

KIC 003116298

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})
003116298-01	OBS	No	1.457309	131.507588	133.8	5.000	7.6	-1.0	2.07	10112	2.46	35276.65
003116298-02	OBS	No	413.971305	448.312894	196.8	12.483	9.7	6.8	2.07	10112	3.23	18.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003116298-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
003116298-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

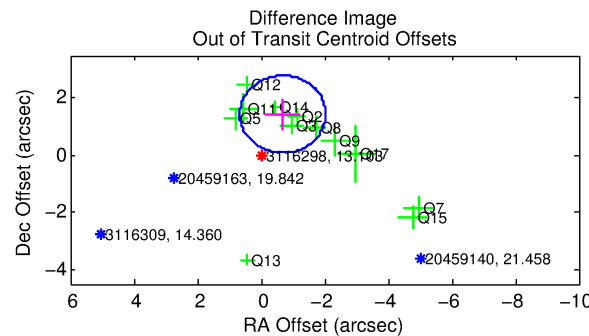
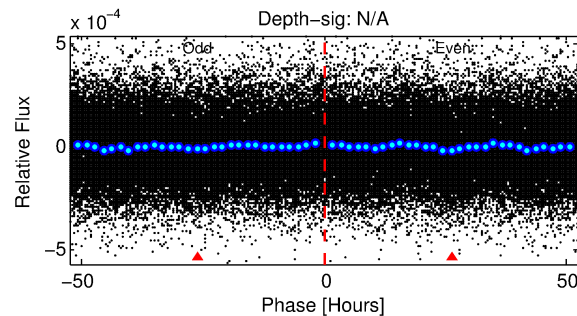
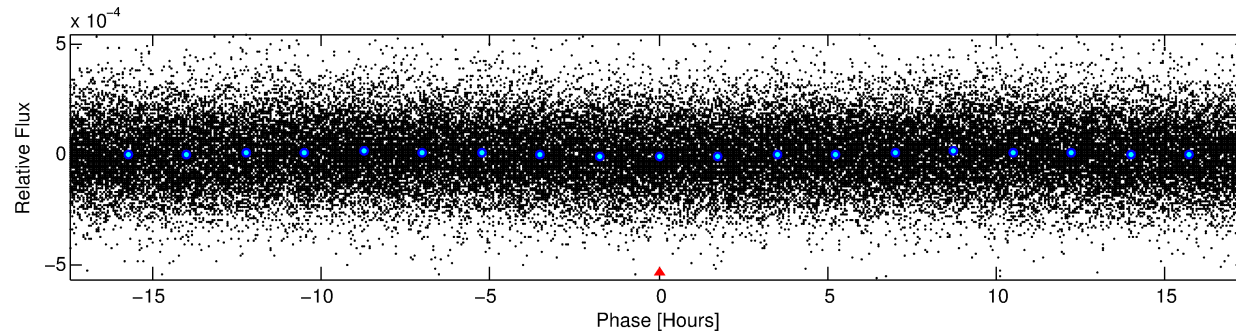
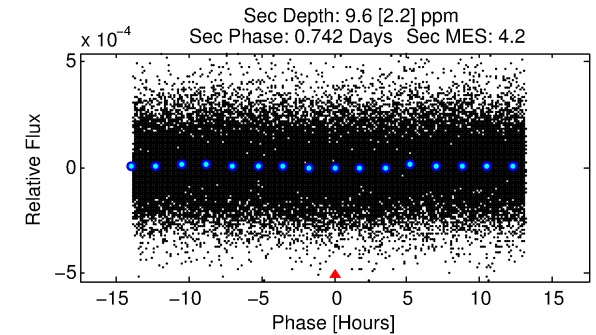
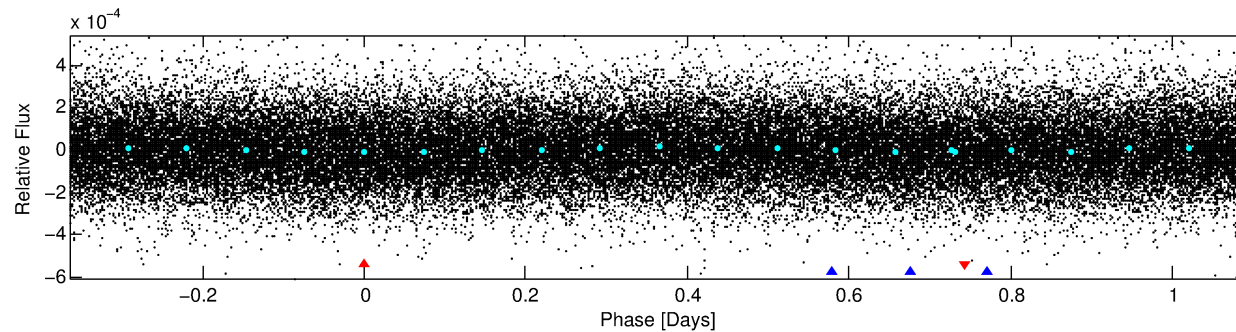
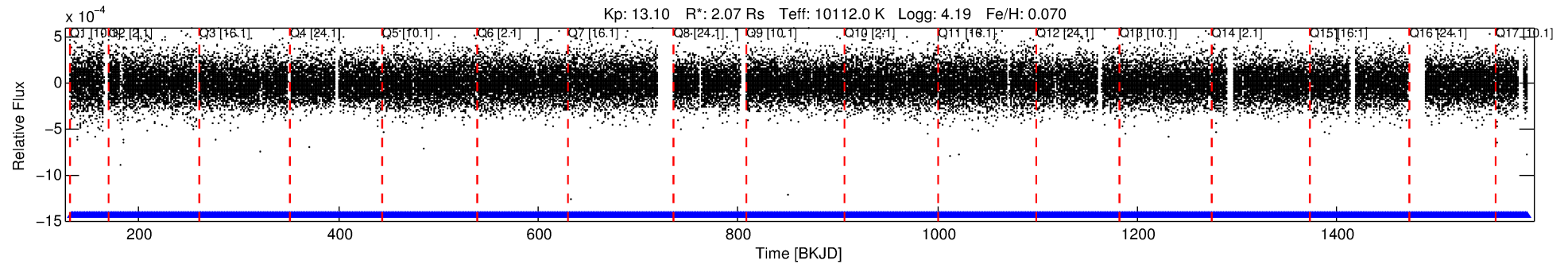
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003116298-01

No Significant Match Found

DV One-Page Summary

KIC: 3116298 Candidate: 1 of 2 Period: 1.457 d



TPS TCE Results:

Period = 1.45731 d
Epoch = 131.5076 BKJD

DV fit results are unavailable

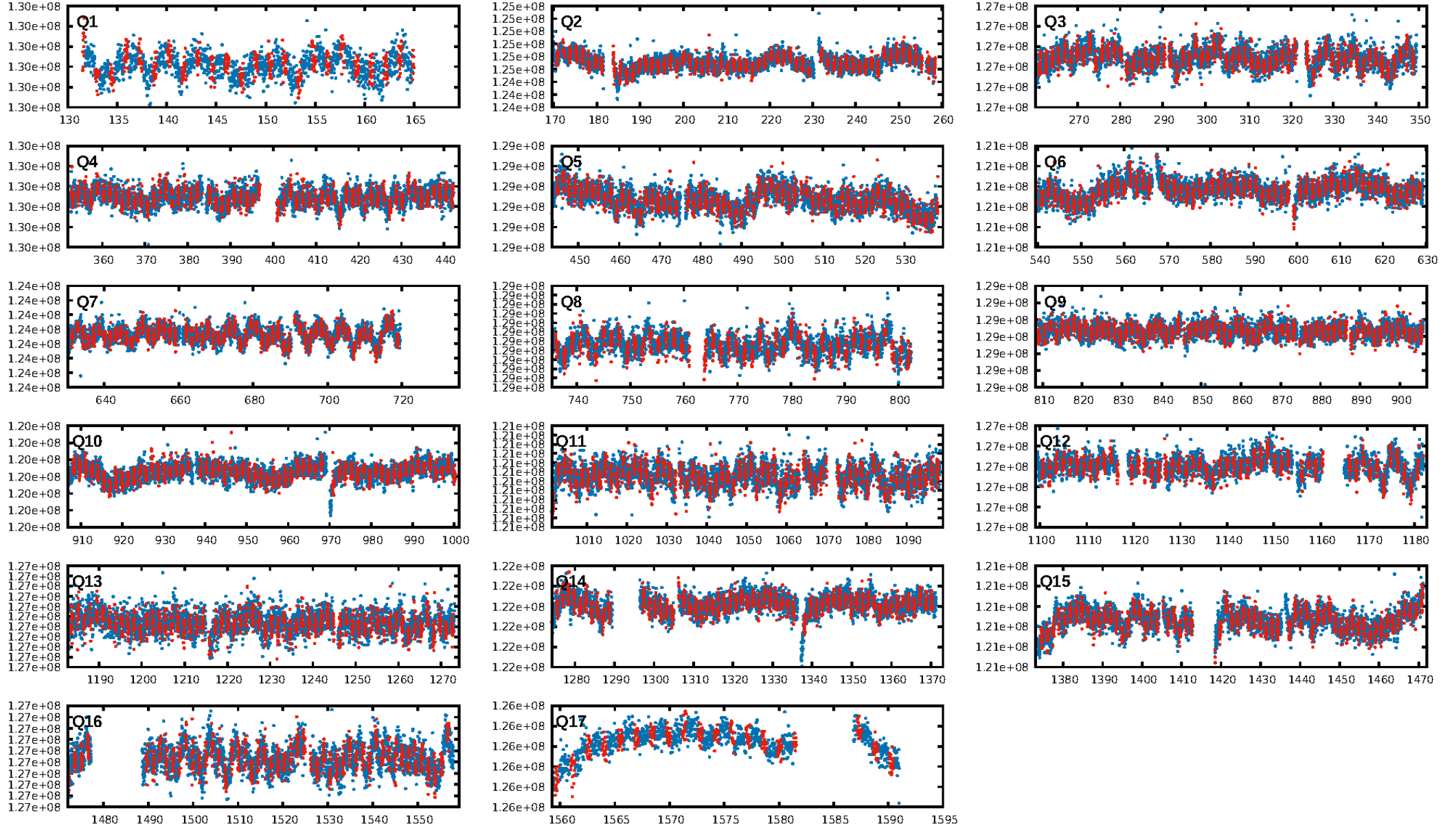
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [736.23σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.57e-12
RollingBand-fgt: 1.00 [890/890]
GhostDiagnostic-chr: 1.731
Centroid-sig: 32.7%
Centroid-so: 0.788 arcsec [0.88σ]
OotOffset-rm: 1.596 arcsec [3.54σ]
KicOffset-rm: 1.387 arcsec [3.09σ]
OotOffset-st: 2/4/2/4 [12]
KicOffset-st: 2/4/2/4 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 1.00 [17/17]

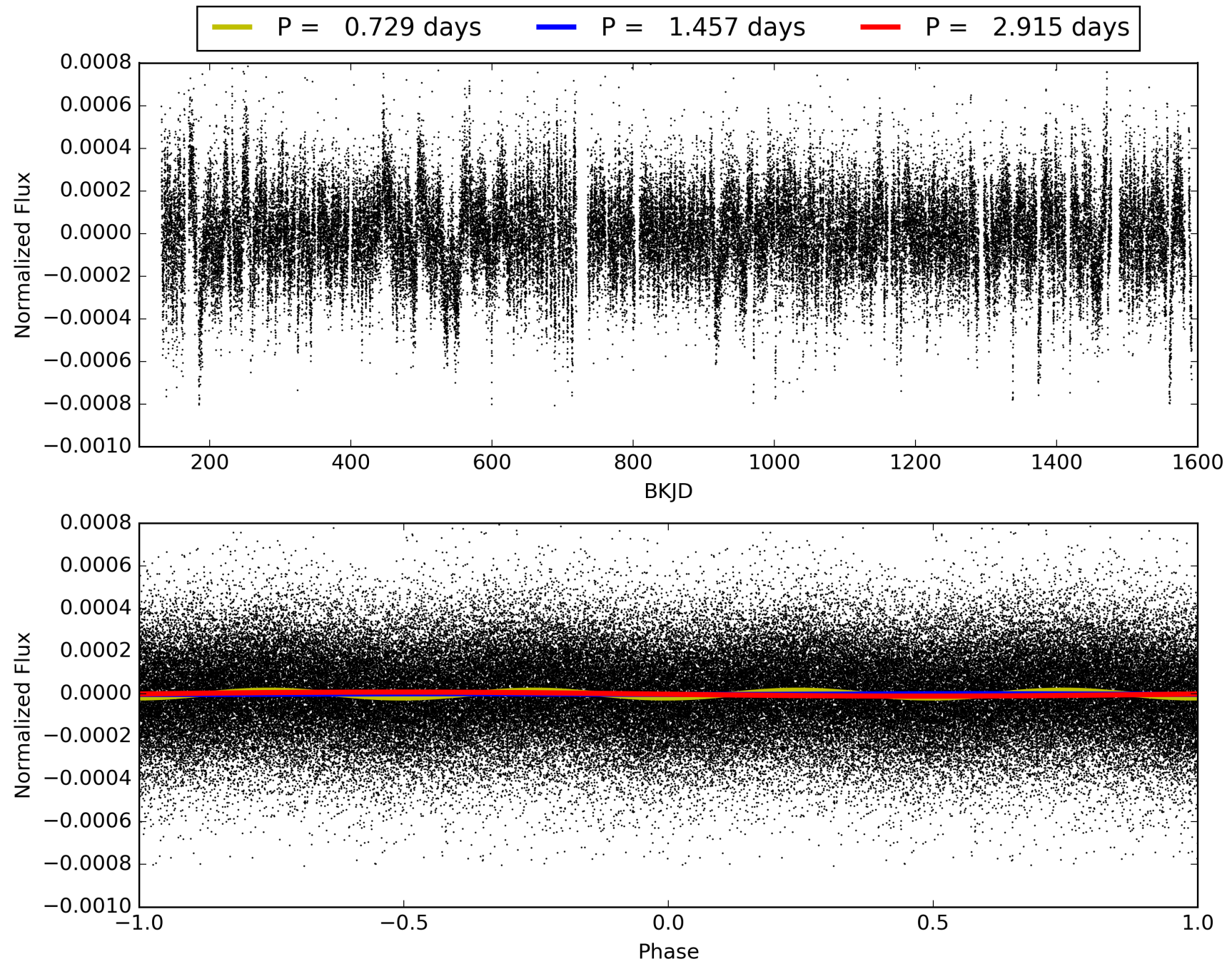
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:31:55 Z

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

TCE 003116298-01, PDC Light Curves

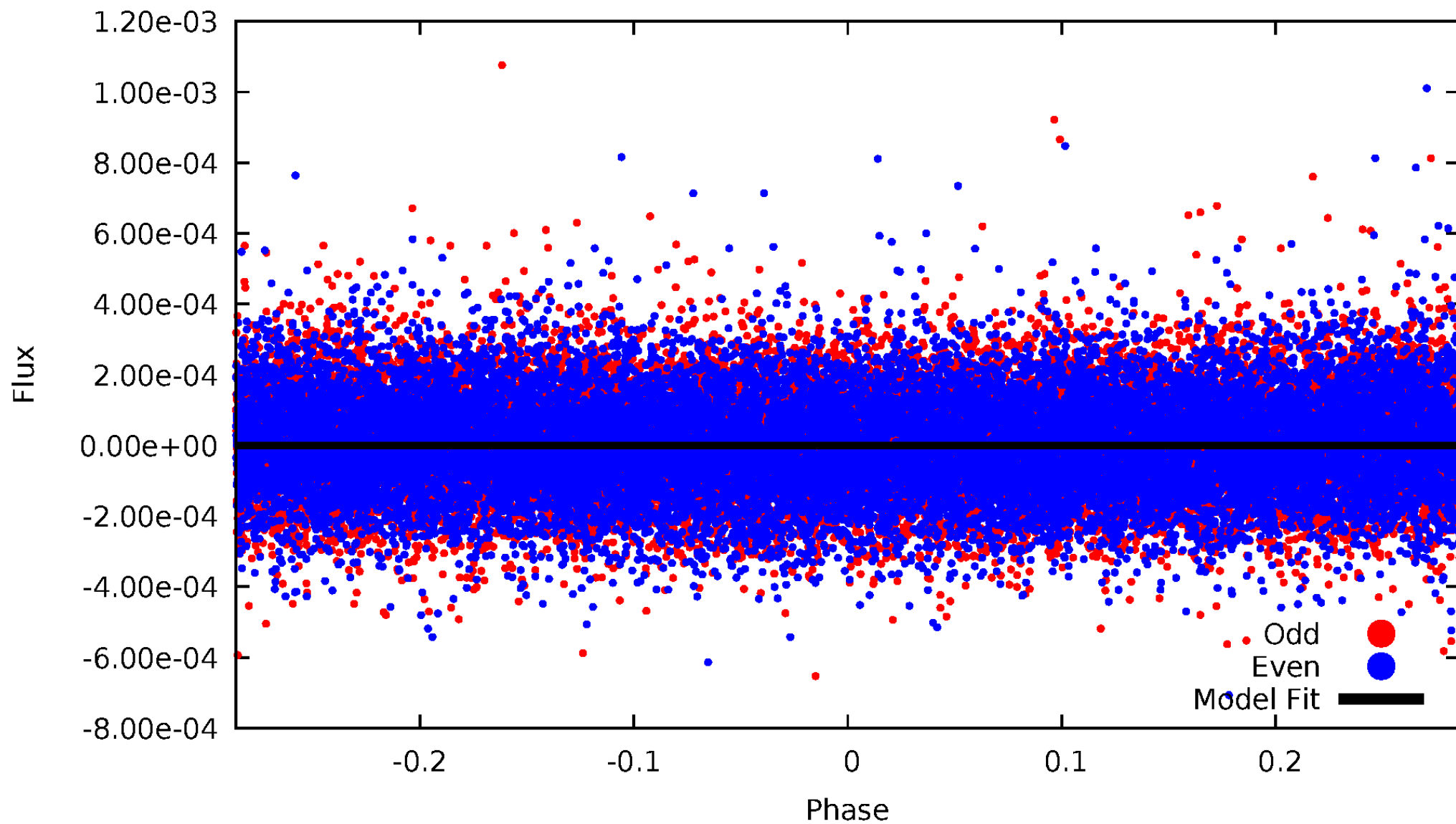


TCE 003116298-01



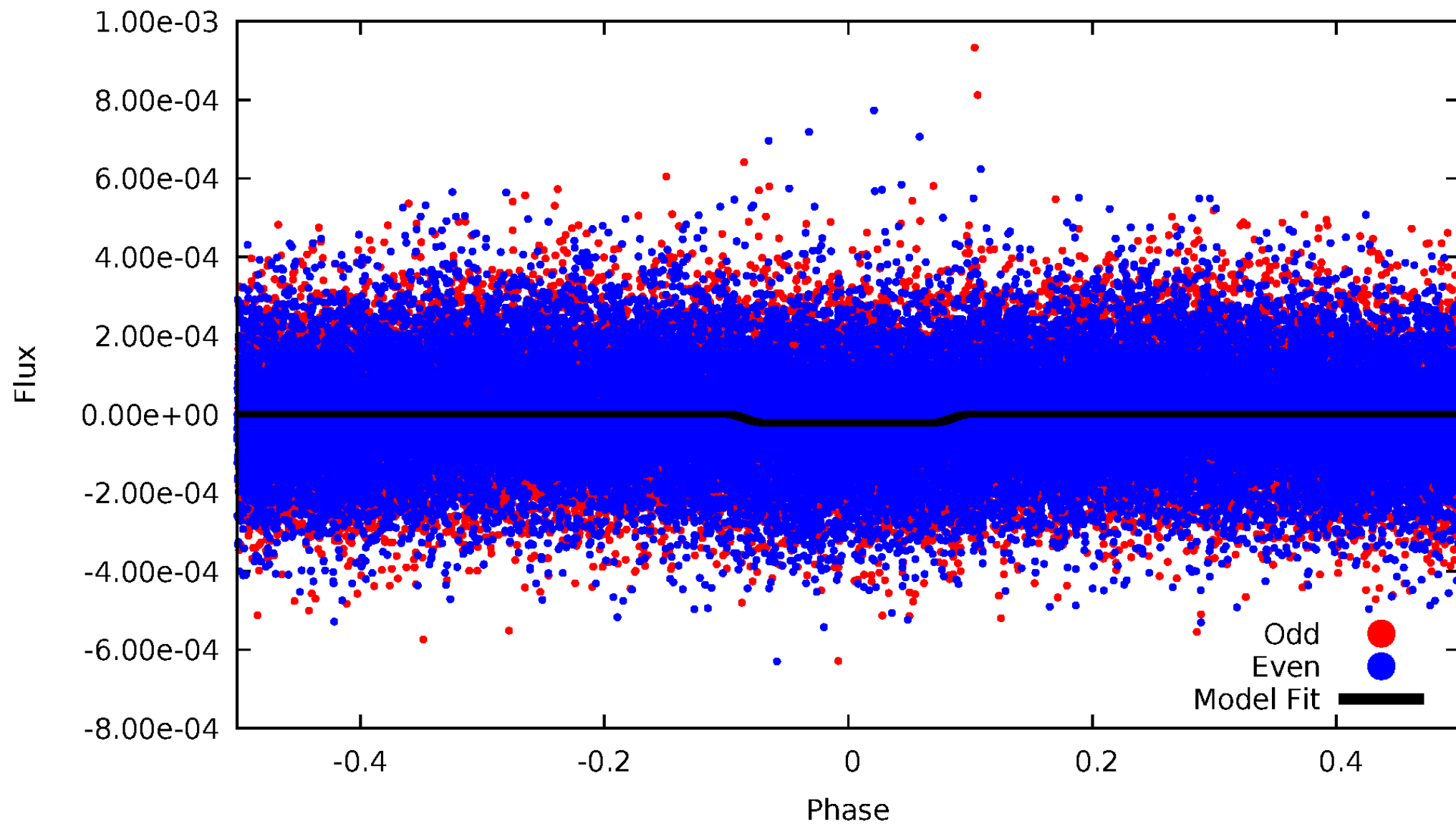
DV Odd/Even

TCE 003116298-01



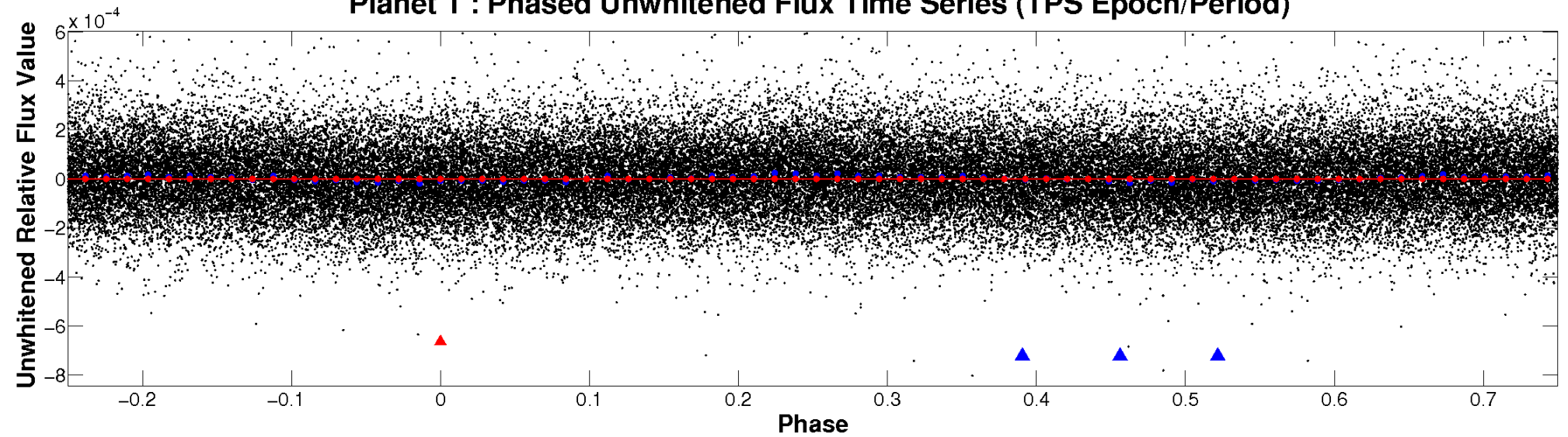
ALT Odd/Even

TCE 003116298-01

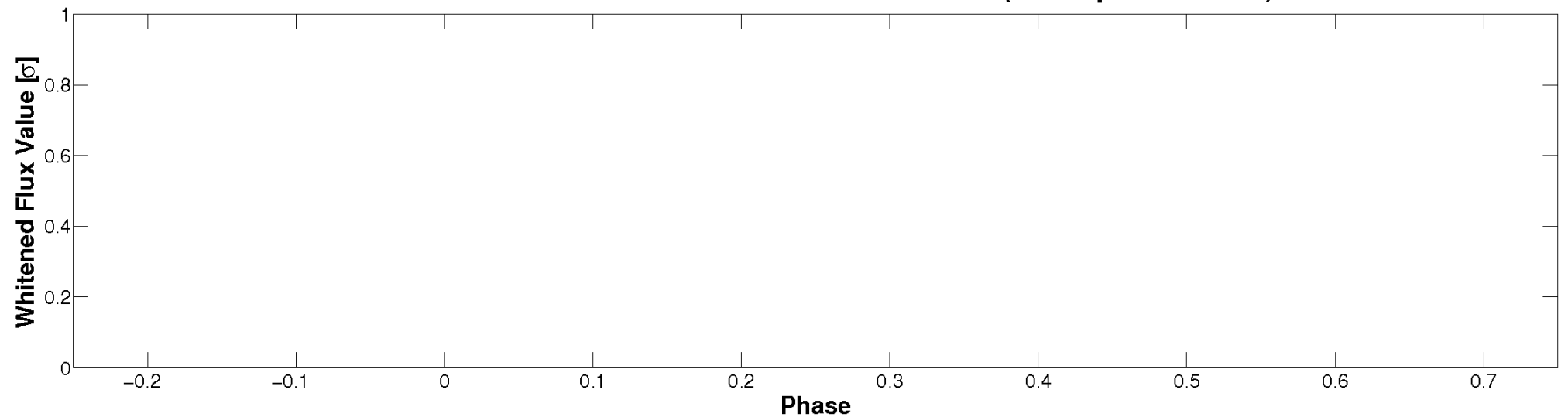


Non-Whitened Vs. Whitened Light Curve

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

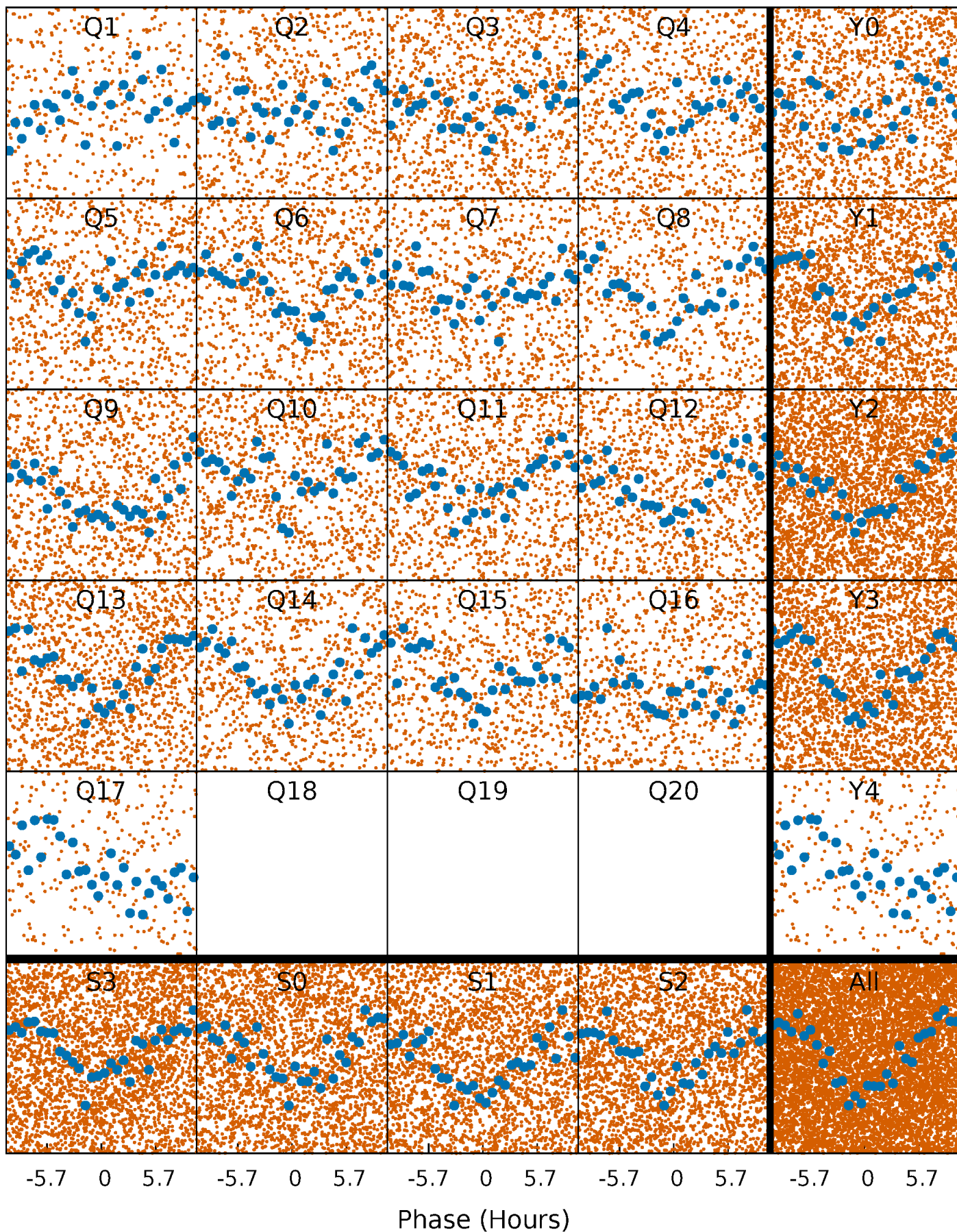


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



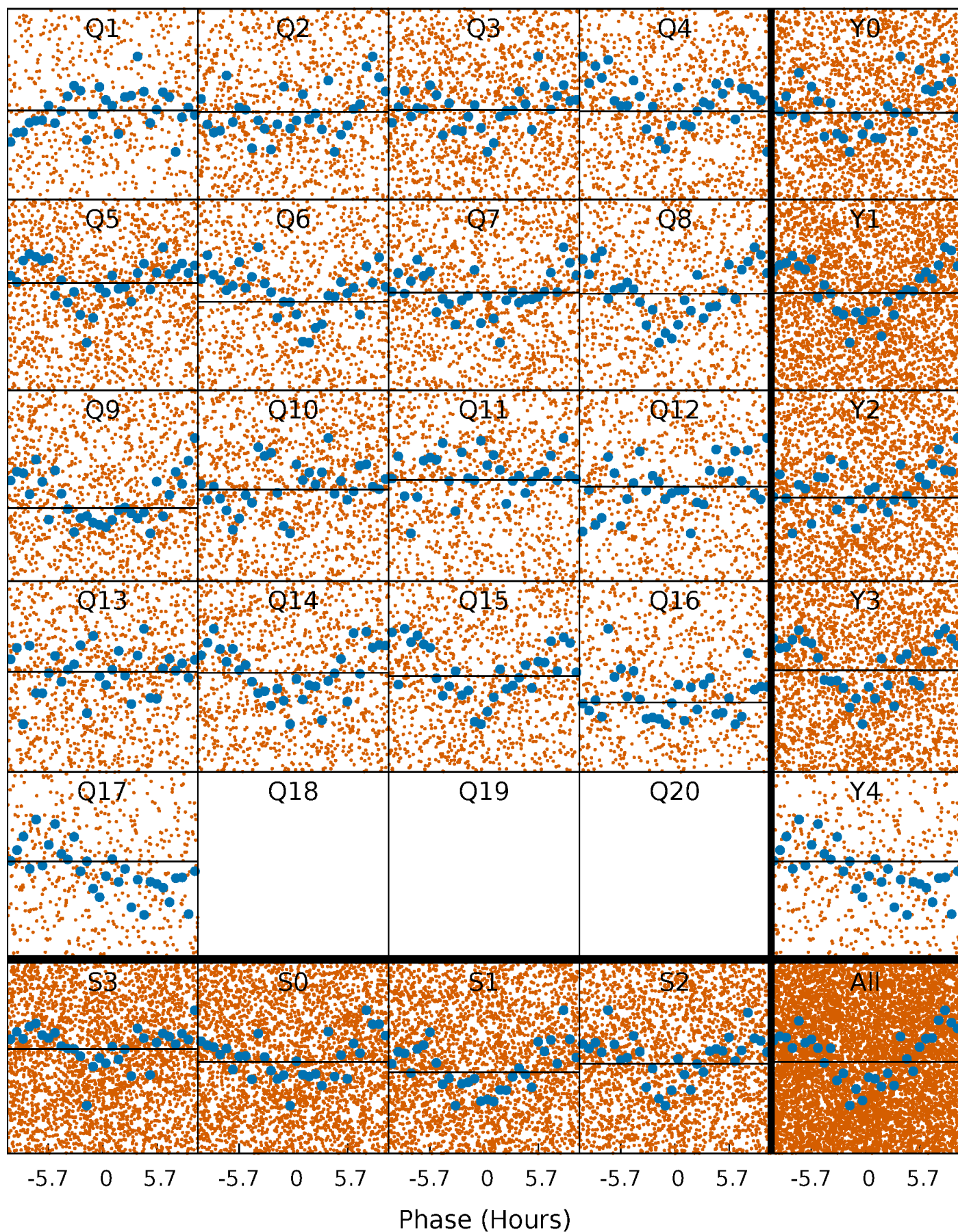
PDC Quarter-Phased Transit Curves

TCE 003116298-01 P= 1.457309 Days $T_0=131.507588$ (BKJD)



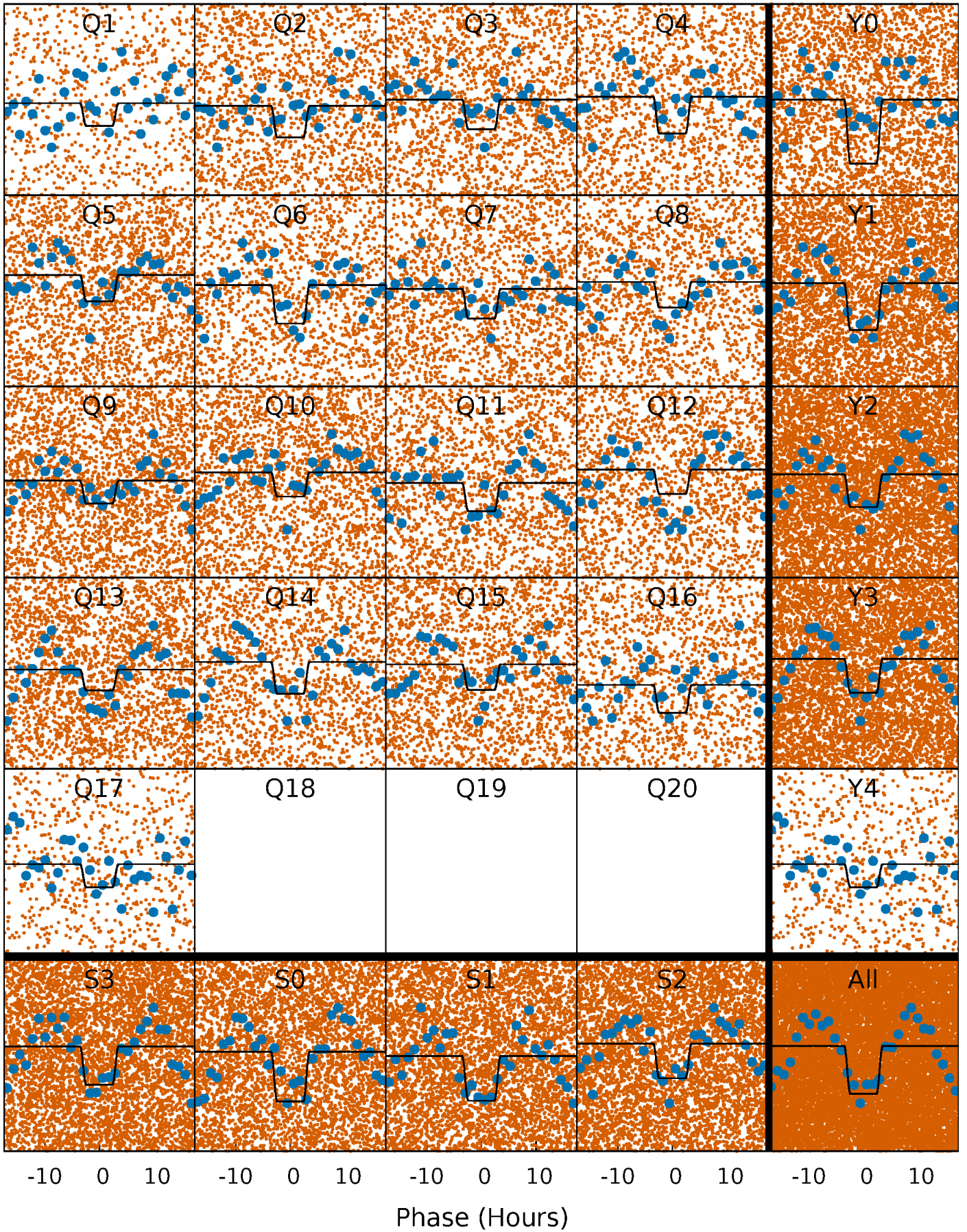
DV Quarter-Phased Transit Curves

TCE 003116298-01 P= 1.457309 Days $T_0=131.507588$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

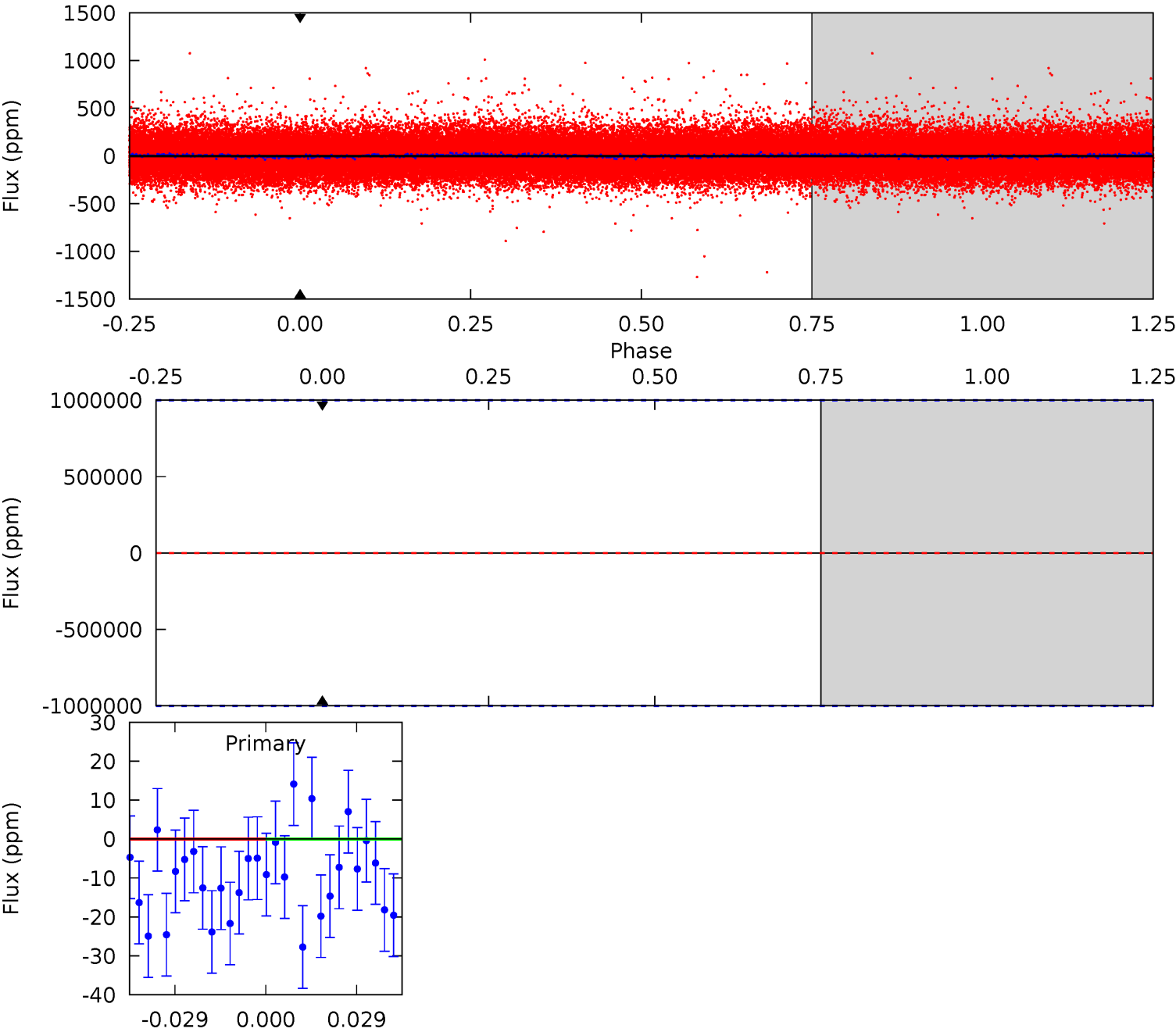
TCE 003116298-01 P= 1.457309 Days $T_0=132.954831$ (BKJD)



DV Model-Shift Uniqueness Test

003116298-01, P = 1.457309 Days, E = 131.507588 Days

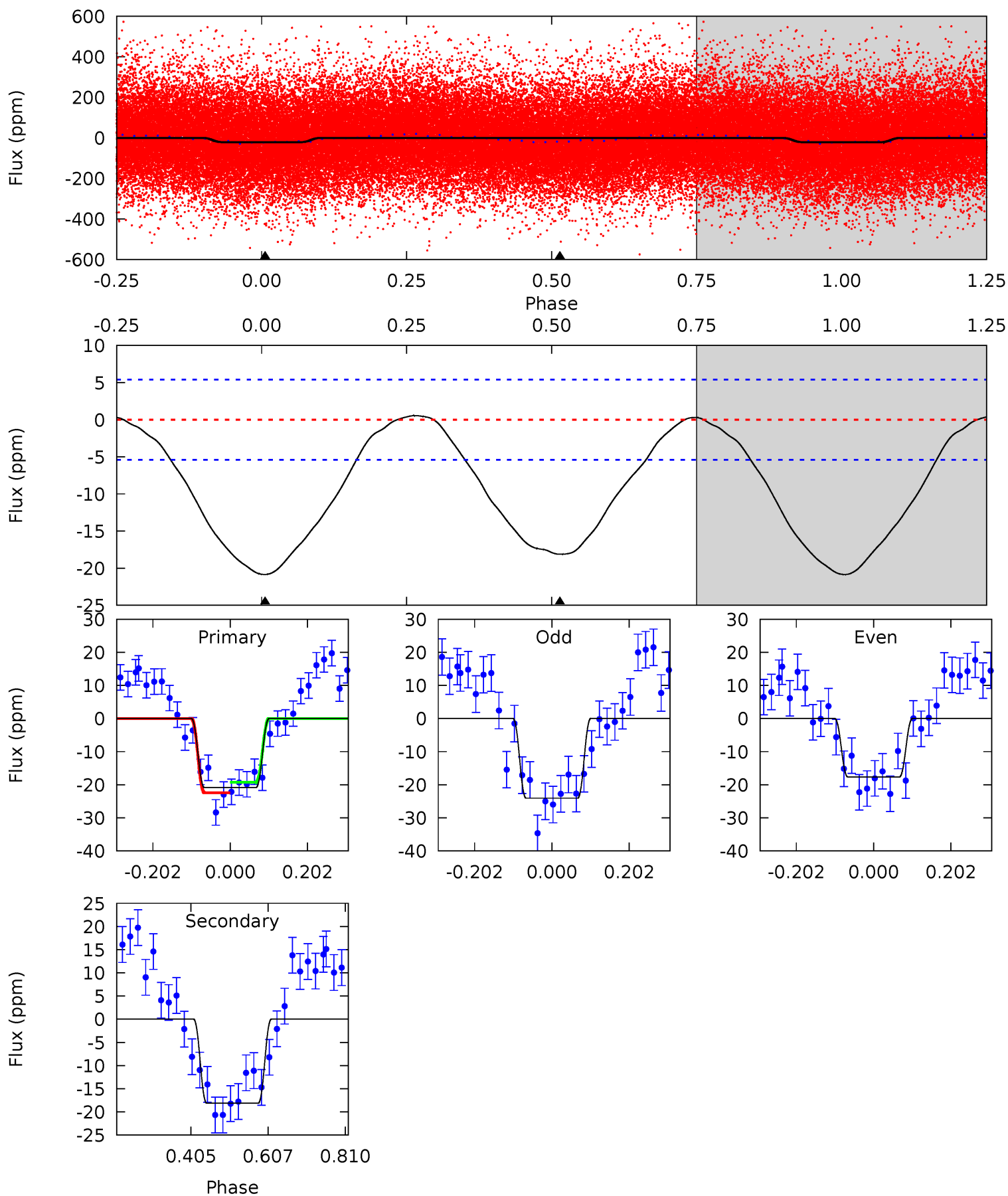
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003116298-01, P = 1.457309 Days, E = 131.497522 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	14.8	0	0	4.41	1.27	0.51	17.1	17.1	14.8	14.8	2.63	0.98	0.03	1.29



Stellar Parameters For KIC 003116298

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	10112^{+321}_{-429}	$4.188^{+0.176}_{-0.215}$	$0.070^{+0.050}_{-0.600}$	$2.070^{+0.810}_{-0.540}$	$2.408^{+0.385}_{-0.577}$	$0.382^{+0.422}_{-0.210}$
	+3%/-4%	+4%/-5%	+71%/-857%	+39%/-26%	+16%/-24%	+110%/-55%
Source	KIC0	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 003116298-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$16.02^{+20.12}_{-11.02}$	4902^{+485}_{-359}	$6852^{+105178}_{-74462}$	$3.606^{+535.482}_{-308.049}$
Alt.	-18 ± 1	$16.32^{+16.75}_{-11.81}$	4912^{+421}_{-397}	-3814^{+7639}_{-306}	$0.043^{+0.521}_{-0.033}$

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 $A_{obs} \gg 1.0$

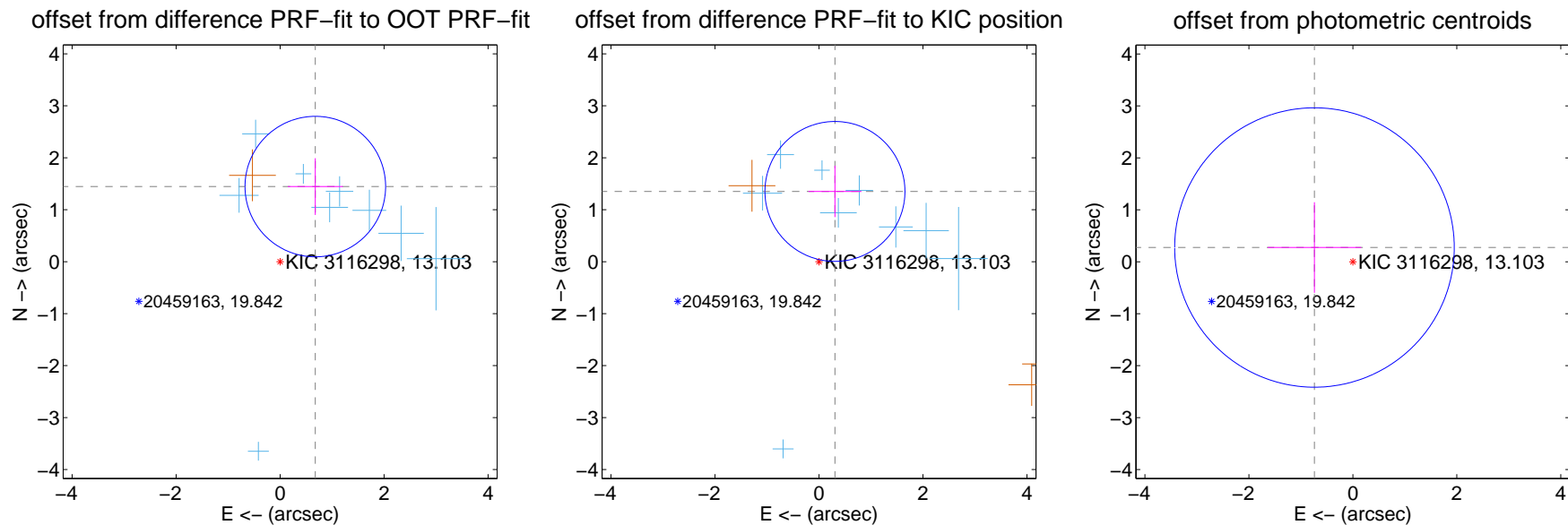
DV Centroid Data

Supplemental centroid analysis for 003116298-01. Kepler magnitude: 13.10. Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

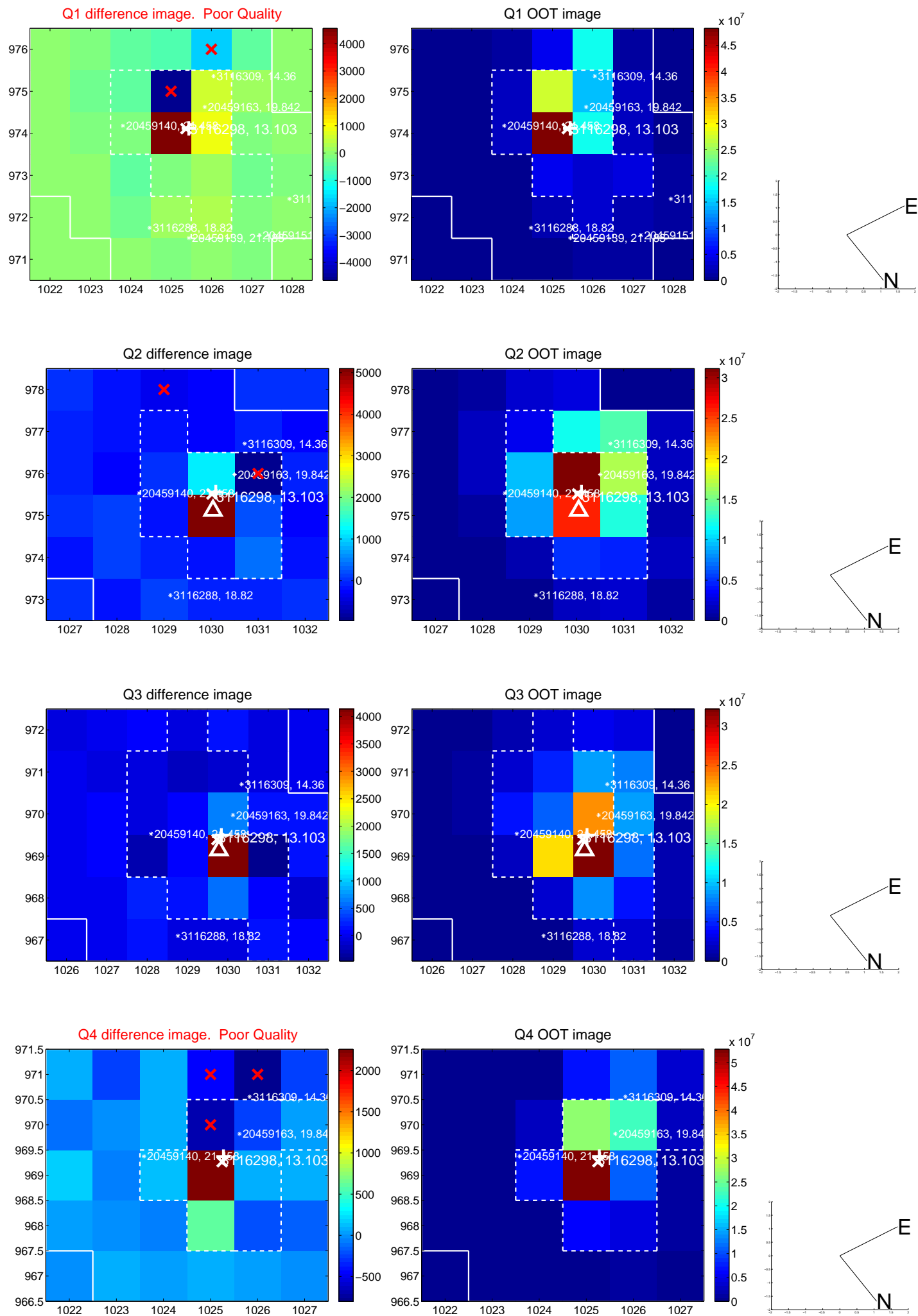
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.596 ± 0.451	3.54	-0.677 ± 0.529	1.446 ± 0.545
PRF-fit source offset from KIC position	1.387 ± 0.449	3.09	-0.307 ± 0.509	1.352 ± 0.495
photometric centroid source offset	0.79 ± 0.90	0.88	0.74 ± 0.90	0.27 ± 0.87

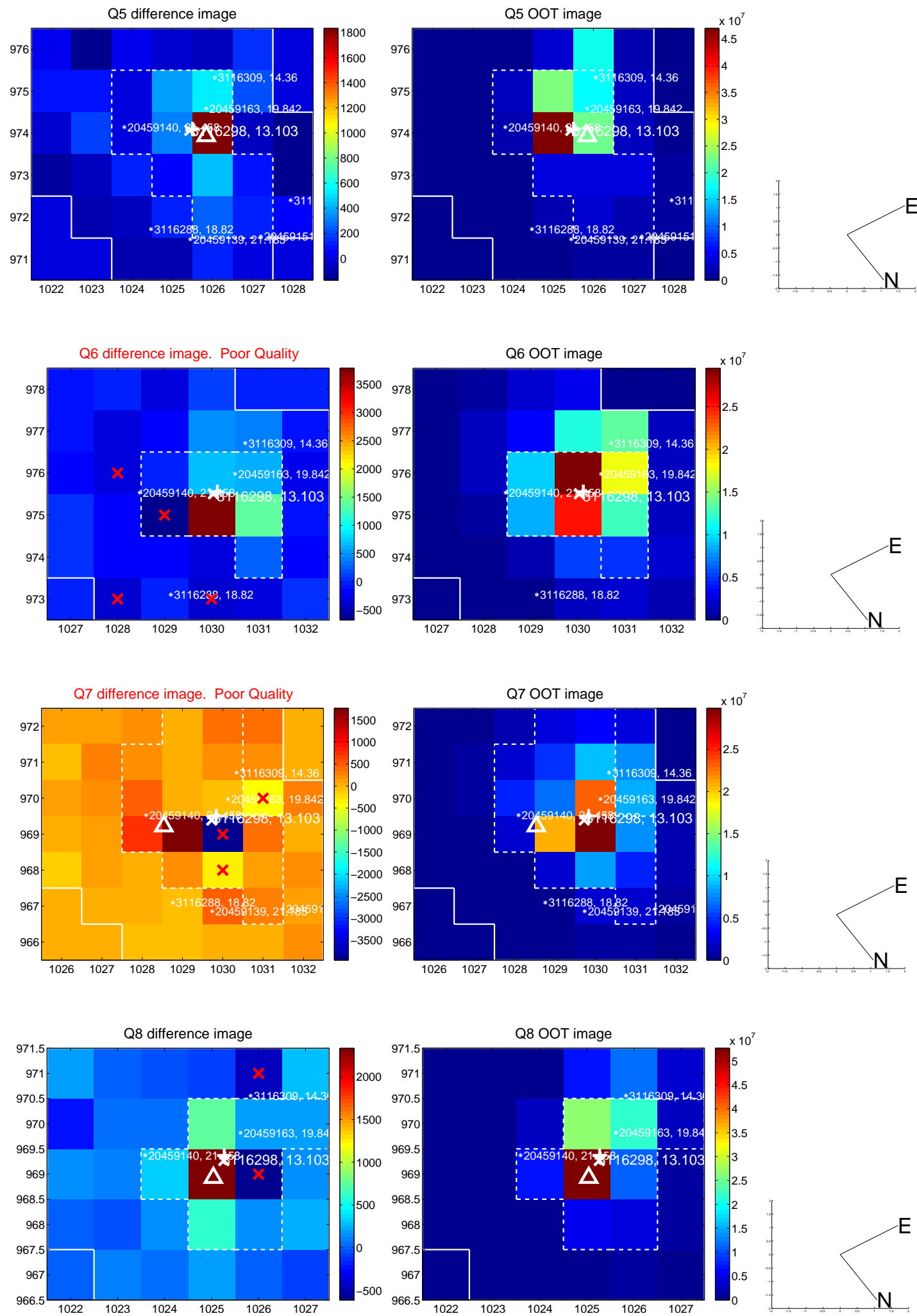


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

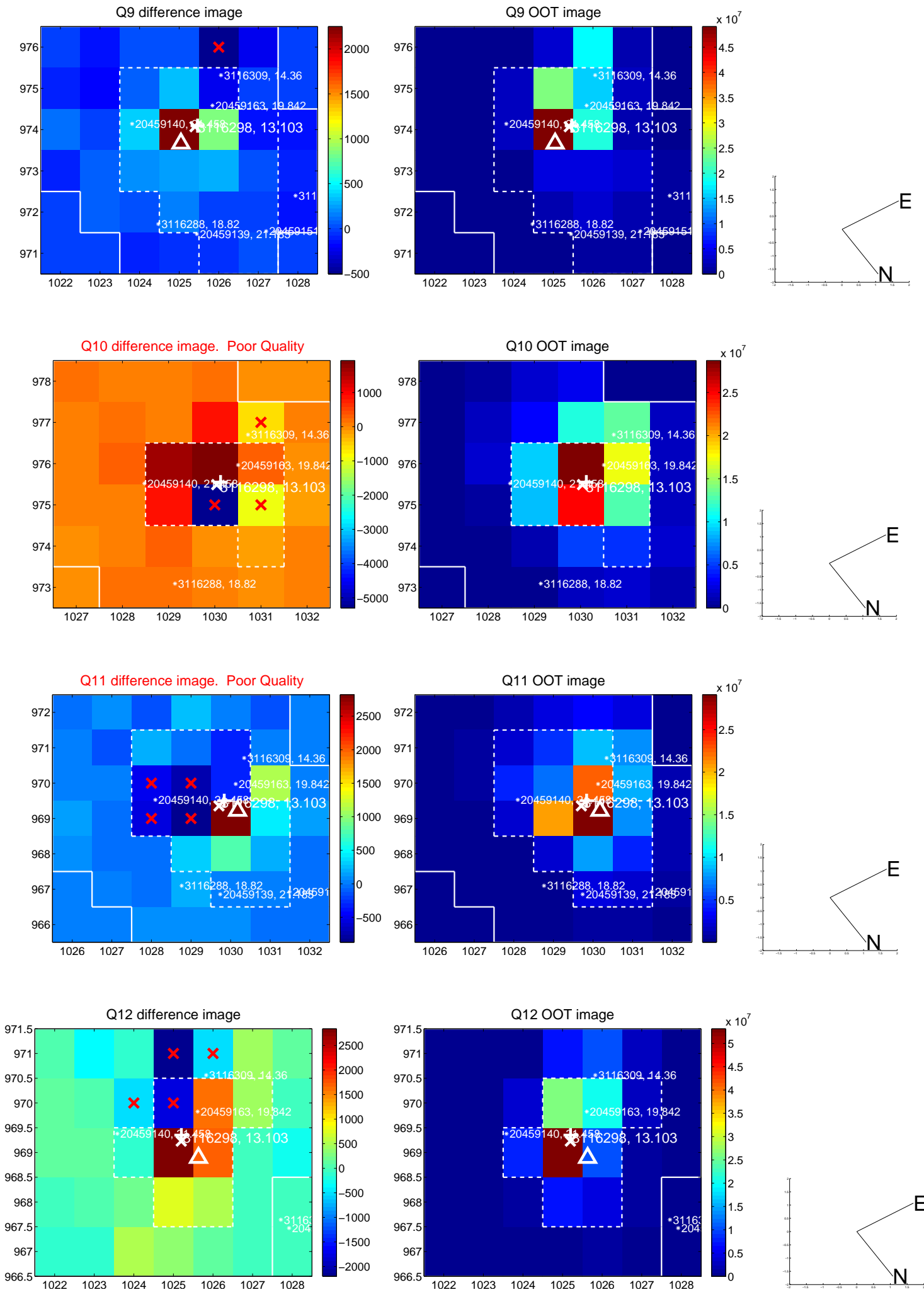
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



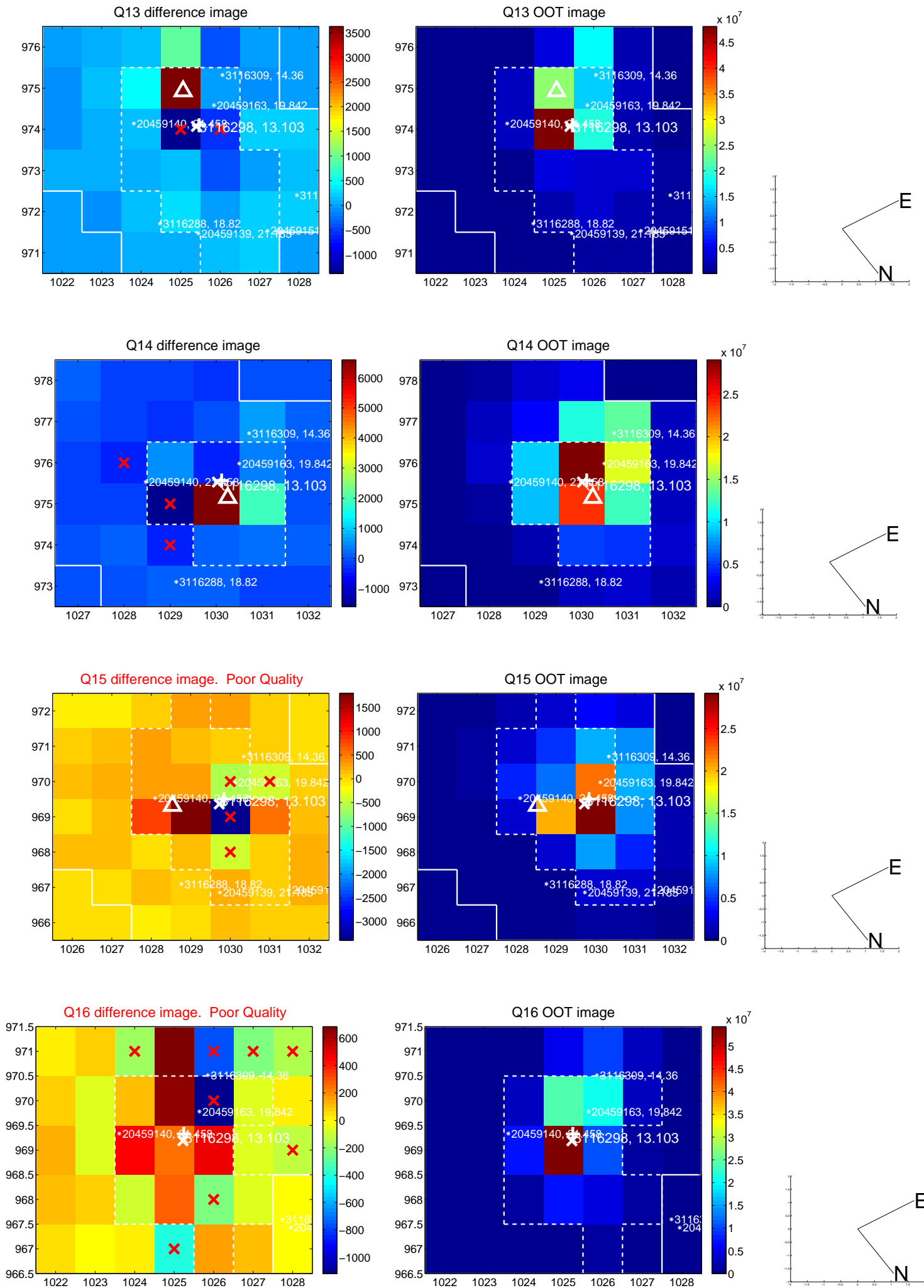
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



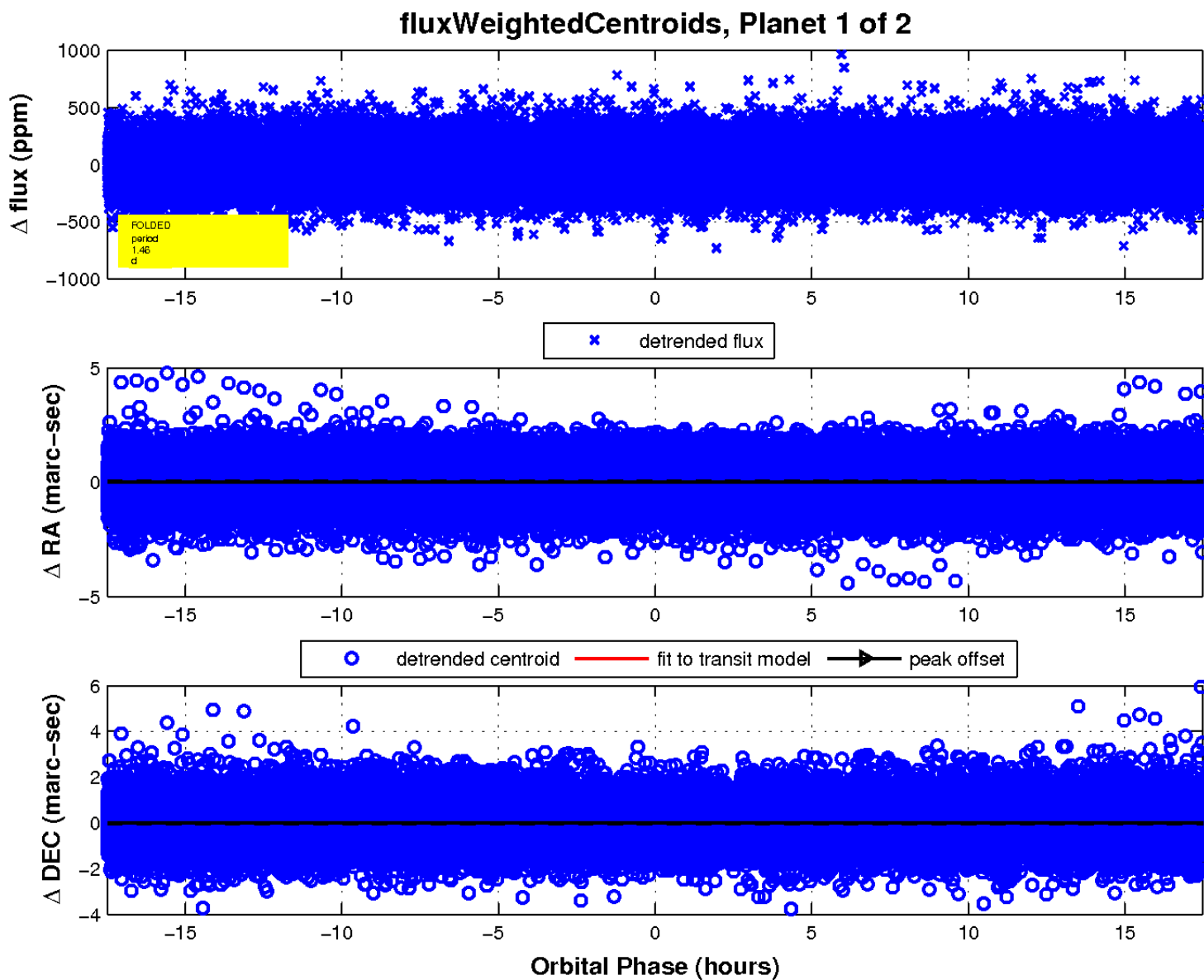
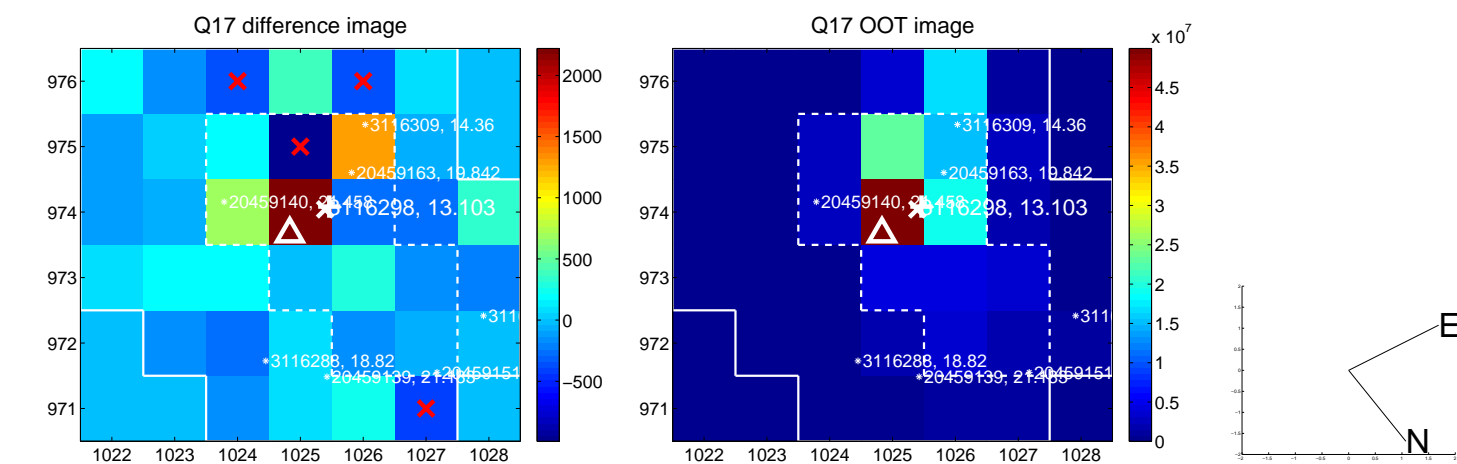
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

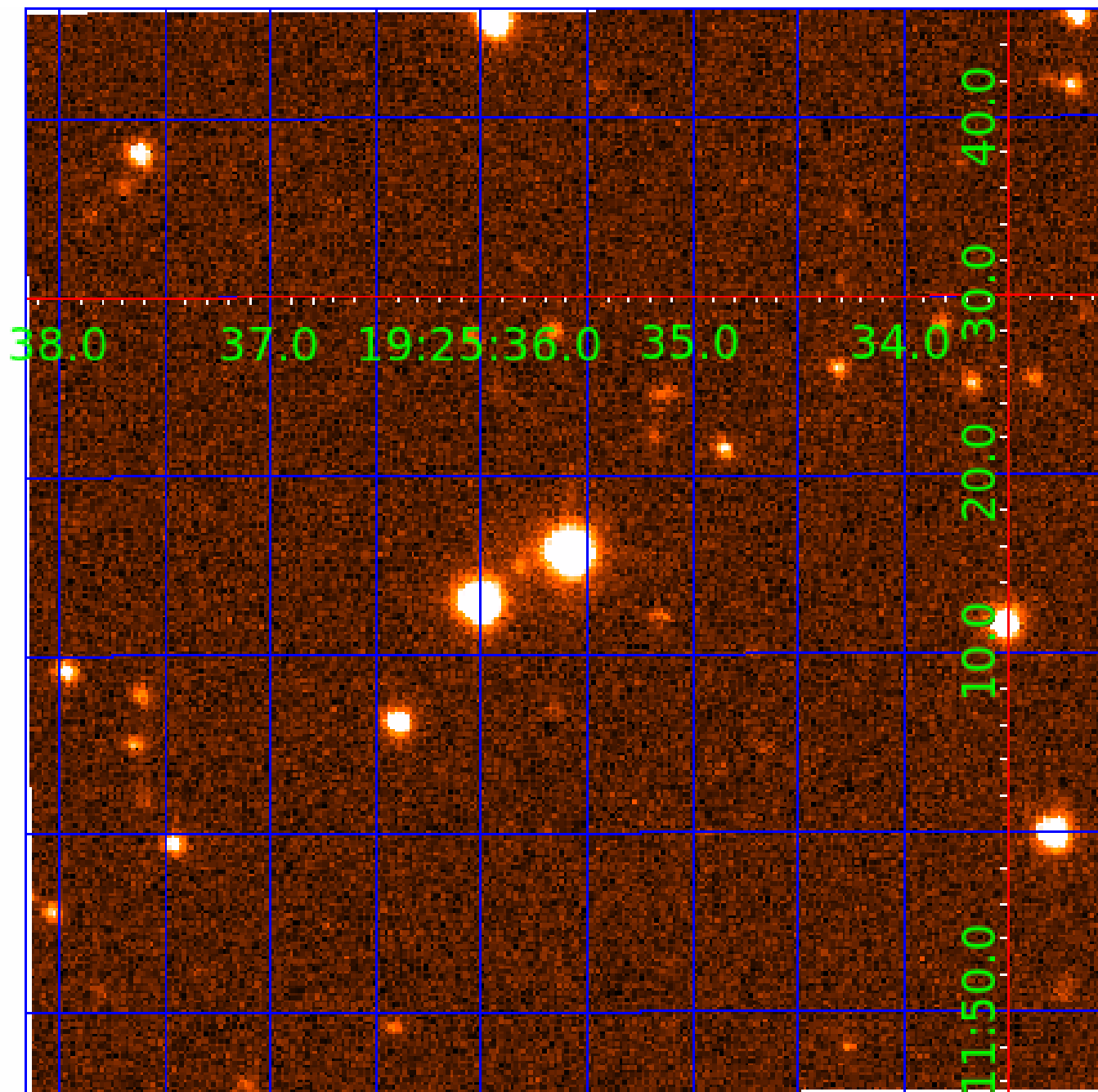


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003116298

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})
003116298-01	OBS	No	1.457309	131.507588	133.8	5.000	7.6	-1.0	2.07	10112	2.46	35276.65
003116298-02	OBS	No	413.971305	448.312894	196.8	12.483	9.7	6.8	2.07	10112	3.23	18.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003116298-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
003116298-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

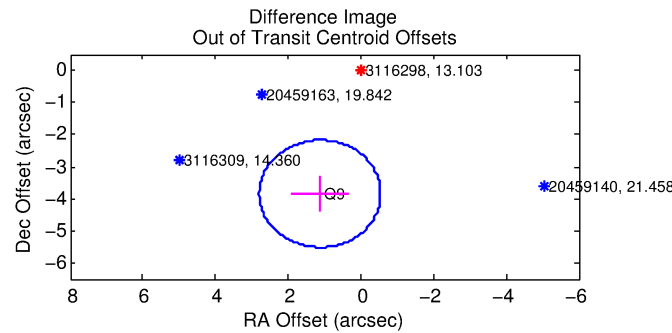
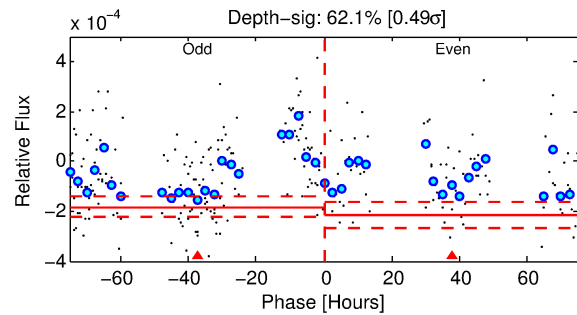
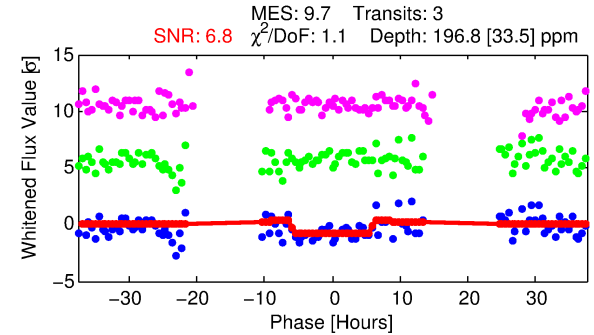
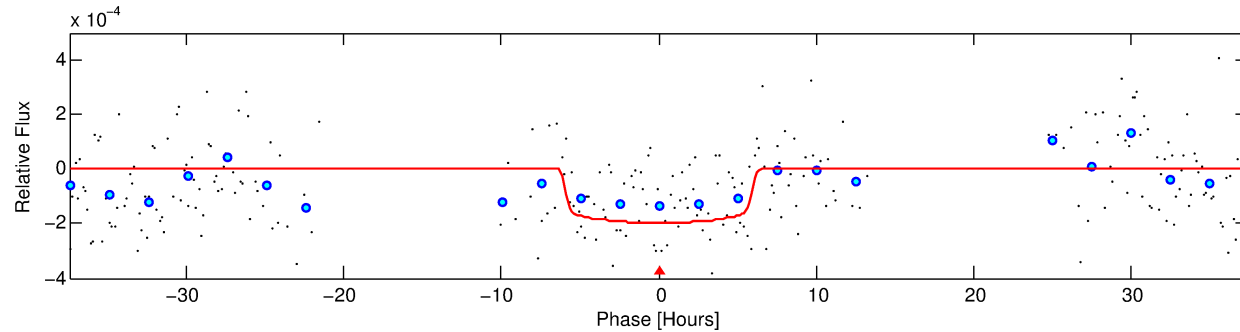
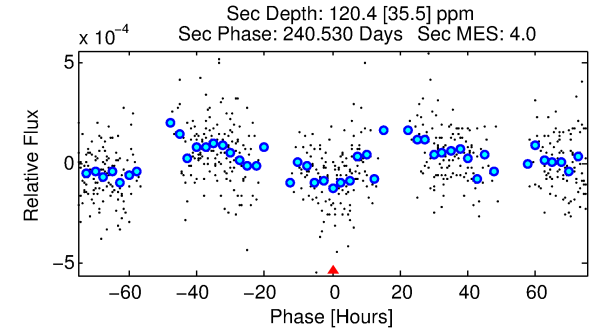
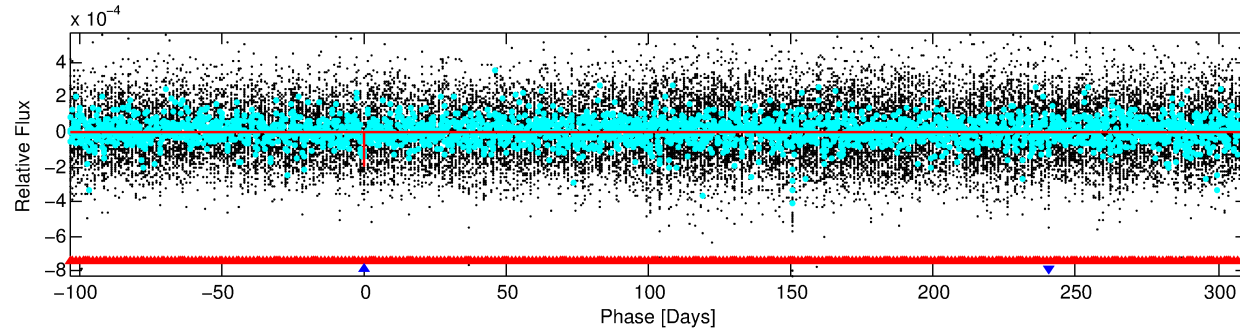
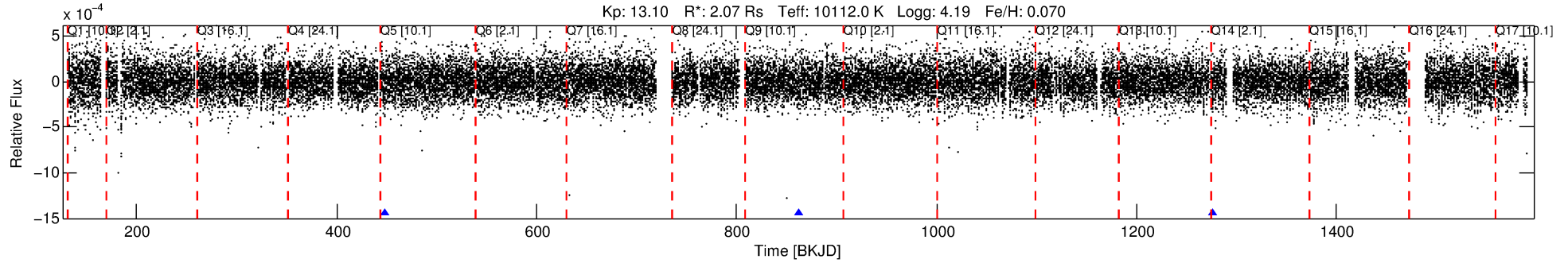
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003116298-02

No Significant Match Found

DV One-Page Summary

KIC: 3116298 Candidate: 2 of 2 Period: 413.971 d



DV Fit Results:

Period = 413.97130 [0.01276] d
Epoch = 448.3129 [0.0155] BKJD
Rp/R* = 0.0143 [0.0025]
a/R* = 147.45 [163.45]
b = 0.83 [0.42]
Seff = 18.89 [8.57]
Teq = 532 [60] K
Rp = 3.23 [1.38] Re
a = 1.4577 [0.4500] AU
Ag = 13521.63 [8394.41] [1.61 σ]
Teffp = 8863 [1079] K [7.71 σ]

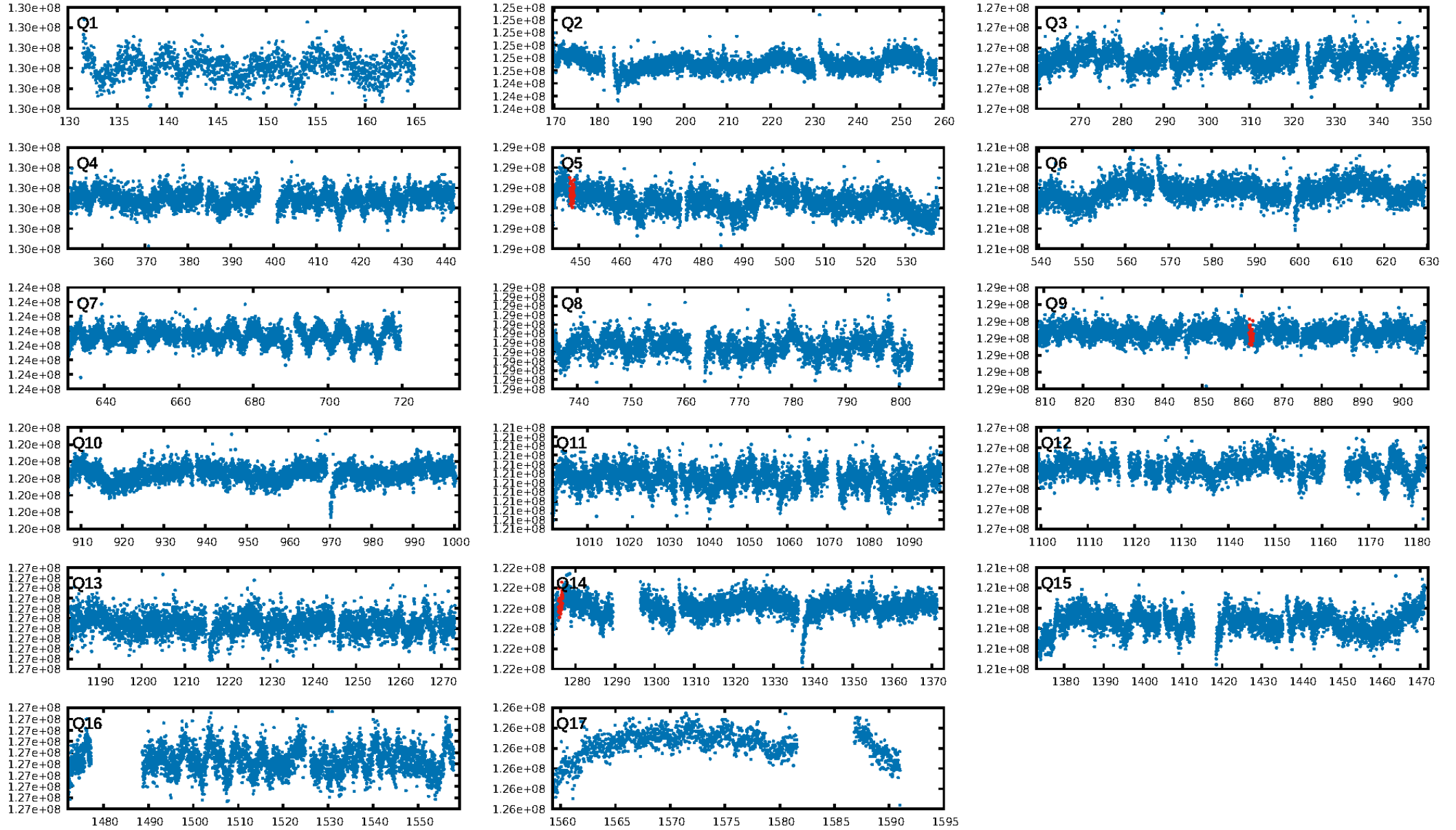
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [736.23 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.6%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 7.15e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.166
Centroid-sig: 39.1%
Centroid-so: 1.530 arcsec [0.89 σ]
OotOffset-rm: 4.007 arcsec [7.19 σ]
KicOffset-rm: 4.086 arcsec [7.20 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/3]

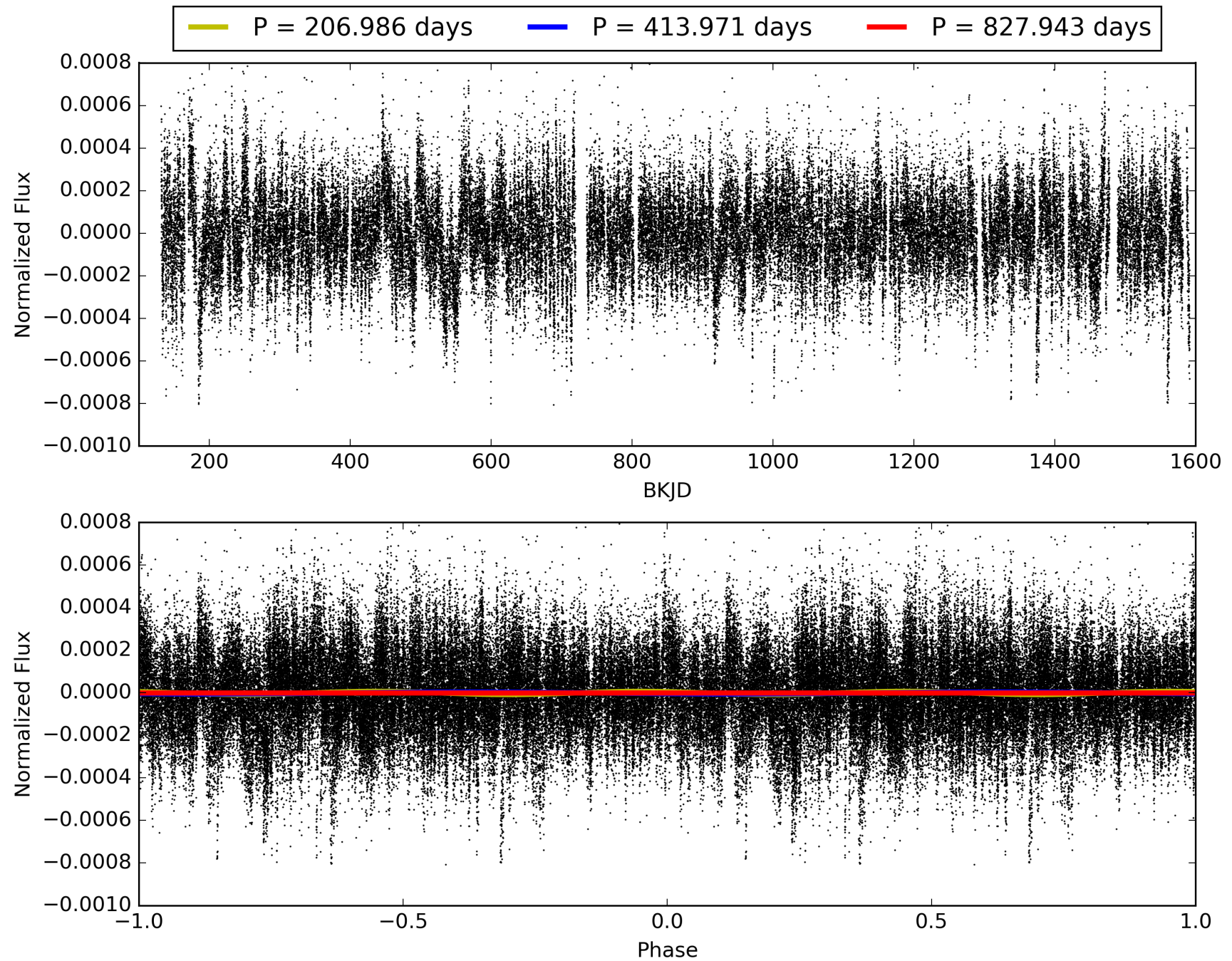
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:32:08 Z

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

TCE 003116298-02, PDC Light Curves

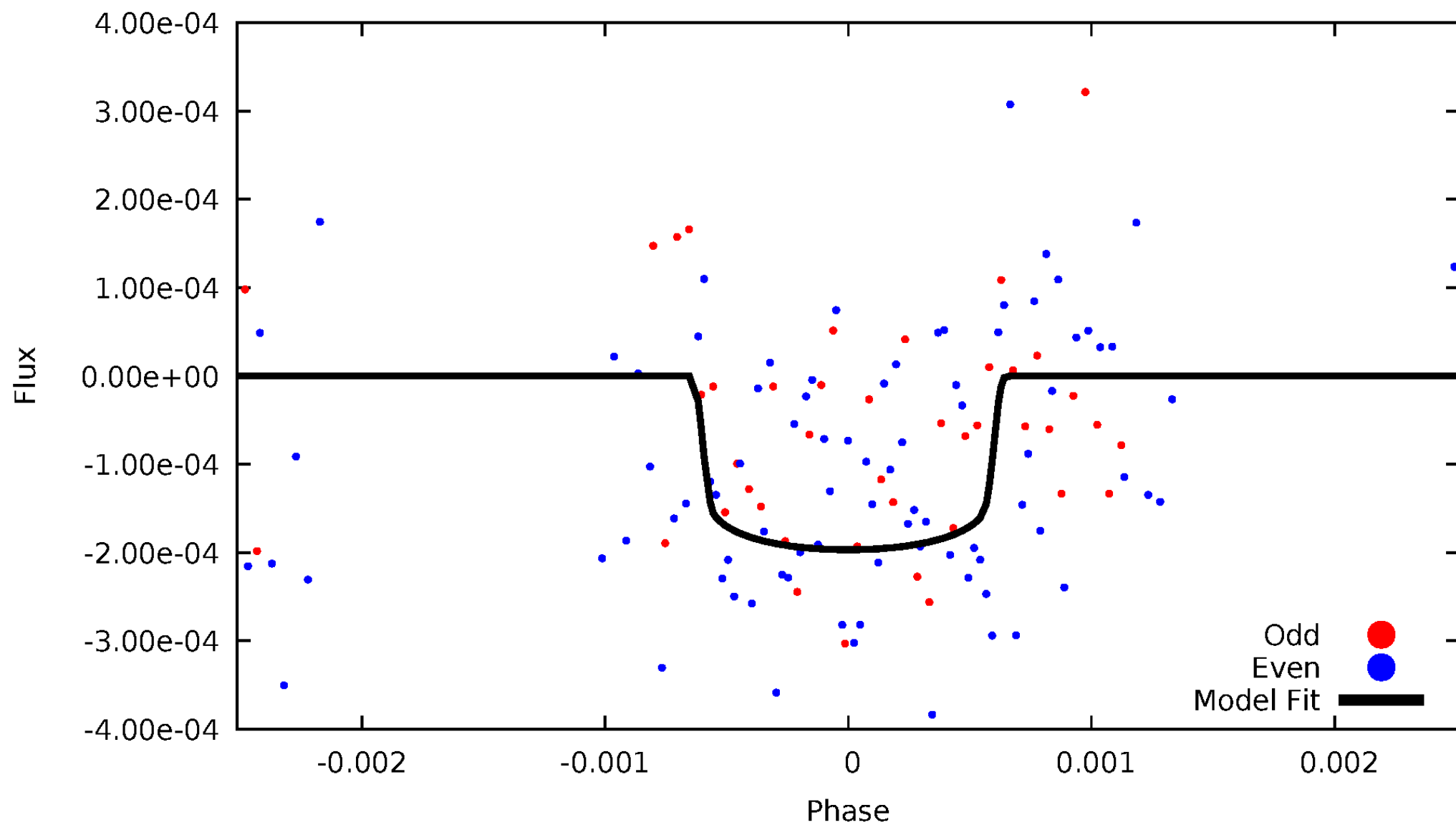


TCE 003116298-02



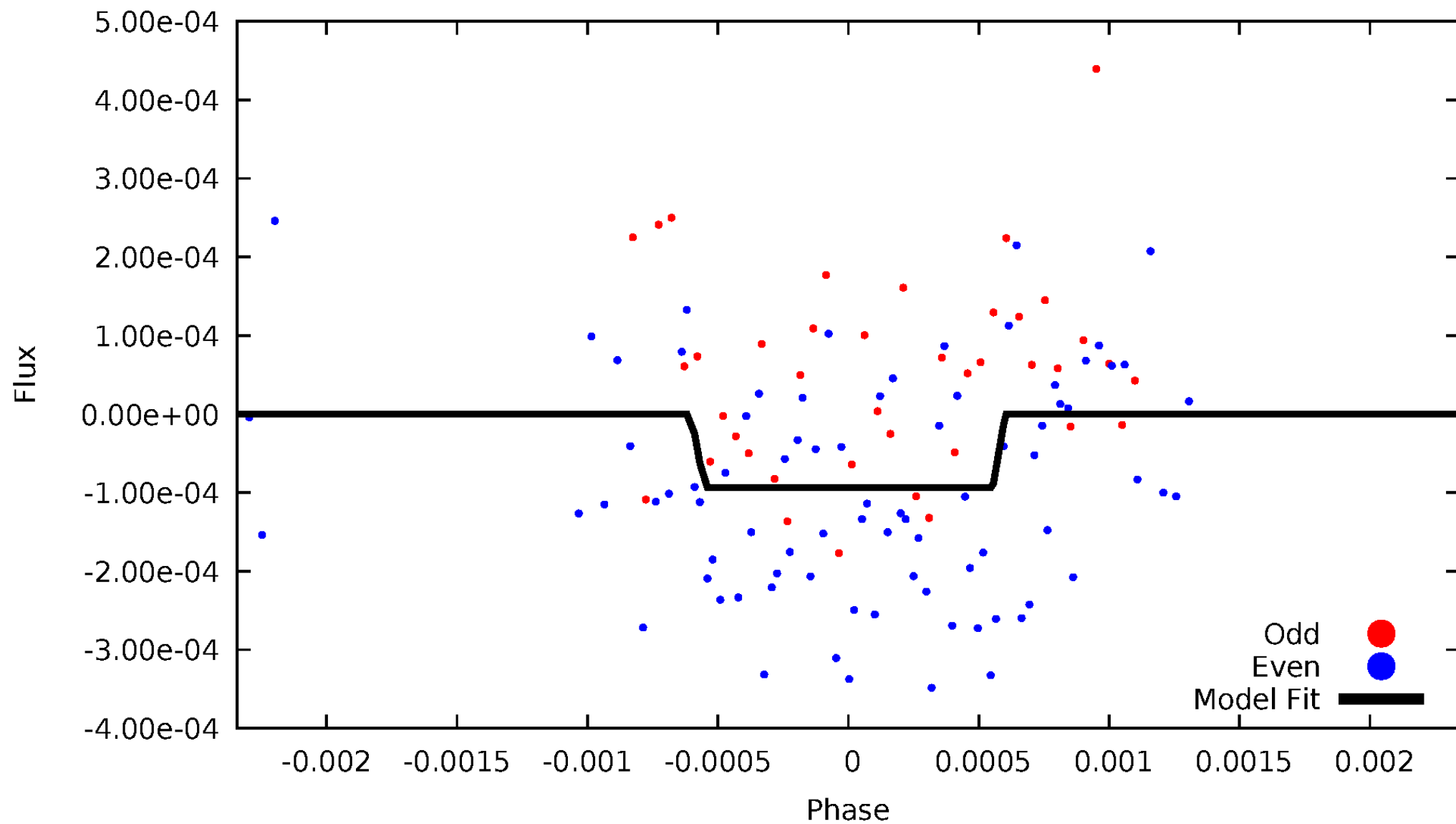
DV Odd/Even

TCE 003116298-02



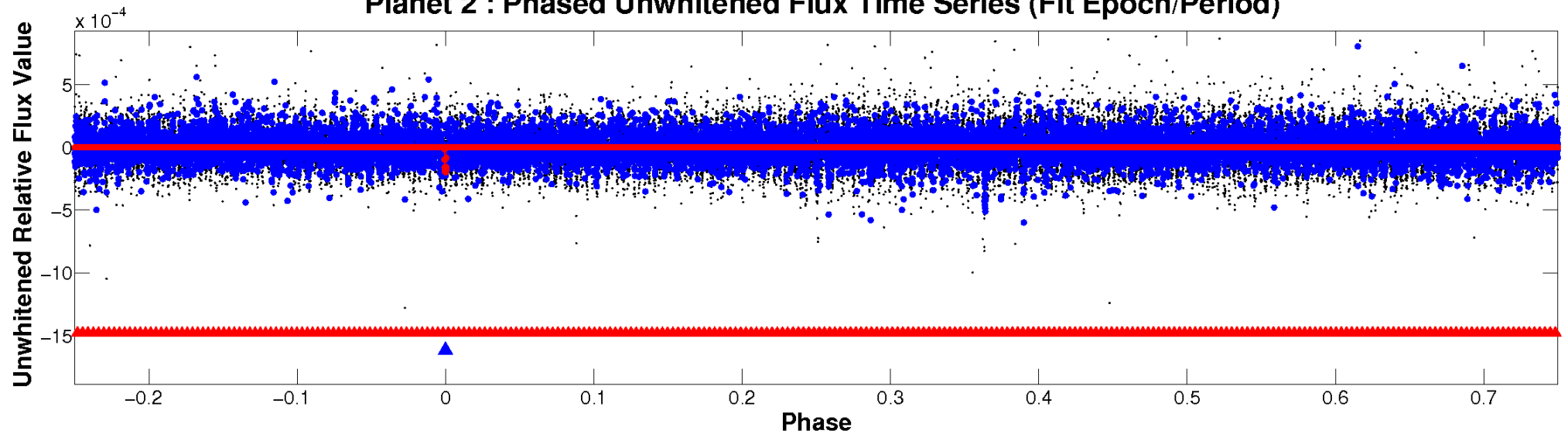
ALT Odd/Even

TCE 003116298-02

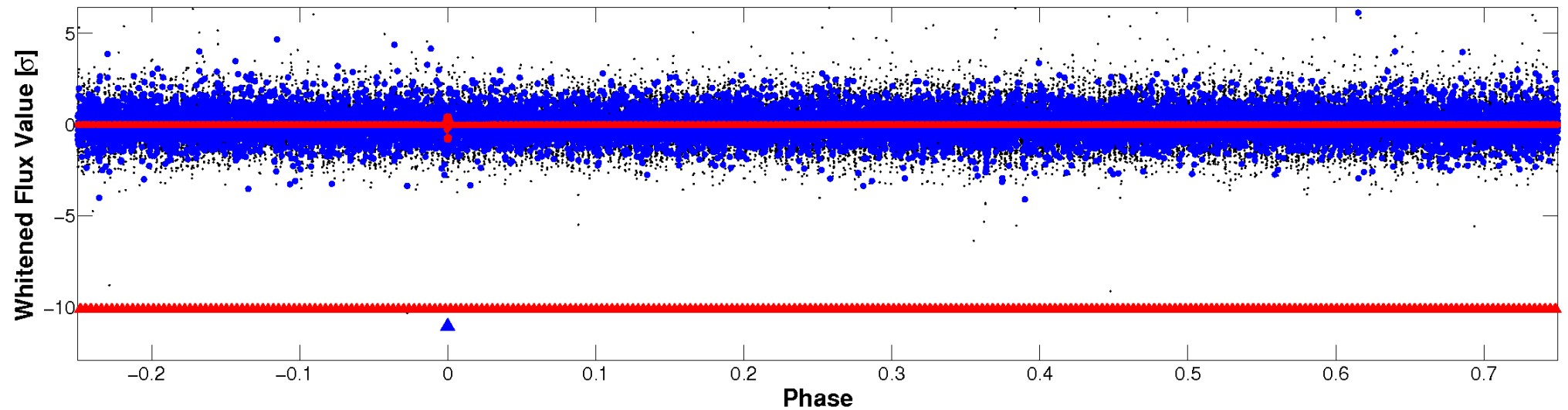


Non-Whitened Vs. Whitened Light Curve

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

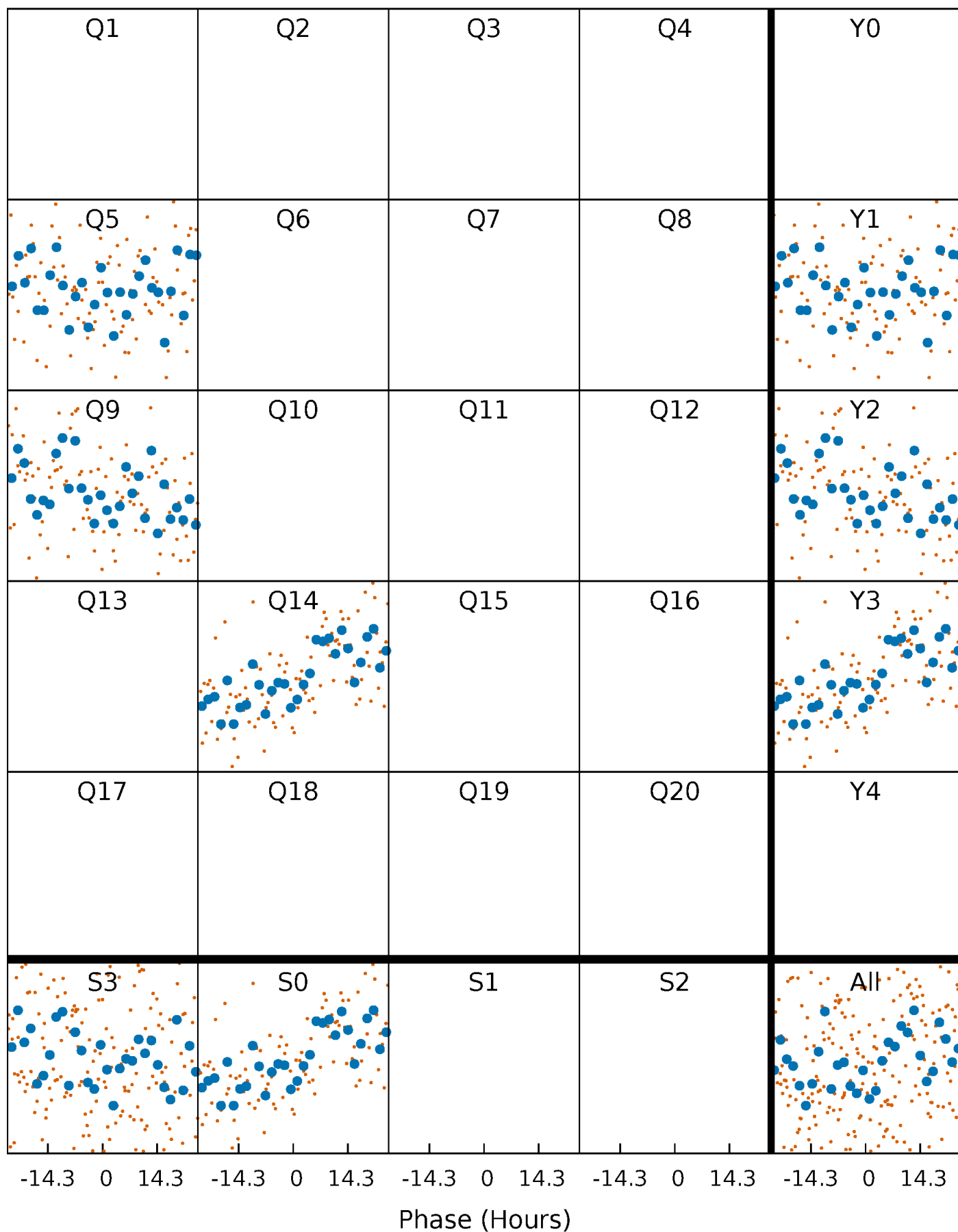


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



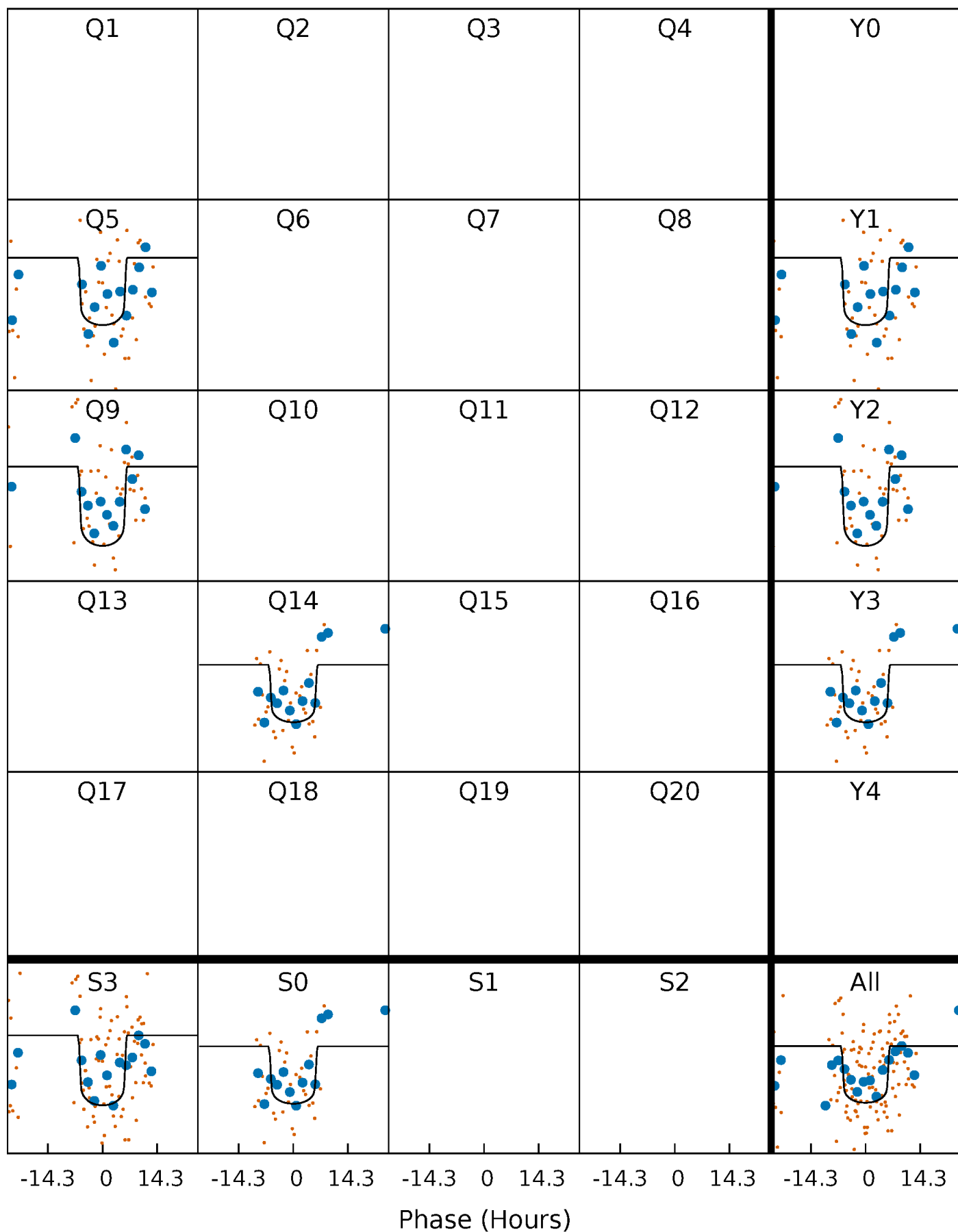
PDC Quarter-Phased Transit Curves

TCE 003116298-02 P=413.971304 Days $T_0=448.312894$ (BKJD)



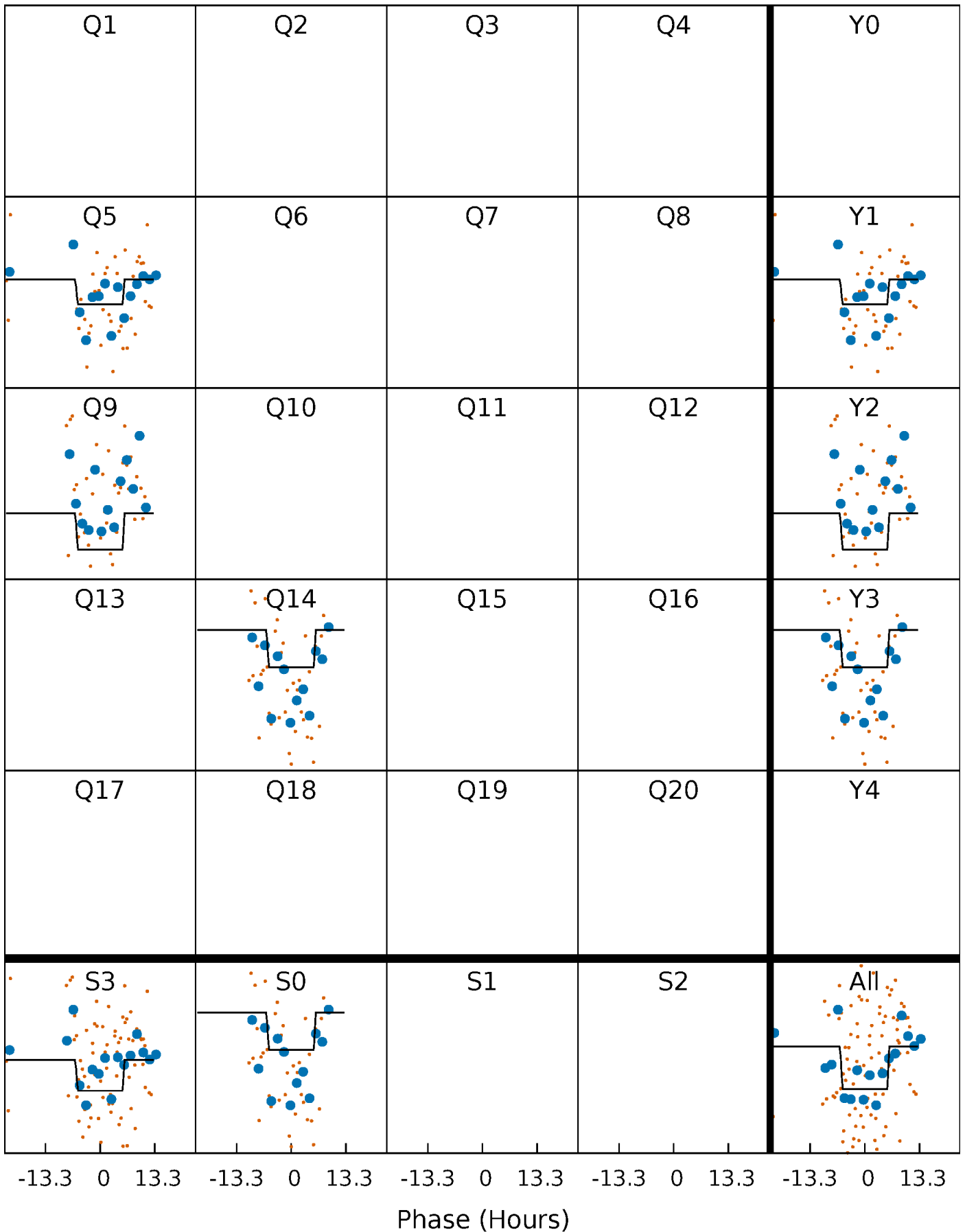
DV Quarter-Phased Transit Curves

TCE 003116298-02 $P=413.971304$ Days $T_0=448.312894$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

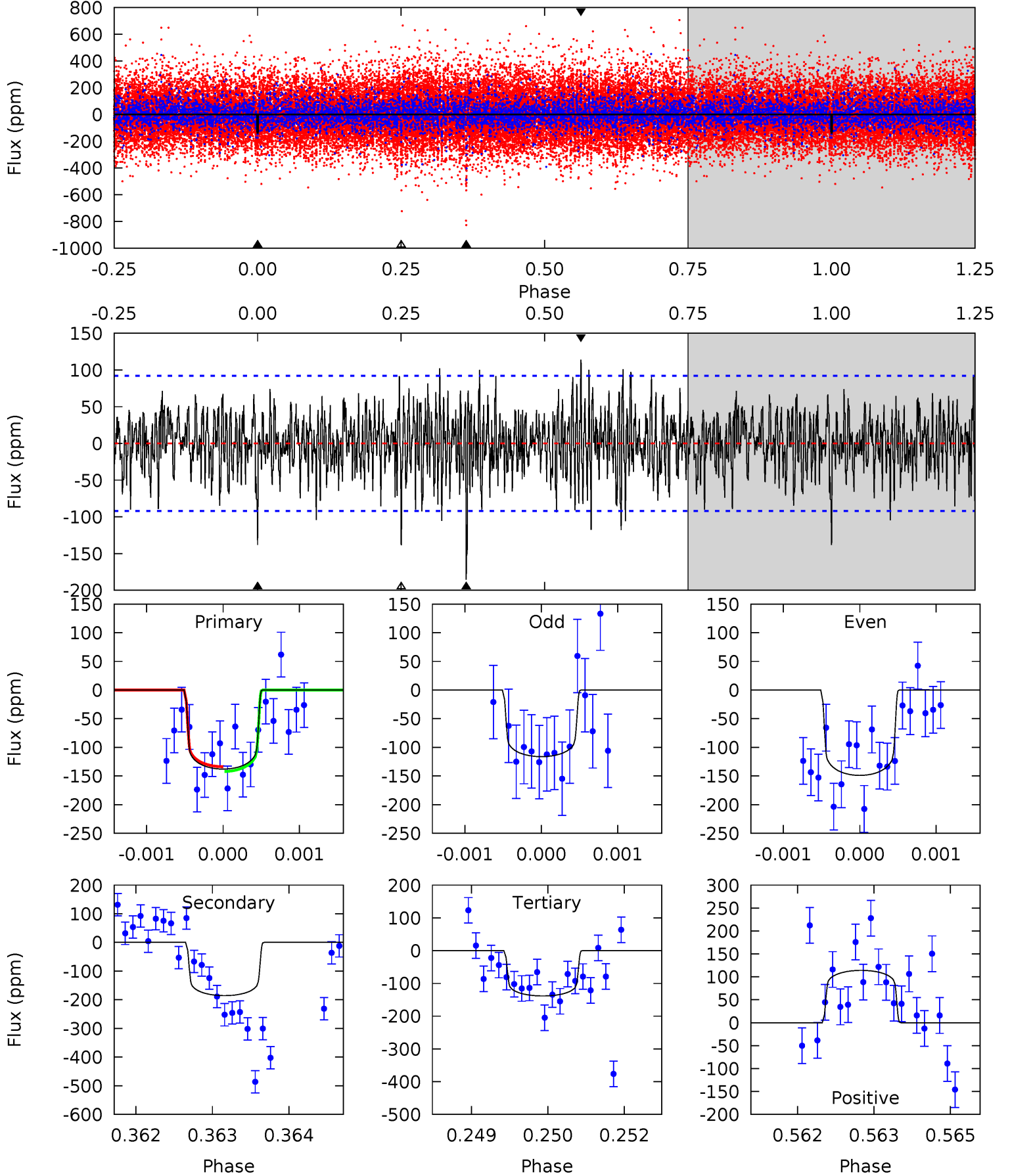
TCE 003116298-02 $P=413.970303$ Days $T_0=448.323554$ (BKJD)



DV Model-Shift Uniqueness Test

003116298-02, $P = 413.971304$ Days, $E = 34.341590$ Days

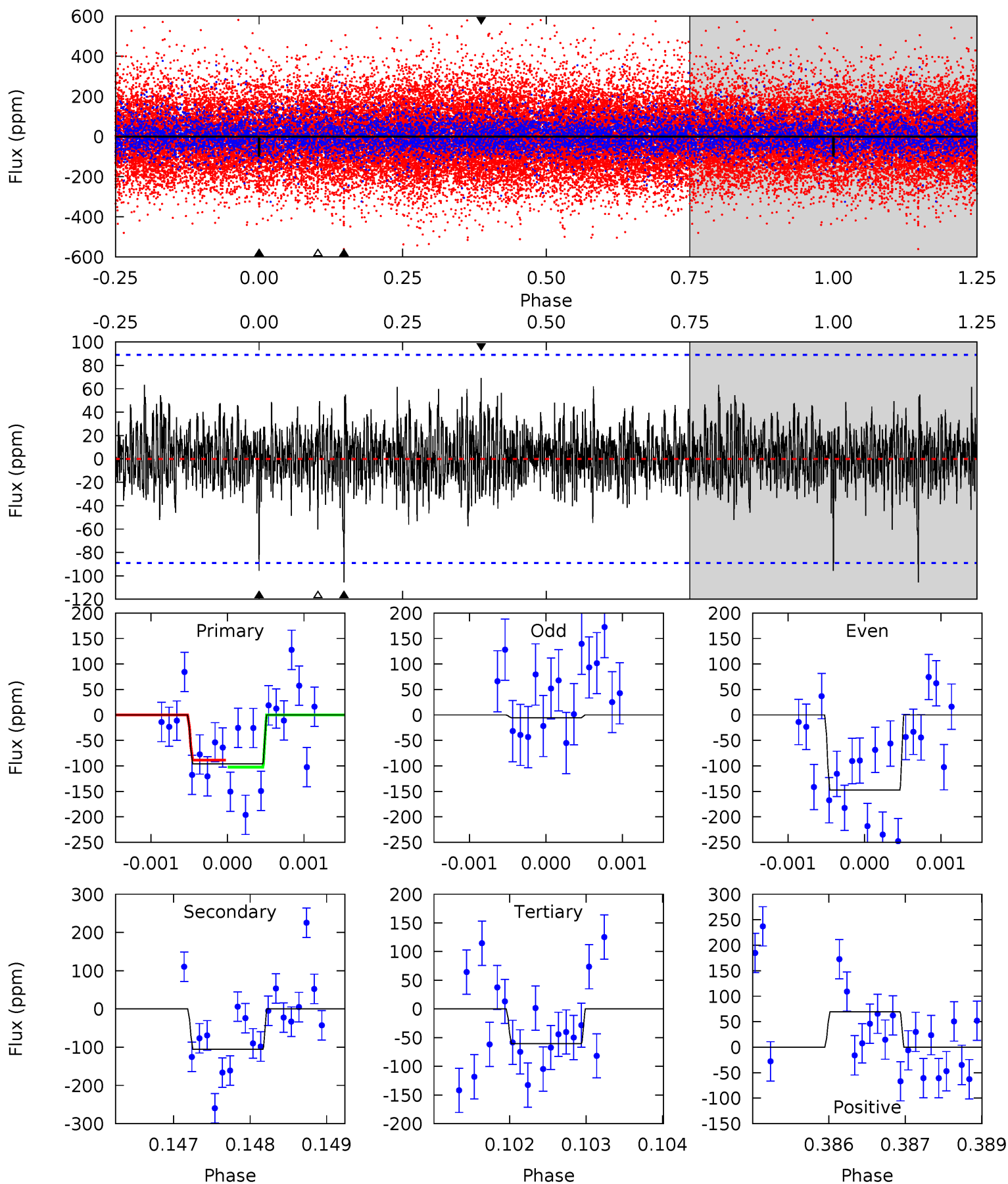
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.10	10.9	8.12	6.69	5.41	3.22	2.10	-0.03	1.40	2.77	4.20	0.90	0.94	0.38	0.25



Alt Model-Shift Uniqueness Test

003116298-02, P = 413.970303 Days, E = 34.353251 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.83	6.42	3.68	4.22	5.42	3.24	1.07	2.15	1.61	2.74	2.20	4.05	0.80	0.40	0.42



Stellar Parameters For KIC 003116298

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	10112^{+321}_{-429}	$4.188^{+0.176}_{-0.215}$	$0.070^{+0.050}_{-0.600}$	$2.070^{+0.810}_{-0.540}$	$2.408^{+0.385}_{-0.577}$	$0.382^{+0.422}_{-0.210}$
	+3%/-4%	+4%/-5%	+71%/-857%	+39%/-26%	+16%/-24%	+110%/-55%
Source	KIC0	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 003116298-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-186 ± 17	$3.22^{+0.86}_{-0.67}$	745^{+70}_{-57}	9712^{+1539}_{-1112}	20557^{+11564}_{-7906}
Alt.	-105 ± 16	$2.17^{+0.71}_{-0.61}$	745^{+67}_{-59}	10563^{+3097}_{-1683}	25791^{+24260}_{-11728}

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

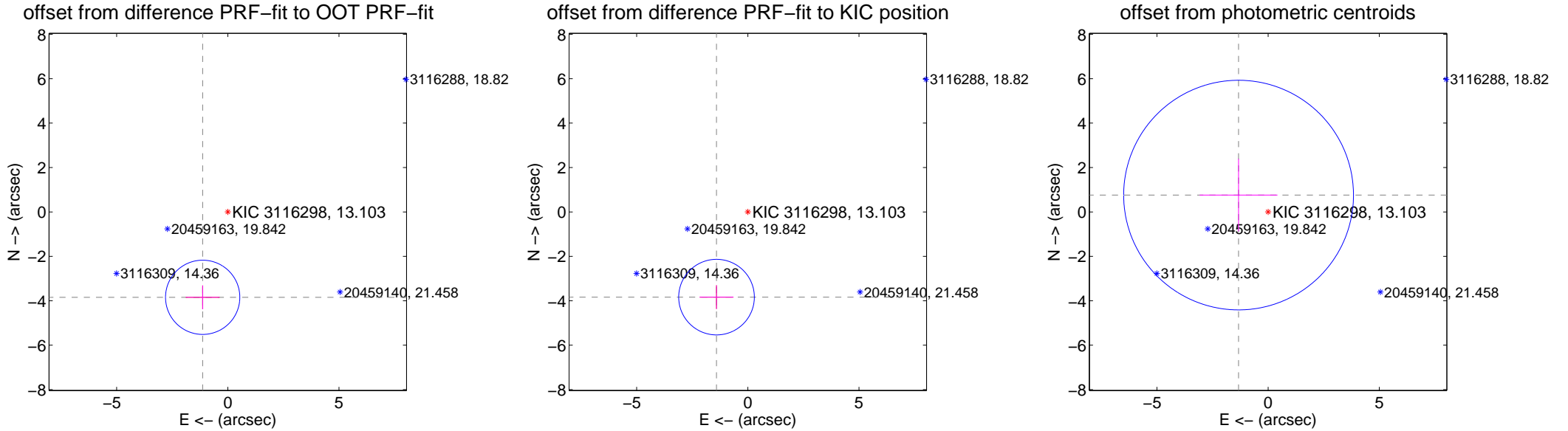
DV Centroid Data

Supplemental centroid analysis for 003116298-02. Kepler magnitude: 13.10. Transit SNR 6.81

There are 0 quarters with good PRF difference image offsets

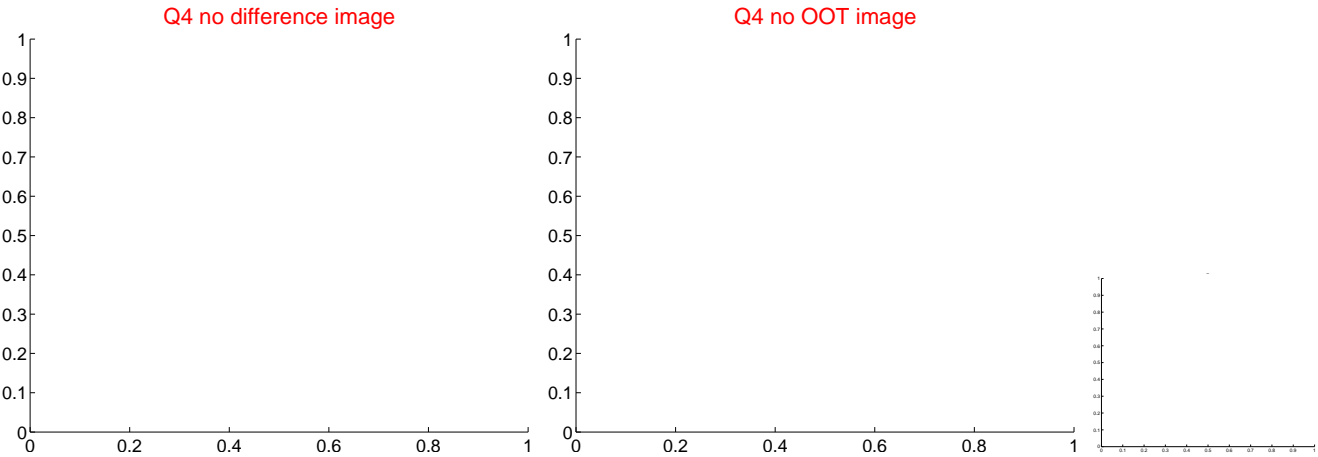
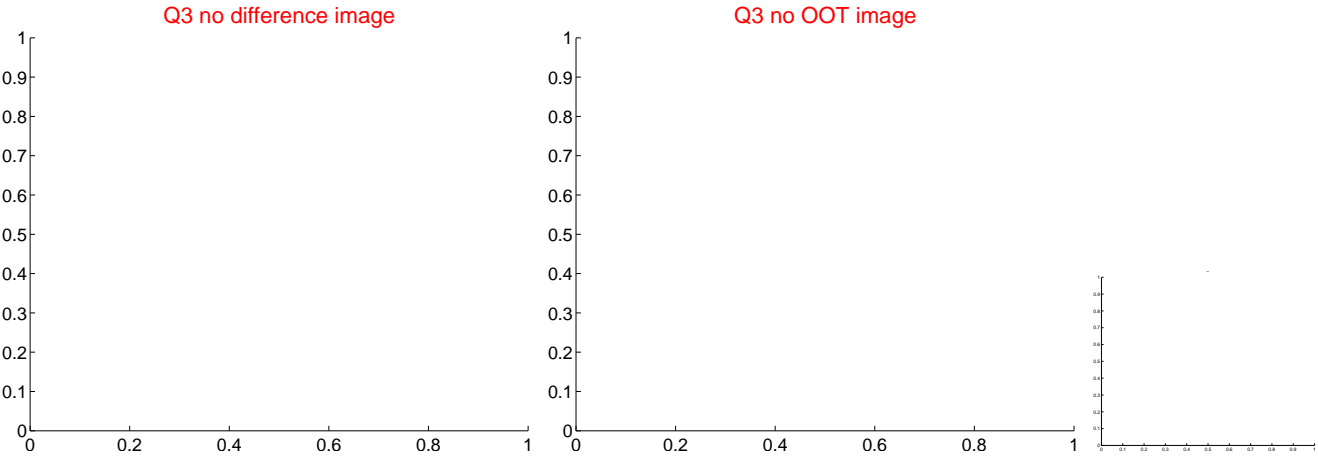
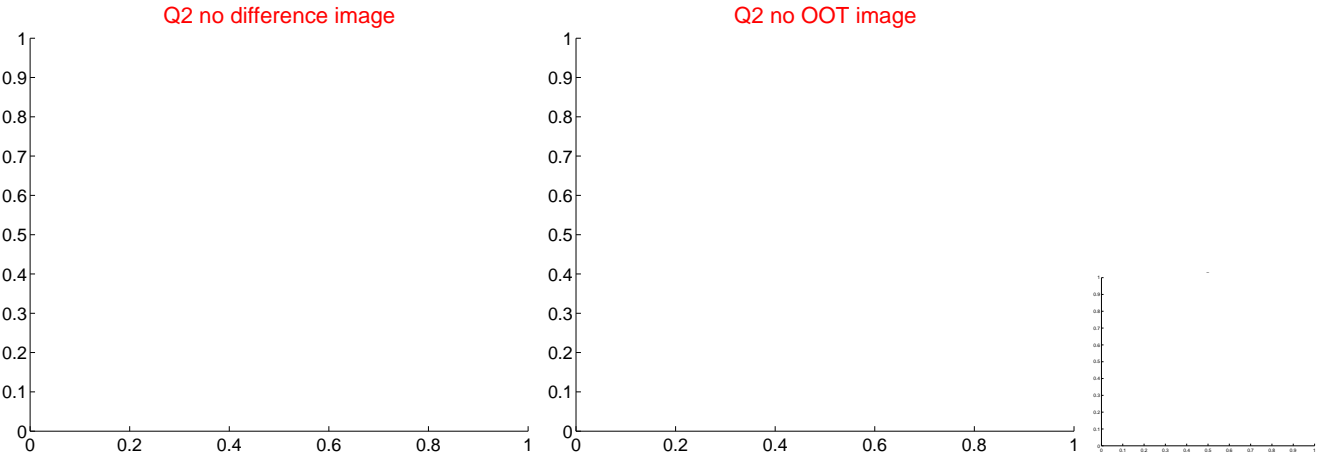
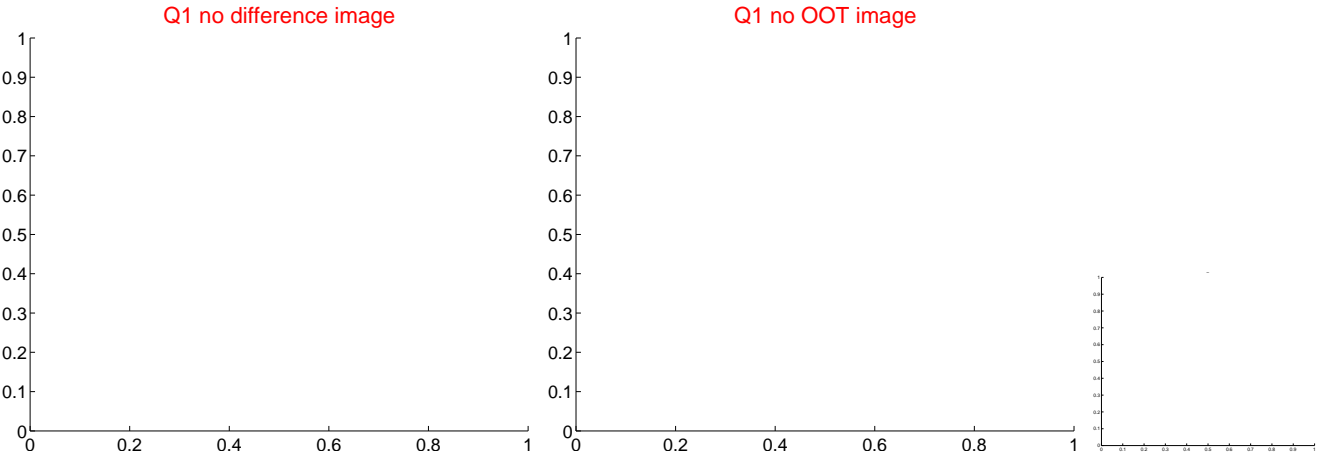
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.007 ± 0.557	7.19	1.131 ± 0.762	-3.844 ± 0.536
PRF-fit source offset from KIC position	4.086 ± 0.567	7.20	1.408 ± 0.762	-3.836 ± 0.536
photometric centroid source offset	1.53 ± 1.72	0.89	1.33 ± 1.75	0.76 ± 1.64

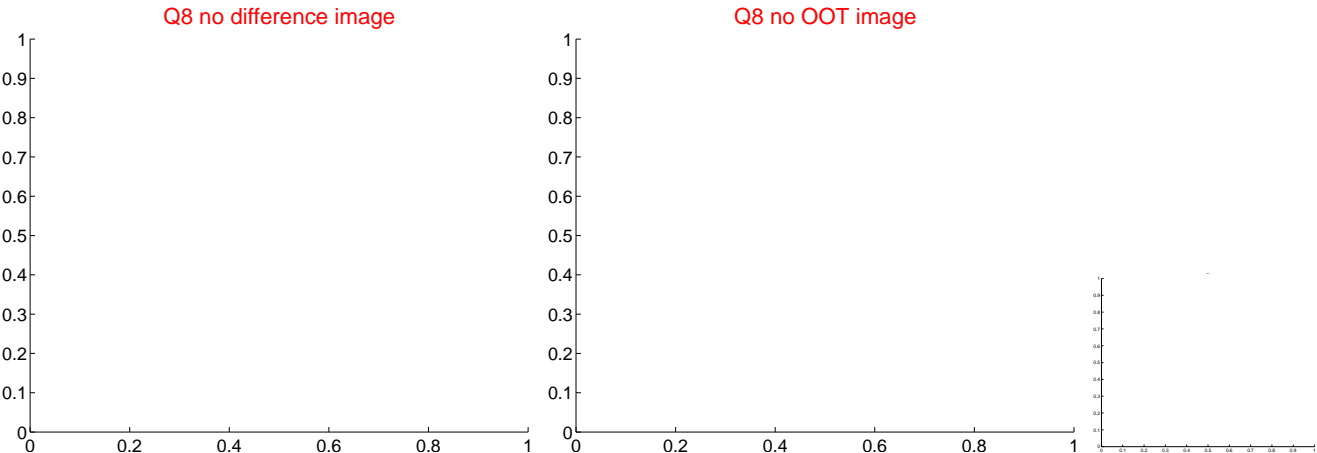
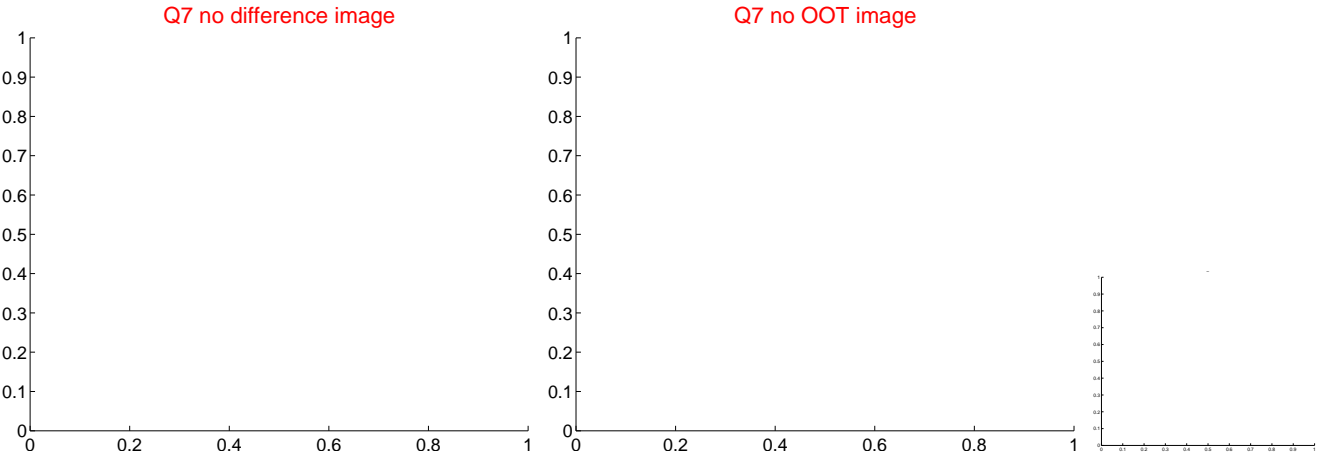
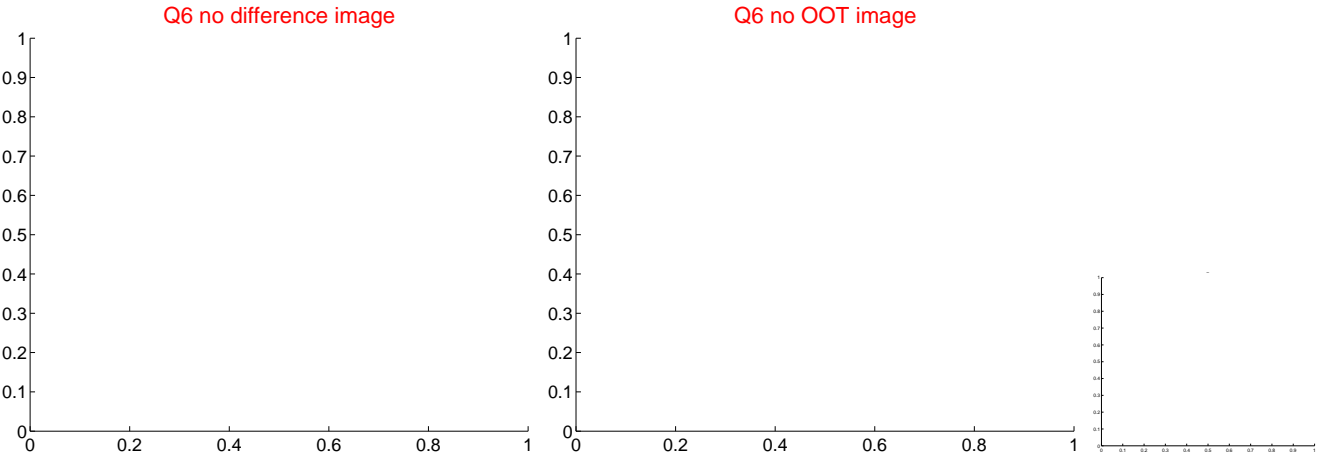
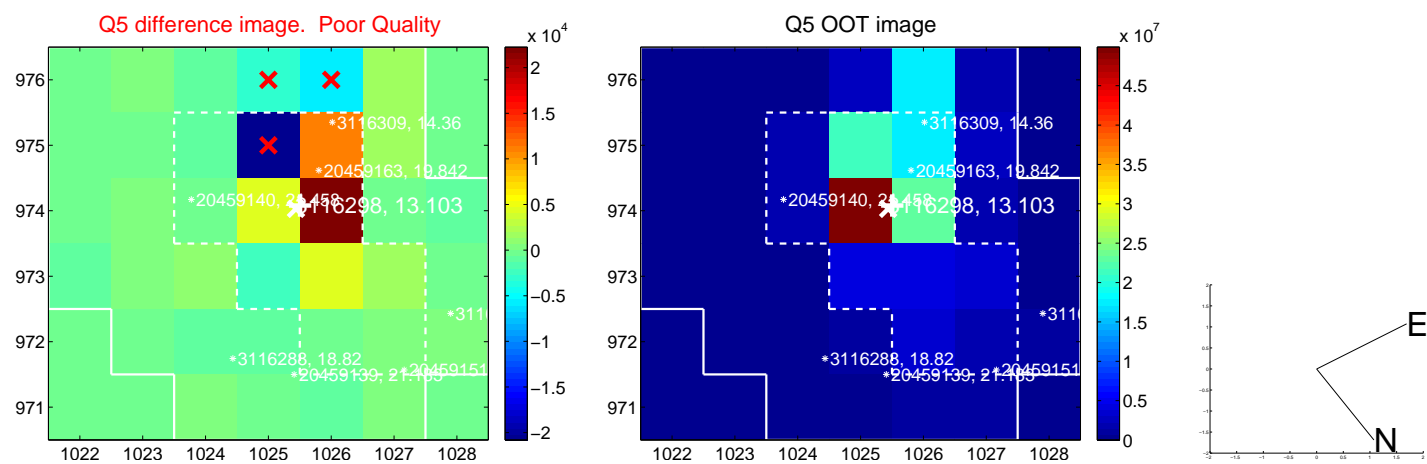


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

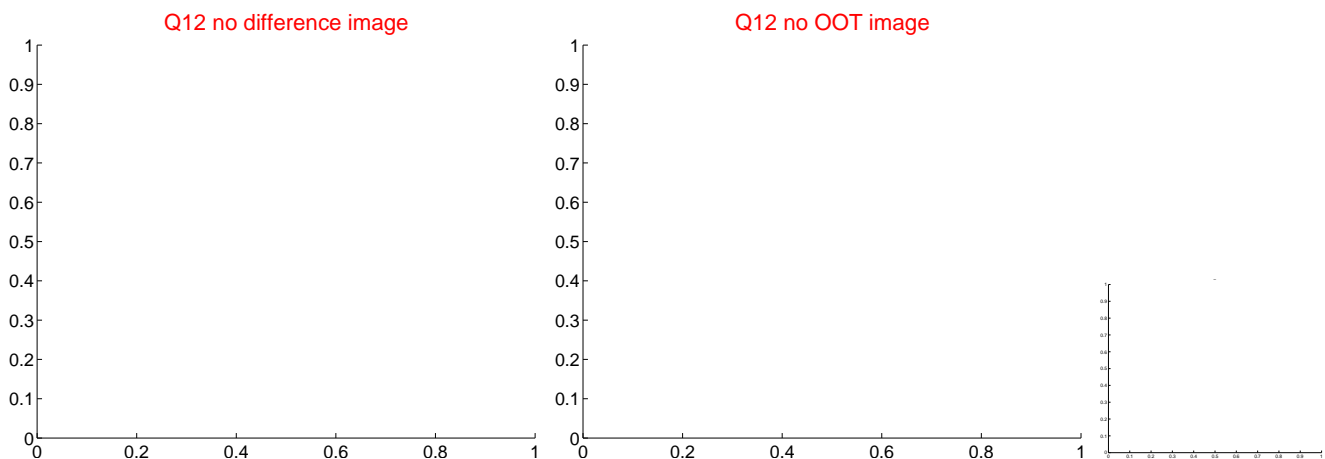
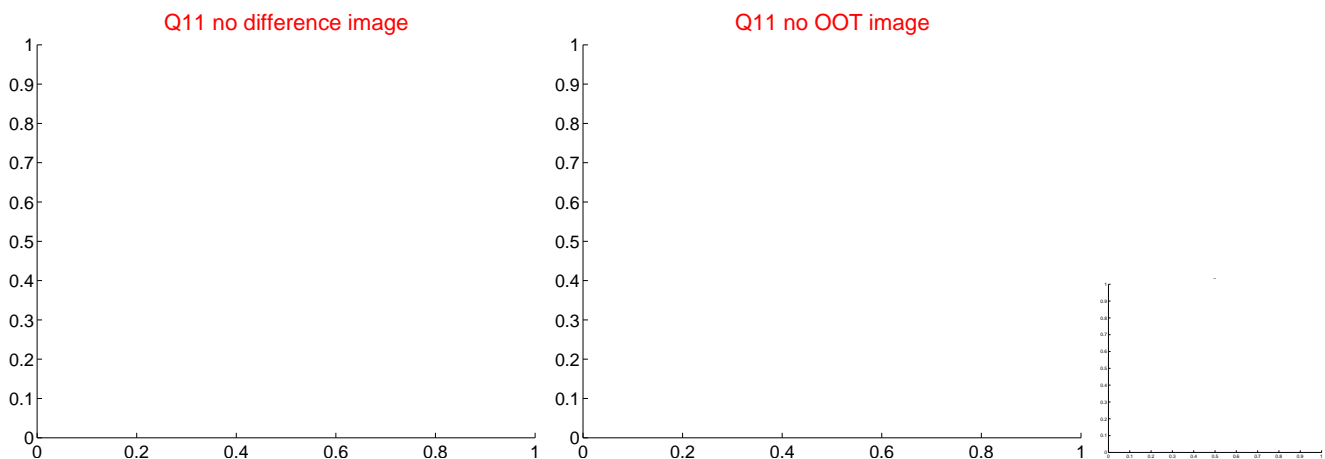
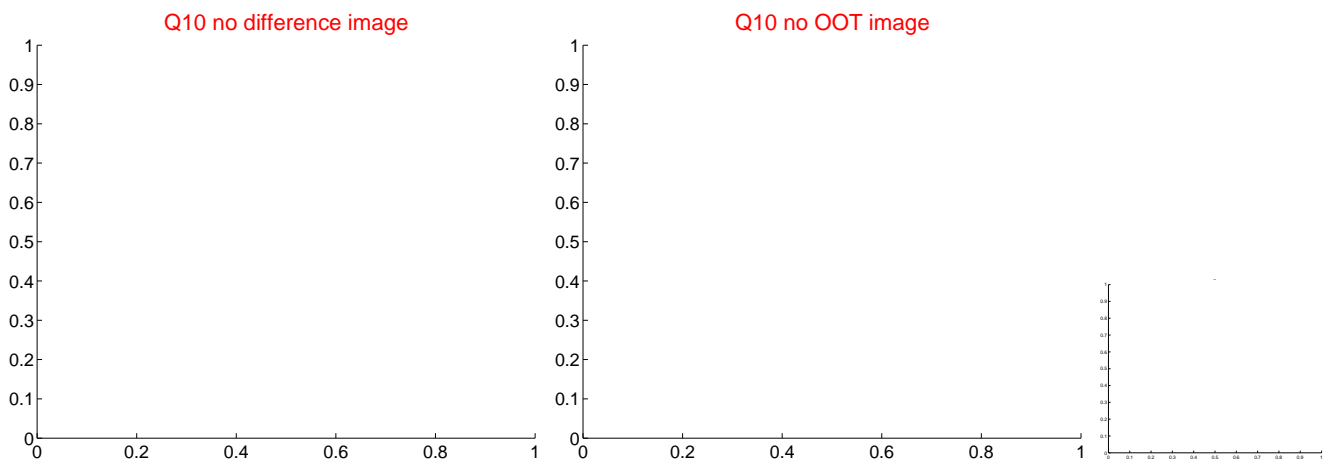
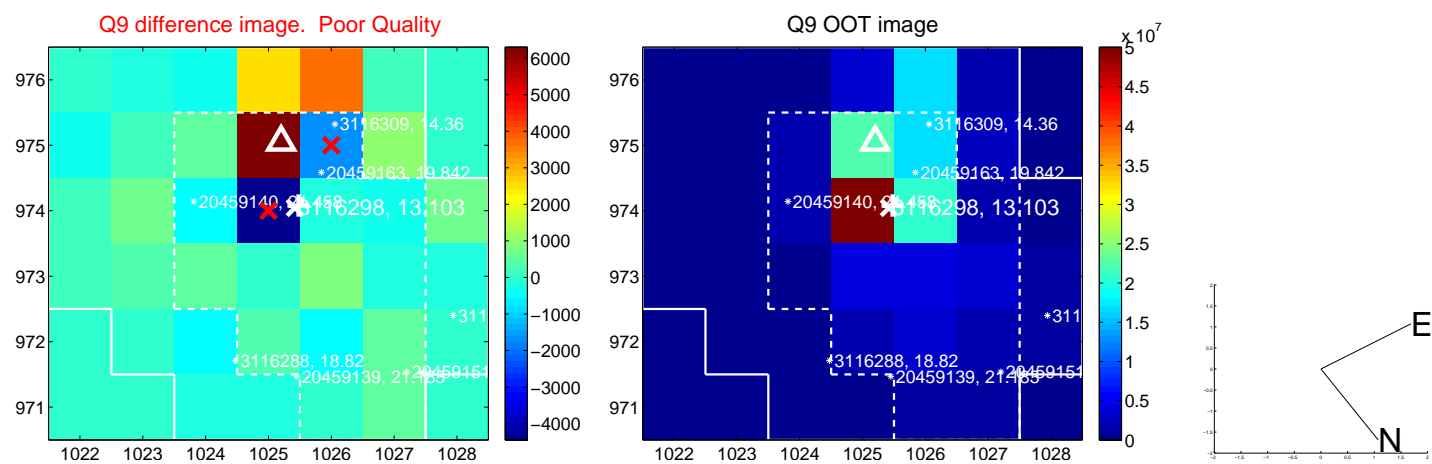
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



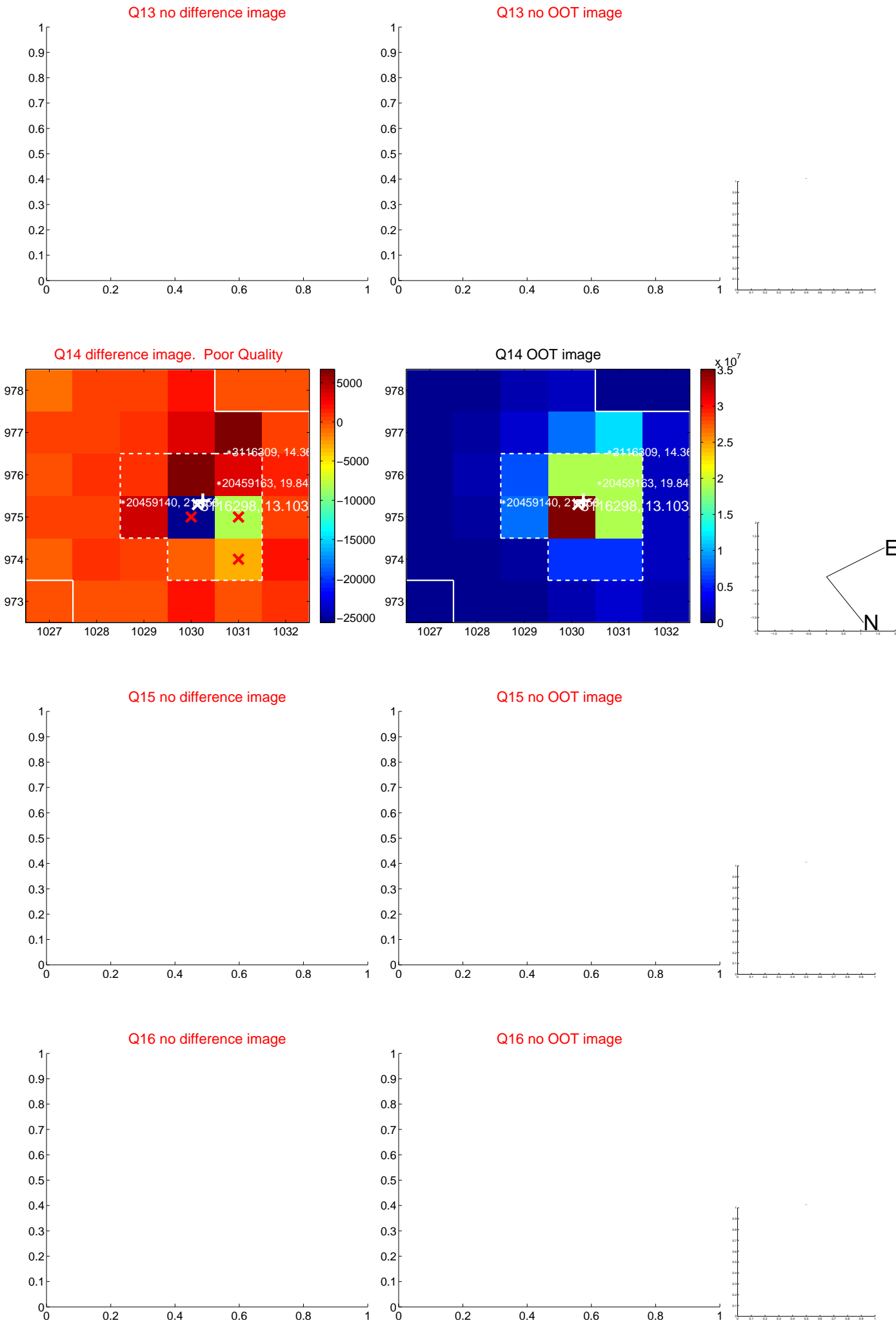
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



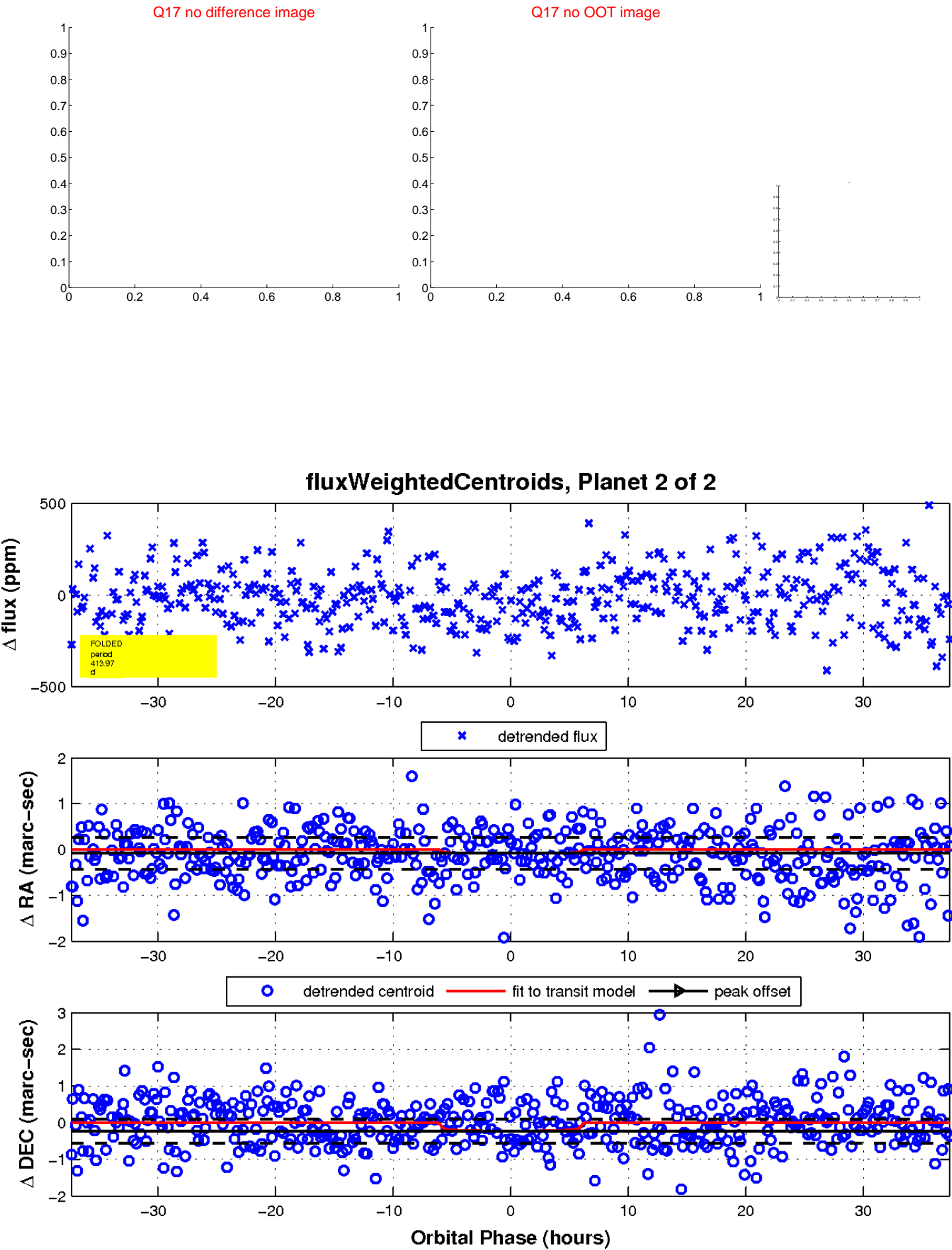
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

