

KIC 007122746

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})
007122746-01	OBS	No	482.554733	150.979827	616.7	6.799	10.5	5.9	2.24	7710	5.76	7.31
007122746-02	OBS	No	0.594422	131.771243	40.5	1.915	9.8	10.8	2.24	7710	1.66	55337.71
007122746-03	OBS	No	0.594425	132.061754	50.0	1.436	8.9	9.8	2.24	7710	1.84	55337.35
007122746-04	OBS	No	0.564491	131.754246	103.8	6.774	9.8	14.5	2.24	7710	2.32	59284.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007122746-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
007122746-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007122746-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007122746-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_SATURATED

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

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

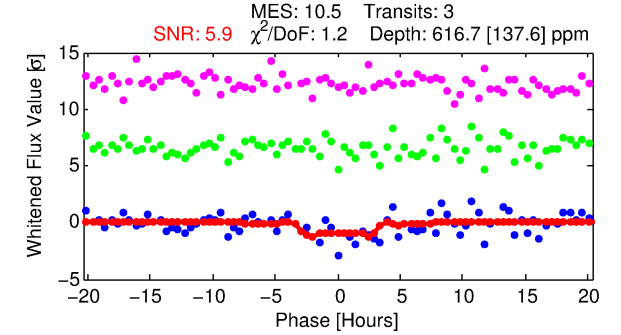
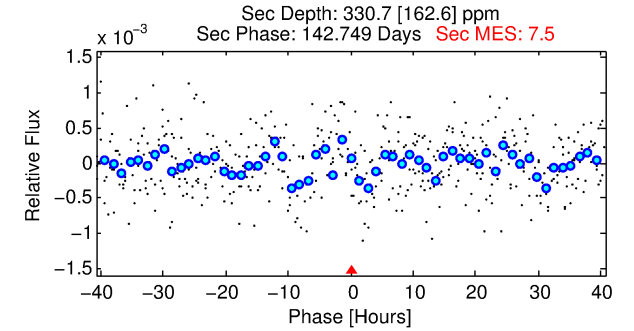
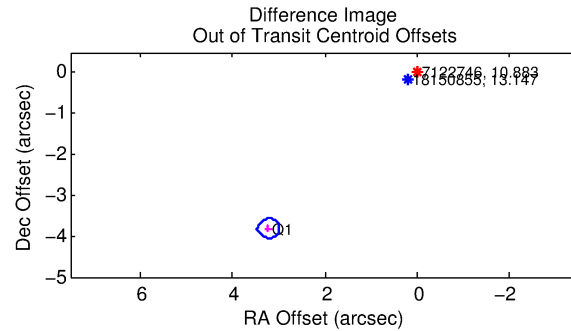
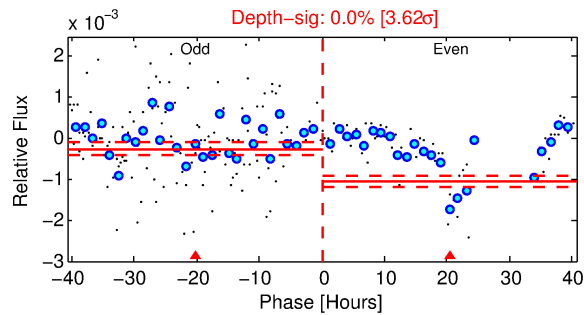
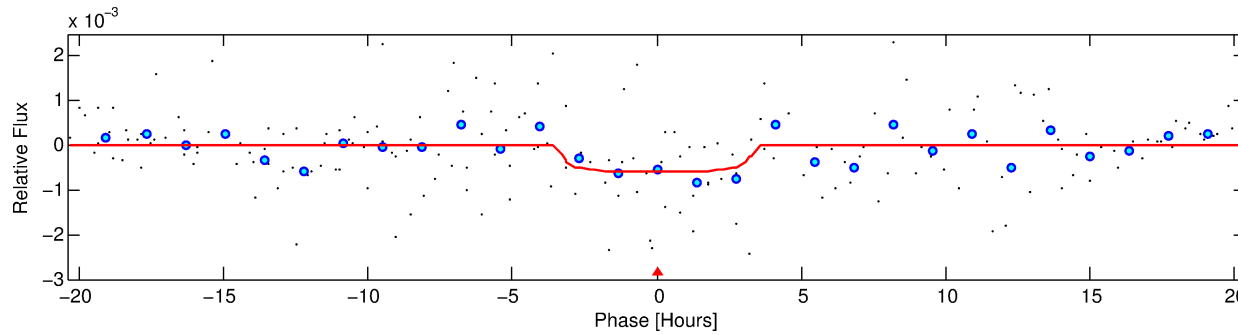
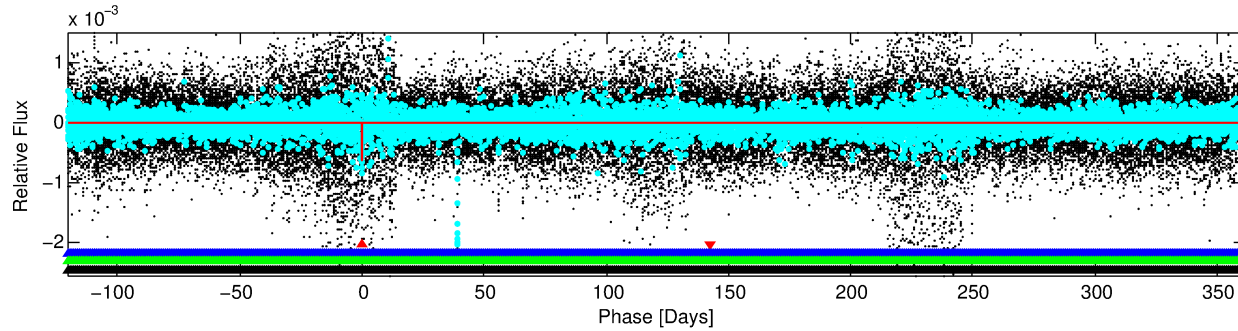
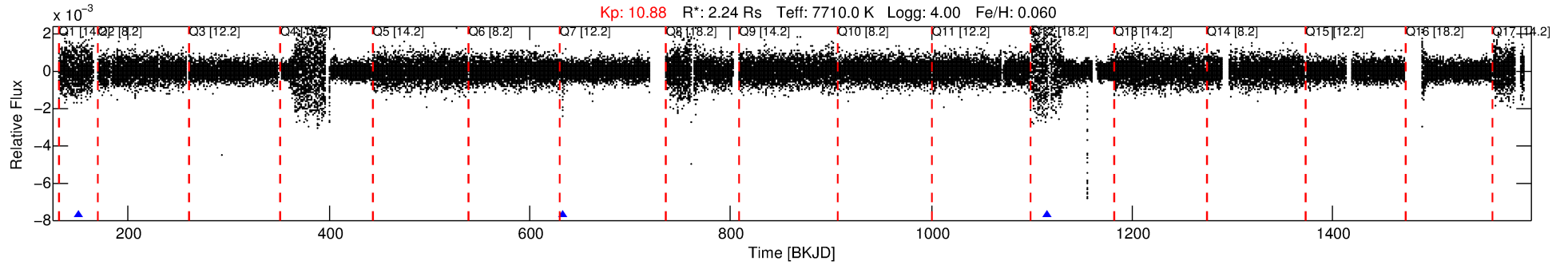
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007122746-01

No Significant Match Found

DV One-Page Summary

KIC: 7122746 Candidate: 1 of 4 Period: 482.555 d



DV Fit Results:

Period = 482.55473 [0.01794] d
Epoch = 150.9798 [0.0178] BKJD
Rp/R* = 0.0236 [0.0667]
a/R* = 490.55 [8468.08]
b = 0.48 [27.93]
Seff = 7.31 [1.73]
Teq = 419 [25] K
Rp = 5.76 [16.34] Re
a = 1.4738 [0.2167] AU
Ag = 11901.38 [67668.48] [0.18 σ]
Teff = 6770 [9617] K [0.66 σ]

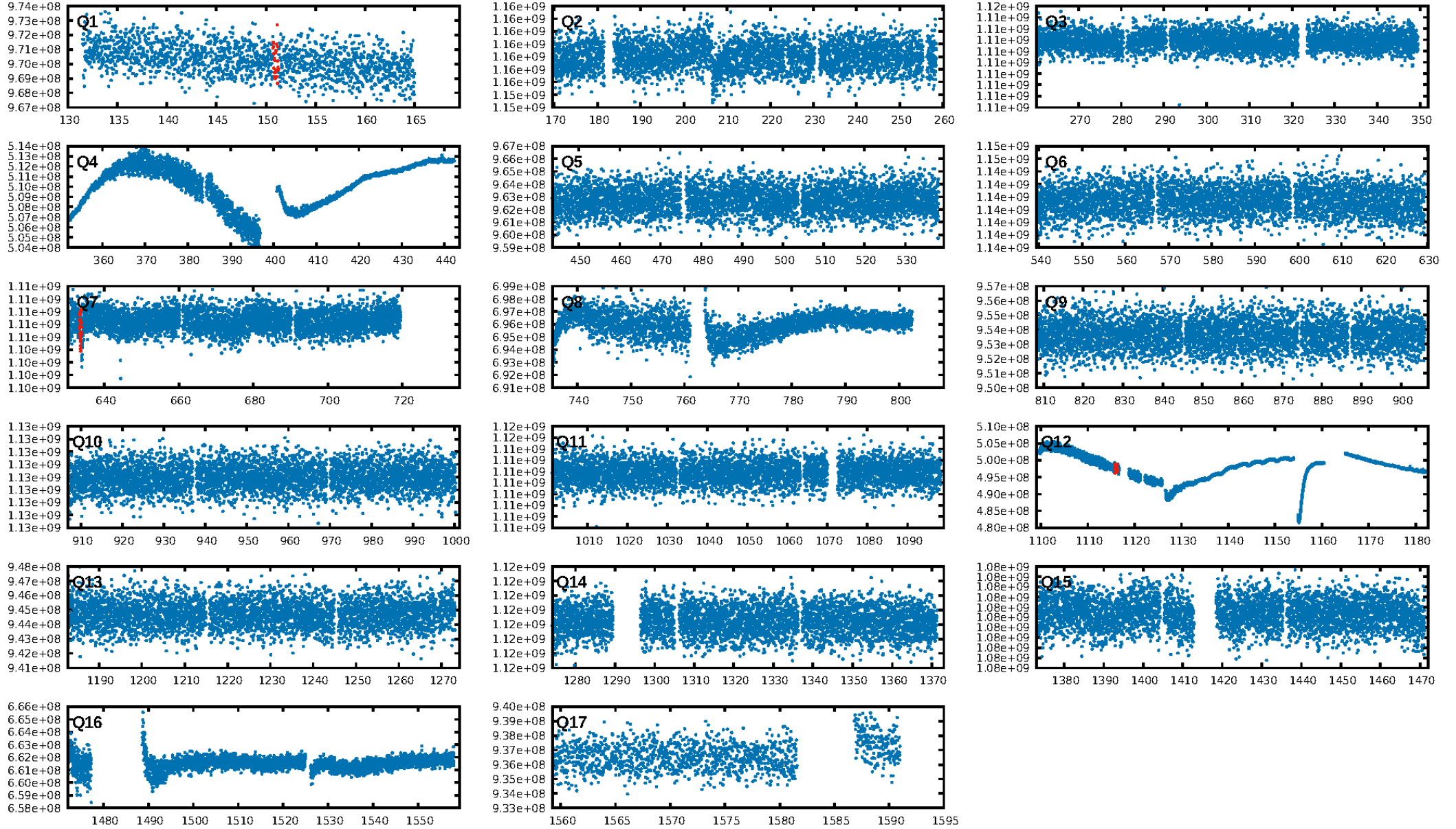
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1664.52 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 89.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.1314
Centroid-sig: 8.5%
Centroid-so: 0.513 arcsec [1.25 σ]
OotOffset-rm: 4.987 arcsec [62.76 σ]
KicOffset-rm: 4.439 arcsec [55.68 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/2]

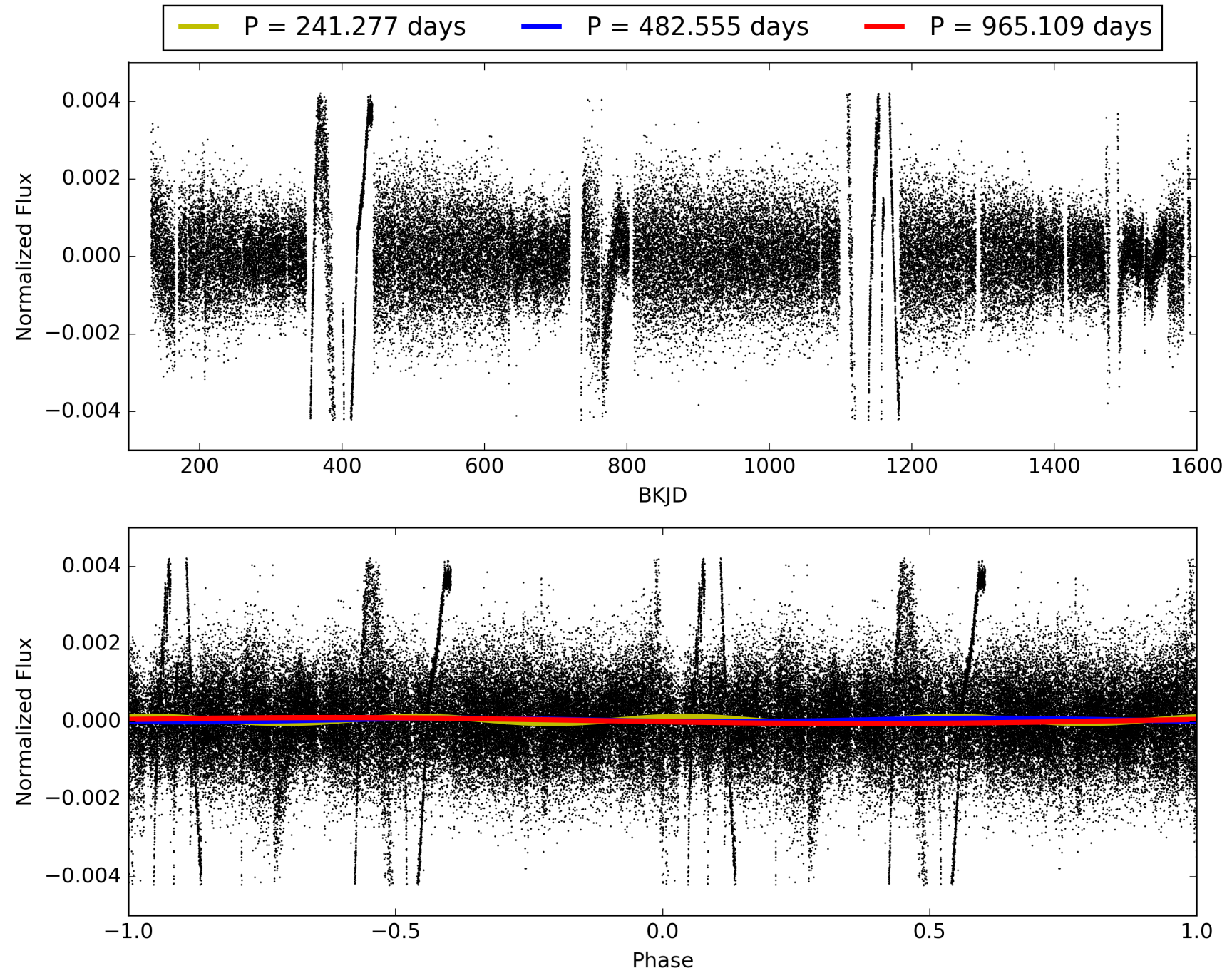
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:25:02 Z

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

TCE 007122746-01, PDC Light Curves

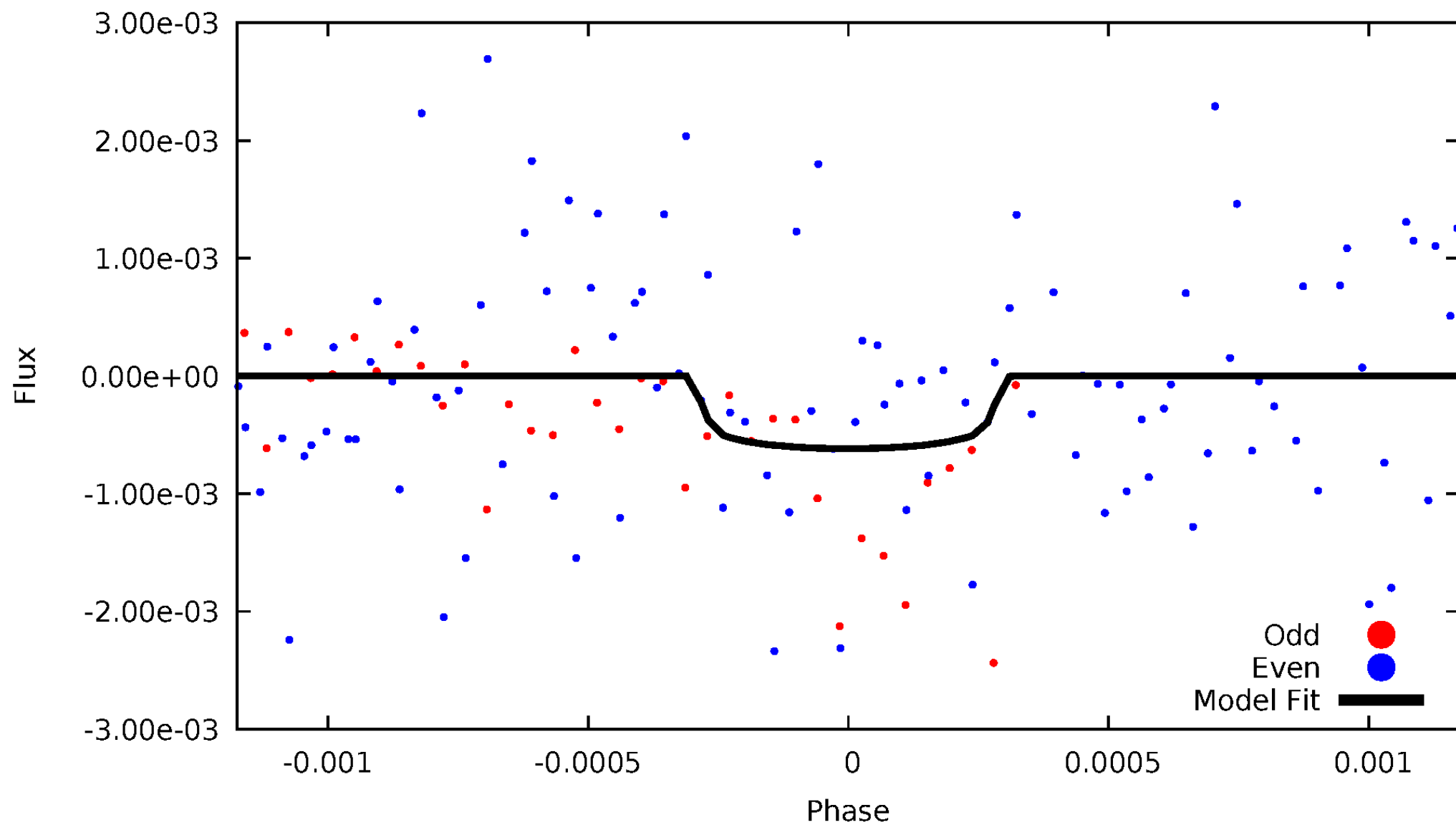


TCE 007122746-01



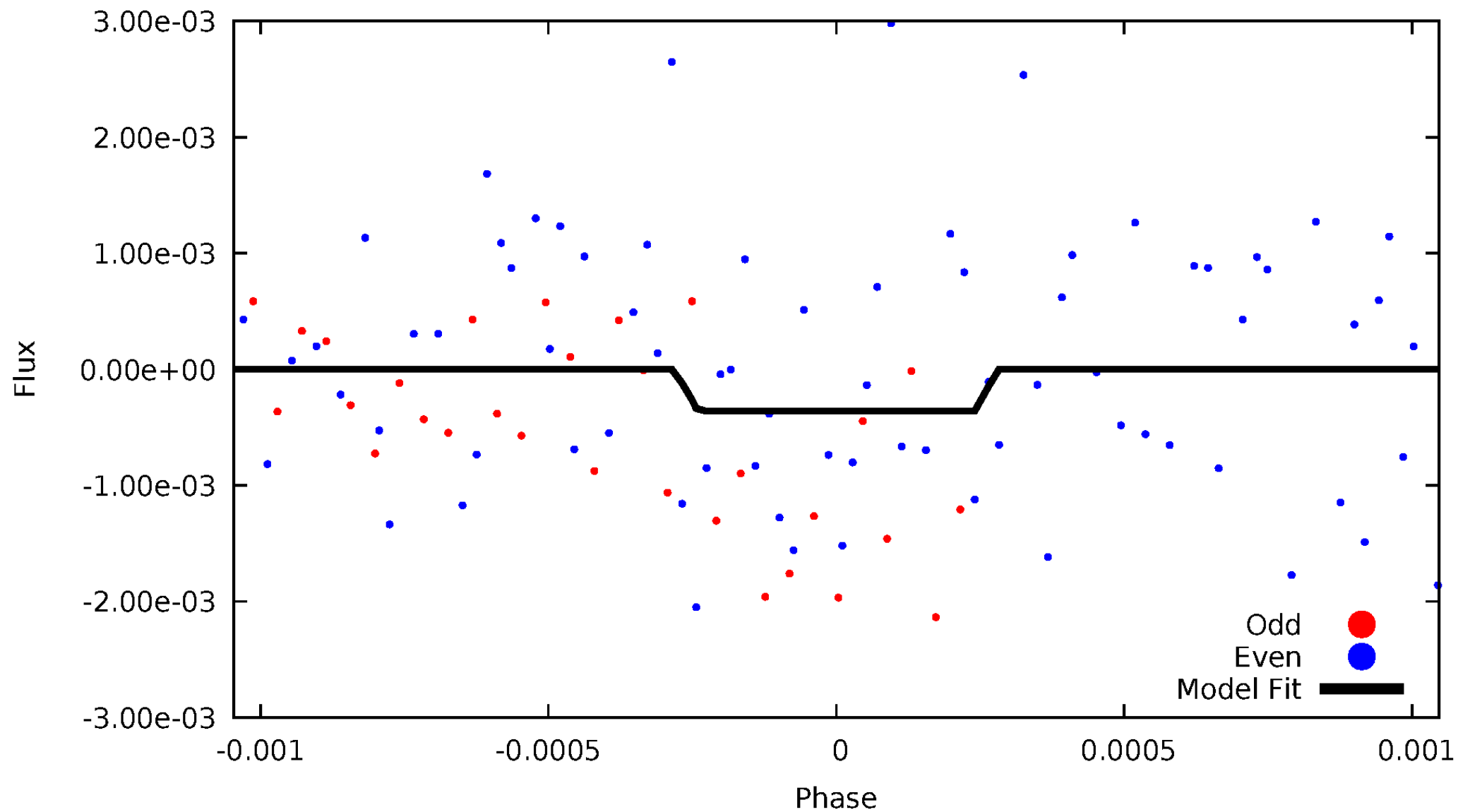
DV Odd/Even

TCE 007122746-01



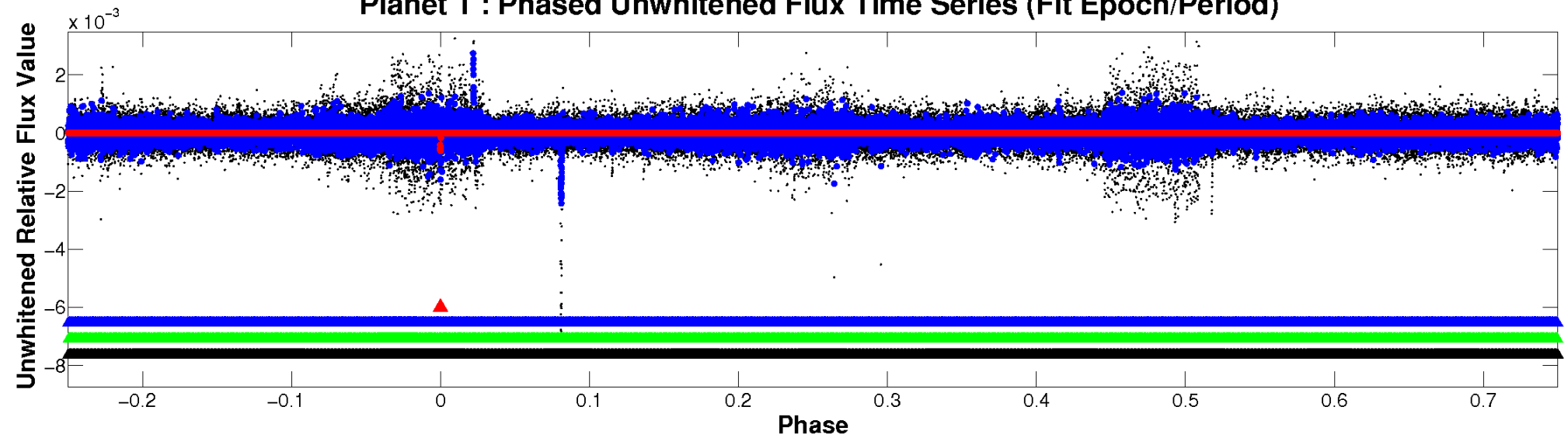
ALT Odd/Even

TCE 007122746-01

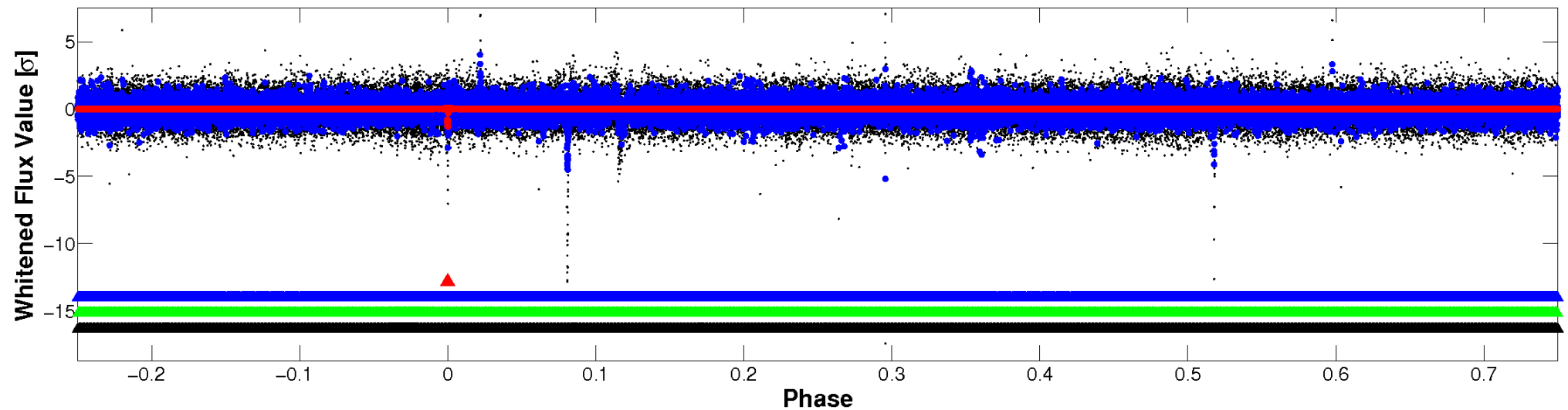


Non-Whitened Vs. Whitened Light Curve

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

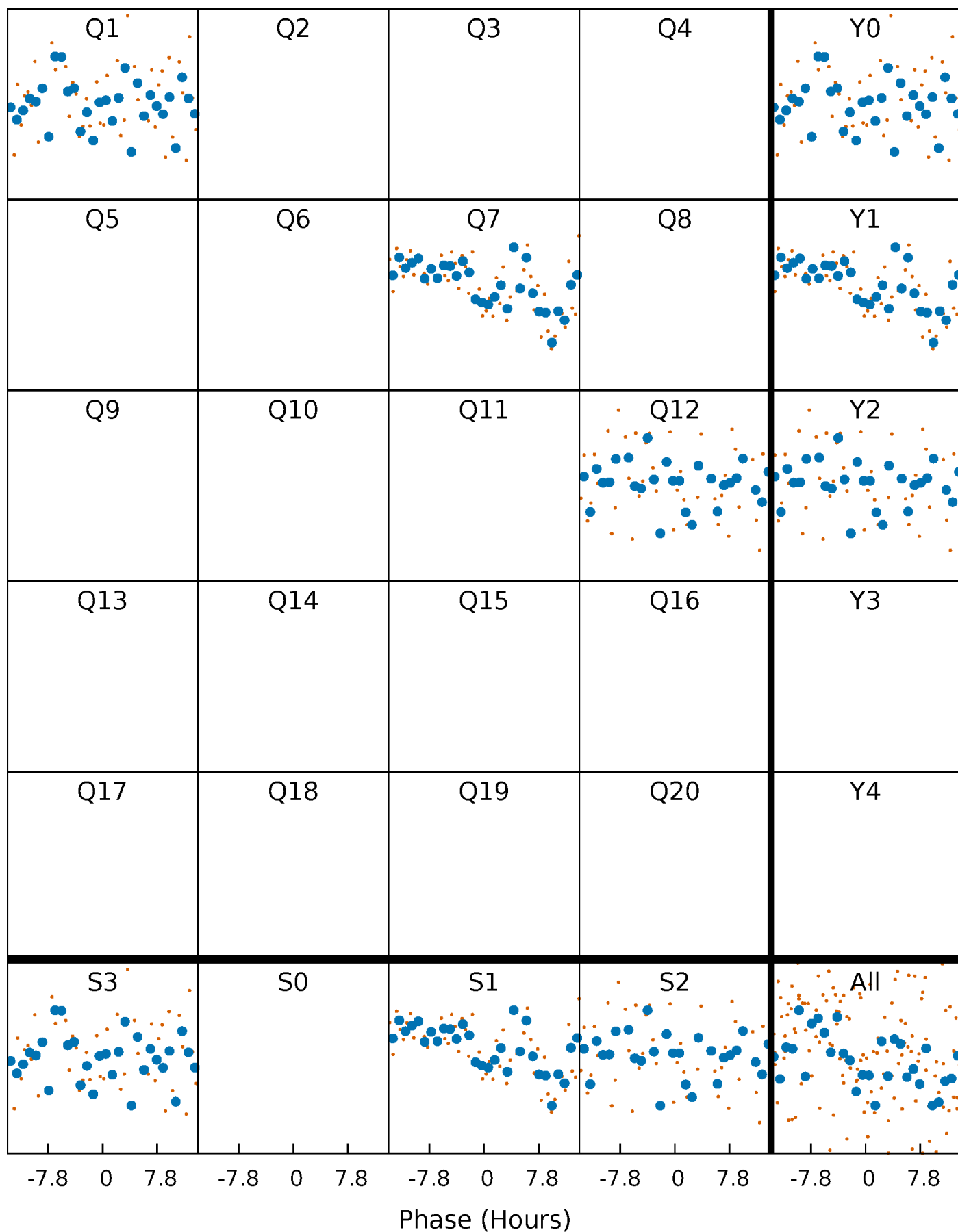


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



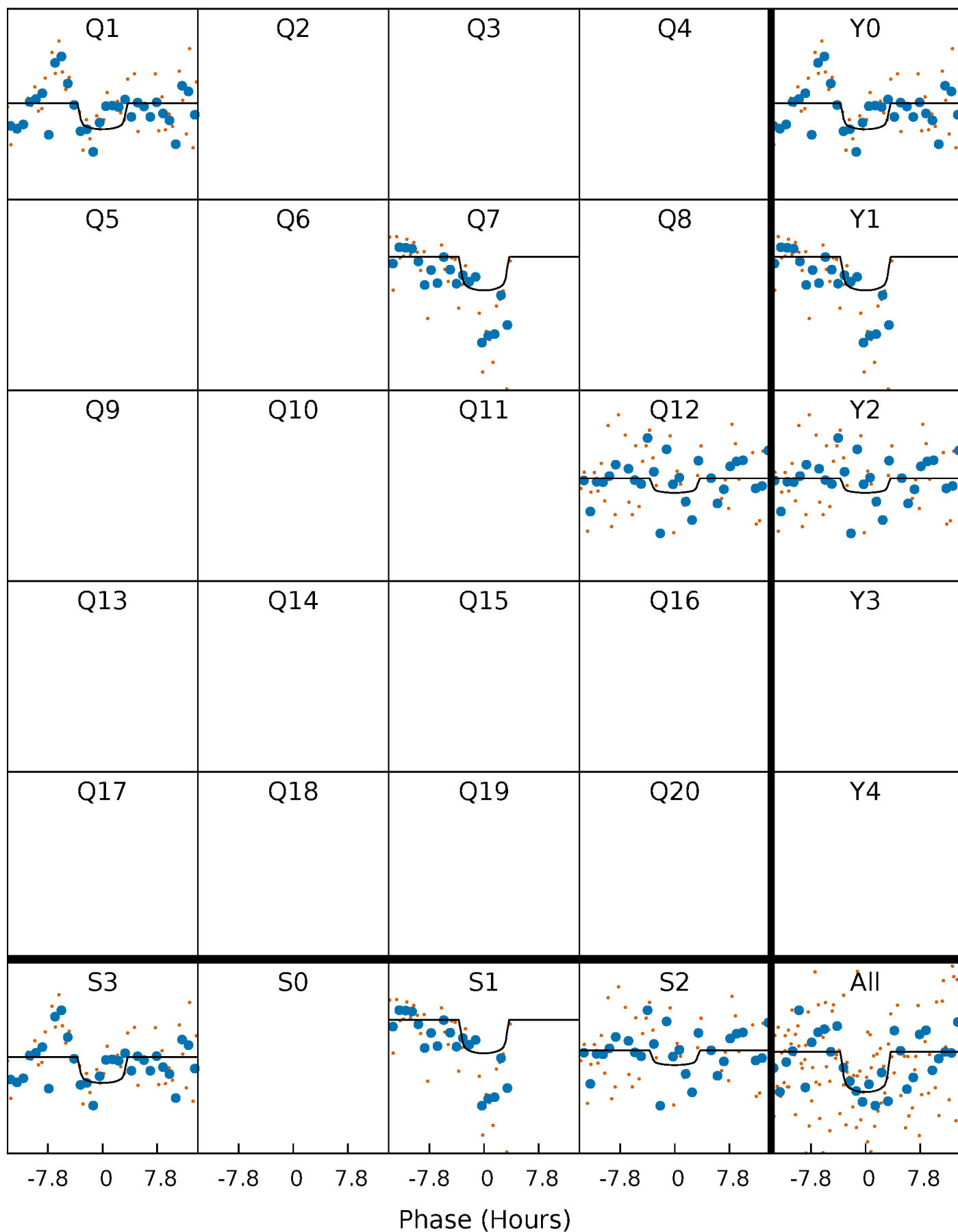
PDC Quarter-Phased Transit Curves

TCE 007122746-01 P=482.554733 Days $T_0=150.979827$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007122746-01 P=482.554733 Days $T_0=150.979827$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

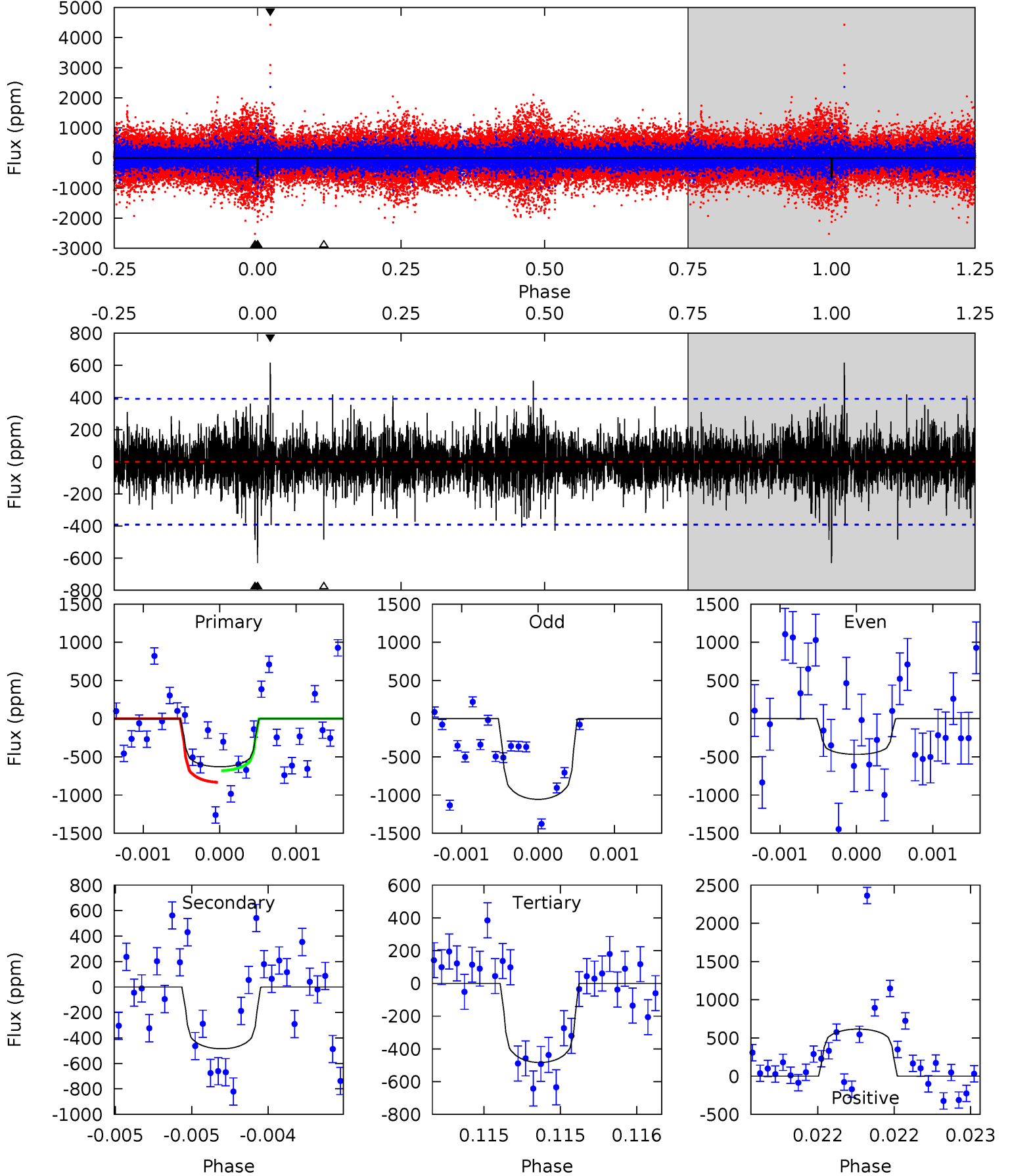
TCE 007122746-01 P=482.613442 Days $T_0=150.972534$ (BKJD)



DV Model-Shift Uniqueness Test

007122746-01, P = 482.554733 Days, E = 150.979827 Days

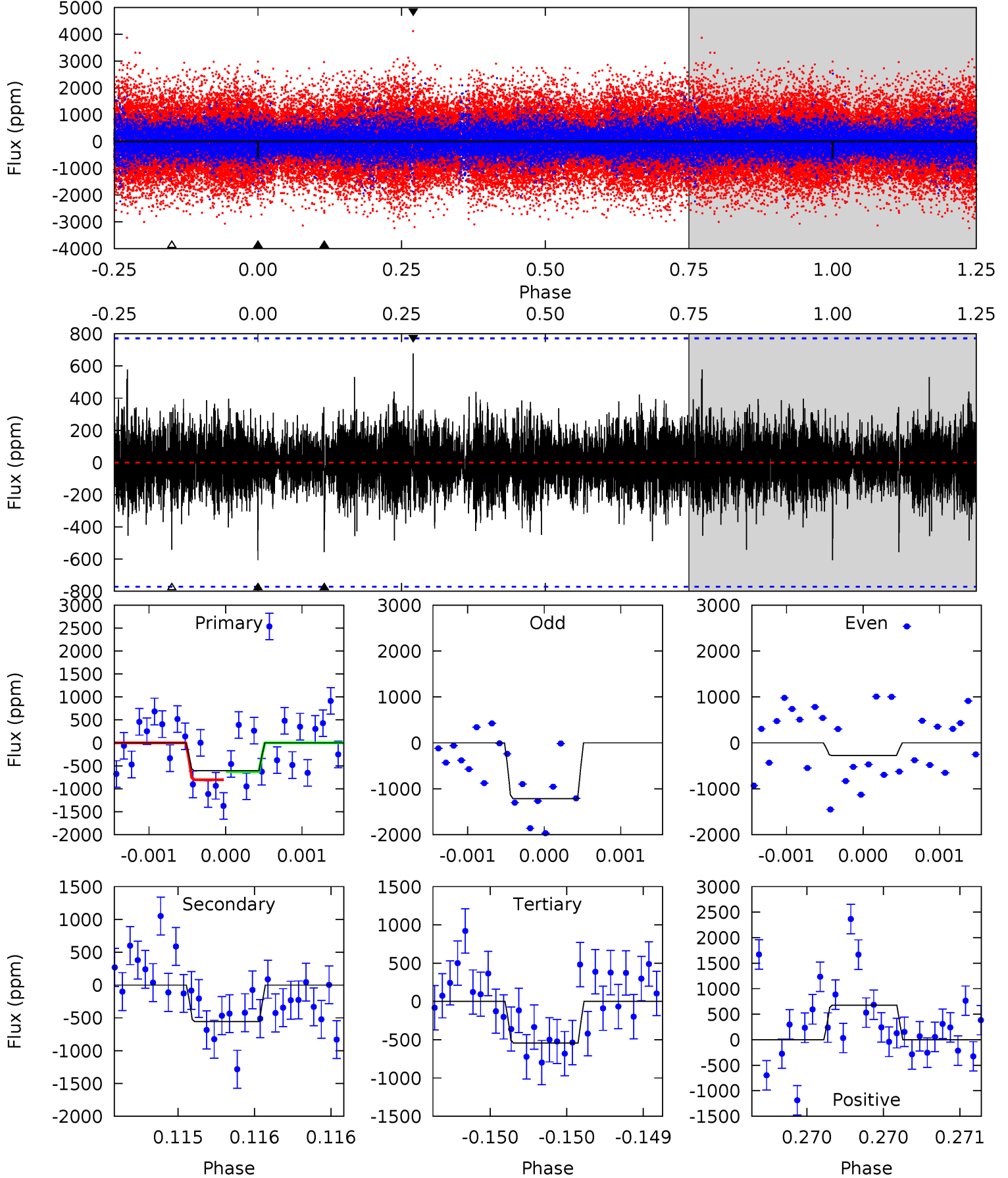
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.91	6.87	6.84	8.72	5.54	3.43	1.43	2.07	0.19	0.02	-1.86	4.11	1.43	0.49	1.08



Alt Model-Shift Uniqueness Test

007122746-01, P = 482.613442 Days, E = 150.972534 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.36	4.01	3.90	4.88	5.56	3.45	0.93	0.46	-0.51	0.11	-0.87	3.32	1.39	0.53	0.63



Stellar Parameters For KIC 007122746

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7710^{+139}_{-154}	$4.001^{+0.126}_{-0.094}$	$0.060^{+0.100}_{-0.150}$	$2.239^{+0.338}_{-0.372}$	$1.833^{+0.090}_{-0.167}$	$0.230^{+0.128}_{-0.070}$
	+2%/-2%	+3%/-2%	+167%/-250%	+15%/-17%	+5%/-9%	+56%/-30%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 007122746-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-485 ± 71	$12.70^{+13.69}_{-8.63}$	584^{+25}_{-29}	4940^{+4272}_{-1190}	3538^{+31145}_{-2726}
Alt.	-557 ± 139	$13.03^{+12.03}_{-8.68}$	584^{+27}_{-25}	5023^{+3997}_{-1124}	3792^{+30208}_{-2832}

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

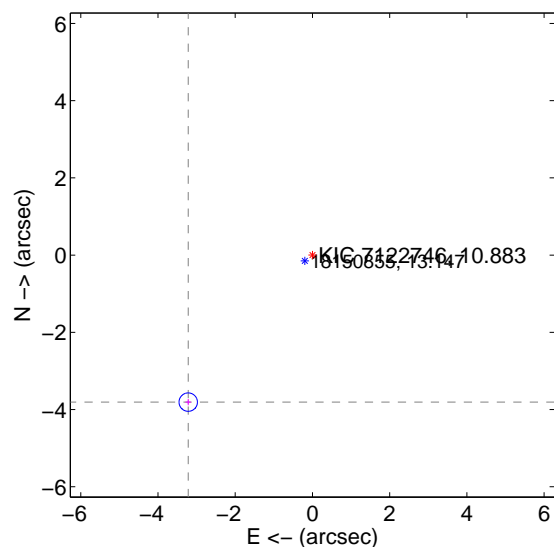
Supplemental centroid analysis for 007122746-01. **Kepler magnitude: 10.88.** Transit SNR 5.94

There are 1 quarters with good PRF difference image offsets

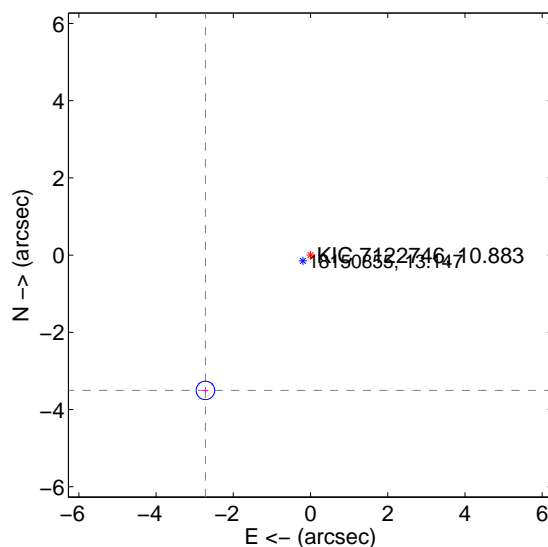
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.987 \pm 0.079	62.76	3.218 \pm 0.076	-3.809 \pm 0.082
PRF-fit source offset from KIC position	4.439 \pm 0.080	55.68	2.723 \pm 0.076	-3.506 \pm 0.082
photometric centroid source offset	0.51 \pm 0.41	1.25	-0.43 \pm 0.40	-0.28 \pm 0.44

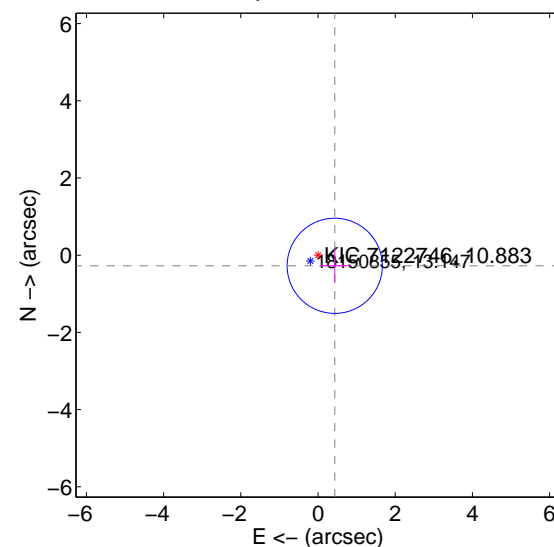
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

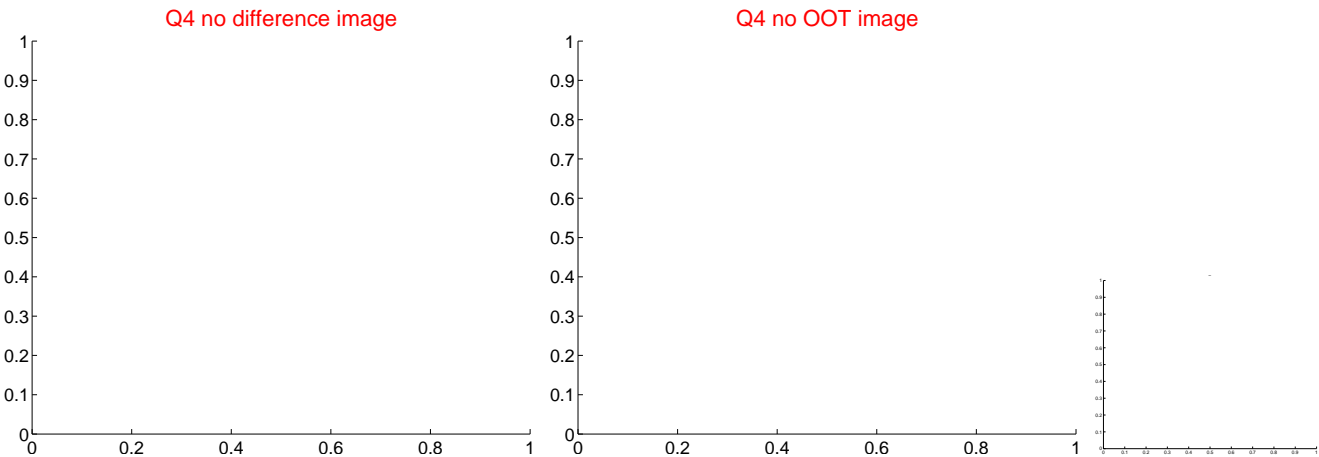
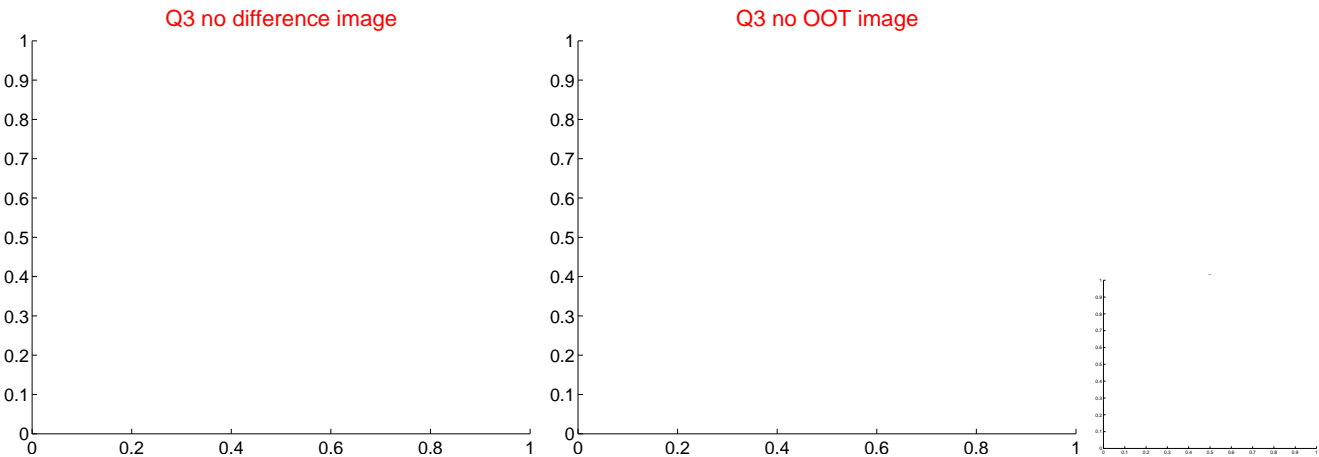
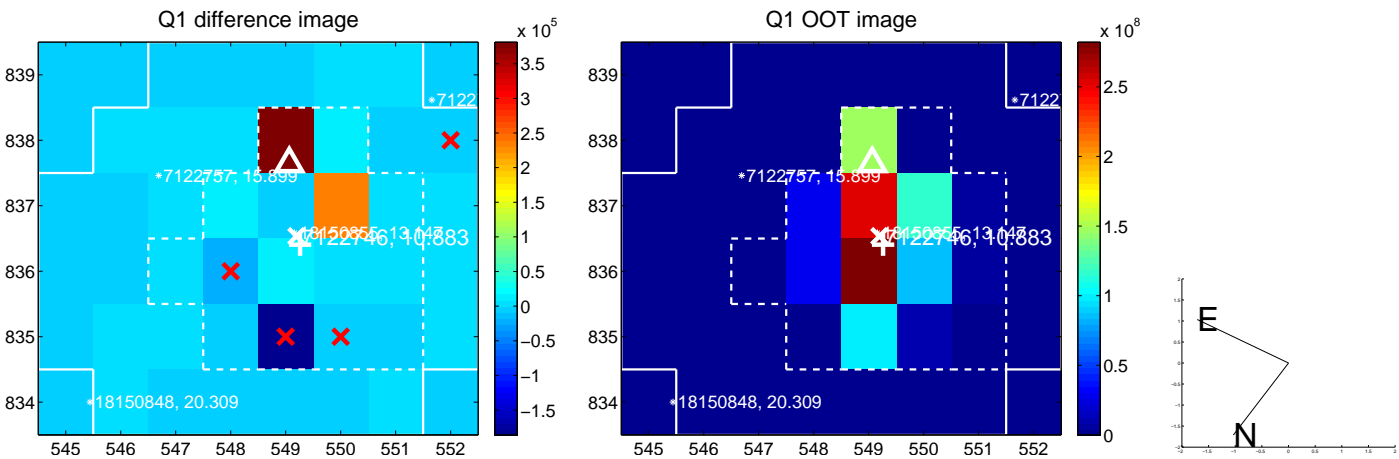


offset from photometric centroids



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.

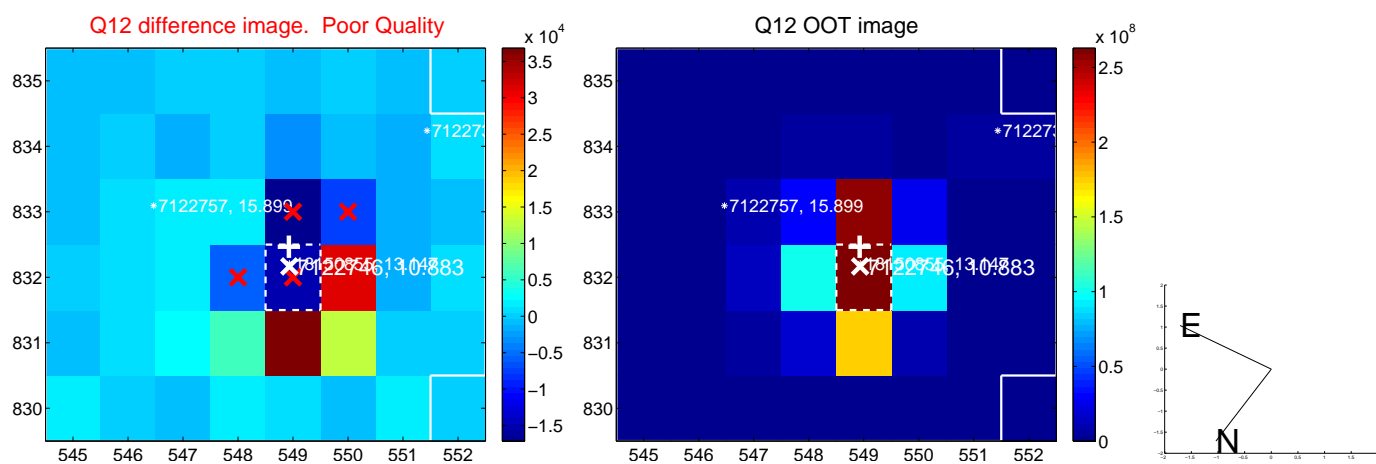
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



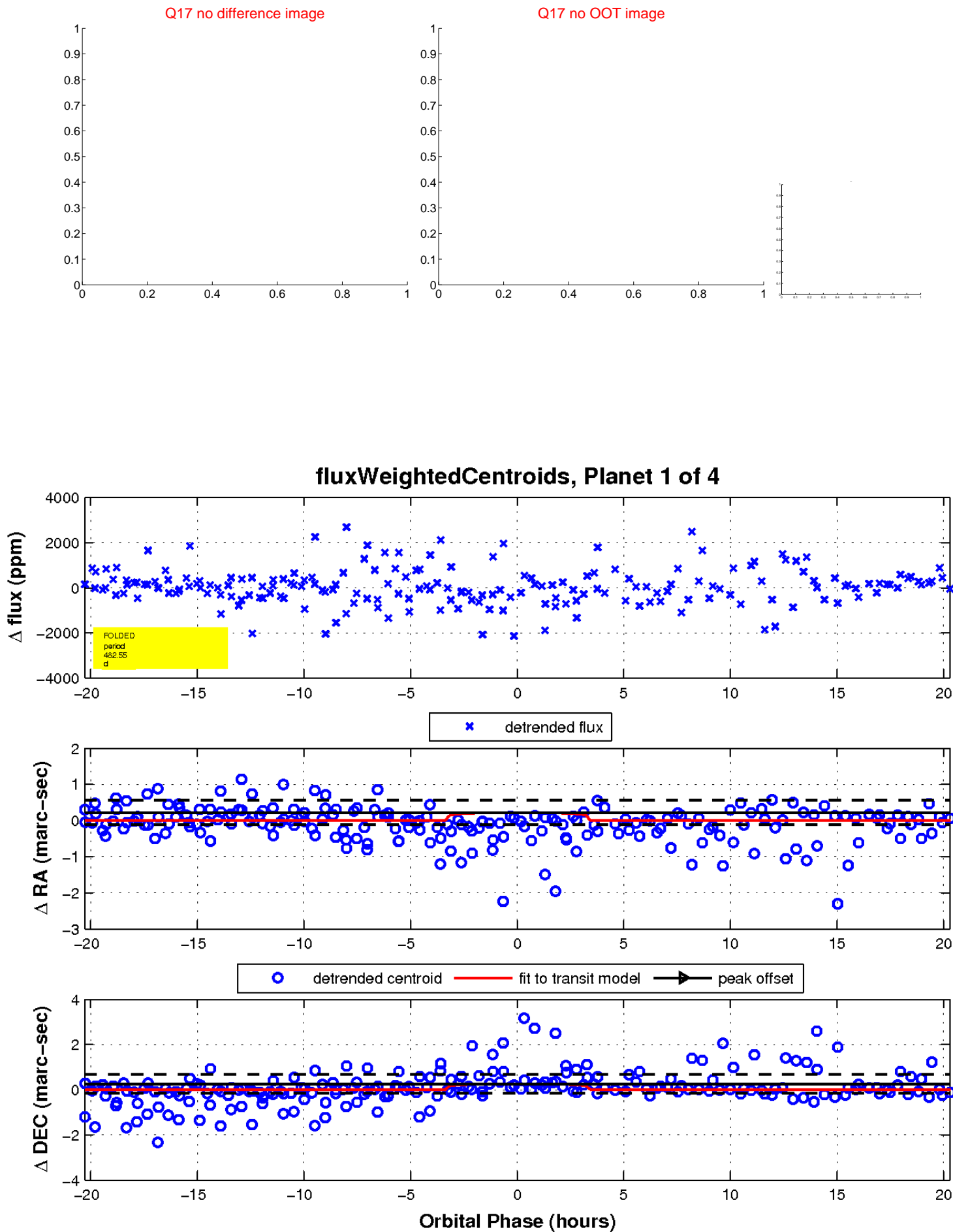
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



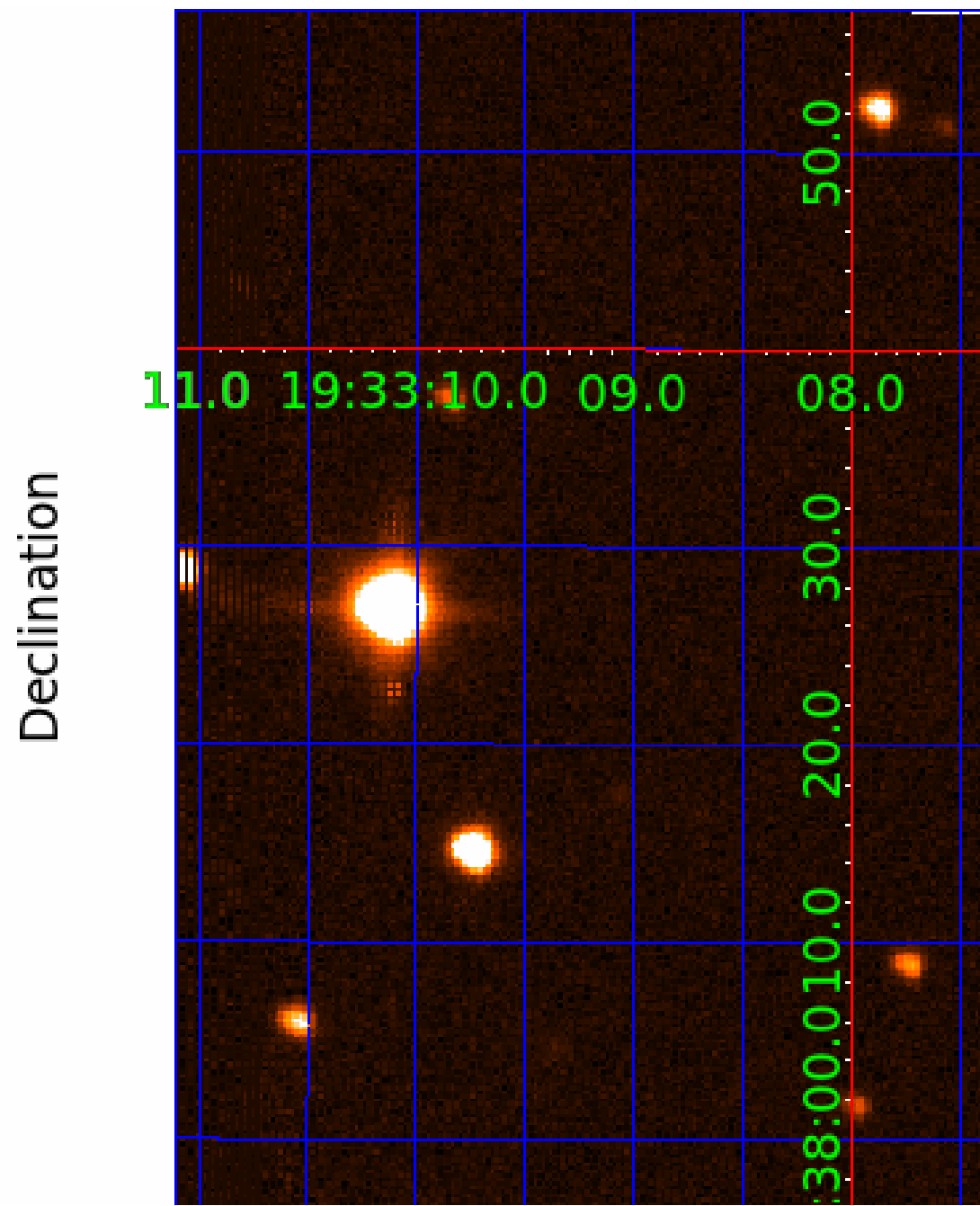
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007122746

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})
007122746-01	OBS	No	482.554733	150.979827	616.7	6.799	10.5	5.9	2.24	7710	5.76	7.31
007122746-02	OBS	No	0.594422	131.771243	40.5	1.915	9.8	10.8	2.24	7710	1.66	55337.71
007122746-03	OBS	No	0.594425	132.061754	50.0	1.436	8.9	9.8	2.24	7710	1.84	55337.35
007122746-04	OBS	No	0.564491	131.754246	103.8	6.774	9.8	14.5	2.24	7710	2.32	59284.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007122746-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
007122746-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007122746-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007122746-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_SATURATED

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

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

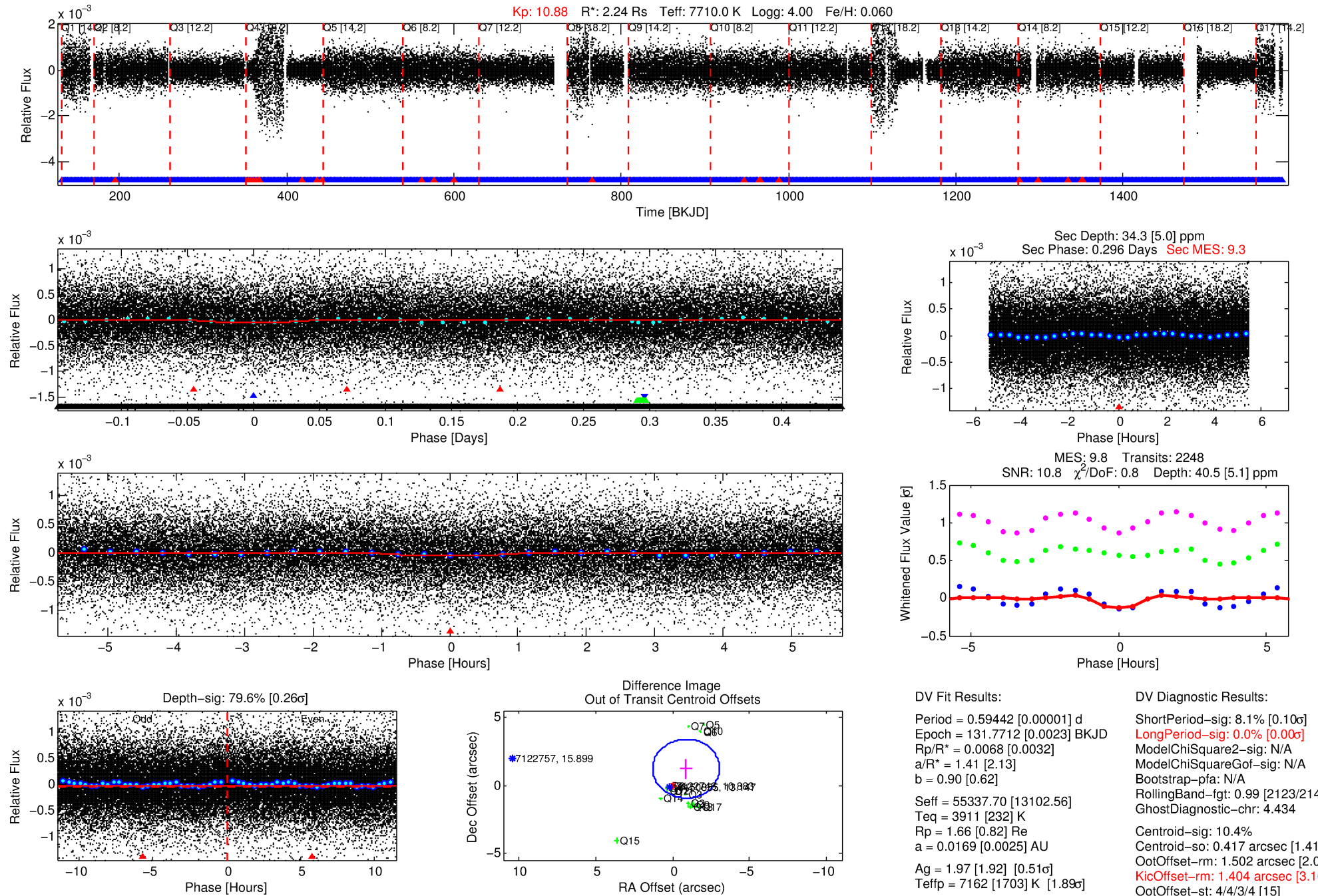
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007122746-02

No Significant Match Found

DV One-Page Summary

KIC: 7122746 Candidate: 2 of 4 Period: 0.594 d



DV Fit Results:

Period = 0.59442 [0.00001] d
Epoch = 131.7712 [0.0023] BKJD
 $R_p/R^* = 0.0068$ [0.0032]
 $a/R^* = 1.41$ [2.13]
 $b = 0.90$ [0.62]
 $\text{Seff} = 55337.70$ [13102.56]
 $T_{\text{eq}} = 3911$ [232] K
 $R_p = 1.66$ [0.82] R_{e}
 $a = 0.0169$ [0.0025] AU
 $A_g = 1.97$ [1.92] [0.51σ]
 $T_{\text{eff}} = 7162$ [1703] K [1.89σ]

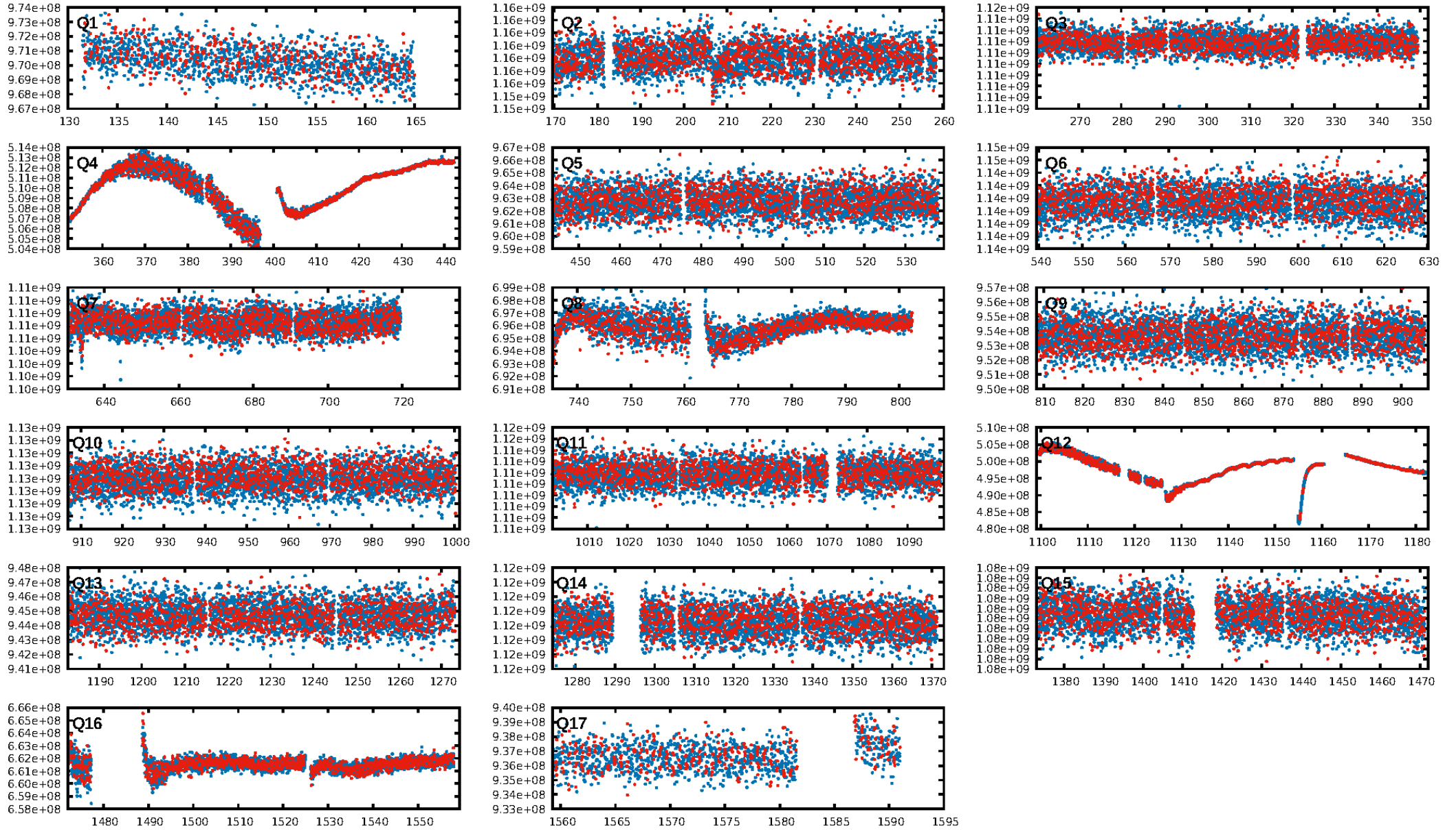
DV Diagnostic Results:

ShortPeriod-sig: 8.1% [0.10σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [2123/2148]
GhostDiagnostic-chr: 4.434
Centroid-sig: 10.4%
Centroid-so: 0.417 arcsec [1.41σ]
OotOffset-rm: 1.502 arcsec [2.08σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-rm: 1.404 arcsec [3.16σ]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 0.00 [0/17]




Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:25:10 Z

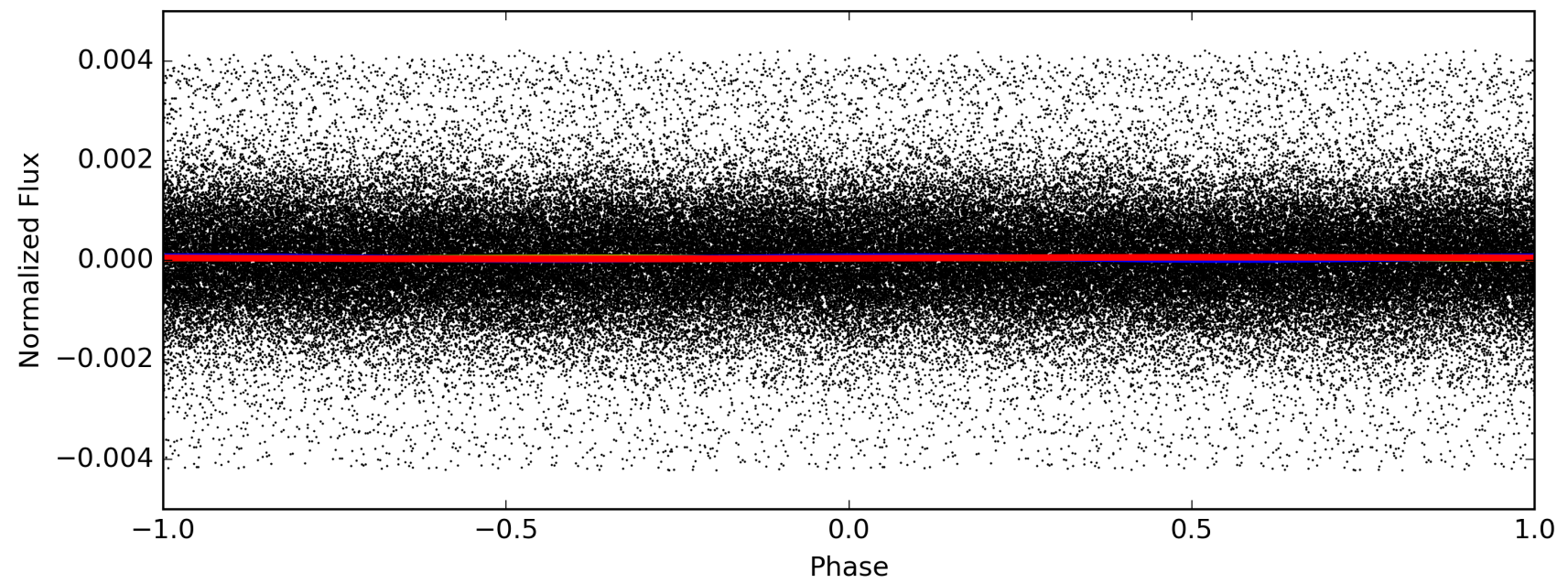
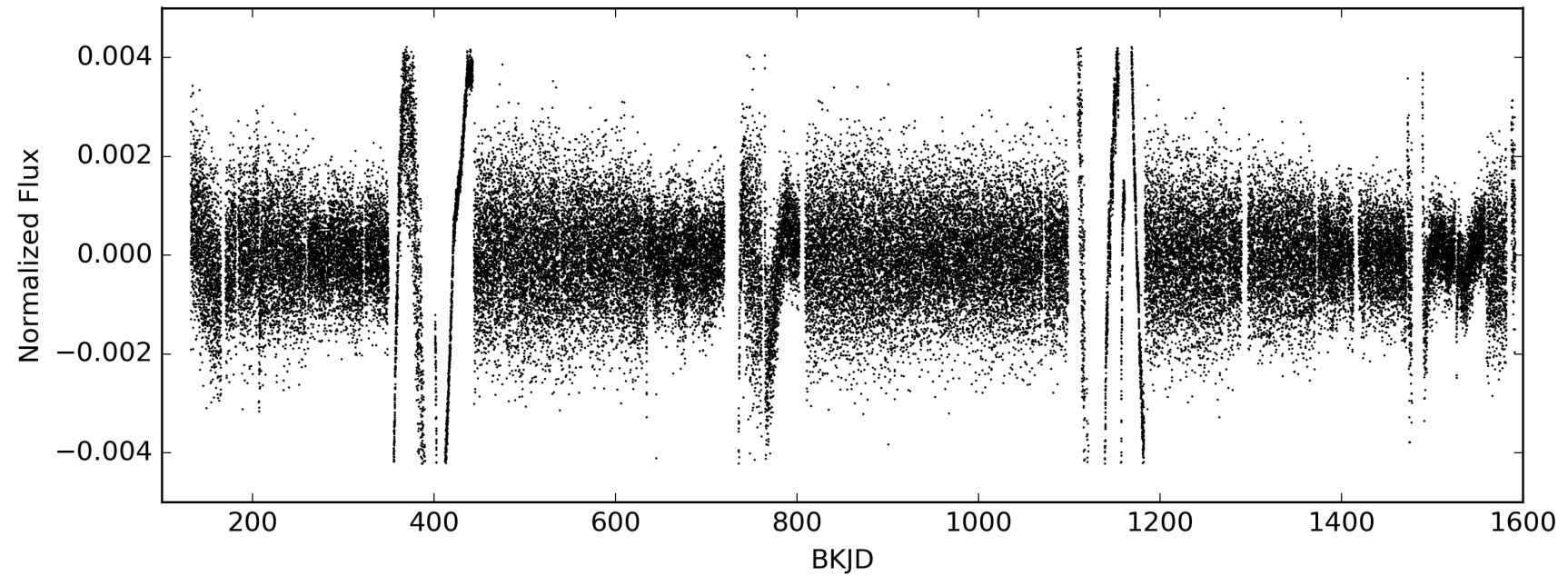
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007122746-02, PDC Light Curves



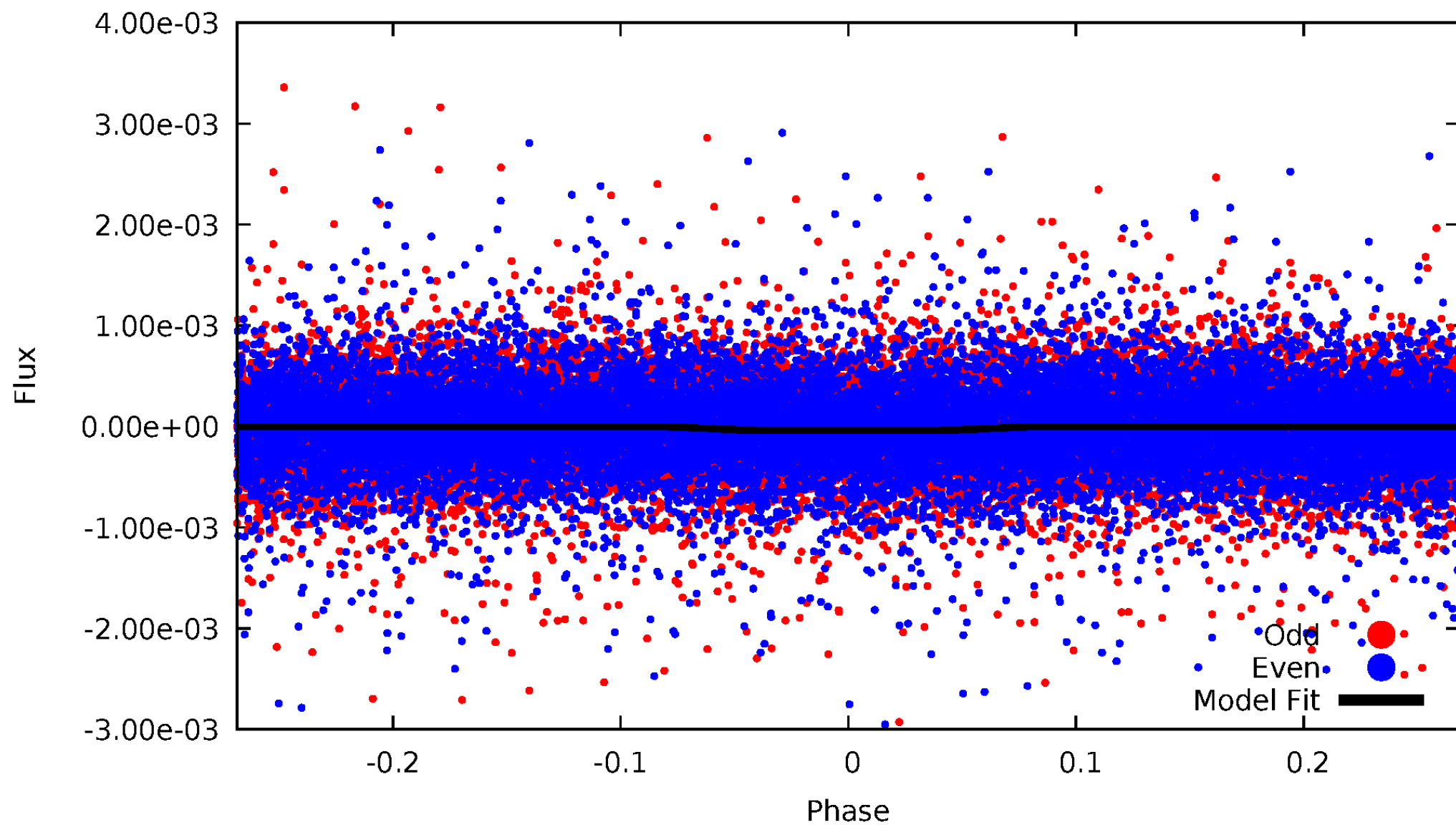
TCE 007122746-02

 P = 0.297 days  P = 0.594 days  P = 1.189 days



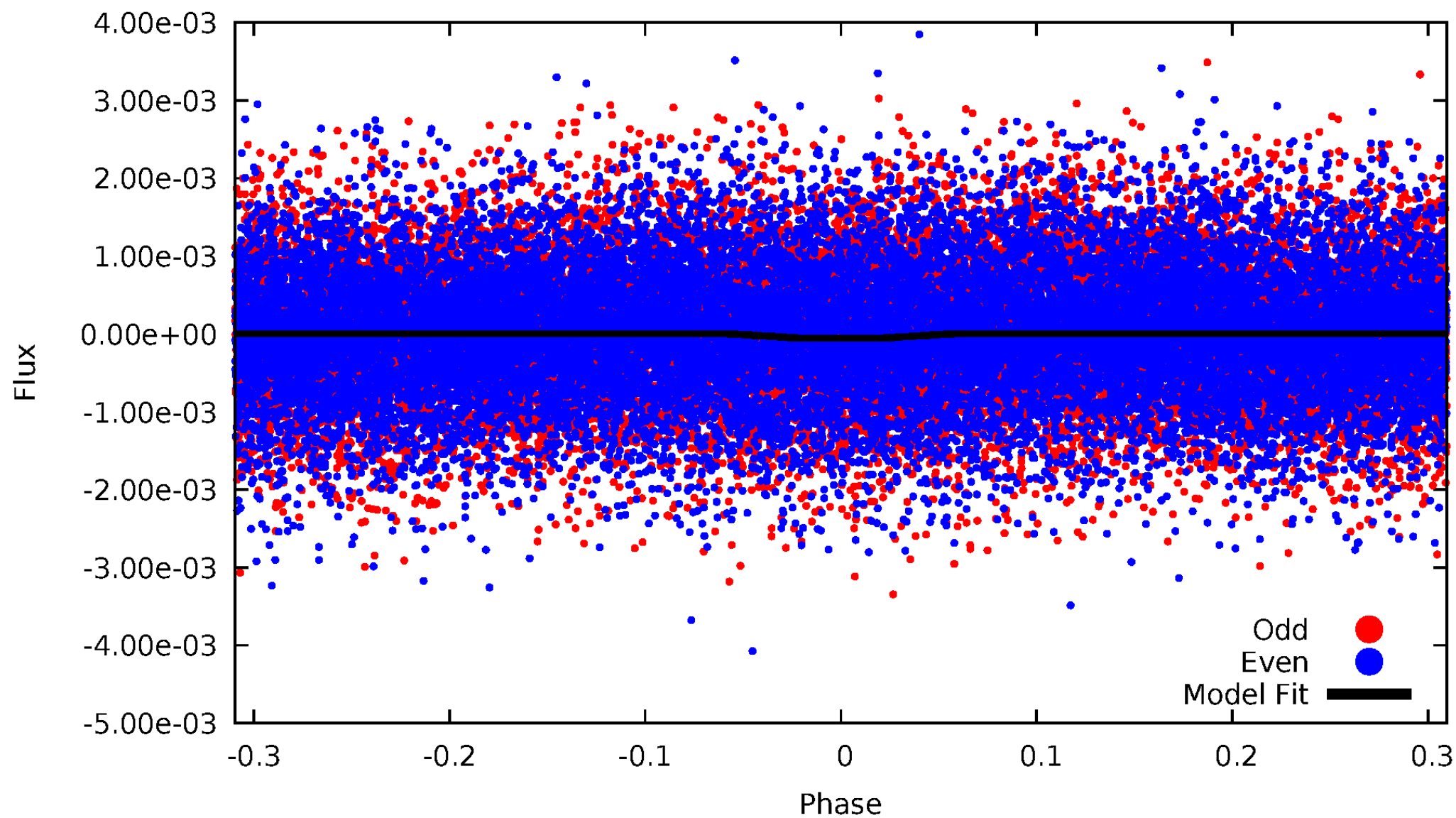
DV Odd/Even

TCE 007122746-02



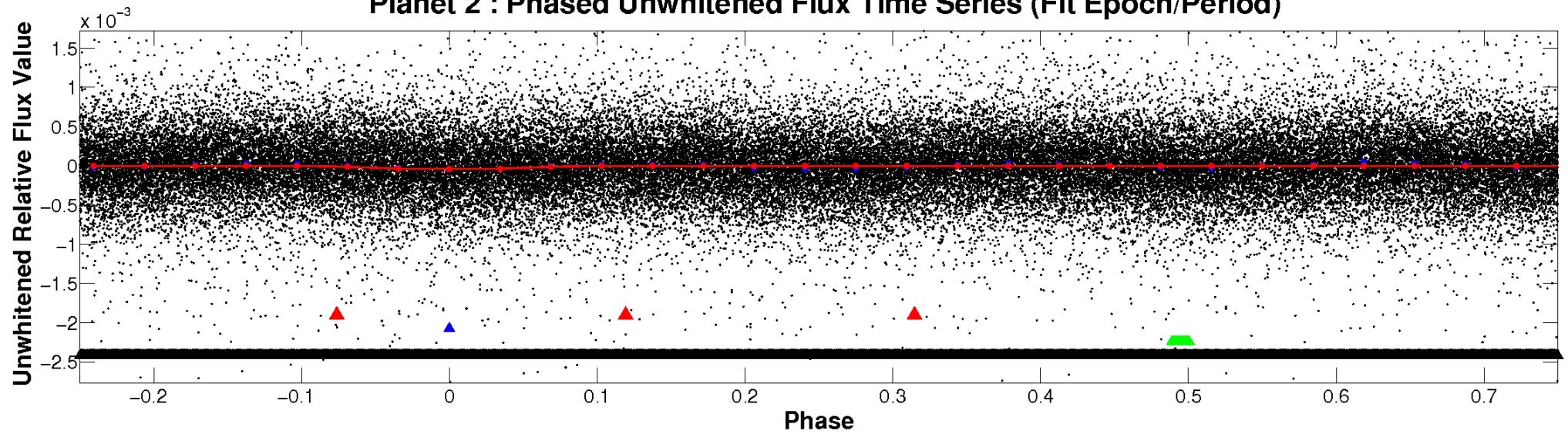
ALT Odd/Even

TCE 007122746-02

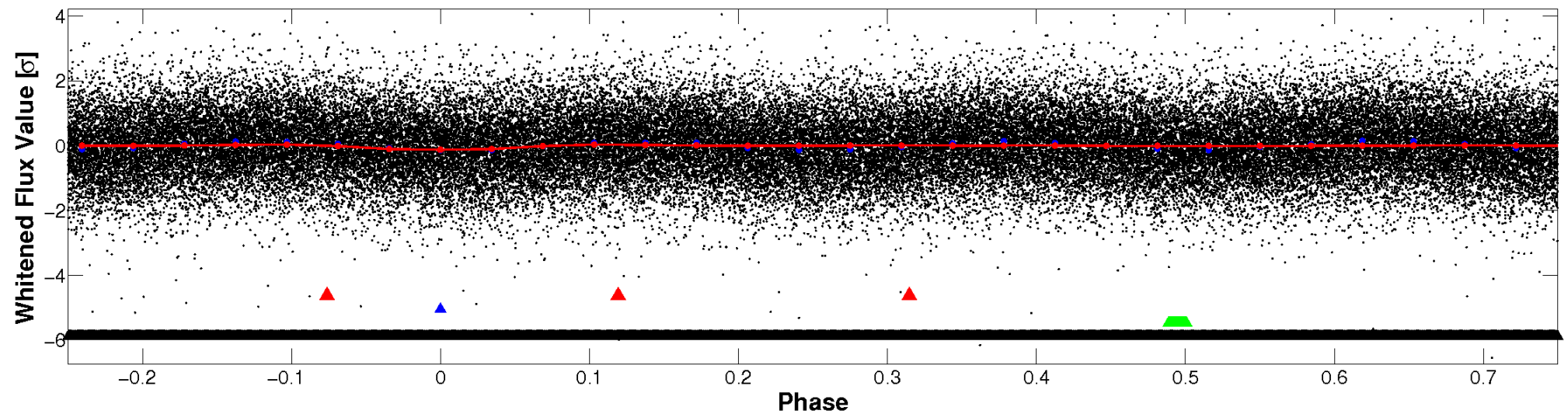


Non-Whitened Vs. Whitened Light Curve

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

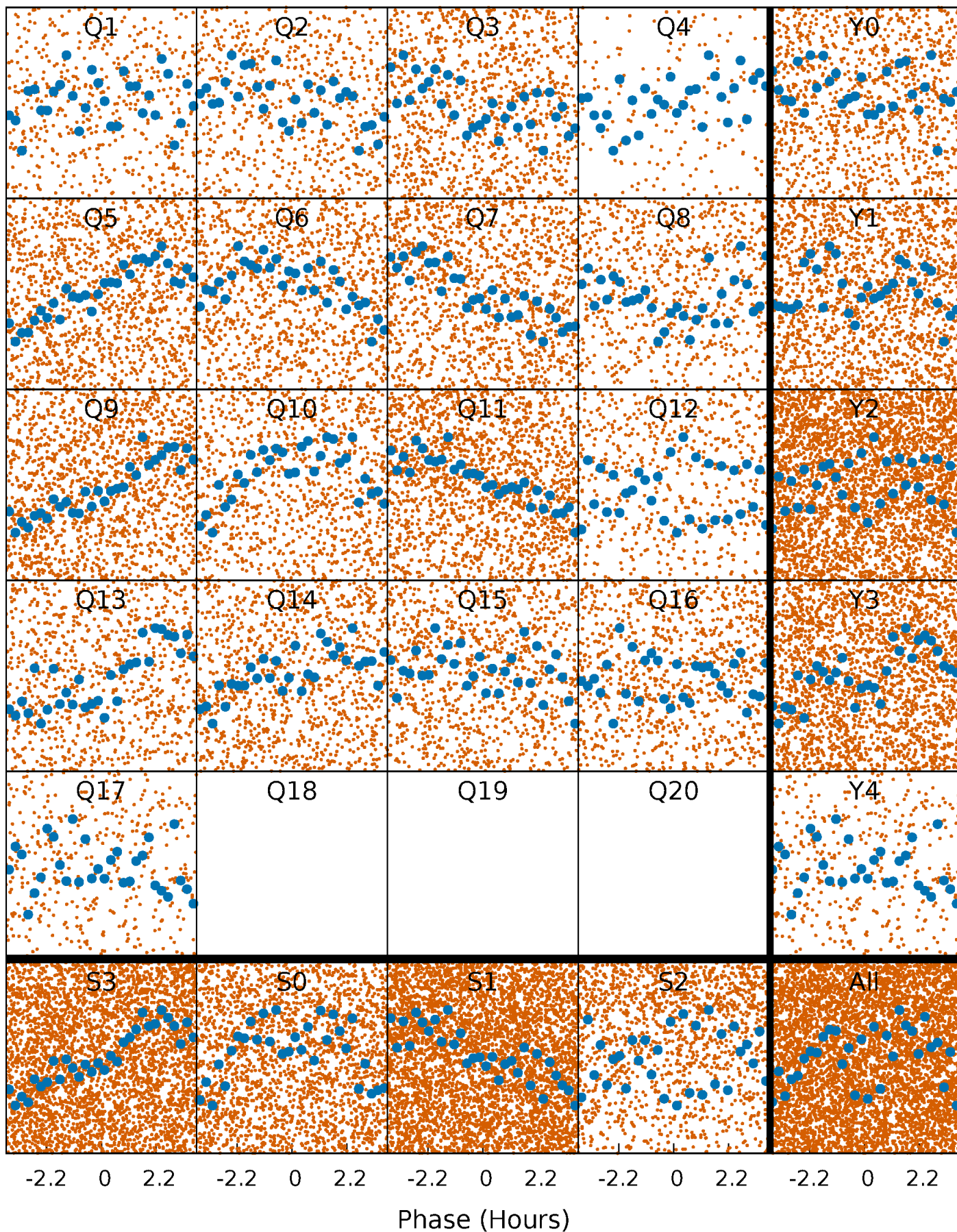


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



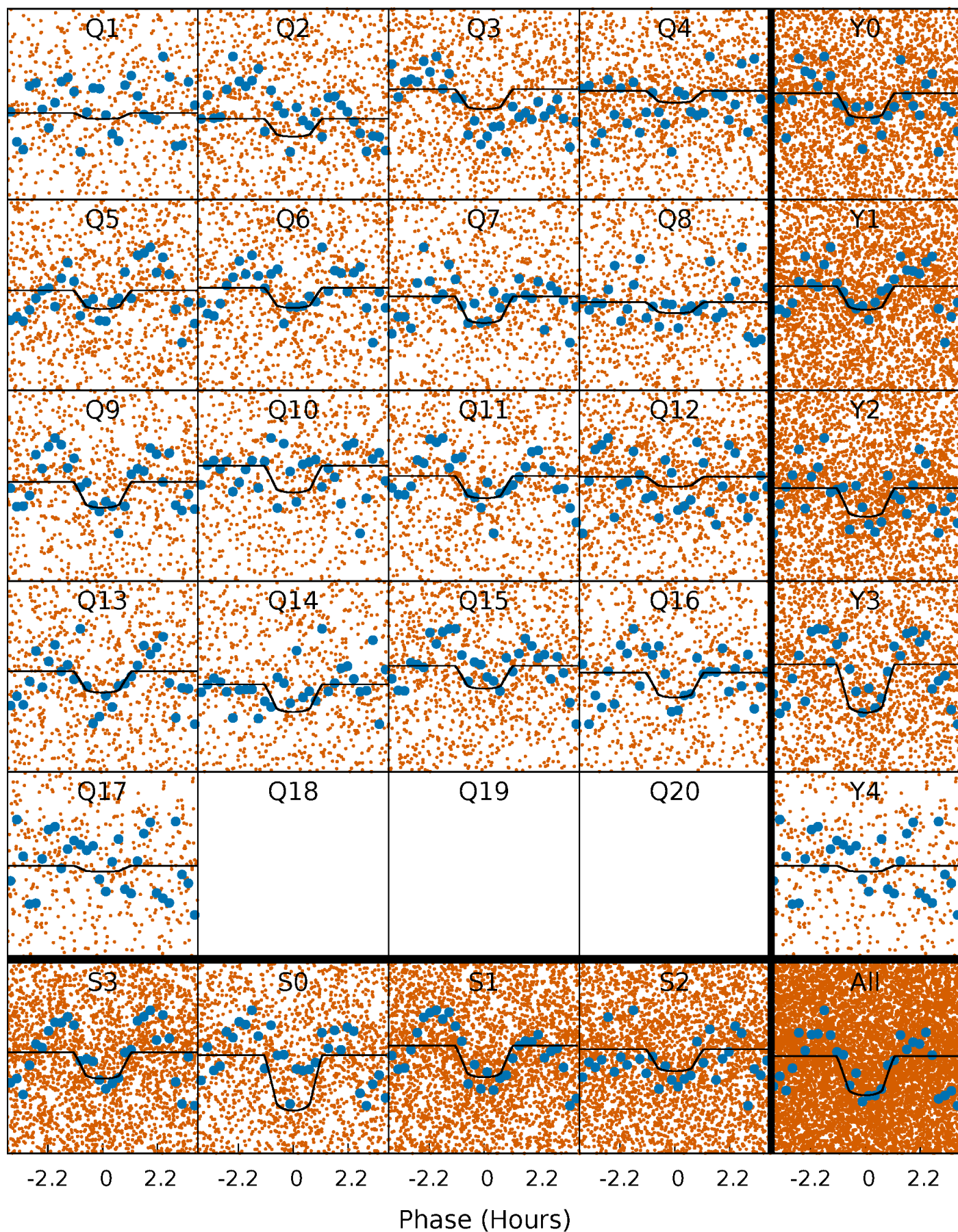
PDC Quarter-Phased Transit Curves

TCE 007122746-02 P= 0.594422 Days $T_0=131.771242$ (BKJD)



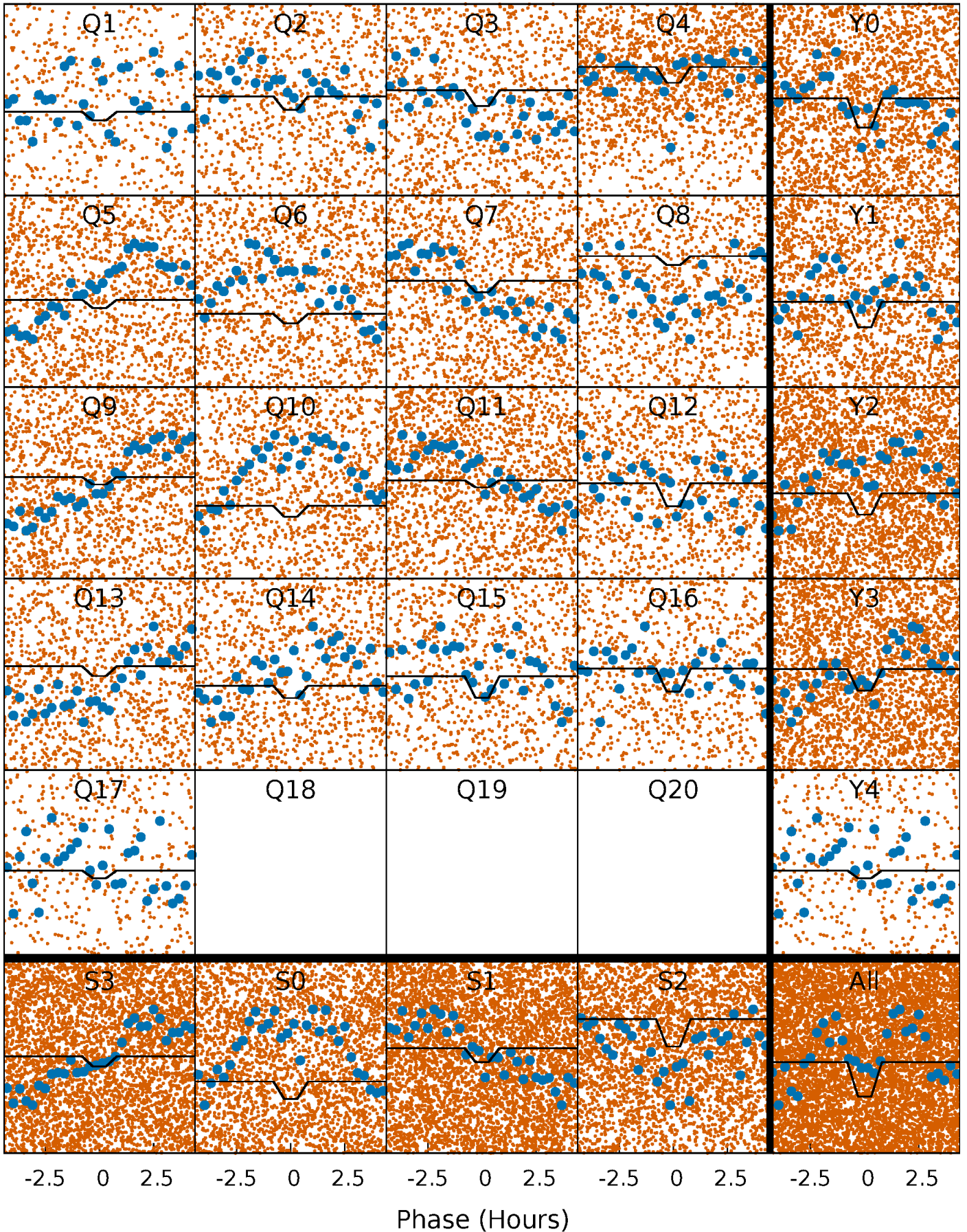
DV Quarter-Phased Transit Curves

TCE 007122746-02 P= 0.594422 Days $T_0=131.771242$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

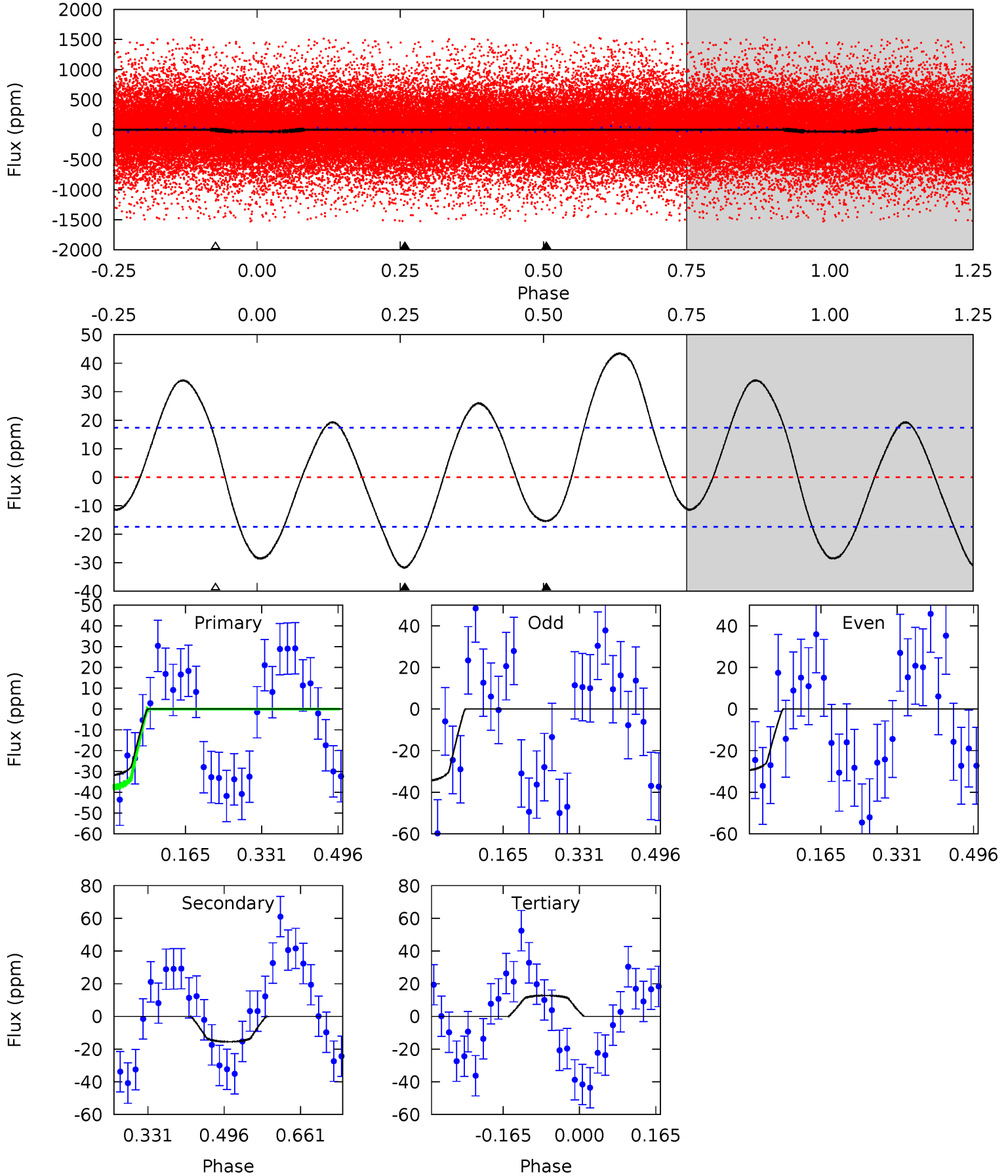
TCE 007122746-02 P= 0.594425 Days $T_0=131.767925$ (BKJD)



DV Model-Shift Uniqueness Test

007122746-02, P = 0.594422 Days, E = 131.176820 Days

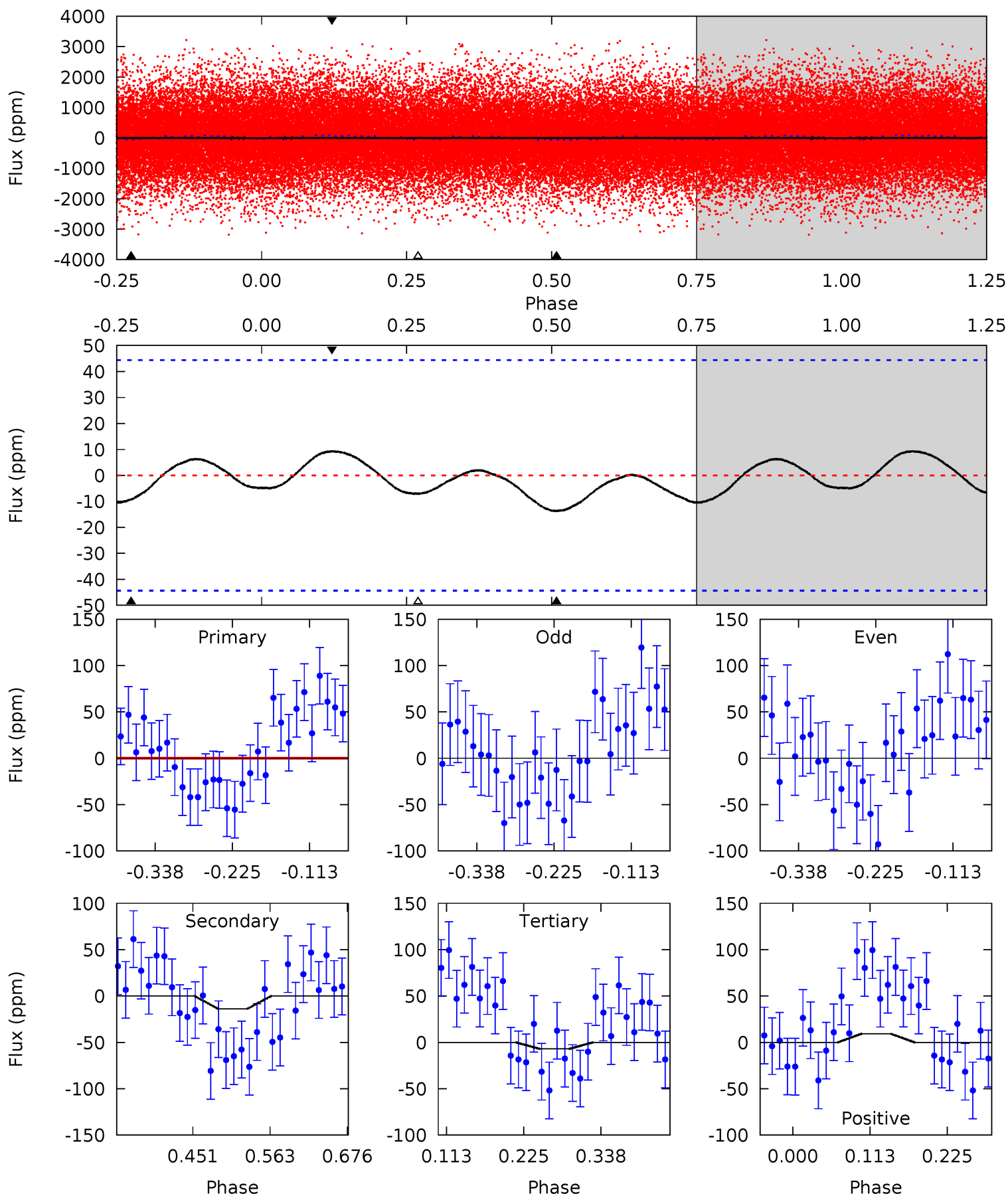
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.16	3.97	-3.28	0	4.46	1.39	4.92	11.4	8.16	7.26	3.97	0.64	1.38	0.58	1.47



Alt Model-Shift Uniqueness Test

007122746-02, P = 0.594425 Days, E = 131.173500 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.95	1.40	0.72	0.95	4.54	1.59	0.49	0.22	-0.00	0.68	0.45	0.95	0.61	0.40	0.41



Stellar Parameters For KIC 007122746

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7710^{+139}_{-154}	$4.001^{+0.126}_{-0.094}$	$0.060^{+0.100}_{-0.150}$	$2.239^{+0.338}_{-0.372}$	$1.833^{+0.090}_{-0.167}$	$0.230^{+0.128}_{-0.070}$
	+2%/-2%	+3%/-2%	+167%/-250%	+15%/-17%	+5%/-9%	+56%/-30%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 007122746-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15 ± 4	$1.65^{+0.80}_{-0.78}$	5437^{+245}_{-236}	5175^{+2618}_{-1519}	$0.859^{+2.214}_{-0.472}$
Alt.	-14 ± 10	$1.77^{+0.85}_{-0.72}$	5452^{+234}_{-248}	4529^{+2388}_{-8539}	$0.594^{+1.567}_{-0.446}$

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 $A_{obs} \gg 1.0$

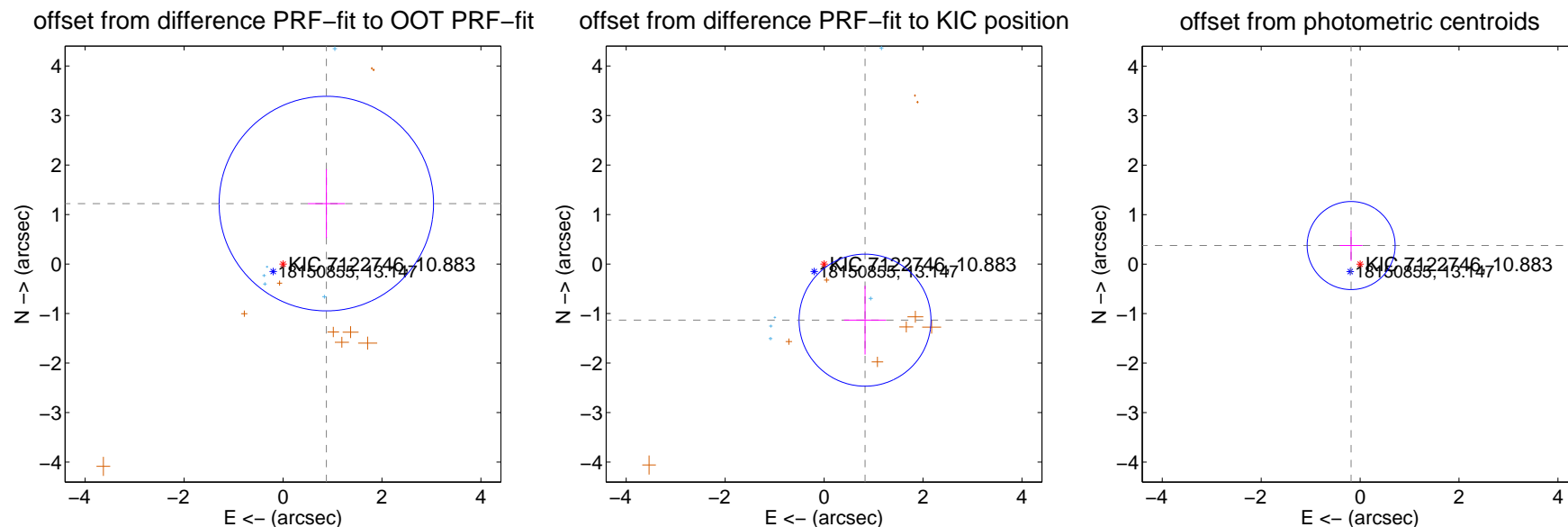
DV Centroid Data

Supplemental centroid analysis for 007122746-02. **Kepler magnitude: 10.88.** Transit SNR 10.83

There are 5 quarters with good PRF difference image offsets

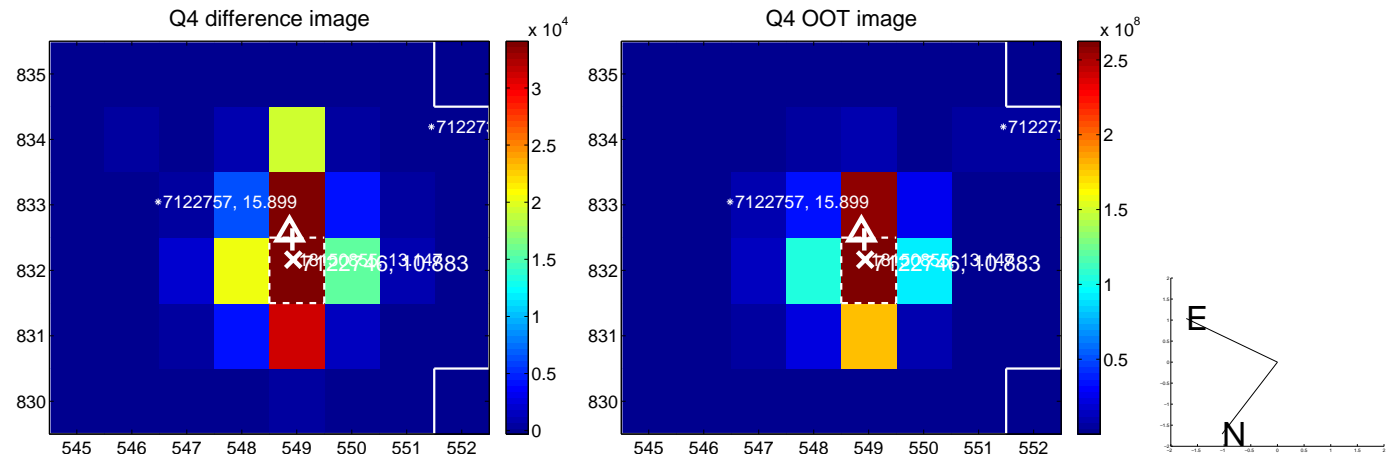
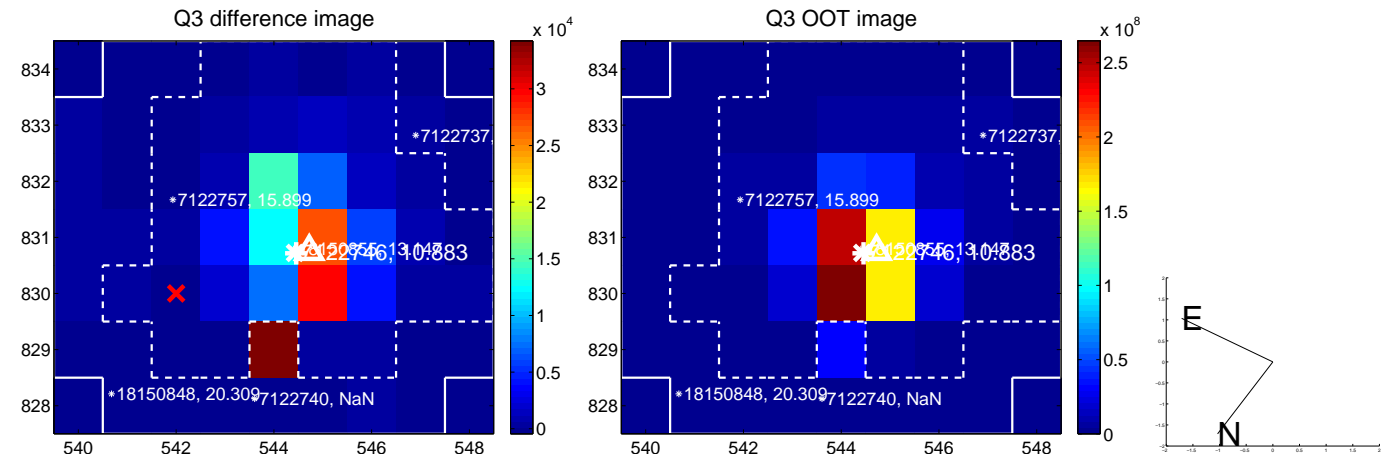
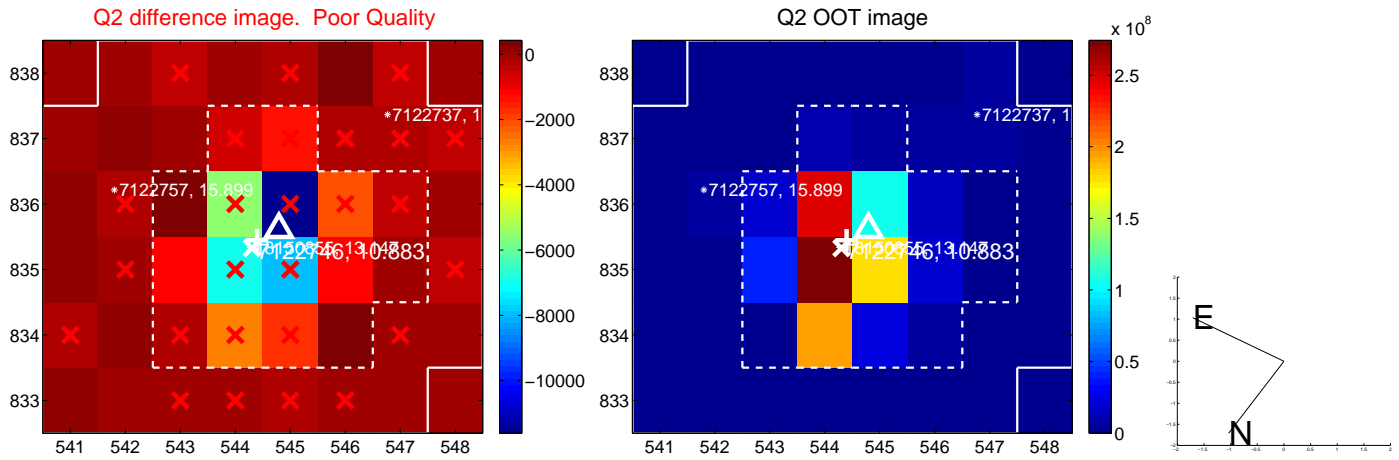
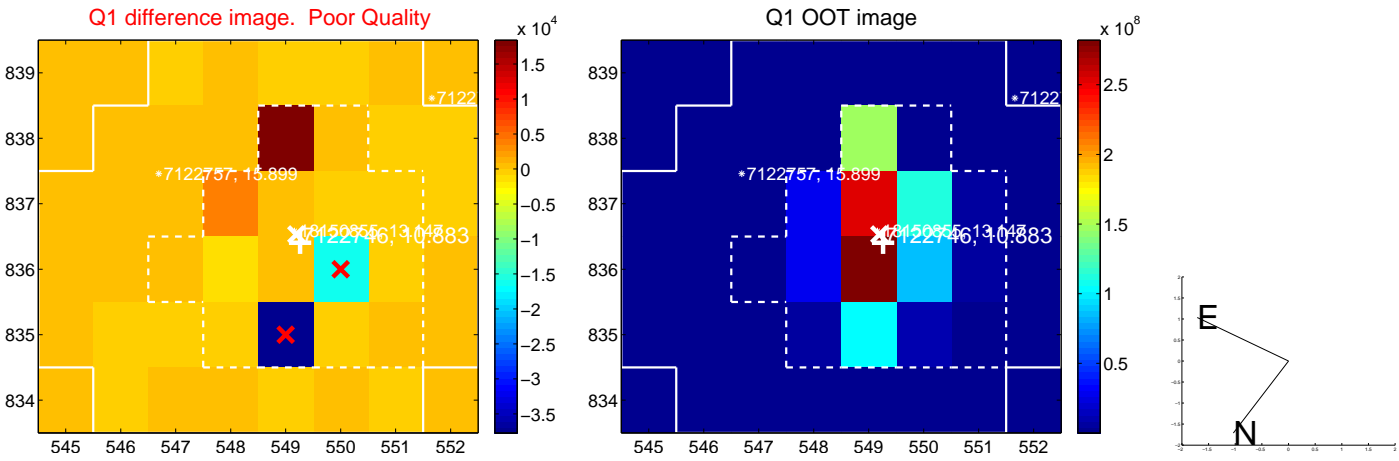
The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.502 ± 0.722	2.08	-0.875 ± 0.372	1.221 ± 0.695
PRF-fit source offset from KIC position	1.404 ± 0.444	3.16	-0.828 ± 0.424	-1.134 ± 0.696
photometric centroid source offset	0.42 ± 0.30	1.41	0.18 ± 0.23	0.38 ± 0.31

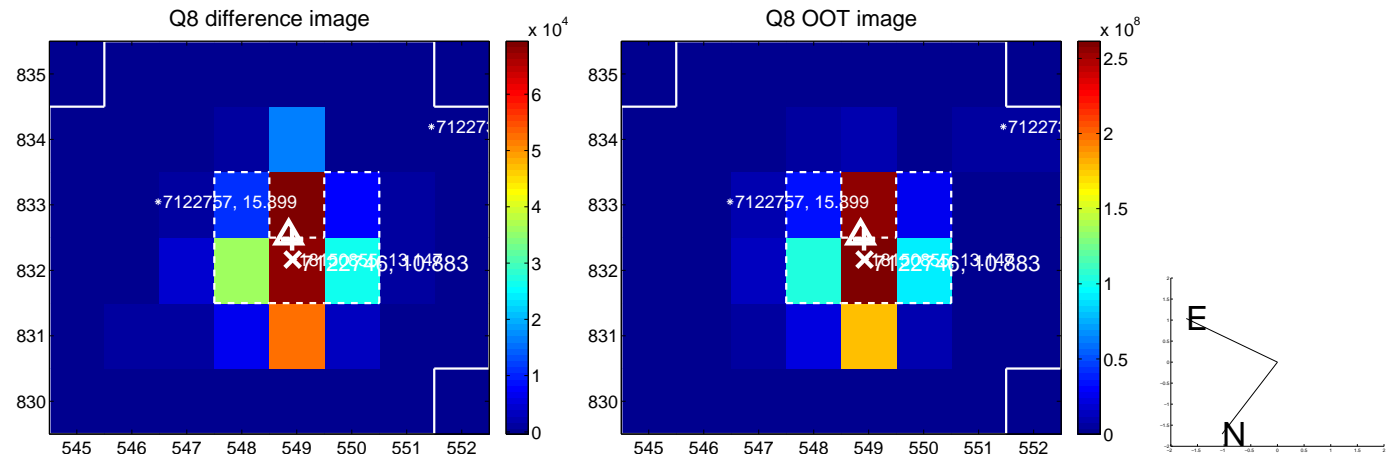
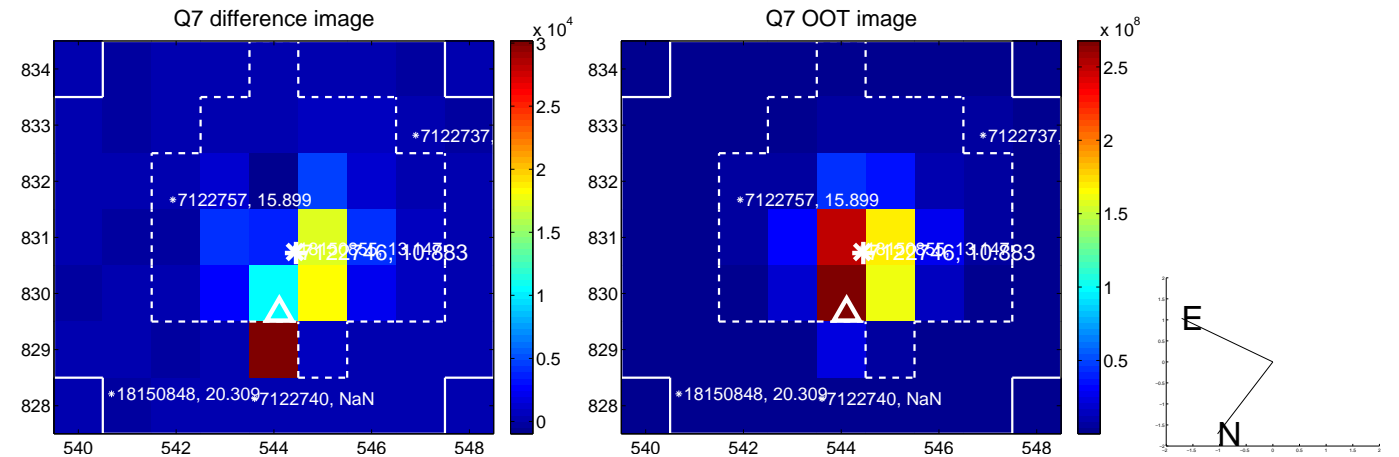
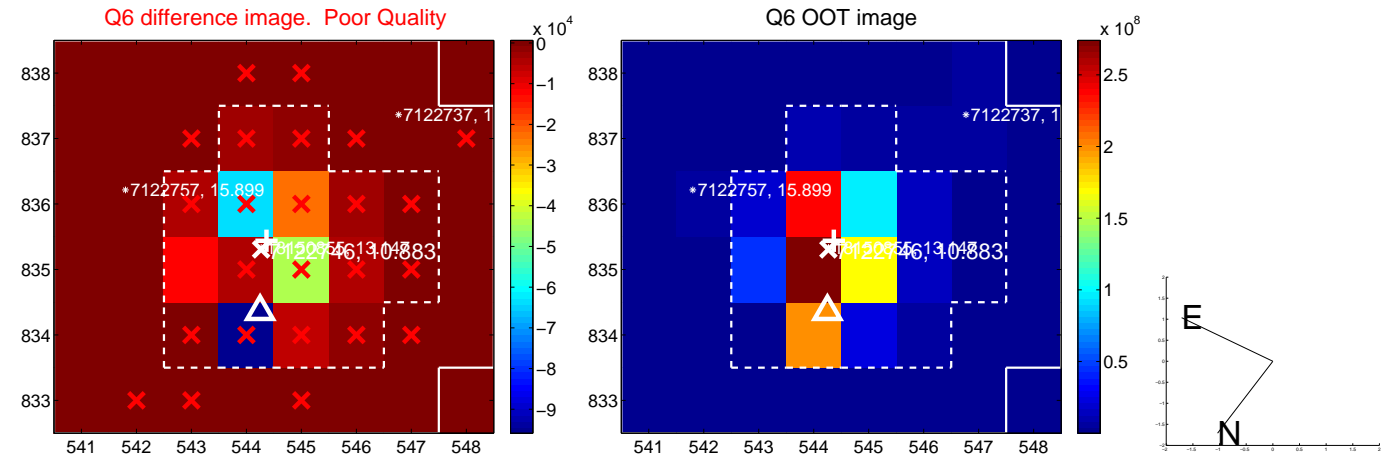
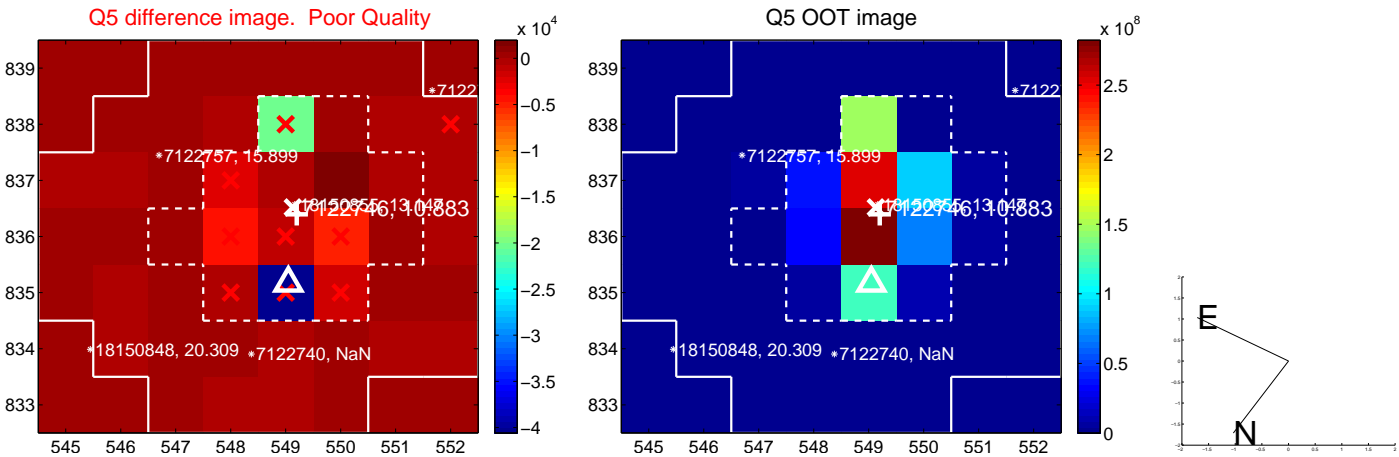


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

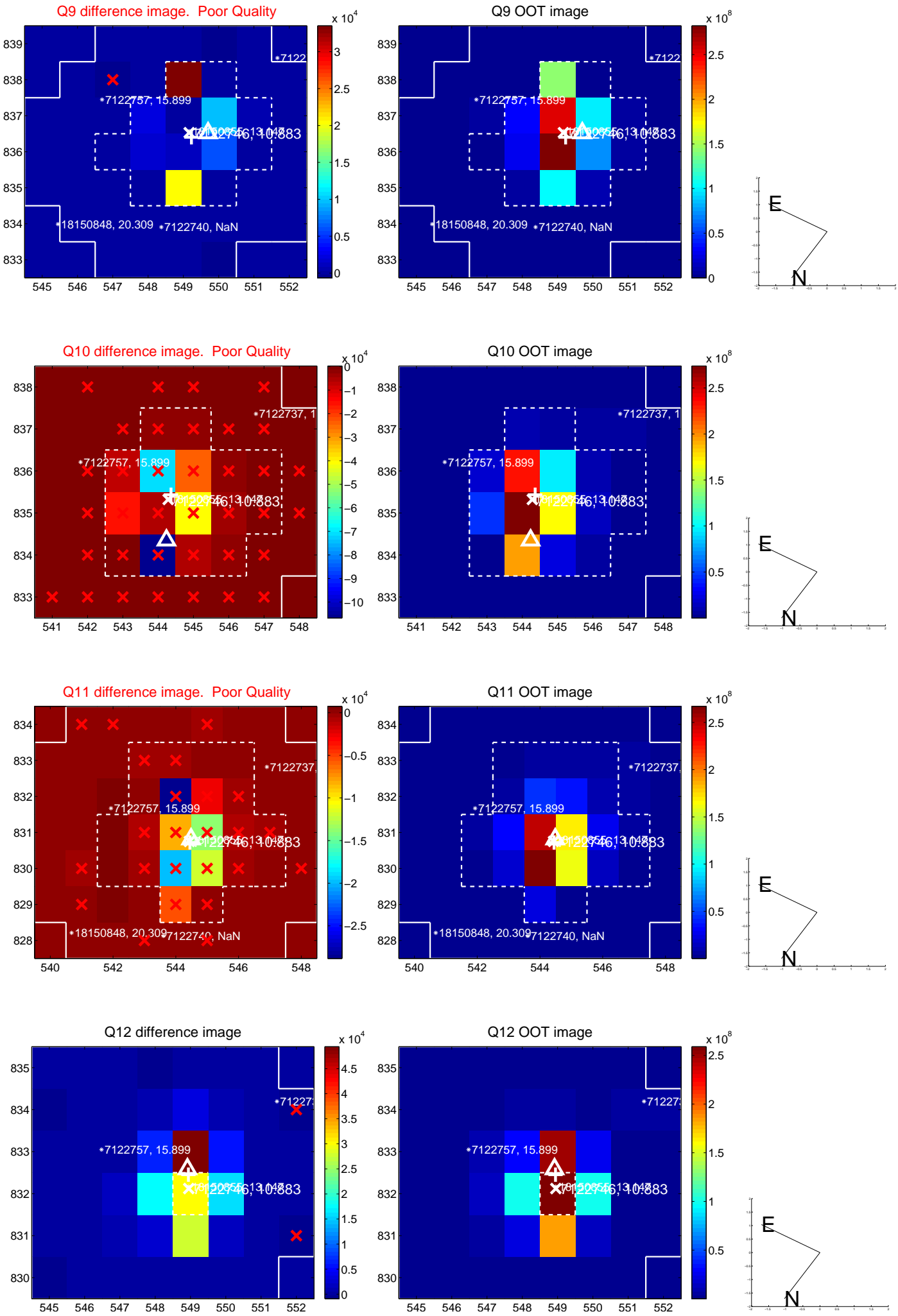
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



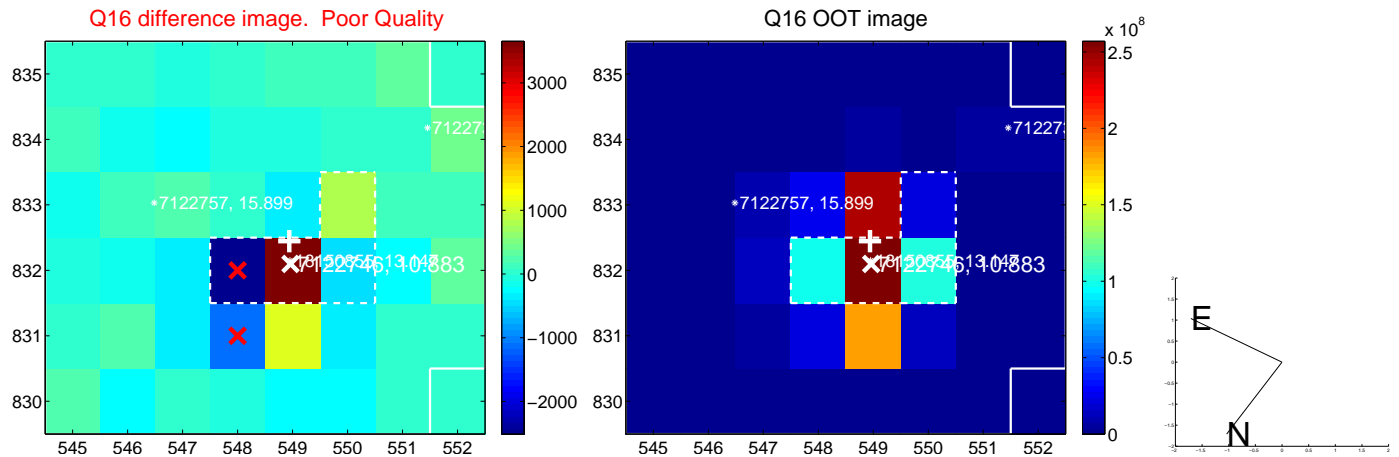
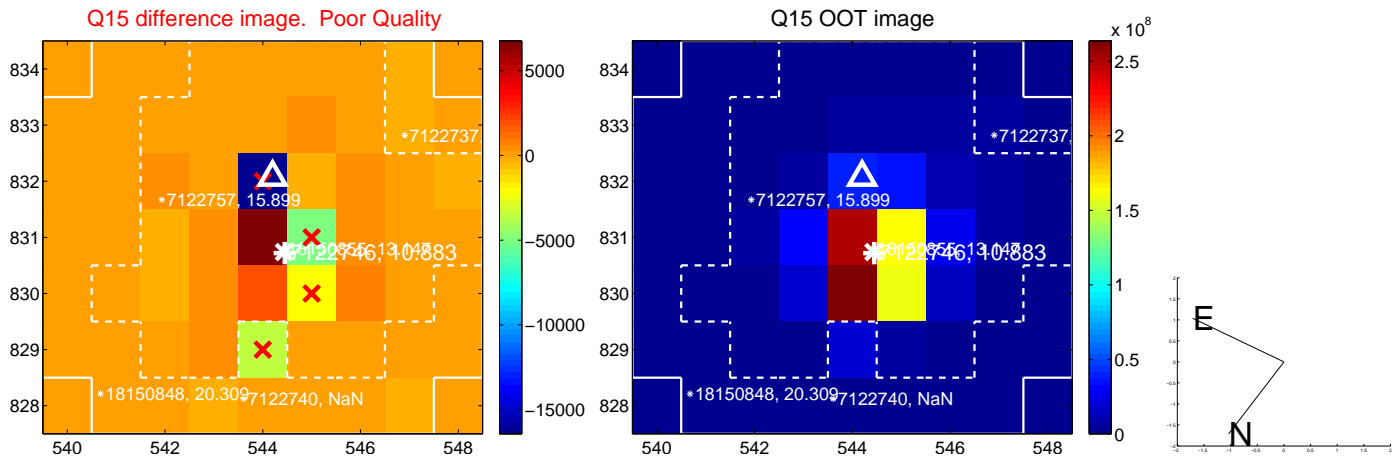
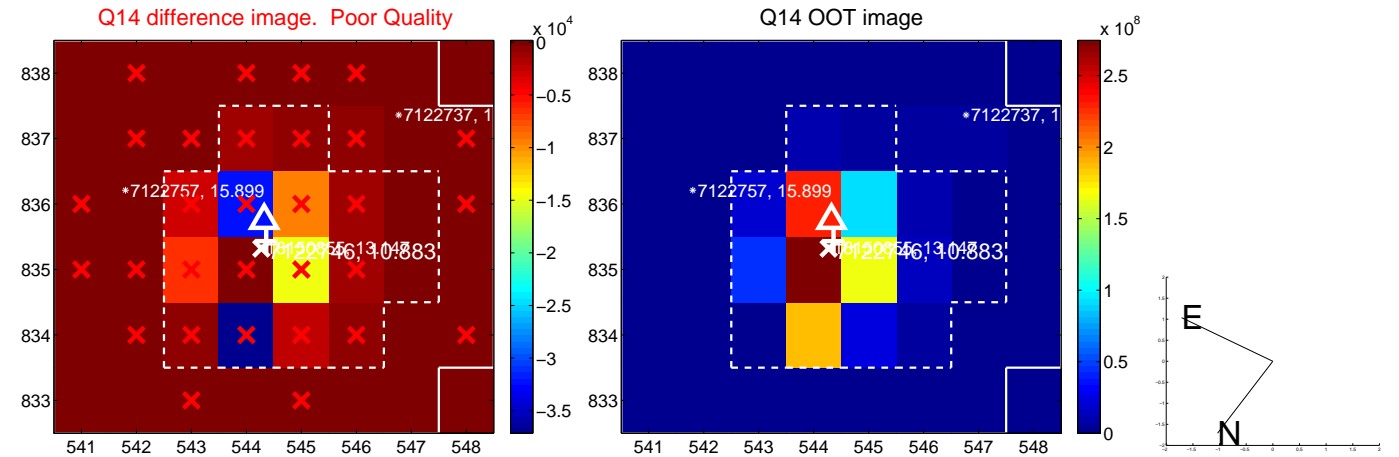
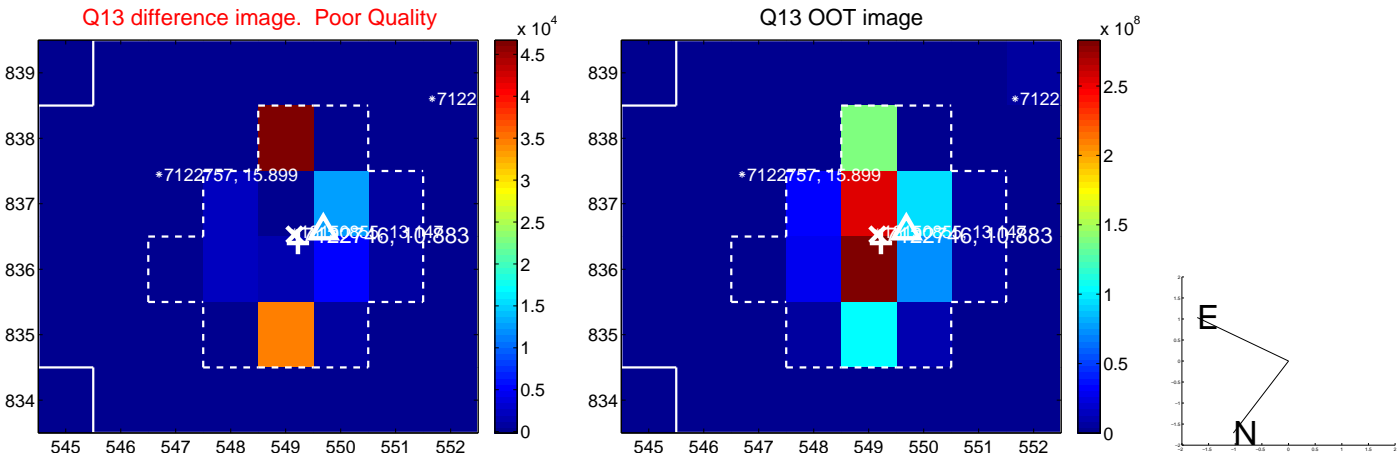
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



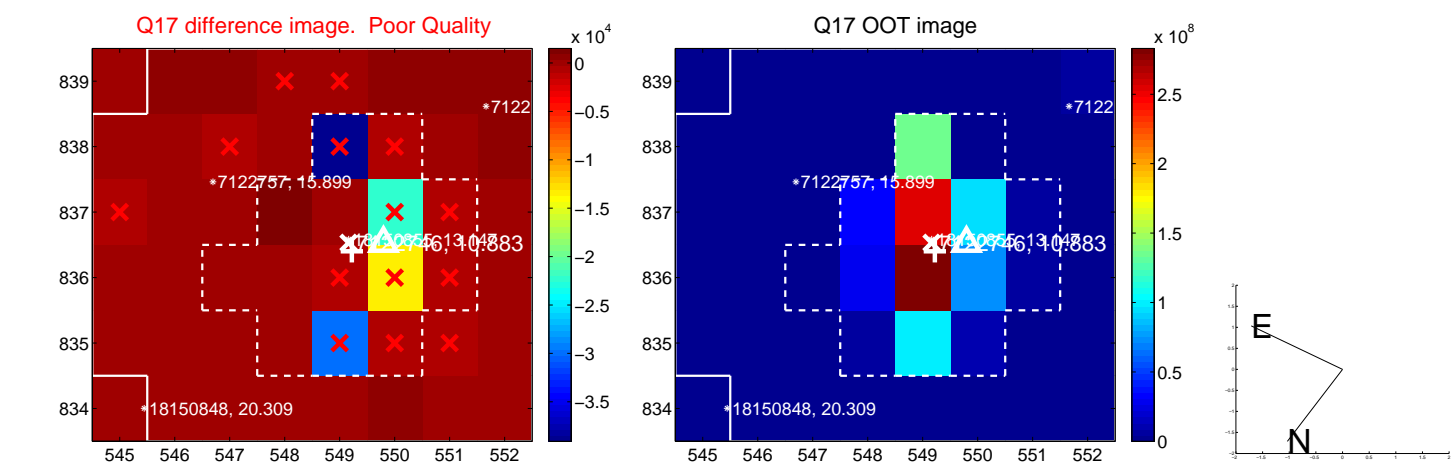
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



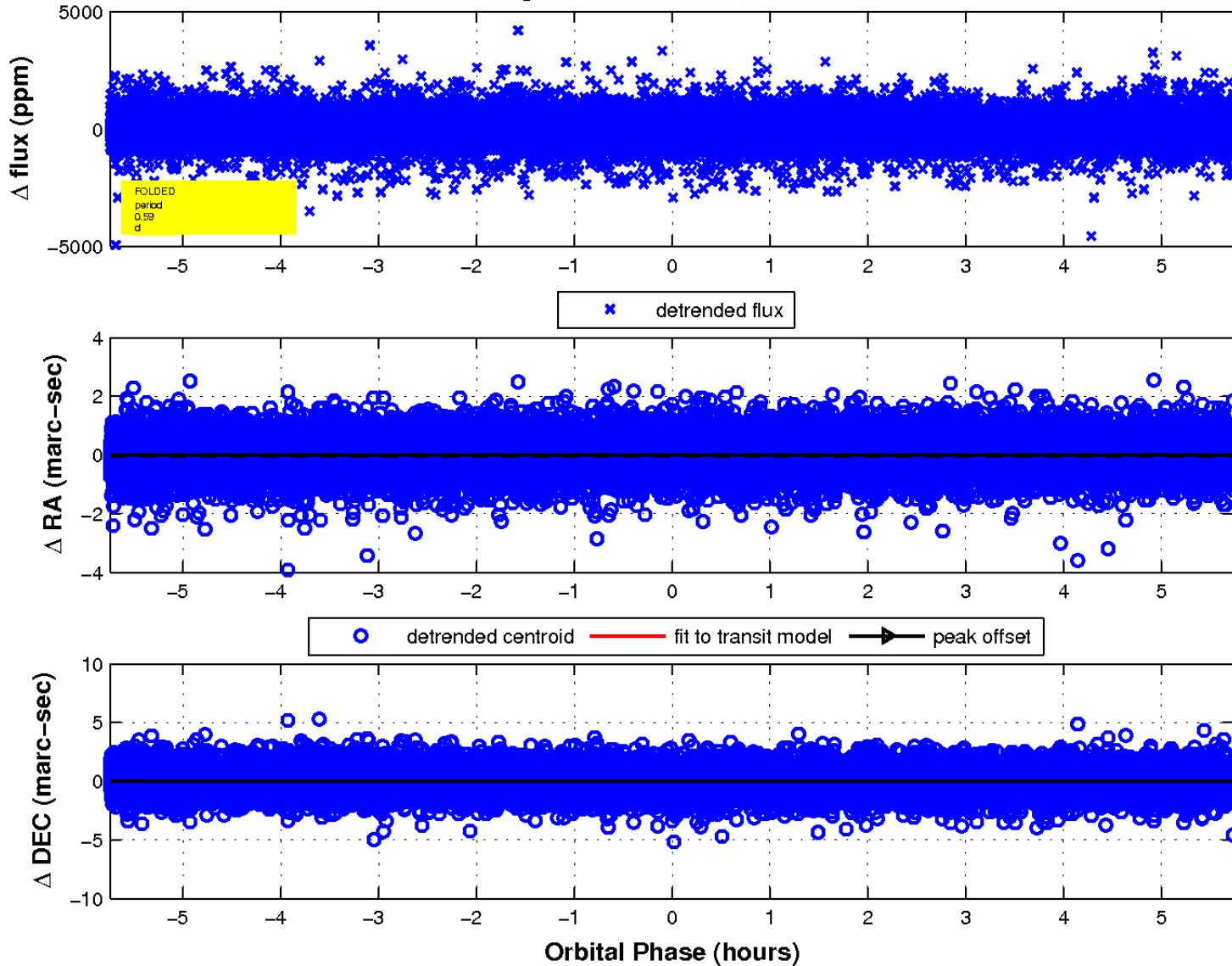
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



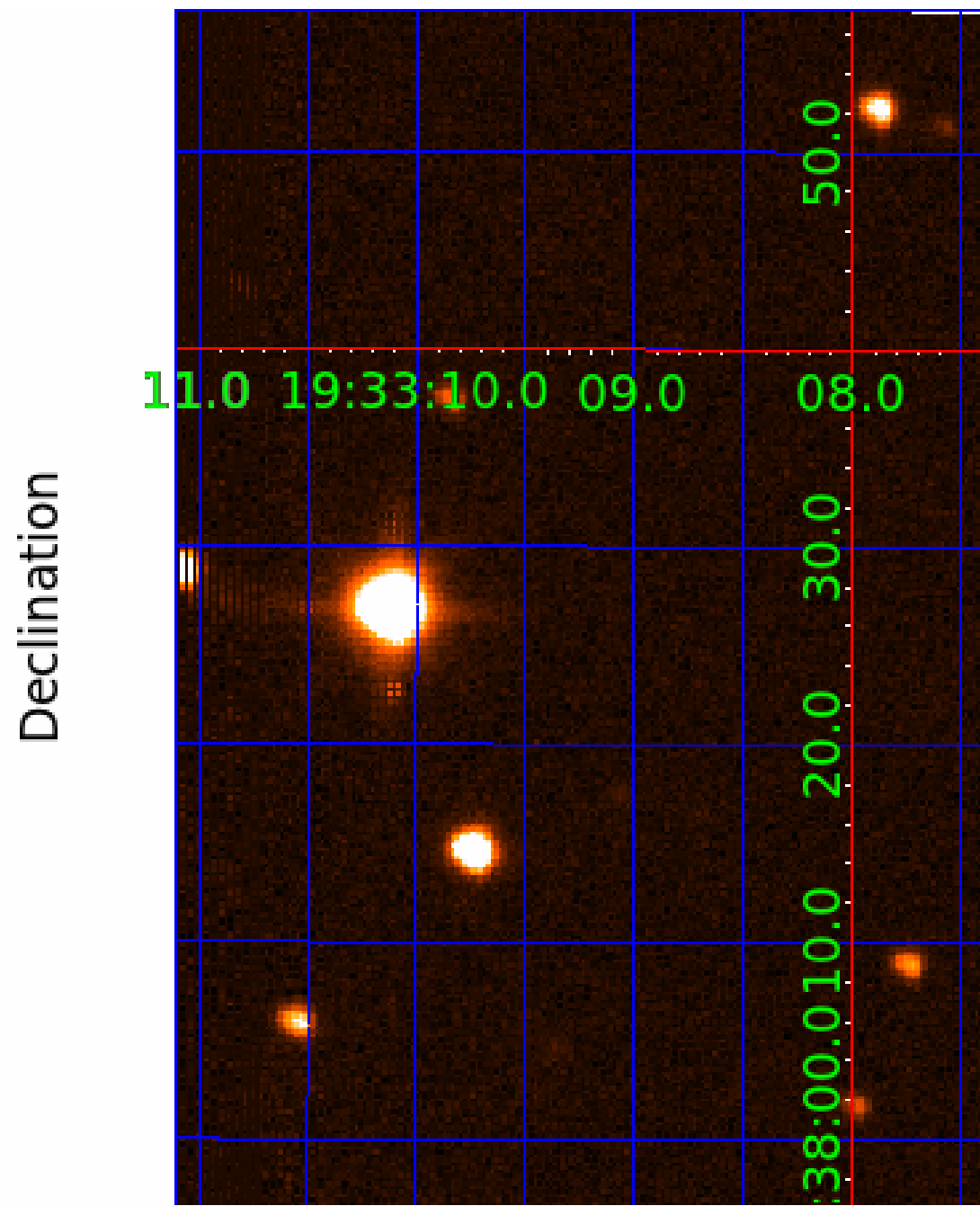
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 4



UKIRT Image



KIC 007122746

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})
007122746-01	OBS	No	482.554733	150.979827	616.7	6.799	10.5	5.9	2.24	7710	5.76	7.31
007122746-02	OBS	No	0.594422	131.771243	40.5	1.915	9.8	10.8	2.24	7710	1.66	55337.71
007122746-03	OBS	No	0.594425	132.061754	50.0	1.436	8.9	9.8	2.24	7710	1.84	55337.35
007122746-04	OBS	No	0.564491	131.754246	103.8	6.774	9.8	14.5	2.24	7710	2.32	59284.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007122746-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
007122746-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007122746-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007122746-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_SATURATED

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

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

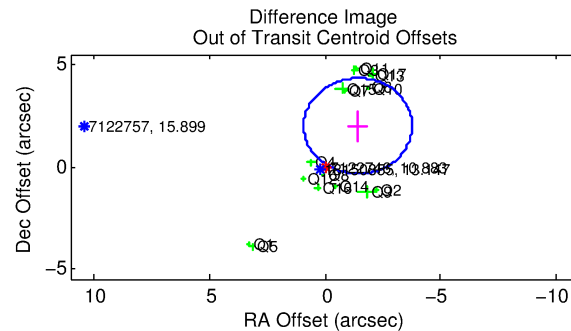
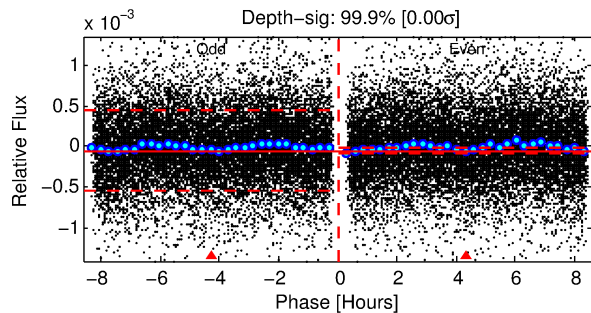
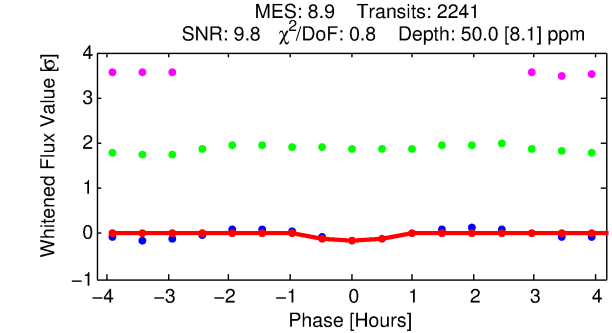
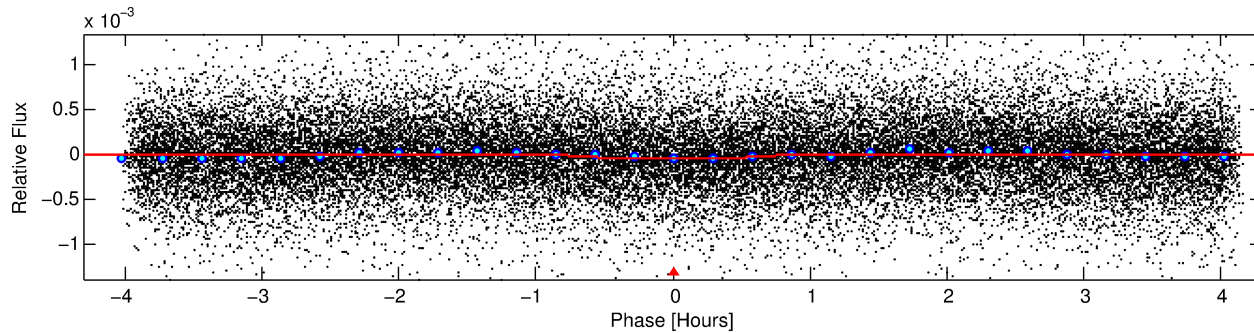
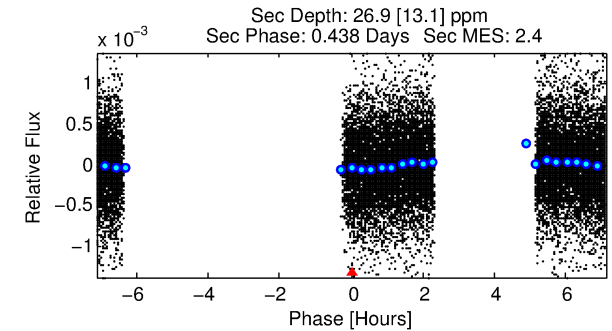
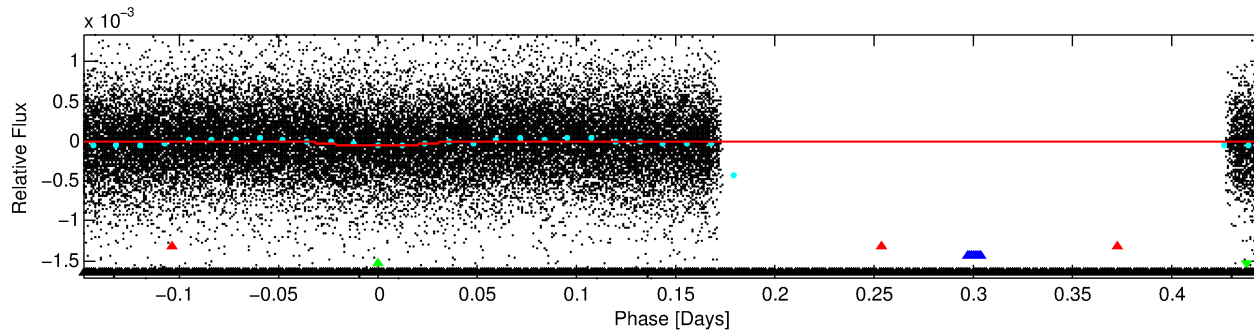
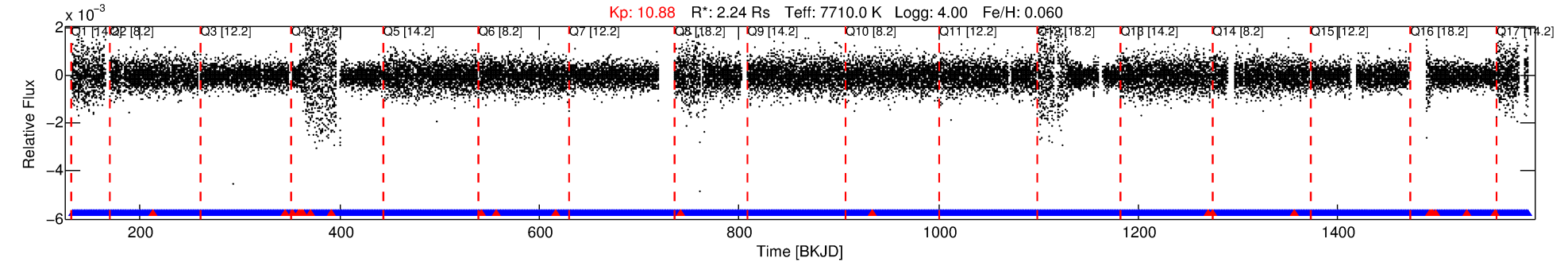
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007122746-03

No Significant Match Found

DV One-Page Summary

KIC: 7122746 Candidate: 3 of 4 Period: 0.594 d



DV Fit Results:

Period = 0.59443 [0.00001] d
Epoch = 132.0618 [0.0021] BKJD
Rp/R* = 0.0075 [0.0035]
a/R* = 1.71 [3.35]
b = 0.90 [0.64]
Seff = 55337.35 [13102.48]
Teq = 3911 [232] K
Rp = 1.84 [0.90] Re
a = 0.0169 [0.0025] AU
Ag = 1.26 [1.34] [0.19σ]
Teffp = 6401 [1676] K [1.47σ]

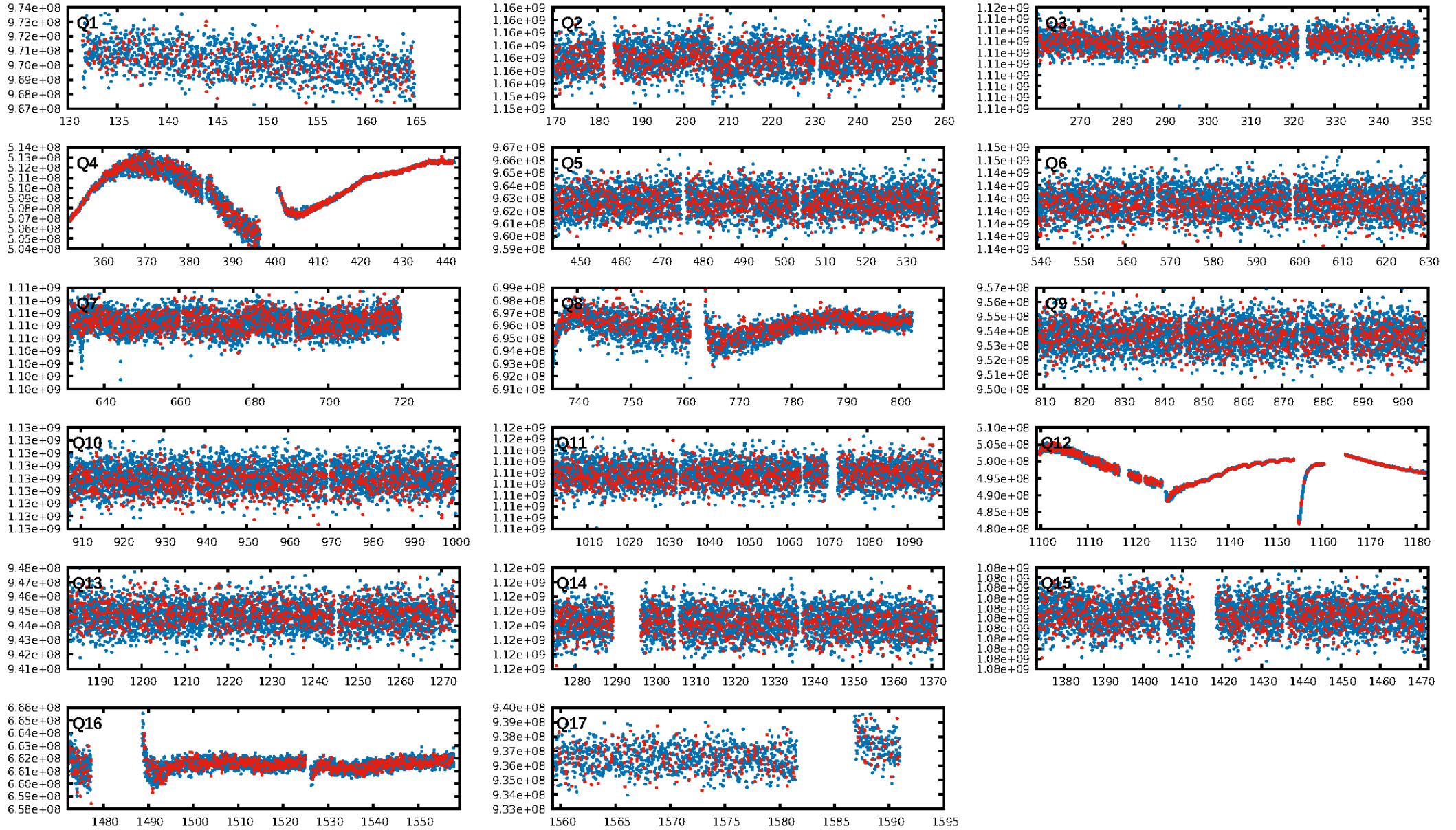
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [1664.52σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [2117/2141]
GhostDiagnostic-chr: 1.764
Centroid-sig: 12.8%
Centroid-so: 0.239 arcsec [1.07σ]
QotOffset-rm: 2.449 arcsec [3.14σ]
KicOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 0.00 [0/17]

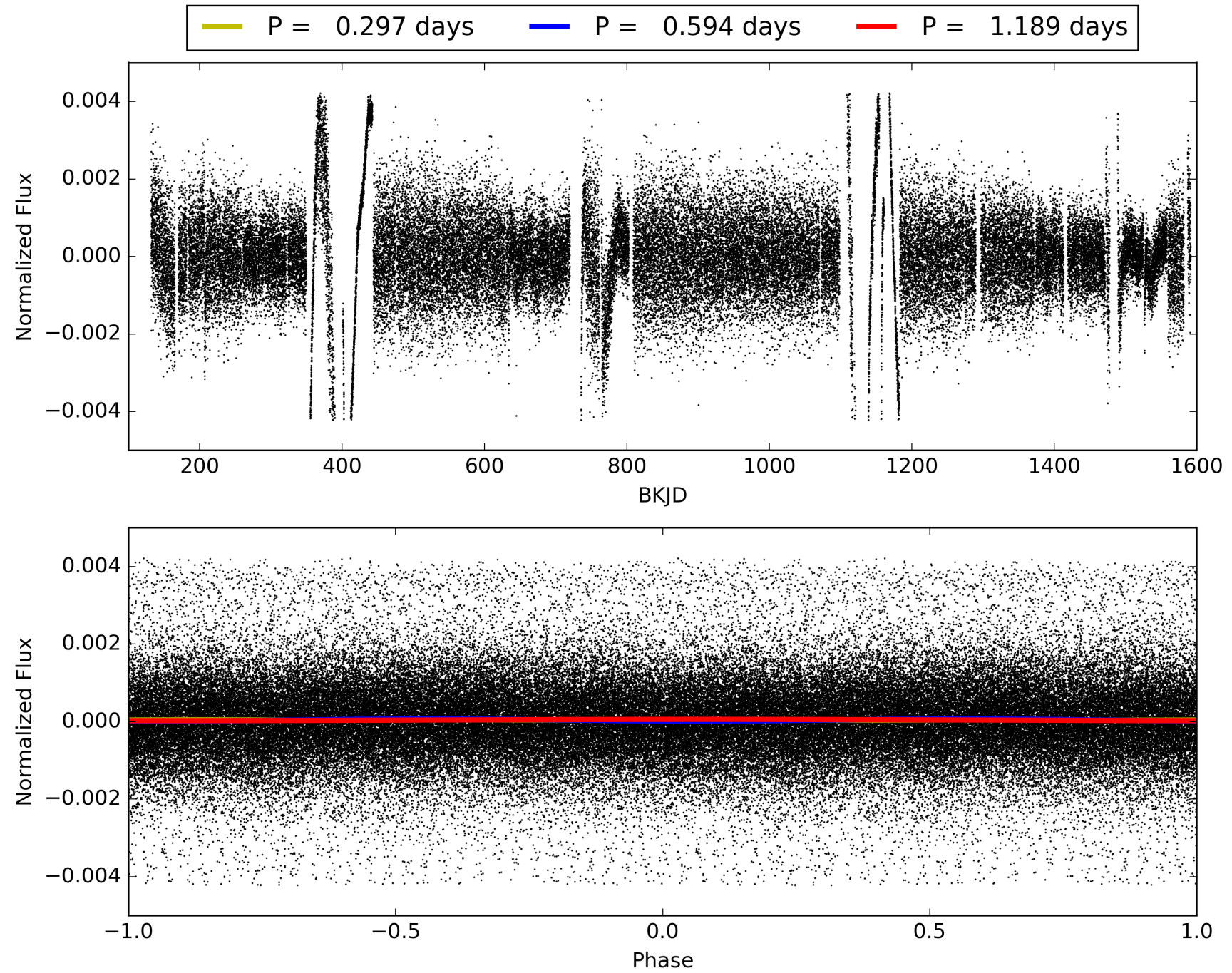
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:25:22 Z

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

TCE 007122746-03, PDC Light Curves

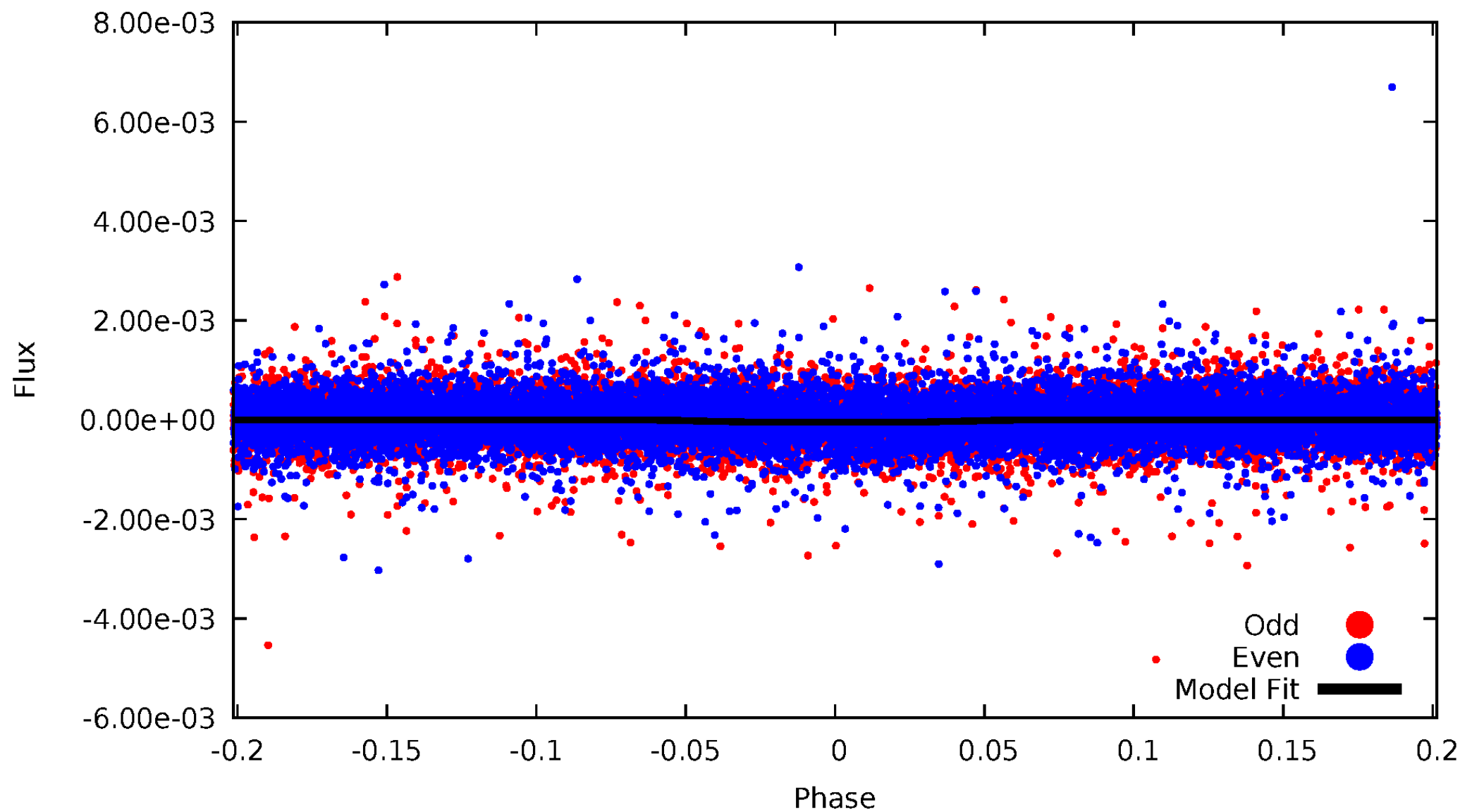


TCE 007122746-03



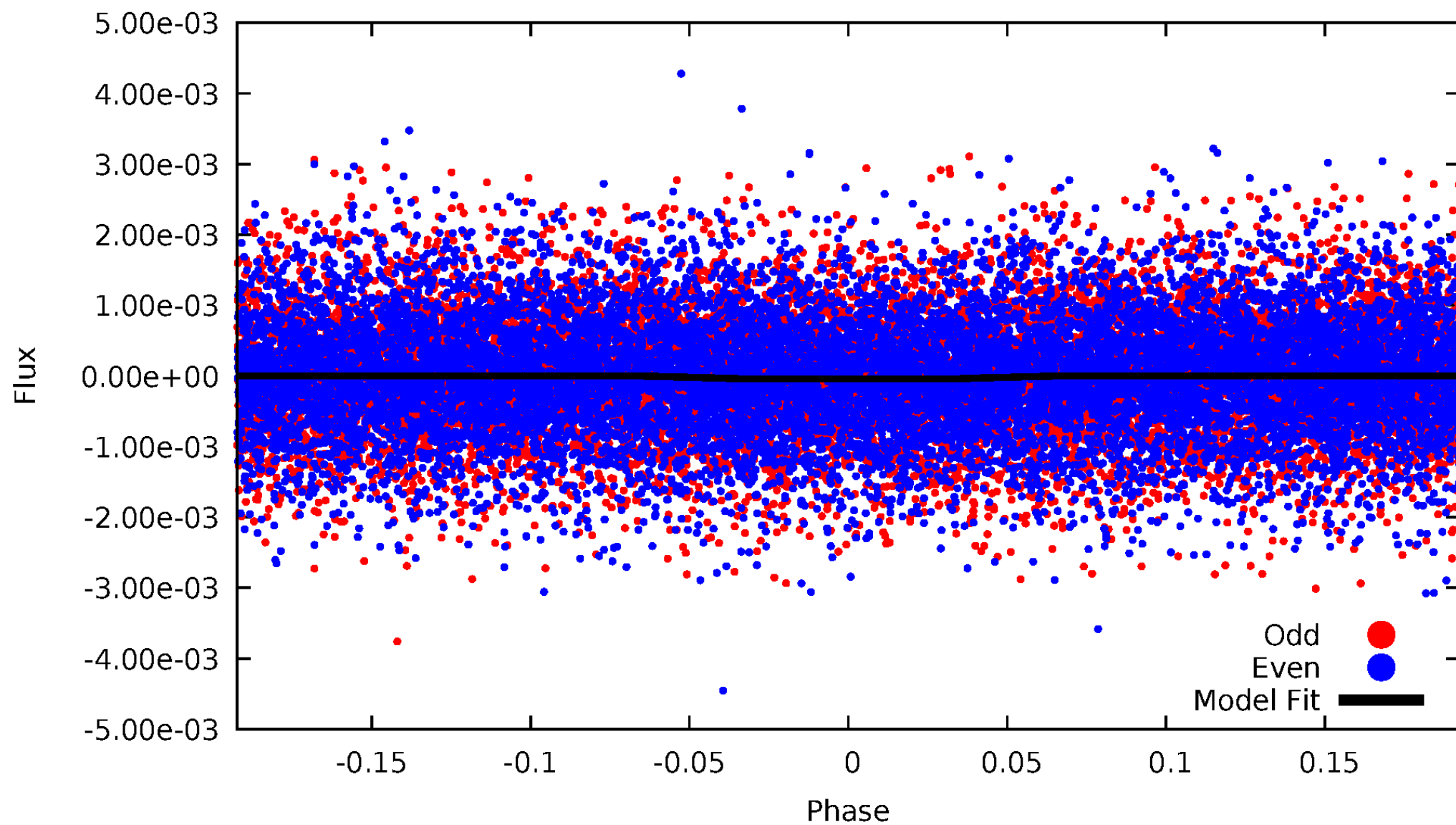
DV Odd/Even

TCE 007122746-03



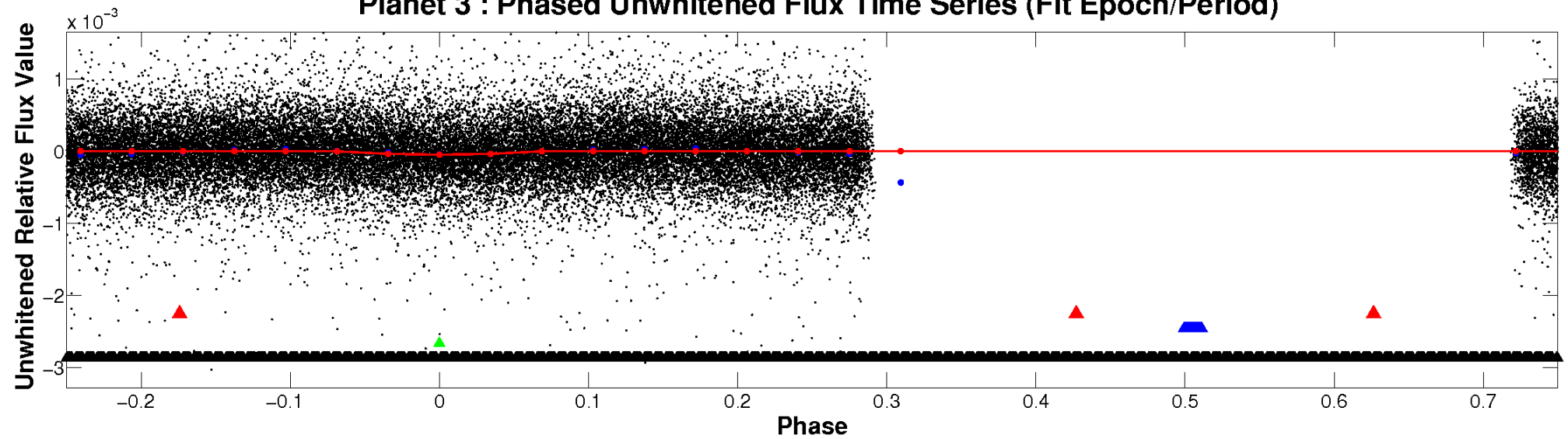
ALT Odd/Even

TCE 007122746-03

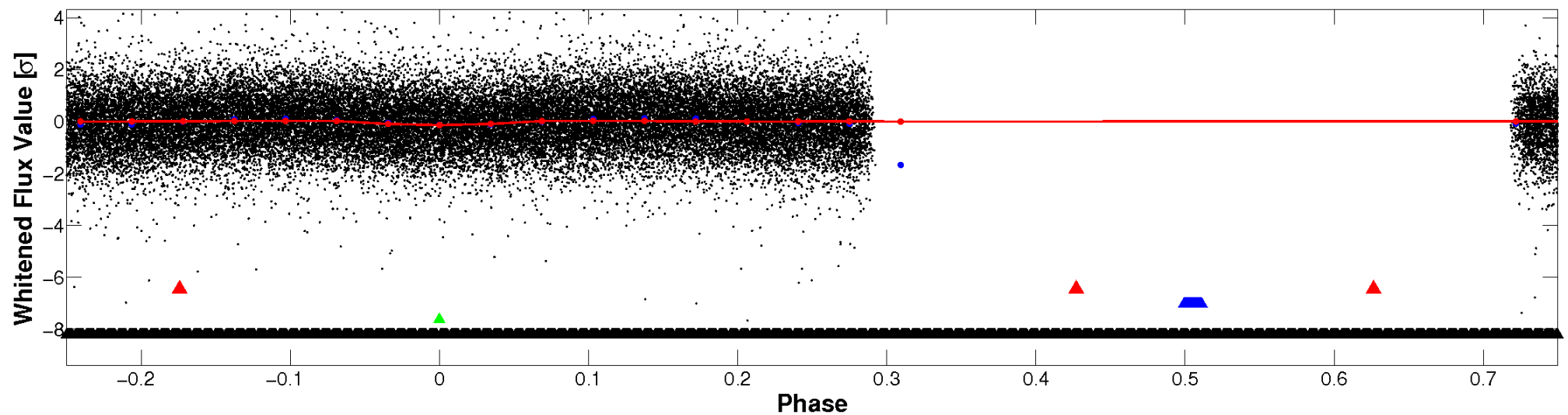


Non-Whitened Vs. Whitened Light Curve

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

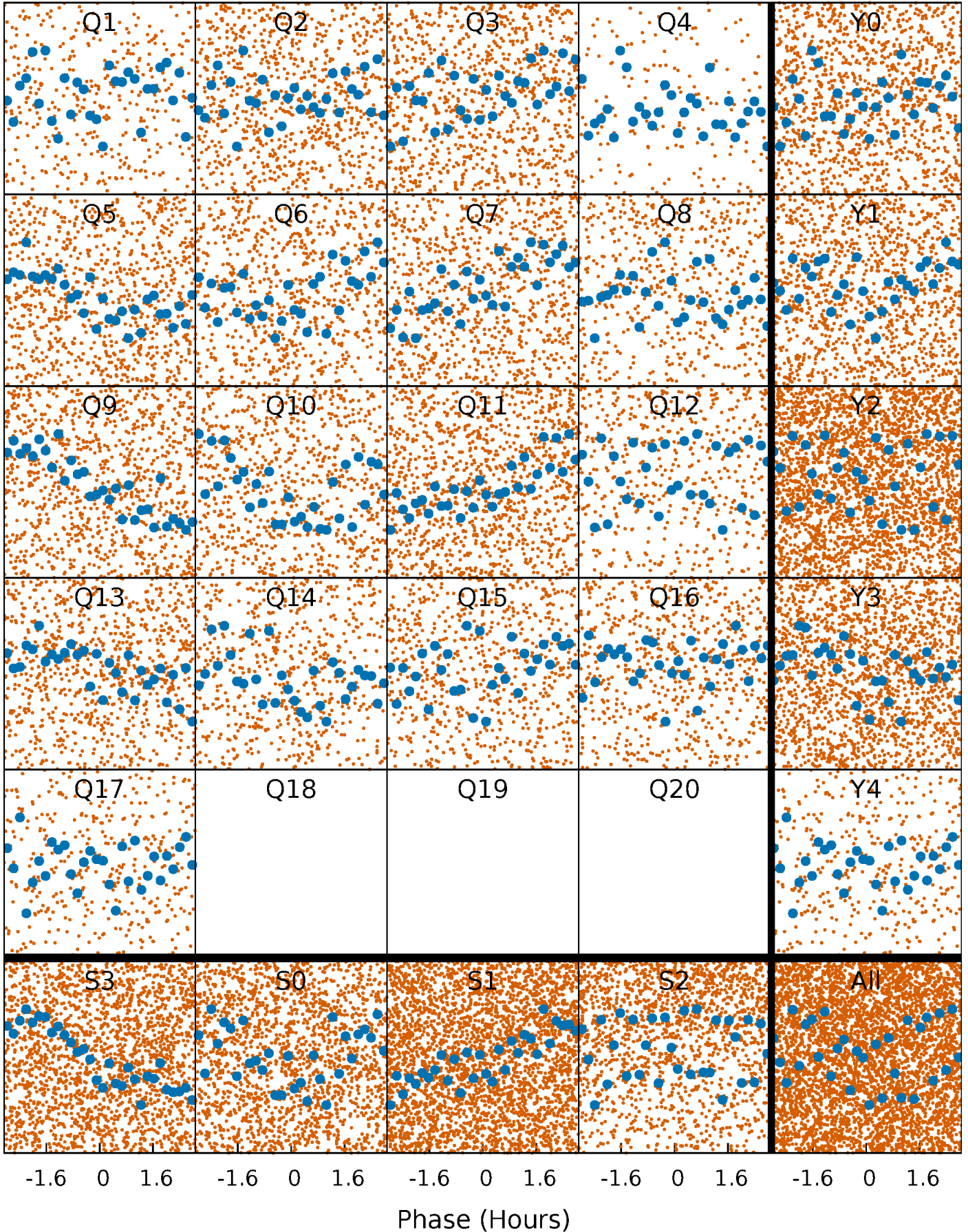


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



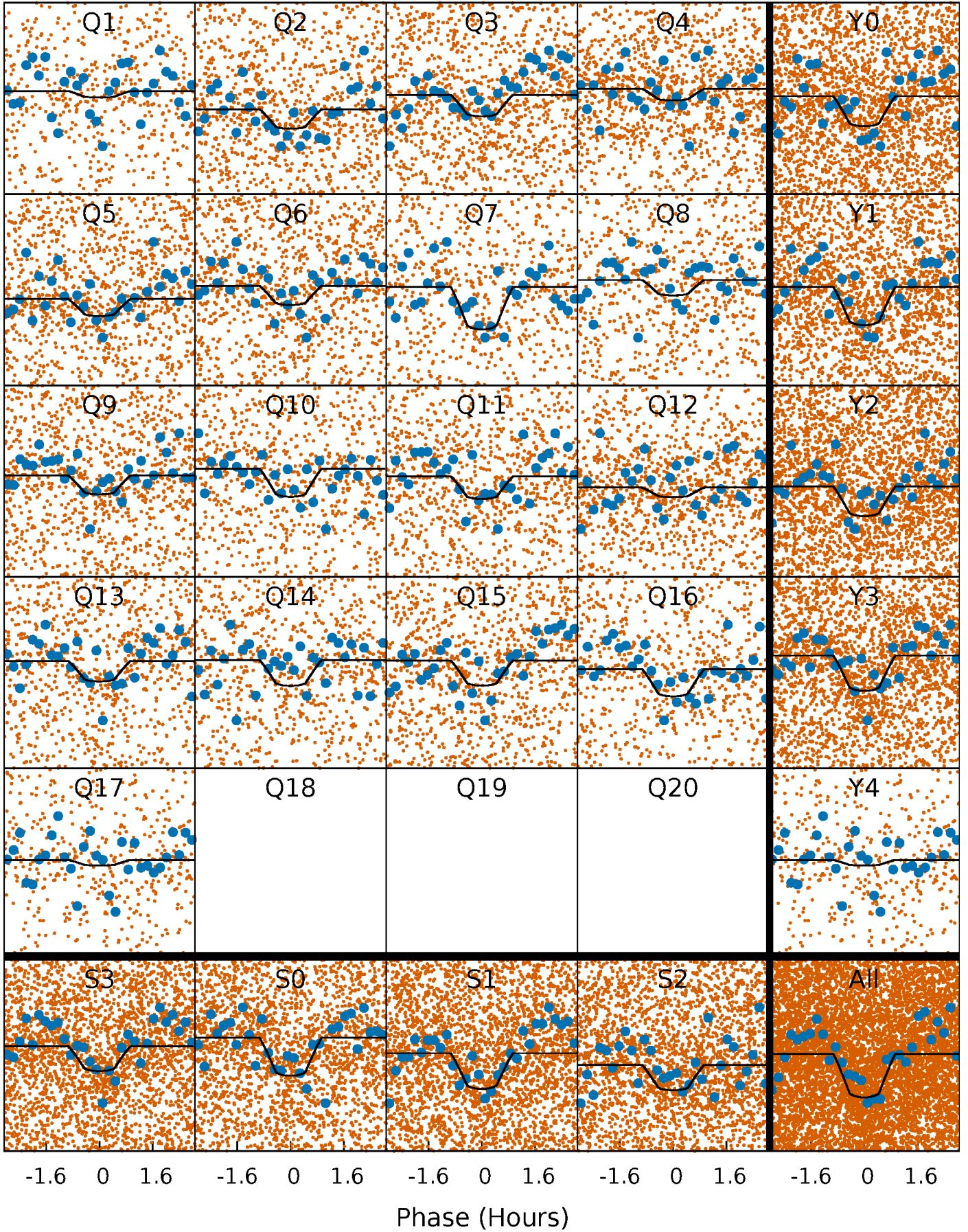
PDC Quarter-Phased Transit Curves

TCE 007122746-03 P= 0.594425 Days $T_0=132.061754$ (BKJD)



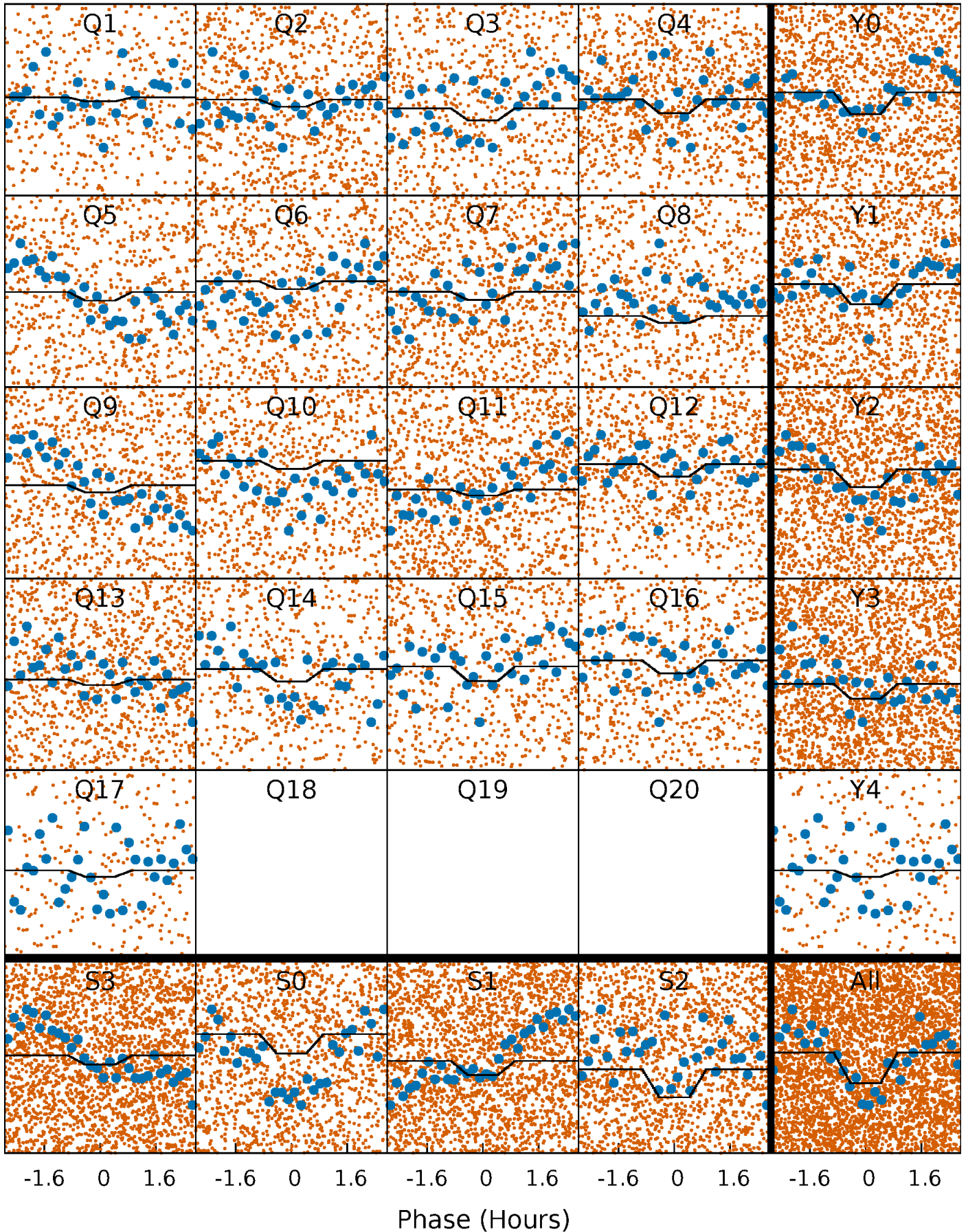
DV Quarter-Phased Transit Curves

TCE 007122746-03 P= 0.594425 Days $T_0=132.061754$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

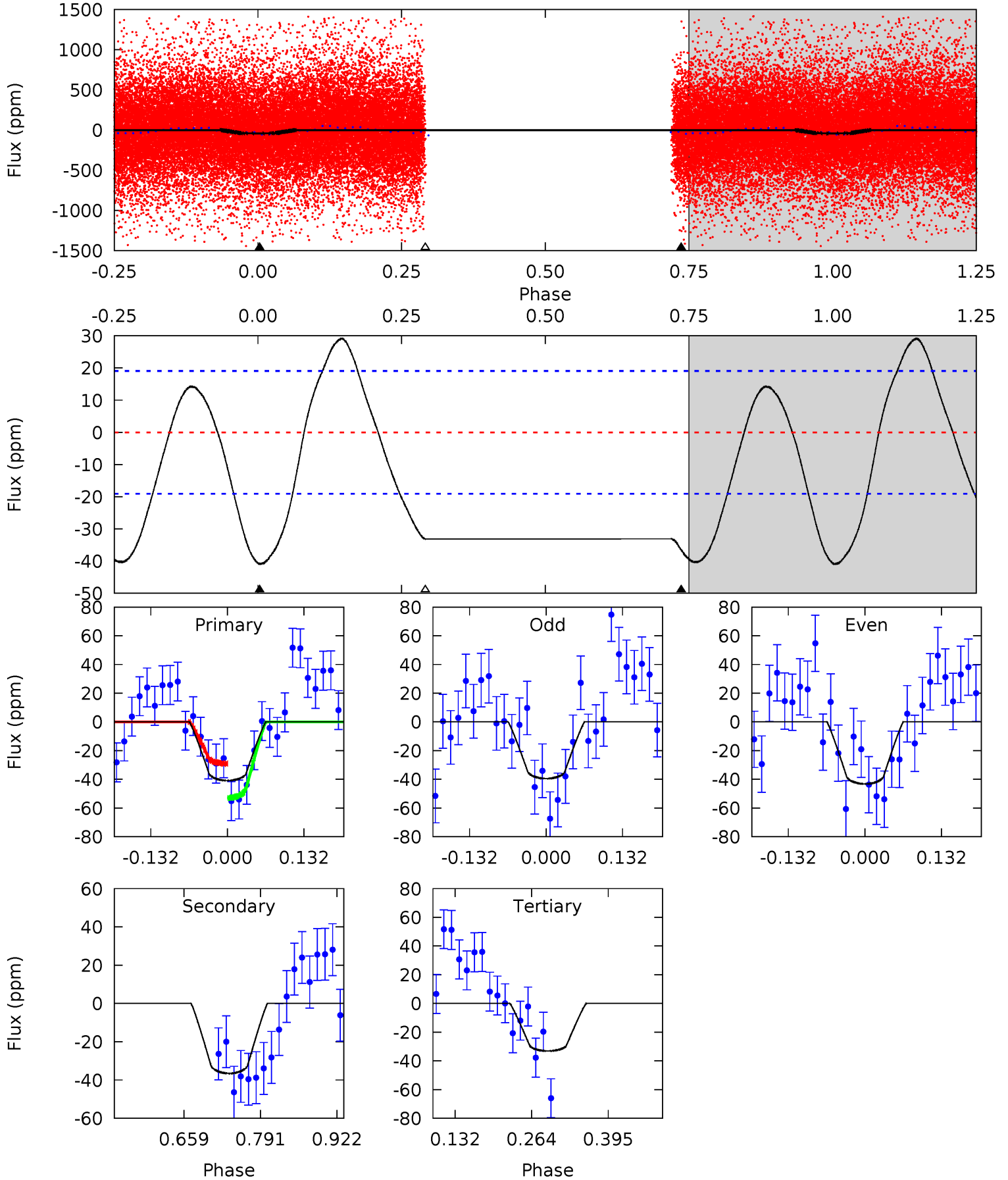
TCE 007122746-03 P= 0.594431 Days $T_0=132.059920$ (BKJD)



DV Model-Shift Uniqueness Test

007122746-03, P = 0.594425 Days, E = 131.467329 Days

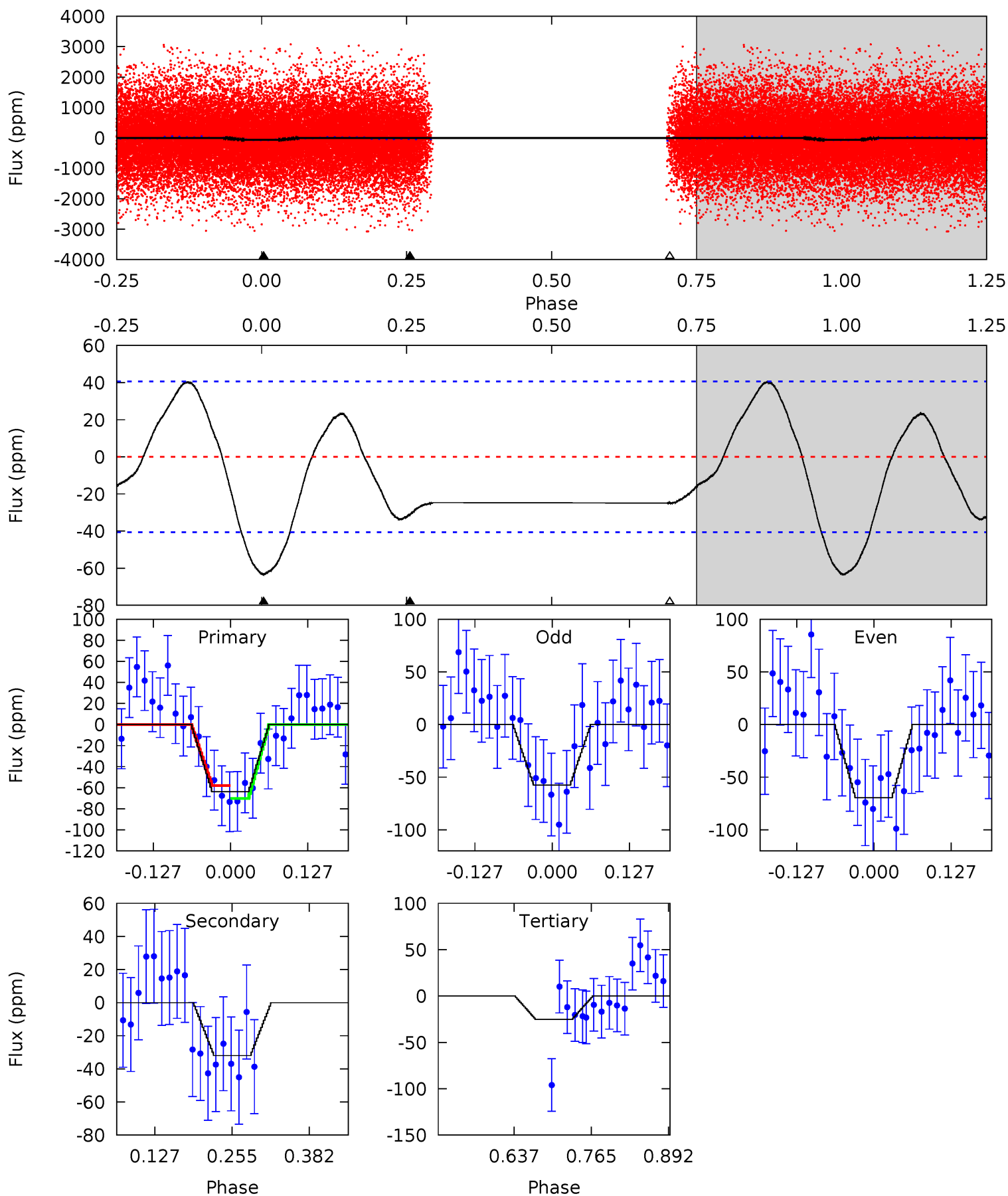
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.66	8.63	7.82	0	4.51	1.51	4.85	1.83	9.66	0.81	8.63	0.44	0.90	0.42	2.85



Alt Model-Shift Uniqueness Test

007122746-03, P = 0.594431 Days, E = 131.465489 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.09	3.56	2.81	0	4.51	1.52	2.42	4.28	7.09	0.74	3.56	0.67	1.18	0.39	0.67



Stellar Parameters For KIC 007122746

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7710^{+139}_{-154}	$4.001^{+0.126}_{-0.094}$	$0.060^{+0.100}_{-0.150}$	$2.239^{+0.338}_{-0.372}$	$1.833^{+0.090}_{-0.167}$	$0.230^{+0.128}_{-0.070}$
	+2%/-2%	+3%/-2%	+167%/-250%	+15%/-17%	+5%/-9%	+56%/-30%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 007122746-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-37 ± 4	$1.82^{+0.90}_{-0.81}$	5429^{+228}_{-241}	6437^{+3202}_{-1452}	$1.711^{+3.831}_{-0.938}$
Alt.	-32 ± 9	$1.62^{+0.92}_{-0.81}$	5448^{+221}_{-229}	6558^{+3958}_{-1705}	$1.779^{+5.740}_{-1.077}$

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

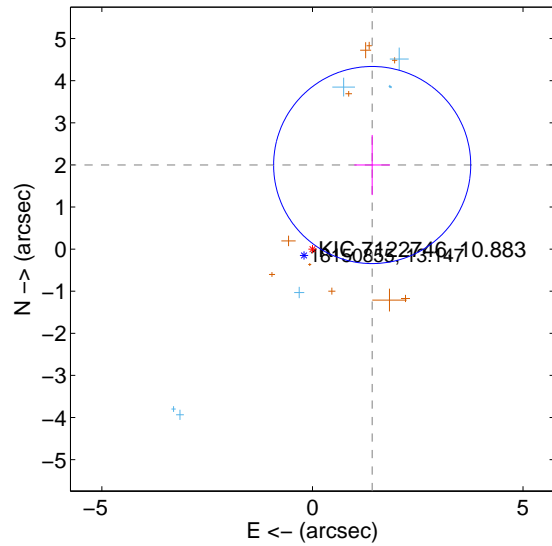
Supplemental centroid analysis for 007122746-03. **Kepler magnitude: 10.88.** Transit SNR 9.83

There are 7 quarters with good PRF difference image offsets

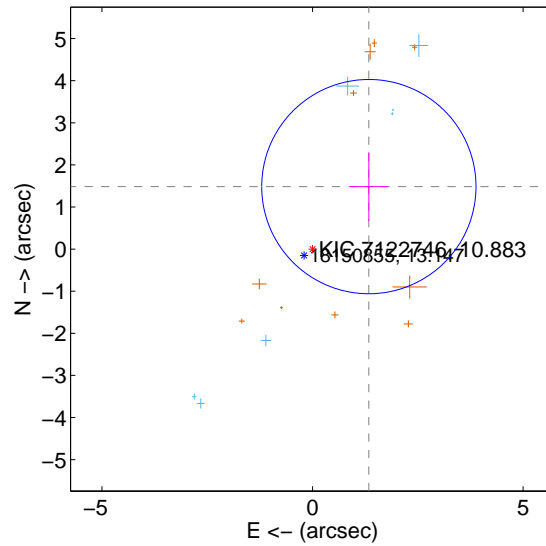
The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.449 ± 0.780	3.14	-1.418 ± 0.425	1.997 ± 0.715
PRF-fit source offset from KIC position	1.998 ± 0.848	2.36	-1.338 ± 0.448	1.484 ± 0.816
photometric centroid source offset	0.24 ± 0.22	1.07	-0.21 ± 0.21	-0.11 ± 0.28

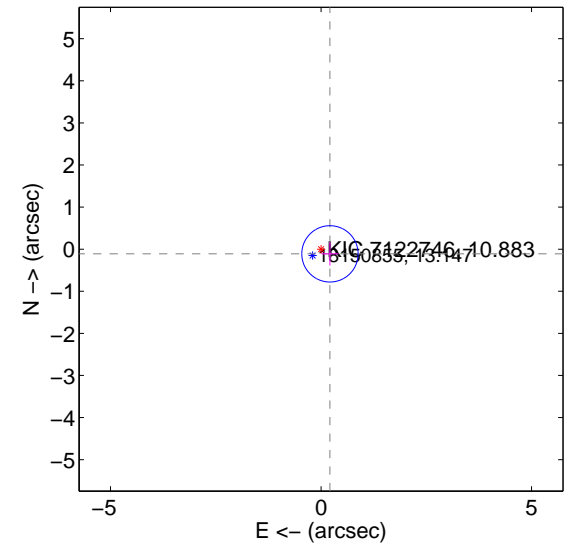
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

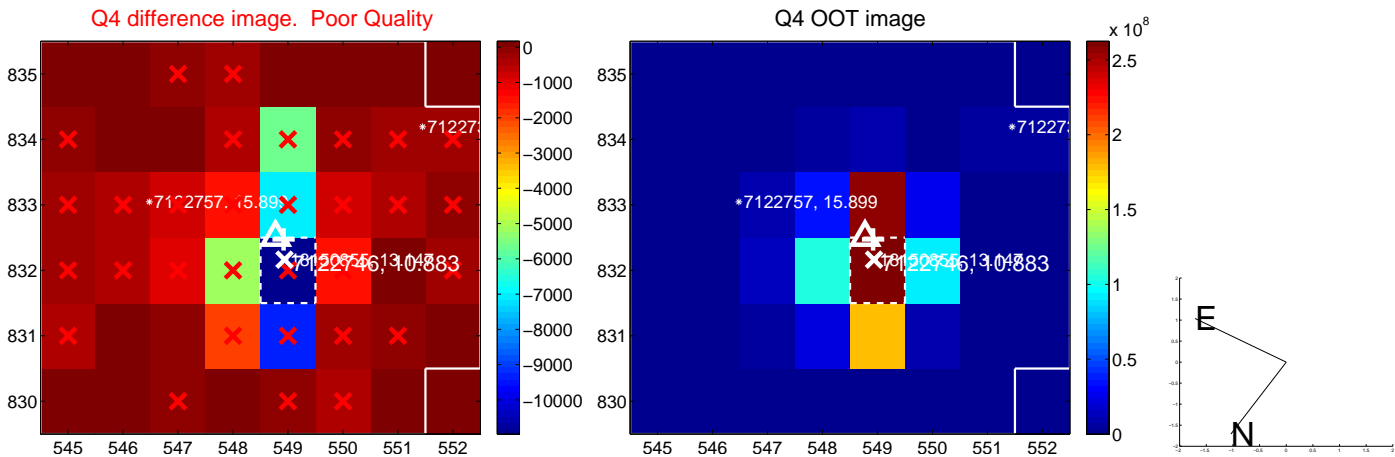
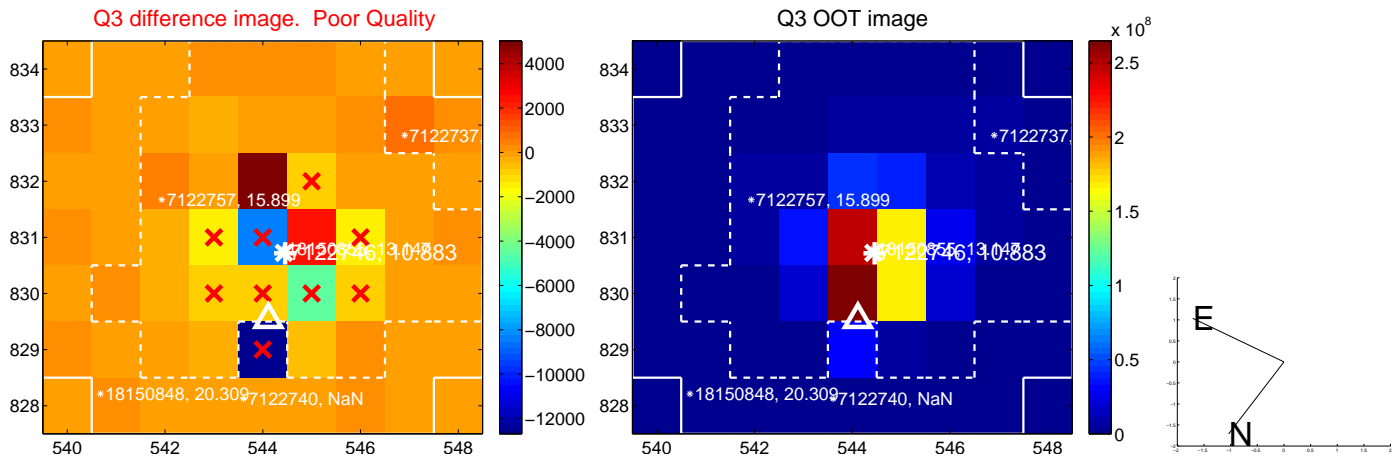
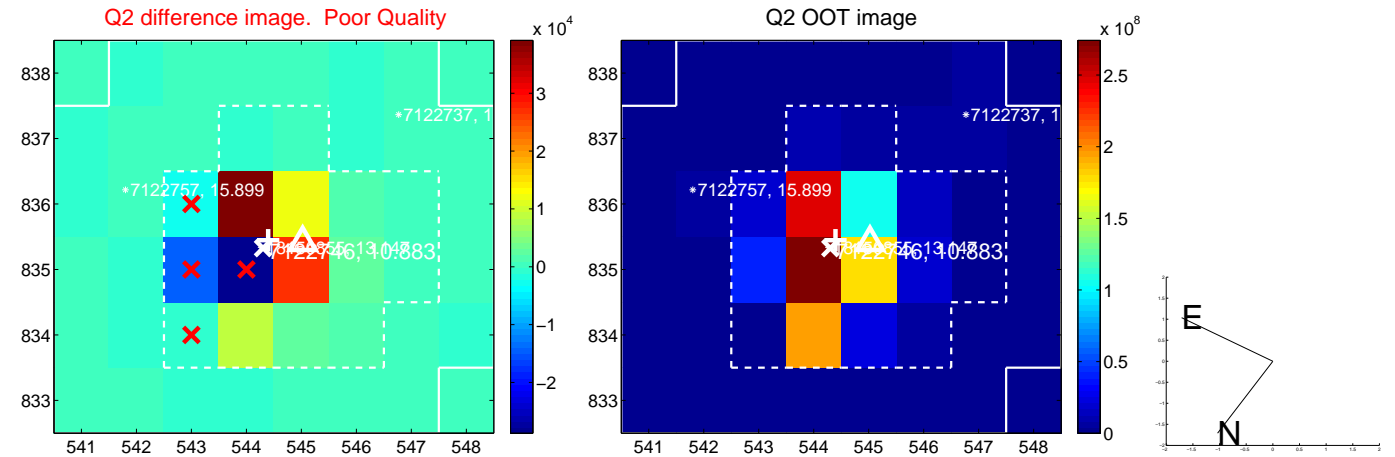
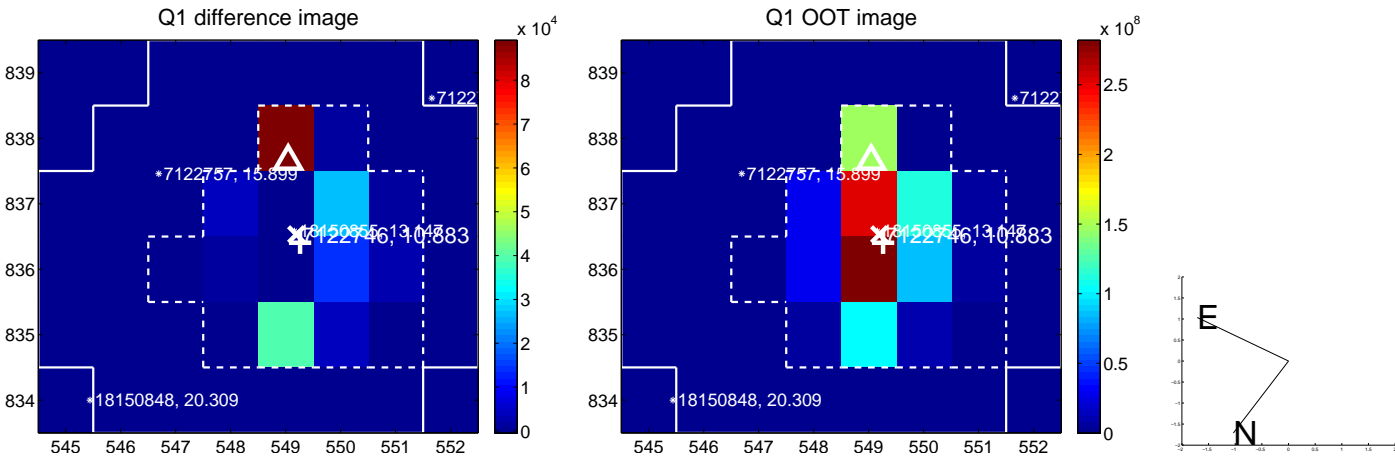


offset from photometric centroids

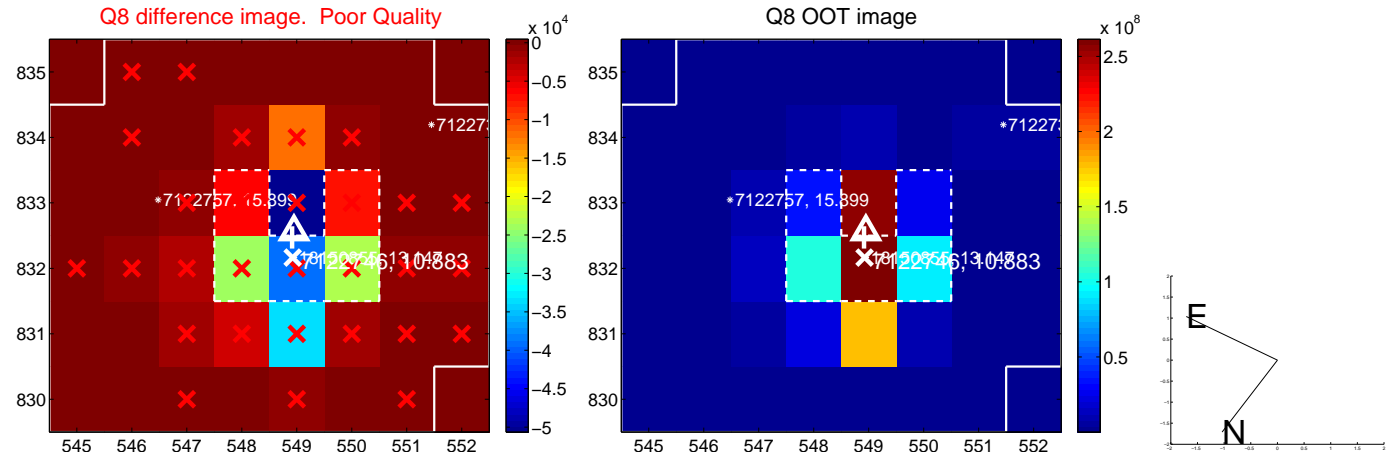
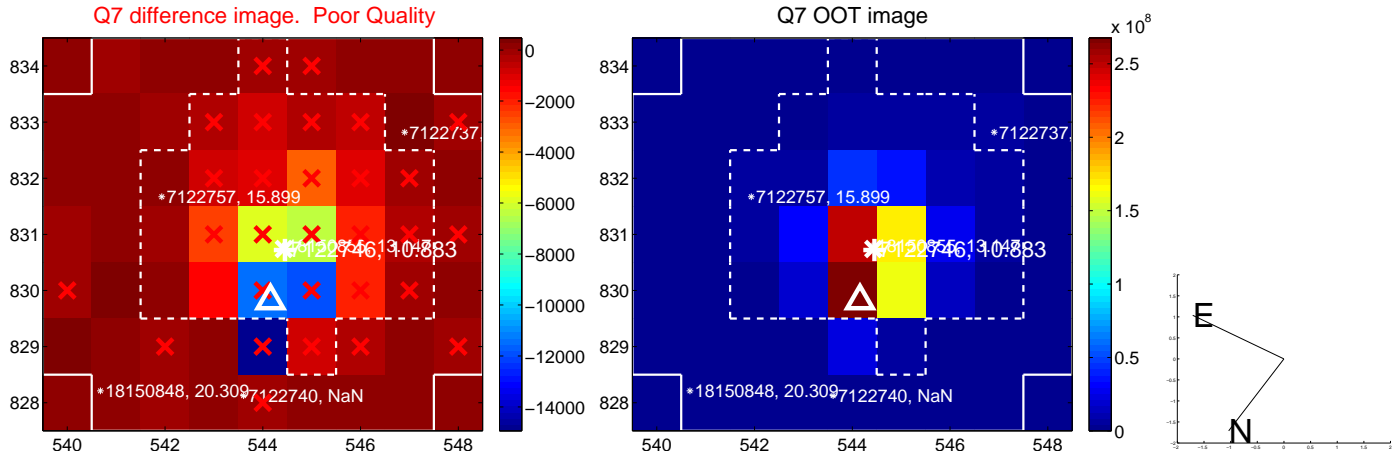
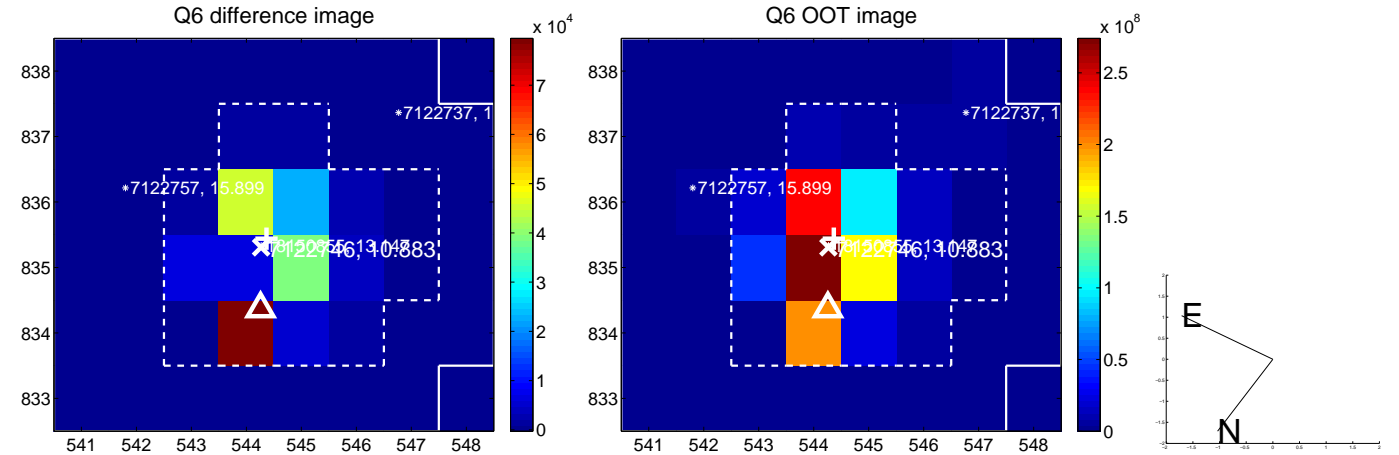
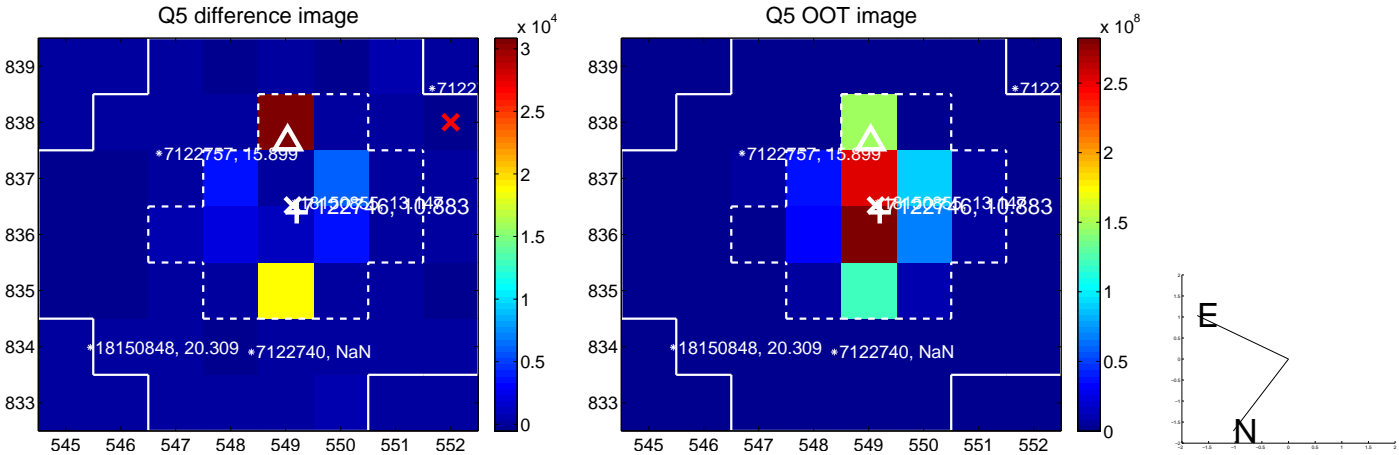


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

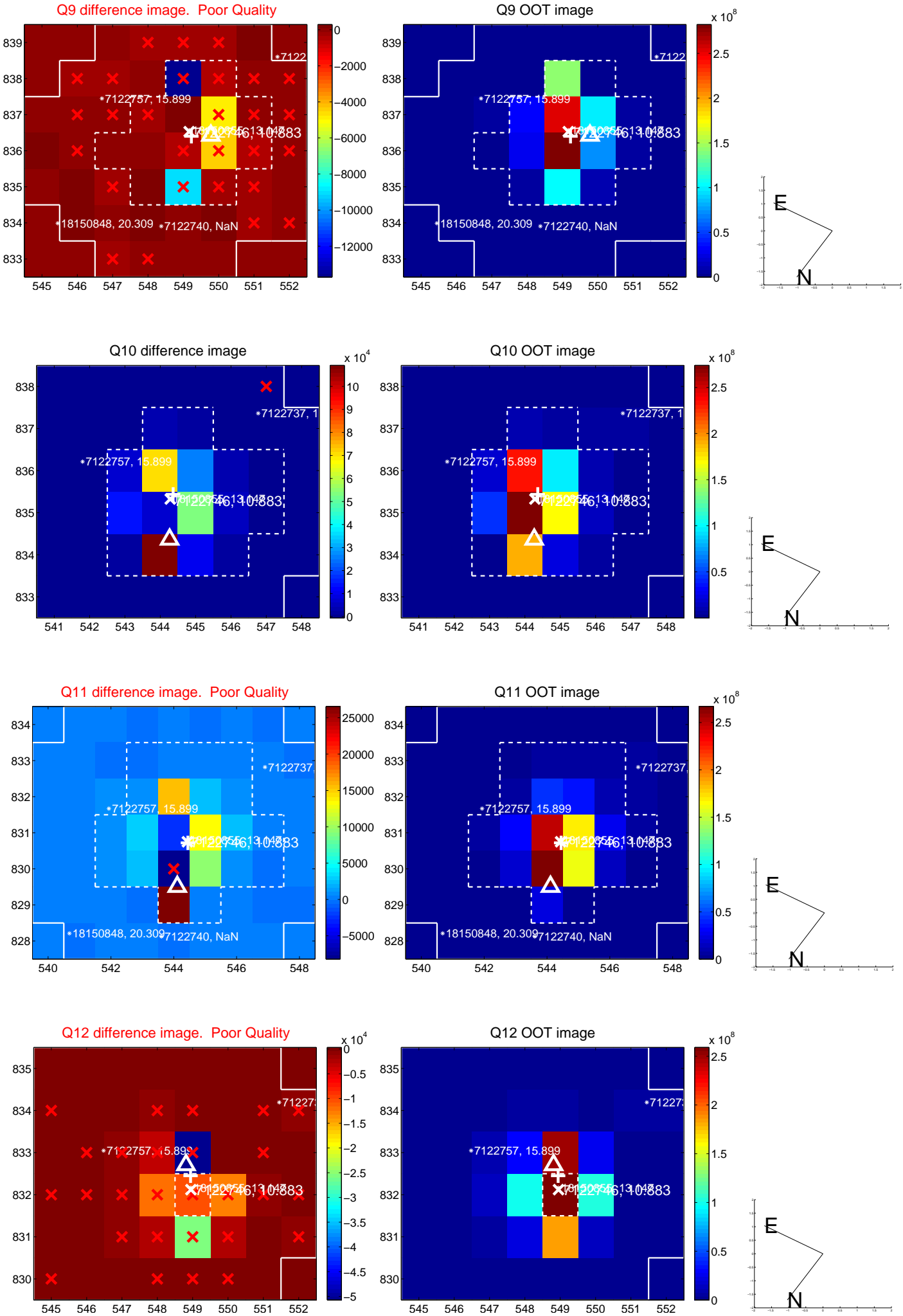
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



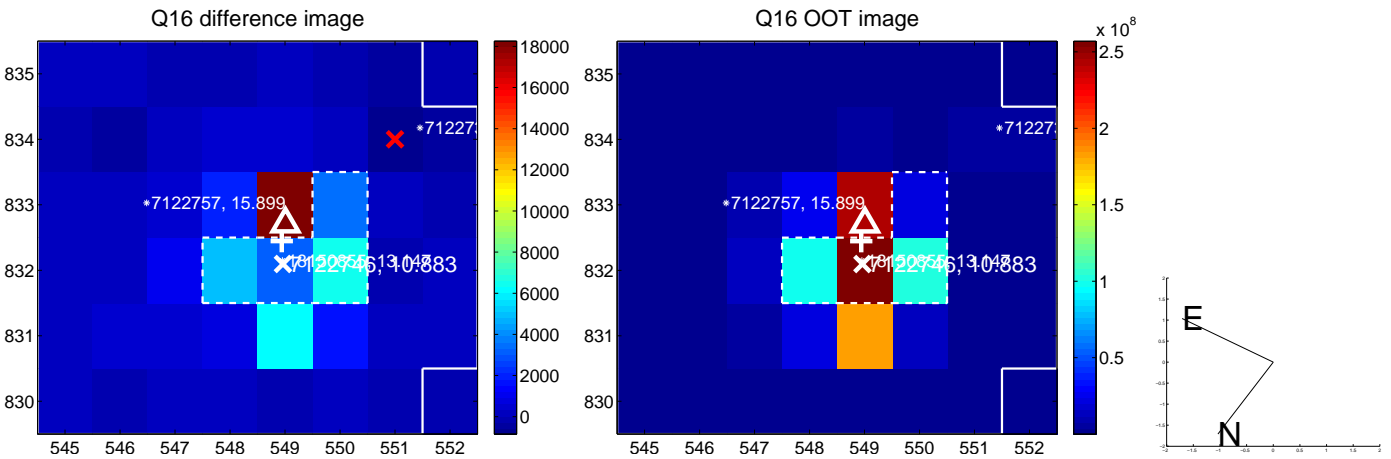
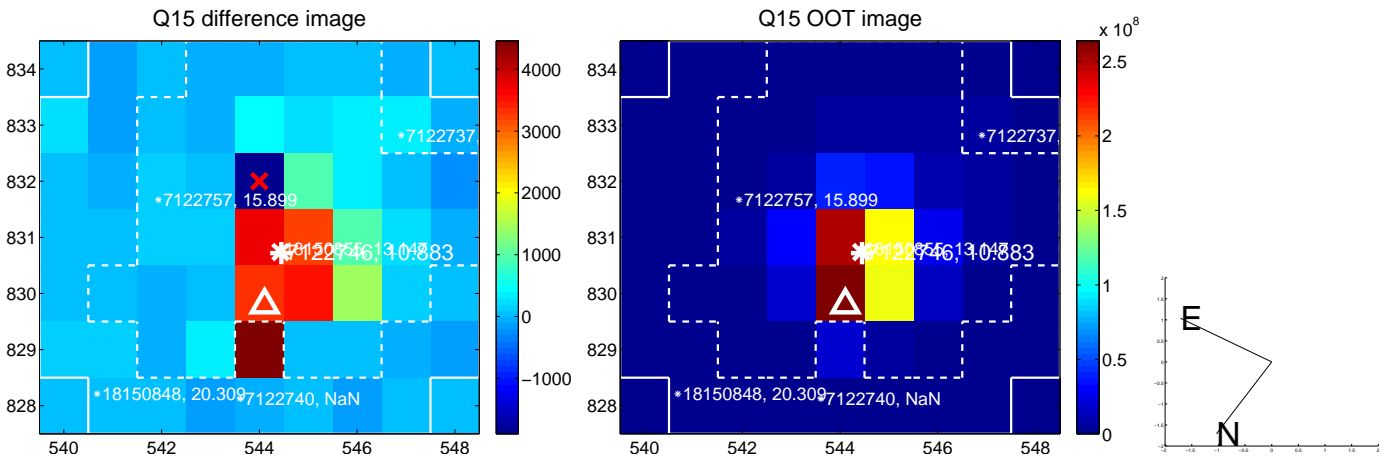
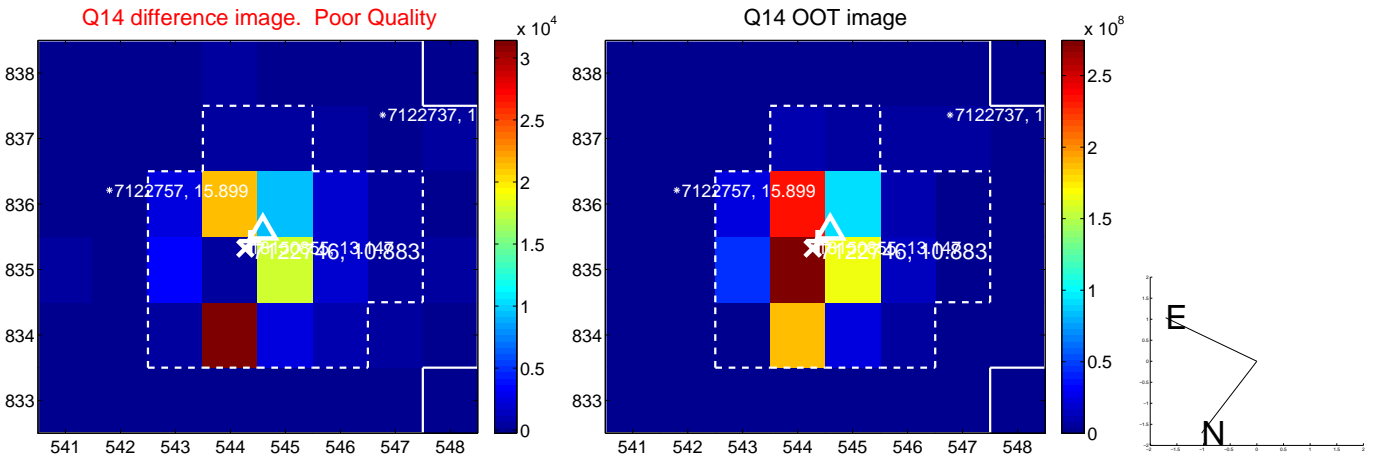
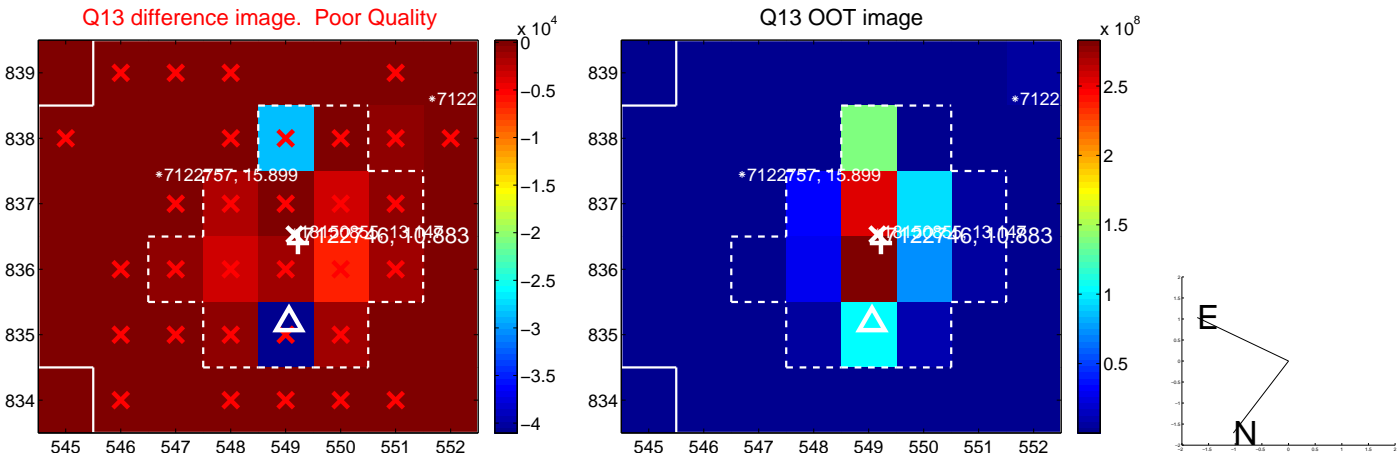
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



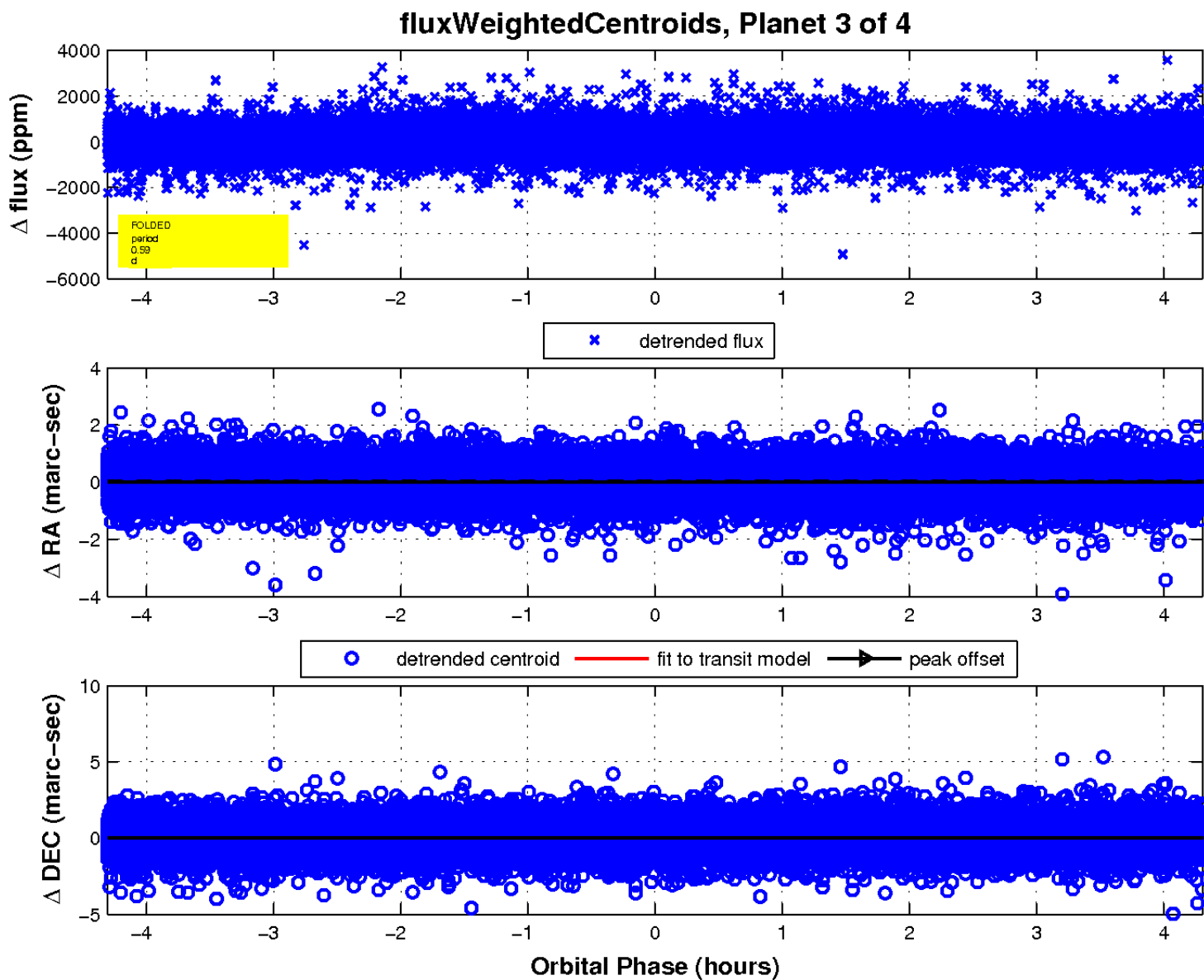
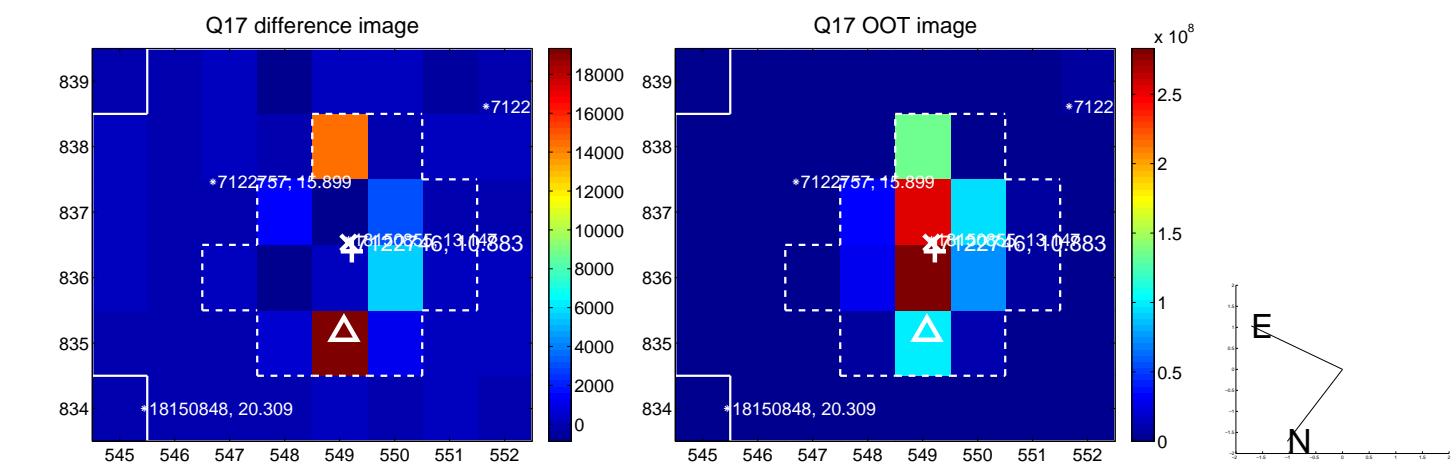
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



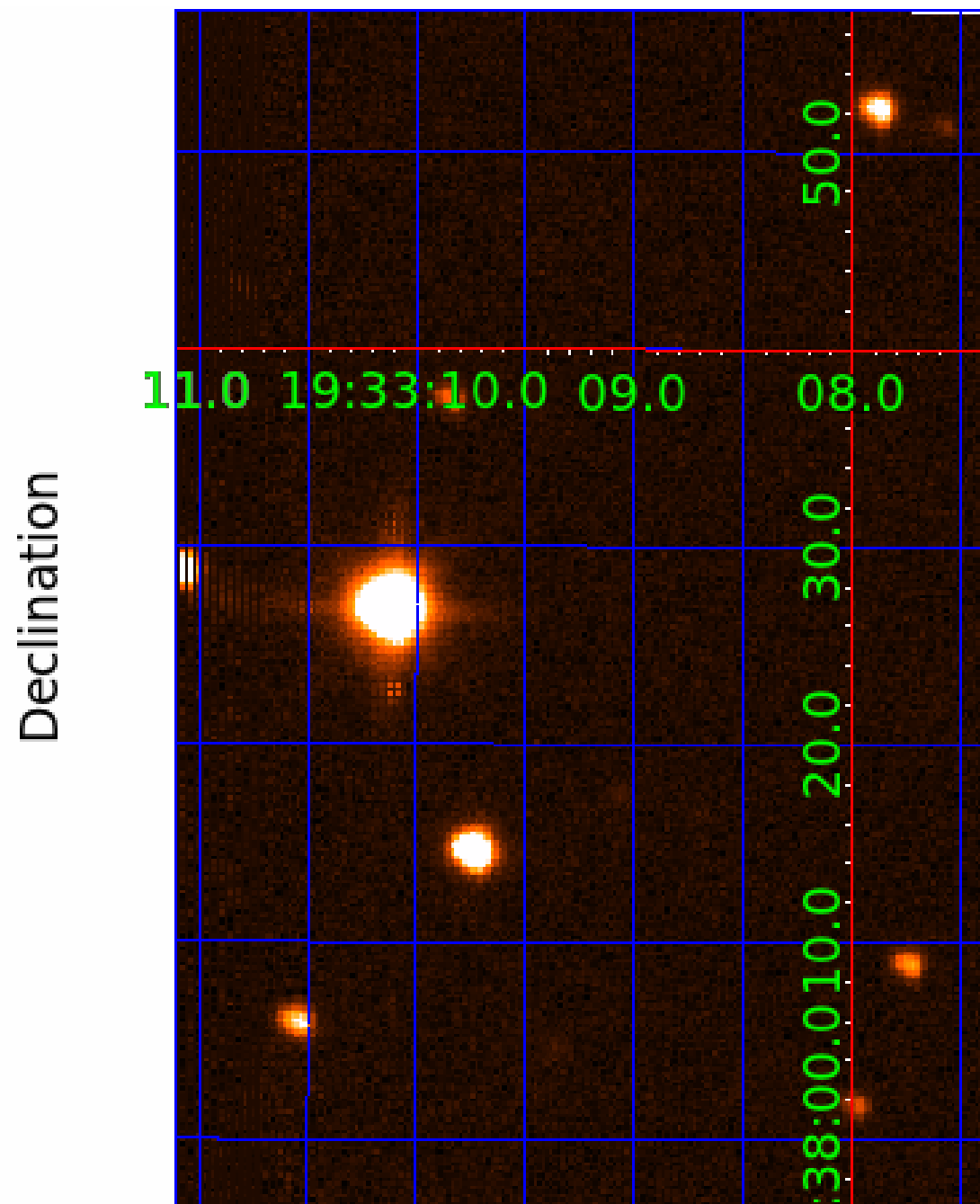
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007122746

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})
007122746-01	OBS	No	482.554733	150.979827	616.7	6.799	10.5	5.9	2.24	7710	5.76	7.31
007122746-02	OBS	No	0.594422	131.771243	40.5	1.915	9.8	10.8	2.24	7710	1.66	55337.71
007122746-03	OBS	No	0.594425	132.061754	50.0	1.436	8.9	9.8	2.24	7710	1.84	55337.35
007122746-04	OBS	No	0.564491	131.754246	103.8	6.774	9.8	14.5	2.24	7710	2.32	59284.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007122746-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
007122746-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007122746-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
007122746-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_SATURATED

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

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

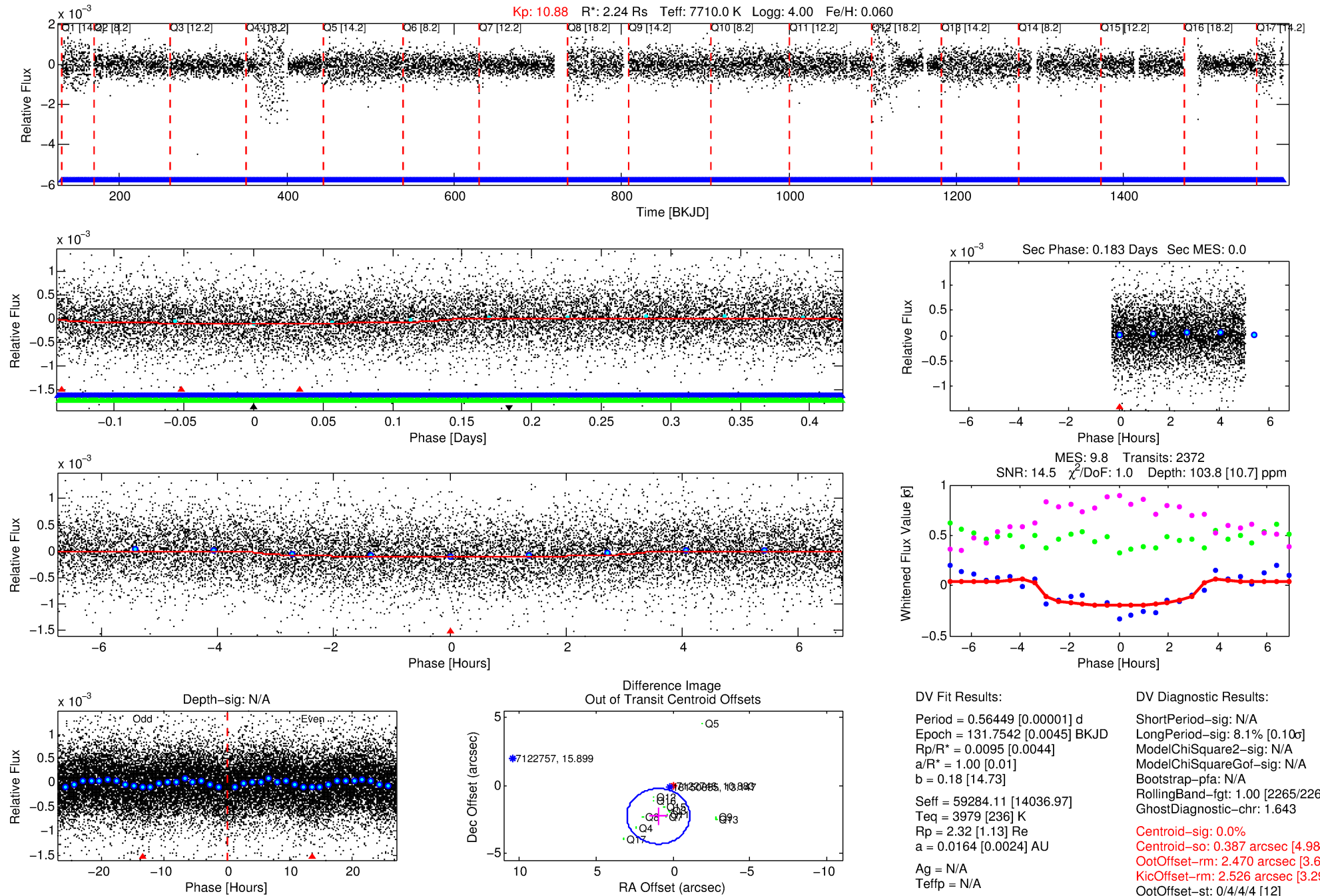
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007122746-04

No Significant Match Found

DV One-Page Summary

KIC: 7122746 Candidate: 4 of 4 Period: 0.564 d



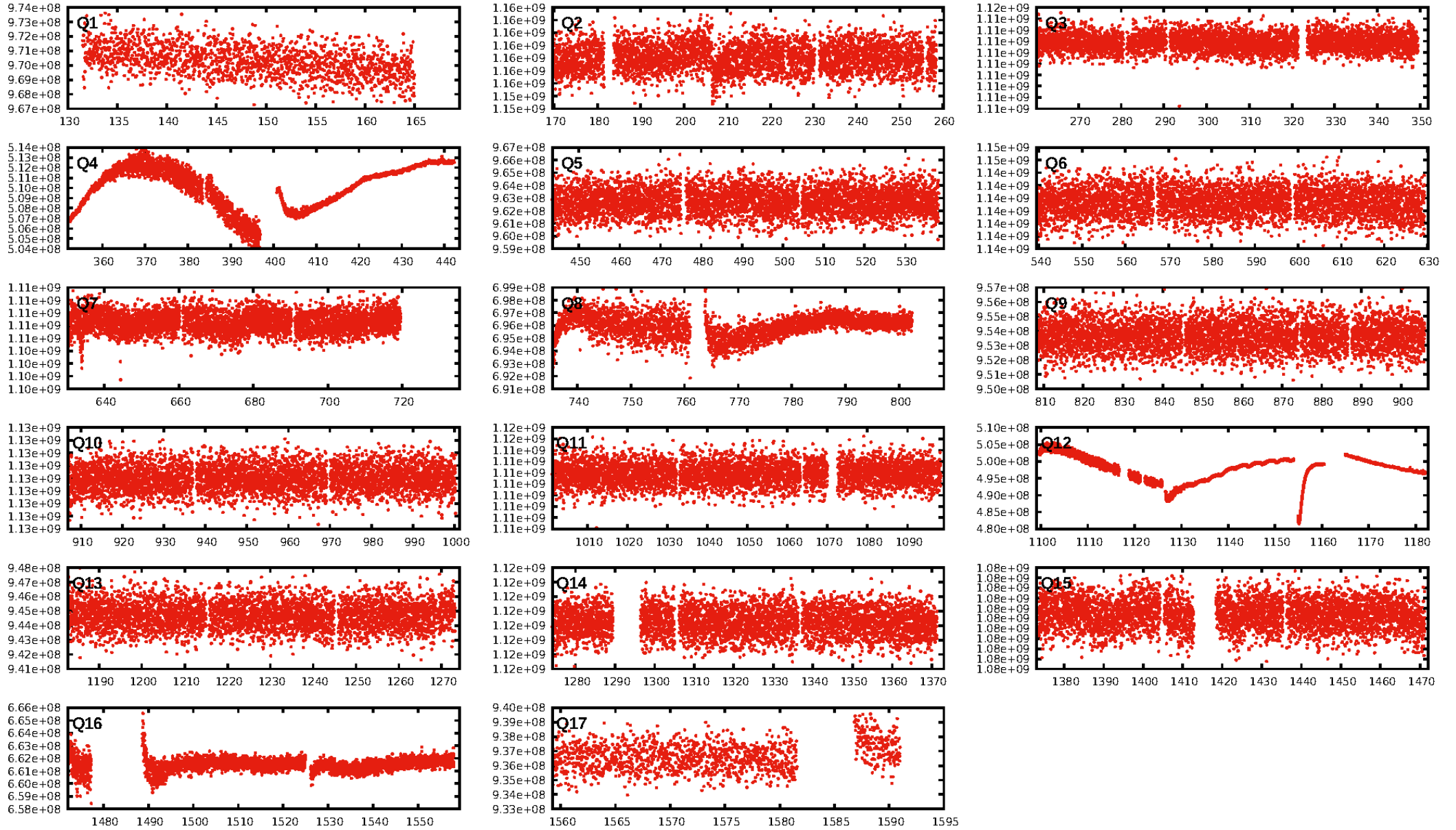
DV Fit Results:

Period = 0.56449 [0.00001] d
Epoch = 131.7542 [0.0045] BKJD
Rp/R* = 0.0095 [0.0044]
a/R* = 1.00 [0.01]
b = 0.18 [14.73]
Seff = 59284.11 [14036.97]
Teff = 3979 [236] K
Rp = 2.32 [1.13] Re
a = 0.0164 [0.0024] AU
Ag = N/A
Teffp = N/A

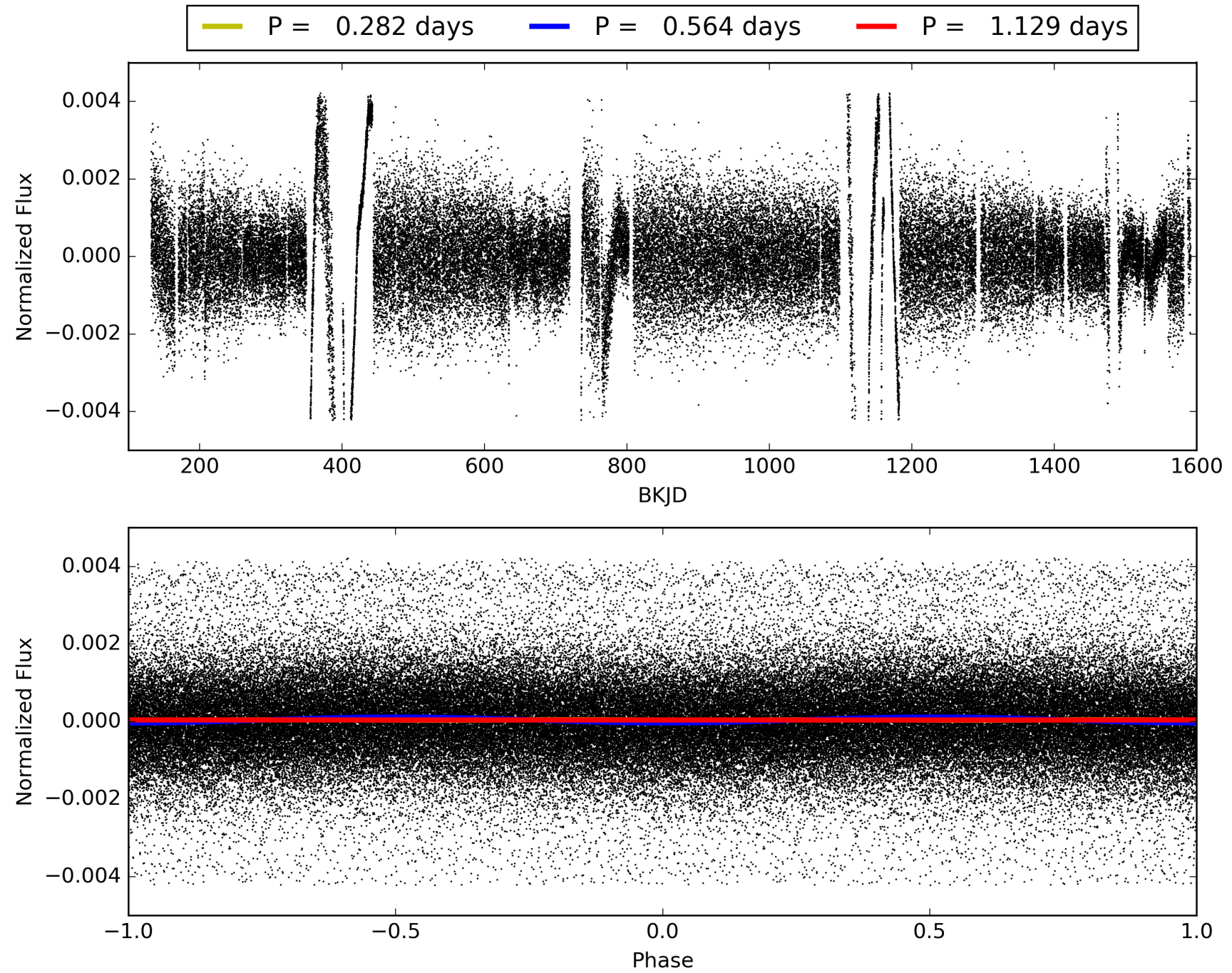
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 8.1% [0.10σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2265/2265]
GhostDiagnostic-chr: 1.643
Centroid-sig: 0.0%
Centroid-so: 0.387 arcsec [4.98σ]
OotOffset-rm: 2.470 arcsec [3.64σ]
KicOffset-rm: 2.526 arcsec [3.29σ]
OotOffset-st: 0/4/4/4 [12]
KicOffset-st: 0/4/4/4 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 007122746-04, PDC Light Curves

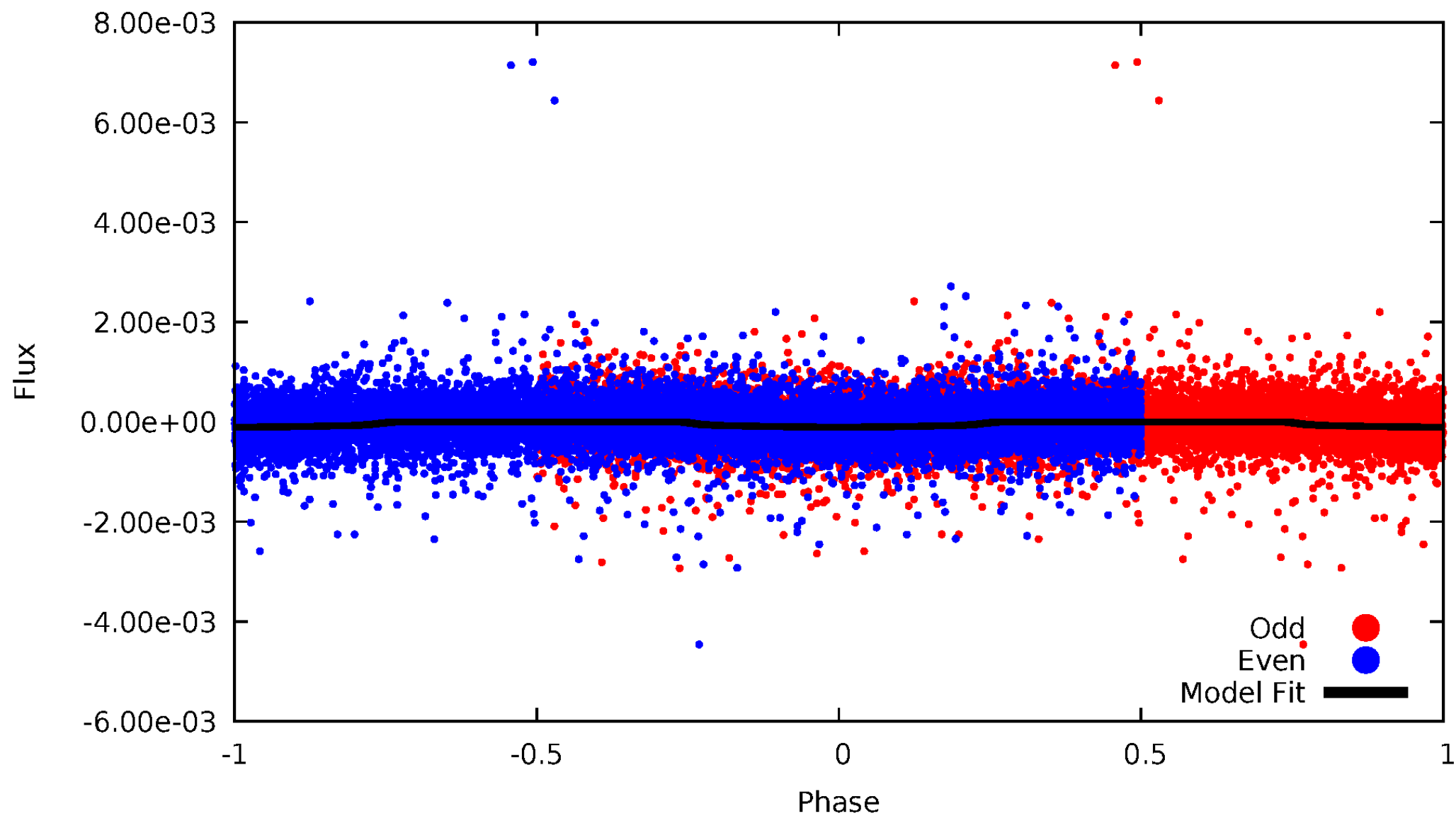


TCE 007122746-04



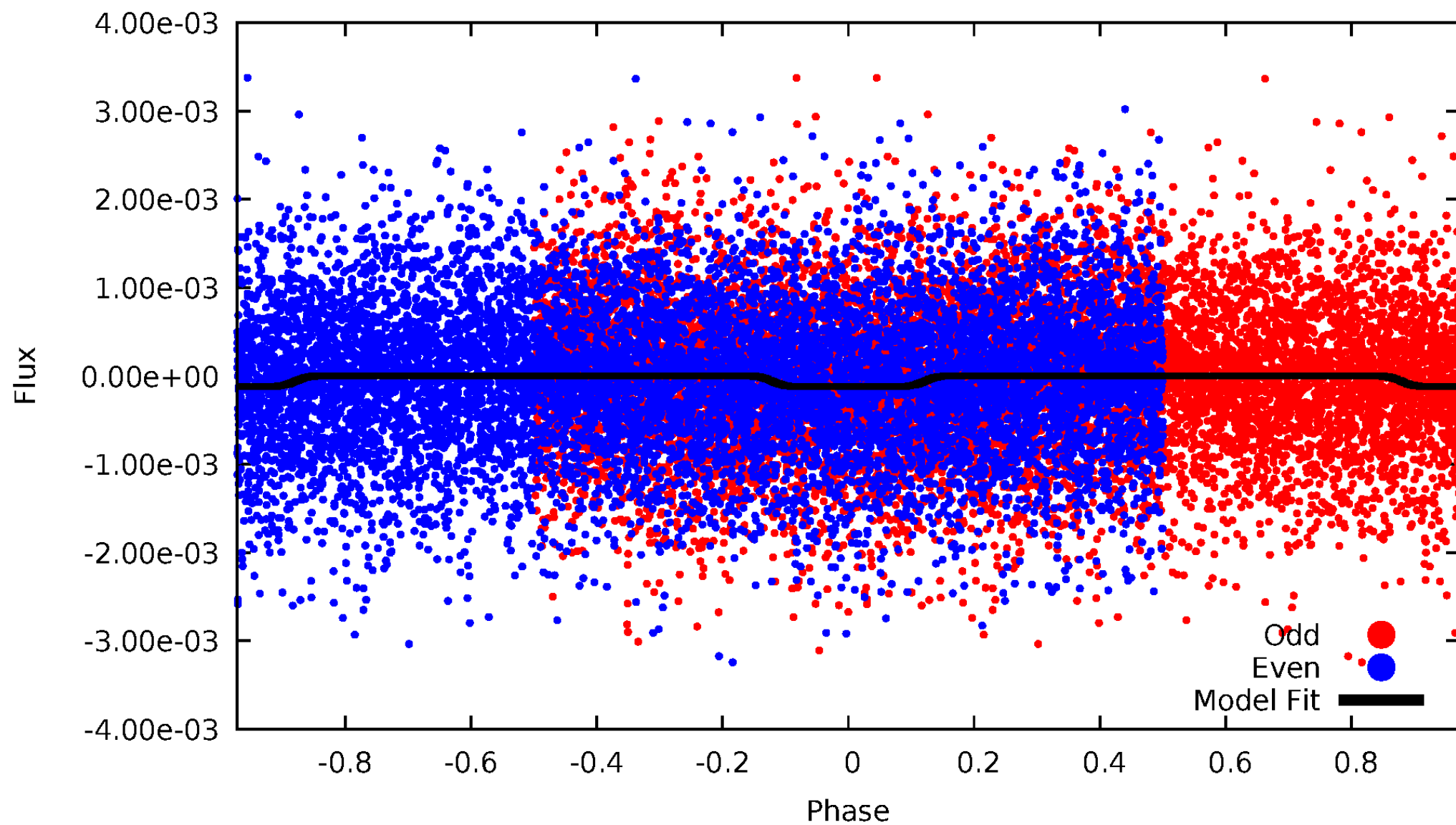
DV Odd/Even

TCE 007122746-04



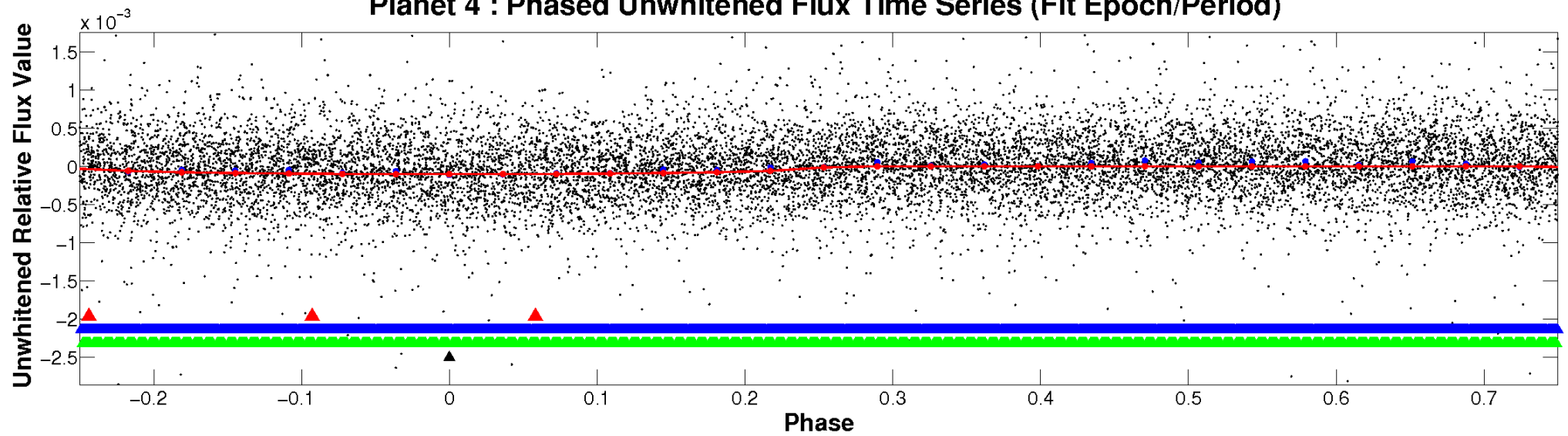
ALT Odd/Even

TCE 007122746-04

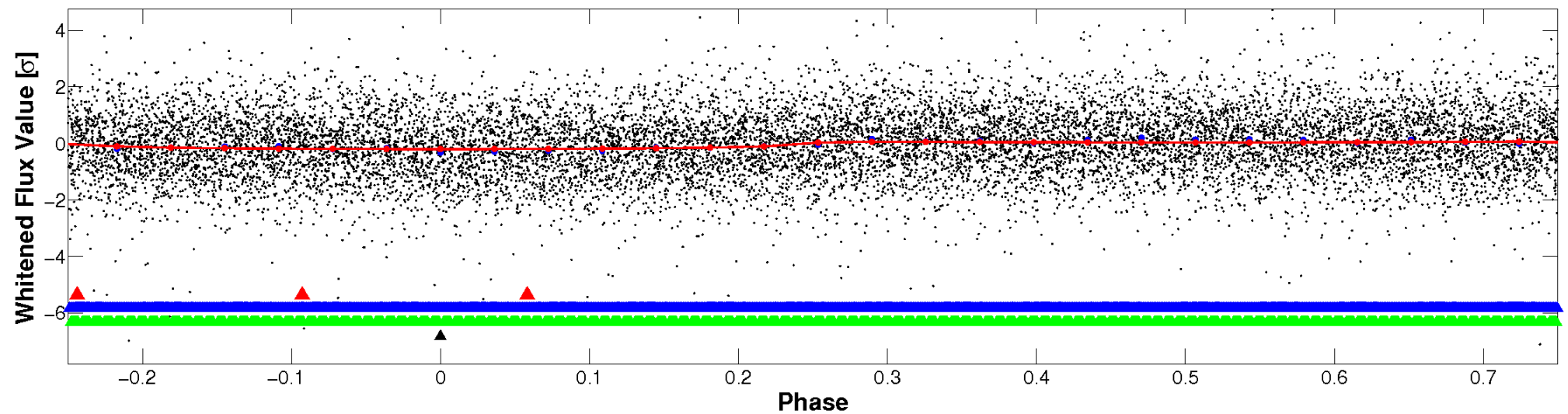


Non-Whitened Vs. Whitened Light Curve

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

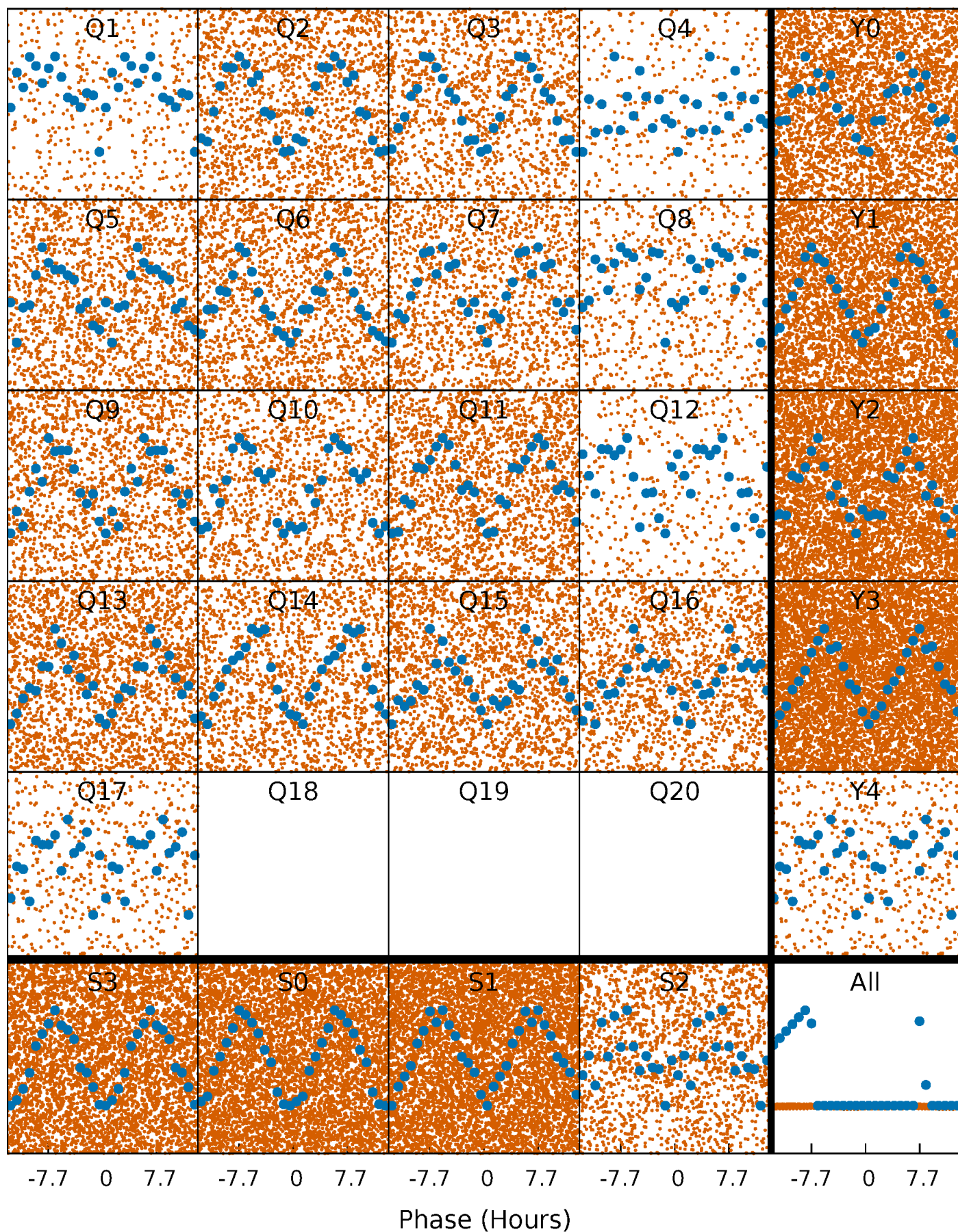


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



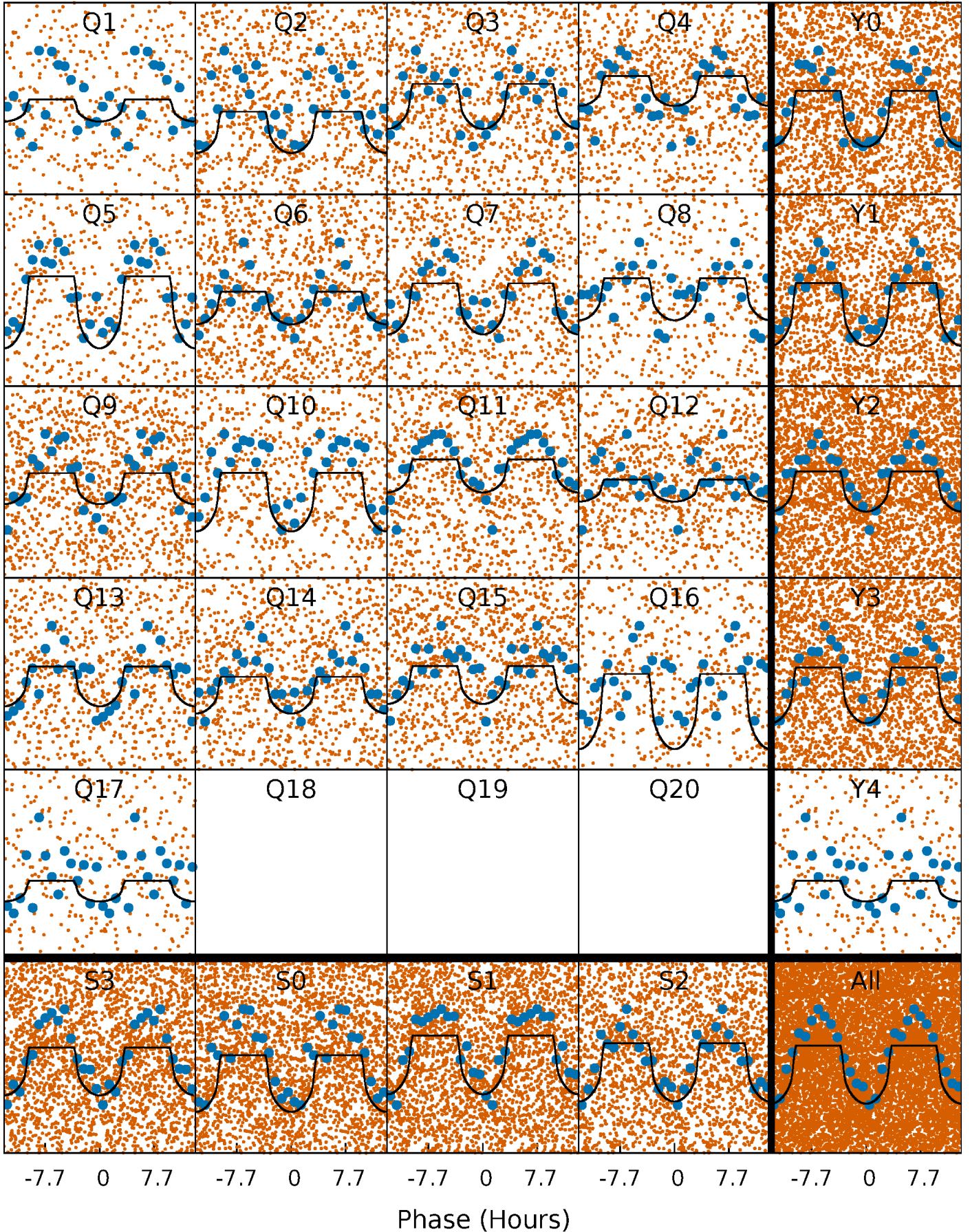
PDC Quarter-Phased Transit Curves

TCE 007122746-04 P= 0.564491 Days $T_0=131.754246$ (BKJD)



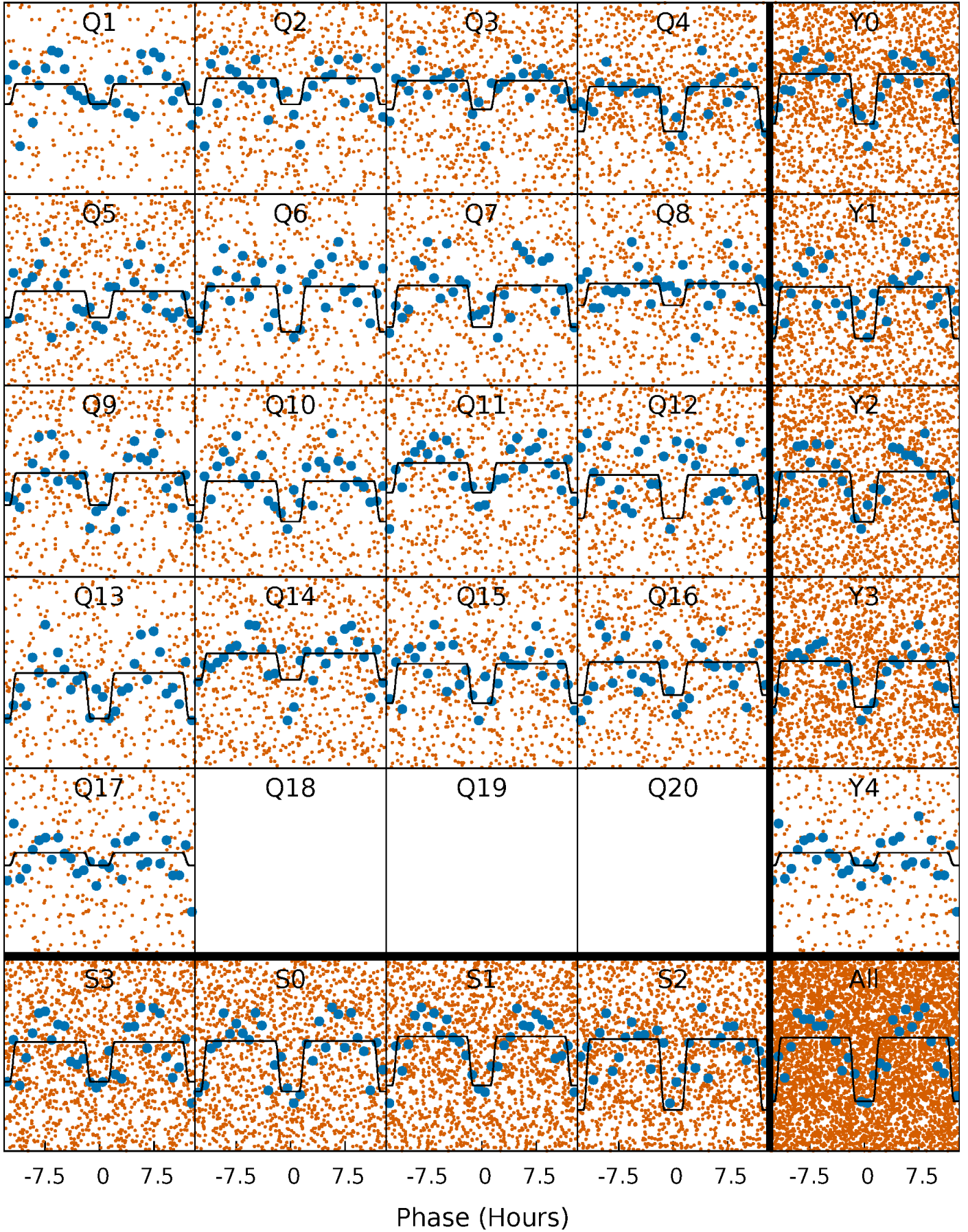
DV Quarter-Phased Transit Curves

TCE 007122746-04 $P = 0.564491$ Days $T_0 = 131.754246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

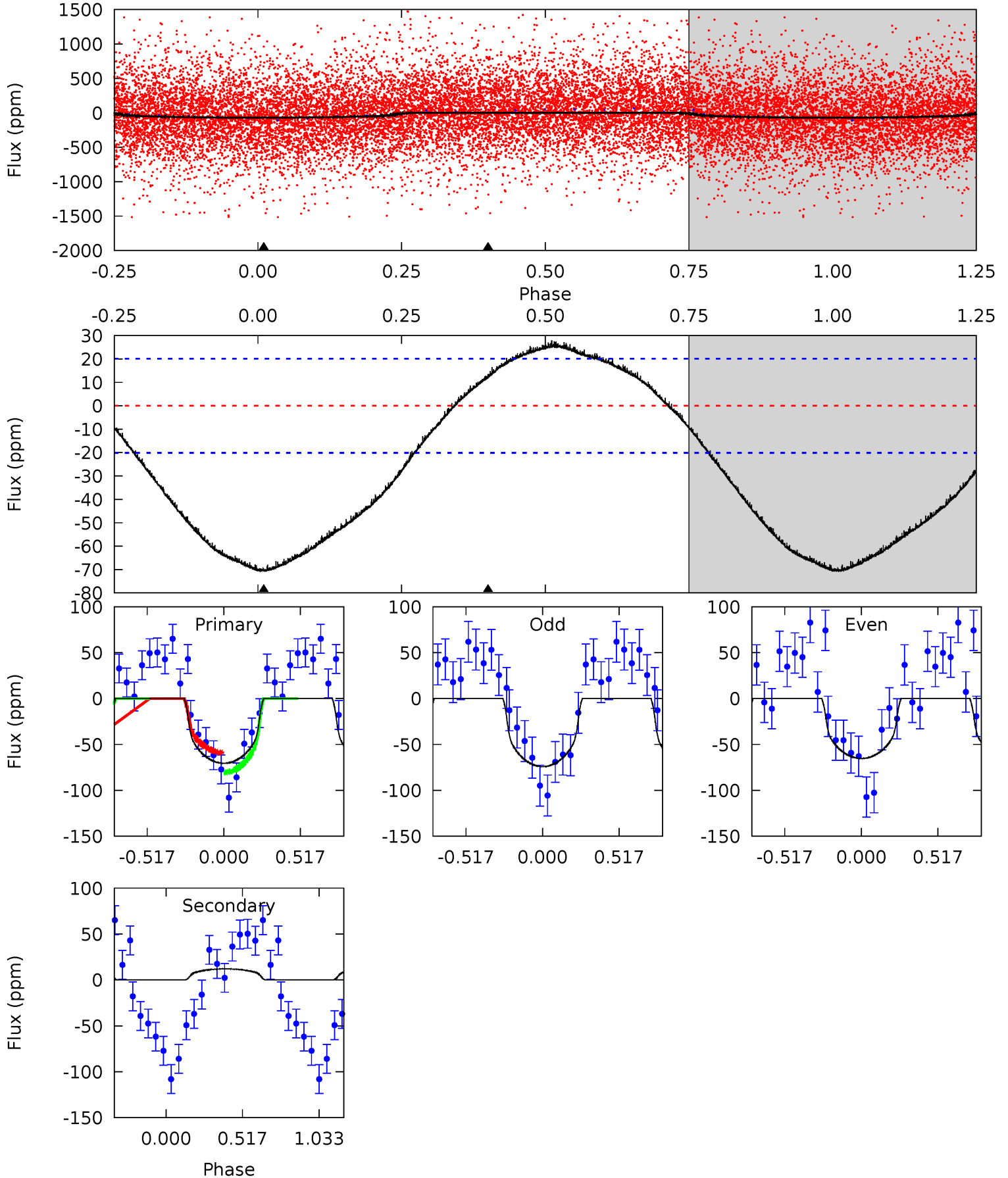
TCE 007122746-04 P= 0.564509 Days $T_0=131.747210$ (BKJD)



DV Model-Shift Uniqueness Test

007122746-04, P = 0.564491 Days, E = 131.189755 Days

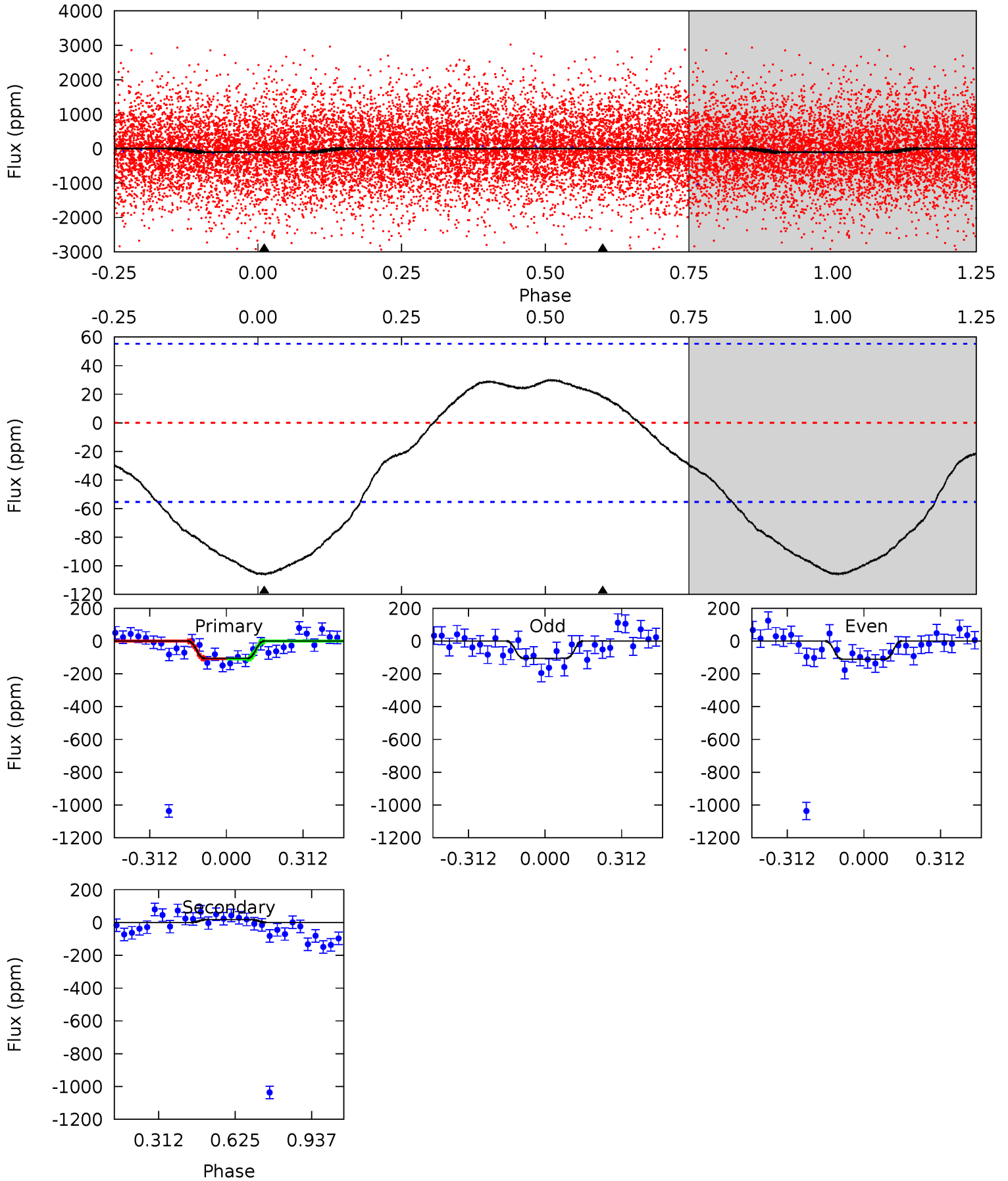
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	-2.52	0	0	4.21	0.65	1.54	14.7	14.7	-2.52	-2.52	0.92	1.02	0.28	2.28



Alt Model-Shift Uniqueness Test

007122746-04, P = 0.564509 Days, E = 131.182701 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.28	-1.39	0	0	4.32	1.01	0.96	8.28	8.28	-1.39	-1.39	0.23	0.89	0.22	0.03



Stellar Parameters For KIC 007122746

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7710^{+139}_{-154}	$4.001^{+0.126}_{-0.094}$	$0.060^{+0.100}_{-0.150}$	$2.239^{+0.338}_{-0.372}$	$1.833^{+0.090}_{-0.167}$	$0.230^{+0.128}_{-0.070}$
	+2%/-2%	+3%/-2%	+167%/-250%	+15%/-17%	+5%/-9%	+56%/-30%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 007122746-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	12 ± 5	$2.25^{+1.11}_{-0.96}$	5533^{+251}_{-249}	-5391^{+435}_{-1153}	$-0.327^{+0.205}_{-0.775}$
Alt.	18 ± 13	$2.57^{+1.04}_{-1.07}$	5527^{+239}_{-264}	-5497^{+654}_{-1251}	$-0.387^{+0.307}_{-0.871}$

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 $A_{obs} \gg 1.0$

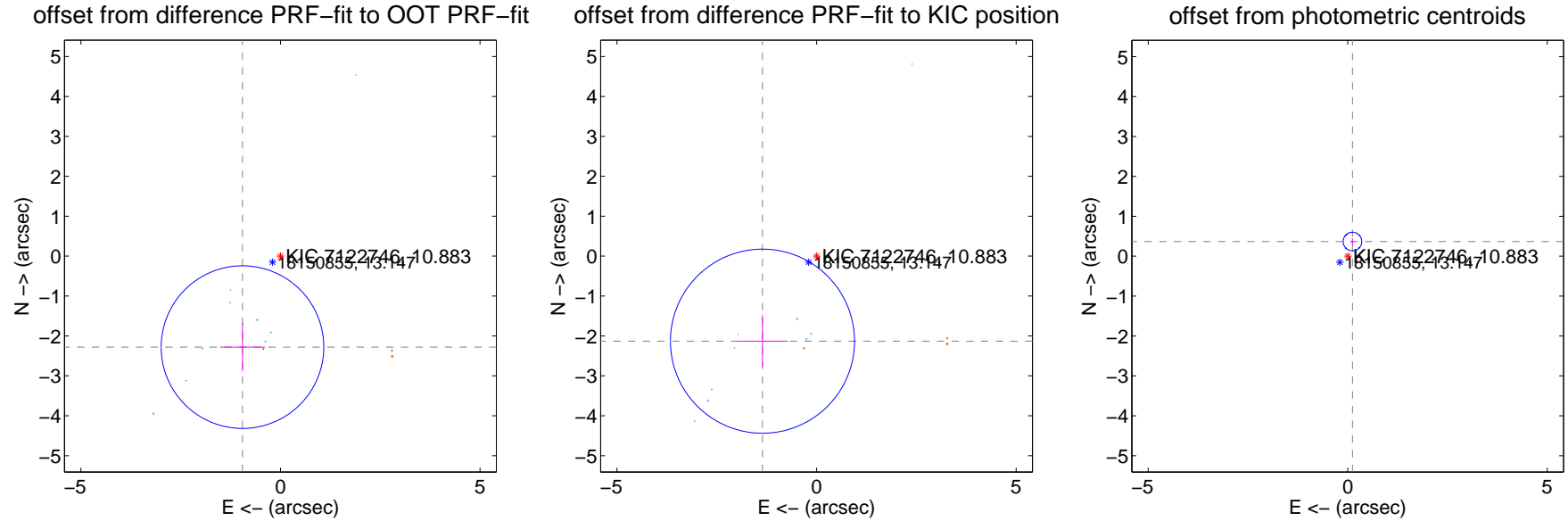
DV Centroid Data

Supplemental centroid analysis for 007122746-04. **Kepler magnitude: 10.88.** Transit SNR 14.54

There are 7 quarters with good PRF difference image offsets

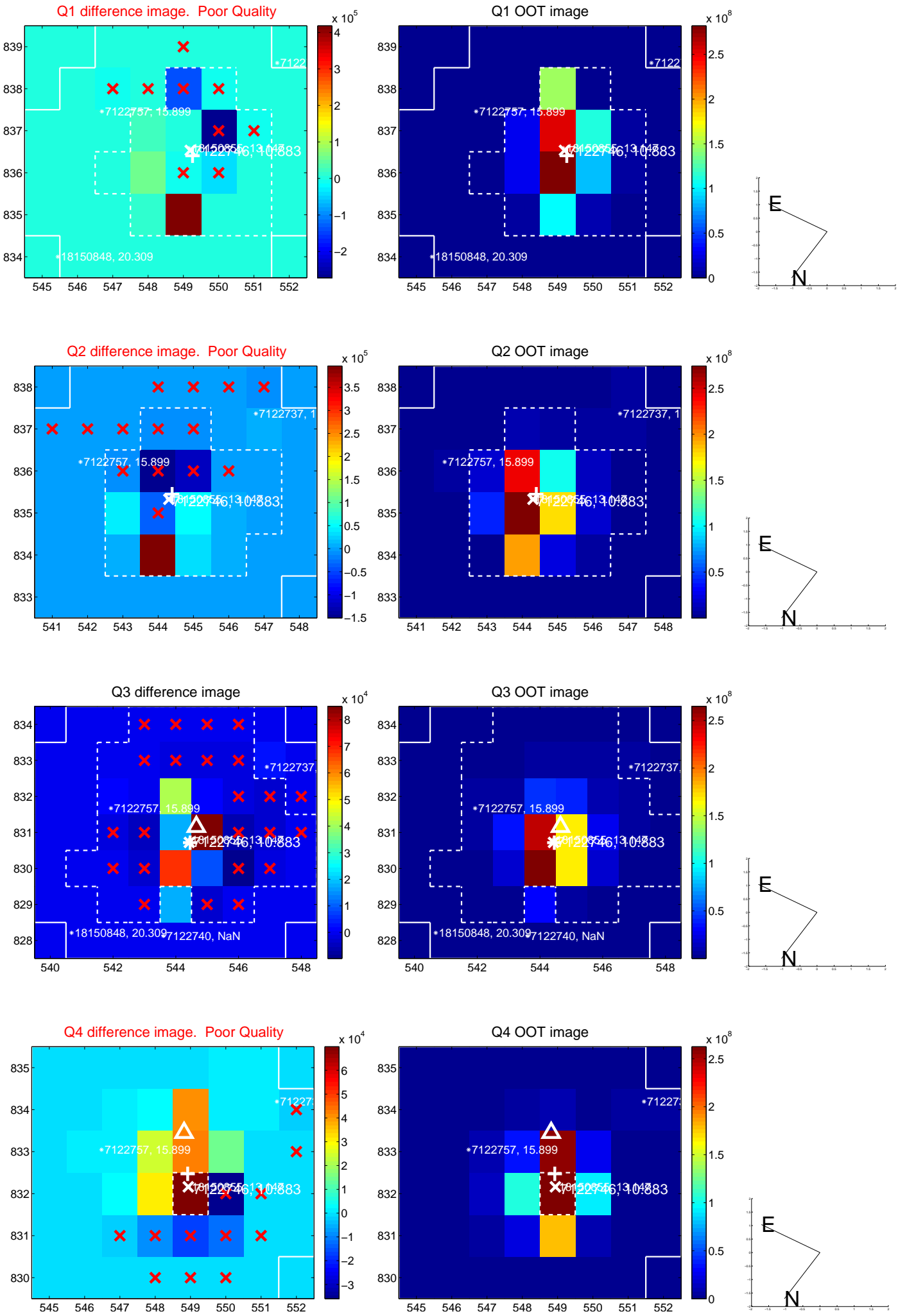
The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.470 ± 0.679	3.64	0.952 ± 0.564	-2.280 ± 0.606
PRF-fit source offset from KIC position	2.526 ± 0.769	3.29	1.356 ± 0.629	-2.131 ± 0.652
photometric centroid source offset	0.39 ± 0.08	4.98	-0.12 ± 0.06	0.37 ± 0.08

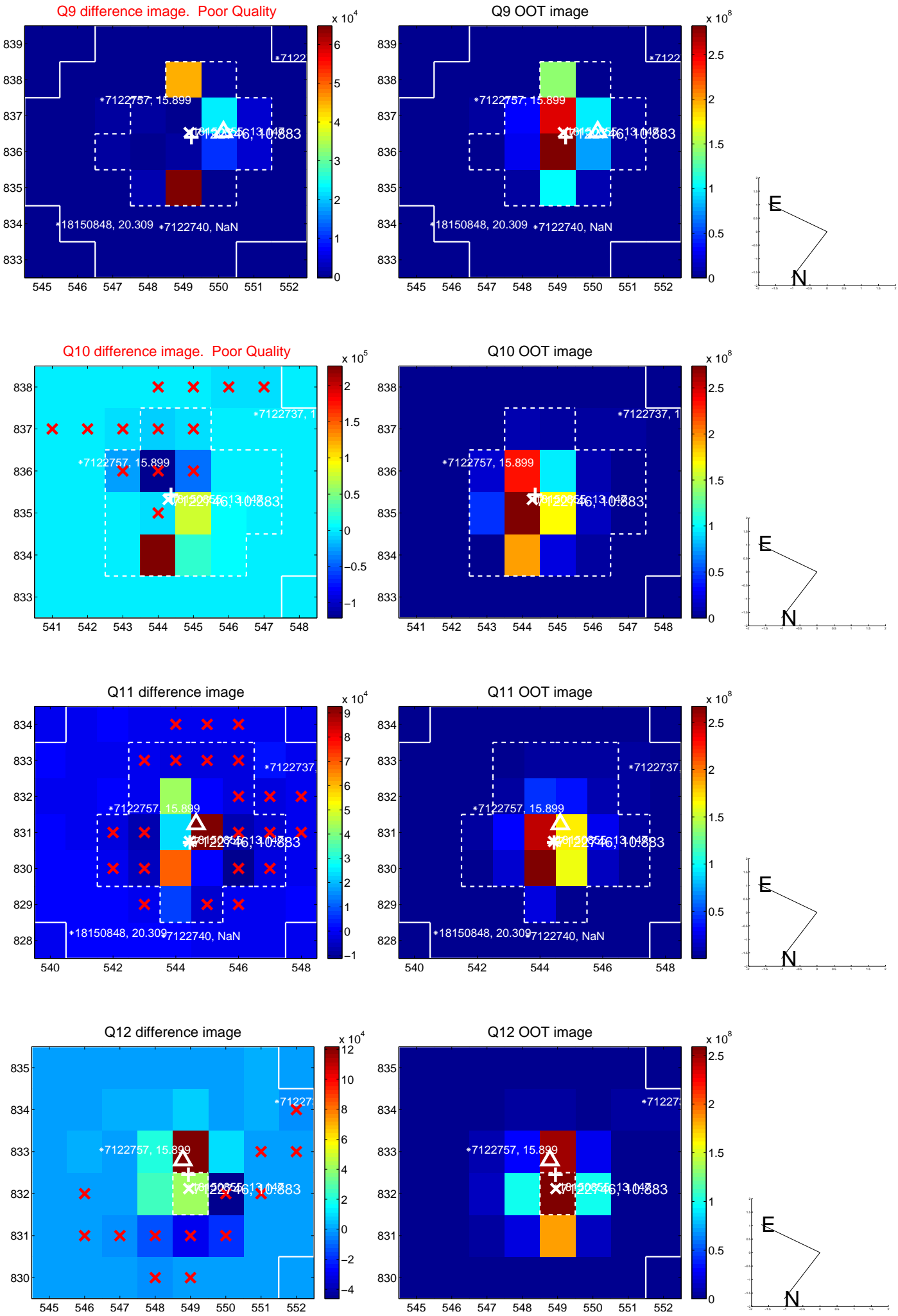


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

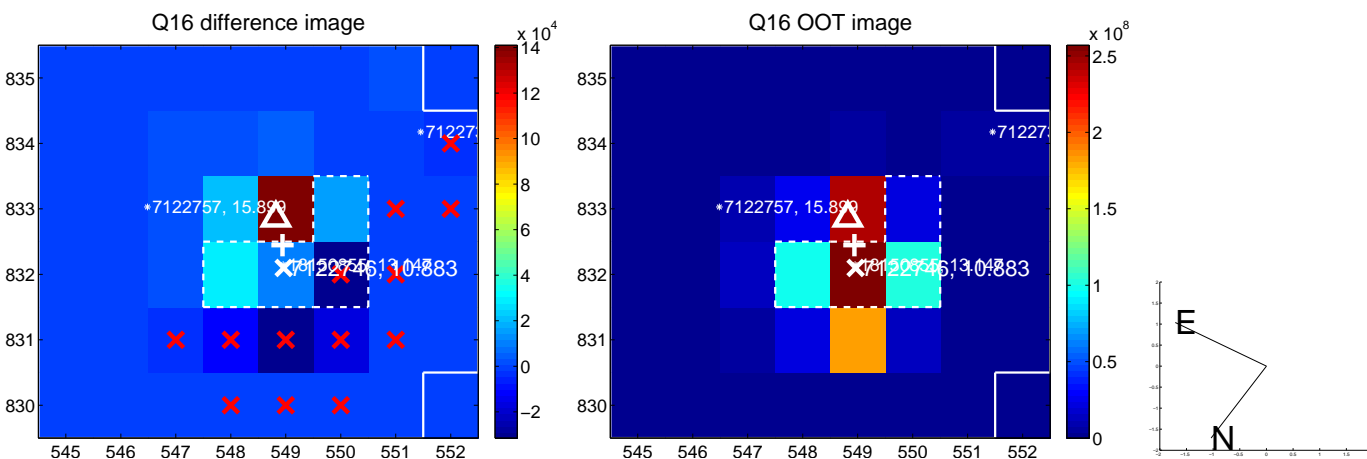
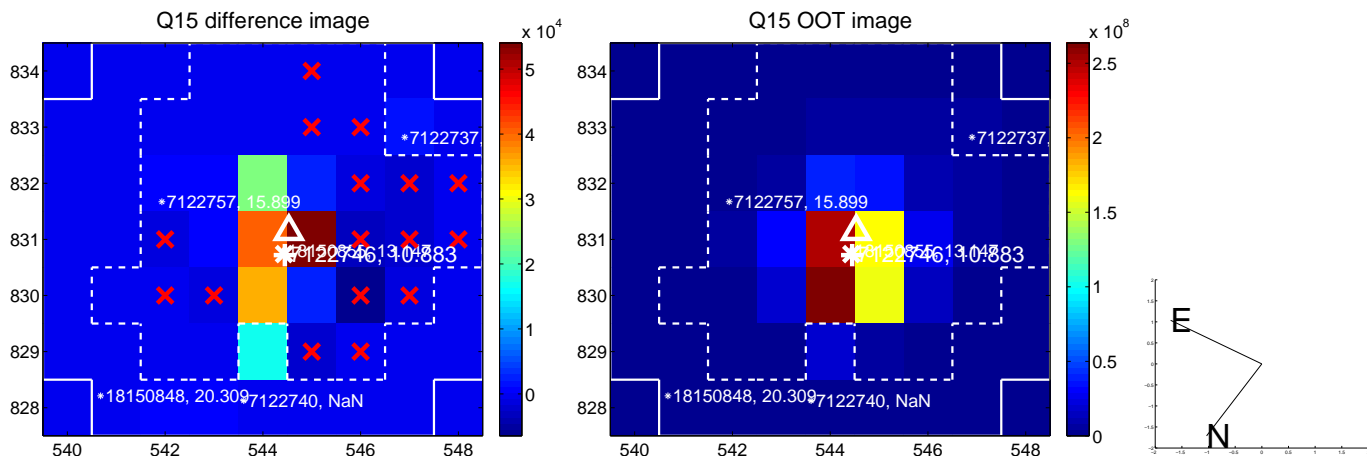
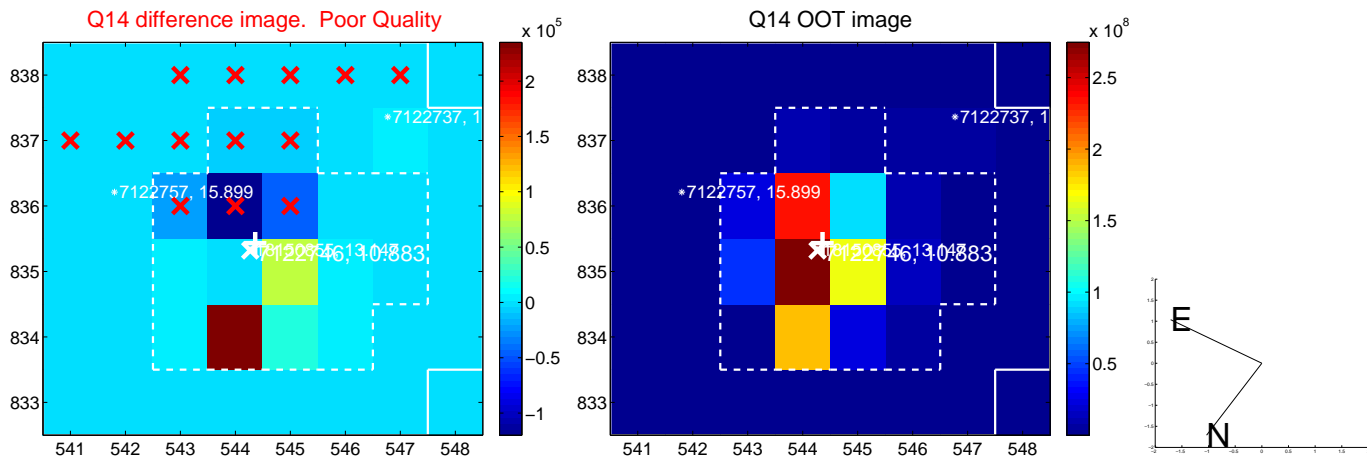
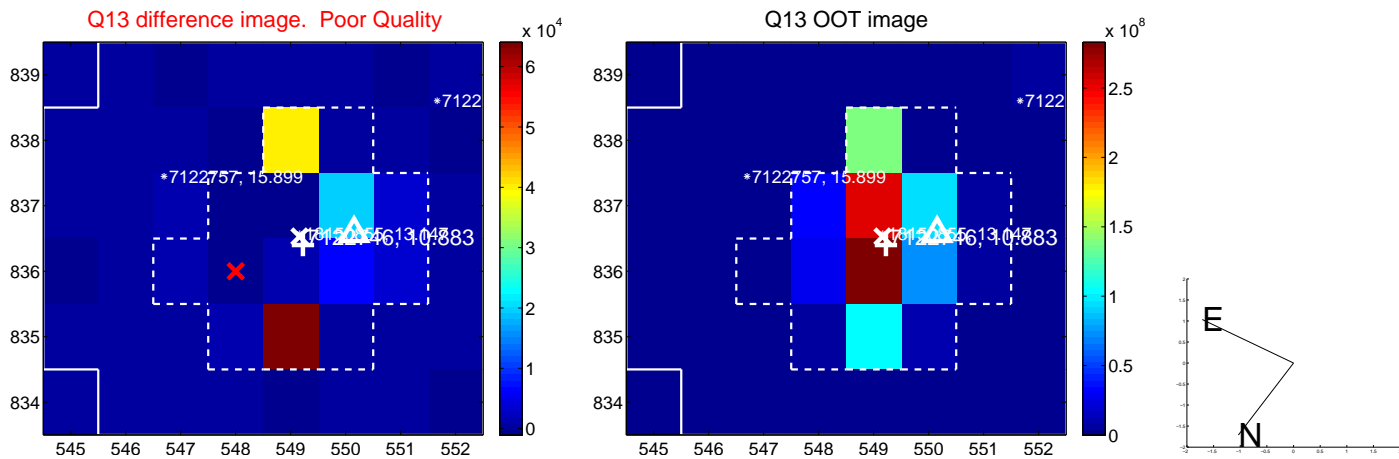
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



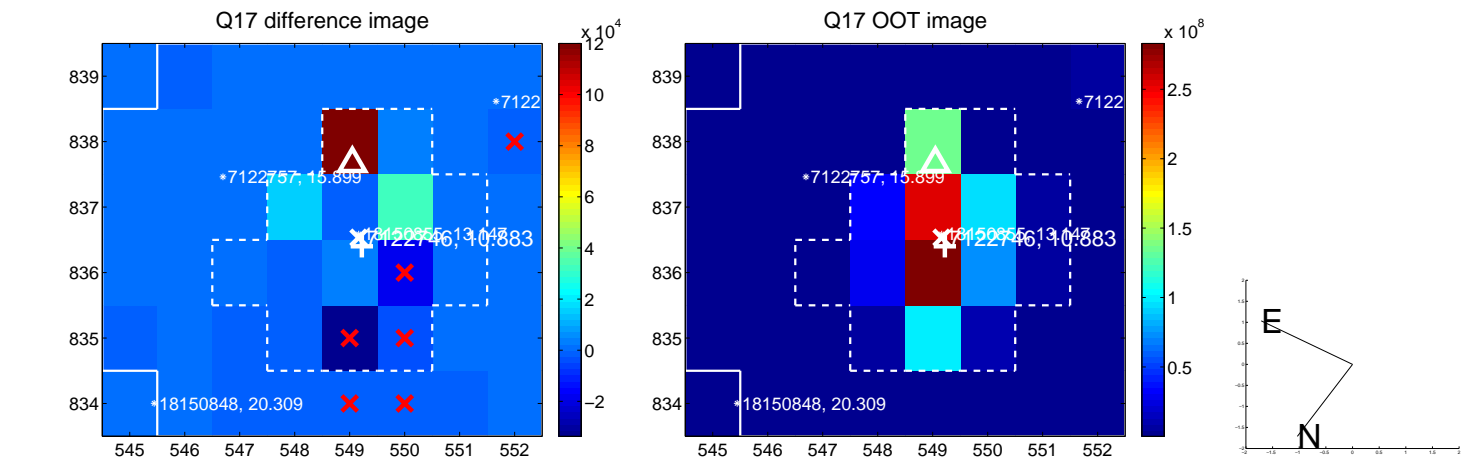
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



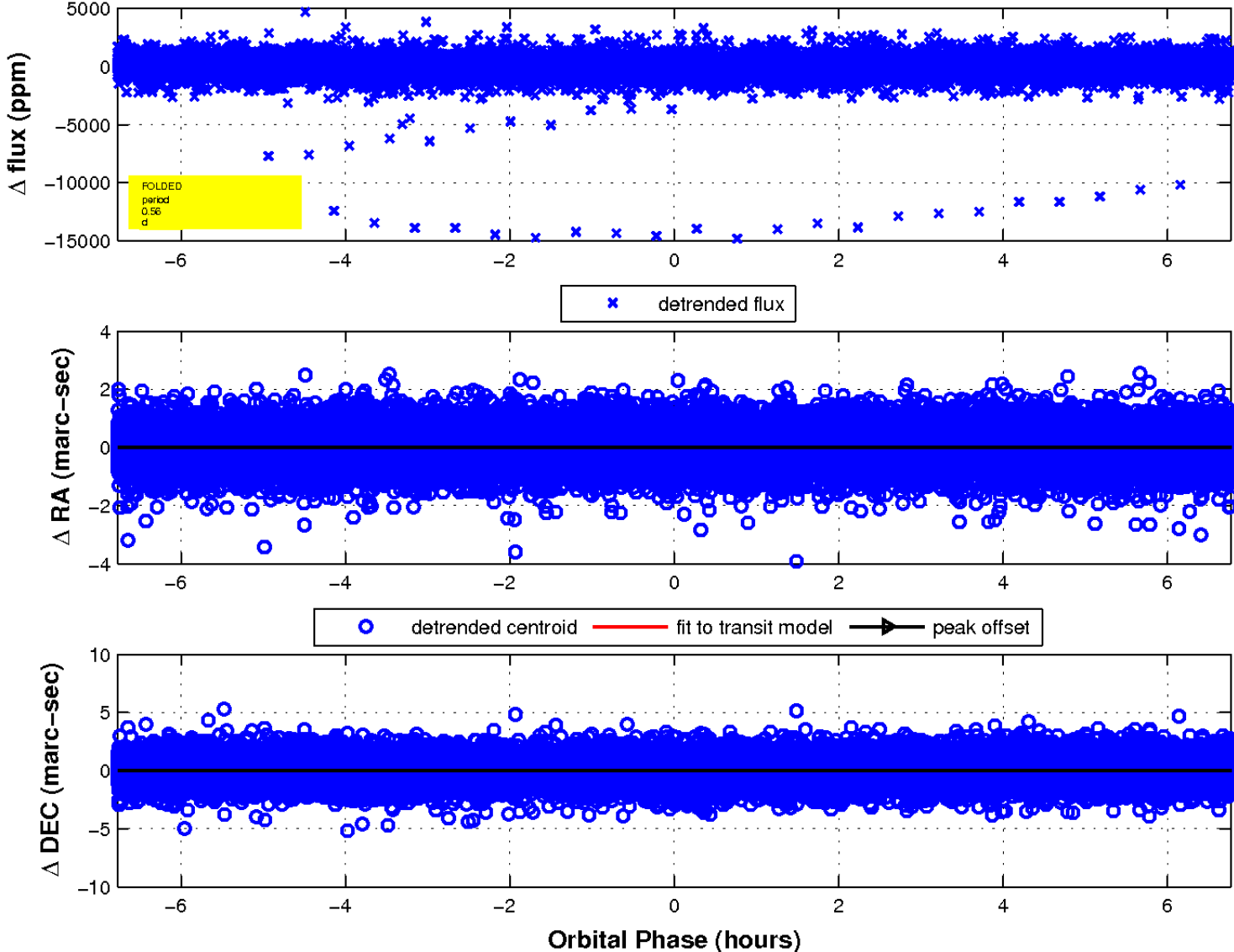
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

