

KIC 004489829

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})
004489829-01	OBS	No	1.455774	132.625915	73.2	5.946	11.1	12.0	0.84	5845	0.74	1222.93
004489829-02	OBS	No	1.455793	131.868484	67.3	5.743	11.0	11.8	0.84	5845	0.78	1222.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004489829-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_KIC_POS
004489829-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

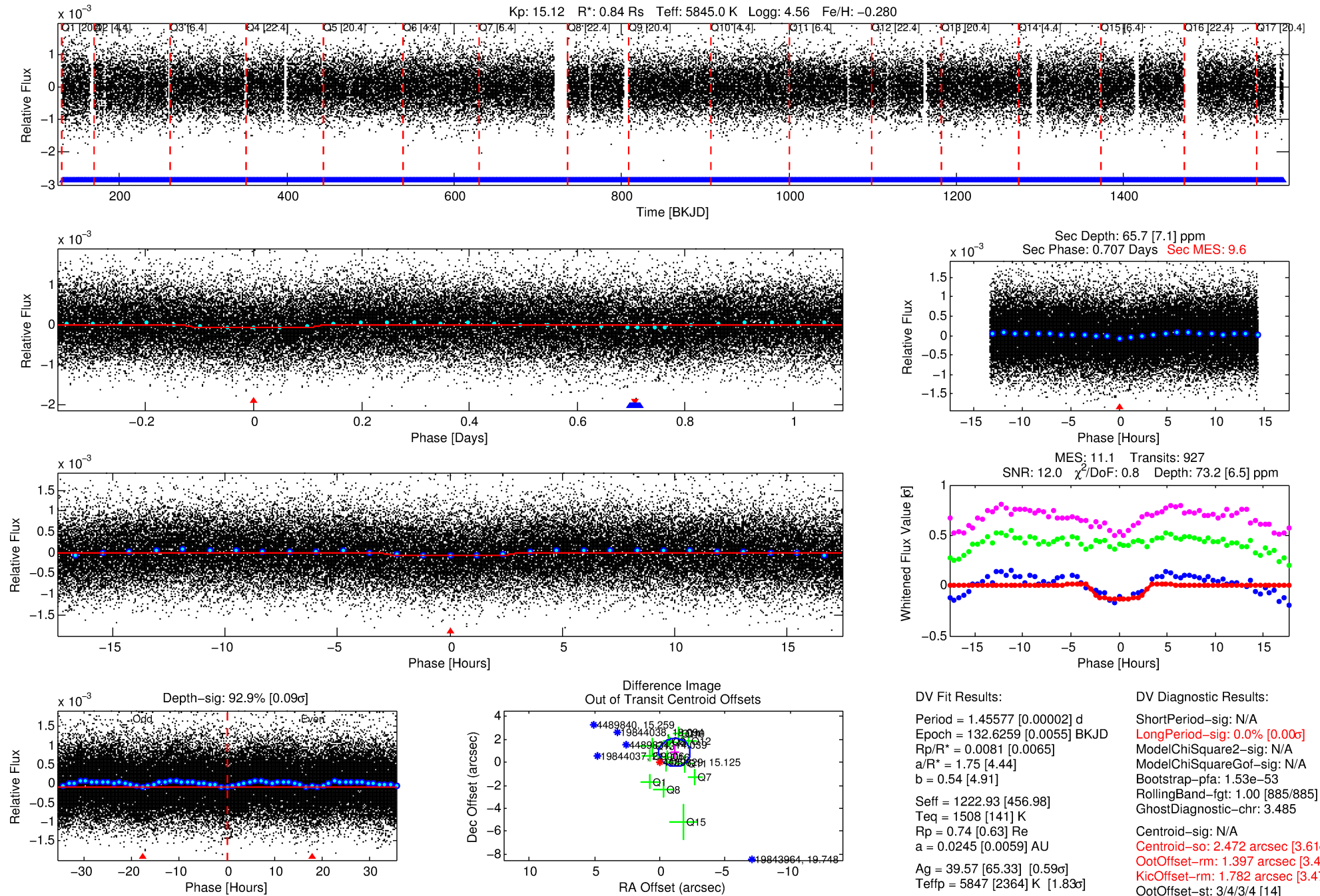
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004489829-01

No Significant Match Found

DV One-Page Summary

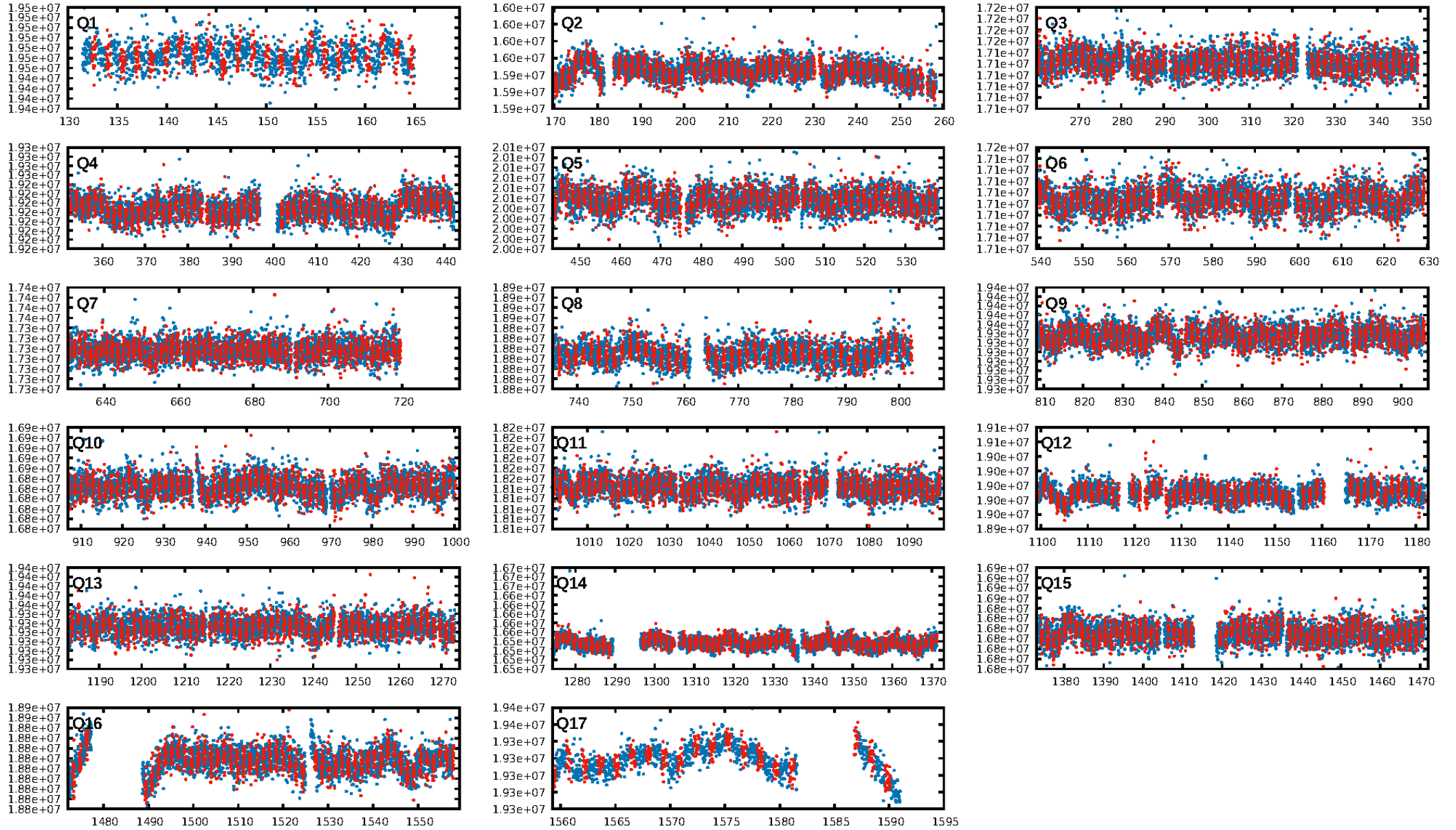
KIC: 4489829 Candidate: 1 of 2 Period: 1.456 d



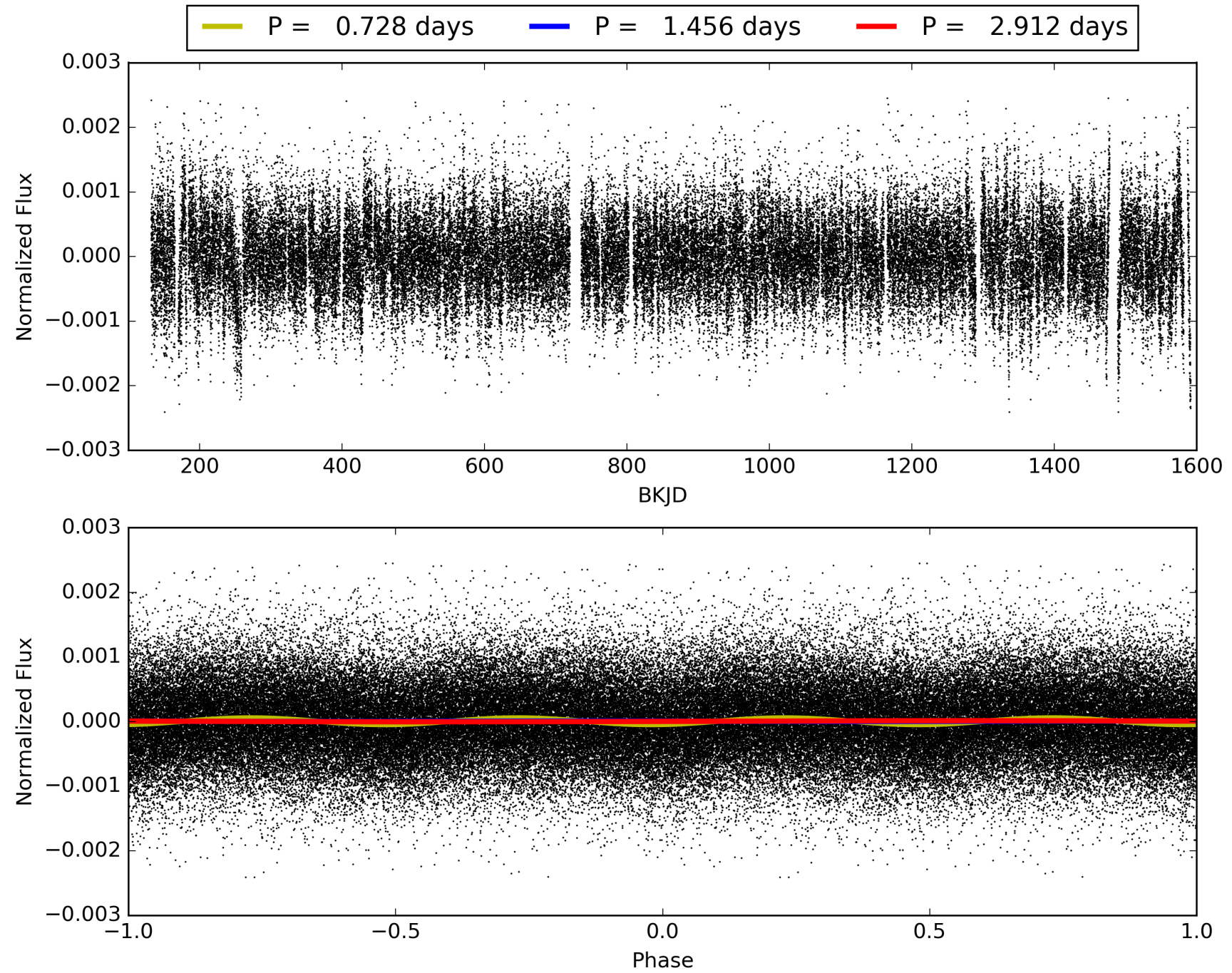
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:20:18 Z

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

TCE 004489829-01, PDC Light Curves

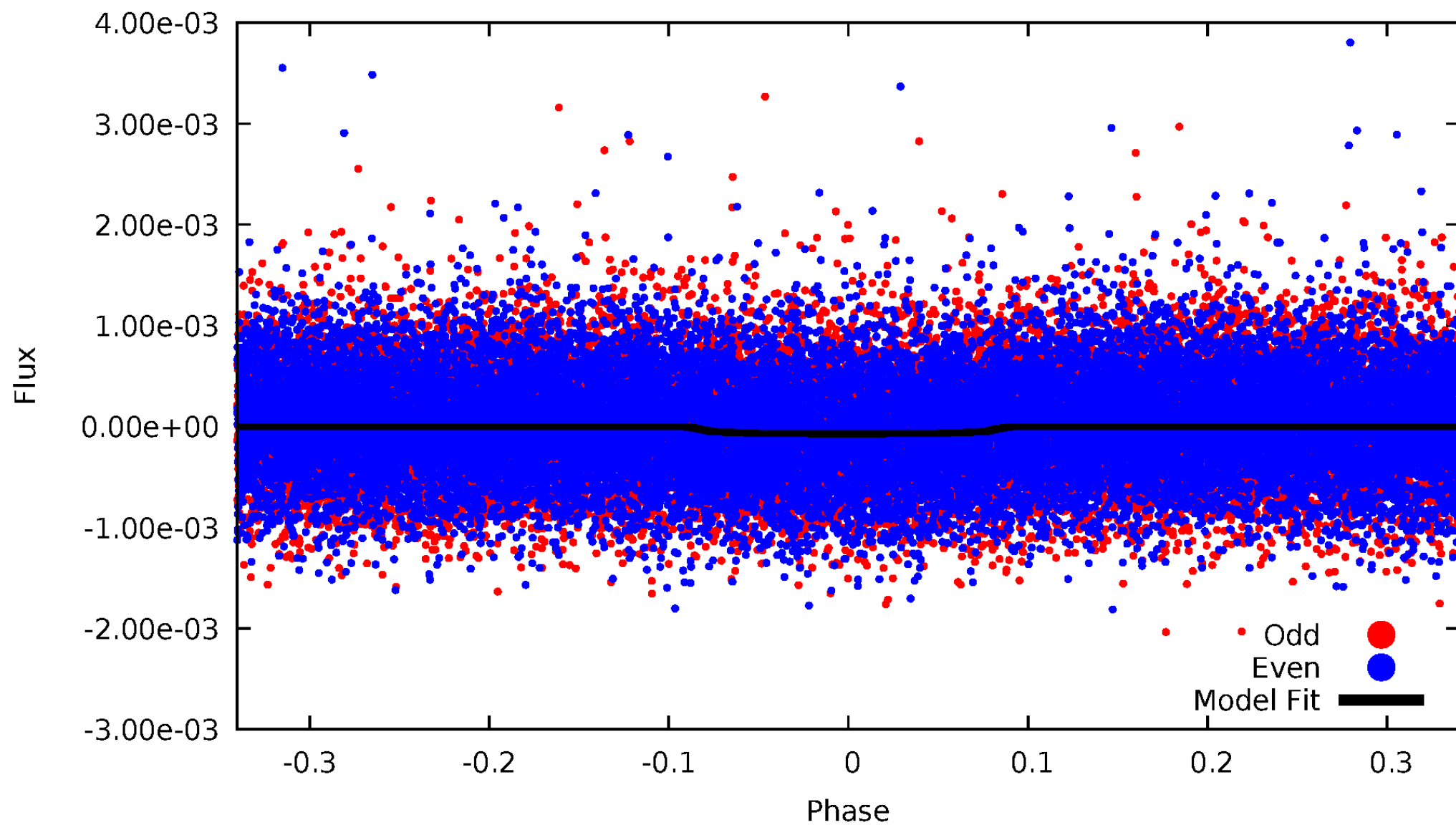


TCE 004489829-01



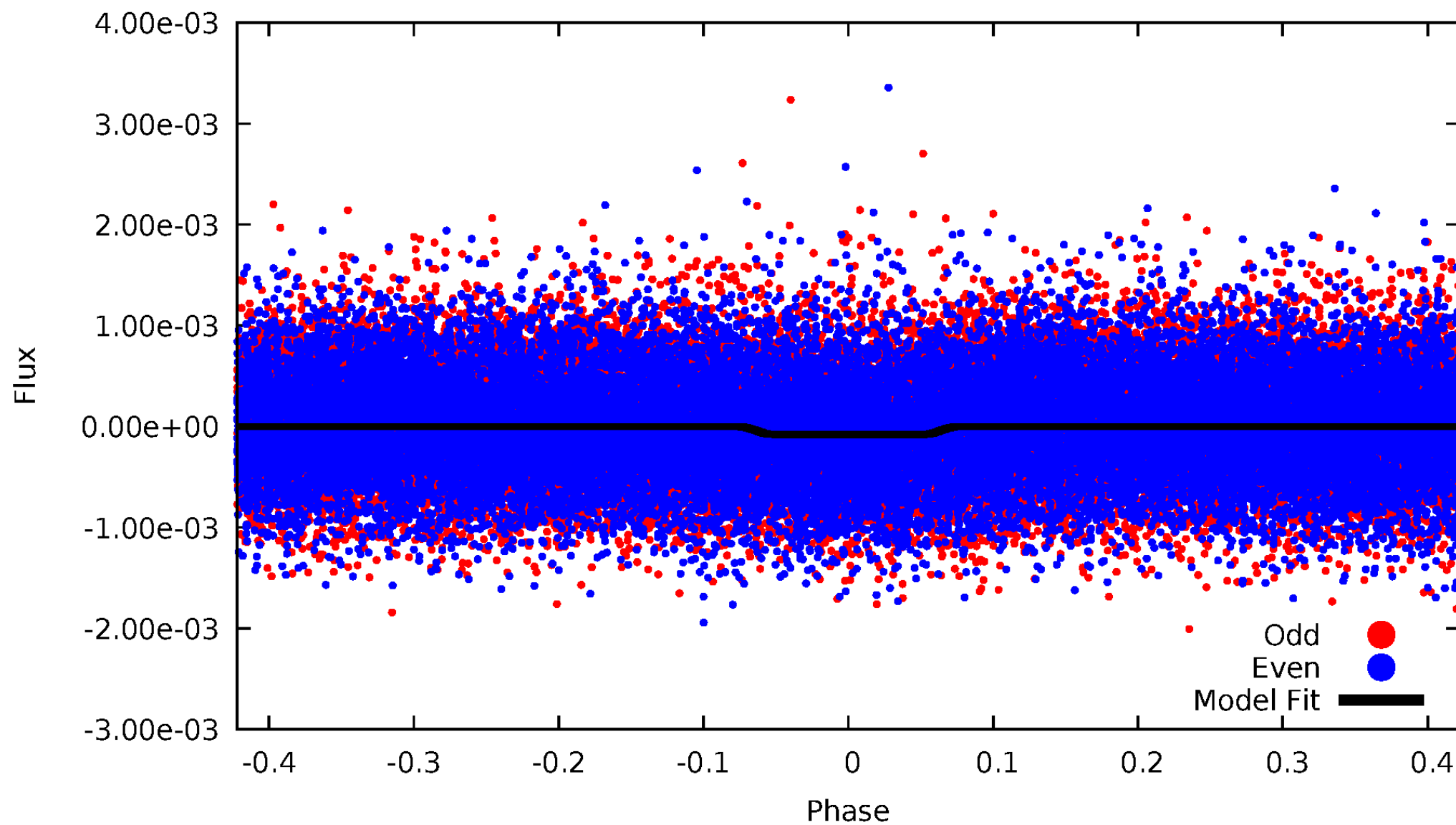
DV Odd/Even

TCE 004489829-01



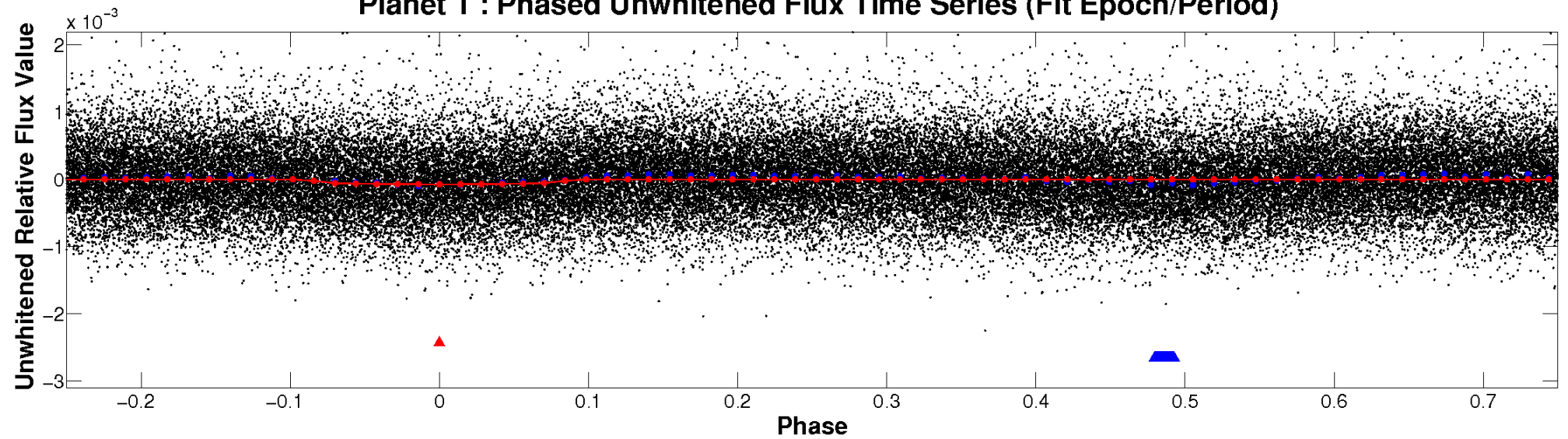
ALT Odd/Even

TCE 004489829-01

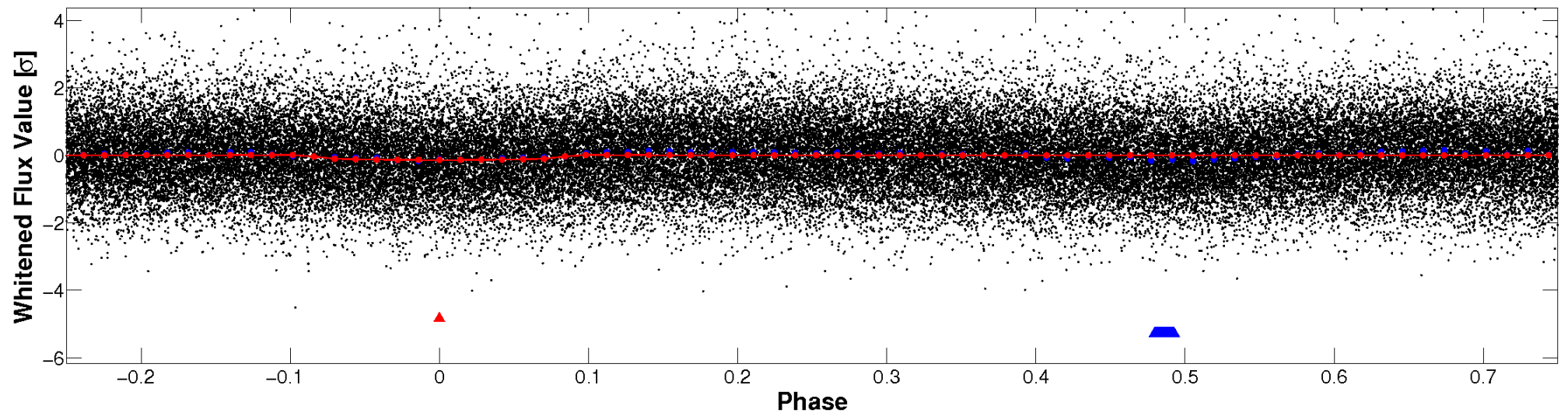


Non-Whitened Vs. Whitened Light Curve

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

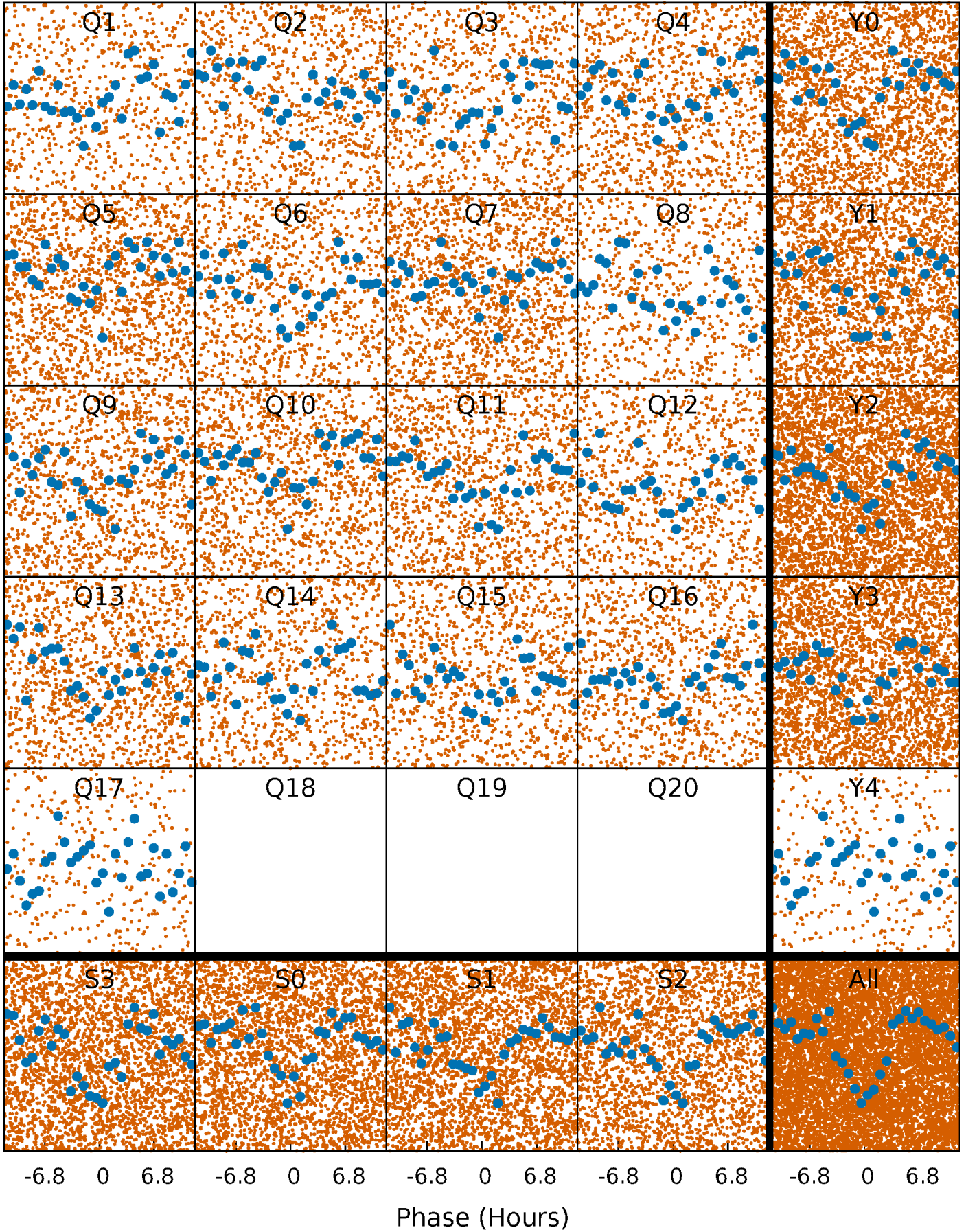


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



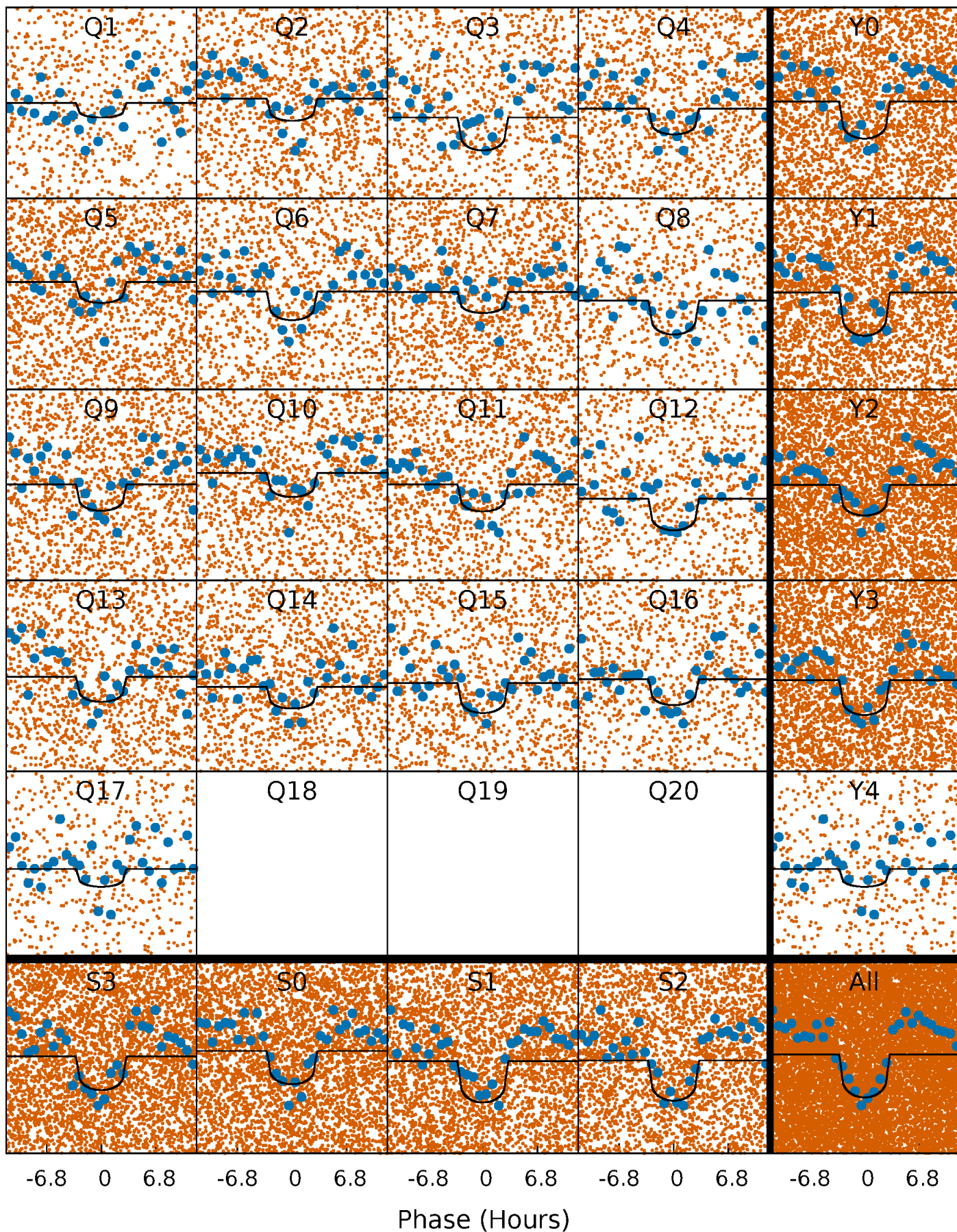
PDC Quarter-Phased Transit Curves

TCE 004489829-01 P= 1.455774 Days $T_0=132.625915$ (BKJD)



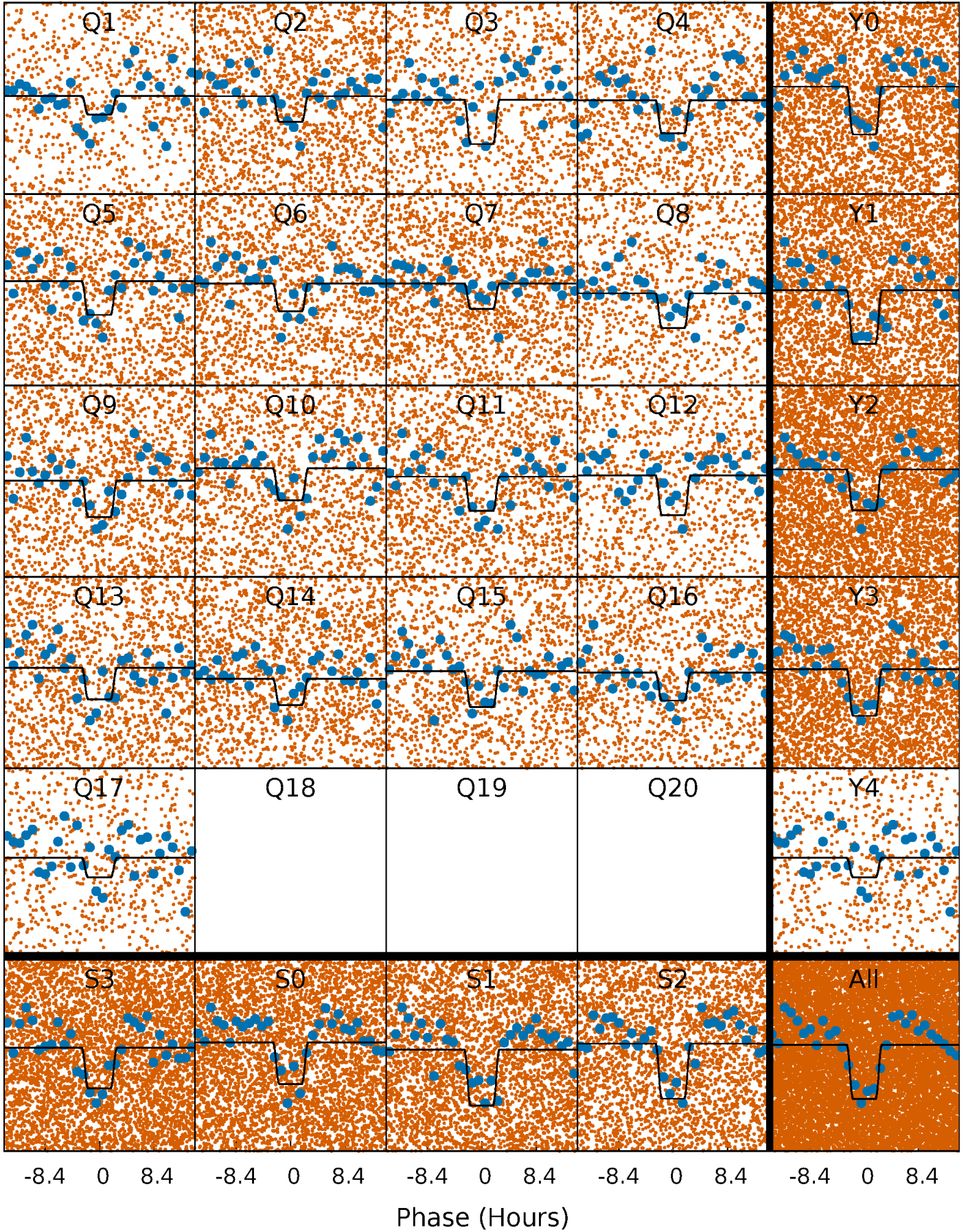
DV Quarter-Phased Transit Curves

TCE 004489829-01 P= 1.455774 Days $T_0=132.625915$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

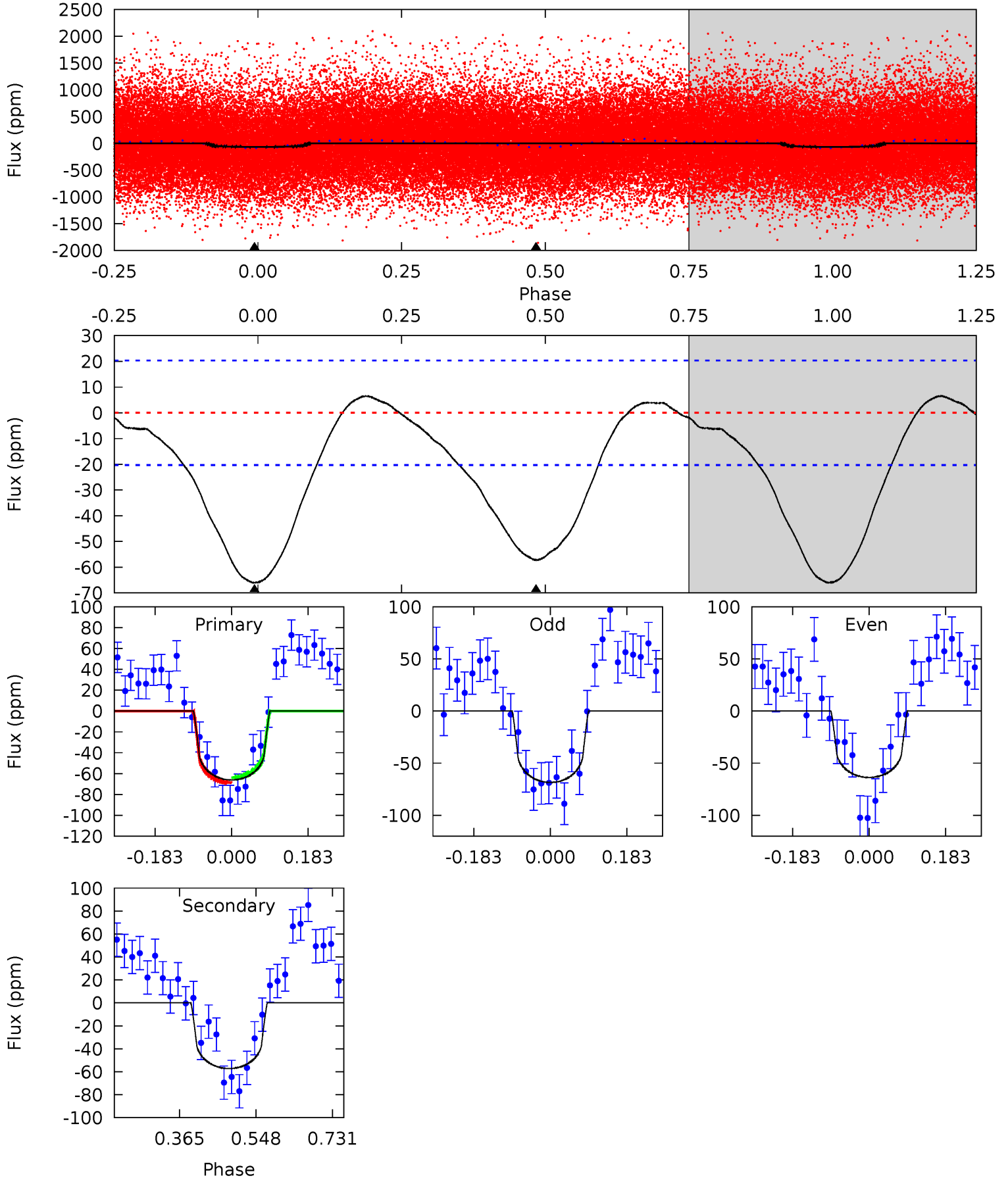
TCE 004489829-01 P= 1.455813 Days $T_0=132.601720$ (BKJD)



DV Model-Shift Uniqueness Test

004489829-01, P = 1.455774 Days, E = 131.170141 Days

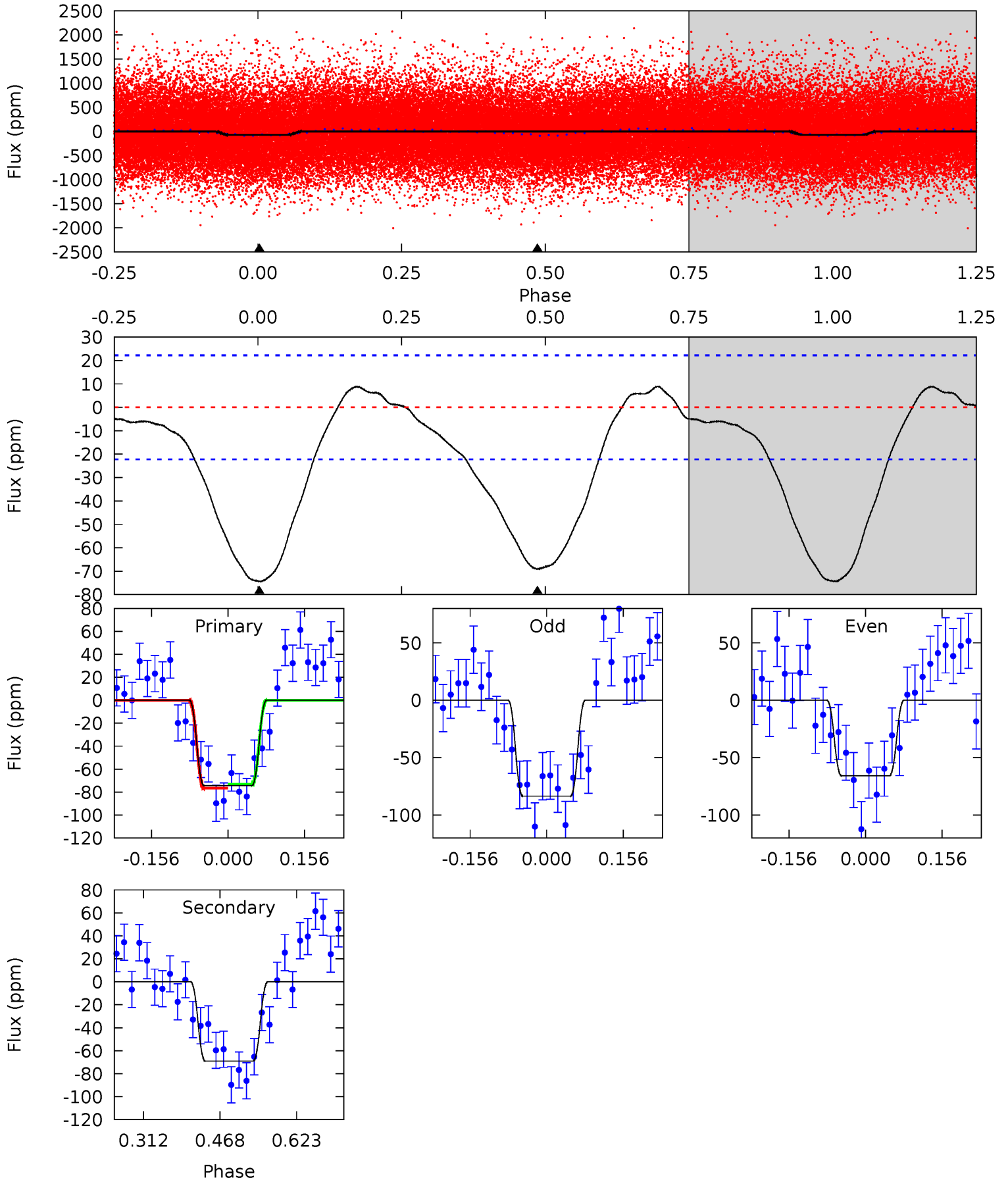
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	12.5	0	0	4.44	1.33	1.00	14.4	14.4	12.5	12.5	0.52	0.95	0.09	0.51



Alt Model-Shift Uniqueness Test

004489829-01, P = 1.455813 Days, E = 131.145907 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	13.9	0	0	4.47	1.42	1.34	15.0	15.0	13.9	13.9	1.78	0.93	0.11	0.33



Stellar Parameters For KIC 004489829

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5845^{+157}_{-174}	$4.558^{+0.034}_{-0.195}$	$-0.280^{+0.300}_{-0.300}$	$0.838^{+0.238}_{-0.079}$	$0.926^{+0.099}_{-0.110}$	$2.214^{+0.423}_{-1.115}$
	+3%/-3%	+1%/-4%	+107%/-107%	+28%/-9%	+11%/-12%	+19%/-50%
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 004489829-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-57 ± 5	$0.83^{+0.63}_{-0.49}$	2161^{+124}_{-93}	5441^{+3710}_{-1097}	27^{+130}_{-19}
Alt.	-69 ± 5	$0.94^{+0.58}_{-0.56}$	2158^{+141}_{-94}	5438^{+3289}_{-1055}	25^{+131}_{-16}

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 $A_{obs} \gg 1.0$

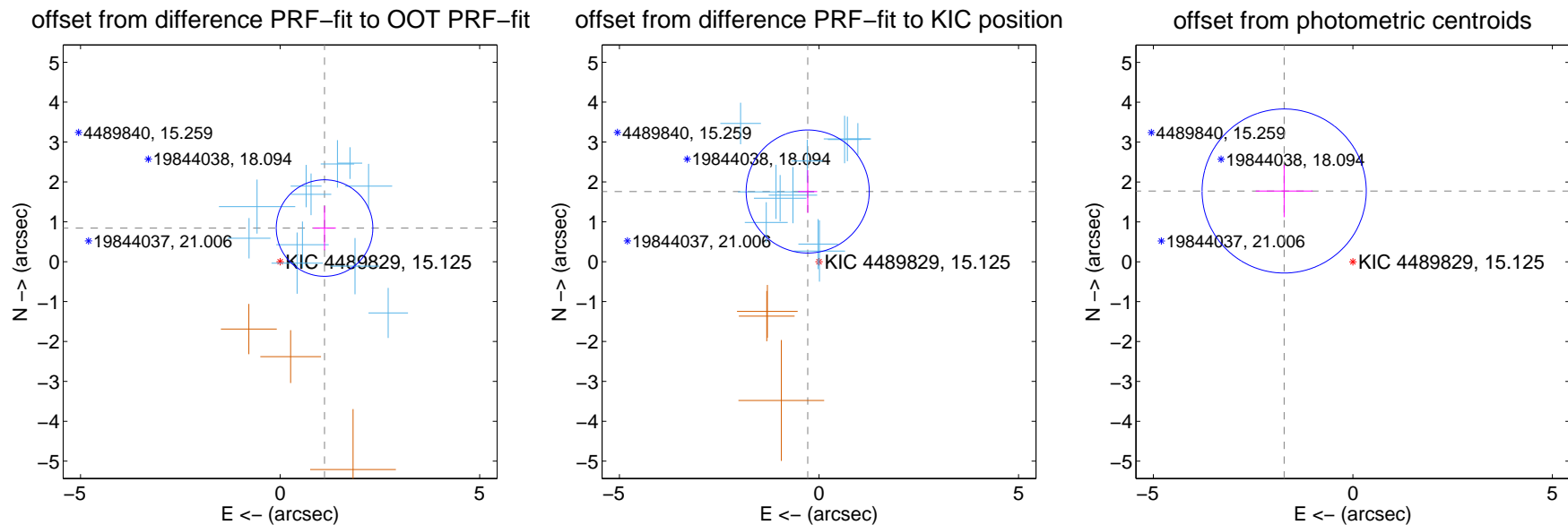
DV Centroid Data

Supplemental centroid analysis for 004489829-01. Kepler magnitude: 15.12. Transit SNR 11.98

There are 11 quarters with good PRF difference image offsets

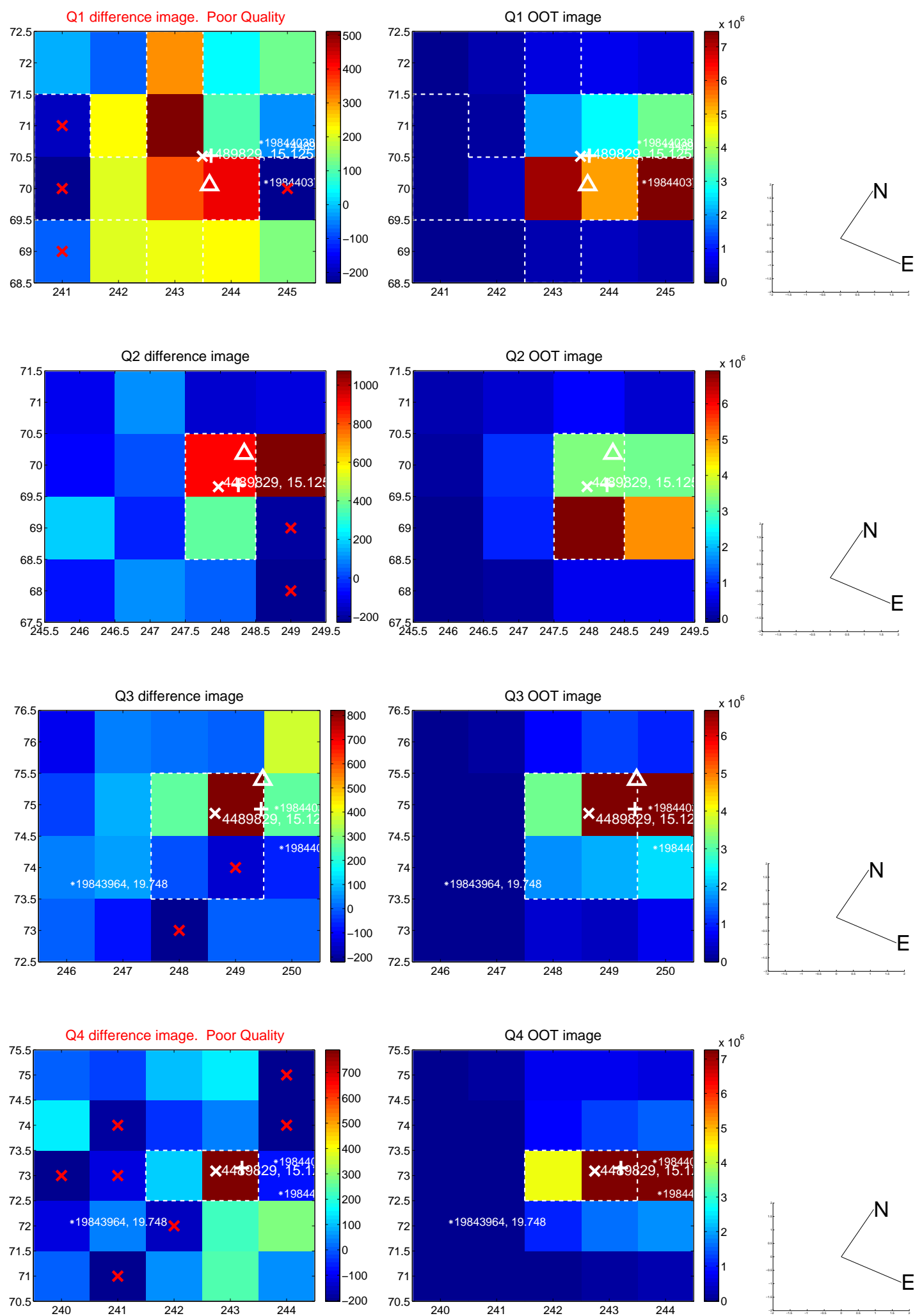
The direct PRF centroid is offset from the target star catalog position by about 1.93 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.397 ± 0.403	3.46	-1.113 ± 0.281	0.843 ± 0.556
PRF-fit source offset from KIC position	1.782 ± 0.514	3.47	0.283 ± 0.238	1.759 ± 0.535
photometric centroid source offset	2.47 ± 0.69	3.61	1.72 ± 0.71	1.77 ± 0.66

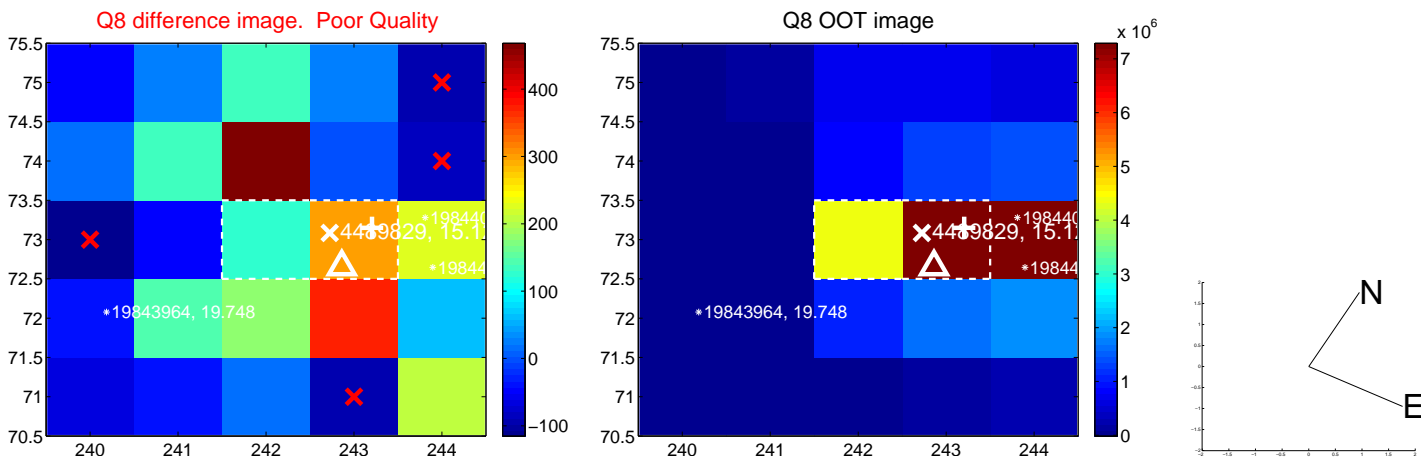
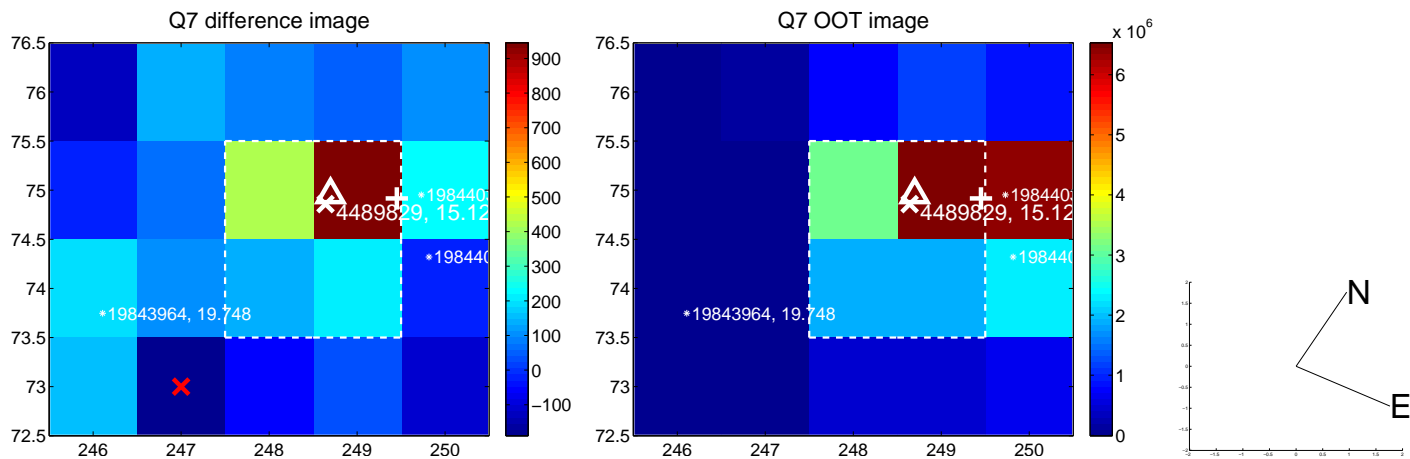
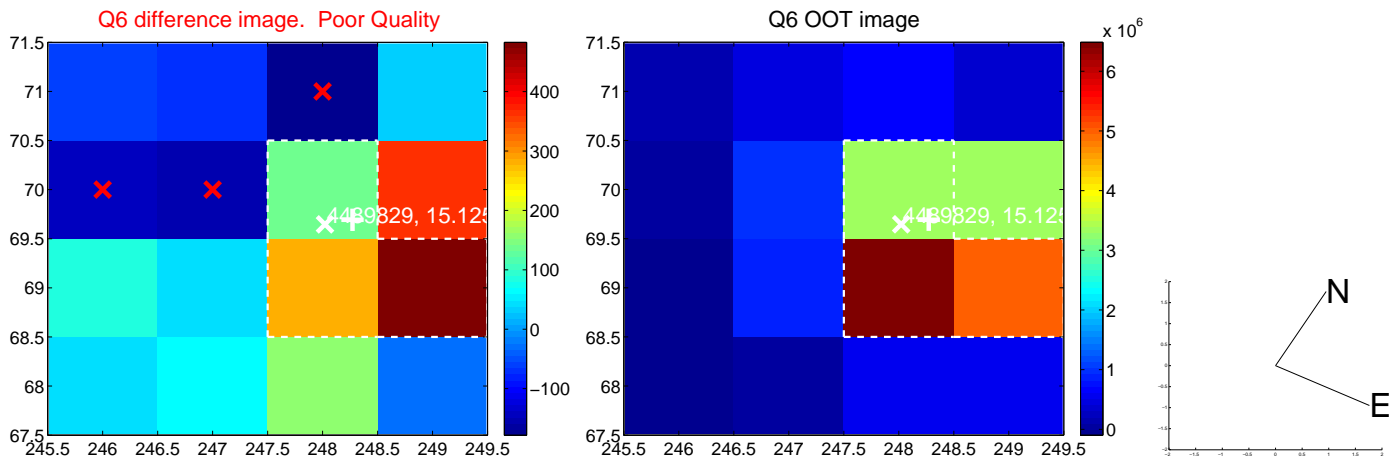
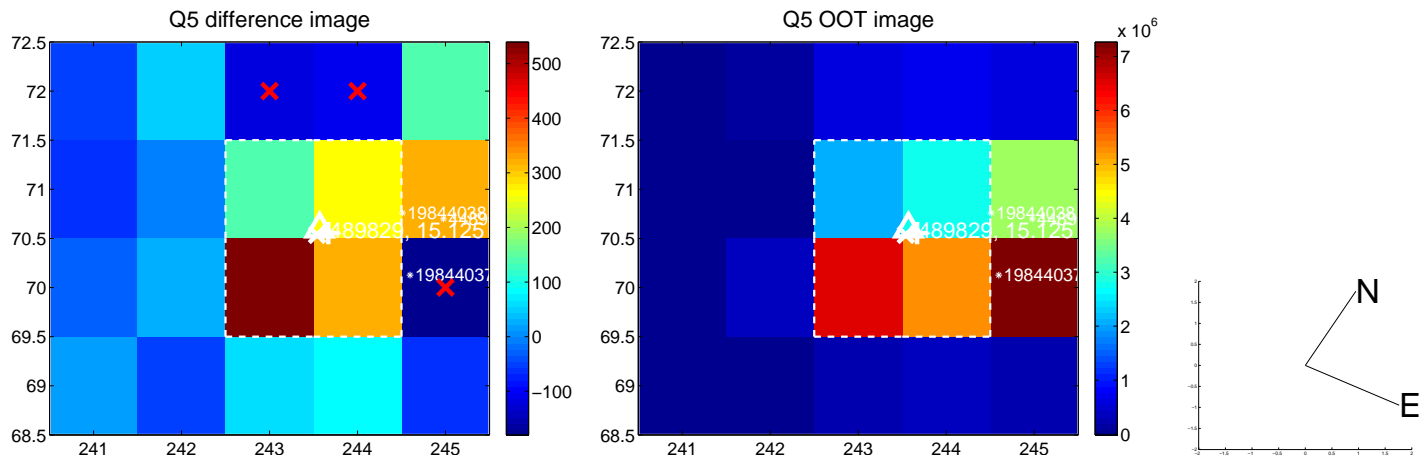


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

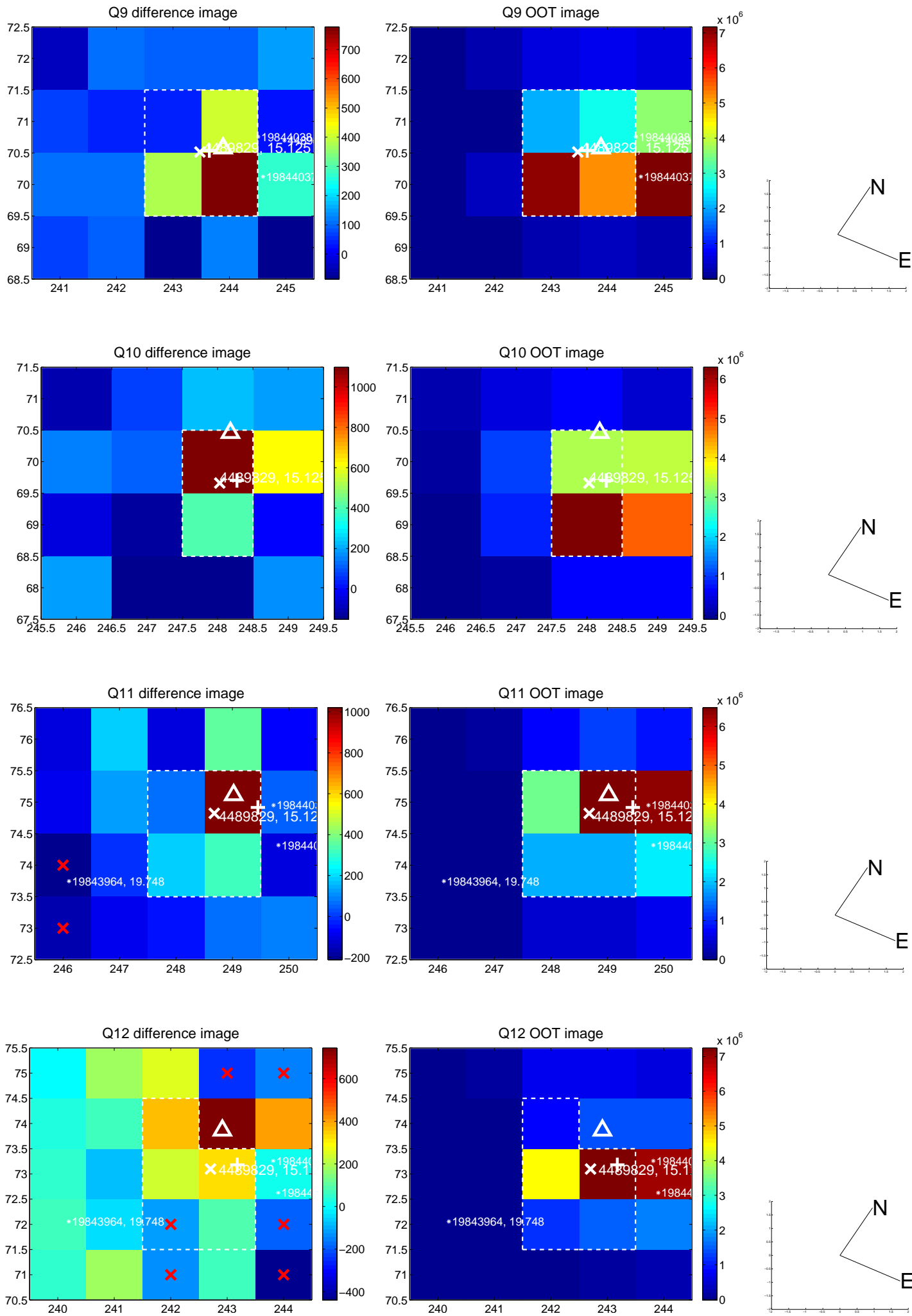
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



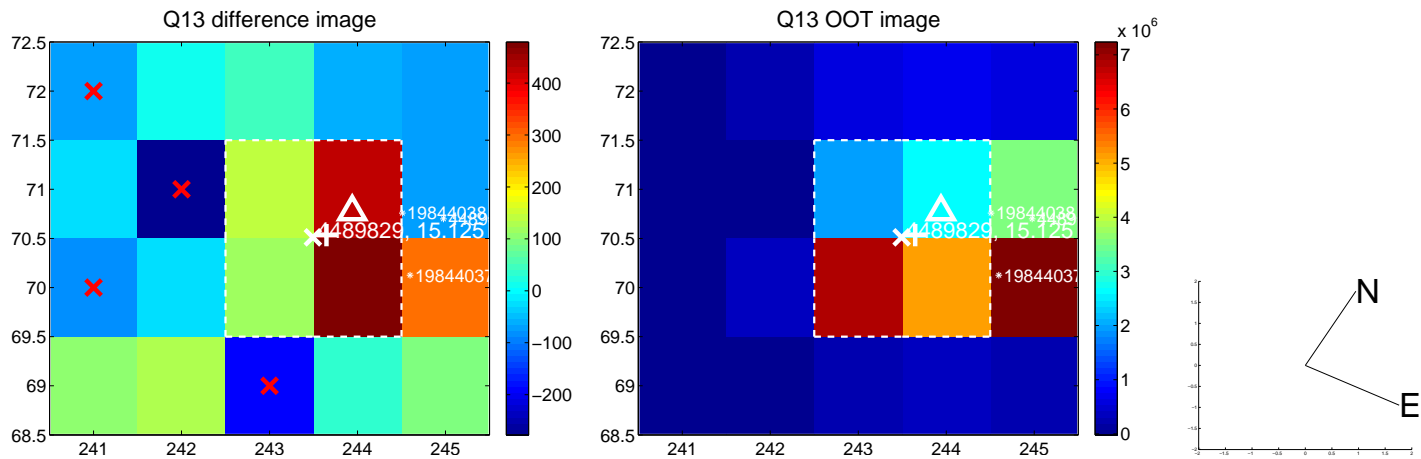
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



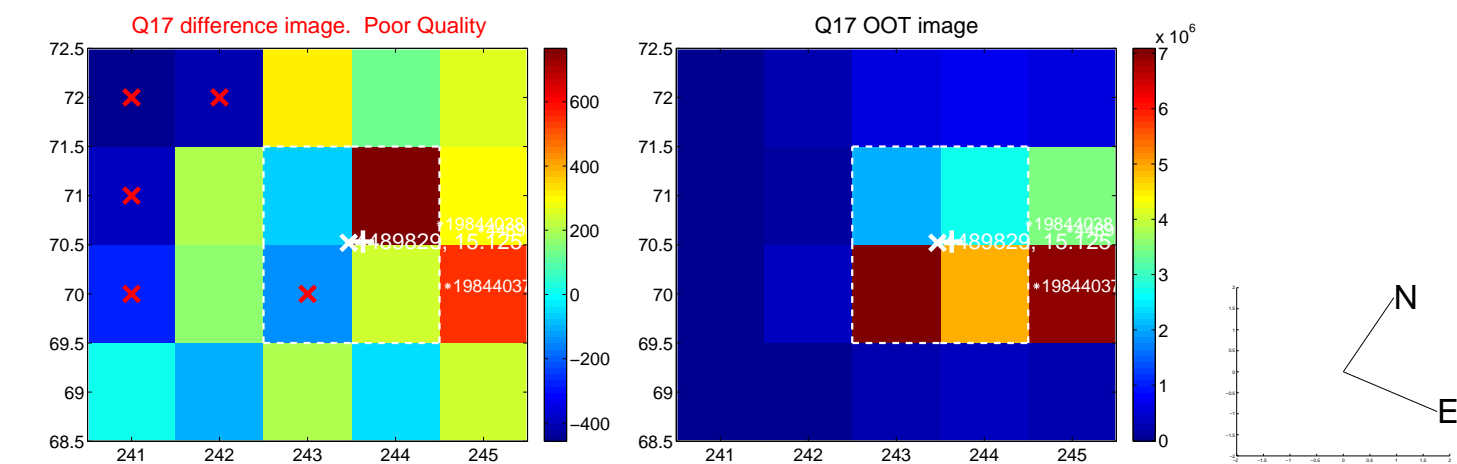
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



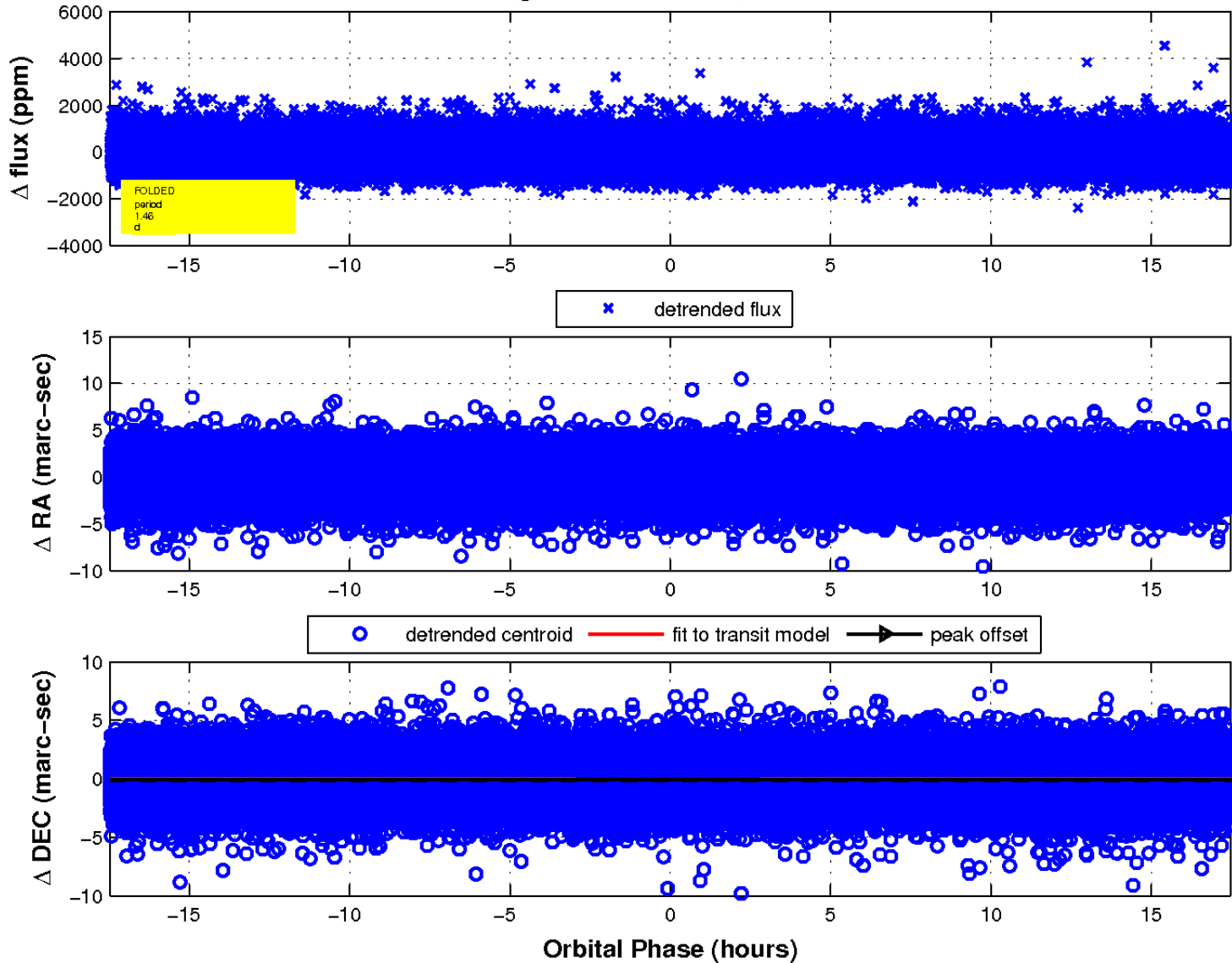
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

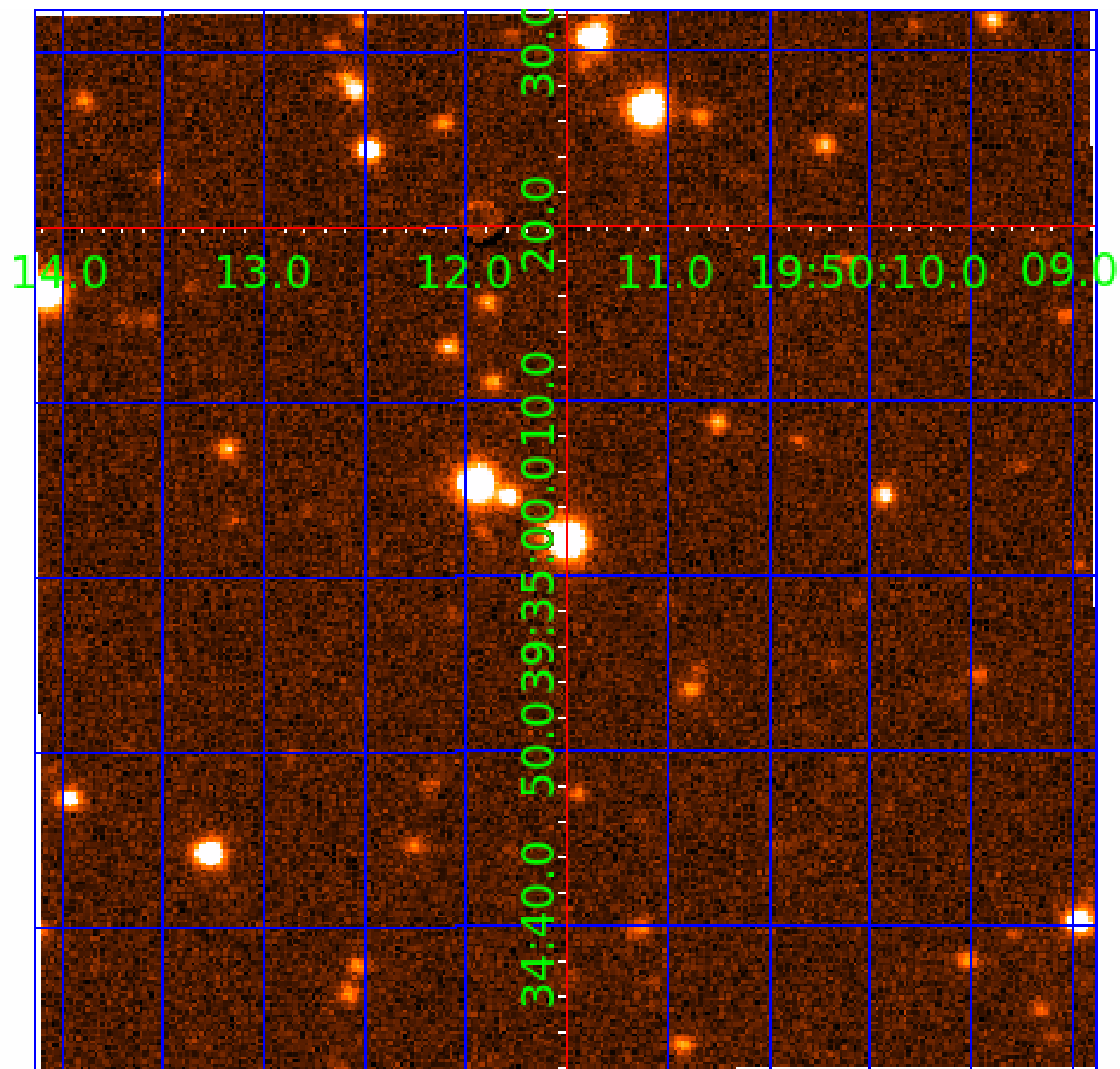


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 004489829

Q1-17 DR25 TCE Parameters

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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004489829-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_KIC_POS
004489829-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

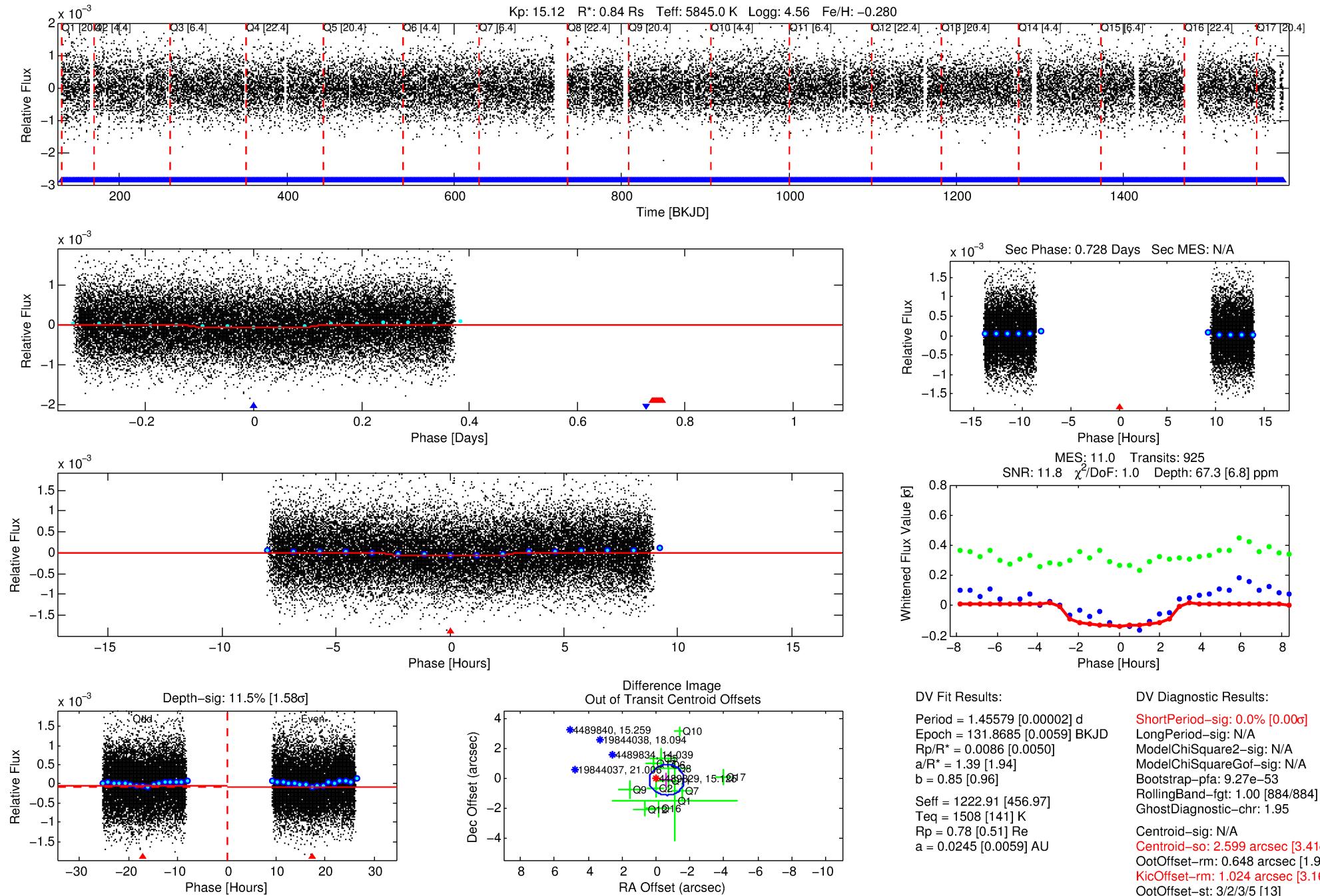
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004489829-02

No Significant Match Found

DV One-Page Summary

KIC: 4489829 Candidate: 2 of 2 Period: 1.456 d



DV Fit Results:

Period = 1.45579 [0.00002] d
Epoch = 131.8685 [0.0059] BKJD
Rp/R* = 0.0086 [0.0050]
a/R* = 1.39 [1.94]
b = 0.85 [0.96]
Seff = 1222.91 [456.97]
Teff = 1508 [141] K
Rp = 0.78 [0.51] Re
a = 0.0245 [0.0059] AU

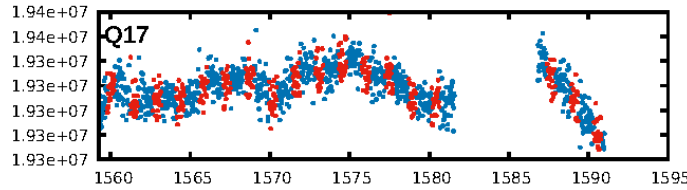
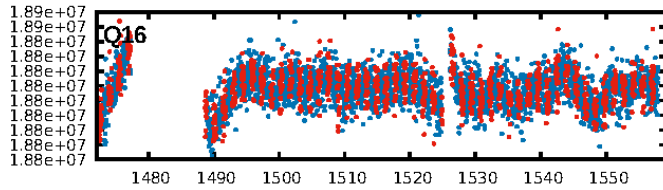
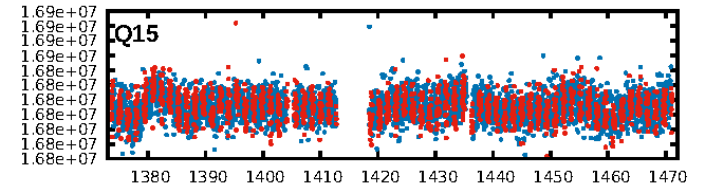
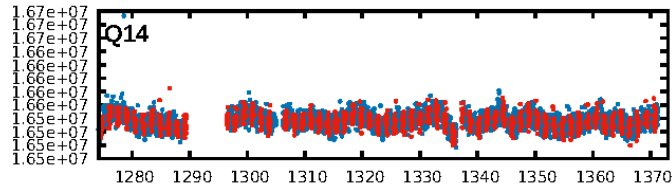
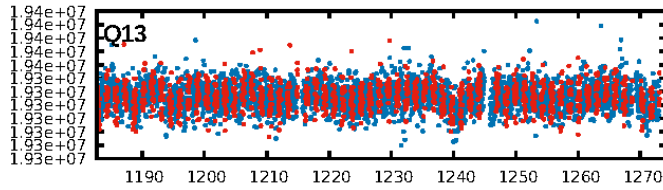
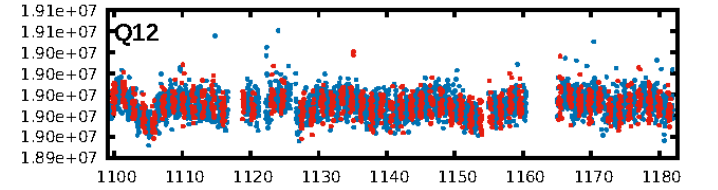
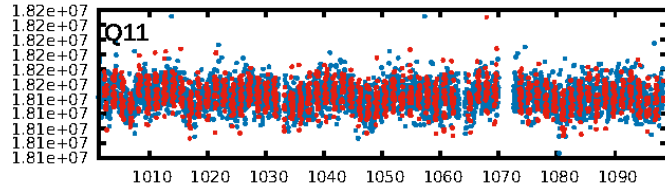
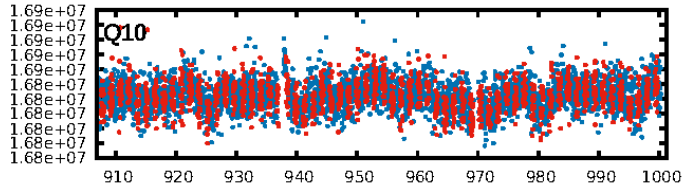
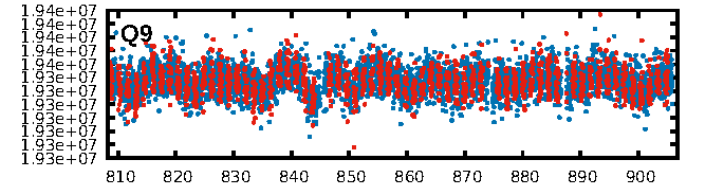
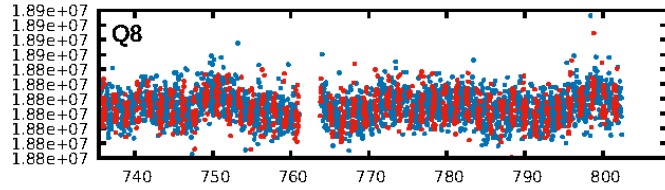
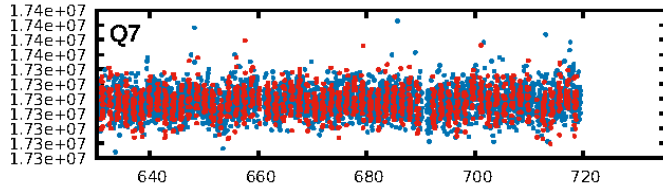
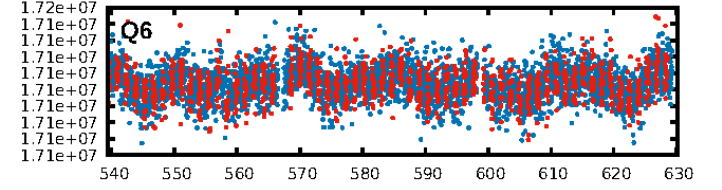
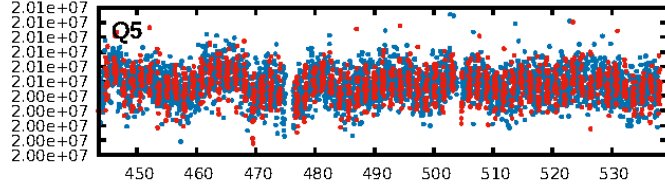
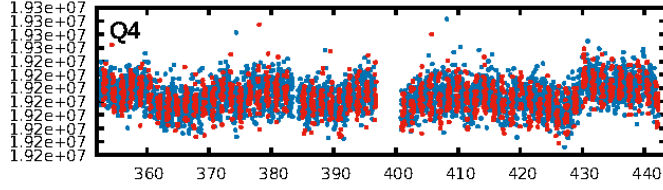
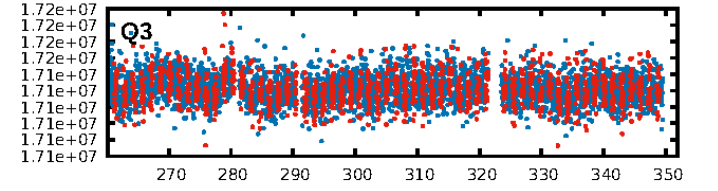
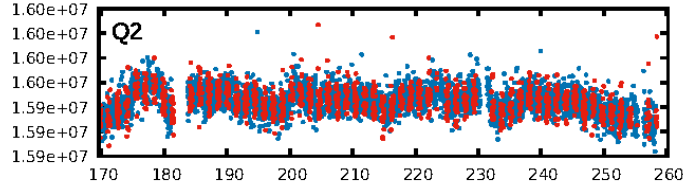
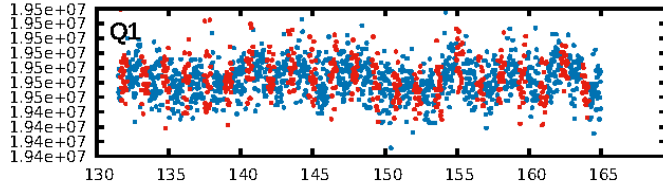
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.27e-53
RollingBand-fgt: 1.00 [884/884]
GhostDiagnostic-chr: 1.95
Centroid-sig: N/A
Centroid-so: 2.599 arcsec [3.41 σ]
OotOffset-rm: 0.648 arcsec [1.90 σ]
KicOffset-rm: 1.024 arcsec [3.16 σ]
OotOffset-st: 3/2/3/5 [13]
KicOffset-st: 3/2/3/5 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 1.00 [17/17]

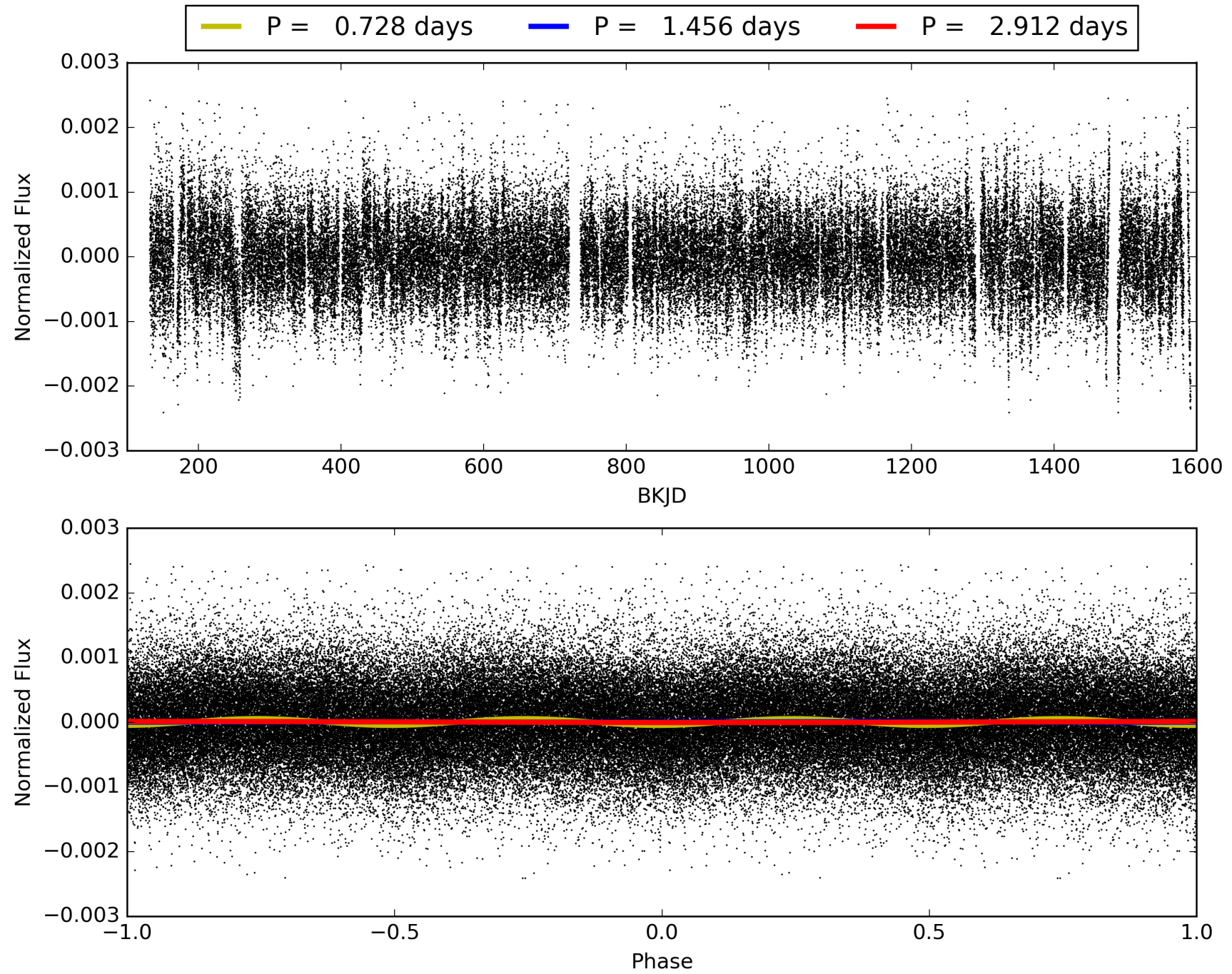
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:20:30 Z

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

TCE 004489829-02, PDC Light Curves

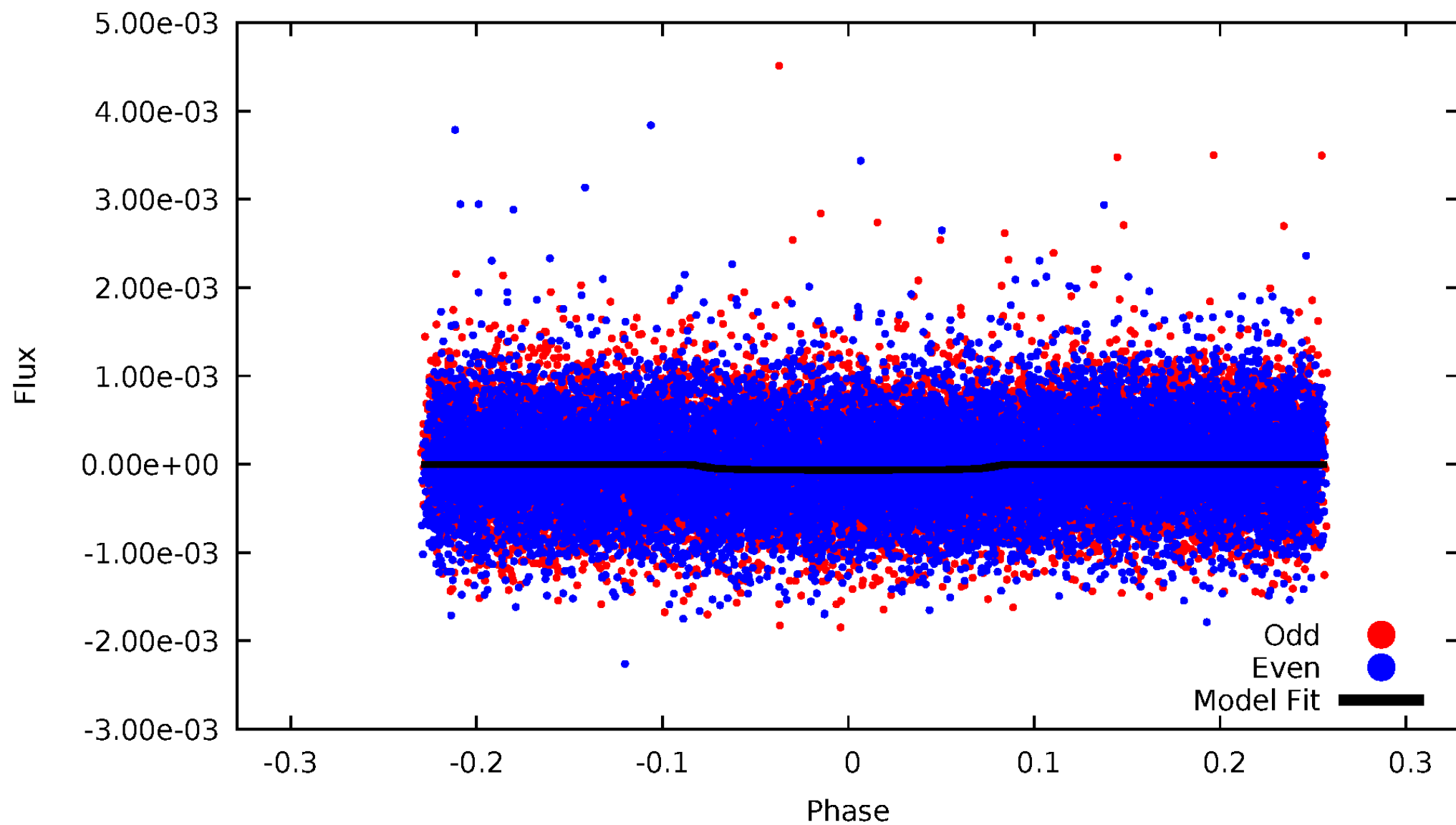


TCE 004489829-02



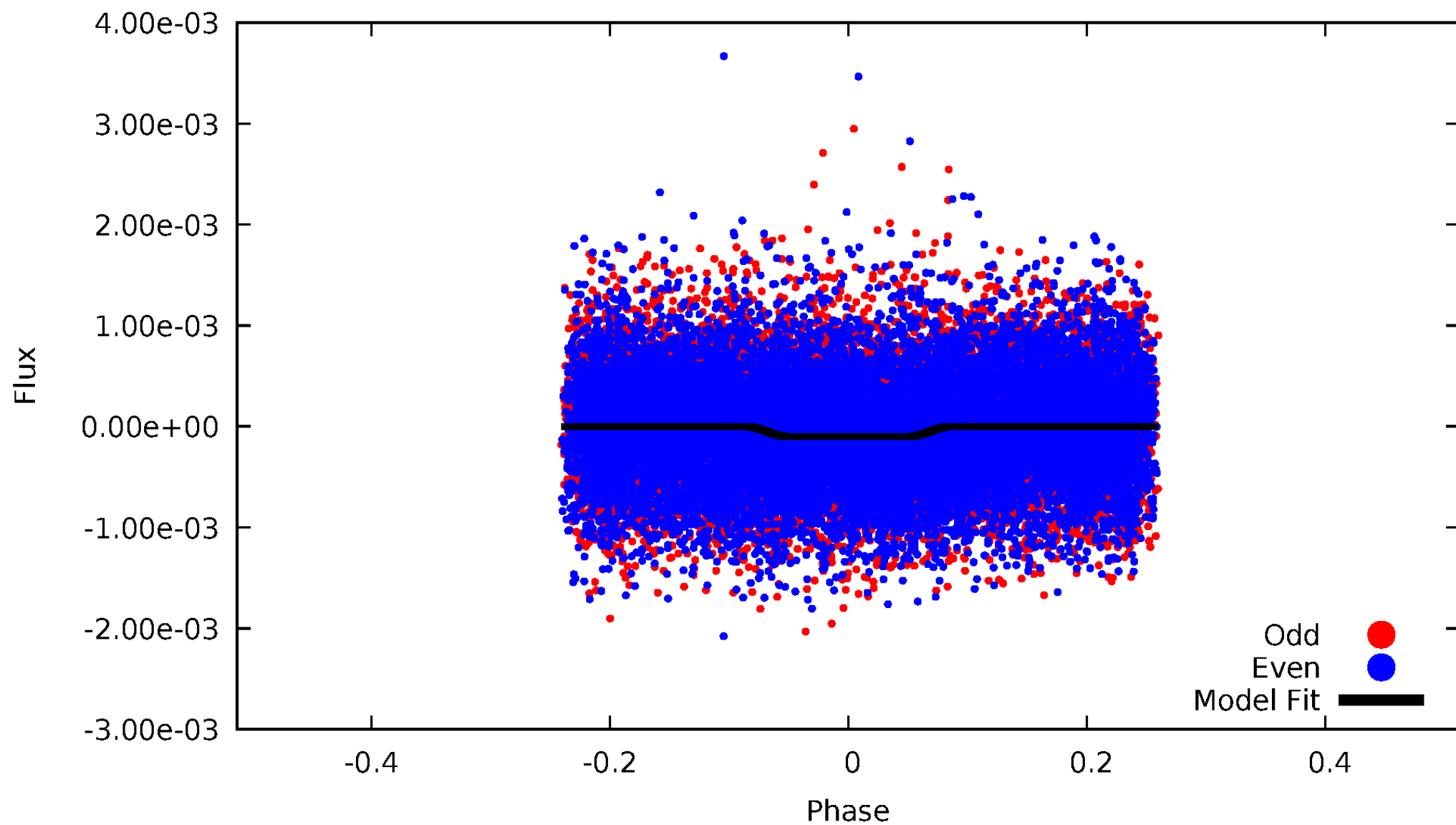
DV Odd/Even

TCE 004489829-02



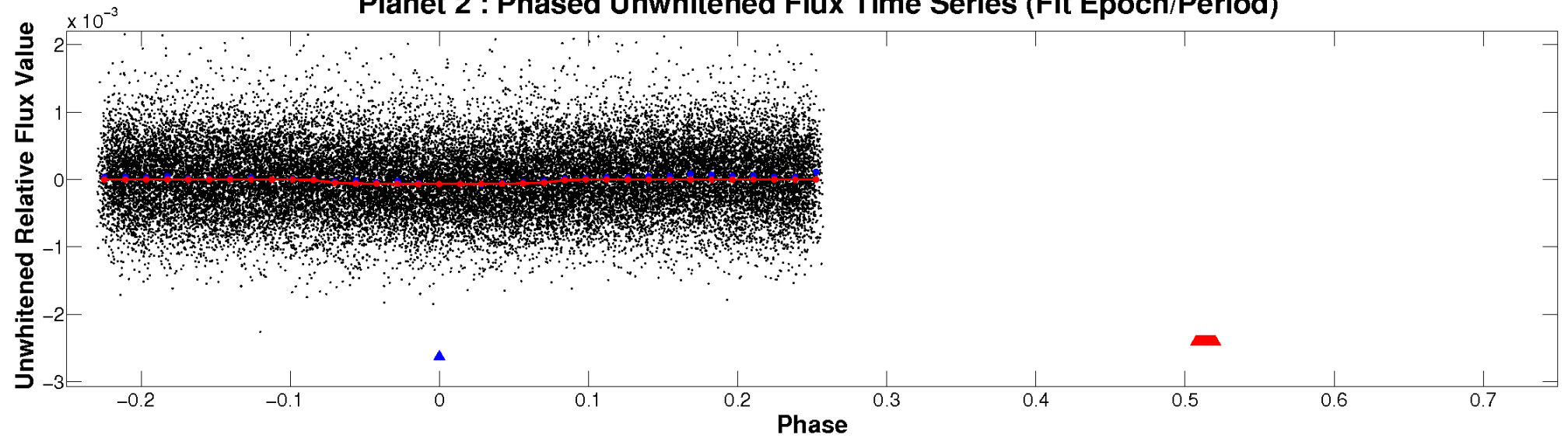
ALT Odd/Even

TCE 004489829-02

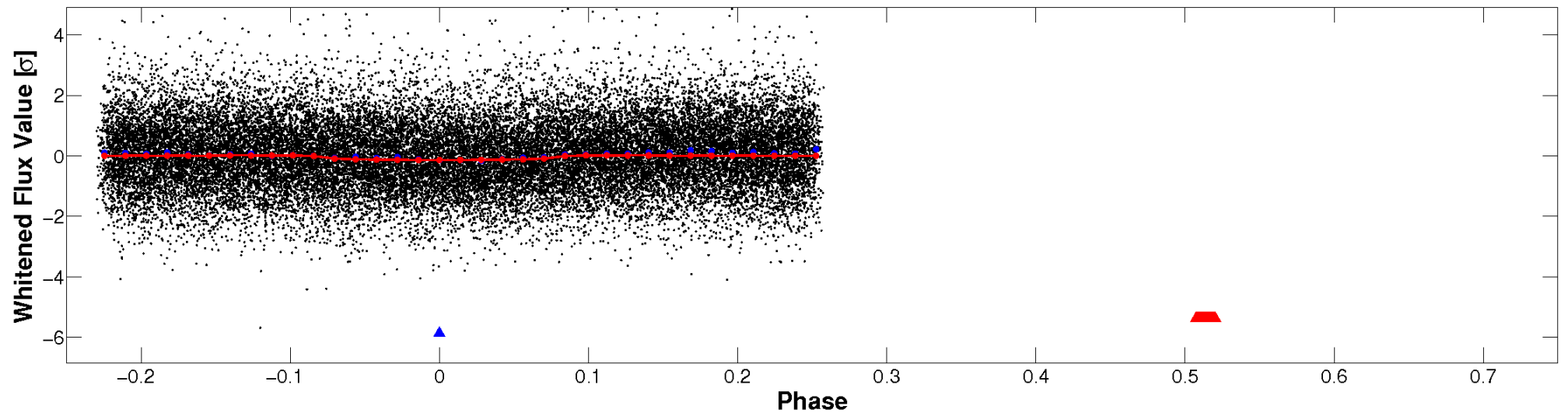


Non-Whitened Vs. Whitened Light Curve

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

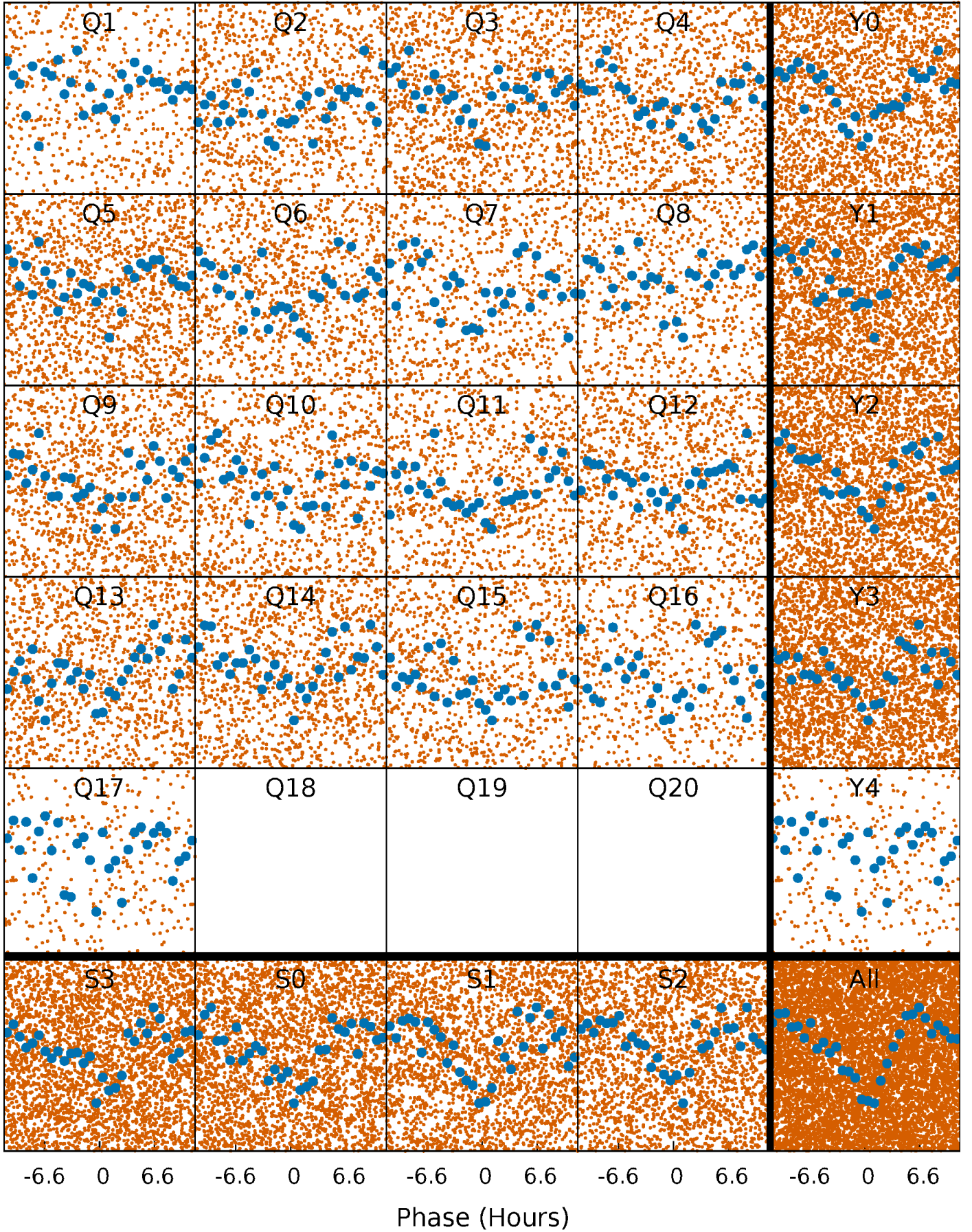


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



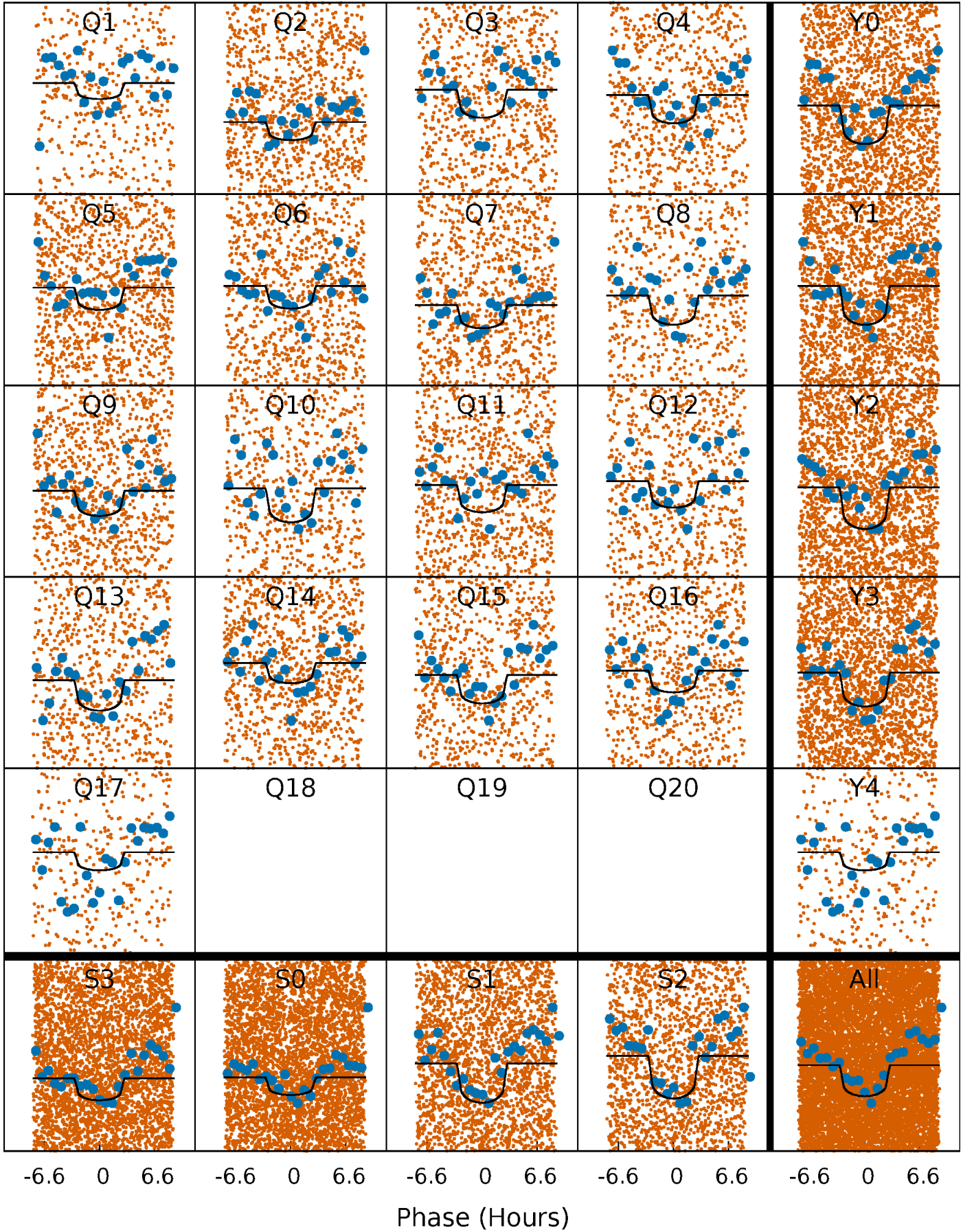
PDC Quarter-Phased Transit Curves

TCE 004489829-02 P= 1.455793 Days $T_0=131.868483$ (BKJD)



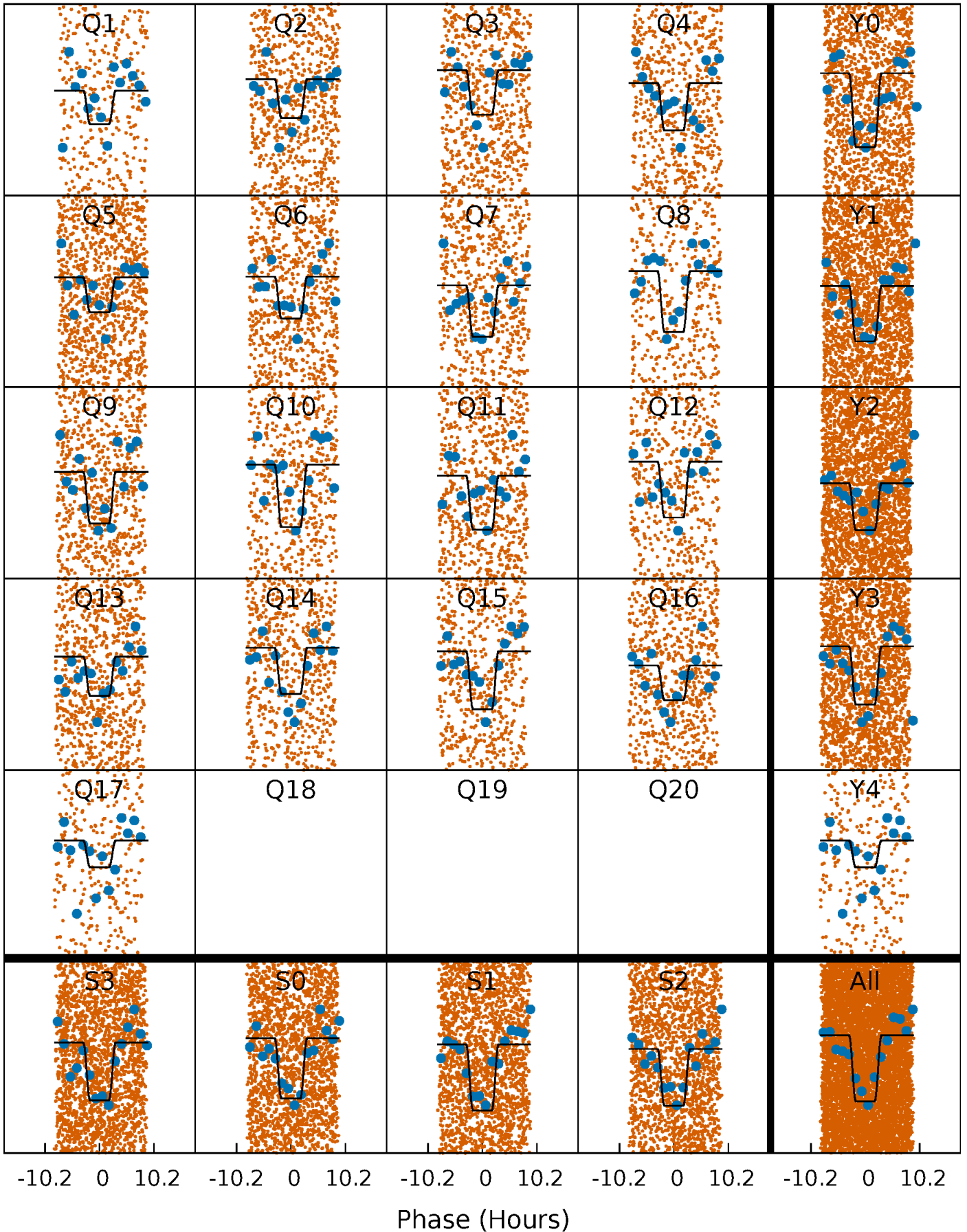
DV Quarter-Phased Transit Curves

TCE 004489829-02 P= 1.455793 Days $T_0=131.868483$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

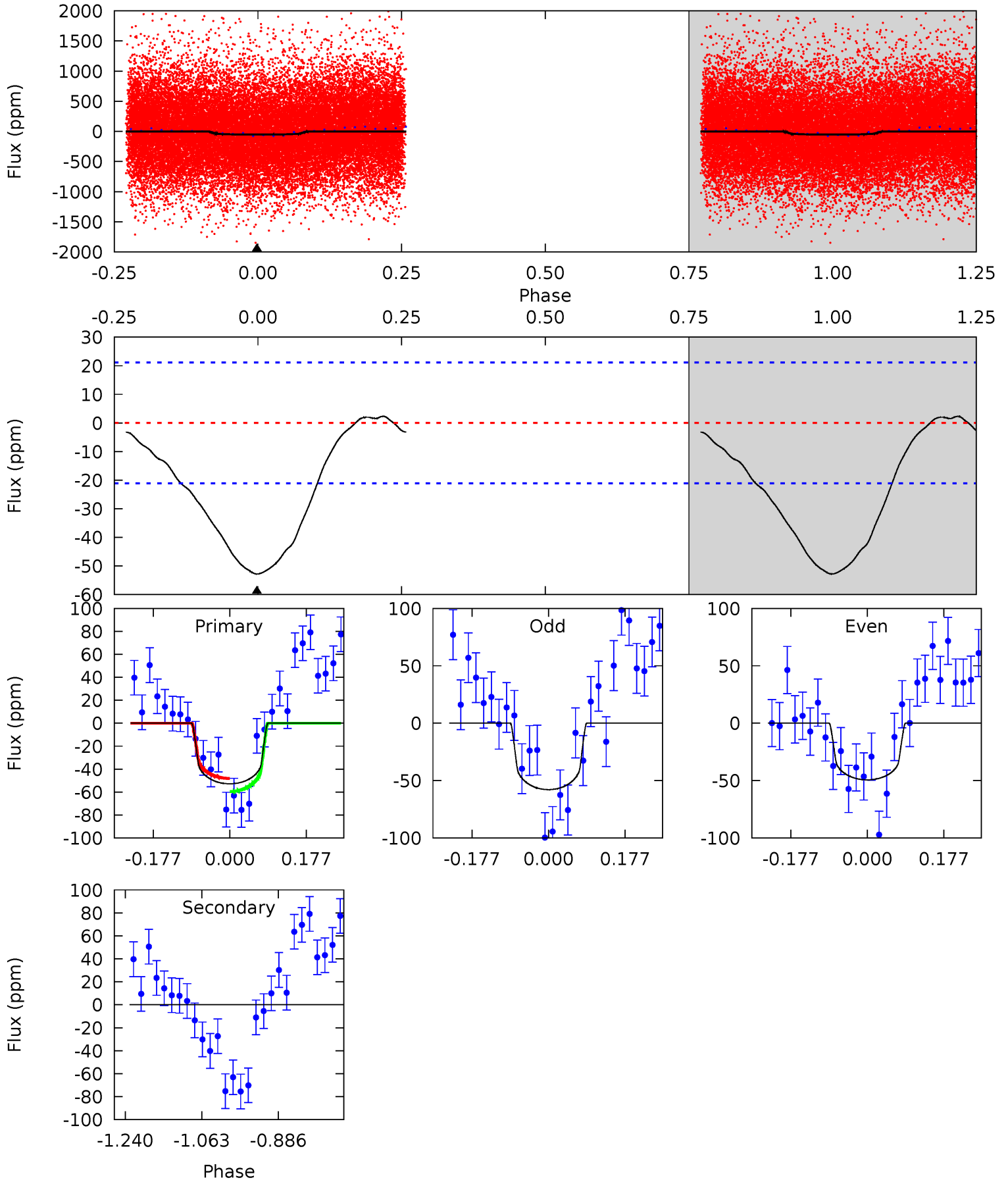
TCE 004489829-02 P= 1.455813 Days $T_0=131.864833$ (BKJD)



DV Model-Shift Uniqueness Test

004489829-02, P = 1.455793 Days, E = 130.412690 Days

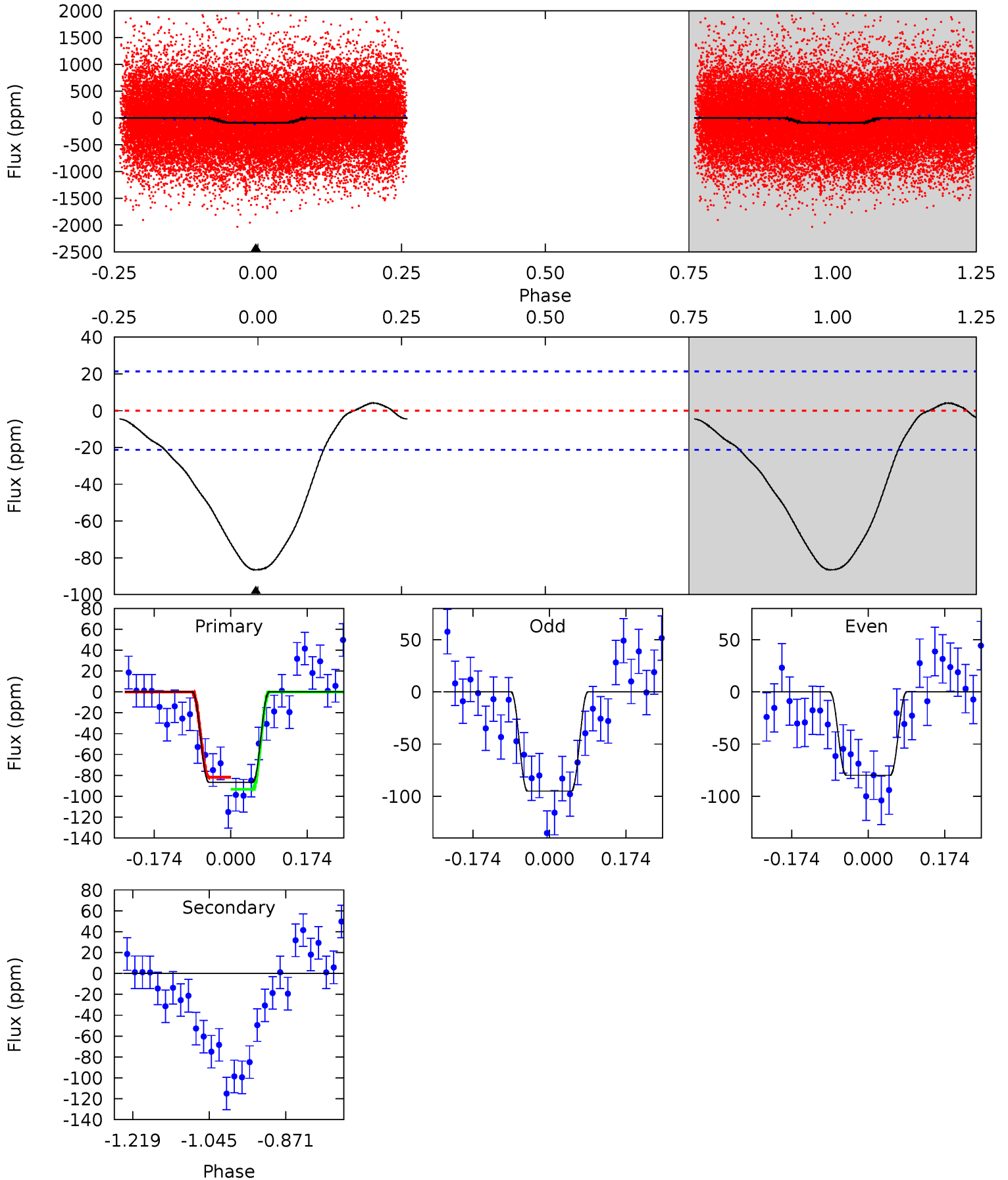
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	0	0	0	4.44	1.35	0.94	11.1	11.1	0	0	0.90	0.92	0.04	1.21



Alt Model-Shift Uniqueness Test

004489829-02, P = 1.455813 Days, E = 130.409020 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	0	0	0	4.45	1.36	1.48	18.0	18.0	0	0	1.57	1.08	0.05	1.20



Stellar Parameters For KIC 004489829

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5845^{+157}_{-174}	$4.558^{+0.034}_{-0.195}$	$-0.280^{+0.300}_{-0.300}$	$0.838^{+0.238}_{-0.079}$	$0.926^{+0.099}_{-0.110}$	$2.214^{+0.423}_{-1.115}$
	+3%/-3%	+1%/-4%	+107%/-107%	+28%/-9%	+11%/-12%	+19%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004489829-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 5	$0.83^{+0.49}_{-0.39}$	2157^{+152}_{-97}	-2501^{+6127}_{-1091}	$0.098^{+3.393}_{-2.727}$
Alt.	0 ± 5	$0.99^{+0.52}_{-0.46}$	2162^{+149}_{-95}	-2625^{+5928}_{-839}	$-0.034^{+2.012}_{-1.946}$

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 $A_{obs} \gg 1.0$

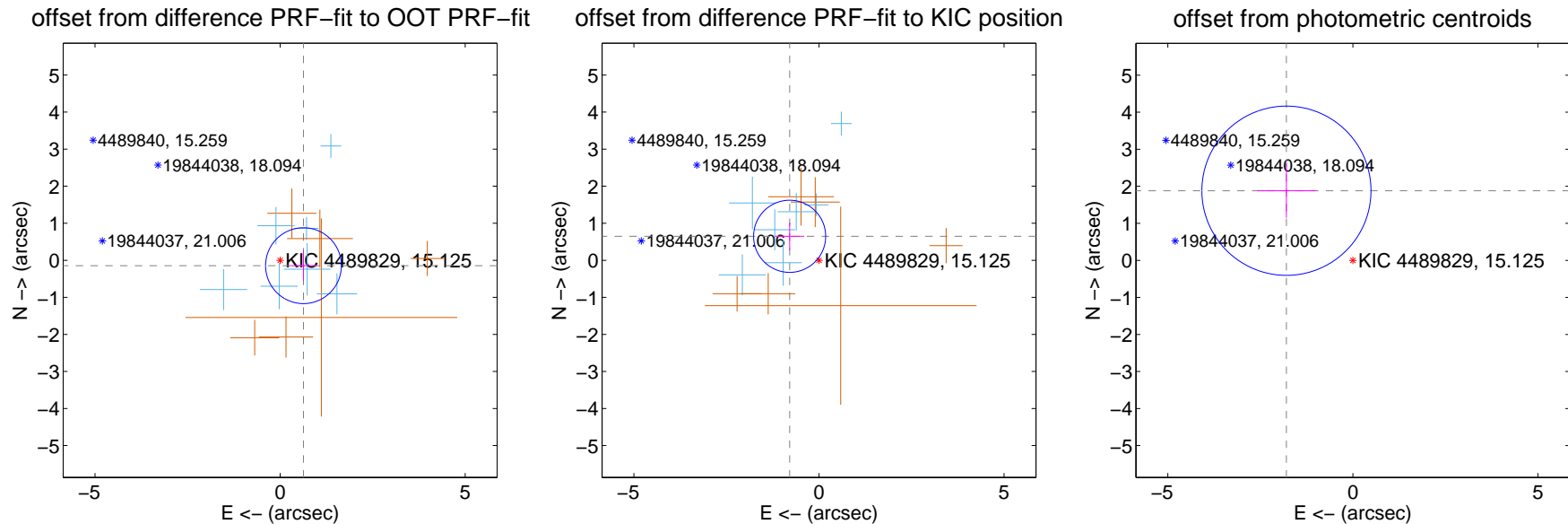
DV Centroid Data

Supplemental centroid analysis for 004489829-02. Kepler magnitude: 15.12. Transit SNR 11.77

There are 7 quarters with good PRF difference image offsets

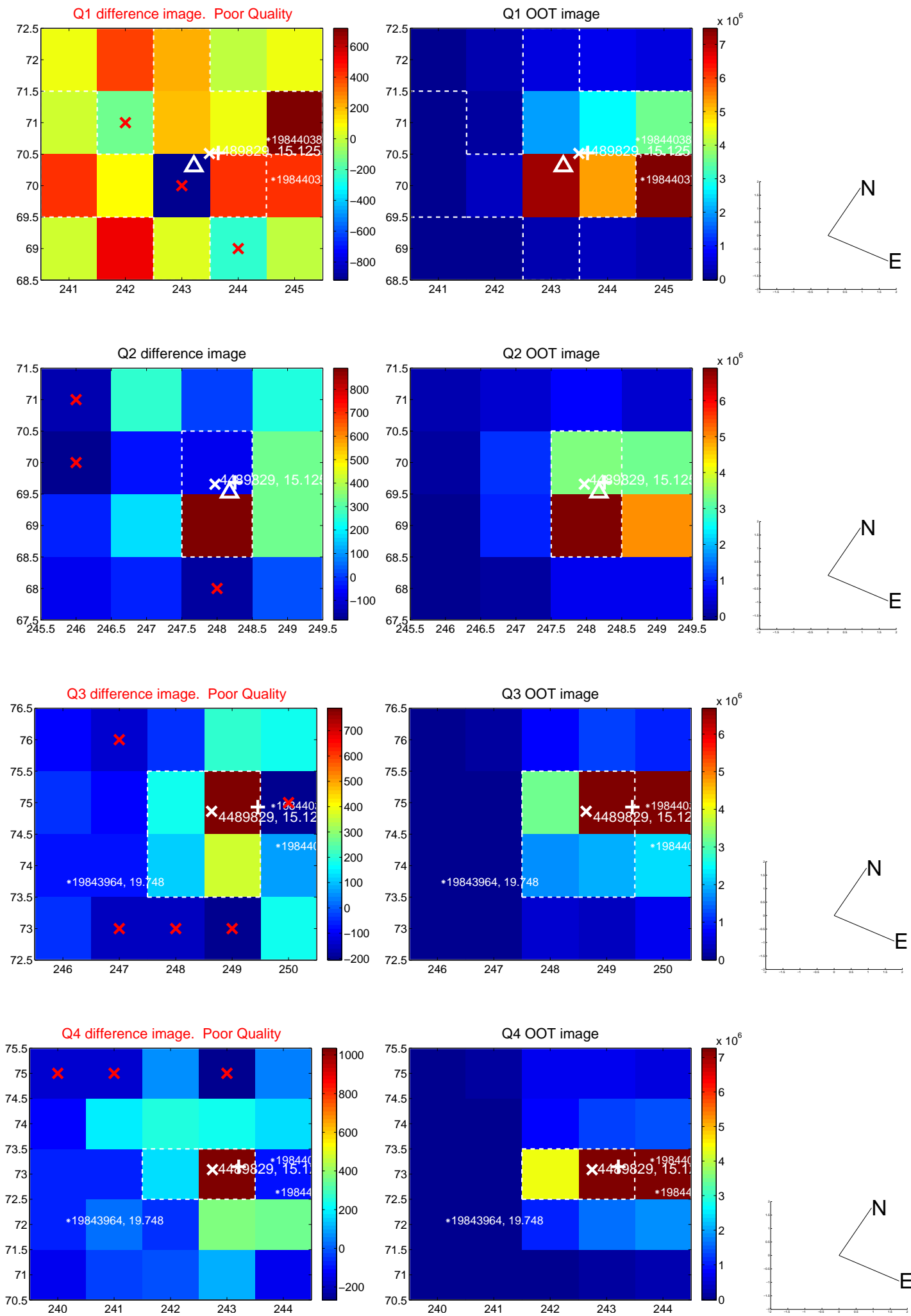
The direct PRF centroid is offset from the target star catalog position by about 0.64 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.648 ± 0.341	1.90	-0.631 ± 0.363	-0.145 ± 0.413
PRF-fit source offset from KIC position	1.024 ± 0.325	3.16	0.793 ± 0.396	0.647 ± 0.376
photometric centroid source offset	2.60 ± 0.76	3.41	1.79 ± 0.79	1.88 ± 0.73

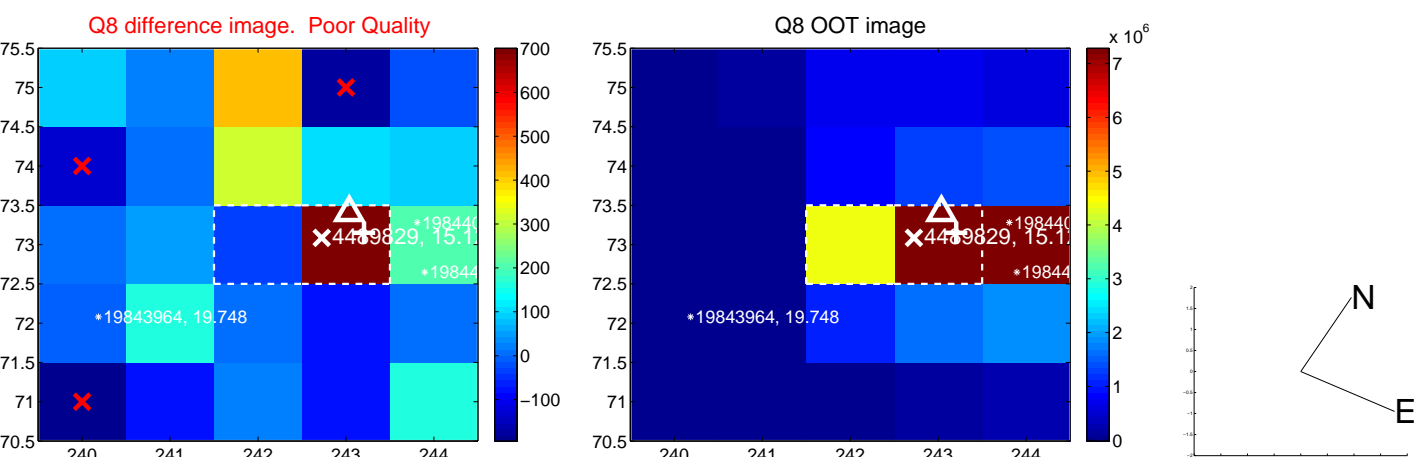
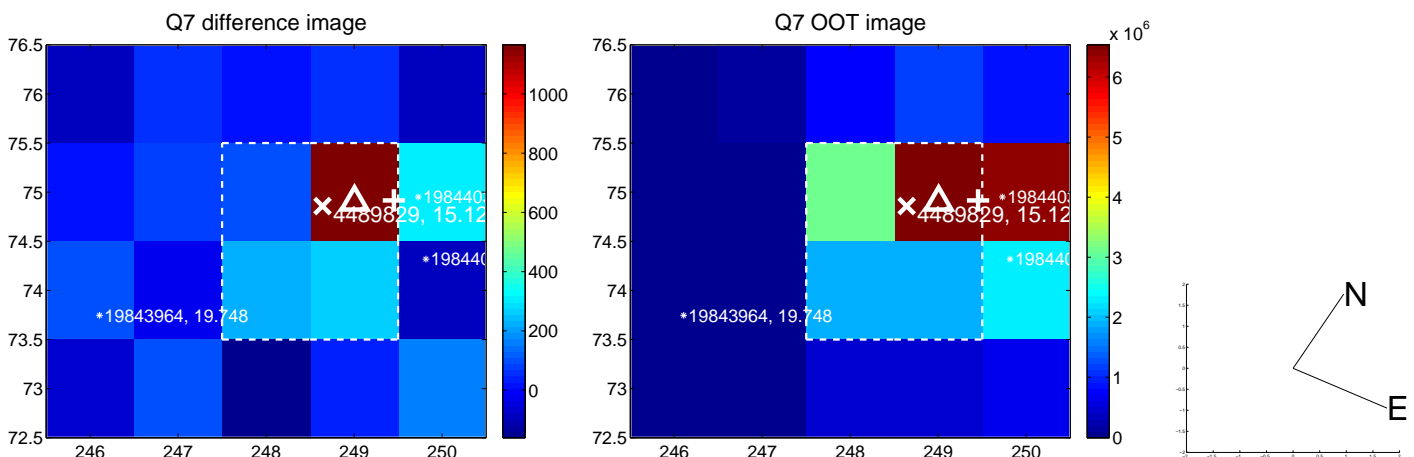
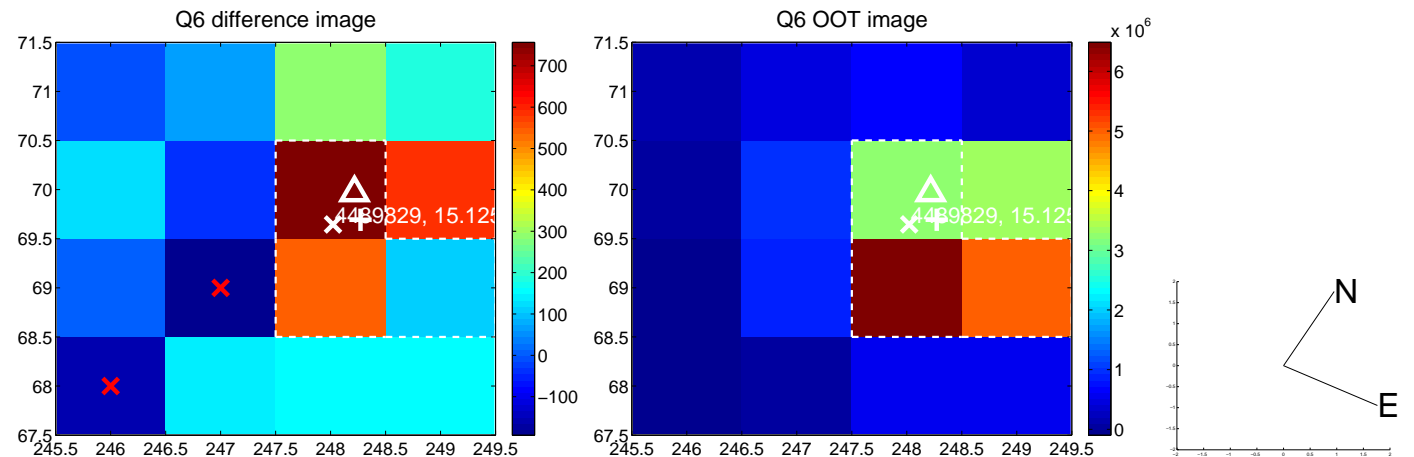
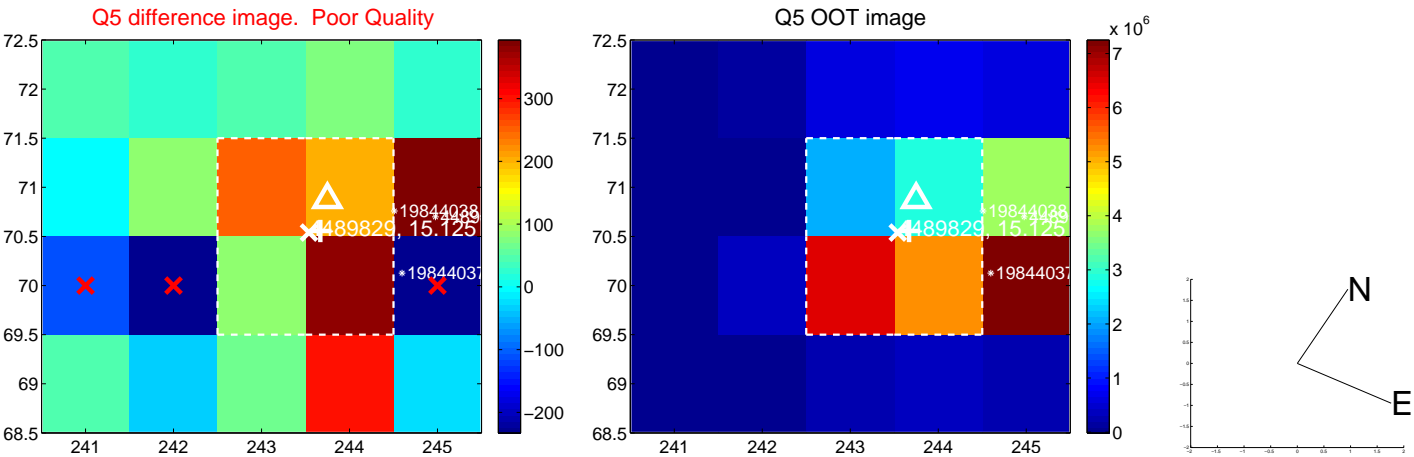


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

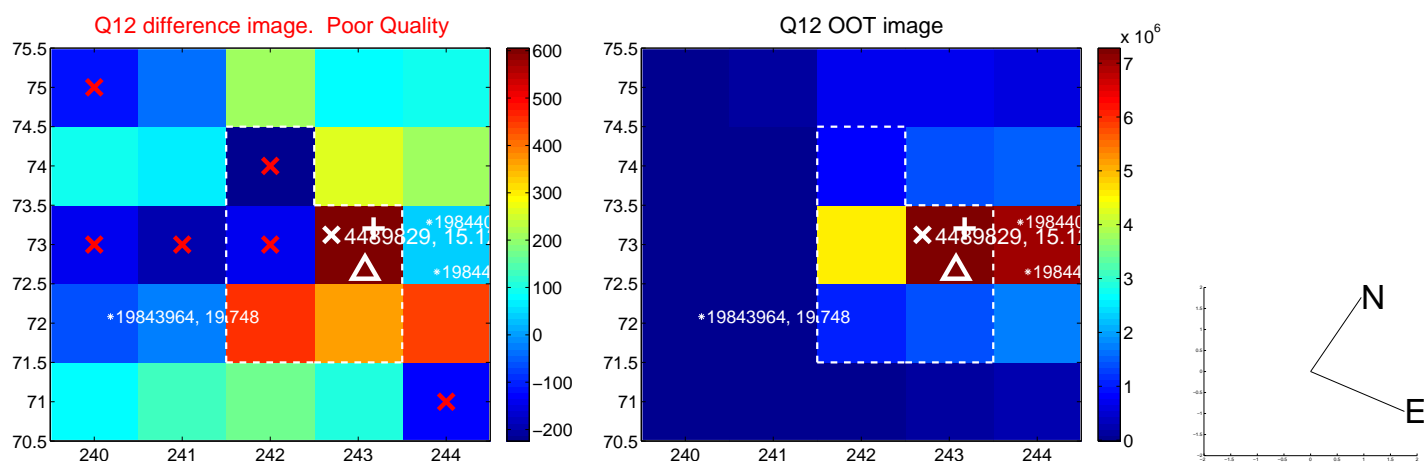
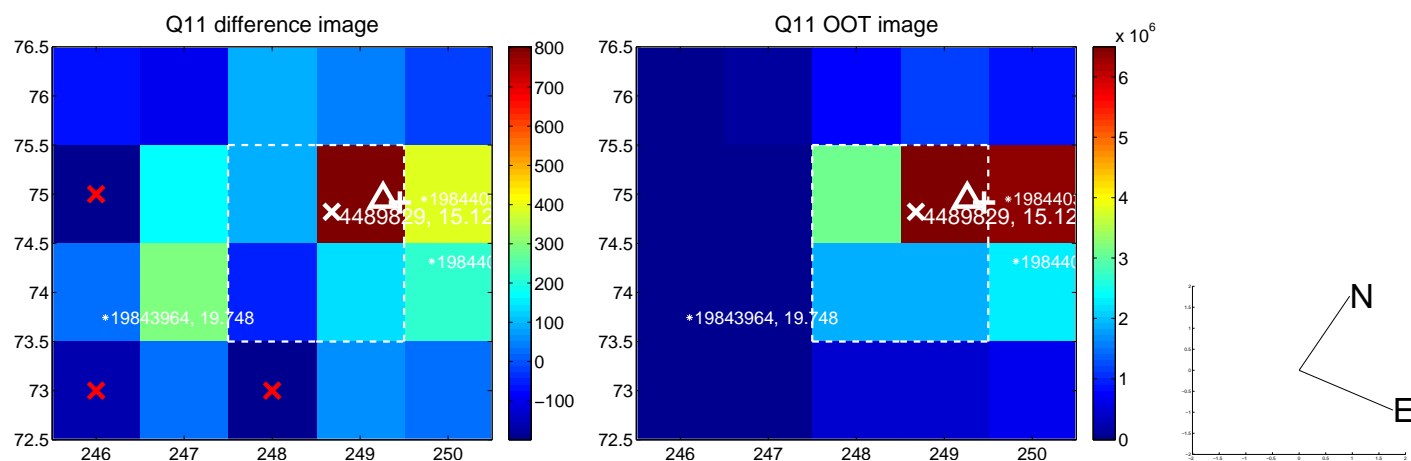
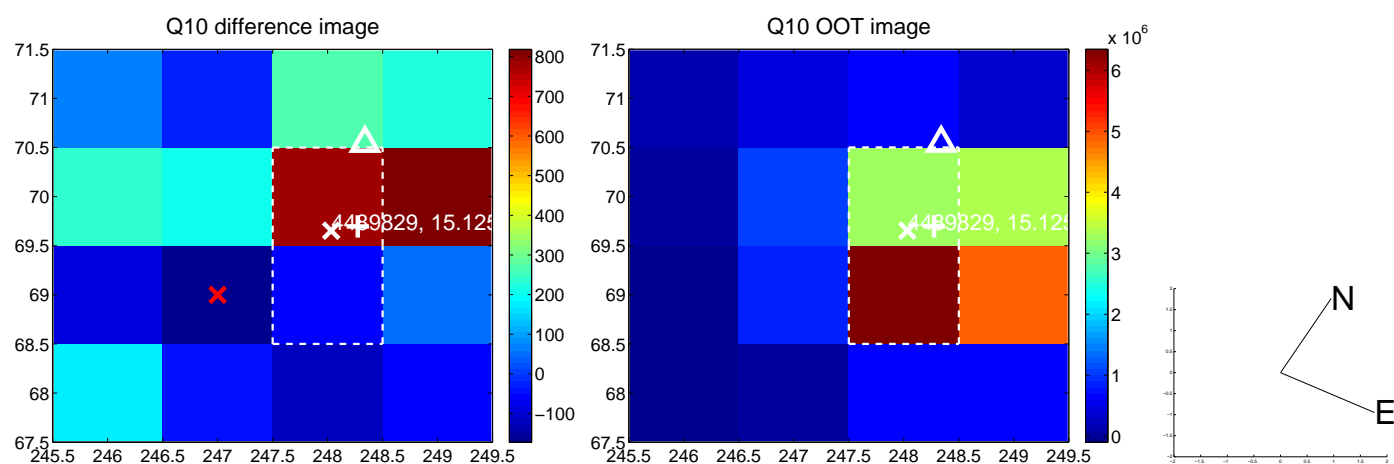
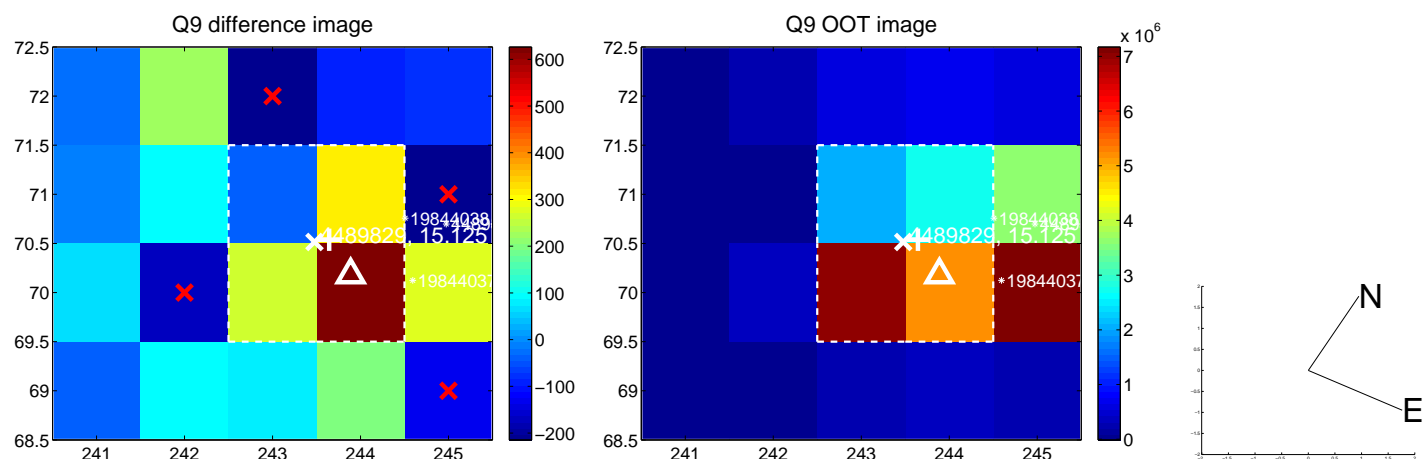
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



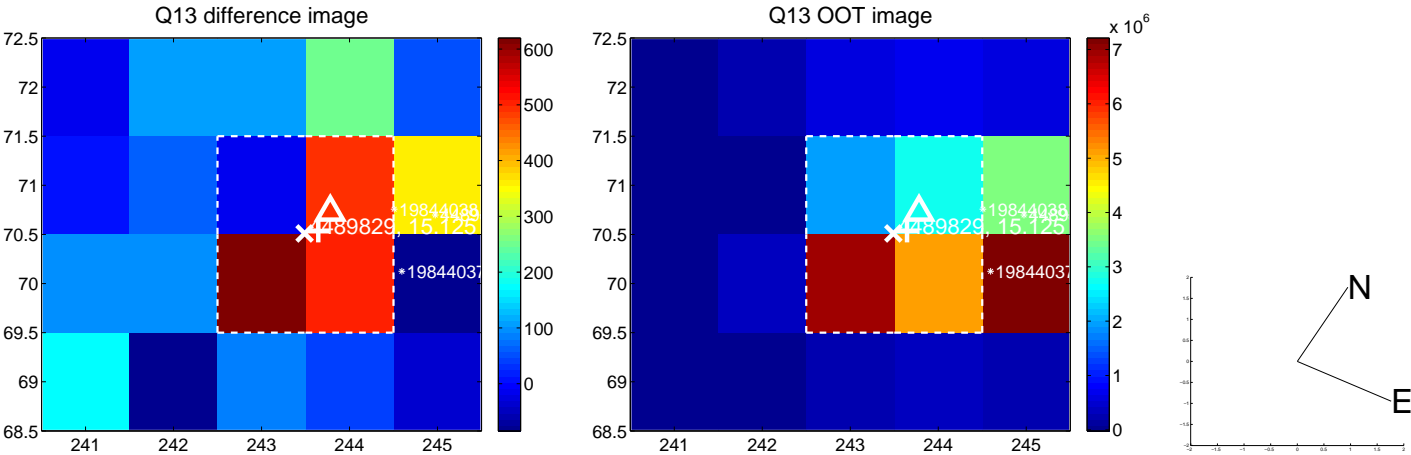
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



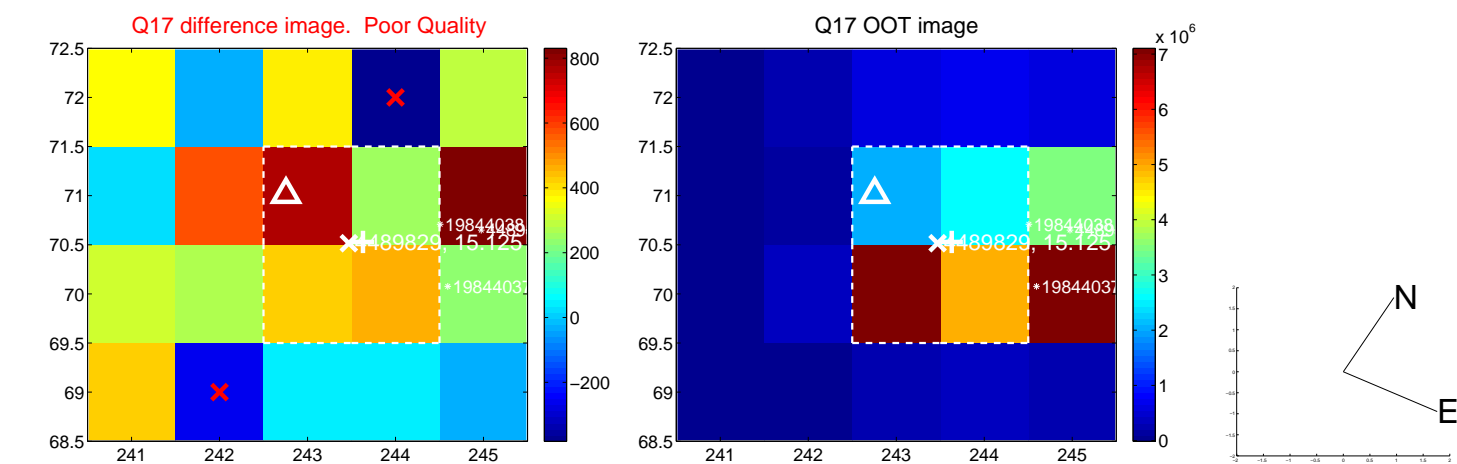
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



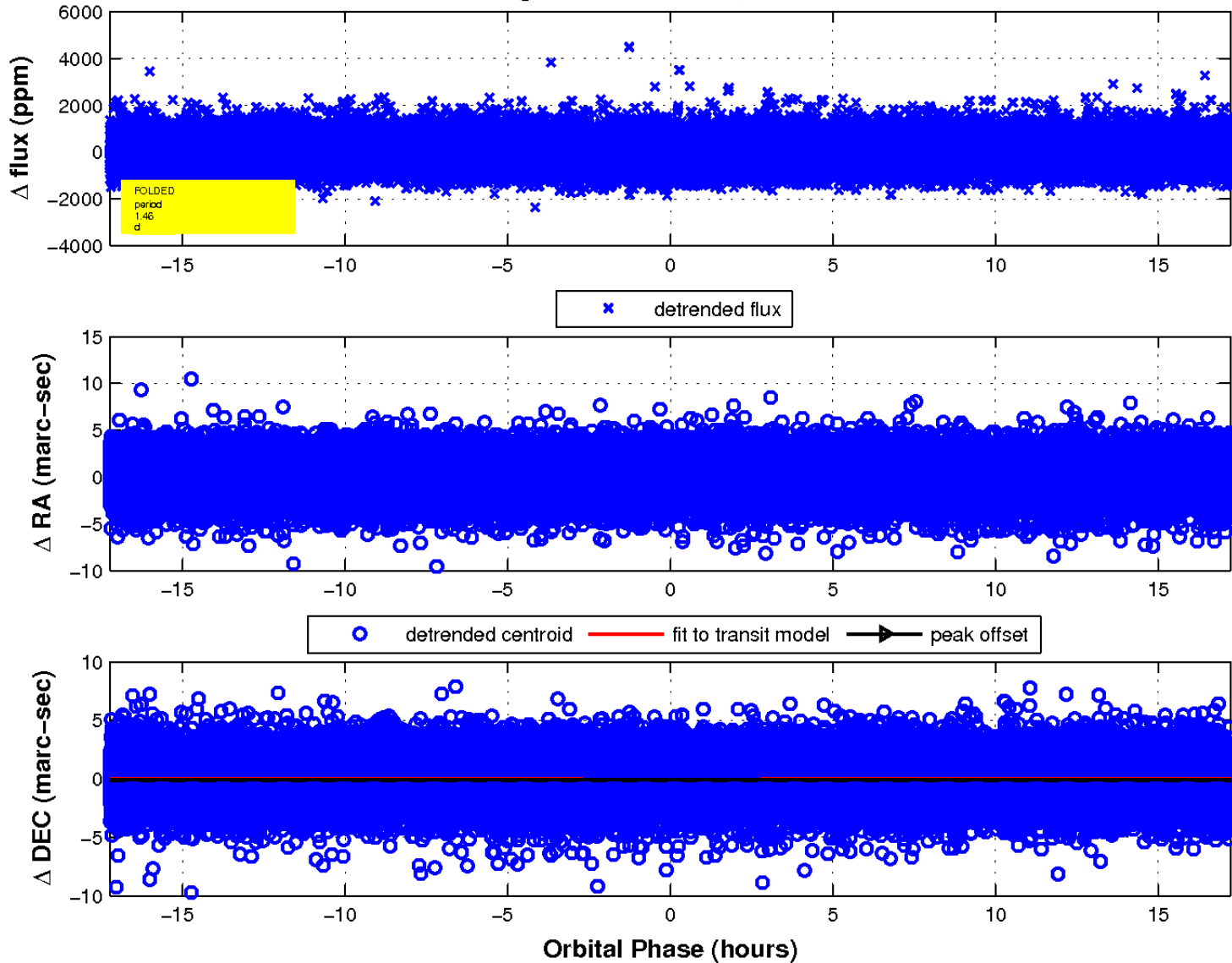
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

