

KIC 005904699

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})
005904699-01	OBS	No	0.559925	131.803305	56.6	0.957	10.9	7.3	1.30	6755	1.14	15254.78
005904699-02	OBS	No	0.591196	131.707815	57.4	7.094	8.3	12.5	1.30	6755	1.01	14188.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005904699-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005904699-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—CENT_FEW_DIFFS

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

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

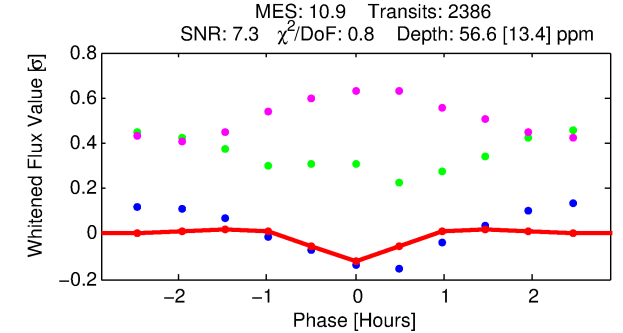
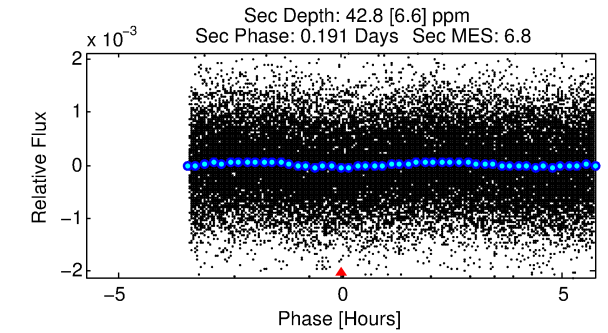
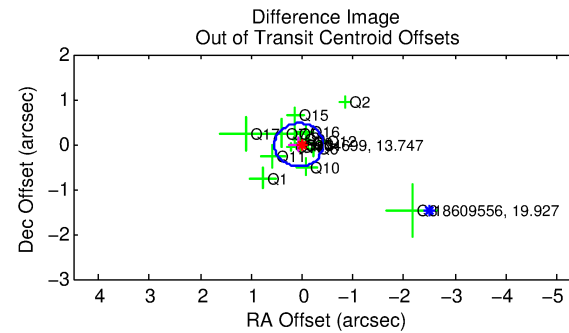
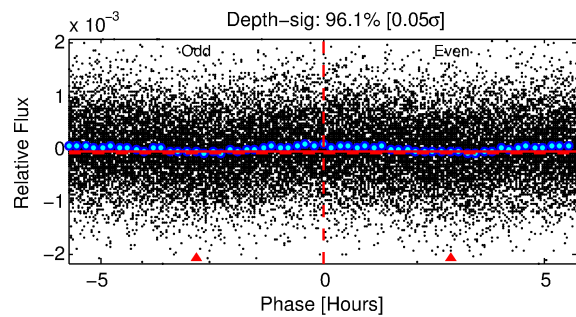
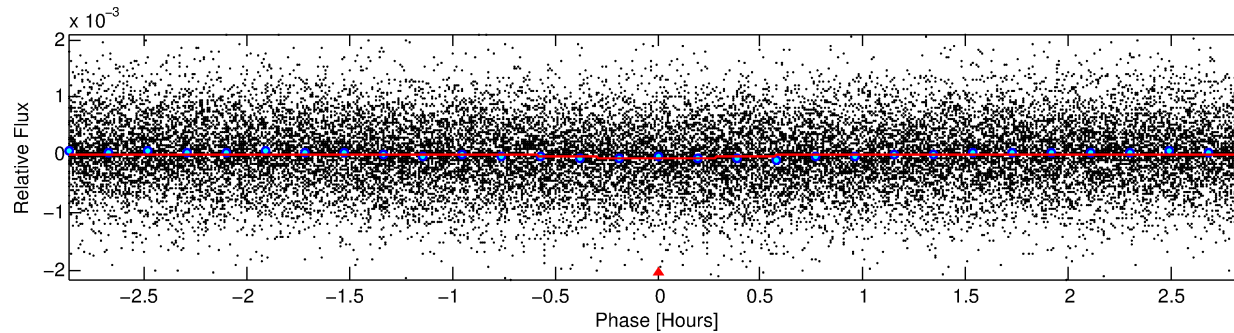
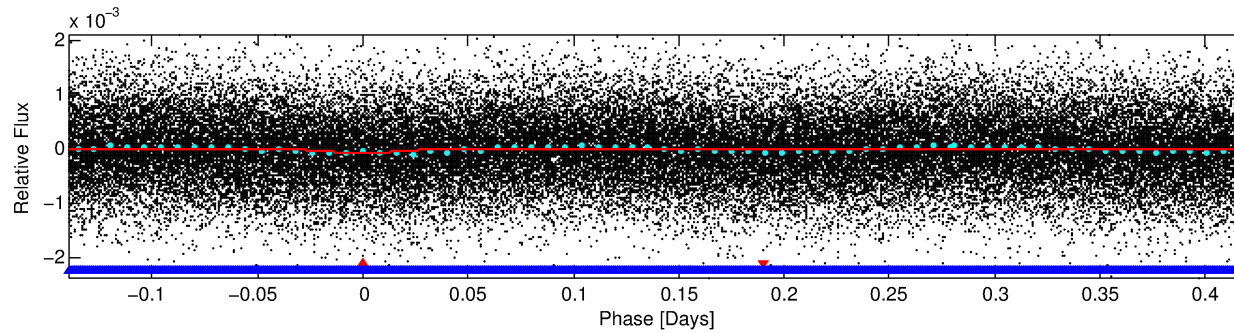
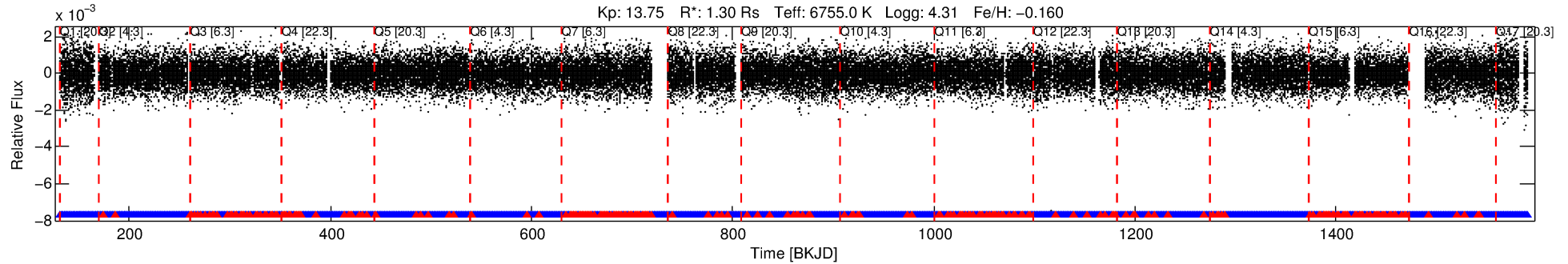
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005904699-01

No Significant Match Found

DV One-Page Summary

KIC: 5904699 Candidate: 1 of 2 Period: 0.560 d



DV Fit Results:

Period = 0.55992 [0.00002] d
Epoch = 131.8033 [0.0026] BKJD
Rp/R* = 0.0080 [0.0035]
a/R* = 2.30 [4.78]
b = 0.89 [0.60]
Seff = 15254.78 [6261.88]
Teq = 2834 [291] K
Rp = 1.14 [0.63] Re
a = 0.0144 [0.0039] AU
Ag = 3.74 [3.64] [0.75 σ]
Teffp = 6094 [1384] K [2.31 σ]

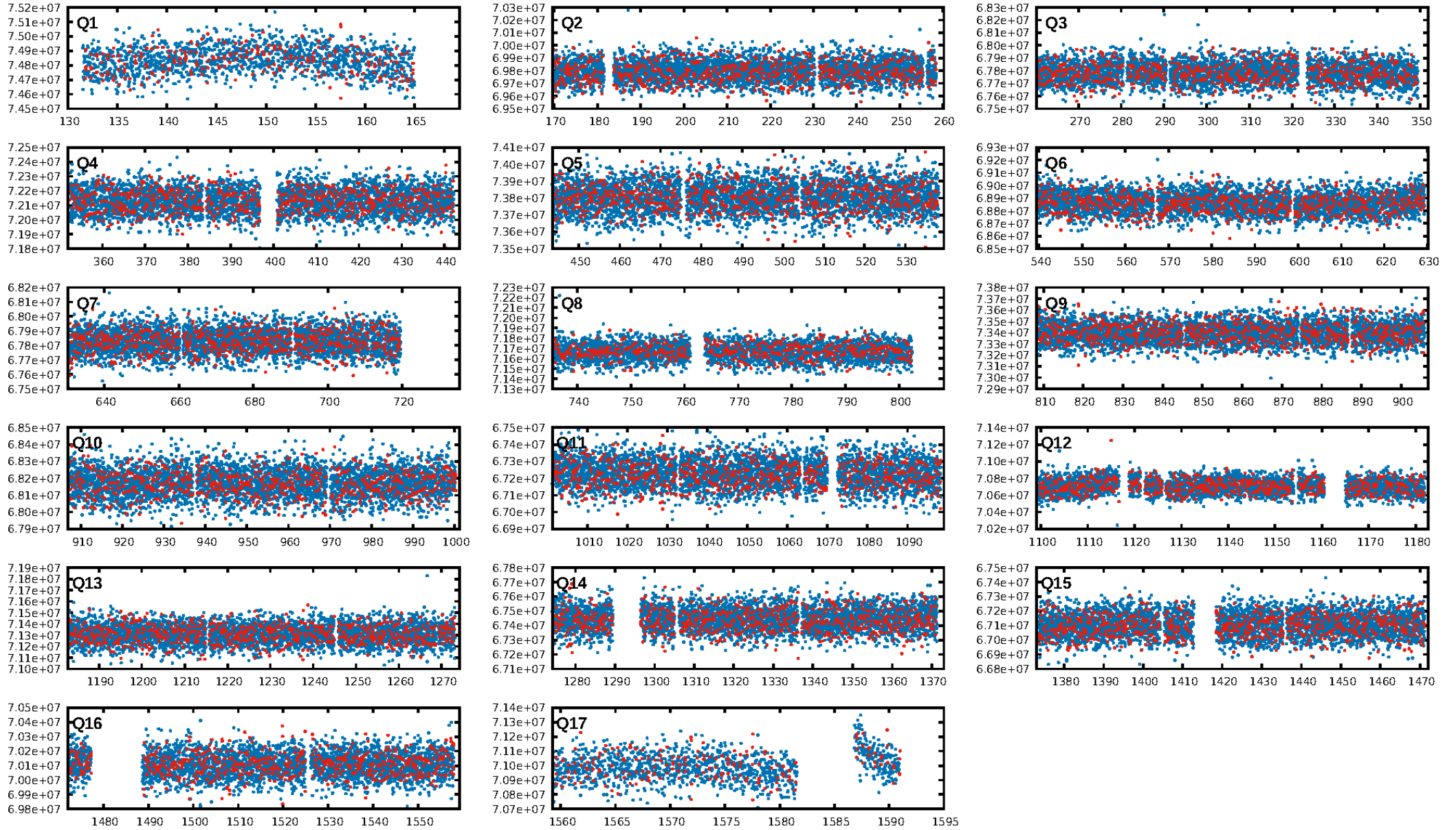
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 8.3% [0.10 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.88 [2005/2278]
GhostDiagnostic-chr: 1.325
Centroid-sig: 28.4%
Centroid-so: 1.167 arcsec [1.18 σ]
OotOffset-rm: 0.069 arcsec [0.43 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.033 arcsec [0.20 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 0.00 [0/17]

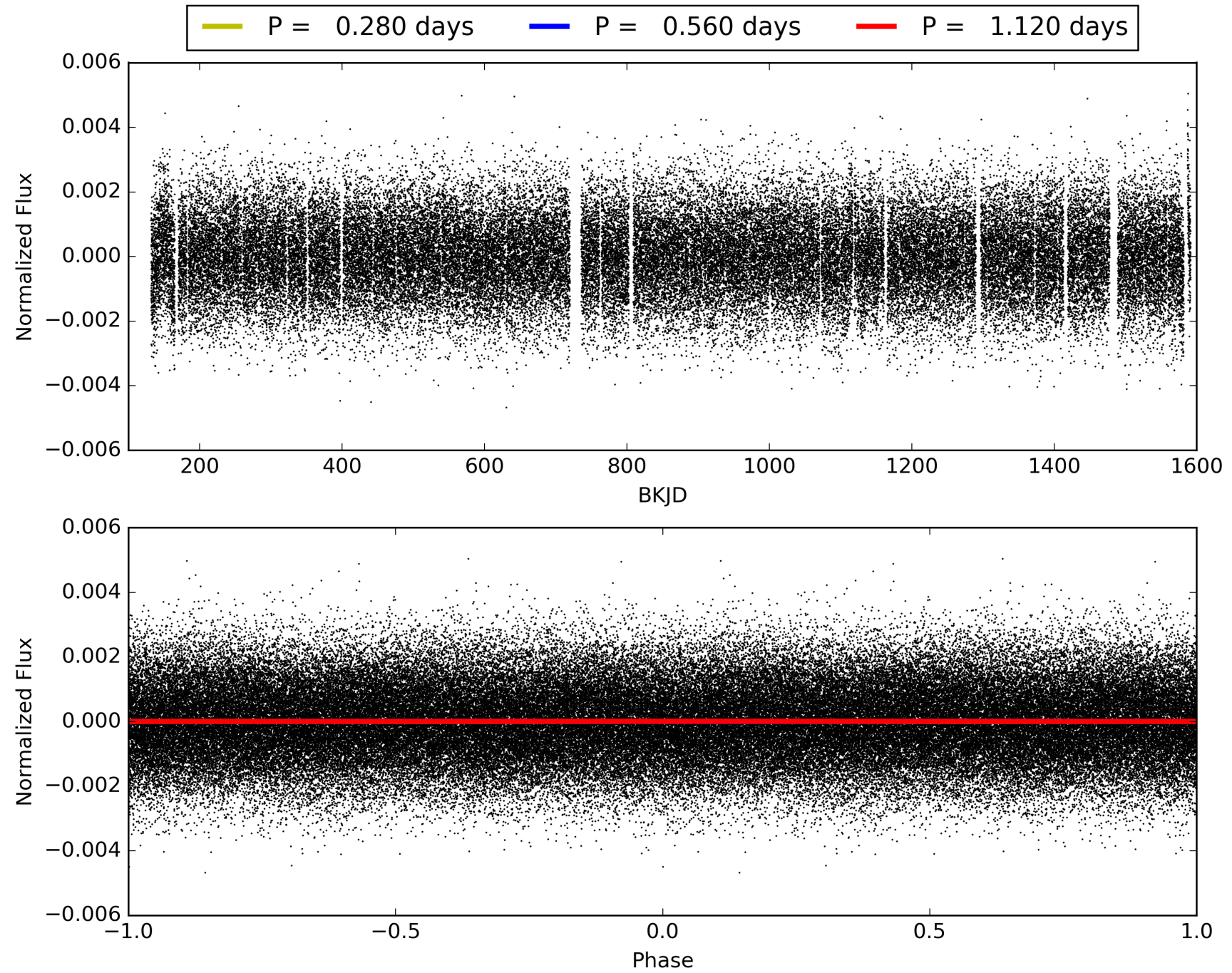
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:17:54 Z

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

TCE 005904699-01, PDC Light Curves

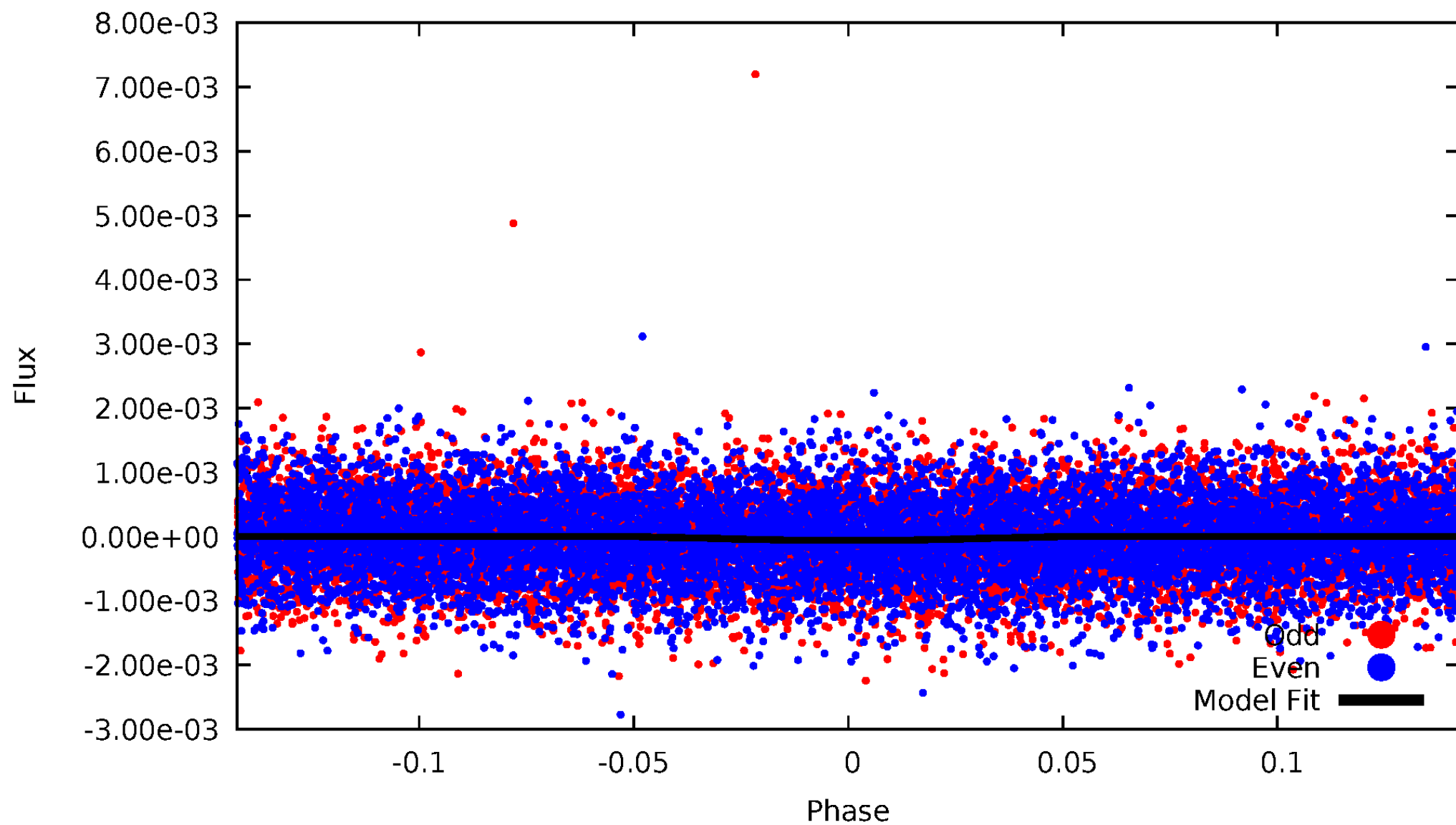


TCE 005904699-01



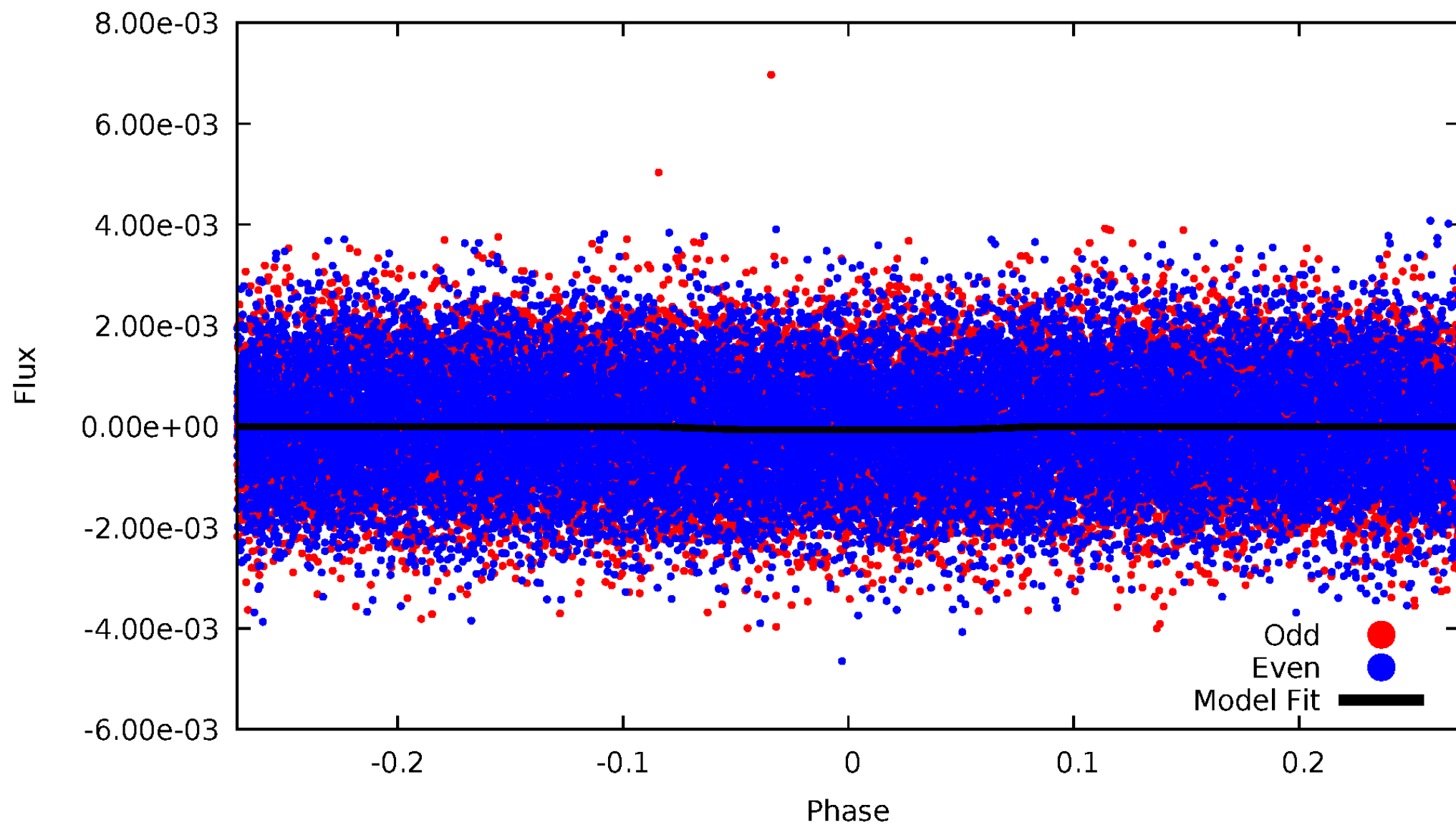
DV Odd/Even

TCE 005904699-01

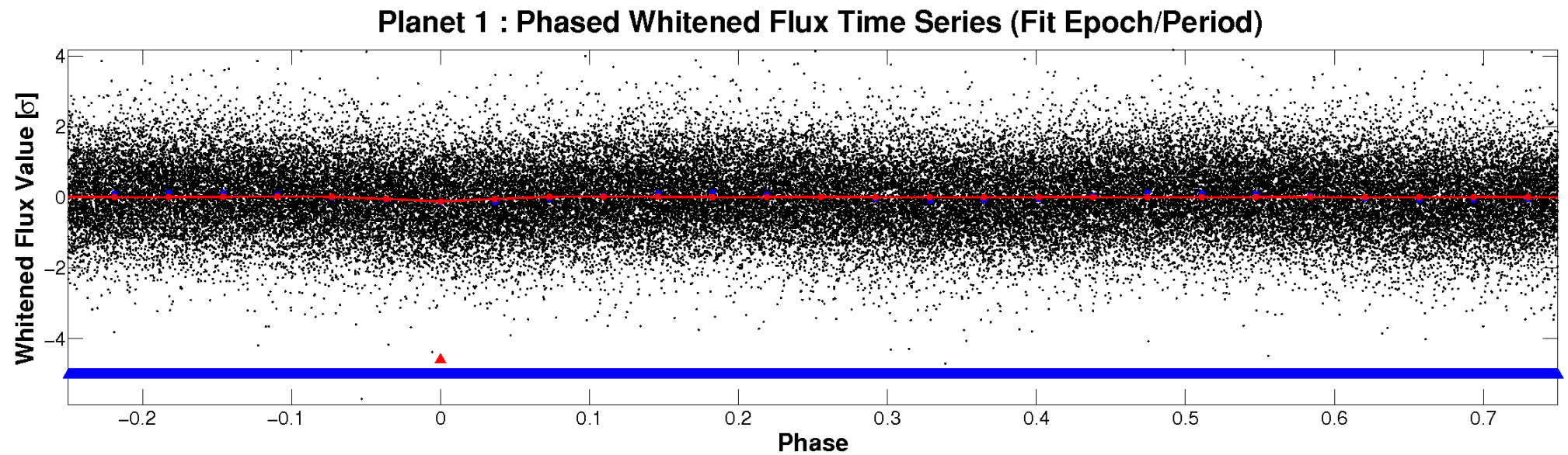
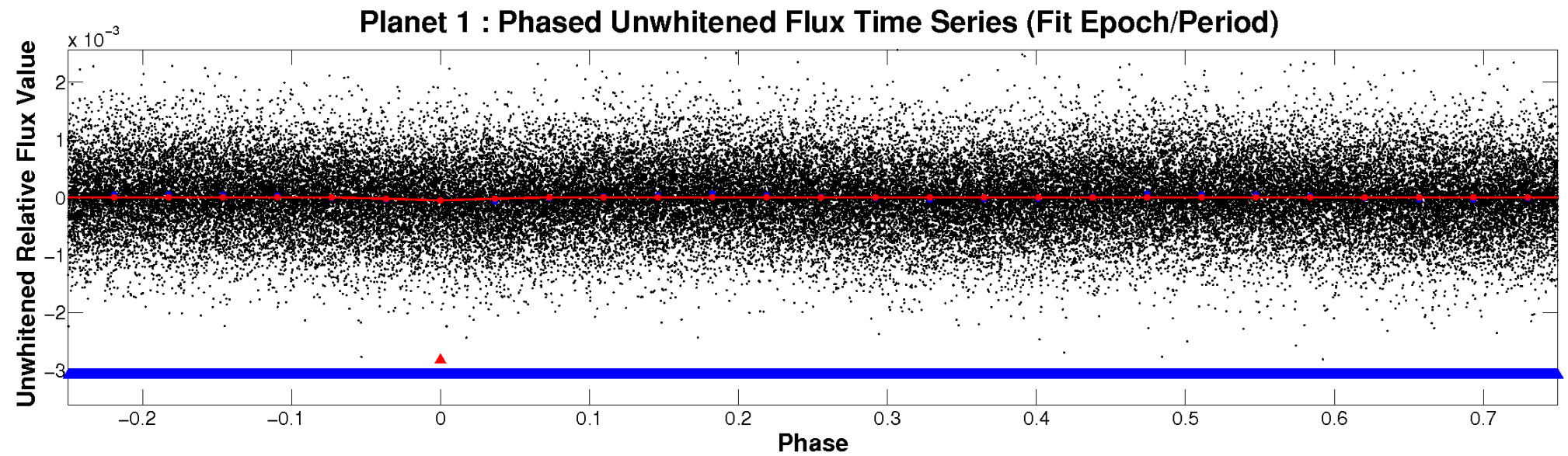


ALT Odd/Even

TCE 005904699-01

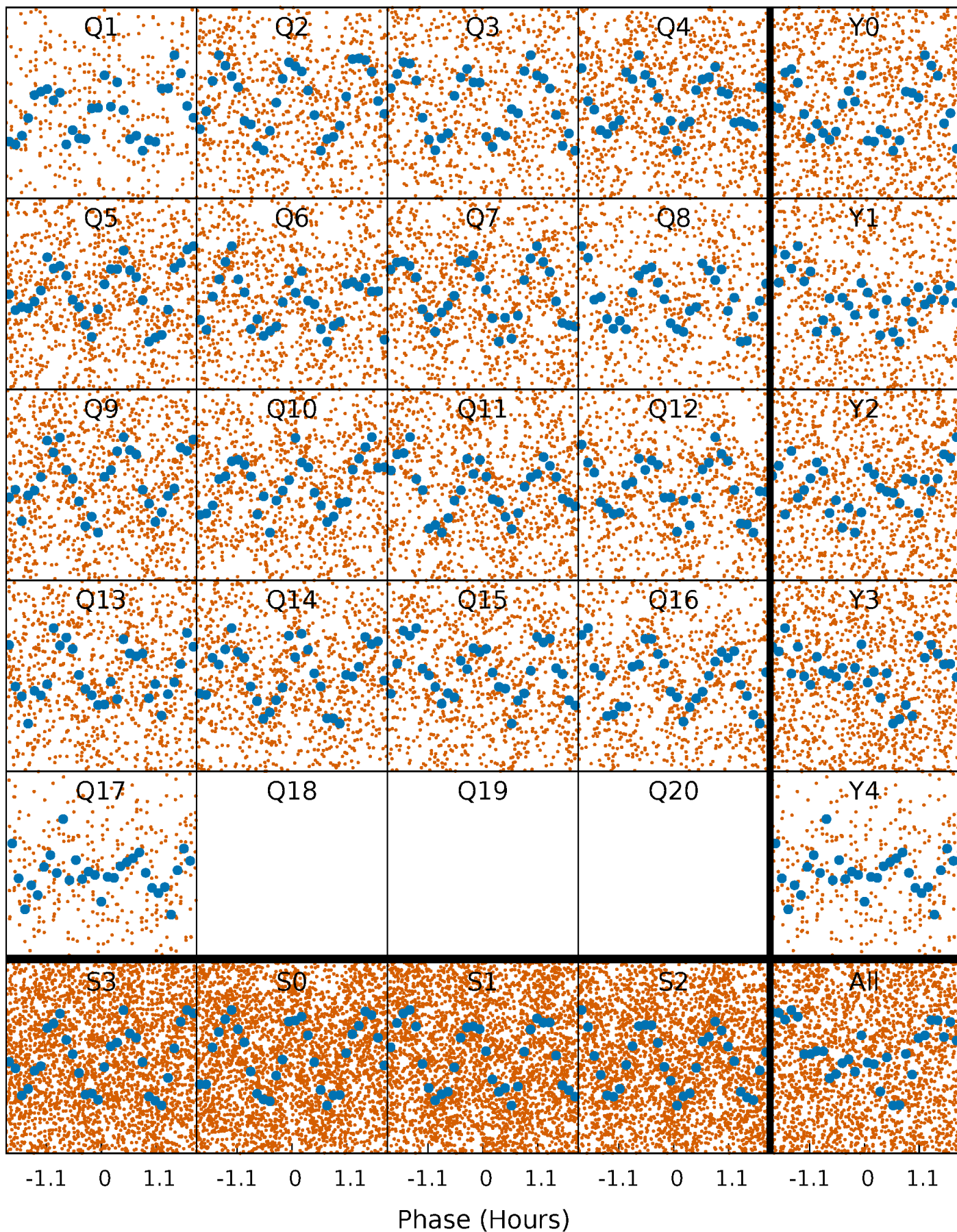


Non-Whitened Vs. Whitened Light Curve



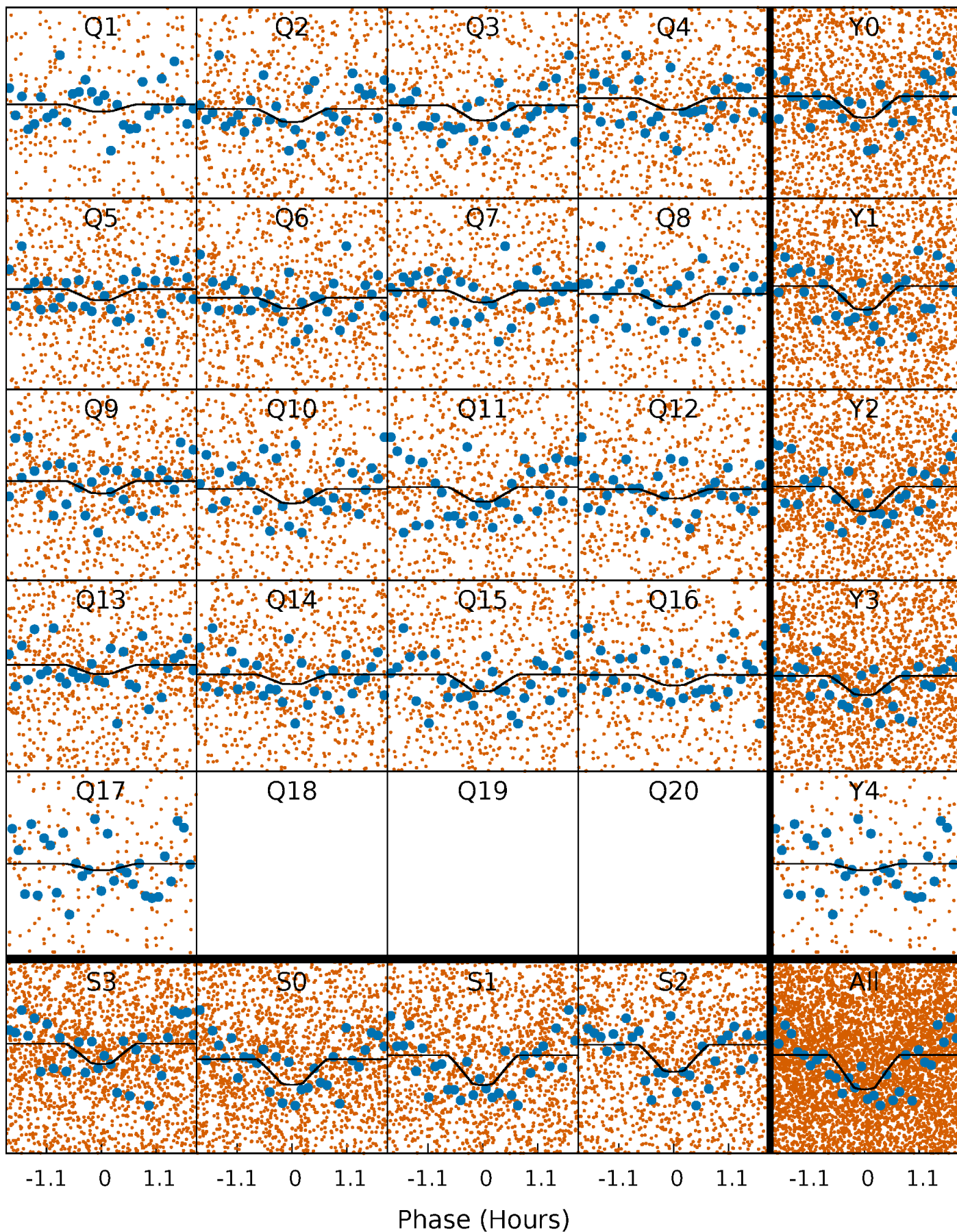
PDC Quarter-Phased Transit Curves

TCE 005904699-01 P= 0.559925 Days $T_0=131.803305$ (BKJD)



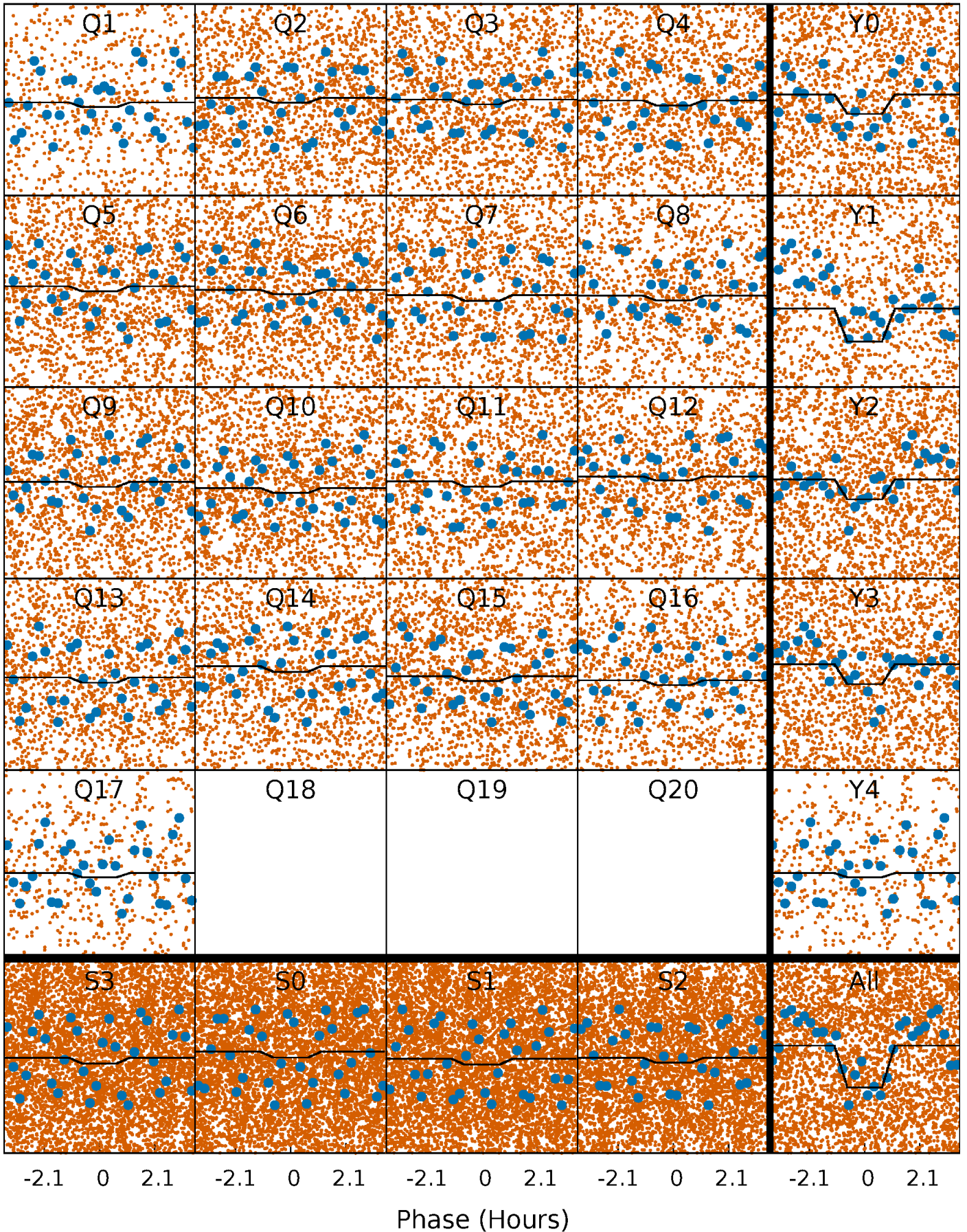
DV Quarter-Phased Transit Curves

TCE 005904699-01 P= 0.559925 Days $T_0=131.803305$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

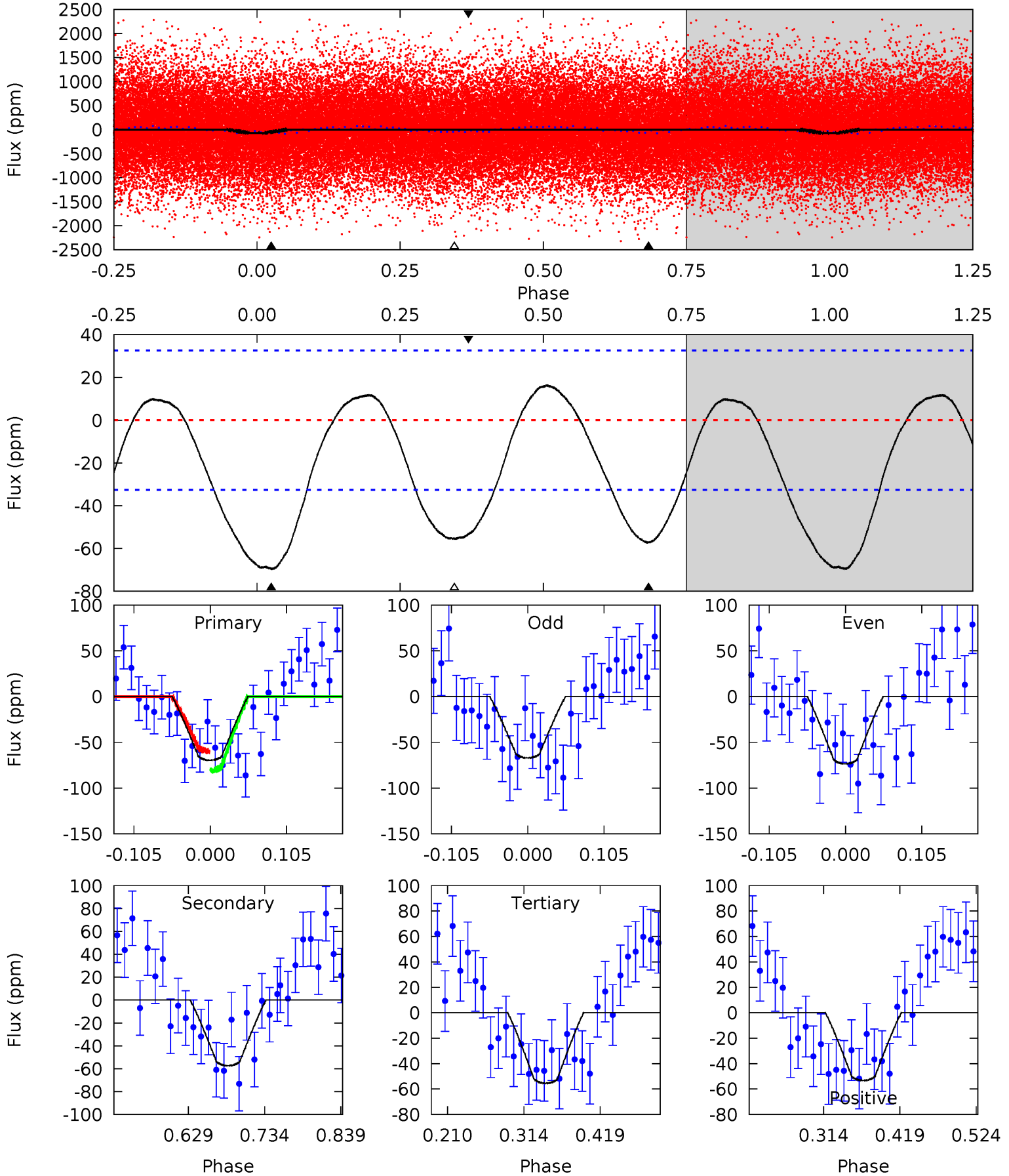
TCE 005904699-01 P= 0.559929 Days $T_0=131.802931$ (BKJD)



DV Model-Shift Uniqueness Test

005904699-01, P = 0.559925 Days, E = 131.243380 Days

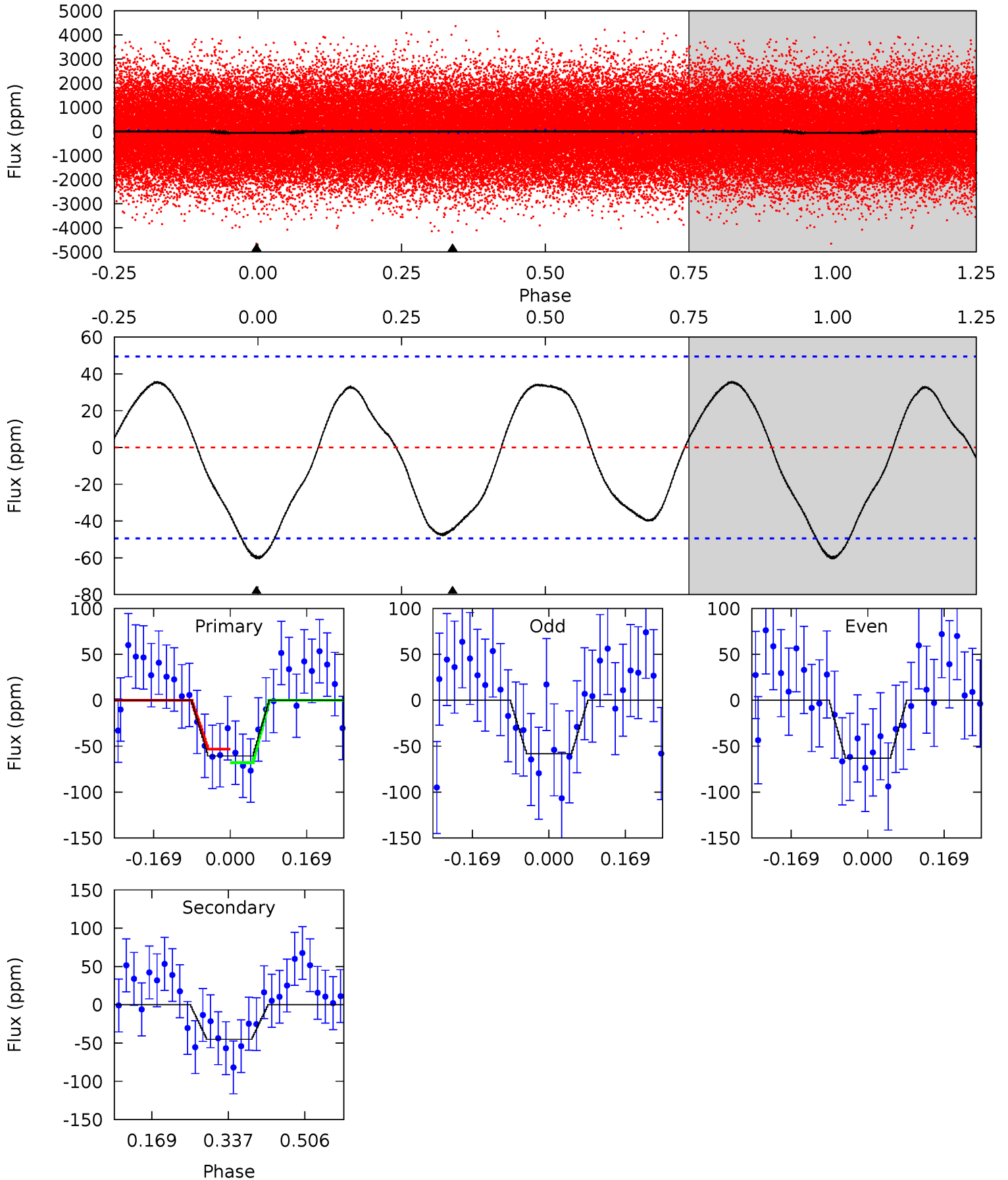
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.72	8.01	7.76	-7.44	4.55	1.62	3.33	1.97	17.2	0.25	15.4	0.44	0.93	0.19	1.49



Alt Model-Shift Uniqueness Test

005904699-01, P = 0.559929 Days, E = 131.243002 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.46	4.07	0	0	4.45	1.38	2.40	5.46	5.46	4.07	4.07	0.22	0.82	0.37	0.66



Stellar Parameters For KIC 005904699

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6755^{+189}_{-259}	$4.311^{+0.087}_{-0.203}$	$-0.160^{+0.250}_{-0.350}$	$1.298^{+0.426}_{-0.183}$	$1.265^{+0.190}_{-0.190}$	$0.815^{+0.320}_{-0.443}$
	+3%/-4%	+2%/-5%	+156%/-219%	+33%/-14%	+15%/-15%	+39%/-54%
Source	PHO1	KIC0	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 005904699-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-57 ± 7	$1.19^{+0.55}_{-0.50}$	4005^{+302}_{-228}	6333^{+2489}_{-1108}	$4.486^{+9.111}_{-2.442}$
Alt.	-45 ± 11	$1.16^{+0.53}_{-0.49}$	4014^{+286}_{-233}	6024^{+2497}_{-1157}	$3.713^{+7.950}_{-2.094}$

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 $A_{obs} \gg 1.0$

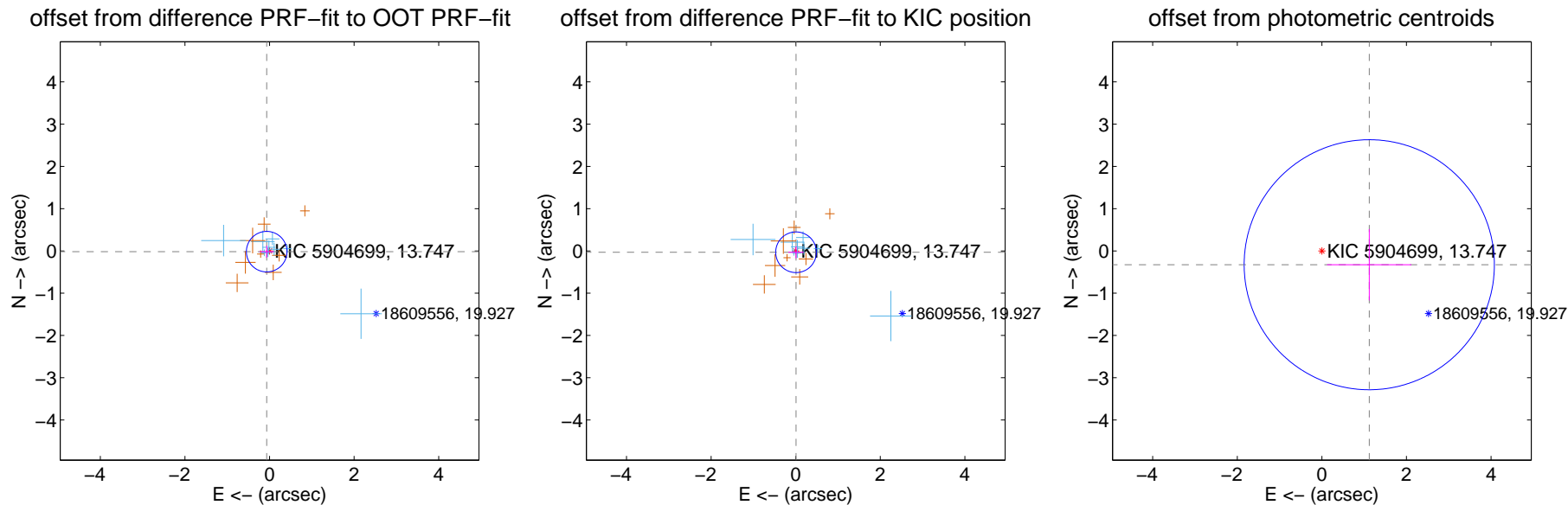
DV Centroid Data

Supplemental centroid analysis for 005904699-01. Kepler magnitude: 13.75. Transit SNR 7.31

There are 9 quarters with good PRF difference image offsets

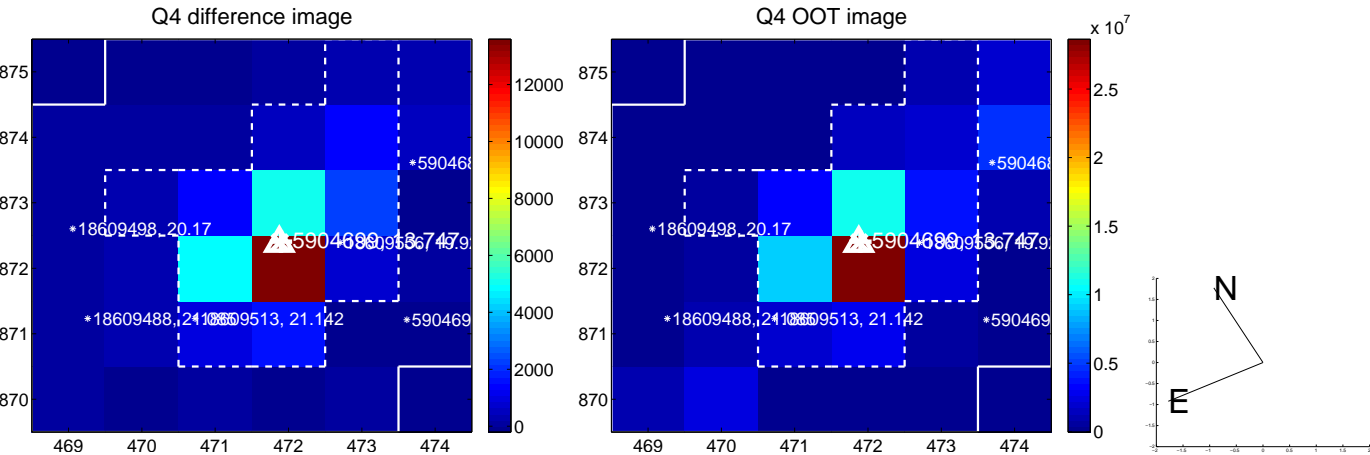
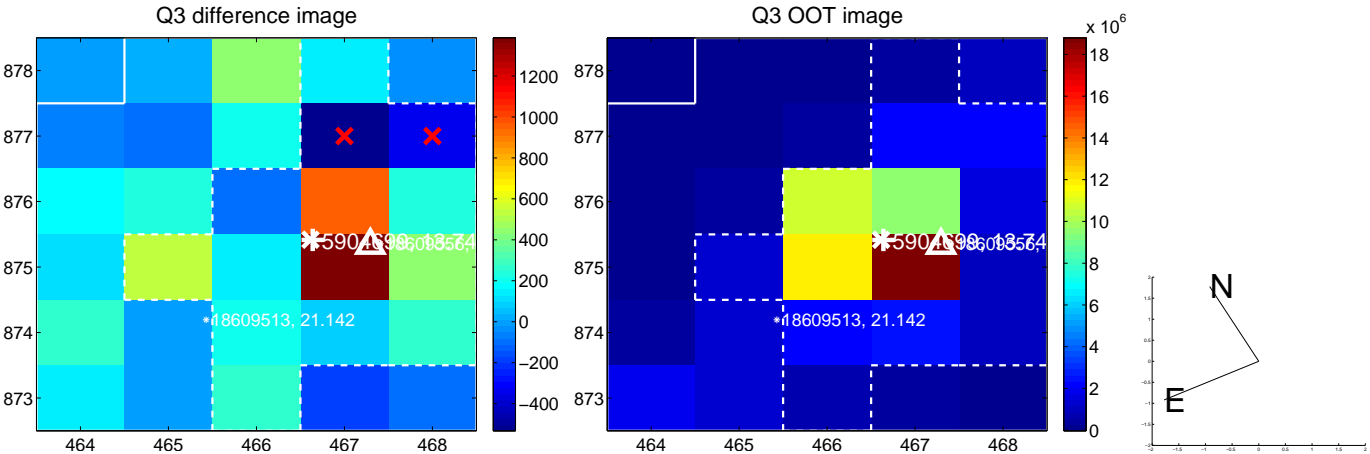
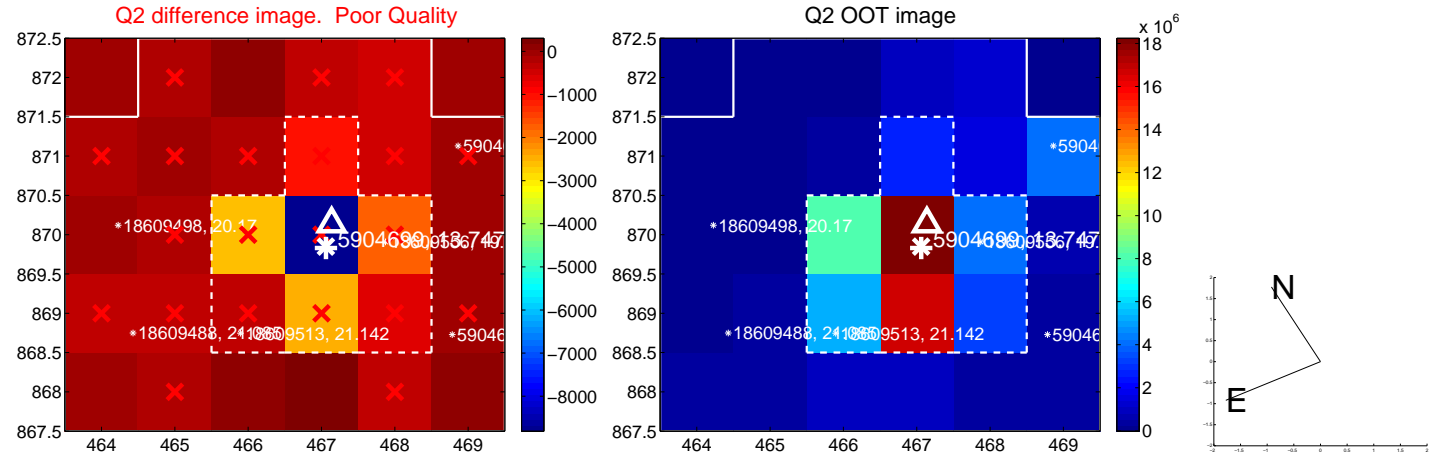
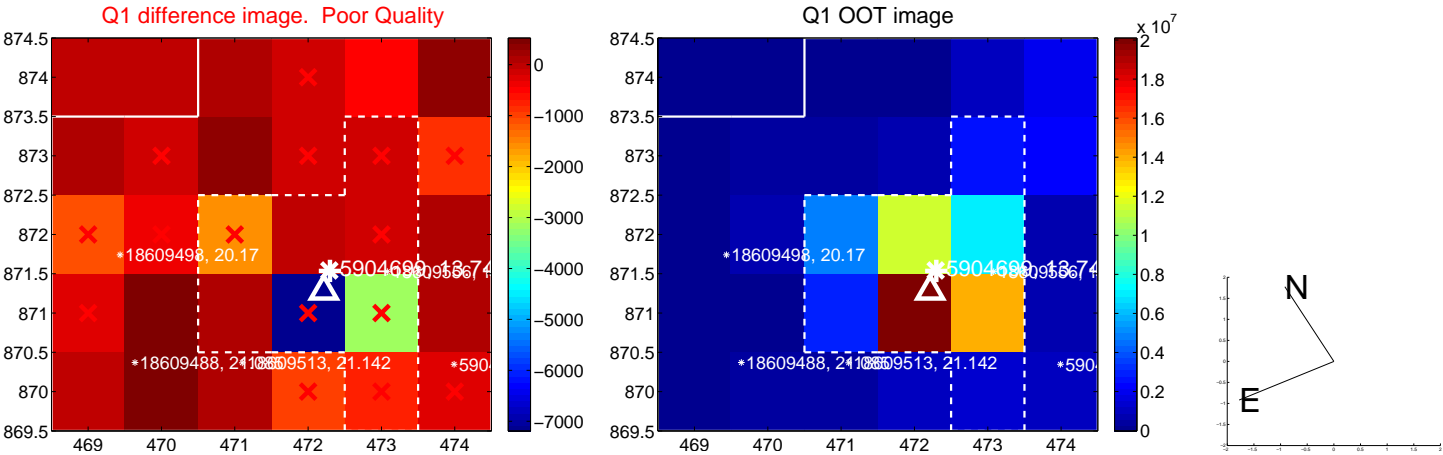
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.069 ± 0.160	0.43	0.067 ± 0.171	-0.017 ± 0.144
PRF-fit source offset from KIC position	0.033 ± 0.160	0.20	-0.008 ± 0.183	-0.031 ± 0.143
photometric centroid source offset	1.17 ± 0.99	1.18	-1.12 ± 1.00	-0.33 ± 0.84

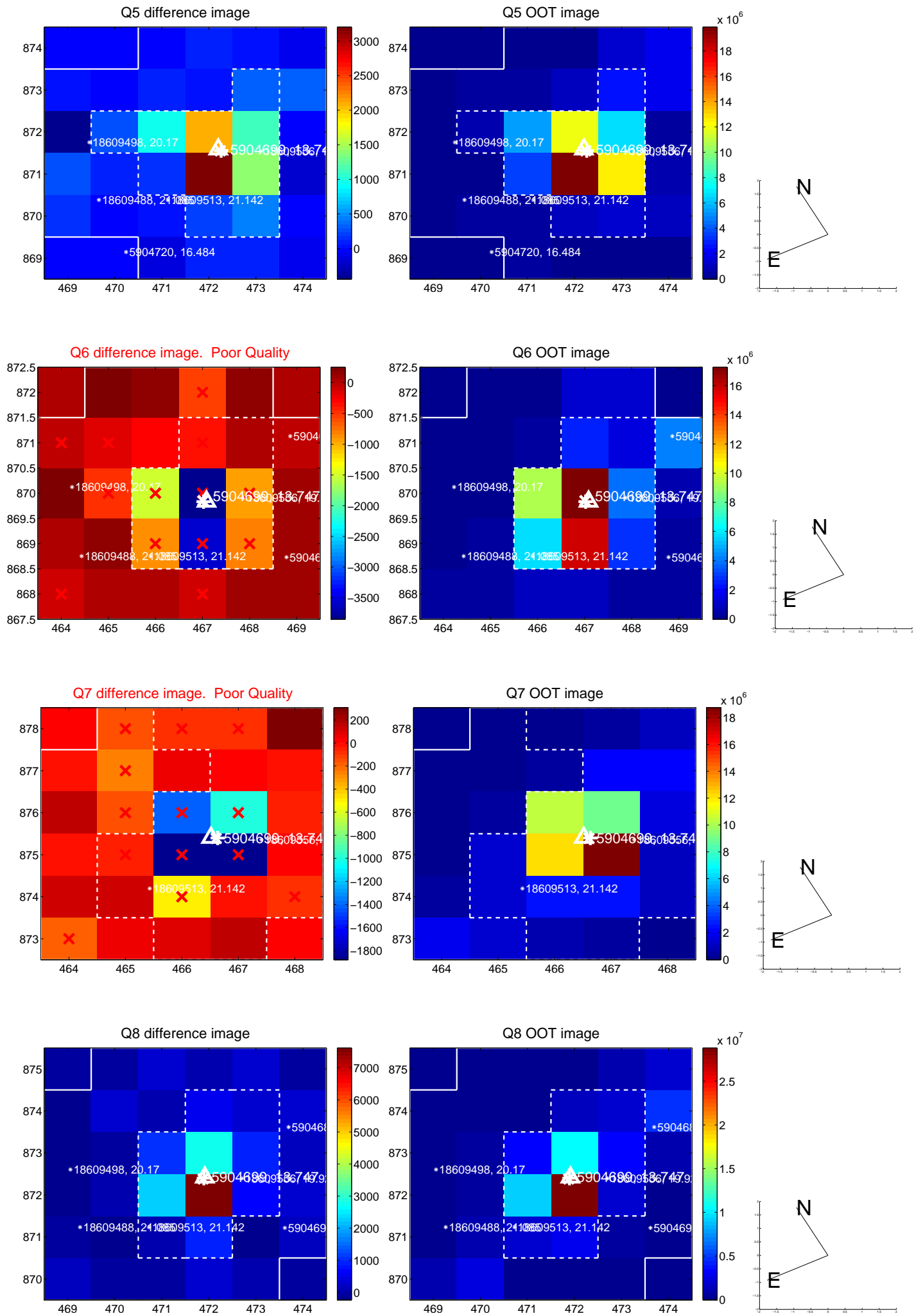


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

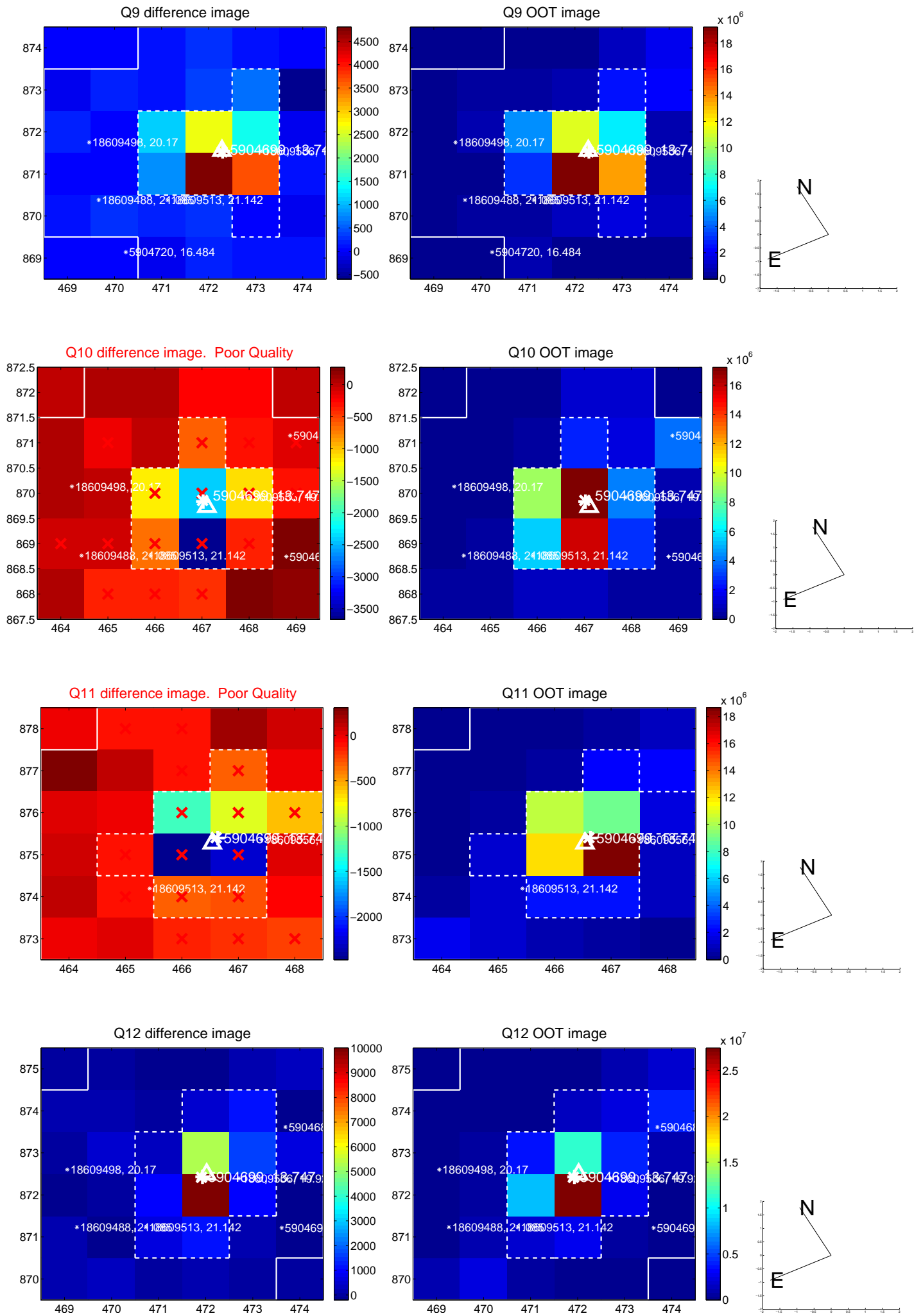
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



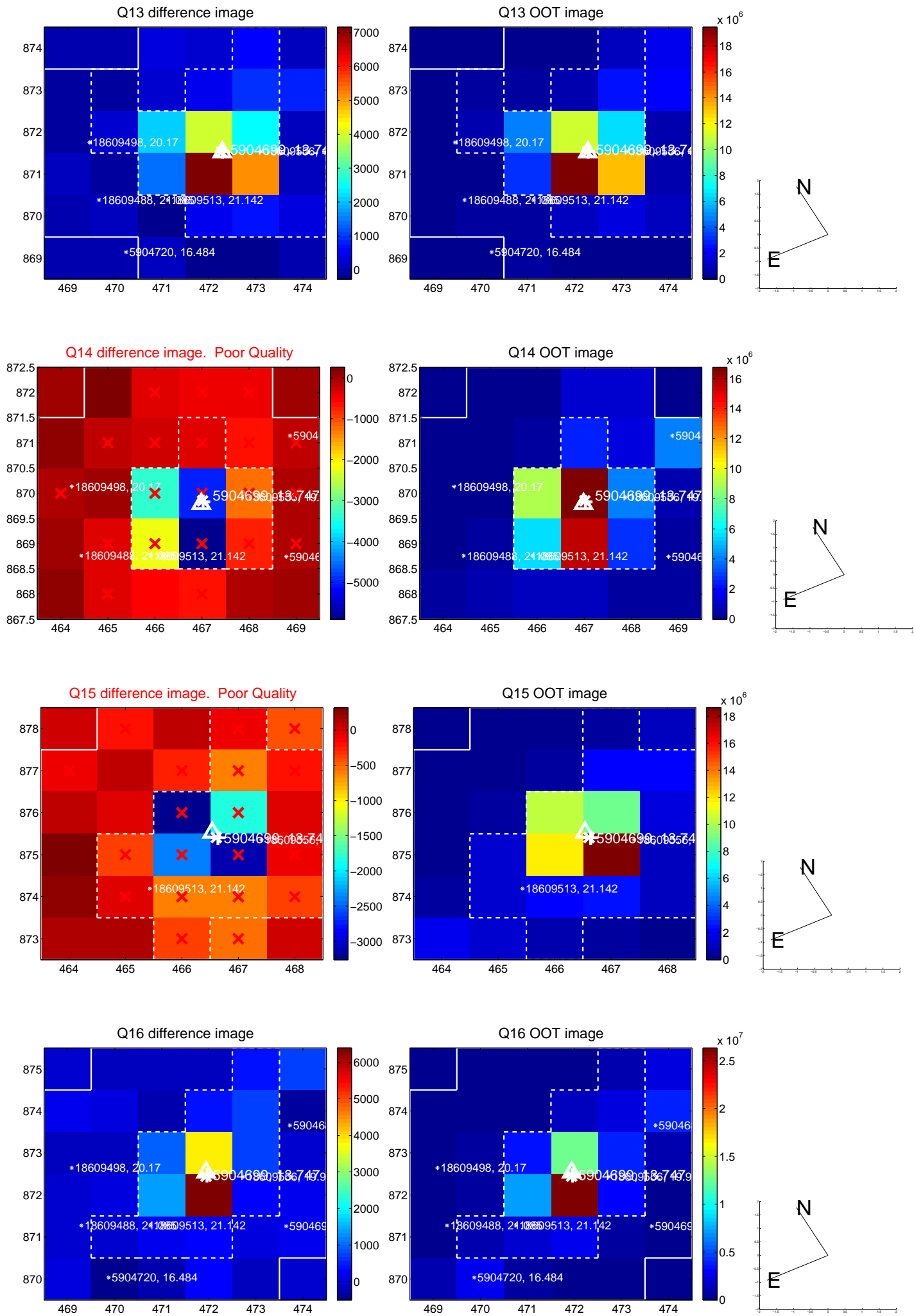
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



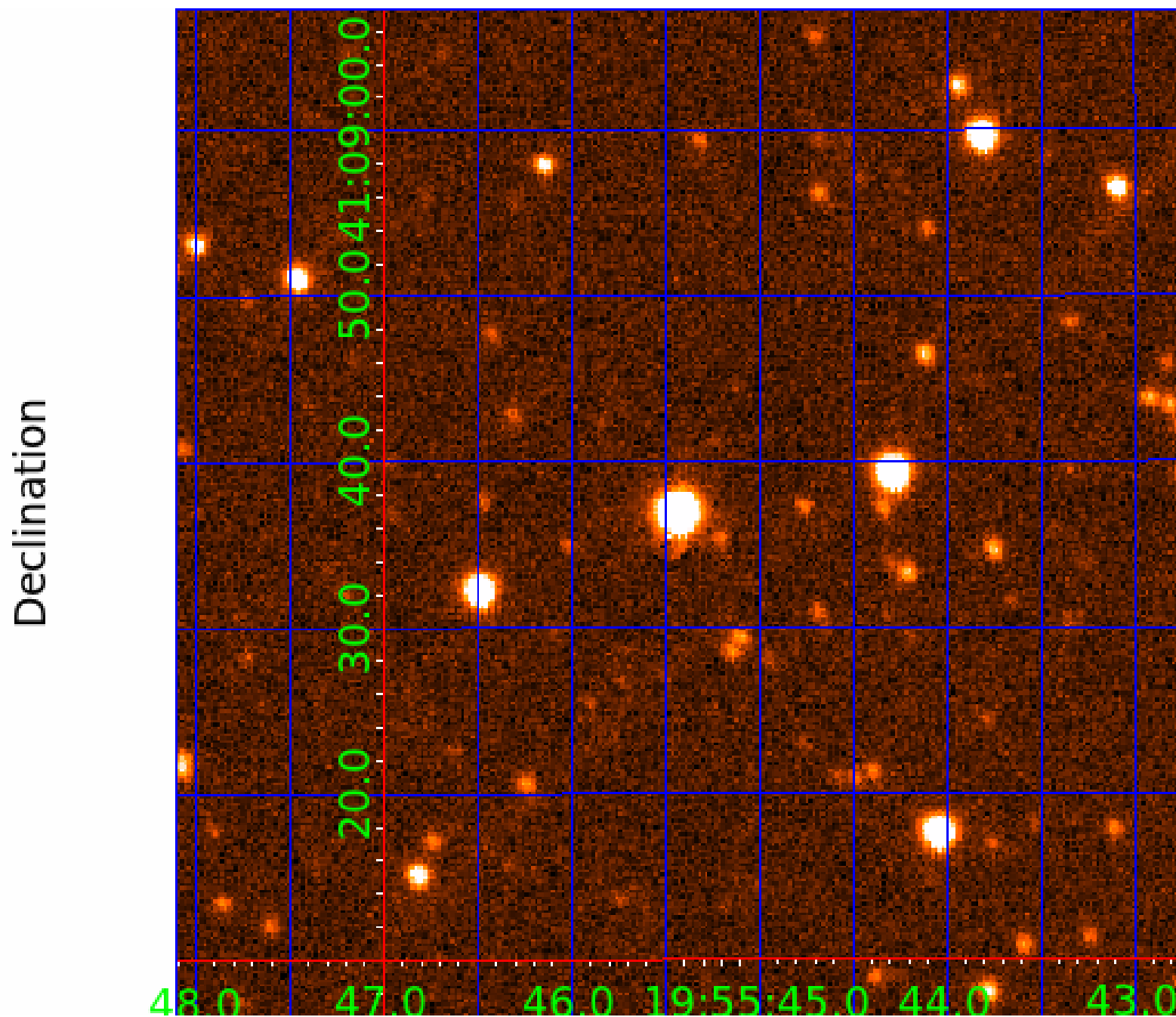
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005904699

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})
005904699-01	OBS	No	0.559925	131.803305	56.6	0.957	10.9	7.3	1.30	6755	1.14	15254.78
005904699-02	OBS	No	0.591196	131.707815	57.4	7.094	8.3	12.5	1.30	6755	1.01	14188.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005904699-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005904699-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—CENT_FEW_DIFFS

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

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

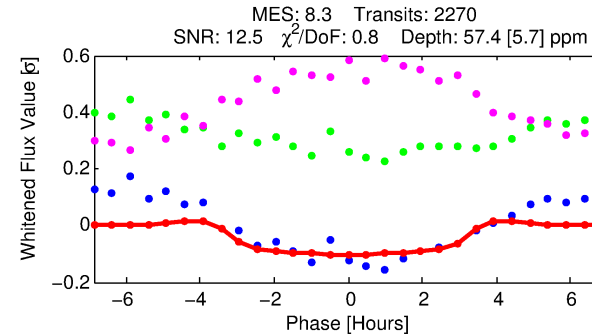
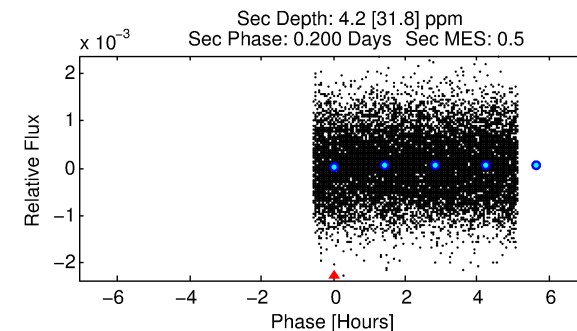
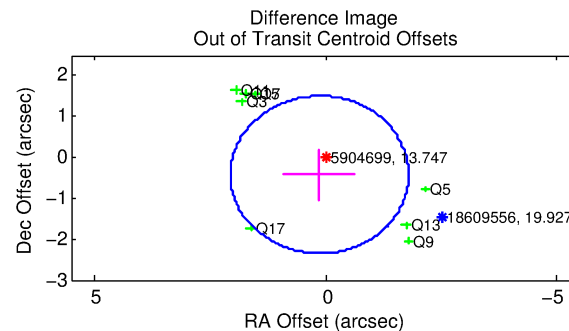
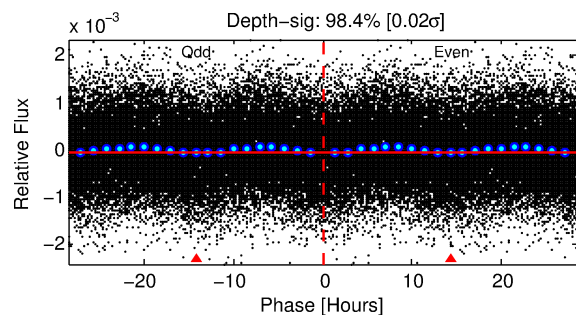
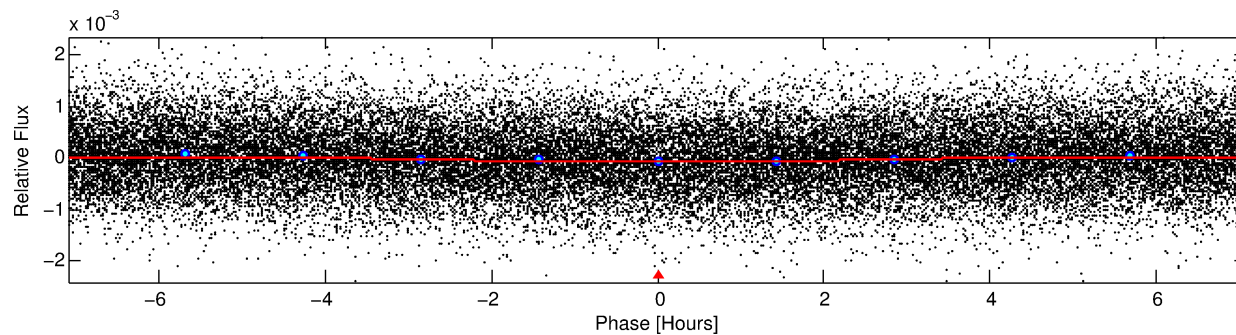
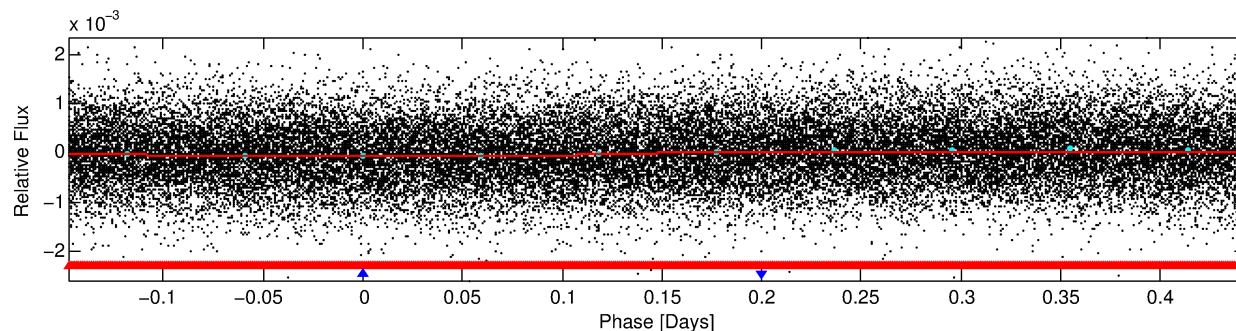
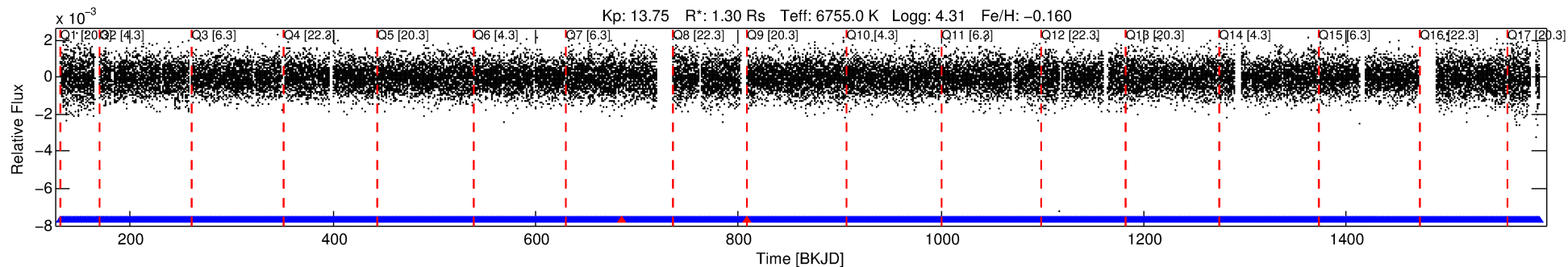
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005904699-02

No Significant Match Found

DV One-Page Summary

KIC: 5904699 Candidate: 2 of 2 Period: 0.591 d



DV Fit Results:

Period = 0.59120 [0.00001] d
Epoch = 131.7078 [0.0064] BKJD
Rp/R* = 0.0071 [0.0039]
a/R* = 1.00 [0.01]
b = 0.45 [5.41]
Seff = 14188.51 [5824.19]
Teq = 2783 [286] K
Rp = 1.01 [0.64] Re
a = 0.0149 [0.0040] AU
Ag = 0.50 [3.83] [-0.13 σ]
Teffp = 3621 [6903] K [0.12 σ]

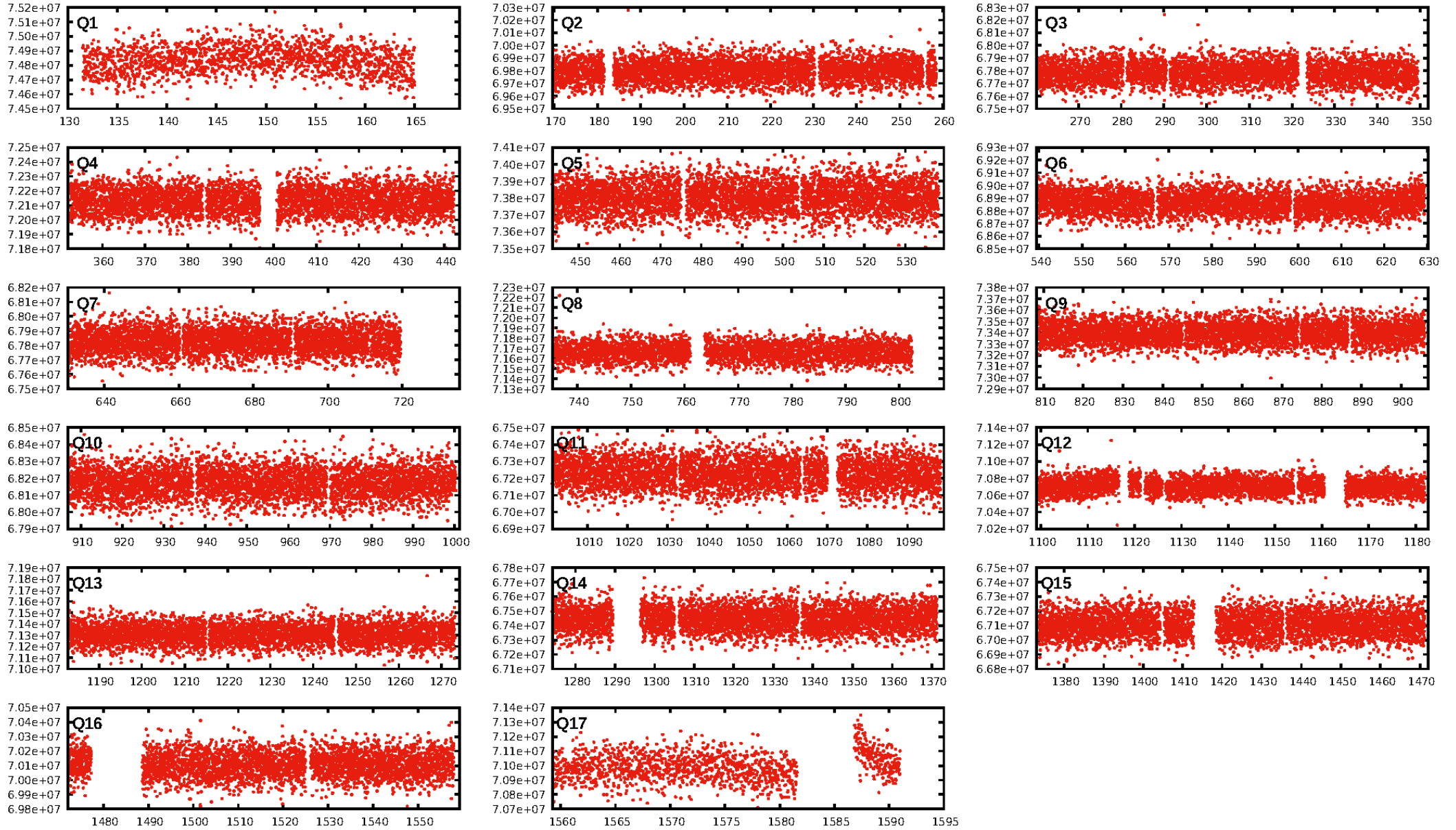
DV Diagnostic Results:

ShortPeriod-sig: 8.3% [0.10 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2166/2168]
GhostDiagnostic-chr: 2.684
Centroid-sig: 13.0%
Centroid-so: 0.594 arcsec [1.58 σ]
OotOffset-rm: 0.442 arcsec [0.69 σ]
OotOffset-st: 0/4/0/4 [8]
KicOffset-rm: 0.447 arcsec [0.72 σ]
KicOffset-st: 0/4/0/4 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 0.00 [0/17]

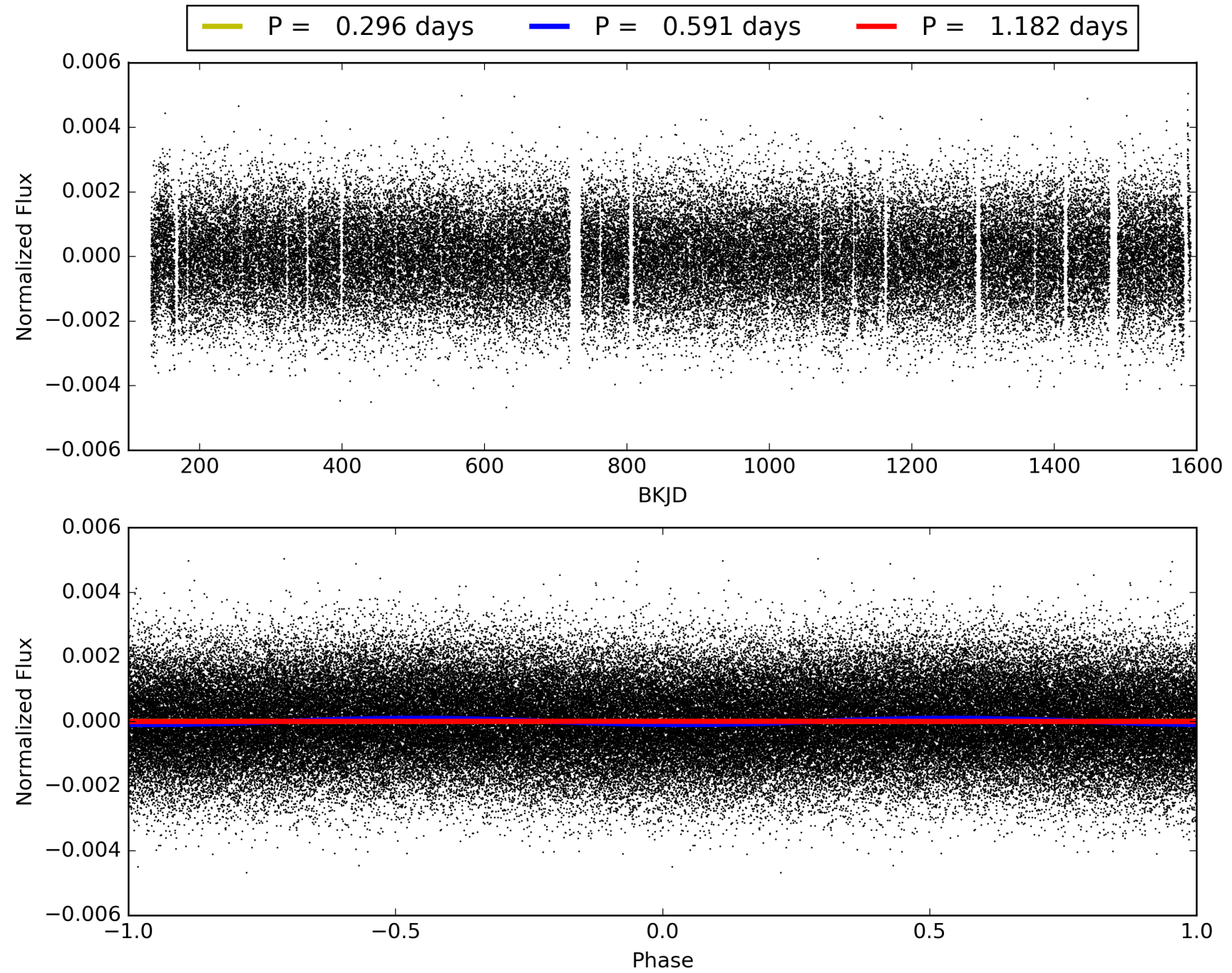
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:18:09 Z

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

TCE 005904699-02, PDC Light Curves

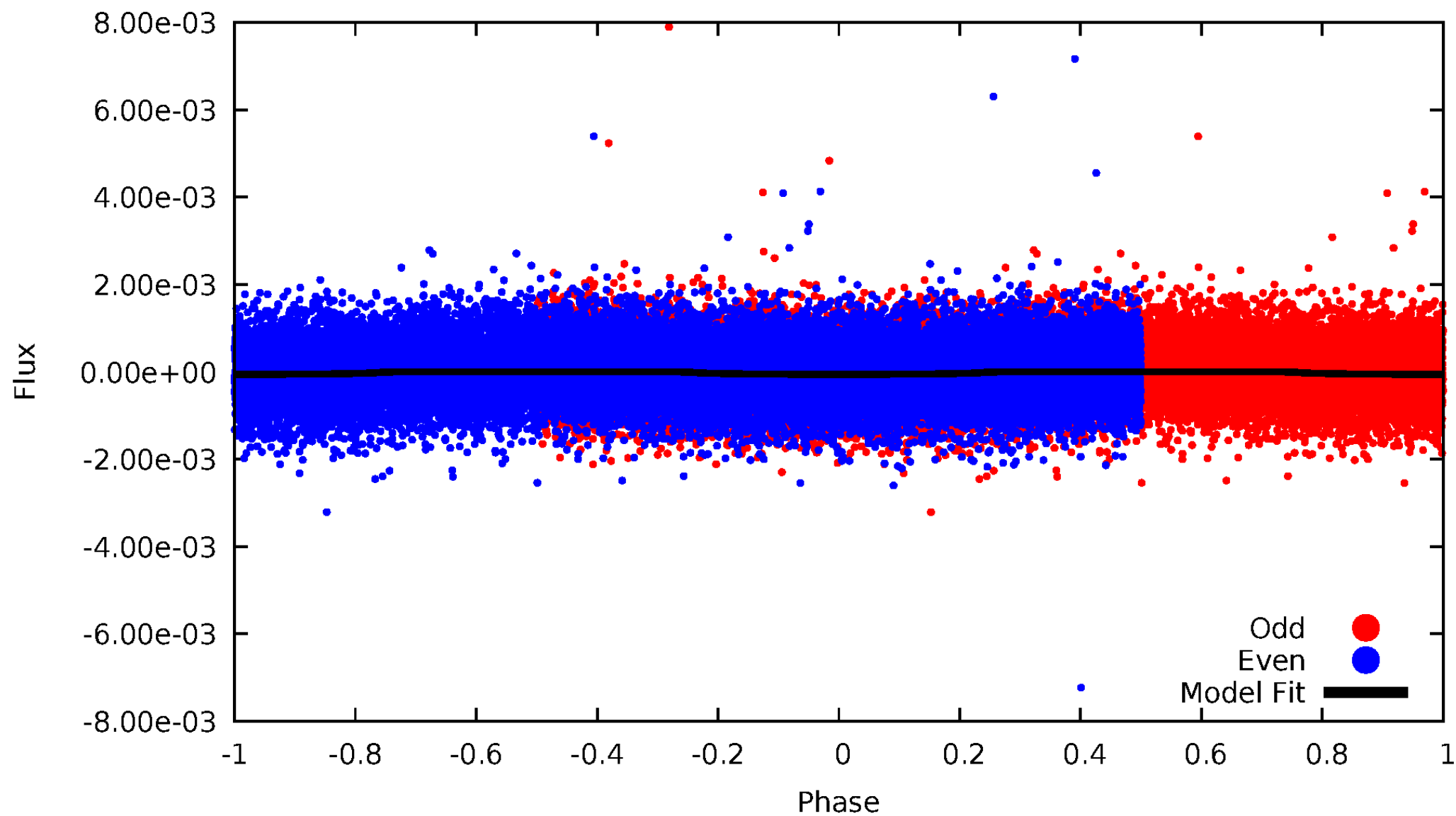


TCE 005904699-02



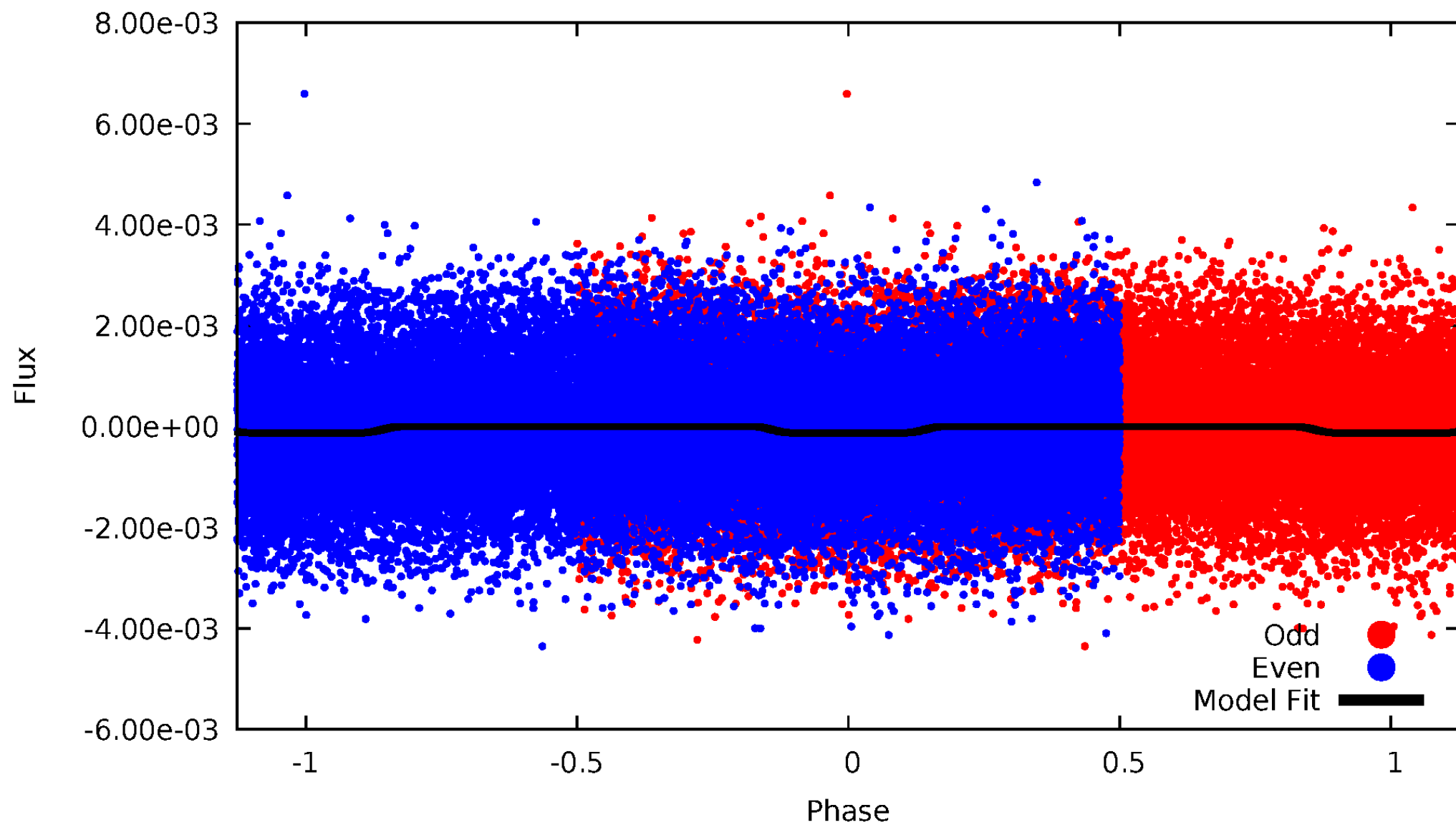
DV Odd/Even

TCE 005904699-02



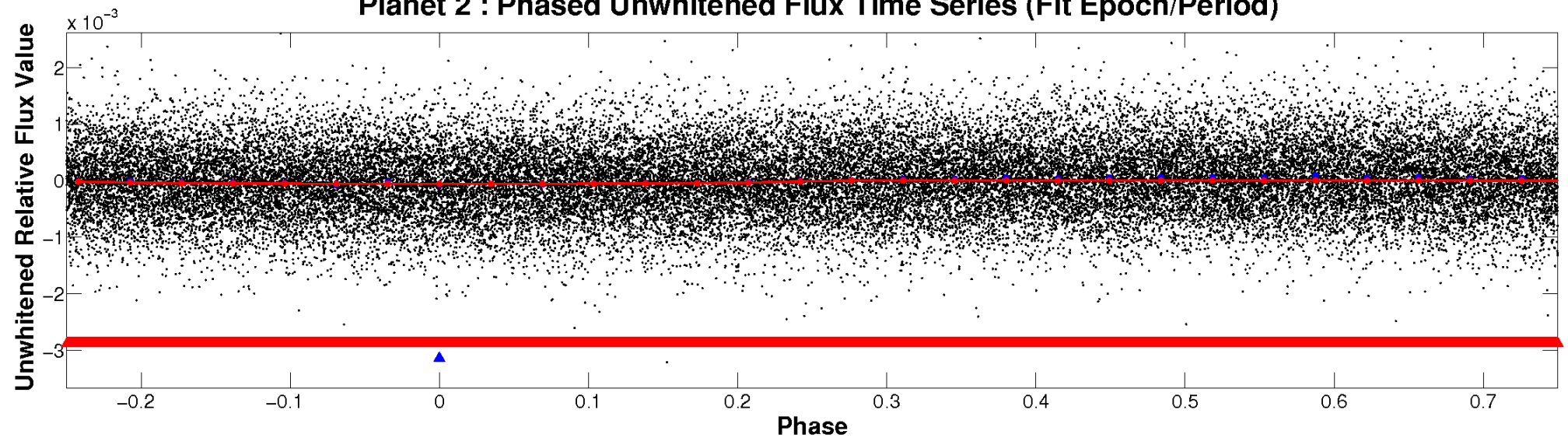
ALT Odd/Even

TCE 005904699-02

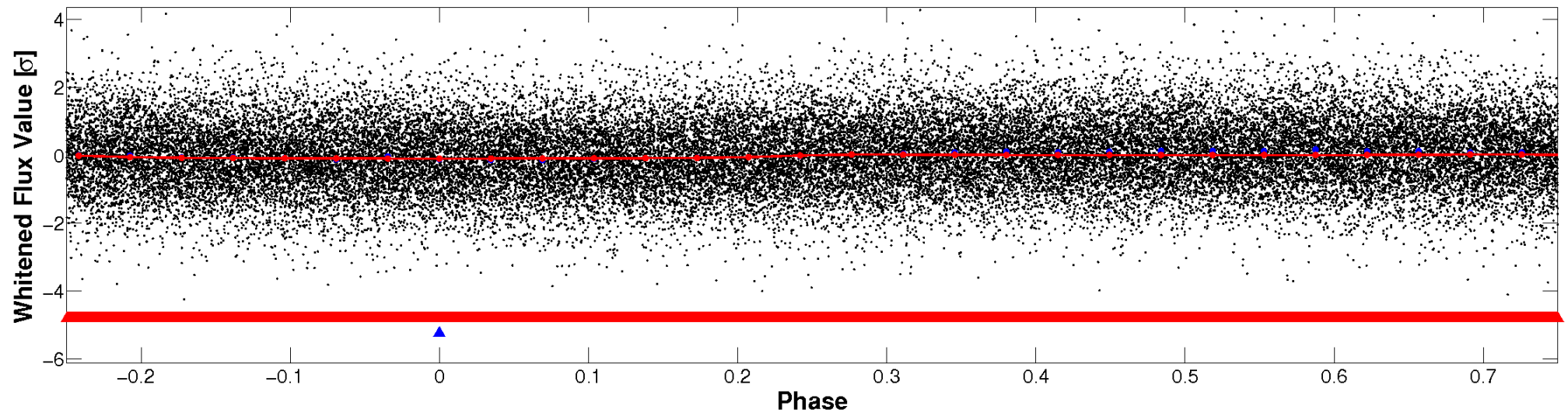


Non-Whitened Vs. Whitened Light Curve

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

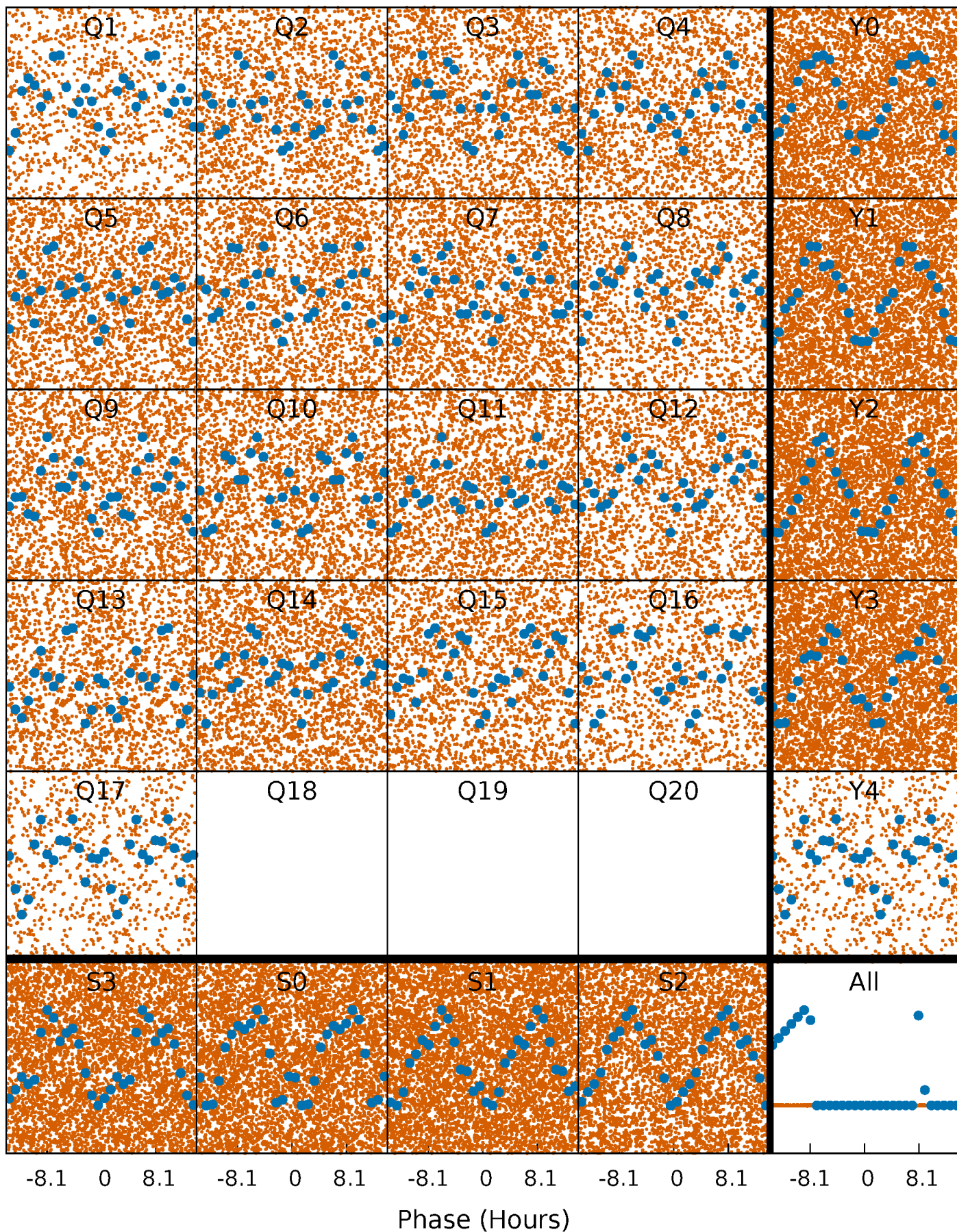


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



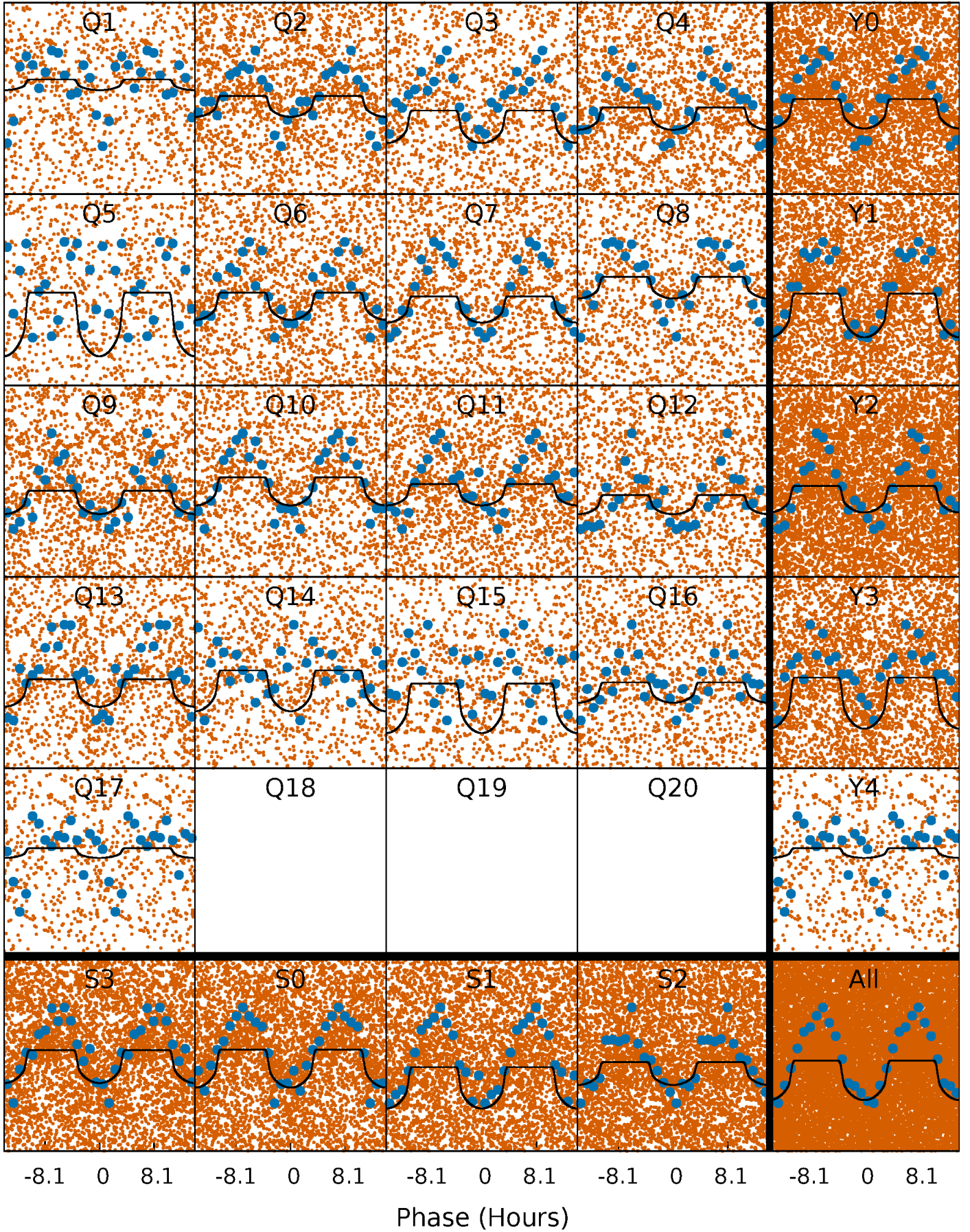
PDC Quarter-Phased Transit Curves

TCE 005904699-02 P= 0.591196 Days $T_0=131.707815$ (BKJD)



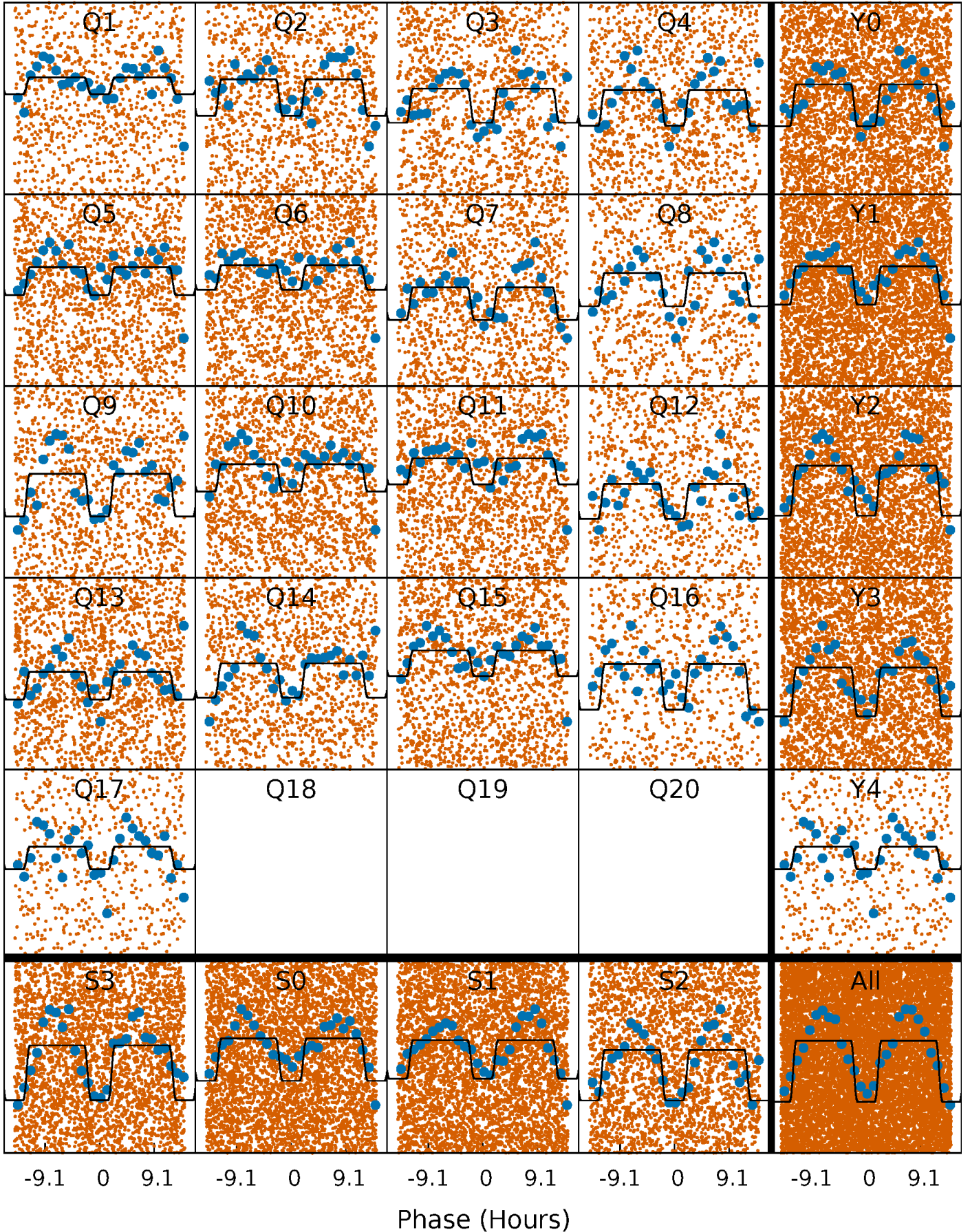
DV Quarter-Phased Transit Curves

TCE 005904699-02 P= 0.591196 Days $T_0=131.707815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

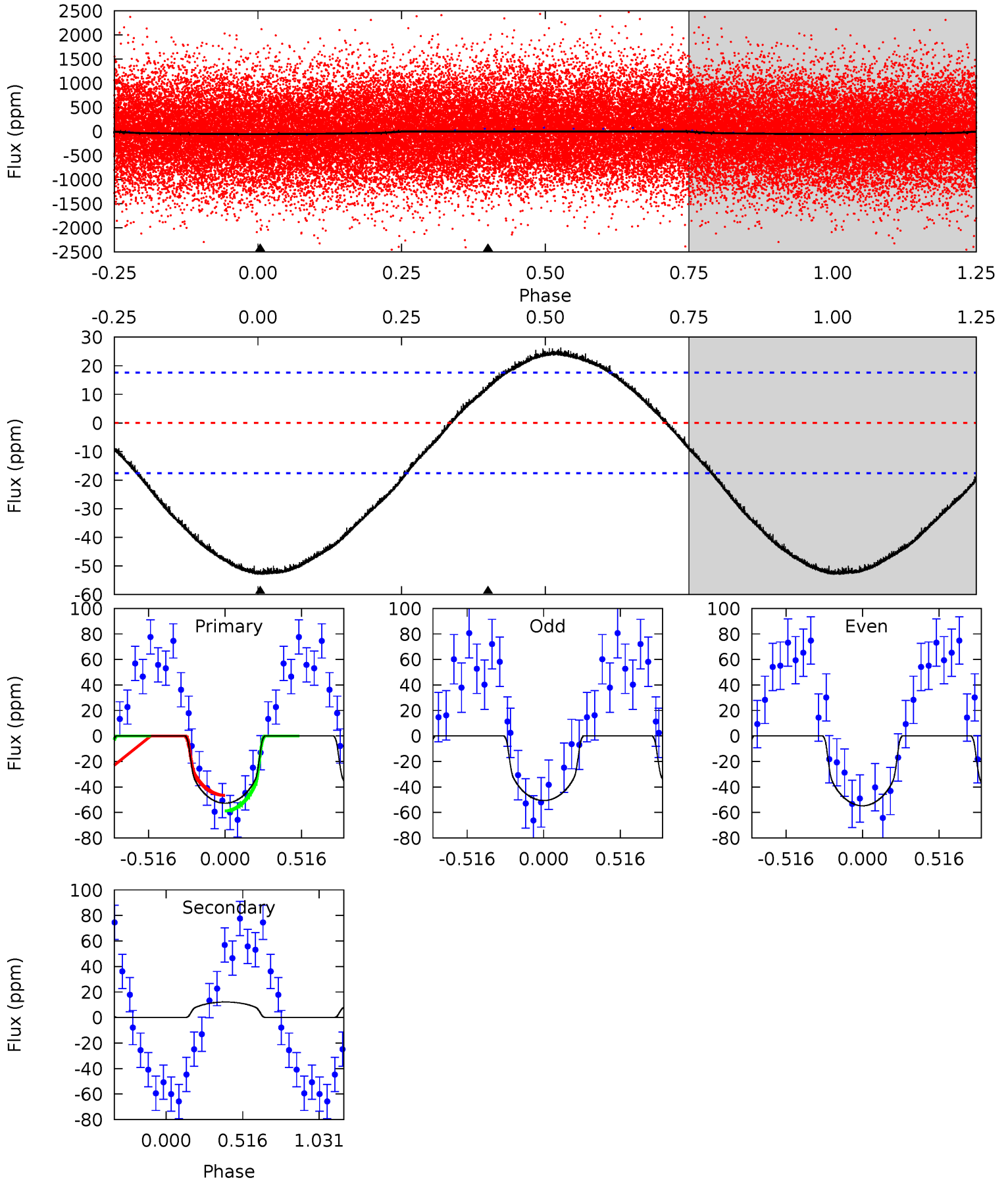
TCE 005904699-02 P= 0.591224 Days $T_0=131.692613$ (BKJD)



DV Model-Shift Uniqueness Test

005904699-02, P = 0.591196 Days, E = 131.116619 Days

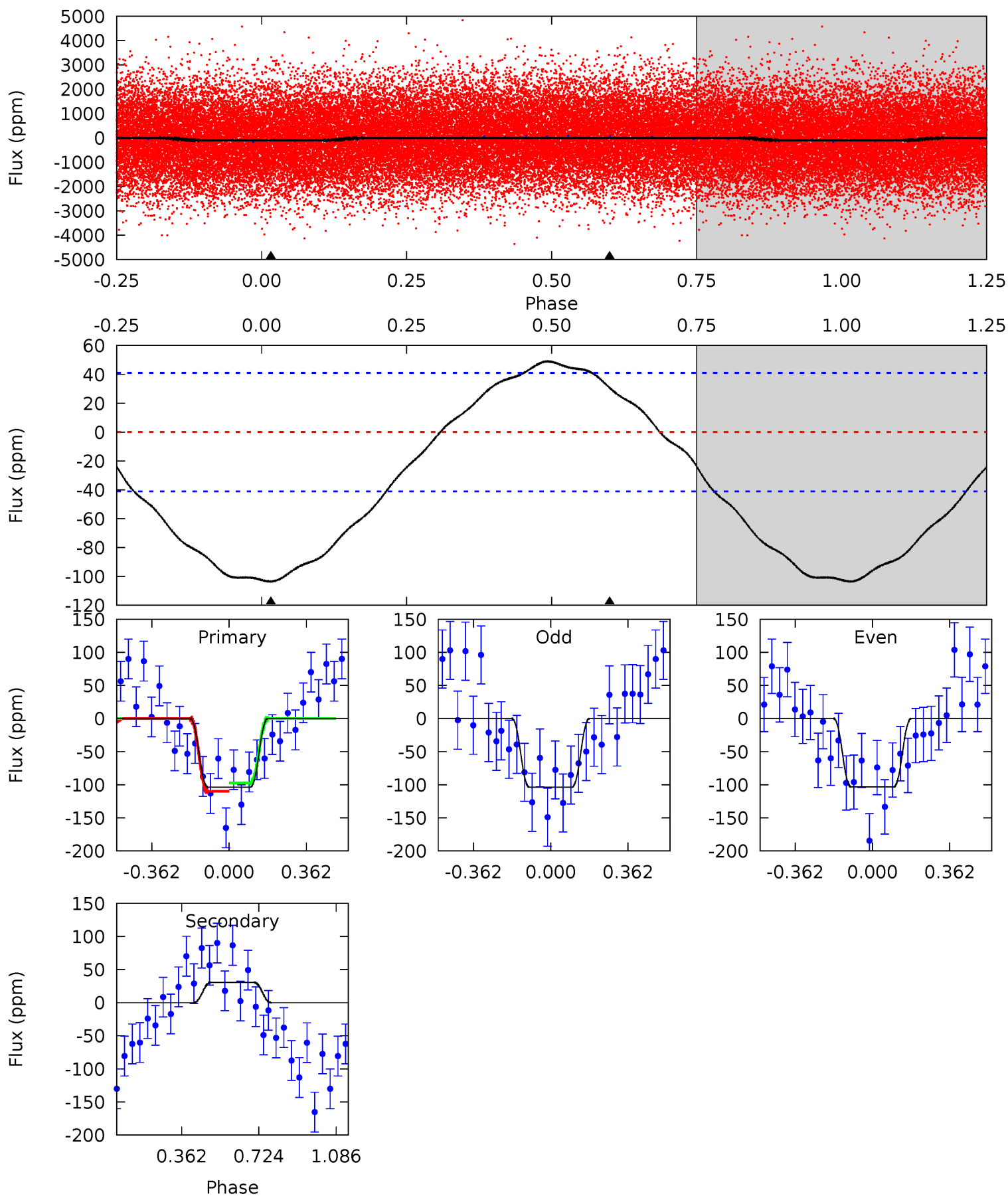
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	-2.91	0	0	4.21	0.65	1.53	12.6	12.6	-2.91	-2.91	0.49	1.23	0.33	1.45



Alt Model-Shift Uniqueness Test

005904699-02, P = 0.591224 Days, E = 131.101389 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	-3.21	0	0	4.29	0.91	1.23	10.8	10.8	-3.21	-3.21	0.02	0.75	0.32	0.67



Stellar Parameters For KIC 005904699

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6755^{+189}_{-259}	$4.311^{+0.087}_{-0.203}$	$-0.160^{+0.250}_{-0.350}$	$1.298^{+0.426}_{-0.183}$	$1.265^{+0.190}_{-0.190}$	$0.815^{+0.320}_{-0.443}$
	+3%/-4%	+2%/-5%	+156%/-219%	+33%/-14%	+15%/-15%	+39%/-54%
Source	PHO1	KIC0	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 005904699-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	12 ± 4	$1.07^{+0.57}_{-0.54}$	3934^{+267}_{-223}	-4950^{+635}_{-1905}	$-1.225^{+0.749}_{-4.089}$
Alt.	31 ± 10	$1.63^{+0.63}_{-0.58}$	3927^{+304}_{-209}	-5032^{+561}_{-1062}	$-1.331^{+0.725}_{-2.072}$

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 $A_{obs} \gg 1.0$

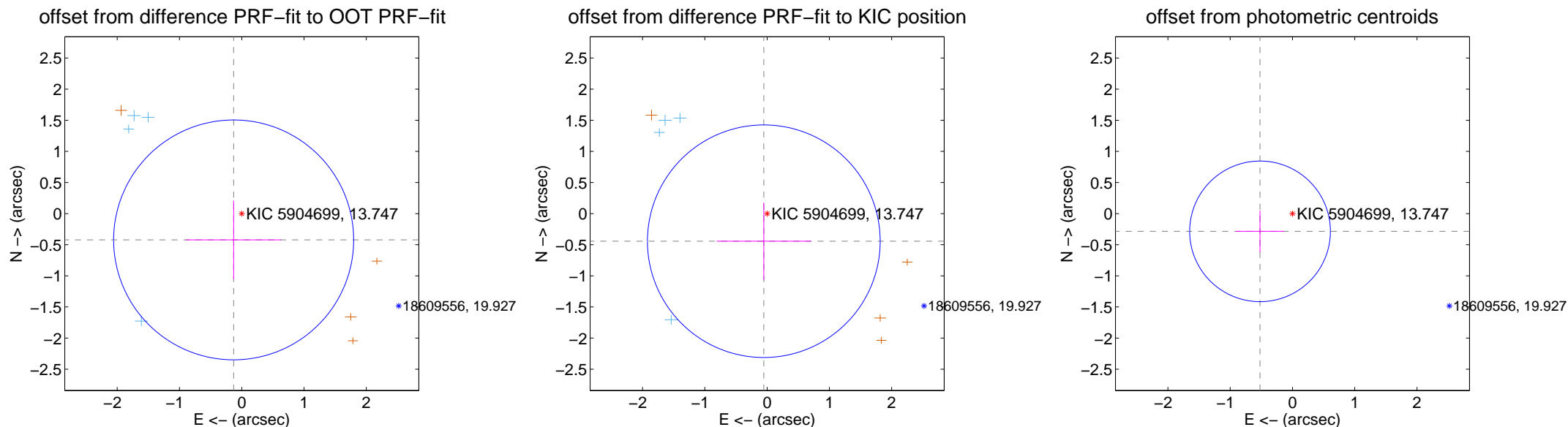
DV Centroid Data

Supplemental centroid analysis for 005904699-02. Kepler magnitude: 13.75. Transit SNR 12.51

There are 4 quarters with good PRF difference image offsets

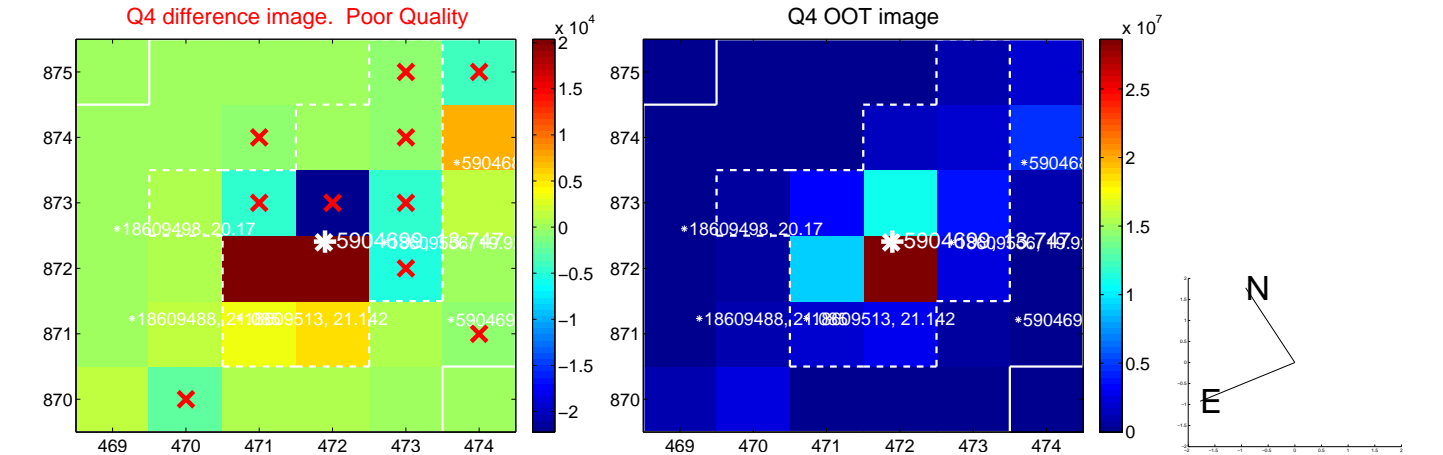
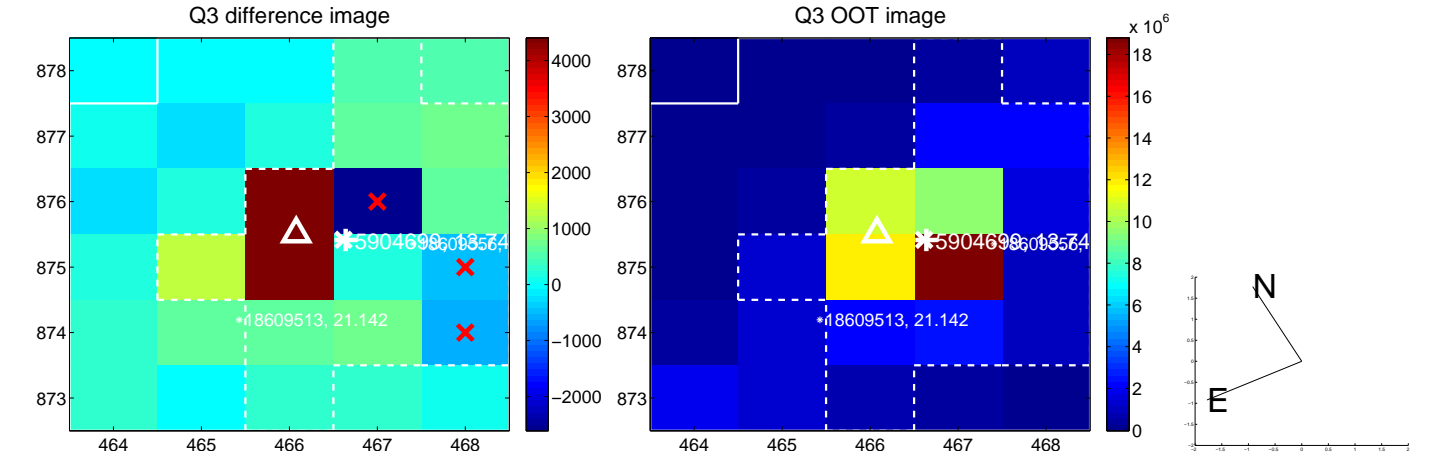
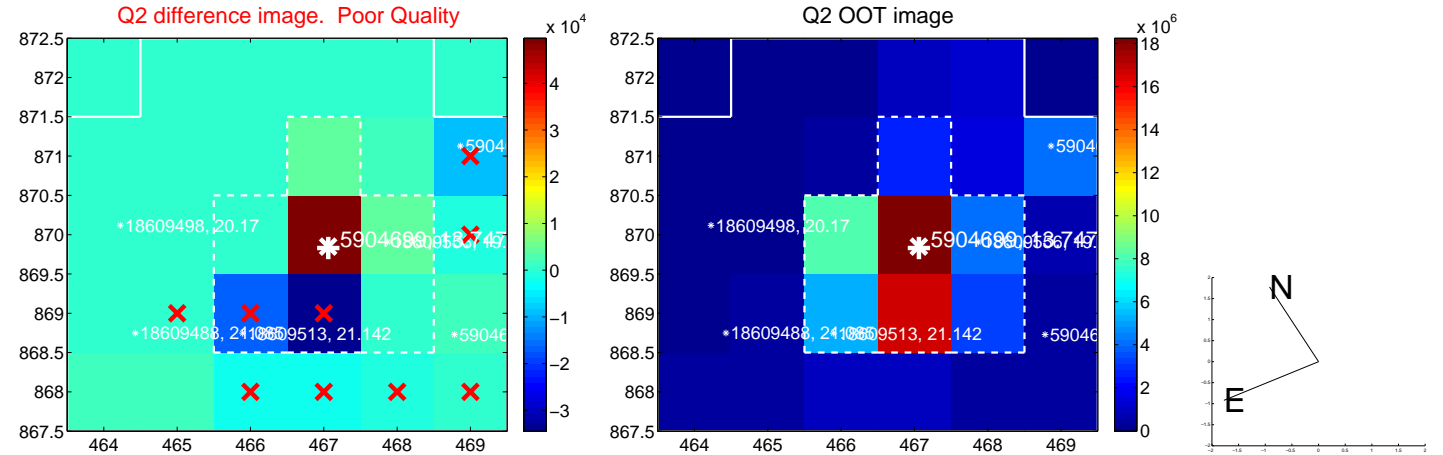
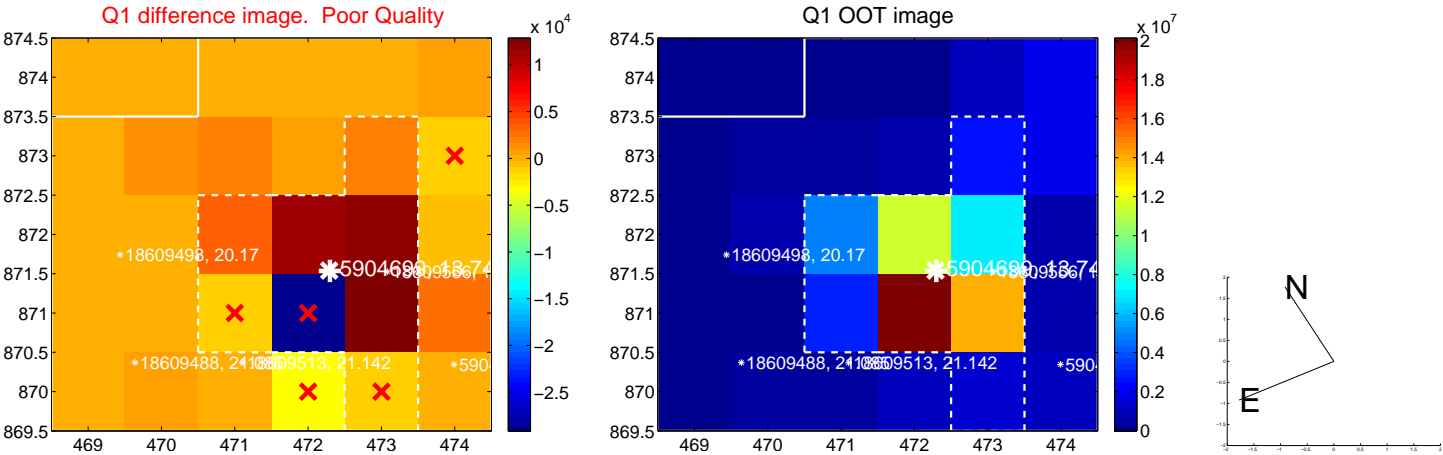
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.442 ± 0.642	0.69	0.130 ± 0.764	-0.422 ± 0.630
PRF-fit source offset from KIC position	0.447 ± 0.623	0.72	0.053 ± 0.759	-0.443 ± 0.621
photometric centroid source offset	0.59 ± 0.38	1.58	0.52 ± 0.39	-0.28 ± 0.34

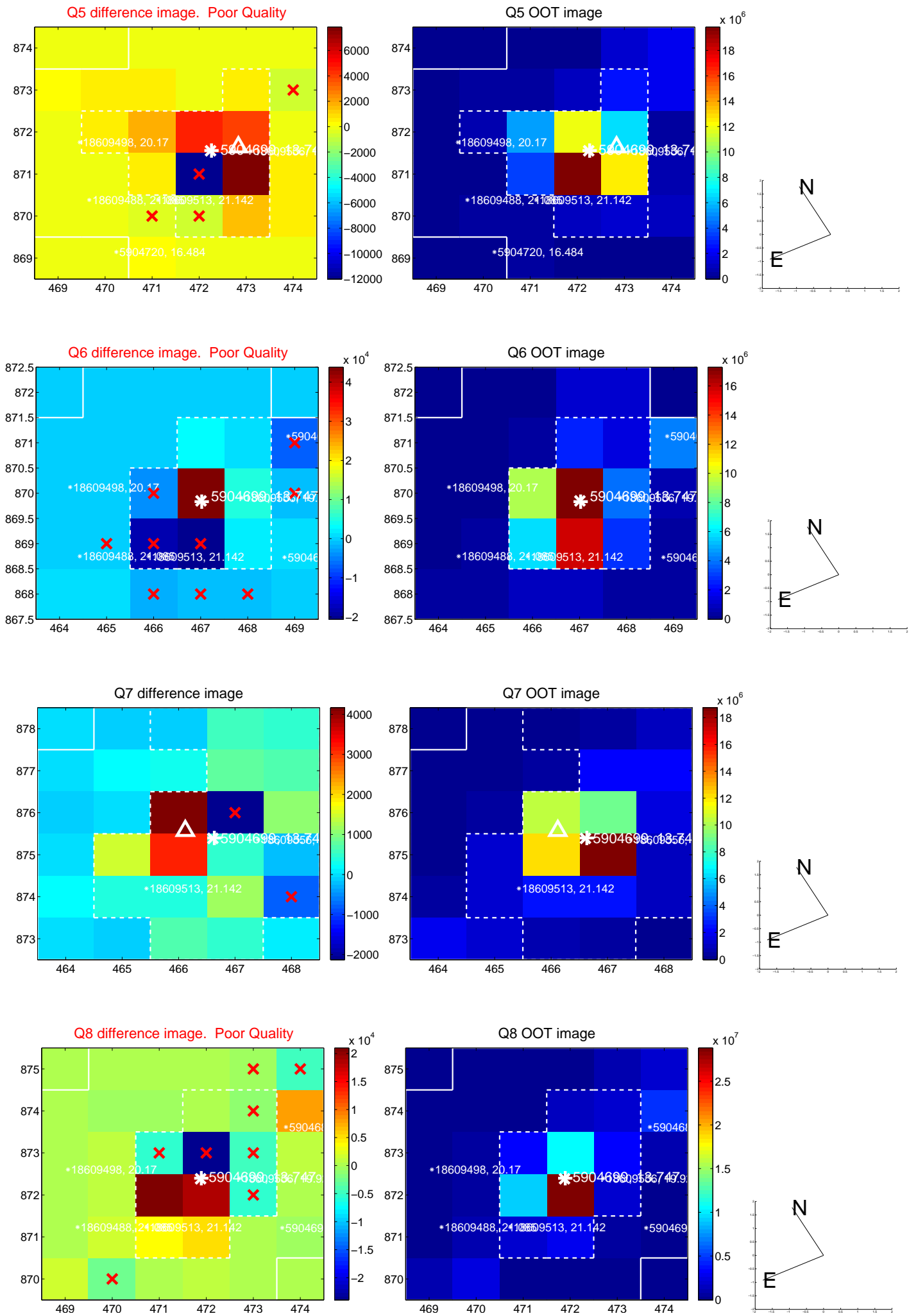


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

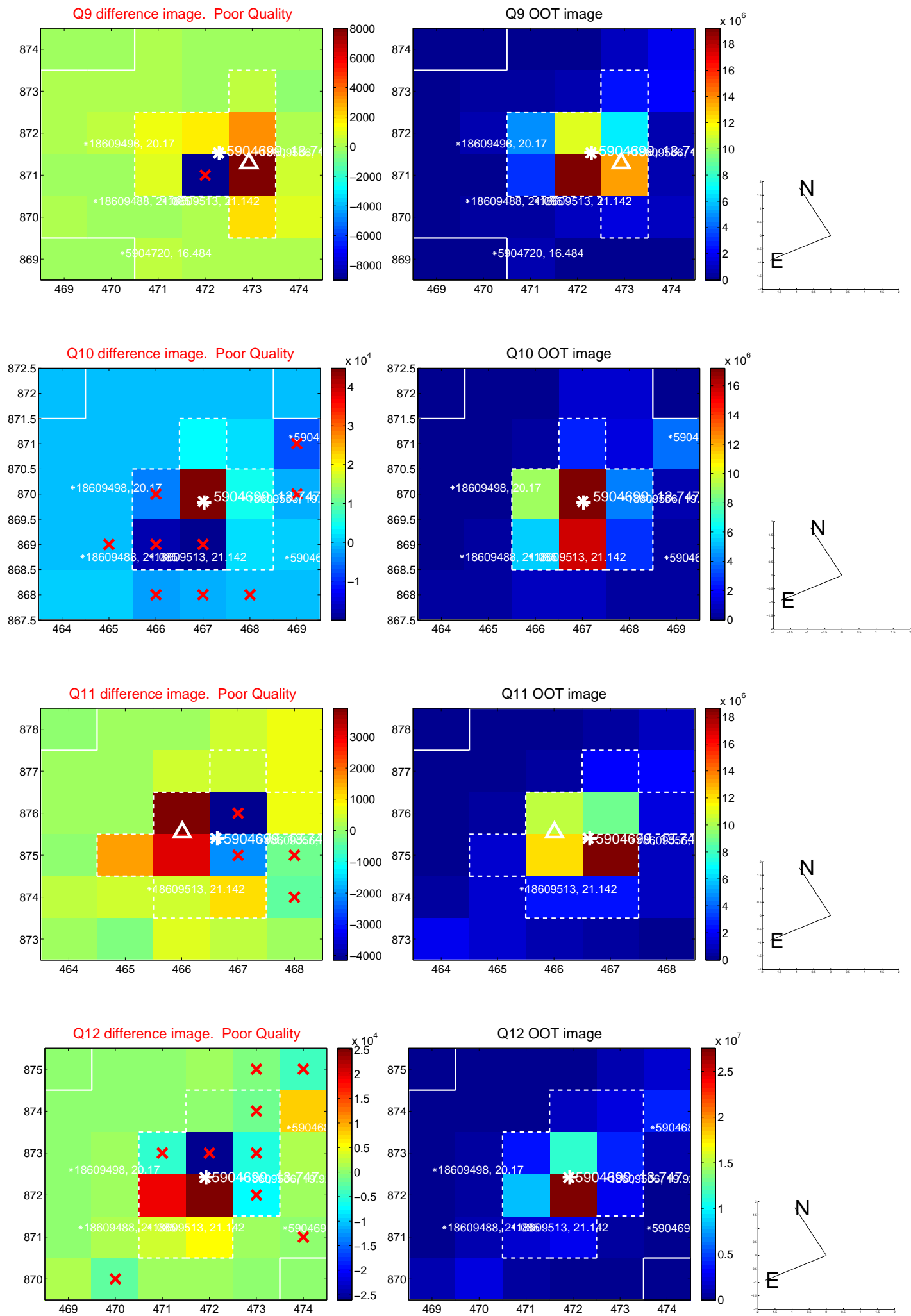
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



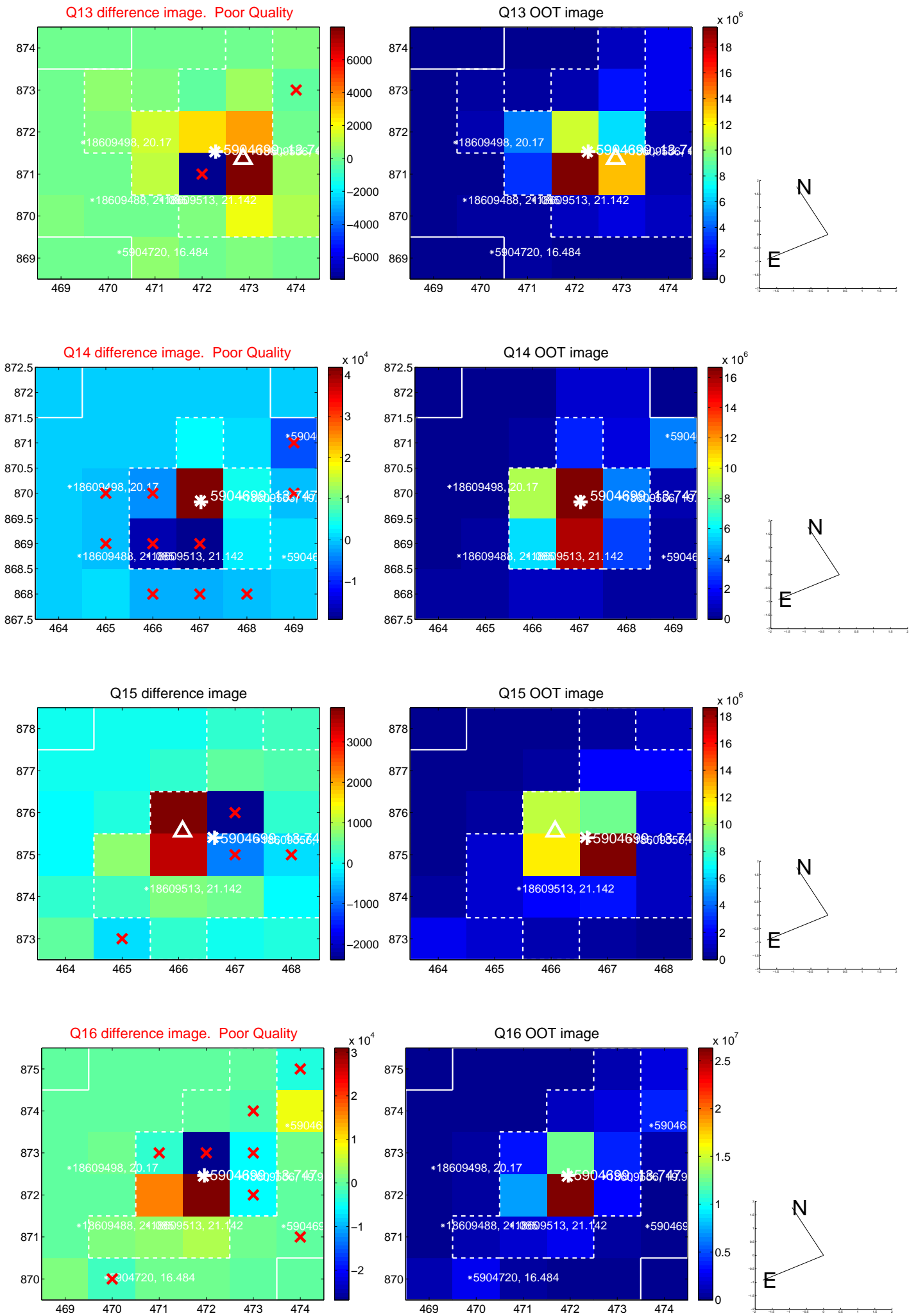
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



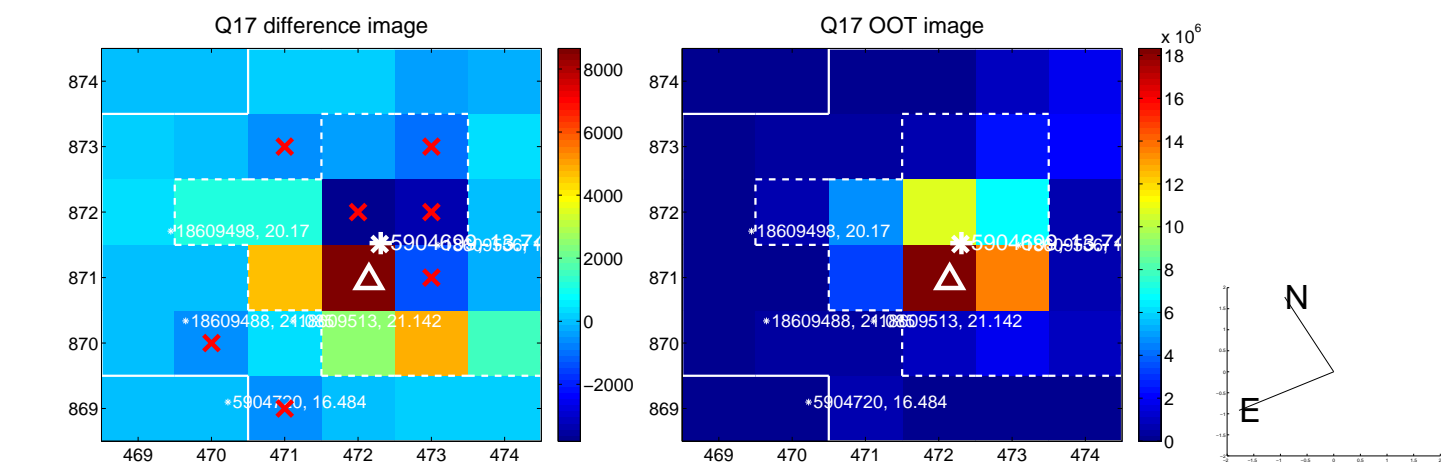
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



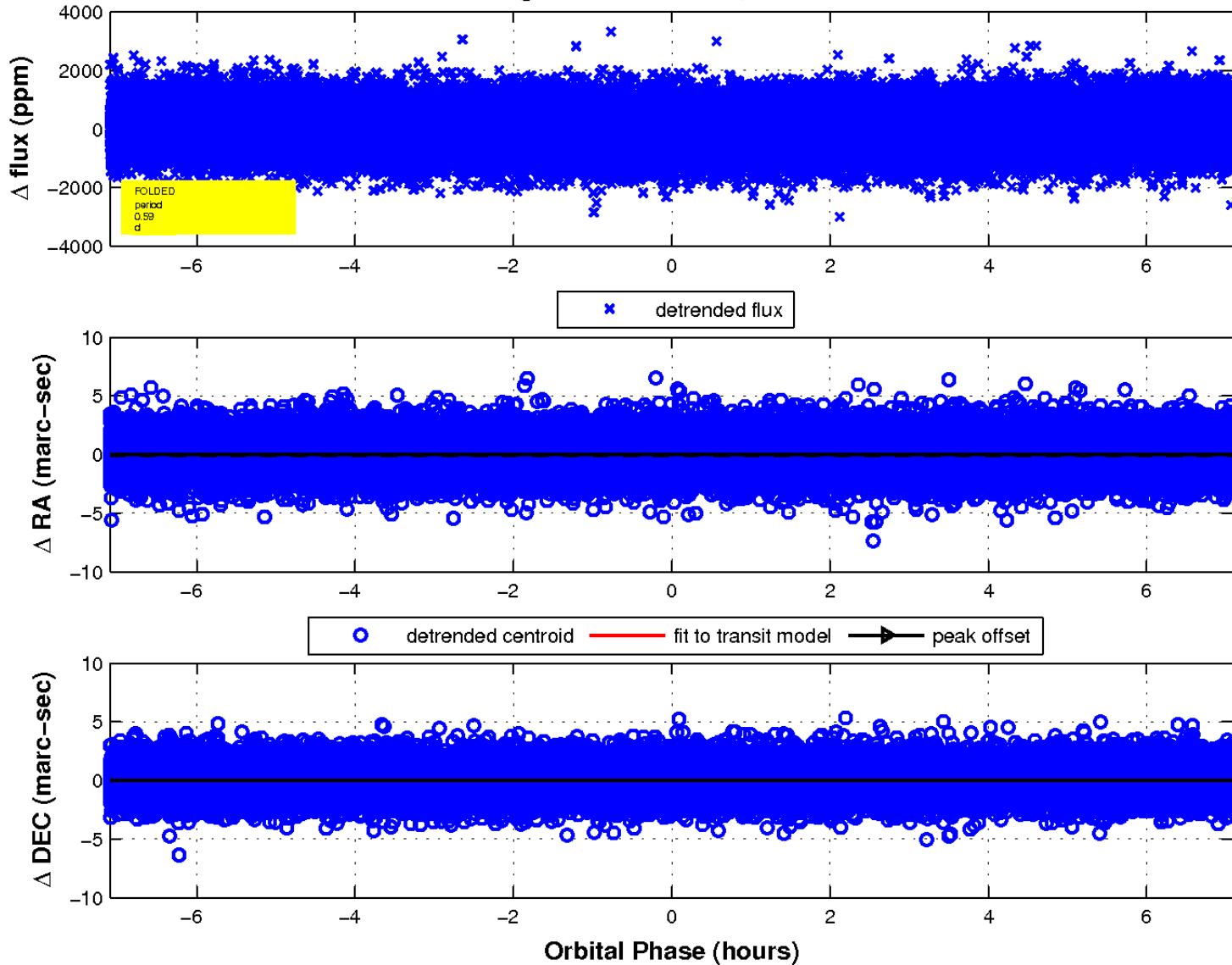
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

