

KIC 007872212

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})
007872212-01	OBS	No	4.574311	134.084776	19.7	14.955	8.2	4.6	3.24	6453	1.64	4069.23
007872212-02	OBS	No	4.571540	131.943111	41.8	13.660	10.4	11.0	3.24	6453	2.52	4072.52
007872212-03	OBS	No	302.128440	136.977375	234.4	17.919	12.7	5.7	3.24	6453	5.27	15.24
007872212-04	OBS	No	78.349039	171.452842	237.7	3.317	9.5	6.8	3.24	6453	5.51	92.17
007872212-05	OBS	No	67.620767	160.520689	204.8	3.082	8.6	6.9	3.24	6453	5.16	112.16
007872212-06	OBS	No	54.295050	164.647359	205.1	5.919	8.3	8.2	3.24	6453	5.17	150.29
007872212-07	OBS	No	402.502509	151.471020	290.3	8.167	7.4	7.5	3.24	6453	6.05	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007872212-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
007872212-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007872212-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
007872212-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007872212-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007872212-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007872212-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

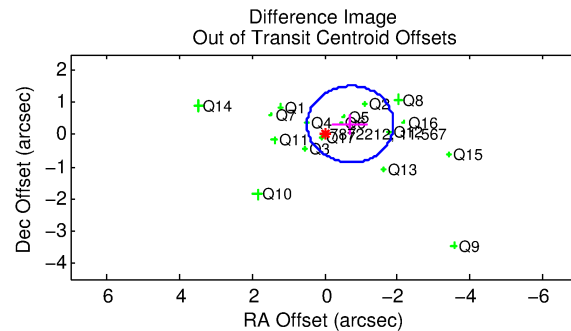
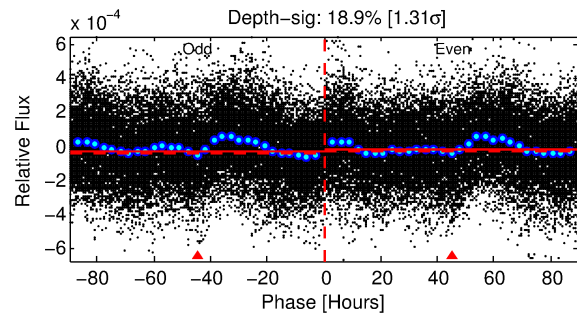
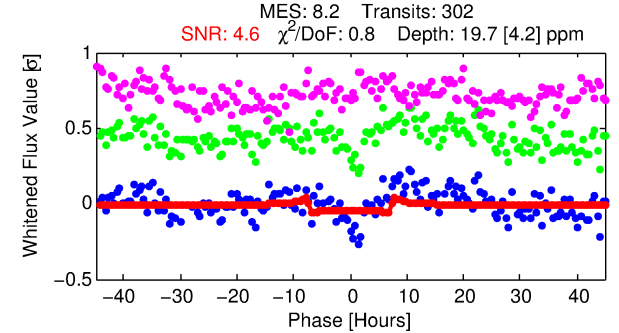
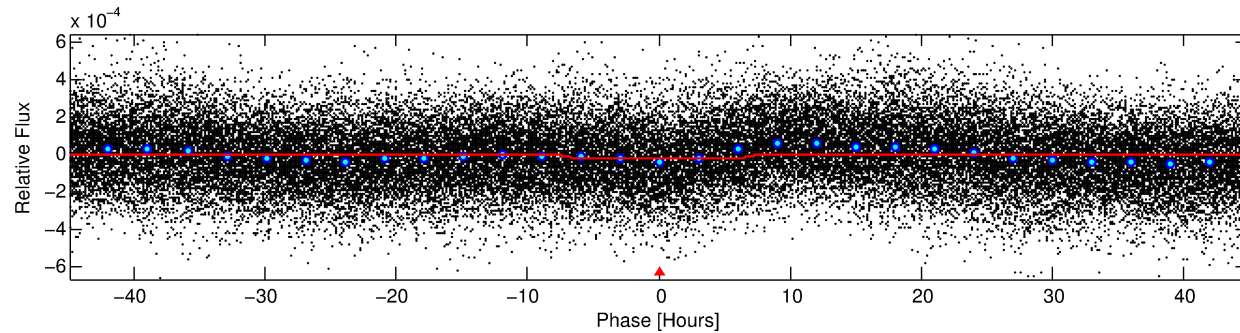
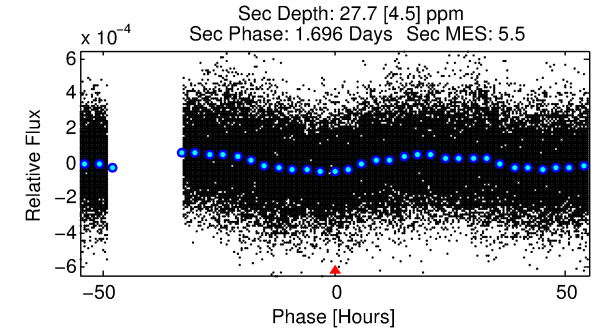
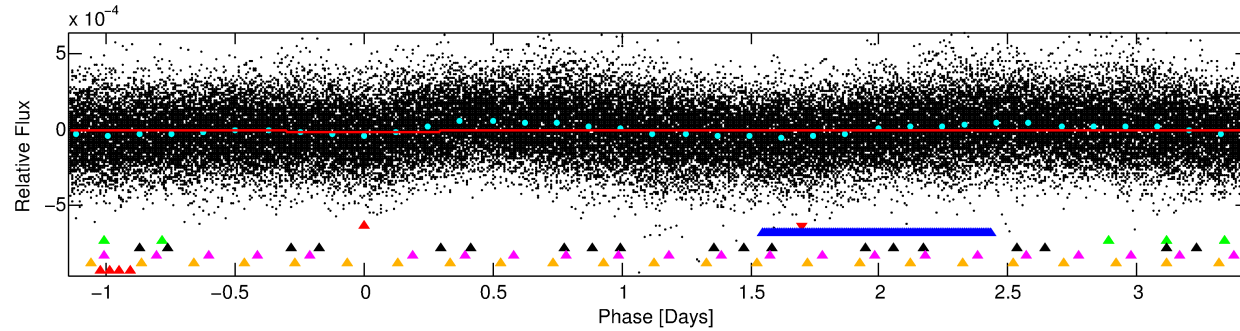
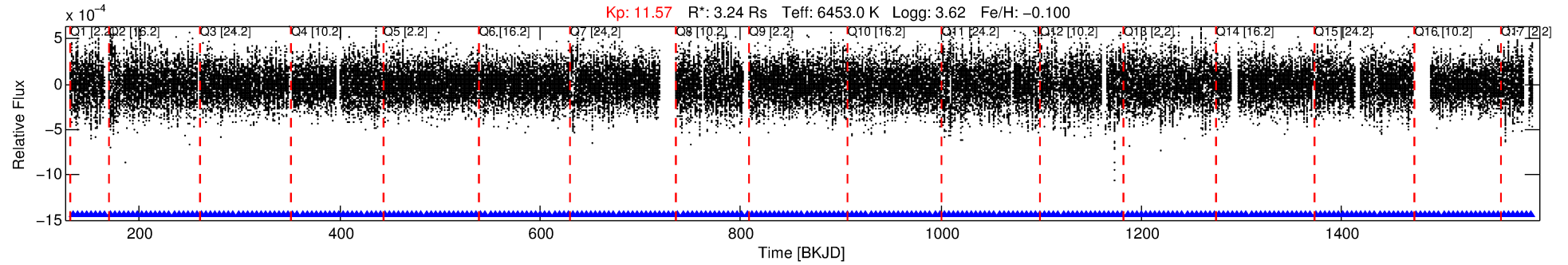
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007872212-01

No Significant Match Found

DV One-Page Summary

KIC: 7872212 Candidate: 1 of 7 Period: 4.574 d



DV Fit Results:

Period = 4.57431 [0.00008] d
Epoch = 134.0848 [0.0110] BKJD
Rp/R* = 0.0047 [0.0009]
a/R* = 1.49 [0.75]
b = 0.87 [0.26]
Seff = 4069.23 [2350.71]
Teq = 2037 [294] K
Rp = 1.64 [0.70] Re
a = 0.0632 [0.0227] AU
Ag = 22.60 [16.03] [1.35σ]
Teffp = 6865 [747] K [6.01σ]

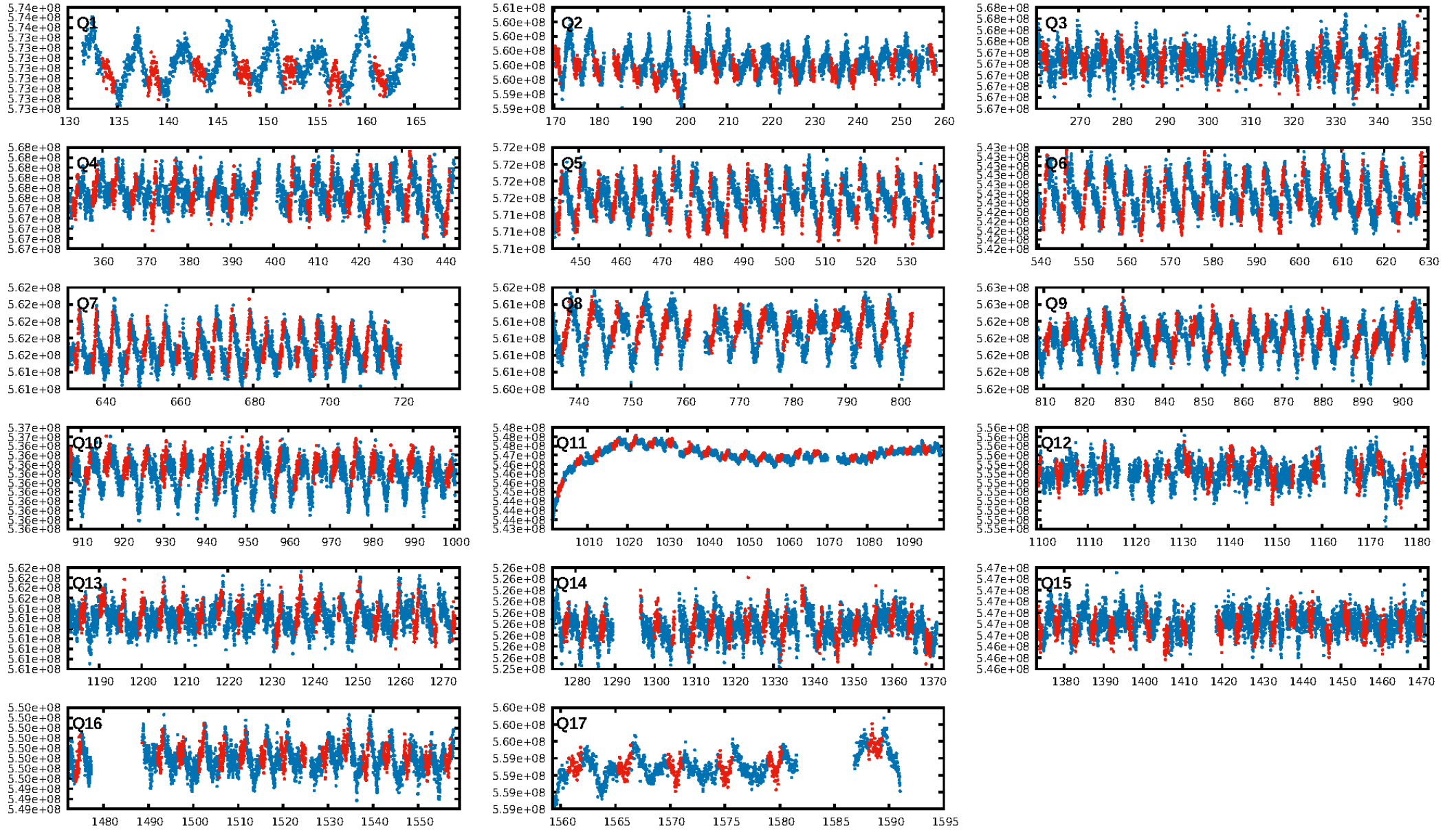
DV Diagnostic Results:

ShortPeriod-sig: 0.3% [0.00σ]
LongPeriod-sig: 100.0% [74.19σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.98e-08
RollingBand-fgt: 1.00 [289/289]
GhostDiagnostic-chr: 0.3742
Centroid-sig: 14.8%
Centroid-so: 0.541 arcsec [0.86σ]
OotOffset-rm: 0.777 arcsec [1.95σ]
KicOffset-rm: 0.817 arcsec [2.09σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 1.00 [17/17]

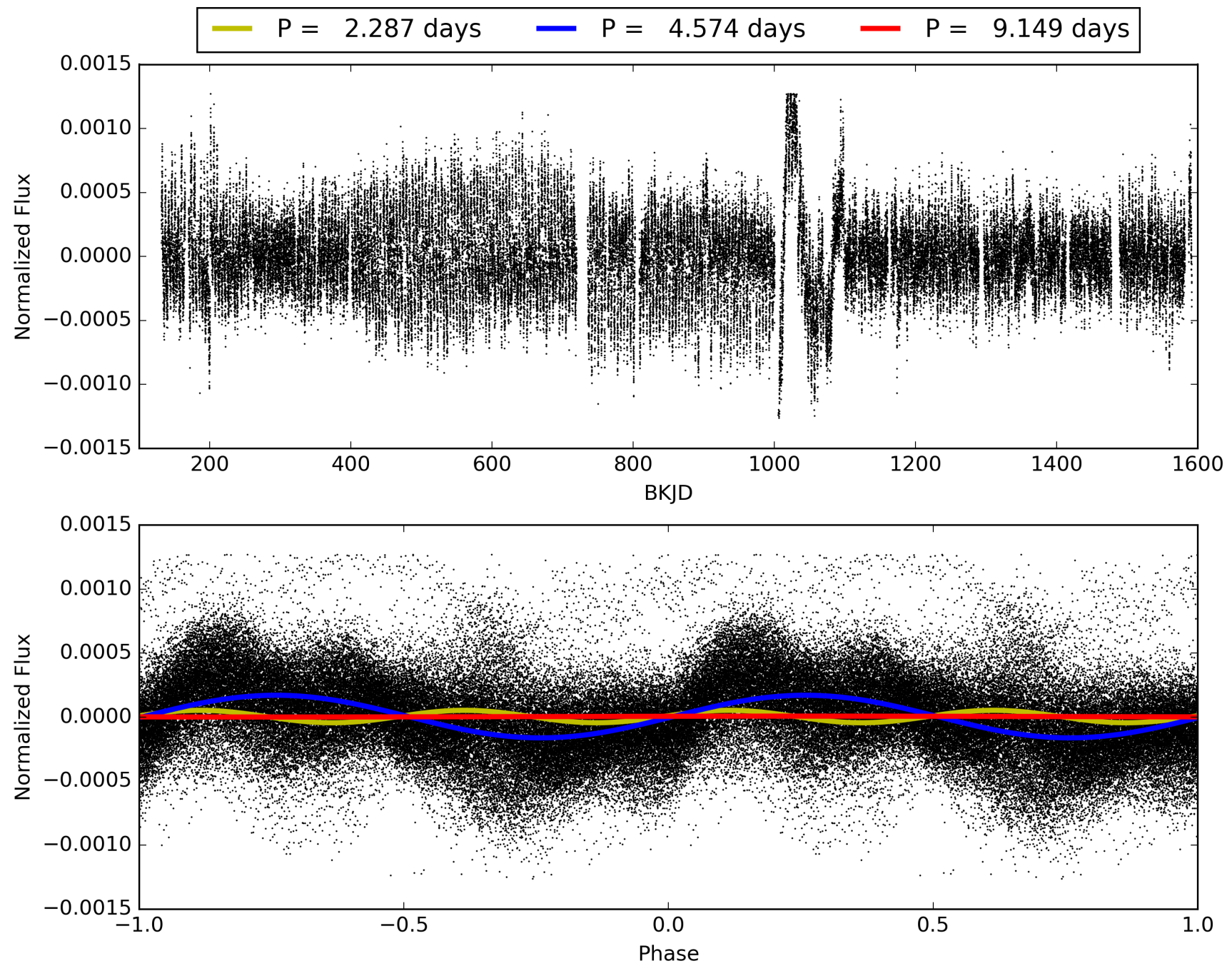
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:48:47 Z

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

TCE 007872212-01, PDC Light Curves

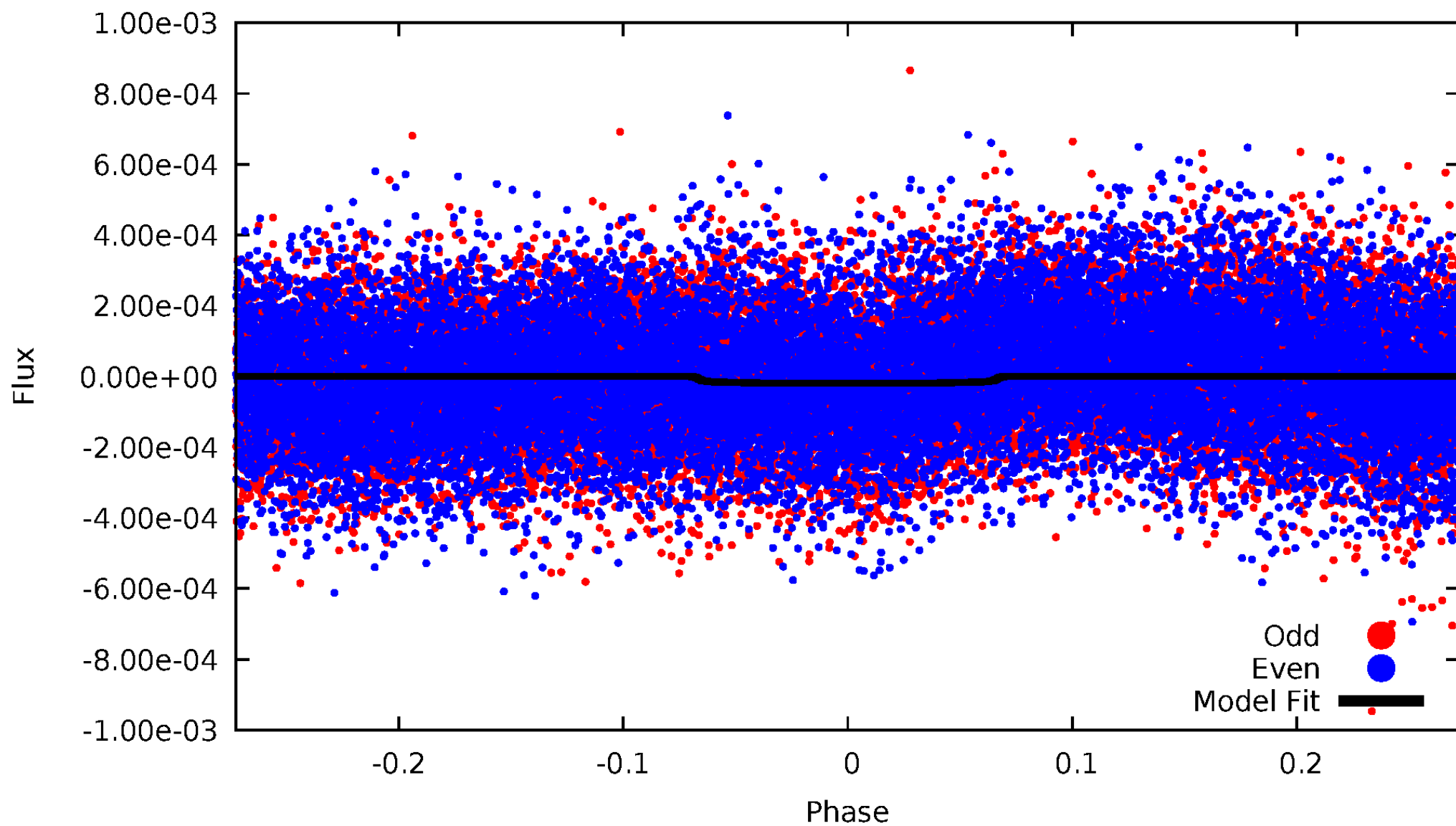


TCE 007872212-01



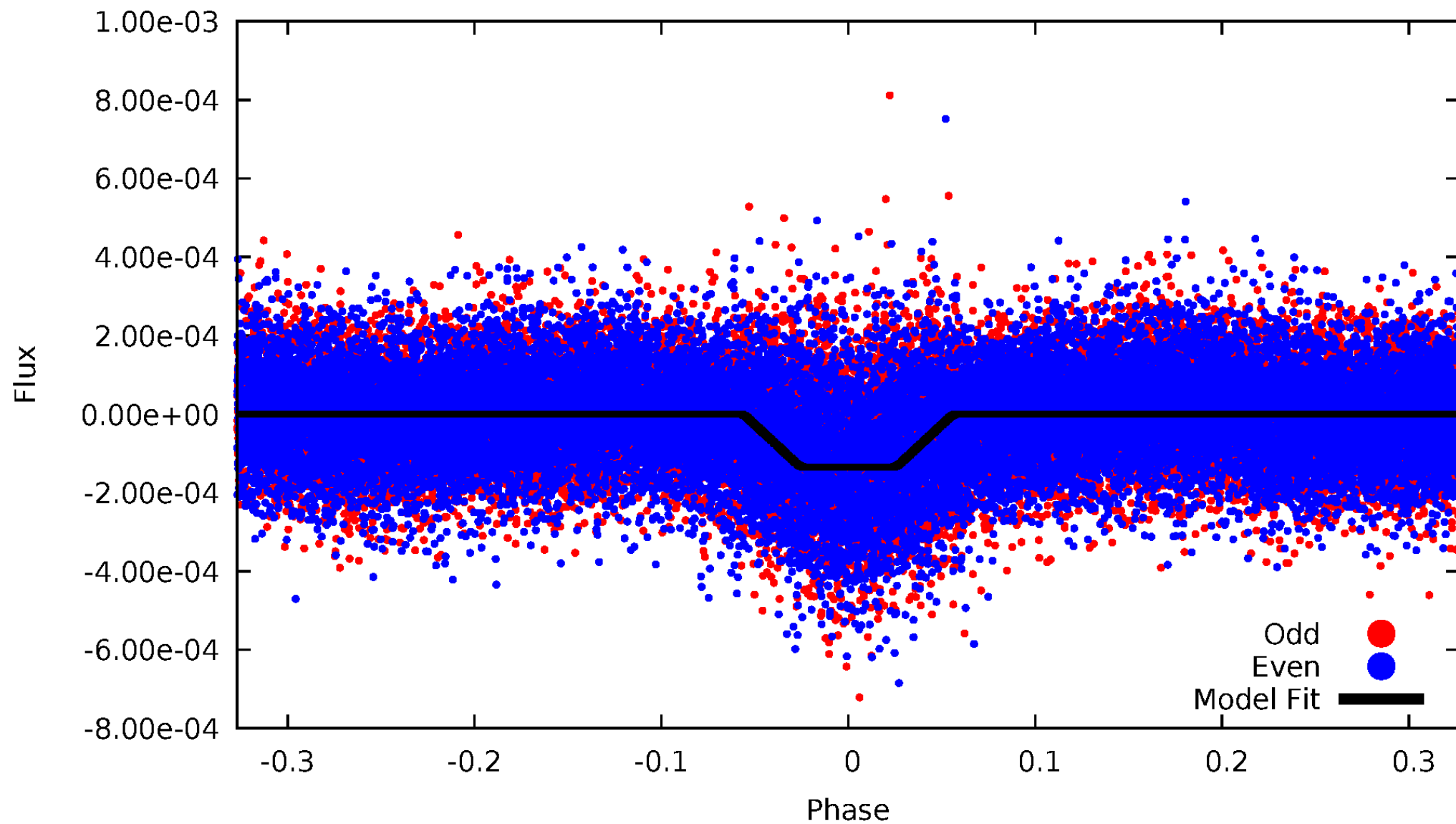
DV Odd/Even

TCE 007872212-01

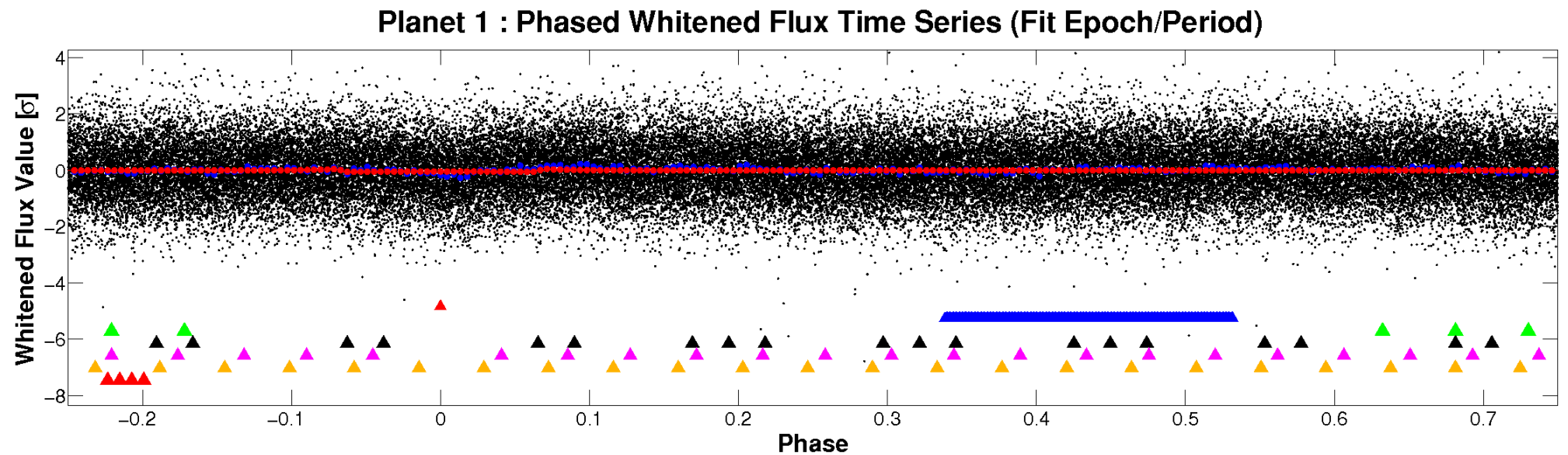
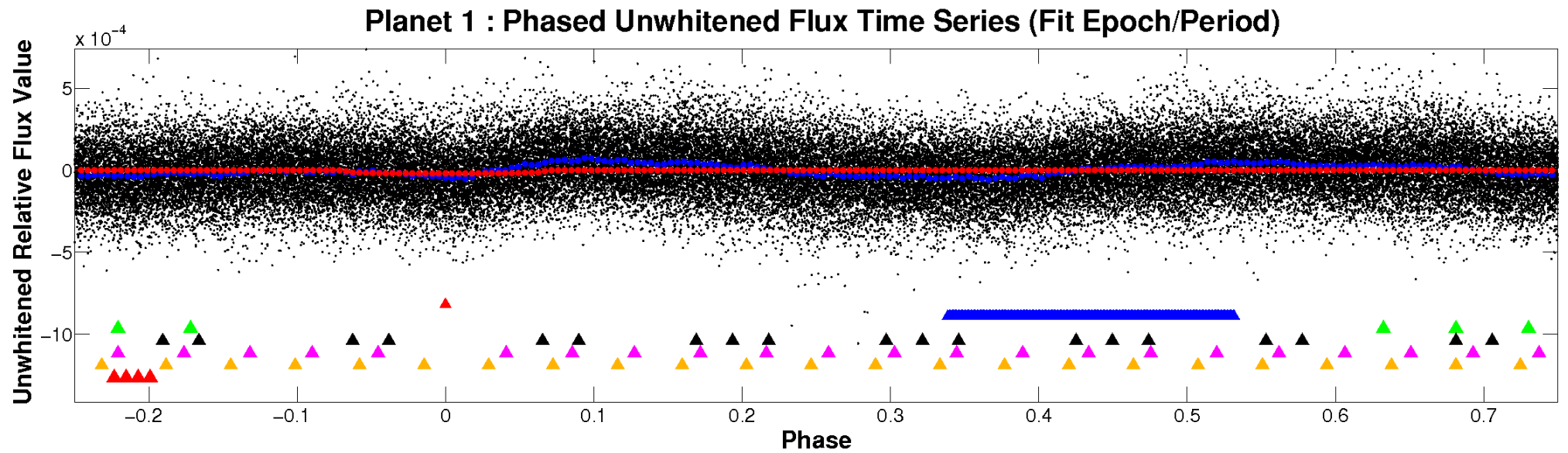


ALT Odd/Even

TCE 007872212-01

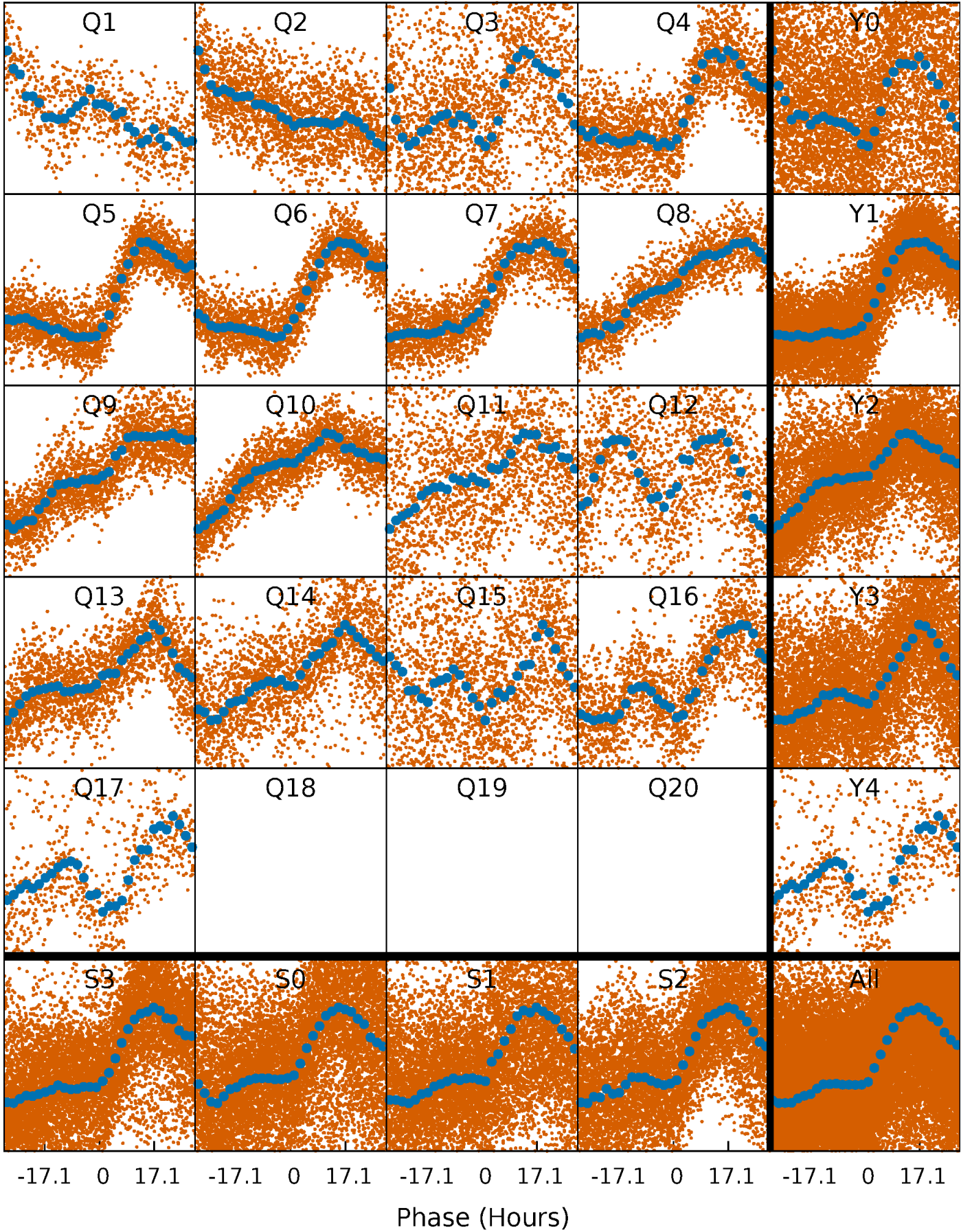


Non-Whitened Vs. Whitened Light Curve



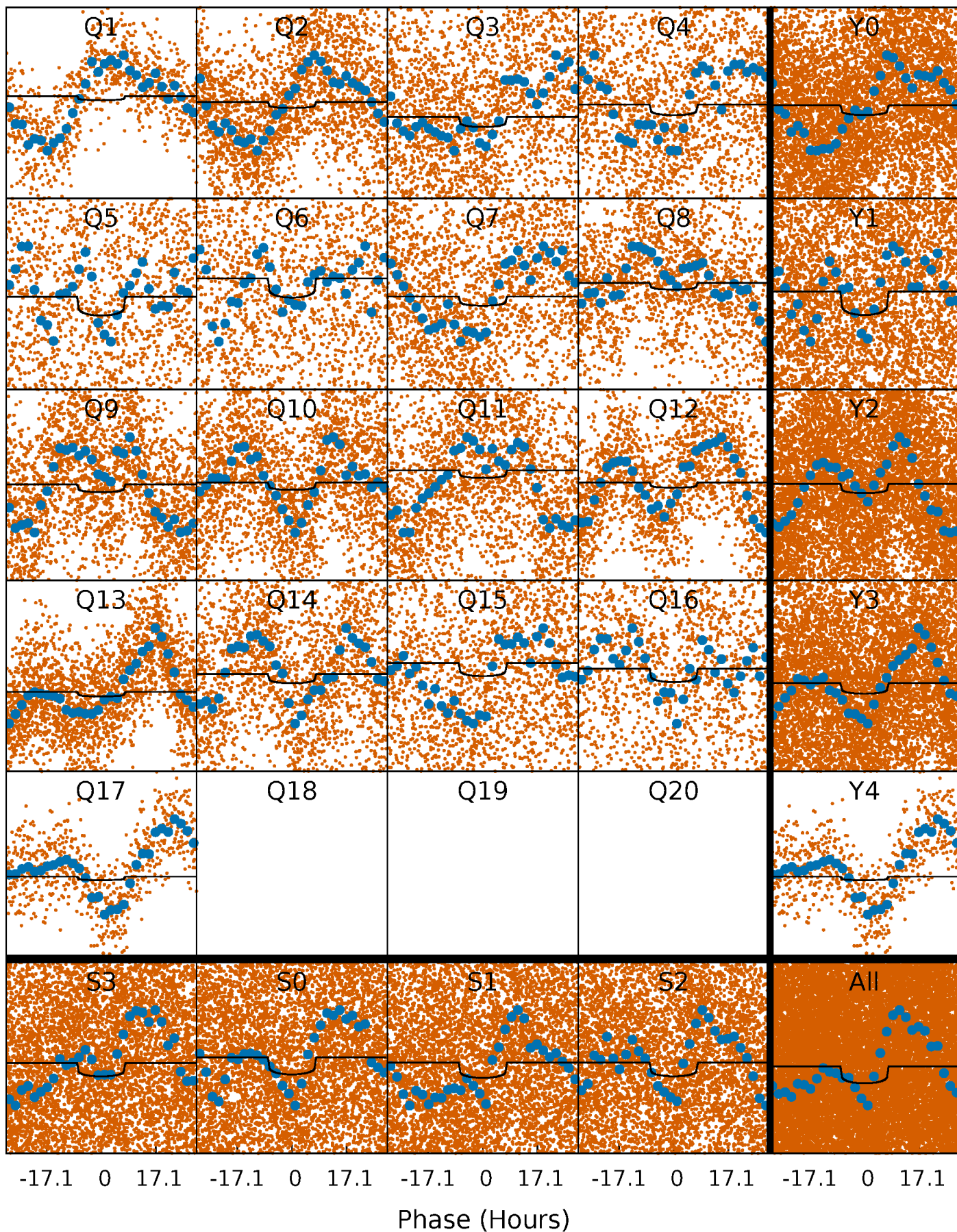
PDC Quarter-Phased Transit Curves

TCE 007872212-01 P= 4.574311 Days $T_0=134.084776$ (BKJD)



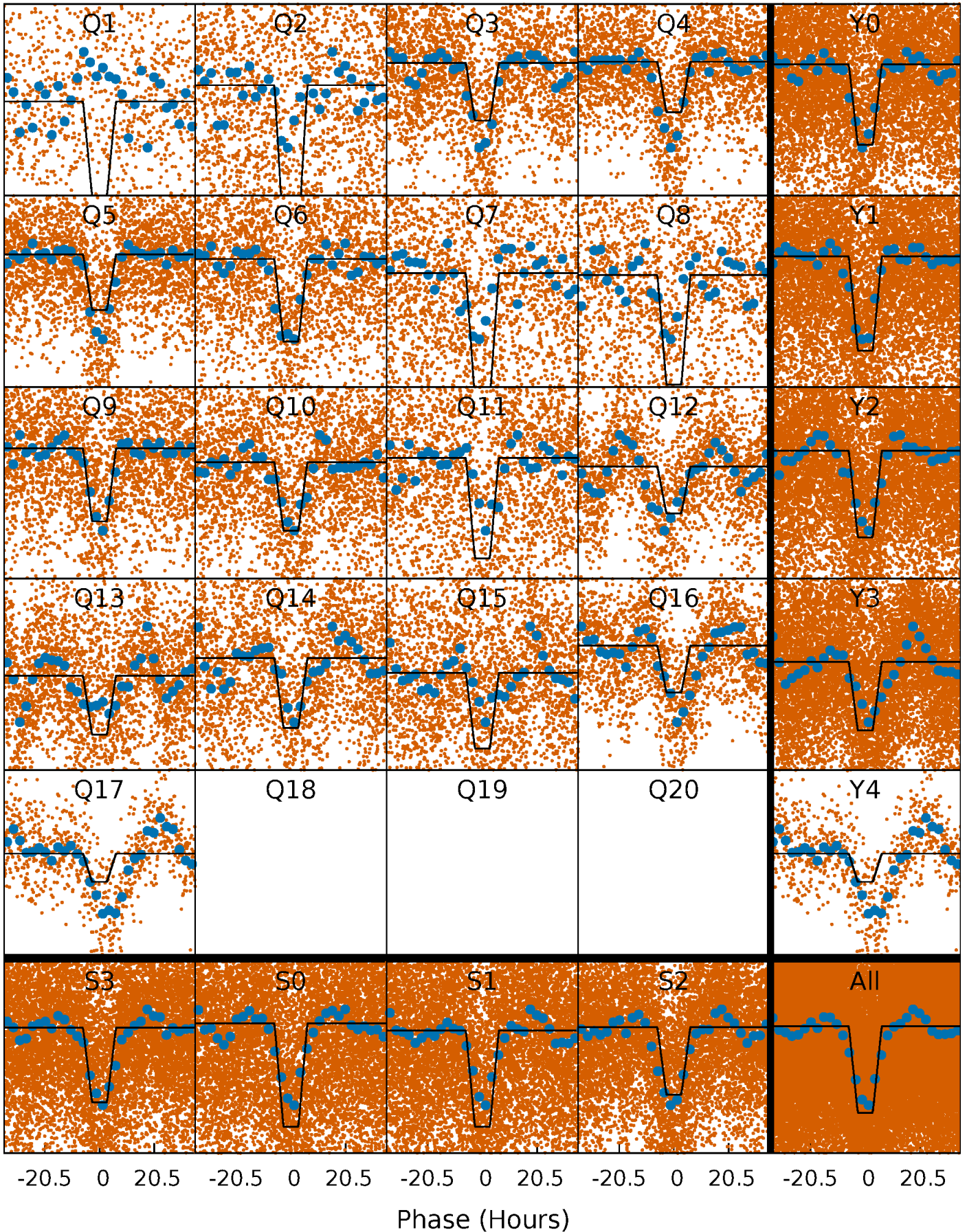
DV Quarter-Phased Transit Curves

TCE 007872212-01 P= 4.574311 Days $T_0=134.084776$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

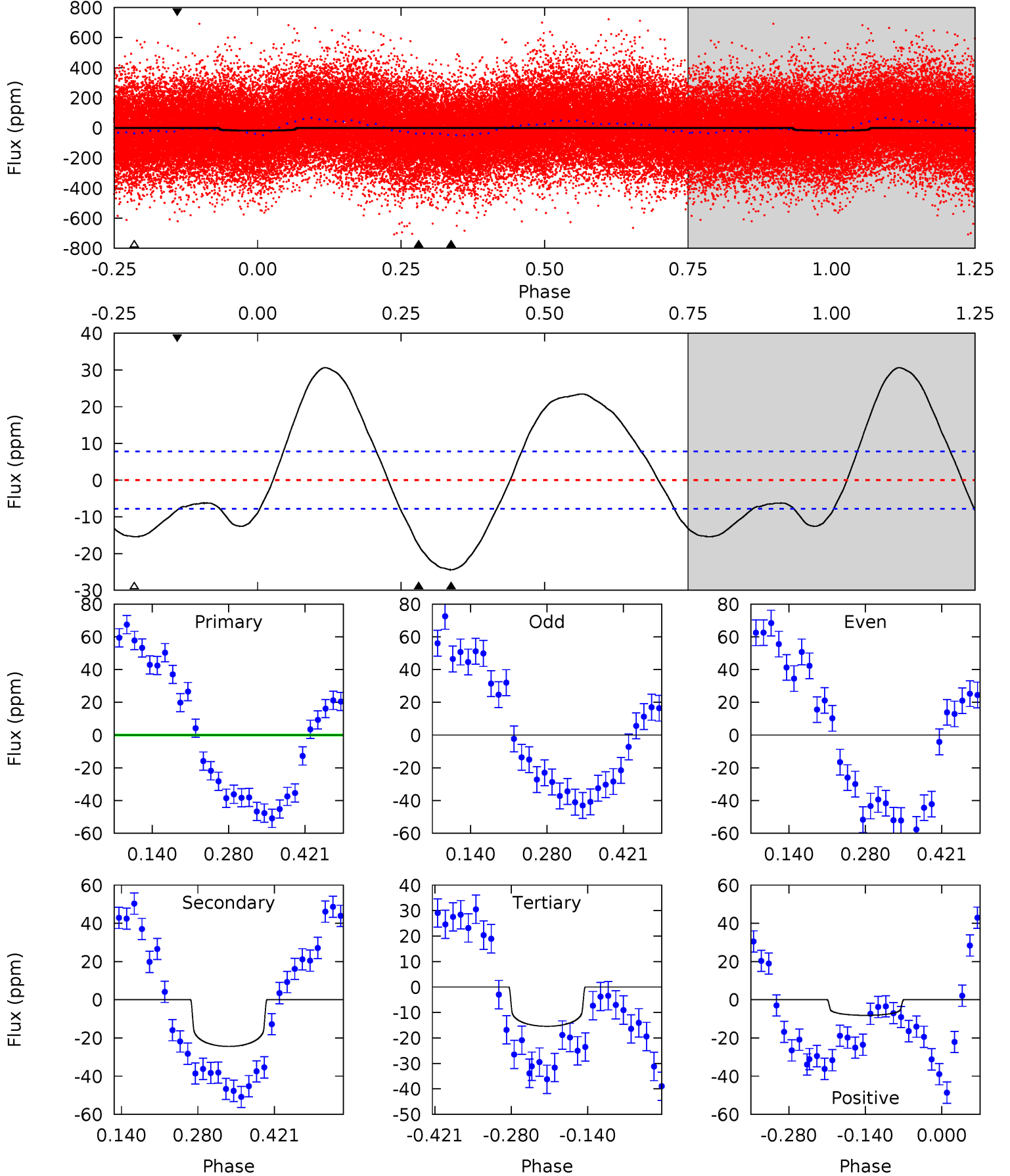
TCE 007872212-01 P= 4.574014 Days $T_0=134.169224$ (BKJD)



DV Model-Shift Uniqueness Test

007872212-01, P = 4.574311 Days, E = 129.510465 Days

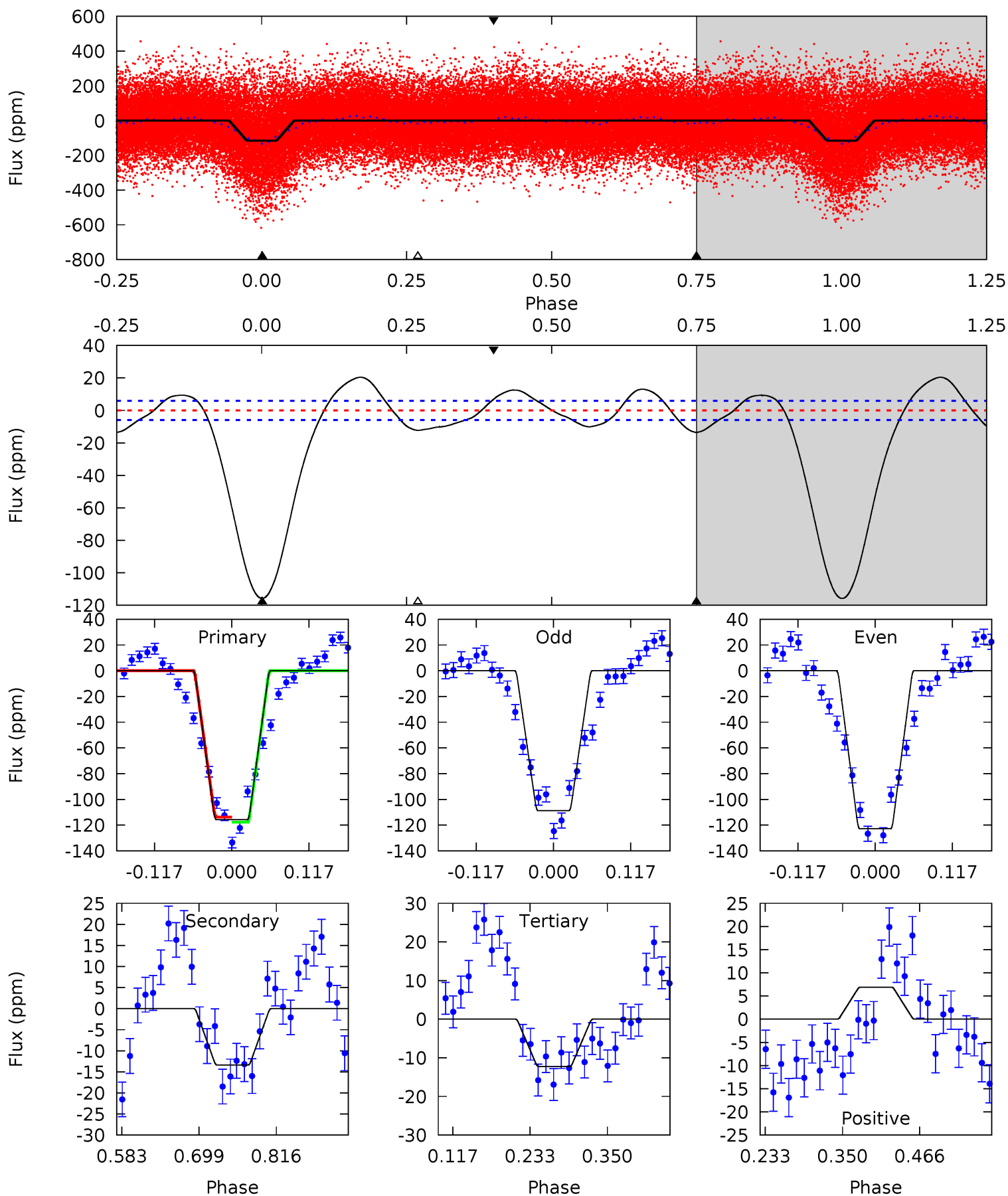
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	14.1	8.89	-4.70	4.49	1.47	8.81	1.32	14.9	5.18	18.8	0.58	0.83	0.56	4.88



Alt Model-Shift Uniqueness Test

007872212-01, P = 4.574014 Days, E = 129.595210 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
88.8	10.3	9.40	5.30	4.53	1.57	7.46	79.4	83.5	0.86	4.97	5.35	1.01	0.15	1.54



Stellar Parameters For KIC 007872212

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-162}	$3.625^{+0.332}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$3.236^{+0.409}_{-1.227}$	$1.613^{+0.220}_{-0.330}$	$0.067^{+0.149}_{-0.017}$
	+3%/-3%	+9%/-2%	+300%/-250%	+13%/-38%	+14%/-20%	+222%/-25%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007872212-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-24 ± 2	$1.57^{+0.40}_{-0.42}$	2792^{+161}_{-241}	6577^{+1012}_{-571}	22^{+17}_{-8}
Alt.	-13 ± 1	$3.93^{+0.58}_{-0.75}$	2787^{+152}_{-258}	3842^{+164}_{-154}	$1.959^{+0.903}_{-0.465}$

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

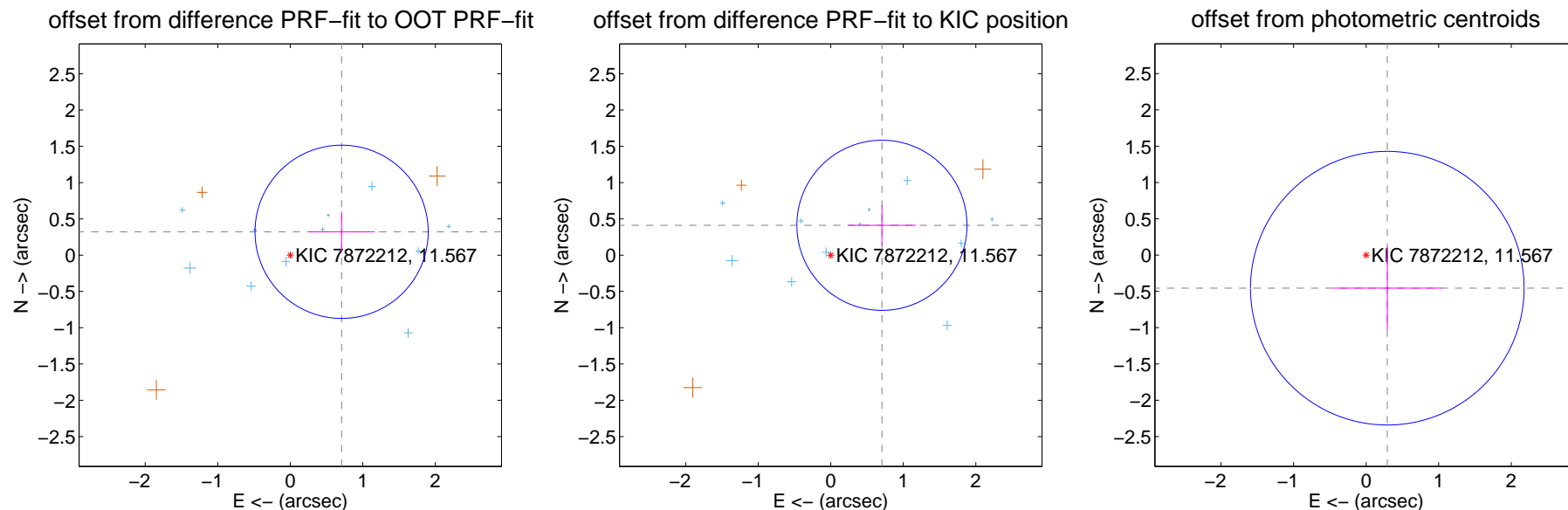
DV Centroid Data

Supplemental centroid analysis for 007872212-01. **Kepler magnitude: 11.57.** Transit SNR 4.59

There are 12 quarters with good PRF difference image offsets

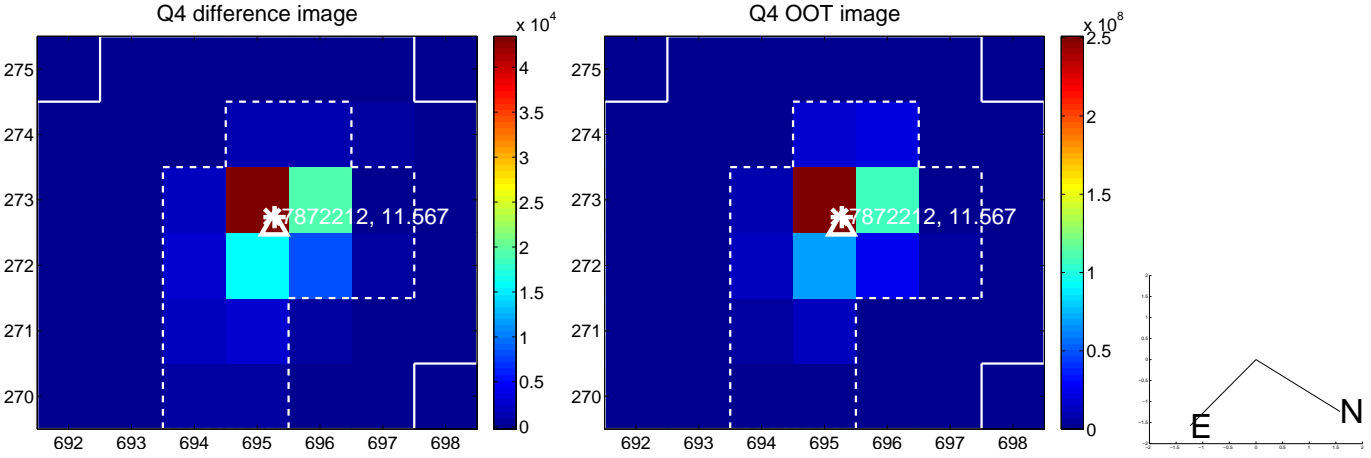
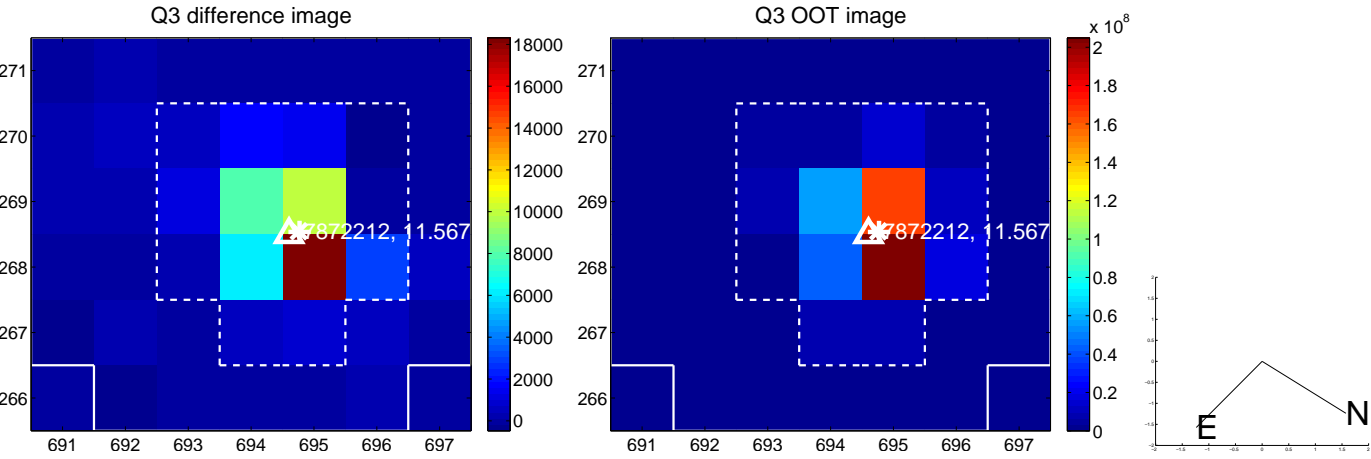
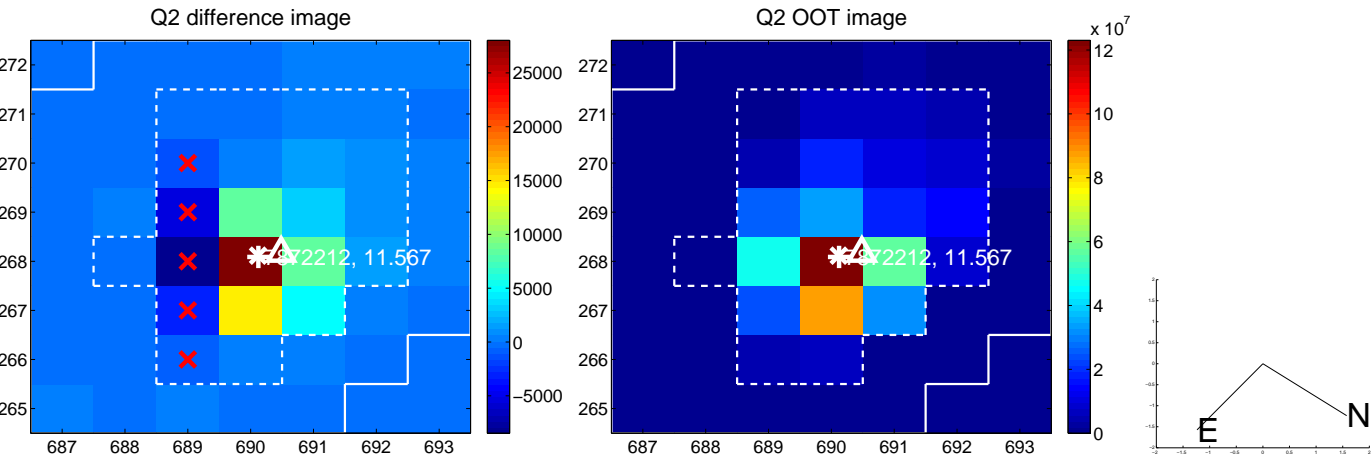
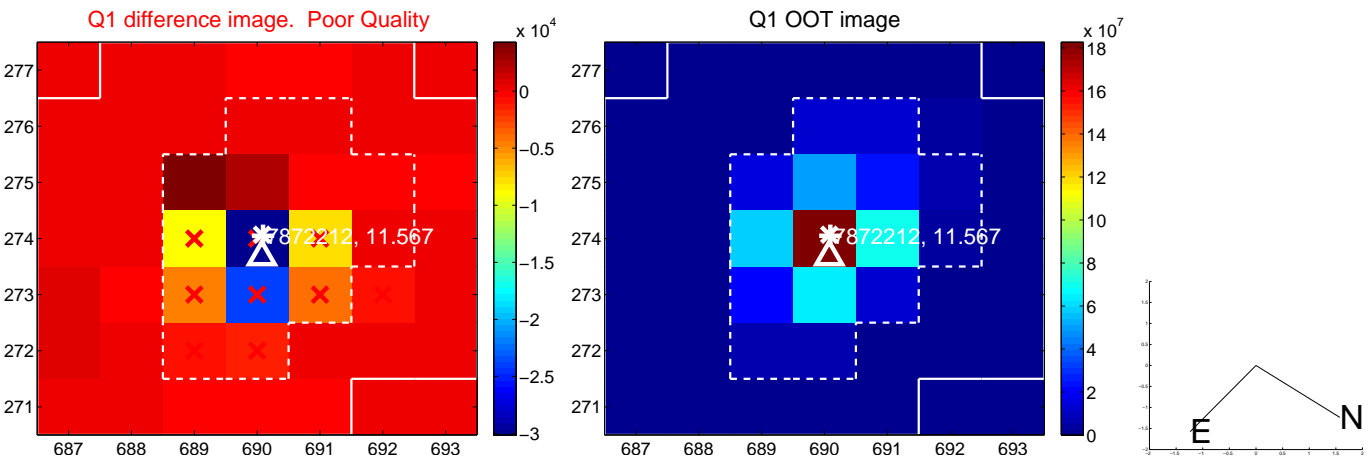
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.777 ± 0.398	1.95	-0.707 ± 0.458	0.322 ± 0.276
PRF-fit source offset from KIC position	0.817 ± 0.391	2.09	-0.706 ± 0.466	0.411 ± 0.279
photometric centroid source offset	0.54 ± 0.63	0.86	-0.29 ± 0.75	-0.46 ± 0.57

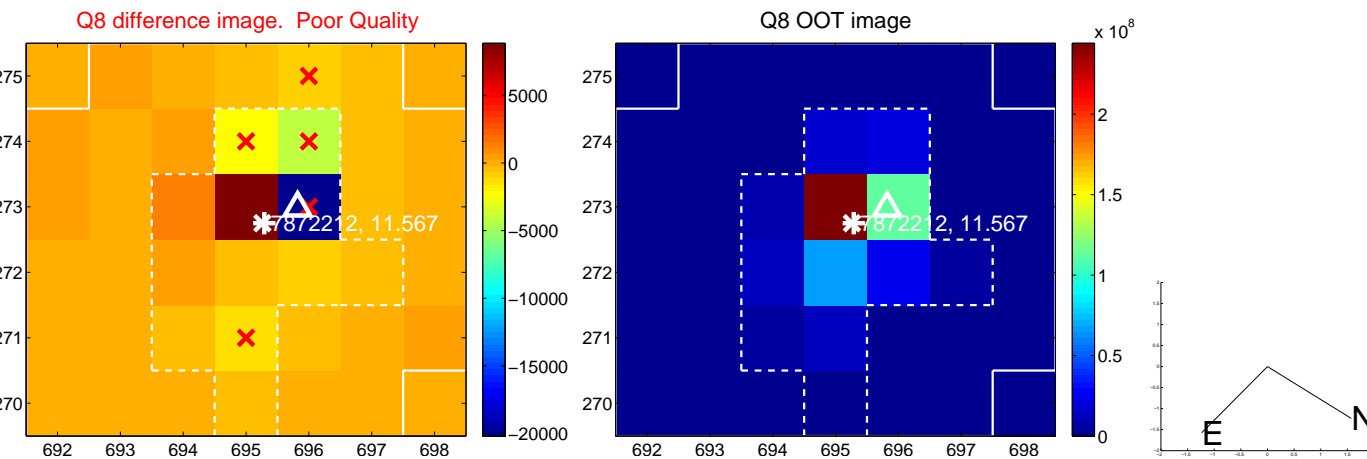
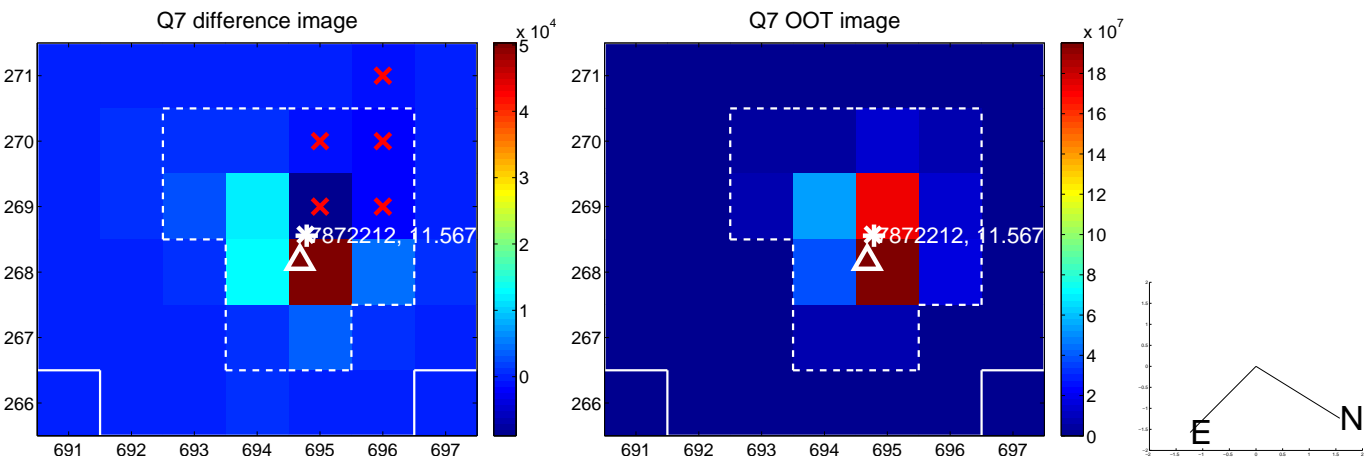
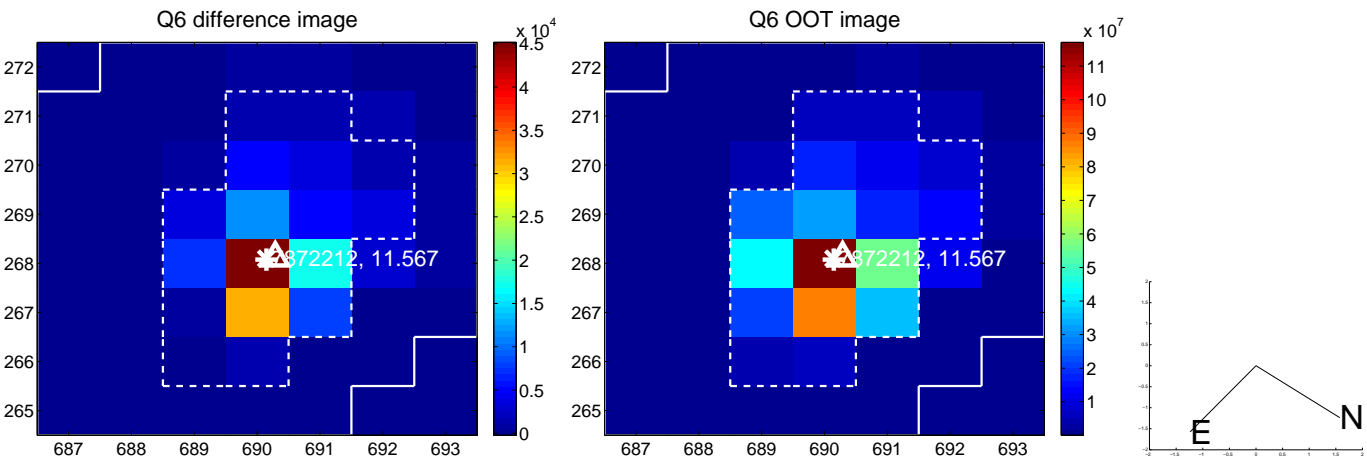
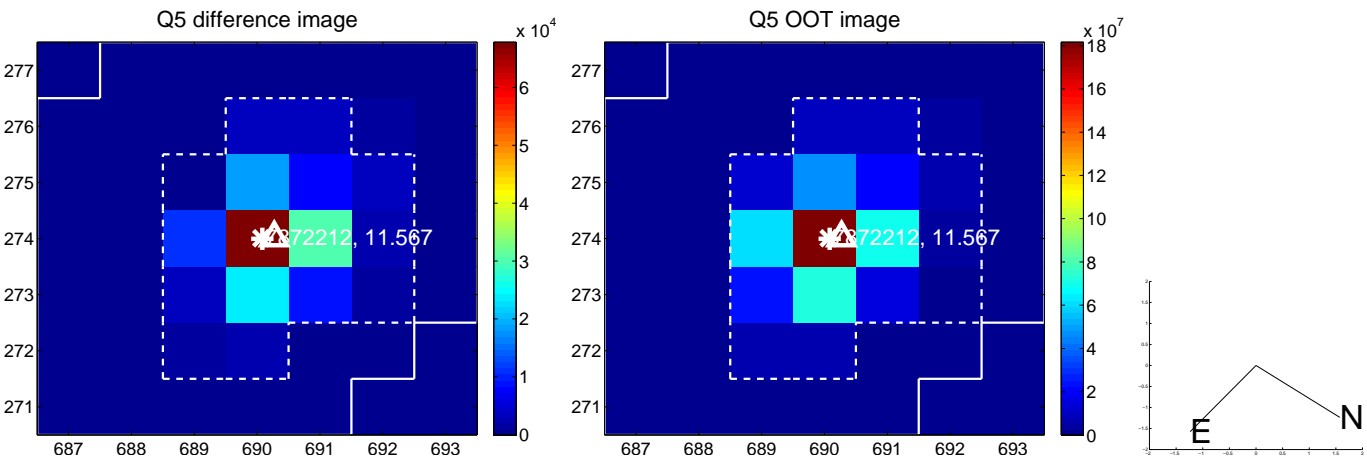


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

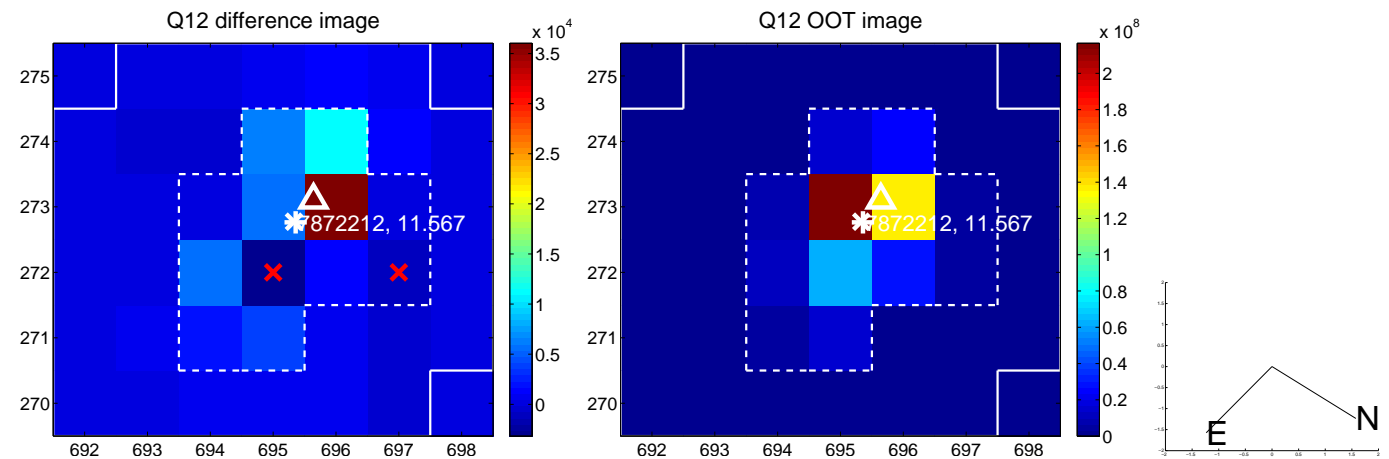
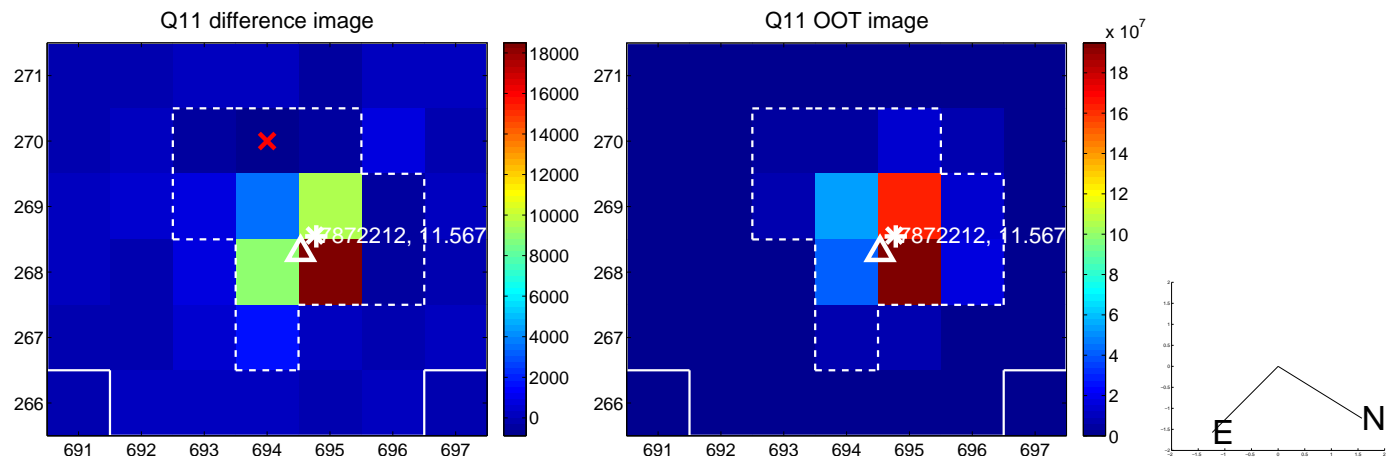
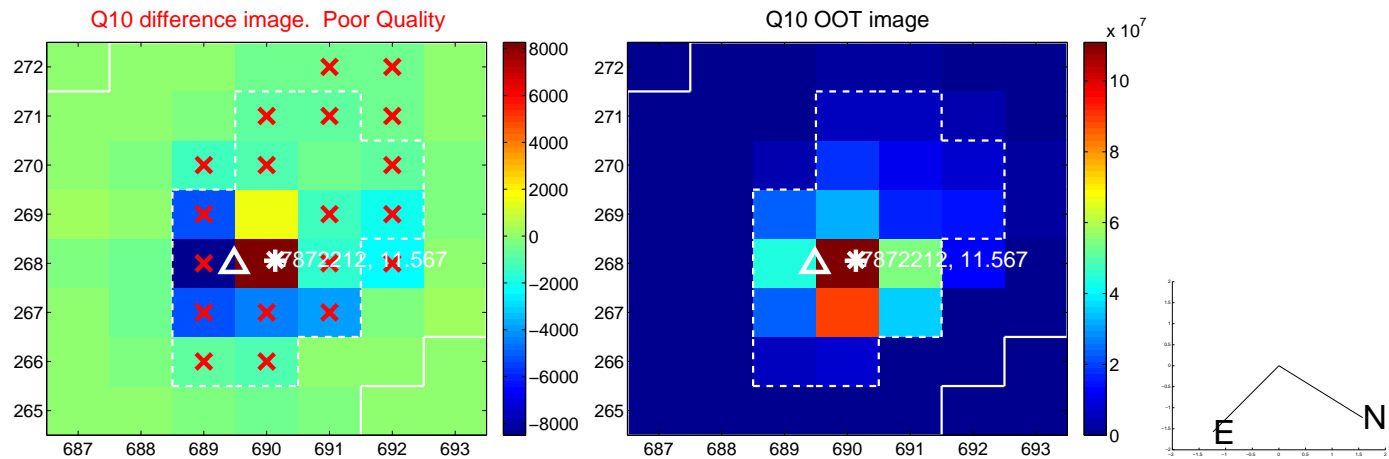
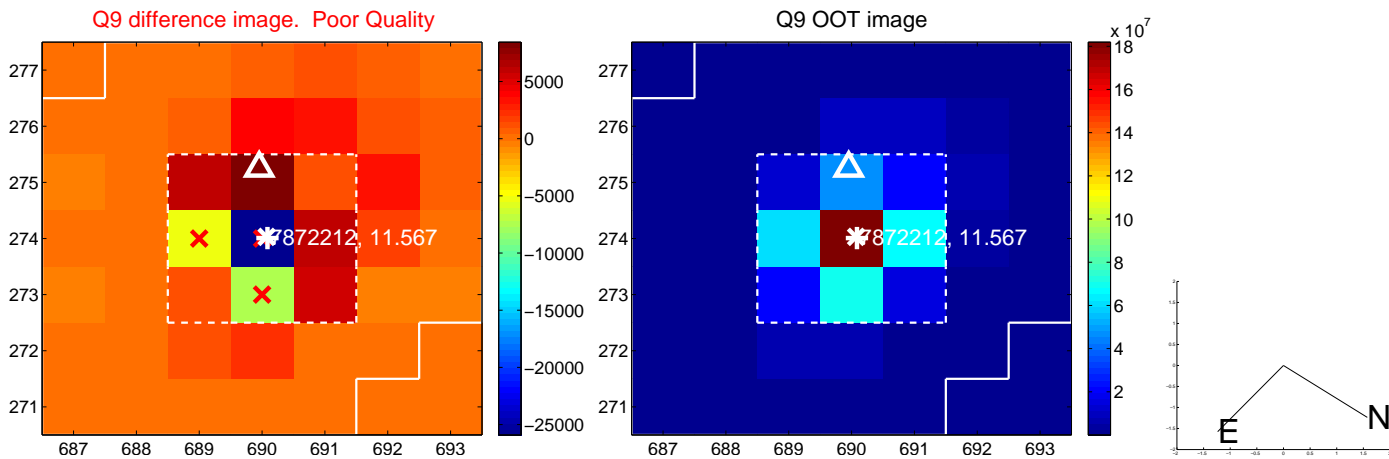
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



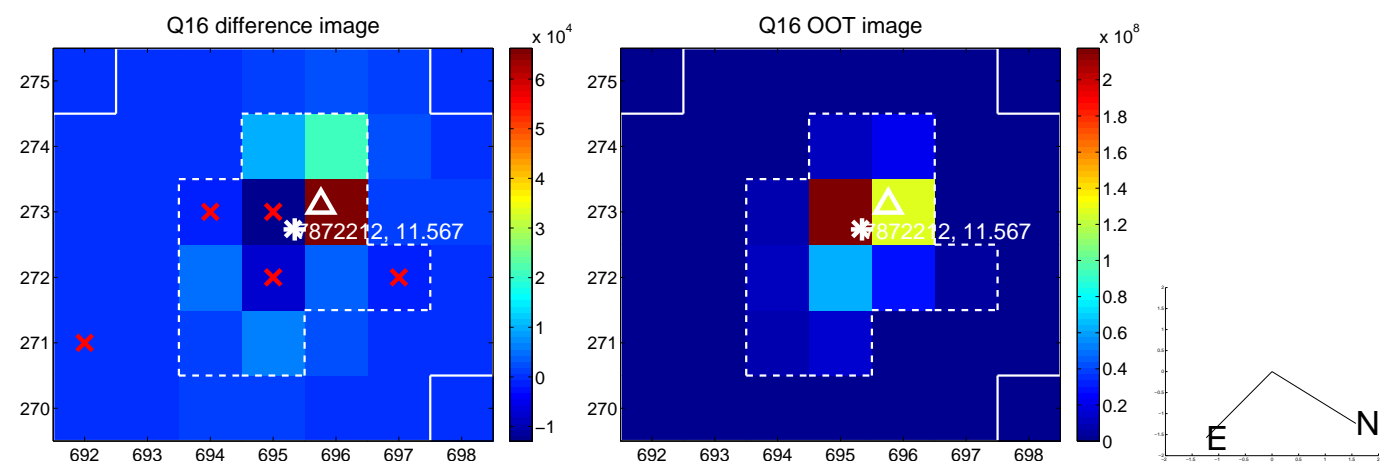
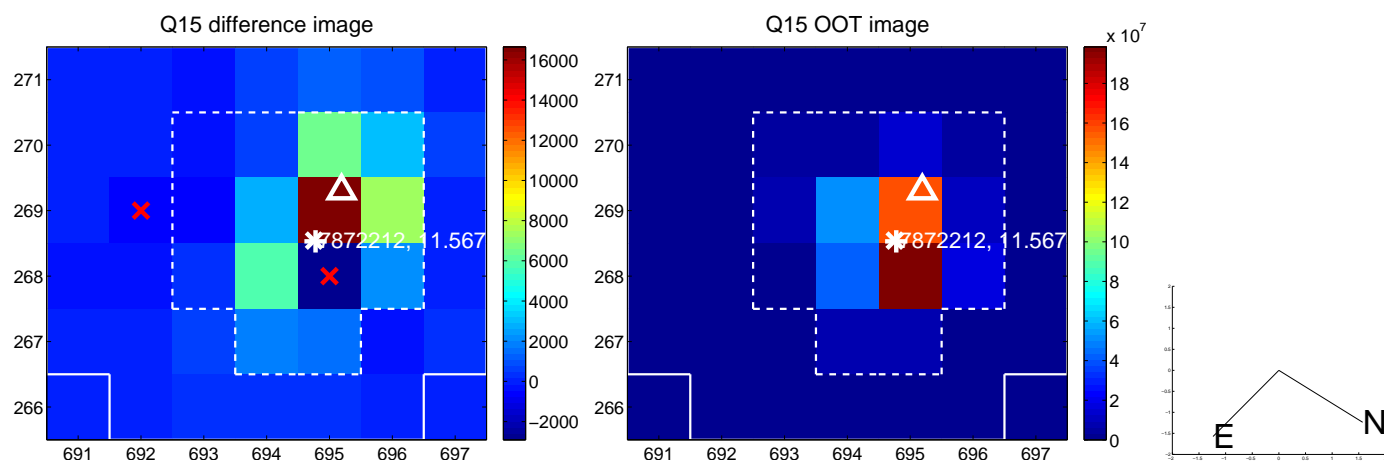
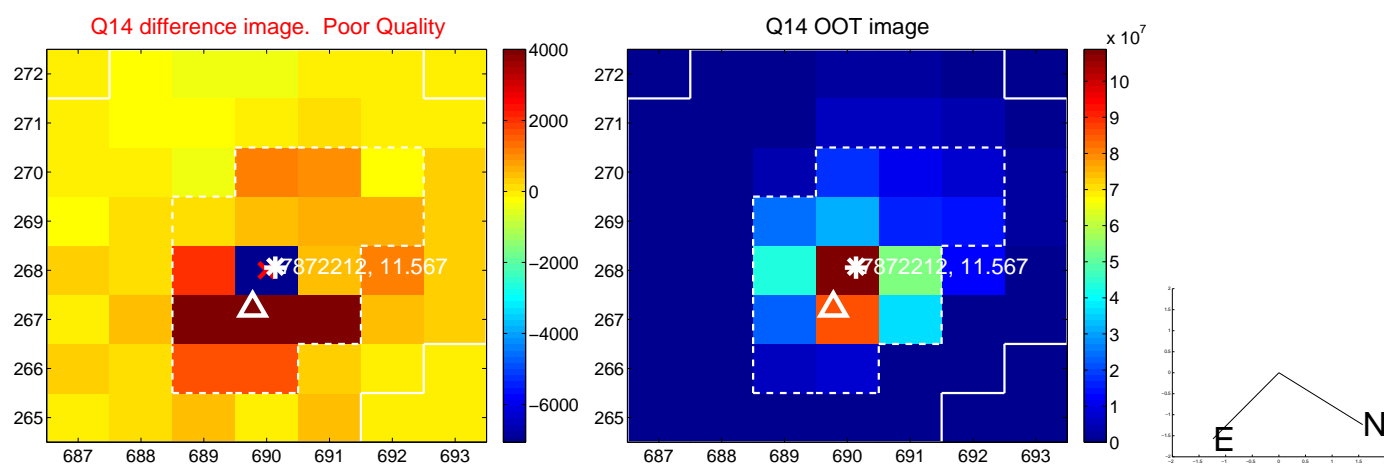
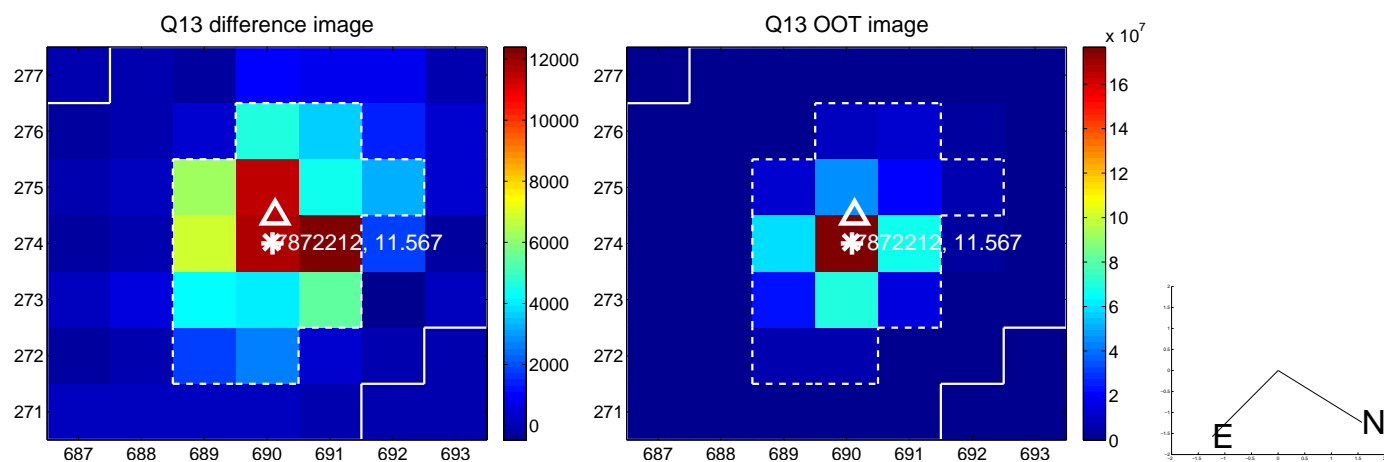
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



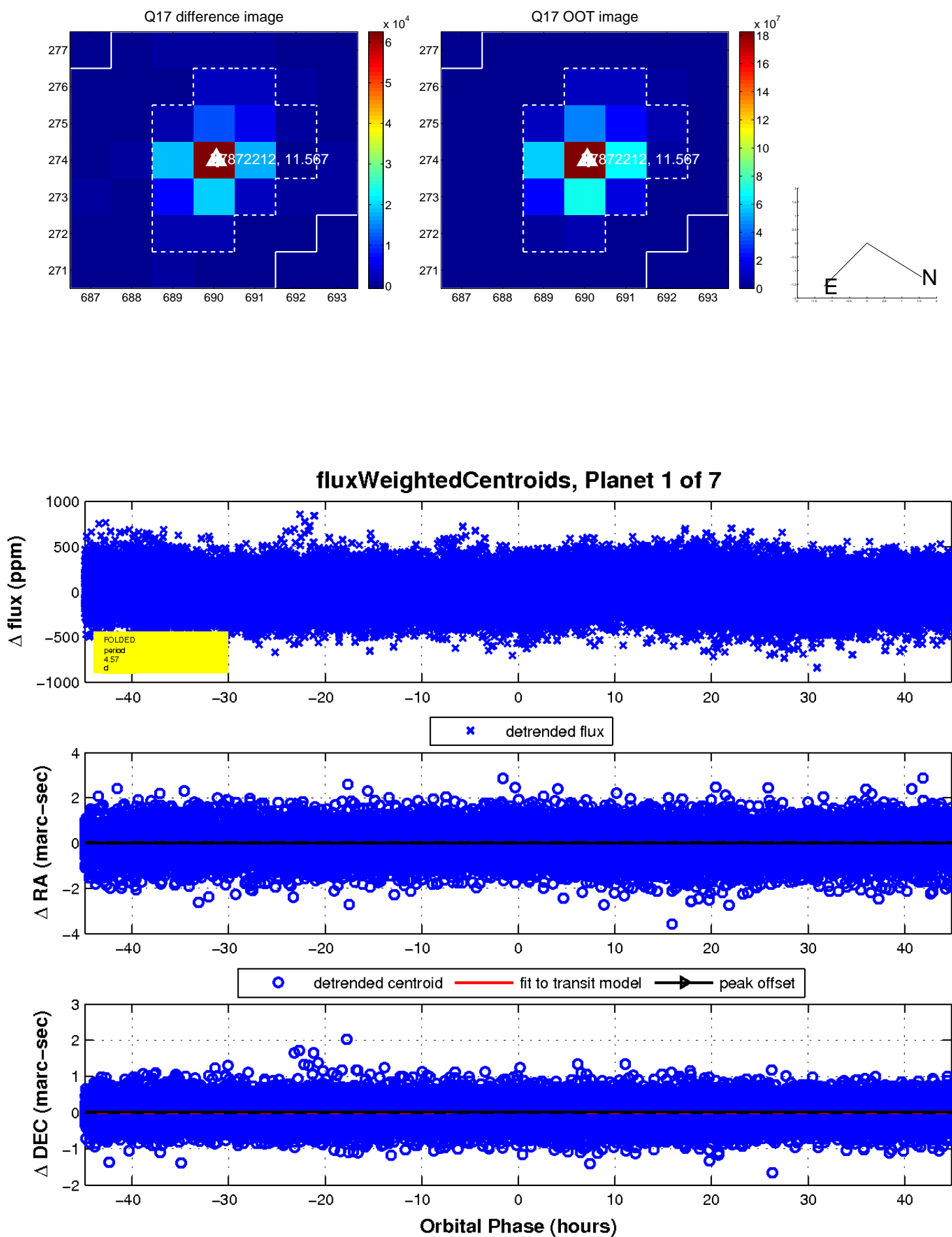
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

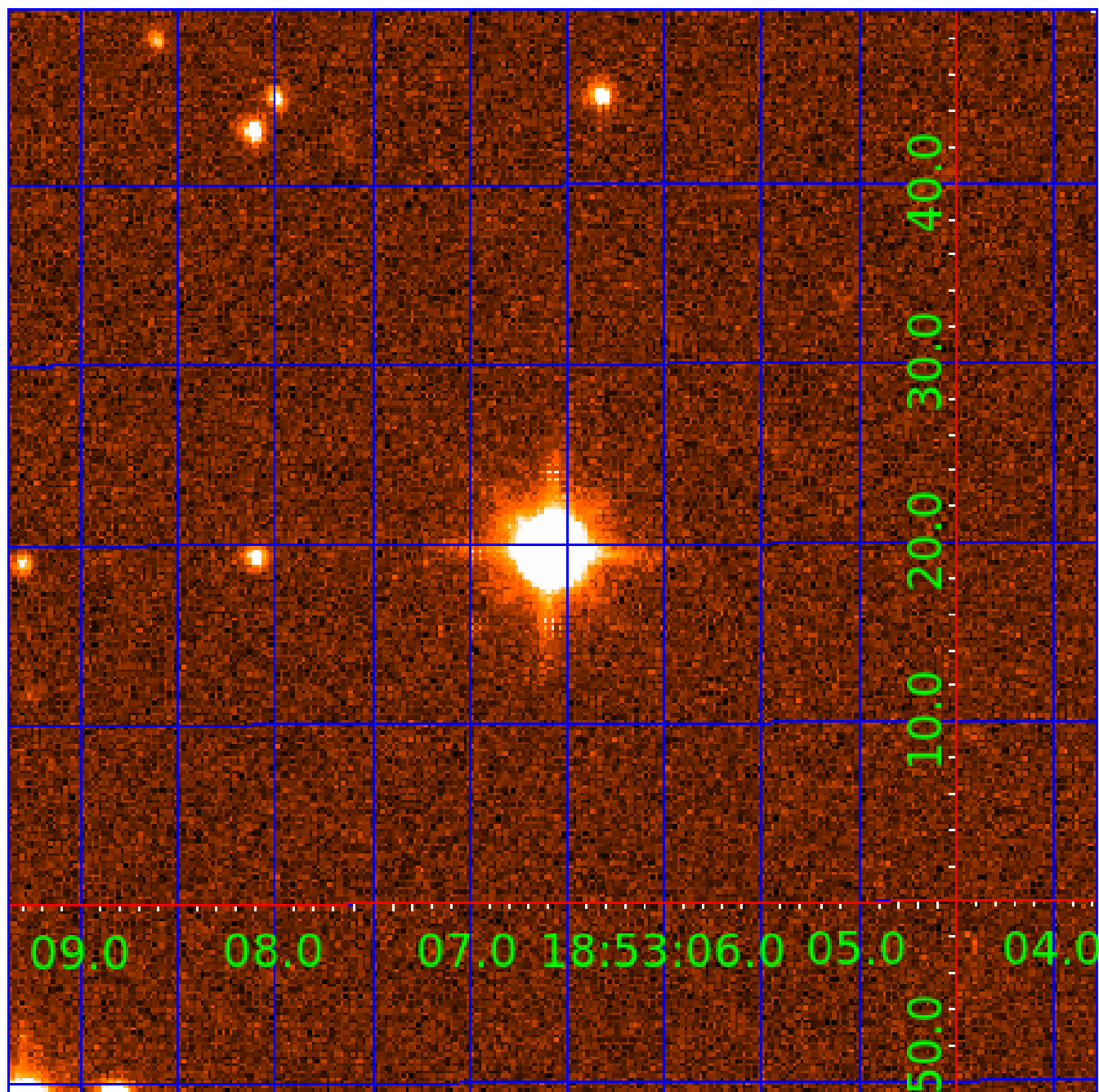


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007872212

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})
007872212-01	OBS	No	4.574311	134.084776	19.7	14.955	8.2	4.6	3.24	6453	1.64	4069.23
007872212-02	OBS	No	4.571540	131.943111	41.8	13.660	10.4	11.0	3.24	6453	2.52	4072.52
007872212-03	OBS	No	302.128440	136.977375	234.4	17.919	12.7	5.7	3.24	6453	5.27	15.24
007872212-04	OBS	No	78.349039	171.452842	237.7	3.317	9.5	6.8	3.24	6453	5.51	92.17
007872212-05	OBS	No	67.620767	160.520689	204.8	3.082	8.6	6.9	3.24	6453	5.16	112.16
007872212-06	OBS	No	54.295050	164.647359	205.1	5.919	8.3	8.2	3.24	6453	5.17	150.29
007872212-07	OBS	No	402.502509	151.471020	290.3	8.167	7.4	7.5	3.24	6453	6.05	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007872212-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
007872212-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007872212-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
007872212-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007872212-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007872212-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007872212-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

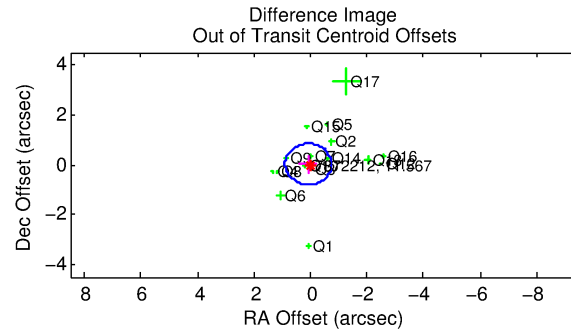
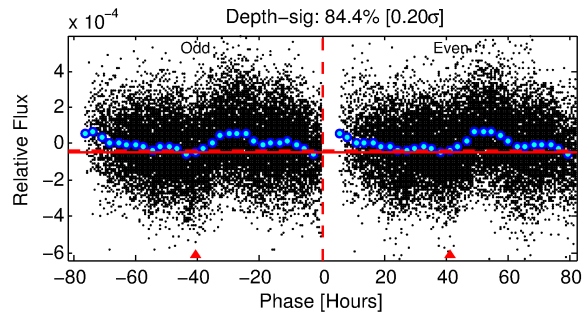
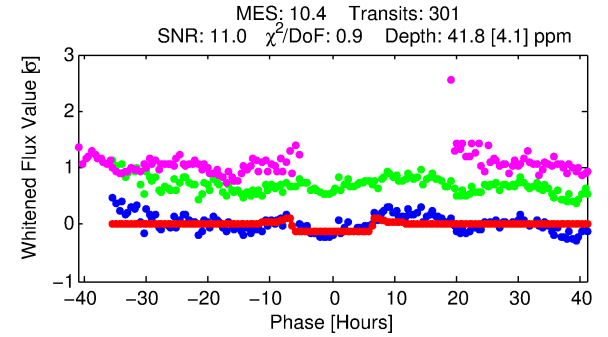
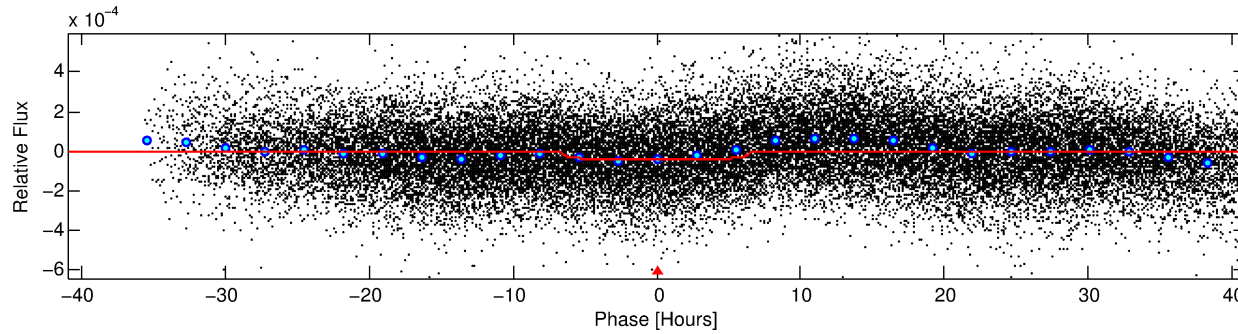
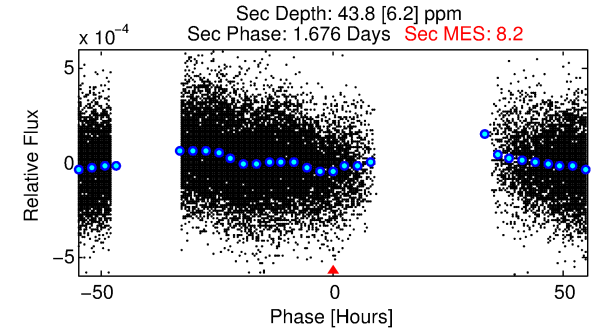
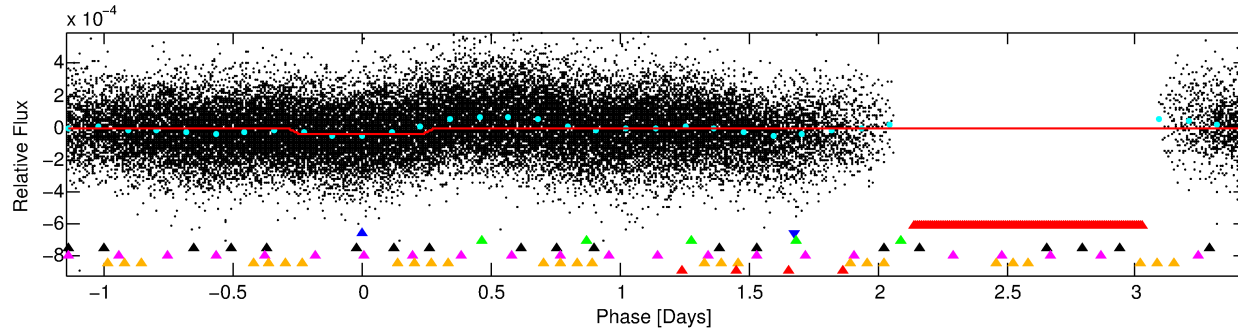
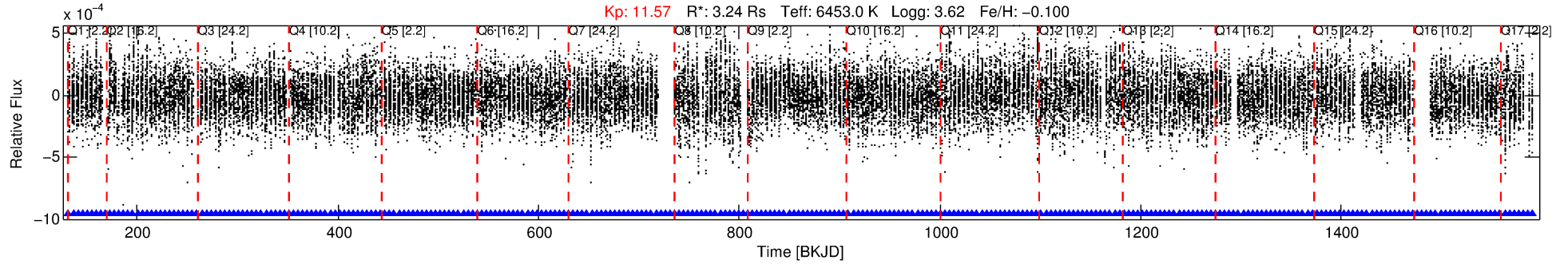
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007872212-02

No Significant Match Found

DV One-Page Summary

KIC: 7872212 Candidate: 2 of 7 Period: 4.572 d



DV Fit Results:

Period = 4.57154 [0.00005] d
Epoch = 131.9431 [0.0070] BKJD
Rp/R* = 0.0071 [0.0005]
a/R* = 1.37 [0.20]
b = 0.93 [0.04]
Seff = 4072.52 [2352.61]
Teq = 2037 [294] K
Rp = 2.52 [0.97] Re
a = 0.0632 [0.0227] AU
Ag = 15.14 [9.16] [1.54σ]
Teffp = 6212 [355] K [9.06σ]

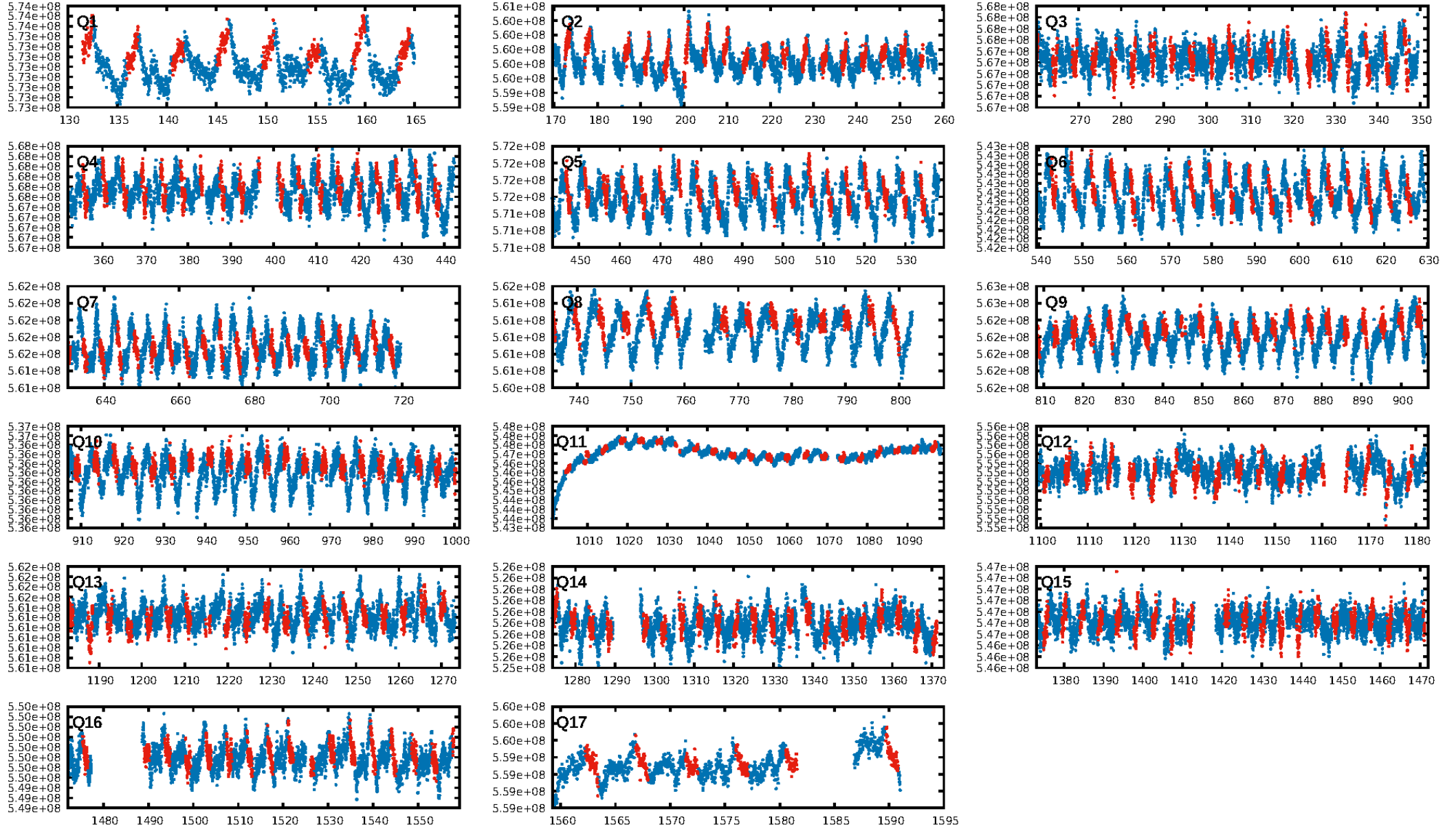
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.3% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.43e-11
RollingBand-fgt: 1.00 [287/287]
GhostDiagnostic-chr: 0.9237
Centroid-sig: 0.2%
Centroid-so: 0.422 arcsec [1.43σ]
OotOffset-rm: 0.087 arcsec [0.32σ]
KicOffset-rm: 0.144 arcsec [0.56σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 1.00 [17/17]

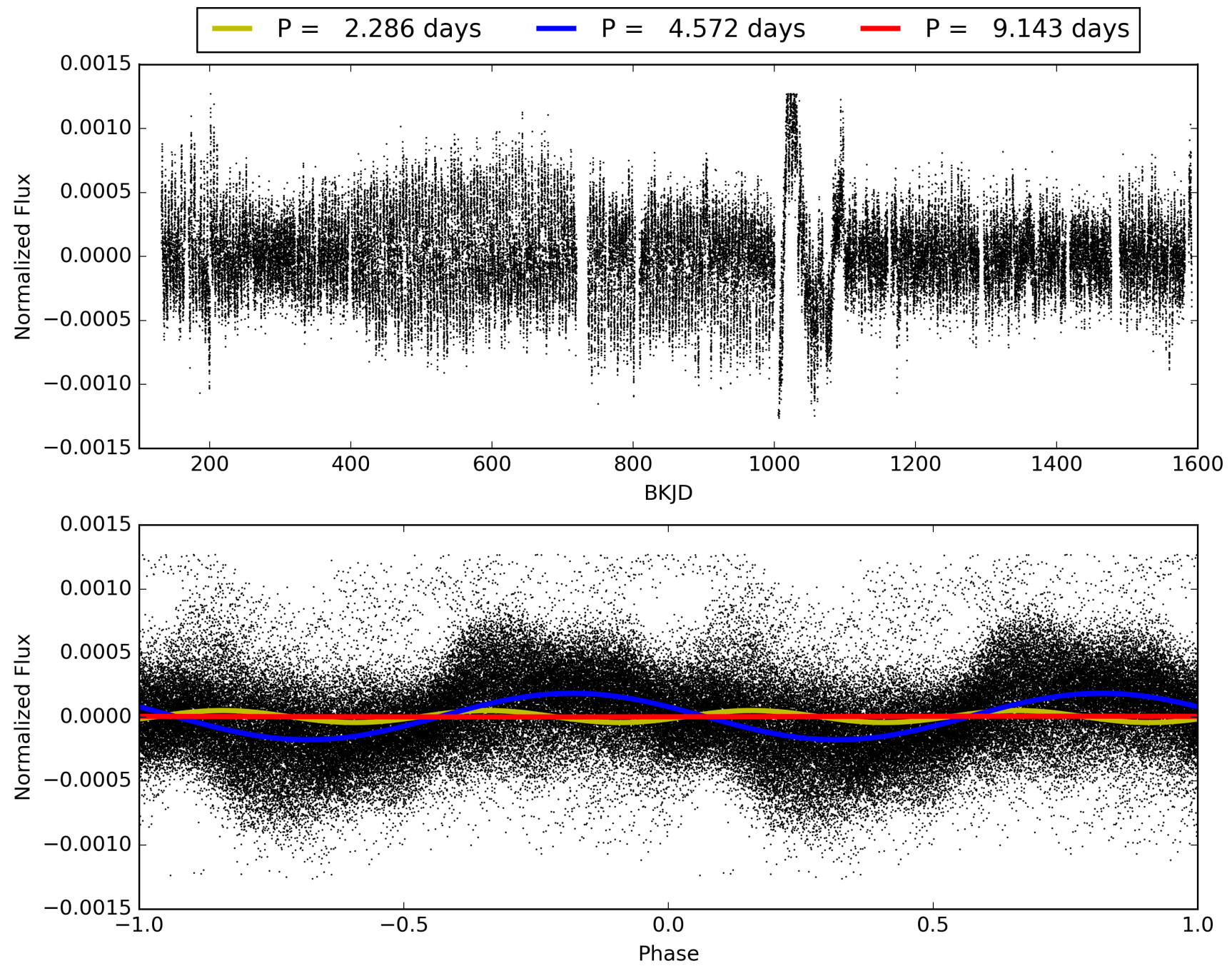
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:48:59 Z

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

TCE 007872212-02, PDC Light Curves

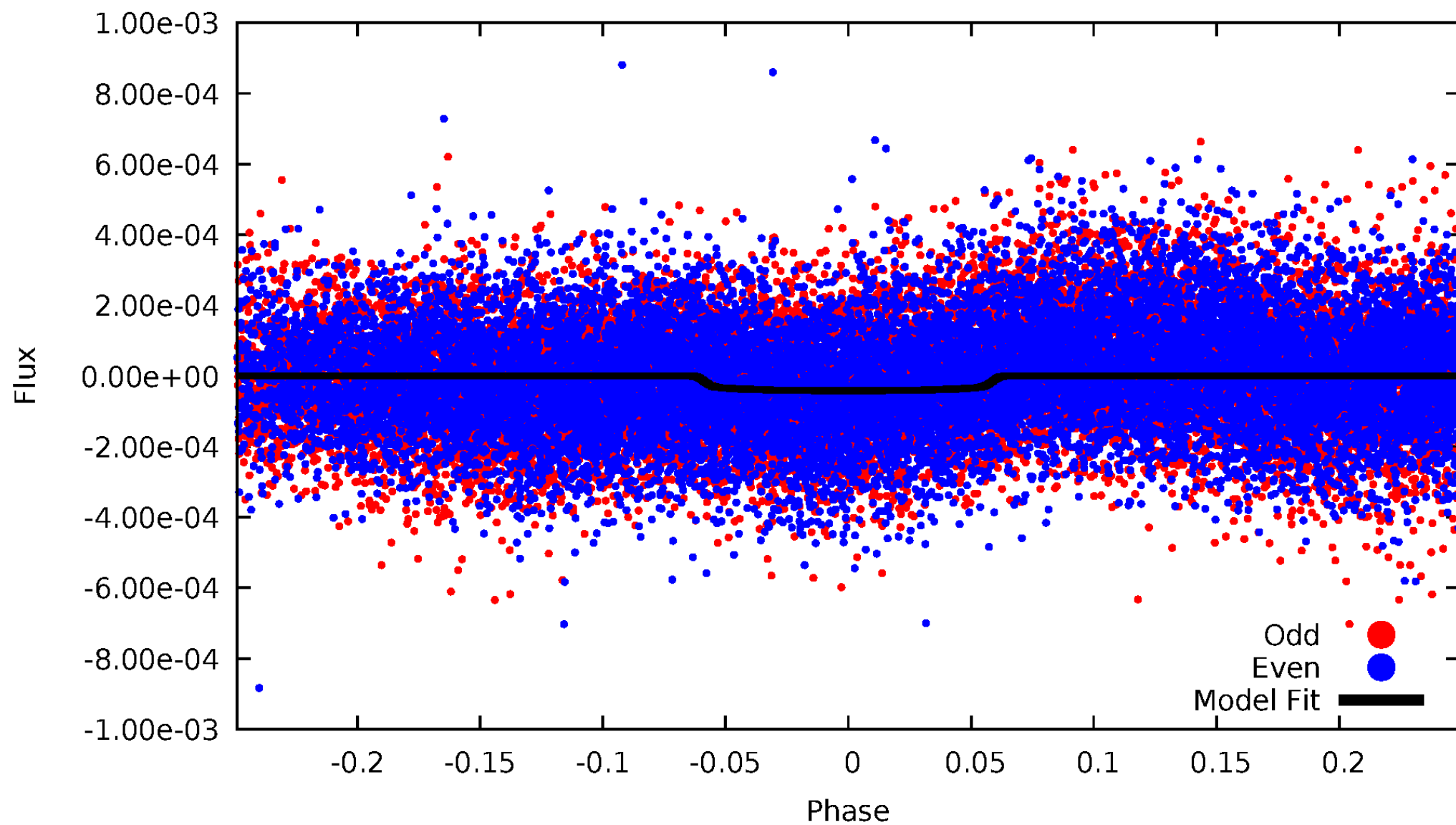


TCE 007872212-02



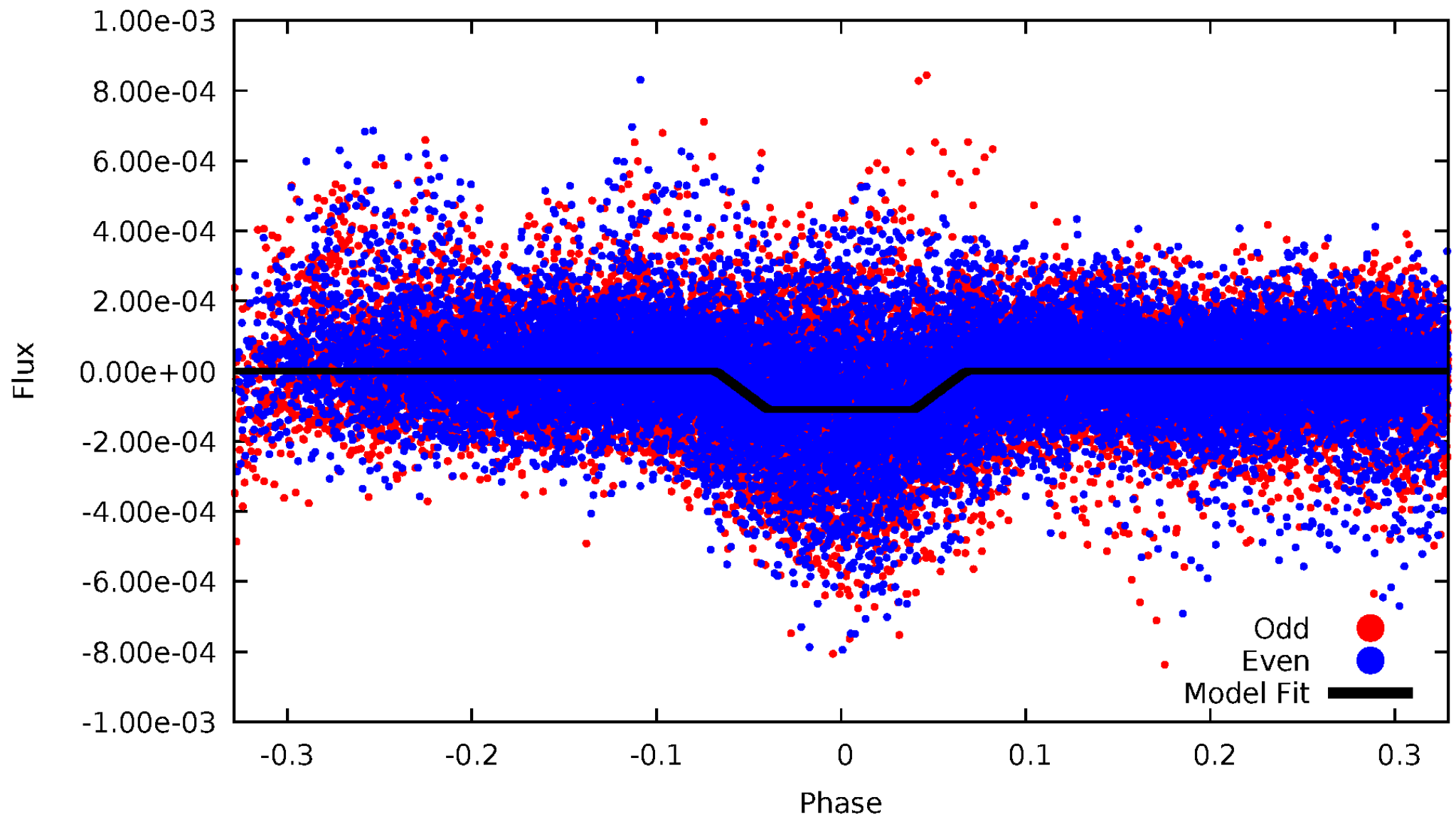
DV Odd/Even

TCE 007872212-02



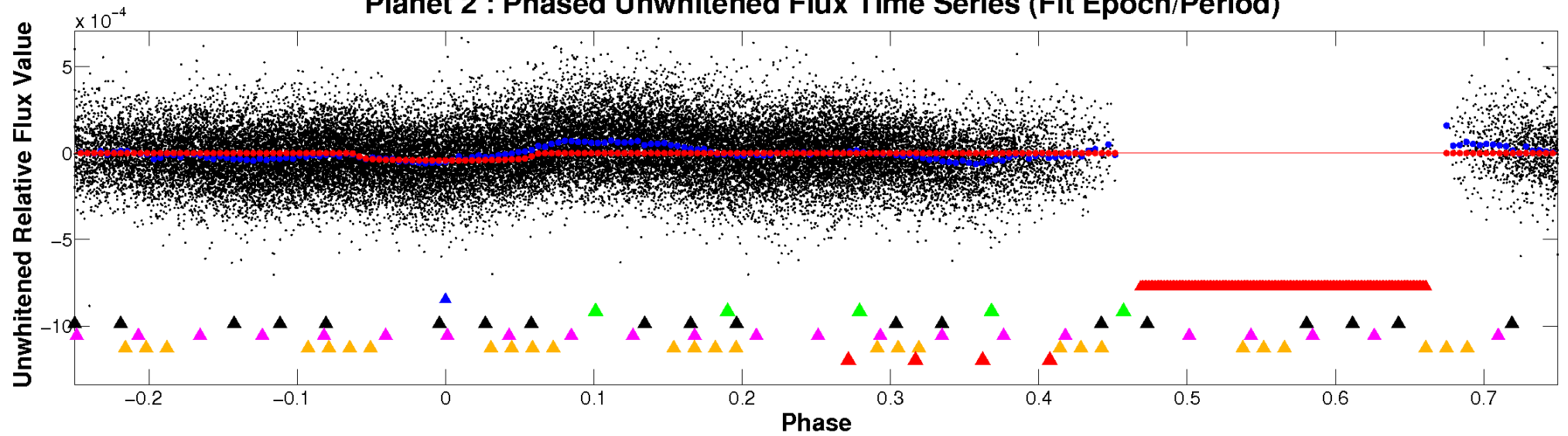
ALT Odd/Even

TCE 007872212-02

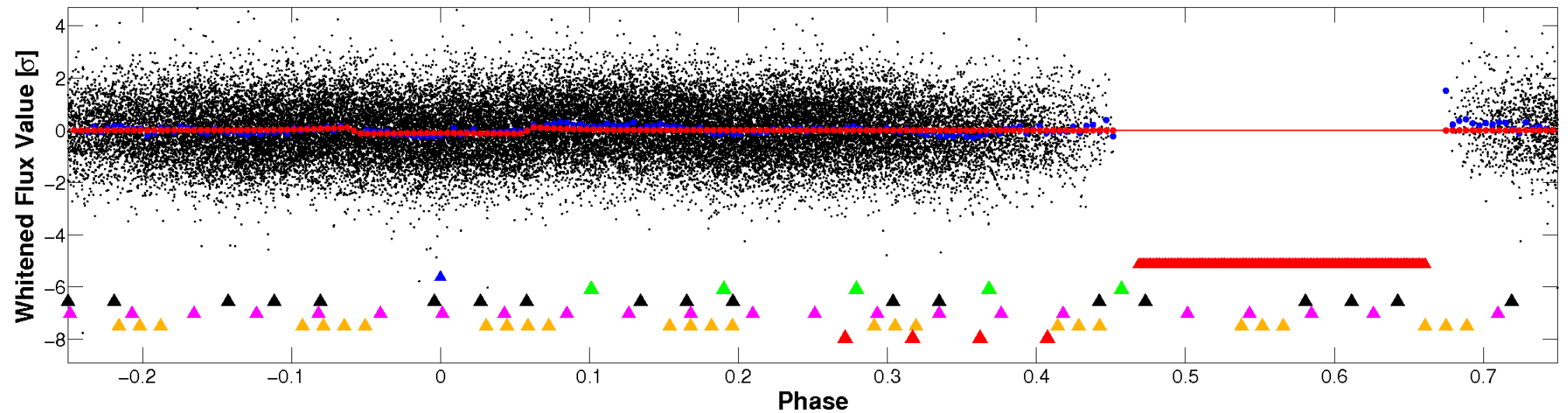


Non-Whitened Vs. Whitened Light Curve

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

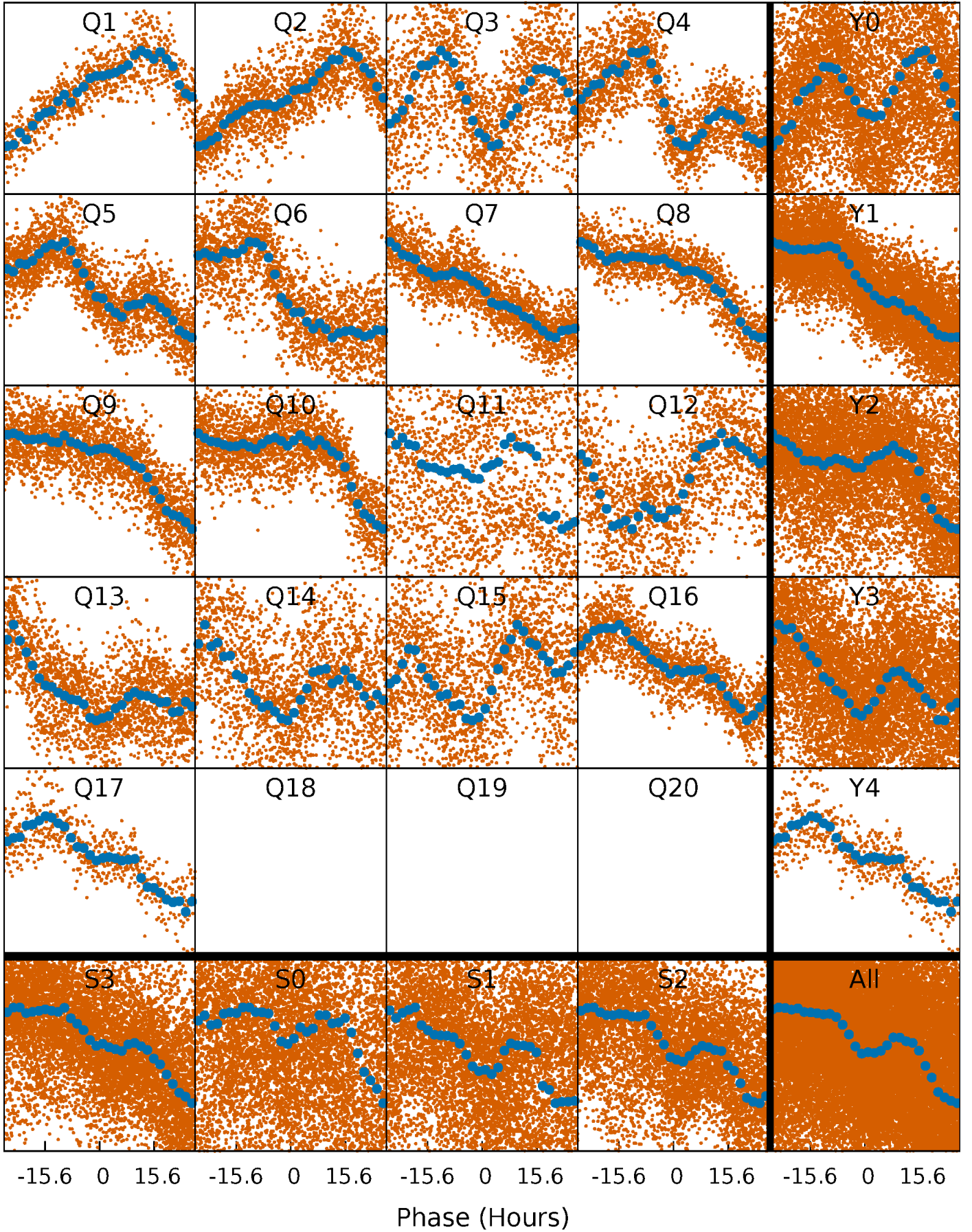


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



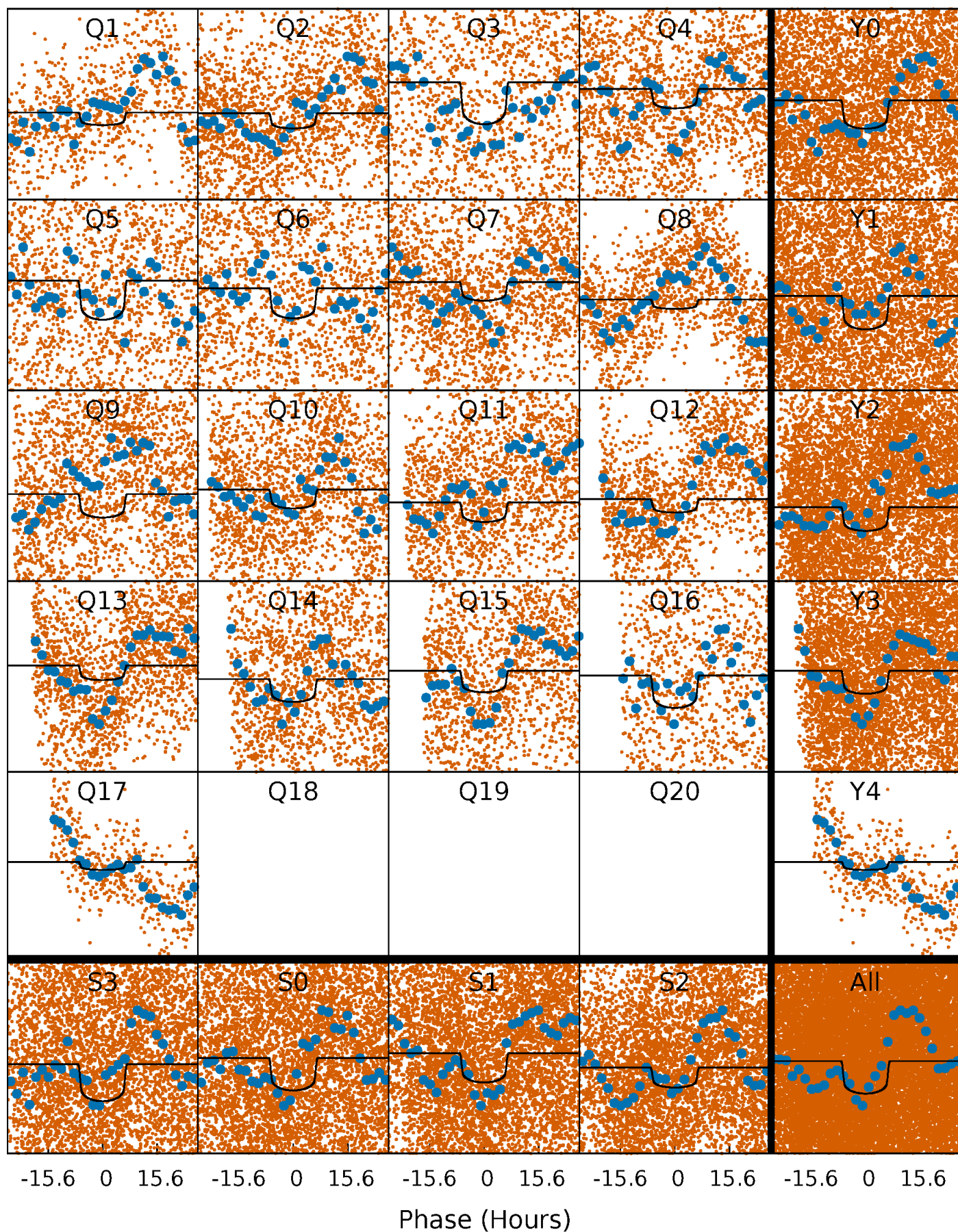
PDC Quarter-Phased Transit Curves

TCE 007872212-02 P= 4.571540 Days $T_0=131.943111$ (BKJD)



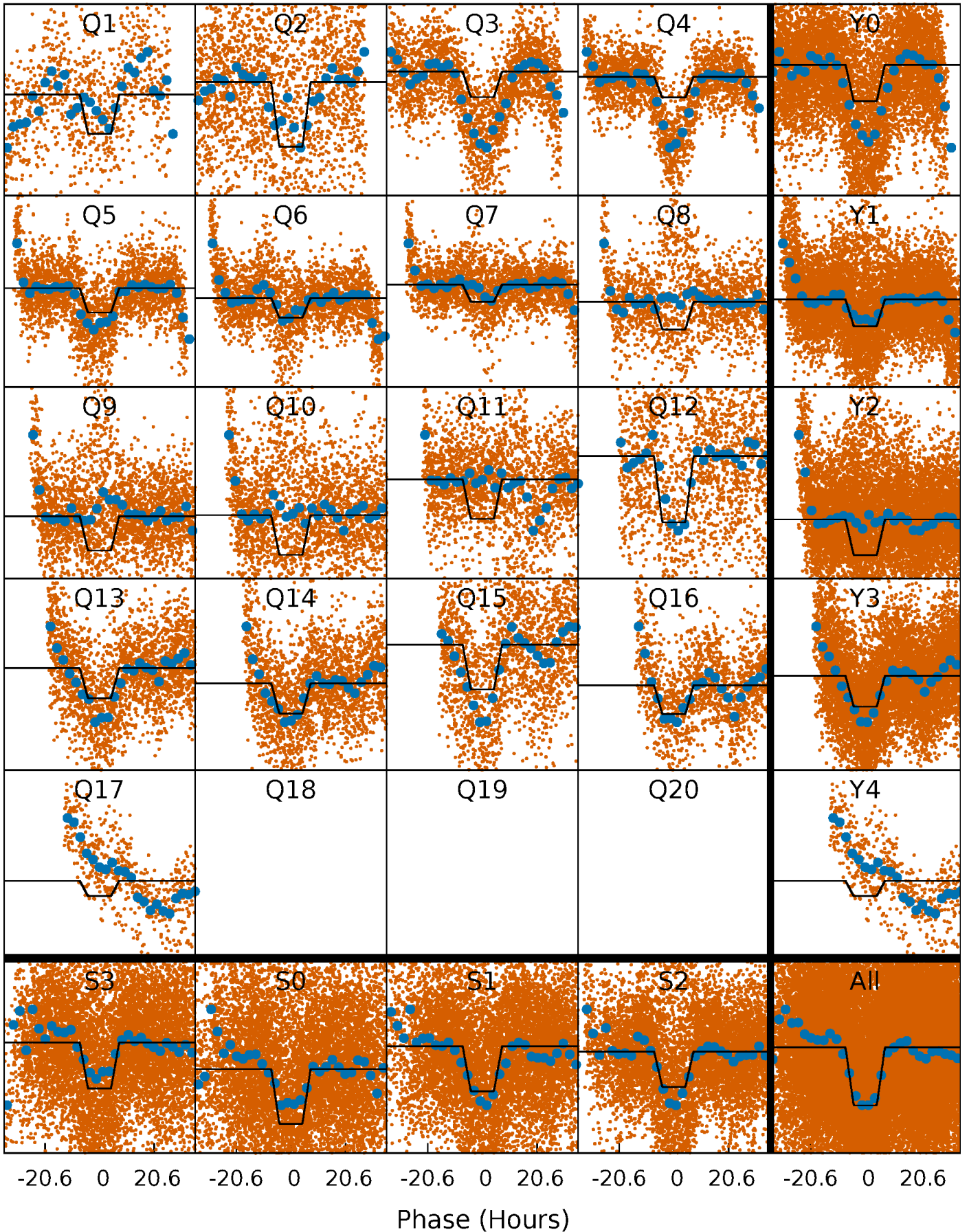
DV Quarter-Phased Transit Curves

TCE 007872212-02 P= 4.571540 Days $T_0=131.943111$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

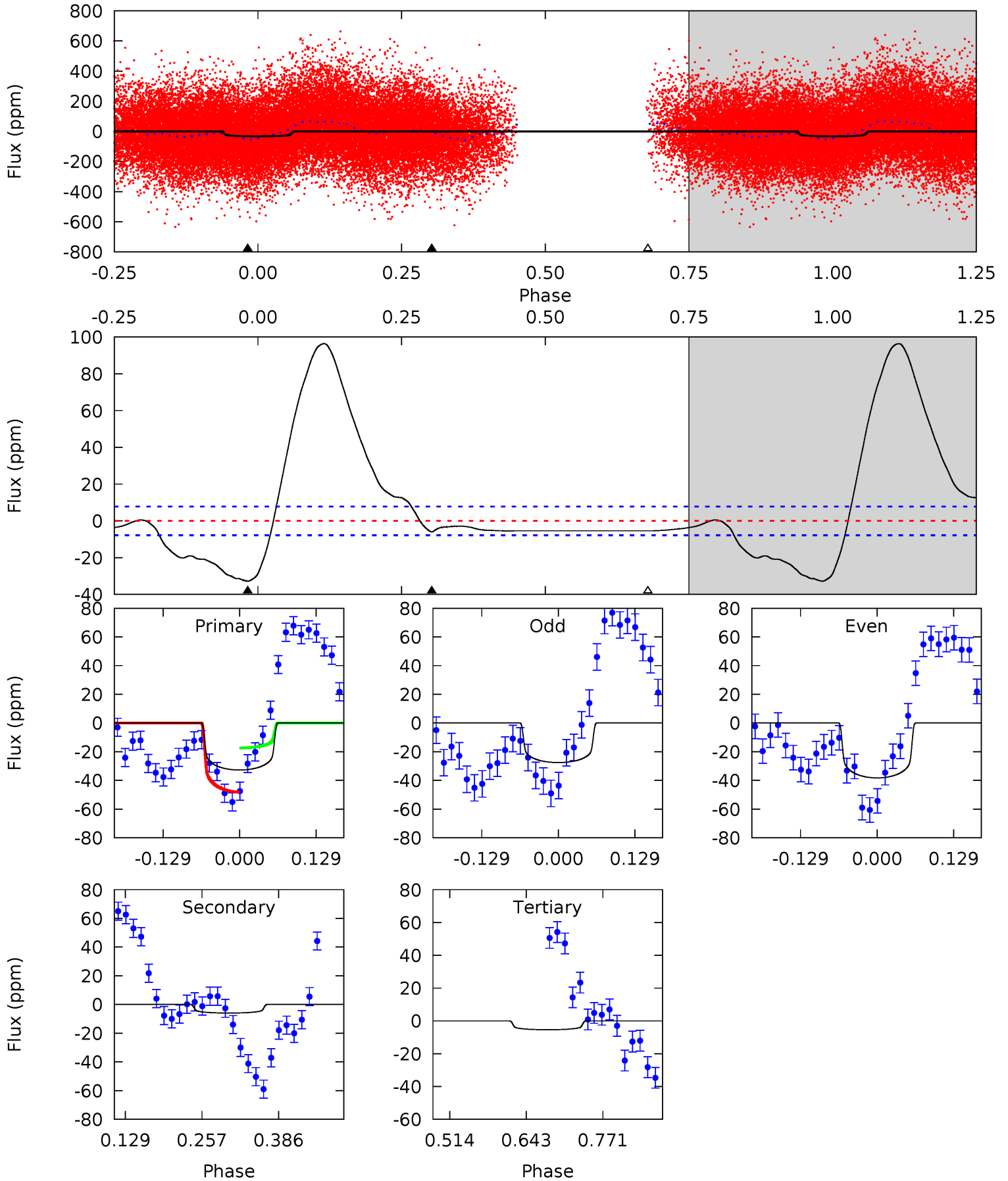
TCE 007872212-02 P= 4.571036 Days $T_0=132.040258$ (BKJD)



DV Model-Shift Uniqueness Test

007872212-02, P = 4.571540 Days, E = 127.371571 Days

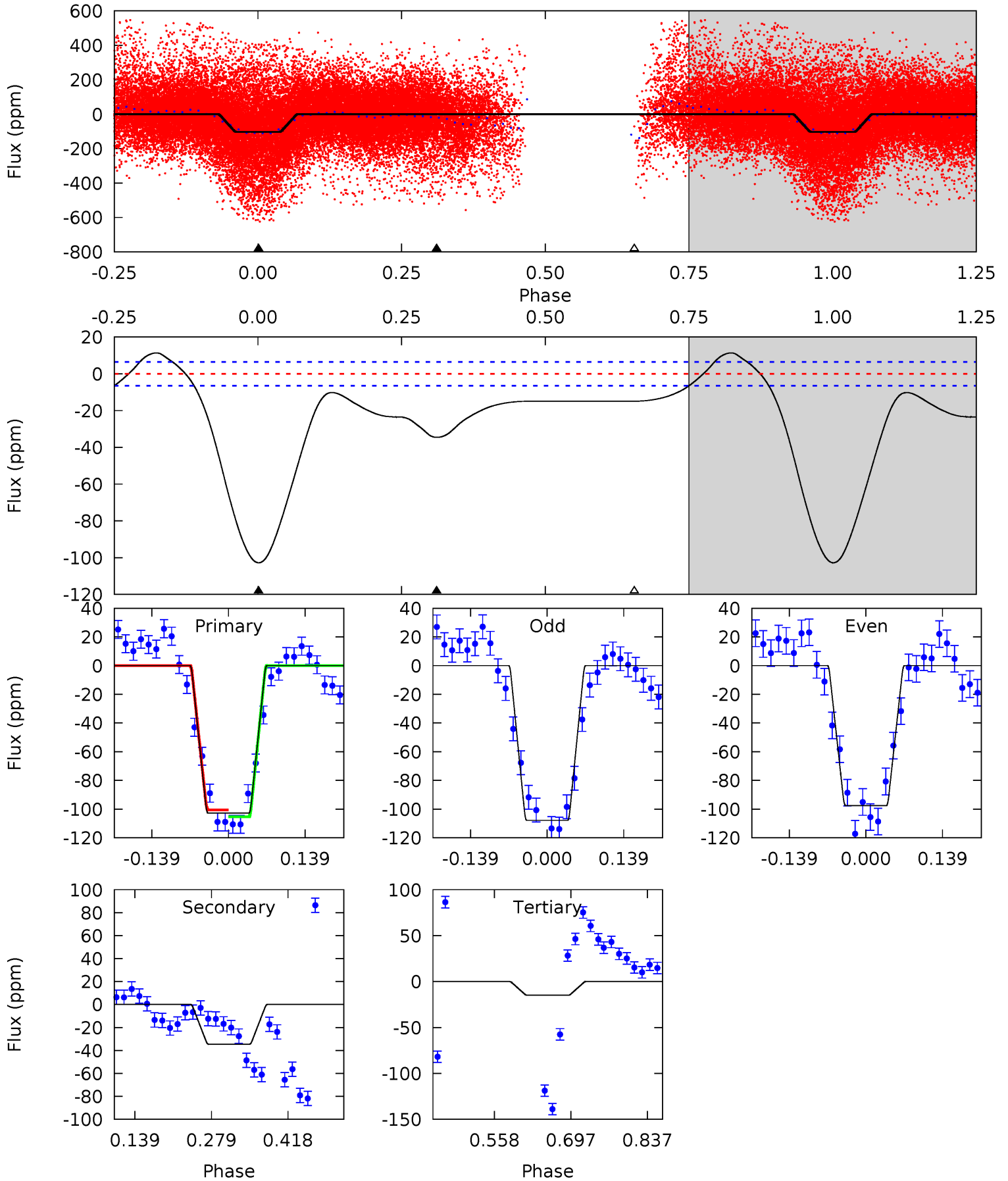
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	3.44	3.12	0	4.51	1.52	24.3	15.8	18.9	0.32	3.44	3.05	0.94	0.75	8.80



Alt Model-Shift Uniqueness Test

007872212-02, P = 4.571036 Days, E = 127.469222 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.5	24.0	10.4	0	4.49	1.48	6.99	61.1	71.5	13.6	24.0	3.62	1.01	0.10	1.91



Stellar Parameters For KIC 007872212

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-162}	$3.625^{+0.332}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$3.236^{+0.409}_{-1.227}$	$1.613^{+0.220}_{-0.330}$	$0.067^{+0.149}_{-0.017}$
	+3%/-3%	+9%/-2%	+300%/-250%	+13%/-38%	+14%/-20%	+222%/-25%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007872212-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 2	$2.43^{+0.37}_{-0.47}$	2798^{+144}_{-271}	3956^{+265}_{-278}	$2.282^{+1.227}_{-0.827}$
Alt.	-35 ± 1	$3.62^{+0.41}_{-0.69}$	2811^{+140}_{-259}	4882^{+151}_{-140}	$5.873^{+2.589}_{-1.046}$

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

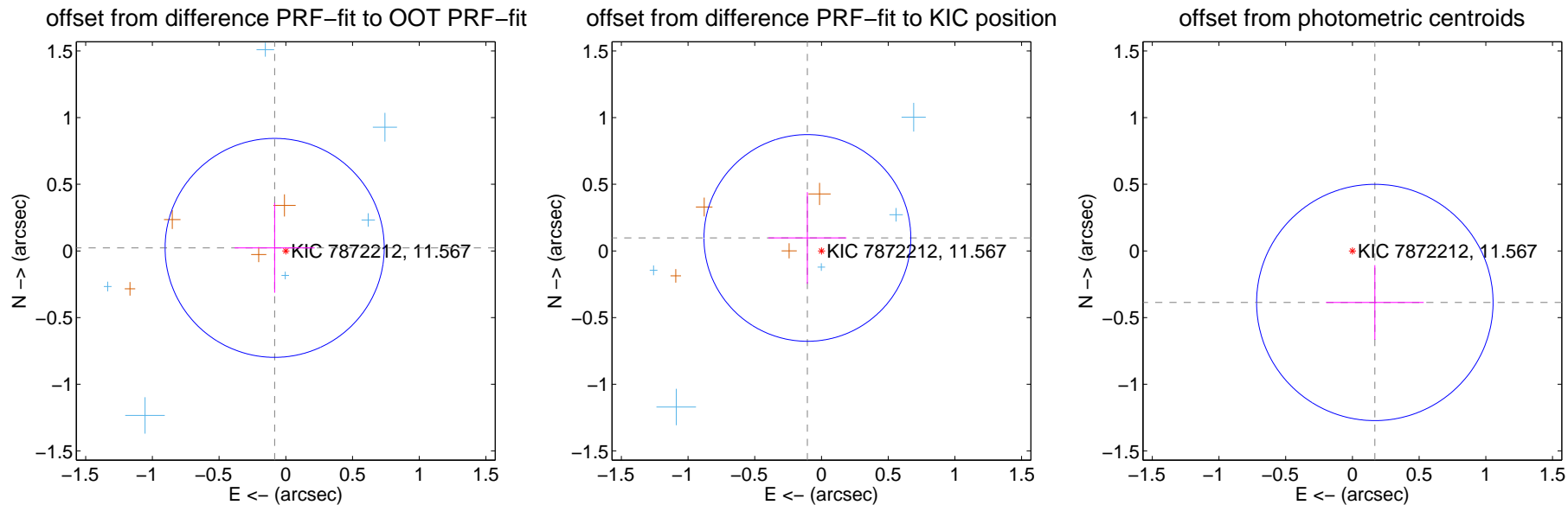
DV Centroid Data

Supplemental centroid analysis for 007872212-02. **Kepler magnitude: 11.57.** Transit SNR 10.95

There are 7 quarters with good PRF difference image offsets

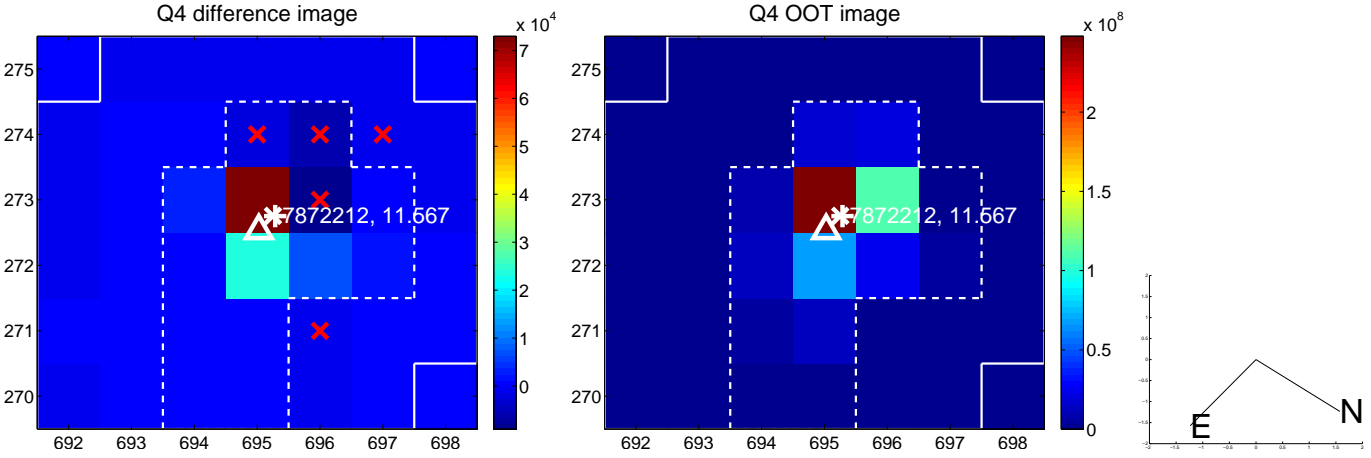
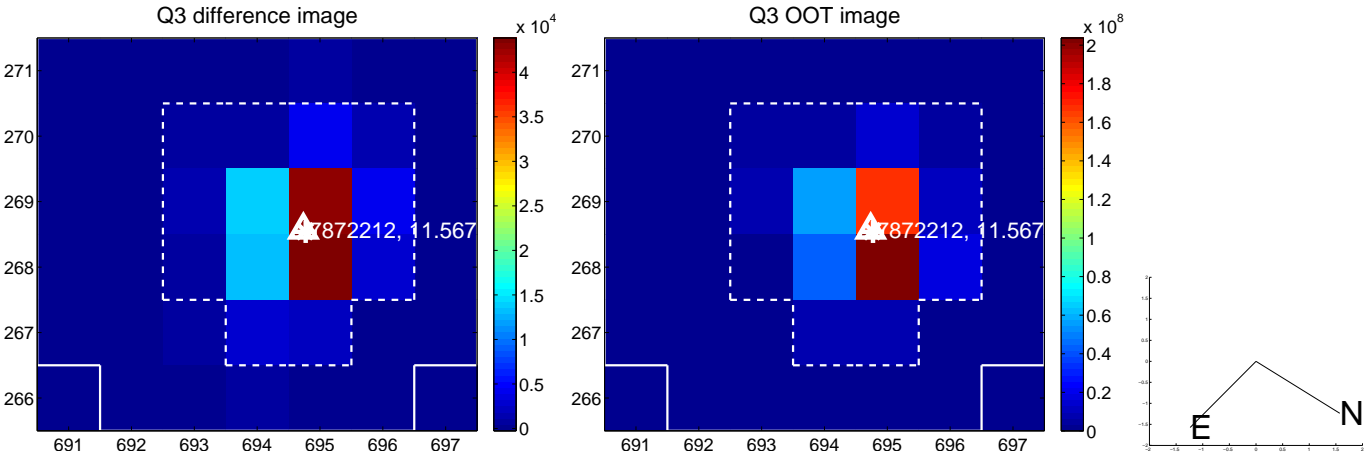
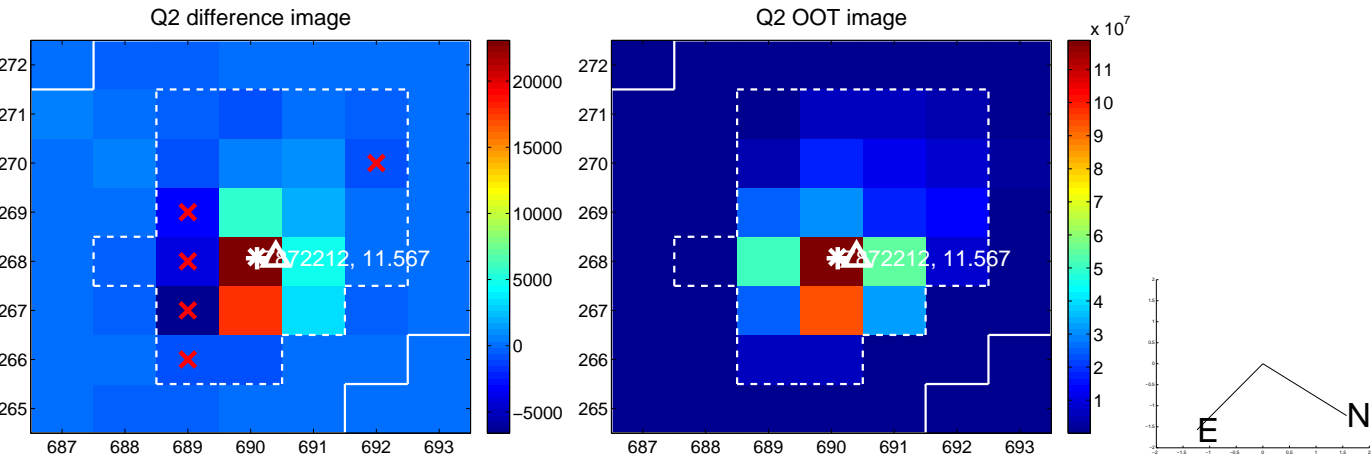
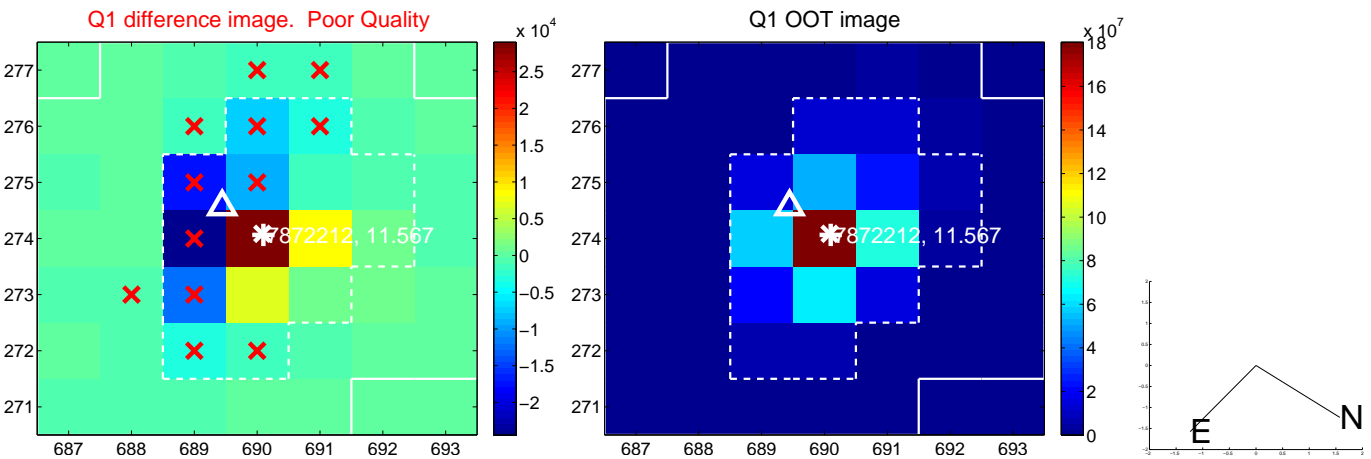
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.274	0.32	0.083 ± 0.300	0.023 ± 0.337
PRF-fit source offset from KIC position	0.144 ± 0.258	0.56	0.106 ± 0.292	0.097 ± 0.343
photometric centroid source offset	0.42 ± 0.30	1.43	-0.17 ± 0.37	-0.39 ± 0.28

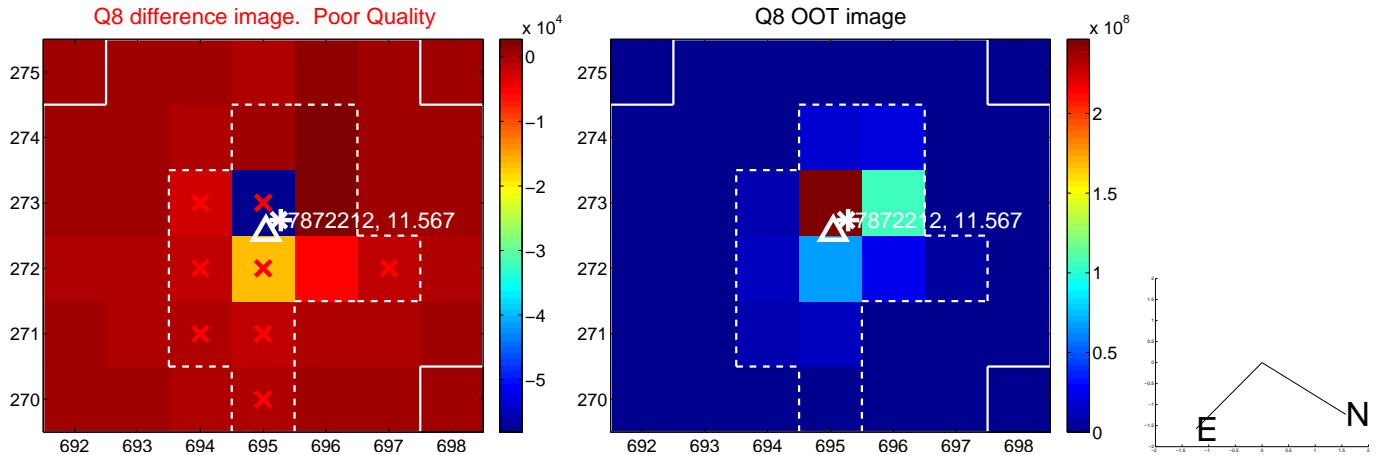
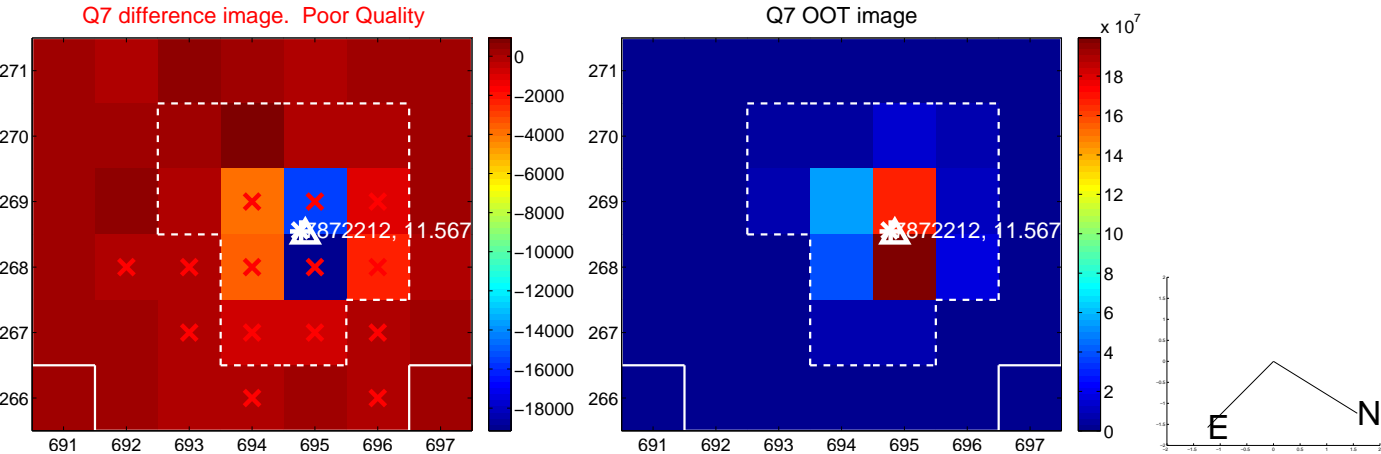
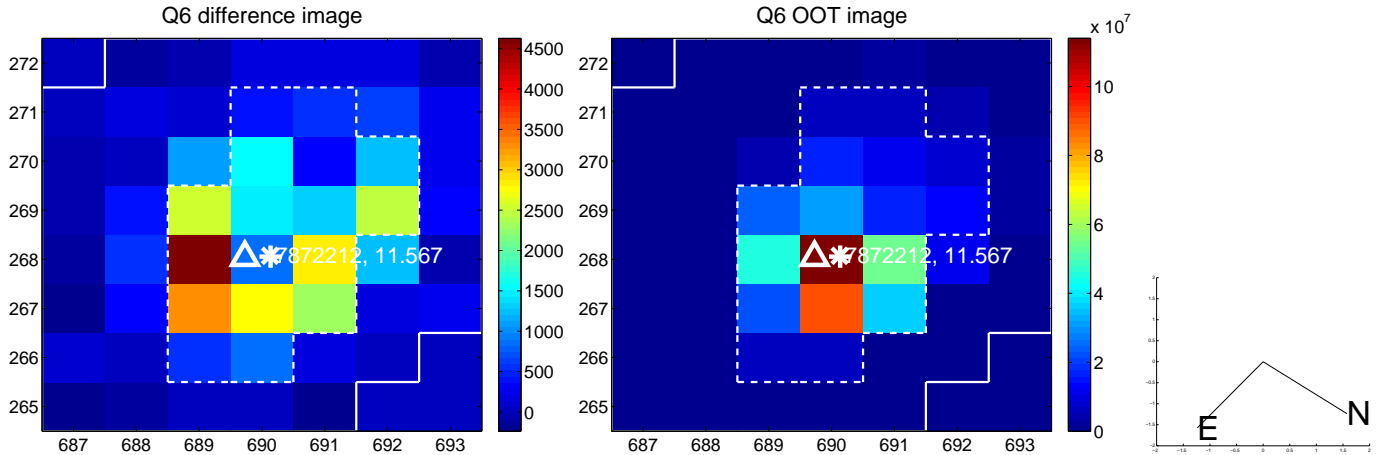
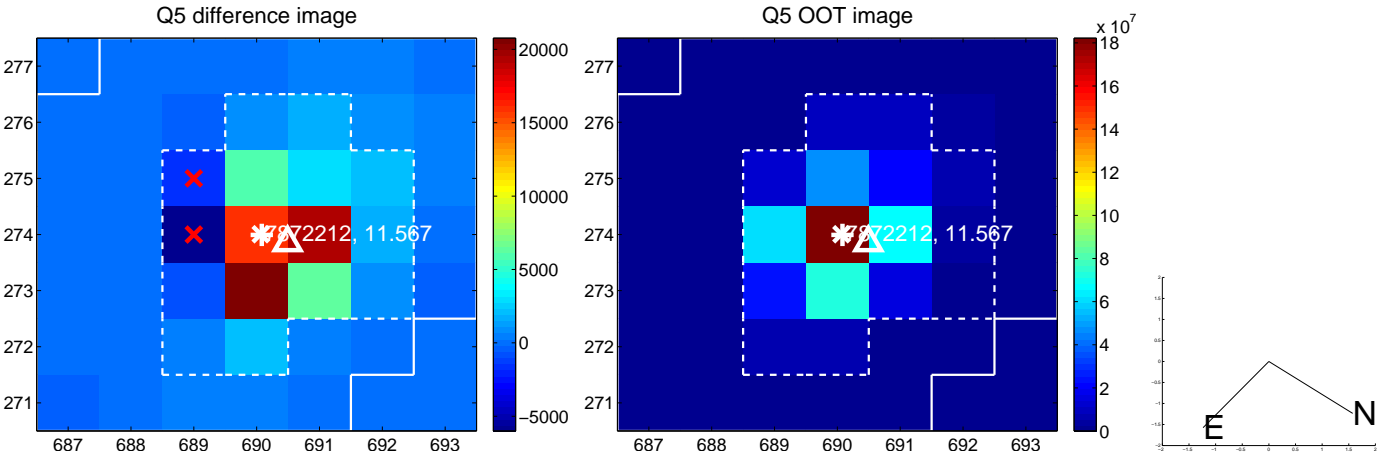


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

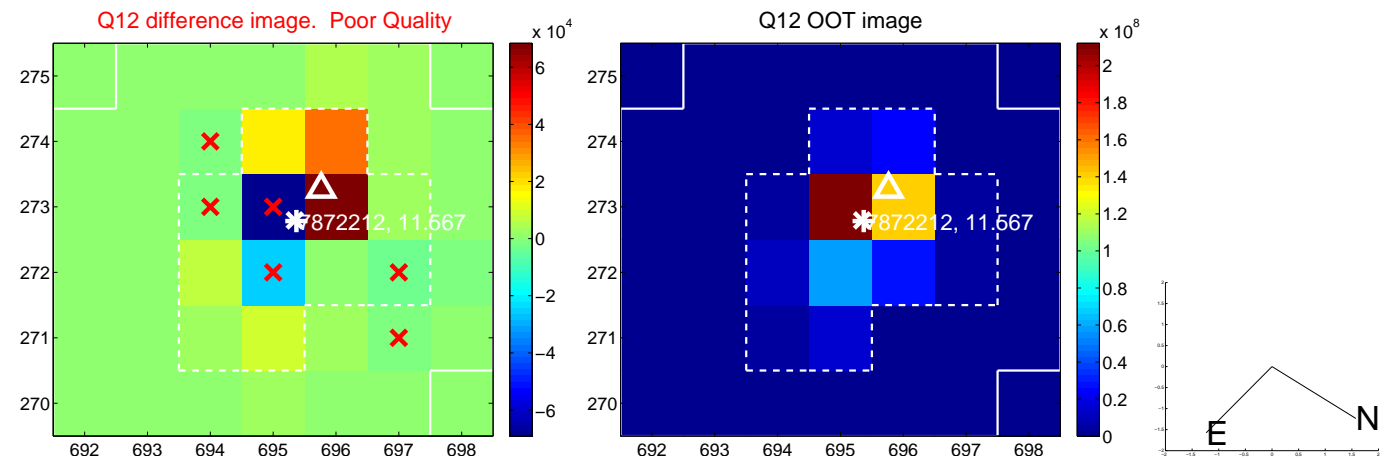
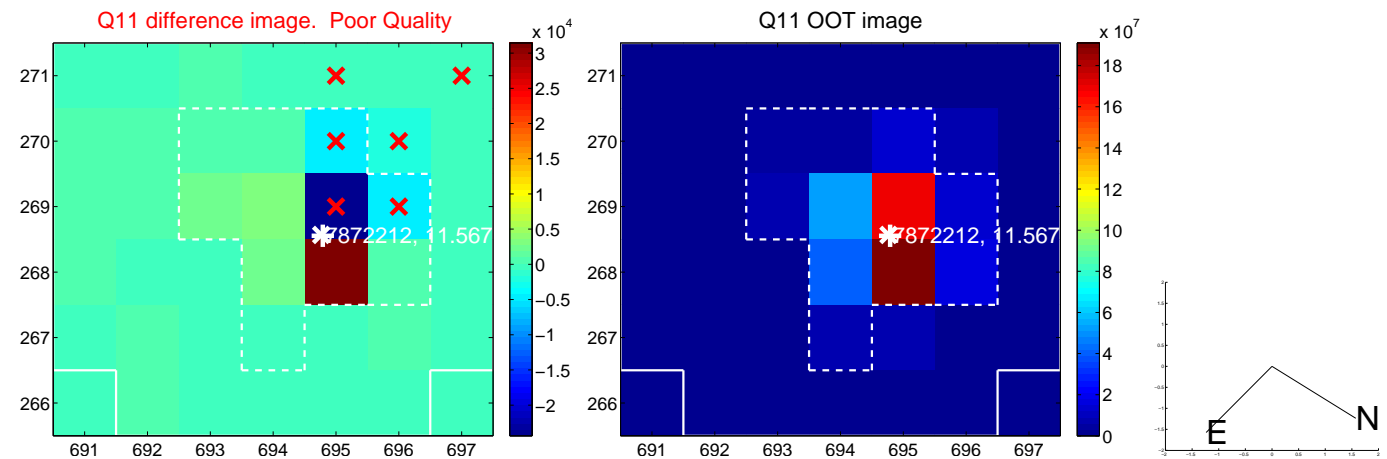
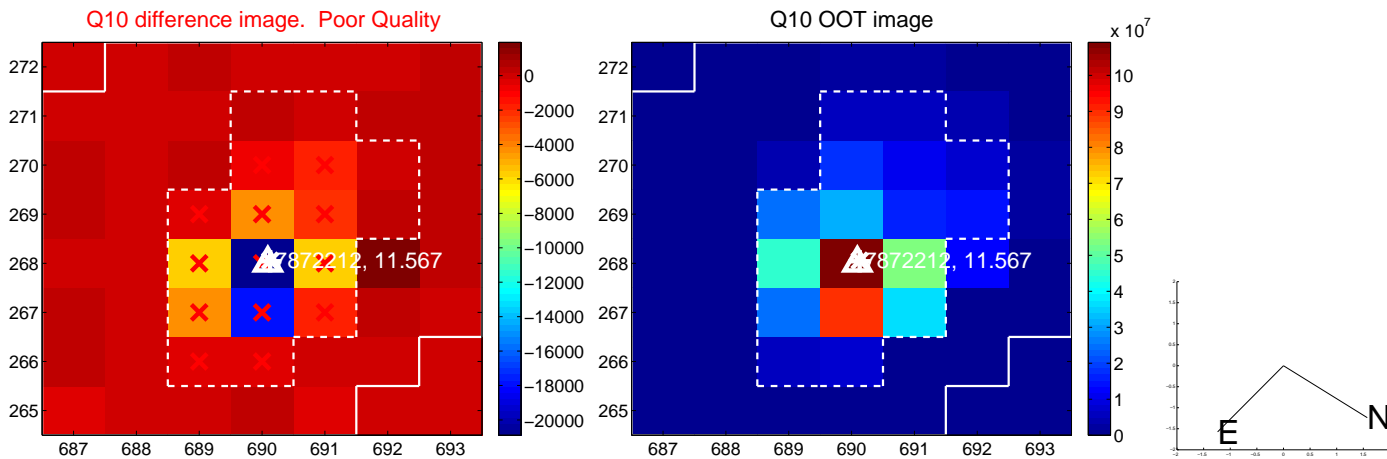
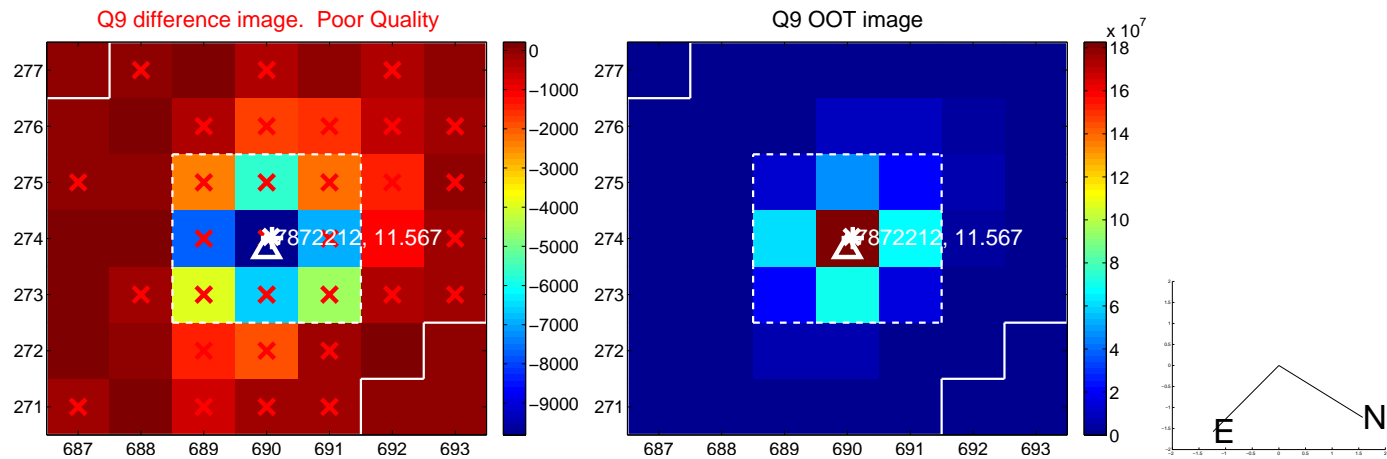
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



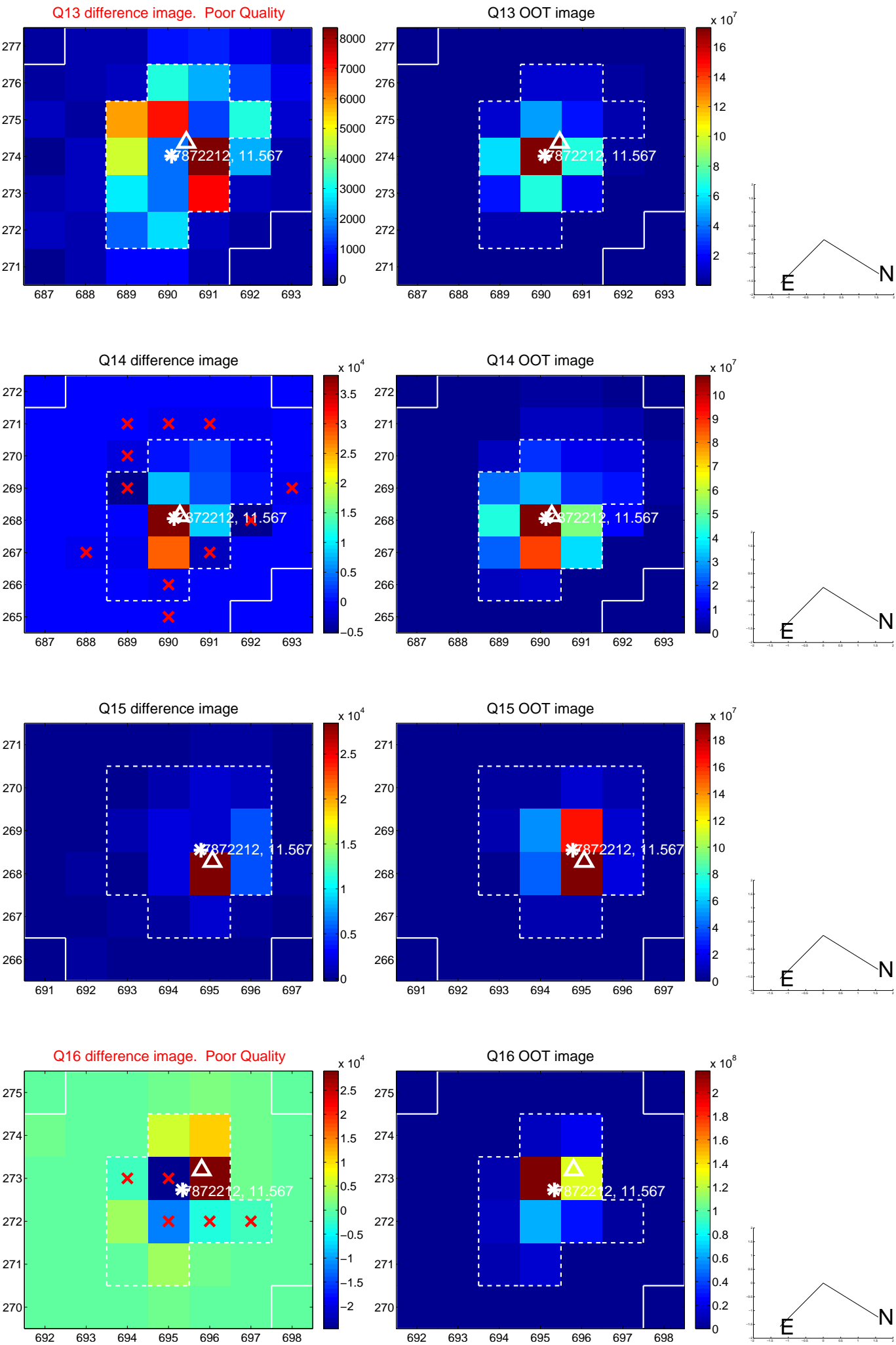
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



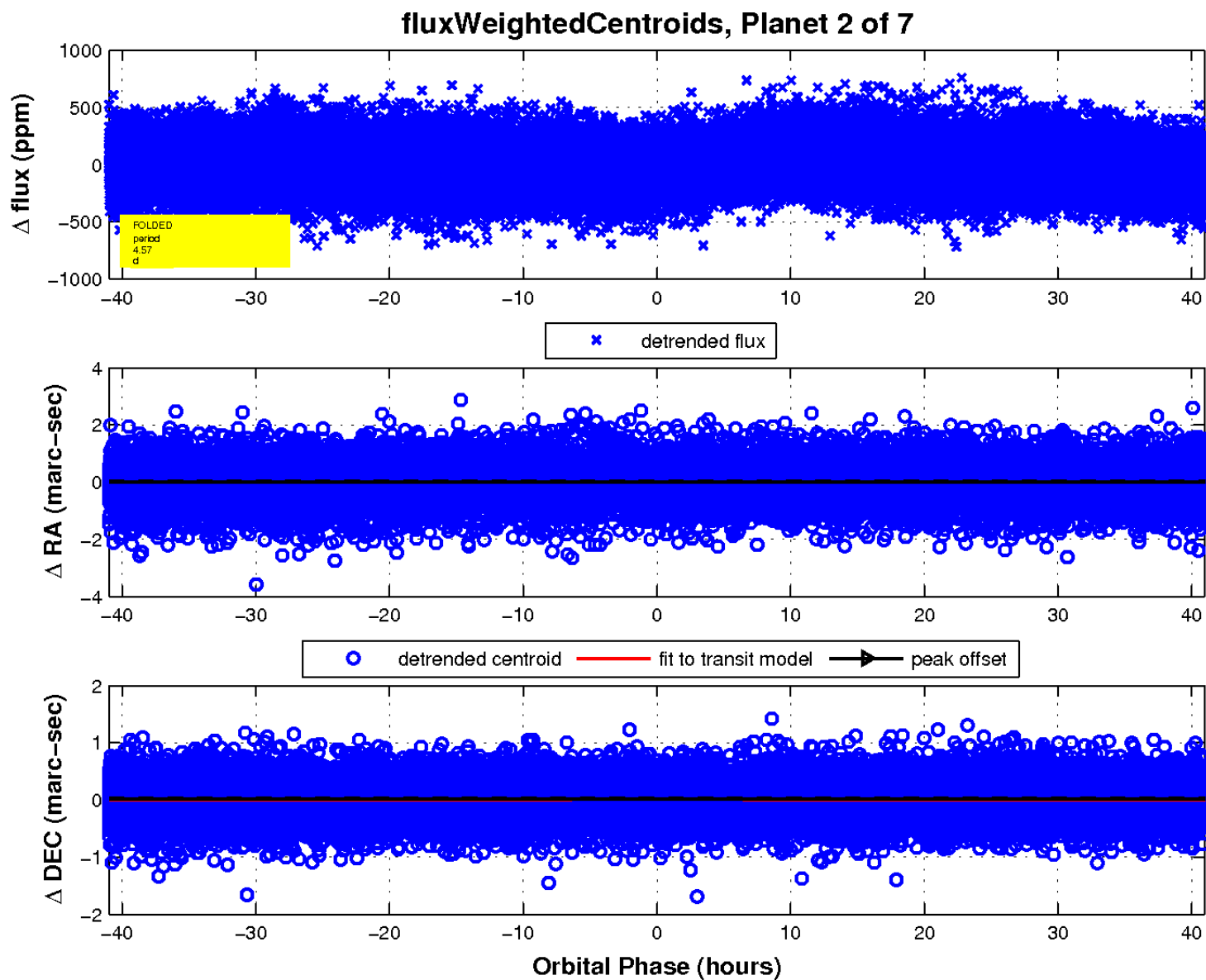
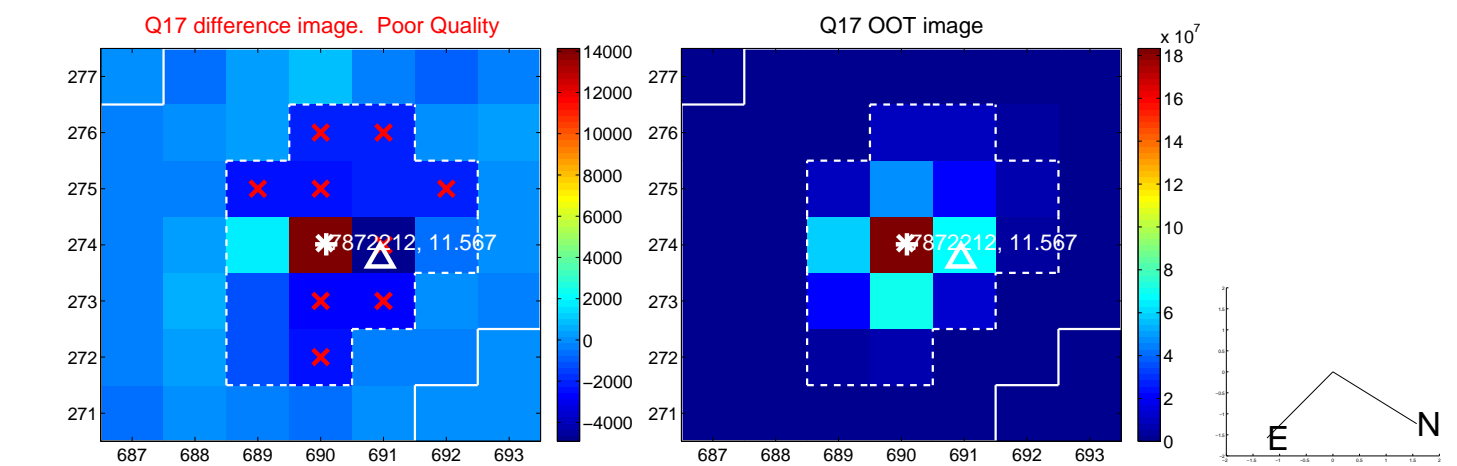
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

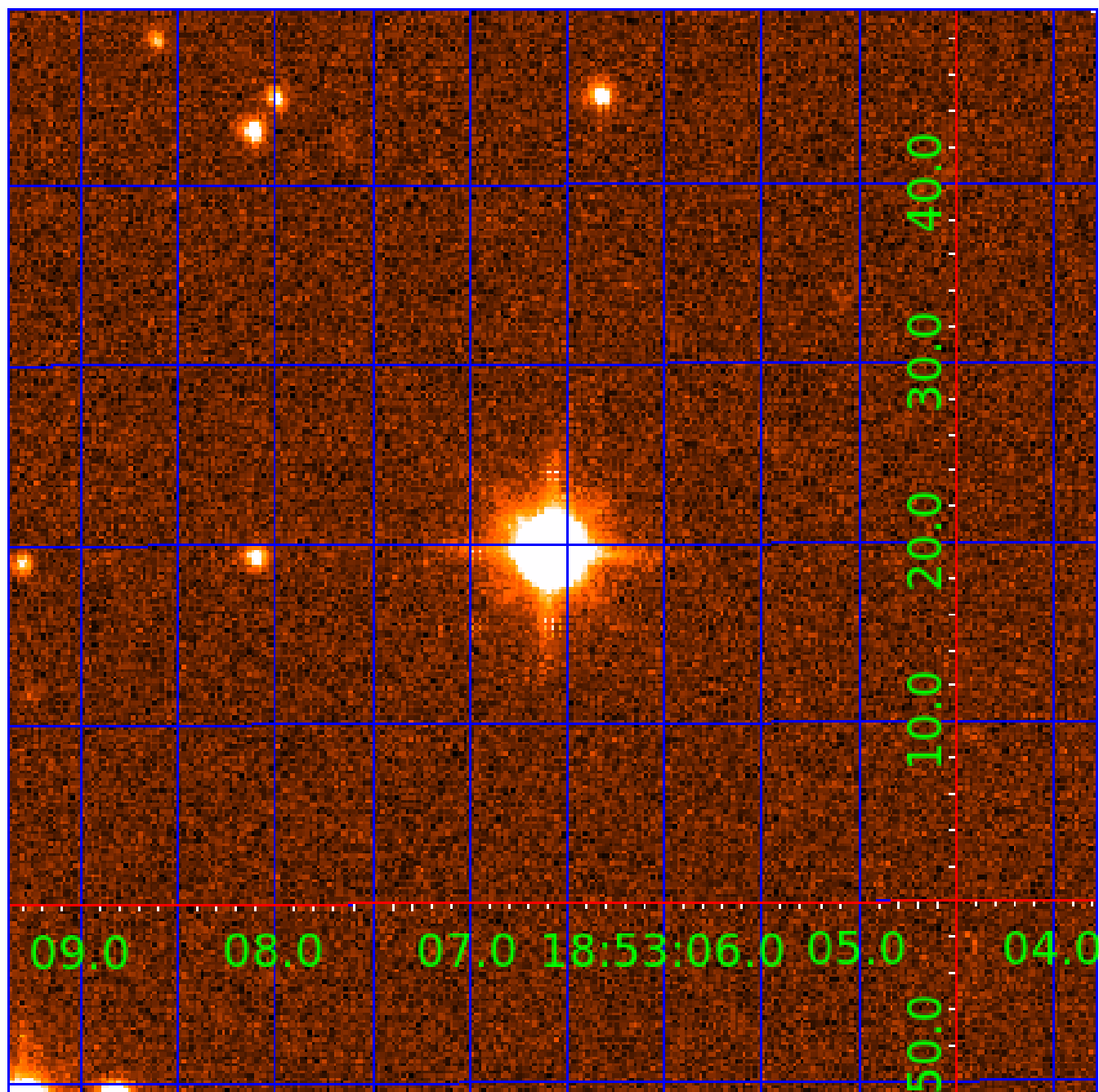


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007872212

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})
007872212-01	OBS	No	4.574311	134.084776	19.7	14.955	8.2	4.6	3.24	6453	1.64	4069.23
007872212-02	OBS	No	4.571540	131.943111	41.8	13.660	10.4	11.0	3.24	6453	2.52	4072.52
007872212-03	OBS	No	302.128440	136.977375	234.4	17.919	12.7	5.7	3.24	6453	5.27	15.24
007872212-04	OBS	No	78.349039	171.452842	237.7	3.317	9.5	6.8	3.24	6453	5.51	92.17
007872212-05	OBS	No	67.620767	160.520689	204.8	3.082	8.6	6.9	3.24	6453	5.16	112.16
007872212-06	OBS	No	54.295050	164.647359	205.1	5.919	8.3	8.2	3.24	6453	5.17	150.29
007872212-07	OBS	No	402.502509	151.471020	290.3	8.167	7.4	7.5	3.24	6453	6.05	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007872212-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
007872212-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007872212-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
007872212-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007872212-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007872212-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007872212-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

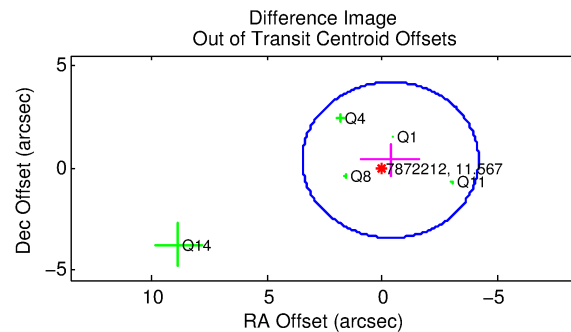
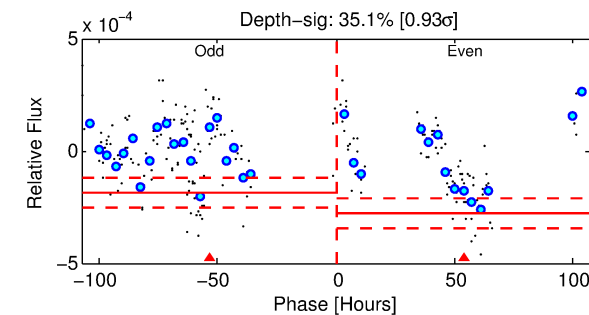
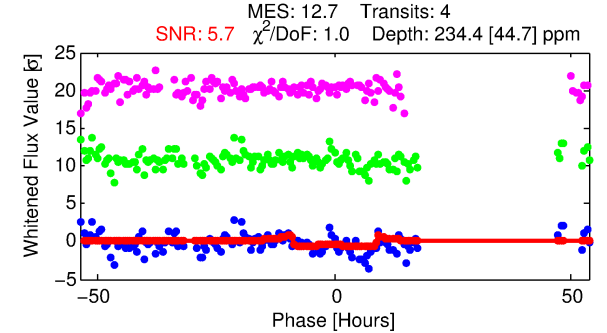
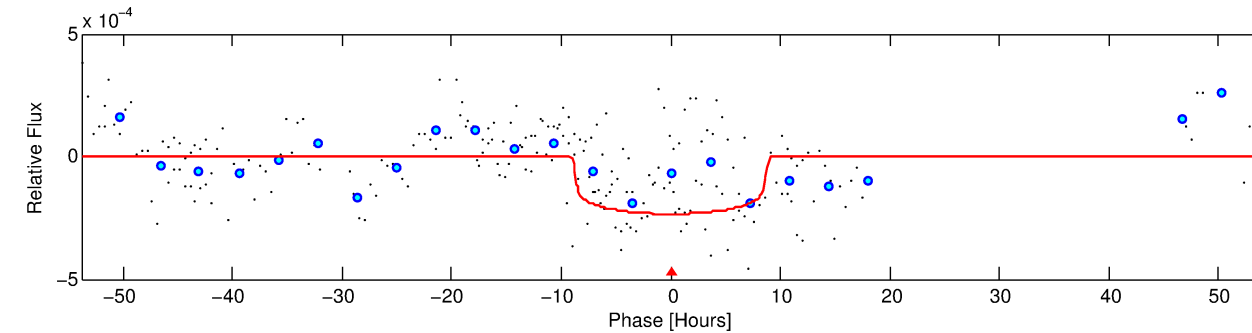
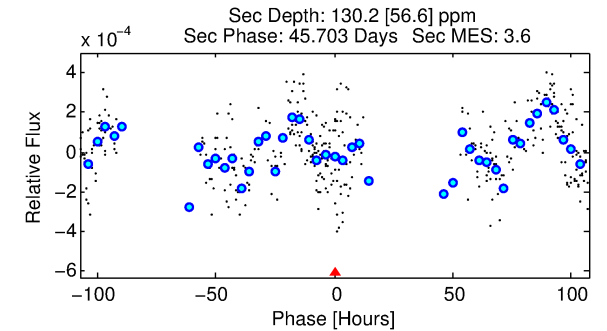
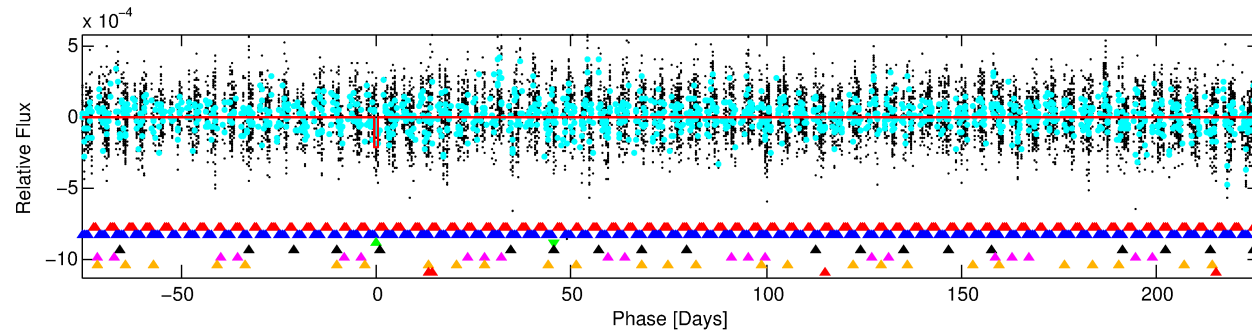
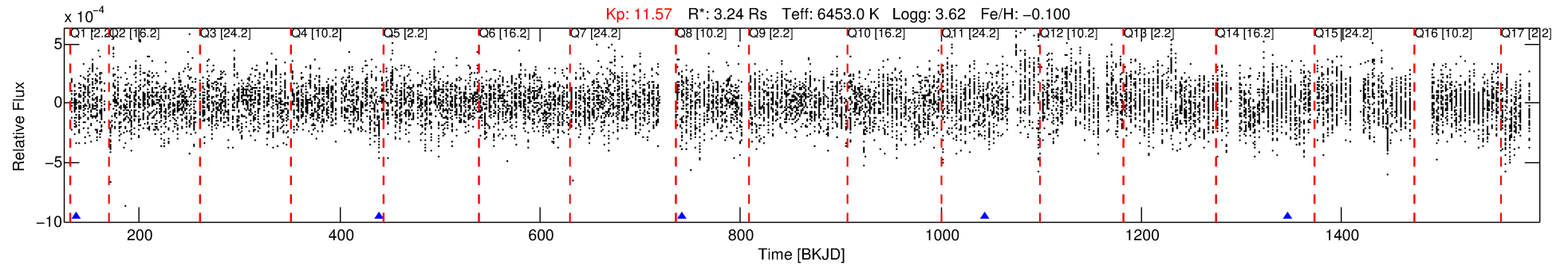
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007872212-03

No Significant Match Found

DV One-Page Summary

KIC: 7872212 Candidate: 3 of 7 Period: 302.128 d



DV Fit Results:

Period = 302.12844 [0.01353] d
Epoch = 136.9774 [0.0305] BKJD
Rp/R* = 0.0149 [0.0046]
a/R* = 97.19 [150.24]
b = 0.68 [1.21]
Seff = 15.24 [8.80]
Teq = 504 [73] K
Rp = 5.27 [2.58] Re
a = 1.0332 [0.3708] AU
Ag = 2747.82 [2599.82] [1.06σ]
Teffp = 5640 [1075] K [4.77σ]

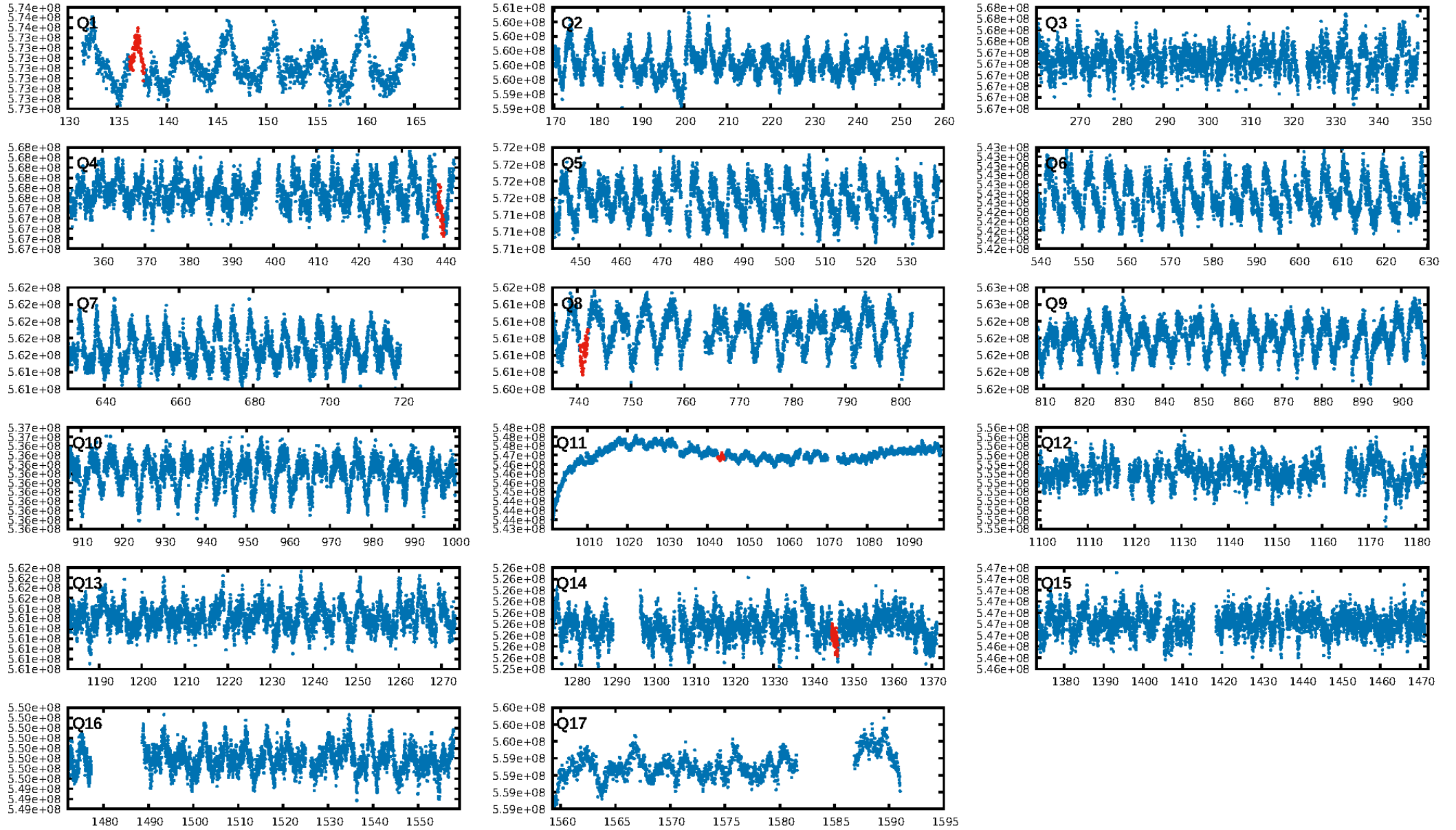
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [294.71σ]
LongPeriod-sig: 100.0% [122.33σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.09e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 5.126
Centroid-sig: 15.2%
Centroid-so: 0.270 arcsec [0.76σ]
OotOffset-rm: 0.508 arcsec [0.40σ]
KicOffset-rm: 0.510 arcsec [0.35σ]
OotOffset-st: 1/1/2/1 [5]
KicOffset-st: 1/1/2/1 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.00 [0/5]

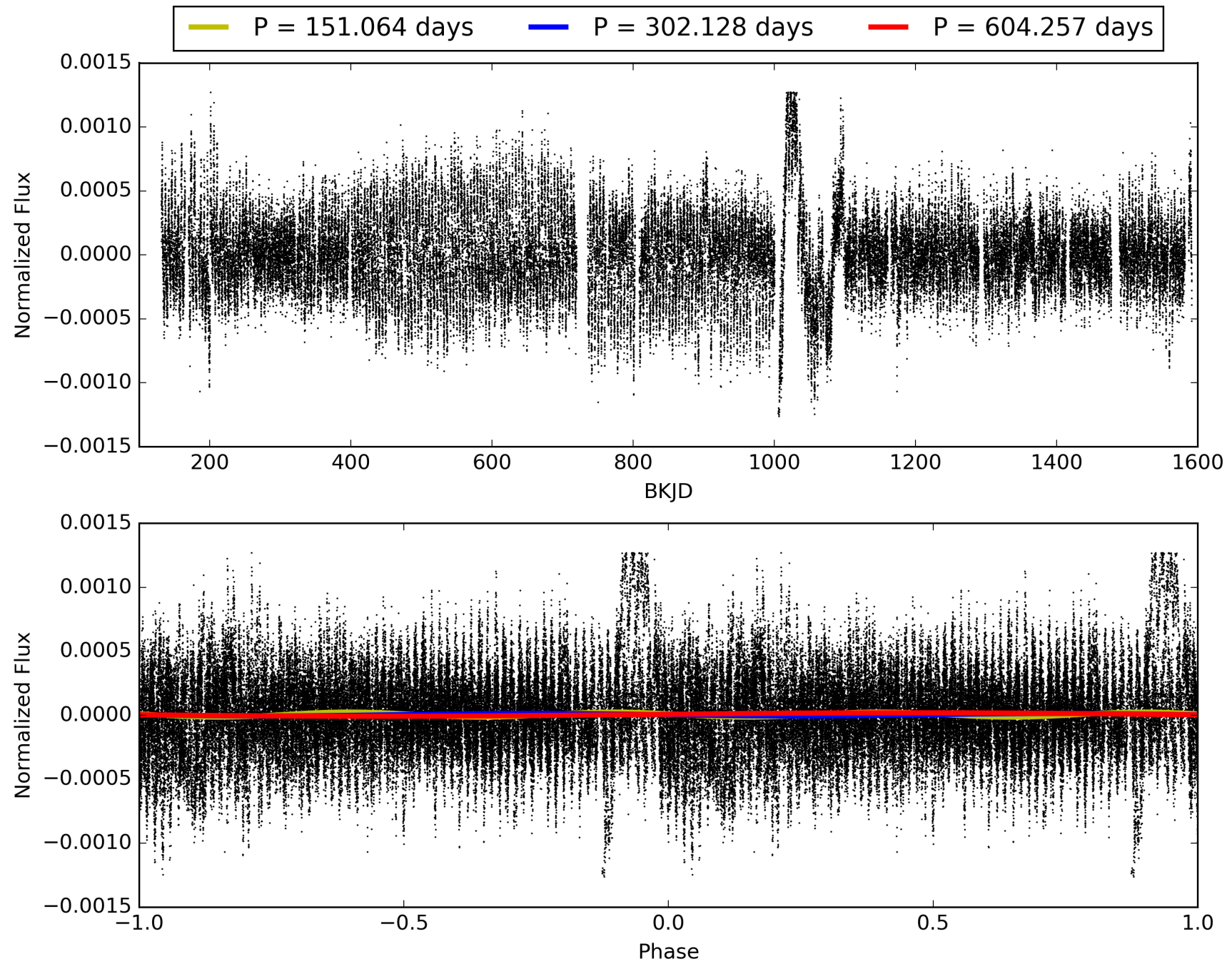
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:49:07 Z

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

TCE 007872212-03, PDC Light Curves

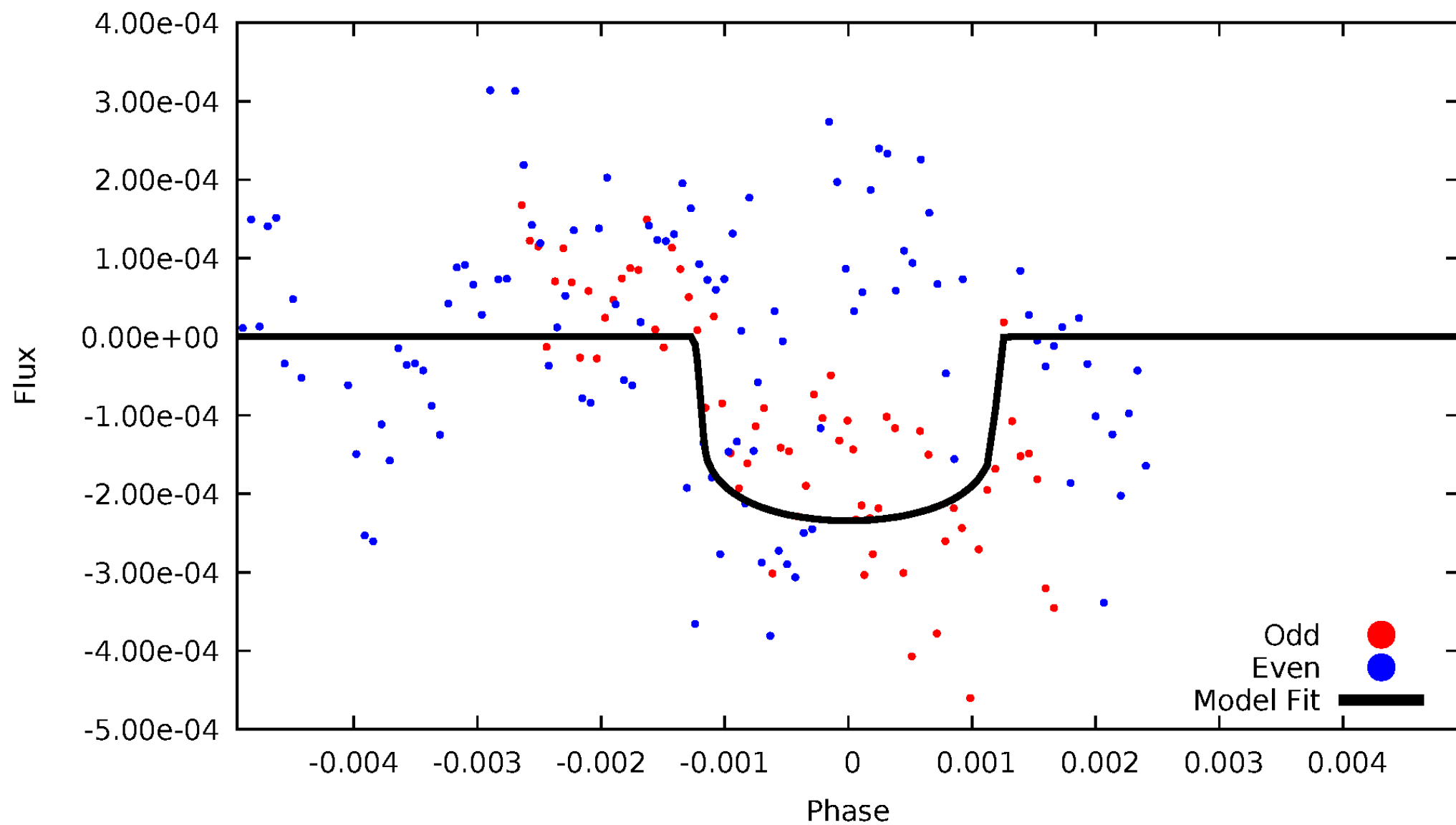


TCE 007872212-03



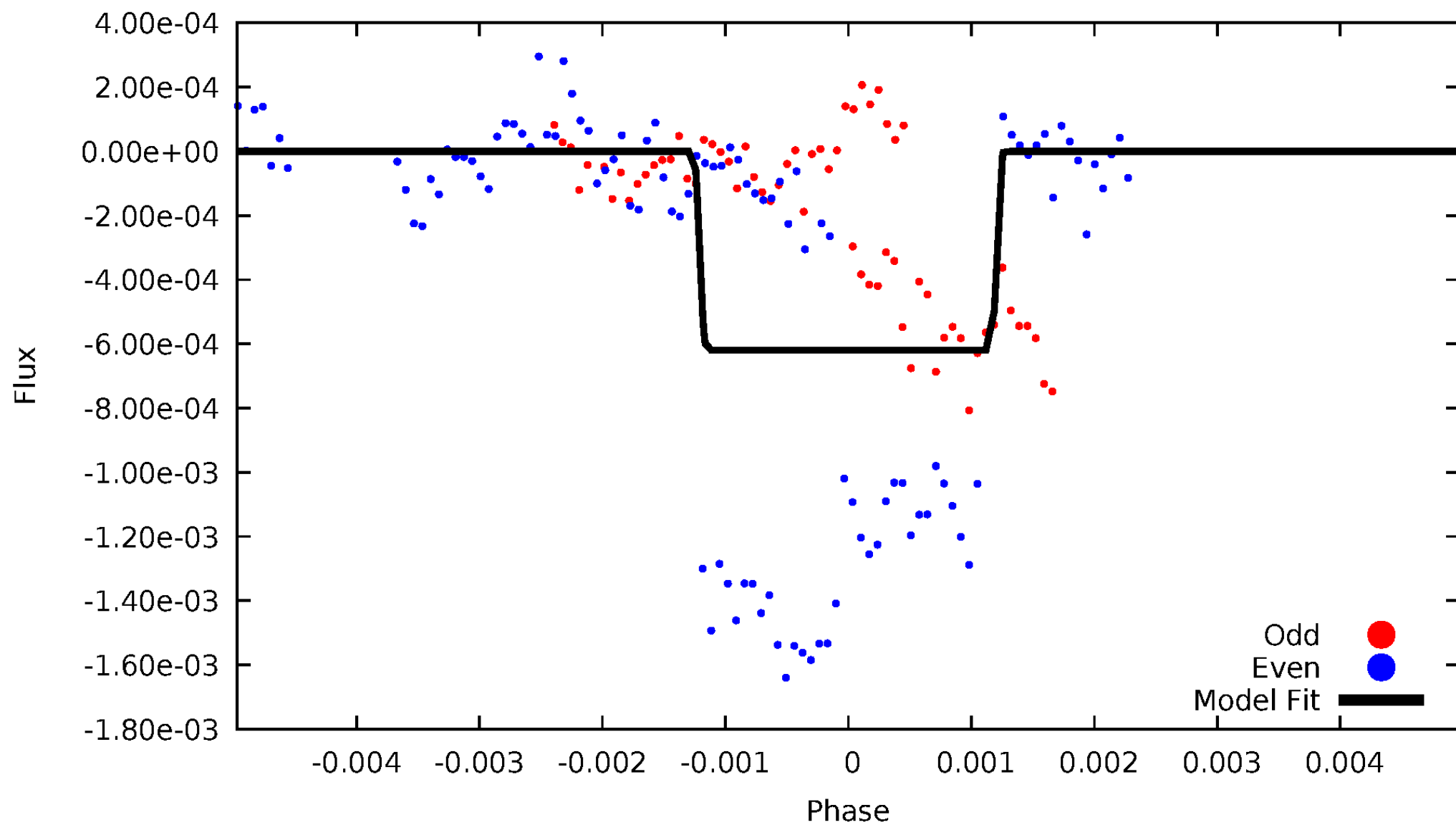
DV Odd/Even

TCE 007872212-03



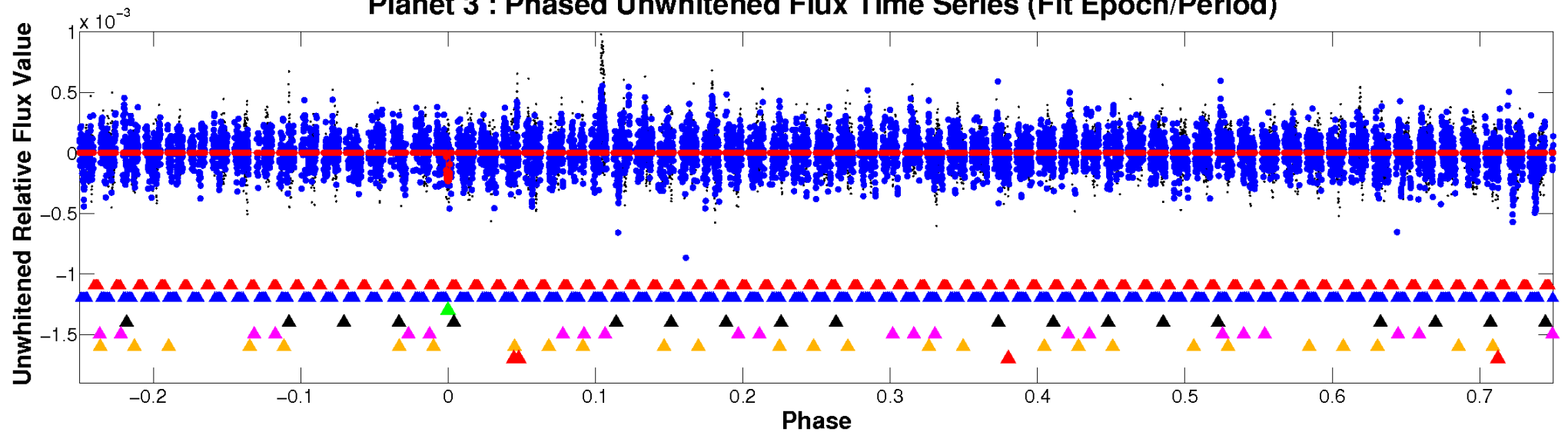
ALT Odd/Even

TCE 007872212-03

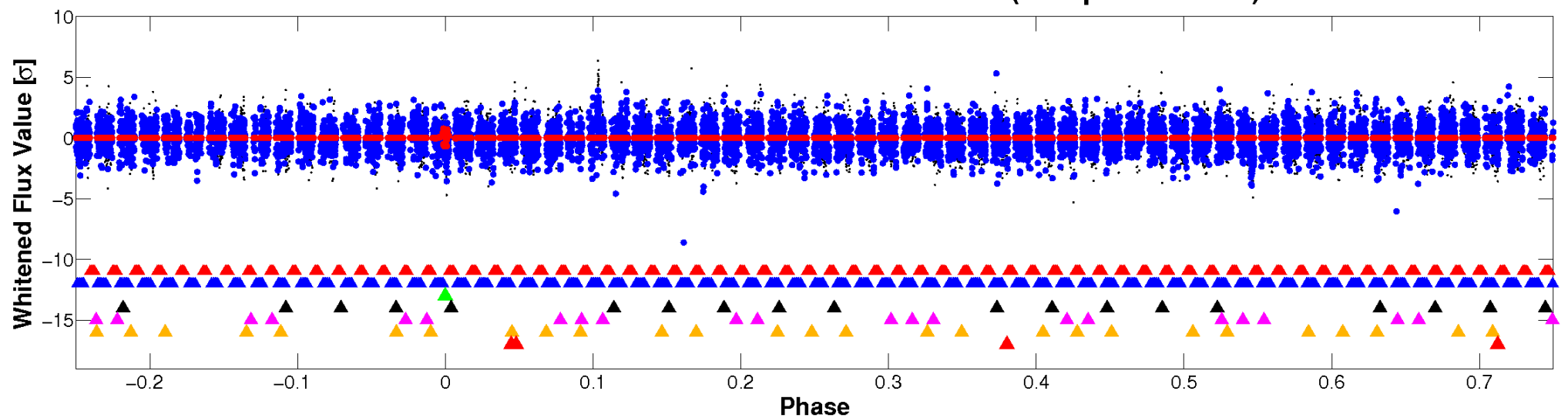


Non-Whitened Vs. Whitened Light Curve

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

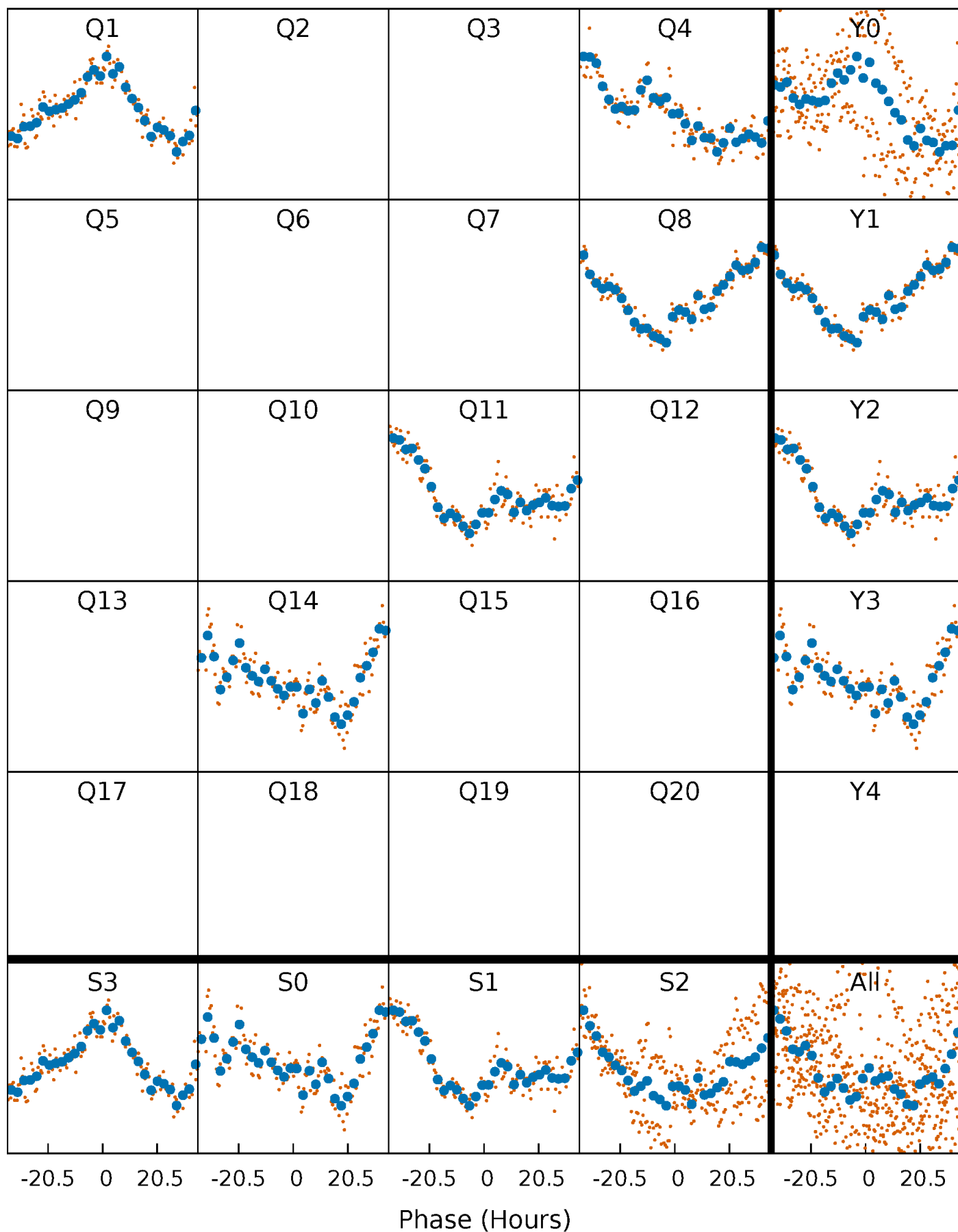


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



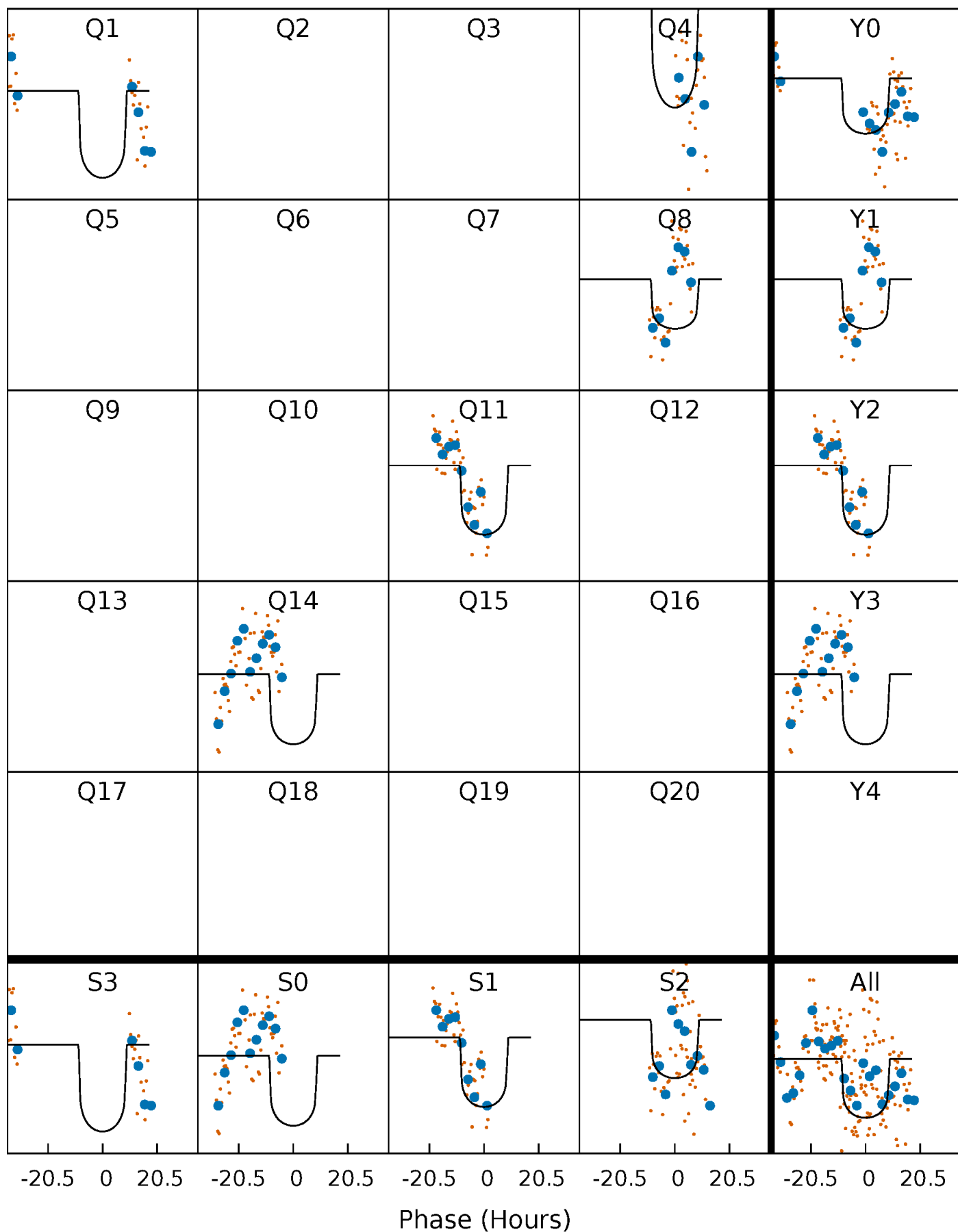
PDC Quarter-Phased Transit Curves

TCE 007872212-03 $P=302.128440$ Days $T_0=136.977375$ (BKJD)



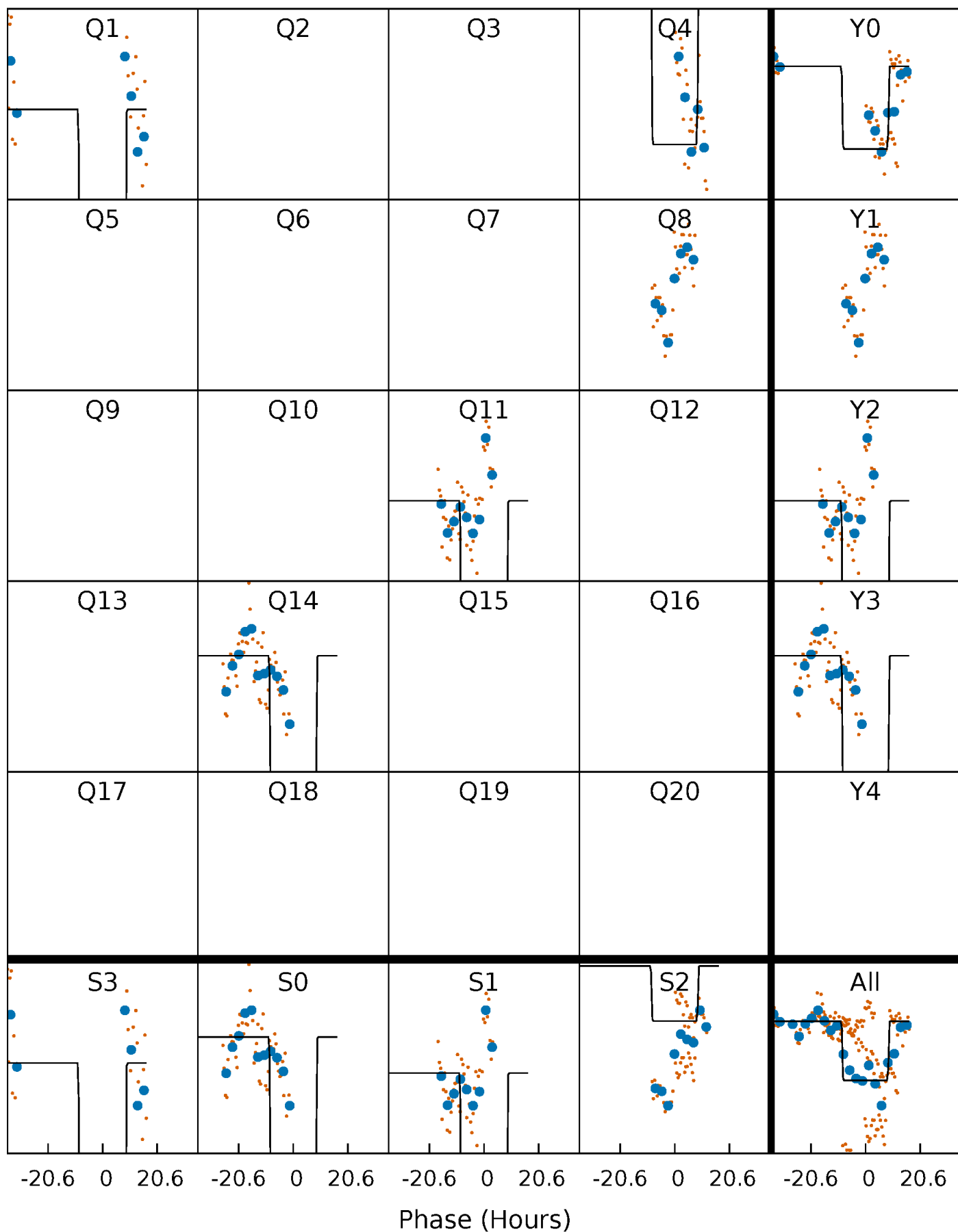
DV Quarter-Phased Transit Curves

TCE 007872212-03 $P=302.128440$ Days $T_0=136.977375$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

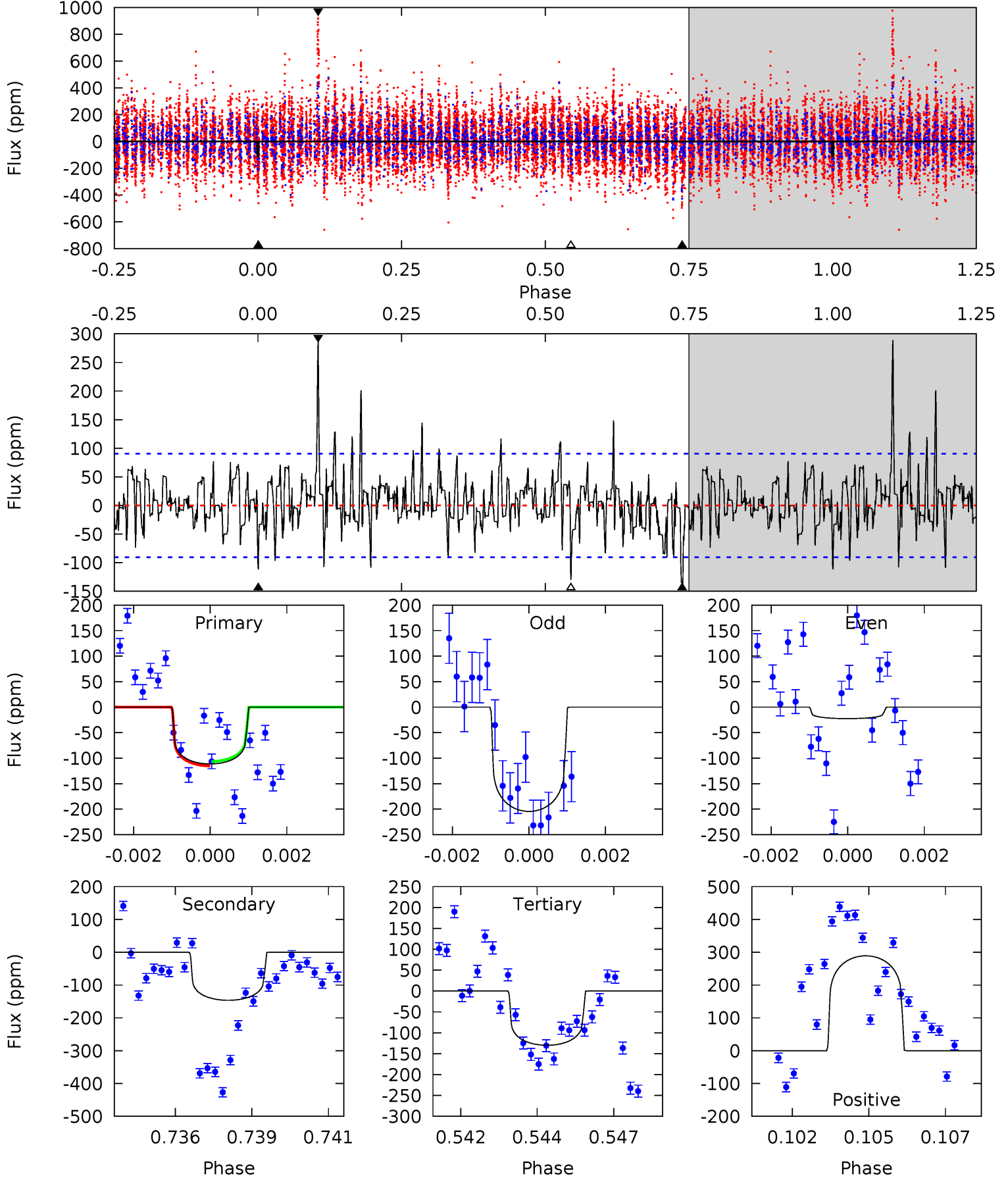
TCE 007872212-03 P=302.089751 Days $T_0=137.017236$ (BKJD)



DV Model-Shift Uniqueness Test

007872212-03, P = 302.128440 Days, E = 136.977375 Days

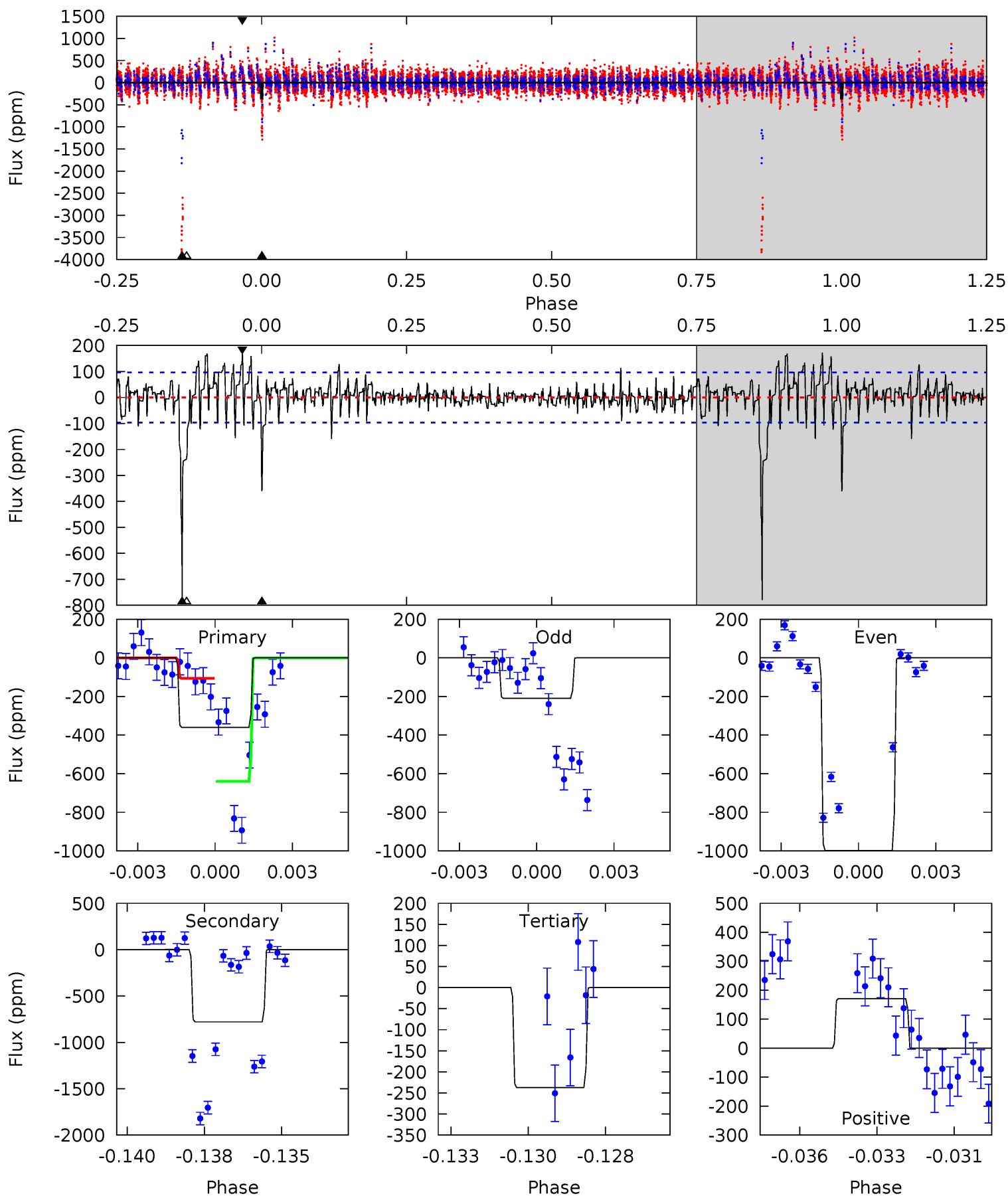
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.50	8.55	7.58	16.9	5.29	3.02	2.66	-1.08	-10.4	0.97	-8.32	5.29	0.96	0.66	0.25



Alt Model-Shift Uniqueness Test

007872212-03, P = 302.089751 Days, E = 137.017236 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	42.6	12.9	9.32	5.28	3.02	2.21	6.73	10.4	29.6	33.2	24.3	1.51	0.18	14.4



Stellar Parameters For KIC 007872212

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-162}	$3.625^{+0.332}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$3.236^{+0.409}_{-1.227}$	$1.613^{+0.220}_{-0.330}$	$0.067^{+0.149}_{-0.017}$
	+3%/-3%	+9%/-2%	+300%/-250%	+13%/-38%	+14%/-20%	+222%/-25%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007872212-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-146 ± 17	$4.72^{+2.01}_{-1.56}$	690^{+35}_{-67}	5861^{+1273}_{-737}	3879^{+4913}_{-1958}
Alt.	-780 ± 18	$8.36^{+1.98}_{-2.20}$	689^{+38}_{-59}	6846^{+906}_{-609}	6767^{+4845}_{-2414}

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 $A_{obs} \gg 1.0$

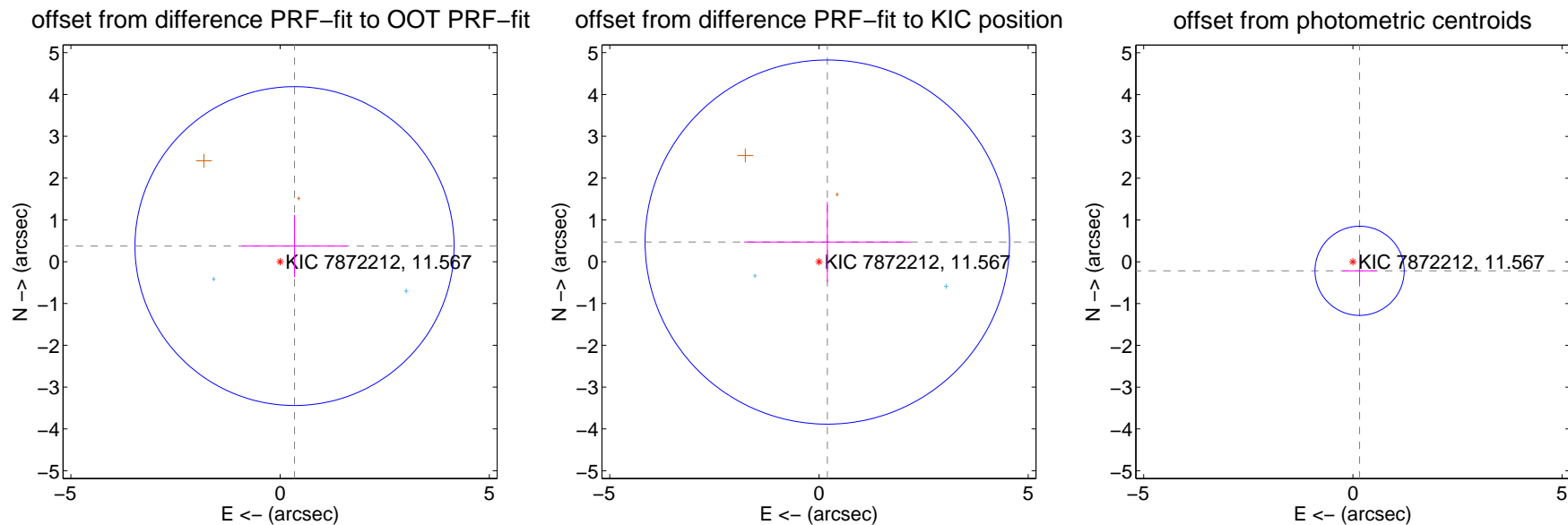
DV Centroid Data

Supplemental centroid analysis for 007872212-03. **Kepler magnitude: 11.57.** Transit SNR 5.74

There are 2 quarters with good PRF difference image offsets

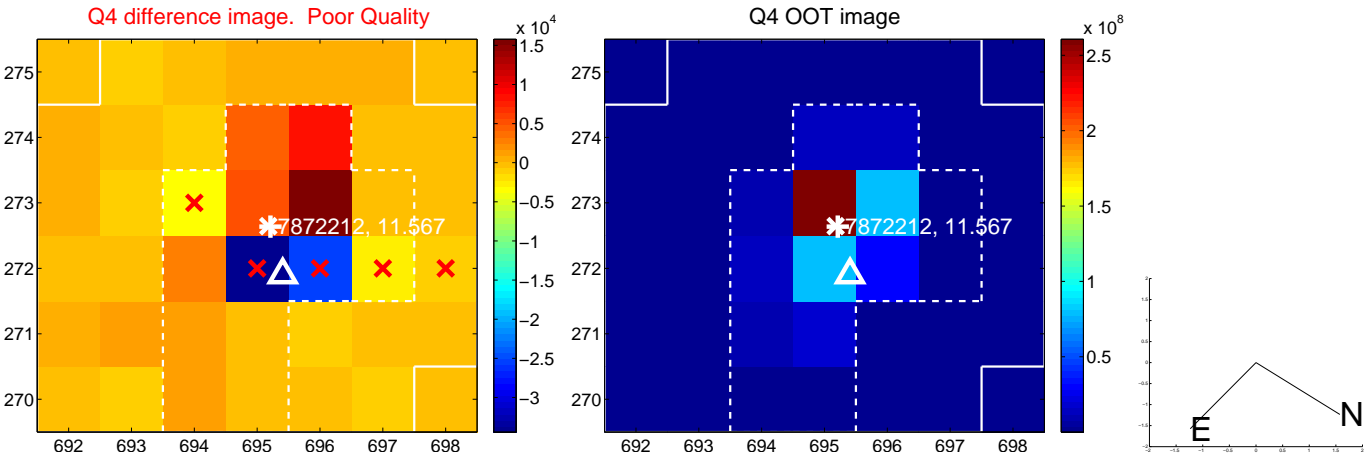
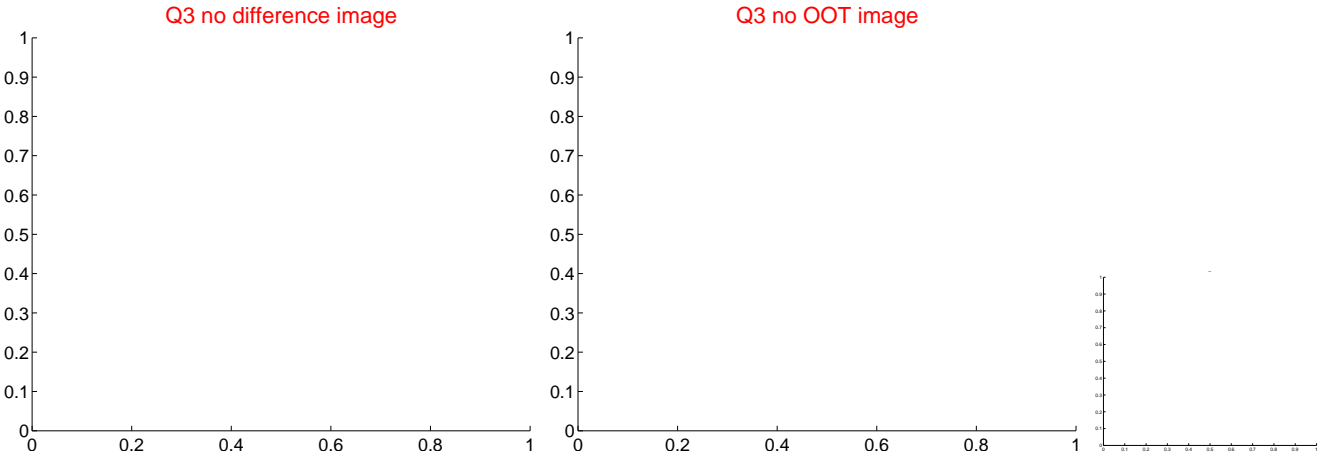
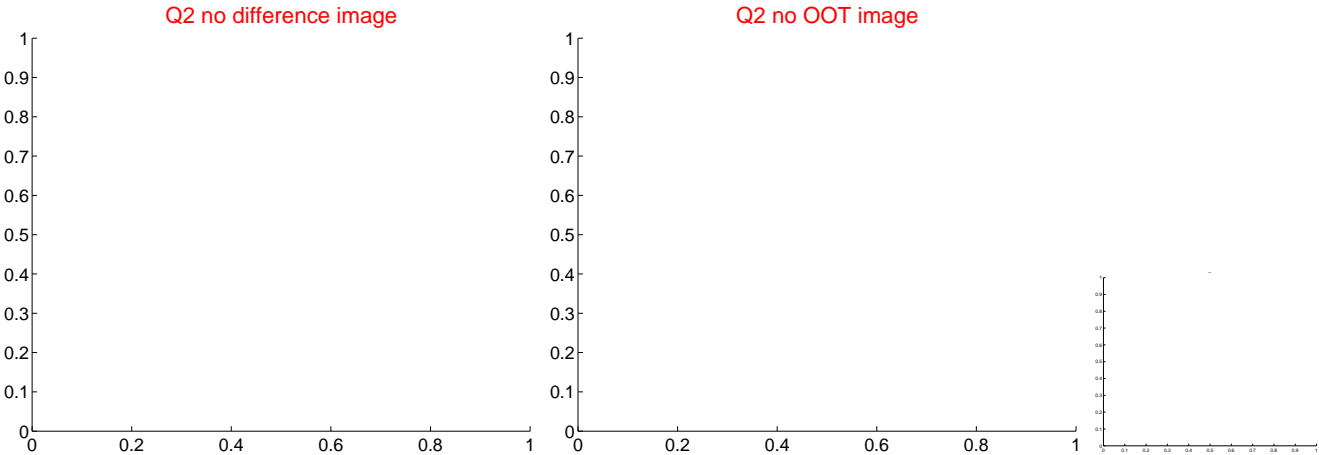
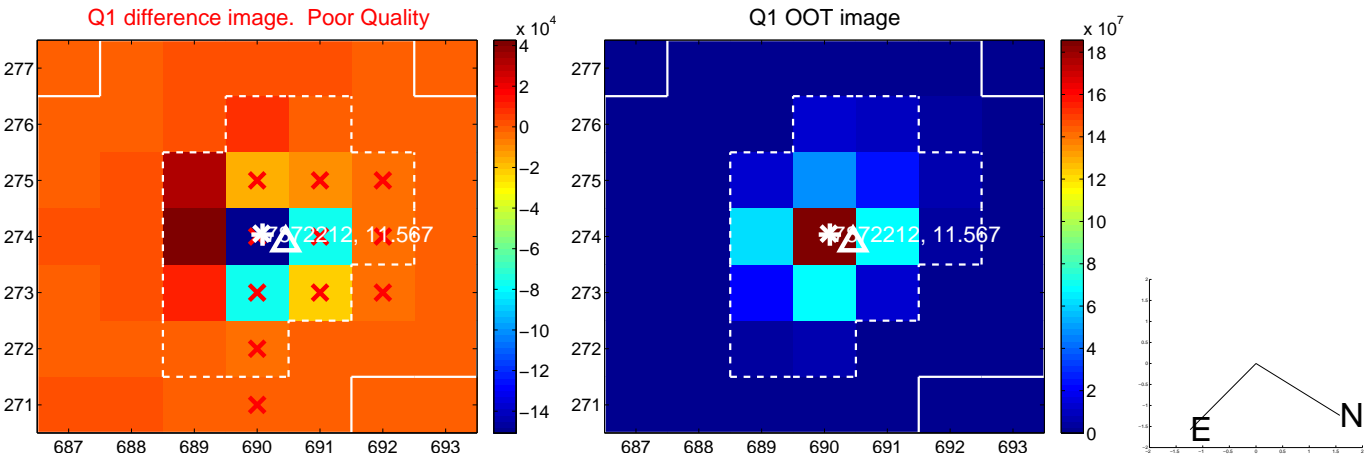
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.508 ± 1.271	0.40	-0.344 ± 1.259	0.374 ± 0.746
PRF-fit source offset from KIC position	0.510 ± 1.452	0.35	-0.199 ± 1.988	0.469 ± 0.961
photometric centroid source offset	0.27 ± 0.36	0.76	-0.16 ± 0.41	-0.22 ± 0.32

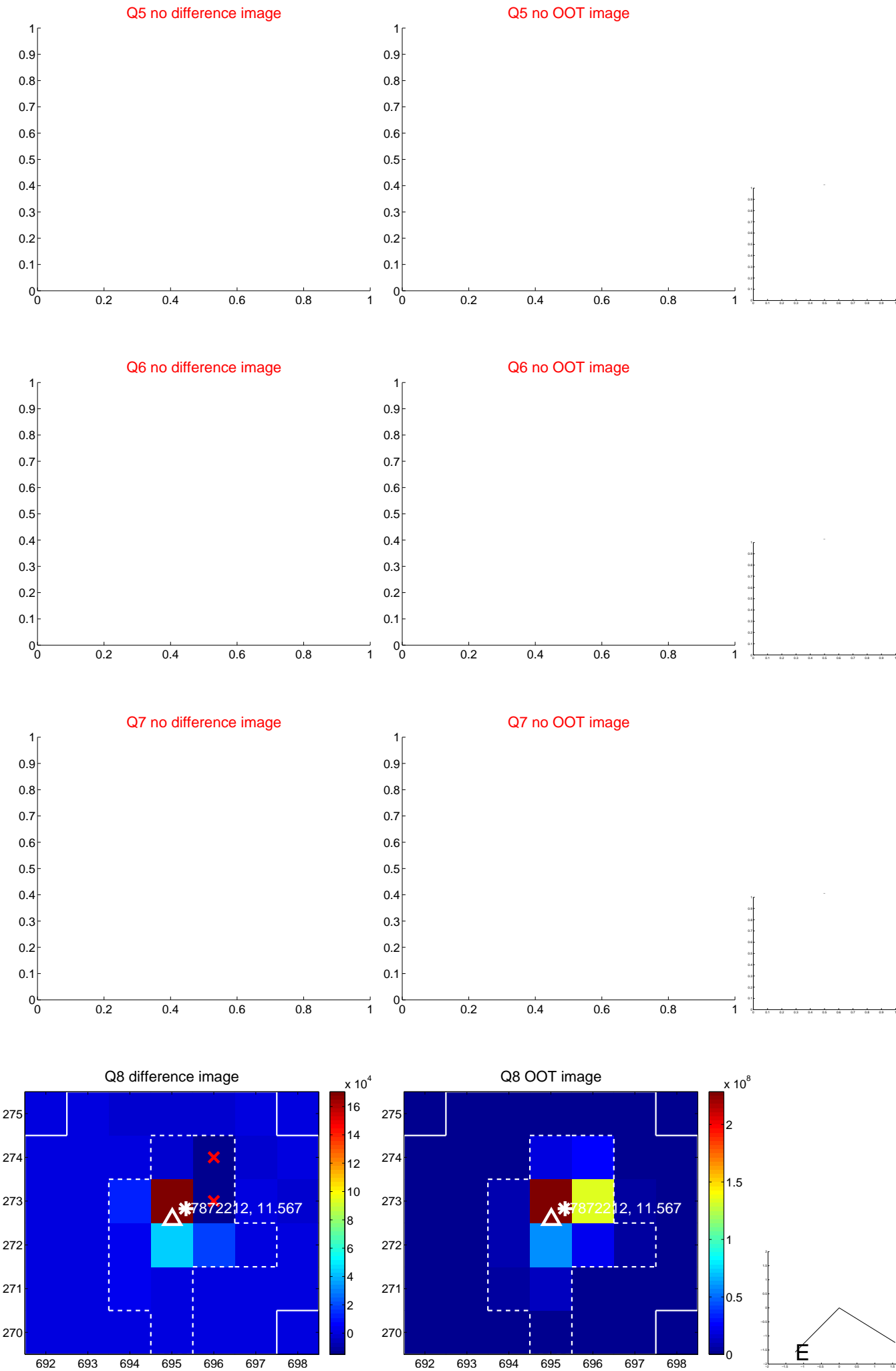


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

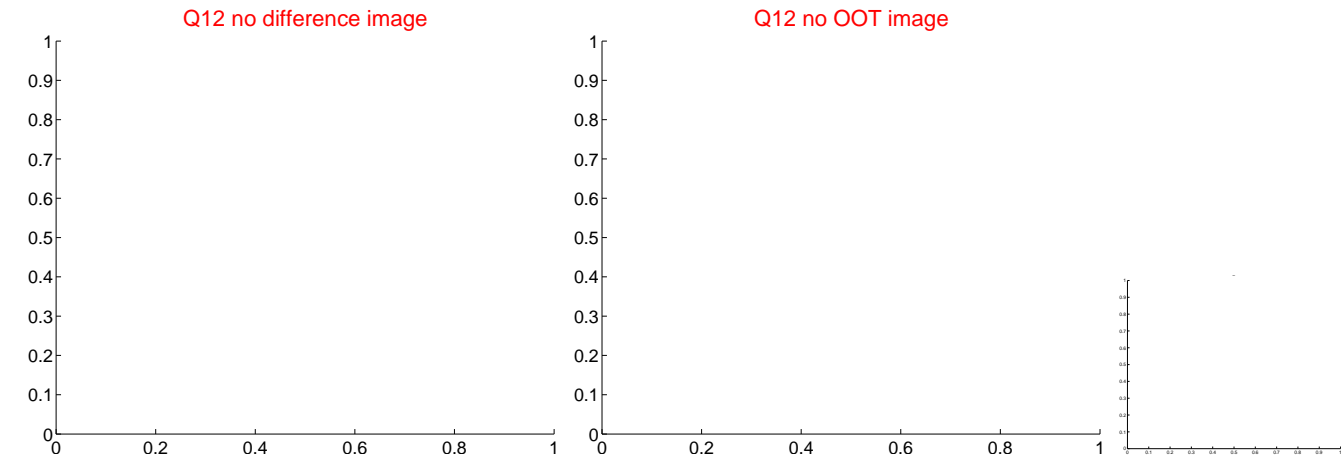
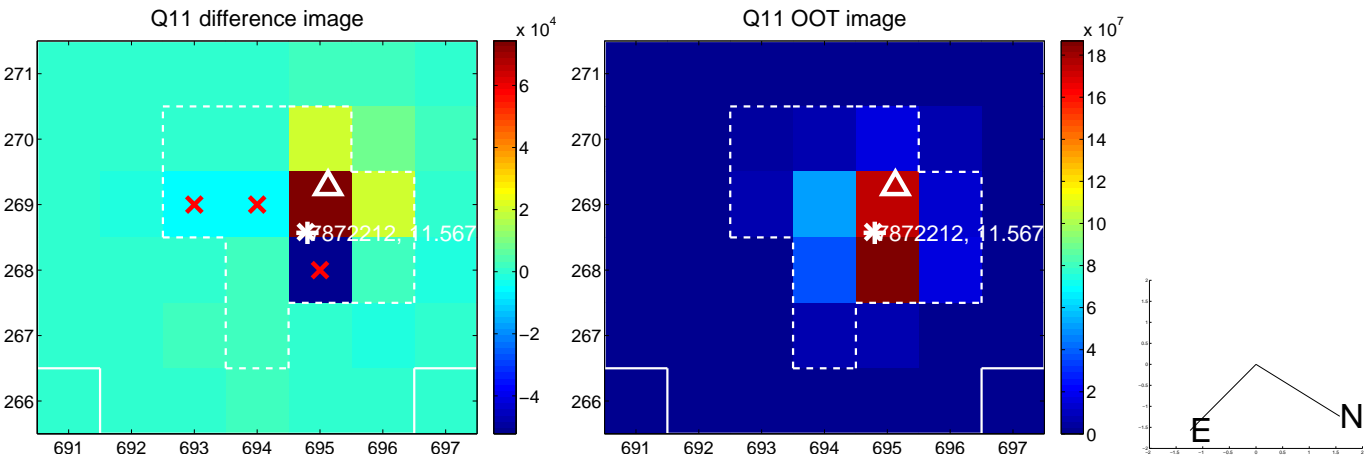
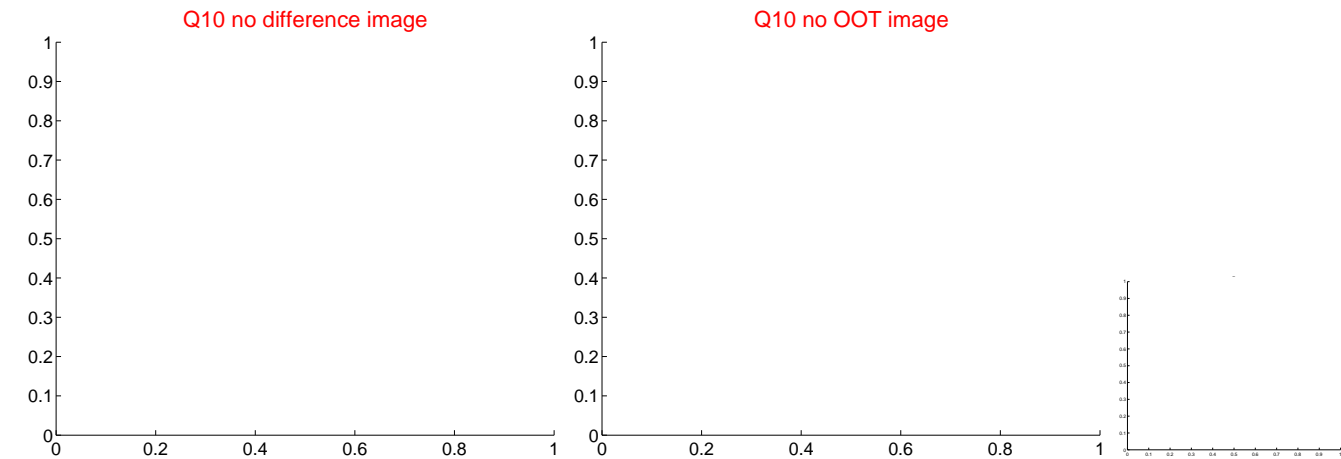
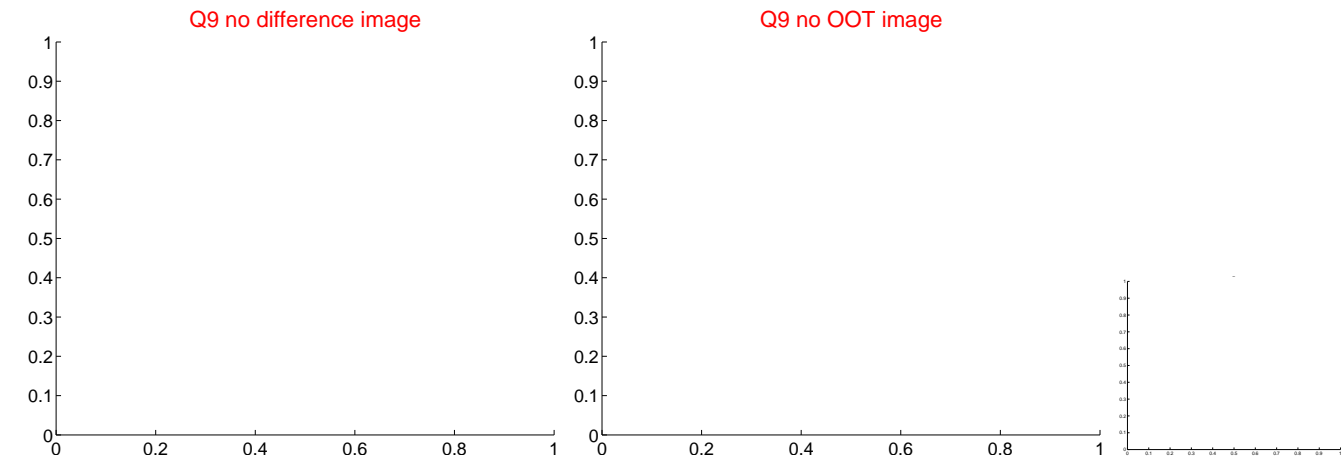
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



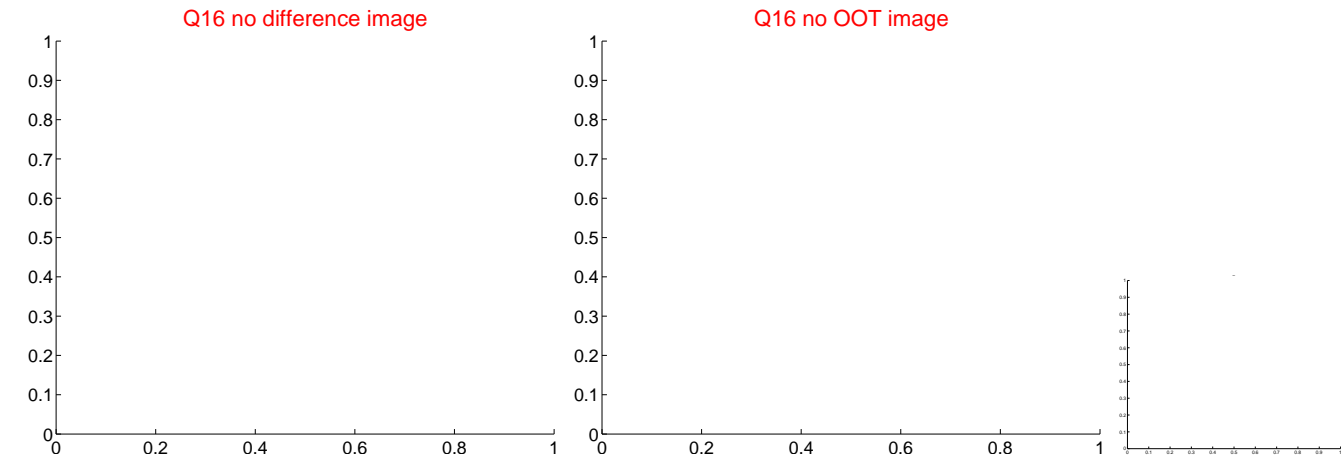
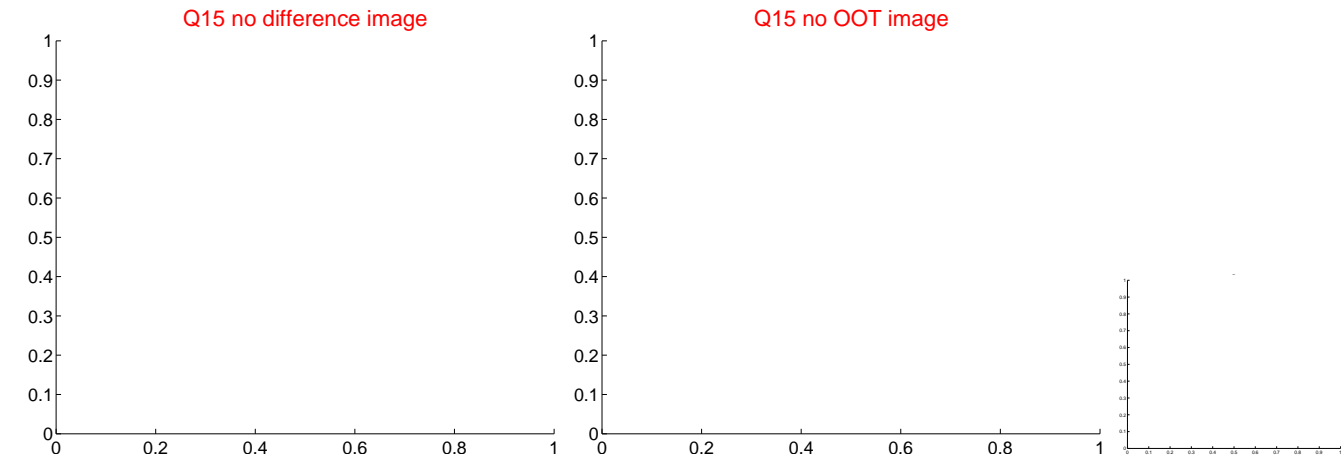
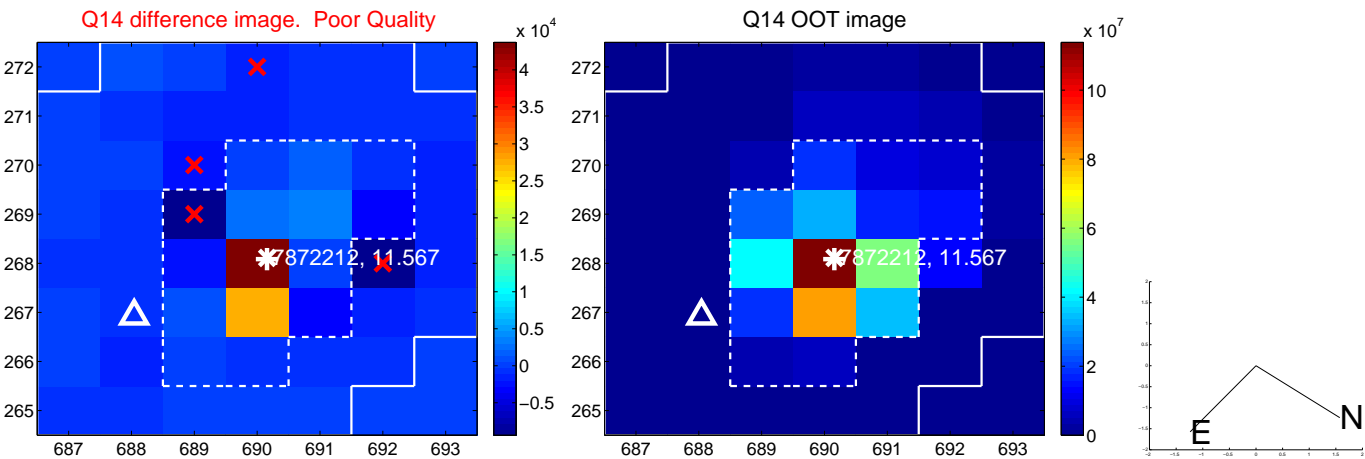
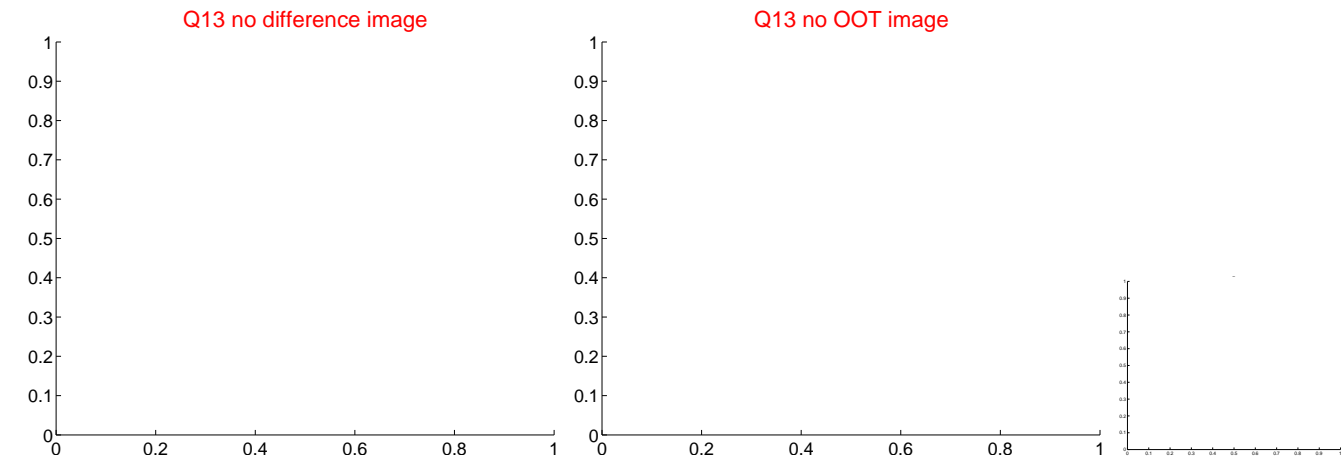
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



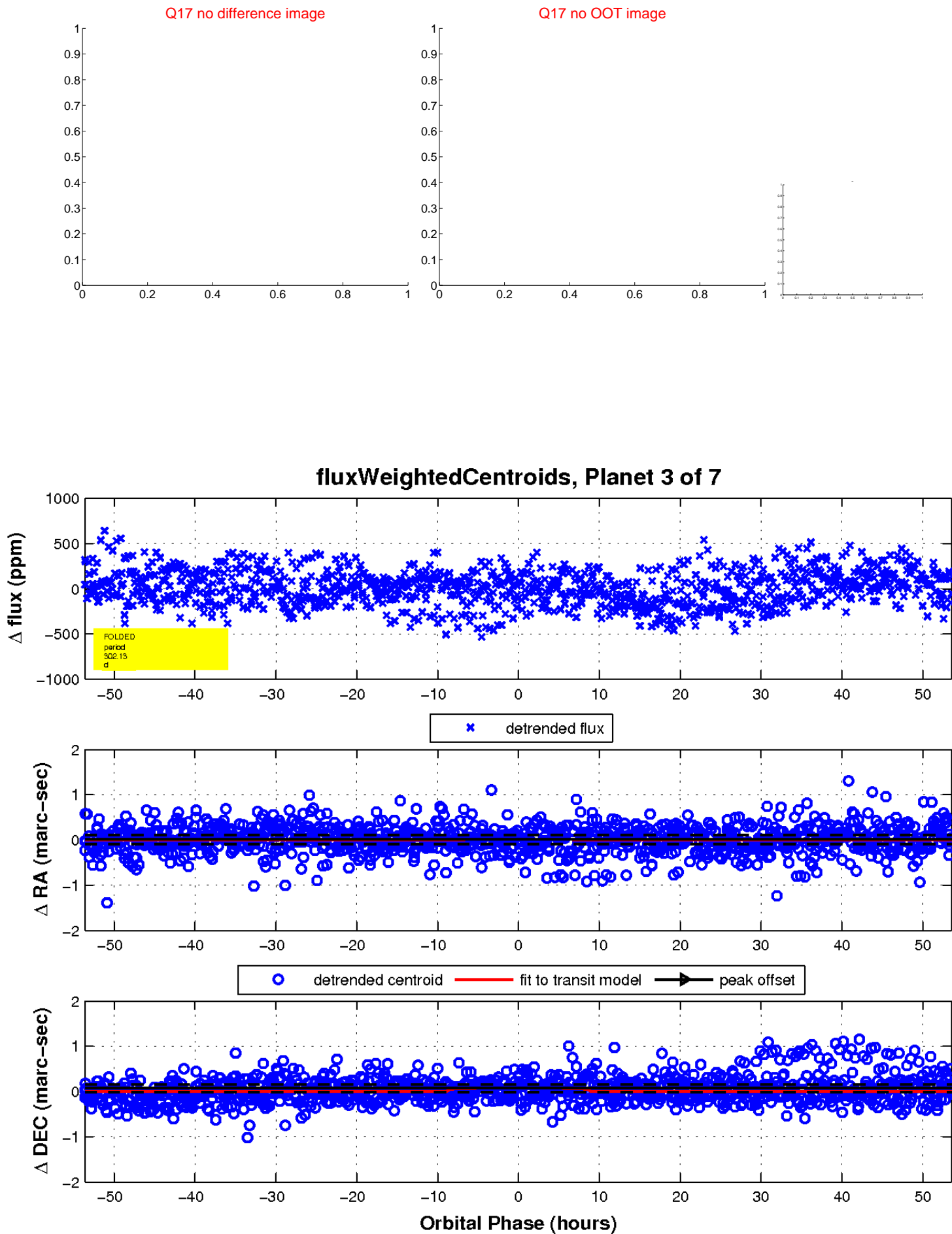
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

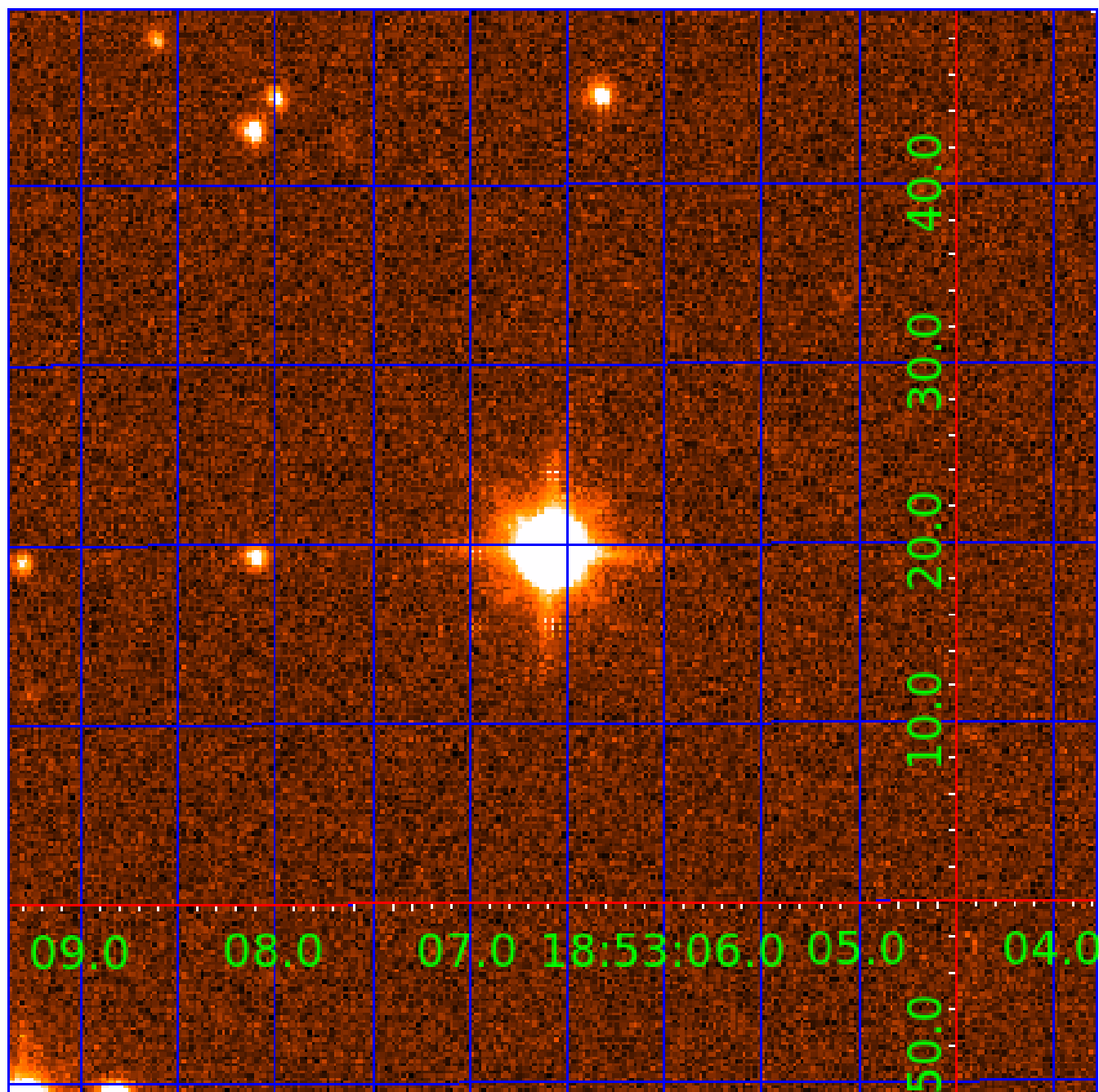


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007872212

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})
007872212-01	OBS	No	4.574311	134.084776	19.7	14.955	8.2	4.6	3.24	6453	1.64	4069.23
007872212-02	OBS	No	4.571540	131.943111	41.8	13.660	10.4	11.0	3.24	6453	2.52	4072.52
007872212-03	OBS	No	302.128440	136.977375	234.4	17.919	12.7	5.7	3.24	6453	5.27	15.24
007872212-04	OBS	No	78.349039	171.452842	237.7	3.317	9.5	6.8	3.24	6453	5.51	92.17
007872212-05	OBS	No	67.620767	160.520689	204.8	3.082	8.6	6.9	3.24	6453	5.16	112.16
007872212-06	OBS	No	54.295050	164.647359	205.1	5.919	8.3	8.2	3.24	6453	5.17	150.29
007872212-07	OBS	No	402.502509	151.471020	290.3	8.167	7.4	7.5	3.24	6453	6.05	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007872212-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
007872212-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007872212-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
007872212-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007872212-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007872212-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007872212-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

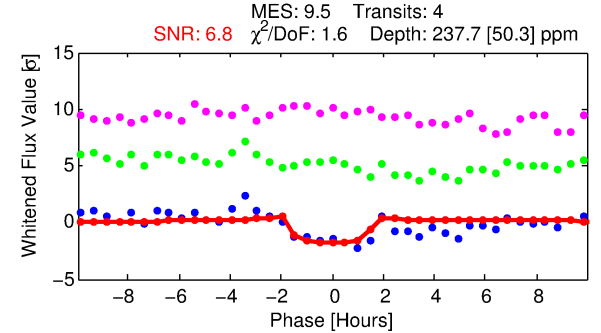
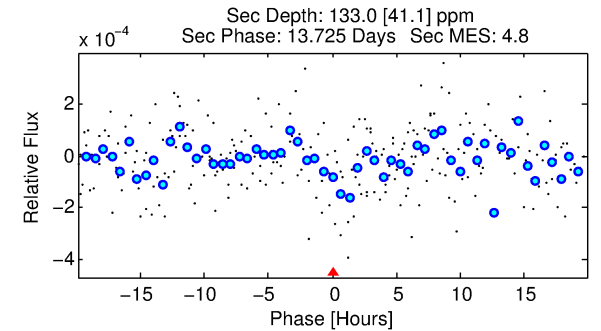
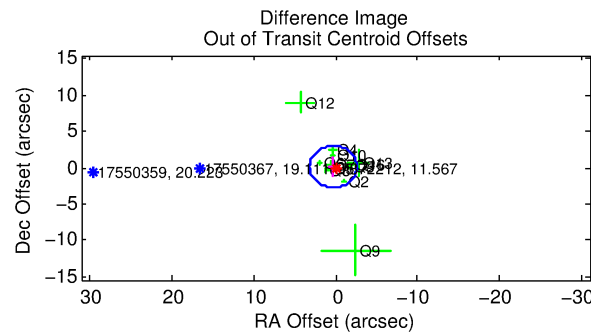
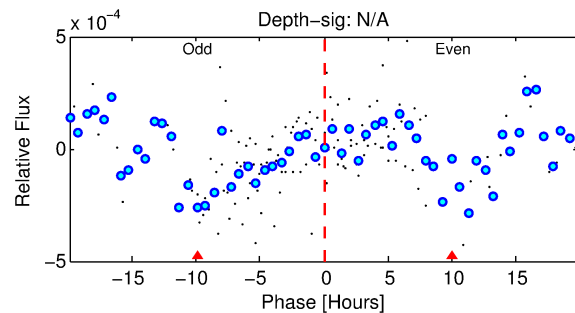
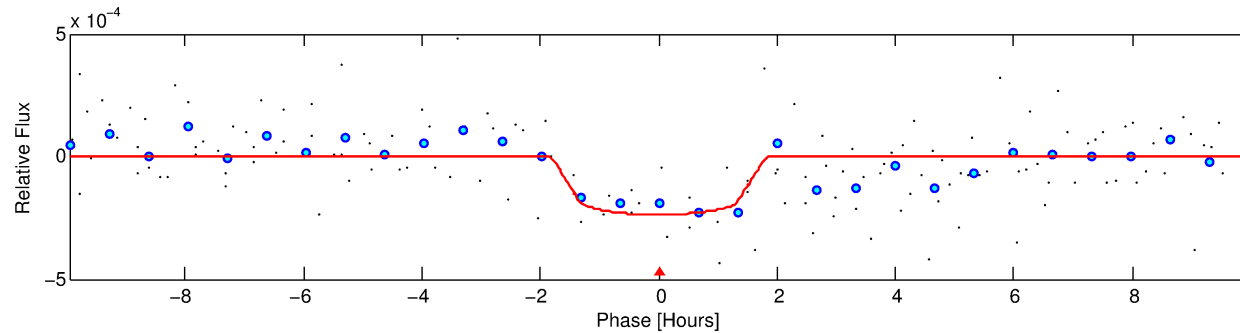
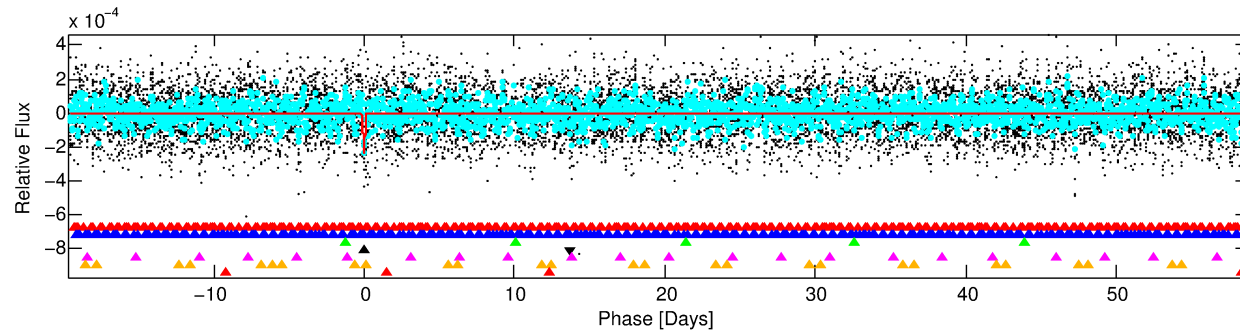
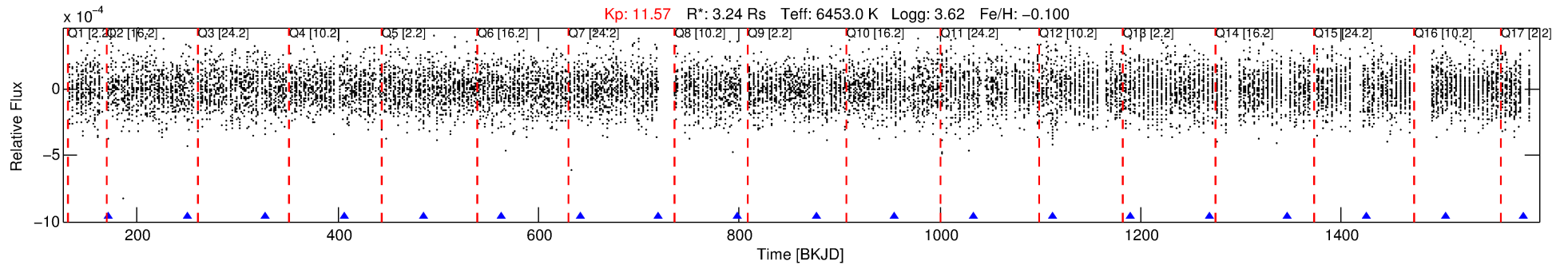
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007872212-04

No Significant Match Found

DV One-Page Summary

KIC: 7872212 Candidate: 4 of 7 Period: 78.349 d



DV Fit Results:

Period = 78.34904 [0.00149] d
 Epoch = 171.4528 [0.0096] BKJD
 Rp/R* = 0.0156 [0.0222]
 a/R* = 113.64 [881.41]
 b = 0.80 [3.61]
 Seff = 92.17 [53.24]
 Teq = 790 [114] K
 Rp = 5.51 [8.10] Re
 a = 0.4201 [0.1508] AU
 Ag = 425.95 [1241.54] [0.34σ]
 Tefp = 5549 [3968] K [1.20σ]

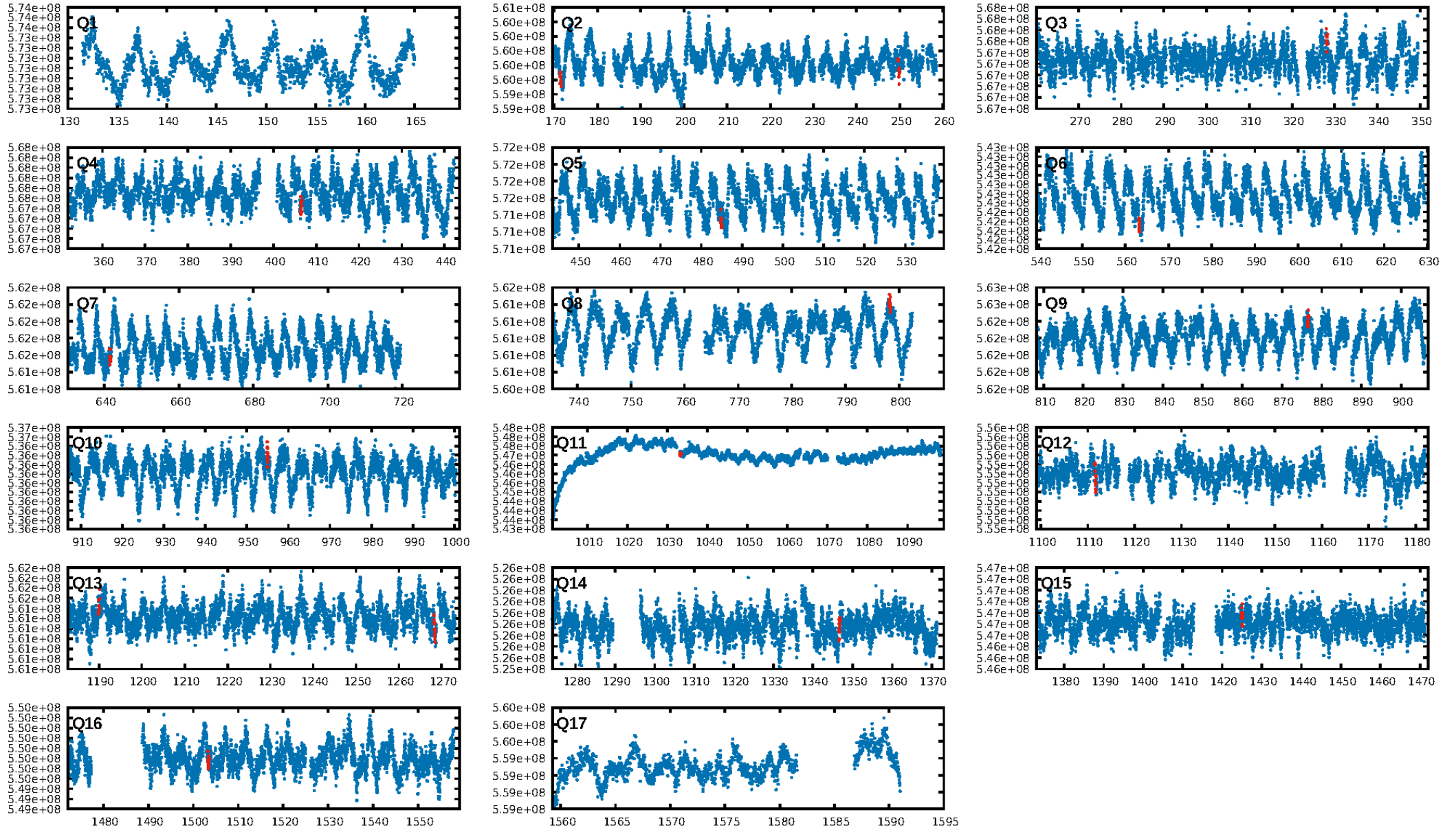
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [56.86σ]
 LongPeriod-sig: 100.0% [294.71σ]
 ModelChiSquare2-sig: 9.7%
 ModelChiSquareGof-sig: 95.8%
 Bootstrap-pfa: 1.31e-09
 RollingBand-fgt: 1.00 [4/4]
 GhostDiagnostic-chr: -0.6551
 Centroid-sig: 5.3%
 Centroid-so: 0.301 arcsec [0.90σ]
 OotOffset-rm: 0.351 arcsec [0.36σ]
 KicOffset-rm: 0.378 arcsec [0.35σ]
 OotOffset-st: 3/2/4/3 [12]
 KicOffset-st: 3/2/4/3 [12]
 DiffImageQuality-fgm: 0.50 [6/12]
 DiffImageOverlap-fno: 0.50 [7/14]

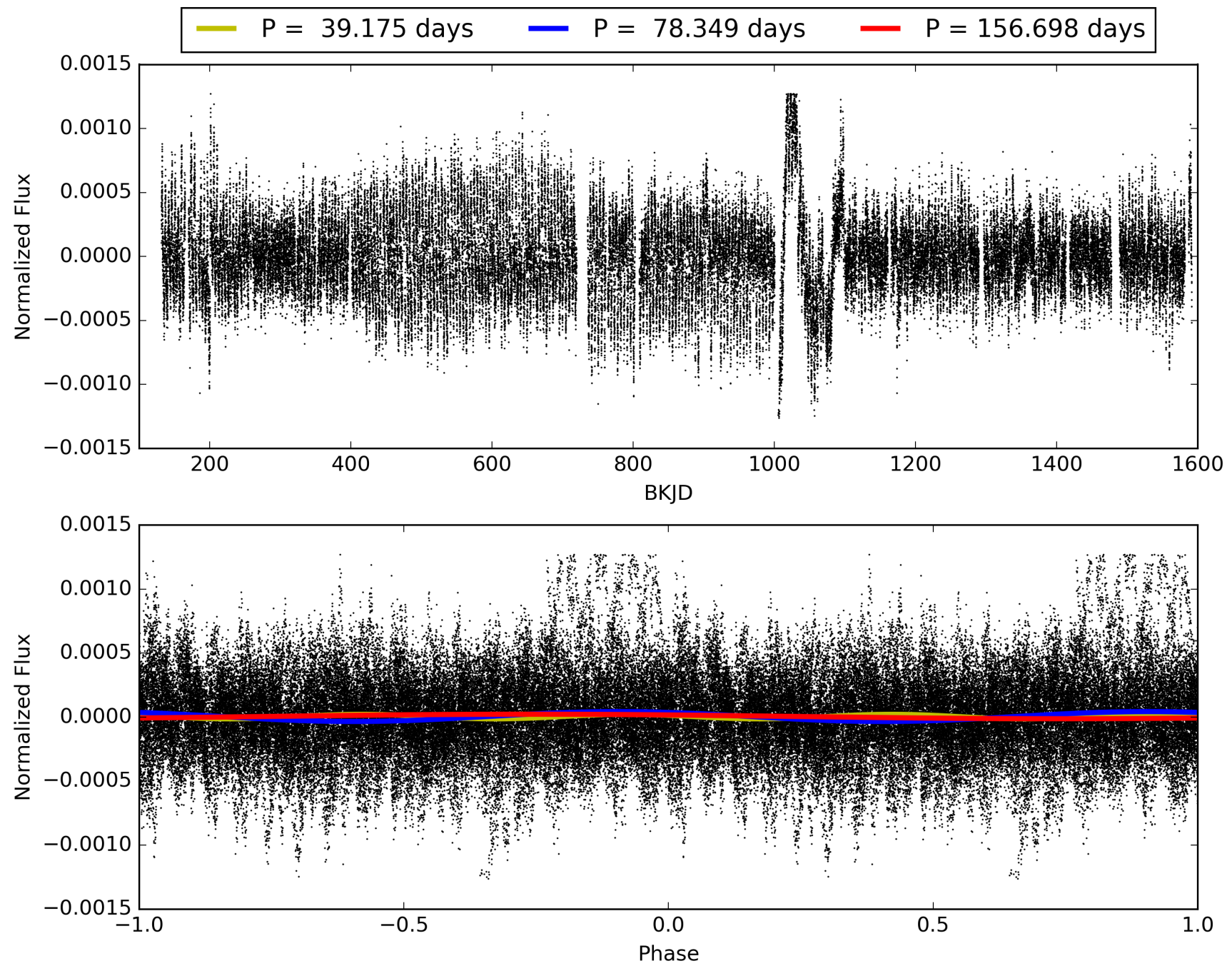
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:49:10 Z

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

TCE 007872212-04, PDC Light Curves

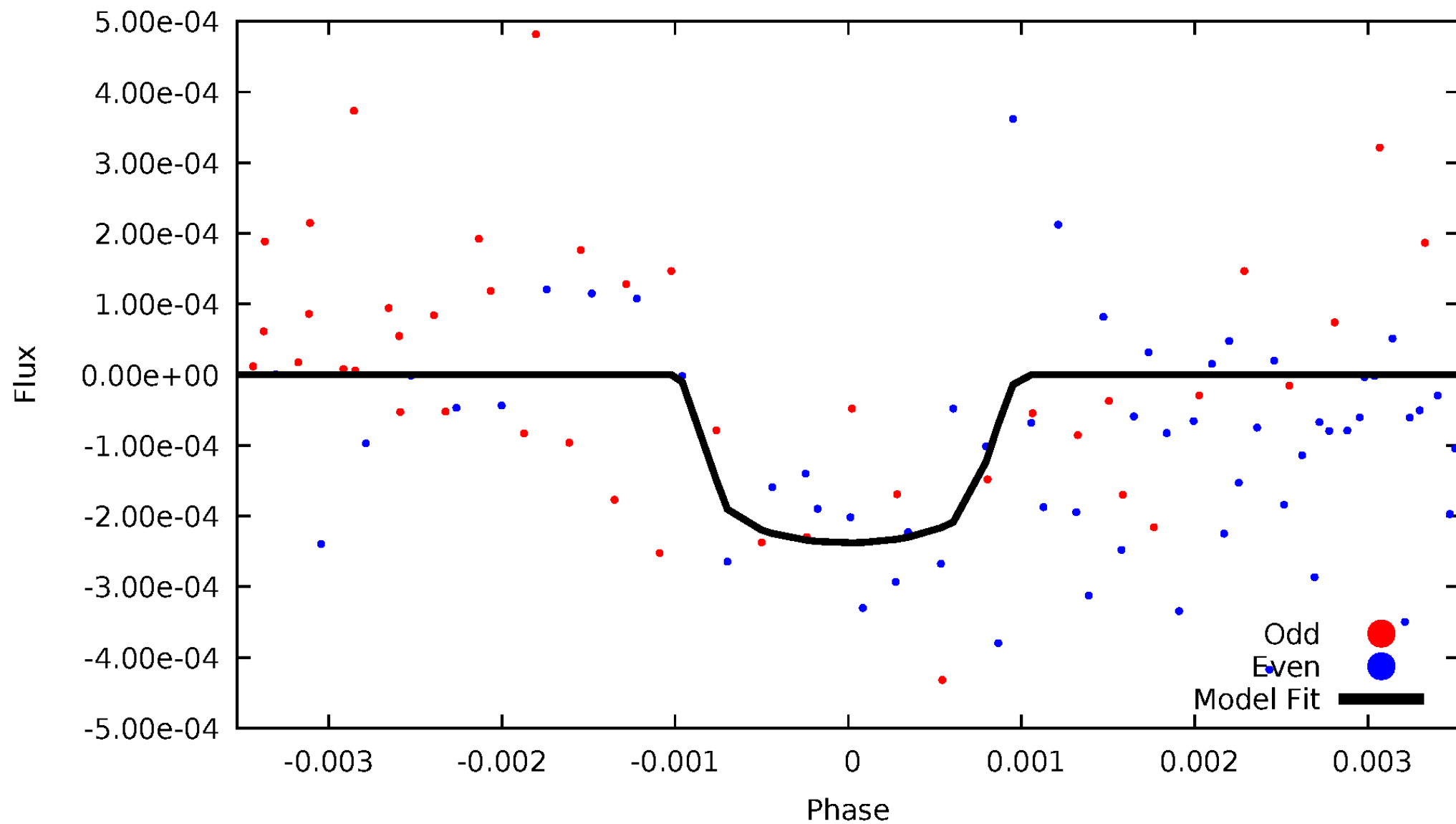


TCE 007872212-04



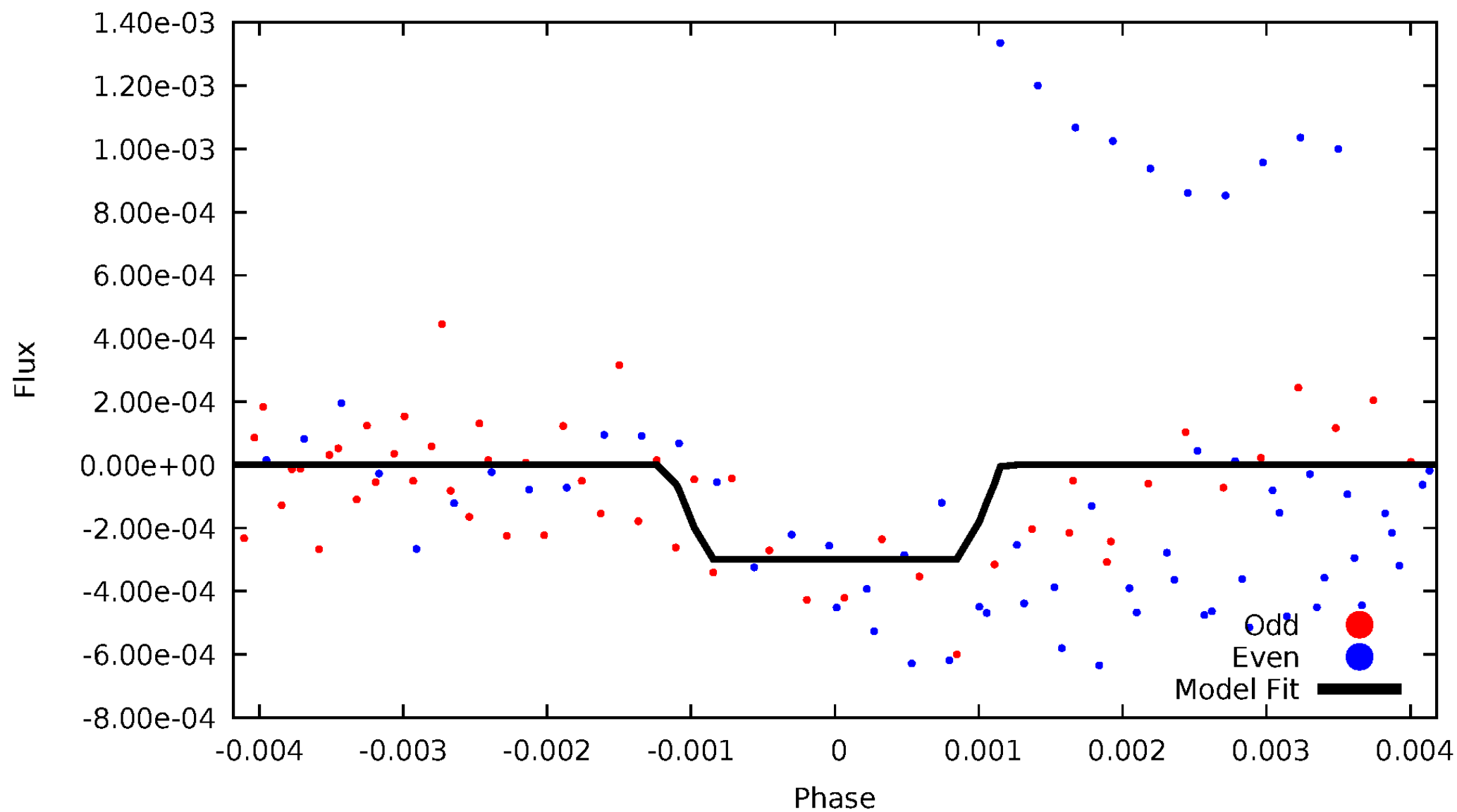
DV Odd/Even

TCE 007872212-04



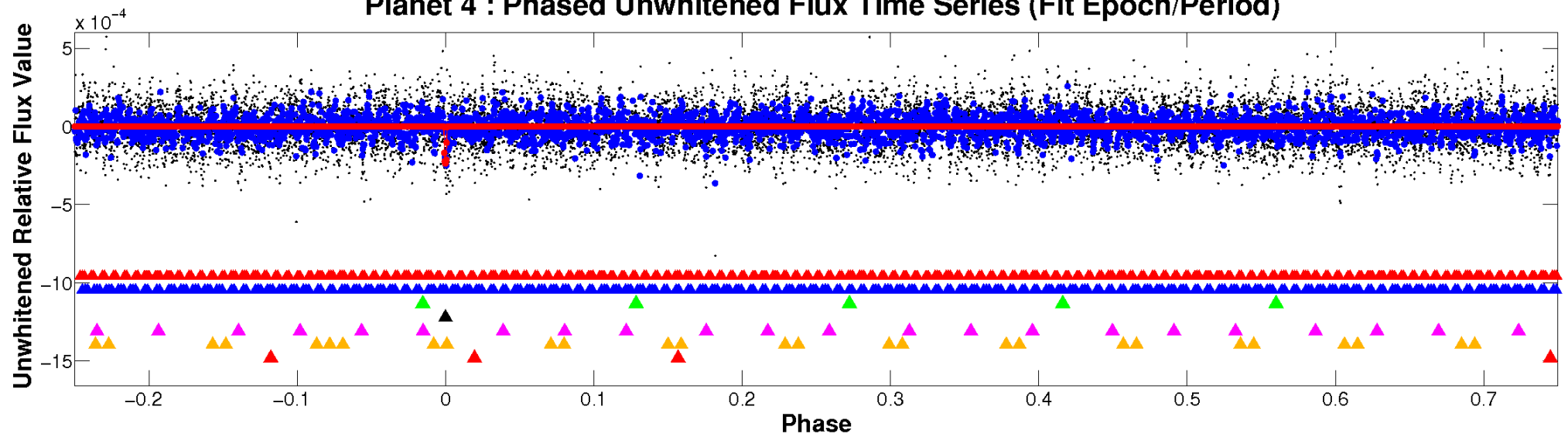
ALT Odd/Even

TCE 007872212-04

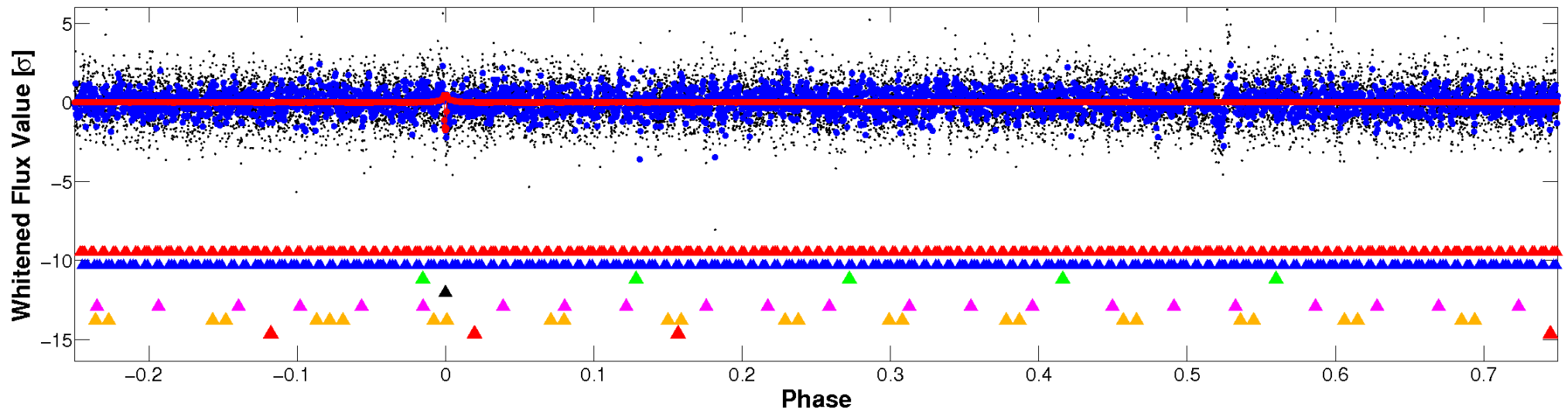


Non-Whitened Vs. Whitened Light Curve

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

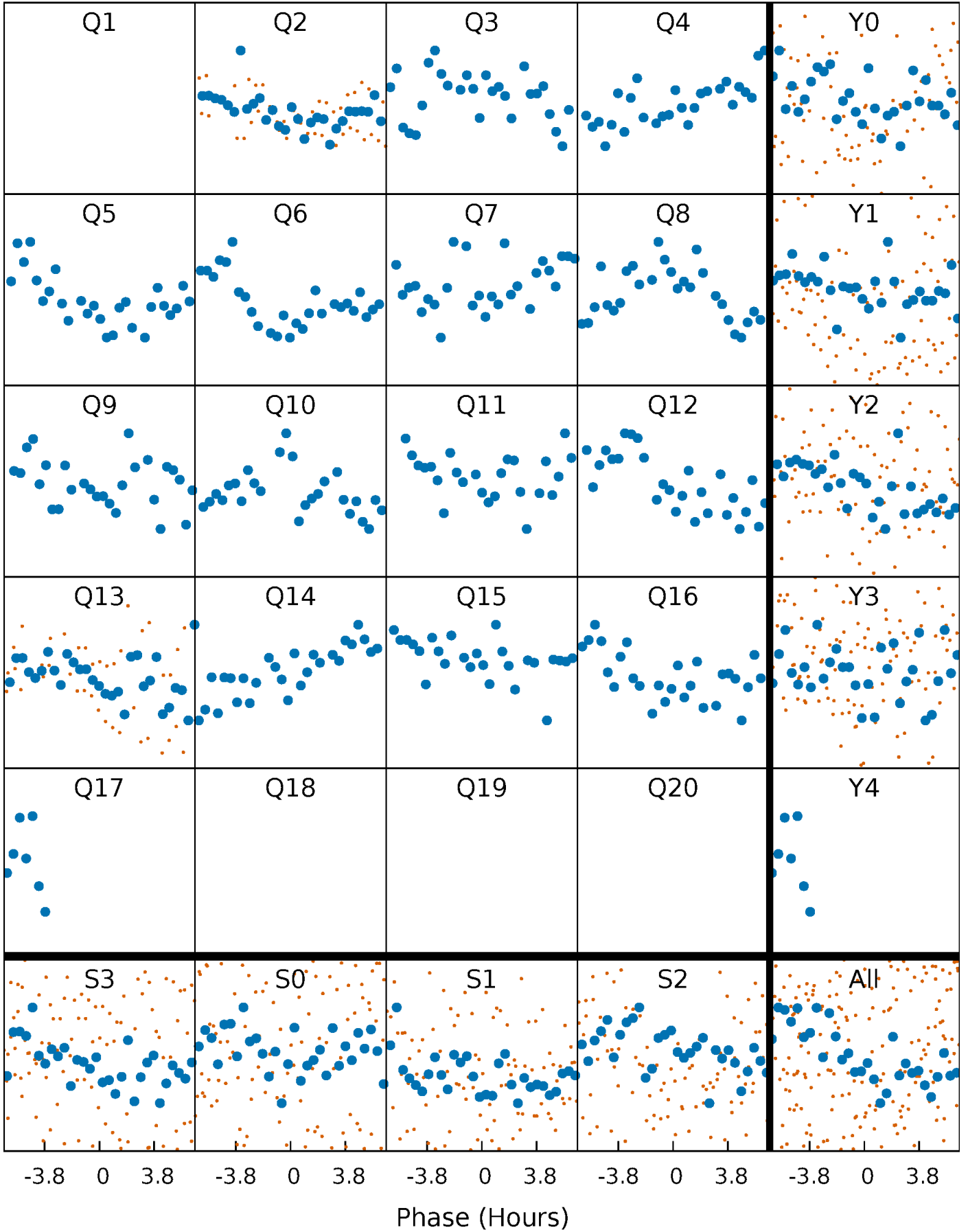


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



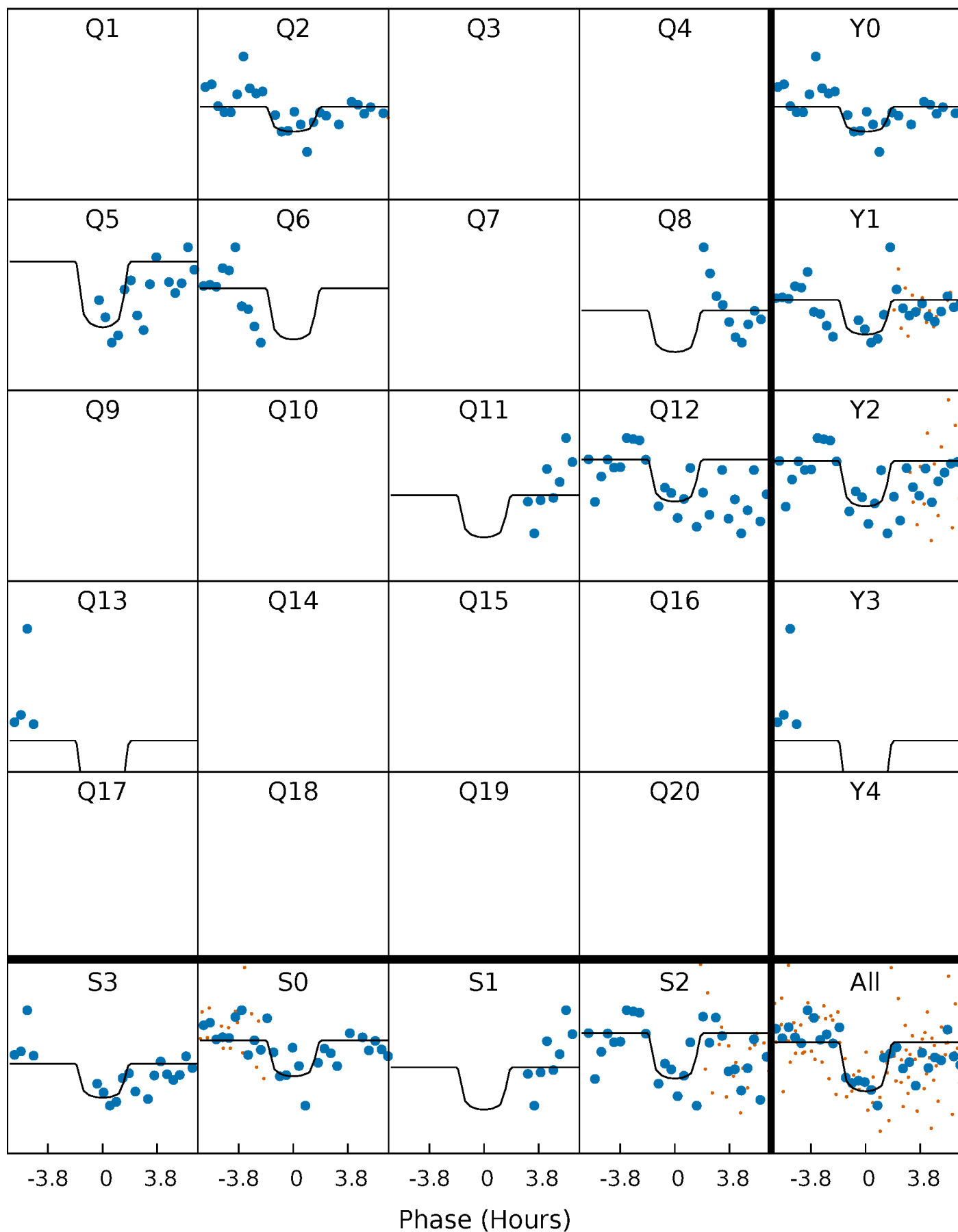
PDC Quarter-Phased Transit Curves

TCE 007872212-04 P= 78.349039 Days $T_0=171.452842$ (BKJD)



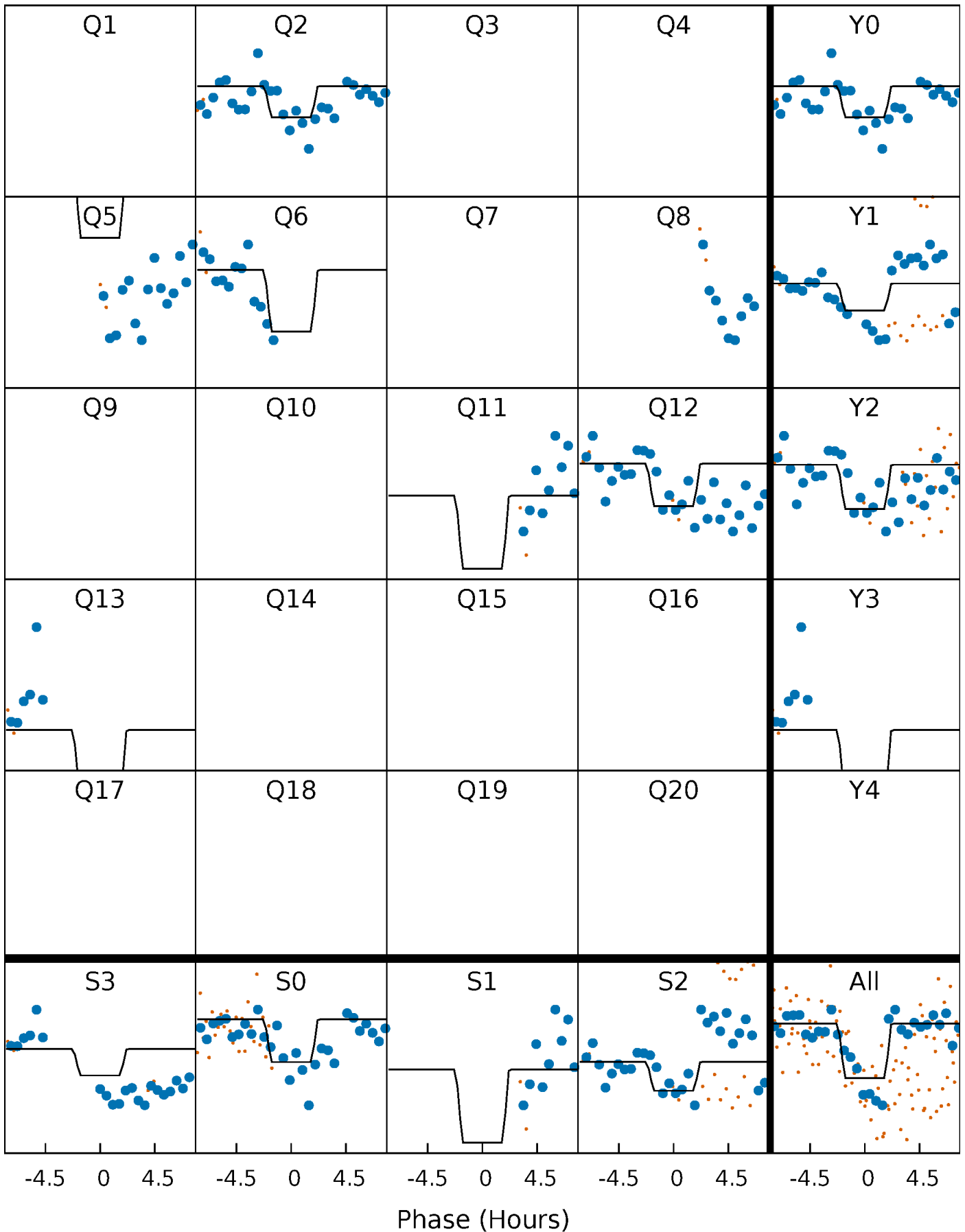
DV Quarter-Phased Transit Curves

TCE 007872212-04 P= 78.349039 Days $T_0=171.452842$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

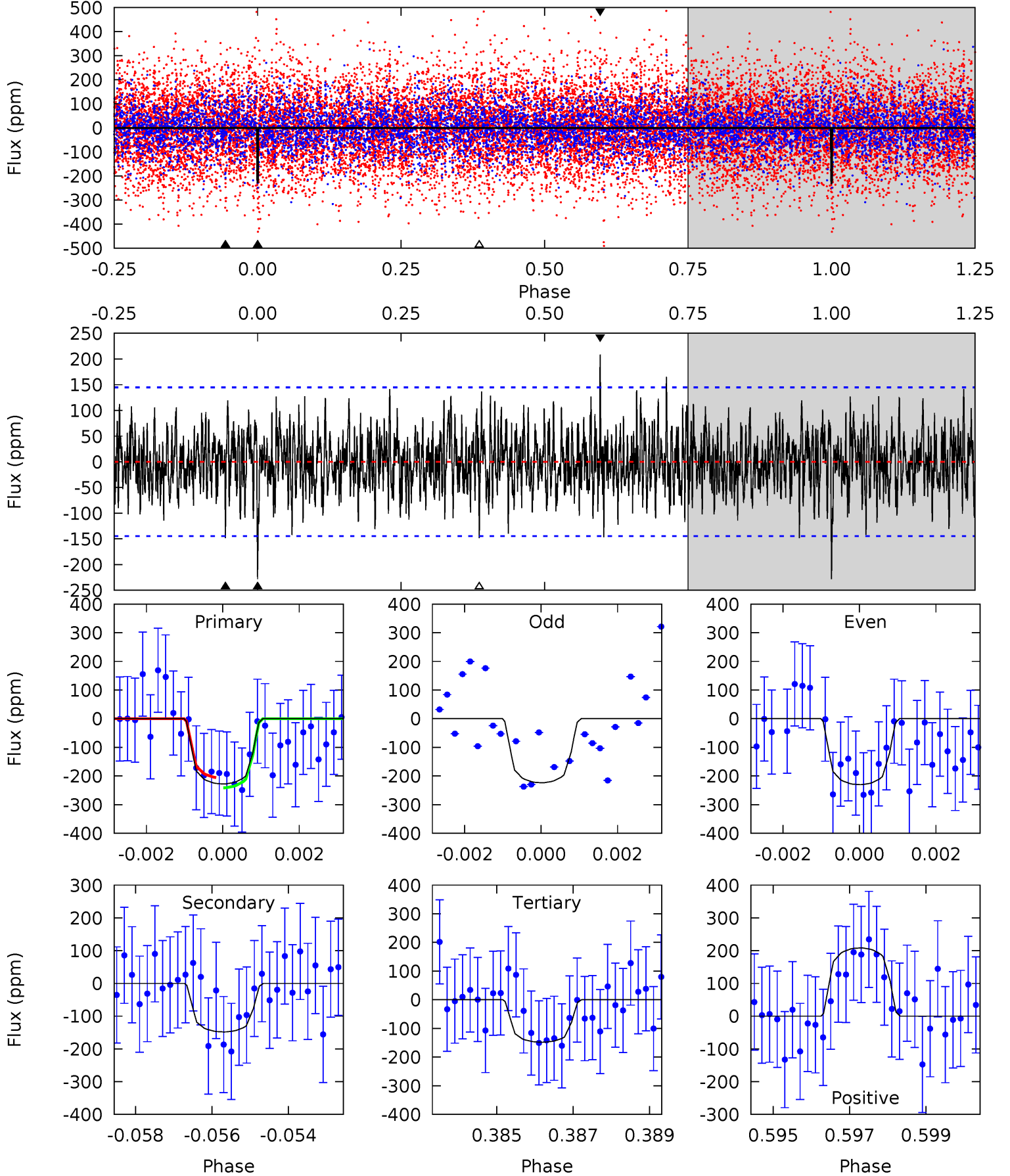
TCE 007872212-04 P= 78.350235 Days $T_0=171.427719$ (BKJD)



DV Model-Shift Uniqueness Test

007872212-04, P = 78.349039 Days, E = 93.103803 Days

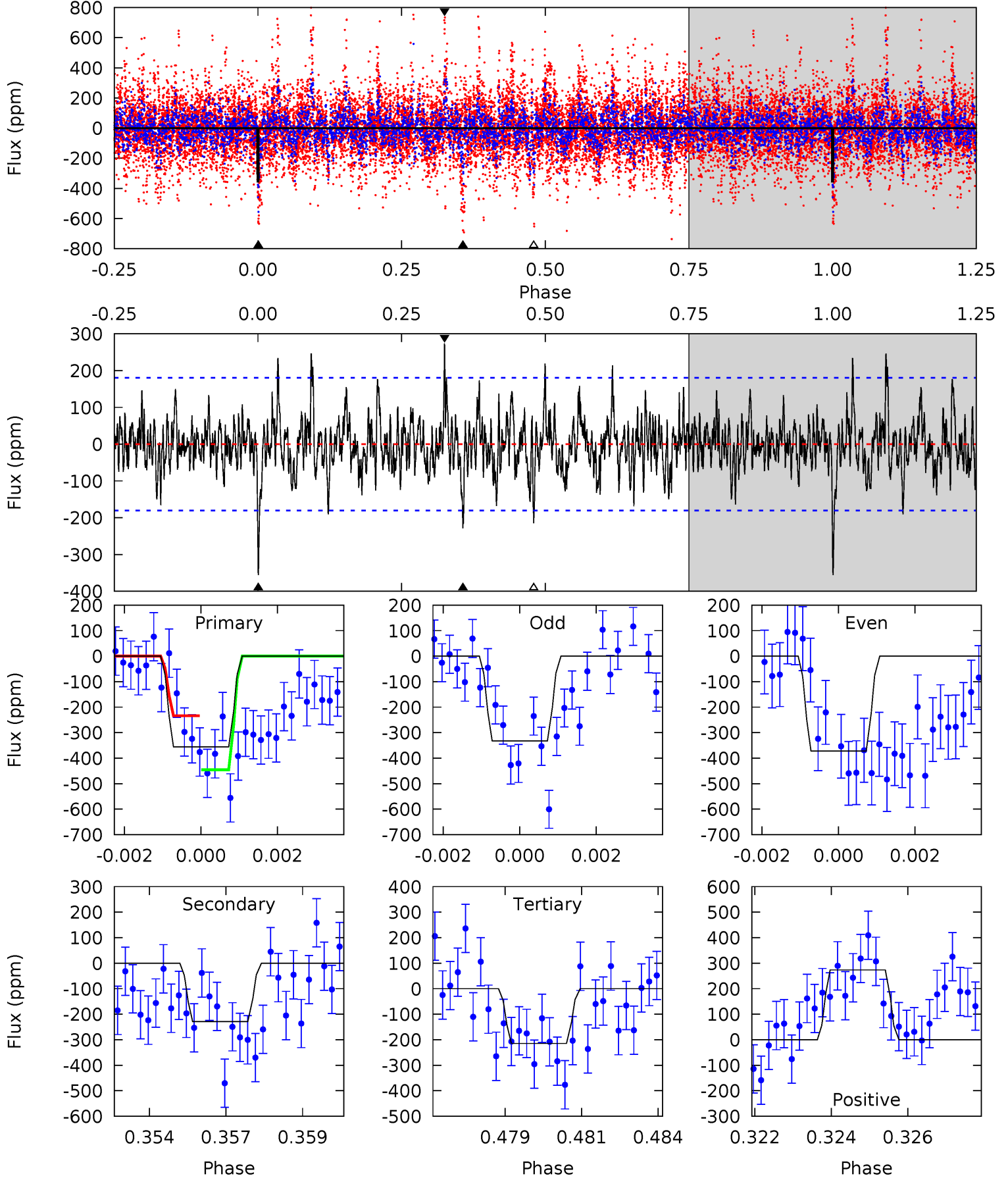
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.39	5.46	5.46	7.67	5.33	3.09	1.74	2.94	0.72	0.00	-2.22	0.12	1.00	0.48	0.63



Alt Model-Shift Uniqueness Test

007872212-04, P = 78.350235 Days, E = 93.077484 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	6.72	6.30	8.03	5.30	3.04	1.80	4.14	2.41	0.42	-1.30	0.57	1.09	0.43	3.04



Stellar Parameters For KIC 007872212

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-162}	$3.625^{+0.332}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$3.236^{+0.409}_{-1.227}$	$1.613^{+0.220}_{-0.330}$	$0.067^{+0.149}_{-0.017}$
	+3%/-3%	+9%/-2%	+300%/-250%	+13%/-38%	+14%/-20%	+222%/-25%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007872212-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-148 ± 27	$7.15^{+6.68}_{-4.63}$	1085^{+56}_{-92}	4899^{+3312}_{-1050}	291^{+1999}_{-213}
Alt.	-229 ± 34	$7.71^{+7.27}_{-4.89}$	1085^{+56}_{-94}	5173^{+3919}_{-1103}	378^{+2645}_{-278}

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 $A_{obs} \gg 1.0$

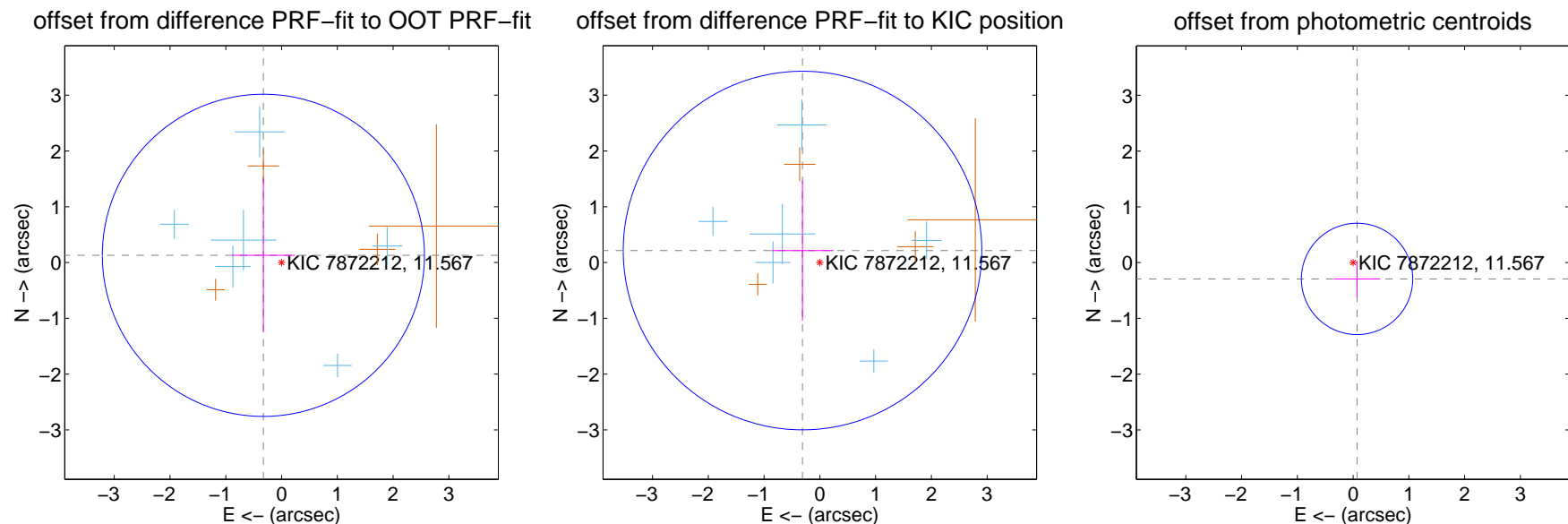
DV Centroid Data

Supplemental centroid analysis for 007872212-04. **Kepler magnitude: 11.57.** Transit SNR 6.78

There are 6 quarters with good PRF difference image offsets

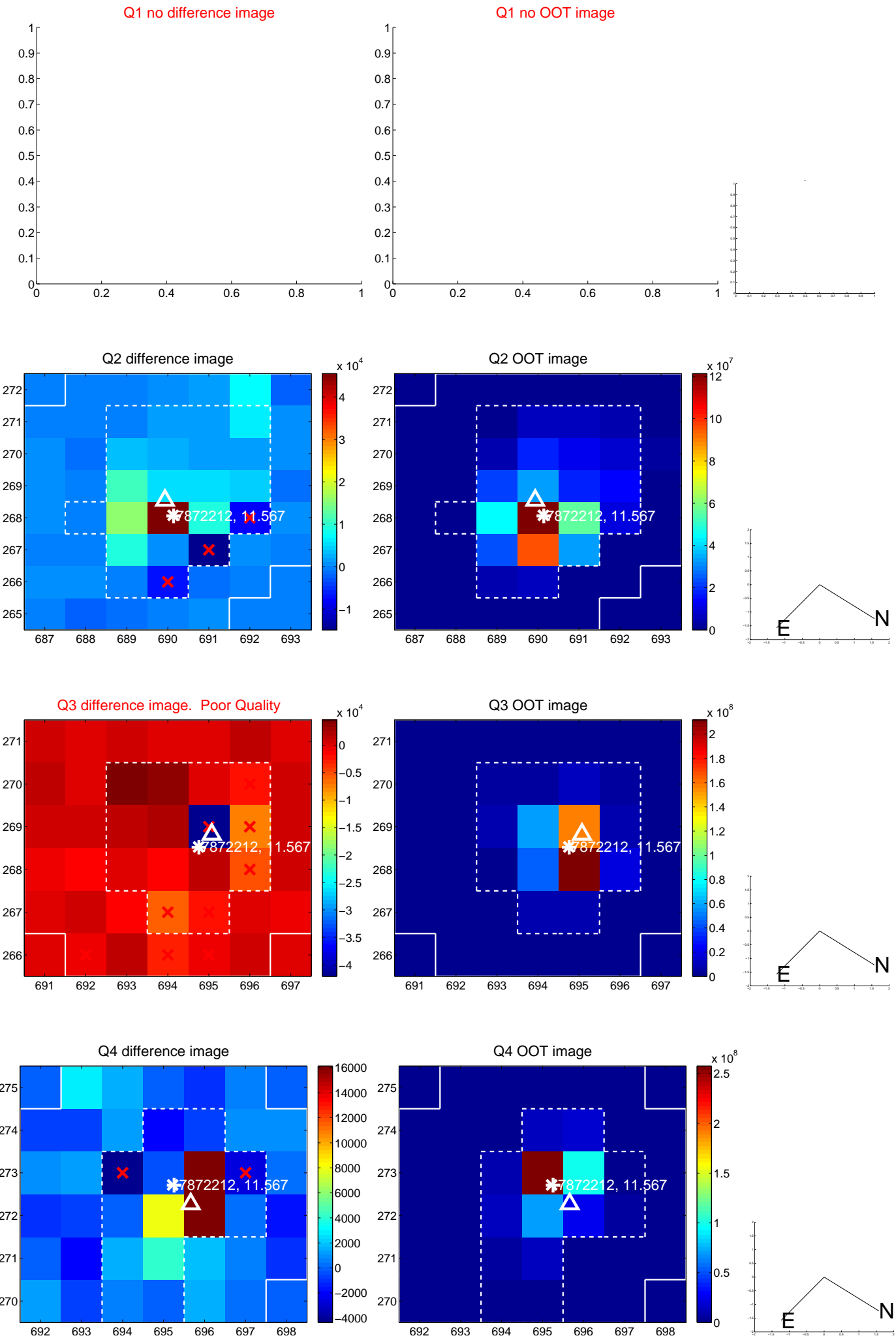
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.351 ± 0.962	0.36	0.326 ± 0.565	0.129 ± 1.380
PRF-fit source offset from KIC position	0.378 ± 1.071	0.35	0.311 ± 0.556	0.215 ± 1.256
photometric centroid source offset	0.30 ± 0.33	0.90	-0.07 ± 0.42	-0.29 ± 0.33

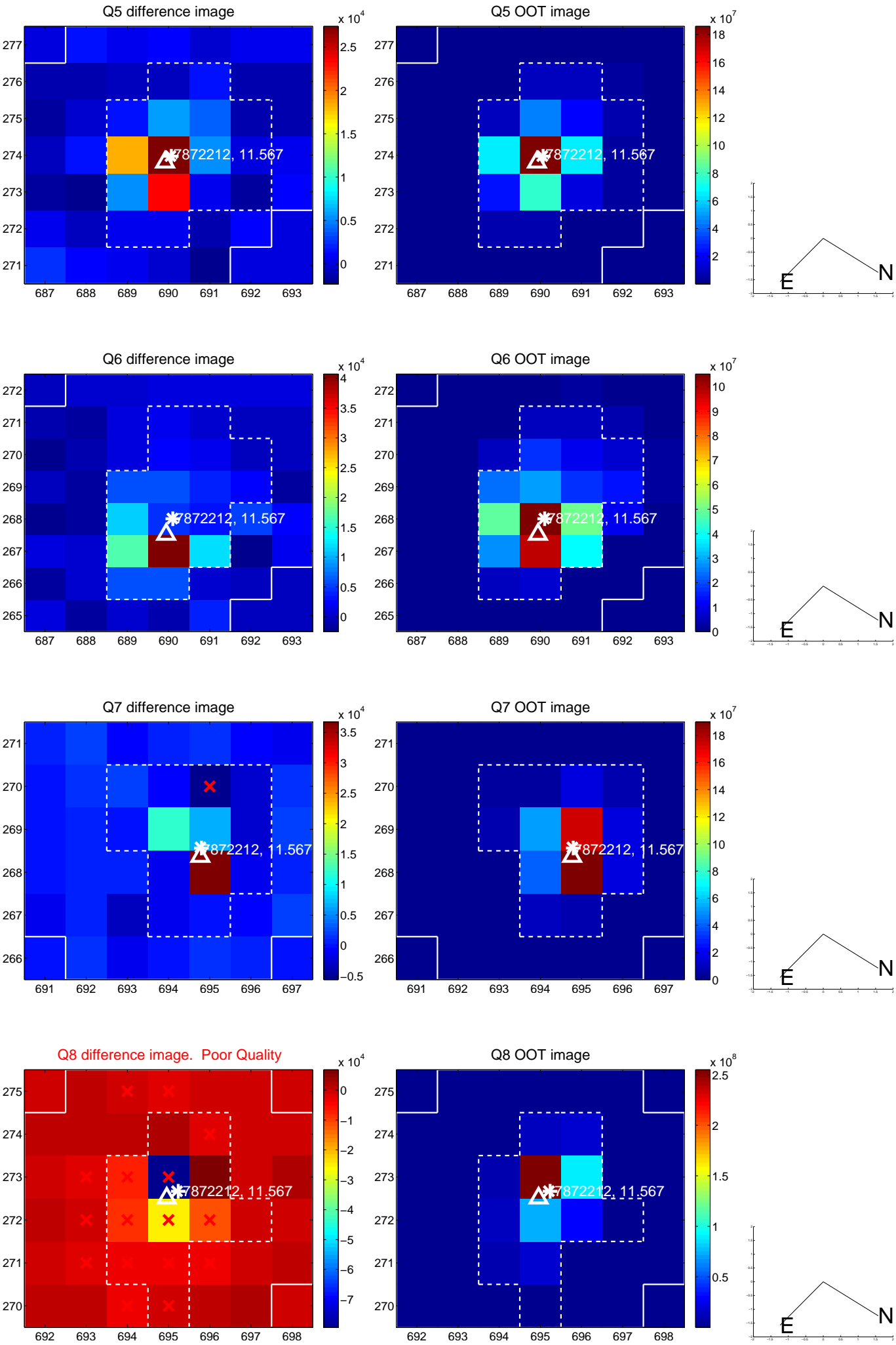


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

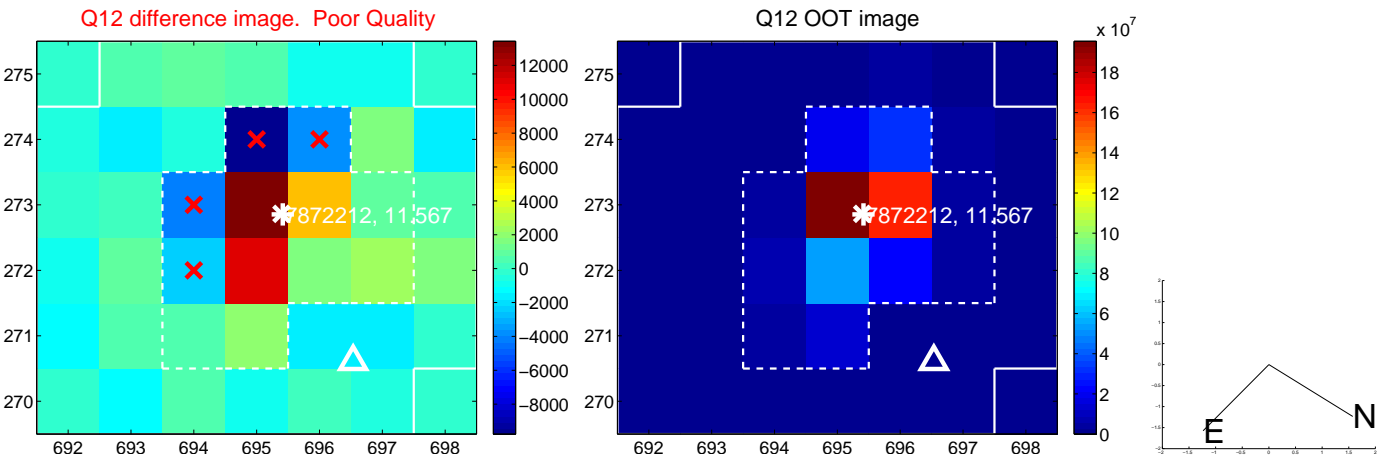
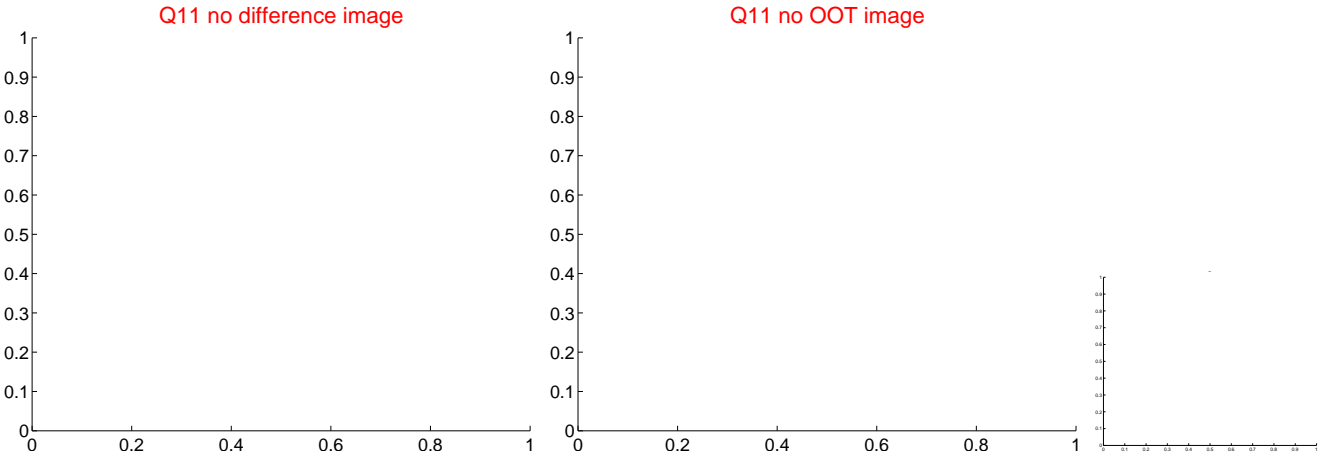
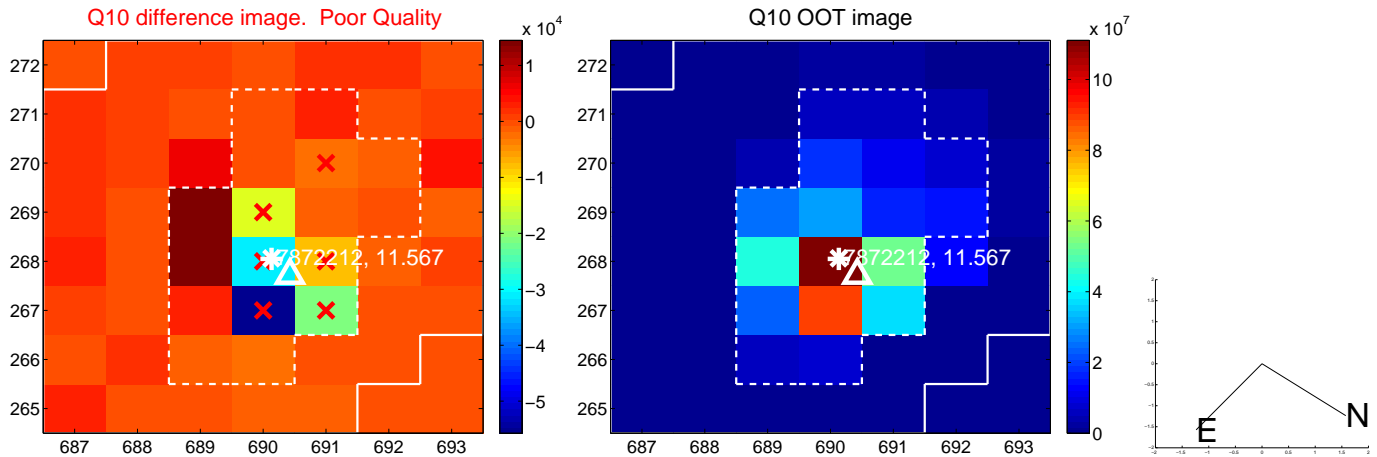
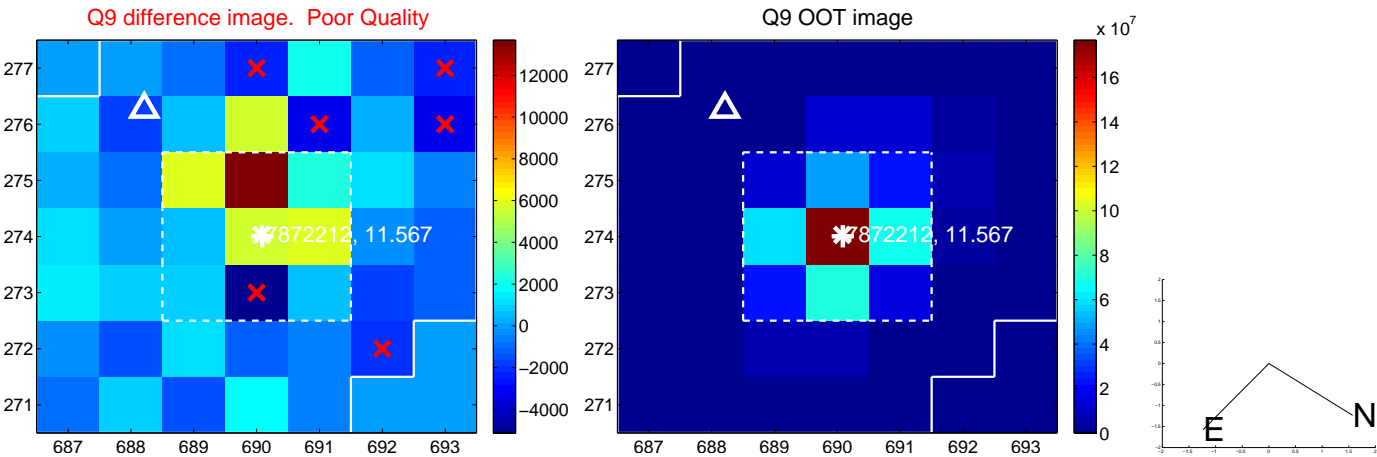
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



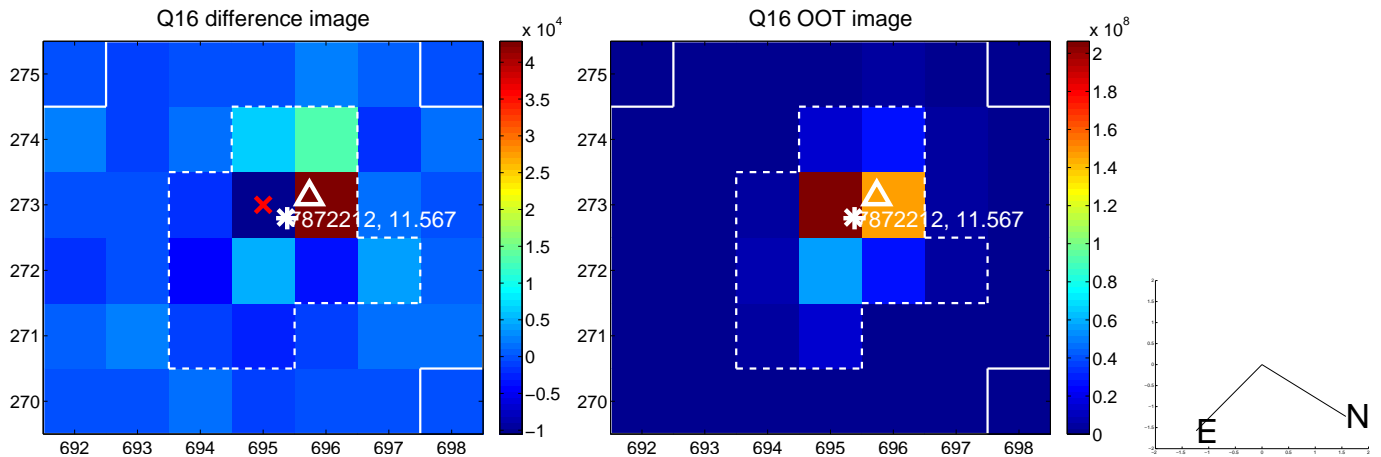
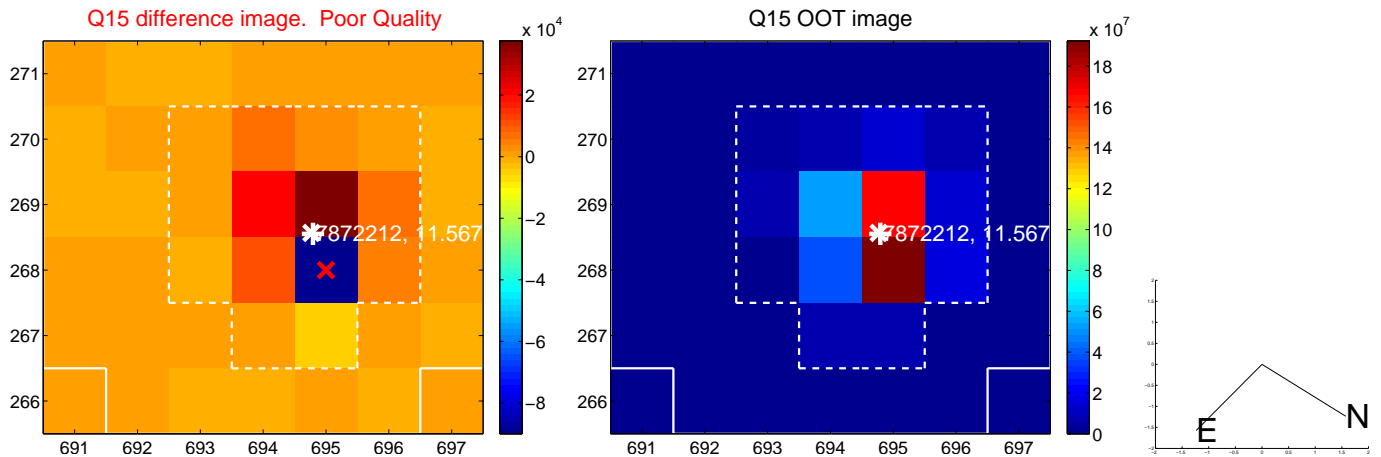
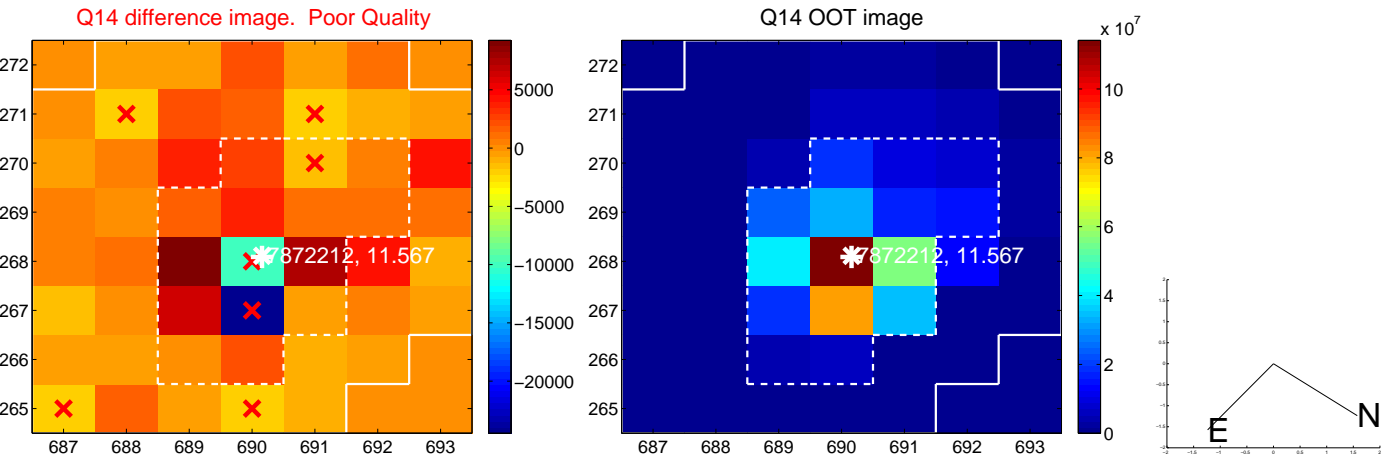
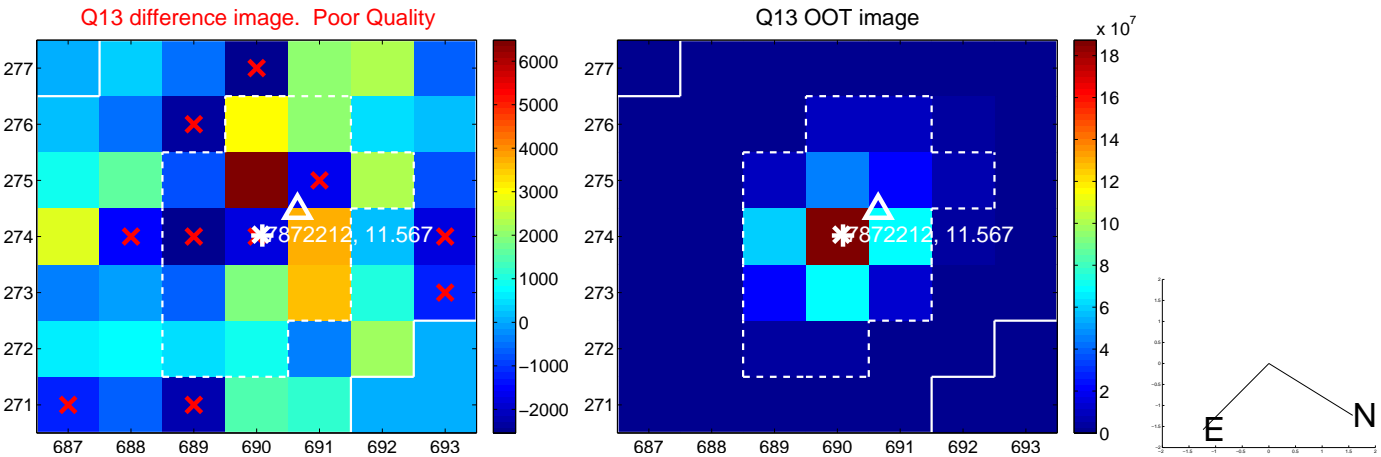
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



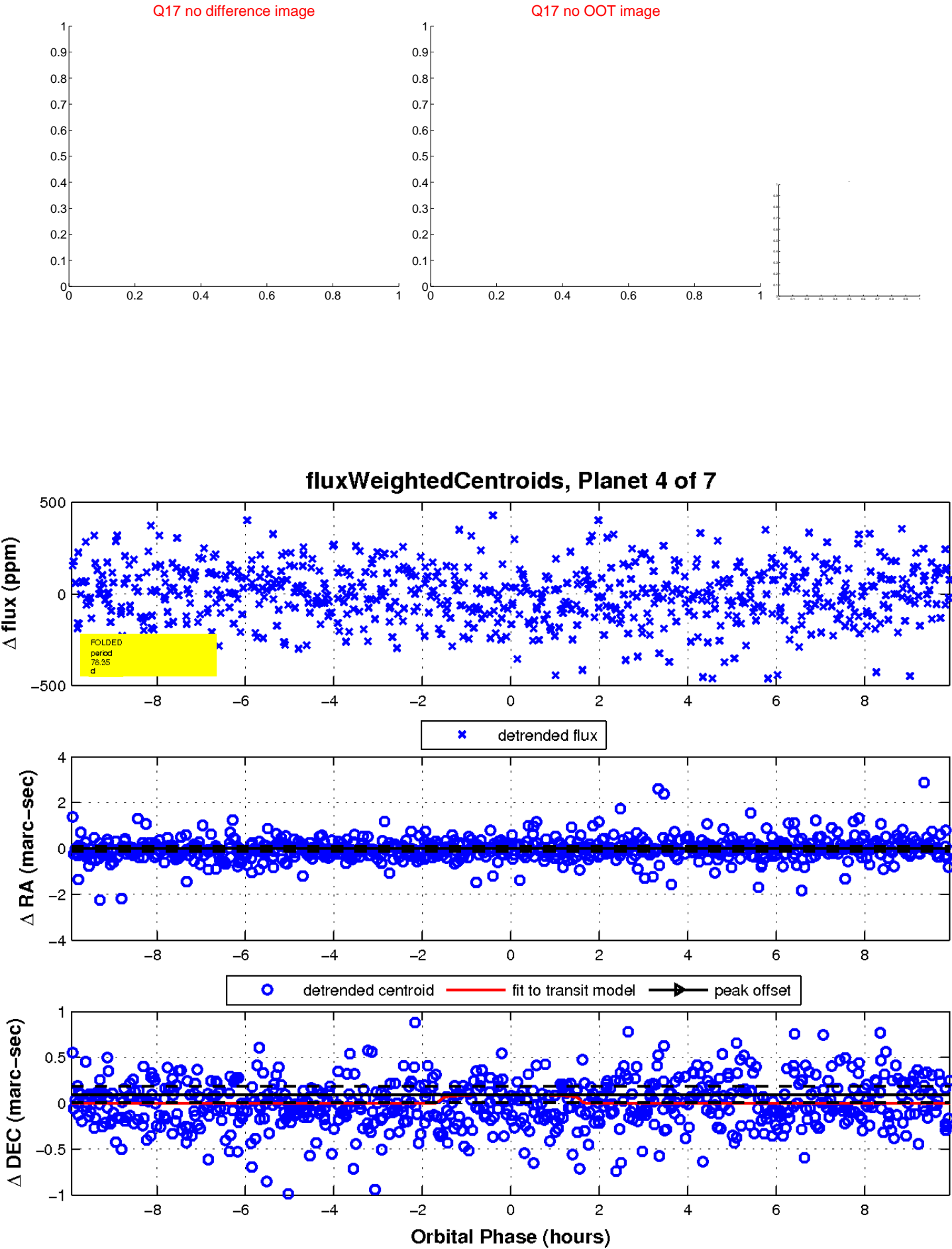
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

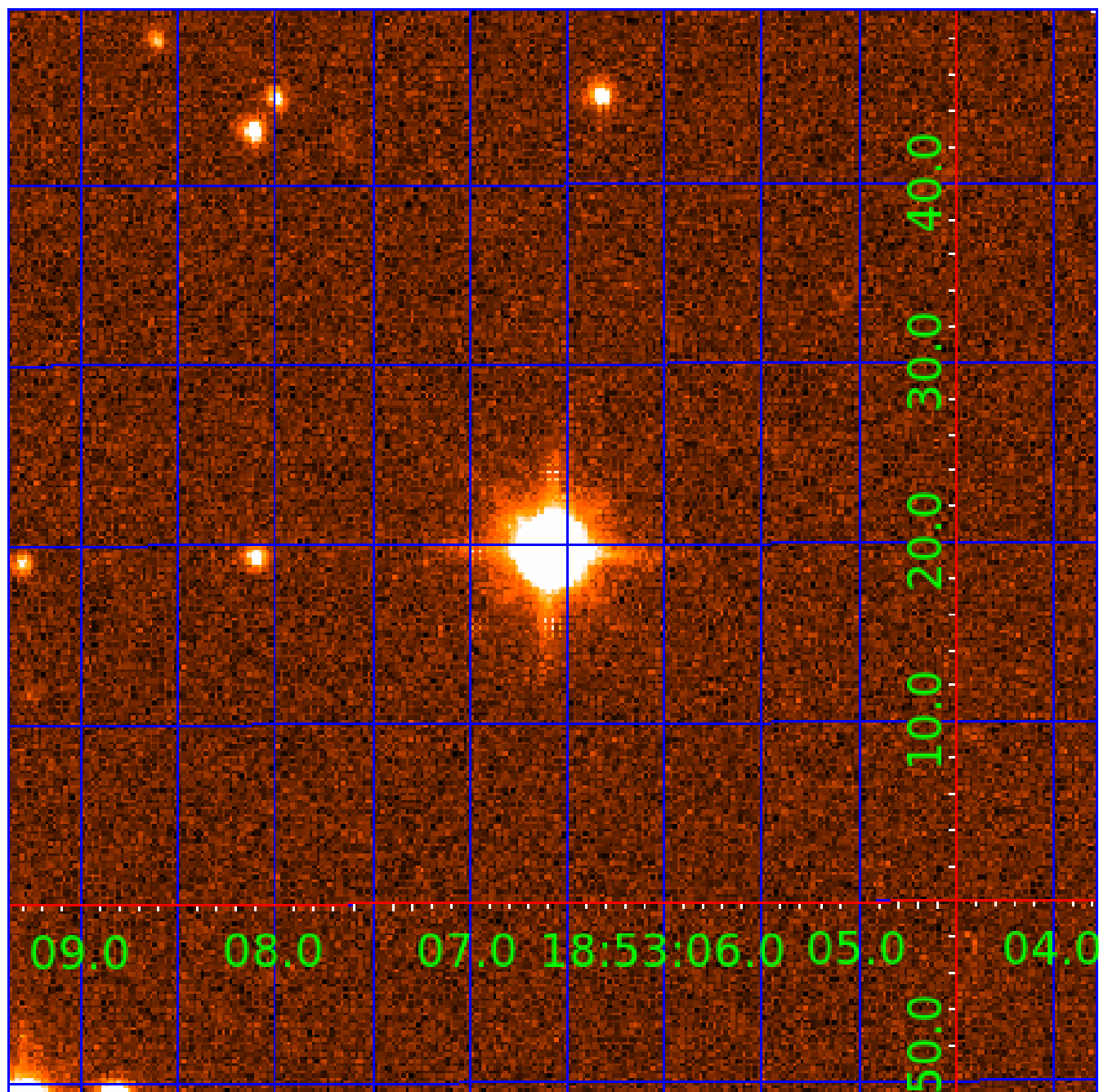


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007872212

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})
007872212-01	OBS	No	4.574311	134.084776	19.7	14.955	8.2	4.6	3.24	6453	1.64	4069.23
007872212-02	OBS	No	4.571540	131.943111	41.8	13.660	10.4	11.0	3.24	6453	2.52	4072.52
007872212-03	OBS	No	302.128440	136.977375	234.4	17.919	12.7	5.7	3.24	6453	5.27	15.24
007872212-04	OBS	No	78.349039	171.452842	237.7	3.317	9.5	6.8	3.24	6453	5.51	92.17
007872212-05	OBS	No	67.620767	160.520689	204.8	3.082	8.6	6.9	3.24	6453	5.16	112.16
007872212-06	OBS	No	54.295050	164.647359	205.1	5.919	8.3	8.2	3.24	6453	5.17	150.29
007872212-07	OBS	No	402.502509	151.471020	290.3	8.167	7.4	7.5	3.24	6453	6.05	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007872212-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
007872212-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007872212-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
007872212-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007872212-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007872212-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007872212-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

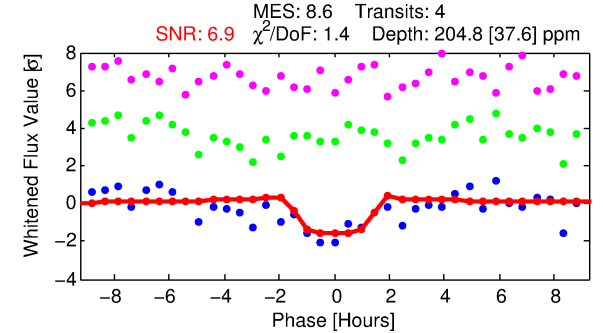
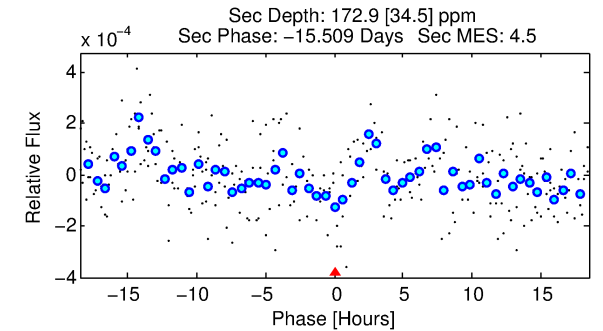
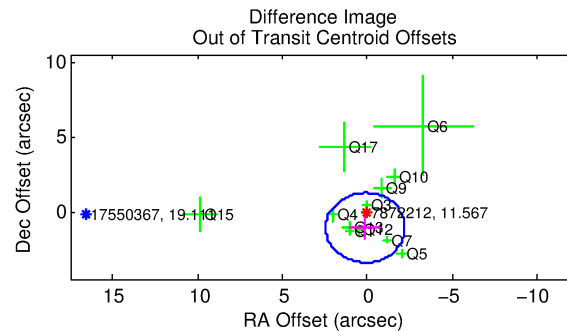
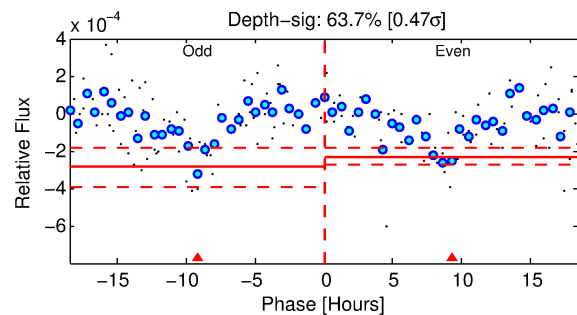
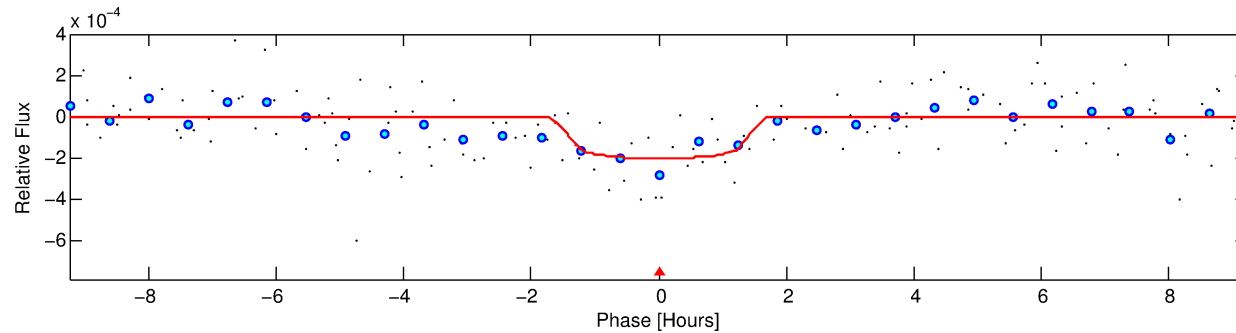
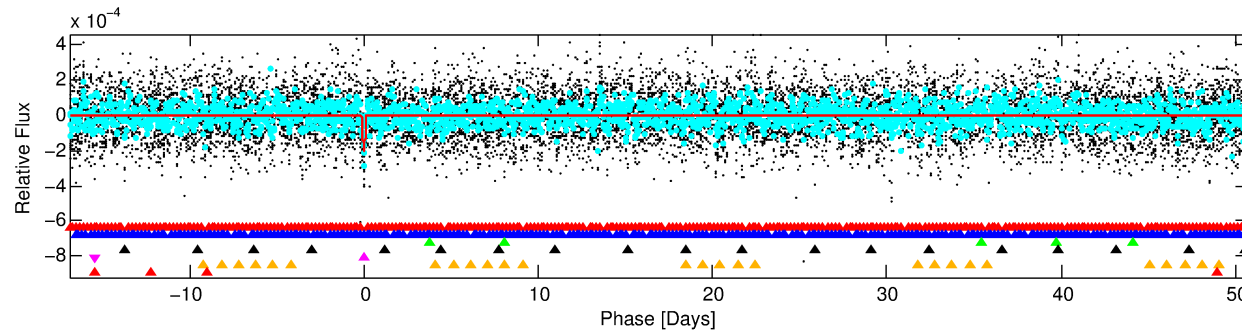
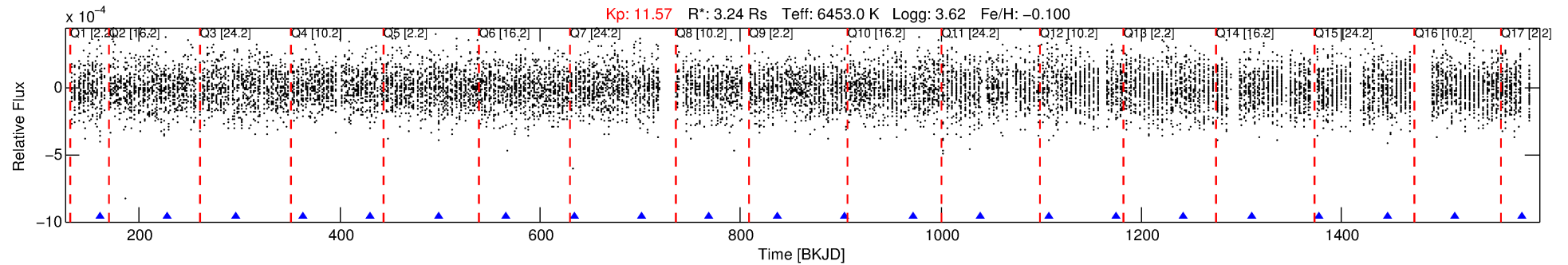
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007872212-05

No Significant Match Found

DV One-Page Summary

KIC: 7872212 Candidate: 5 of 7 Period: 67.621 d



DV Fit Results:

Period = 67.62077 [0.00083] d
Epoch = 160.5207 [0.0106] BKJD
Rp/R* = 0.0146 [0.0187]
a/R* = 100.43 [717.86]
b = 0.82 [2.89]
Seff = 112.16 [64.79]
Teq = 830 [120] K
Rp = 5.16 [6.90] Re
a = 0.3809 [0.1367] AU
Ag = 518.08 [1364.04] [0.38 σ]
Teffp = 6121 [3937] K [1.34 σ]

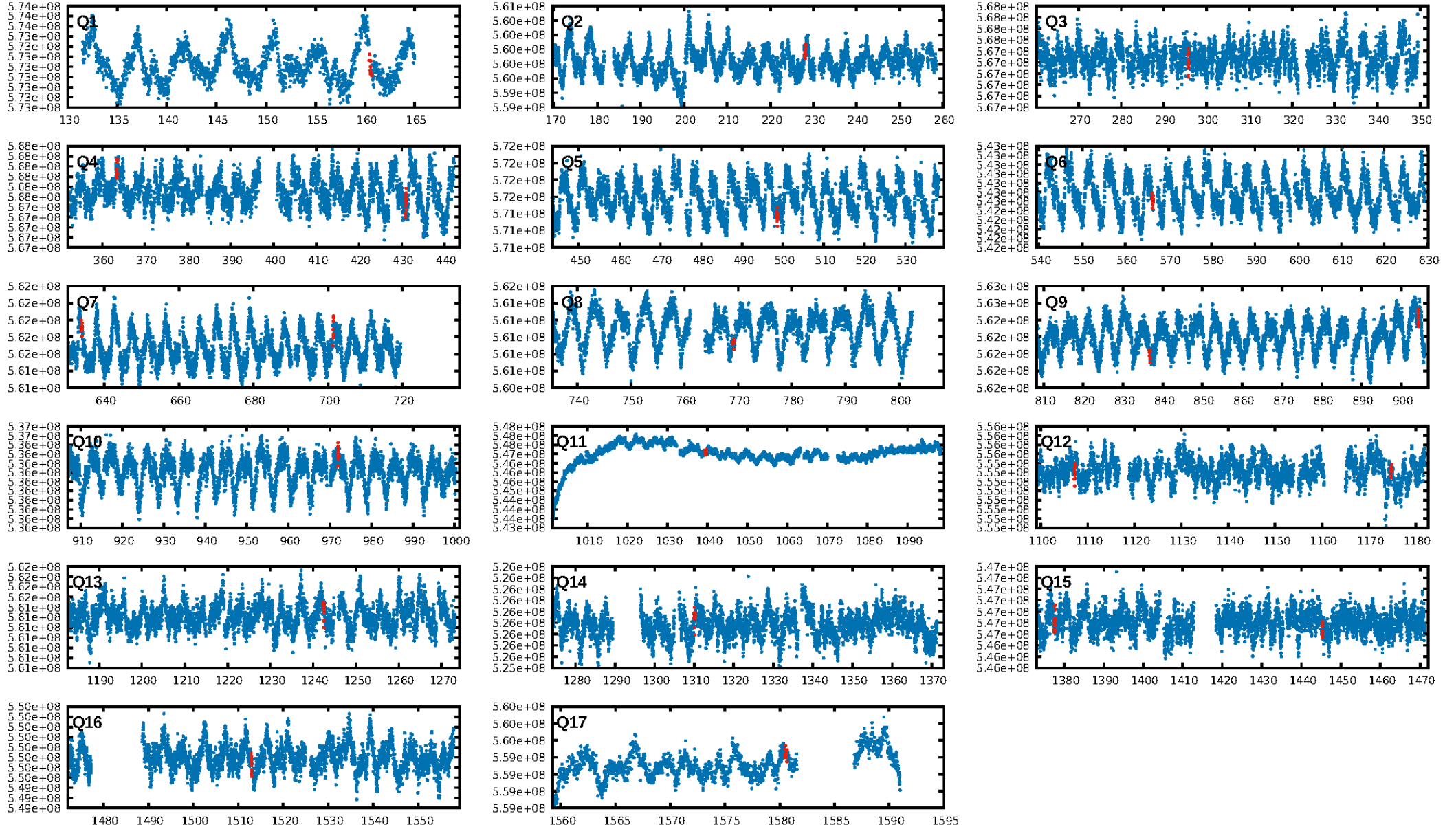
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.93 σ]
LongPeriod-sig: 100.0% [56.86 σ]
ModelChiSquare2-sig: 17.8%
ModelChiSquareGof-sig: 66.2%
Bootstrap-pfa: 1.17e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.4597
Centroid-sig: 3.4%
Centroid-so: 0.874 arcsec [2.15 σ]
OotOffset-rm: 1.081 arcsec [1.39 σ]
KicOffset-rm: 0.992 arcsec [1.23 σ]
OotOffset-st: 2/3/2/5 [12]
KicOffset-st: 2/3/2/5 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.47 [8/17]

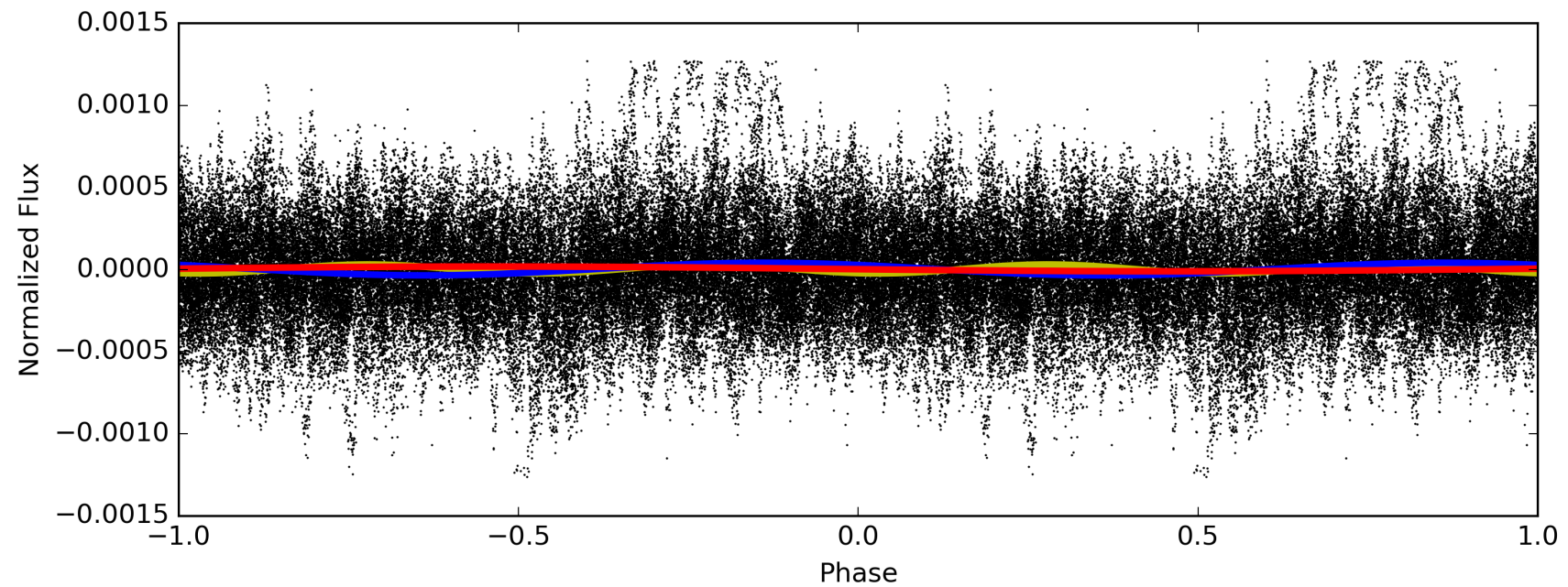
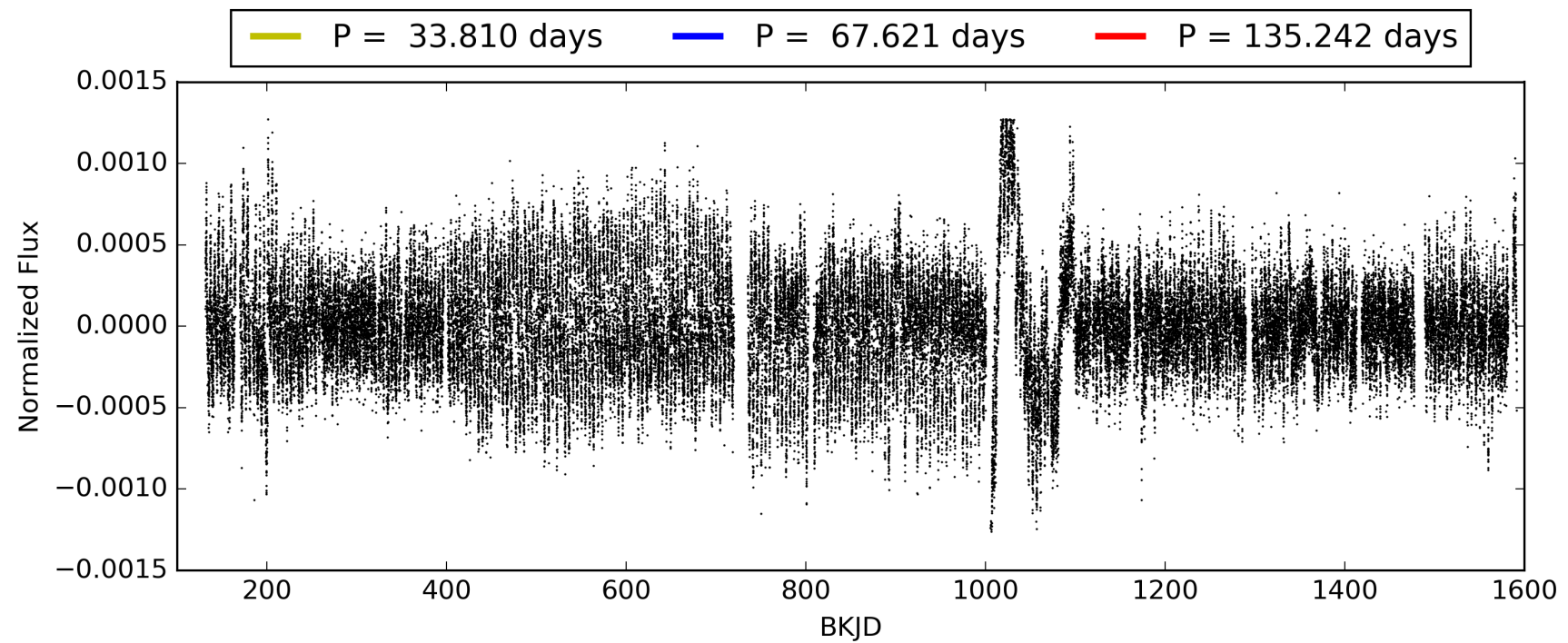
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:49:15 Z

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

TCE 007872212-05, PDC Light Curves

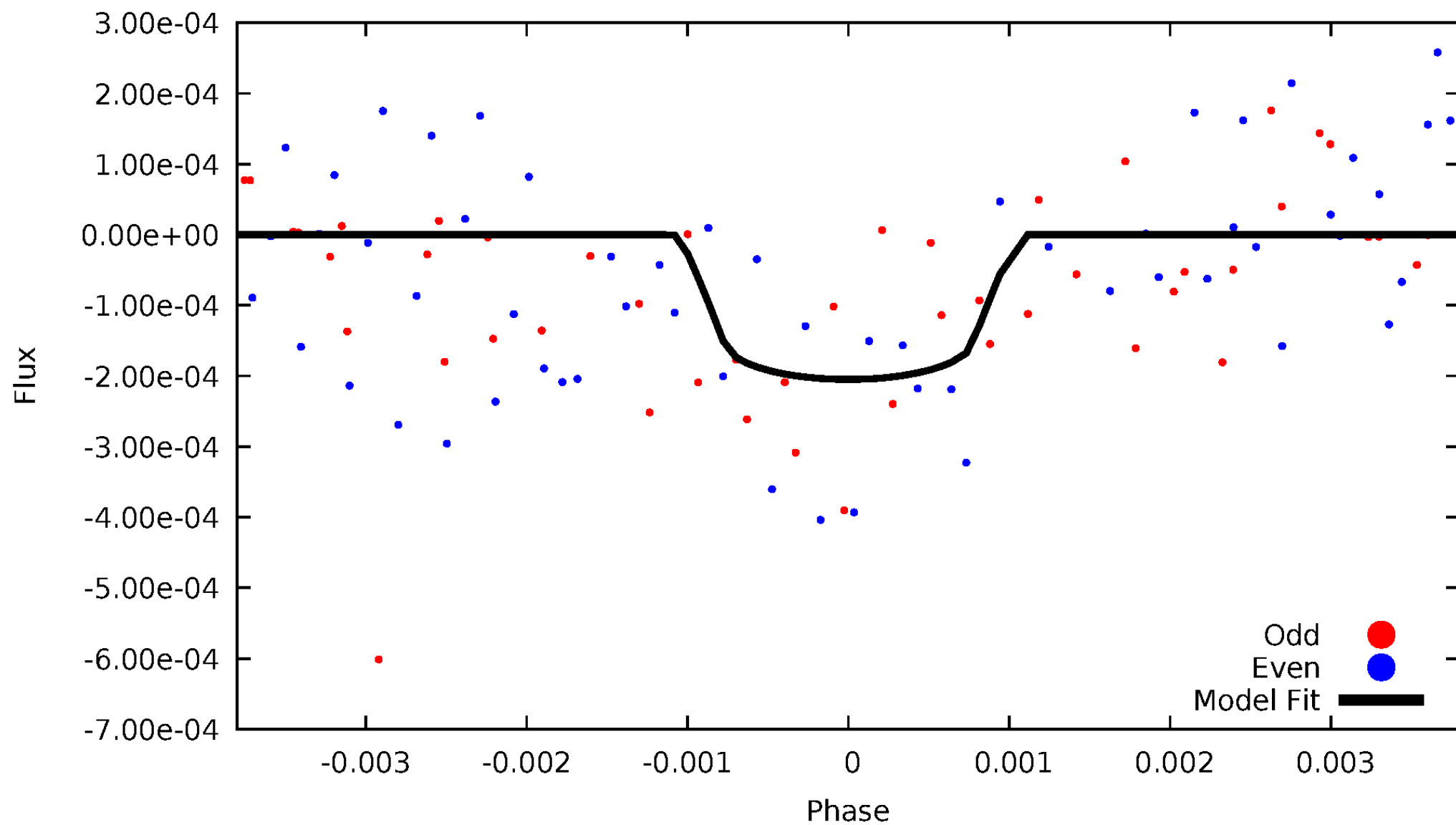


TCE 007872212-05



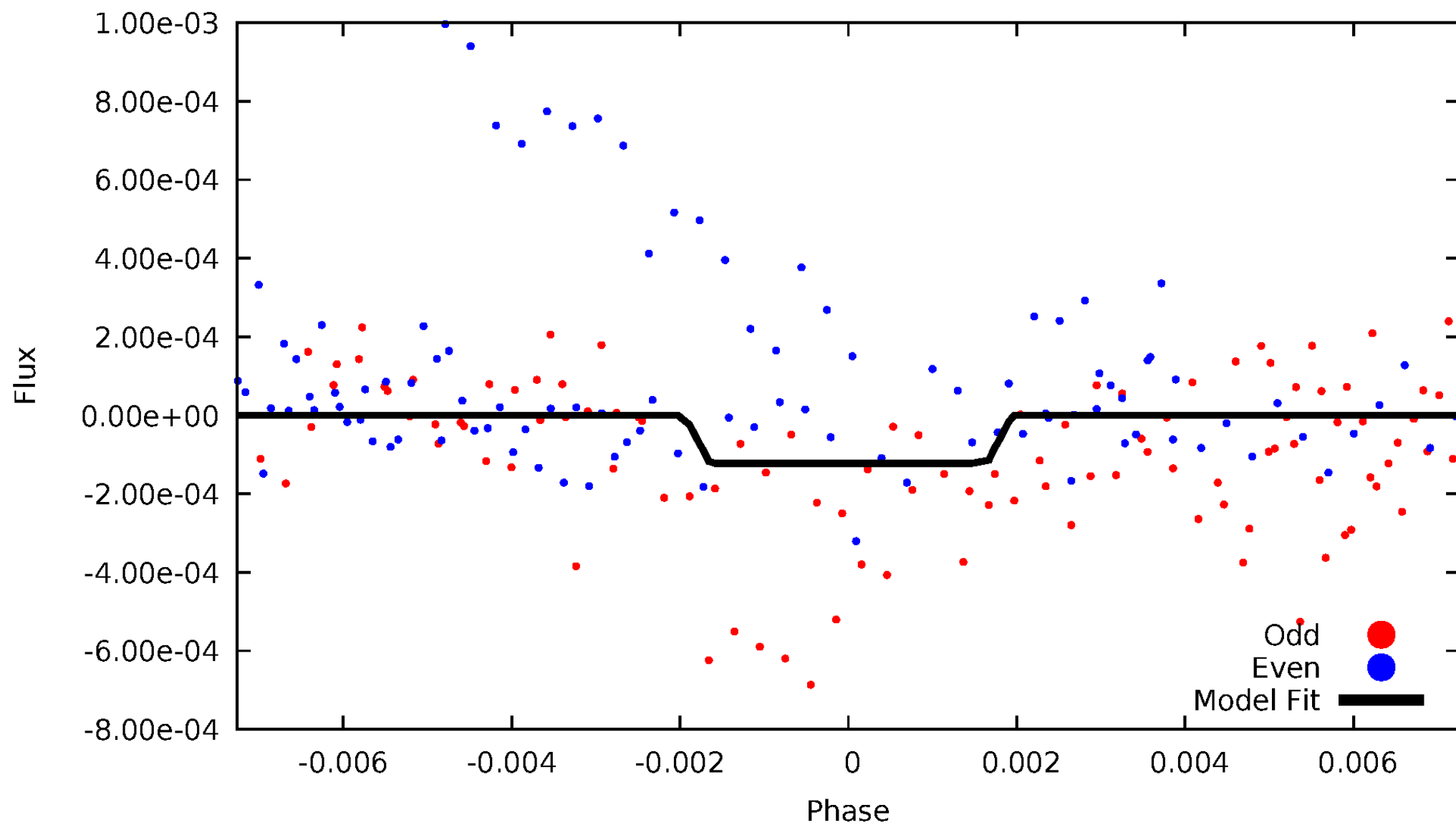
DV Odd/Even

TCE 007872212-05

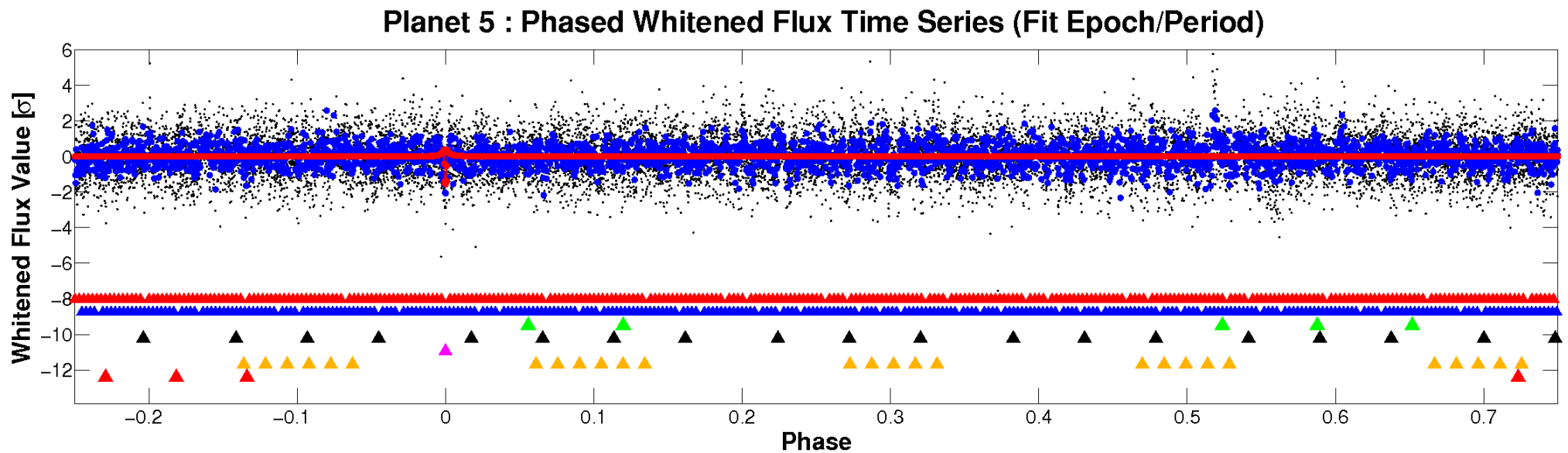
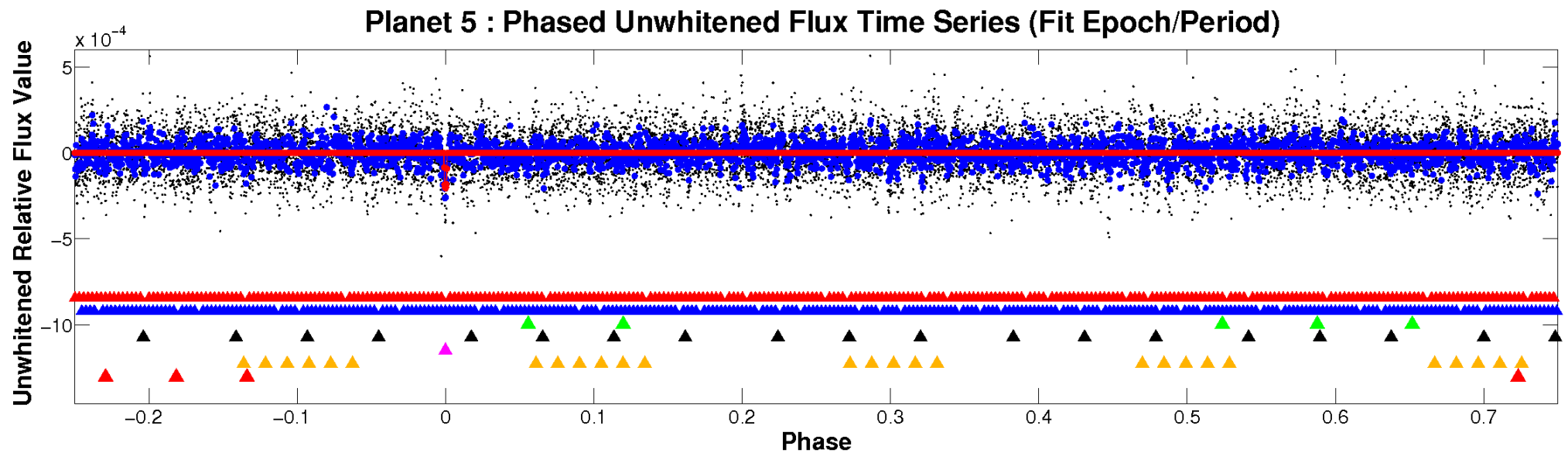


ALT Odd/Even

TCE 007872212-05

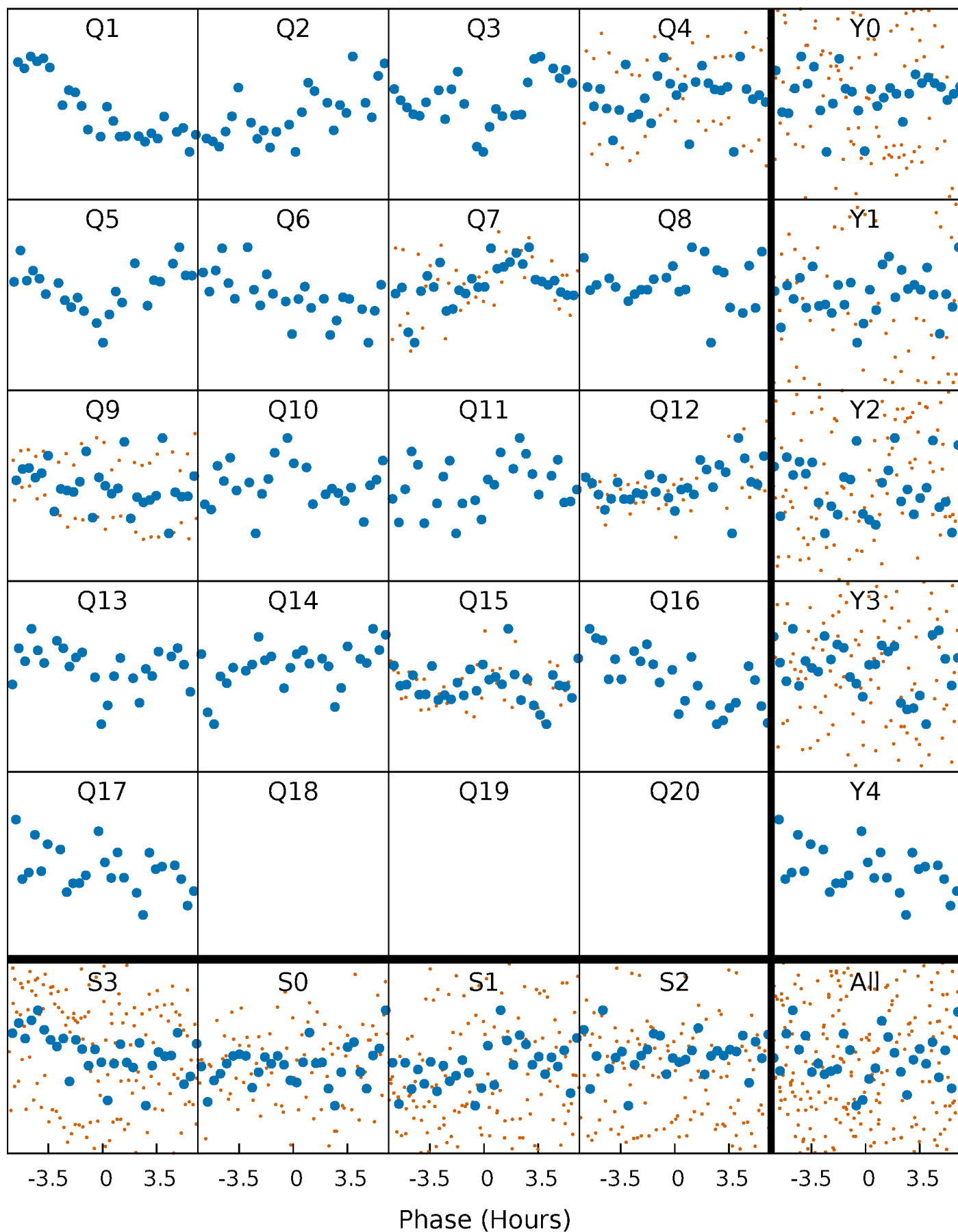


Non-Whitened Vs. Whitened Light Curve



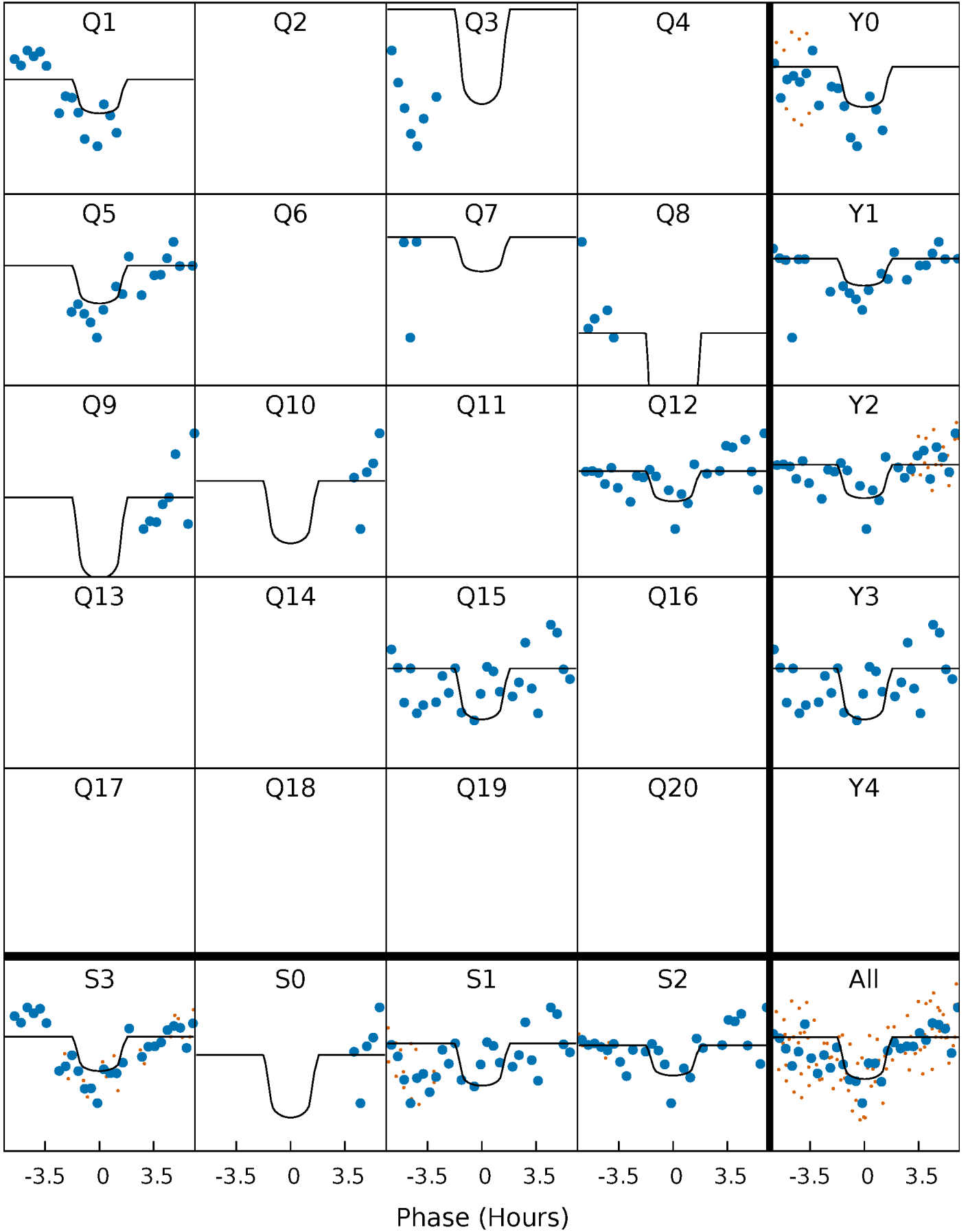
PDC Quarter-Phased Transit Curves

TCE 007872212-05 P= 67.620767 Days $T_0=160.520689$ (BKJD)



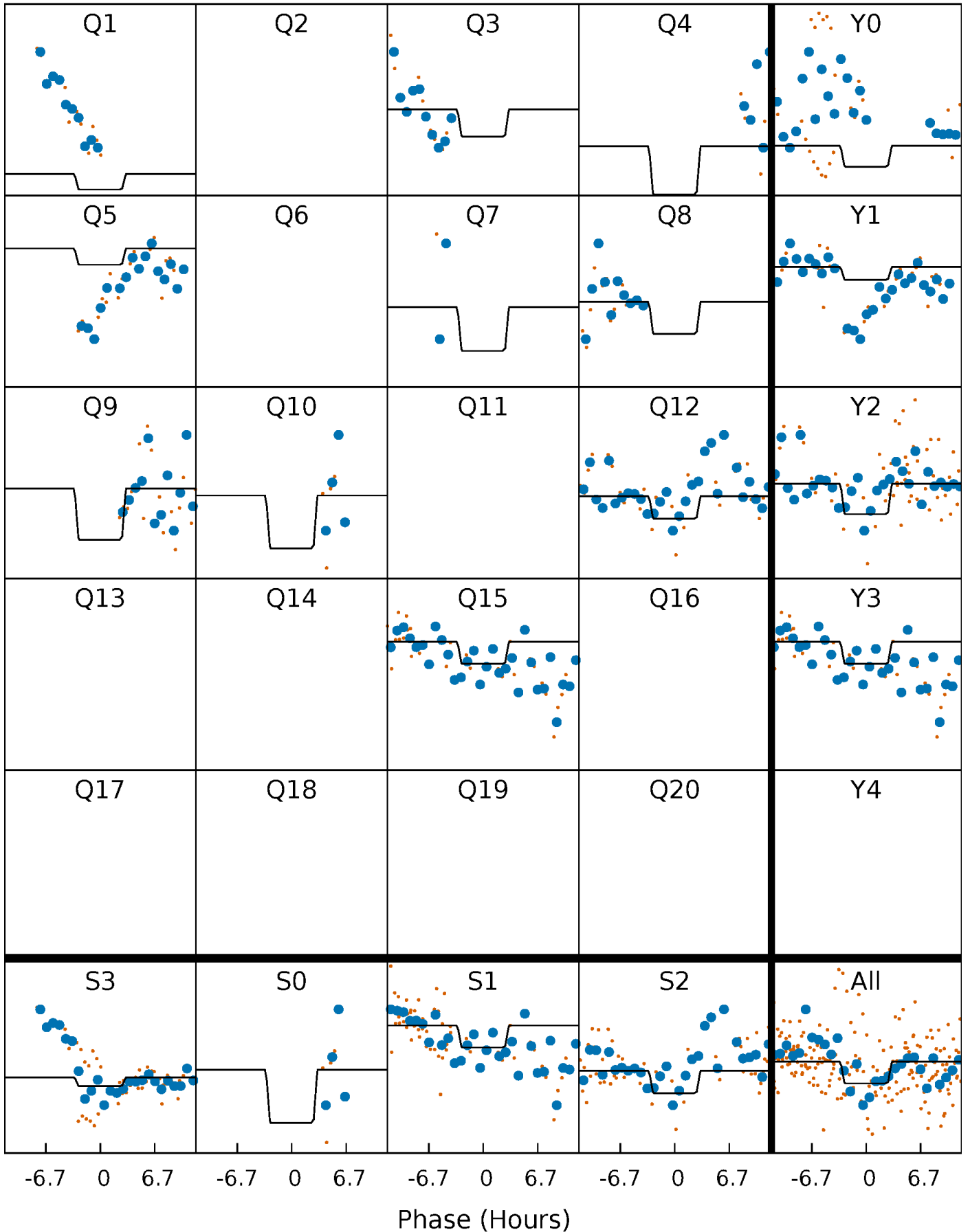
DV Quarter-Phased Transit Curves

TCE 007872212-05 $P = 67.620767$ Days $T_0 = 160.520689$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

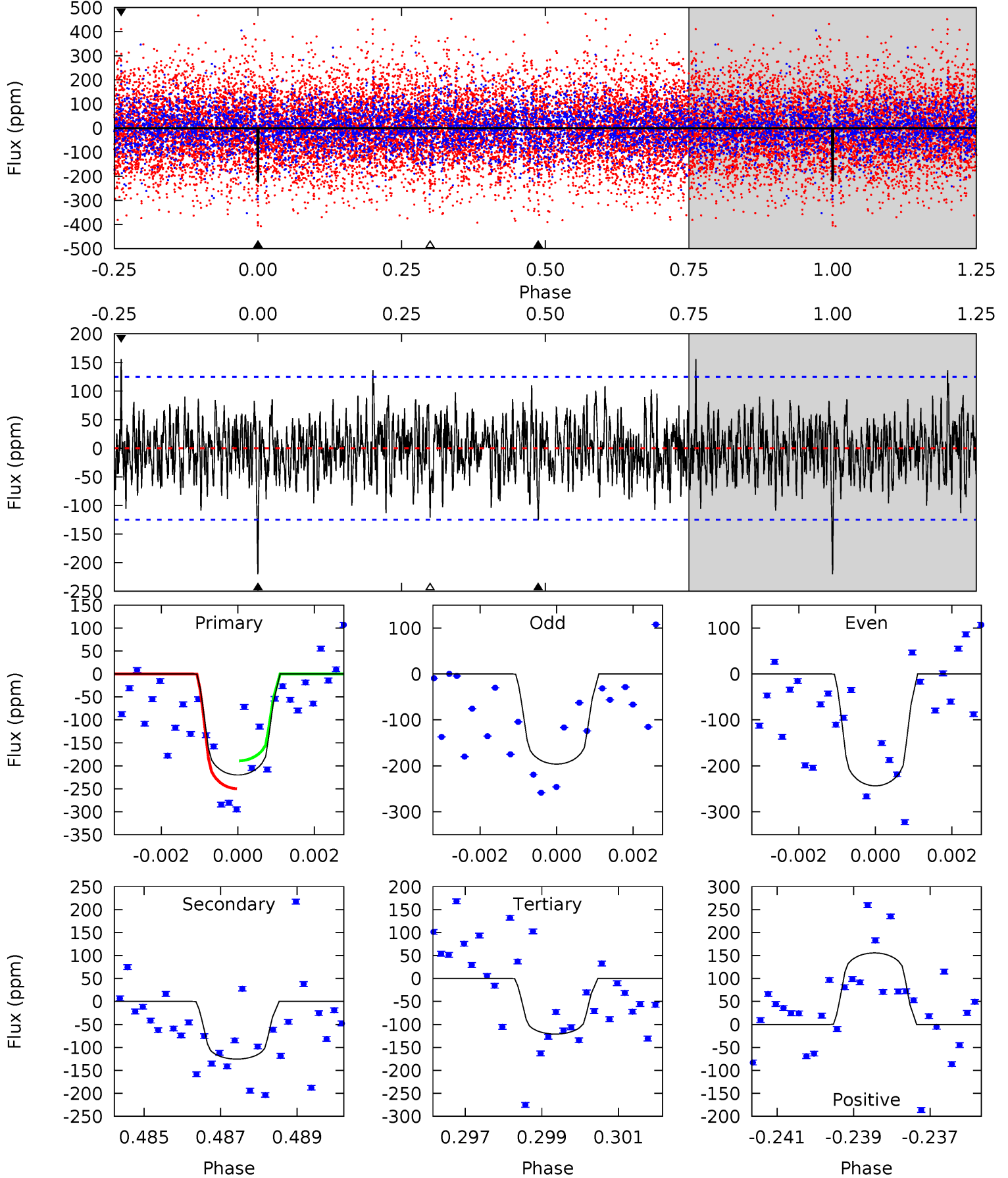
TCE 007872212-05 P= 67.617175 Days $T_0=160.567111$ (BKJD)



DV Model-Shift Uniqueness Test

007872212-05, P = 67.620767 Days, E = 92.899922 Days

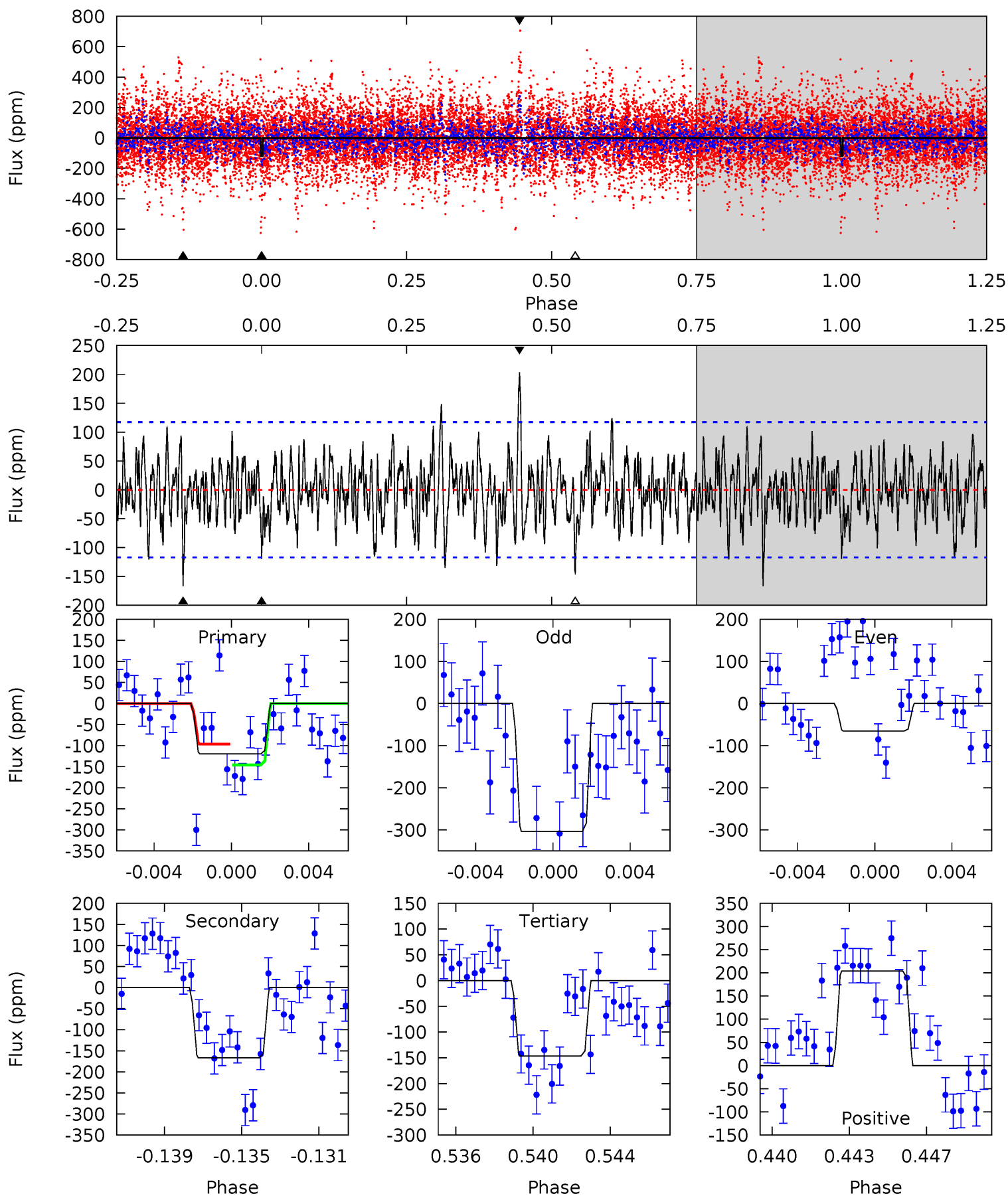
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.37	5.35	5.16	6.63	5.32	3.09	1.70	4.22	2.74	0.19	-1.28	1.00	0.93	0.41	1.29



Alt Model-Shift Uniqueness Test

007872212-05, P = 67.617175 Days, E = 92.949936 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.31	7.41	6.50	9.05	5.21	2.89	1.99	-1.19	-3.73	0.91	-1.64	5.50	1.27	0.55	1.10



Stellar Parameters For KIC 007872212

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-162}	$3.625^{+0.332}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$3.236^{+0.409}_{-1.227}$	$1.613^{+0.220}_{-0.330}$	$0.067^{+0.149}_{-0.017}$
	+3%/-3%	+9%/-2%	+300%/-250%	+13%/-38%	+14%/-20%	+222%/-25%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007872212-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-126 ± 23	$6.16^{+5.75}_{-4.04}$	1138^{+62}_{-103}	5062^{+3953}_{-1107}	268^{+2016}_{-197}
Alt.	-167 ± 23	$5.75^{+5.02}_{-3.93}$	1135^{+63}_{-102}	5582^{+5127}_{-1343}	406^{+3464}_{-293}

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

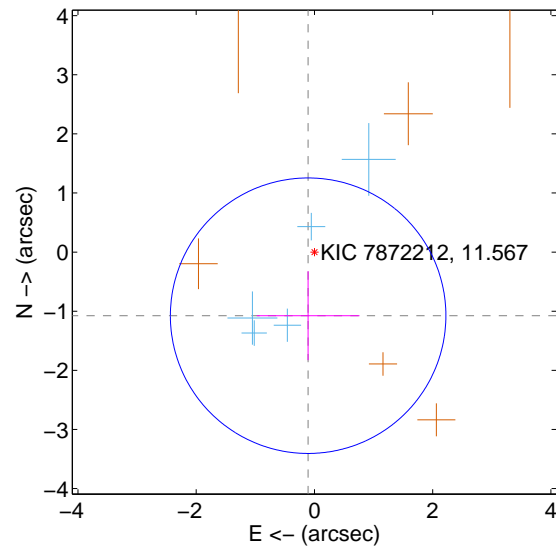
Supplemental centroid analysis for 007872212-05. **Kepler magnitude: 11.57.** Transit SNR 6.92

There are 5 quarters with good PRF difference image offsets

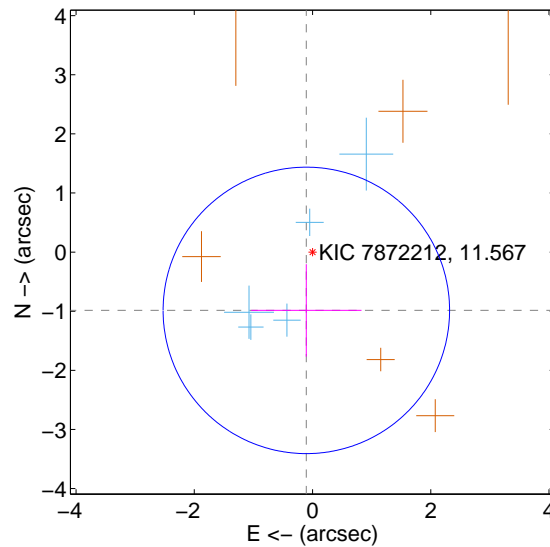
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.081 ± 0.777	1.39	0.107 ± 0.870	-1.076 ± 0.752
PRF-fit source offset from KIC position	0.992 ± 0.808	1.23	0.105 ± 0.933	-0.986 ± 0.781
photometric centroid source offset	0.87 ± 0.41	2.15	-0.83 ± 0.41	0.29 ± 0.34

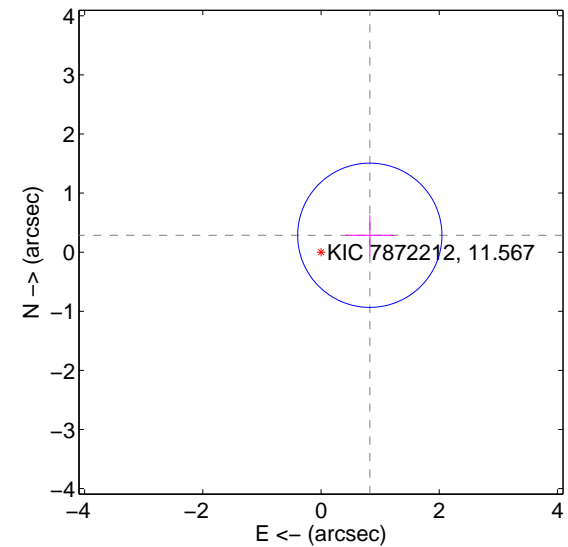
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

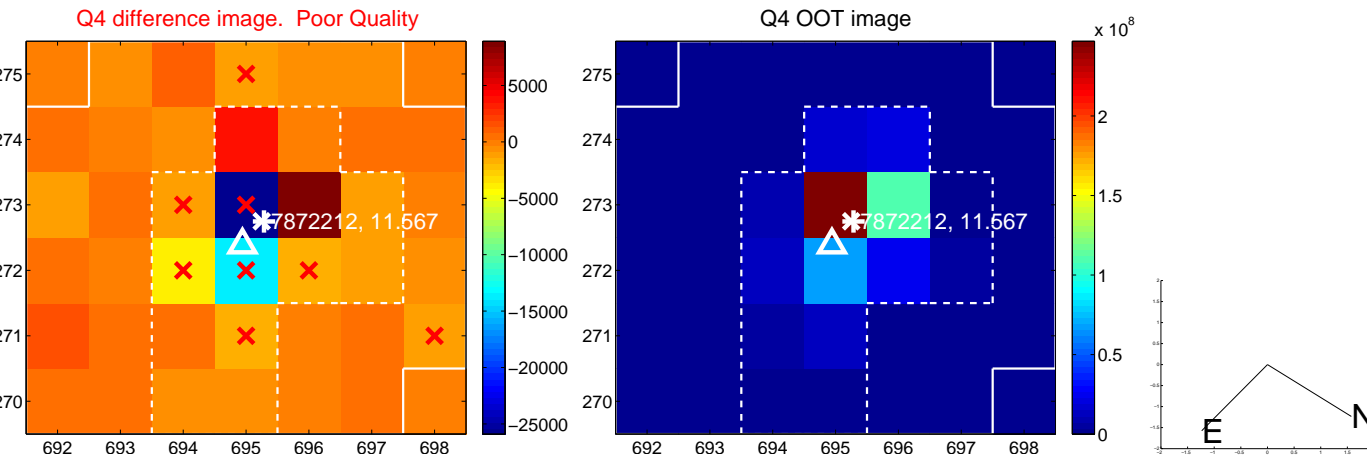
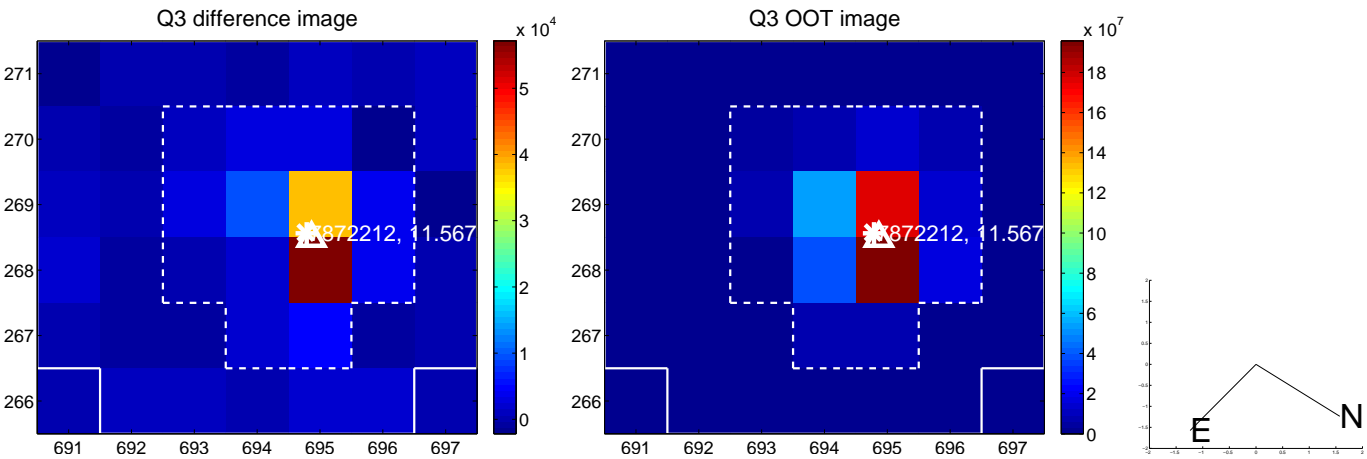
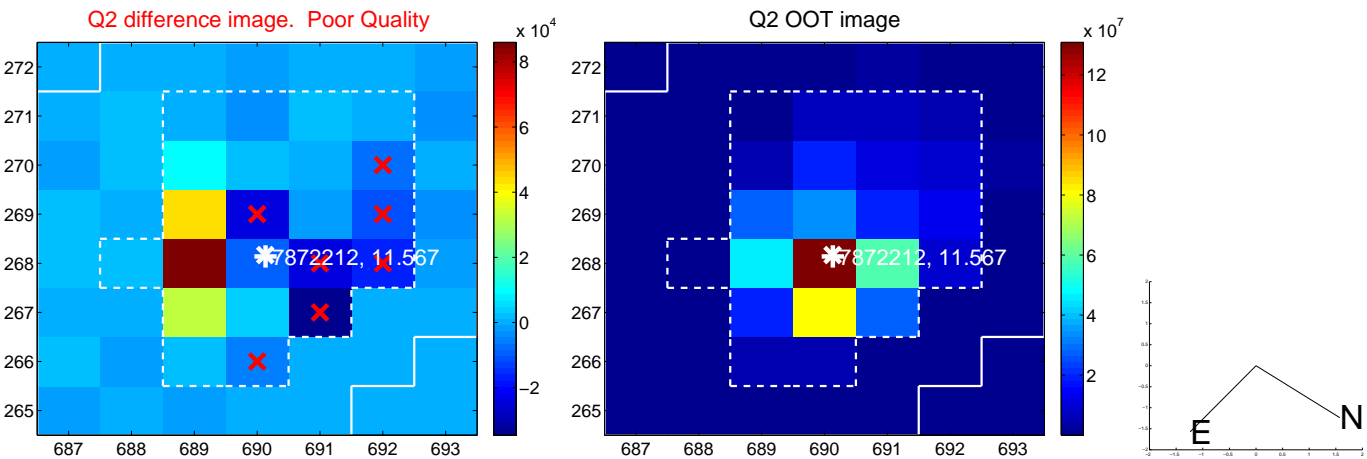
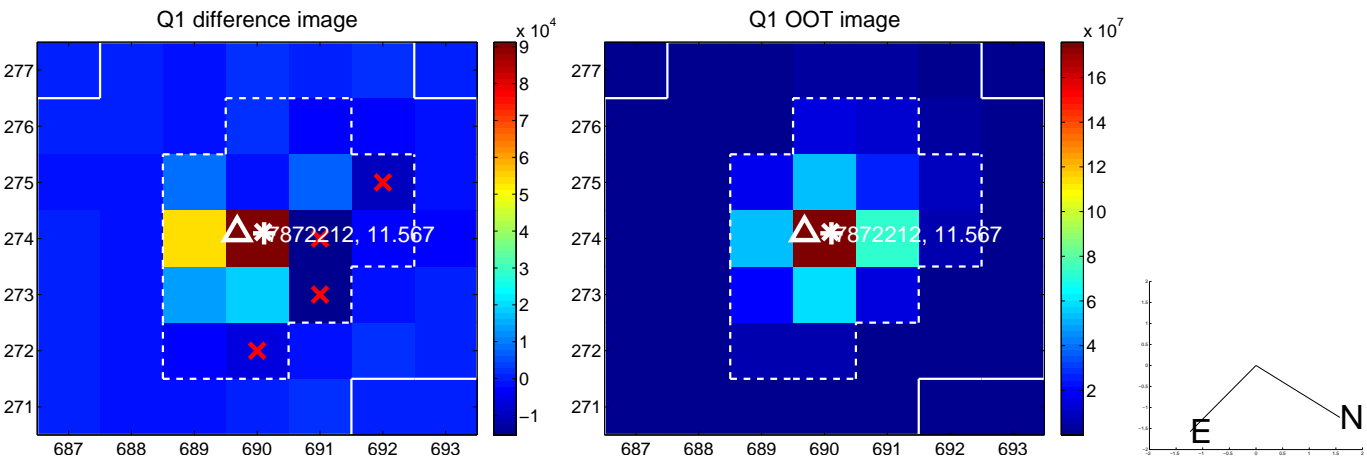


offset from photometric centroids

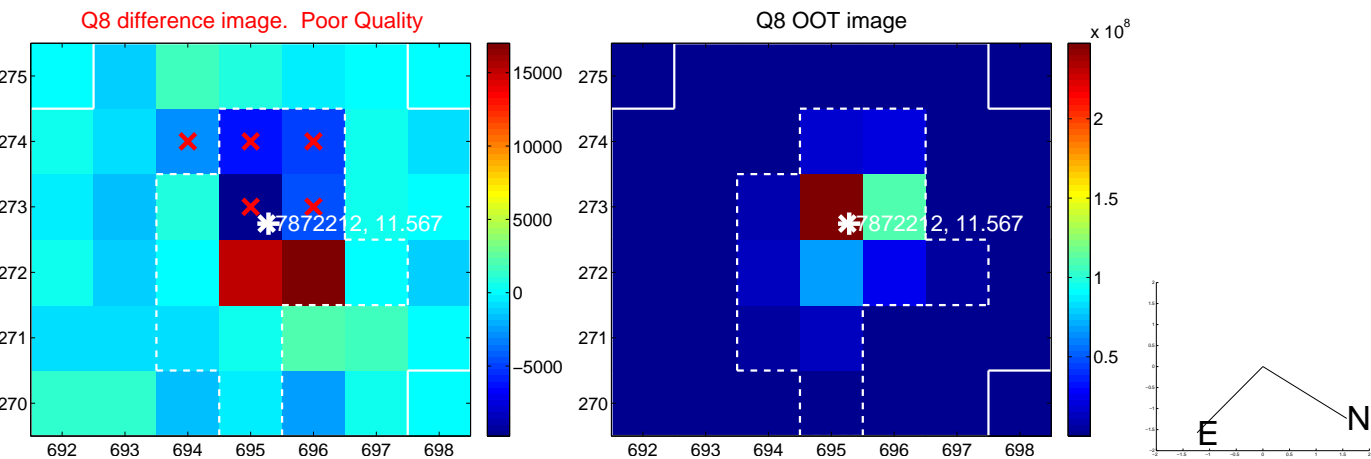
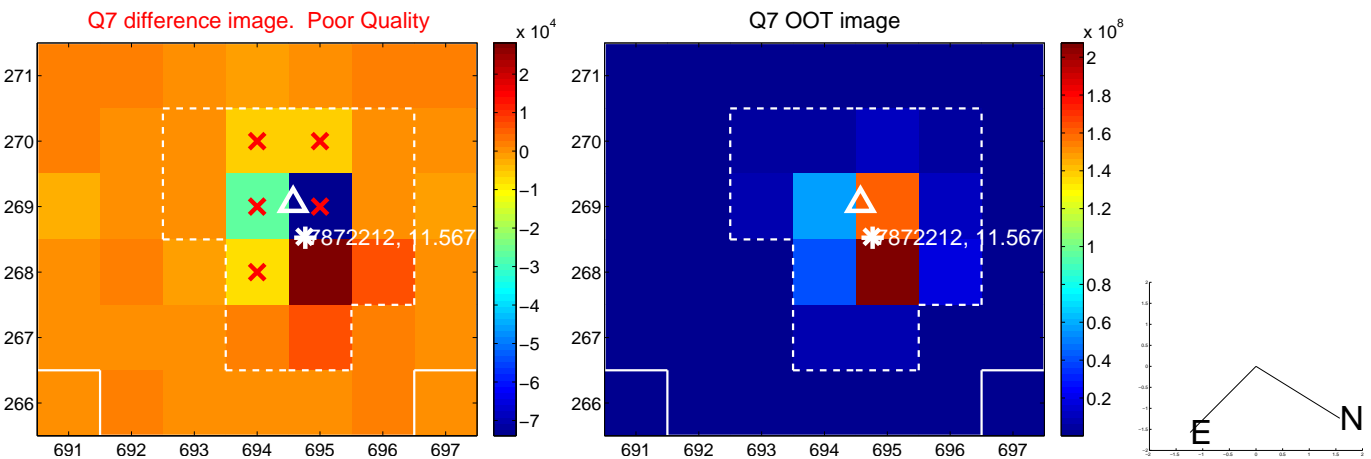
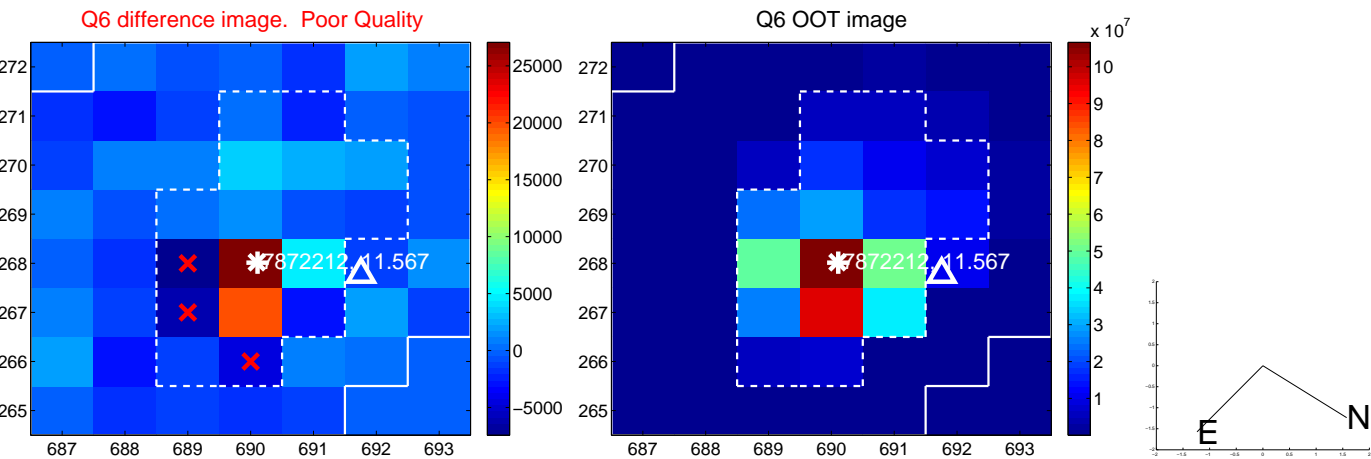
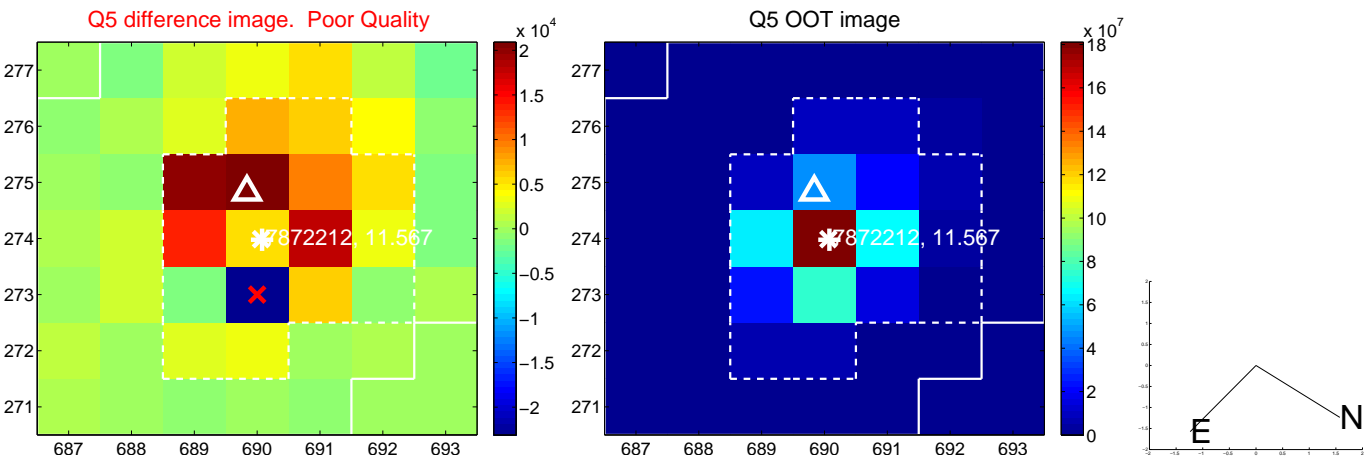


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

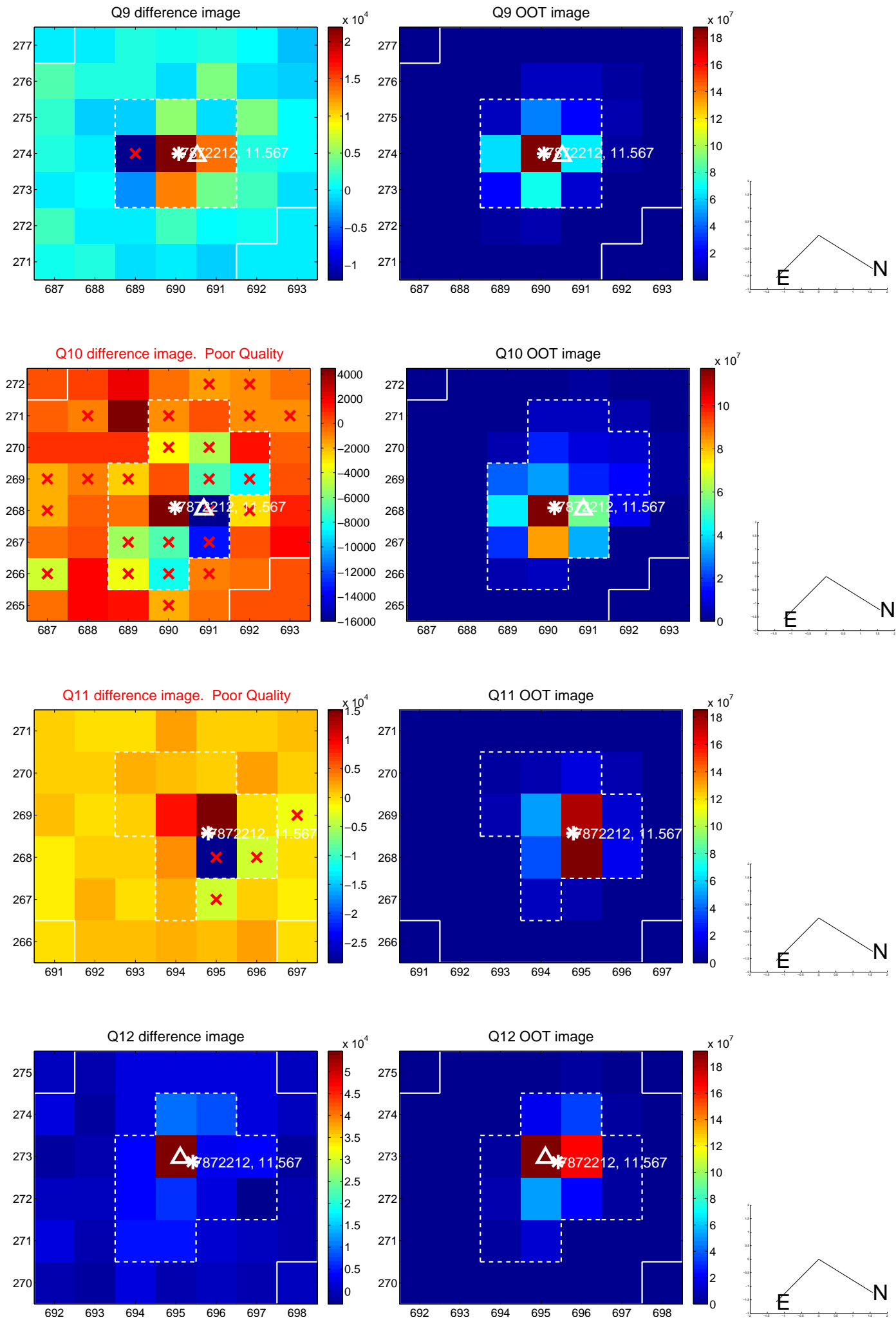
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



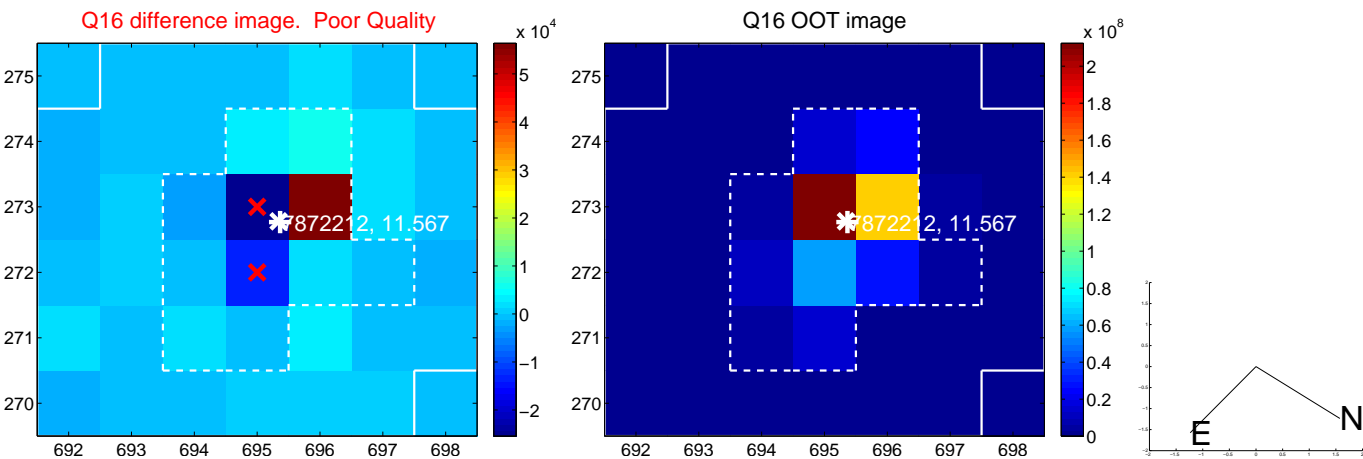
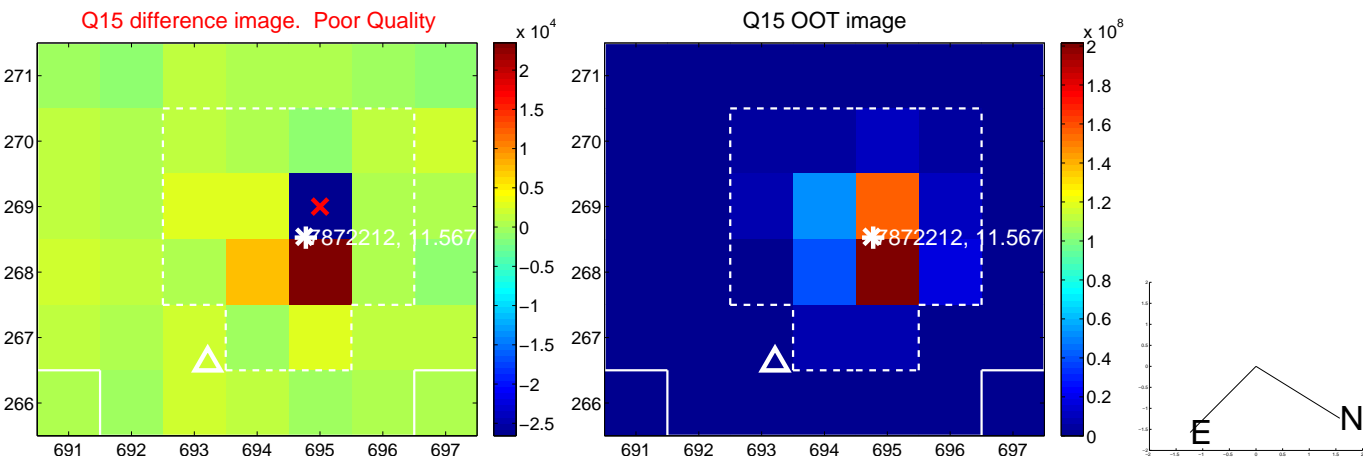
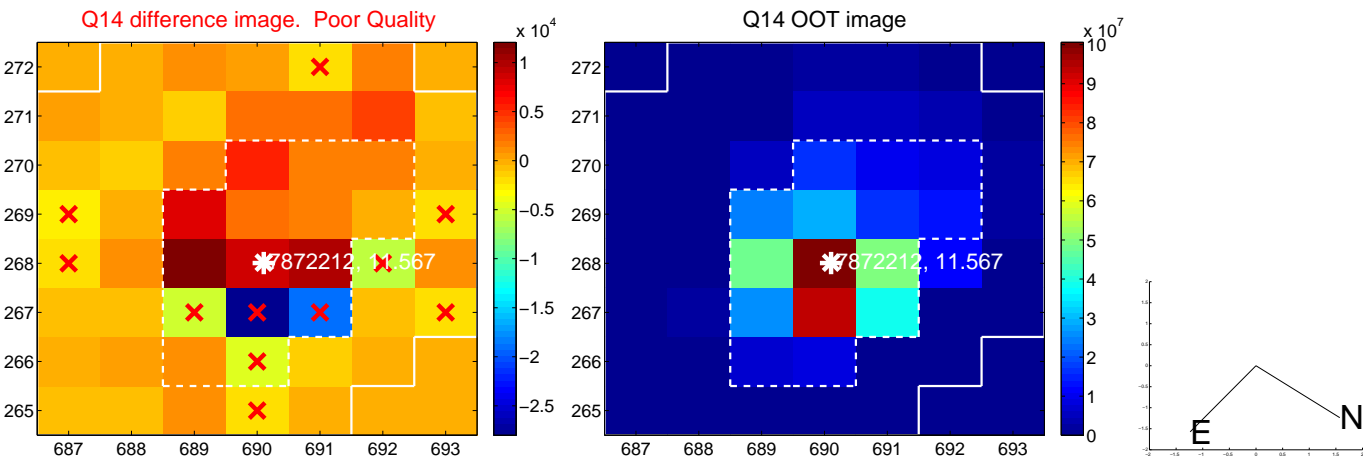
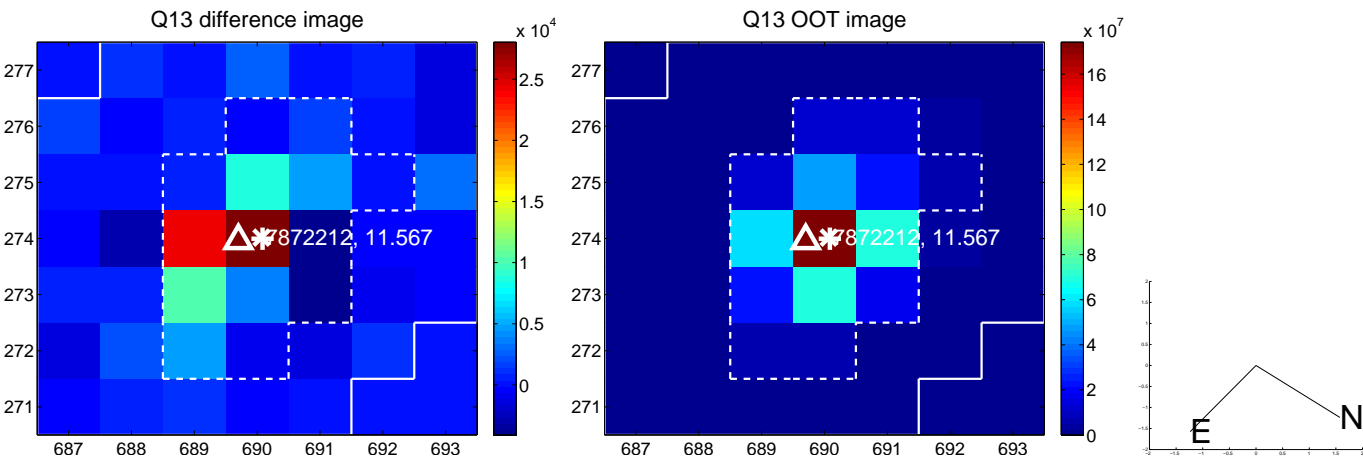
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



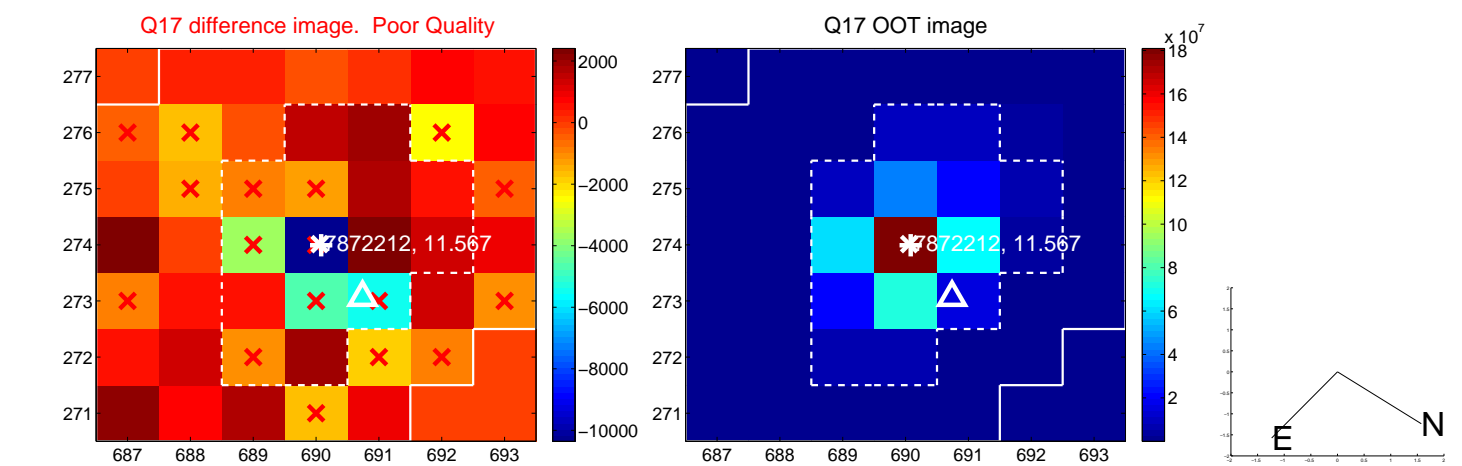
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



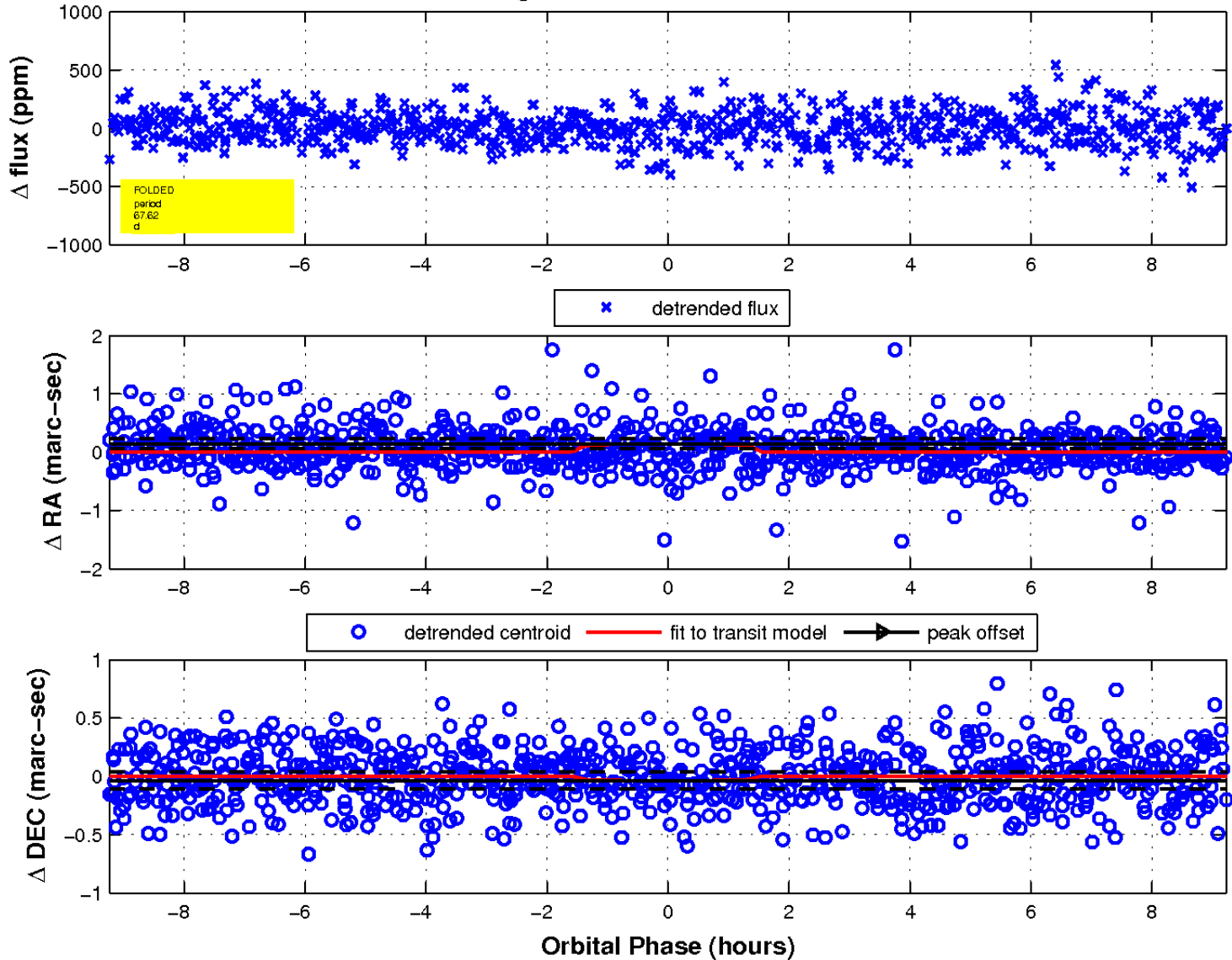
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

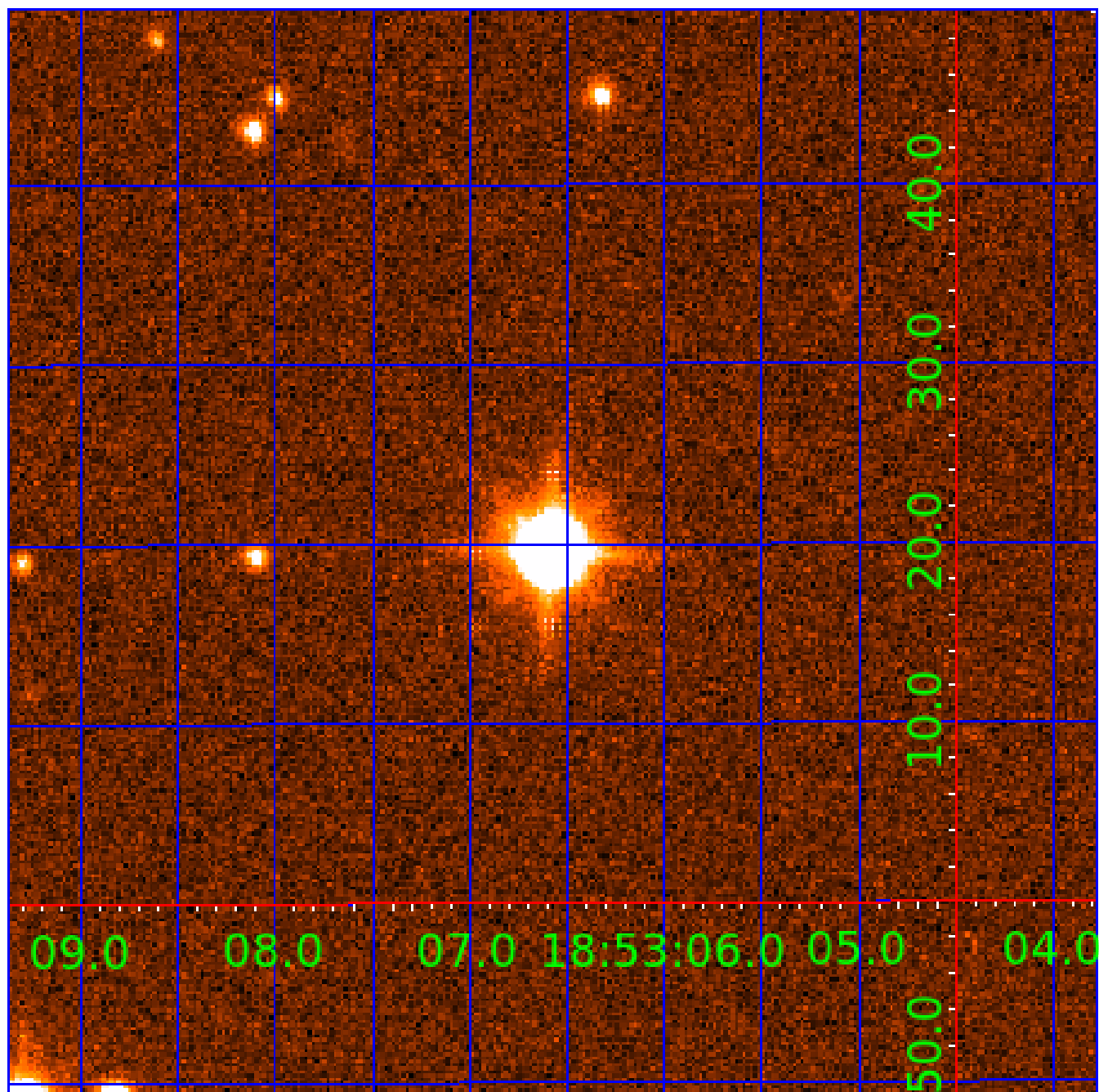


fluxWeightedCentroids, Planet 5 of 7



UKIRT Image

Declination



KIC 007872212

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})
007872212-01	OBS	No	4.574311	134.084776	19.7	14.955	8.2	4.6	3.24	6453	1.64	4069.23
007872212-02	OBS	No	4.571540	131.943111	41.8	13.660	10.4	11.0	3.24	6453	2.52	4072.52
007872212-03	OBS	No	302.128440	136.977375	234.4	17.919	12.7	5.7	3.24	6453	5.27	15.24
007872212-04	OBS	No	78.349039	171.452842	237.7	3.317	9.5	6.8	3.24	6453	5.51	92.17
007872212-05	OBS	No	67.620767	160.520689	204.8	3.082	8.6	6.9	3.24	6453	5.16	112.16
007872212-06	OBS	No	54.295050	164.647359	205.1	5.919	8.3	8.2	3.24	6453	5.17	150.29
007872212-07	OBS	No	402.502509	151.471020	290.3	8.167	7.4	7.5	3.24	6453	6.05	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007872212-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
007872212-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007872212-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
007872212-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007872212-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007872212-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007872212-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

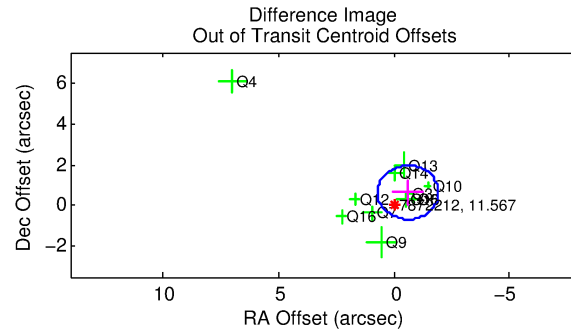
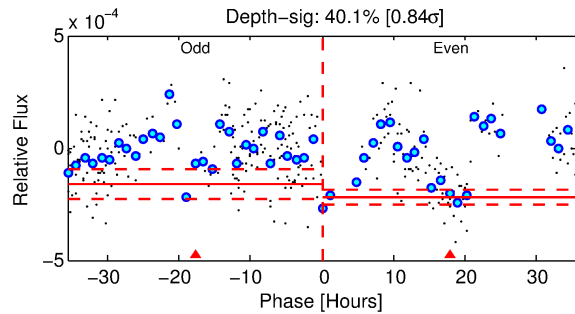
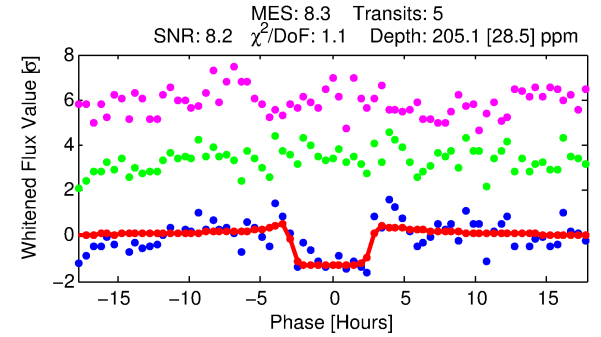
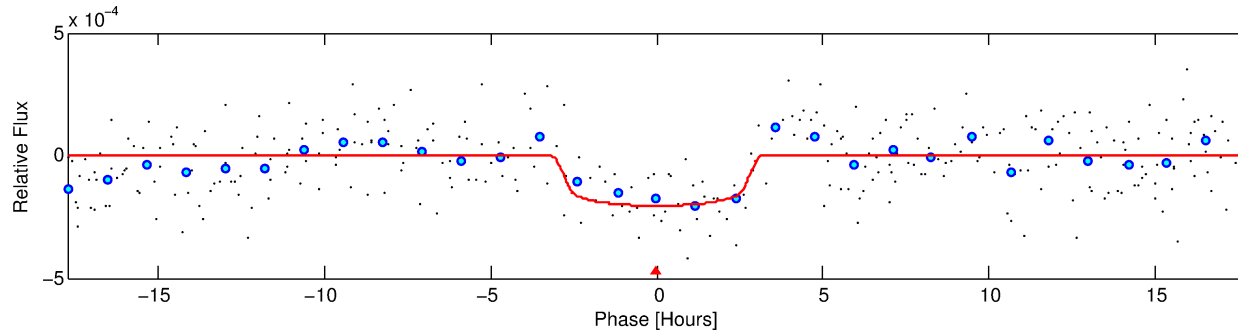
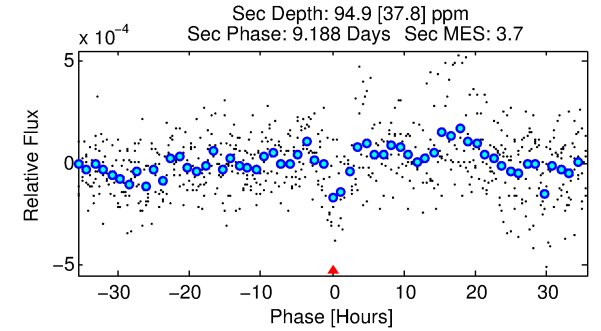
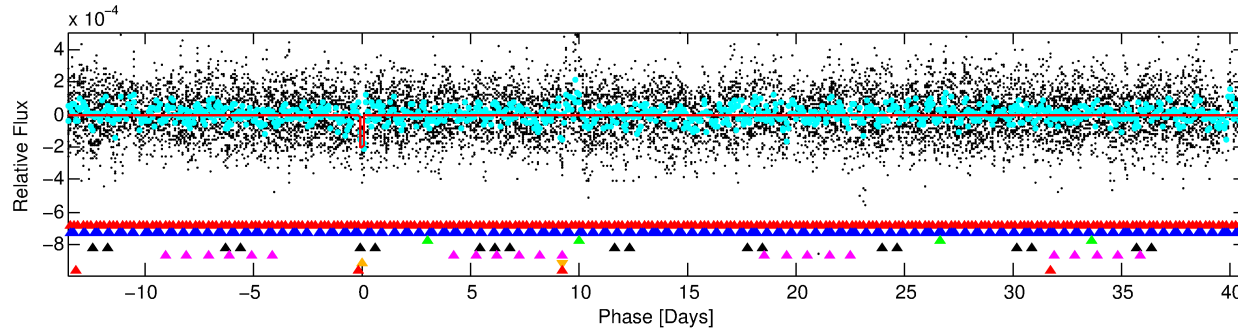
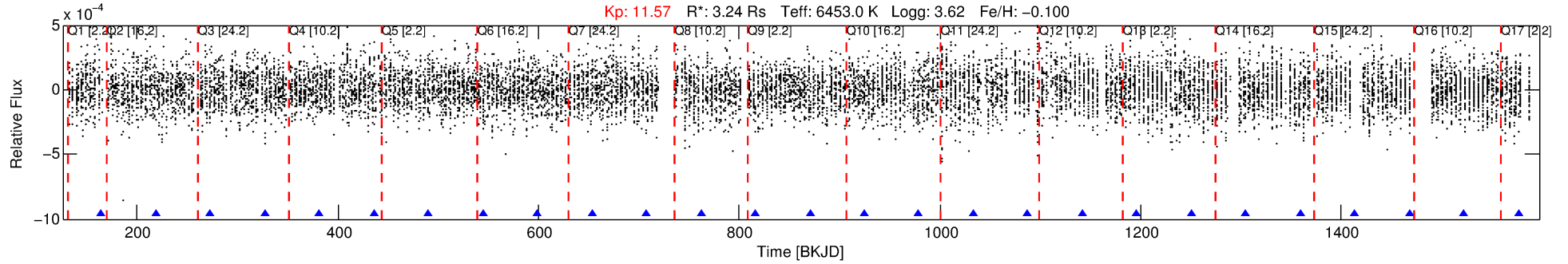
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007872212-06

No Significant Match Found

DV One-Page Summary

KIC: 7872212 Candidate: 6 of 7 Period: 54.295 d



DV Fit Results:

Period = 54.29505 [0.00077] d
Epoch = 164.6474 [0.0110] BKJD
Rp/R* = 0.0146 [0.0092]
a/R* = 41.76 [145.60]
b = 0.82 [1.39]
Seff = 150.29 [86.82]
Teq = 893 [129] K
Rp = 5.17 [3.78] Re
a = 0.3290 [0.1181] AU
Ag = 211.75 [303.09] [0.70σ]
Teffp = 5266 [1734] K [2.51σ]

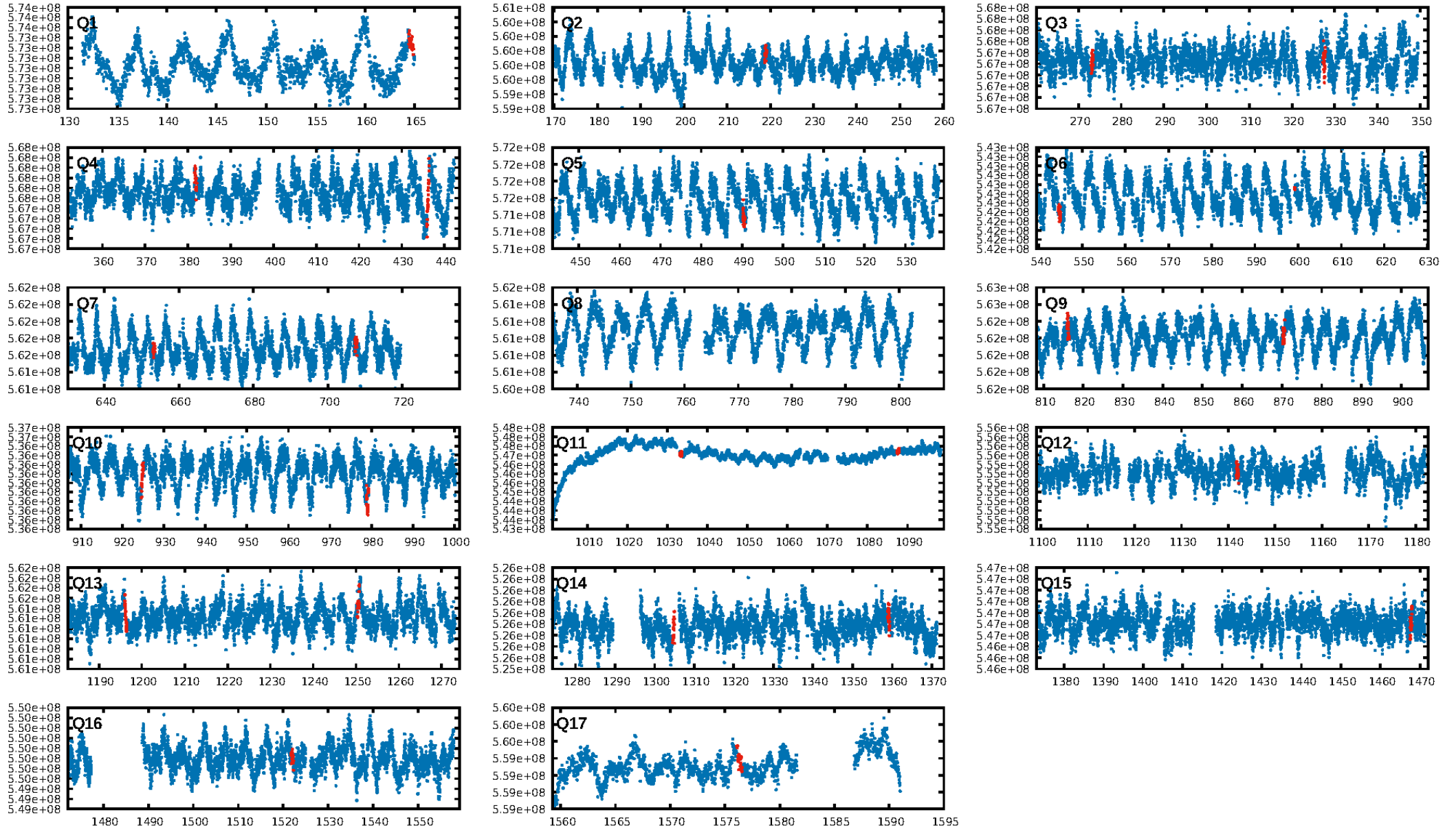
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [74.19σ]
LongPeriod-sig: 100.0% [47.93σ]
ModelChiSquare2-sig: 25.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.24e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.03469
Centroid-sig: 0.2%
Centroid-so: 0.693 arcsec [2.23σ]
OotOffset-rm: 0.876 arcsec [2.00σ]
KicOffset-rm: 0.882 arcsec [2.47σ]
OotOffset-st: 3/3/3/2 [11]
KicOffset-st: 3/3/3/2 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 0.33 [5/15]

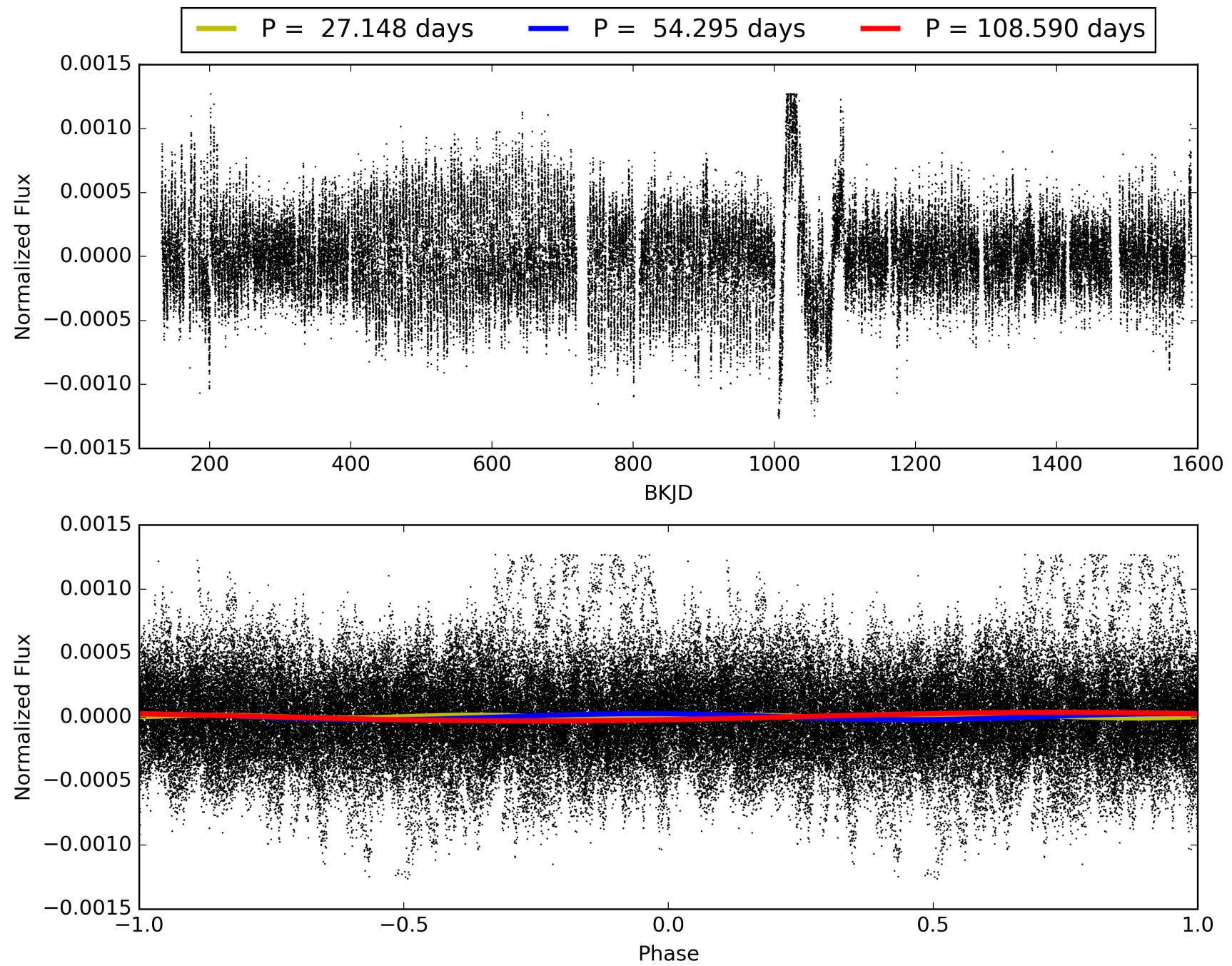
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:49:19 Z

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

TCE 007872212-06, PDC Light Curves

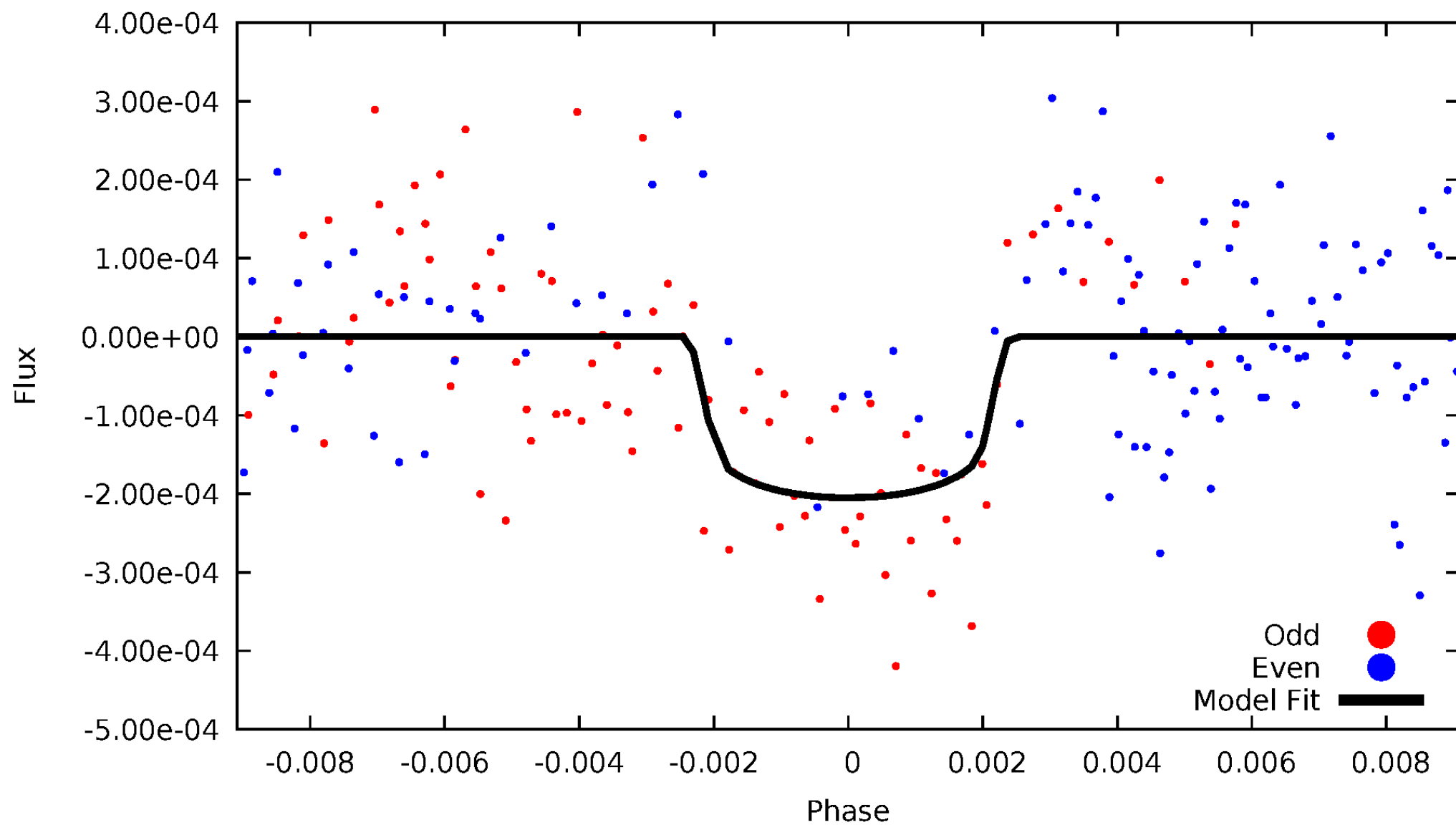


TCE 007872212-06



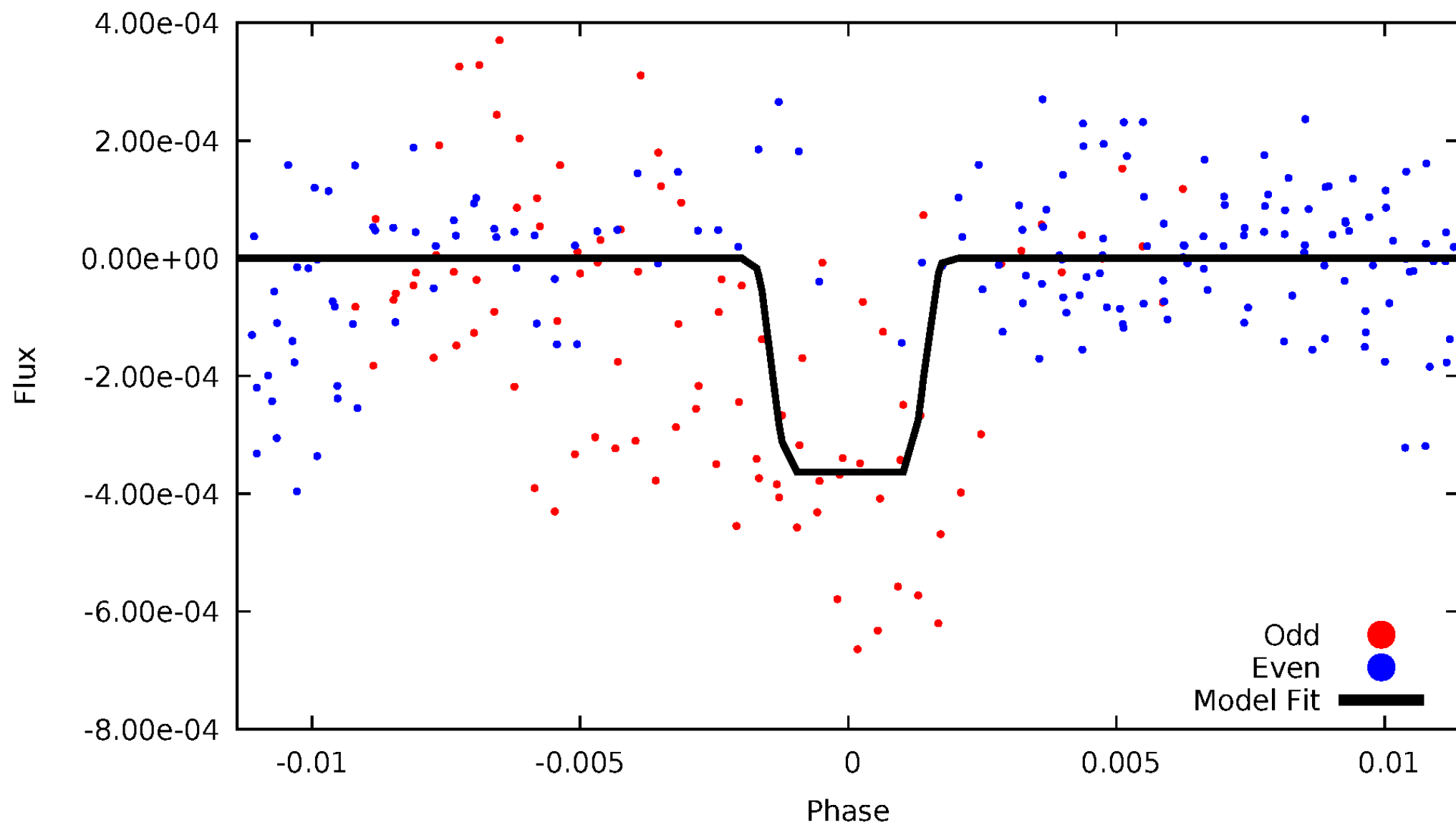
DV Odd/Even

TCE 007872212-06



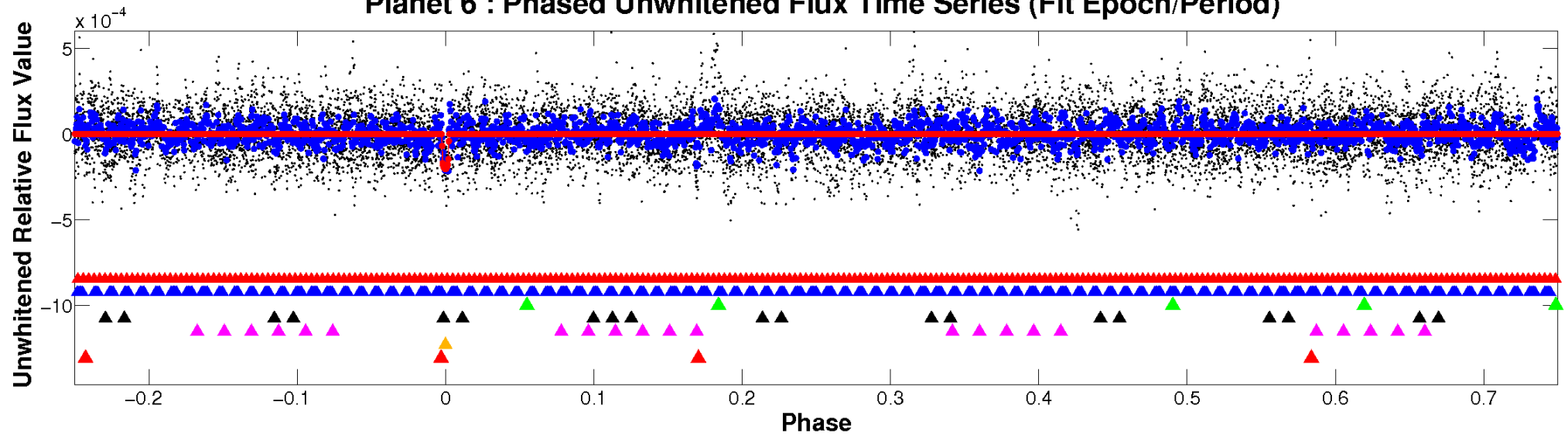
ALT Odd/Even

TCE 007872212-06

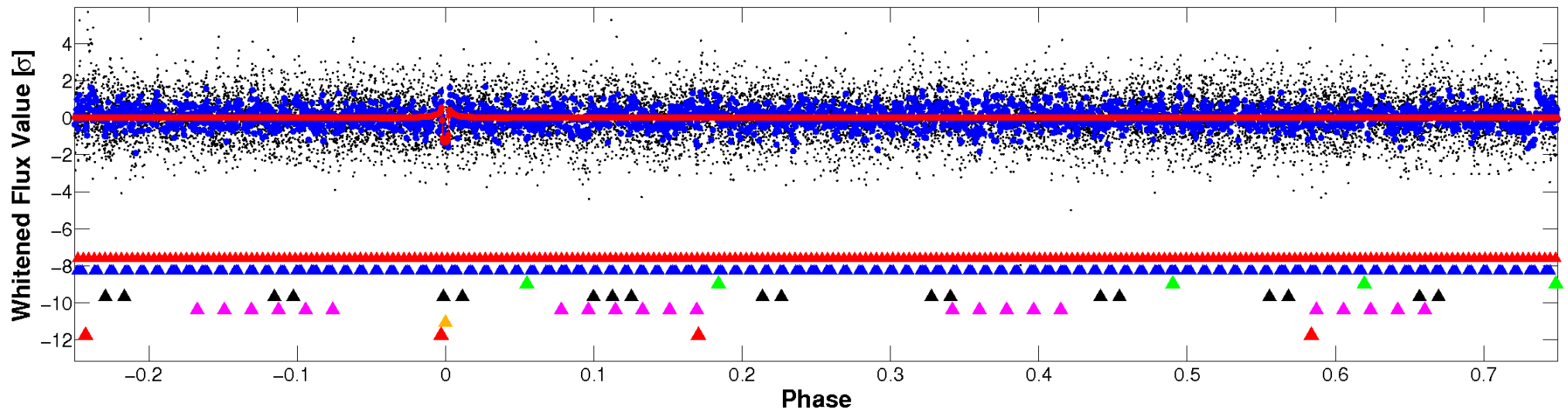


Non-Whitened Vs. Whitened Light Curve

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

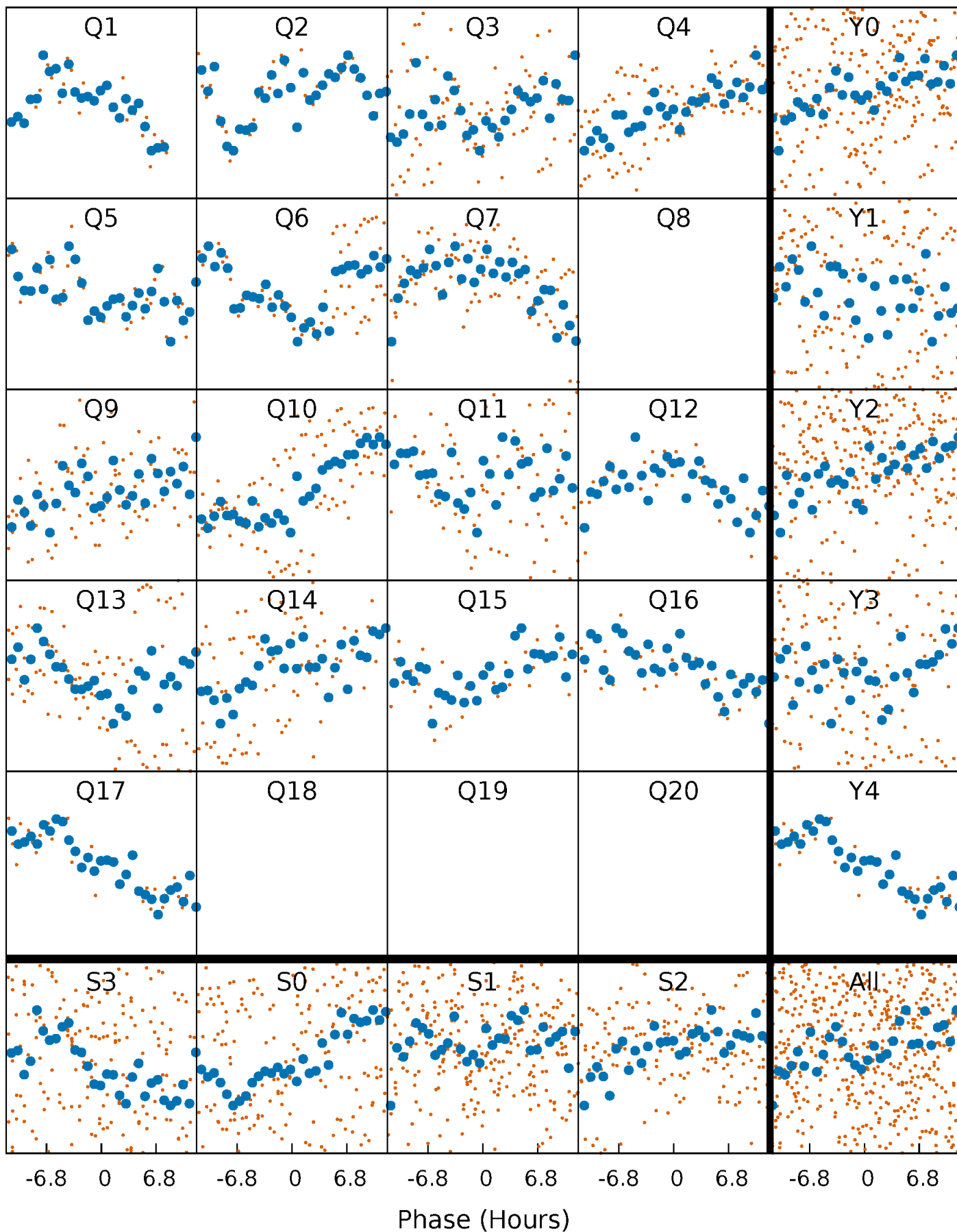


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



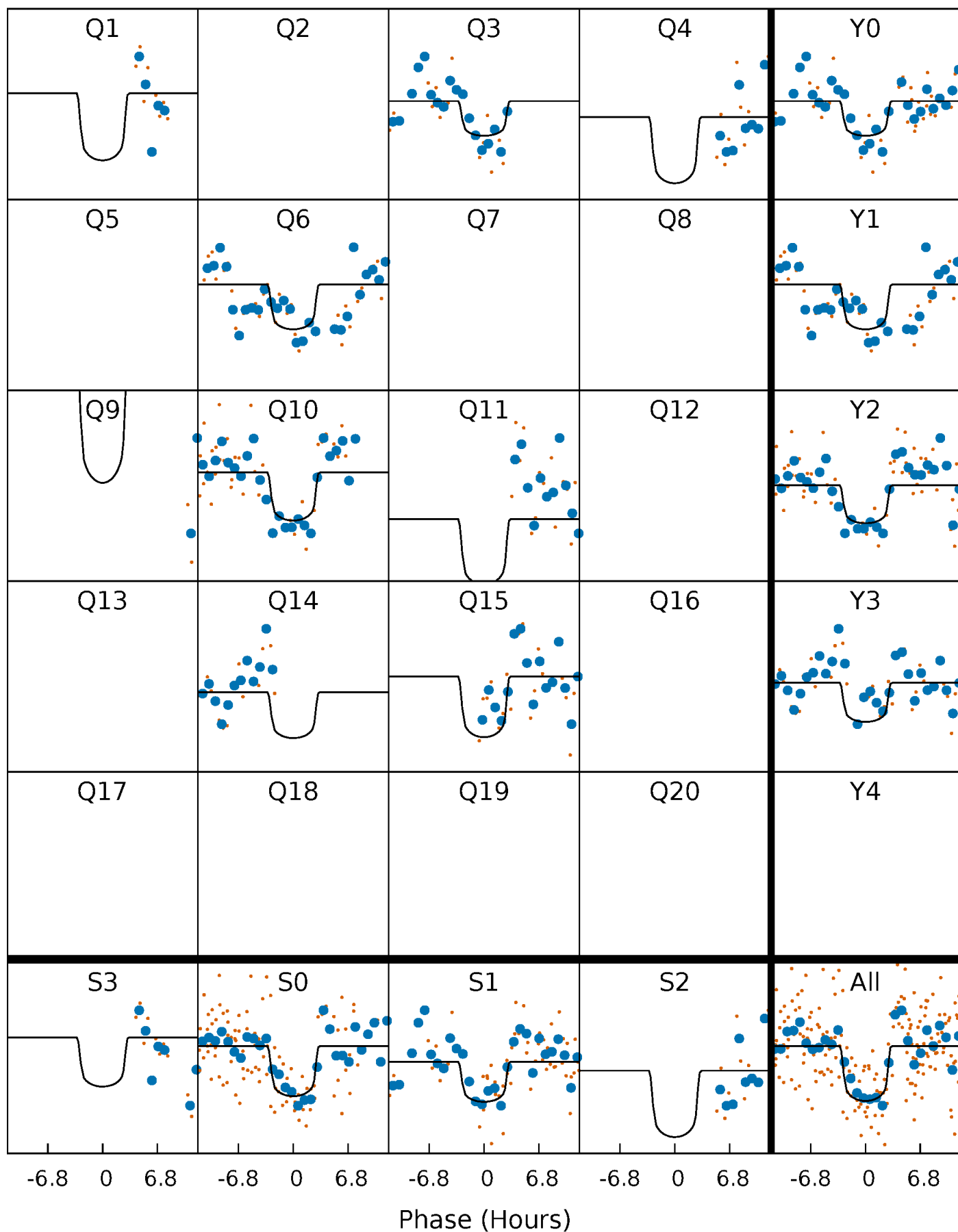
PDC Quarter-Phased Transit Curves

TCE 007872212-06 P= 54.295050 Days $T_0=164.647359$ (BKJD)



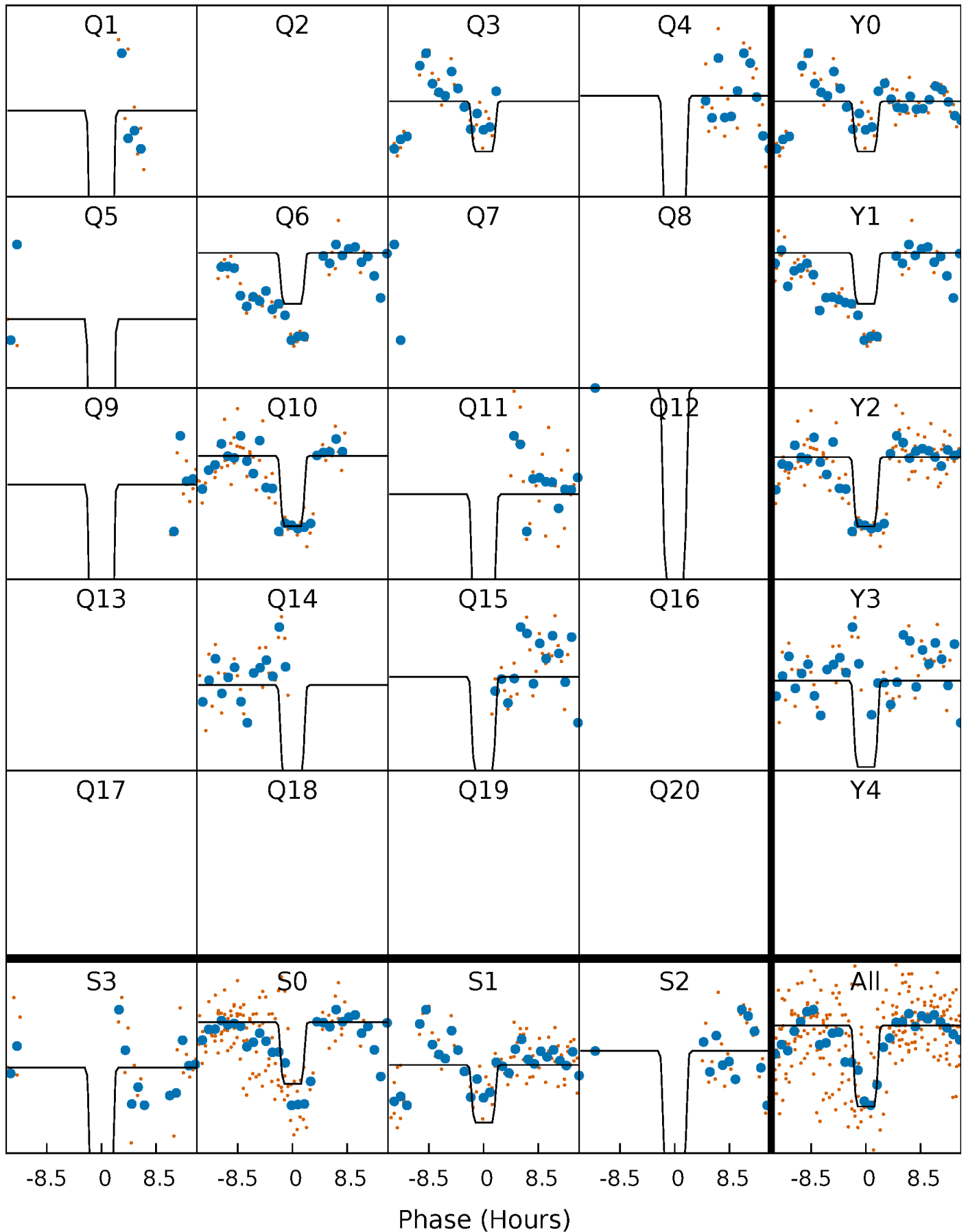
DV Quarter-Phased Transit Curves

TCE 007872212-06 P= 54.295050 Days $T_0=164.647359$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

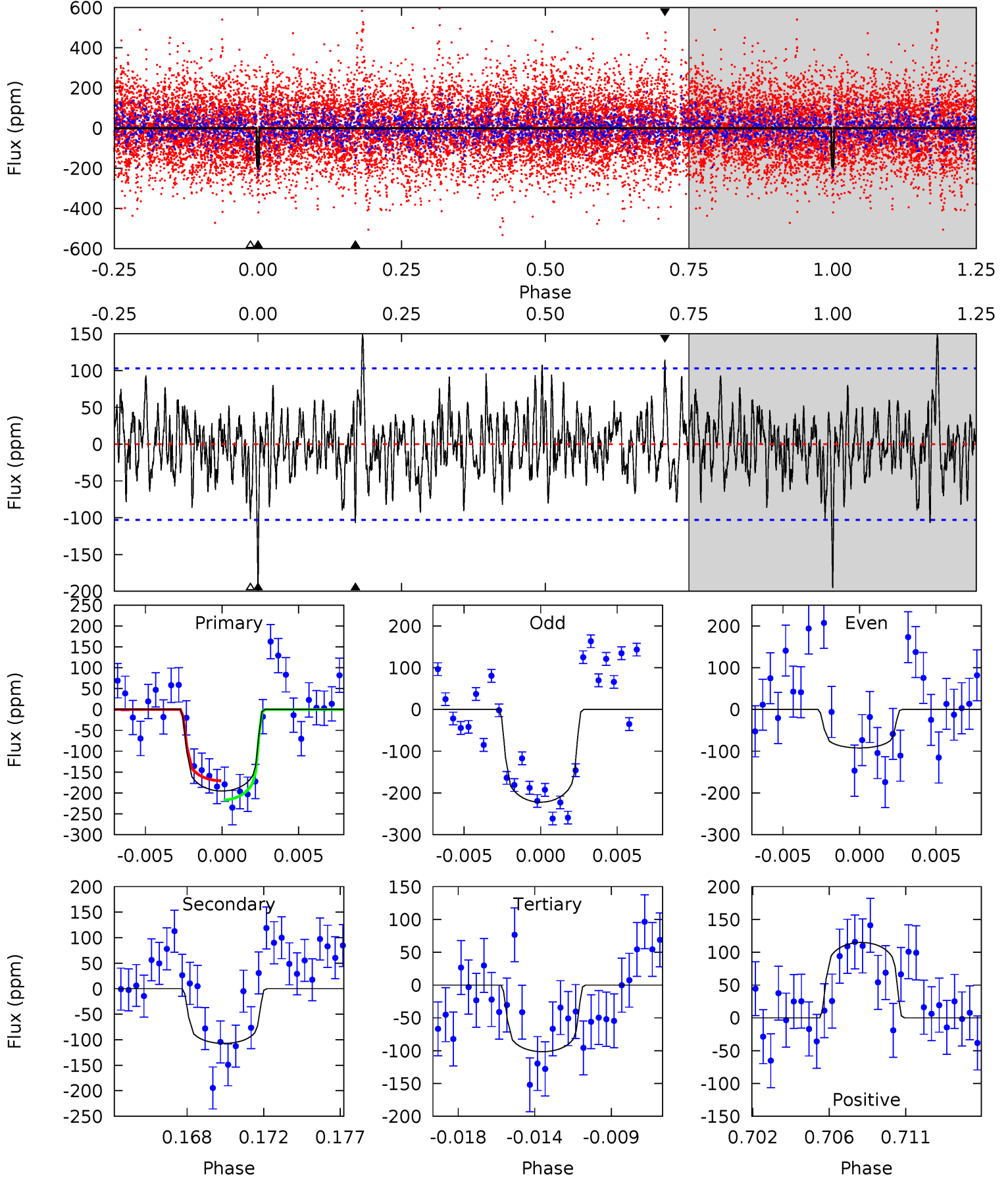
TCE 007872212-06 P= 54.289189 Days $T_0=164.708997$ (BKJD)



DV Model-Shift Uniqueness Test

007872212-06, P = 54.295050 Days, E = 110.352309 Days

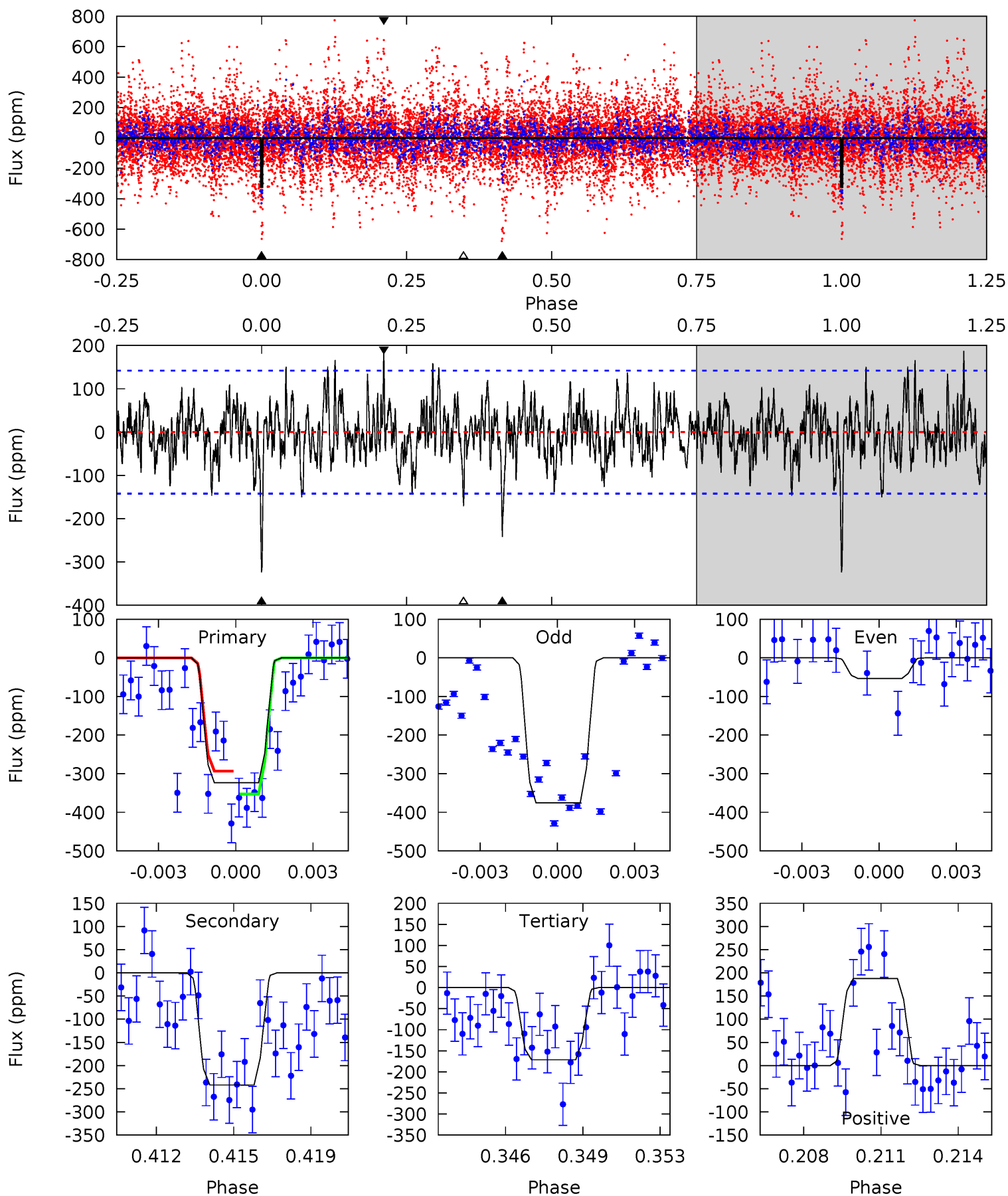
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.82	5.39	5.10	5.78	5.18	2.84	1.77	4.72	4.05	0.28	-0.39	2.67	0.77	0.43	1.16



Alt Model-Shift Uniqueness Test

007872212-06, $P = 54.289189$ Days, $E = 110.419808$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	8.92	6.31	6.91	5.23	2.92	1.87	5.61	5.01	2.61	2.01	4.57	1.32	0.37	1.07



Stellar Parameters For KIC 007872212

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-162}	$3.625^{+0.332}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$3.236^{+0.409}_{-1.227}$	$1.613^{+0.220}_{-0.330}$	$0.067^{+0.149}_{-0.017}$
	+3%/-3%	+9%/-2%	+300%/-250%	+13%/-38%	+14%/-20%	+222%/-25%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007872212-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-107 ± 20	$5.09^{+3.10}_{-2.89}$	1227^{+66}_{-120}	5327^{+2729}_{-920}	243^{+1059}_{-149}
Alt.	-242 ± 27	$6.10^{+3.37}_{-2.66}$	1222^{+64}_{-99}	5877^{+2152}_{-965}	383^{+831}_{-223}

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

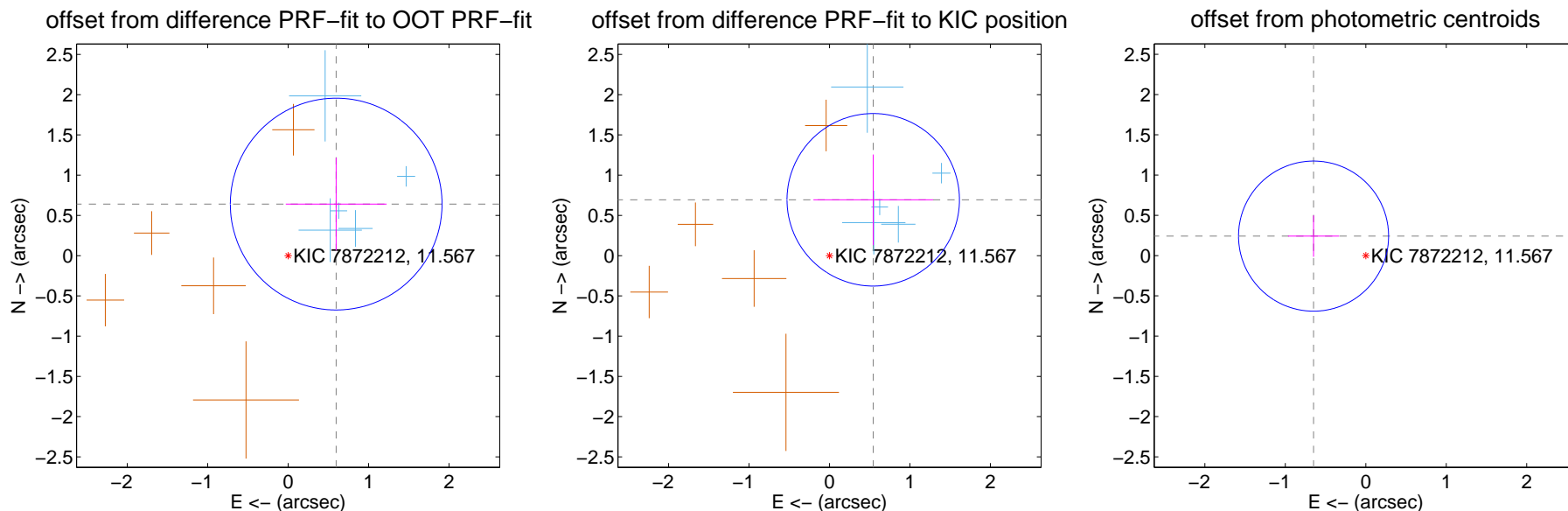
DV Centroid Data

Supplemental centroid analysis for 007872212-06. **Kepler magnitude: 11.57.** Transit SNR 8.18

There are 5 quarters with good PRF difference image offsets

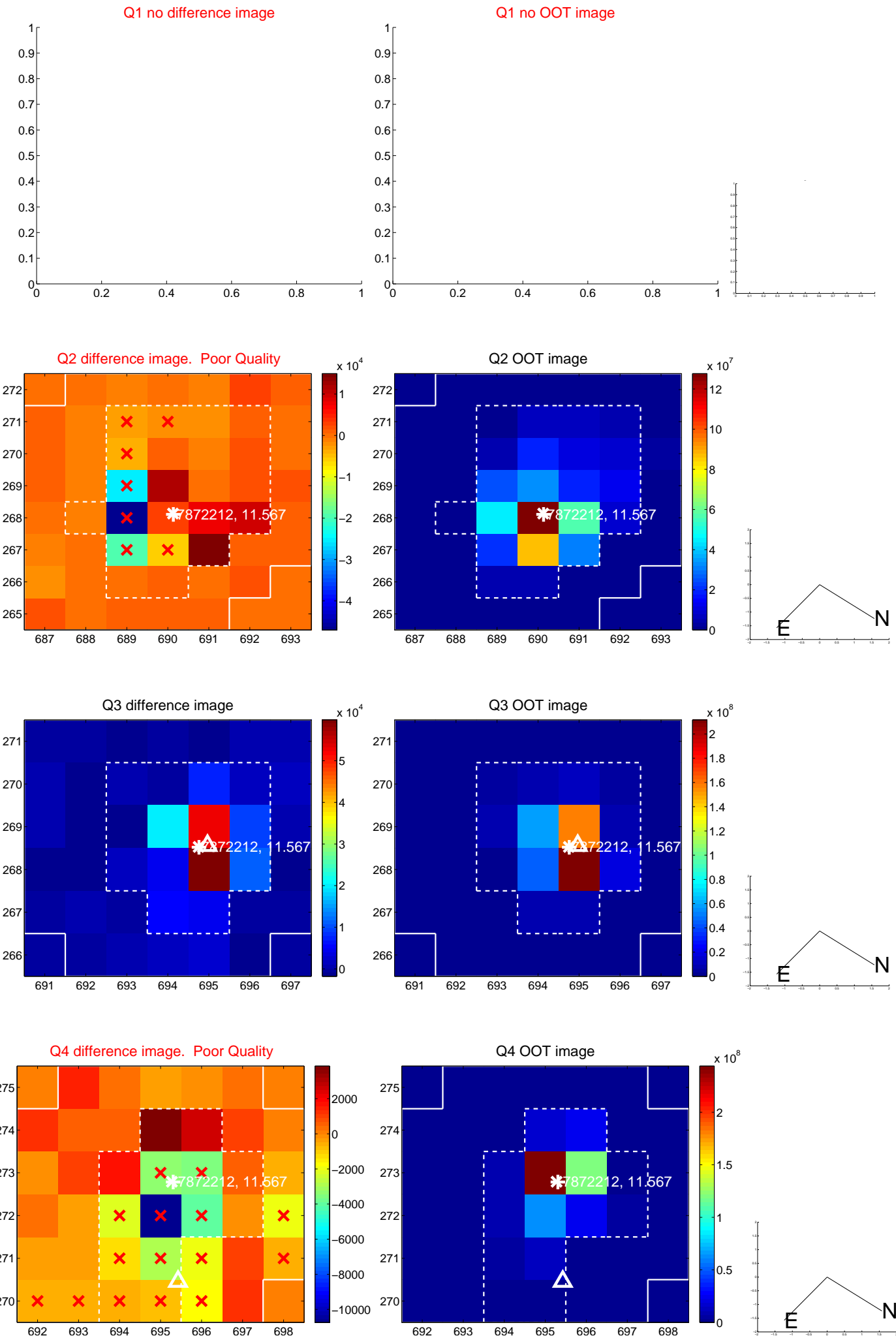
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.876 ± 0.439	2.00	-0.597 ± 0.626	0.641 ± 0.575
PRF-fit source offset from KIC position	0.882 ± 0.357	2.47	-0.544 ± 0.744	0.694 ± 0.562
photometric centroid source offset	0.69 ± 0.31	2.23	0.65 ± 0.32	0.24 ± 0.26

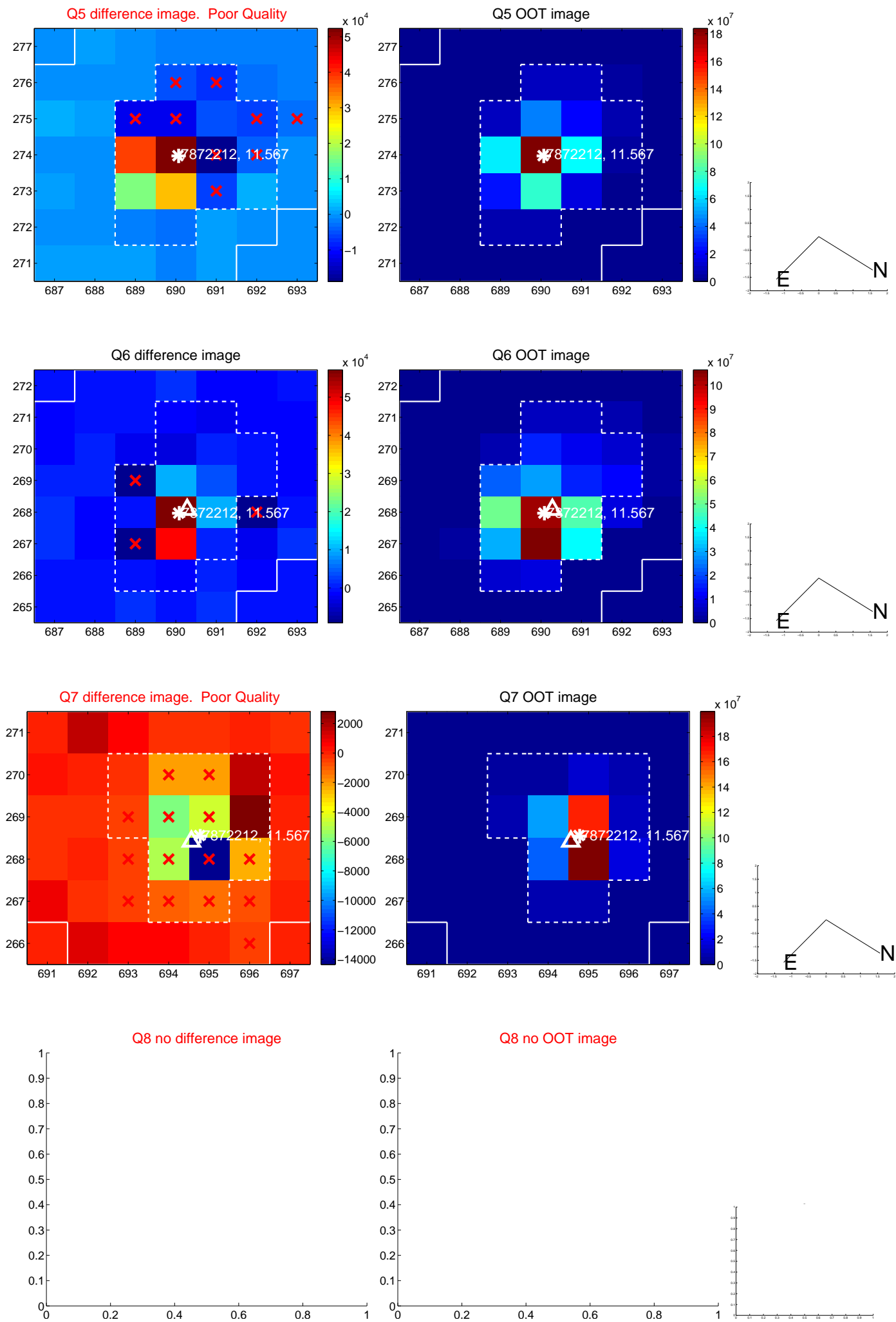


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

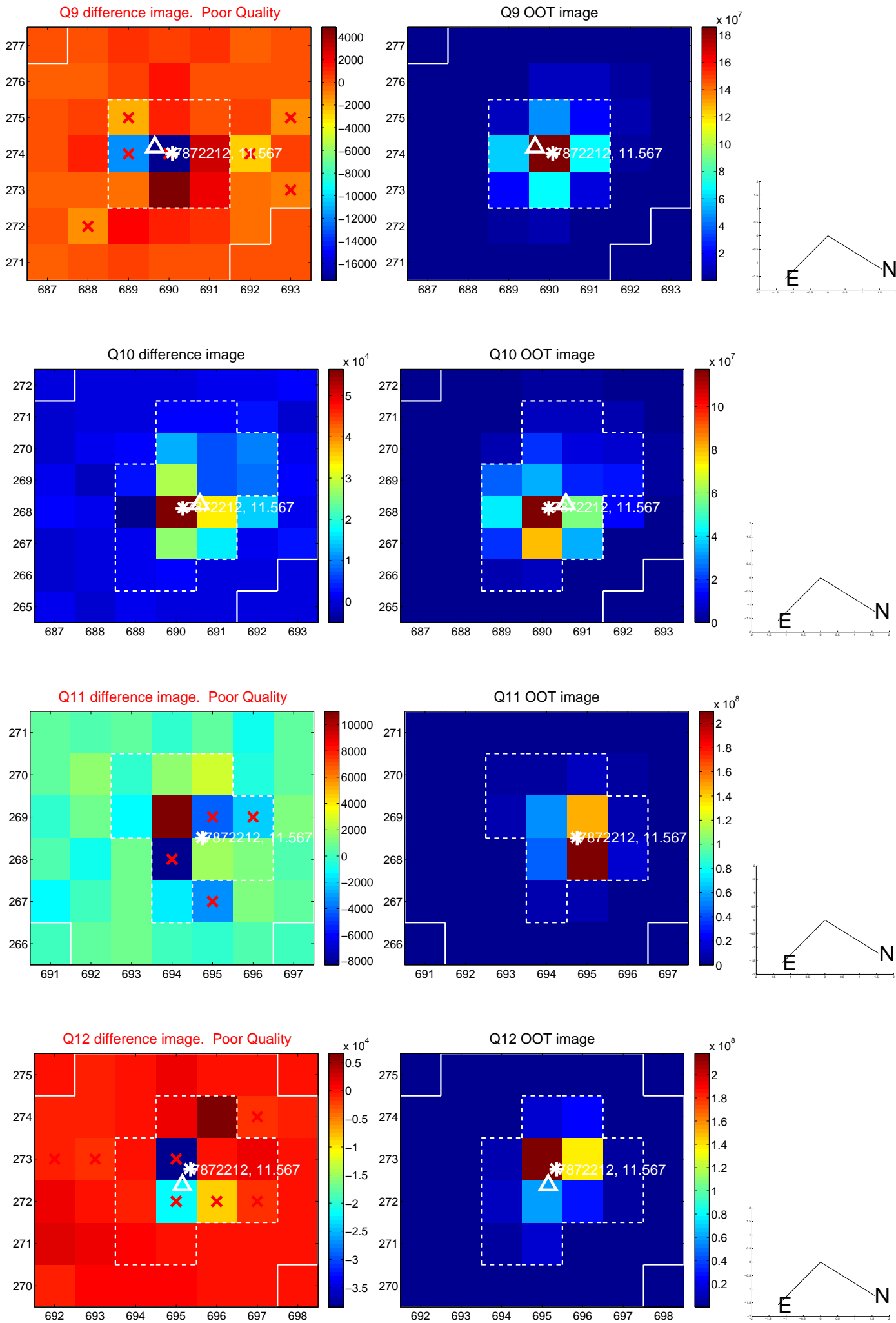
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



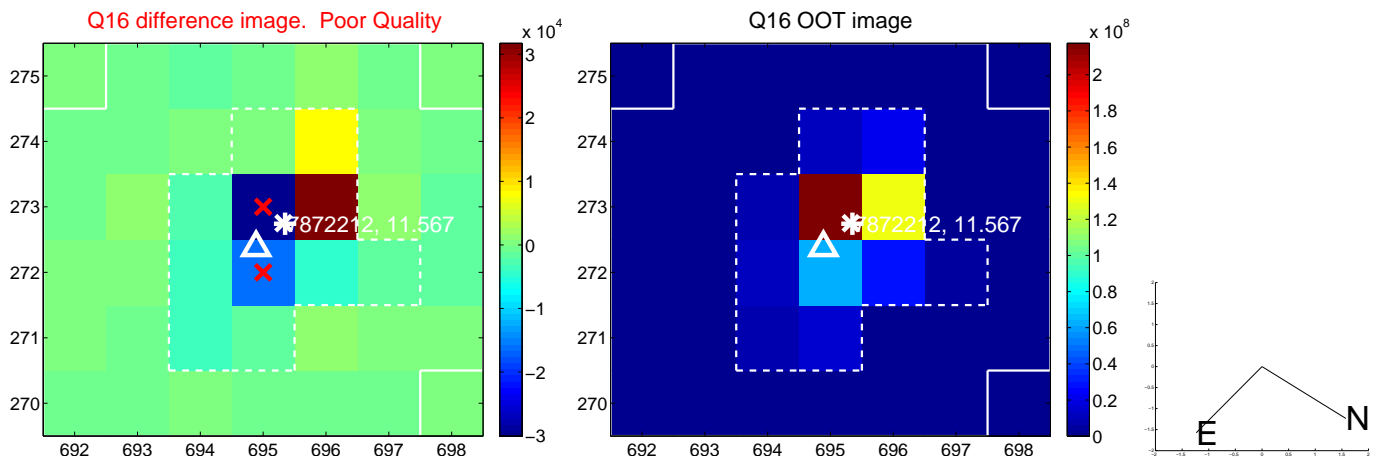
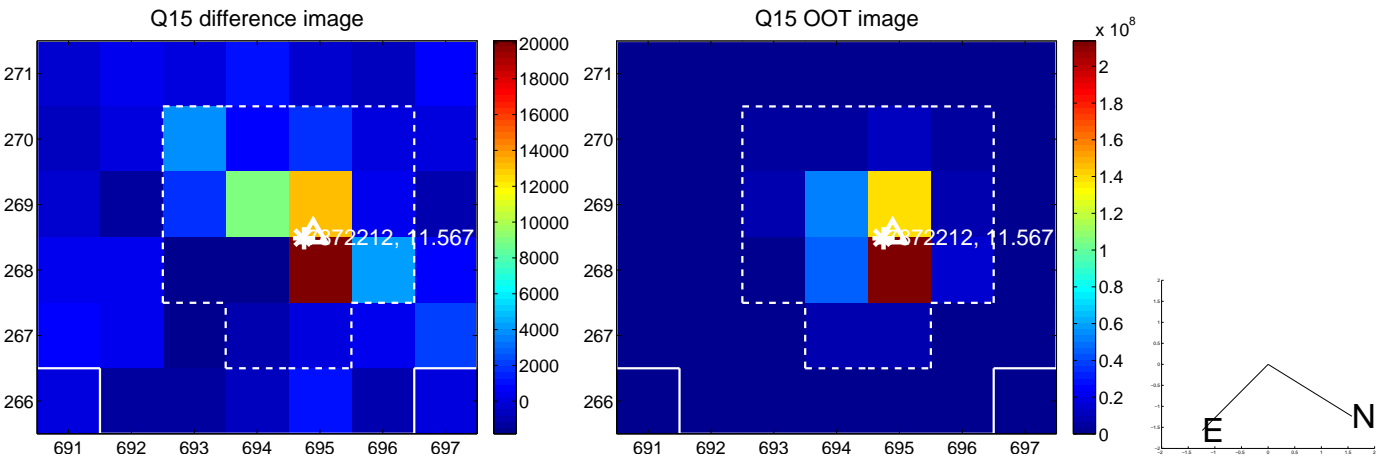
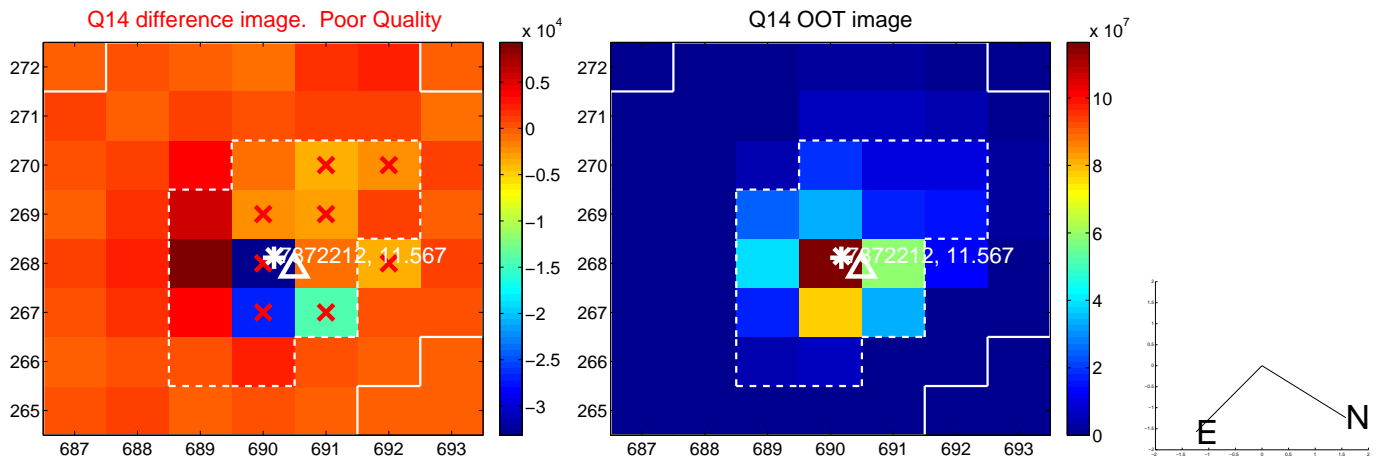
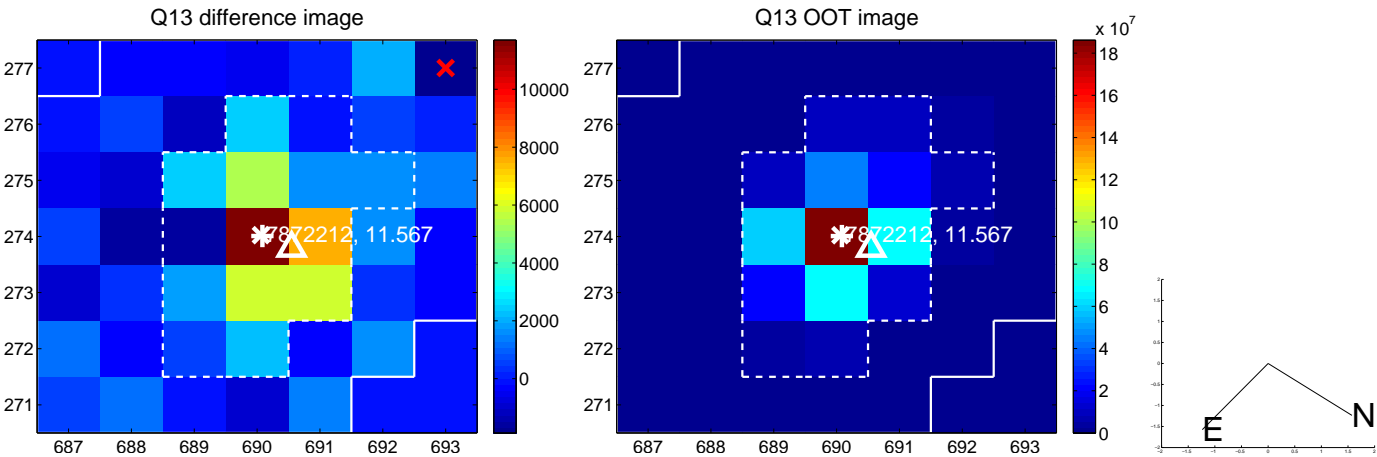
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



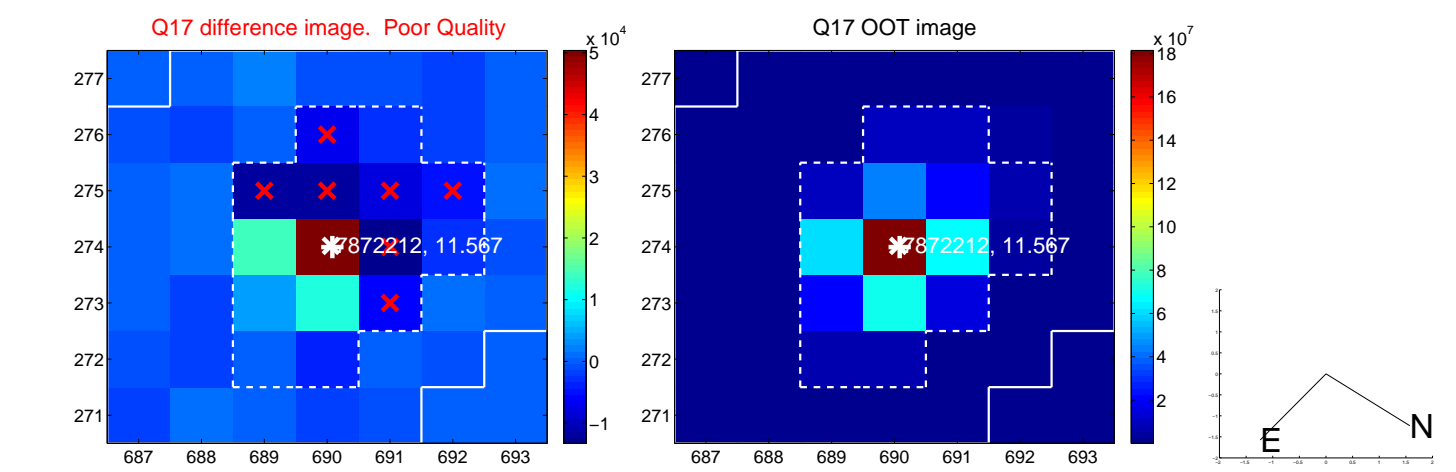
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



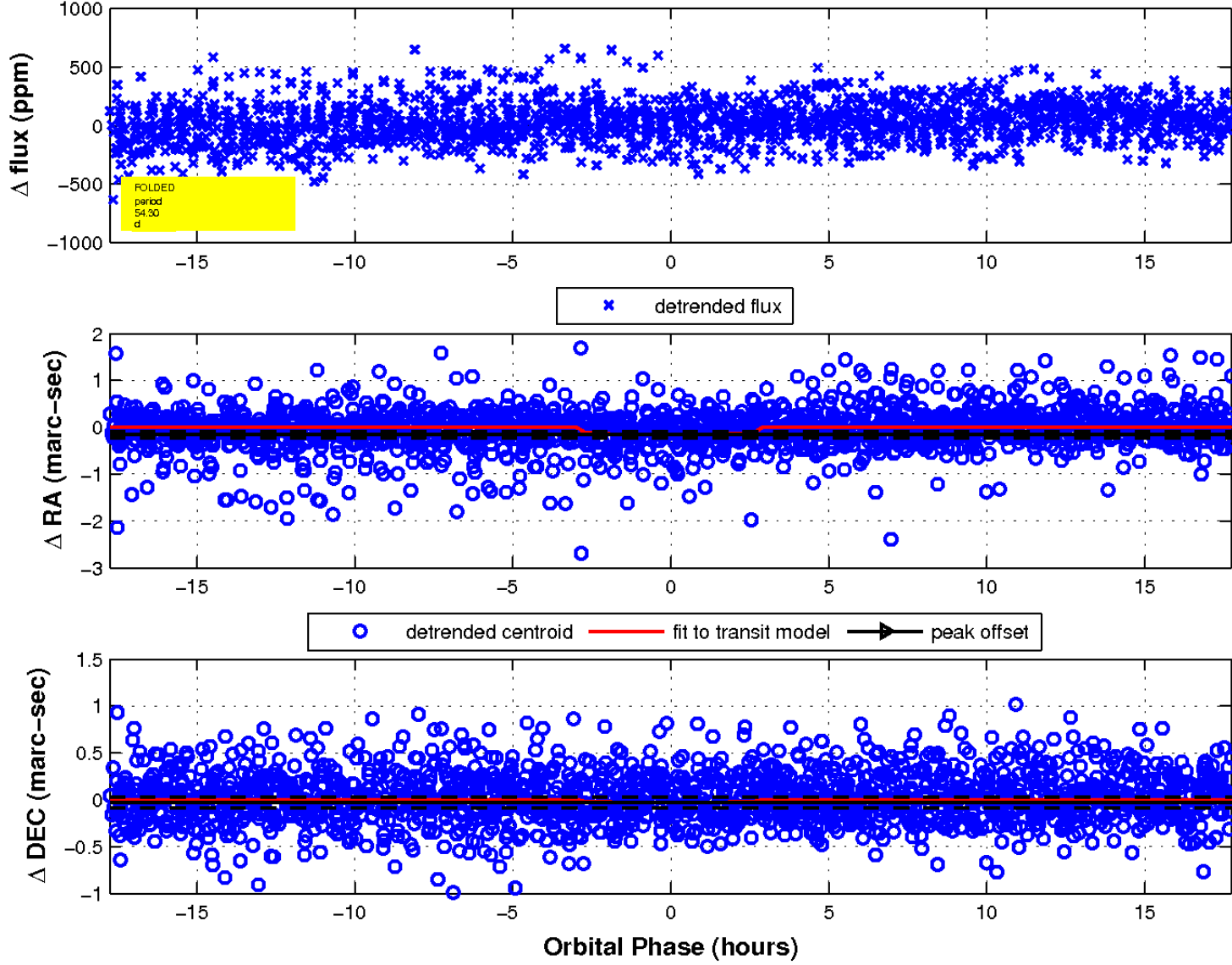
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

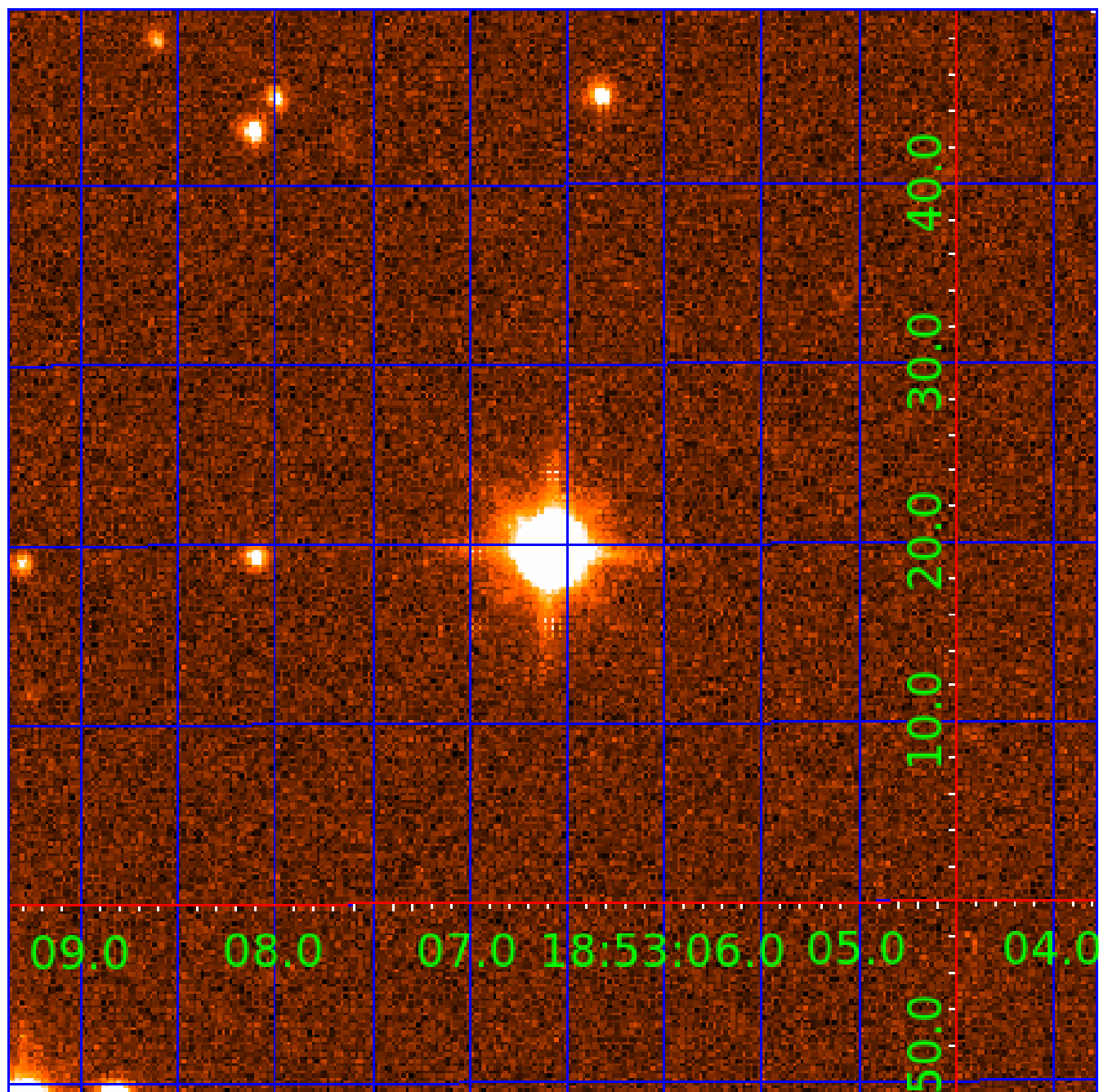


fluxWeightedCentroids, Planet 6 of 7



UKIRT Image

Declination



KIC 007872212

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})
007872212-01	OBS	No	4.574311	134.084776	19.7	14.955	8.2	4.6	3.24	6453	1.64	4069.23
007872212-02	OBS	No	4.571540	131.943111	41.8	13.660	10.4	11.0	3.24	6453	2.52	4072.52
007872212-03	OBS	No	302.128440	136.977375	234.4	17.919	12.7	5.7	3.24	6453	5.27	15.24
007872212-04	OBS	No	78.349039	171.452842	237.7	3.317	9.5	6.8	3.24	6453	5.51	92.17
007872212-05	OBS	No	67.620767	160.520689	204.8	3.082	8.6	6.9	3.24	6453	5.16	112.16
007872212-06	OBS	No	54.295050	164.647359	205.1	5.919	8.3	8.2	3.24	6453	5.17	150.29
007872212-07	OBS	No	402.502509	151.471020	290.3	8.167	7.4	7.5	3.24	6453	6.05	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007872212-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
007872212-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
007872212-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
007872212-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007872212-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007872212-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007872212-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

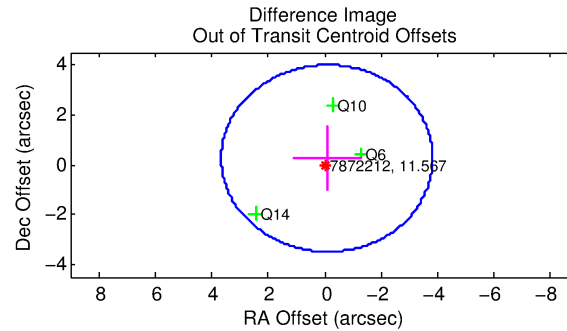
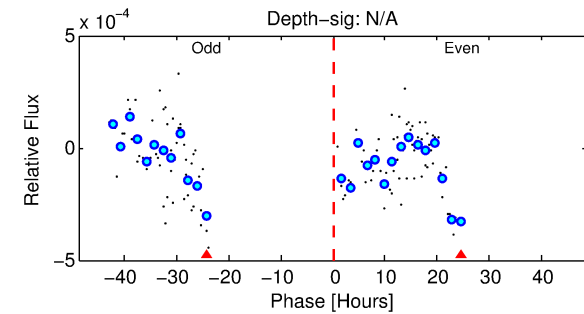
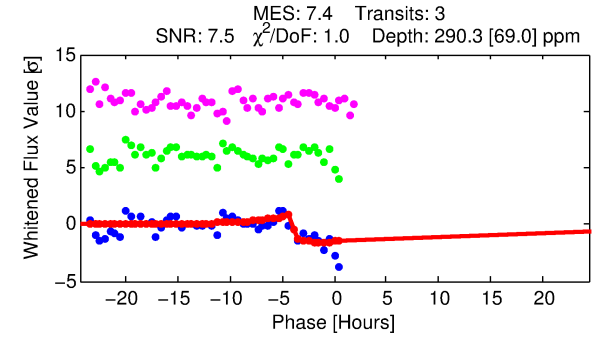
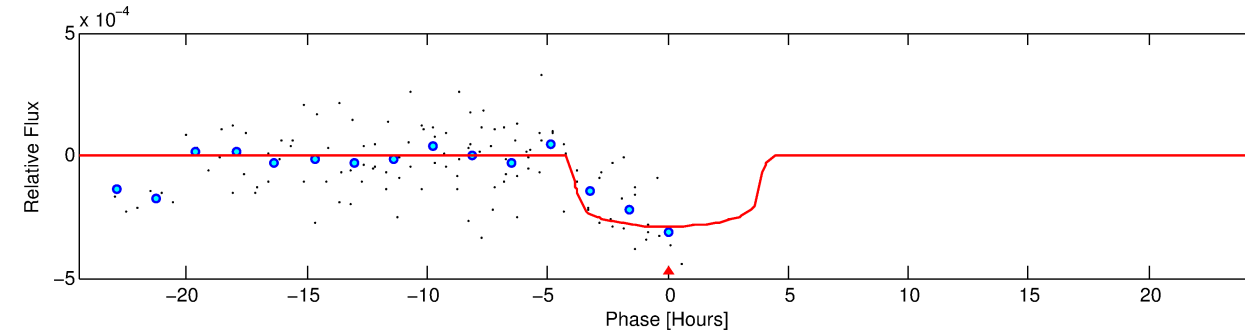
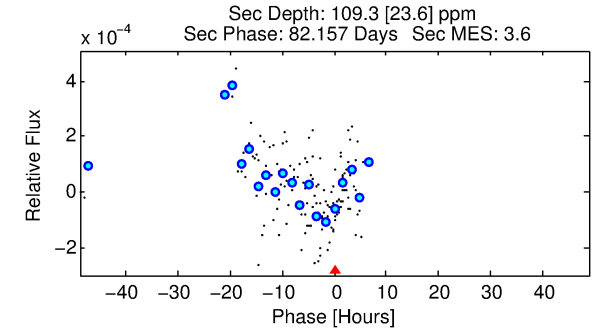
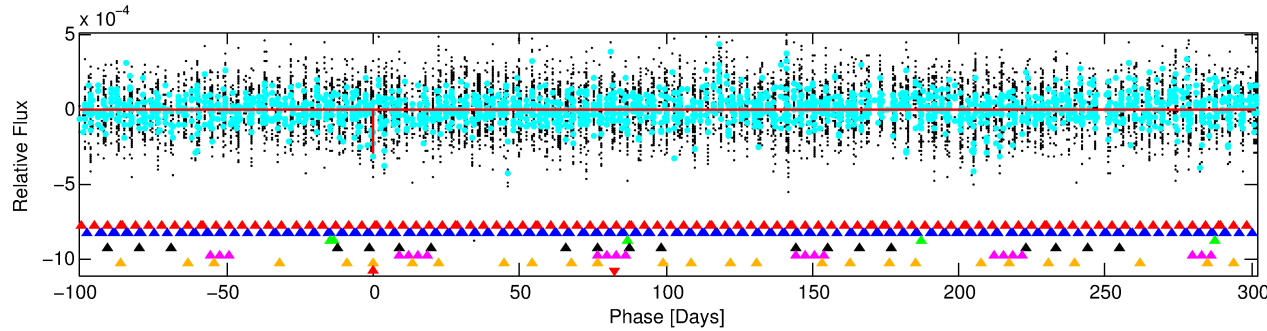
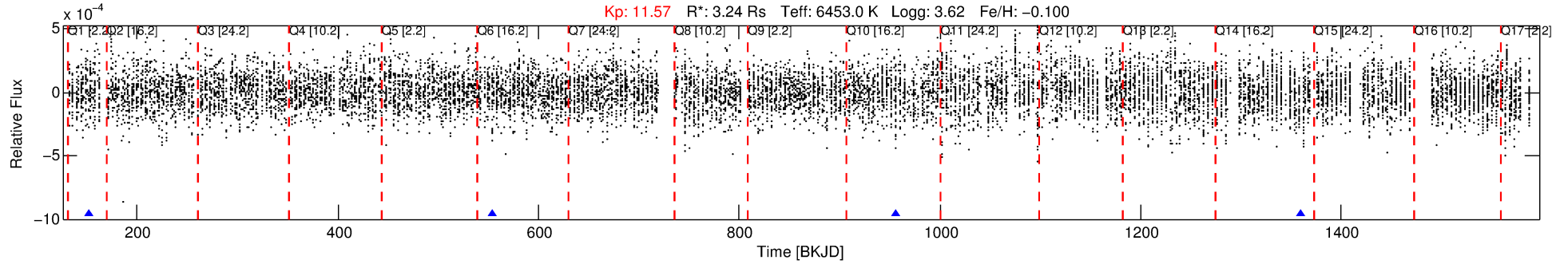
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007872212-07

No Significant Match Found

DV One-Page Summary

KIC: 7872212 Candidate: 7 of 7 Period: 402.503 d



DV Fit Results:

Period = 402.50251 [0.00911] d
Epoch = 151.4710 [0.0700] BKJD
Rp/R* = 0.0171 [0.0175]
a/R* = 244.28 [1392.51]
b = 0.78 [2.86]
Seff = 10.40 [6.01]
Teq = 458 [66] K
Rp = 6.05 [6.59] Re
a = 1.2509 [0.4490] AU
Ag = 2569.72 [5474.76] [0.47σ]
Teffp = 5040 [2590] K [1.77σ]

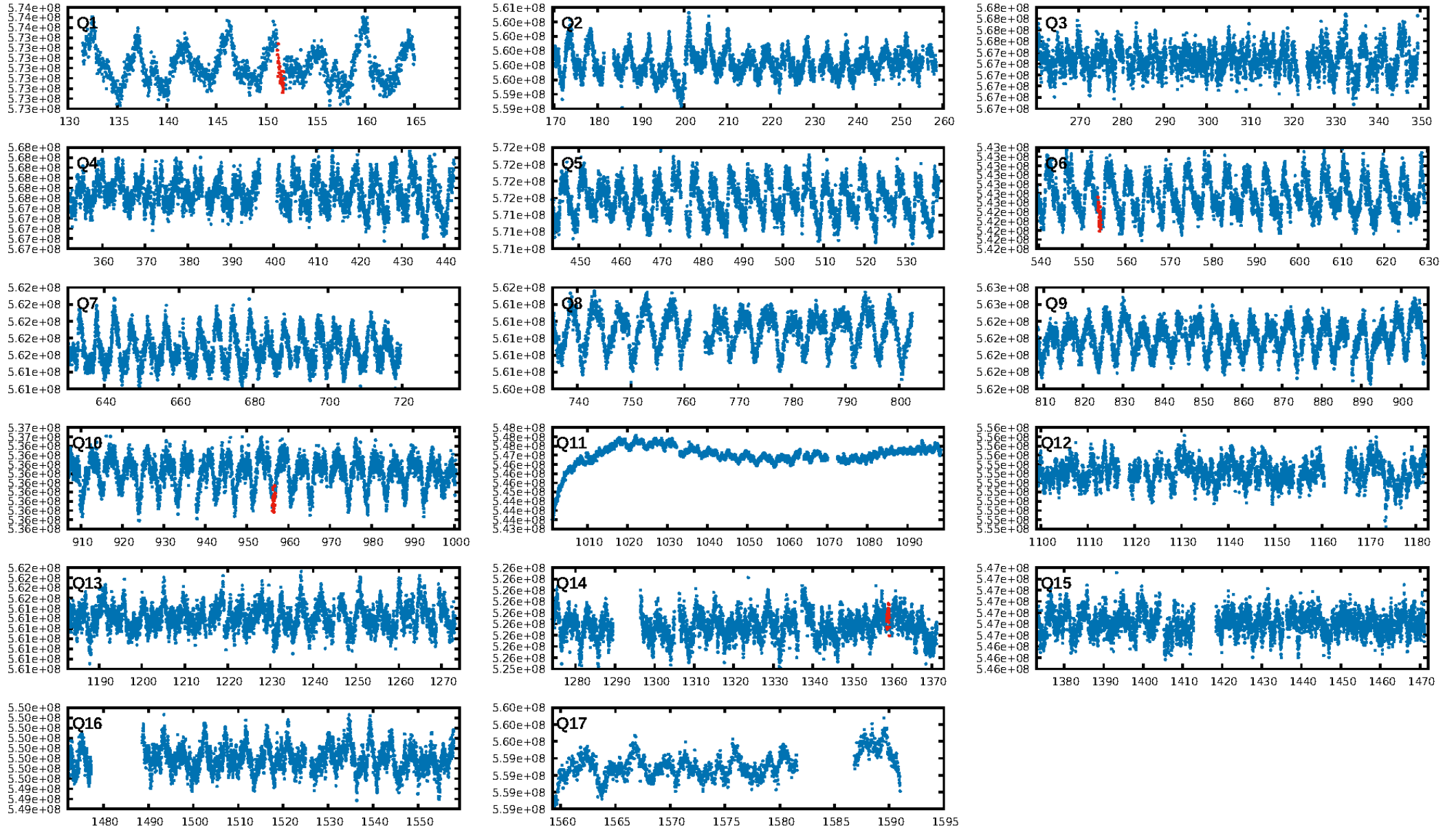
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [122.33σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.74e-07
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.346
Centroid-sig: 58.9%
Centroid-so: 0.305 arcsec [0.72σ]
OotOffset-rm: 0.267 arcsec [0.21σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-rm: 0.303 arcsec [0.24σ]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.25 [1/4]

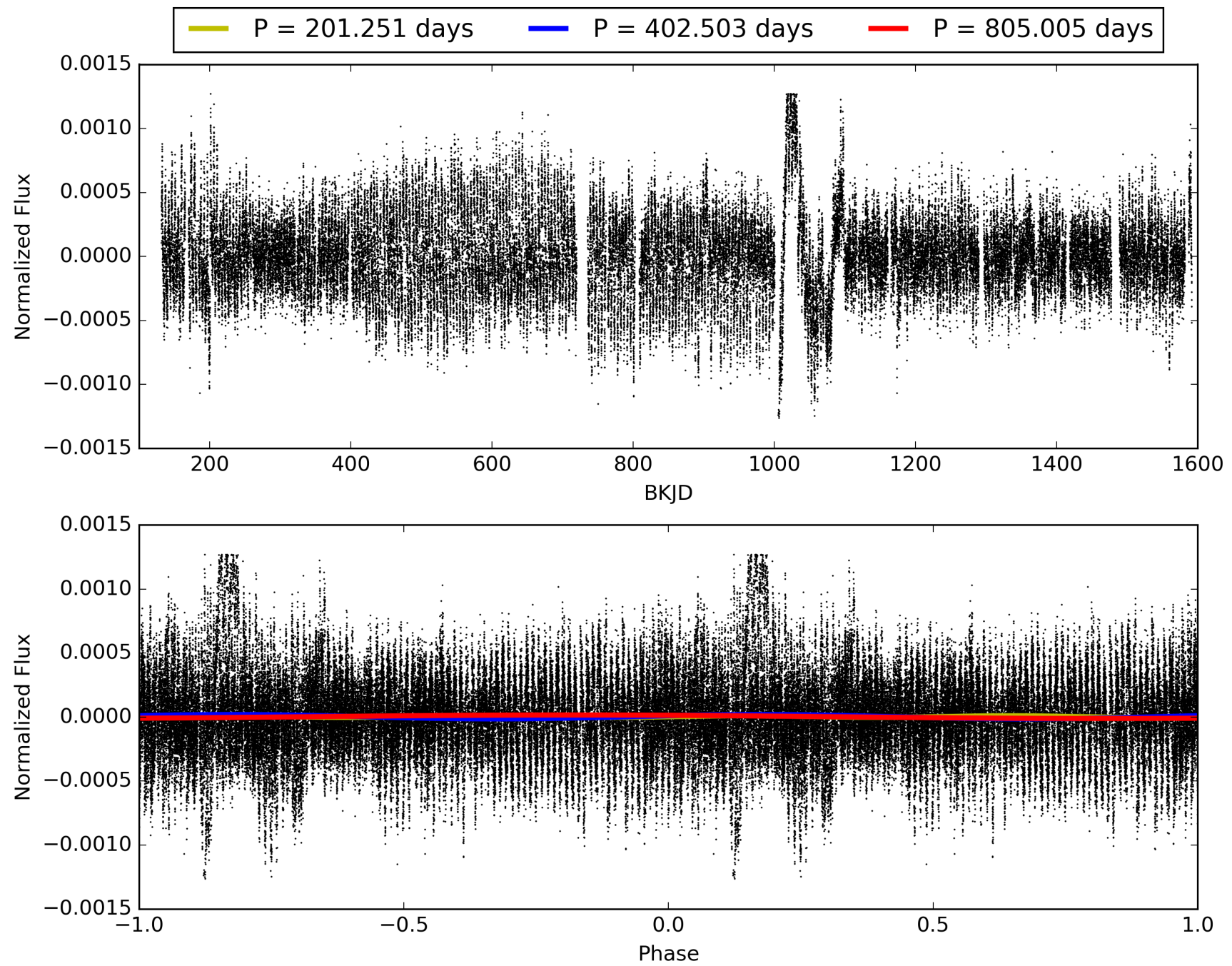
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:49:24 Z

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

TCE 007872212-07, PDC Light Curves

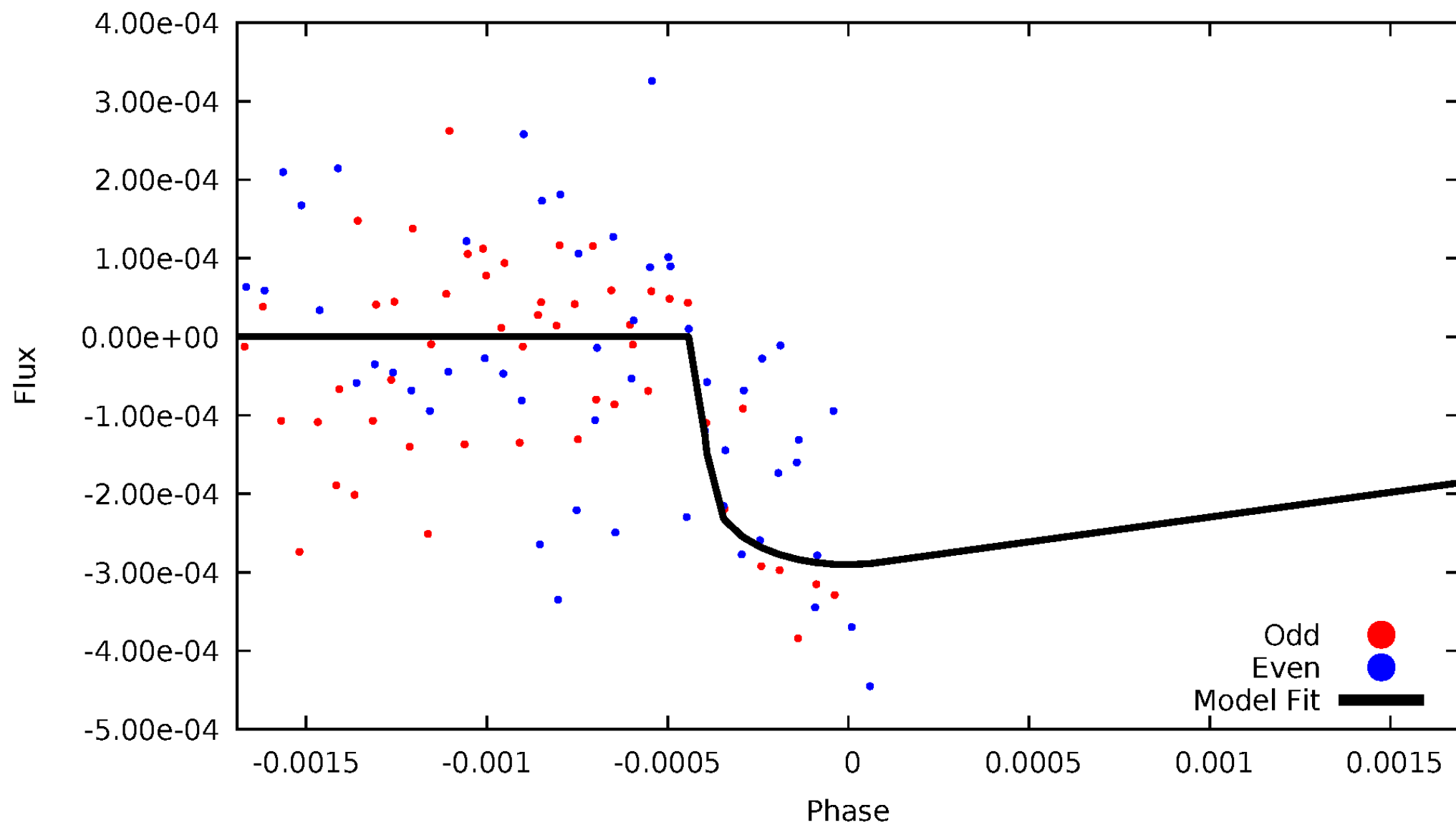


TCE 007872212-07



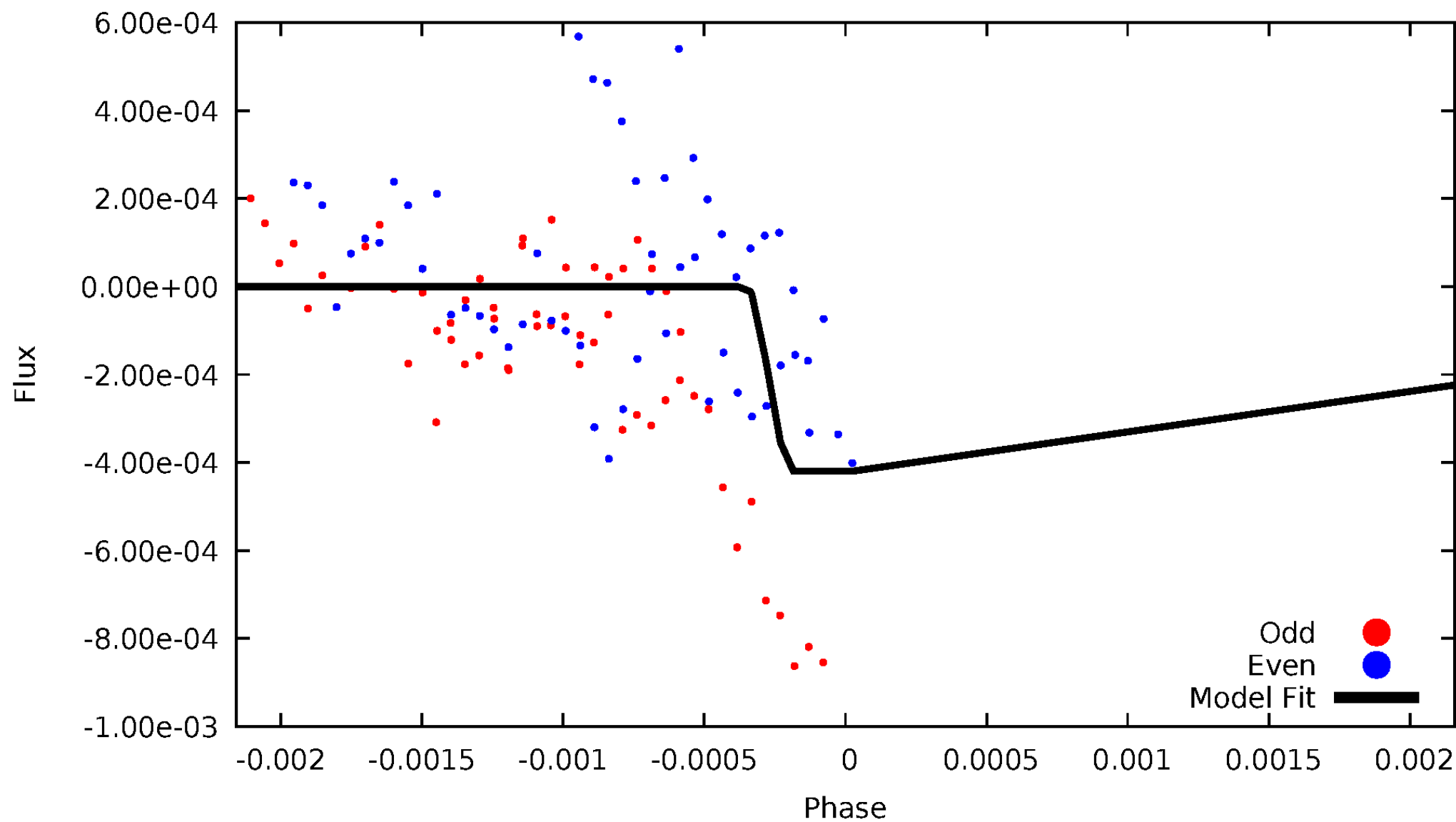
DV Odd/Even

TCE 007872212-07



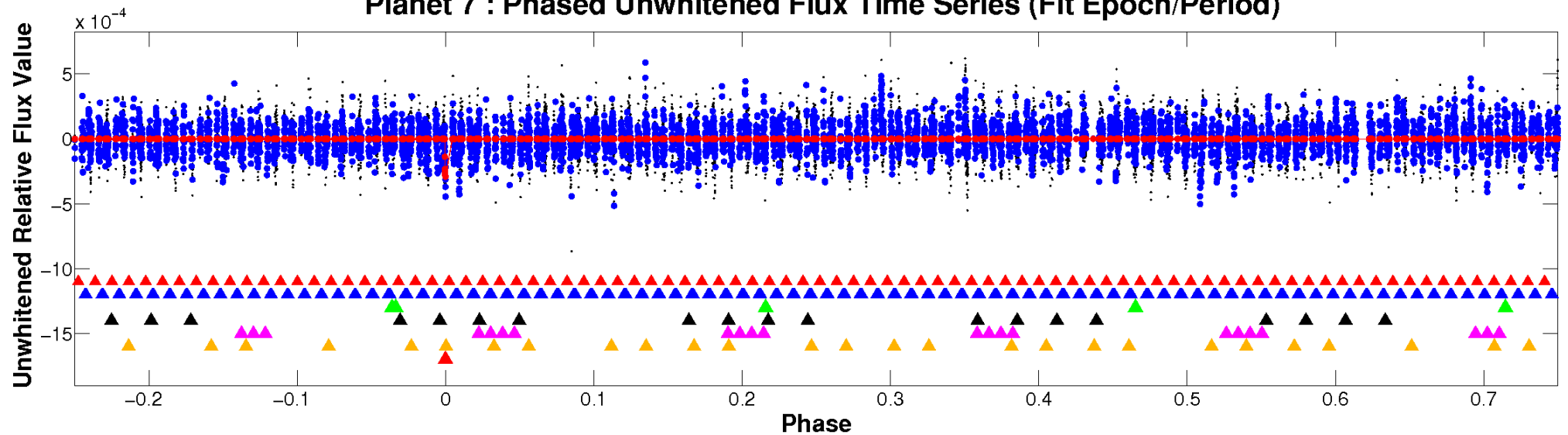
ALT Odd/Even

TCE 007872212-07

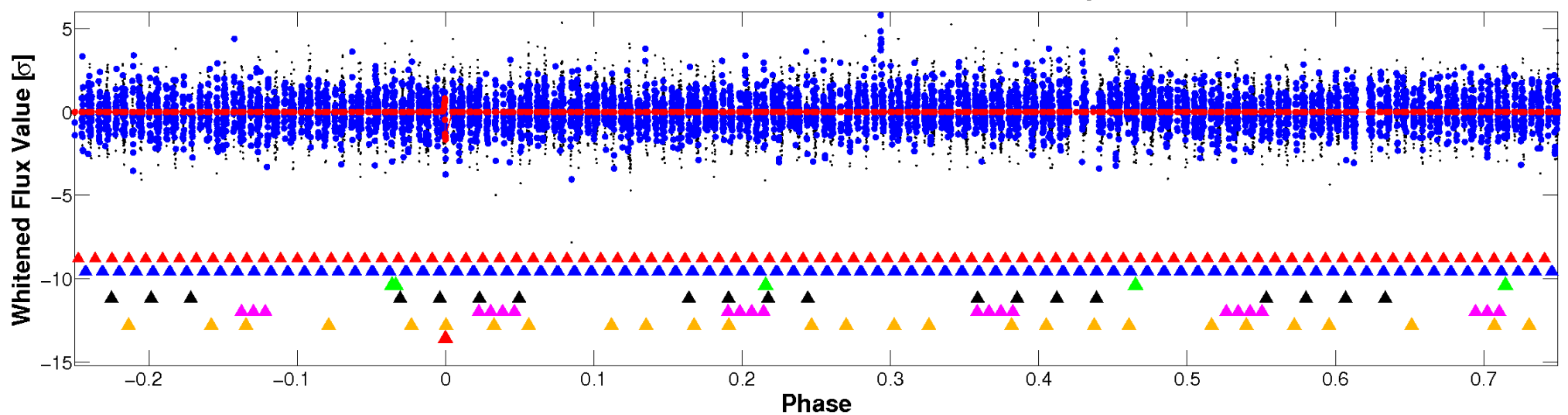


Non-Whitened Vs. Whitened Light Curve

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

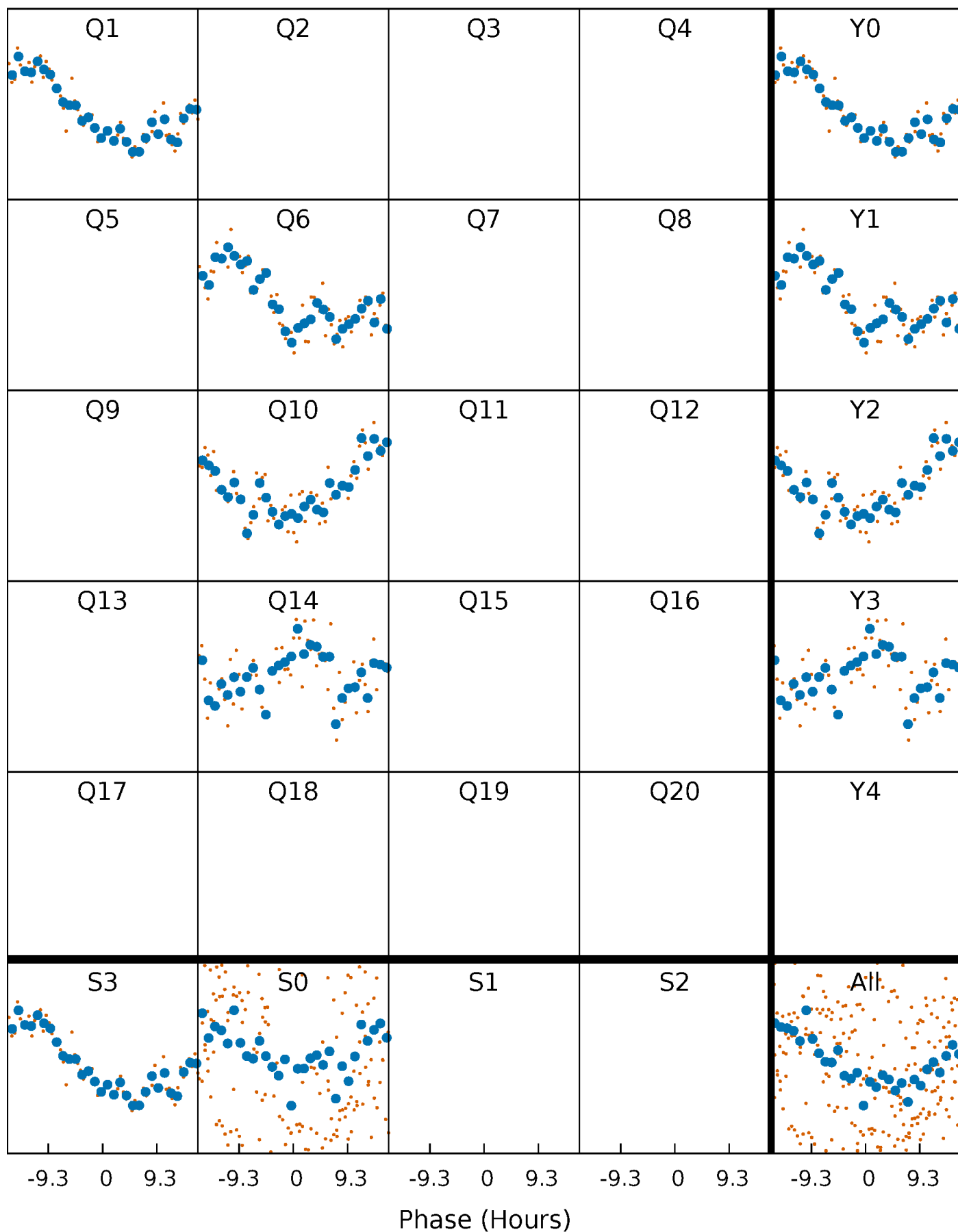


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



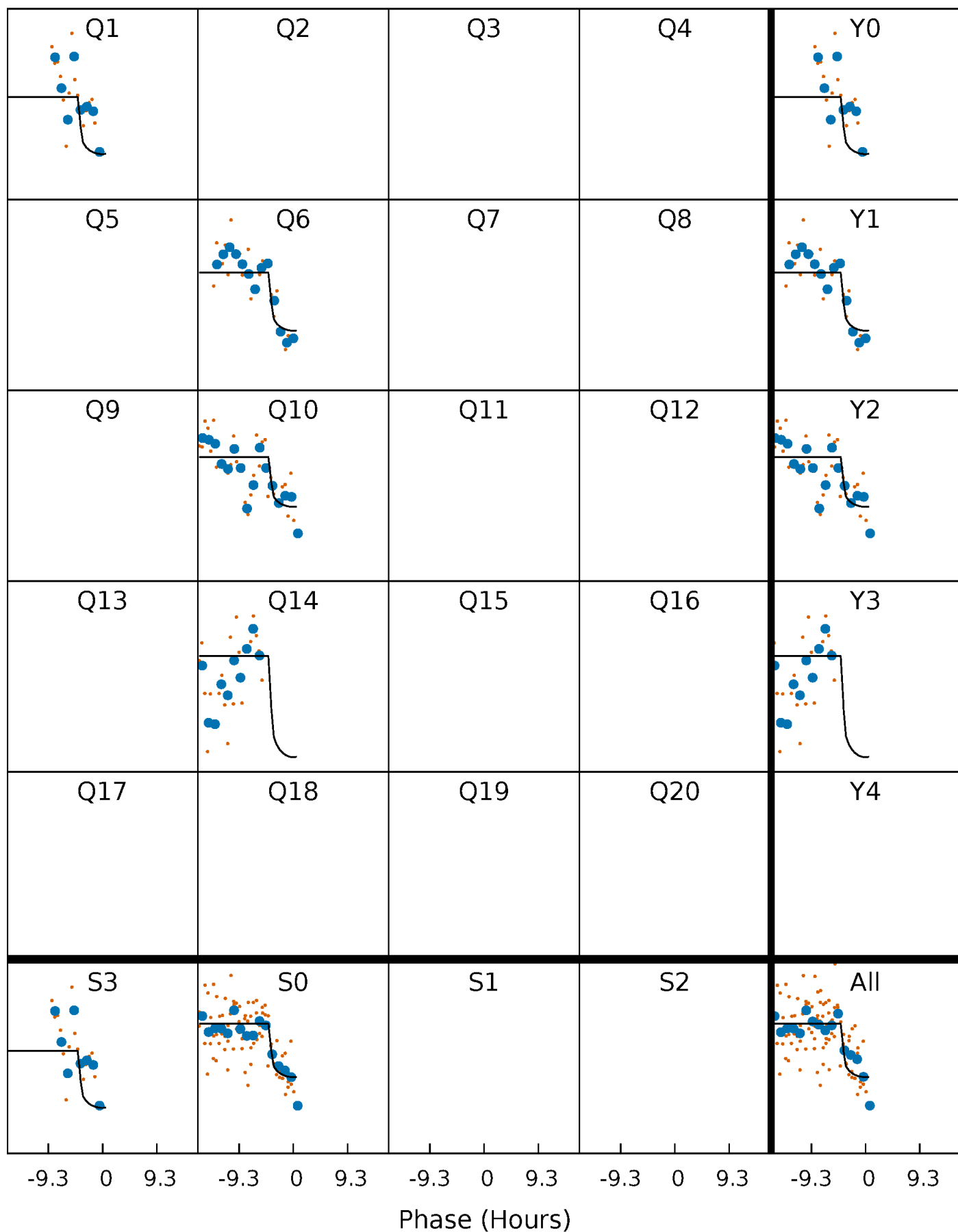
PDC Quarter-Phased Transit Curves

TCE 007872212-07 $P=402.502509$ Days $T_0=151.471020$ (BKJD)



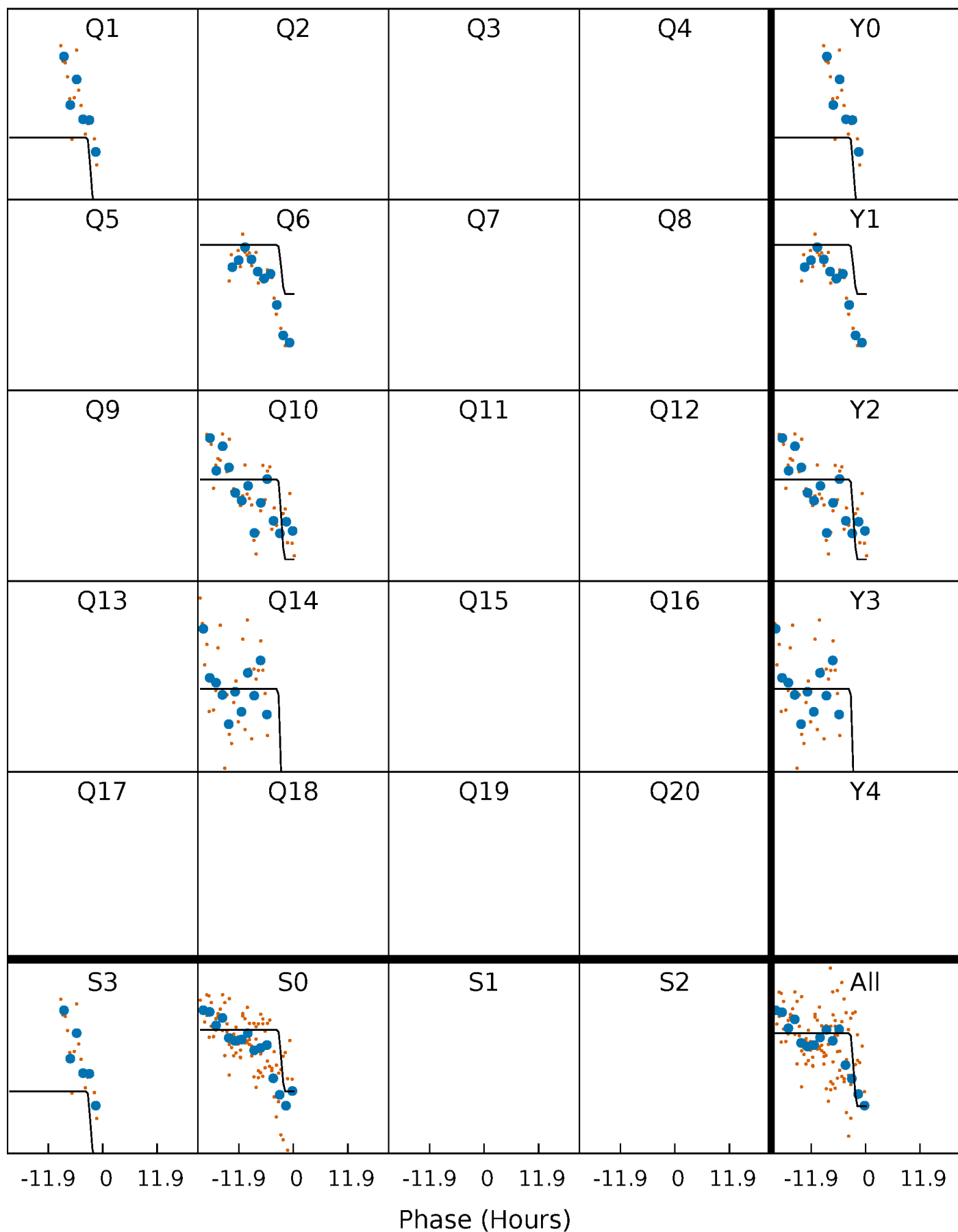
DV Quarter-Phased Transit Curves

TCE 007872212-07 $P=402.502509$ Days $T_0=151.471020$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

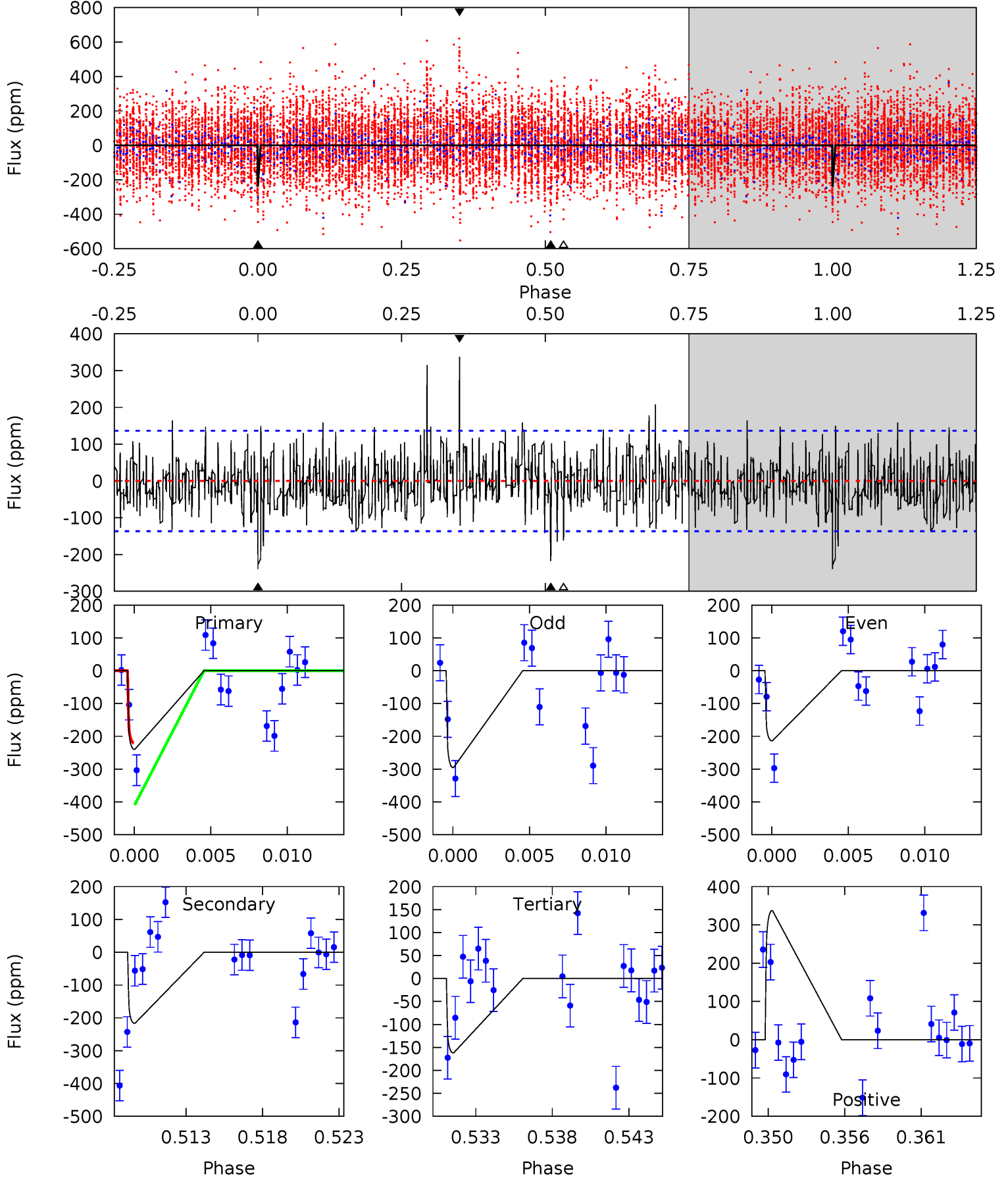
TCE 007872212-07 $P=402.500265$ Days $T_0=151.489852$ (BKJD)



DV Model-Shift Uniqueness Test

007872212-07, P = 402.502509 Days, E = 151.471020 Days

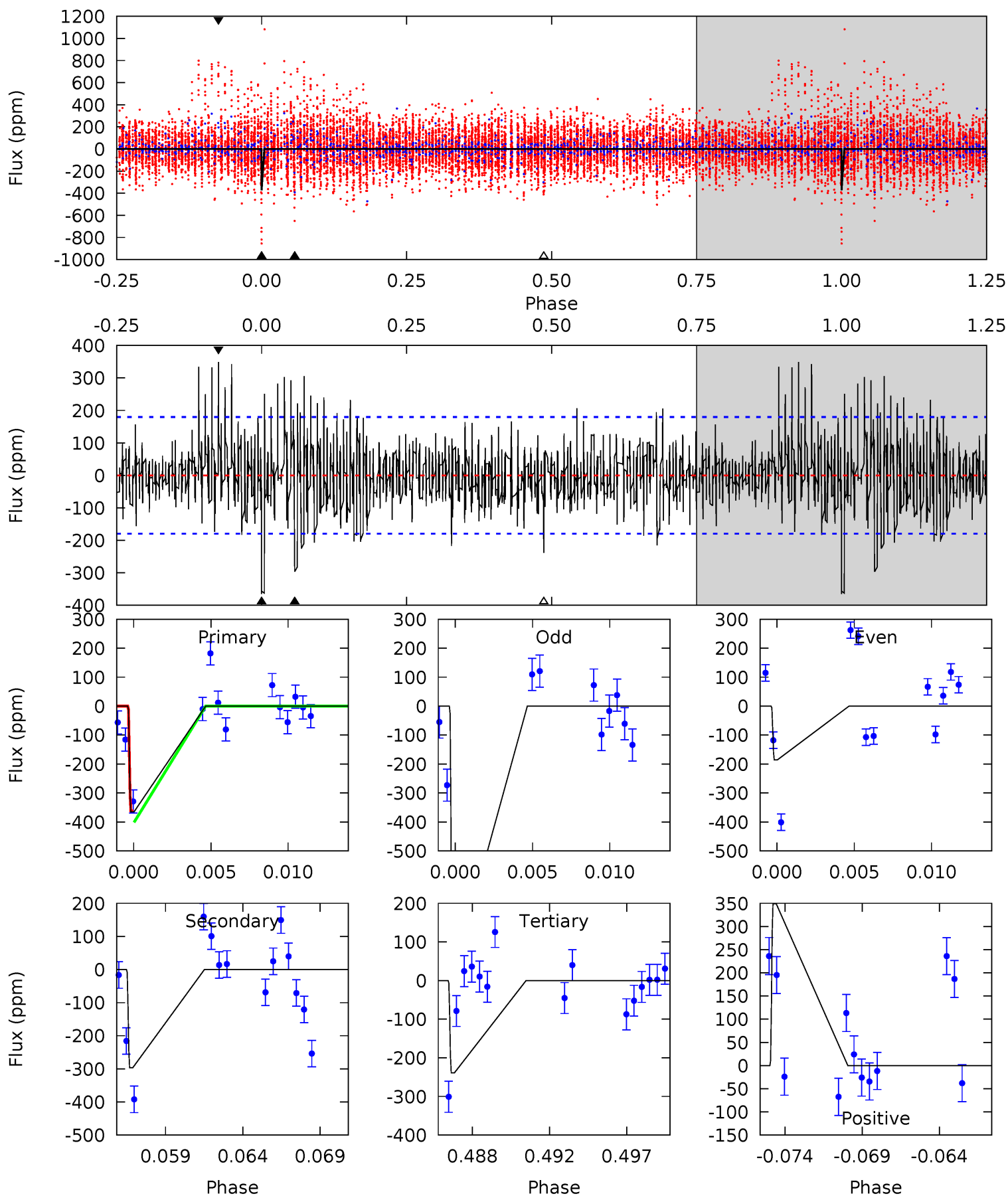
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.05	8.17	6.11	12.7	5.15	2.80	2.09	2.94	-3.68	2.07	-4.56	1.43	0.84	0.58	1.85



Alt Model-Shift Uniqueness Test

007872212-07, P = 402.500265 Days, E = 151.489852 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	8.52	6.86	10.0	5.16	2.81	1.96	3.63	0.45	1.66	-1.52	9.86	1.47	0.49	0.26



Stellar Parameters For KIC 007872212

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-162}	$3.625^{+0.332}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$3.236^{+0.409}_{-1.227}$	$1.613^{+0.220}_{-0.330}$	$0.067^{+0.149}_{-0.017}$
	+3%/-3%	+9%/-2%	+300%/-250%	+13%/-38%	+14%/-20%	+222%/-25%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007872212-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-217 ± 27	$7.20^{+5.10}_{-4.67}$	629^{+32}_{-60}	5354^{+3817}_{-1034}	3730^{+24488}_{-2497}
Alt.	-296 ± 35	$7.65^{+6.05}_{-4.94}$	628^{+32}_{-56}	5542^{+4054}_{-1147}	4280^{+28602}_{-2896}

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

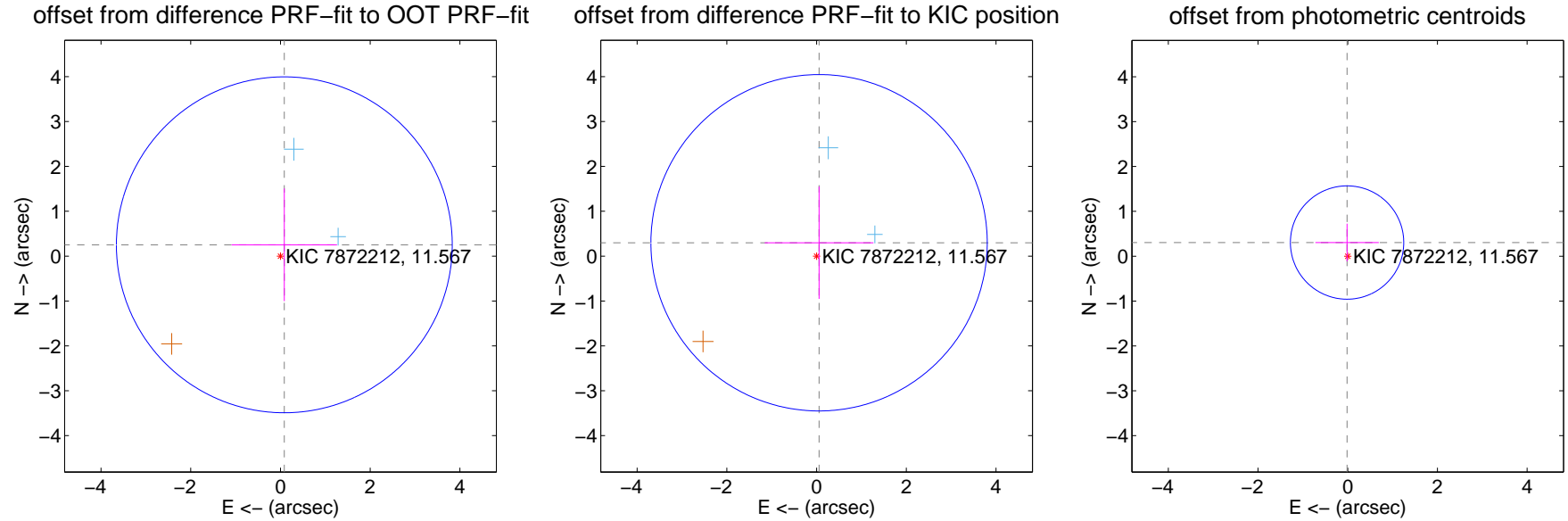
DV Centroid Data

Supplemental centroid analysis for 007872212-07. **Kepler magnitude: 11.57.** Transit SNR 7.52

There are 2 quarters with good PRF difference image offsets

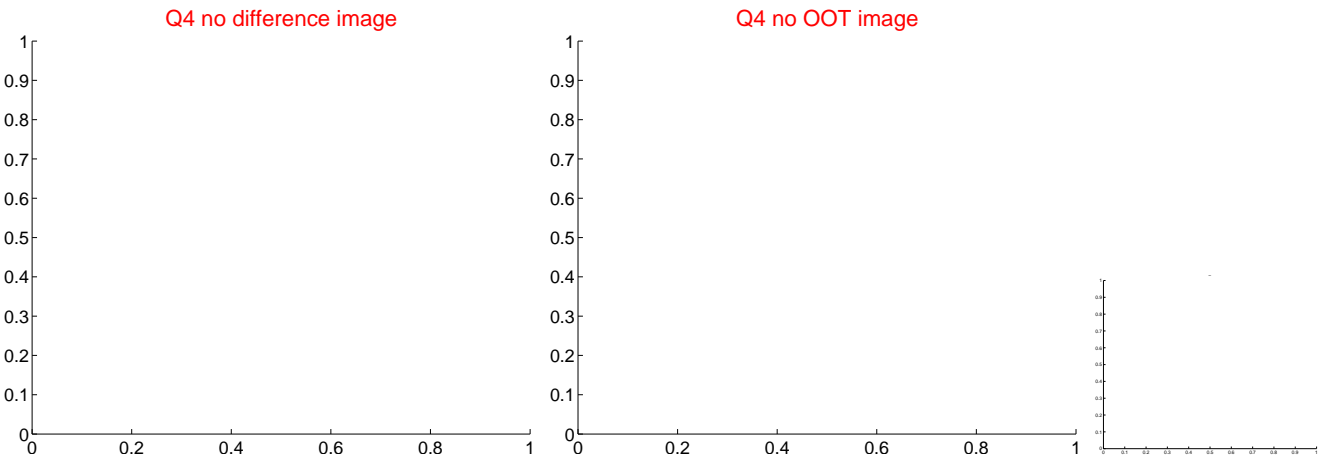
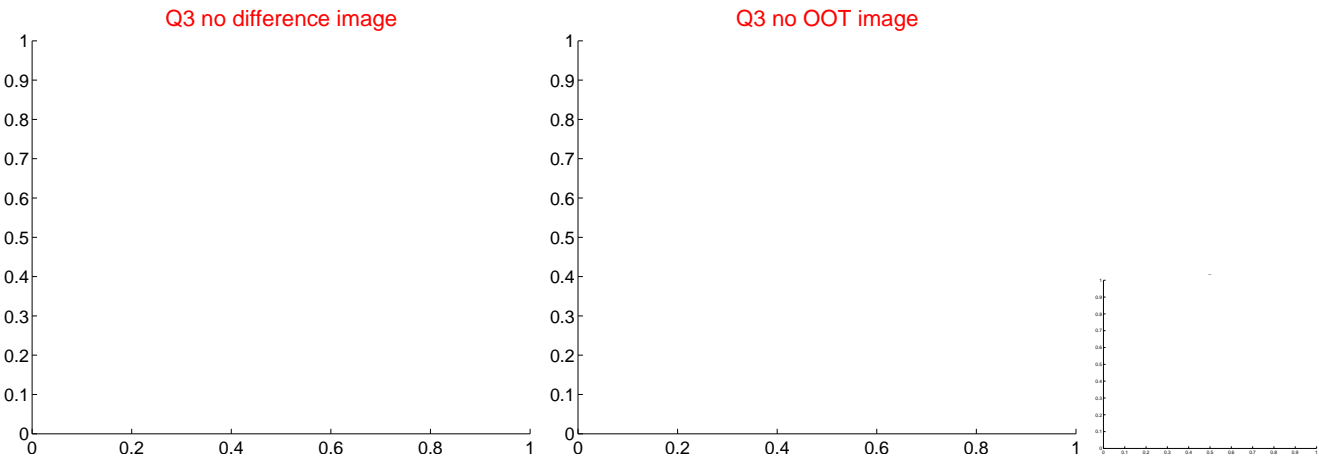
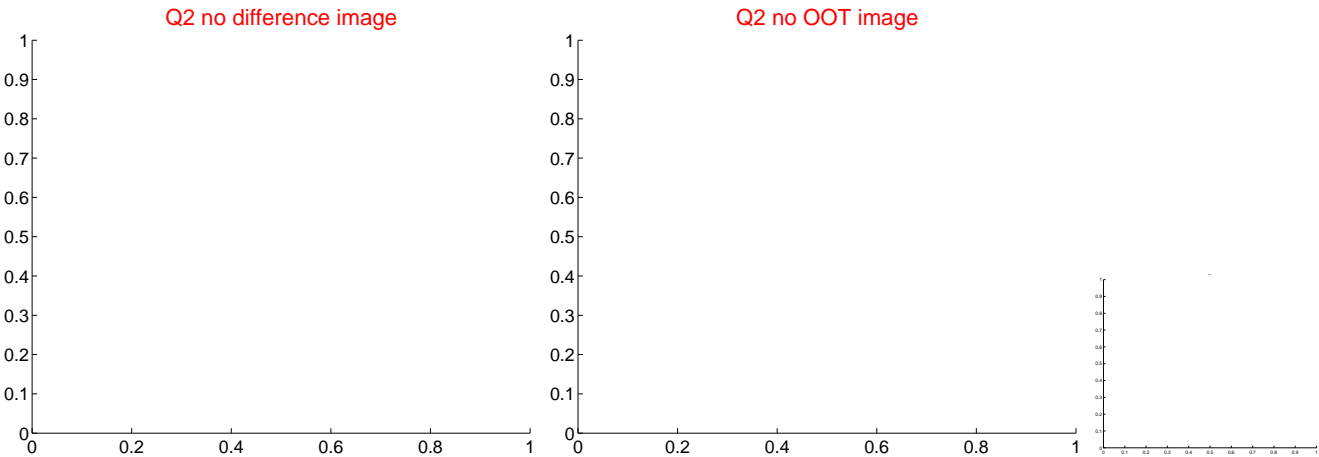
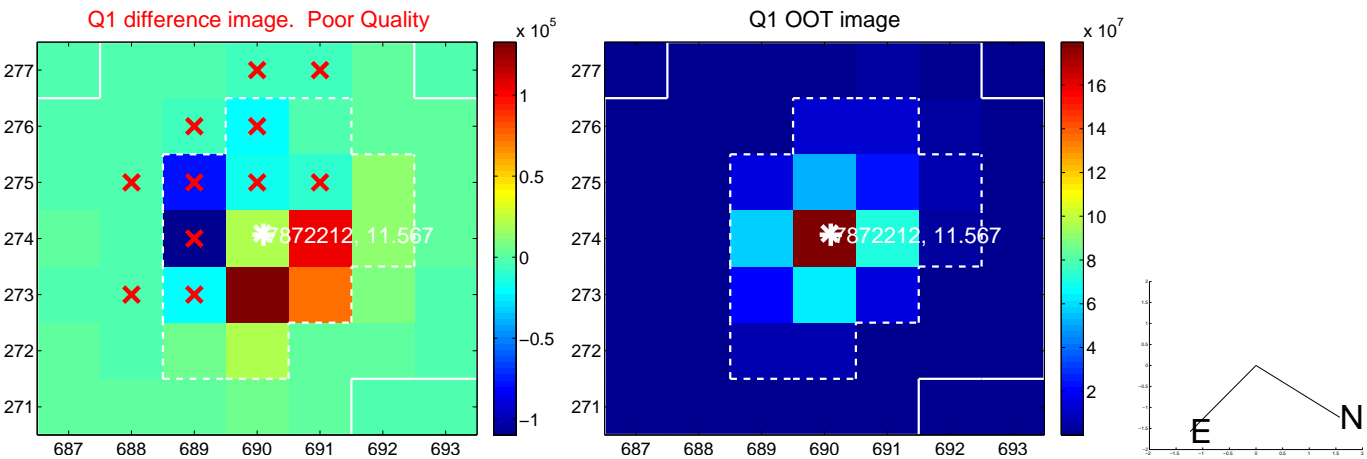
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.267 ± 1.248	0.21	-0.086 ± 1.175	0.252 ± 1.256
PRF-fit source offset from KIC position	0.303 ± 1.250	0.24	-0.055 ± 1.211	0.298 ± 1.251
photometric centroid source offset	0.31 ± 0.42	0.72	0.01 ± 0.71	0.30 ± 0.42



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

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



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

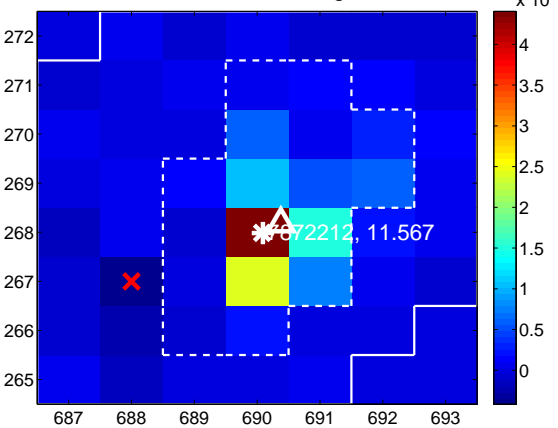
Q5 no difference image



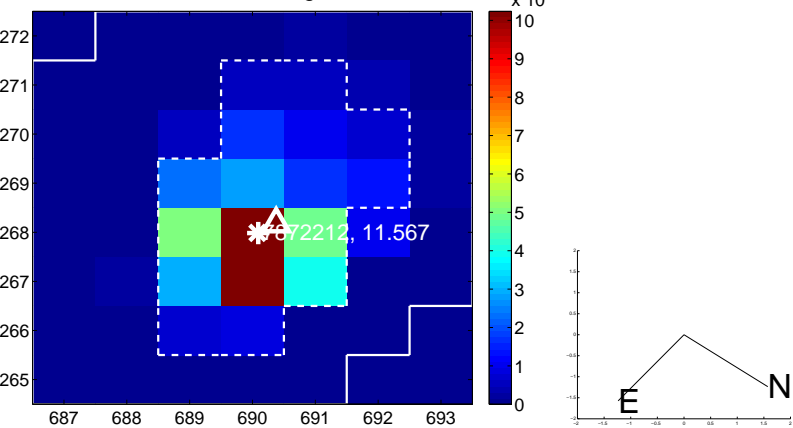
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



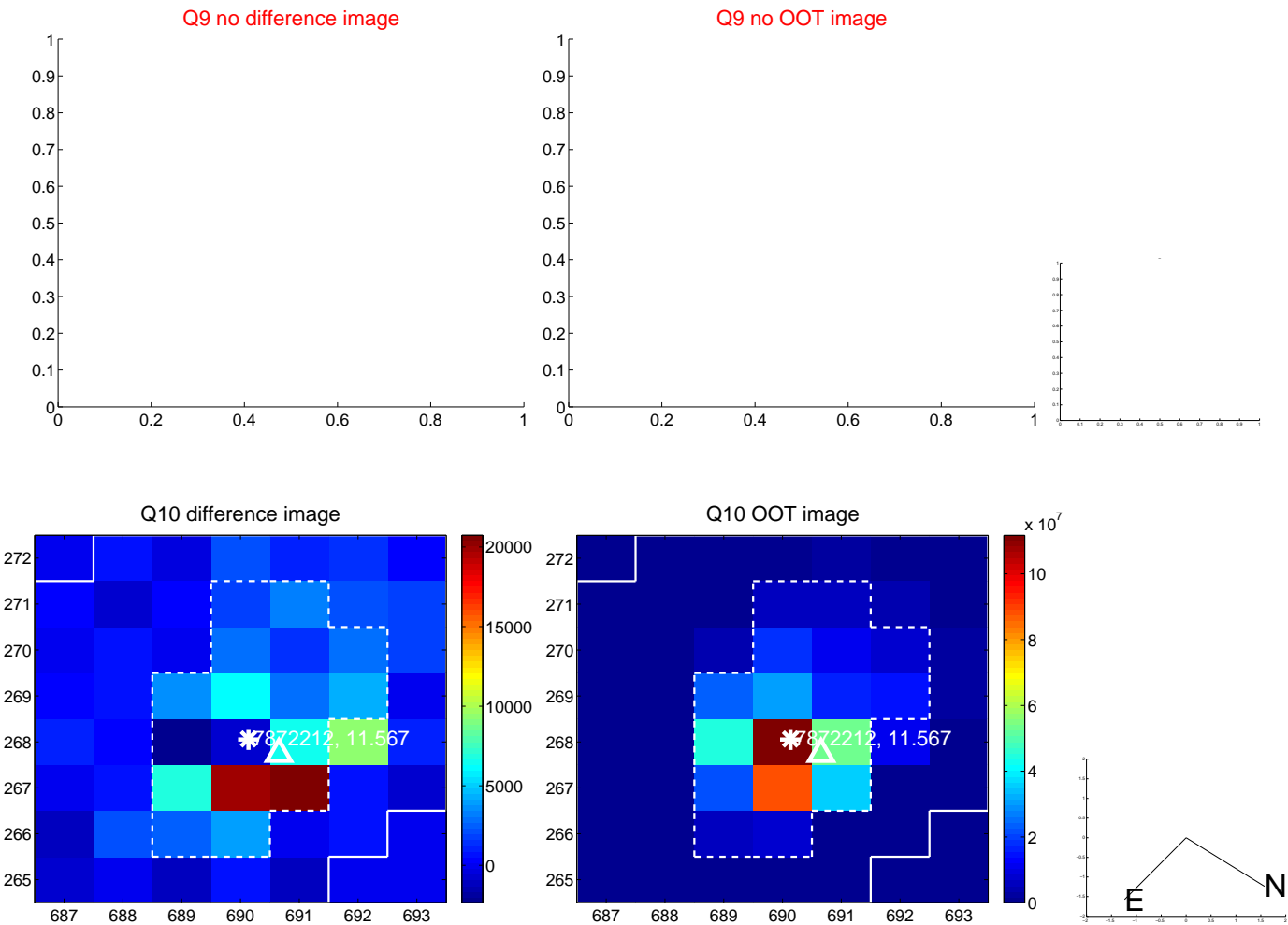
Q8 no difference image



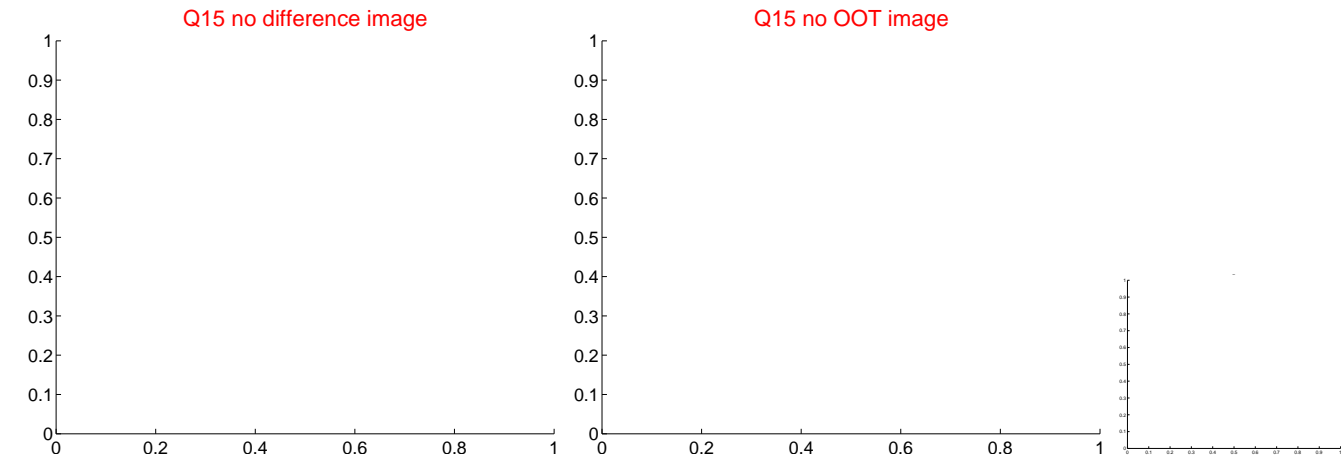
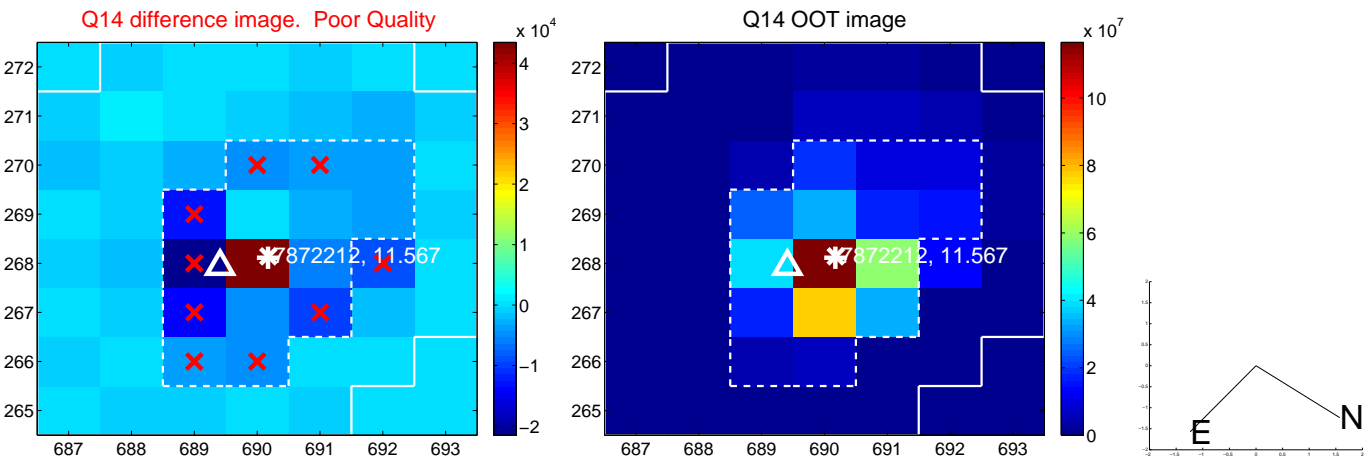
Q8 no OOT image



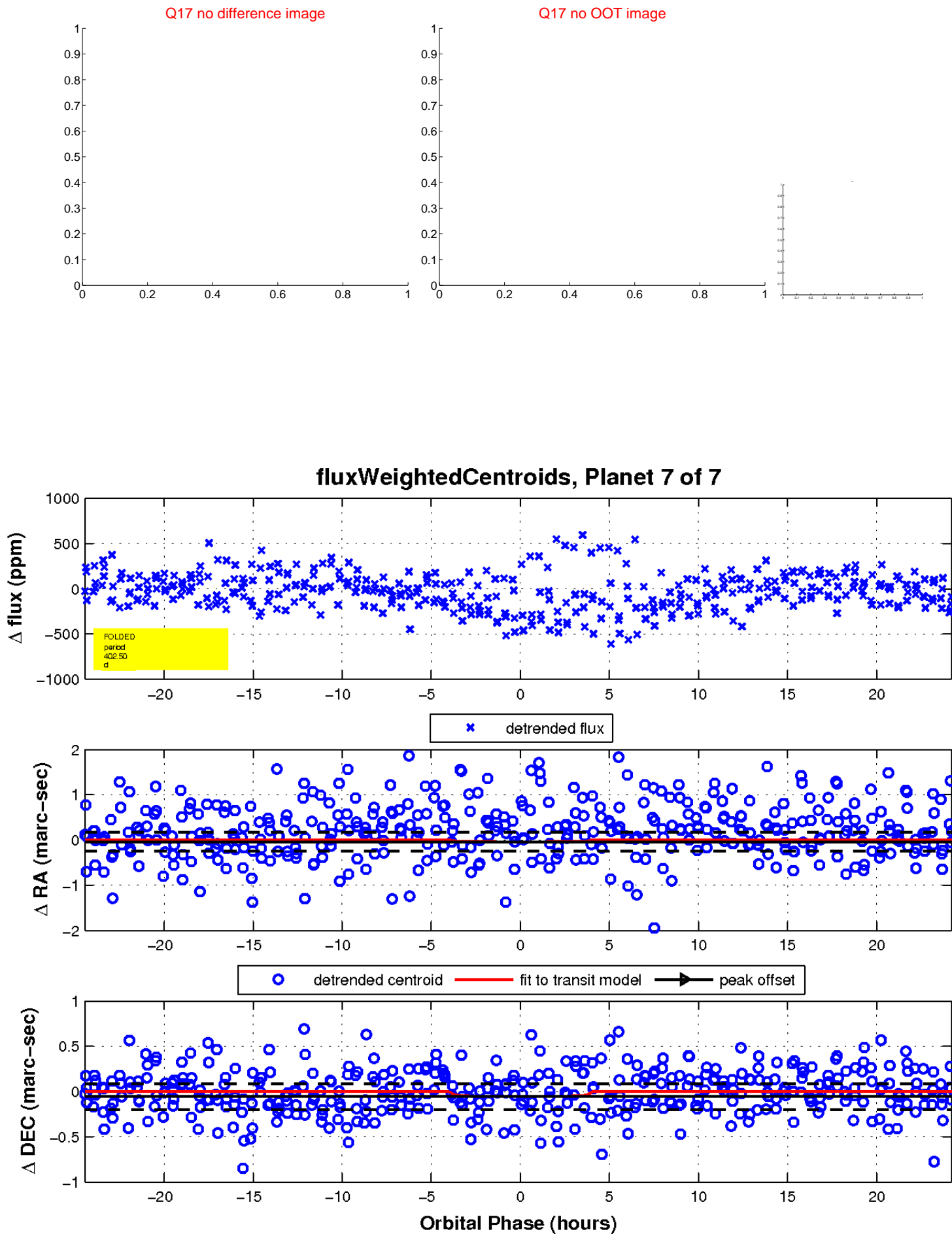
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

