

KIC 005472950

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})
005472950-01	OBS	No	1.070613	132.496212	89.3	3.949	8.8	5.2	0.73	5254	0.84	1122.54
005472950-02	OBS	No	0.535560	131.993992	137.0	3.711	8.3	8.1	0.73	5254	0.89	2826.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005472950-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005472950-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT

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

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

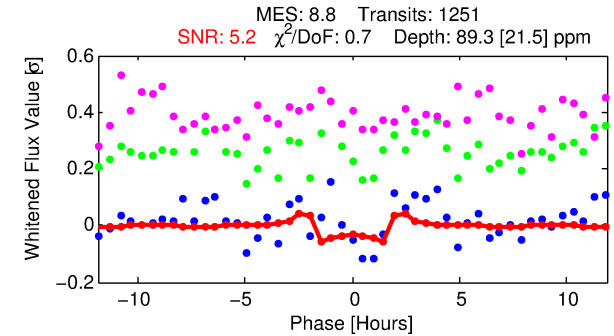
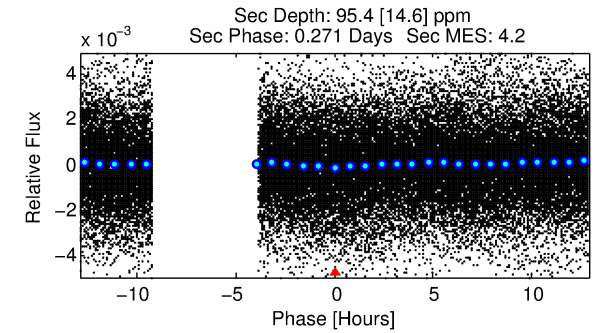
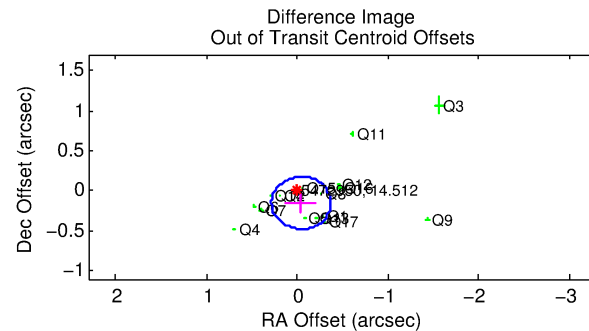
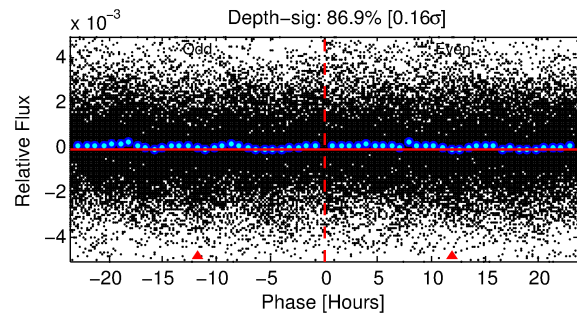
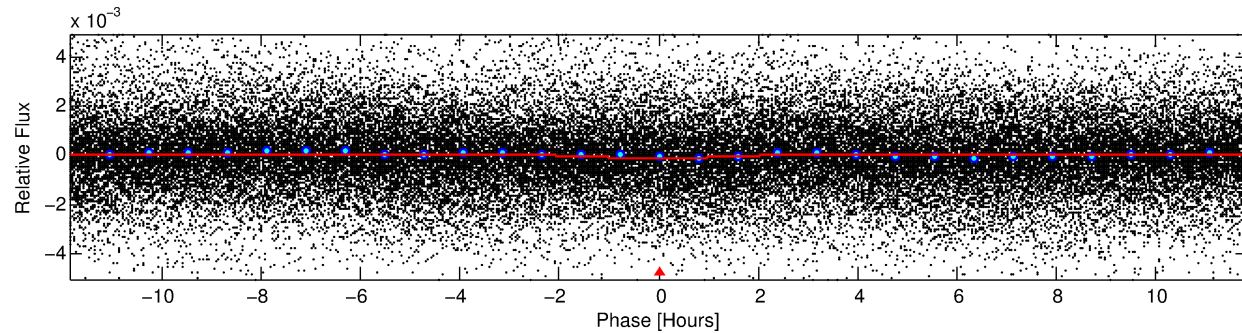
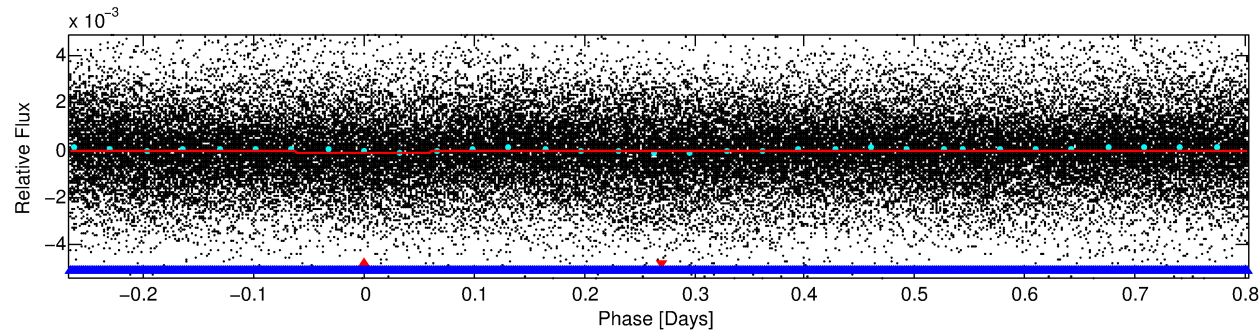
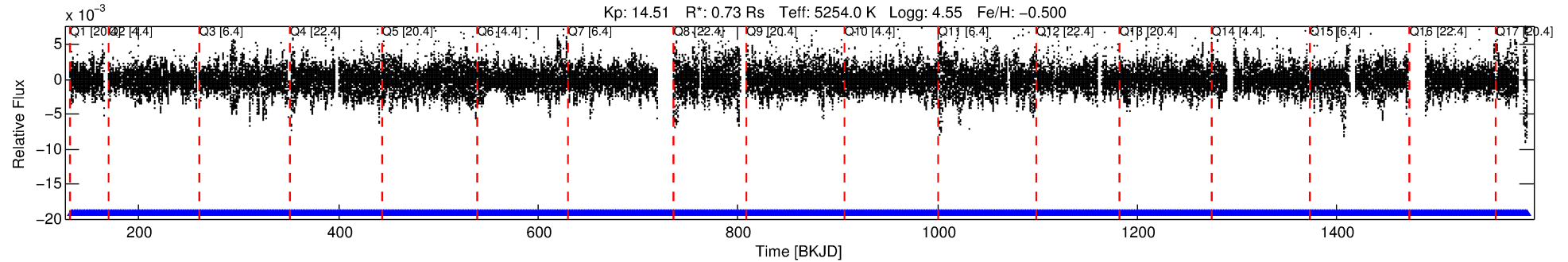
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005472950-01

No Significant Match Found

DV One-Page Summary

KIC: 5472950 Candidate: 1 of 2 Period: 1.071 d



DV Fit Results:

Period = 1.07061 [0.00002] d
Epoch = 132.4962 [0.0031] BKJD
Rp/R* = 0.0105 [0.0037]
a/R* = 1.31 [0.78]
b = 0.91 [0.27]
Seff = 1122.54 [220.32]
Teq = 1476 [72] K
Rp = 0.84 [0.31] Re
a = 0.0181 [0.0018] AU
Ag = 24.25 [17.66] [1.32 σ]
Teffp = 5064 [913] K [3.92 σ]

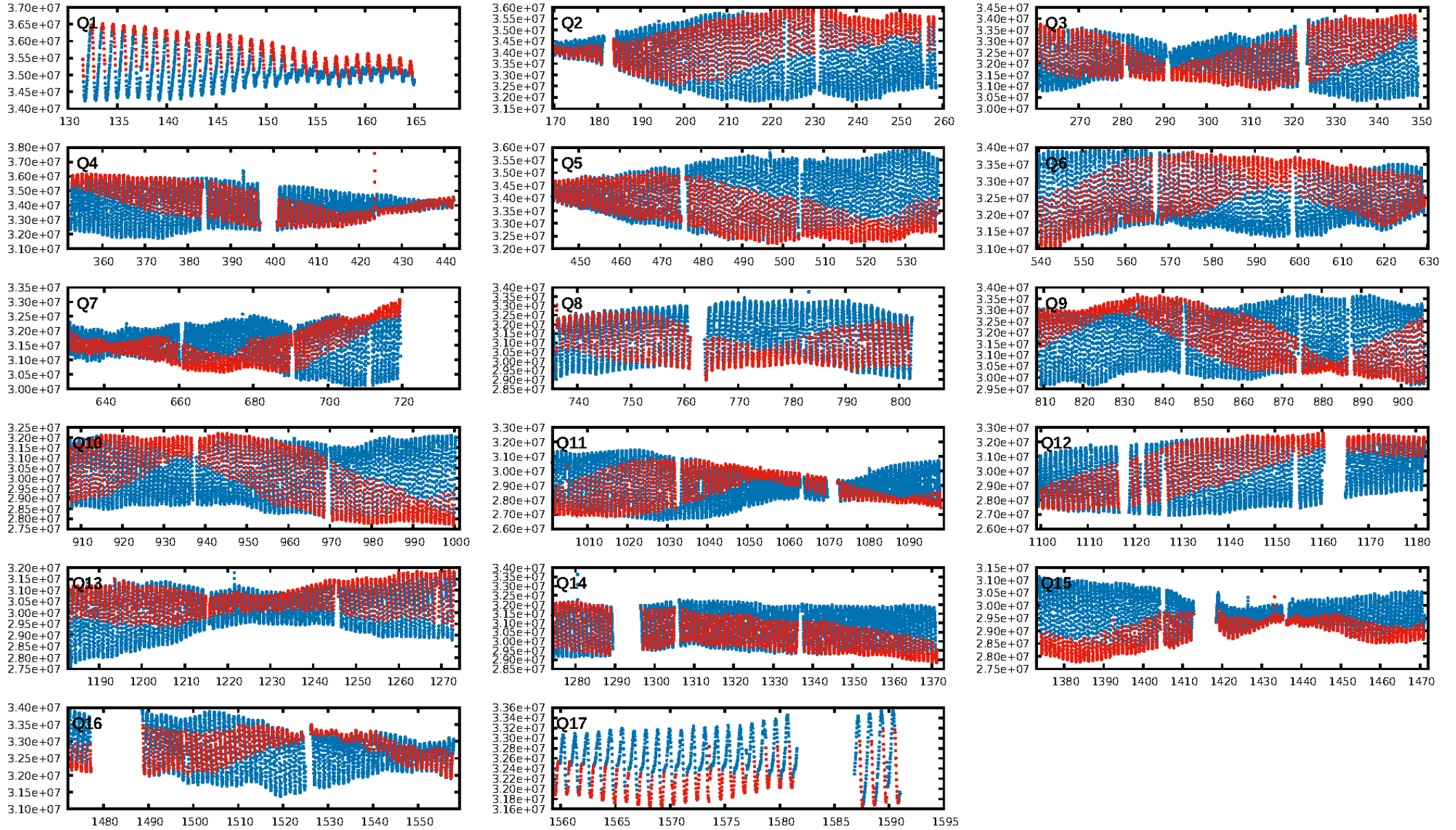
DV Diagnostic Results:

ShortPeriod-sig: 98.2% [2.37 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1194/1194]
GhostDiagnostic-chr: -1.779
Centroid-sig: 0.3%
Centroid-so: 3.410 arcsec [2.17 σ]
OotOffset-rm: 0.158 arcsec [1.45 σ]
KicOffset-rm: 0.225 arcsec [1.54 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 0.00 [0/17]

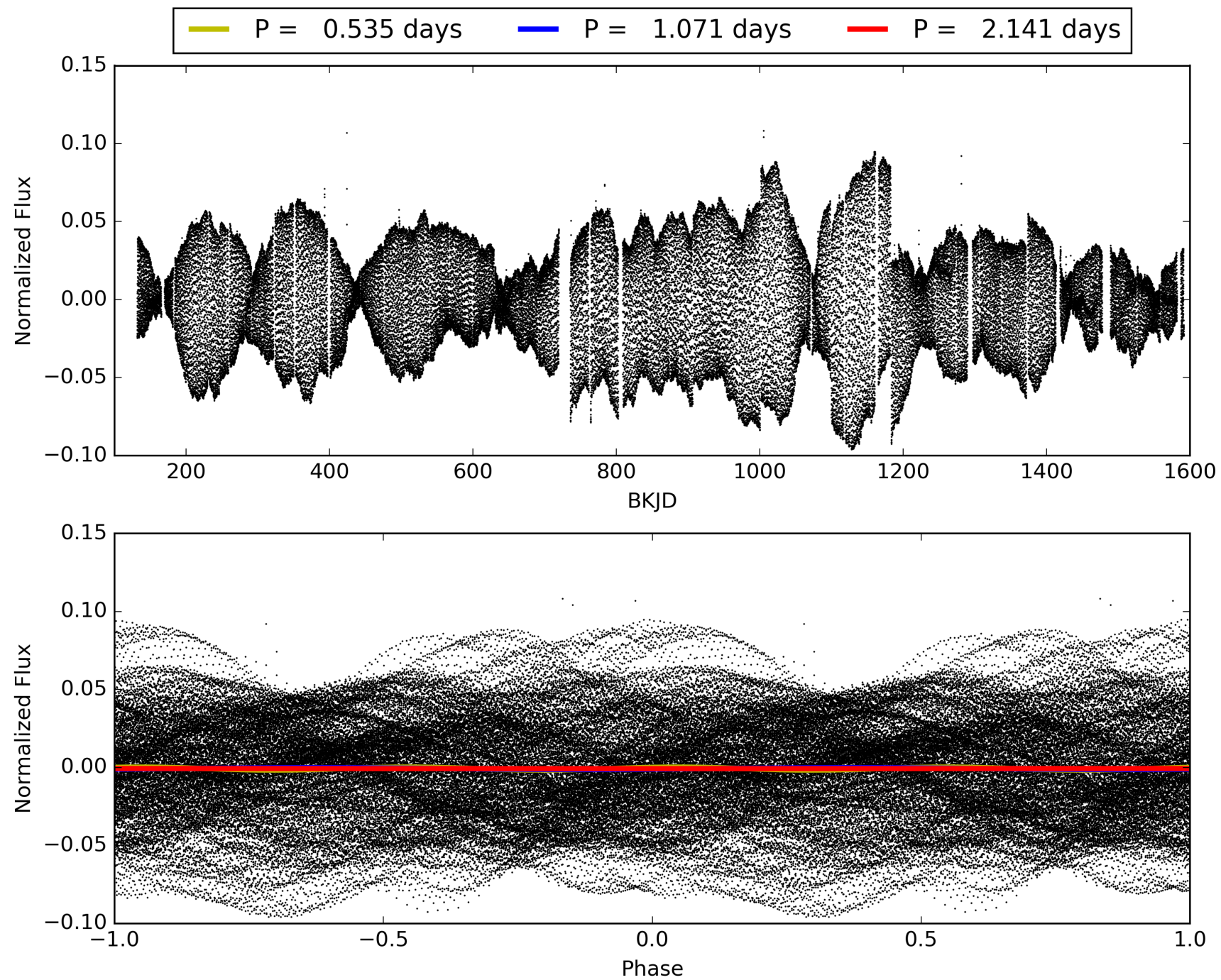
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:25:21 Z

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

TCE 005472950-01, PDC Light Curves

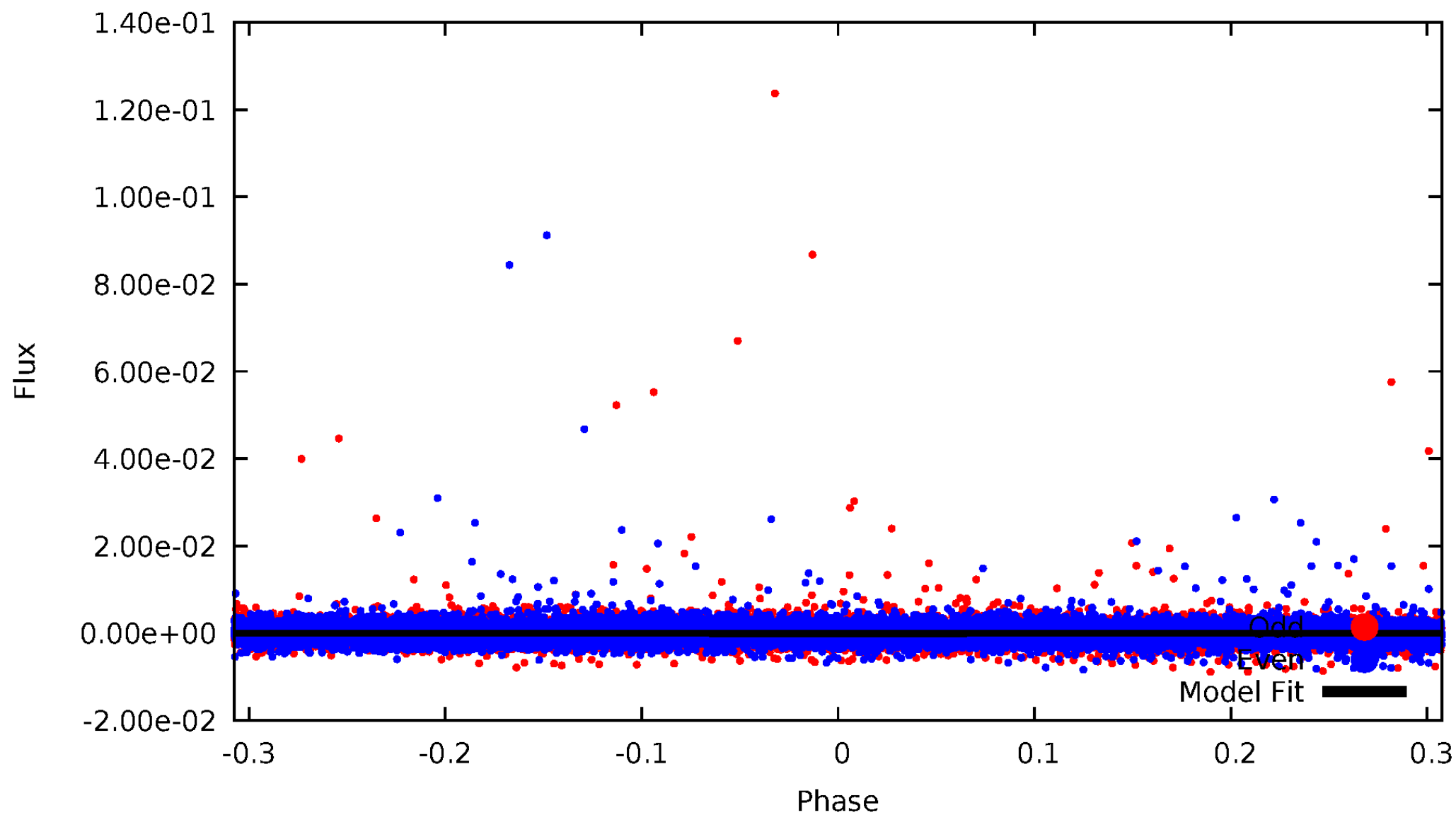


TCE 005472950-01



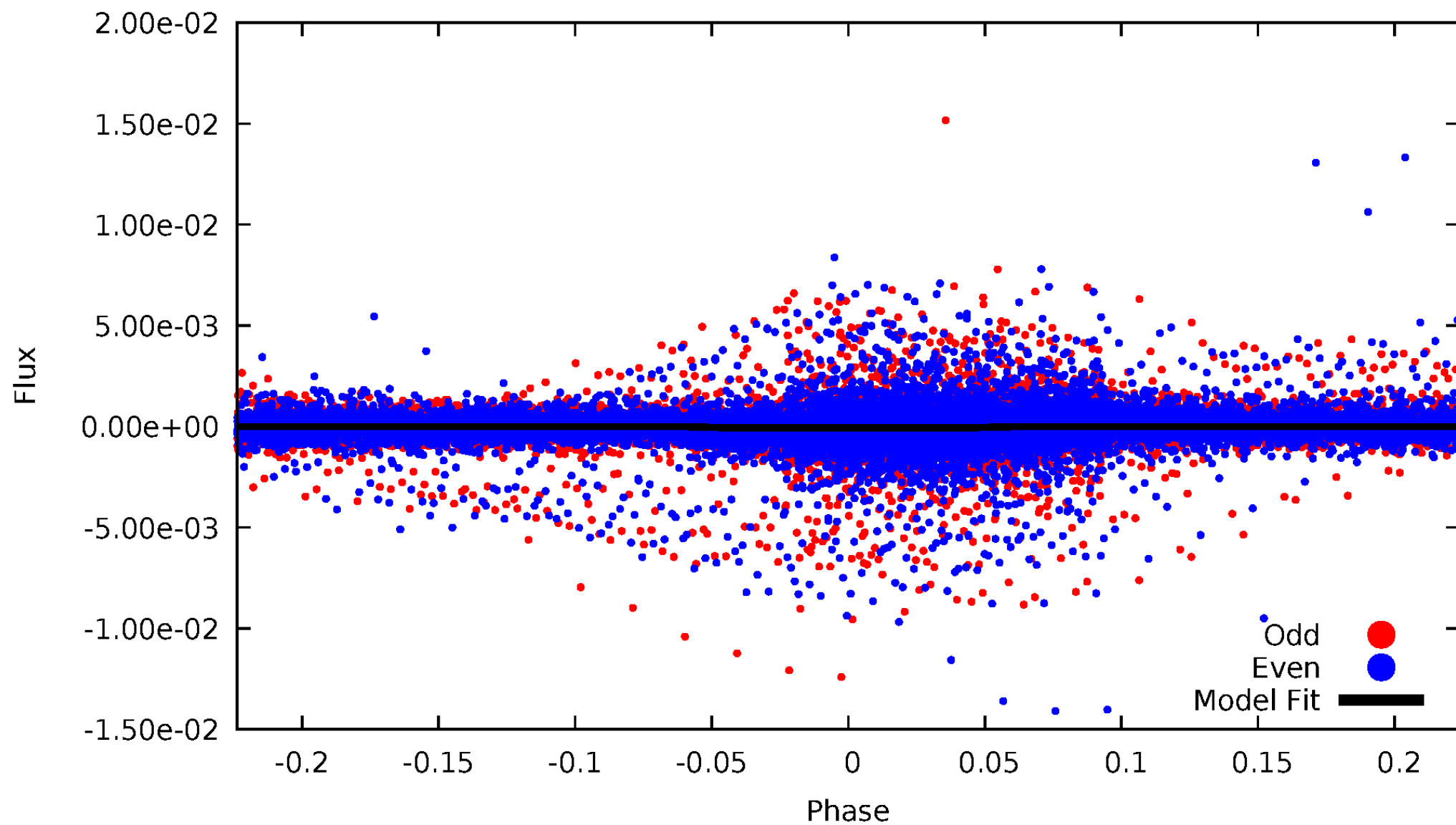
DV Odd/Even

TCE 005472950-01



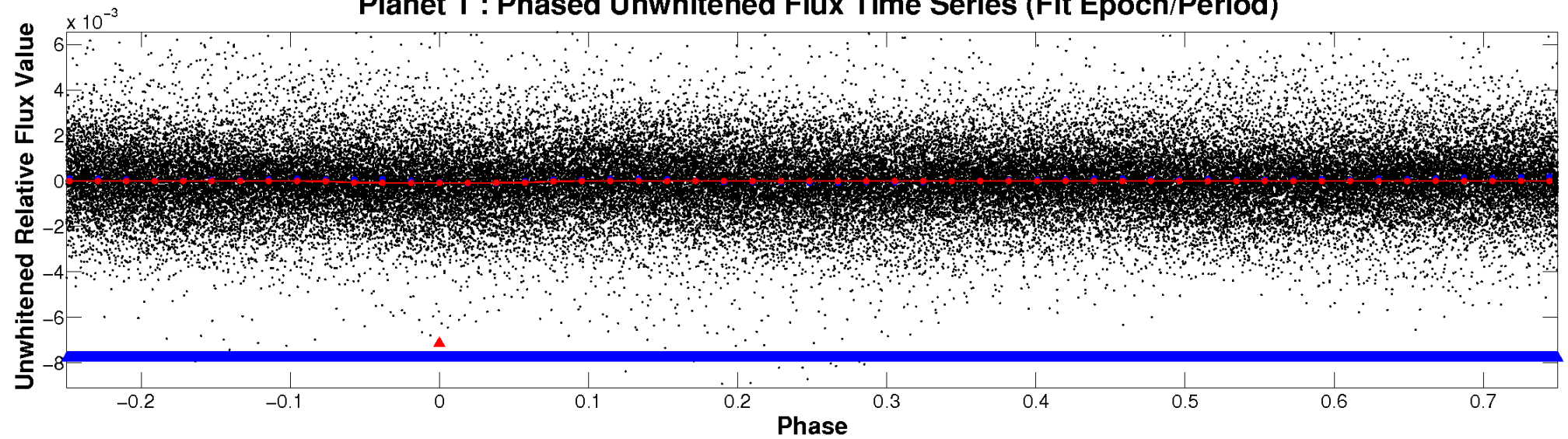
ALT Odd/Even

TCE 005472950-01

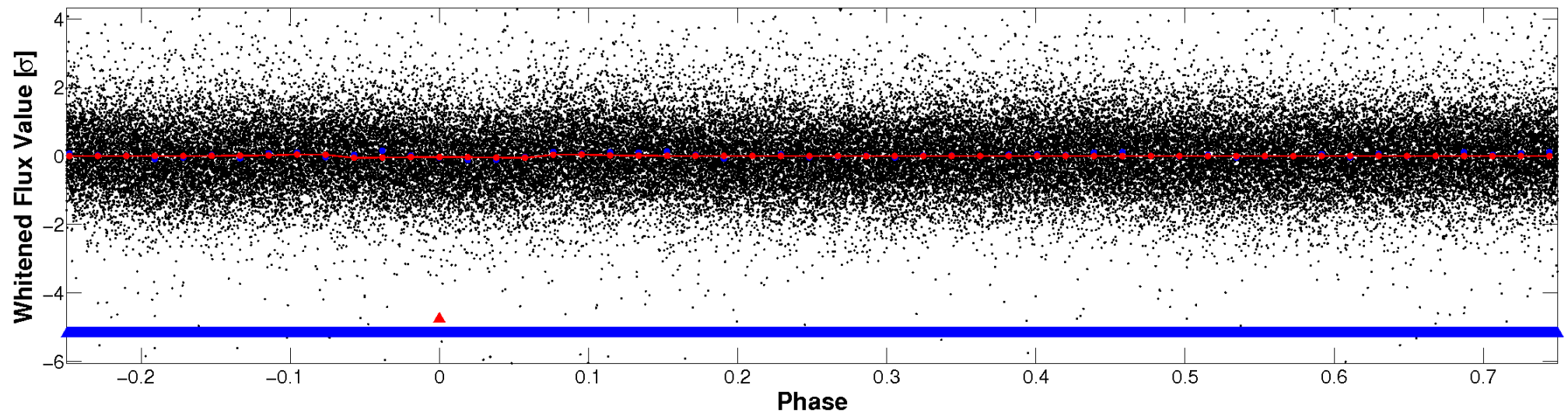


Non-Whitened Vs. Whitened Light Curve

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

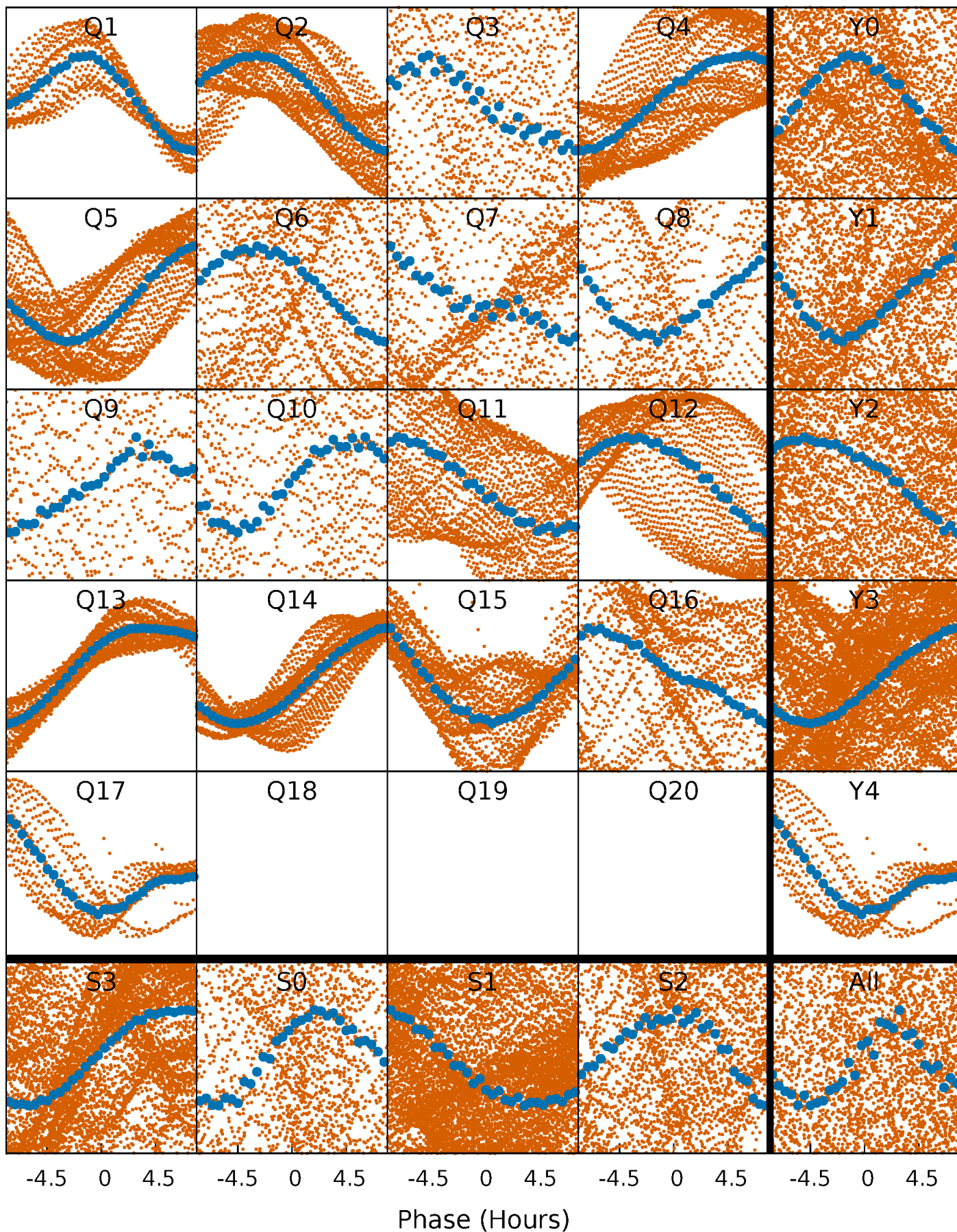


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



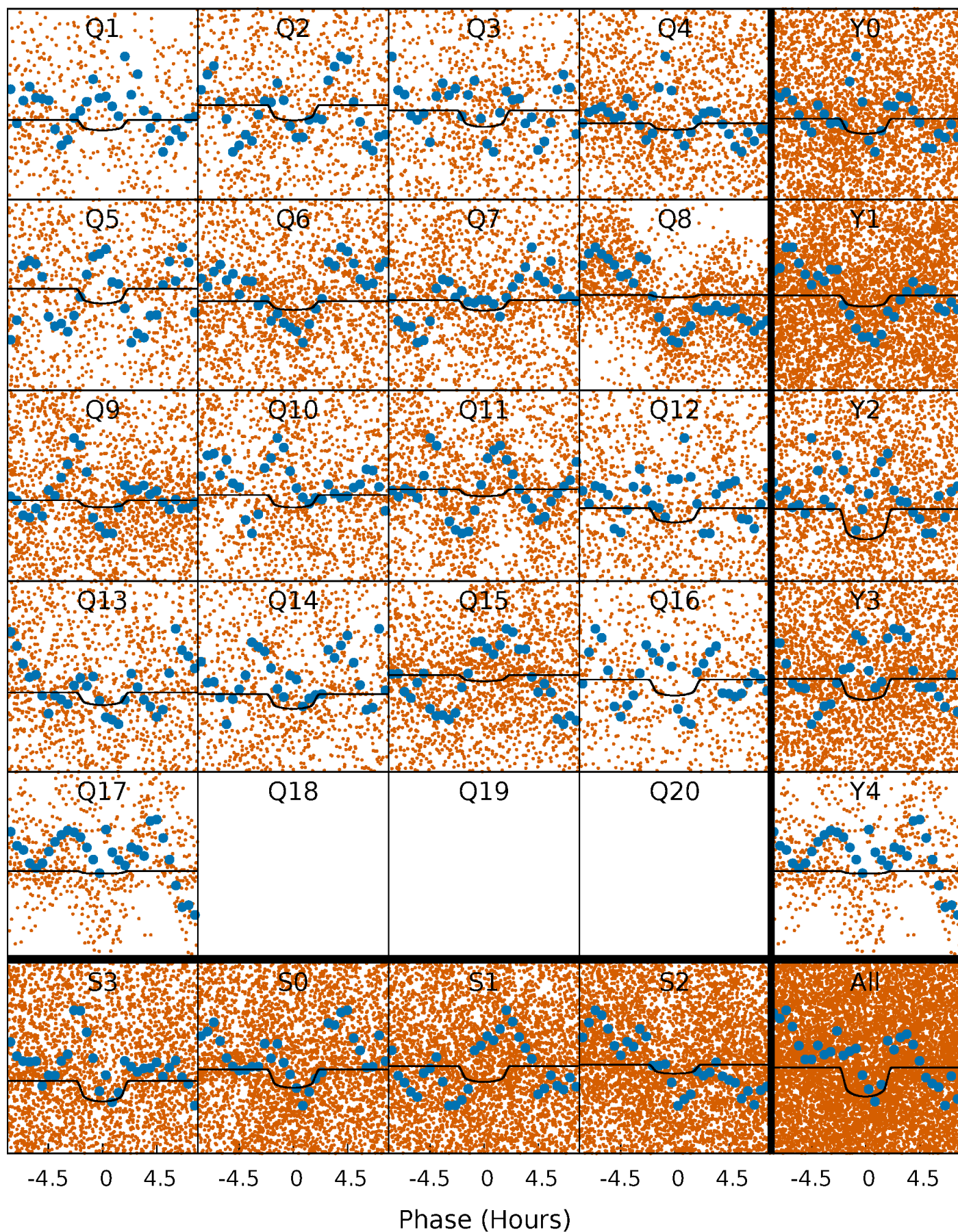
PDC Quarter-Phased Transit Curves

TCE 005472950-01 P= 1.070613 Days $T_0=132.496212$ (BKJD)



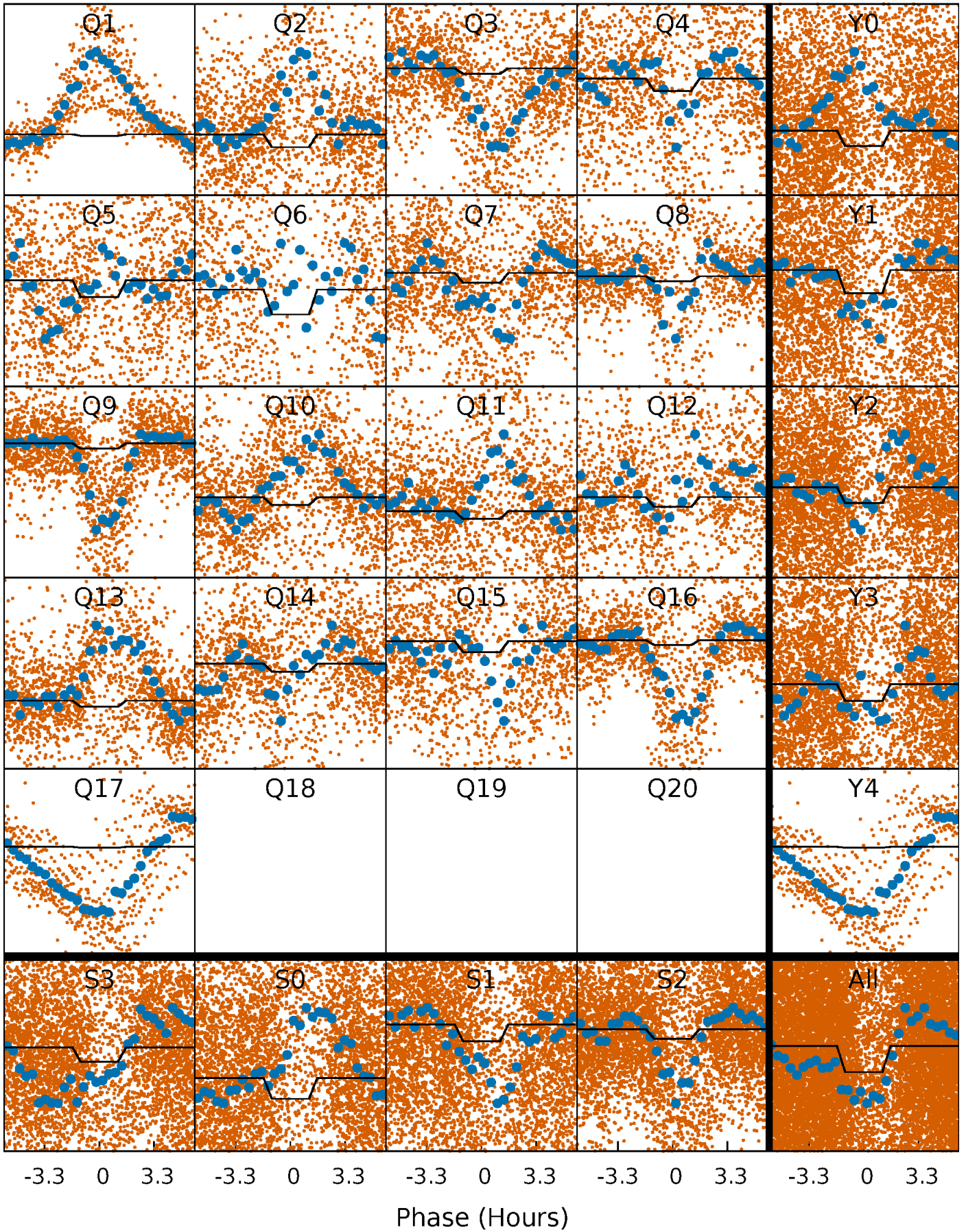
DV Quarter-Phased Transit Curves

TCE 005472950-01 P= 1.070613 Days $T_0=132.496212$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

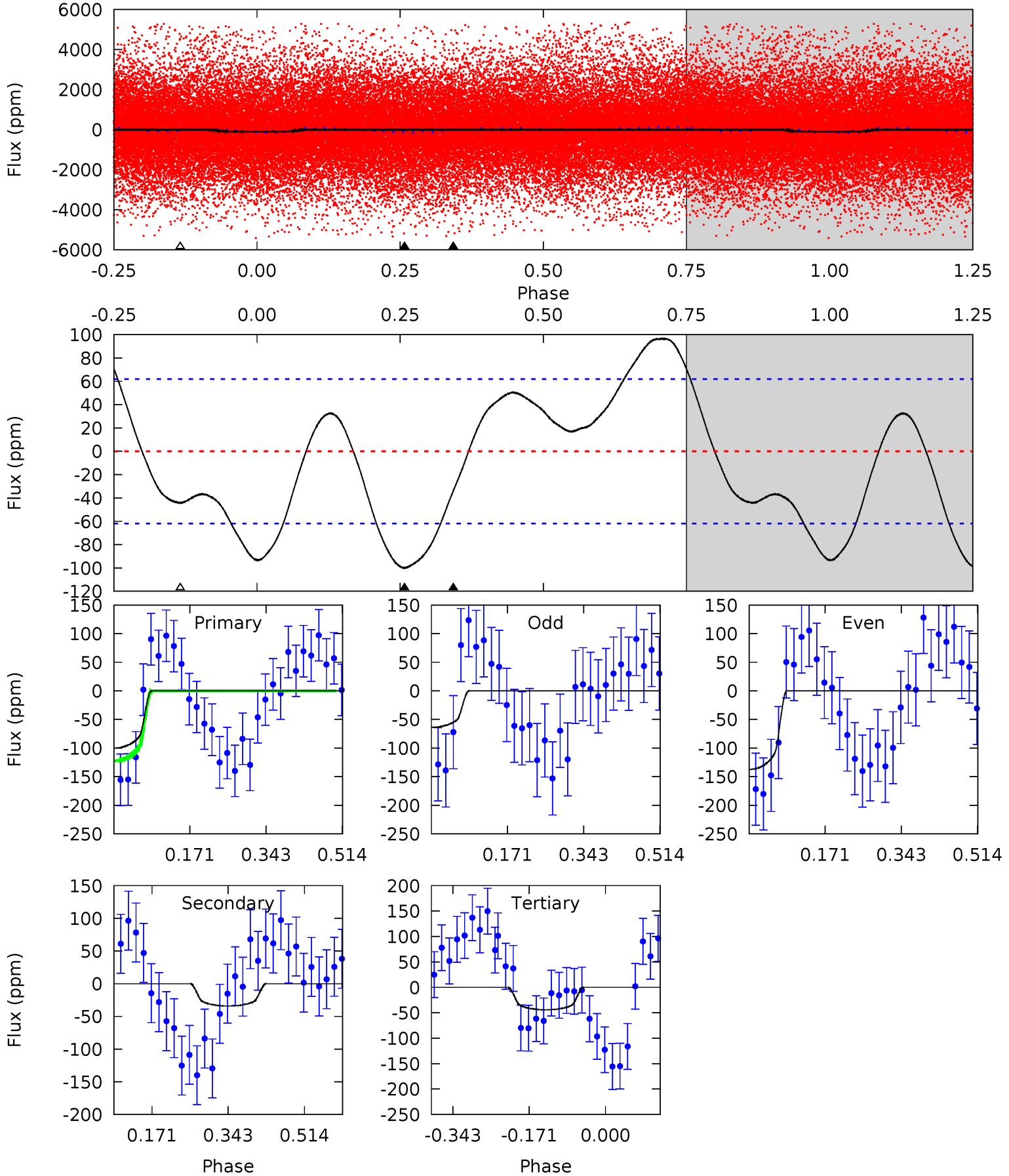
TCE 005472950-01 P= 1.070621 Days $T_0=132.475771$ (BKJD)



DV Model-Shift Uniqueness Test

005472950-01, P = 1.070613 Days, E = 131.425599 Days

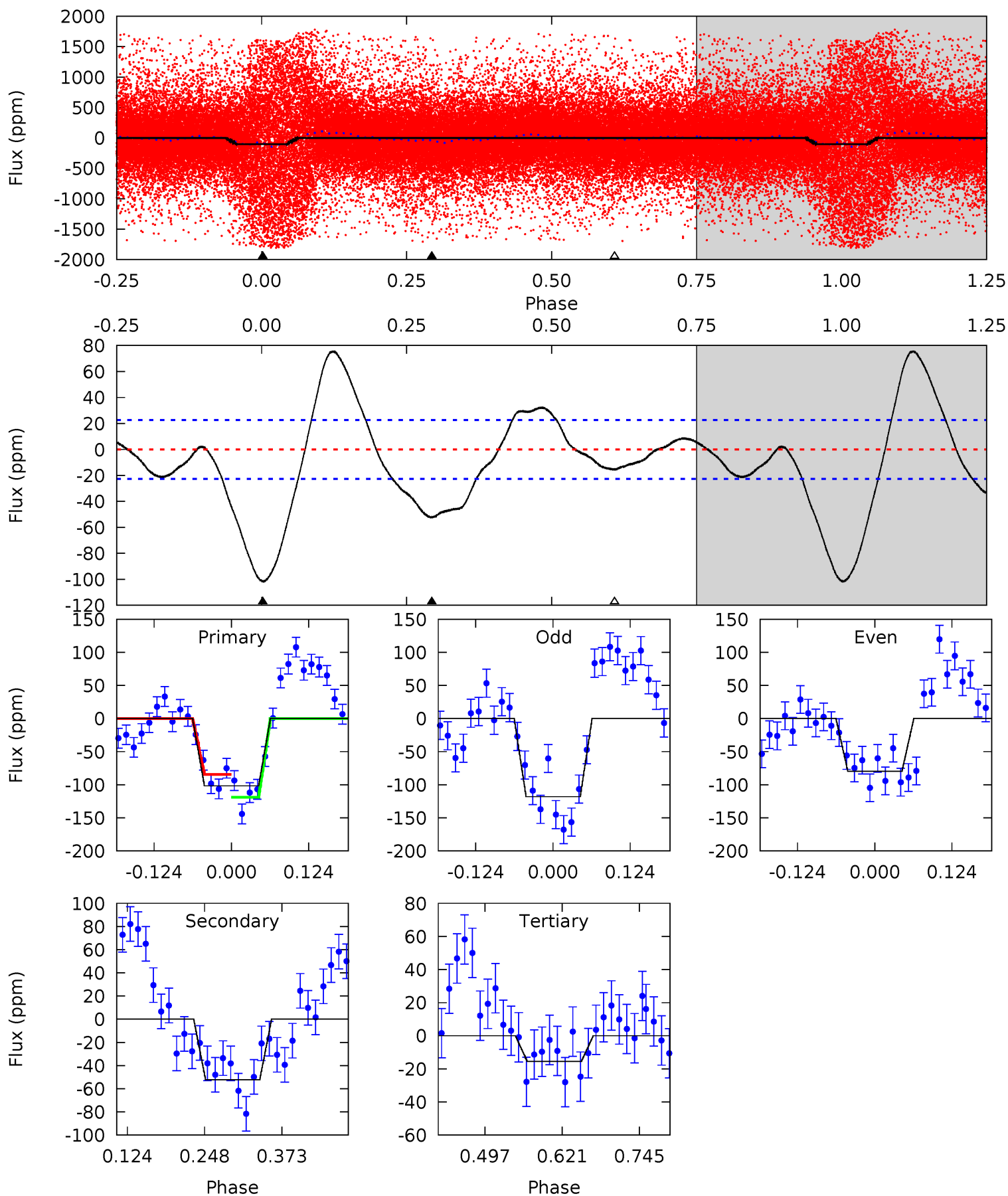
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.19	2.45	3.18	0	4.45	1.37	4.17	4.01	7.19	-0.72	2.45	2.67	0.09	0.49	1.54



Alt Model-Shift Uniqueness Test

005472950-01, P = 1.070621 Days, E = 131.405150 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	10.4	3.09	0	4.52	1.54	4.40	17.2	20.3	7.36	10.4	3.85	1.59	0.43	0



Stellar Parameters For KIC 005472950

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5254^{+158}_{-158}	$4.546^{+0.088}_{-0.064}$	$-0.500^{+0.350}_{-0.300}$	$0.735^{+0.084}_{-0.084}$	$0.693^{+0.095}_{-0.037}$	$2.458^{+0.908}_{-0.556}$
	+3%/-3%	+2%/-1%	+70%/-60%	+11%/-11%	+14%/-5%	+37%/-23%
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 005472950-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-34 ± 14	$0.85^{+0.27}_{-0.30}$	2055^{+83}_{-84}	4127^{+872}_{-574}	$8.801^{+14.047}_{-4.836}$
Alt.	-52 ± 5	$0.68^{+0.29}_{-0.29}$	2059^{+88}_{-93}	4868^{+1544}_{-630}	21^{+45}_{-11}

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

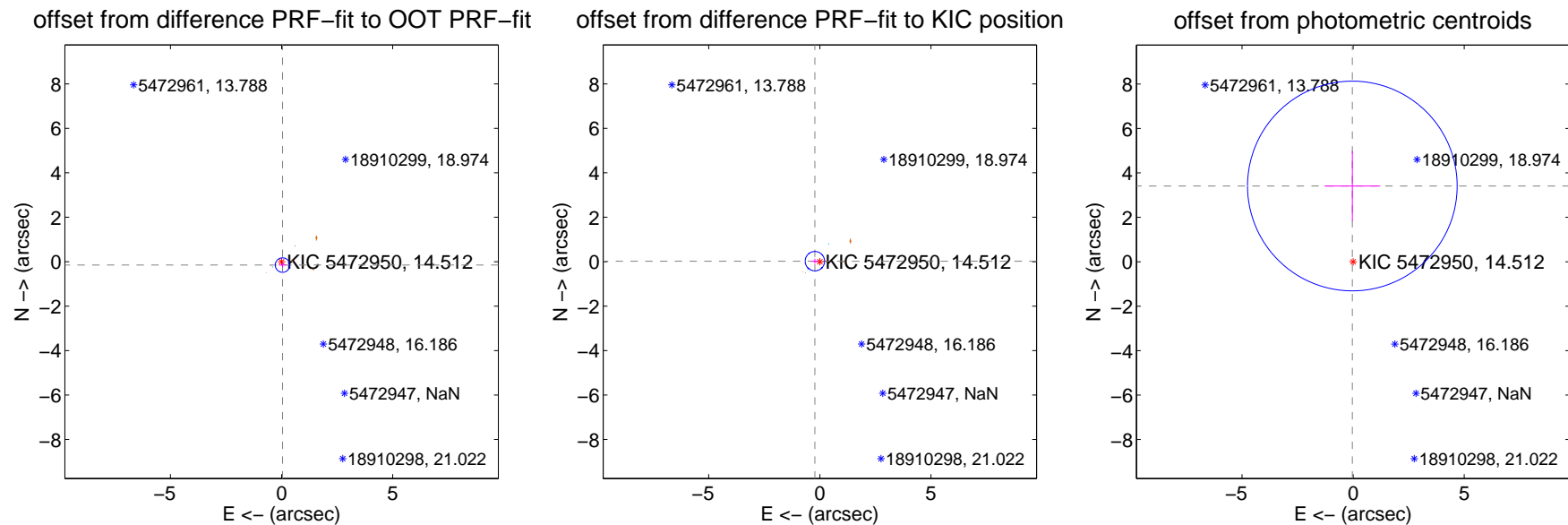
DV Centroid Data

Supplemental centroid analysis for 005472950-01. Kepler magnitude: 14.51. Transit SNR 5.23

There are 7 quarters with good PRF difference image offsets

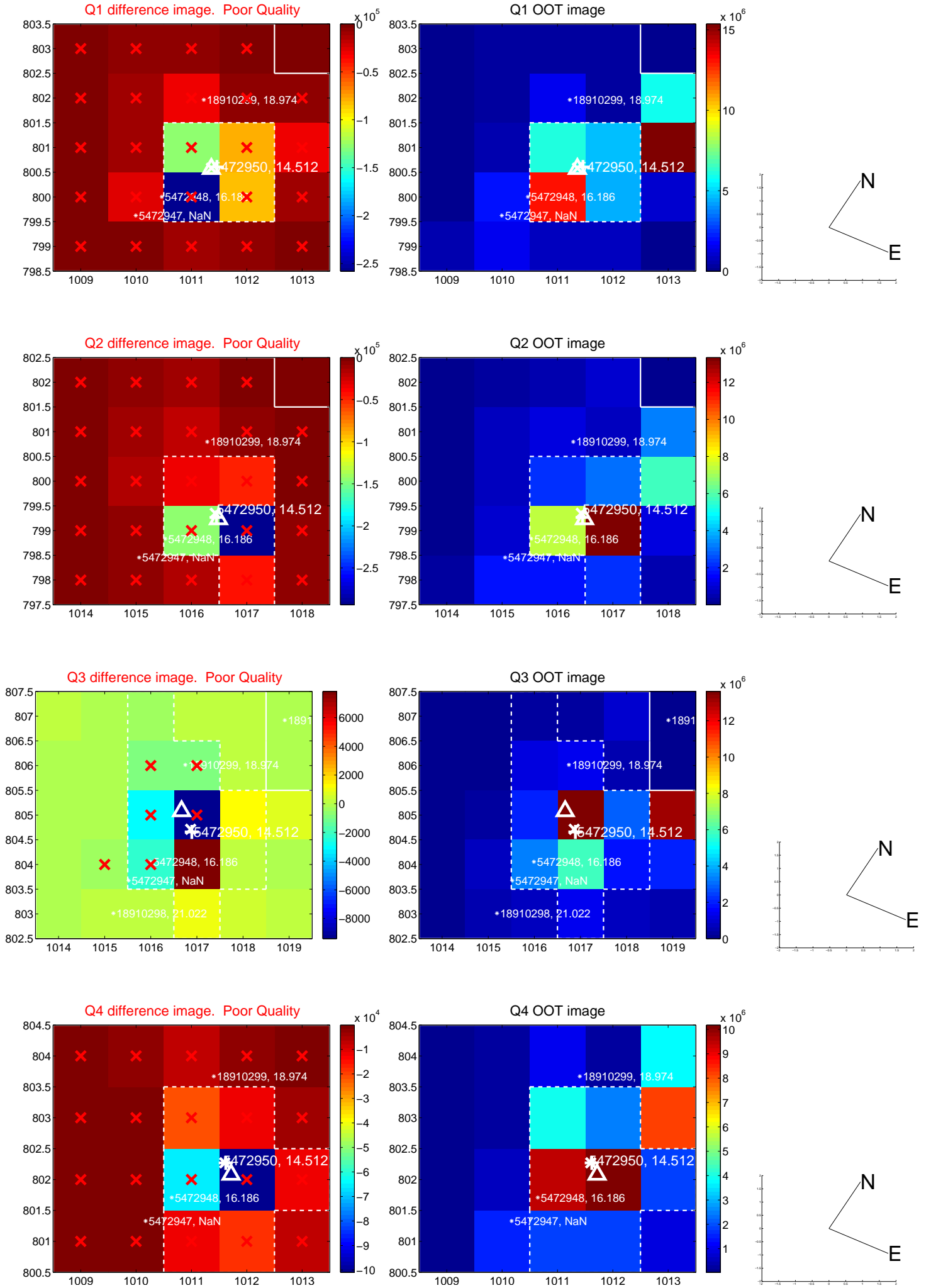
The direct PRF centroid is offset from the target star catalog position by about 0.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.158 ± 0.109	1.45	-0.043 ± 0.166	-0.152 ± 0.123
PRF-fit source offset from KIC position	0.225 ± 0.146	1.54	0.223 ± 0.152	0.023 ± 0.111
photometric centroid source offset	3.41 ± 1.57	2.17	0.03 ± 1.25	3.41 ± 1.57

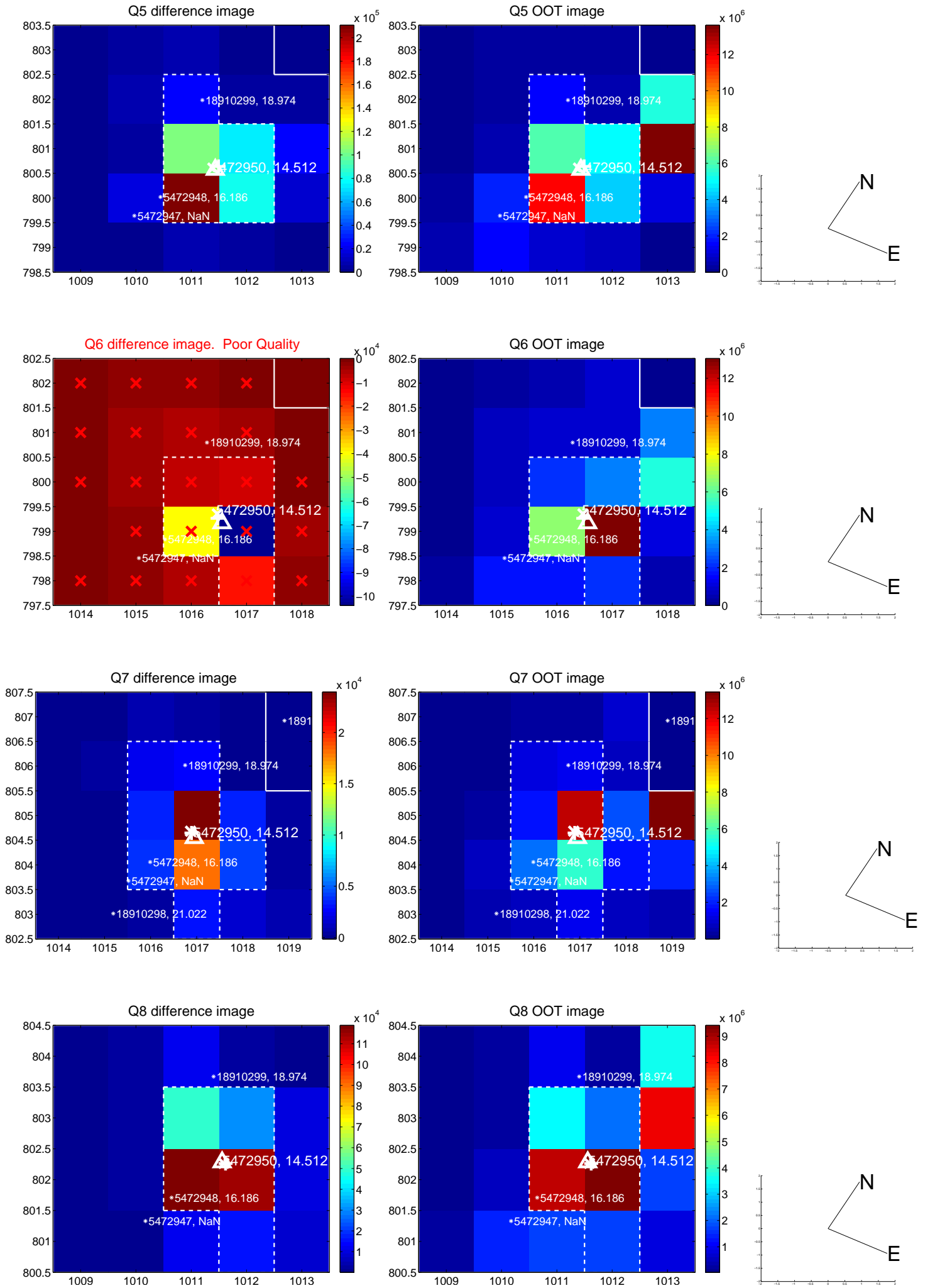


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

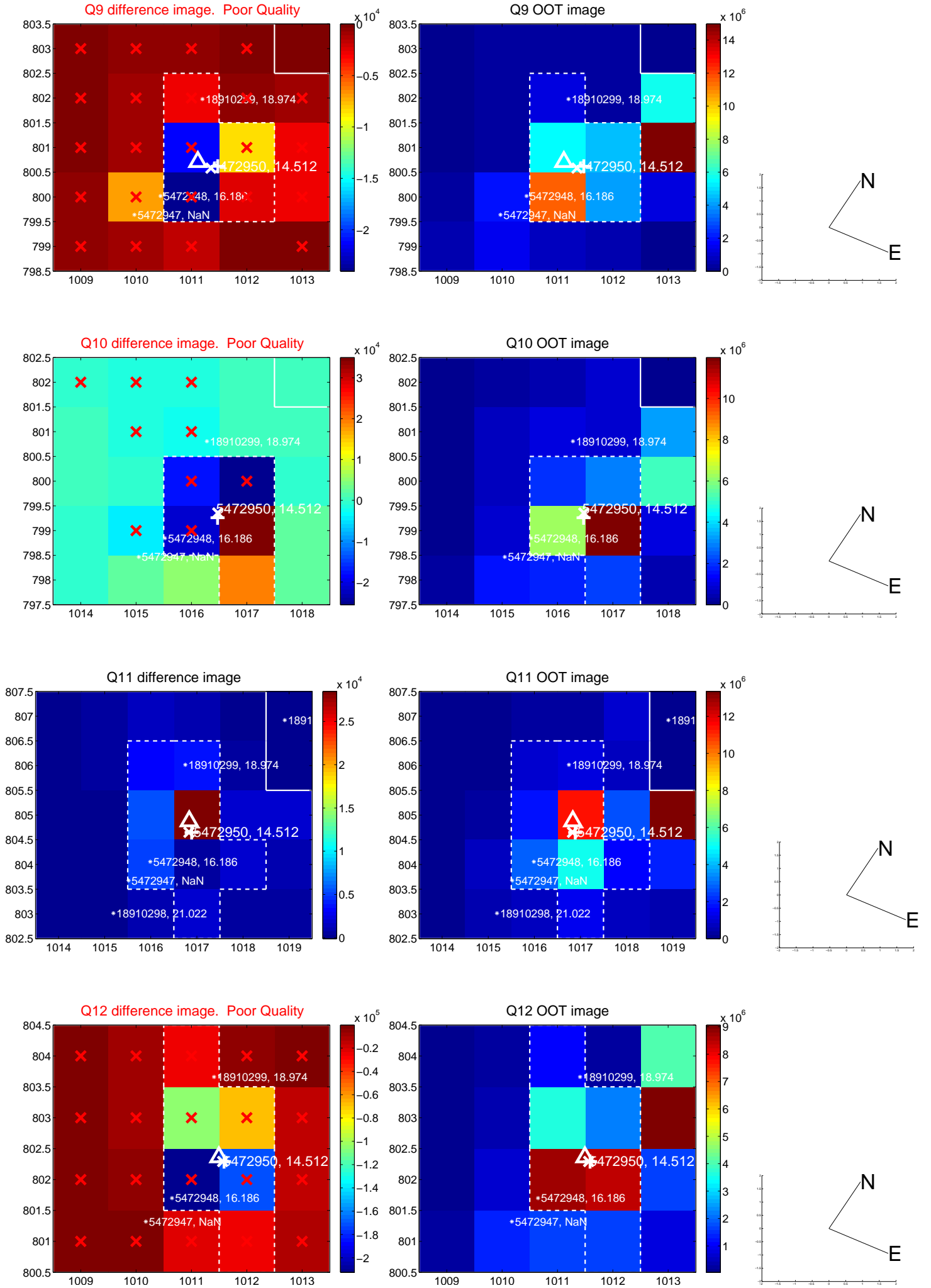
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



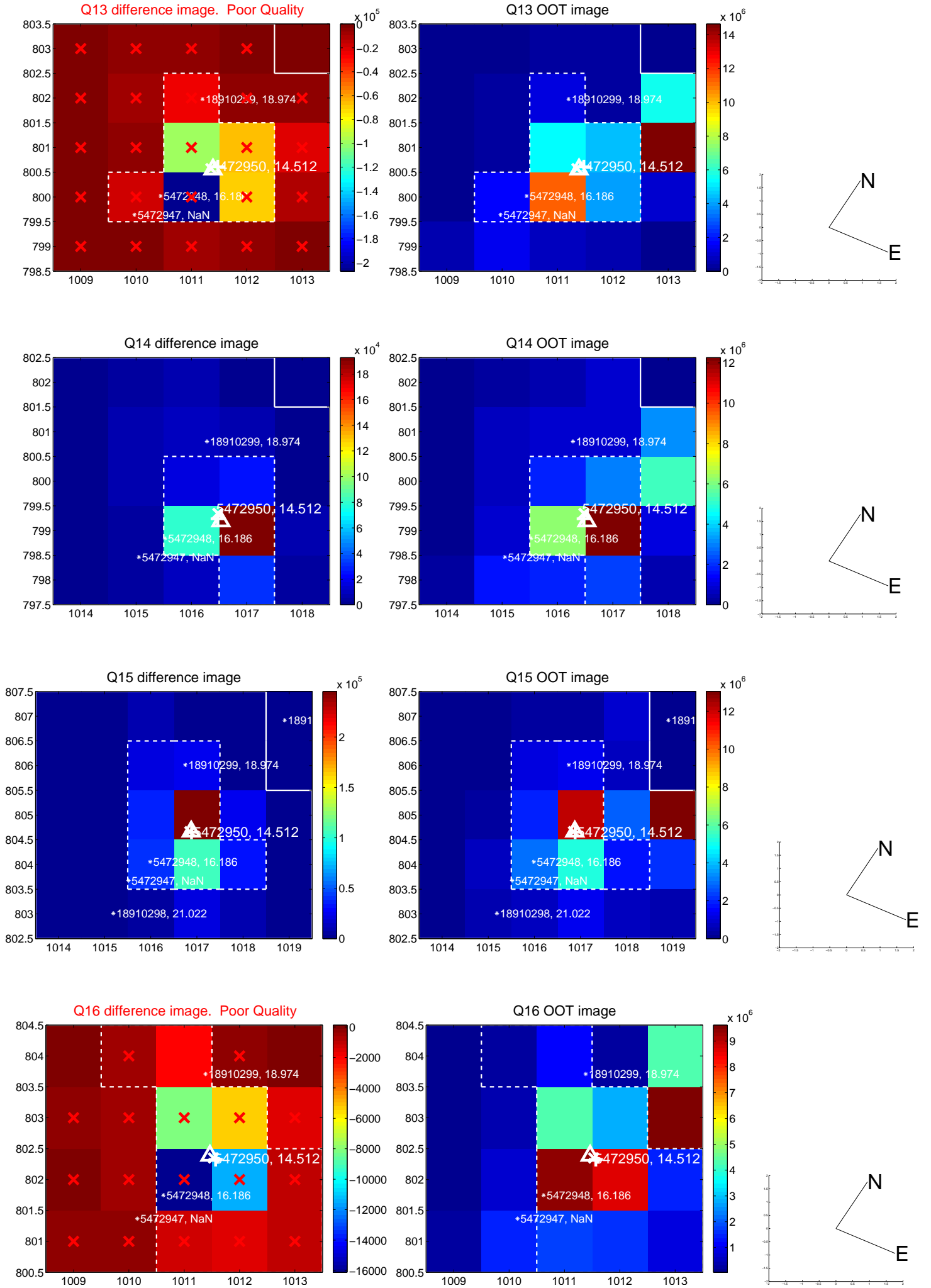
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



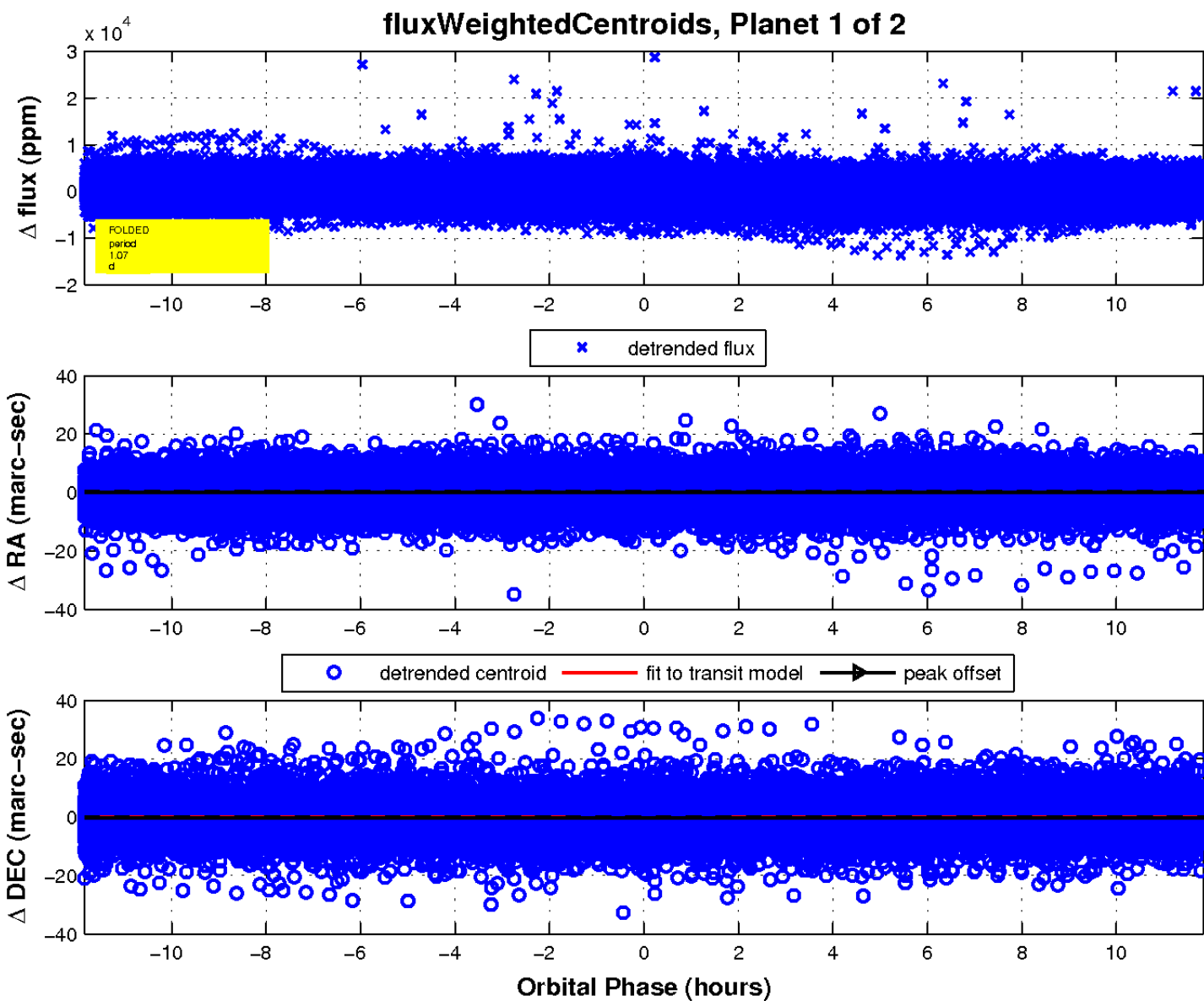
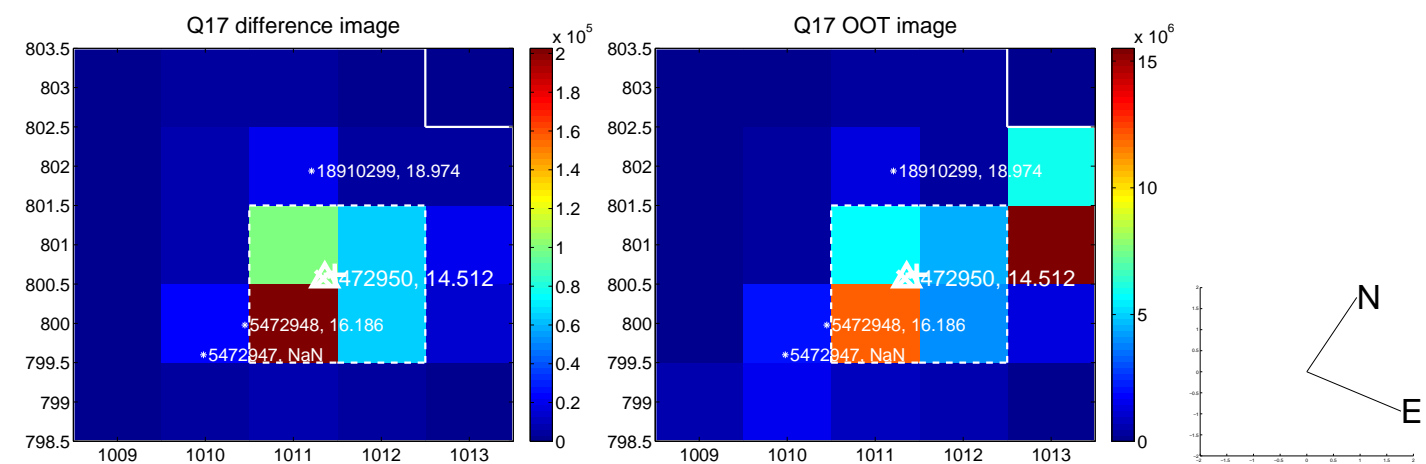
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

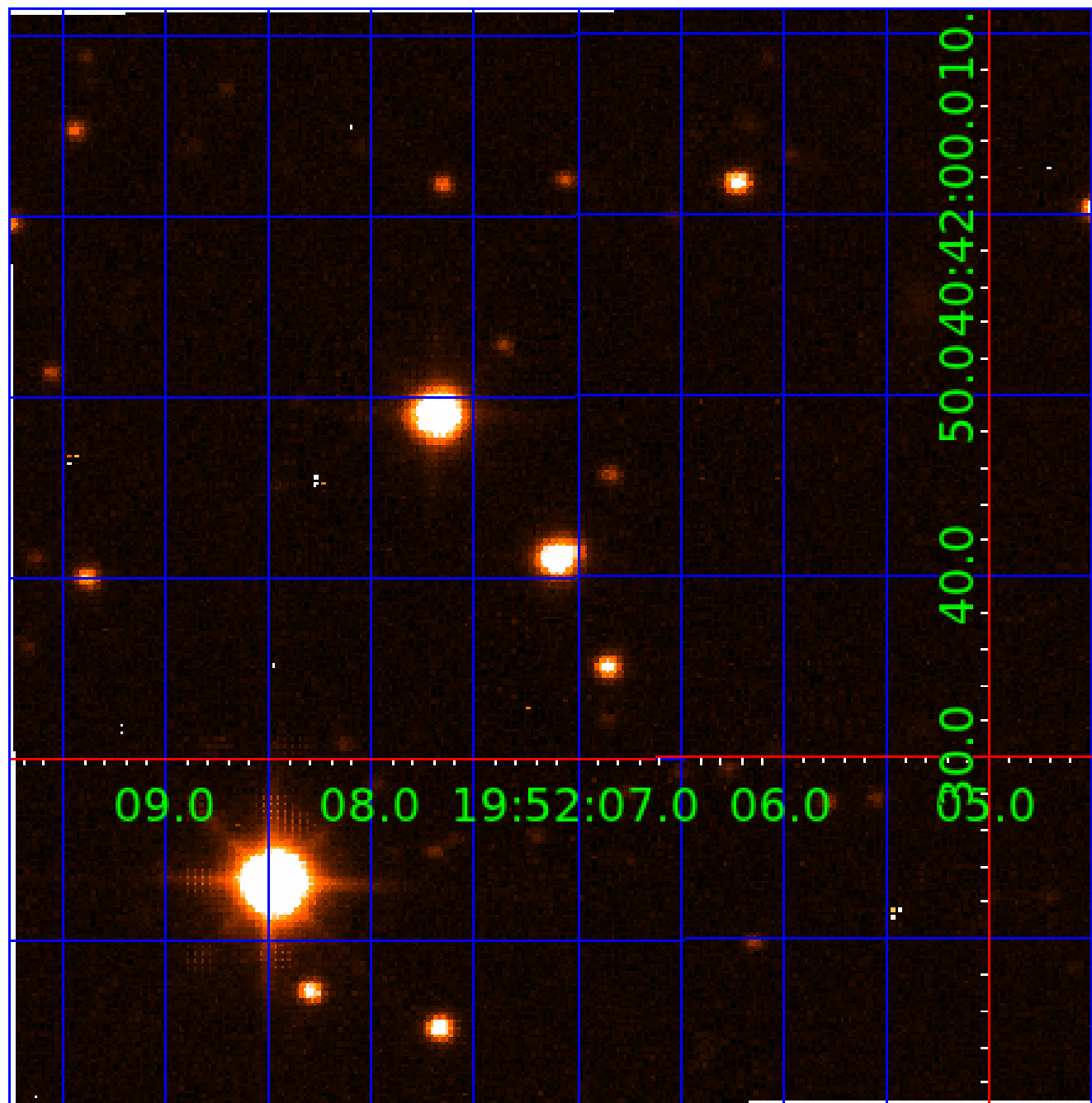


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005472950

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})
005472950-01	OBS	No	1.070613	132.496212	89.3	3.949	8.8	5.2	0.73	5254	0.84	1122.54
005472950-02	OBS	No	0.535560	131.993992	137.0	3.711	8.3	8.1	0.73	5254	0.89	2826.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005472950-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005472950-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT

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

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

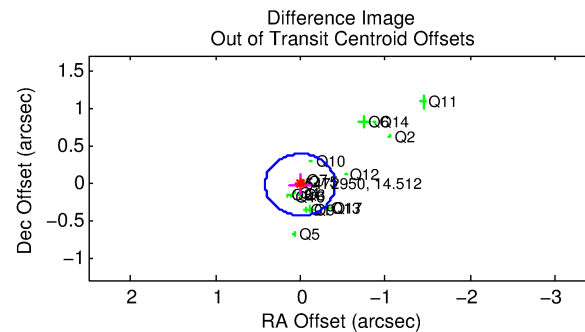
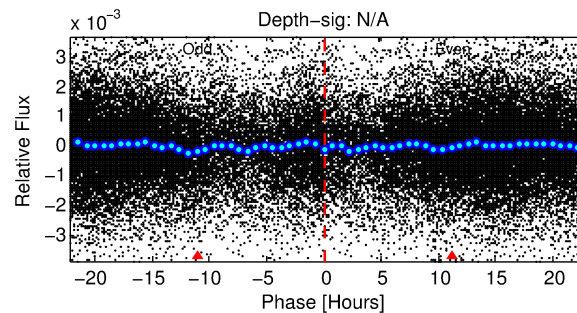
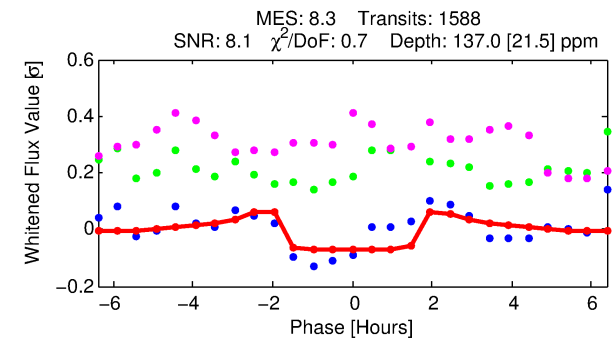
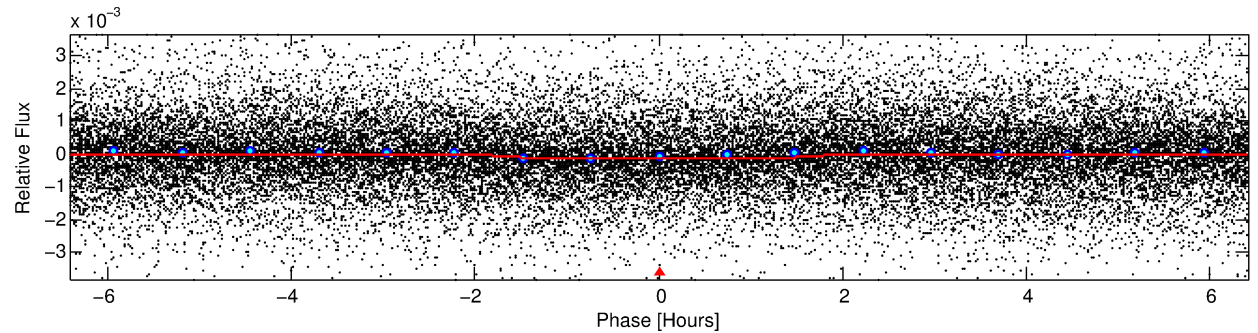
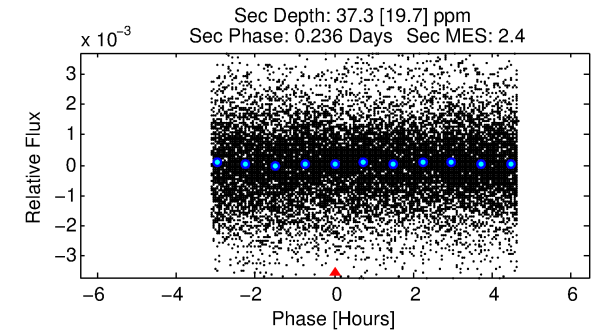
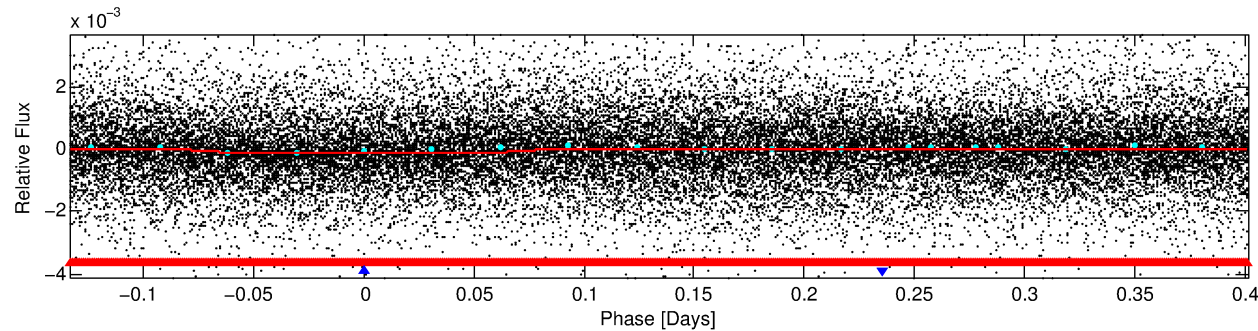
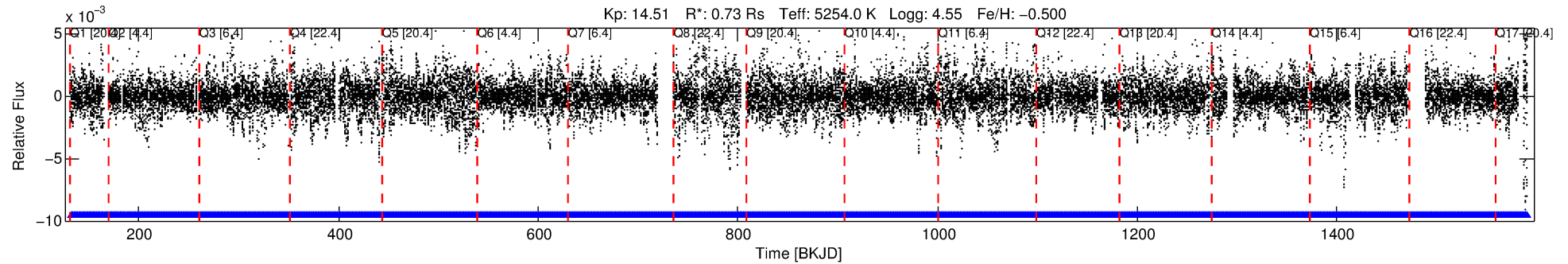
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005472950-02

No Significant Match Found

DV One-Page Summary

KIC: 5472950 Candidate: 2 of 2 Period: 0.536 d



DV Fit Results:

Period = 0.53556 [0.00001] d
Epoch = 131.9940 [0.0022] BKJD
Rp/R* = 0.0111 [0.0068]
a/R* = 1.19 [0.88]
b = 0.60 [2.66]
Seff = 2826.85 [554.83]
Teff = 1859 [91] K
Rp = 0.89 [0.56] Re
a = 0.0114 [0.0012] AU
Ag = 3.35 [4.50] [0.52σ]
Teffp = 3890 [1303] K [1.55σ]

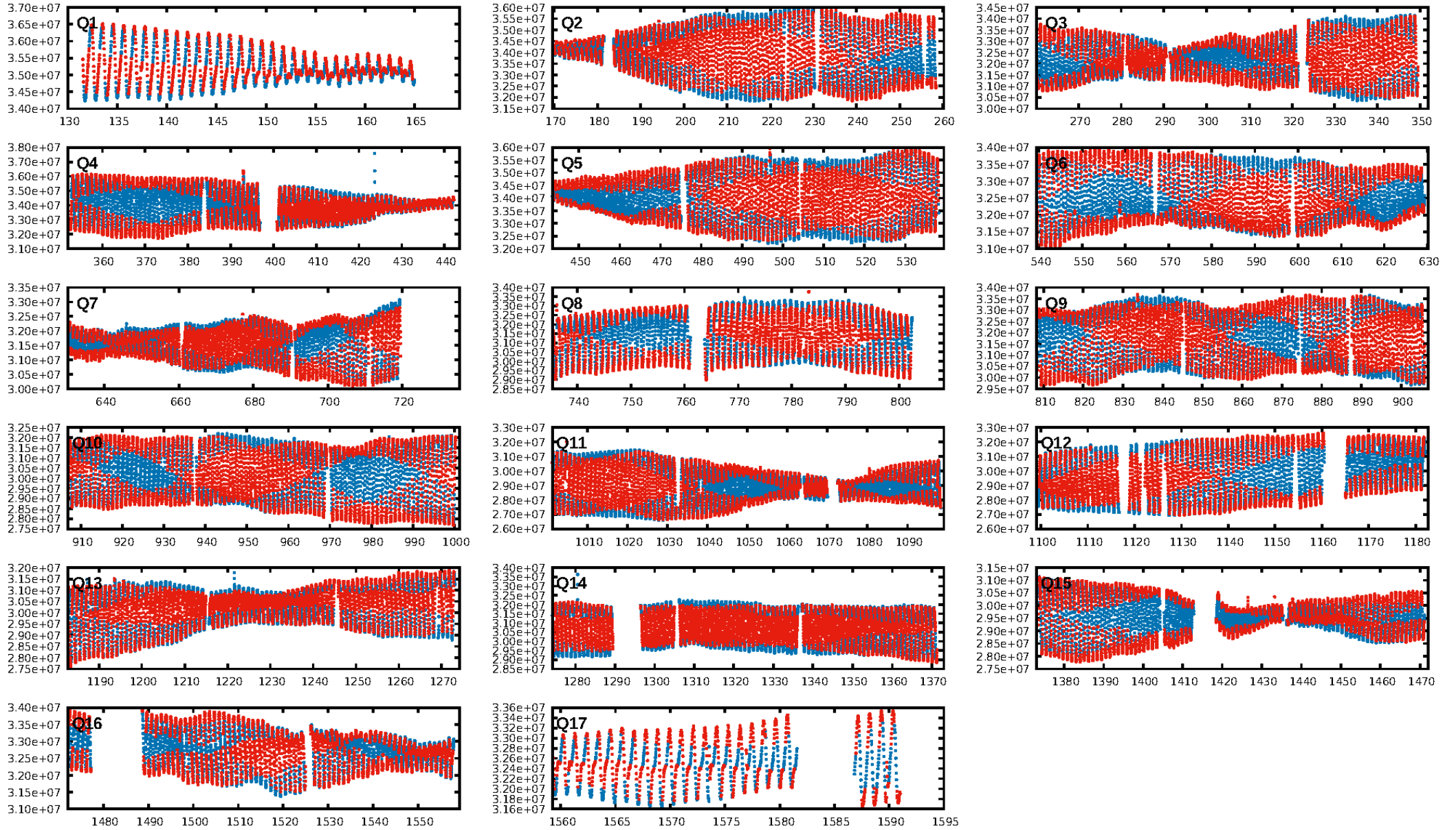
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.2% [2.37σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1520/1520]
GhostDiagnostic-chr: 0.4749
Centroid-sig: 0.6%
Centroid-so: 2.854 arcsec [4.72σ]
OotOffset-rm: 0.028 arcsec [0.20σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.115 arcsec [1.08σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 0.65 [11/17]

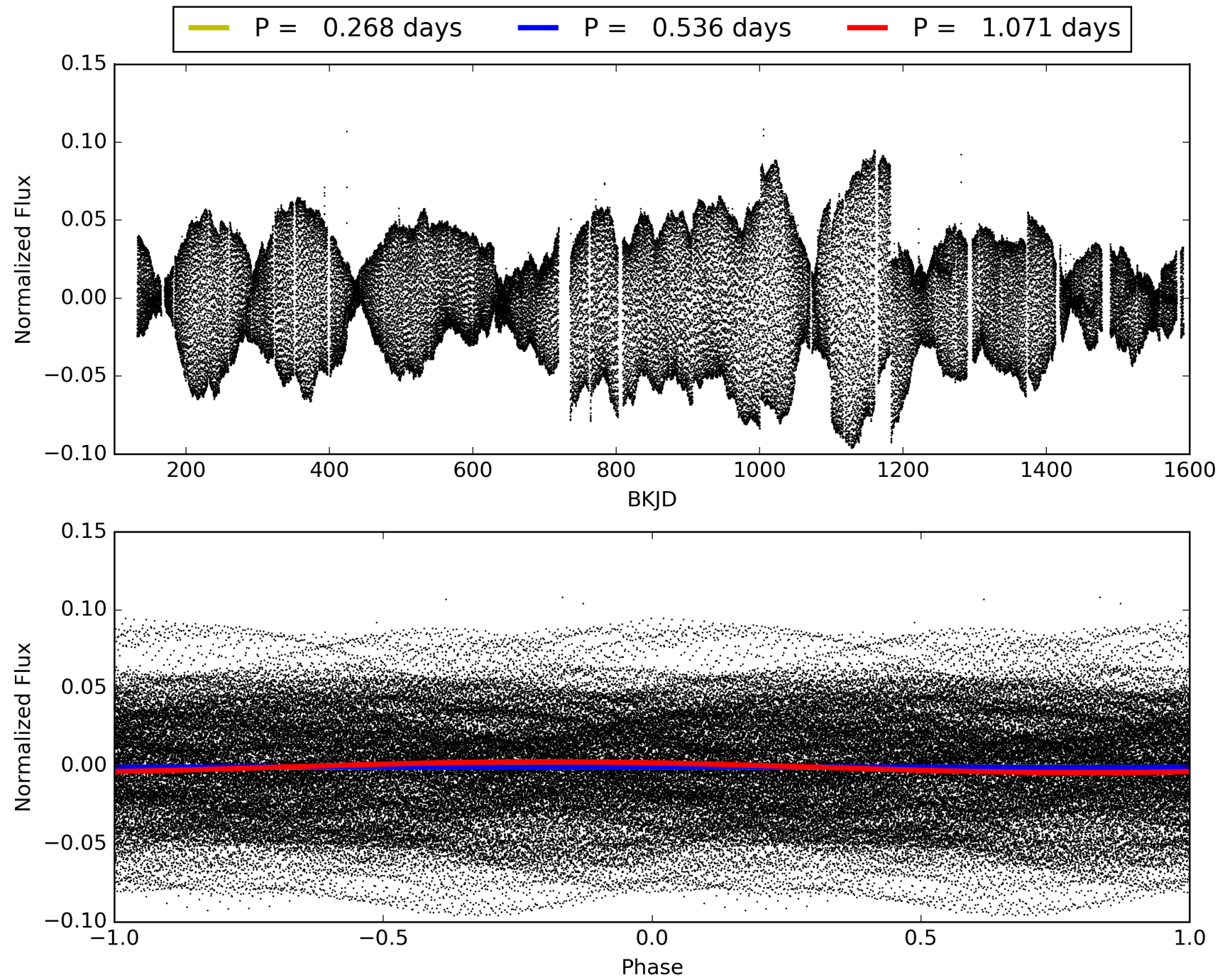
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:25:35 Z

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

TCE 005472950-02, PDC Light Curves

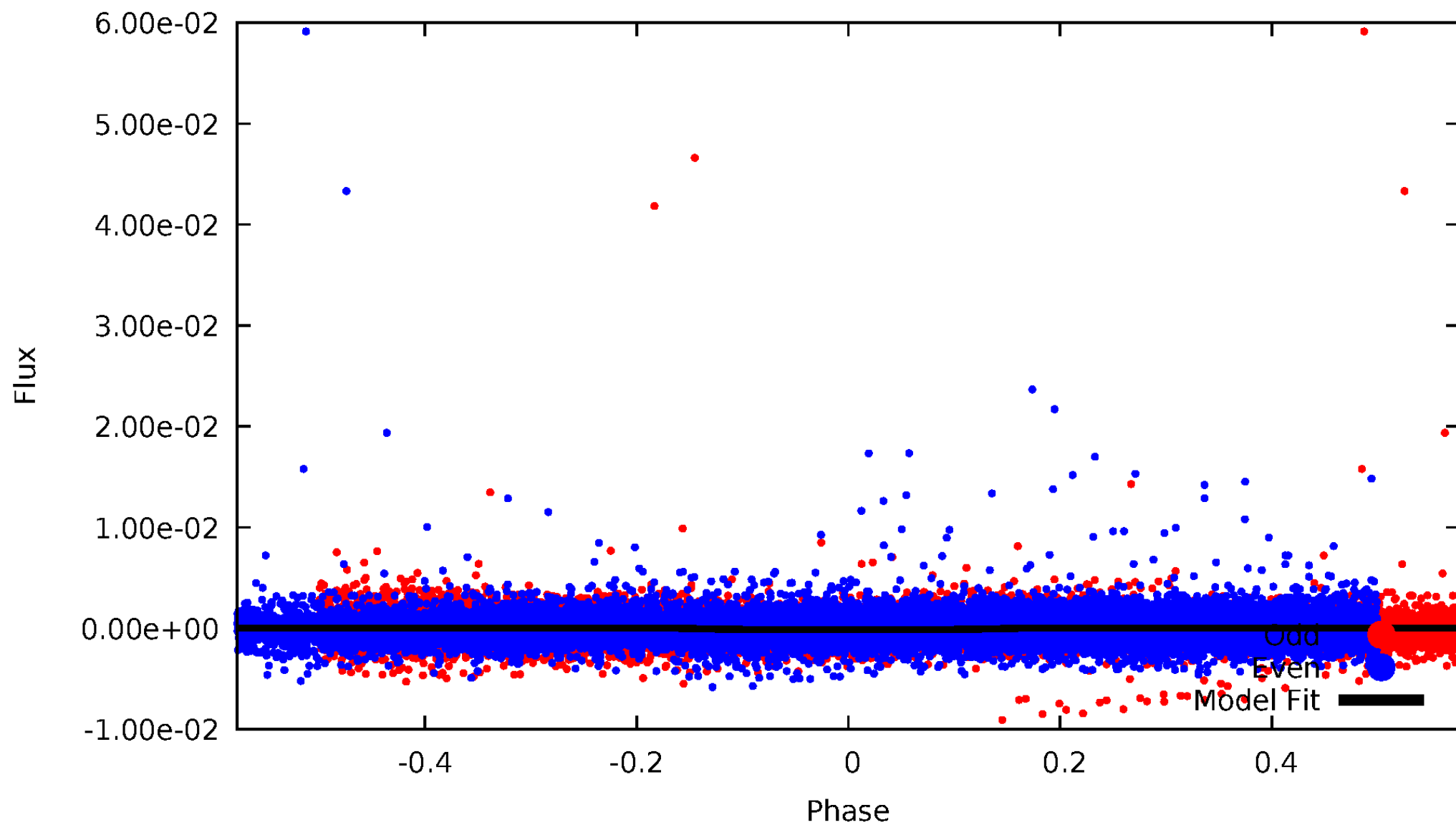


TCE 005472950-02



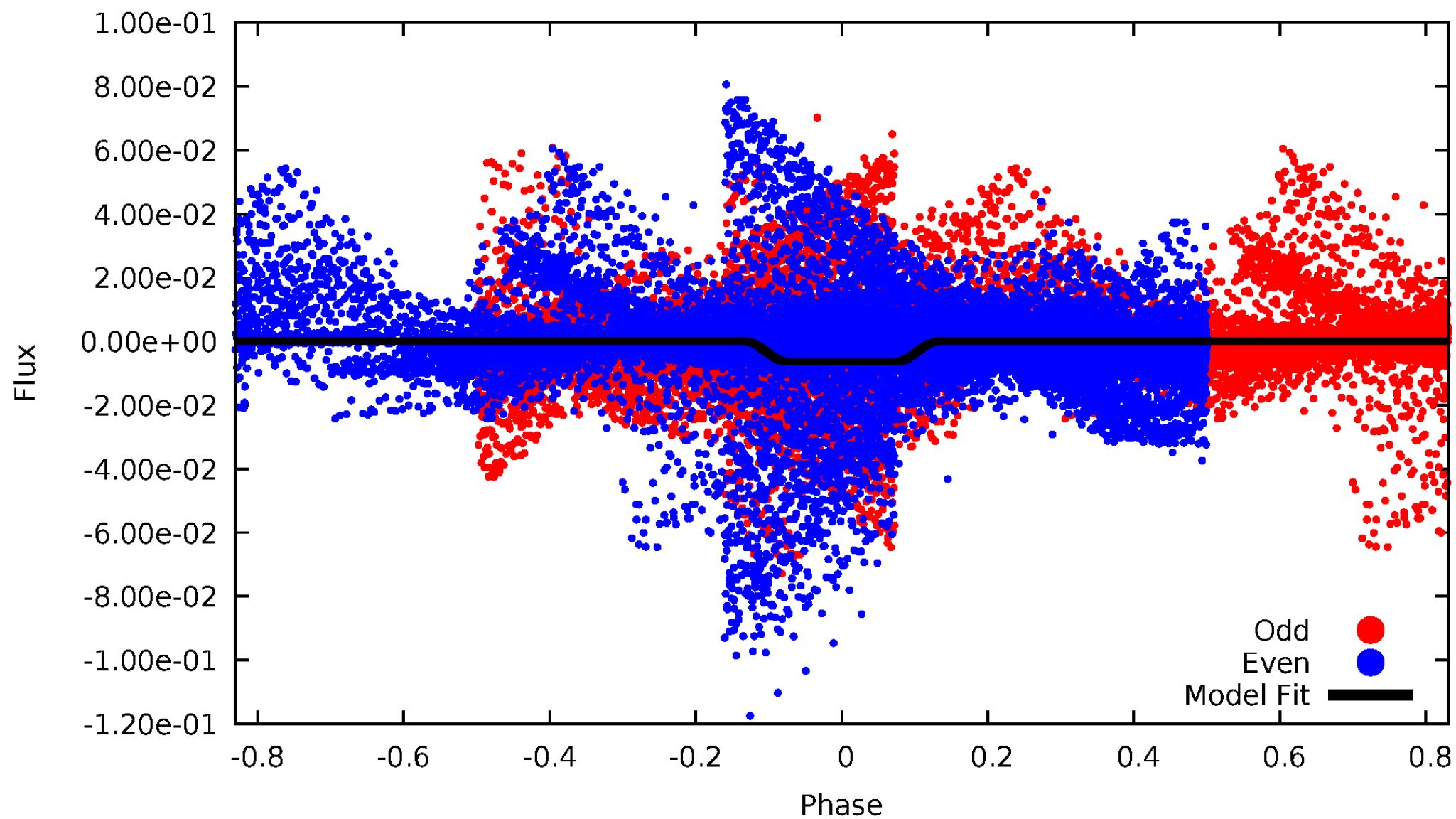
DV Odd/Even

TCE 005472950-02



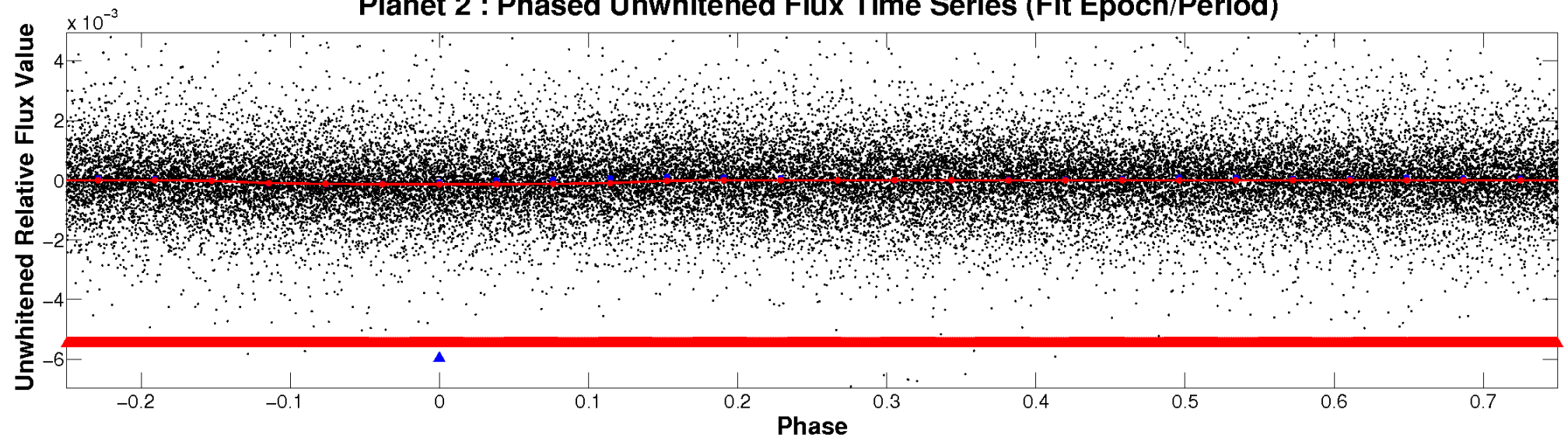
ALT Odd/Even

TCE 005472950-02

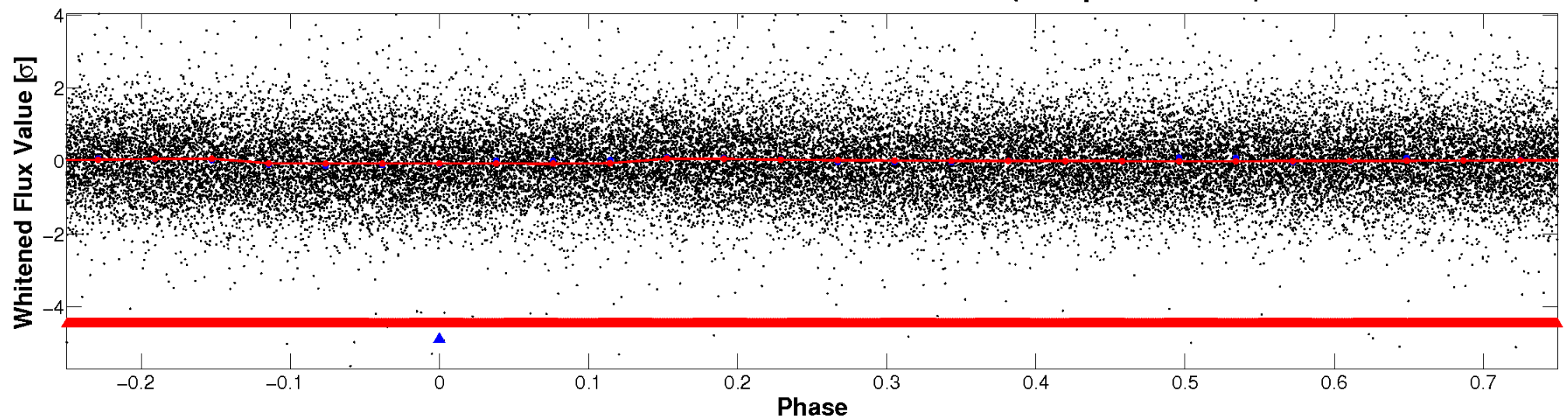


Non-Whitened Vs. Whitened Light Curve

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

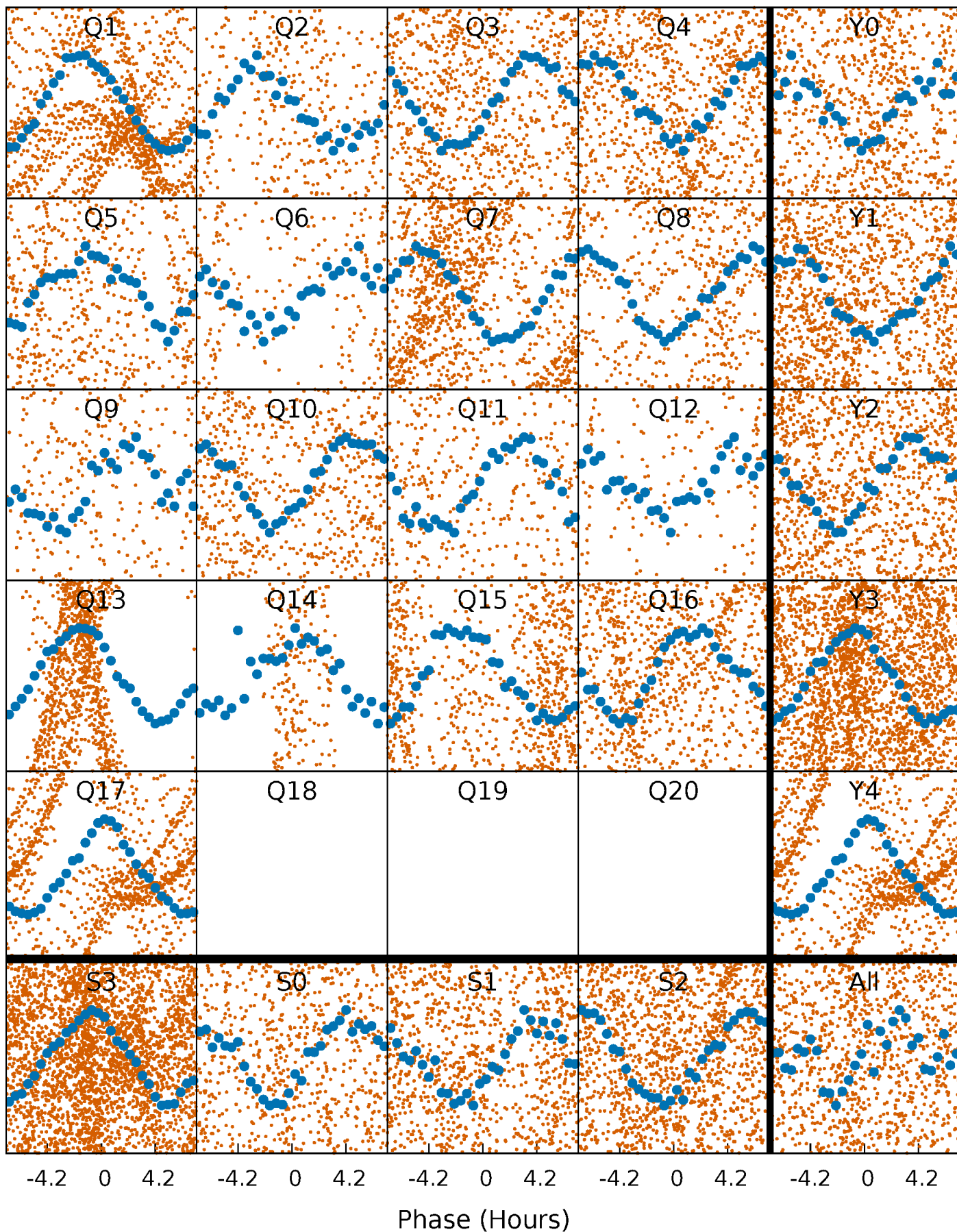


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



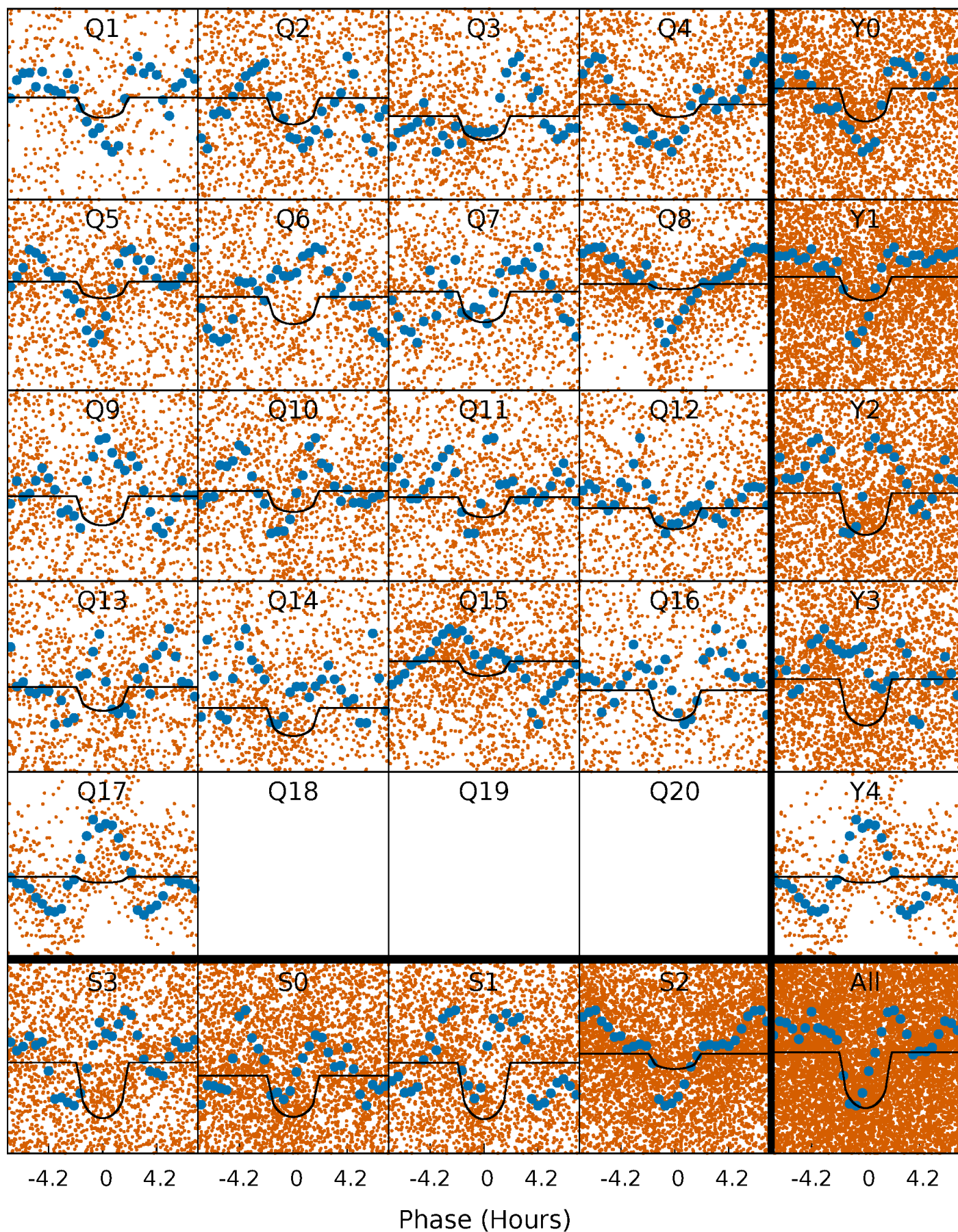
PDC Quarter-Phased Transit Curves

TCE 005472950-02 P= 0.535560 Days $T_0=131.993992$ (BKJD)



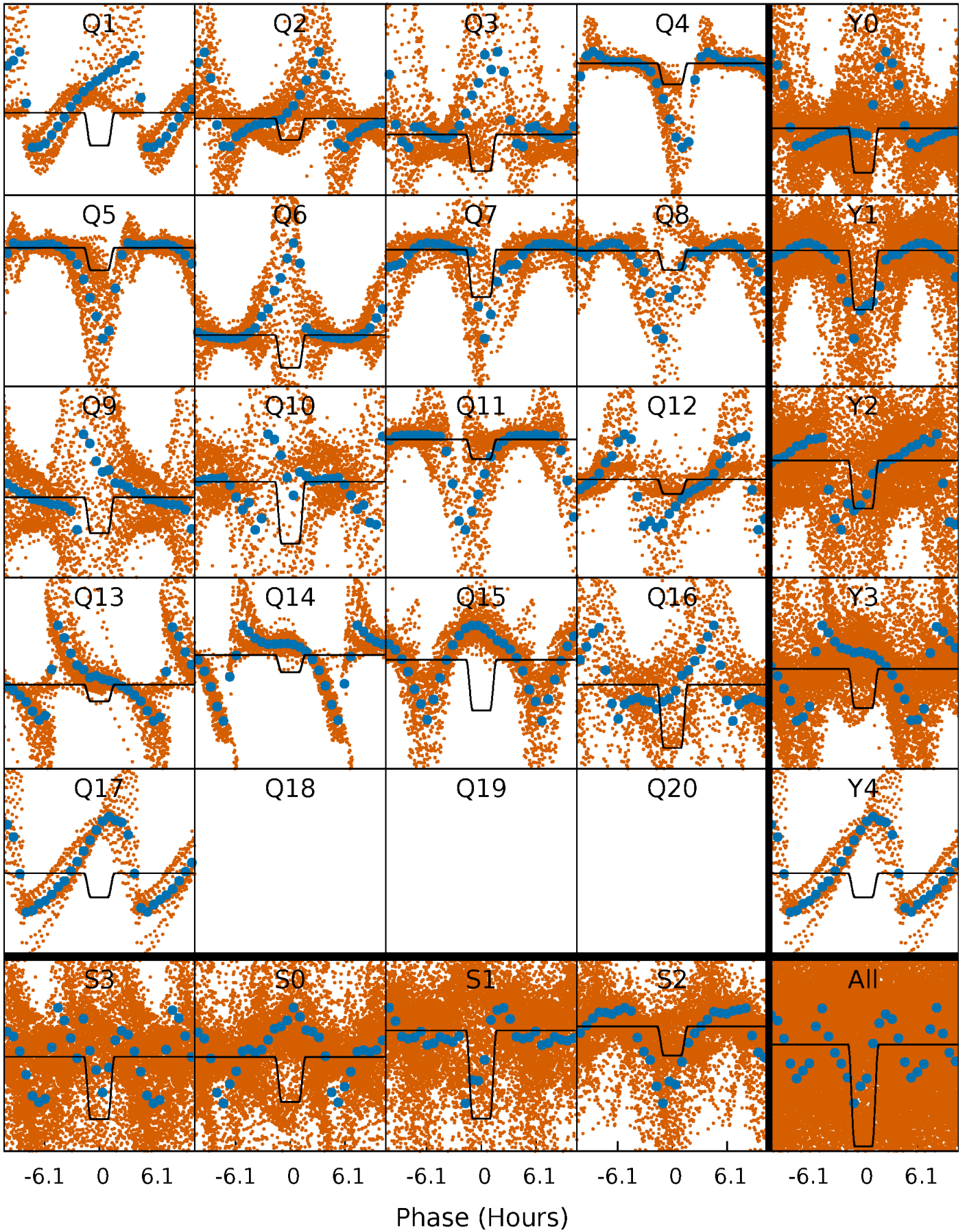
DV Quarter-Phased Transit Curves

TCE 005472950-02 P= 0.535560 Days $T_0=131.993992$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

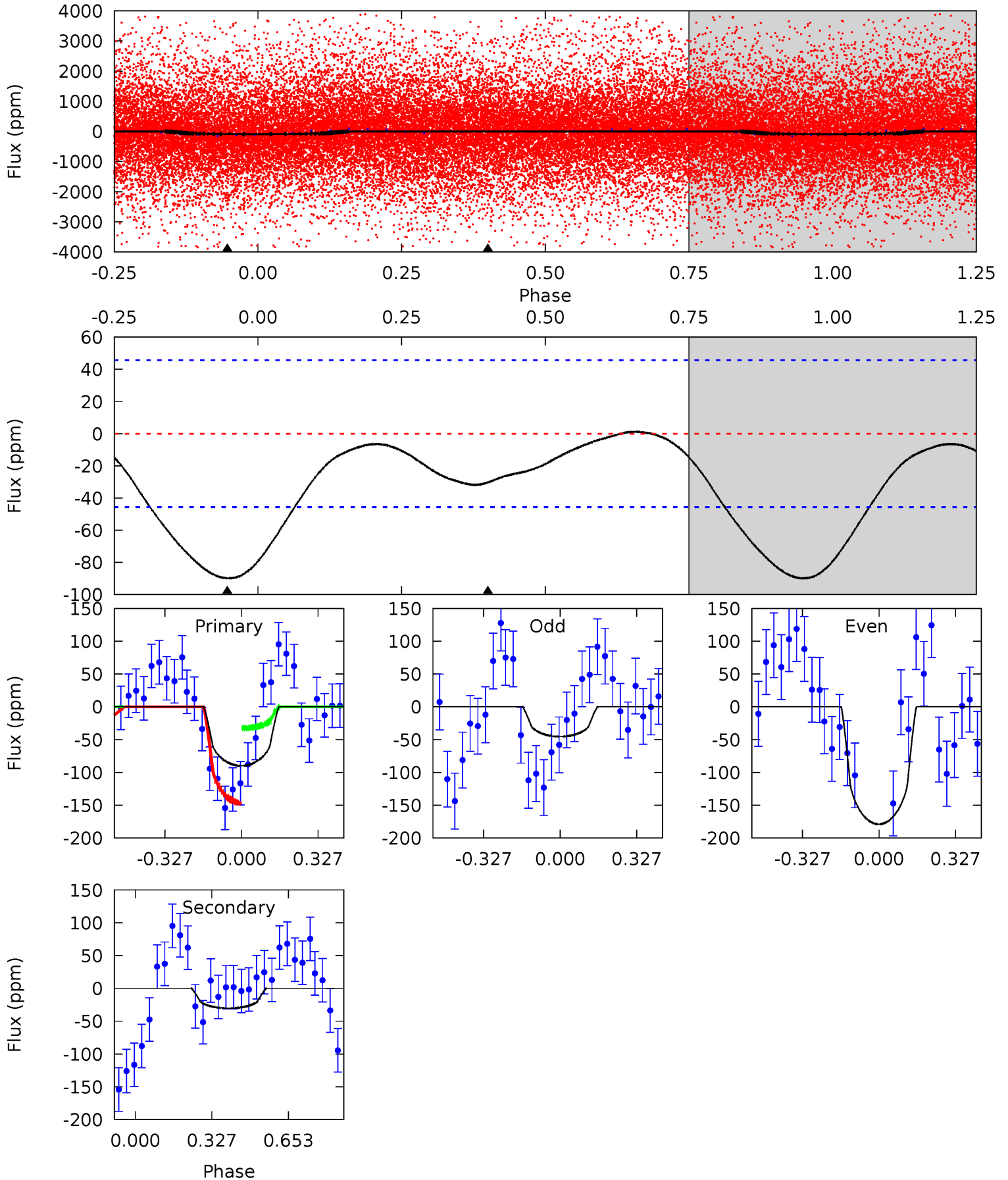
TCE 005472950-02 P= 0.535516 Days $T_0=132.025924$ (BKJD)



DV Model-Shift Uniqueness Test

005472950-02, P = 0.535560 Days, E = 131.458432 Days

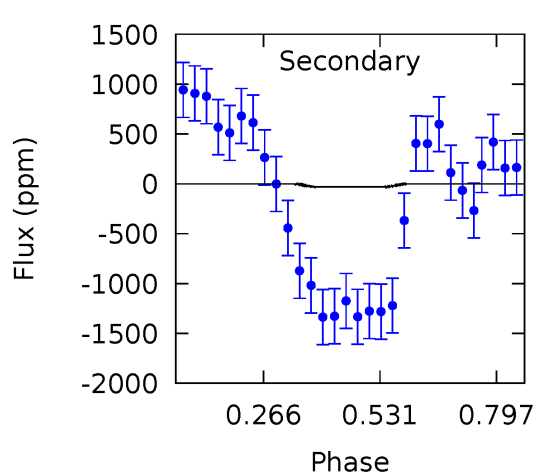
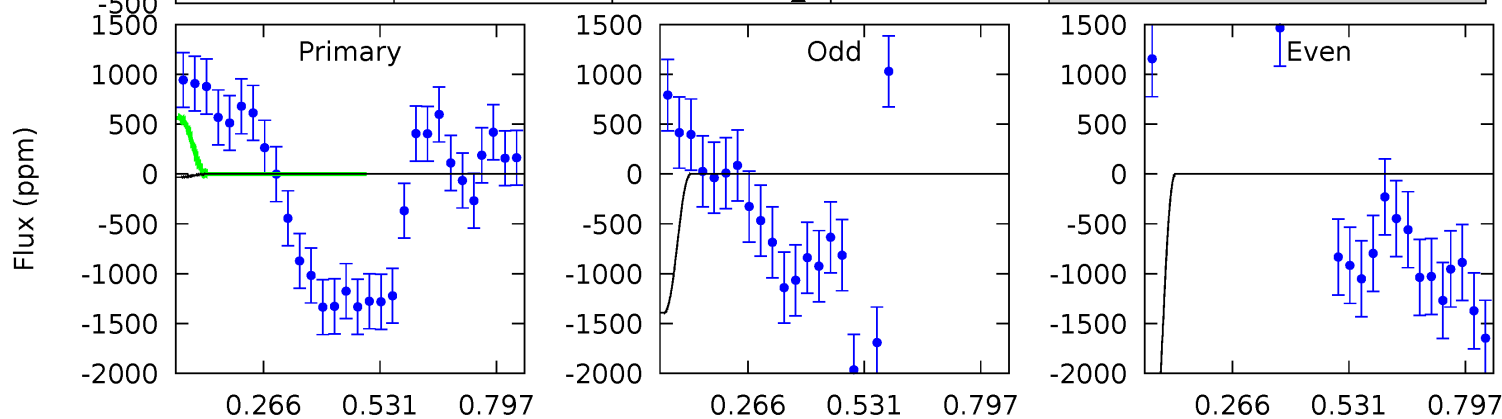
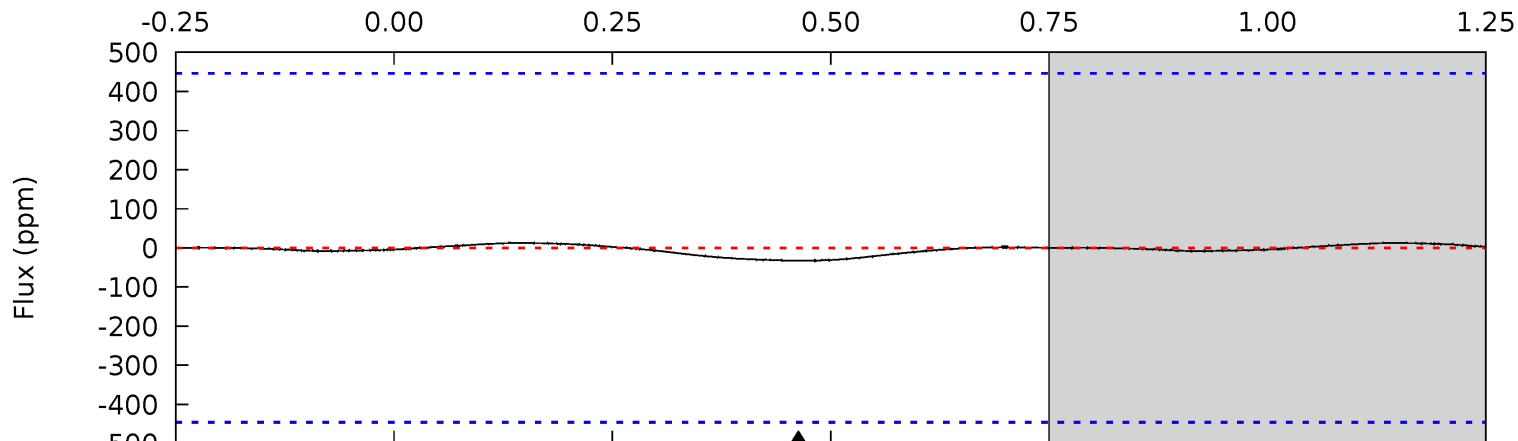
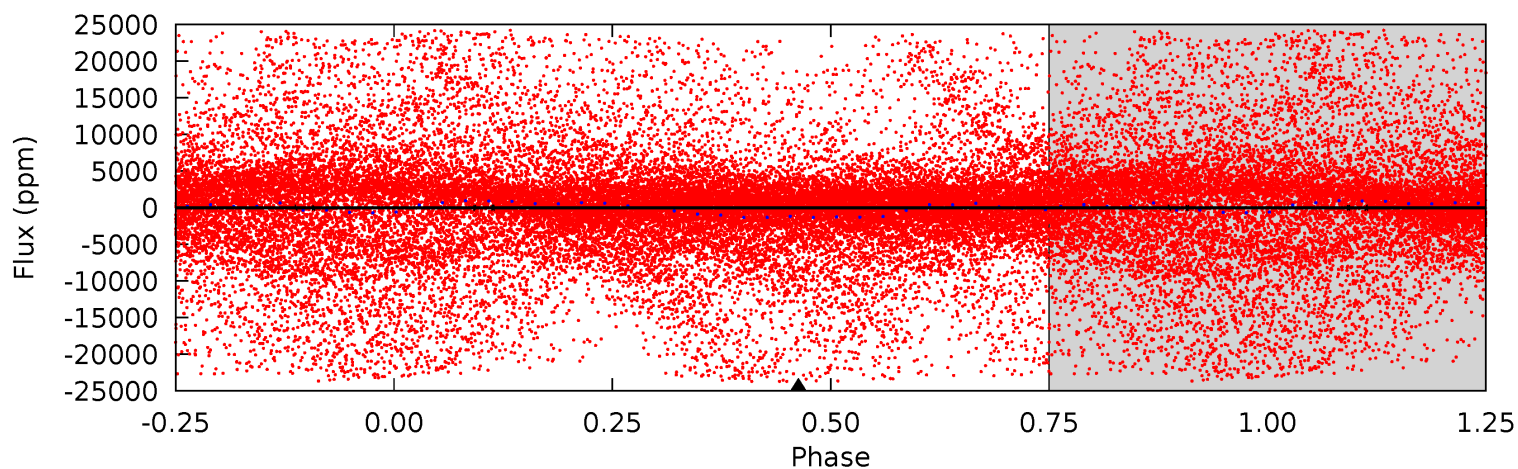
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.49	2.87	0	0	4.31	0.98	0.25	8.49	8.49	2.87	2.87	6.09	0.21	0.01	5.57



Alt Model-Shift Uniqueness Test

005472950-02, P = 0.535516 Days, E = 131.490408 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.32	0.32	0	0	4.36	1.11	0.06	0.32	0.32	0.32	0.32	9.29	-12.4	0.27	0.51



Stellar Parameters For KIC 005472950

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5254^{+158}_{-158}	$4.546^{+0.088}_{-0.064}$	$-0.500^{+0.350}_{-0.300}$	$0.735^{+0.084}_{-0.084}$	$0.693^{+0.095}_{-0.037}$	$2.458^{+0.908}_{-0.556}$
	+3%/-3%	+2%/-1%	+70%/-60%	+11%/-11%	+14%/-5%	+37%/-23%
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 005472950-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-30 ± 11	$0.93^{+0.52}_{-0.47}$	2593^{+101}_{-117}	3818^{+1278}_{-682}	$2.431^{+7.811}_{-1.486}$
Alt.	-32 ± 102	$6.41^{+0.70}_{-0.64}$	2595^{+104}_{-116}	-2777^{+433}_{-207}	$0.043^{+0.193}_{-0.167}$

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

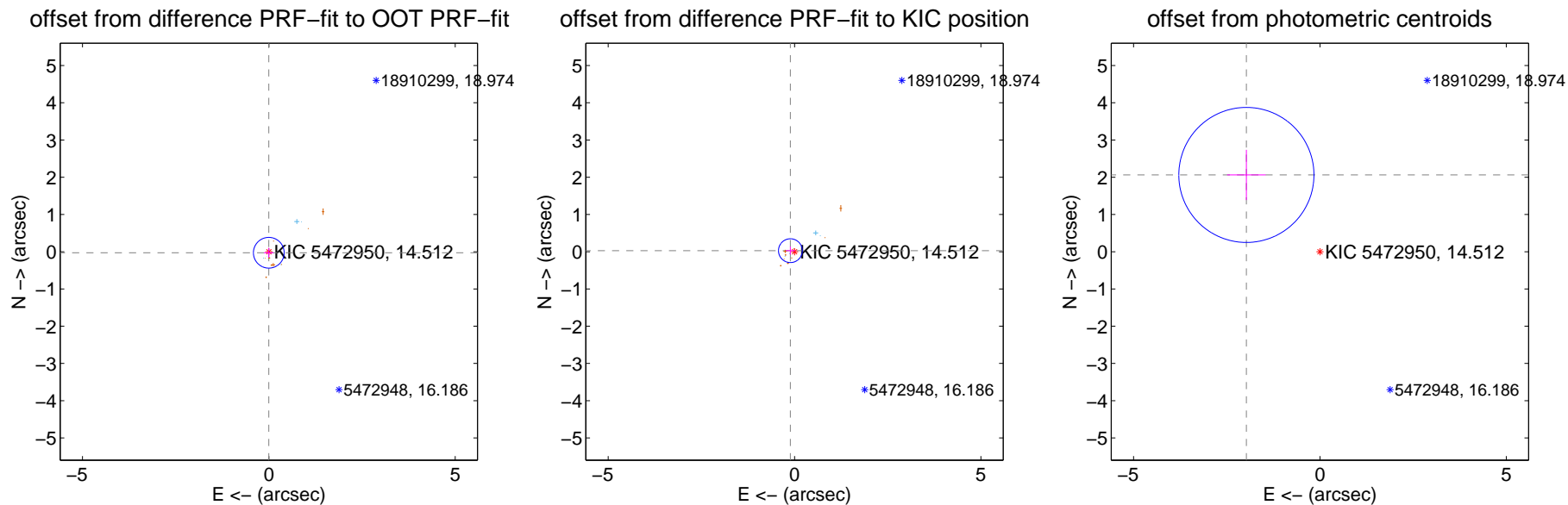
DV Centroid Data

Supplemental centroid analysis for 005472950-02. Kepler magnitude: 14.51. Transit SNR 8.13

There are 7 quarters with good PRF difference image offsets

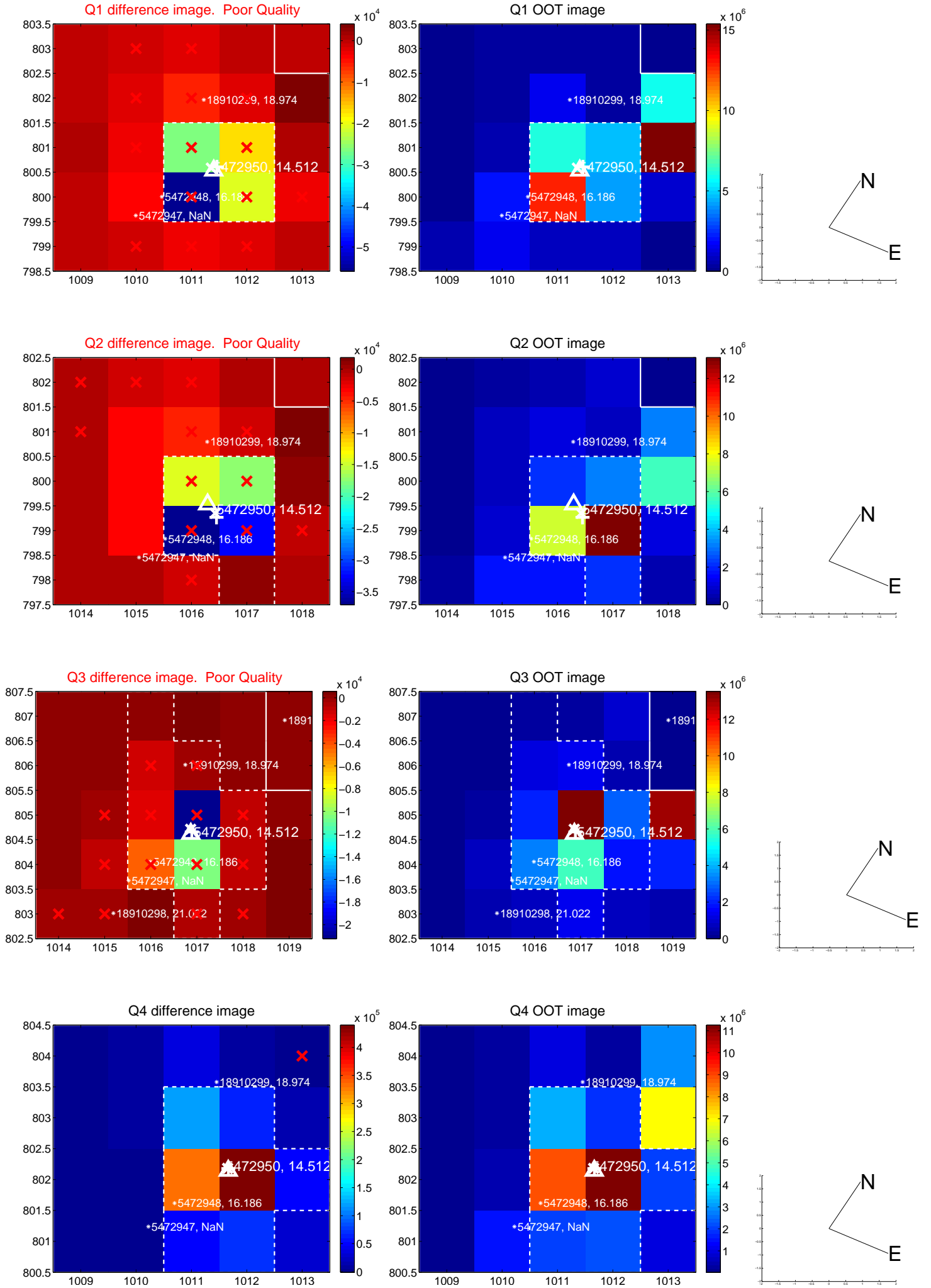
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.028 ± 0.137	0.20	0.002 ± 0.130	-0.028 ± 0.133
PRF-fit source offset from KIC position	0.115 ± 0.106	1.08	0.111 ± 0.125	0.028 ± 0.107
photometric centroid source offset	2.85 ± 0.60	4.72	1.97 ± 0.52	2.06 ± 0.67

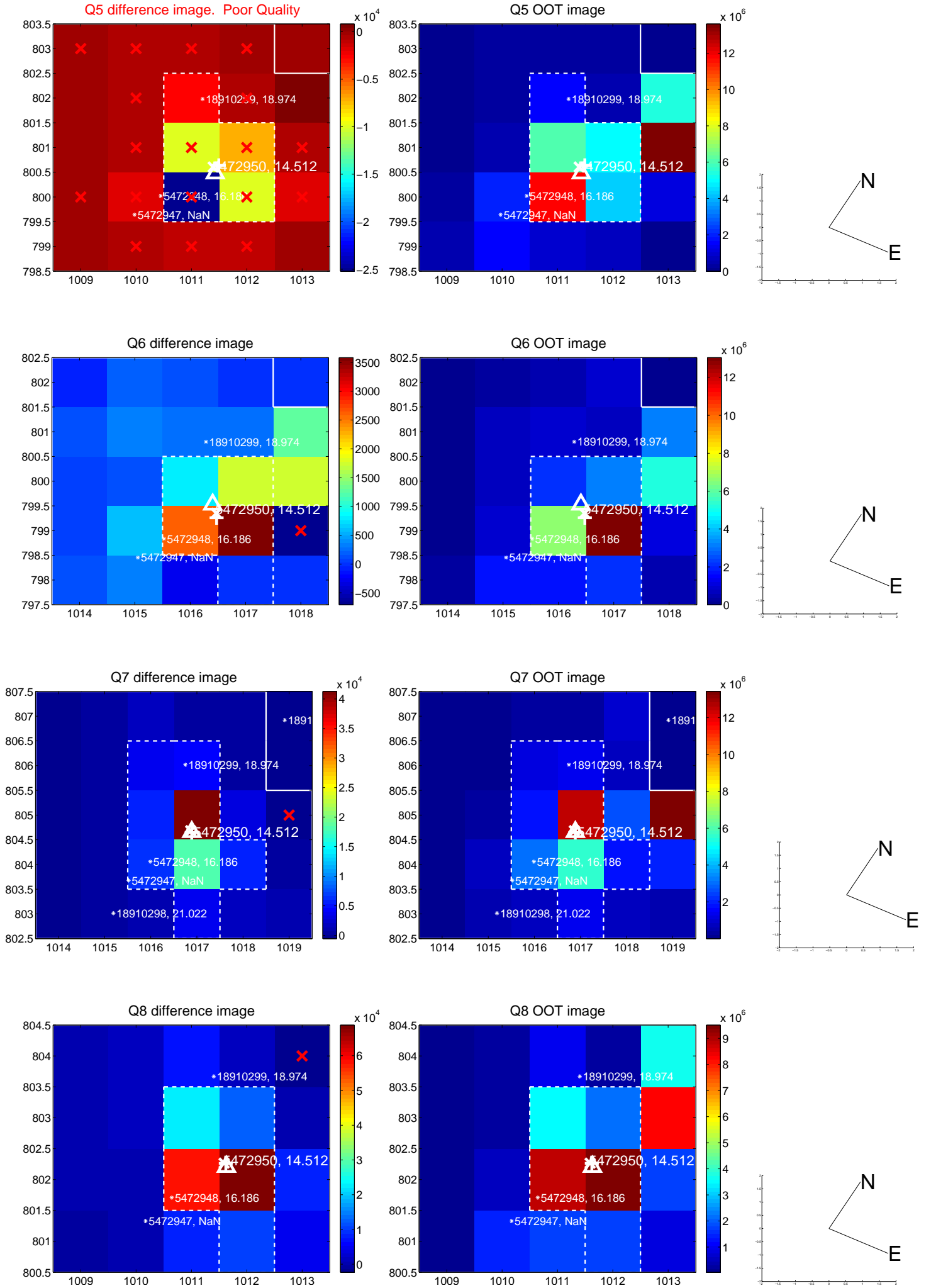


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

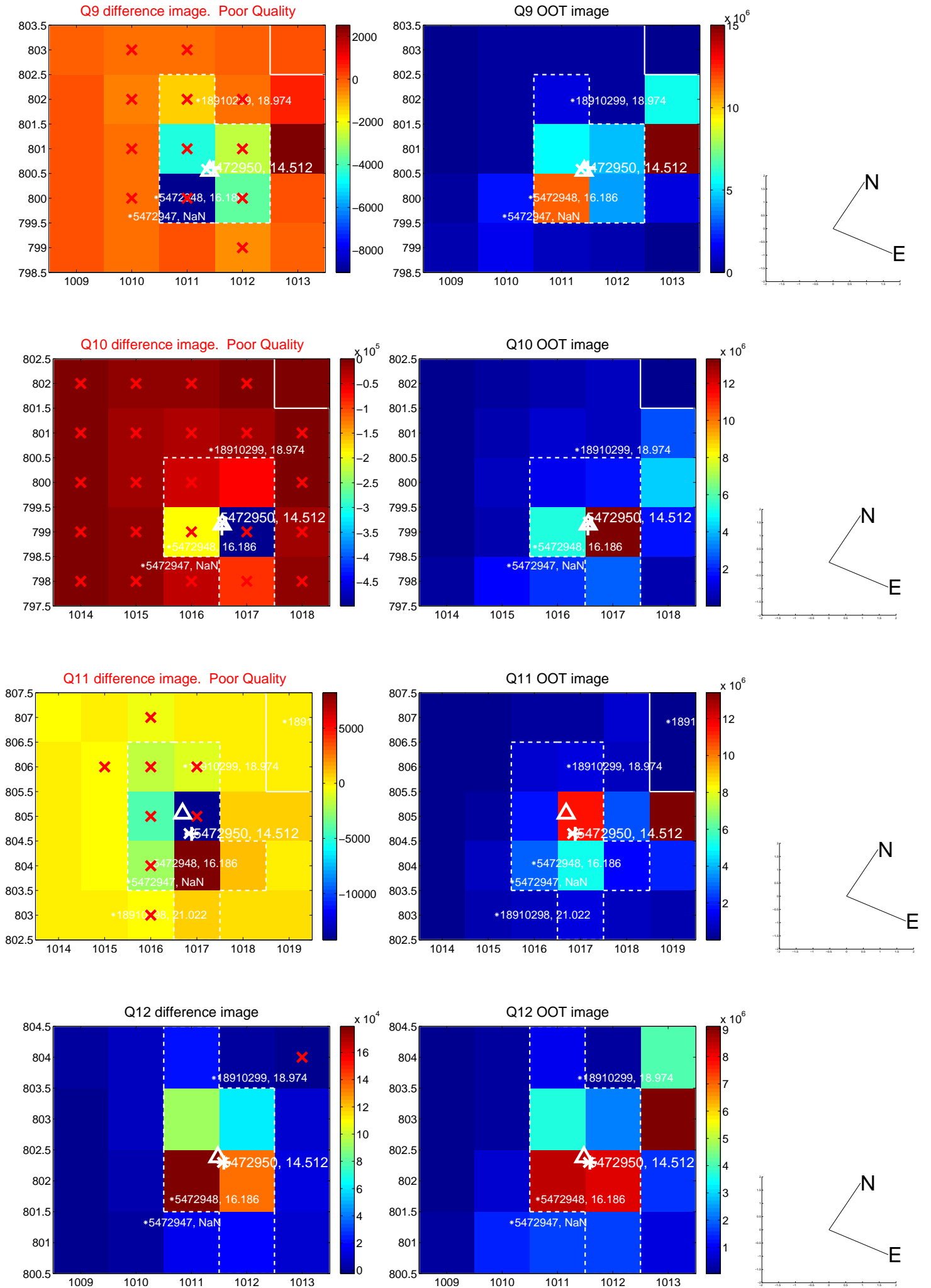
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



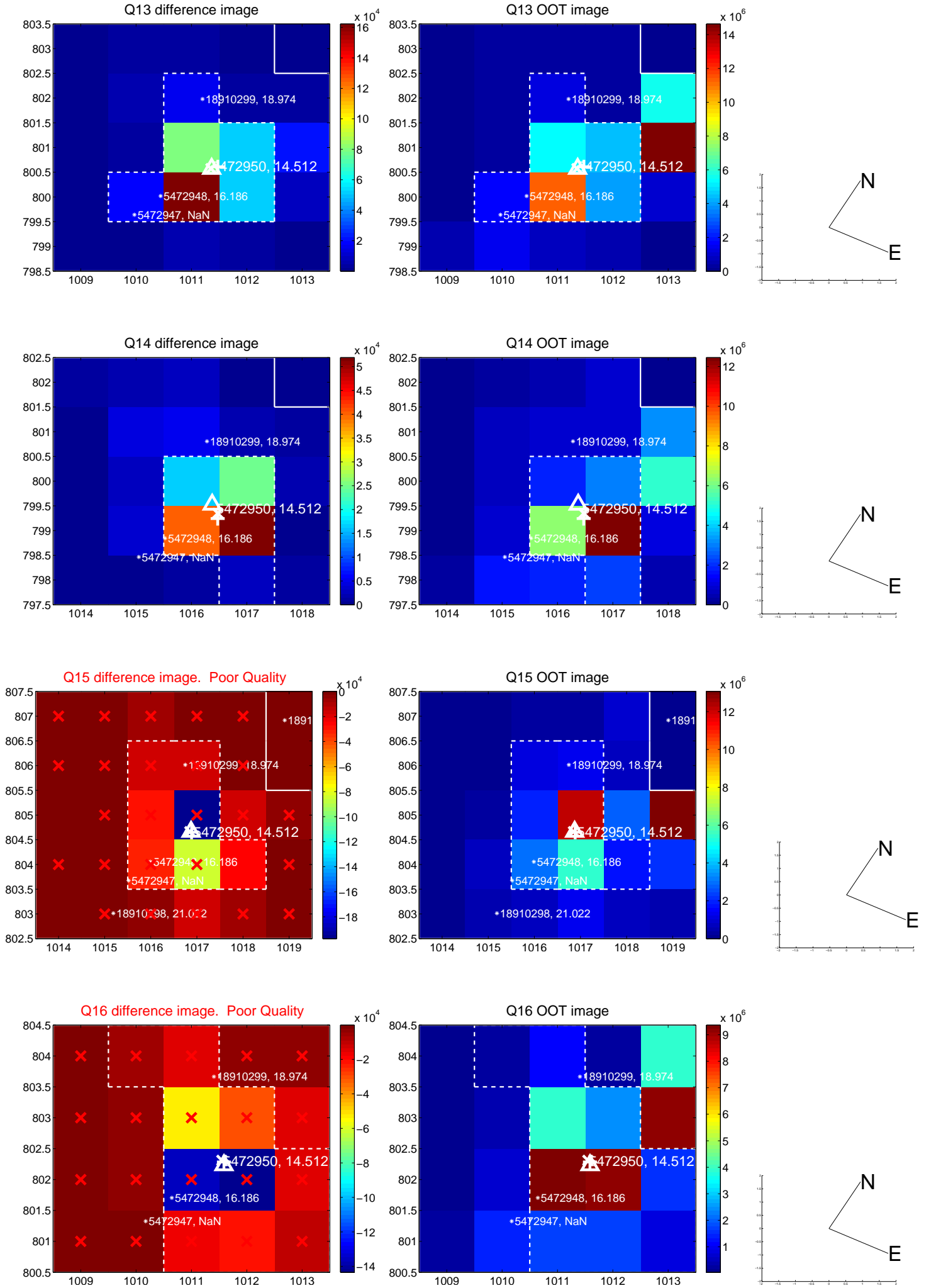
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



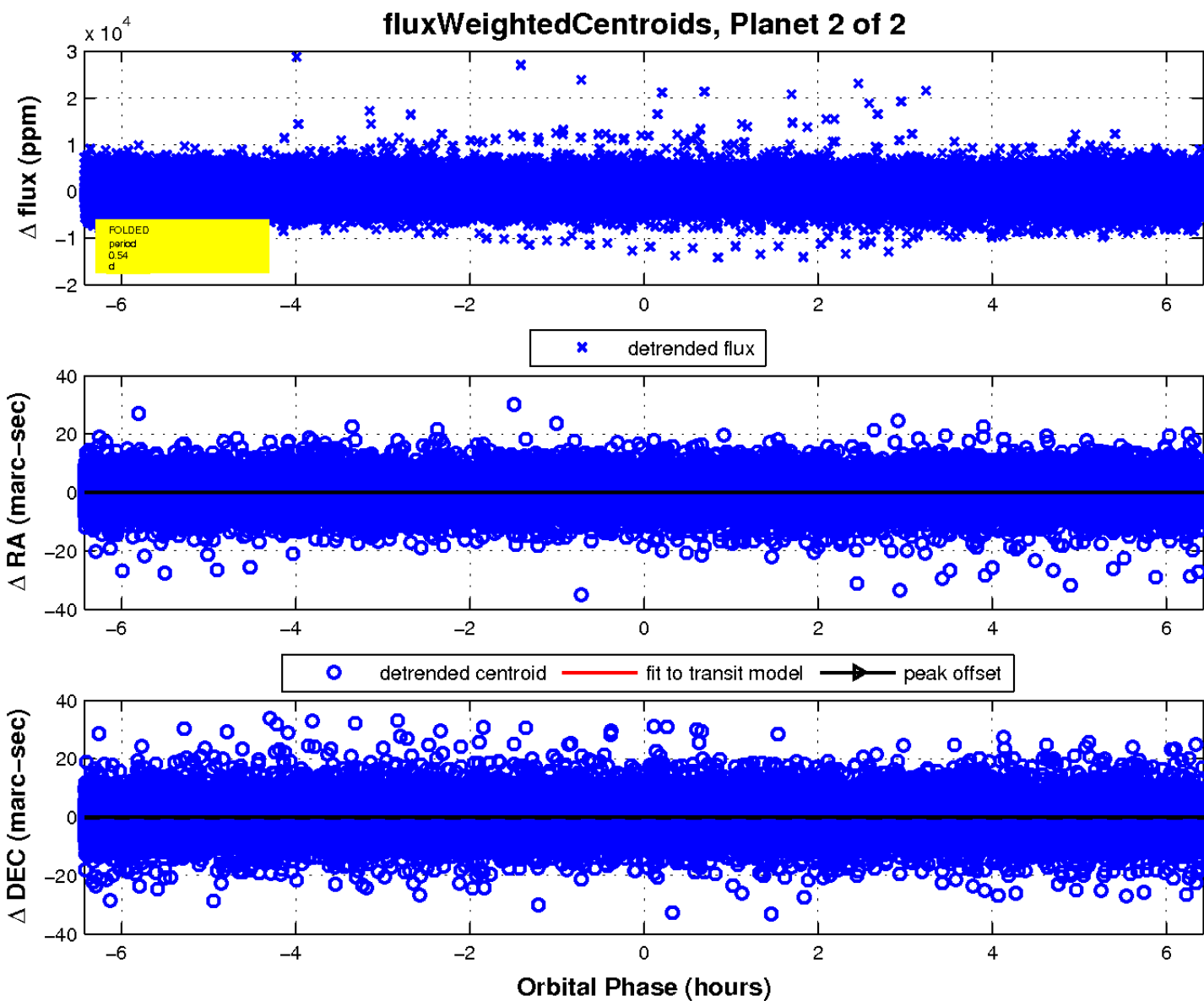
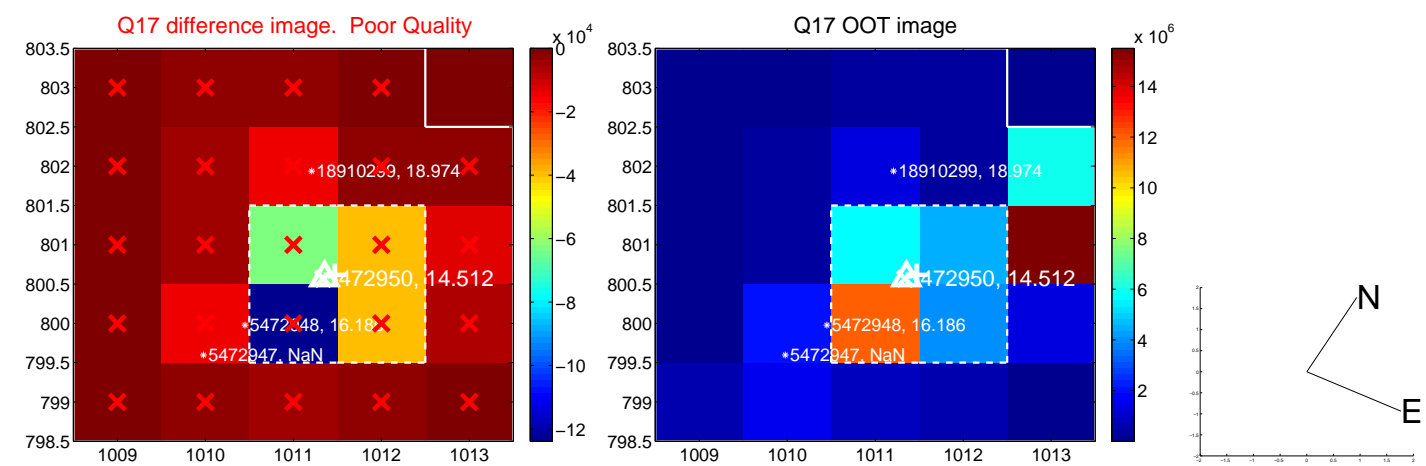
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

