

KIC 003115435

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})
003115435-01	OBS	No	6.808578	133.298475	39.7	17.572	11.6	11.8	2.99	6988	2.31	3095.82
003115435-02	OBS	No	6.810276	134.875837	27.7	10.483	9.0	8.4	2.99	6988	1.83	3094.79
003115435-04	OBS	No	3.404388	133.415719	24.6	13.361	8.4	9.0	2.99	6988	1.71	7800.66
003115435-06	OBS	No	6.805700	137.510854	51.0	30.302	9.3	9.9	2.99	6988	2.50	3097.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003115435-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
003115435-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003115435-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003115435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

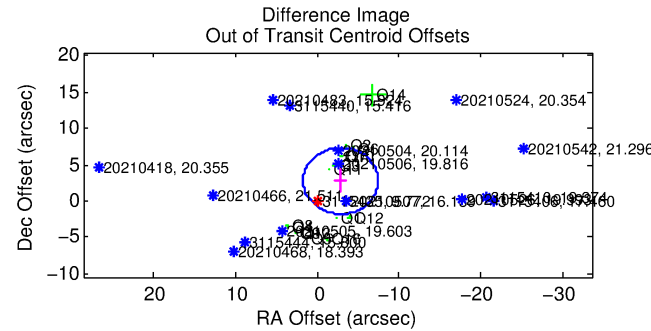
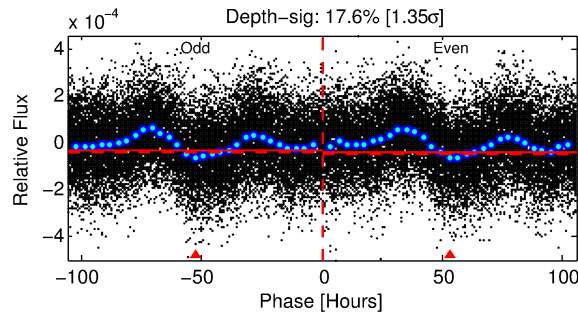
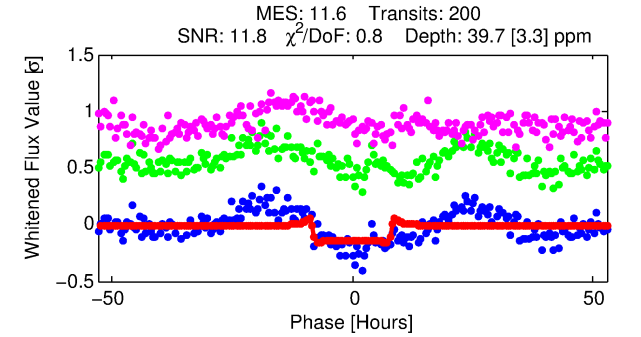
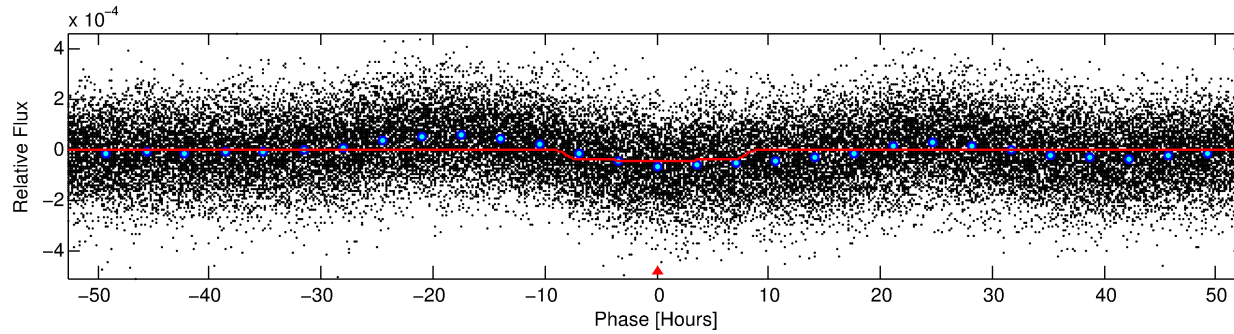
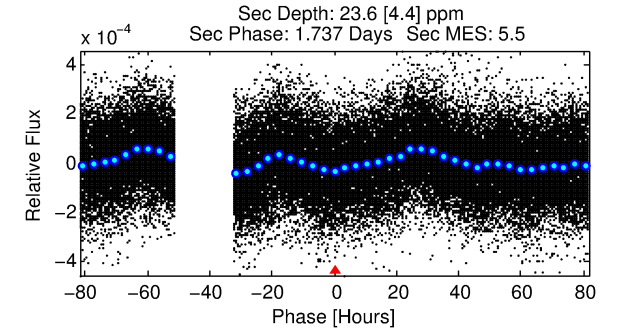
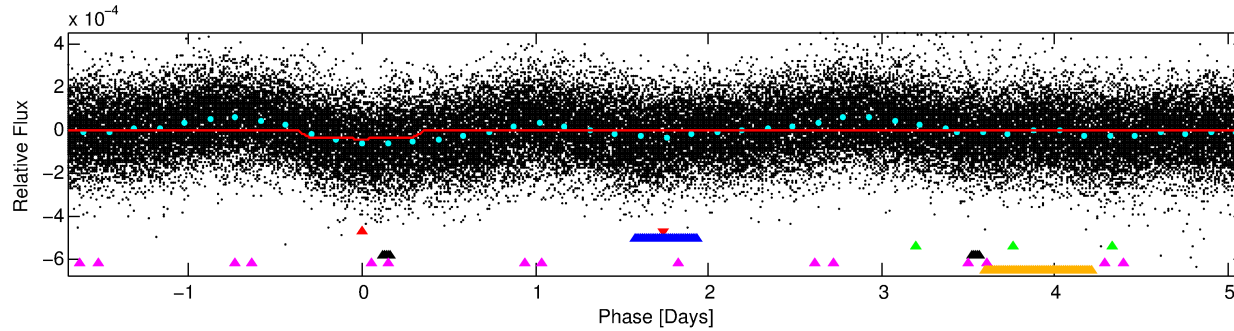
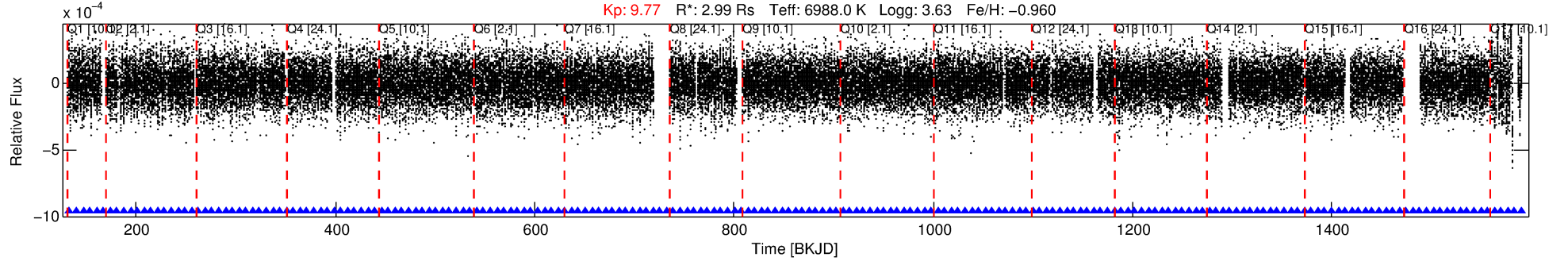
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003115435-01

No Significant Match Found

DV One-Page Summary

KIC: 3115435 Candidate: 1 of 6 Period: 6.809 d



DV Fit Results:

Period = 6.80858 [0.00011] d
Epoch = 133.2985 [0.0128] BKJD
Rp/R* = 0.0071 [0.0004]
a/R* = 1.37 [0.12]
b = 0.95 [0.02]
Seff = 3095.81 [2045.33]
Teq = 1902 [314] K
Rp = 2.31 [1.03] Re
a = 0.0786 [0.0323] AU
Ag = 14.96 [10.20] [1.37σ]
Teffp = 5784 [363] K [8.09σ]

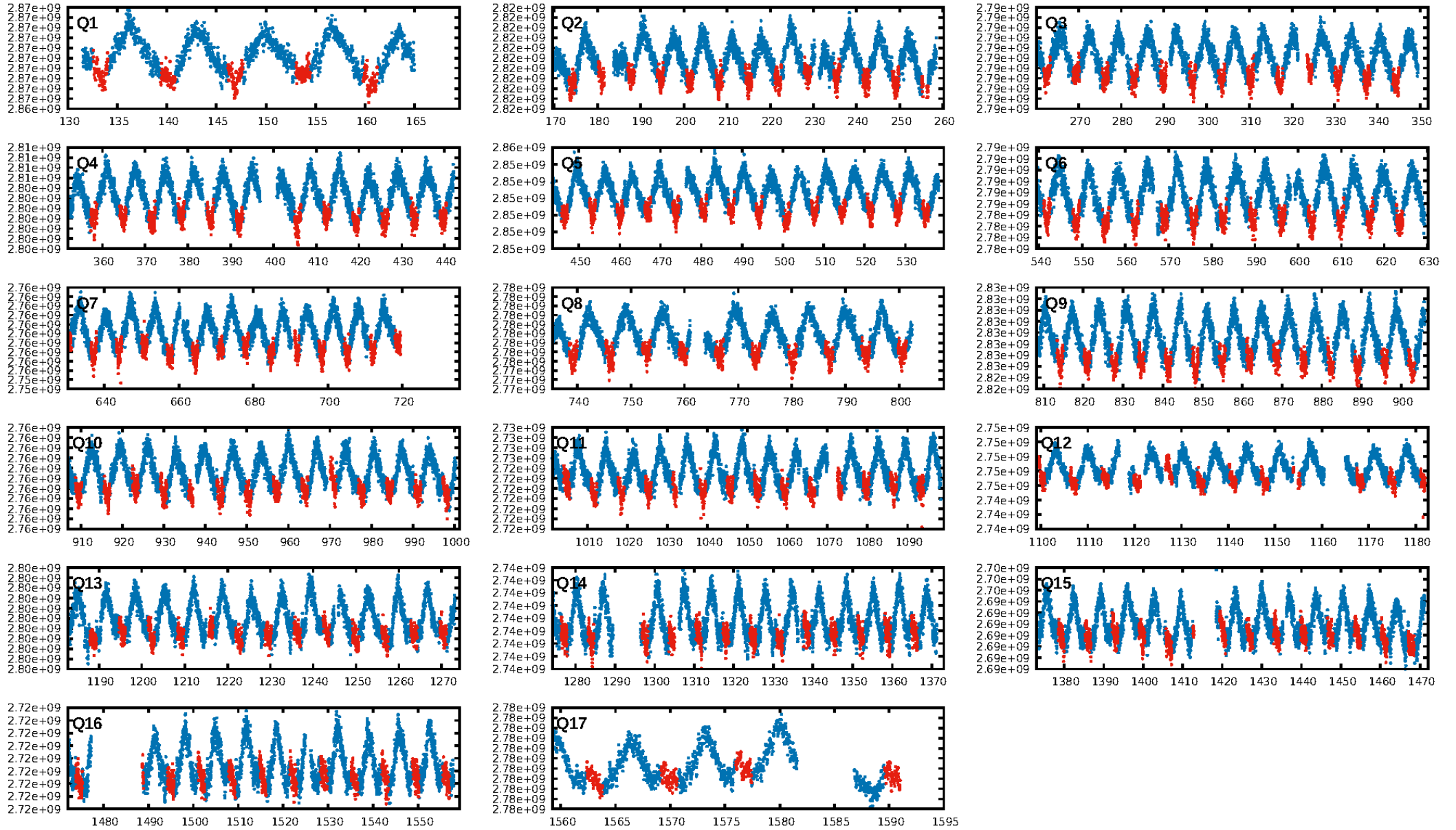
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [191/191]
GhostDiagnostic-chr: N/A
Centroid-sig: 9.2%
Centroid-so: 1.178 arcsec [1.41σ]
OotOffset-rm: 3.963 arcsec [2.61σ]
KicOffset-rm: 4.256 arcsec [2.41σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.27 [4/15]
DiffImageOverlap-fno: 0.00 [0/17]

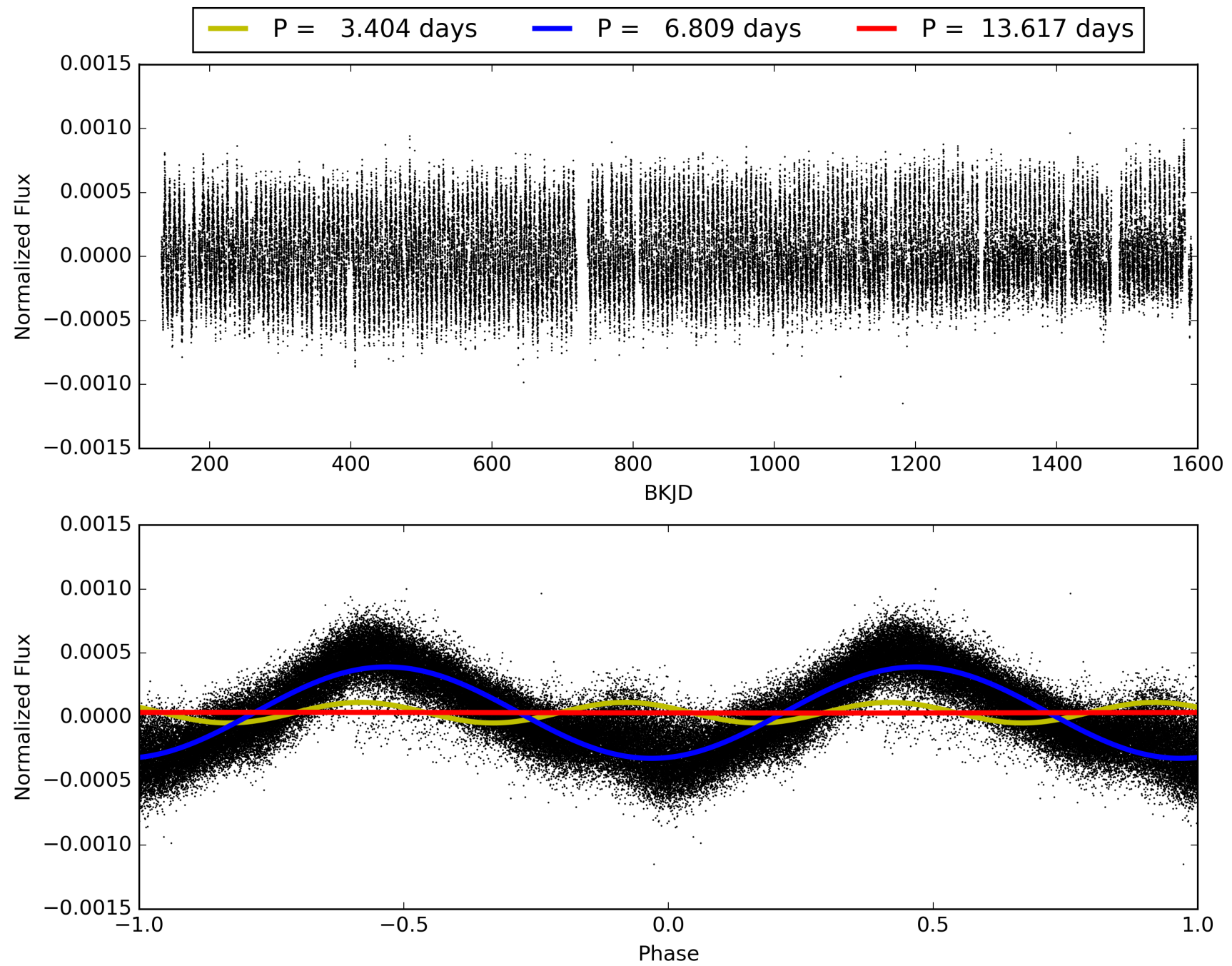
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:52:12 Z

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

TCE 003115435-01, PDC Light Curves

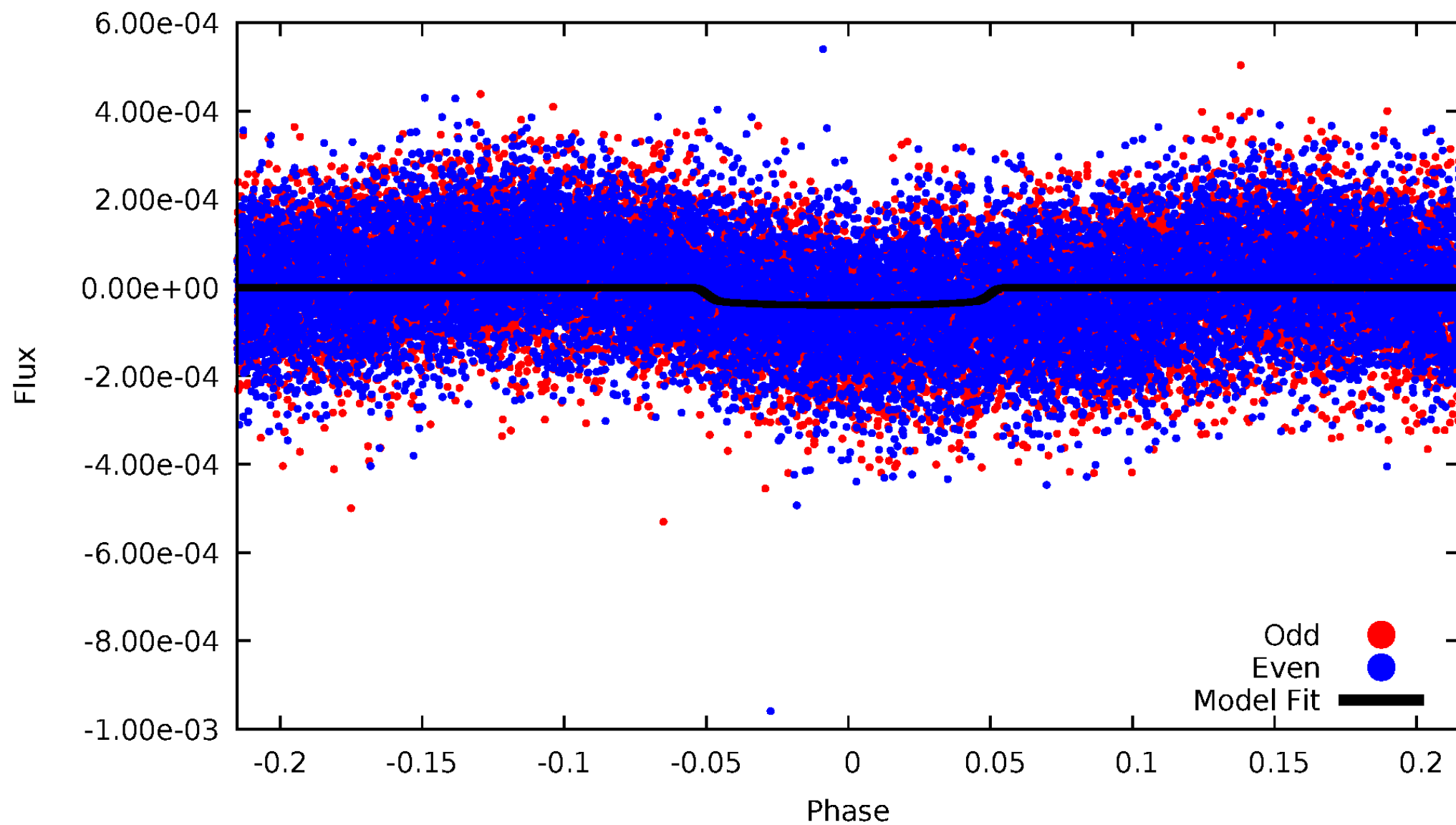


TCE 003115435-01



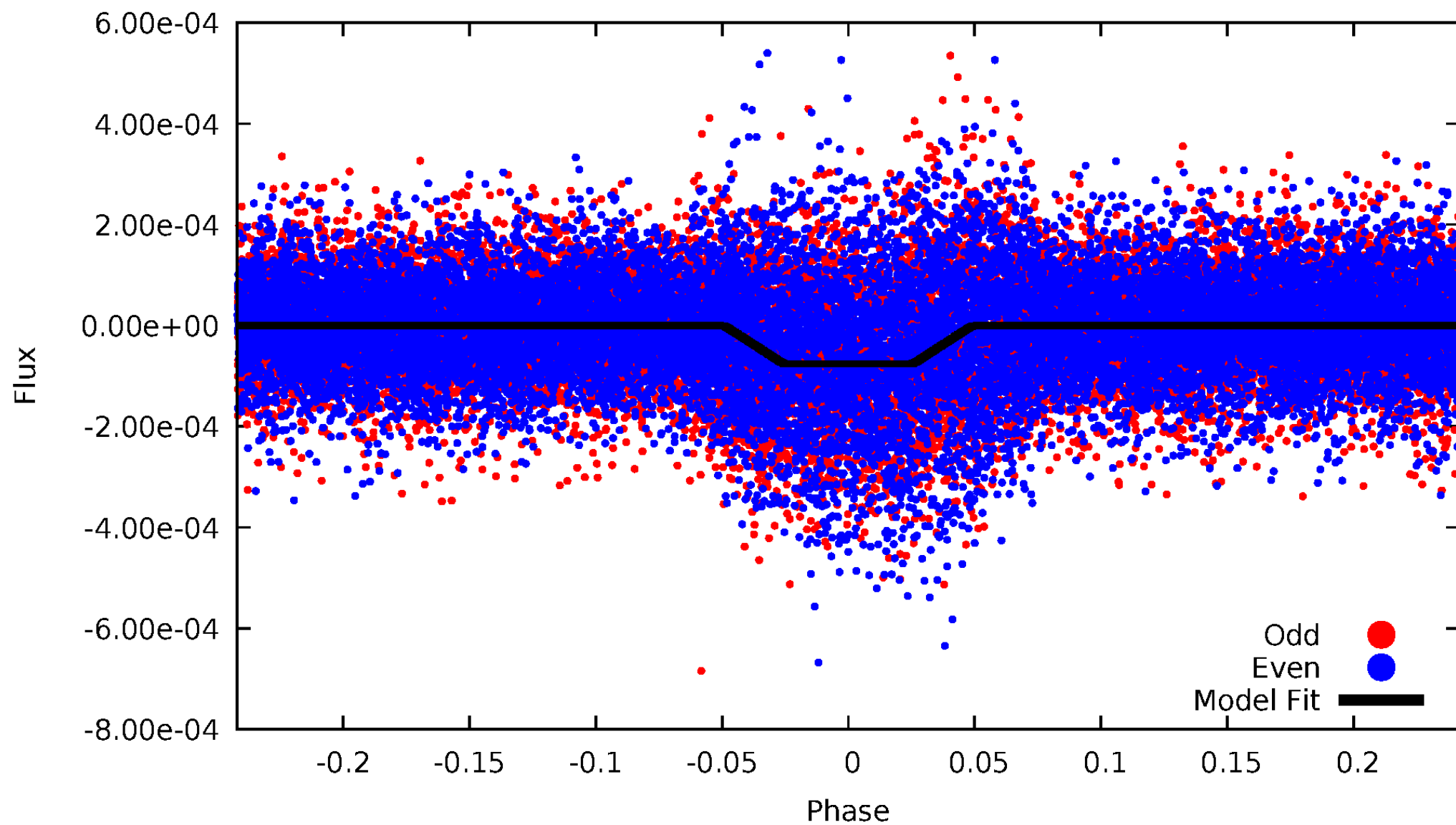
DV Odd/Even

TCE 003115435-01



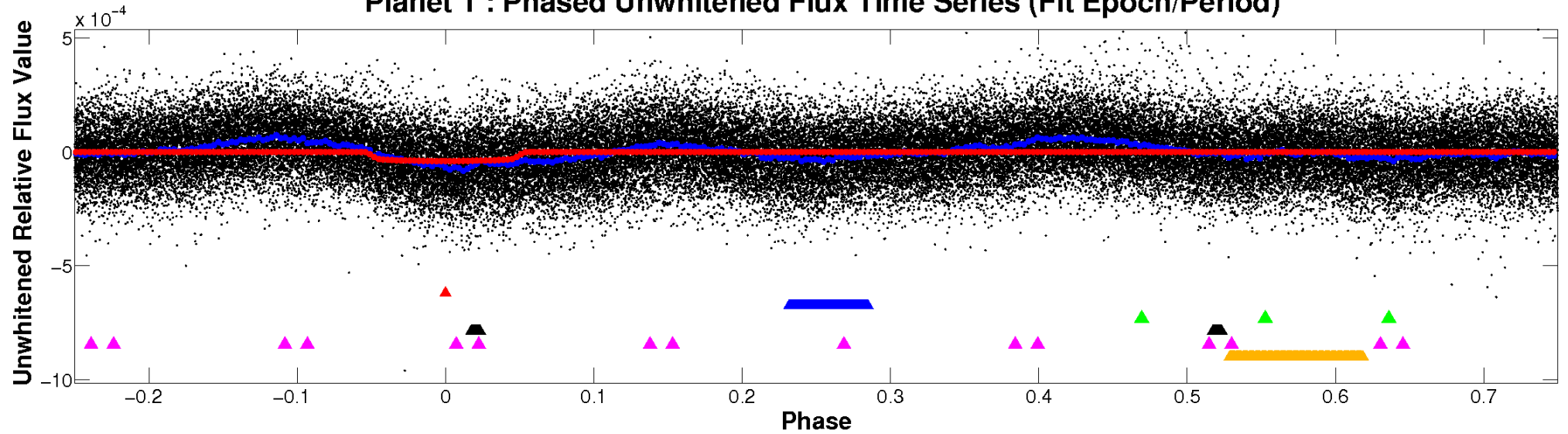
ALT Odd/Even

TCE 003115435-01

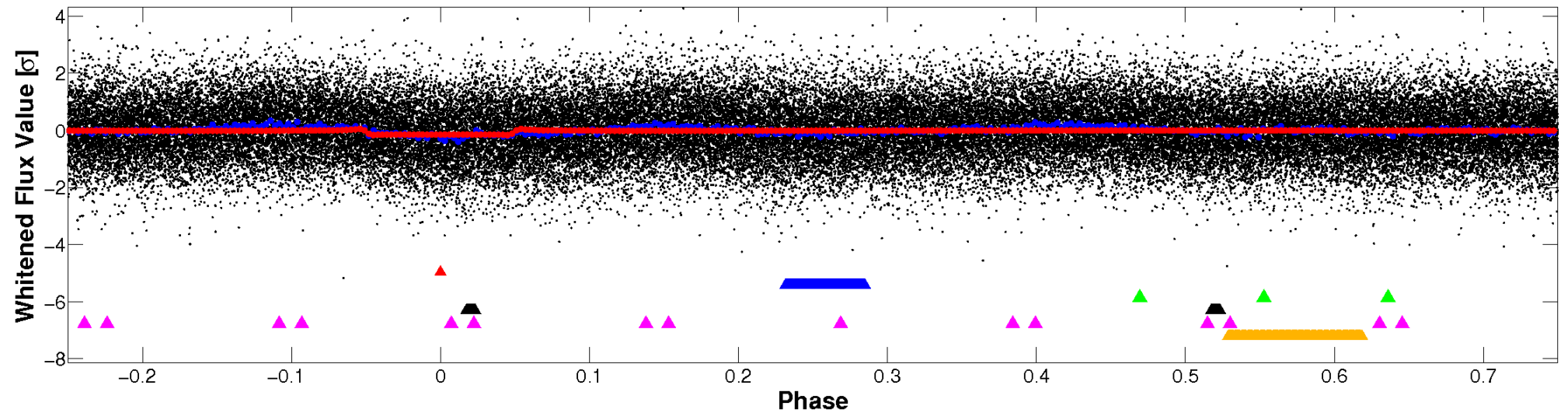


Non-Whitened Vs. Whitened Light Curve

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

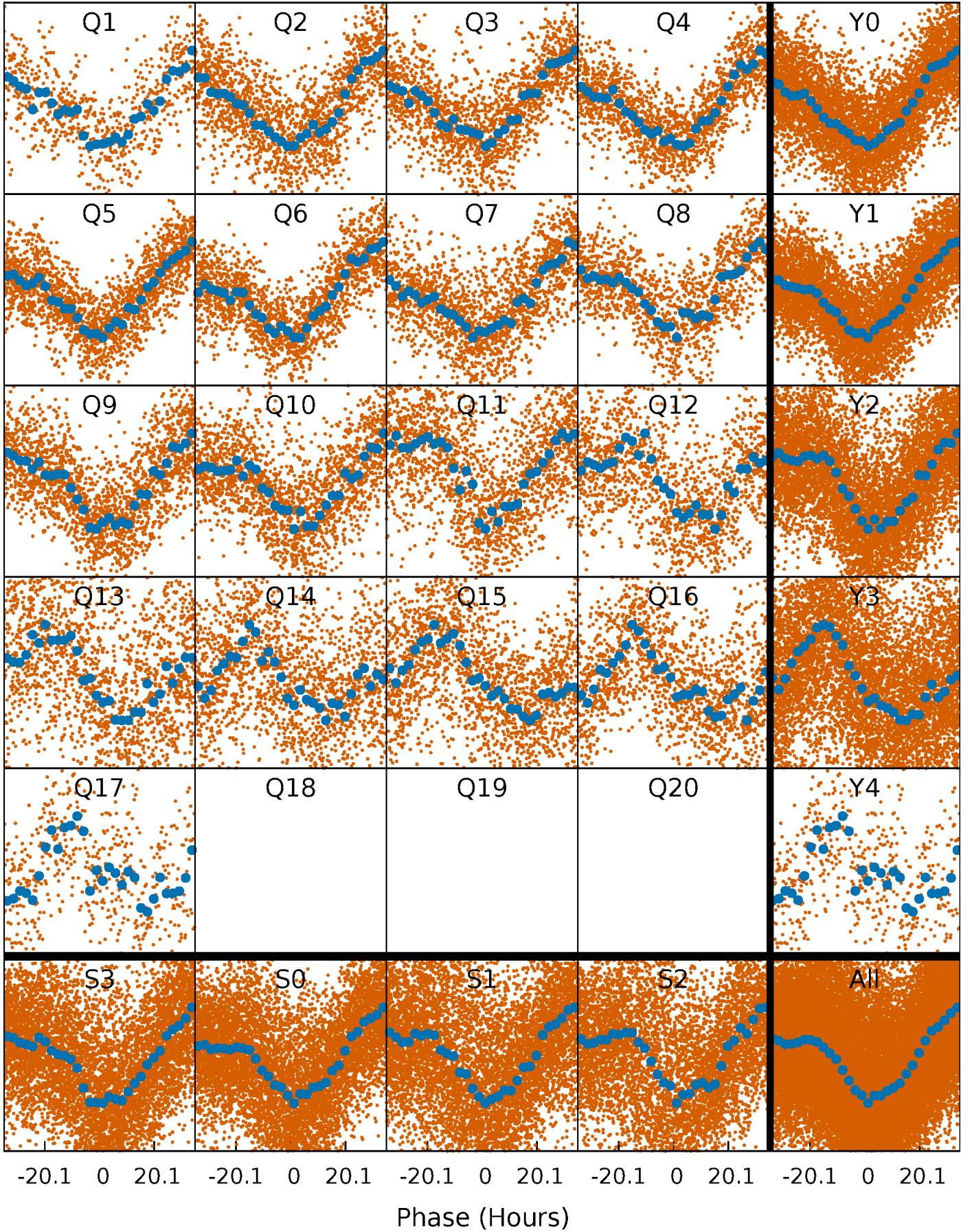


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



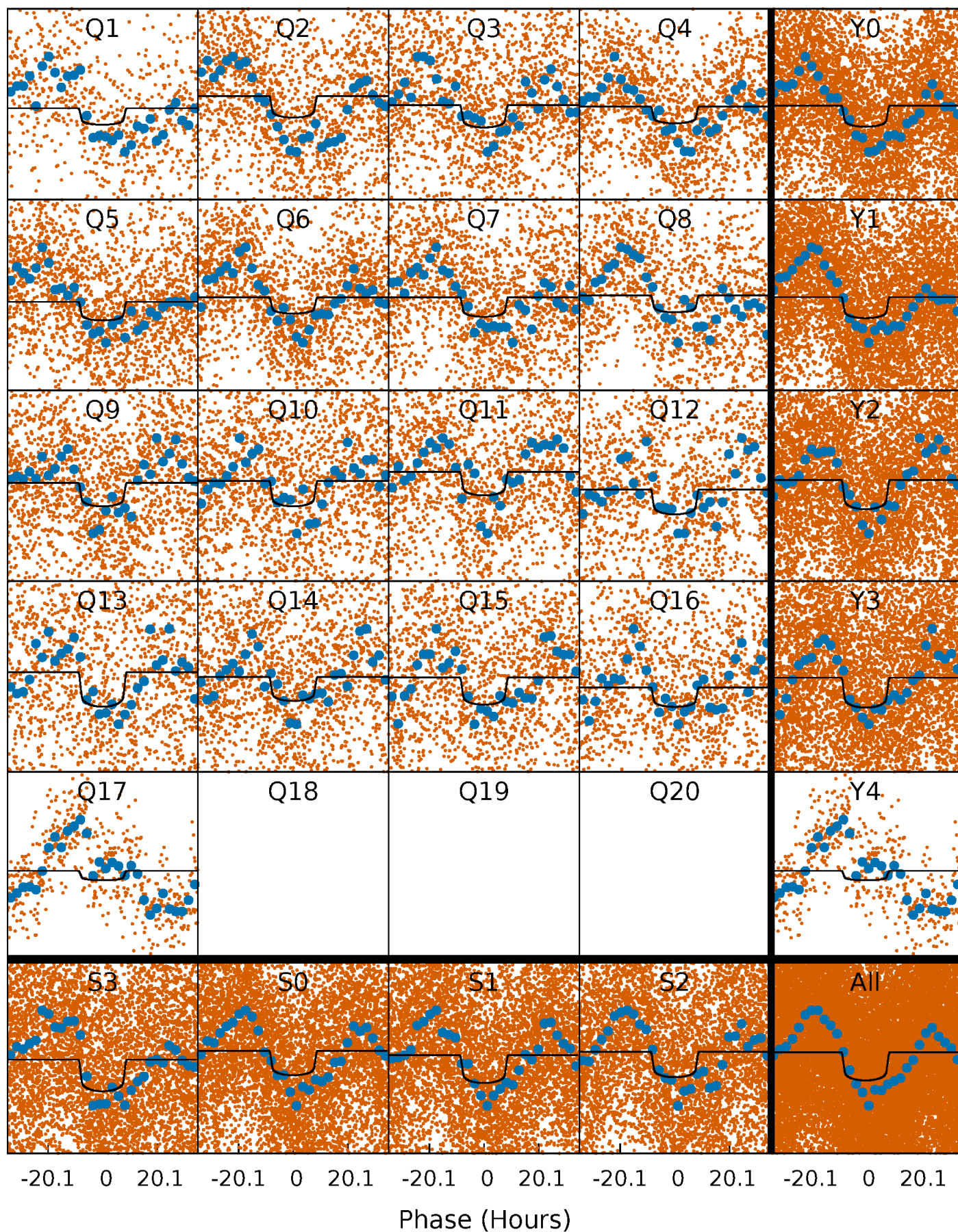
PDC Quarter-Phased Transit Curves

TCE 003115435-01 P= 6.808578 Days $T_0=133.298475$ (BKJD)



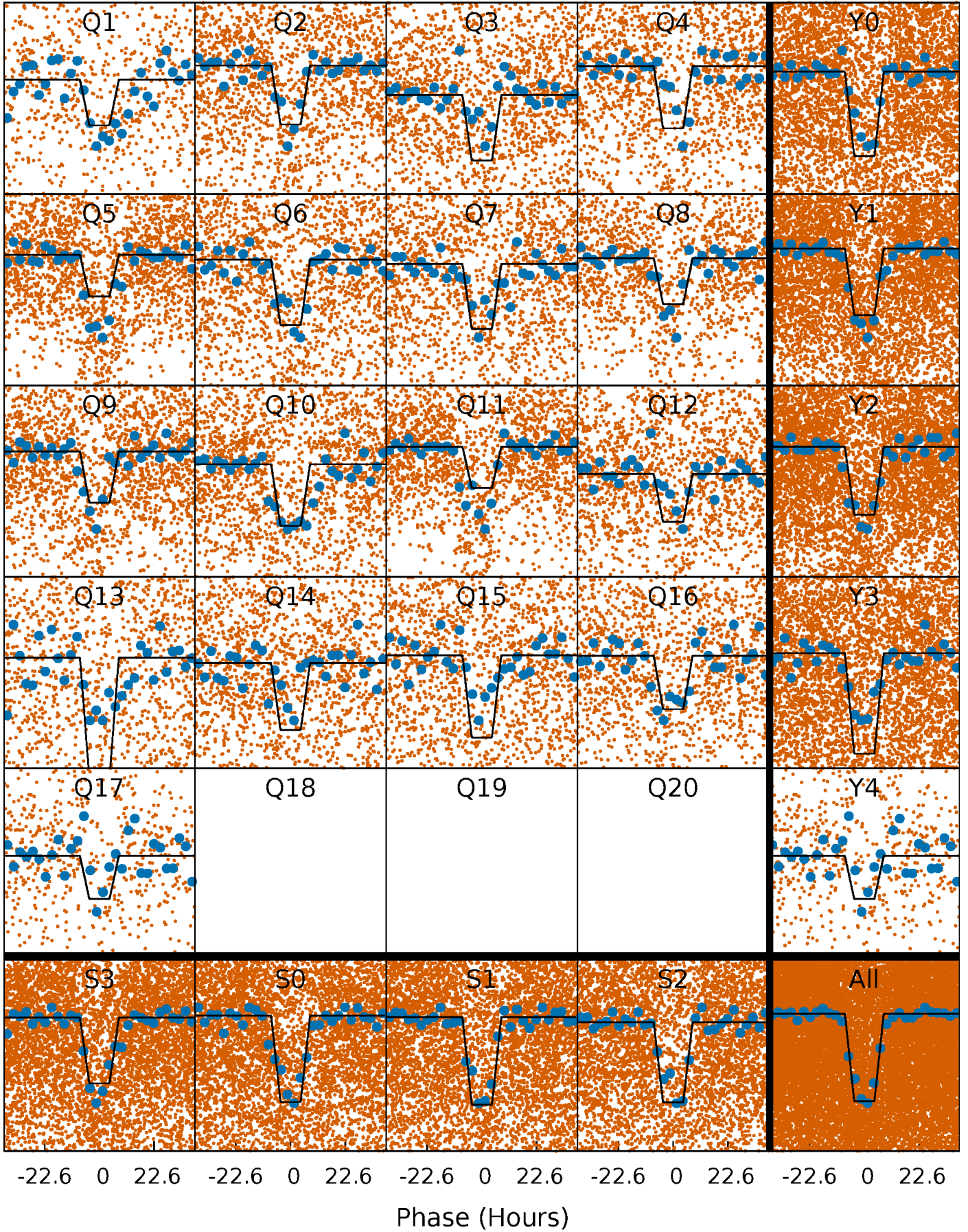
DV Quarter-Phased Transit Curves

TCE 003115435-01 P= 6.808578 Days $T_0=133.298475$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

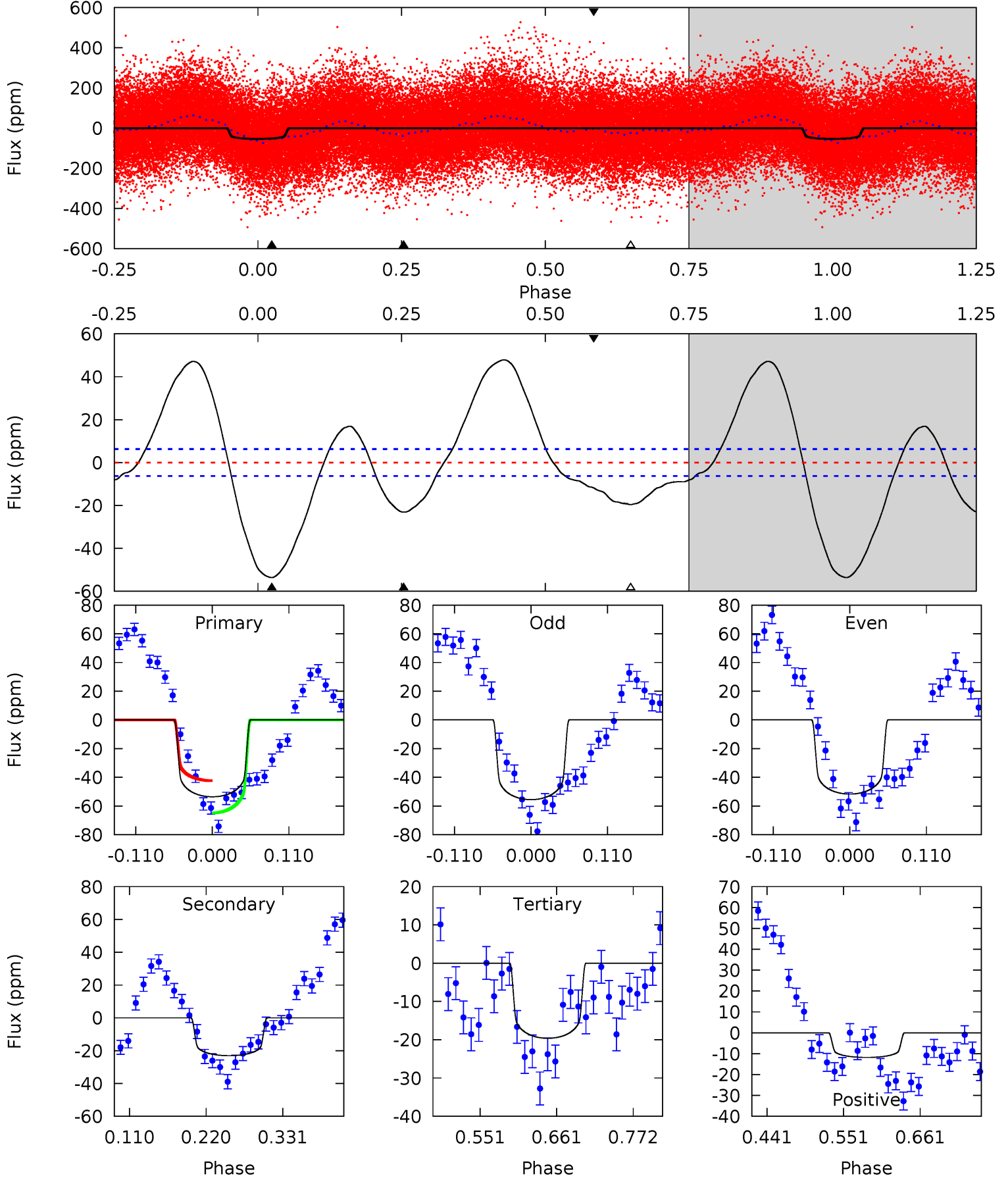
TCE 003115435-01 P= 6.808480 Days $T_0=133.264401$ (BKJD)



DV Model-Shift Uniqueness Test

003115435-01, P = 6.808578 Days, E = 126.489897 Days

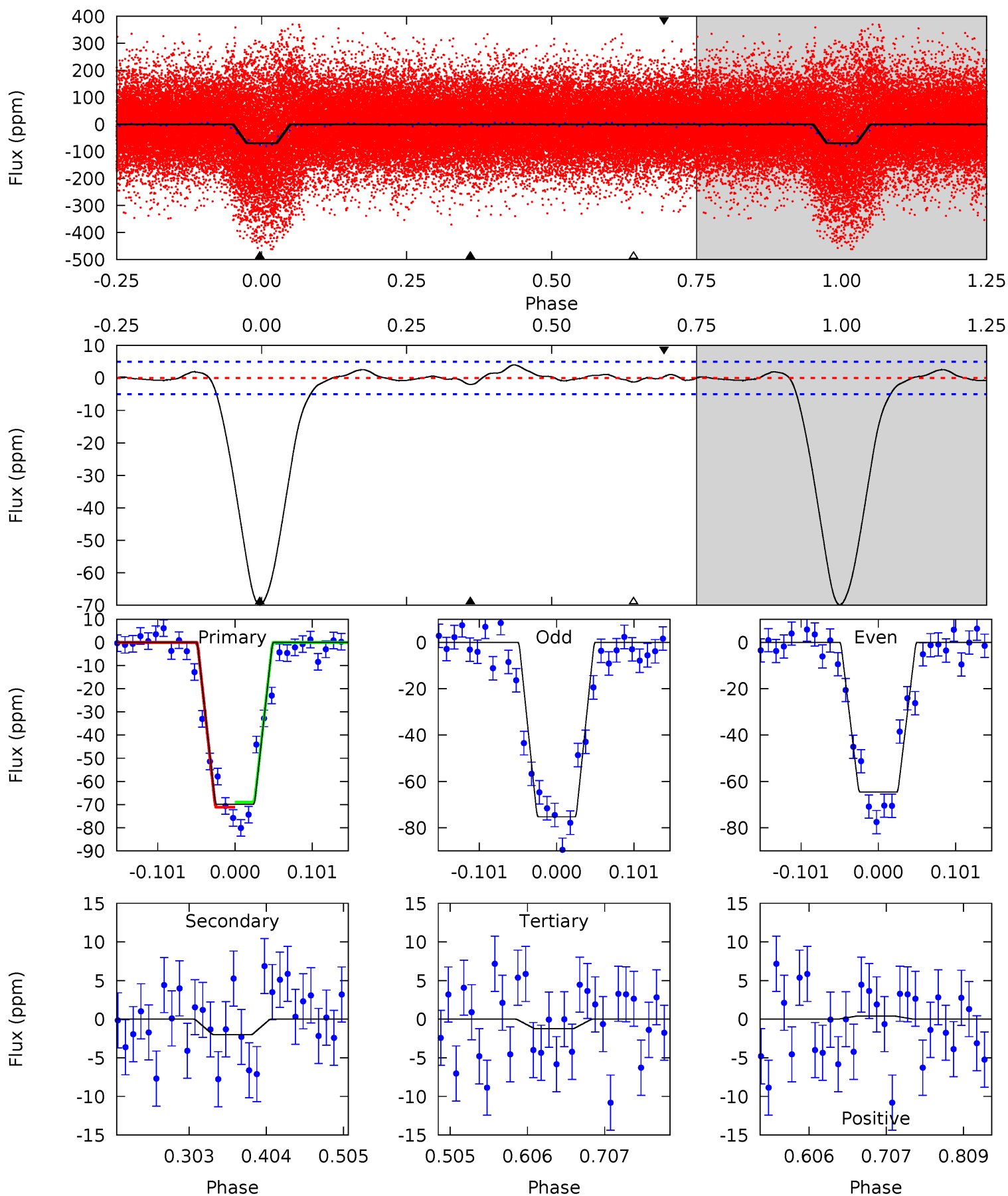
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.9	16.7	14.2	-8.58	4.54	1.60	17.2	24.7	47.5	2.49	25.3	1.42	0.95	0.47	8.19



Alt Model-Shift Uniqueness Test

003115435-01, P = 6.808480 Days, E = 126.455921 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.8	1.83	1.12	0.36	4.56	1.64	0.82	62.7	63.4	0.71	1.47	4.88	1.01	0.05	1.03



Stellar Parameters For KIC 003115435

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6988^{+167}_{-229}	$3.631^{+0.376}_{-0.094}$	$-0.960^{+0.400}_{-0.300}$	$2.991^{+0.439}_{-1.317}$	$1.395^{+0.170}_{-0.340}$	$0.073^{+0.238}_{-0.023}$
	+2%/-3%	+10%/-3%	+42%/-31%	+15%/-44%	+12%/-24%	+324%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003115435-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-23 ± 1	$2.23^{+0.31}_{-0.45}$	2601^{+163}_{-265}	5690^{+227}_{-228}	16^{+8}_{-3}
Alt.	-2 ± 1	$2.76^{+0.37}_{-0.63}$	2593^{+151}_{-271}	3160^{+314}_{-605}	$0.957^{+0.728}_{-0.524}$

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

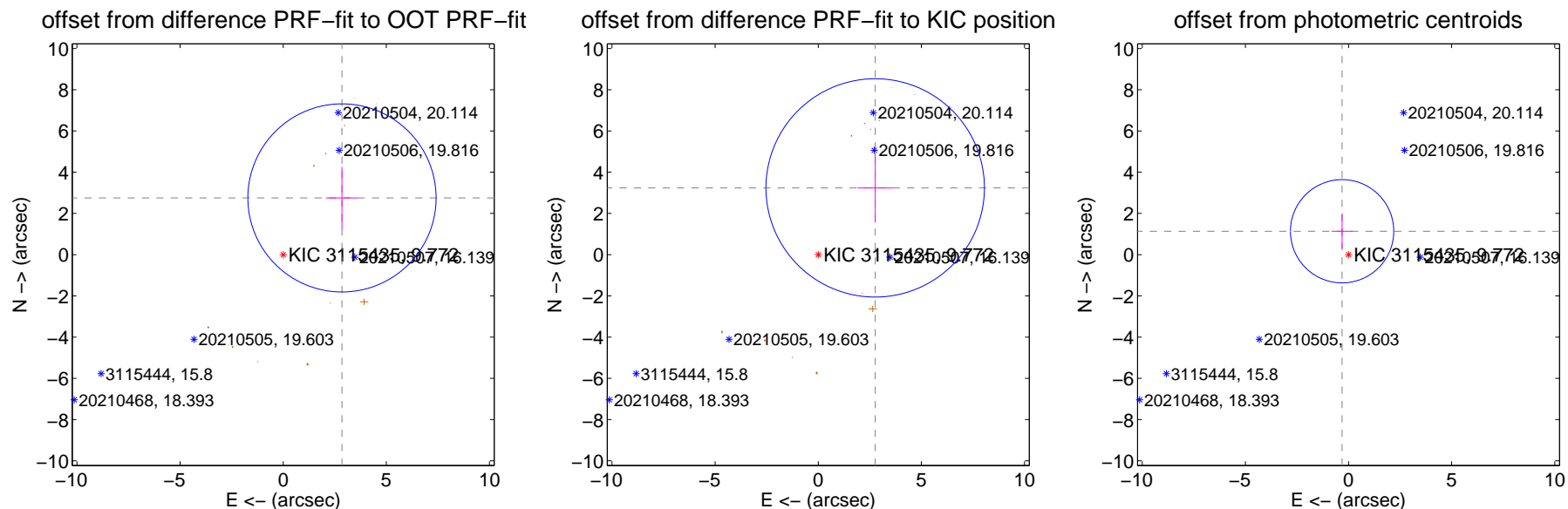
DV Centroid Data

Supplemental centroid analysis for 003115435-01. **Kepler magnitude: 9.77**. Transit SNR 11.80

There are 4 quarters with good PRF difference image offsets

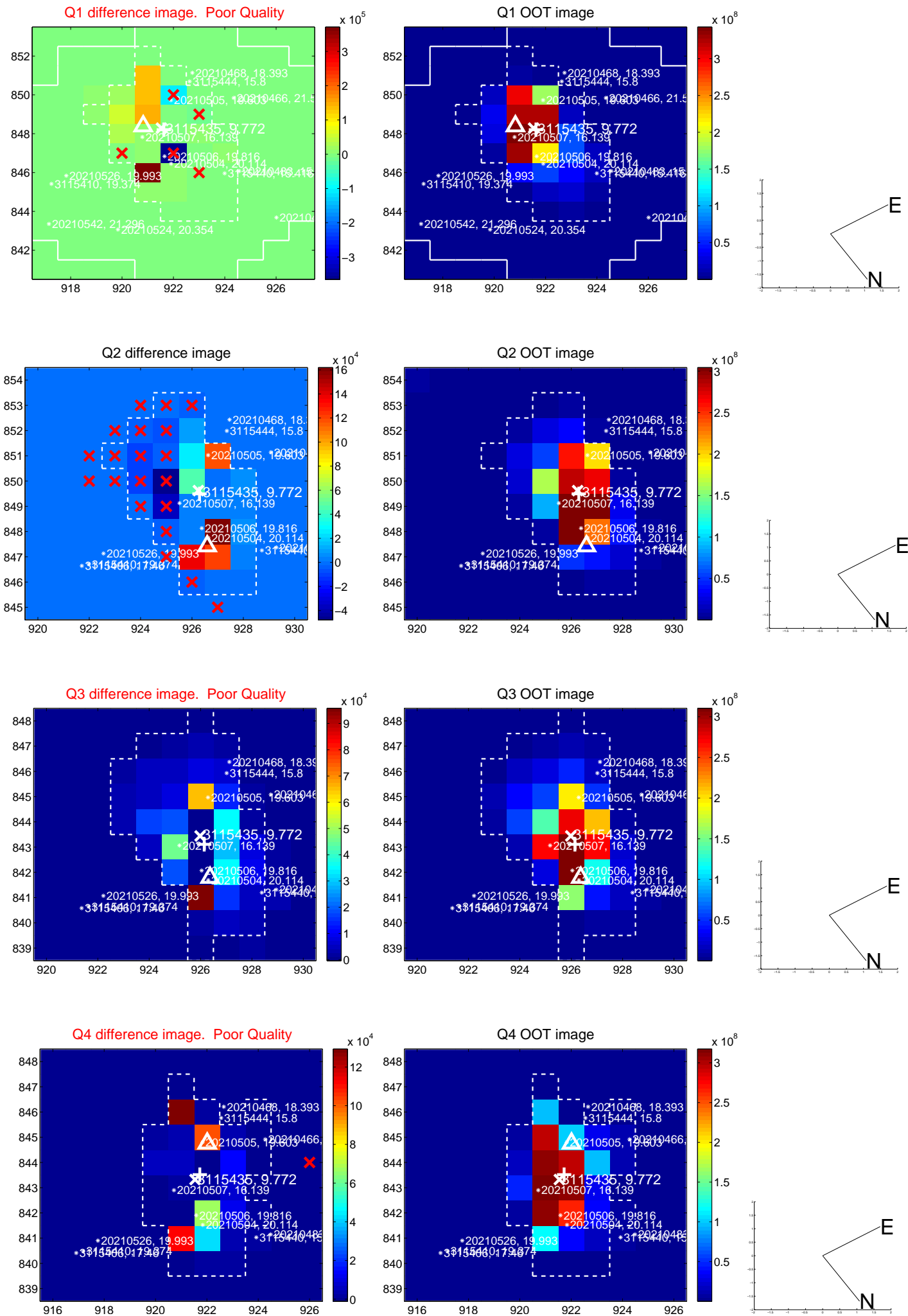
The direct PRF centroid is offset from the target star catalog position by about 1.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.963 ± 1.521	2.61	-2.851 ± 0.777	2.753 ± 1.500
PRF-fit source offset from KIC position	4.256 ± 1.766	2.41	-2.761 ± 0.856	3.239 ± 1.671
photometric centroid source offset	1.18 ± 0.83	1.41	0.31 ± 0.52	1.14 ± 0.85

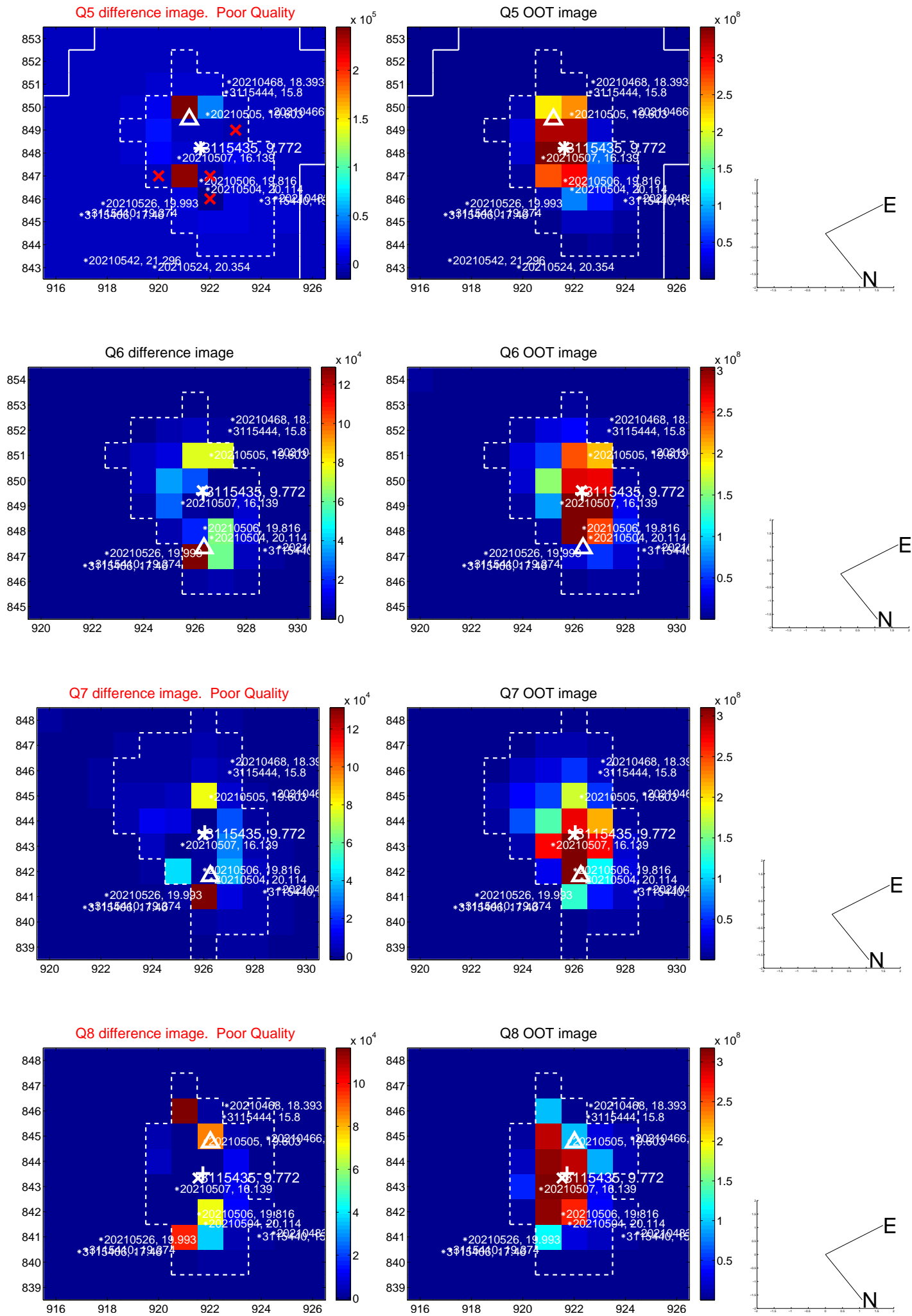


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

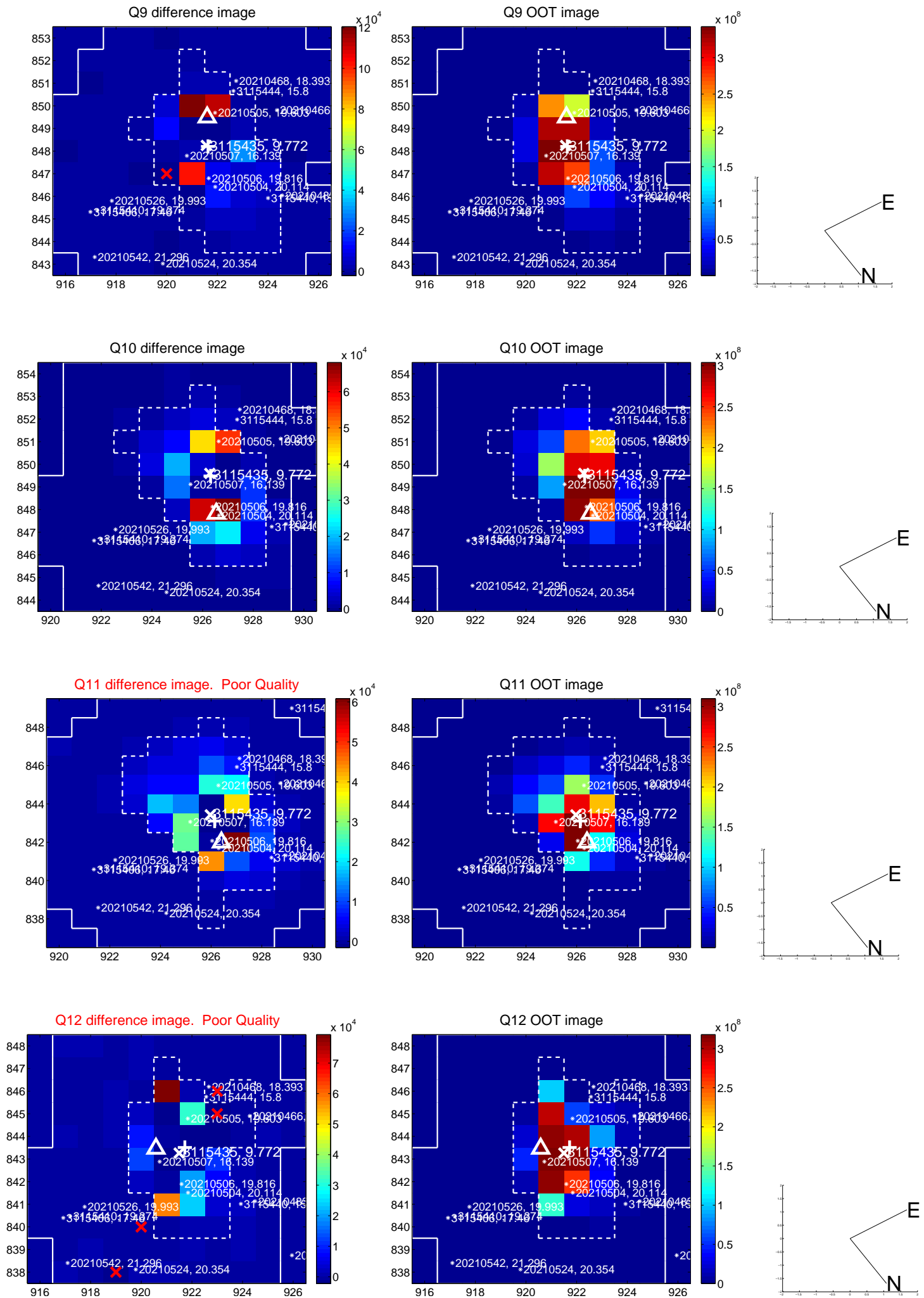
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



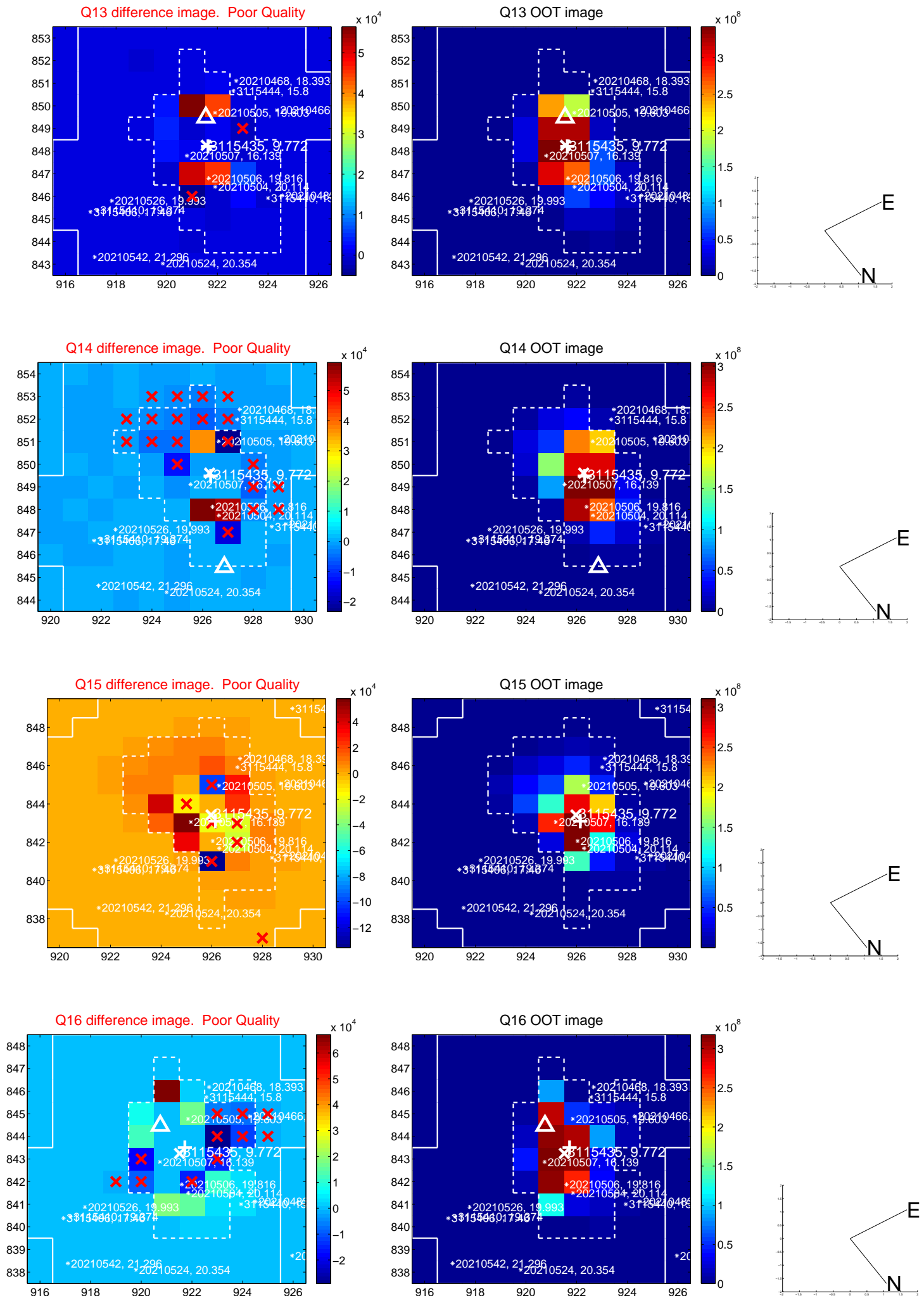
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

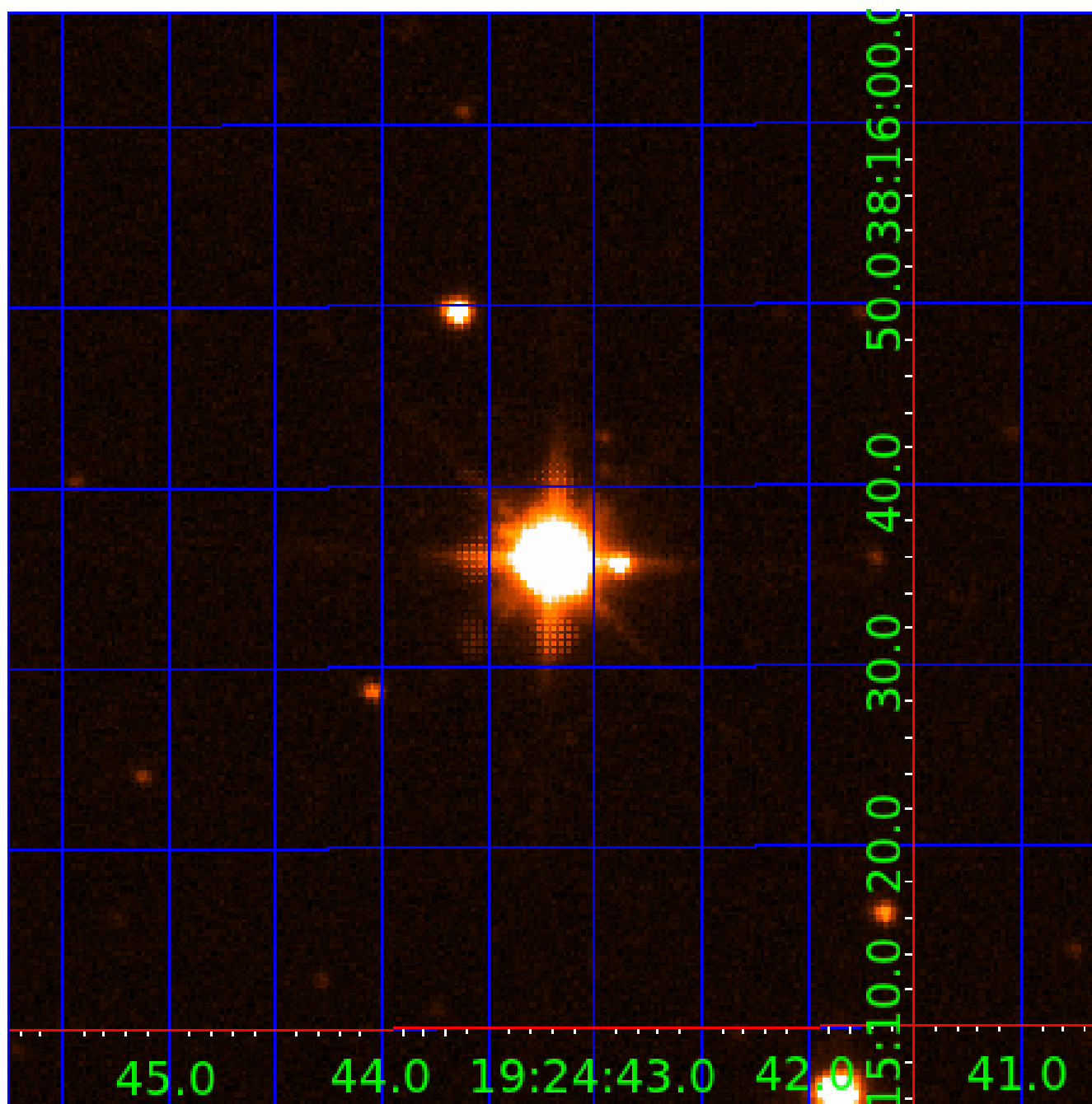


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003115435

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})
003115435-01	OBS	No	6.808578	133.298475	39.7	17.572	11.6	11.8	2.99	6988	2.31	3095.82
003115435-02	OBS	No	6.810276	134.875837	27.7	10.483	9.0	8.4	2.99	6988	1.83	3094.79
003115435-04	OBS	No	3.404388	133.415719	24.6	13.361	8.4	9.0	2.99	6988	1.71	7800.66
003115435-06	OBS	No	6.805700	137.510854	51.0	30.302	9.3	9.9	2.99	6988	2.50	3097.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003115435-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
003115435-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003115435-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003115435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

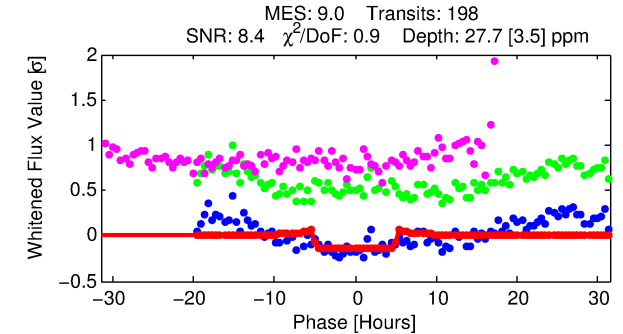
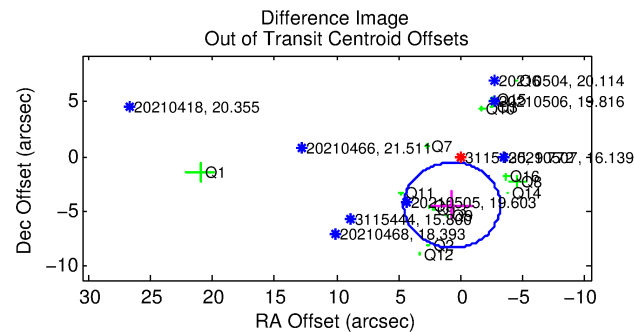
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 003115435-02

No Significant Match Found

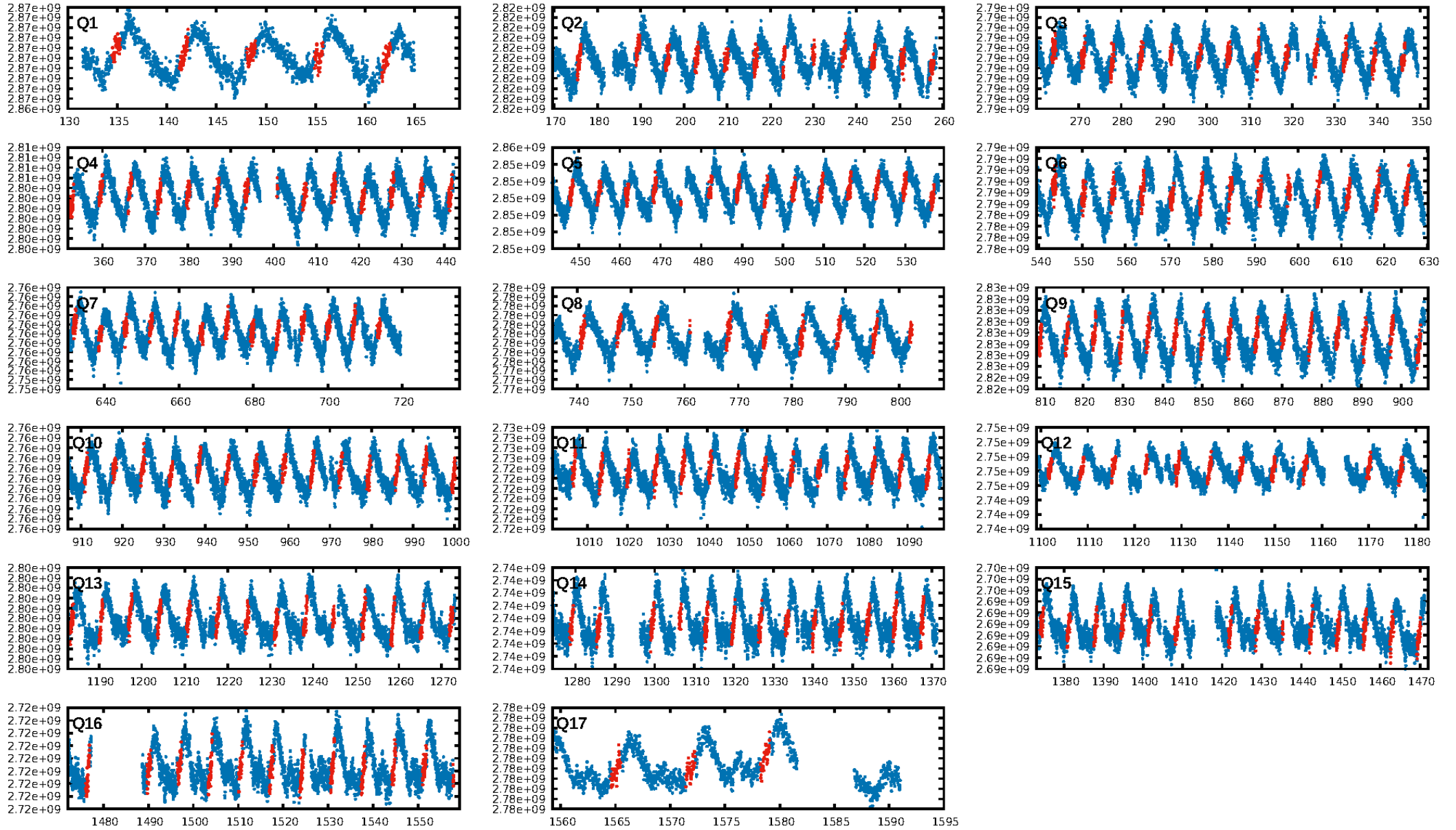
KIC: 3115435 Candidate: 2 of 6 Period: 6.810 d



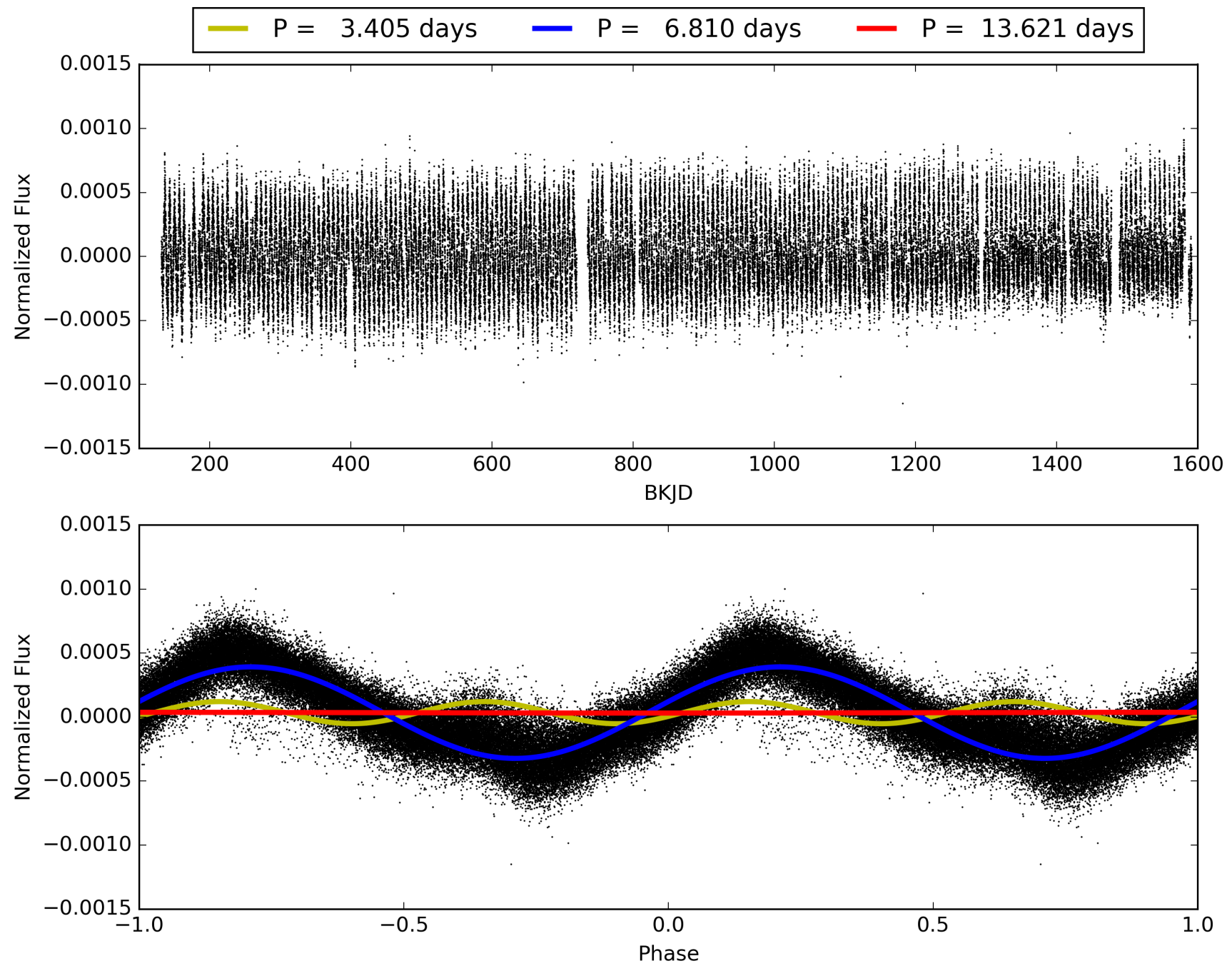
ShortPeriod-sig: 0.2% [0.00s]
 LongPeriod-sig: 100.0% [168.57s]
 ModelChiSquare2-sig: 68.5%
 ModelChiSquareGof-sig: 100.0%
 Bootstrap-pfa: N/A
 RollingBand-fgt: 1.00 [190/190]
 GhostDiagnostic-chr: N/A
 Centroid-sig: 28.3%
 Centroid-so: 0.543 arcsec [0.48s]
 OotOffset-rm: 4.478 arcsec [3.45s]
 KicOffset-rm: 4.554 arcsec [2.89s]
 OotOffset-st: 4/4/3/4 [15]
 KicOffset-st: 4/4/3/4 [15]
 DiffImageQuality-fgm: 0.13 [2/15]
 DiffImageOverlap-fno: 1.00 [17/17]

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

TCE 003115435-02, PDC Light Curves

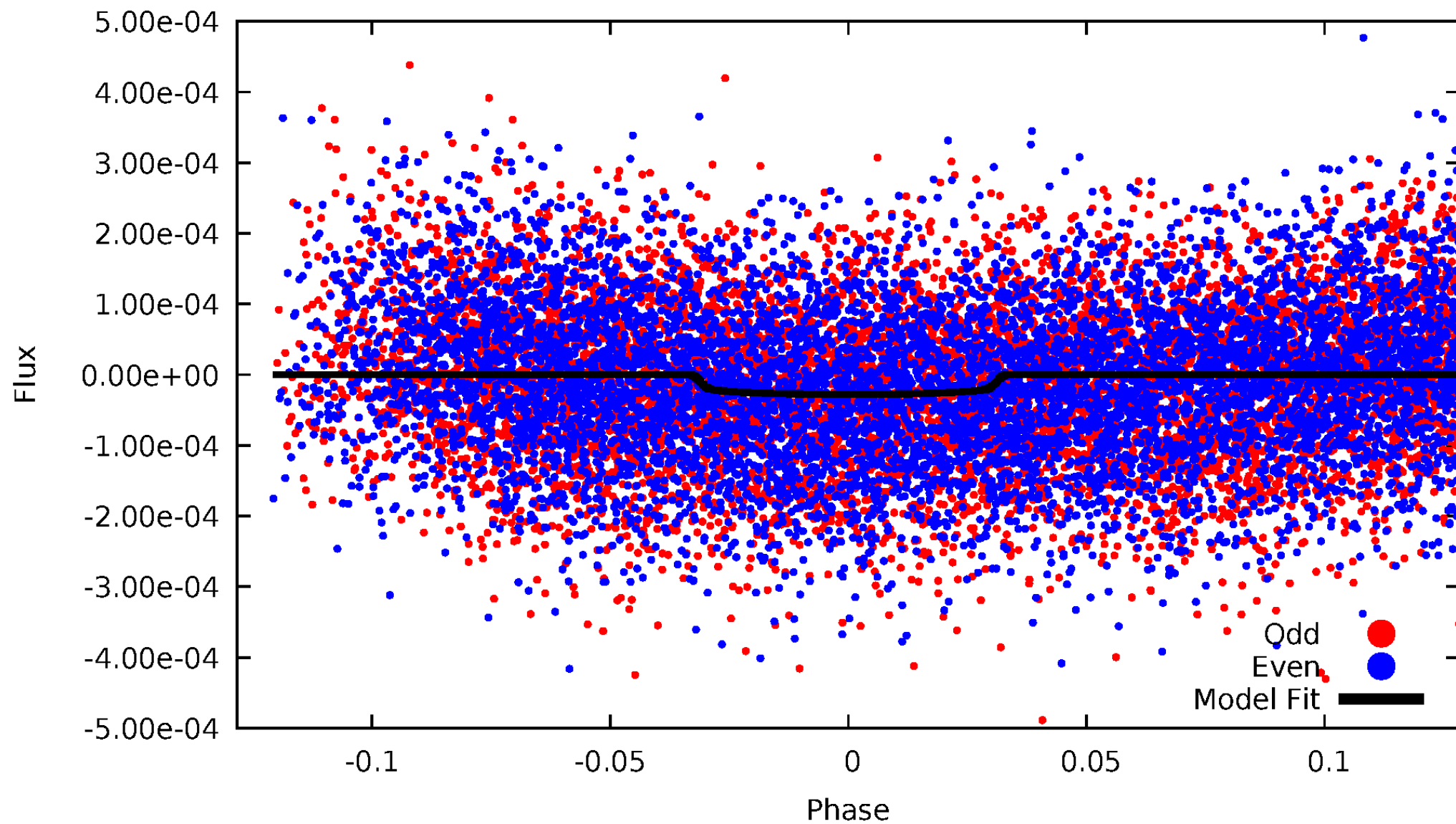


TCE 003115435-02



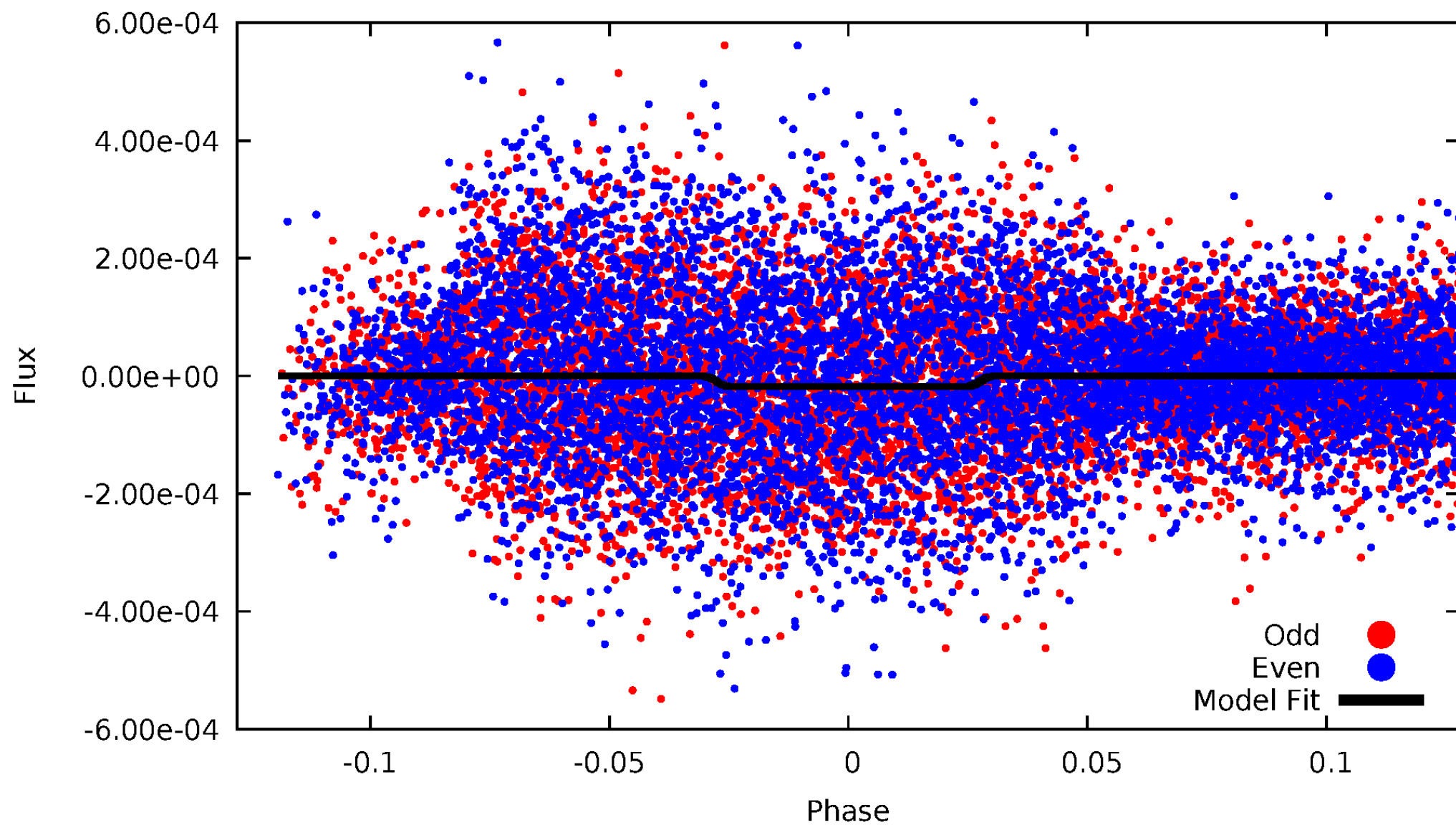
DV Odd/Even

TCE 003115435-02



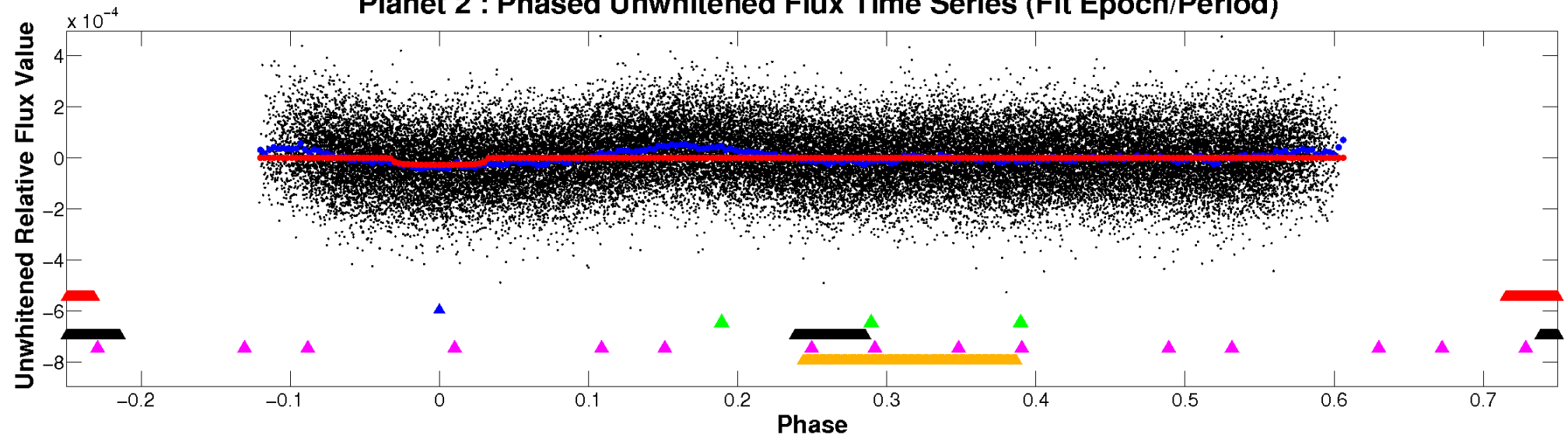
ALT Odd/Even

TCE 003115435-02

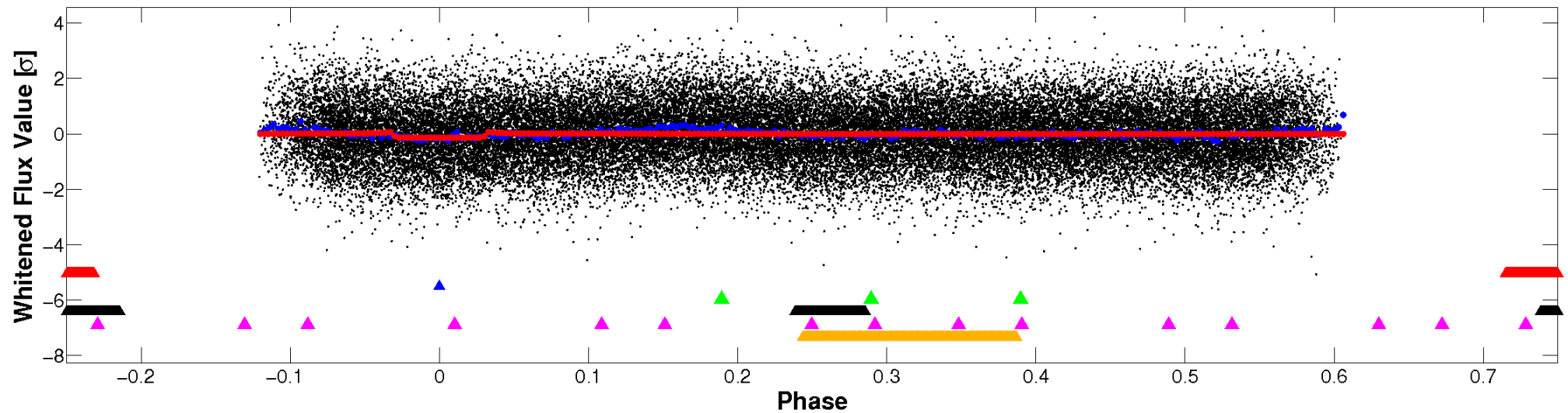


Non-Whitened Vs. Whitened Light Curve

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

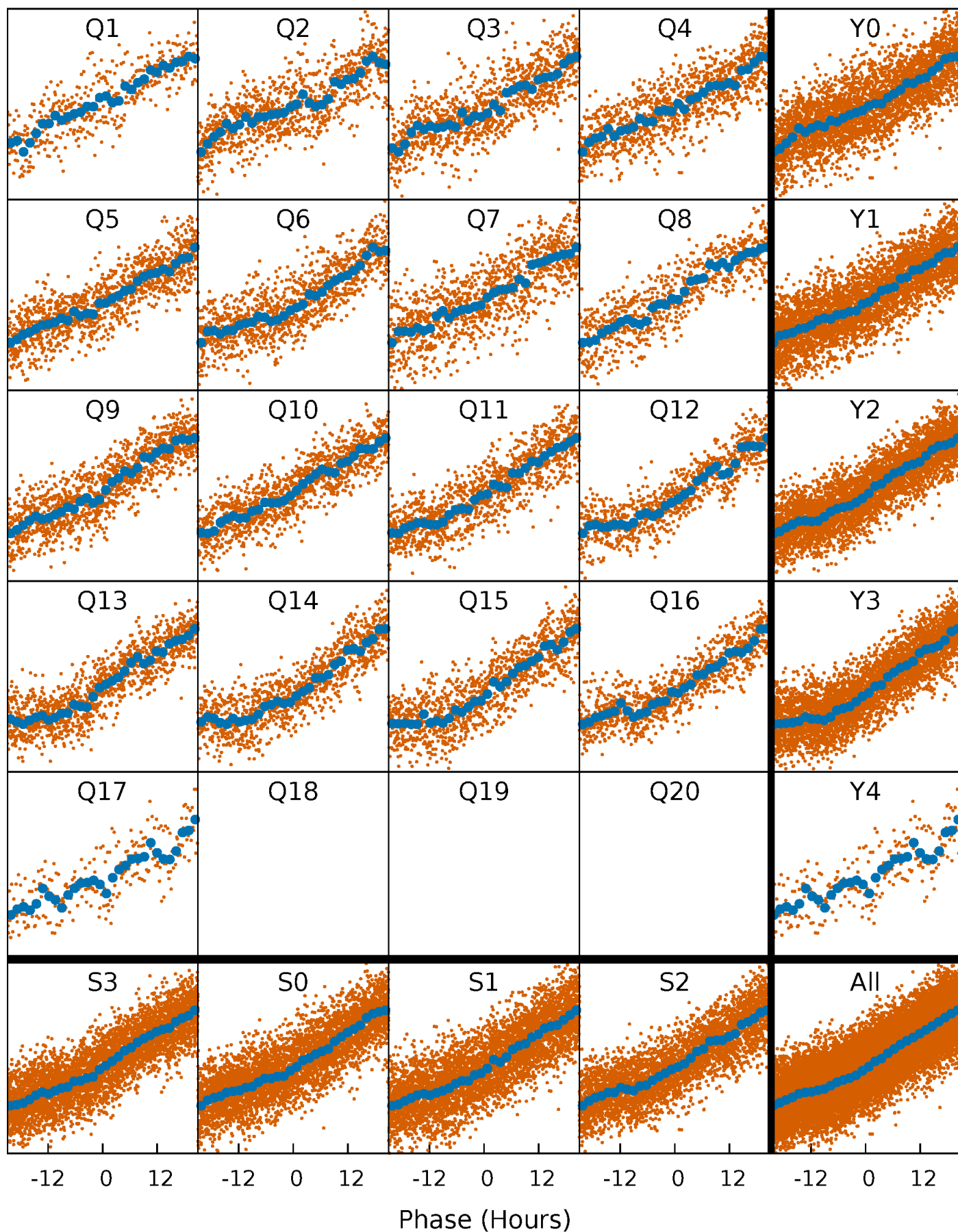


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



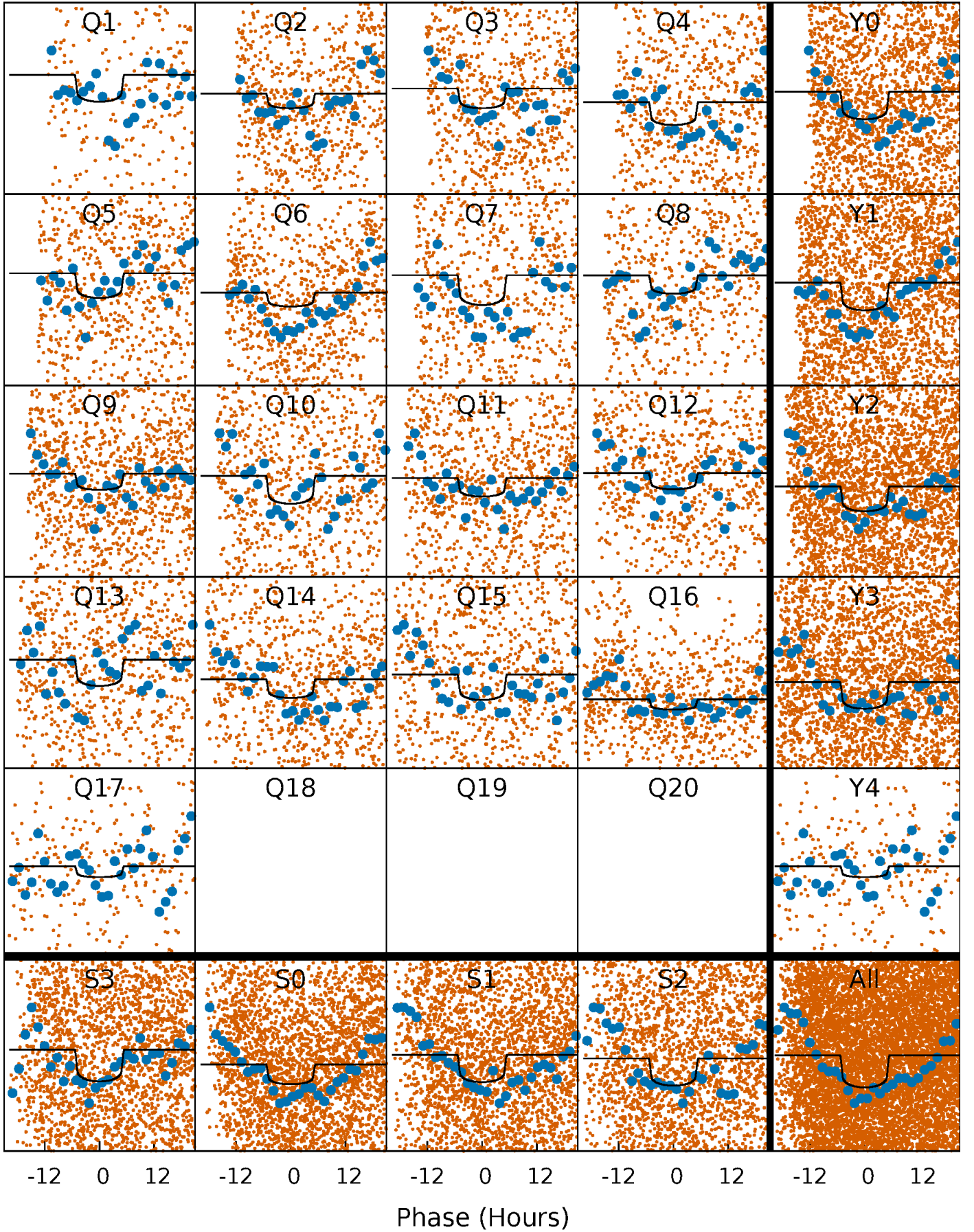
PDC Quarter-Phased Transit Curves

TCE 003115435-02 P= 6.810276 Days $T_0=134.875837$ (BKJD)



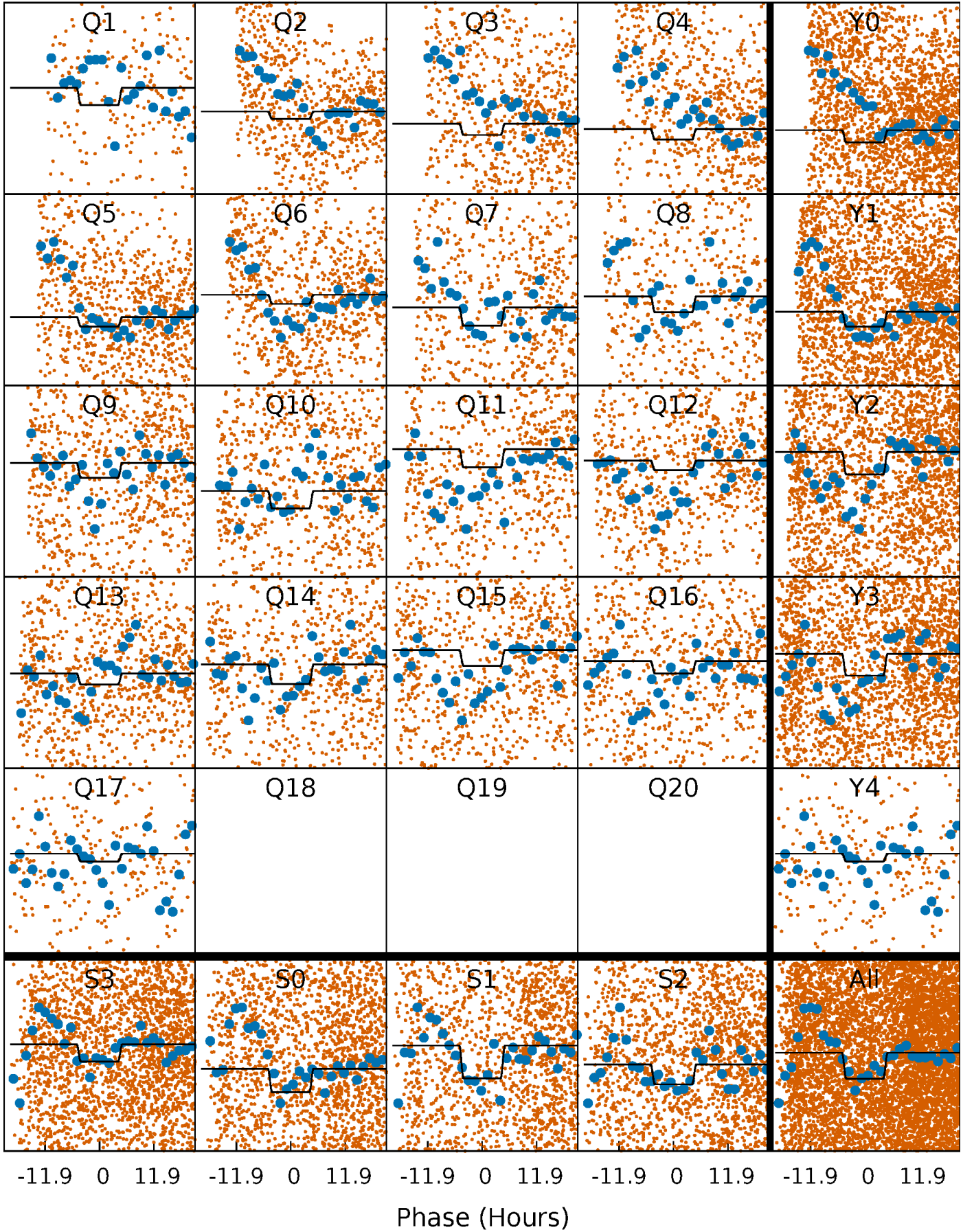
DV Quarter-Phased Transit Curves

TCE 003115435-02 P= 6.810276 Days $T_0=134.875837$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

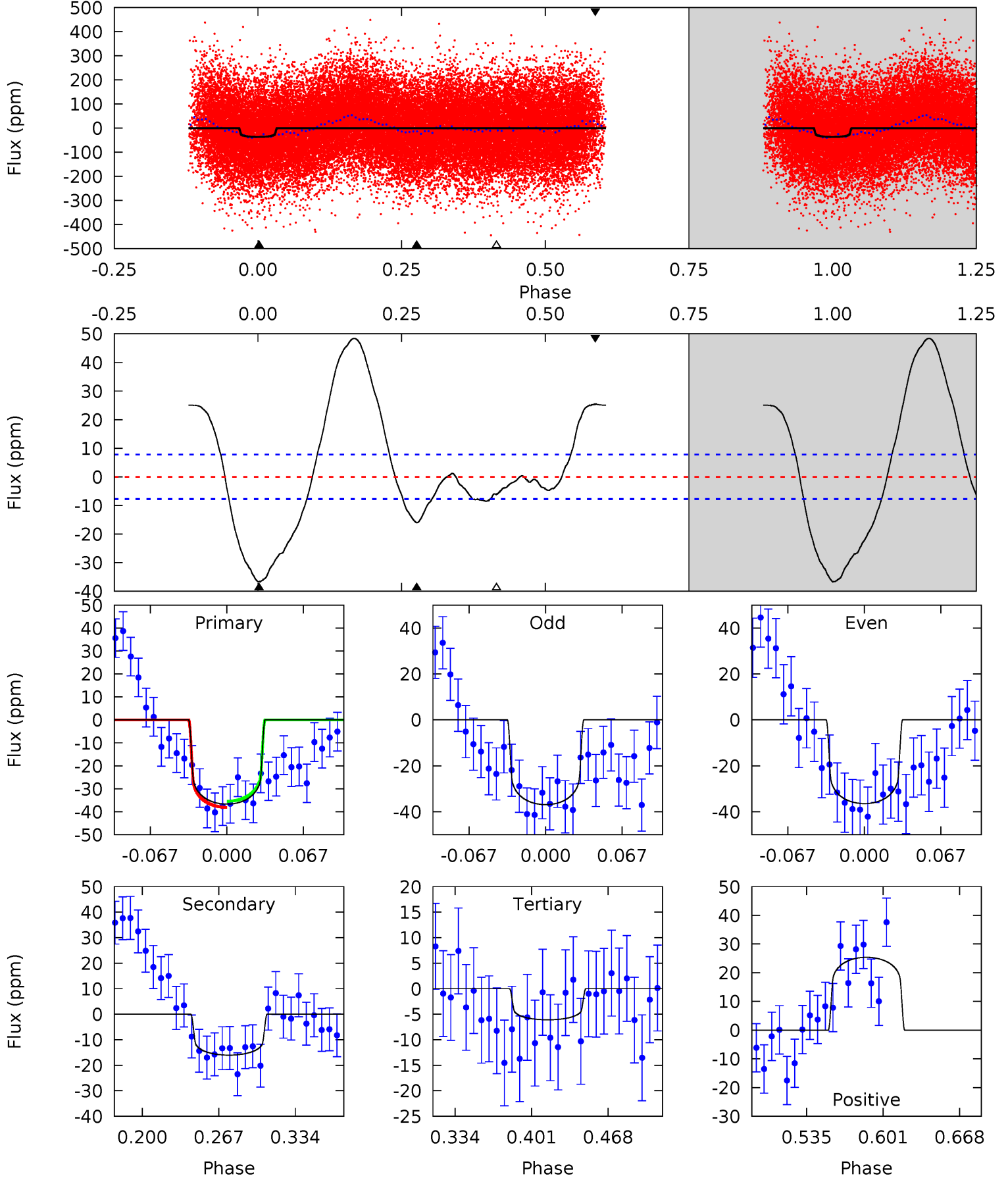
TCE 003115435-02 P= 6.810224 Days $T_0=134.876743$ (BKJD)



DV Model-Shift Uniqueness Test

003115435-02, P = 6.810276 Days, E = 128.065561 Days

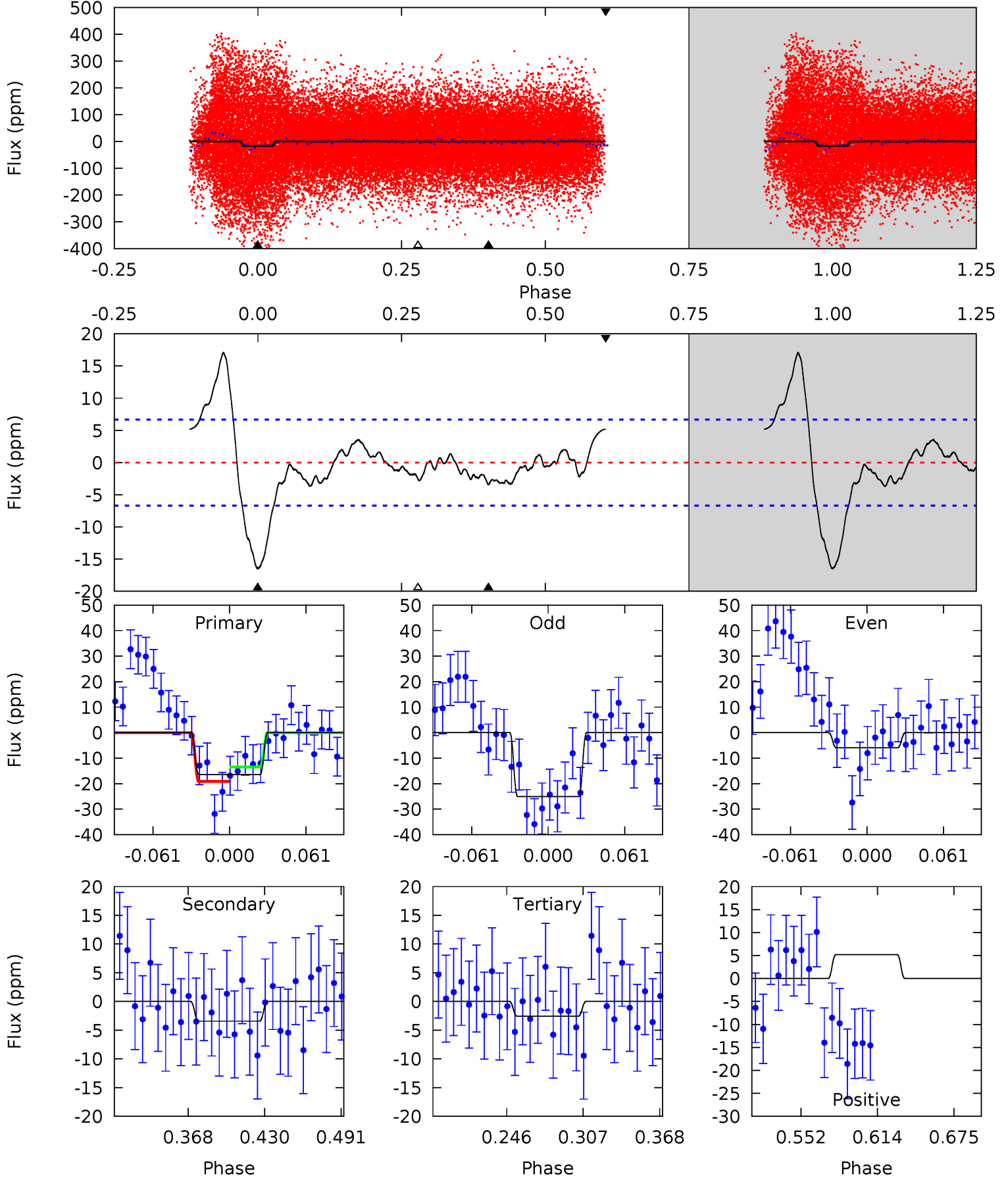
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	9.58	3.64	15.2	4.65	1.83	11.1	18.3	6.76	5.94	-5.58	0.14	1.16	0.57	0.78



Alt Model-Shift Uniqueness Test

003115435-02, P = 6.810224 Days, E = 128.066519 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	2.40	1.79	3.62	4.67	1.87	2.47	9.69	7.87	0.60	-1.23	6.62	0.87	0.51	1.76



Stellar Parameters For KIC 003115435

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6988^{+167}_{-229}	$3.631^{+0.376}_{-0.094}$	$-0.960^{+0.400}_{-0.300}$	$2.991^{+0.439}_{-1.317}$	$1.395^{+0.170}_{-0.340}$	$0.073^{+0.238}_{-0.023}$
	+2%/-3%	+10%/-3%	+42%/-31%	+15%/-44%	+12%/-24%	+324%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003115435-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16 ± 2	$1.72^{+0.38}_{-0.40}$	2588^{+185}_{-263}	5842^{+516}_{-427}	19^{+12}_{-6}
Alt.	-3 ± 1	$1.26^{+0.36}_{-0.35}$	2589^{+167}_{-267}	4685^{+614}_{-590}	$7.079^{+7.042}_{-3.632}$

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

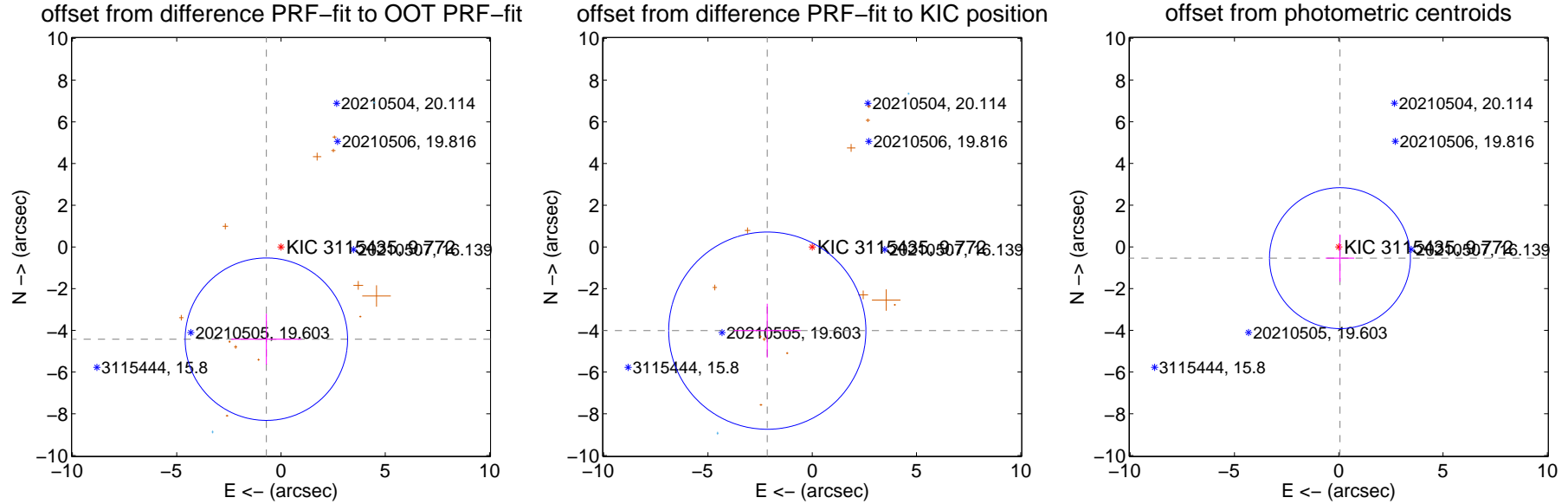
DV Centroid Data

Supplemental centroid analysis for 003115435-02. **Kepler magnitude: 9.77.** Transit SNR 8.43

There are 2 quarters with good PRF difference image offsets

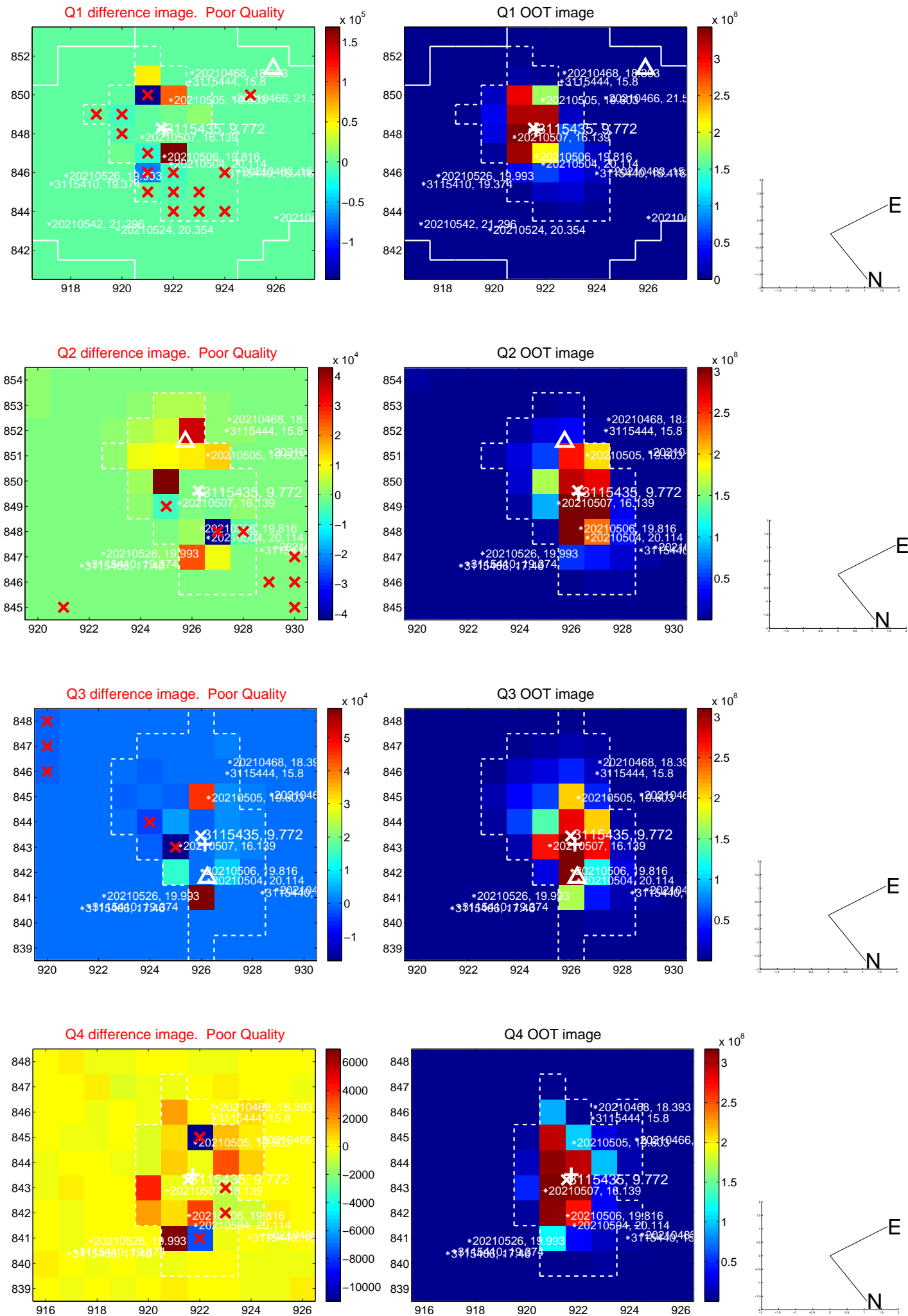
The direct PRF centroid is offset from the target star catalog position by about 1.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.478 ± 1.298	3.45	0.702 ± 1.686	-4.422 ± 1.218
PRF-fit source offset from KIC position	4.554 ± 1.576	2.89	2.154 ± 1.606	-4.013 ± 1.289
photometric centroid source offset	0.54 ± 1.13	0.48	-0.06 ± 0.68	-0.54 ± 1.13

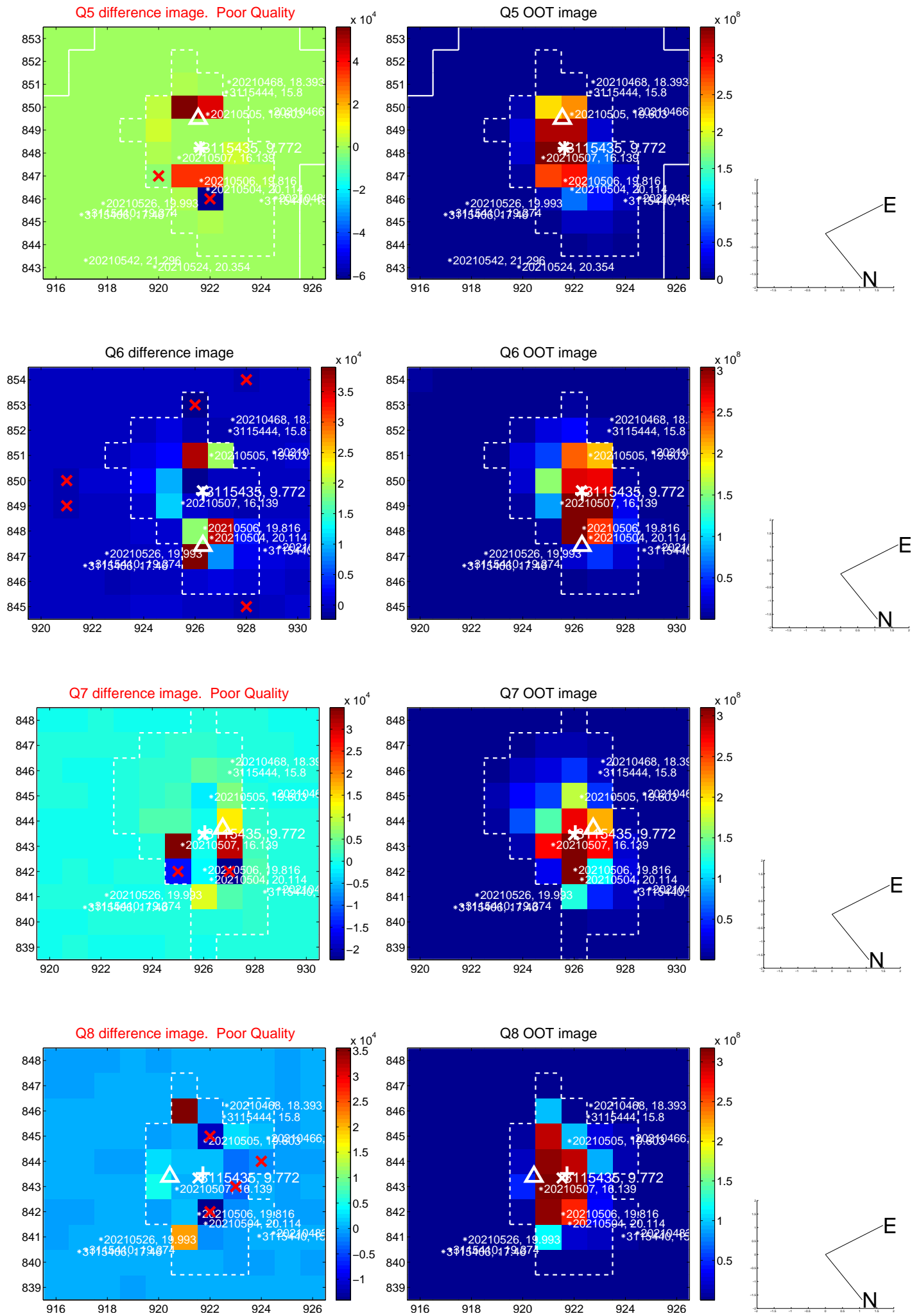


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

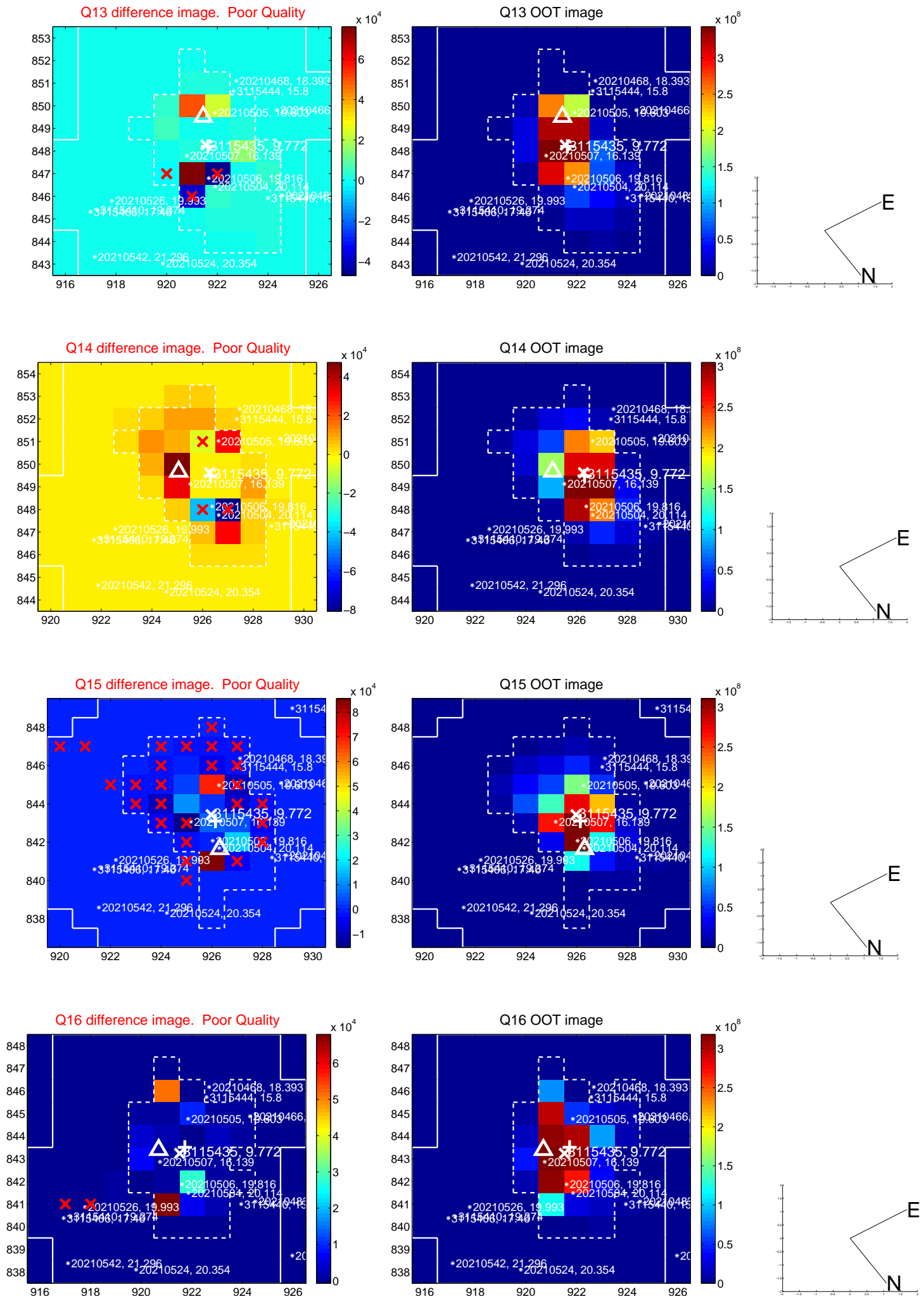
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

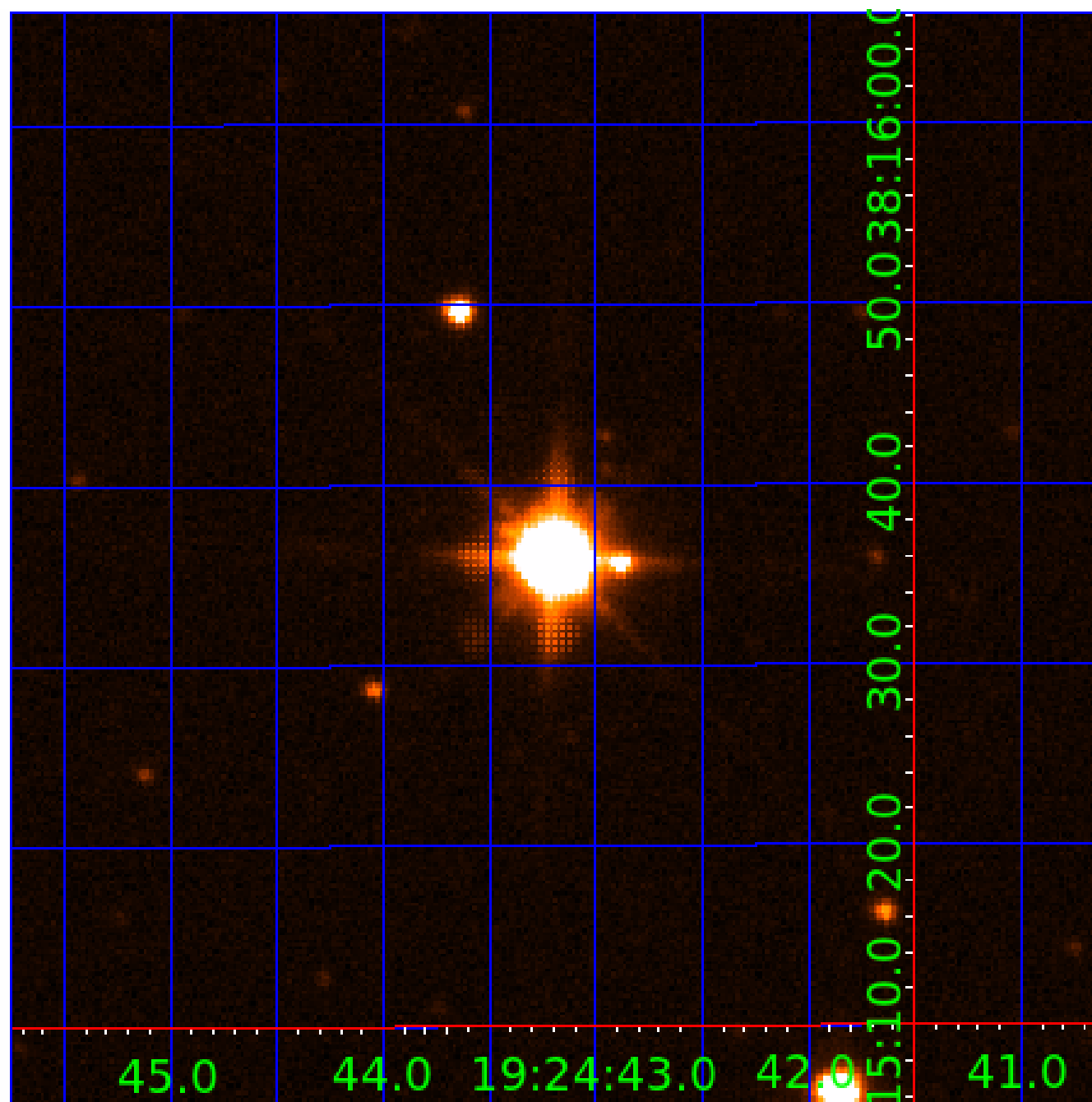


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003115435

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})
003115435-01	OBS	No	6.808578	133.298475	39.7	17.572	11.6	11.8	2.99	6988	2.31	3095.82
003115435-02	OBS	No	6.810276	134.875837	27.7	10.483	9.0	8.4	2.99	6988	1.83	3094.79
003115435-04	OBS	No	3.404388	133.415719	24.6	13.361	8.4	9.0	2.99	6988	1.71	7800.66
003115435-06	OBS	No	6.805700	137.510854	51.0	30.302	9.3	9.9	2.99	6988	2.50	3097.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003115435-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
003115435-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003115435-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003115435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

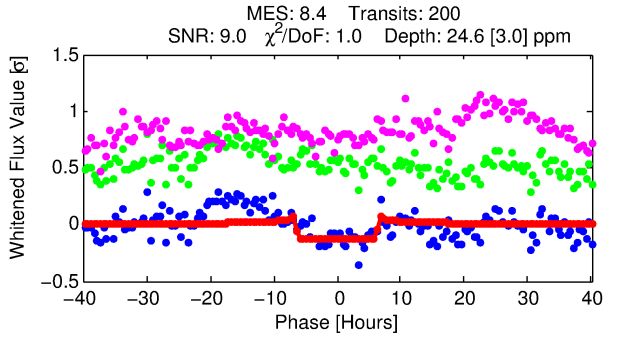
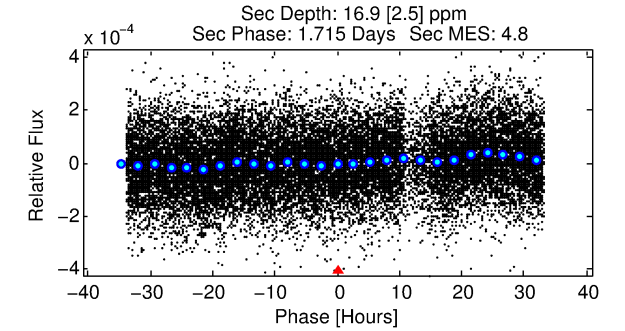
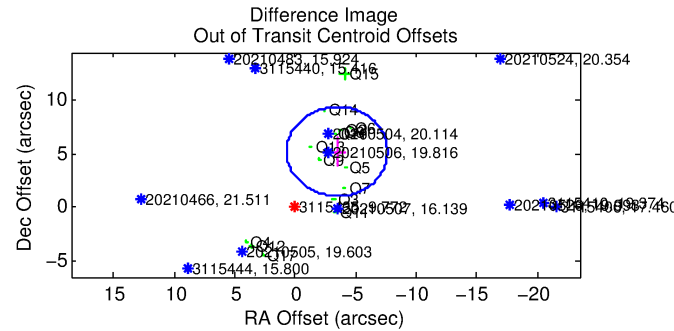
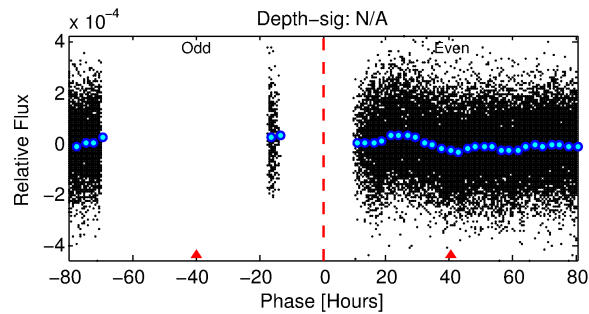
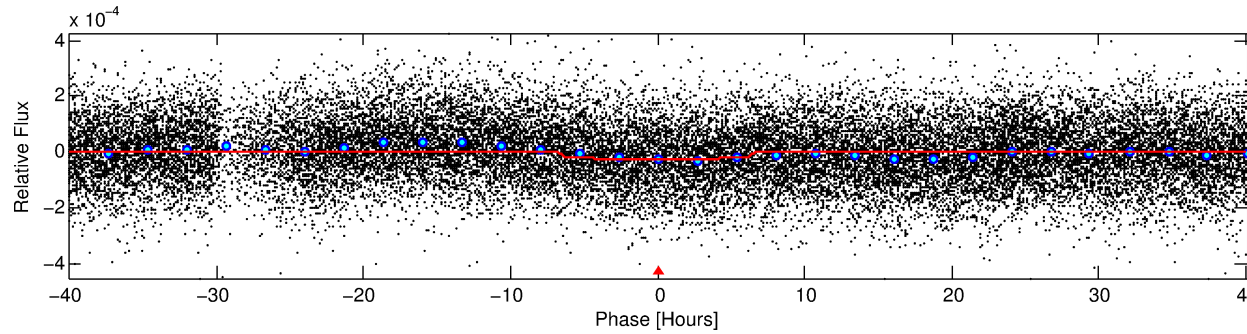
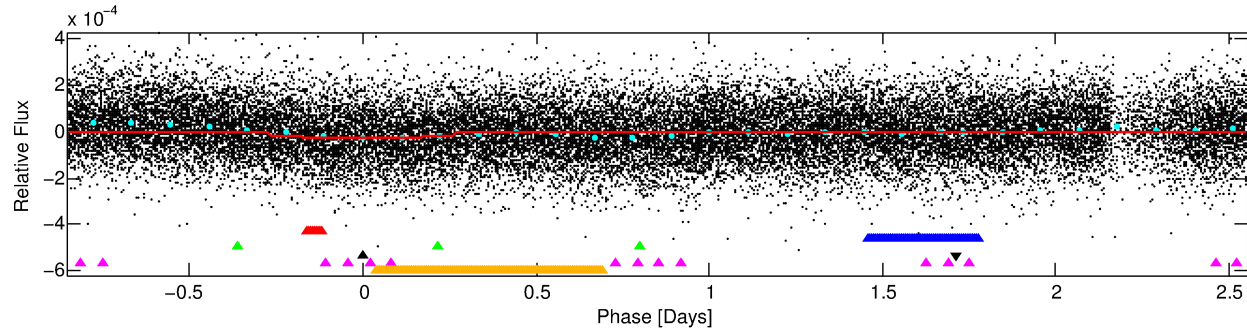
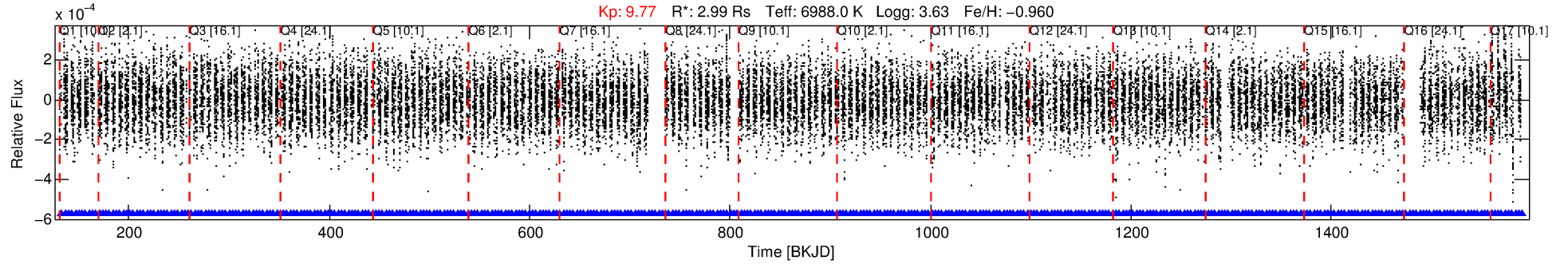
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003115435-04

No Significant Match Found

DV One-Page Summary

KIC: 3115435 Candidate: 4 of 6 Period: 3.404 d



DV Fit Results:

Period = 3.40439 [0.00005] d
Epoch = 133.4157 [0.0081] BKJD
 $R_p/R^* = 0.0052$ [0.0008]
 $a/R^* = 1.30$ [0.46]
 $b = 0.89$ [0.20]
 $\text{Seff} = 7800.66$ [5153.70]
 $T_{\text{eq}} = 2396$ [396] K
 $R_p = 1.71$ [0.80] R_e
 $a = 0.0495$ [0.0204] AU
 $\text{Ag} = 7.77$ [5.69] [1.19σ]
 $T_{\text{eff}} = 6186$ [565] K [5.49σ]

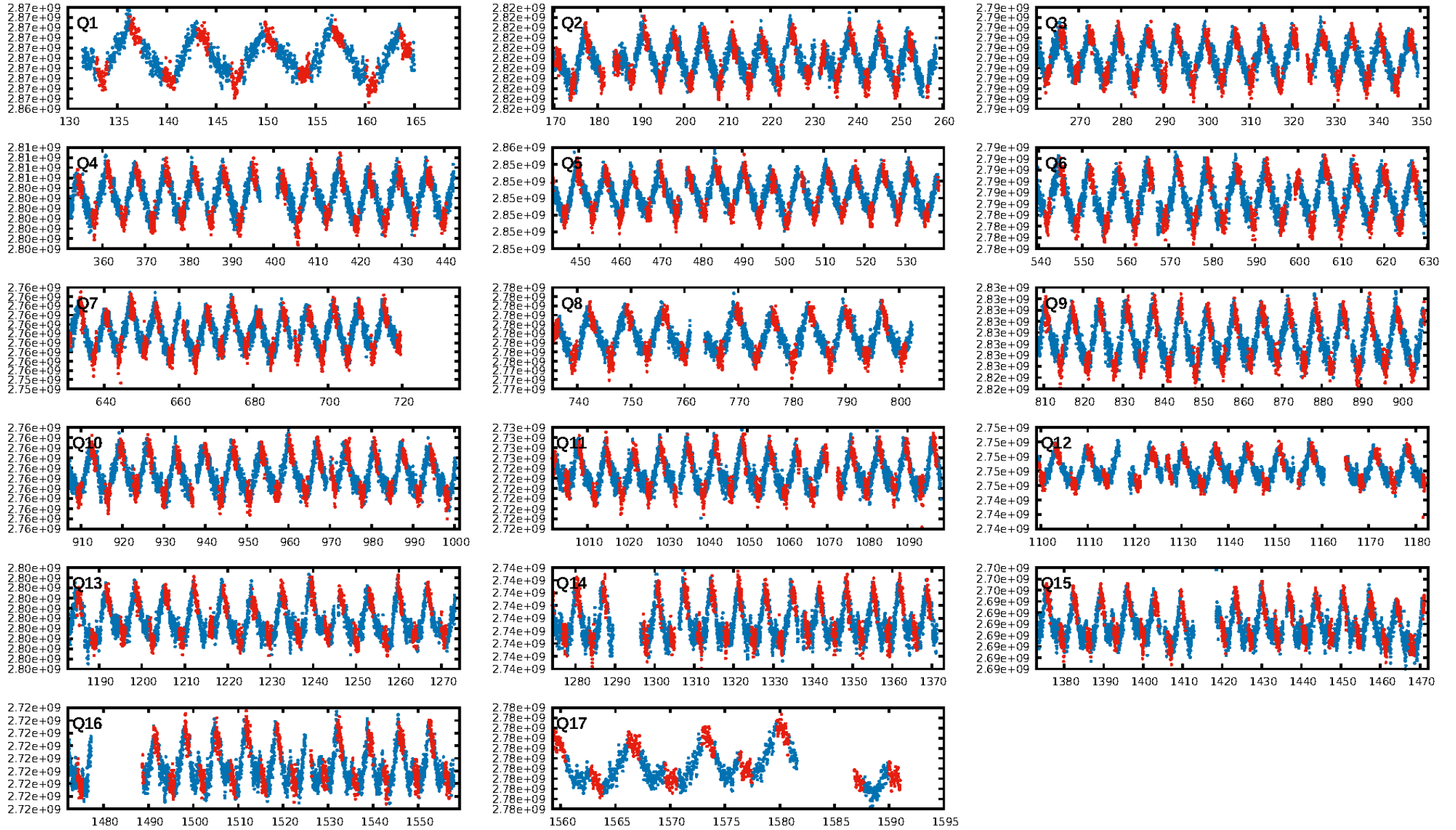
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.6% [2.46σ]
ModelChiSquare2-sig: 84.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [190/190]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.3%
Centroid-so: 1.951 arcsec [2.01σ]
OotOffset-rm: 6.259 arcsec [4.51σ]
KicOffset-rm: 6.476 arcsec [4.20σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 0.00 [0/17]

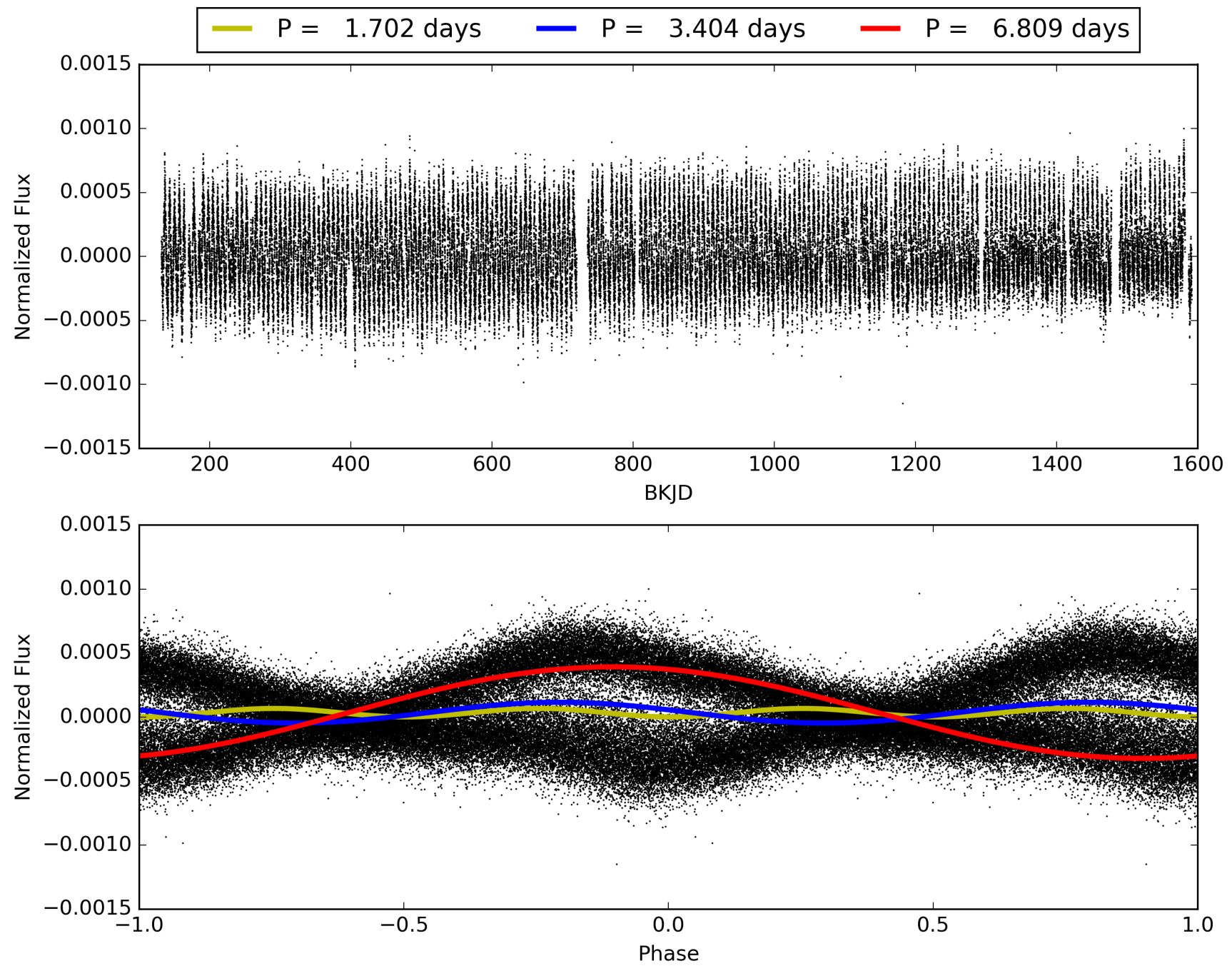
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:52:39 Z

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

TCE 003115435-04, PDC Light Curves

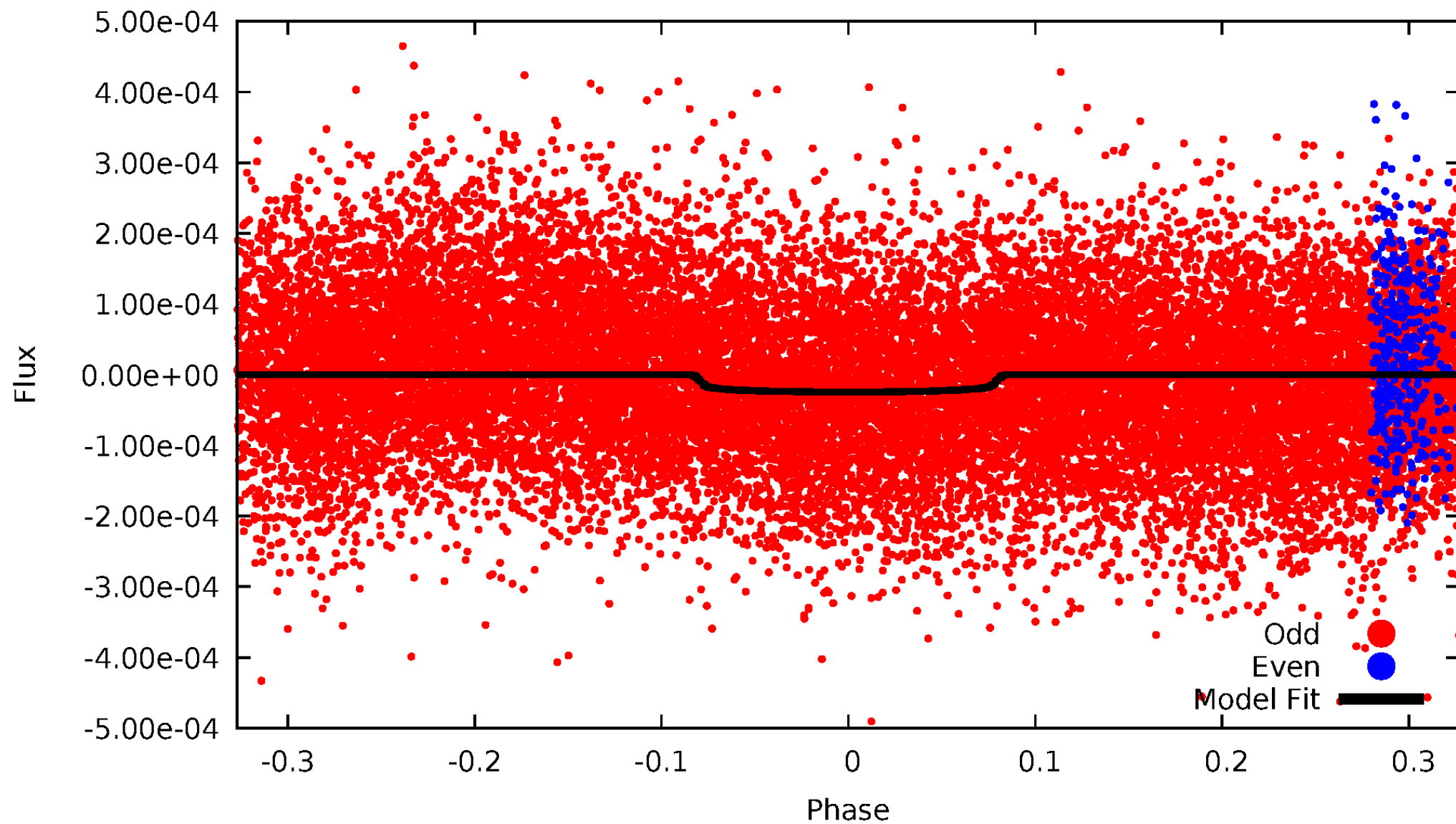


TCE 003115435-04



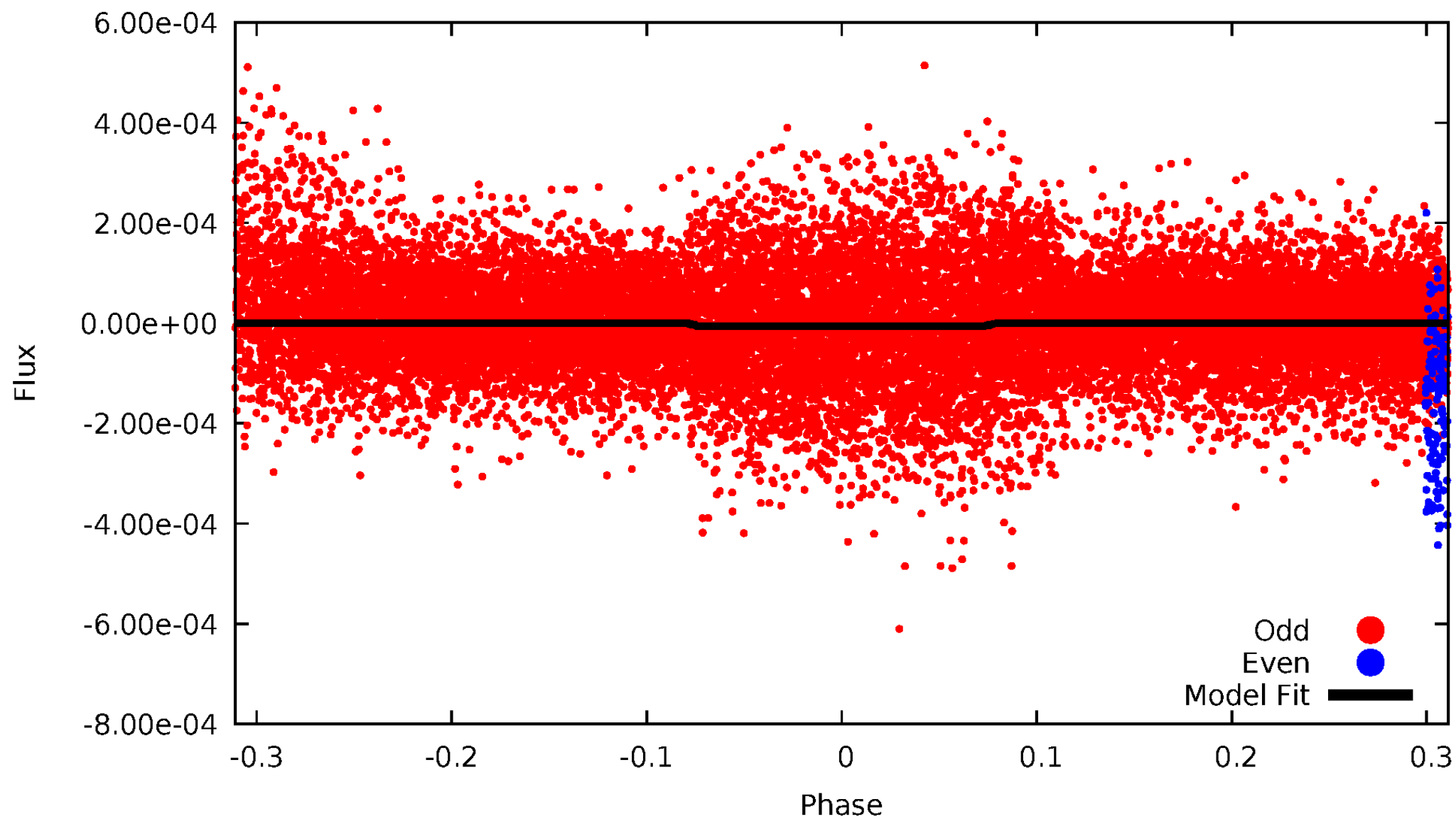
DV Odd/Even

TCE 003115435-04



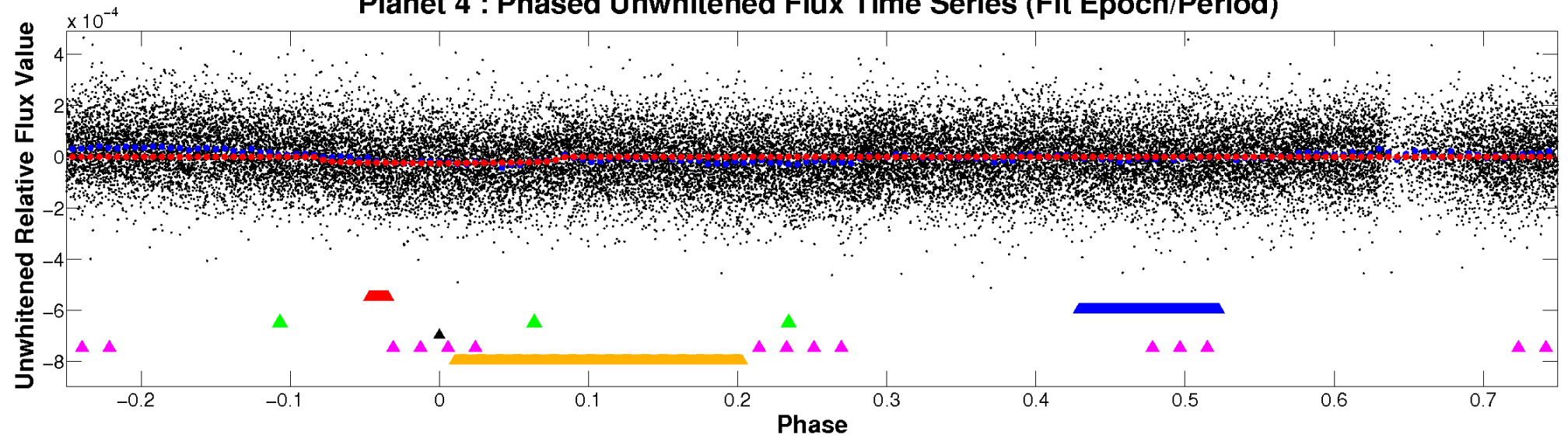
ALT Odd/Even

TCE 003115435-04

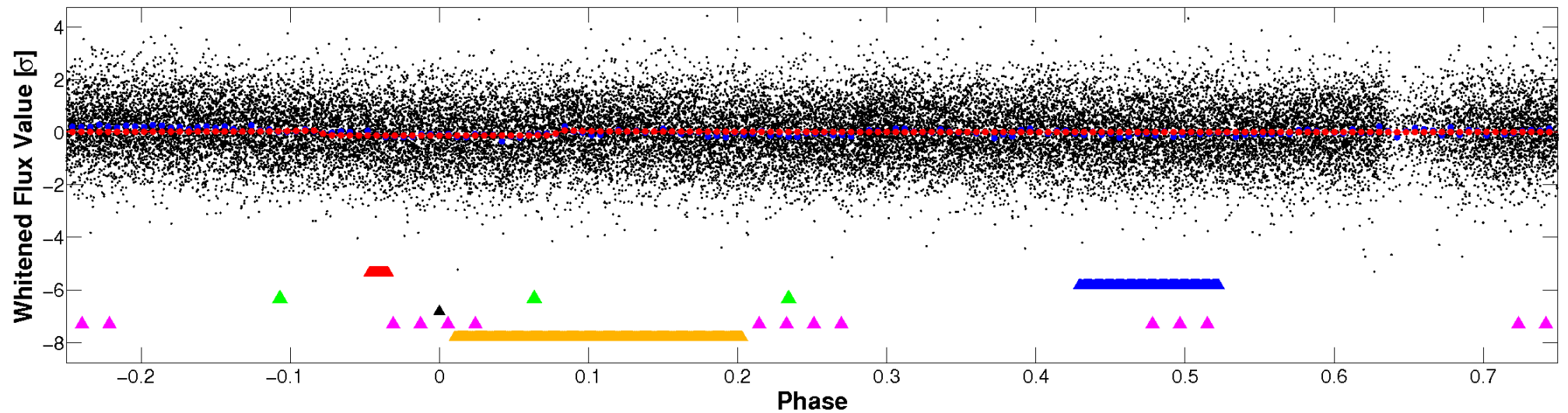


Non-Whitened Vs. Whitened Light Curve

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

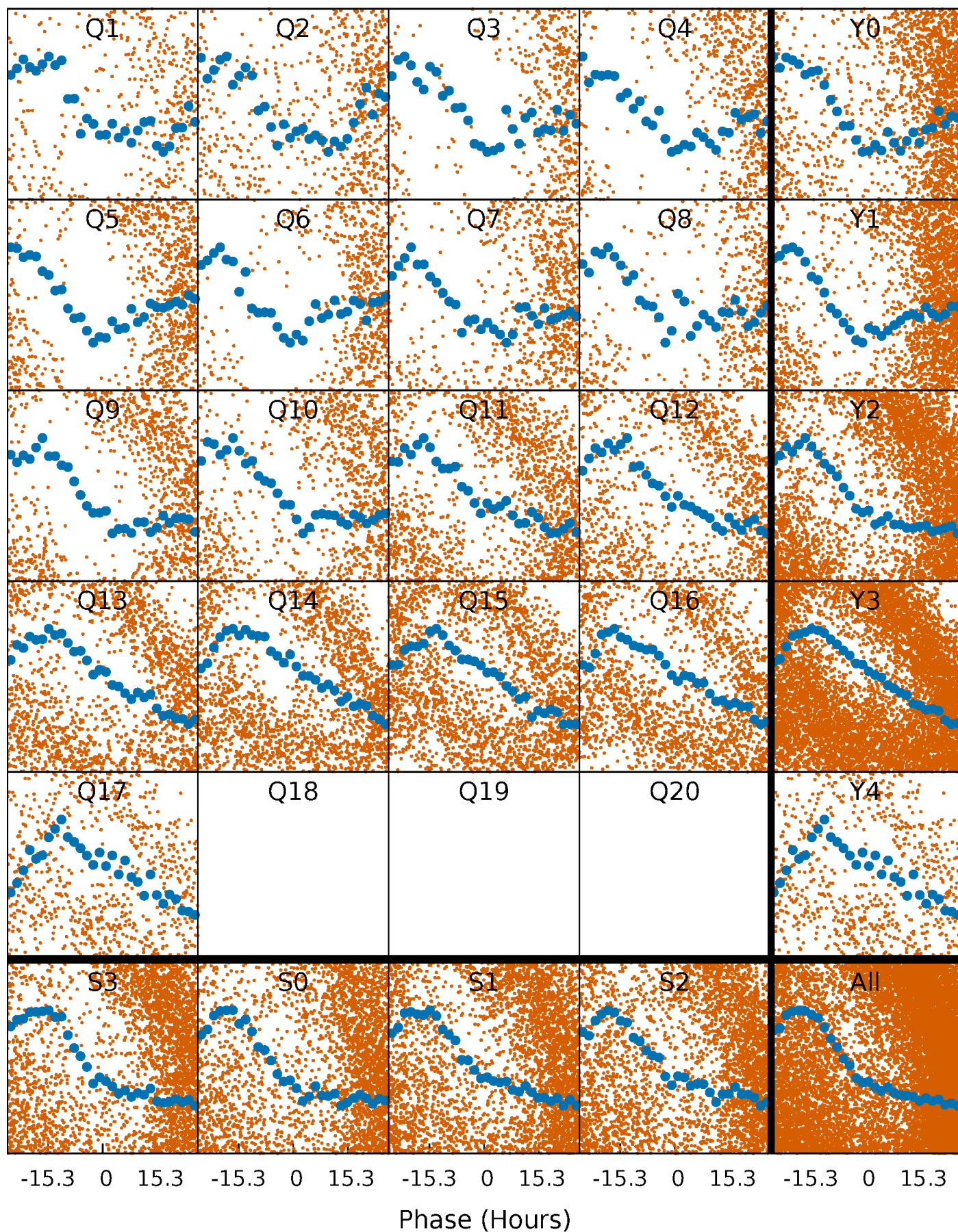


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



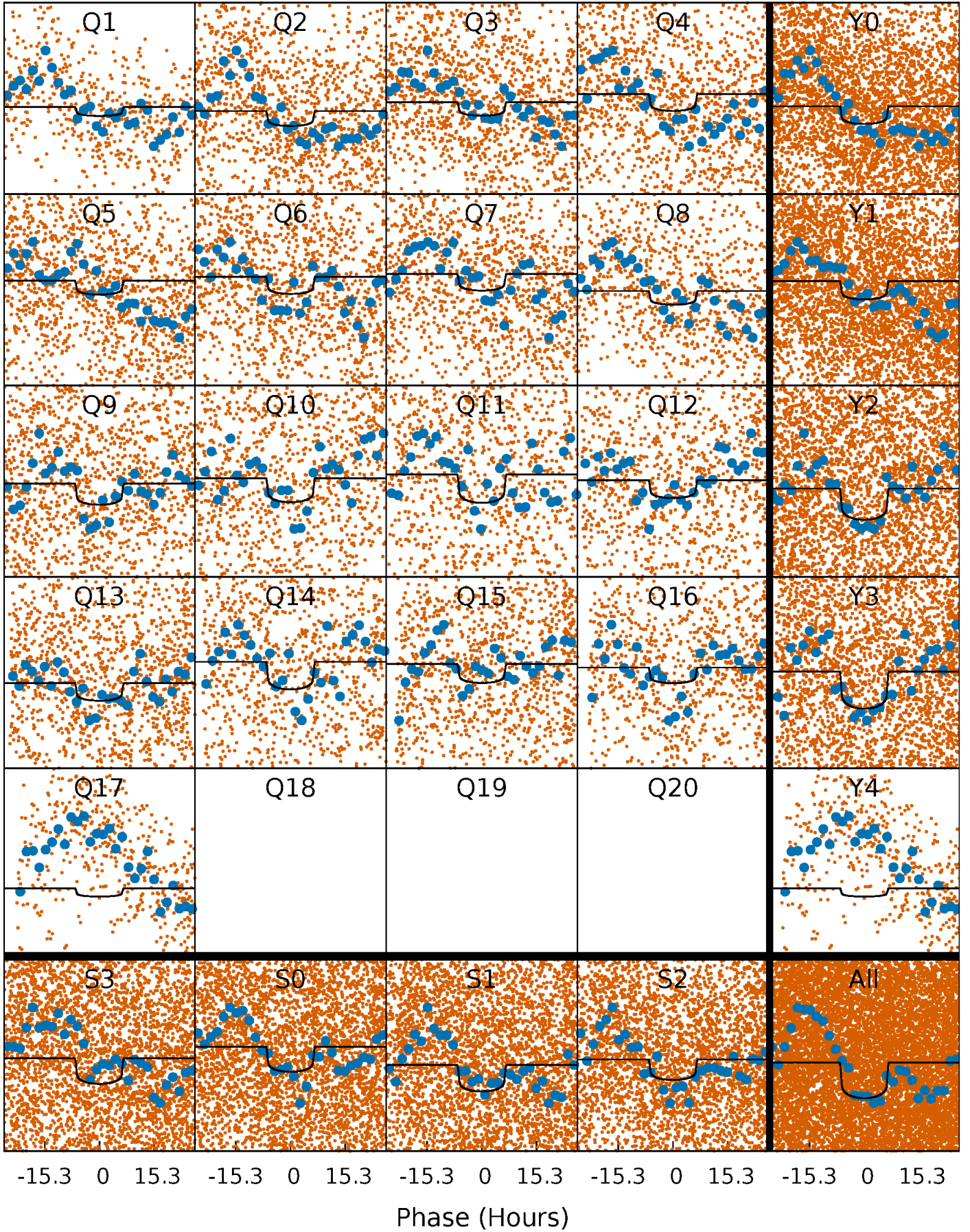
PDC Quarter-Phased Transit Curves

TCE 003115435-04 P= 3.404388 Days $T_0=133.415719$ (BKJD)



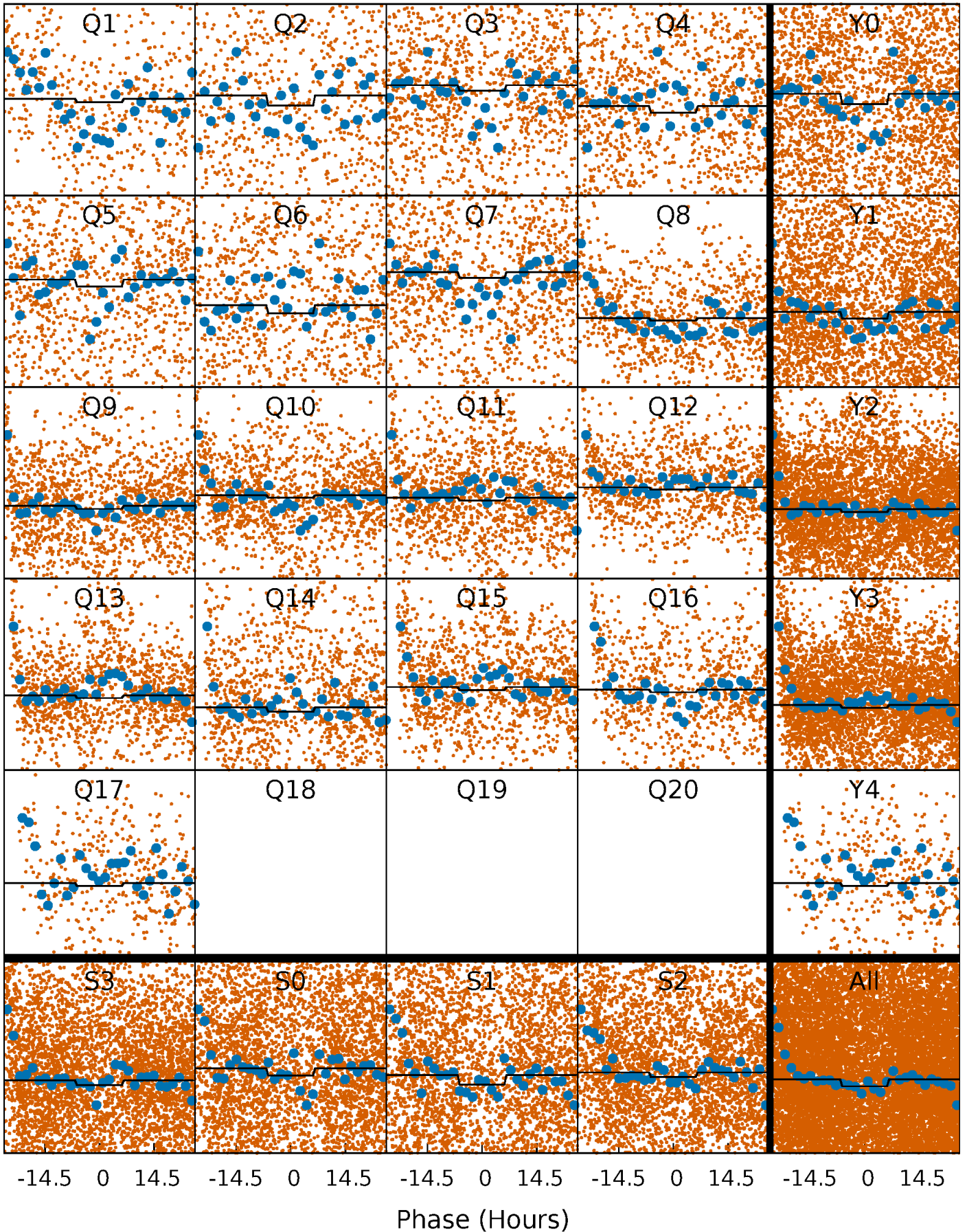
DV Quarter-Phased Transit Curves

TCE 003115435-04 P= 3.404388 Days $T_0=133.415719$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

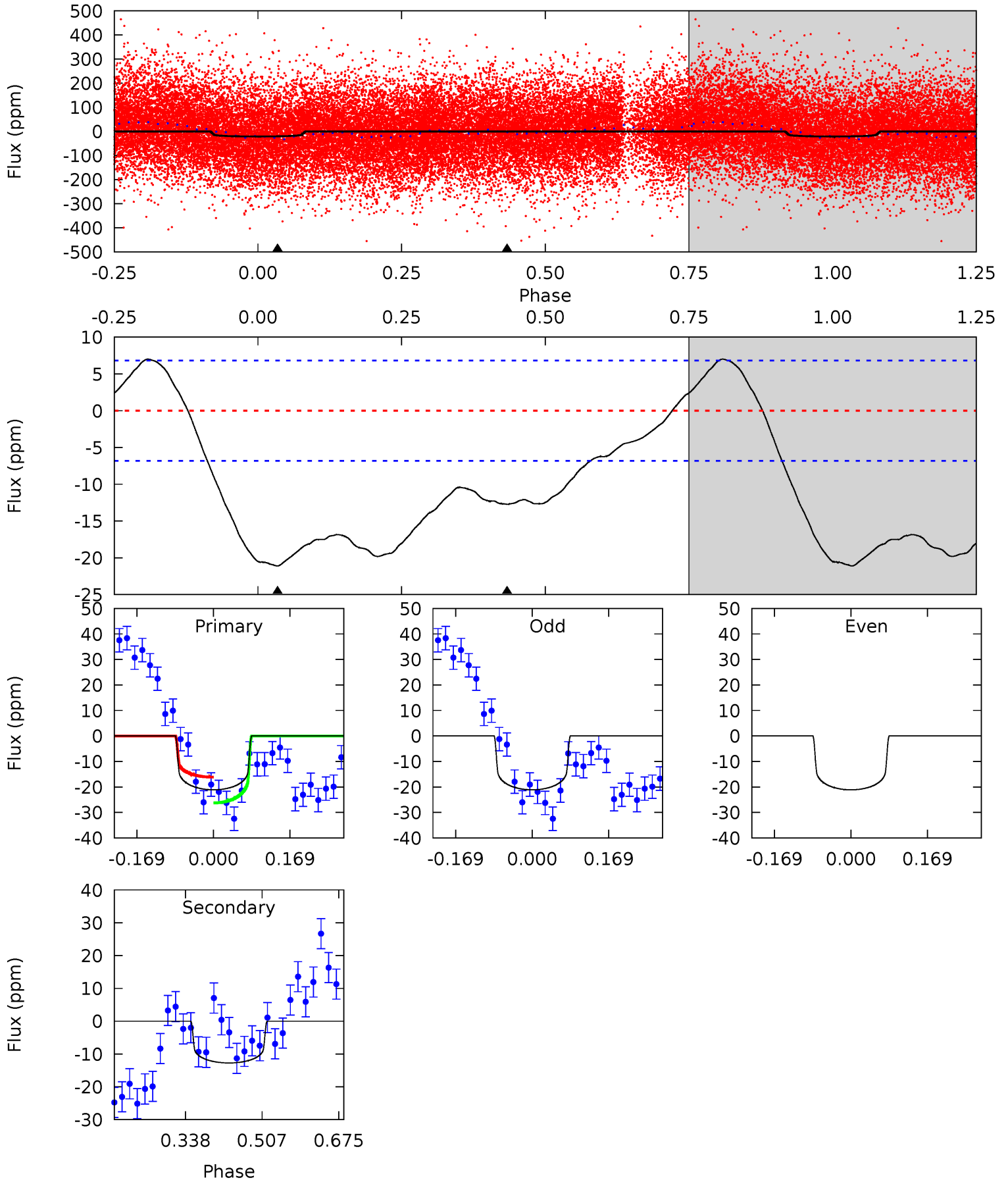
TCE 003115435-04 P= 3.404270 Days $T_0=133.393695$ (BKJD)



DV Model-Shift Uniqueness Test

003115435-04, P = 3.404388 Days, E = 130.011331 Days

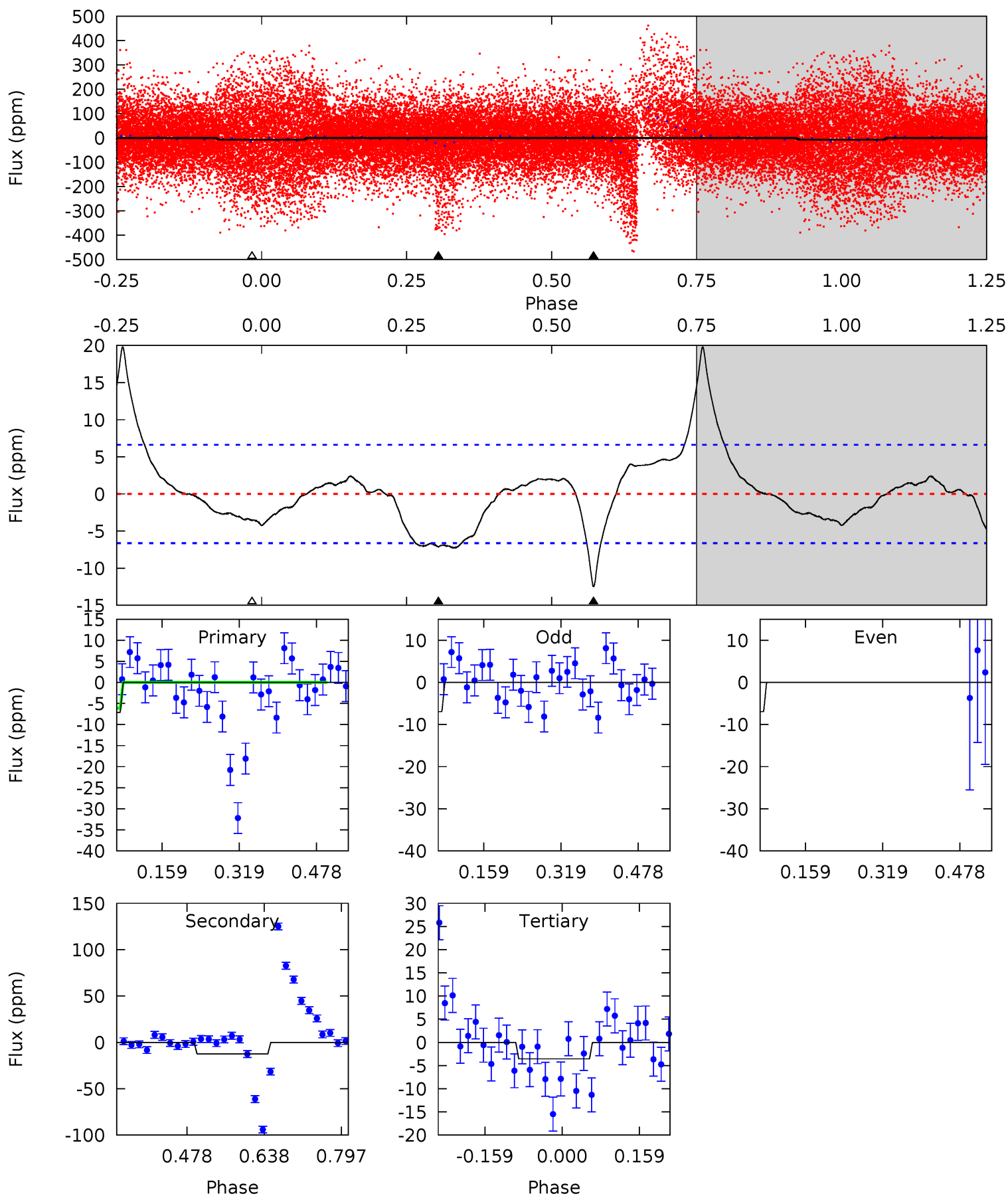
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	8.31	0	0	4.45	1.38	6.02	13.8	13.8	8.31	8.31	0	0.77	0.25	3.32



Alt Model-Shift Uniqueness Test

003115435-04, P = 3.404270 Days, E = 129.989425 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.80	8.42	2.40	0	4.47	1.41	3.72	2.39	4.80	6.02	8.42	0	0.94	0.61	0.43



Stellar Parameters For KIC 003115435

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6988^{+167}_{-229}	$3.631^{+0.376}_{-0.094}$	$-0.960^{+0.400}_{-0.300}$	$2.991^{+0.439}_{-1.317}$	$1.395^{+0.170}_{-0.340}$	$0.073^{+0.238}_{-0.023}$
	+2%/-3%	+10%/-3%	+42%/-31%	+15%/-44%	+12%/-24%	+324%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003115435-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 2	$1.58^{+0.39}_{-0.36}$	3270^{+196}_{-370}	5655^{+512}_{-428}	$6.789^{+4.356}_{-2.471}$
Alt.	-12 ± 1	$0.76^{+0.29}_{-0.28}$	3279^{+201}_{-360}	8404^{+2647}_{-1296}	28^{+39}_{-13}

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

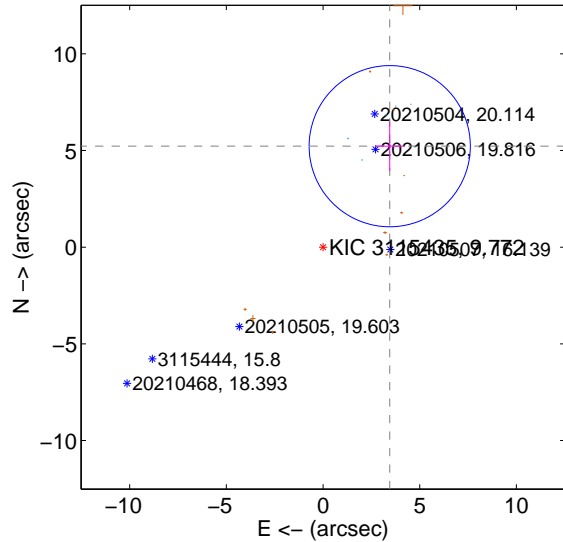
Supplemental centroid analysis for 003115435-04. **Kepler magnitude: 9.77.** Transit SNR 9.03

There are 5 quarters with good PRF difference image offsets

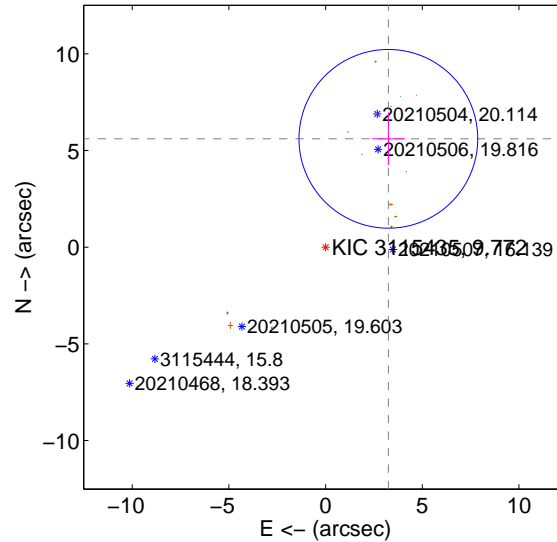
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.259 ± 1.389	4.51	-3.449 ± 0.738	5.223 ± 1.274
PRF-fit source offset from KIC position	6.476 ± 1.540	4.20	-3.246 ± 0.855	5.604 ± 1.363
photometric centroid source offset	1.95 ± 0.97	2.01	-0.05 ± 0.59	1.95 ± 0.97

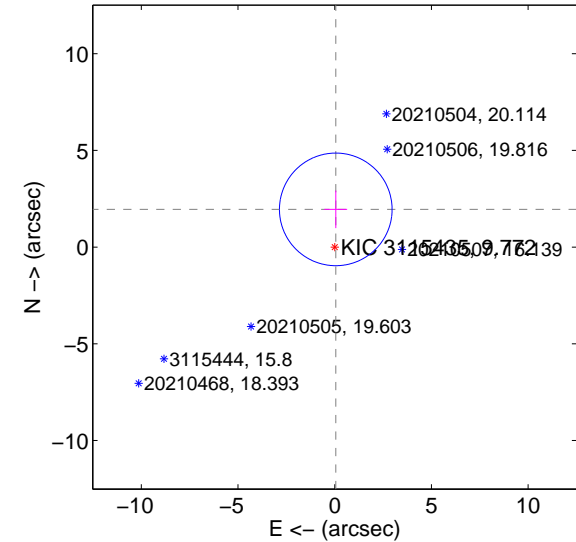
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

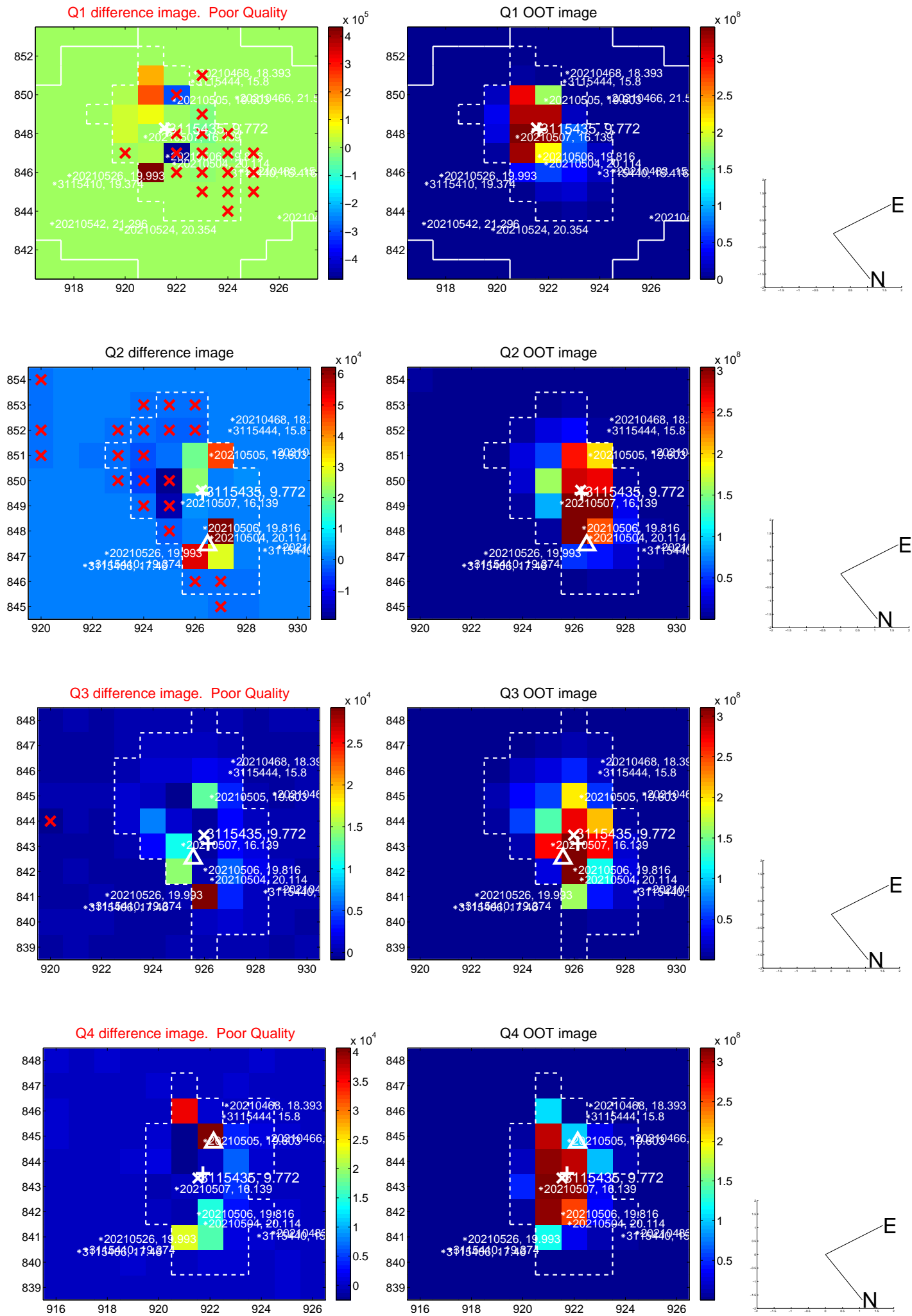


offset from photometric centroids

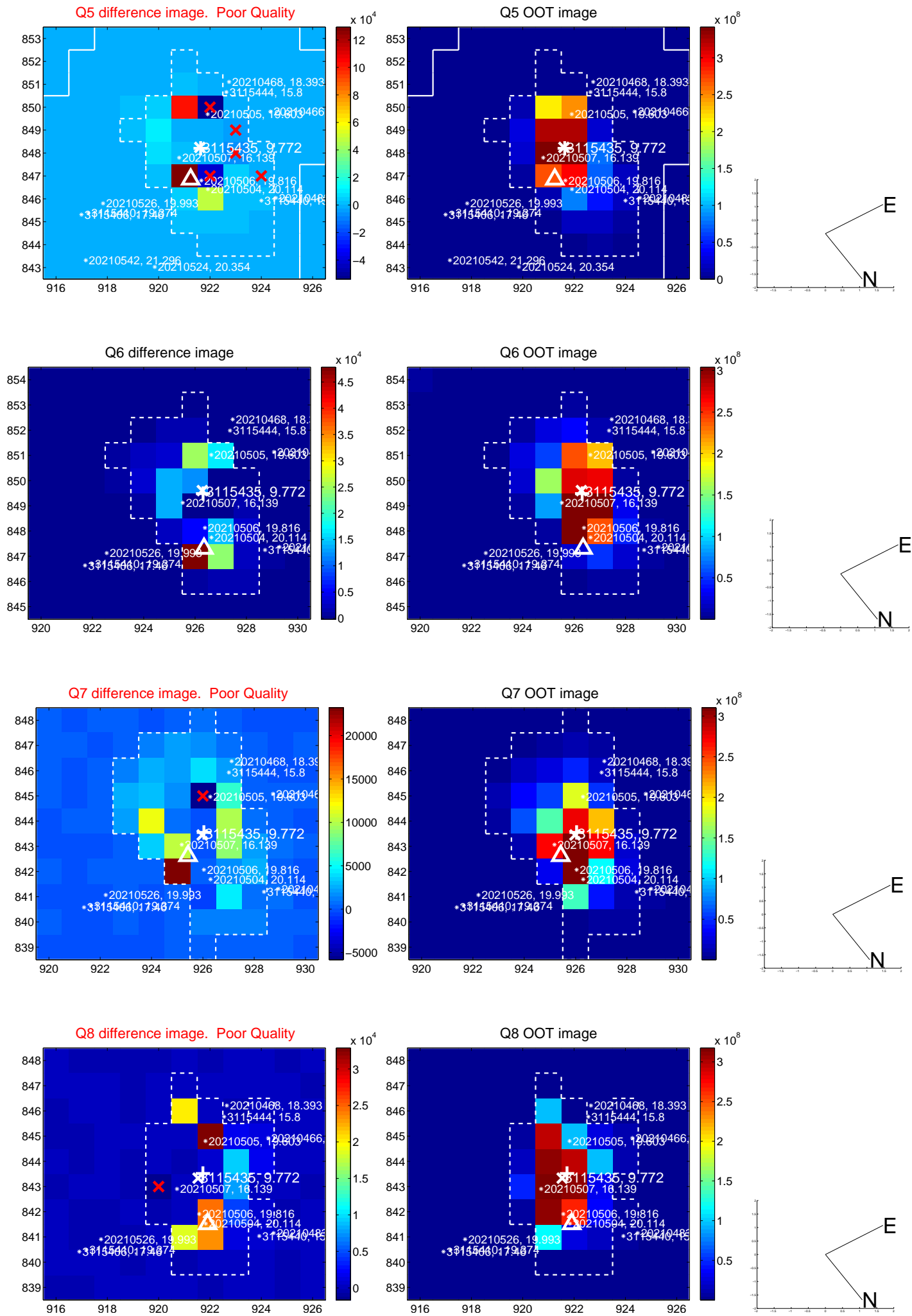


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

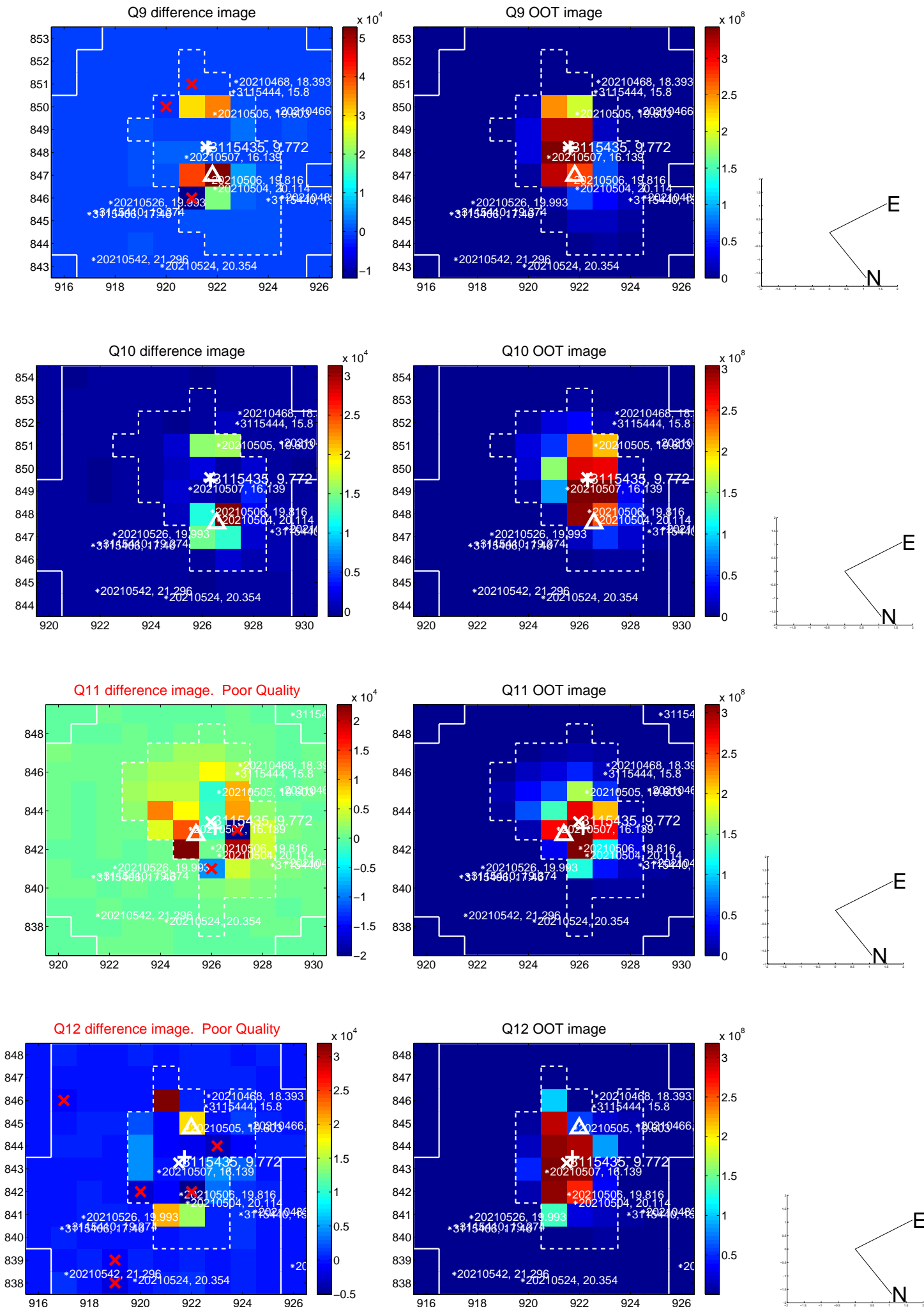
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



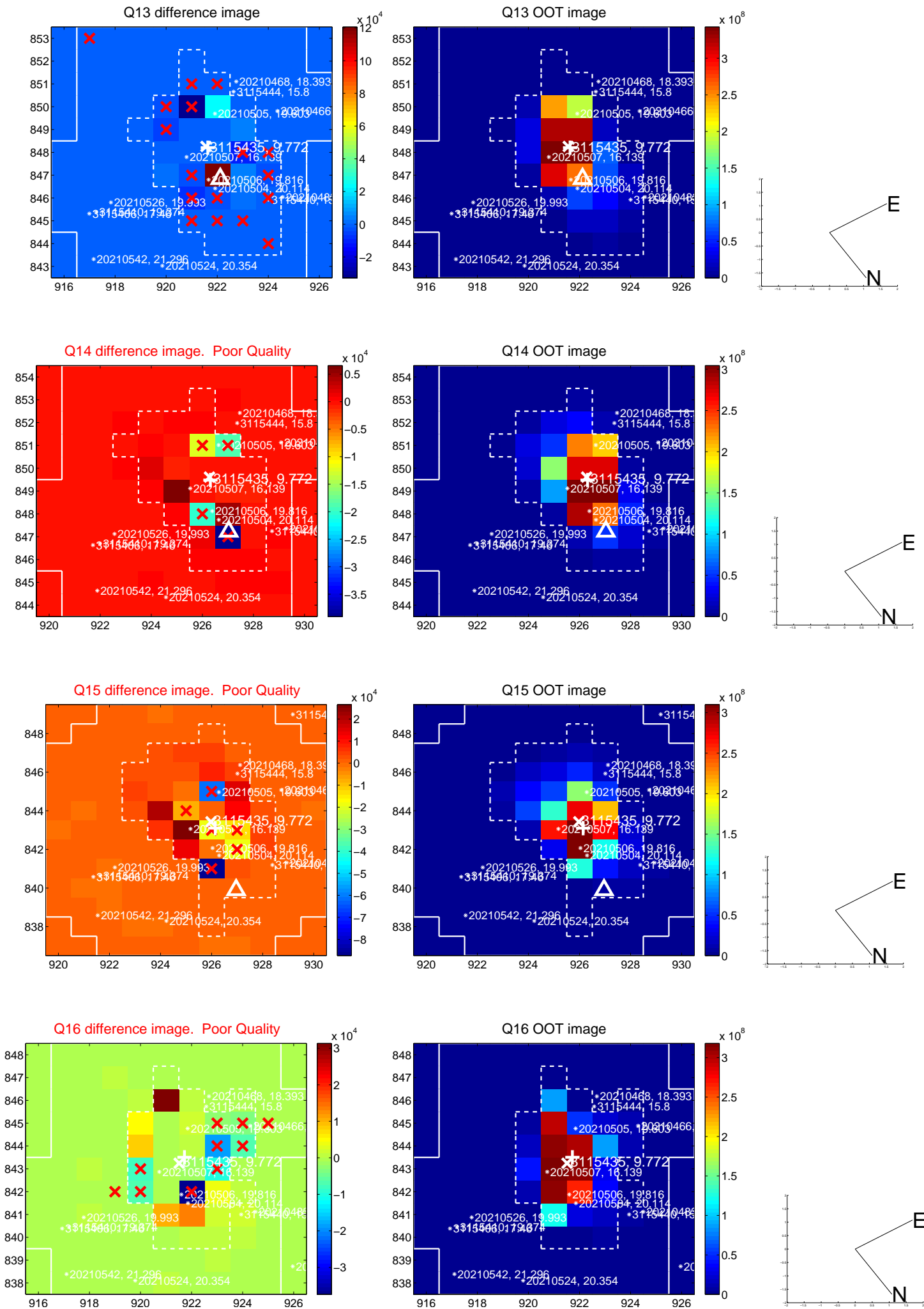
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



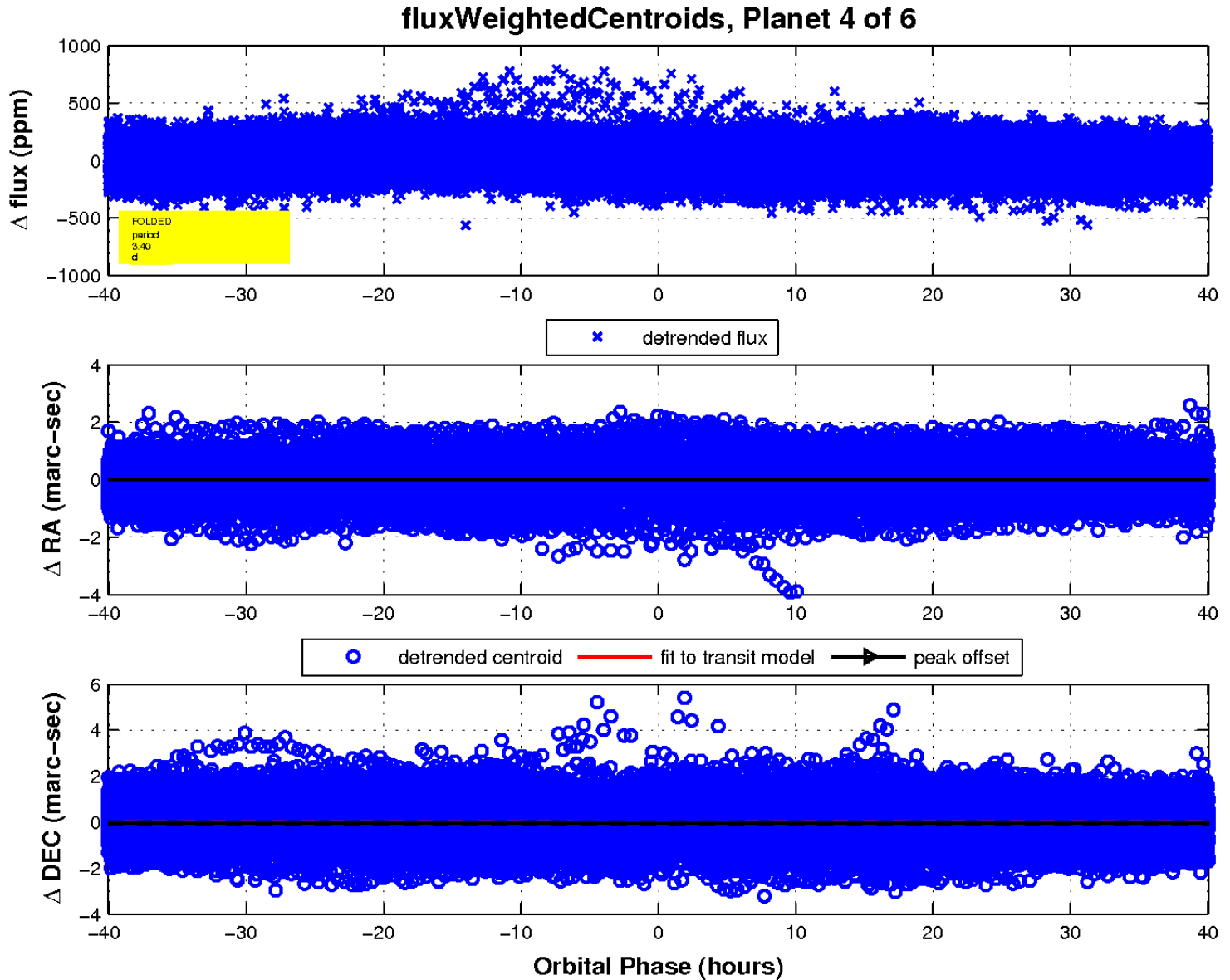
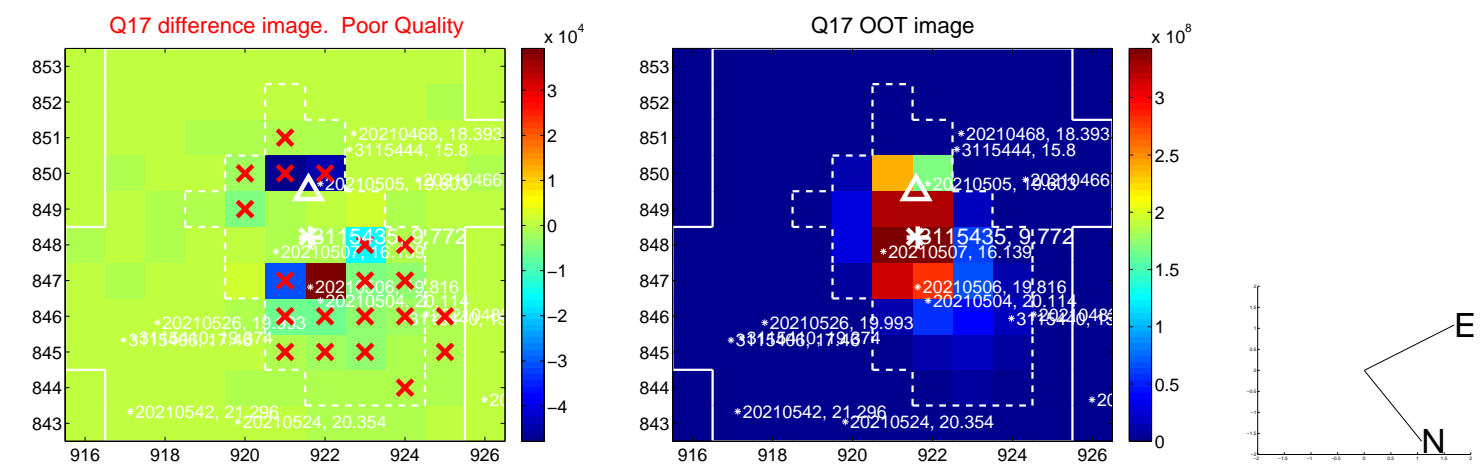
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

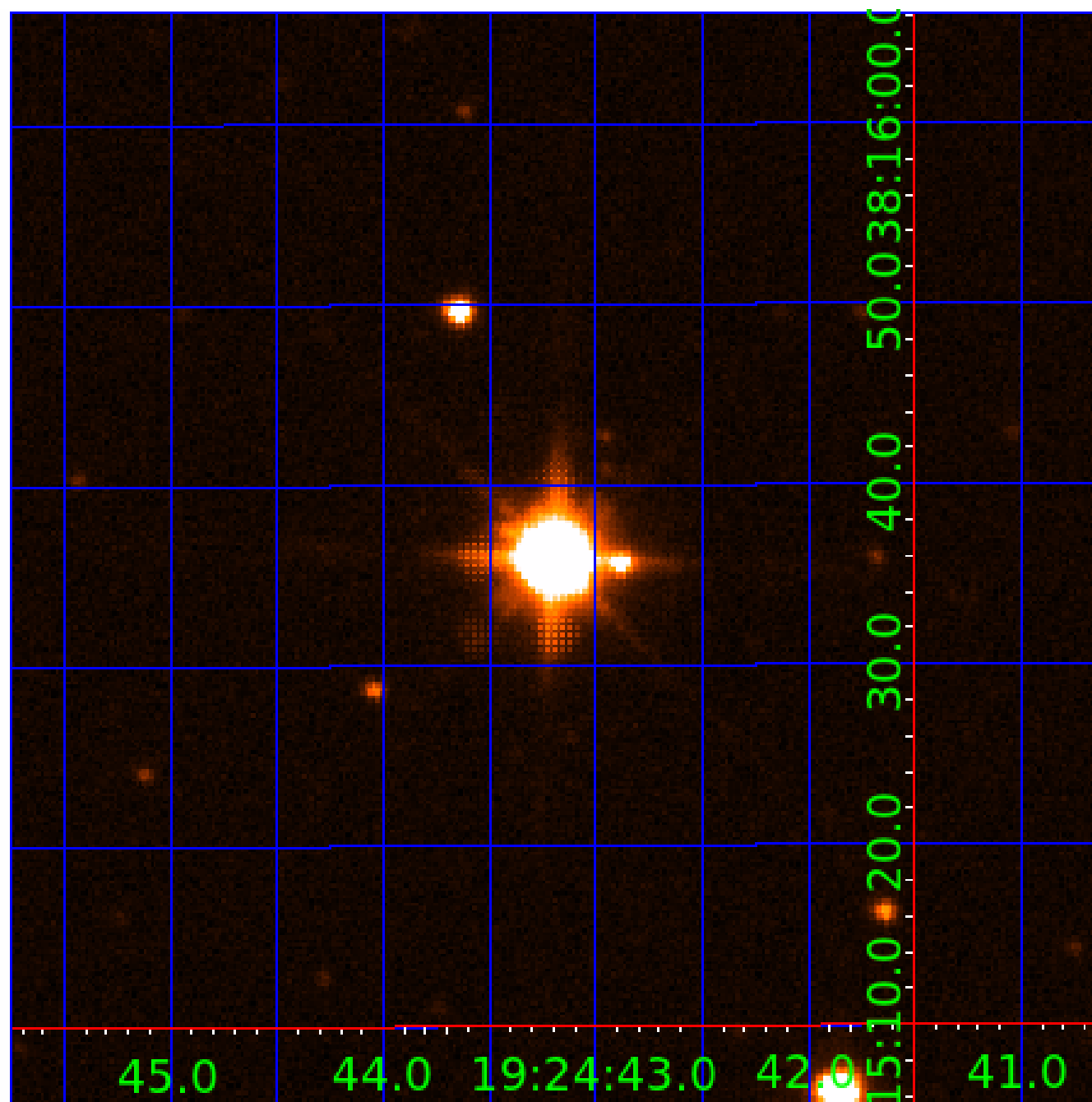


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003115435

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})
003115435-01	OBS	No	6.808578	133.298475	39.7	17.572	11.6	11.8	2.99	6988	2.31	3095.82
003115435-02	OBS	No	6.810276	134.875837	27.7	10.483	9.0	8.4	2.99	6988	1.83	3094.79
003115435-04	OBS	No	3.404388	133.415719	24.6	13.361	8.4	9.0	2.99	6988	1.71	7800.66
003115435-06	OBS	No	6.805700	137.510854	51.0	30.302	9.3	9.9	2.99	6988	2.50	3097.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003115435-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
003115435-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003115435-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003115435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

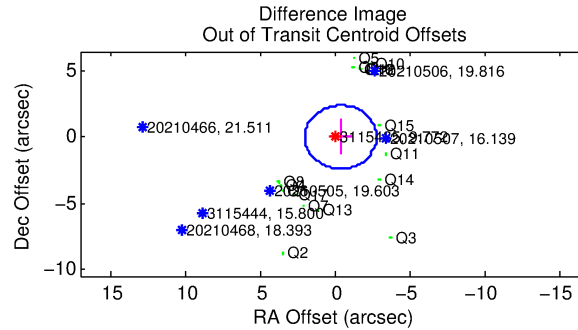
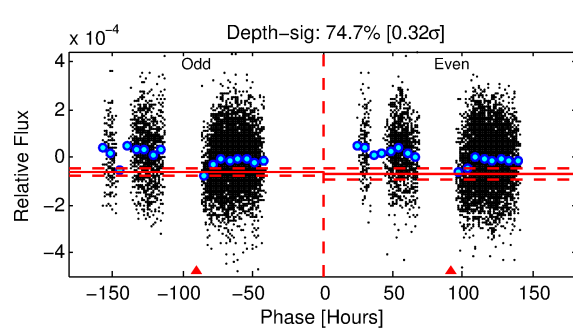
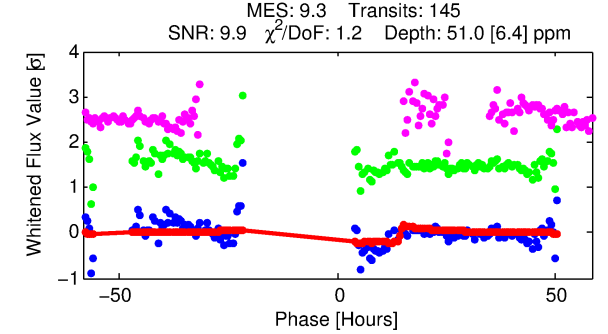
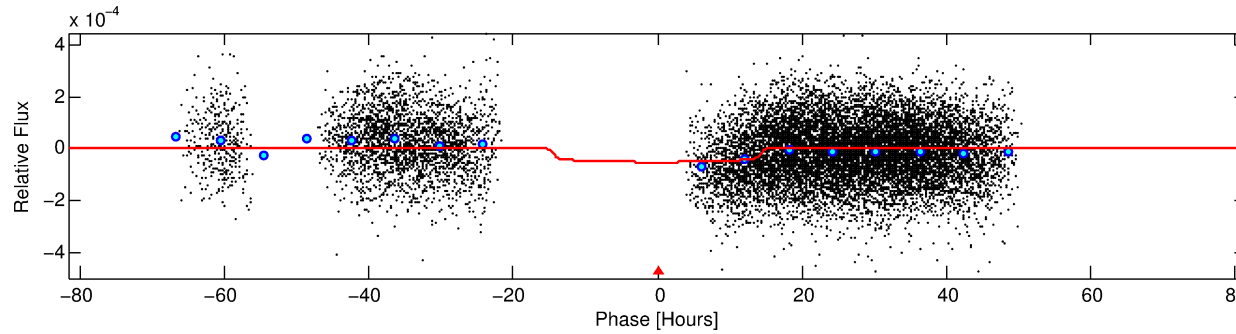
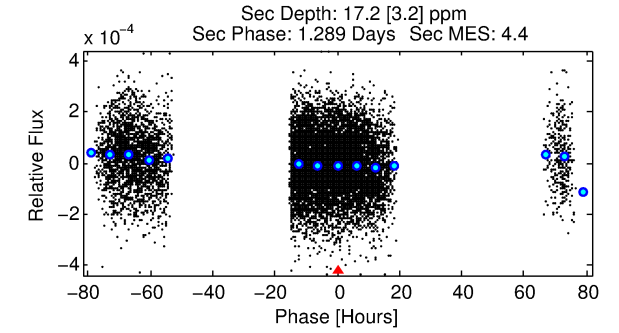
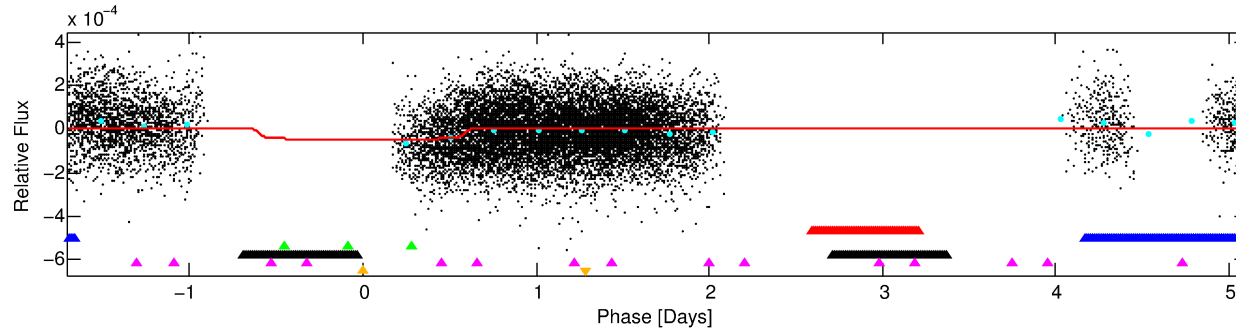
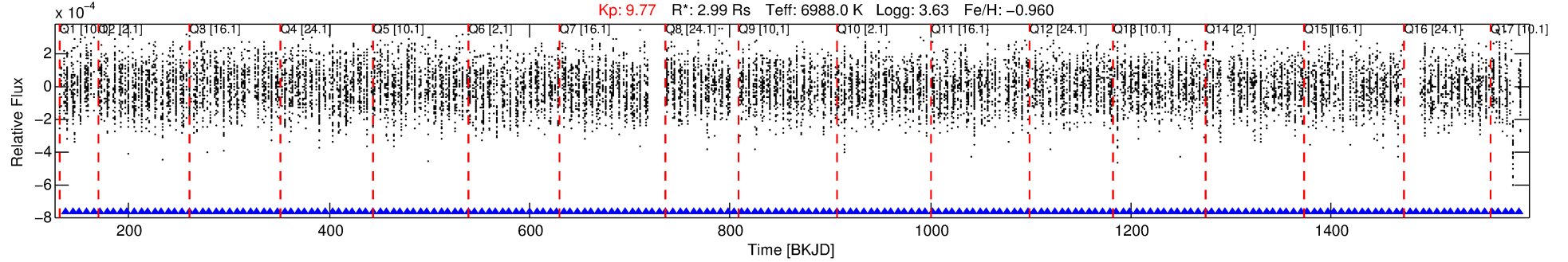
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003115435-06

No Significant Match Found

DV One-Page Summary

KIC: 3115435 Candidate: 6 of 6 Period: 6.806 d



DV Fit Results:

Period = 6.80570 [0.00022] d
Epoch = 137.5109 [0.1221] BKJD
Rp/R* = 0.0077 [0.0007]
a/R* = 1.20 [0.18]
b = 0.91 [0.06]
Seff = 3097.56 [2046.48]
Teq = 1902 [314] K
Rp = 2.50 [1.12] Re
a = 0.0786 [0.0323] AU
Ag = 9.32 [6.49] [1.28 σ]
Teffp = 5139 [370] K [6.66 σ]

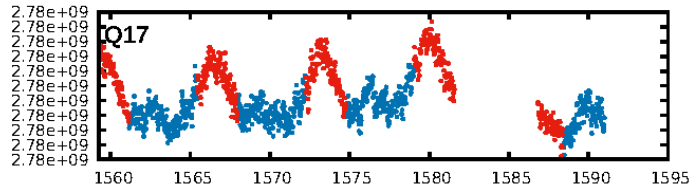
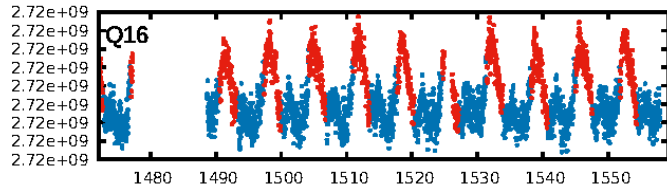
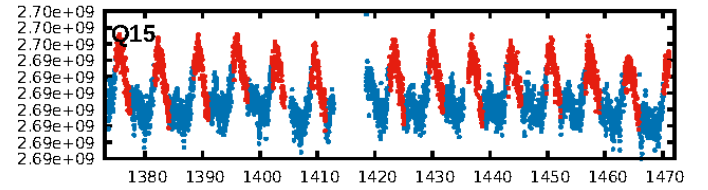
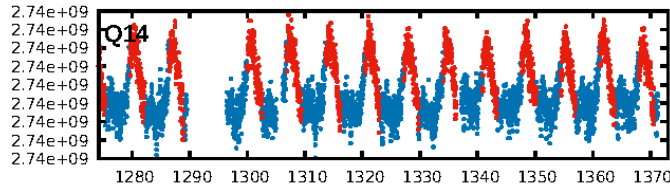
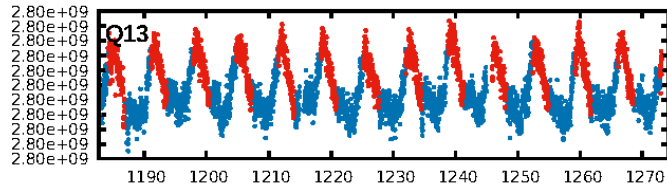
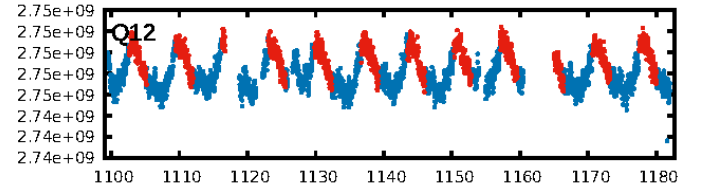
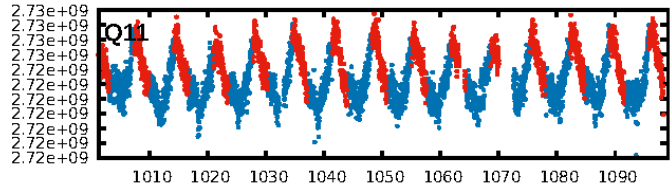
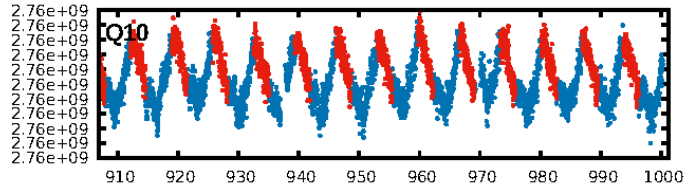
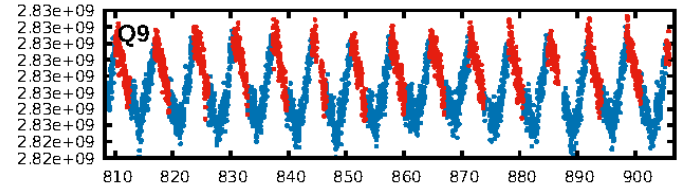
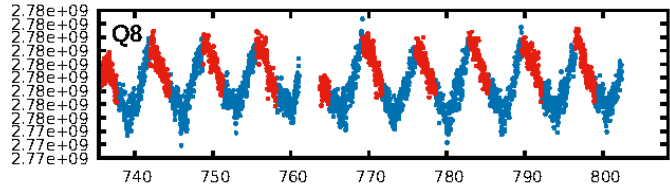
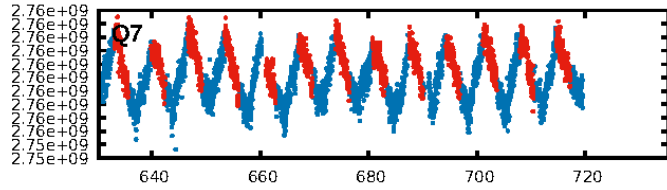
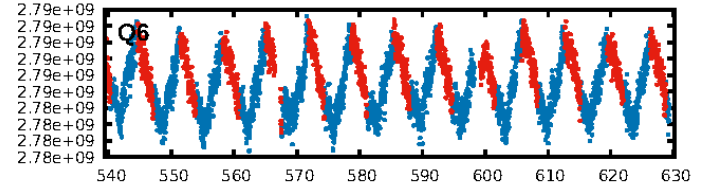
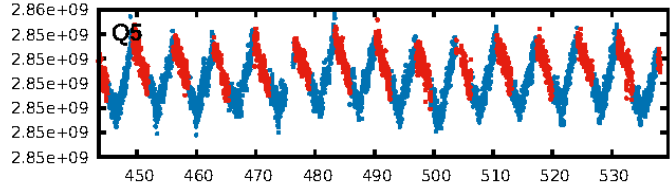
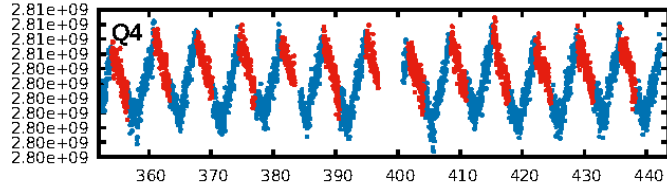
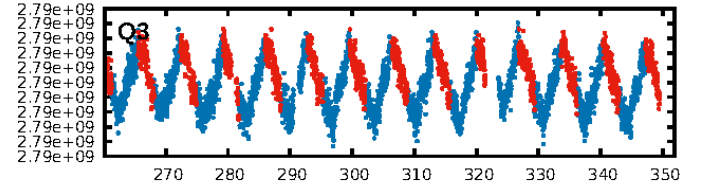
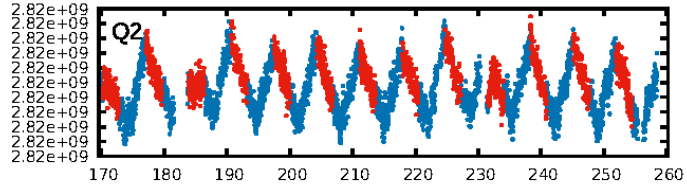
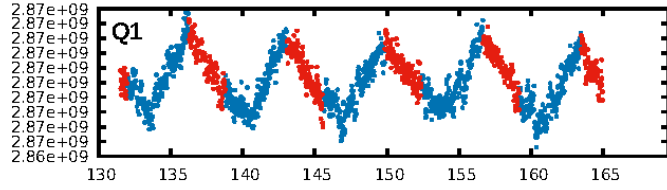
DV Diagnostic Results:

ShortPeriod-sig: 98.6% [2.46 σ]
LongPeriod-sig: 0.2% [0.00 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [140/140]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.4%
Centroid-so: 1.373 arcsec [2.30 σ]
OotOffset-rm: 0.404 arcsec [0.51 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.578 arcsec [0.40 σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 0.00 [0/17]

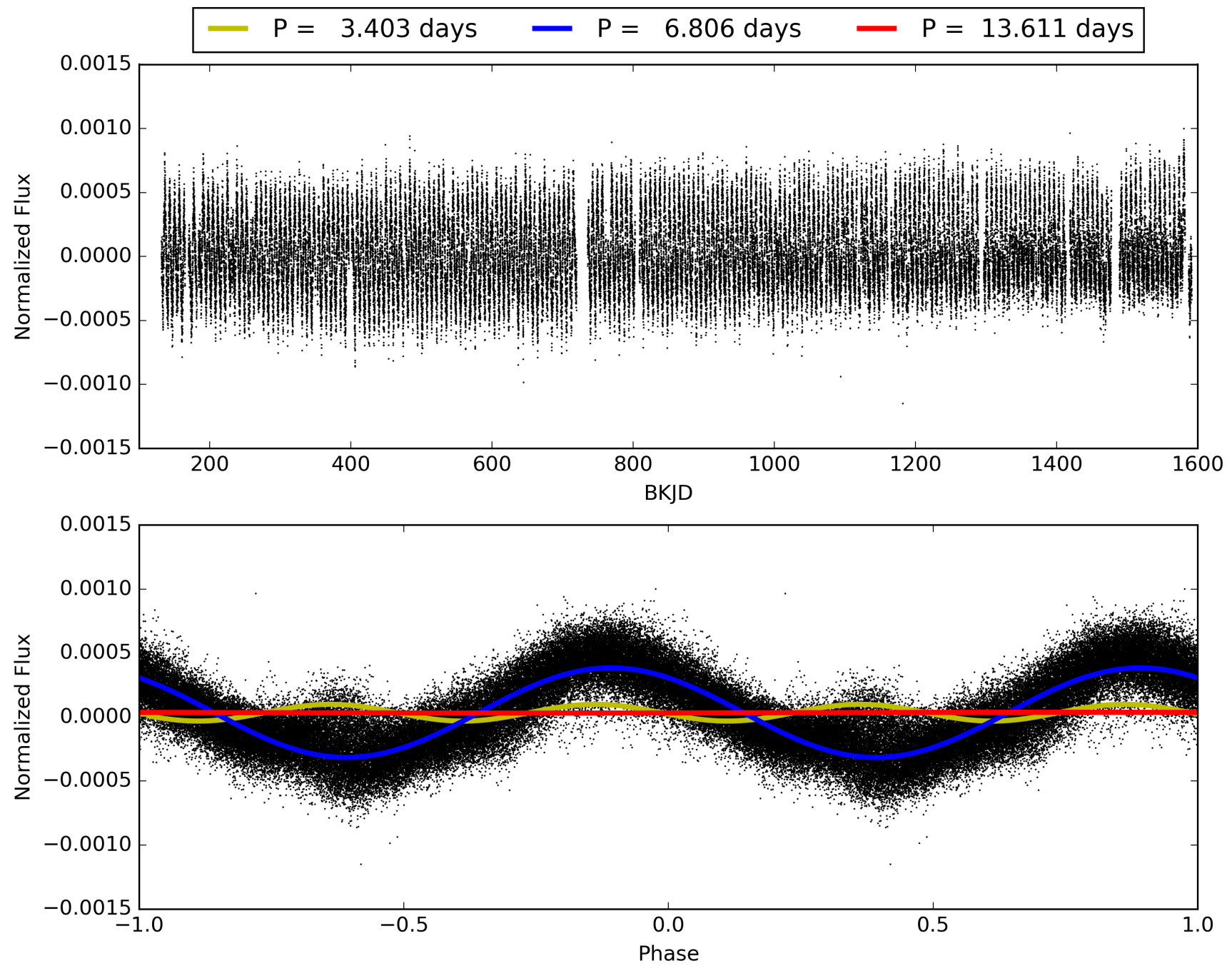
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:52:53 Z

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

TCE 003115435-06, PDC Light Curves

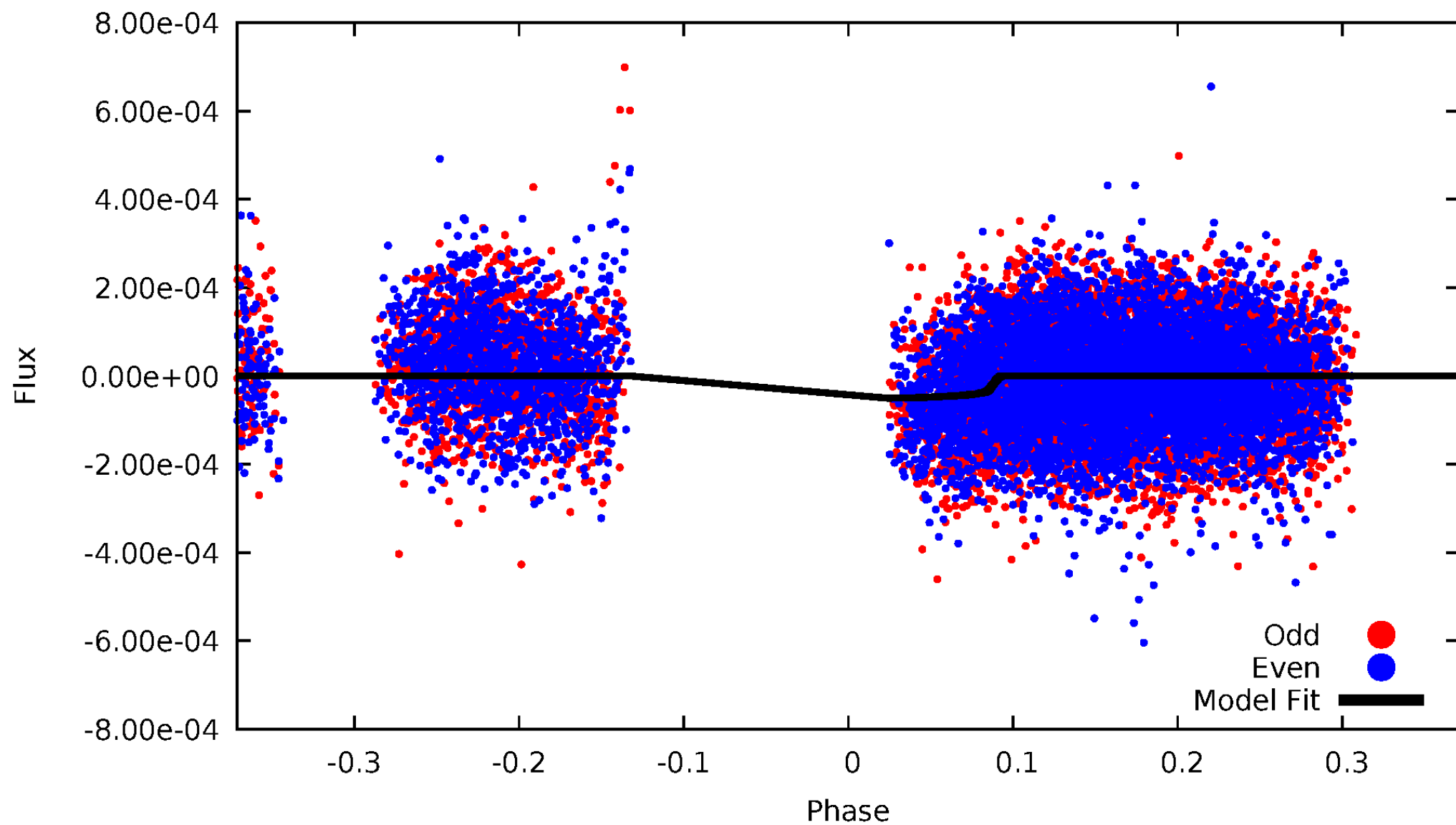


TCE 003115435-06



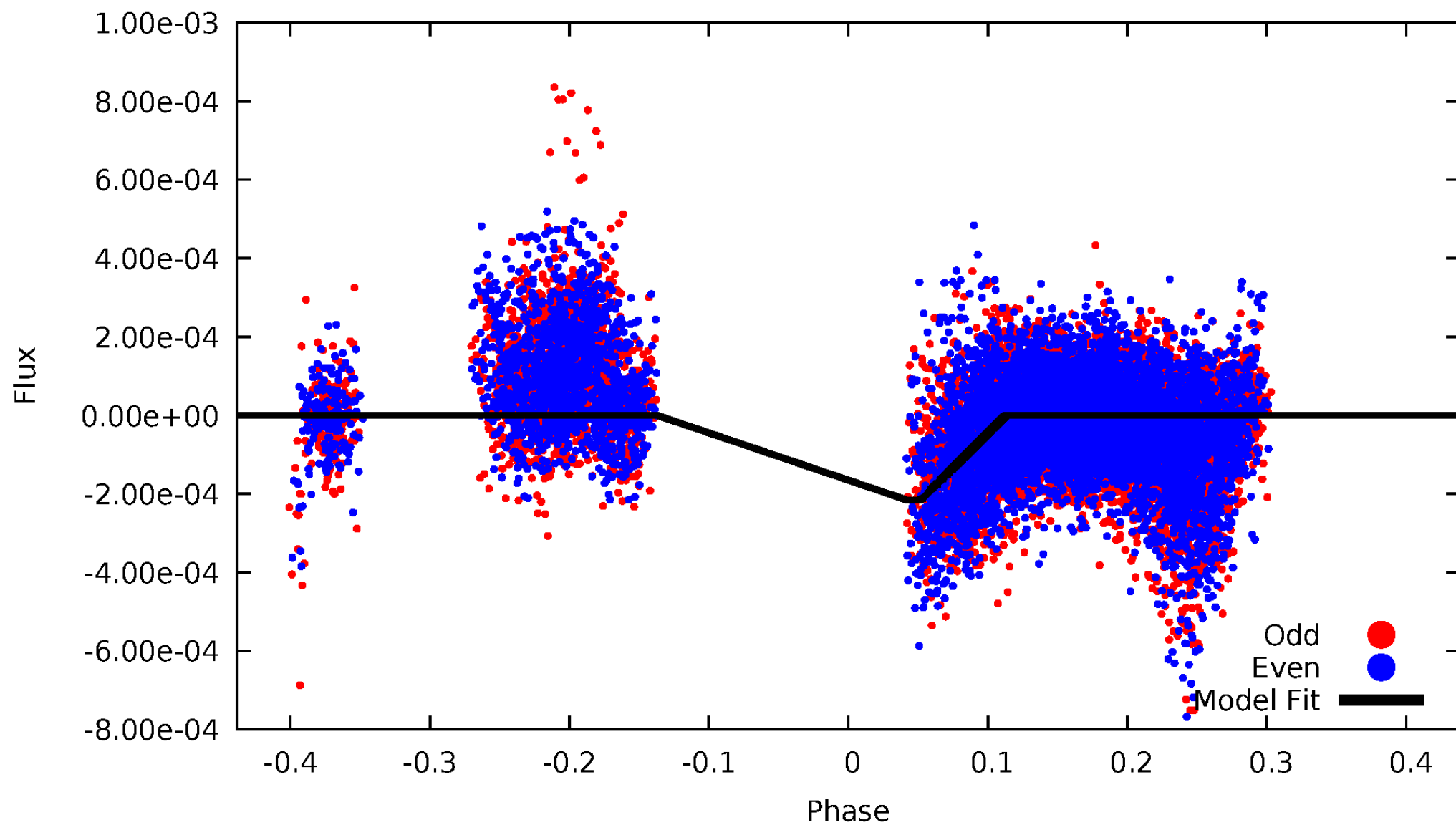
DV Odd/Even

TCE 003115435-06



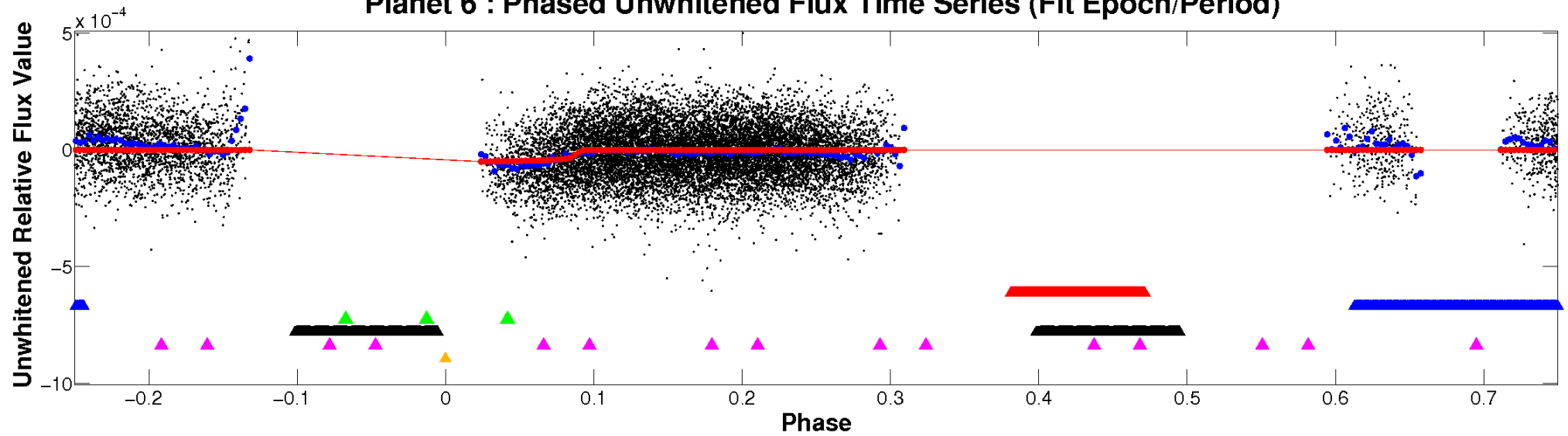
ALT Odd/Even

TCE 003115435-06

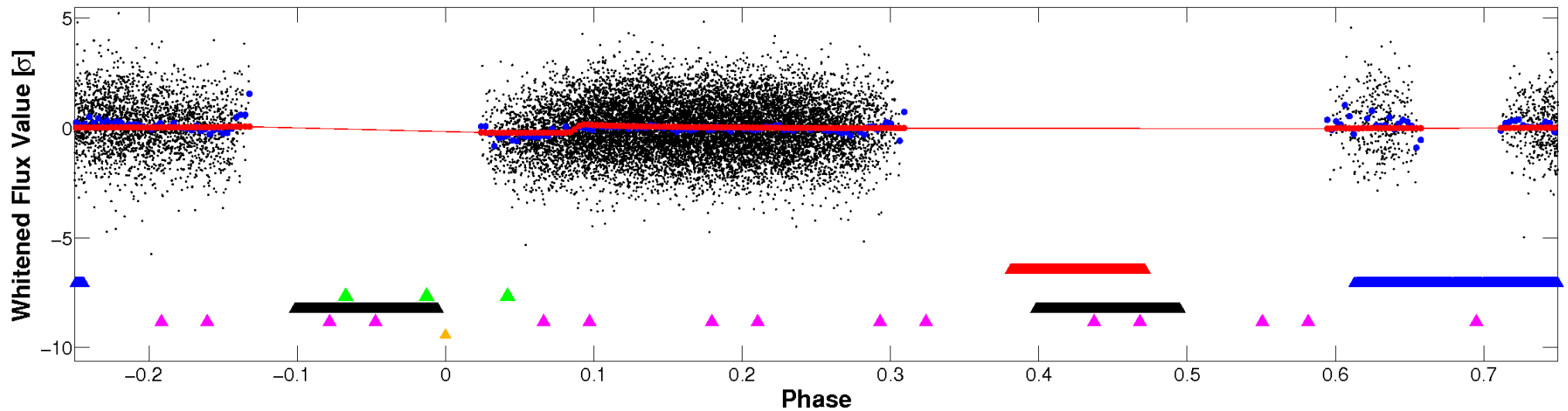


Non-Whitened Vs. Whitened Light Curve

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

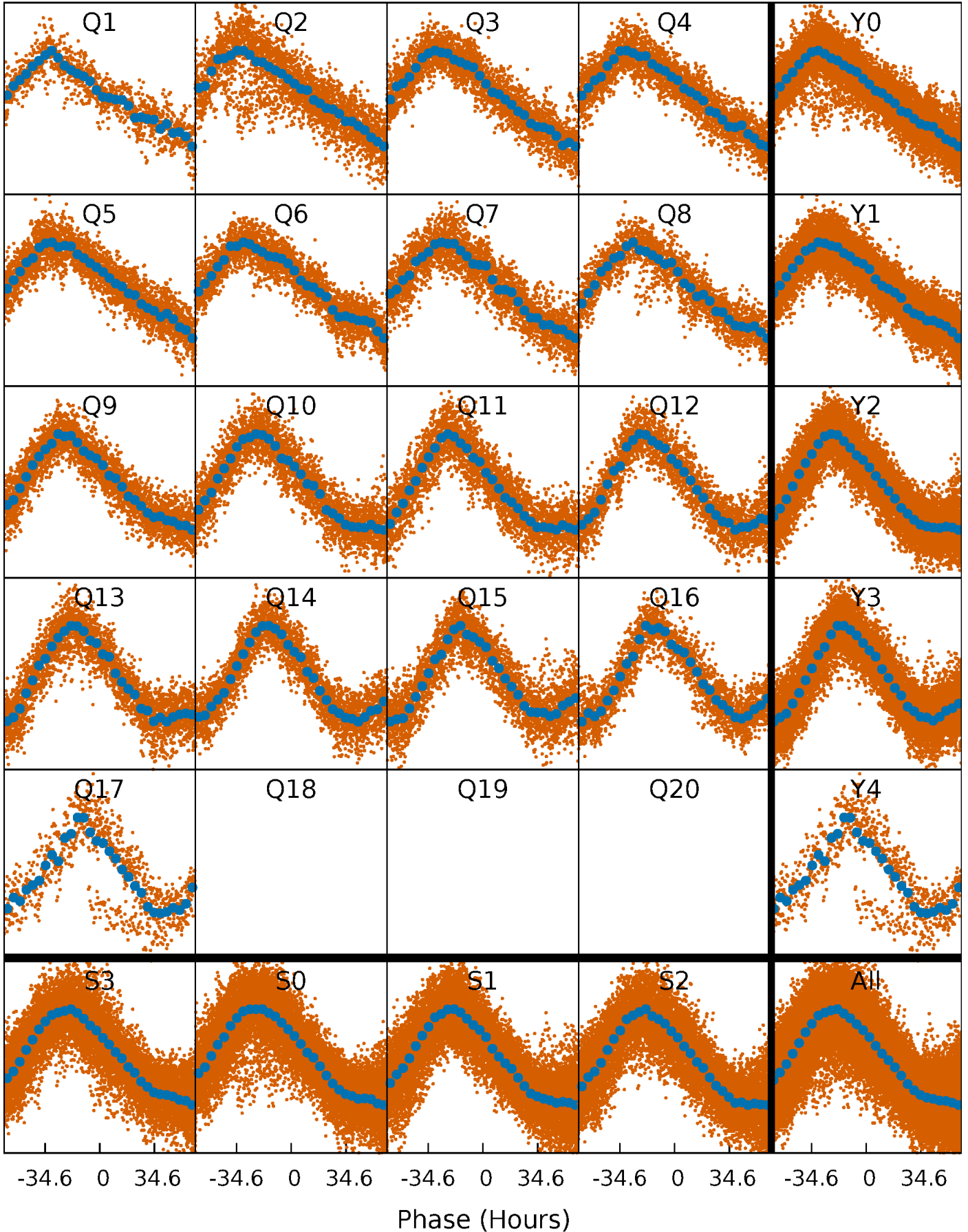


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



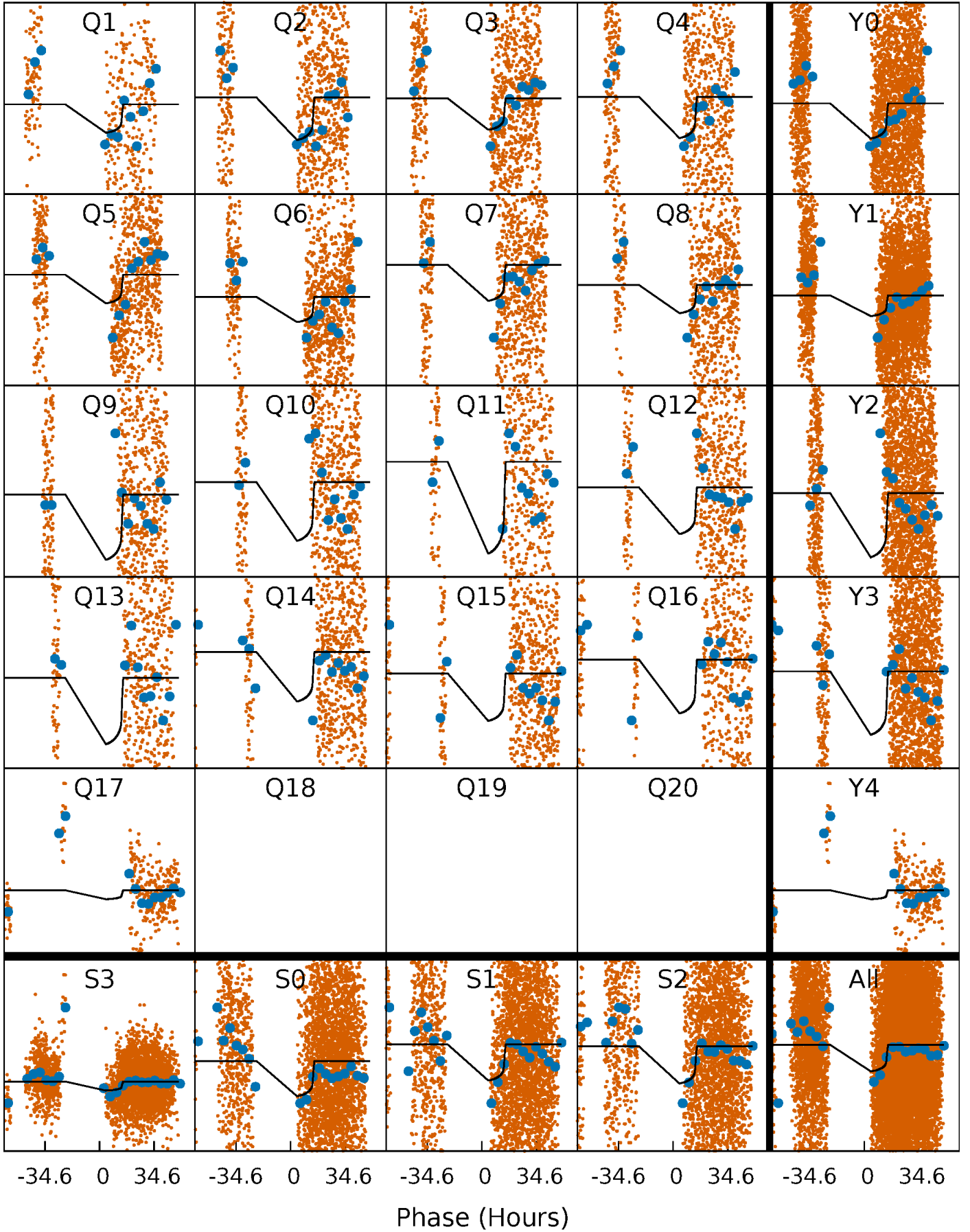
PDC Quarter-Phased Transit Curves

TCE 003115435-06 P= 6.805700 Days $T_0=137.510854$ (BKJD)



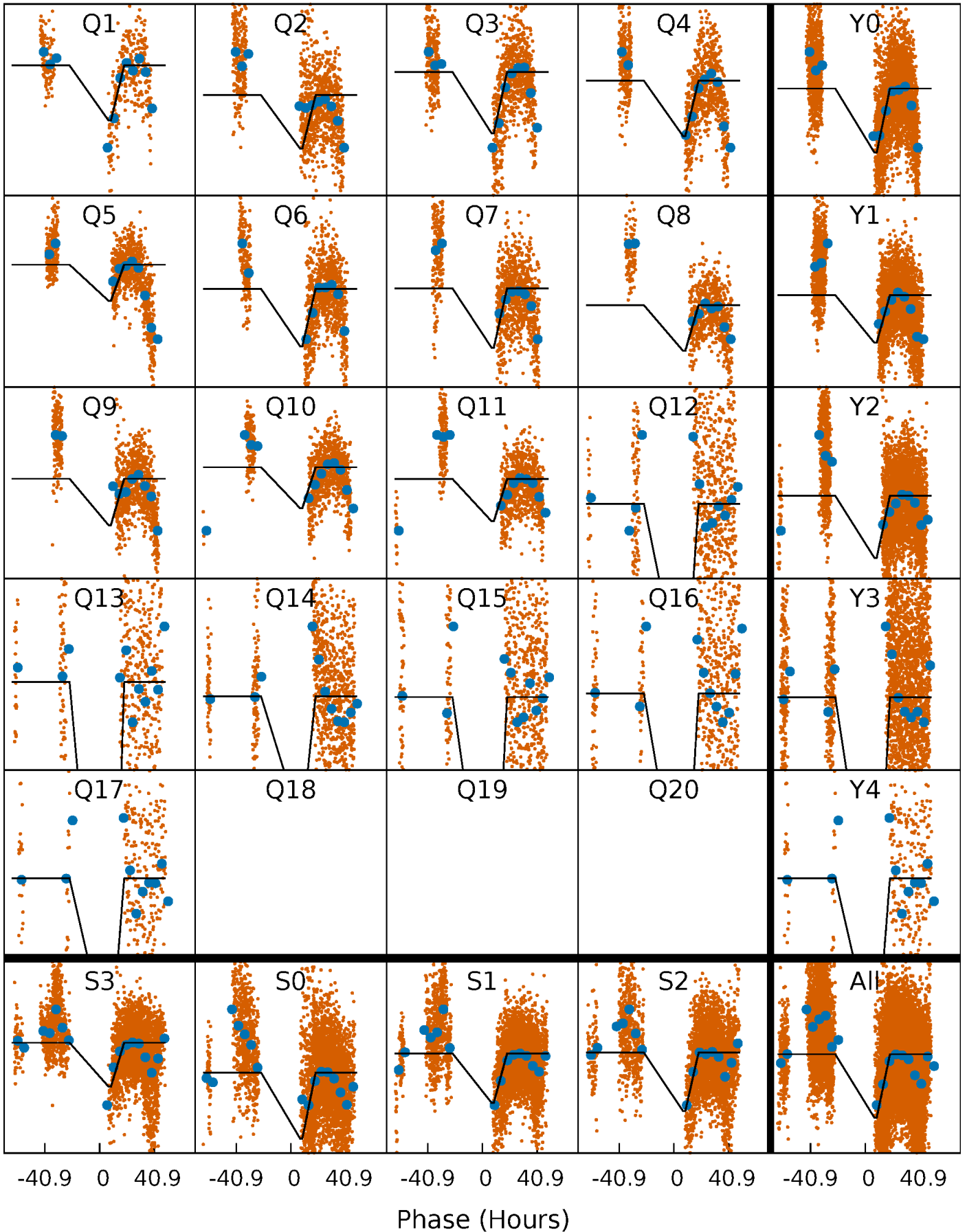
DV Quarter-Phased Transit Curves

TCE 003115435-06 P= 6.805700 Days $T_0=137.510854$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

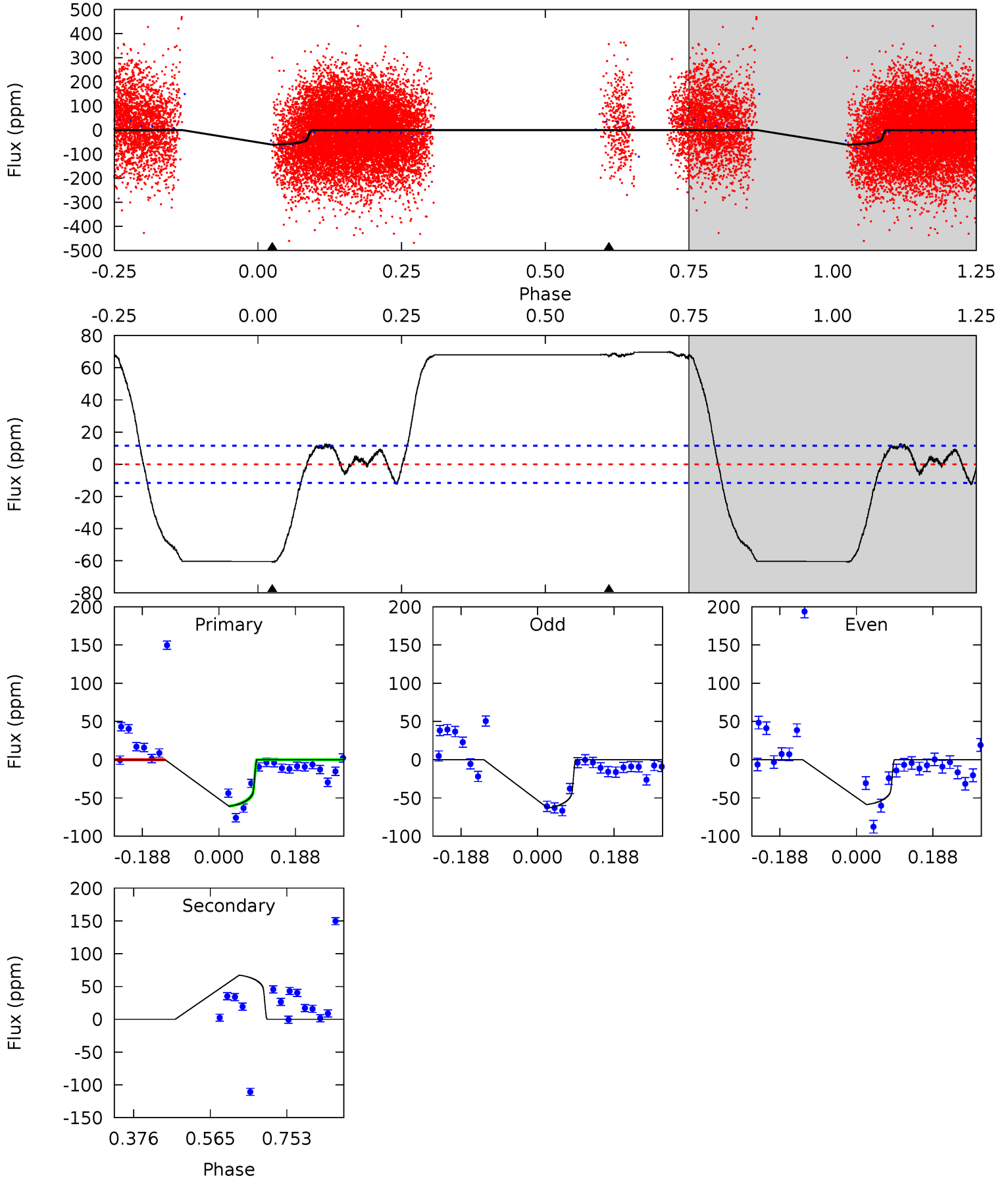
TCE 003115435-06 P= 6.806427 Days $T_0=137.392185$ (BKJD)



DV Model-Shift Uniqueness Test

003115435-06, P = 6.805700 Days, E = 130.705154 Days

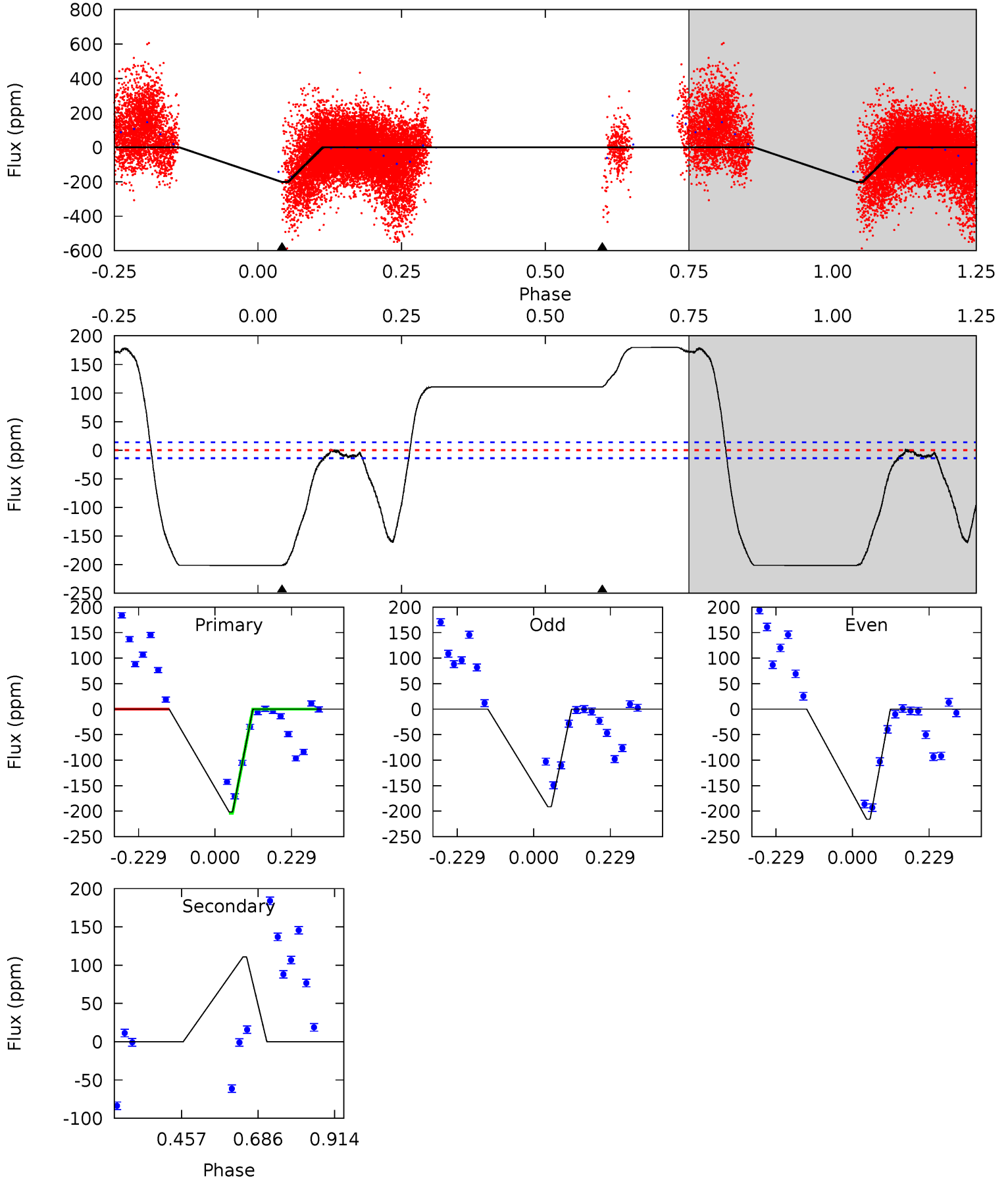
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	-25.8	0	0	4.43	1.32	9.22	23.3	23.3	-25.8	-25.8	0.86	0.87	0.53	0



Alt Model-Shift Uniqueness Test

003115435-06, P = 6.806427 Days, E = 130.585758 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.3	-34.9	0	0	4.39	1.20	19.4	63.3	63.3	-34.9	-34.9	3.83	-0.08	0.47	0



Stellar Parameters For KIC 003115435

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6988^{+167}_{-229}	$3.631^{+0.376}_{-0.094}$	$-0.960^{+0.400}_{-0.300}$	$2.991^{+0.439}_{-1.317}$	$1.395^{+0.170}_{-0.340}$	$0.073^{+0.238}_{-0.023}$
	+2%/-3%	+10%/-3%	+42%/-31%	+15%/-44%	+12%/-24%	+324%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003115435-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	67 ± 3	$2.37^{+0.44}_{-0.50}$	2600^{+154}_{-261}	-7257^{+409}_{-490}	$-40.686^{+10.668}_{-20.819}$
Alt.	111 ± 3	$4.69^{+0.58}_{-1.13}$	2604^{+152}_{-294}	-5891^{+205}_{-186}	$-17.608^{+3.561}_{-9.942}$

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

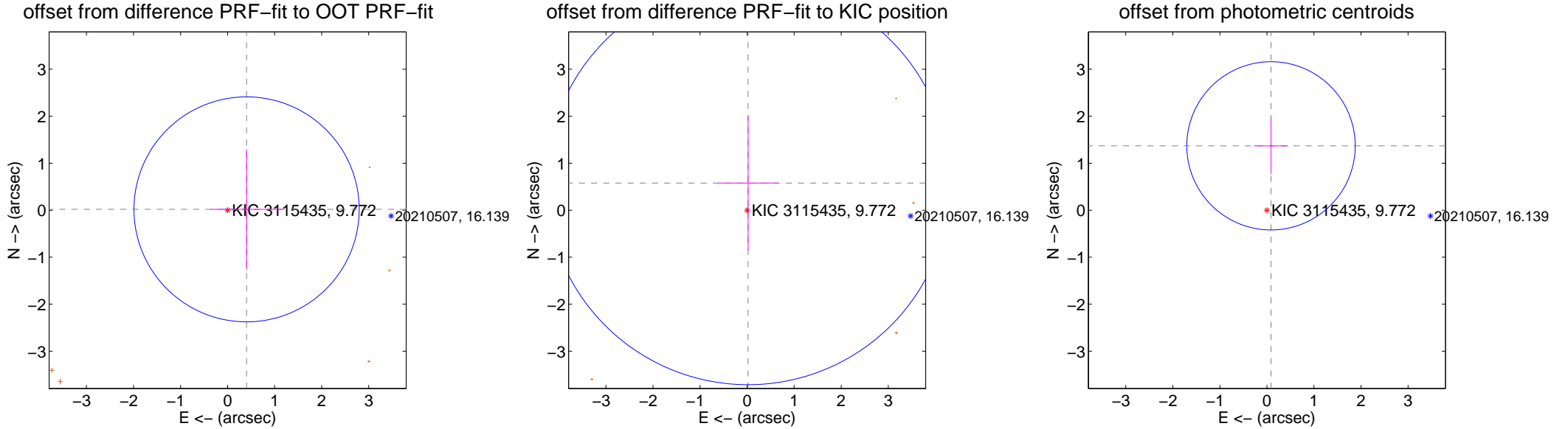
DV Centroid Data

Supplemental centroid analysis for 003115435-06. **Kepler magnitude: 9.77.** Transit SNR 9.86

There are 0 quarters with good PRF difference image offsets

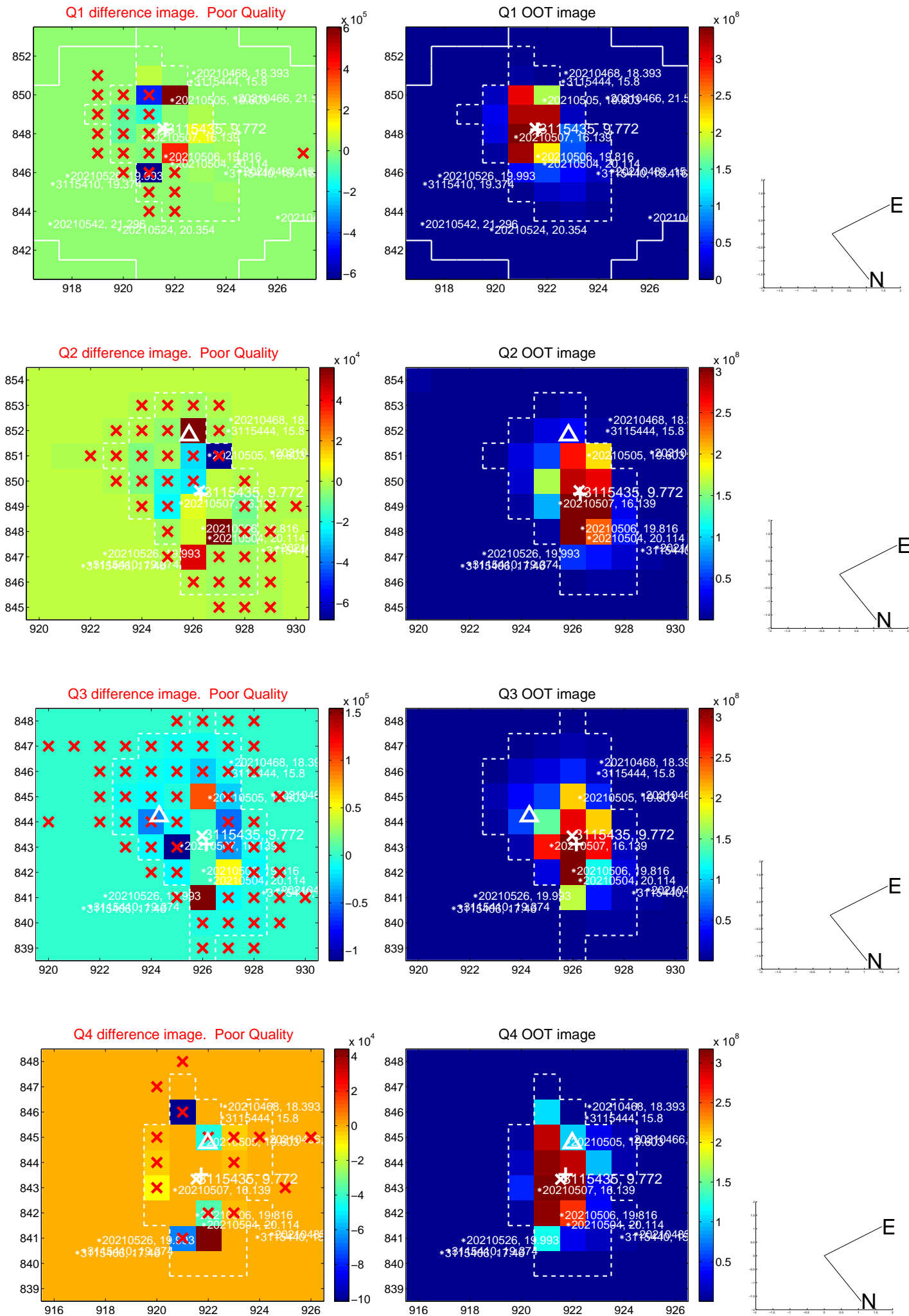
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.404 ± 0.798	0.51	-0.404 ± 0.766	0.018 ± 1.278
PRF-fit source offset from KIC position	0.578 ± 1.430	0.40	-0.020 ± 0.647	0.578 ± 1.431
photometric centroid source offset	1.37 ± 0.60	2.30	-0.09 ± 0.36	1.37 ± 0.60

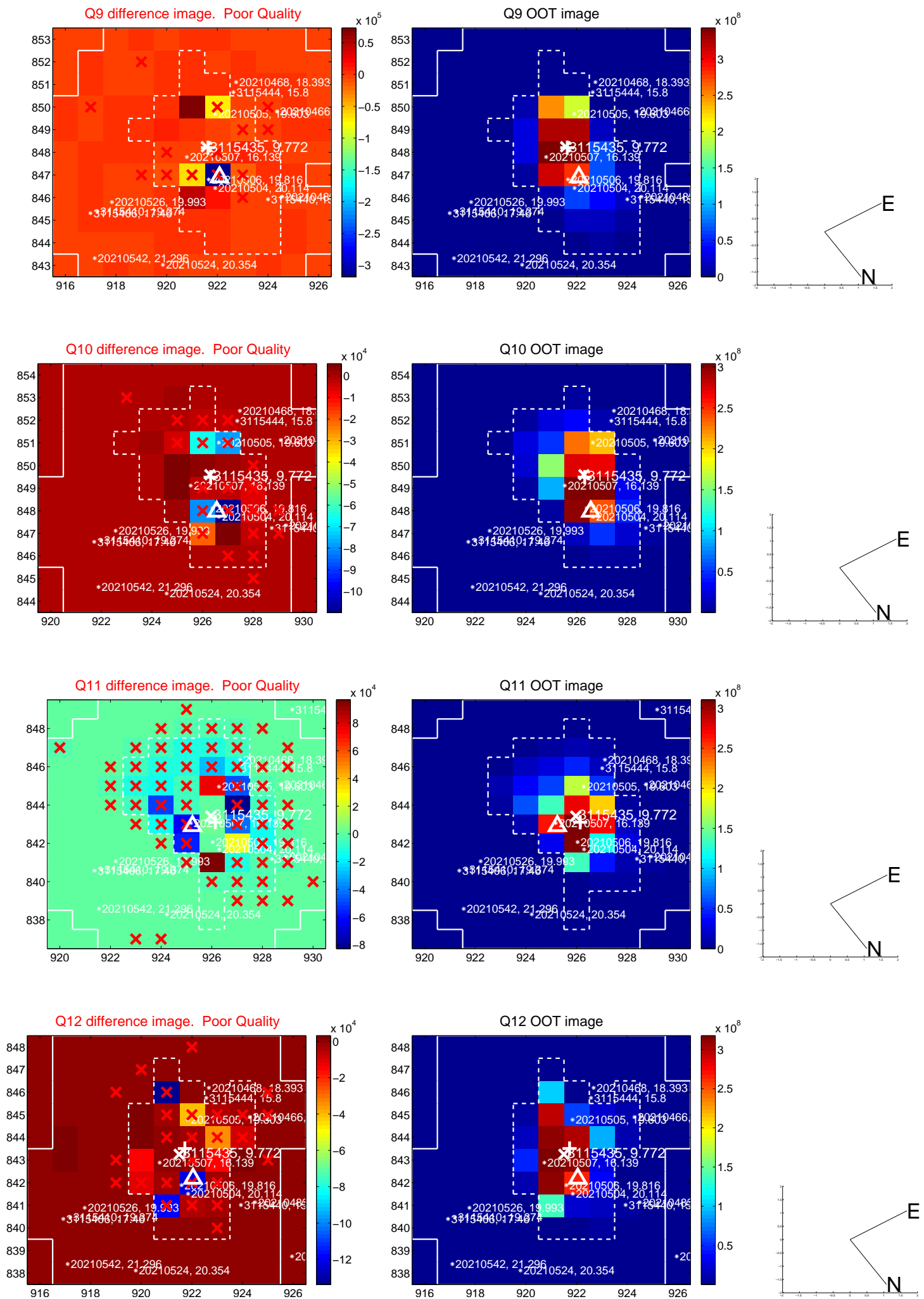


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

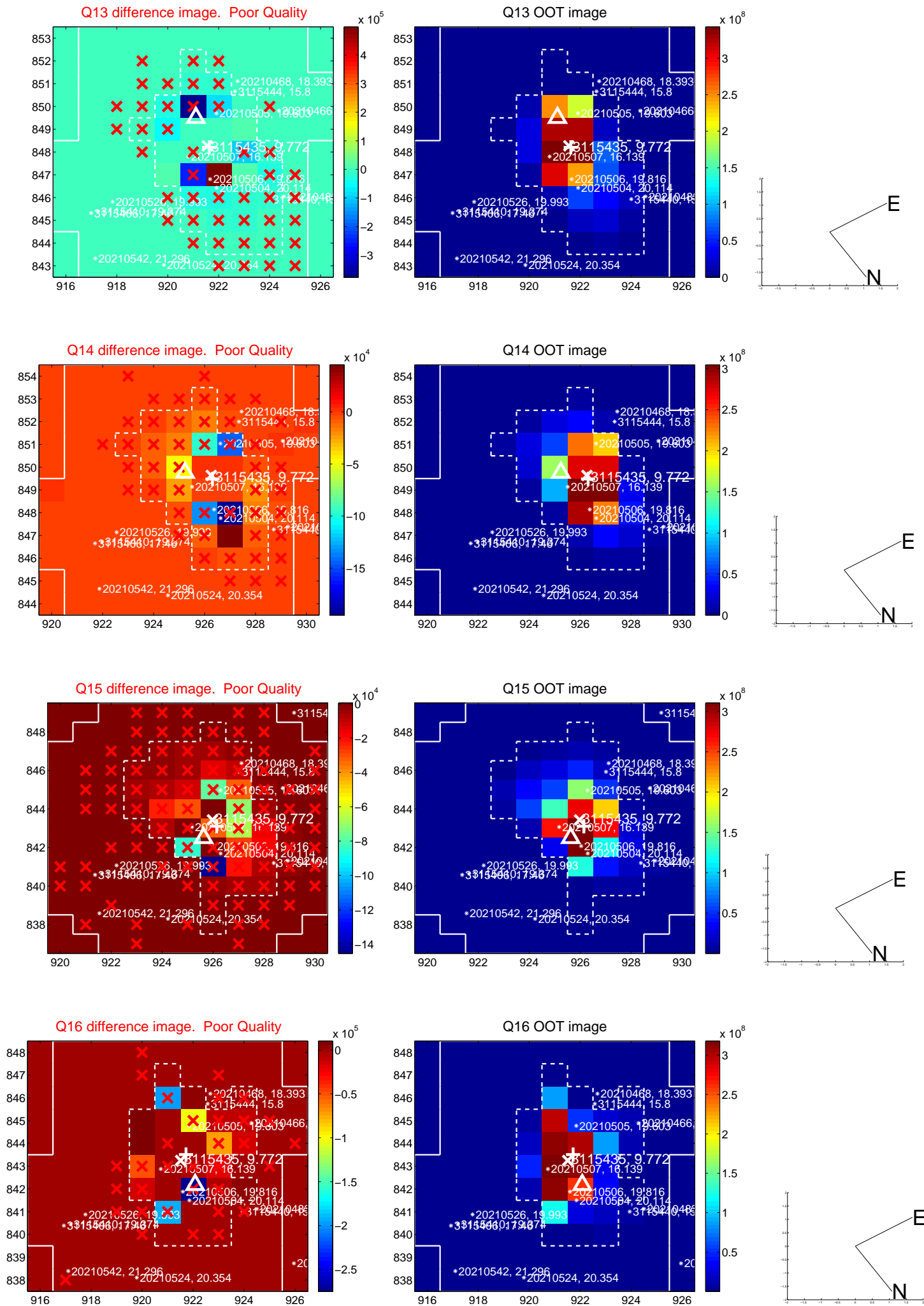
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



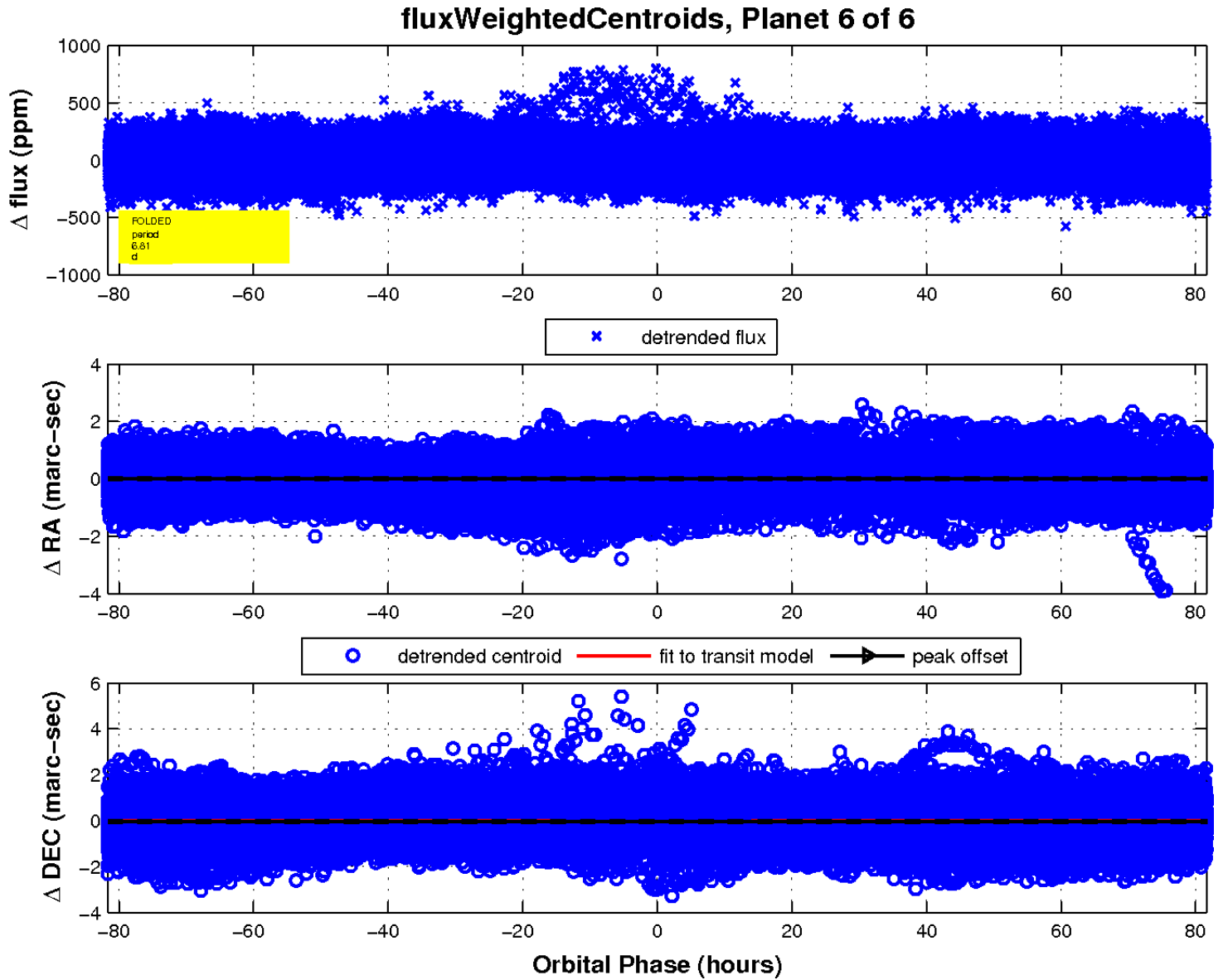
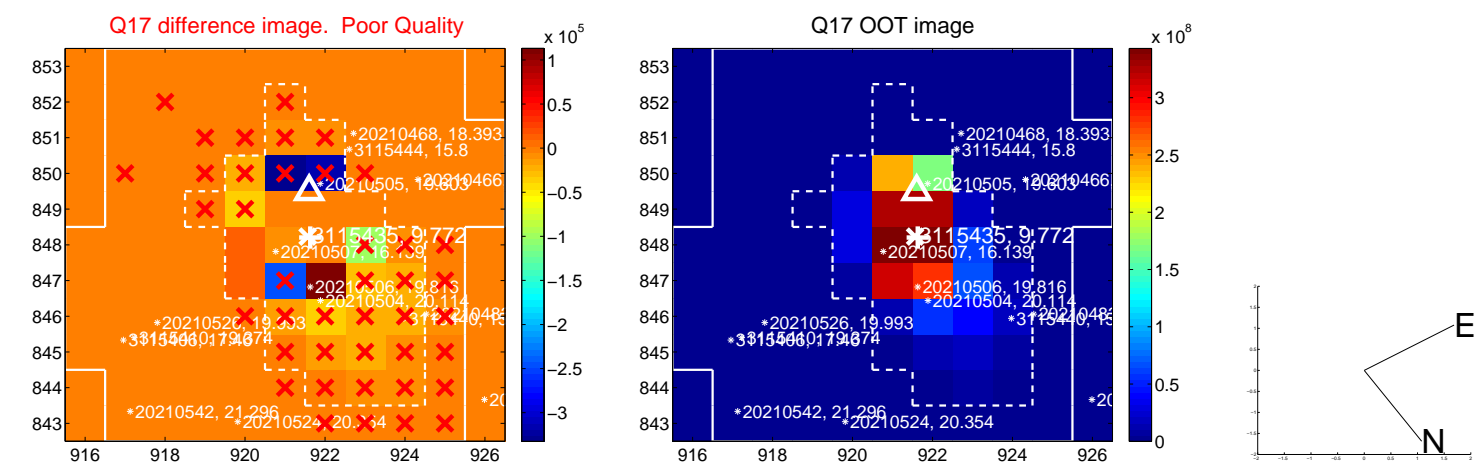
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Declination

