

KIC 005304184

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})
005304184-01	OBS	No	1.804555	132.351432	388.0	7.631	9.4	9.9	1.77	7244	4.44	6976.38
005304184-02	OBS	No	23.567648	140.505462	895.0	10.065	10.4	7.0	1.77	7244	5.69	226.83
005304184-03	OBS	No	36.292534	164.210569	1517.8	9.143	8.3	9.2	1.77	7244	7.19	127.56
005304184-04	OBS	No	210.584158	253.048314	5208.4	3.970	8.5	8.8	1.77	7244	19.54	12.23
005304184-05	OBS	No	245.598932	374.621718	3813.7	4.054	8.4	8.3	1.77	7244	17.98	9.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005304184-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005304184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

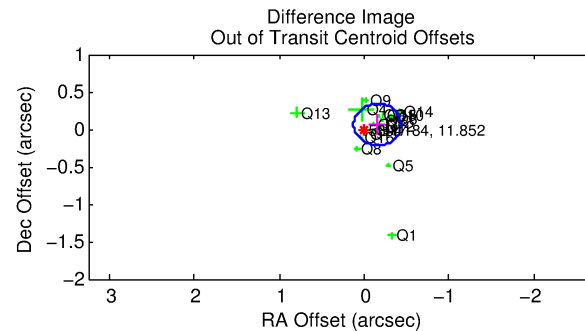
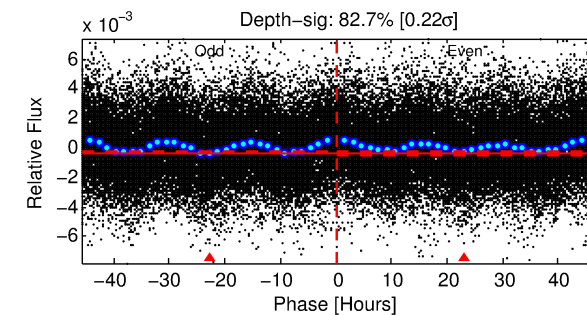
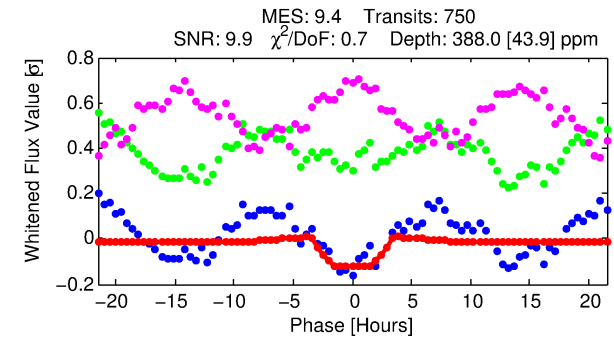
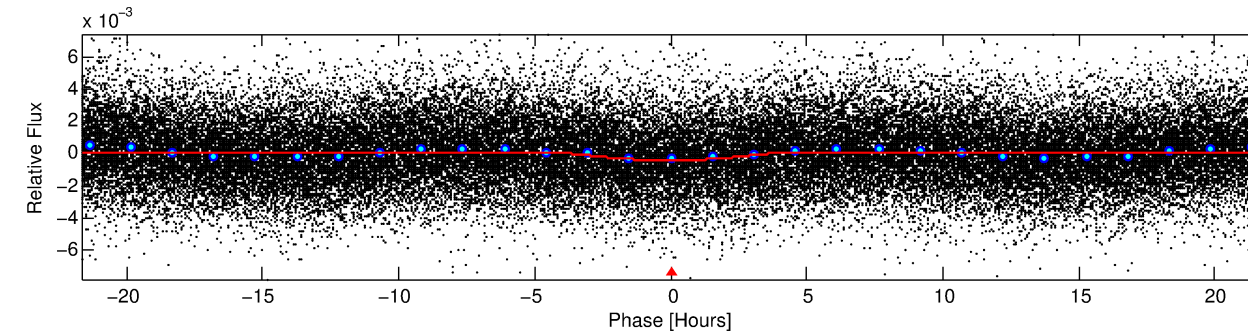
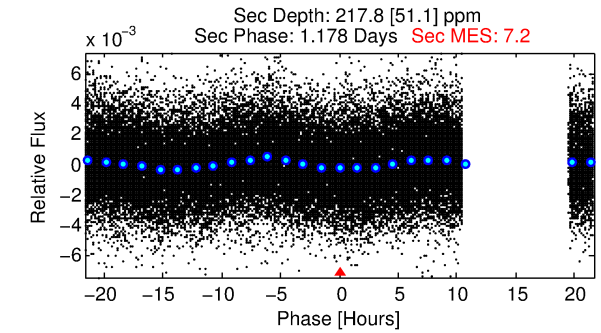
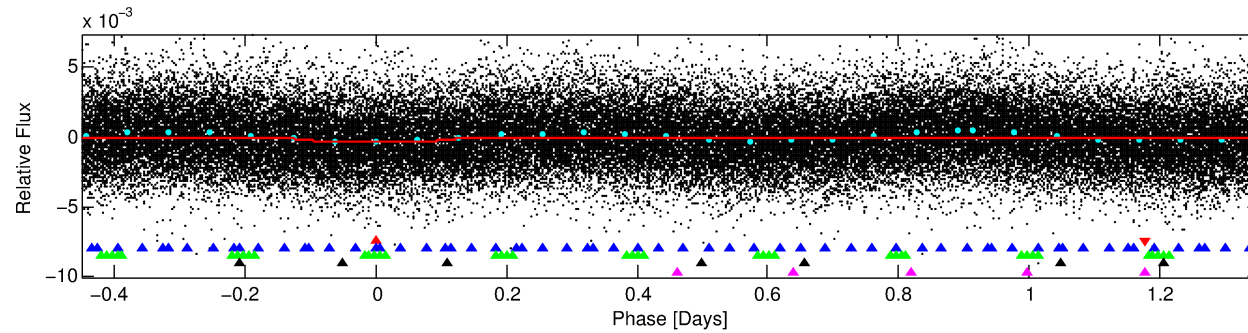
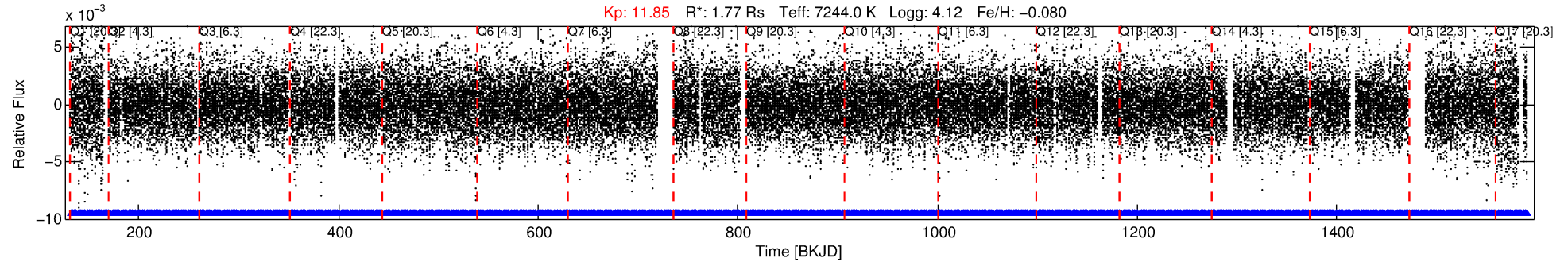
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005304184-01

No Significant Match Found

DV One-Page Summary

KIC: 5304184 Candidate: 1 of 5 Period: 1.805 d



DV Fit Results:

Period = 1.80456 [0.00003] d
Epoch = 132.3514 [0.0096] BKJD
Rp/R* = 0.0230 [0.0015]
a/R* = 1.15 [0.03]
b = 0.97 [0.01]
Seff = 6976.38 [2631.87]
Teq = 2330 [220] K
Rp = 4.44 [1.39] Re
a = 0.0333 [0.0081] AU
Ag = 6.75 [2.92] [1.97σ]
Teffp = 5807 [461] K [6.81σ]

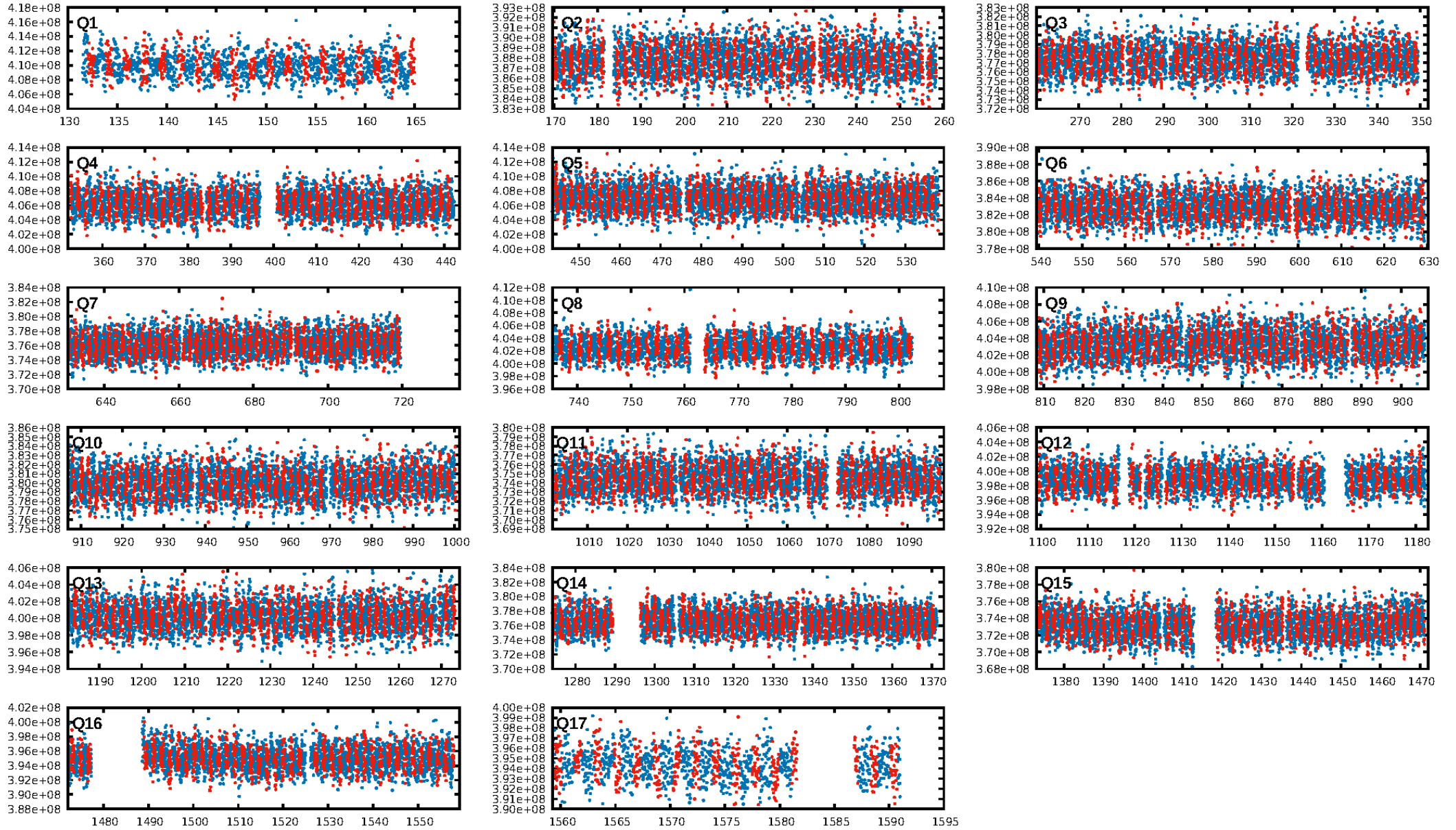
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [41.35σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.46e-15
RollingBand-fgt: 1.00 [715/715]
GhostDiagnostic-chr: 1.776
Centroid-sig: 0.0%
Centroid-so: 0.242 arcsec [5.48σ]
OotOffset-rm: 0.169 arcsec [1.81σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.200 arcsec [2.23σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

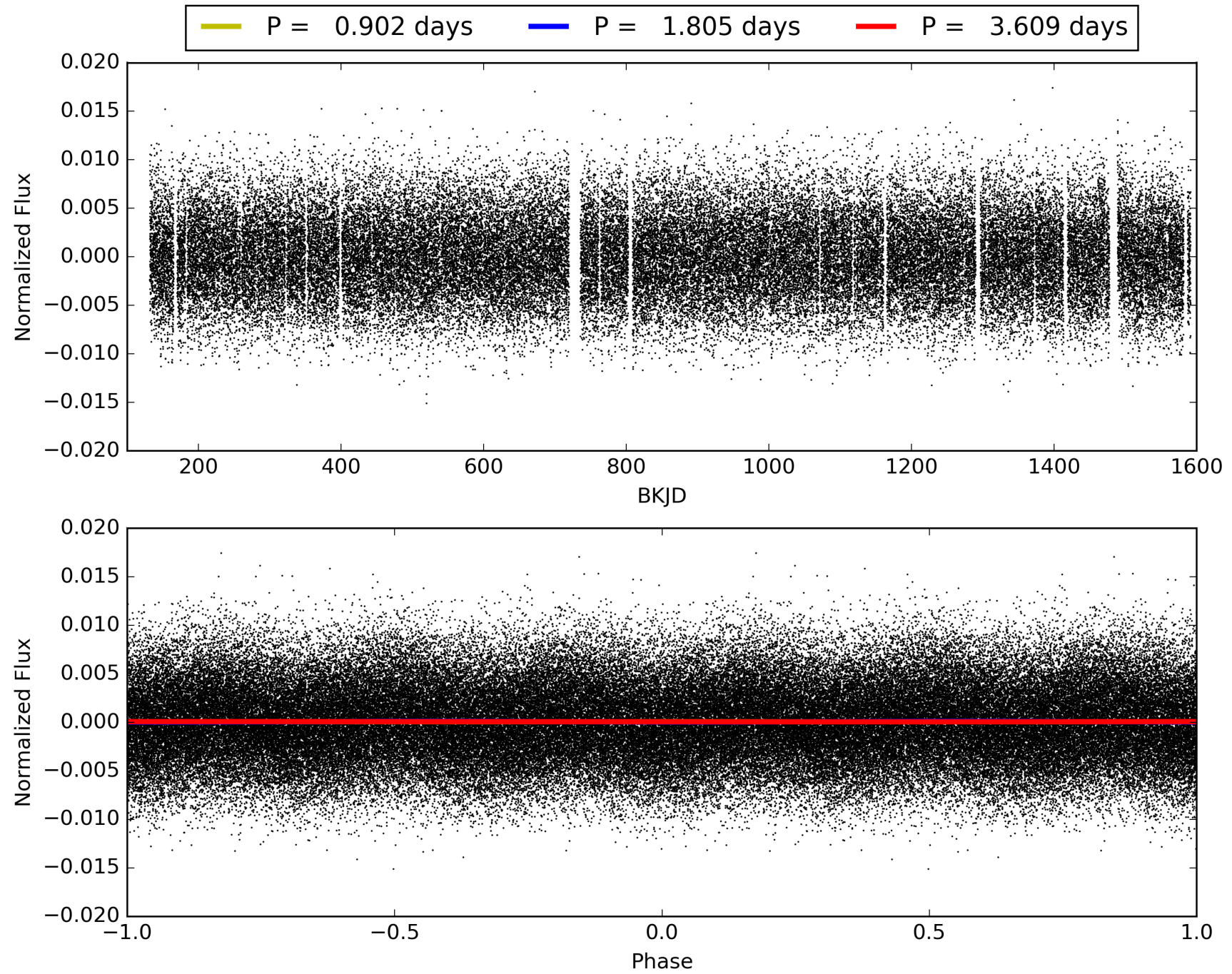
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005304184-01, PDC Light Curves

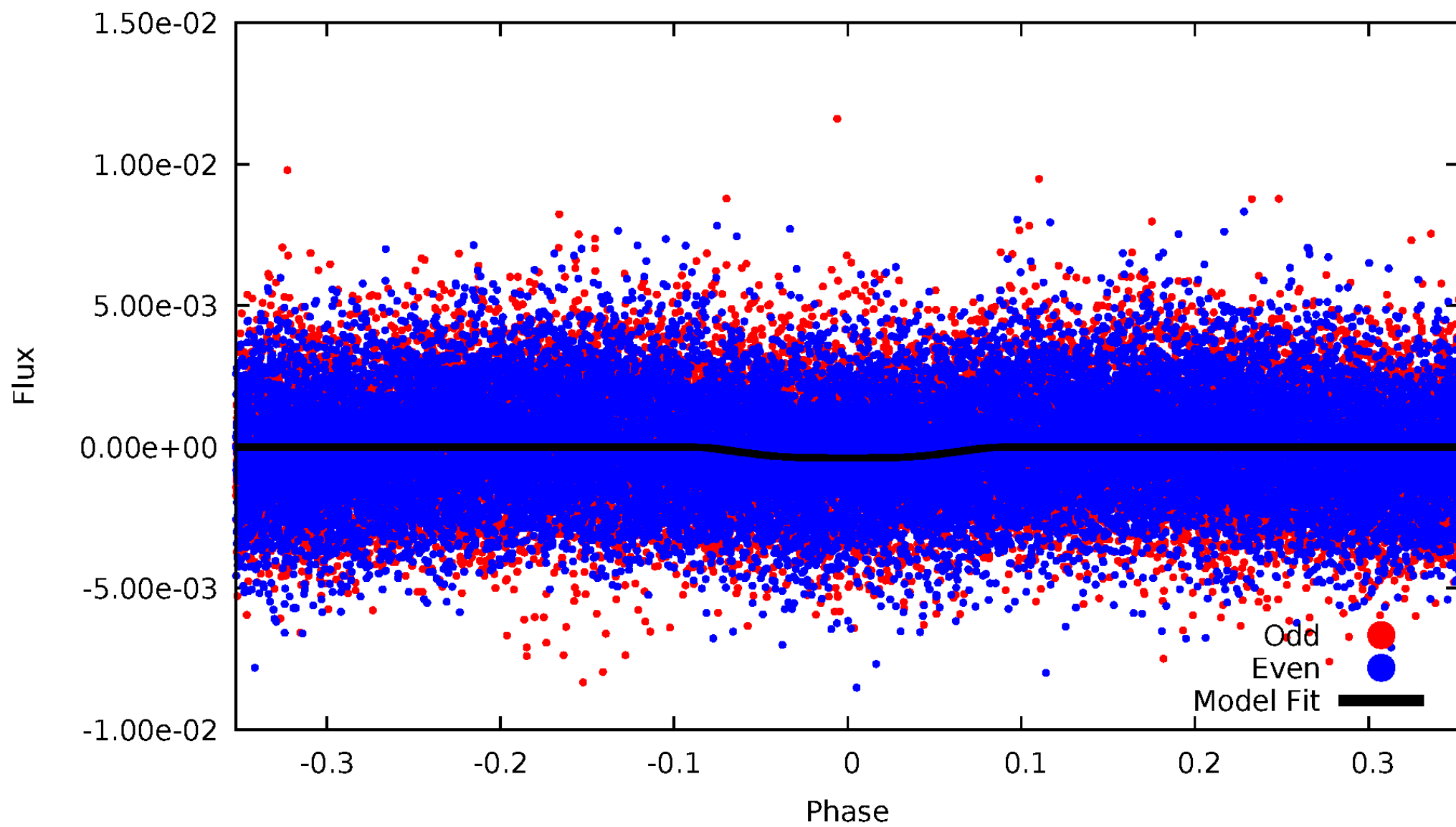


TCE 005304184-01



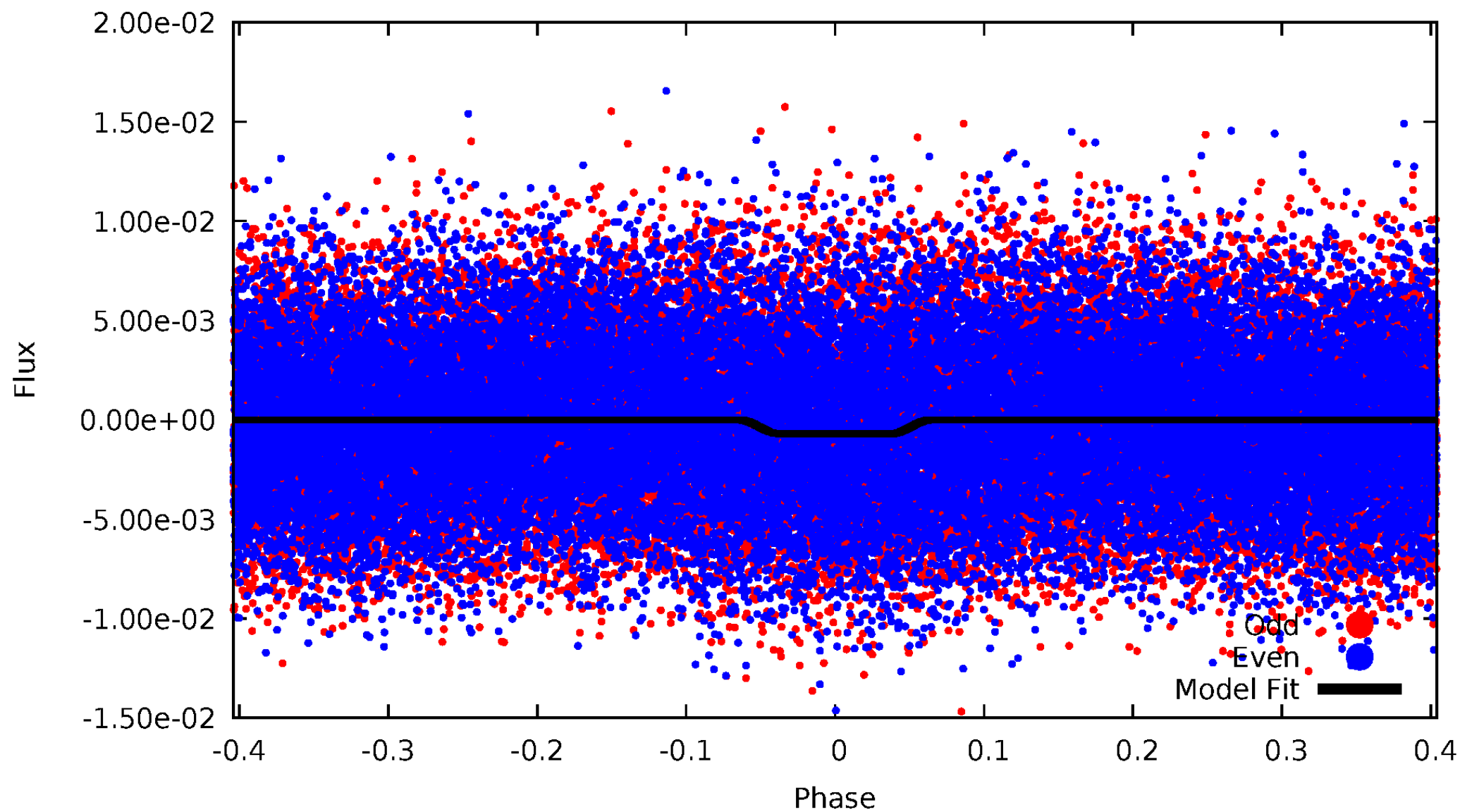
DV Odd/Even

TCE 005304184-01

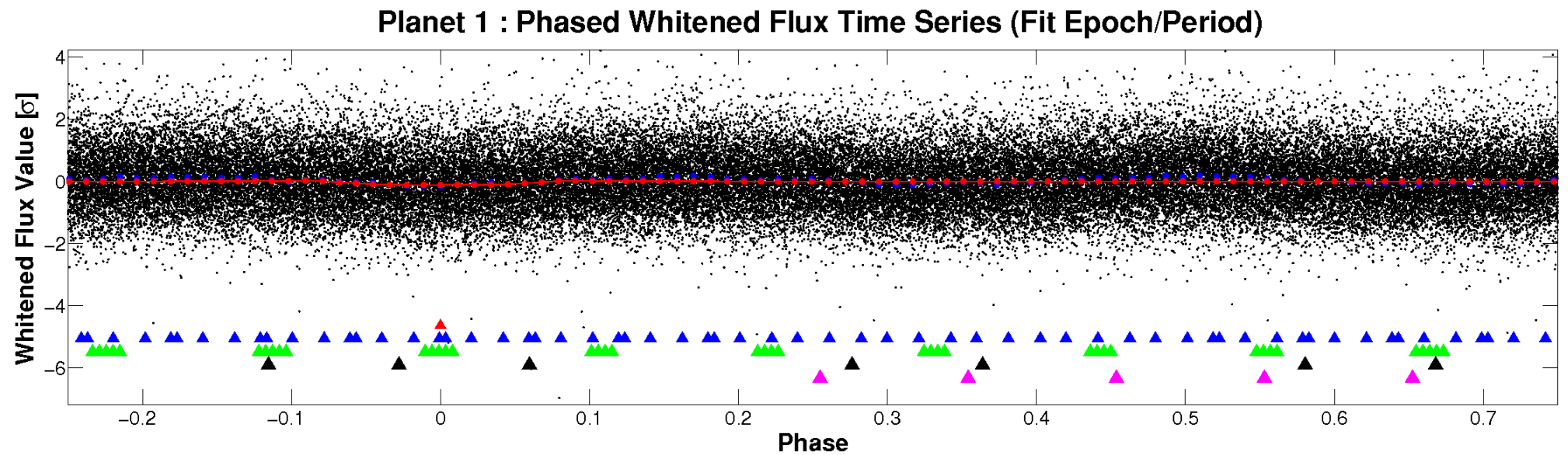
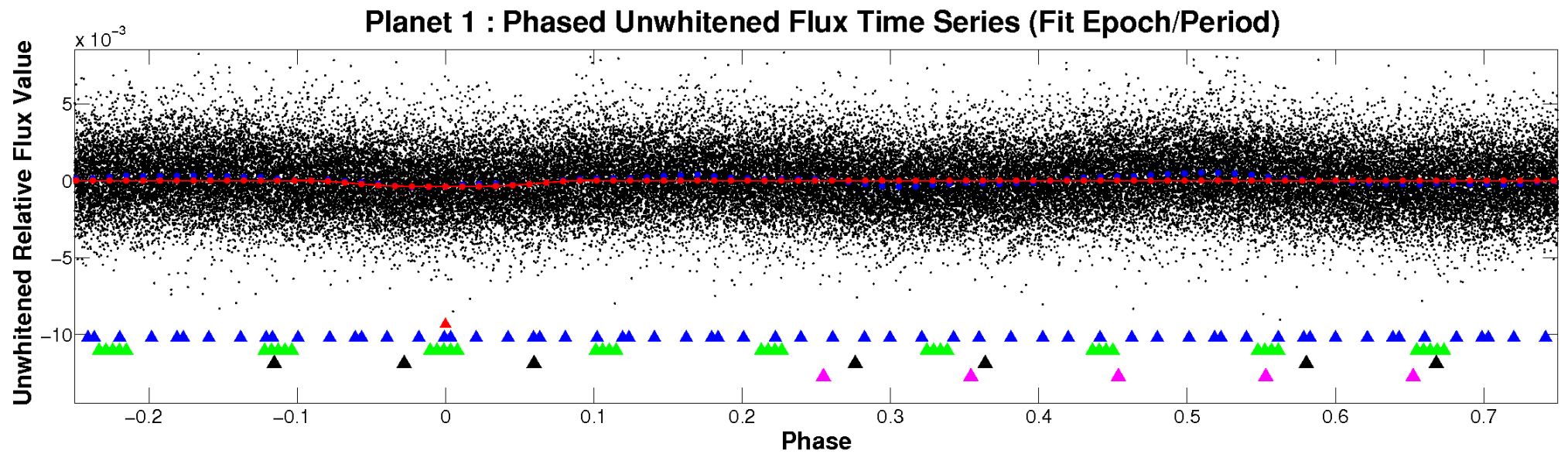


ALT Odd/Even

TCE 005304184-01

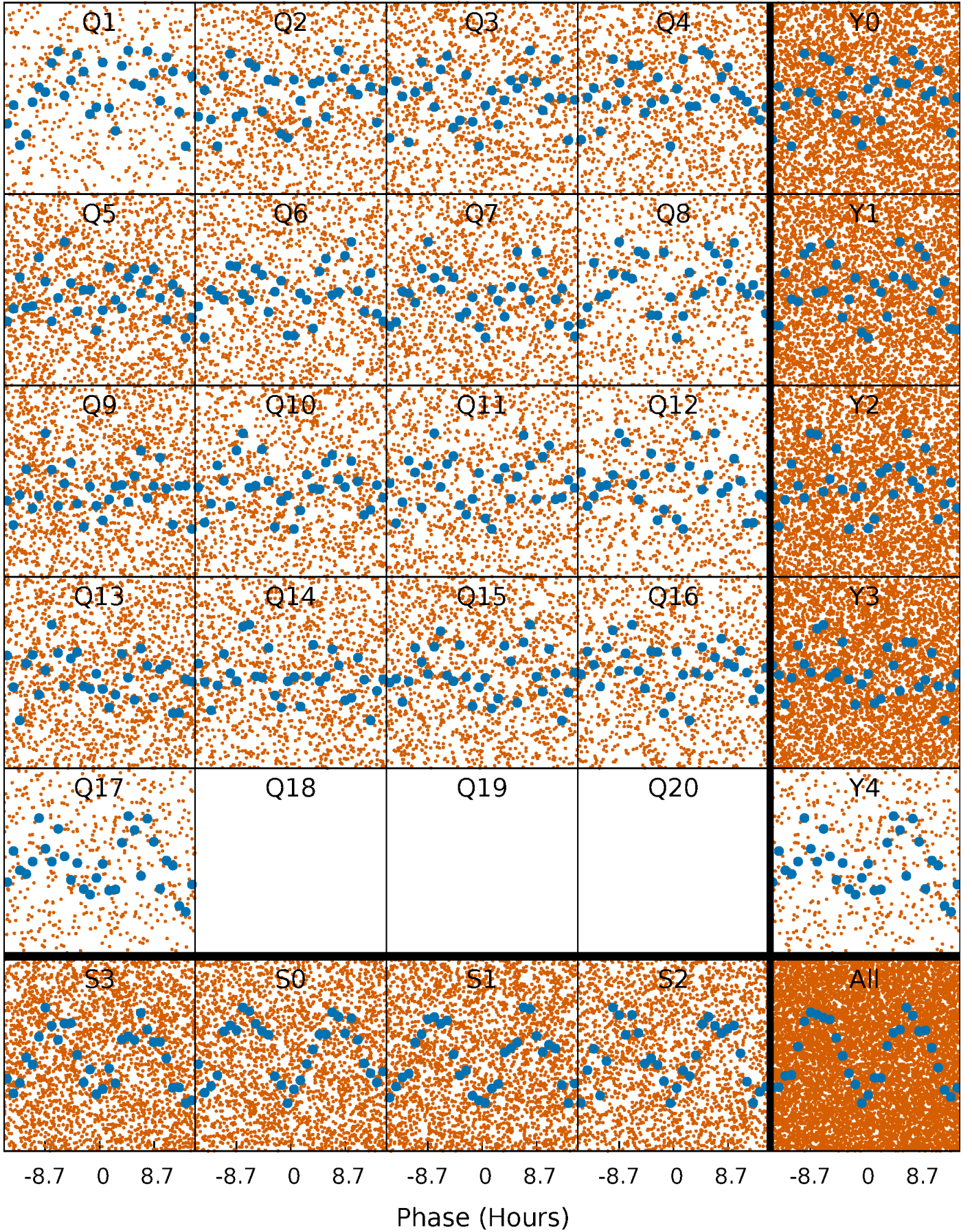


Non-Whitened Vs. Whitened Light Curve



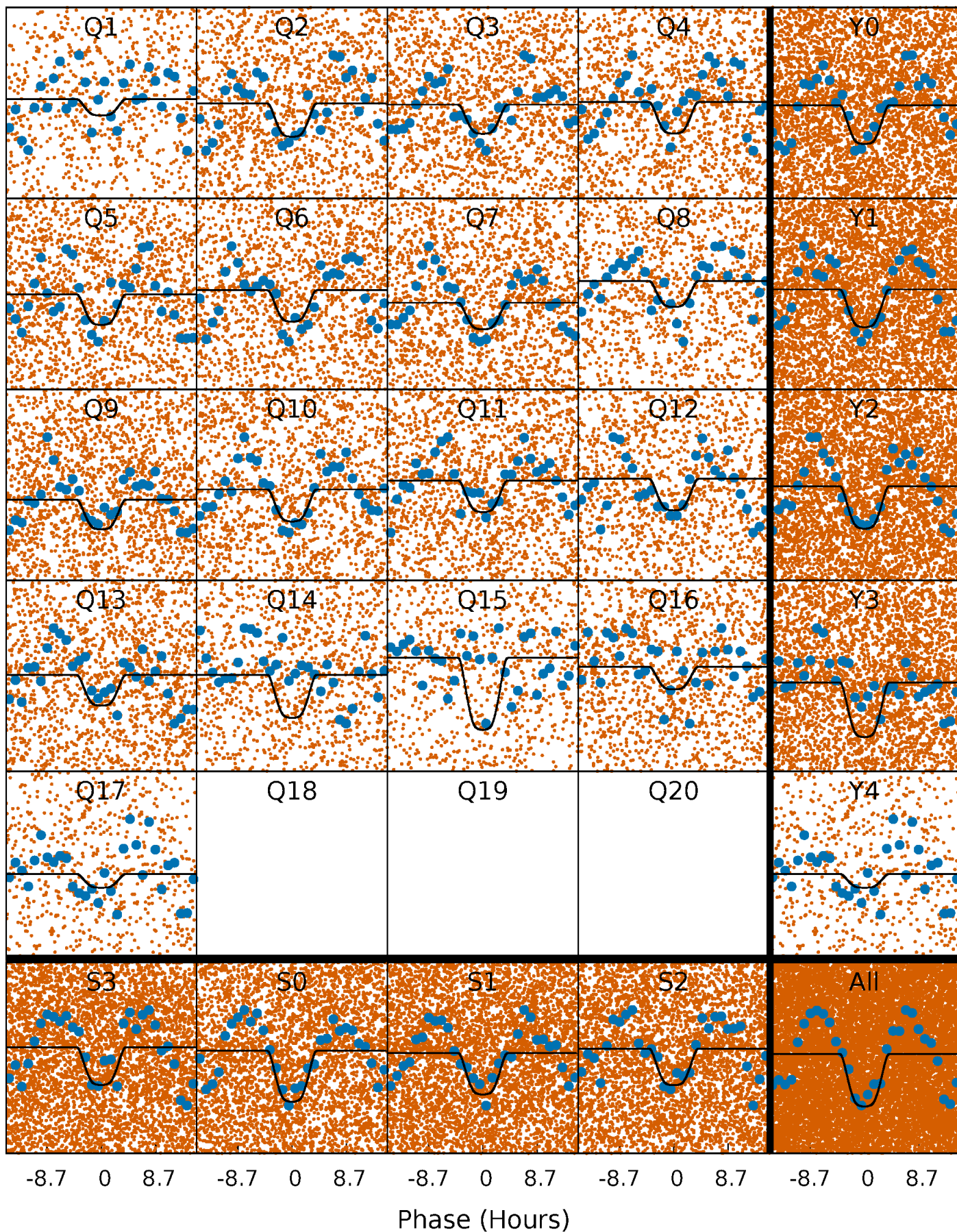
PDC Quarter-Phased Transit Curves

TCE 005304184-01 P= 1.804555 Days $T_0=132.351431$ (BKJD)



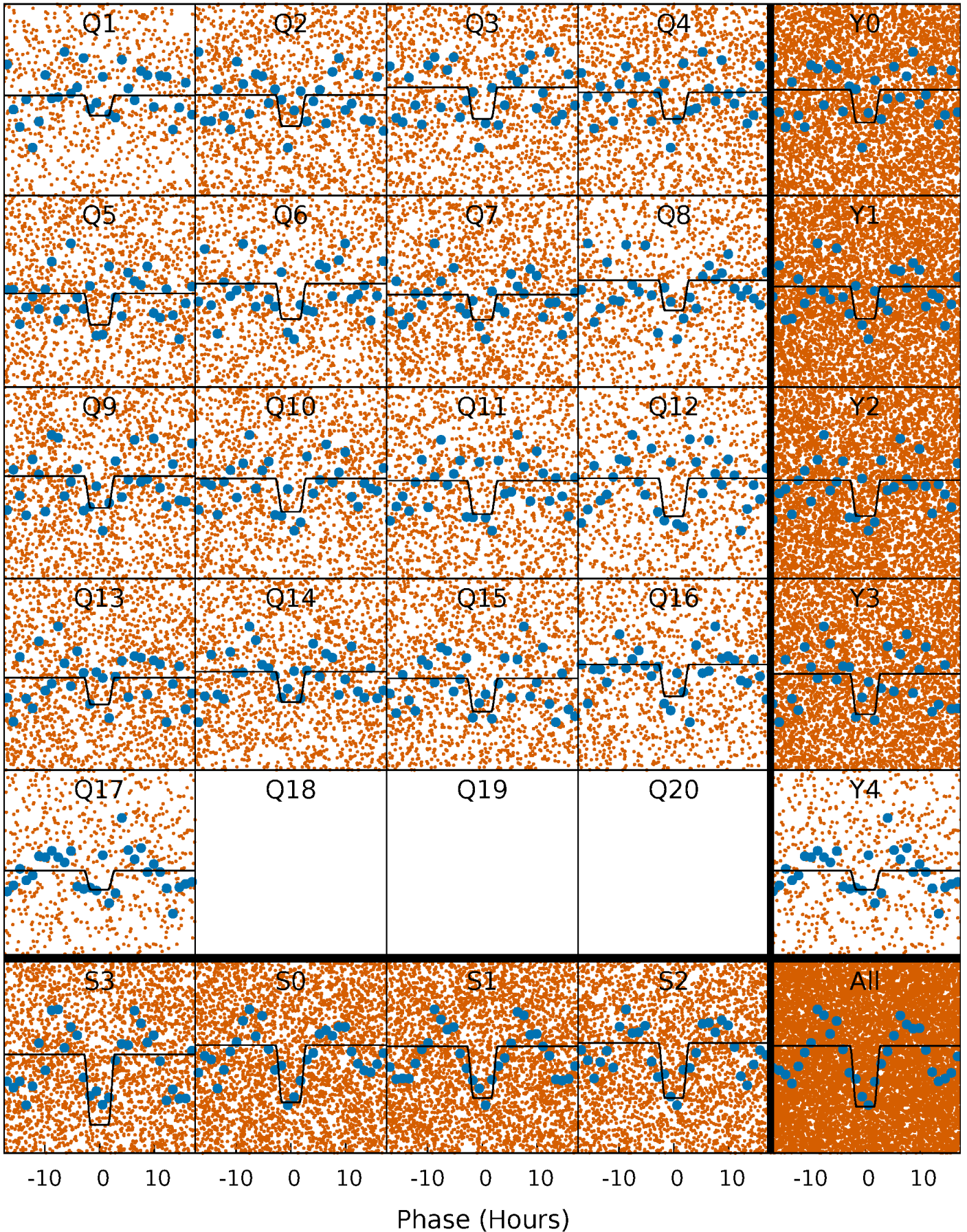
DV Quarter-Phased Transit Curves

TCE 005304184-01 P= 1.804555 Days $T_0=132.351431$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

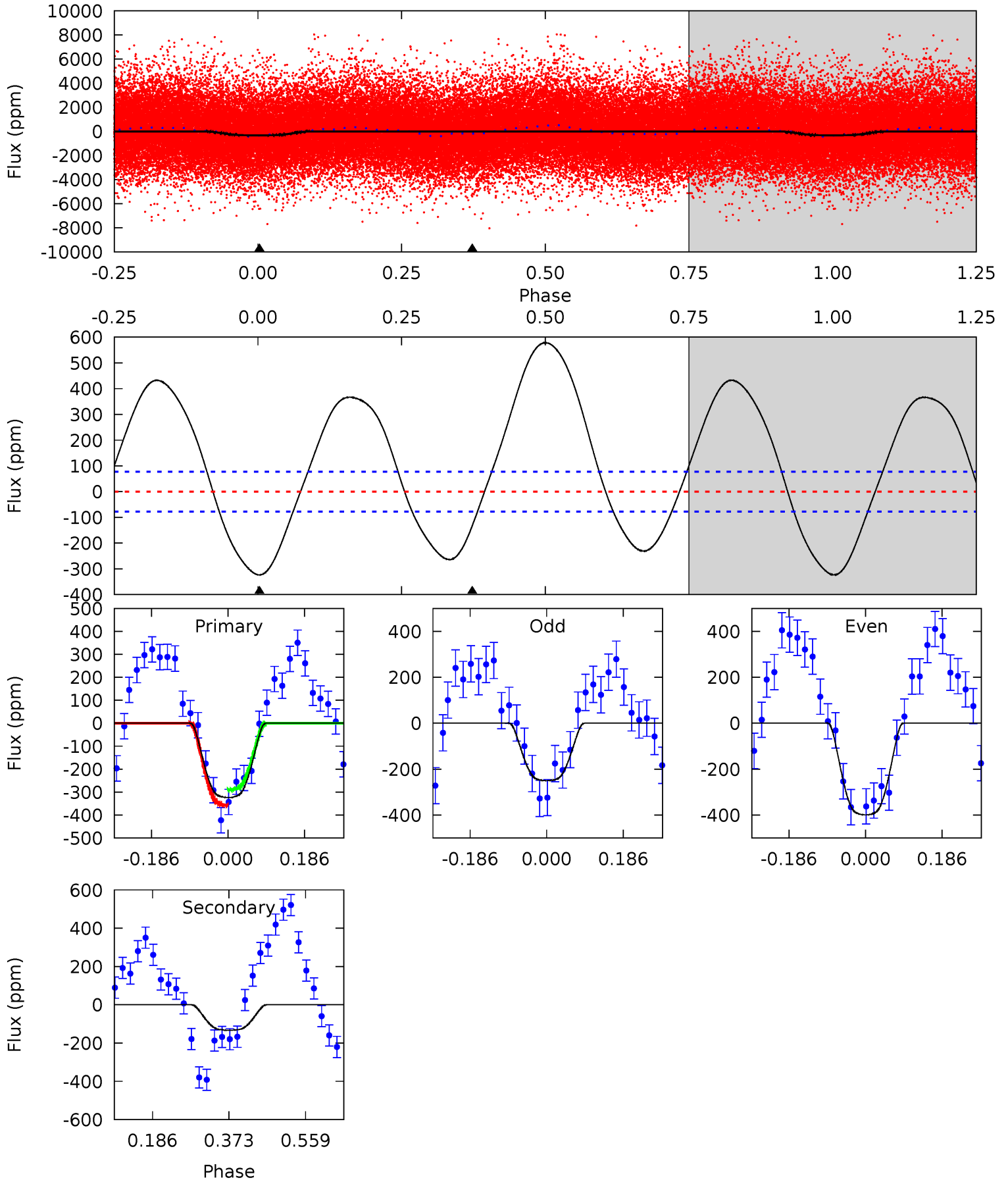
TCE 005304184-01 P= 1.804576 Days $T_0=132.336828$ (BKJD)



DV Model-Shift Uniqueness Test

005304184-01, P = 1.804555 Days, E = 130.546876 Days

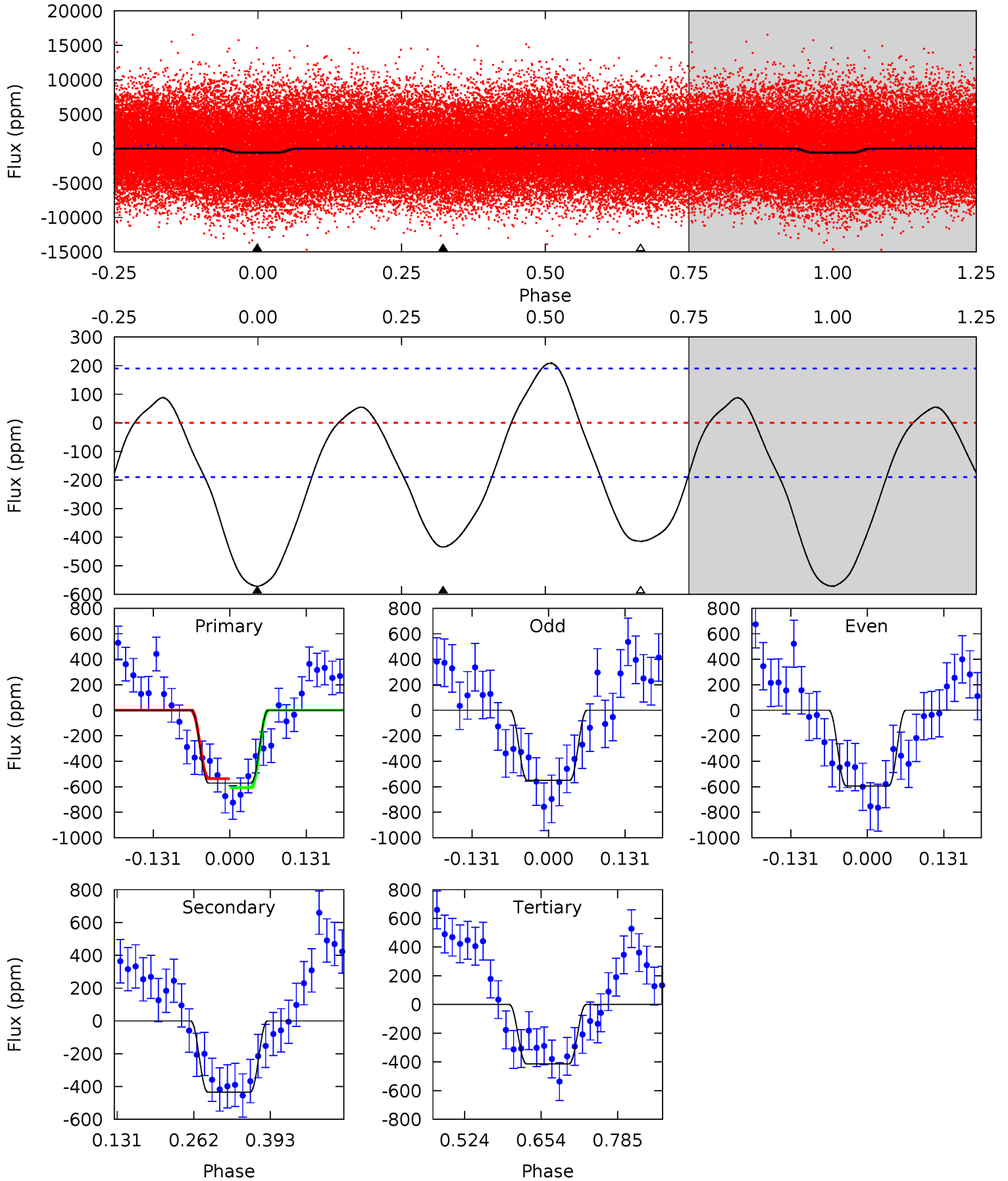
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	7.60	0	0	4.43	1.32	12.0	18.5	18.5	7.60	7.60	4.30	0.93	0.64	1.92



Alt Model-Shift Uniqueness Test

005304184-01, P = 1.804576 Days, E = 130.532252 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	10.3	9.83	0	4.51	1.51	4.78	3.74	13.6	0.48	10.3	0.52	1.18	0.27	0.84



Stellar Parameters For KIC 005304184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+201}_{-302}	$4.121^{+0.144}_{-0.176}$	$-0.080^{+0.200}_{-0.350}$	$1.770^{+0.541}_{-0.406}$	$1.508^{+0.212}_{-0.236}$	$0.383^{+0.296}_{-0.196}$
	+3%/-4%	+3%/-4%	+250%/-438%	+31%/-23%	+14%/-16%	+77%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005304184-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-133 ± 17	$4.47^{+0.76}_{-0.57}$	3273^{+235}_{-220}	5032^{+244}_{-247}	$3.956^{+1.326}_{-1.119}$
Alt.	-434 ± 42	$5.22^{+0.86}_{-0.67}$	3262^{+260}_{-210}	6254^{+324}_{-331}	$9.591^{+2.964}_{-2.374}$

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

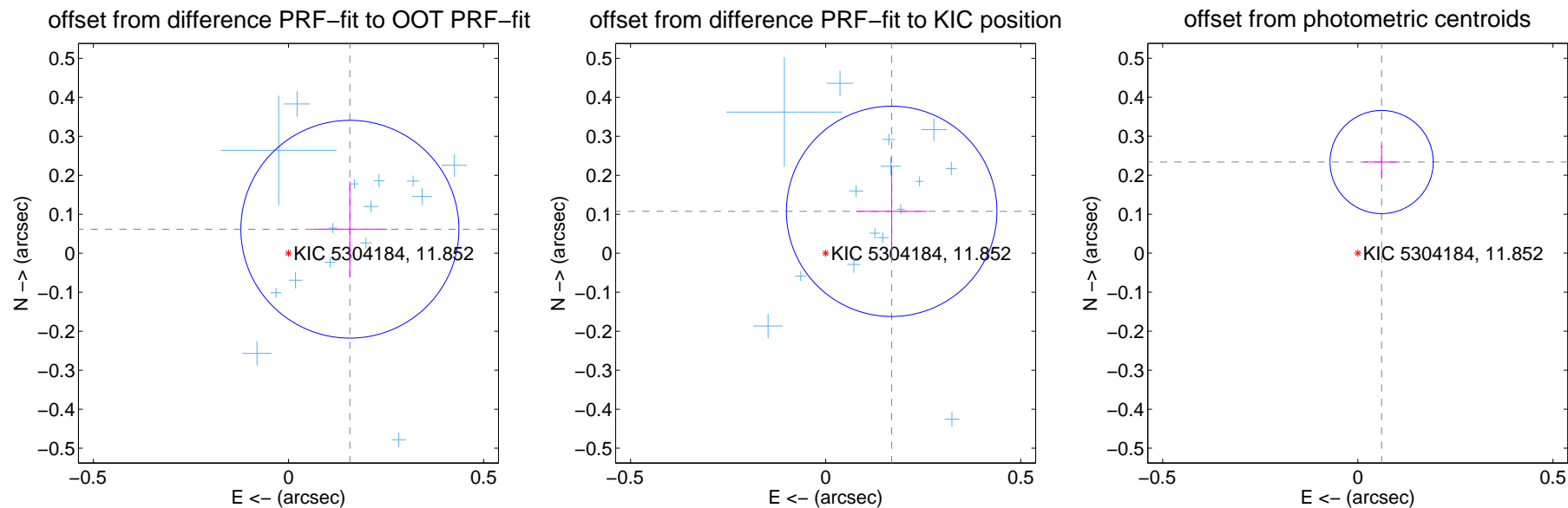
DV Centroid Data

Supplemental centroid analysis for 005304184-01. **Kepler magnitude: 11.85.** Transit SNR 9.89

There are 17 quarters with good PRF difference image offsets

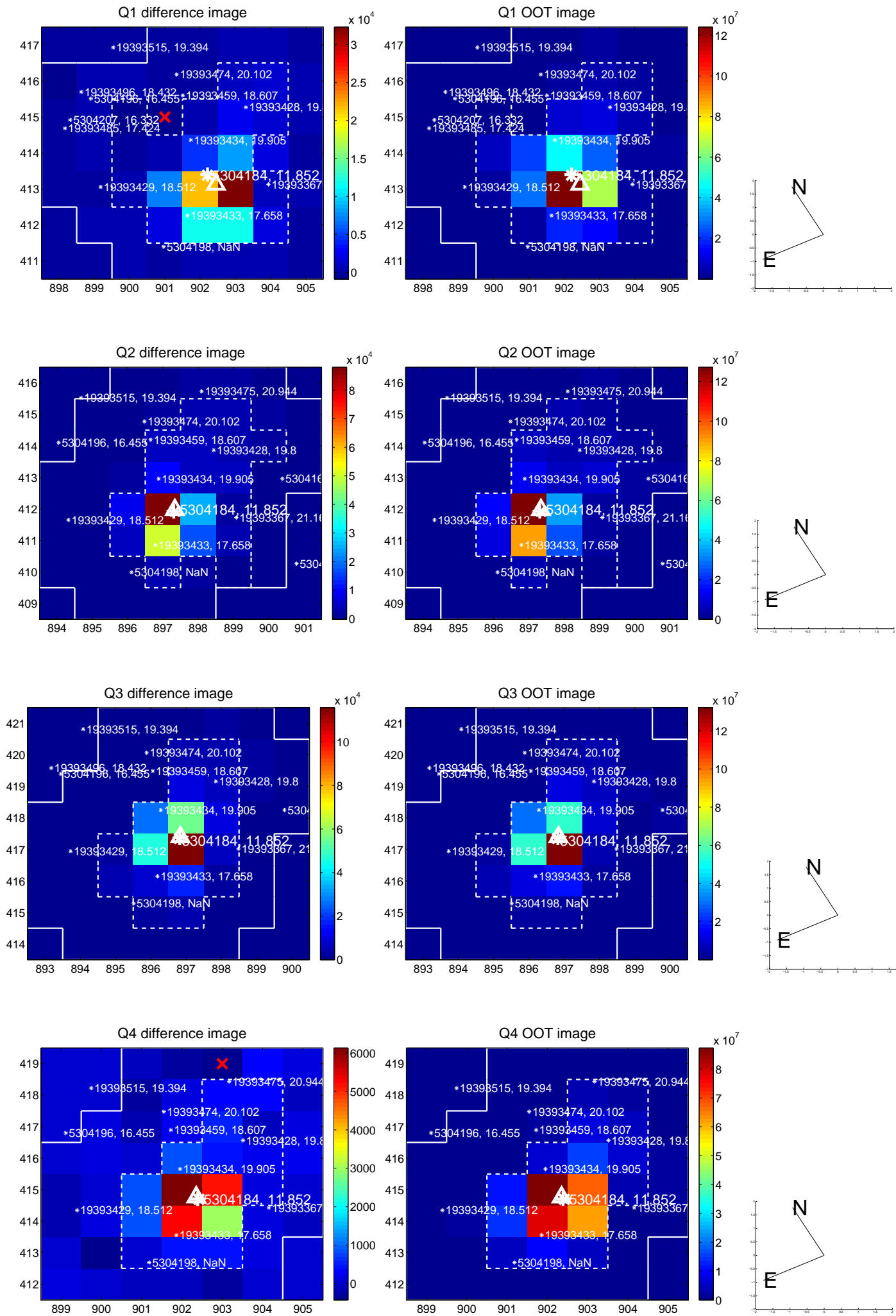
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.169 ± 0.093	1.81	-0.157 ± 0.095	0.062 ± 0.122
PRF-fit source offset from KIC position	0.200 ± 0.090	2.23	-0.169 ± 0.091	0.108 ± 0.117
photometric centroid source offset	0.24 ± 0.04	5.48	-0.06 ± 0.05	0.23 ± 0.04

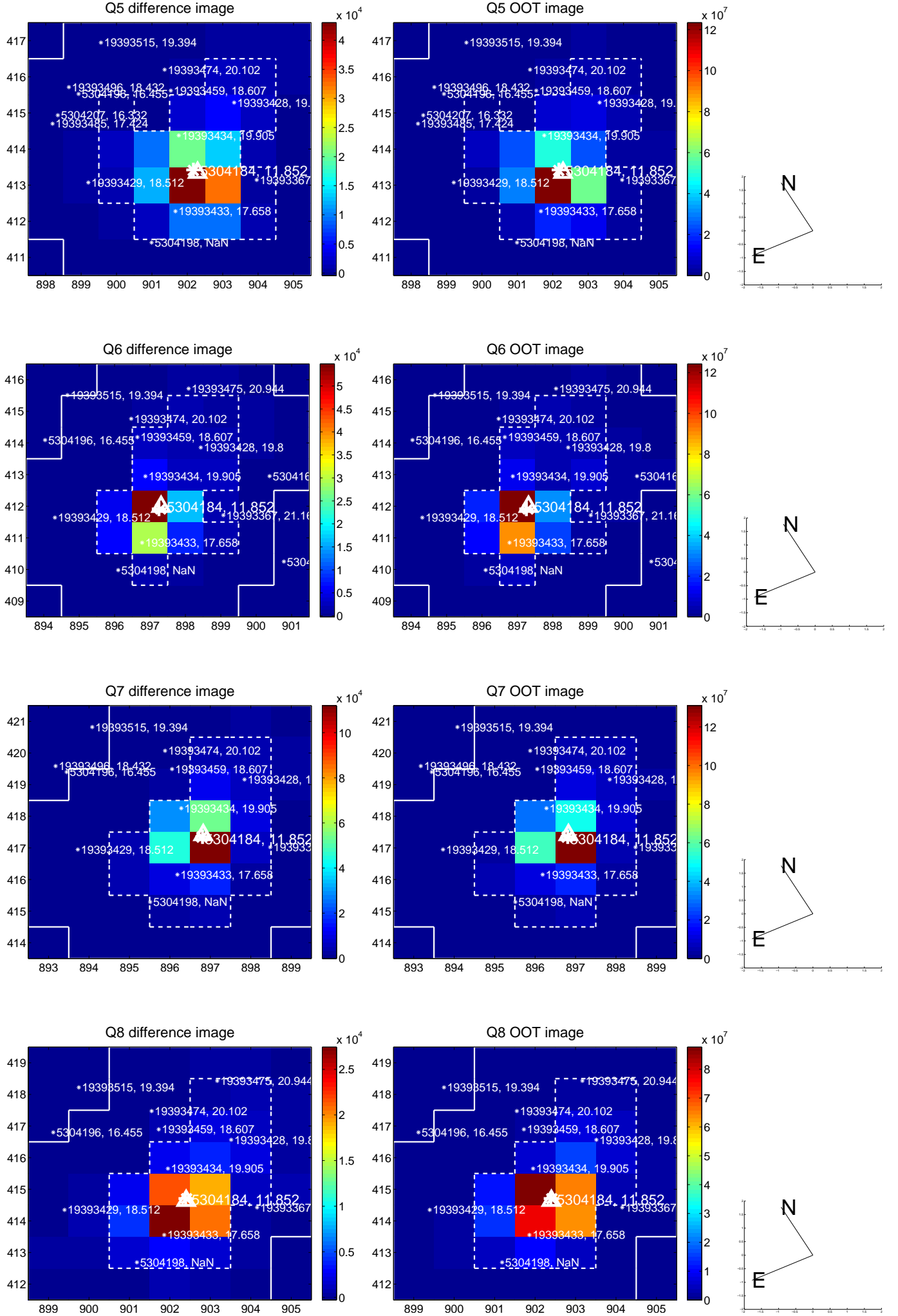


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

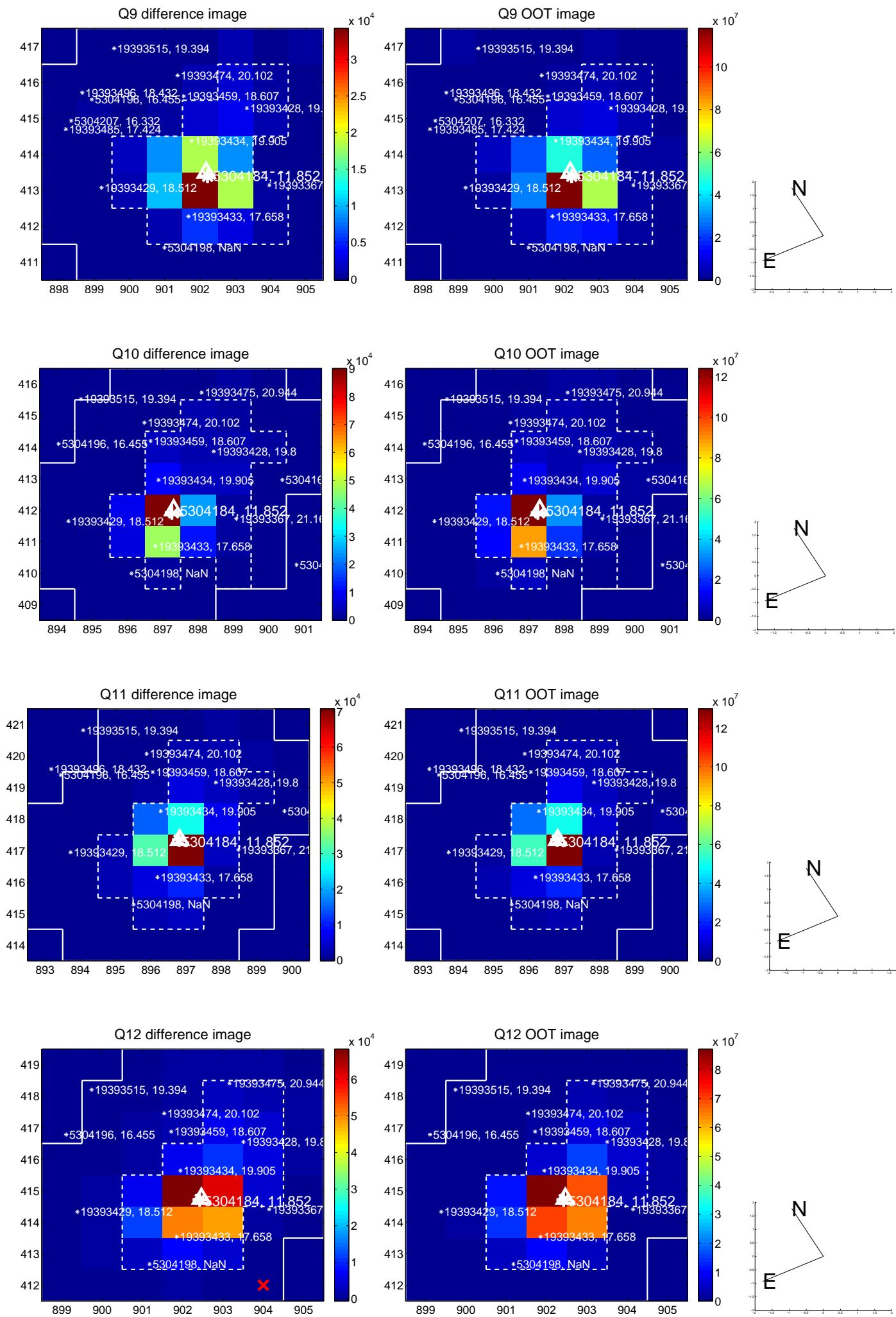
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



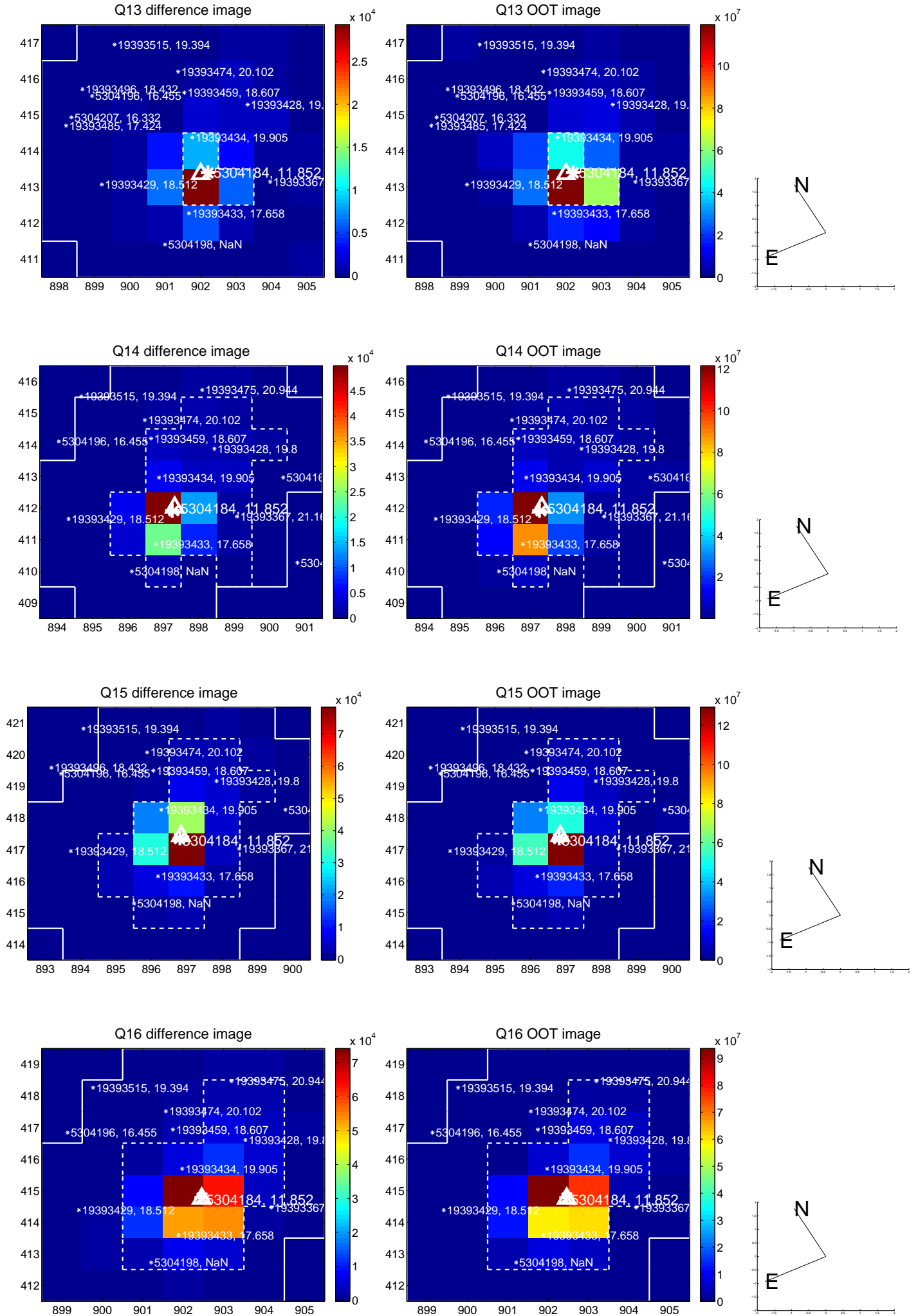
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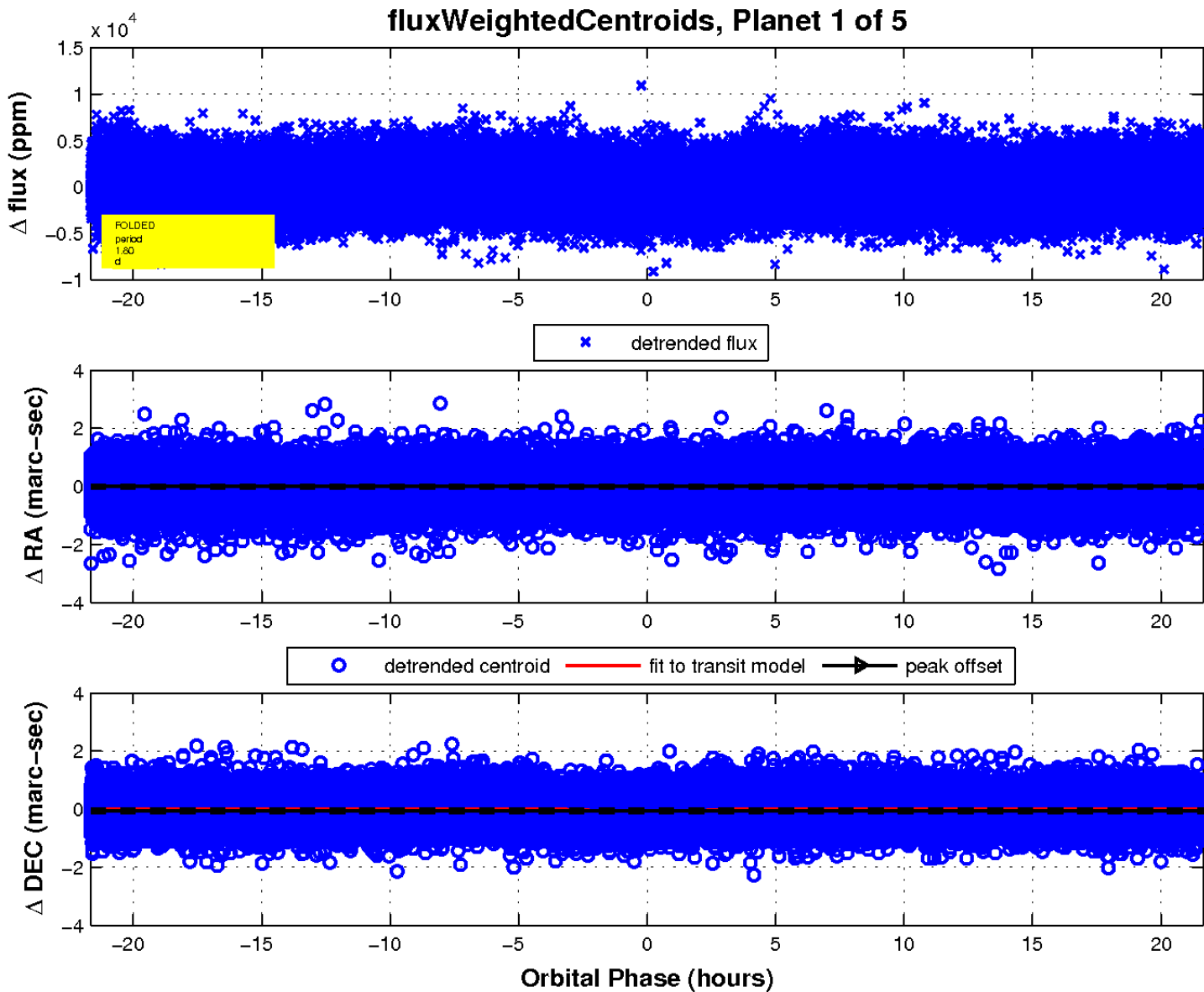
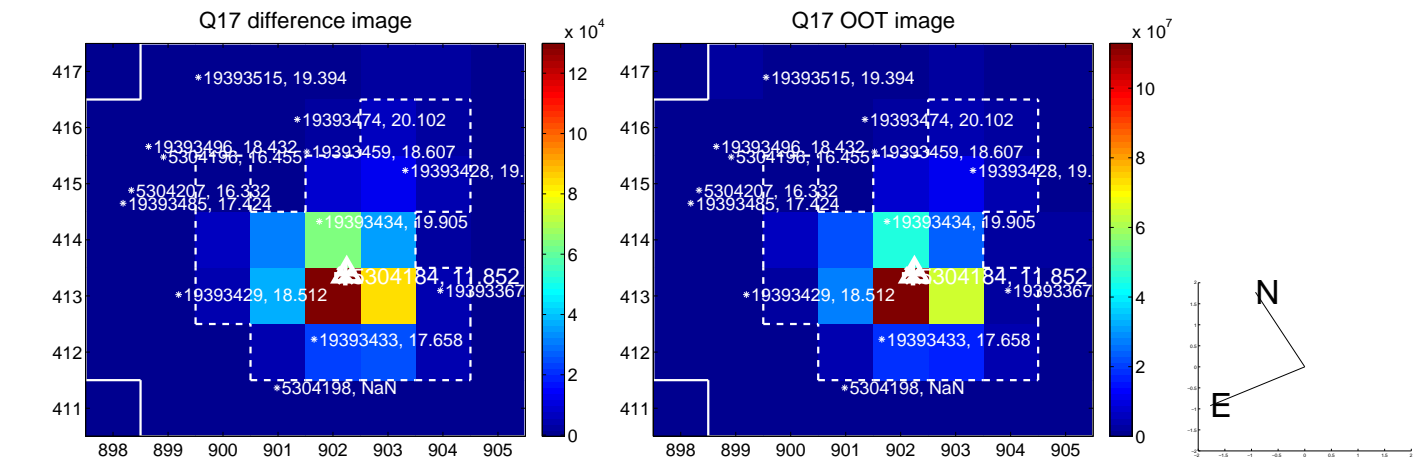
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

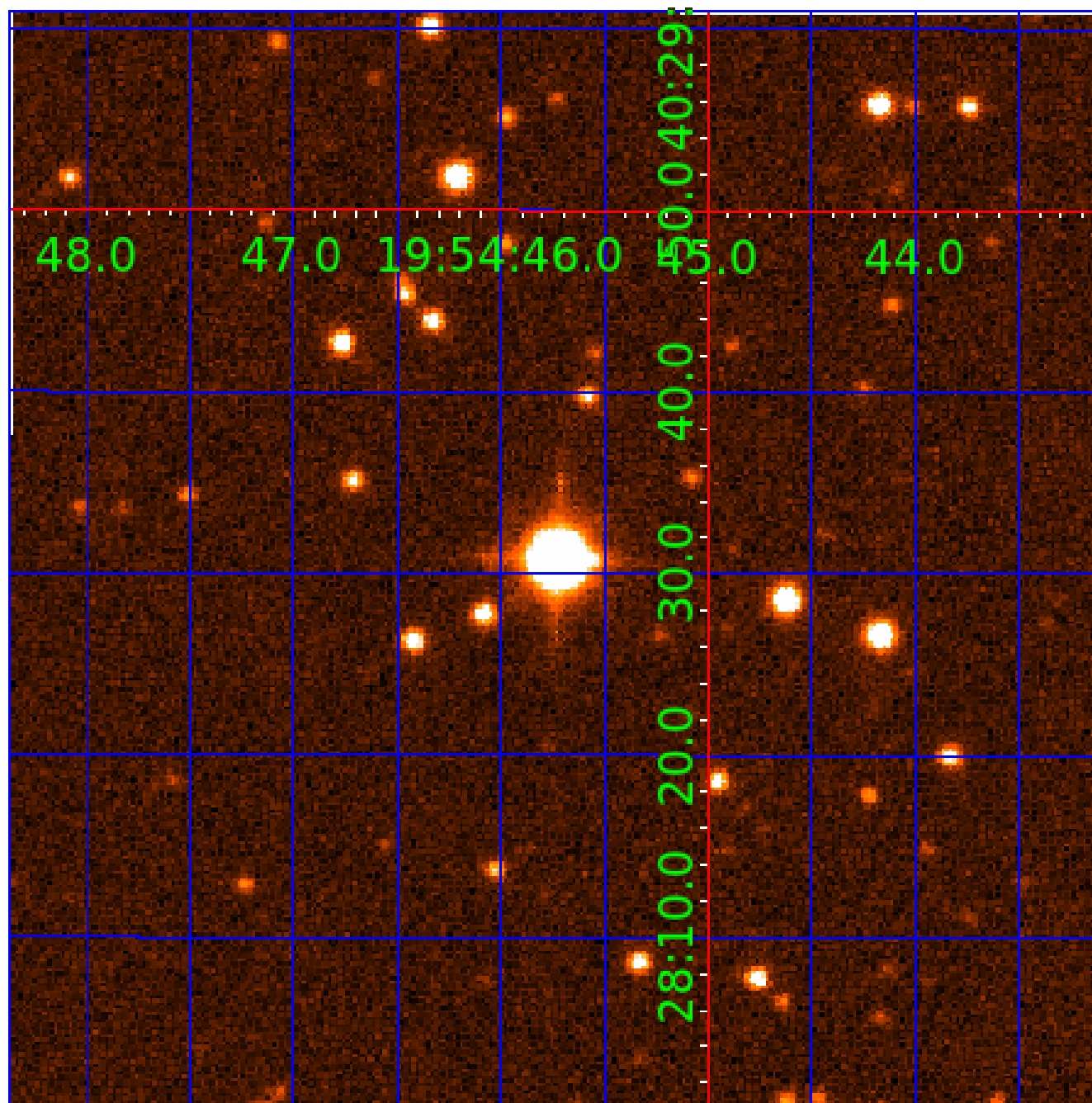


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005304184

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})
005304184-01	OBS	No	1.804555	132.351432	388.0	7.631	9.4	9.9	1.77	7244	4.44	6976.38
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Robovetter Results

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005304184-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005304184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

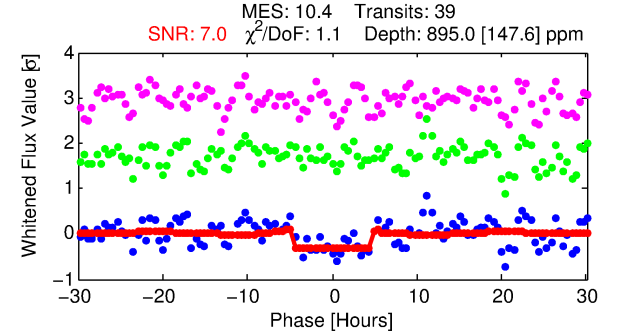
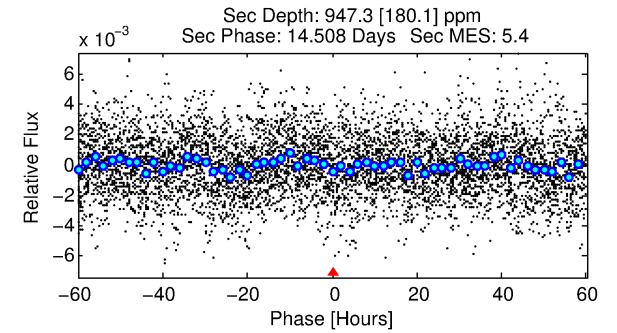
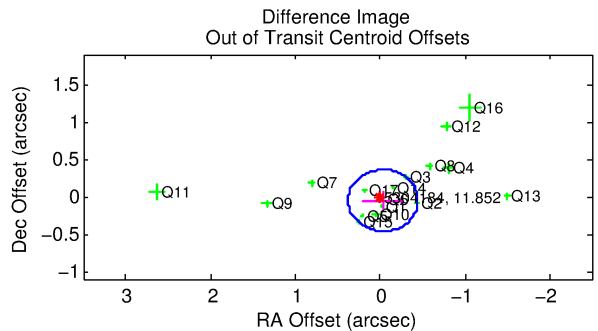
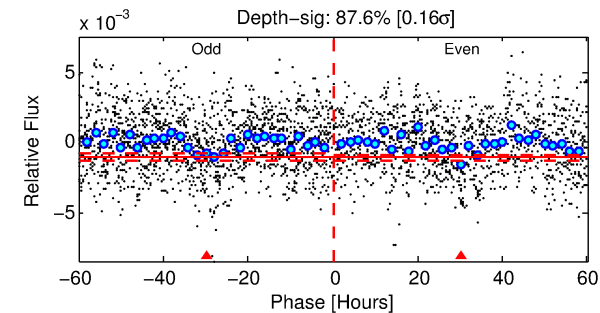
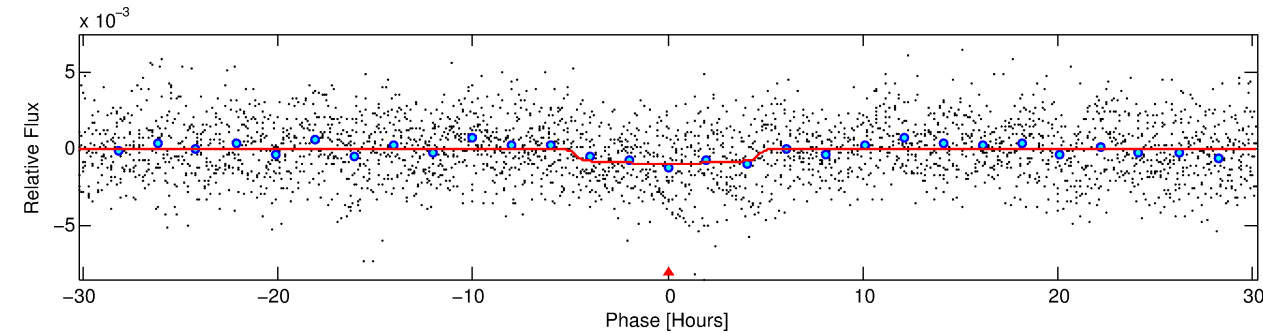
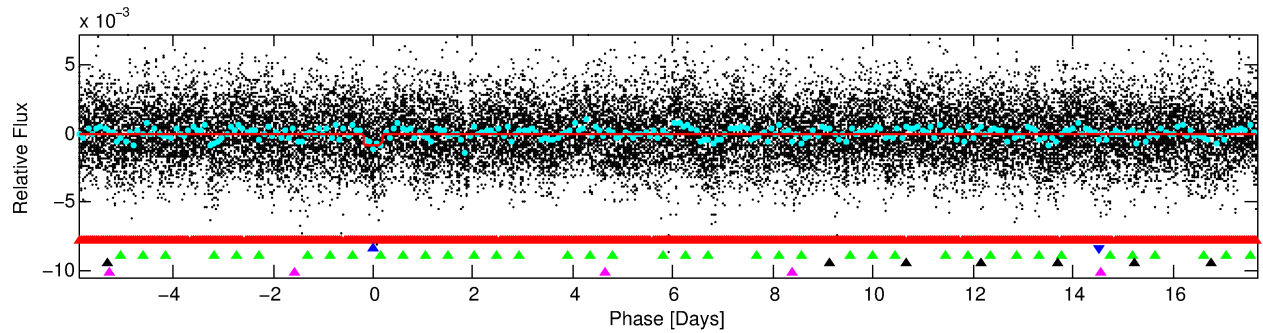
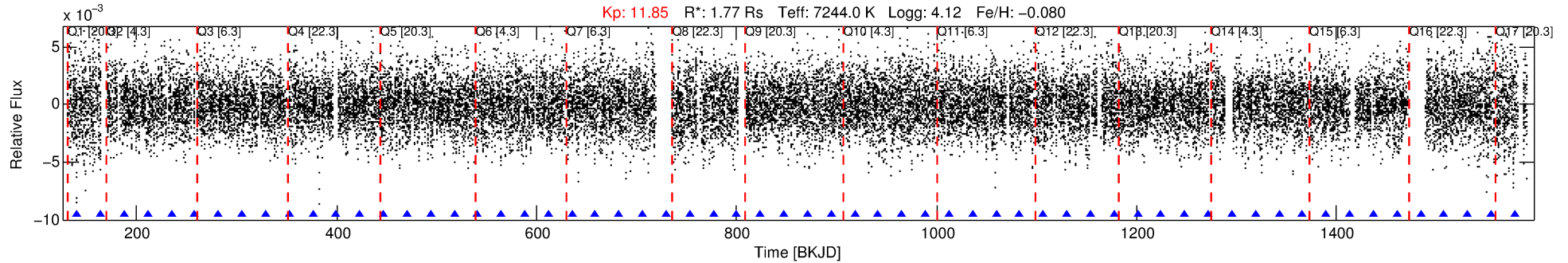
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005304184-02

No Significant Match Found

DV One-Page Summary

KIC: 5304184 Candidate: 2 of 5 Period: 23.568 d



DV Fit Results:

Period = 23.56765 [0.00037] d
Epoch = 140.5055 [0.0121] BKJD
Rp/R* = 0.0294 [0.0042]
a/R* = 13.37 [8.36]
b = 0.71 [0.44]
Seff = 226.83 [85.57]
Teq = 990 [93] K
Rp = 5.69 [1.92] Re
a = 0.1846 [0.0451] AU
Ag = 549.30 [264.28] [2.07 σ]
Teffp = 7407 [705] K [9.03 σ]

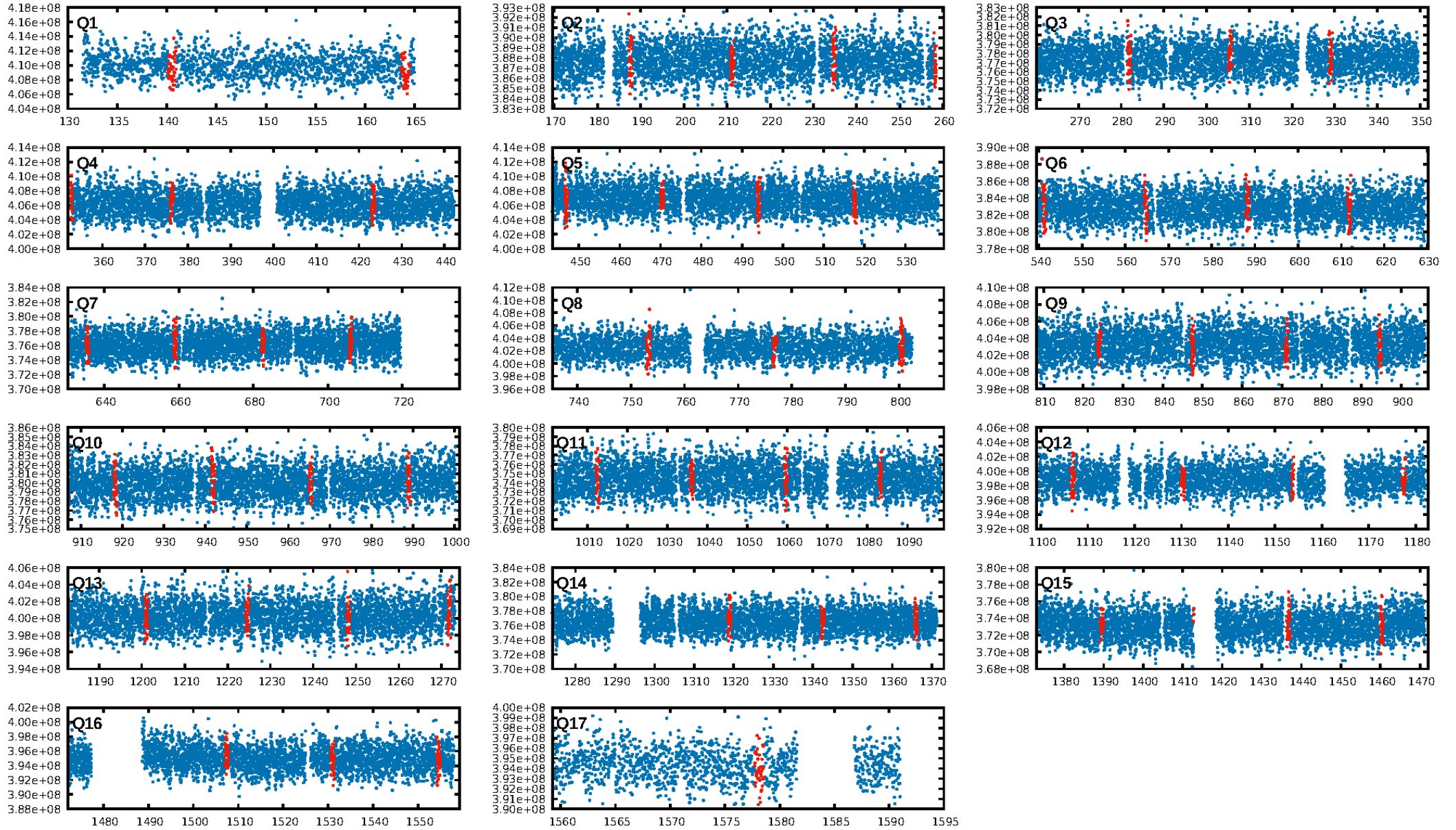
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.35 σ]
LongPeriod-sig: 100.0% [22.46 σ]
ModelChiSquare2-sig: 26.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.48e-13
RollingBand-fgt: 1.00 [36/36]
GhostDiagnostic-chr: 0.9058
Centroid-sig: 0.0%
Centroid-so: 0.190 arcsec [3.21 σ]
OotOffset-rm: 0.062 arcsec [0.45 σ]
KicOffset-rm: 0.019 arcsec [0.12 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 0.00 [0/17]

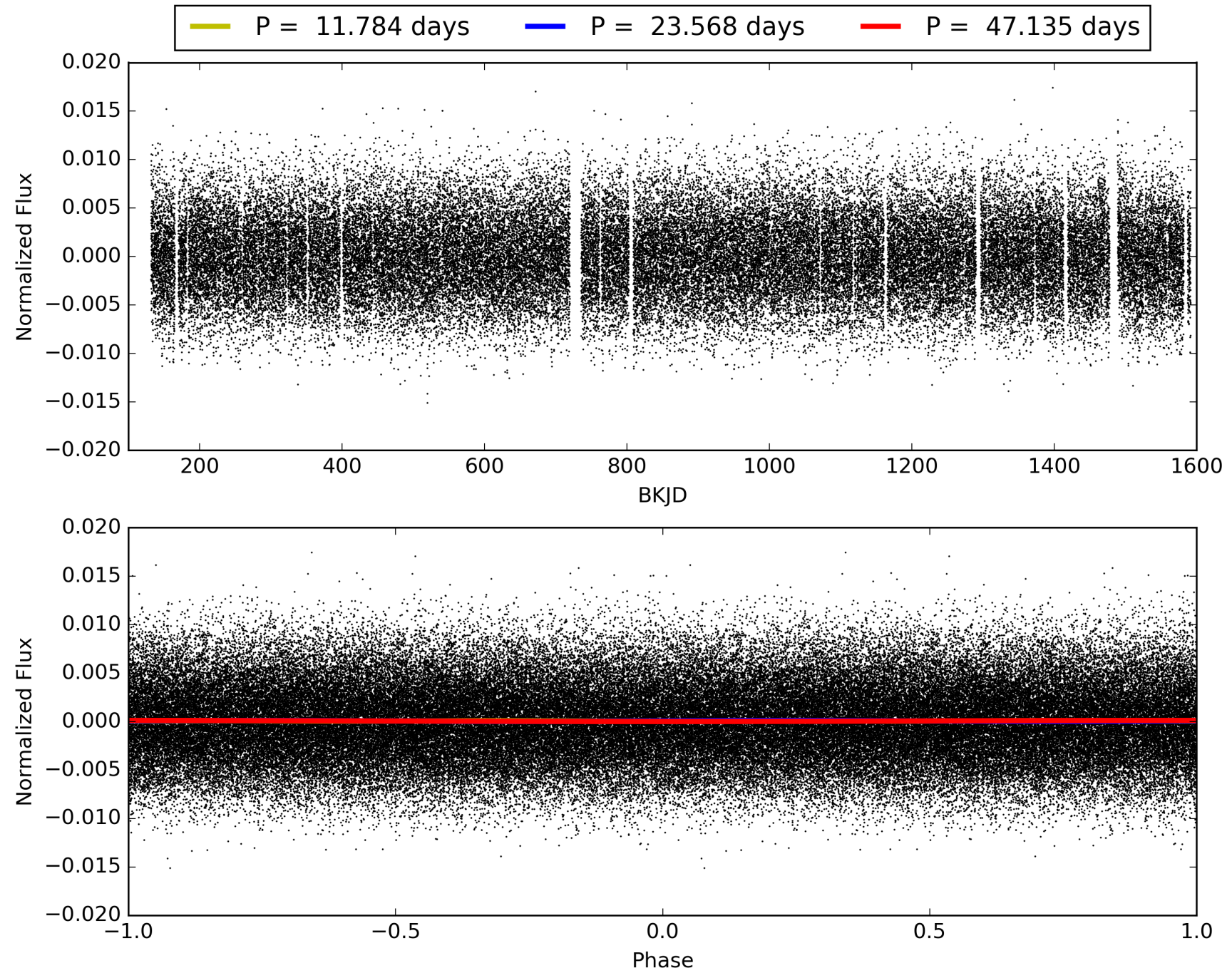
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005304184-02, PDC Light Curves

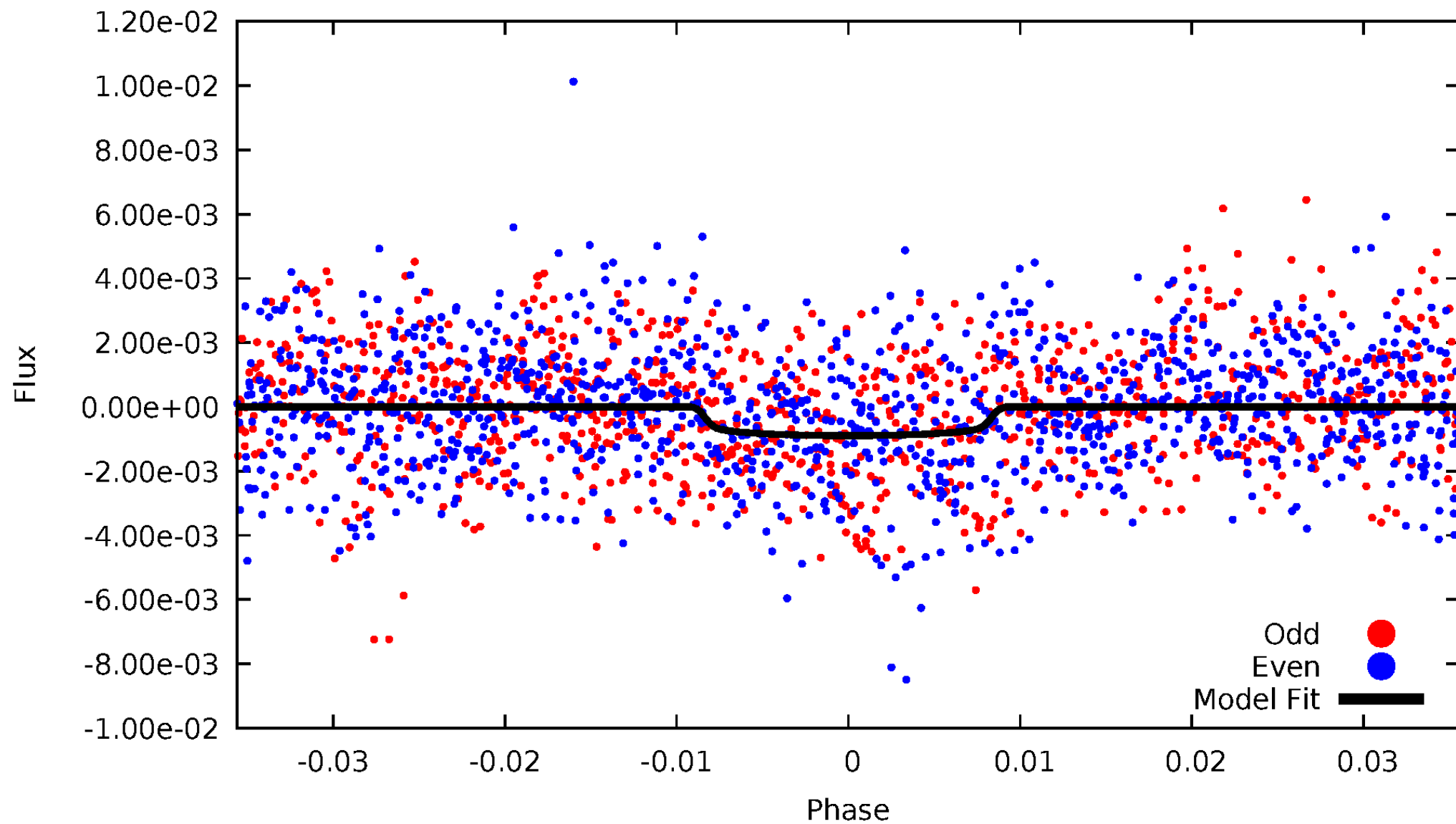


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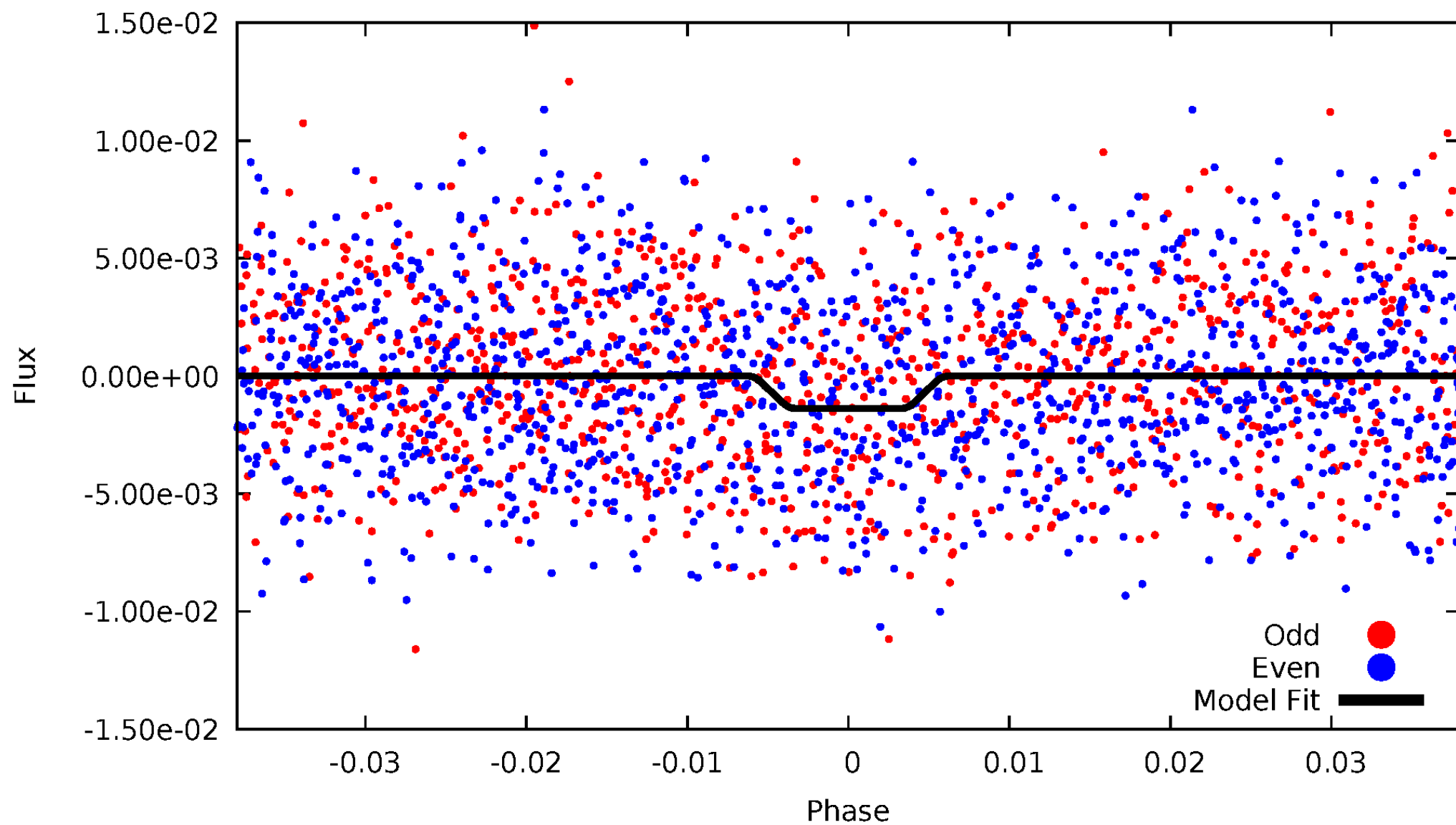
DV Odd/Even

TCE 005304184-02



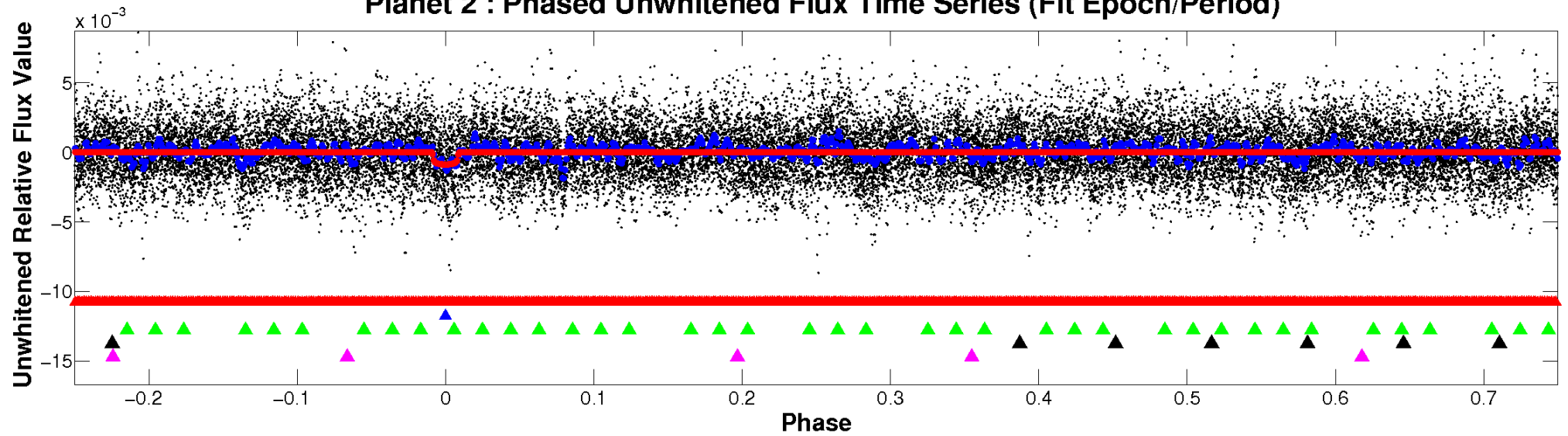
ALT Odd/Even

TCE 005304184-02

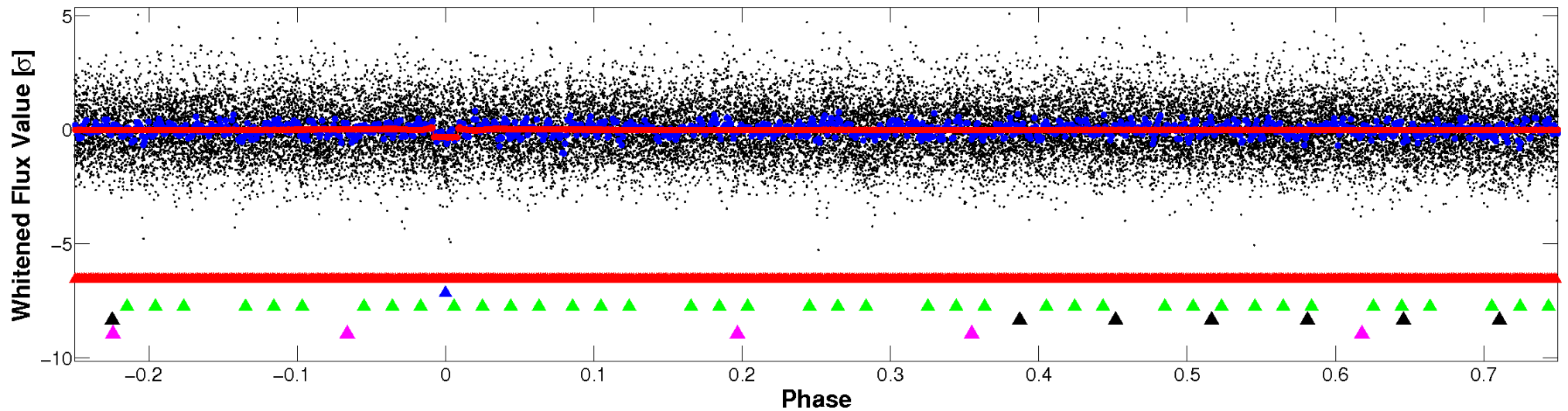


Non-Whitened Vs. Whitened Light Curve

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

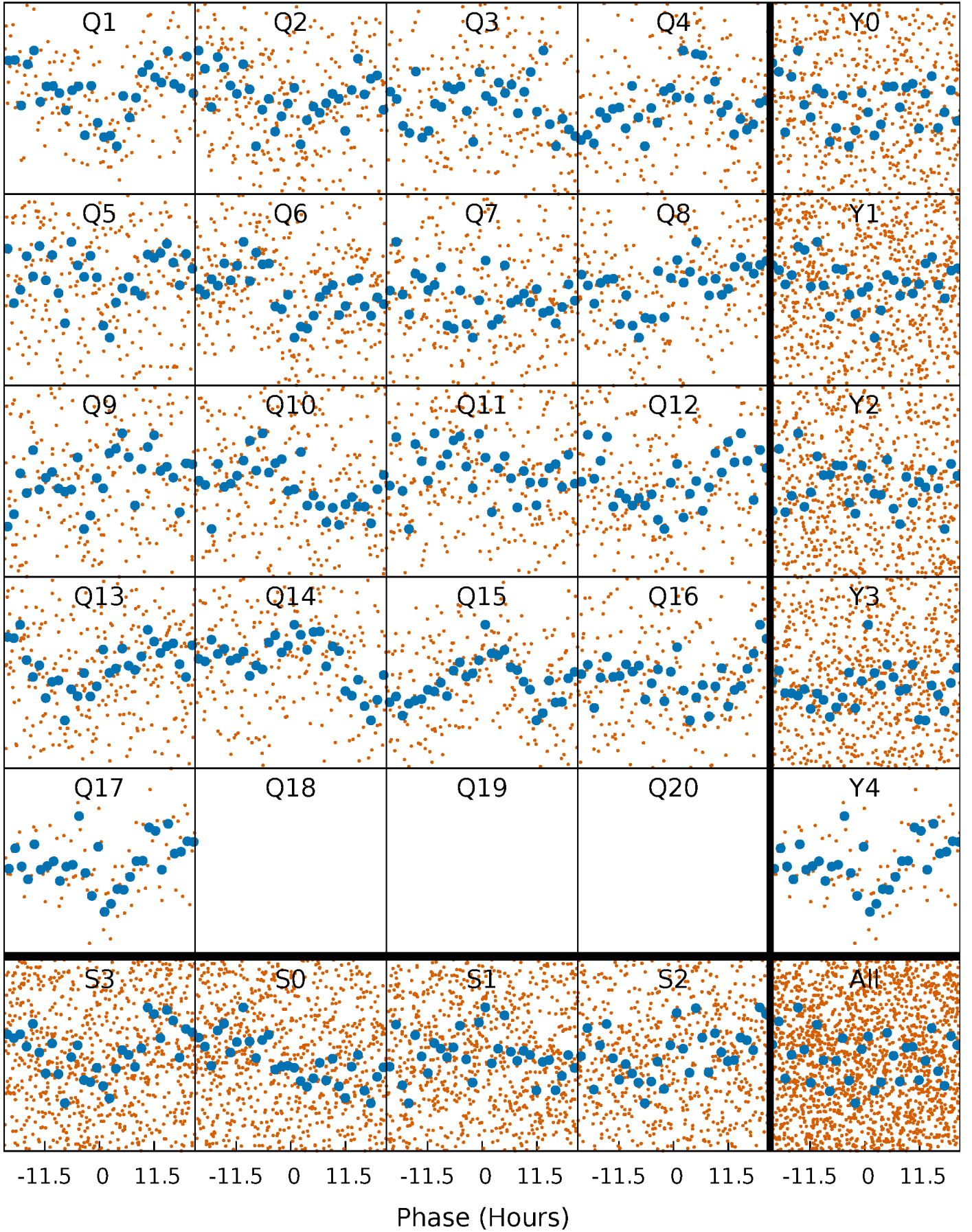


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



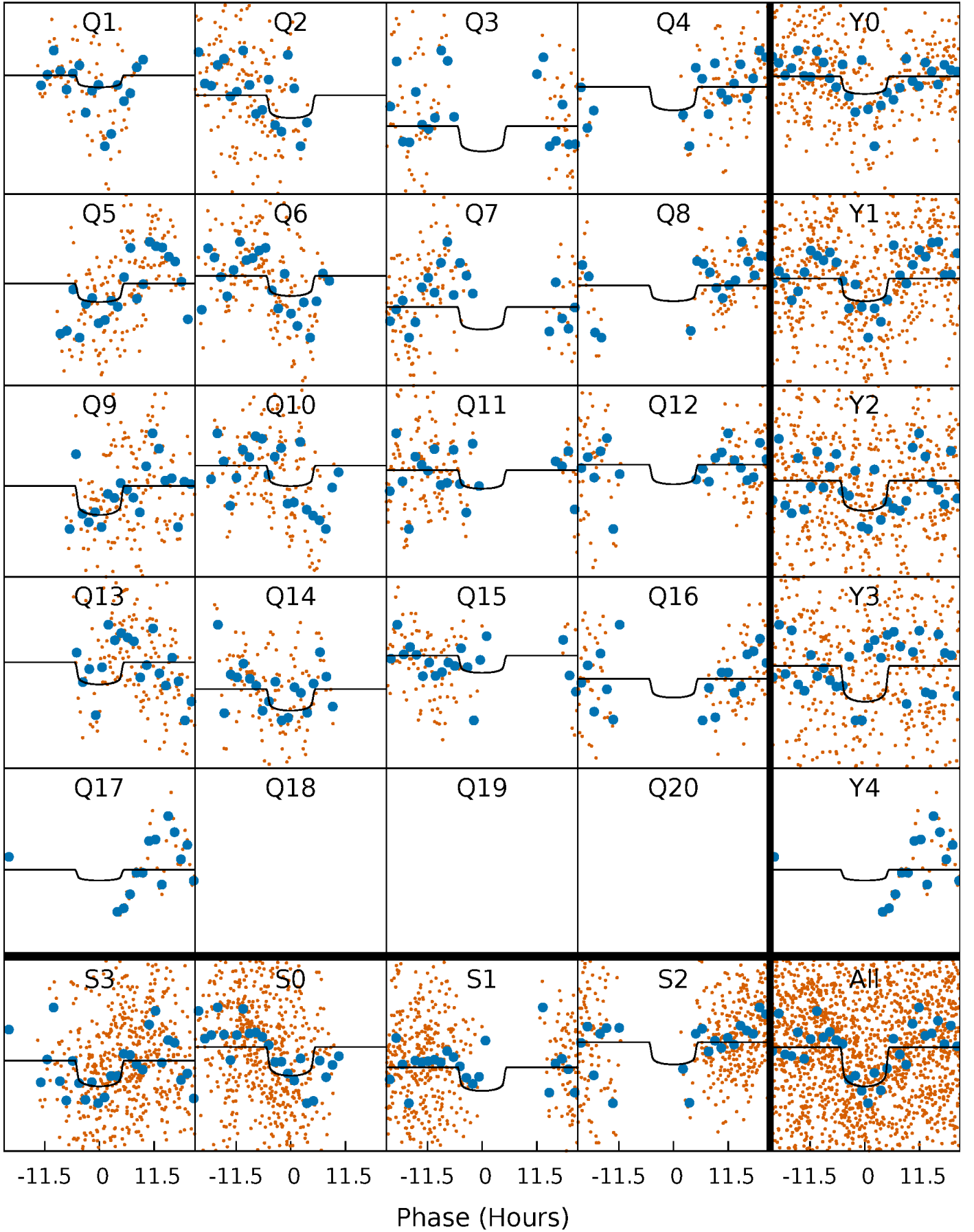
PDC Quarter-Phased Transit Curves

TCE 005304184-02 P= 23.567648 Days $T_0=140.505462$ (BKJD)



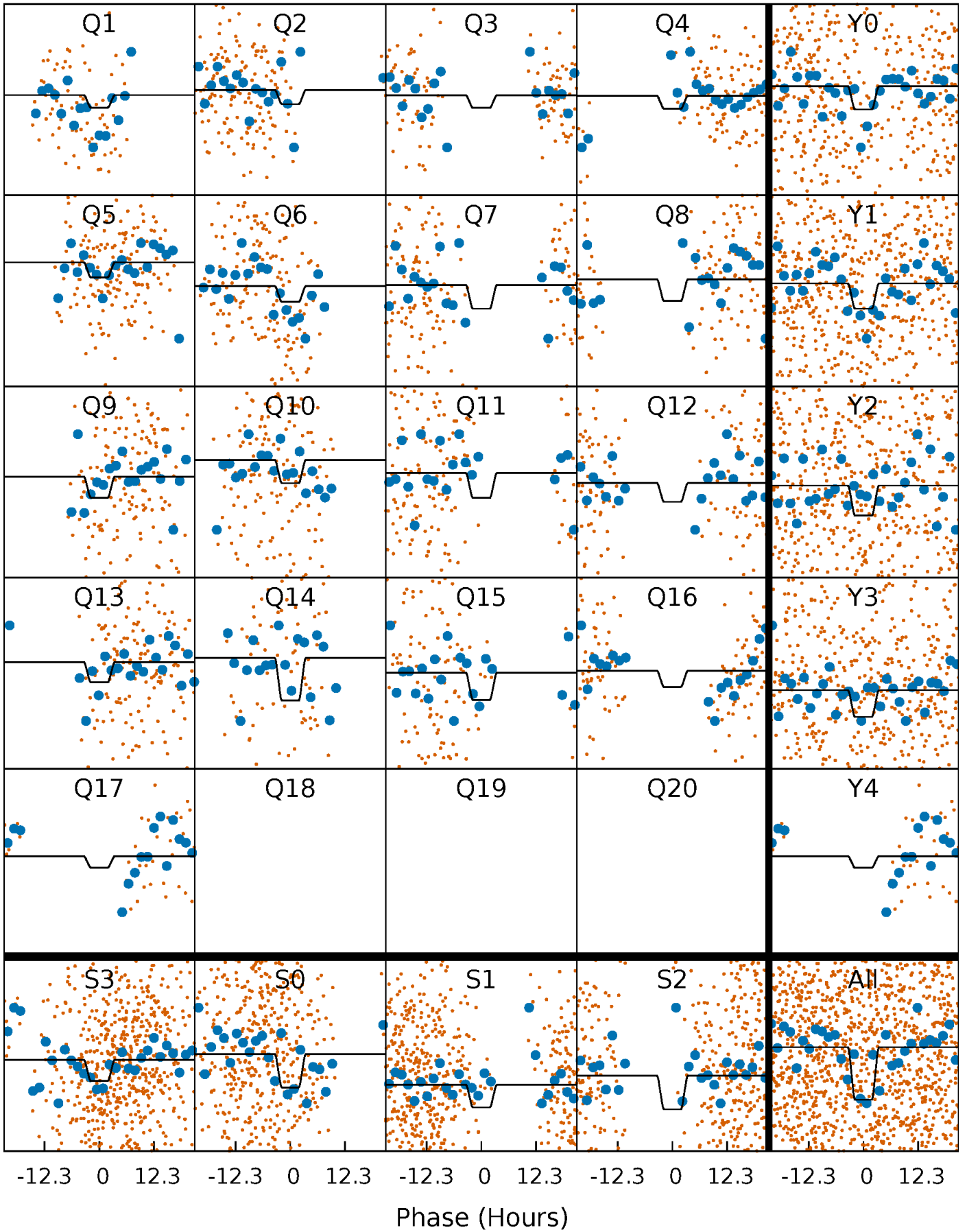
DV Quarter-Phased Transit Curves

TCE 005304184-02 $P = 23.567648$ Days $T_0 = 140.505462$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

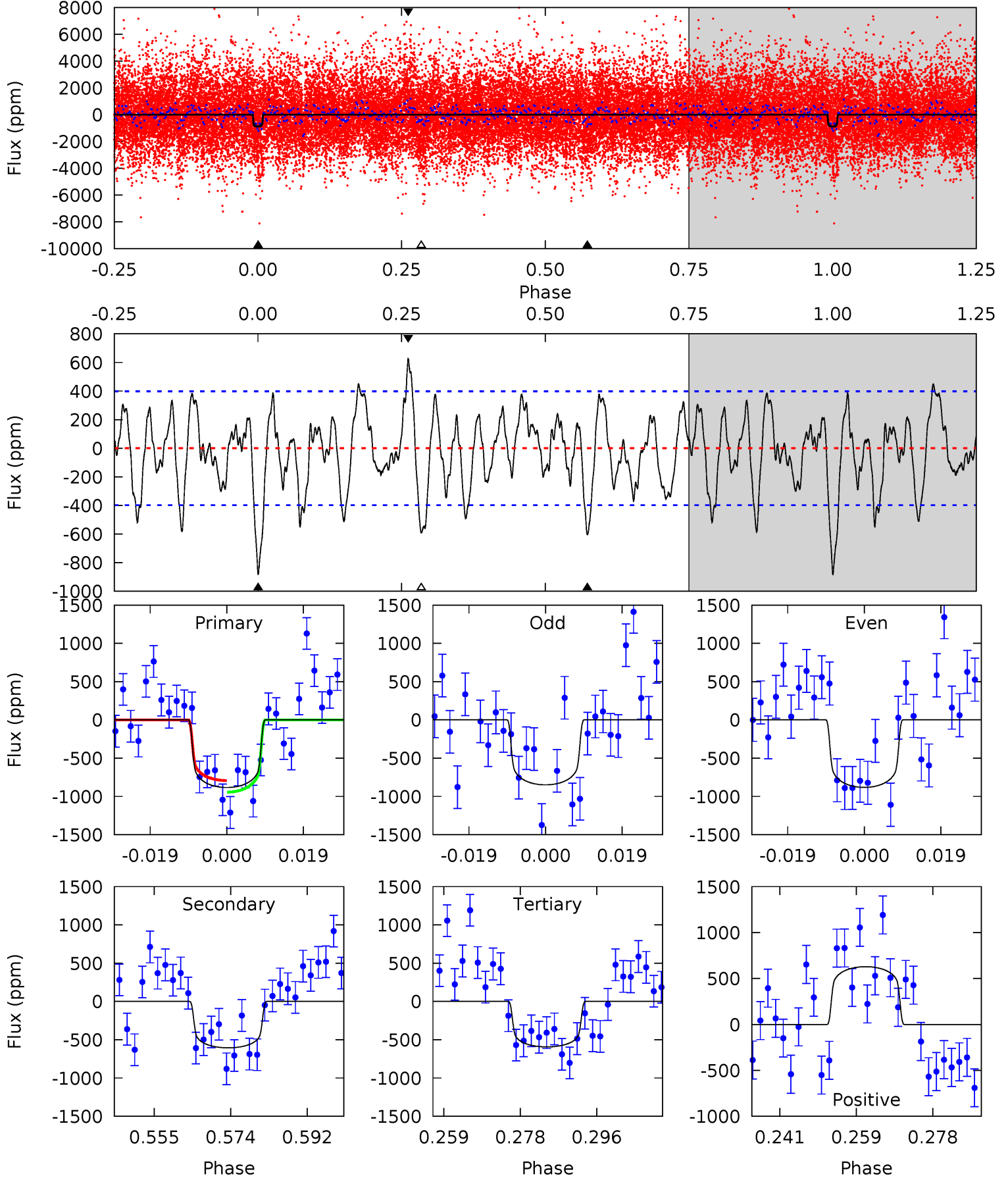
TCE 005304184-02 P= 23.564961 Days $T_0=140.592878$ (BKJD)



DV Model-Shift Uniqueness Test

005304184-02, P = 23.567648 Days, E = 116.937814 Days

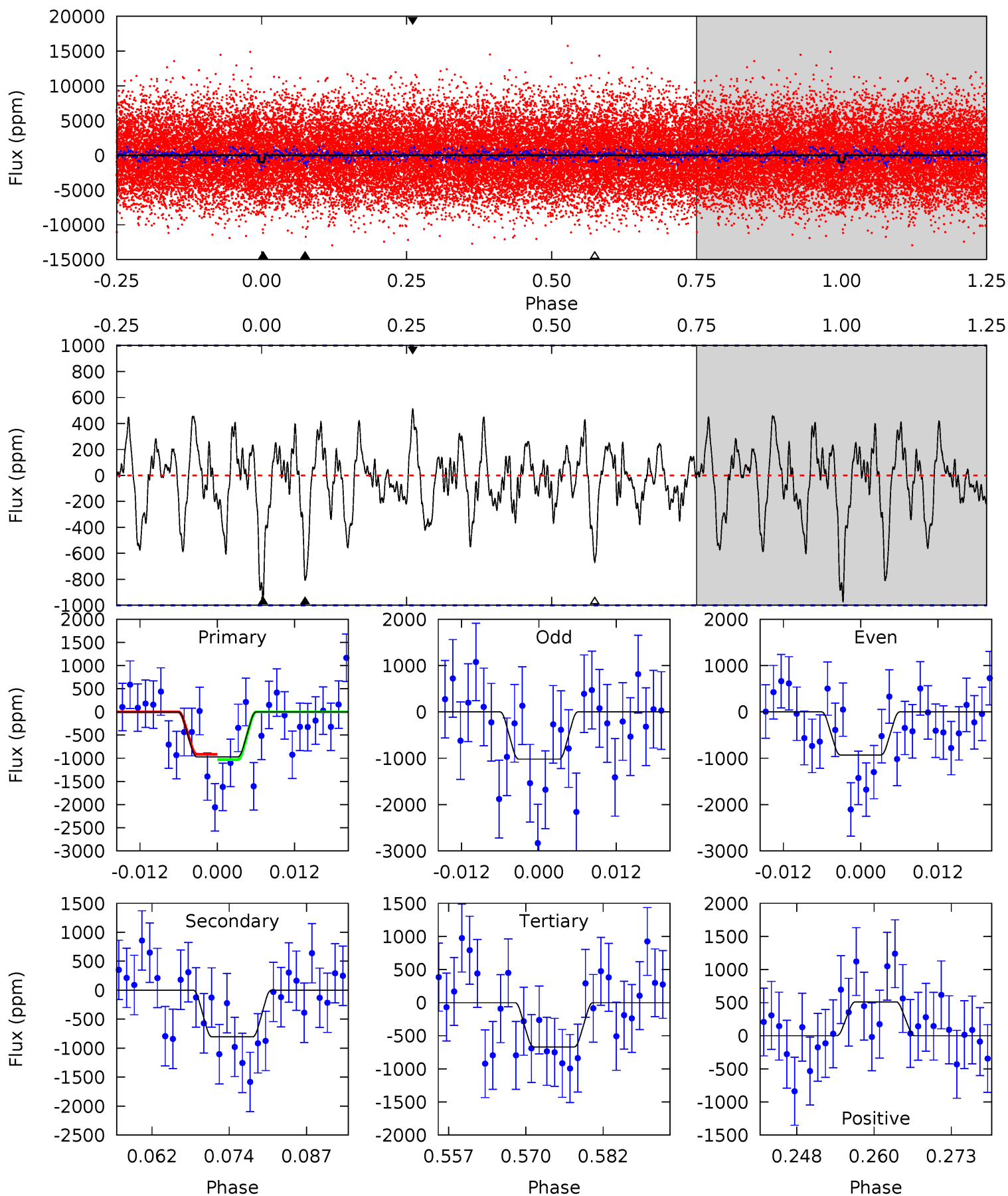
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	7.47	7.32	7.75	4.91	2.36	2.81	3.57	3.15	0.15	-0.28	0.20	1.00	0.42	0.94



Alt Model-Shift Uniqueness Test

005304184-02, P = 23.564961 Days, E = 117.027917 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.85	4.02	3.33	2.55	4.99	2.50	1.06	1.51	2.29	0.69	1.46	0.22	2.53	0.35	0.28



Stellar Parameters For KIC 005304184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+201}_{-302}	$4.121^{+0.144}_{-0.176}$	$-0.080^{+0.200}_{-0.350}$	$1.770^{+0.541}_{-0.406}$	$1.508^{+0.212}_{-0.236}$	$0.383^{+0.296}_{-0.196}$
	+3%/-4%	+3%/-4%	+250%/-438%	+31%/-23%	+14%/-16%	+77%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005304184-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-606 ± 81	$5.77^{+1.19}_{-1.05}$	1385^{+98}_{-97}	6540^{+596}_{-550}	345^{+170}_{-117}
Alt.	-806 ± 201	$7.36^{+1.31}_{-1.33}$	1394^{+101}_{-97}	6208^{+602}_{-563}	271^{+138}_{-95}

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

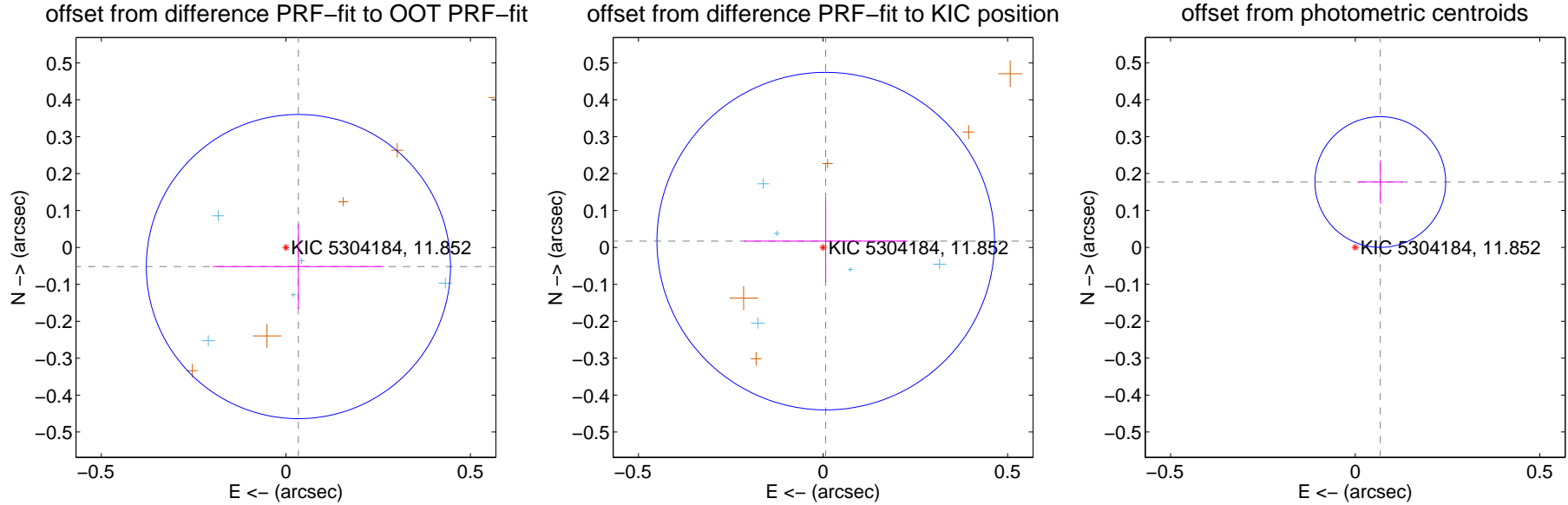
DV Centroid Data

Supplemental centroid analysis for 005304184-02. **Kepler magnitude: 11.85.** Transit SNR 6.98

There are 10 quarters with good PRF difference image offsets

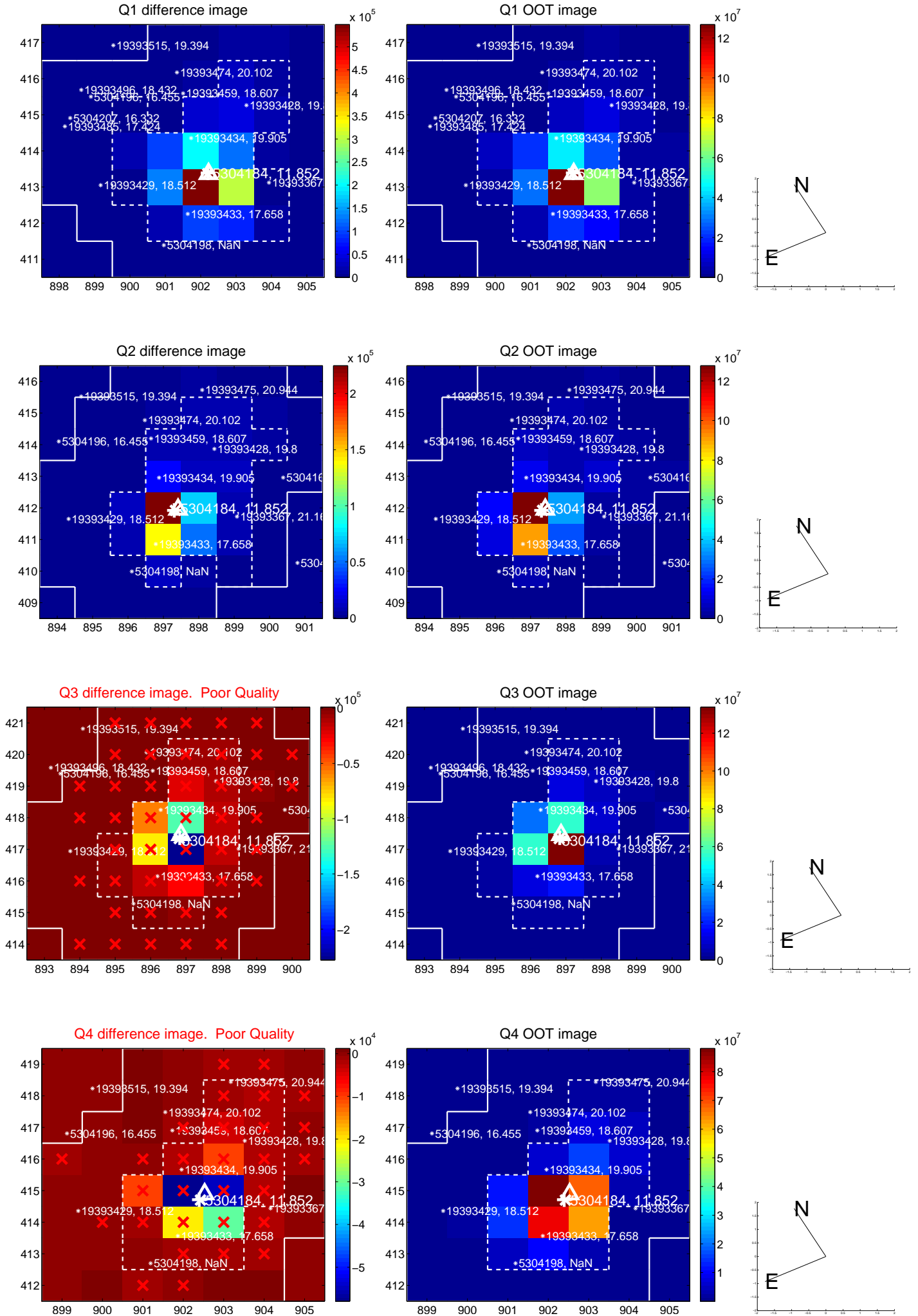
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.062 ± 0.137	0.45	-0.034 ± 0.232	-0.052 ± 0.115
PRF-fit source offset from KIC position	0.019 ± 0.152	0.12	-0.007 ± 0.222	0.017 ± 0.113
photometric centroid source offset	0.19 ± 0.06	3.21	-0.07 ± 0.06	0.18 ± 0.06

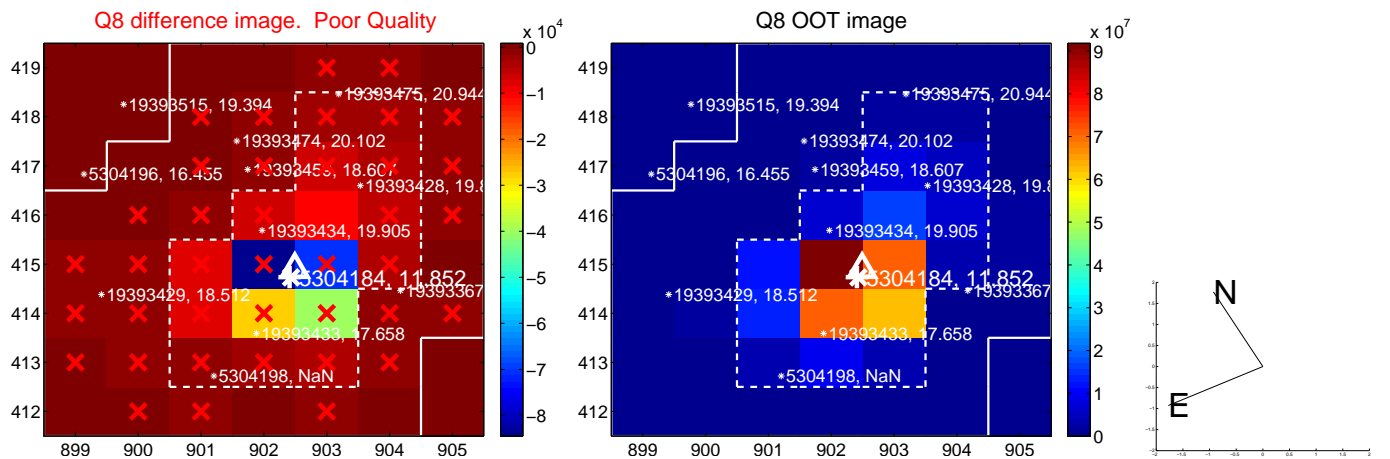
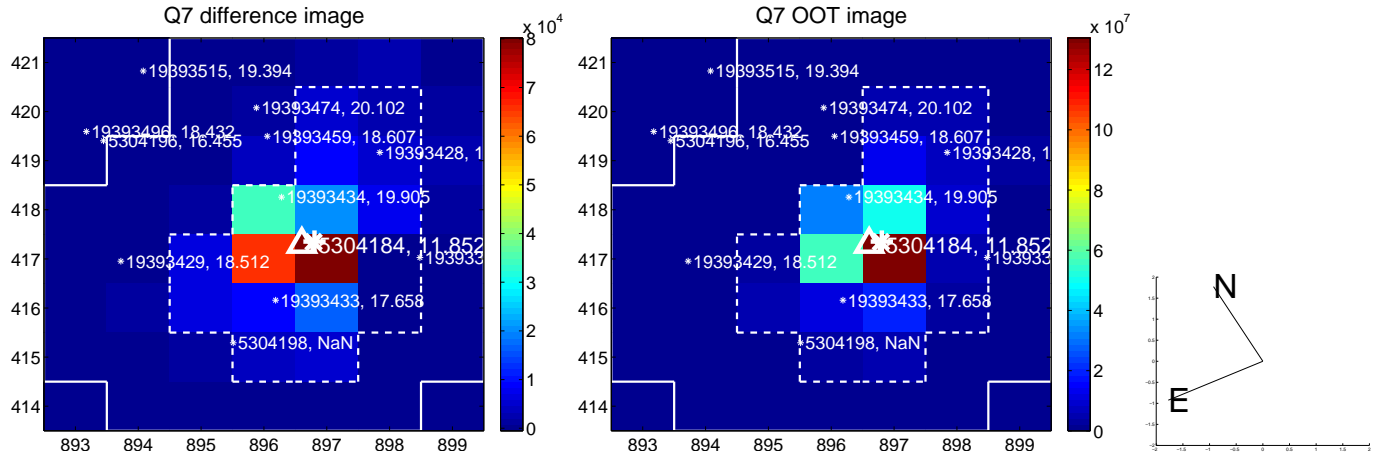
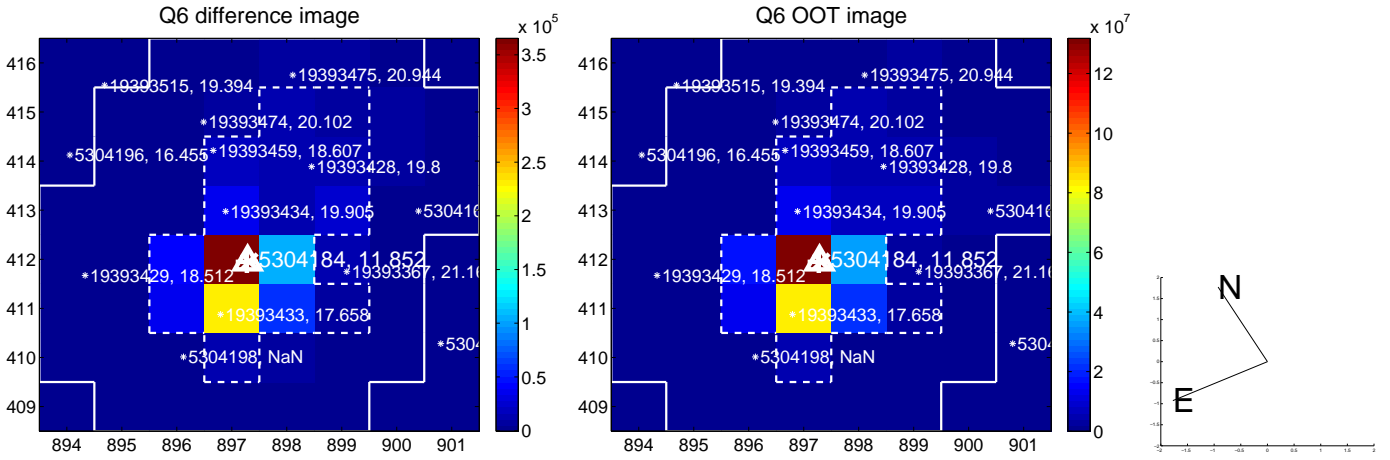
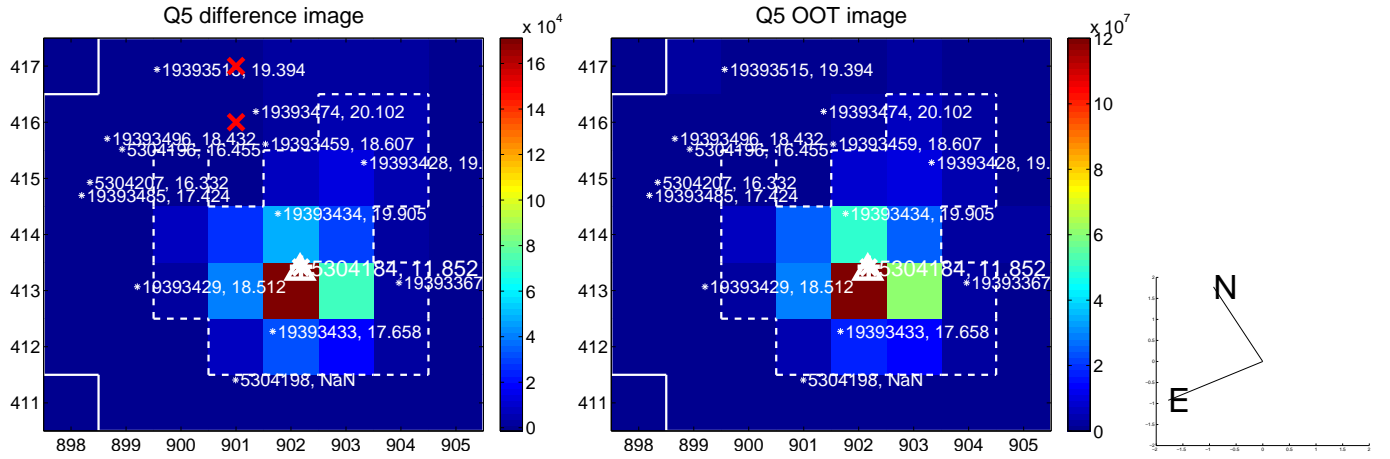


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

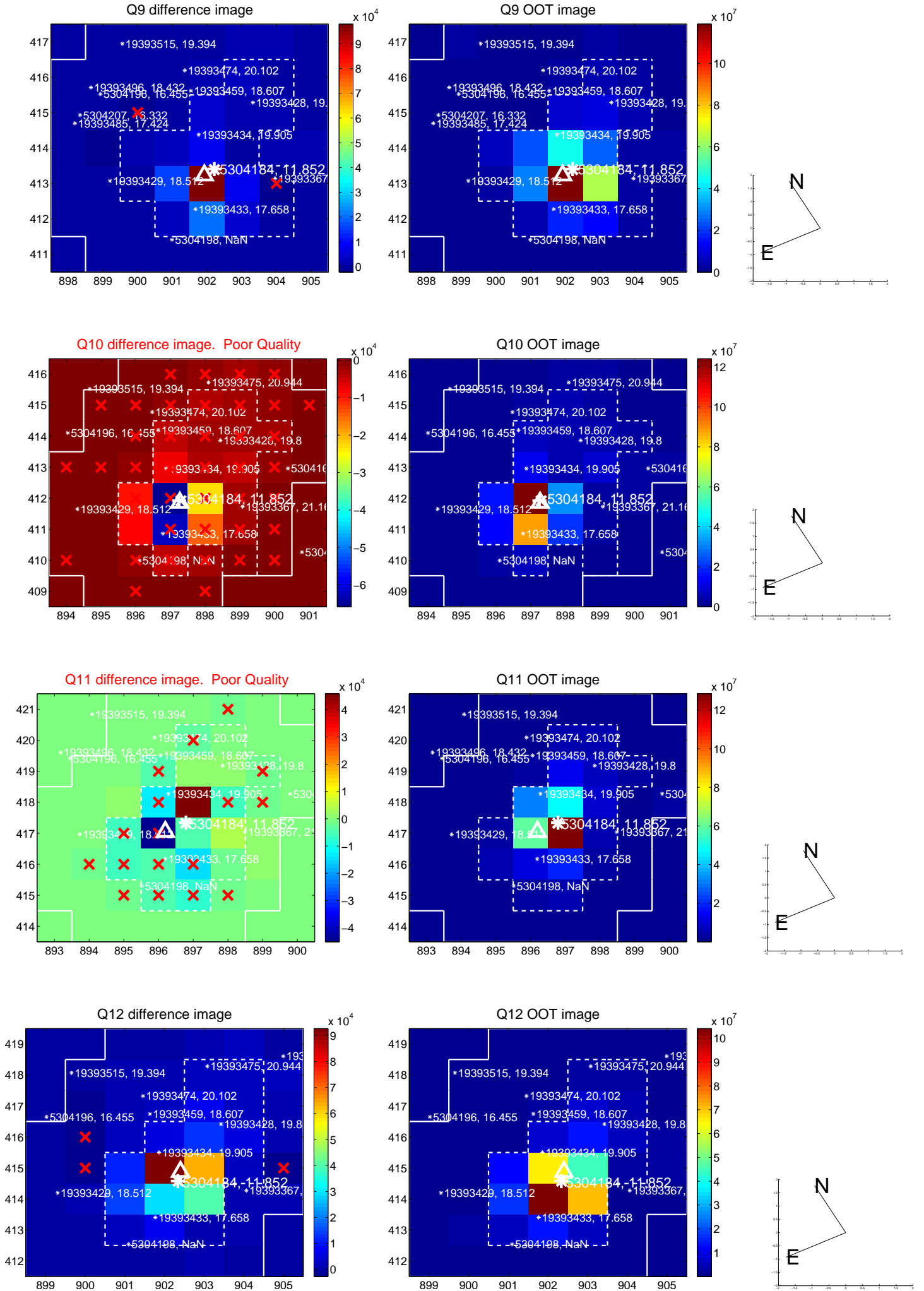
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



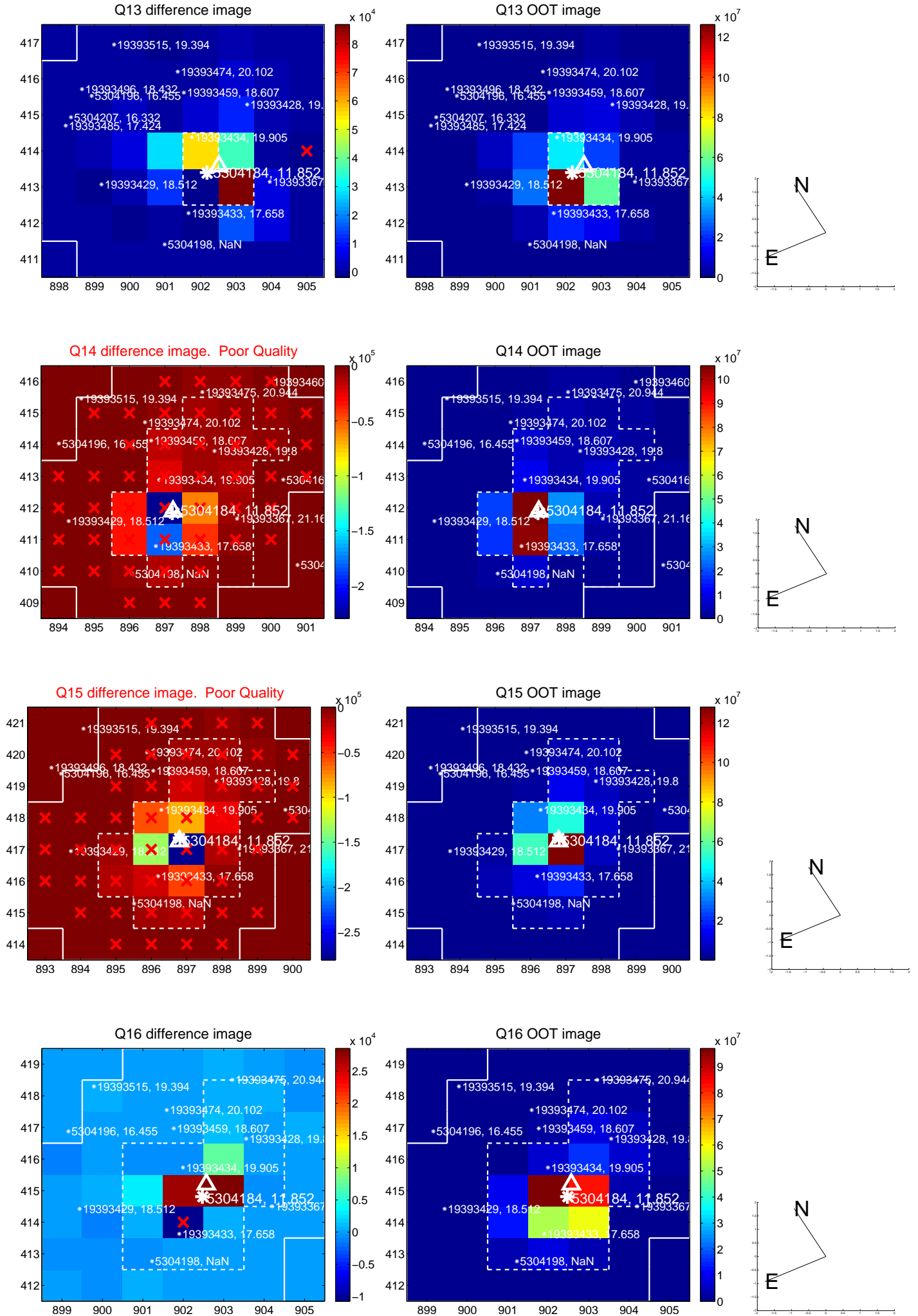
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



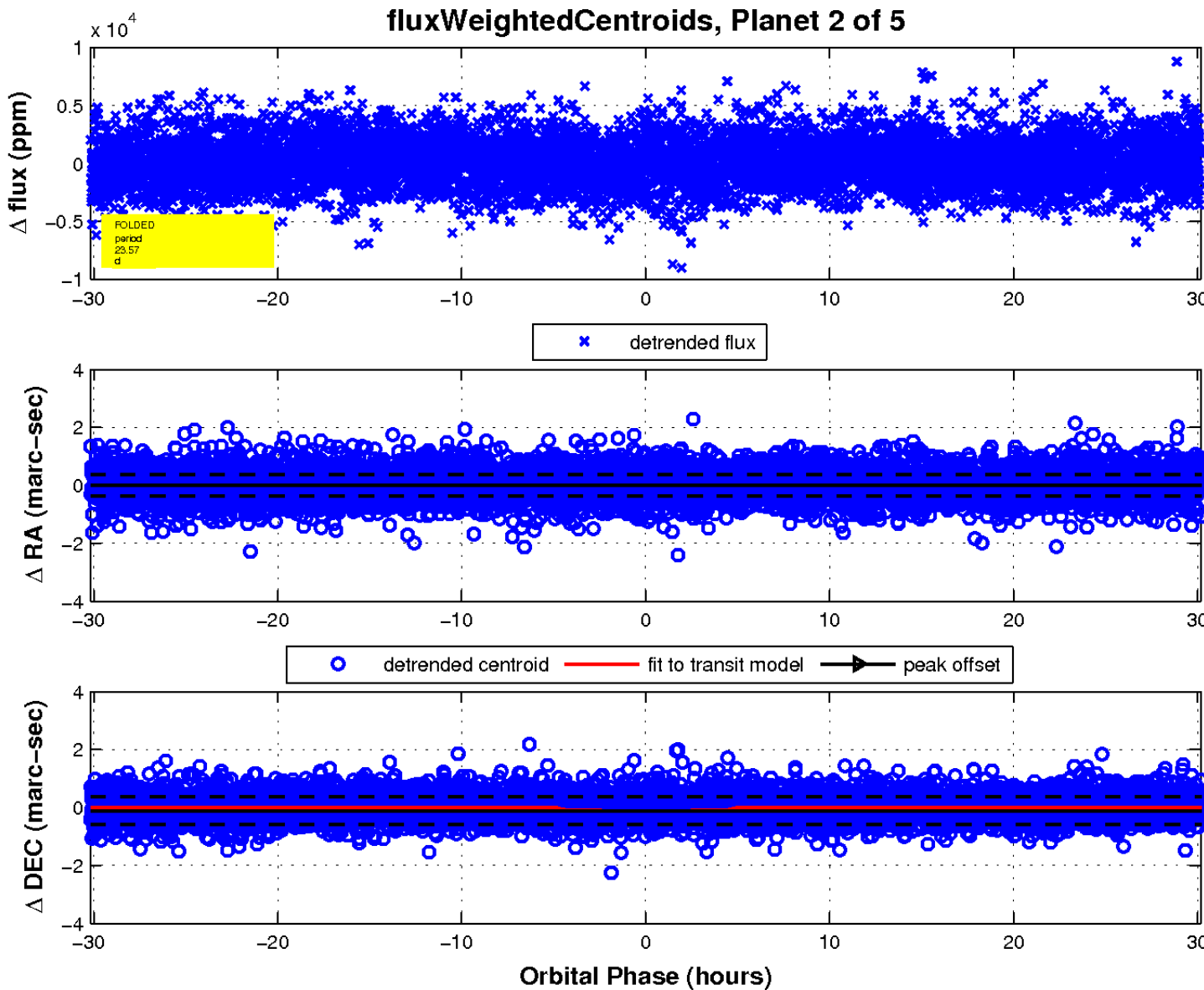
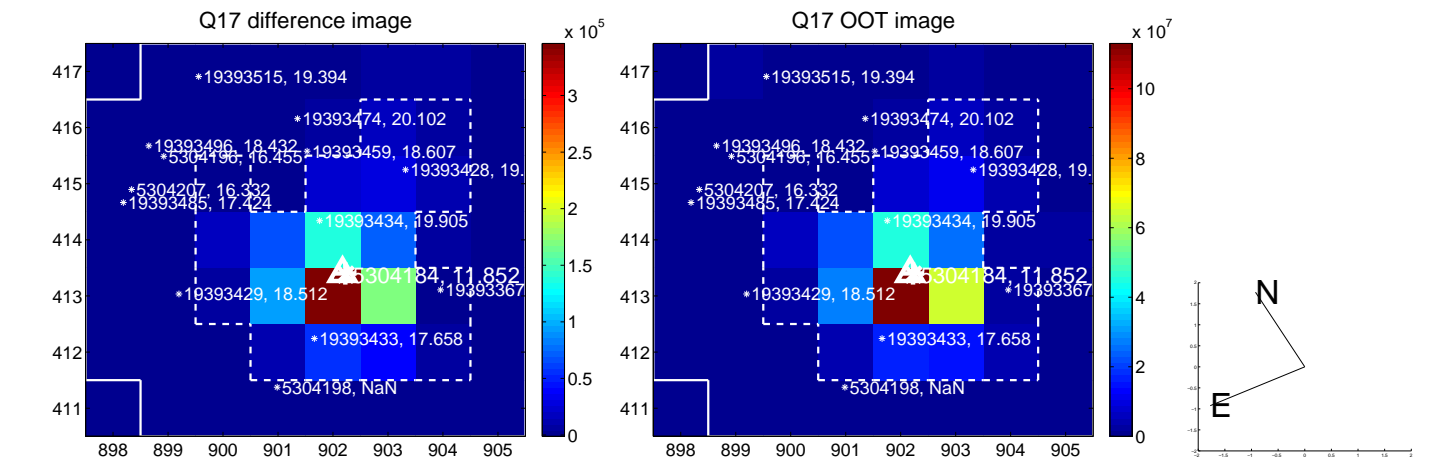
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

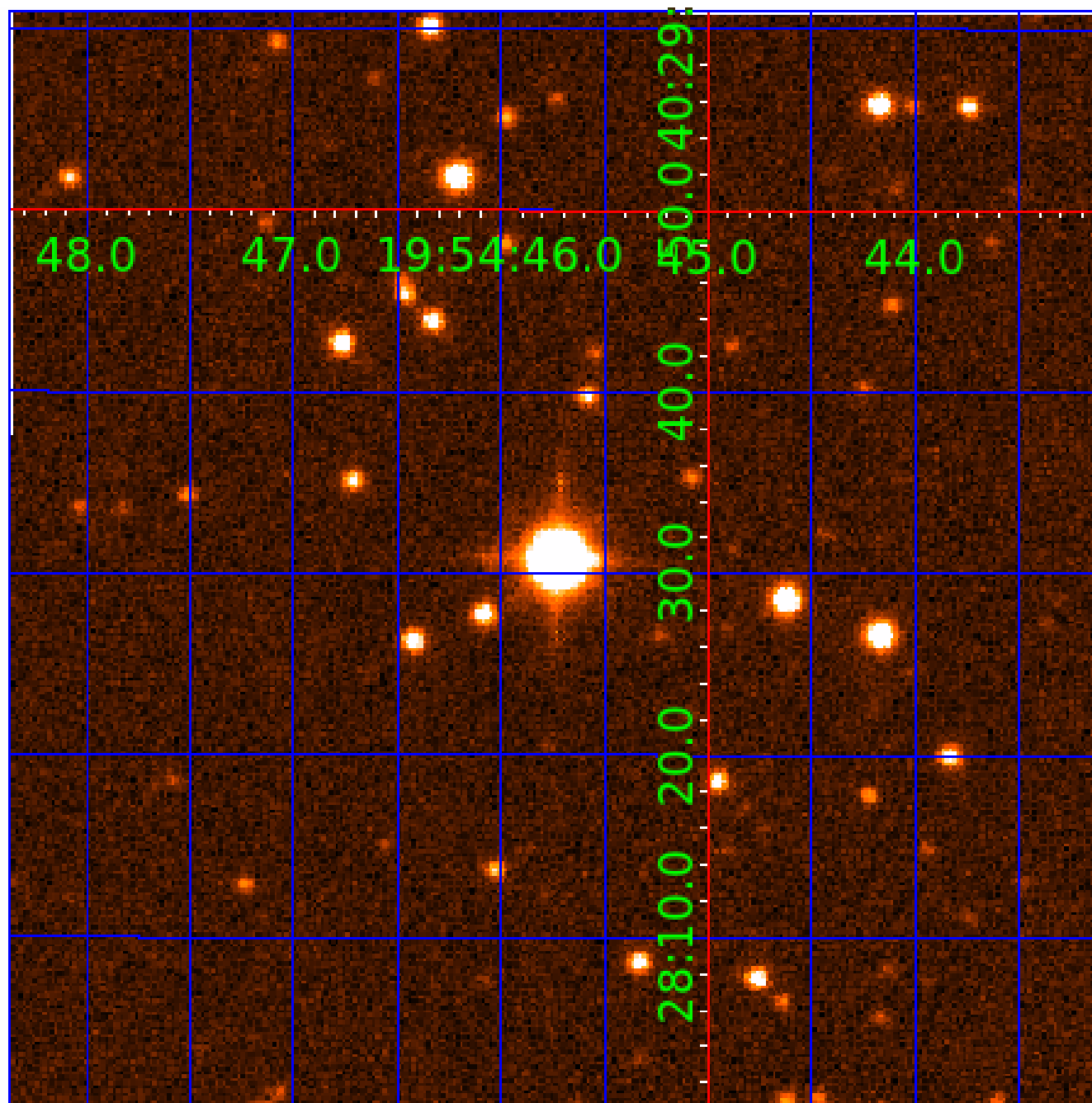


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005304184

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})
005304184-01	OBS	No	1.804555	132.351432	388.0	7.631	9.4	9.9	1.77	7244	4.44	6976.38
005304184-02	OBS	No	23.567648	140.505462	895.0	10.065	10.4	7.0	1.77	7244	5.69	226.83
005304184-03	OBS	No	36.292534	164.210569	1517.8	9.143	8.3	9.2	1.77	7244	7.19	127.56
005304184-04	OBS	No	210.584158	253.048314	5208.4	3.970	8.5	8.8	1.77	7244	19.54	12.23
005304184-05	OBS	No	245.598932	374.621718	3813.7	4.054	8.4	8.3	1.77	7244	17.98	9.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005304184-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005304184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

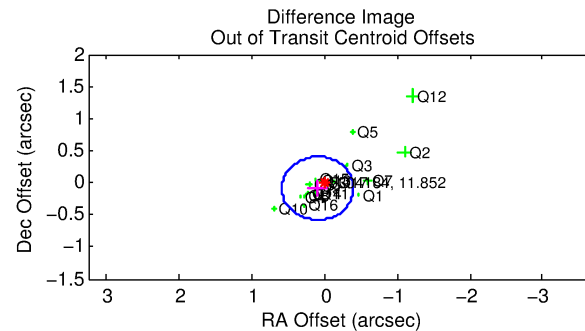
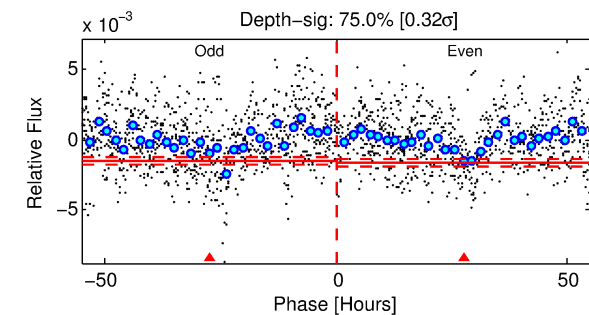
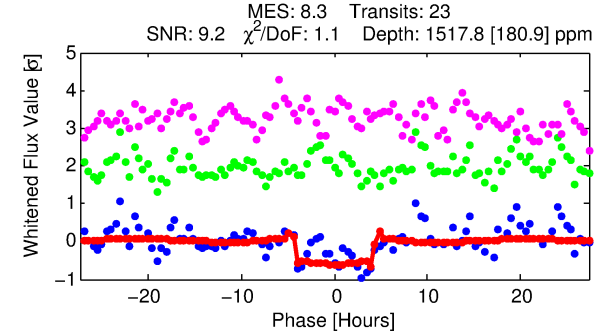
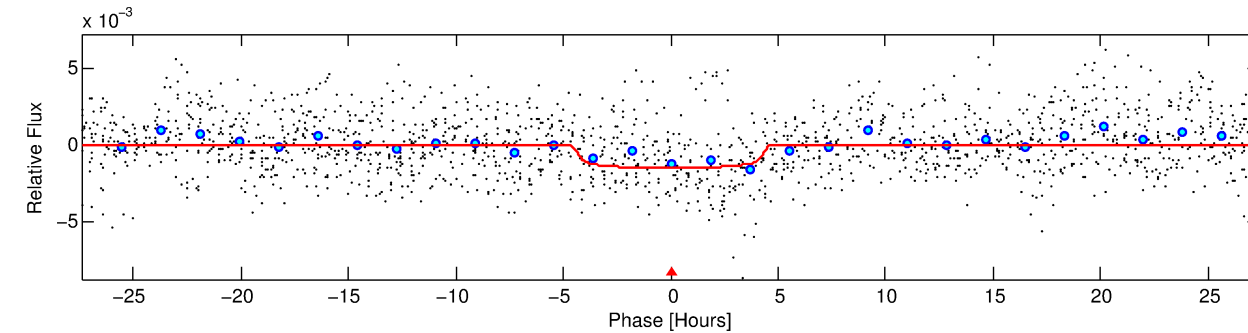
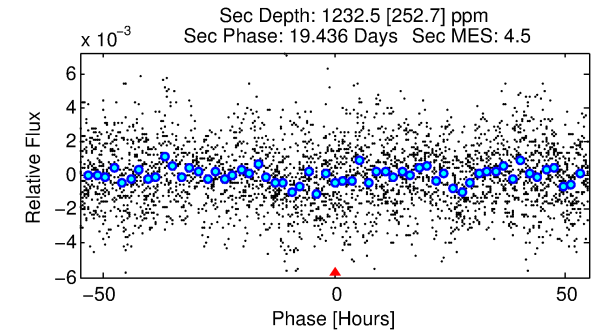
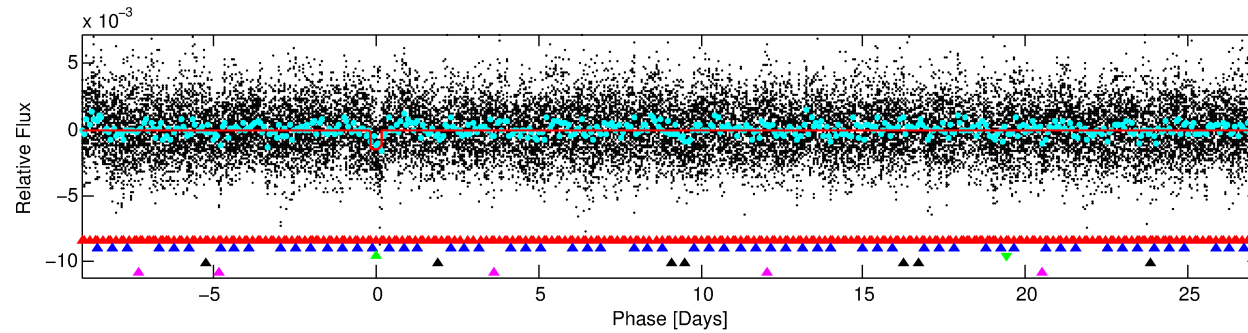
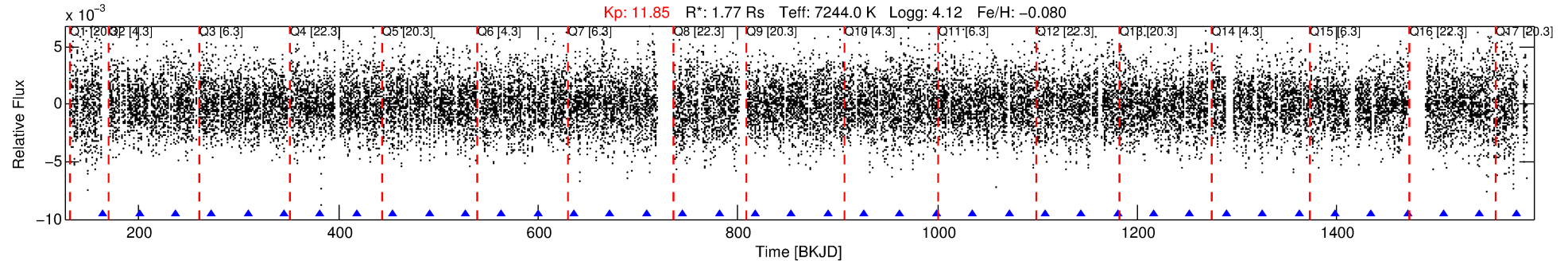
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005304184-03

No Significant Match Found

DV One-Page Summary

KIC: 5304184 Candidate: 3 of 5 Period: 36.293 d



DV Fit Results:

Period = 36.29253 [0.00038] d
Epoch = 164.2106 [0.0093] BKJD
Rp/R* = 0.0372 [0.0054]
a/R* = 26.93 [20.15]
b = 0.54 [0.99]
Seff = 127.56 [48.12]
Teq = 857 [81] K
Rp = 7.19 [2.43] Re
a = 0.2462 [0.0602] AU
Ag = 795.35 [391.12] [2.03σ]
Teffp = 7036 [693] K [8.86σ]

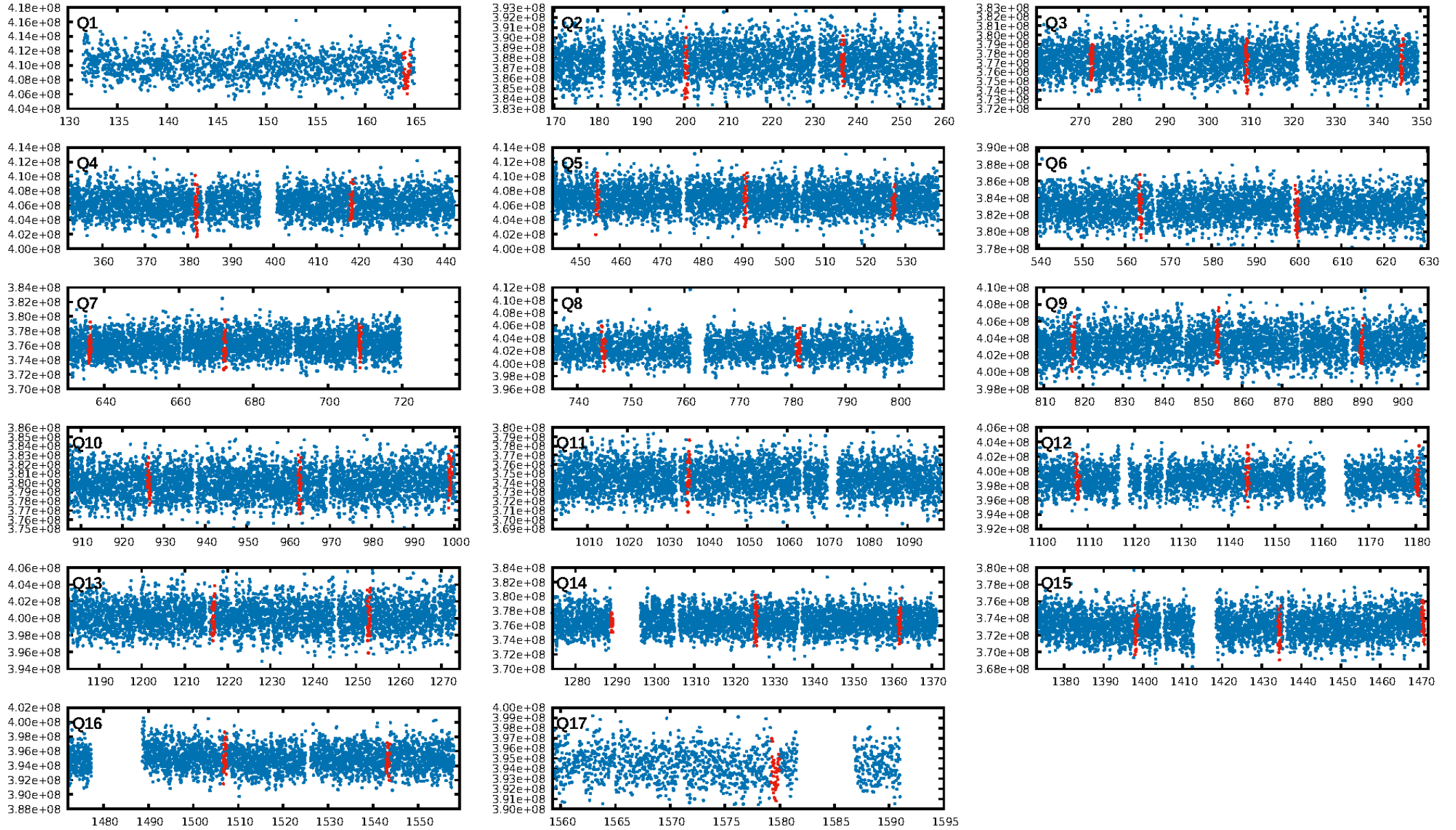
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.46σ]
LongPeriod-sig: 100.0% [419.66σ]
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.05e-10
RollingBand-fgt: 1.00 [23/23]
GhostDiagnostic-chr: -3.273
Centroid-sig: 1.7%
Centroid-so: 0.093 arcsec [2.17σ]
OotOffset-rm: 0.129 arcsec [0.79σ]
KicOffset-rm: 0.046 arcsec [0.28σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

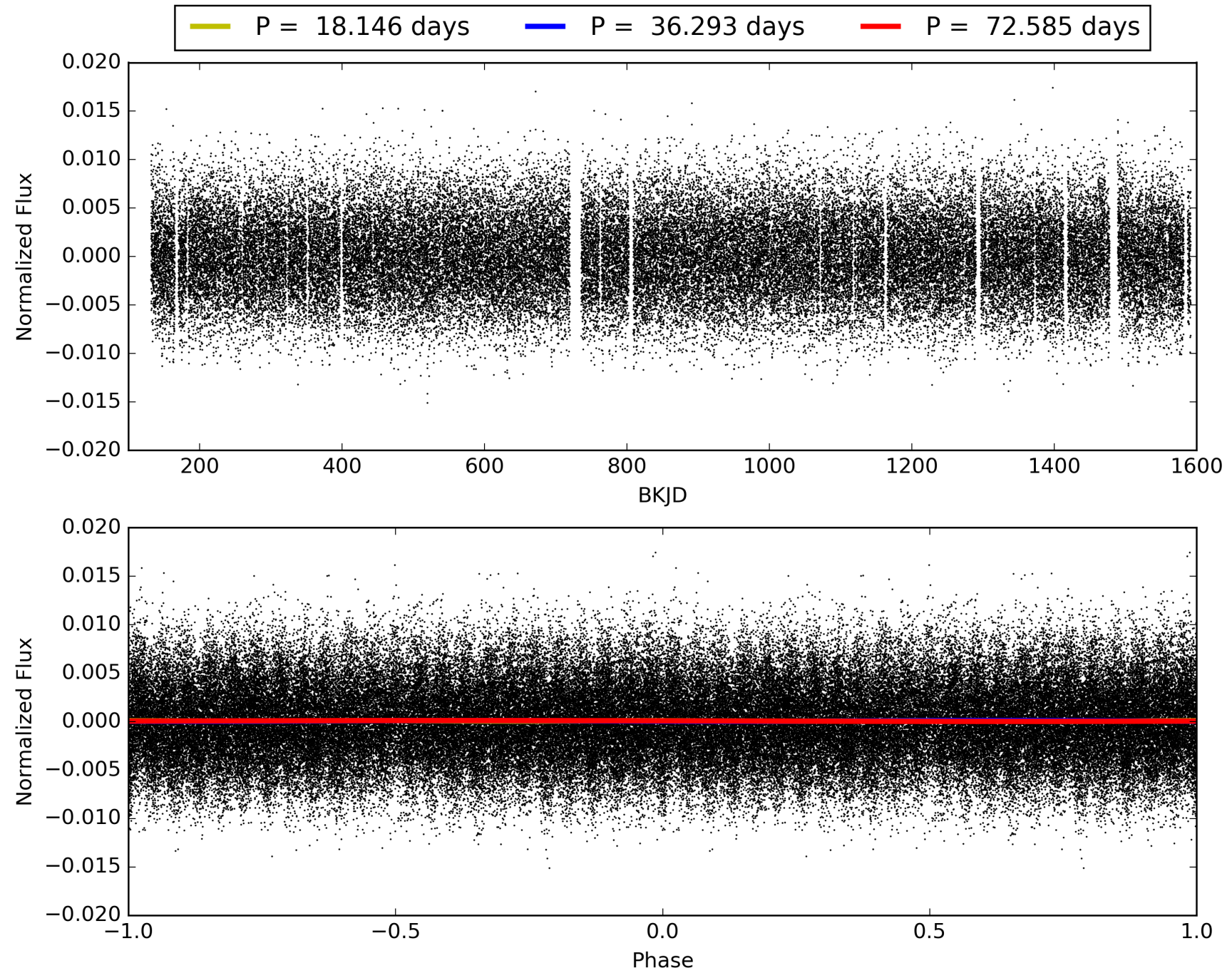
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:02:49 Z

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

TCE 005304184-03, PDC Light Curves

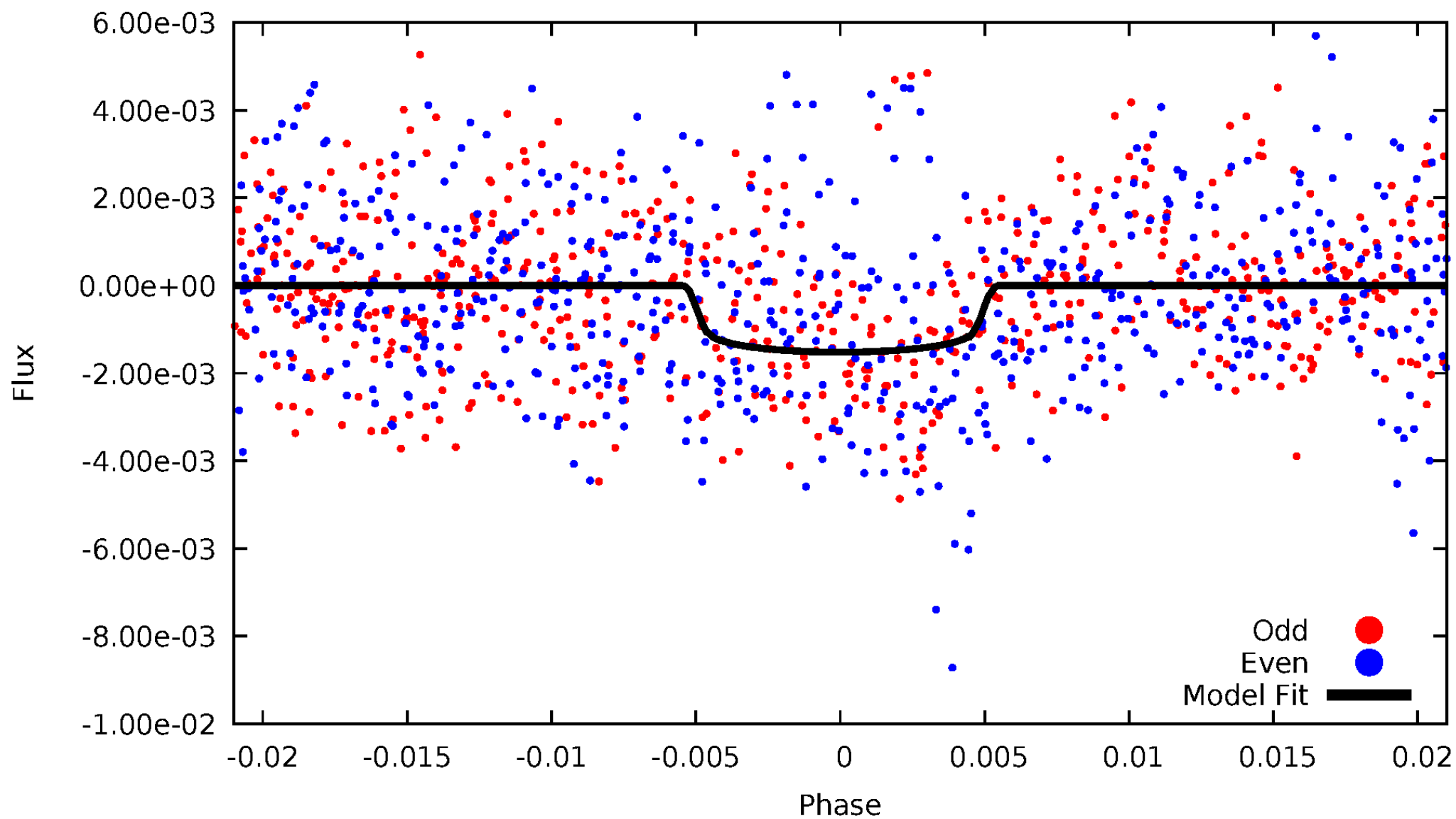


TCE 005304184-03



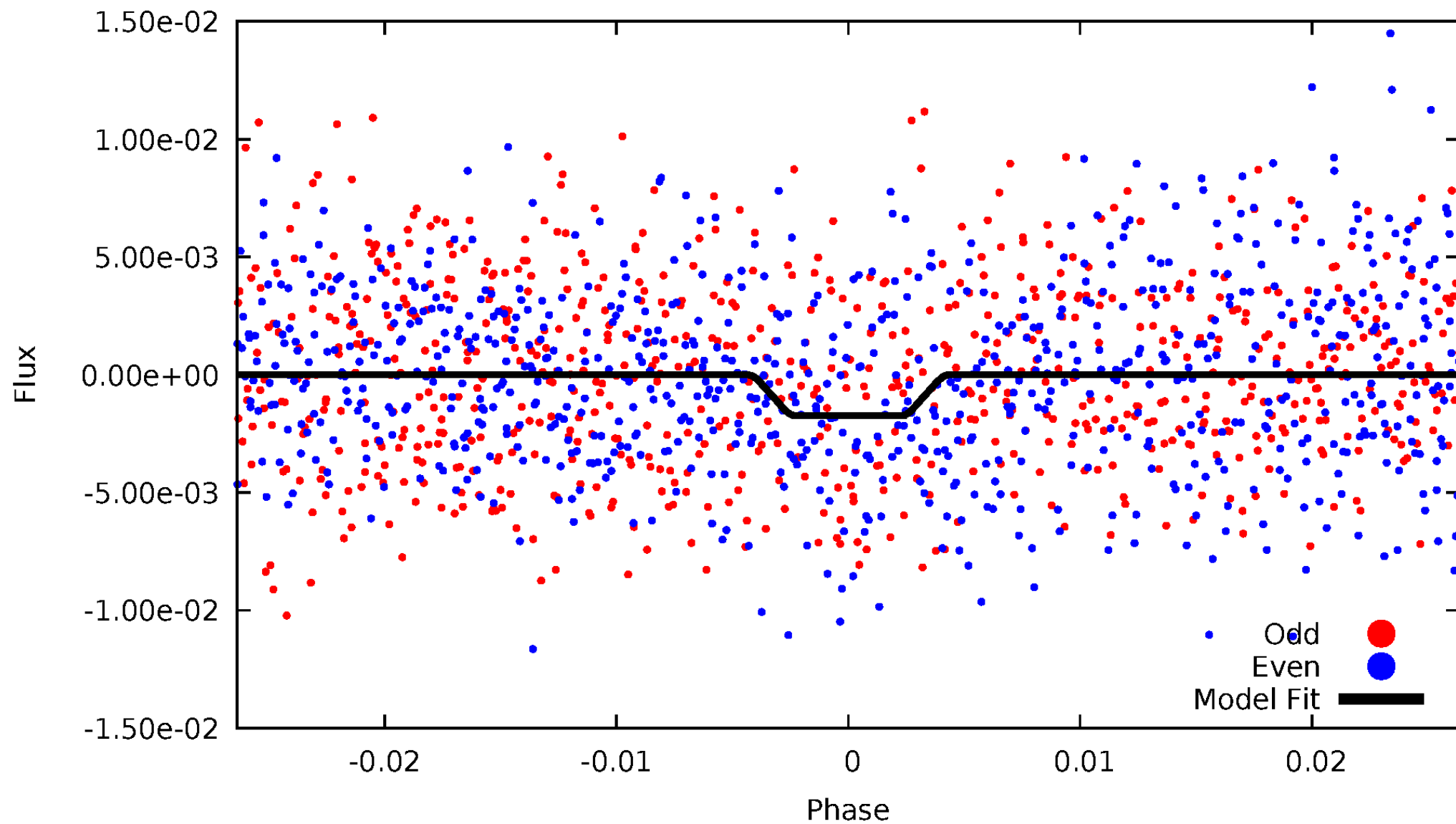
DV Odd/Even

TCE 005304184-03



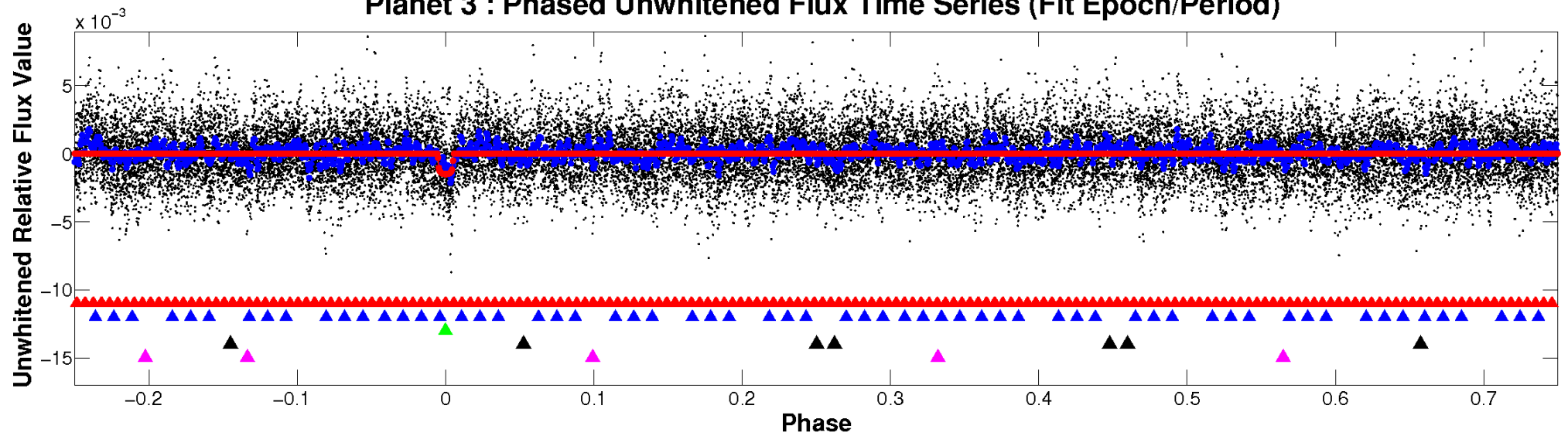
ALT Odd/Even

TCE 005304184-03

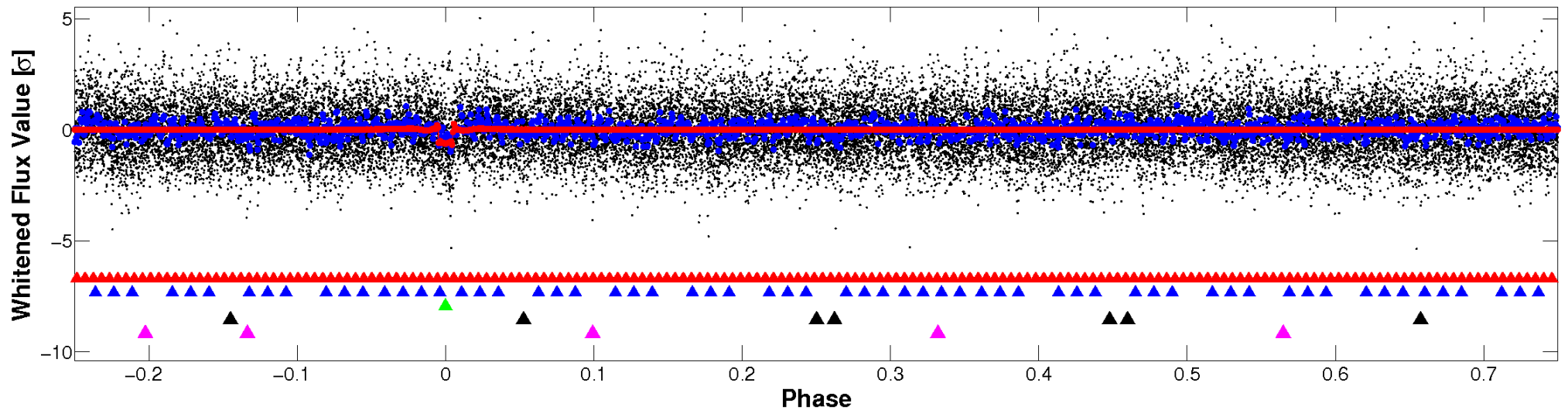


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

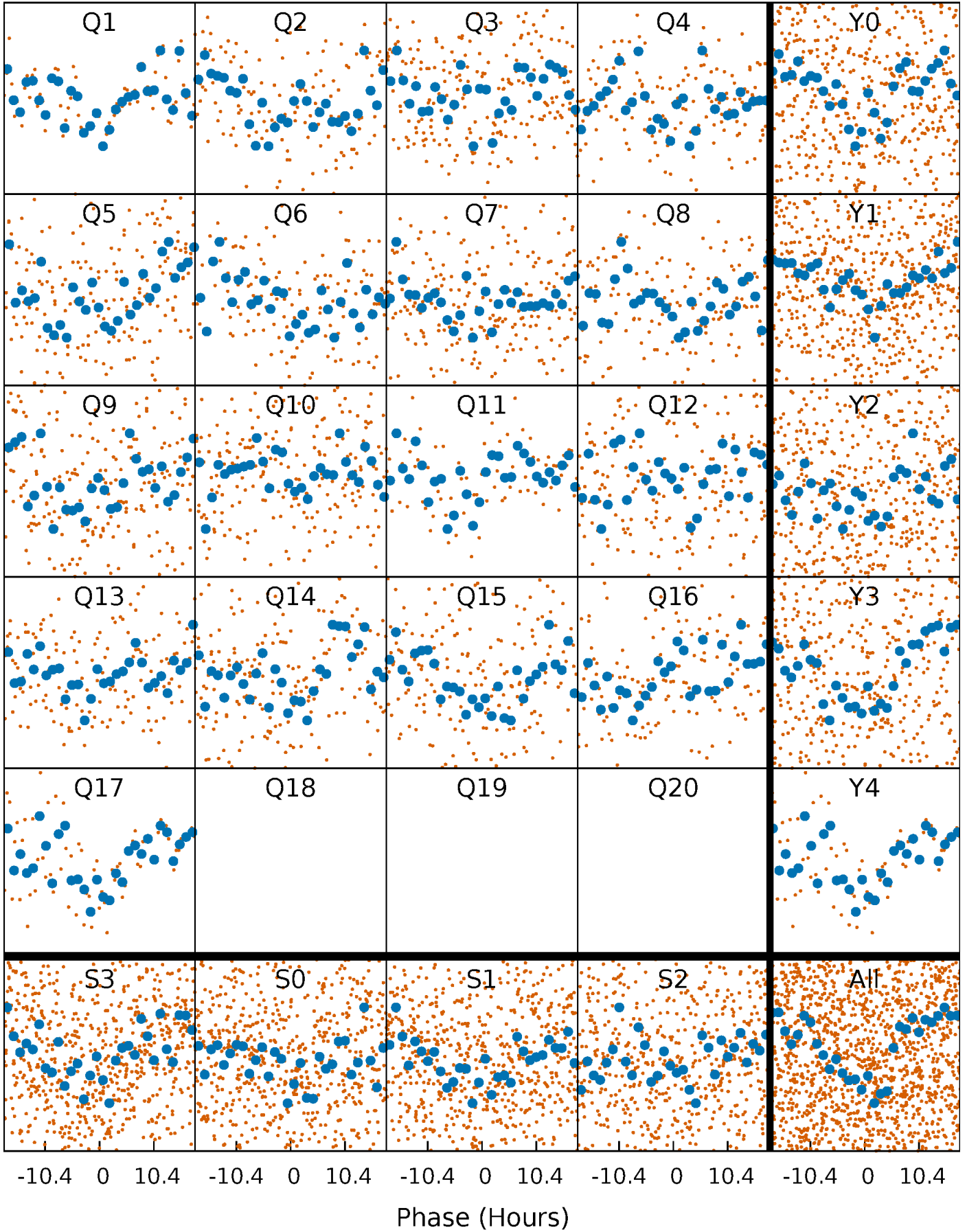


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



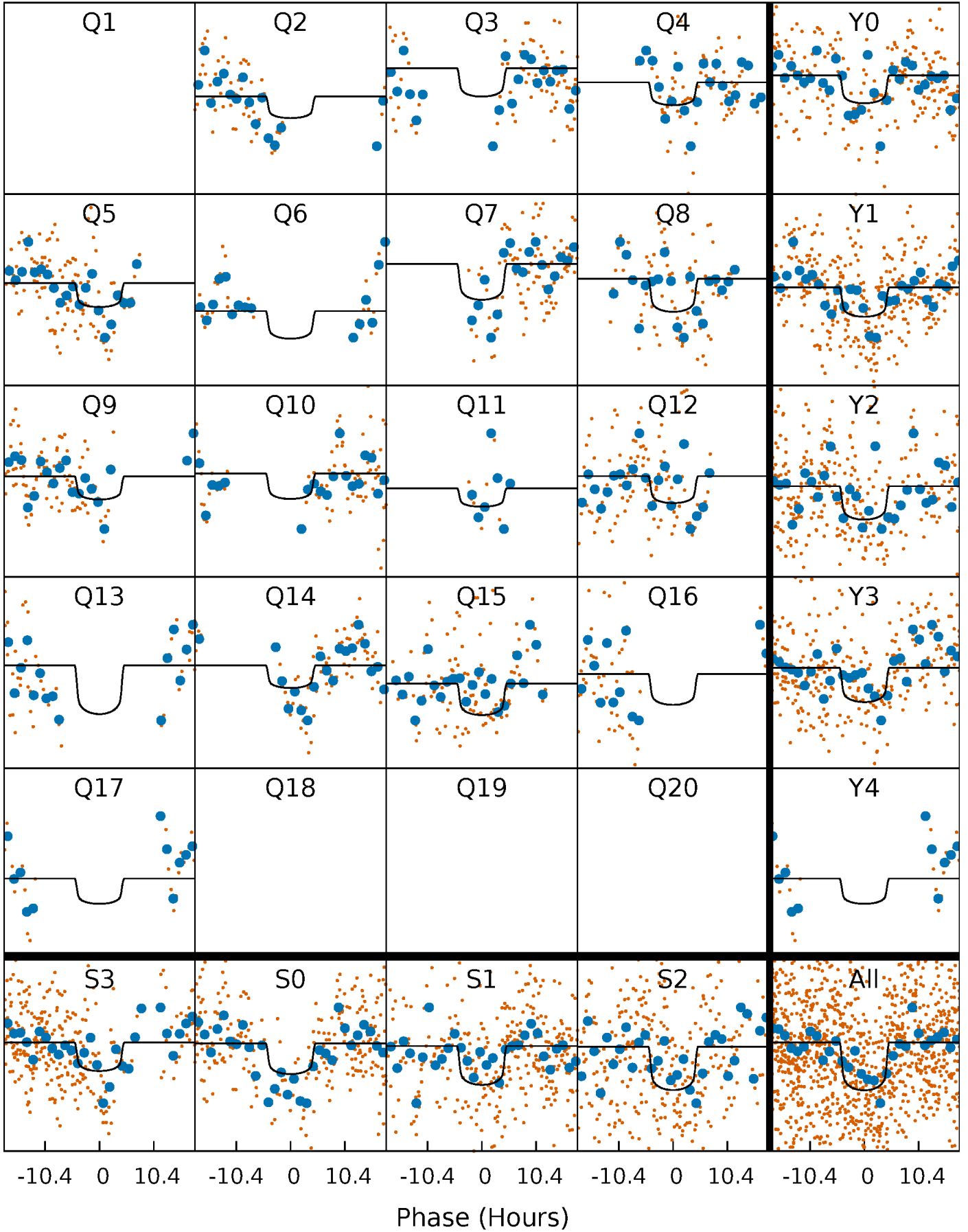
PDC Quarter-Phased Transit Curves

TCE 005304184-03 P= 36.292534 Days $T_0=164.210569$ (BKJD)



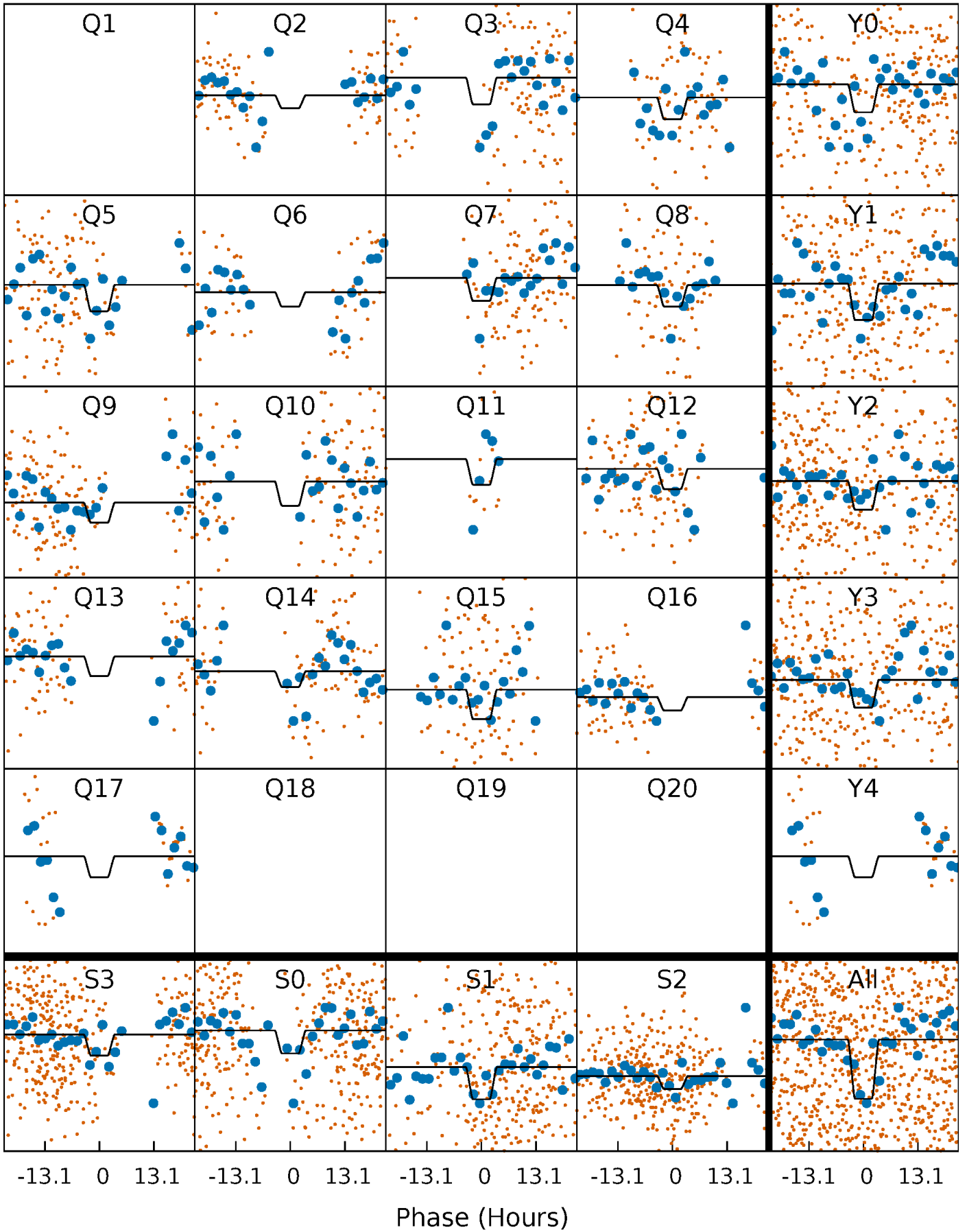
DV Quarter-Phased Transit Curves

TCE 005304184-03 P= 36.292534 Days $T_0=164.210569$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

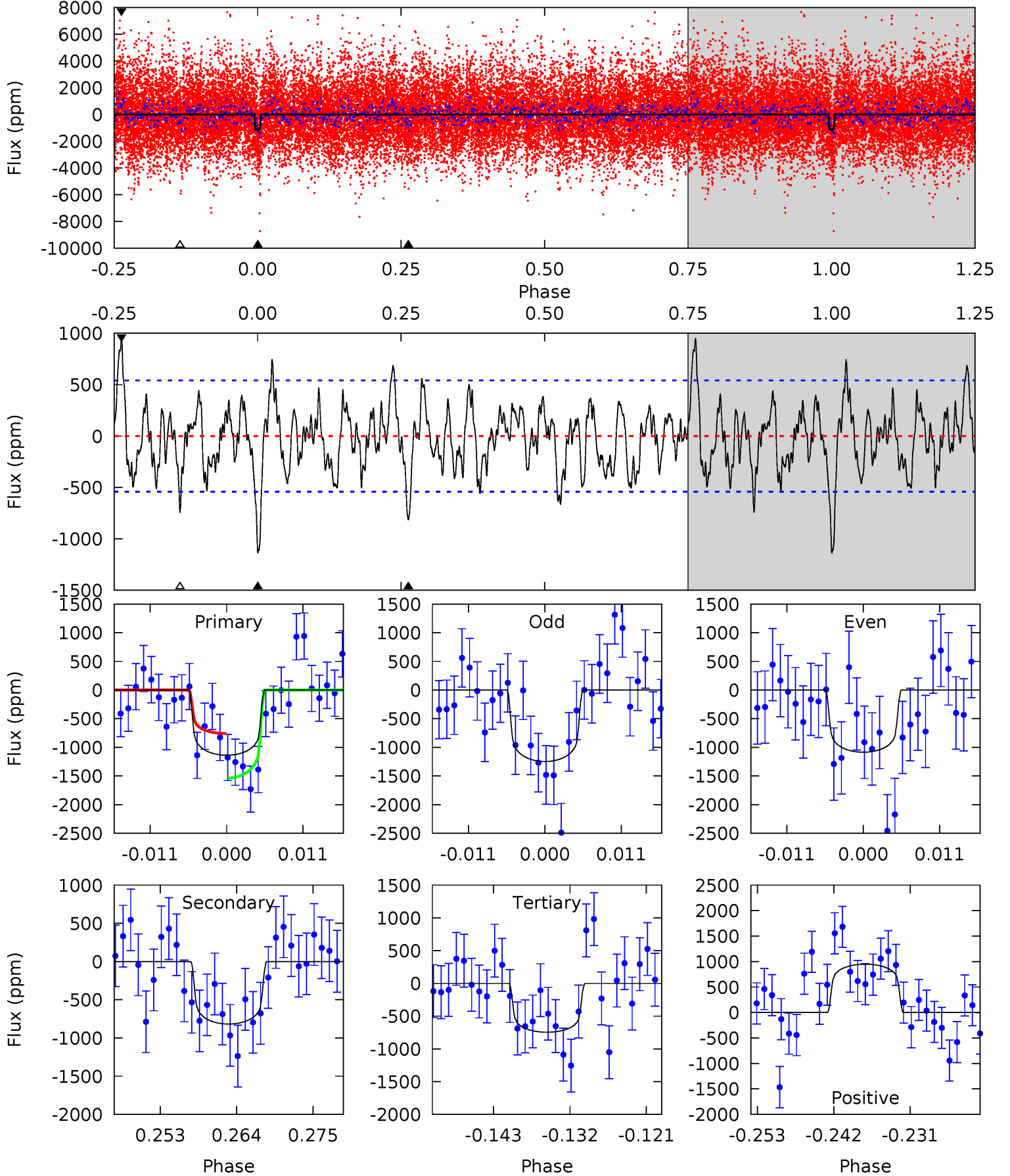
TCE 005304184-03 P= 36.285710 Days $T_0=164.384880$ (BKJD)



DV Model-Shift Uniqueness Test

005304184-03, P = 36.292534 Days, E = 127.918035 Days

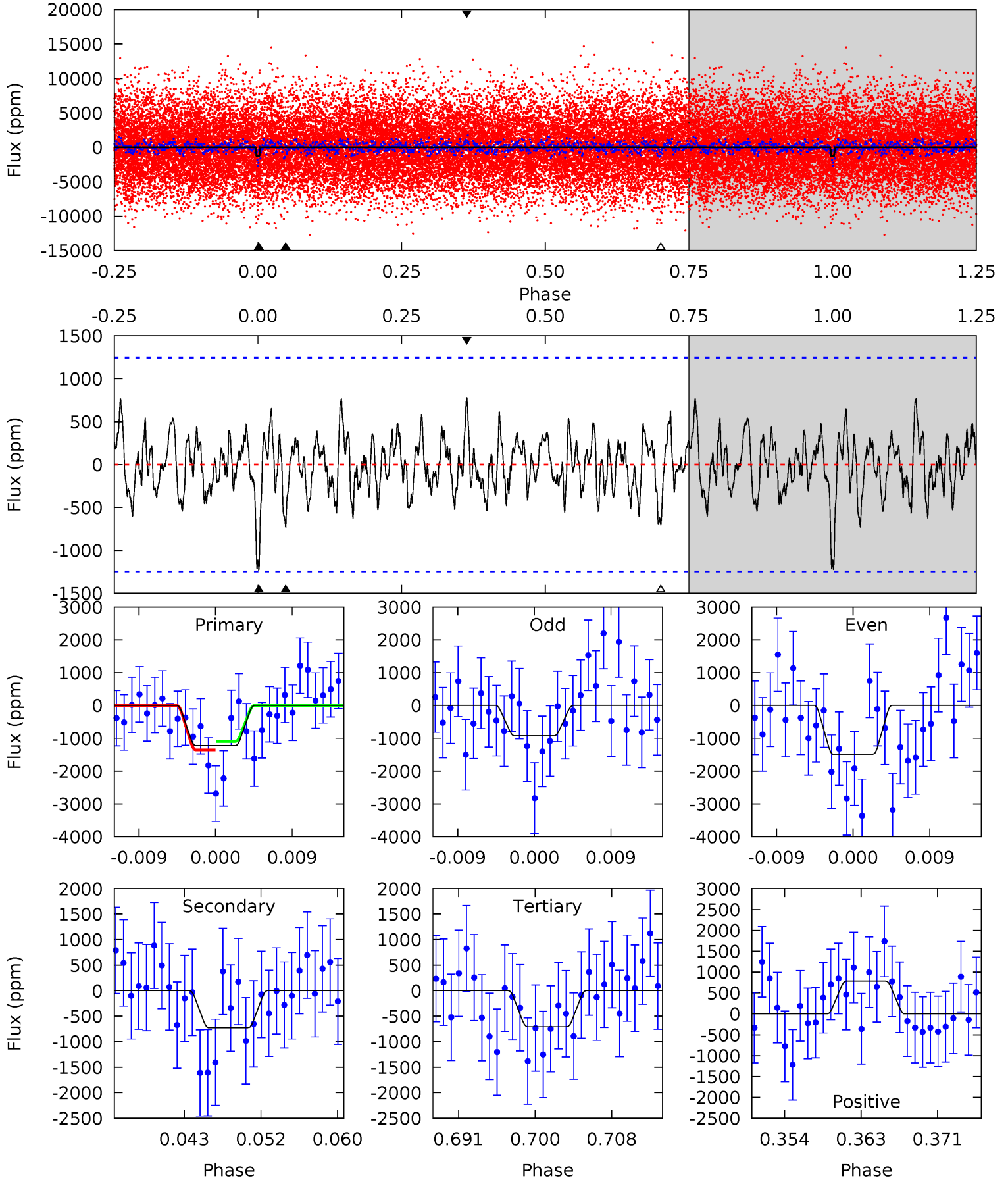
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	7.56	6.90	8.77	5.01	2.54	2.47	3.62	1.75	0.66	-1.21	0.75	0.89	0.45	3.60



Alt Model-Shift Uniqueness Test

005304184-03, P = 36.285710 Days, E = 128.099170 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.97	2.94	2.86	3.19	5.05	2.63	1.11	2.11	1.78	0.08	-0.24	1.14	1.35	0.39	0.53



Stellar Parameters For KIC 005304184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+201}_{-302}	$4.121^{+0.144}_{-0.176}$	$-0.080^{+0.200}_{-0.350}$	$1.770^{+0.541}_{-0.406}$	$1.508^{+0.212}_{-0.236}$	$0.383^{+0.296}_{-0.196}$
	+3%/-4%	+3%/-4%	+250%/-438%	+31%/-23%	+14%/-16%	+77%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005304184-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-818 ± 108	$7.20^{+1.58}_{-1.27}$	1198^{+87}_{-82}	6228^{+657}_{-493}	512^{+273}_{-170}
Alt.	-726 ± 246	$8.07^{+1.75}_{-1.42}$	1200^{+90}_{-78}	5713^{+622}_{-625}	356^{+213}_{-155}

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

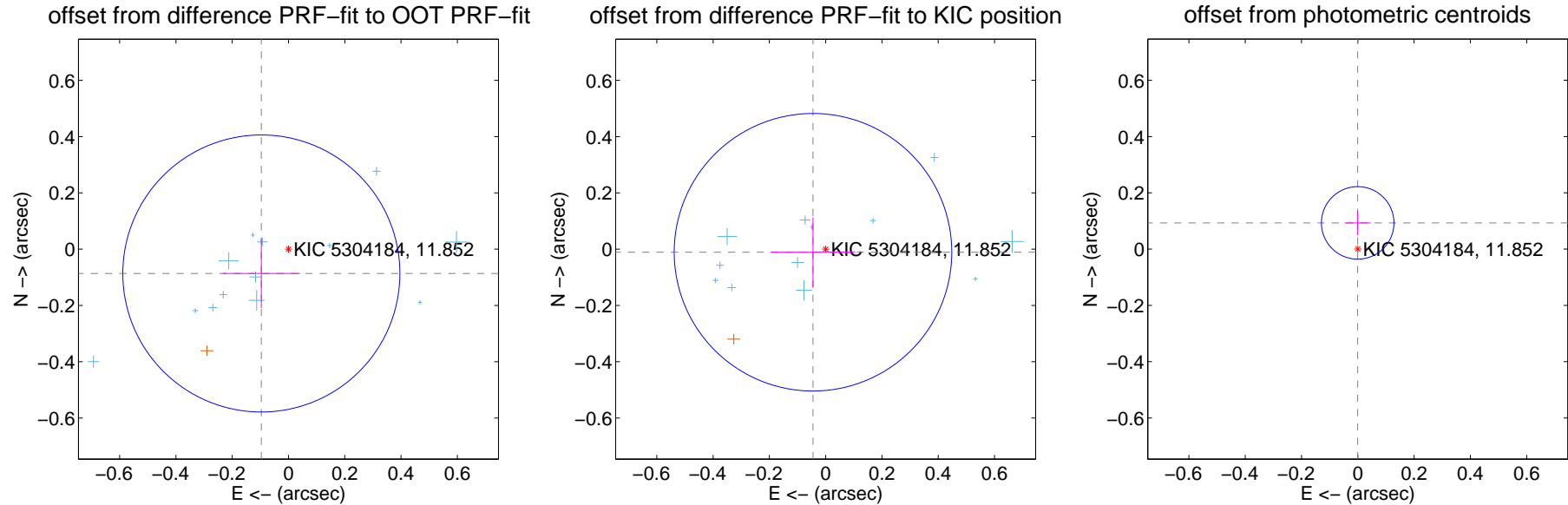
DV Centroid Data

Supplemental centroid analysis for 005304184-03. **Kepler magnitude: 11.85**. Transit SNR 9.22

There are 16 quarters with good PRF difference image offsets

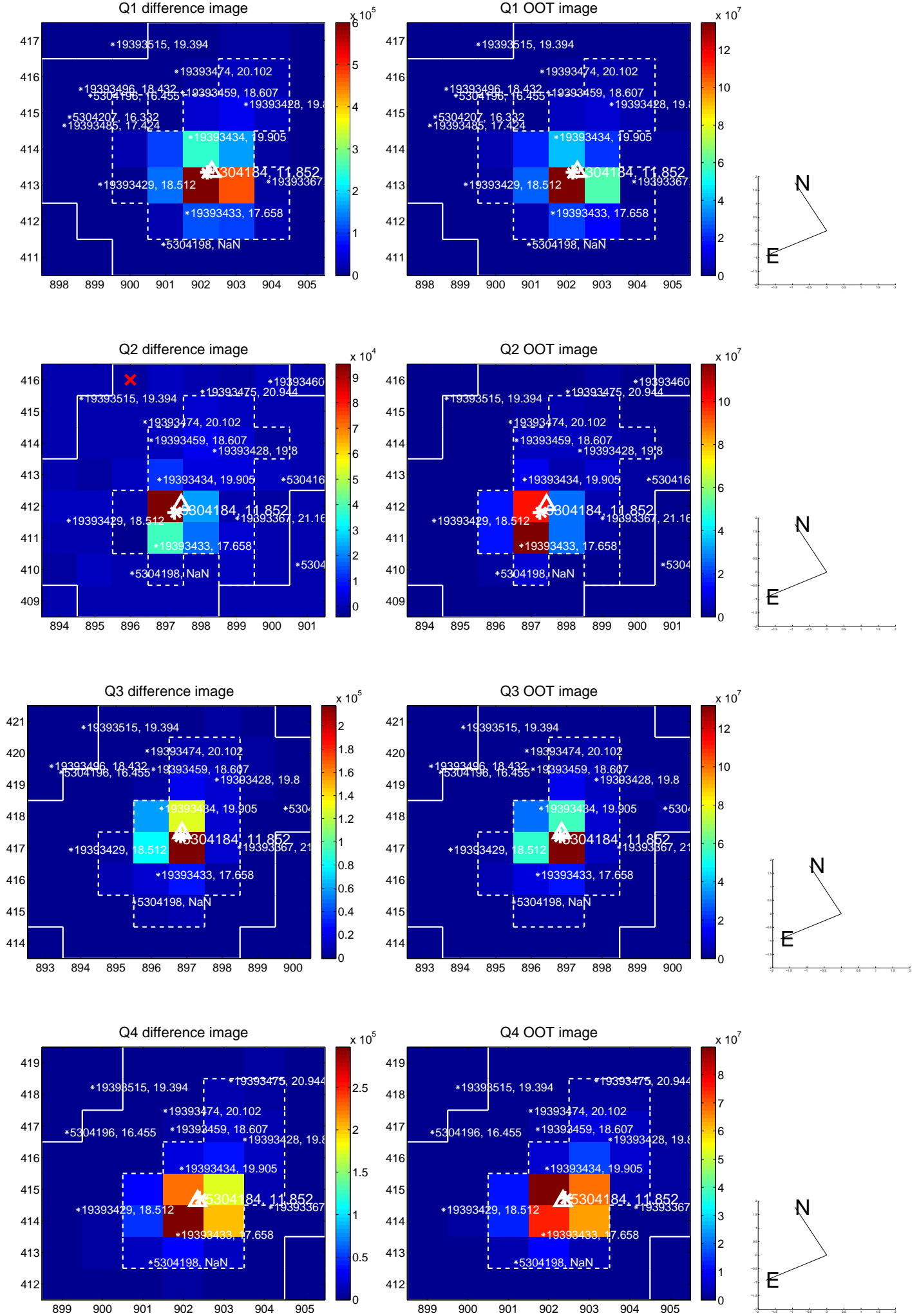
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.129 ± 0.164	0.79	0.096 ± 0.137	-0.086 ± 0.123
PRF-fit source offset from KIC position	0.046 ± 0.164	0.28	0.045 ± 0.150	-0.011 ± 0.124
photometric centroid source offset	0.09 ± 0.04	2.17	0.00 ± 0.05	0.09 ± 0.04

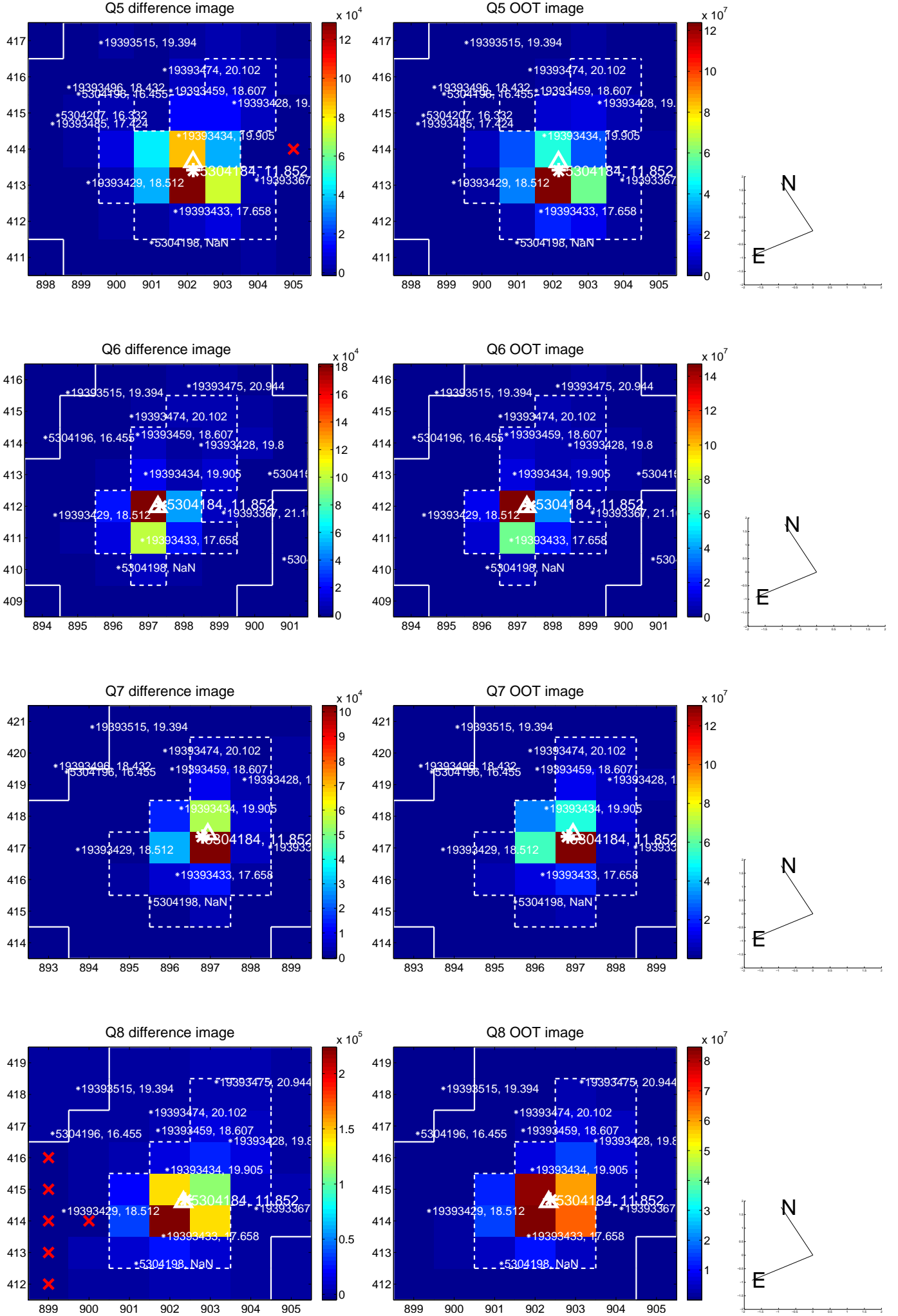


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

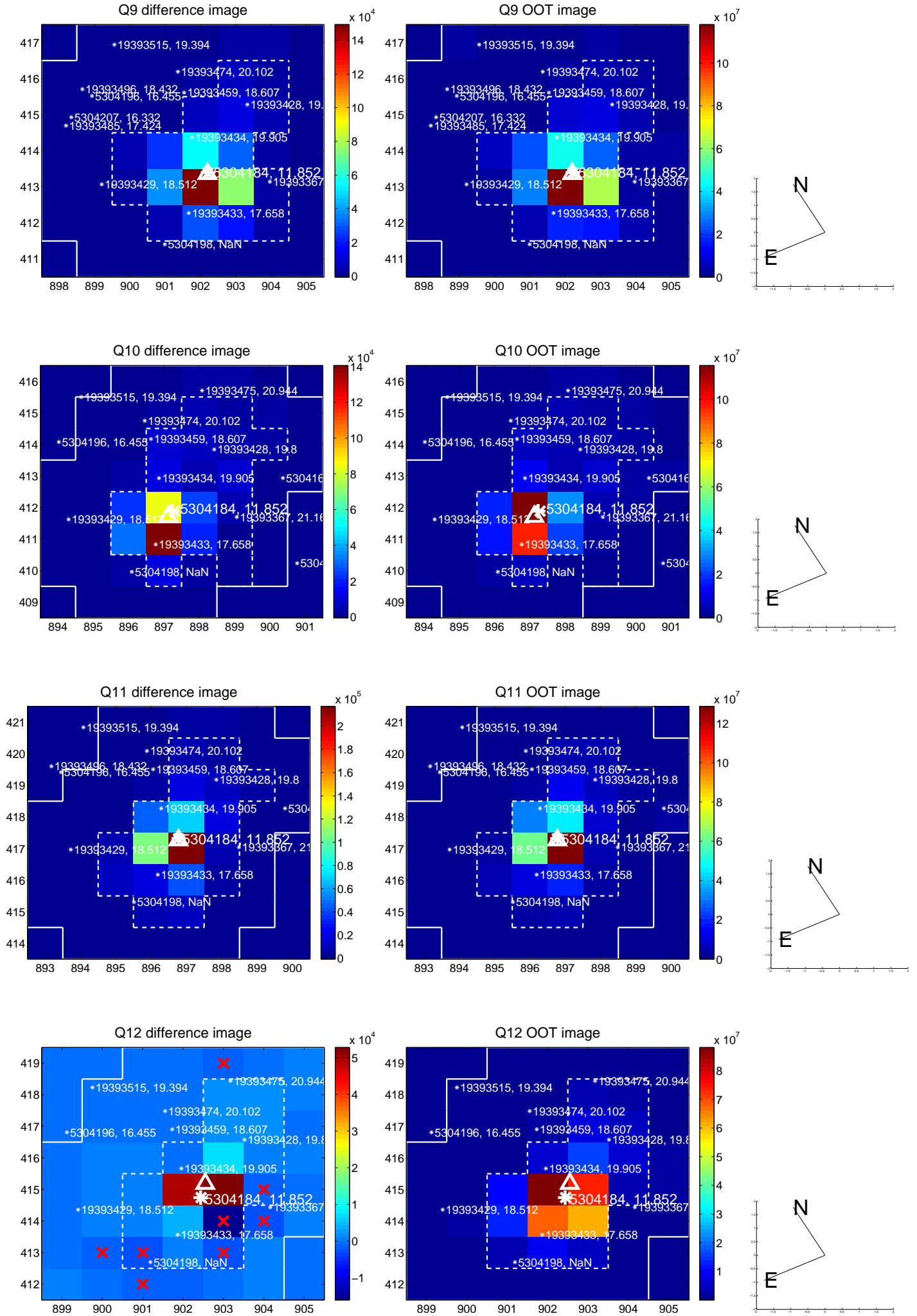
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



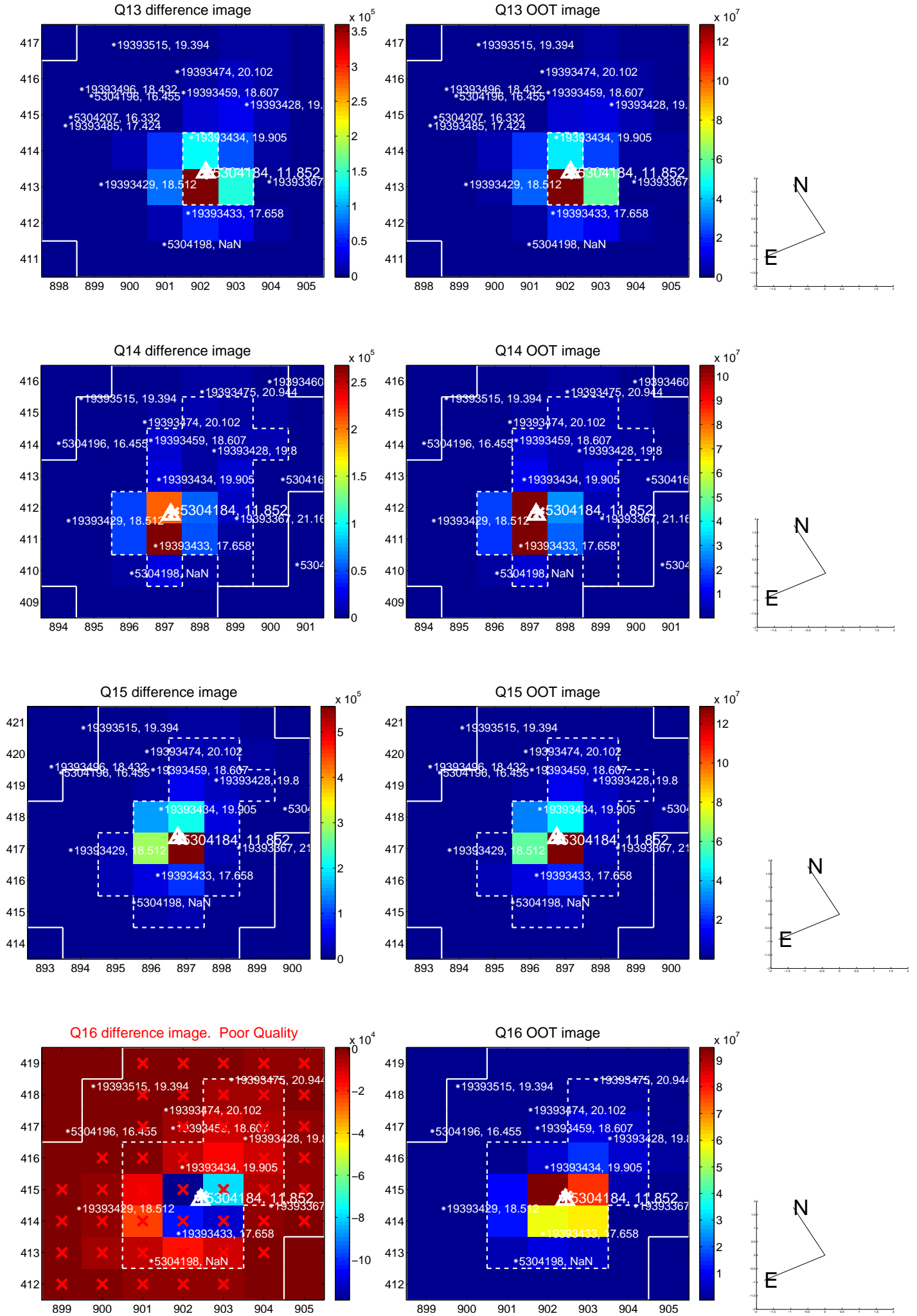
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



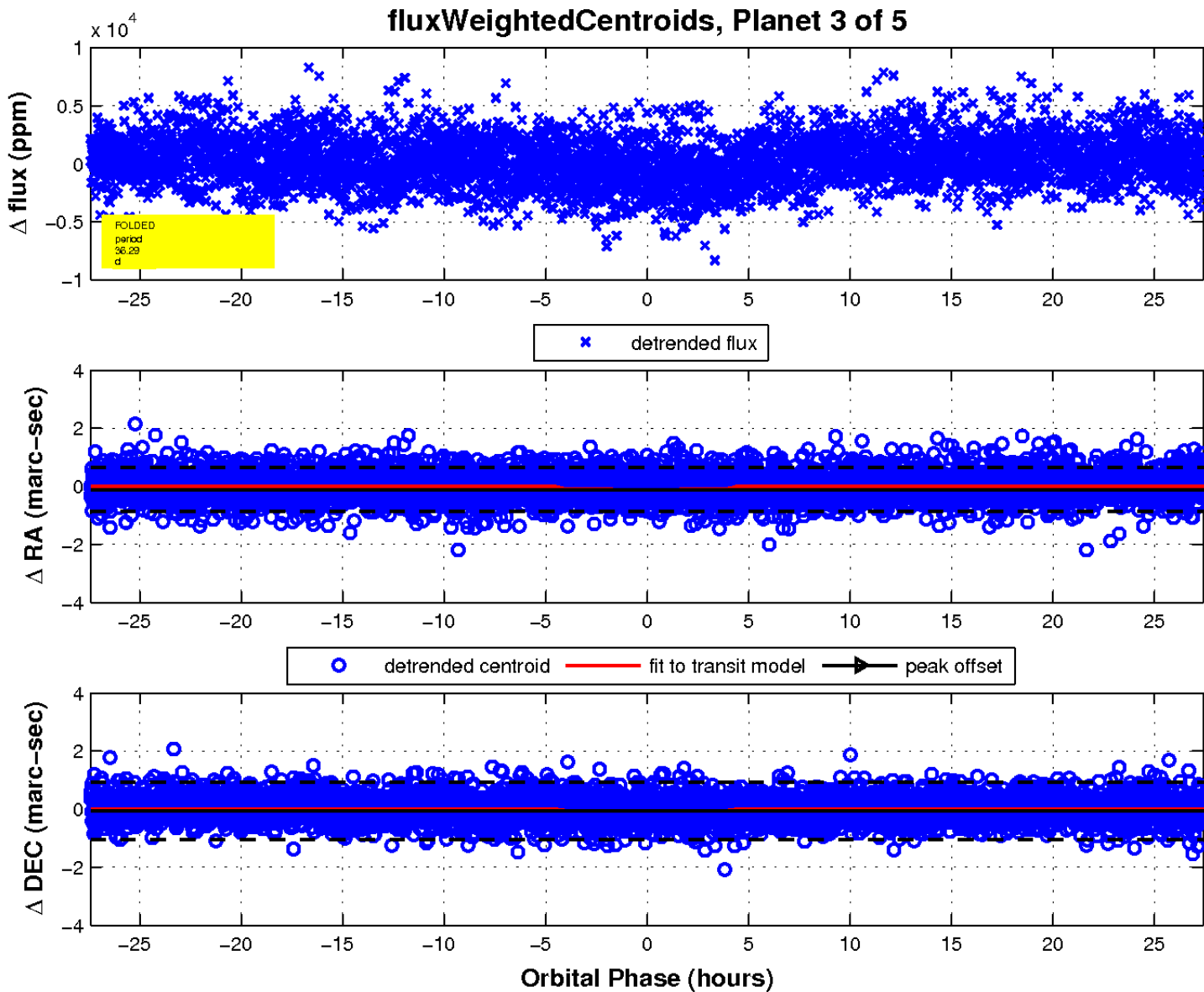
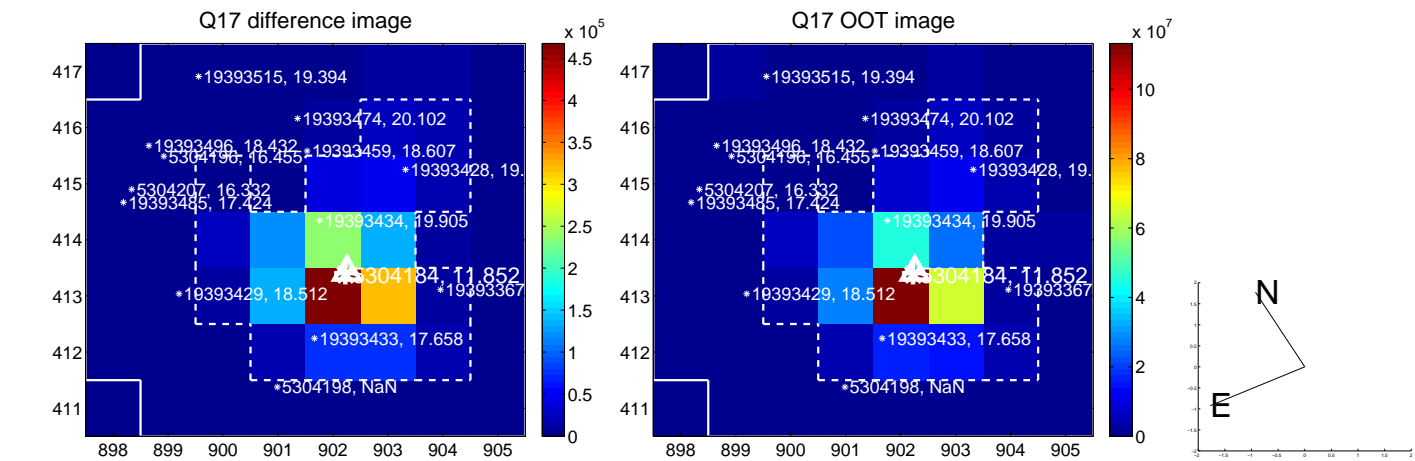
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

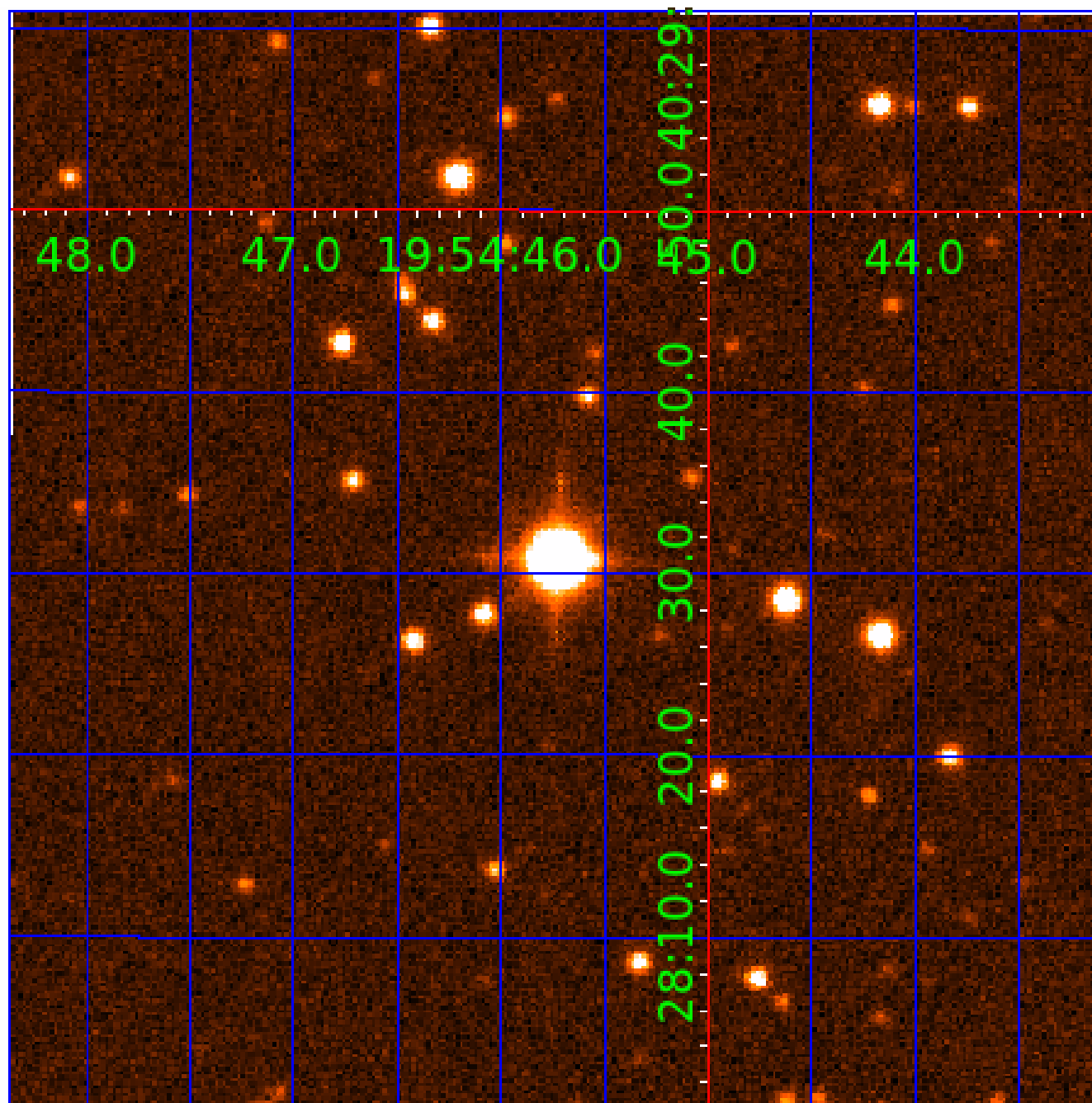


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005304184

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})
005304184-01	OBS	No	1.804555	132.351432	388.0	7.631	9.4	9.9	1.77	7244	4.44	6976.38
005304184-02	OBS	No	23.567648	140.505462	895.0	10.065	10.4	7.0	1.77	7244	5.69	226.83
005304184-03	OBS	No	36.292534	164.210569	1517.8	9.143	8.3	9.2	1.77	7244	7.19	127.56
005304184-04	OBS	No	210.584158	253.048314	5208.4	3.970	8.5	8.8	1.77	7244	19.54	12.23
005304184-05	OBS	No	245.598932	374.621718	3813.7	4.054	8.4	8.3	1.77	7244	17.98	9.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005304184-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005304184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

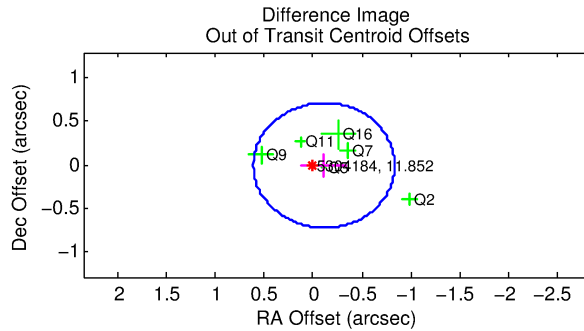
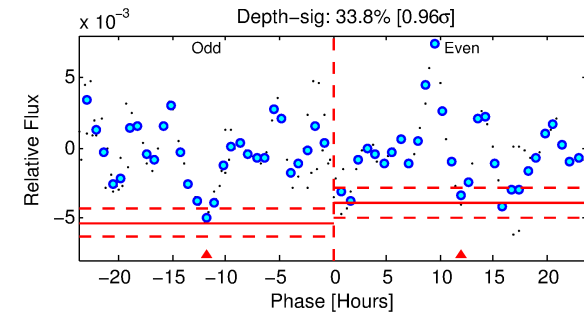
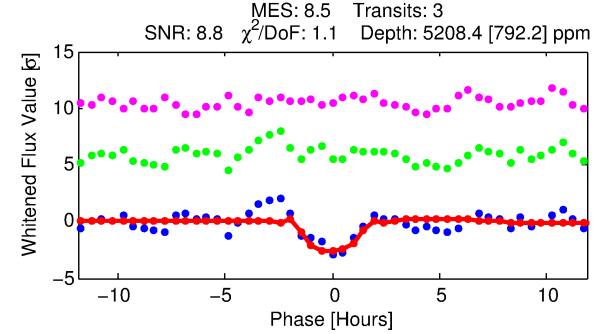
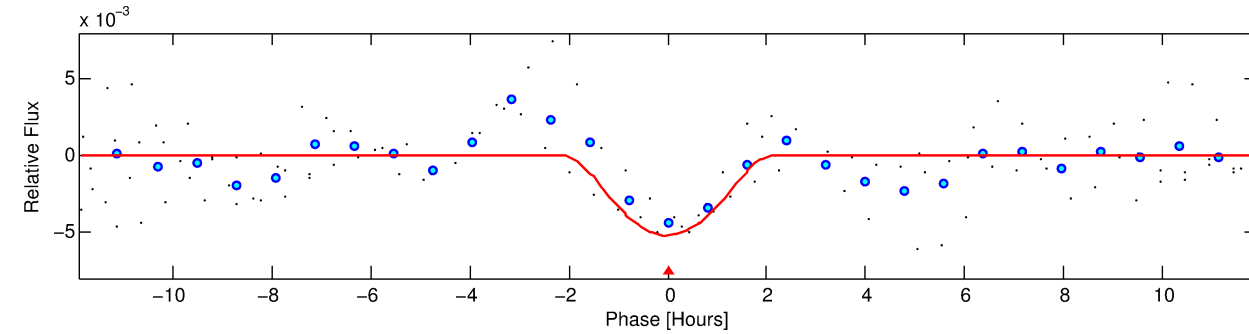
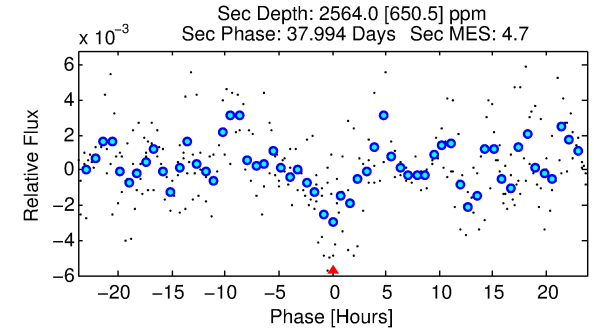
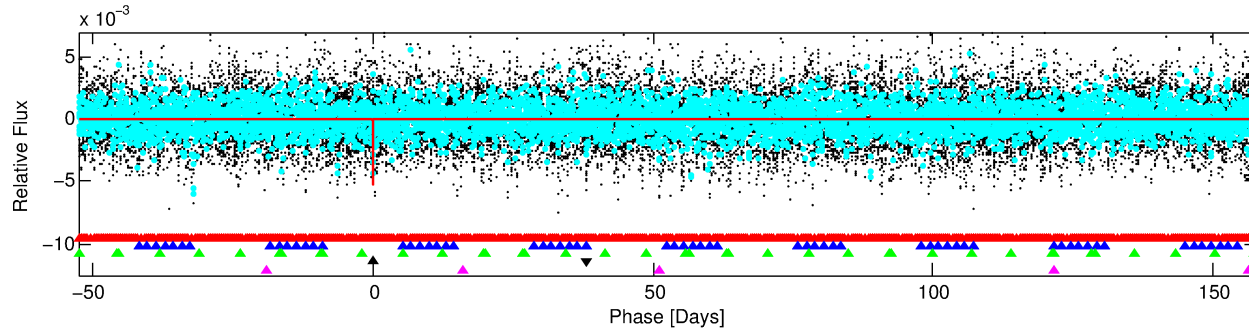
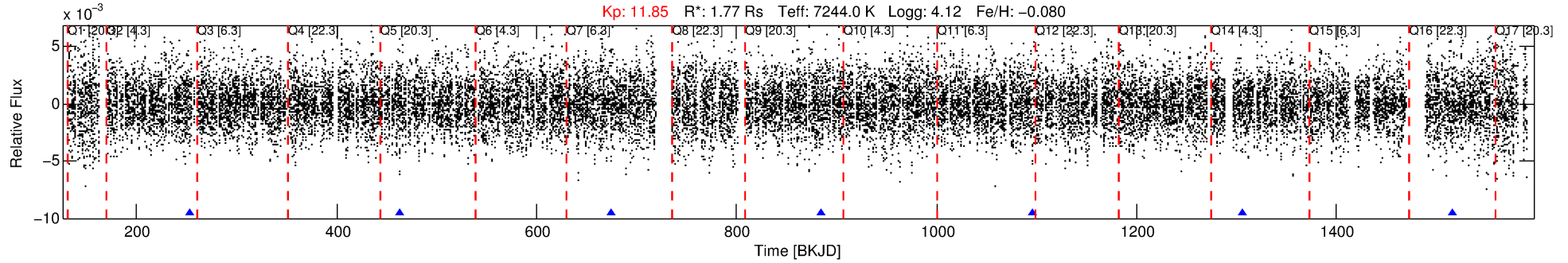
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005304184-04

No Significant Match Found

DV One-Page Summary

KIC: 5304184 Candidate: 4 of 5 Period: 210.584 d



DV Fit Results:

Period = 210.58416 [0.00476] d
Epoch = 253.0483 [0.0139] BKJD
 $R_p/R^* = 0.1012$ [0.1730]
 $a/R^* = 208.12$ [92.78]
 $b = 0.97$ [0.29]
 $S_{\text{eff}} = 12.23$ [4.62]
 $T_{\text{eq}} = 477$ [45] K
 $R_p = 19.54$ [33.95] R_e
 $a = 0.7949$ [0.1943] AU
 $A_g = 2333.08$ [8040.56] [0.29σ]
 $T_{\text{eff}} = 5124$ [4399] K [1.06σ]

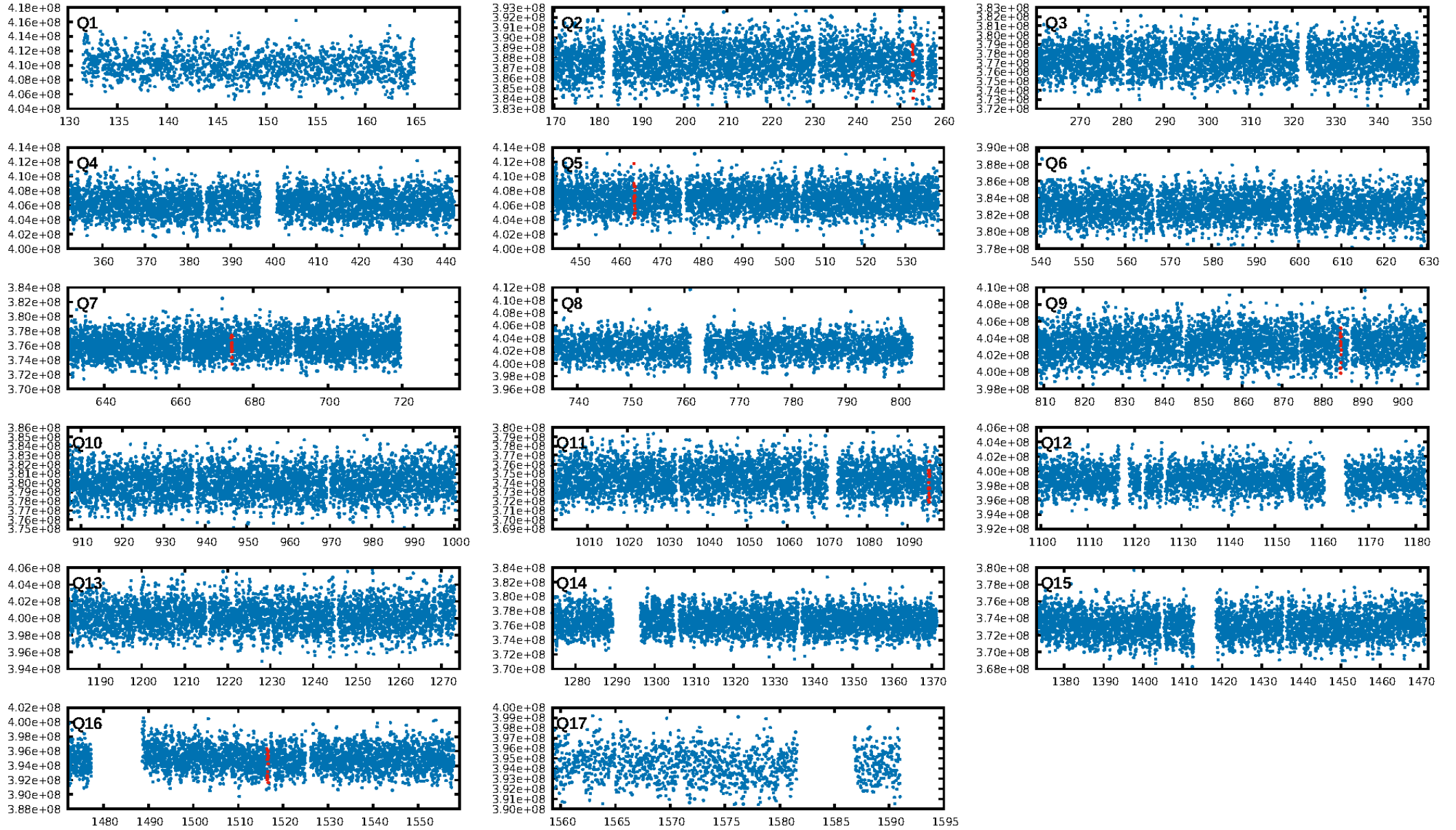
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [419.66σ]
LongPeriod-sig: 100.0% [148.10σ]
ModelChiSquare2-sig: 26.4%
ModelChiSquareGof-sig: 96.2%
Bootstrap-pfa: 4.59e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.388
Centroid-sig: 96.4%
Centroid-so: 0.090 arcsec [1.54σ]
OotOffset-rm: 0.111 arcsec [0.46σ]
KicOffset-rm: 0.159 arcsec [0.96σ]
OotOffset-st: 1/2/1/2 [6]
KicOffset-st: 1/2/1/2 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 0.33 [2/6]

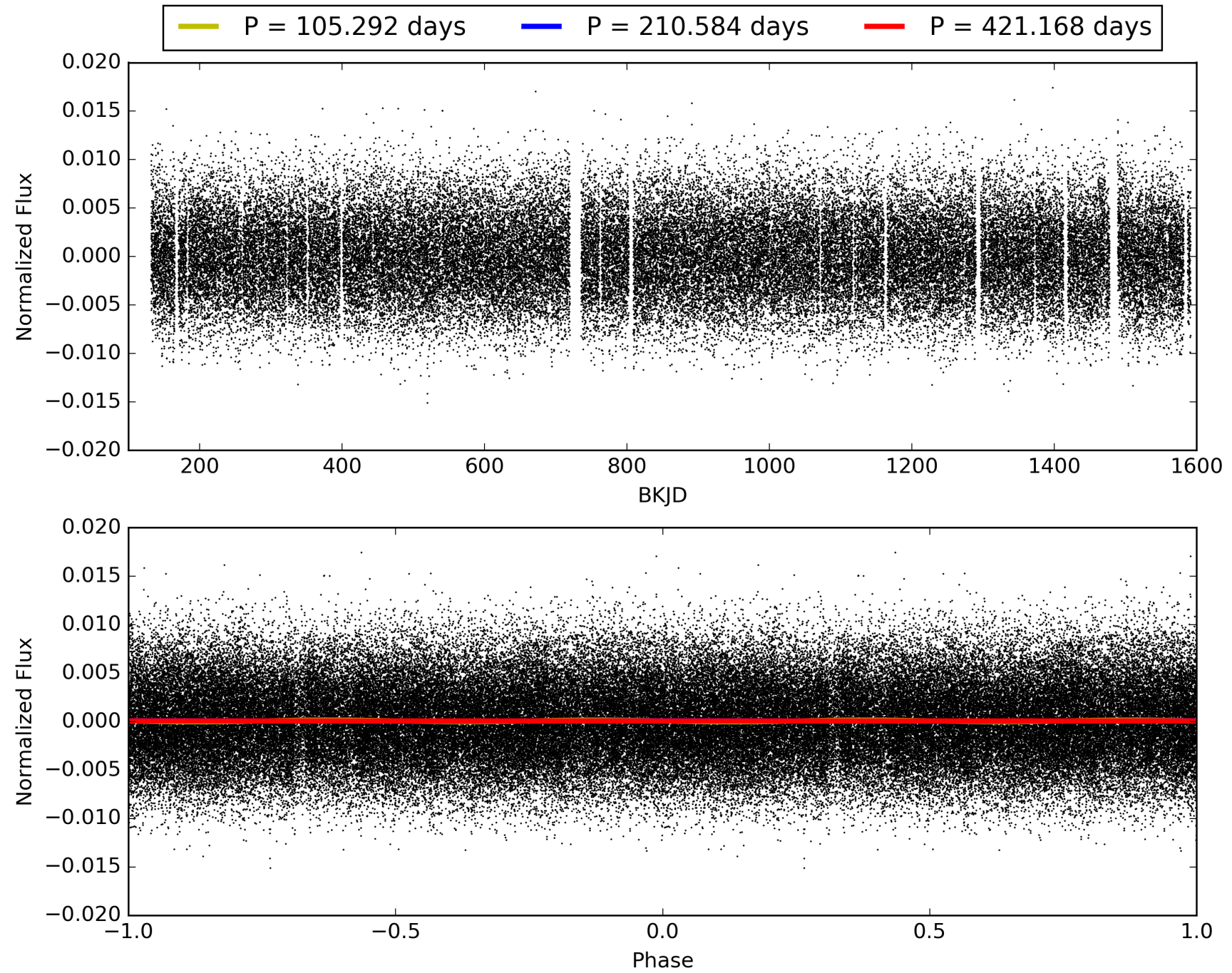
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:02:56 Z

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

TCE 005304184-04, PDC Light Curves

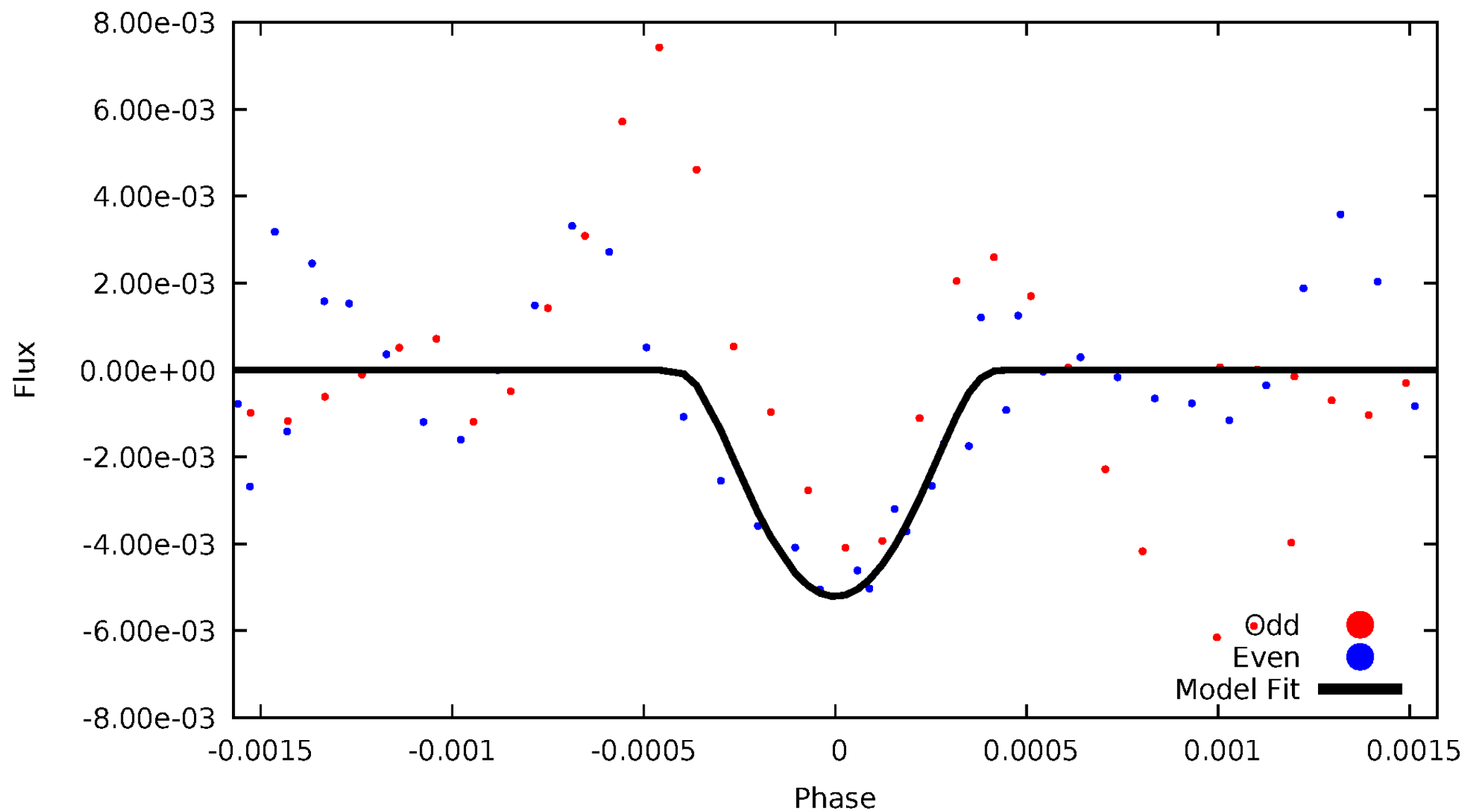


TCE 005304184-04



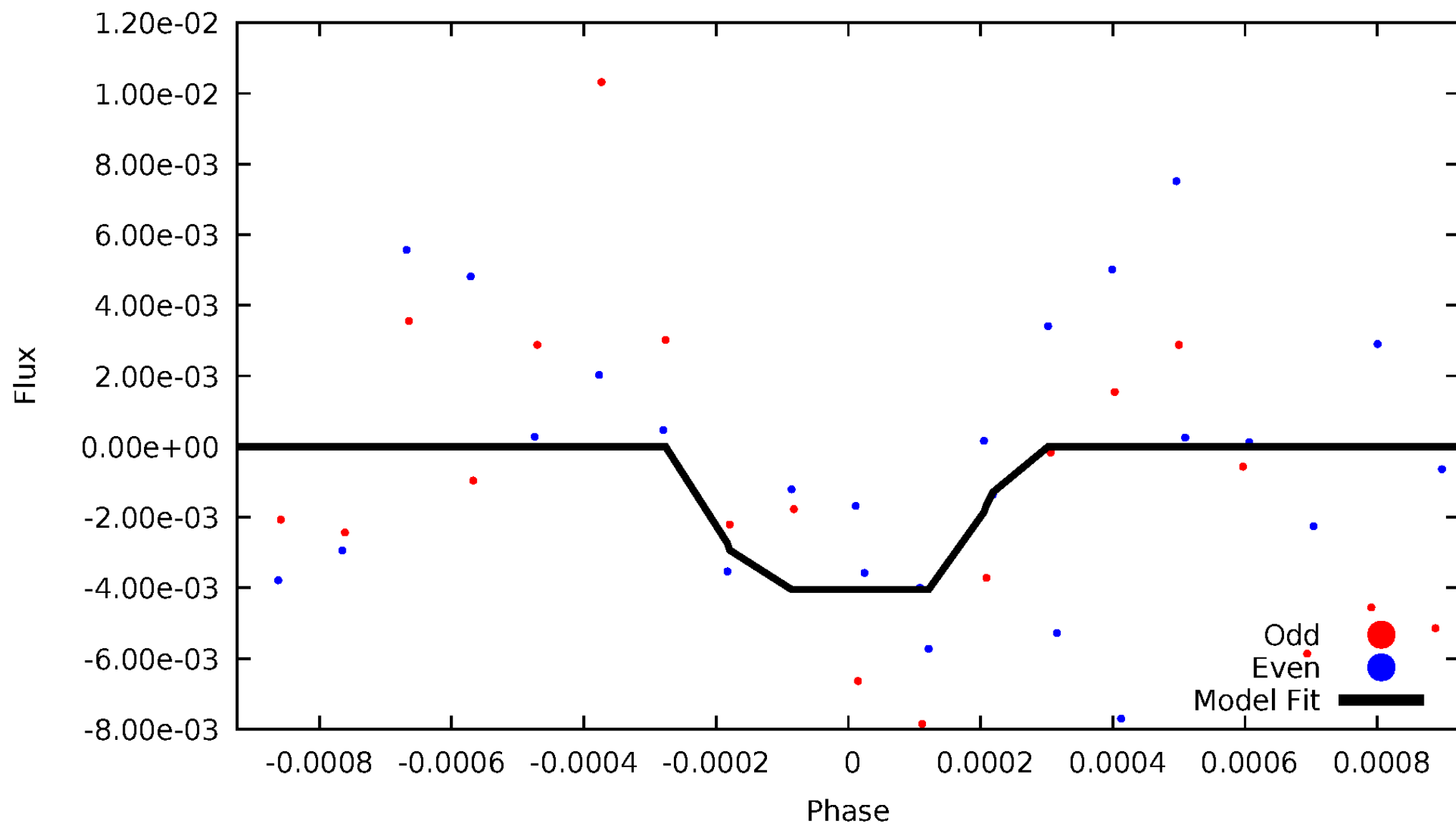
DV Odd/Even

TCE 005304184-04



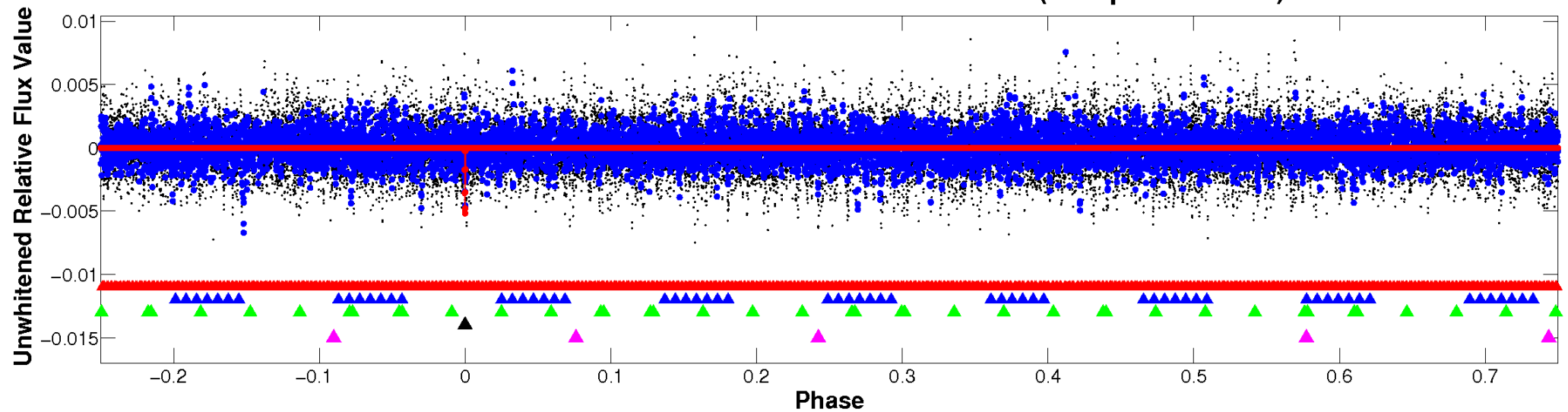
ALT Odd/Even

TCE 005304184-04

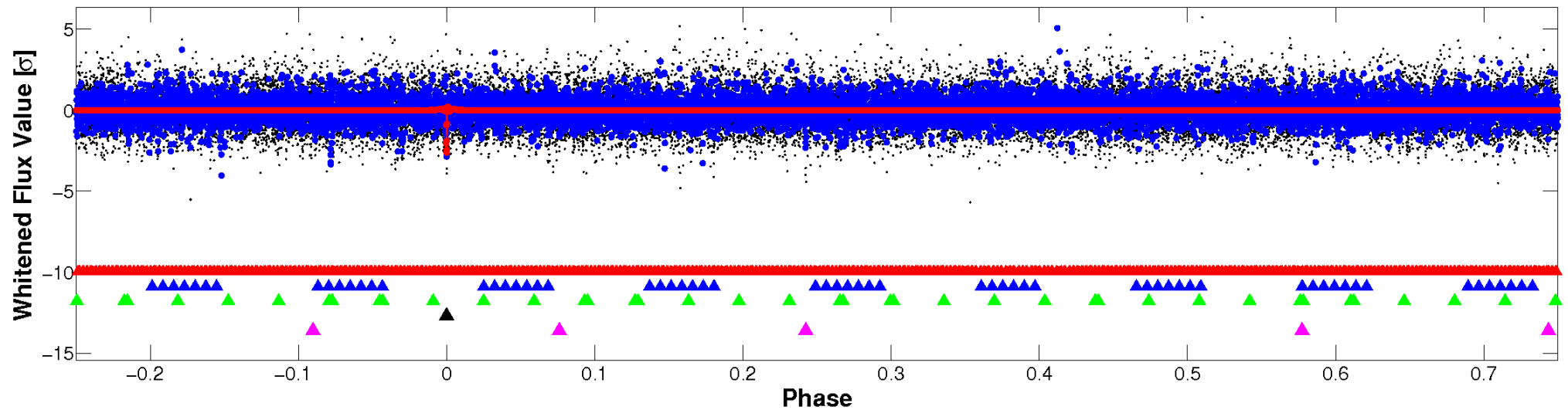


Non-Whitened Vs. Whitened Light Curve

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

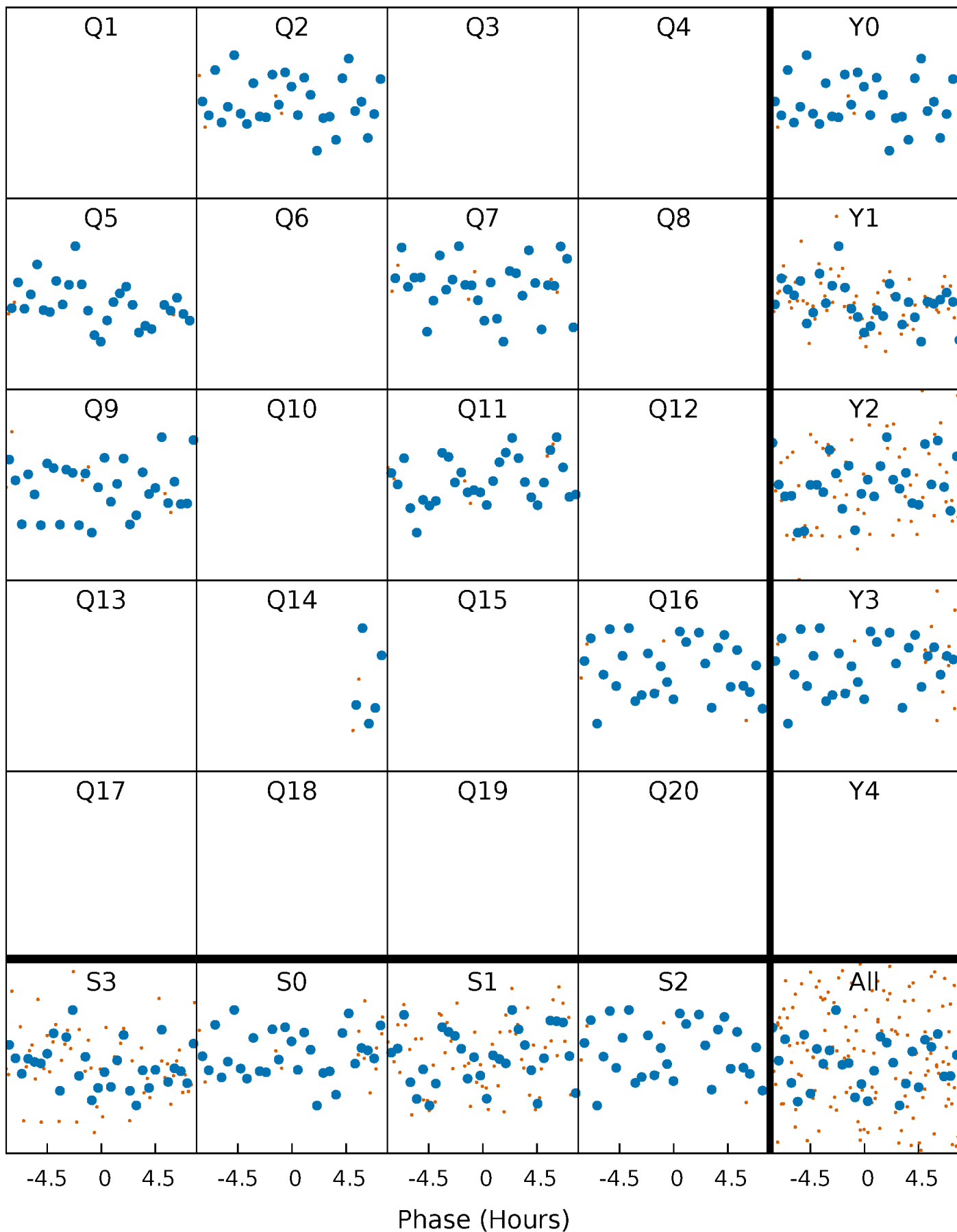


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



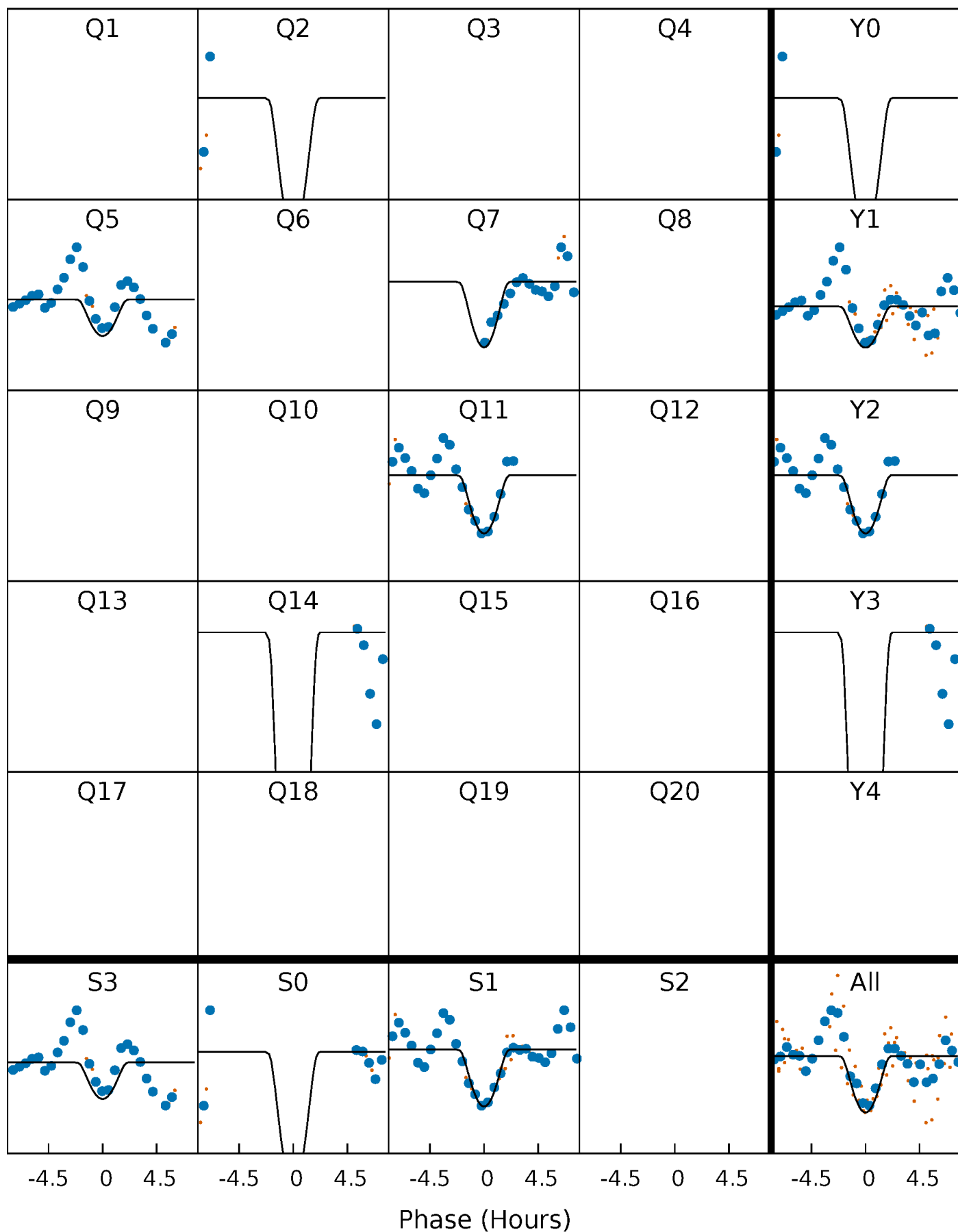
PDC Quarter-Phased Transit Curves

TCE 005304184-04 $P=210.584158$ Days $T_0=253.048314$ (BKJD)



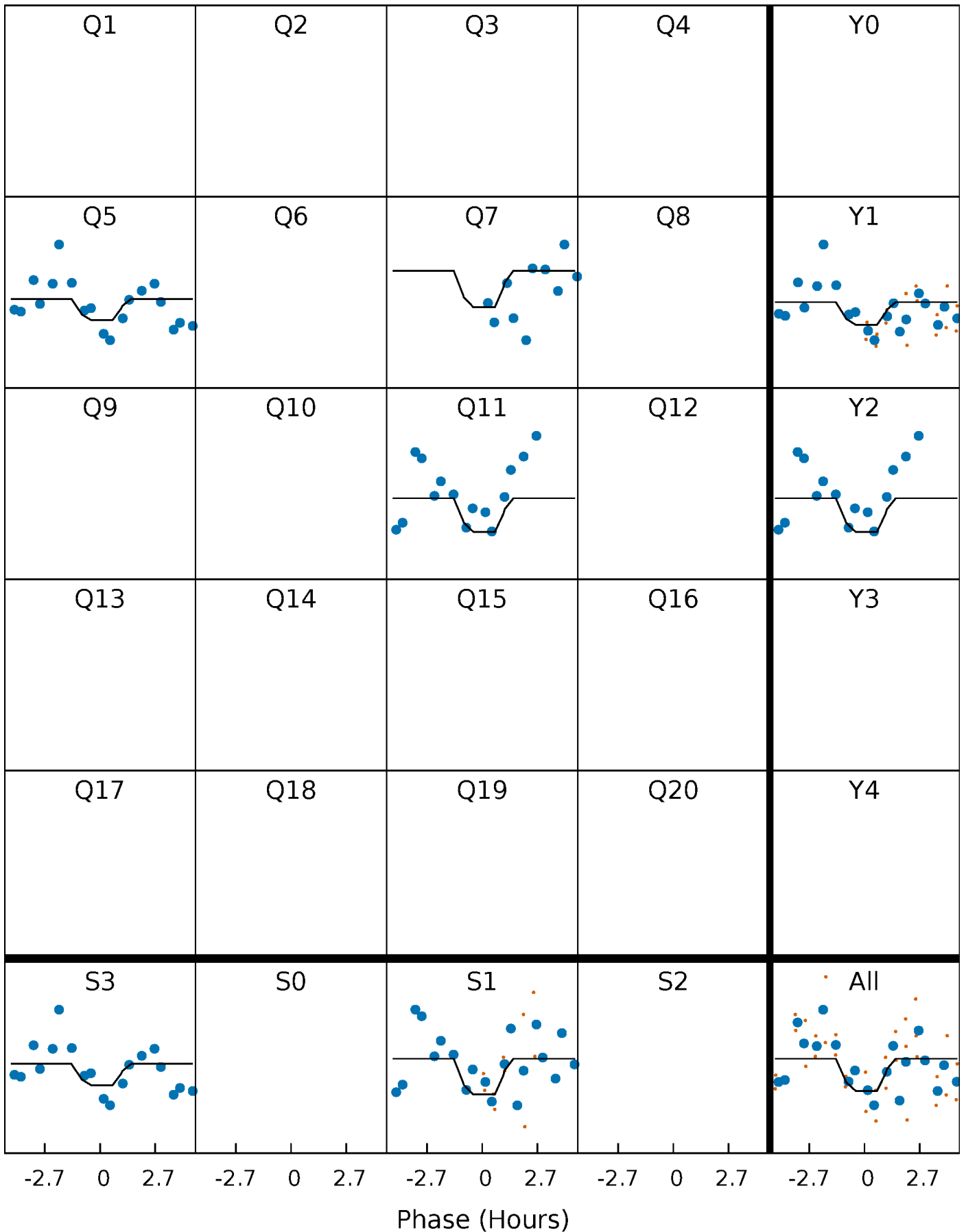
DV Quarter-Phased Transit Curves

TCE 005304184-04 P=210.584158 Days $T_0=253.048314$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

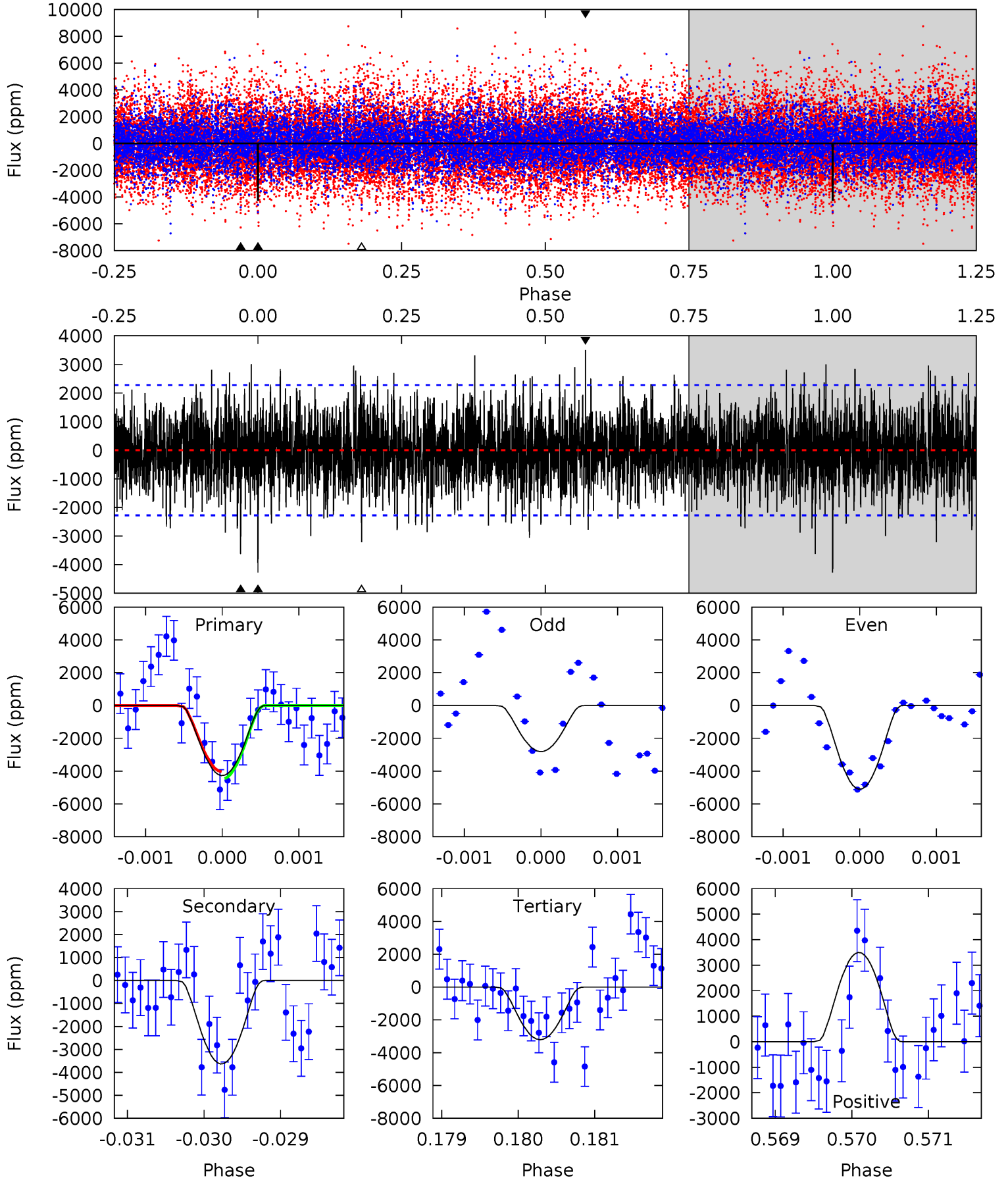
TCE 005304184-04 $P=210.588864$ Days $T_0=253.025486$ (BKJD)



DV Model-Shift Uniqueness Test

005304184-04, P = 210.584158 Days, E = 42.464156 Days

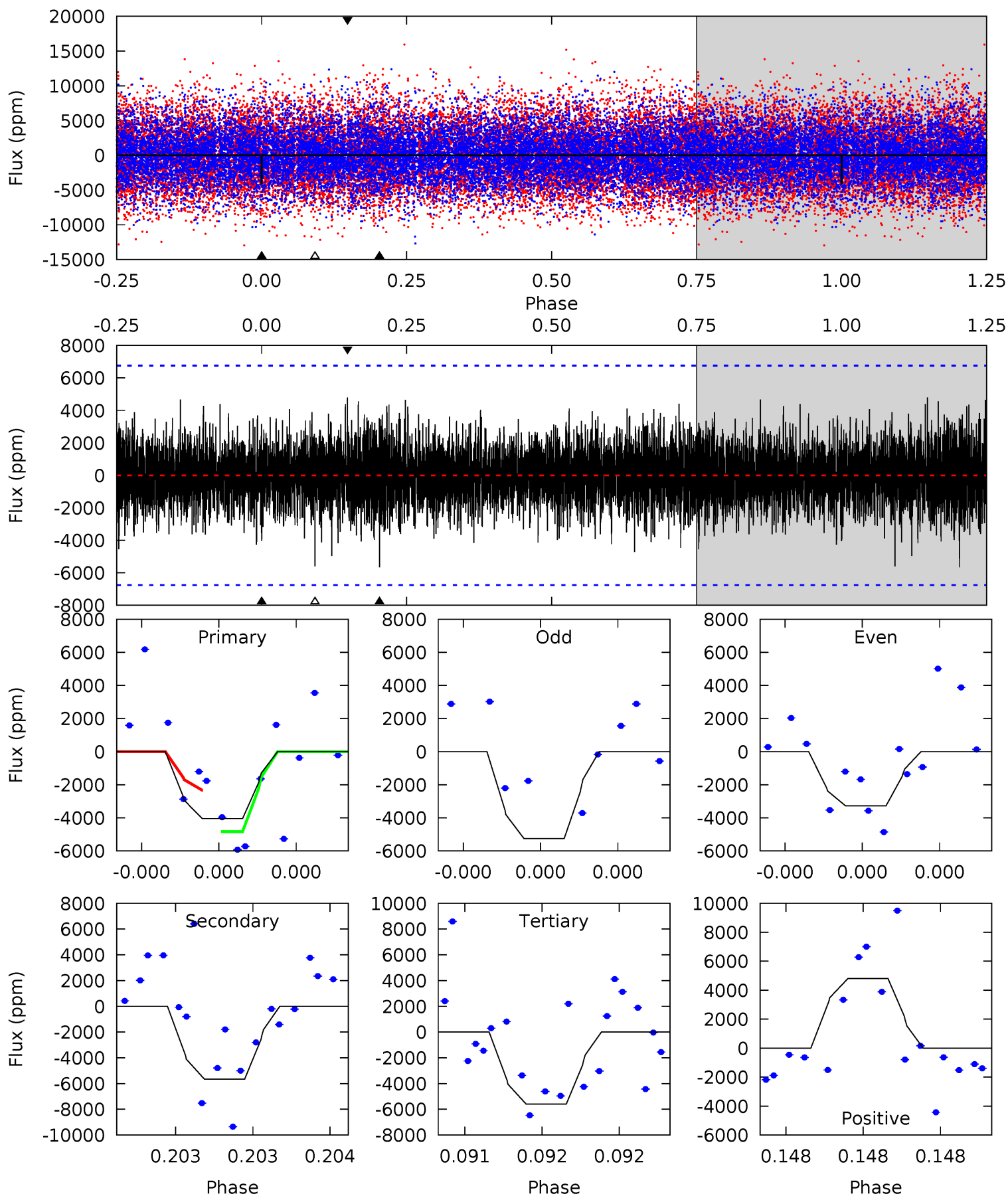
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	8.78	7.75	8.45	5.50	3.36	2.17	2.57	1.87	1.03	0.33	2.67	0.89	0.45	0.50



Alt Model-Shift Uniqueness Test

005304184-04, P = 210.588864 Days, E = 42.436622 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.36	4.70	4.64	3.99	5.61	3.54	1.12	-1.28	-0.62	0.05	0.71	0.80	0.89	0.46	0.83



Stellar Parameters For KIC 005304184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+201}_{-302}	$4.121^{+0.144}_{-0.176}$	$-0.080^{+0.200}_{-0.350}$	$1.770^{+0.541}_{-0.406}$	$1.508^{+0.212}_{-0.236}$	$0.383^{+0.296}_{-0.196}$
	+3%/-4%	+3%/-4%	+250%/-438%	+31%/-23%	+14%/-16%	+77%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005304184-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3634 ± 414	$31.30^{+29.13}_{-21.52}$	666^{+51}_{-43}	4559^{+3432}_{-928}	1284^{+11841}_{-932}
Alt.	-5656 ± 1204	$29.88^{+27.56}_{-19.99}$	666^{+49}_{-44}	5046^{+4066}_{-1096}	2230^{+17363}_{-1655}

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

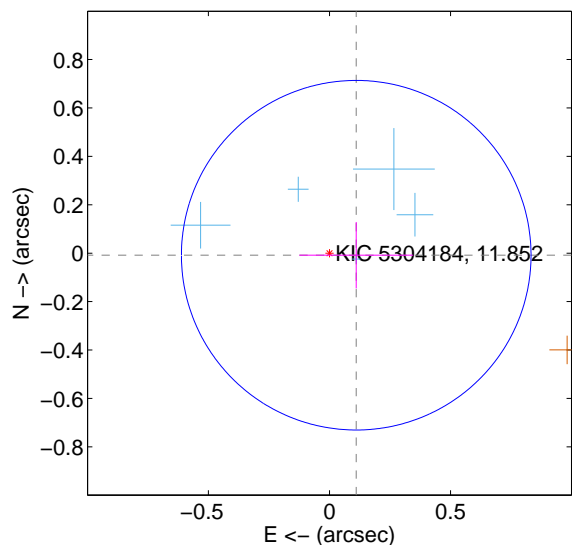
Supplemental centroid analysis for 005304184-04. **Kepler magnitude: 11.85.** Transit SNR 8.77

There are 5 quarters with good PRF difference image offsets

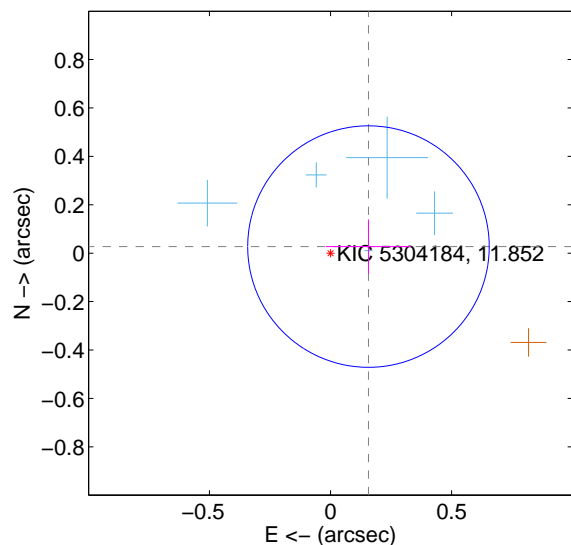
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.111 ± 0.241	0.46	-0.110 ± 0.235	-0.008 ± 0.137
PRF-fit source offset from KIC position	0.159 ± 0.166	0.96	-0.157 ± 0.176	0.027 ± 0.112
photometric centroid source offset	0.09 ± 0.06	1.54	-0.07 ± 0.06	0.06 ± 0.05

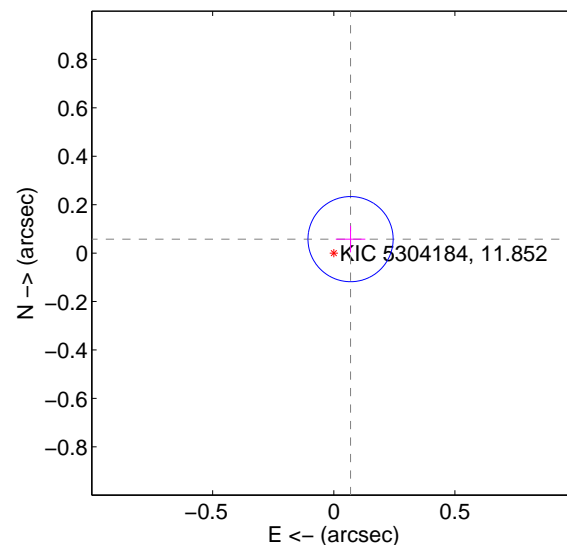
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

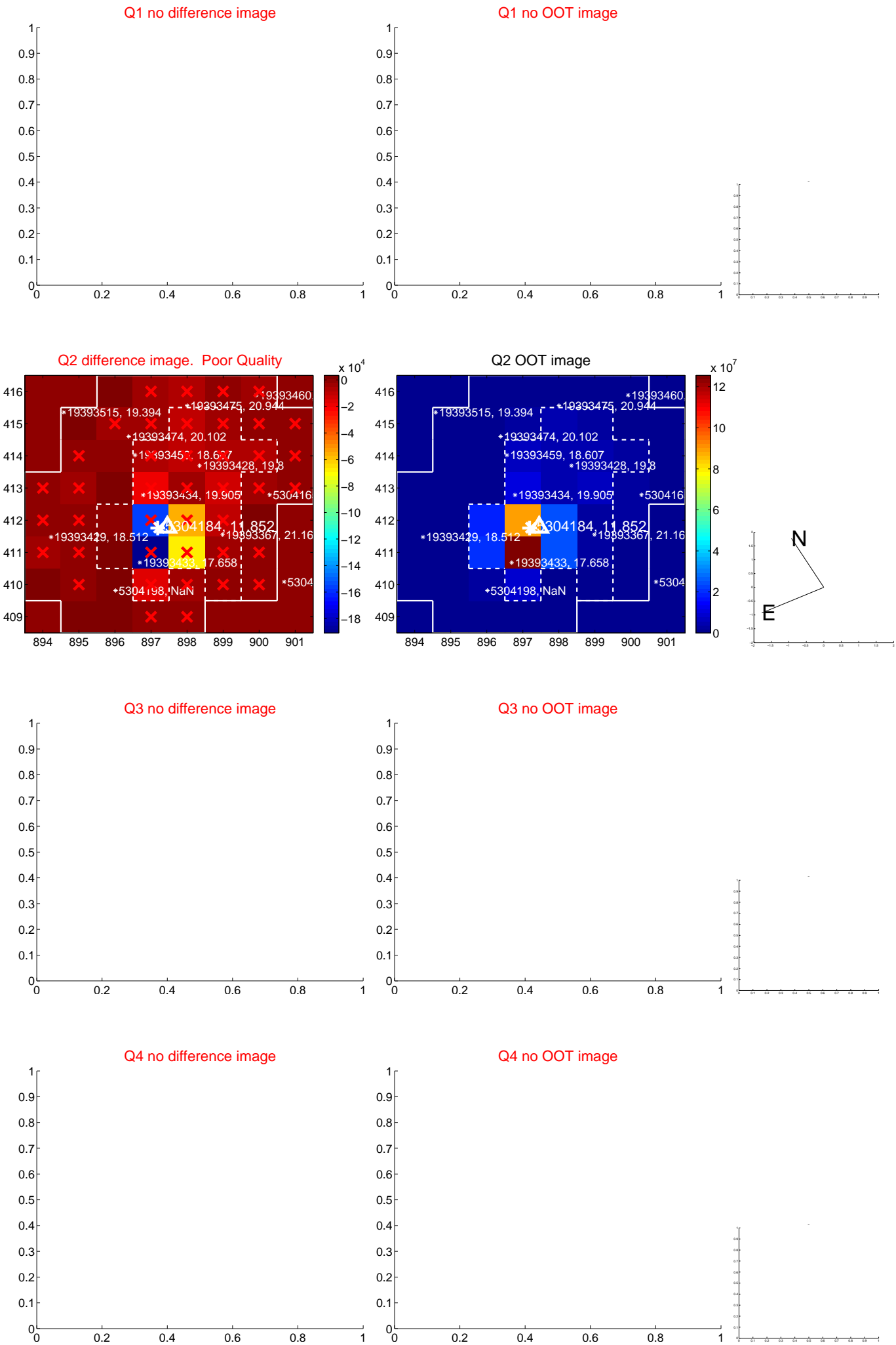


offset from photometric centroids

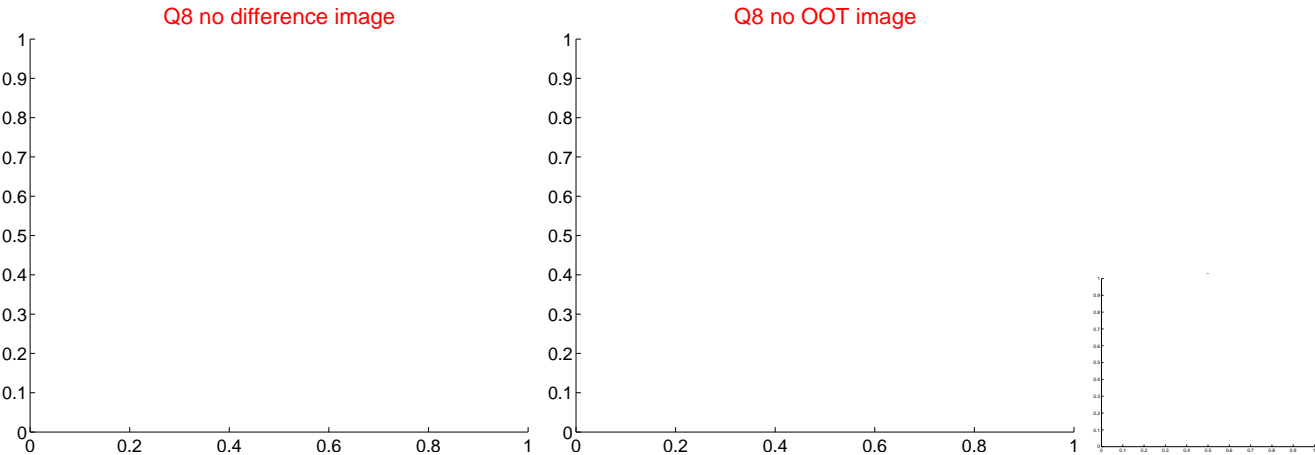
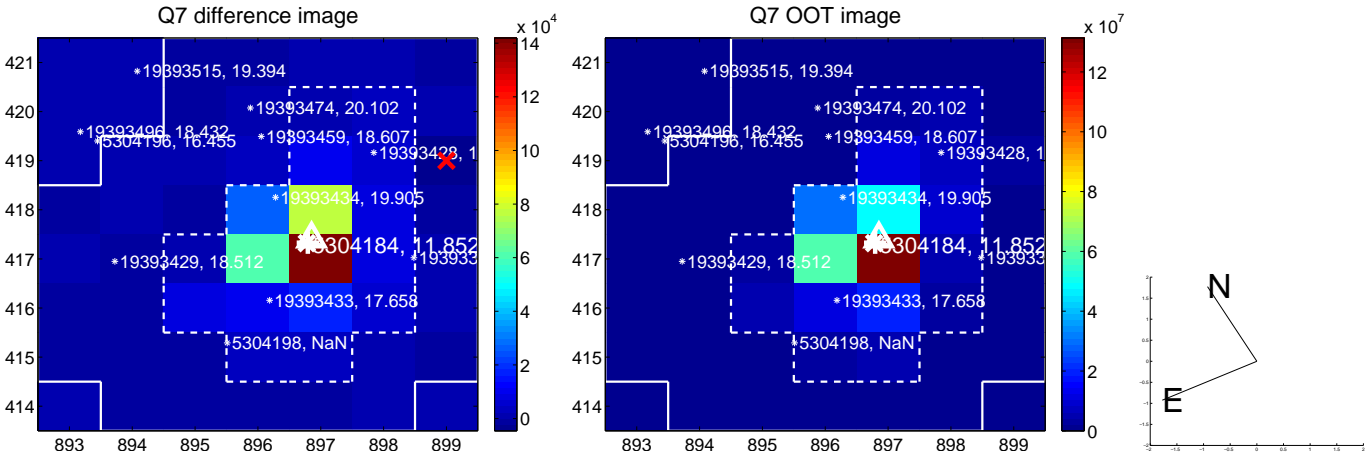
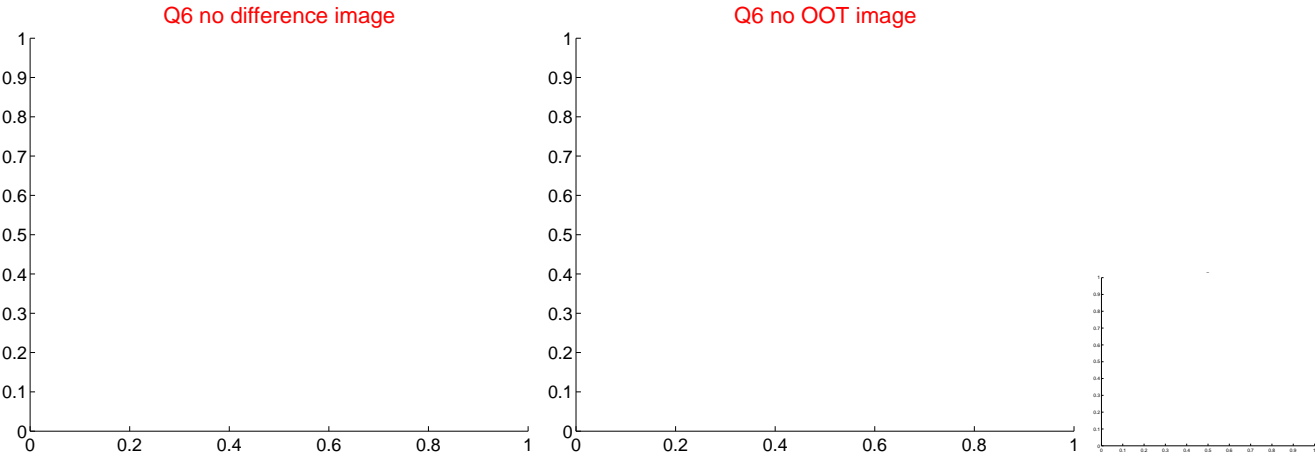
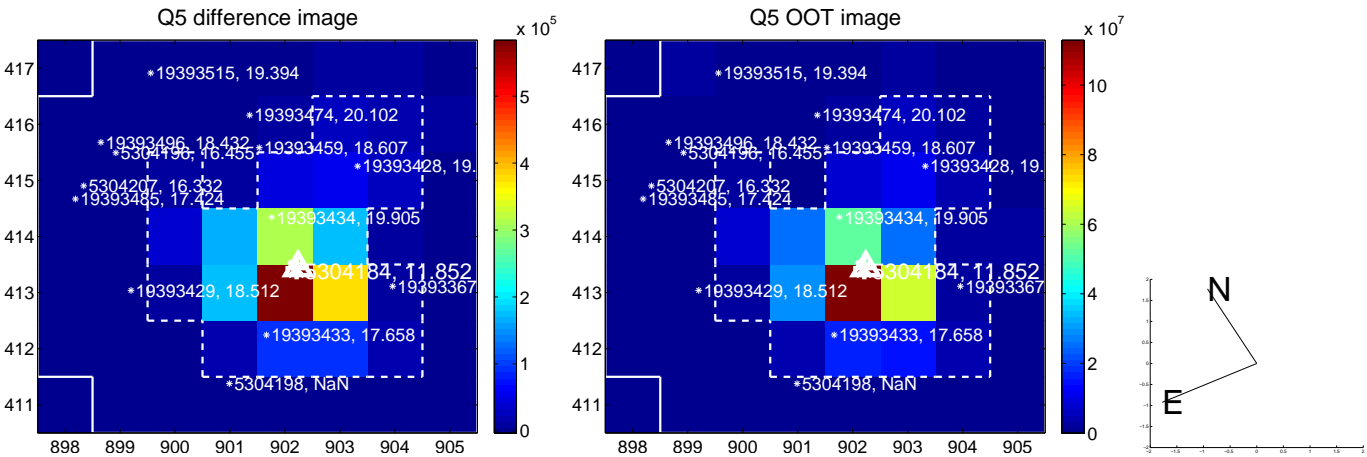


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

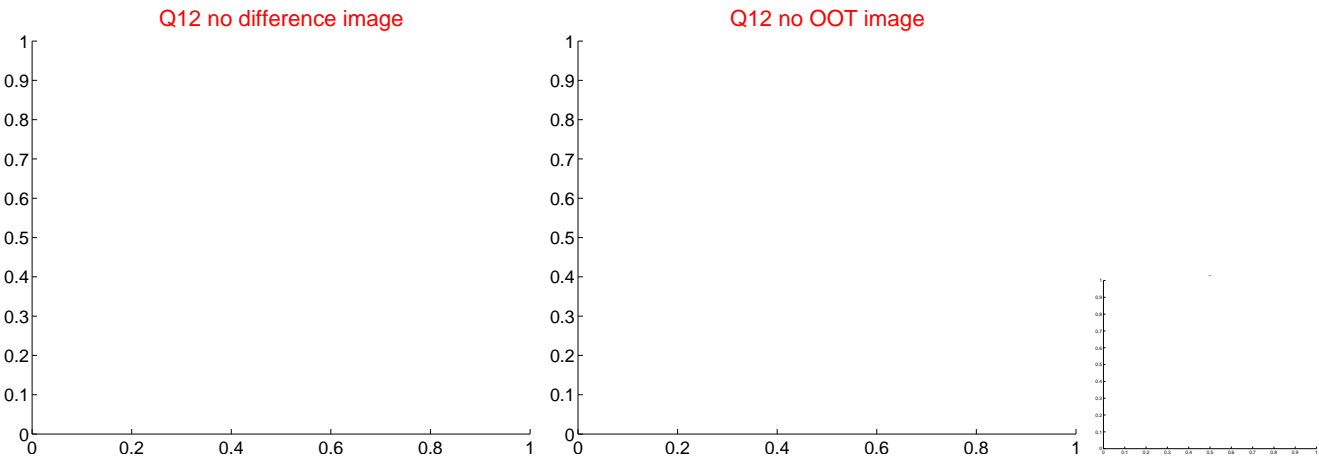
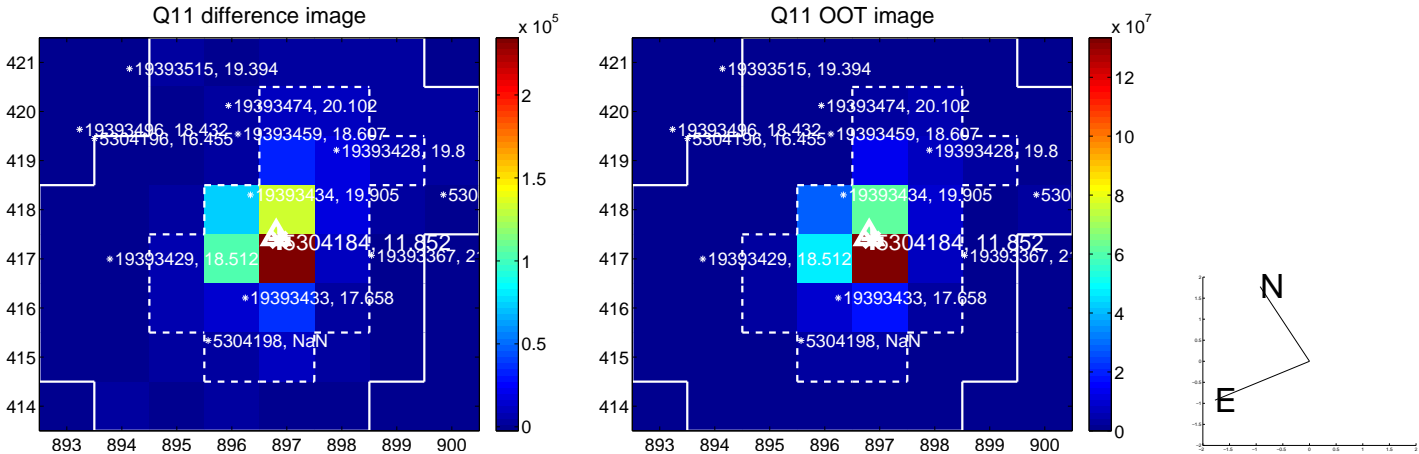
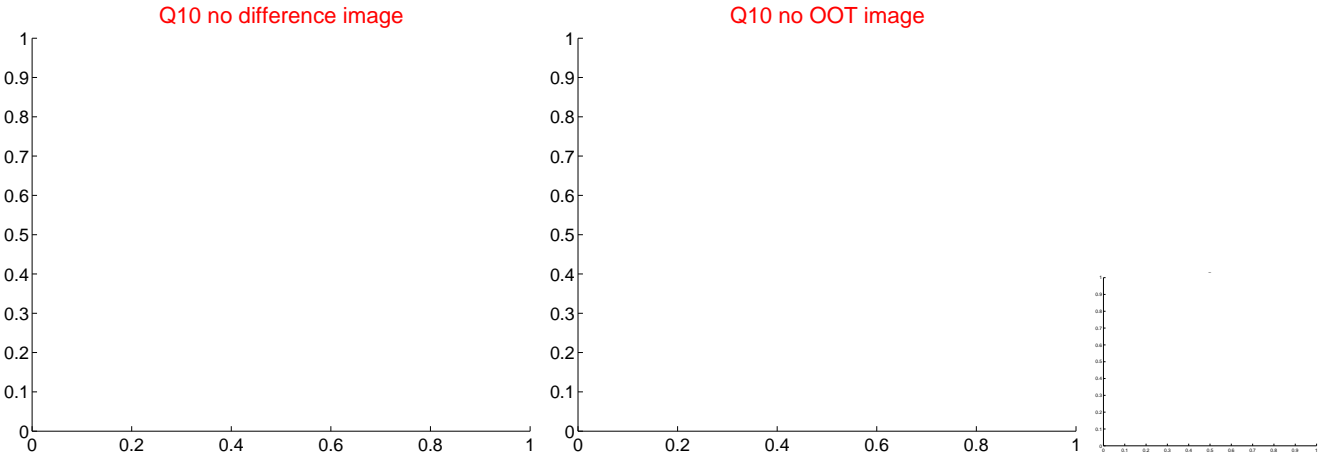
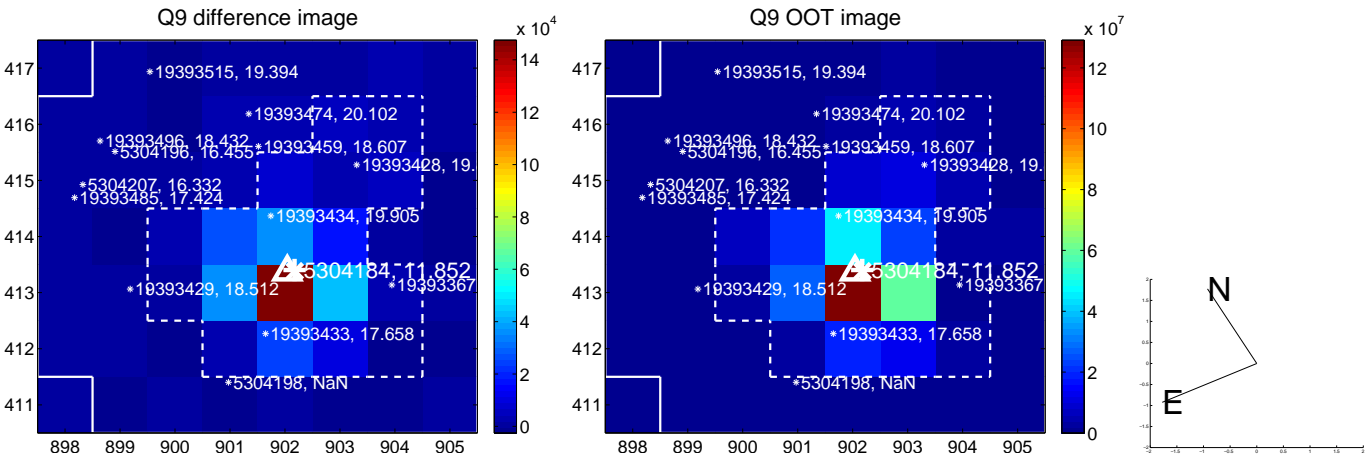
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



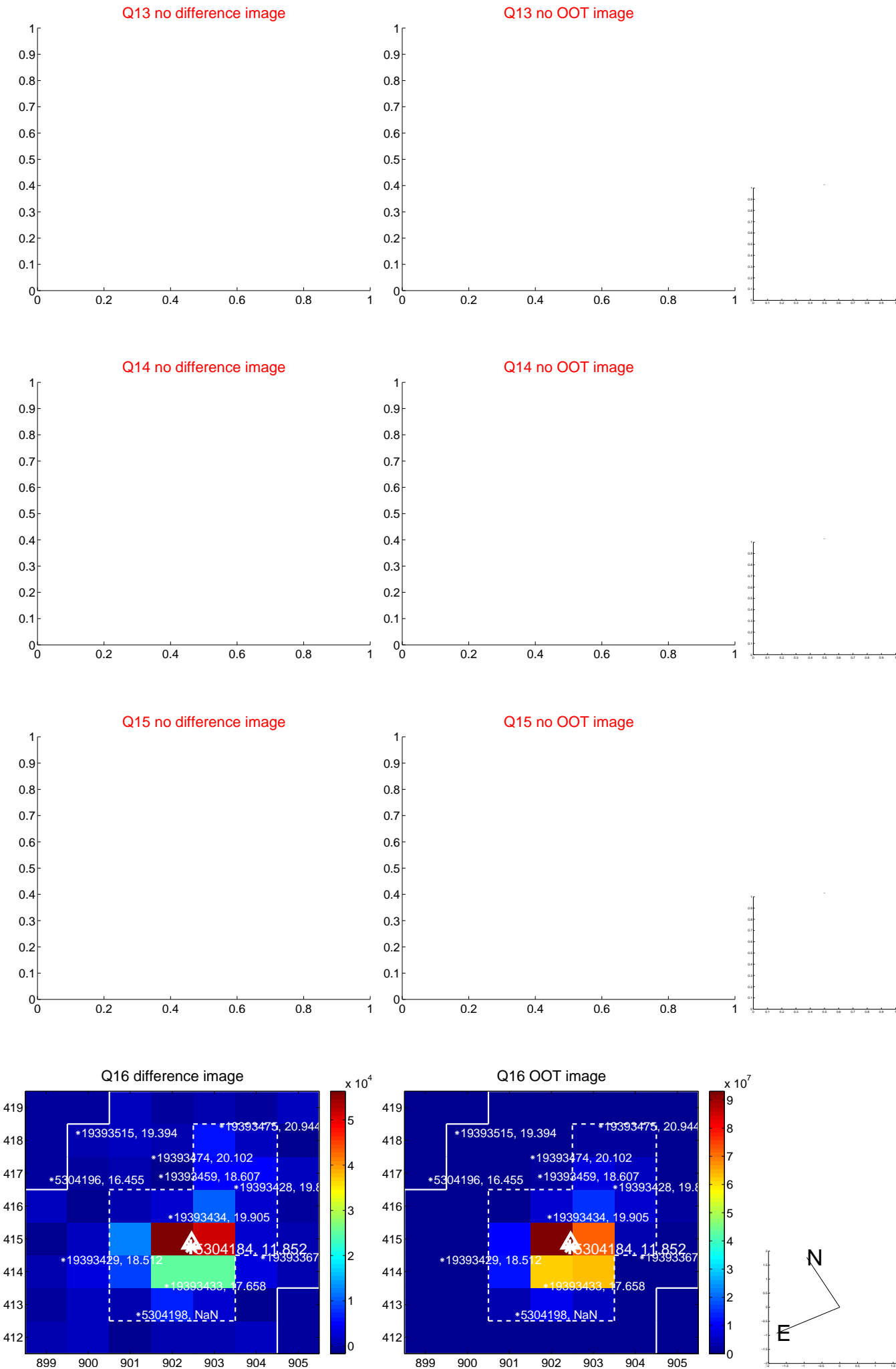
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



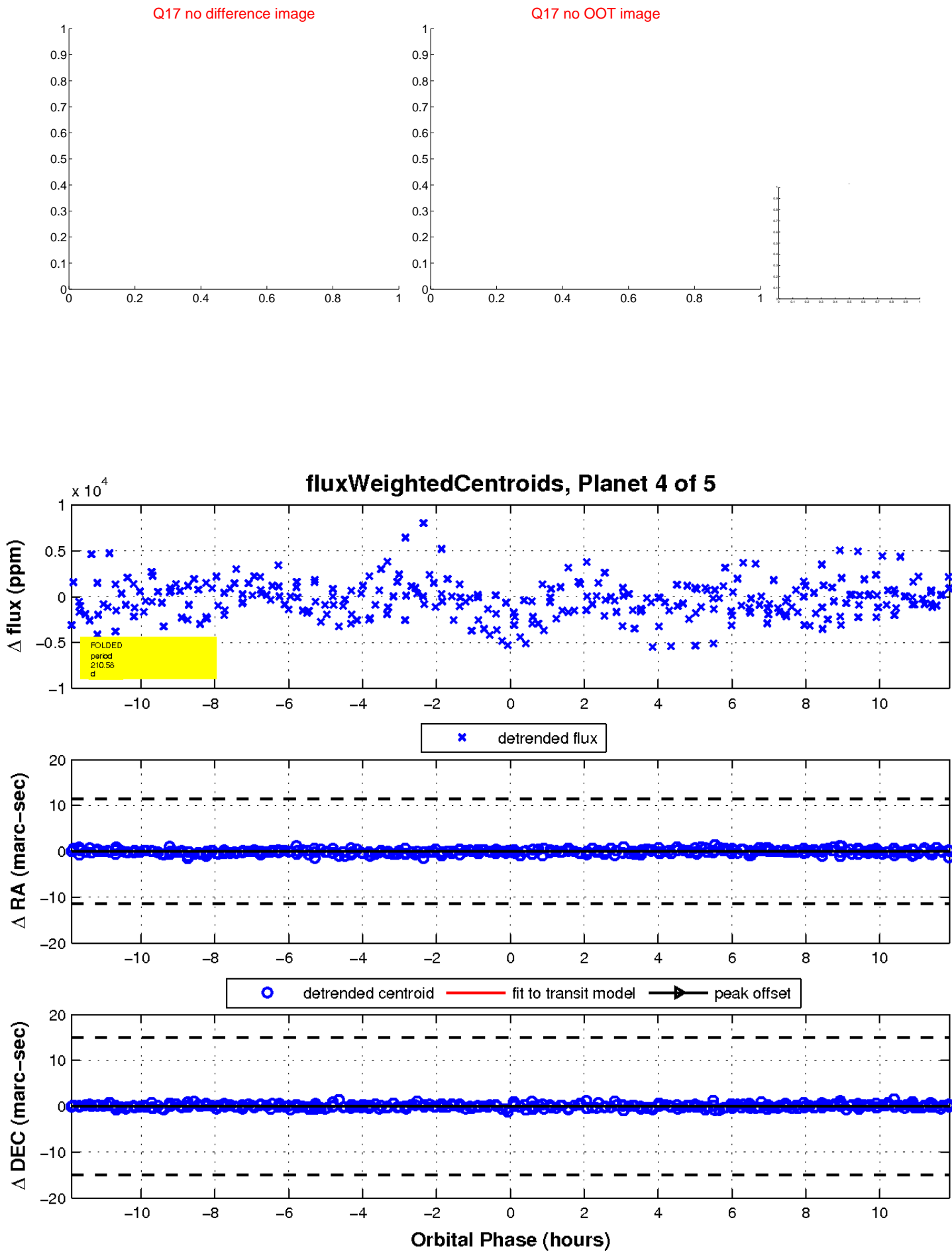
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

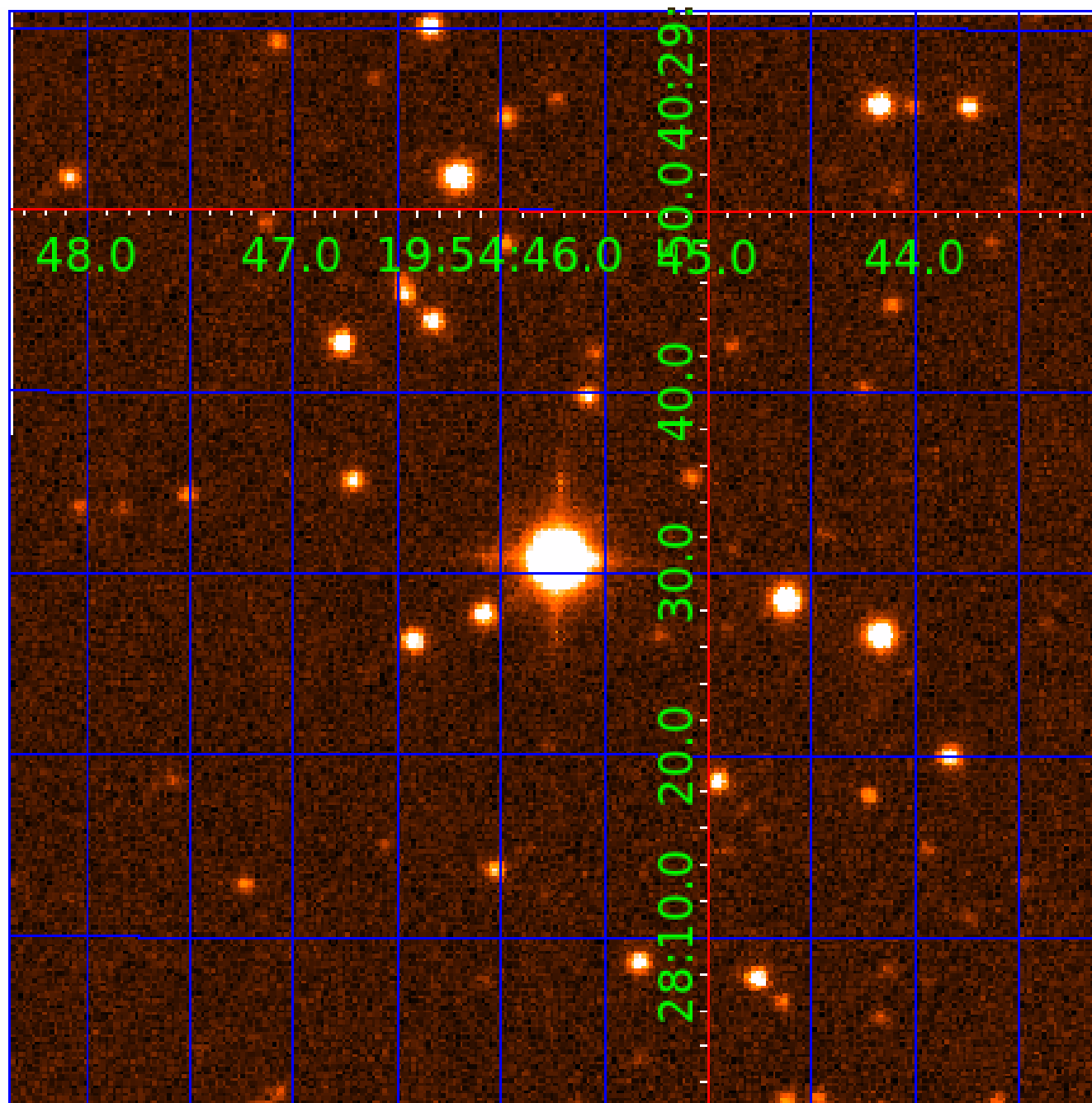


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005304184

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})
005304184-01	OBS	No	1.804555	132.351432	388.0	7.631	9.4	9.9	1.77	7244	4.44	6976.38
005304184-02	OBS	No	23.567648	140.505462	895.0	10.065	10.4	7.0	1.77	7244	5.69	226.83
005304184-03	OBS	No	36.292534	164.210569	1517.8	9.143	8.3	9.2	1.77	7244	7.19	127.56
005304184-04	OBS	No	210.584158	253.048314	5208.4	3.970	8.5	8.8	1.77	7244	19.54	12.23
005304184-05	OBS	No	245.598932	374.621718	3813.7	4.054	8.4	8.3	1.77	7244	17.98	9.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005304184-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005304184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005304184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

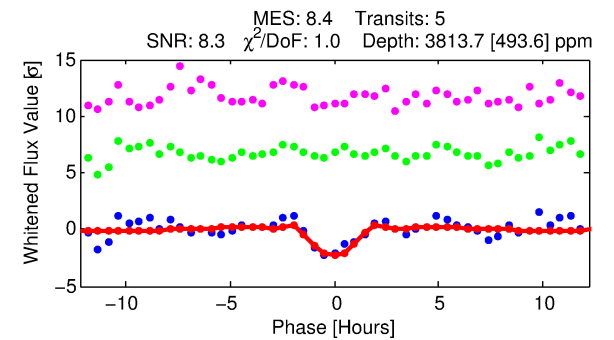
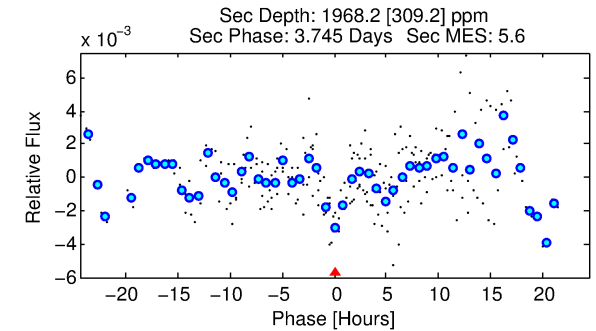
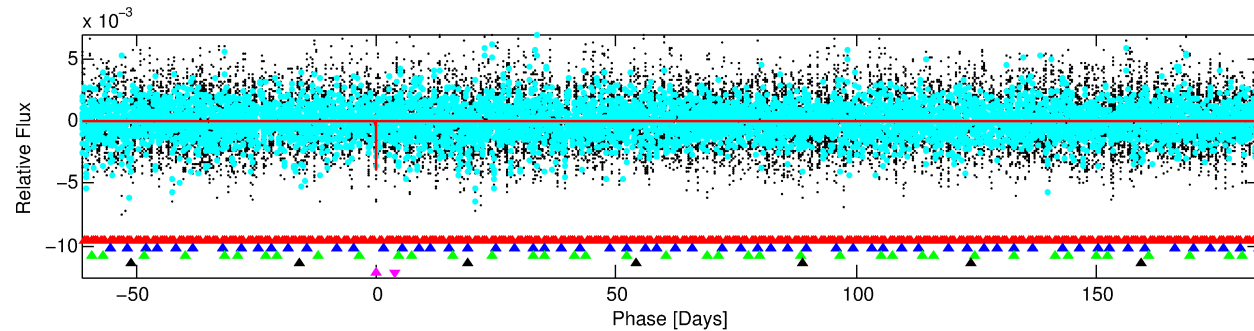
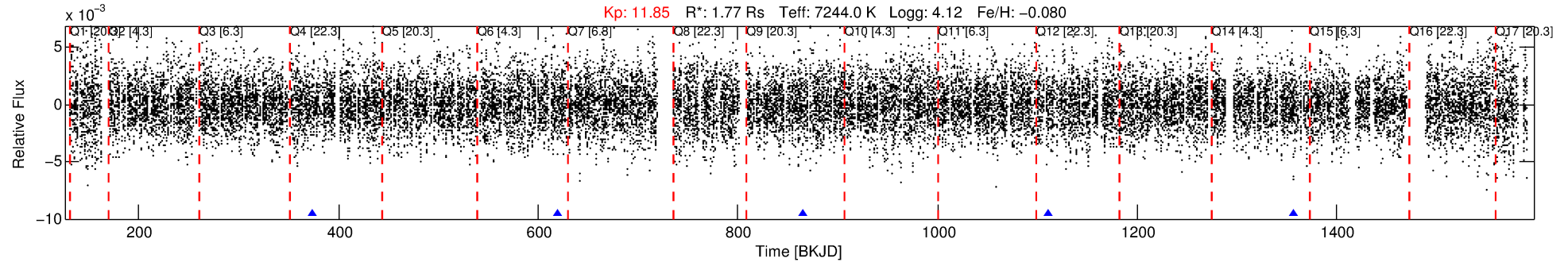
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005304184-05

No Significant Match Found

DV One-Page Summary

KIC: 5304184 Candidate: 5 of 5 Period: 245.599 d

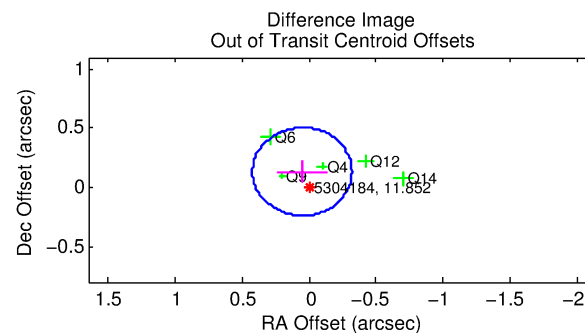
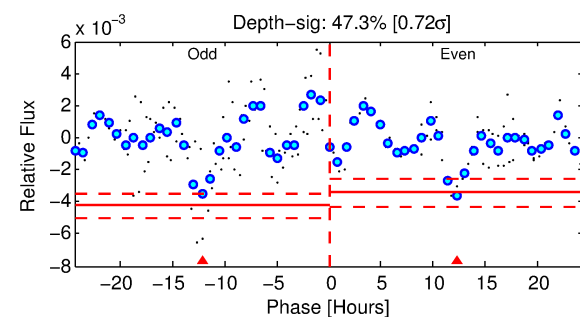
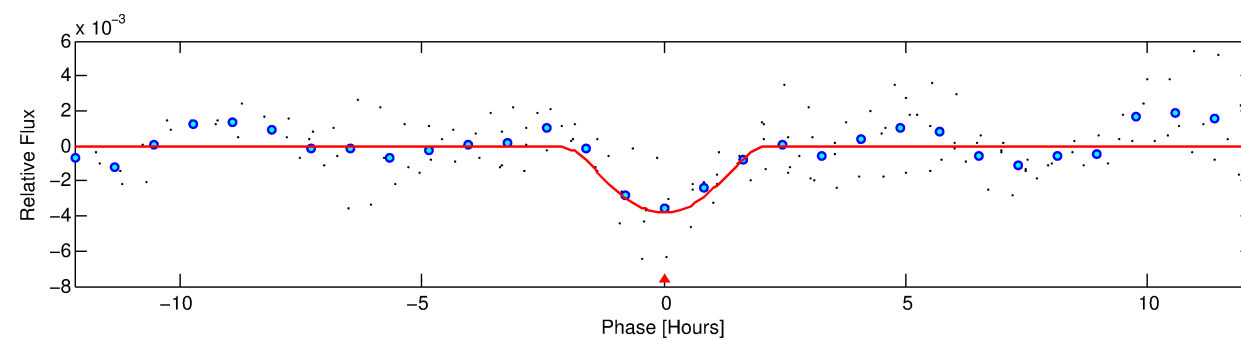


DV Fit Results:

Period = 245.59893 [0.00416] d
Epoch = 374.6217 [0.0113] BKJD
 $R_p/R^* = 0.0931$ [0.1986]
 $a/R^* = 217.42$ [112.06]
 $b = 0.99$ [0.31]
 $\text{Seff} = 9.97$ [3.76]
 $T_{\text{eq}} = 453$ [43] K
 $R_p = 17.98$ [38.74] R_e
 $a = 0.8807$ [0.2153] AU
 $A_g = 2598.89$ [11131.72] [0.23] σ
 $T_{\text{effp}} = 5001$ [5343] K [0.85] σ

DV Diagnostic Results:

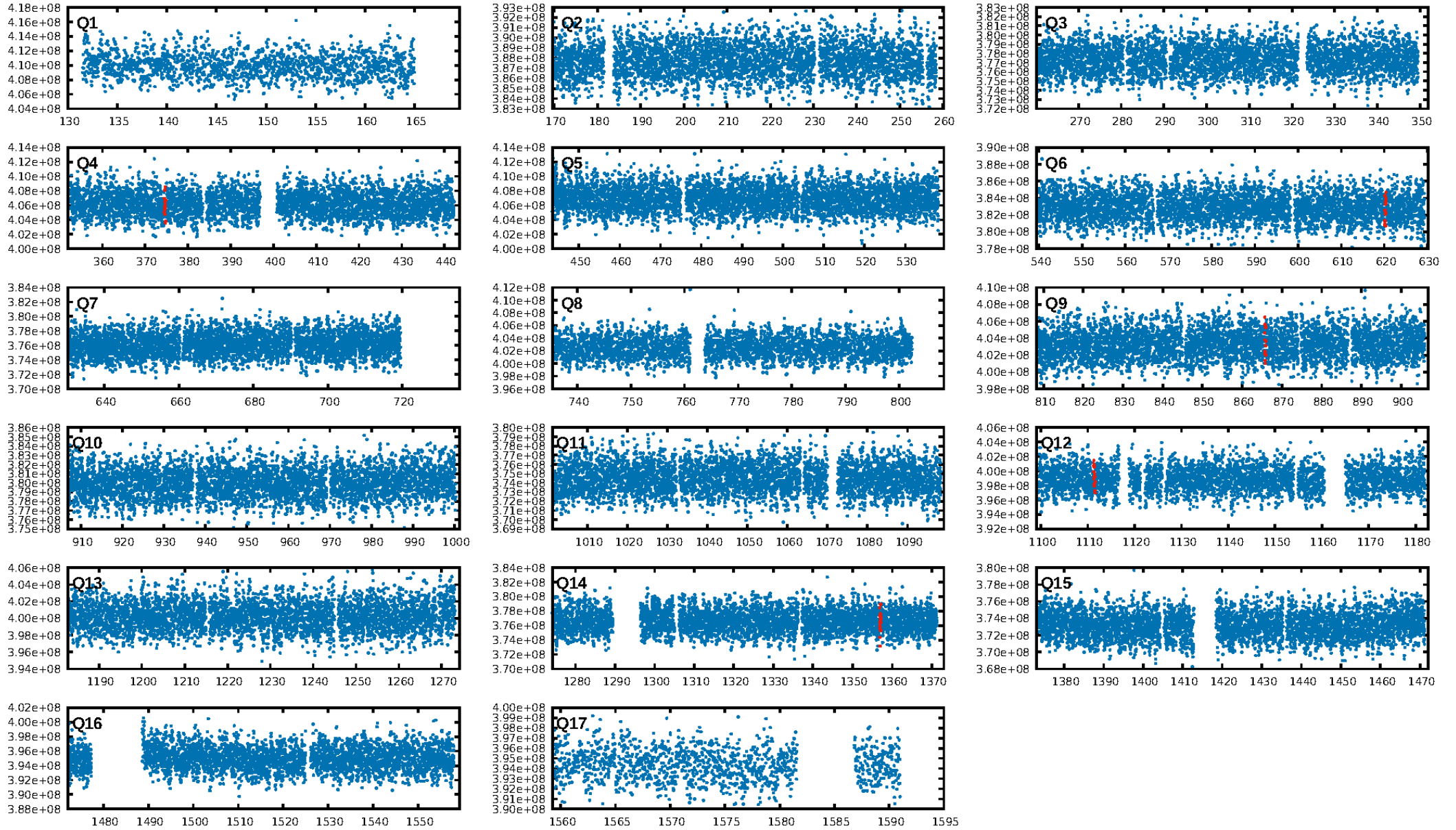
ShortPeriod-sig: 100.0% [148.10] σ
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.0%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 7.02e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 2.476
Centroid-sig: 0.4%
Centroid-so: 0.254 arcsec [2.73] σ
OotOffset-rm: 0.143 arcsec [1.15] σ
OotOffset-st: 2/0/2/1 [5]
KicOffset-rm: 0.222 arcsec [1.80] σ
KicOffset-st: 2/0/2/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.80 [4/5]



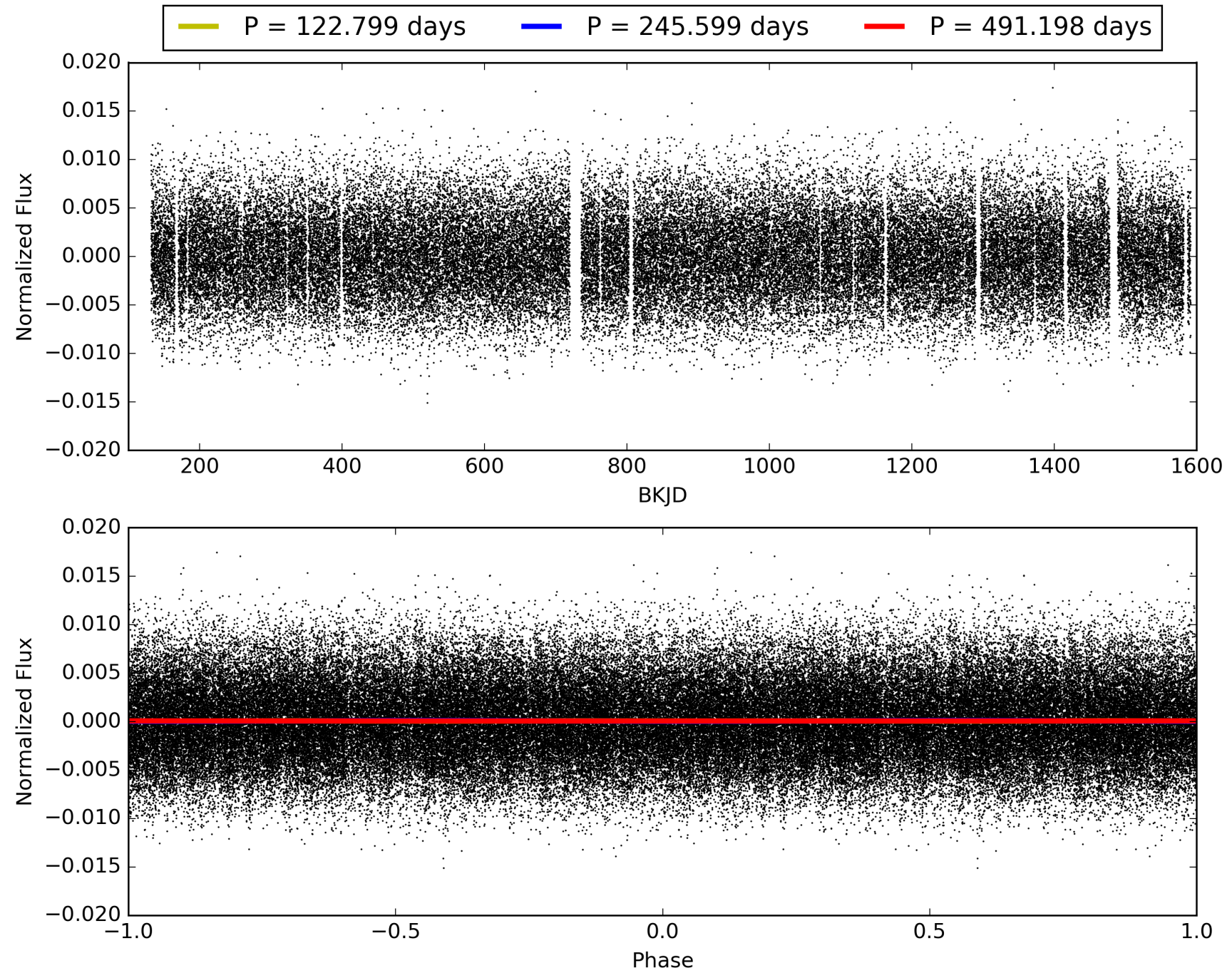
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:03:03 Z

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

TCE 005304184-05, PDC Light Curves

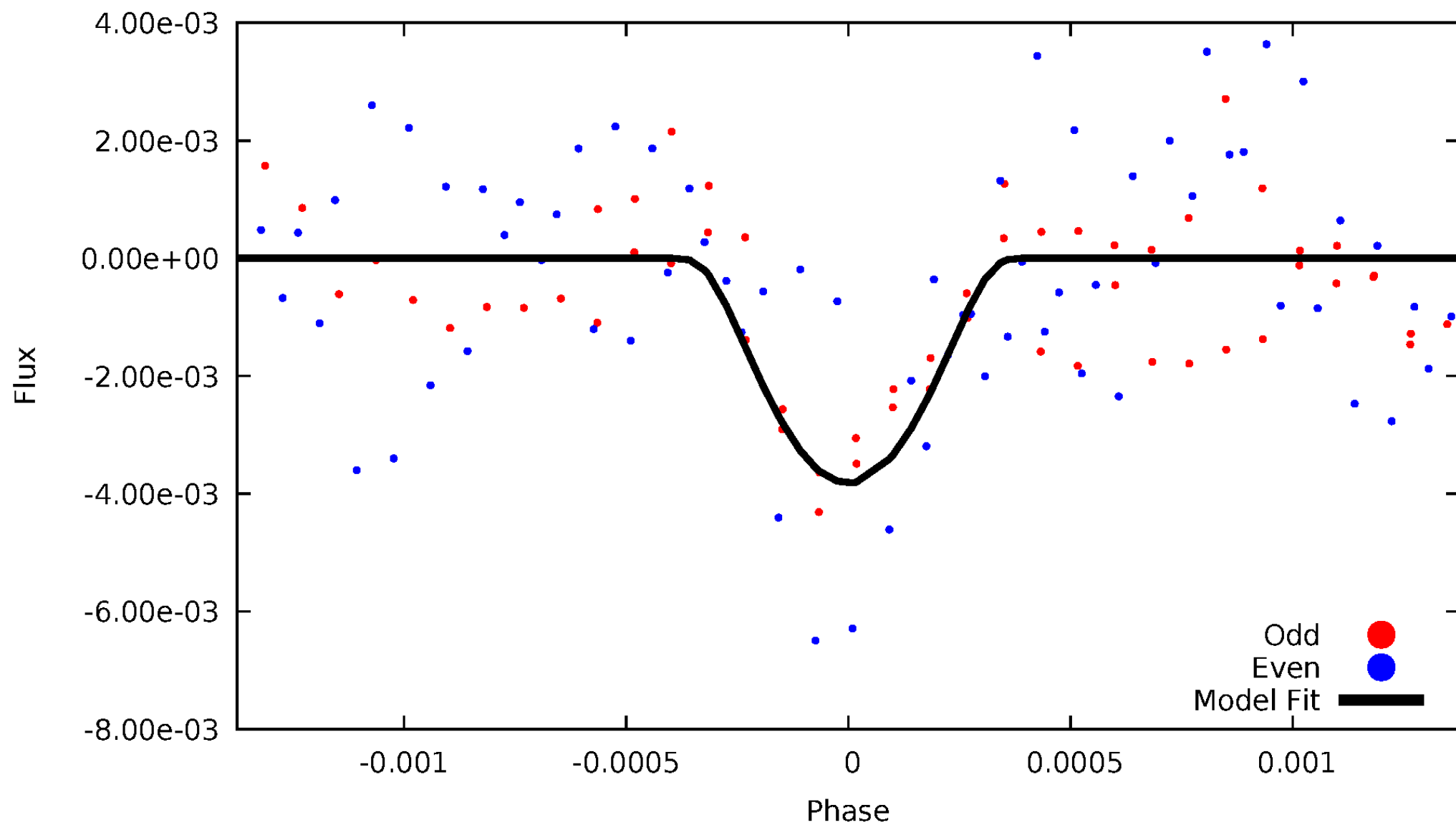


TCE 005304184-05



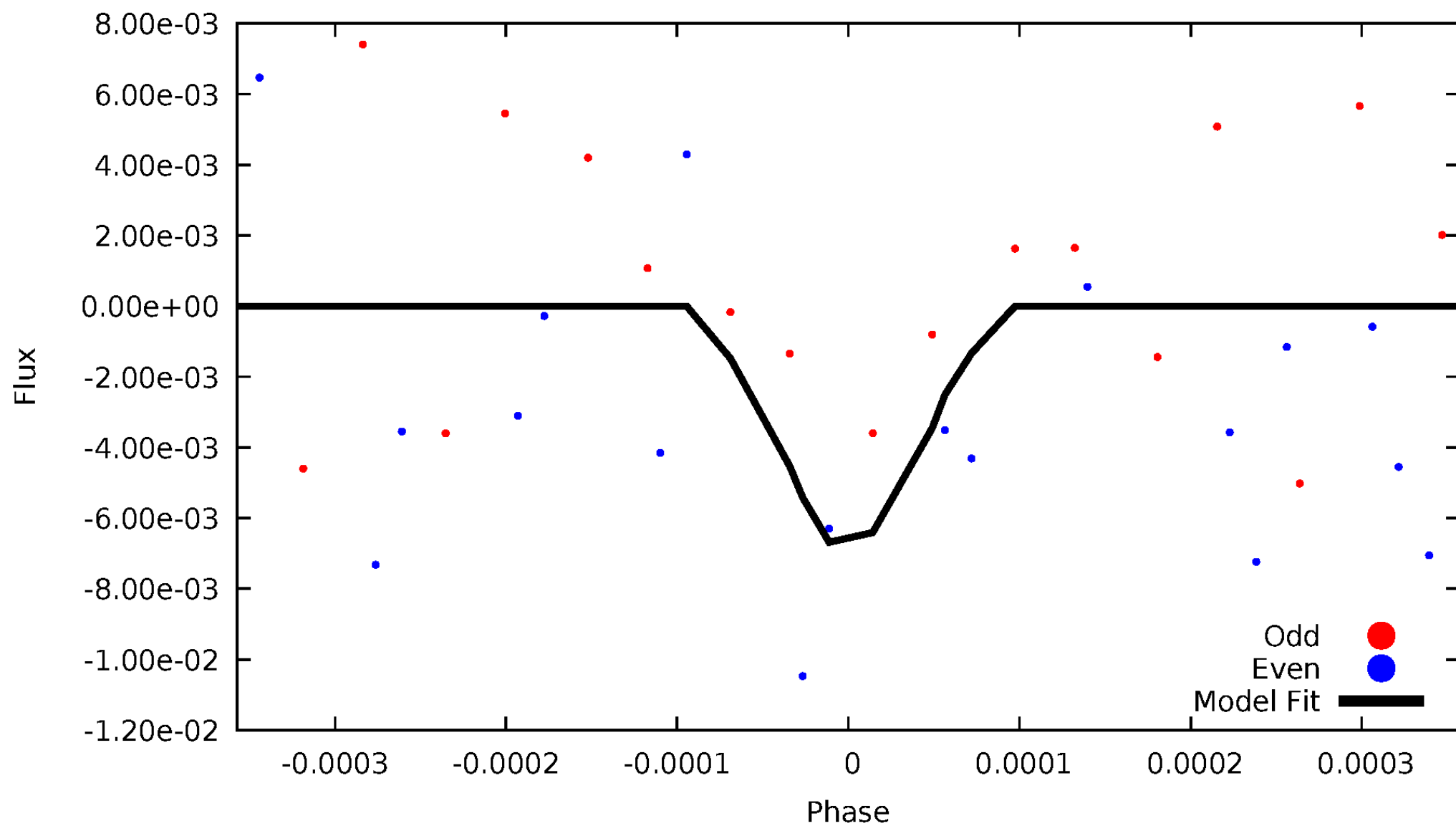
DV Odd/Even

TCE 005304184-05



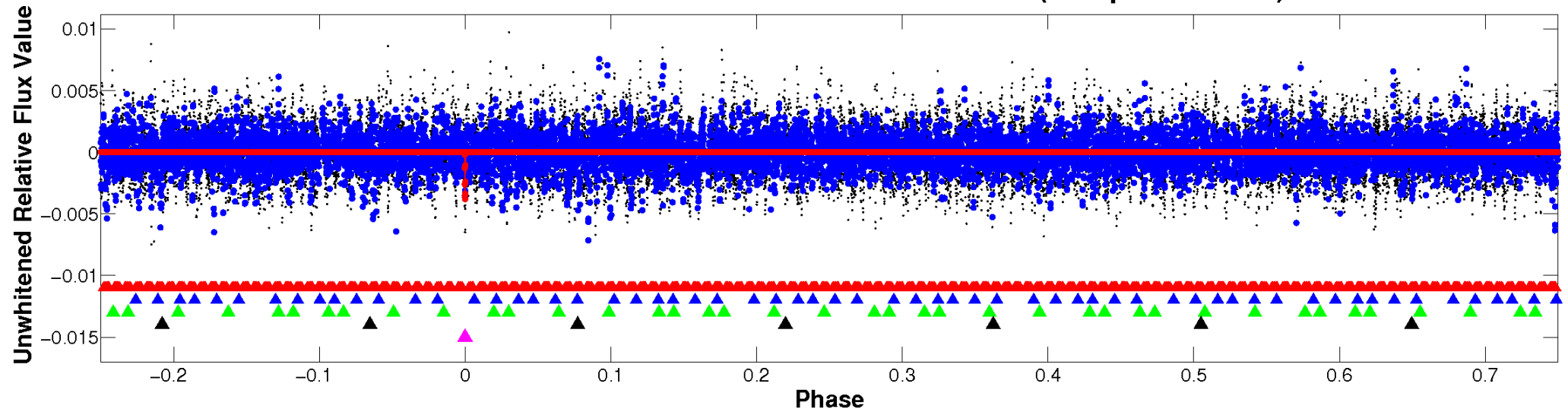
ALT Odd/Even

TCE 005304184-05

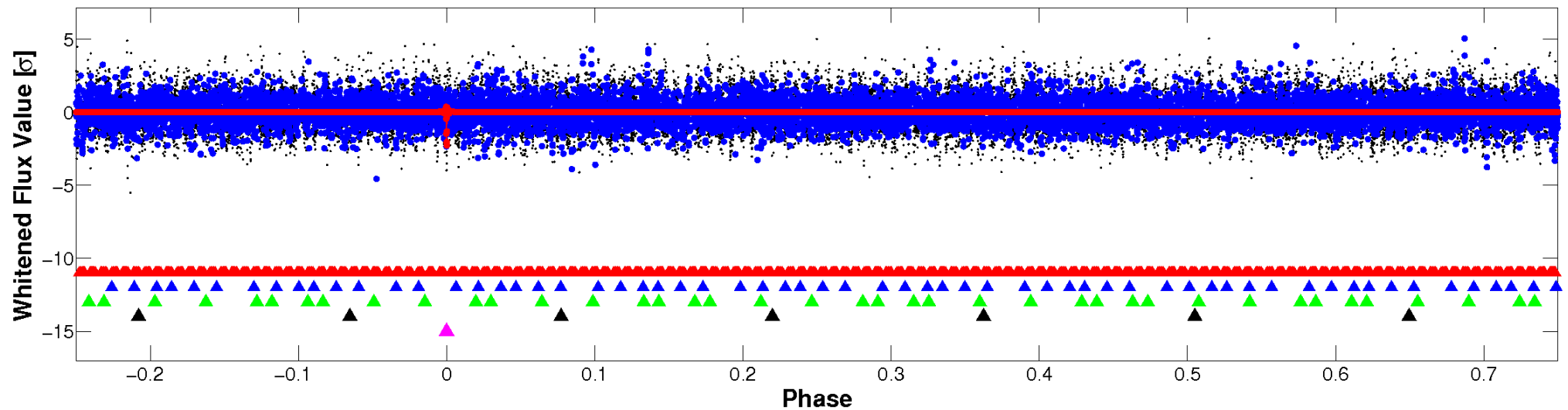


Non-Whitened Vs. Whitened Light Curve

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

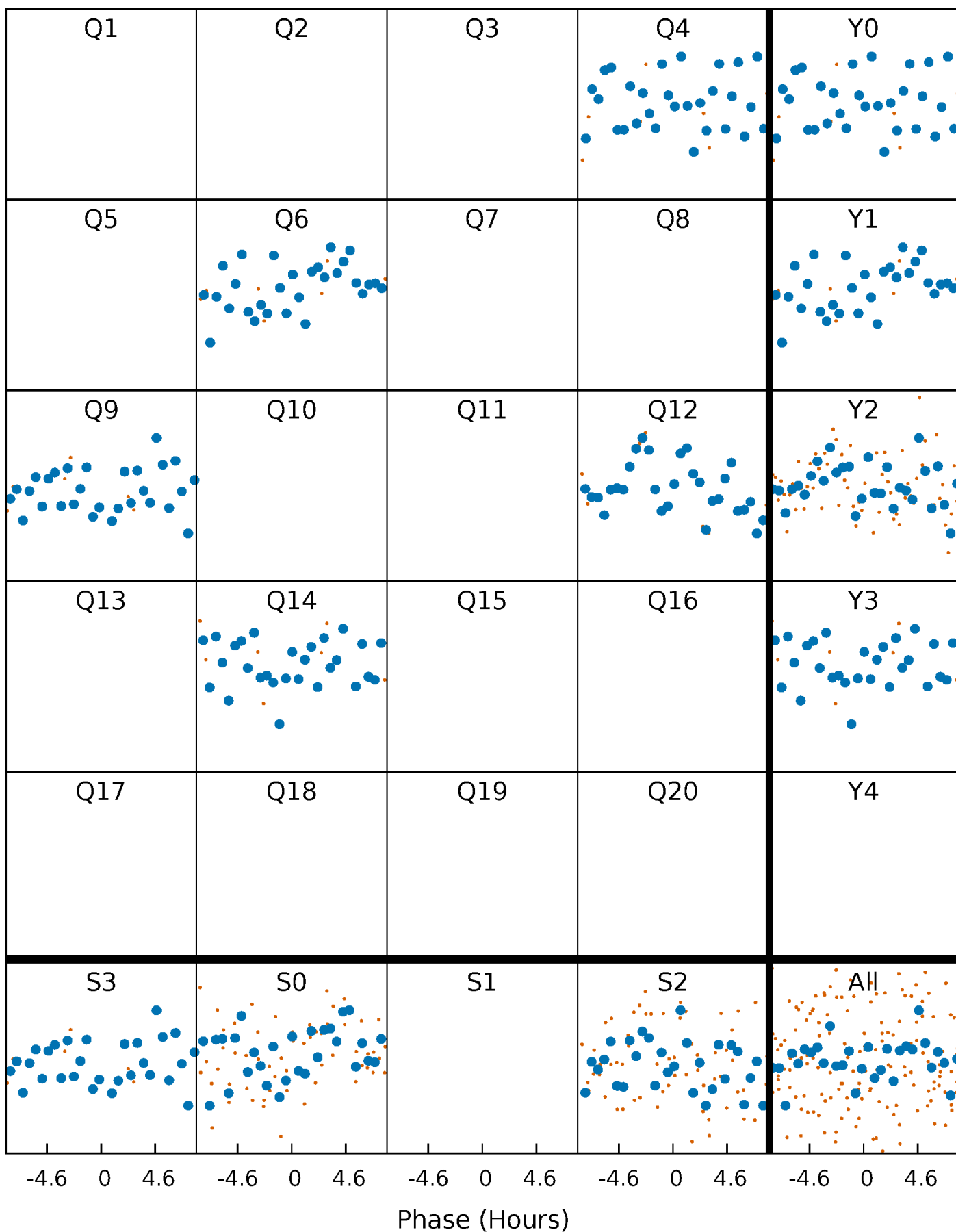


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



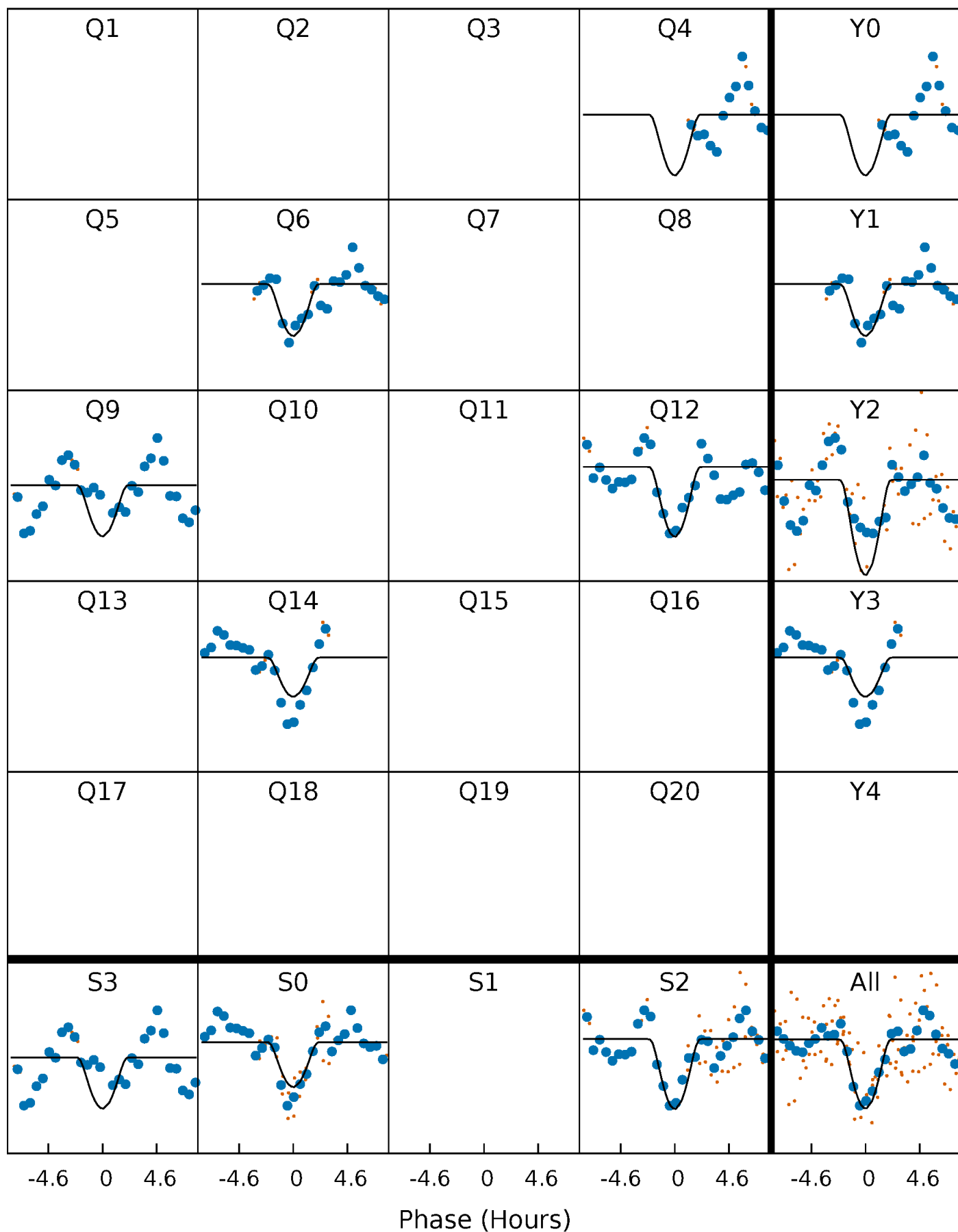
PDC Quarter-Phased Transit Curves

TCE 005304184-05 P=245.598932 Days $T_0=374.621718$ (BKJD)



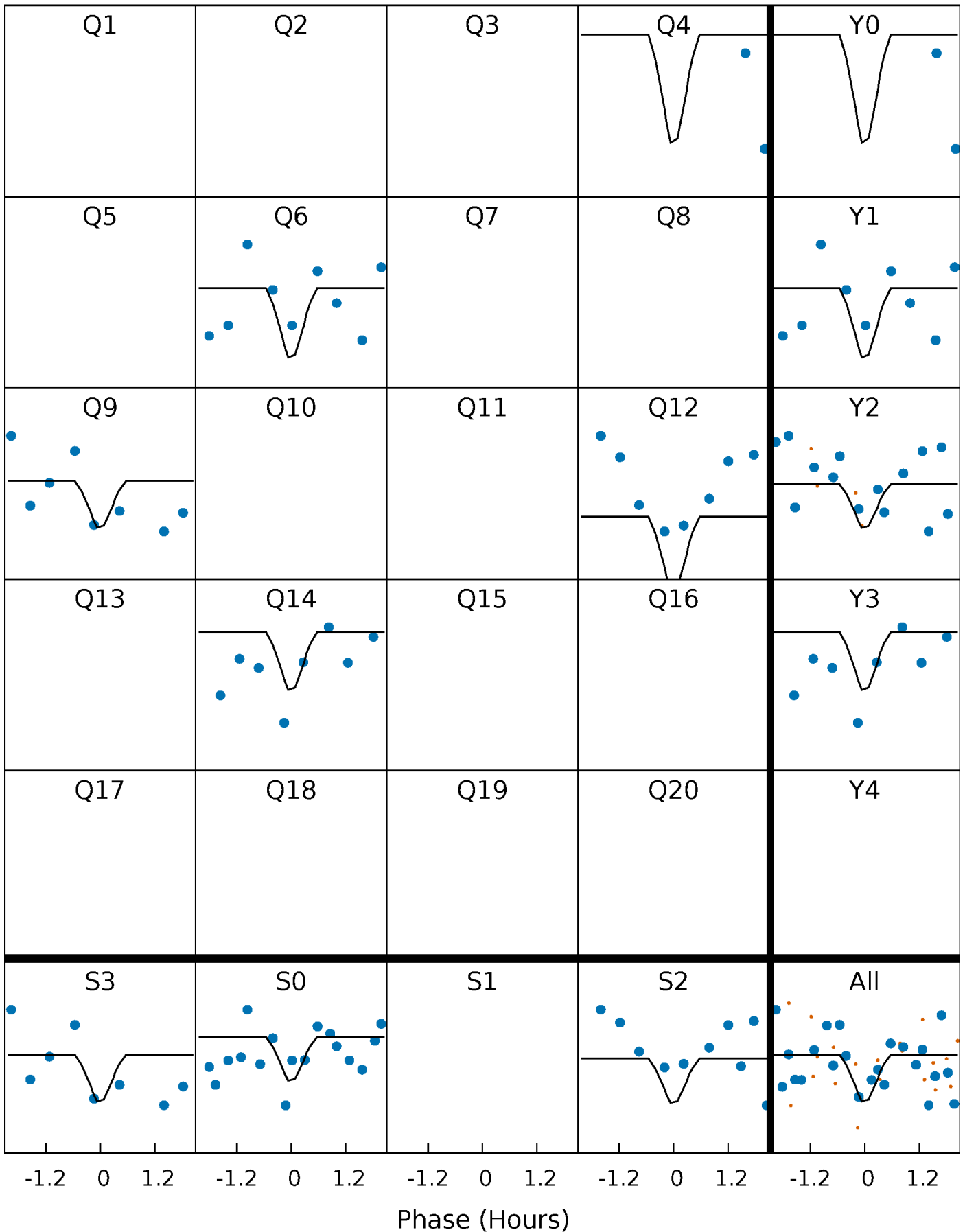
DV Quarter-Phased Transit Curves

TCE 005304184-05 $P=245.598932$ Days $T_0=374.621718$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

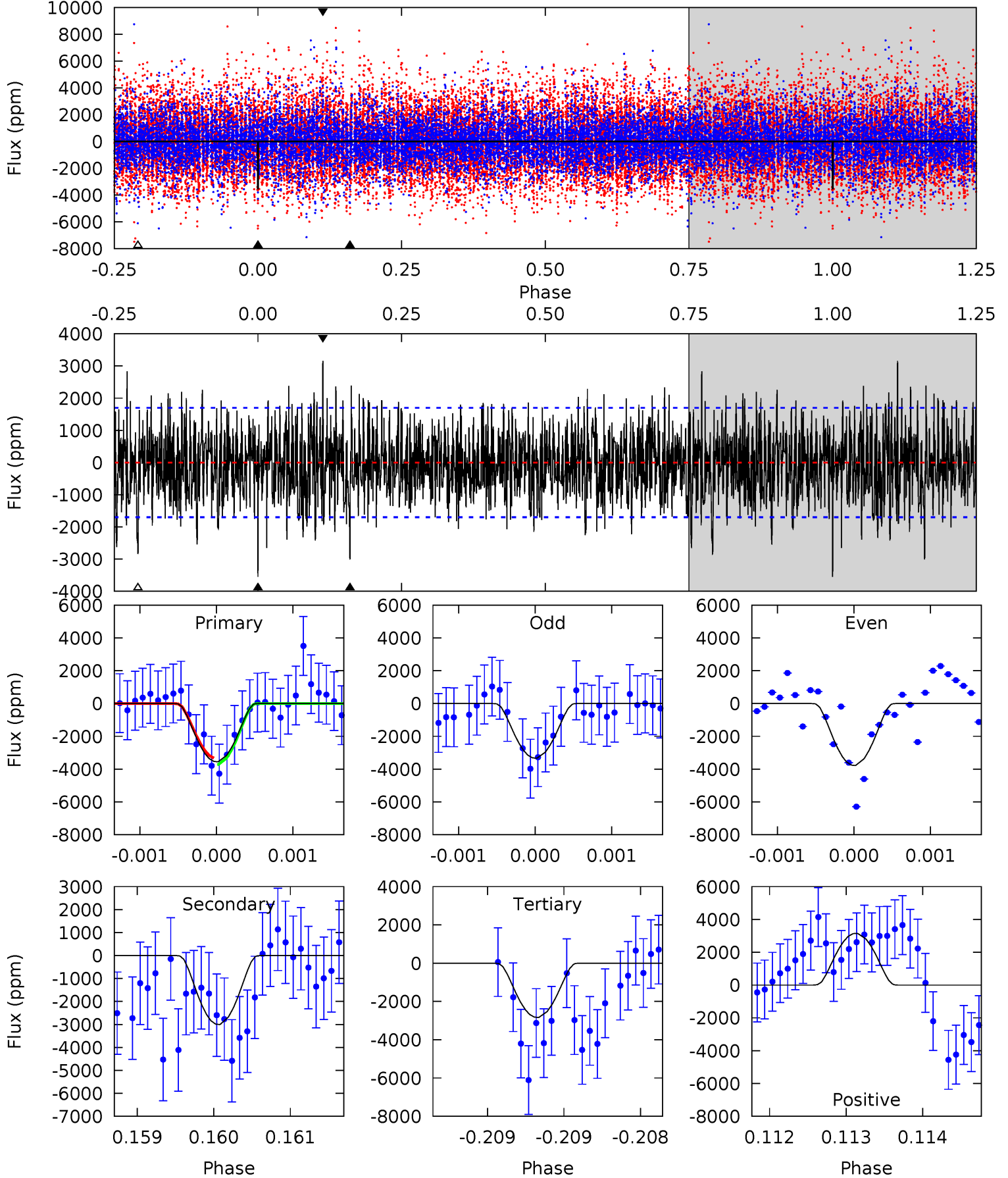
TCE 005304184-05 P=245.594825 Days $T_0=374.606093$ (BKJD)



DV Model-Shift Uniqueness Test

005304184-05, P = 245.598932 Days, E = 129.022786 Days

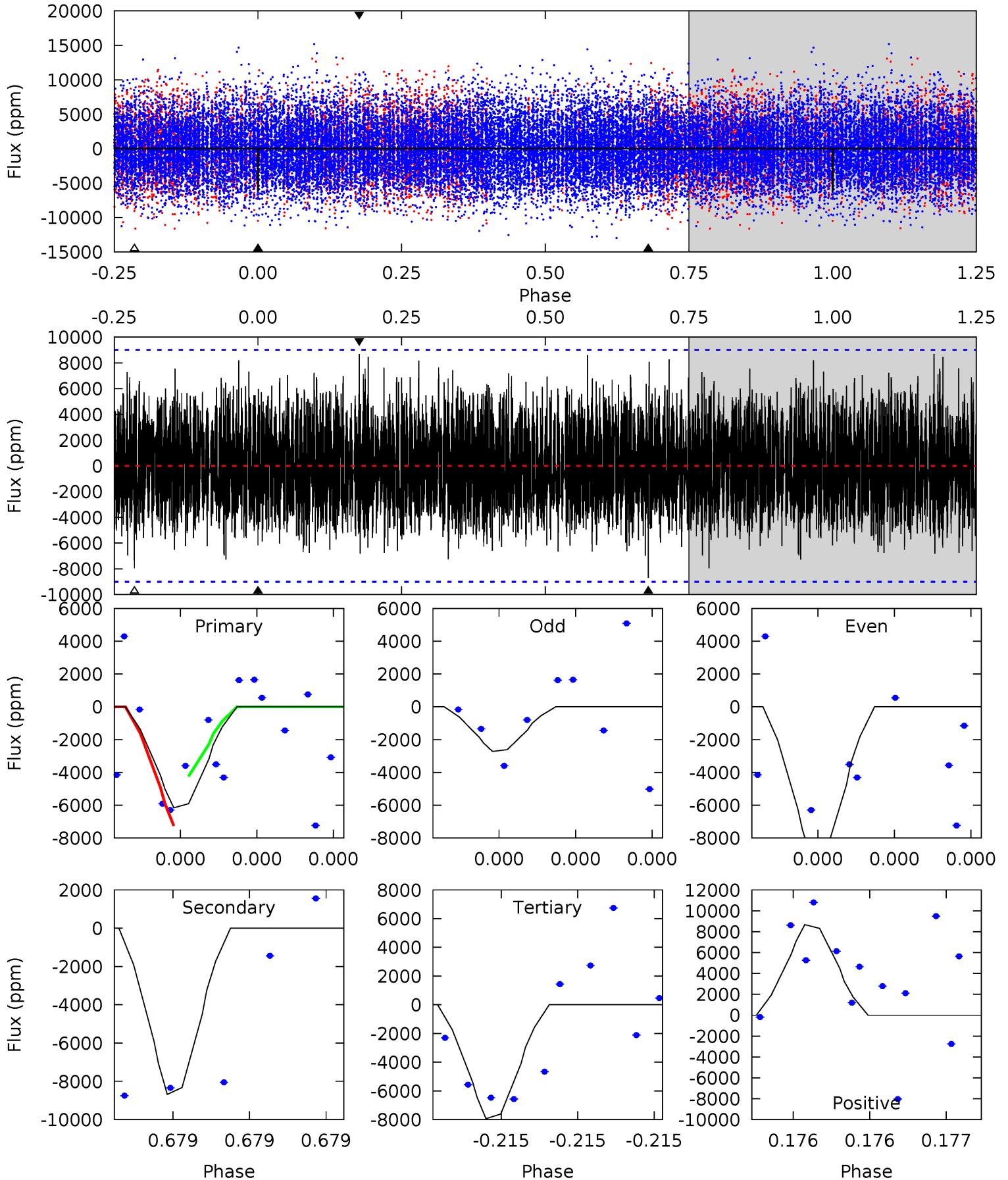
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	9.74	9.20	10.2	5.51	3.38	2.56	2.32	1.30	0.54	-0.48	0.72	0.91	0.47	0.65



Alt Model-Shift Uniqueness Test

005304184-05, P = 245.594825 Days, E = 129.011268 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.97	5.59	5.11	5.59	5.80	3.82	1.52	-1.14	-1.62	0.48	0.00	1.97	1.17	0.50	0.92



Stellar Parameters For KIC 005304184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+201}_{-302}	$4.121^{+0.144}_{-0.176}$	$-0.080^{+0.200}_{-0.350}$	$1.770^{+0.541}_{-0.406}$	$1.508^{+0.212}_{-0.236}$	$0.383^{+0.296}_{-0.196}$
	+3%/-4%	+3%/-4%	+250%/-438%	+31%/-23%	+14%/-16%	+77%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005304184-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3005 ± 308	$34.32^{+33.04}_{-23.65}$	636^{+47}_{-44}	4247^{+2940}_{-840}	1076^{+9453}_{-796}
Alt.	-8683 ± 1553	$31.99^{+32.98}_{-21.67}$	633^{+47}_{-42}	5358^{+4863}_{-1292}	3579^{+32640}_{-2750}

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 $A_{obs} \gg 1.0$

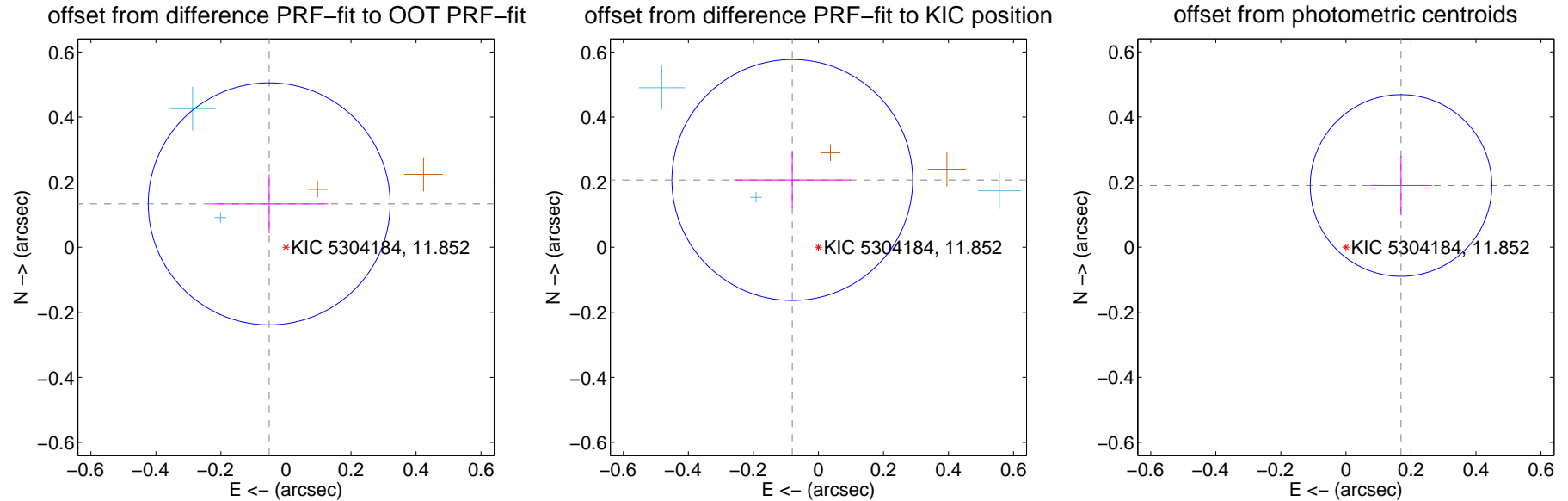
DV Centroid Data

Supplemental centroid analysis for 005304184-05. **Kepler magnitude: 11.85.** Transit SNR 8.25

There are 3 quarters with good PRF difference image offsets

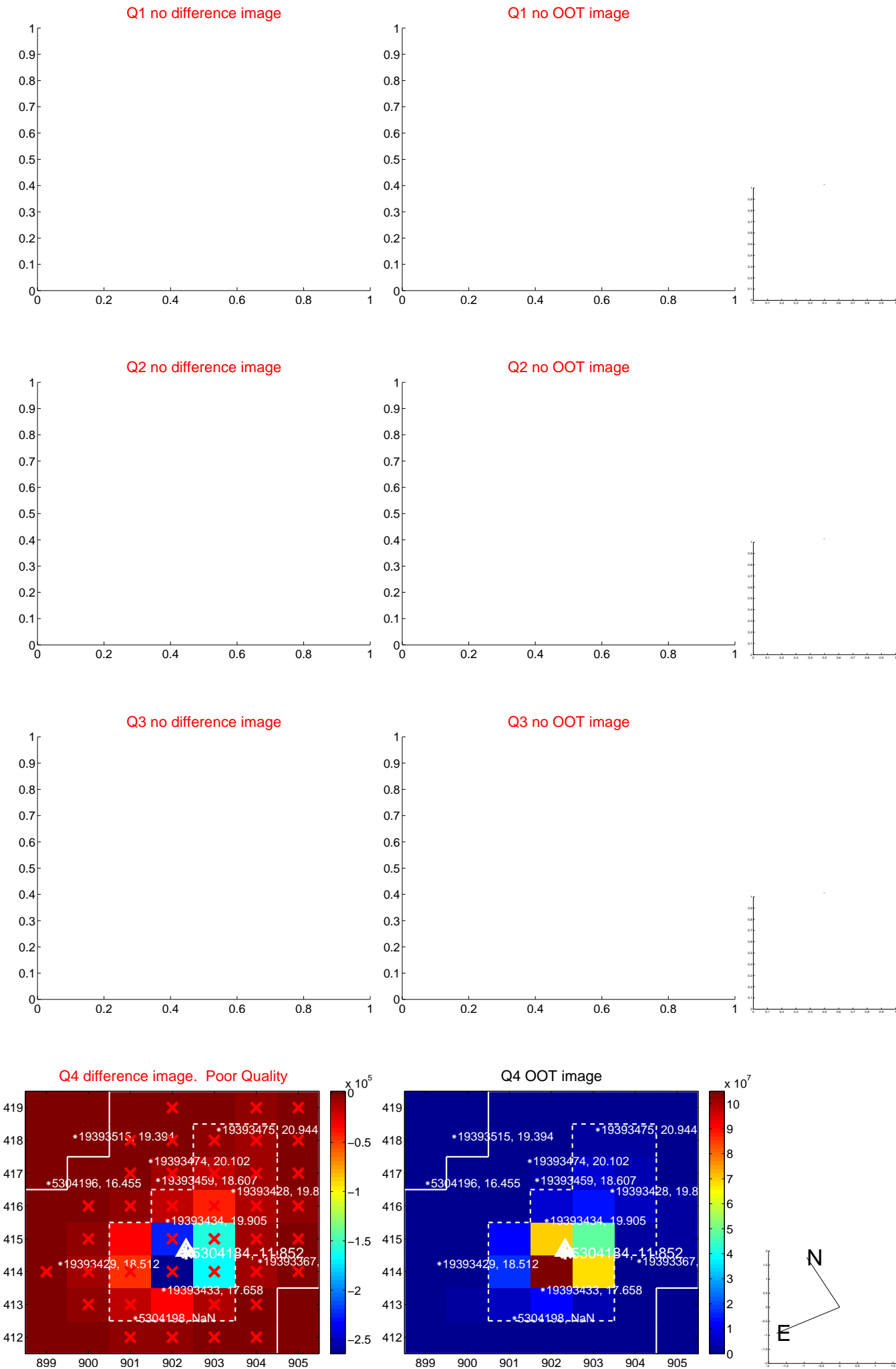
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.143 ± 0.124	1.15	0.052 ± 0.181	0.133 ± 0.091
PRF-fit source offset from KIC position	0.222 ± 0.123	1.80	0.080 ± 0.180	0.207 ± 0.087
photometric centroid source offset	0.25 ± 0.09	2.73	-0.17 ± 0.10	0.19 ± 0.09

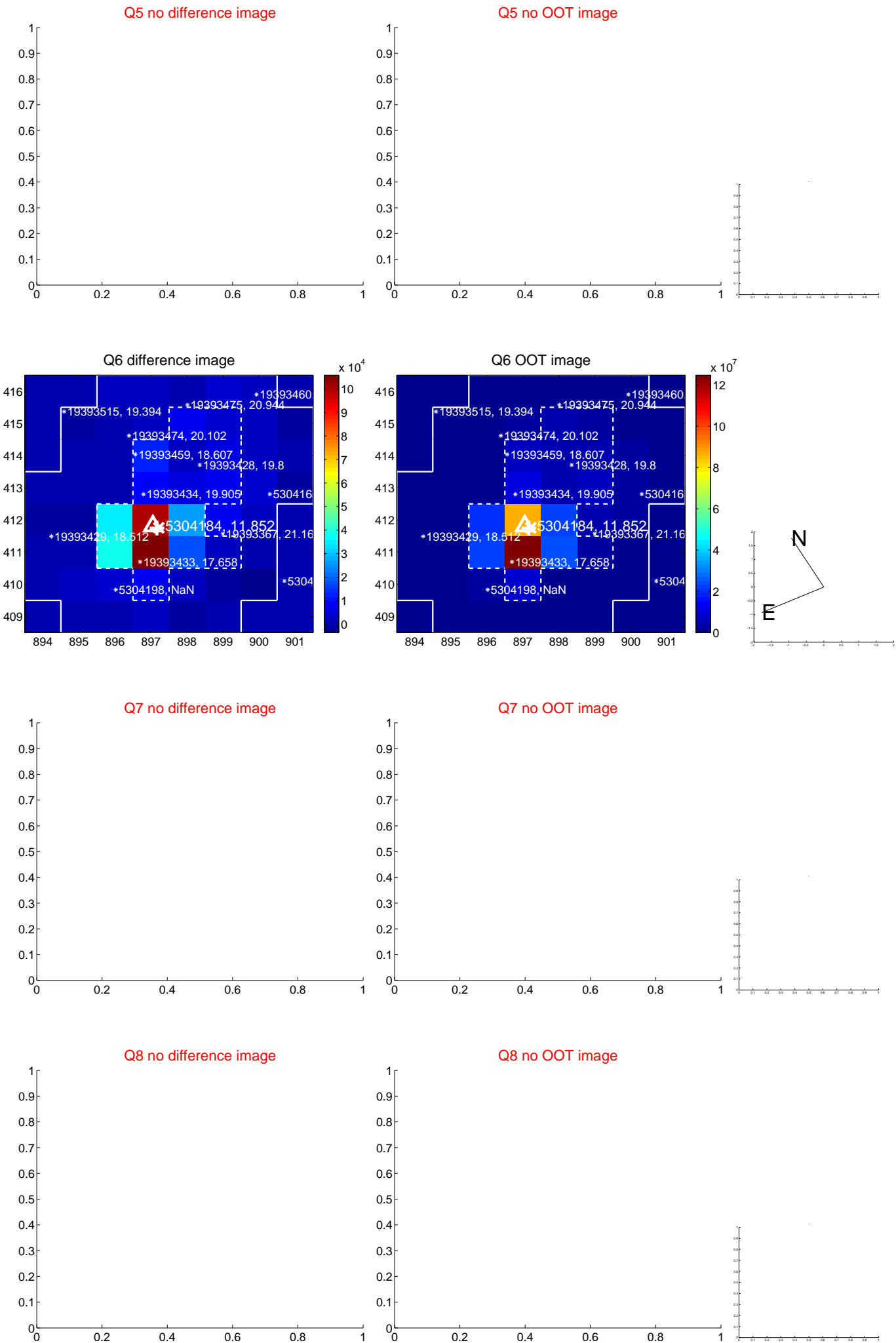


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

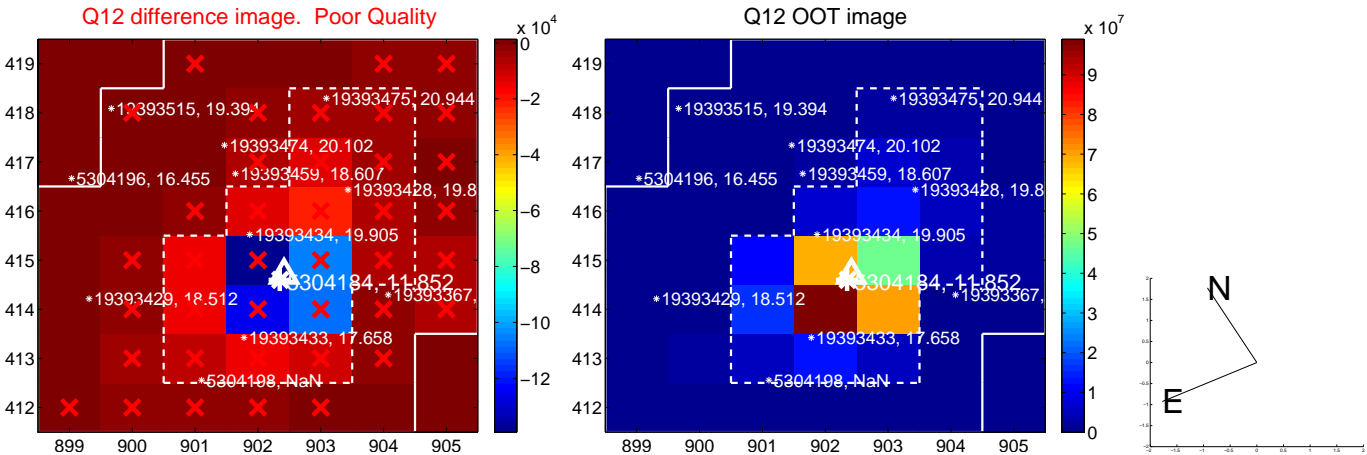
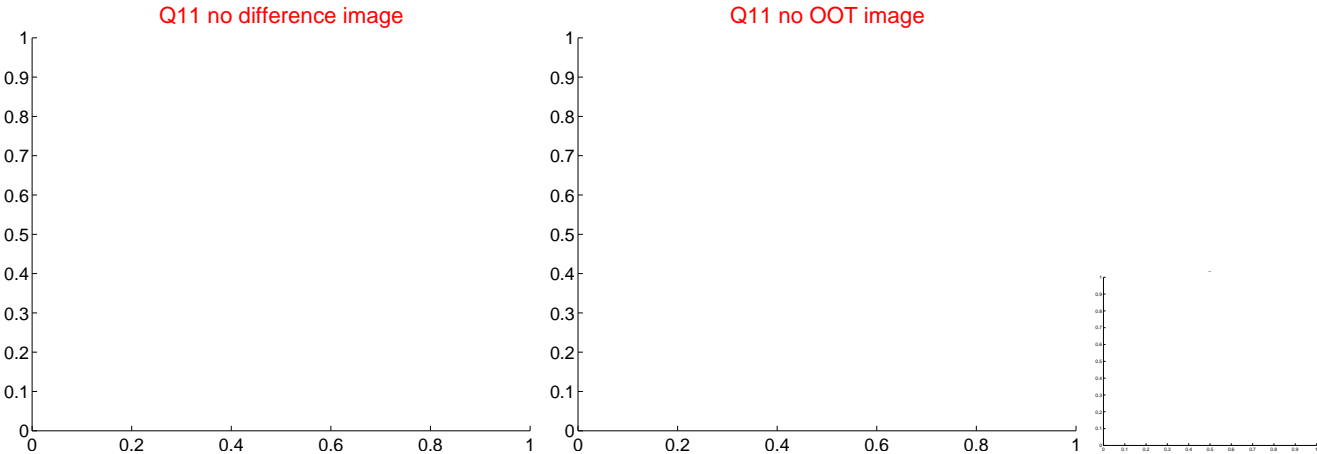
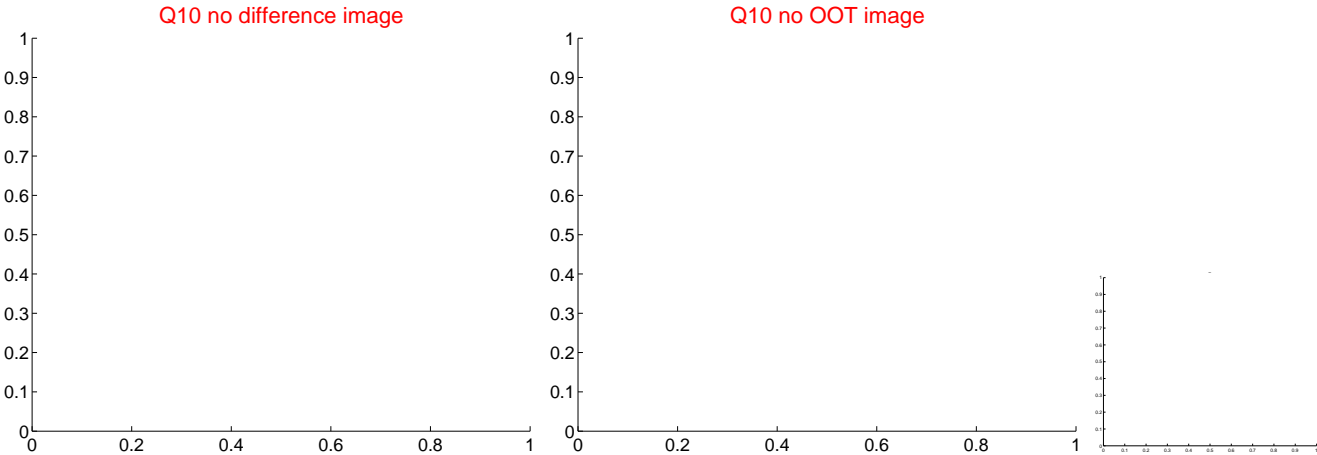
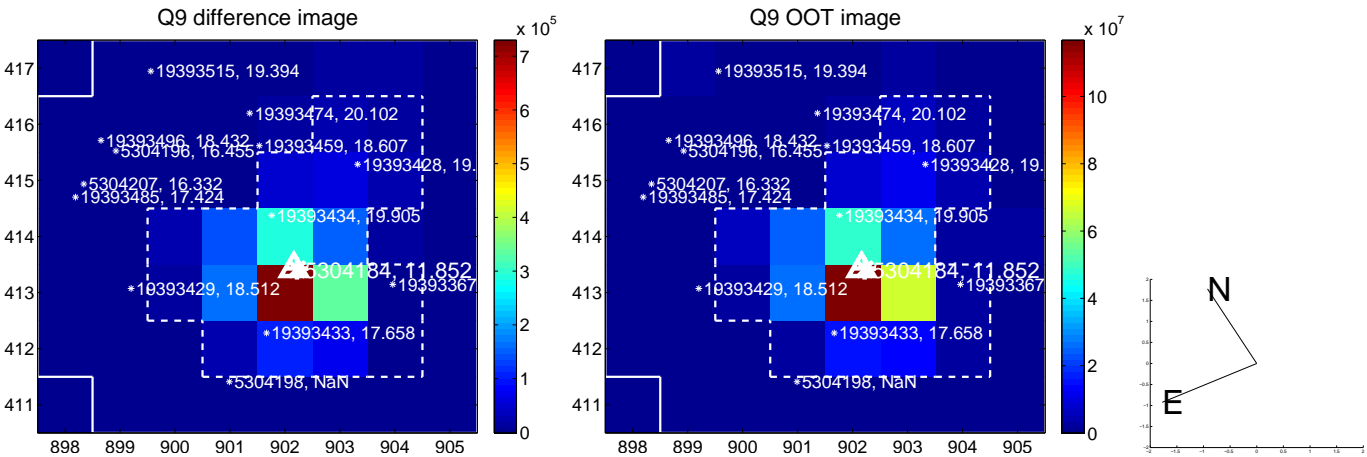
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



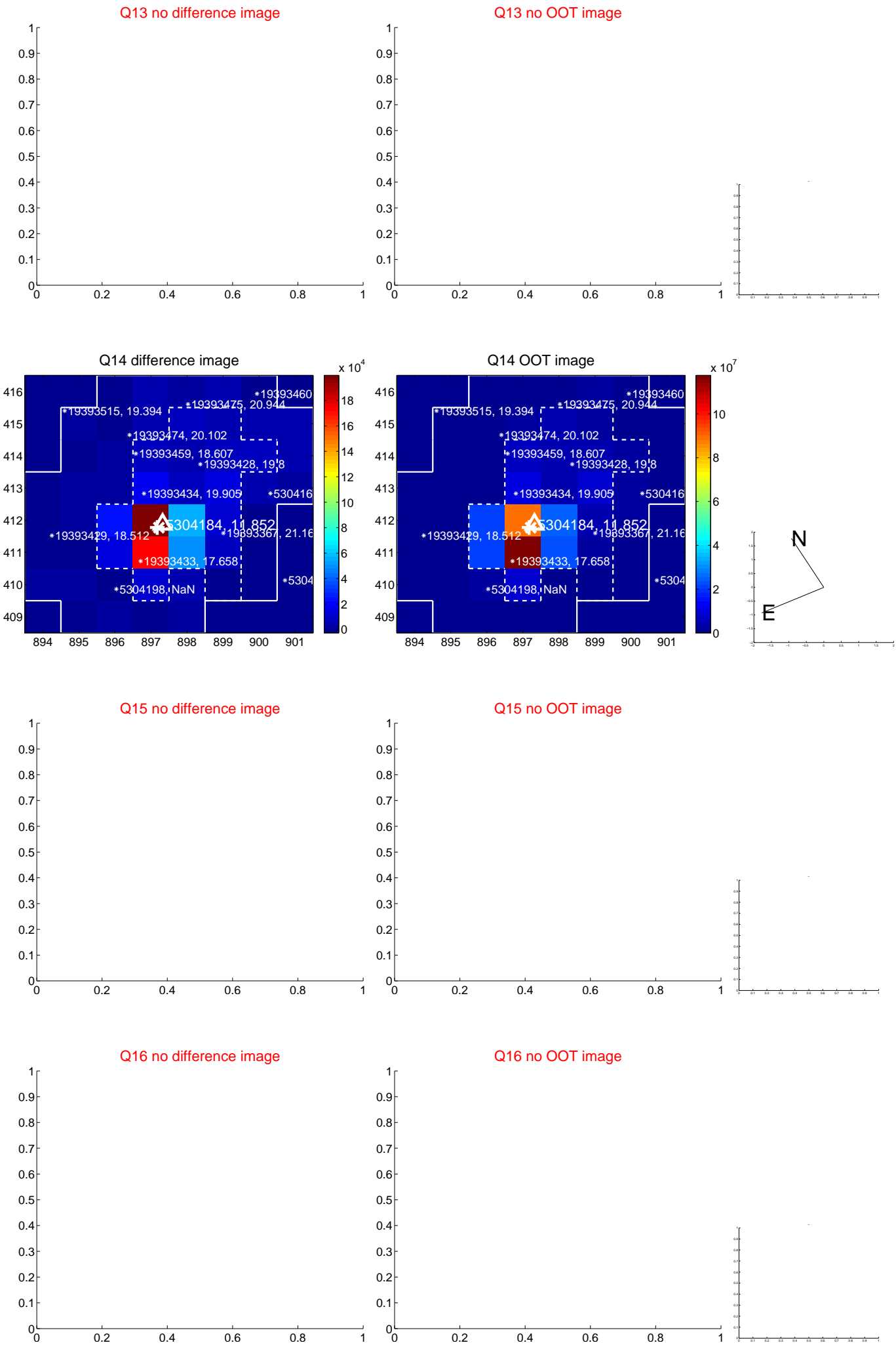
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



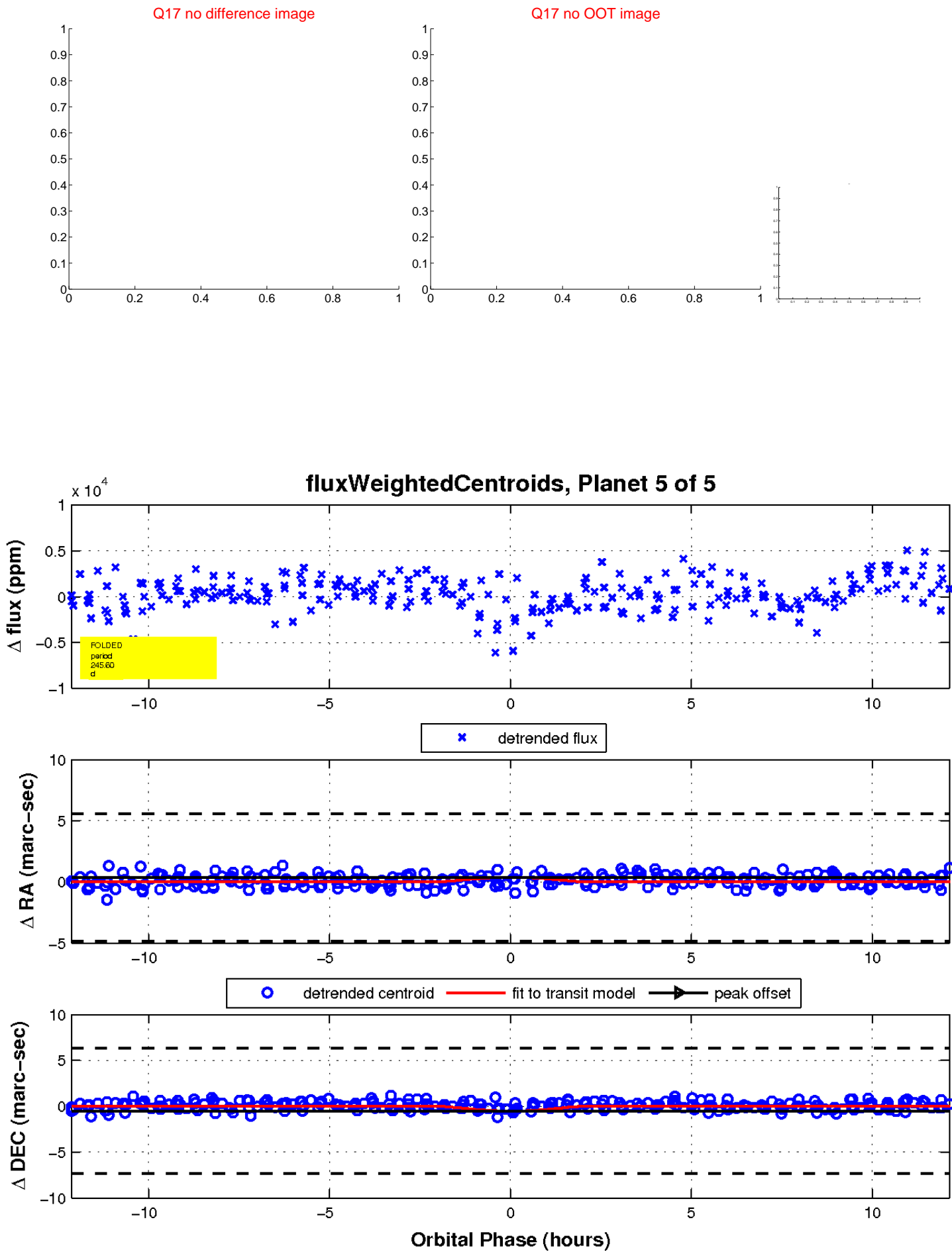
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

