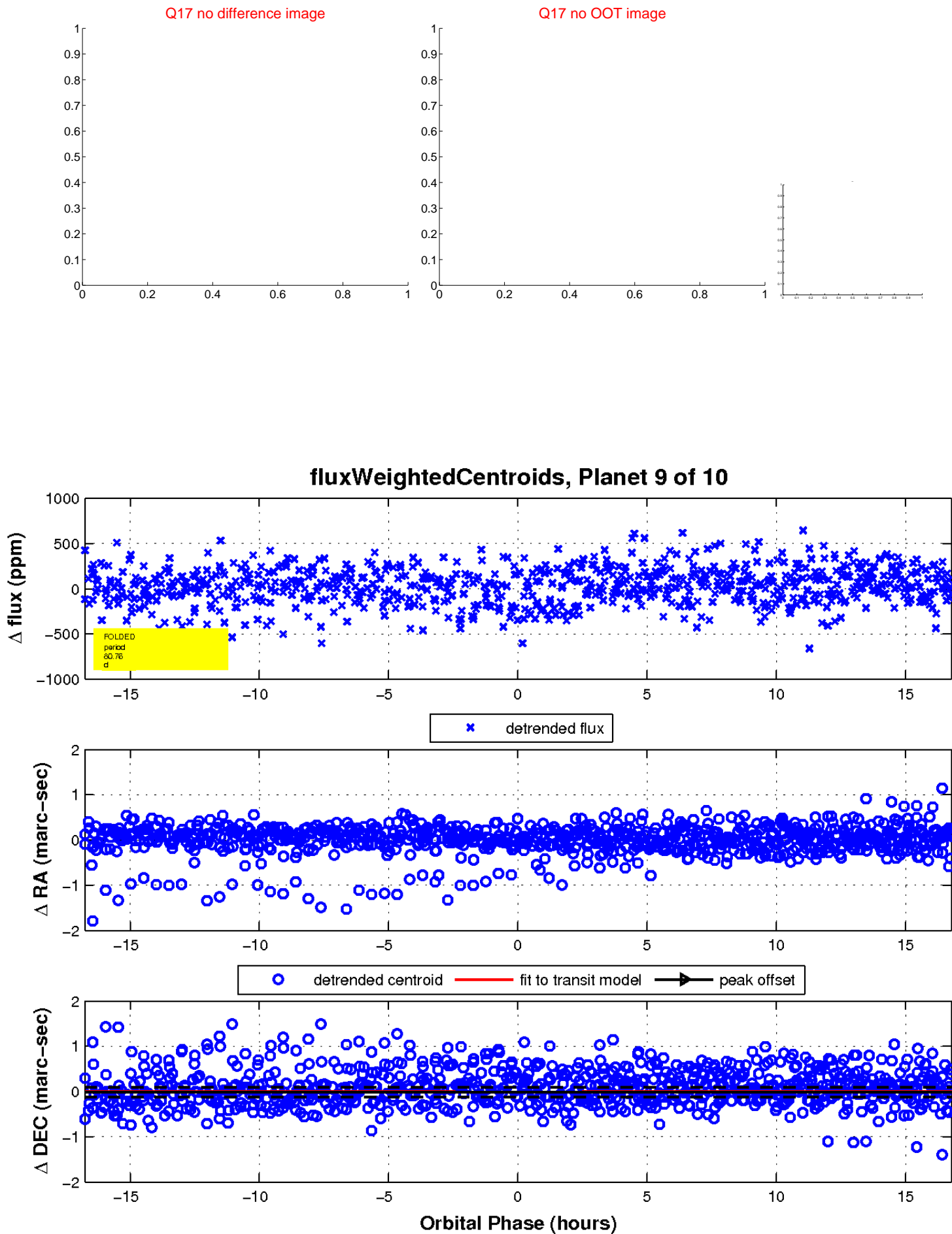
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

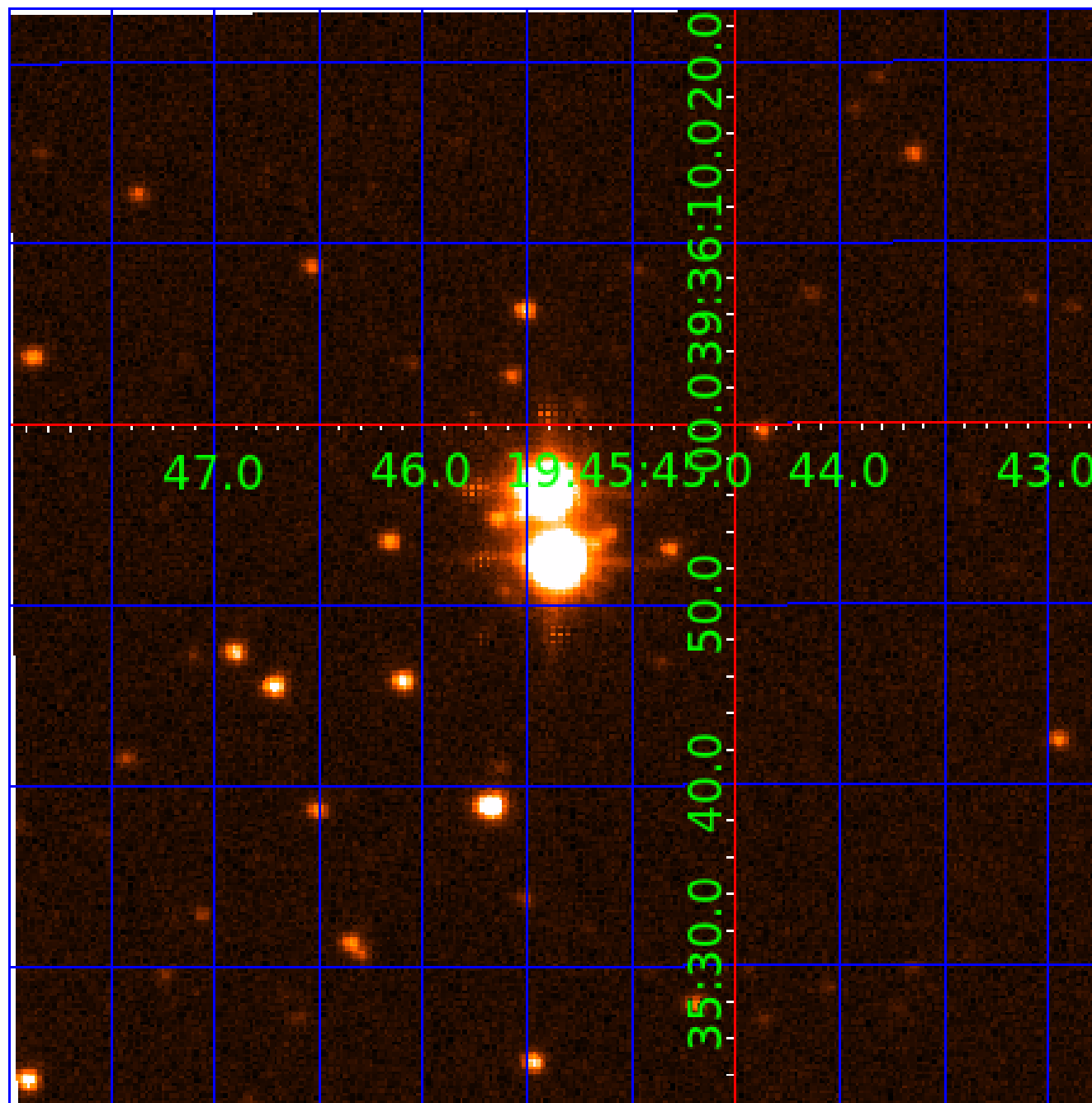


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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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})
004484251-01	OBS	No	1.927596	133.409729	62.5	11.096	10.7	13.4	1.61	6796	2.44	4419.88
004484251-02	OBS	No	187.518566	143.631143	246.3	20.390	11.4	6.7	1.61	6796	2.70	9.88
004484251-03	OBS	No	131.156980	172.932168	354.5	3.277	9.8	9.3	1.61	6796	3.72	15.91
004484251-04	OBS	No	212.126737	208.397966	52.3	128.241	9.8	1.4	1.61	6796	1.22	8.38
004484251-05	OBS	No	157.257304	150.611824	337.5	20.471	13.4	7.2	1.61	6796	3.14	12.49
004484251-06	OBS	No	23.480828	137.485920	112.3	23.308	8.4	6.3	1.61	6796	1.84	157.69
004484251-07	OBS	No	44.120496	170.252040	218.2	3.171	7.9	8.6	1.61	6796	2.76	68.01
004484251-08	OBS	No	110.484116	231.548195	78.2	1.464	7.6	1.8	1.61	6796	1.84	20.00
004484251-09	OBS	No	80.760059	162.027606	249.9	5.597	8.0	8.6	1.61	6796	2.89	30.37
004484251-10	OBS	No	28.140832	150.550074	244.2	4.077	7.9	8.8	1.61	6796	4.19	123.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004484251-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
004484251-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004484251-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004484251-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
004484251-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
004484251-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
004484251-09	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
004484251-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

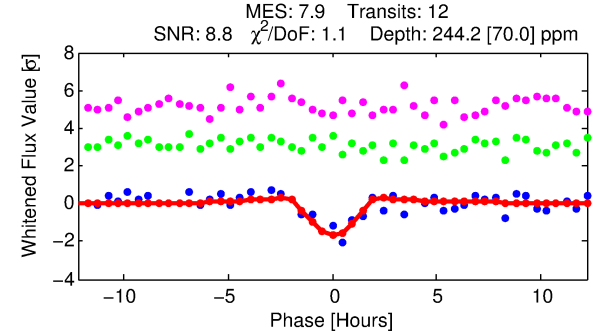
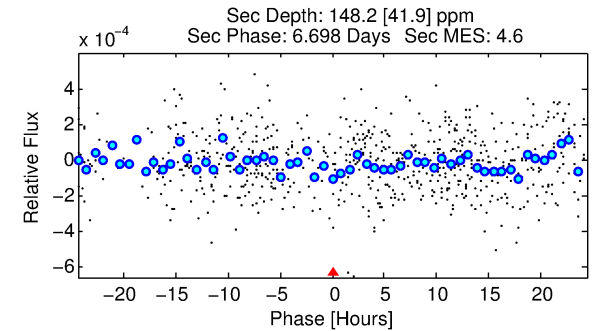
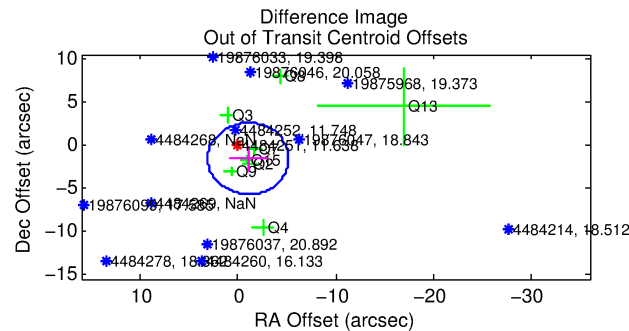
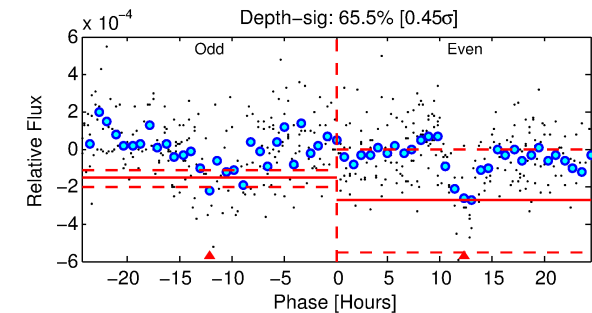
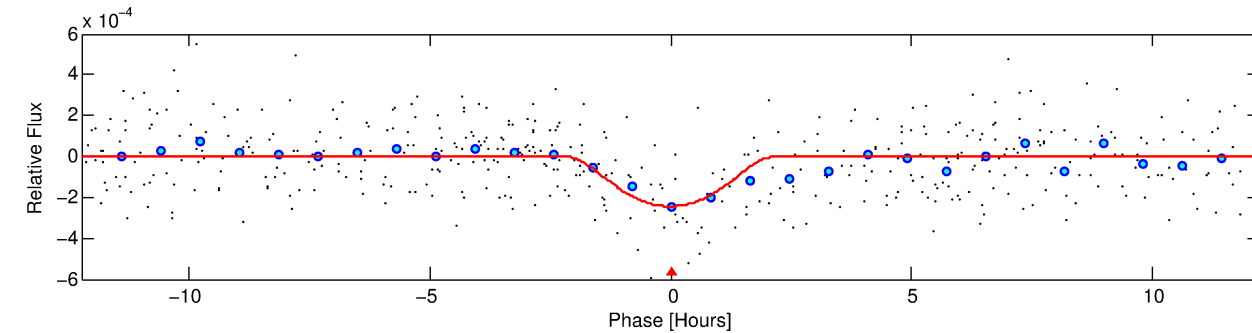
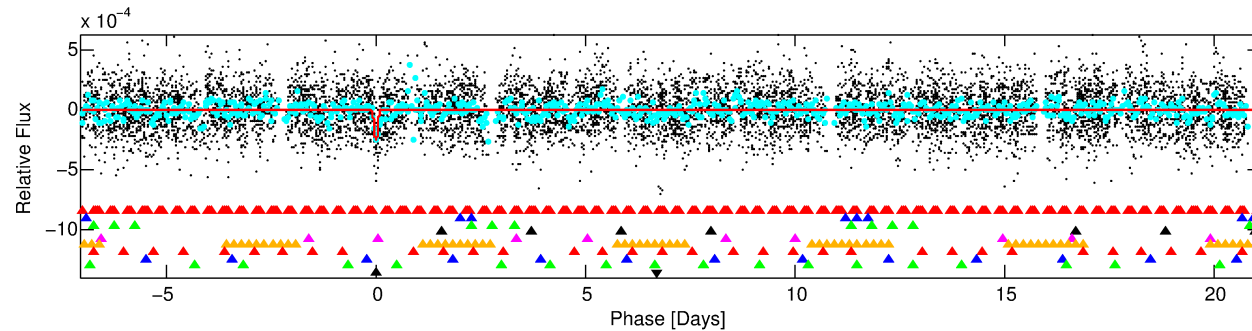
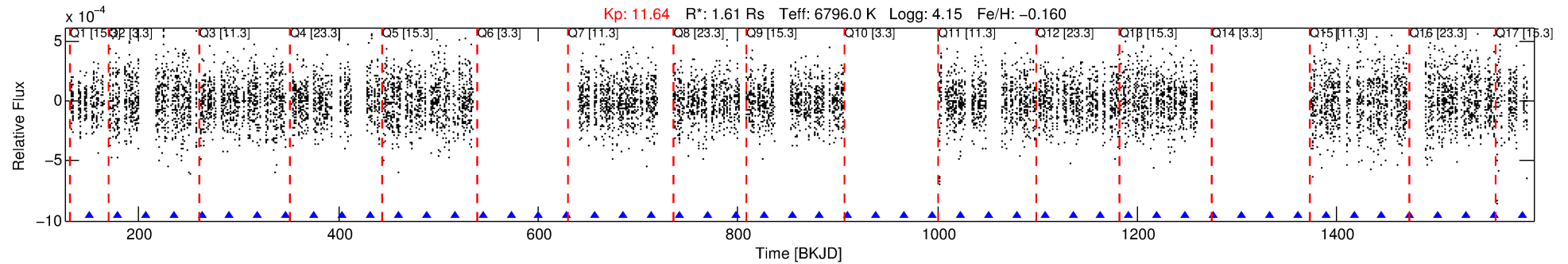
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004484251-10

No Significant Match Found

DV One-Page Summary

KIC: 4484251 Candidate: 10 of 10 Period: 28.141 d



DV Fit Results:

Period = 28.14083 [0.00040] d
Epoch = 150.5501 [0.0105] BKJD
Rp/R* = 0.0239 [0.0523]
a/R* = 13.12 [10.02]
b = 0.99 [0.09]
Seff = 123.87 [27.22]
Teq = 851 [47] K
Rp = 4.19 [9.21] Re
a = 0.1997 [0.0297] AU
Ag = 185.49 [815.72] [0.23 σ]
Teff = 4854 [5331] K [0.75 σ]

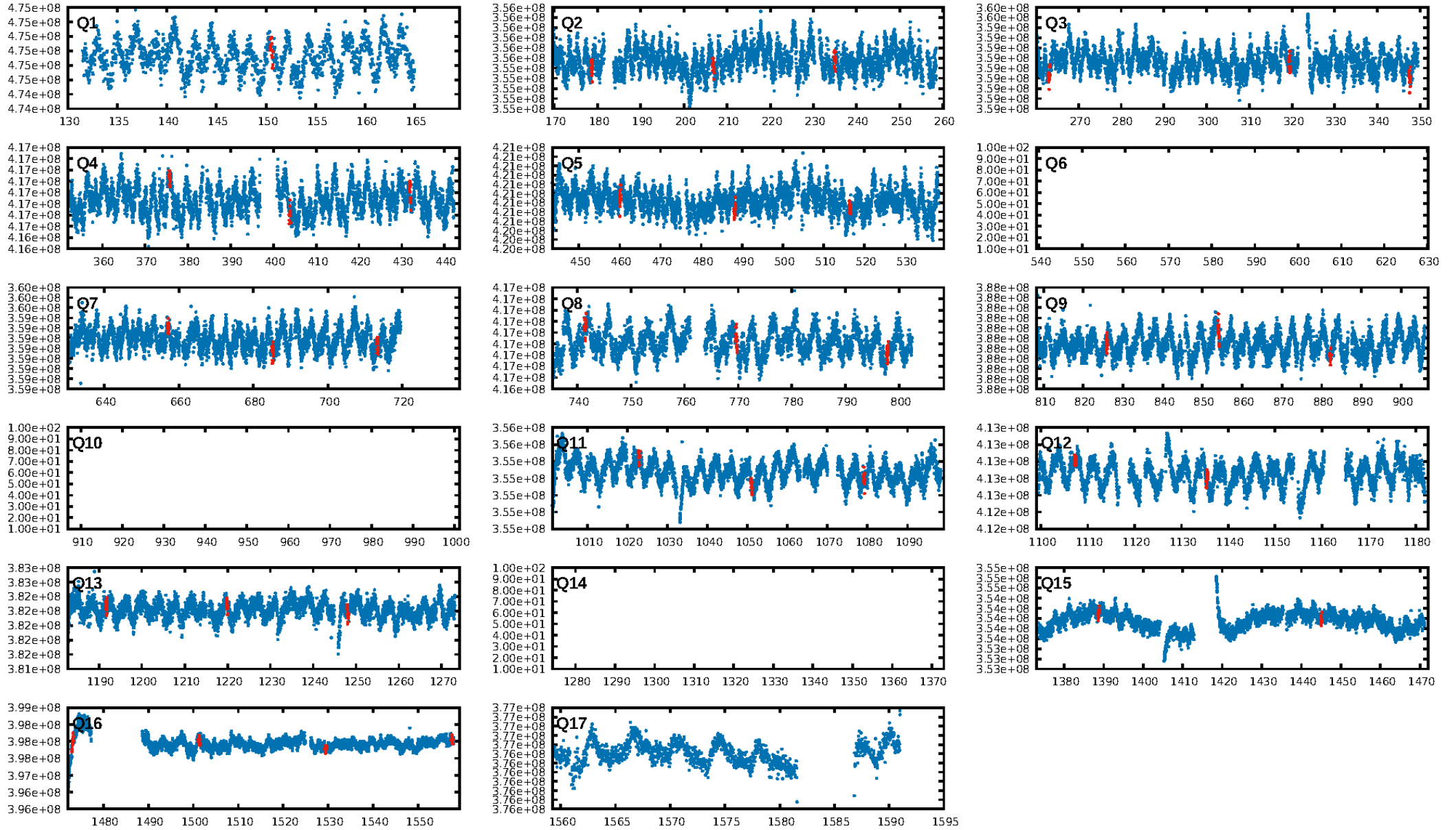
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.73 σ]
LongPeriod-sig: 100.0% [74.25 σ]
ModelChiSquare2-sig: 89.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 1.472
Centroid-sig: N/A
Centroid-so: 1.358 arcsec [4.49 σ]
OotOffset-rm: 1.883 arcsec [1.37 σ]
KicOffset-rm: 0.583 arcsec [0.27 σ]
OotOffset-st: 1/3/2/2 [8]
KicOffset-st: 1/3/2/2 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 0.77 [10/13]

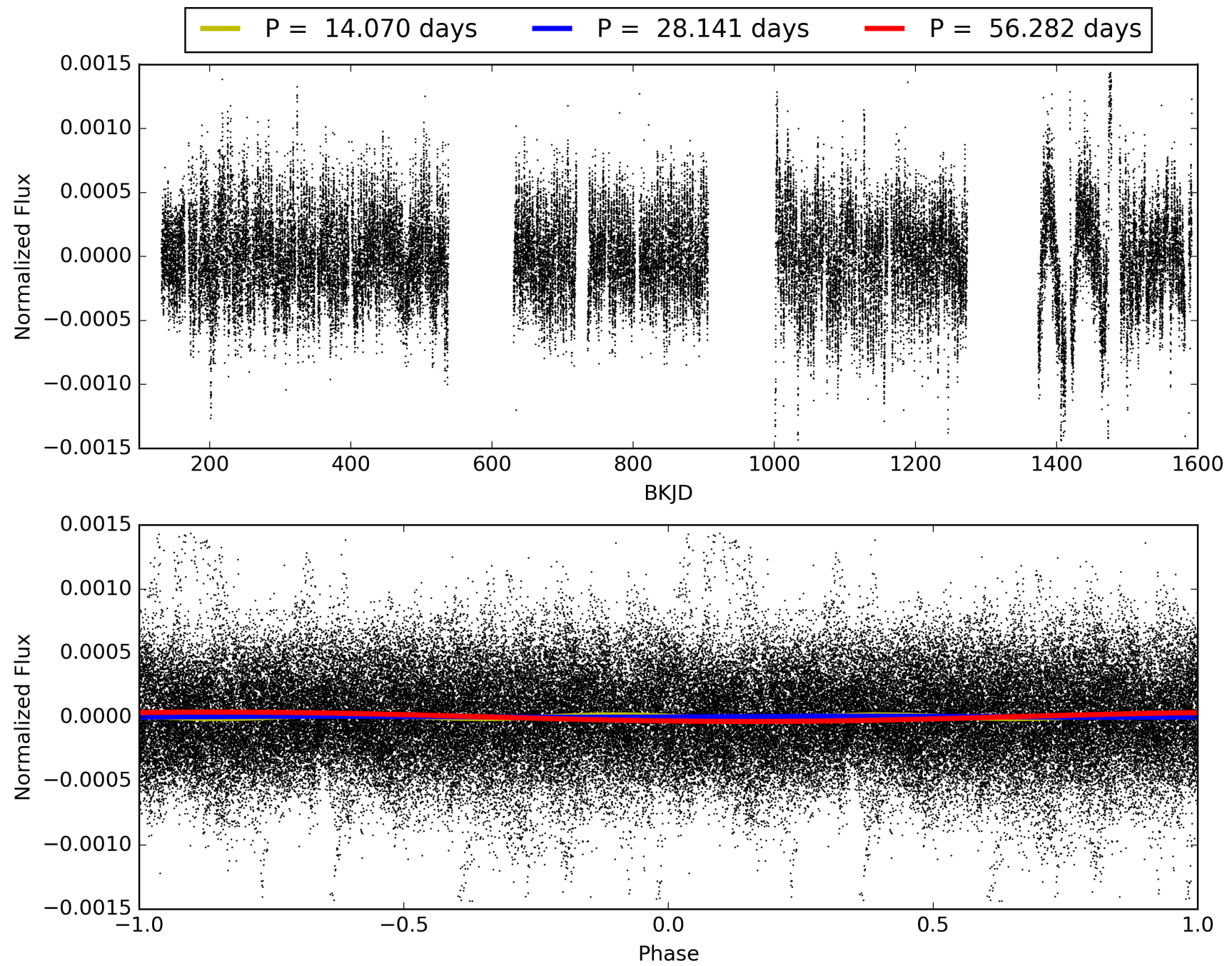
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:13:23 Z

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

TCE 004484251-10, PDC Light Curves

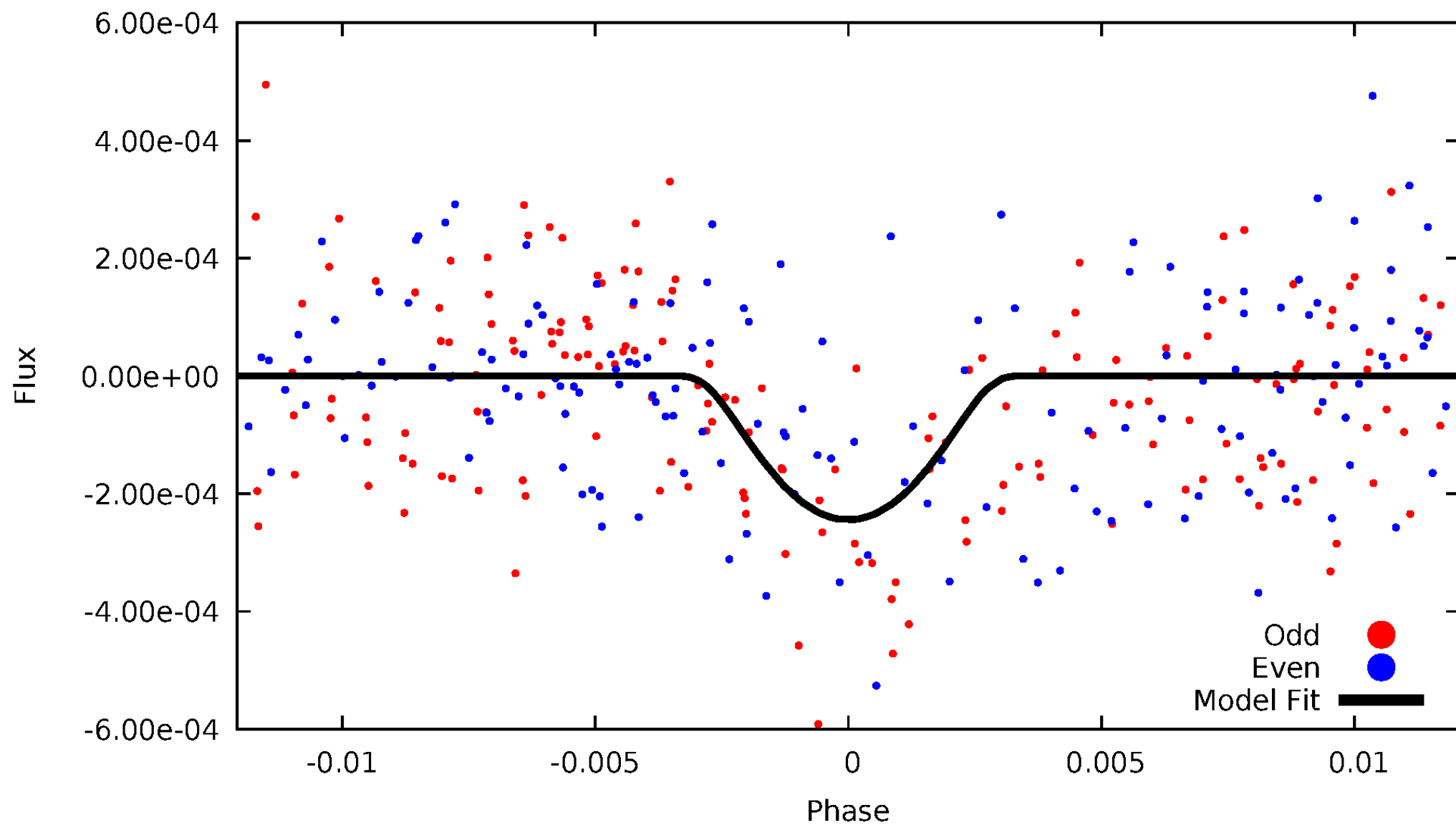


TCE 004484251-10



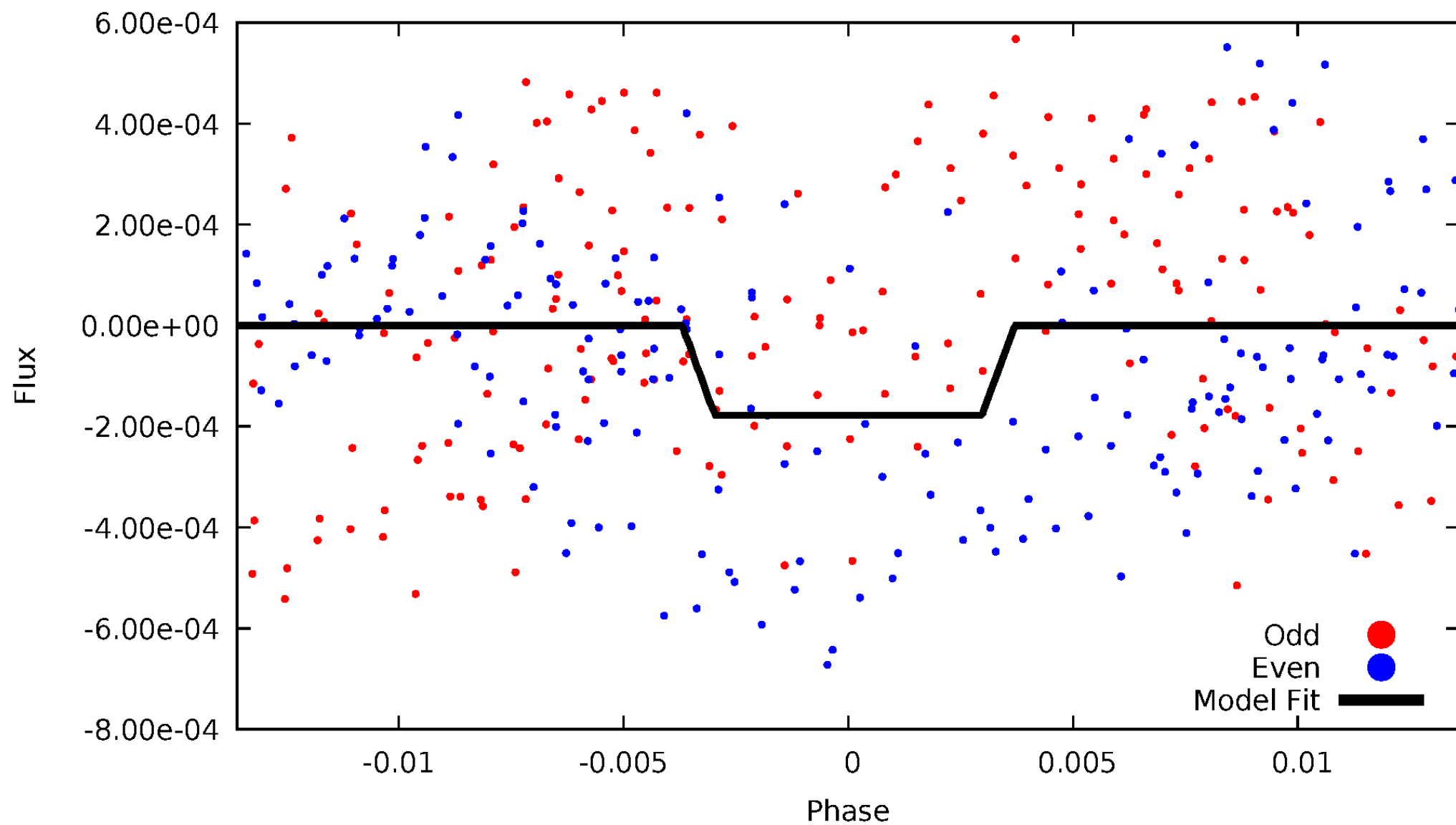
DV Odd/Even

TCE 004484251-10



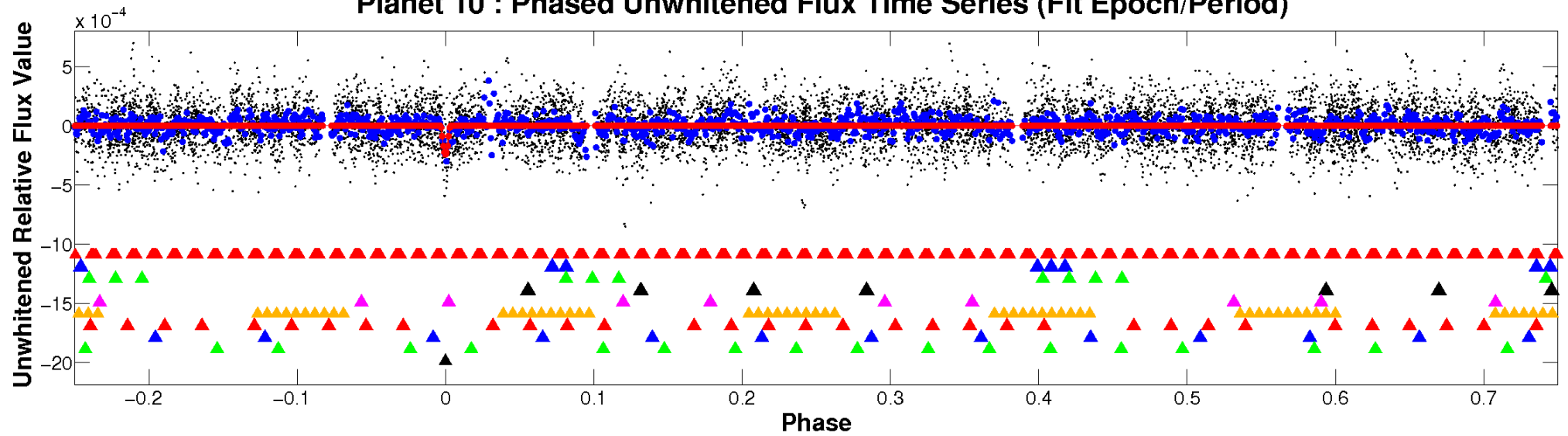
ALT Odd/Even

TCE 004484251-10

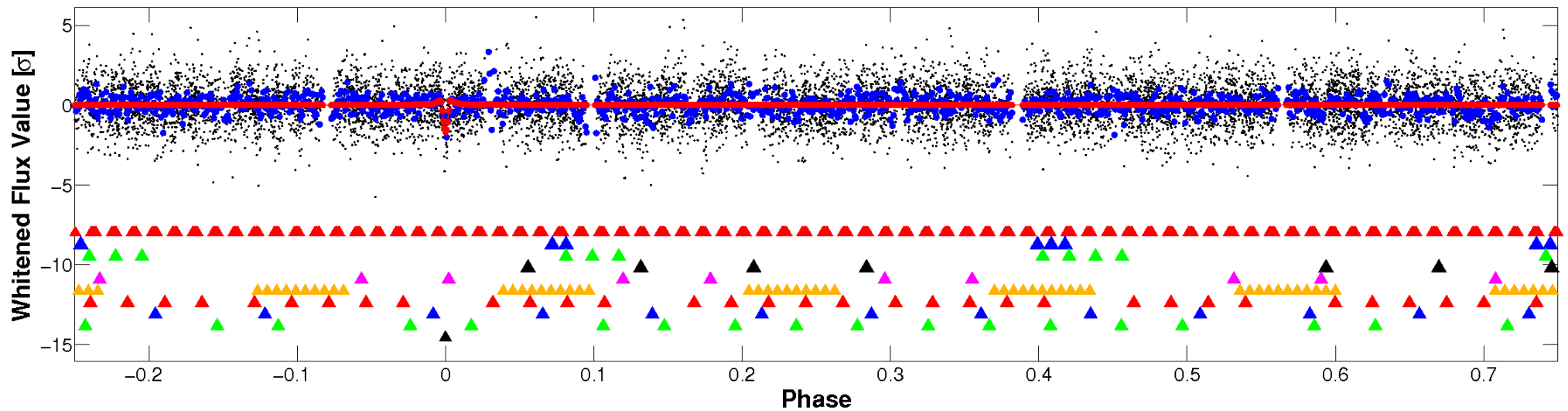


Non-Whitened Vs. Whitened Light Curve

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

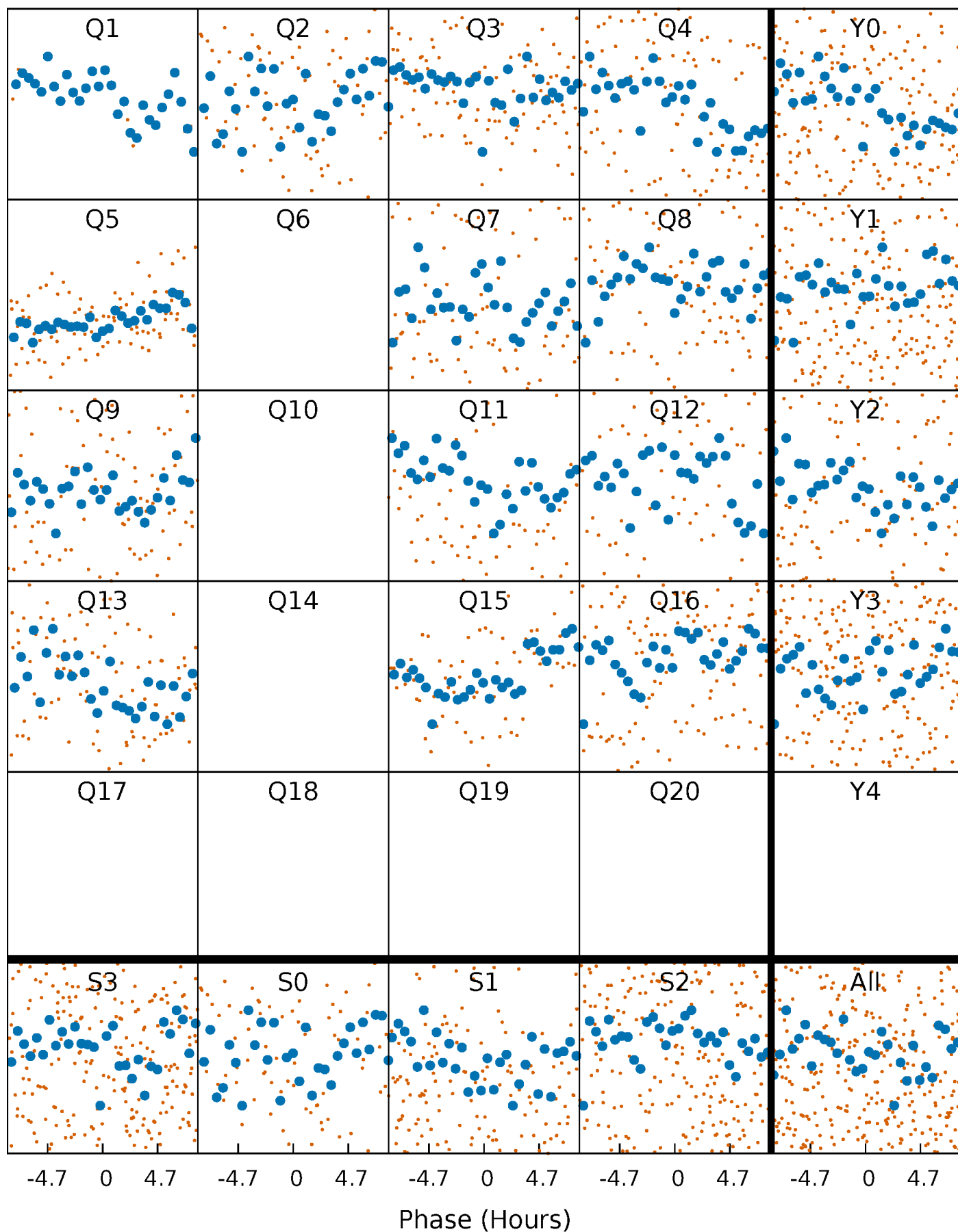


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



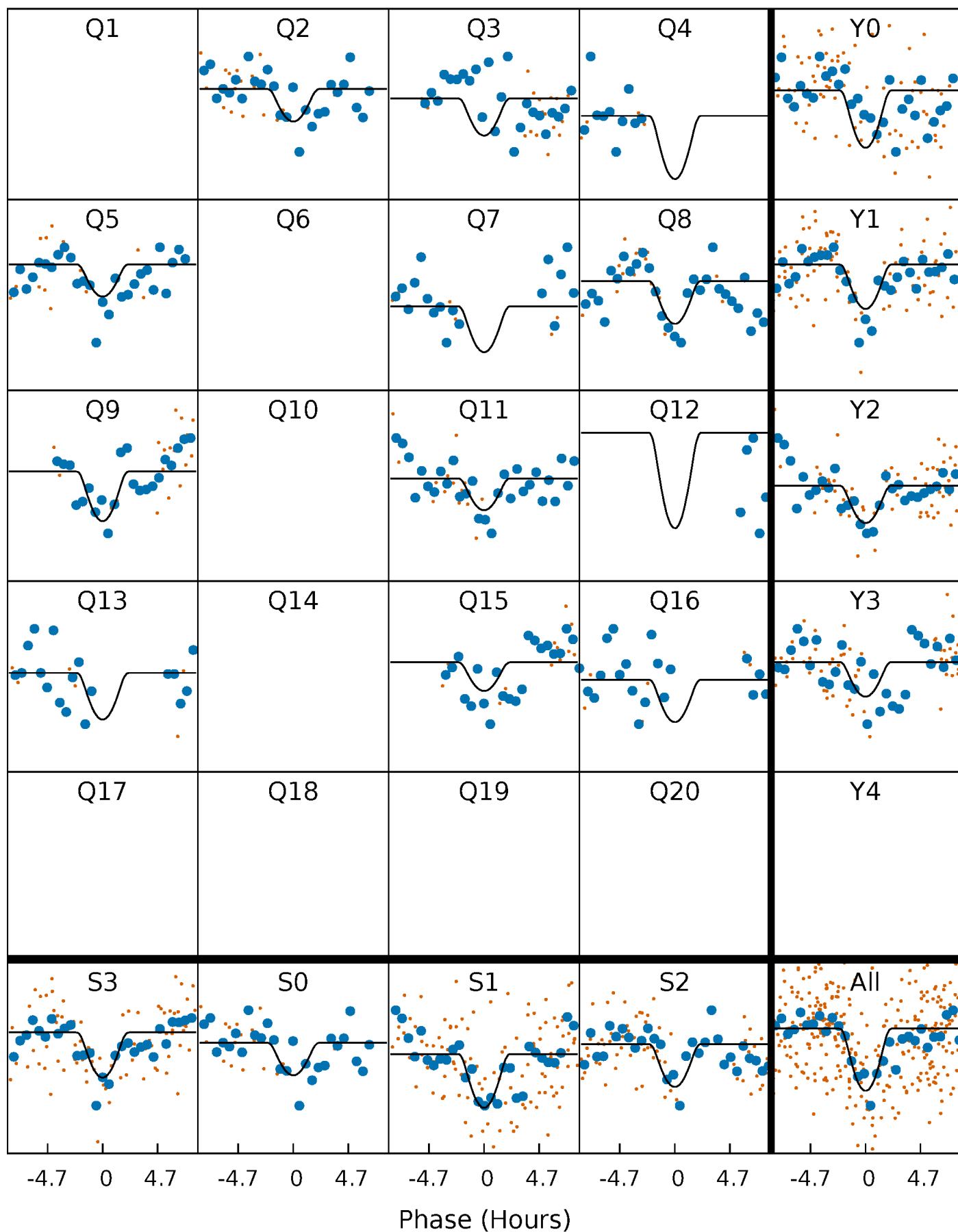
PDC Quarter-Phased Transit Curves

TCE 004484251-10 P= 28.140832 Days $T_0=150.550074$ (BKJD)



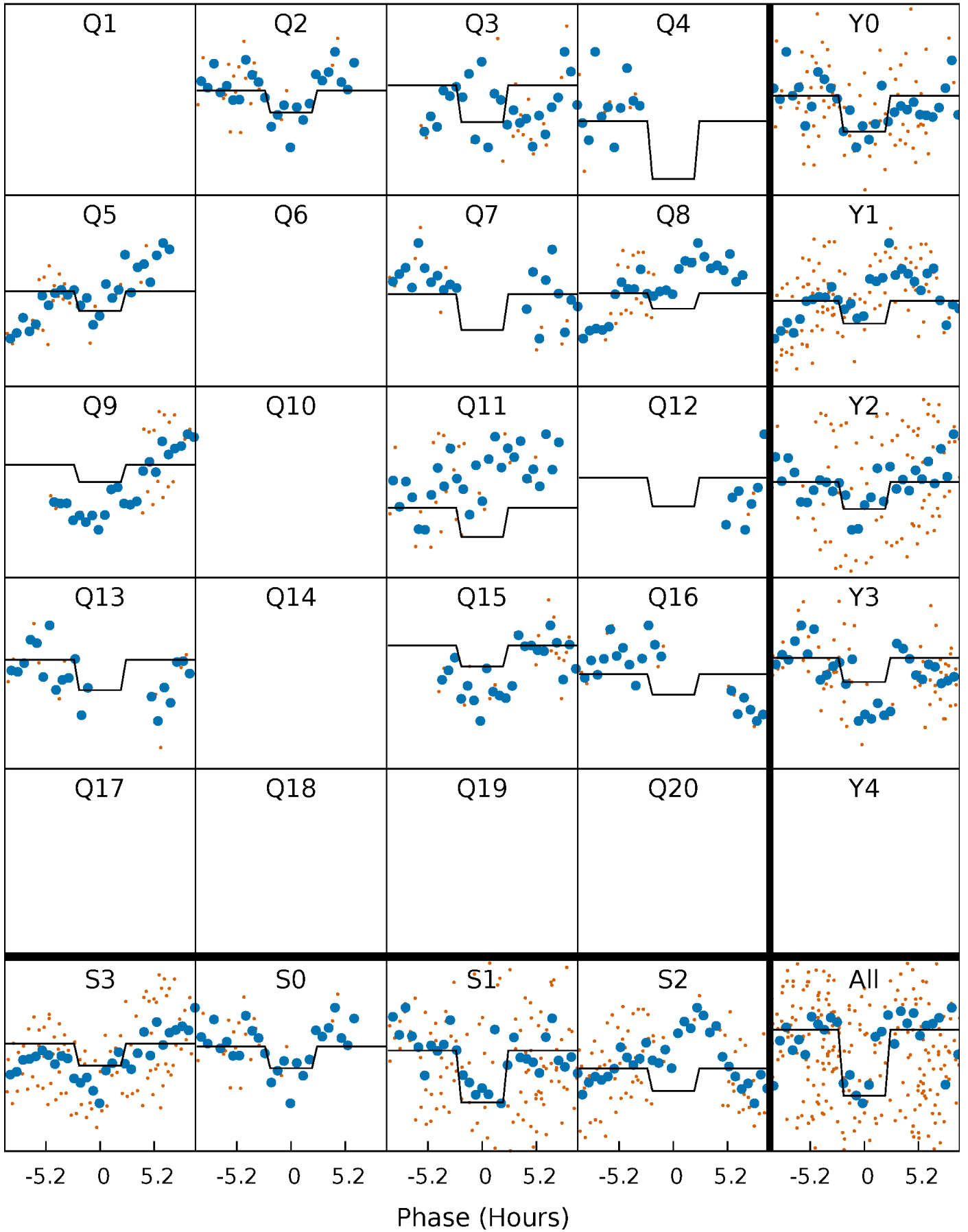
DV Quarter-Phased Transit Curves

TCE 004484251-10 P= 28.140832 Days $T_0=150.550074$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

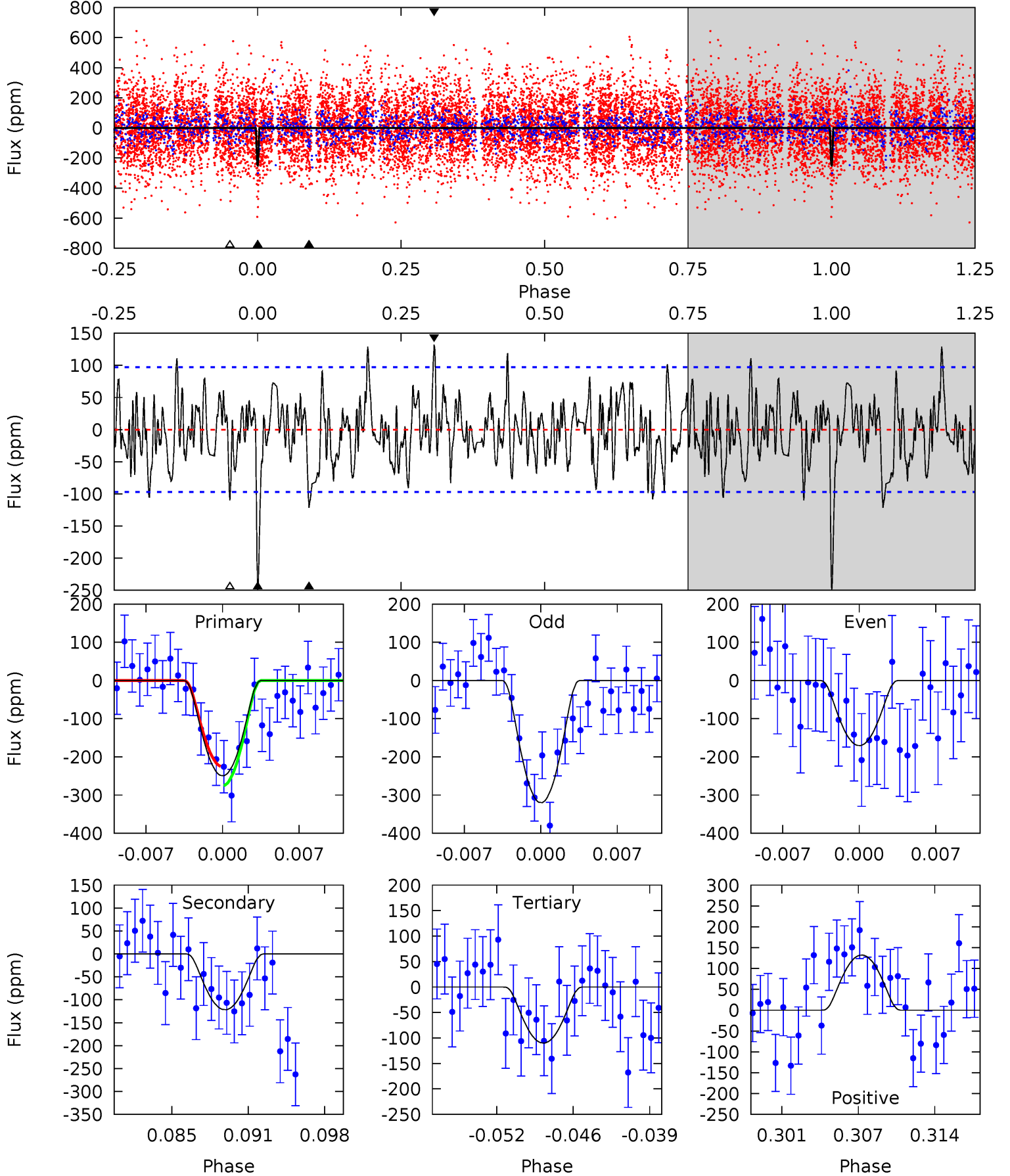
TCE 004484251-10 P= 28.140898 Days $T_0=150.572409$ (BKJD)



DV Model-Shift Uniqueness Test

004484251-10, $P = 28.140832$ Days, $E = 122.409242$ Days

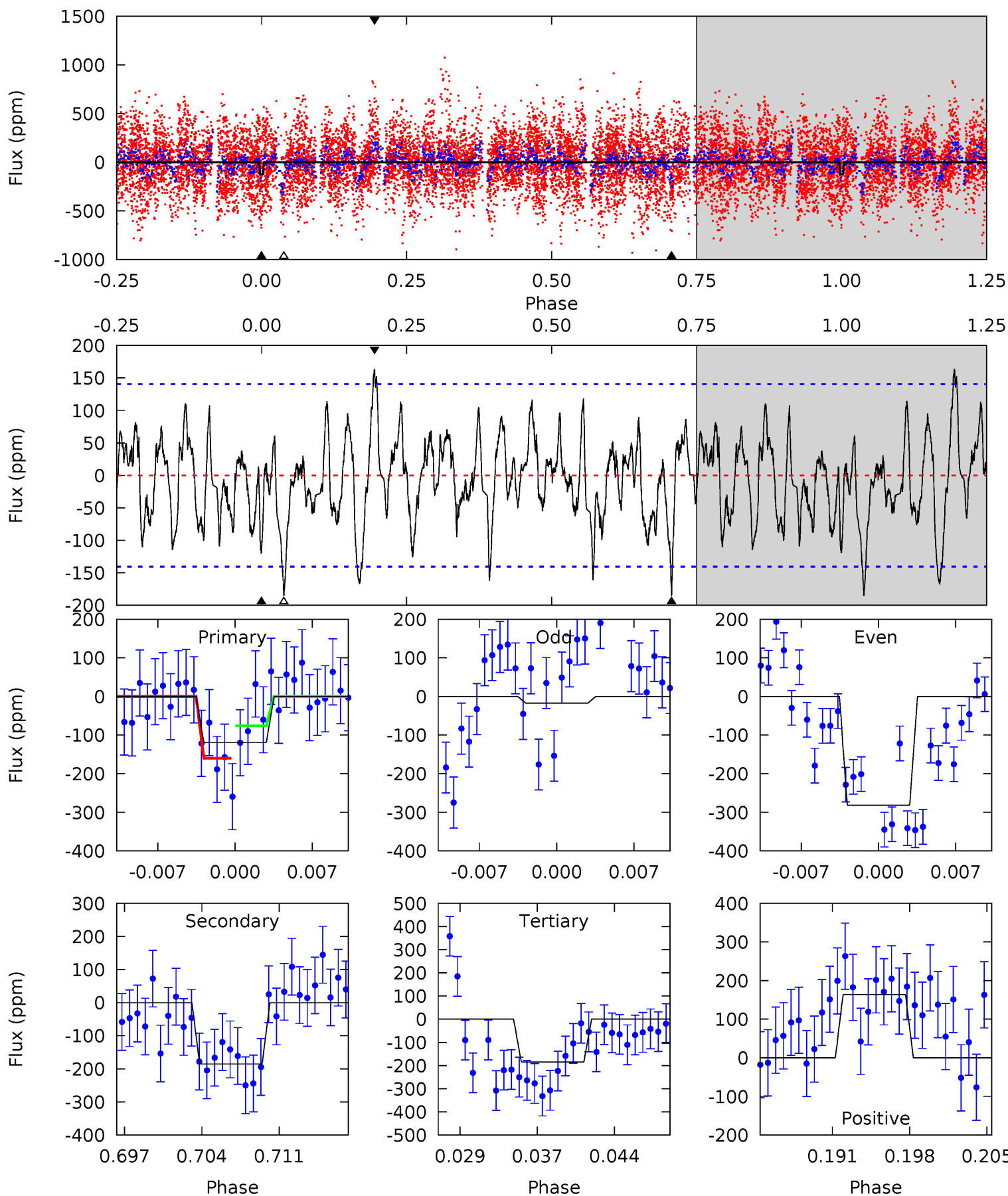
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	6.39	5.78	6.94	5.11	2.72	2.12	7.32	6.16	0.61	-0.55	3.93	0.97	0.35	1.32



Alt Model-Shift Uniqueness Test

004484251-10, P = 28.140898 Days, E = 122.431511 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.33	6.70	6.70	5.92	5.09	2.68	2.04	-2.37	-1.60	0.00	0.78	4.80	0.80	0.47	1.52



Stellar Parameters For KIC 004484251

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6796^{+71}_{-91}	$4.153^{+0.115}_{-0.115}$	$-0.160^{+0.150}_{-0.150}$	$1.608^{+0.288}_{-0.236}$	$1.351^{+0.088}_{-0.108}$	$0.458^{+0.245}_{-0.160}$
	+1%/-1%	+3%/-3%	+94%/-94%	+18%/-15%	+7%/-8%	+54%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004484251-10 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-122±19	$8.06^{+7.37}_{-5.42}$	1191^{+55}_{-51}	3732^{+2147}_{-690}	41^{+333}_{-30}
Alt.	-185±28	$7.14^{+7.47}_{-5.09}$	1186^{+60}_{-45}	4201^{+3178}_{-932}	83^{+865}_{-63}

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

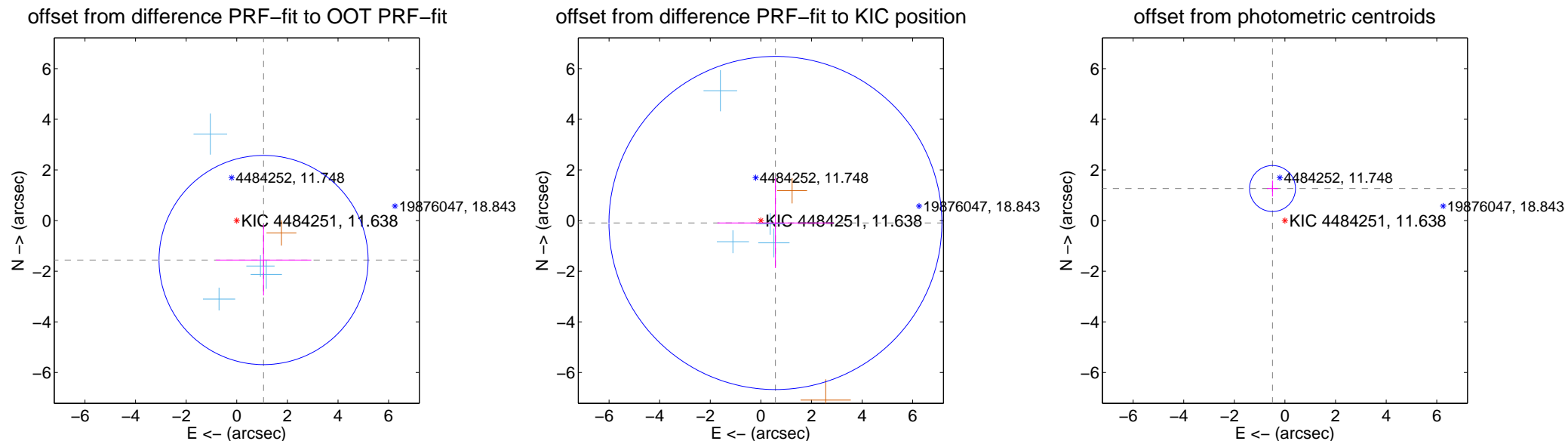
DV Centroid Data

Supplemental centroid analysis for 004484251-10. **Kepler magnitude: 11.64.** Transit SNR 8.85

There are 4 quarters with good PRF difference image offsets

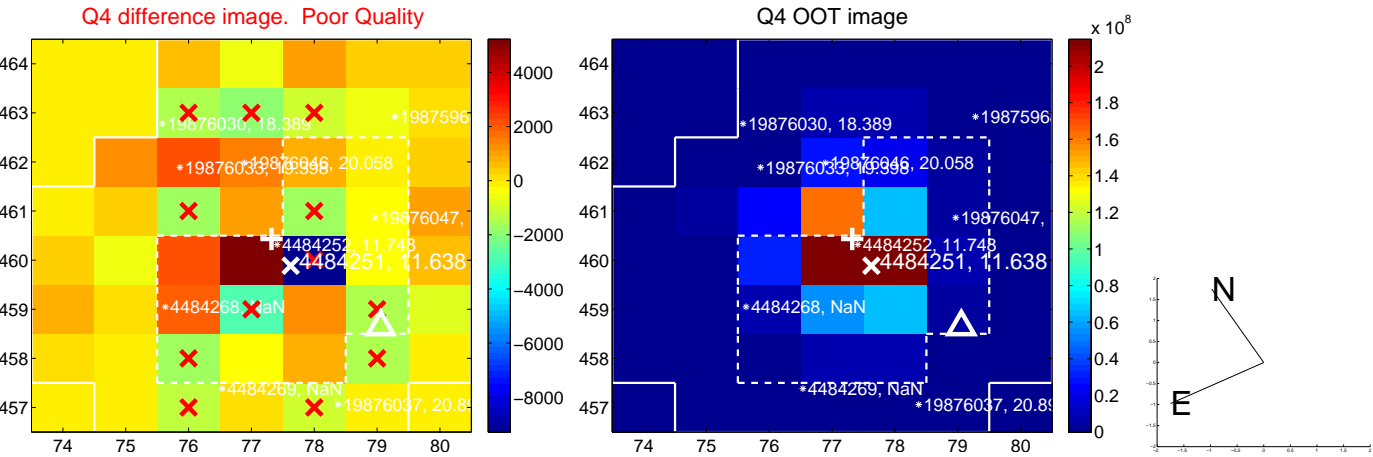
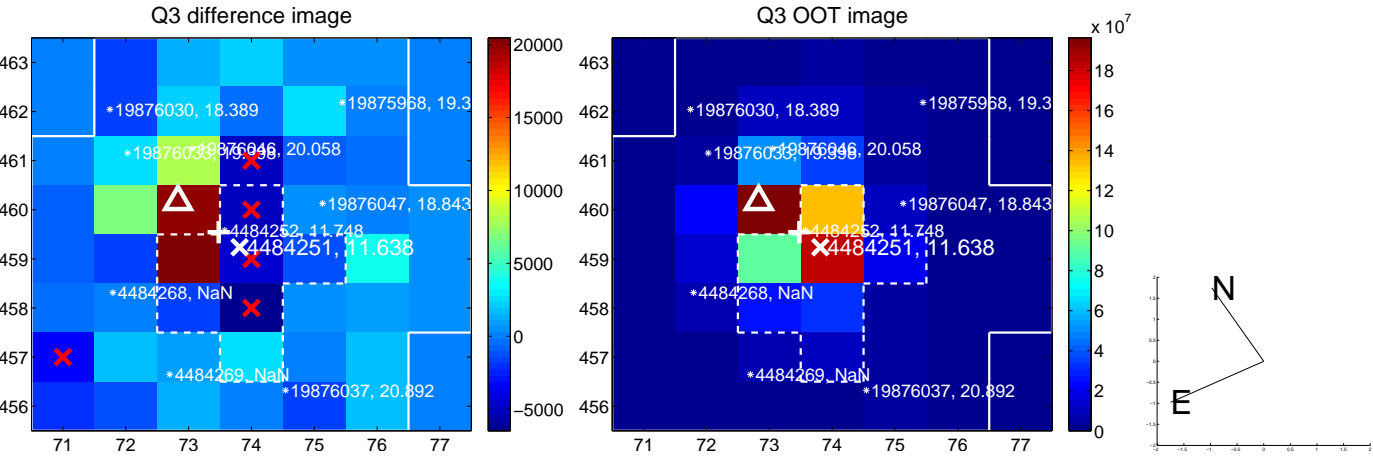
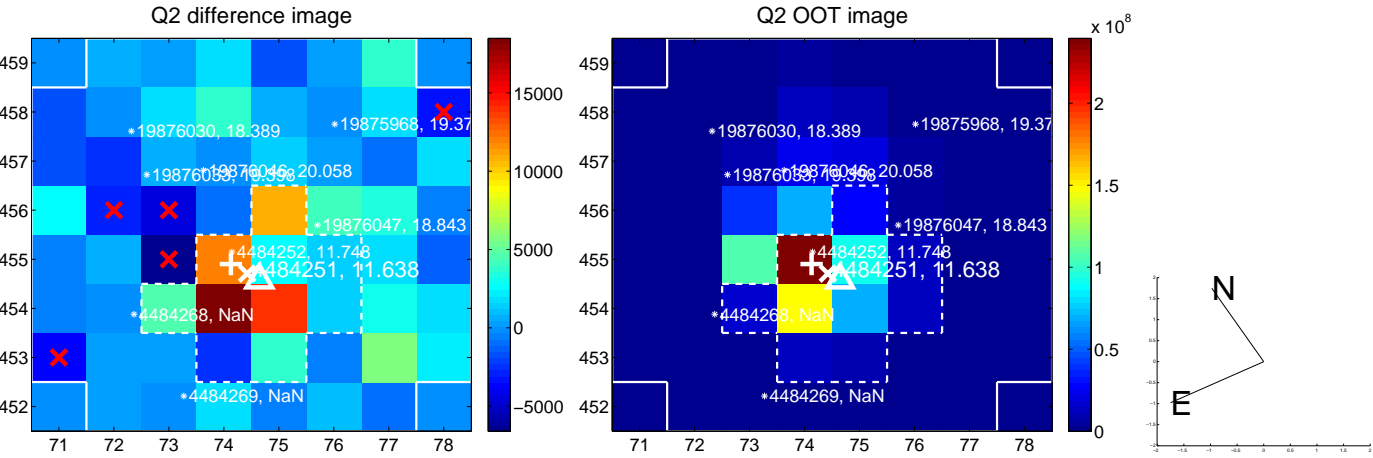
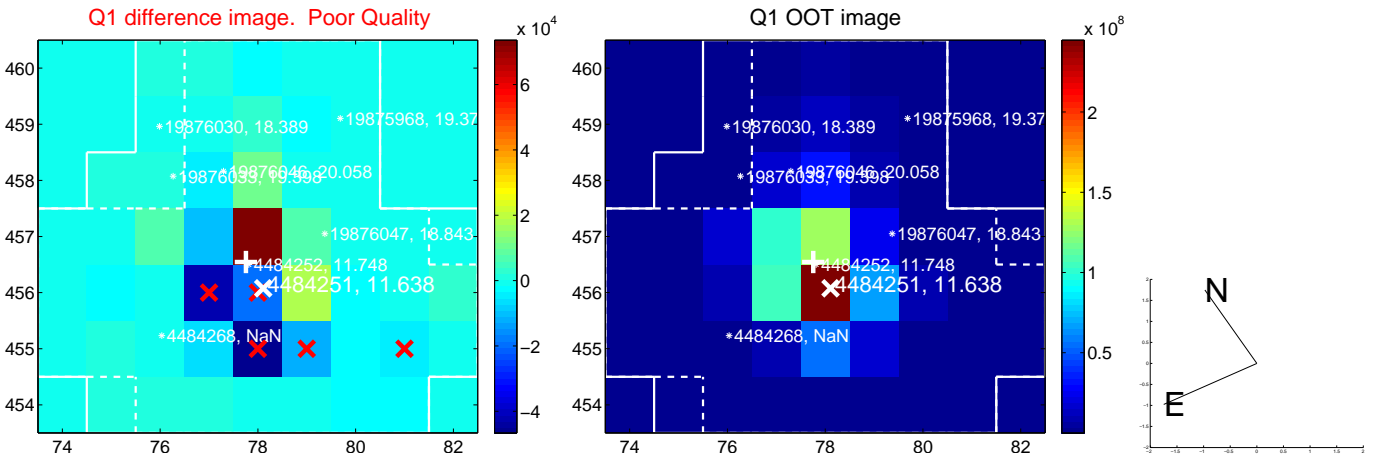
The direct PRF centroid is offset from the target star catalog position by about 1.76 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.883 ± 1.377	1.37	-1.058 ± 1.889	-1.558 ± 1.399
PRF-fit source offset from KIC position	0.583 ± 2.193	0.27	-0.575 ± 2.296	-0.094 ± 1.780
photometric centroid source offset	1.36 ± 0.30	4.49	0.49 ± 0.22	1.27 ± 0.31

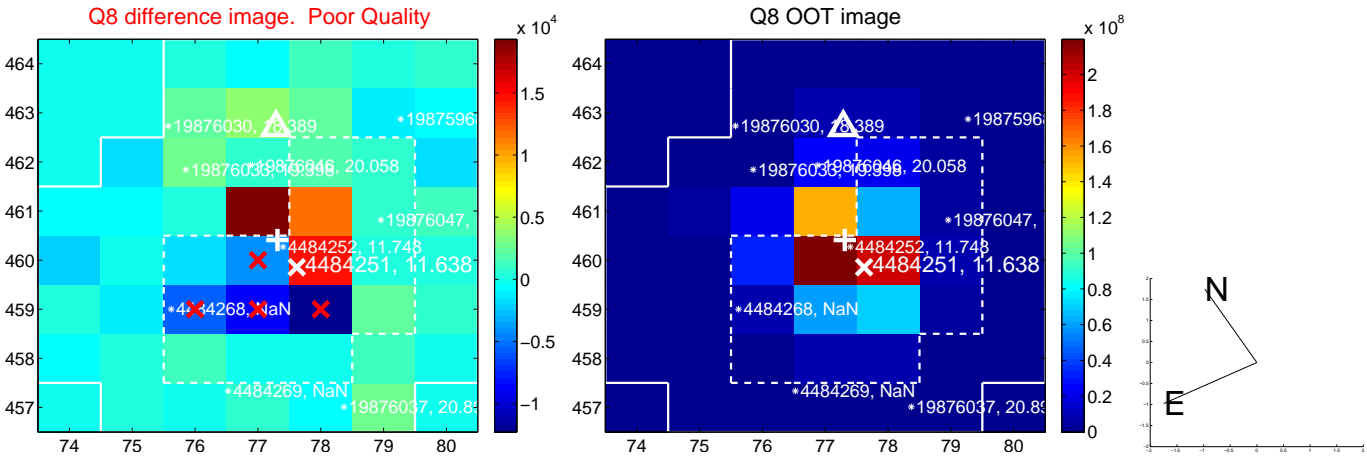
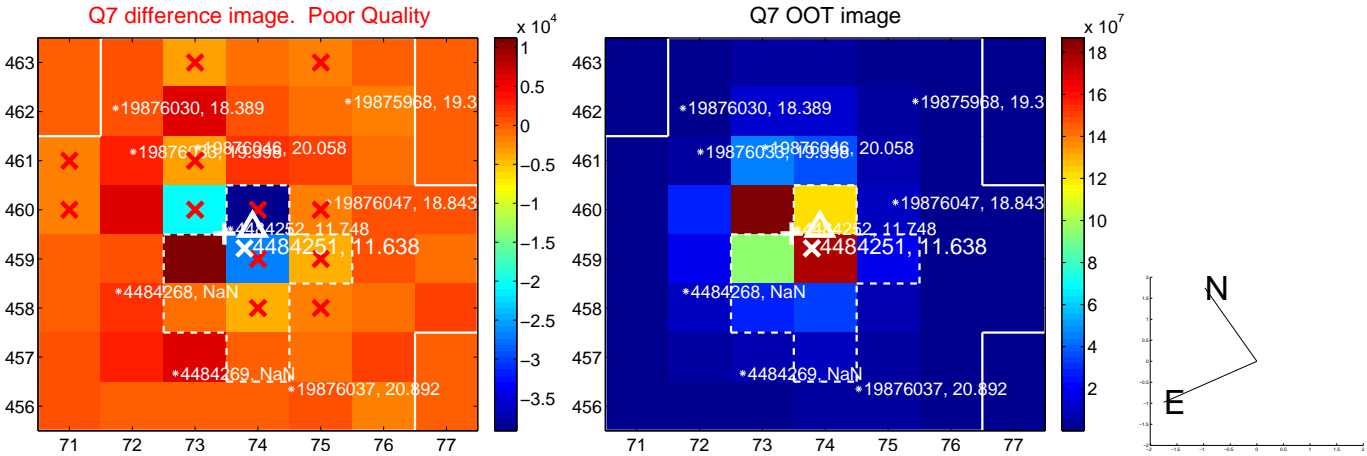
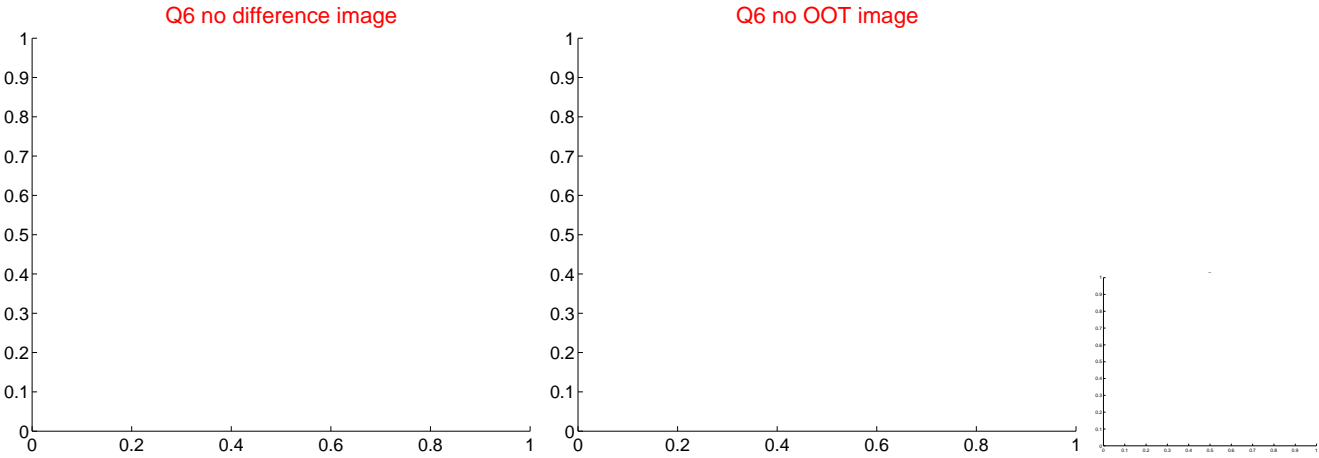
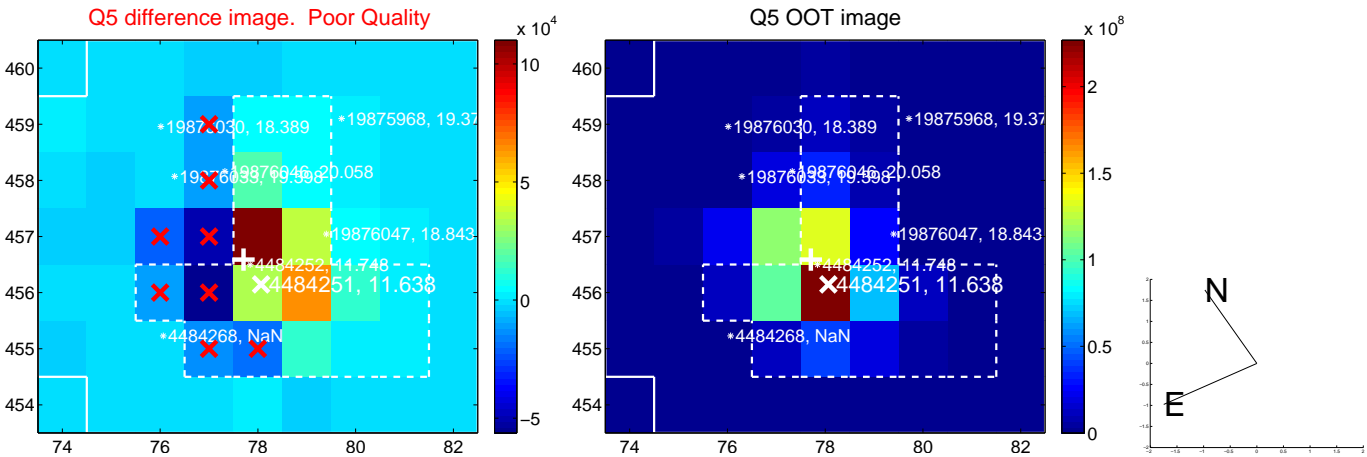


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

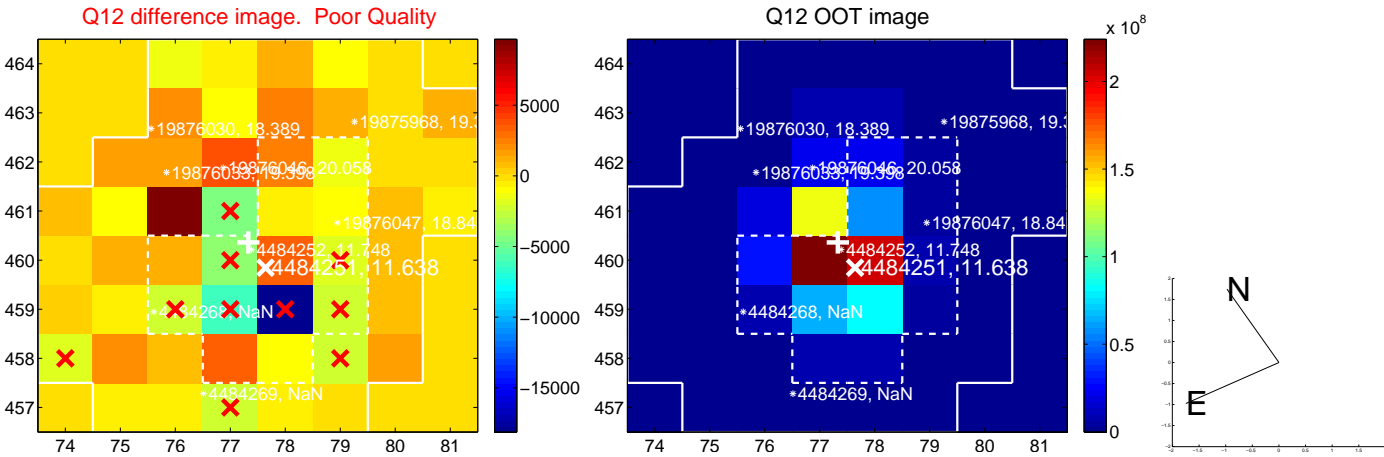
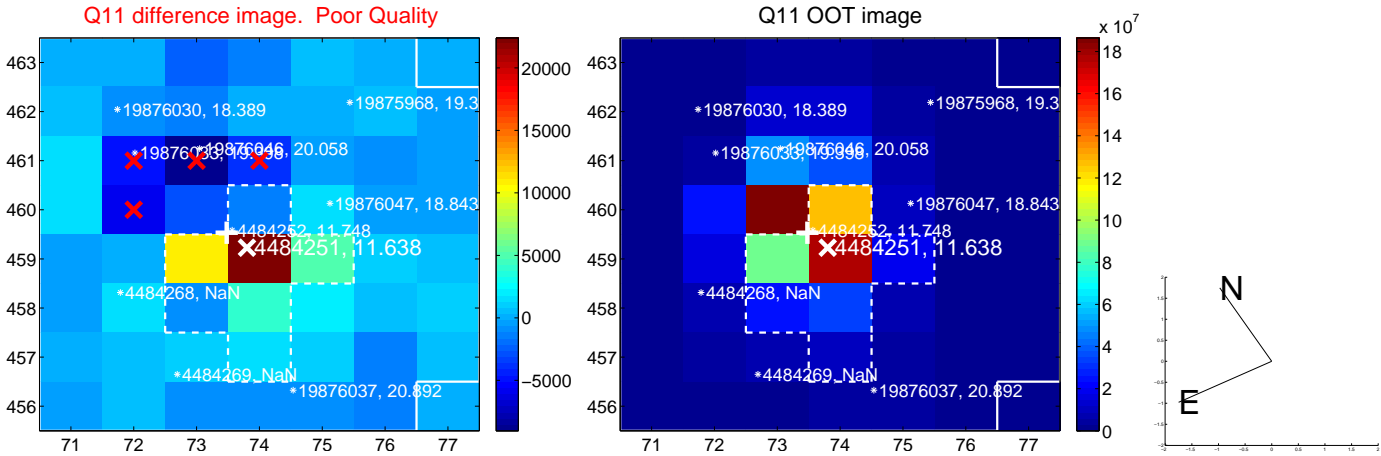
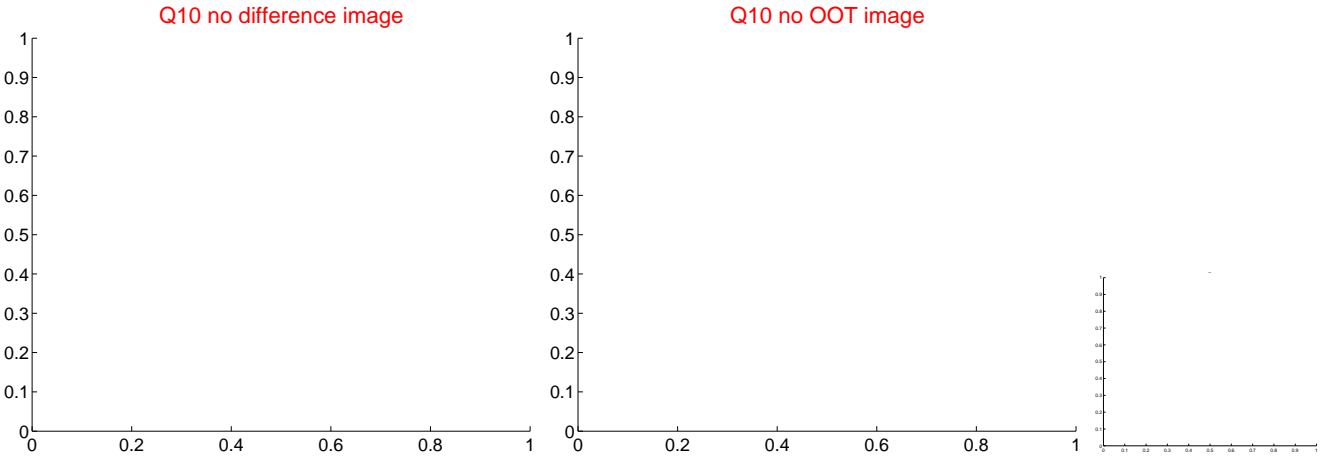
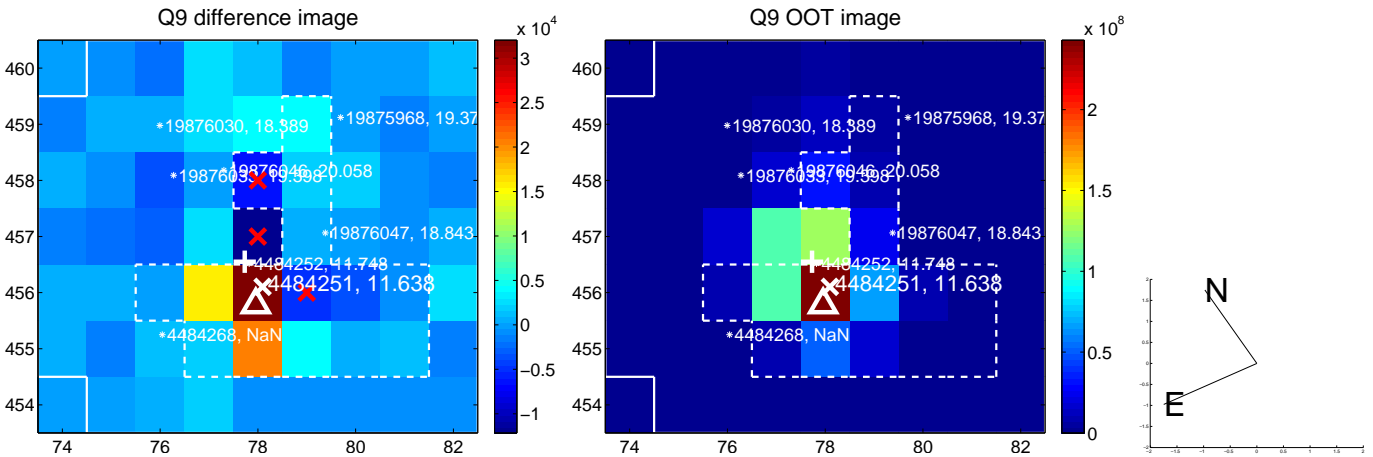
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



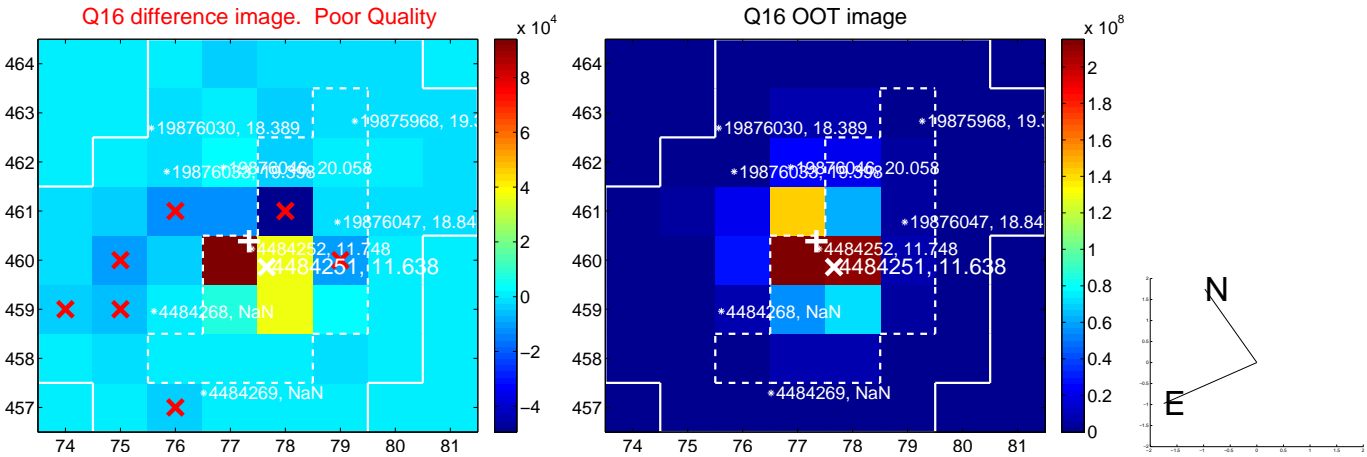
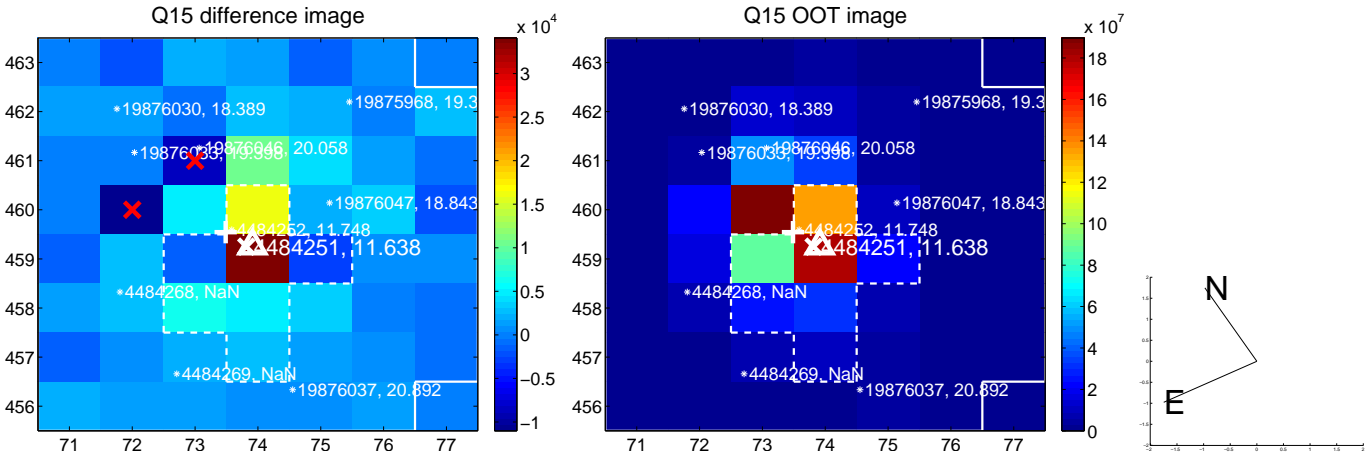
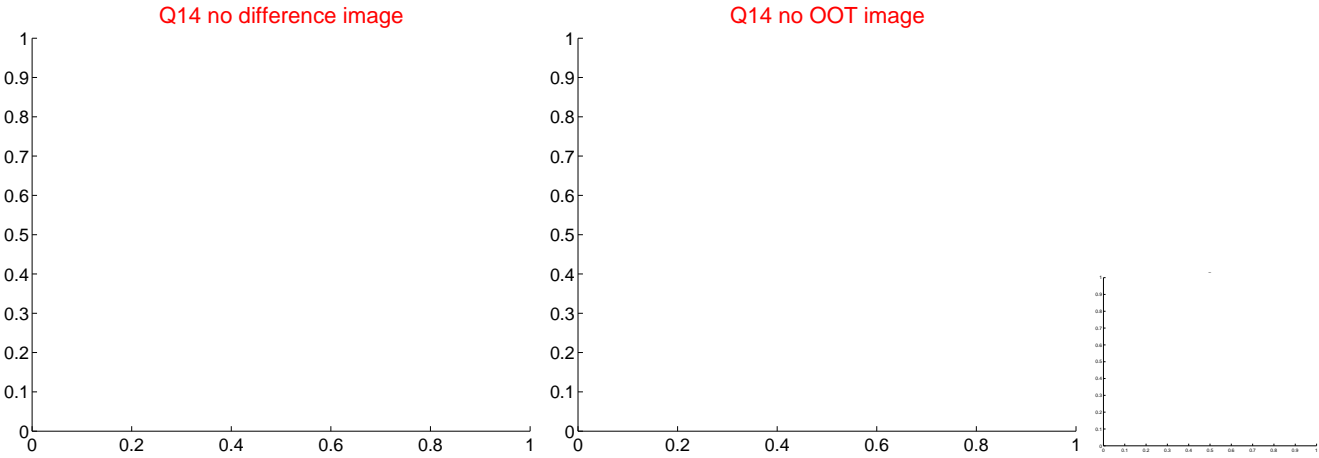
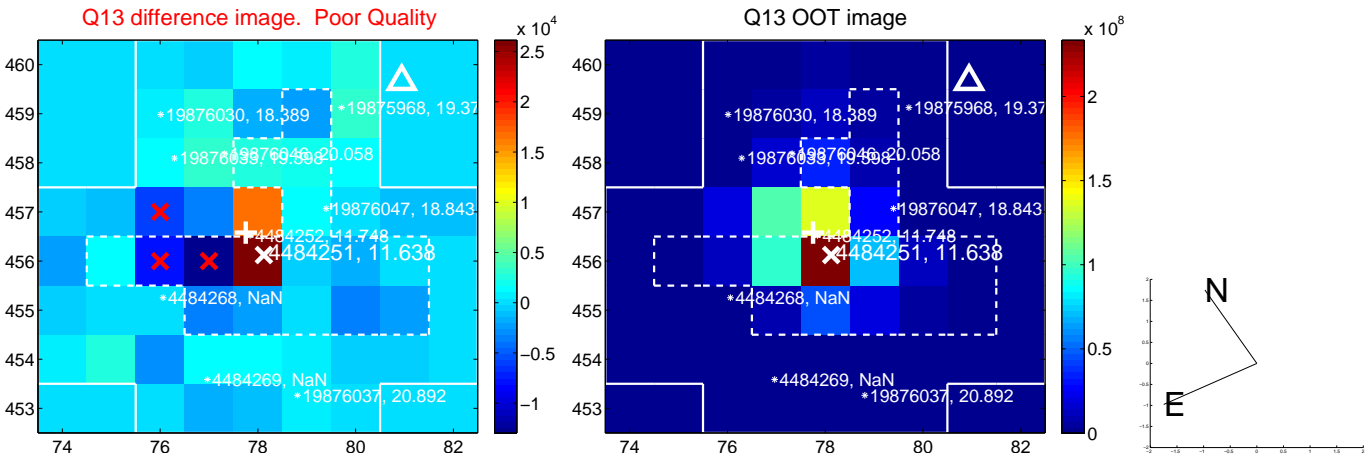
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



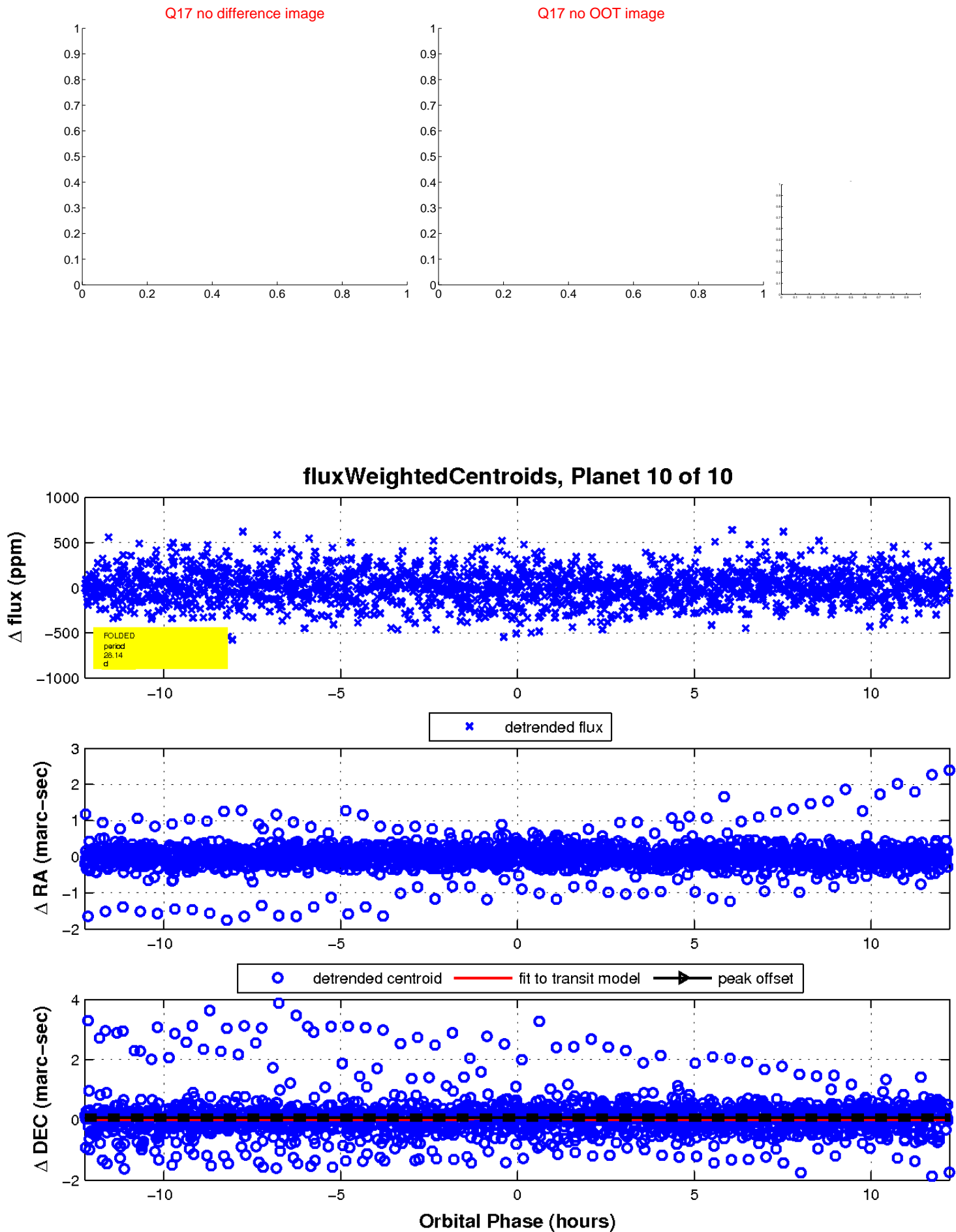
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

