

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})
008027902-01	OBS	6955.01	1.796314	131.552349	14.1	10.675	8.3	7.7	2.09	7117	0.79	8960.59
008027902-02	OBS	No	136.633031	234.251816	158.9	12.869	13.5	8.5	2.09	7117	2.84	27.80
008027902-03	OBS	No	88.248184	153.502583	122.4	21.072	12.6	8.1	2.09	7117	2.49	49.80
008027902-04	OBS	No	28.689666	153.428684	107.4	8.820	8.6	9.1	2.09	7117	2.44	222.78
008027902-05	OBS	No	54.623685	166.278027	178.4	3.172	8.3	9.4	2.09	7117	3.30	94.41
008027902-06	OBS	No	168.743612	161.903299	119.8	12.118	8.7	6.7	2.09	7117	2.60	20.98
008027902-07	OBS	No	72.541293	166.720724	183.1	5.868	8.5	8.5	2.09	7117	3.31	64.67
008027902-08	OBS	No	96.868394	167.019374	152.8	6.800	7.9	6.5	2.09	7117	2.99	43.98
008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008027902-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008027902-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

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

Ephemeris Match Information For 008027902-01

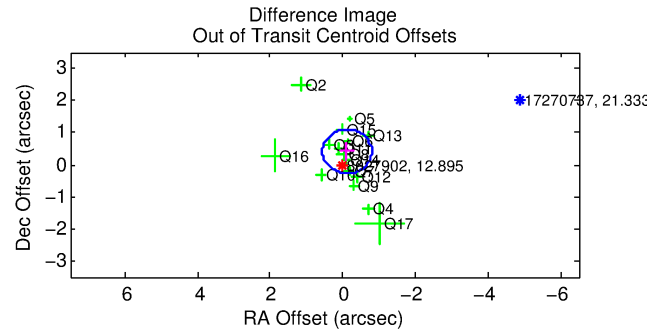
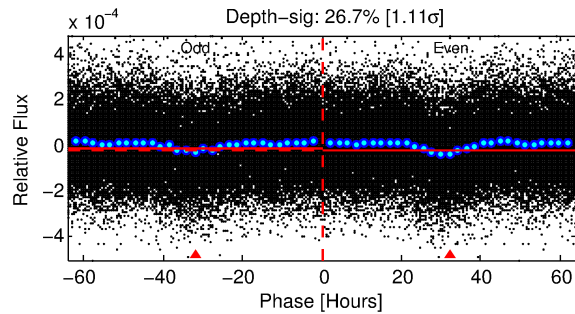
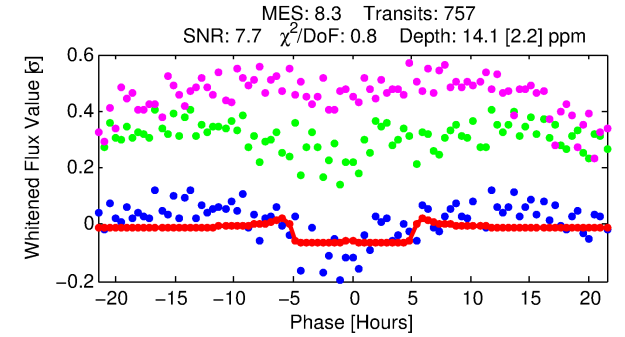
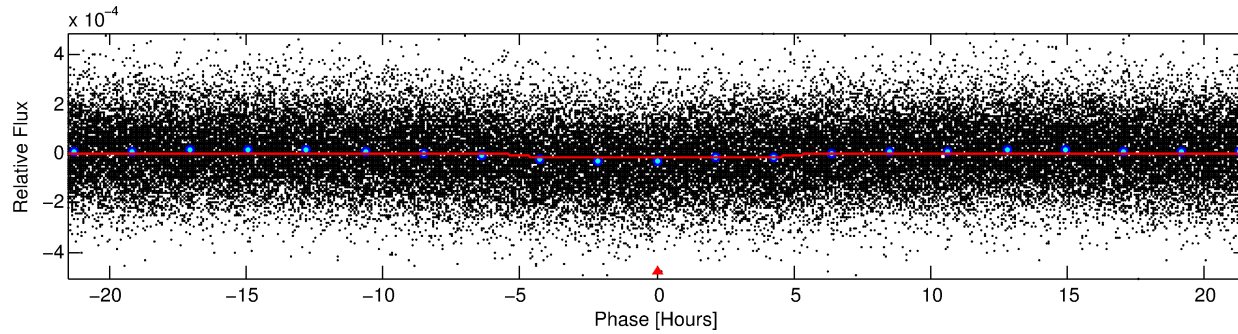
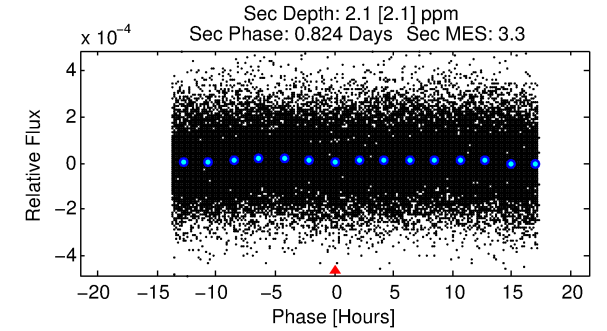
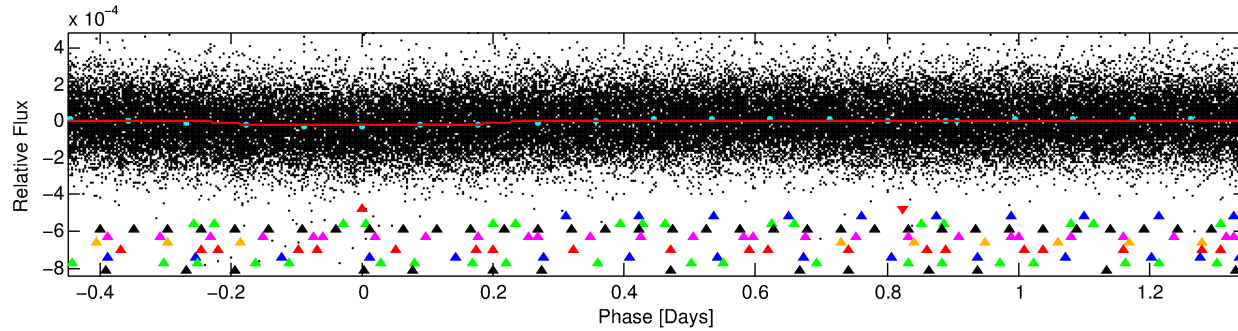
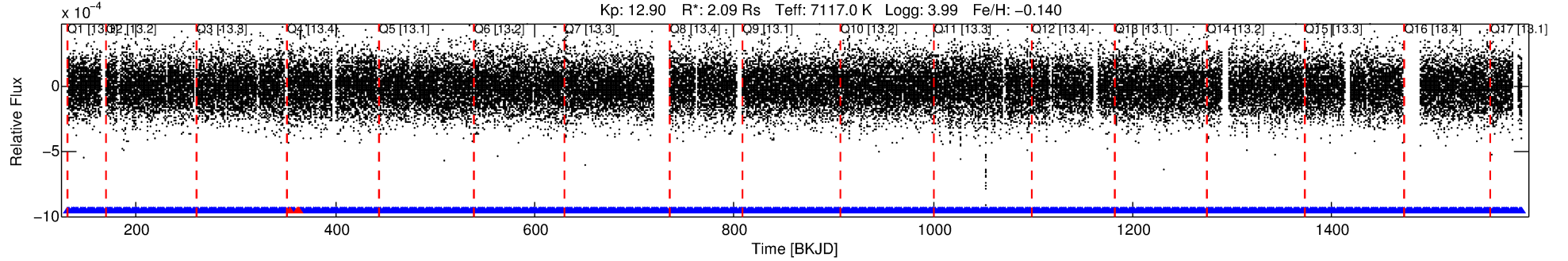
No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 1 of 10 Period: 1.796 d

KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 1.79631 [0.00003] d
Epoch = 131.5523 [0.0076] BKJD
Rp/R* = 0.0035 [0.0034]
a/R* = 1.43 [4.19]
b = 0.03 [174.26]
Seff = 8960.59 [3411.15]
Teq = 2481 [236] K
Rp = 0.79 [0.81] Re
a = 0.0335 [0.0077] AU
Ag = 2.03 [4.57] [0.23σ]
Teffp = 4581 [2545] K [0.82σ]

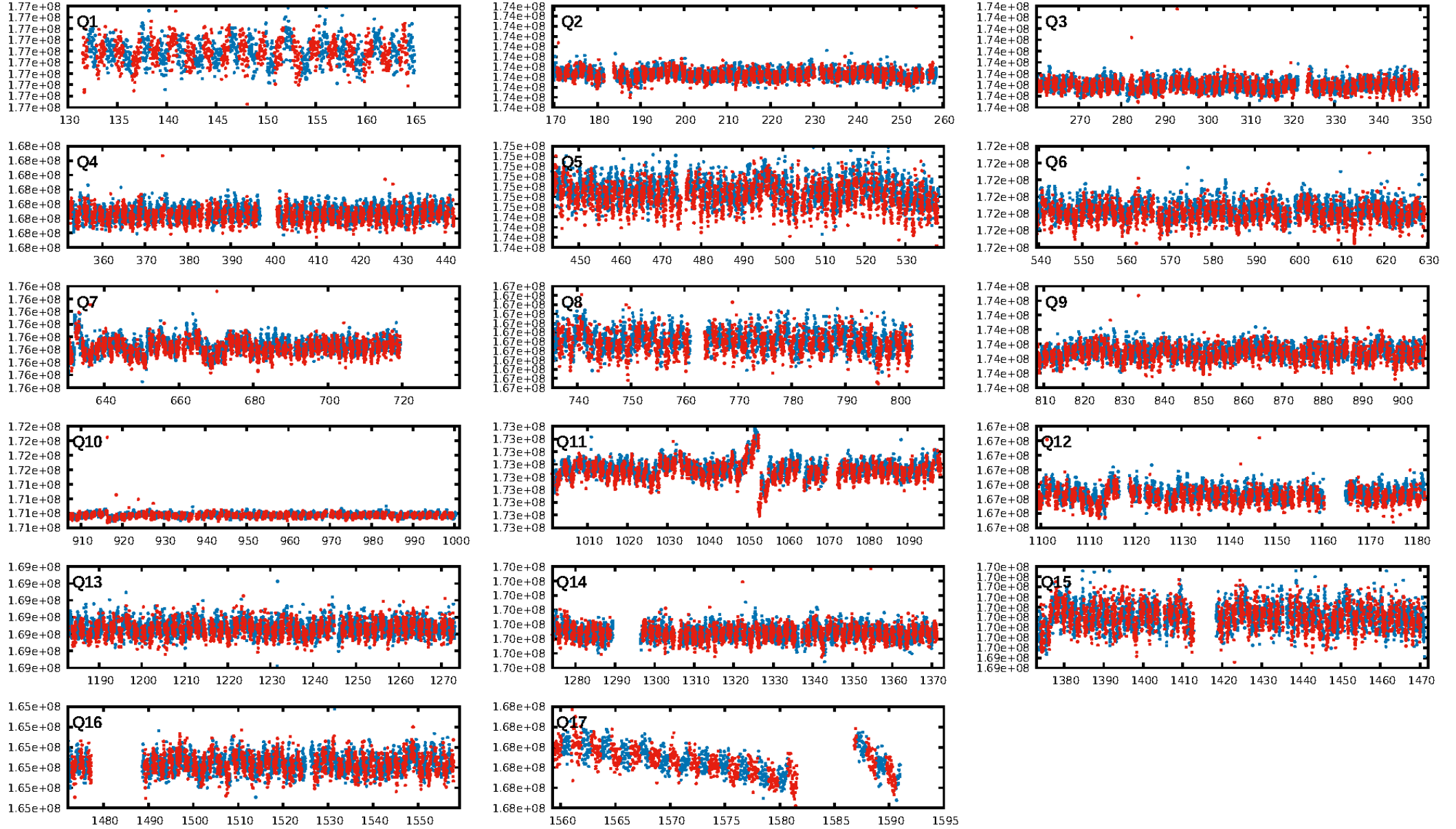
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [46.61σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [720/723]
GhostDiagnostic-chr: 1.212
Centroid-sig: 5.7%
Centroid-so: 1.208 arcsec [1.31σ]
OotOffset-rm: 0.428 arcsec [1.88σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.455 arcsec [1.98σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

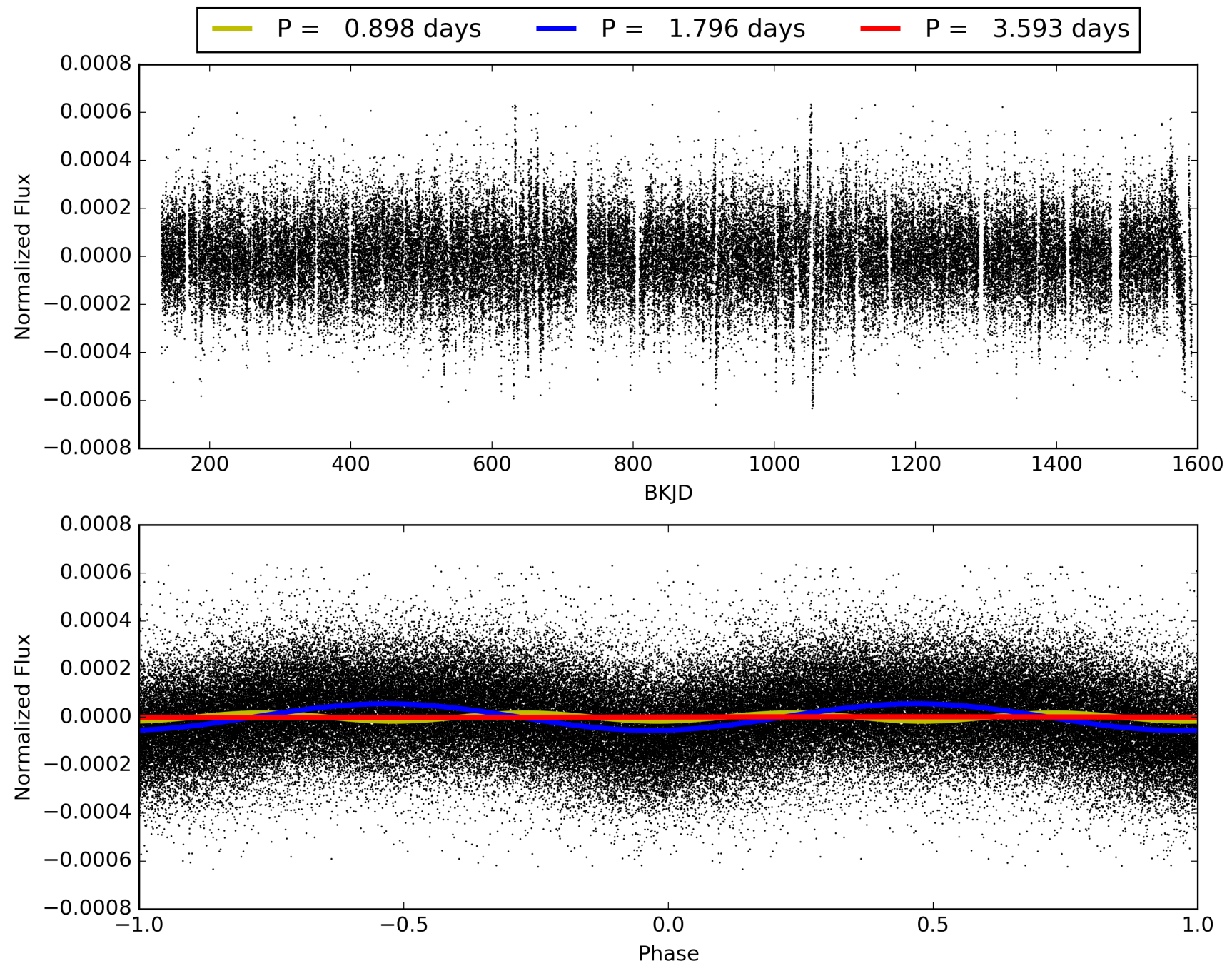
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:20:39 Z

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

TCE 008027902-01, PDC Light Curves

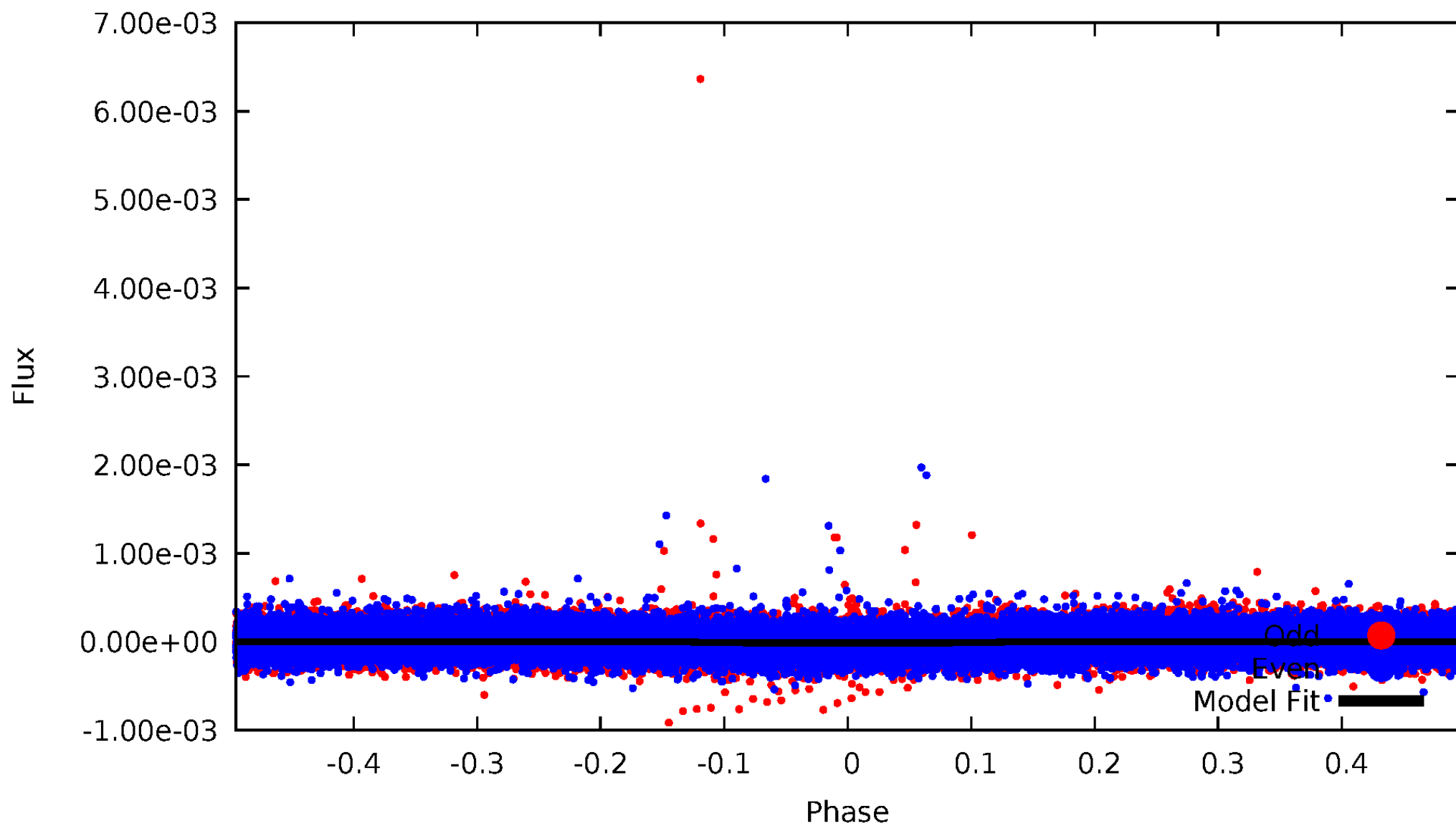


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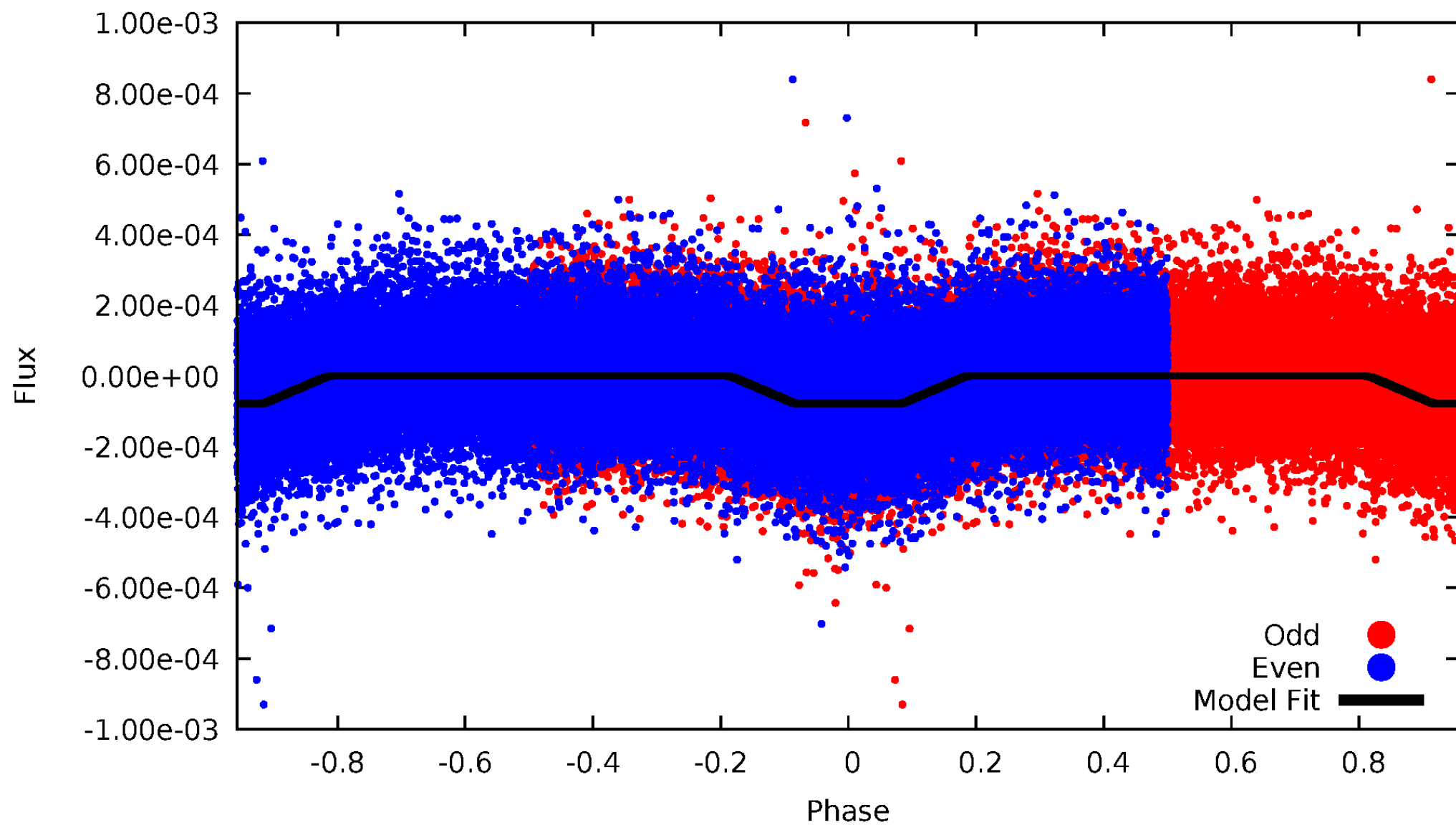
DV Odd/Even

TCE 008027902-01



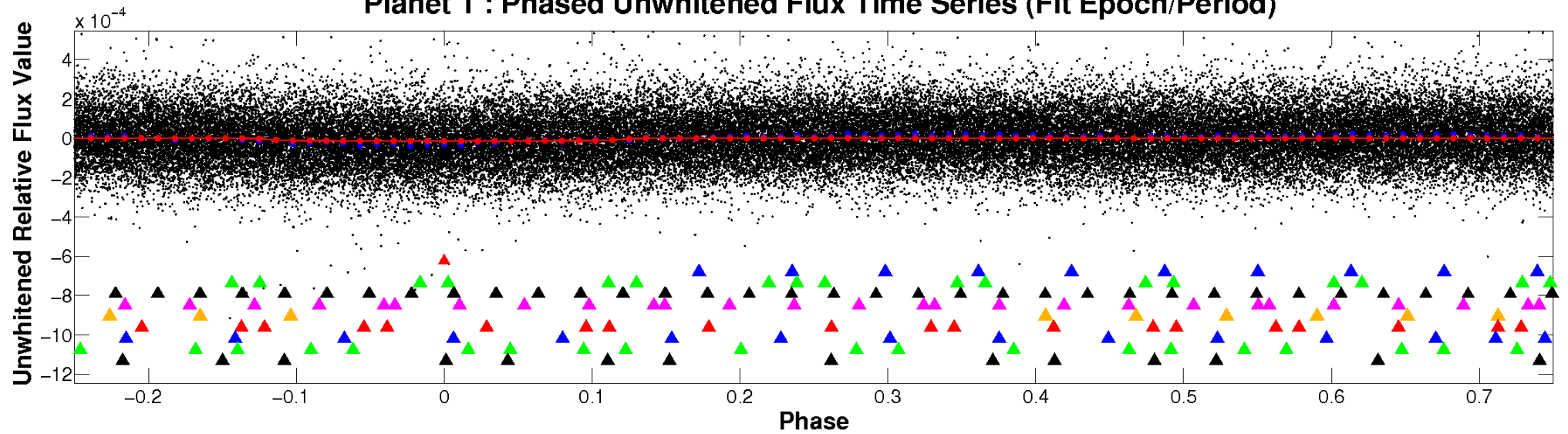
ALT Odd/Even

TCE 008027902-01

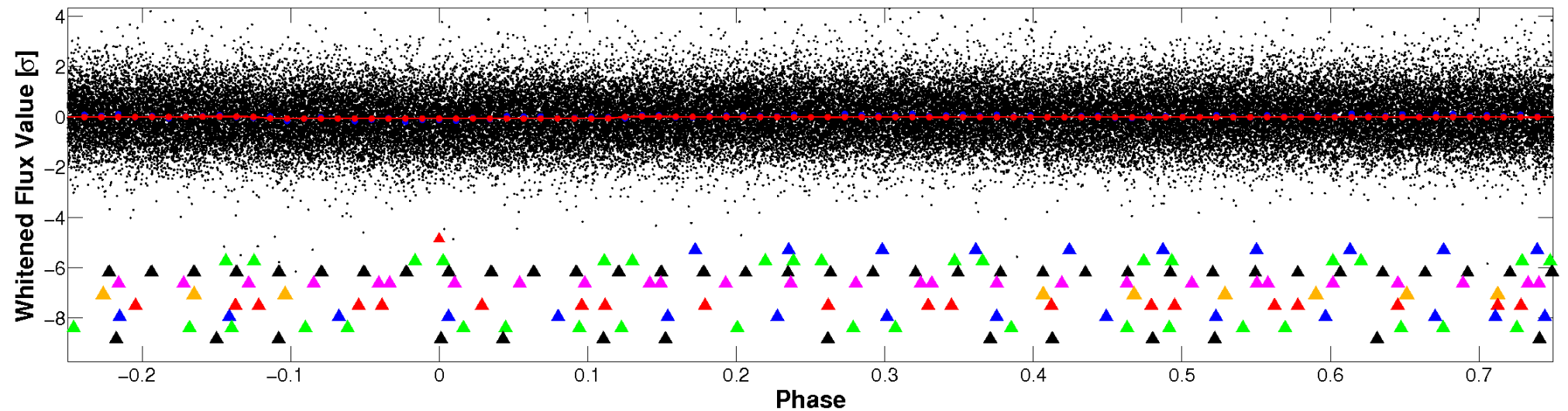


Non-Whitened Vs. Whitened Light Curve

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

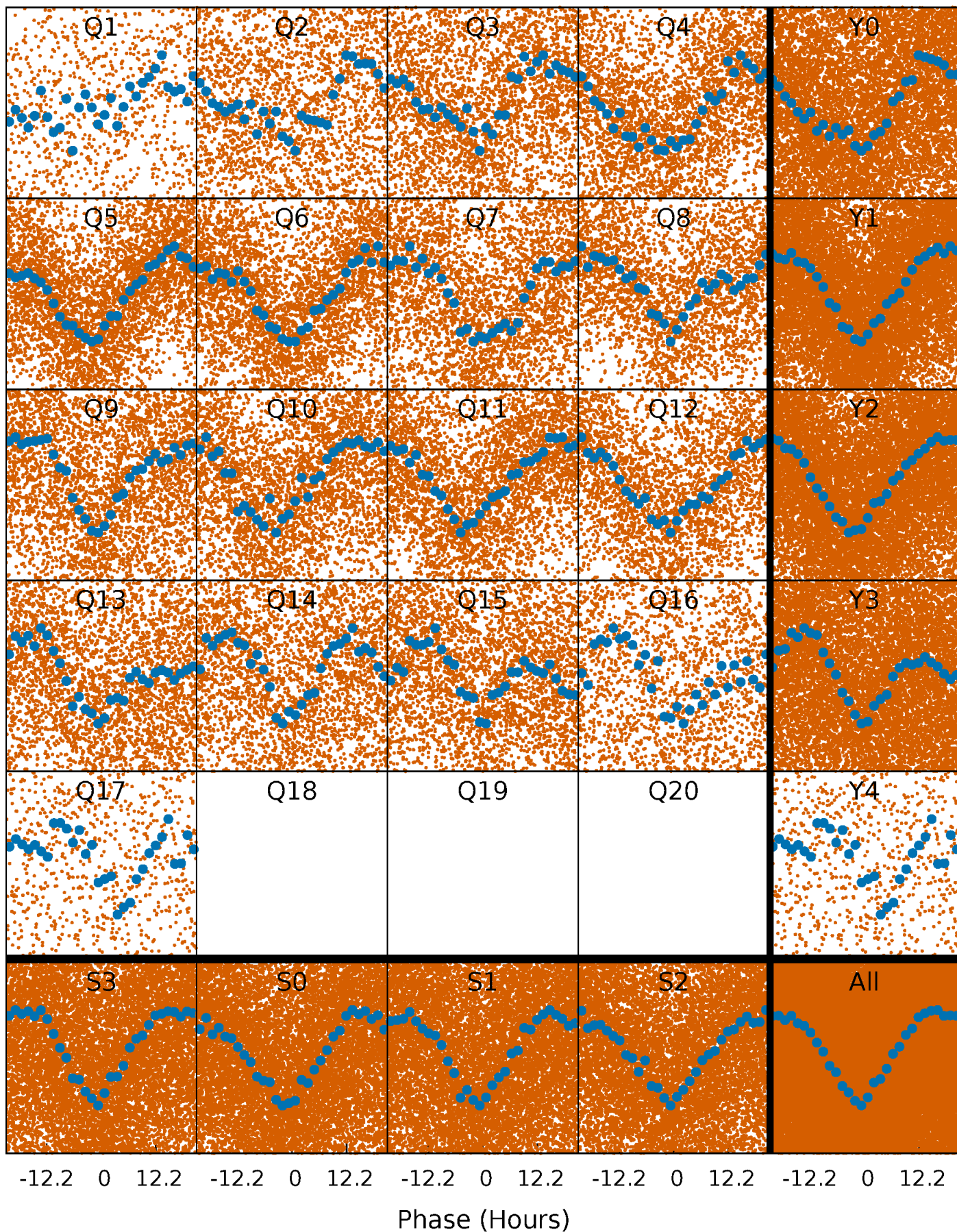


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



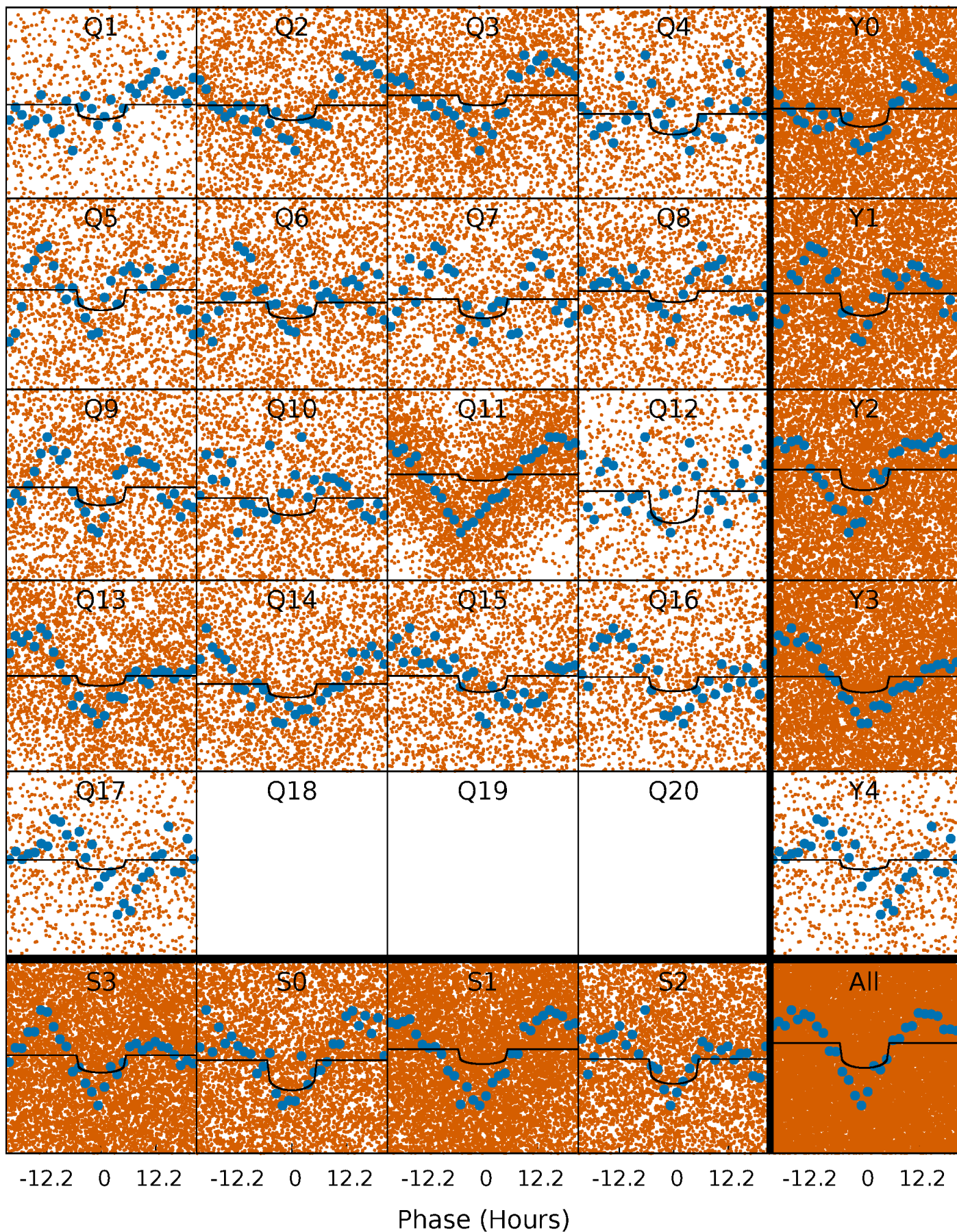
PDC Quarter-Phased Transit Curves

TCE 008027902-01 P= 1.796314 Days $T_0=131.552349$ (BKJD)



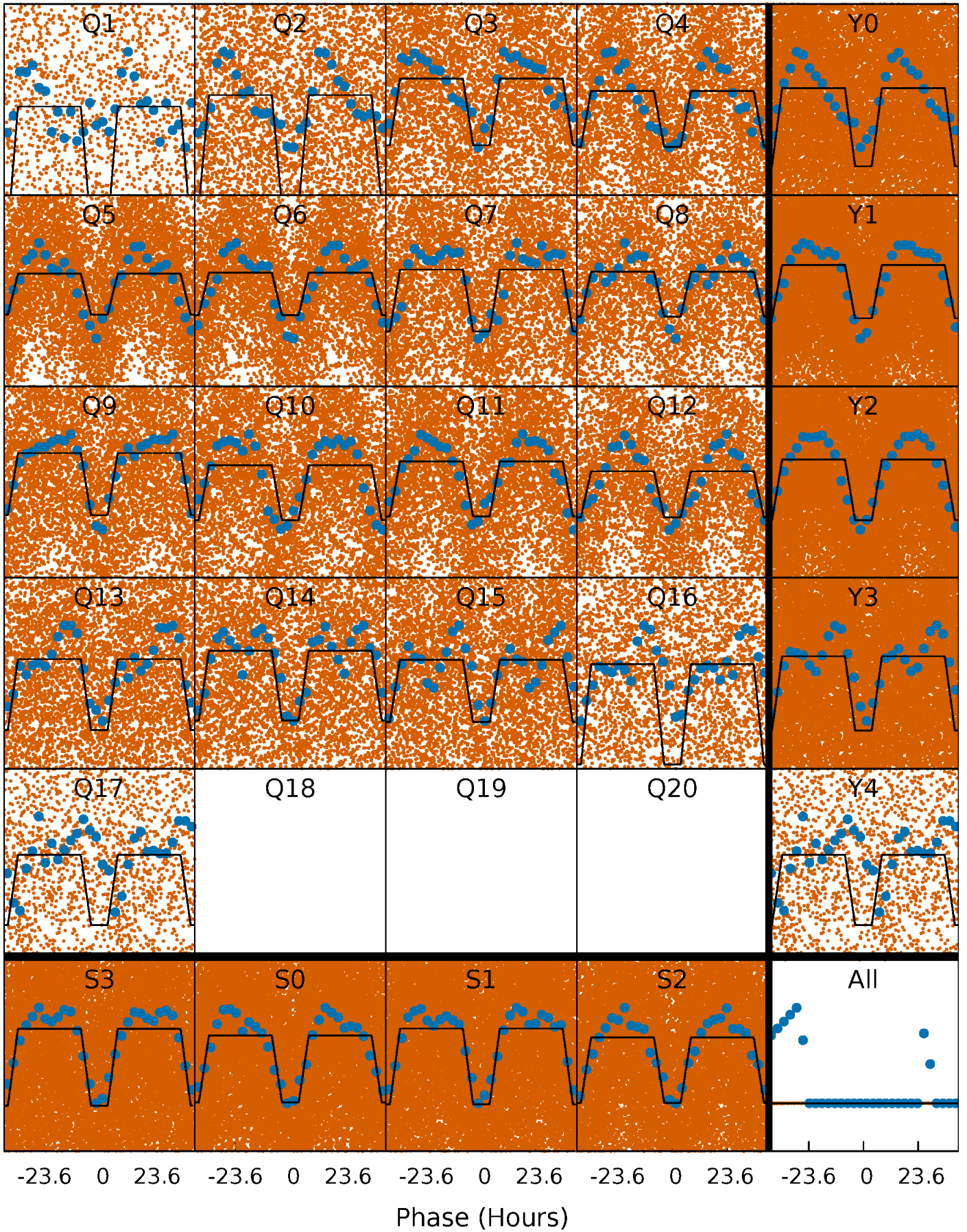
DV Quarter-Phased Transit Curves

TCE 008027902-01 P= 1.796314 Days $T_0=131.552349$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

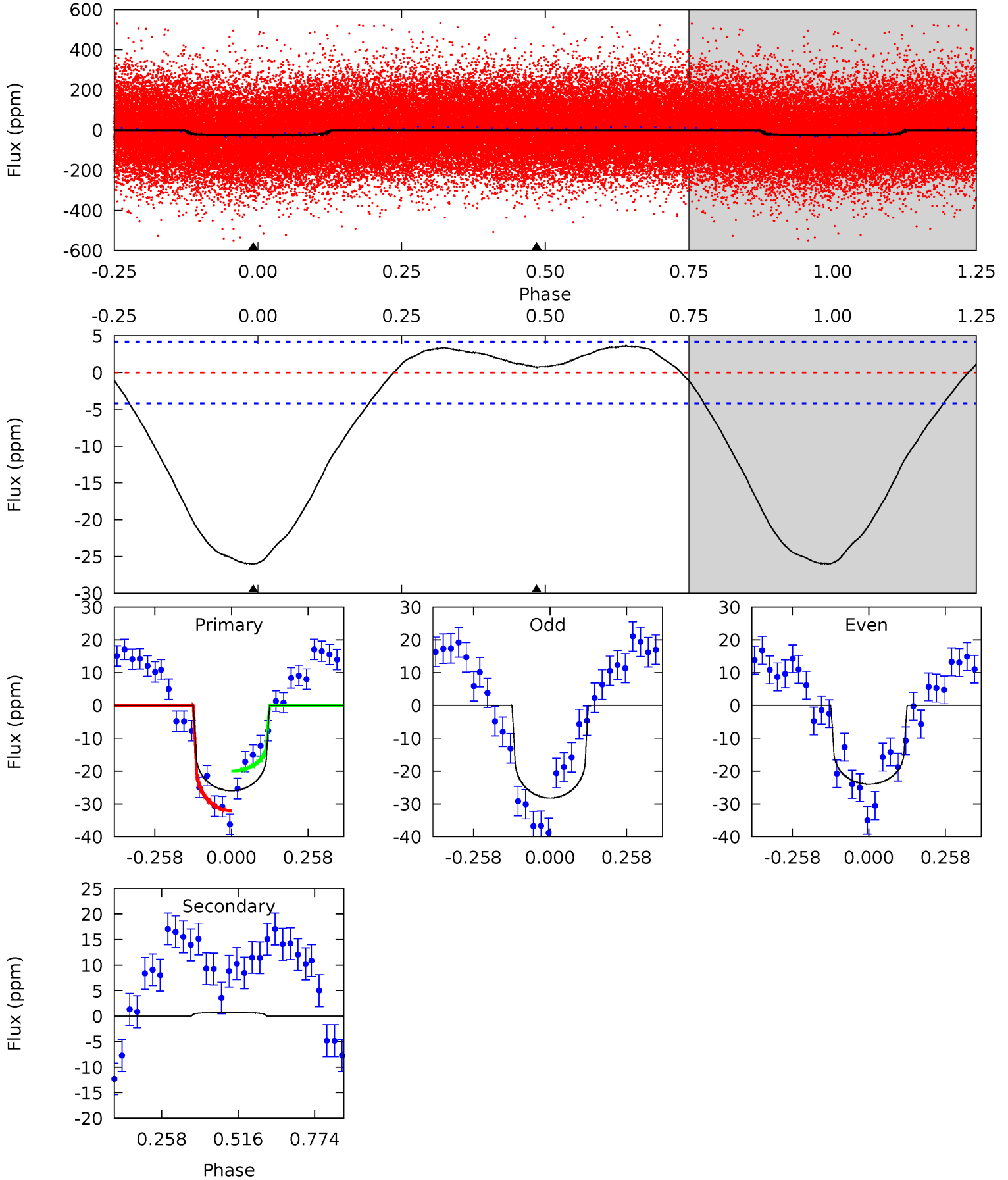
TCE 008027902-01 P= 1.796193 Days $T_0=131.549777$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-01, P = 1.796314 Days, E = 129.756035 Days

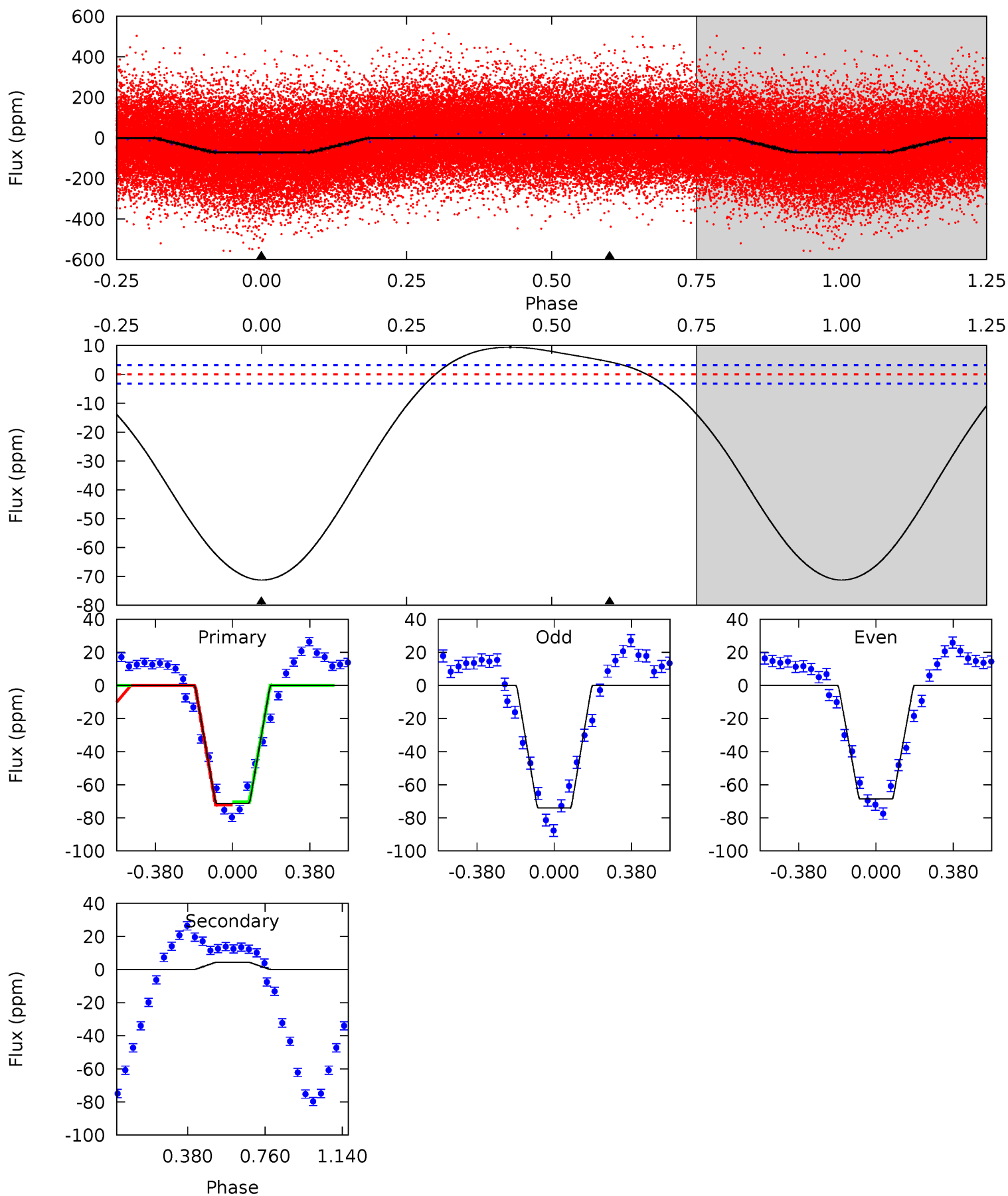
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.1	-0.76	0	0	4.36	1.13	1.31	27.1	27.1	-0.76	-0.76	2.19	1.06	0.12	6.23



Alt Model-Shift Uniqueness Test

008027902-01, P = 1.796193 Days, E = 129.753584 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
94.7	-5.76	0	0	4.28	0.88	6.92	94.7	94.7	-5.76	-5.76	3.57	1.01	0.12	1.29



Stellar Parameters For KIC 008027902

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-01 / KOI 6955.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	1 ± 1	$0.96^{+0.72}_{-0.60}$	3445^{+229}_{-230}	-3784^{+731}_{-1468}	$-0.343^{+0.463}_{-3.172}$
Alt.	4 ± 1	$1.98^{+0.86}_{-0.74}$	3435^{+243}_{-238}	-4055^{+318}_{-615}	$-0.688^{+0.367}_{-1.017}$

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

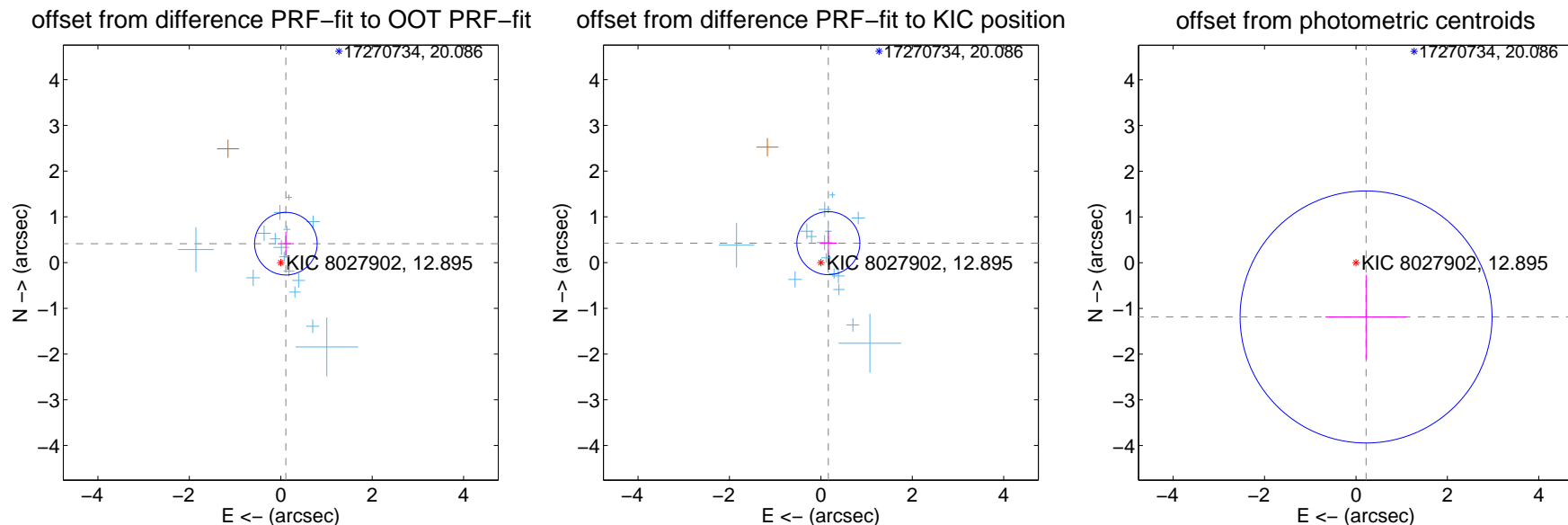
DV Centroid Data

Supplemental centroid analysis for 008027902-01. Kepler magnitude: 12.89. Transit SNR 7.71

There are 15 quarters with good PRF difference image offsets

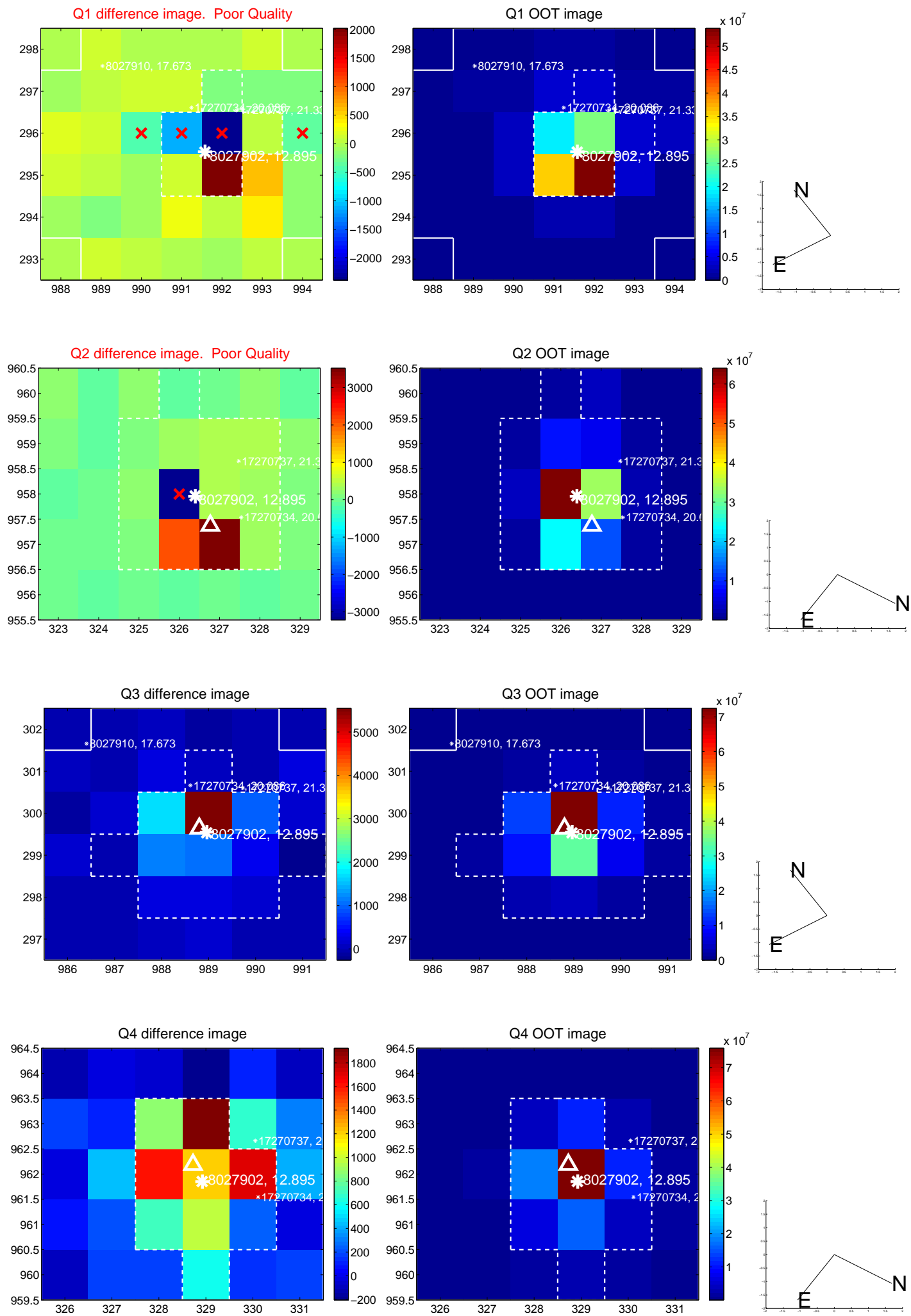
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.428 ± 0.228	1.88	-0.112 ± 0.180	0.413 ± 0.257
PRF-fit source offset from KIC position	0.455 ± 0.230	1.98	-0.164 ± 0.188	0.425 ± 0.271
photometric centroid source offset	1.21 ± 0.92	1.31	-0.22 ± 0.89	-1.19 ± 0.92

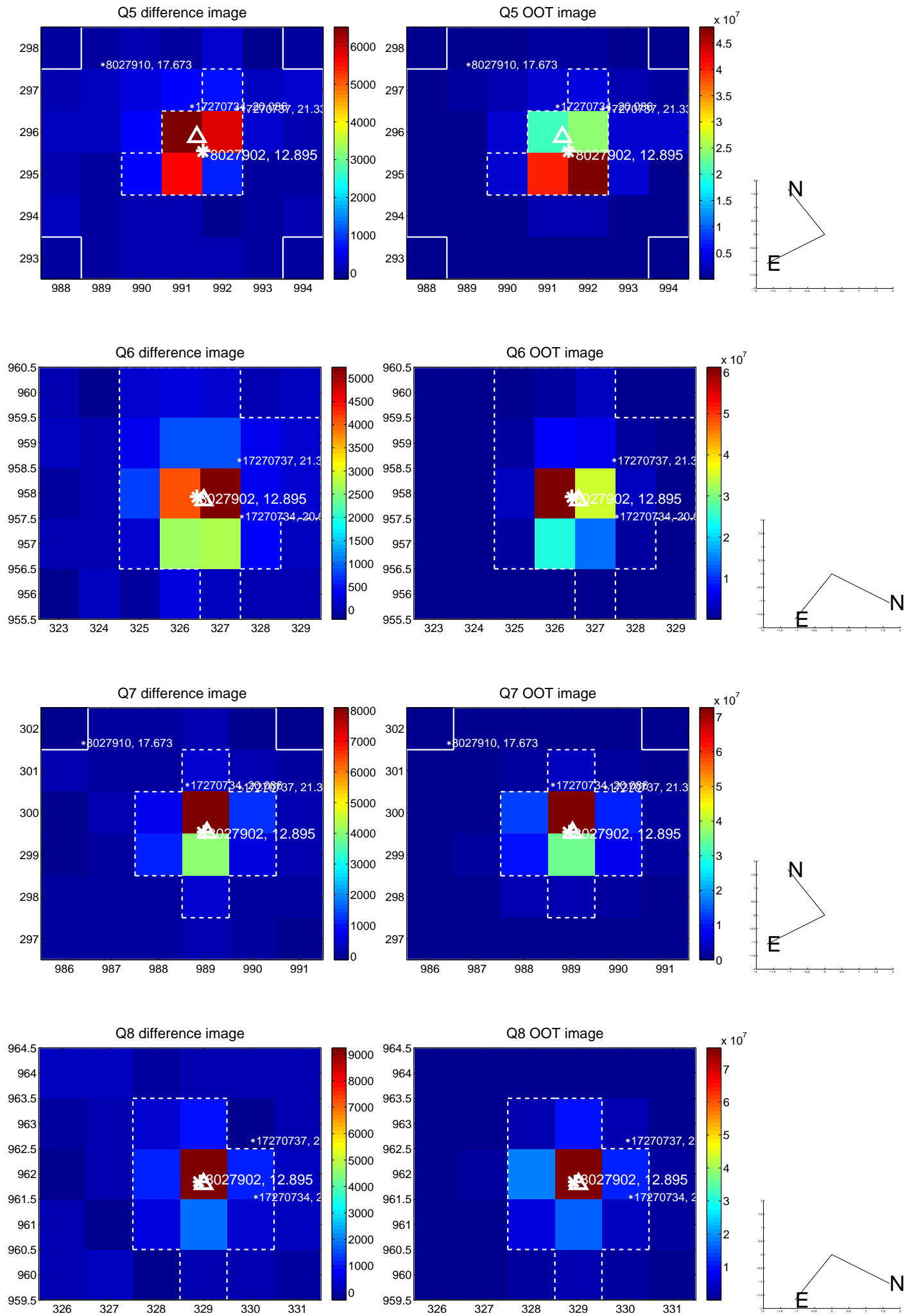


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

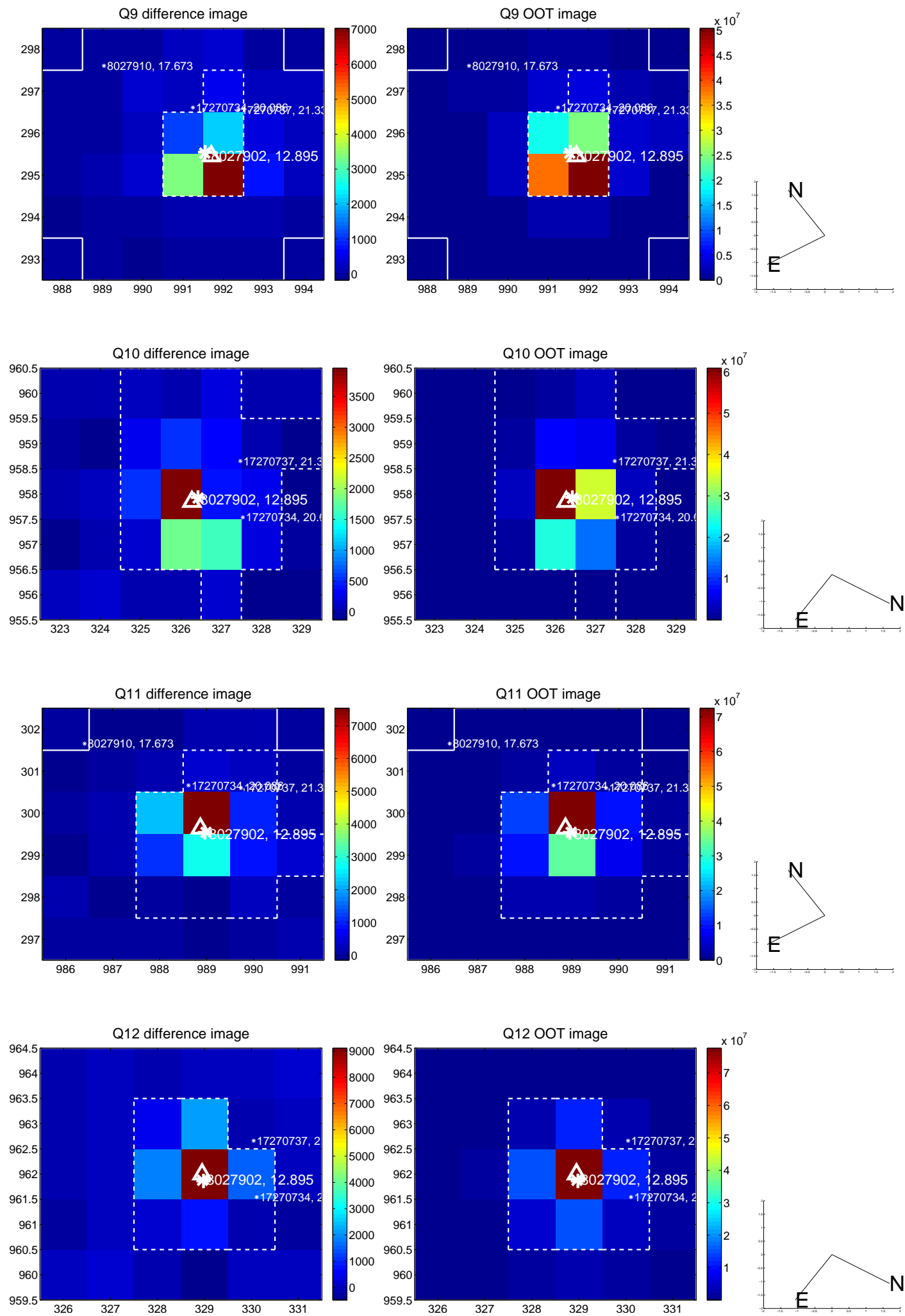
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



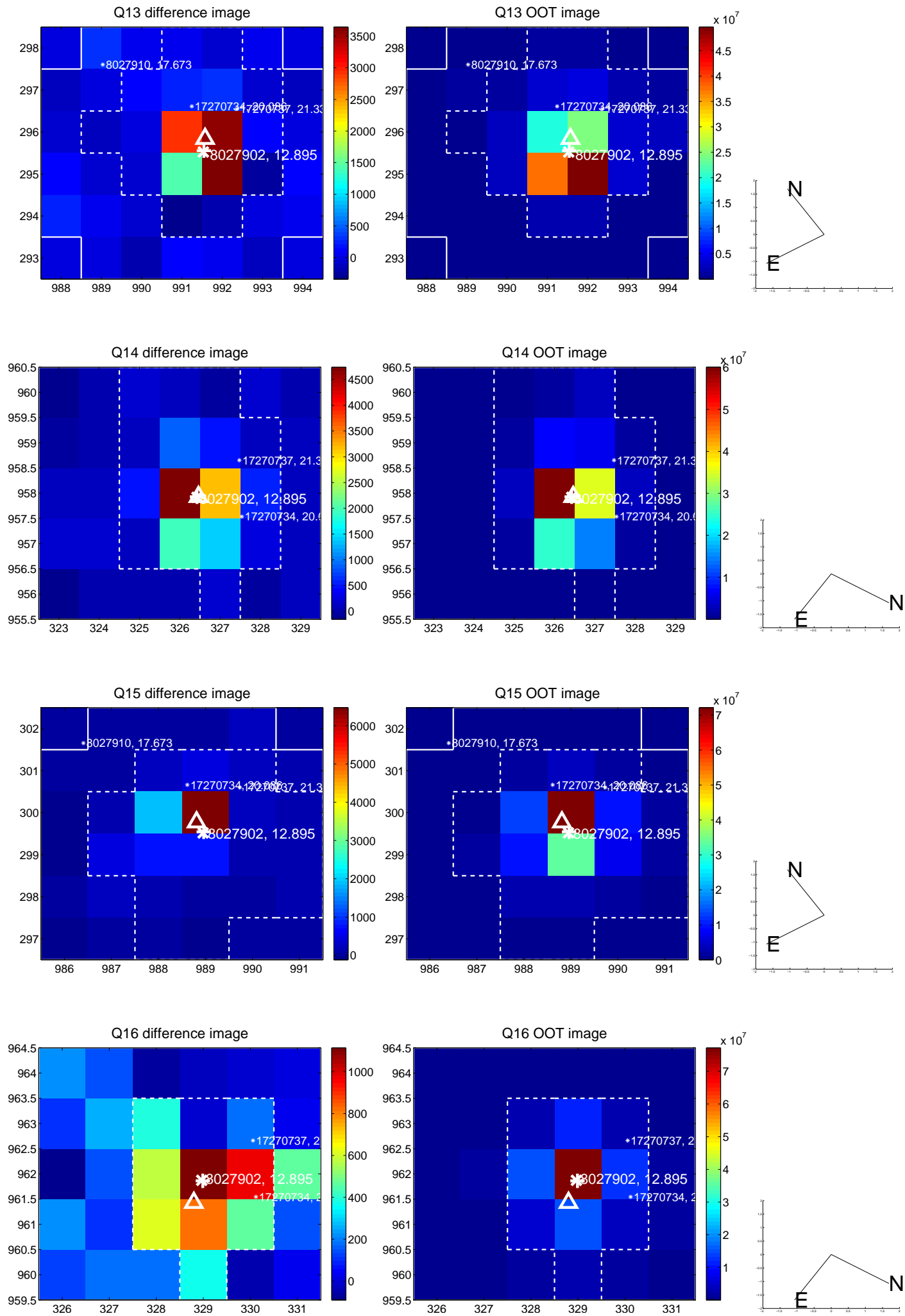
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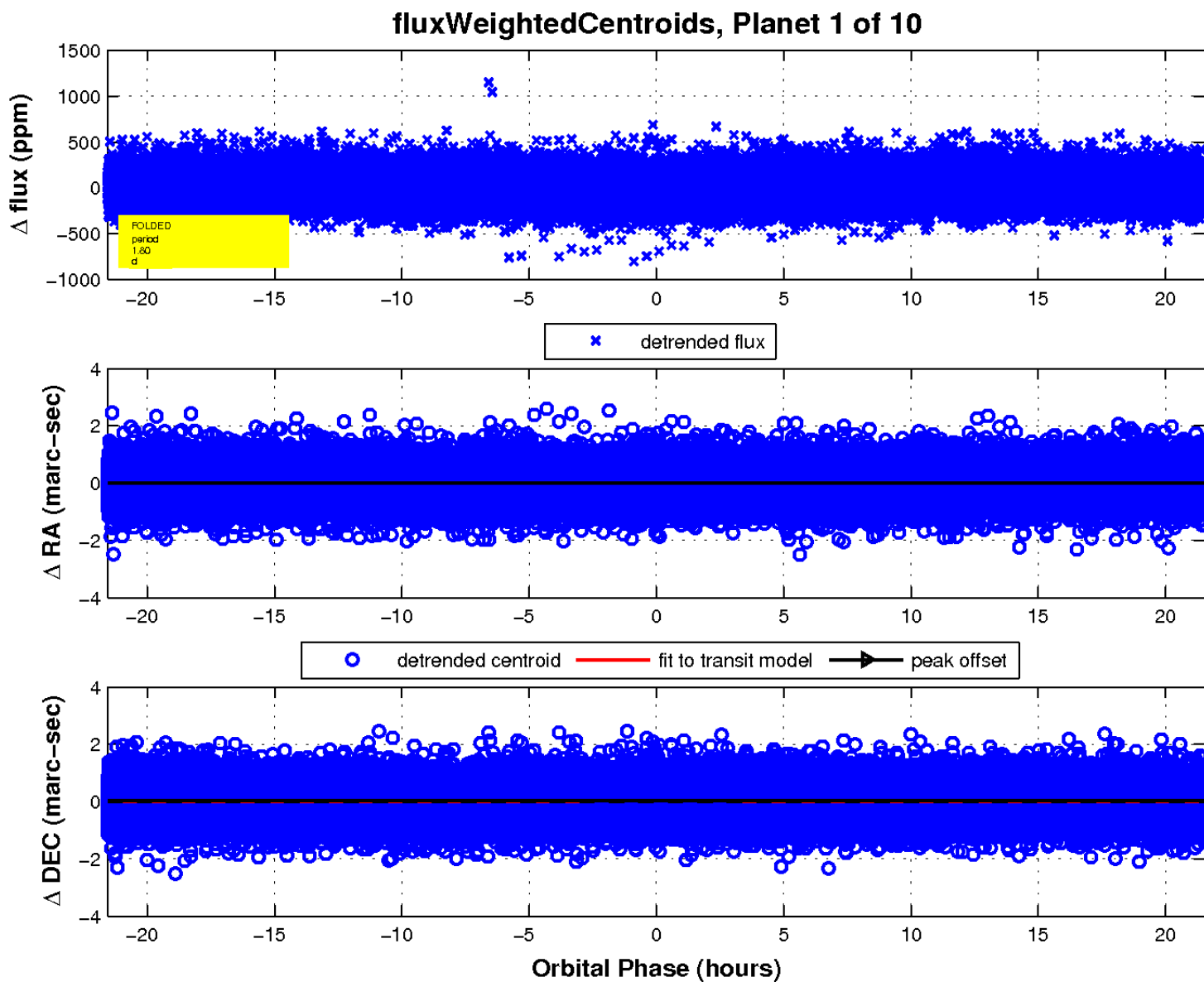
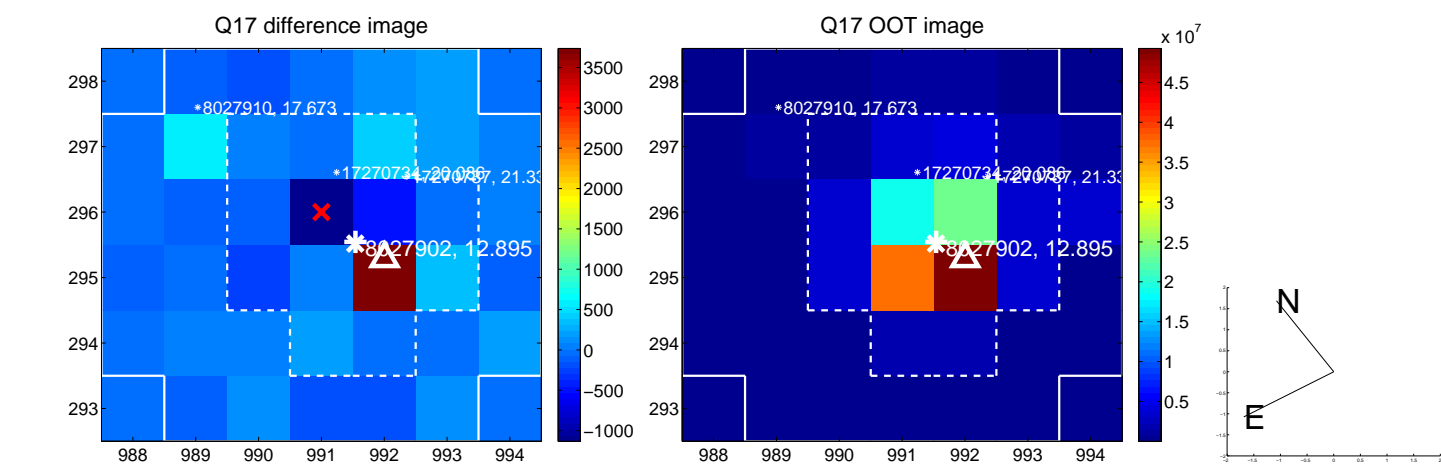
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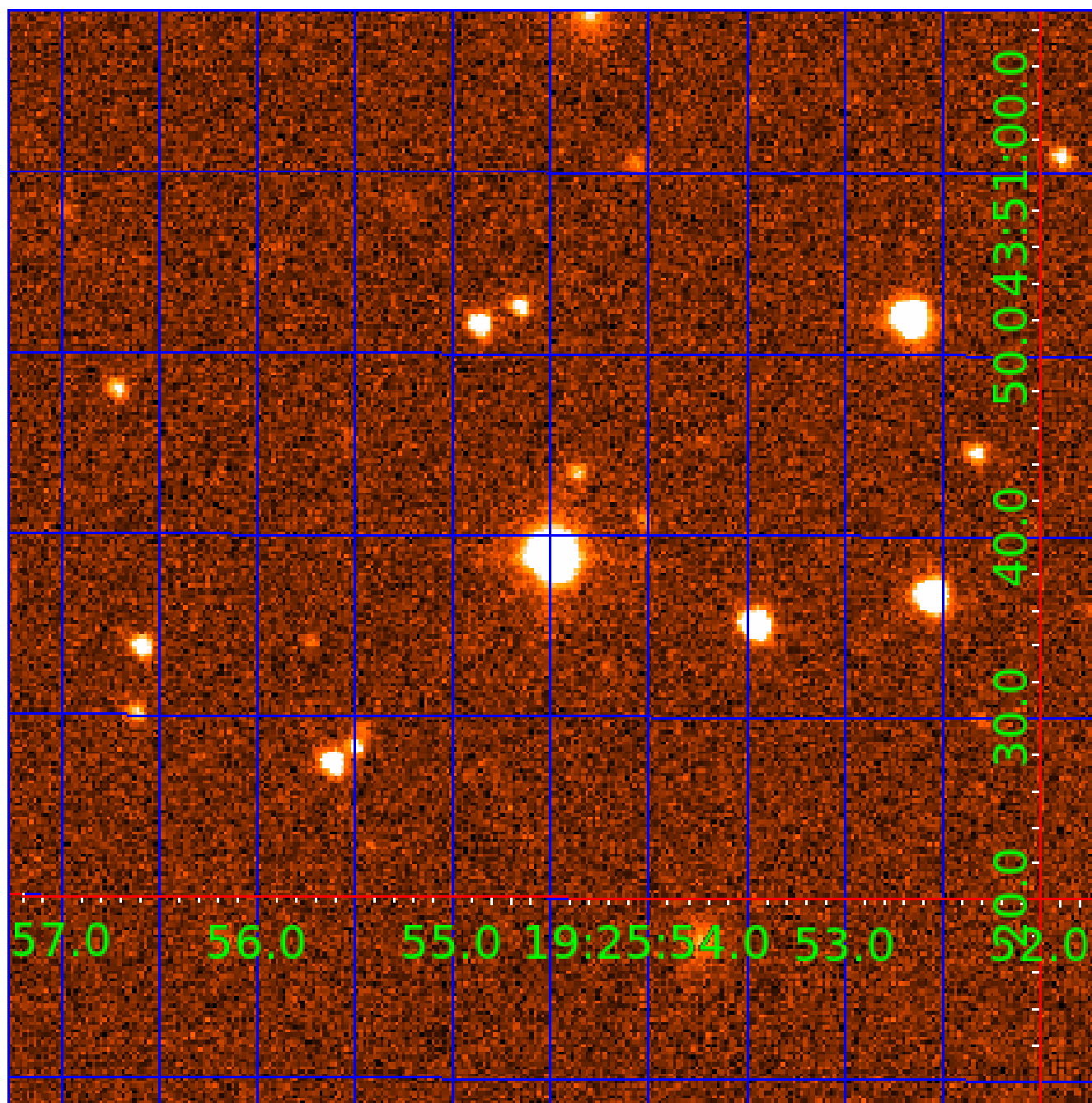


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

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Robovetter Results

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008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

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

Ephemeris Match Information For 008027902-02

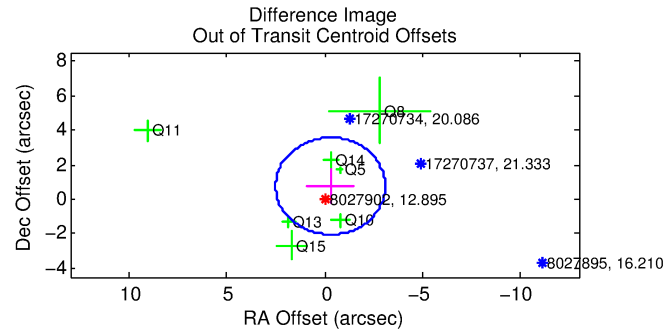
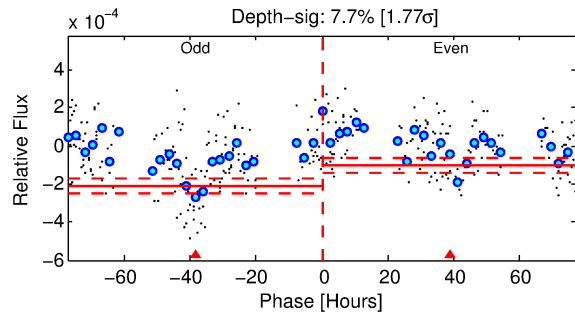
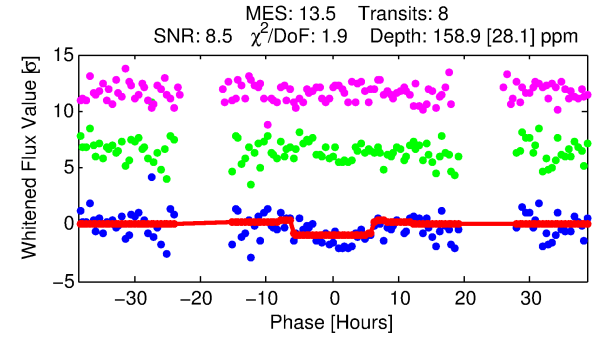
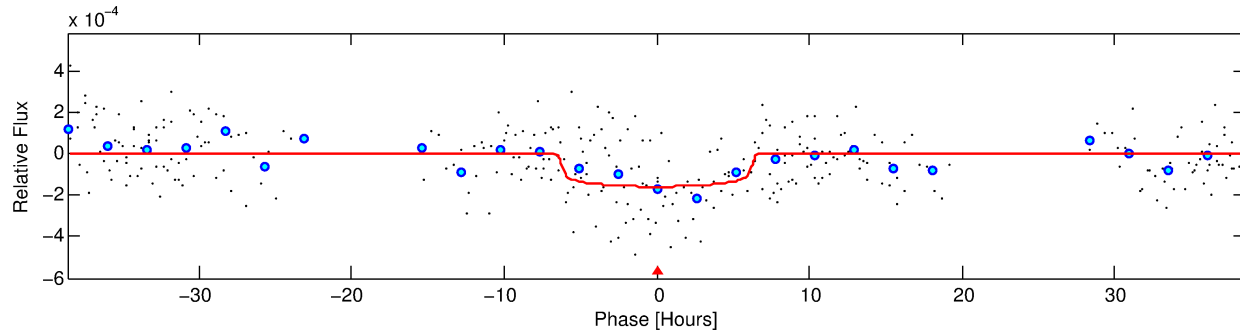
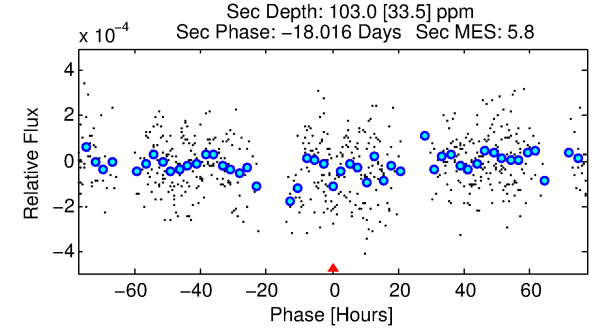
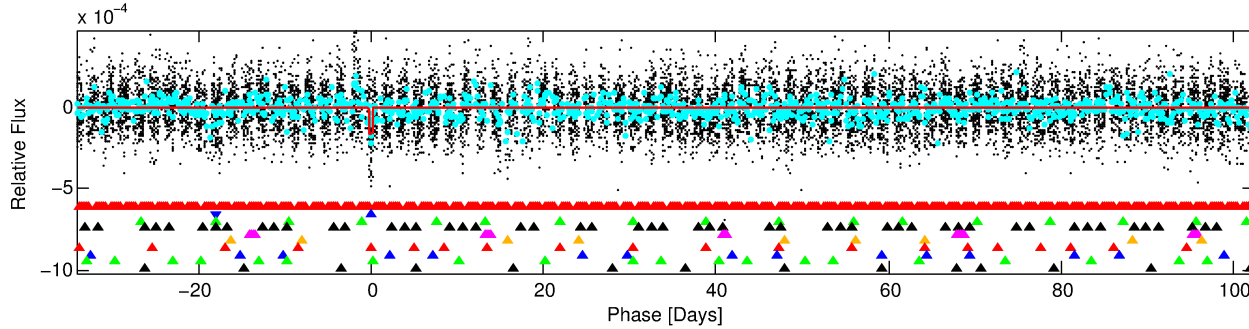
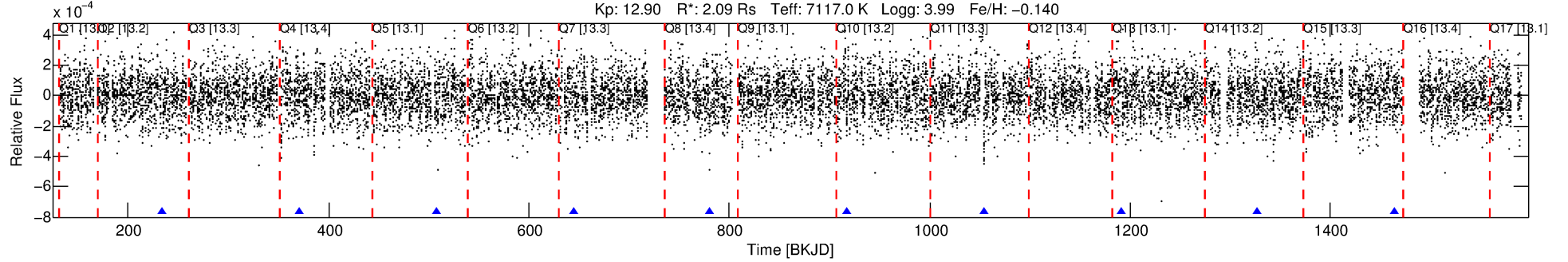
No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 2 of 10 Period: 136.633 d

KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 136.63303 [0.01069] d
Epoch = 234.2518 [0.0550] BKJD
Rp/R* = 0.0124 [0.0052]
a/R* = 57.26 [140.64]
b = 0.73 [1.58]
Seff = 27.80 [10.58]
Teq = 586 [56] K
Rp = 2.84 [1.40] Re
a = 0.6009 [0.1376] AU
Ag = 2537.95 [2453.12] [1.03σ]
Teffp = 6426 [1469] K [3.97σ]

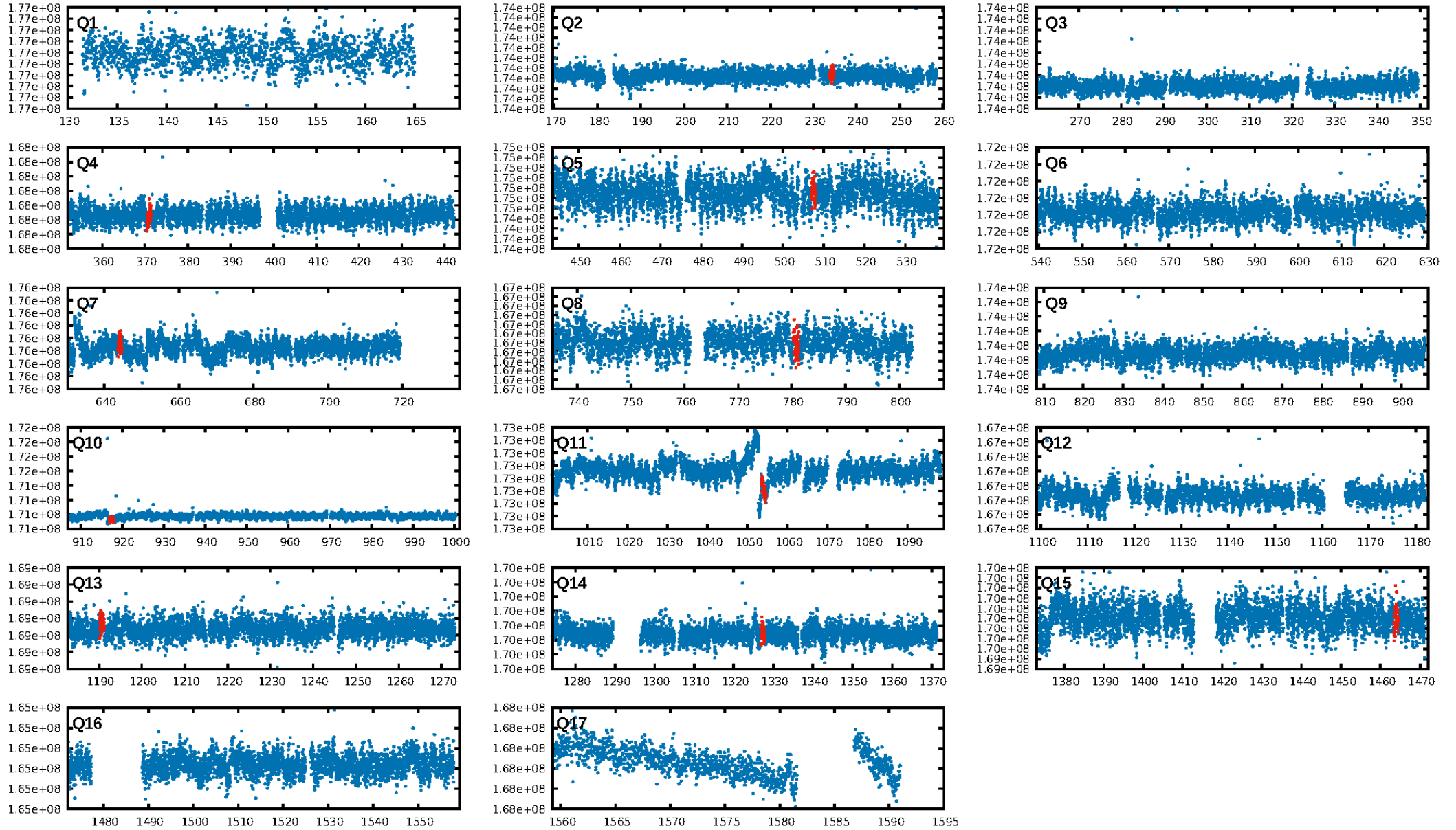
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [43.81σ]
LongPeriod-sig: 100.0% [43.60σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 1.146
Centroid-sig: 9.0%
Centroid-so: 1.031 arcsec [1.43σ]
OotOffset-rm: 0.812 arcsec [0.87σ]
KicOffset-rm: 0.881 arcsec [0.74σ]
OotOffset-st: 2/2/1/2 [7]
KicOffset-st: 2/2/1/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/9]

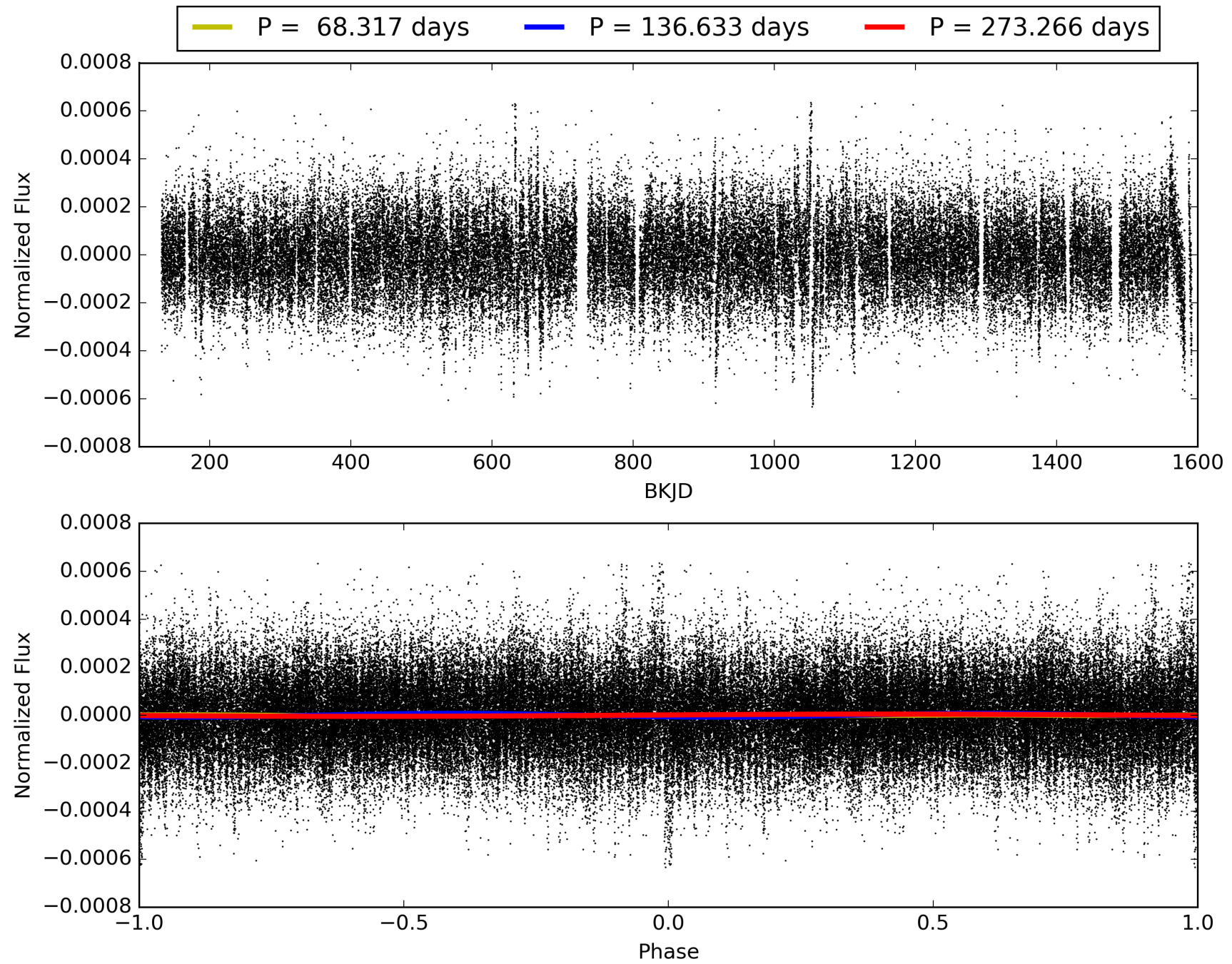
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:20:50 Z

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

TCE 008027902-02, PDC Light Curves

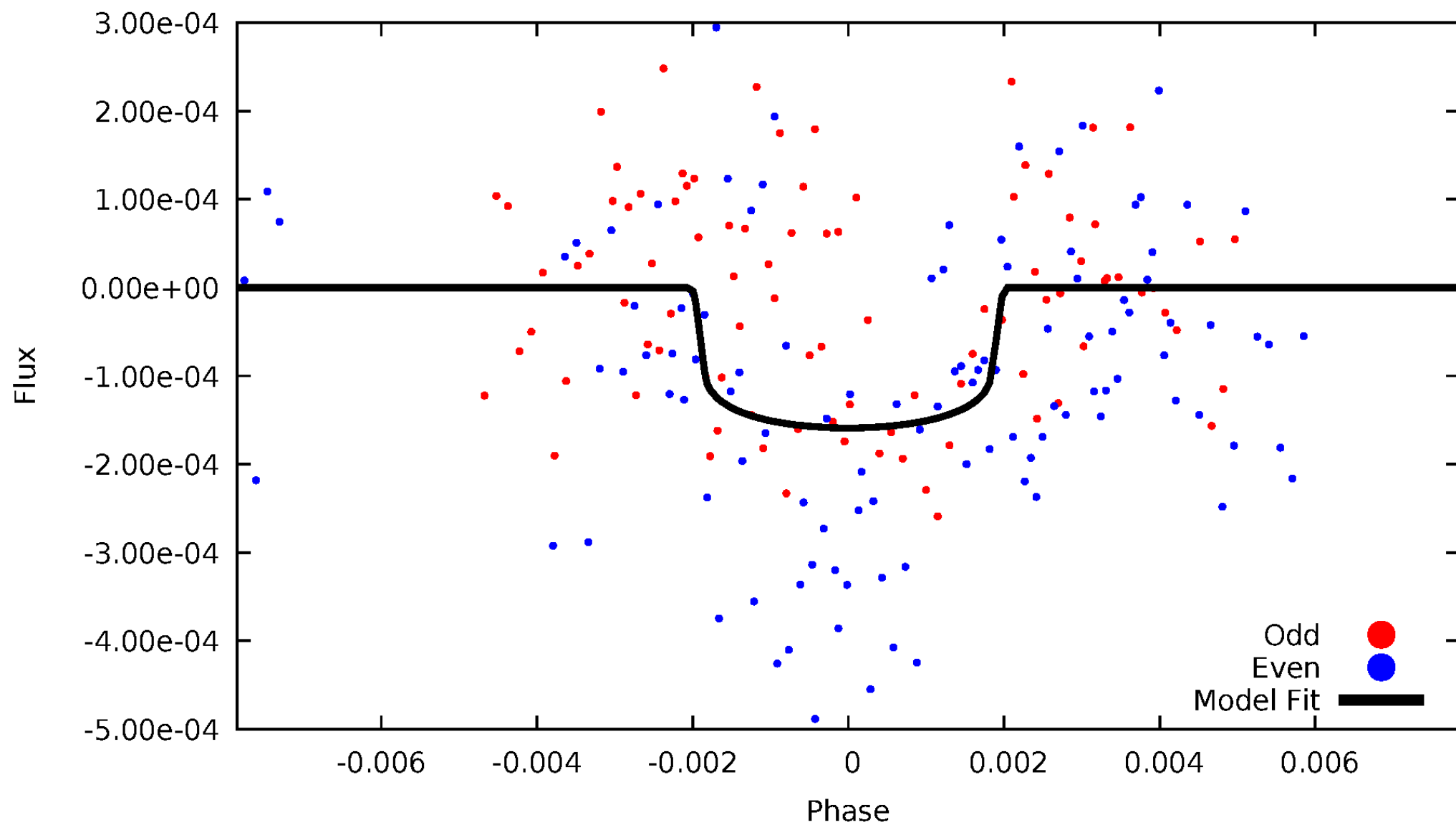


TCE 008027902-02



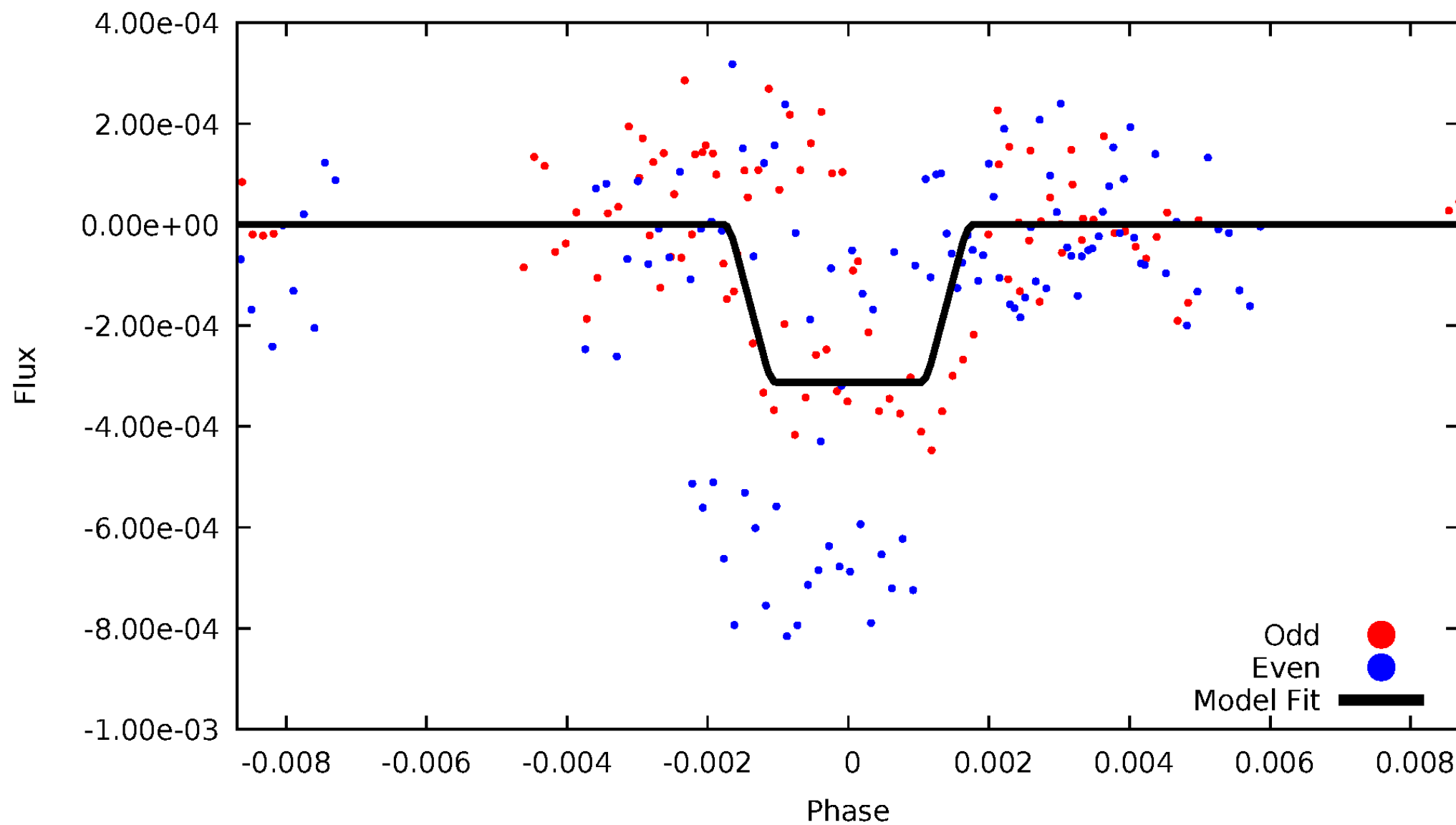
DV Odd/Even

TCE 008027902-02



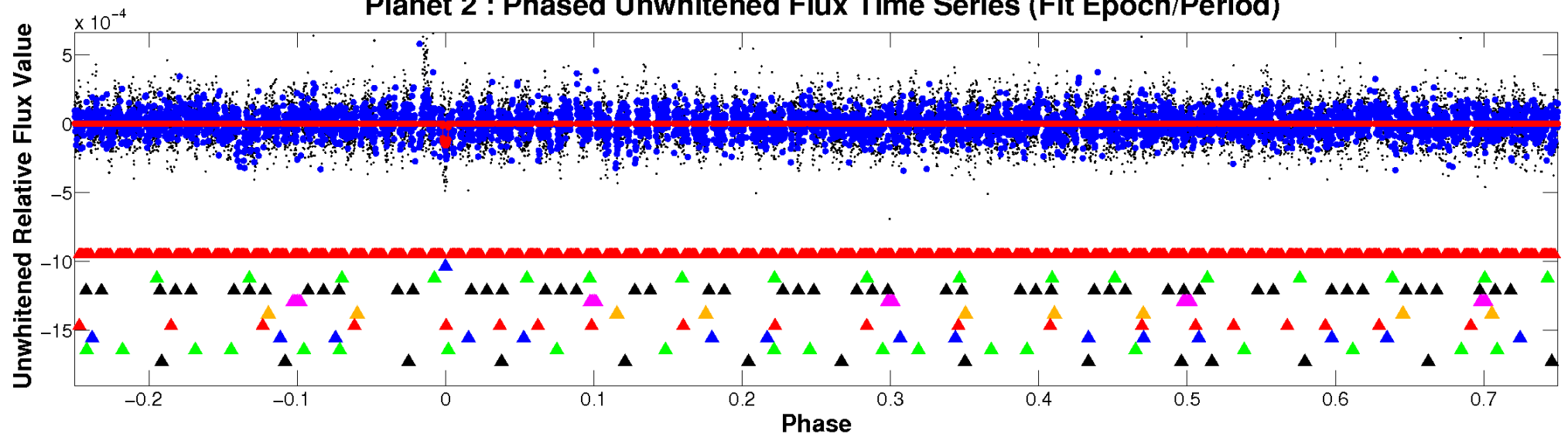
ALT Odd/Even

TCE 008027902-02

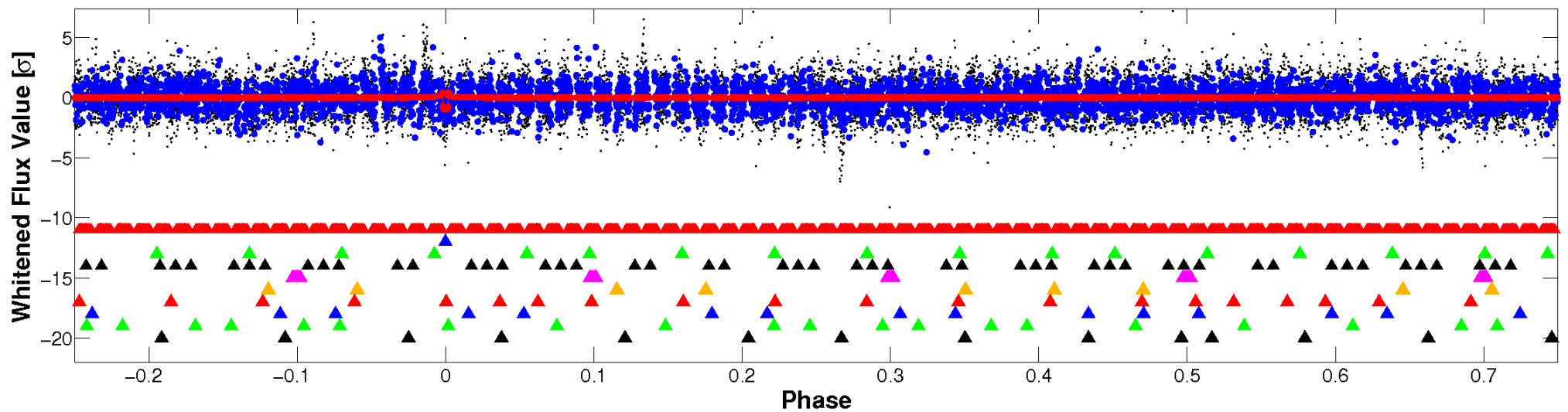


Non-Whitened Vs. Whitened Light Curve

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

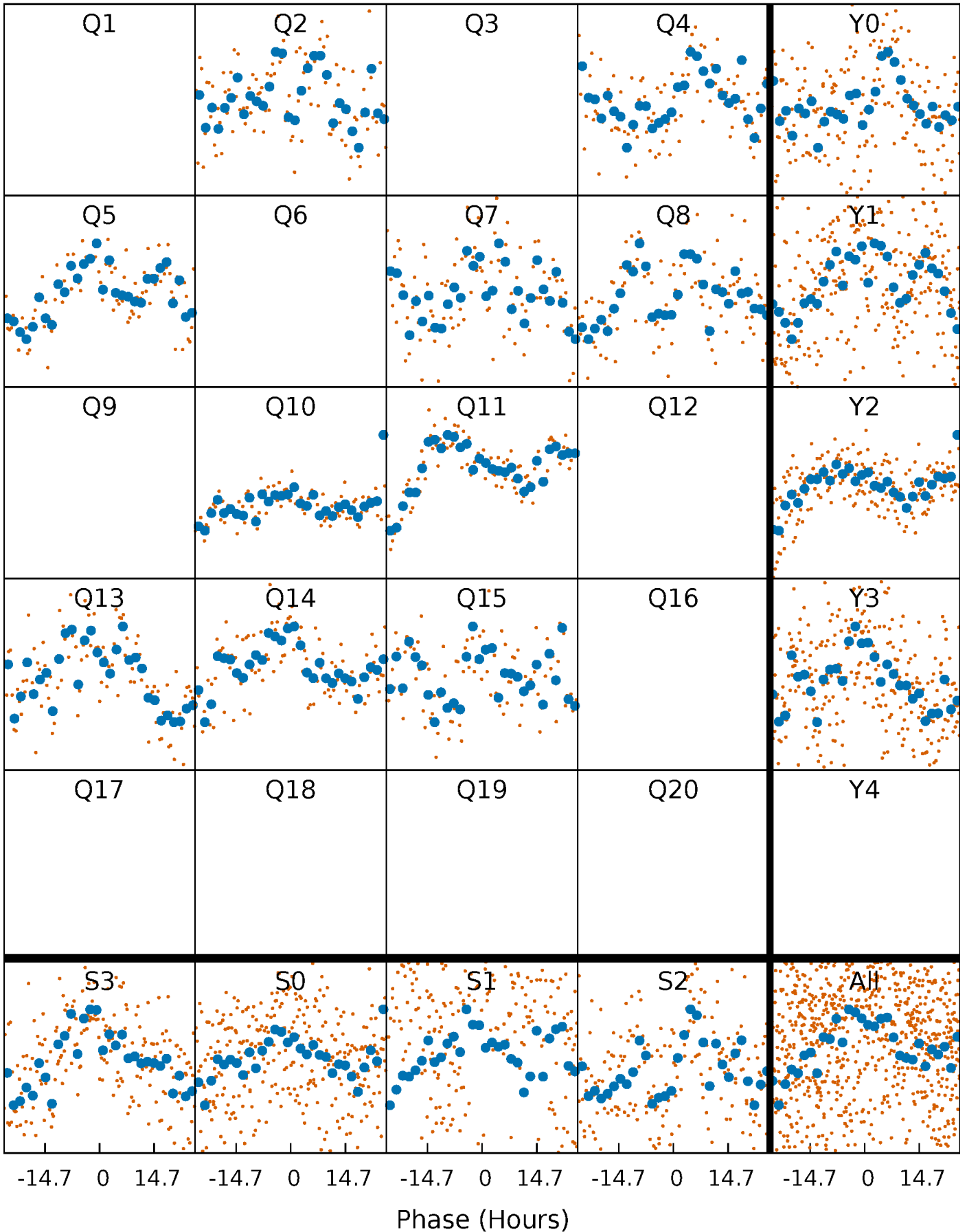


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



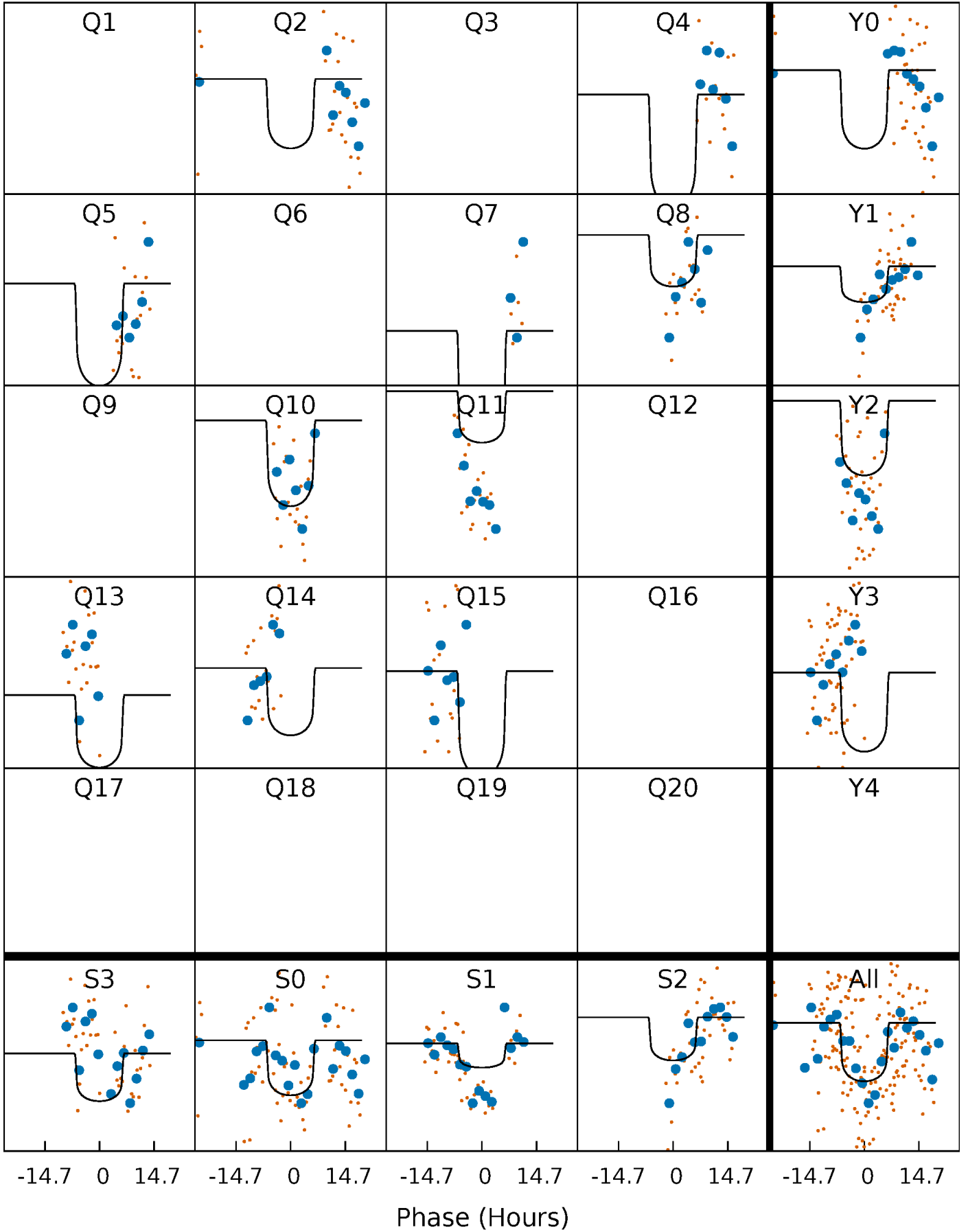
PDC Quarter-Phased Transit Curves

TCE 008027902-02 $P=136.633031$ Days $T_0=234.251816$ (BKJD)



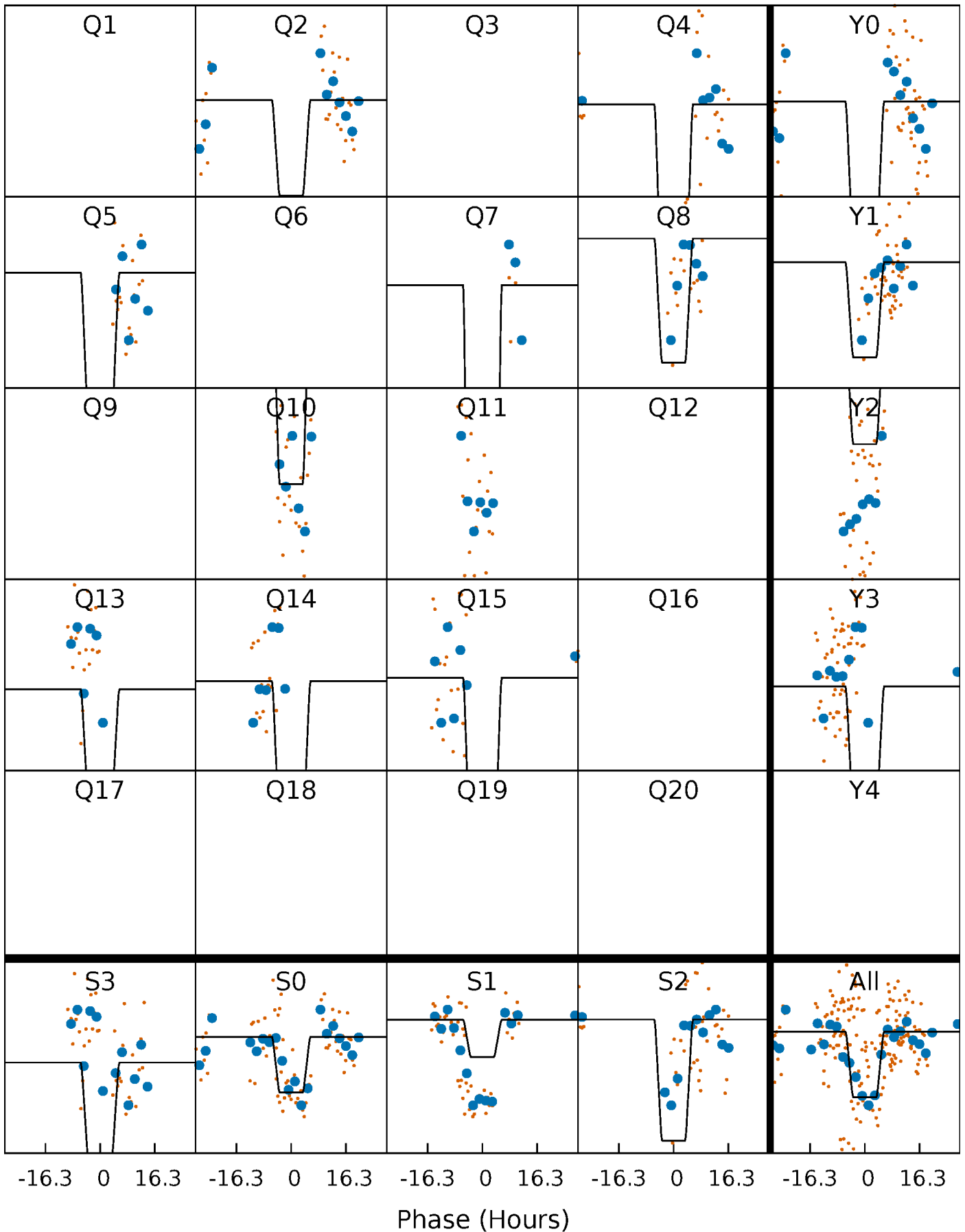
DV Quarter-Phased Transit Curves

TCE 008027902-02 P=136.633031 Days $T_0=234.251816$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

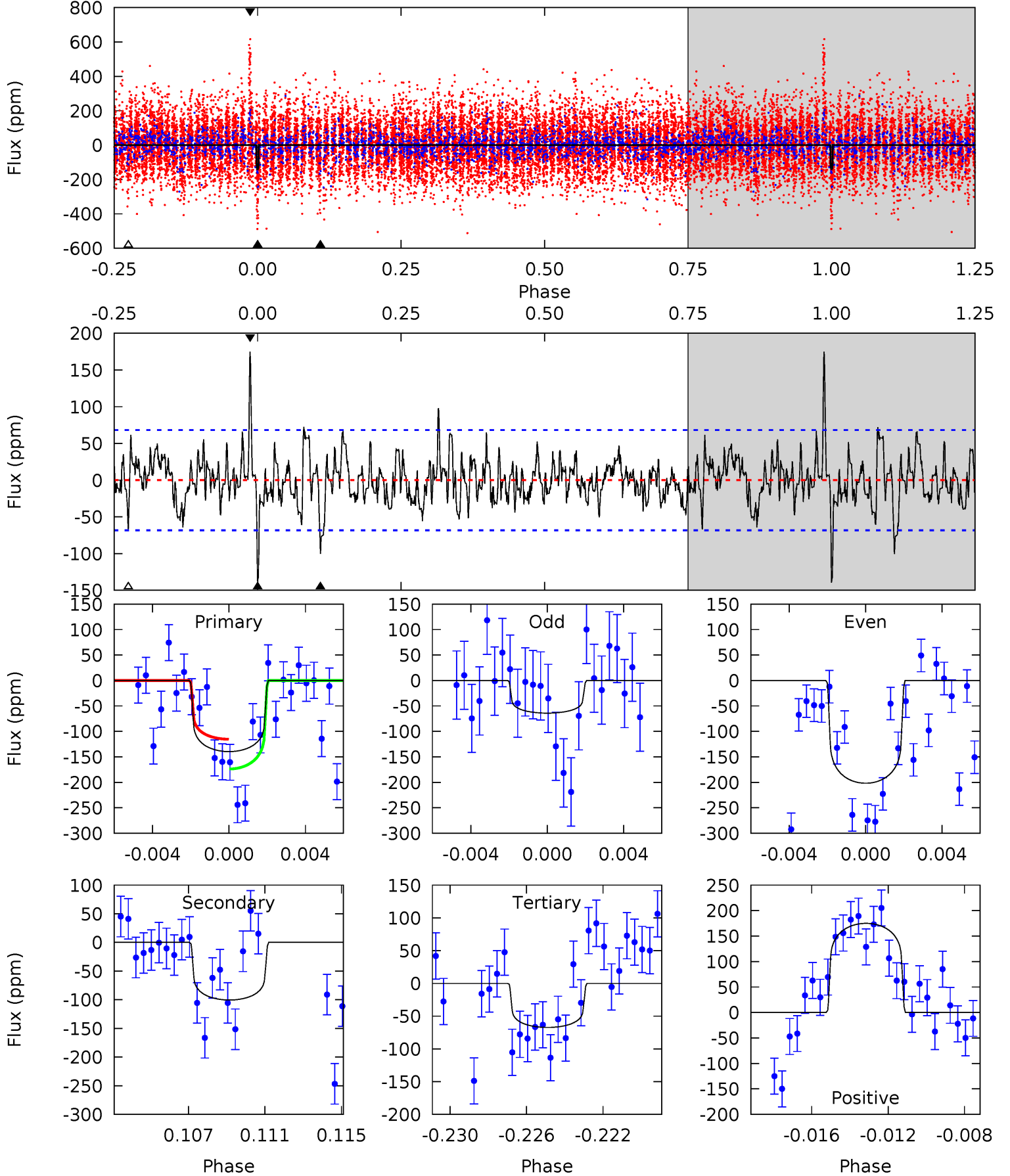
TCE 008027902-02 P=136.632405 Days $T_0=234.250028$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-02, $P = 136.633031$ Days, $E = 97.618785$ Days

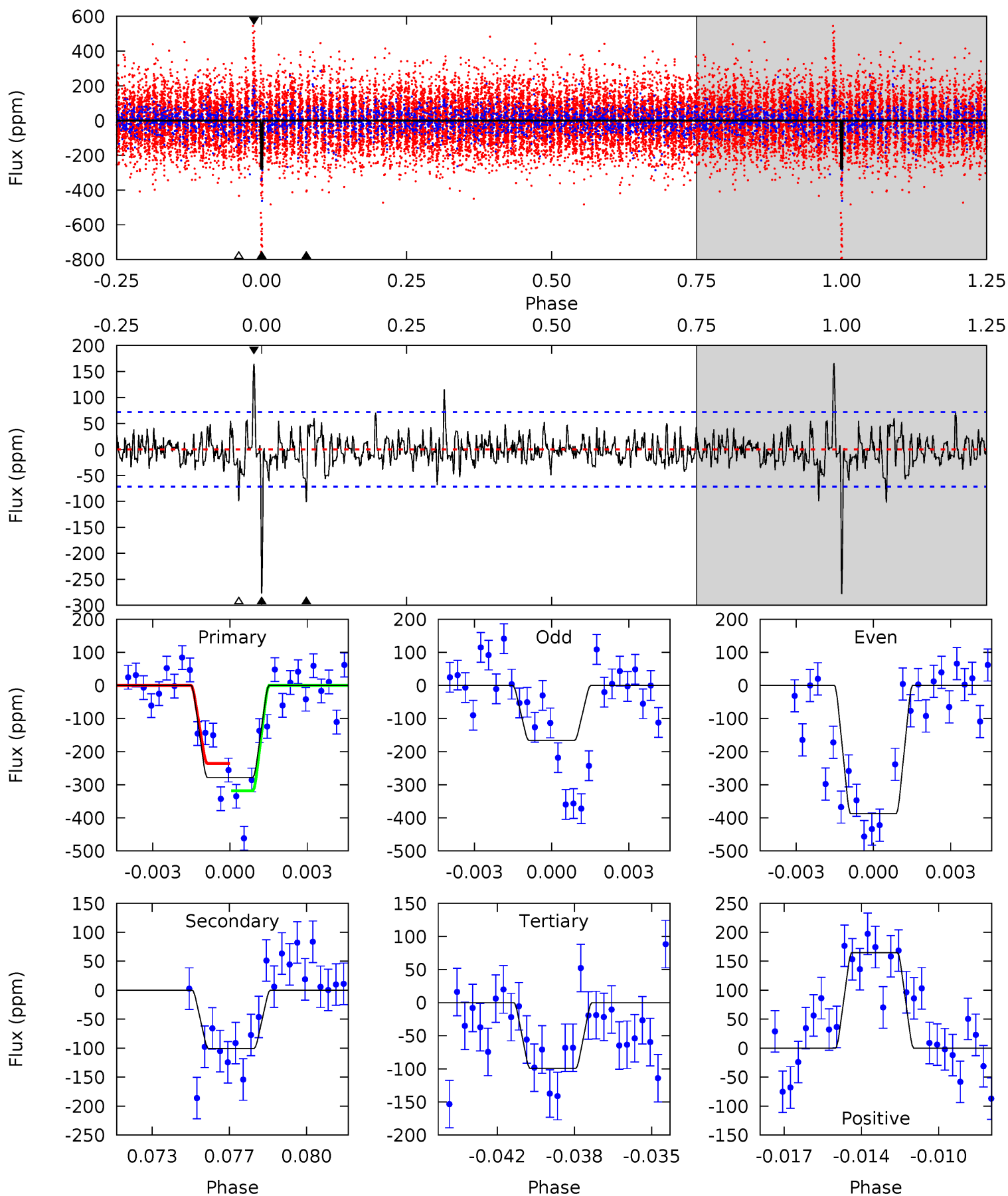
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	7.65	5.12	13.3	5.20	2.88	2.06	5.51	-2.69	2.53	-5.67	5.18	1.14	0.56	2.19



Alt Model-Shift Uniqueness Test

008027902-02, P = 136.632405 Days, E = 97.617623 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	7.31	7.23	12.0	5.22	2.92	1.82	13.0	8.21	0.09	-4.68	8.08	2.63	0.37	2.94



Stellar Parameters For KIC 008027902

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-100 ± 13	$2.76^{+1.29}_{-1.13}$	812^{+51}_{-56}	6279^{+2320}_{-1008}	2544^{+4961}_{-1348}
Alt.	-101 ± 14	$3.95^{+1.40}_{-1.24}$	812^{+55}_{-60}	5348^{+960}_{-609}	1282^{+1322}_{-586}

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

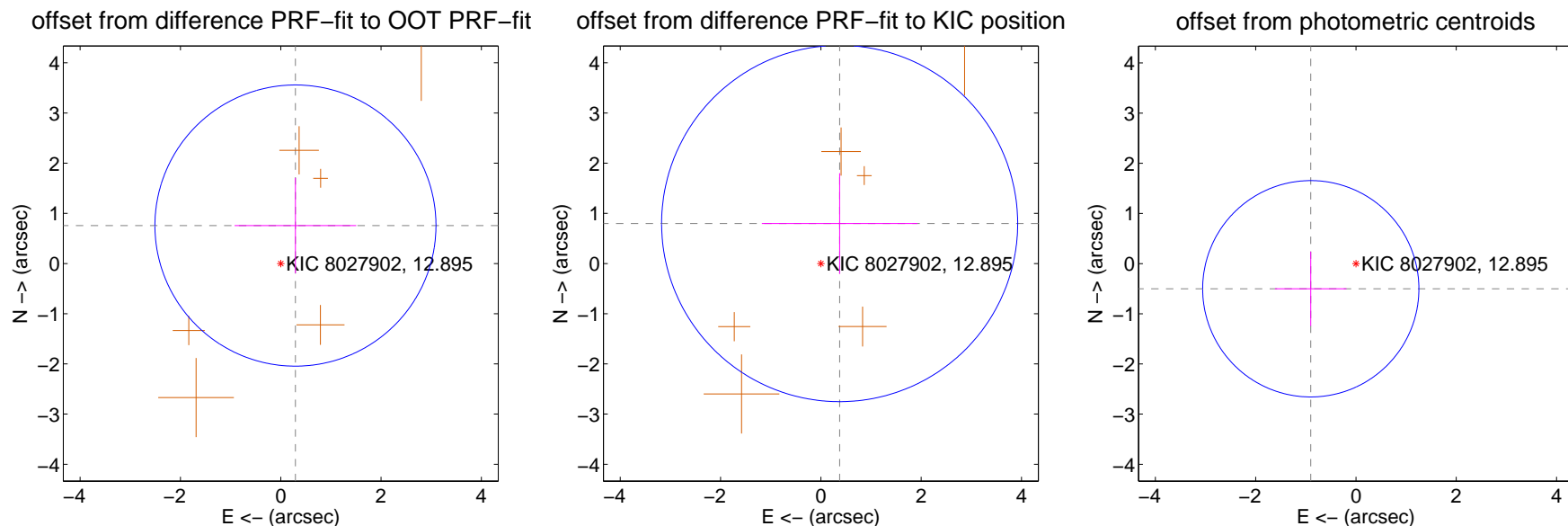
DV Centroid Data

Supplemental centroid analysis for 008027902-02. Kepler magnitude: 12.89. Transit SNR 8.46

There are 0 quarters with good PRF difference image offsets

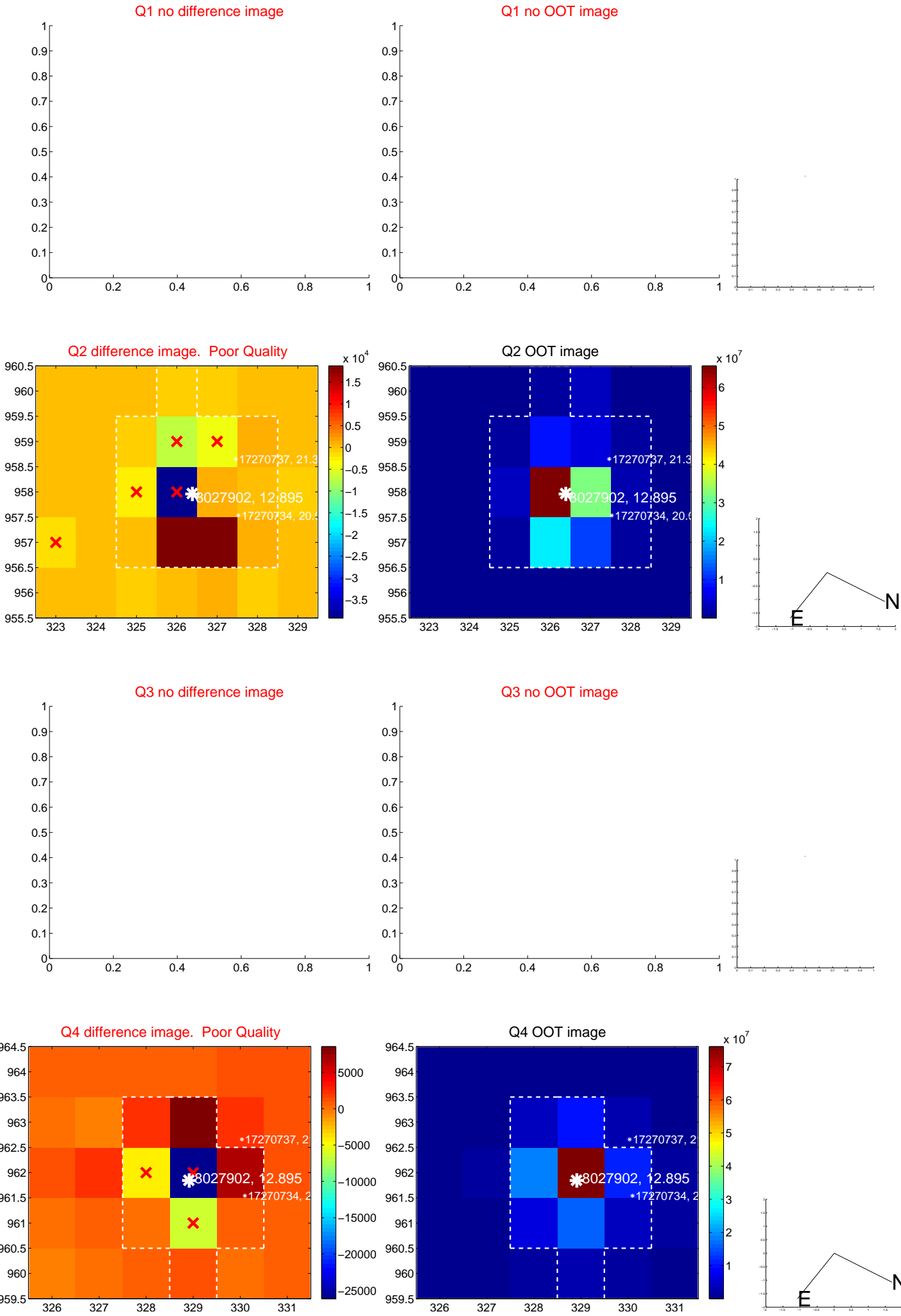
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.812 ± 0.934	0.87	-0.293 ± 1.213	0.757 ± 0.950
PRF-fit source offset from KIC position	0.881 ± 1.183	0.74	-0.374 ± 1.551	0.797 ± 1.003
photometric centroid source offset	1.03 ± 0.72	1.43	0.90 ± 0.71	-0.50 ± 0.74

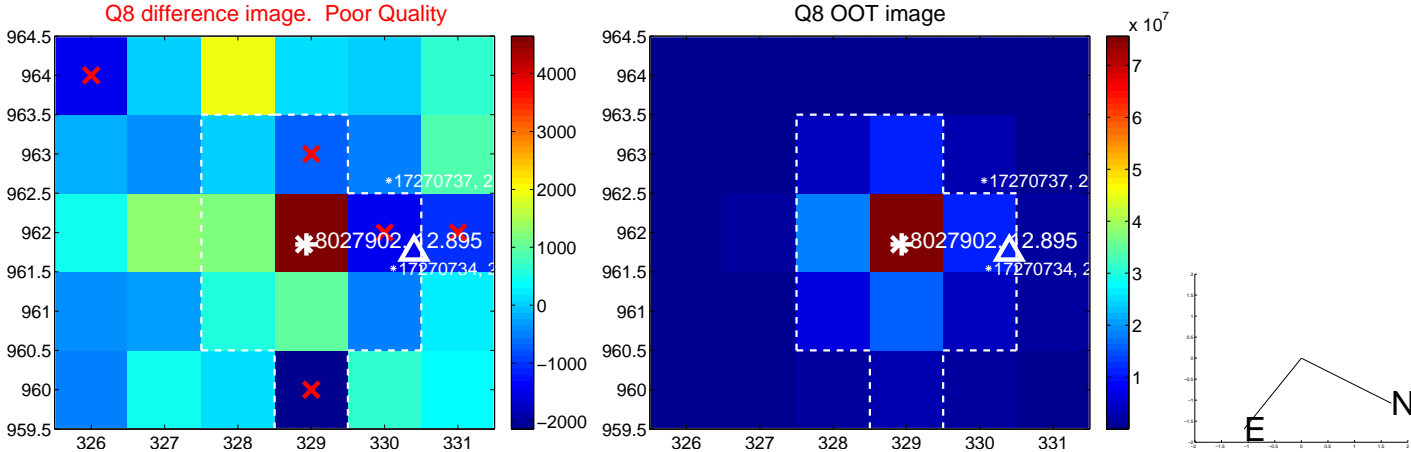
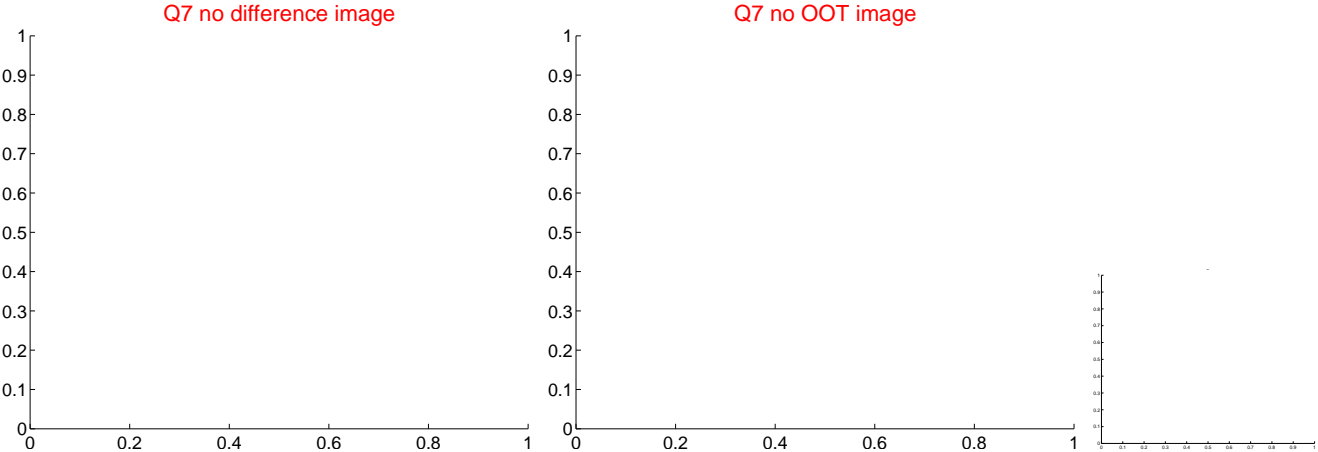
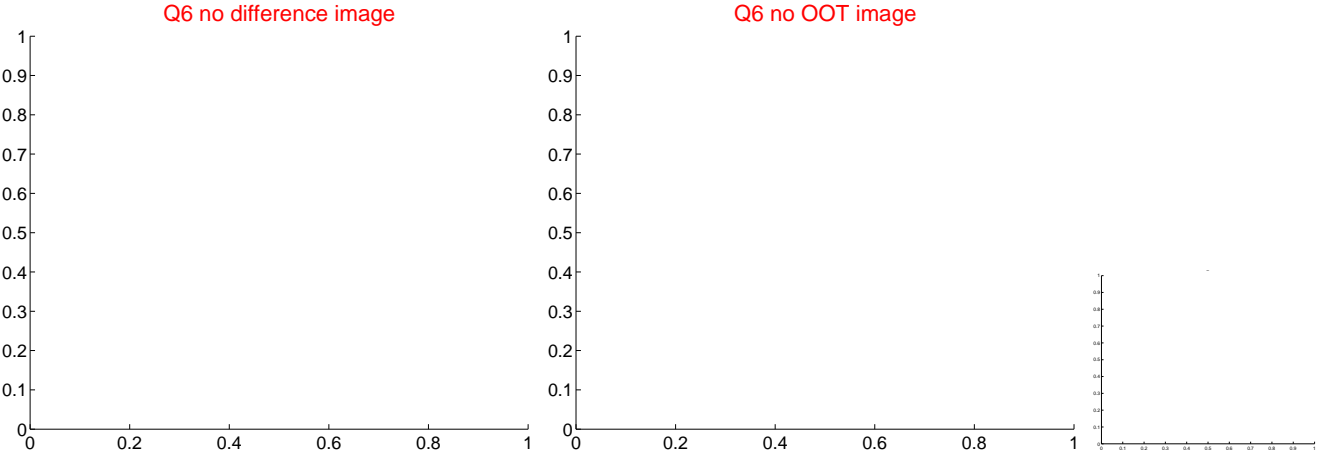
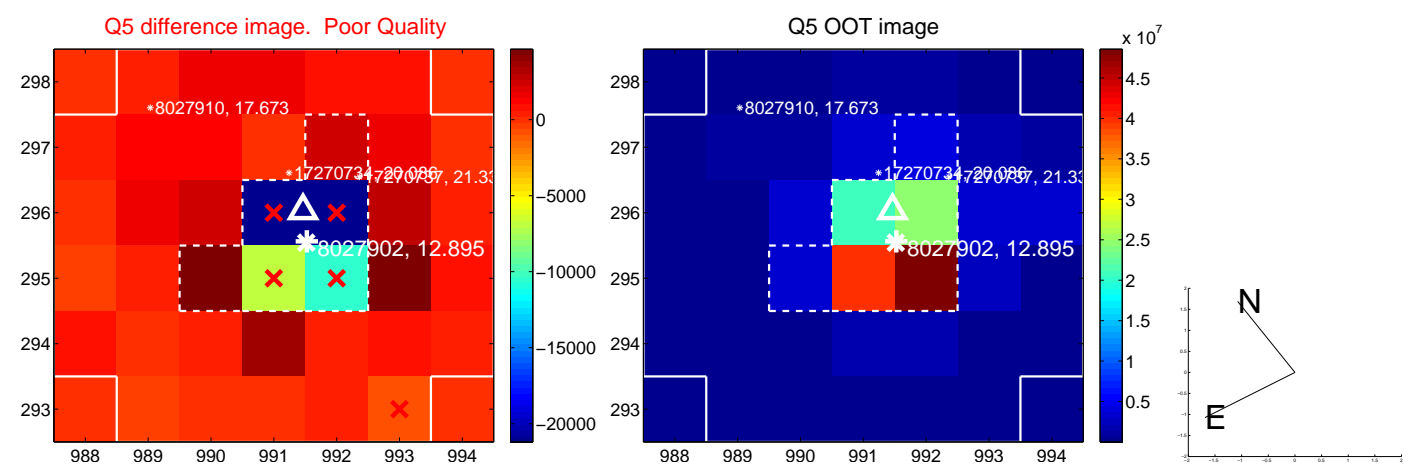


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



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

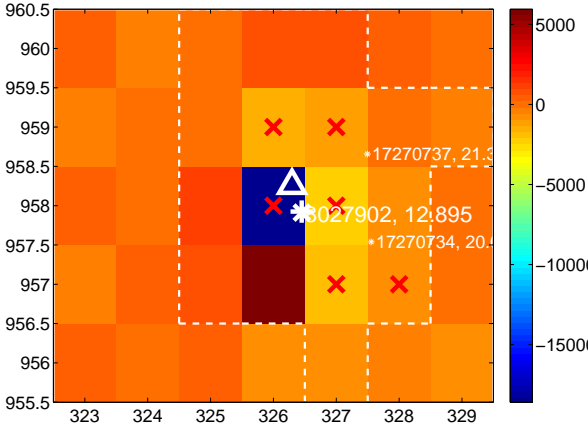
Q9 no difference image



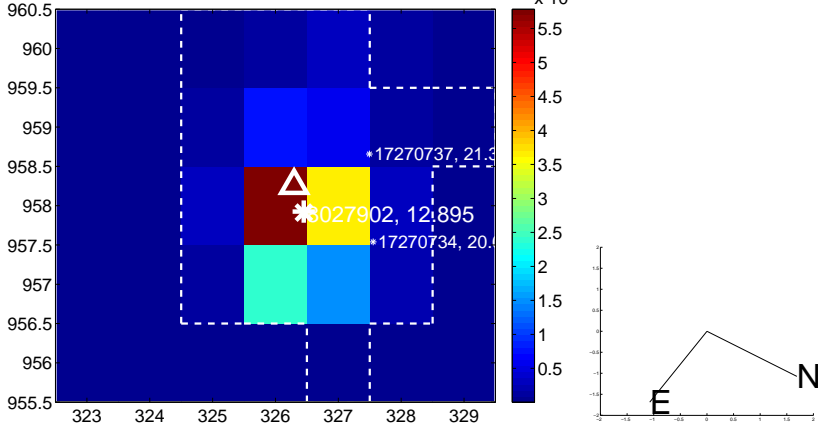
Q9 no OOT image



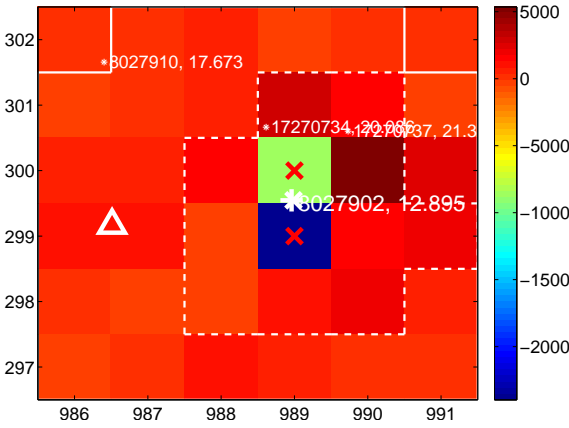
Q10 difference image. Poor Quality



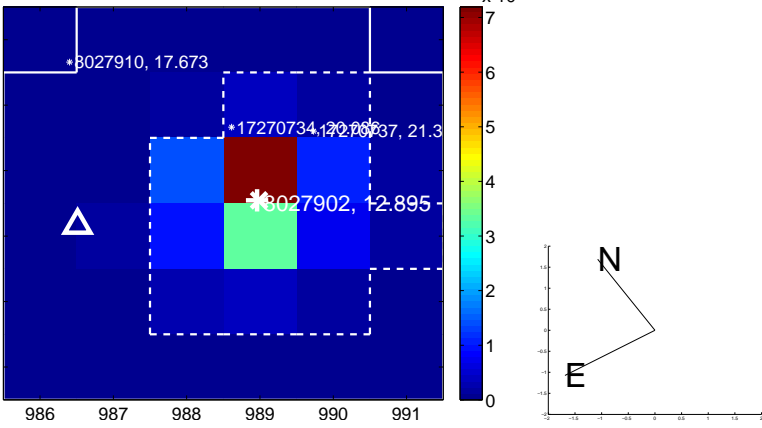
Q10 OOT image



Q11 difference image. Poor Quality



Q11 OOT image



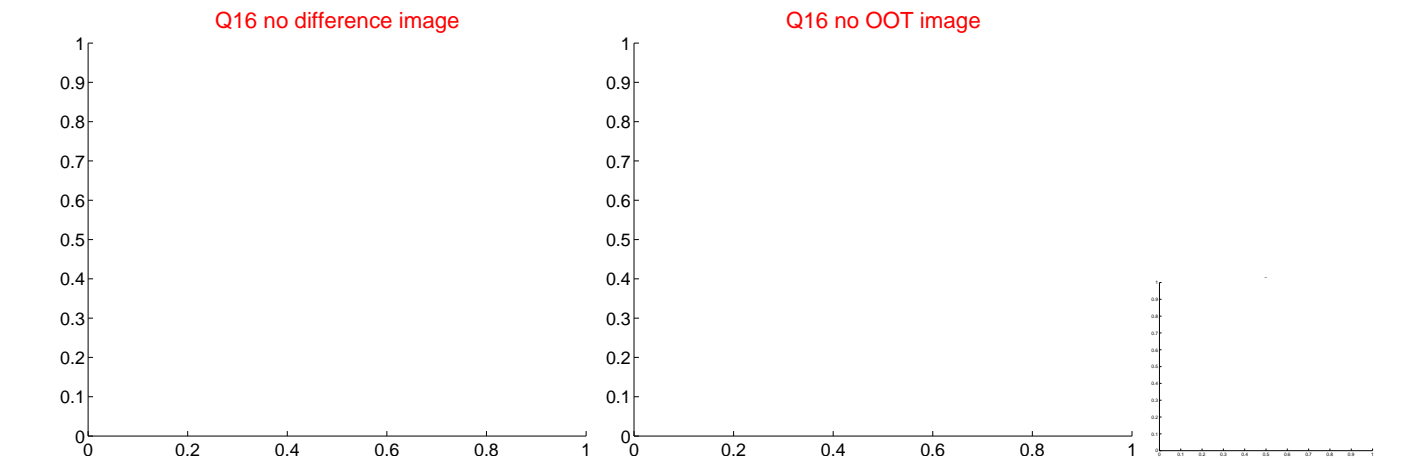
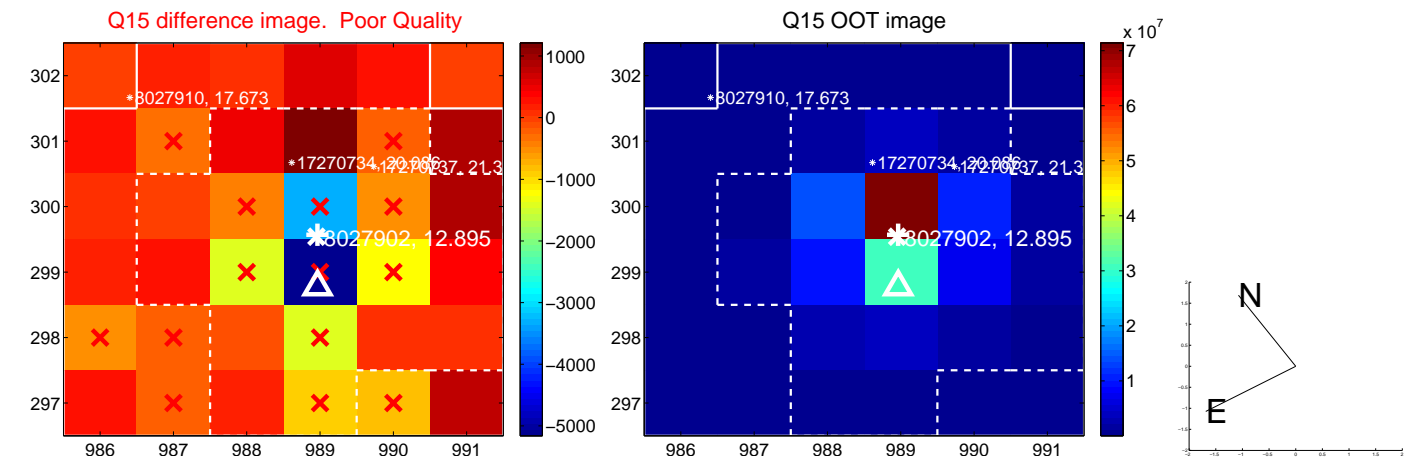
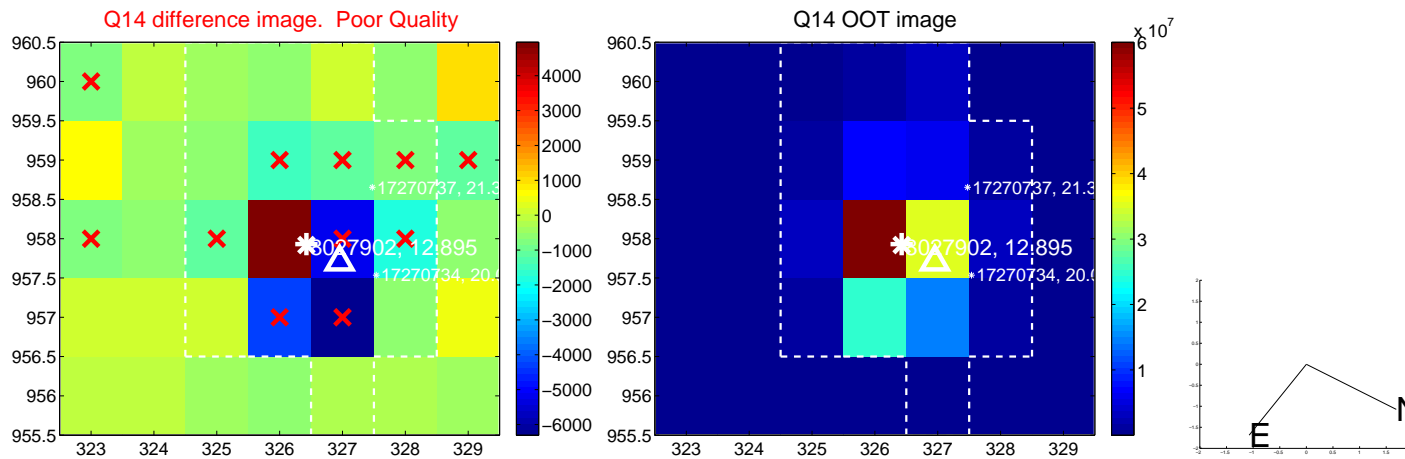
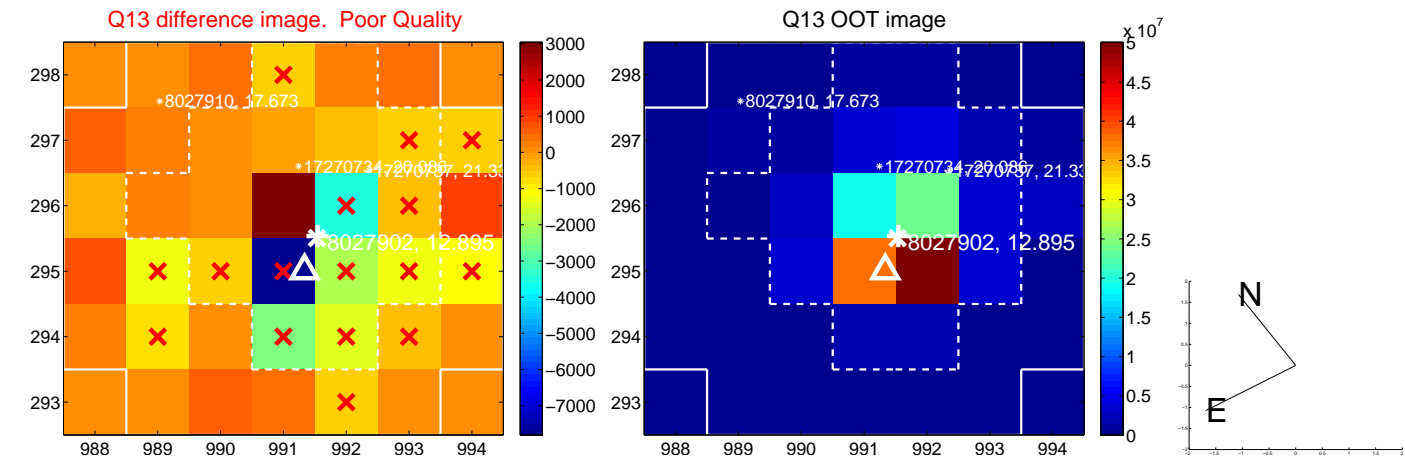
Q12 no difference image



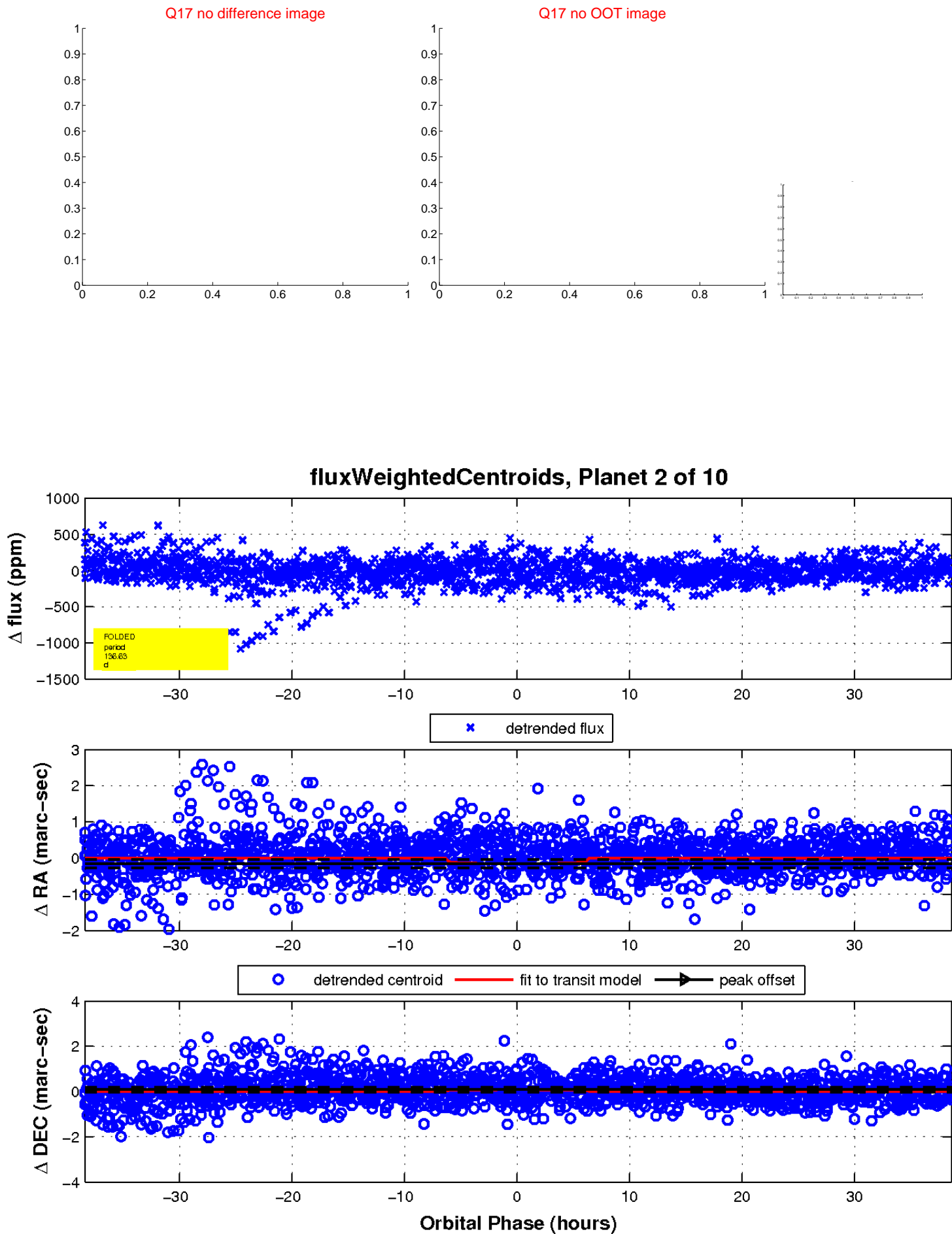
Q12 no OOT image



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

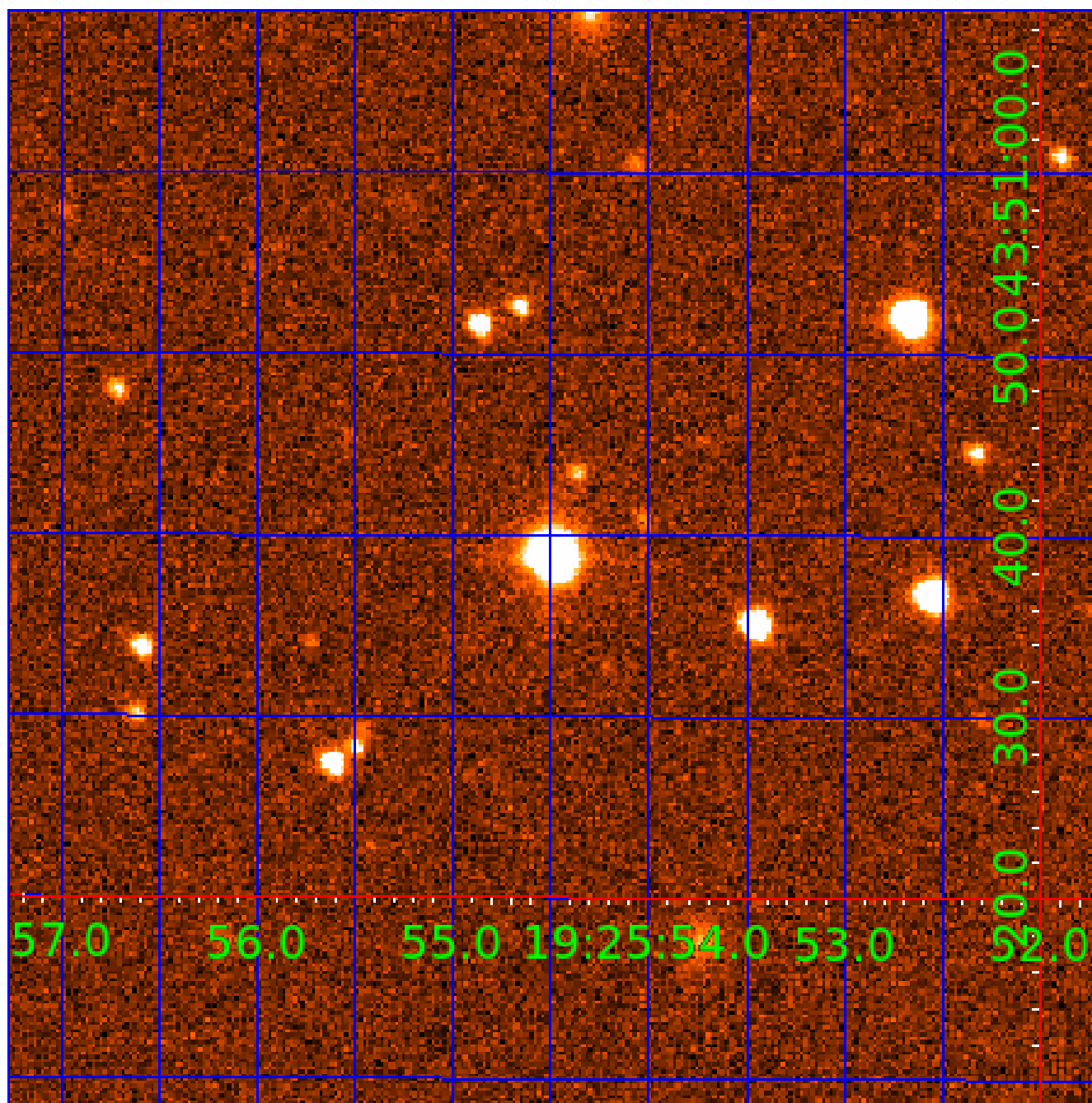


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
008027902-01	OBS	6955.01	1.796314	131.552349	14.1	10.675	8.3	7.7	2.09	7117	0.79	8960.59
008027902-02	OBS	No	136.633031	234.251816	158.9	12.869	13.5	8.5	2.09	7117	2.84	27.80
008027902-03	OBS	No	88.248184	153.502583	122.4	21.072	12.6	8.1	2.09	7117	2.49	49.80
008027902-04	OBS	No	28.689666	153.428684	107.4	8.820	8.6	9.1	2.09	7117	2.44	222.78
008027902-05	OBS	No	54.623685	166.278027	178.4	3.172	8.3	9.4	2.09	7117	3.30	94.41
008027902-06	OBS	No	168.743612	161.903299	119.8	12.118	8.7	6.7	2.09	7117	2.60	20.98
008027902-07	OBS	No	72.541293	166.720724	183.1	5.868	8.5	8.5	2.09	7117	3.31	64.67
008027902-08	OBS	No	96.868394	167.019374	152.8	6.800	7.9	6.5	2.09	7117	2.99	43.98
008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008027902-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008027902-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

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

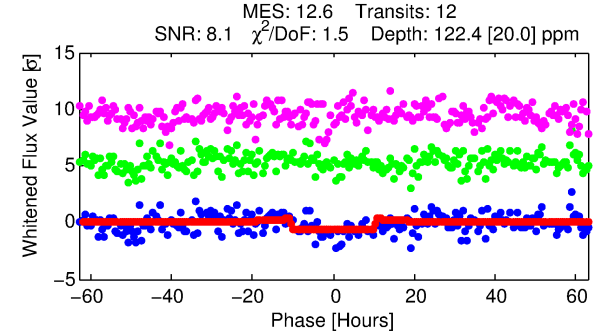
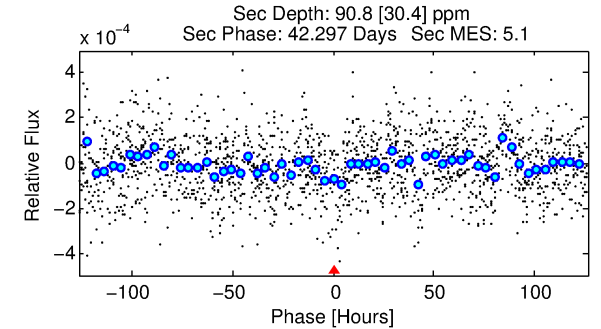
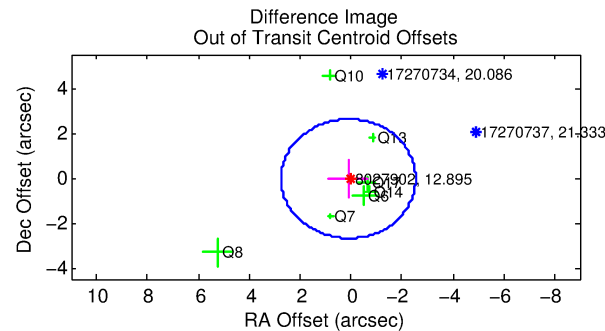
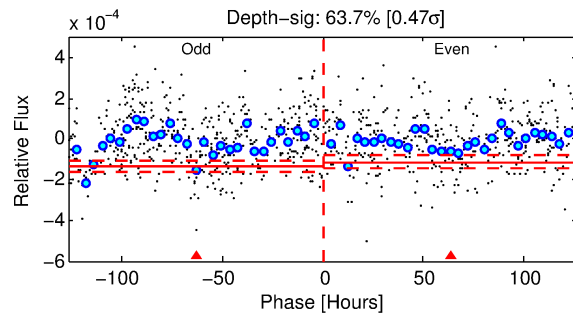
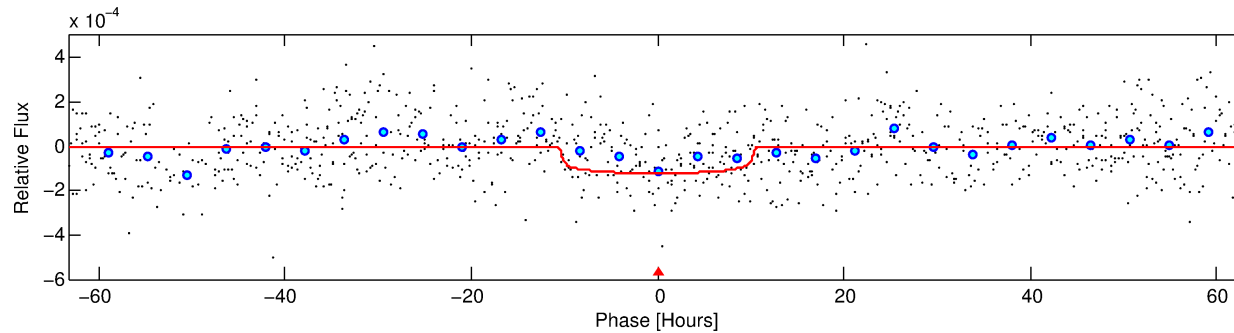
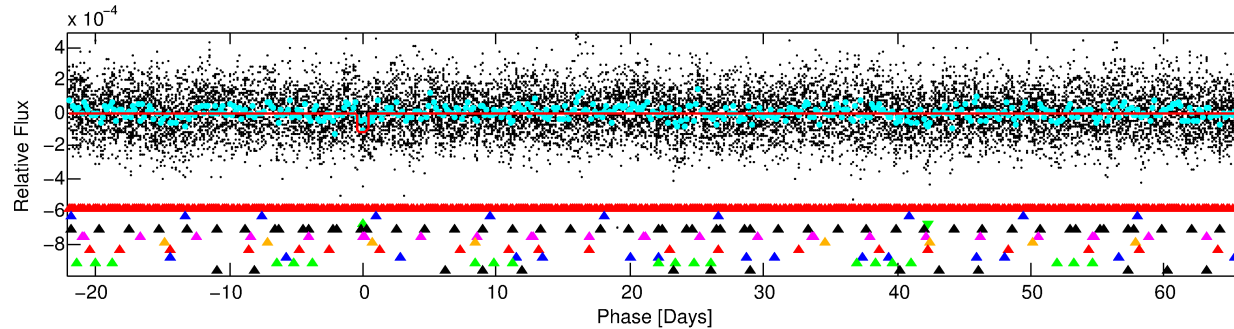
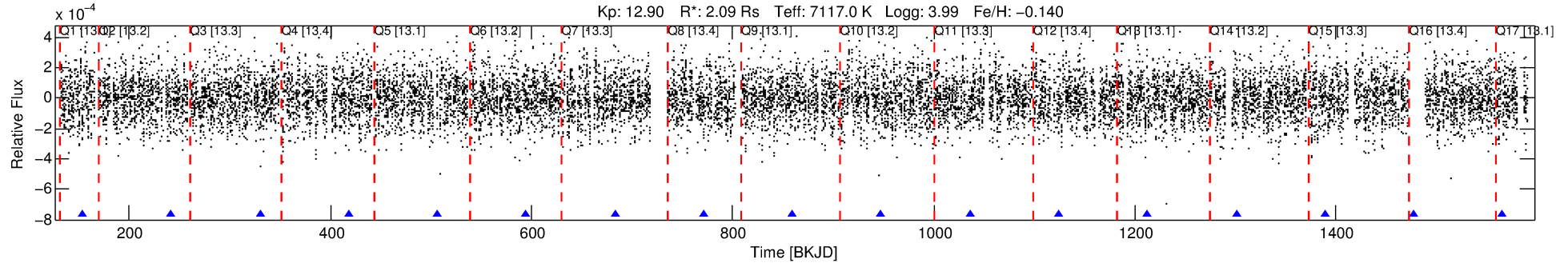
Ephemeris Match Information For 008027902-03

No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 3 of 10 Period: 88.248 d
KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 88.24818 [0.00244] d
Epoch = 153.5026 [0.0213] BKJD
Rp/R* = 0.0109 [0.0025]
a/R* = 22.82 [27.94]
b = 0.72 [0.83]
Seff = 49.80 [18.96]
Teq = 677 [64] K
Rp = 2.49 [0.85] Re
a = 0.4490 [0.1028] AU
Ag = 1629.31 [1077.02] [1.51σ]
Teffp = 6654 [968] K [6.16σ]

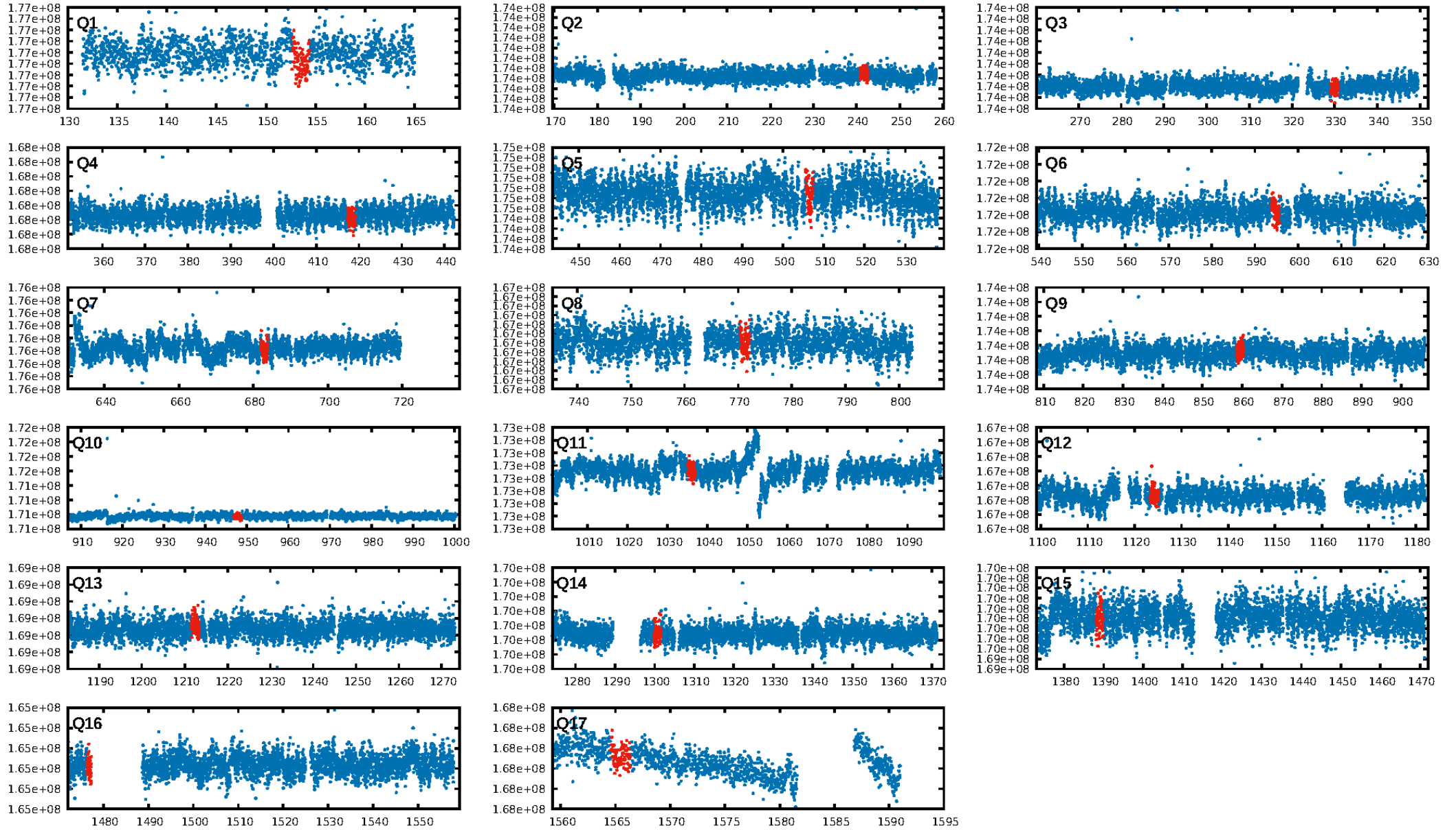
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.97σ]
LongPeriod-sig: 100.0% [9.34σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 1.791
Centroid-sig: 14.9%
Centroid-so: 0.572 arcsec [1.04σ]
OotOffset-rm: 0.109 arcsec [0.12σ]
KicOffset-rm: 0.070 arcsec [0.06σ]
OotOffset-st: 3/1/1/2 [7]
KicOffset-st: 3/1/1/2 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.00 [0/14]

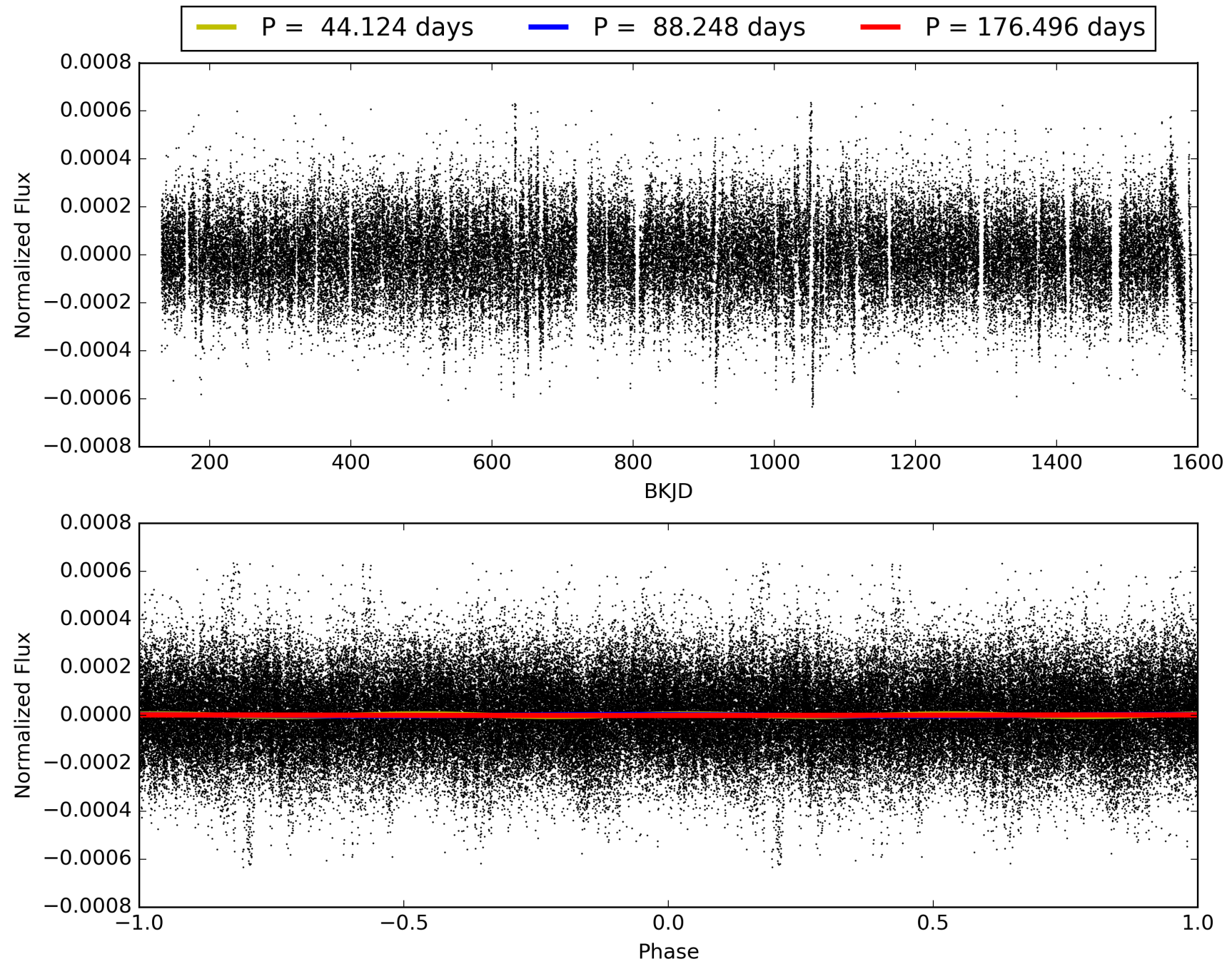
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:20:55 Z

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

TCE 008027902-03, PDC Light Curves

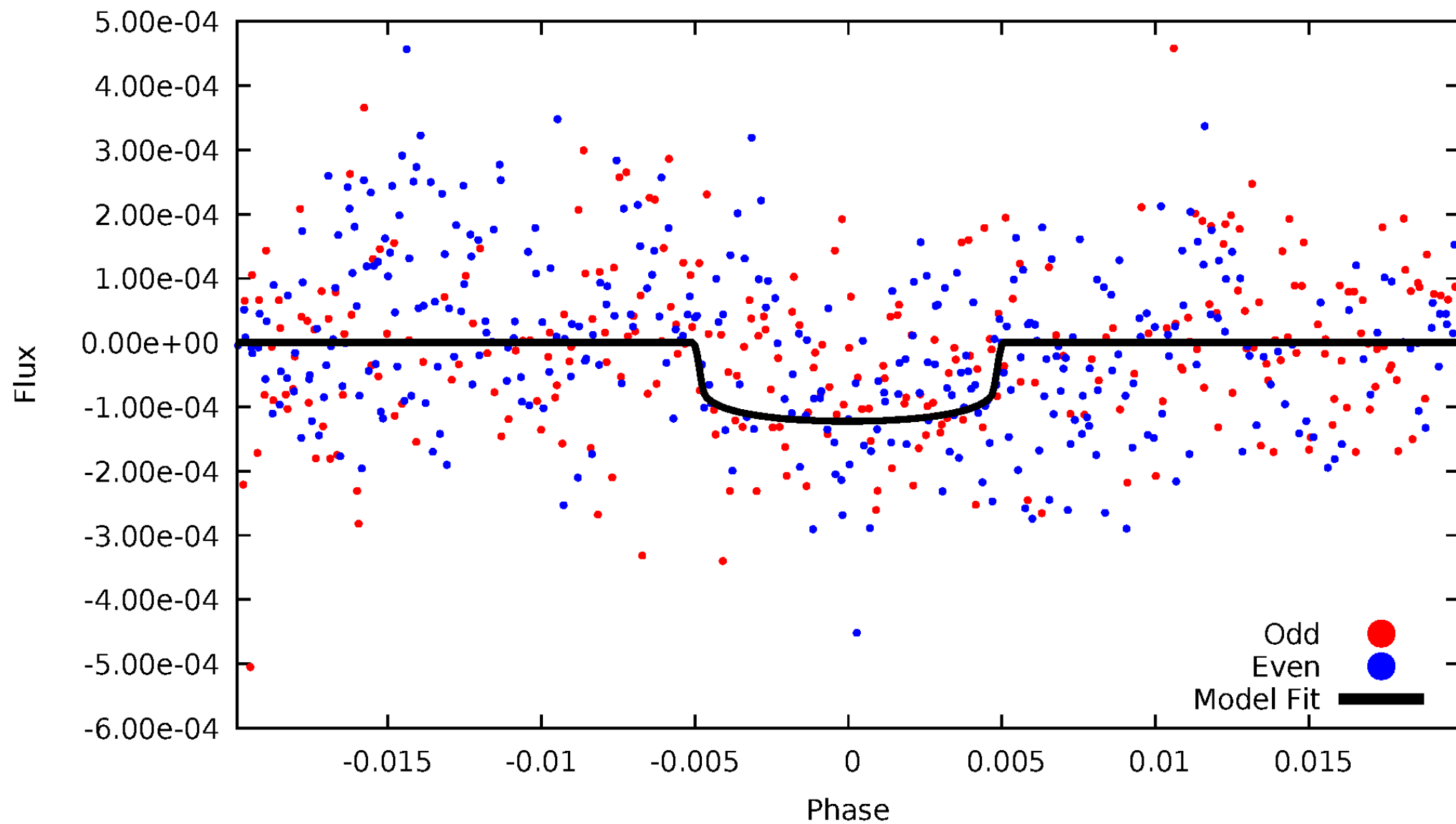


TCE 008027902-03



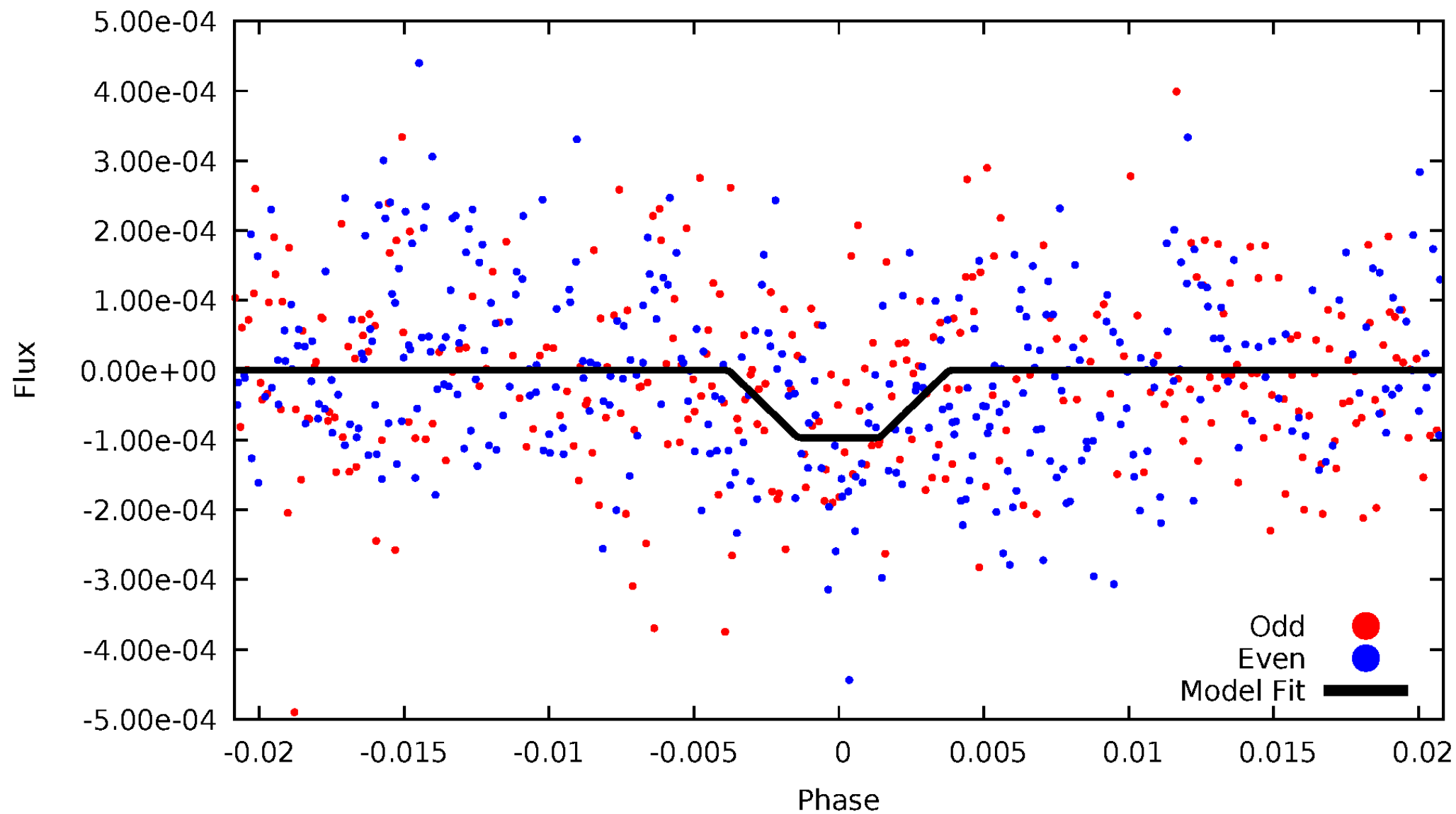
DV Odd/Even

TCE 008027902-03



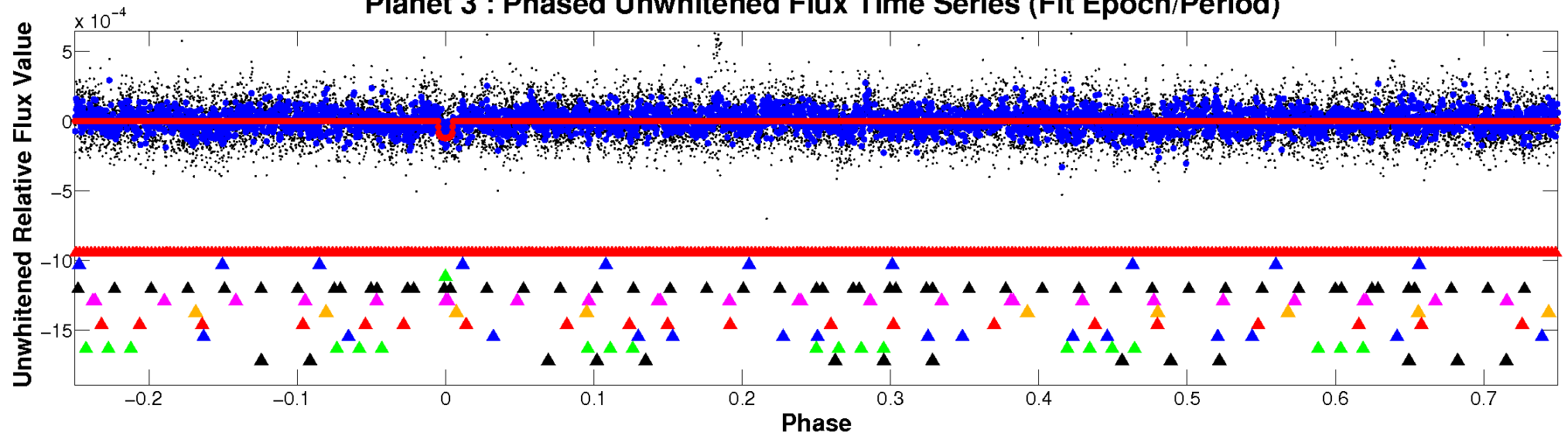
ALT Odd/Even

TCE 008027902-03

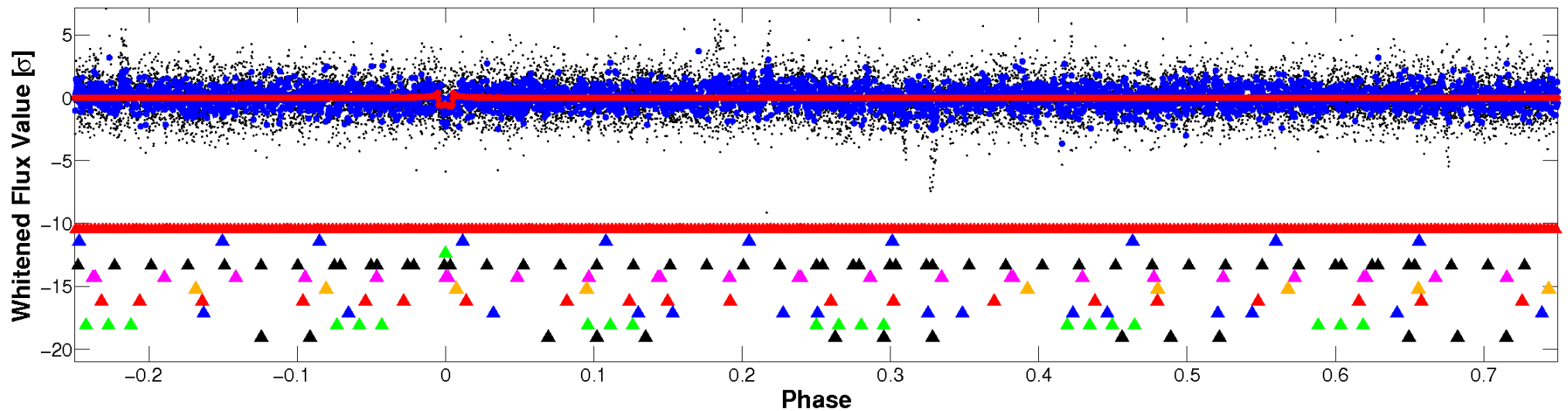


Non-Whitened Vs. Whitened Light Curve

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

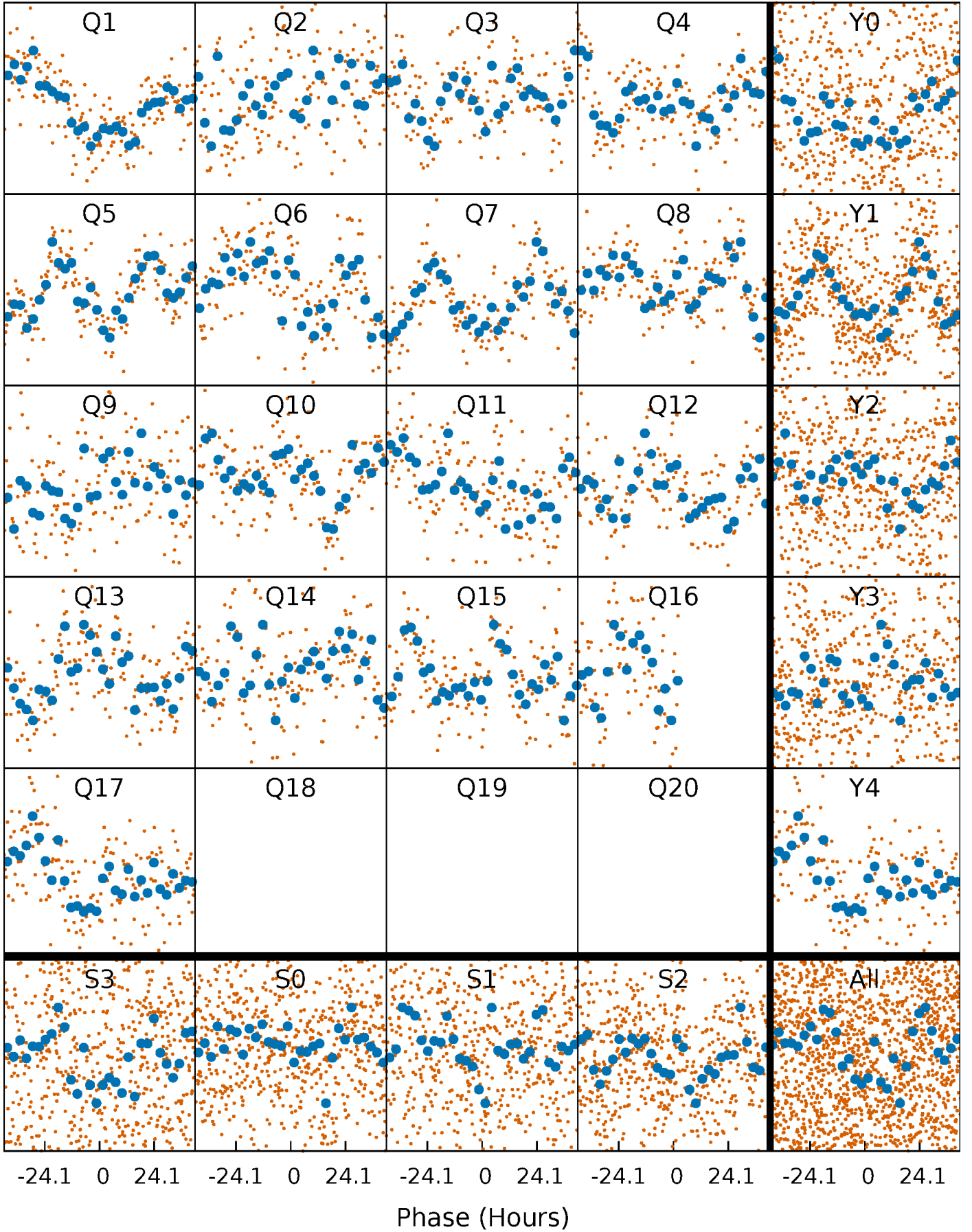


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



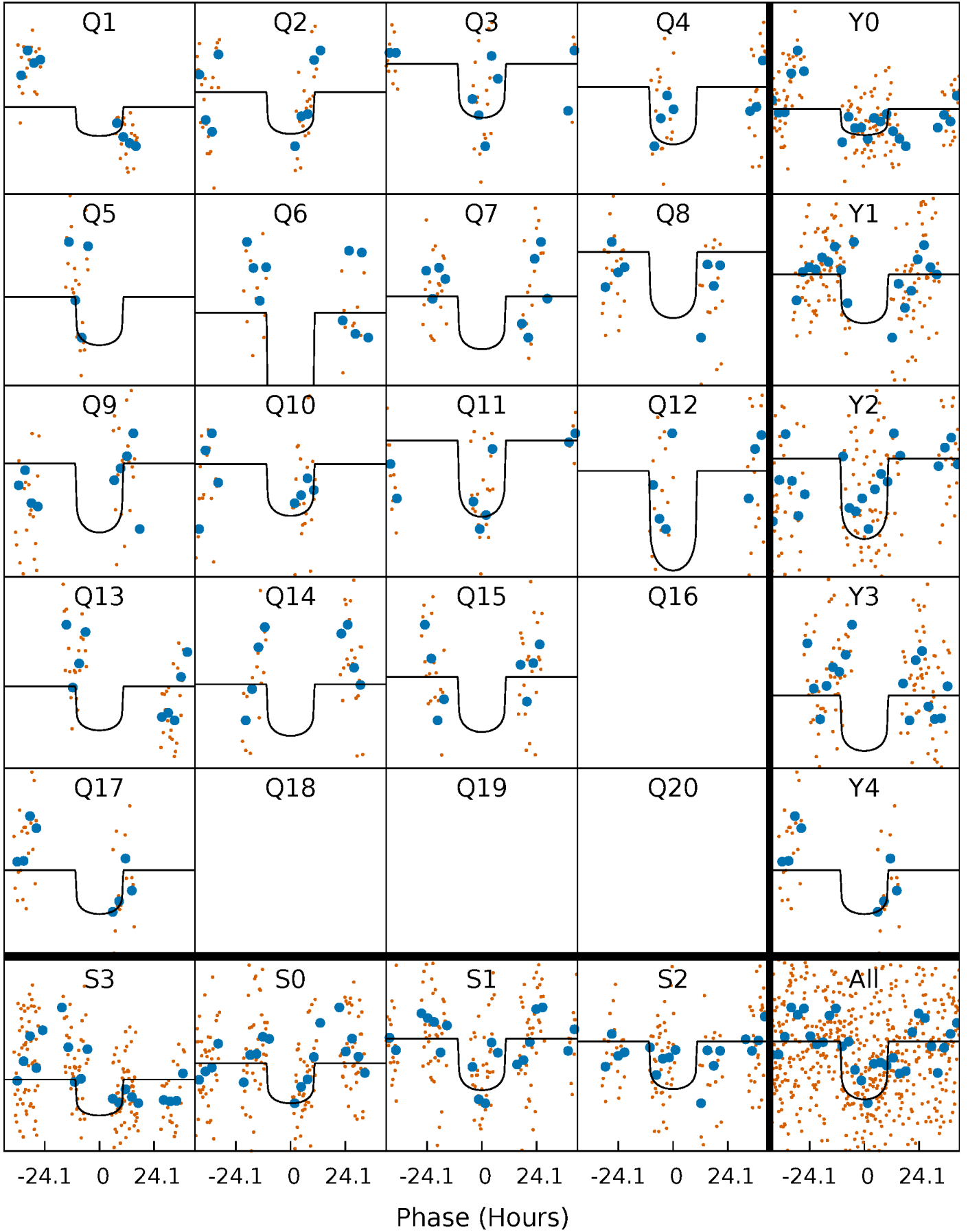
PDC Quarter-Phased Transit Curves

TCE 008027902-03 $P = 88.248184$ Days $T_0 = 153.502583$ (BKJD)



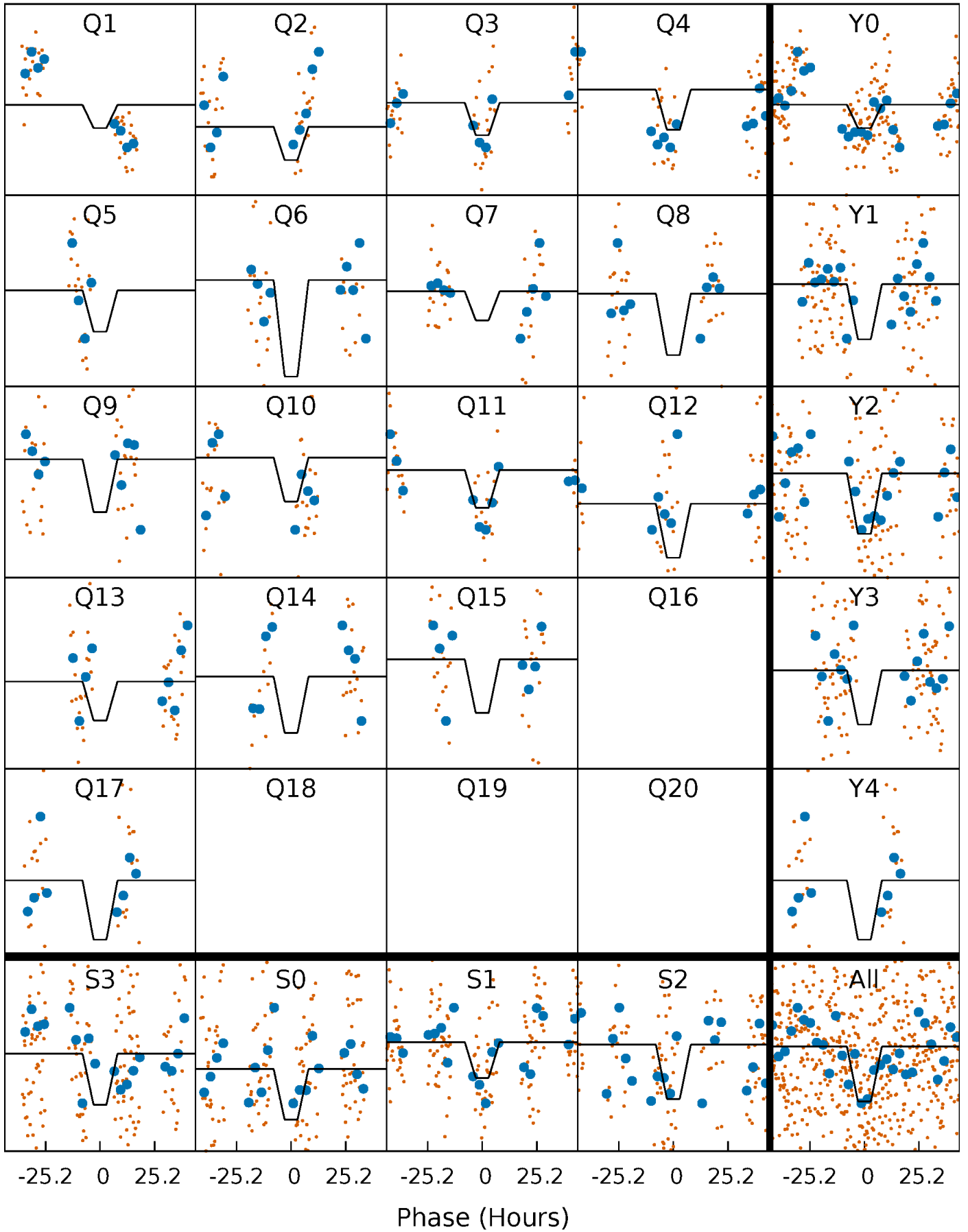
DV Quarter-Phased Transit Curves

TCE 008027902-03 P= 88.248184 Days $T_0=153.502583$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

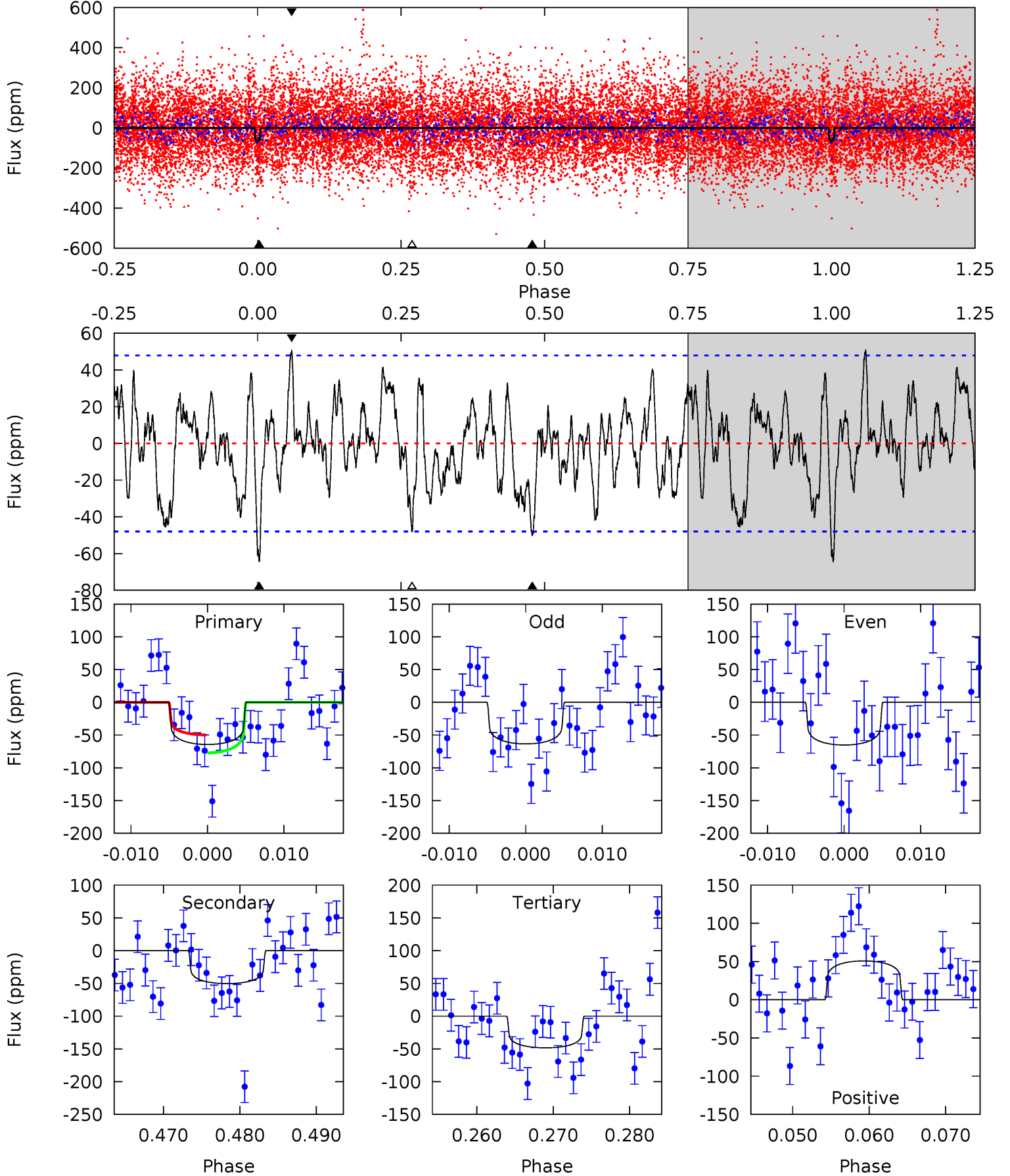
TCE 008027902-03 P= 88.240453 Days $T_0=153.510852$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-03, P = 88.248184 Days, E = 65.254399 Days

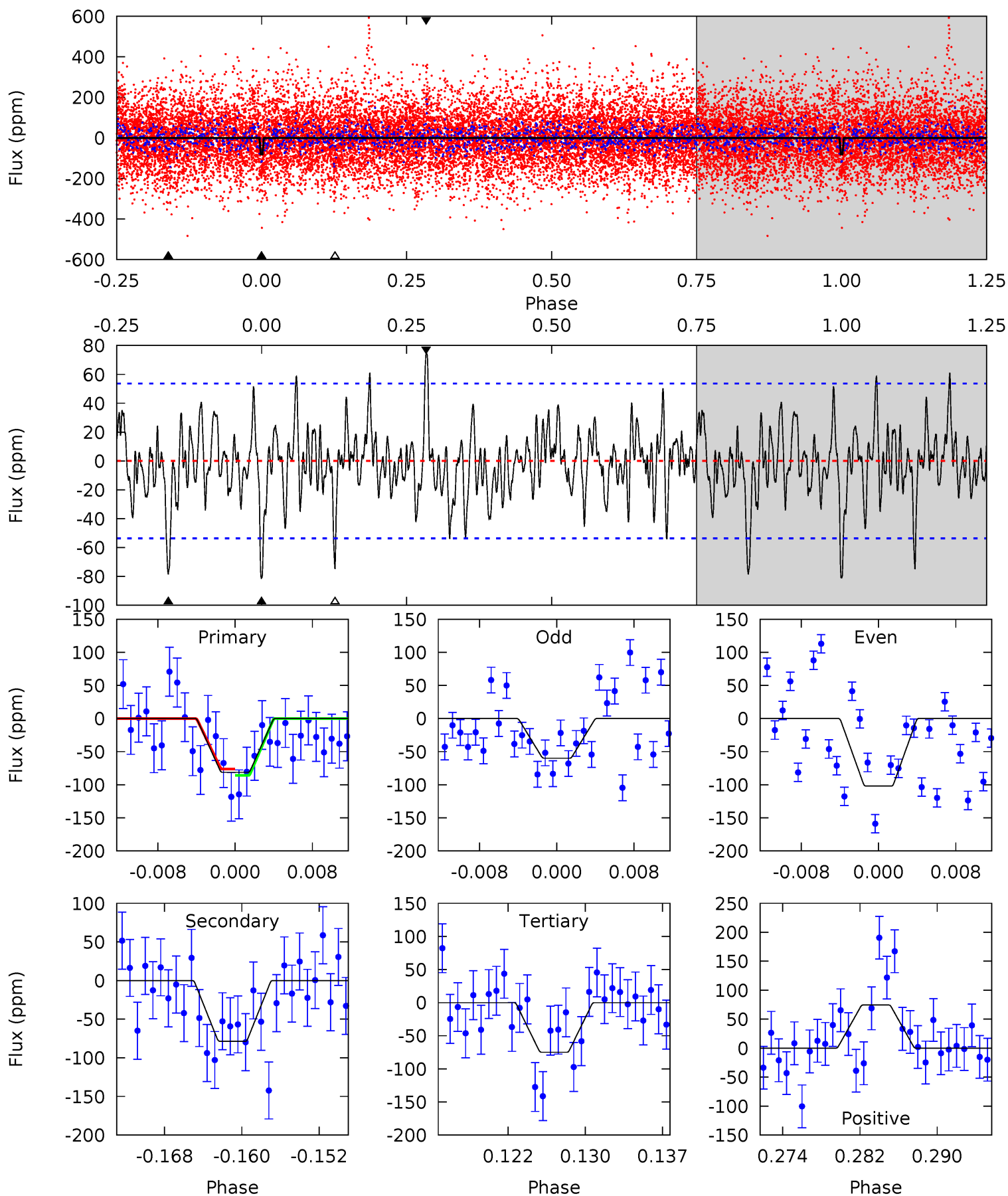
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.76	5.28	5.07	5.33	5.03	2.58	1.96	1.69	1.43	0.21	-0.05	0.09	0.76	0.44	1.43



Alt Model-Shift Uniqueness Test

008027902-03, P = 88.240453 Days, E = 65.270399 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.70	7.44	7.09	7.06	5.08	2.67	1.88	0.60	0.64	0.35	0.39	1.98	0.55	0.48	0.46



Stellar Parameters For KIC 008027902

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-50 ± 10	$2.39^{+0.70}_{-0.60}$	937^{+60}_{-65}	5692^{+844}_{-571}	948^{+755}_{-387}
Alt.	-79 ± 11	$2.21^{+0.67}_{-0.64}$	936^{+67}_{-65}	6688^{+1455}_{-787}	1816^{+1731}_{-780}

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

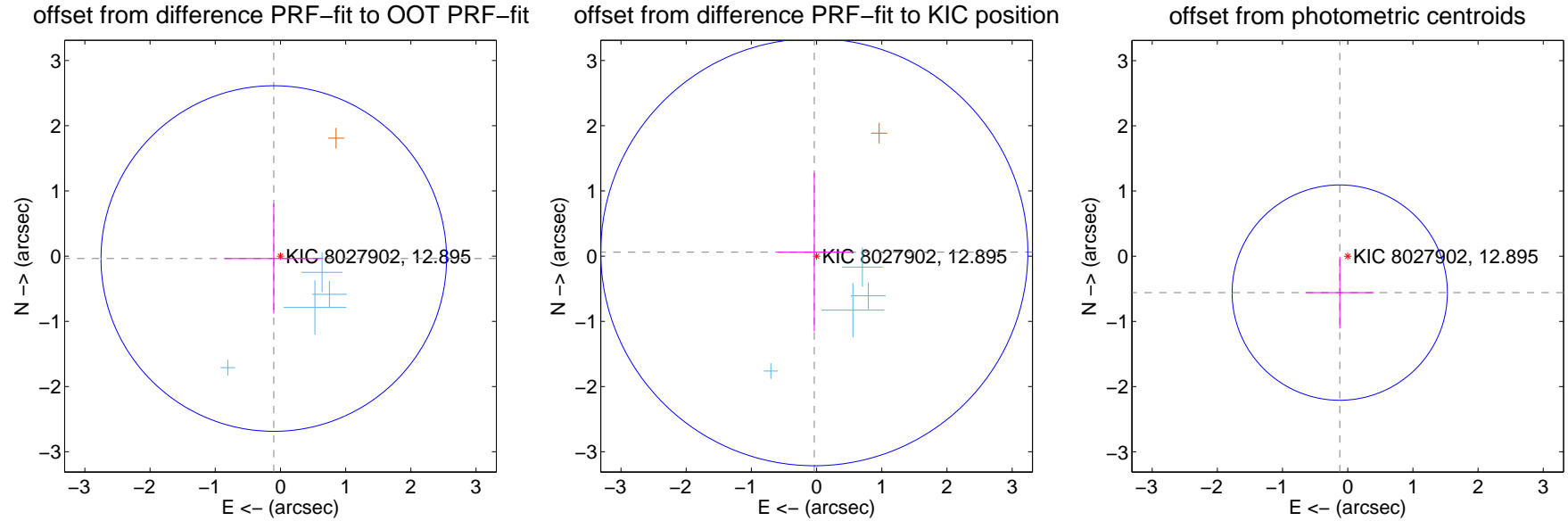
DV Centroid Data

Supplemental centroid analysis for 008027902-03. Kepler magnitude: 12.89. Transit SNR 8.09

There are 4 quarters with good PRF difference image offsets

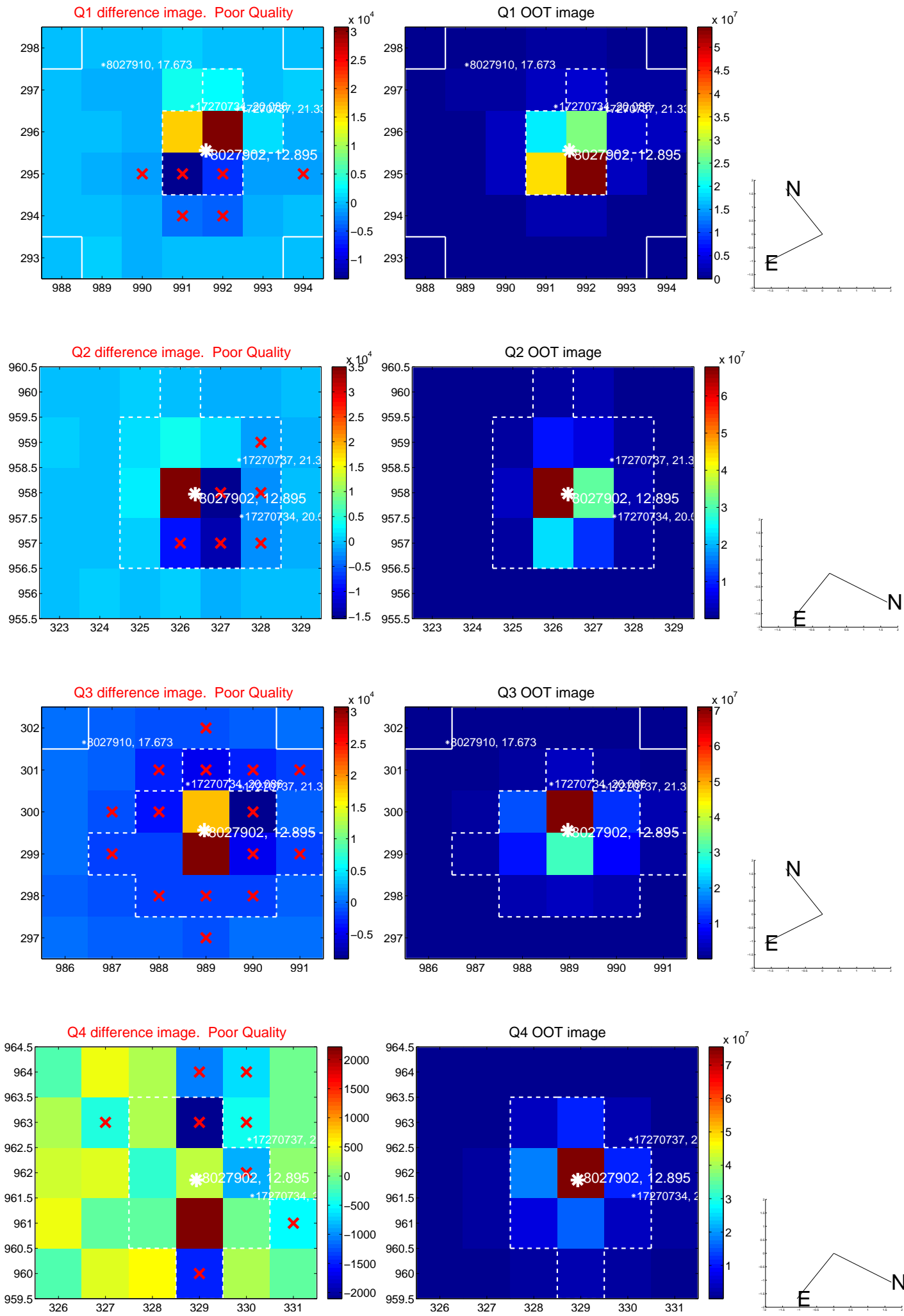
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.109 ± 0.884	0.12	0.103 ± 0.758	-0.037 ± 0.843
PRF-fit source offset from KIC position	0.070 ± 1.092	0.06	0.035 ± 0.566	0.061 ± 1.217
photometric centroid source offset	0.57 ± 0.55	1.04	0.12 ± 0.53	-0.56 ± 0.55

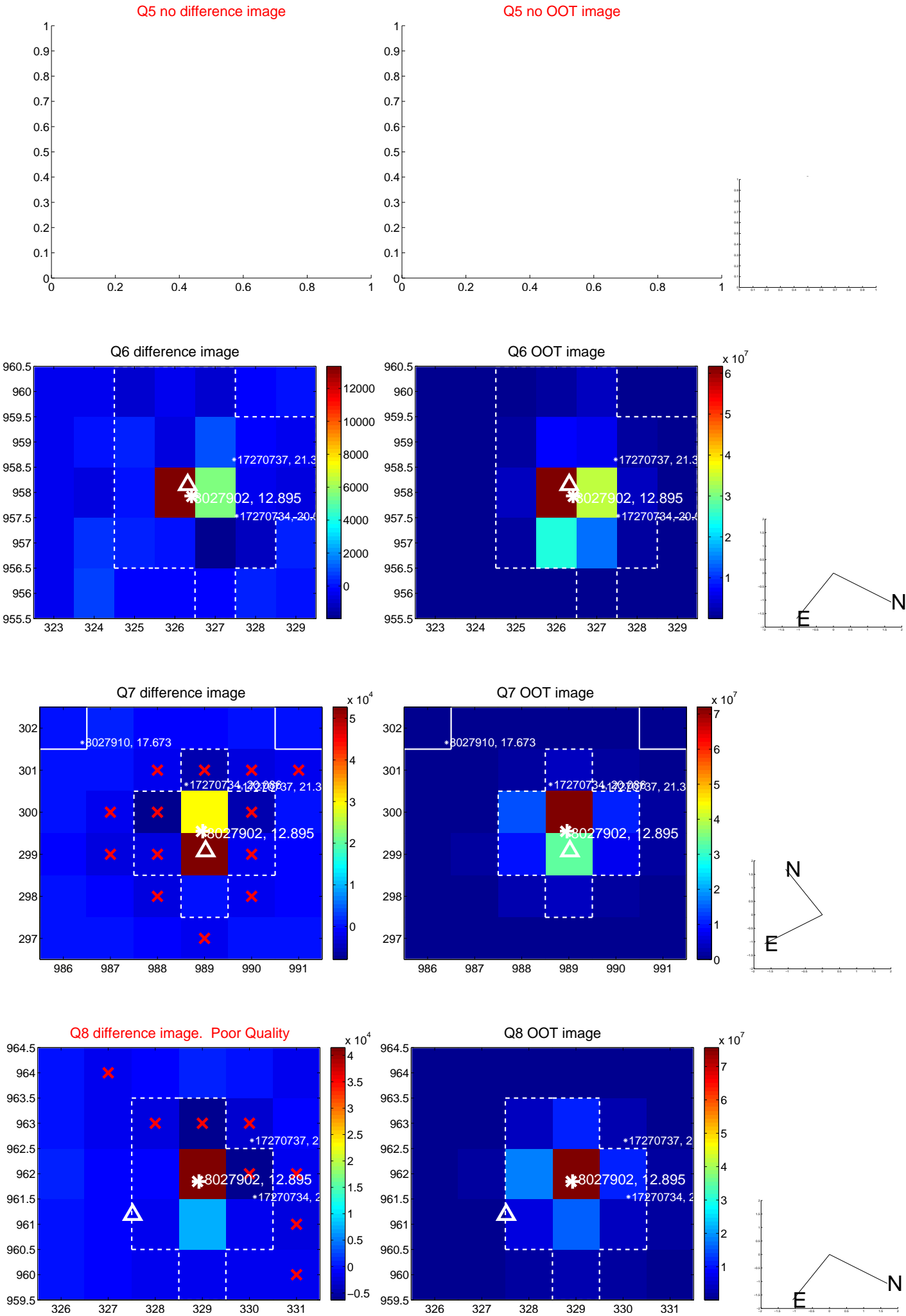


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

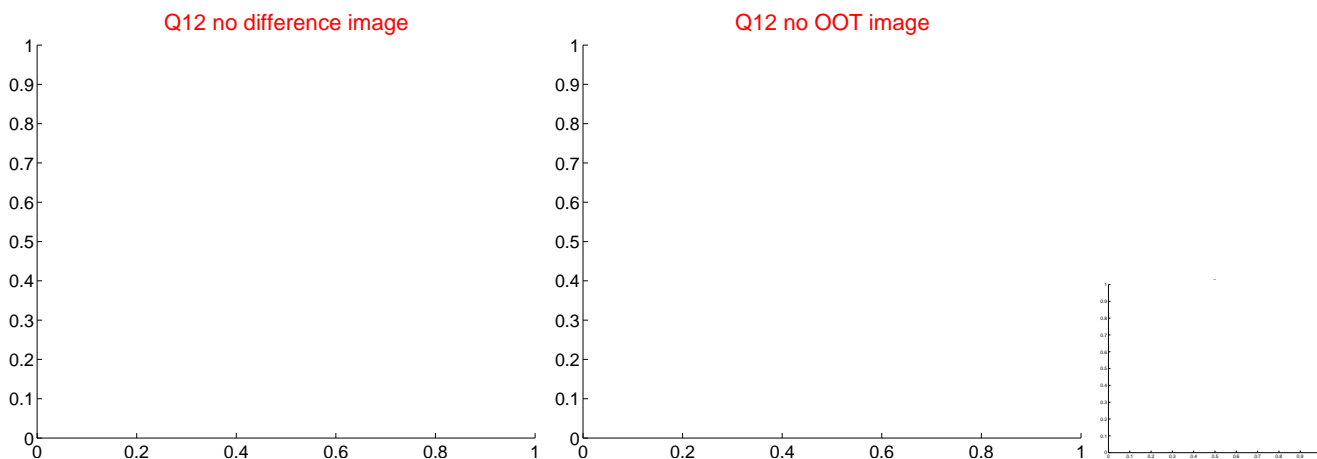
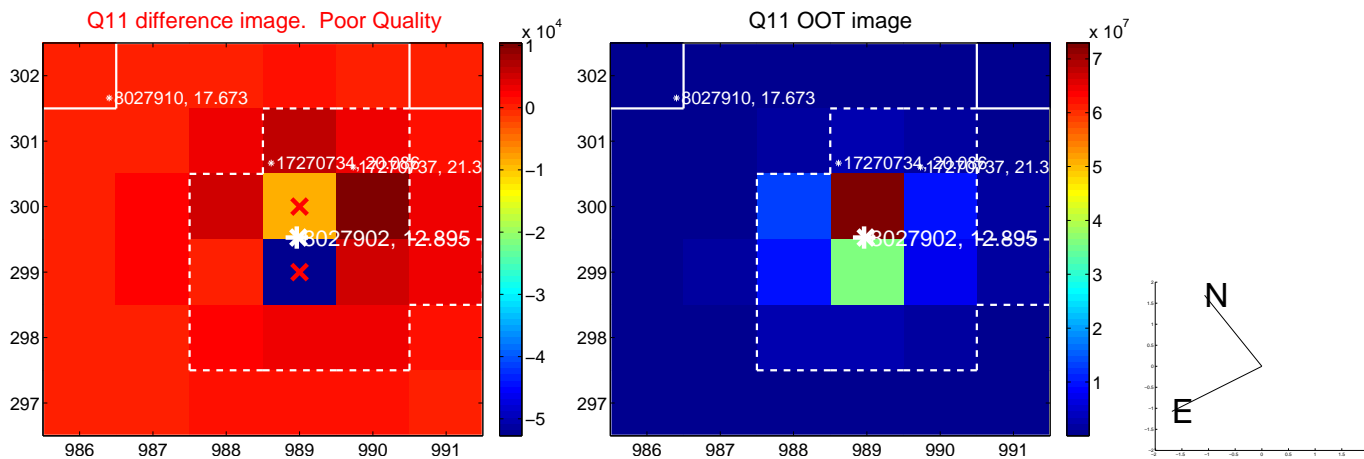
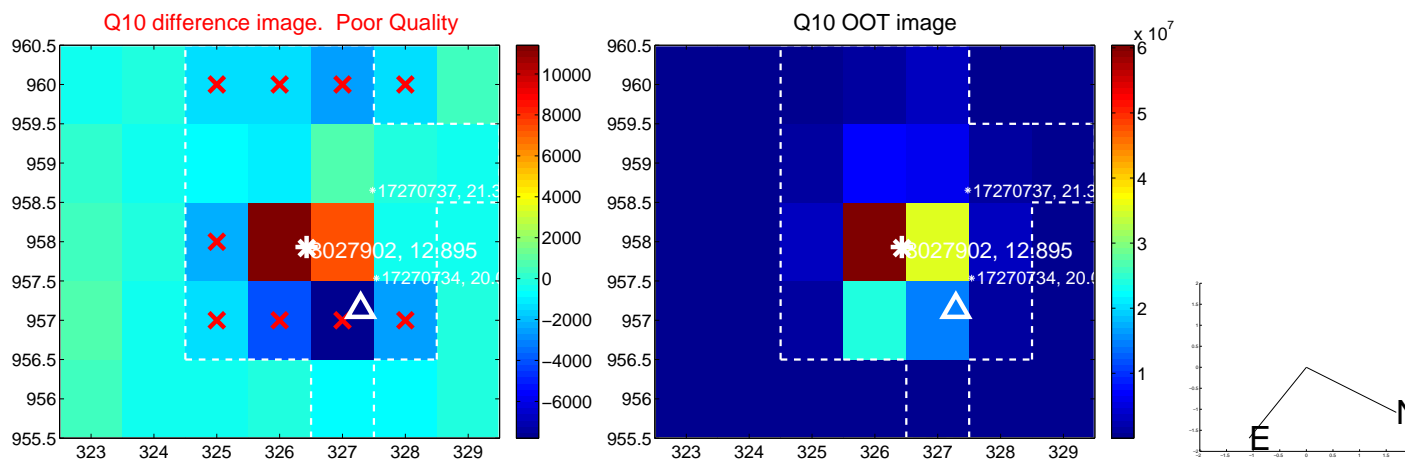
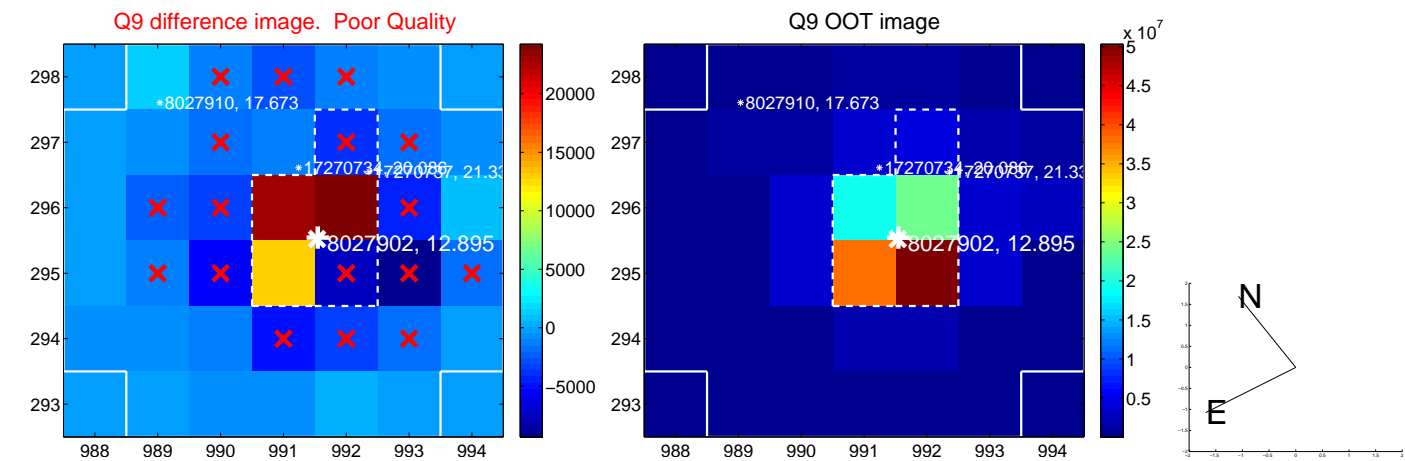
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



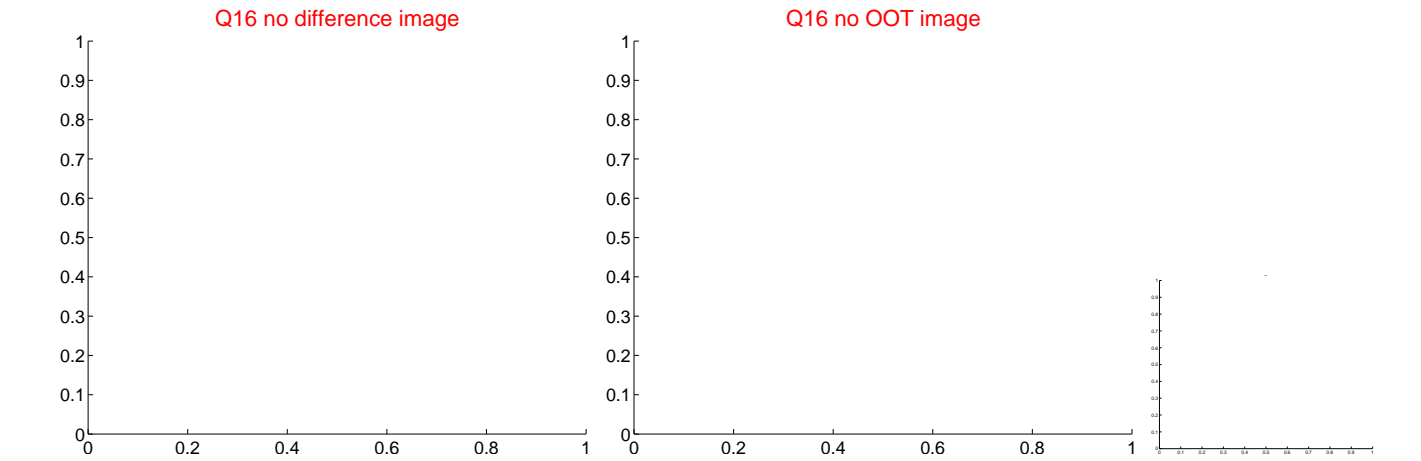
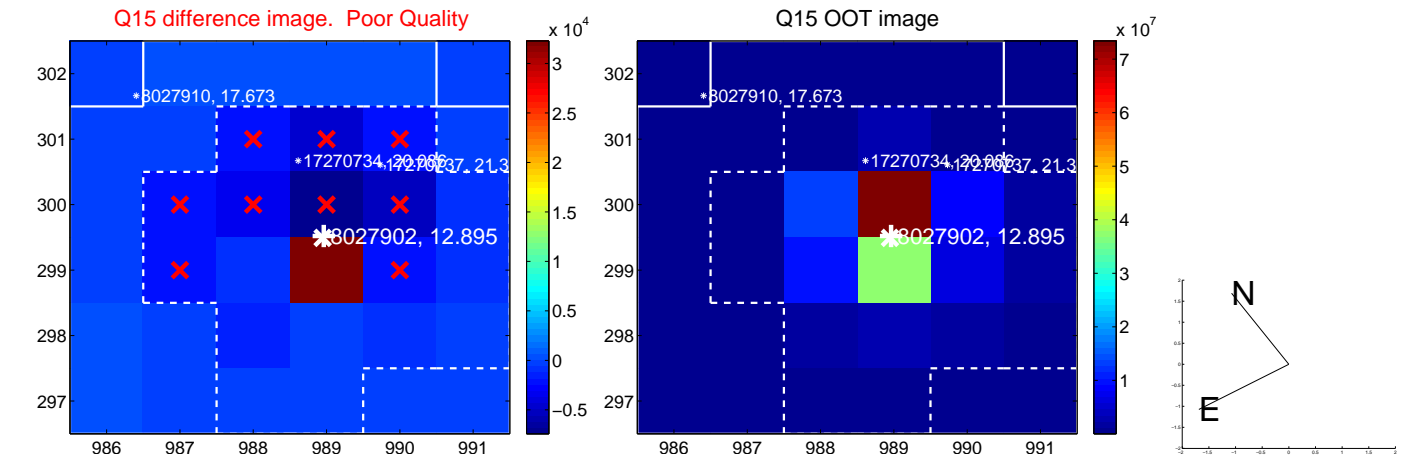
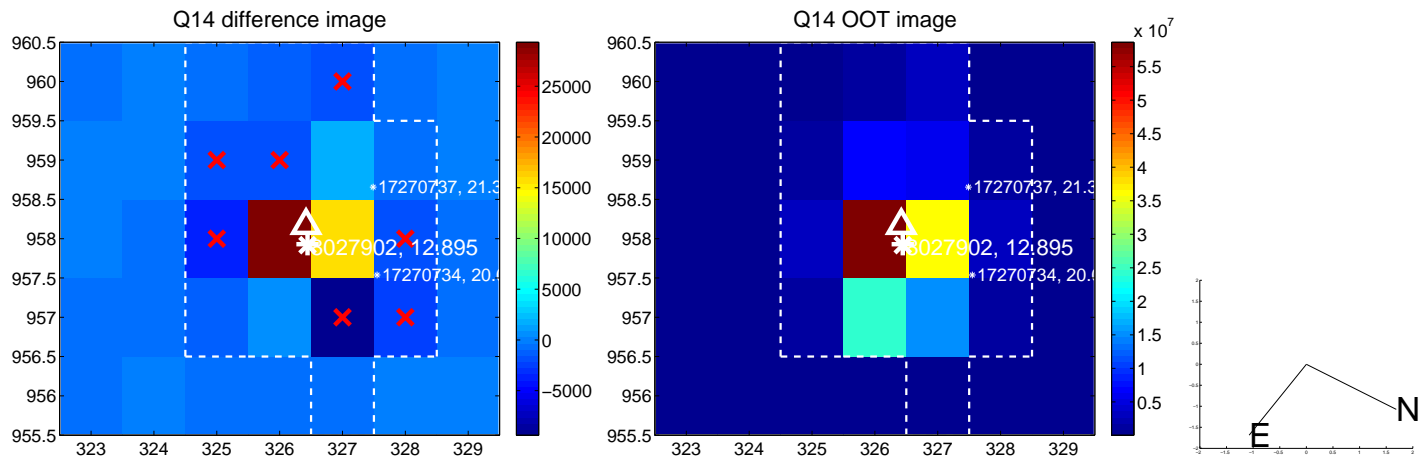
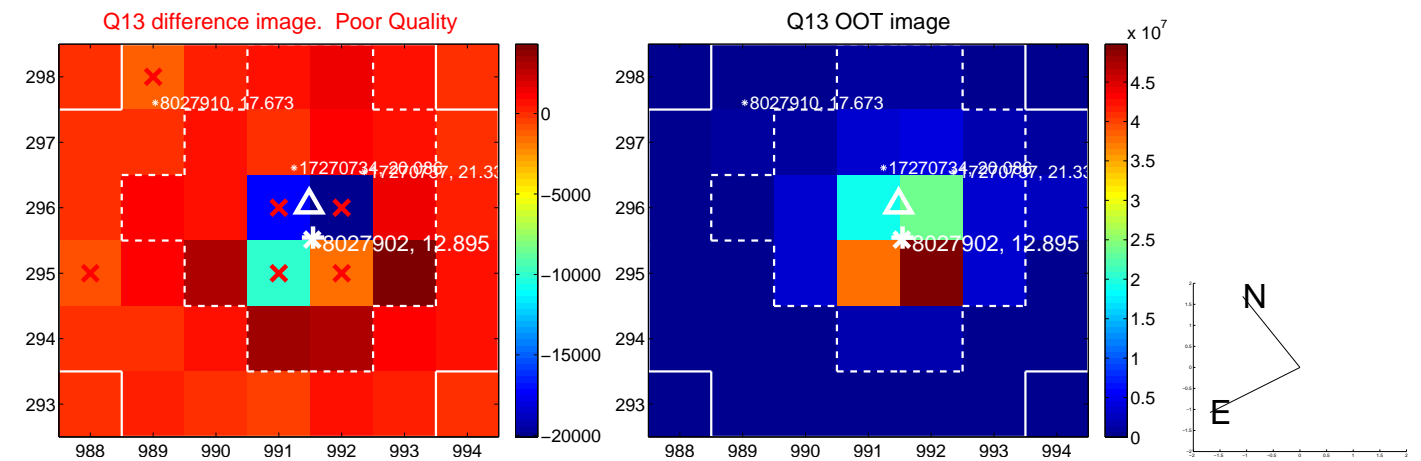
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



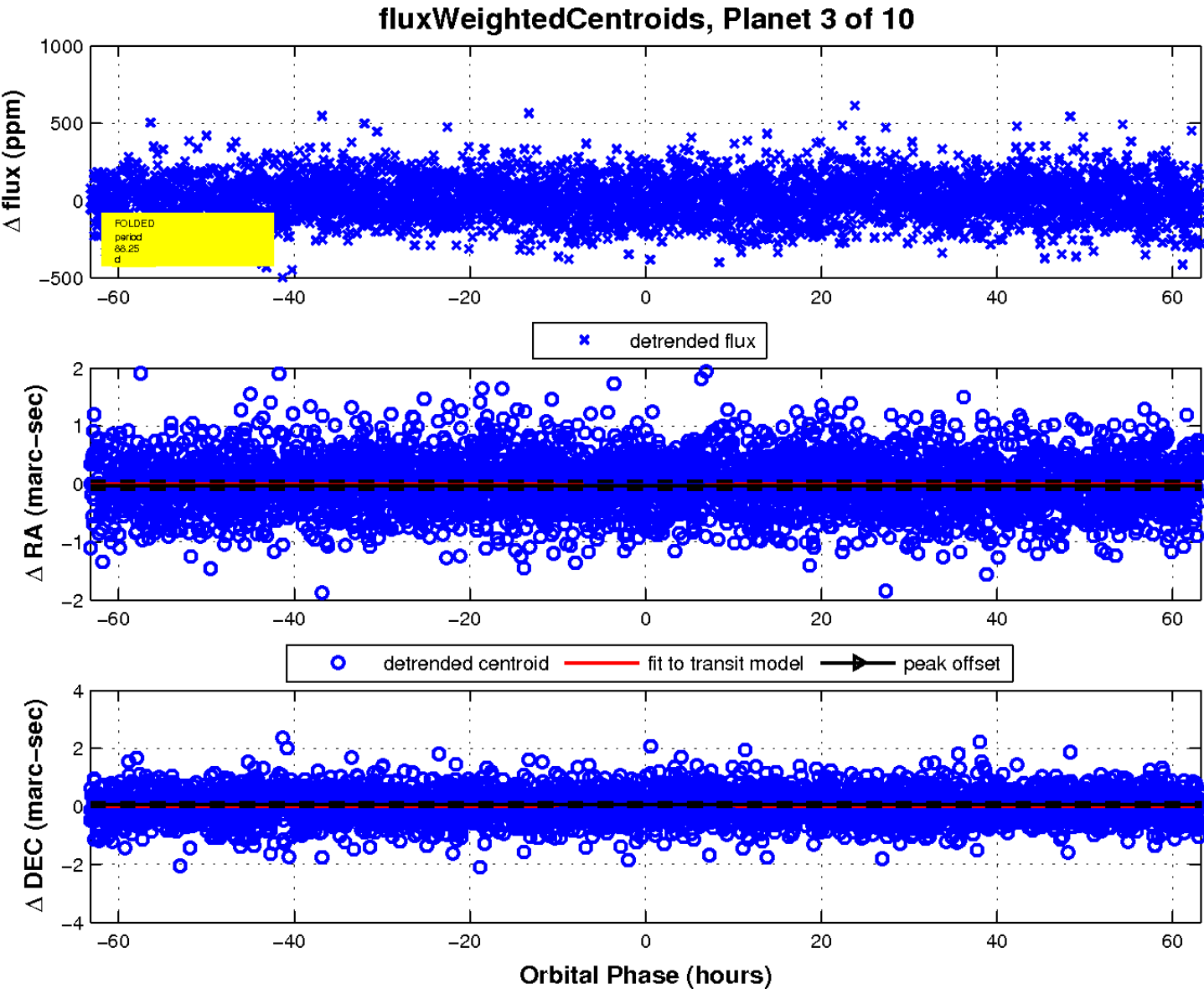
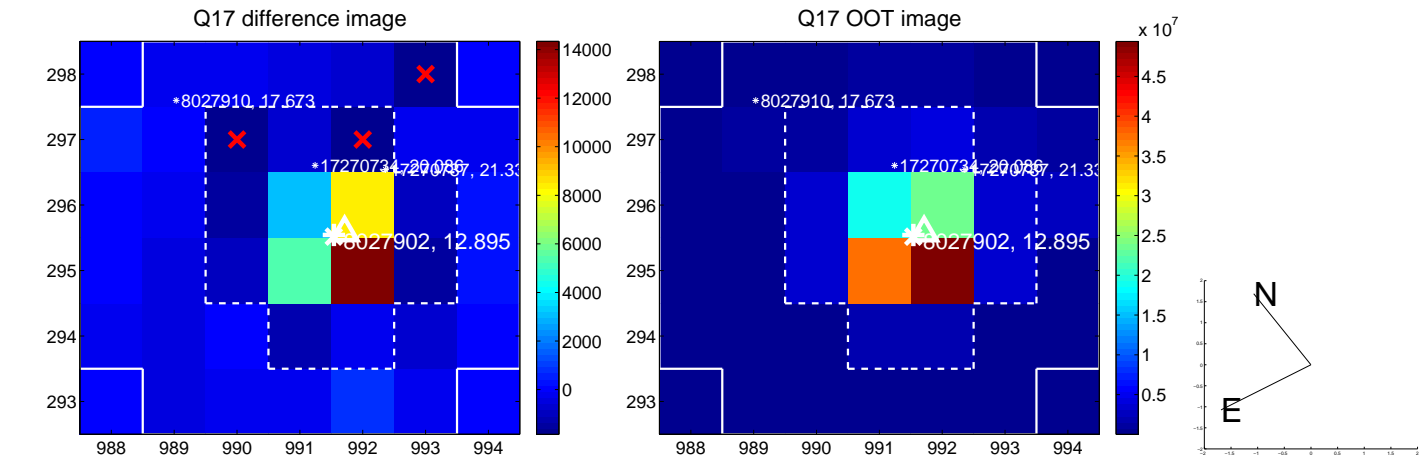
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

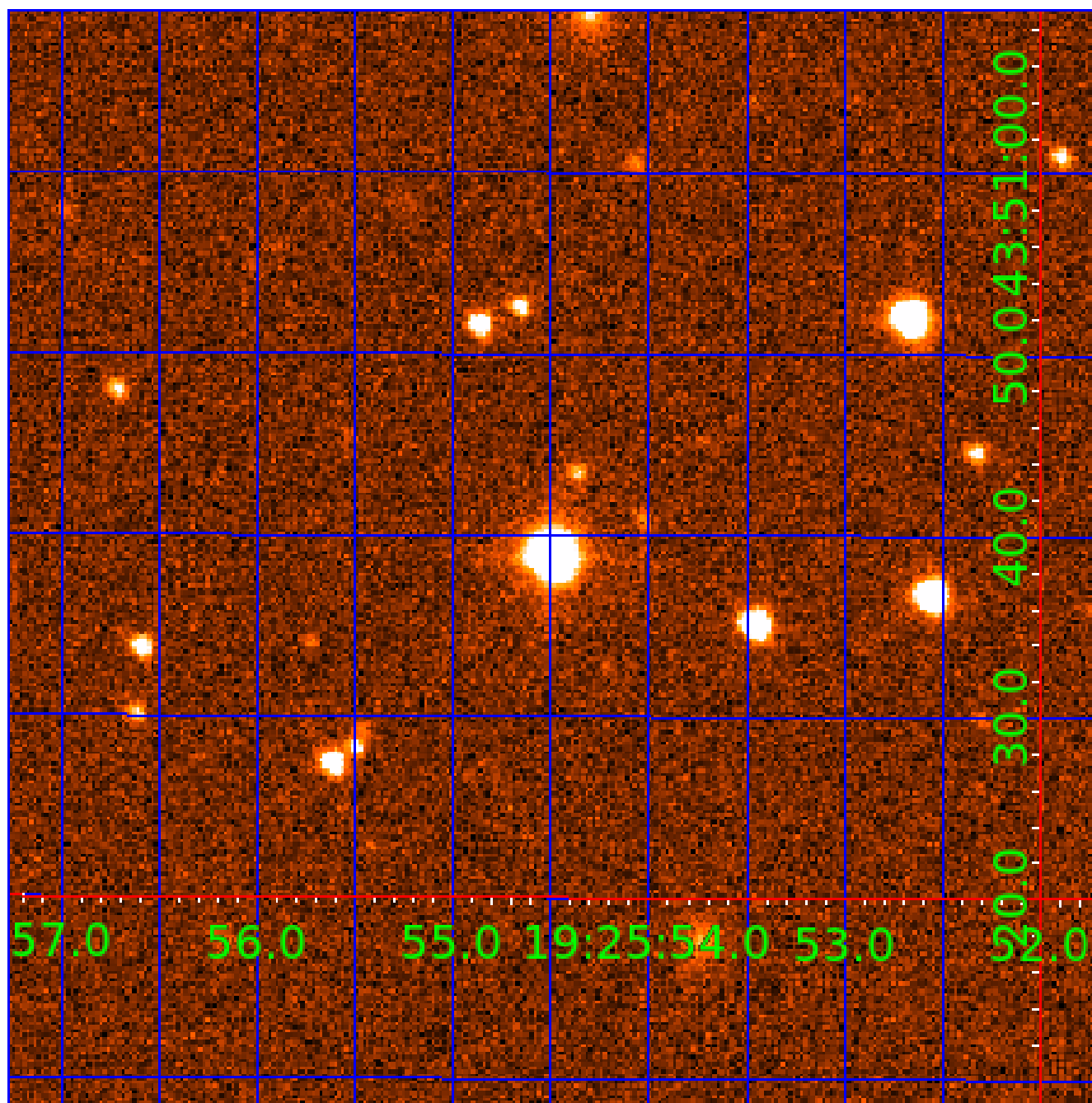


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
008027902-01	OBS	6955.01	1.796314	131.552349	14.1	10.675	8.3	7.7	2.09	7117	0.79	8960.59
008027902-02	OBS	No	136.633031	234.251816	158.9	12.869	13.5	8.5	2.09	7117	2.84	27.80
008027902-03	OBS	No	88.248184	153.502583	122.4	21.072	12.6	8.1	2.09	7117	2.49	49.80
008027902-04	OBS	No	28.689666	153.428684	107.4	8.820	8.6	9.1	2.09	7117	2.44	222.78
008027902-05	OBS	No	54.623685	166.278027	178.4	3.172	8.3	9.4	2.09	7117	3.30	94.41
008027902-06	OBS	No	168.743612	161.903299	119.8	12.118	8.7	6.7	2.09	7117	2.60	20.98
008027902-07	OBS	No	72.541293	166.720724	183.1	5.868	8.5	8.5	2.09	7117	3.31	64.67
008027902-08	OBS	No	96.868394	167.019374	152.8	6.800	7.9	6.5	2.09	7117	2.99	43.98
008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008027902-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008027902-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

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

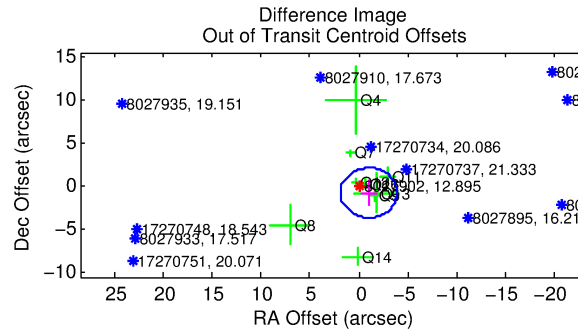
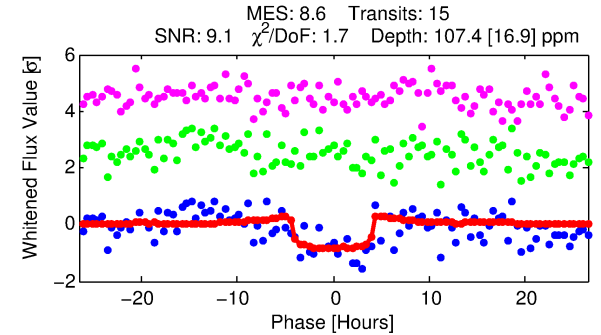
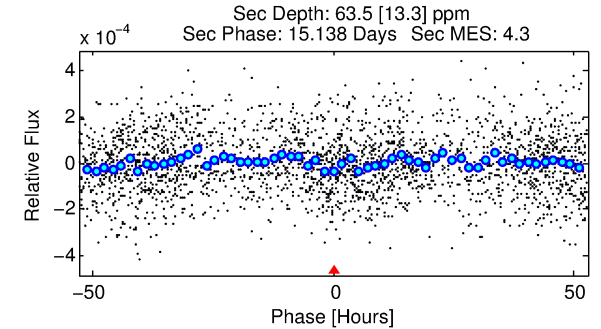
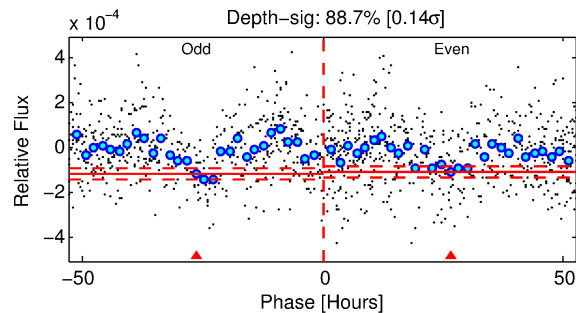
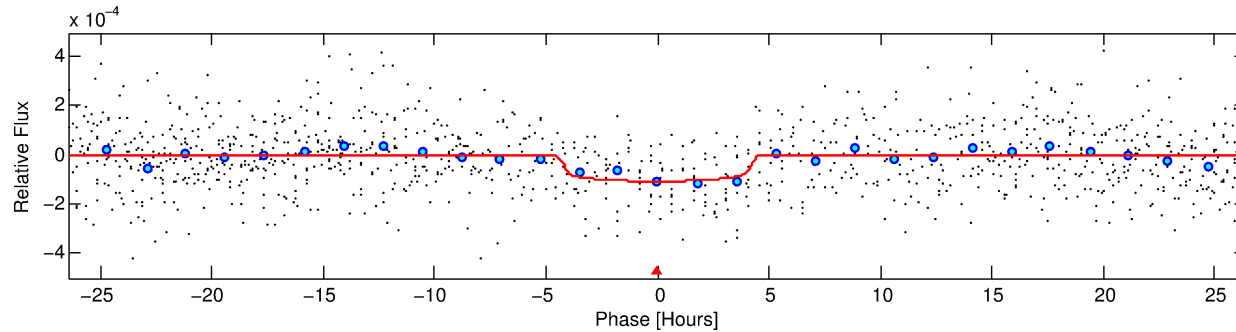
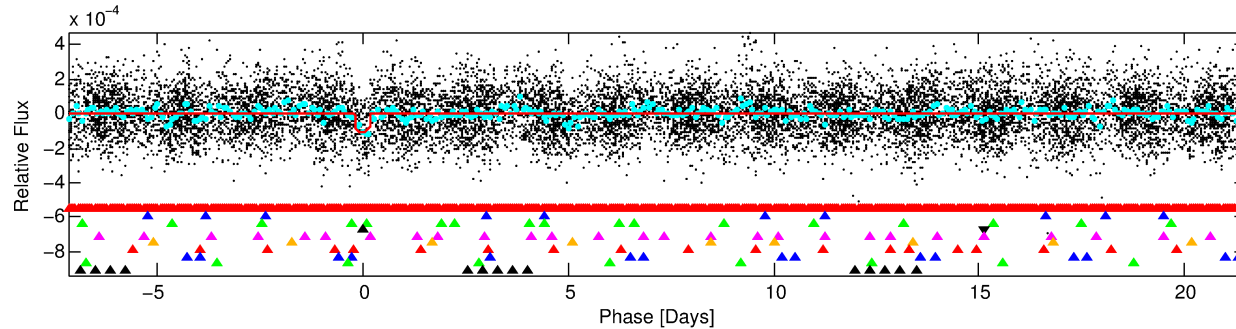
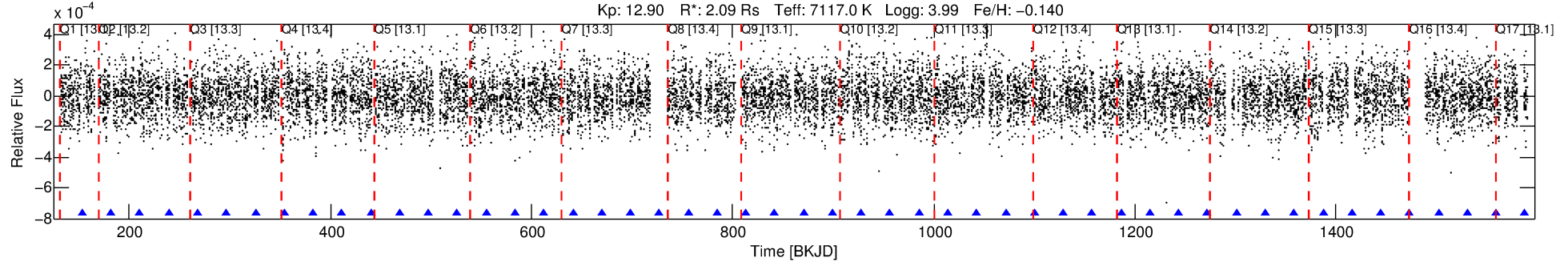
Ephemeris Match Information For 008027902-04

No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 4 of 10 Period: 28.690 d
KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 28.68967 [0.00316] d
Epoch = 153.4287 [0.0766] BKJD
Rp/R* = 0.0107 [0.0033]
b/R* = 13.60 [24.43]
b = 0.85 [0.59]
Seff = 222.78 [84.81]
Teq = 985 [94] K
Rp = 2.44 [0.98] Re
a = 0.2123 [0.0486] AU
Ag = 264.48 [194.63] [1.35σ]
Teffp = 6142 [1022] K [5.02σ]

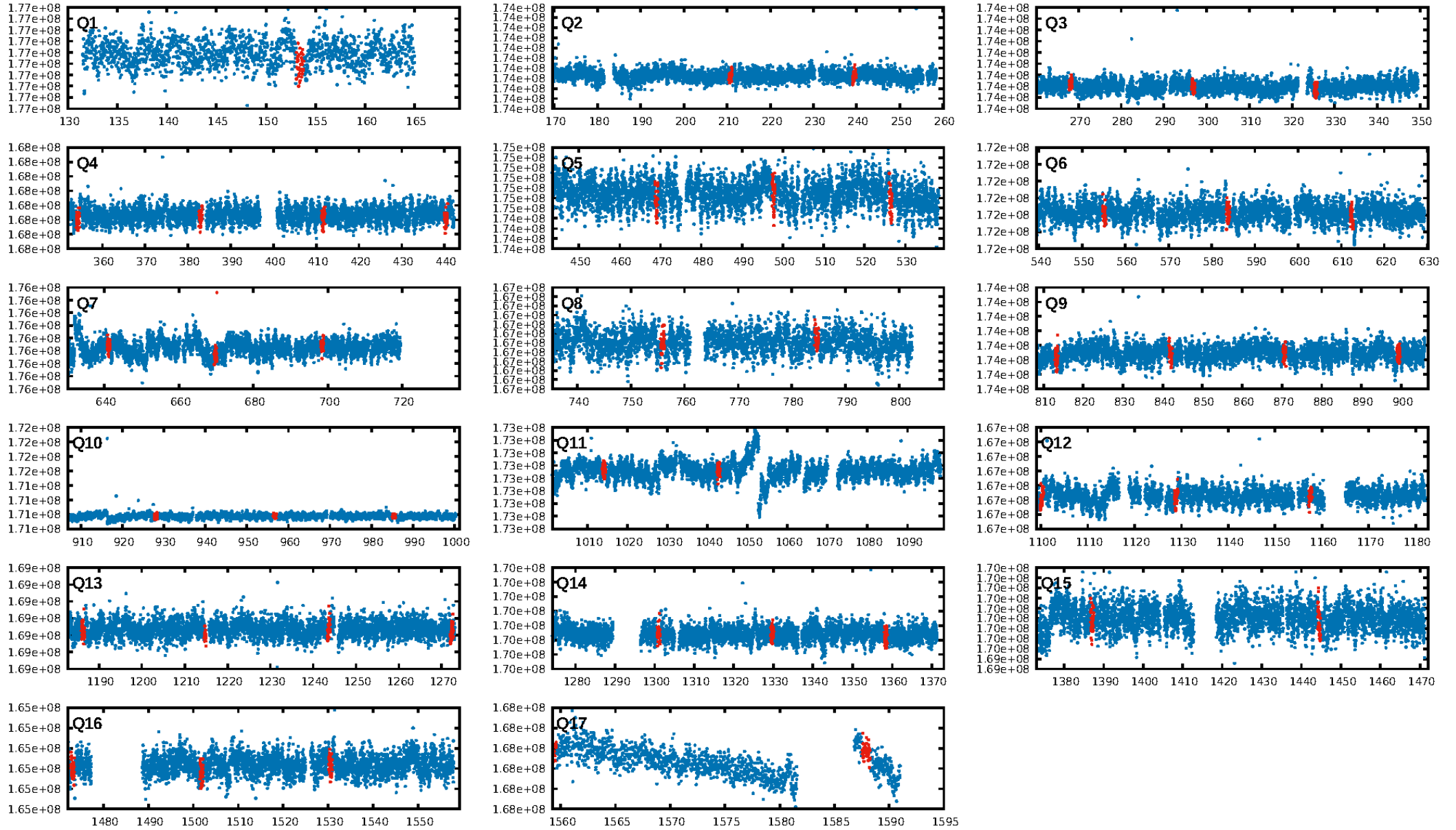
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [46.61σ]
LongPeriod-sig: 100.0% [66.40σ]
ModelChiSquare2-sig: 39.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: 2.745
Centroid-sig: 0.0%
Centroid-so: 1.675 arcsec [3.00σ]
OotOffset-rm: 1.238 arcsec [1.29σ]
OotOffset-st: 1/2/4/3 [10]
KicOffset-rm: 1.224 arcsec [1.36σ]
KicOffset-st: 1/2/4/3 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 0.00 [0/16]

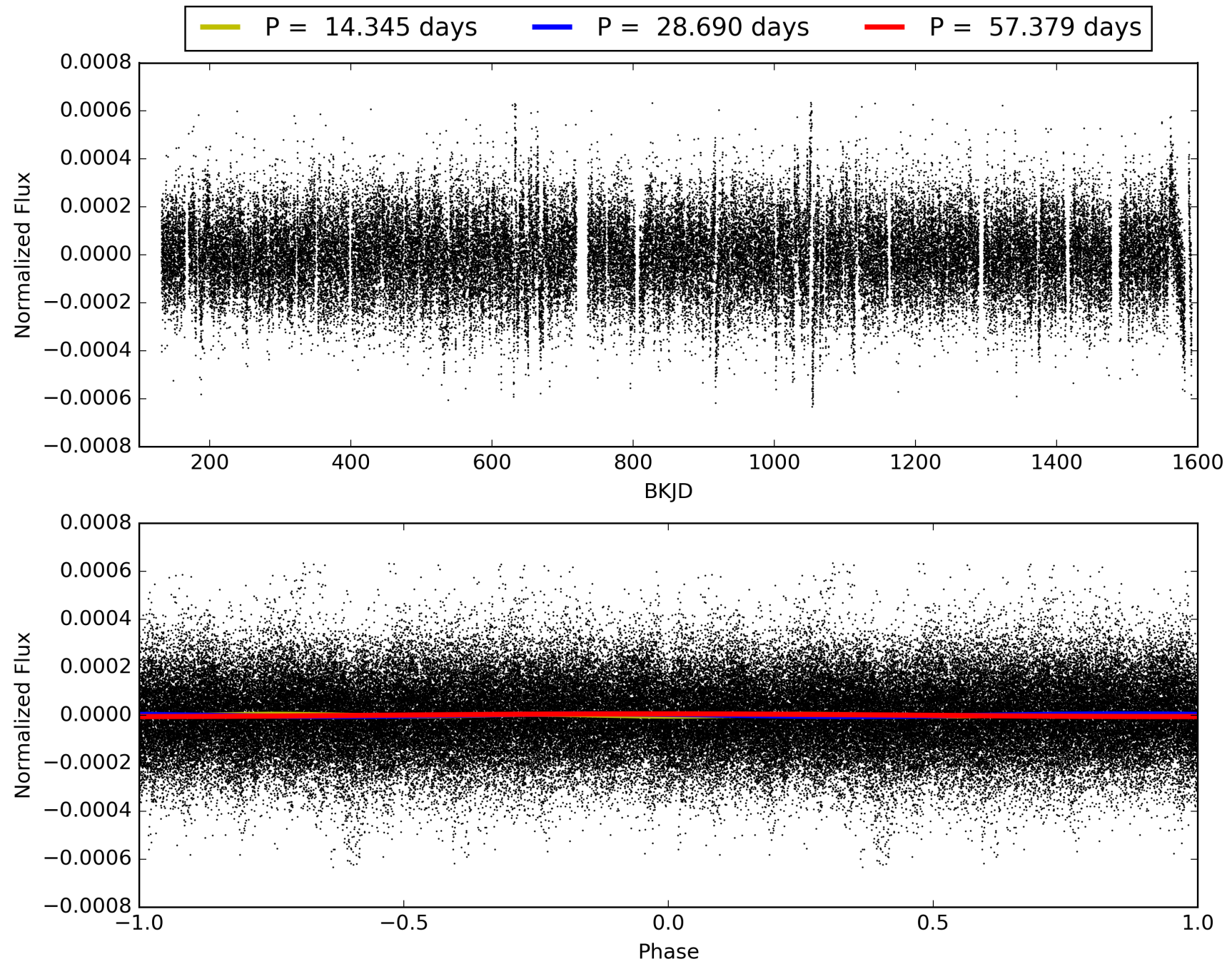
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:20:59 Z

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

TCE 008027902-04, PDC Light Curves

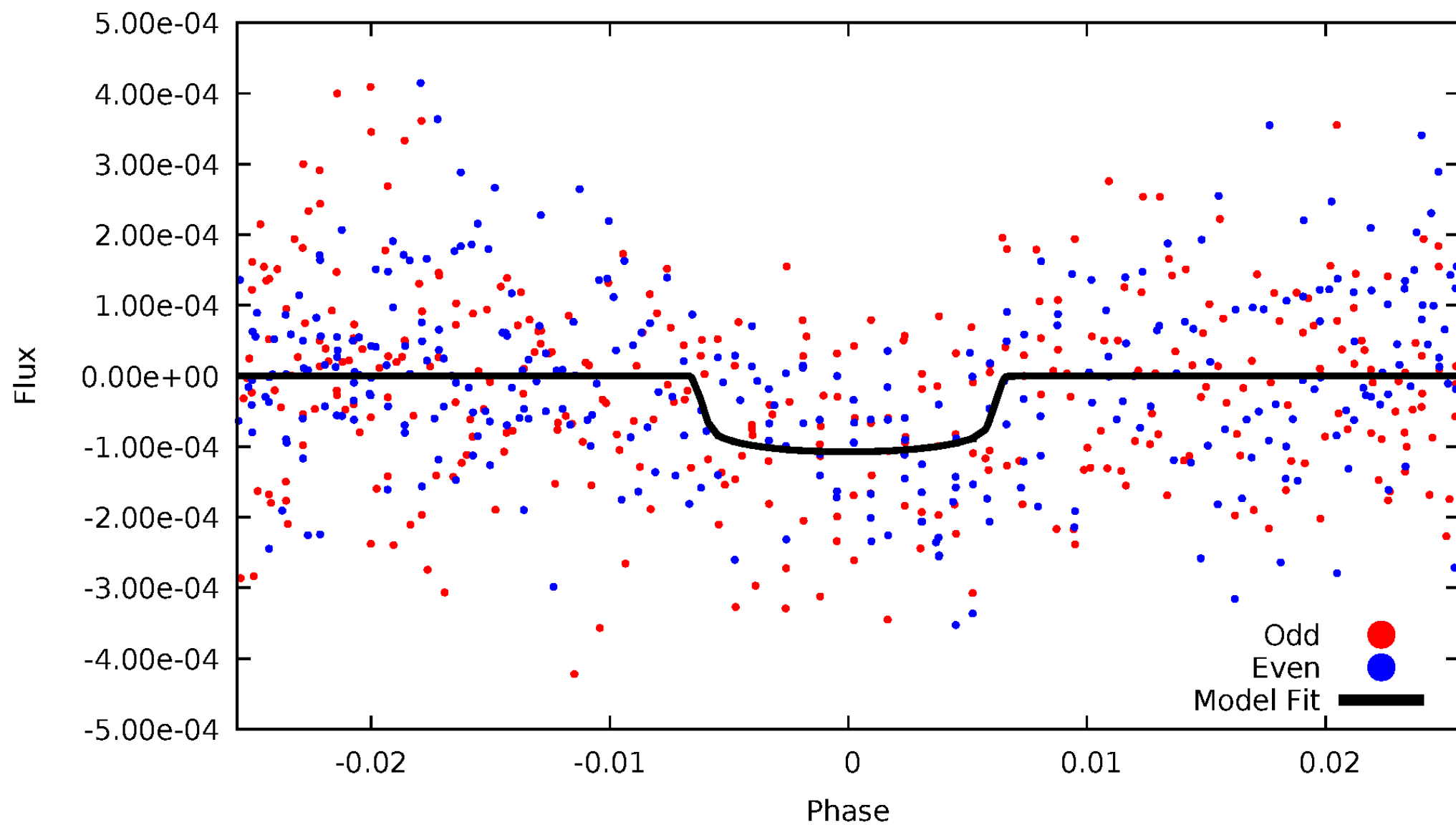


TCE 008027902-04



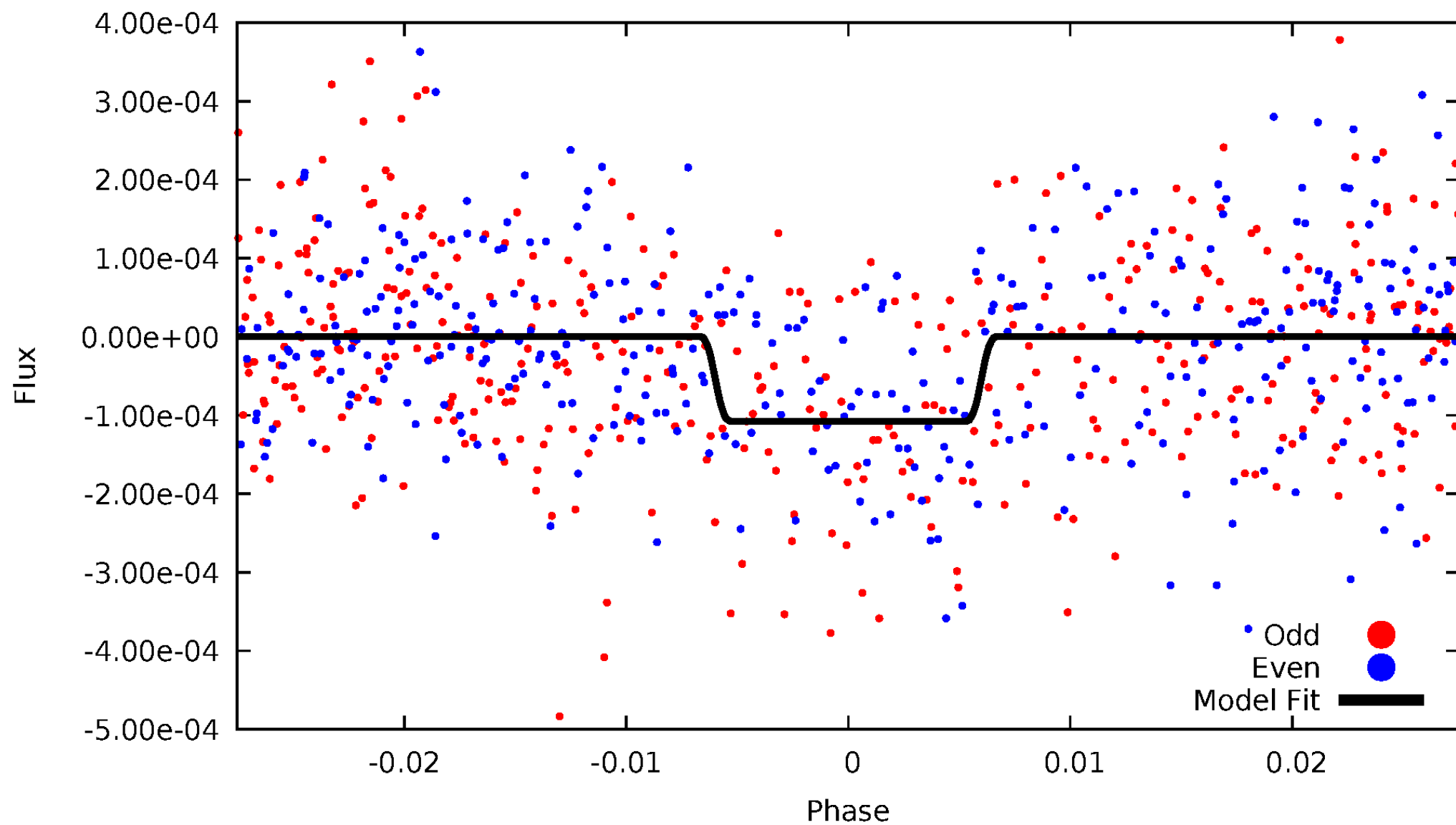
DV Odd/Even

TCE 008027902-04



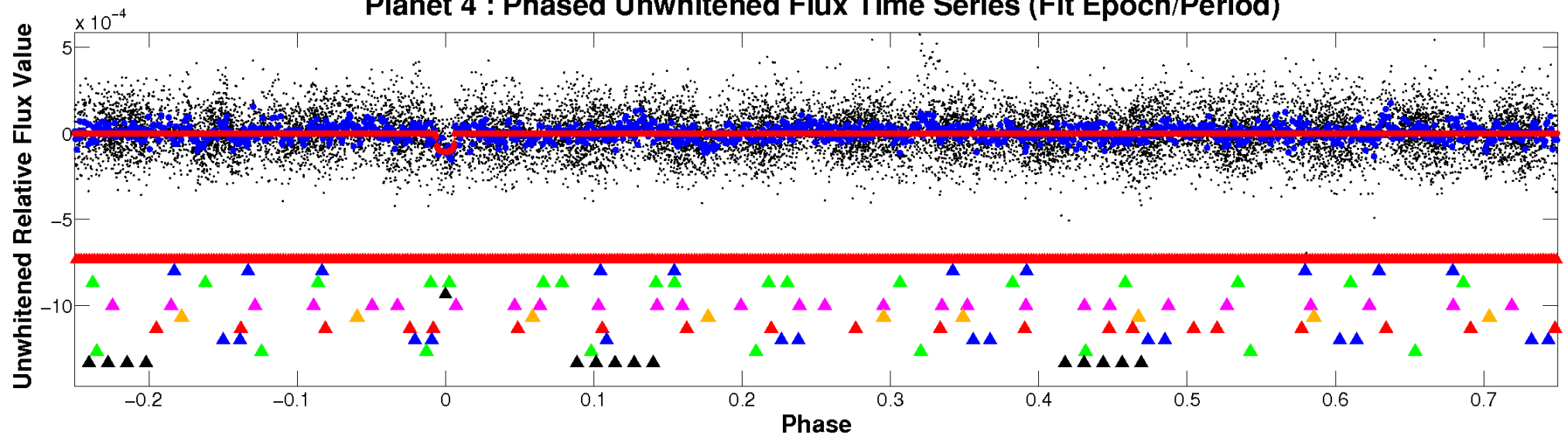
ALT Odd/Even

TCE 008027902-04

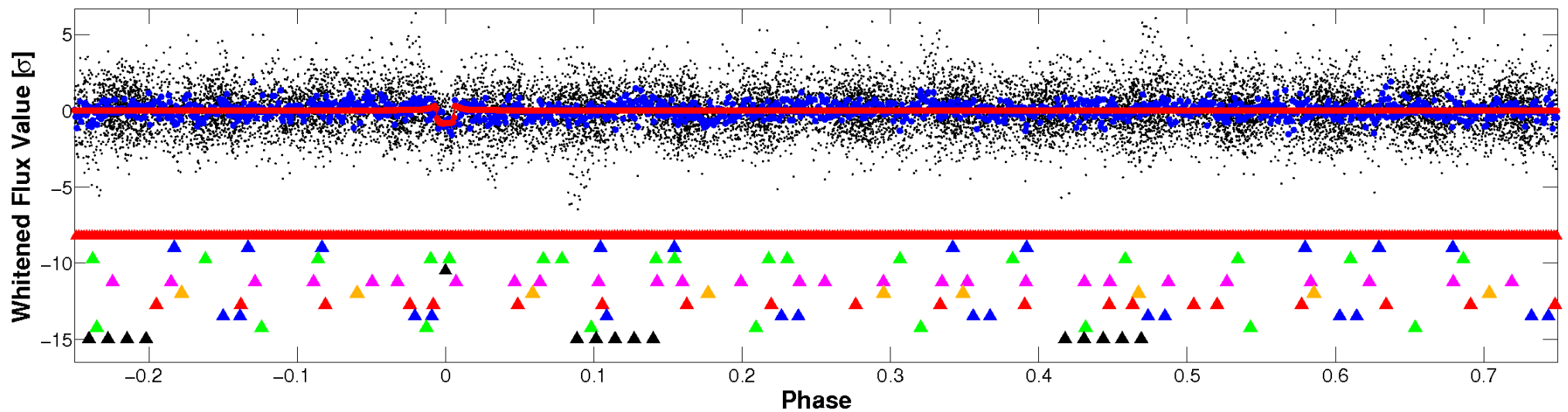


Non-Whitened Vs. Whitened Light Curve

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

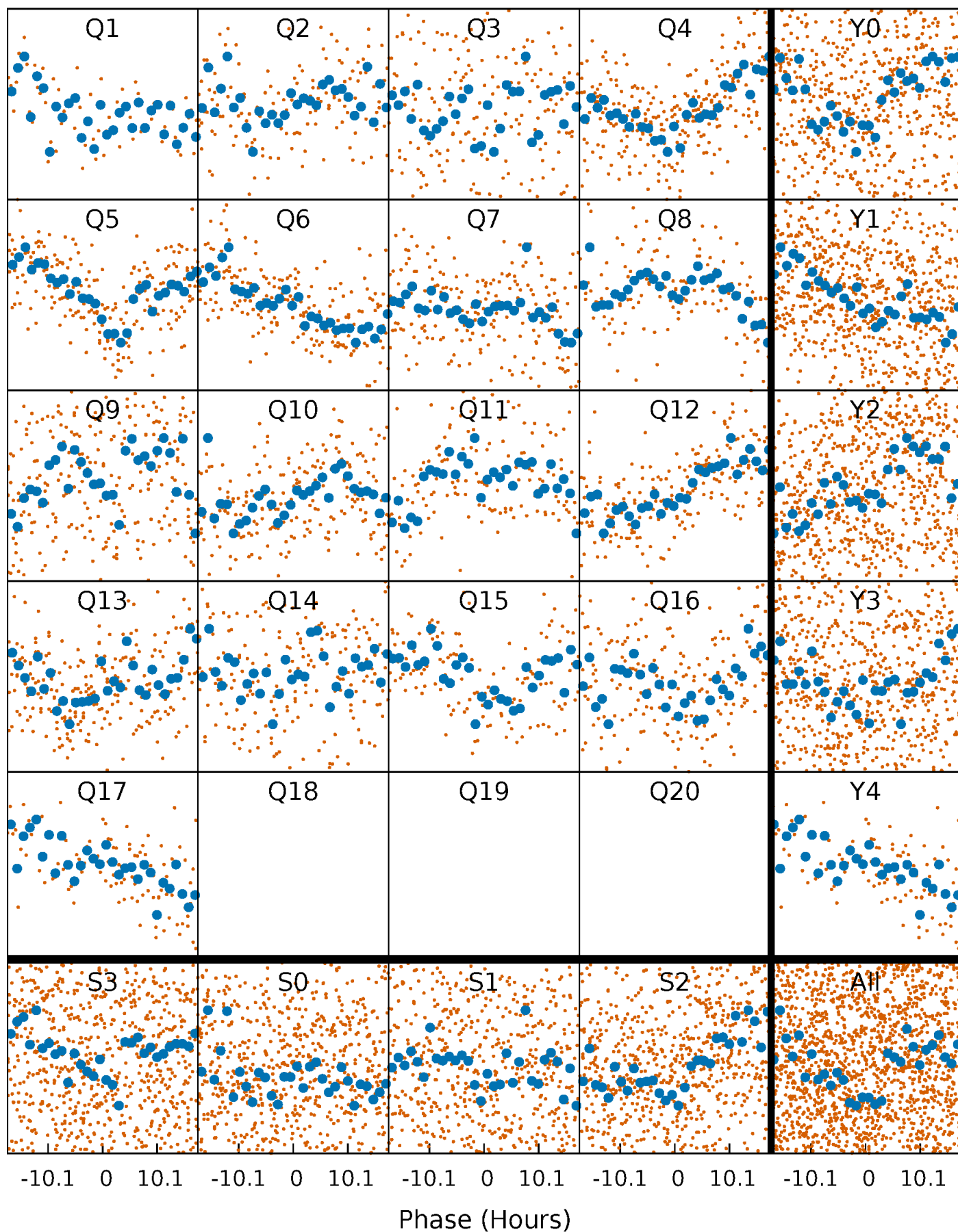


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



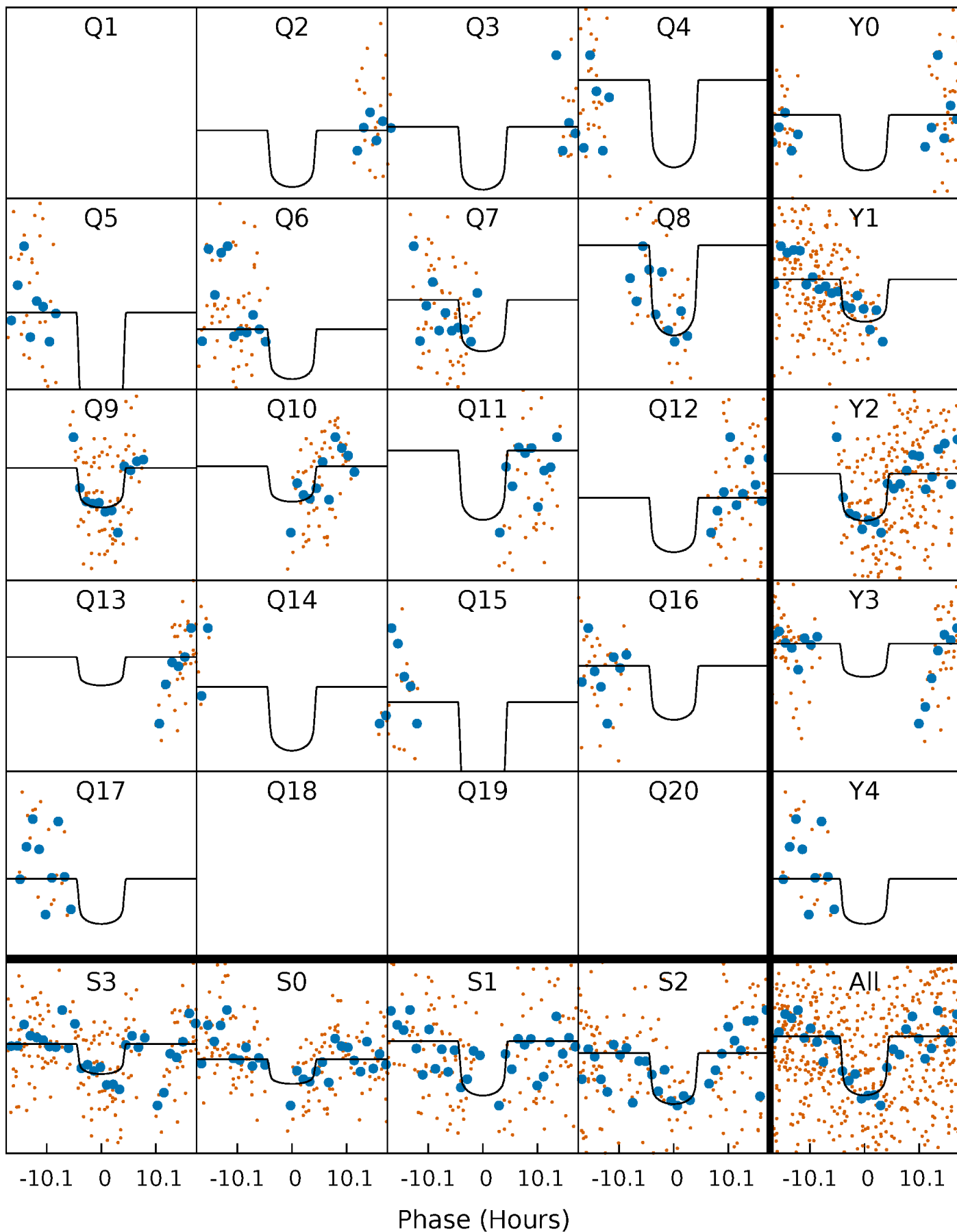
PDC Quarter-Phased Transit Curves

TCE 008027902-04 P= 28.689666 Days $T_0=153.428684$ (BKJD)



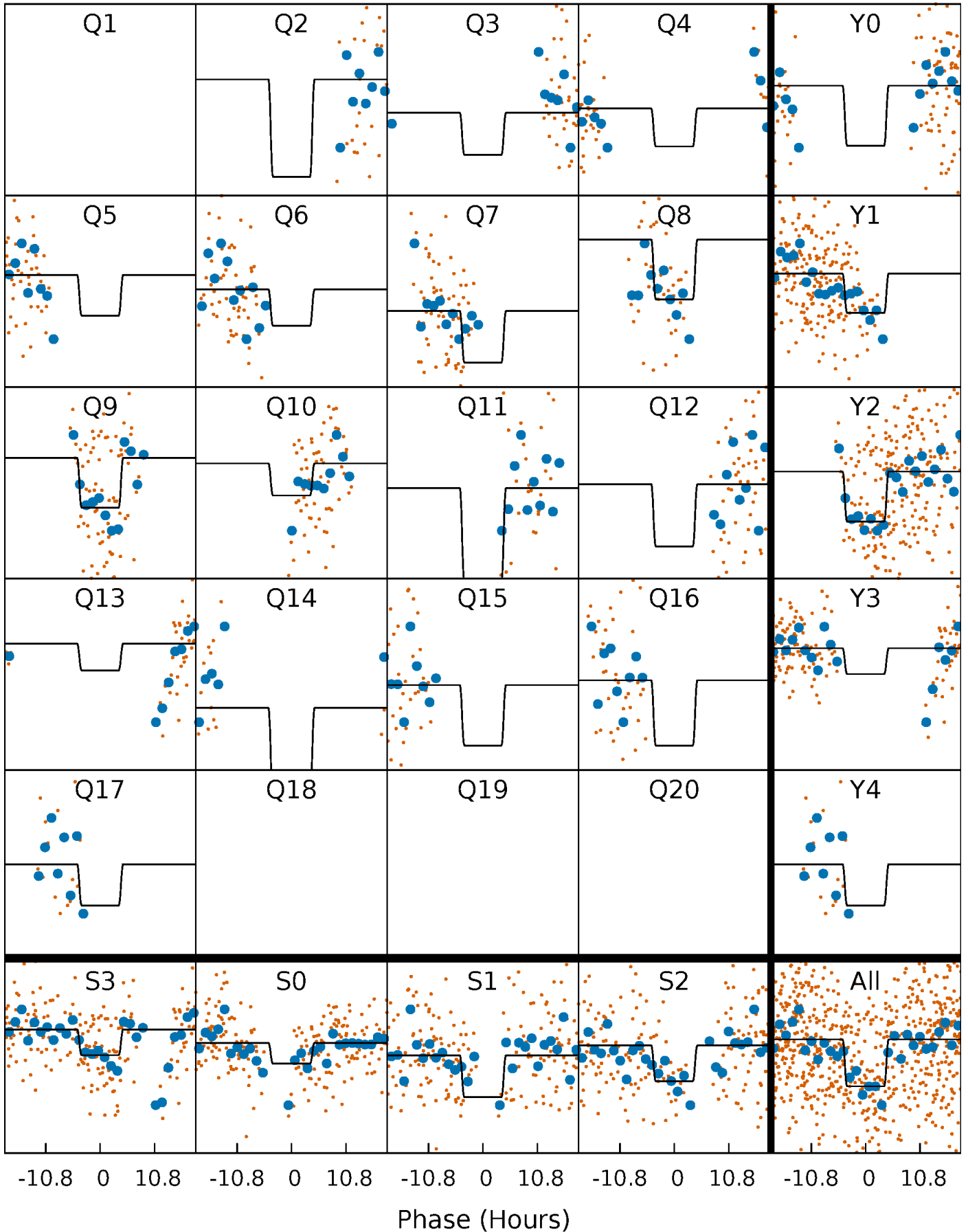
DV Quarter-Phased Transit Curves

TCE 008027902-04 $P = 28.689666$ Days $T_0 = 153.428684$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

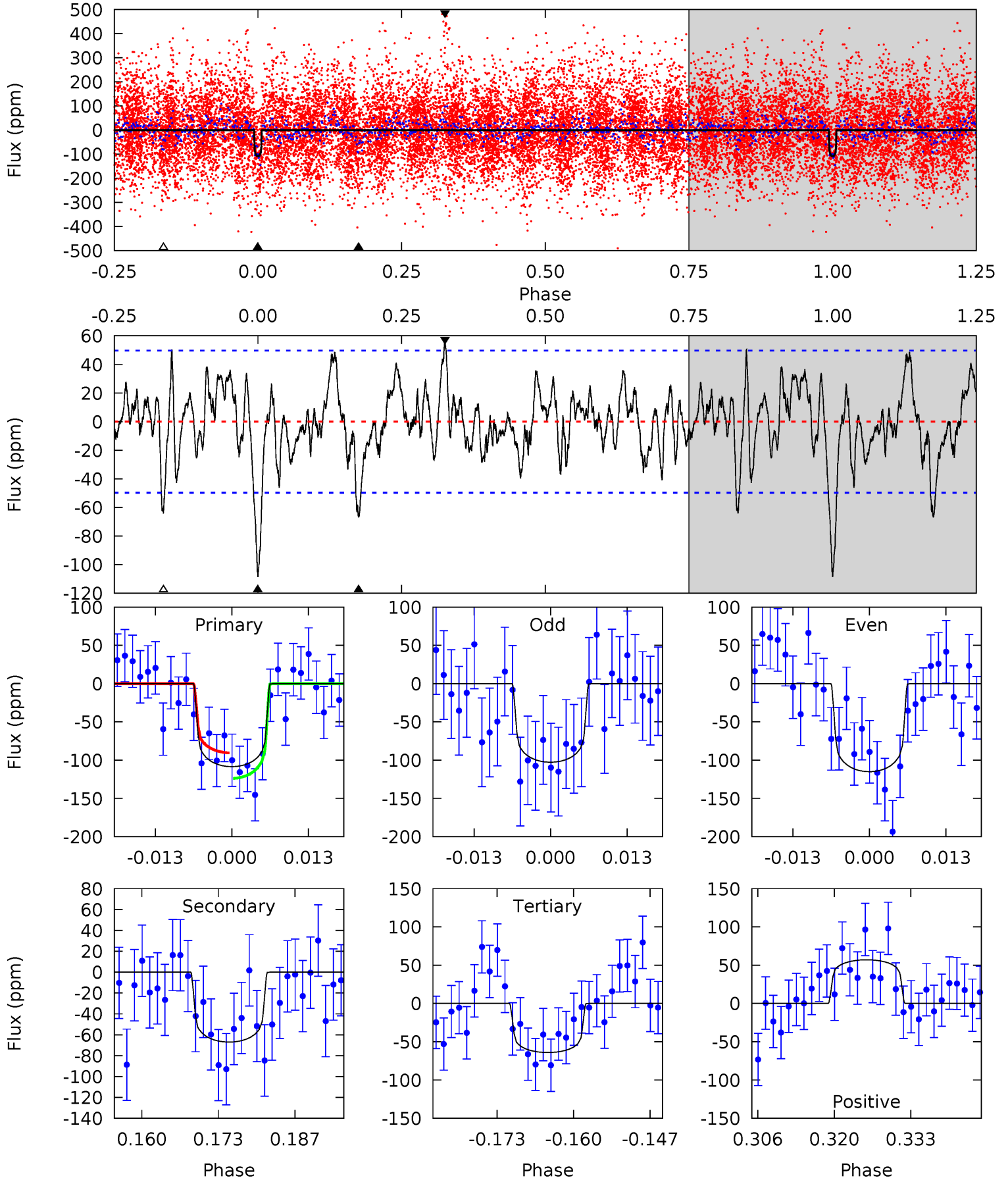
TCE 008027902-04 $P = 28.685096$ Days $T_0 = 153.541045$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-04, P = 28.689666 Days, E = 124.739018 Days

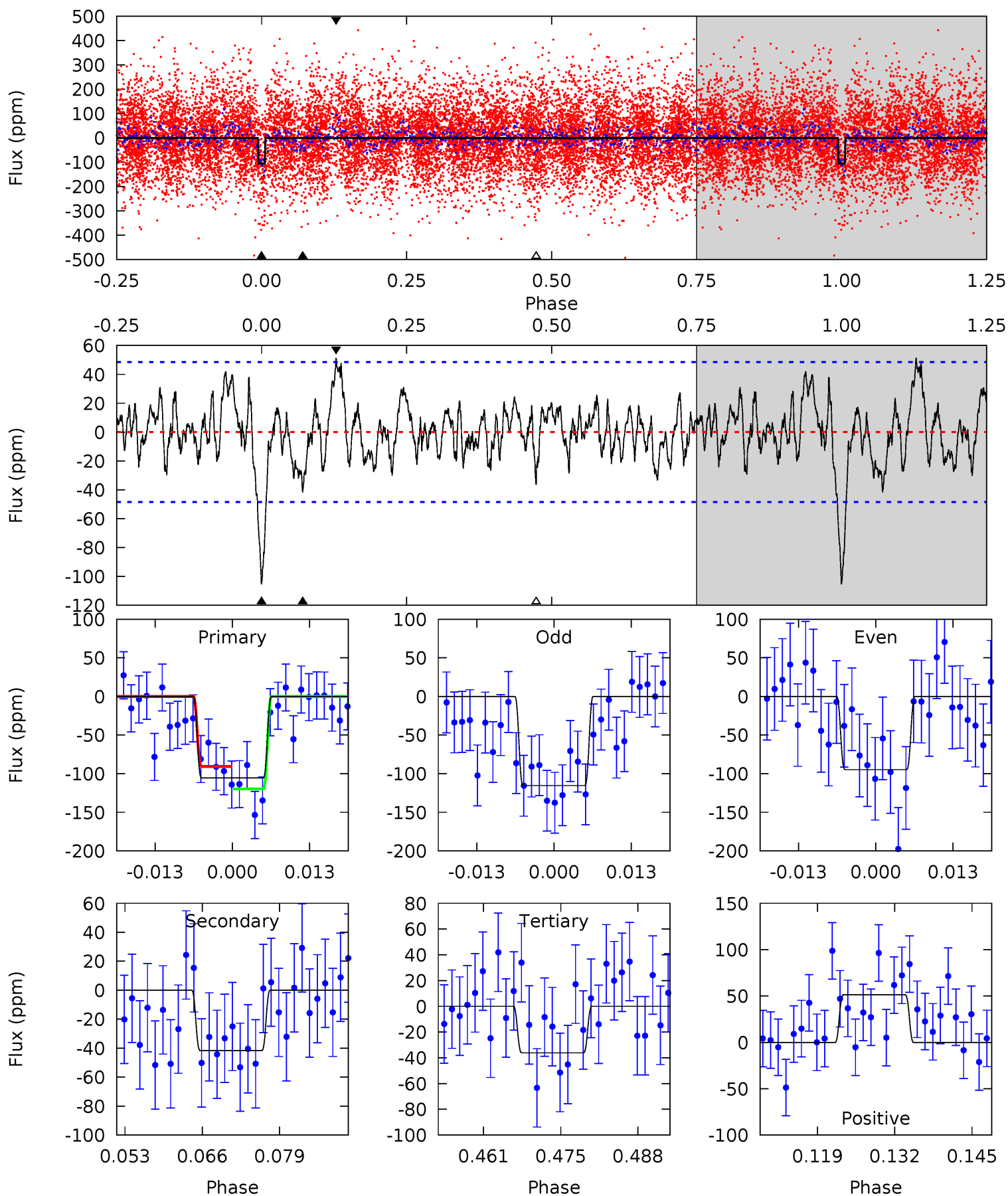
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	6.71	6.42	5.71	4.97	2.48	1.83	4.45	5.16	0.29	1.00	0.62	0.95	0.34	1.66



Alt Model-Shift Uniqueness Test

008027902-04, P = 28.685096 Days, E = 124.855949 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	4.28	3.71	5.27	4.97	2.48	1.45	7.10	5.54	0.57	-0.99	1.06	1.09	0.33	1.48



Stellar Parameters For KIC 008027902

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-67 ± 10	$2.47^{+0.78}_{-0.81}$	1371^{+92}_{-94}	6093^{+1364}_{-744}	268^{+323}_{-115}
Alt.	-42 ± 10	$2.32^{+0.81}_{-0.78}$	1365^{+97}_{-96}	5548^{+1189}_{-726}	190^{+230}_{-93}

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

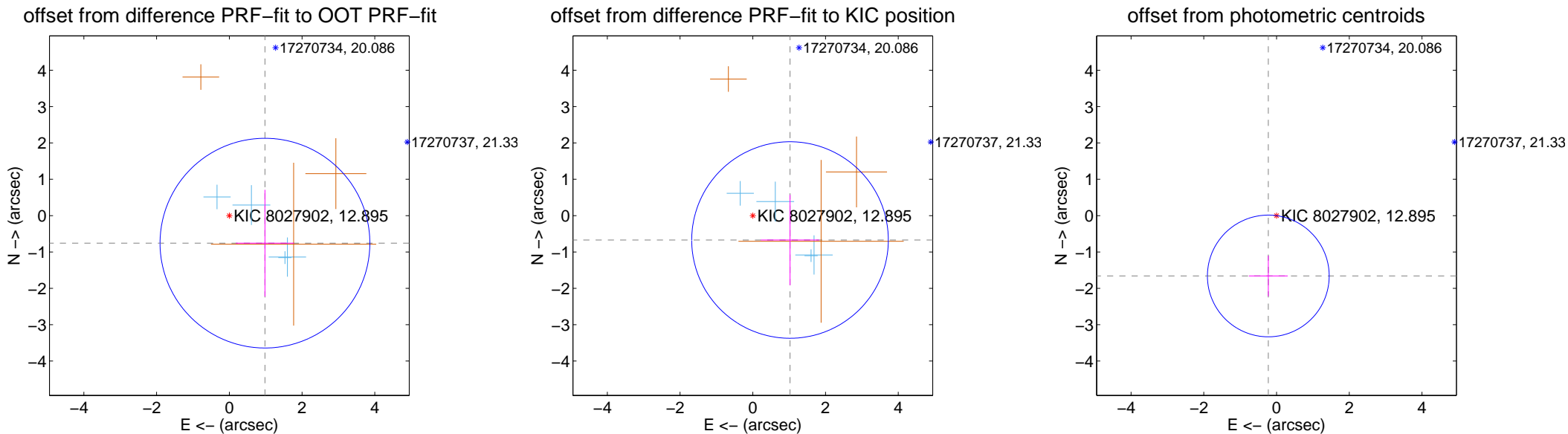
DV Centroid Data

Supplemental centroid analysis for 008027902-04. Kepler magnitude: 12.89. Transit SNR 9.11

There are 4 quarters with good PRF difference image offsets

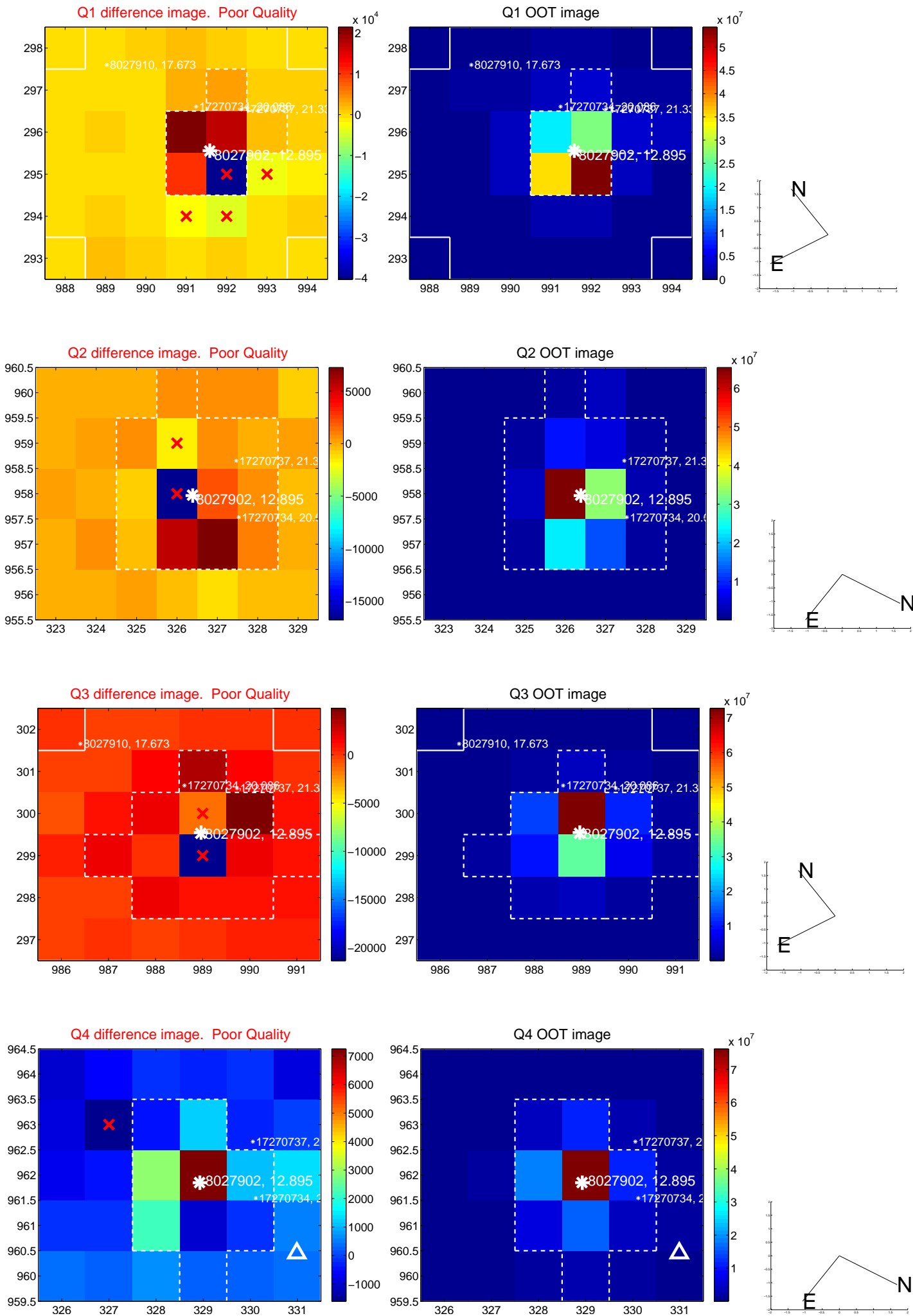
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.238 ± 0.962	1.29	-0.980 ± 0.800	-0.757 ± 1.468
PRF-fit source offset from KIC position	1.224 ± 0.901	1.36	-1.024 ± 0.803	-0.671 ± 1.244
photometric centroid source offset	1.68 ± 0.56	3.00	0.23 ± 0.53	-1.66 ± 0.56

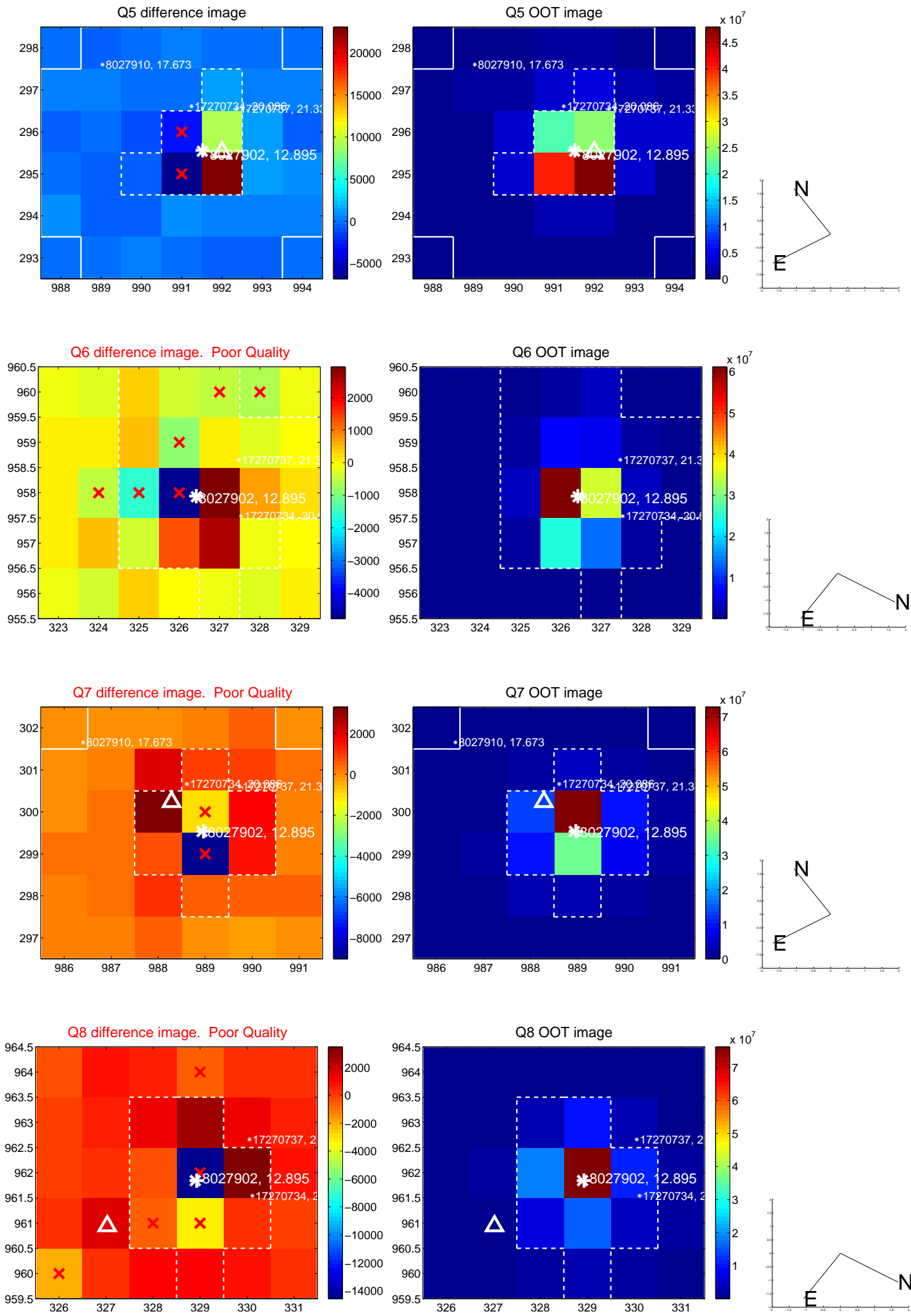


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

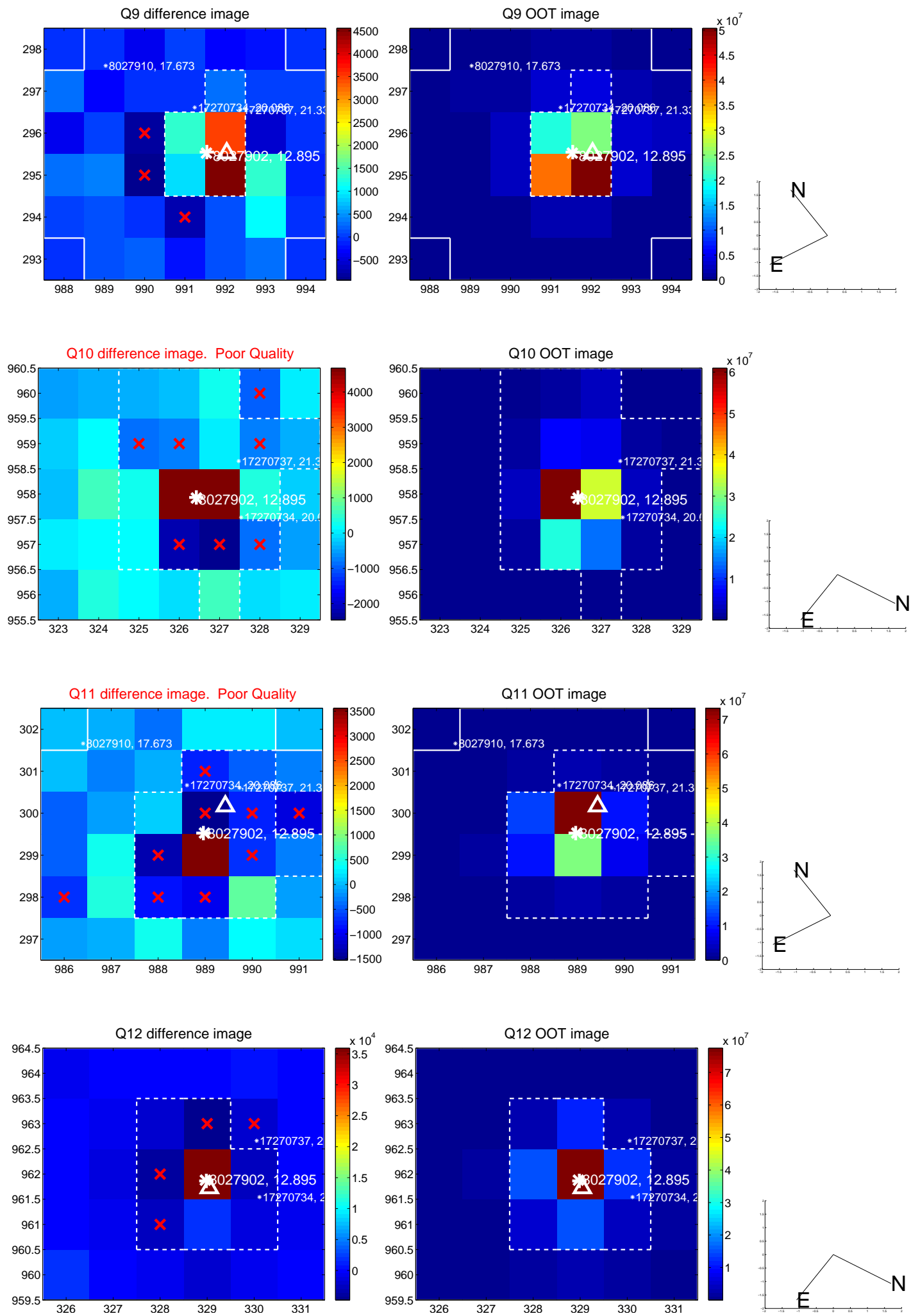
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



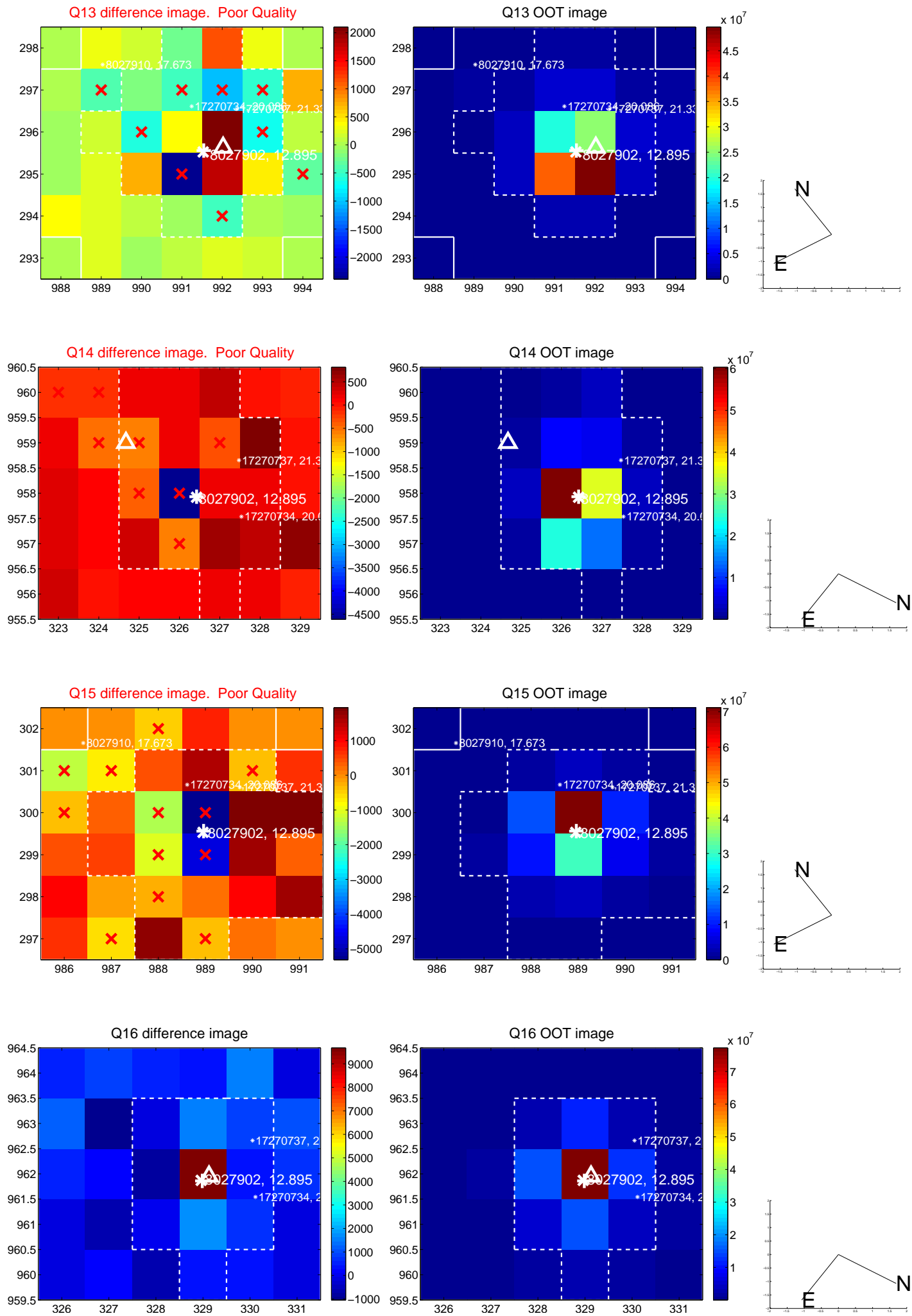
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



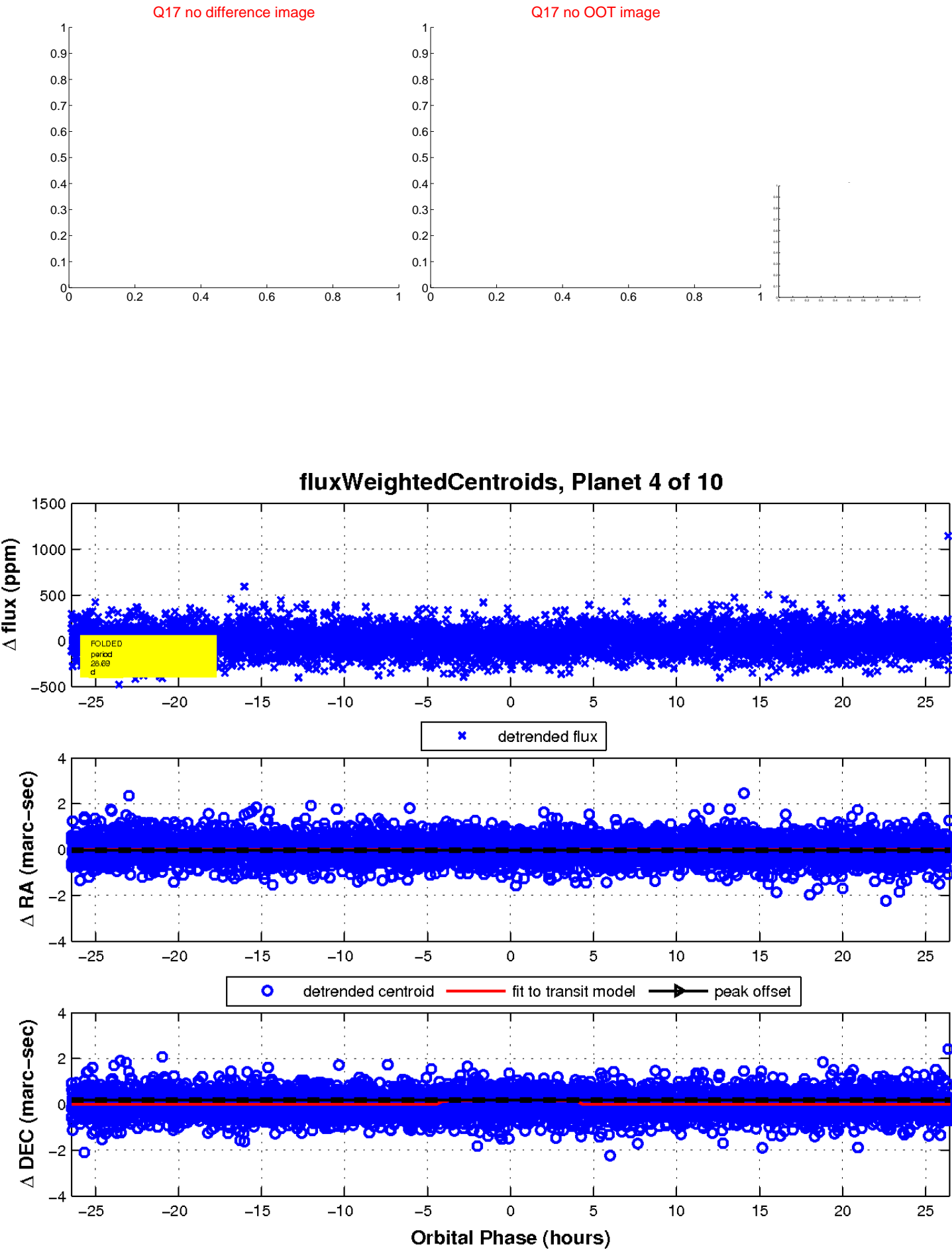
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

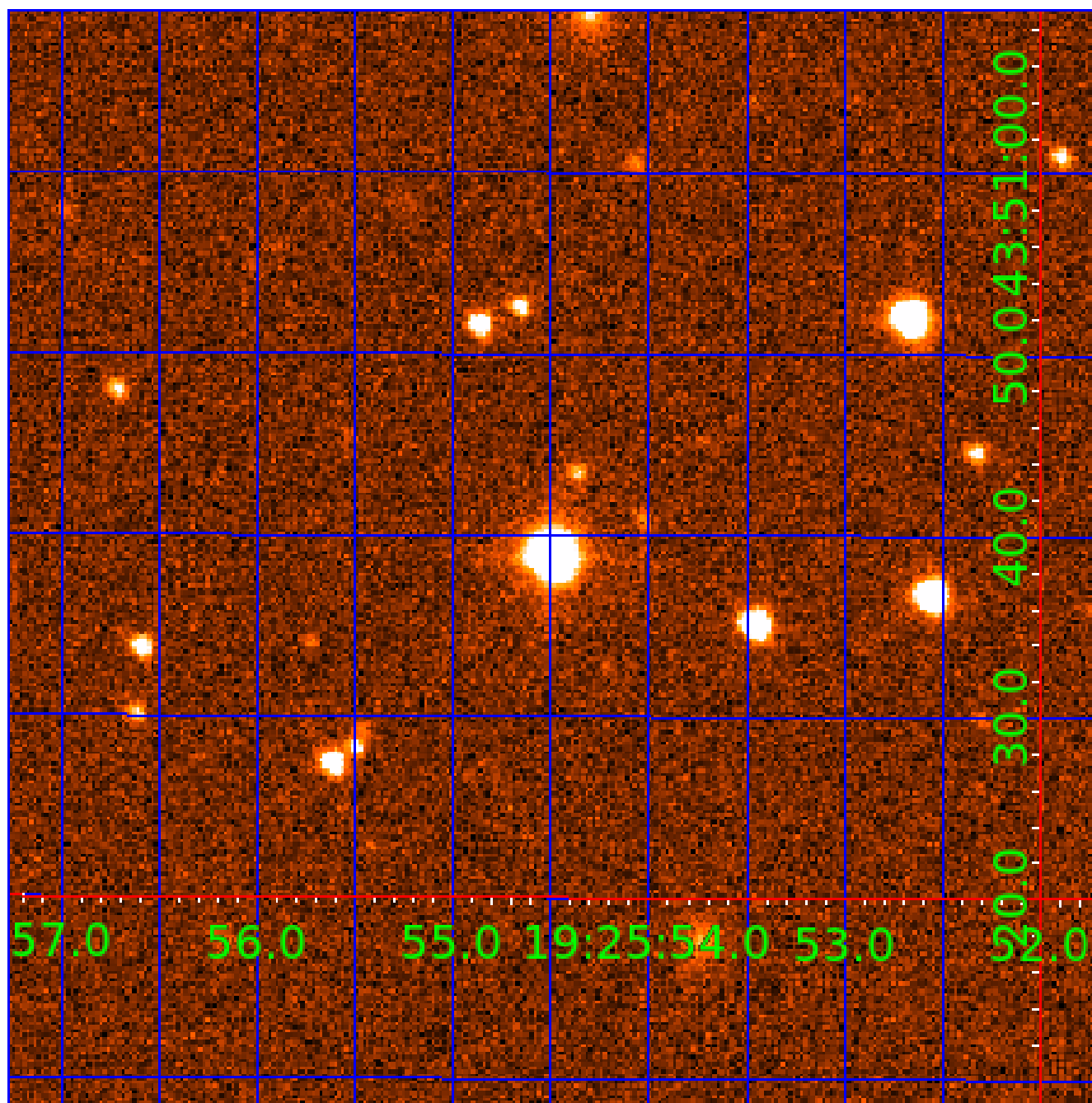


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
008027902-01	OBS	6955.01	1.796314	131.552349	14.1	10.675	8.3	7.7	2.09	7117	0.79	8960.59
008027902-02	OBS	No	136.633031	234.251816	158.9	12.869	13.5	8.5	2.09	7117	2.84	27.80
008027902-03	OBS	No	88.248184	153.502583	122.4	21.072	12.6	8.1	2.09	7117	2.49	49.80
008027902-04	OBS	No	28.689666	153.428684	107.4	8.820	8.6	9.1	2.09	7117	2.44	222.78
008027902-05	OBS	No	54.623685	166.278027	178.4	3.172	8.3	9.4	2.09	7117	3.30	94.41
008027902-06	OBS	No	168.743612	161.903299	119.8	12.118	8.7	6.7	2.09	7117	2.60	20.98
008027902-07	OBS	No	72.541293	166.720724	183.1	5.868	8.5	8.5	2.09	7117	3.31	64.67
008027902-08	OBS	No	96.868394	167.019374	152.8	6.800	7.9	6.5	2.09	7117	2.99	43.98
008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008027902-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008027902-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

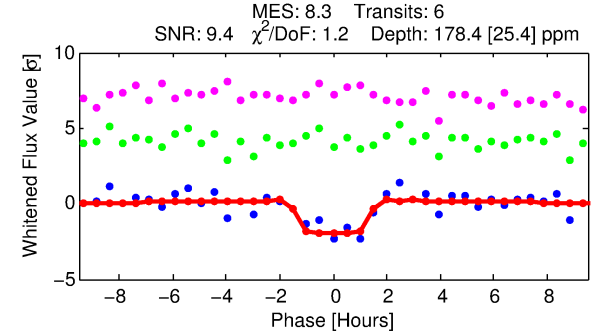
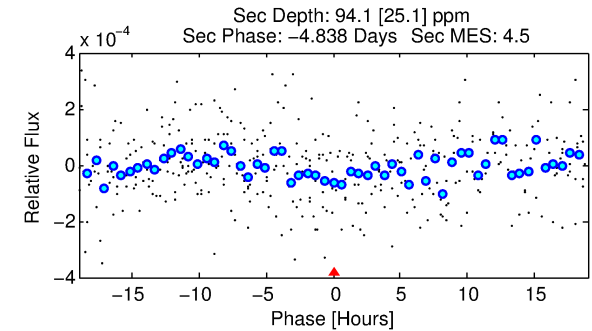
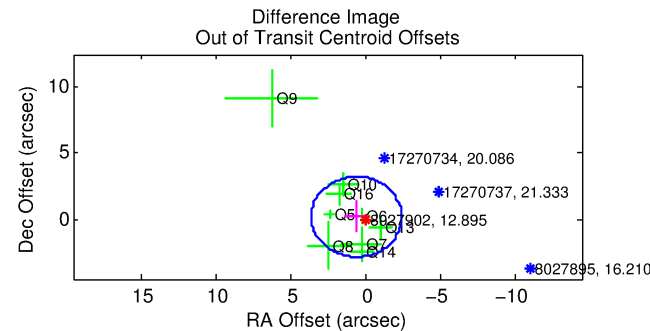
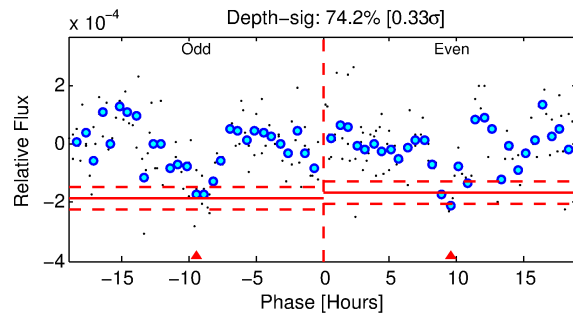
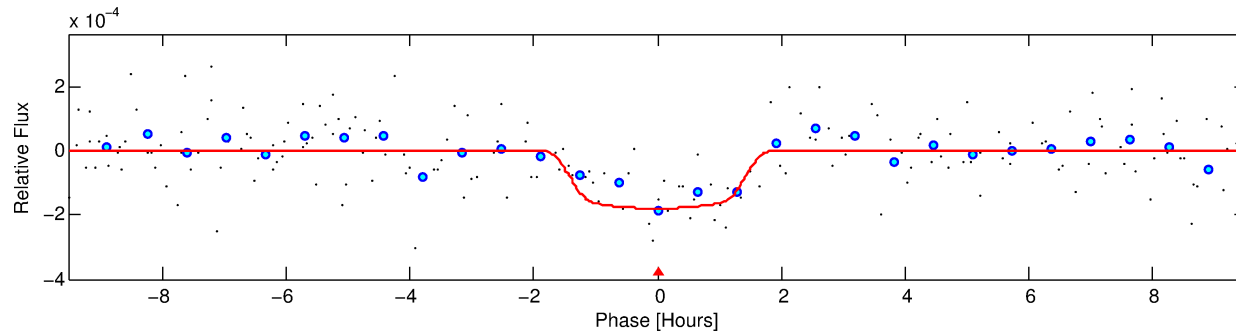
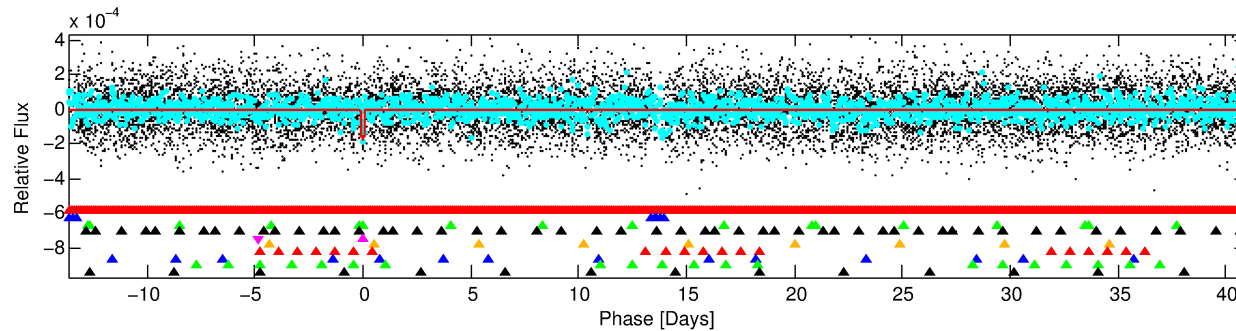
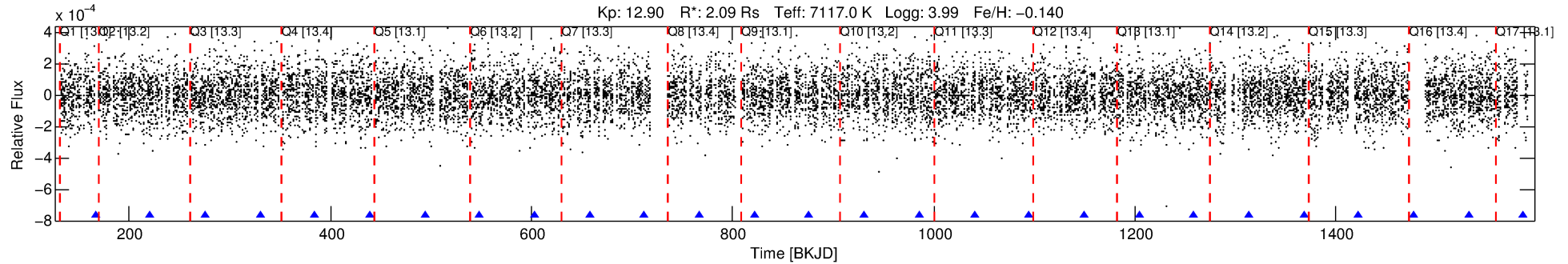
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008027902-05

No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 5 of 10 Period: 54.624 d
KOI: K06955 Corr: No Ephemeris Match



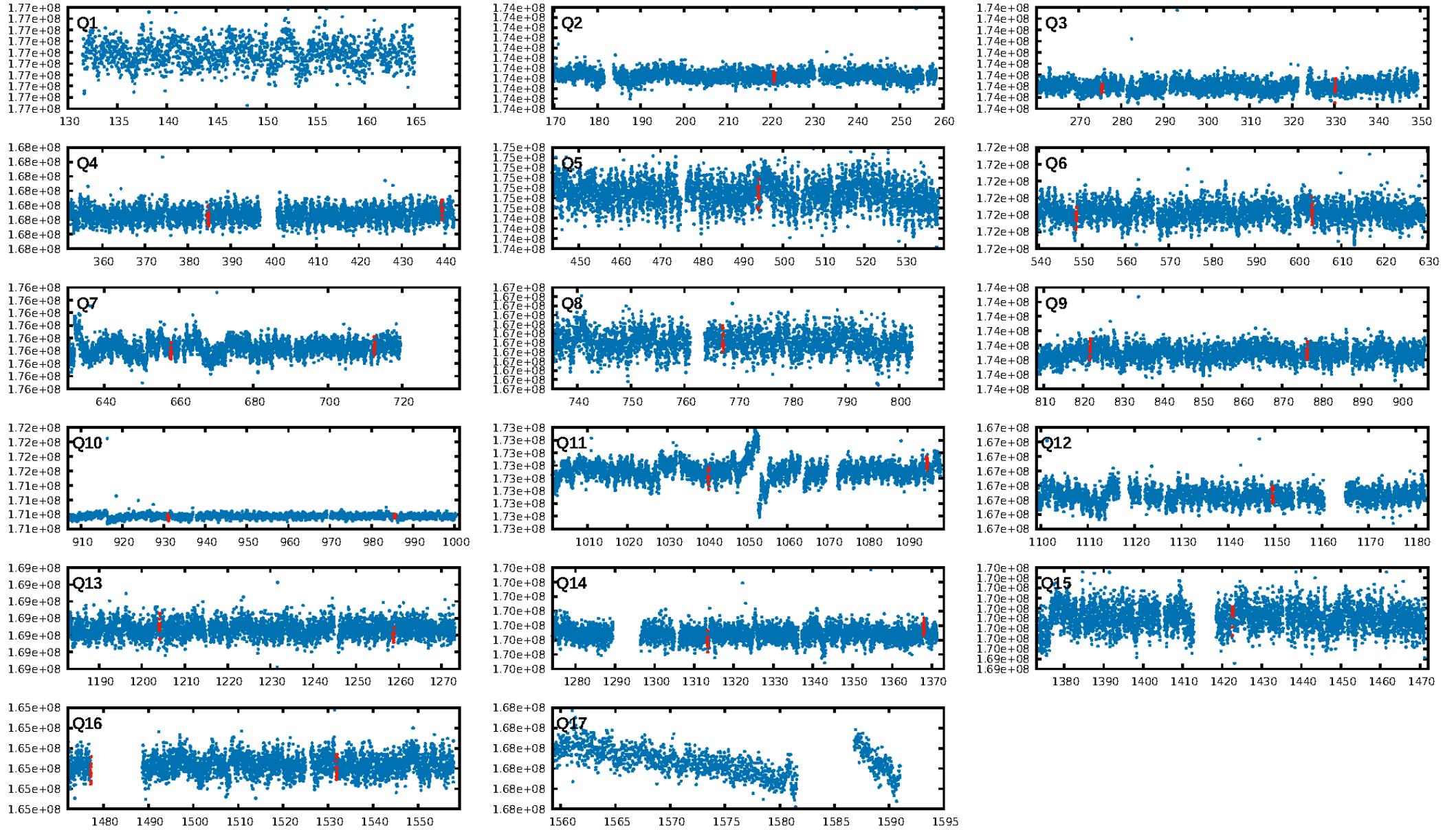
DV Fit Results:

Period = 54.62368 [0.00064] d
Epoch = 166.2780 [0.0107] BKJD
Rp/R* = 0.0145 [0.0061]
a/R* = 56.19 [141.69]
b = 0.92 [0.43]
Seff = 94.41 [35.94]
Teq = 795 [76] K
Rp = 3.30 [1.63] Re
a = 0.3261 [0.0747] AU
Ag = 506.01 [481.81] [1.05 σ]
Teffp = 5829 [1310] K [3.84 σ]

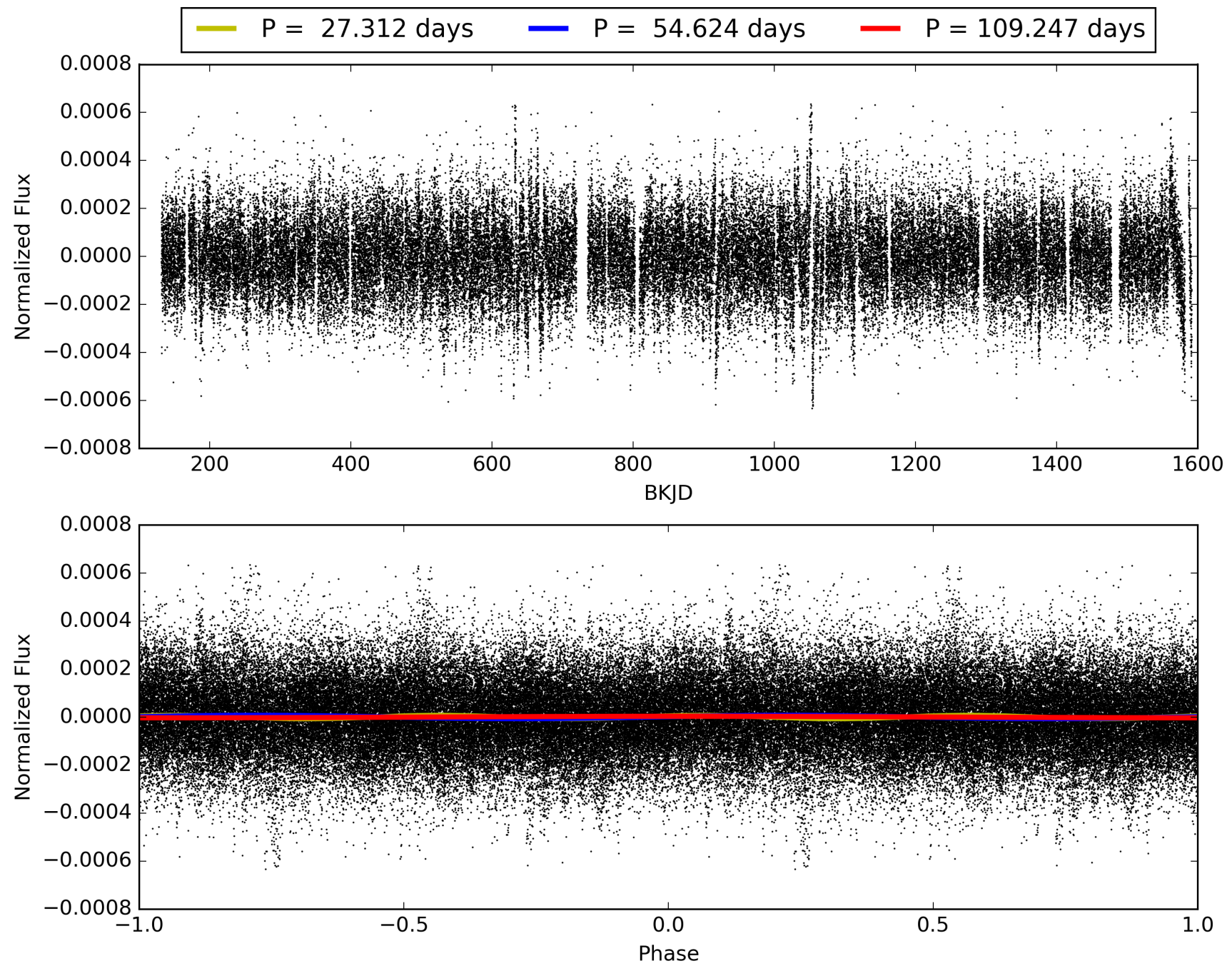
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [66.40 σ]
LongPeriod-sig: 100.0% [64.47 σ]
ModelChiSquare2-sig: 92.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -17.84
Centroid-sig: 0.1%
Centroid-so: 1.585 arcsec [2.14 σ]
OotOffset-rm: 0.608 arcsec [0.60 σ]
KicOffset-rm: 0.578 arcsec [0.68 σ]
OotOffset-st: 3/1/2/3 [9]
KicOffset-st: 3/1/2/3 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 0.53 [8/15]

TCE 008027902-05, PDC Light Curves

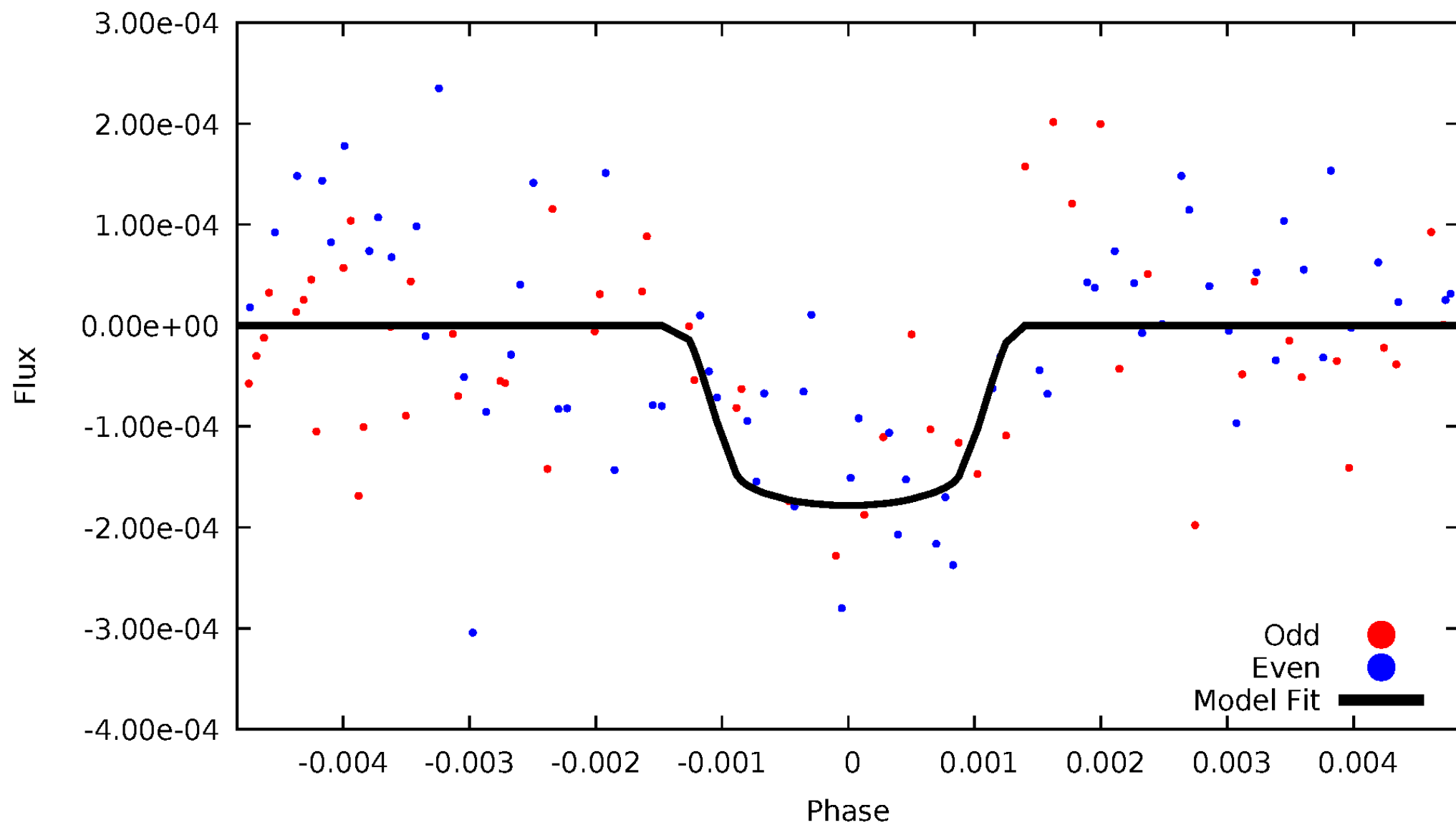


TCE 008027902-05



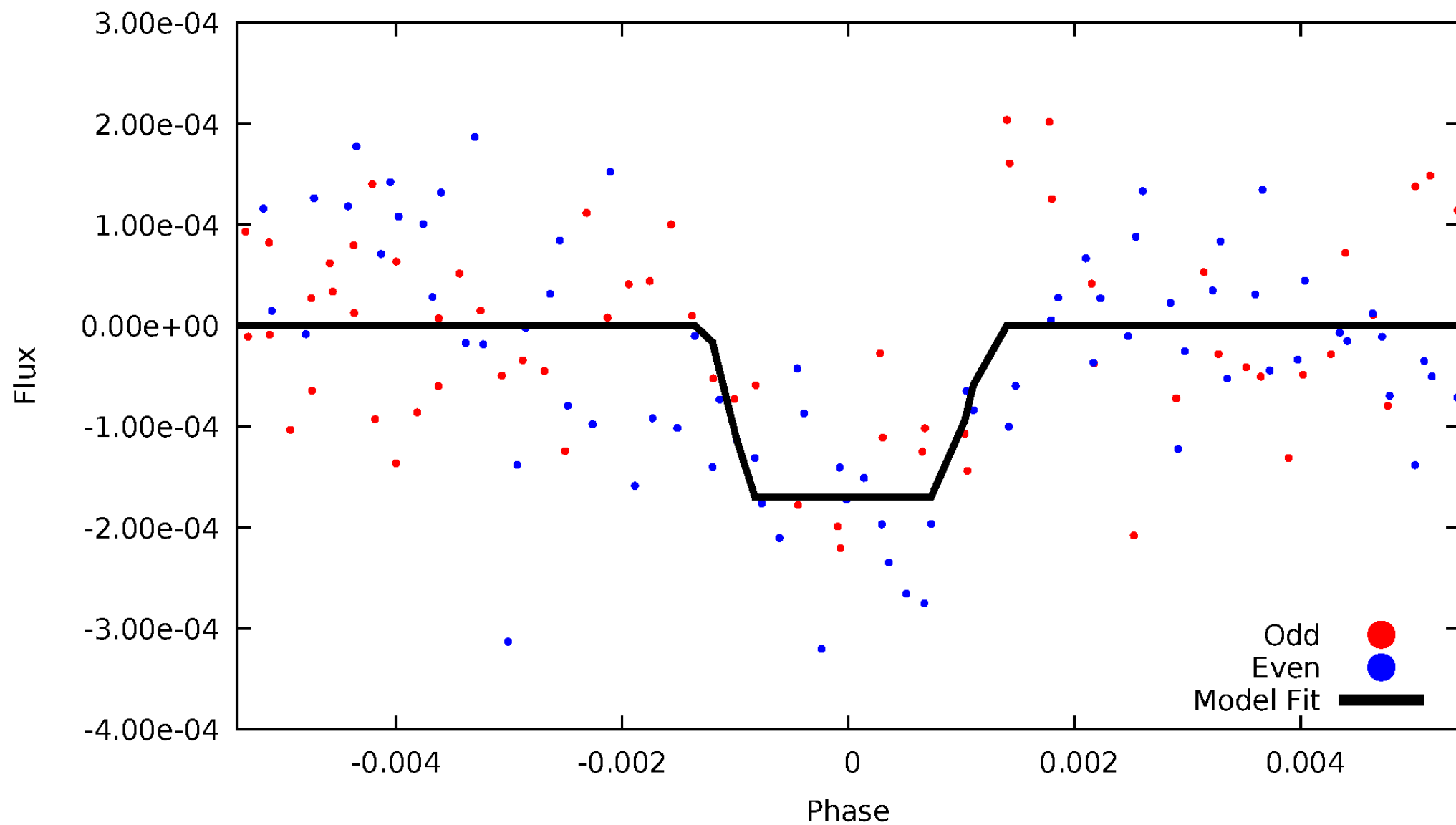
DV Odd/Even

TCE 008027902-05



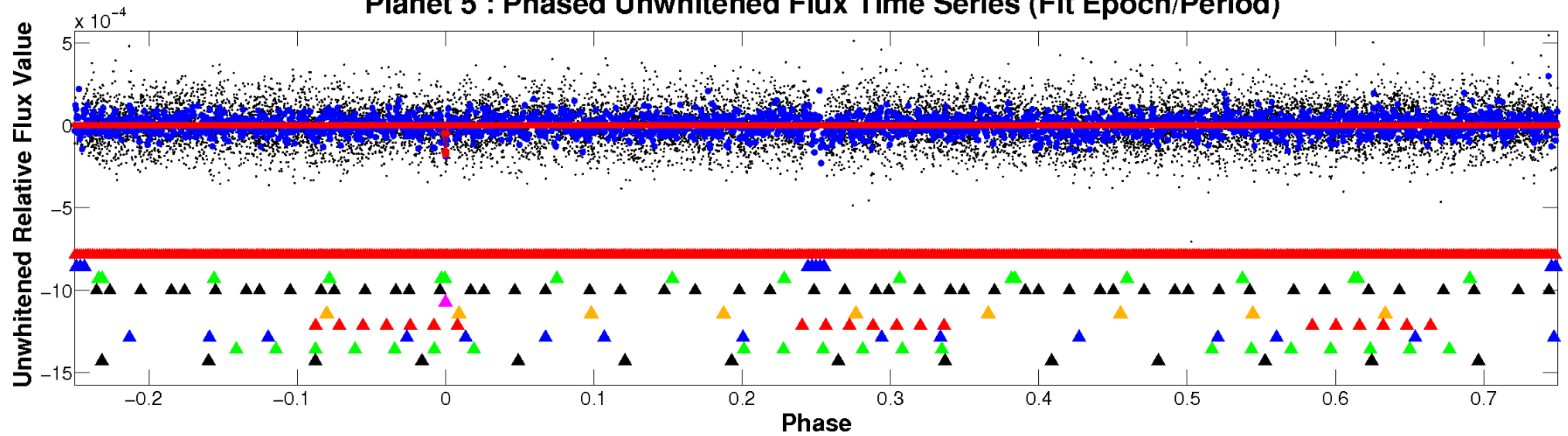
ALT Odd/Even

TCE 008027902-05

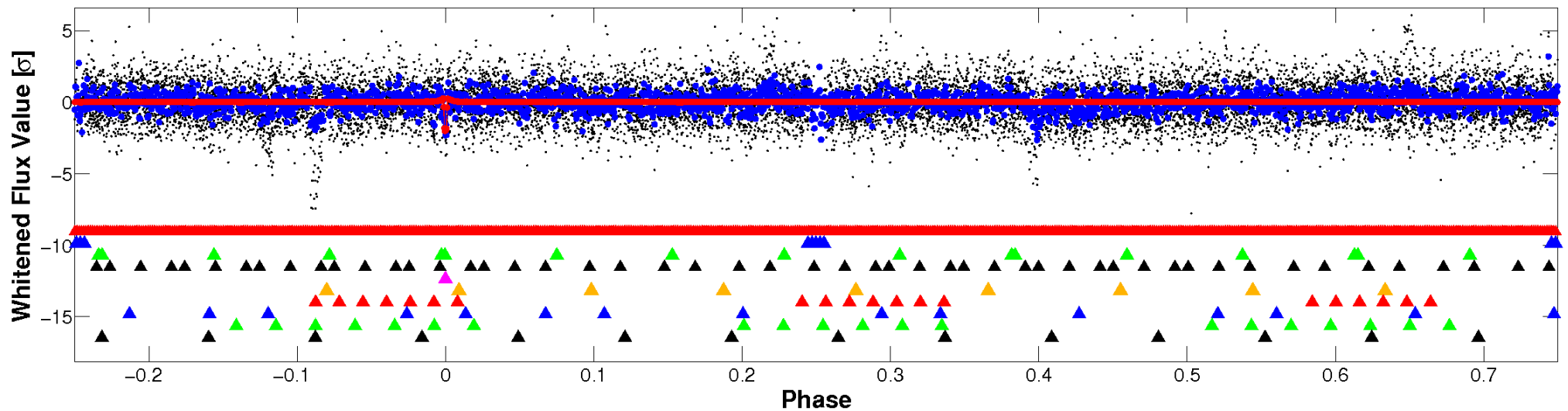


Non-Whitened Vs. Whitened Light Curve

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

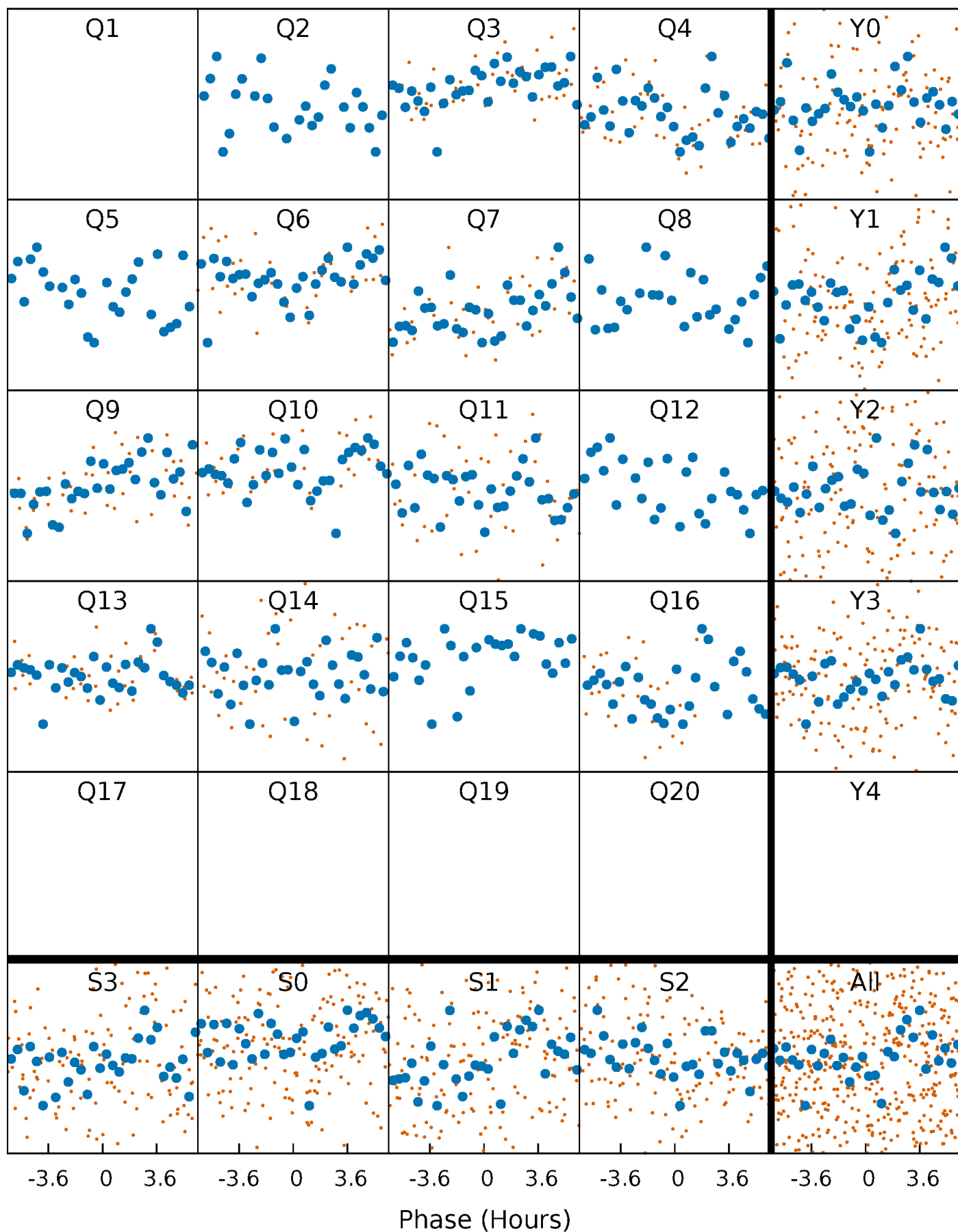


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



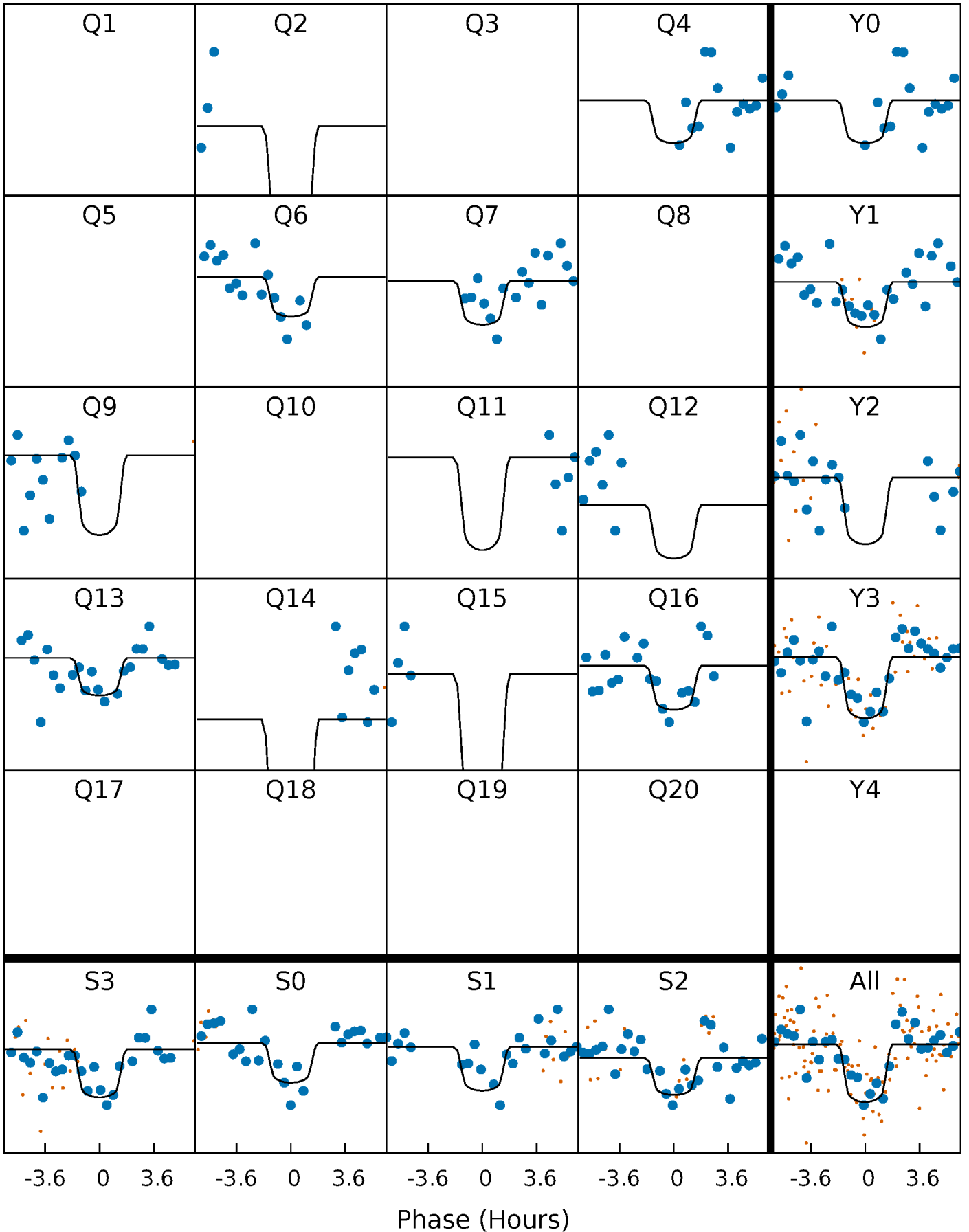
PDC Quarter-Phased Transit Curves

TCE 008027902-05 $P = 54.623685$ Days $T_0 = 166.278027$ (BKJD)



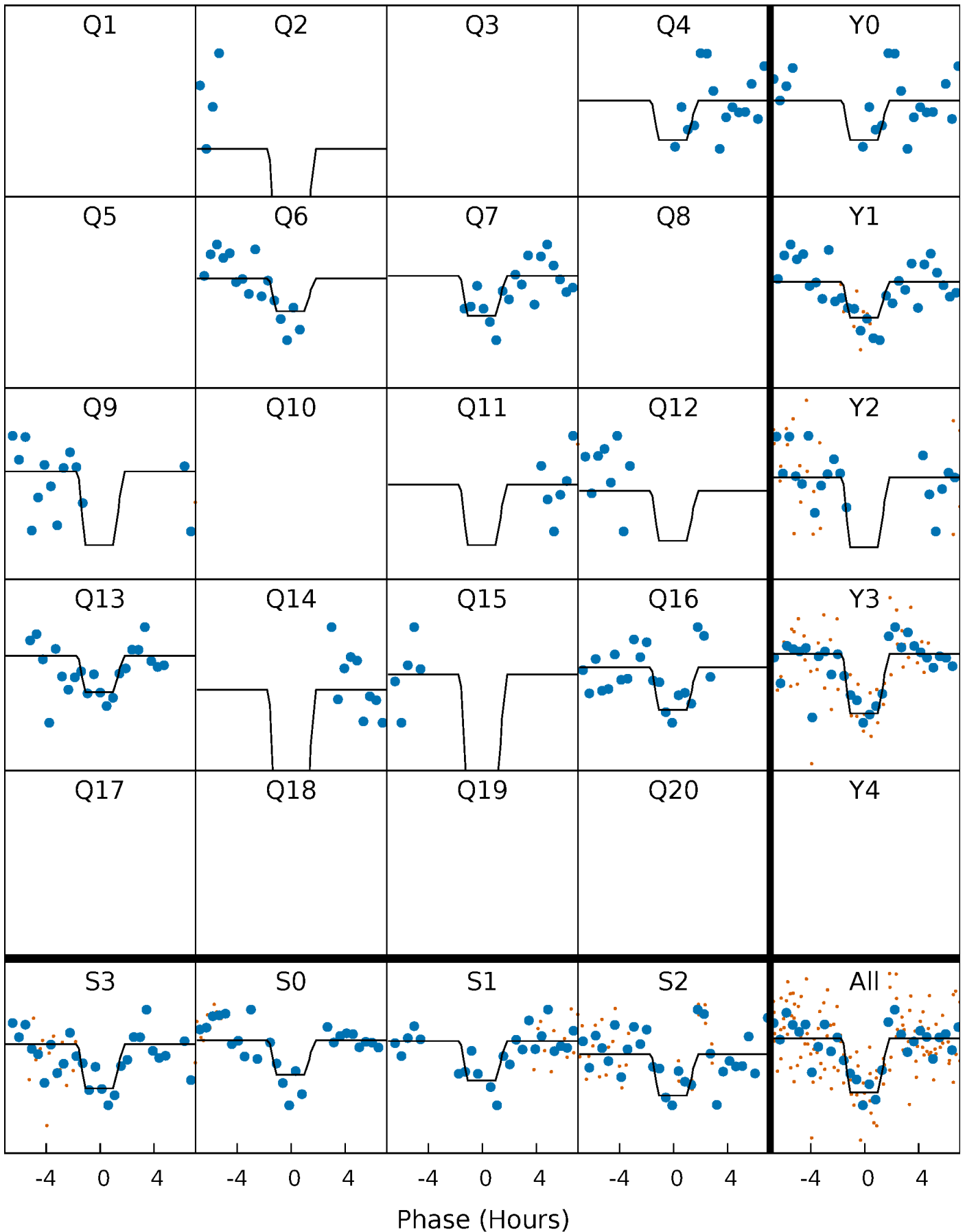
DV Quarter-Phased Transit Curves

TCE 008027902-05 $P = 54.623685$ Days $T_0 = 166.278027$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

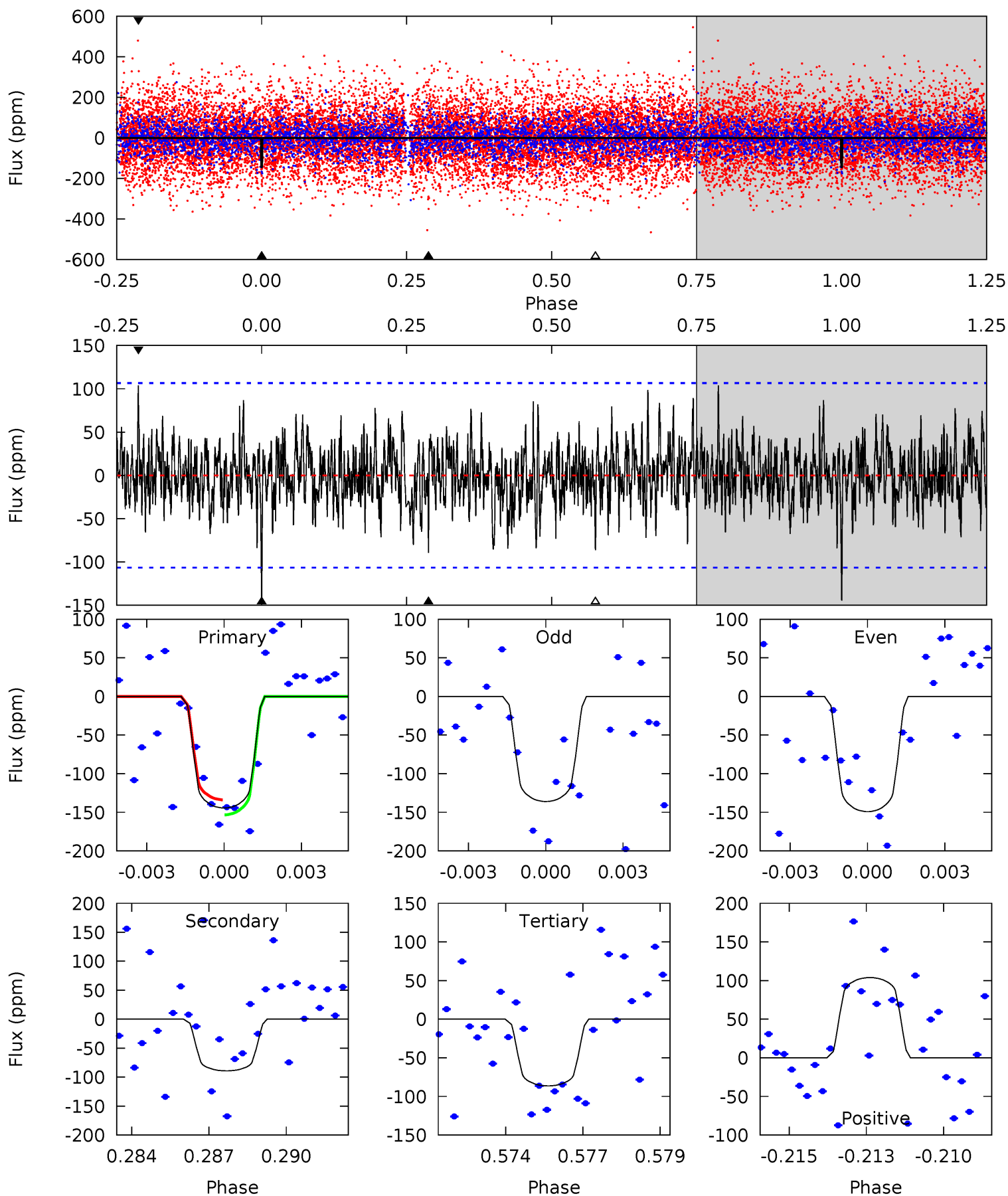
TCE 008027902-05 $P = 54.623006$ Days $T_0 = 166.293480$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-05, $P = 54.623685$ Days, $E = 111.654342$ Days

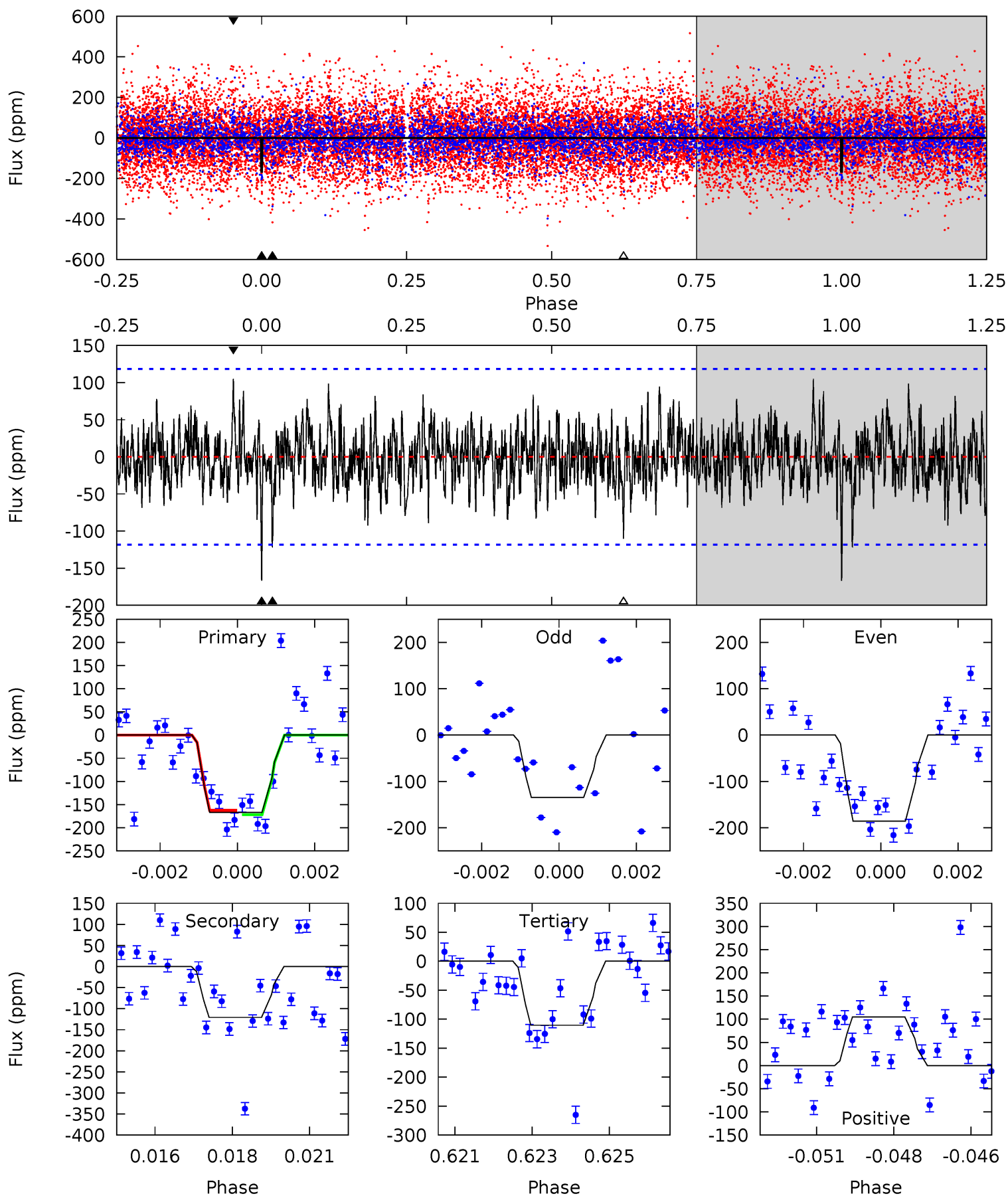
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.15	4.42	4.28	5.14	5.27	3.00	1.43	2.88	2.01	0.14	-0.73	0.31	1.01	0.42	0.48



Alt Model-Shift Uniqueness Test

008027902-05, P = 54.623006 Days, E = 111.670474 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.47	5.42	4.95	4.70	5.30	3.05	1.37	2.53	2.78	0.47	0.72	1.12	1.05	0.39	0.21



Stellar Parameters For KIC 008027902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-89 ± 20	$3.23^{+1.52}_{-1.32}$	1102^{+67}_{-81}	5649^{+1813}_{-876}	501^{+986}_{-282}
Alt.	-121 ± 22	$2.94^{+1.33}_{-1.40}$	1095^{+75}_{-76}	6432^{+2697}_{-1114}	804^{+2205}_{-433}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

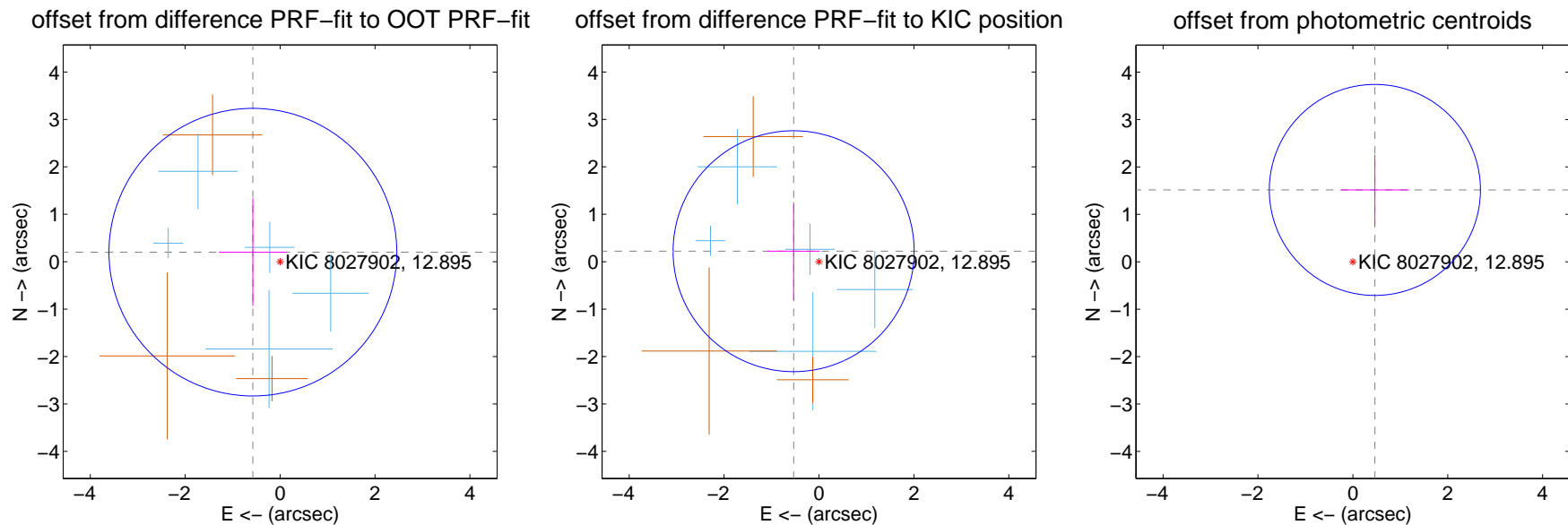
DV Centroid Data

Supplemental centroid analysis for 008027902-05. Kepler magnitude: 12.89. Transit SNR 9.38

There are 5 quarters with good PRF difference image offsets

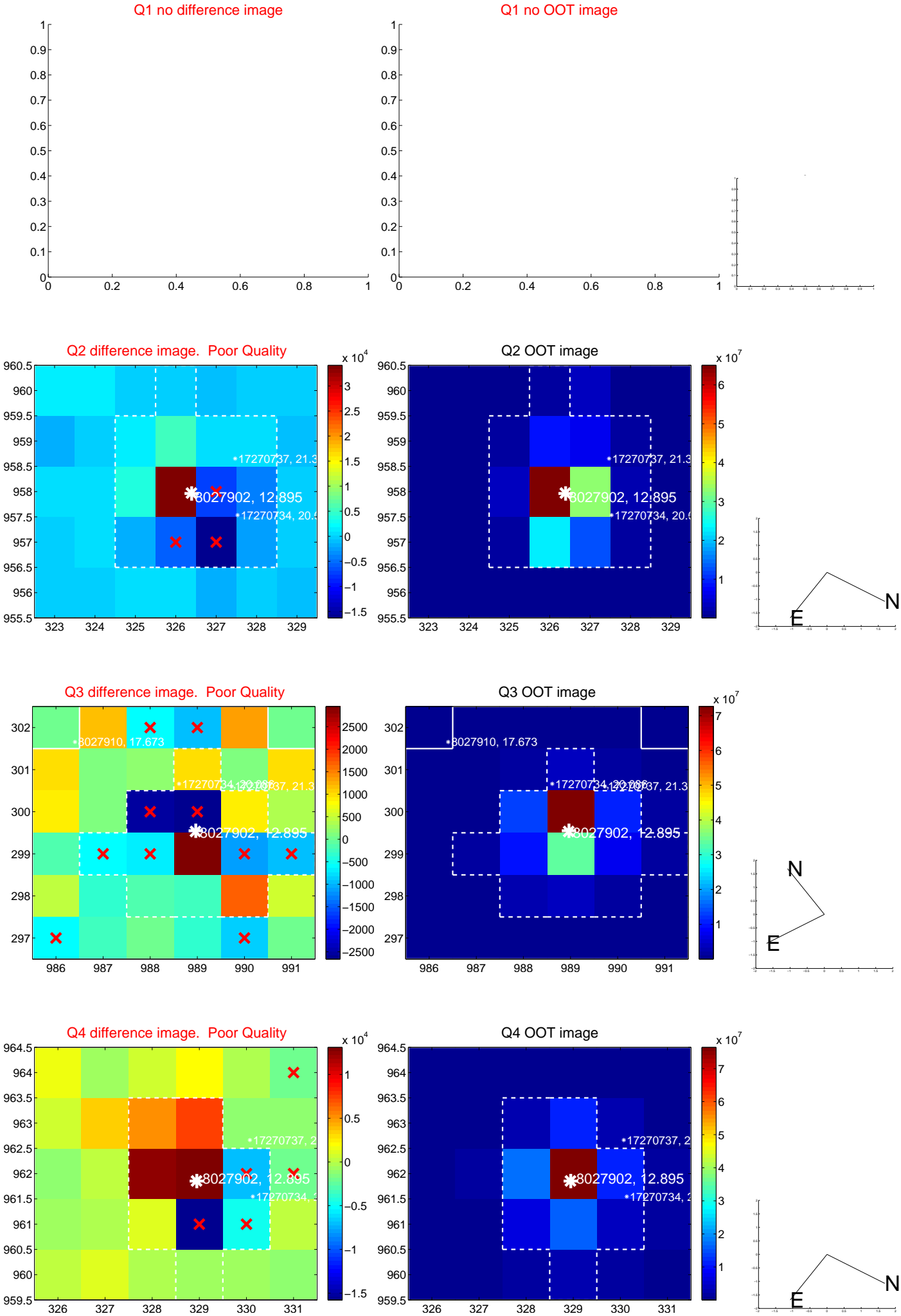
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.608 ± 1.011	0.60	0.574 ± 0.715	0.201 ± 1.135
PRF-fit source offset from KIC position	0.578 ± 0.847	0.68	0.534 ± 0.554	0.221 ± 1.029
photometric centroid source offset	1.59 ± 0.74	2.14	-0.46 ± 0.72	1.52 ± 0.74

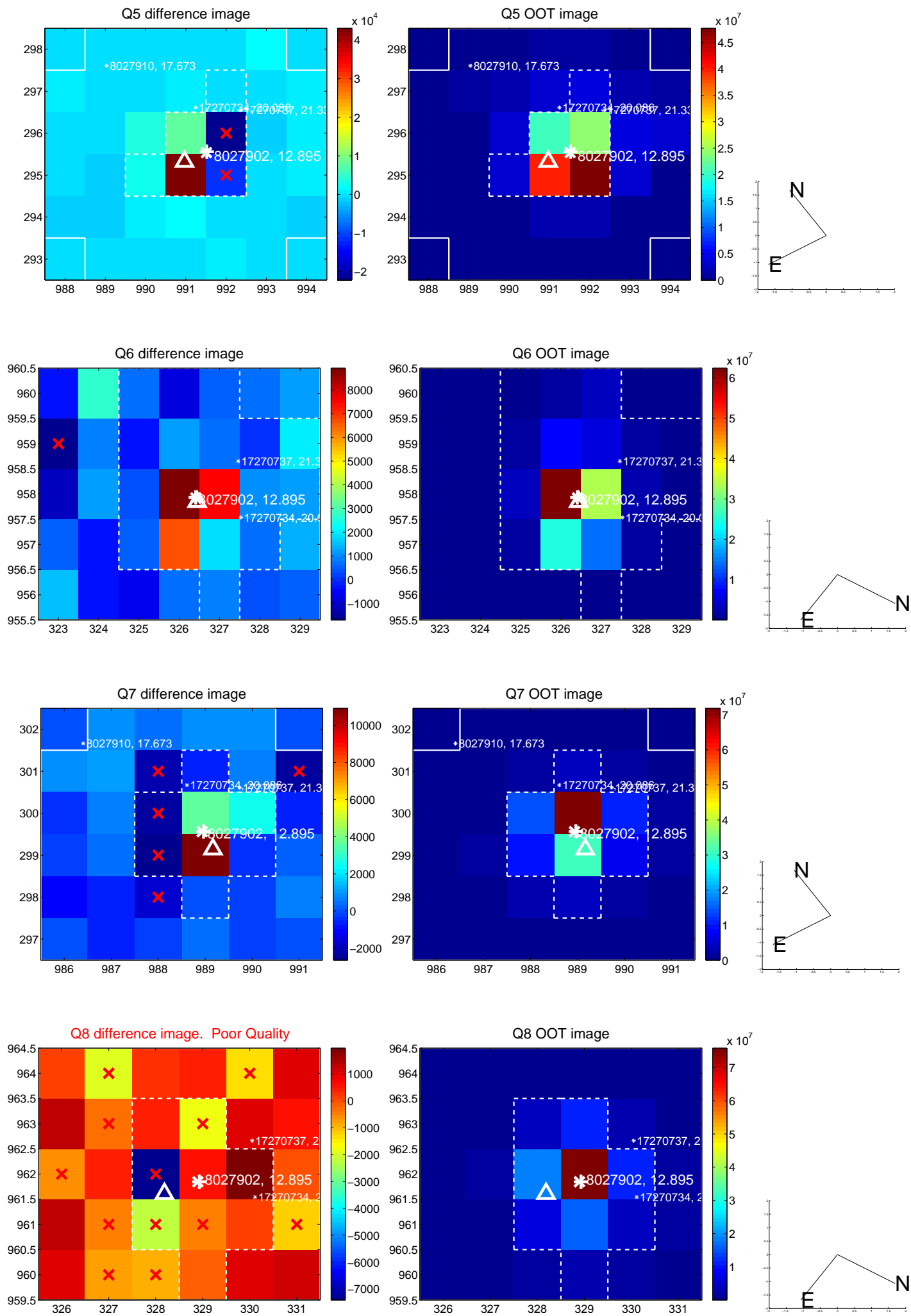


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

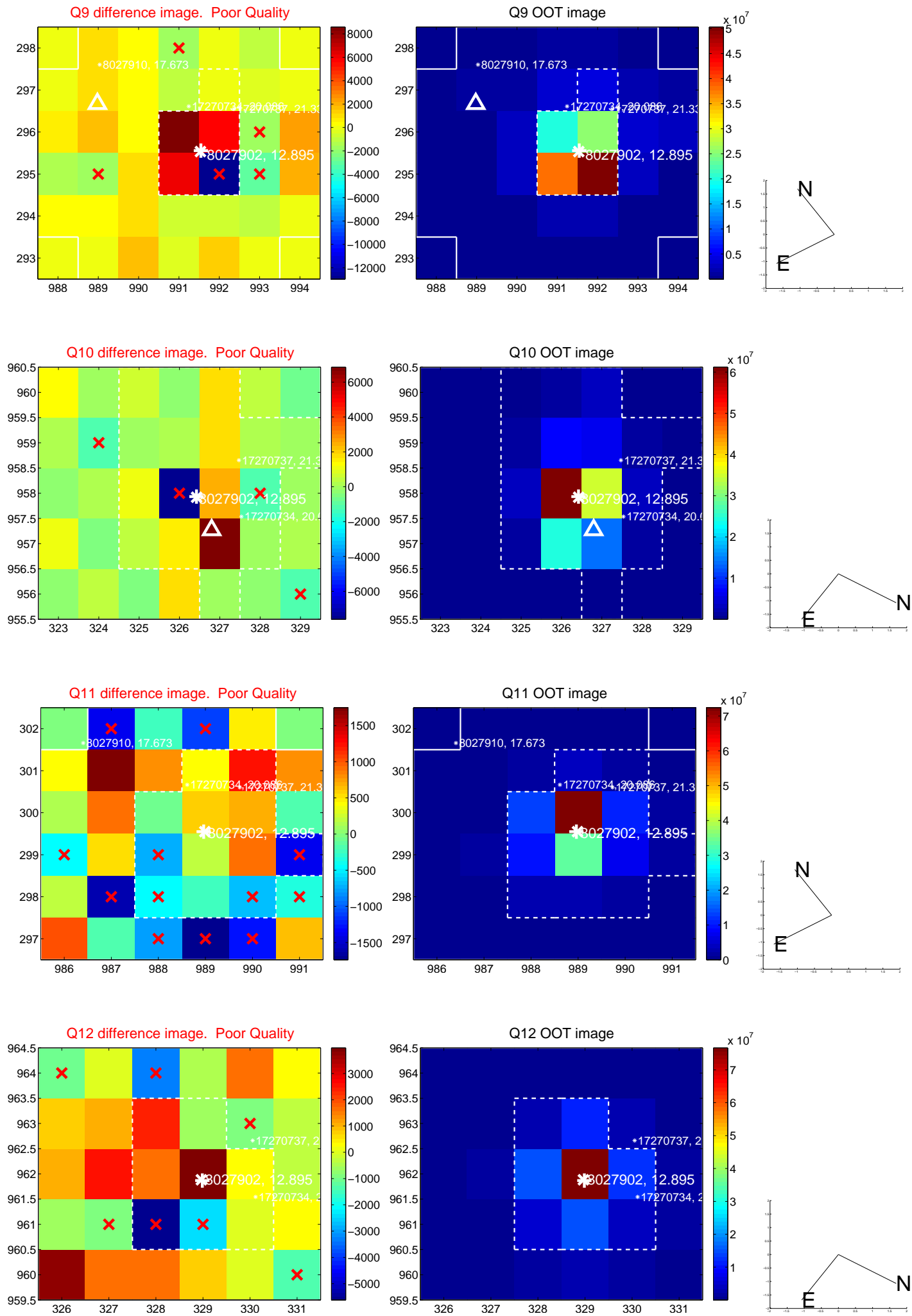
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



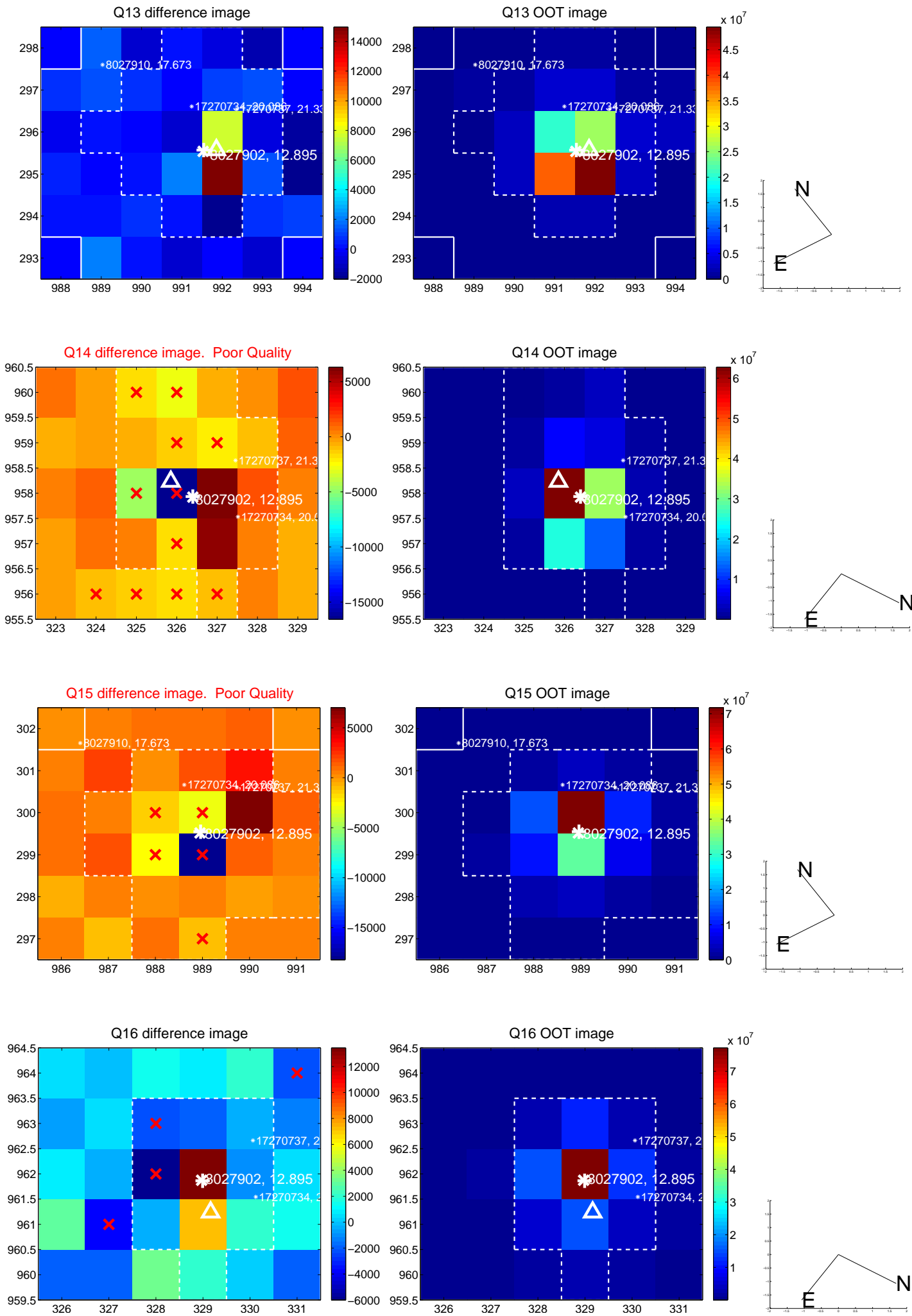
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



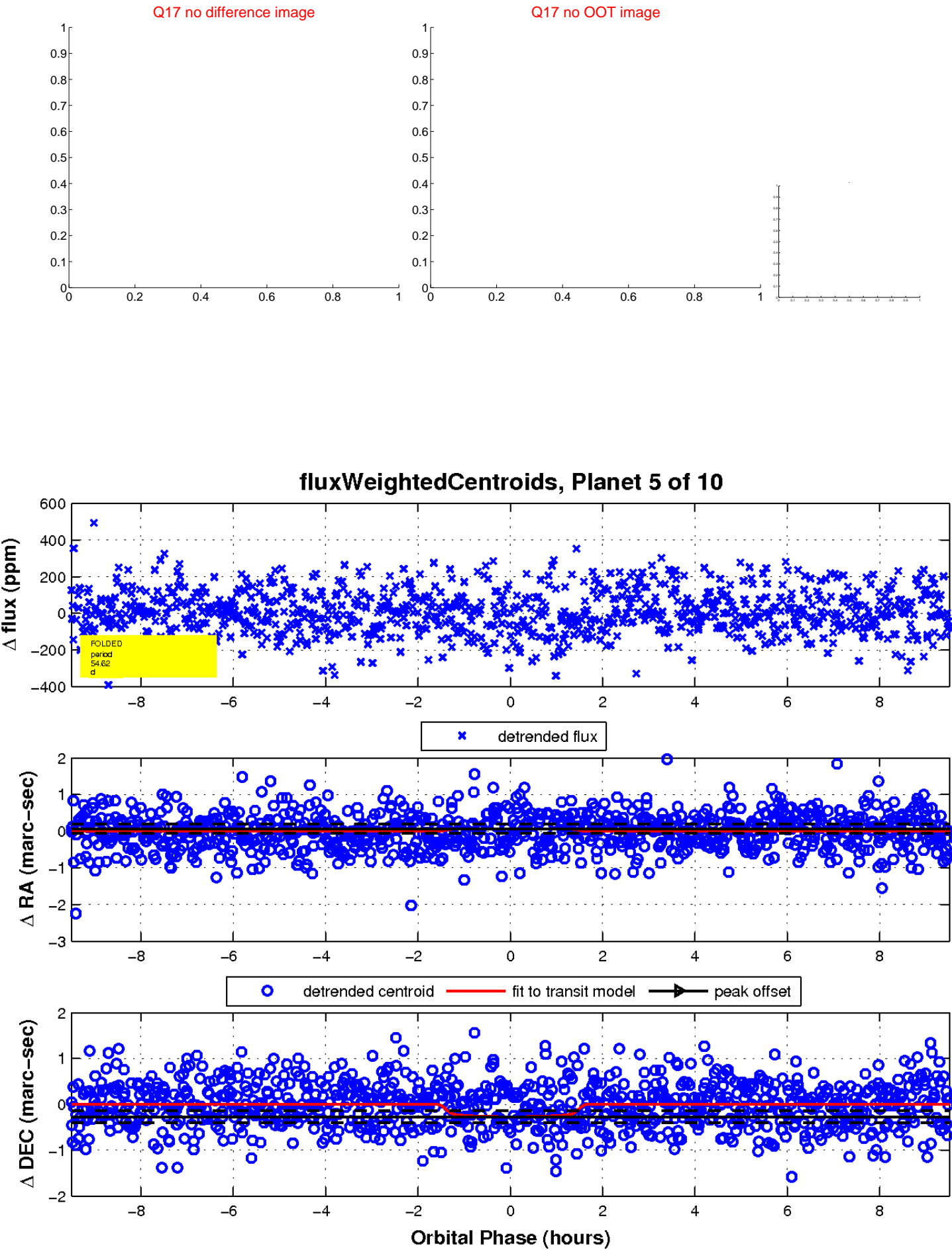
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

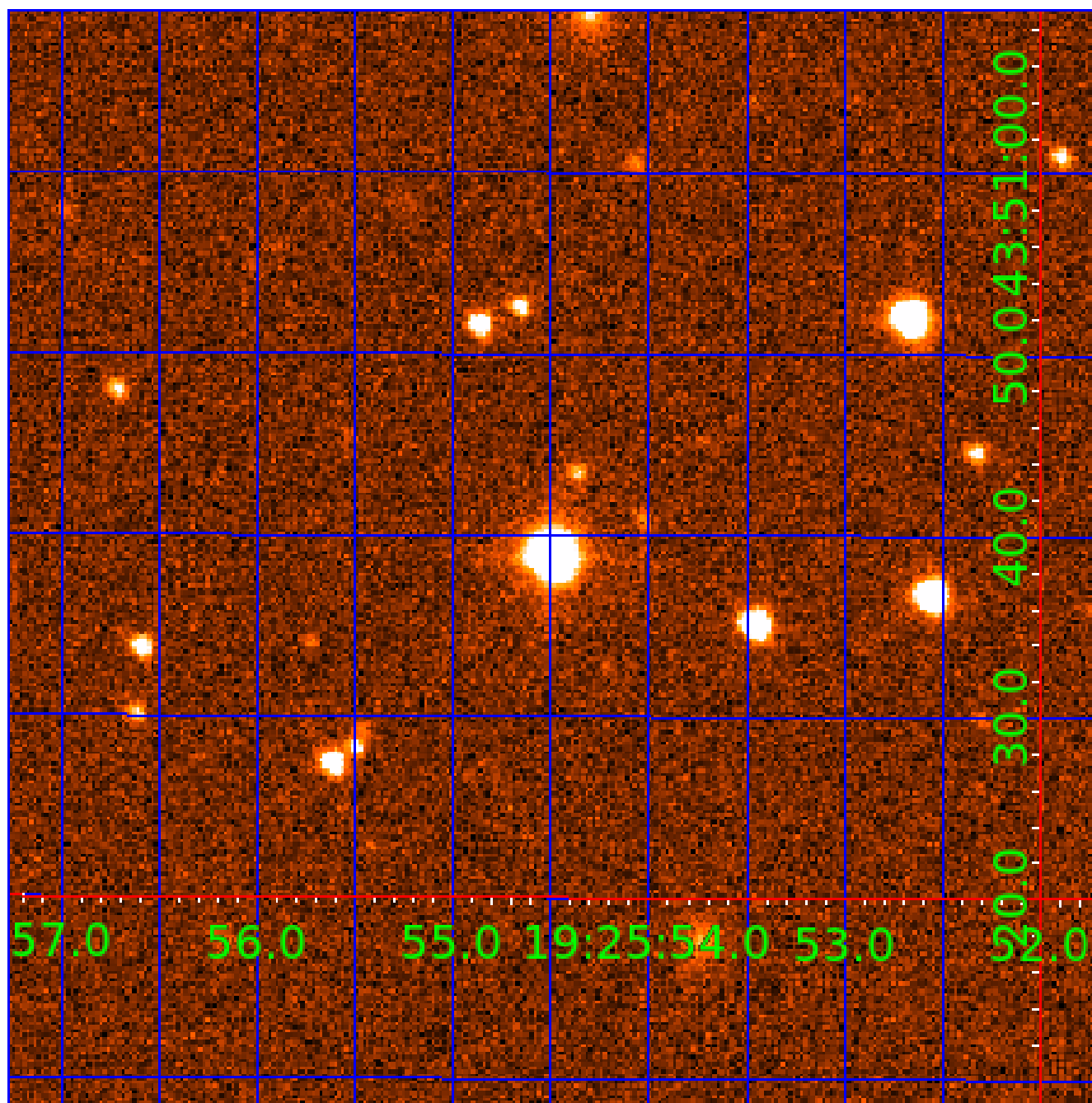


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
008027902-01	OBS	6955.01	1.796314	131.552349	14.1	10.675	8.3	7.7	2.09	7117	0.79	8960.59
008027902-02	OBS	No	136.633031	234.251816	158.9	12.869	13.5	8.5	2.09	7117	2.84	27.80
008027902-03	OBS	No	88.248184	153.502583	122.4	21.072	12.6	8.1	2.09	7117	2.49	49.80
008027902-04	OBS	No	28.689666	153.428684	107.4	8.820	8.6	9.1	2.09	7117	2.44	222.78
008027902-05	OBS	No	54.623685	166.278027	178.4	3.172	8.3	9.4	2.09	7117	3.30	94.41
008027902-06	OBS	No	168.743612	161.903299	119.8	12.118	8.7	6.7	2.09	7117	2.60	20.98
008027902-07	OBS	No	72.541293	166.720724	183.1	5.868	8.5	8.5	2.09	7117	3.31	64.67
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008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008027902-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008027902-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

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

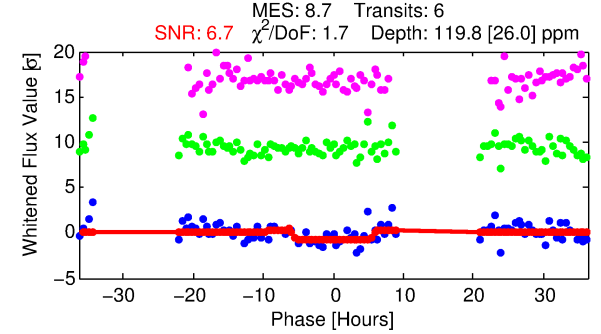
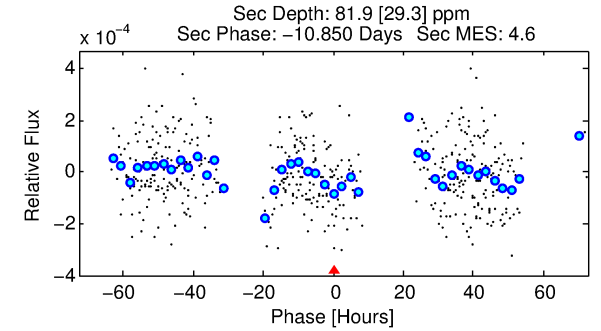
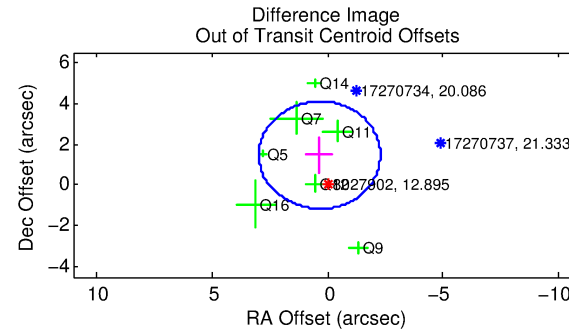
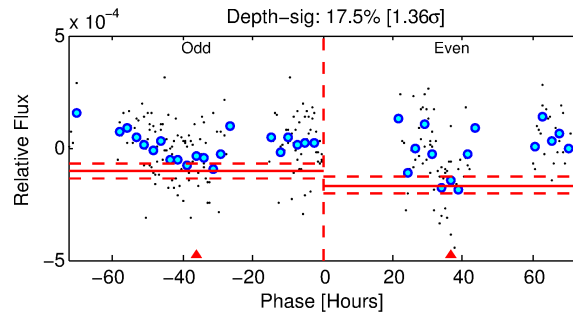
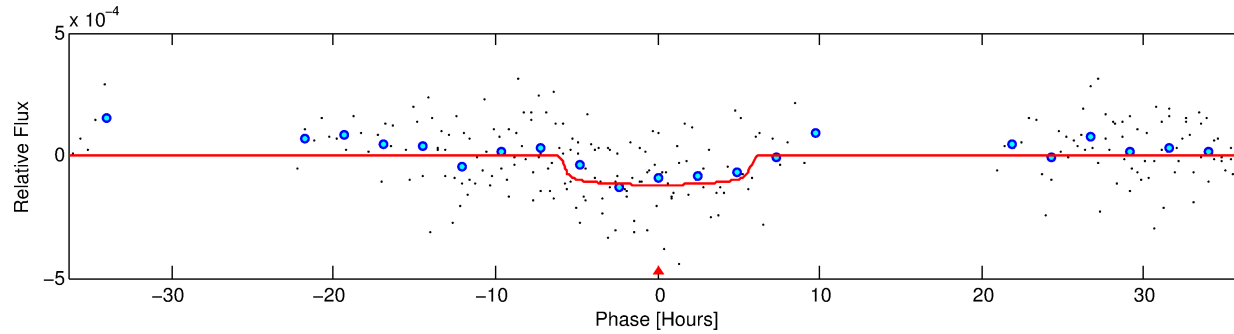
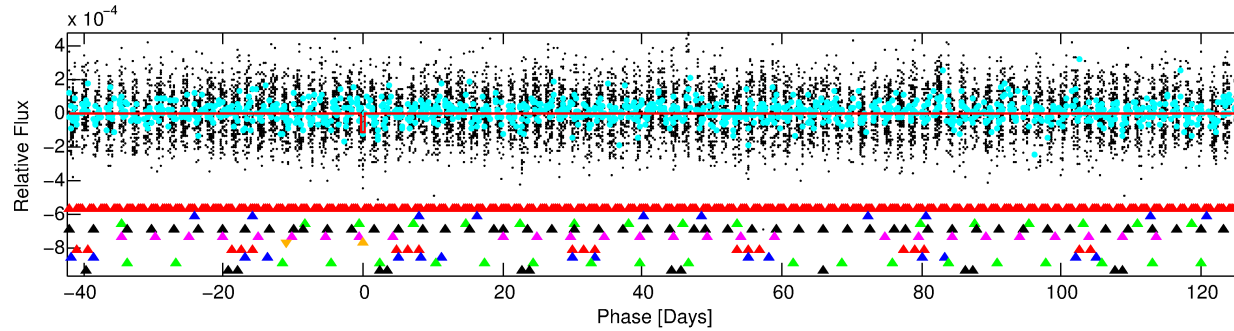
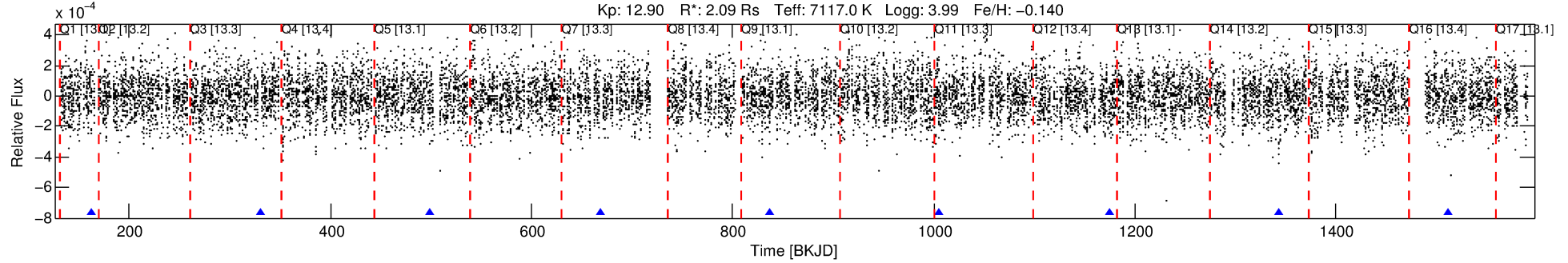
Ephemeris Match Information For 008027902-06

No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 6 of 10 Period: 168.744 d
KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 168.74361 [0.01608] d
Epoch = 161.9033 [0.0983] BKJD
Rp/R* = 0.0114 [0.0041]
a/R* = 54.72 [114.98]
b = 0.87 [0.61]
Seff = 20.98 [7.99]
Teq = 546 [52] K
Rp = 2.61 [1.15] Re
a = 0.6917 [0.1584] AU
Ag = 3178.41 [2791.24] [1.14σ]
Teffp = 6336 [1299] K [4.45σ]

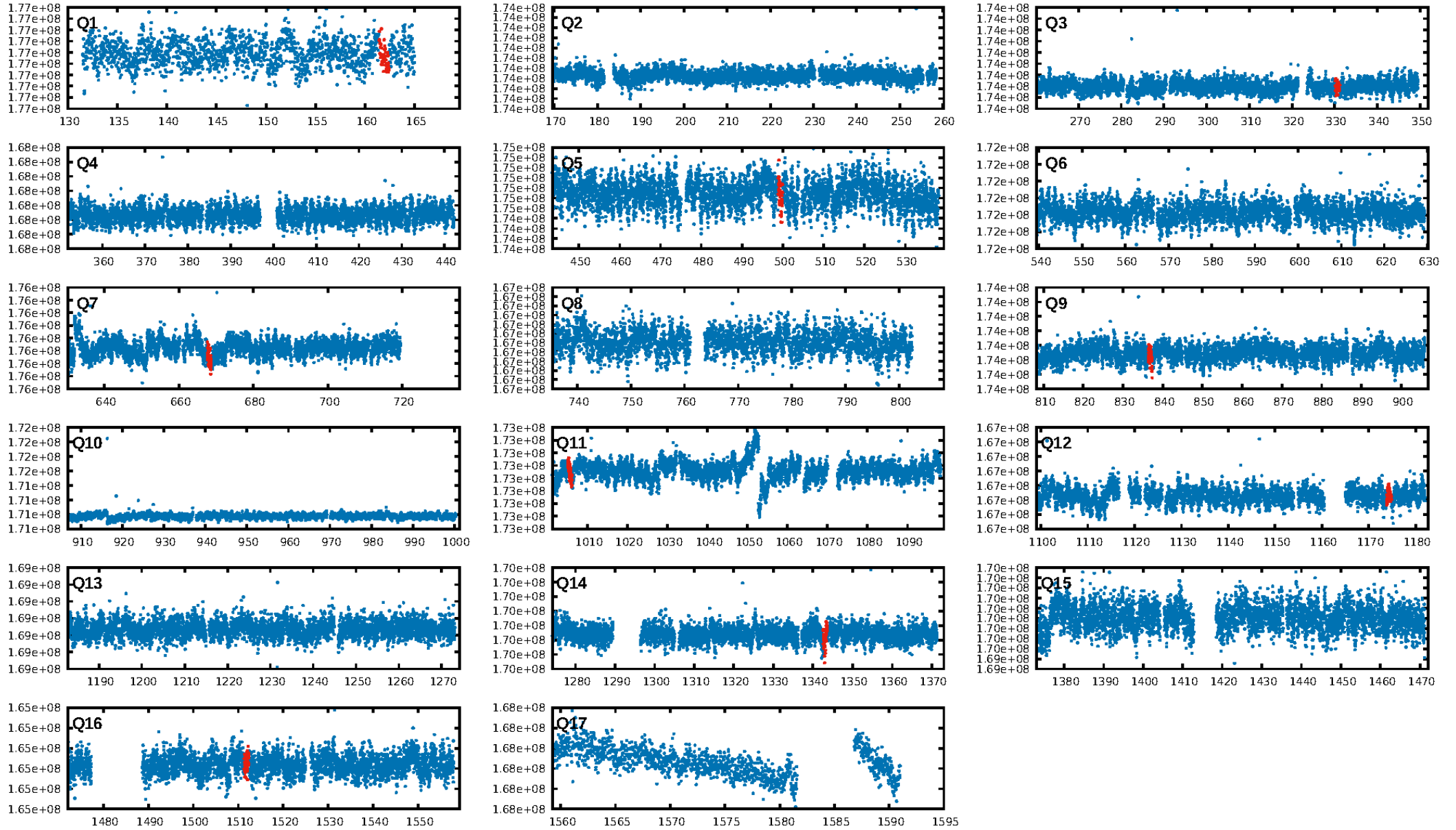
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [43.60σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 30.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.6775
Centroid-sig: 12.7%
Centroid-so: 1.095 arcsec [1.25σ]
OotOffset-rm: 1.504 arcsec [1.72σ]
OotOffset-st: 1/2/2/2 [7]
KicOffset-rm: 1.562 arcsec [1.72σ]
KicOffset-st: 1/2/2/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/9]

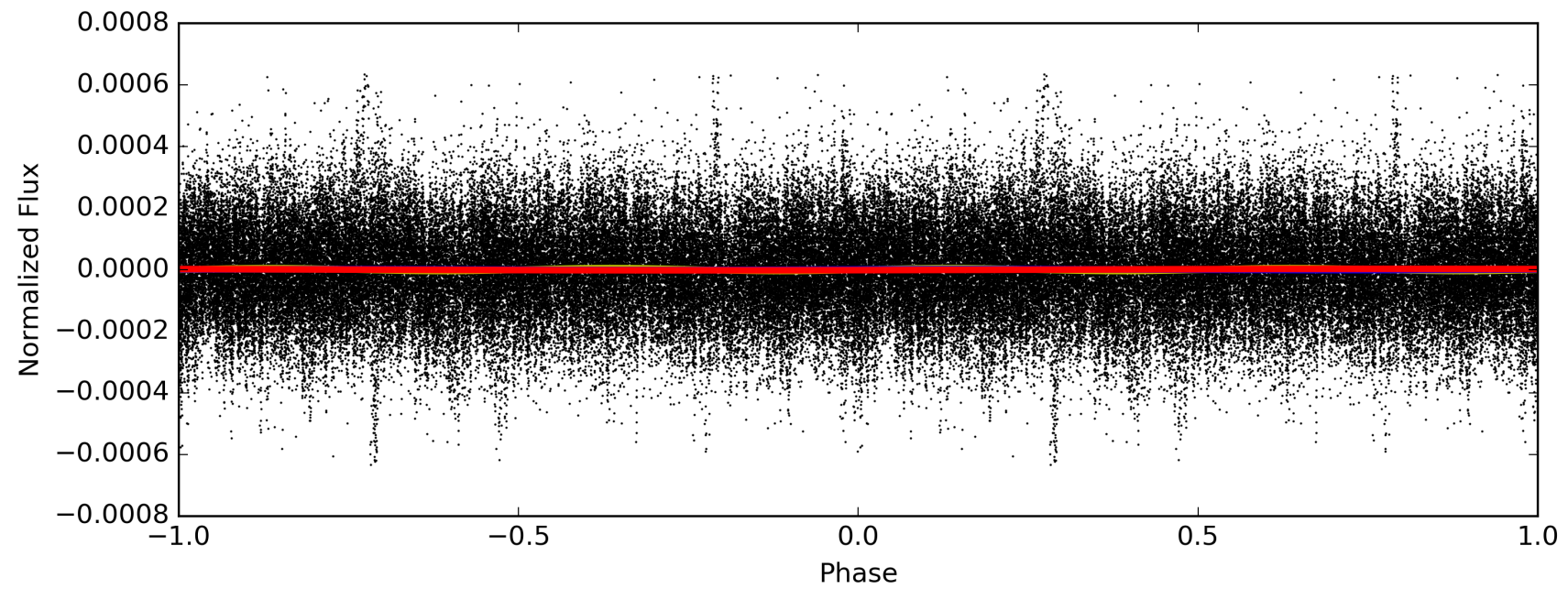
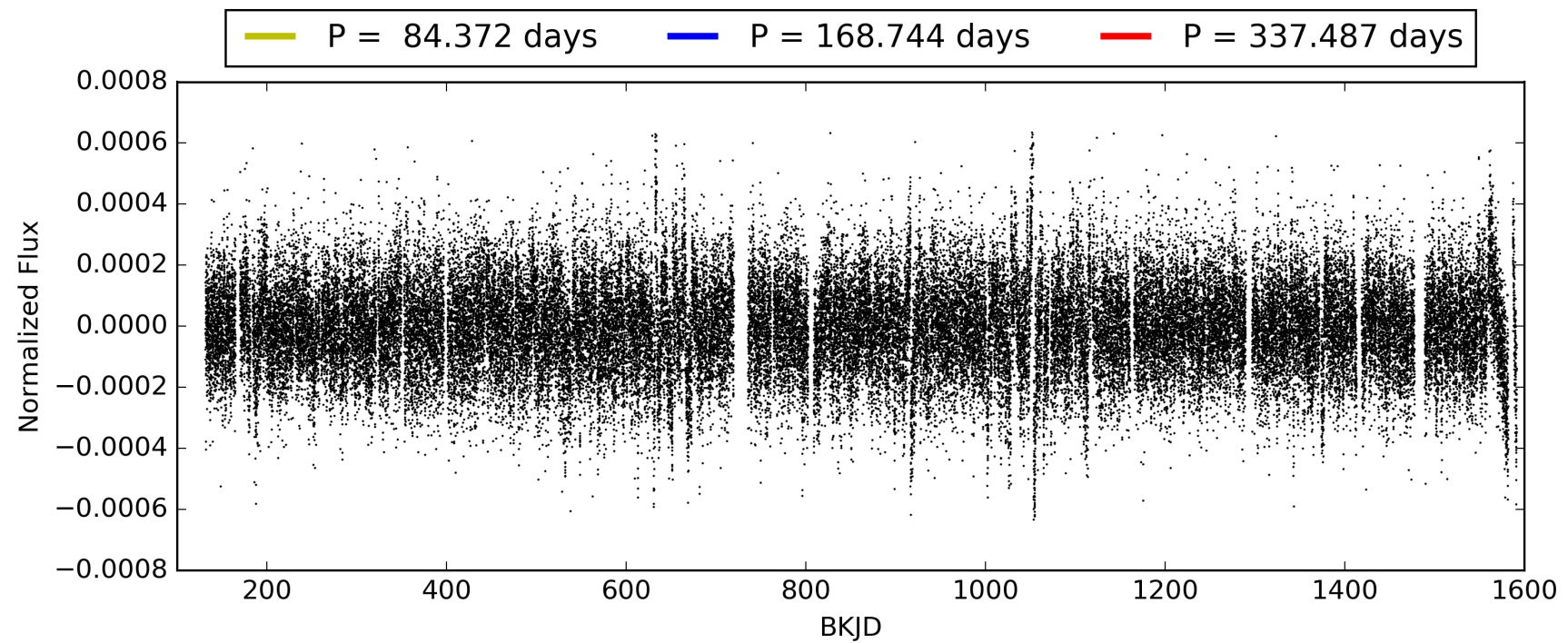
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:21:07 Z

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

TCE 008027902-06, PDC Light Curves

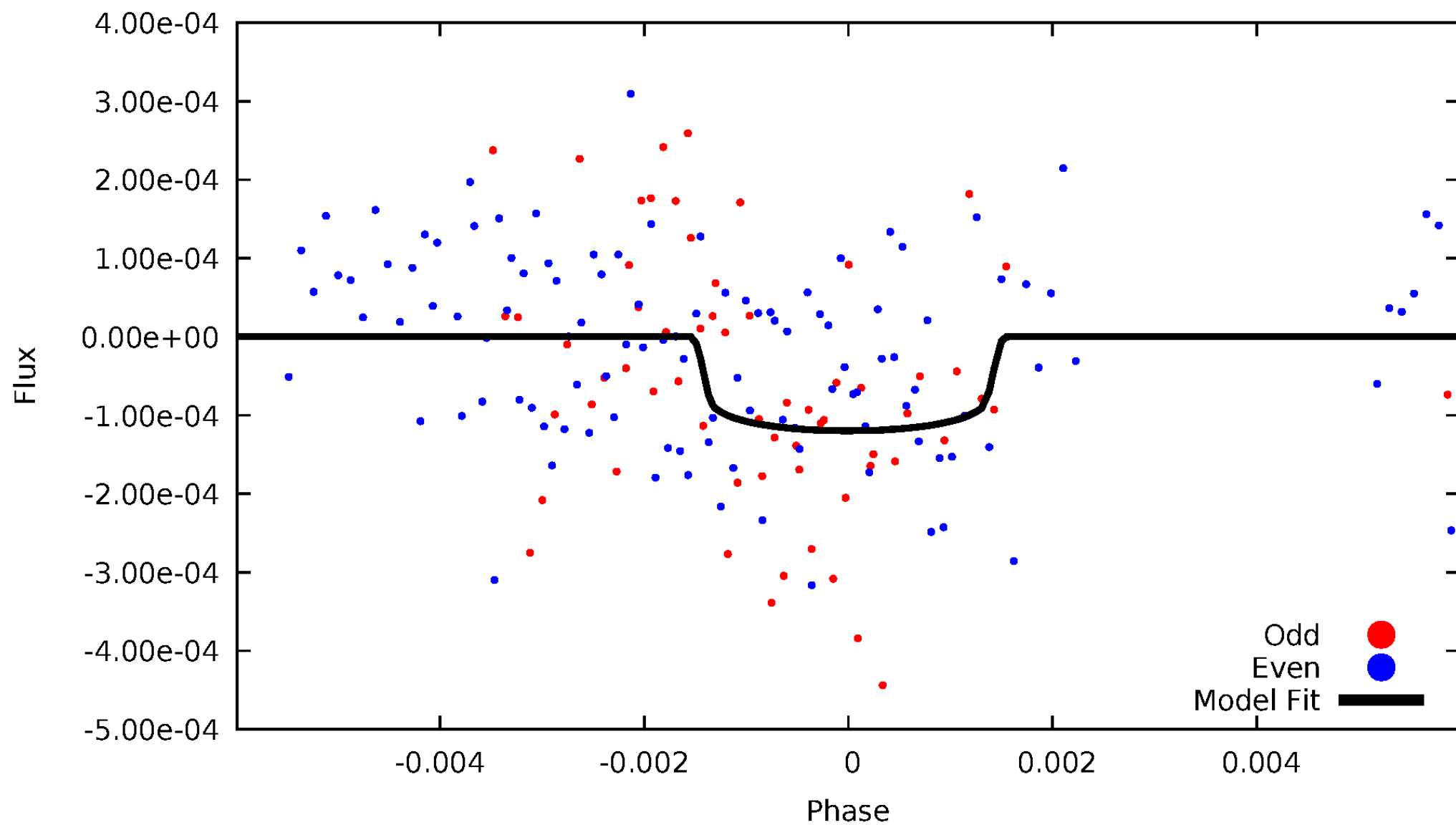


TCE 008027902-06



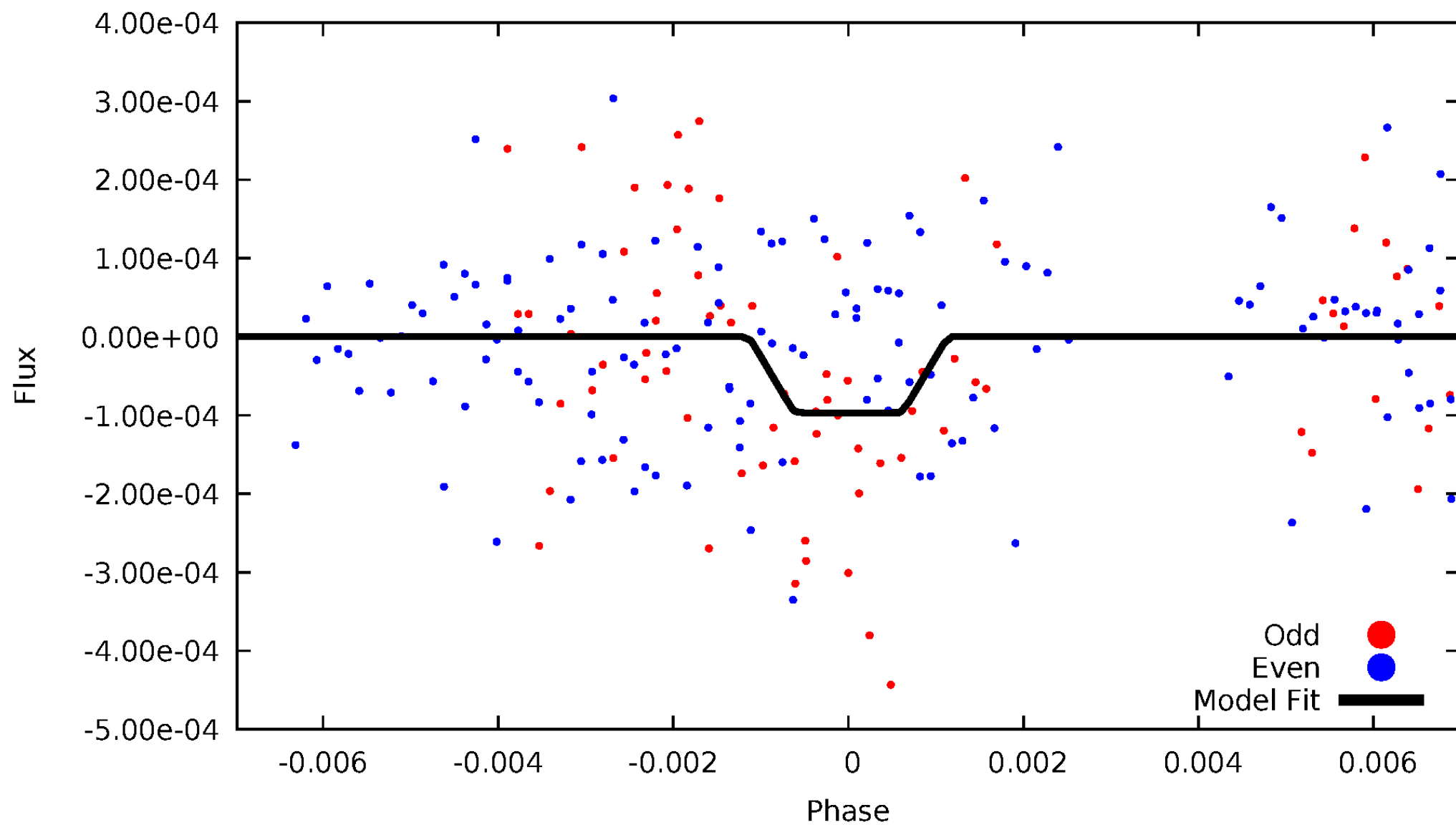
DV Odd/Even

TCE 008027902-06



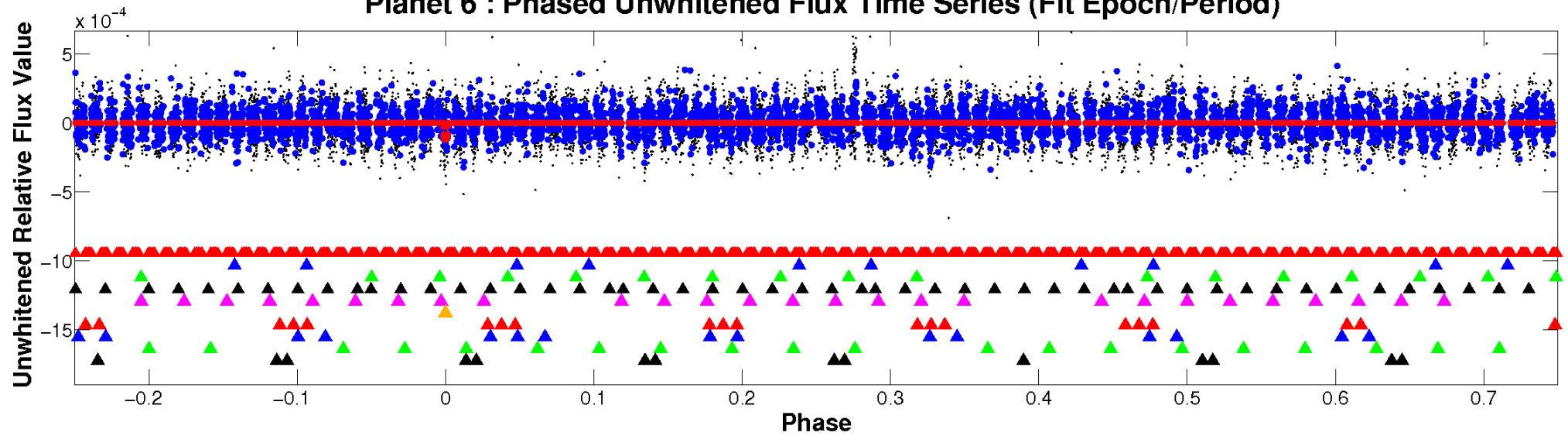
ALT Odd/Even

TCE 008027902-06

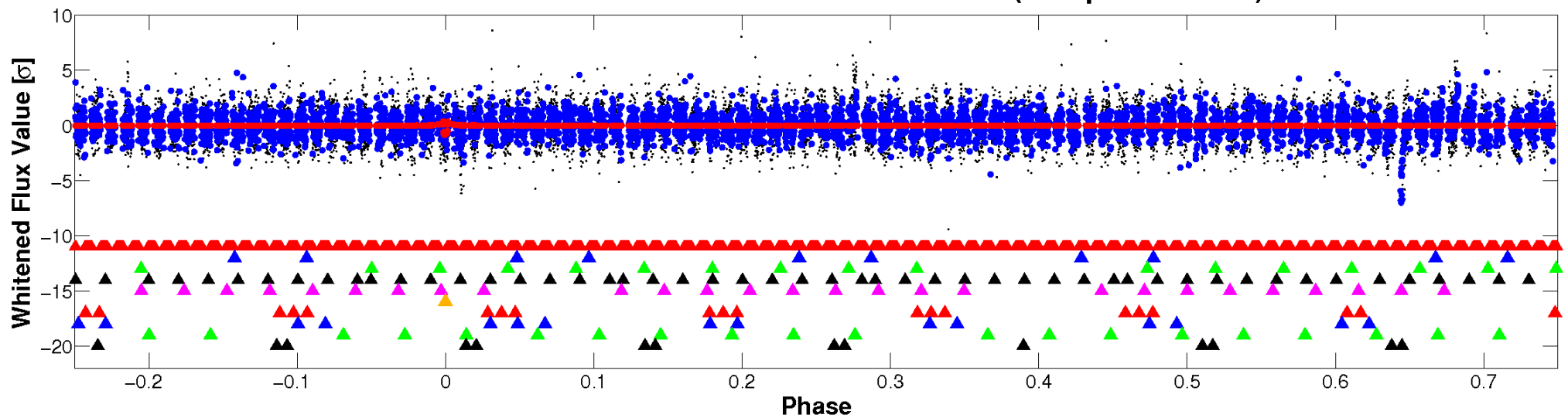


Non-Whitened Vs. Whitened Light Curve

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



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



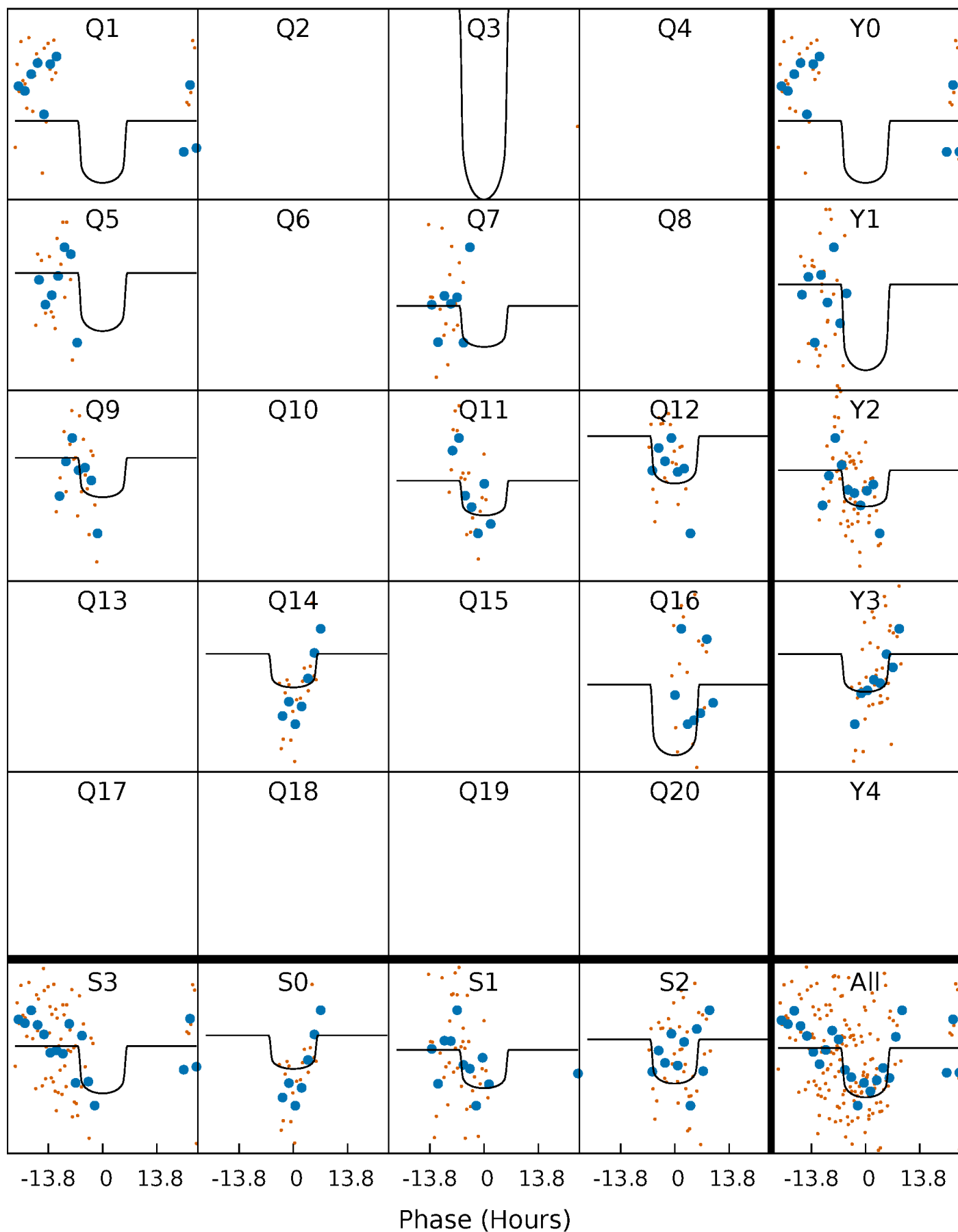
PDC Quarter-Phased Transit Curves

TCE 008027902-06 P=168.743612 Days $T_0=161.903299$ (BKJD)



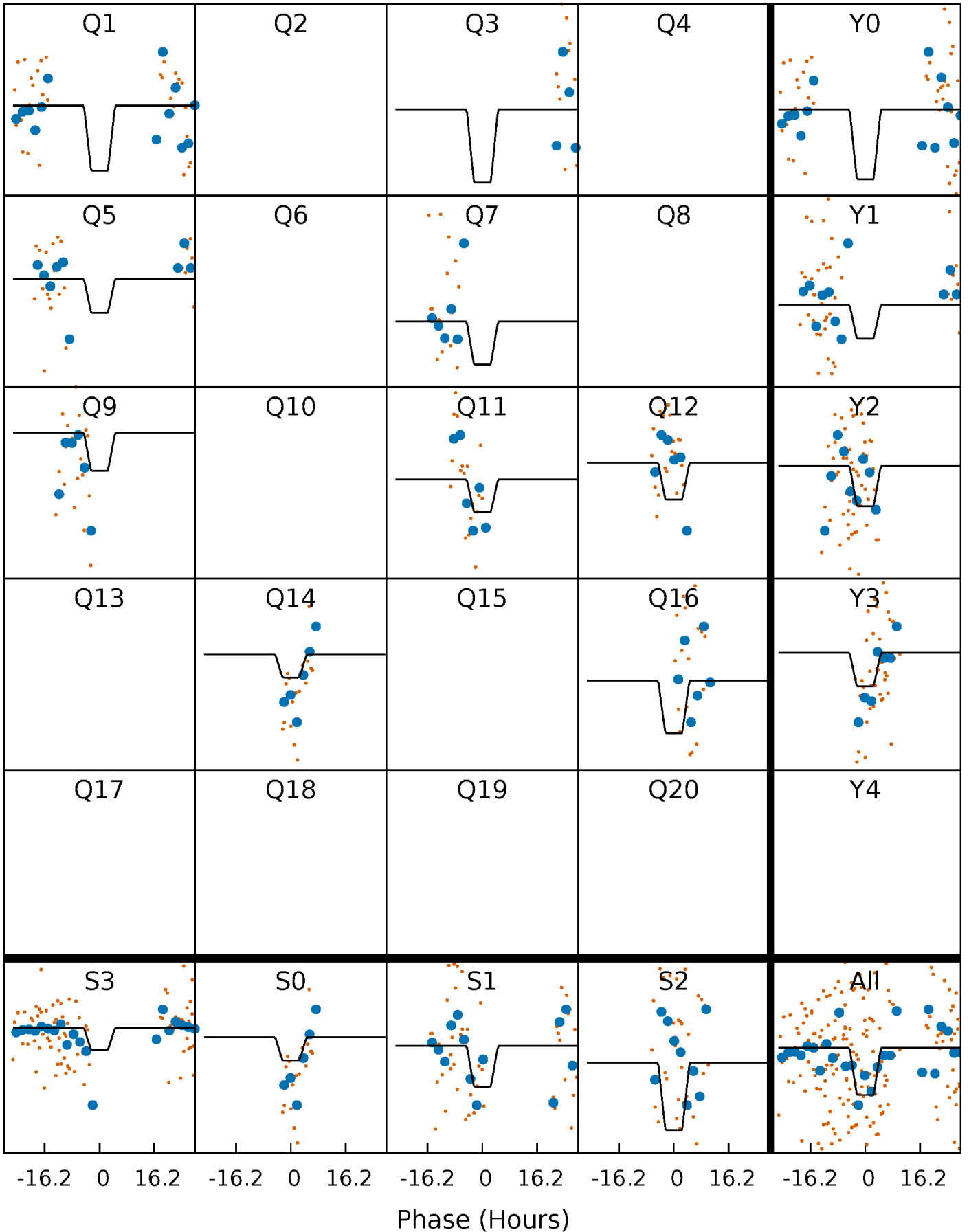
DV Quarter-Phased Transit Curves

TCE 008027902-06 P=168.743612 Days $T_0=161.903299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

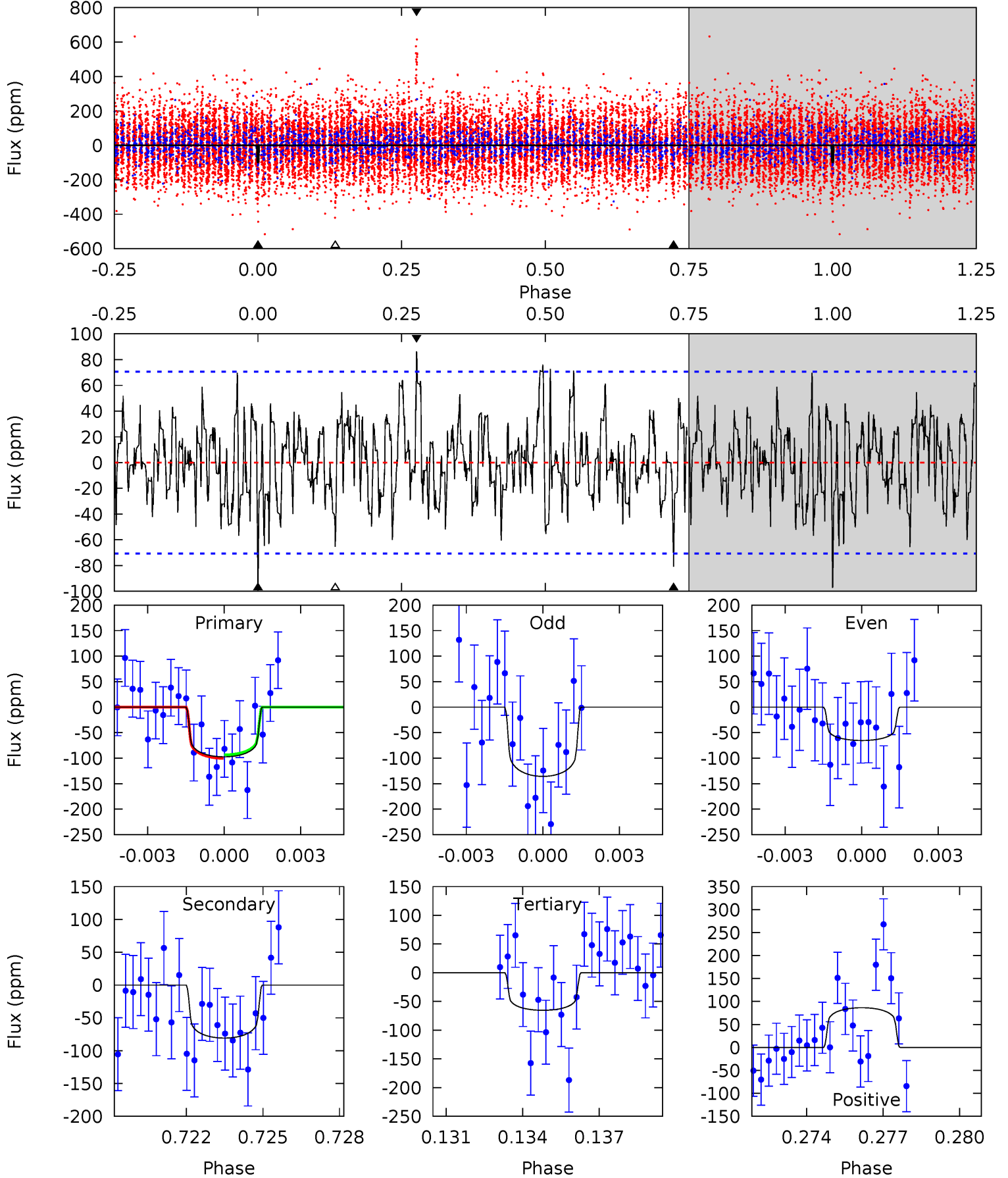
TCE 008027902-06 $P=168.719905$ Days $T_0=162.044153$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-06, P = 168.743612 Days, E = 161.903299 Days

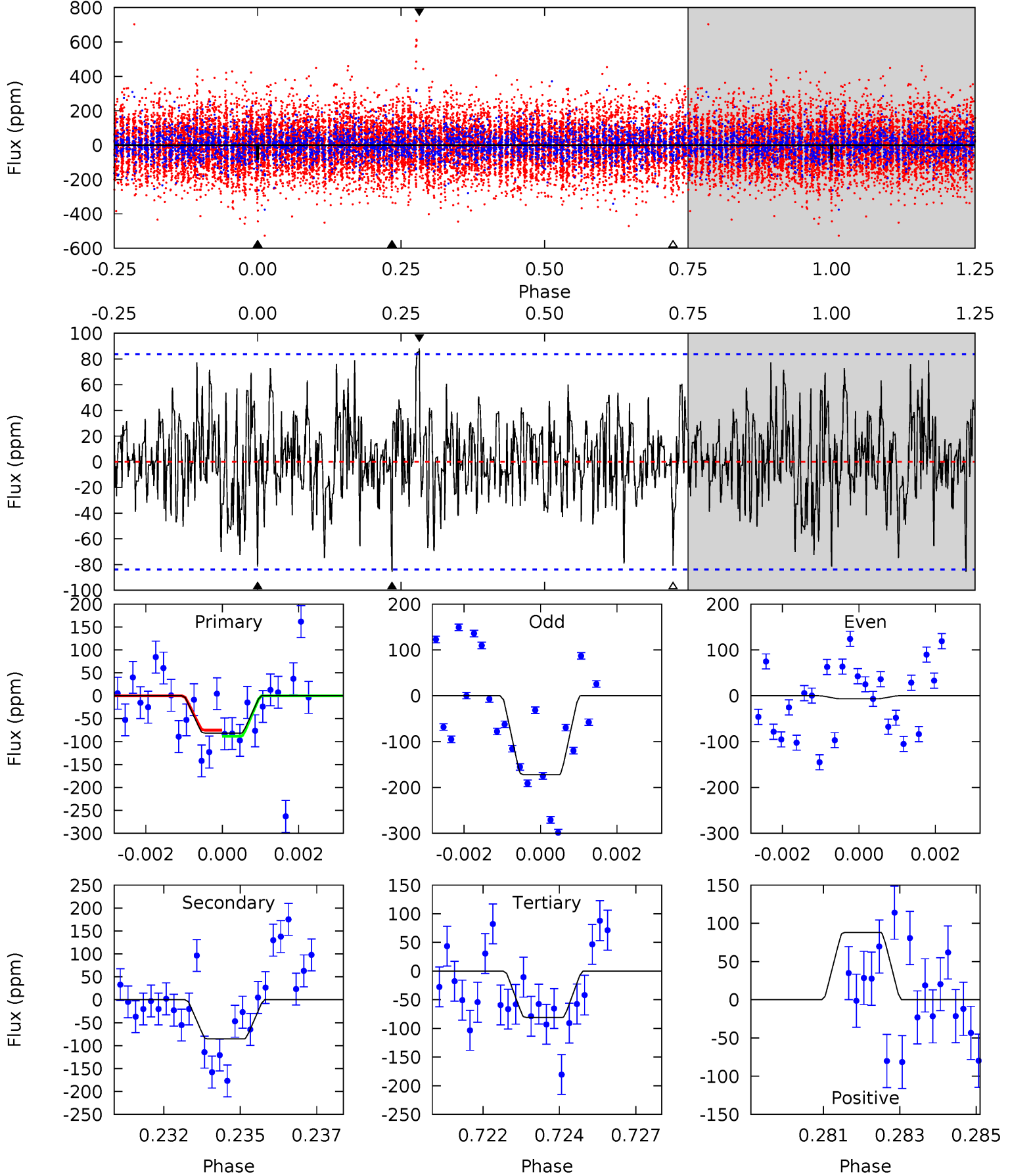
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.23	6.00	4.86	6.41	5.25	2.96	1.91	2.37	0.82	1.14	-0.41	2.59	0.94	0.47	0.25



Alt Model-Shift Uniqueness Test

008027902-06, P = 168.719905 Days, E = 162.044153 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.15	5.41	5.12	5.57	5.30	3.05	1.61	0.04	-0.42	0.29	-0.16	5.12	0.98	0.51	0.41



Stellar Parameters For KIC 008027902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-81 ± 13	$2.57^{+0.99}_{-0.93}$	756^{+49}_{-55}	6175^{+1655}_{-814}	3225^{+4602}_{-1533}
Alt.	-86 ± 16	$2.19^{+0.99}_{-0.89}$	756^{+49}_{-58}	6846^{+2509}_{-1088}	4708^{+8588}_{-2531}

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

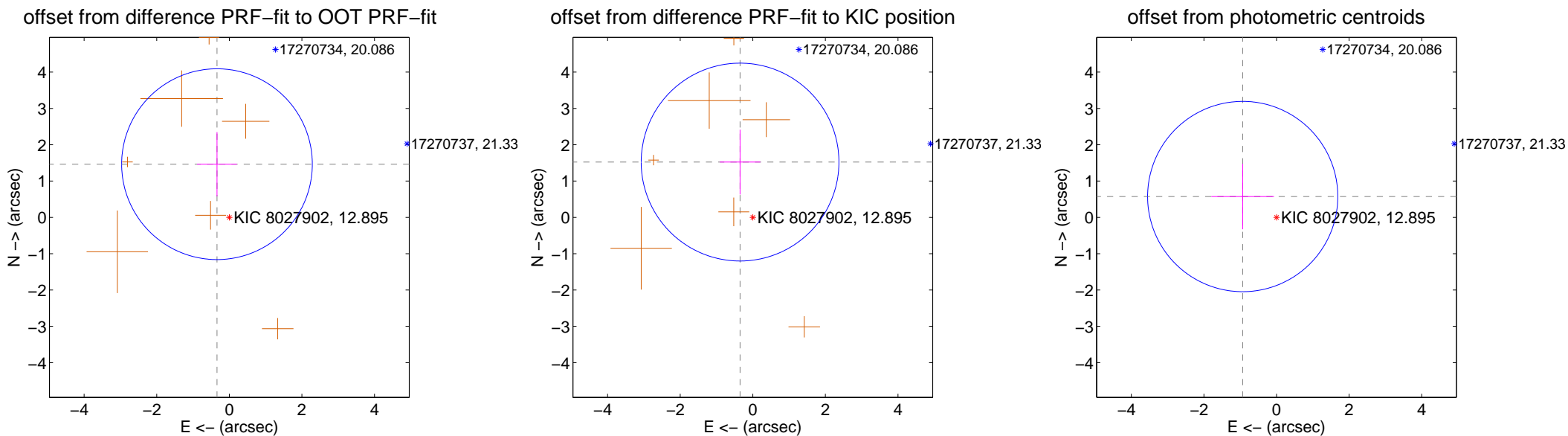
DV Centroid Data

Supplemental centroid analysis for 008027902-06. Kepler magnitude: 12.89. Transit SNR 6.67

There are 0 quarters with good PRF difference image offsets

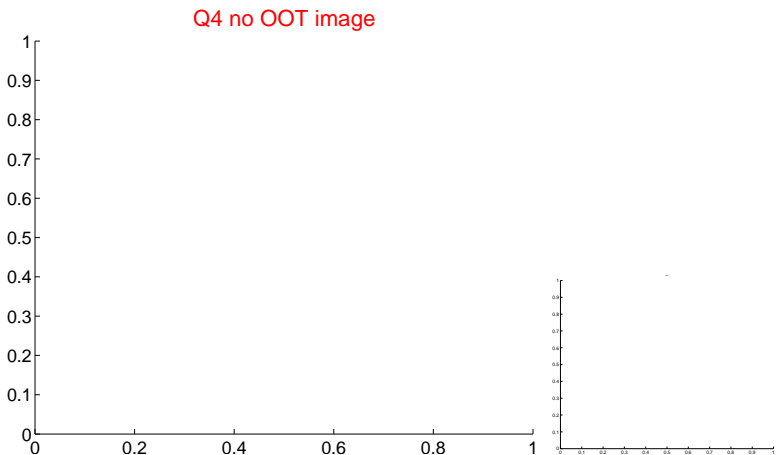
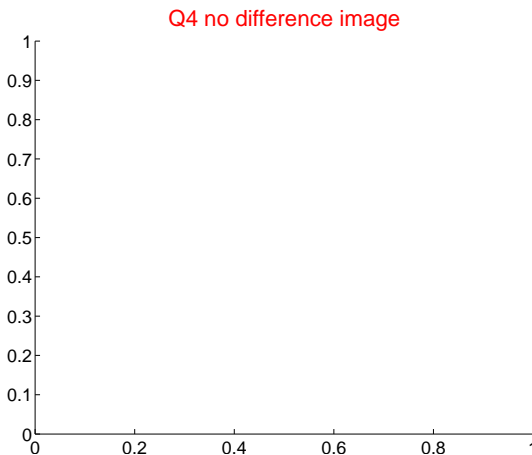
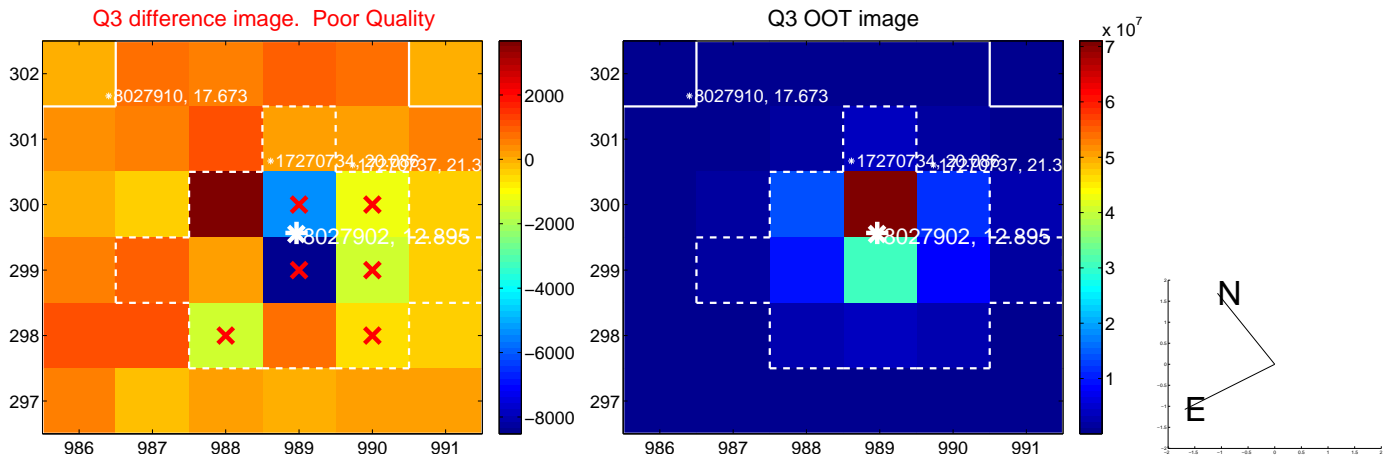
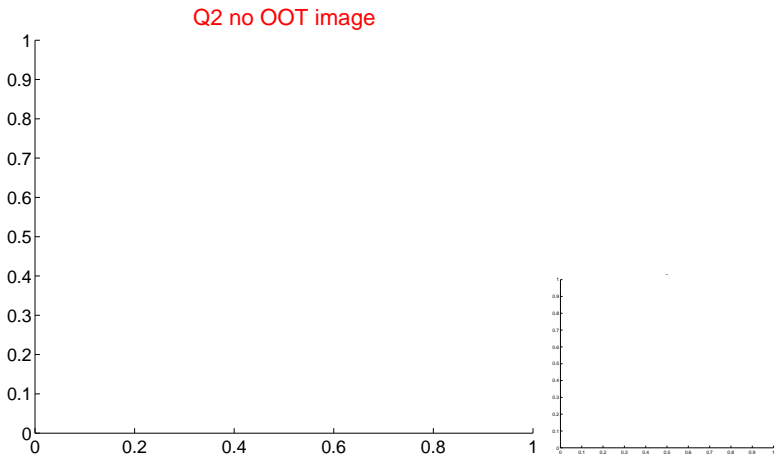
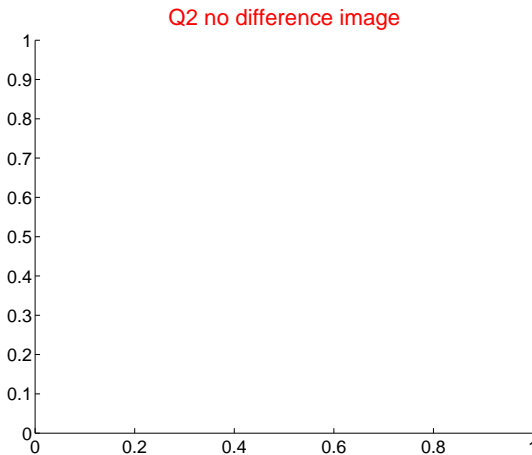
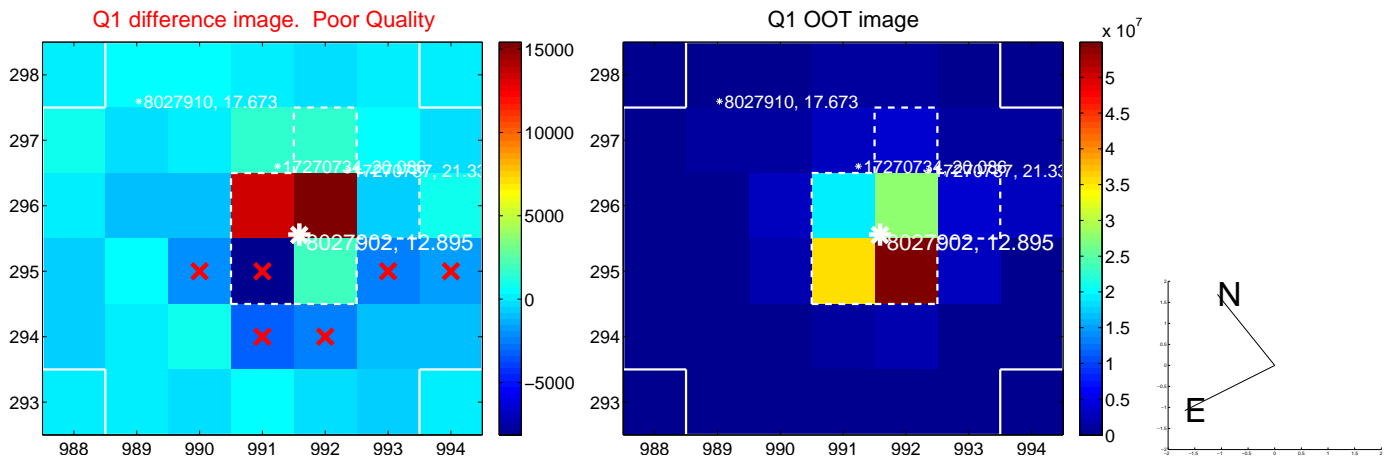
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.504 ± 0.876	1.72	0.340 ± 0.550	1.465 ± 0.885
PRF-fit source offset from KIC position	1.562 ± 0.908	1.72	0.351 ± 0.559	1.522 ± 0.892
photometric centroid source offset	1.09 ± 0.87	1.25	0.93 ± 0.86	0.57 ± 0.90

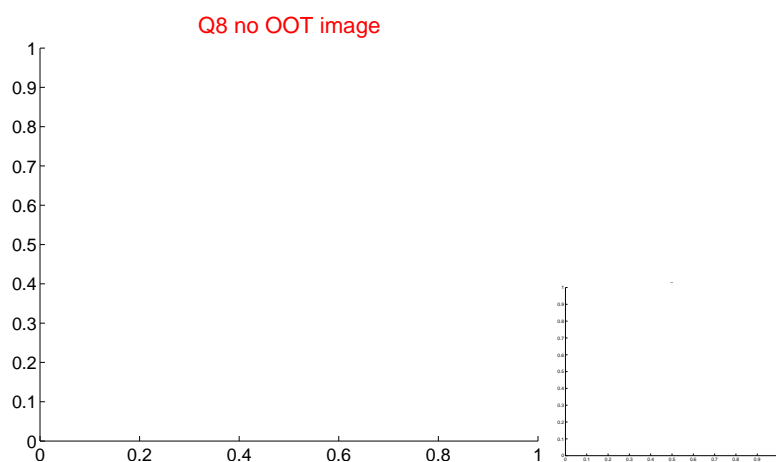
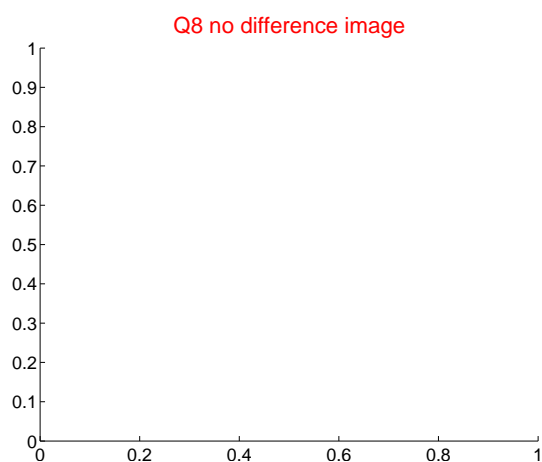
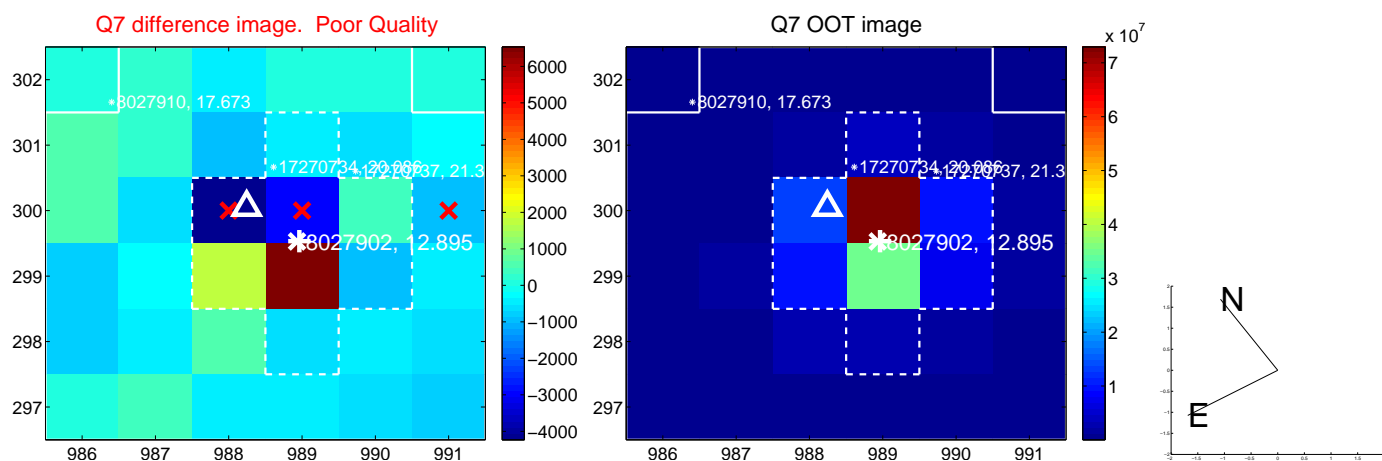
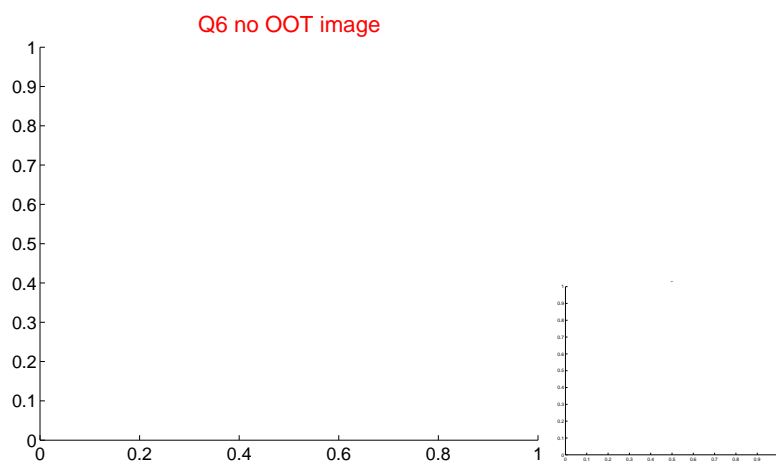
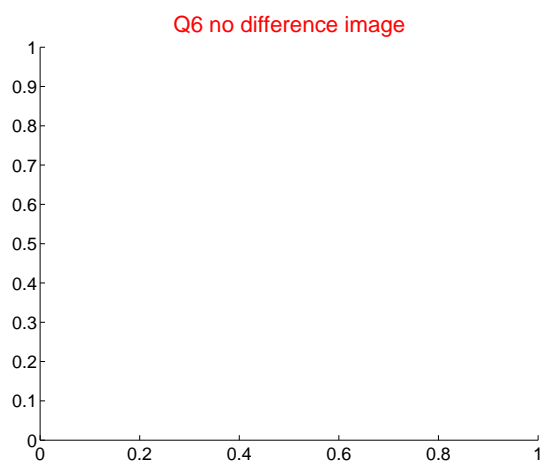
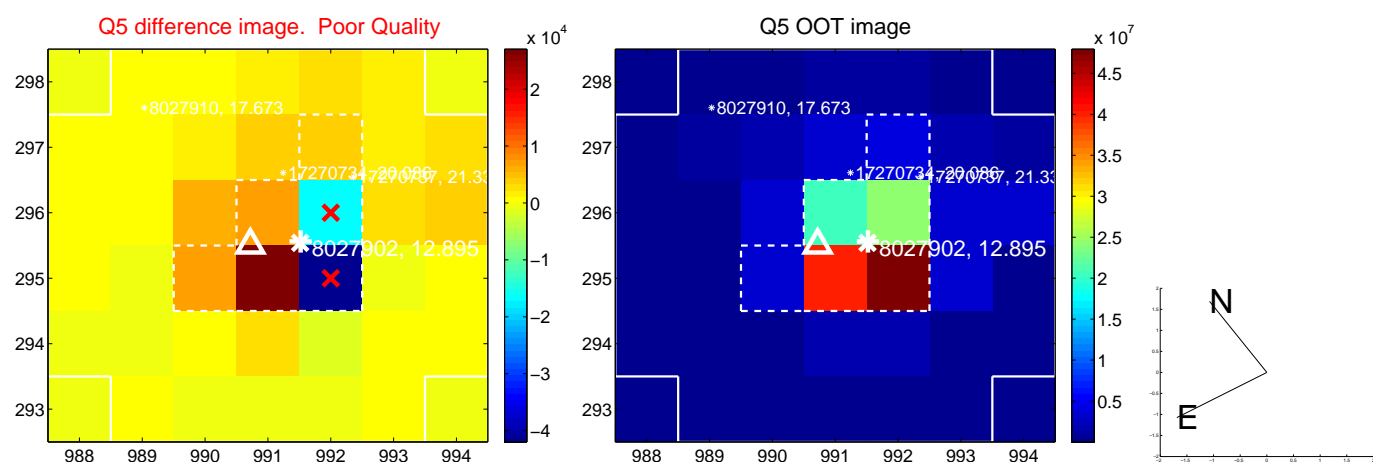


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

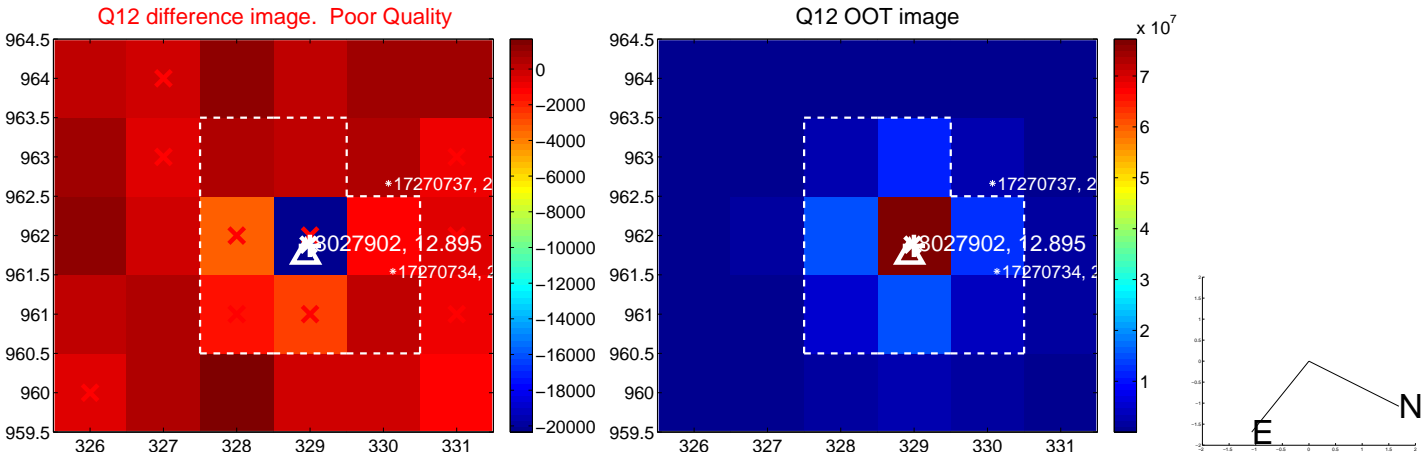
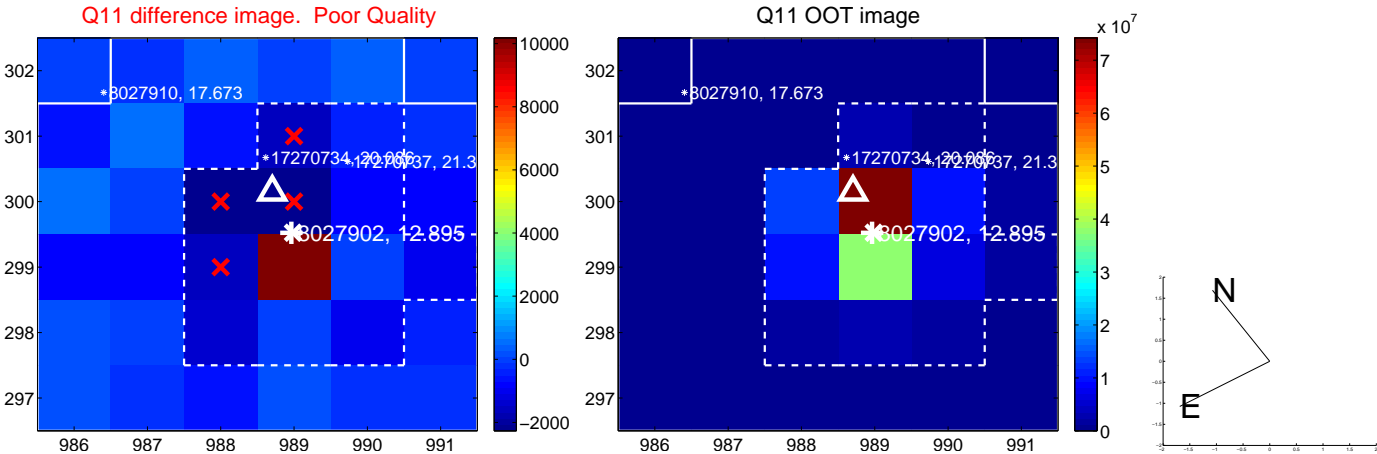
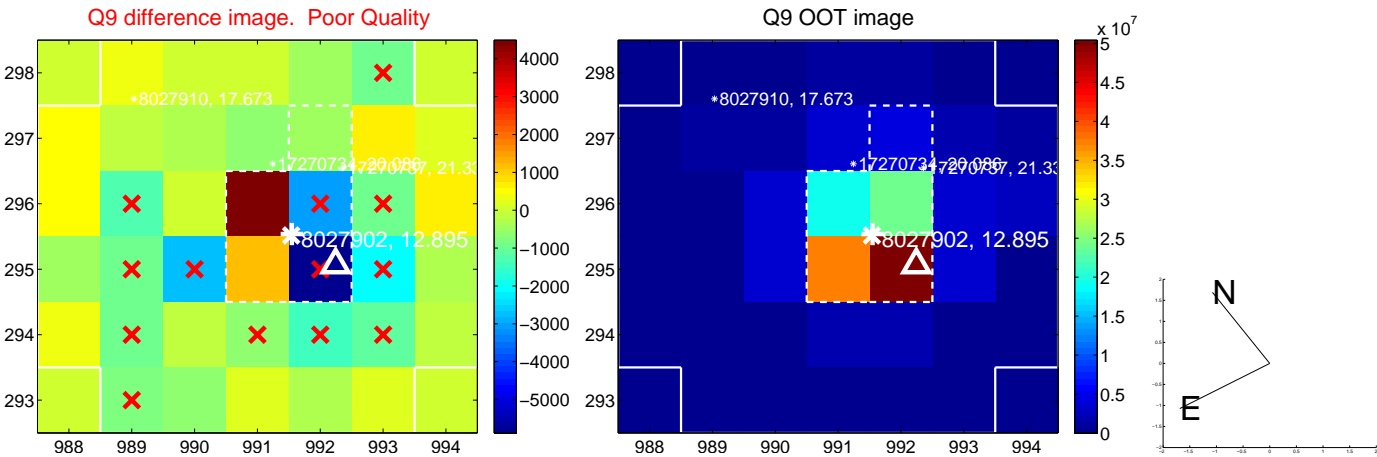
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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.

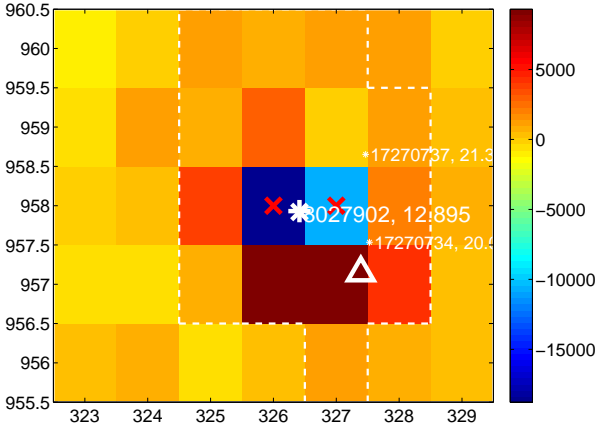
Q13 no difference image



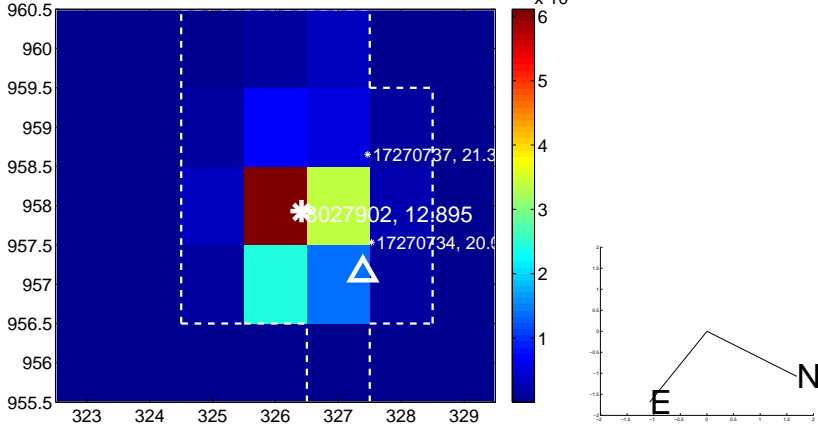
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



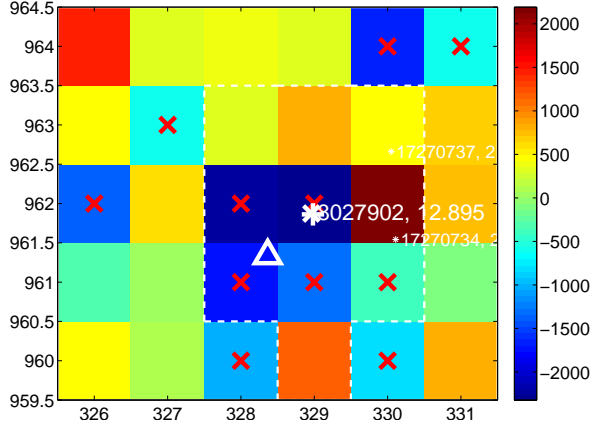
Q15 no difference image



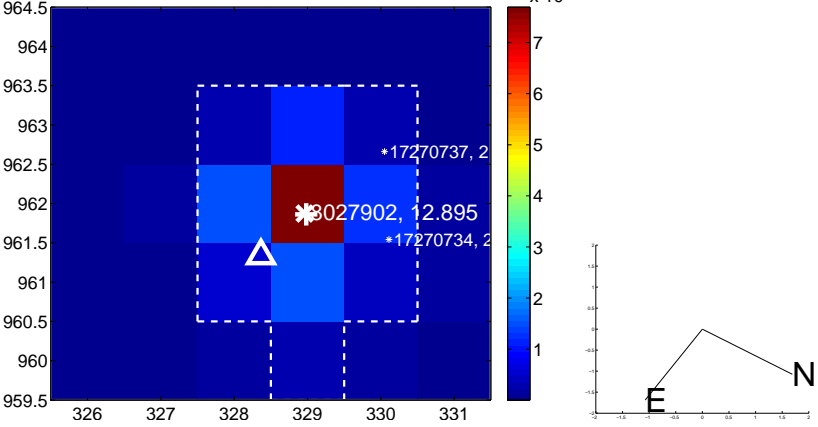
Q15 no OOT image



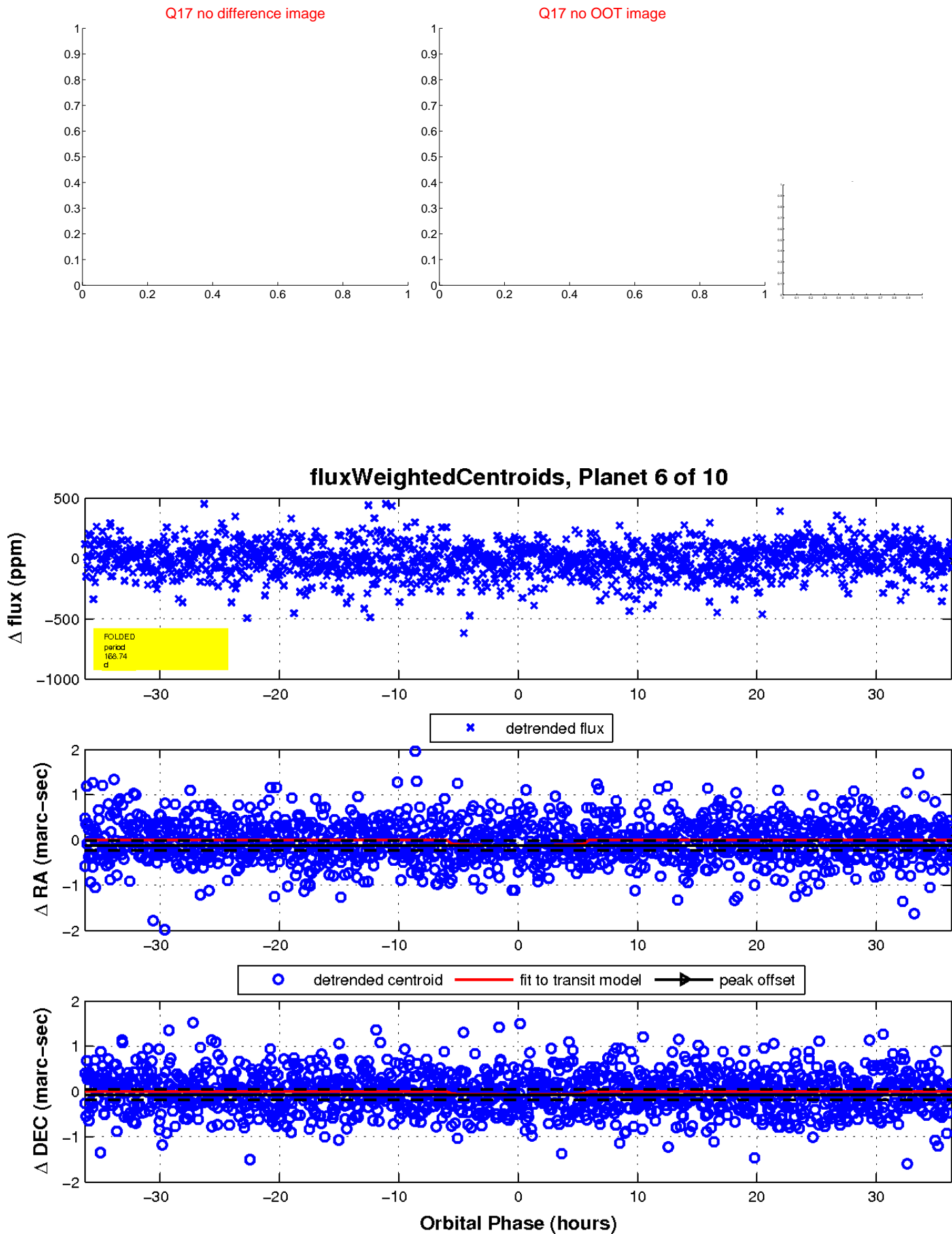
Q16 difference image. Poor Quality



Q16 OOT image

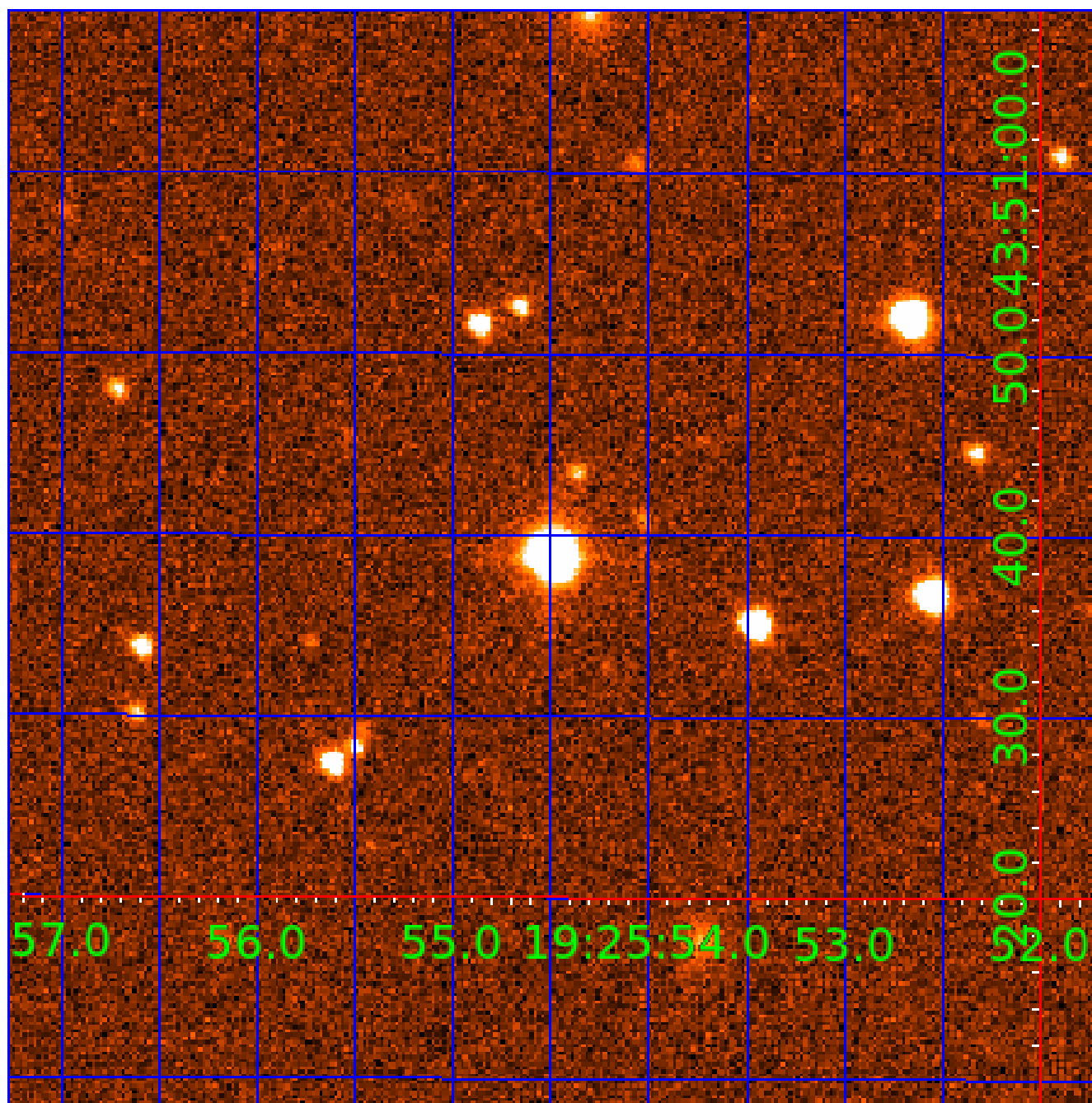


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
008027902-01	OBS	6955.01	1.796314	131.552349	14.1	10.675	8.3	7.7	2.09	7117	0.79	8960.59
008027902-02	OBS	No	136.633031	234.251816	158.9	12.869	13.5	8.5	2.09	7117	2.84	27.80
008027902-03	OBS	No	88.248184	153.502583	122.4	21.072	12.6	8.1	2.09	7117	2.49	49.80
008027902-04	OBS	No	28.689666	153.428684	107.4	8.820	8.6	9.1	2.09	7117	2.44	222.78
008027902-05	OBS	No	54.623685	166.278027	178.4	3.172	8.3	9.4	2.09	7117	3.30	94.41
008027902-06	OBS	No	168.743612	161.903299	119.8	12.118	8.7	6.7	2.09	7117	2.60	20.98
008027902-07	OBS	No	72.541293	166.720724	183.1	5.868	8.5	8.5	2.09	7117	3.31	64.67
008027902-08	OBS	No	96.868394	167.019374	152.8	6.800	7.9	6.5	2.09	7117	2.99	43.98
008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008027902-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008027902-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

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

Ephemeris Match Information For 008027902-07

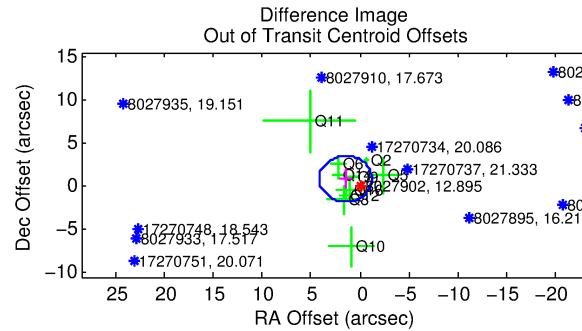
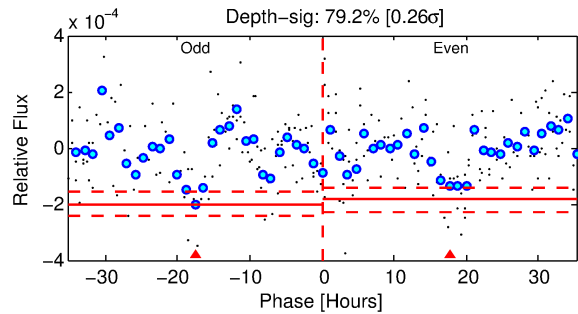
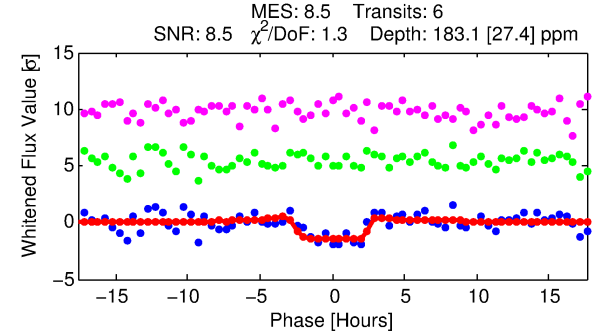
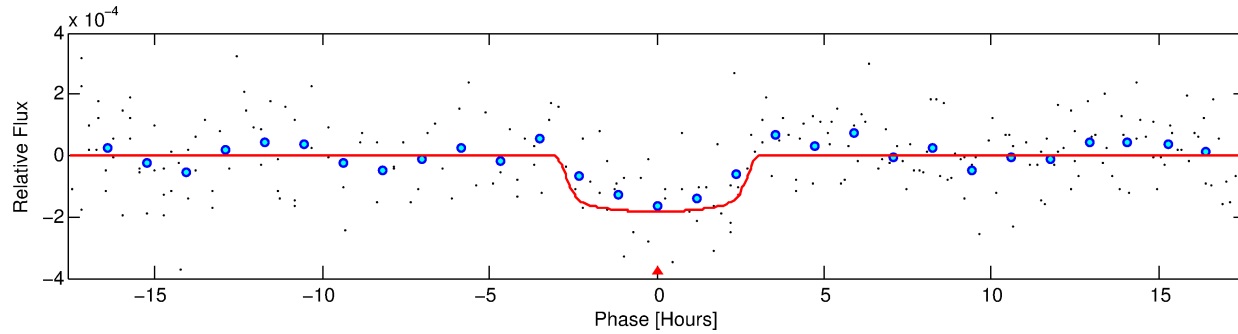
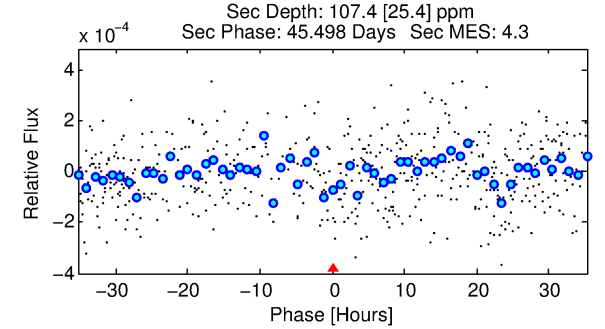
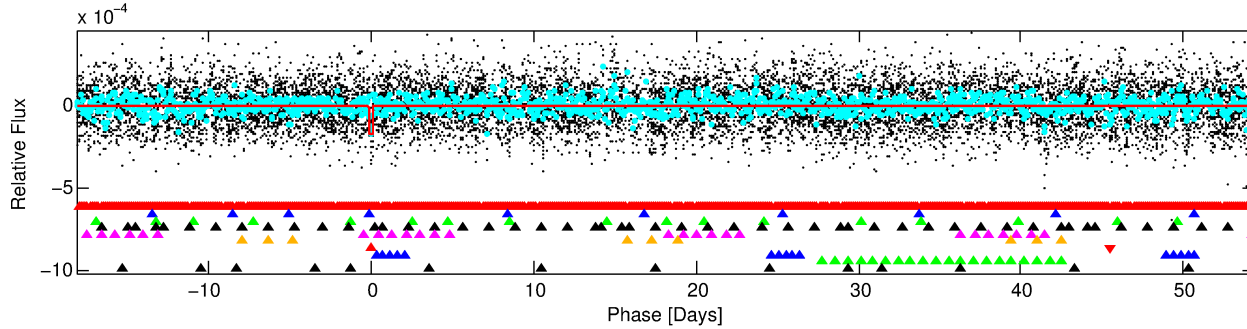
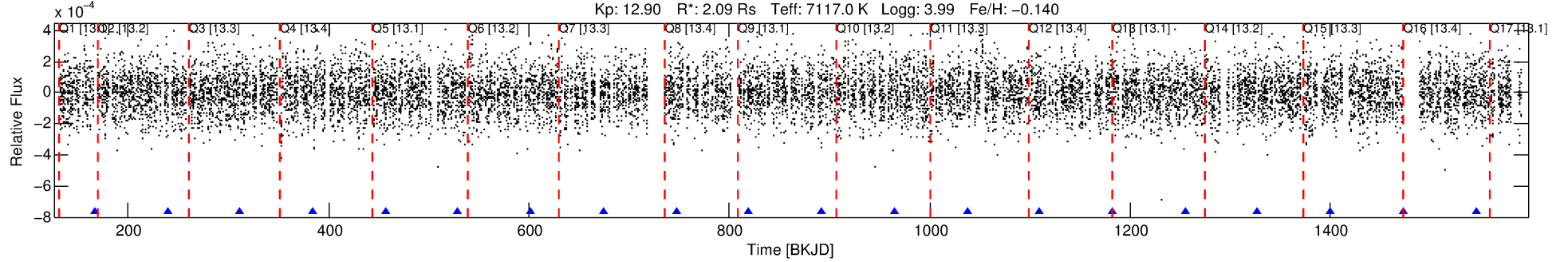
No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 7 of 10 Period: 72.541 d

KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 72.54129 [0.00128] d
Epoch = 166.7207 [0.0131] BKJD
Rp/R* = 0.0145 [0.0044]
b/R* = 41.93 [75.74]
b = 0.91 [0.34]
Seff = 64.67 [24.62]
Teq = 723 [69] K
Rp = 3.32 [1.32] Re
a = 0.3940 [0.0902] AU
Ag = 834.87 [619.92] [1.35σ]
Teffp = 6010 [1011] K [5.22σ]

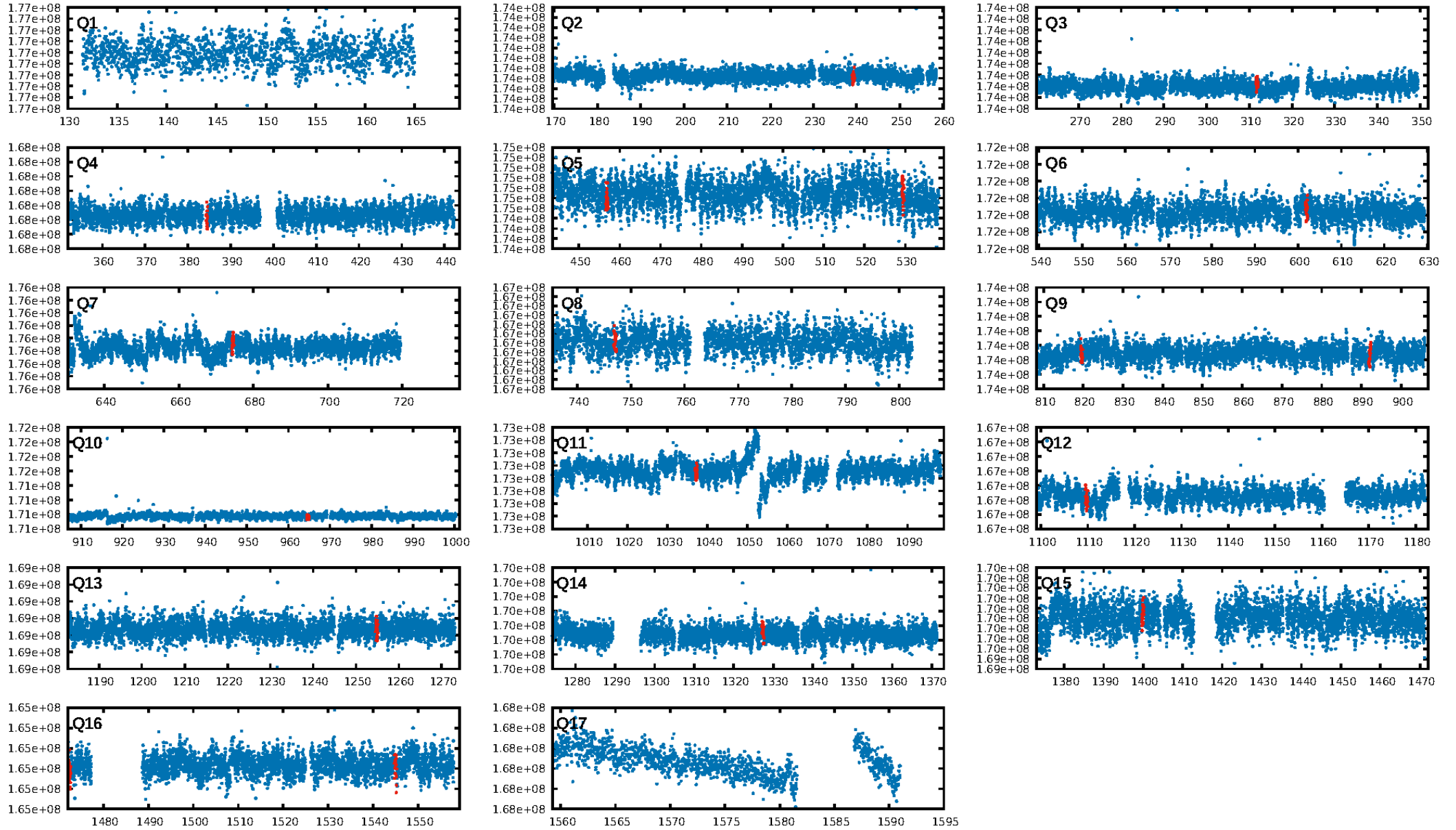
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [64.47σ]
LongPeriod-sig: 99.8% [3.08σ]
ModelChiSquare2-sig: 29.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -1.134
Centroid-sig: 3.7%
Centroid-so: 1.138 arcsec [1.82σ]
OotOffset-rm: 1.713 arcsec [1.93σ]
OotOffset-st: 4/1/3/2 [10]
KicOffset-rm: 1.697 arcsec [1.91σ]
KicOffset-st: 4/1/3/2 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 0.21 [3/14]

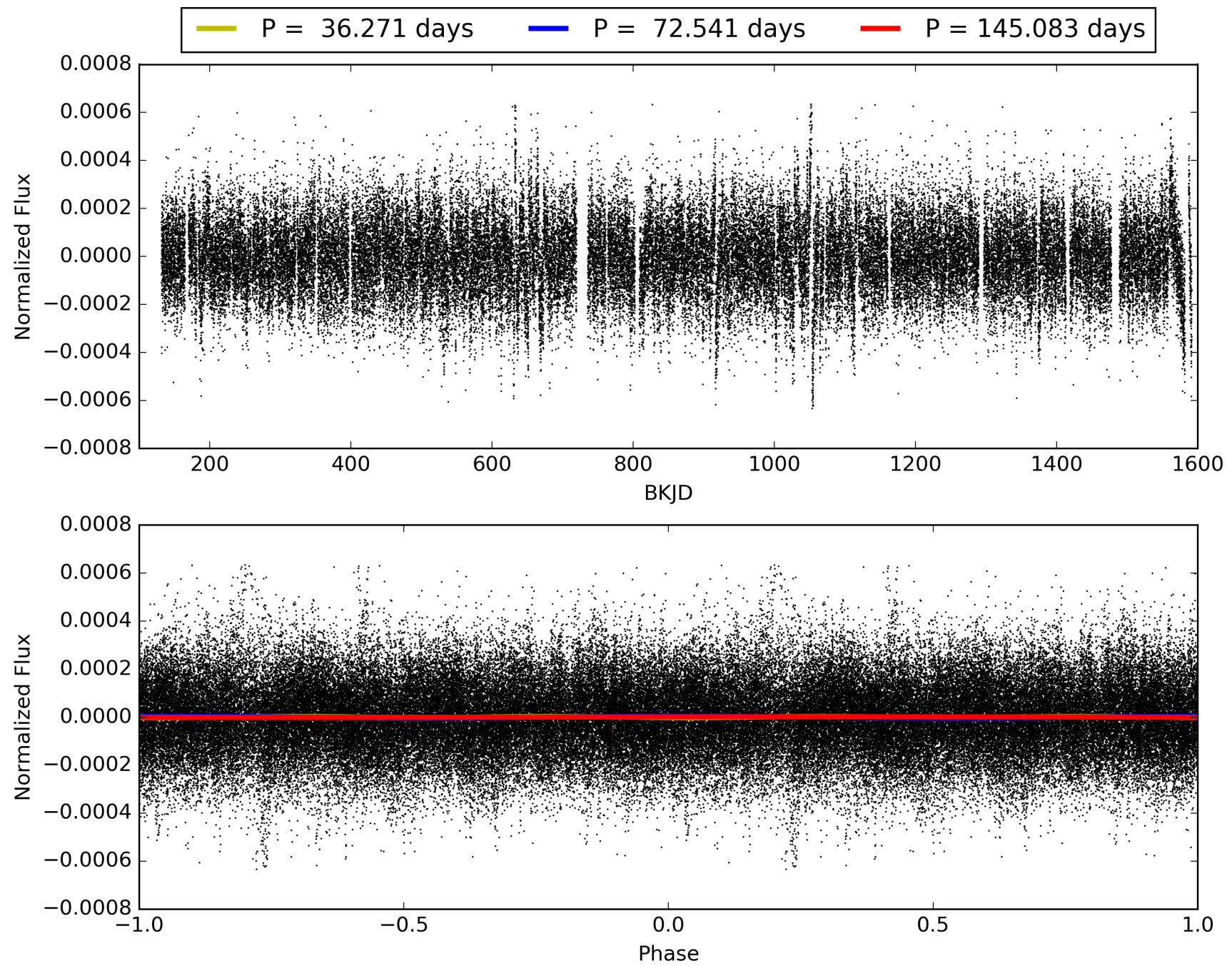
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:21:11 Z

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

TCE 008027902-07, PDC Light Curves

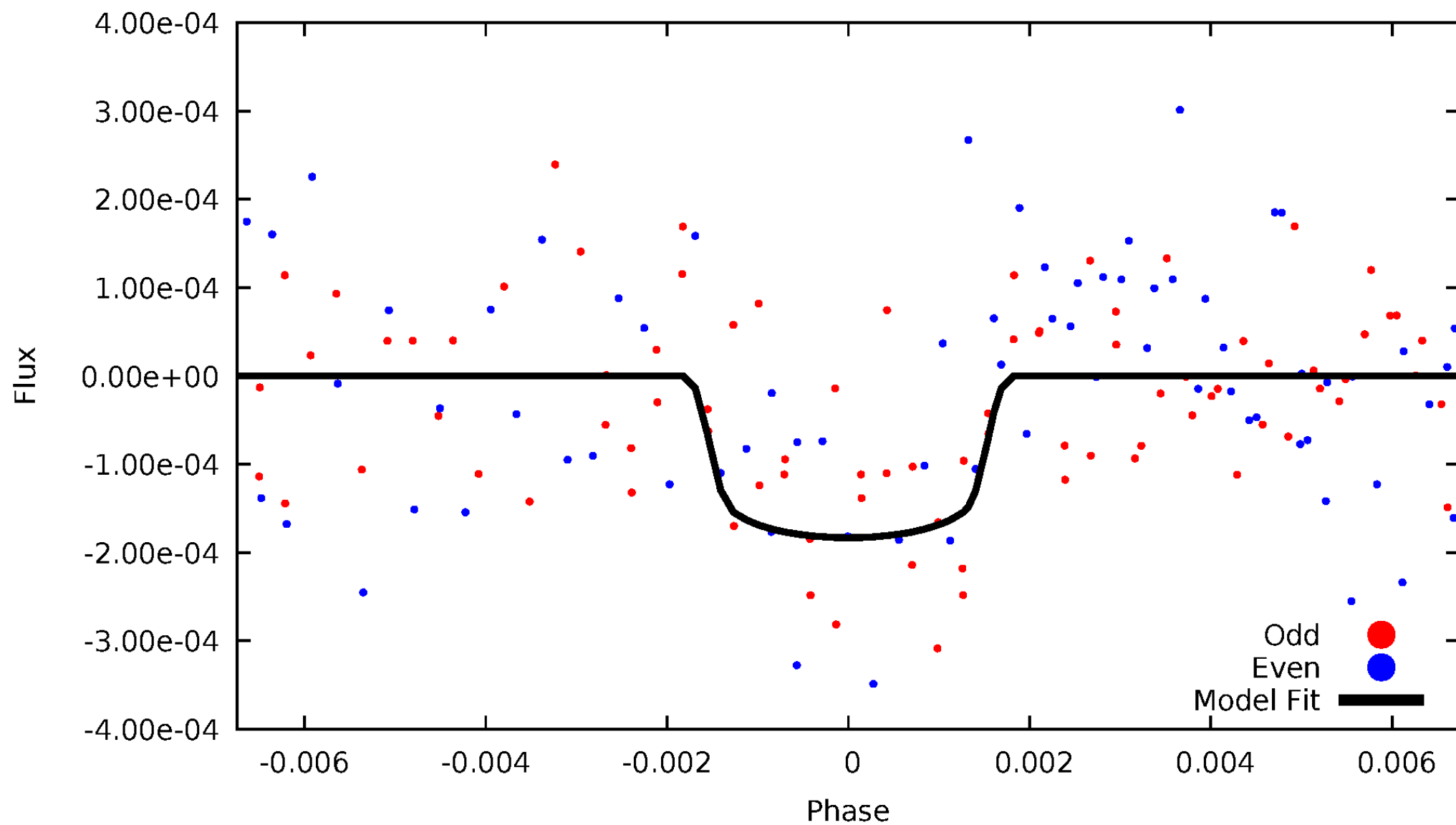


TCE 008027902-07



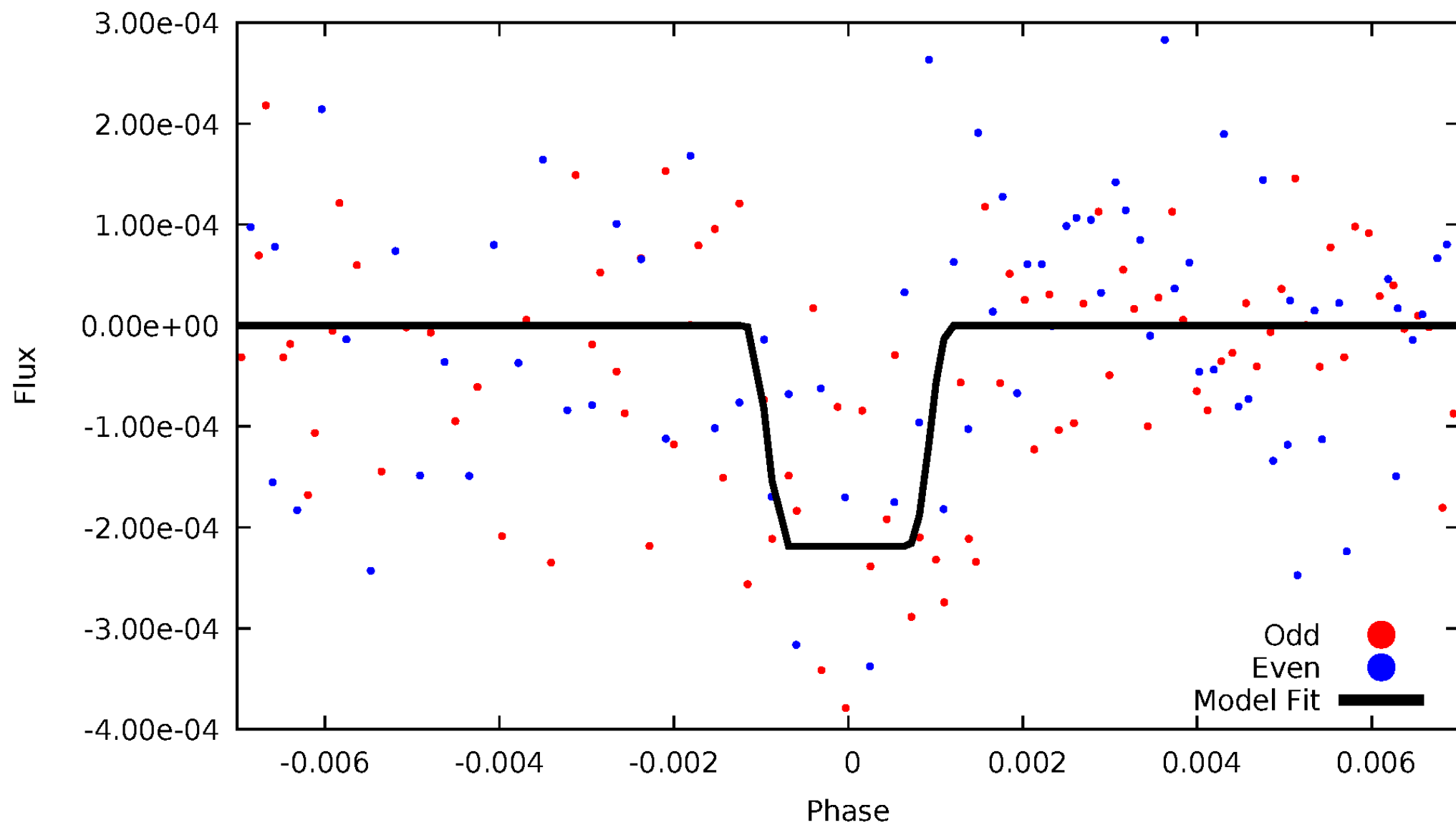
DV Odd/Even

TCE 008027902-07



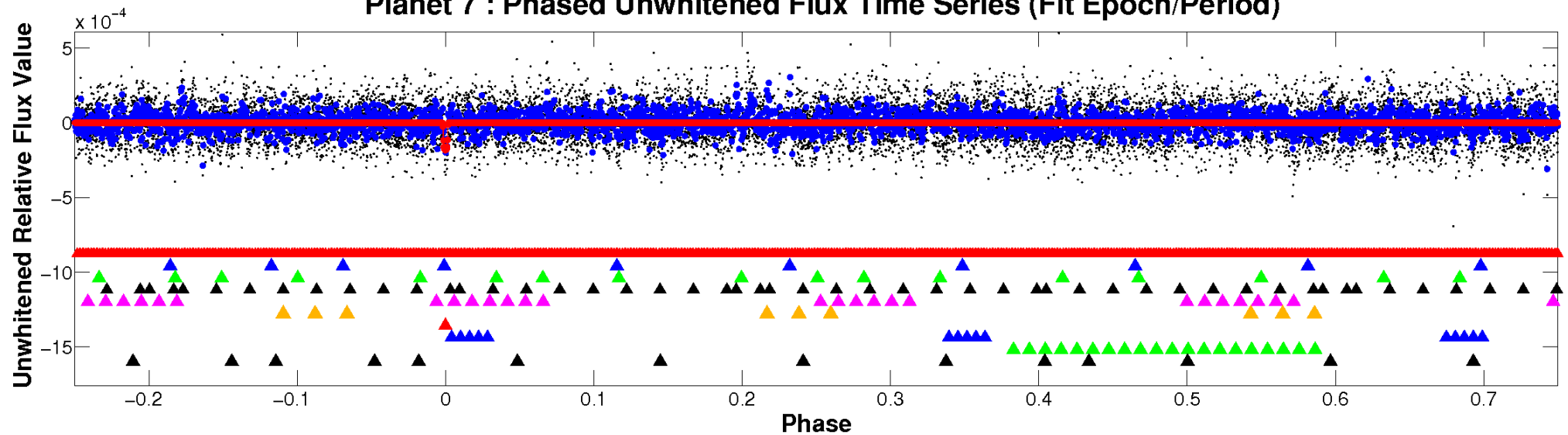
ALT Odd/Even

TCE 008027902-07

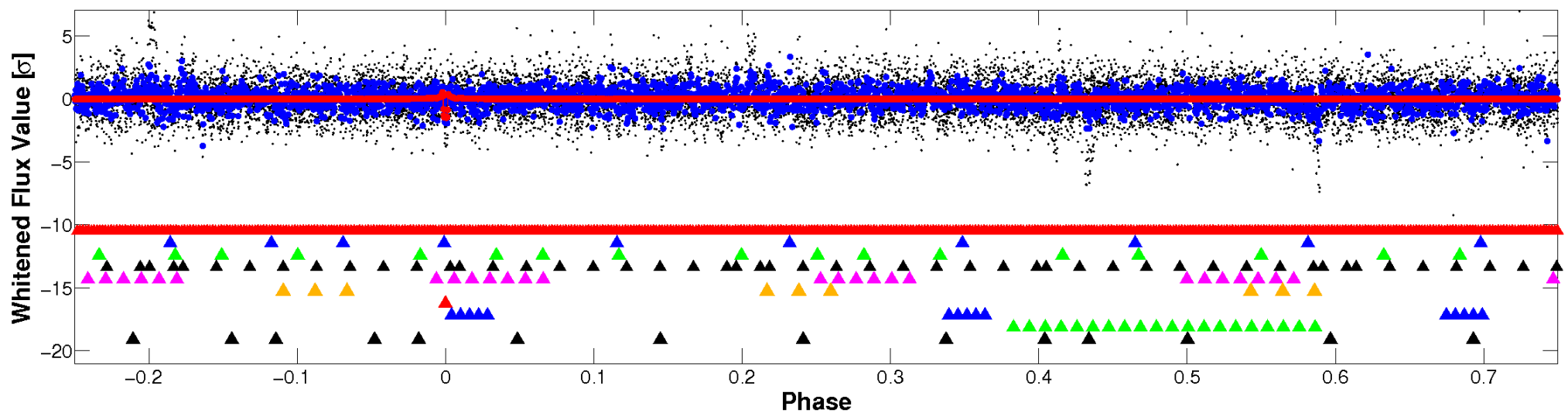


Non-Whitened Vs. Whitened Light Curve

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

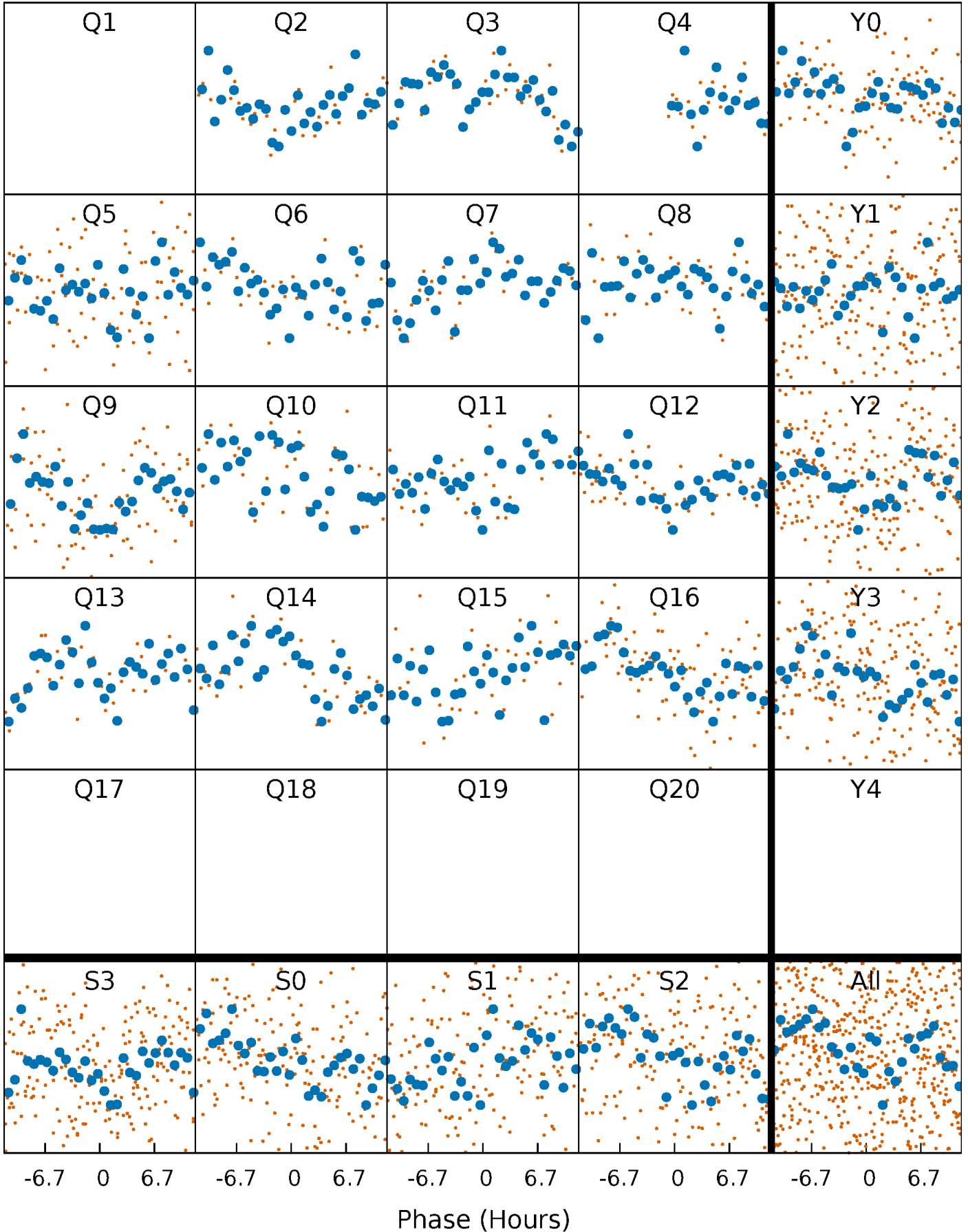


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



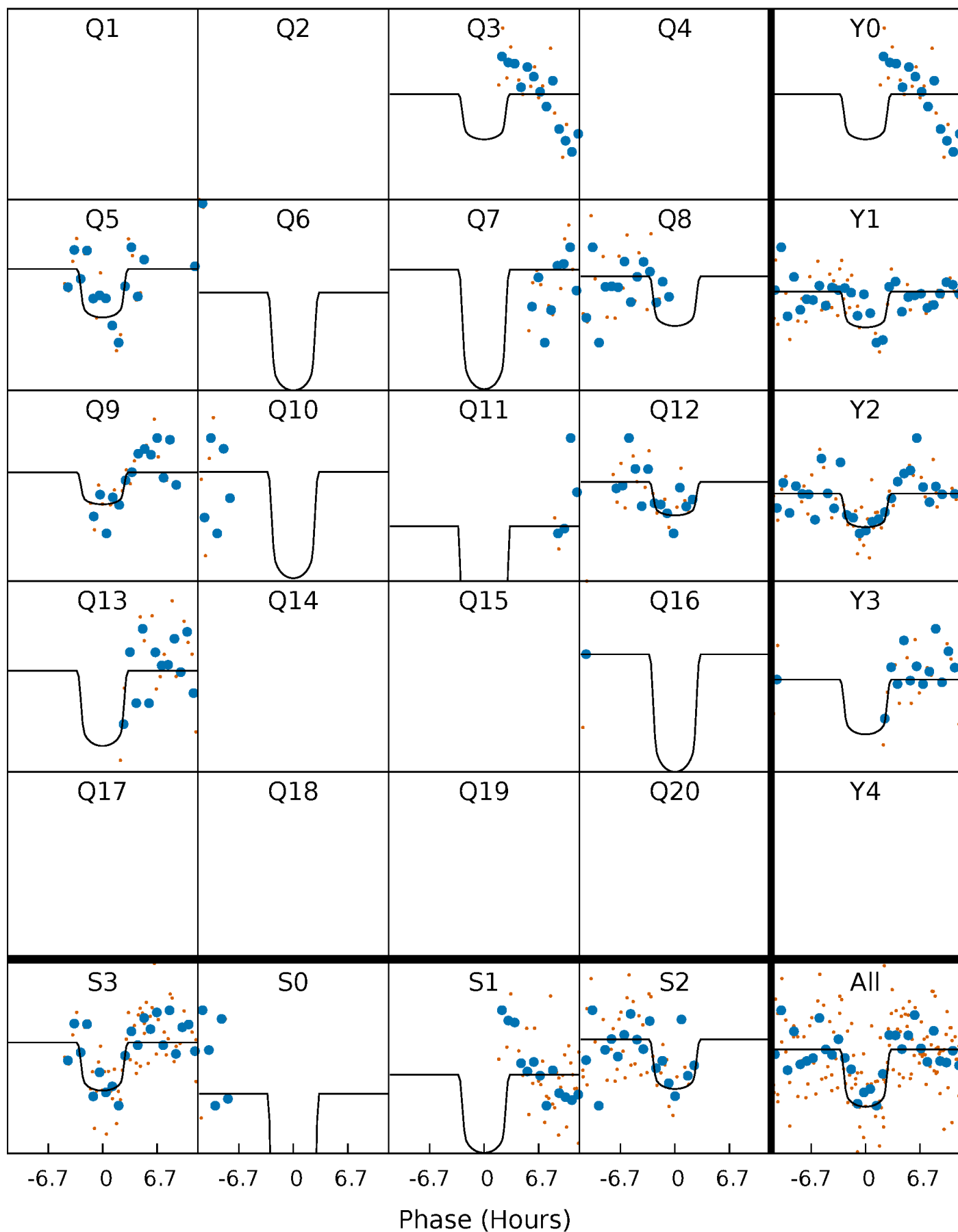
PDC Quarter-Phased Transit Curves

TCE 008027902-07 $P = 72.541293$ Days $T_0 = 166.720724$ (BKJD)



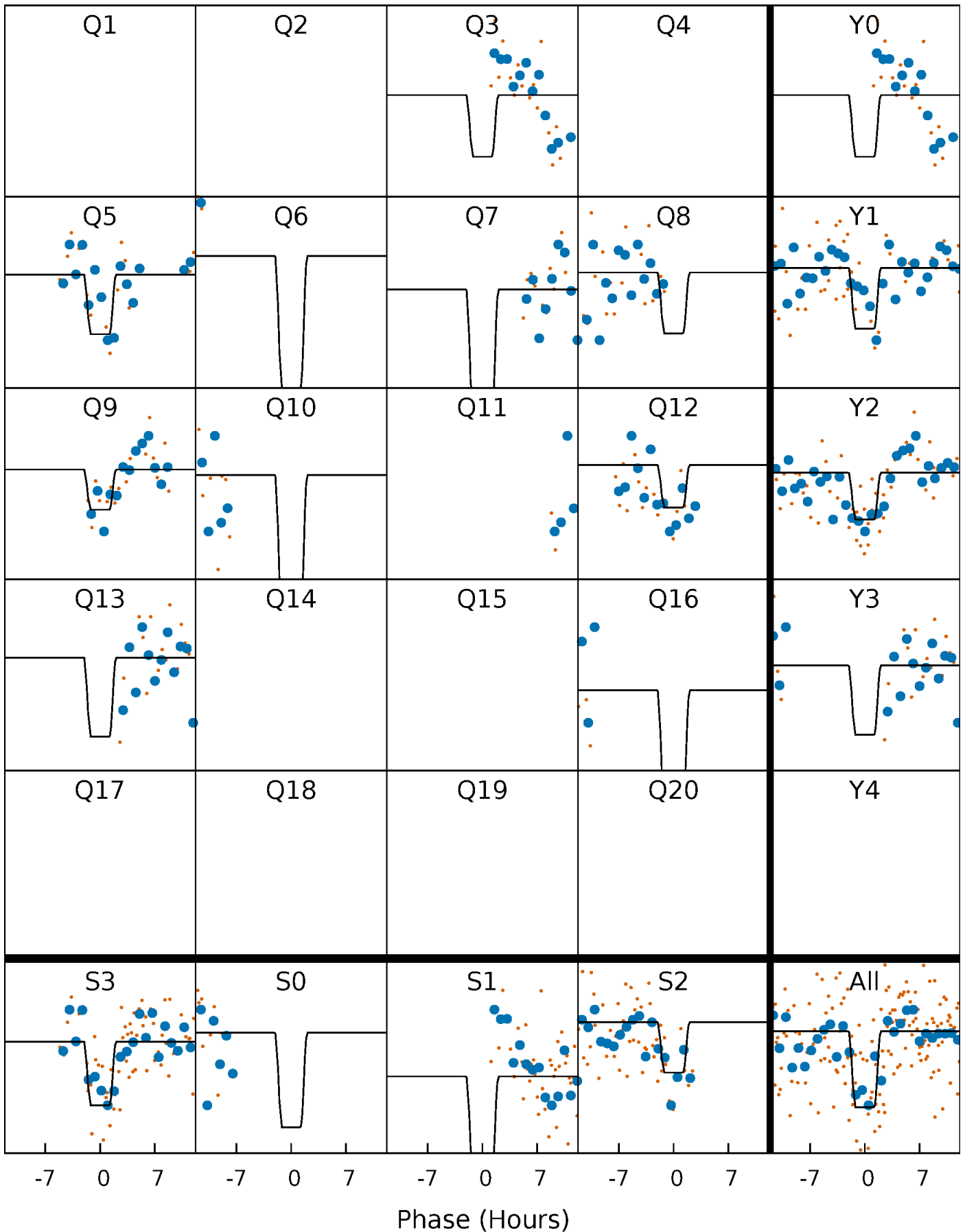
DV Quarter-Phased Transit Curves

TCE 008027902-07 $P = 72.541293$ Days $T_0 = 166.720724$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

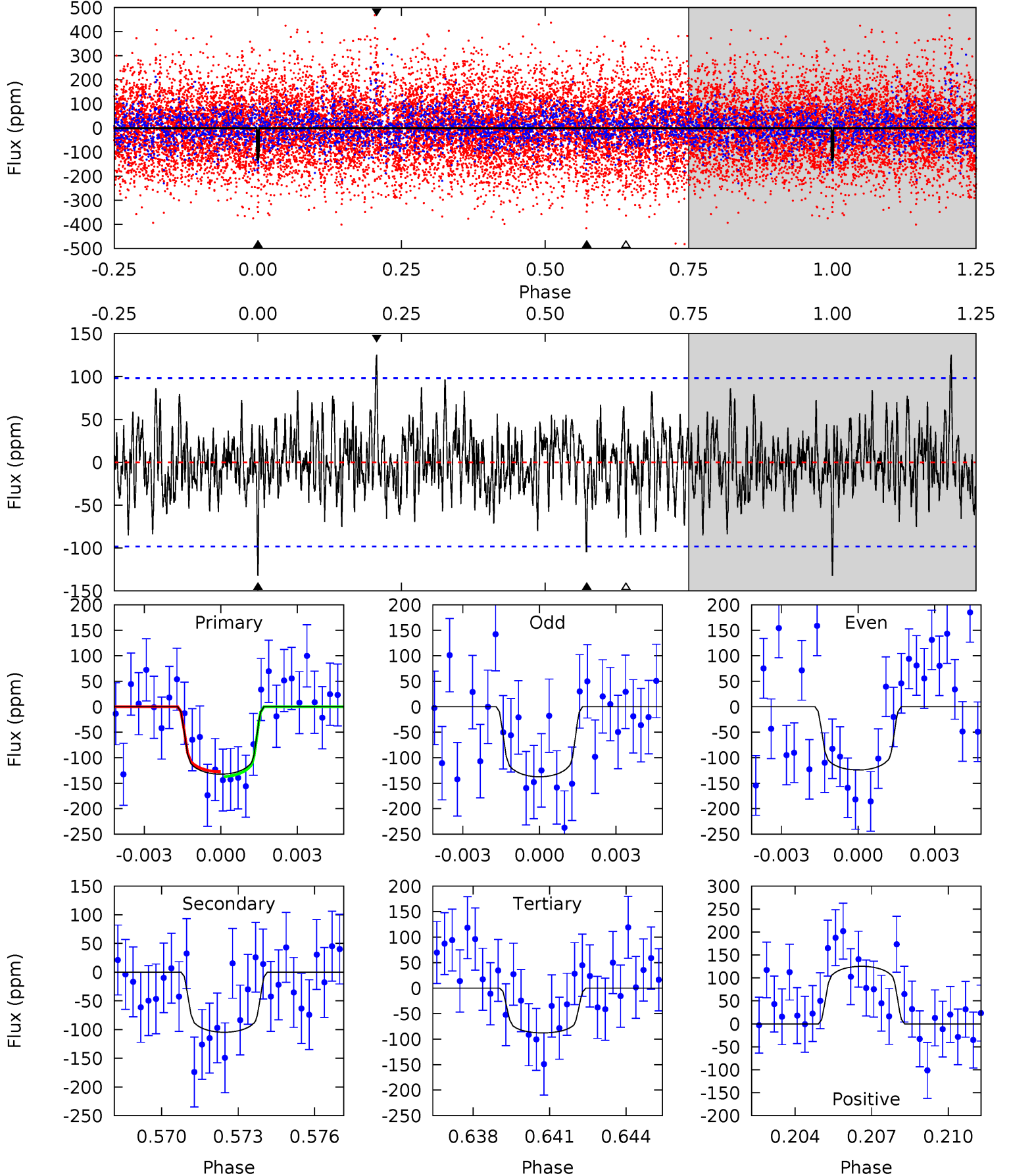
TCE 008027902-07 $P = 72.537951$ Days $T_0 = 166.756356$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-07, P = 72.541293 Days, E = 94.179431 Days

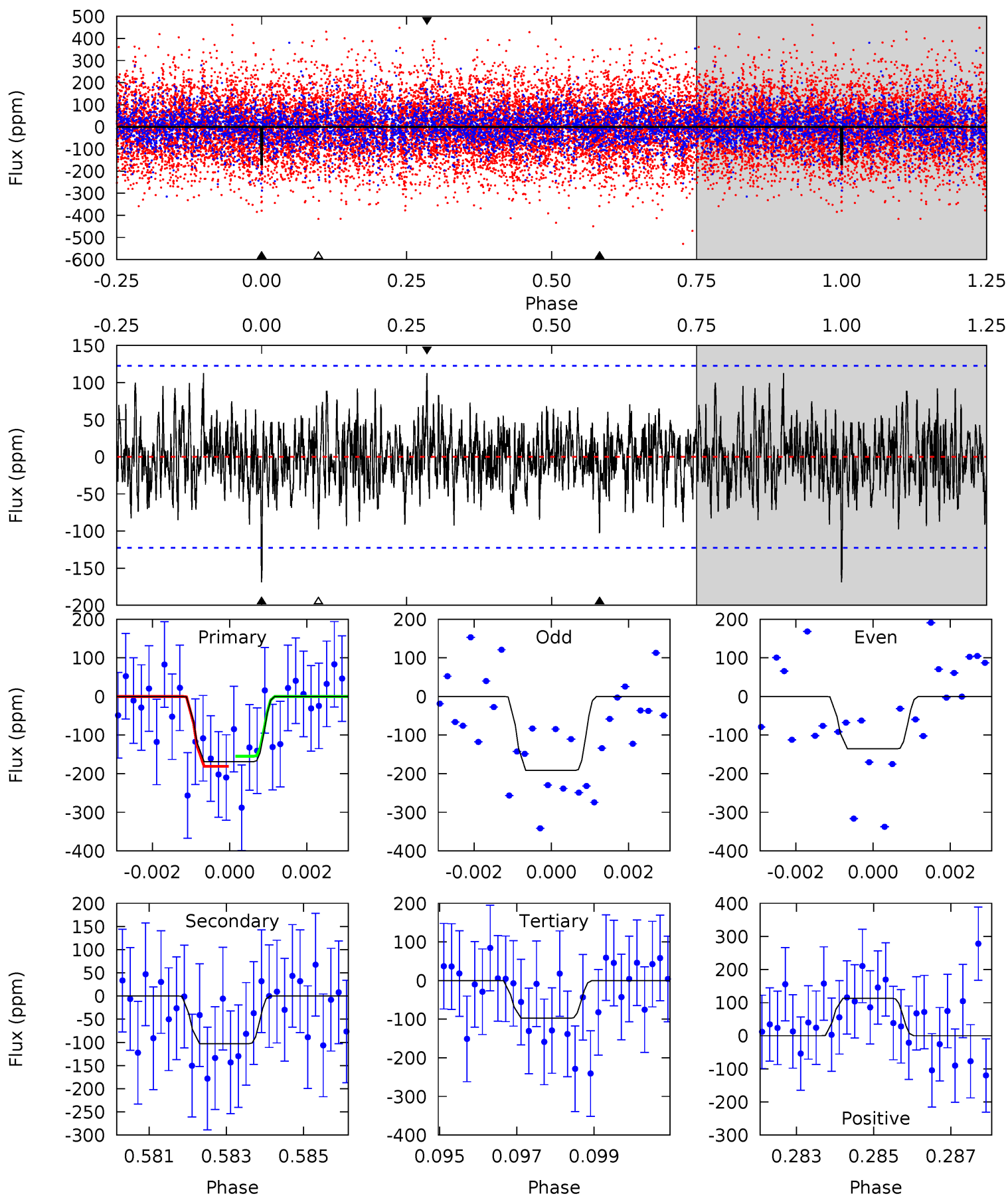
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.05	5.58	4.68	6.68	5.24	2.94	1.63	2.37	0.37	0.90	-1.10	0.35	0.75	0.49	0.25



Alt Model-Shift Uniqueness Test

008027902-07, P = 72.537951 Days, E = 94.218405 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.32	4.46	4.23	4.89	5.32	3.08	1.39	3.09	2.43	0.22	-0.44	1.20	0.74	0.40	0.56



Stellar Parameters For KIC 008027902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-105 ± 19	$3.20^{+1.14}_{-1.18}$	1002^{+68}_{-68}	5919^{+1506}_{-745}	863^{+1271}_{-392}
Alt.	-103 ± 23	$3.29^{+1.10}_{-1.08}$	1002^{+63}_{-73}	5808^{+1250}_{-718}	778^{+1042}_{-363}

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 $A_{obs} \gg 1.0$

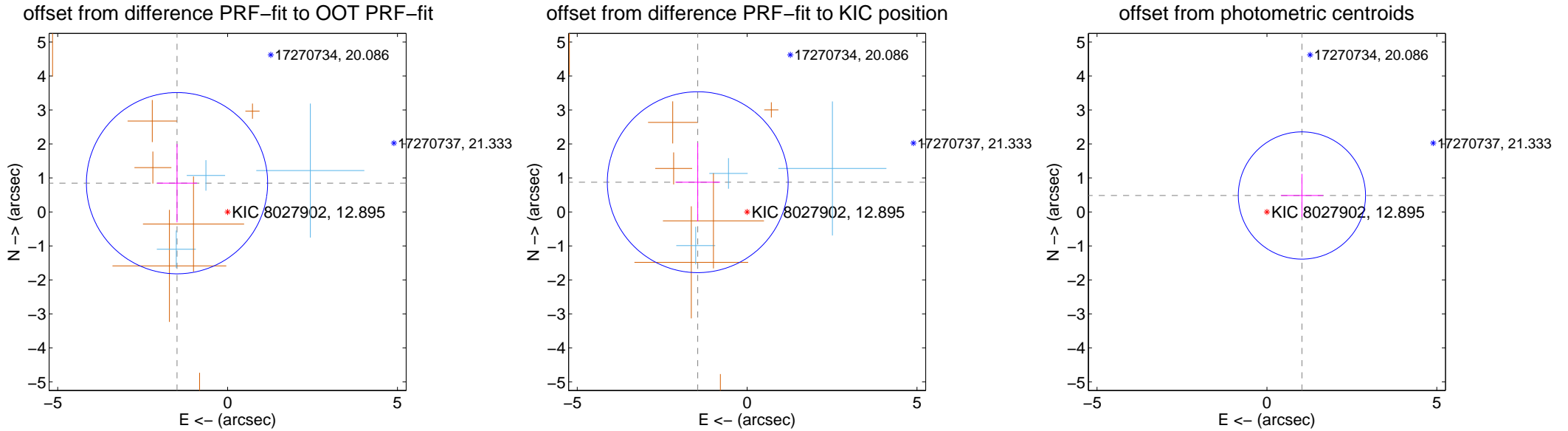
DV Centroid Data

Supplemental centroid analysis for 008027902-07. Kepler magnitude: 12.89. Transit SNR 8.50

There are 3 quarters with good PRF difference image offsets

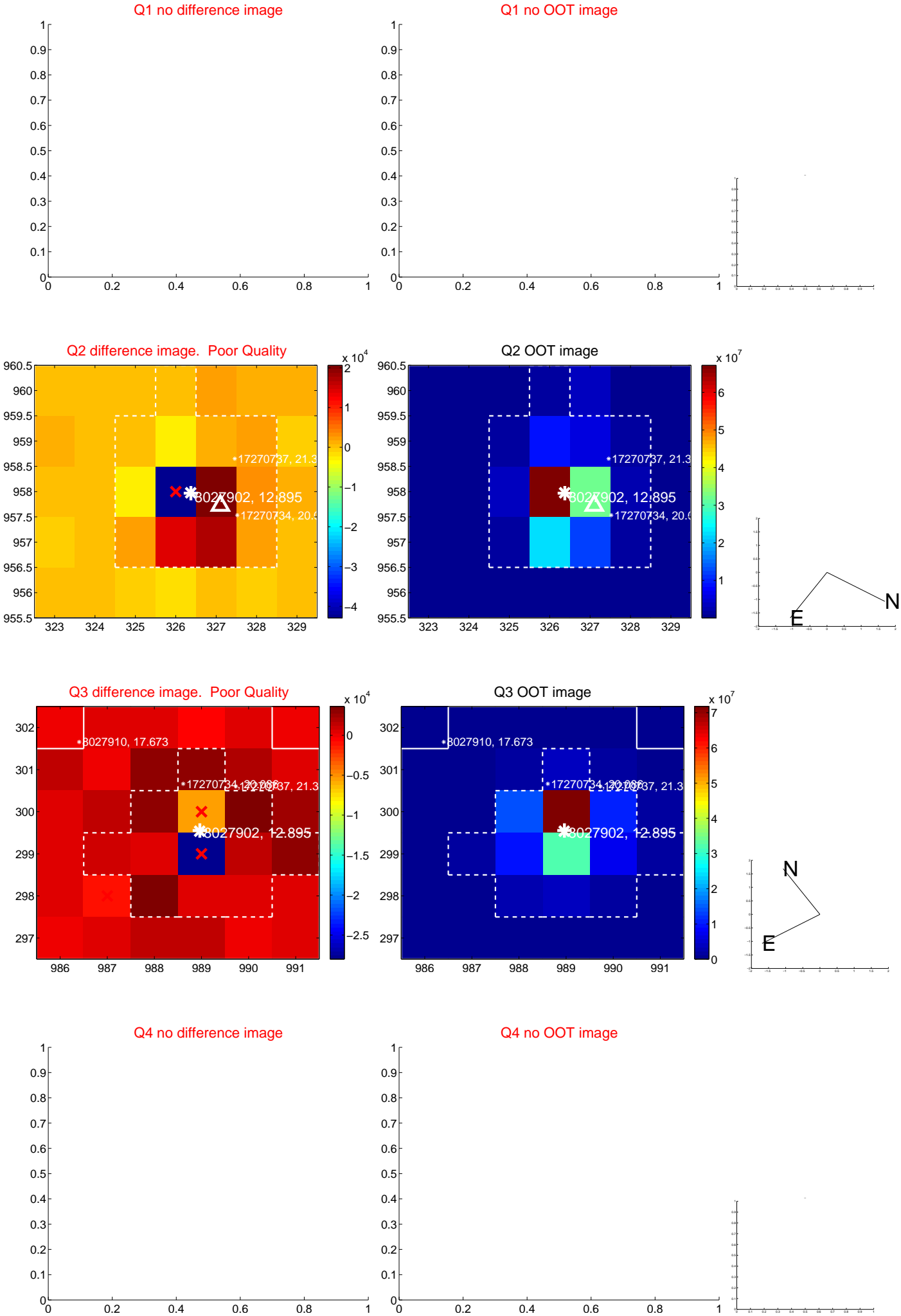
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.713 ± 0.889	1.93	1.489 ± 0.590	0.846 ± 1.154
PRF-fit source offset from KIC position	1.697 ± 0.887	1.91	1.454 ± 0.657	0.875 ± 1.155
photometric centroid source offset	1.14 ± 0.62	1.82	-1.03 ± 0.62	0.48 ± 0.64

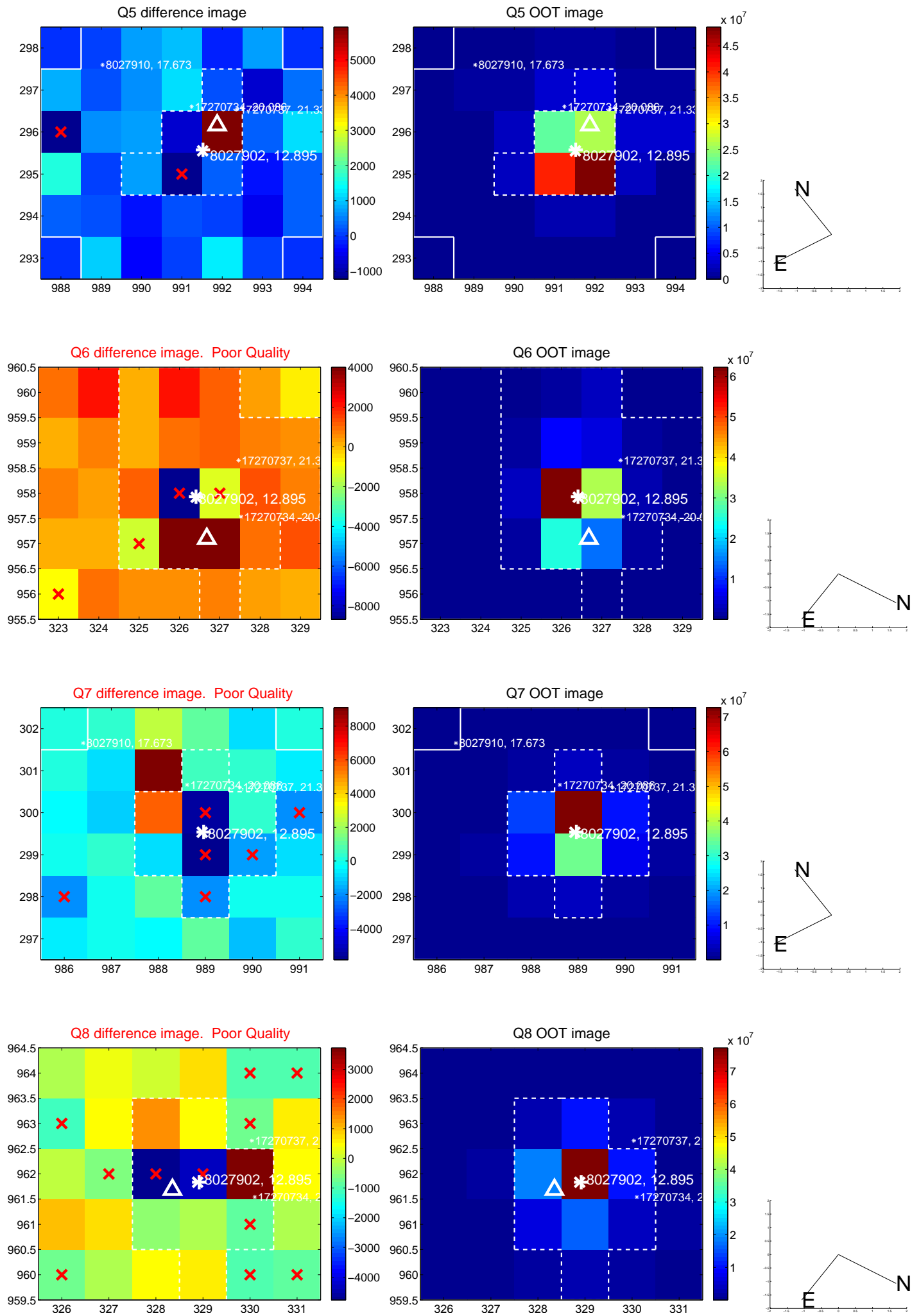


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

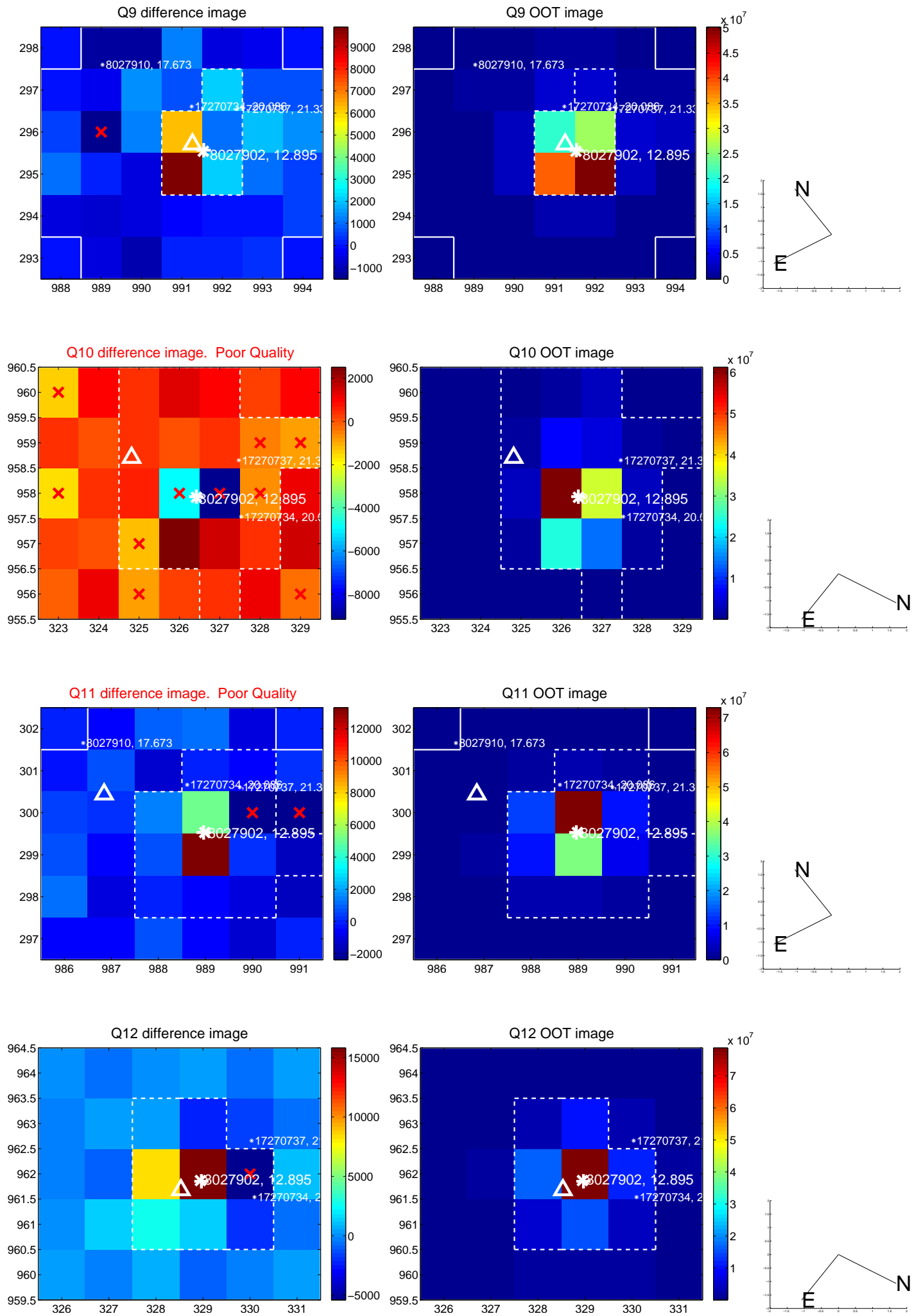
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



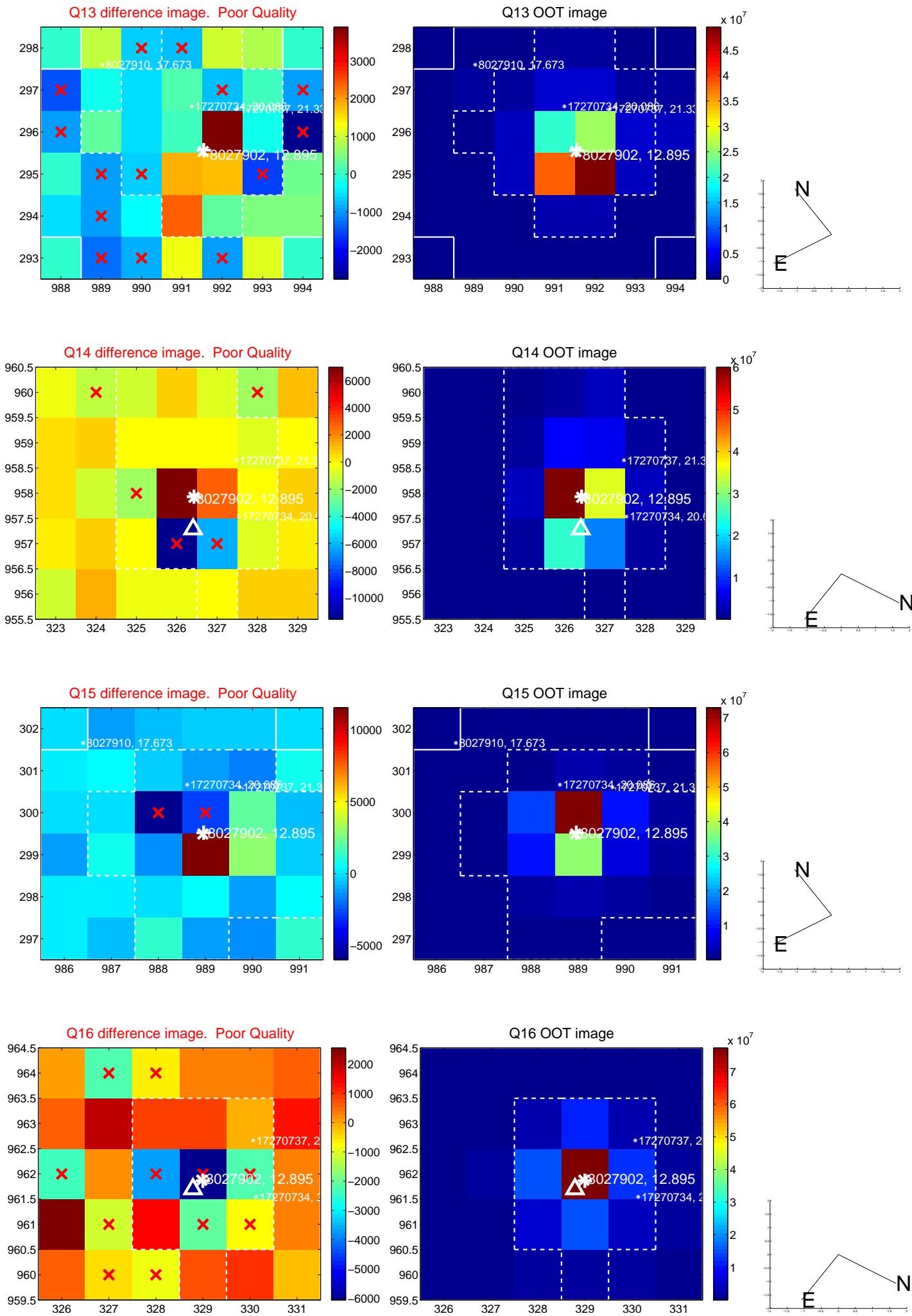
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



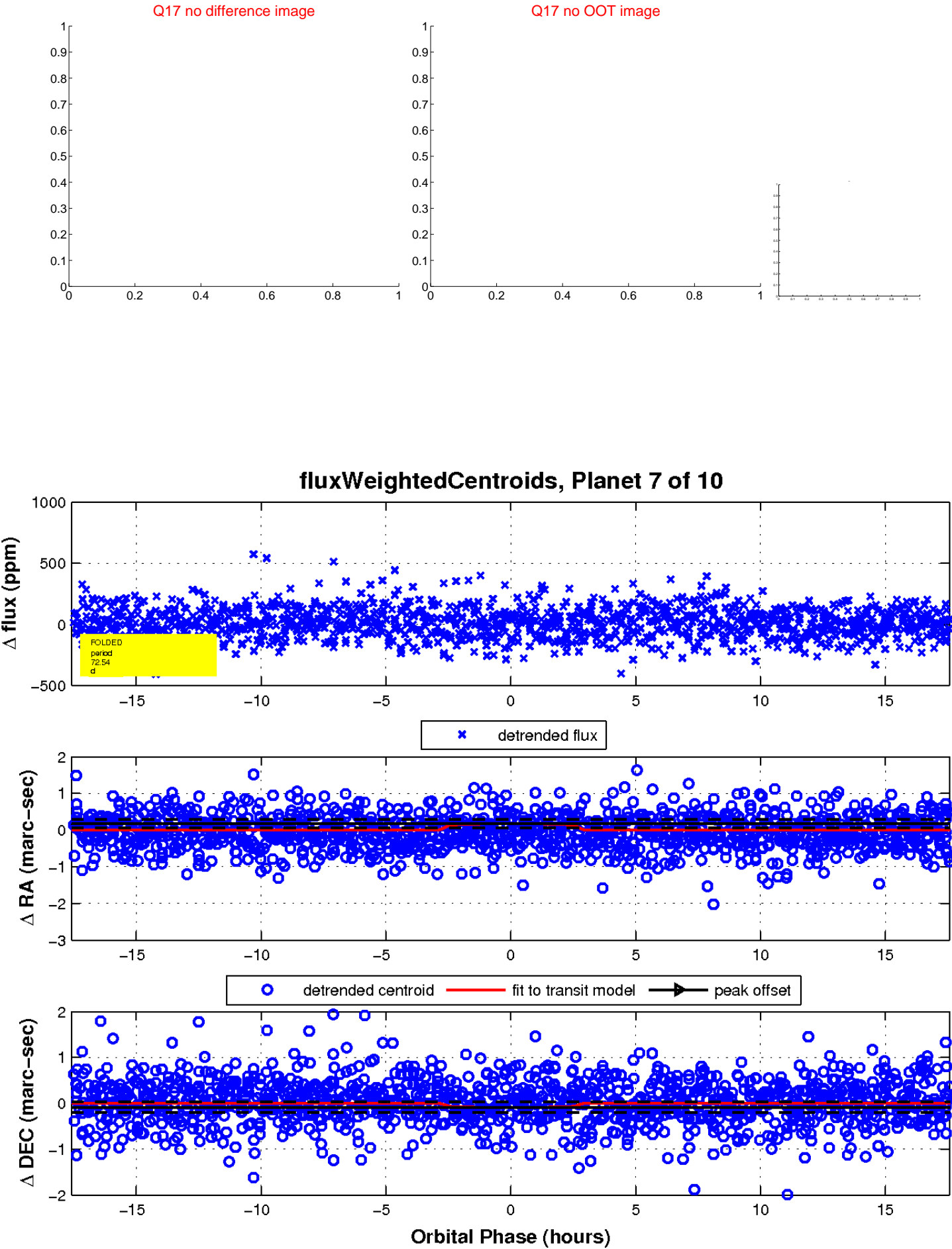
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

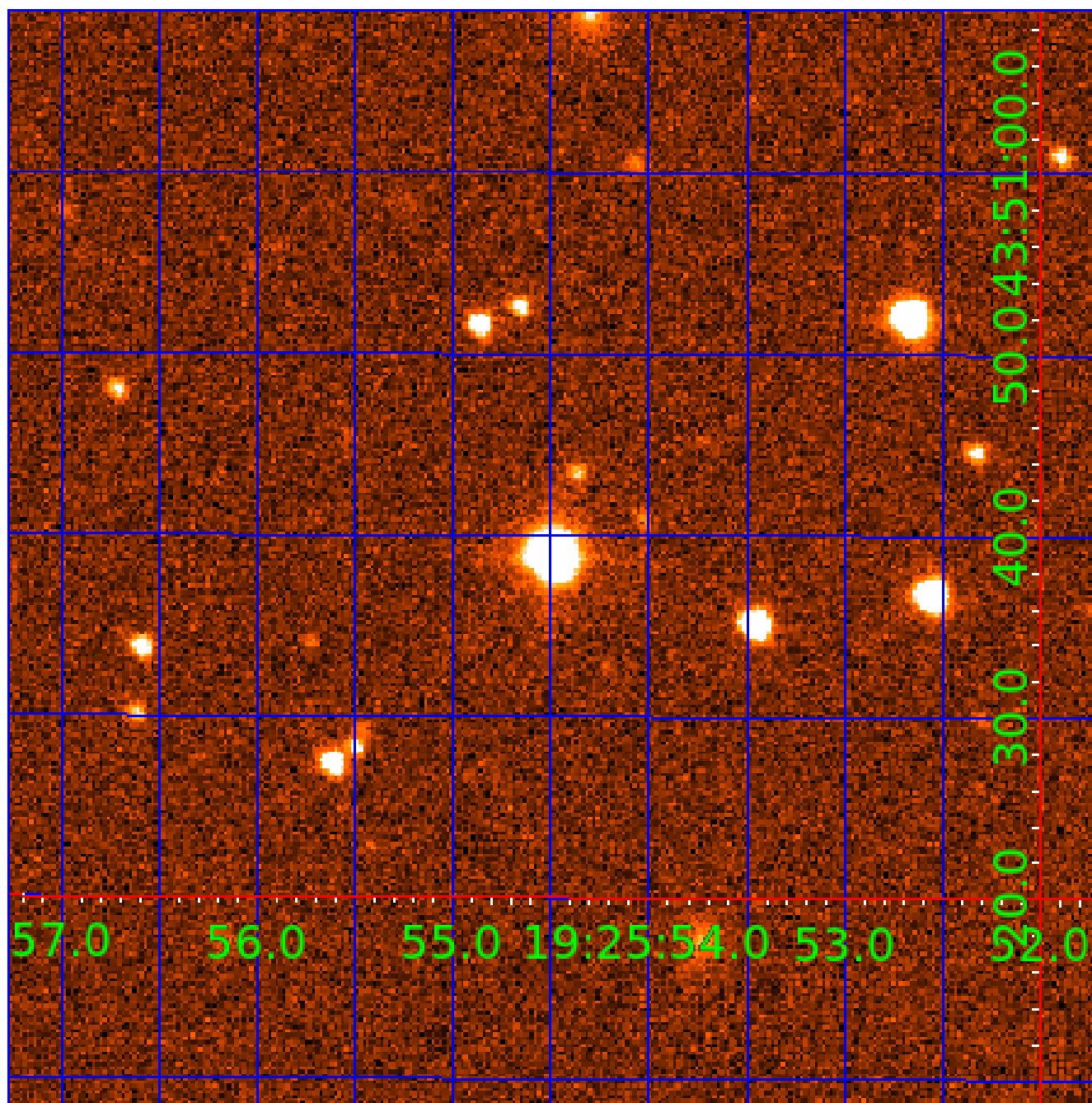


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
008027902-01	OBS	6955.01	1.796314	131.552349	14.1	10.675	8.3	7.7	2.09	7117	0.79	8960.59
008027902-02	OBS	No	136.633031	234.251816	158.9	12.869	13.5	8.5	2.09	7117	2.84	27.80
008027902-03	OBS	No	88.248184	153.502583	122.4	21.072	12.6	8.1	2.09	7117	2.49	49.80
008027902-04	OBS	No	28.689666	153.428684	107.4	8.820	8.6	9.1	2.09	7117	2.44	222.78
008027902-05	OBS	No	54.623685	166.278027	178.4	3.172	8.3	9.4	2.09	7117	3.30	94.41
008027902-06	OBS	No	168.743612	161.903299	119.8	12.118	8.7	6.7	2.09	7117	2.60	20.98
008027902-07	OBS	No	72.541293	166.720724	183.1	5.868	8.5	8.5	2.09	7117	3.31	64.67
008027902-08	OBS	No	96.868394	167.019374	152.8	6.800	7.9	6.5	2.09	7117	2.99	43.98
008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008027902-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008027902-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

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

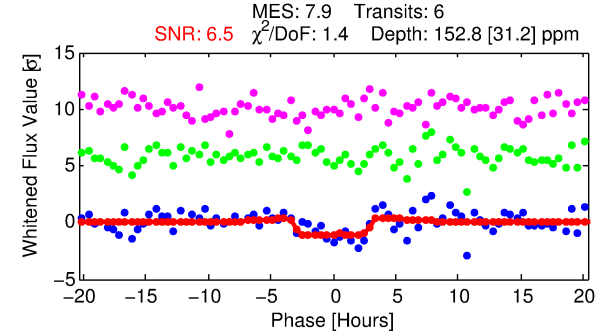
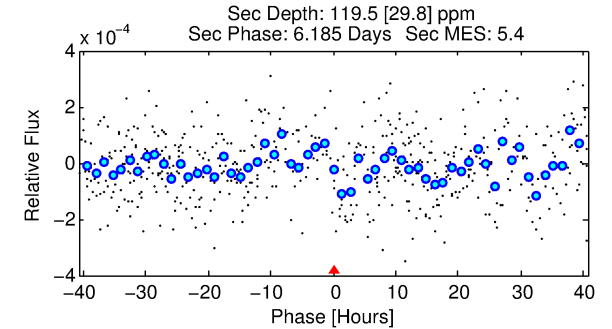
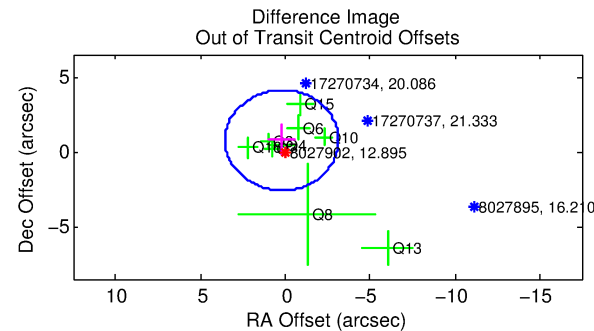
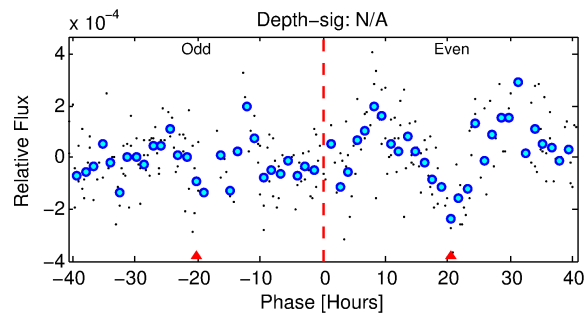
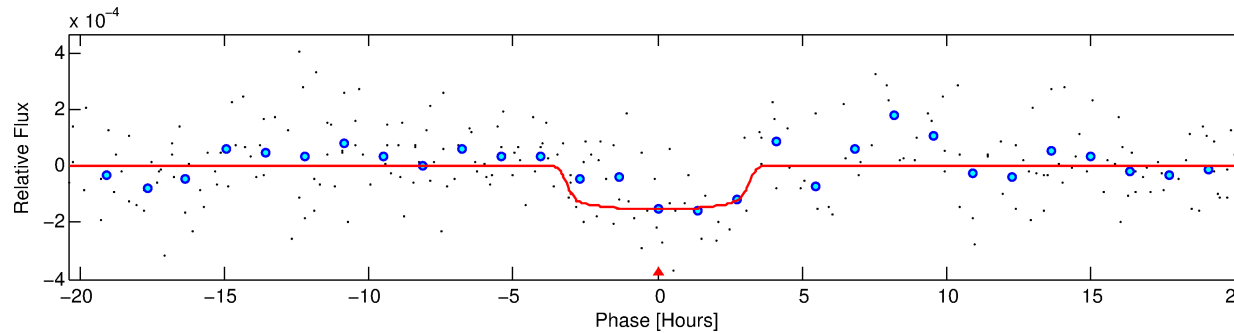
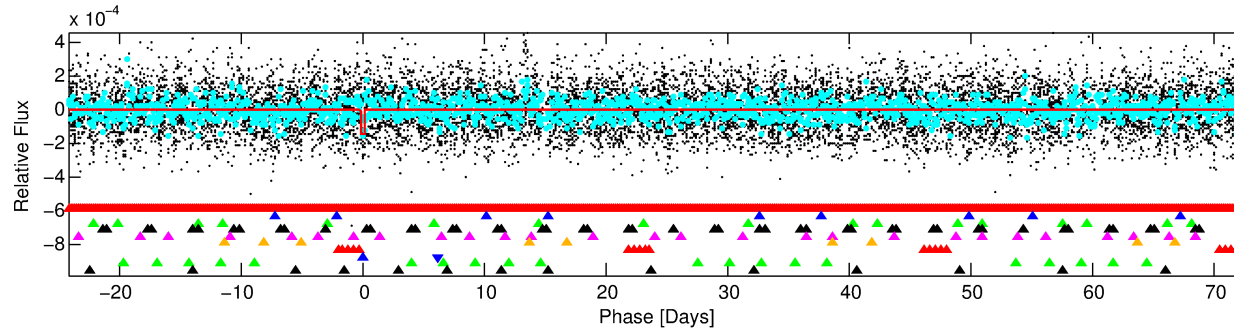
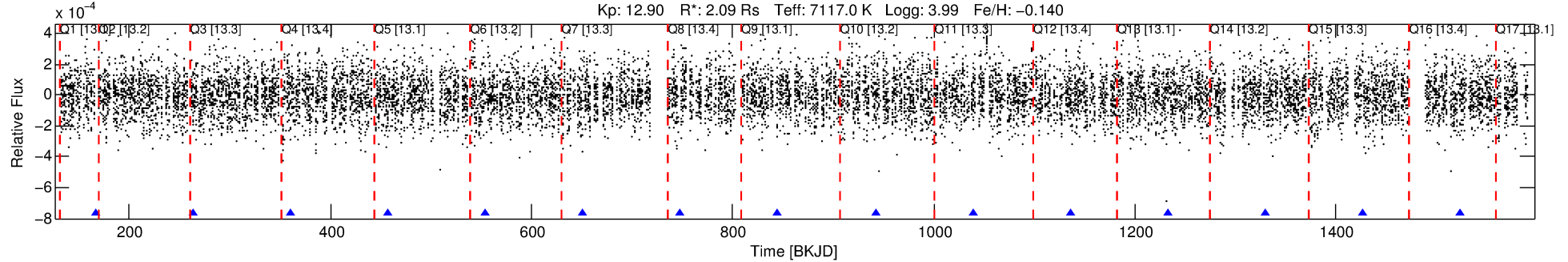
Ephemeris Match Information For 008027902-08

No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 8 of 10 Period: 96.868 d
KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 96.86839 [0.00875] d
Epoch = 167.0194 [0.0295] BKJD
Rp/R* = 0.0131 [0.0056]
a/R* = 51.65 [130.45]
b = 0.90 [0.56]
Seff = 43.98 [16.74]
Teq = 657 [62] K
Rp = 2.99 [1.48] Re
a = 0.4778 [0.1094] AU
Ag = 1680.78 [1599.24] [1.05σ]
Teffp = 6501 [1460] K [4.00σ]

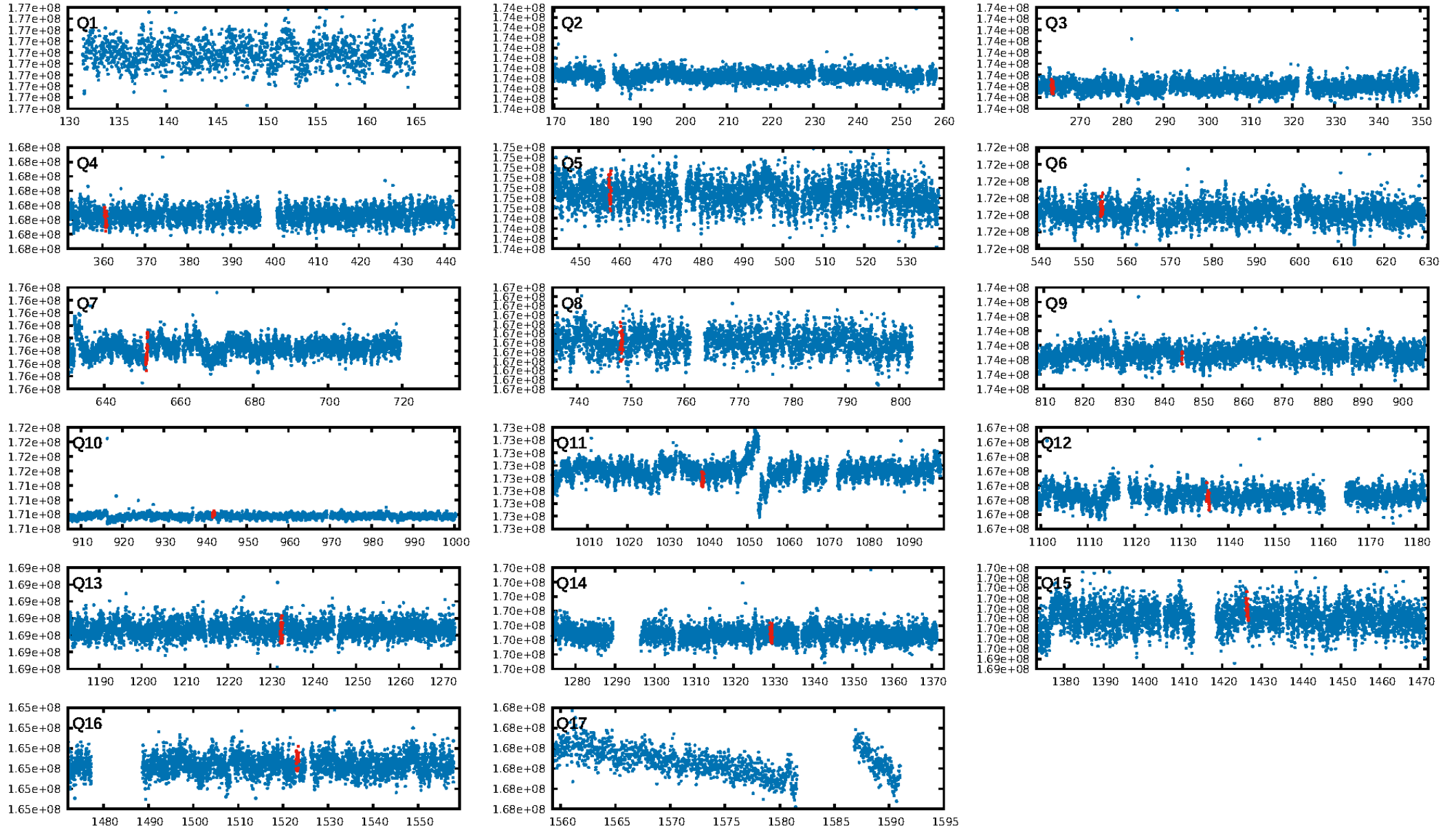
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.34σ]
LongPeriod-sig: 100.0% [15.33σ]
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -4.7
Centroid-sig: 76.1%
Centroid-so: 0.327 arcsec [0.39σ]
OotOffset-rm: 0.788 arcsec [0.71σ]
OotOffset-st: 2/3/3/1 [9]
KicOffset-rm: 0.777 arcsec [0.89σ]
KicOffset-st: 2/3/3/1 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.08 [1/12]

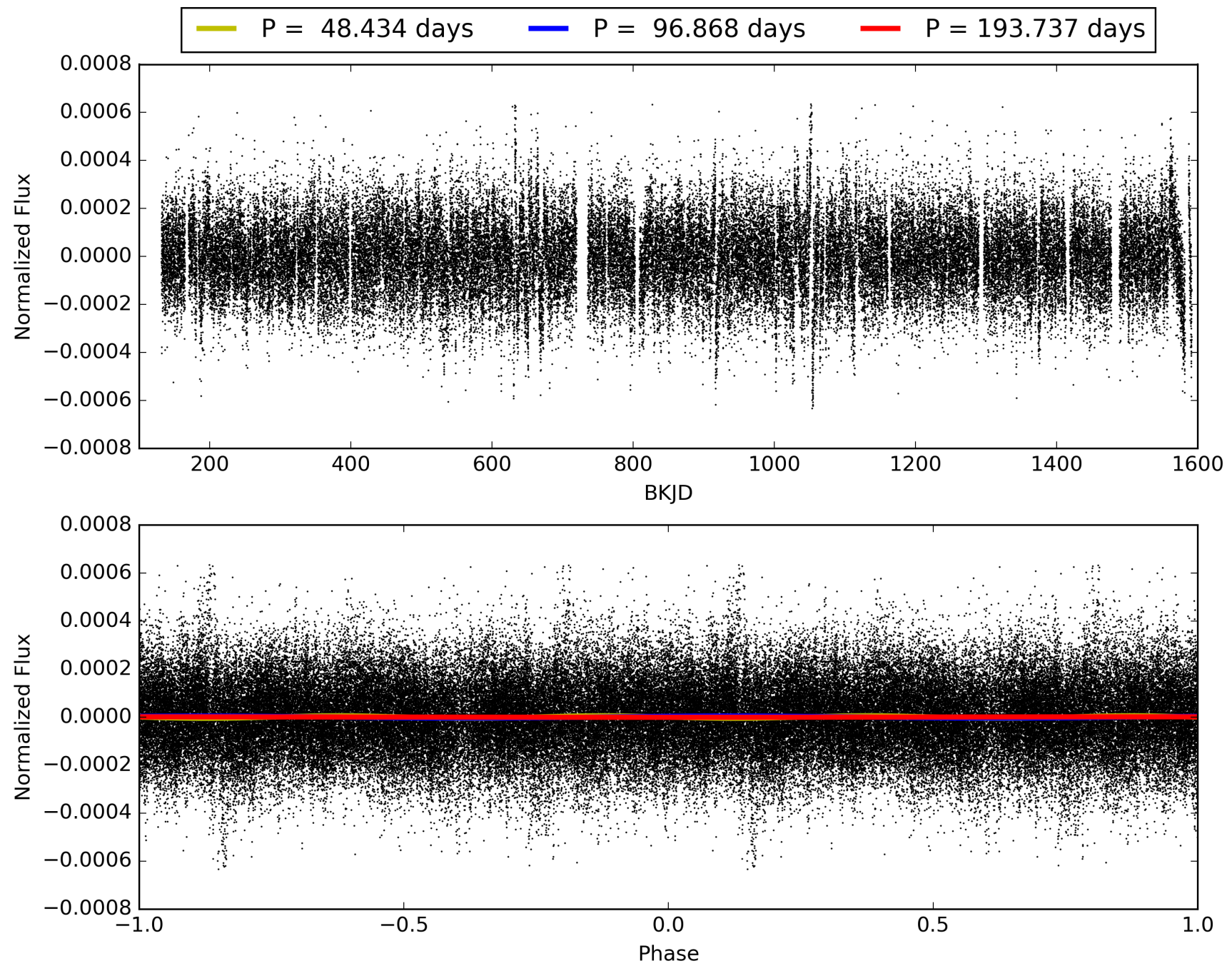
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:21:15 Z

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

TCE 008027902-08, PDC Light Curves

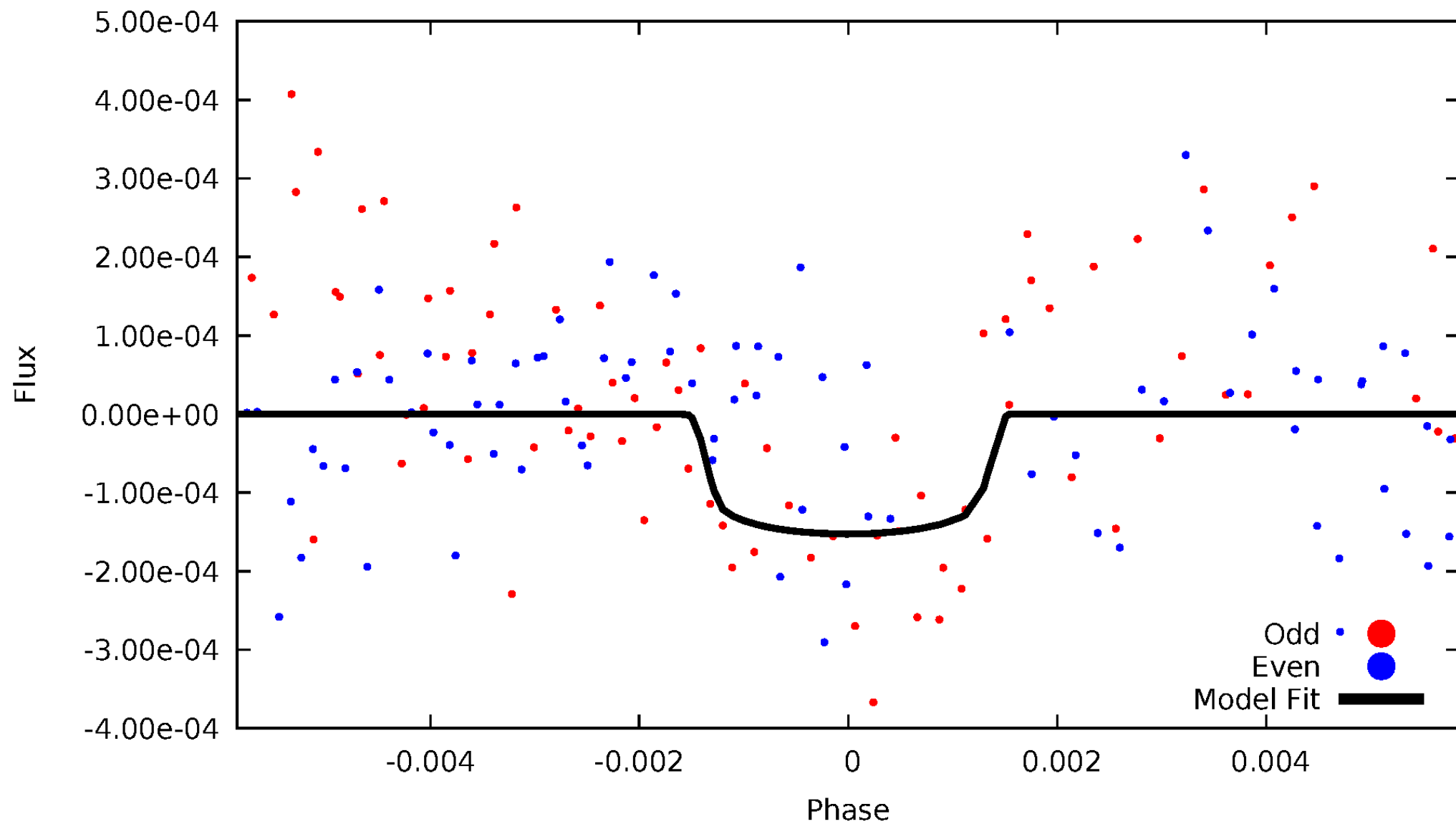


TCE 008027902-08



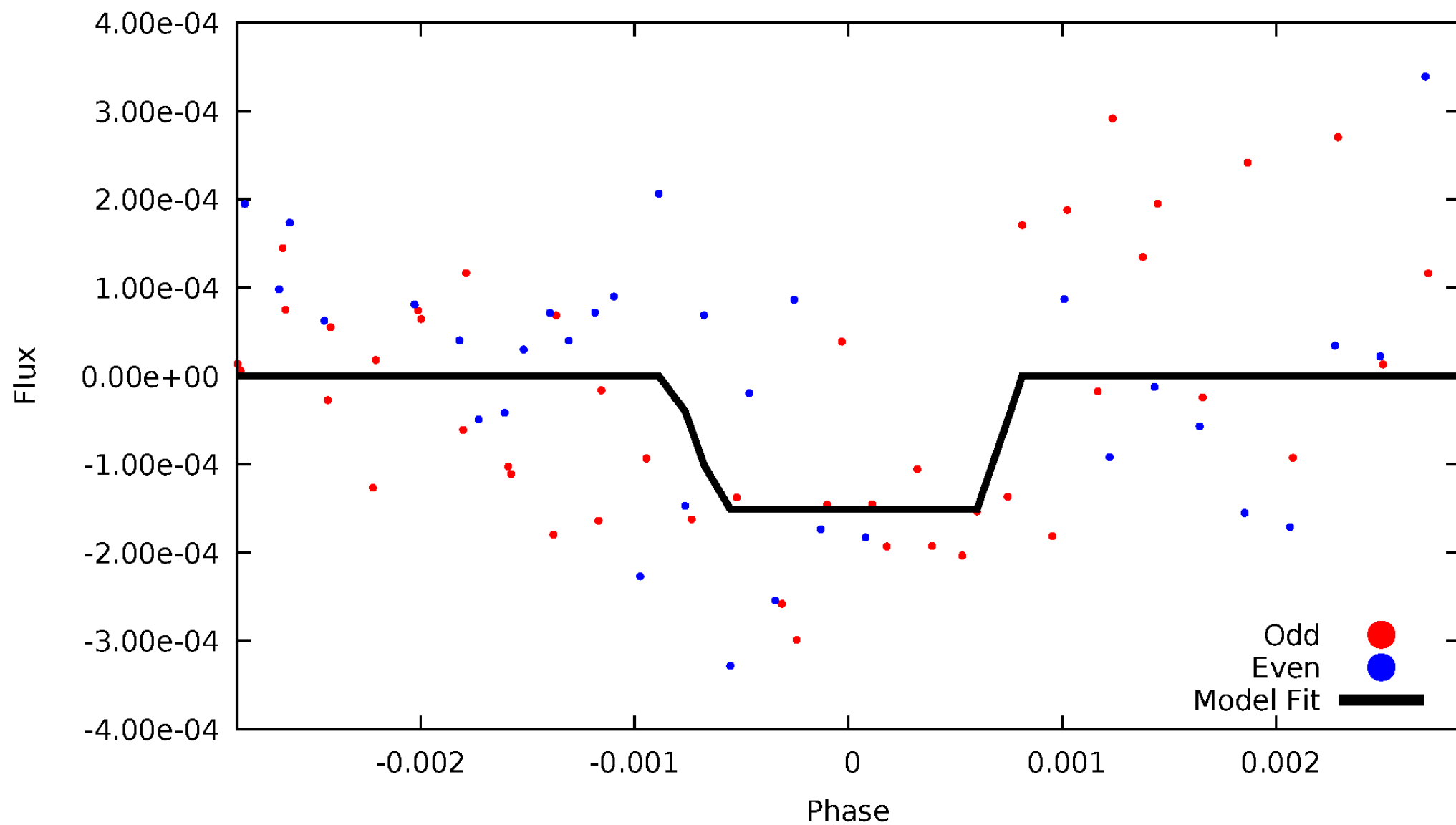
DV Odd/Even

TCE 008027902-08



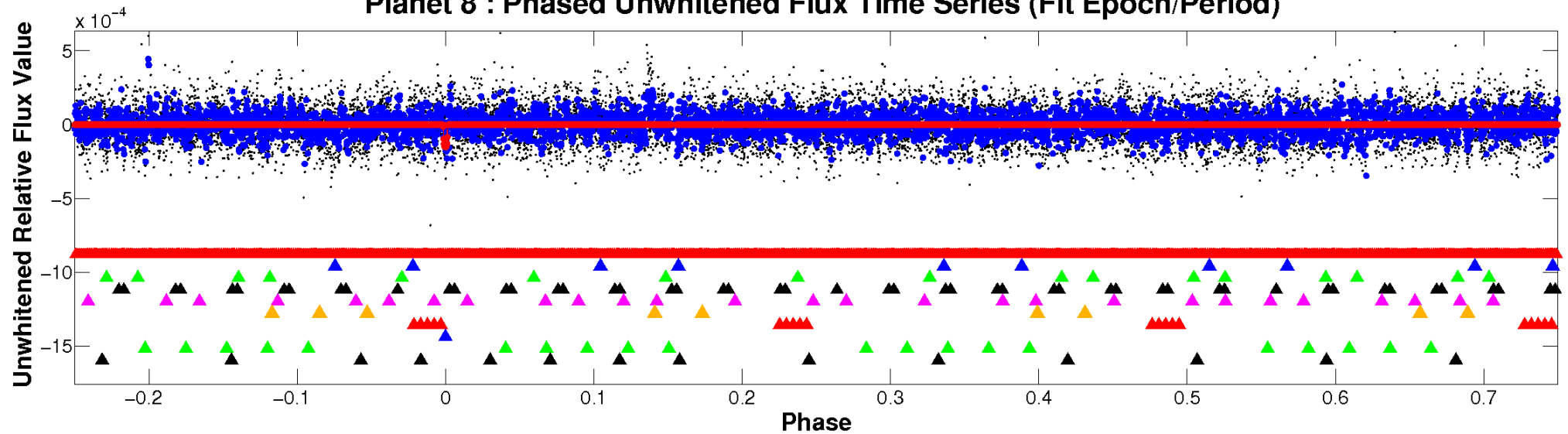
ALT Odd/Even

TCE 008027902-08

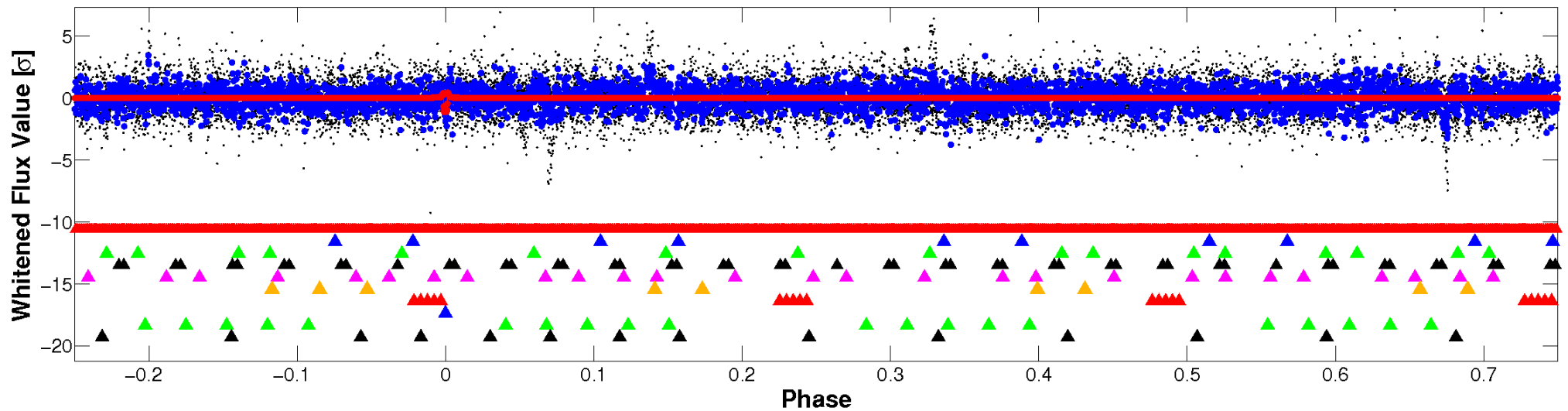


Non-Whitened Vs. Whitened Light Curve

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

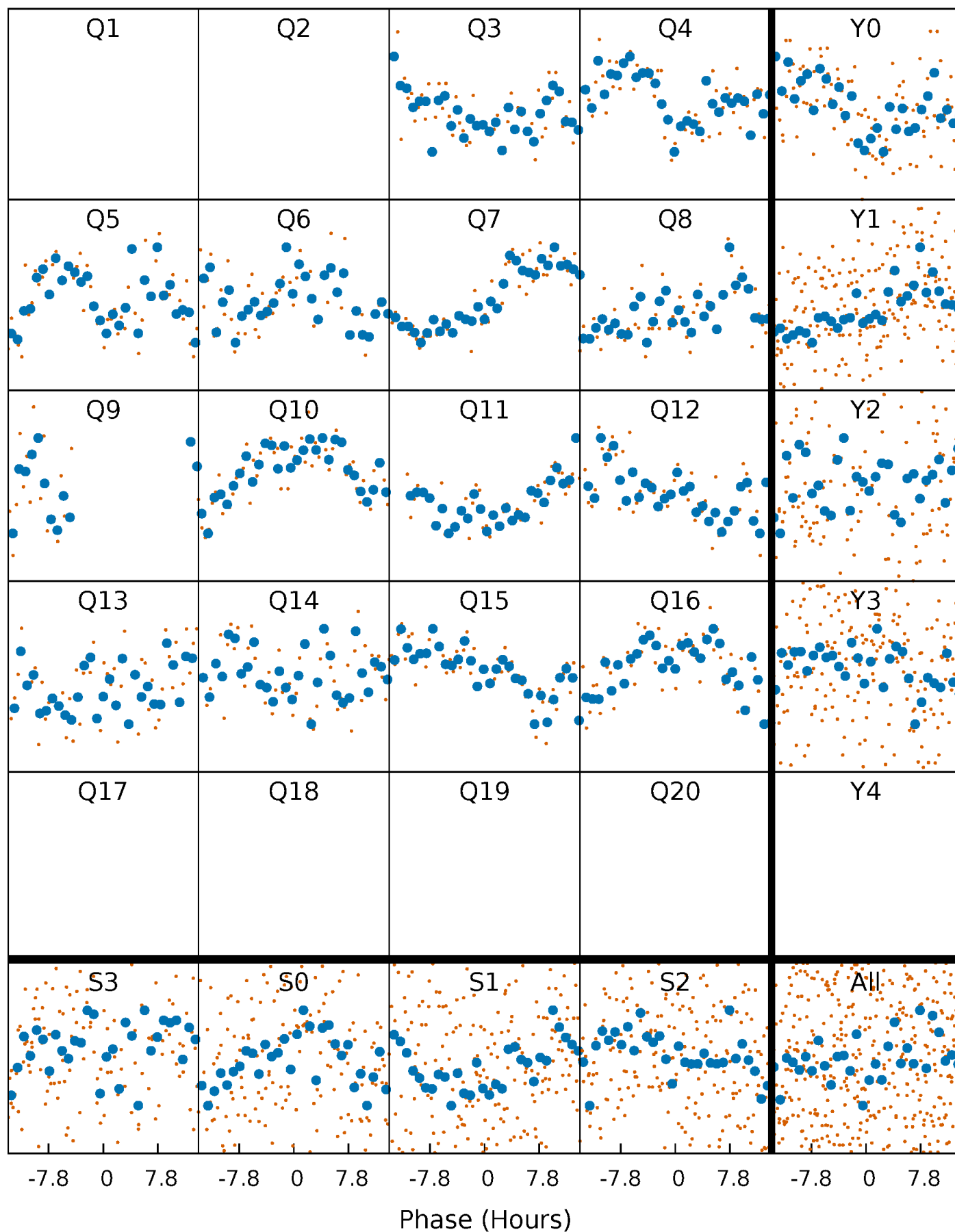


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



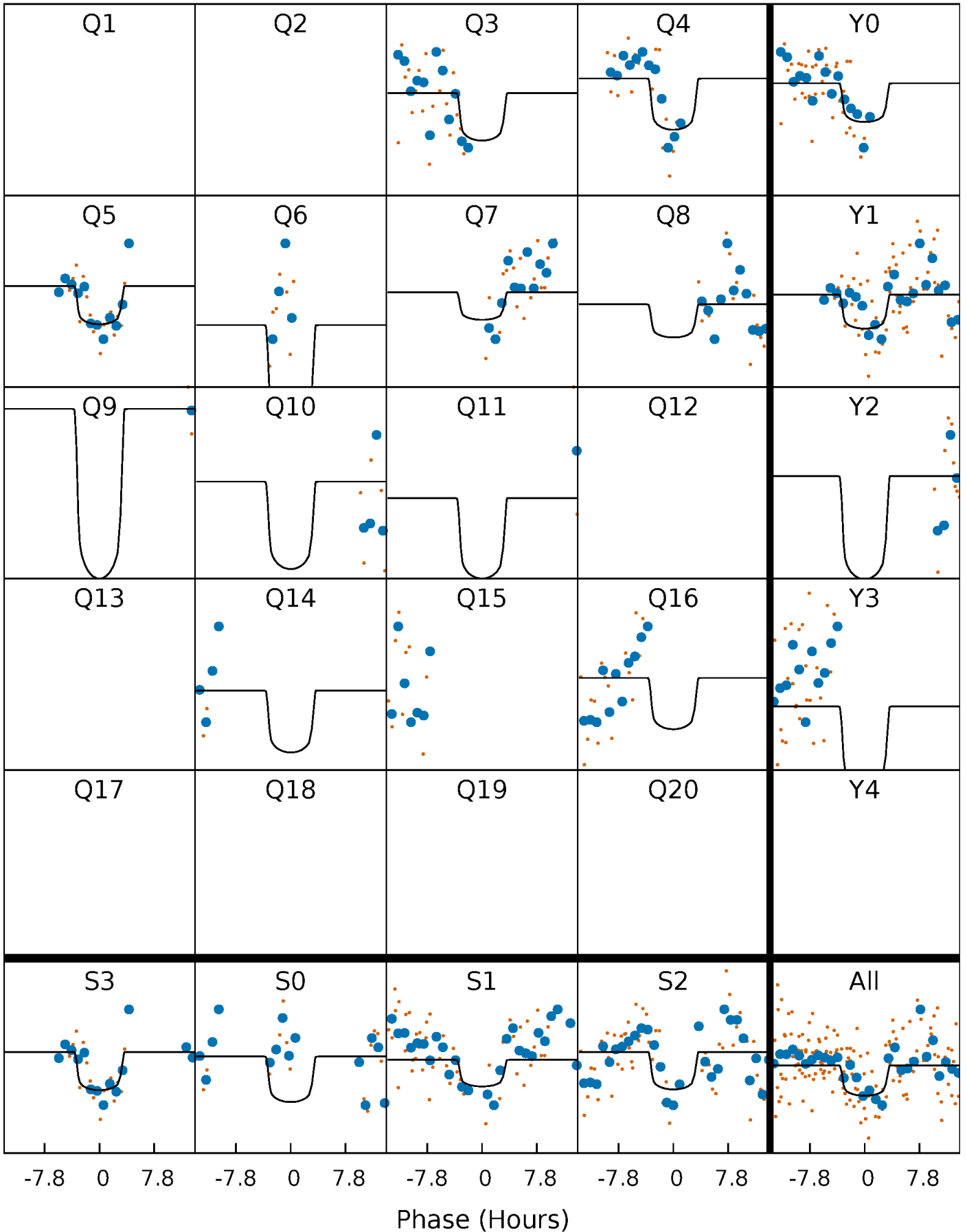
PDC Quarter-Phased Transit Curves

TCE 008027902-08 P= 96.868394 Days $T_0=167.019374$ (BKJD)



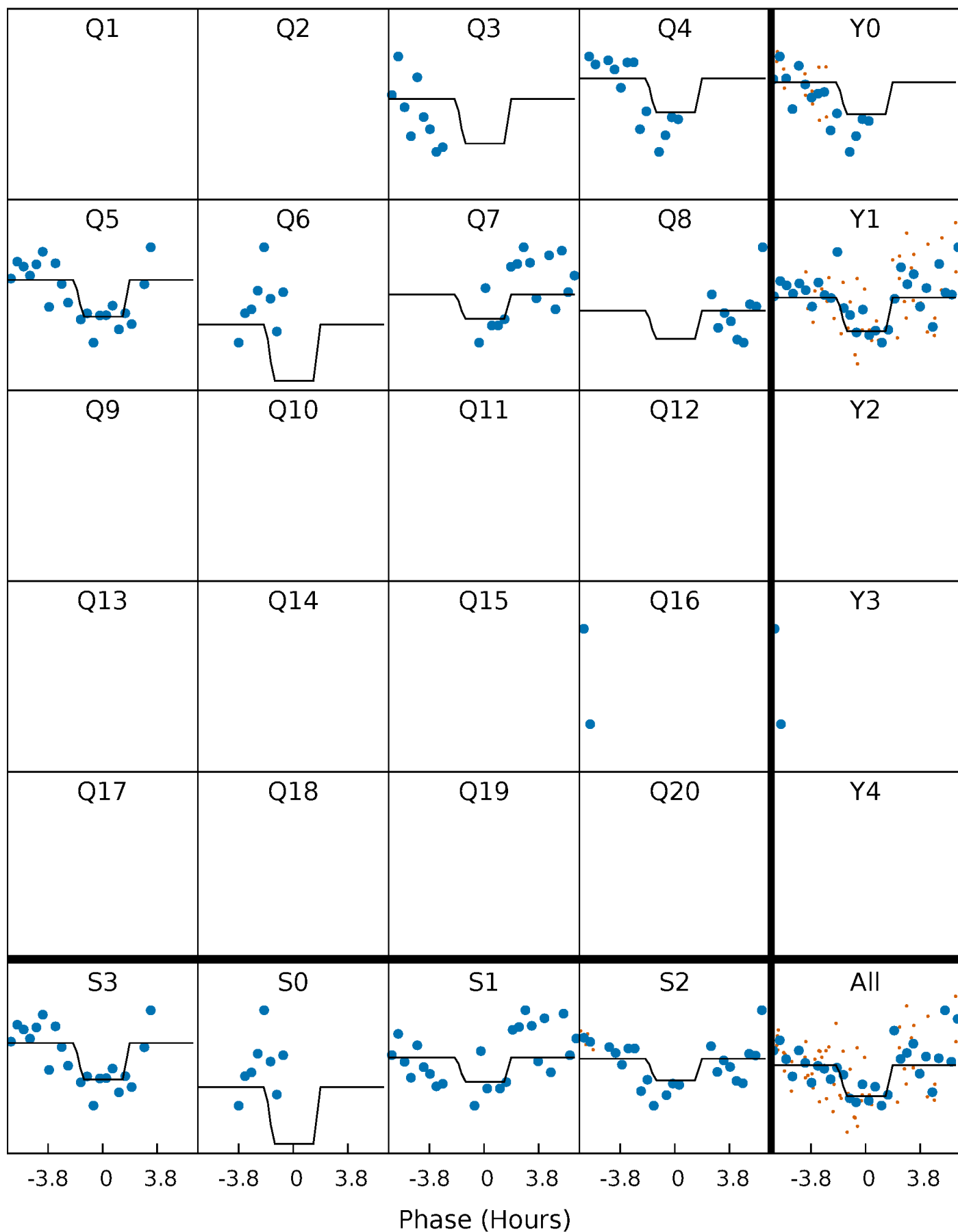
DV Quarter-Phased Transit Curves

TCE 008027902-08 $P = 96.868394$ Days $T_0 = 167.019374$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

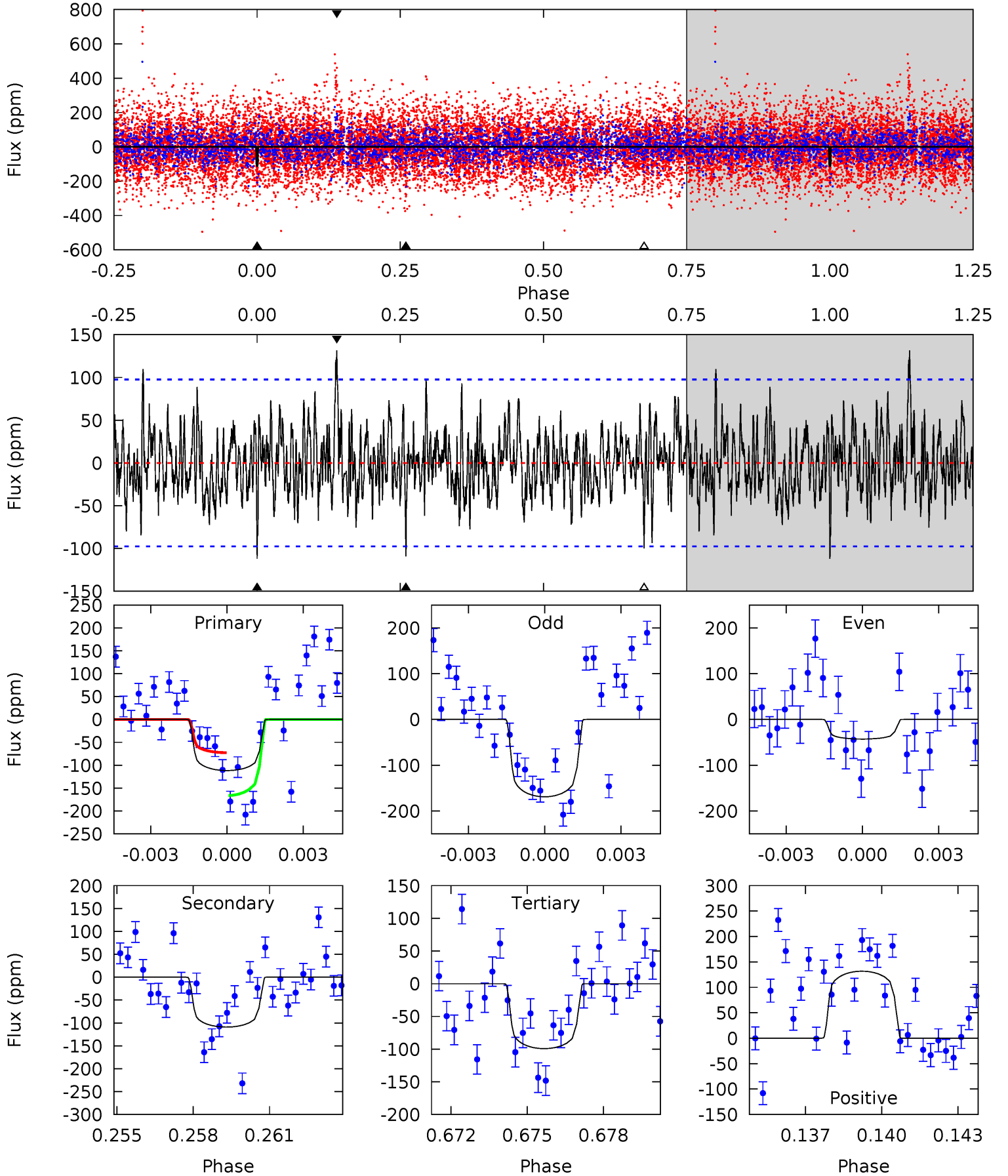
TCE 008027902-08 P= 96.873549 Days $T_0=167.040194$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-08, P = 96.868394 Days, E = 70.150980 Days

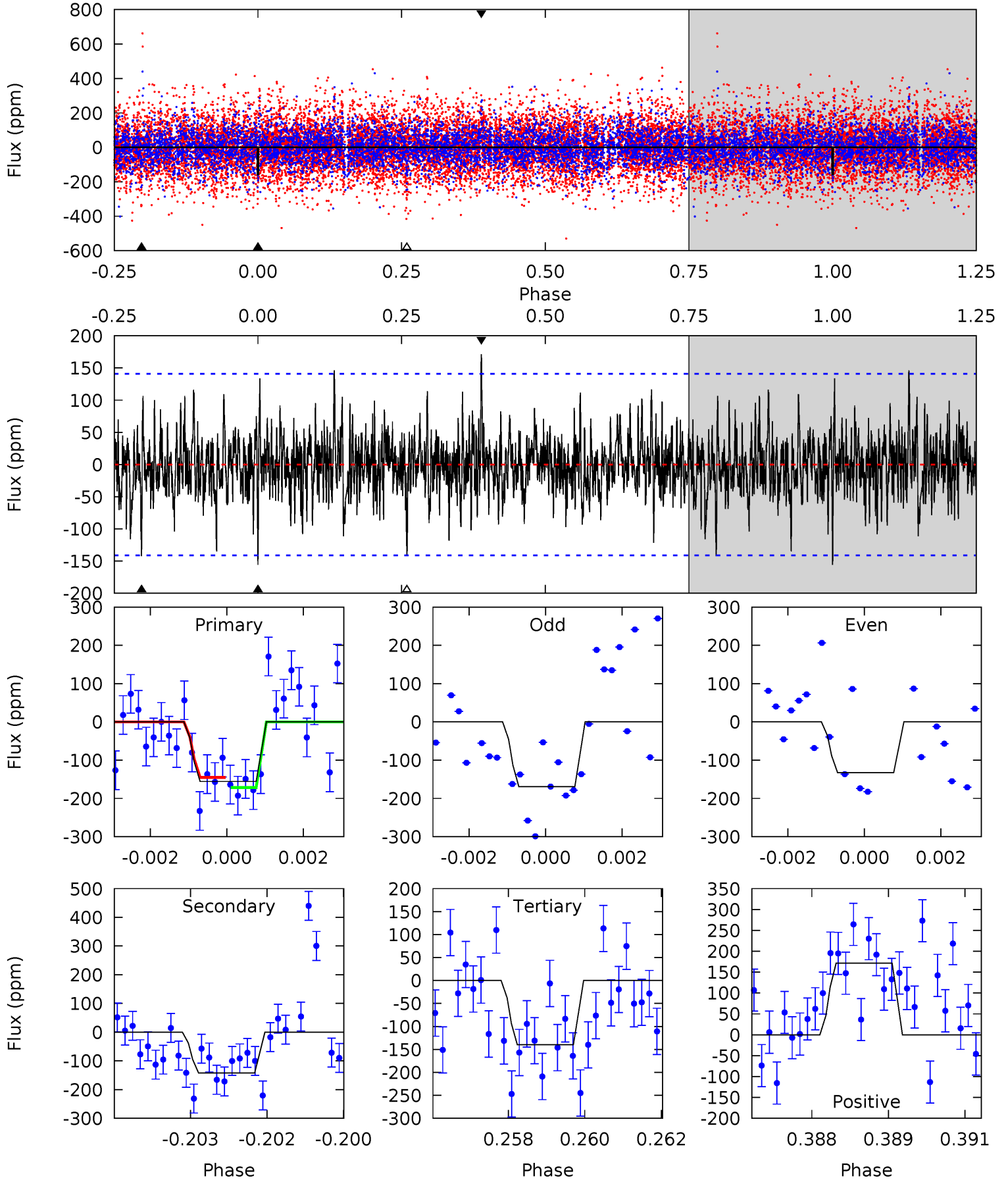
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.01	5.86	5.34	7.08	5.25	2.96	1.73	0.67	-1.07	0.52	-1.22	3.33	0.88	0.54	2.49



Alt Model-Shift Uniqueness Test

008027902-08, P = 96.873549 Days, E = 70.166645 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.93	5.42	5.33	6.52	5.37	3.16	1.41	0.60	-0.60	0.09	-1.10	0.68	0.79	0.52	0.50



Stellar Parameters For KIC 008027902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-109 ± 19	$2.88^{+1.42}_{-1.27}$	909^{+59}_{-63}	6282^{+2139}_{-1060}	1601^{+3288}_{-901}
Alt.	-142 ± 26	$2.70^{+1.41}_{-1.27}$	906^{+66}_{-60}	7086^{+3199}_{-1390}	2436^{+6058}_{-1401}

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

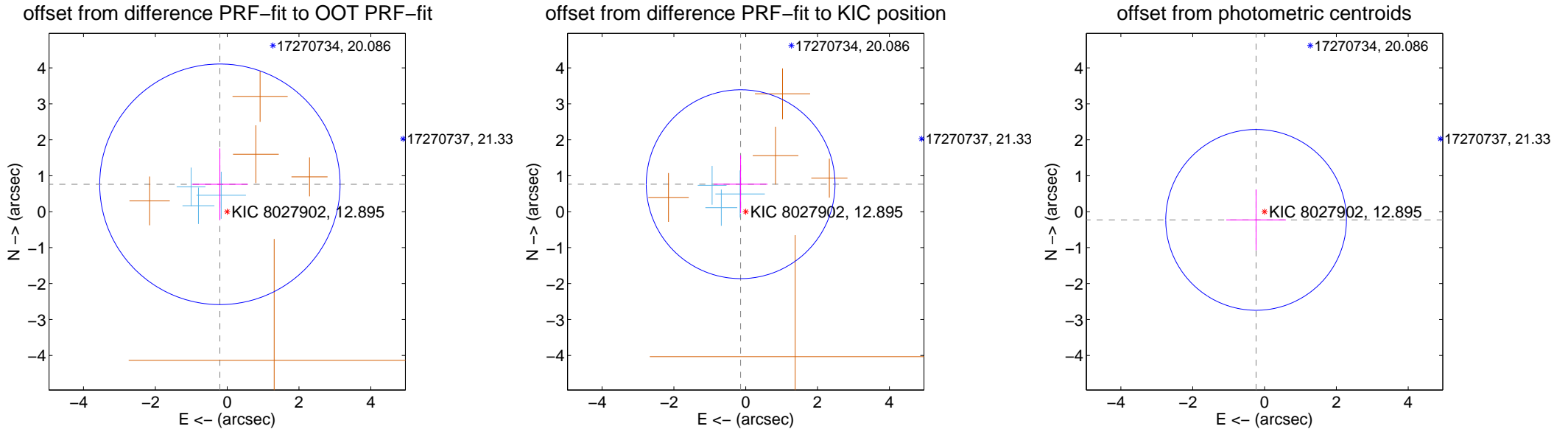
DV Centroid Data

Supplemental centroid analysis for 008027902-08. Kepler magnitude: 12.89. Transit SNR 6.55

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.788 ± 1.115	0.71	0.203 ± 0.778	0.762 ± 0.998
PRF-fit source offset from KIC position	0.777 ± 0.876	0.89	0.142 ± 0.748	0.764 ± 0.801
photometric centroid source offset	0.33 ± 0.84	0.39	0.24 ± 0.83	-0.23 ± 0.85



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

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

Q1 no difference image



Q1 no OOT image



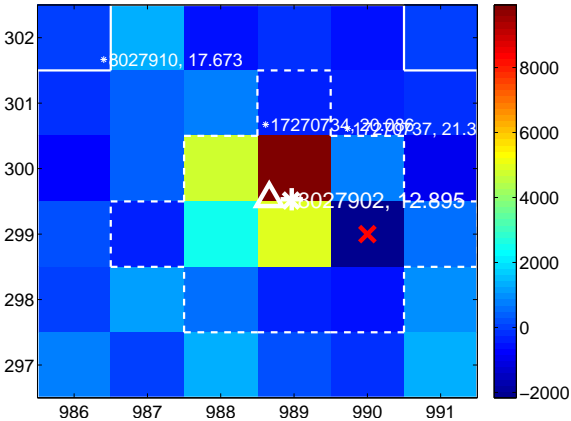
Q2 no difference image



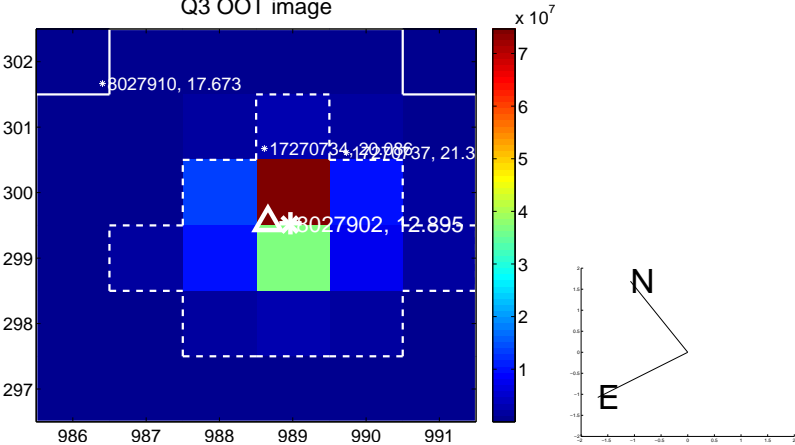
Q2 no OOT image



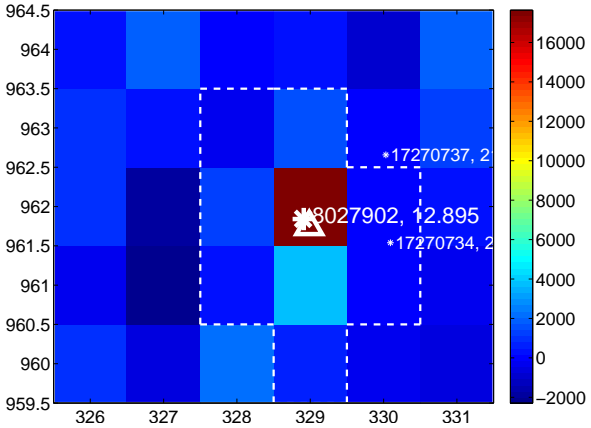
Q3 difference image



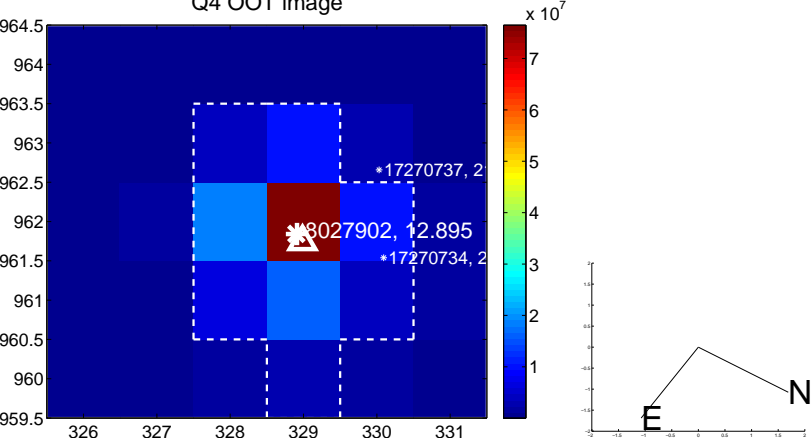
Q3 OOT image



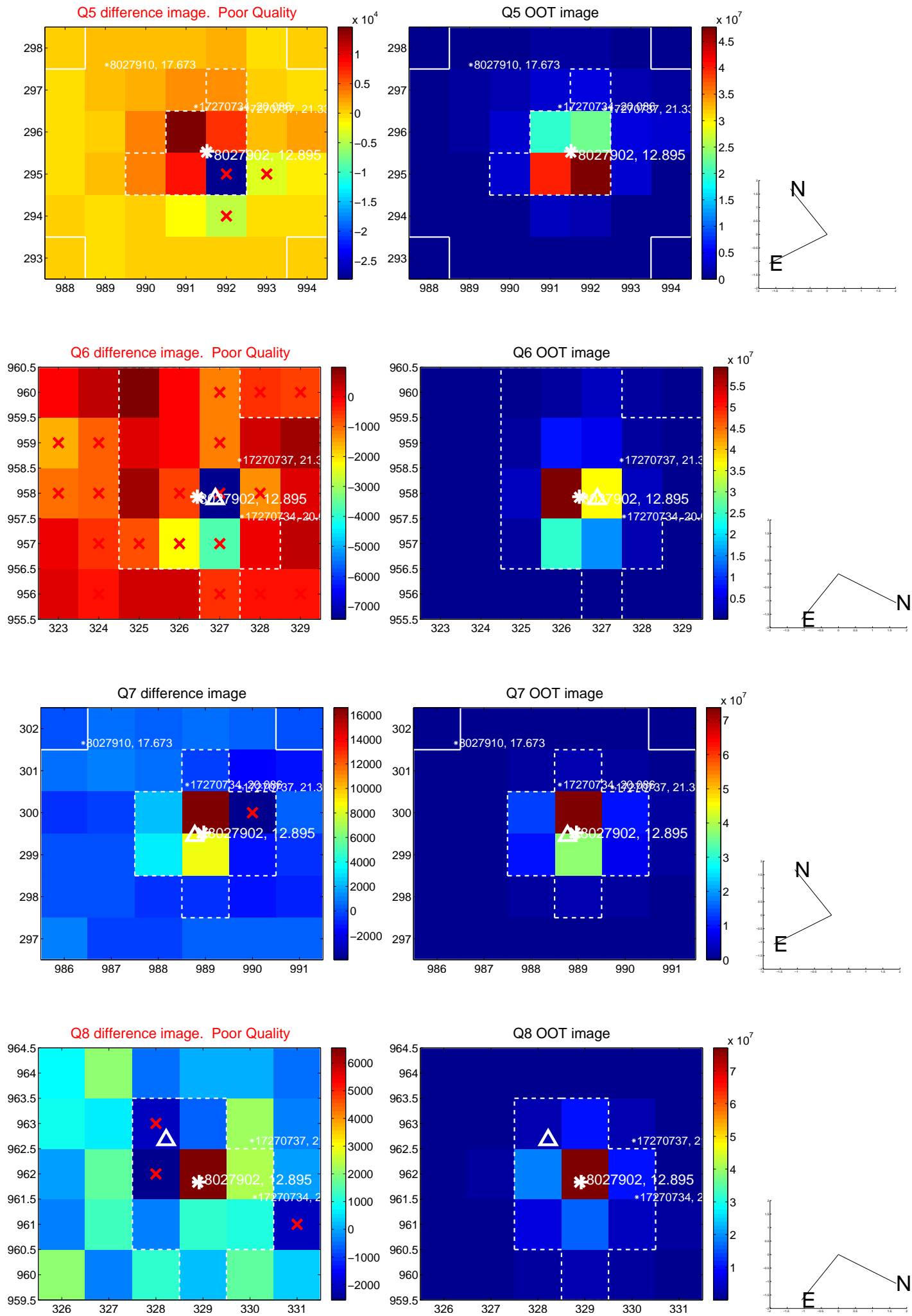
Q4 difference image



Q4 OOT image



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



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

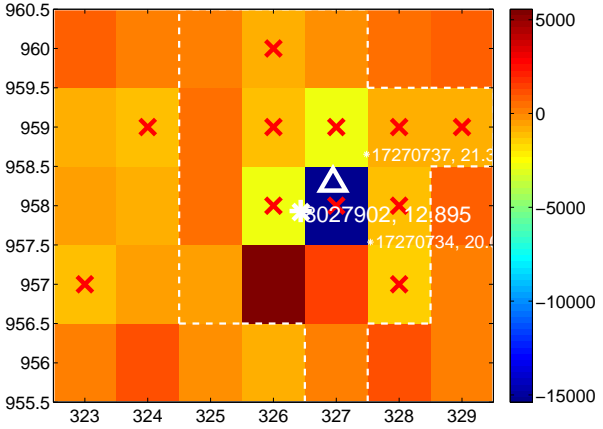
Q9 no difference image



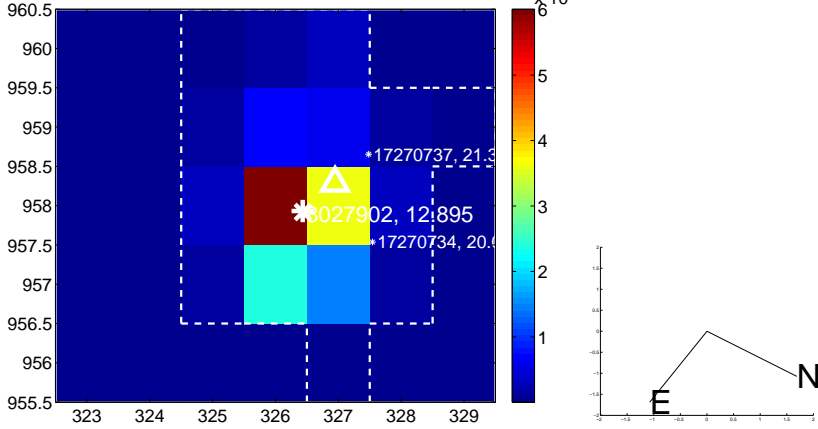
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



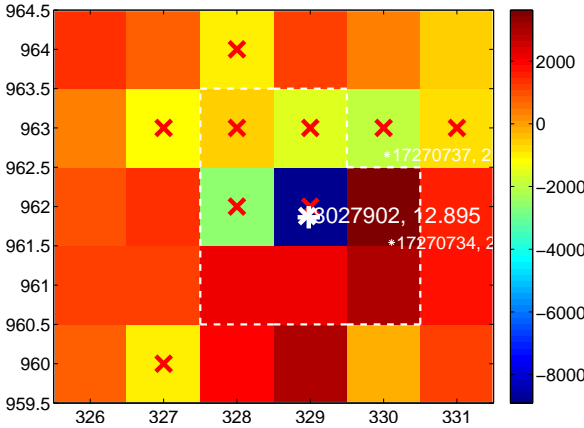
Q11 no difference image



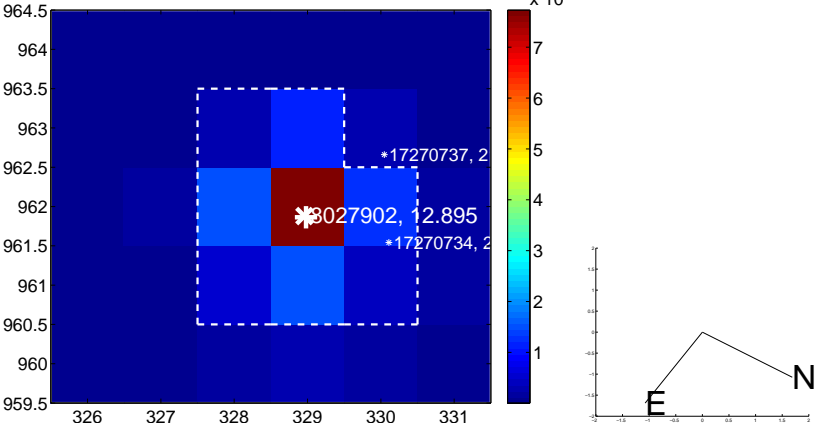
Q11 no OOT image



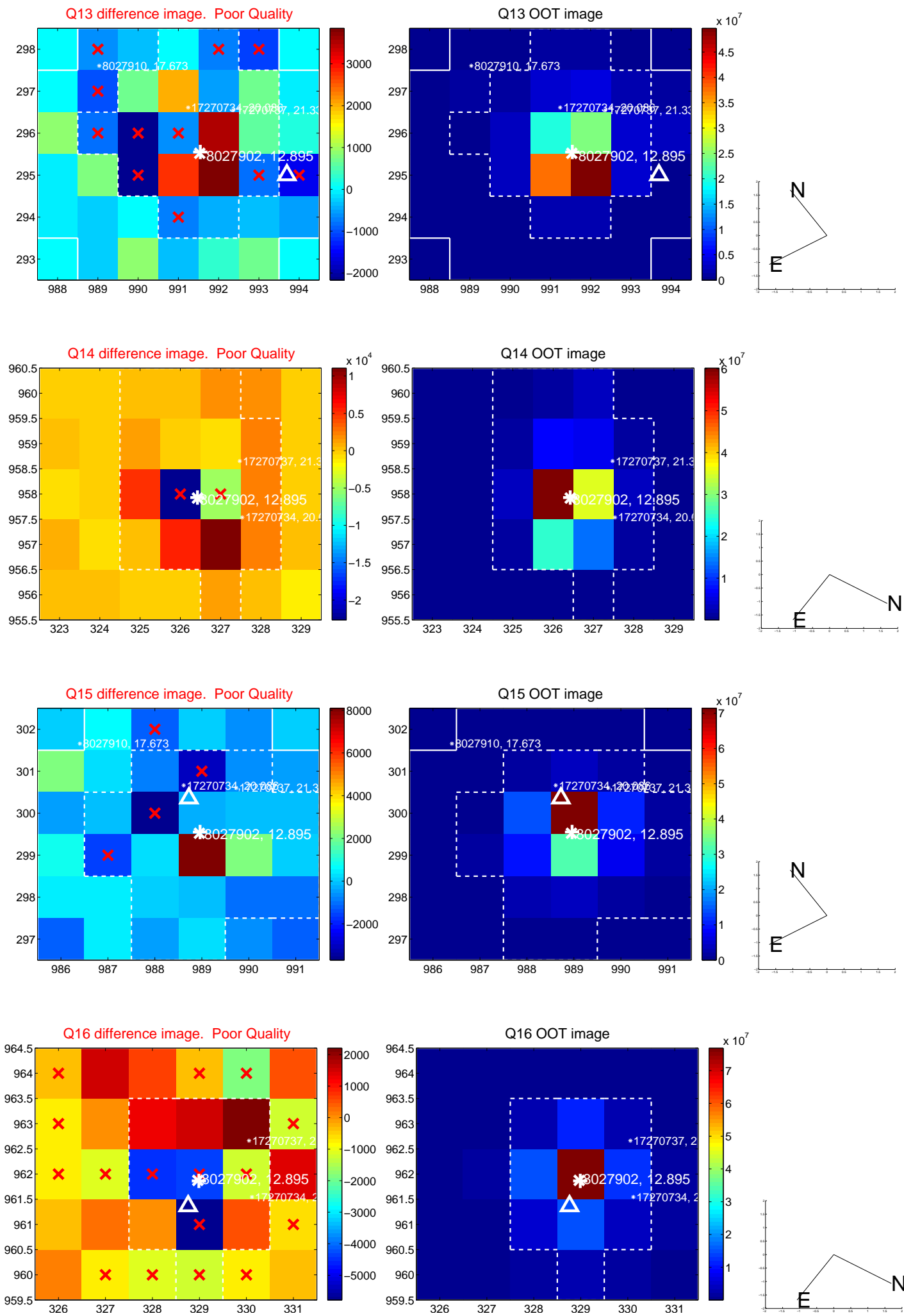
Q12 difference image. Poor Quality



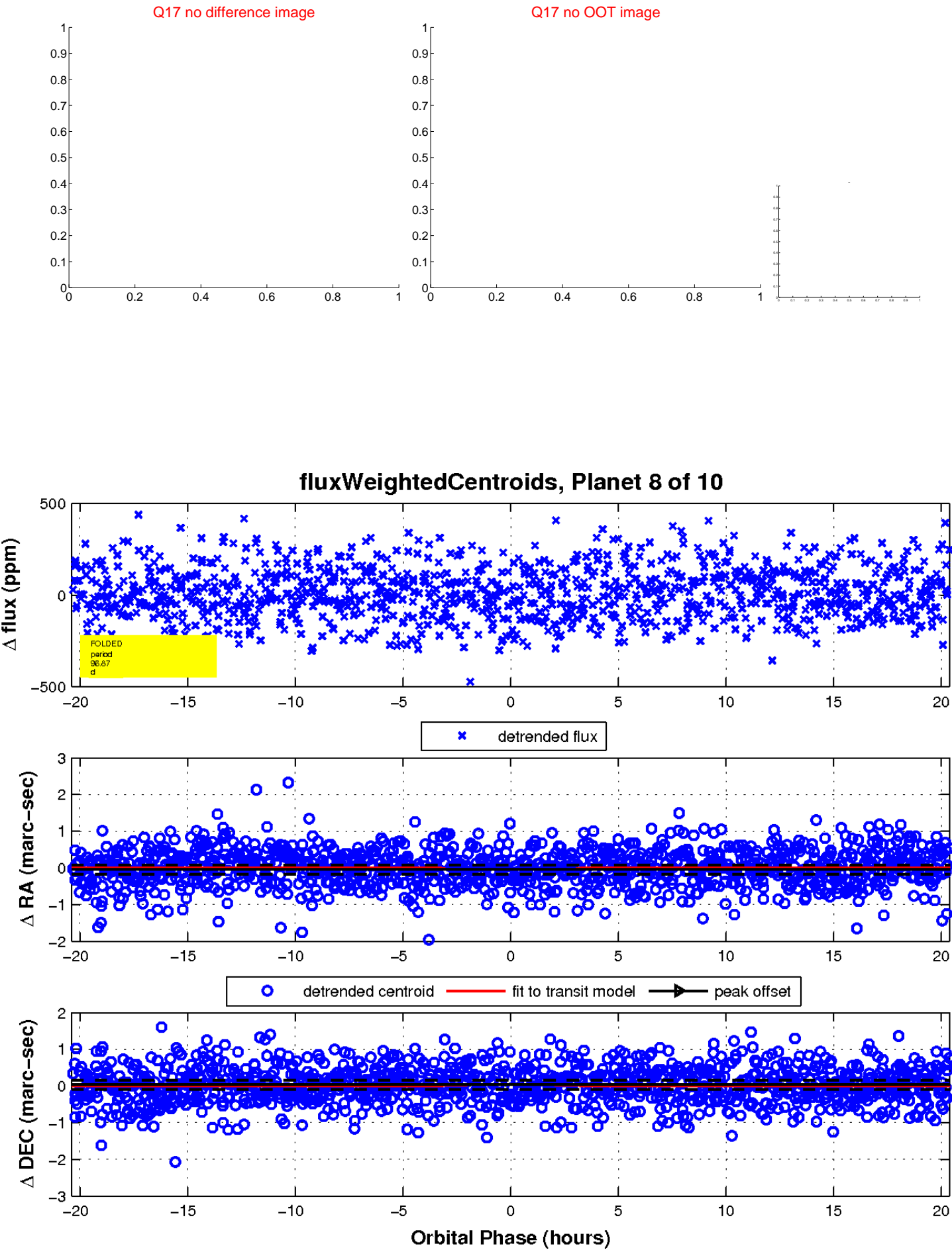
Q12 OOT image



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

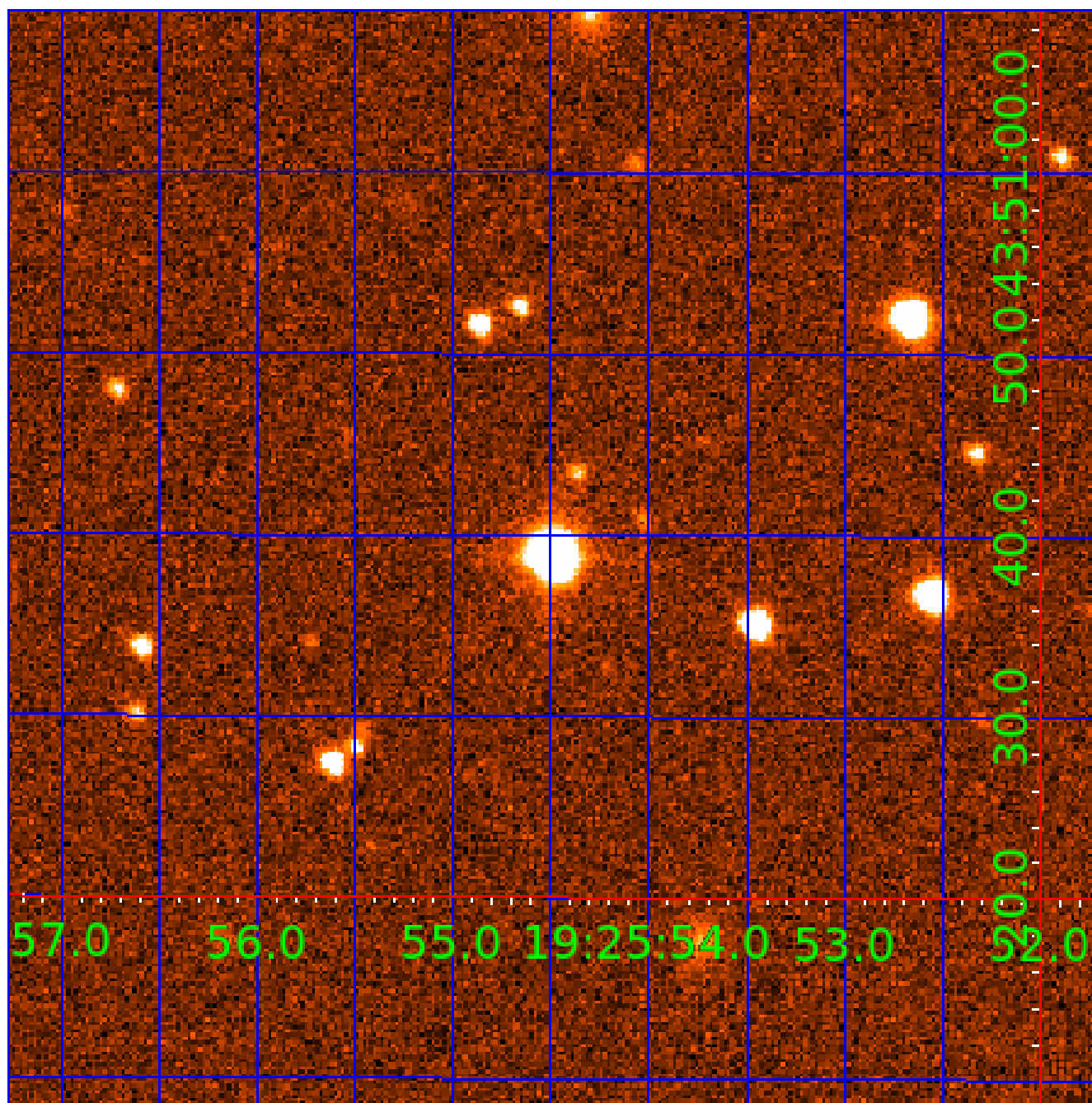


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
008027902-01	OBS	6955.01	1.796314	131.552349	14.1	10.675	8.3	7.7	2.09	7117	0.79	8960.59
008027902-02	OBS	No	136.633031	234.251816	158.9	12.869	13.5	8.5	2.09	7117	2.84	27.80
008027902-03	OBS	No	88.248184	153.502583	122.4	21.072	12.6	8.1	2.09	7117	2.49	49.80
008027902-04	OBS	No	28.689666	153.428684	107.4	8.820	8.6	9.1	2.09	7117	2.44	222.78
008027902-05	OBS	No	54.623685	166.278027	178.4	3.172	8.3	9.4	2.09	7117	3.30	94.41
008027902-06	OBS	No	168.743612	161.903299	119.8	12.118	8.7	6.7	2.09	7117	2.60	20.98
008027902-07	OBS	No	72.541293	166.720724	183.1	5.868	8.5	8.5	2.09	7117	3.31	64.67
008027902-08	OBS	No	96.868394	167.019374	152.8	6.800	7.9	6.5	2.09	7117	2.99	43.98
008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008027902-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008027902-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008027902-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
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008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

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

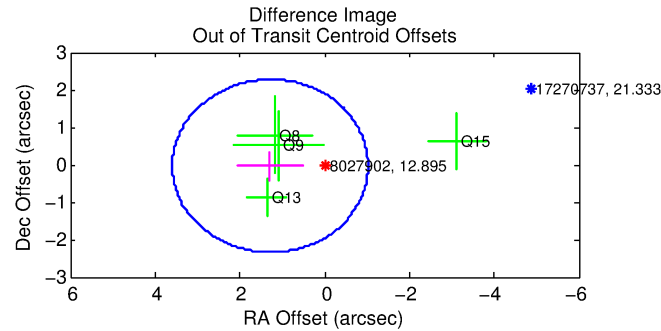
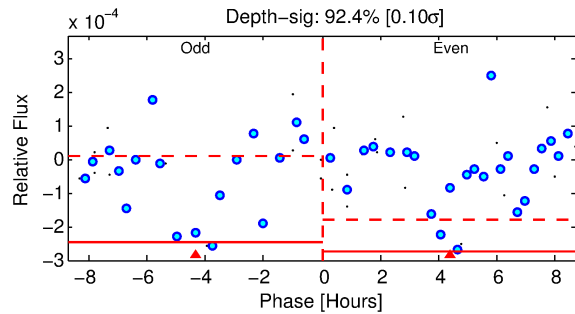
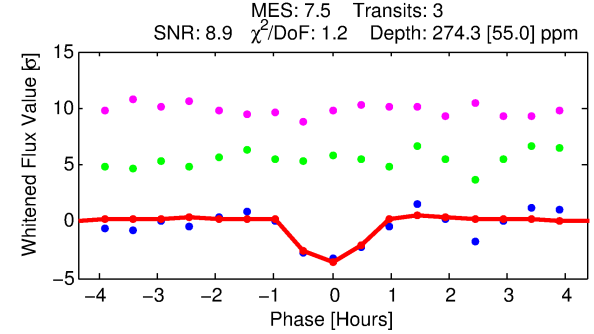
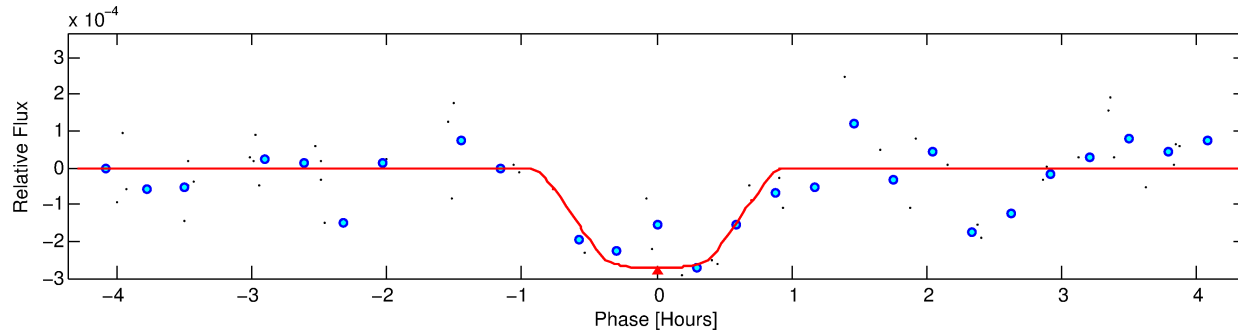
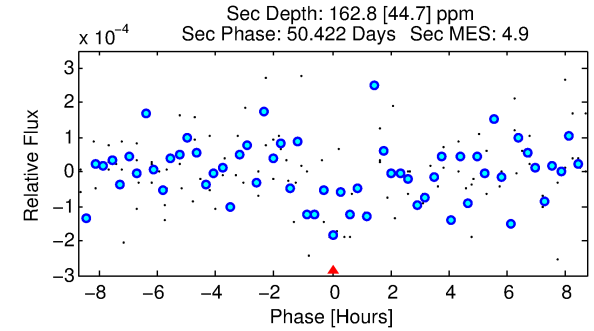
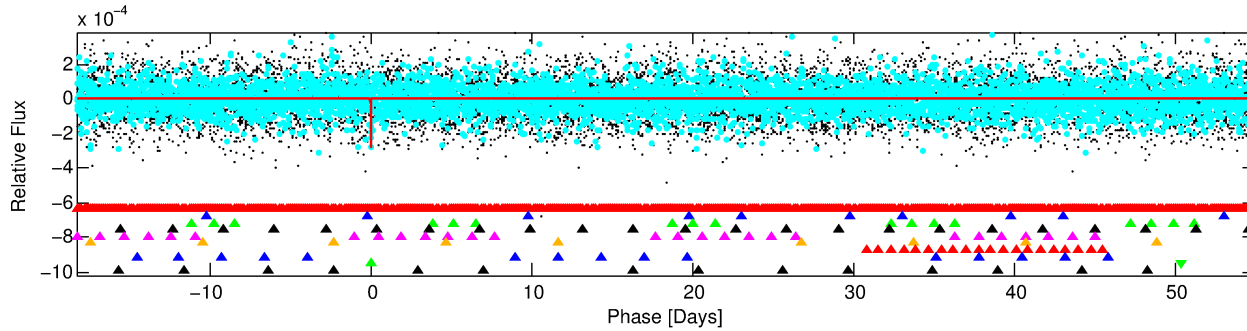
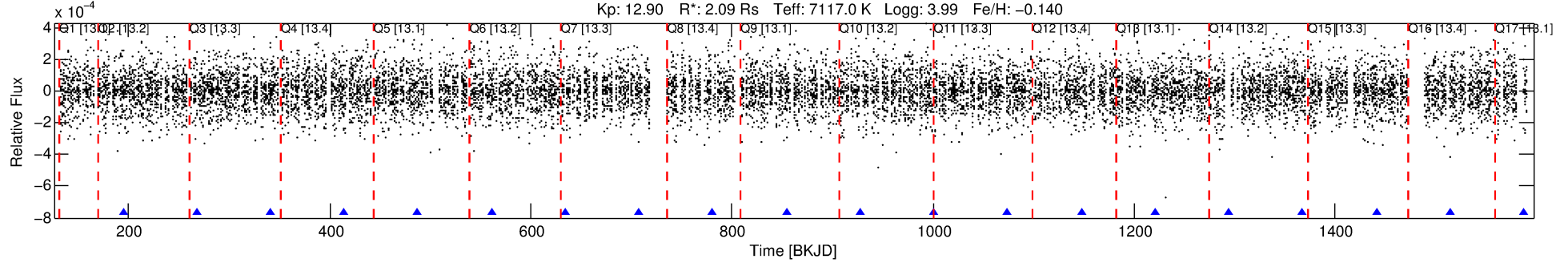
Ephemeris Match Information For 008027902-09

No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 9 of 10 Period: 73.318 d
KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 73.31764 [0.00080] d
Epoch = 194.5037 [0.0080] BKJD
Rp/R* = 0.0180 [0.0138]
a/R* = 166.30 [772.16]
b = 0.92 [0.77]
Seff = 63.76 [24.27]
Teff = 721 [69] K
Rp = 4.11 [3.31] Re
a = 0.3968 [0.0909] AU
Ag = 836.29 [1332.73] [0.63 sigma]
Teffp = 5991 [2340] K [2.25 sigma]

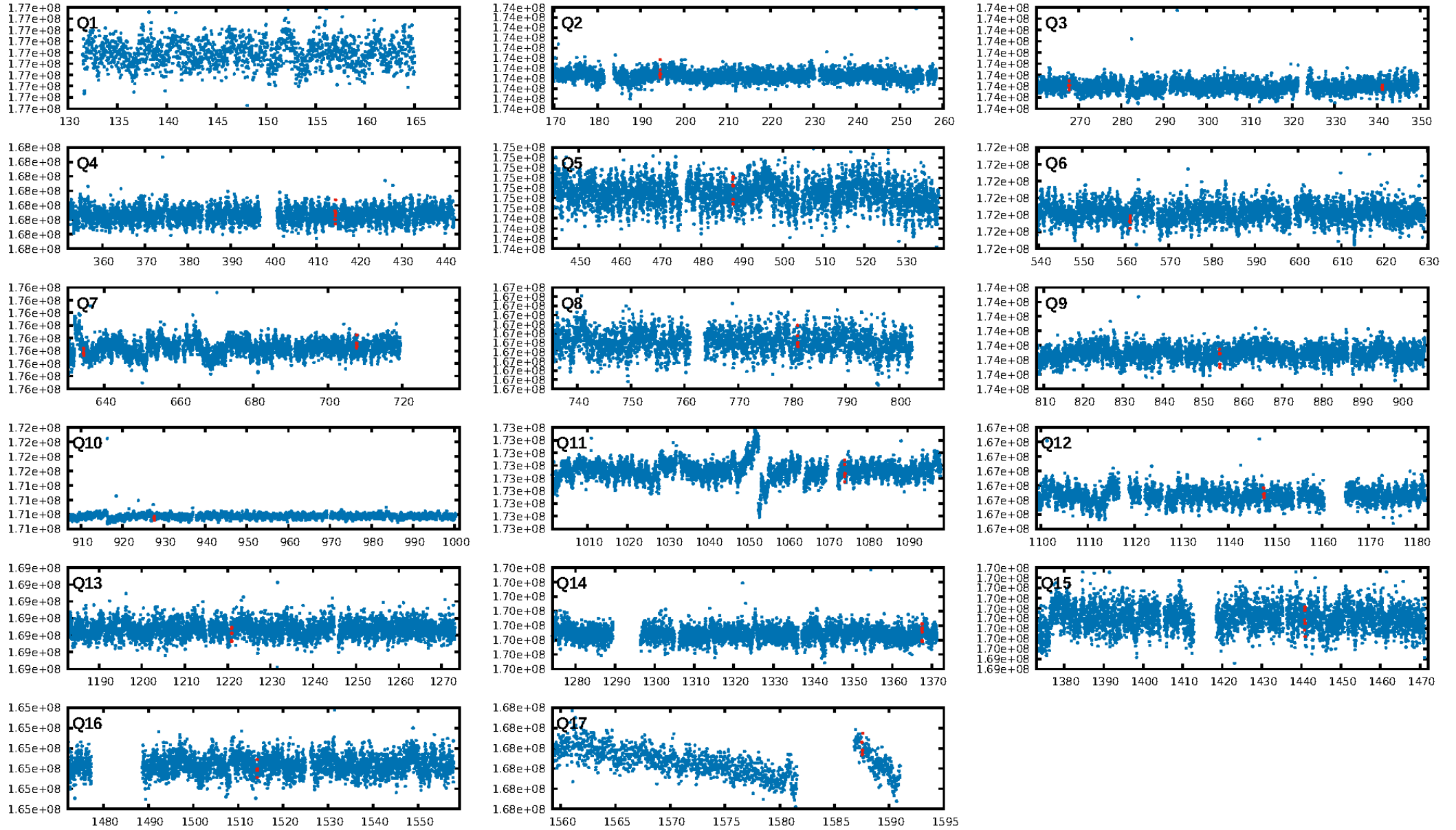
DV Diagnostic Results:

ShortPeriod-sig: 99.8% [3.08 sigma]
LongPeriod-sig: 100.0% [16.97 sigma]
ModelChiSquare2-sig: 57.7%
ModelChiSquareGof-sig: 95.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.536
Centroid-sig: 1.5%
Centroid-so: 1.772 arcsec [2.20 sigma]
OotOffset-rm: 1.283 arcsec [1.67 sigma]
OotOffset-st: 0/1/1/2 [4]
KicOffset-rm: 1.188 arcsec [1.54 sigma]
KicOffset-st: 0/1/1/2 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.50 [7/14]

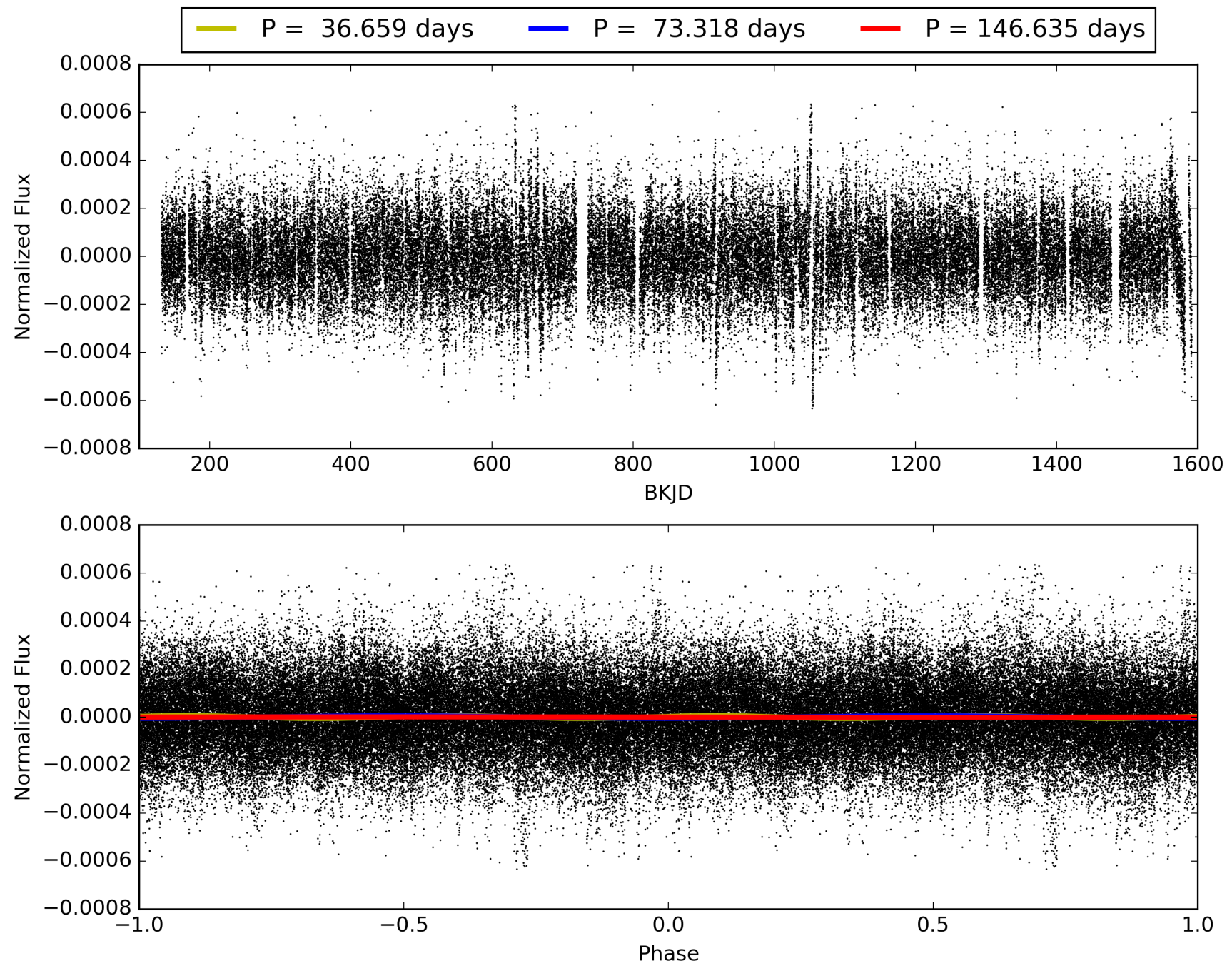
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:21:20 Z

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

TCE 008027902-09, PDC Light Curves

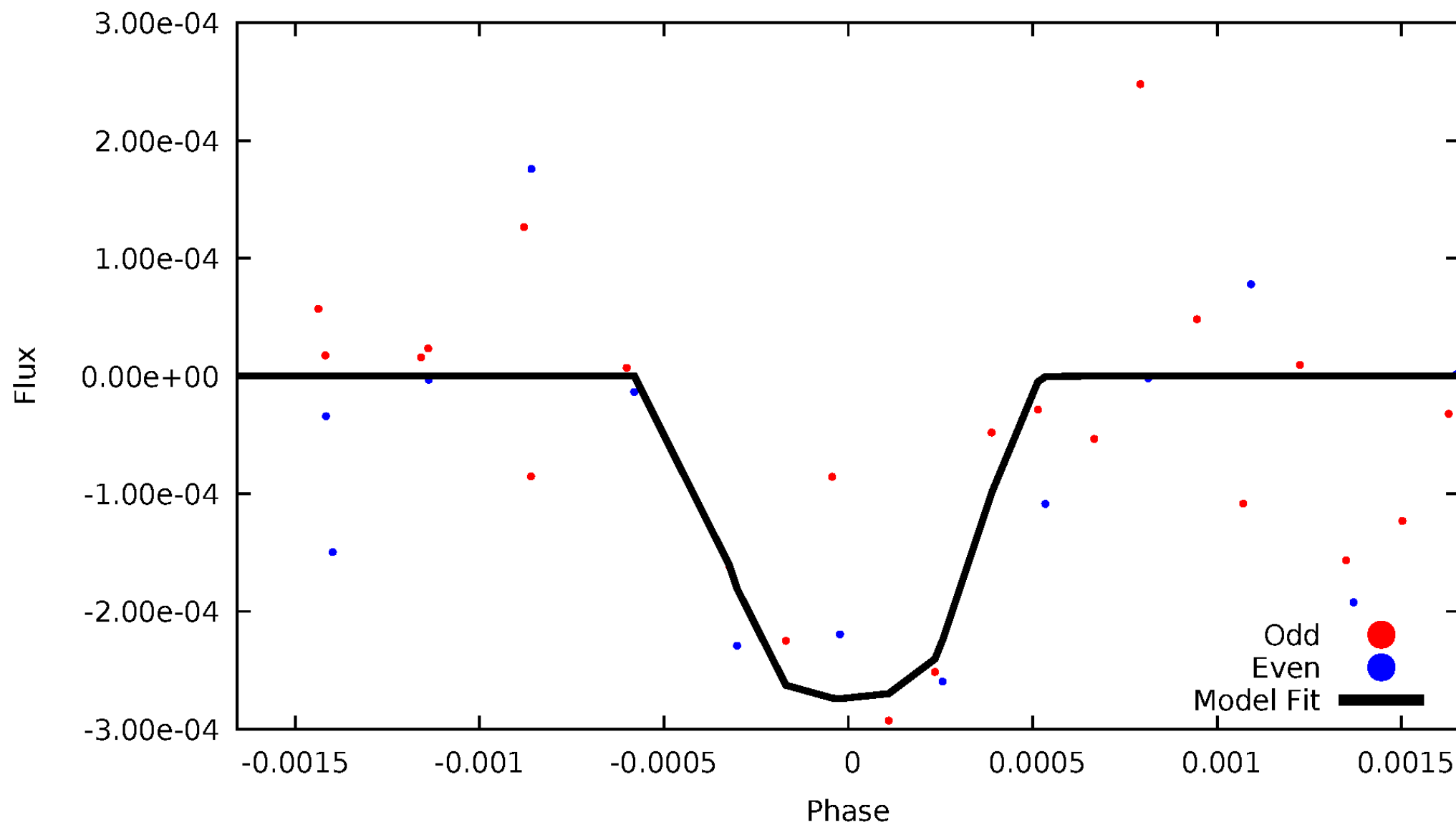


TCE 008027902-09



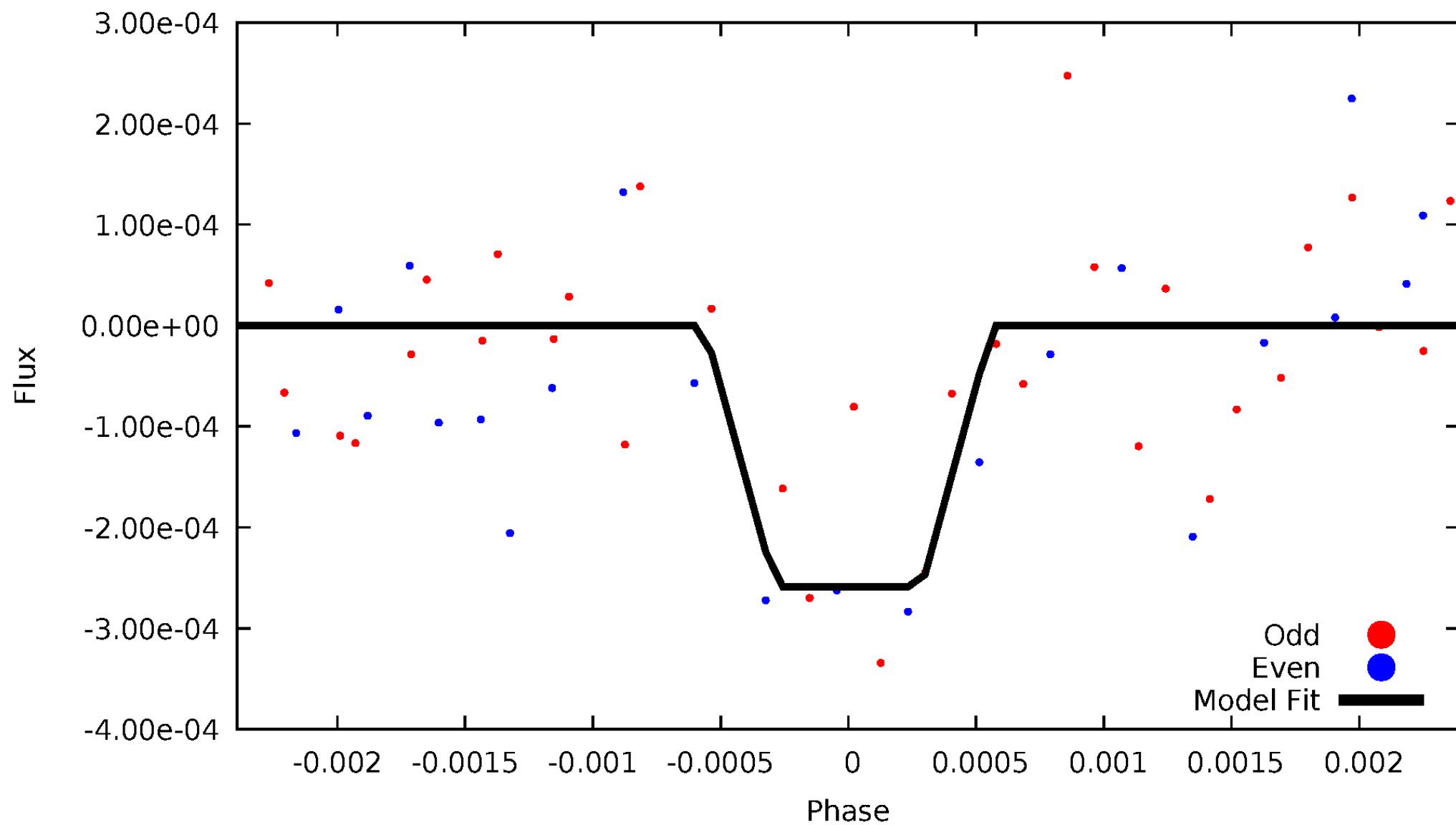
DV Odd/Even

TCE 008027902-09



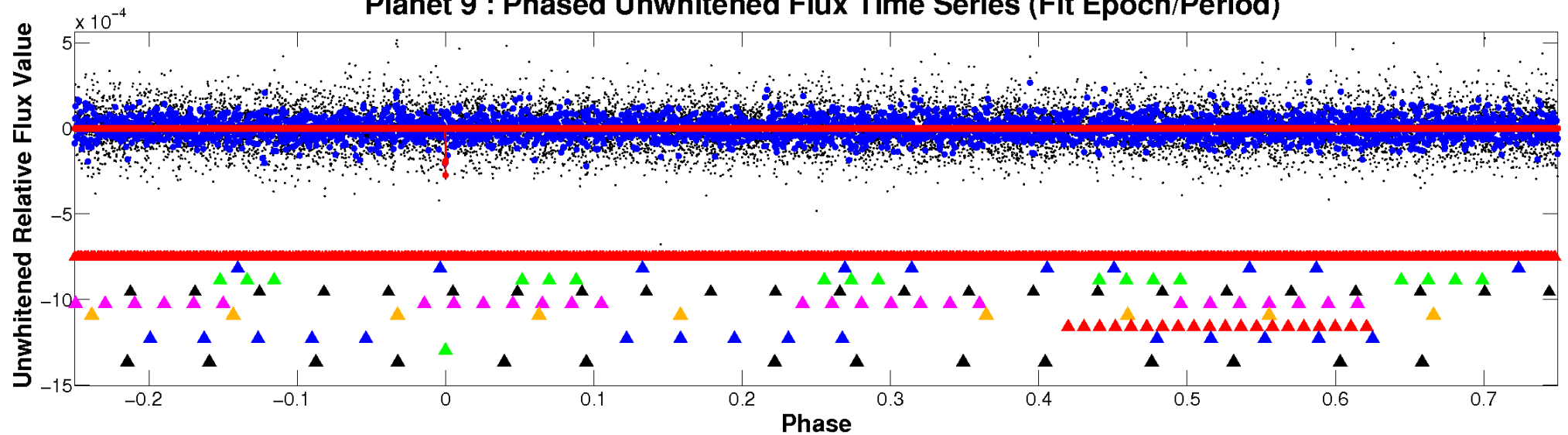
ALT Odd/Even

TCE 008027902-09

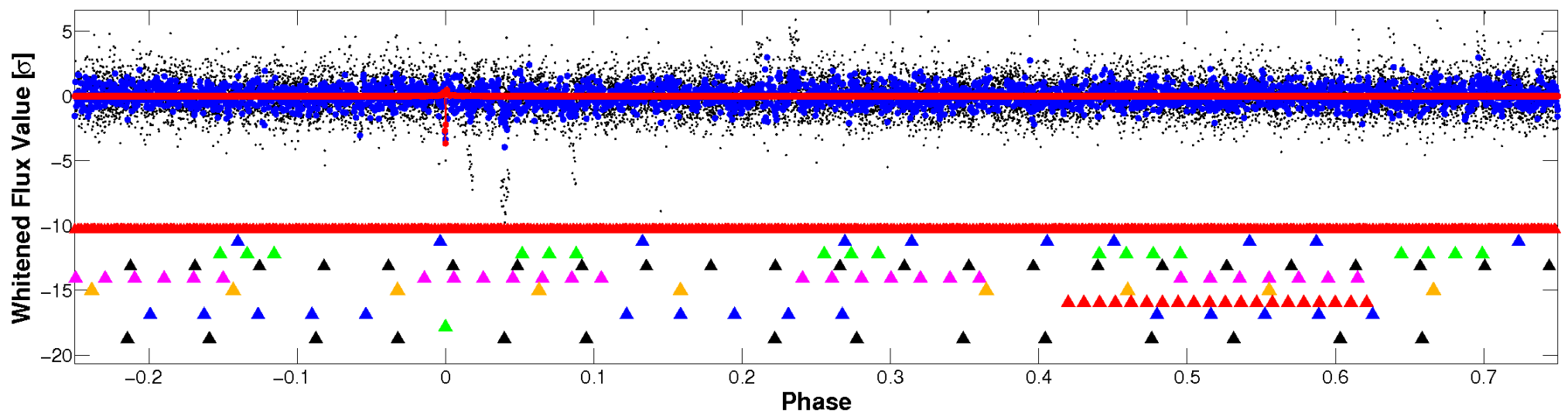


Non-Whitened Vs. Whitened Light Curve

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

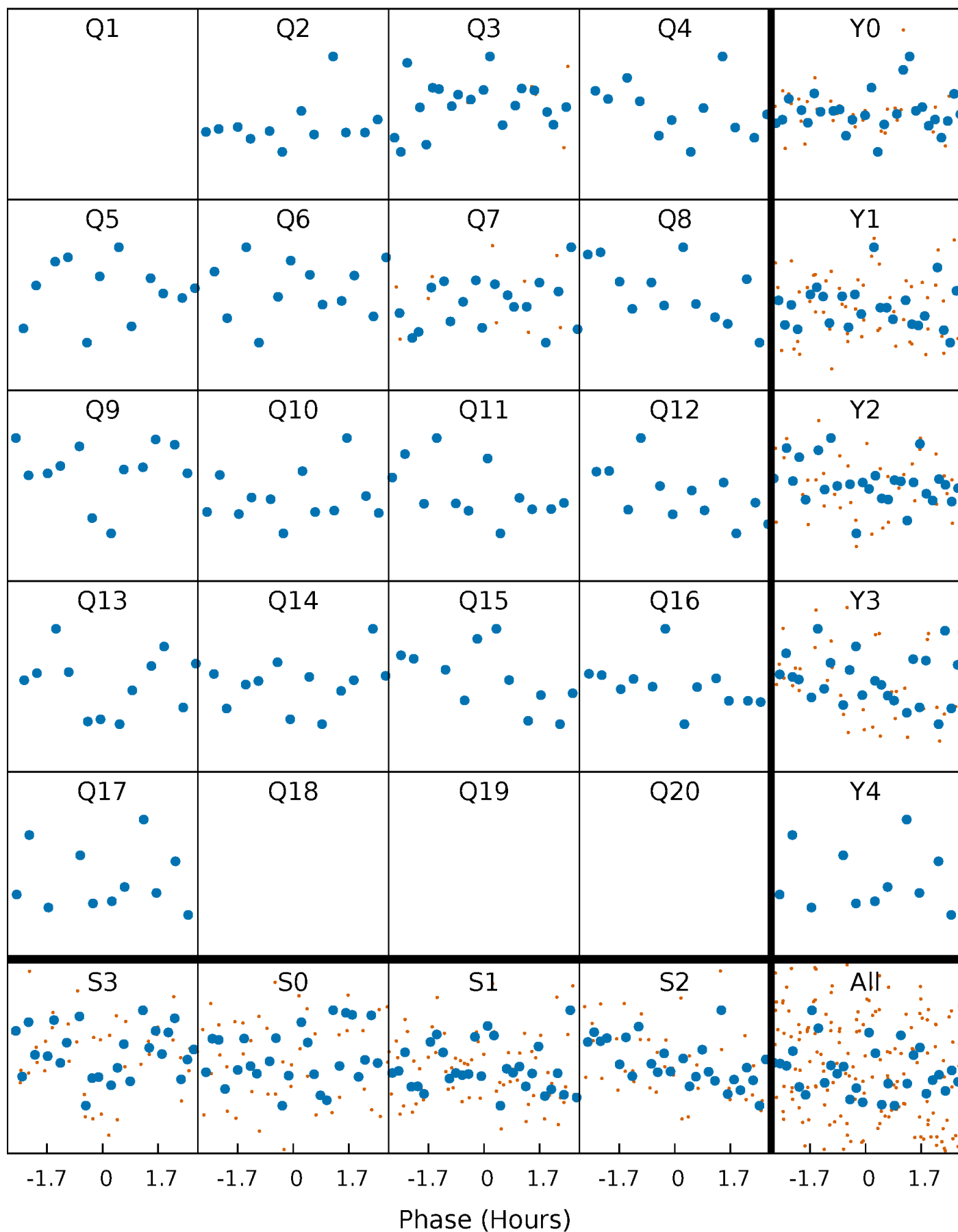


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



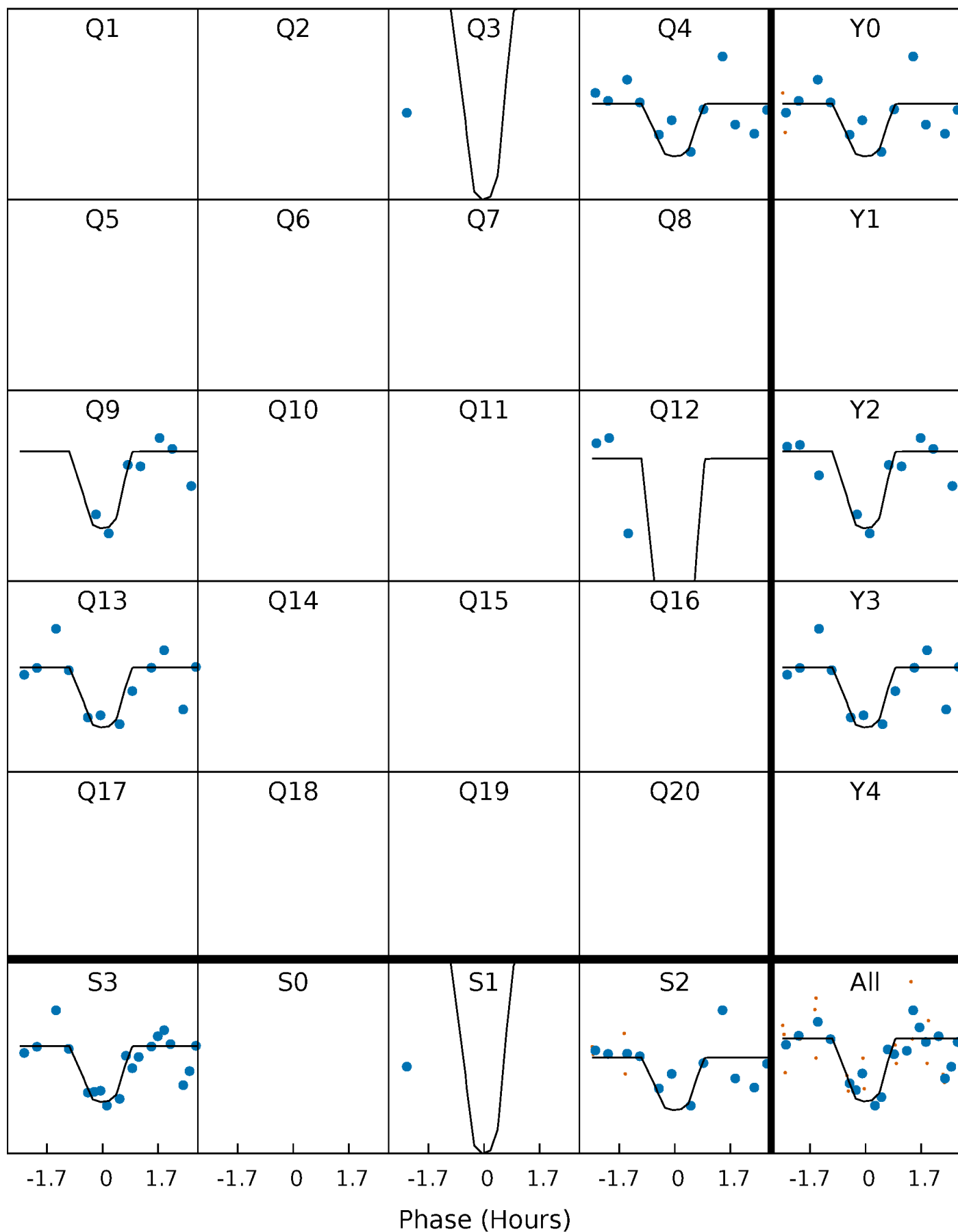
PDC Quarter-Phased Transit Curves

TCE 008027902-09 $P = 73.317645$ Days $T_0 = 194.503688$ (BKJD)



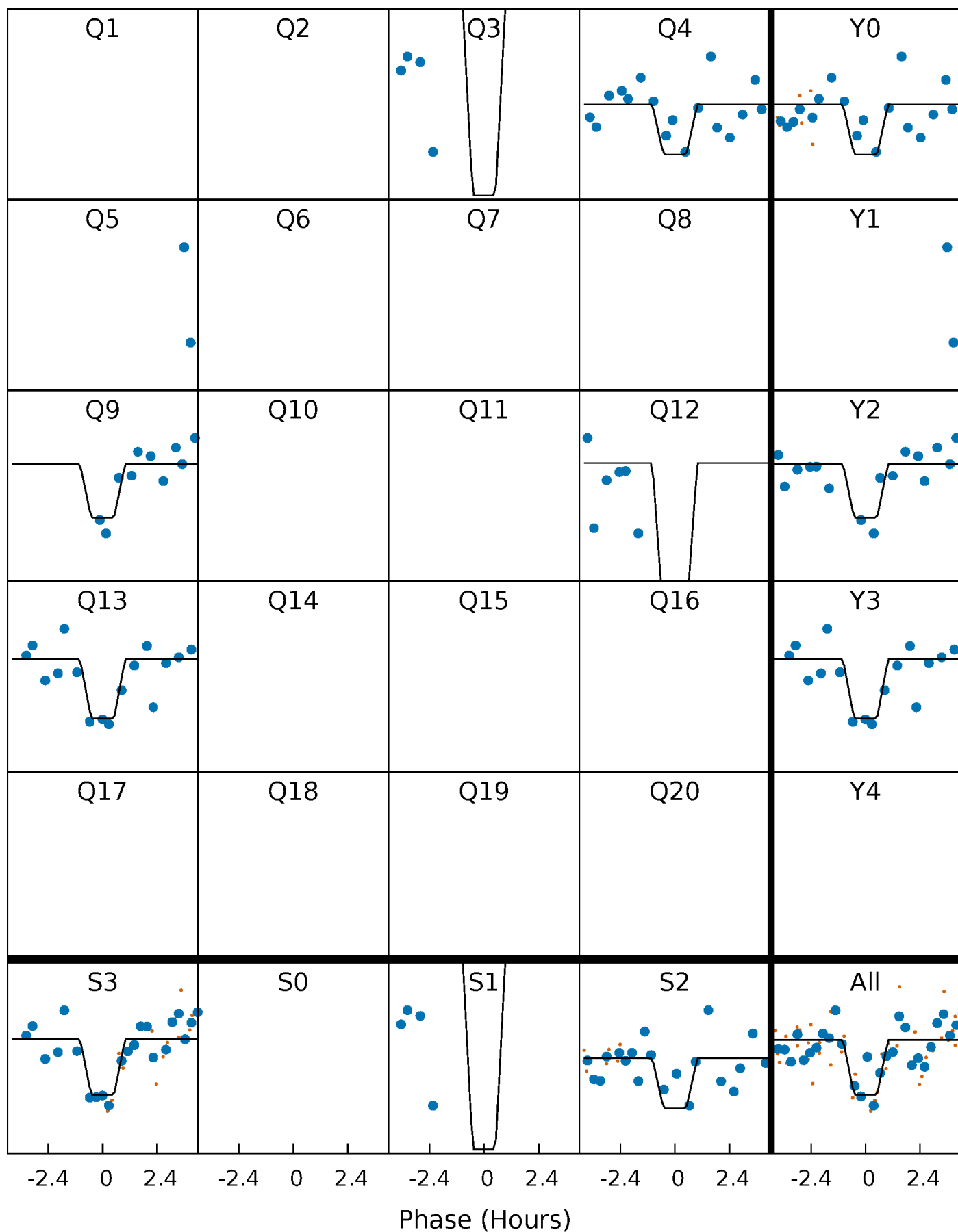
DV Quarter-Phased Transit Curves

TCE 008027902-09 P= 73.317645 Days $T_0=194.503688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

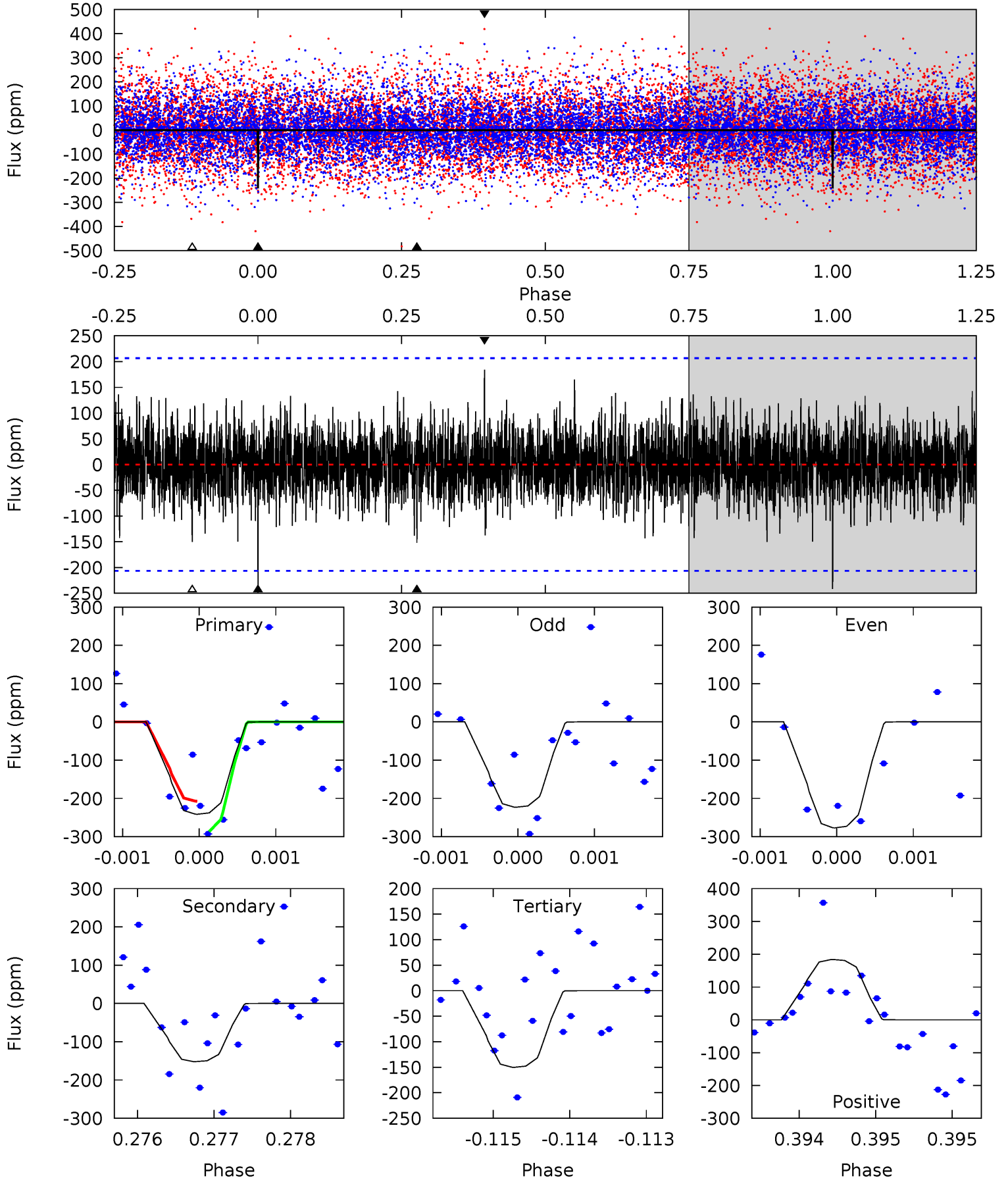
TCE 008027902-09 P= 73.318226 Days $T_0=194.497156$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-09, P = 73.317645 Days, E = 121.186043 Days

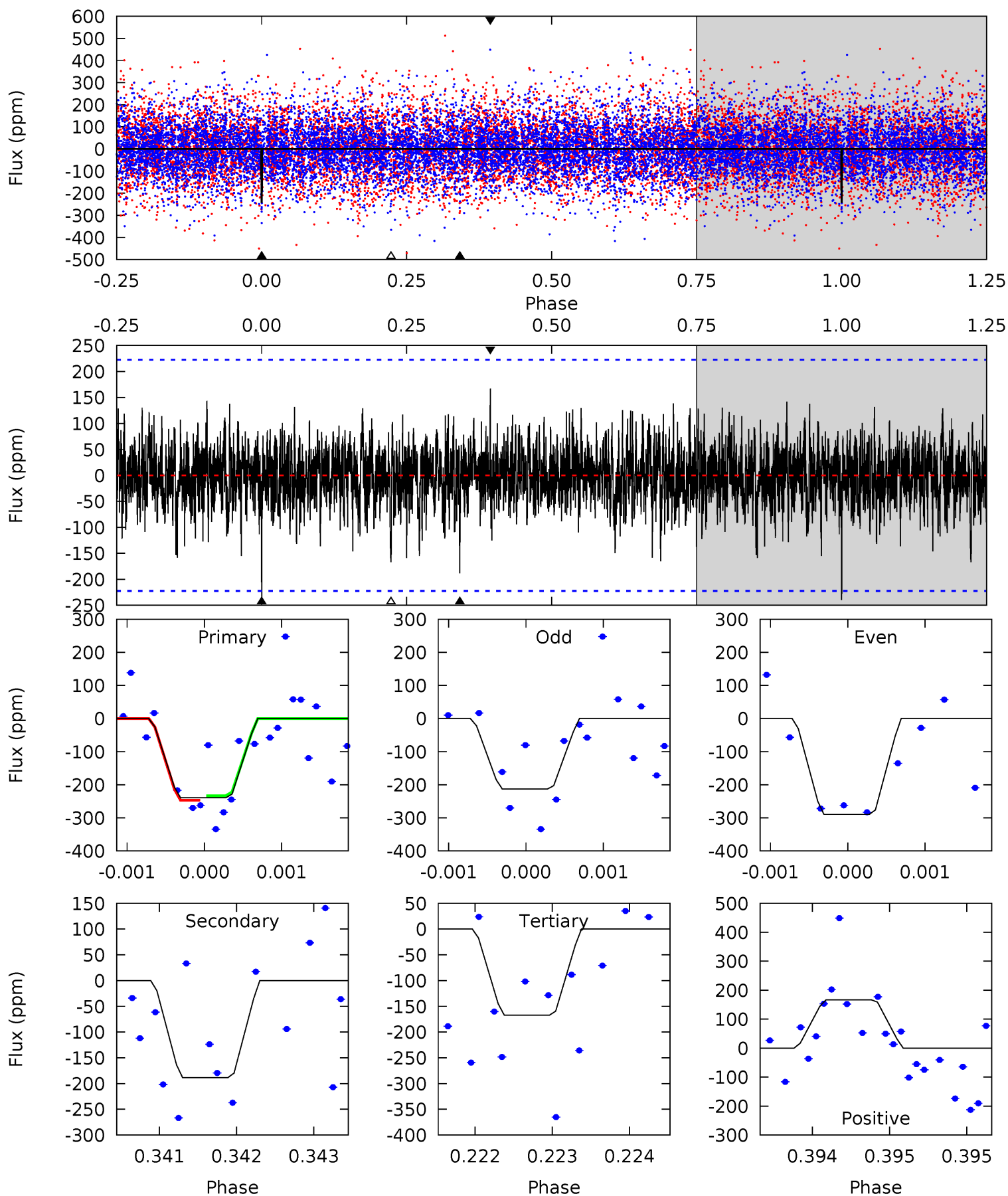
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.42	4.04	3.99	4.89	5.48	3.34	1.15	2.43	1.53	0.05	-0.85	0.71	0.94	0.43	1.02



Alt Model-Shift Uniqueness Test

008027902-09, P = 73.318226 Days, E = 121.178930 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.90	4.65	4.12	4.11	5.48	3.34	1.09	1.78	1.79	0.53	0.53	0.95	0.88	0.41	0.16



Stellar Parameters For KIC 008027902

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-152 ± 38	$4.31^{+3.27}_{-2.53}$	999^{+72}_{-67}	5614^{+3721}_{-1152}	663^{+3494}_{-435}
Alt.	-188 ± 41	$4.07^{+3.03}_{-2.39}$	997^{+67}_{-72}	6048^{+4336}_{-1310}	952^{+4857}_{-653}

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

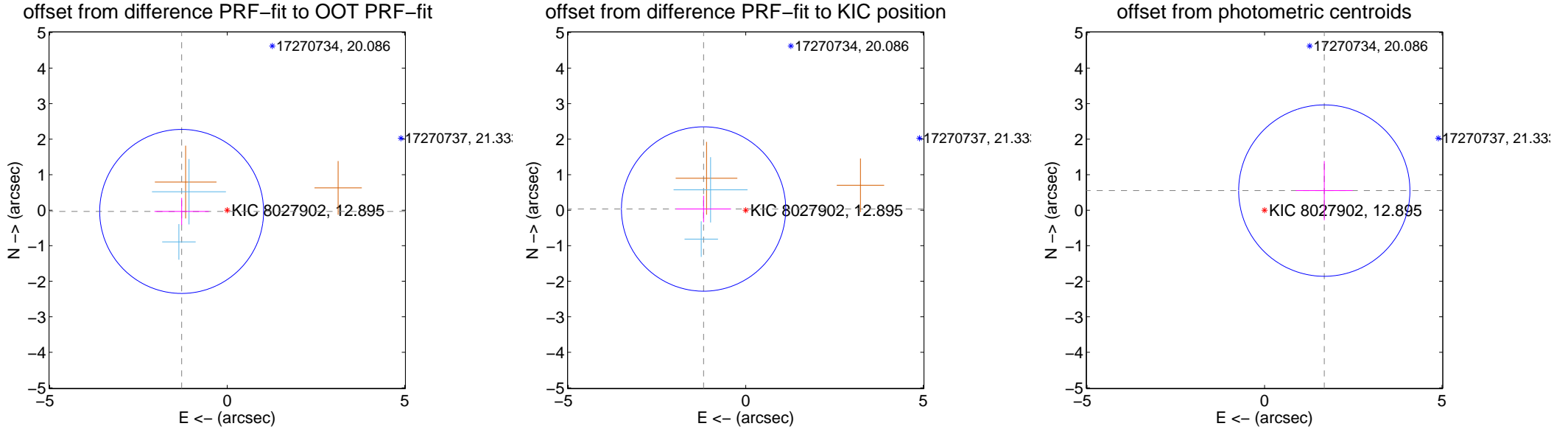
DV Centroid Data

Supplemental centroid analysis for 008027902-09. Kepler magnitude: 12.89. Transit SNR 8.91

There are 2 quarters with good PRF difference image offsets

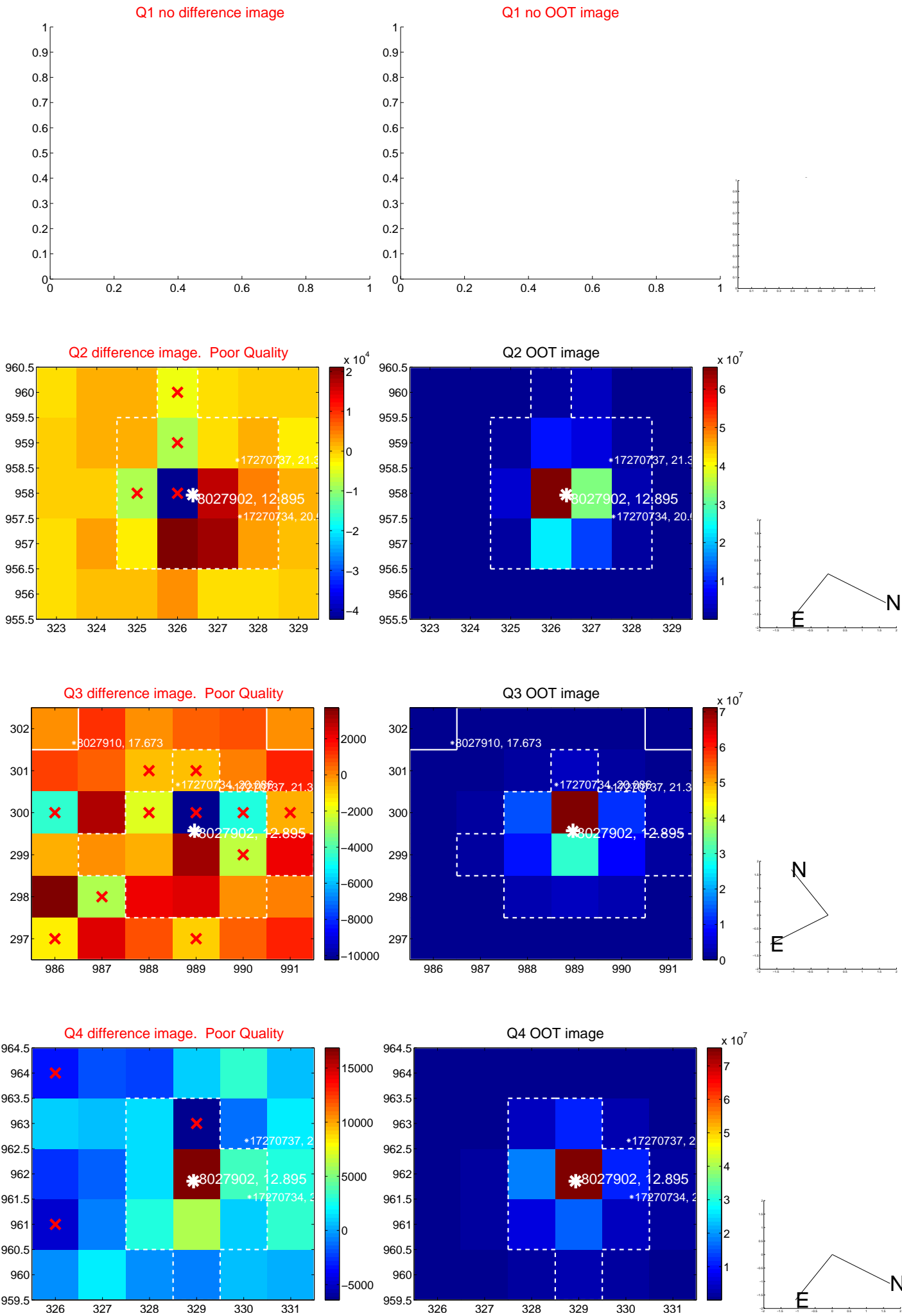
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.283 ± 0.770	1.67	1.283 ± 0.765	-0.034 ± 0.381
PRF-fit source offset from KIC position	1.188 ± 0.771	1.54	1.187 ± 0.772	0.034 ± 0.373
photometric centroid source offset	1.77 ± 0.80	2.20	-1.68 ± 0.80	0.55 ± 0.83

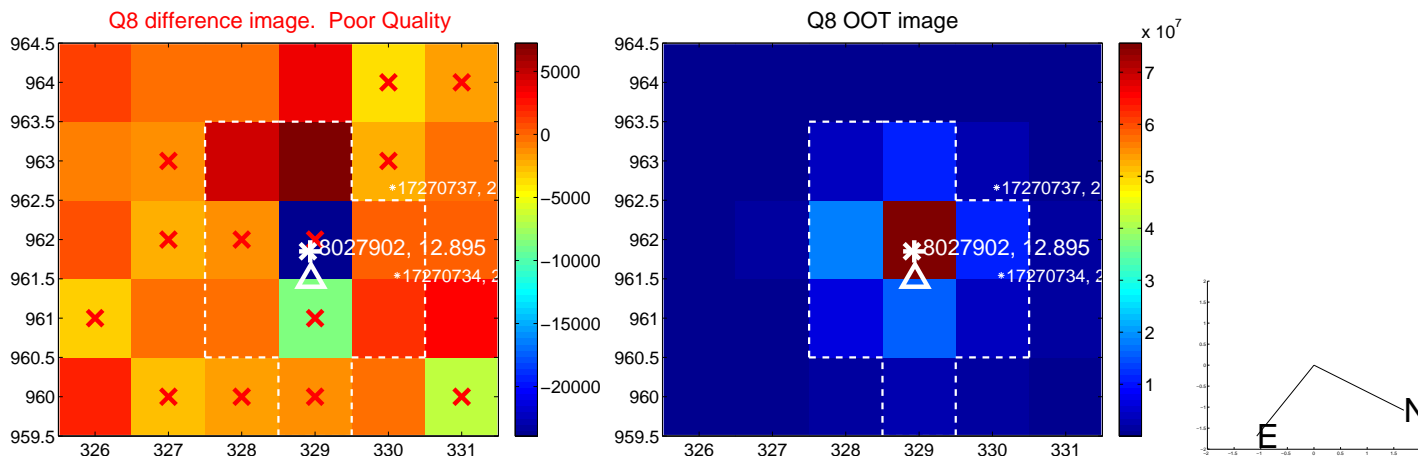
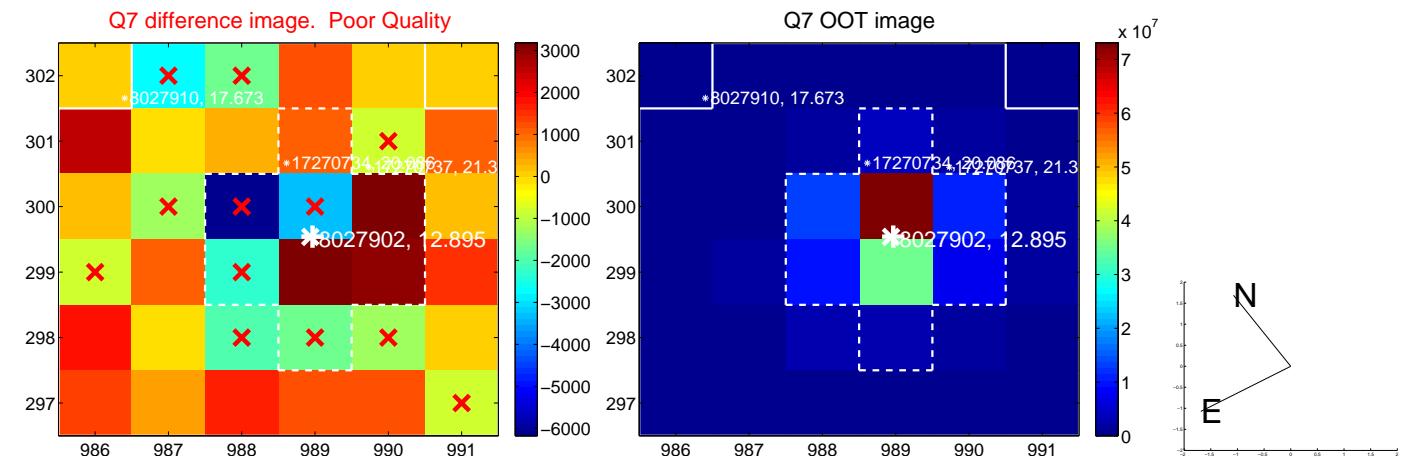
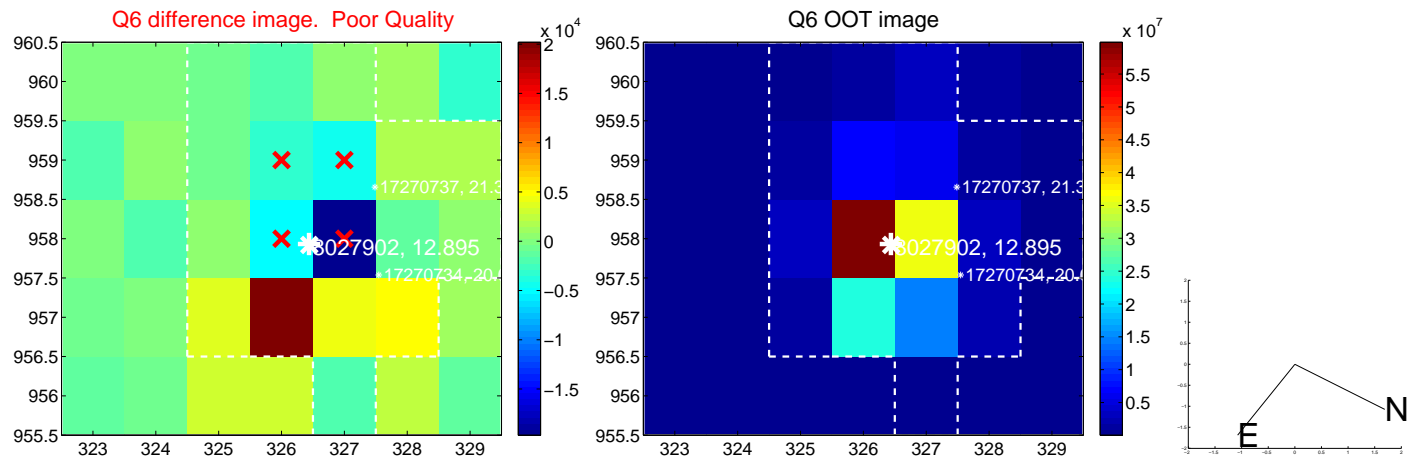
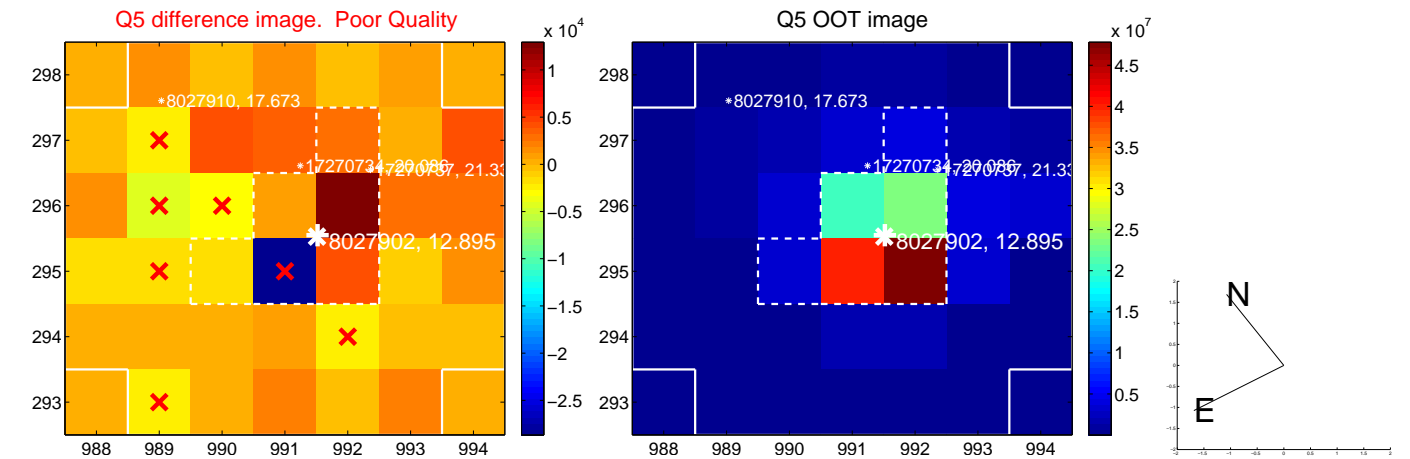


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

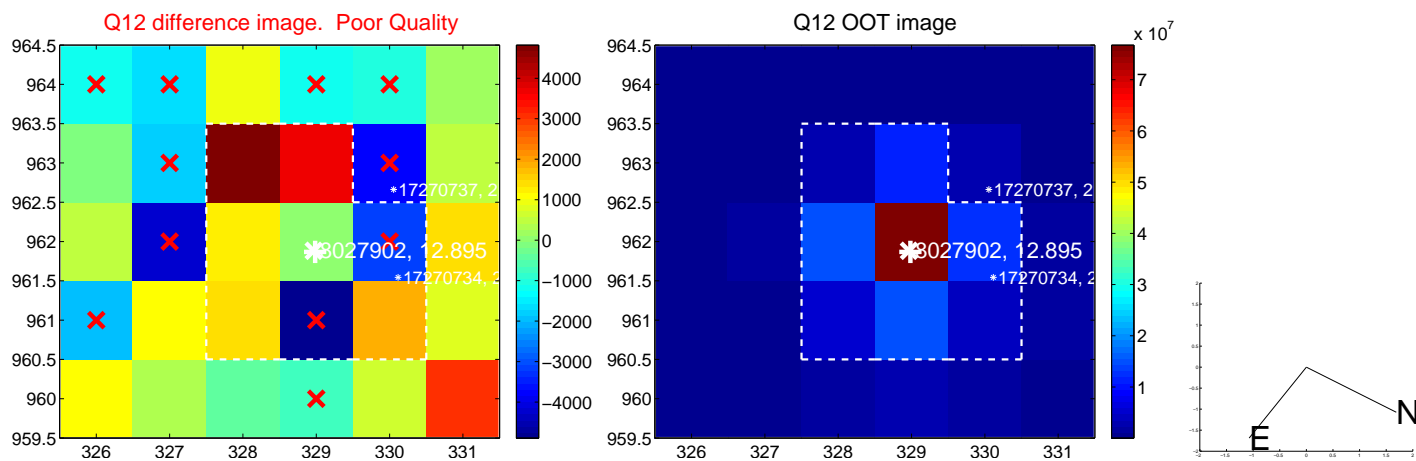
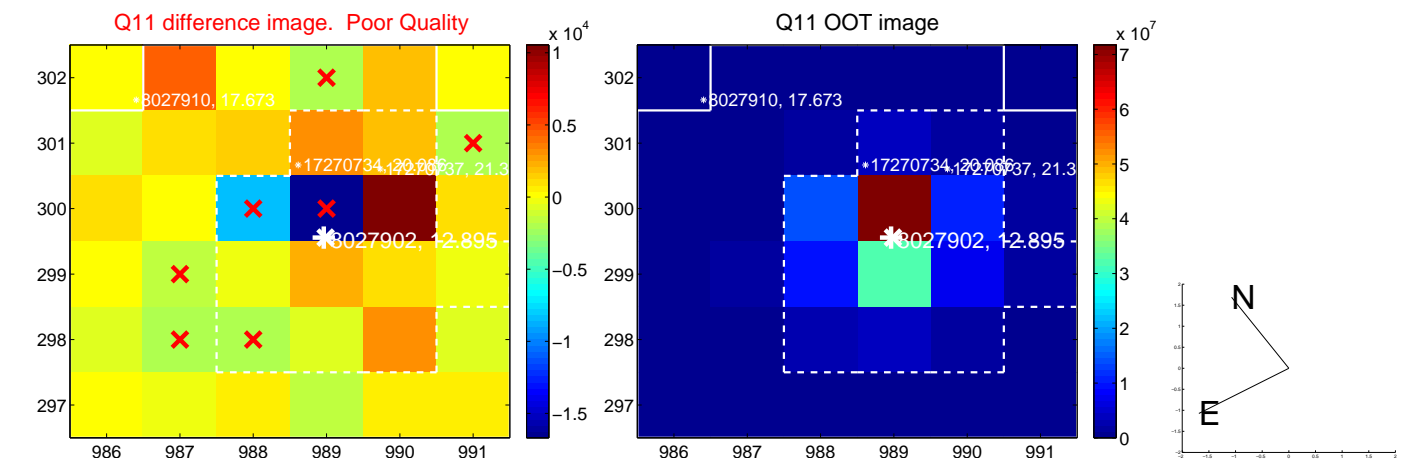
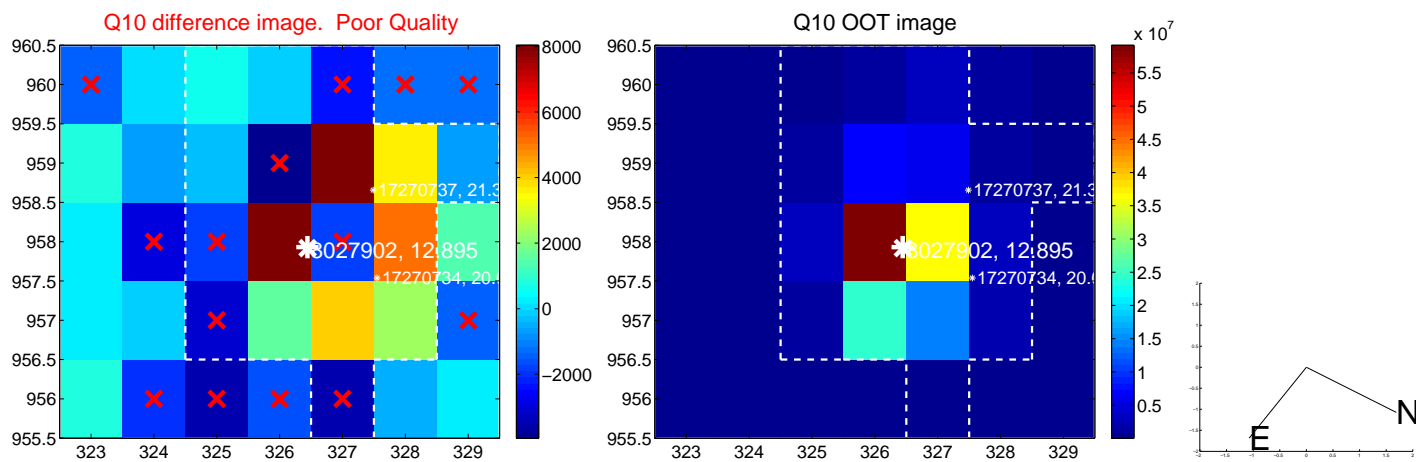
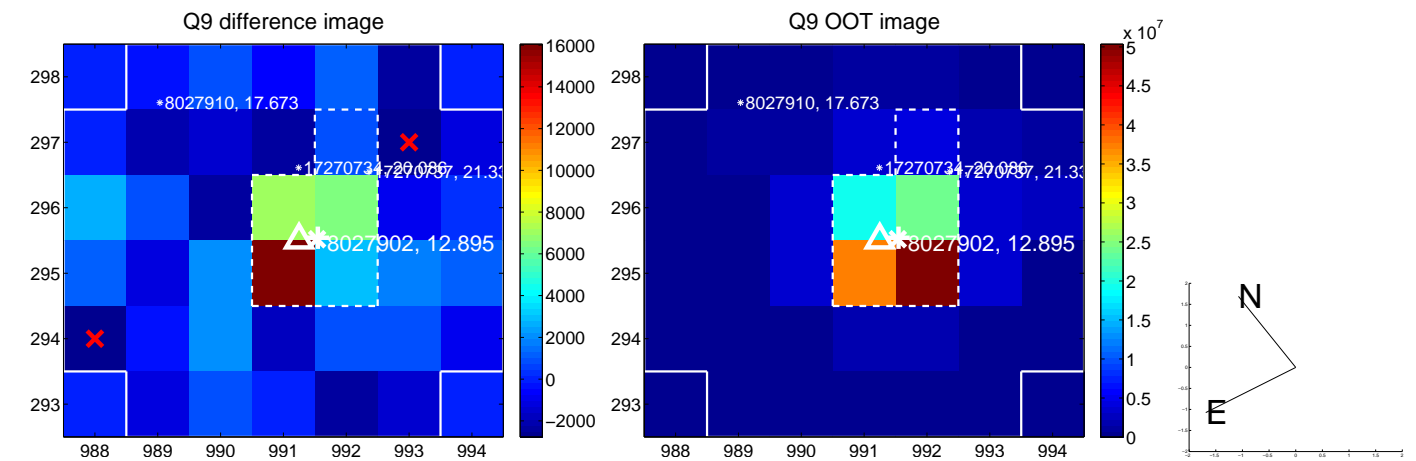
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



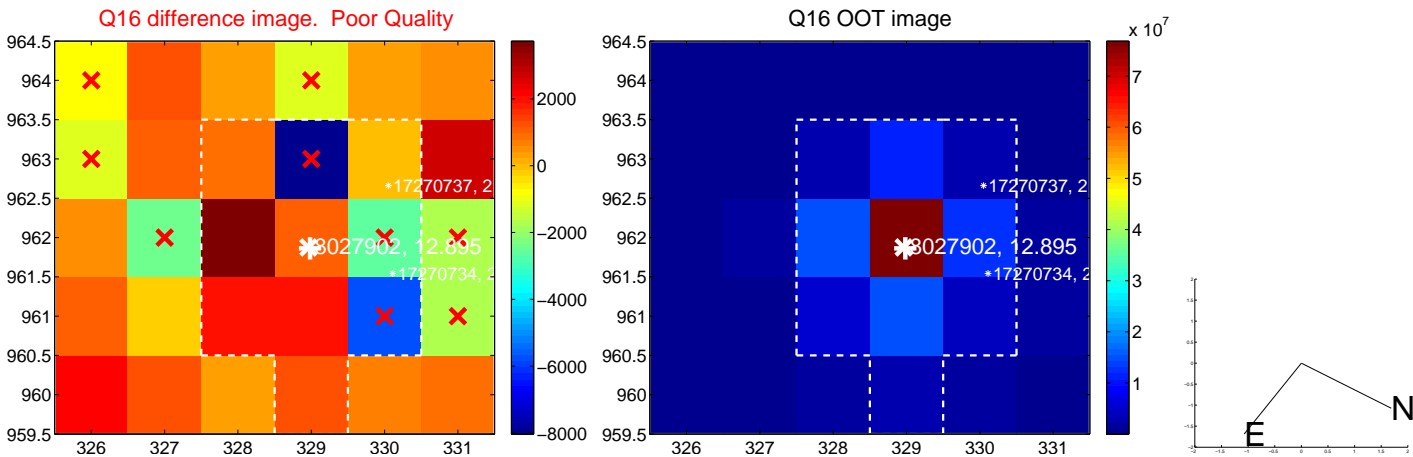
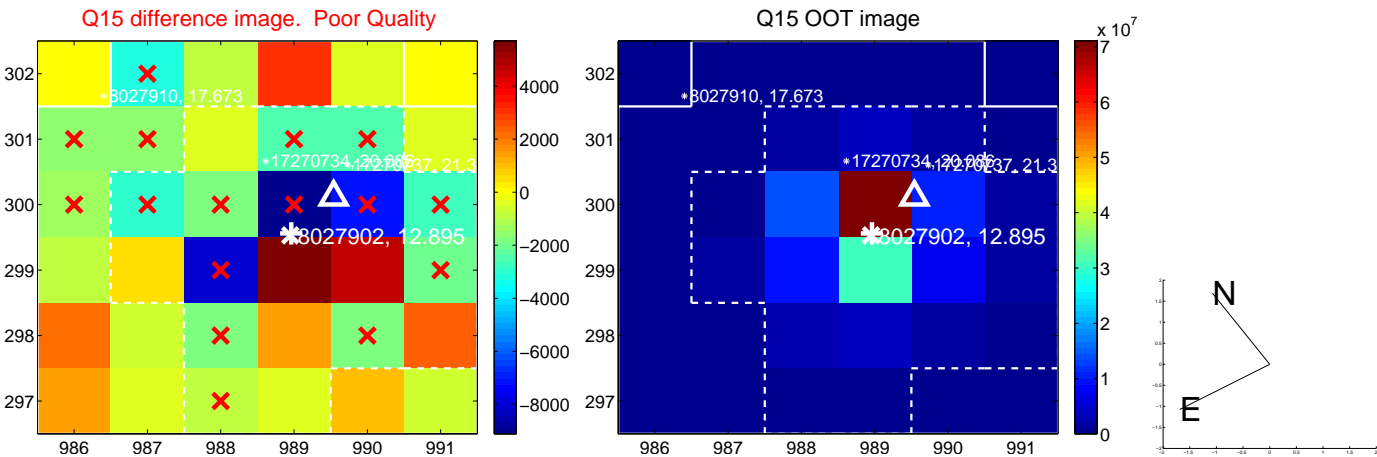
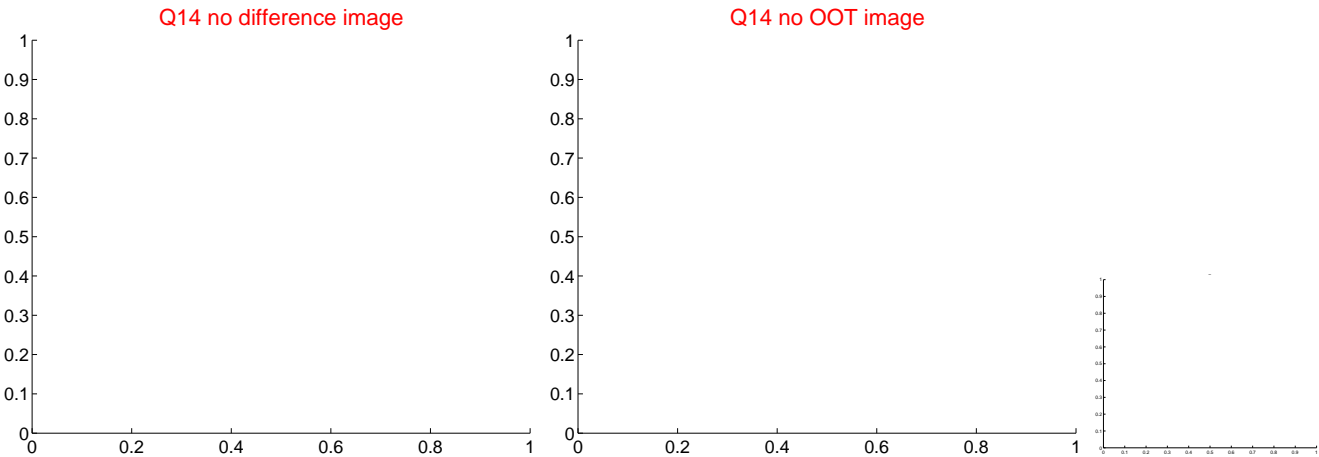
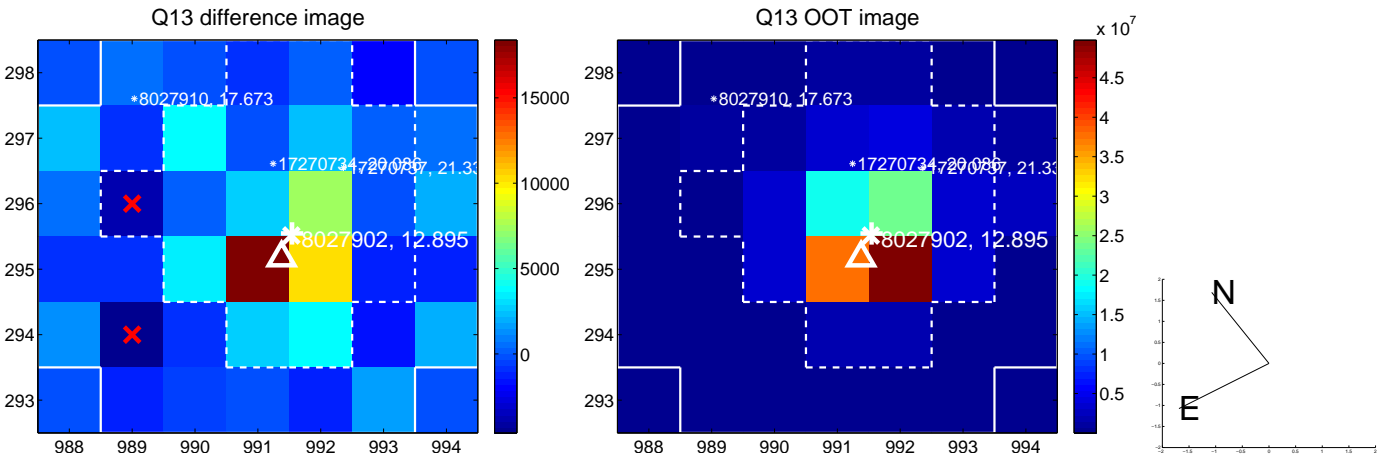
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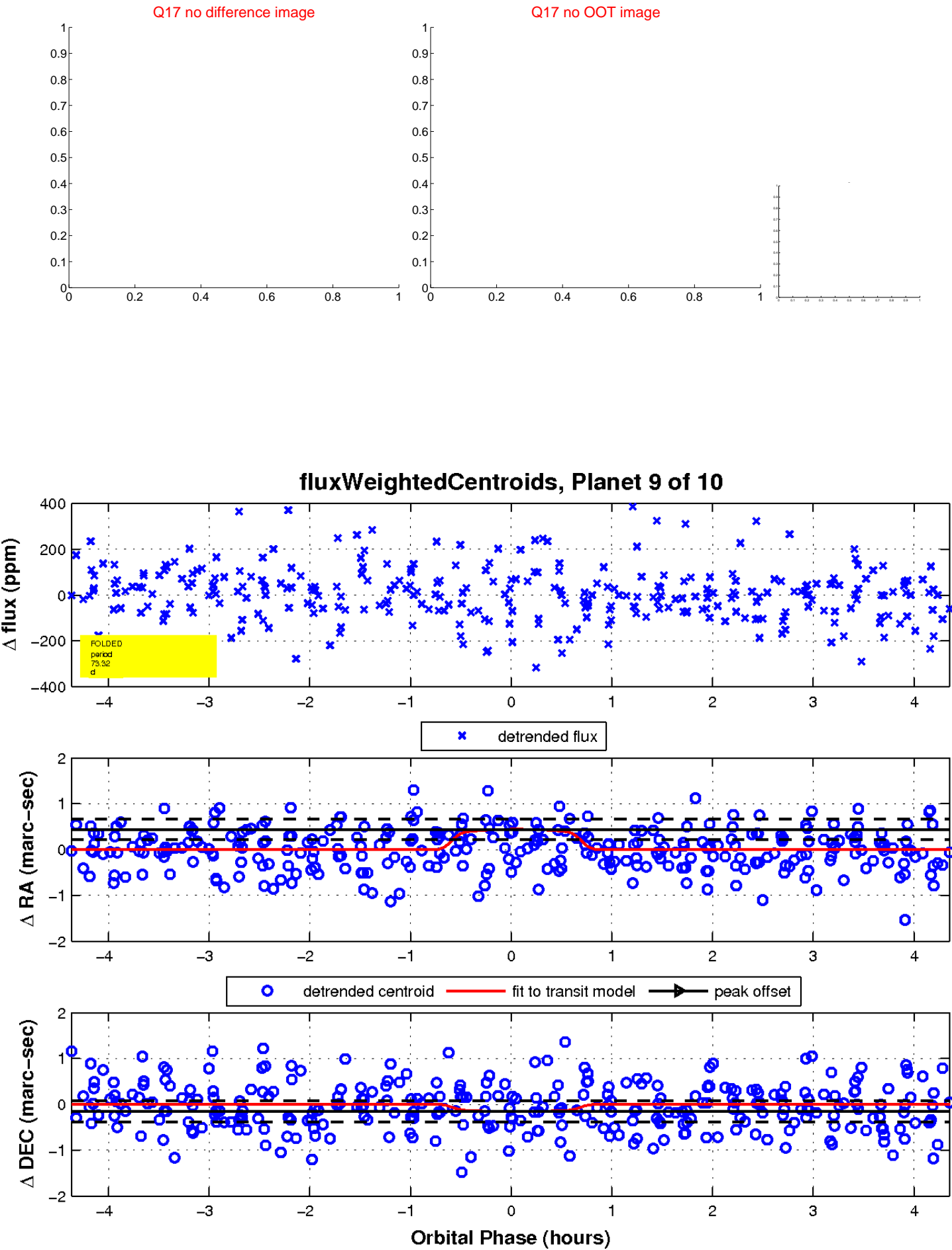
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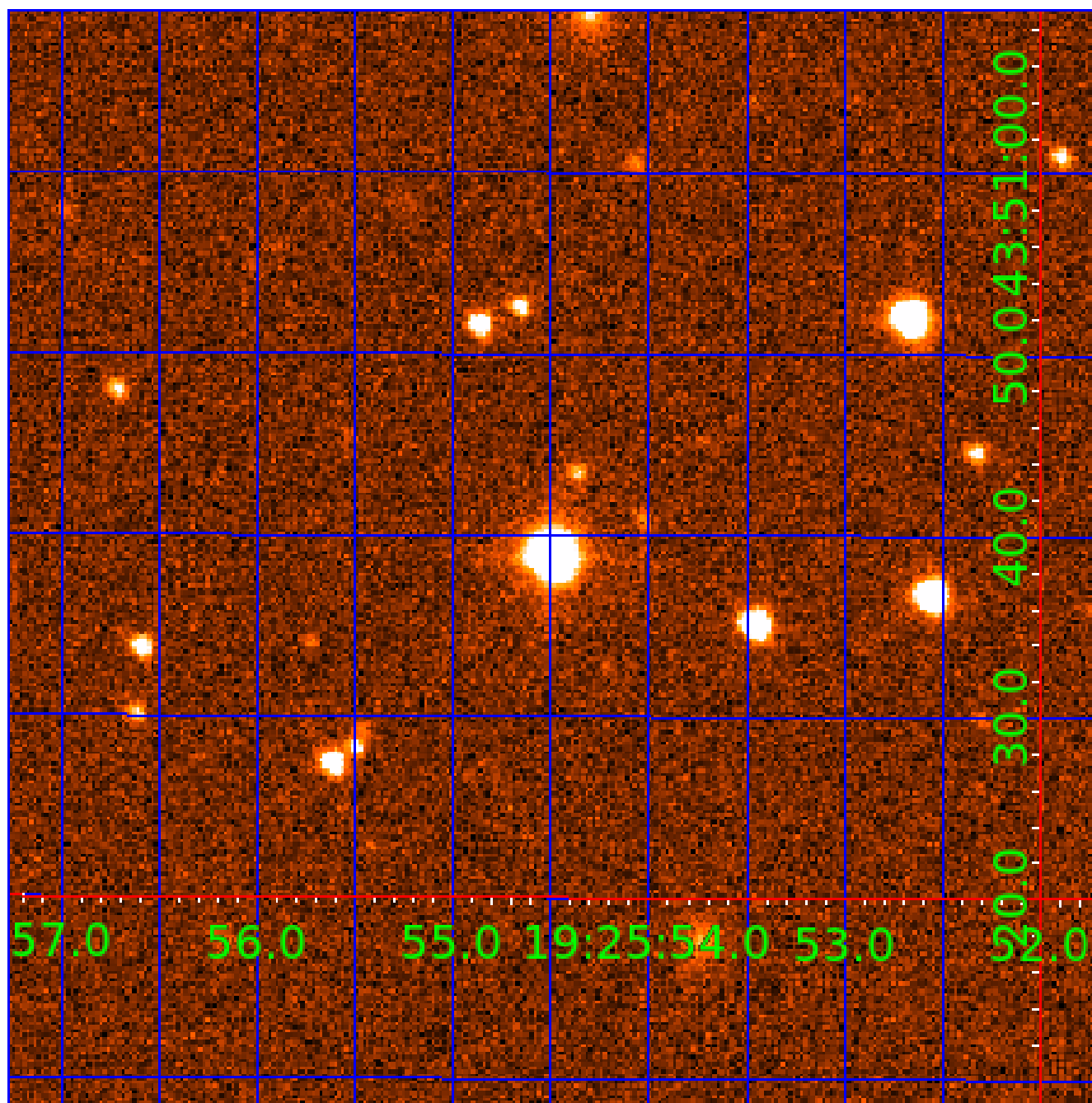


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UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

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008027902-09	OBS	No	73.317645	194.503688	274.3	1.458	7.5	8.9	2.09	7117	4.11	63.76
008027902-10	OBS	No	105.318306	165.413067	88.0	11.343	7.6	3.9	2.09	7117	2.11	39.34

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008027902-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008027902-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008027902-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008027902-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008027902-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

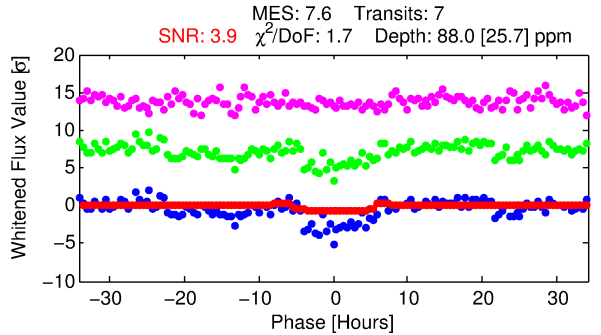
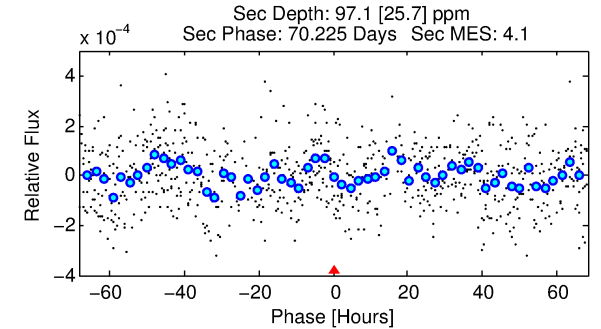
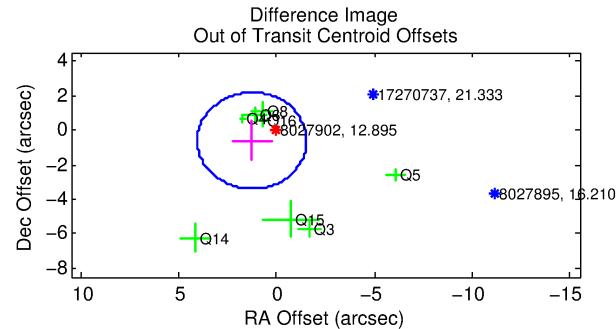
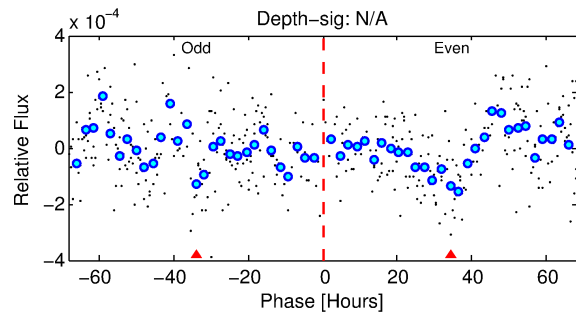
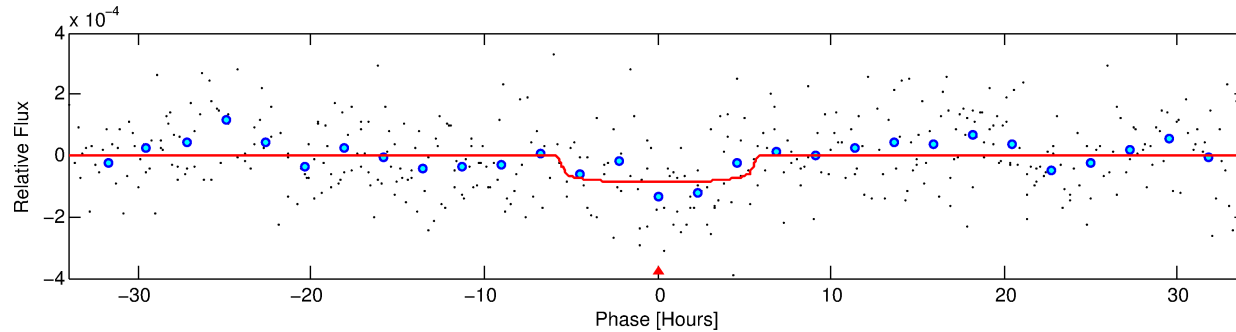
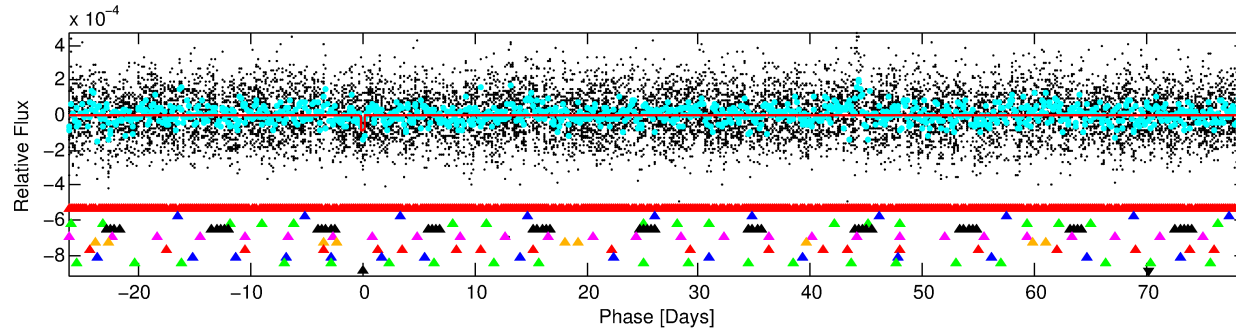
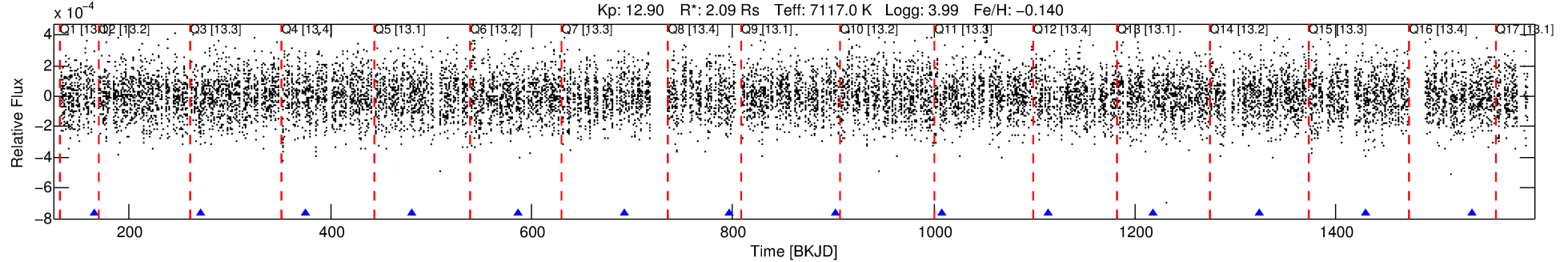
Ephemeris Match Information For 008027902-10

No Significant Match Found

DV One-Page Summary

KIC: 8027902 Candidate: 10 of 10 Period: 105.318 d
KOI: K06955 Corr: No Ephemeris Match

Kp: 12.90 R*: 2.09 Rs Teff: 7117.0 K Logg: 3.99 Fe/H: -0.140



DV Fit Results:

Period = 105.31831 [0.00558] d
Epoch = 165.4131 [0.0386] BKJD
Rp/R* = 0.0093 [0.0075]
a/R* = 50.24 [234.17]
b = 0.72 [3.15]
Seff = 39.34 [14.98]
Teq = 639 [61] K
Rp = 2.11 [1.79] Re
a = 0.5052 [0.1157] AU
Ag = 3062.69 [5123.99] [0.60σ]
Teffp = 7345 [3018] K [2.22σ]

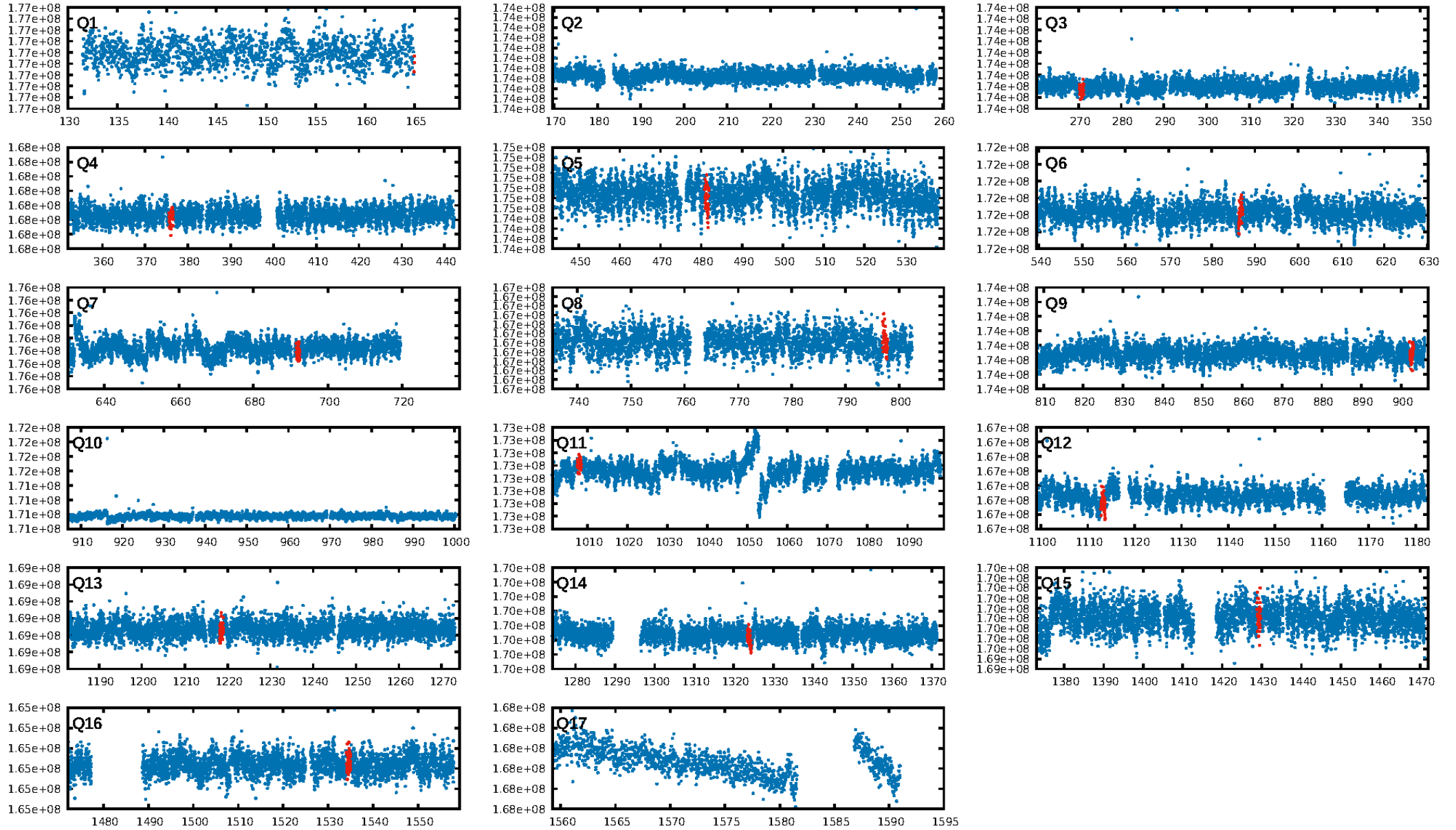
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.33σ]
LongPeriod-sig: 100.0% [43.81σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.345
Centroid-sig: 43.8%
Centroid-so: 0.917 arcsec [0.84σ]
OotOffset-rm: 1.405 arcsec [1.51σ]
KicOffset-rm: 1.375 arcsec [1.65σ]
OotOffset-st: 2/2/3/1 [8]
KicOffset-st: 2/2/3/1 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.00 [0/9]

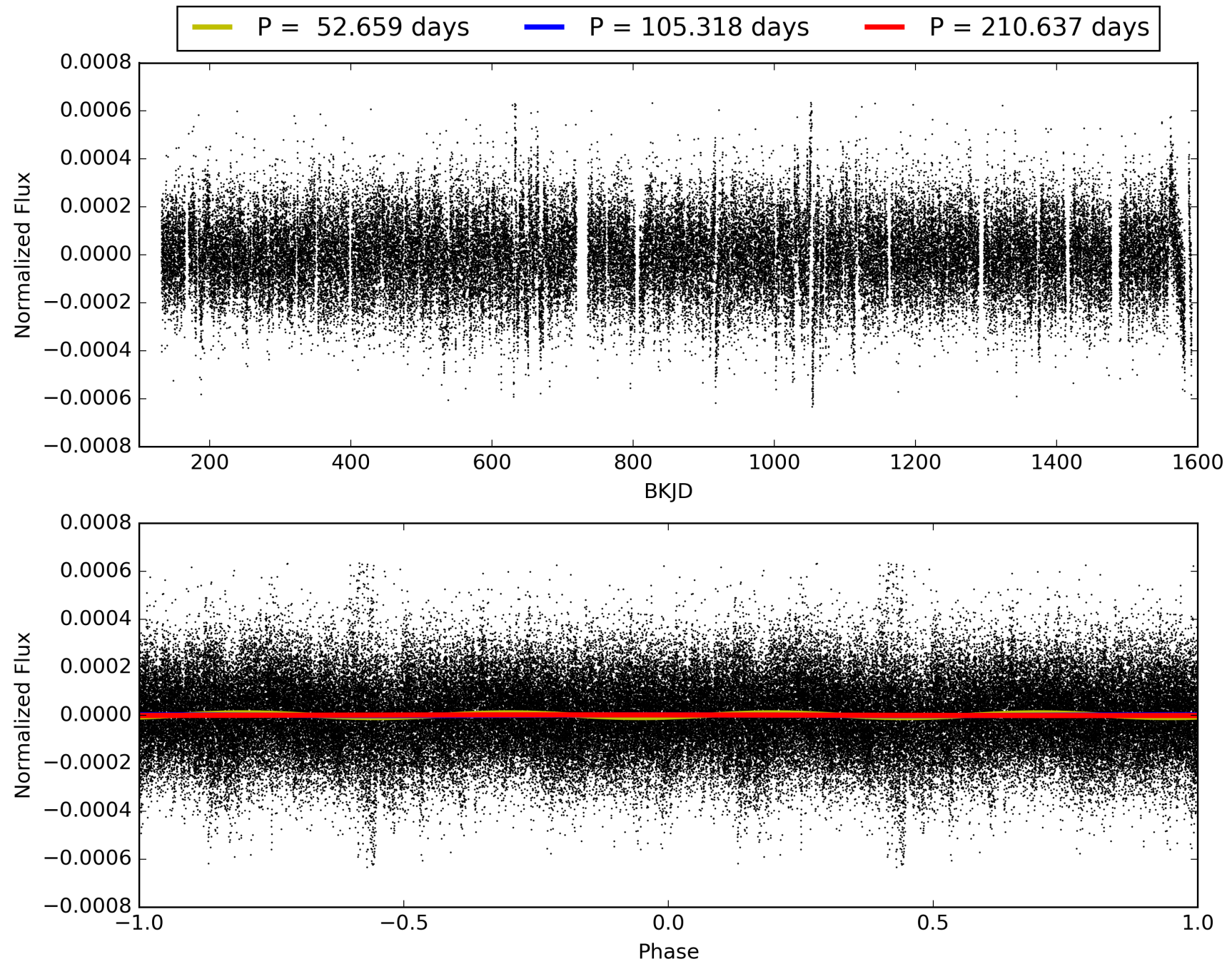
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 16:21:24 Z

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

TCE 008027902-10, PDC Light Curves

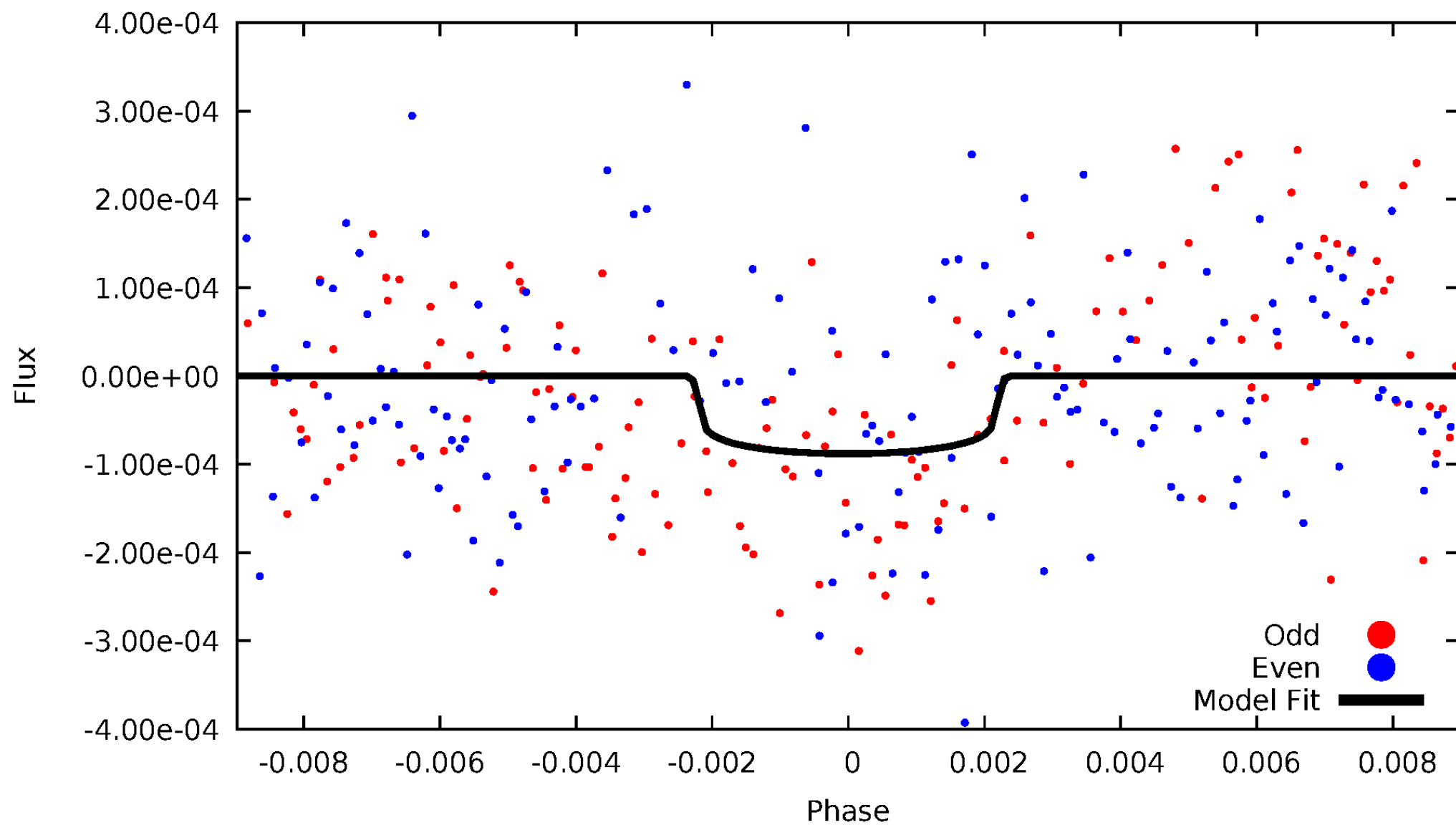


TCE 008027902-10



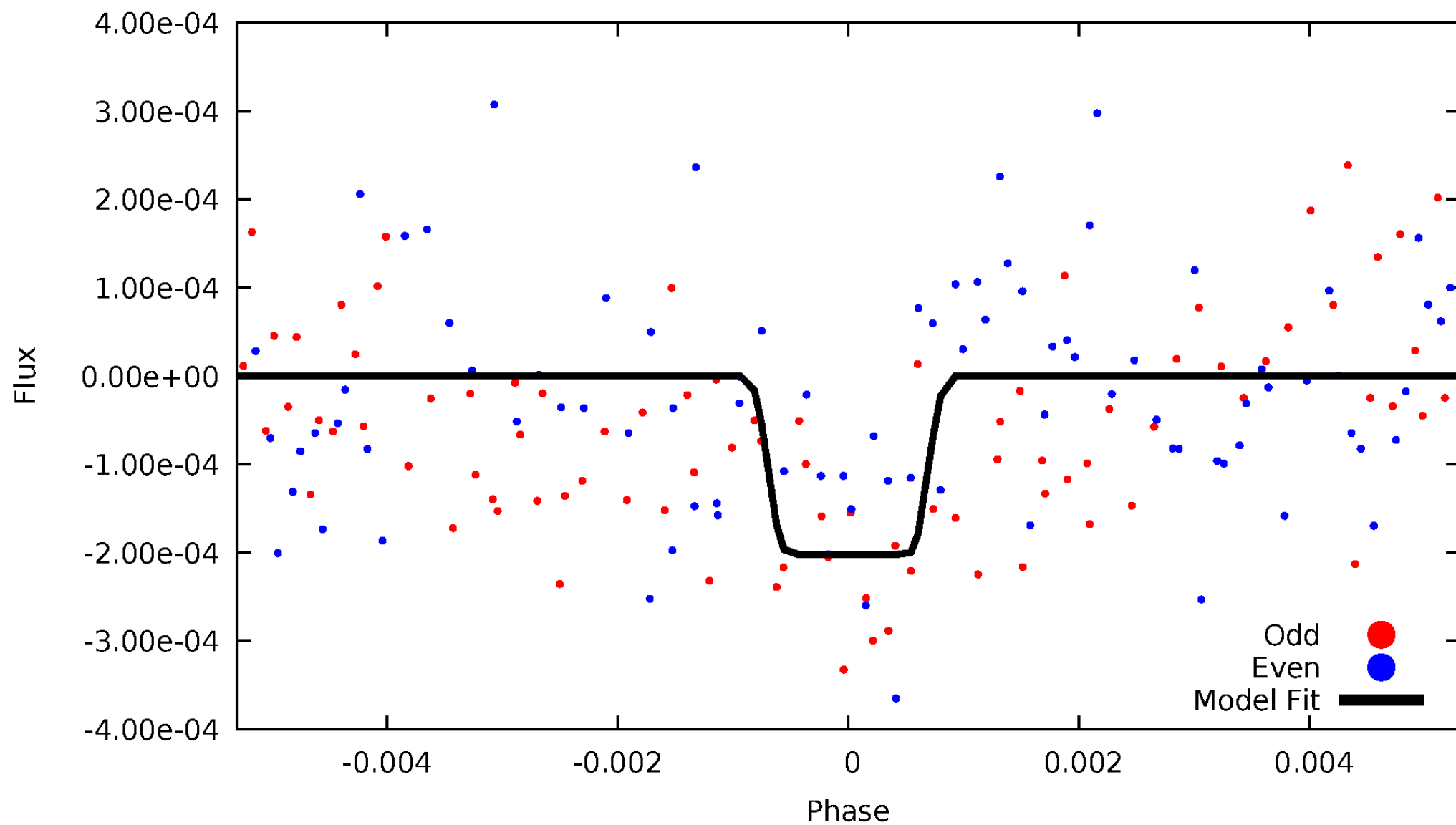
DV Odd/Even

TCE 008027902-10



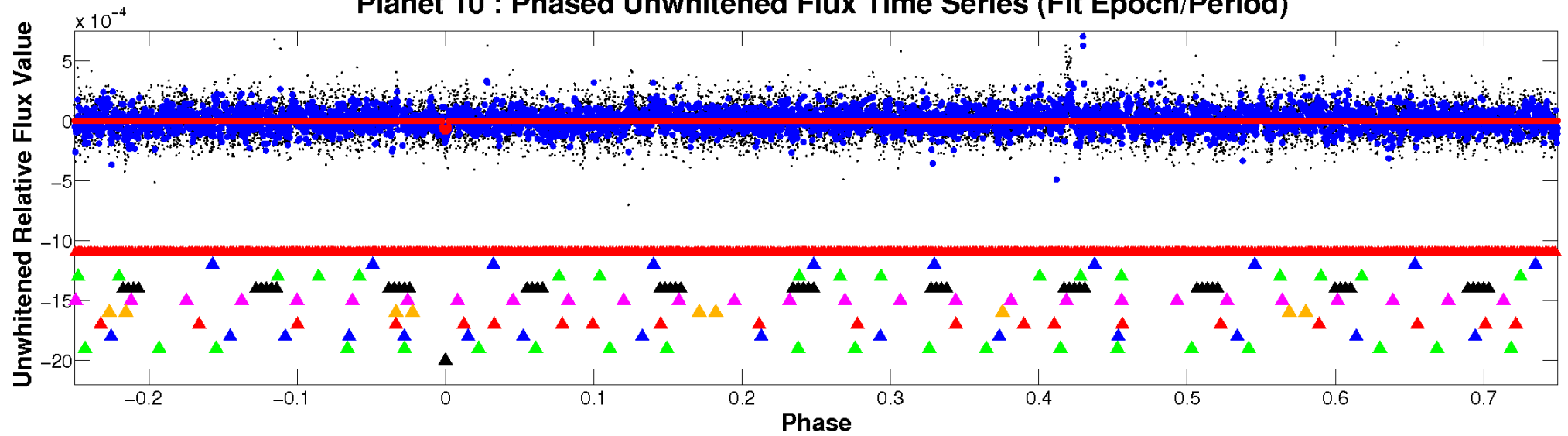
ALT Odd/Even

TCE 008027902-10

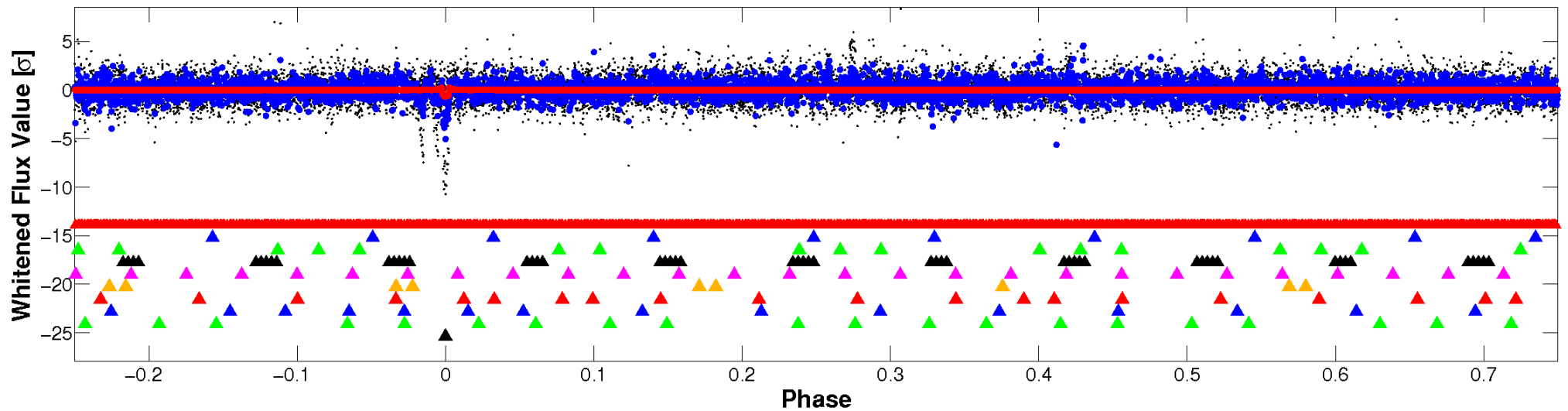


Non-Whitened Vs. Whitened Light Curve

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

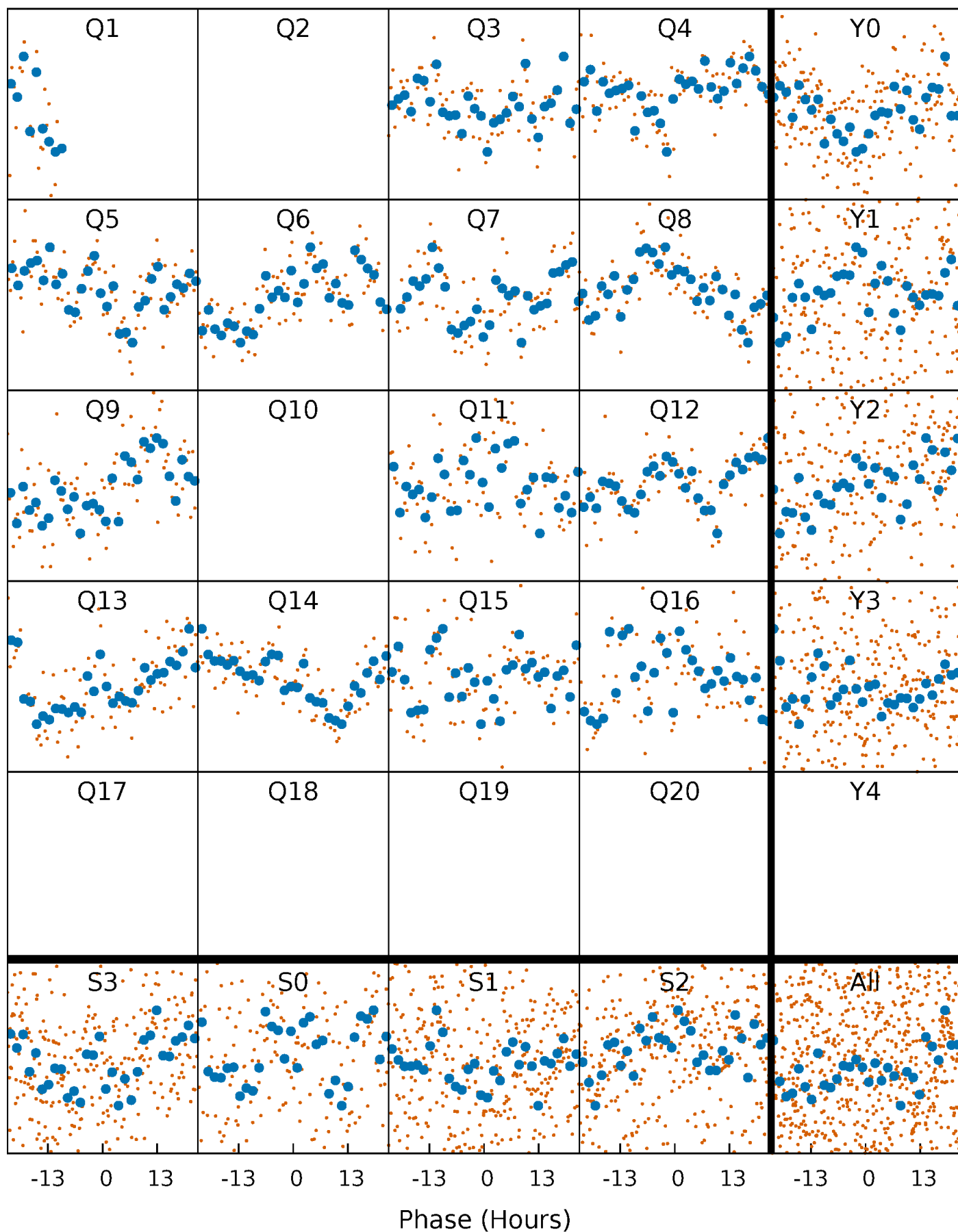


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



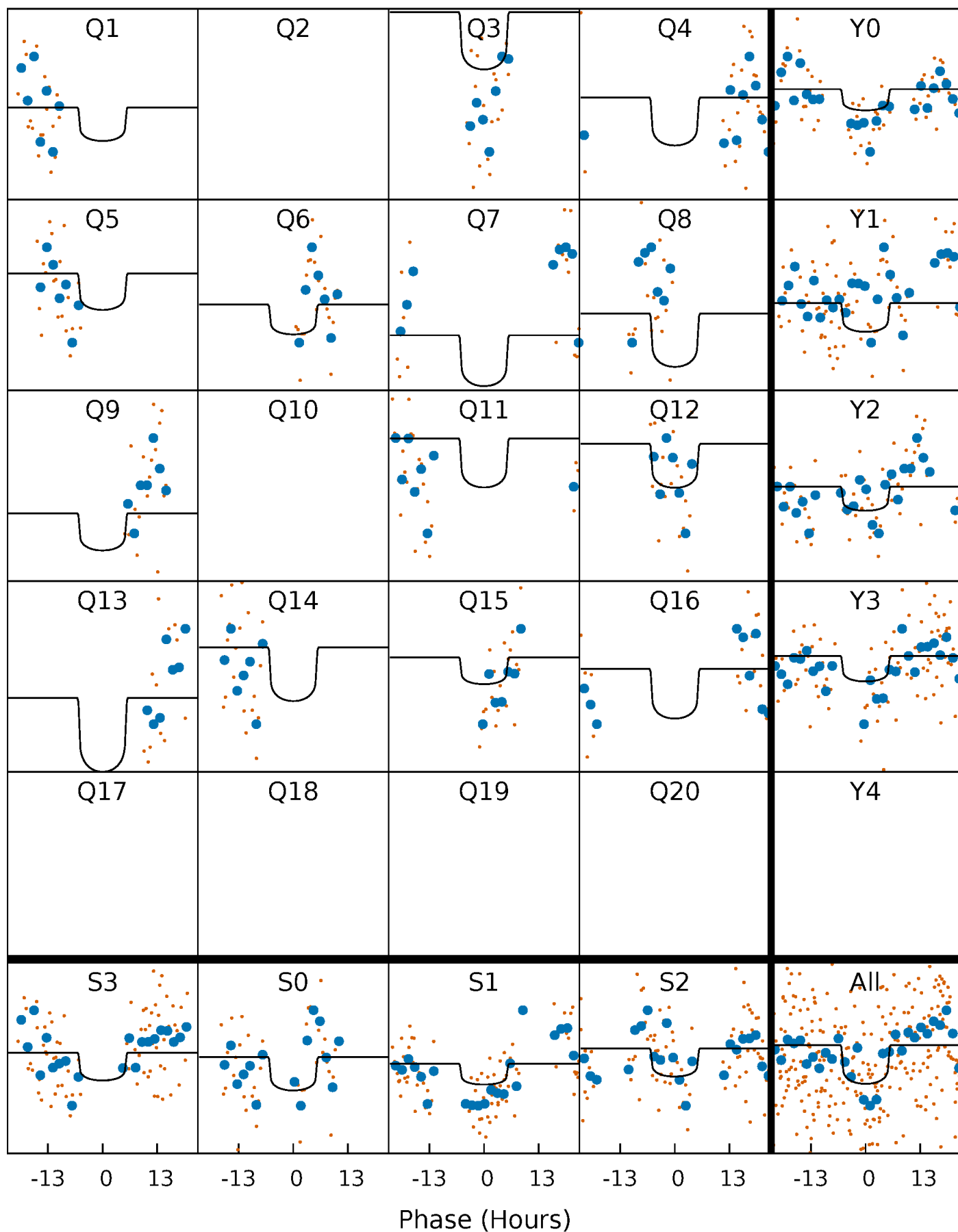
PDC Quarter-Phased Transit Curves

TCE 008027902-10 P=105.318306 Days $T_0=165.413067$ (BKJD)



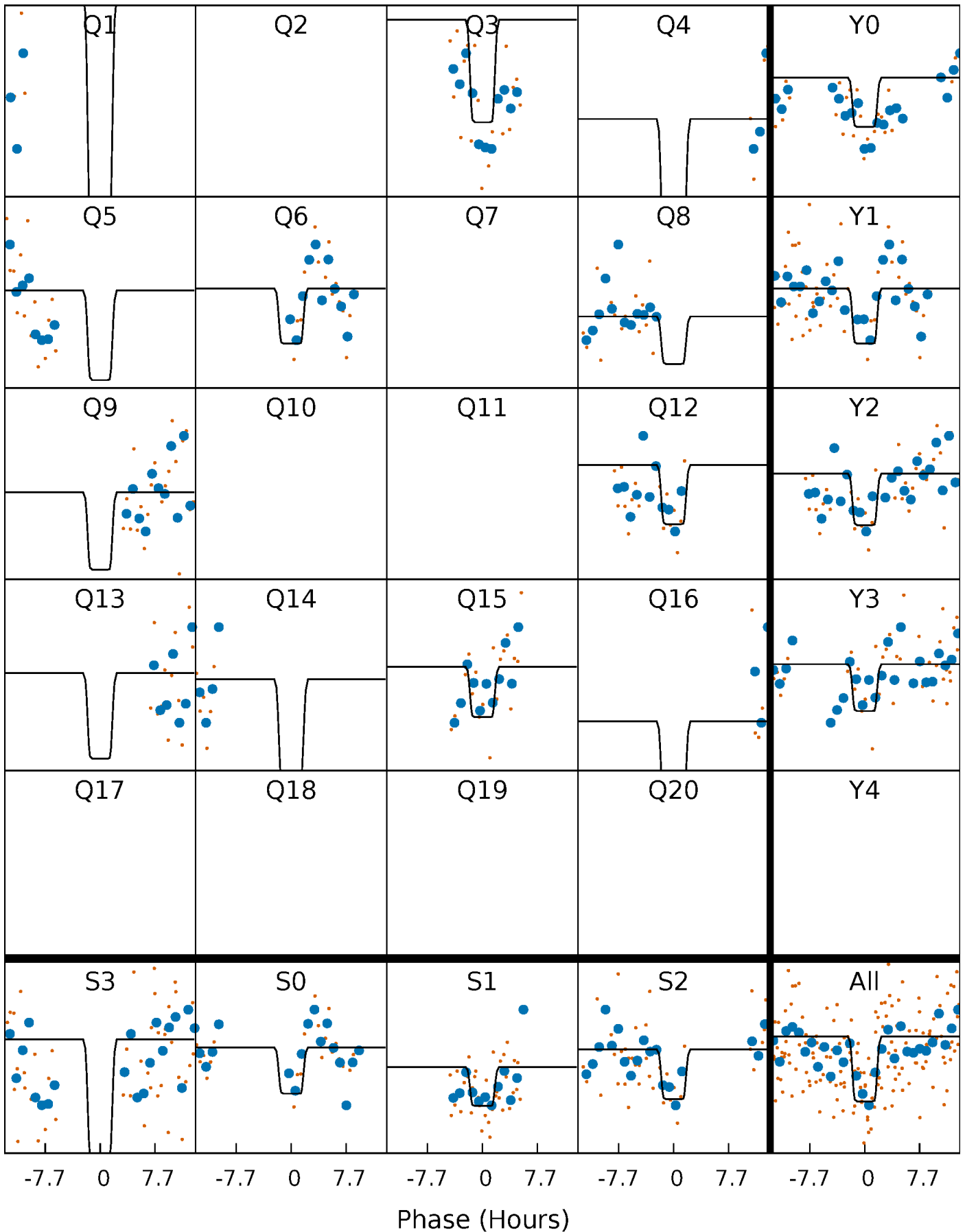
DV Quarter-Phased Transit Curves

TCE 008027902-10 $P=105.318306$ Days $T_0=165.413067$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

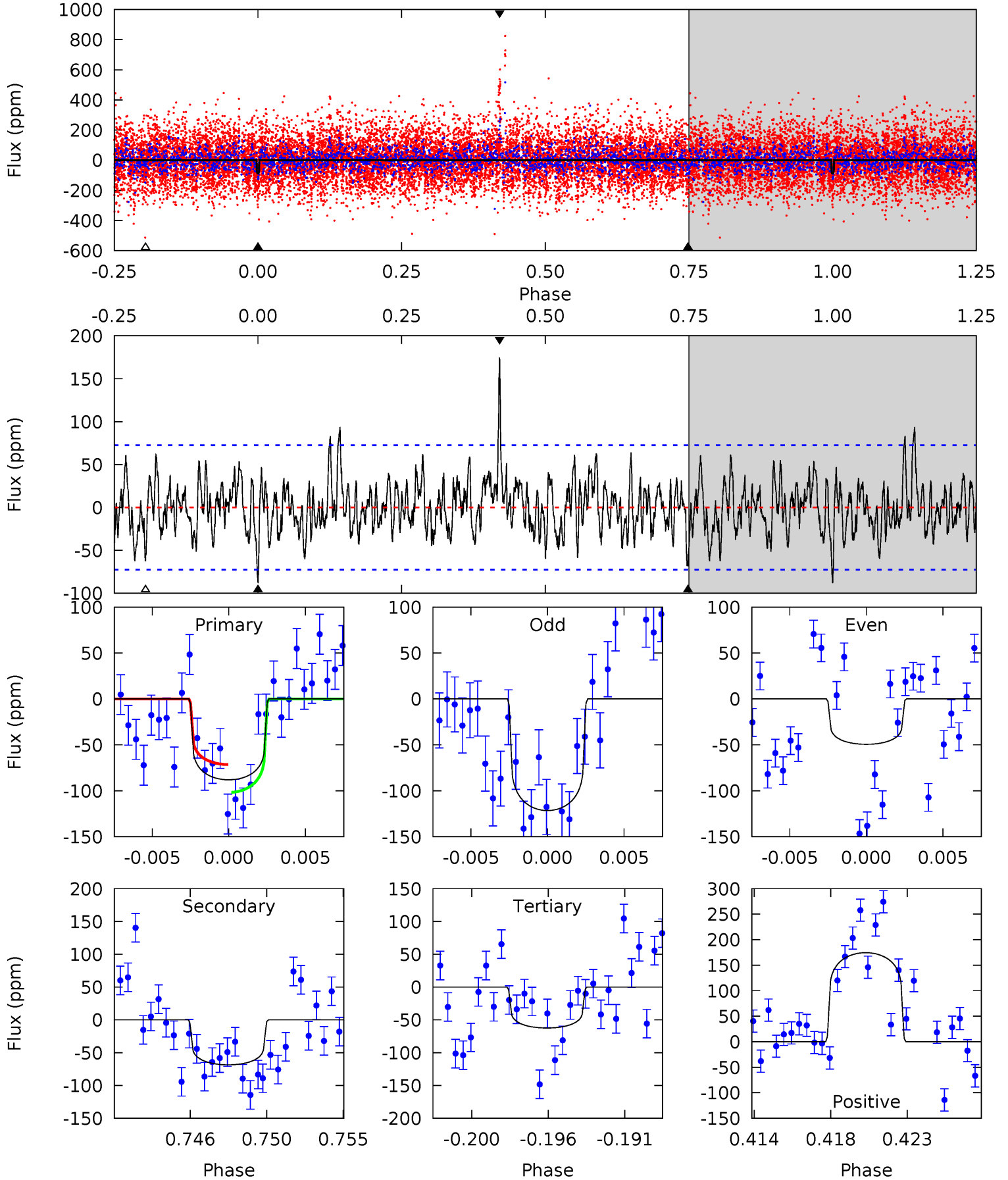
TCE 008027902-10 P=105.328853 Days $T_0=165.423086$ (BKJD)



DV Model-Shift Uniqueness Test

008027902-10, P = 105.318306 Days, E = 60.094761 Days

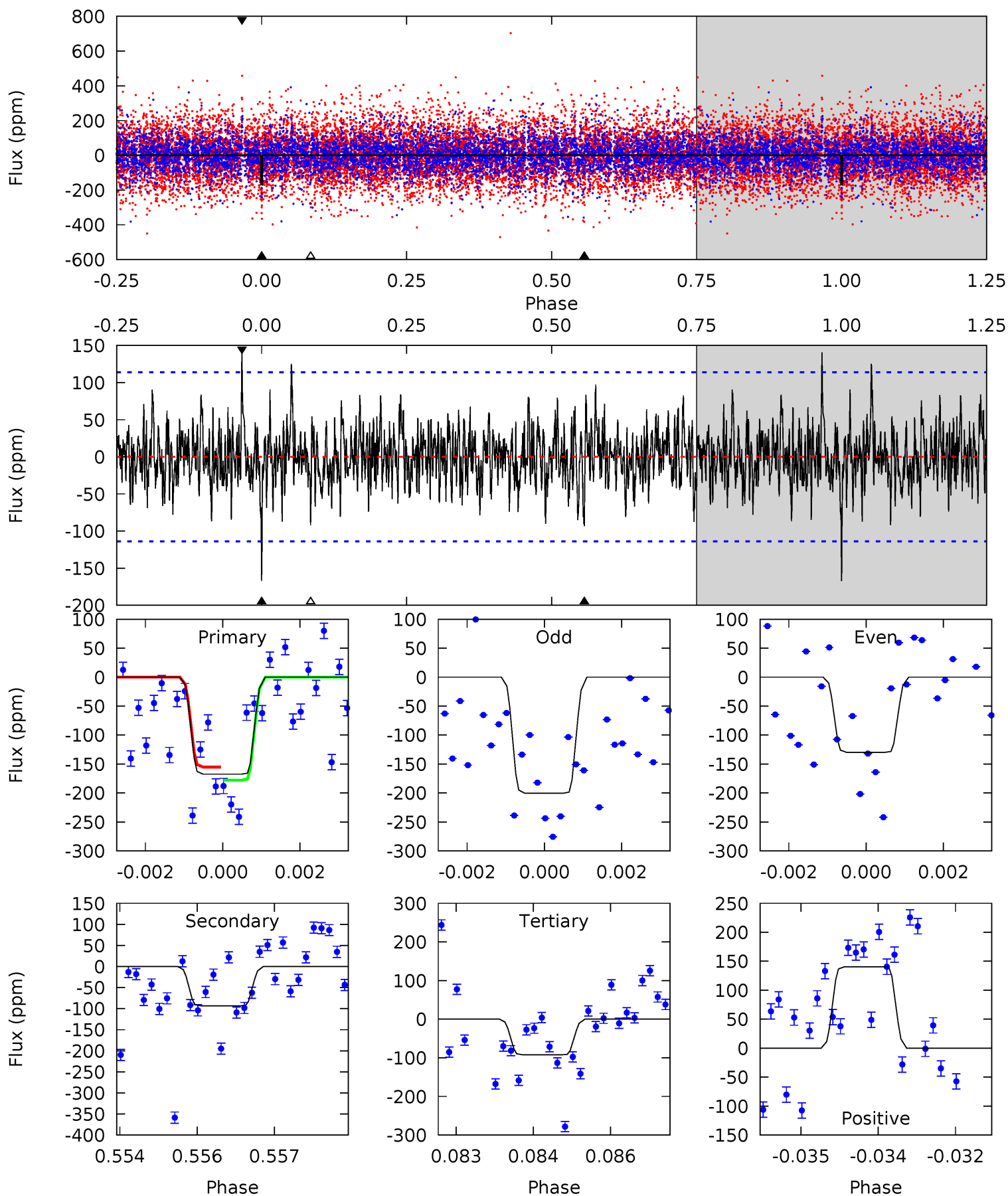
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.29	4.89	4.46	12.5	5.18	2.84	1.94	1.83	-6.17	0.43	-7.57	2.56	1.03	0.66	1.08



Alt Model-Shift Uniqueness Test

008027902-10, P = 105.328853 Days, E = 60.094233 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.88	4.39	4.34	6.61	5.36	3.14	1.47	3.54	1.27	0.06	-2.22	1.67	1.07	0.46	0.53



Stellar Parameters For KIC 008027902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7117^{+197}_{-271}	$3.988^{+0.198}_{-0.132}$	$-0.140^{+0.250}_{-0.300}$	$2.090^{+0.439}_{-0.537}$	$1.548^{+0.195}_{-0.260}$	$0.239^{+0.260}_{-0.092}$
	+3%/-4%	+5%/-3%	+179%/-214%	+21%/-26%	+13%/-17%	+109%/-39%
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 008027902-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-69±14	$2.38^{+1.60}_{-1.47}$	885^{+62}_{-61}	6218^{+5229}_{-1307}	1667^{+9723}_{-1071}
Alt.	-93±21	$3.13^{+1.73}_{-1.39}$	885^{+57}_{-61}	5799^{+2299}_{-1042}	1318^{+3223}_{-795}

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

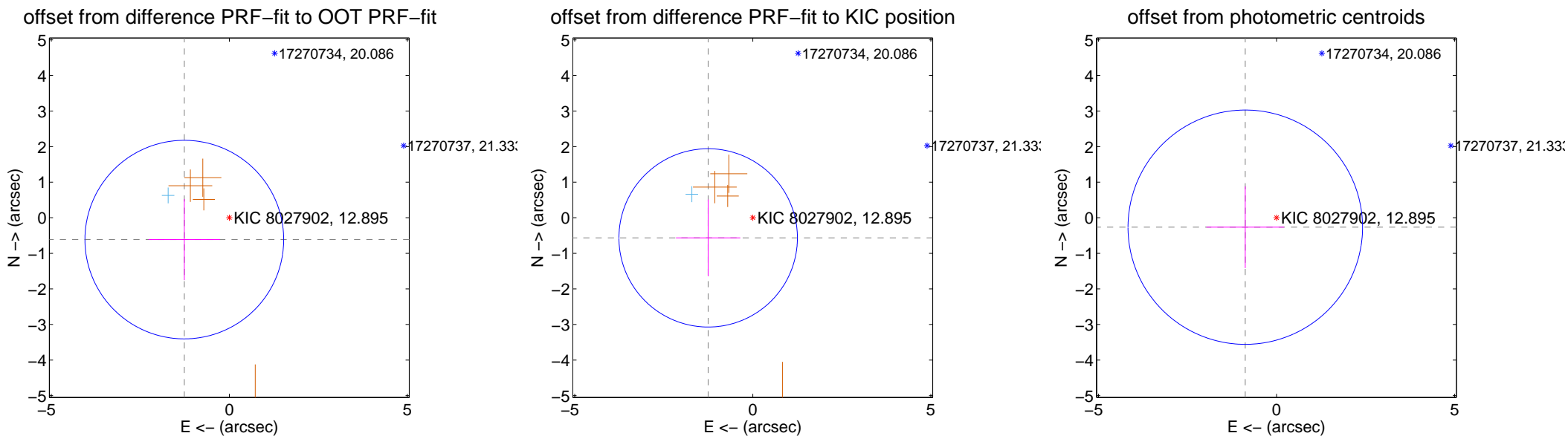
DV Centroid Data

Supplemental centroid analysis for 008027902-10. Kepler magnitude: 12.89. Transit SNR 3.94

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.405 ± 0.930	1.51	1.264 ± 1.002	-0.614 ± 1.140
PRF-fit source offset from KIC position	1.375 ± 0.835	1.65	1.253 ± 0.904	-0.566 ± 1.079
photometric centroid source offset	0.92 ± 1.10	0.84	0.88 ± 1.09	-0.27 ± 1.15



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

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

Q1 no difference image



Q1 no OOT image



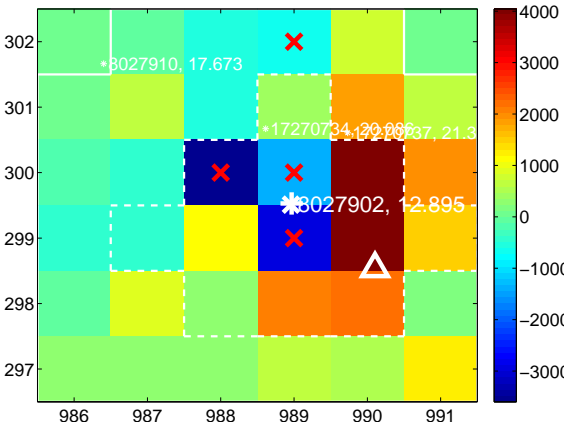
Q2 no difference image



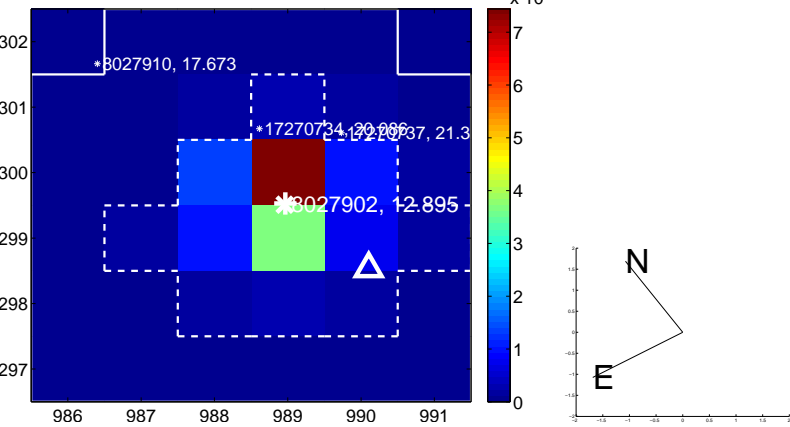
Q2 no OOT image



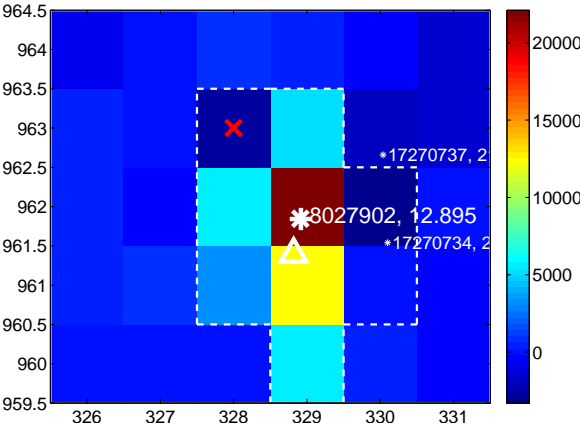
Q3 difference image. Poor Quality



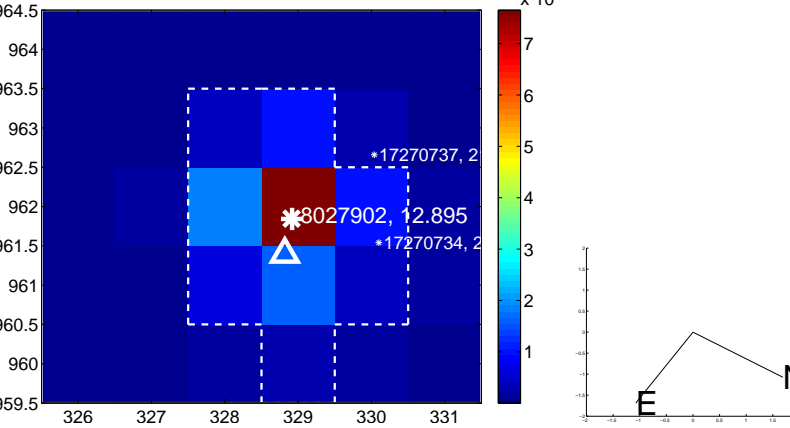
Q3 OOT image



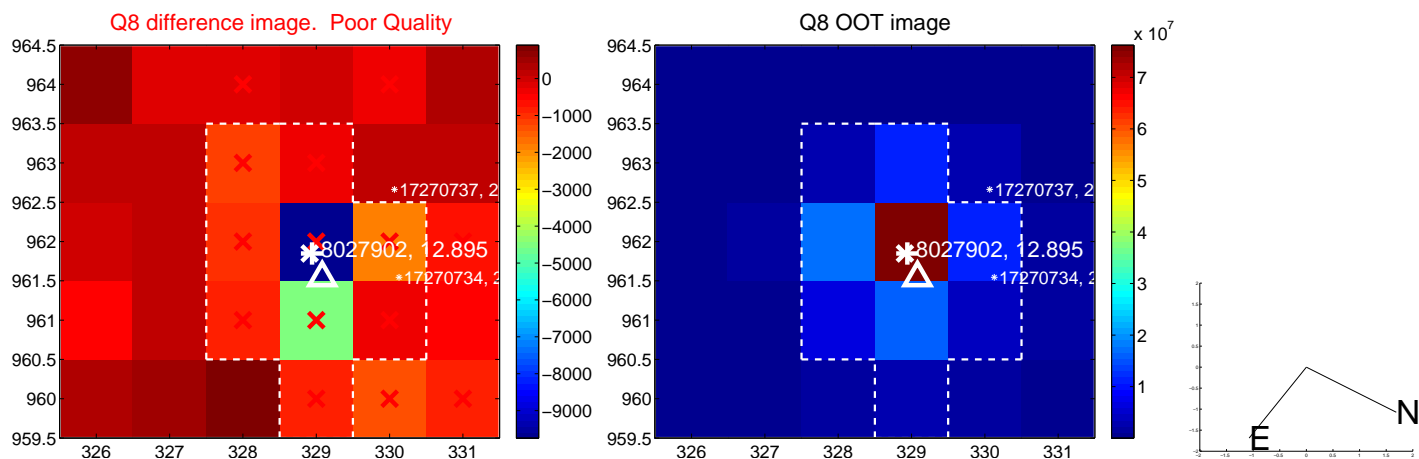
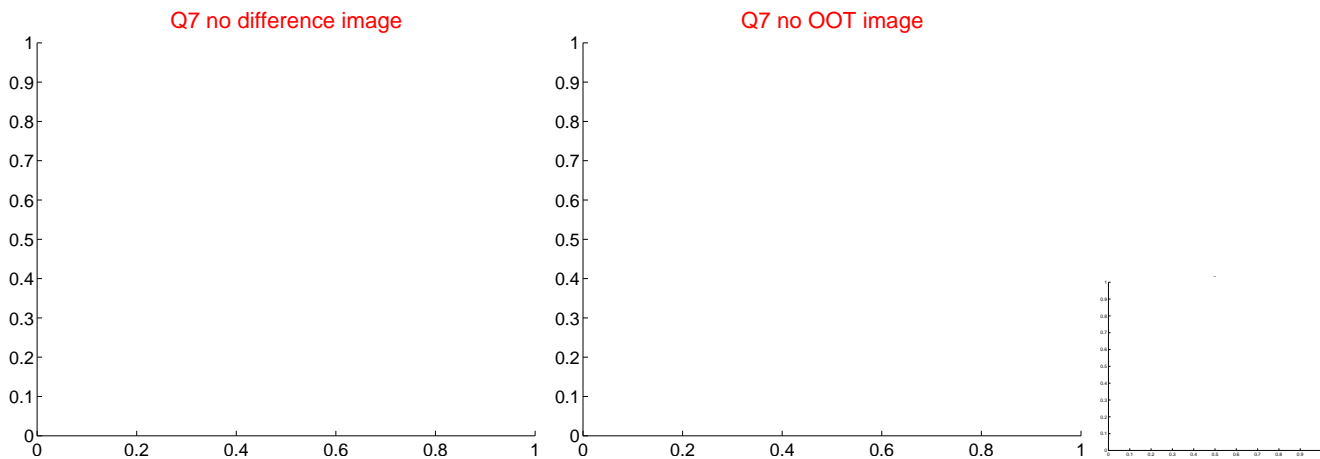
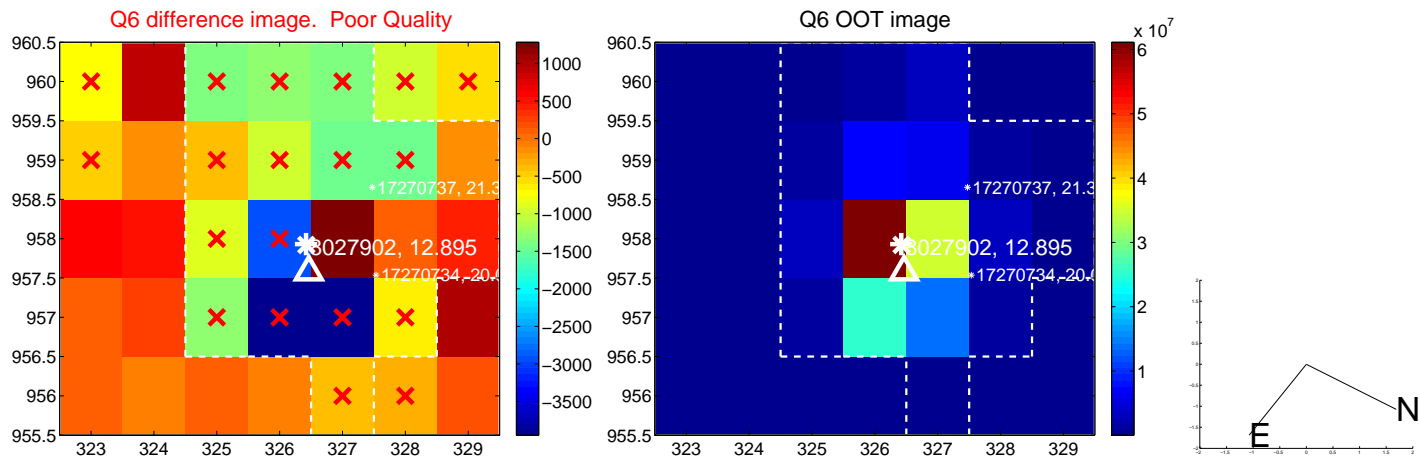
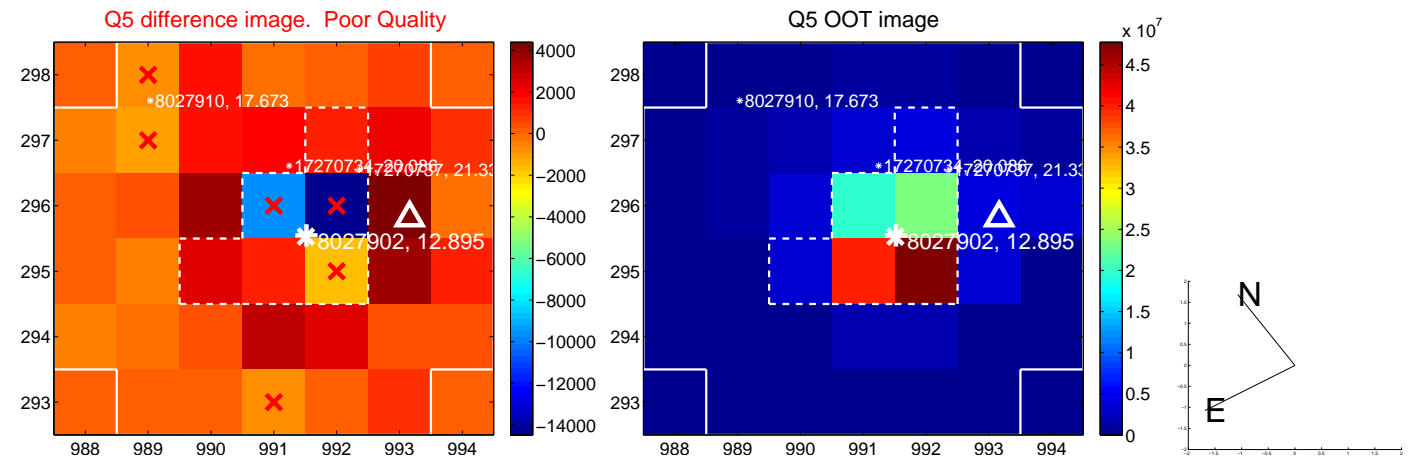
Q4 difference image



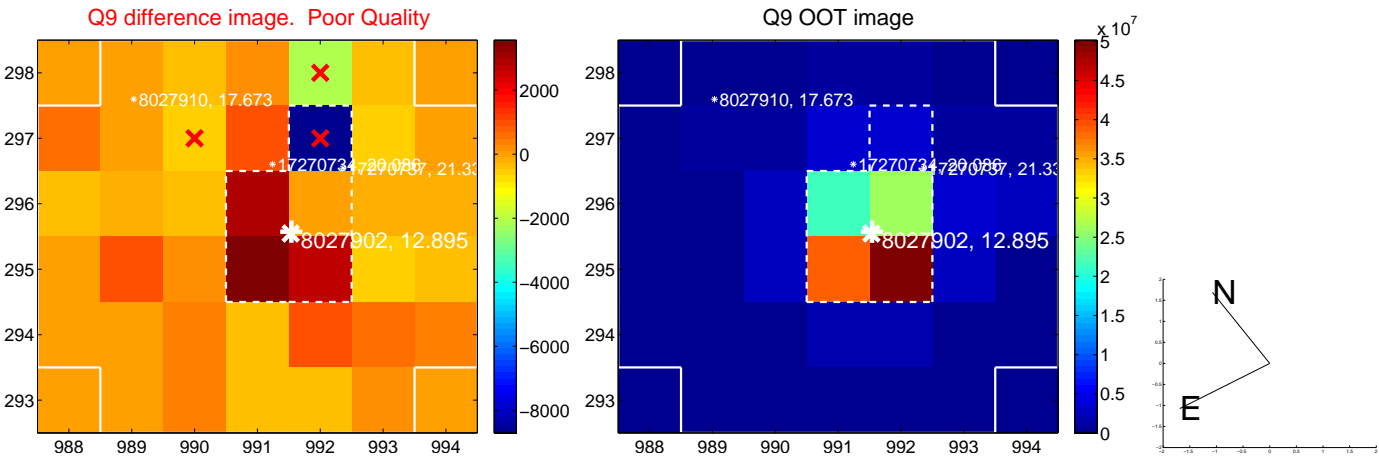
Q4 OOT image



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

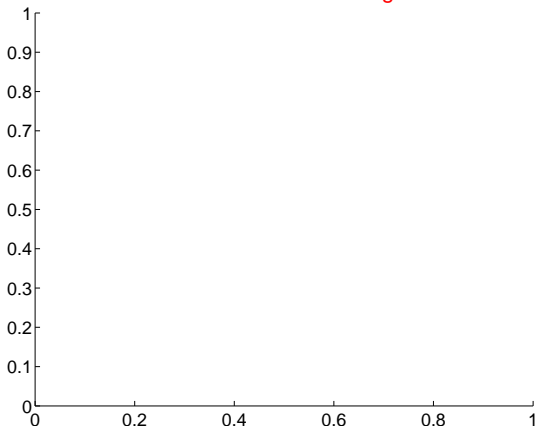


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

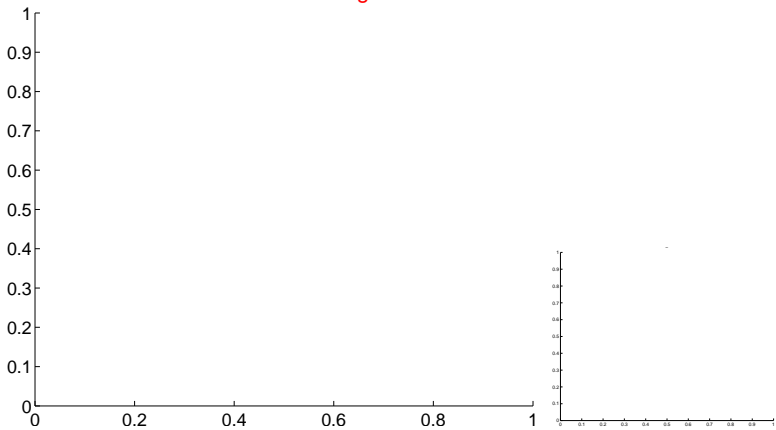


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

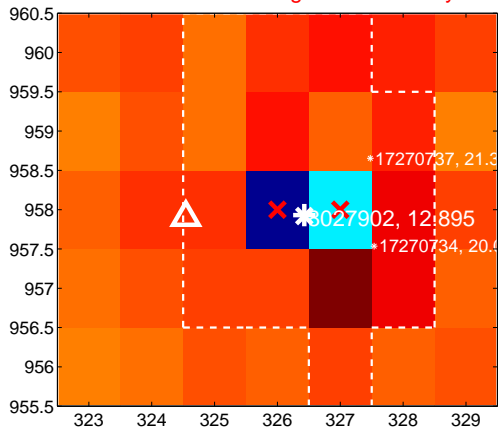
Q13 no difference image



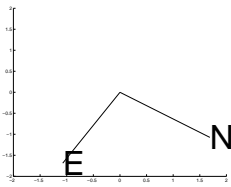
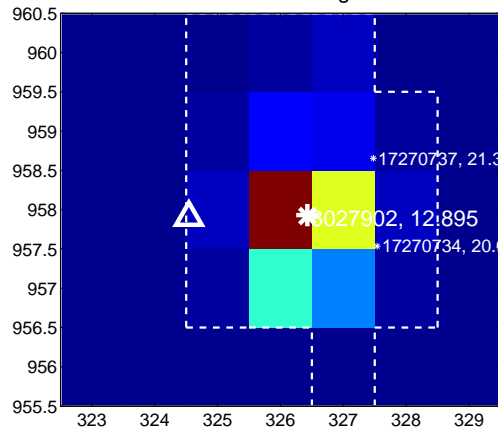
Q13 no OOT image



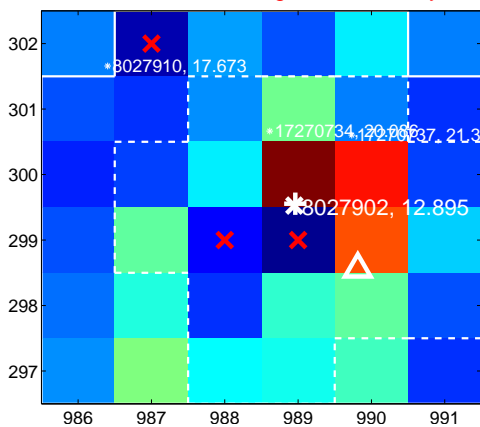
Q14 difference image. Poor Quality



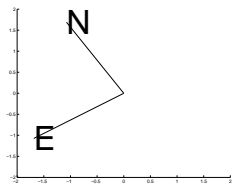
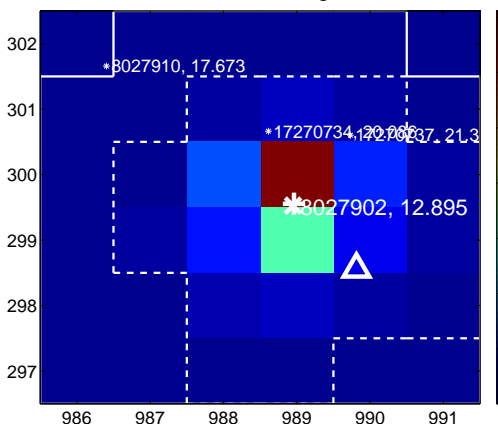
Q14 OOT image



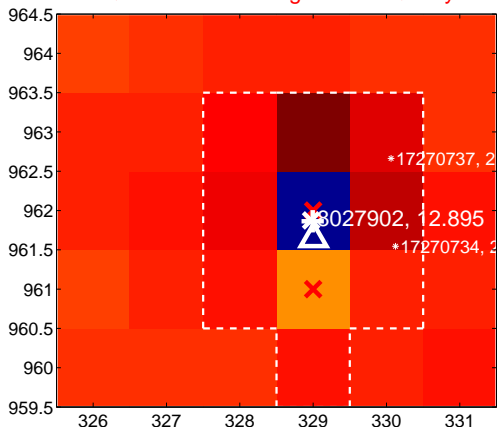
Q15 difference image. Poor Quality



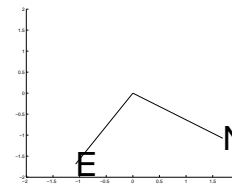
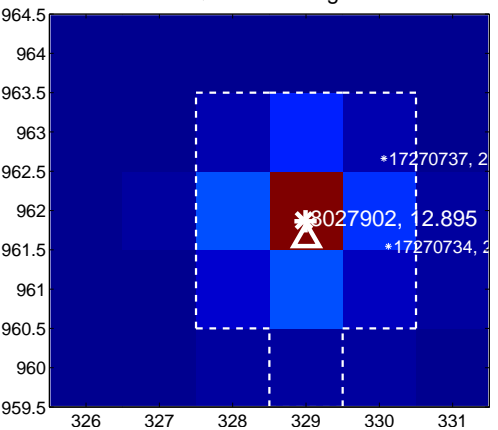
Q15 OOT image



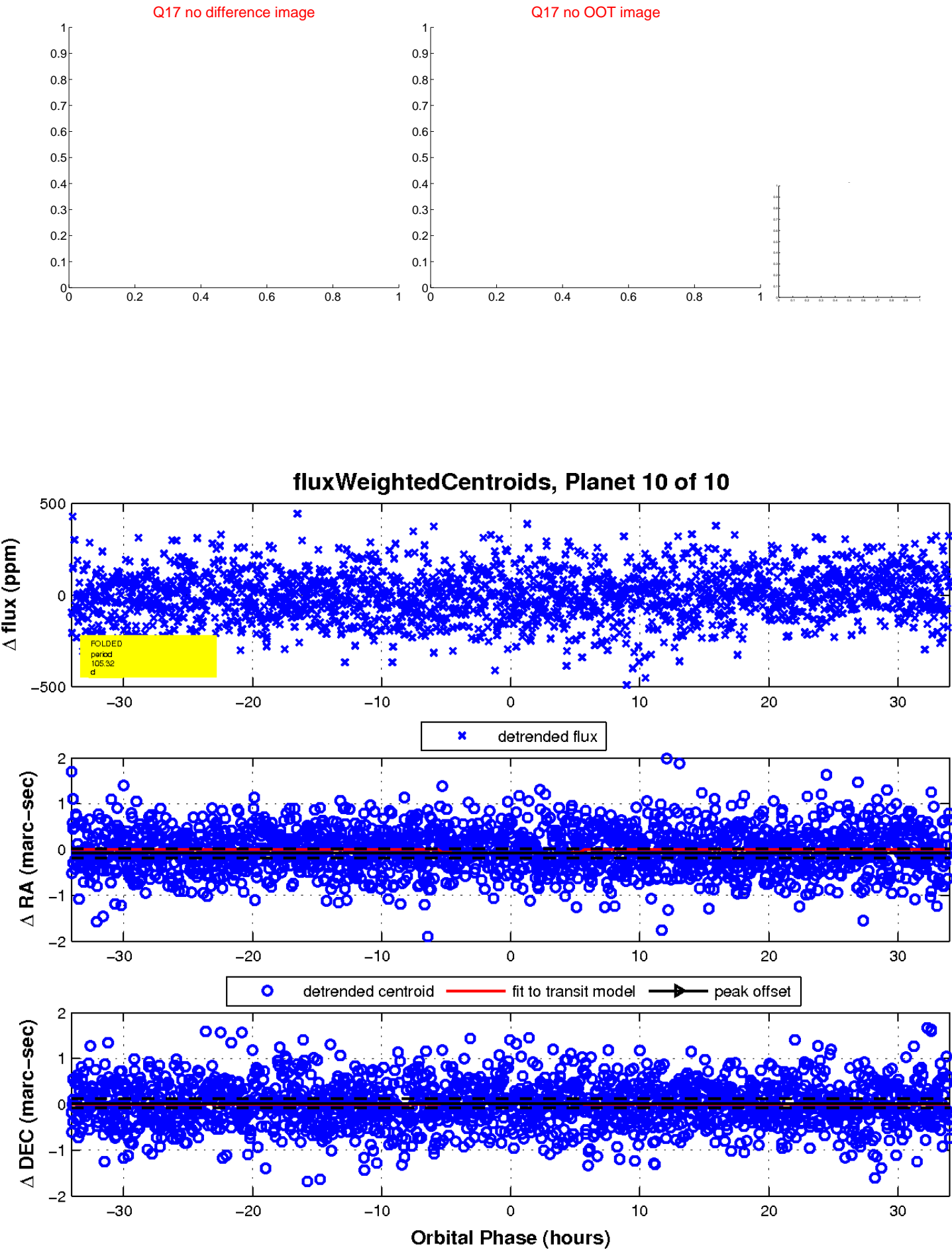
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

Declination

