

KIC 003749404

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})
003749404-01	OBS	No	20.306979	148.110993	1877.0	29.426	96.0	188.1	2.36	7363	18.59	473.46
003749404-02	OBS	No	20.306111	150.922369	187.4	19.452	17.4	26.5	2.36	7363	6.10	473.49
003749404-03	OBS	No	10.154727	134.630380	24.6	18.032	9.6	8.3	2.36	7363	1.35	1192.85
003749404-04	OBS	No	20.305583	132.495917	153.7	20.849	12.0	24.4	2.36	7363	5.69	473.50
003749404-05	OBS	No	10.152836	133.628493	29.2	38.770	9.5	5.0	2.36	7363	1.46	1193.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749404-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003749404-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-03	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
003749404-04	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—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.

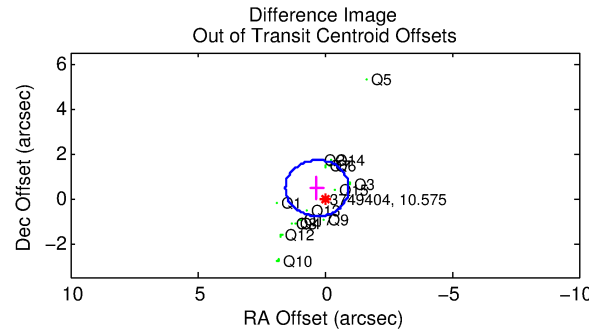
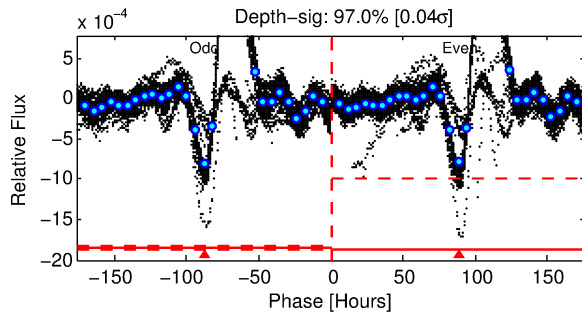
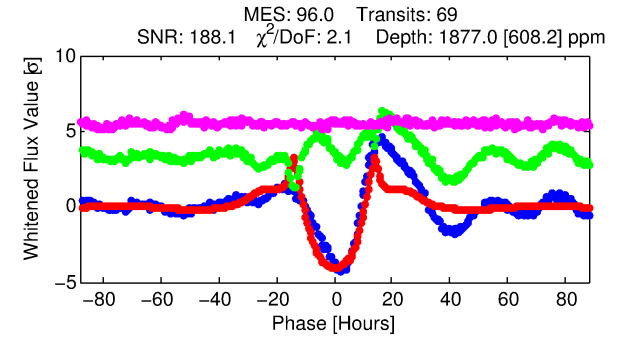
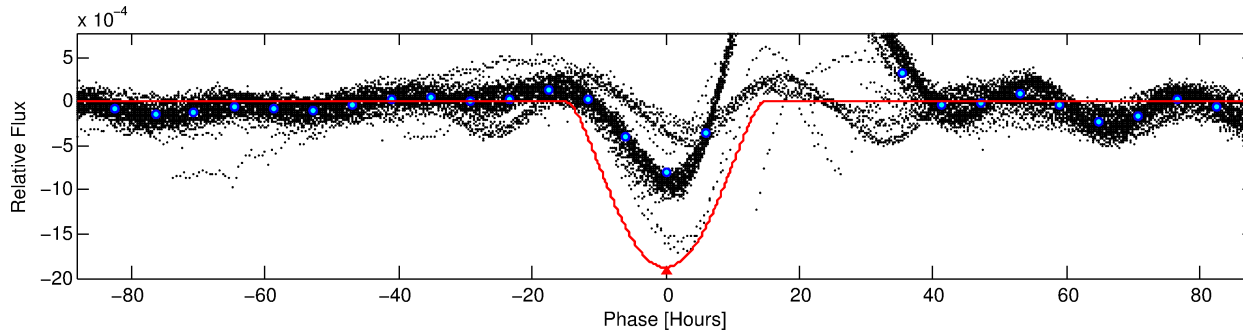
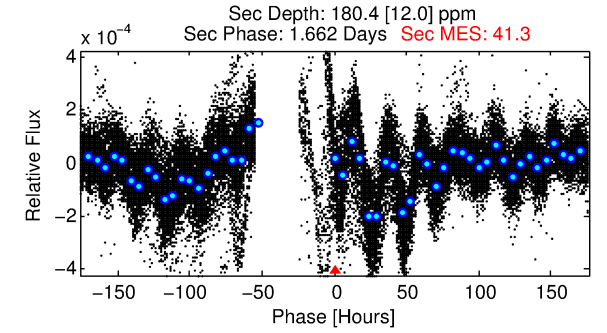
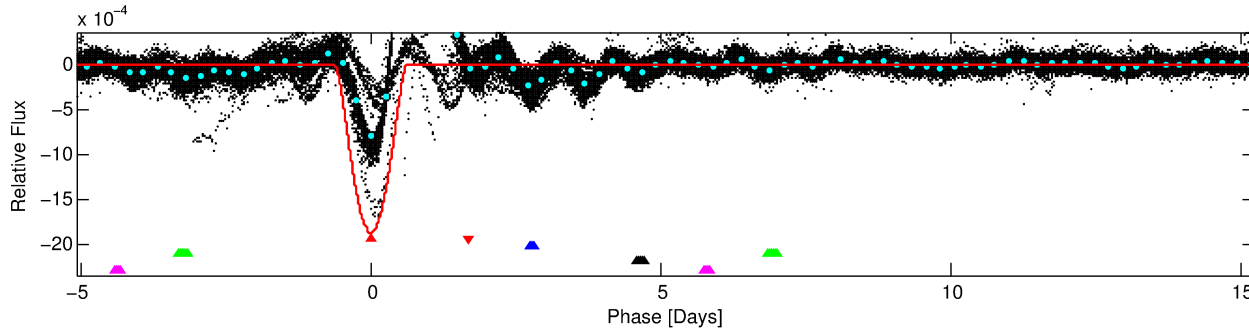
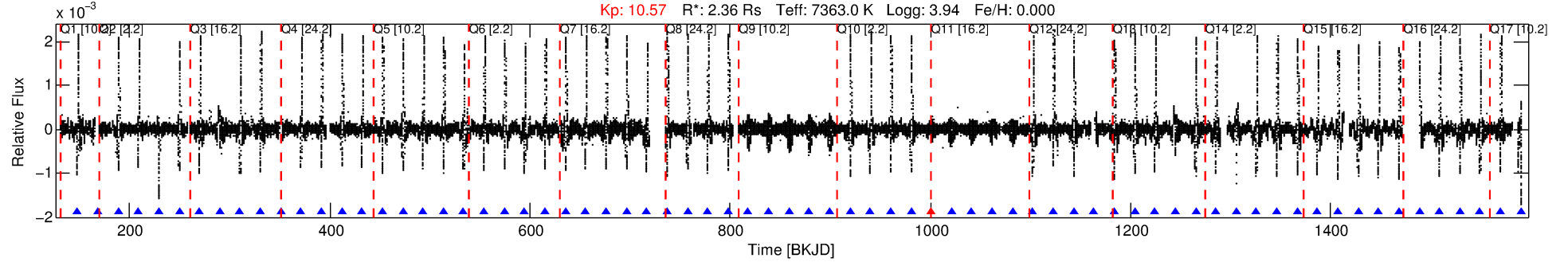
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749404-01

No Significant Match Found

DV One-Page Summary

KIC: 3749404 Candidate: 1 of 5 Period: 20.307 d



DV Fit Results:

Period = 20.30698 [0.00008] d
Epoch = 148.1110 [0.0031] BKJD
Rp/R* = 0.0722 [0.0061]
a/R* = 2.28 [0.03]
b = 1.00 [0.01]
Seff = 473.46 [216.09]
Teq = 1189 [136] K
Rp = 18.59 [6.25] Re
a = 0.1759 [0.0496] AU
Ag = 8.89 [4.06] [1.94σ]
Teffp = 3175 [203] K [8.14σ]

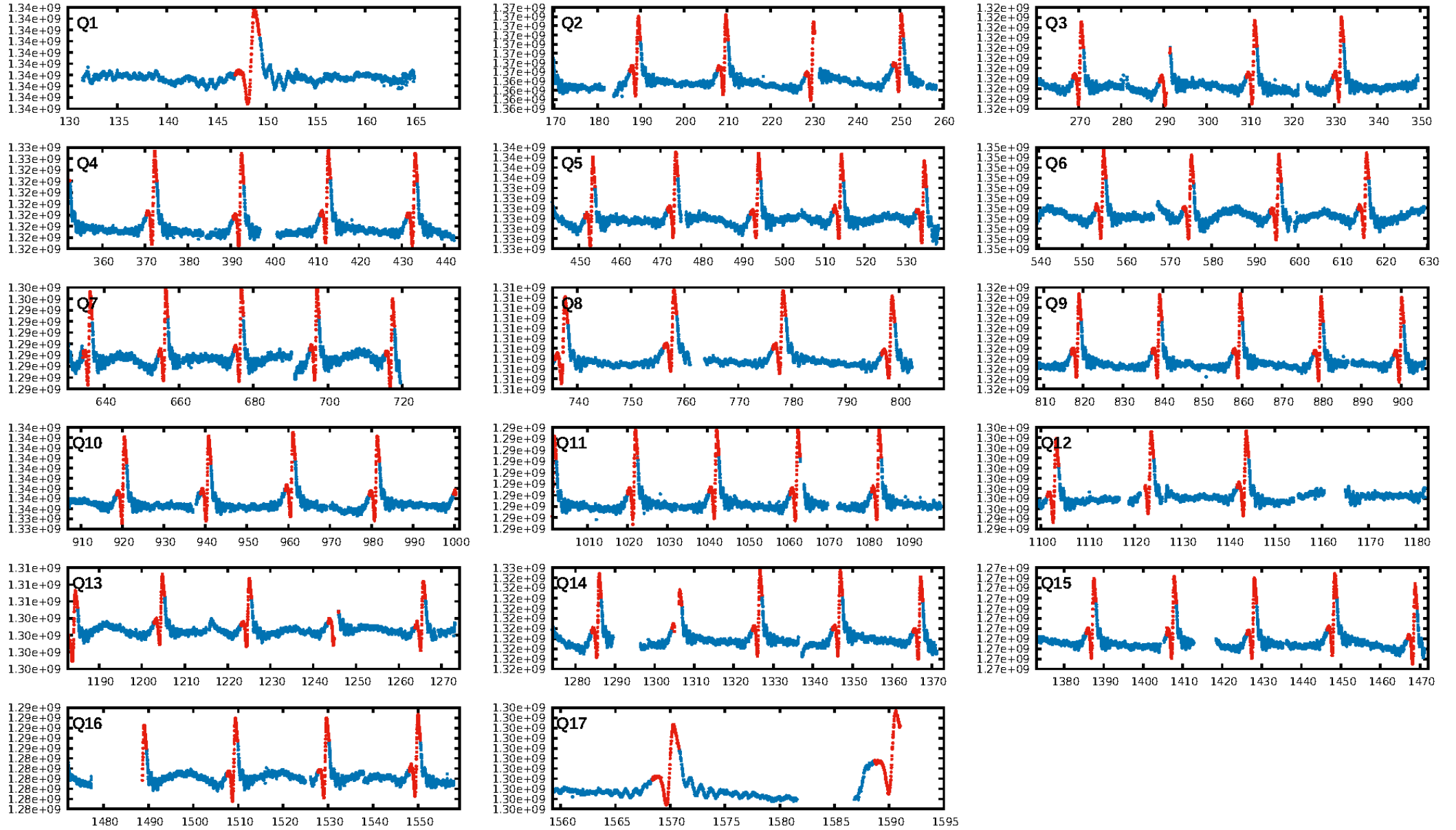
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [65/66]
GhostDiagnostic-chr: 1.815
Centroid-sig: 0.0%
Centroid-so: 0.568 arcsec [10.62σ]
OotOffset-rm: 0.540 arcsec [1.30σ]
OotOffset-st: 4/3/3/5 [15]
KicOffset-rm: 0.812 arcsec [1.48σ]
KicOffset-st: 4/3/3/5 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [15/15]

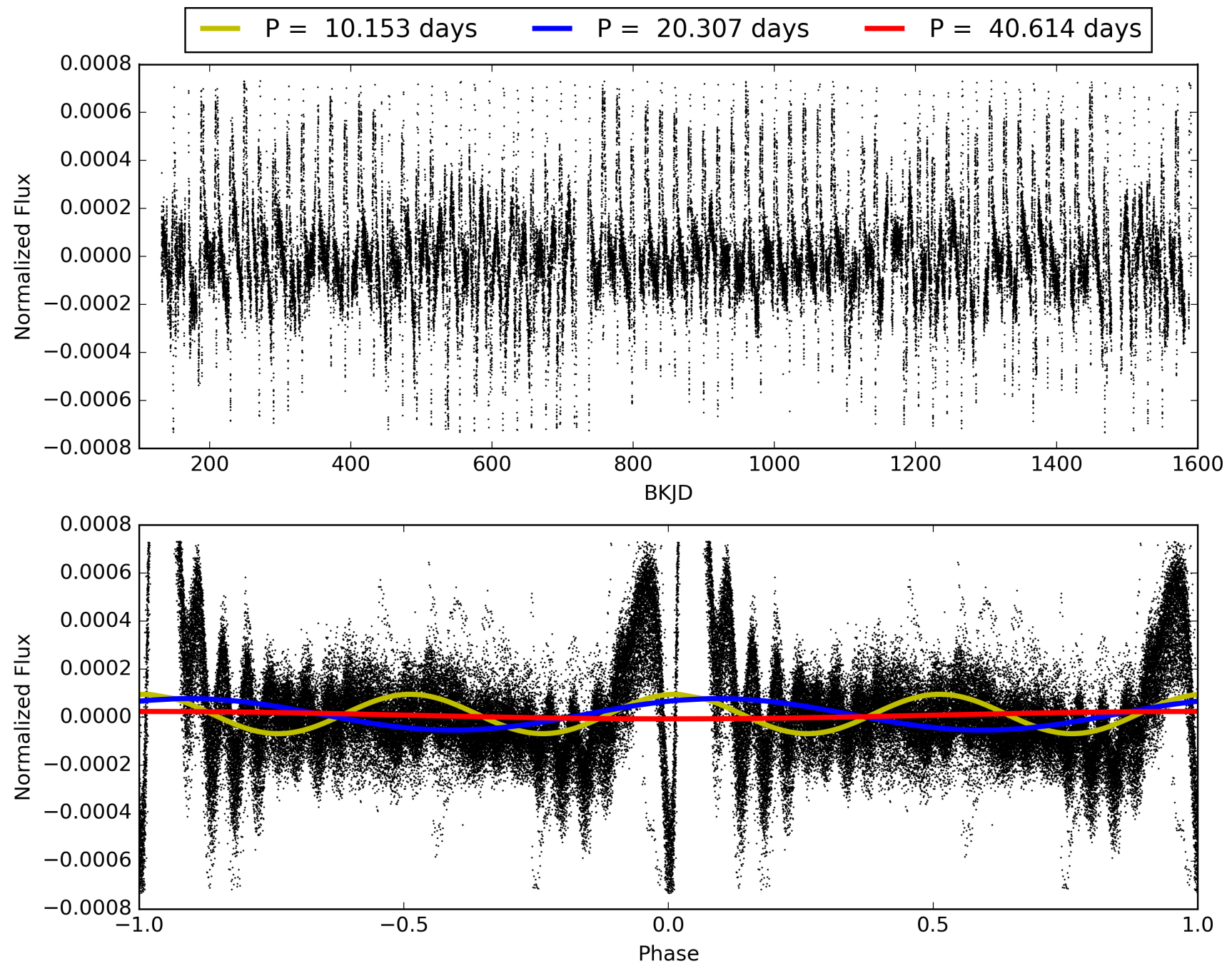
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003749404-01, PDC Light Curves

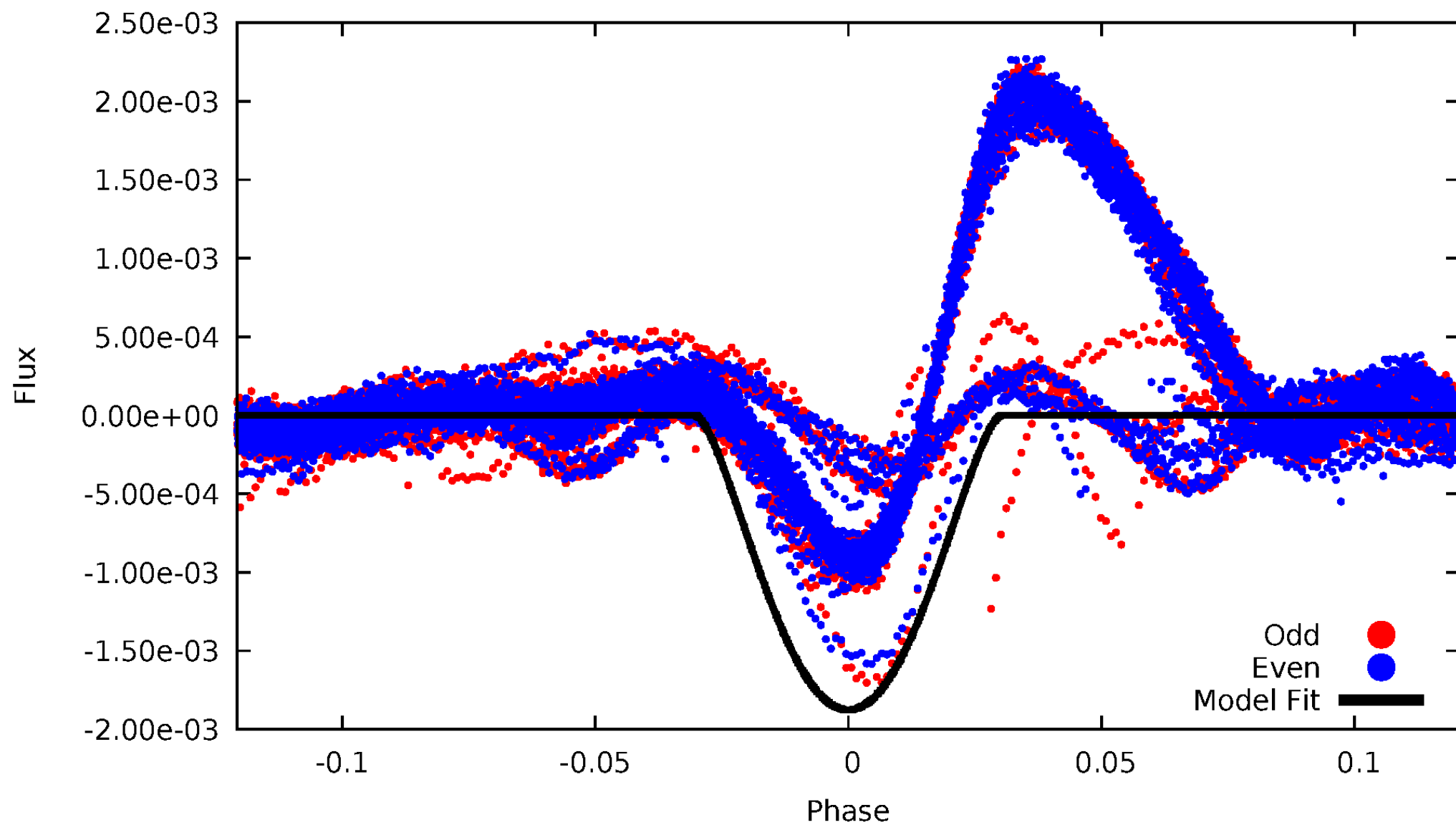


TCE 003749404-01



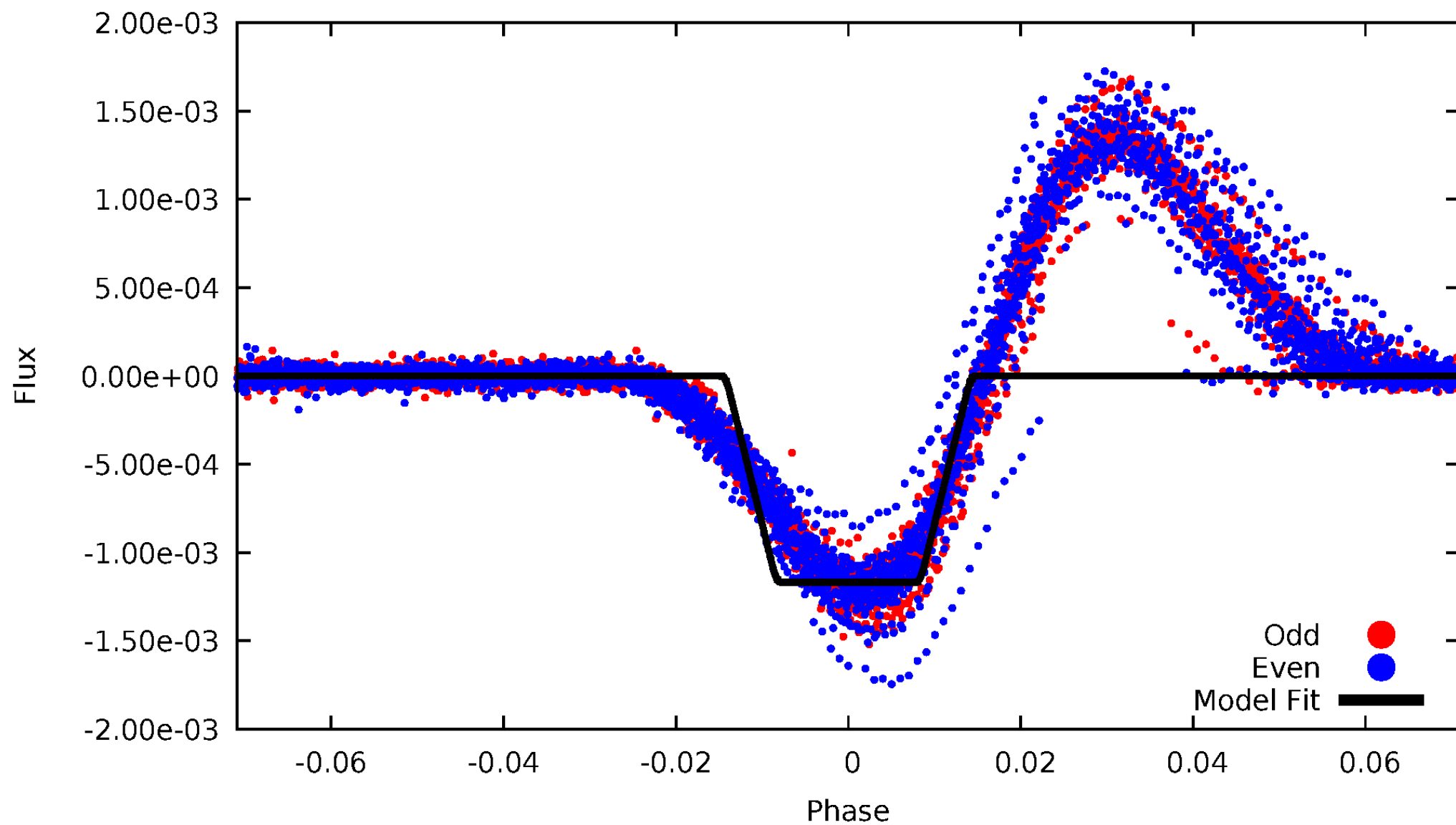
DV Odd/Even

TCE 003749404-01



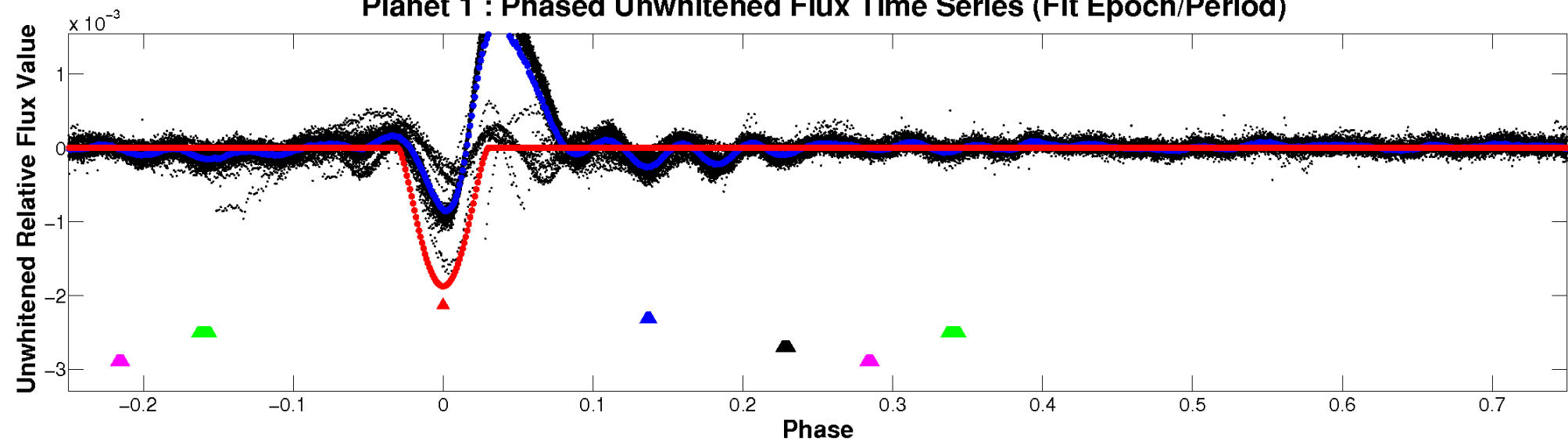
ALT Odd/Even

TCE 003749404-01

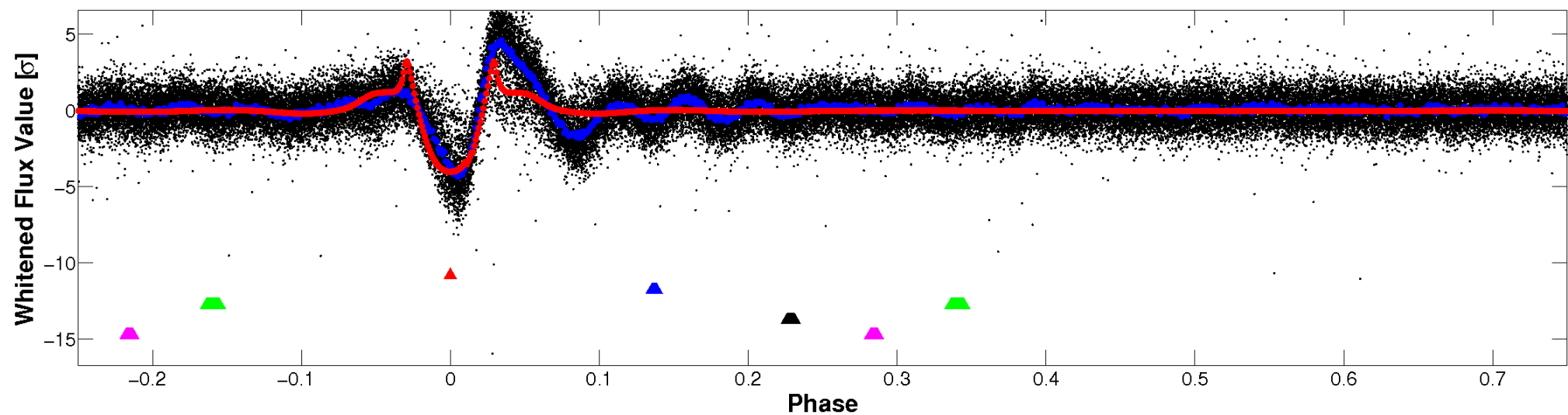


Non-Whitened Vs. Whitened Light Curve

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

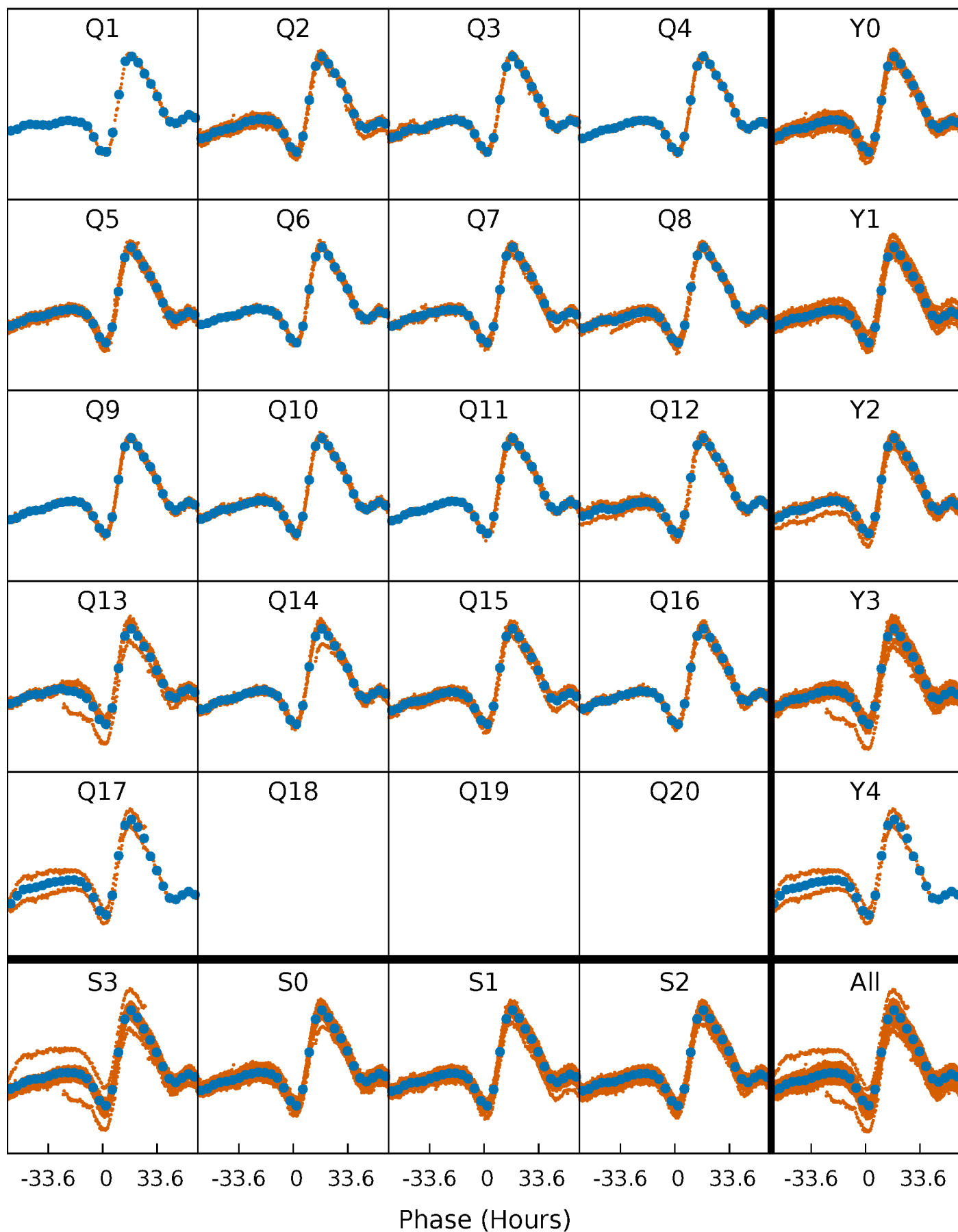


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



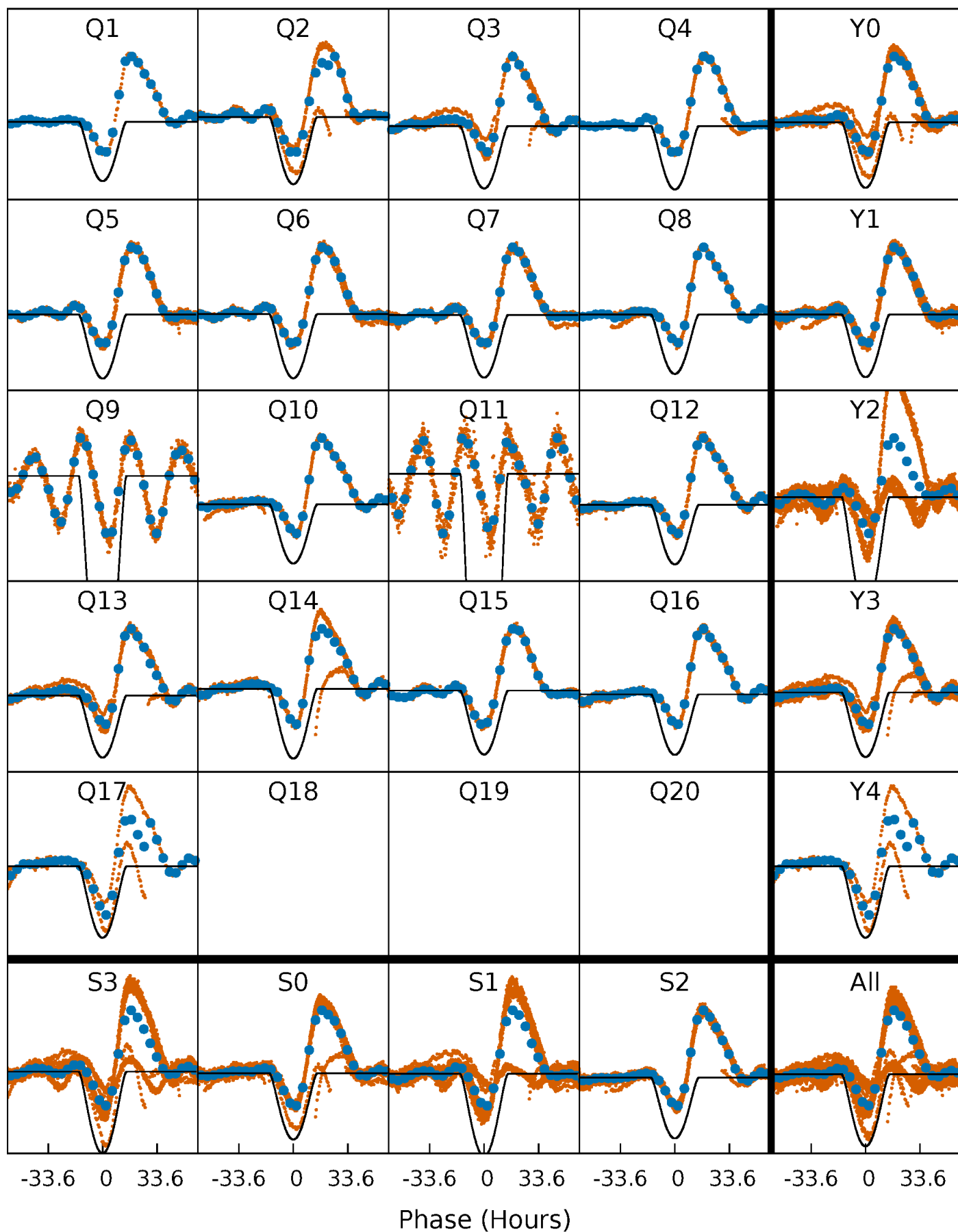
PDC Quarter-Phased Transit Curves

TCE 003749404-01 P= 20.306979 Days $T_0=148.110993$ (BKJD)



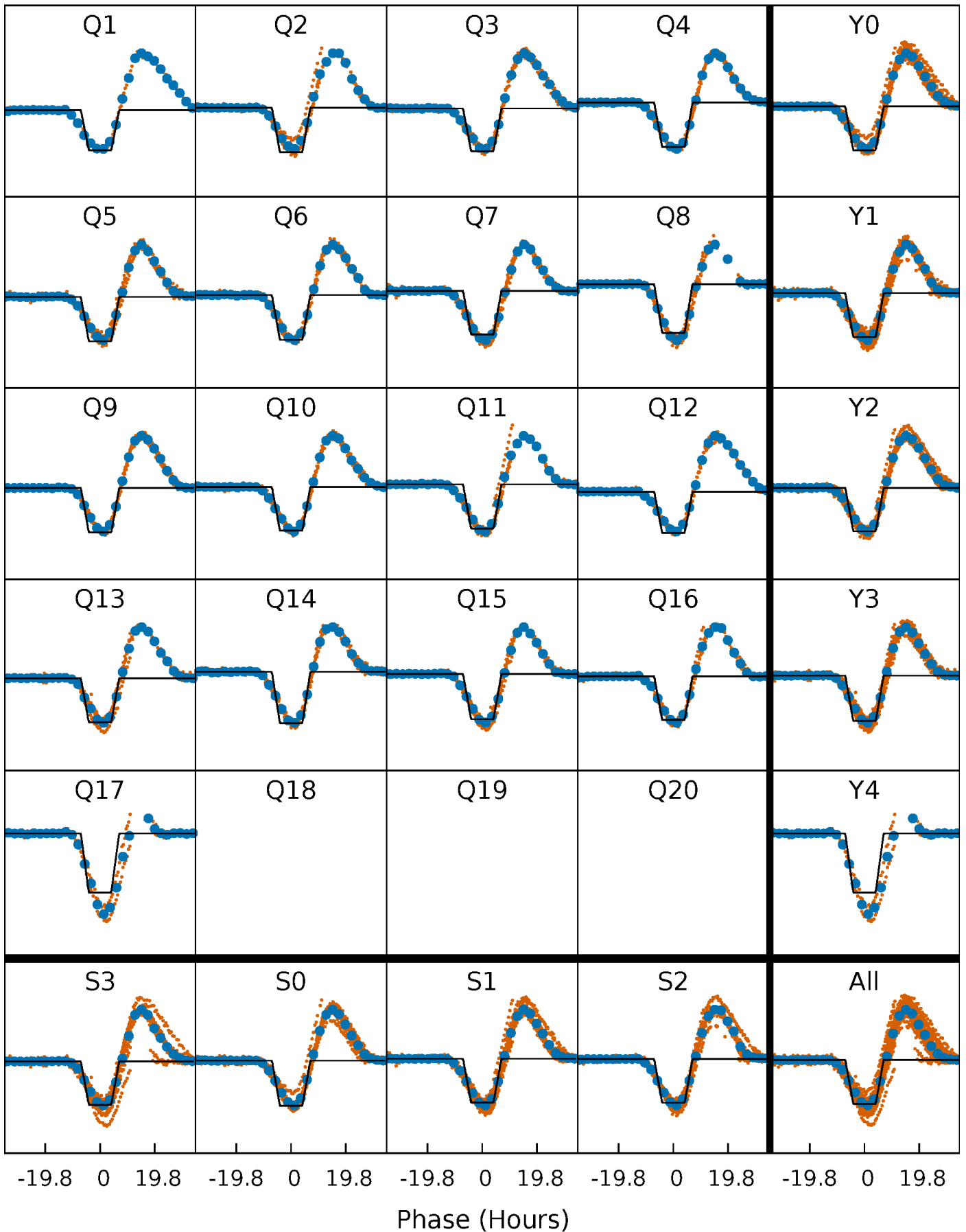
DV Quarter-Phased Transit Curves

TCE 003749404-01 P= 20.306979 Days $T_0=148.110993$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

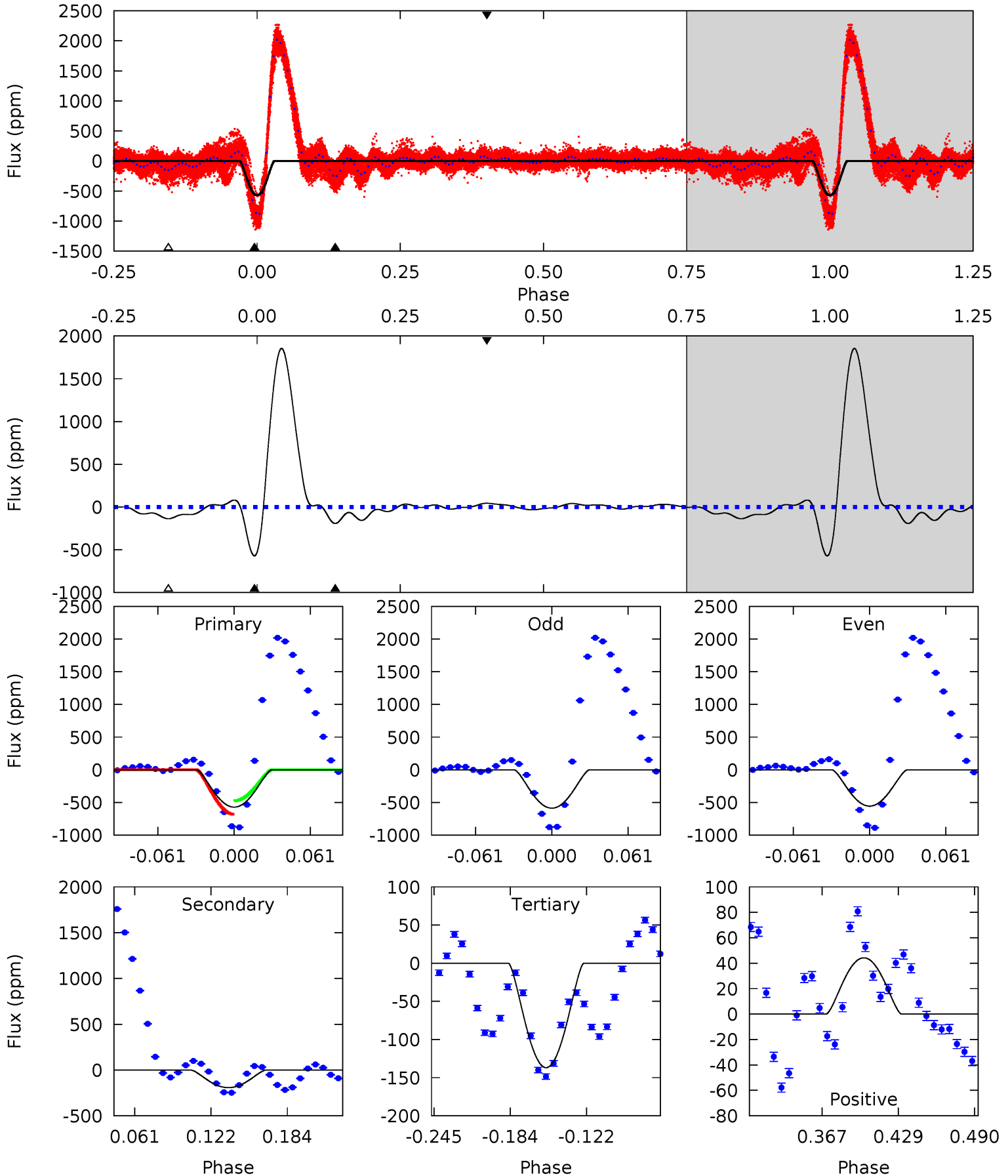
TCE 003749404-01 P= 20.306753 Days $T_0=148.174864$ (BKJD)



DV Model-Shift Uniqueness Test

003749404-01, P = 20.306979 Days, E = 127.804014 Days

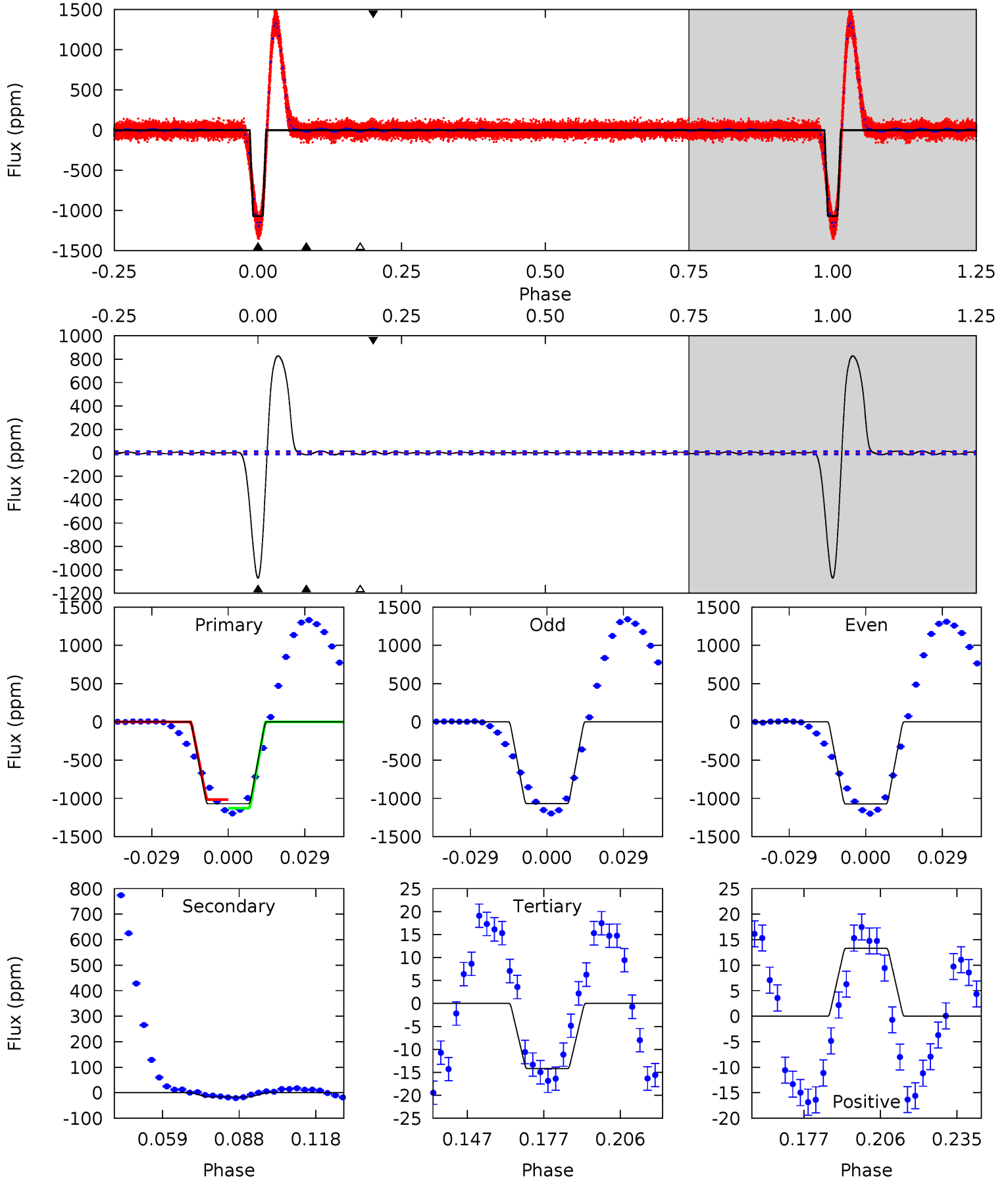
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
219.8	74.1	52.7	17.0	4.67	1.87	59.9	167.1	202.7	21.4	57.1	6.00	1.81	0.76	43.0



Alt Model-Shift Uniqueness Test

003749404-01, P = 20.306753 Days, E = 127.868111 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
403.0	6.15	5.33	5.01	4.82	2.18	30.6	397.6	398.0	0.82	1.14	0.56	1.00	0.44	20.1



Stellar Parameters For KIC 003749404

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7363^{+228}_{-330}	$3.938^{+0.234}_{-0.156}$	$0.000^{+0.200}_{-0.300}$	$2.358^{+0.576}_{-0.768}$	$1.757^{+0.184}_{-0.342}$	$0.189^{+0.270}_{-0.085}$
	+3%/-4%	+6%/-4%	+inf%/-inf%	+24%/-33%	+10%/-19%	+143%/-45%
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 003749404-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-192 ± 3	$18.12^{+3.18}_{-3.29}$	1645^{+120}_{-147}	3599^{+125}_{-110}	$9.867^{+4.151}_{-2.616}$
Alt.	-16 ± 3	$8.50^{+2.20}_{-1.72}$	1656^{+116}_{-140}	3086^{+214}_{-195}	$3.726^{+2.448}_{-1.400}$

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

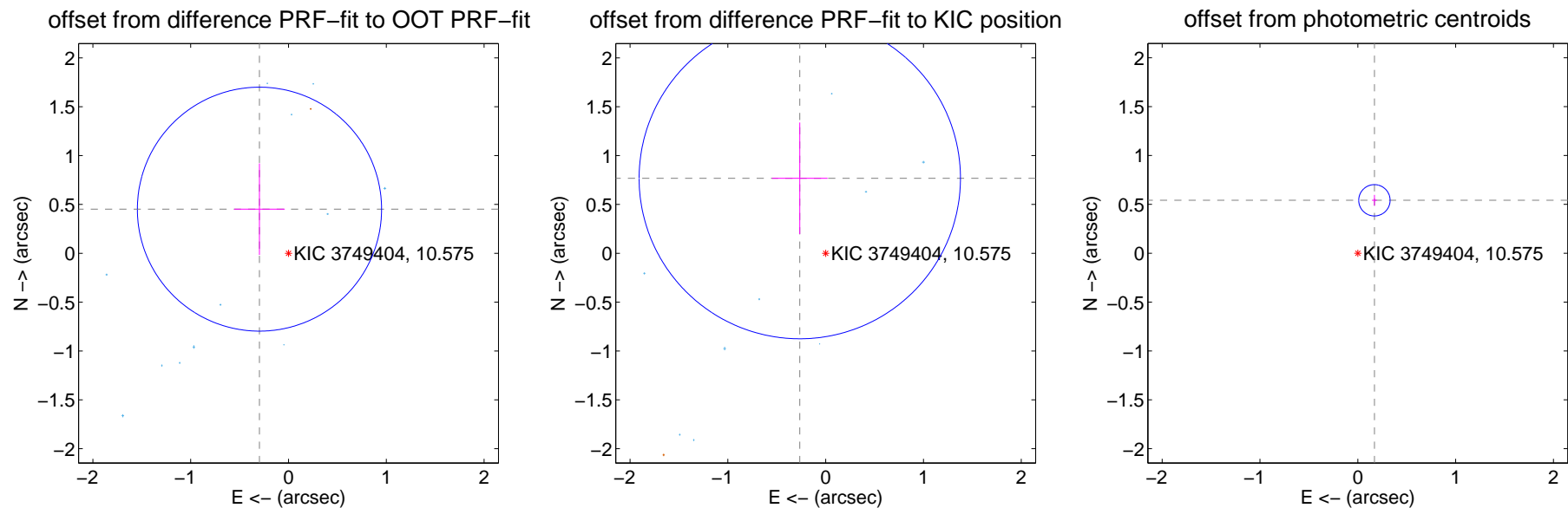
DV Centroid Data

Supplemental centroid analysis for 003749404-01. **Kepler magnitude: 10.57.** Transit SNR 188.06

There are 13 quarters with good PRF difference image offsets

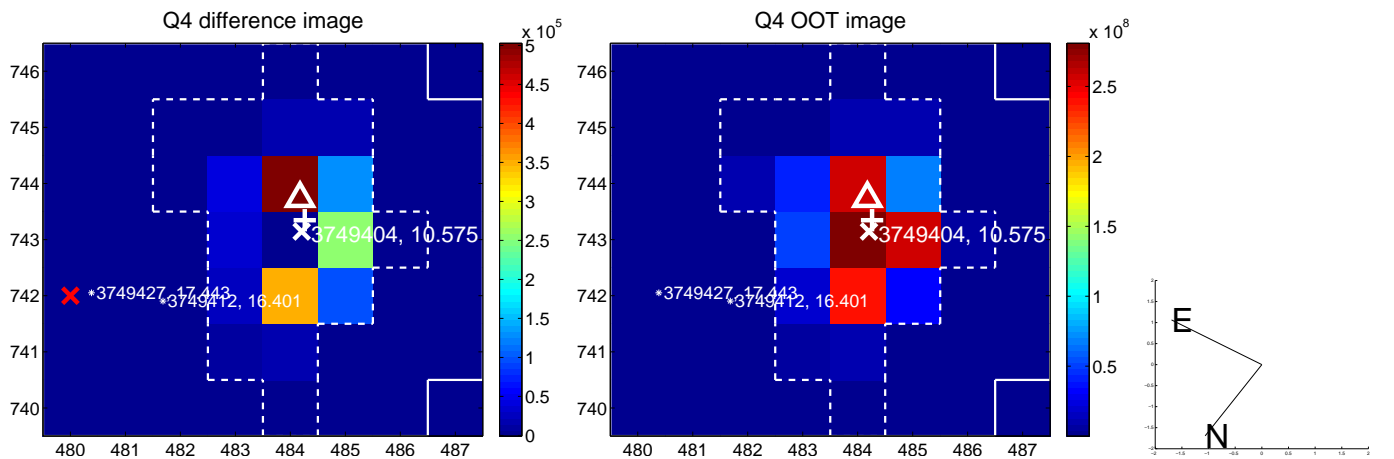
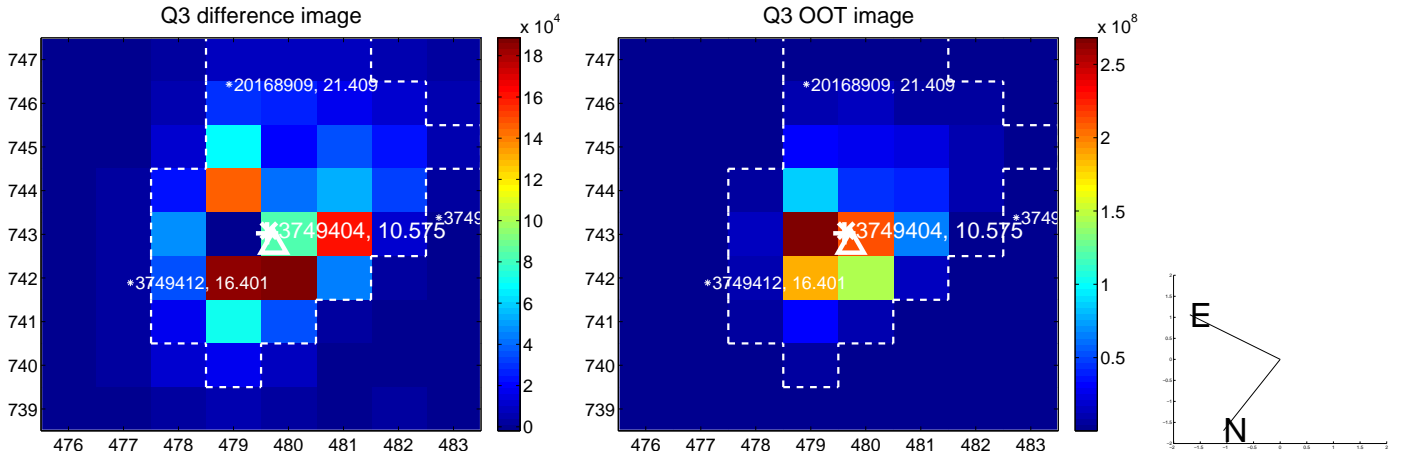
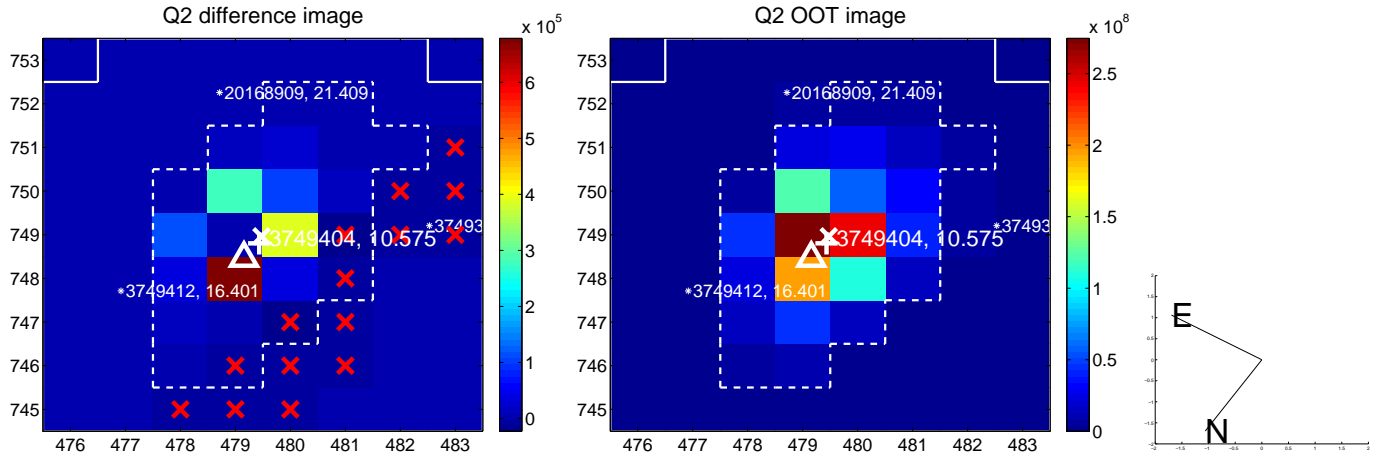
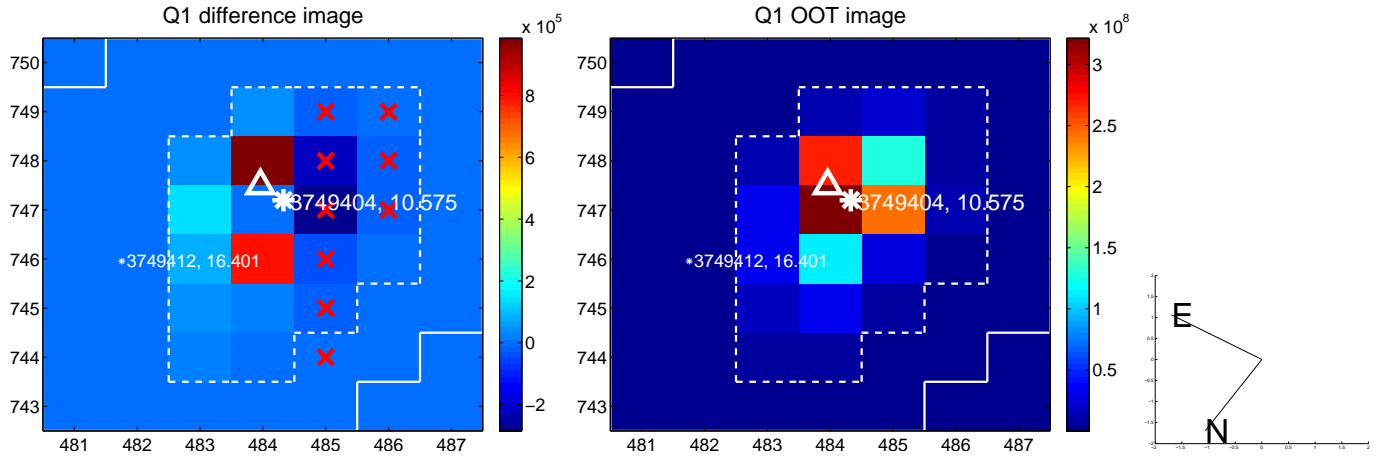
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.540 ± 0.416	1.30	0.297 ± 0.259	0.452 ± 0.468
PRF-fit source offset from KIC position	0.812 ± 0.548	1.48	0.265 ± 0.285	0.768 ± 0.571
photometric centroid source offset	0.57 ± 0.05	10.62	-0.17 ± 0.02	0.54 ± 0.06

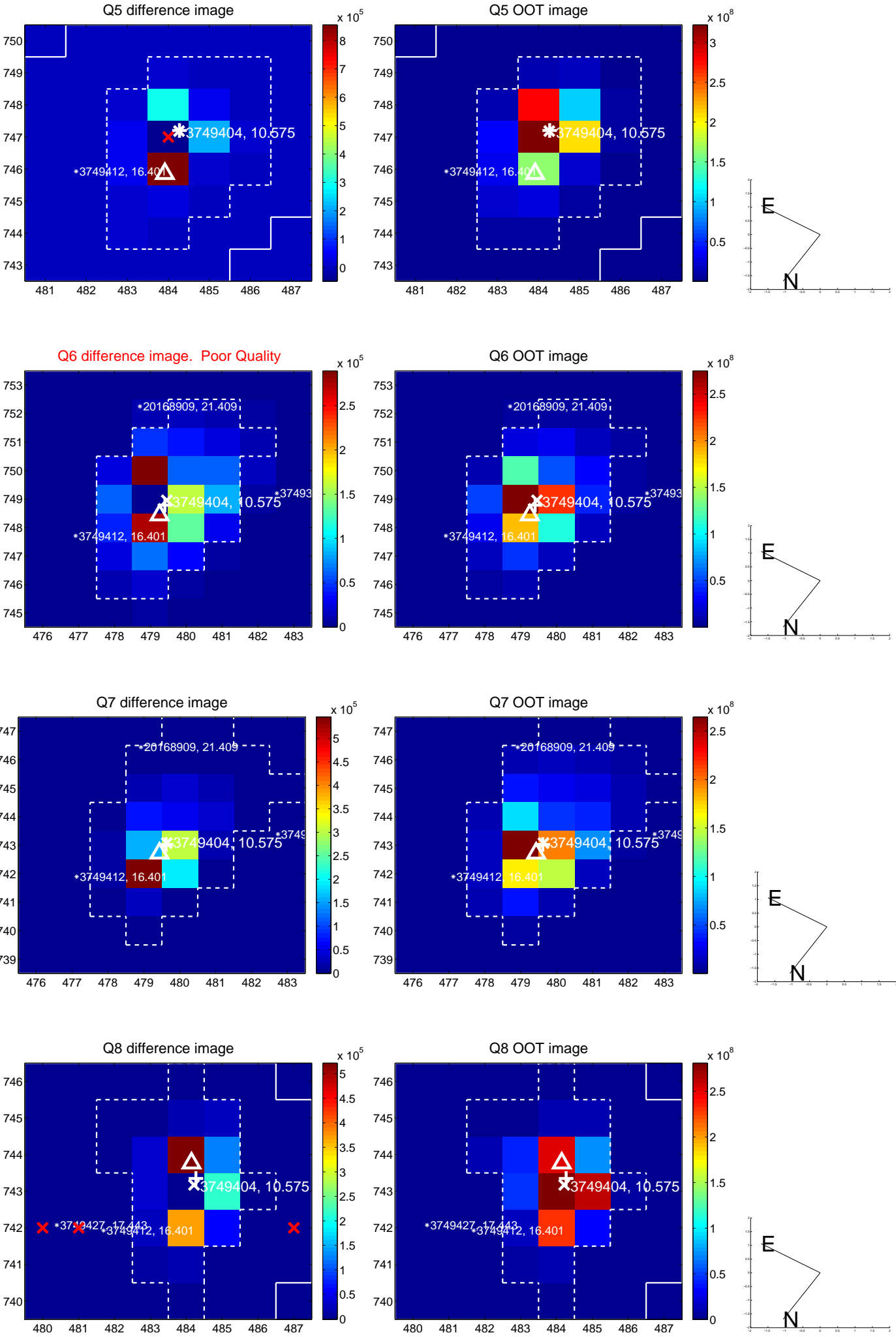


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

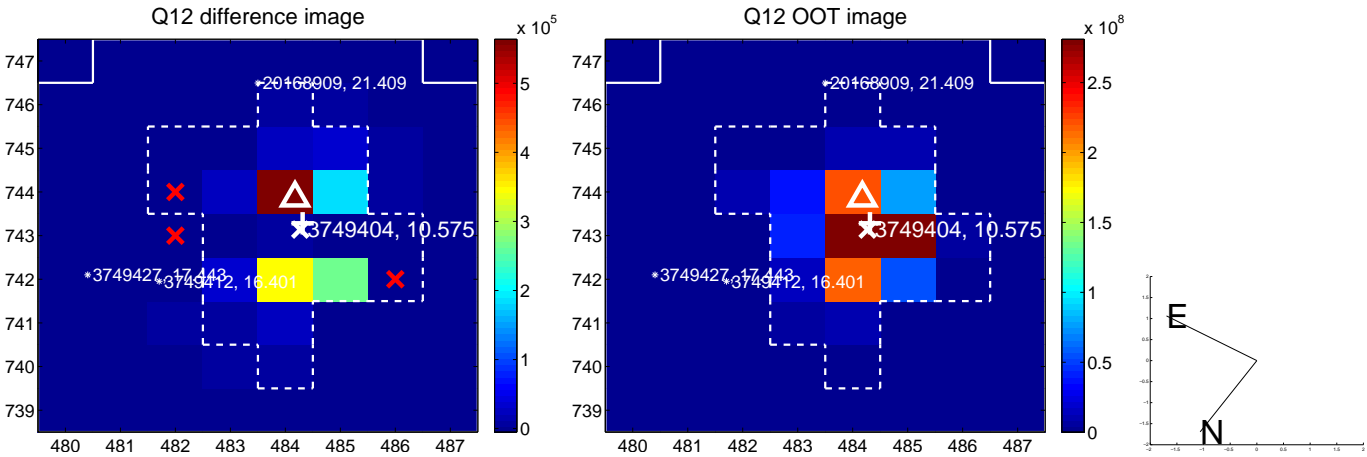
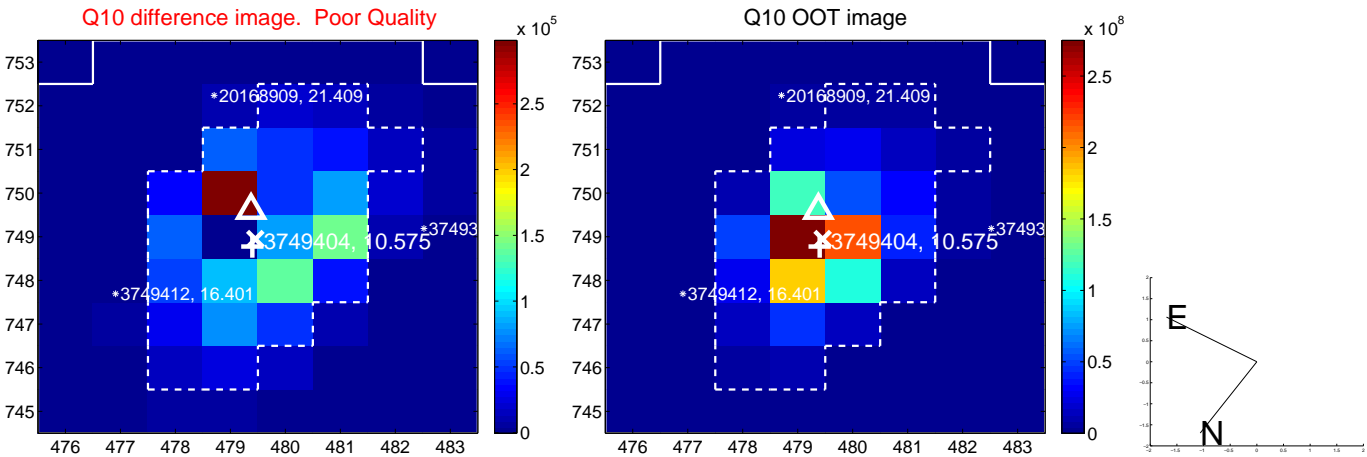
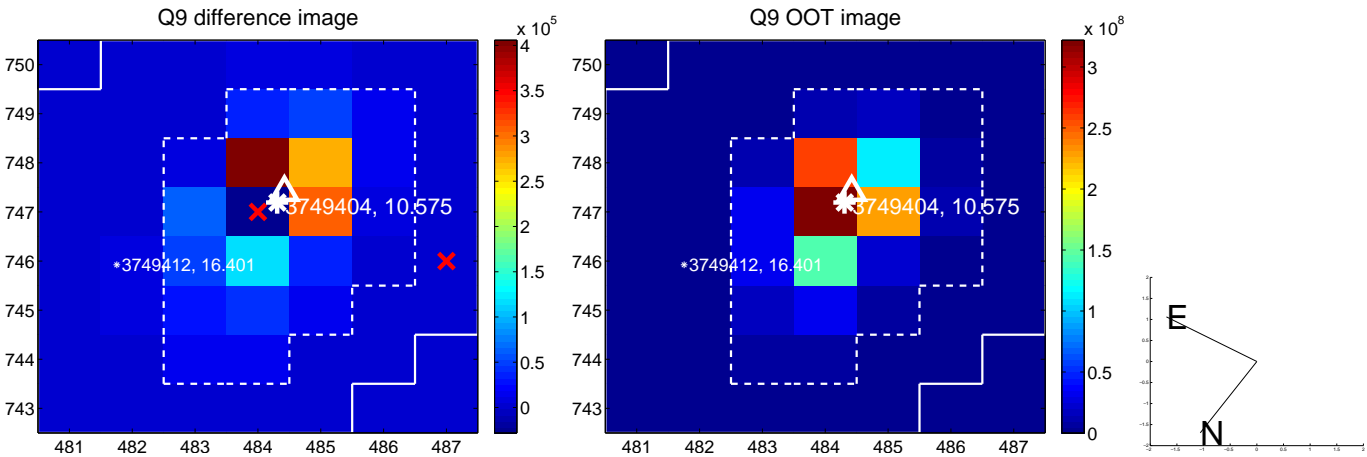
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



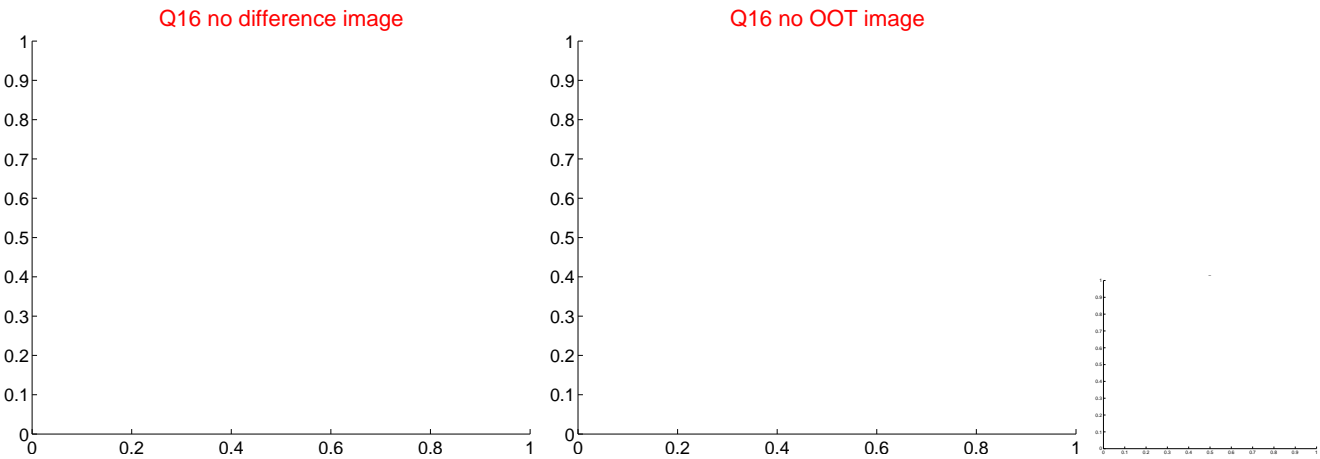
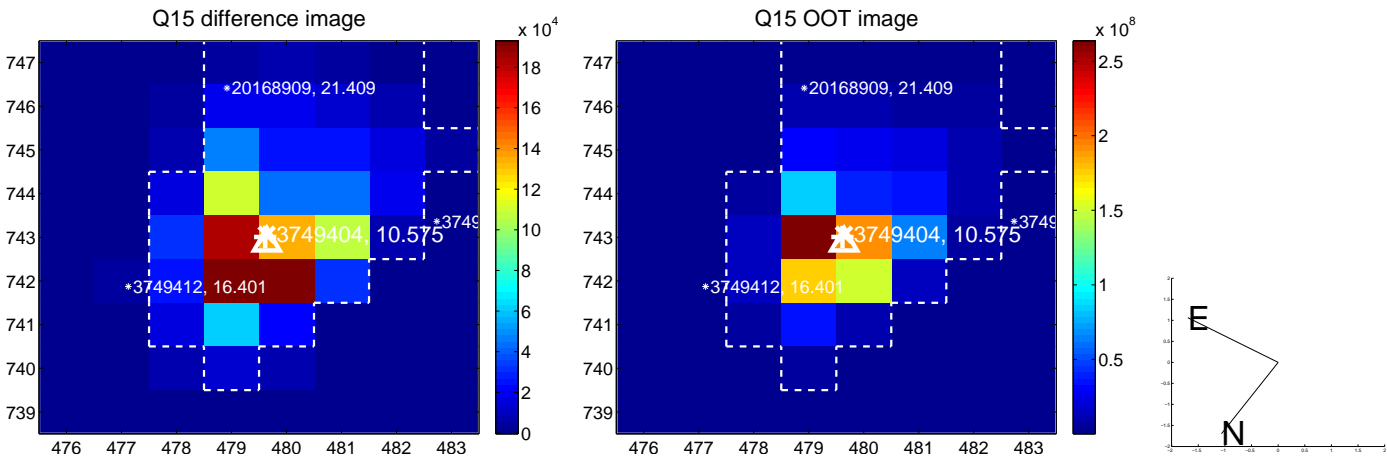
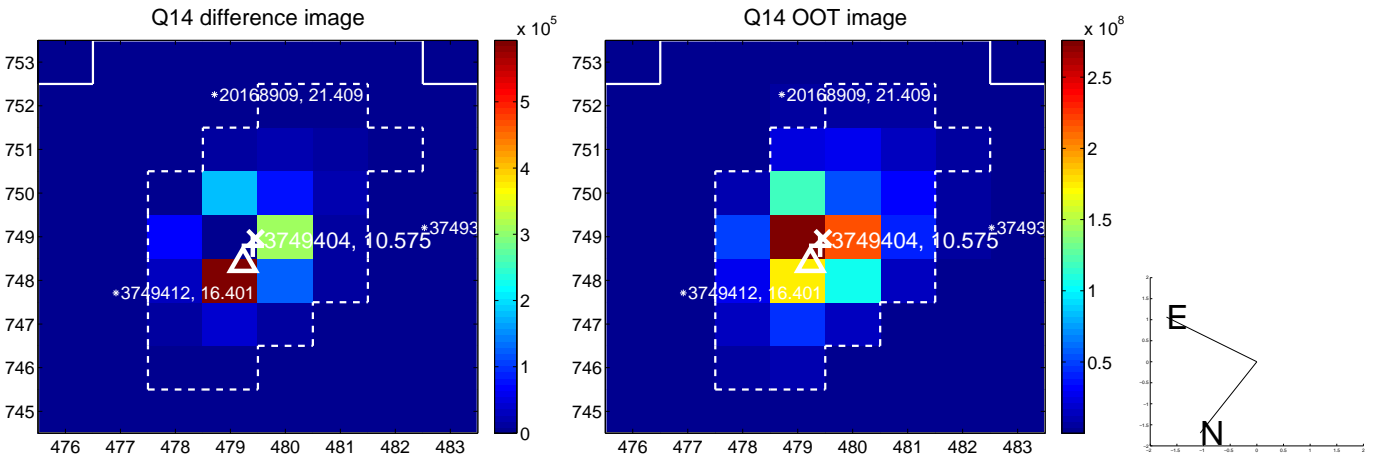
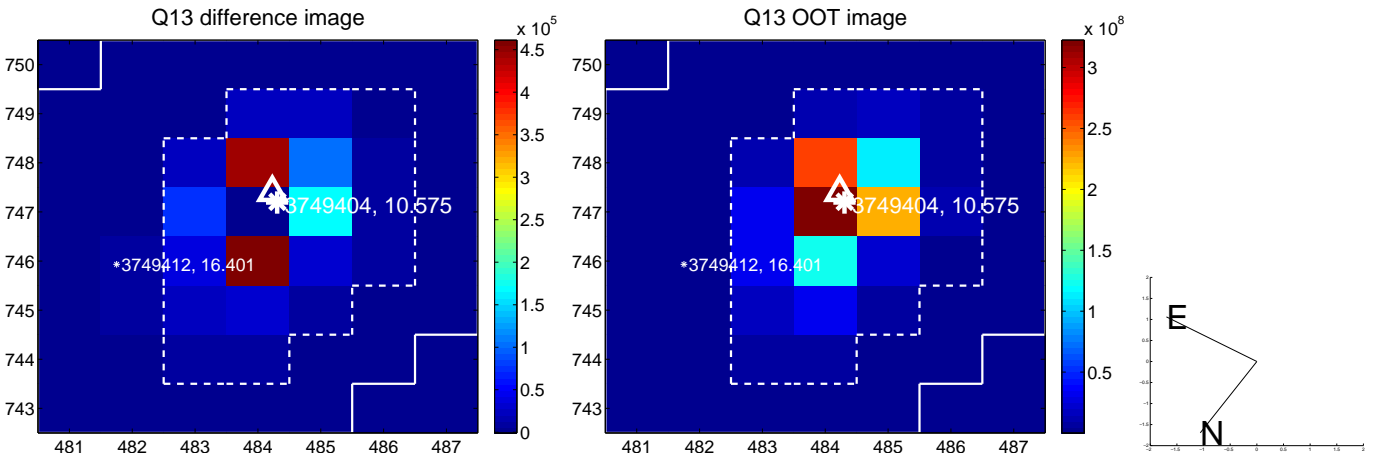
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



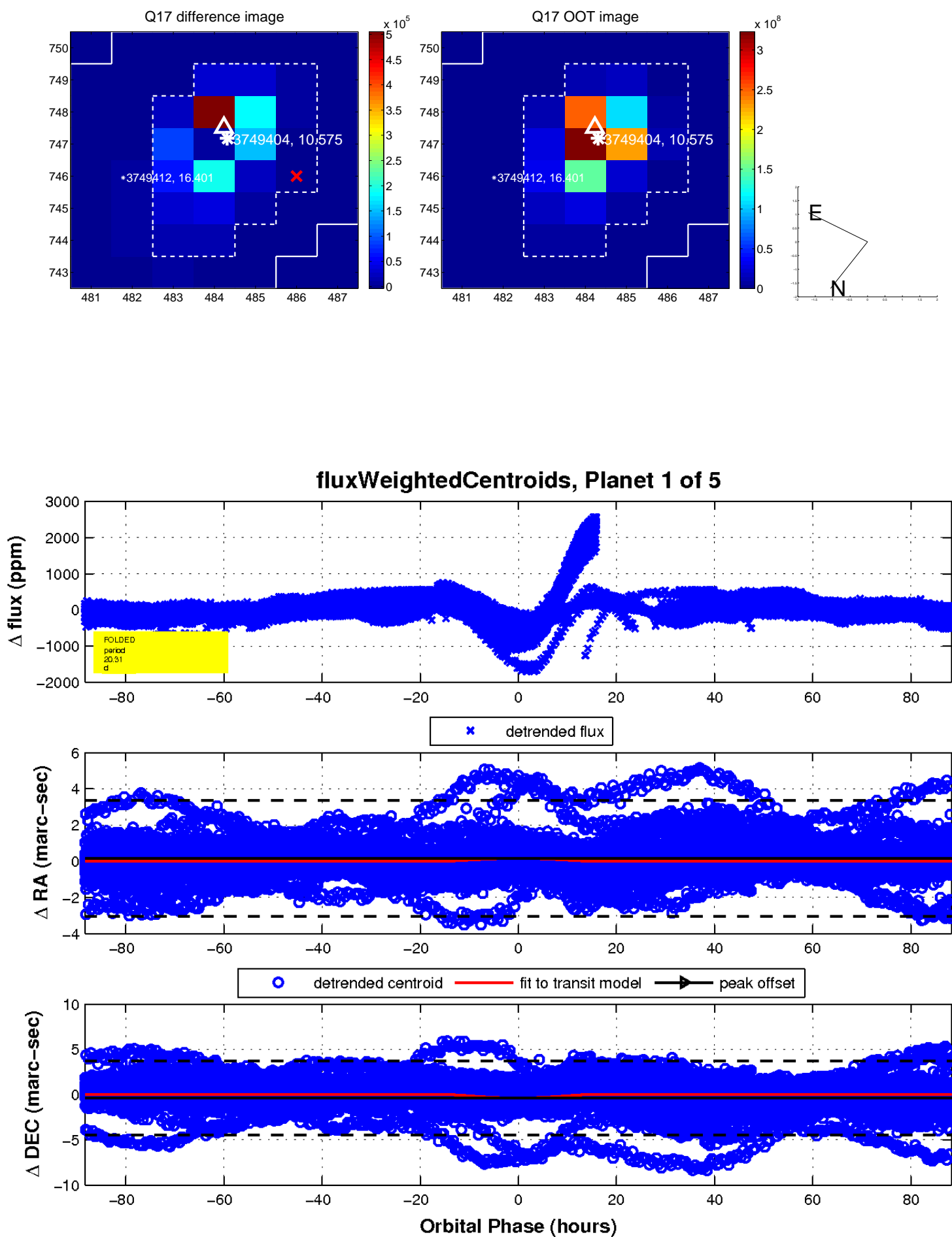
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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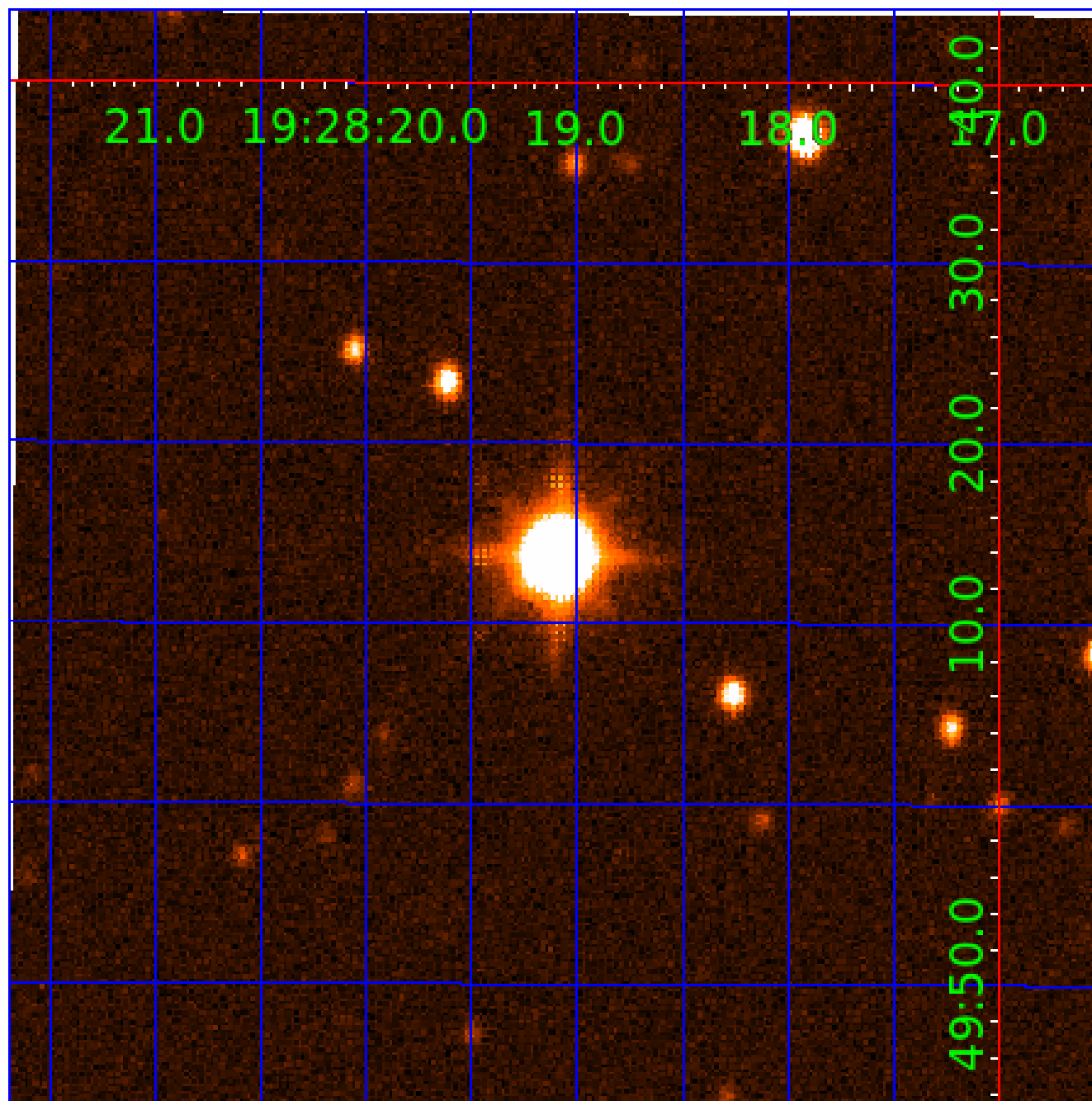


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003749404

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})
003749404-01	OBS	No	20.306979	148.110993	1877.0	29.426	96.0	188.1	2.36	7363	18.59	473.46
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003749404-05	OBS	No	10.152836	133.628493	29.2	38.770	9.5	5.0	2.36	7363	1.46	1193.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749404-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003749404-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-03	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
003749404-04	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—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.

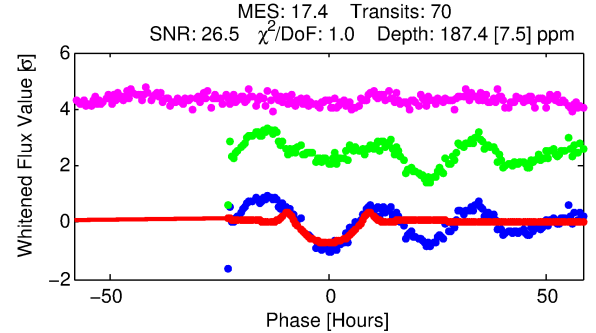
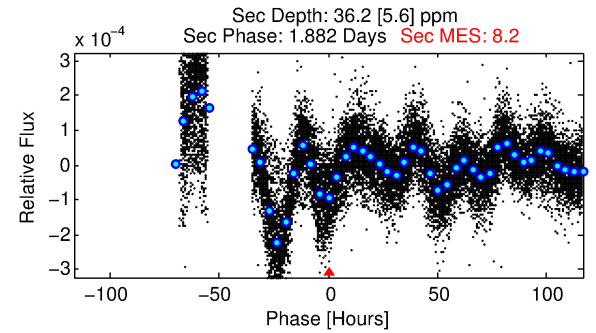
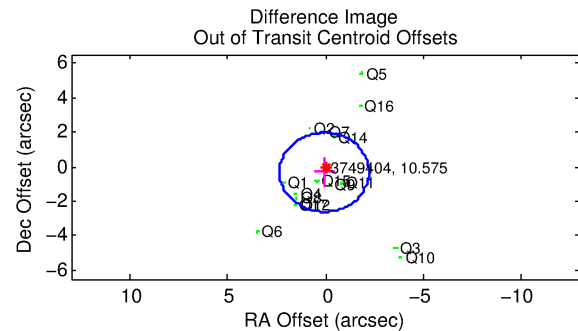
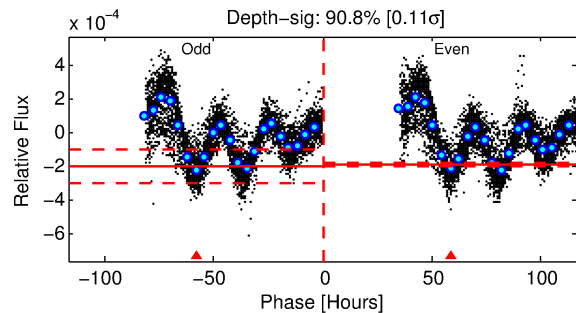
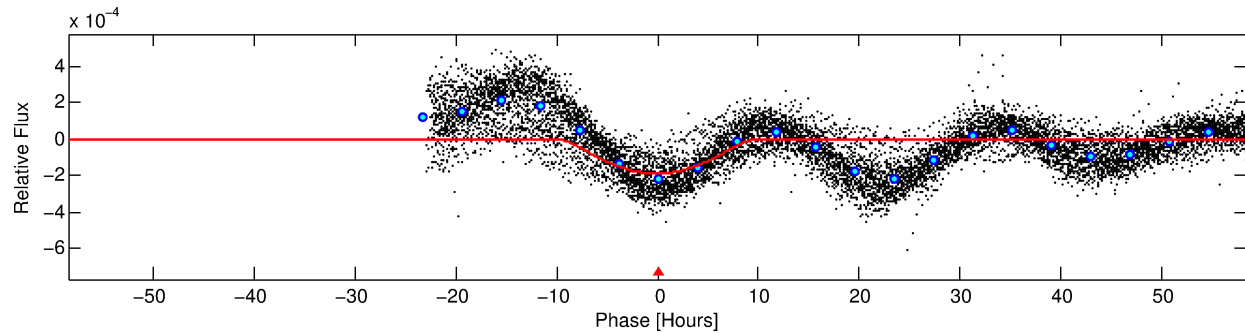
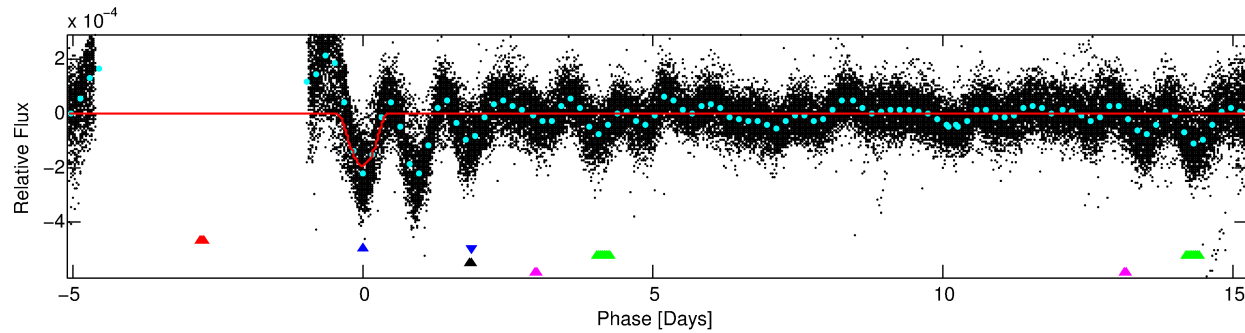
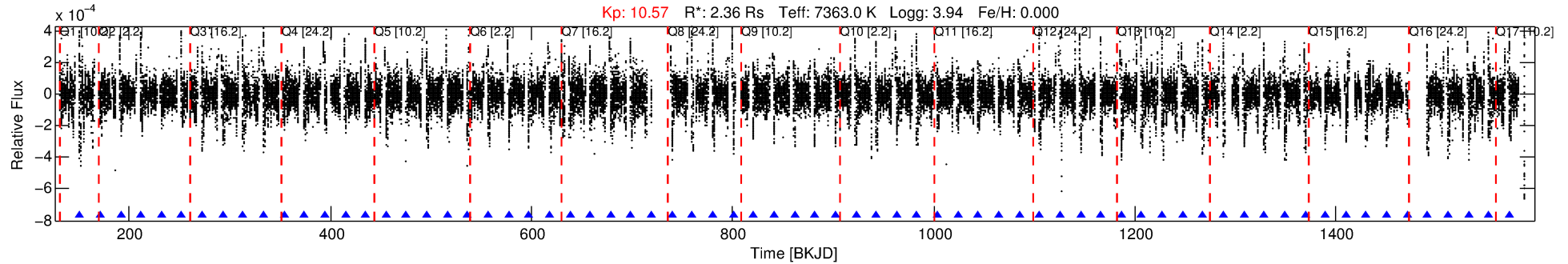
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749404-02

No Significant Match Found

DV One-Page Summary

KIC: 3749404 Candidate: 2 of 5 Period: 20.306 d



DV Fit Results:

Period = 20.30611 [0.00027] d
Epoch = 150.9224 [0.0112] BKJD
Rp/R* = 0.0237 [0.0081]
a/R* = 2.04 [0.14]
b = 1.00 [0.01]
Seff = 473.49 [216.11]
Teq = 1189 [136] K
Rp = 6.10 [2.89] Re
a = 0.1759 [0.0496] AU
Ag = 16.54 [13.55] [1.15 σ]
Teff = 3709 [673] K [3.67 σ]

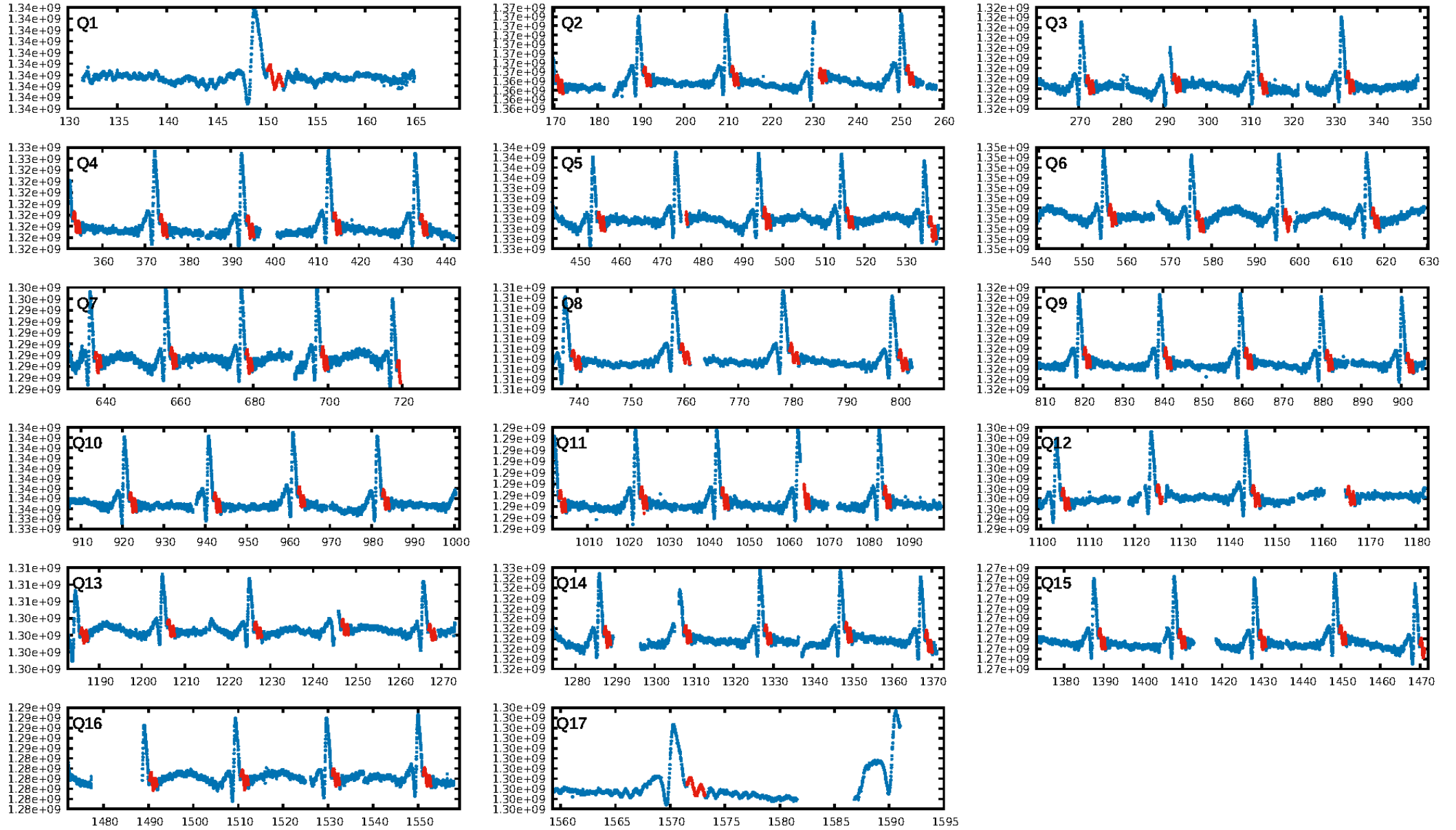
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.38e-87
RollingBand-fgt: 1.00 [68/68]
GhostDiagnostic-chr: 2.754
Centroid-sig: 0.0%
Centroid-so: 1.590 arcsec [3.41 σ]
OotOffset-rm: 0.328 arcsec [0.43 σ]
KicOffset-rm: 0.209 arcsec [0.26 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.69 [11/16]
DiffImageOverlap-fno: 1.00 [16/16]

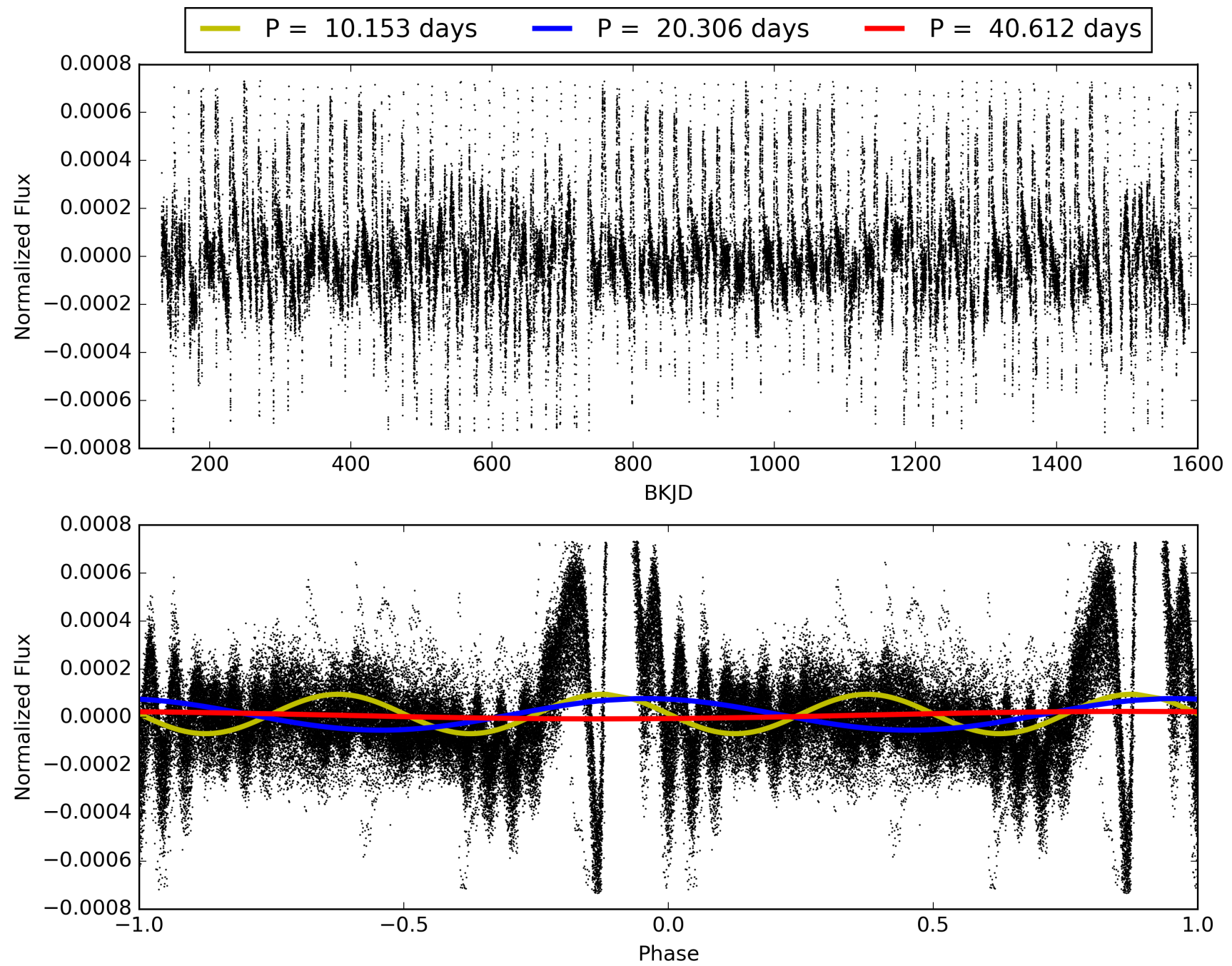
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:04:00 Z

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

TCE 003749404-02, PDC Light Curves

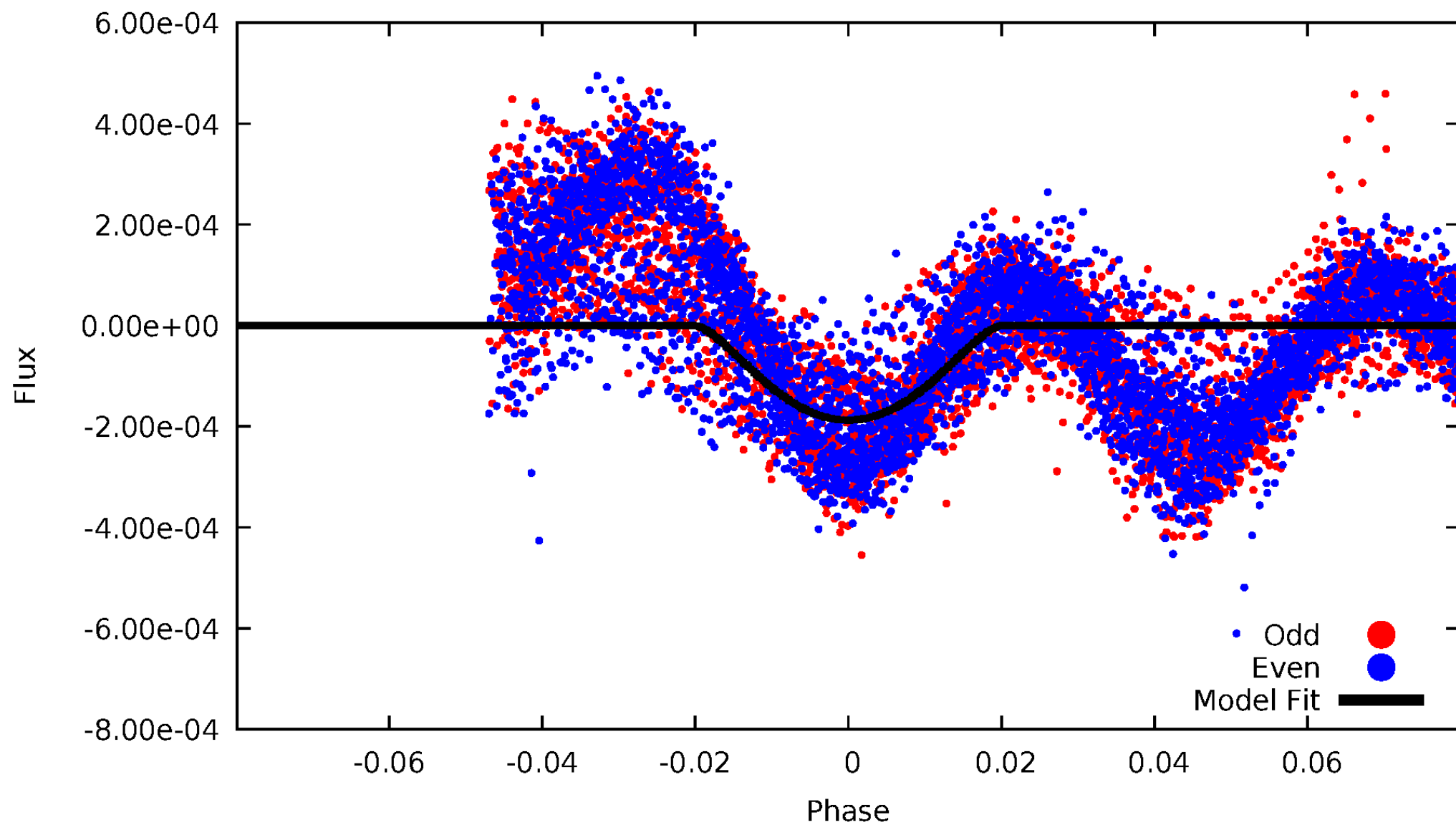


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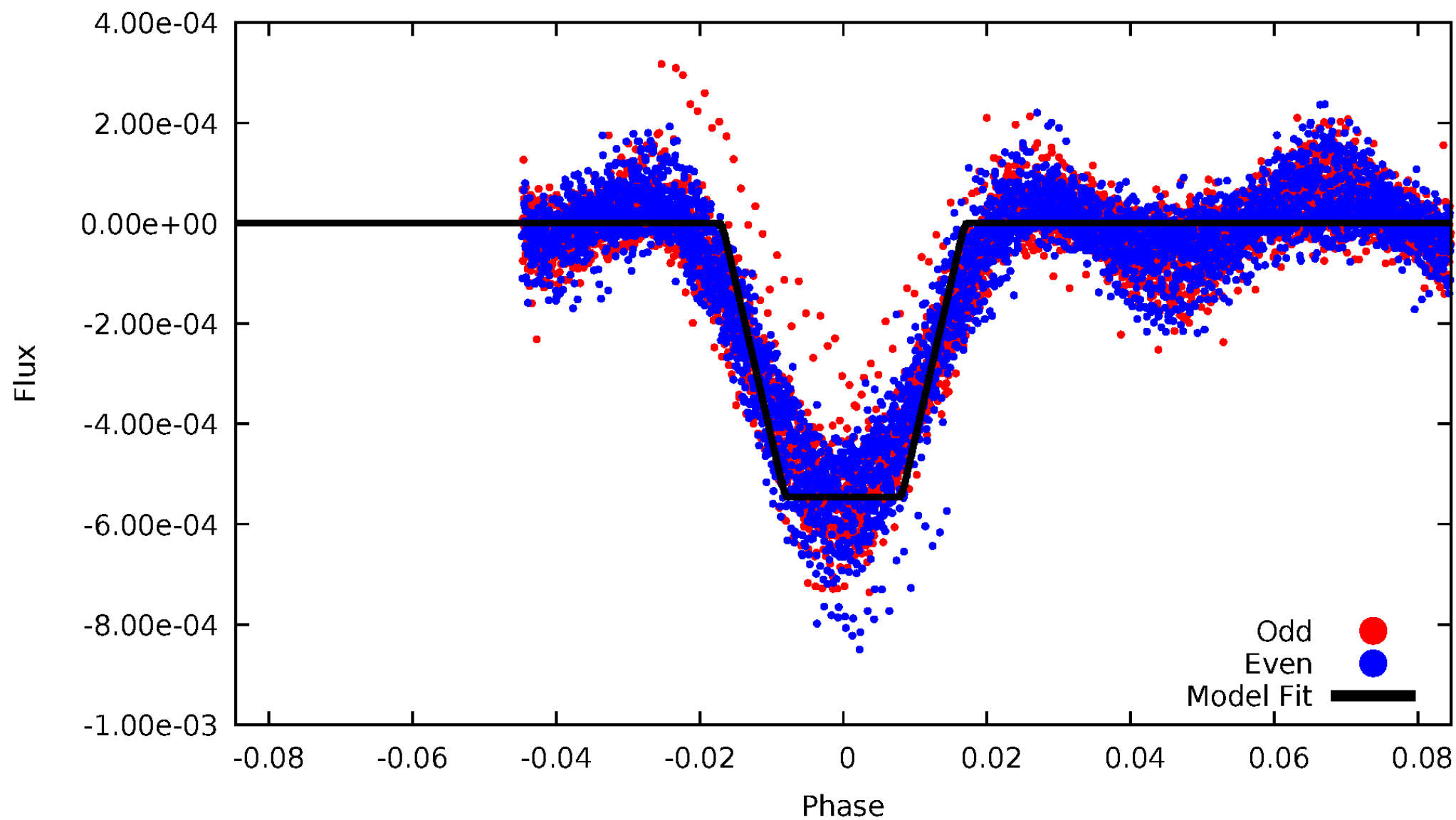
DV Odd/Even

TCE 003749404-02



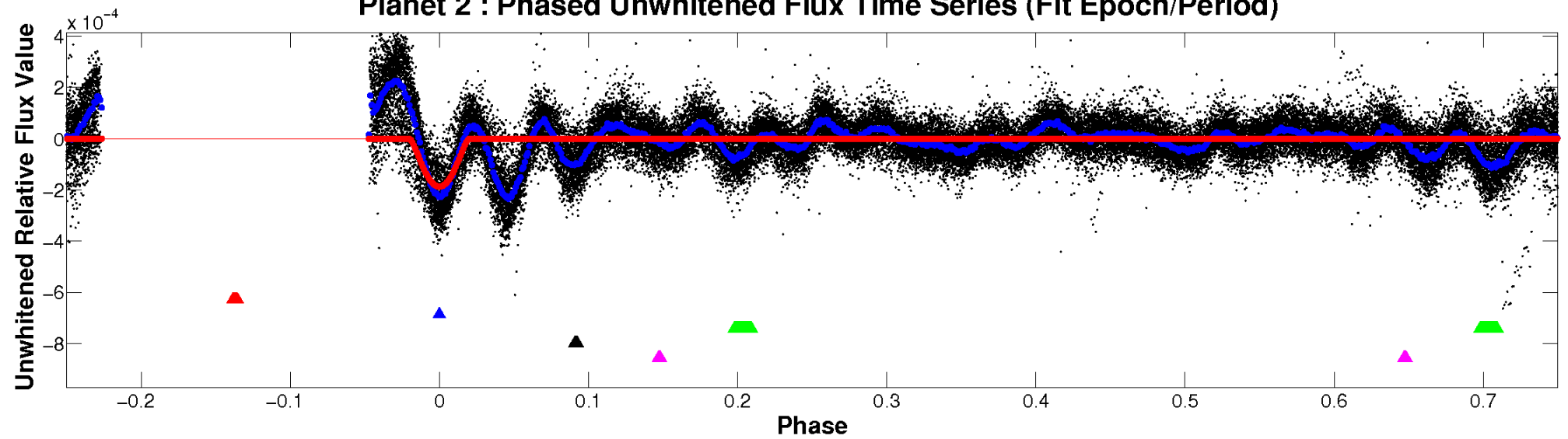
ALT Odd/Even

TCE 003749404-02

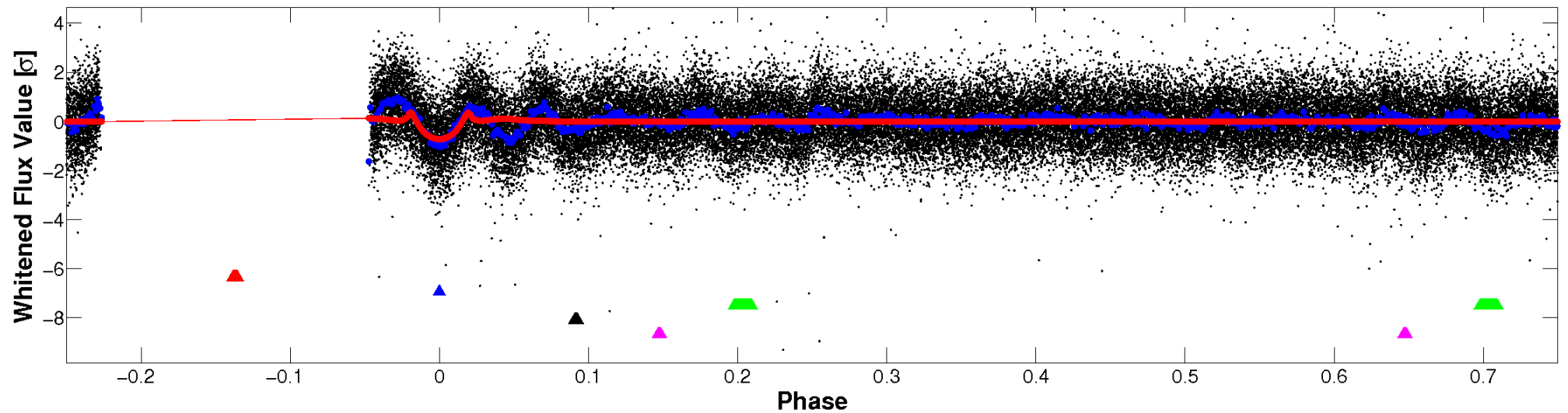


Non-Whitened Vs. Whitened Light Curve

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

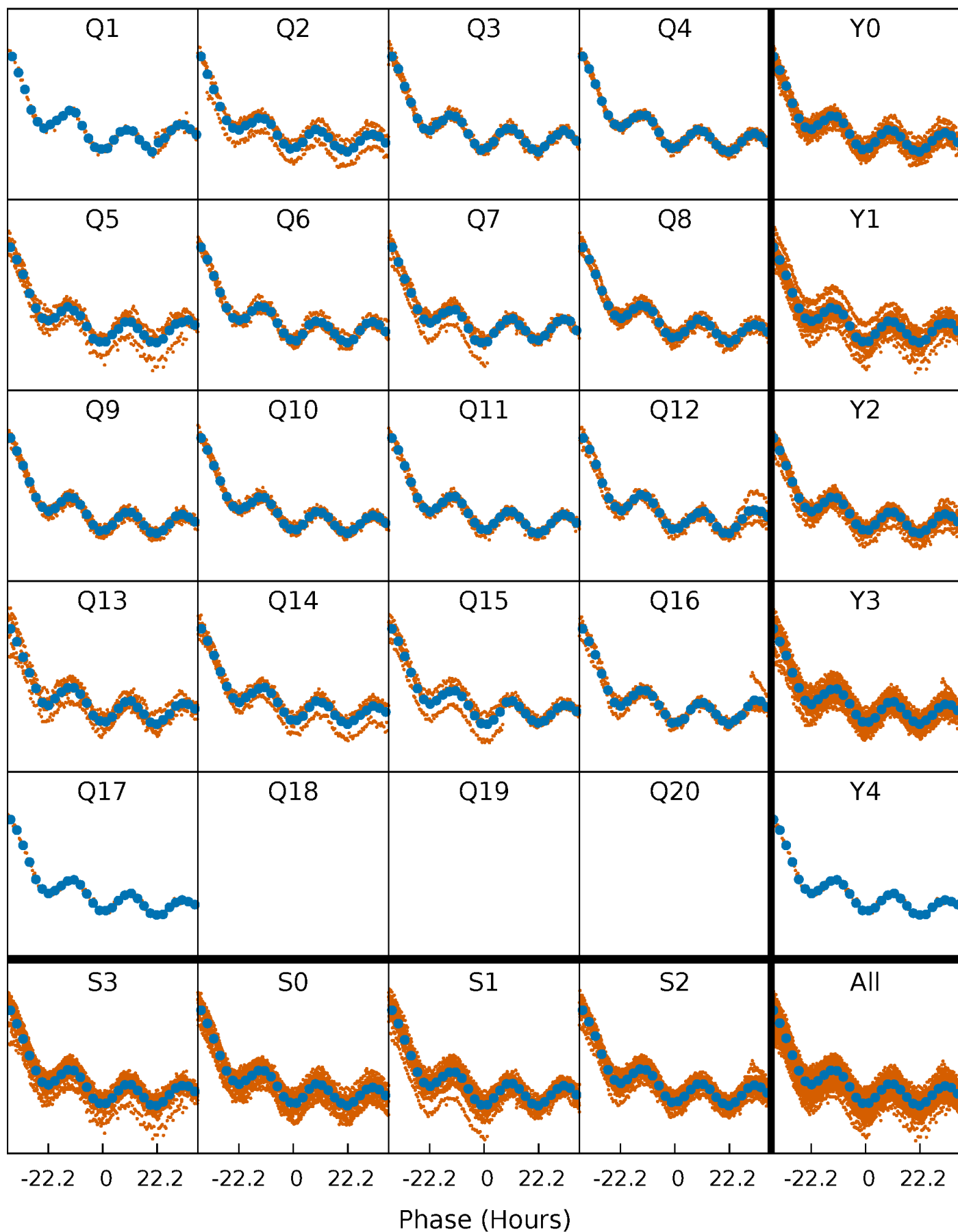


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



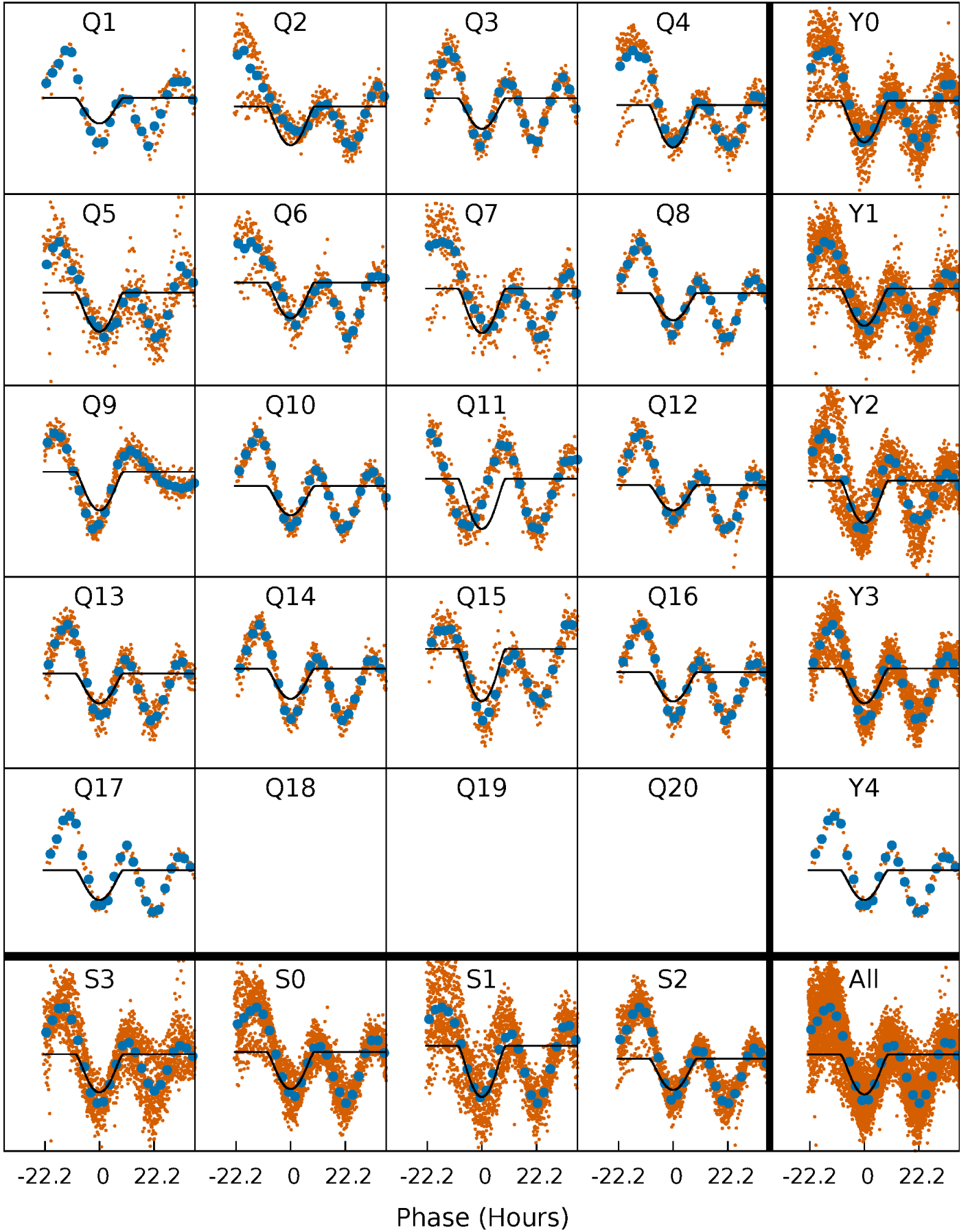
PDC Quarter-Phased Transit Curves

TCE 003749404-02 P= 20.306111 Days $T_0=150.922369$ (BKJD)



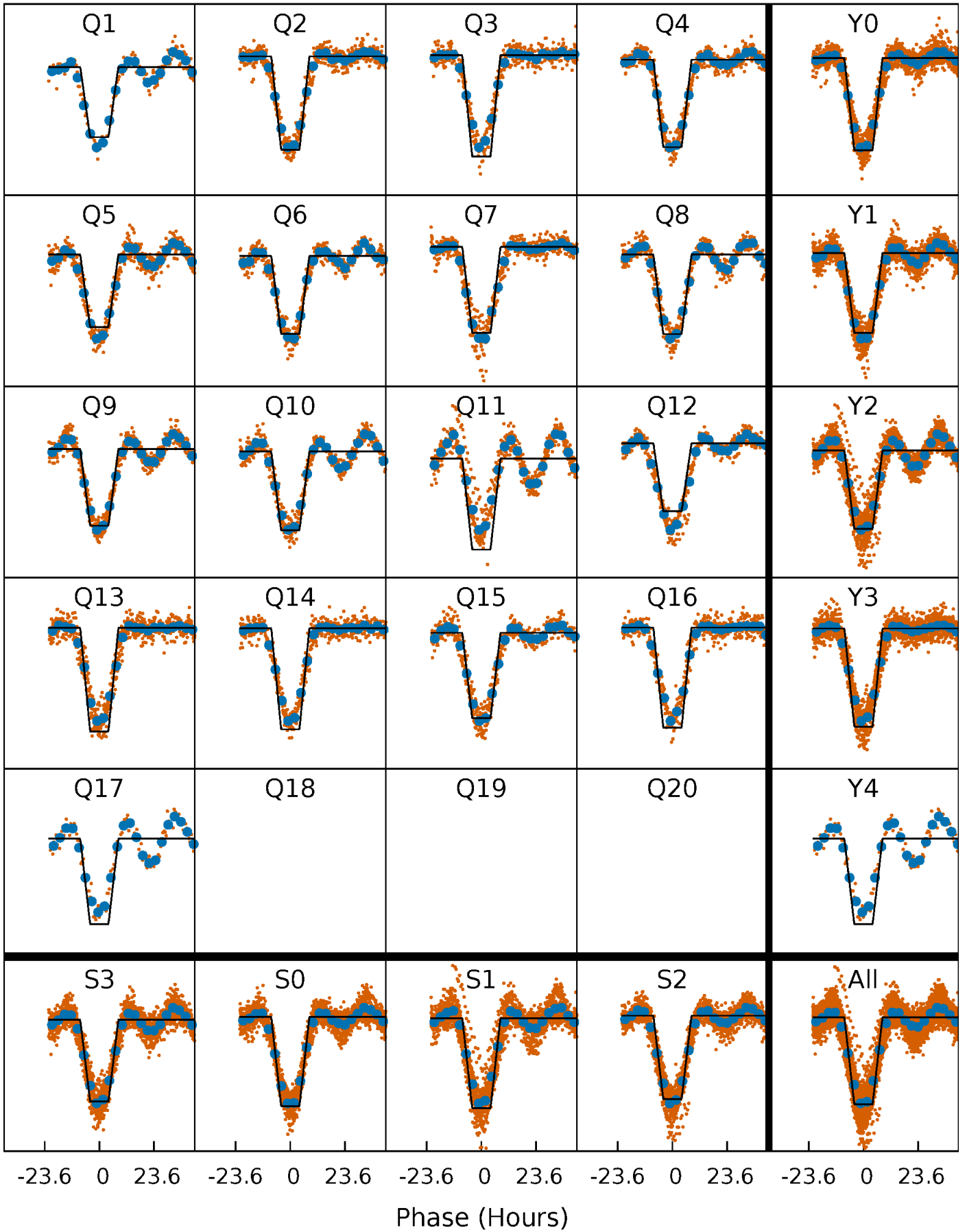
DV Quarter-Phased Transit Curves

TCE 003749404-02 $P = 20.306111$ Days $T_0 = 150.922369$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

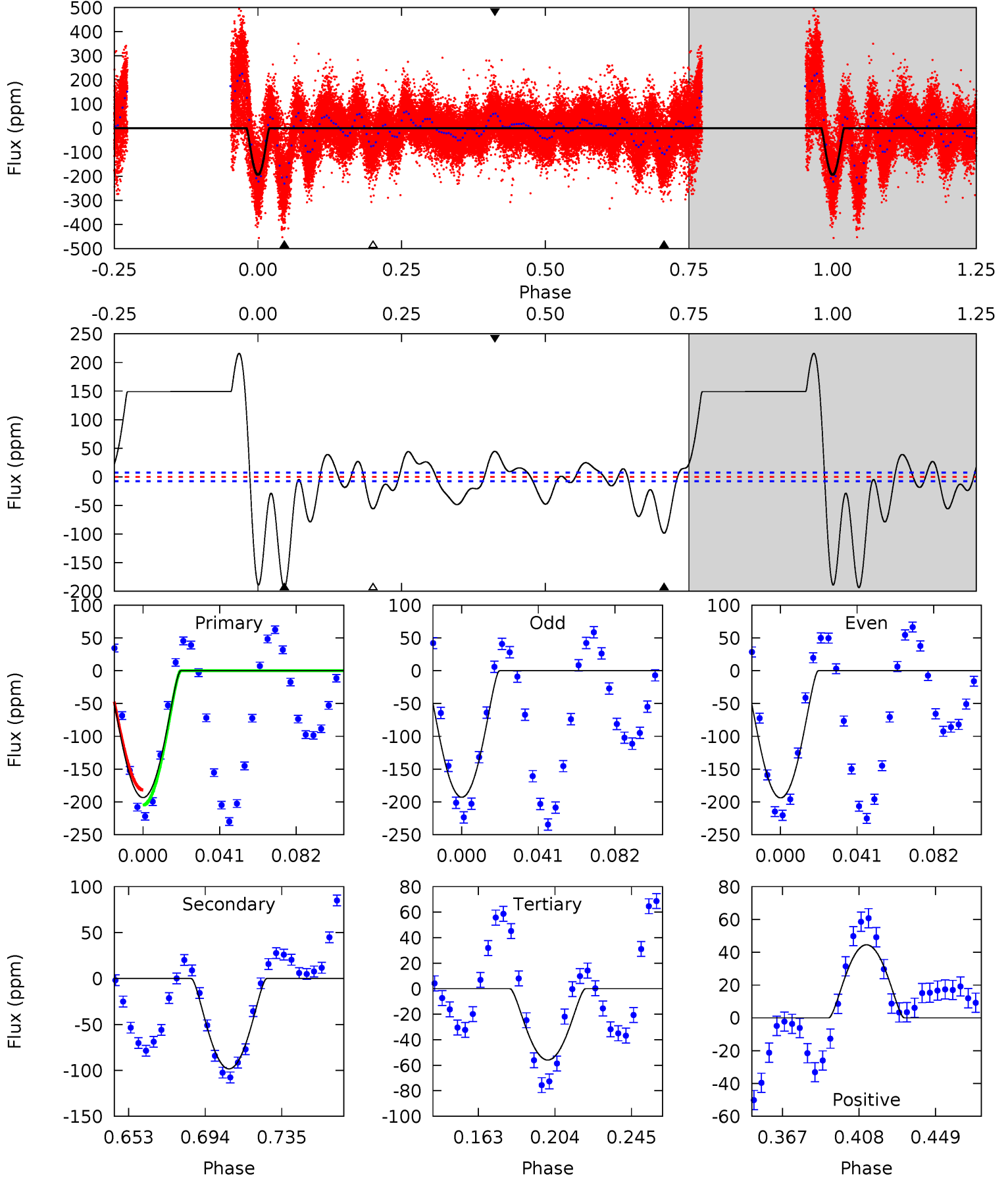
TCE 003749404-02 P= 20.306753 Days $T_0=150.872188$ (BKJD)



DV Model-Shift Uniqueness Test

003749404-02, P = 20.306111 Days, E = 130.616258 Days

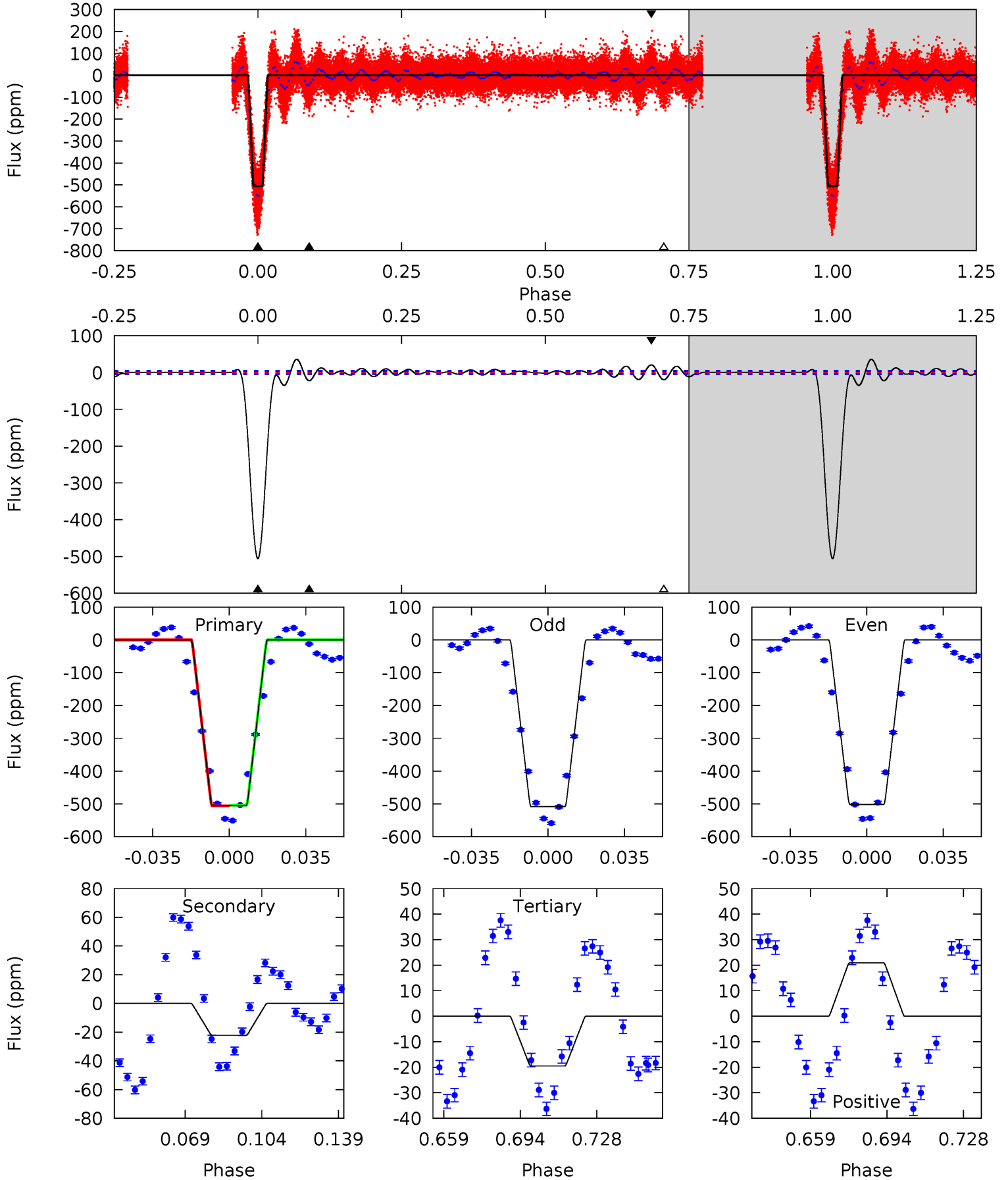
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
123.1	62.6	35.6	28.4	4.75	2.05	35.7	87.5	94.8	27.0	34.2	0.33	0.94	0.53	7.88



Alt Model-Shift Uniqueness Test

003749404-02, P = 20.306753 Days, E = 130.565435 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
578.6	25.4	22.3	23.9	4.78	2.11	9.54	556.3	554.7	3.10	1.49	3.74	1.01	0.07	1.29



Stellar Parameters For KIC 003749404

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7363^{+228}_{-330}	$3.938^{+0.234}_{-0.156}$	$0.000^{+0.200}_{-0.300}$	$2.358^{+0.576}_{-0.768}$	$1.757^{+0.184}_{-0.342}$	$0.189^{+0.270}_{-0.085}$
	+3%/-4%	+6%/-4%	+inf%/-inf%	+24%/-33%	+10%/-19%	+143%/-45%
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 003749404-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-98 ± 2	$5.98^{+2.37}_{-2.23}$	1641^{+133}_{-143}	4770^{+1037}_{-512}	46^{+73}_{-22}
Alt.	-22 ± 1	$5.65^{+2.42}_{-2.07}$	1648^{+131}_{-154}	3692^{+577}_{-390}	12^{+17}_{-6}

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 $A_{obs} \gg 1.0$

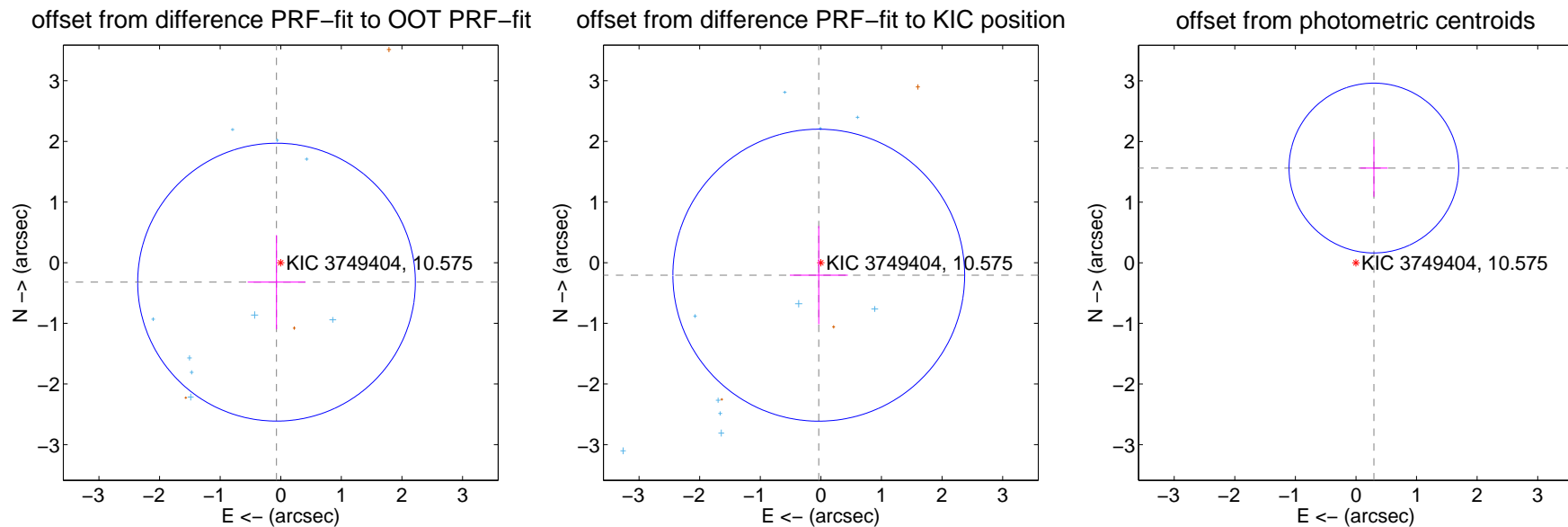
DV Centroid Data

Supplemental centroid analysis for 003749404-02. **Kepler magnitude: 10.57.** Transit SNR 26.53

There are 11 quarters with good PRF difference image offsets

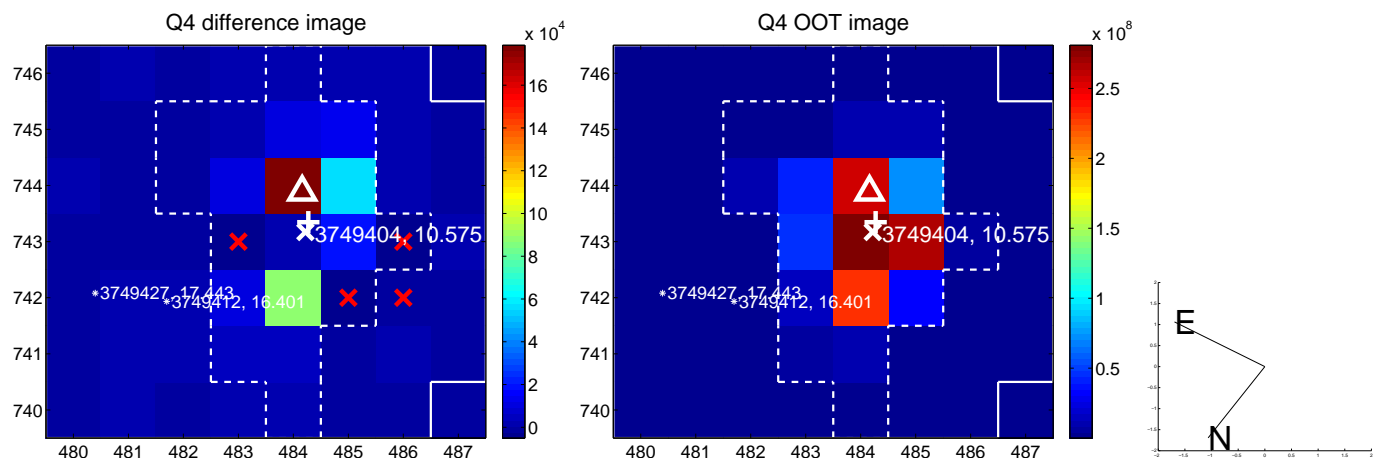
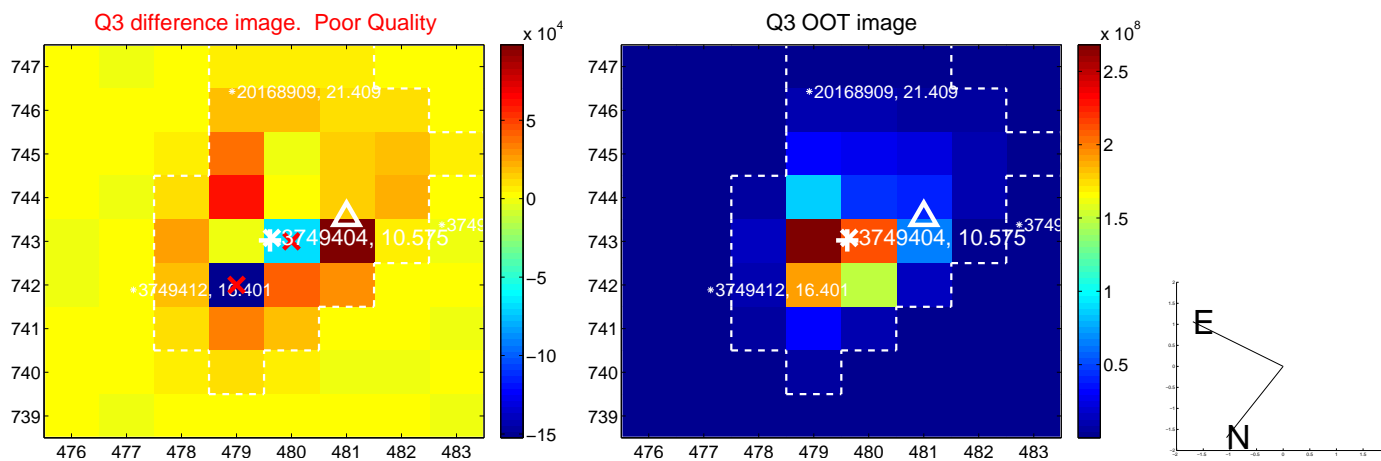
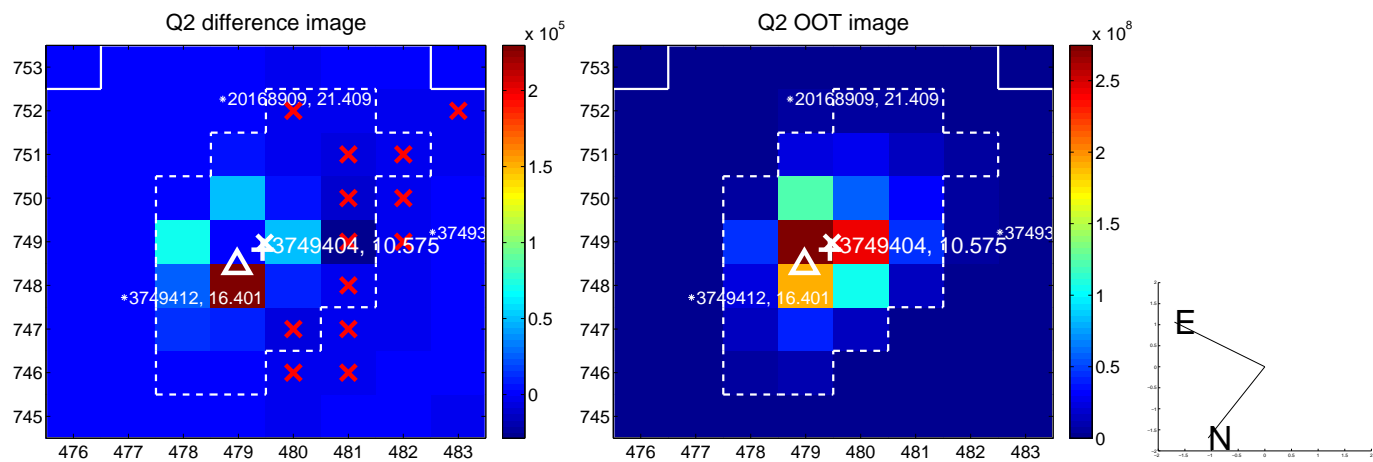
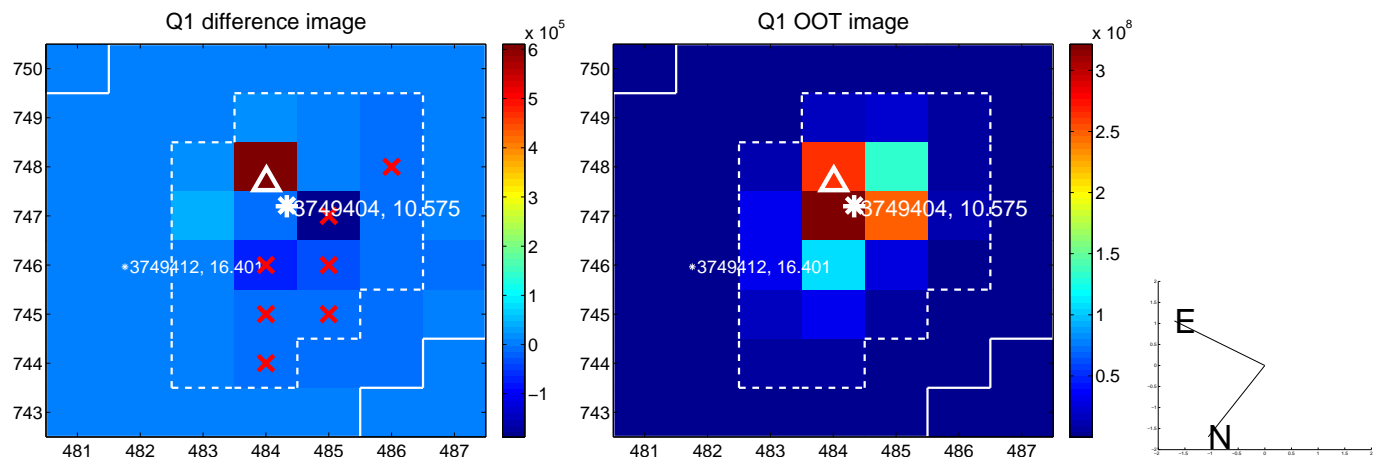
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.328 ± 0.764	0.43	0.070 ± 0.477	-0.321 ± 0.775
PRF-fit source offset from KIC position	0.209 ± 0.803	0.26	0.034 ± 0.478	-0.206 ± 0.810
photometric centroid source offset	1.59 ± 0.47	3.41	-0.30 ± 0.23	1.56 ± 0.47

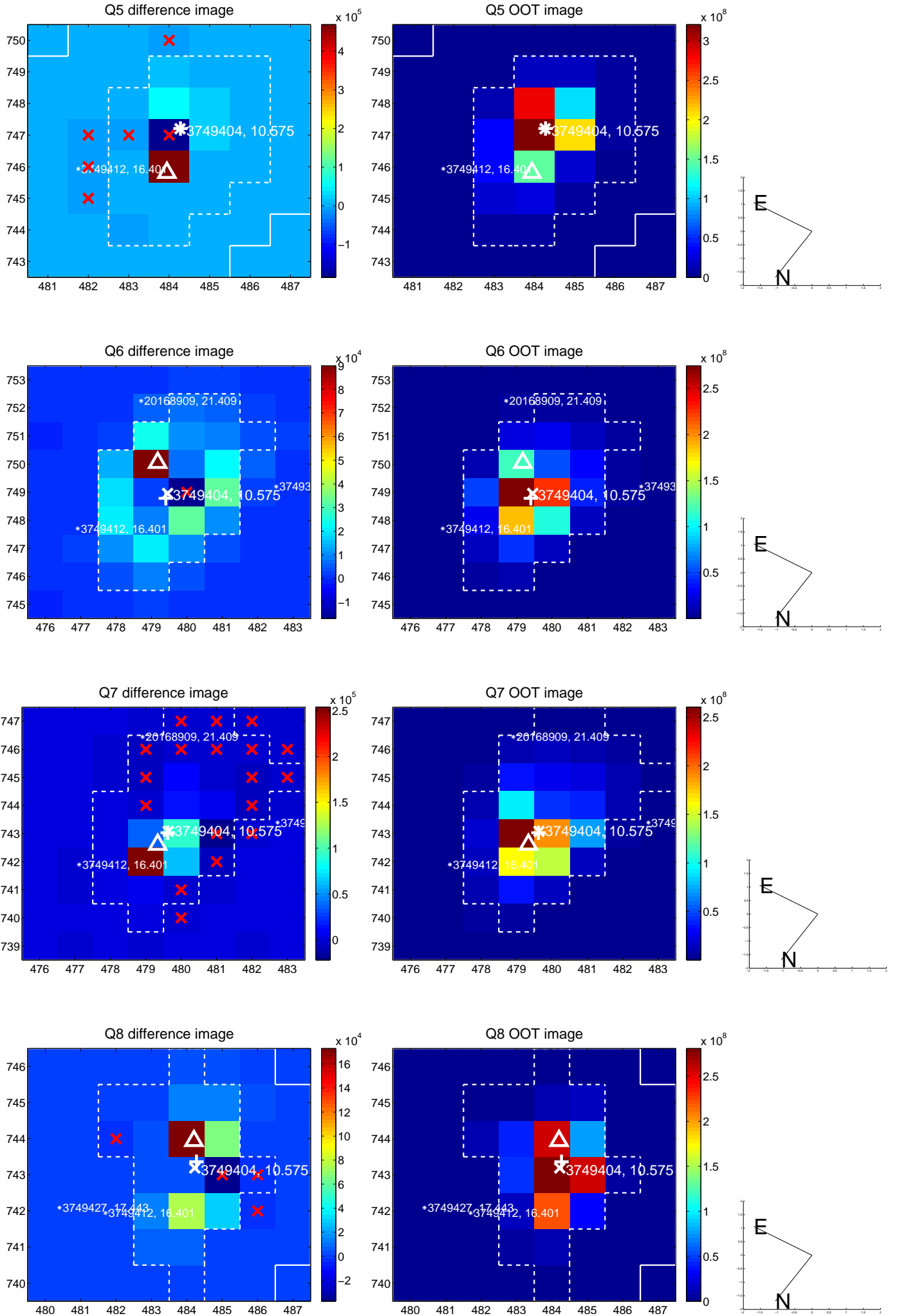


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

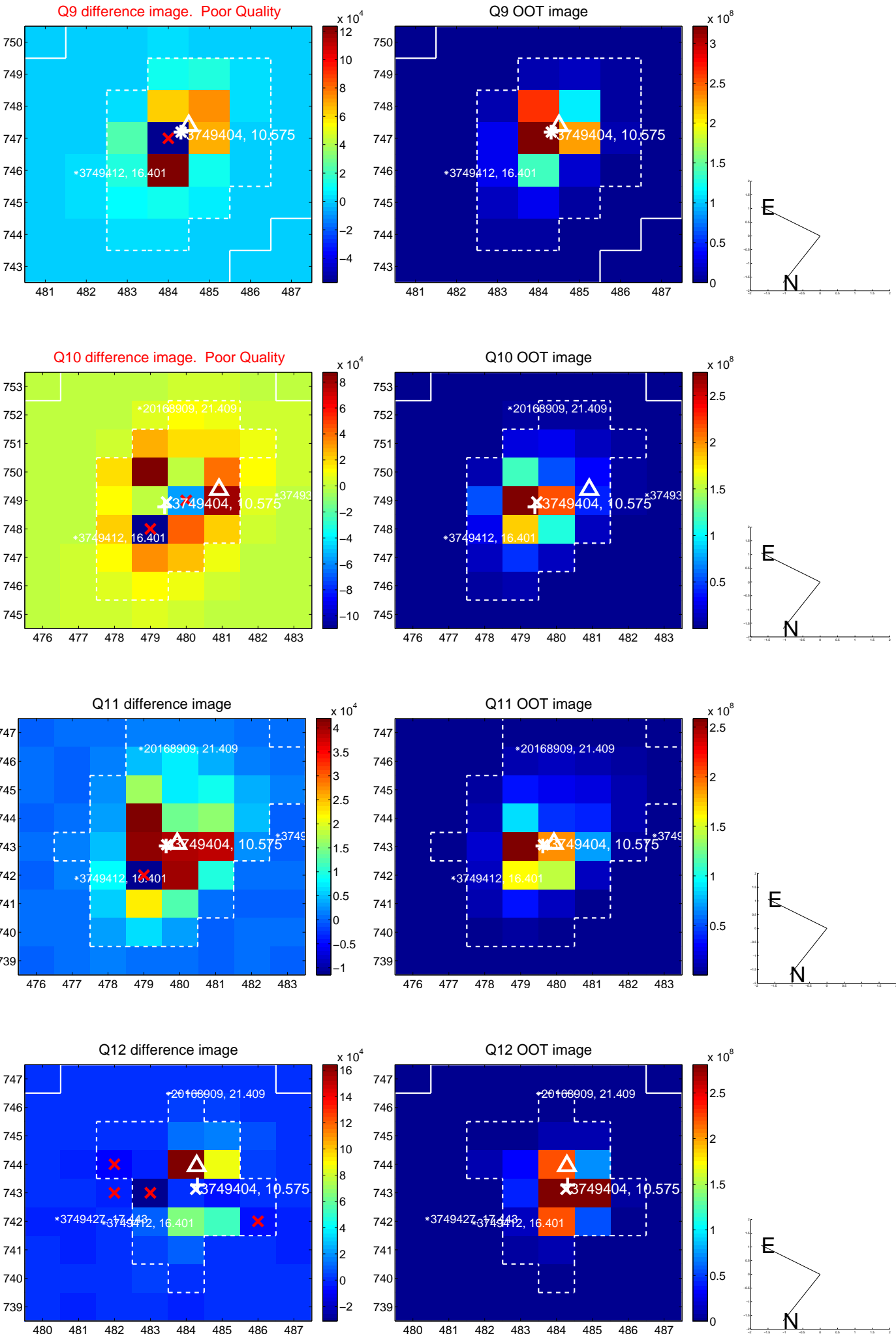
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



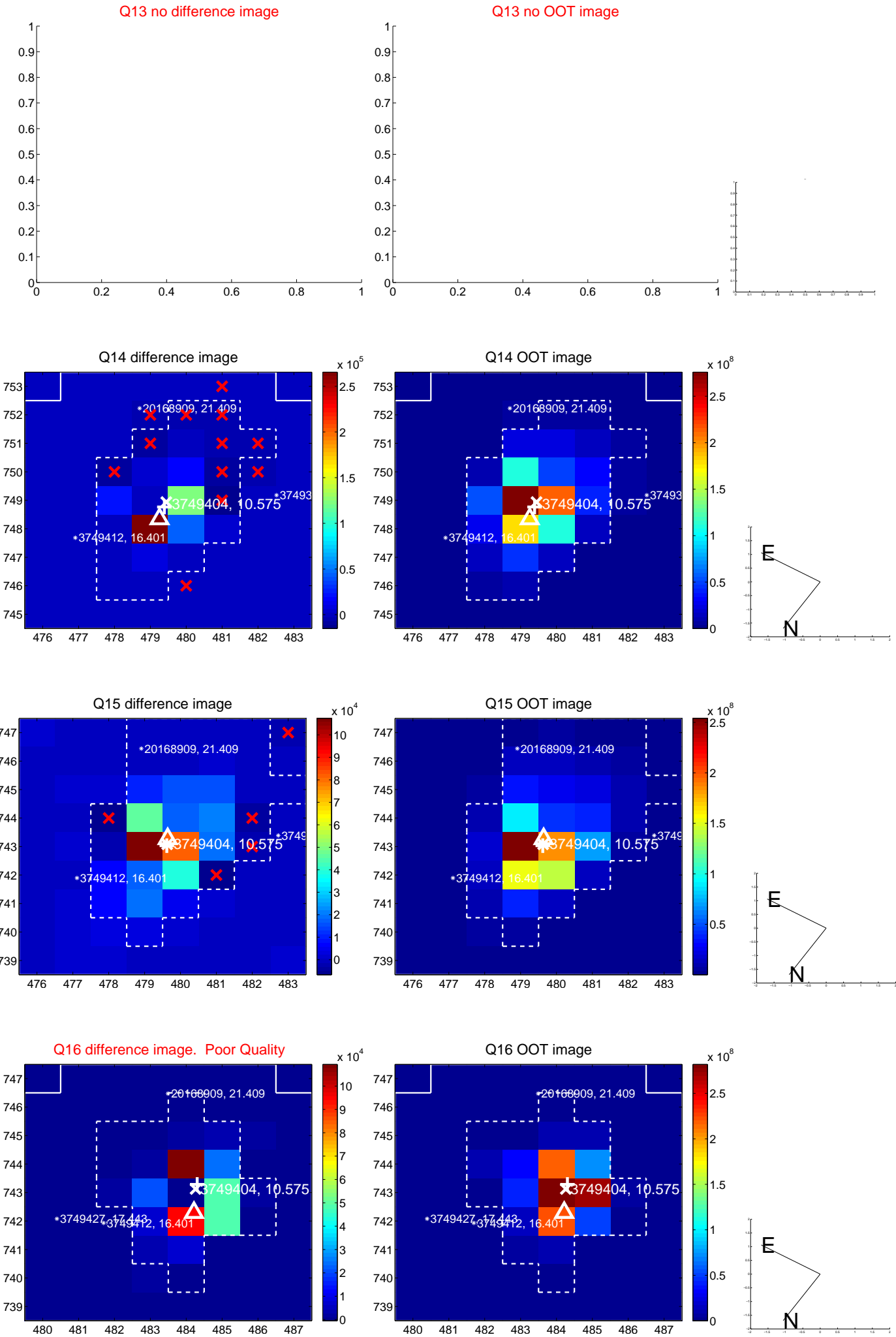
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



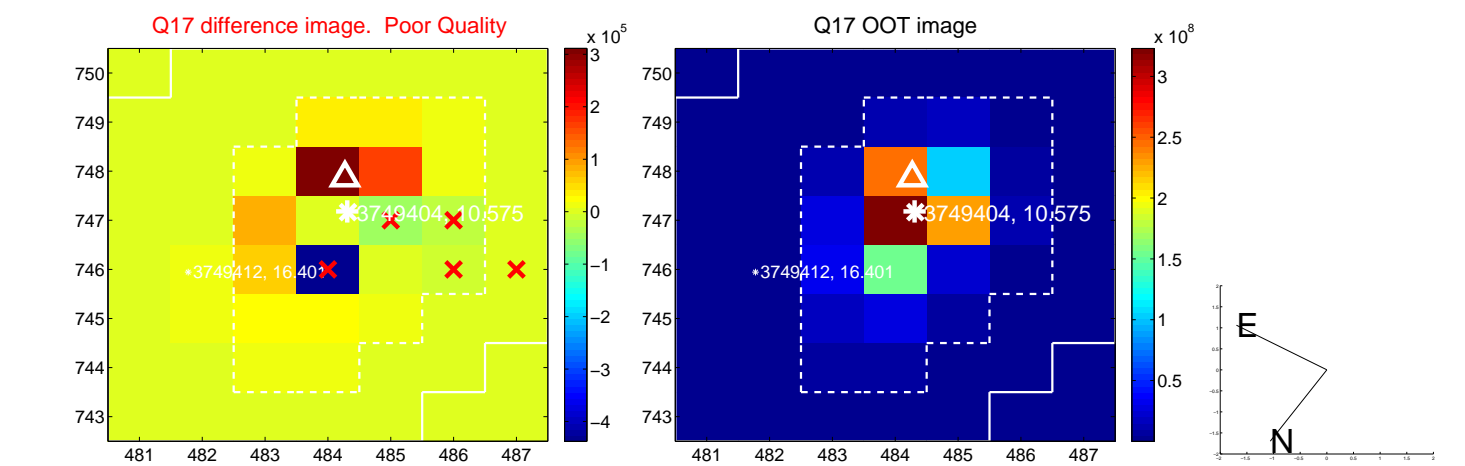
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



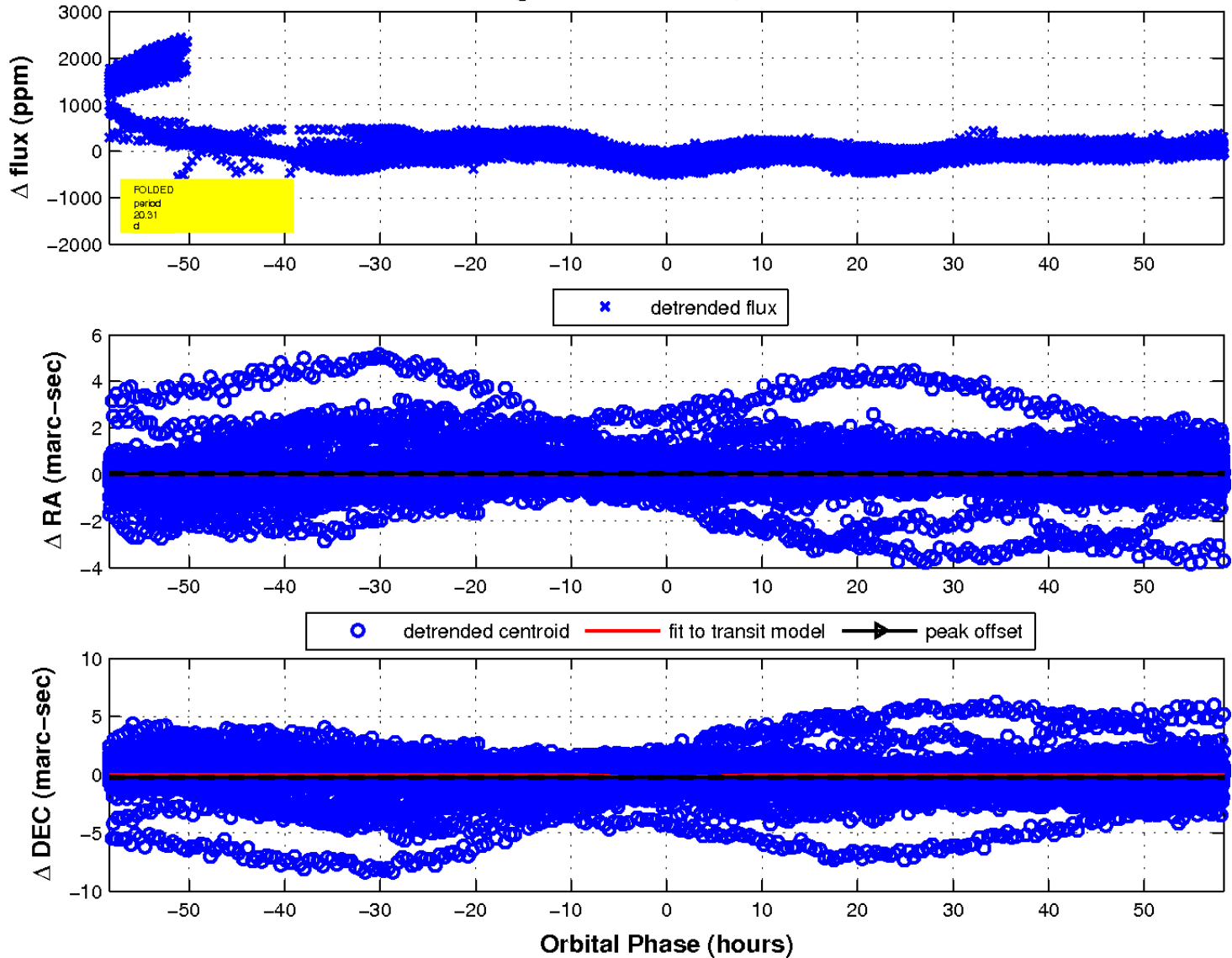
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

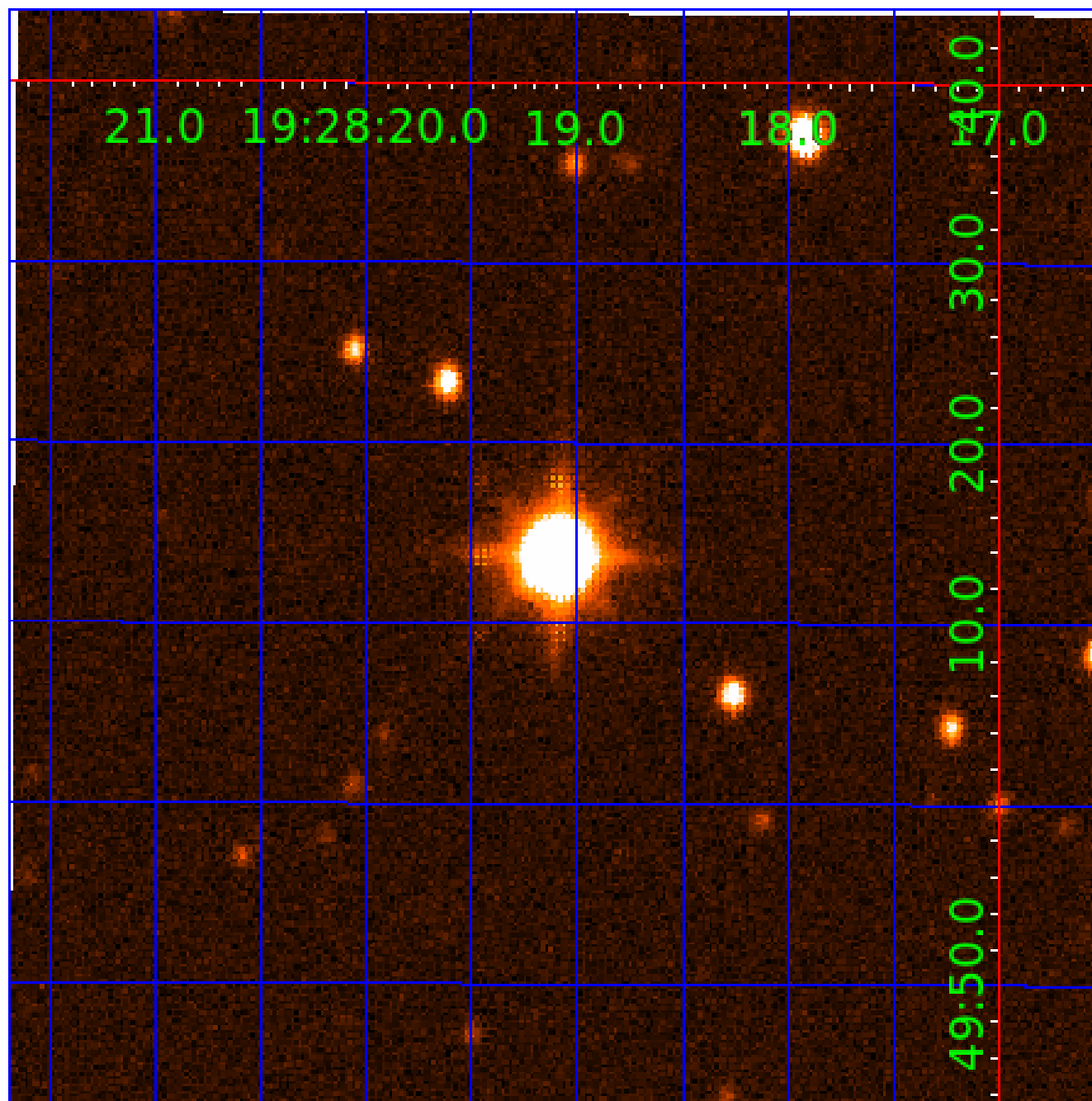


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 003749404

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})
003749404-01	OBS	No	20.306979	148.110993	1877.0	29.426	96.0	188.1	2.36	7363	18.59	473.46
003749404-02	OBS	No	20.306111	150.922369	187.4	19.452	17.4	26.5	2.36	7363	6.10	473.49
003749404-03	OBS	No	10.154727	134.630380	24.6	18.032	9.6	8.3	2.36	7363	1.35	1192.85
003749404-04	OBS	No	20.305583	132.495917	153.7	20.849	12.0	24.4	2.36	7363	5.69	473.50
003749404-05	OBS	No	10.152836	133.628493	29.2	38.770	9.5	5.0	2.36	7363	1.46	1193.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749404-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003749404-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-03	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
003749404-04	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—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.

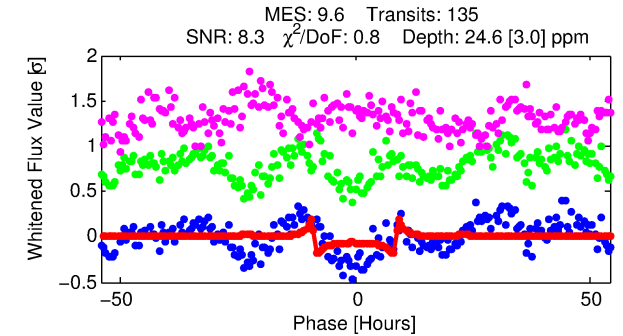
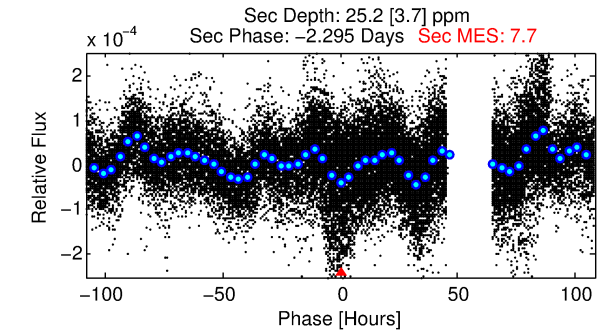
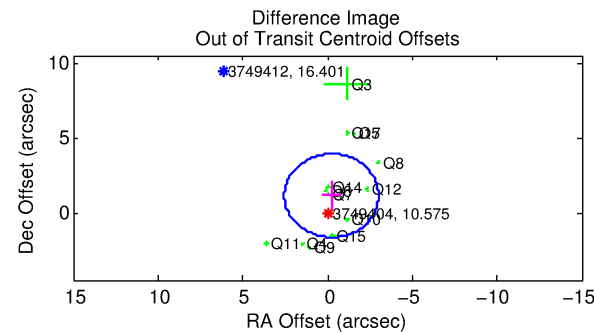
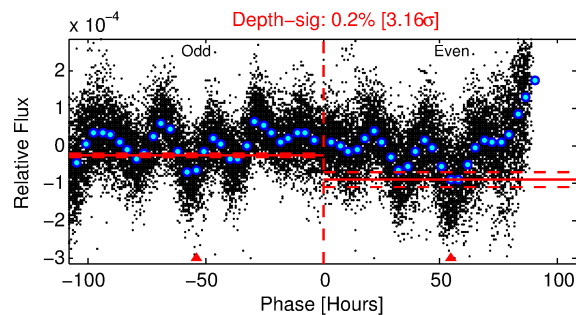
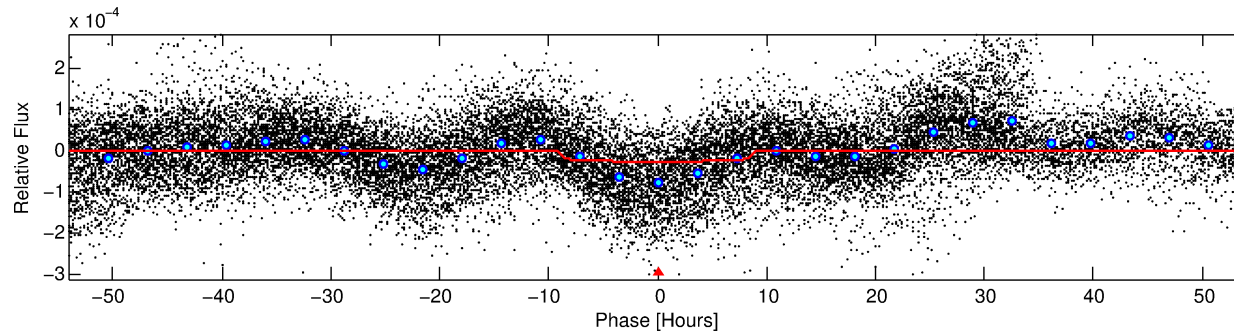
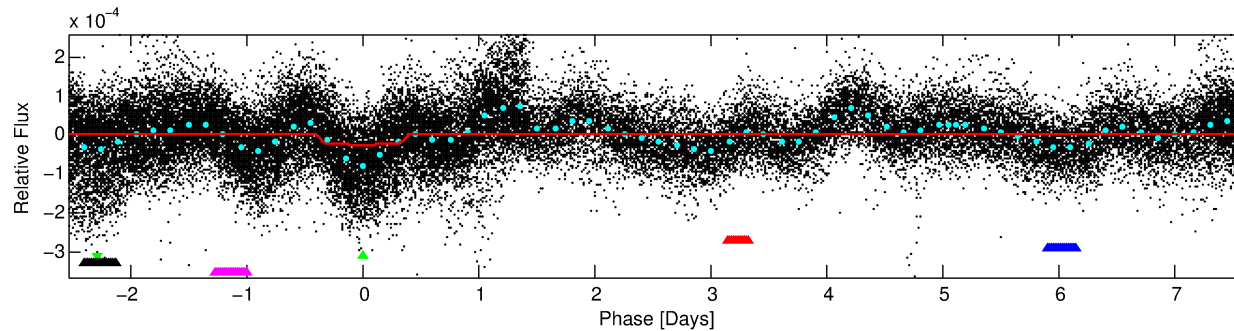
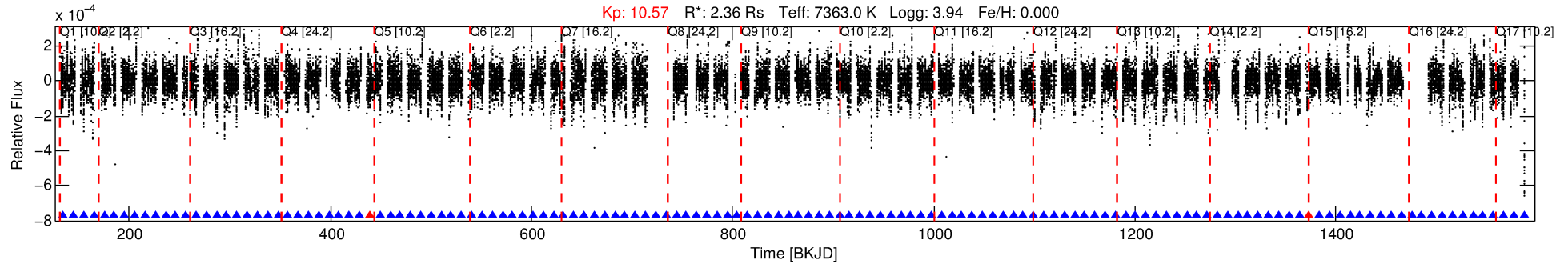
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749404-03

No Significant Match Found

DV One-Page Summary

KIC: 3749404 Candidate: 3 of 5 Period: 10.155 d



DV Fit Results:

Period = 10.15473 [0.00009] d
Epoch = 134.6304 [0.0067] BKJD
Rp/R* = 0.0053 [0.0004]
a/R* = 2.15 [0.37]
b = 0.90 [0.05]
Seff = 1192.85 [544.43]
Teq = 1499 [171] K
Rp = 1.35 [0.45] Re
a = 0.1108 [0.0312] AU
Ag = 93.02 [43.78] [2.10 σ]
Teffp = 7195 [501] K [10.77 σ]

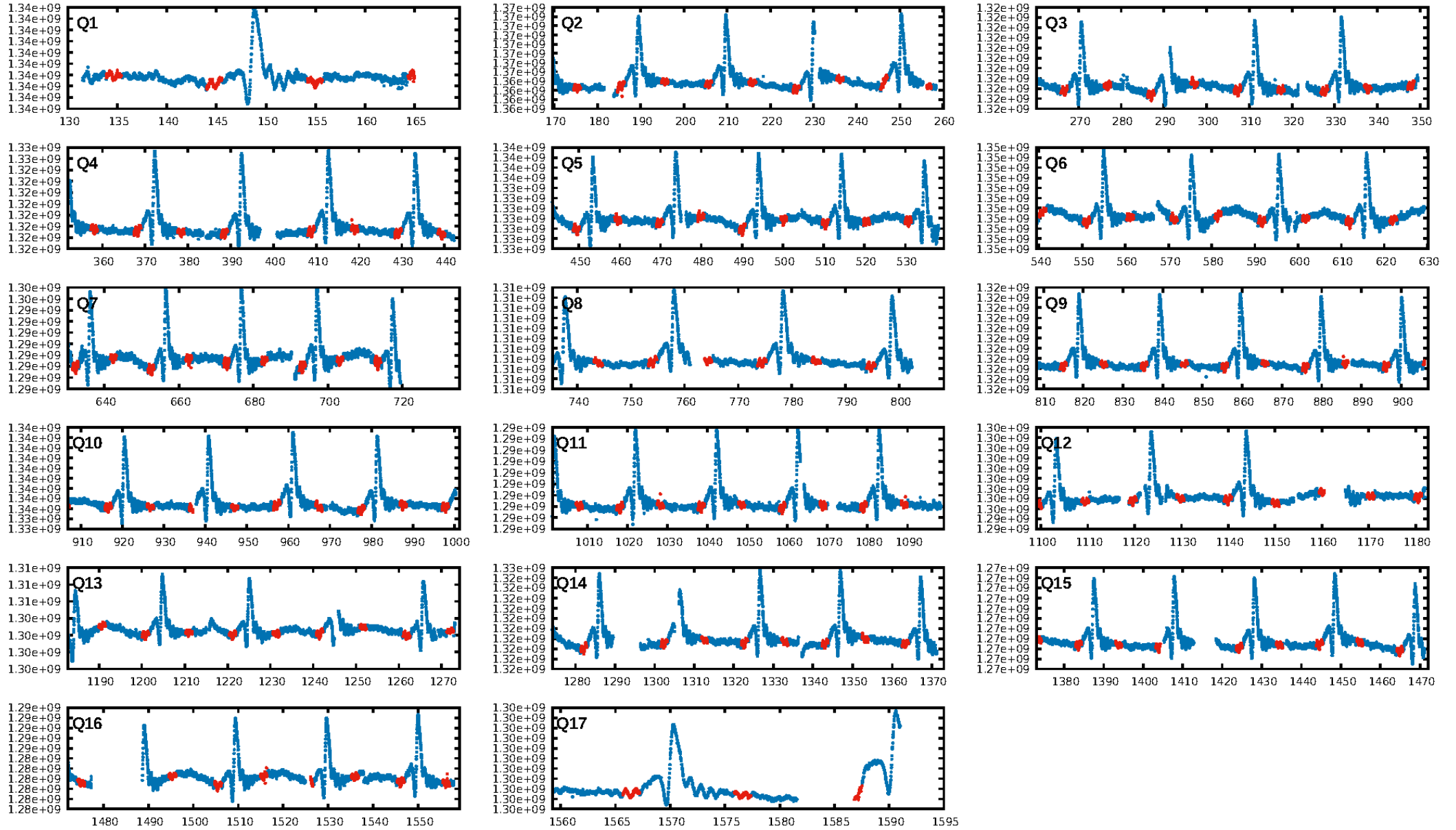
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 σ]
LongPeriod-sig: 100.0% [8.84 σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.77e-27
RollingBand-fgt: 0.98 [126/128]
GhostDiagnostic-chr: 0.1915
Centroid-sig: 0.0%
Centroid-so: 4.044 arcsec [2.23 σ]
OotOffset-rm: 1.152 arcsec [1.24 σ]
KicOffset-rm: 2.271 arcsec [2.48 σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 0.00 [0/17]

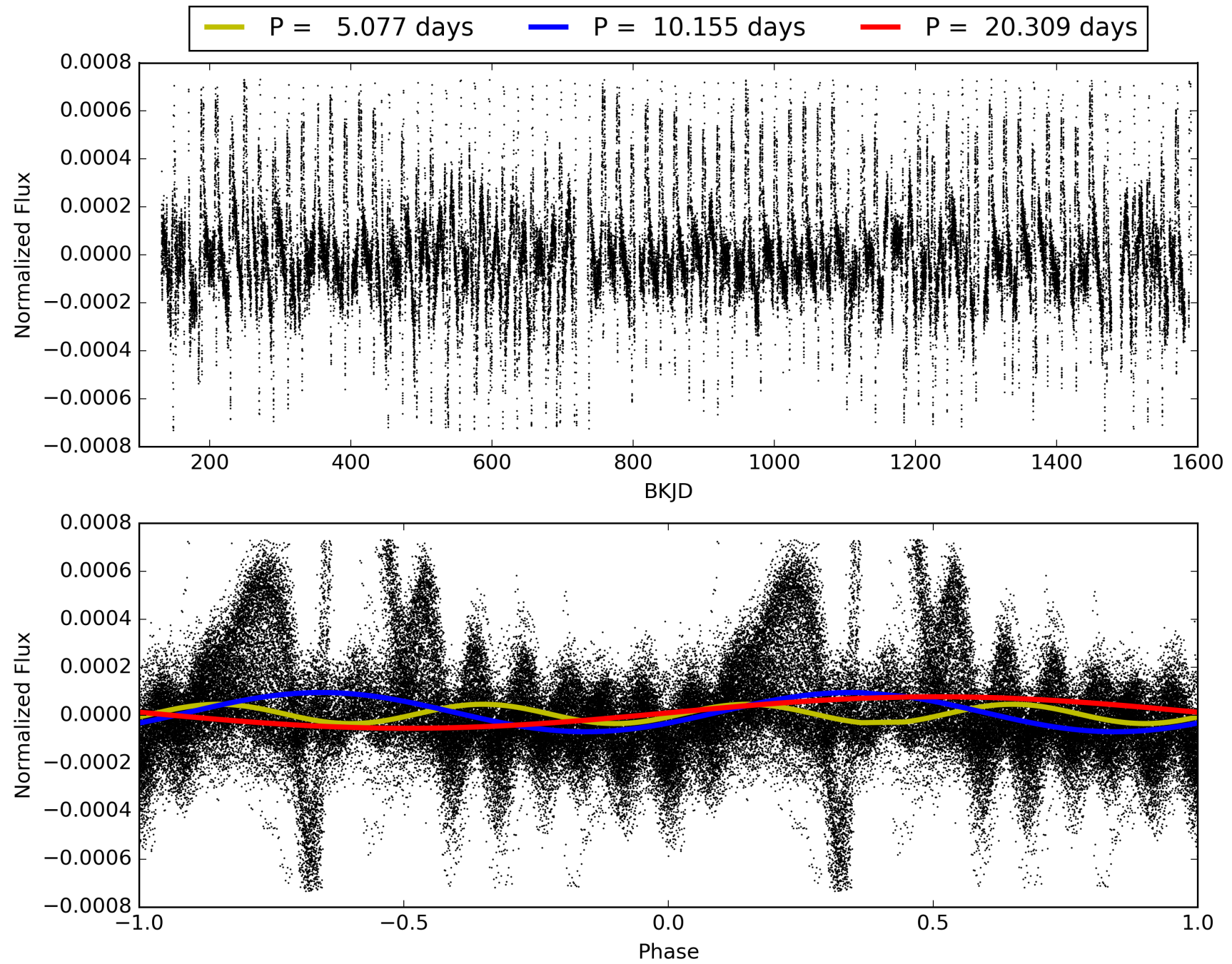
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:04:07 Z

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

TCE 003749404-03, PDC Light Curves

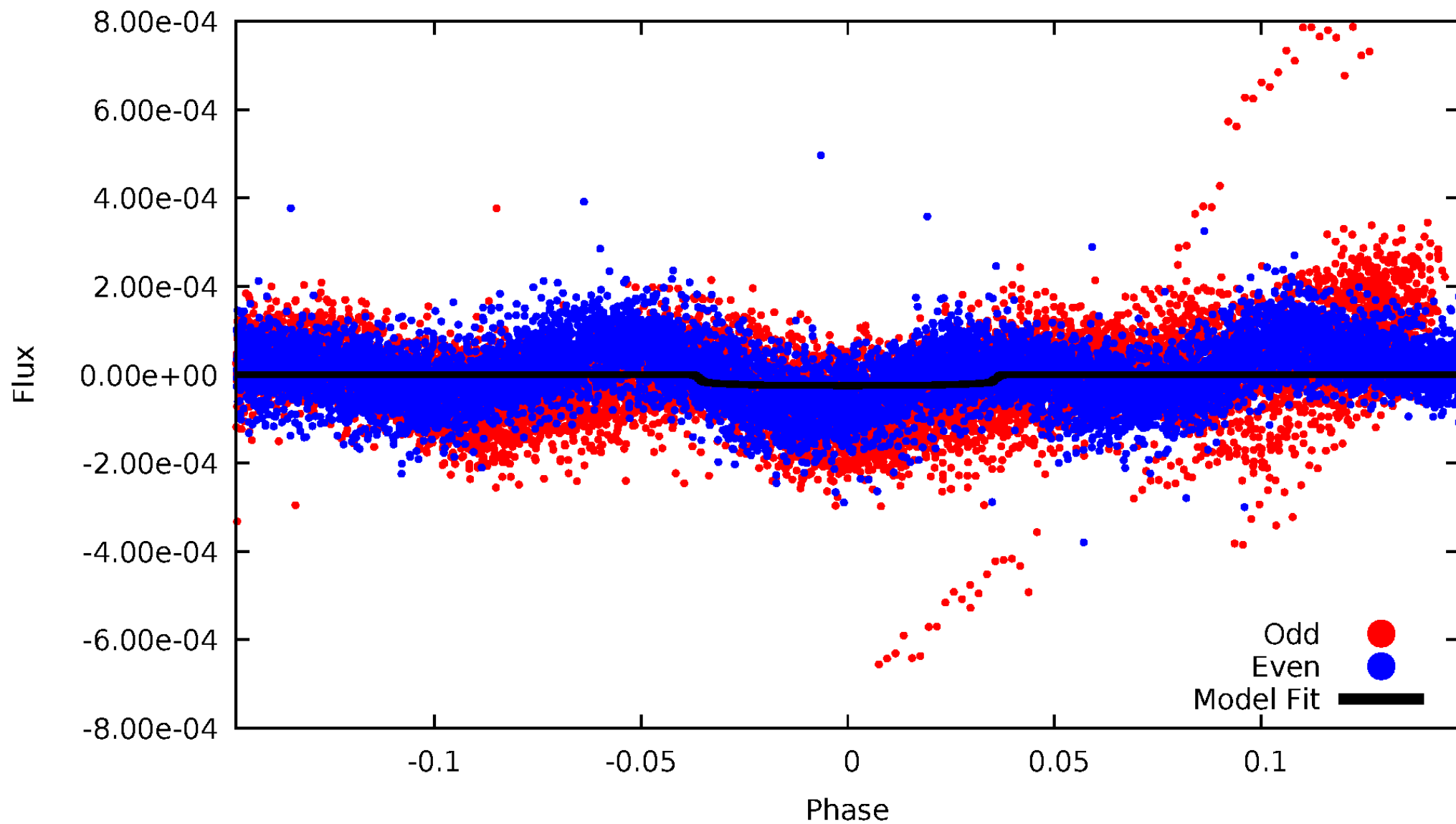


TCE 003749404-03



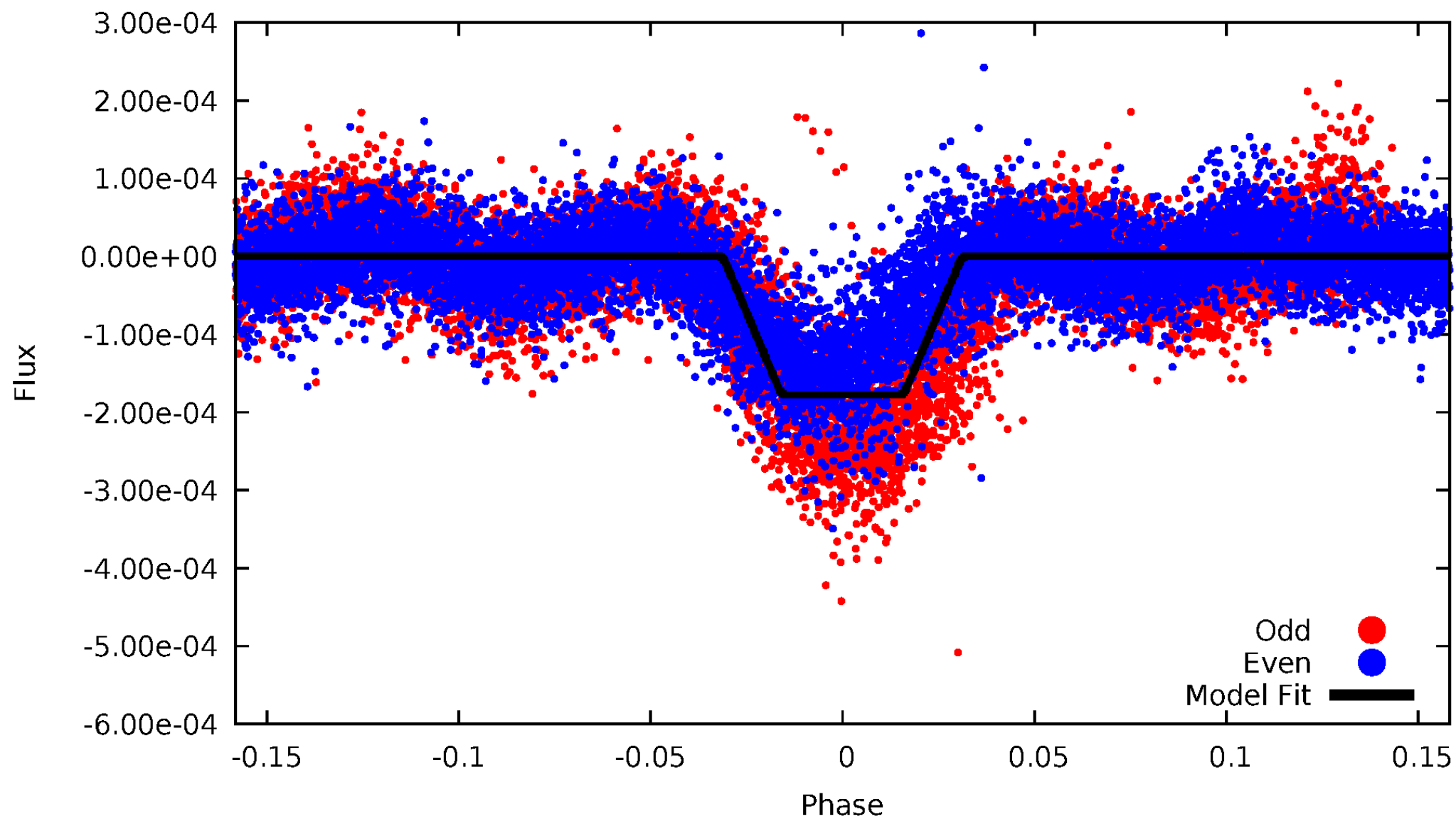
DV Odd/Even

TCE 003749404-03

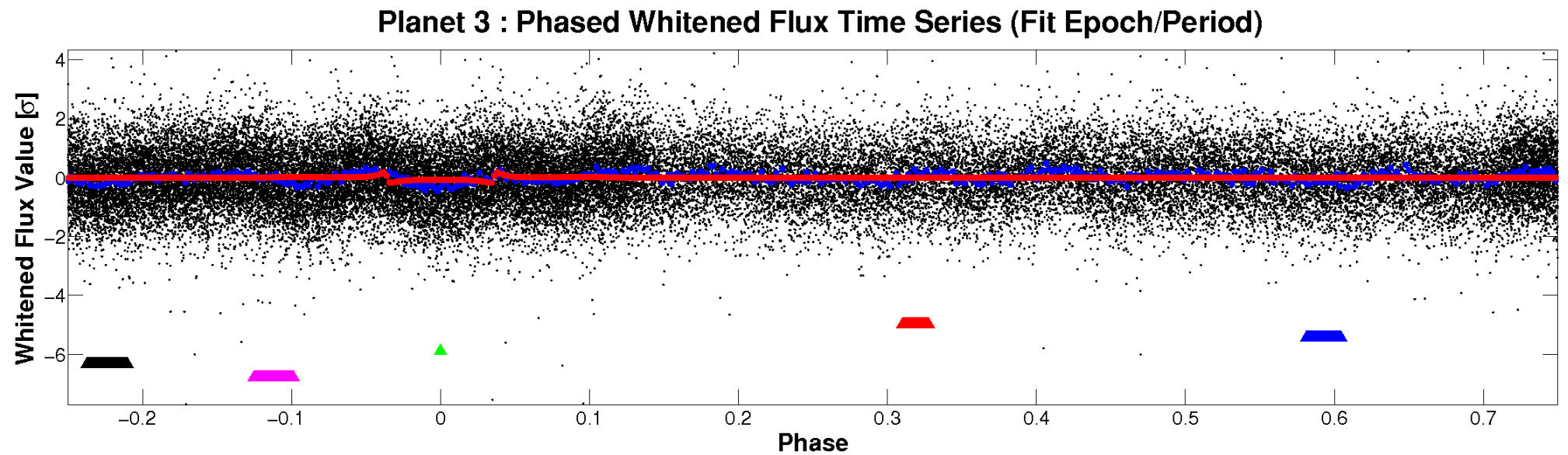
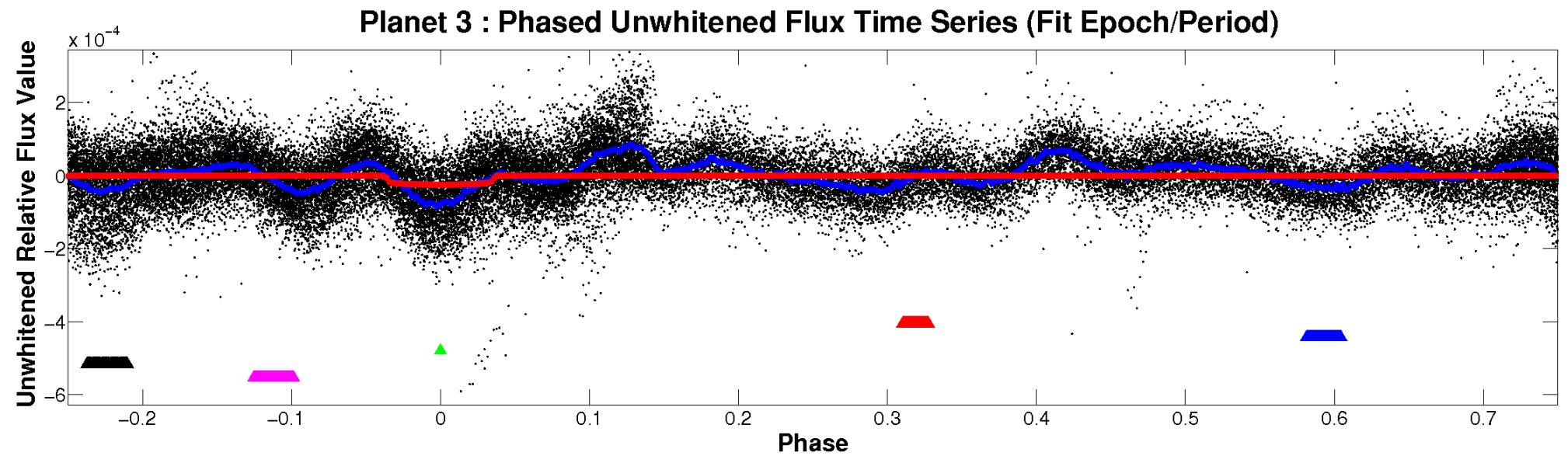


ALT Odd/Even

TCE 003749404-03

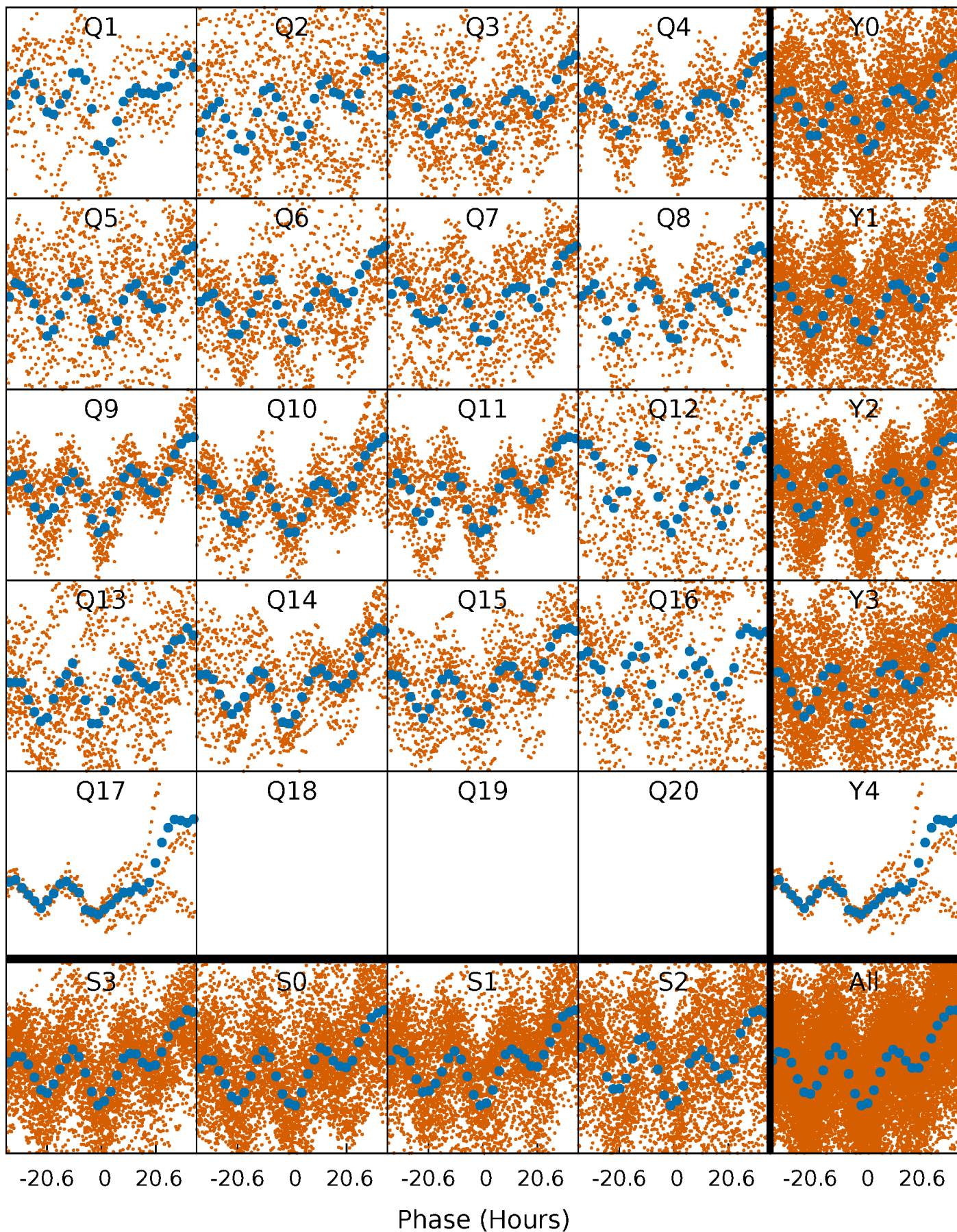


Non-Whitened Vs. Whitened Light Curve



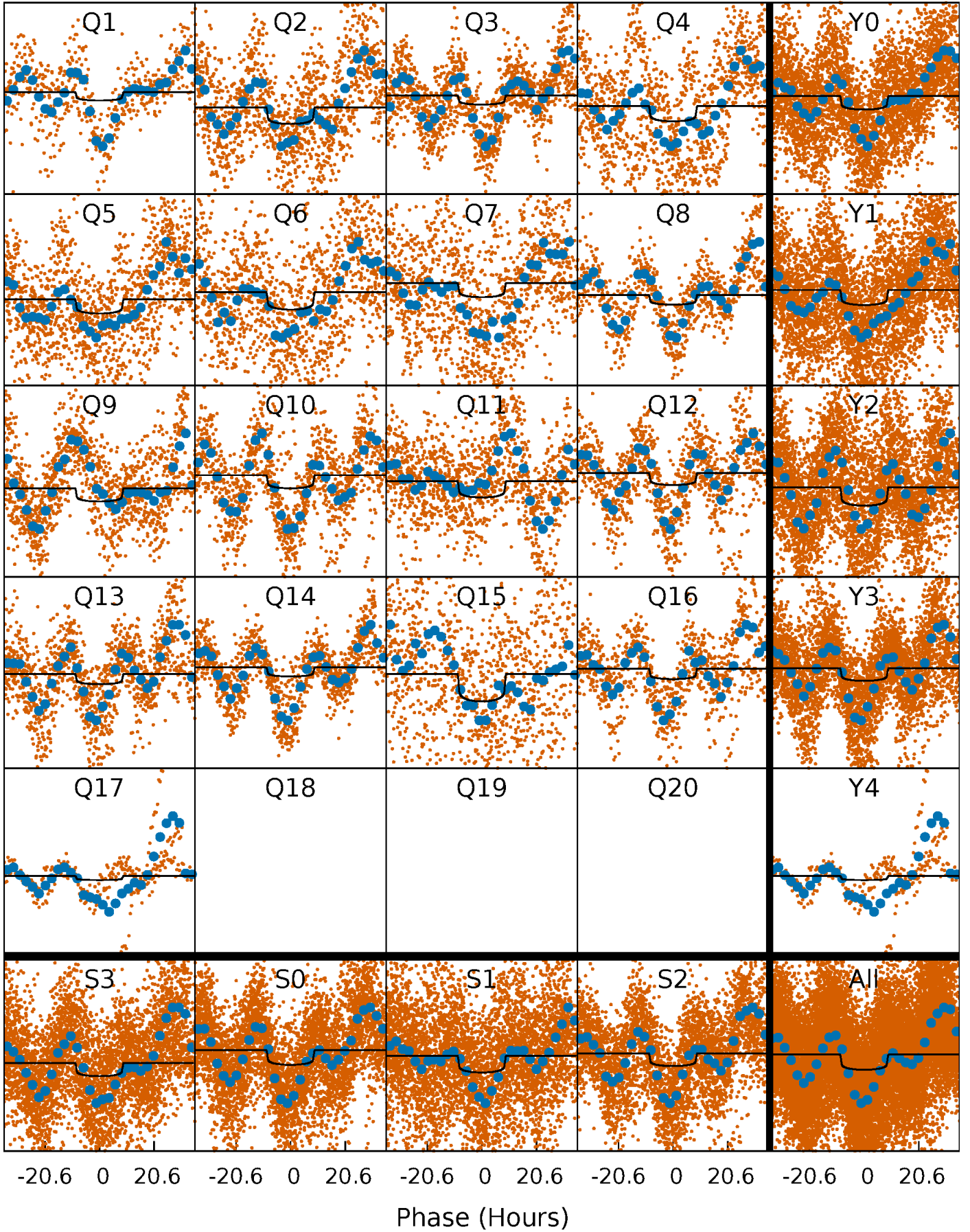
PDC Quarter-Phased Transit Curves

TCE 003749404-03 P= 10.154727 Days $T_0=134.630381$ (BKJD)



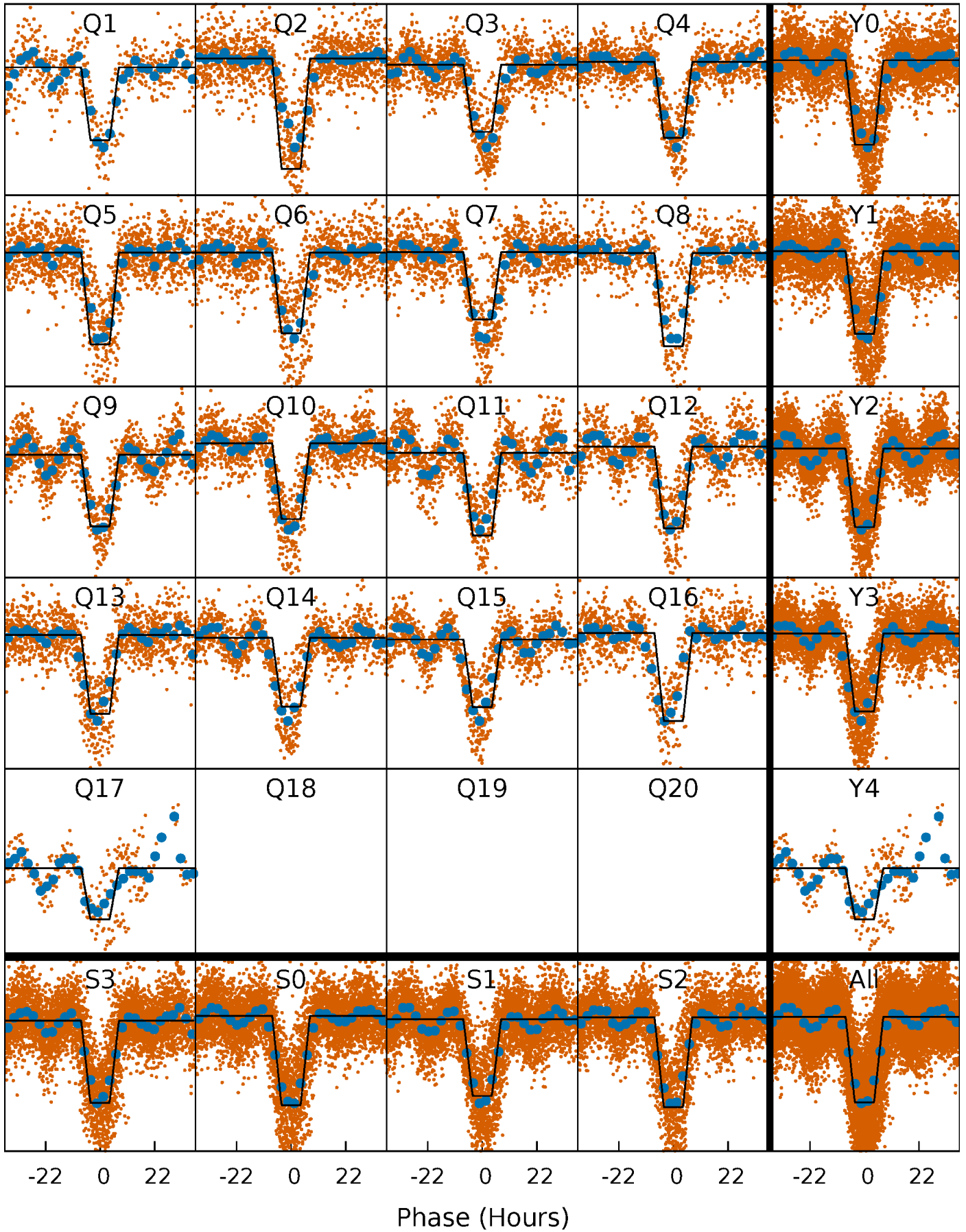
DV Quarter-Phased Transit Curves

TCE 003749404-03 $P = 10.154727$ Days $T_0 = 134.630381$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

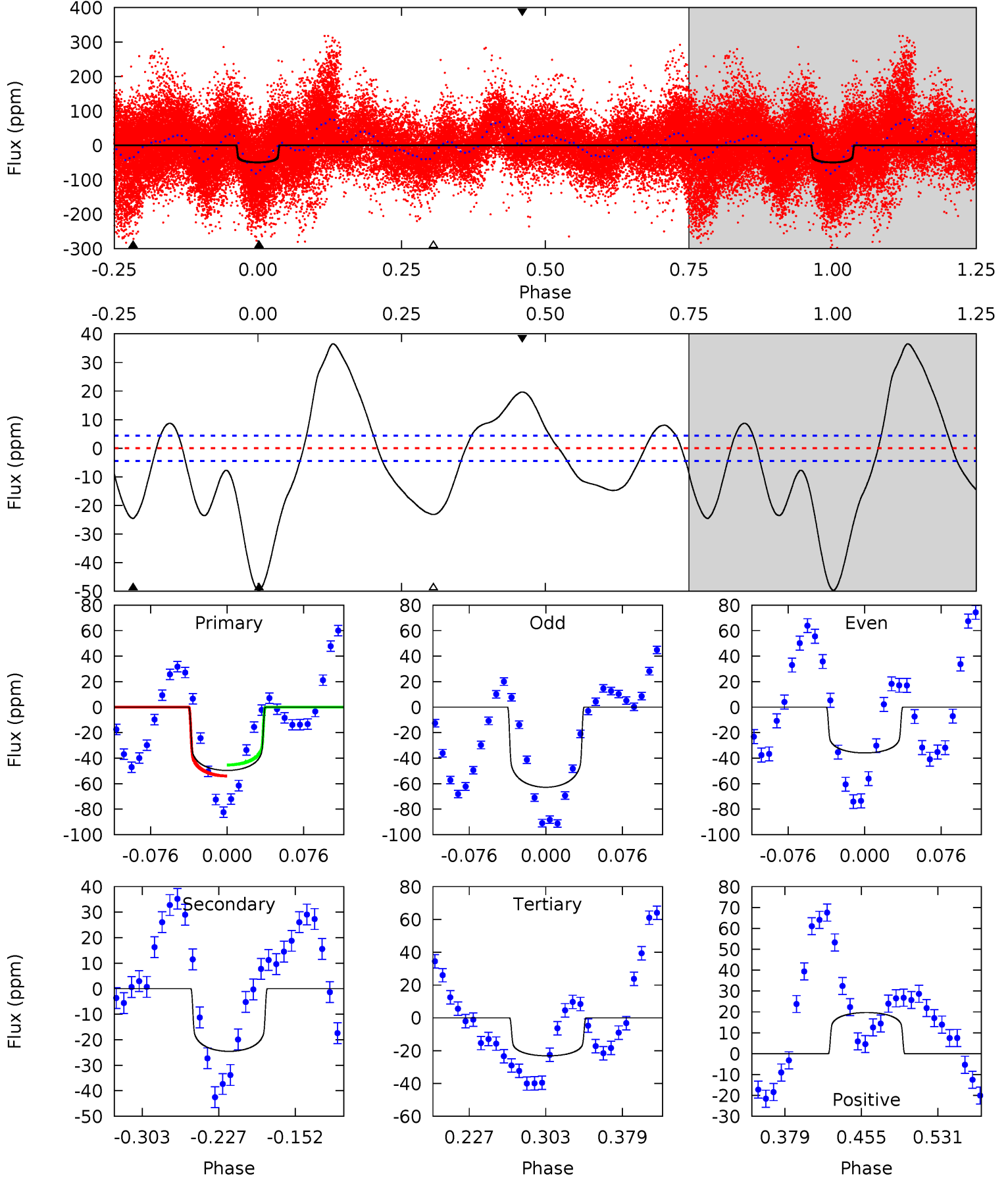
TCE 003749404-03 $P = 10.154669$ Days $T_0 = 134.625913$ (BKJD)



DV Model-Shift Uniqueness Test

003749404-03, P = 10.154727 Days, E = 124.475654 Days

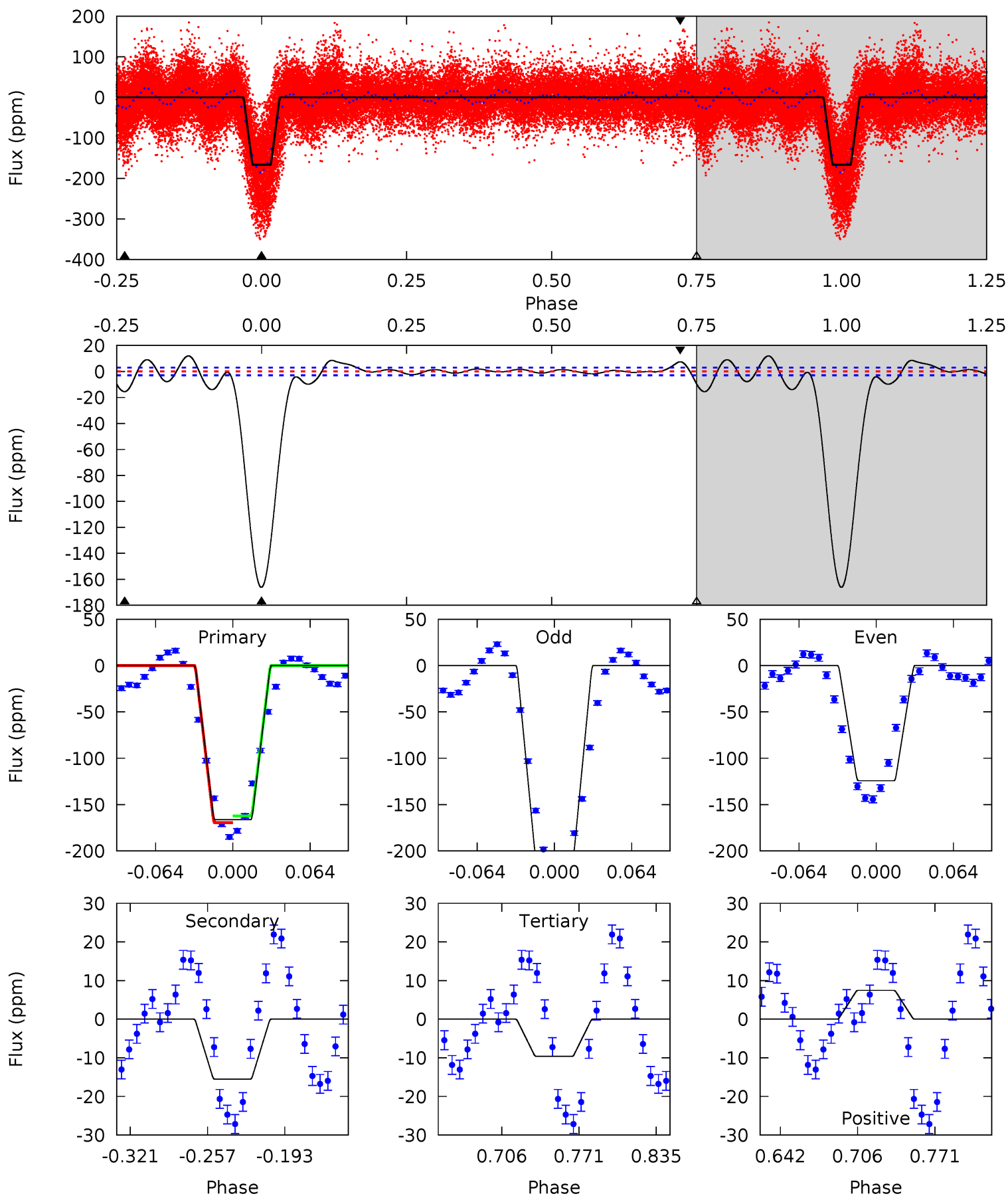
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.0	25.7	24.3	20.6	4.62	1.78	16.9	27.7	31.3	1.44	5.08	13.6	1.11	0.42	4.24



Alt Model-Shift Uniqueness Test

003749404-03, P = 10.154669 Days, E = 124.471244 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
262.8	24.6	15.2	11.8	4.66	1.85	8.22	247.6	251.0	9.34	12.8	66.1	0.99	0.07	5.49



Stellar Parameters For KIC 003749404

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7363^{+228}_{-330}	$3.938^{+0.234}_{-0.156}$	$0.000^{+0.200}_{-0.300}$	$2.358^{+0.576}_{-0.768}$	$1.757^{+0.184}_{-0.342}$	$0.189^{+0.270}_{-0.085}$
	+3%/-4%	+6%/-4%	+inf%/-inf%	+24%/-33%	+10%/-19%	+143%/-45%
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 003749404-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 1	$1.32^{+0.22}_{-0.23}$	2077^{+152}_{-176}	7118^{+430}_{-420}	94^{+39}_{-25}
Alt.	-16 ± 1	$3.42^{+0.49}_{-0.51}$	2086^{+152}_{-161}	4185^{+111}_{-127}	$8.933^{+3.014}_{-2.015}$

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

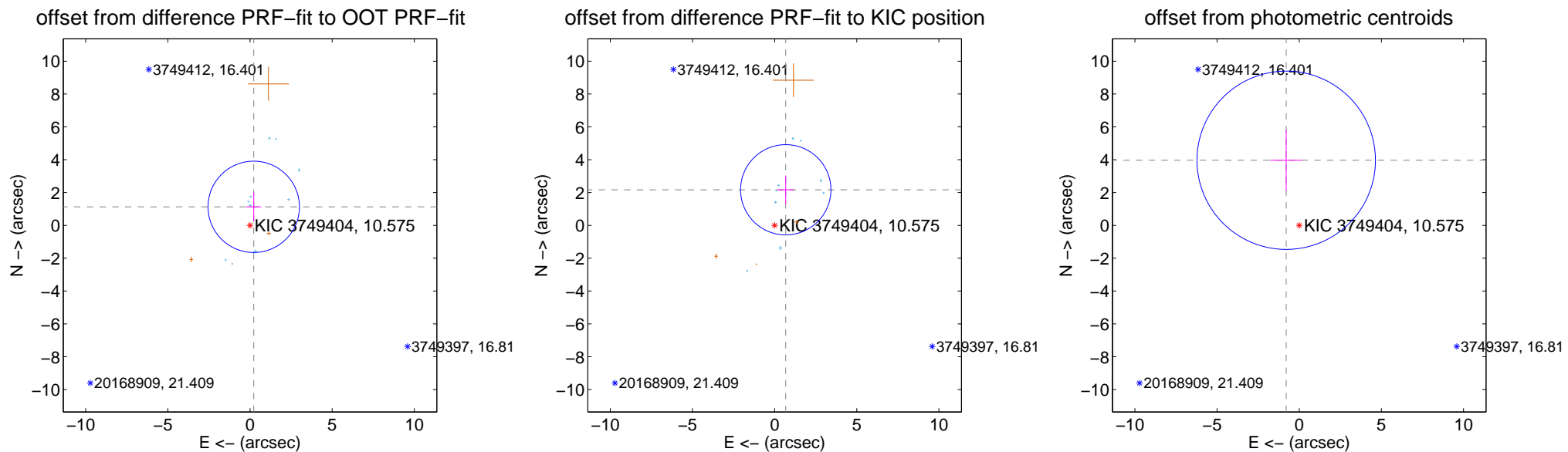
DV Centroid Data

Supplemental centroid analysis for 003749404-03. **Kepler magnitude: 10.57.** Transit SNR 8.27

There are 9 quarters with good PRF difference image offsets

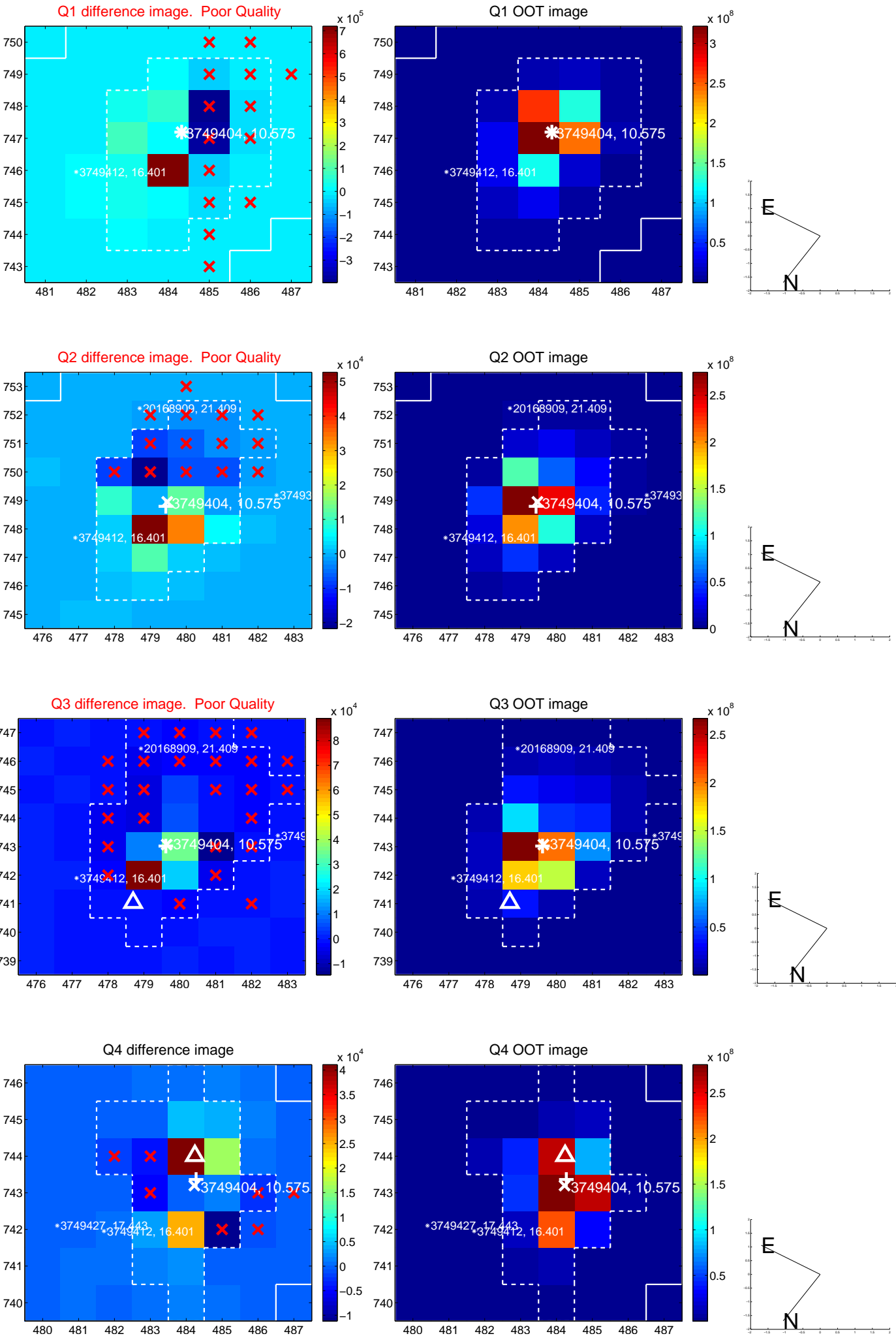
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.152 ± 0.927	1.24	-0.226 ± 0.455	1.129 ± 0.882
PRF-fit source offset from KIC position	2.271 ± 0.916	2.48	-0.677 ± 0.505	2.168 ± 0.868
photometric centroid source offset	4.04 ± 1.81	2.23	0.79 ± 0.97	3.97 ± 1.84

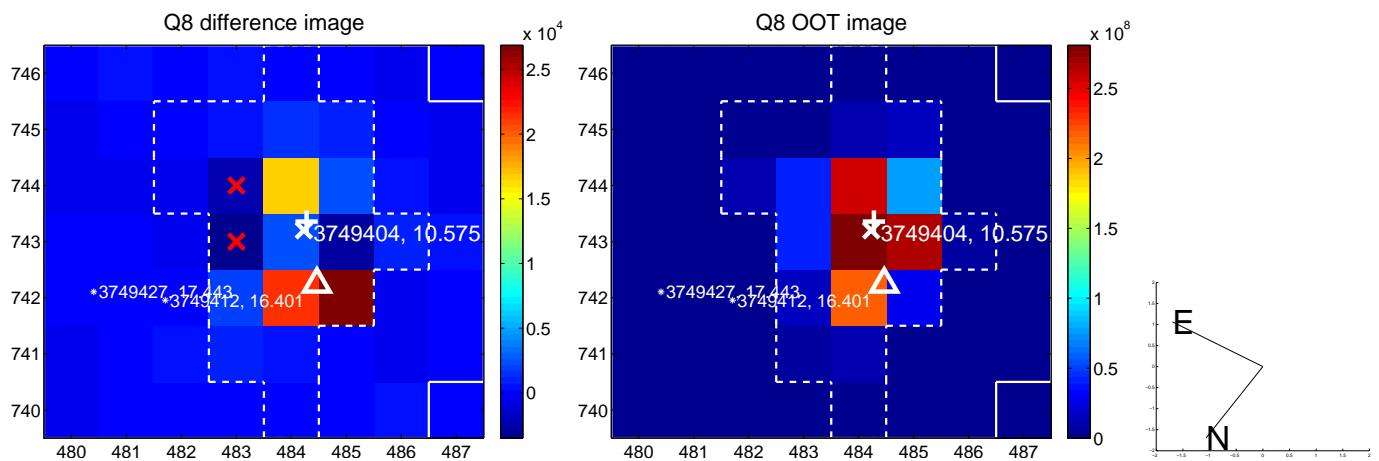
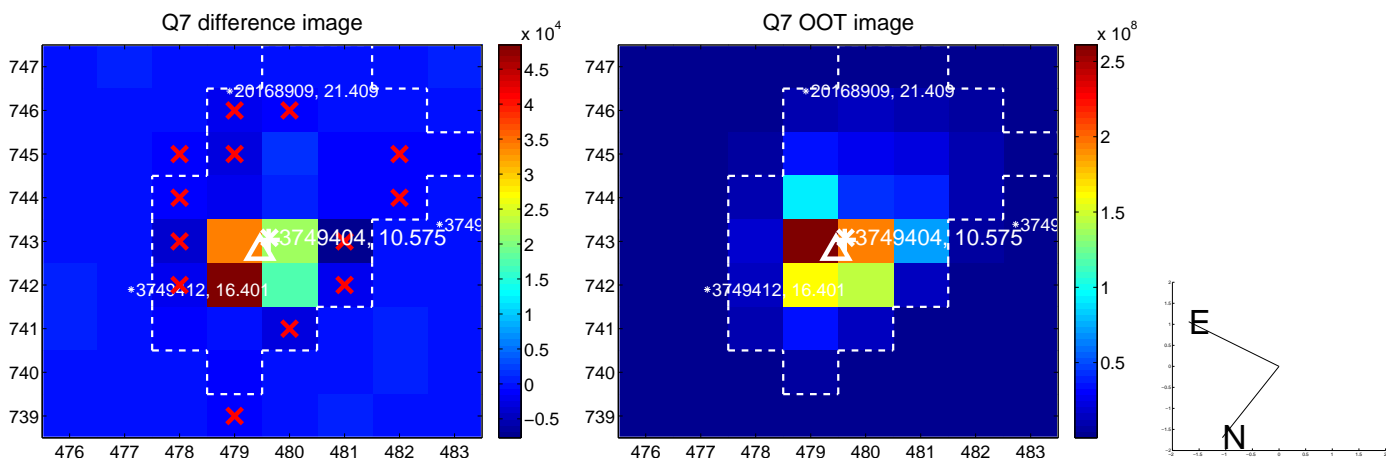
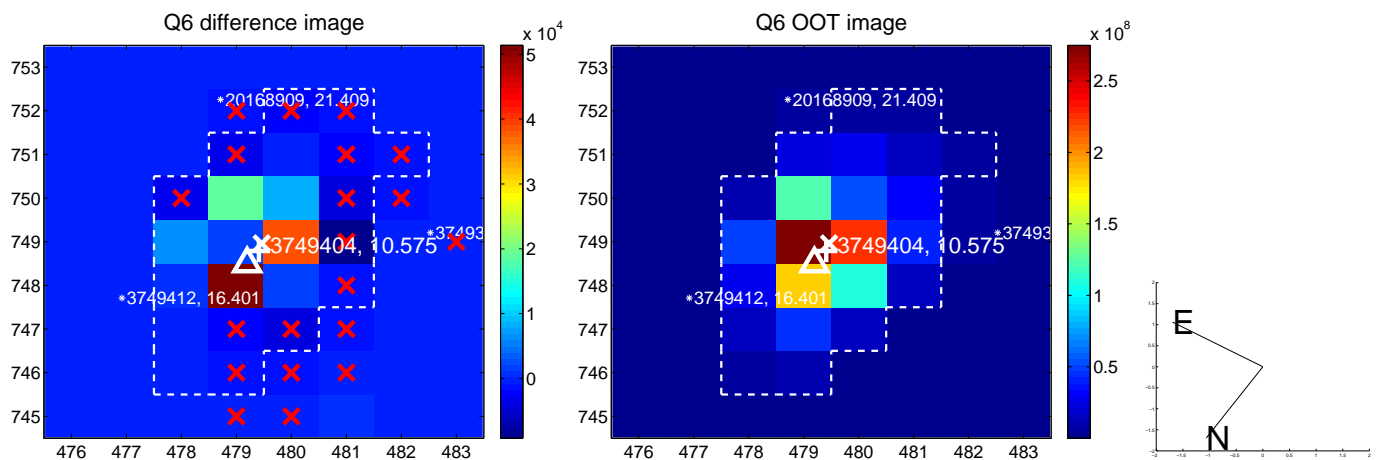
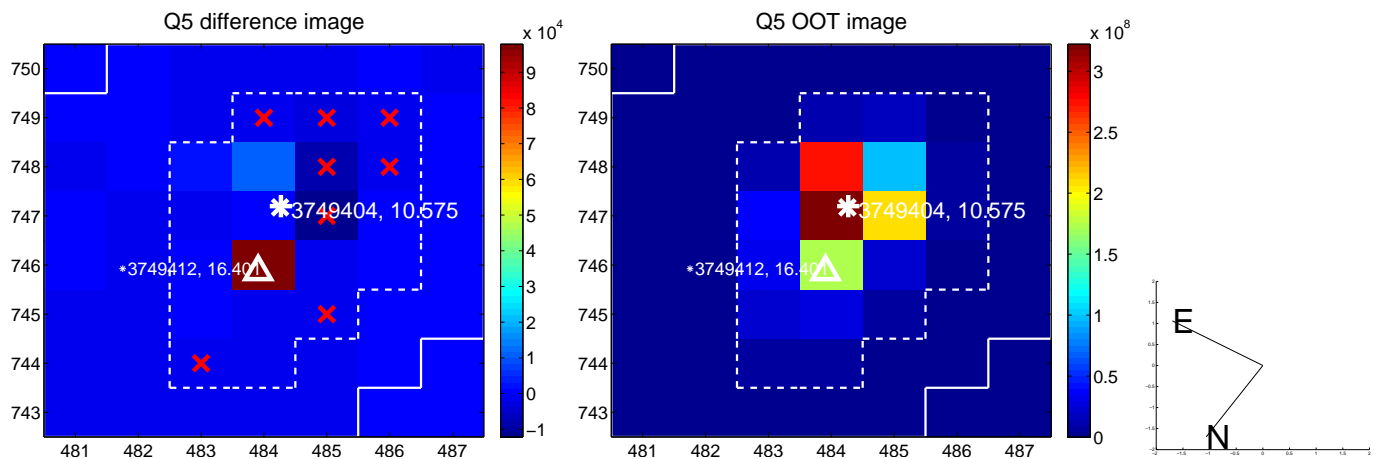


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

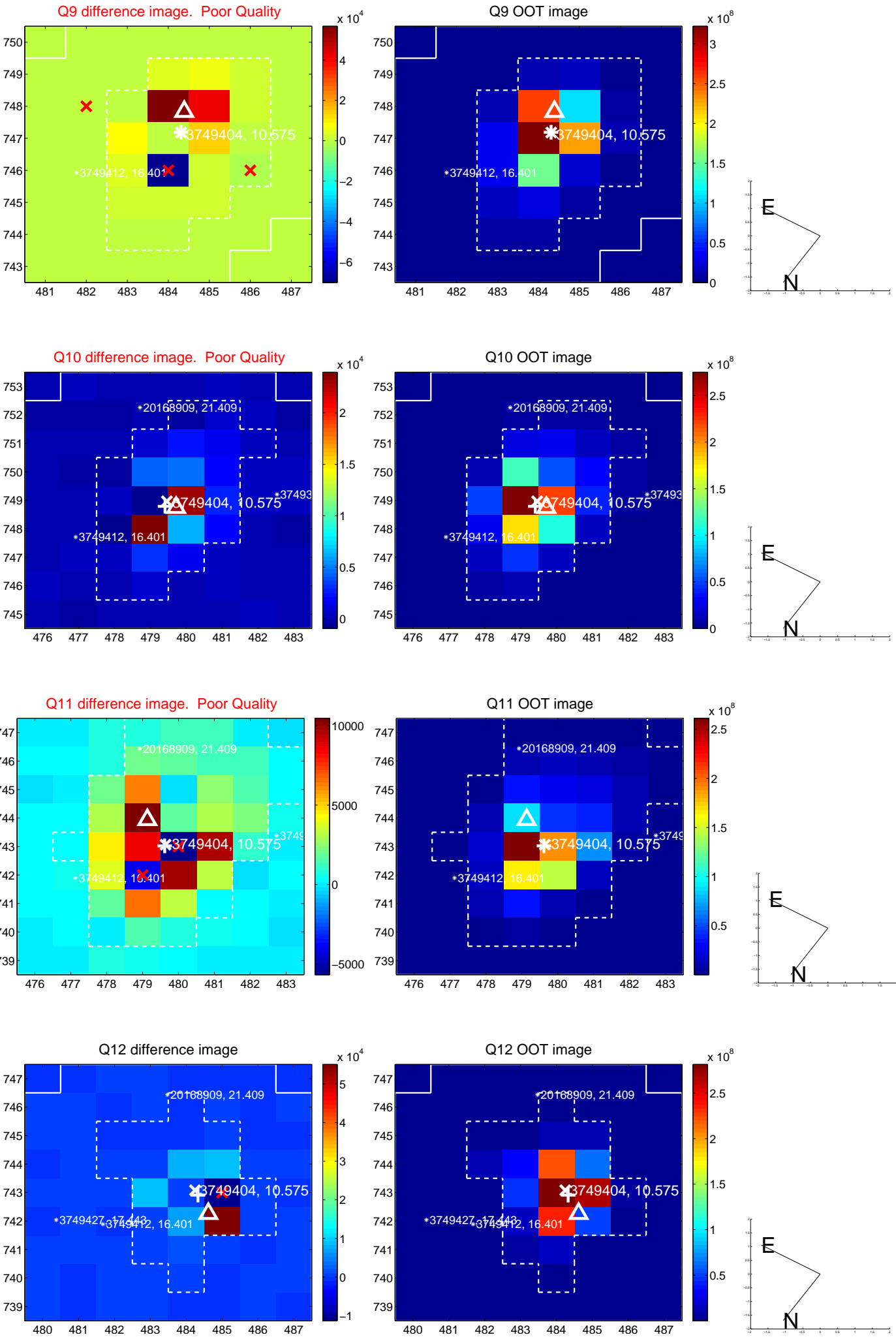
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



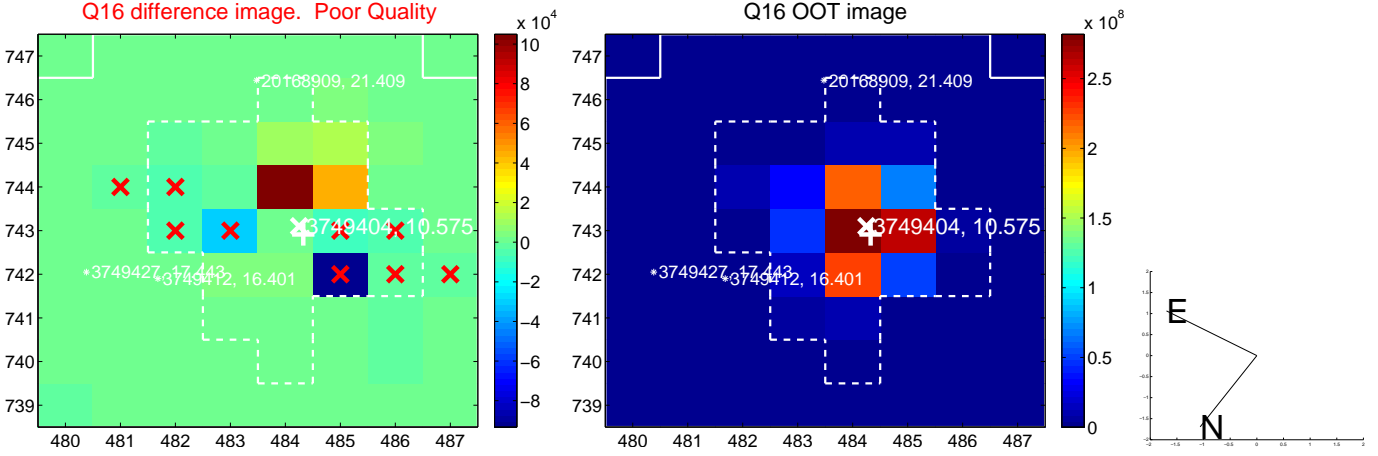
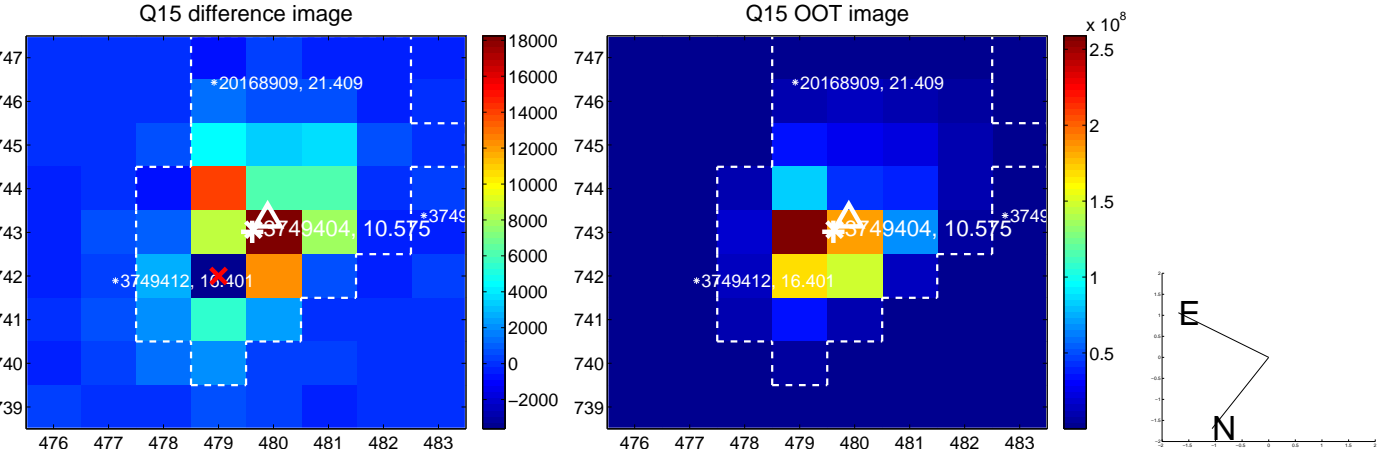
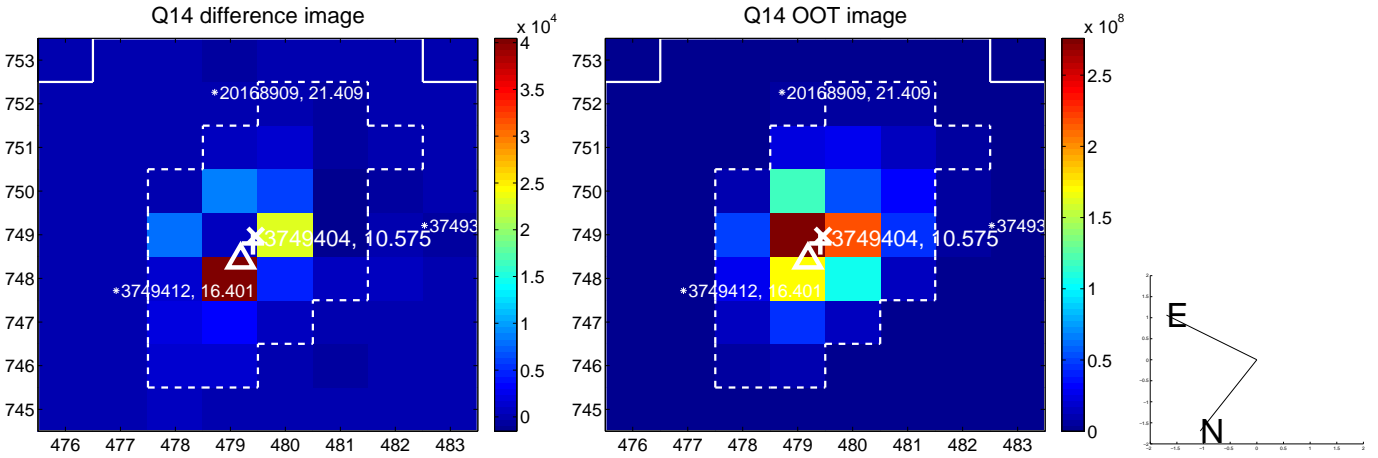
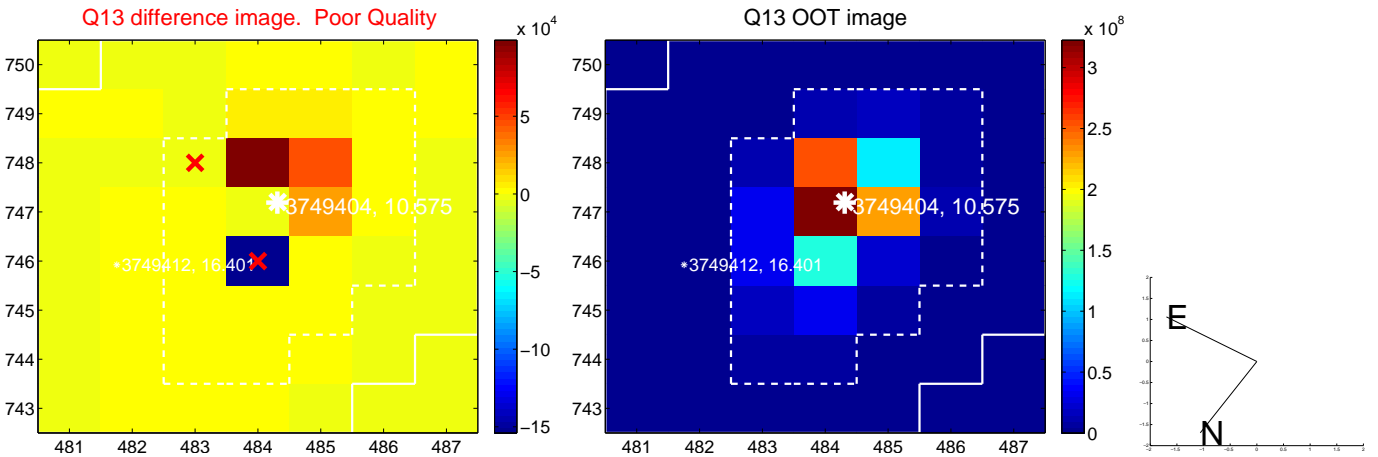
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



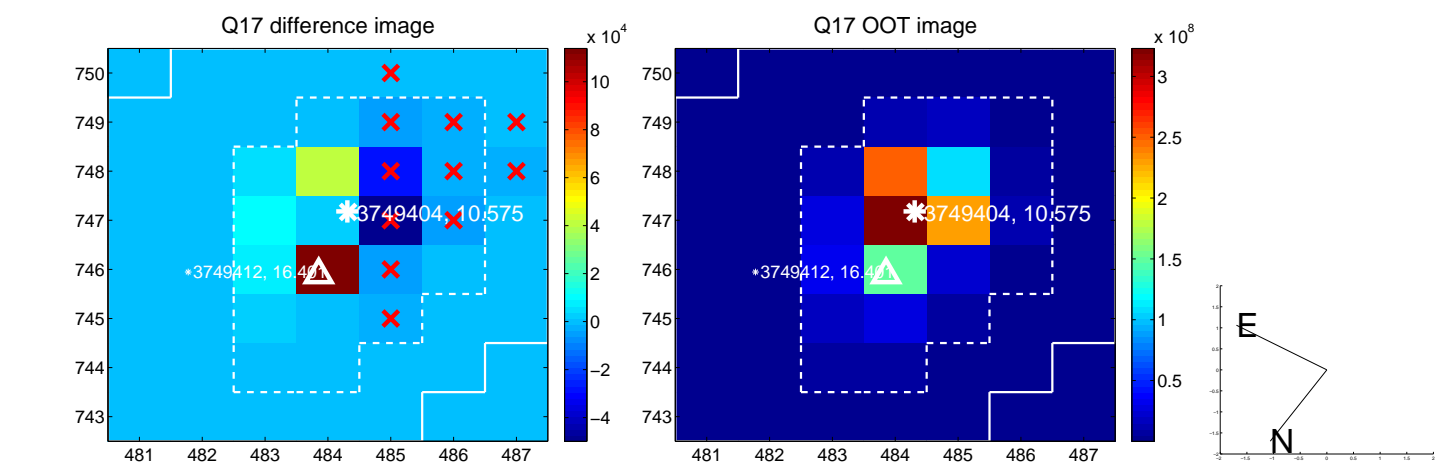
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



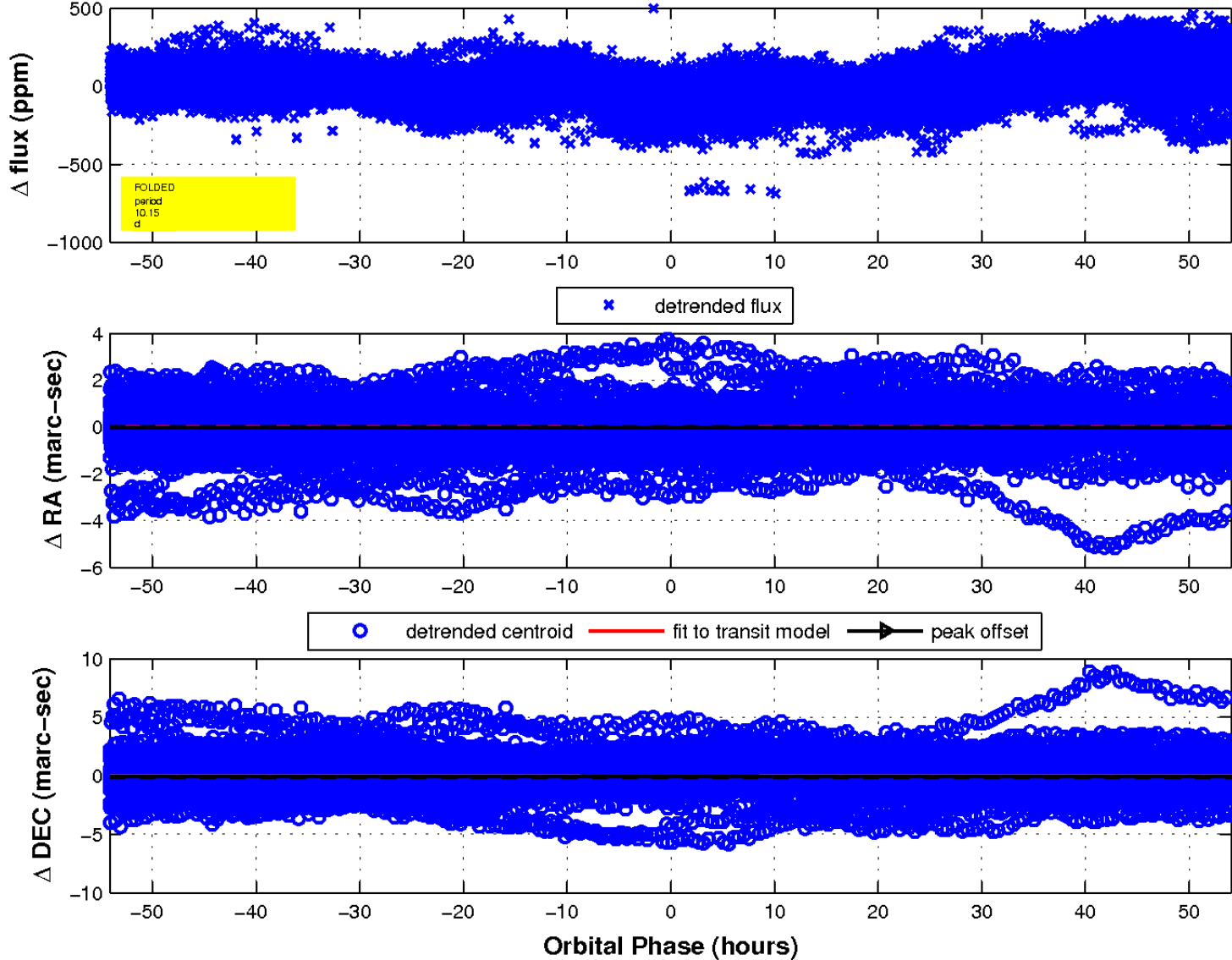
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

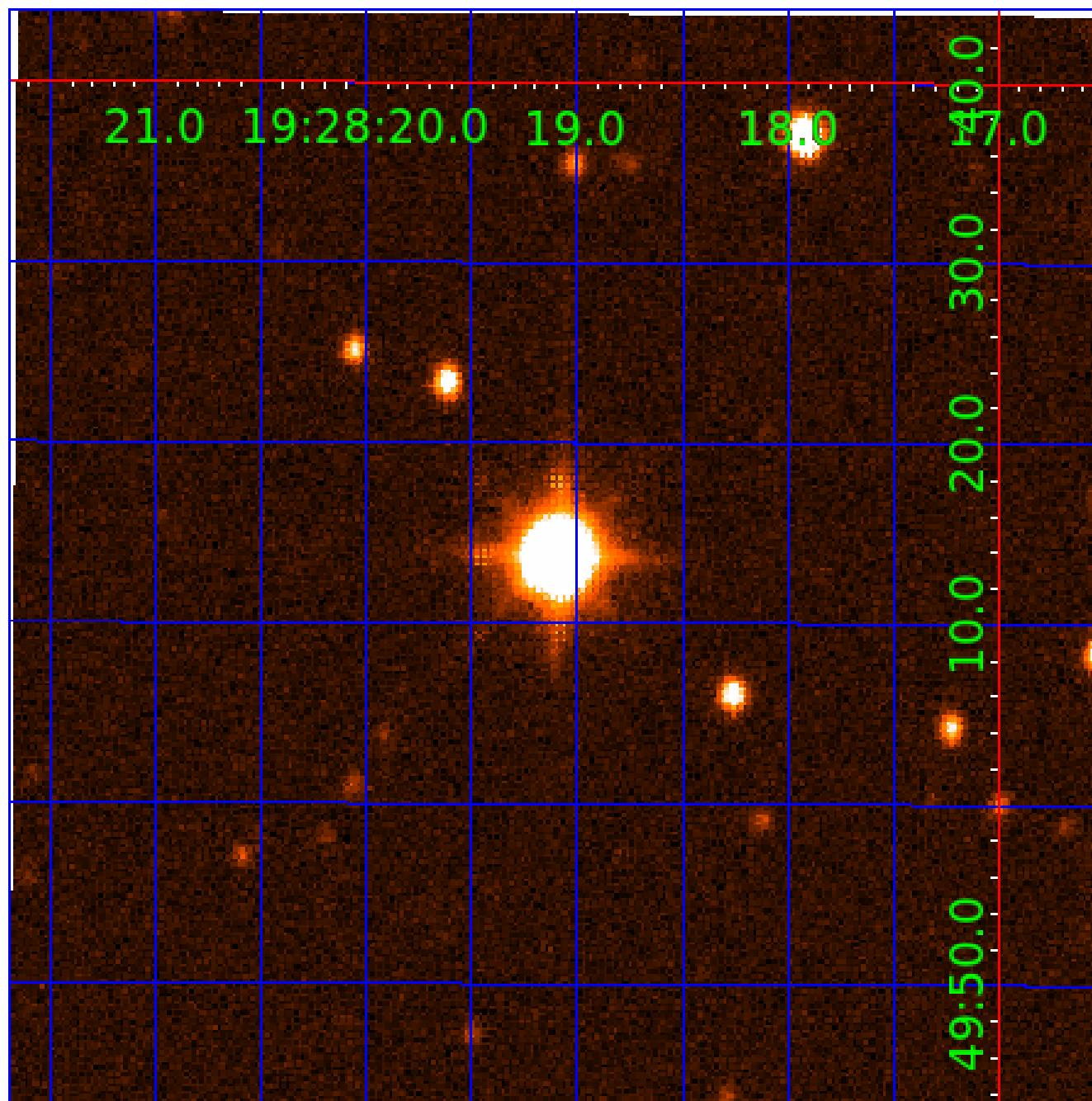


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 003749404

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})
003749404-01	OBS	No	20.306979	148.110993	1877.0	29.426	96.0	188.1	2.36	7363	18.59	473.46
003749404-02	OBS	No	20.306111	150.922369	187.4	19.452	17.4	26.5	2.36	7363	6.10	473.49
003749404-03	OBS	No	10.154727	134.630380	24.6	18.032	9.6	8.3	2.36	7363	1.35	1192.85
003749404-04	OBS	No	20.305583	132.495917	153.7	20.849	12.0	24.4	2.36	7363	5.69	473.50
003749404-05	OBS	No	10.152836	133.628493	29.2	38.770	9.5	5.0	2.36	7363	1.46	1193.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749404-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003749404-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-03	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
003749404-04	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—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.

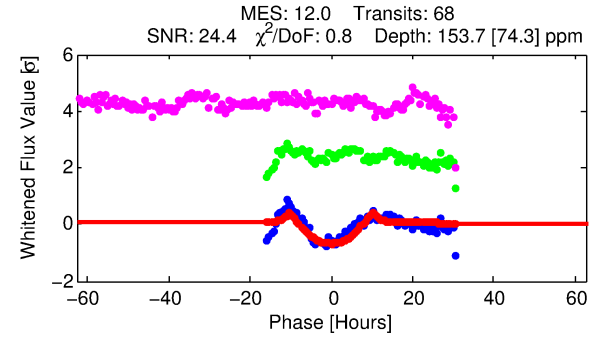
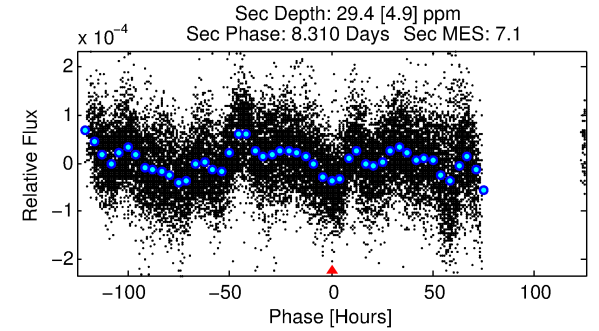
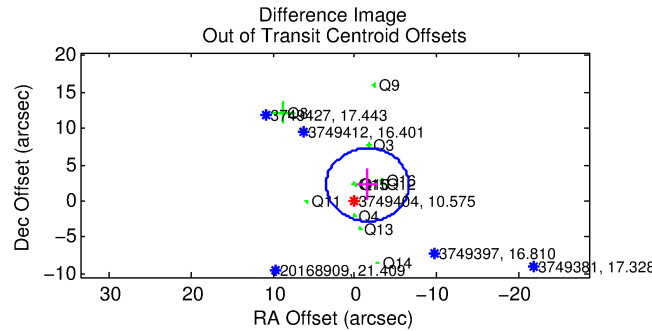
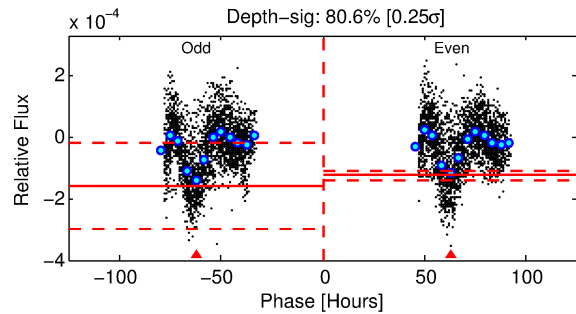
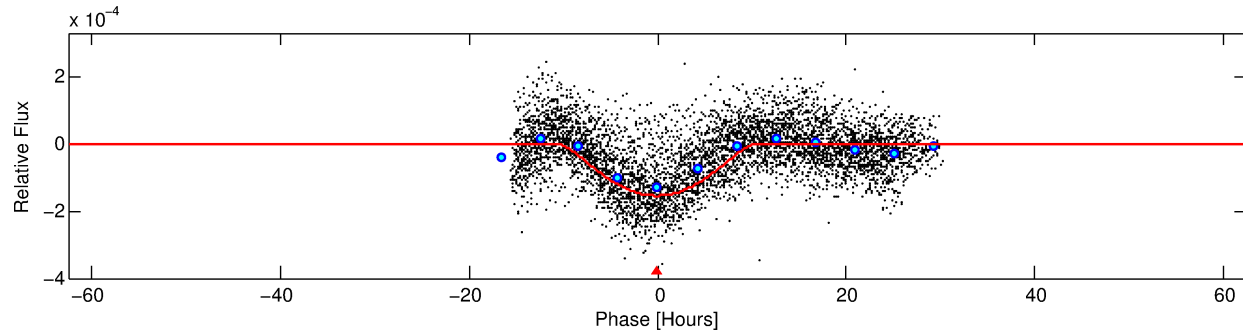
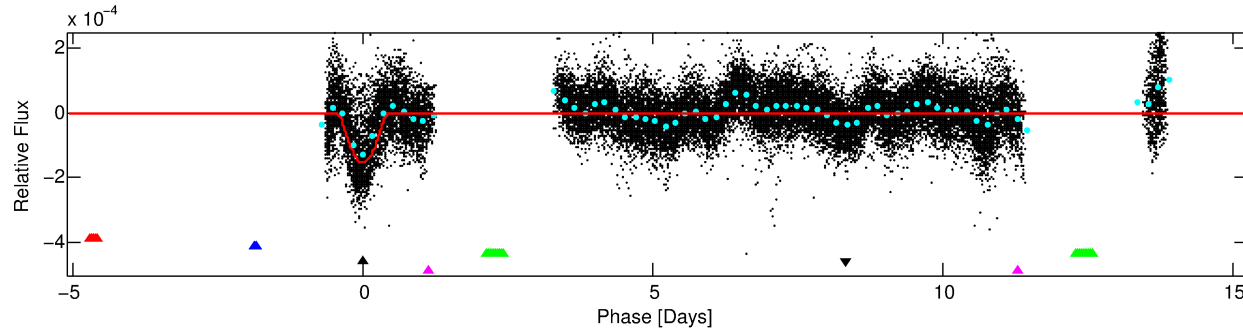
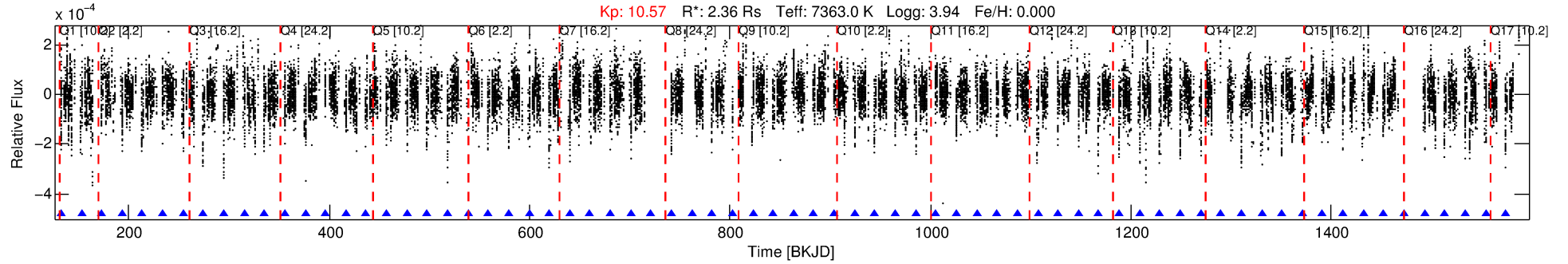
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749404-04

No Significant Match Found

DV One-Page Summary

KIC: 3749404 Candidate: 4 of 5 Period: 20.306 d



DV Fit Results:

Period = 20.30558 [0.00029] d
Epoch = 132.4959 [0.0119] BKJD
Rp/R* = 0.0221 [0.0092]
a/R* = 1.87 [0.14]
b = 1.00 [0.01]
Seff = 473.50 [216.11]
Teq = 1189 [136] K
Rp = 5.69 [3.00] Re
a = 0.1758 [0.0496] AU
Ag = 15.49 [14.63] [0.99 σ]
Teffp = 3648 [789] K [3.07 σ]

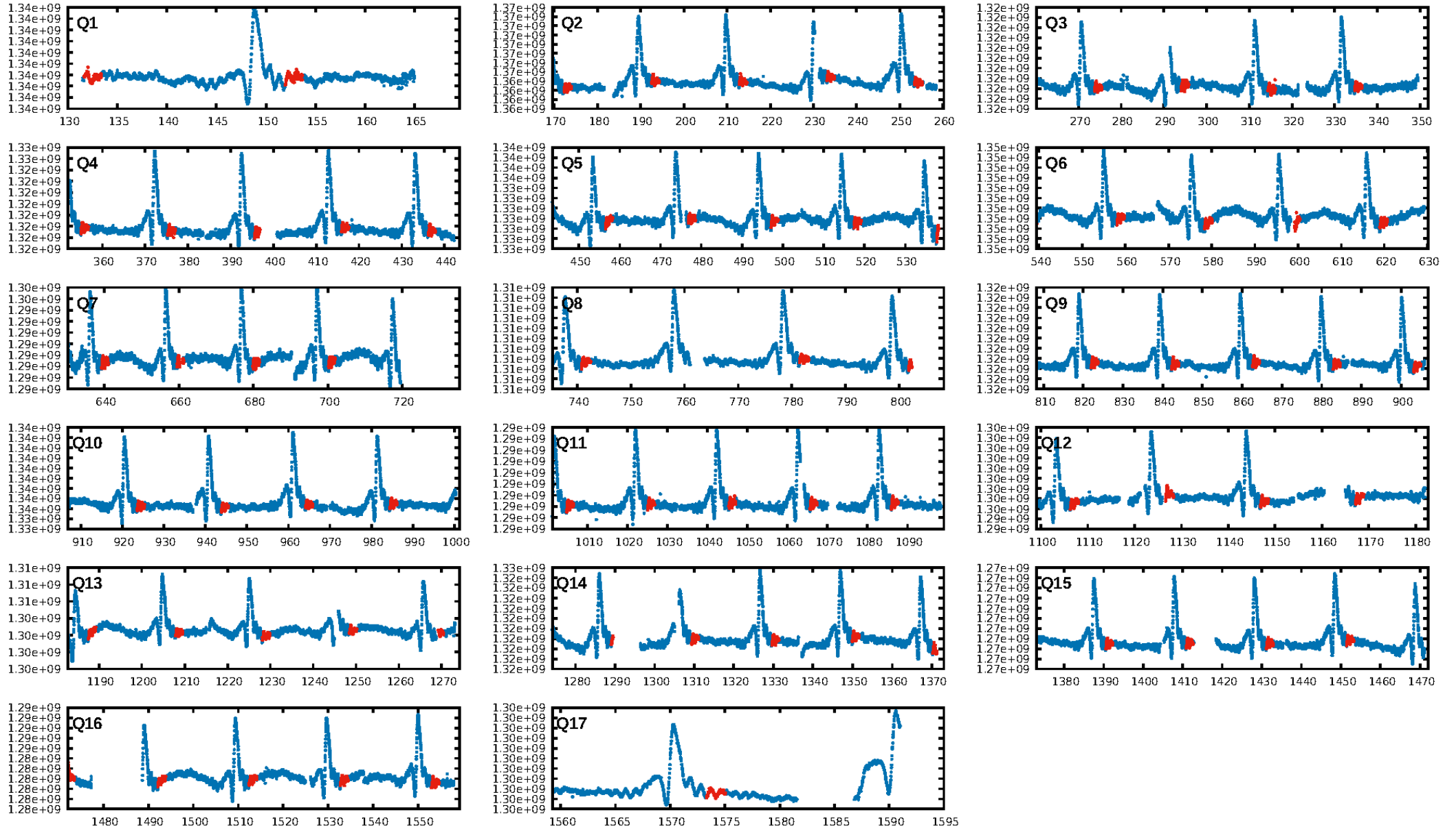
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.84 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.76e-42
RollingBand-fgt: 1.00 [65/65]
GhostDiagnostic-chr: 0.5141
Centroid-sig: 0.0%
Centroid-so: 1.338 arcsec [2.49 σ]
OotOffset-rm: 2.672 arcsec [1.59 σ]
KicOffset-rm: 2.583 arcsec [1.70 σ]
OotOffset-st: 2/3/4/2 [11]
KicOffset-st: 2/3/4/2 [11]
DiffImageQuality-fgm: 0.36 [4/11]
DiffImageOverlap-fno: 0.00 [0/17]

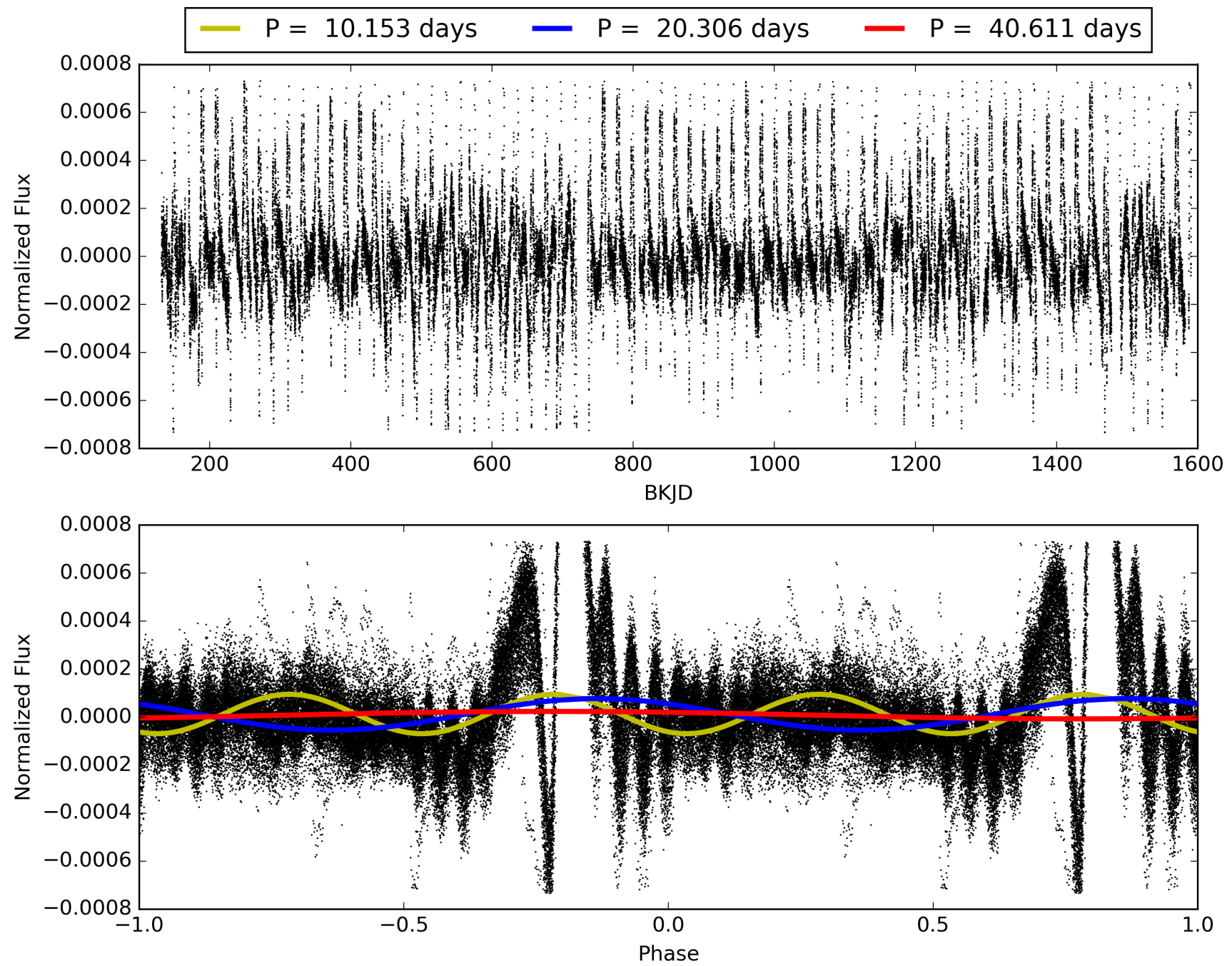
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:04:16 Z

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

TCE 003749404-04, PDC Light Curves

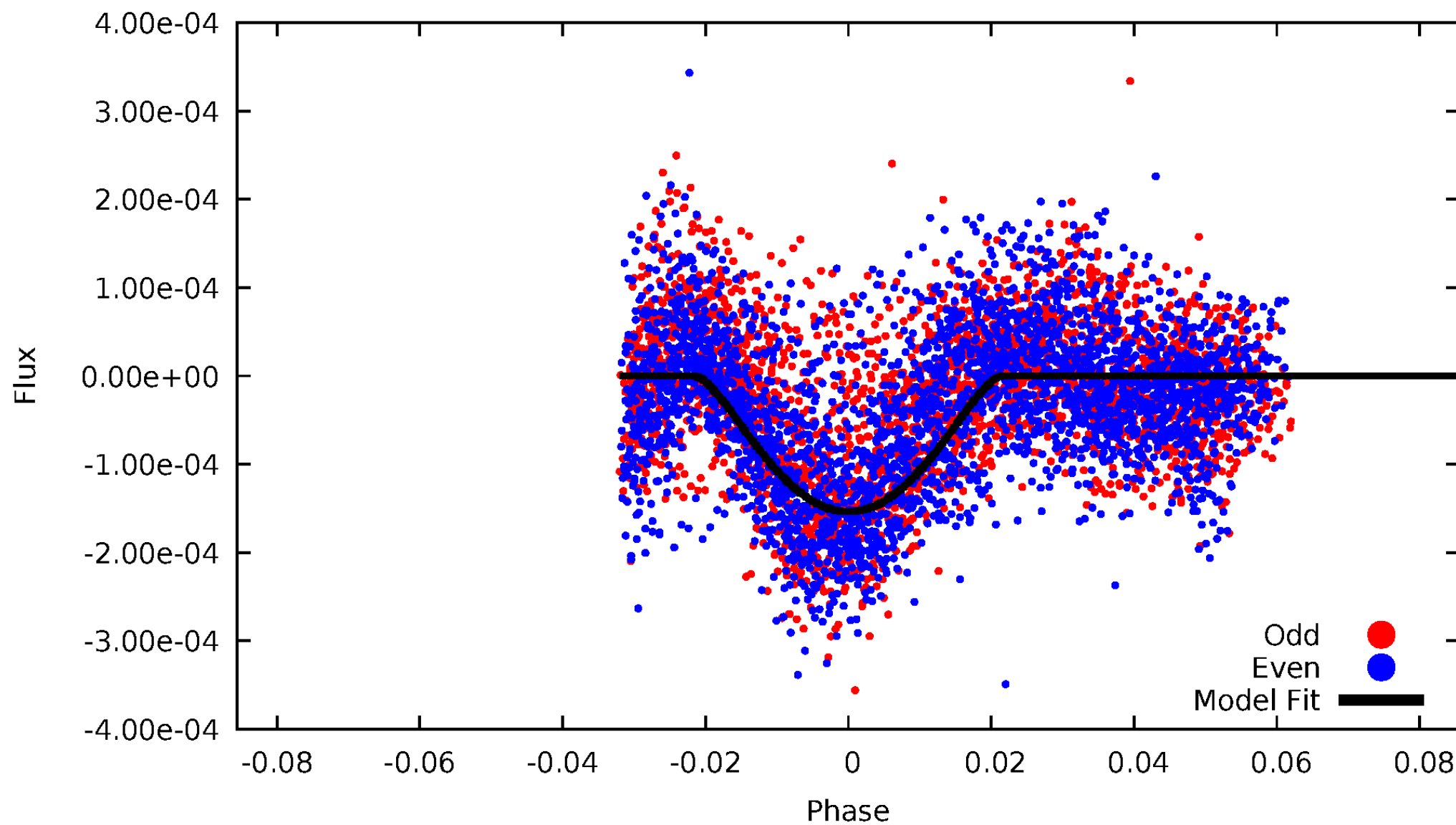


TCE 003749404-04



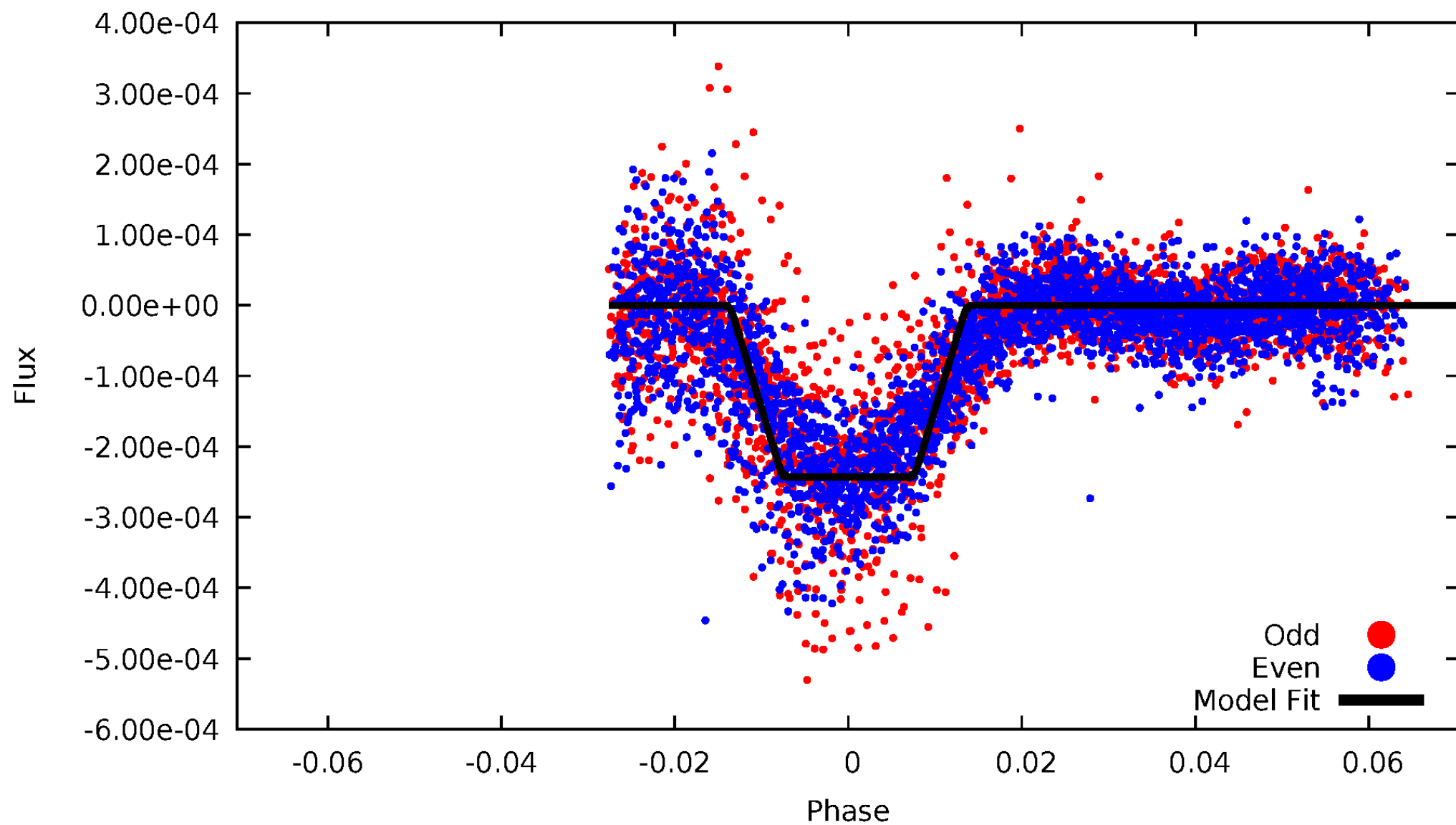
DV Odd/Even

TCE 003749404-04



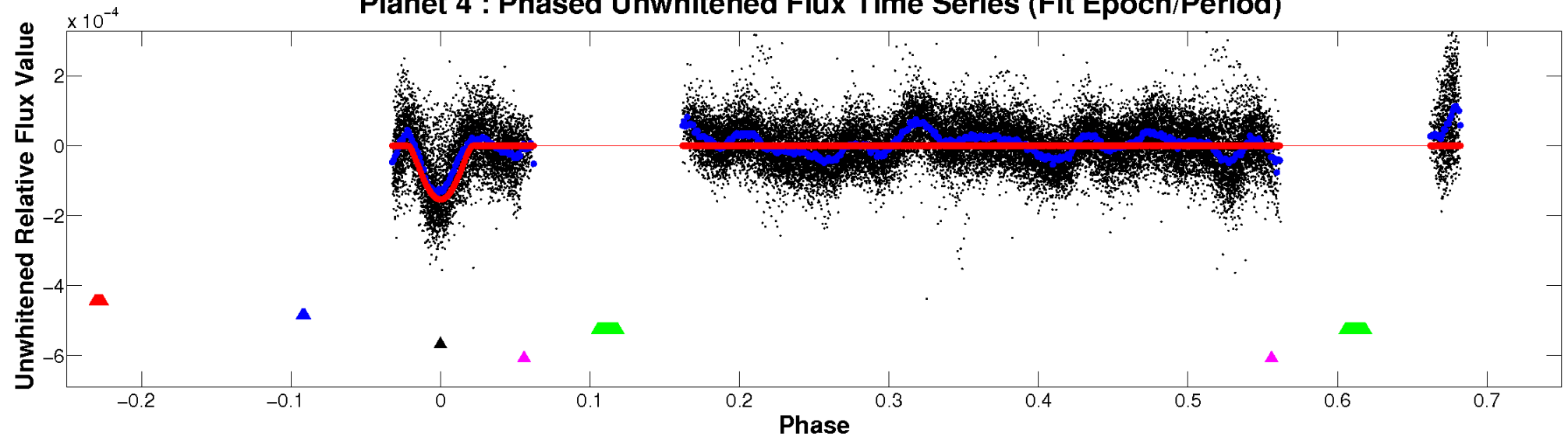
ALT Odd/Even

TCE 003749404-04

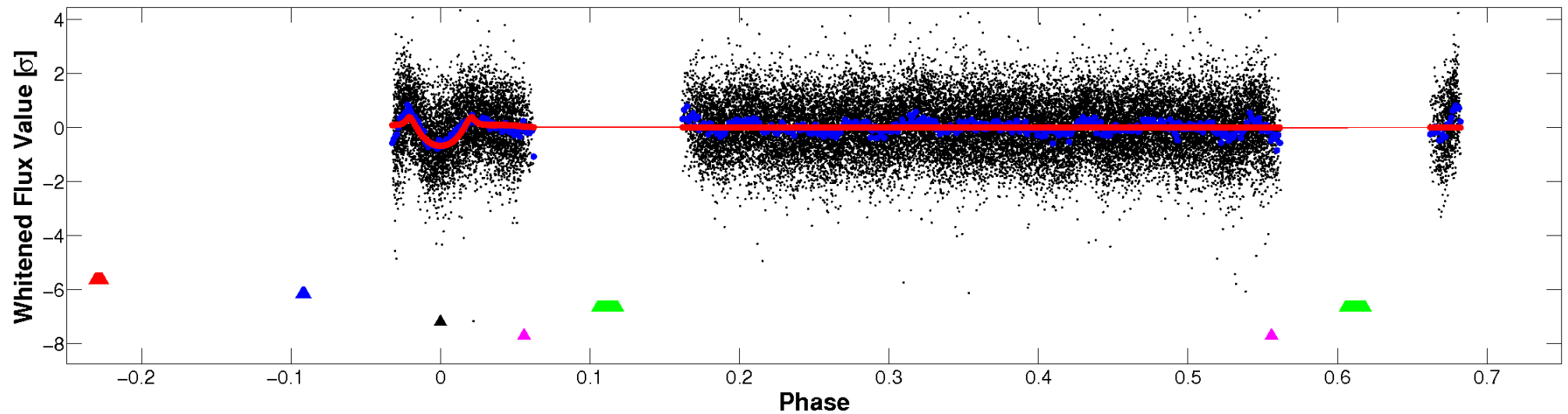


Non-Whitened Vs. Whitened Light Curve

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

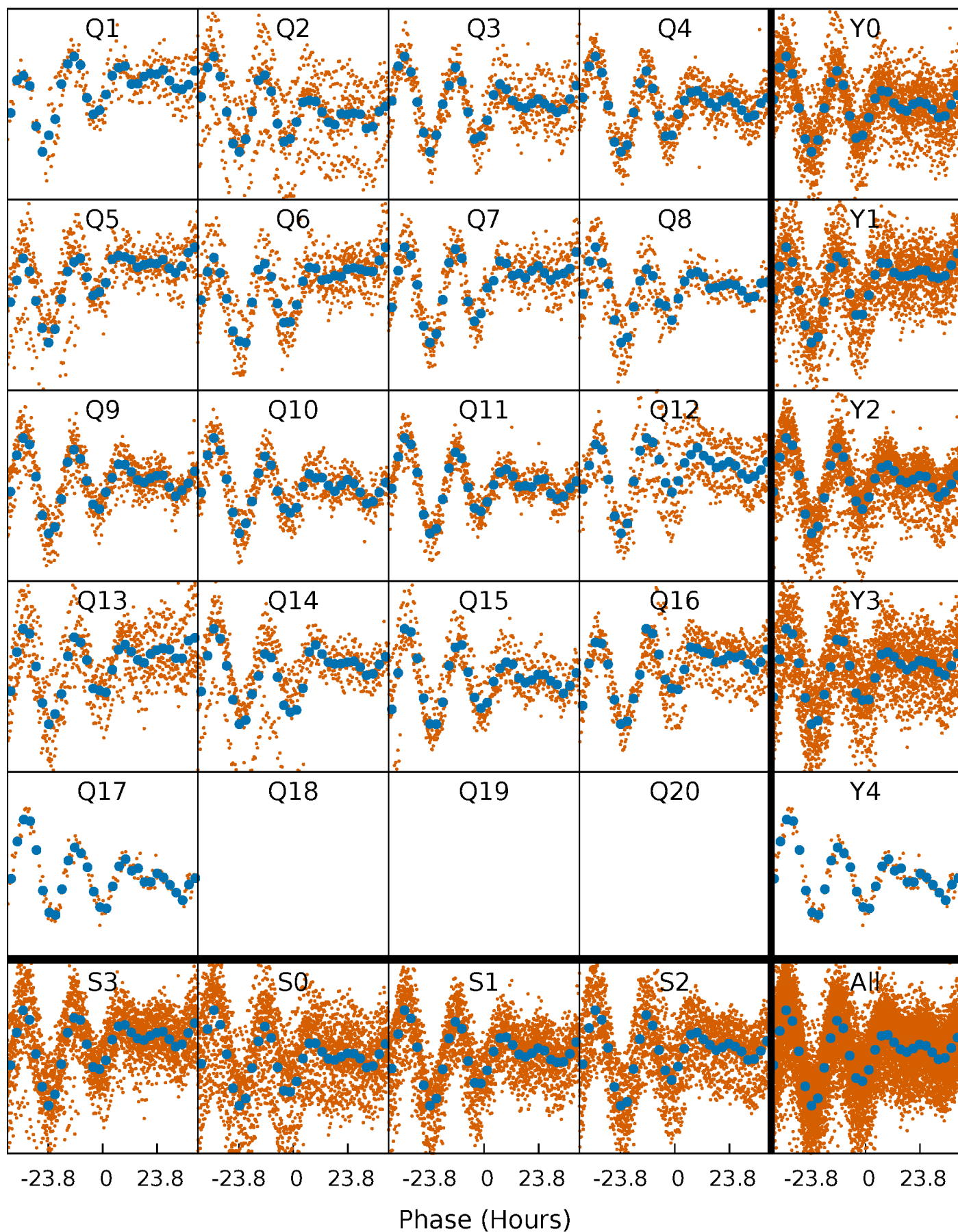


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



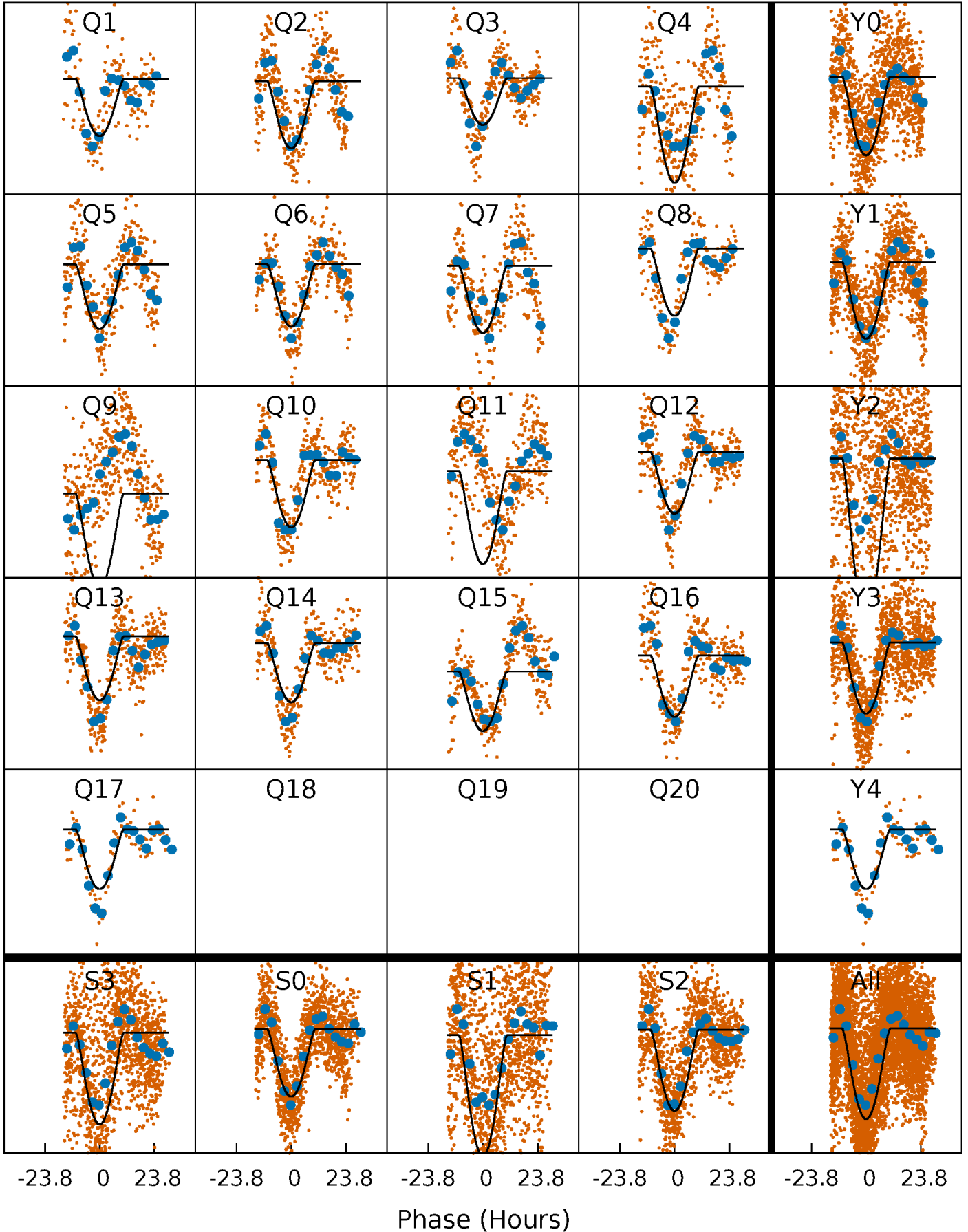
PDC Quarter-Phased Transit Curves

TCE 003749404-04 P= 20.305583 Days $T_0=132.495917$ (BKJD)



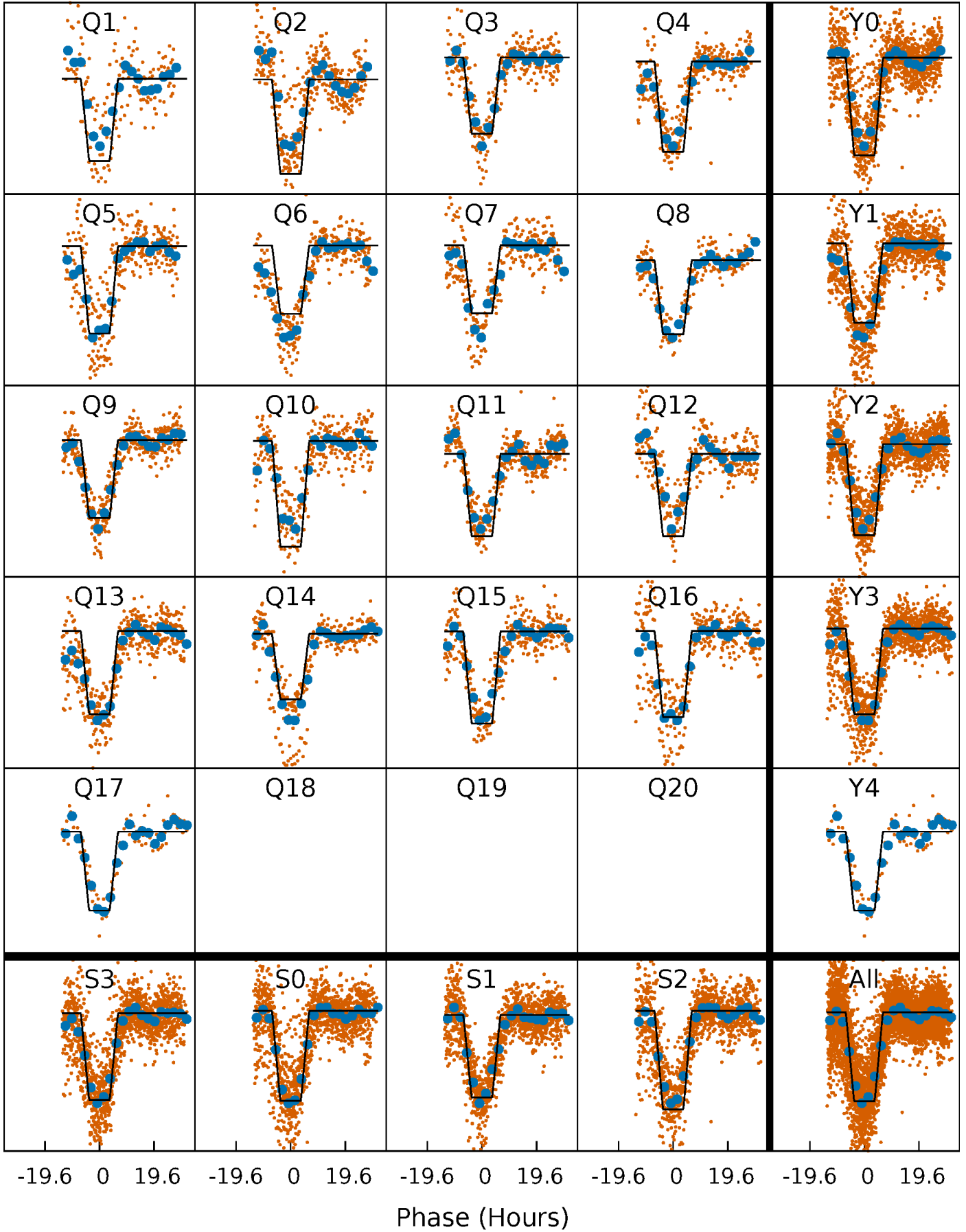
DV Quarter-Phased Transit Curves

TCE 003749404-04 P= 20.305583 Days $T_0=132.495917$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

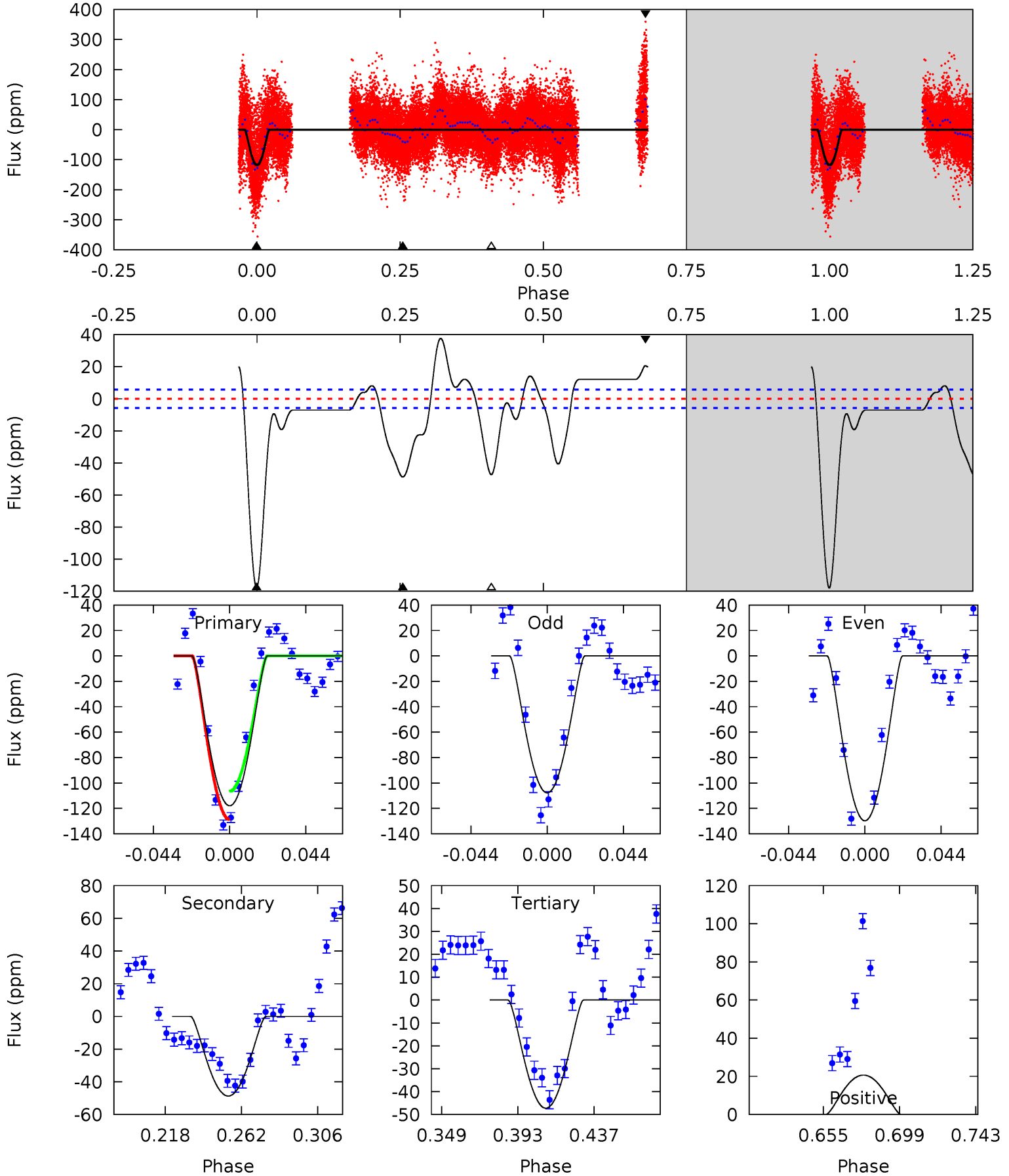
TCE 003749404-04 $P = 20.306753$ Days $T_0 = 132.362757$ (BKJD)



DV Model-Shift Uniqueness Test

003749404-04, P = 20.305583 Days, E = 112.190334 Days

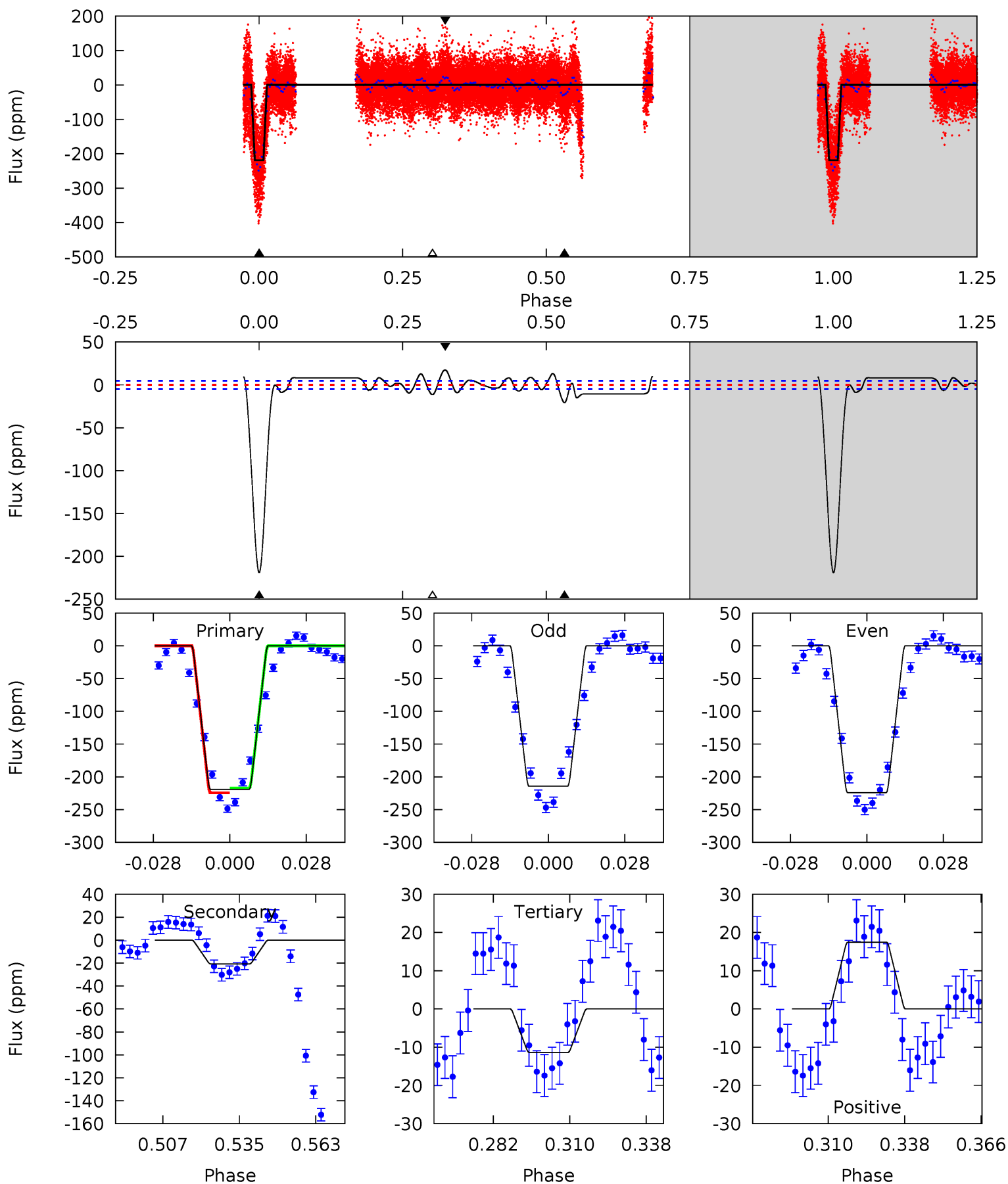
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
97.1	40.1	38.9	17.0	4.74	2.02	16.1	58.2	80.1	1.21	23.1	9.19	0.88	0.24	7.34



Alt Model-Shift Uniqueness Test

003749404-04, P = 20.306753 Days, E = 112.056004 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
223.9	21.2	11.6	17.8	4.82	2.20	6.38	212.3	206.1	9.57	3.37	5.01	1.06	0.07	2.80



Stellar Parameters For KIC 003749404

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7363^{+228}_{-330}	$3.938^{+0.234}_{-0.156}$	$0.000^{+0.200}_{-0.300}$	$2.358^{+0.576}_{-0.768}$	$1.757^{+0.184}_{-0.342}$	$0.189^{+0.270}_{-0.085}$
	+3%/-4%	+6%/-4%	+inf%/-inf%	+24%/-33%	+10%/-19%	+143%/-45%
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 003749404-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-49 ± 1	$5.48^{+2.60}_{-2.21}$	1640^{+139}_{-130}	4288^{+1013}_{-513}	27^{+50}_{-14}
Alt.	-21 ± 1	$4.02^{+2.38}_{-2.04}$	1639^{+131}_{-128}	4109^{+1282}_{-577}	21^{+67}_{-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

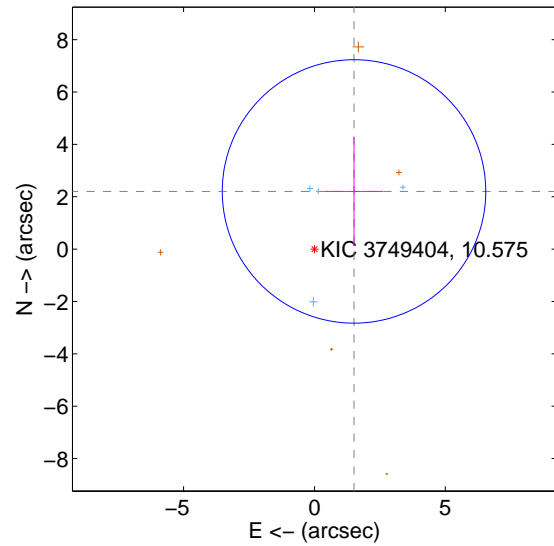
Supplemental centroid analysis for 003749404-04. **Kepler magnitude: 10.57.** Transit SNR 24.42

There are 4 quarters with good PRF difference image offsets

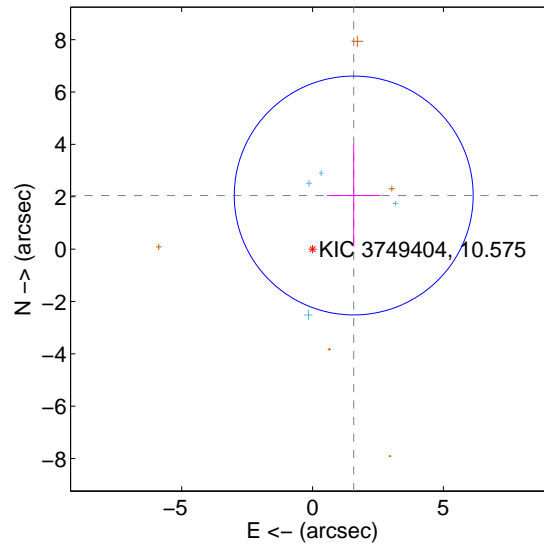
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.672 ± 1.678	1.59	-1.512 ± 1.106	2.204 ± 2.076
PRF-fit source offset from KIC position	2.583 ± 1.521	1.70	-1.574 ± 1.019	2.048 ± 1.944
photometric centroid source offset	1.34 ± 0.54	2.49	-0.78 ± 0.30	1.09 ± 0.62

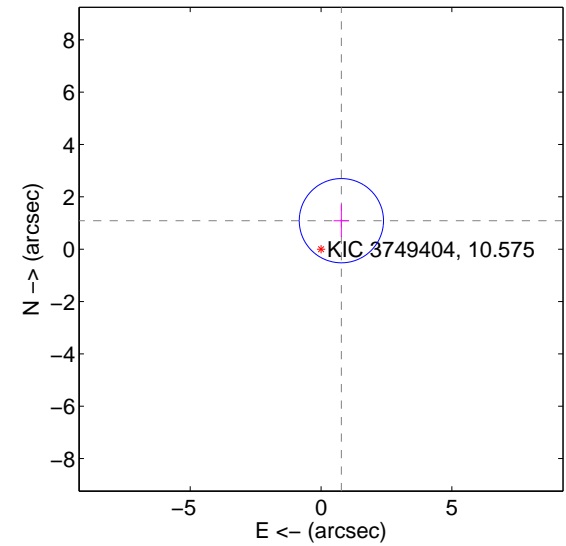
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

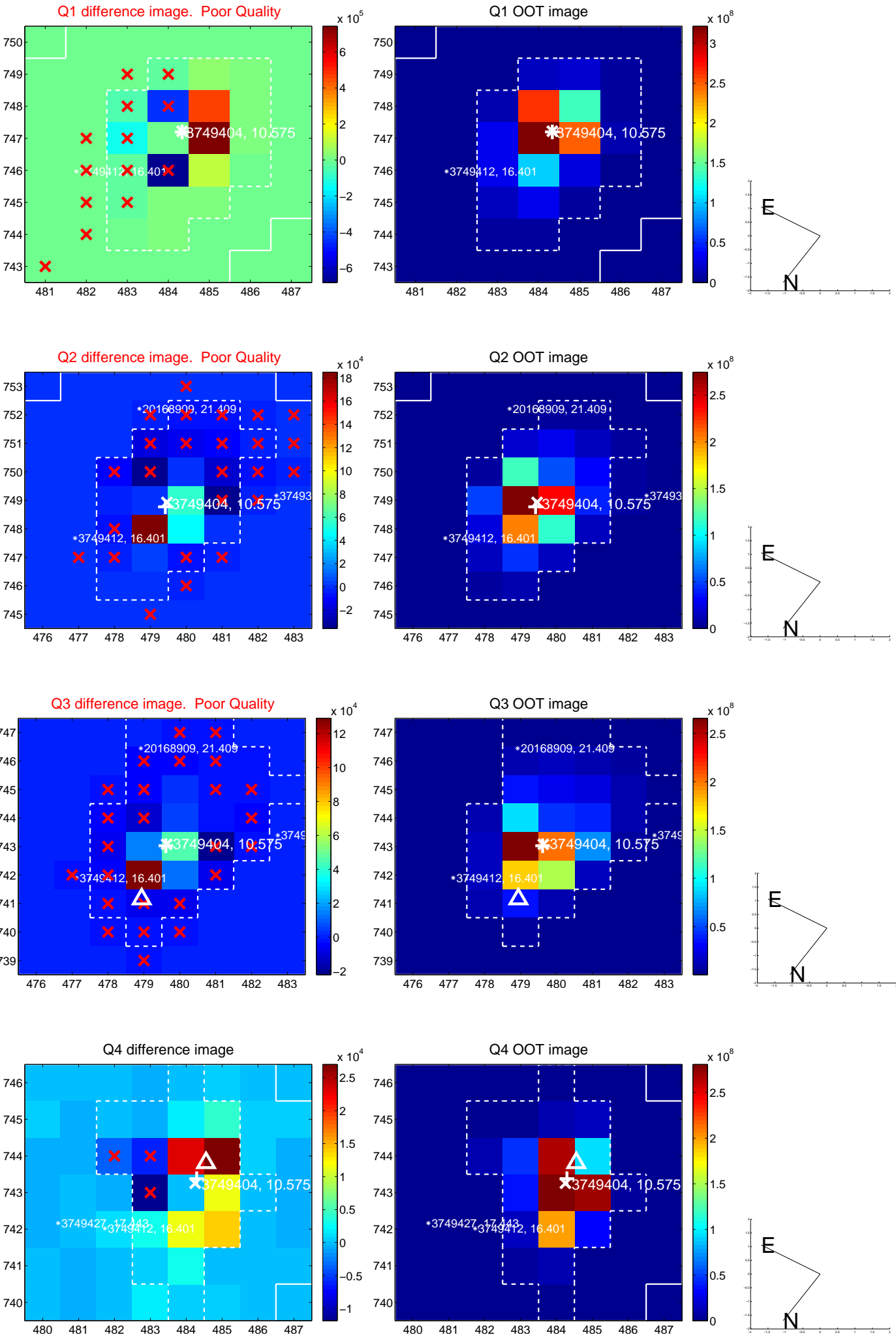


offset from photometric centroids

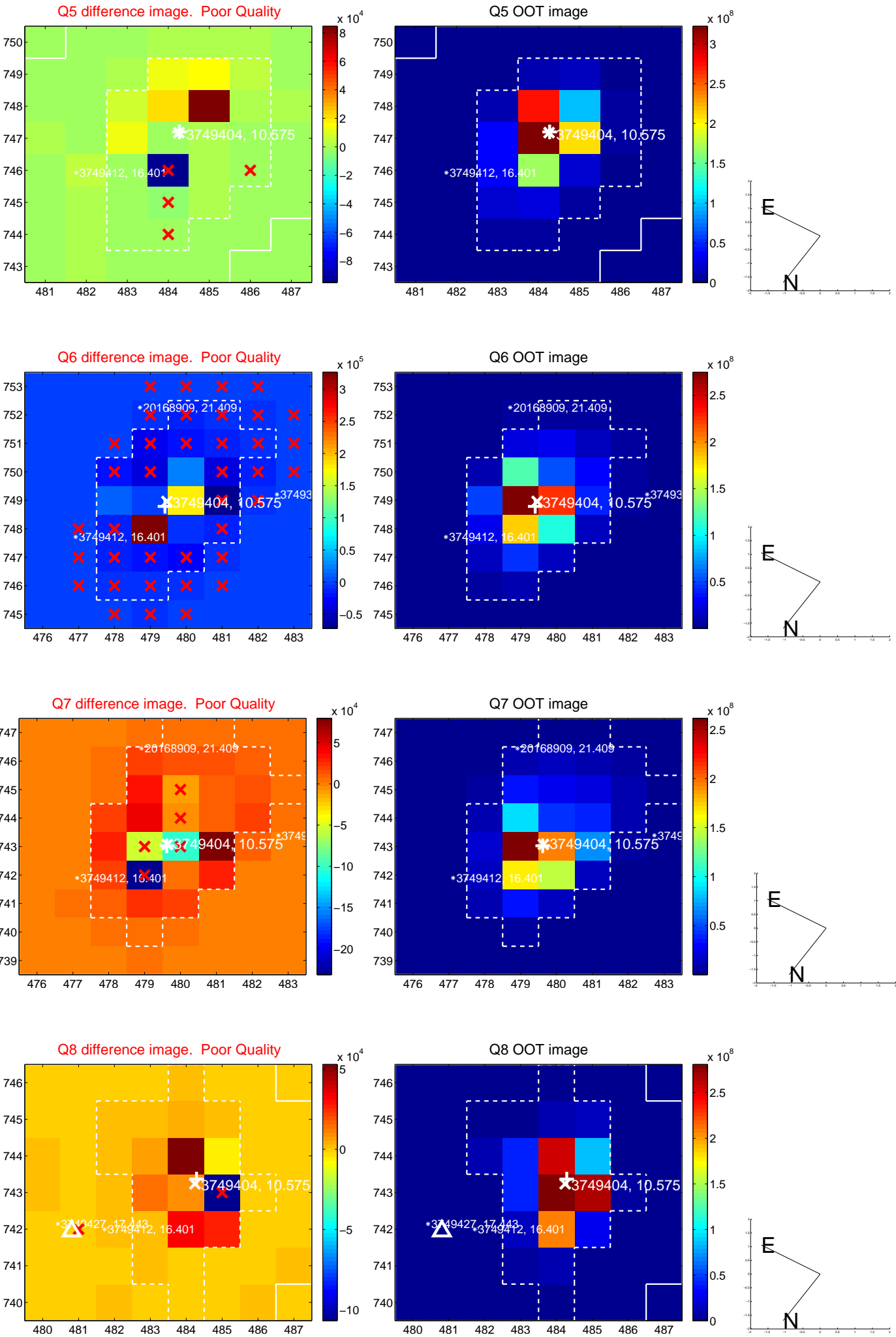


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

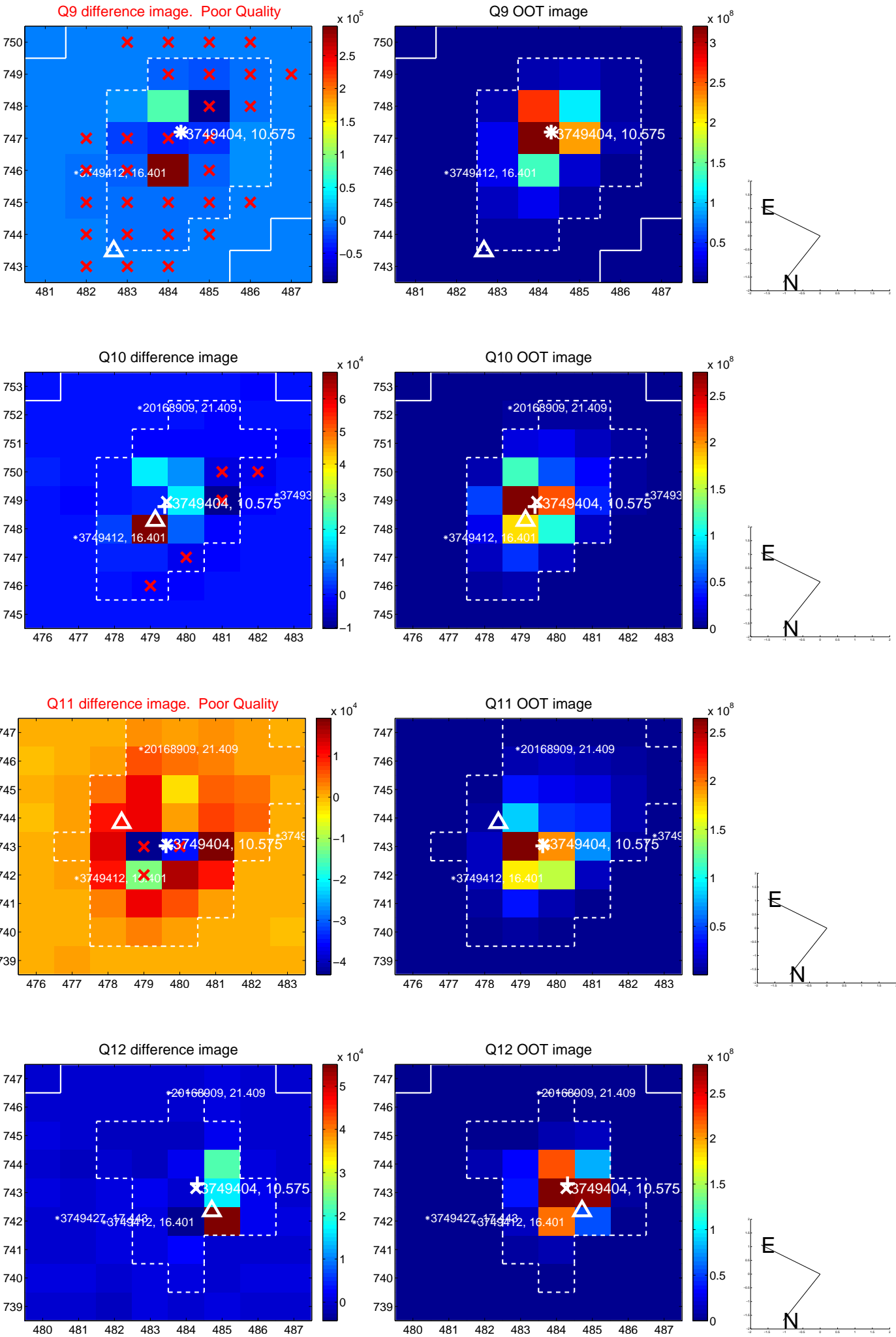
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



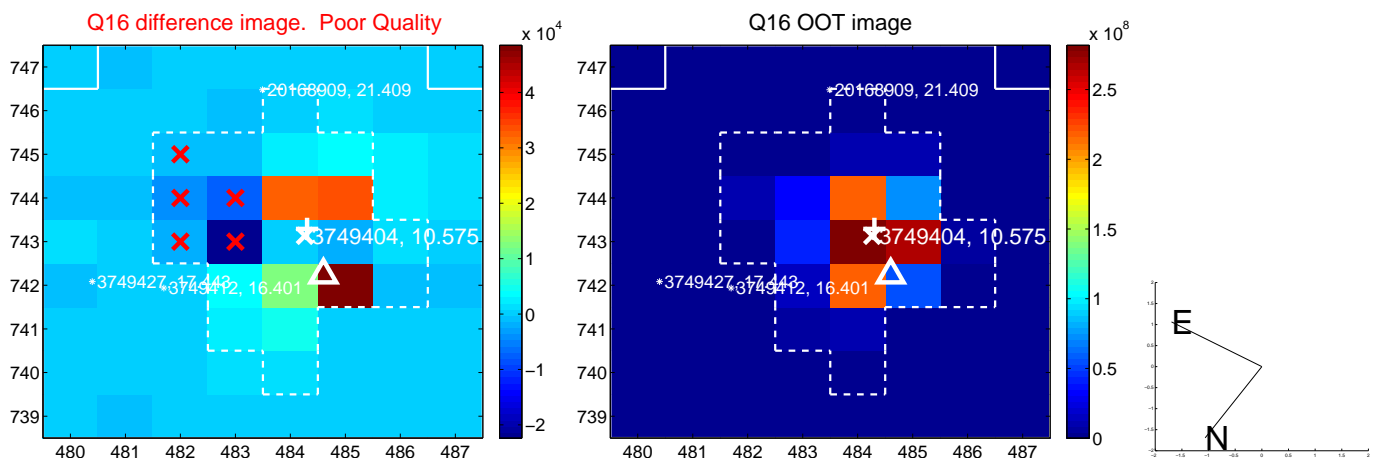
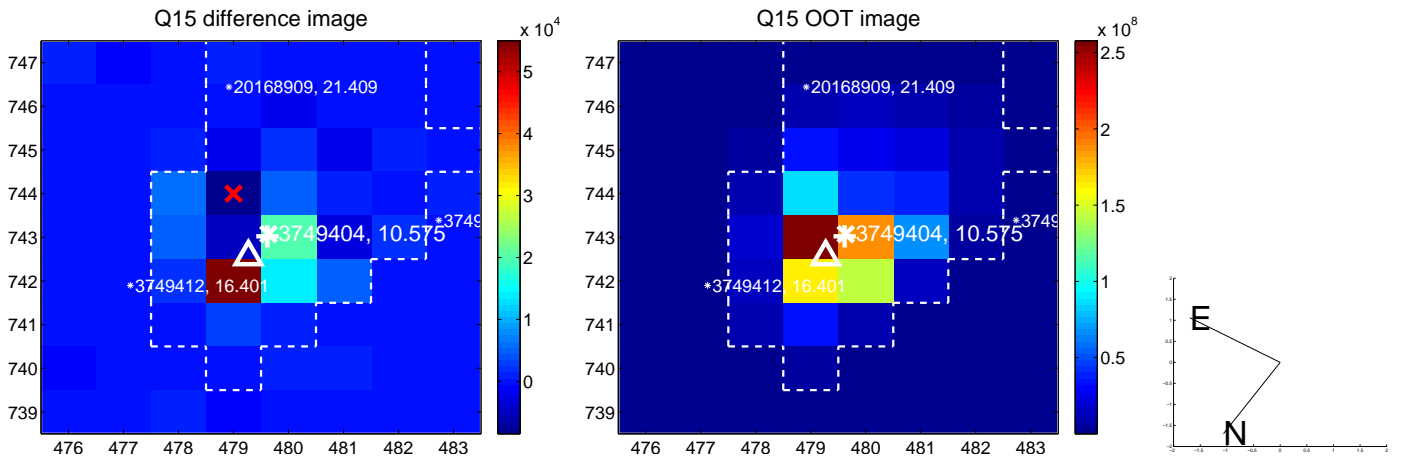
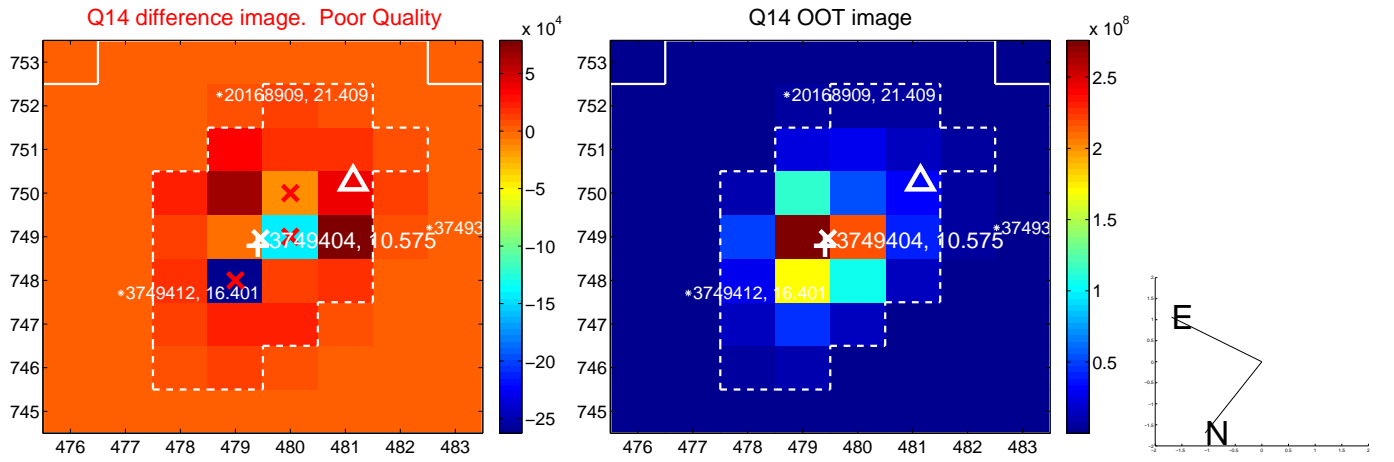
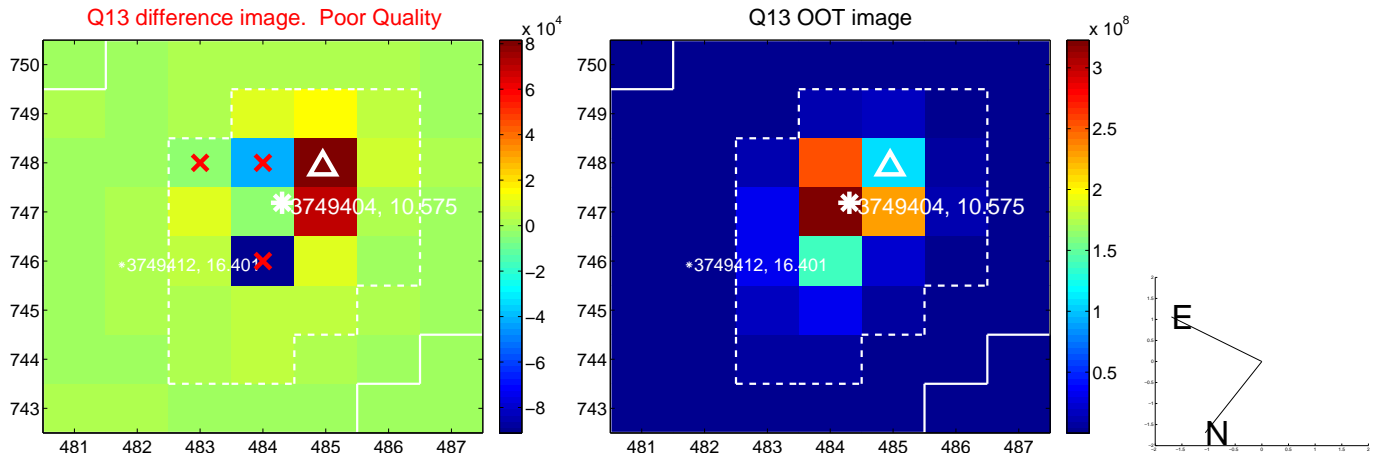
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



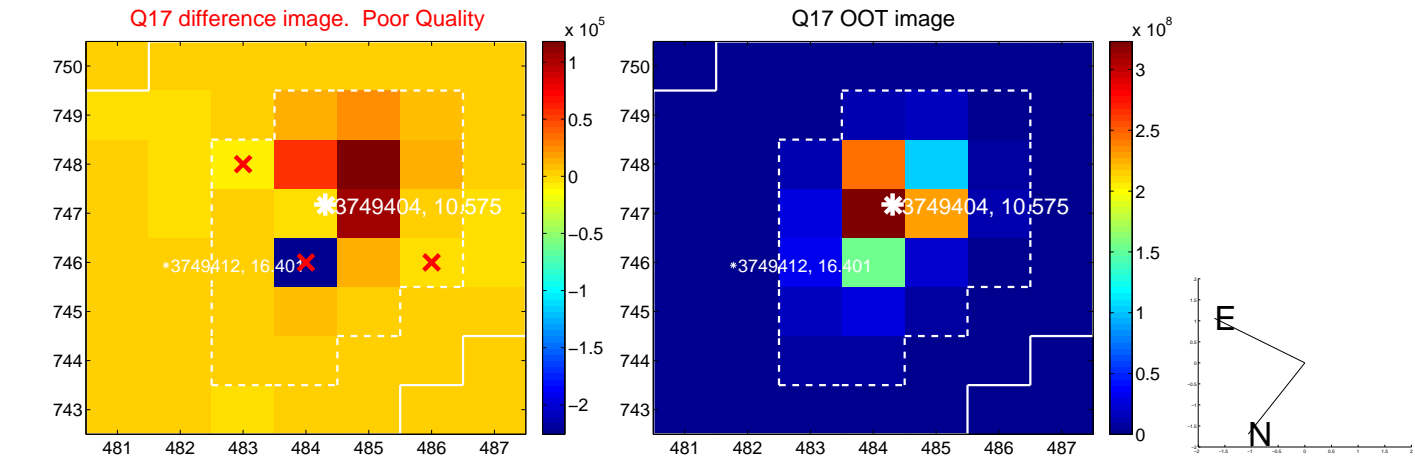
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



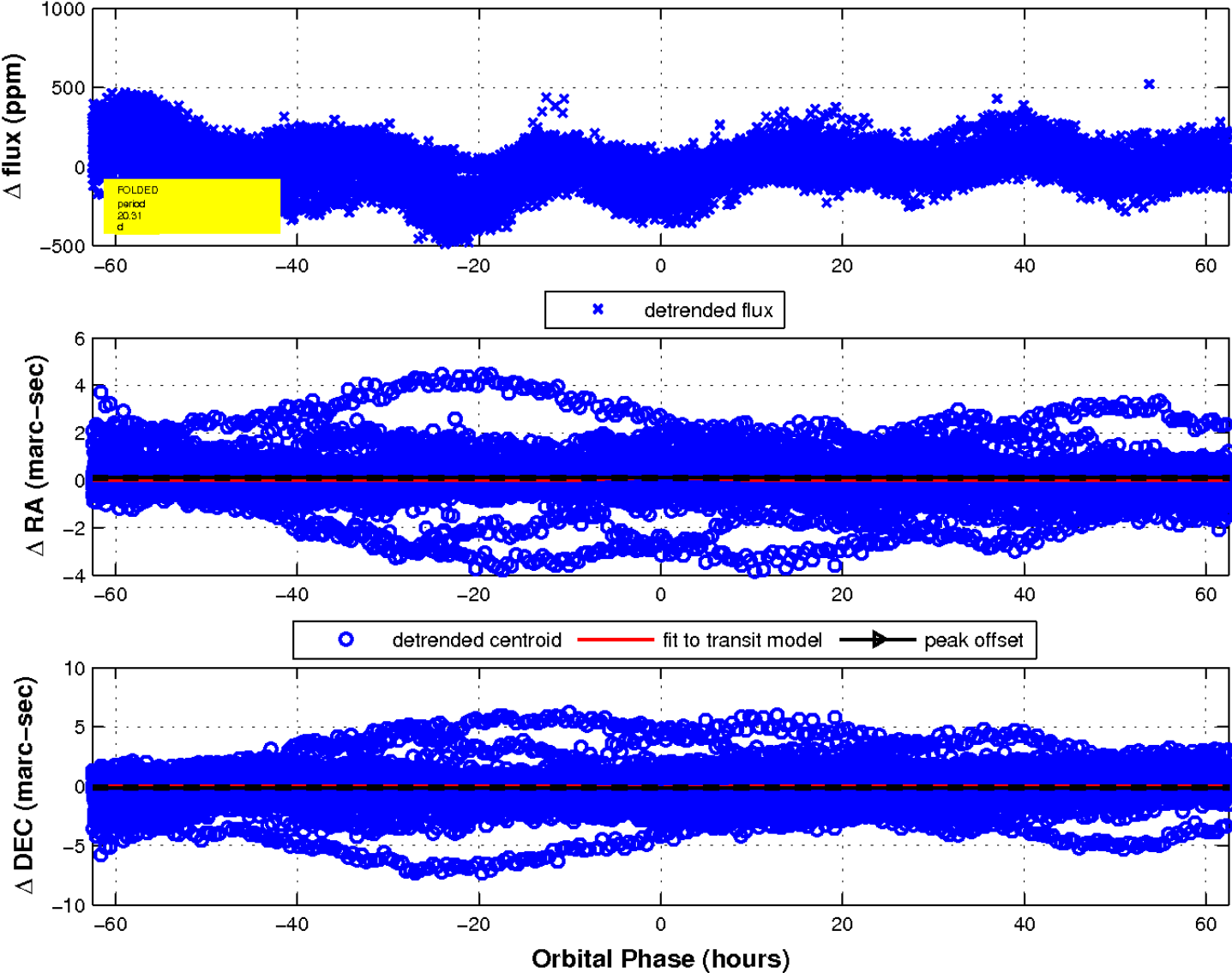
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

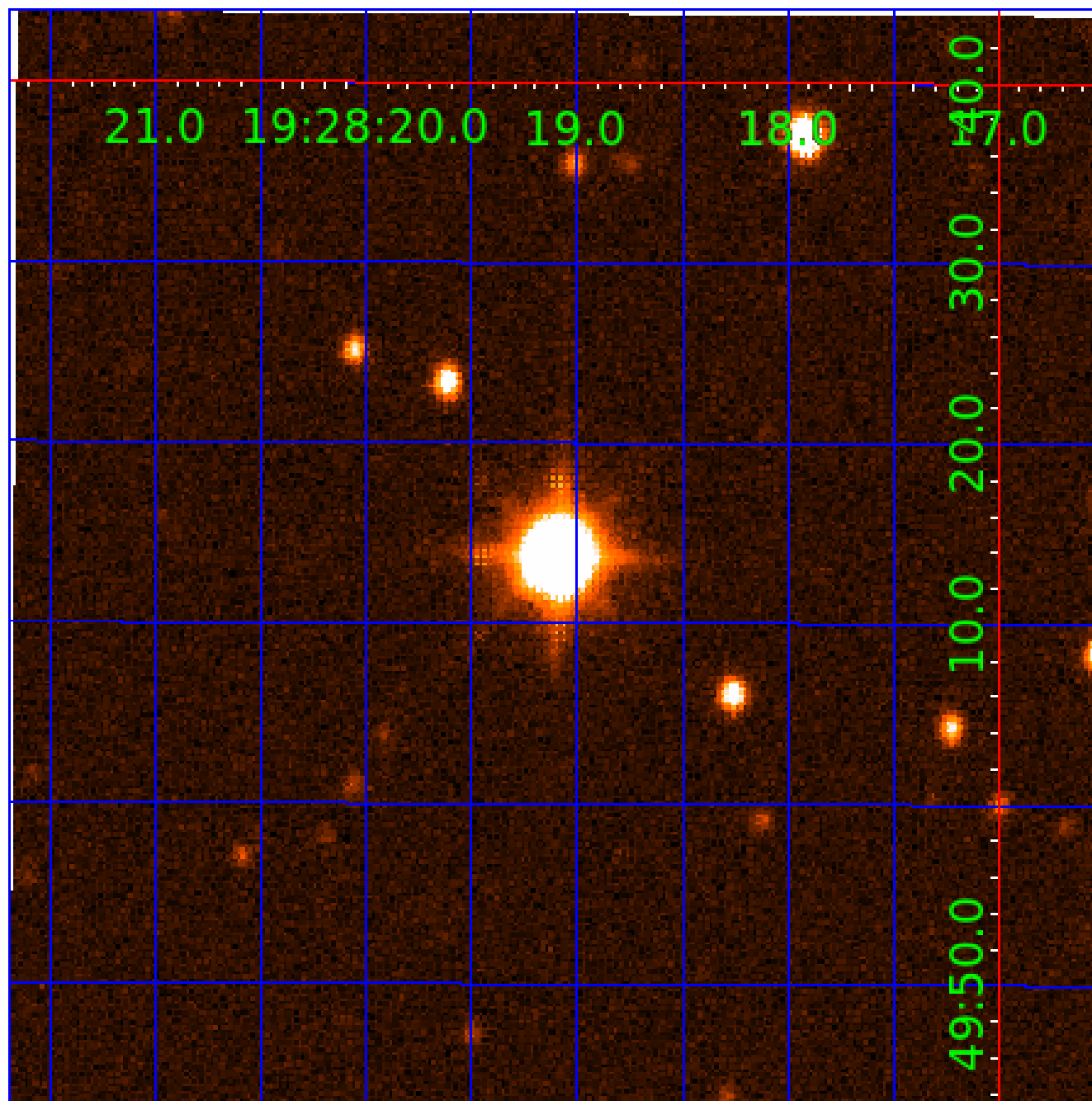


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 003749404

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})
003749404-01	OBS	No	20.306979	148.110993	1877.0	29.426	96.0	188.1	2.36	7363	18.59	473.46
003749404-02	OBS	No	20.306111	150.922369	187.4	19.452	17.4	26.5	2.36	7363	6.10	473.49
003749404-03	OBS	No	10.154727	134.630380	24.6	18.032	9.6	8.3	2.36	7363	1.35	1192.85
003749404-04	OBS	No	20.305583	132.495917	153.7	20.849	12.0	24.4	2.36	7363	5.69	473.50
003749404-05	OBS	No	10.152836	133.628493	29.2	38.770	9.5	5.0	2.36	7363	1.46	1193.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749404-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003749404-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-03	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED—HALO_GHOST
003749404-04	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
003749404-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—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.

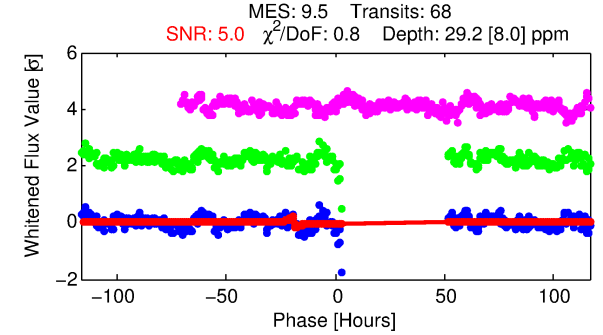
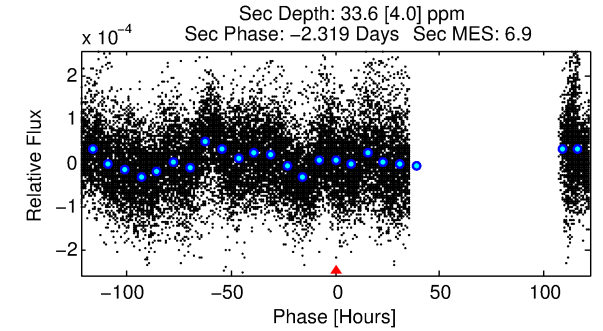
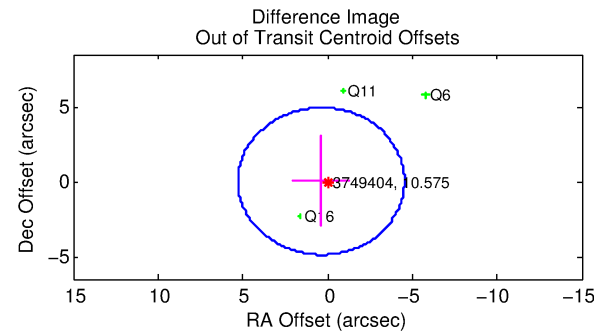
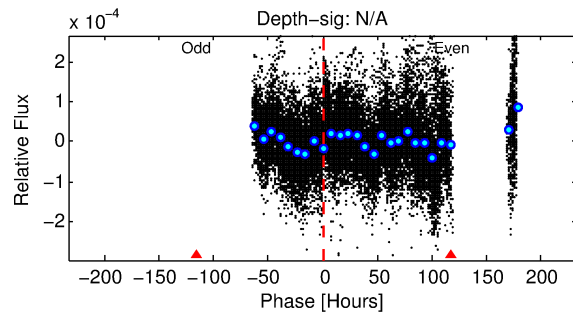
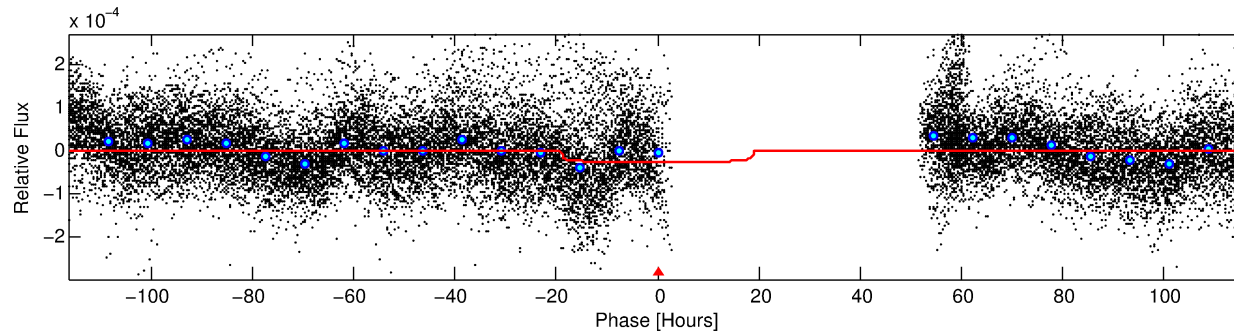
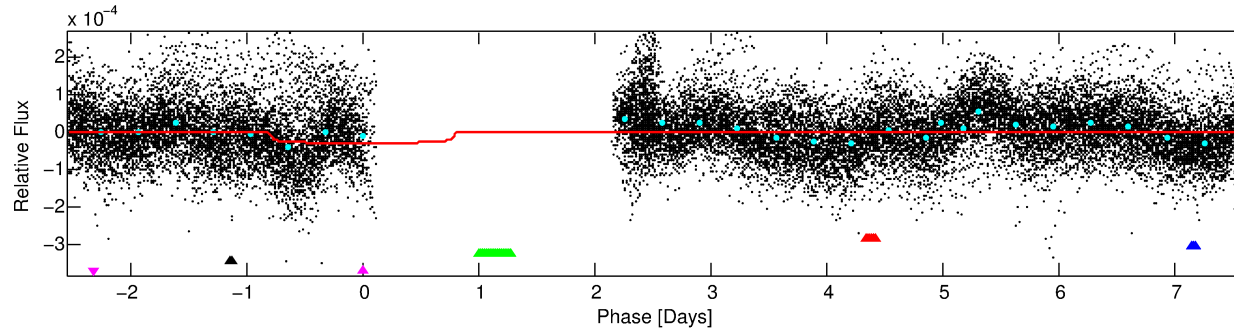
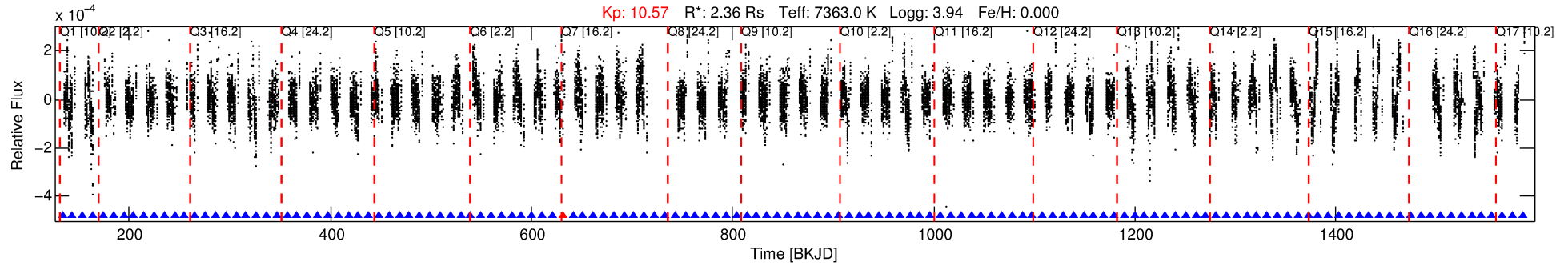
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749404-05

No Significant Match Found

DV One-Page Summary

KIC: 3749404 Candidate: 5 of 5 Period: 10.153 d



DV Fit Results:

Period = 10.15284 [0.00022] d
Epoch = 133.6285 [0.3482] BKJD
 $R_p/R^* = 0.0057$ [0.0007]
 $a/R^* = 1.34$ [0.32]
 $b = 0.88$ [0.26]
 $\text{Seff} = 1193.14$ [544.57]
 $T_{\text{eq}} = 1499$ [171] K
 $R_p = 1.46$ [0.51] R_e
 $a = 0.1108$ [0.0312] AU
 $A_g = 106.72$ [54.12] [1.95σ]
 $T_{\text{eff}} = 7447$ [626] K [9.16σ]

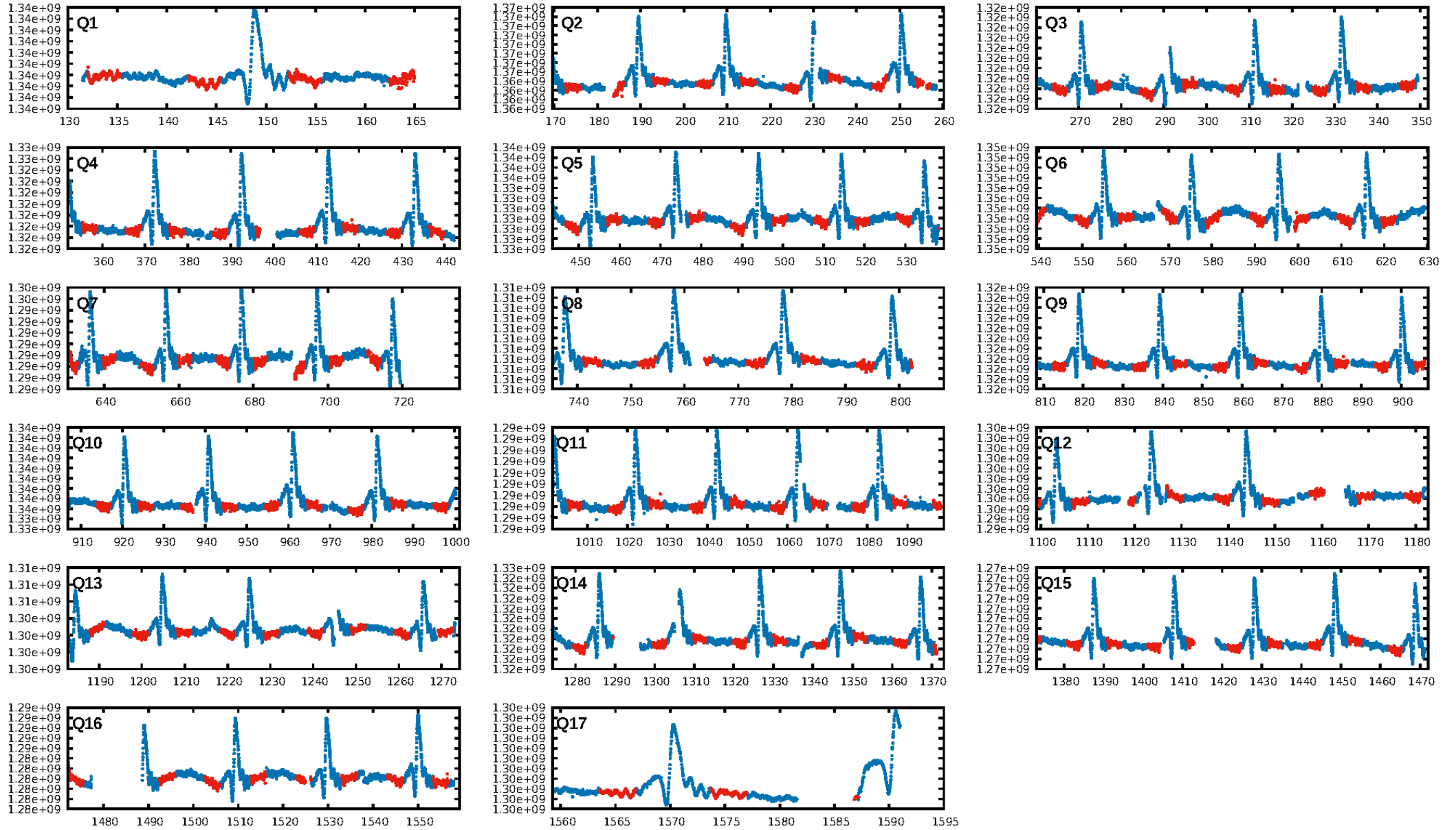
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 66.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.37e-25
RollingBand-fgt: 0.98 [64/65]
GhostDiagnostic-chr: 4.447
Centroid-sig: 0.7%
Centroid-so: 2.304 arcsec [1.72σ]
OotOffset-rm: 0.376 arcsec [0.23σ]
KicOffset-rm: 0.608 arcsec [0.21σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/17]

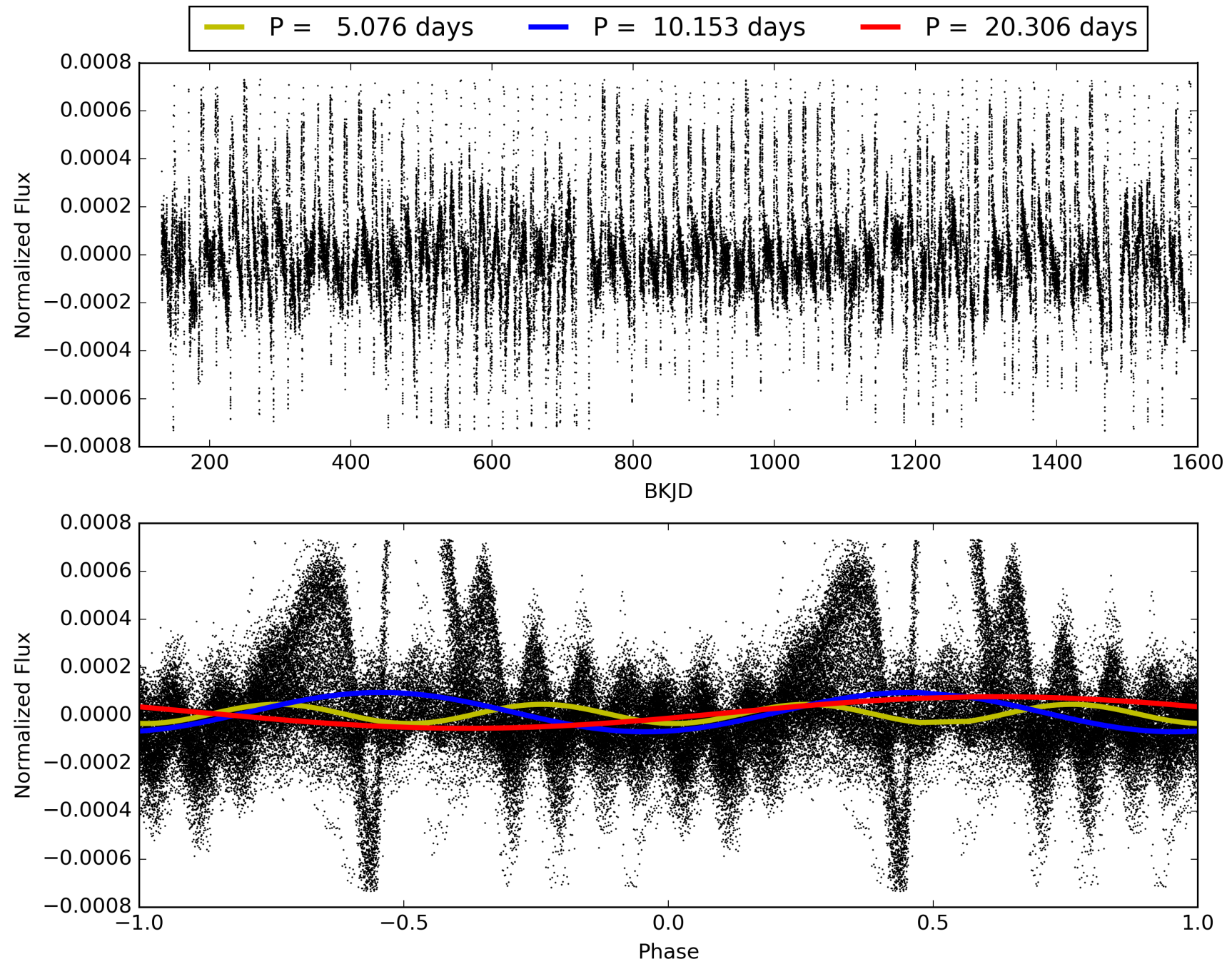
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:04:24 Z

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

TCE 003749404-05, PDC Light Curves

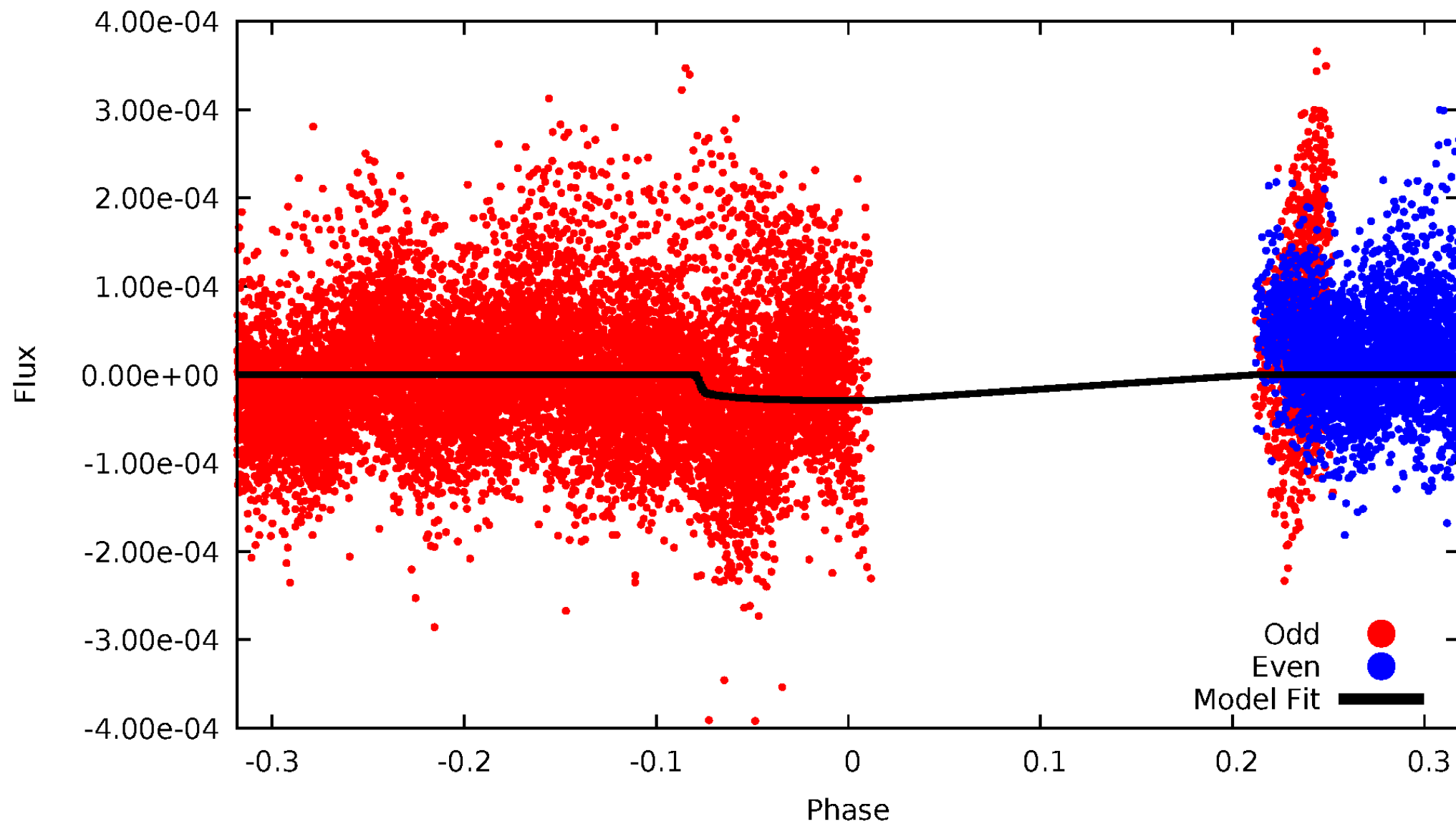


TCE 003749404-05



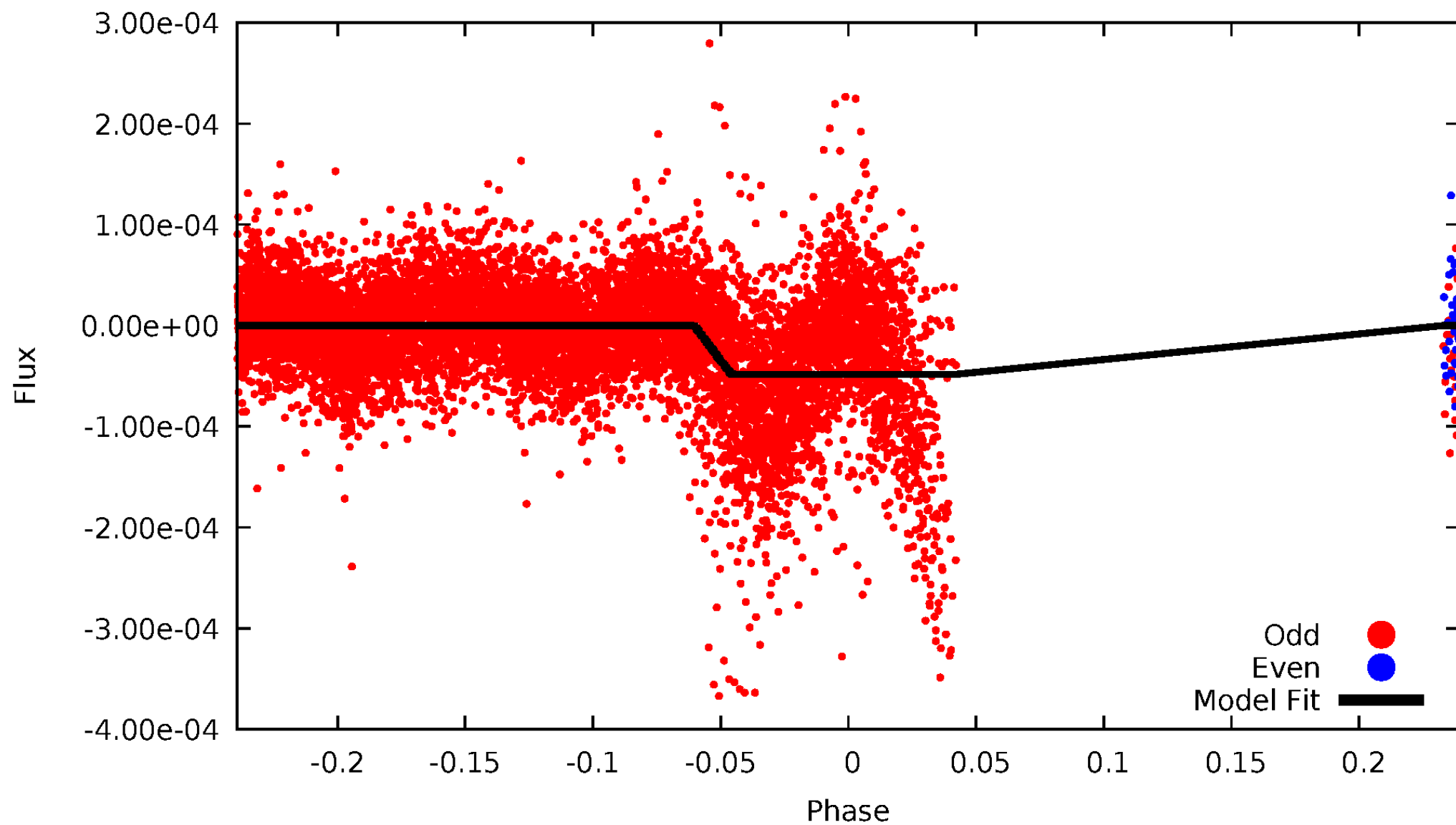
DV Odd/Even

TCE 003749404-05



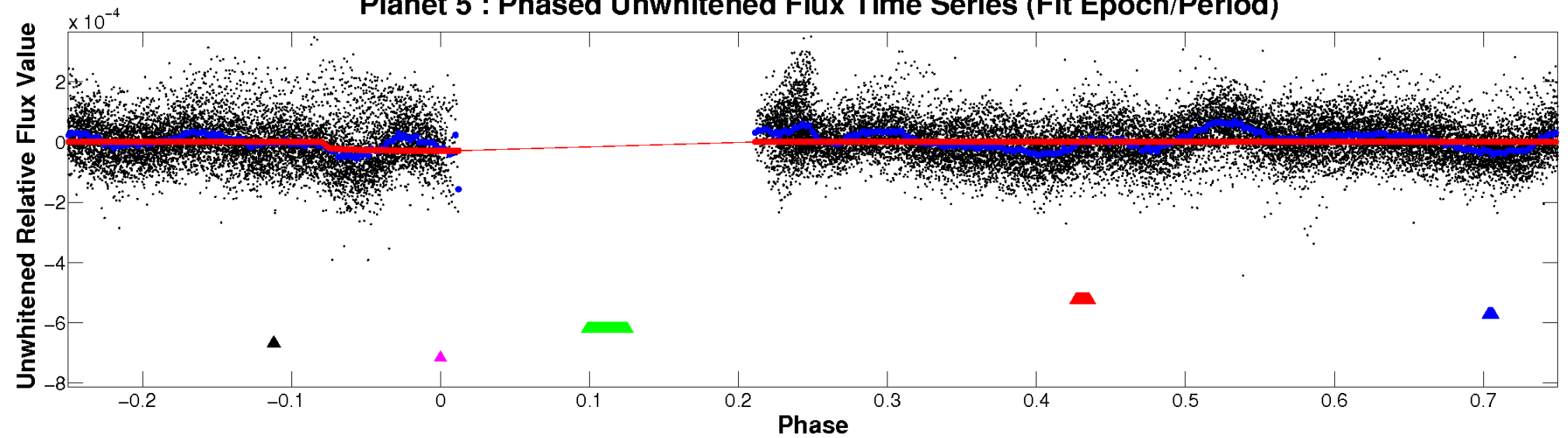
ALT Odd/Even

TCE 003749404-05

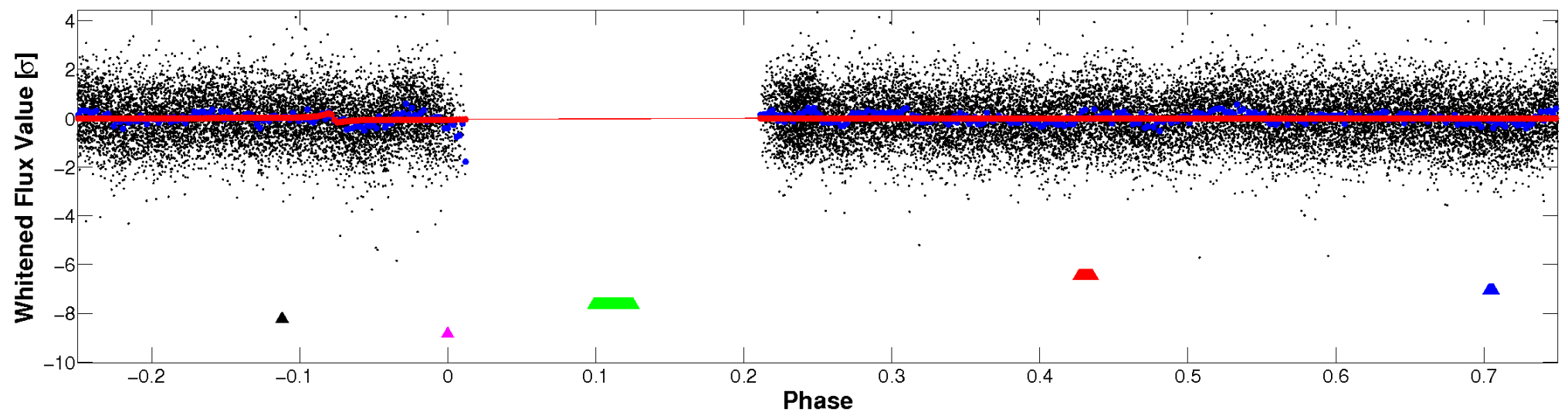


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

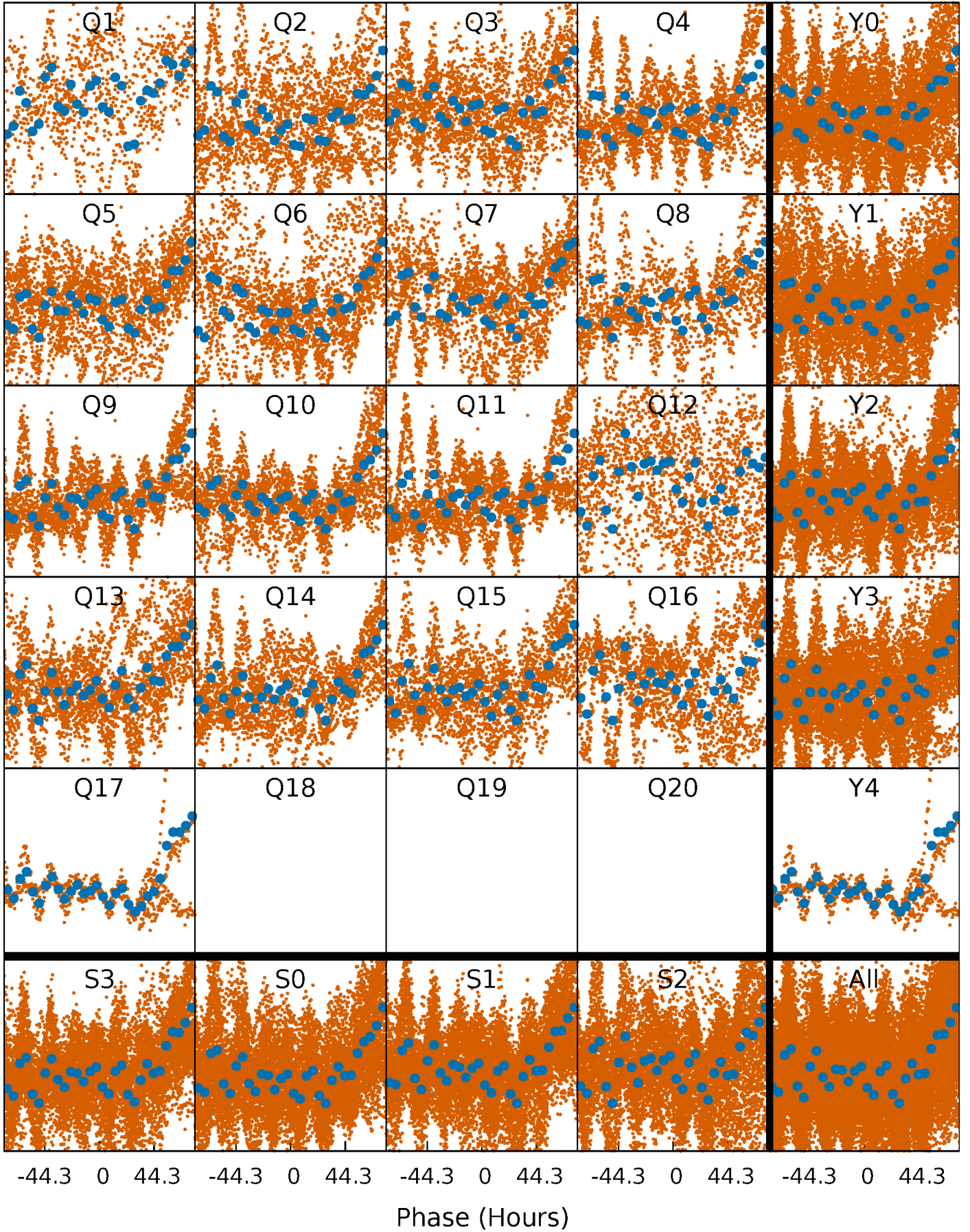


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



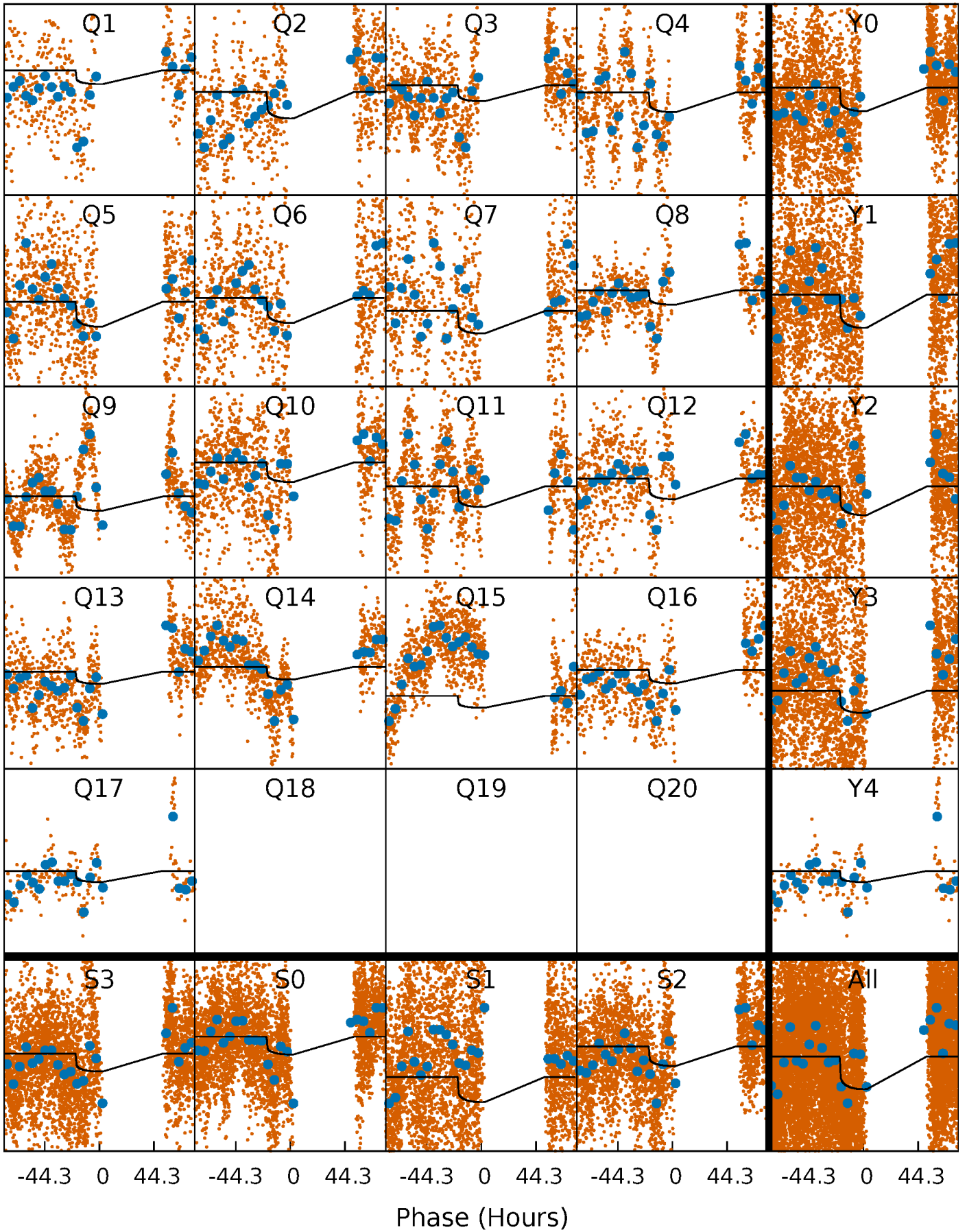
PDC Quarter-Phased Transit Curves

TCE 003749404-05 $P = 10.152836$ Days $T_0 = 133.628493$ (BKJD)



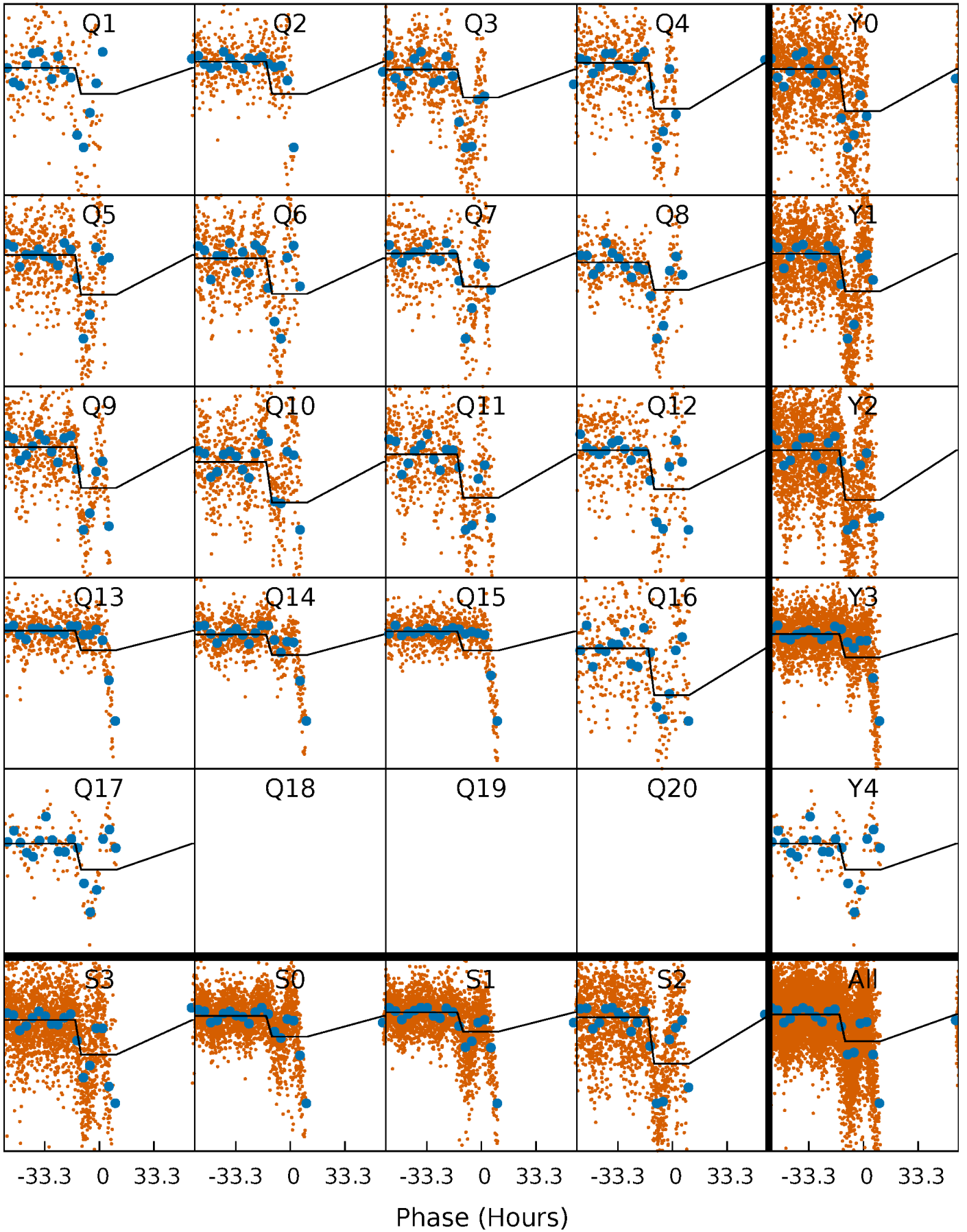
DV Quarter-Phased Transit Curves

TCE 003749404-05 $P = 10.152836$ Days $T_0 = 133.628493$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

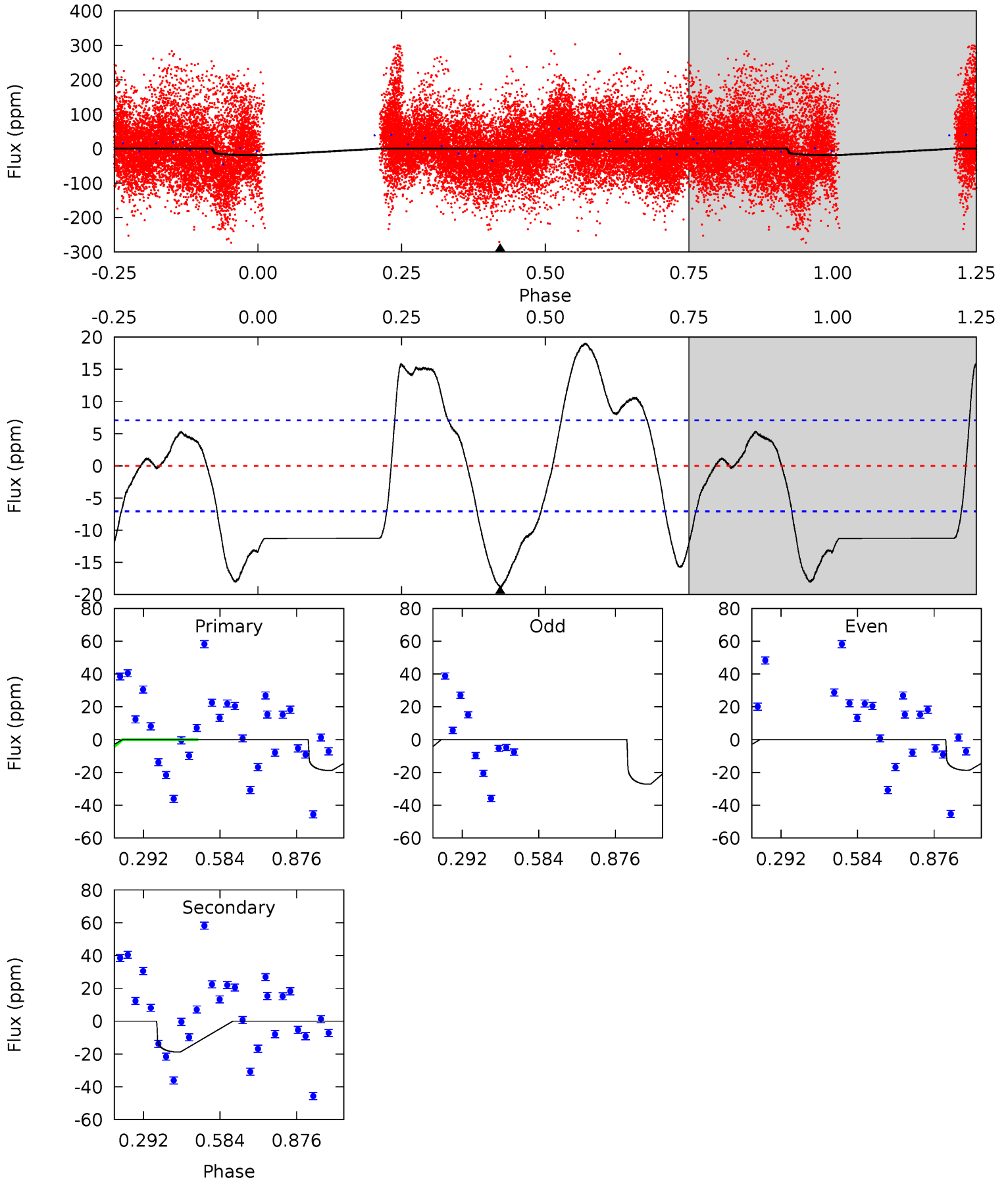
TCE 003749404-05 $P = 10.152134$ Days $T_0 = 133.415858$ (BKJD)



DV Model-Shift Uniqueness Test

003749404-05, P = 10.152836 Days, E = 133.628493 Days

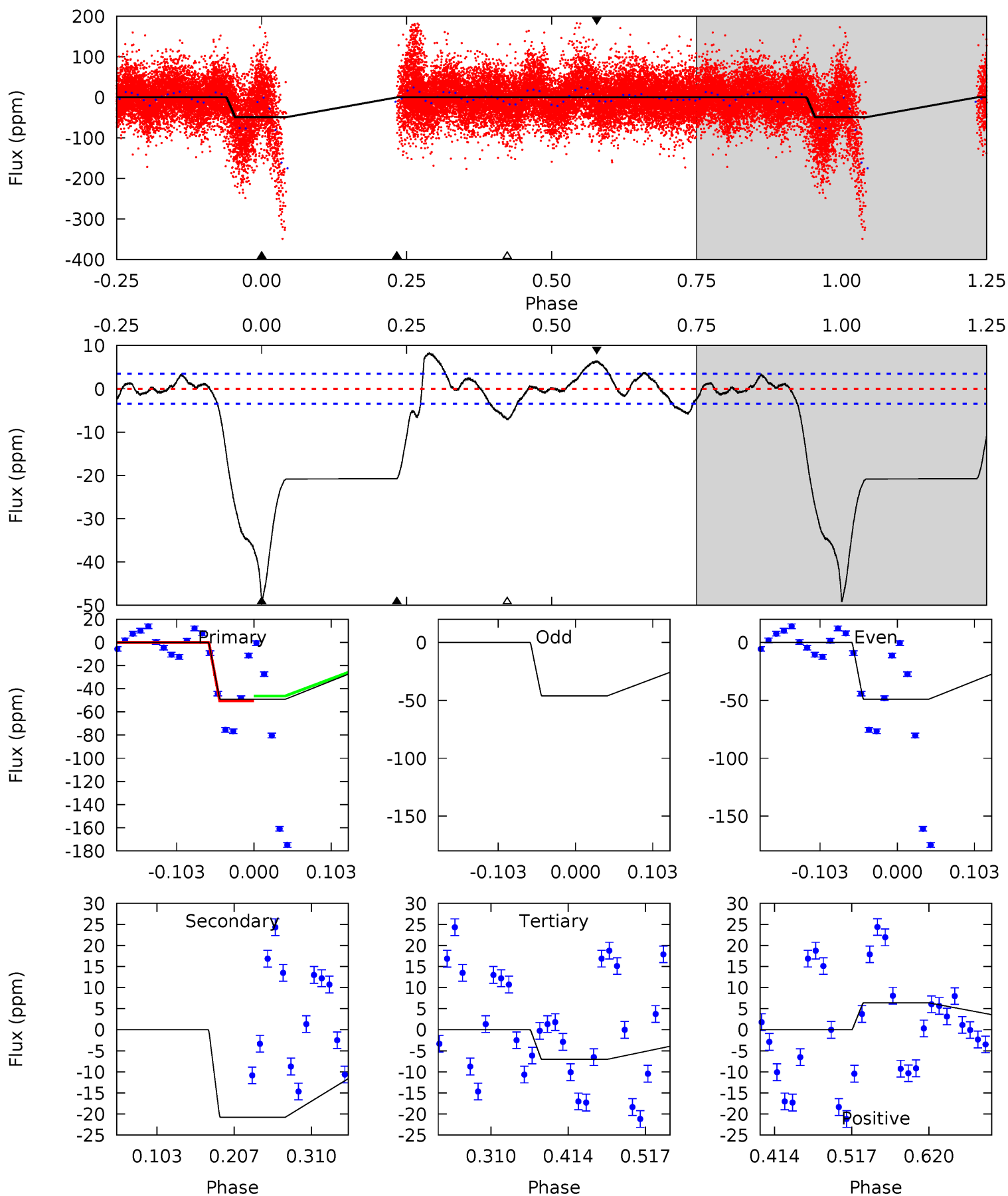
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	11.6	0	0	4.33	1.05	6.35	11.6	11.6	11.6	11.6	1.02	0.58	0.50	1.04



Alt Model-Shift Uniqueness Test

003749404-05, P = 10.152134 Days, E = 133.415858 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.1	27.2	9.21	8.36	4.56	1.63	3.79	54.9	55.8	18.0	18.8	1.53	1.00	0.14	2.26



Stellar Parameters For KIC 003749404

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7363^{+228}_{-330}	$3.938^{+0.234}_{-0.156}$	$0.000^{+0.200}_{-0.300}$	$2.358^{+0.576}_{-0.768}$	$1.757^{+0.184}_{-0.342}$	$0.189^{+0.270}_{-0.085}$
	+3%/-4%	+6%/-4%	+inf%/-inf%	+24%/-33%	+10%/-19%	+143%/-45%
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 003749404-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19 ± 2	$1.45^{+0.28}_{-0.29}$	2084^{+154}_{-175}	6303^{+564}_{-418}	60^{+32}_{-18}
Alt.	-21 ± 1	$1.76^{+0.33}_{-0.32}$	2071^{+159}_{-186}	5845^{+397}_{-329}	45^{+21}_{-14}

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

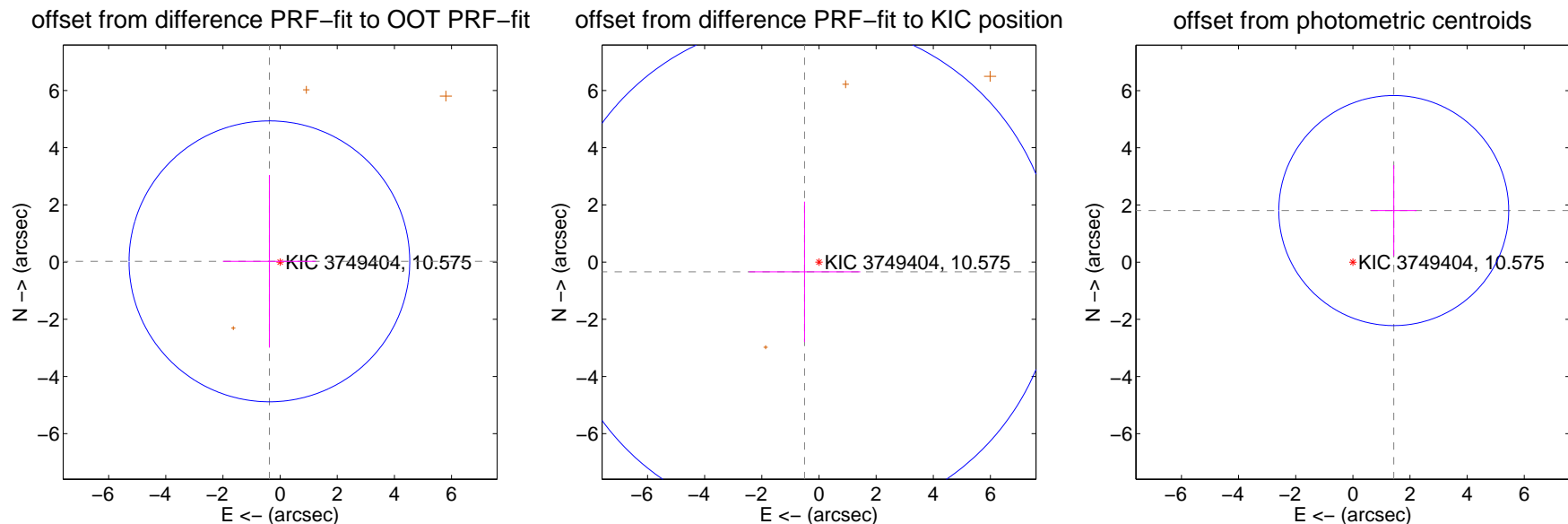
DV Centroid Data

Supplemental centroid analysis for 003749404-05. **Kepler magnitude: 10.57.** Transit SNR 4.96

There are 0 quarters with good PRF difference image offsets

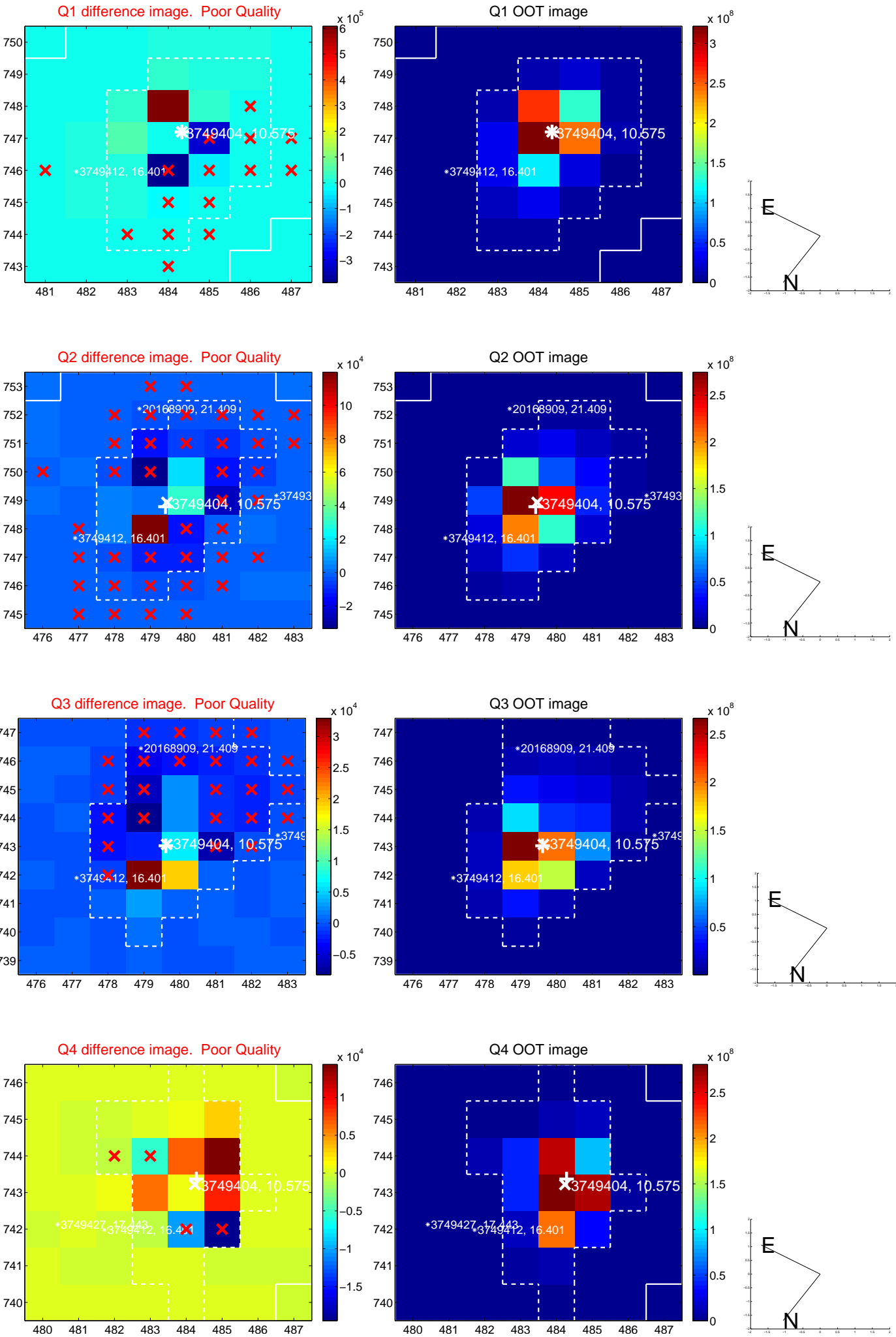
The direct PRF centroid is offset from the target star catalog position by about 0.71 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.376 ± 1.637	0.23	0.375 ± 1.627	0.026 ± 3.017
PRF-fit source offset from KIC position	0.608 ± 2.929	0.21	0.504 ± 1.949	-0.341 ± 2.455
photometric centroid source offset	2.30 ± 1.34	1.72	-1.43 ± 0.80	1.81 ± 1.59

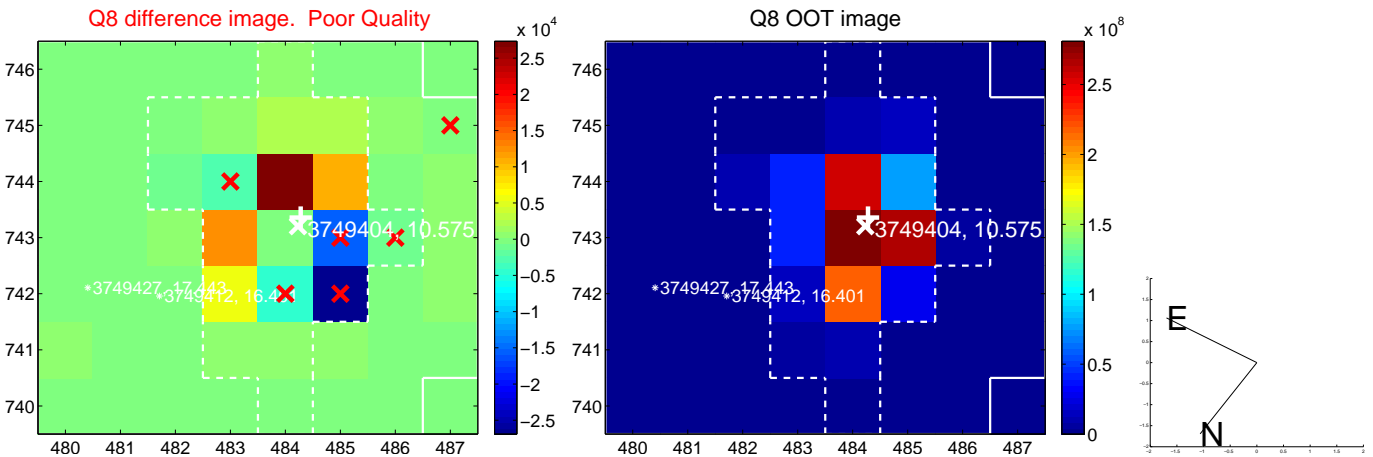
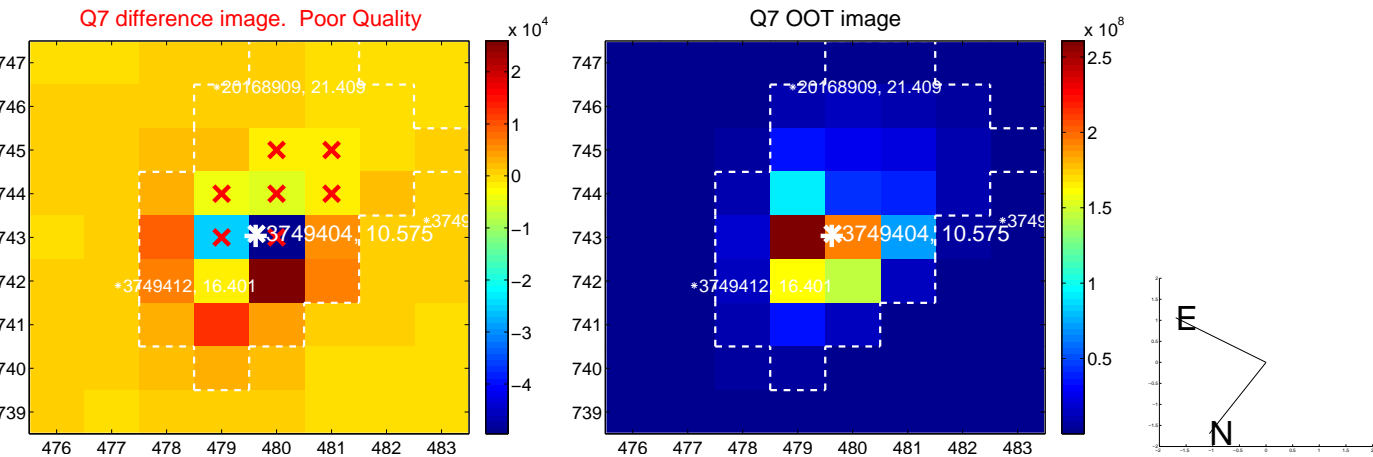
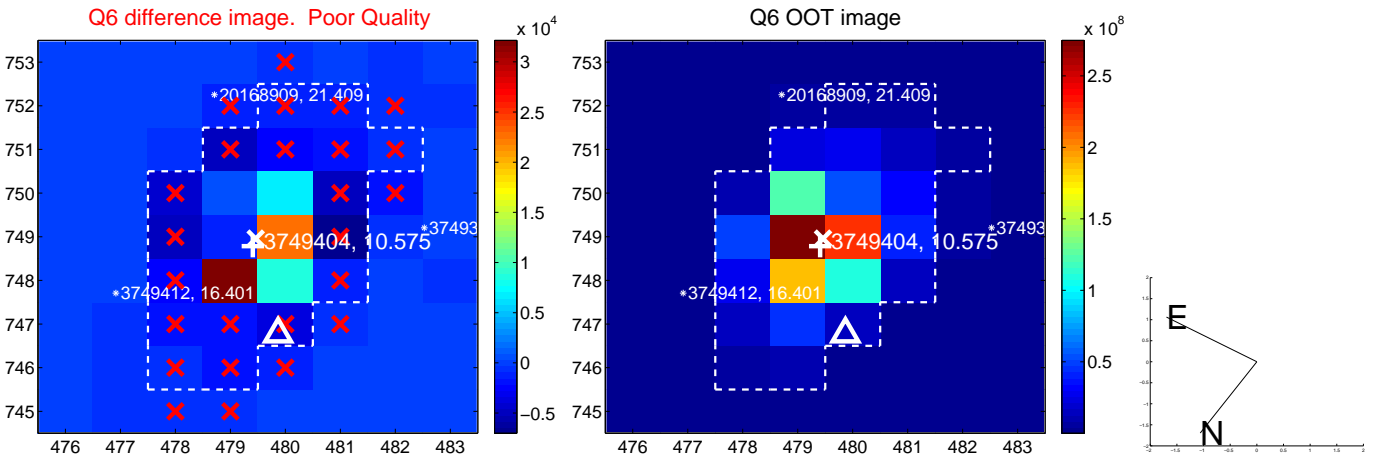
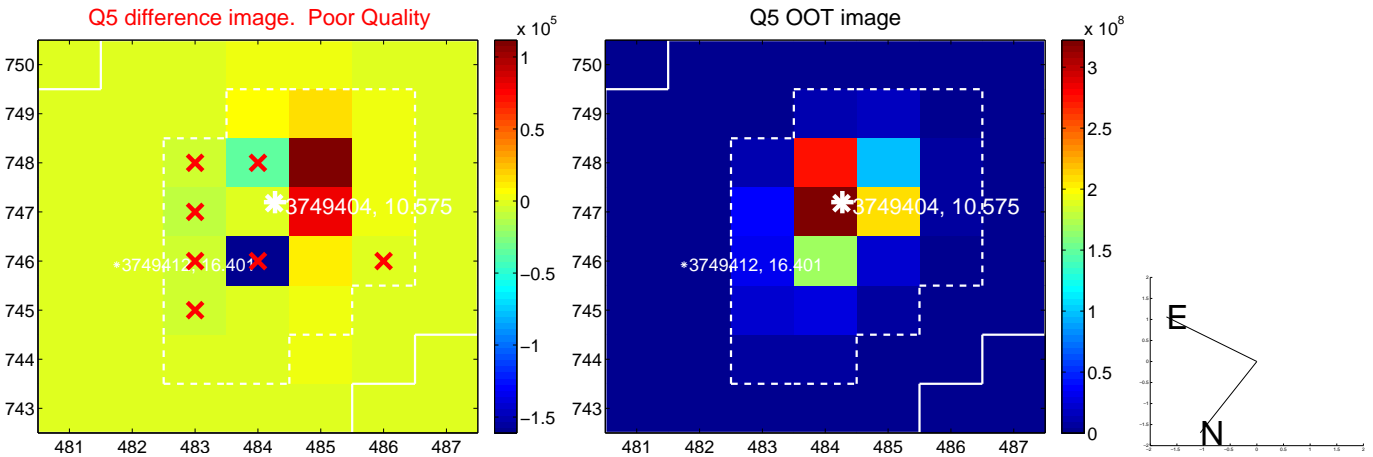


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

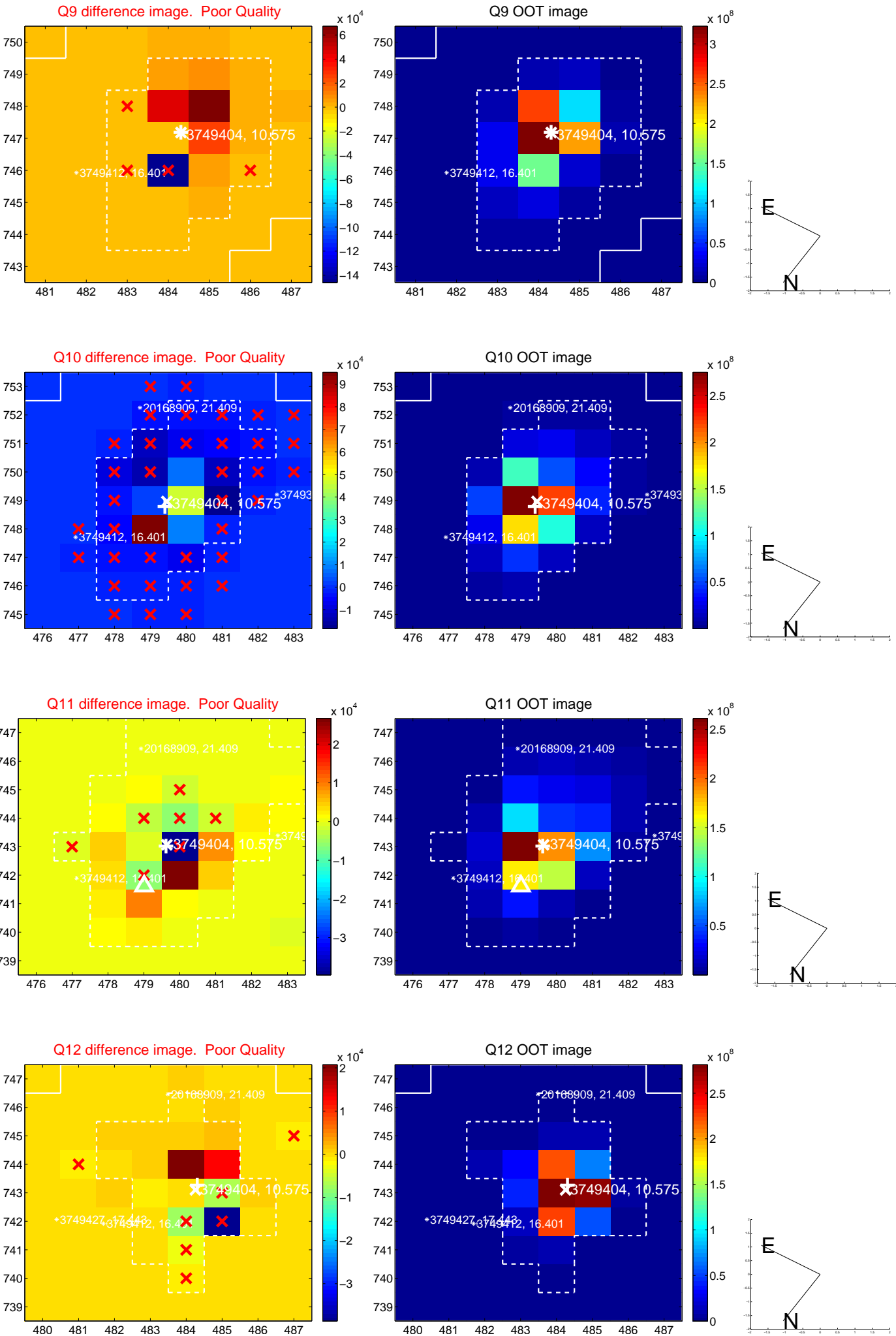
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



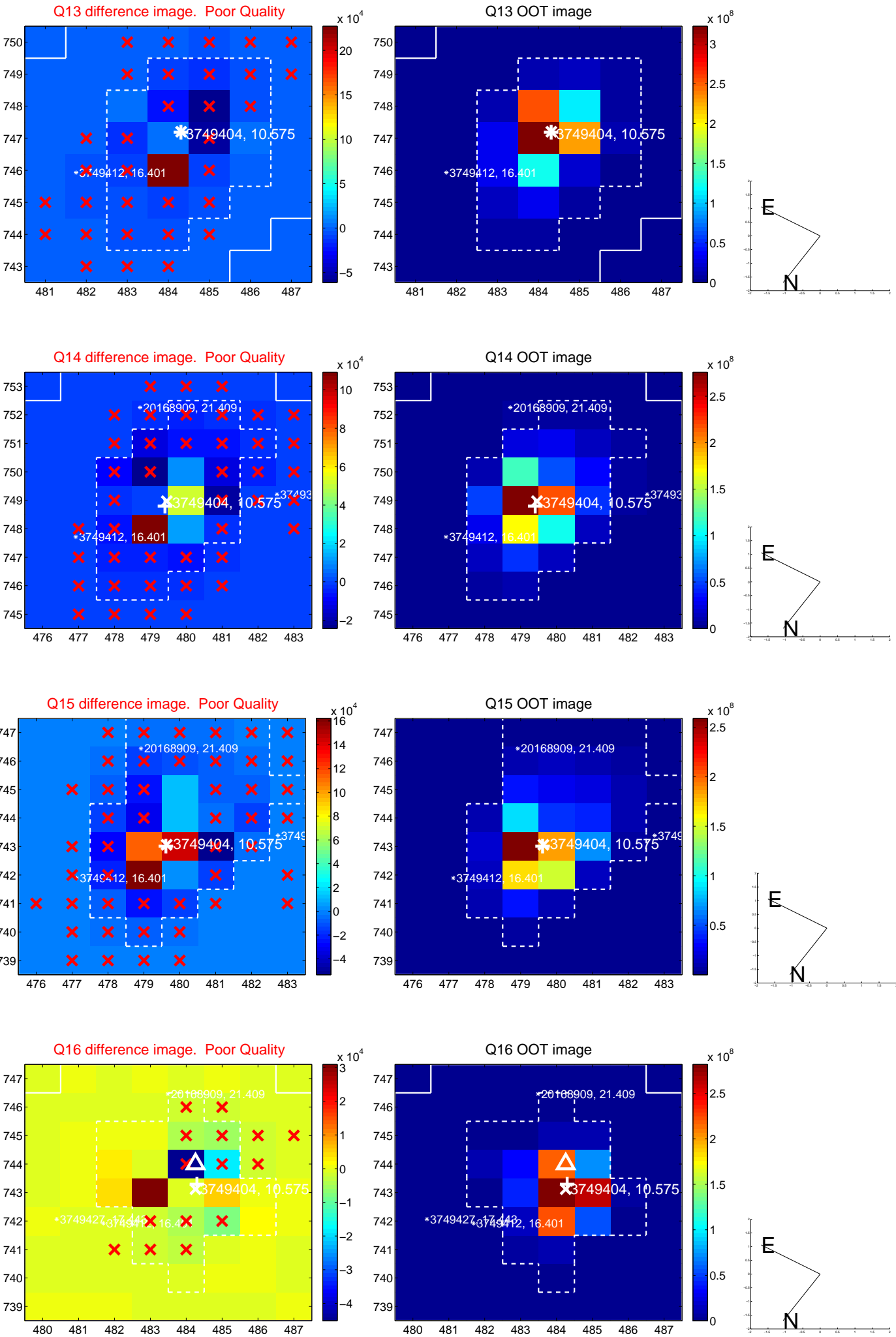
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



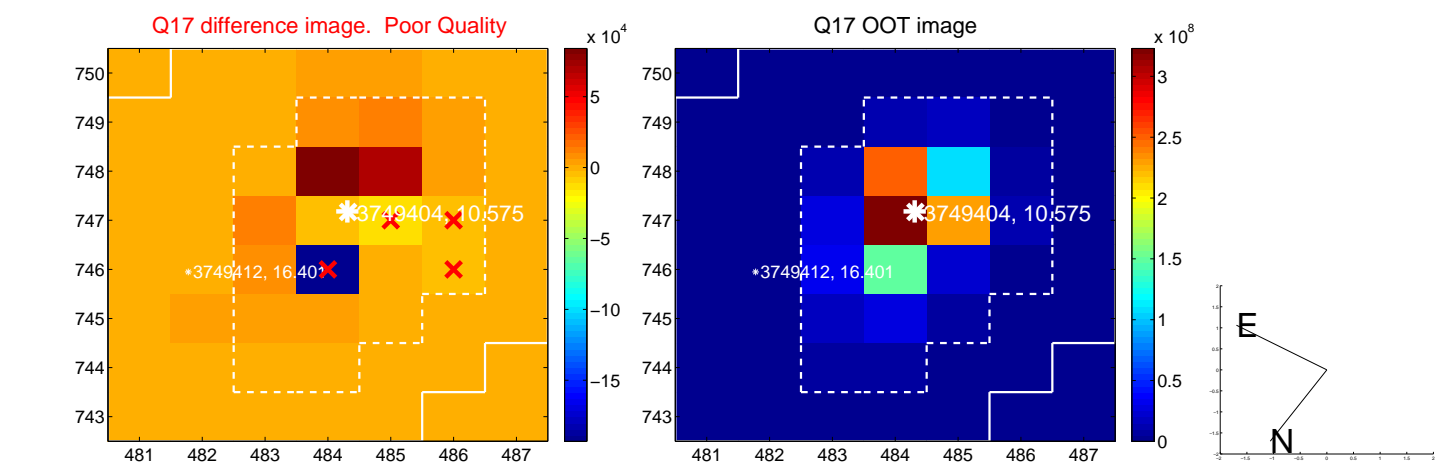
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



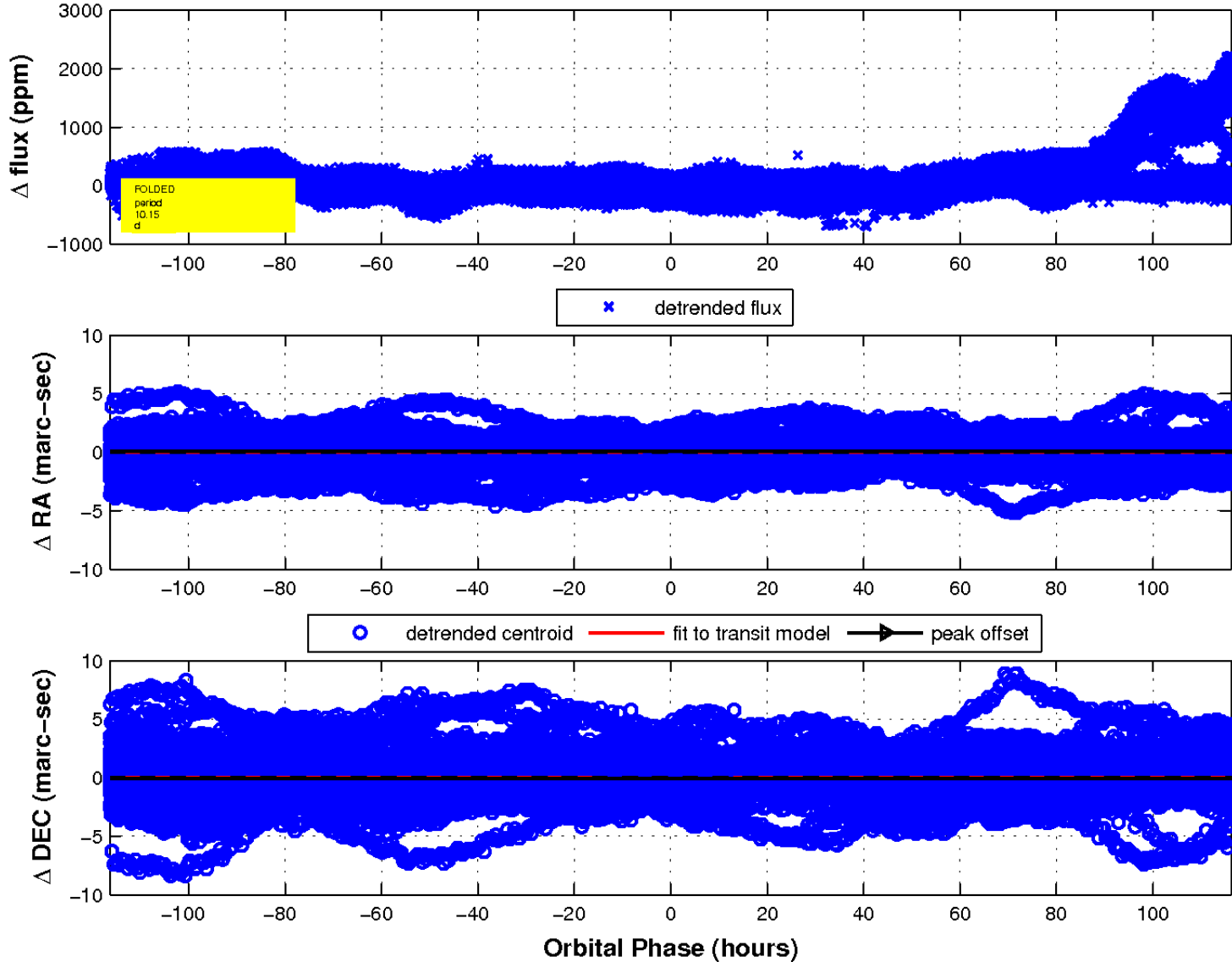
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

Declination

