

KIC 008591498

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})
008591498-01	OBS	No	0.743473	131.764924	149.5	1.266	9.8	11.9	0.74	4682	1.14	1142.10
008591498-02	OBS	No	0.743473	131.521143	109.4	1.265	7.8	9.0	0.74	4682	0.97	1142.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008591498-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
008591498-02	OBS	FP	0.00	1	0	1	0	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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

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

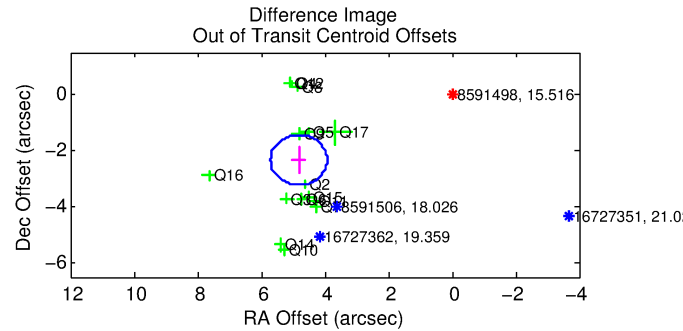
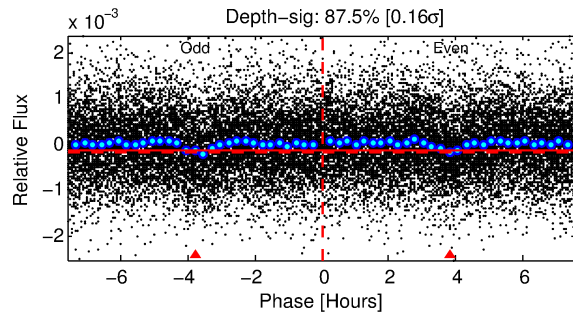
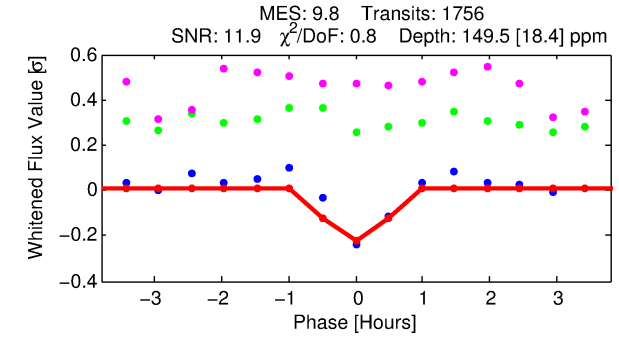
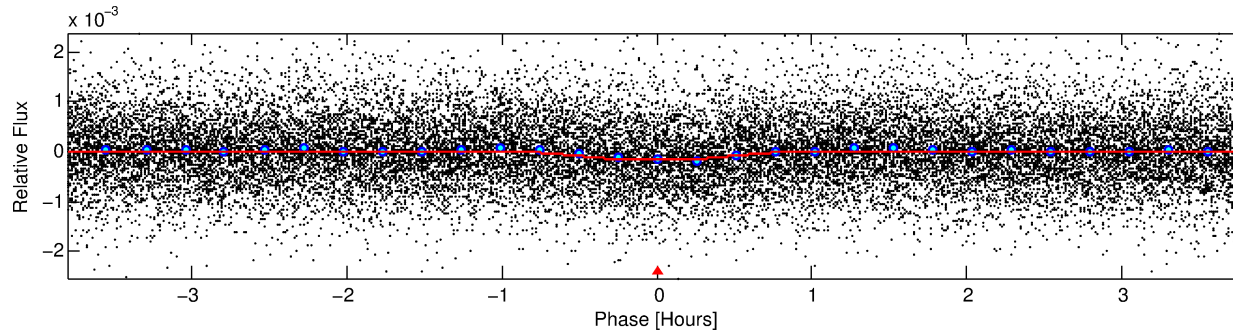
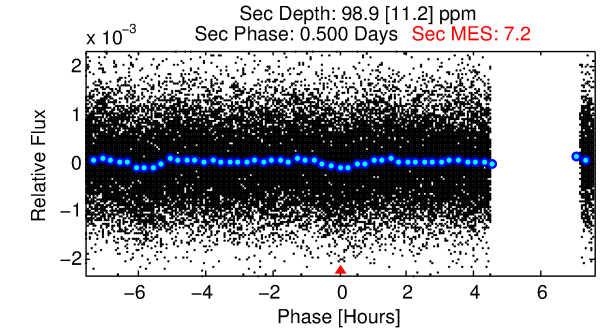
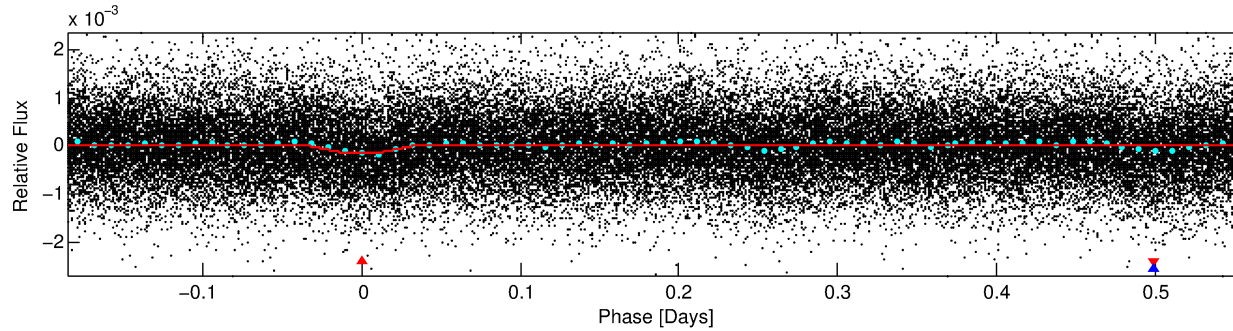
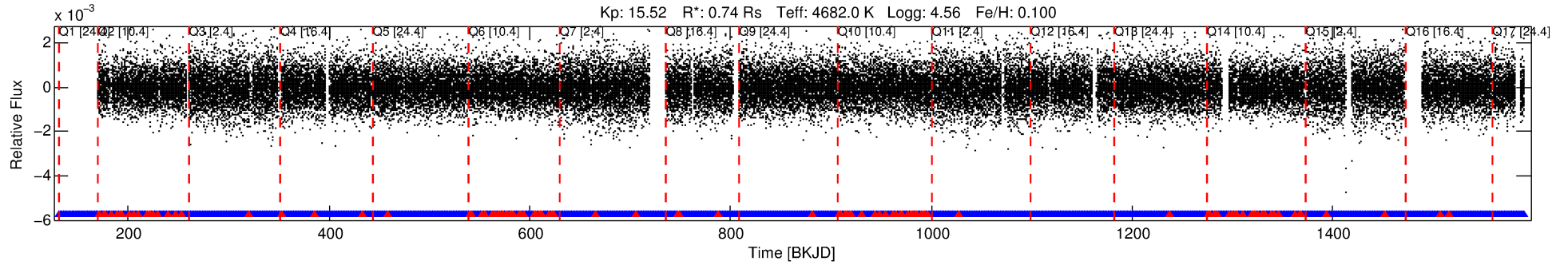
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008591498-01

No Significant Match Found

DV One-Page Summary

KIC: 8591498 Candidate: 1 of 2 Period: 0.743 d



DV Fit Results:

Period = 0.74347 [0.00001] d
Epoch = 131.7649 [0.0016] BKJD
Rp/R* = 0.0140 [0.0111]
a/R* = 2.25 [5.39]
b = 0.91 [0.61]
Seff = 1142.10 [188.92]
Teff = 1482 [61] K
Rp = 1.14 [0.91] Re
a = 0.0145 [0.0011] AU
Ag = 8.79 [13.97] [0.56σ]
Teffp = 3947 [1569] K [1.57σ]

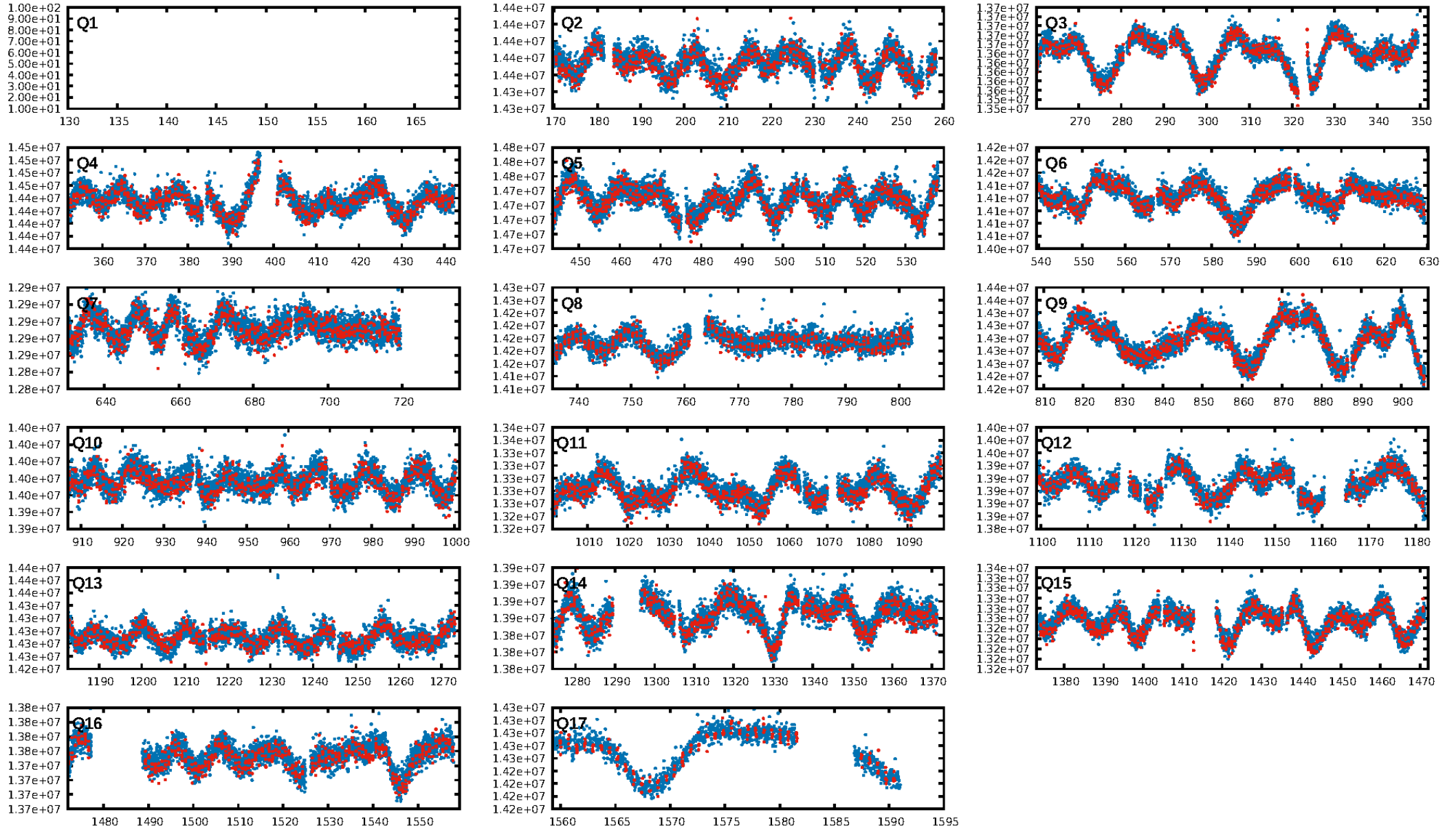
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.29e-22
RollingBand-fgt: 0.93 [1604/1720]
GhostDiagnostic-chr: 1.395
Centroid-sig: 0.0%
Centroid-so: 5.439 arcsec [5.46σ]
OotOffset-rm: 5.354 arcsec [18.08σ]
KicOffset-rm: 5.514 arcsec [17.37σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.60 [9/15]
DiffImageOverlap-fno: 0.00 [0/16]

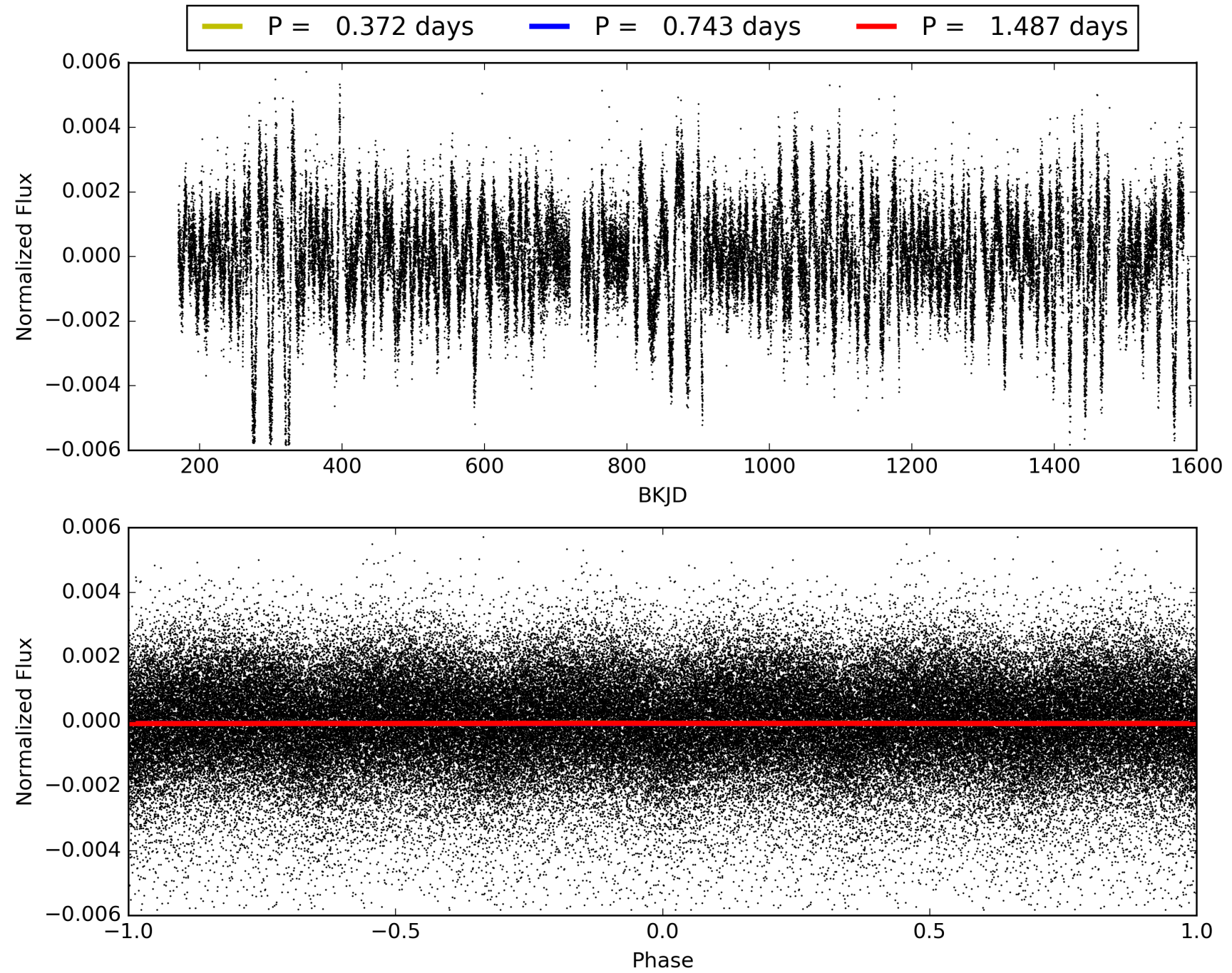
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:22:27 Z

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

TCE 008591498-01, PDC Light Curves

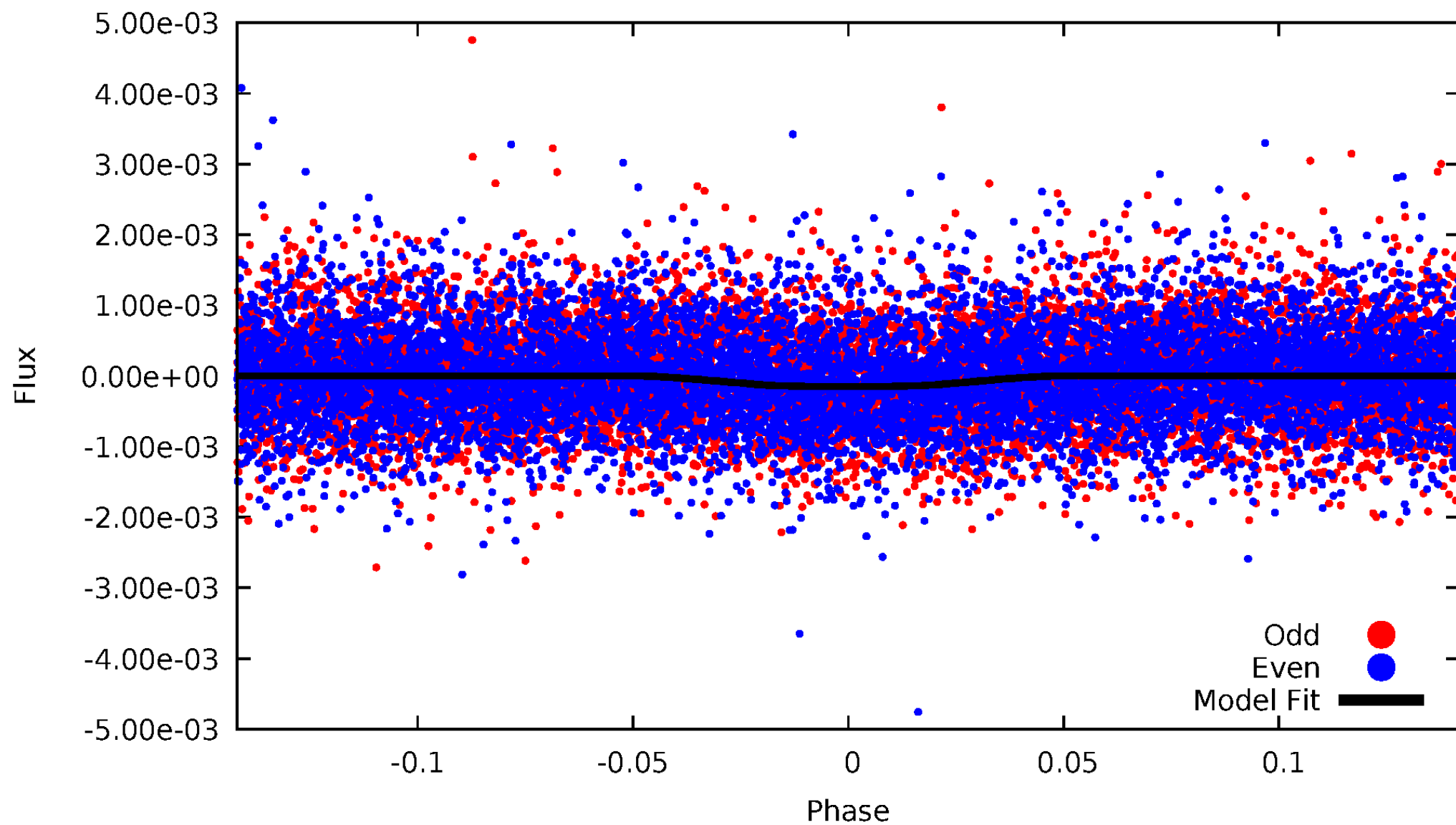


TCE 008591498-01



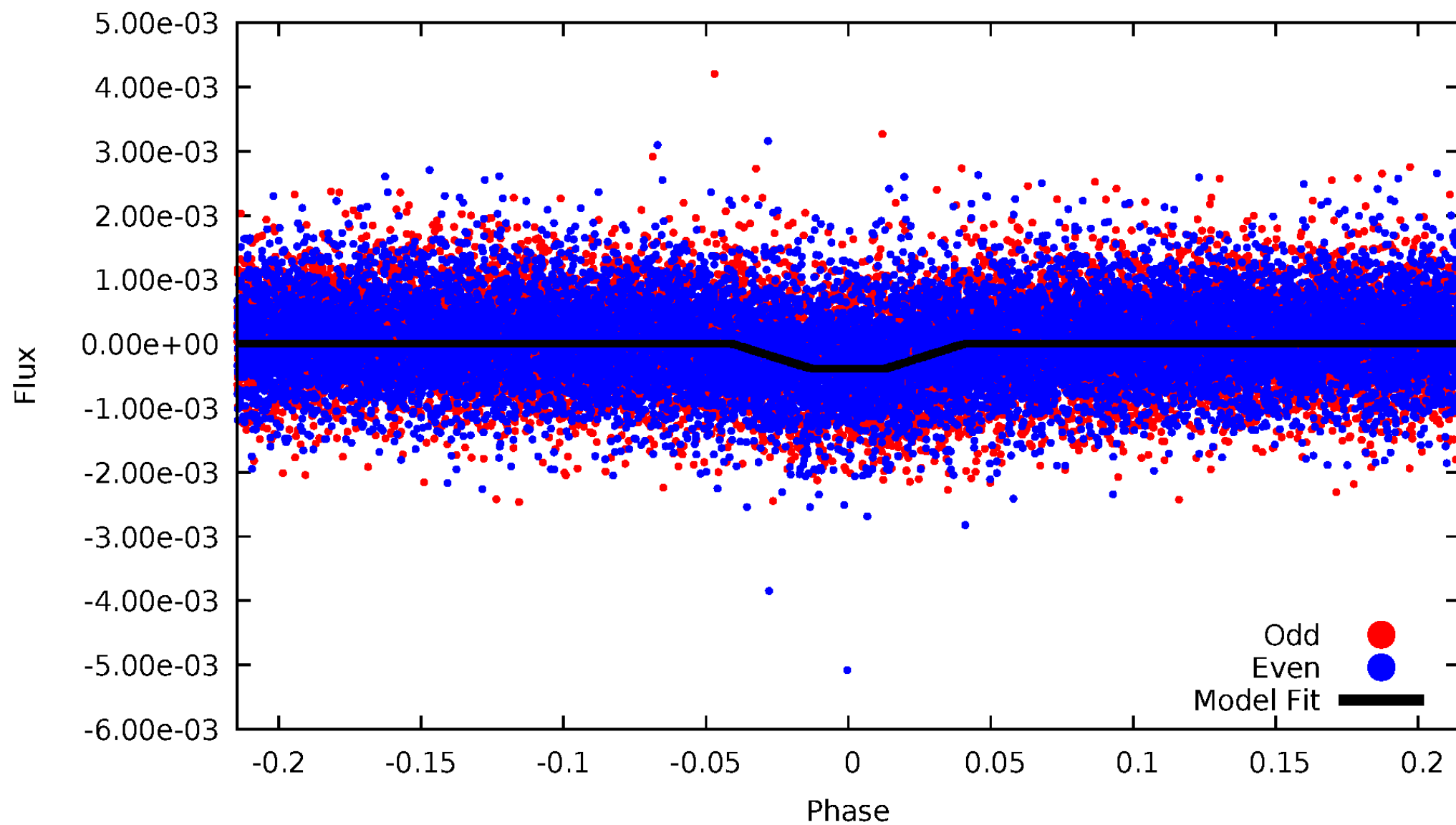
DV Odd/Even

TCE 008591498-01

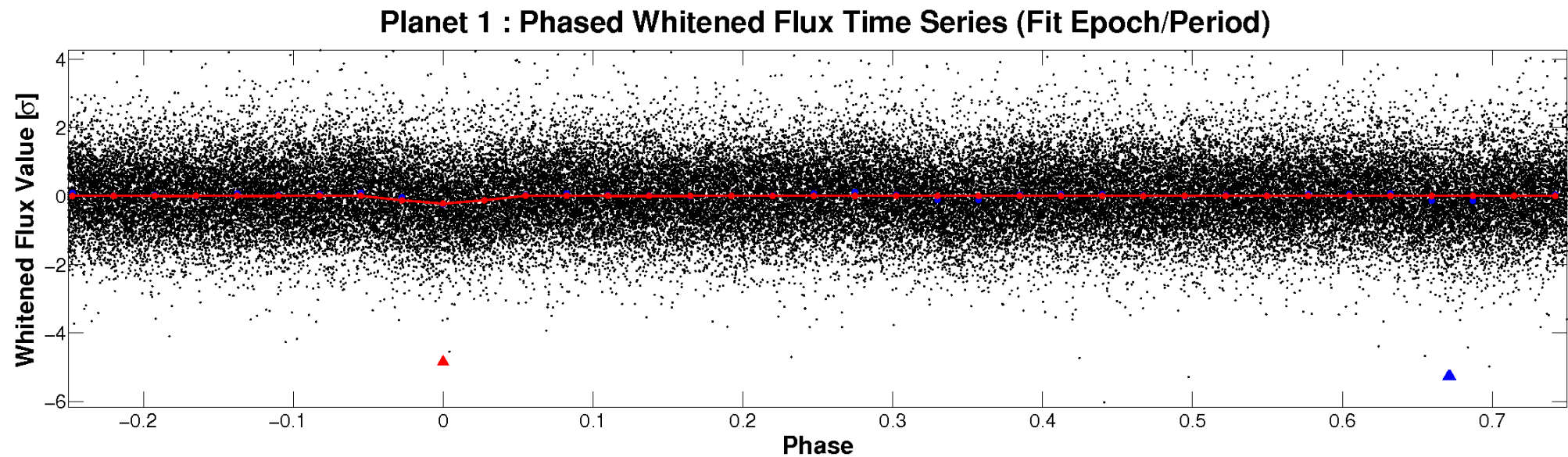
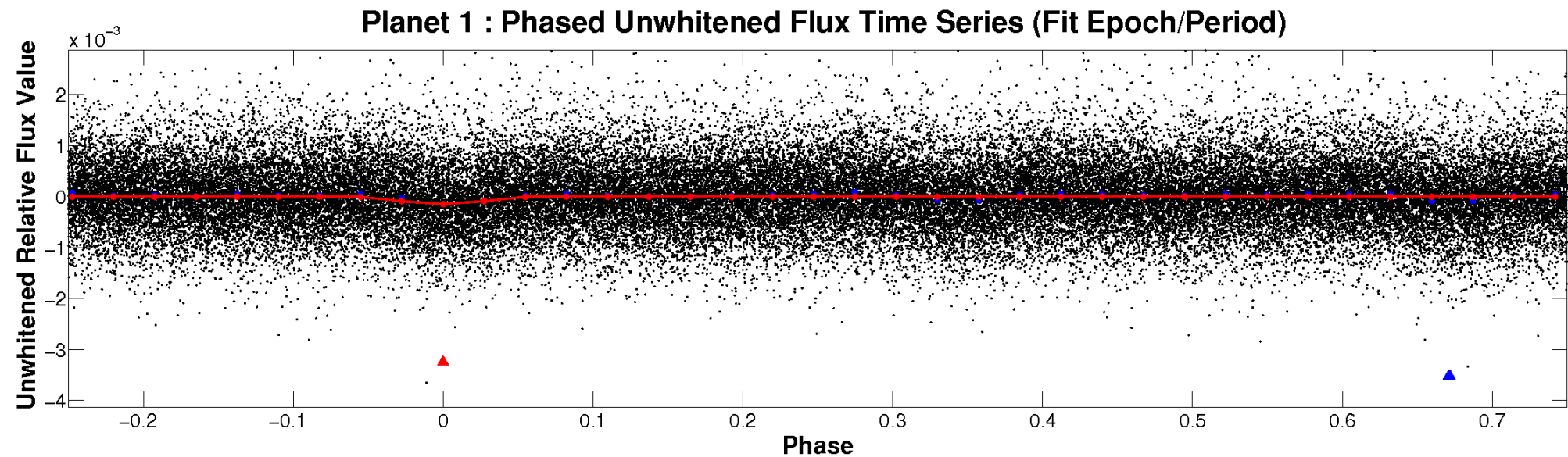


ALT Odd/Even

TCE 008591498-01

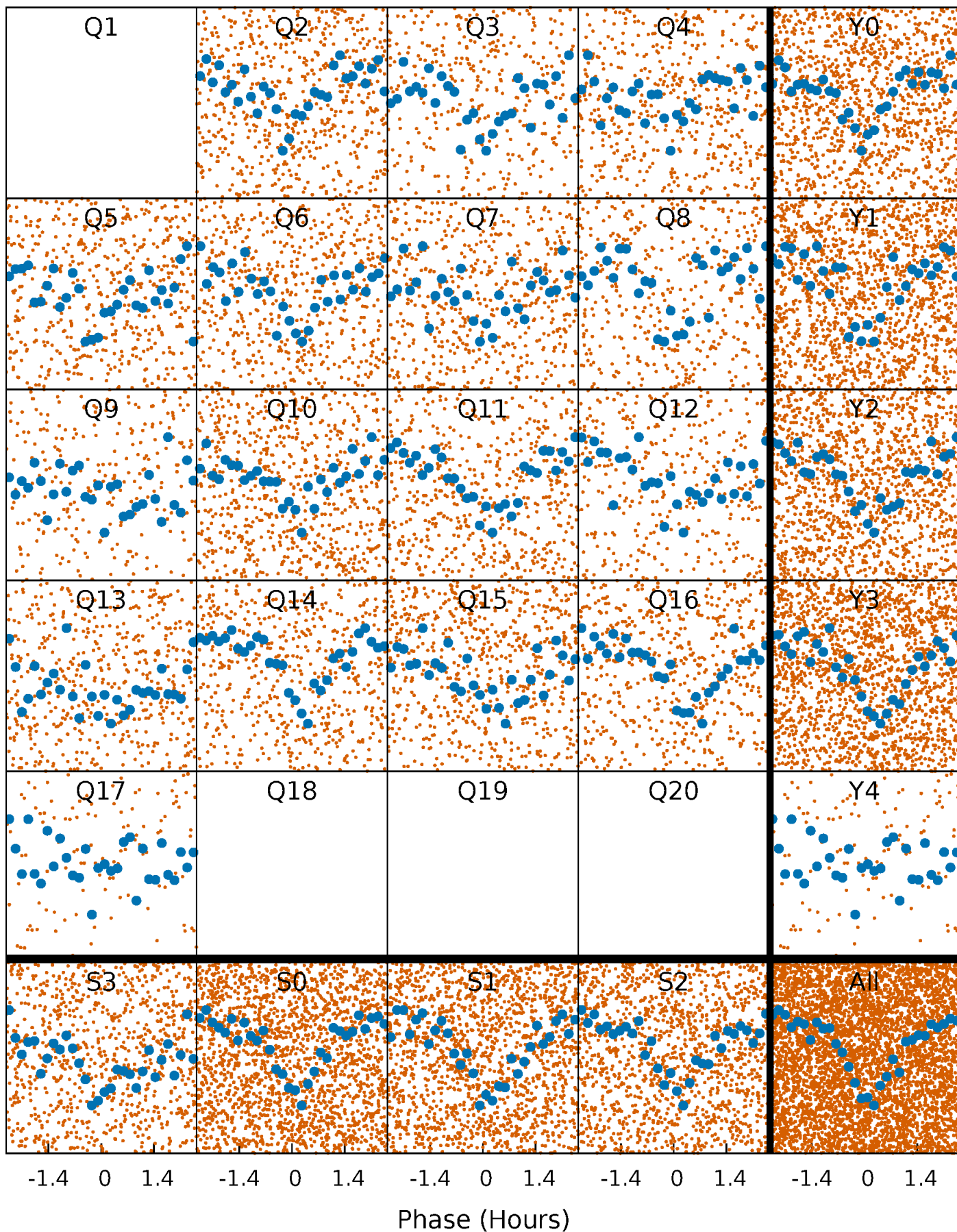


Non-Whitened Vs. Whitened Light Curve



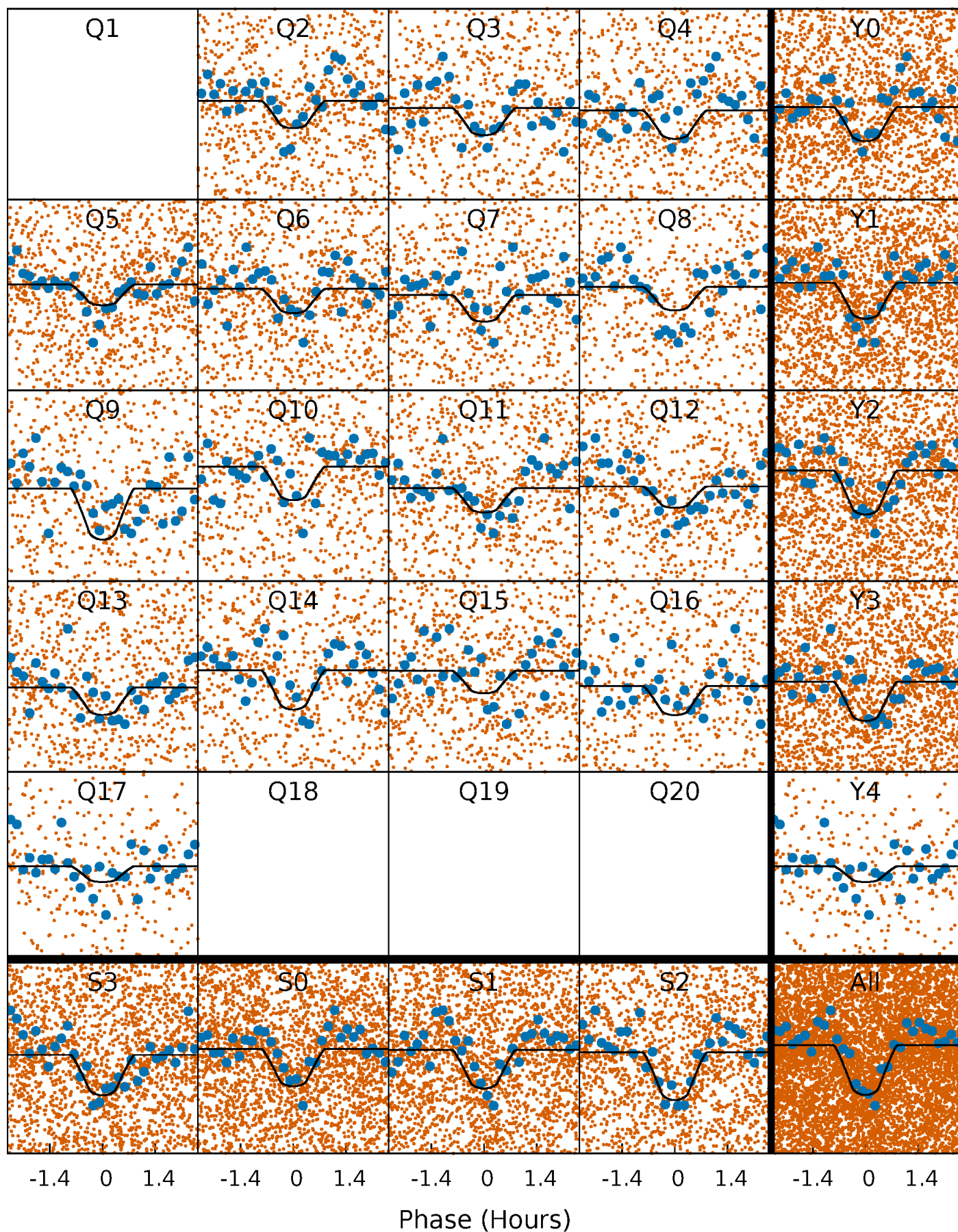
PDC Quarter-Phased Transit Curves

TCE 008591498-01 P= 0.743473 Days $T_0=131.764924$ (BKJD)



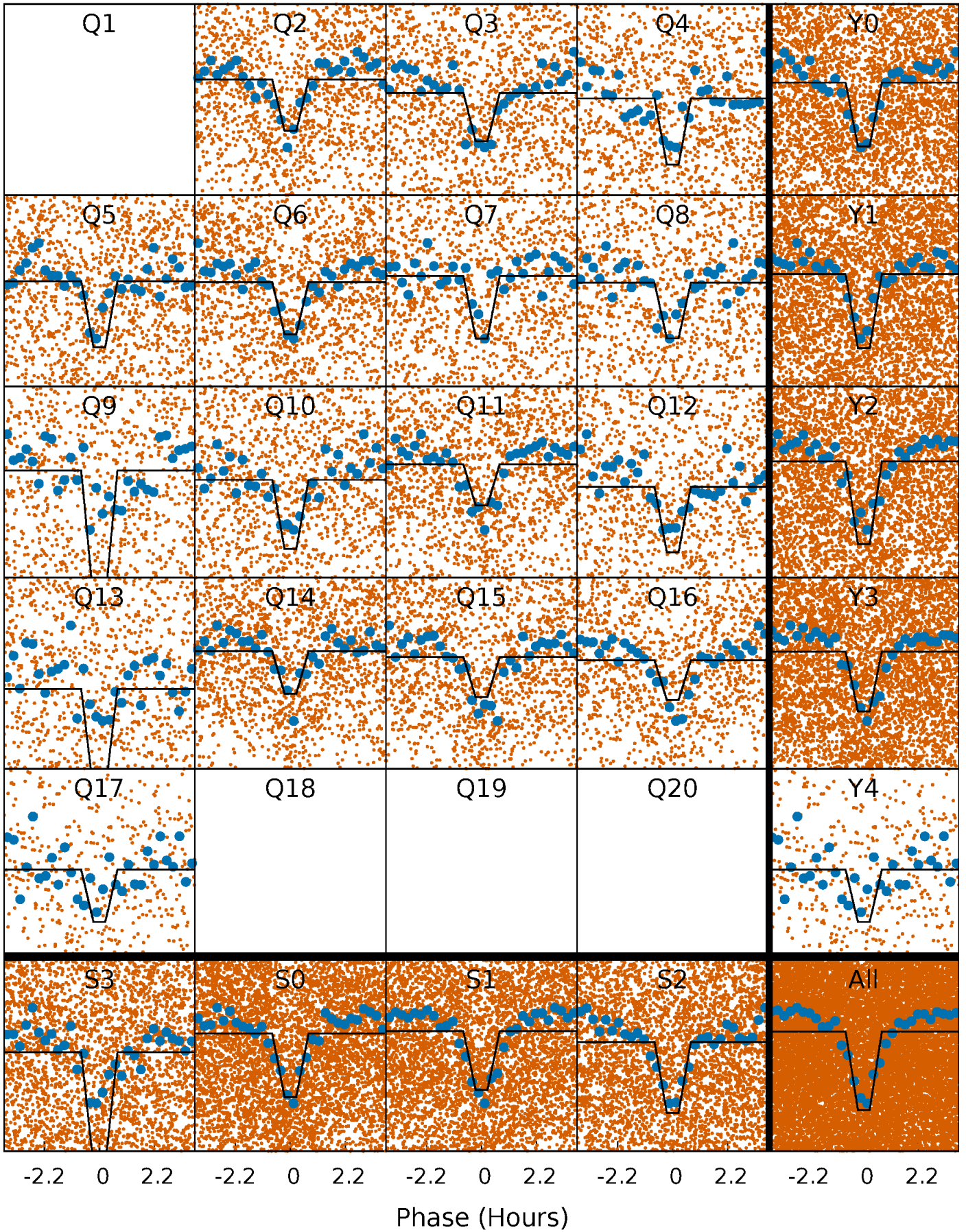
DV Quarter-Phased Transit Curves

TCE 008591498-01 $P = 0.743473$ Days $T_0 = 131.764924$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

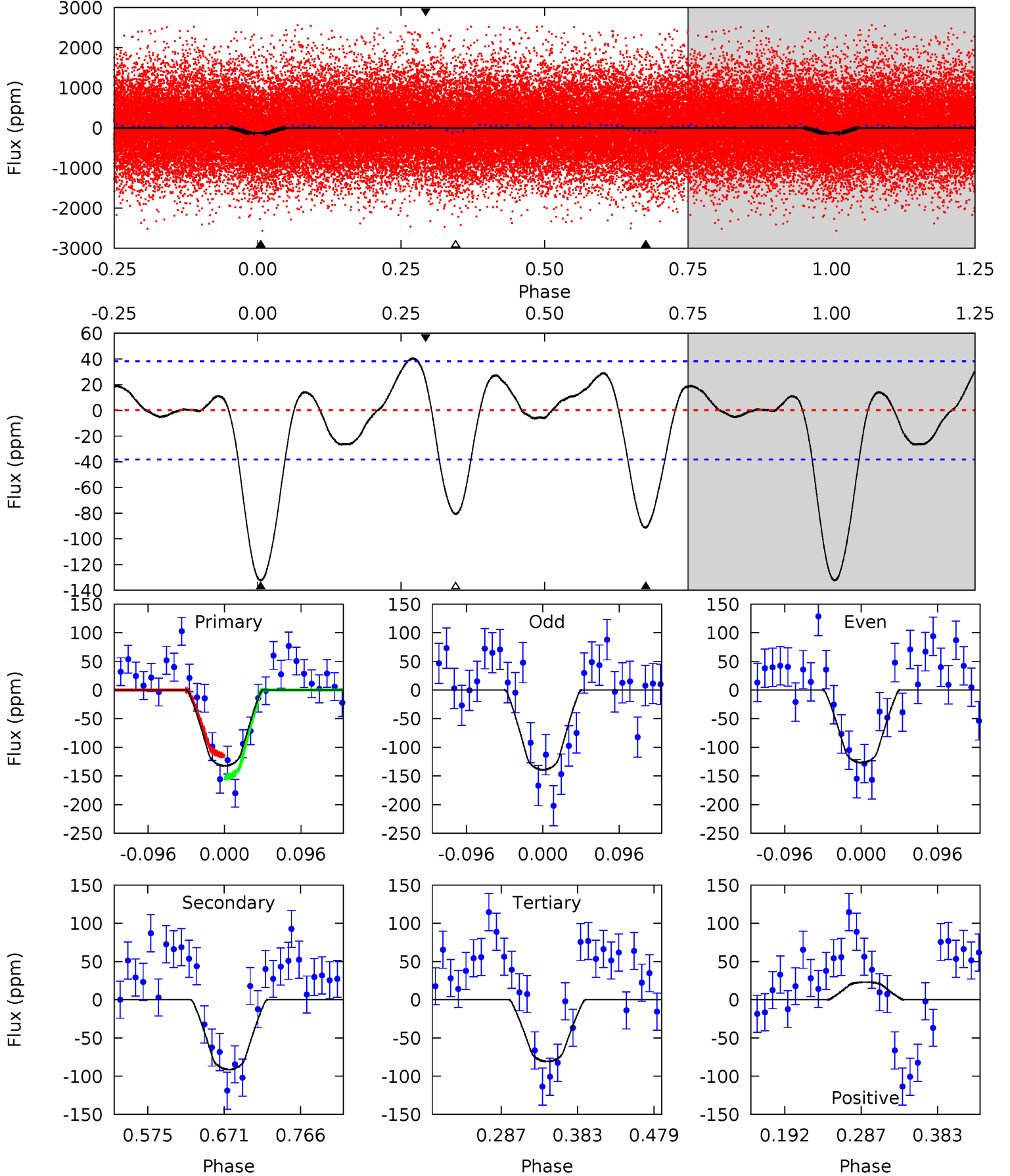
TCE 008591498-01 P= 0.743481 Days $T_0=131.763429$ (BKJD)



DV Model-Shift Uniqueness Test

008591498-01, P = 0.743473 Days, E = 131.764924 Days

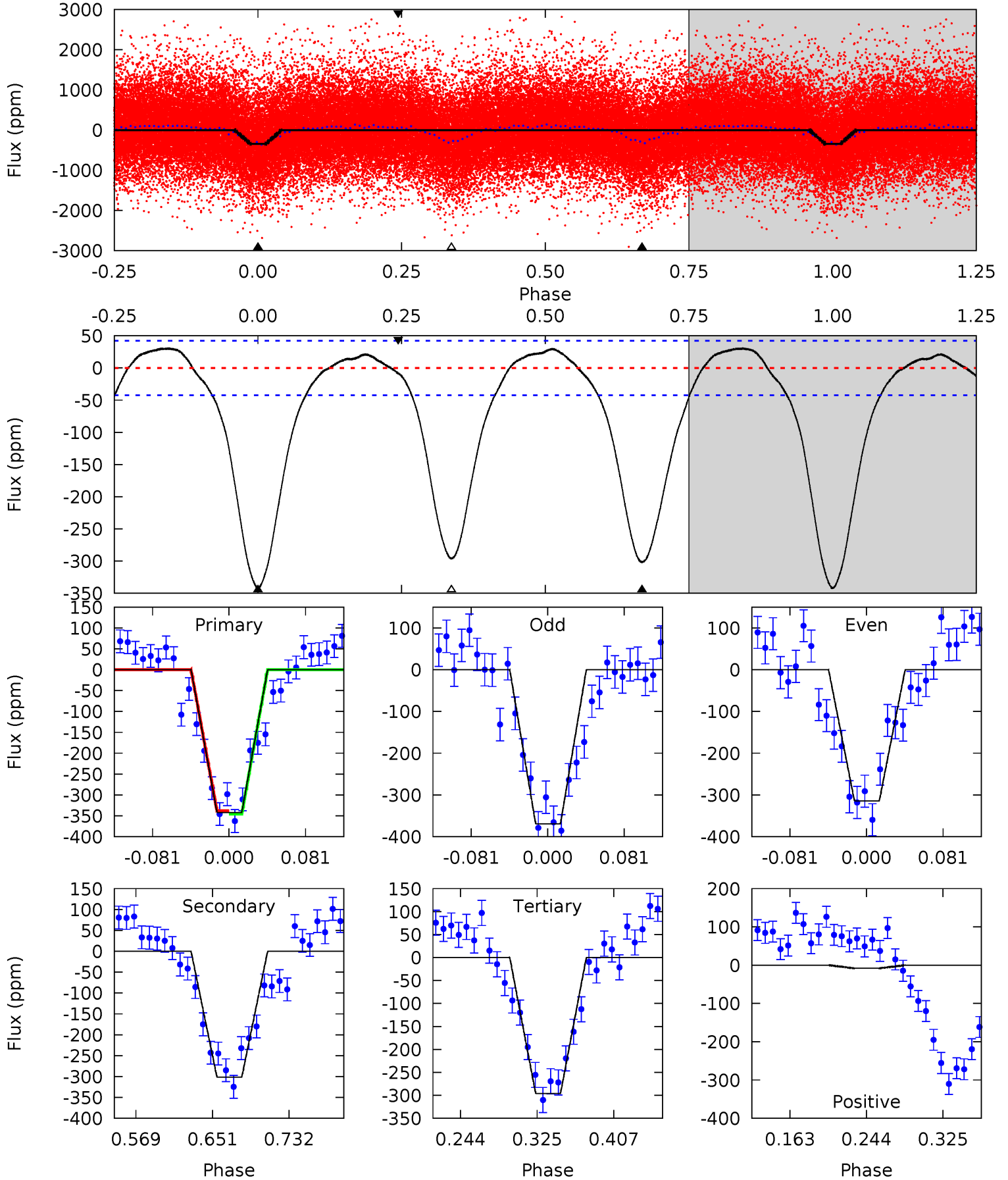
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	10.9	9.67	2.77	4.57	1.67	3.05	6.17	13.1	1.26	8.16	0.75	0.88	0.23	2.29



Alt Model-Shift Uniqueness Test

008591498-01, P = 0.743481 Days, E = 131.763429 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.3	32.9	32.3	-0.89	4.61	1.74	9.25	5.01	38.2	0.60	33.8	3.00	0.96	0.08	0.46



Stellar Parameters For KIC 008591498

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4682^{+126}_{-140}	$4.557^{+0.063}_{-0.027}$	$0.100^{+0.250}_{-0.300}$	$0.745^{+0.037}_{-0.068}$	$0.730^{+0.063}_{-0.052}$	$2.490^{+0.679}_{-0.244}$
	+3%/-3%	+1%/-1%	+250%/-300%	+5%/-9%	+9%/-7%	+27%/-10%
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 008591498-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-91 ± 8	$1.29^{+0.86}_{-0.77}$	2055^{+72}_{-76}	3795^{+1732}_{-589}	$6.413^{+32.833}_{-4.103}$
Alt.	-302 ± 9	$1.61^{+0.88}_{-0.82}$	2057^{+65}_{-74}	4427^{+1651}_{-681}	13^{+43}_{-8}

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

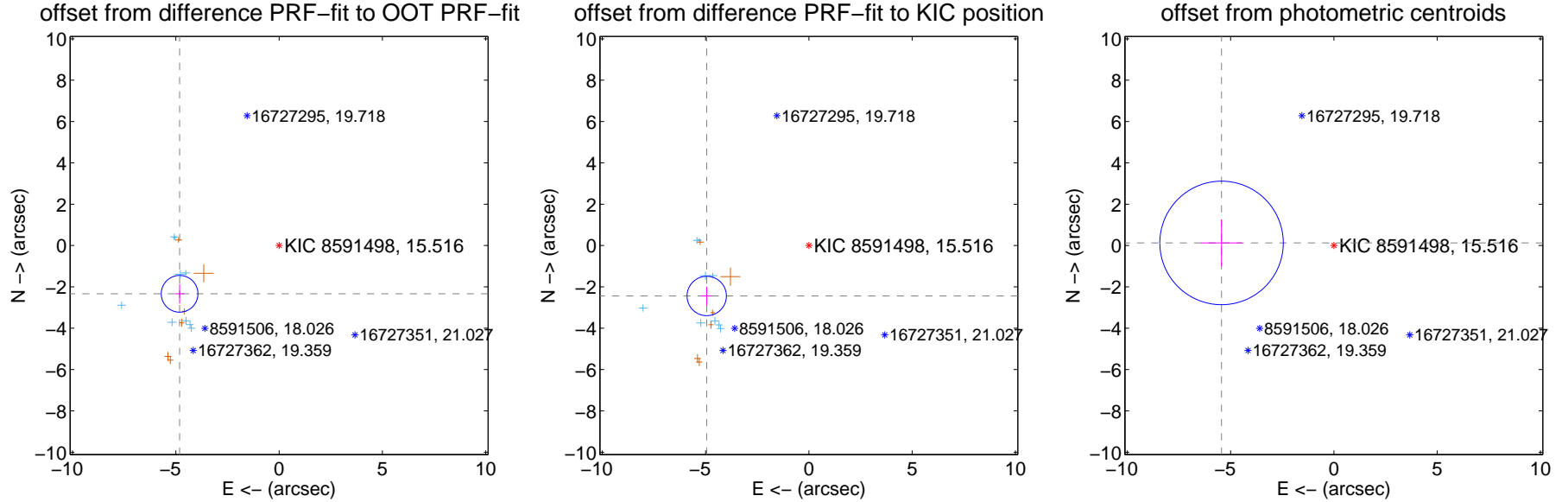
DV Centroid Data

Supplemental centroid analysis for 008591498-01. Kepler magnitude: 15.52. Transit SNR 11.90

There are 9 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.354 ± 0.296	18.08	4.818 ± 0.222	-2.335 ± 0.463
PRF-fit source offset from KIC position	5.514 ± 0.317	17.37	4.945 ± 0.263	-2.440 ± 0.458
photometric centroid source offset	5.44 ± 1.00	5.46	5.44 ± 1.00	0.13 ± 1.13



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

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

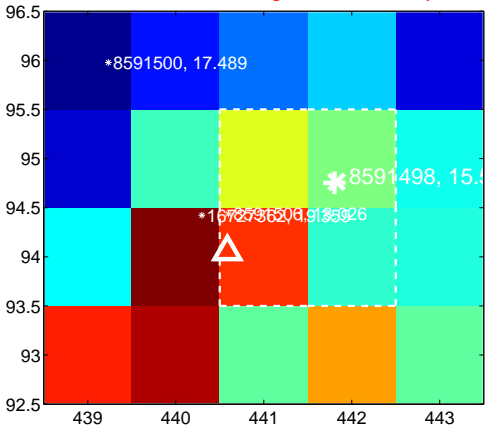
Q1 no difference image



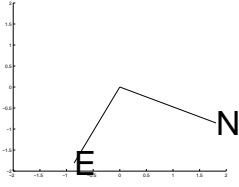
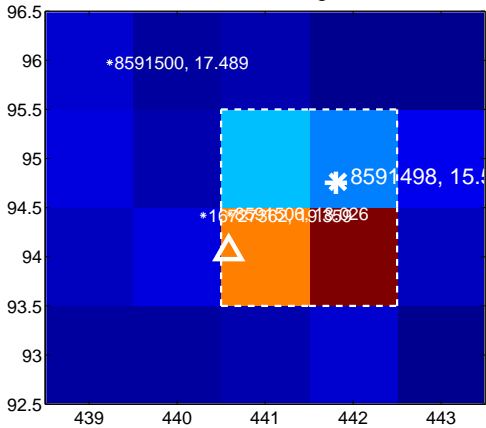
Q1 no OOT image



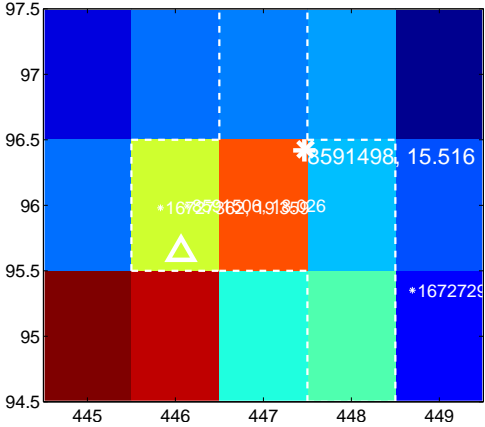
Q2 difference image. Poor Quality



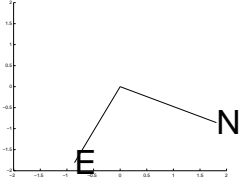
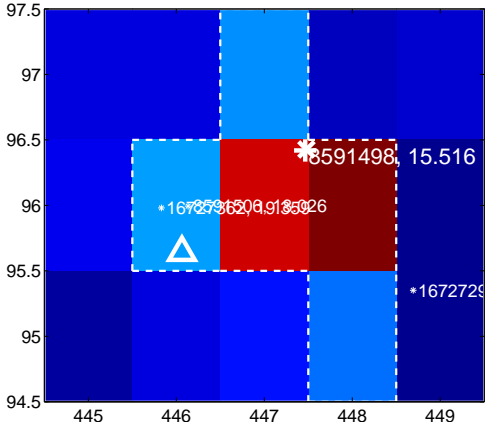
Q2 OOT image



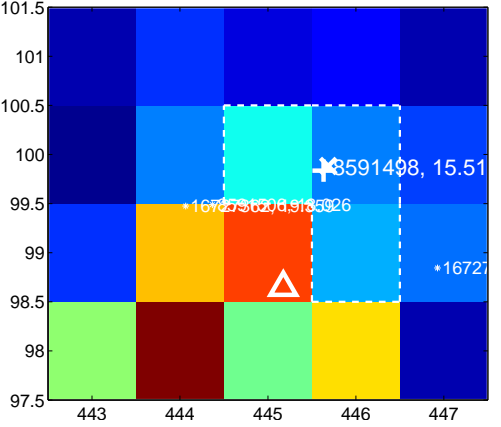
Q3 difference image



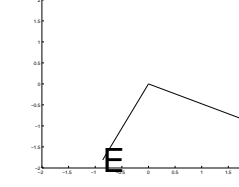
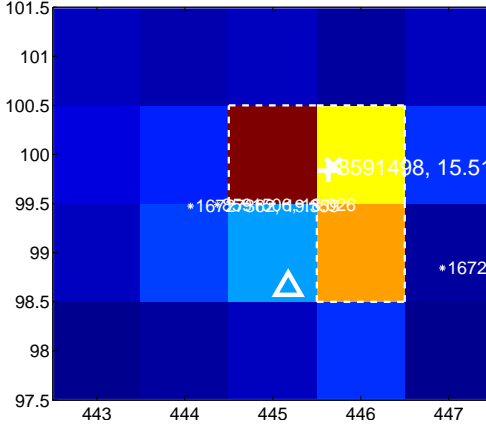
Q3 OOT image



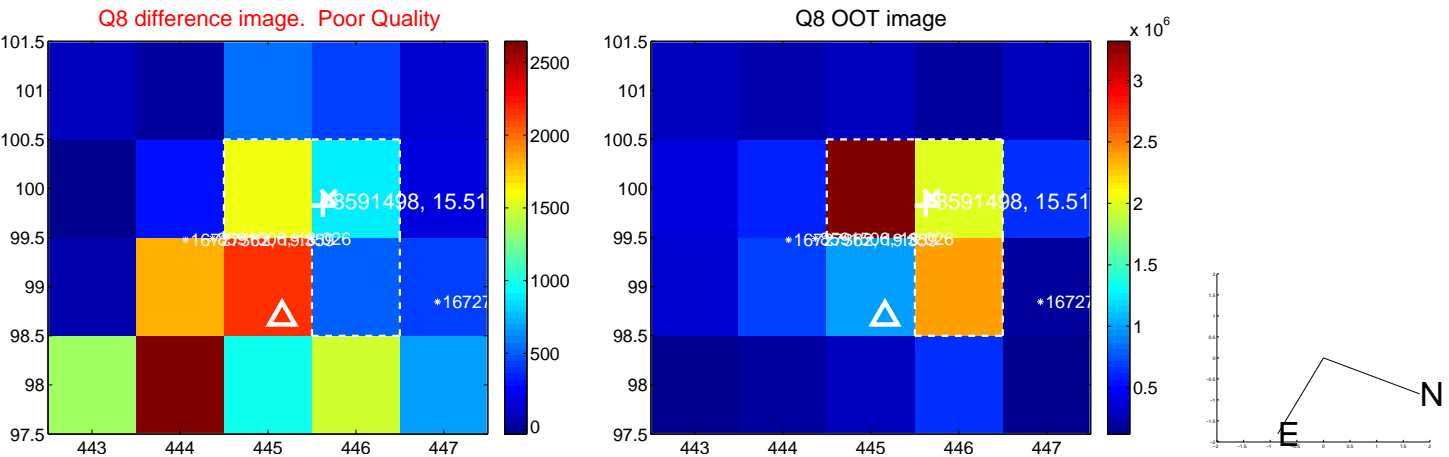
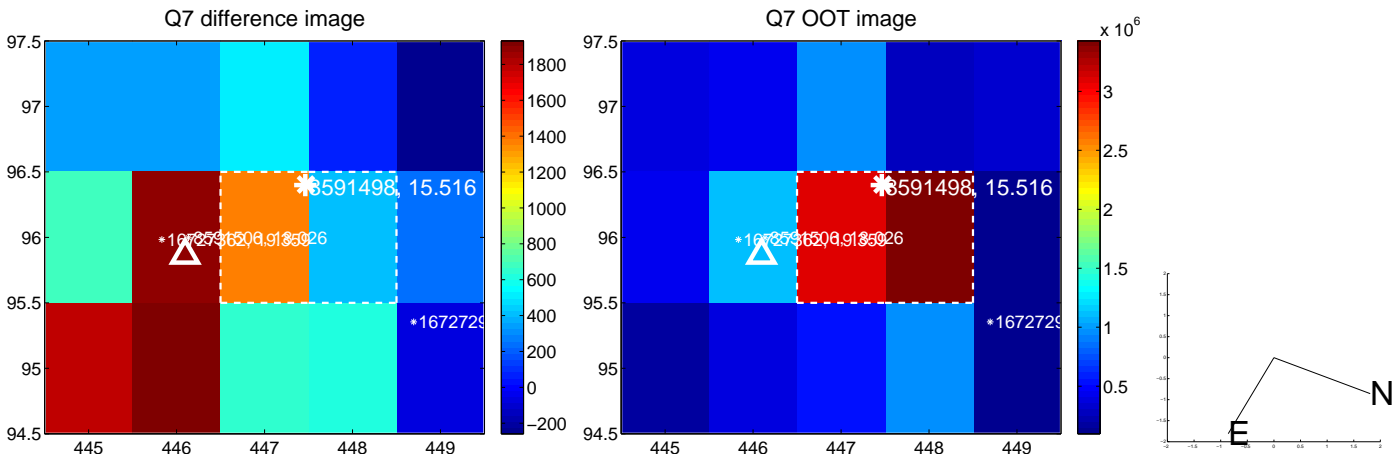
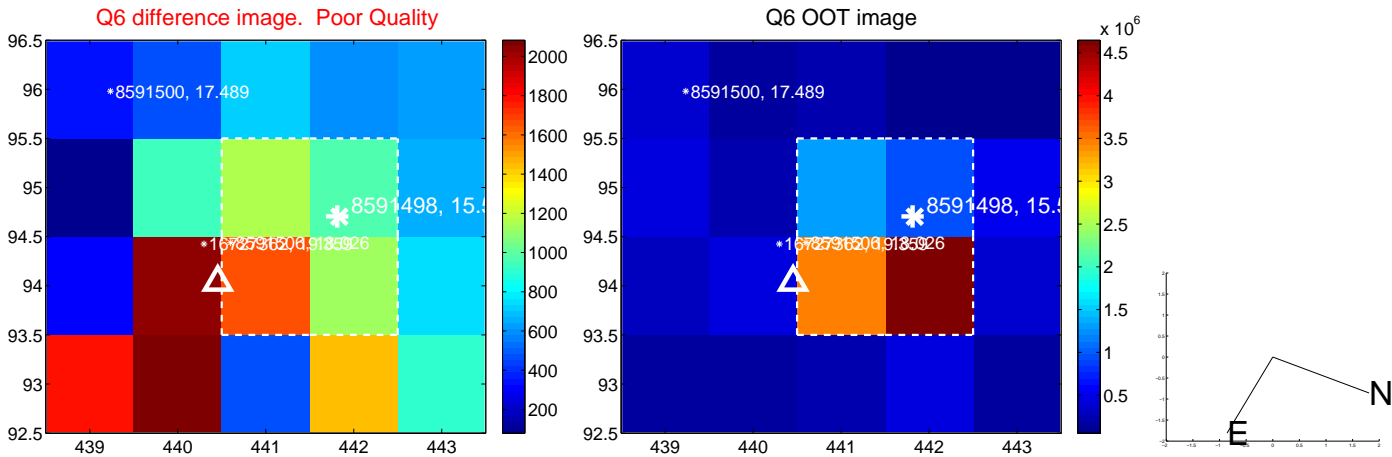
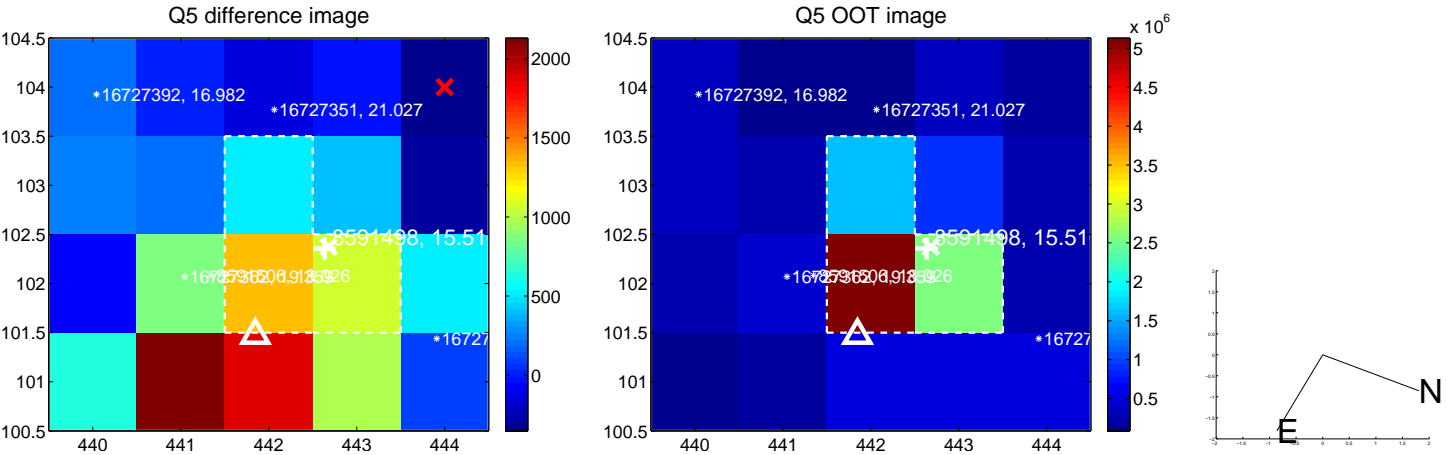
Q4 difference image



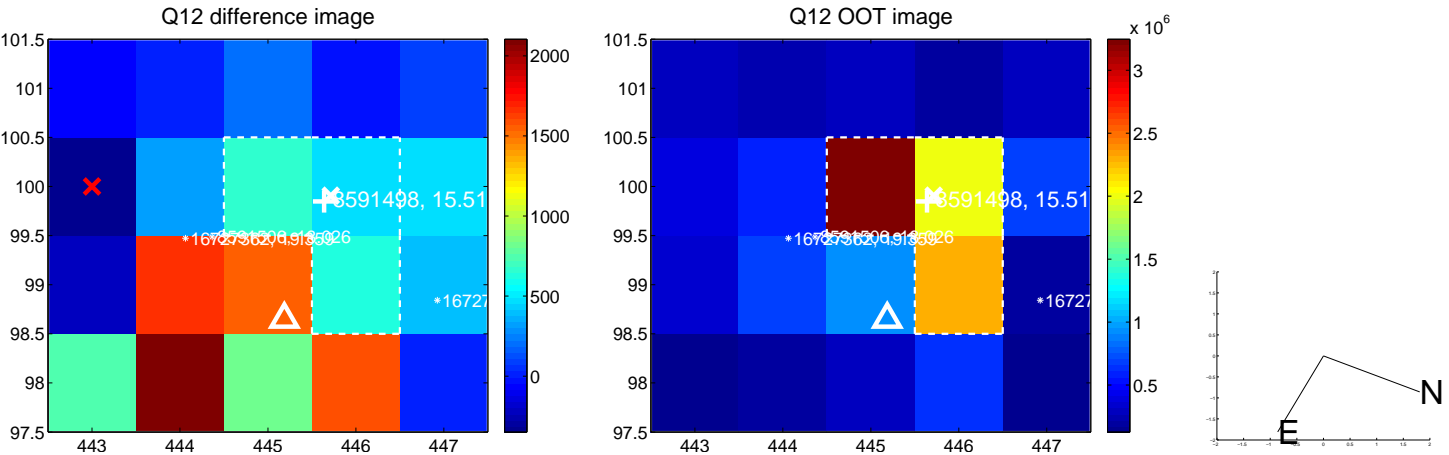
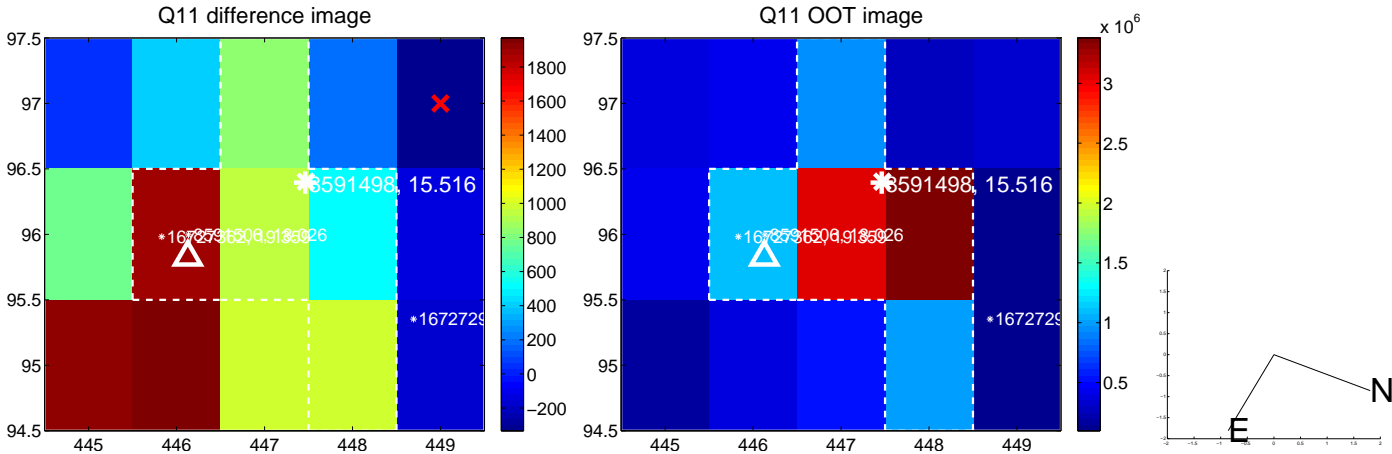
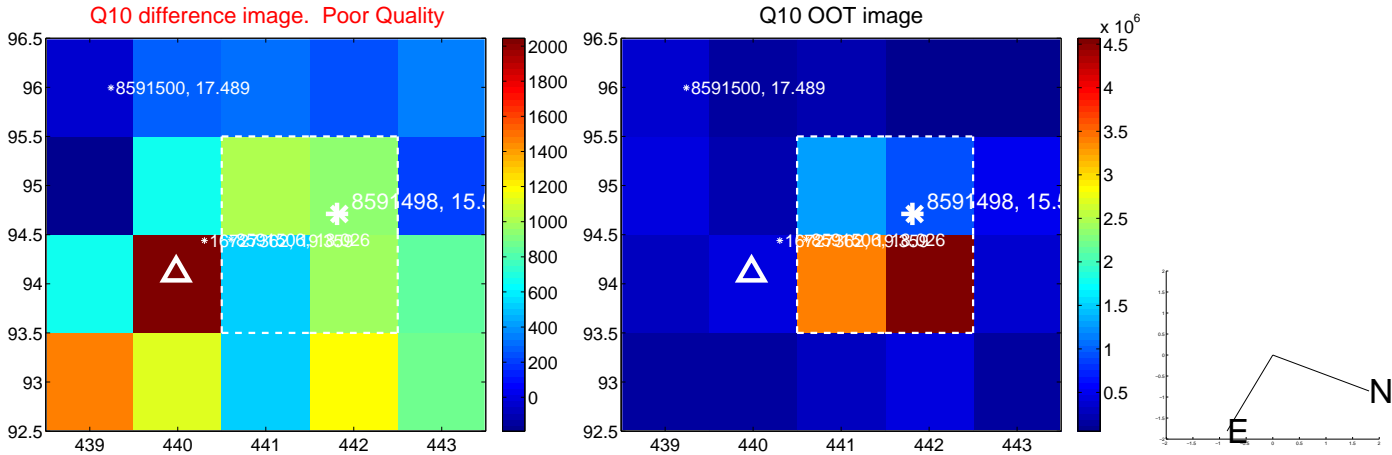
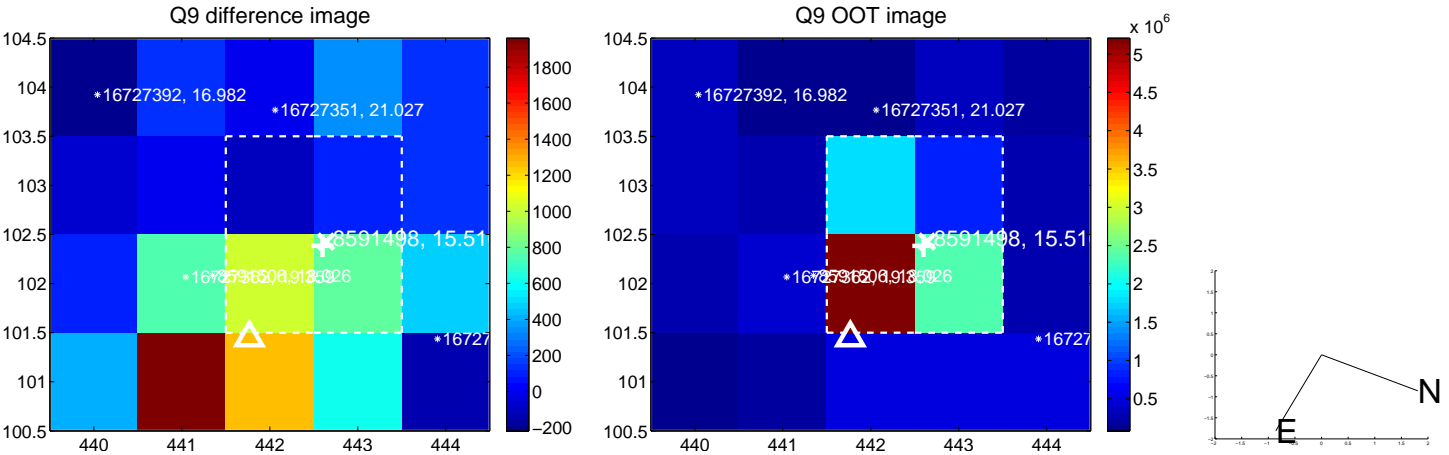
Q4 OOT image



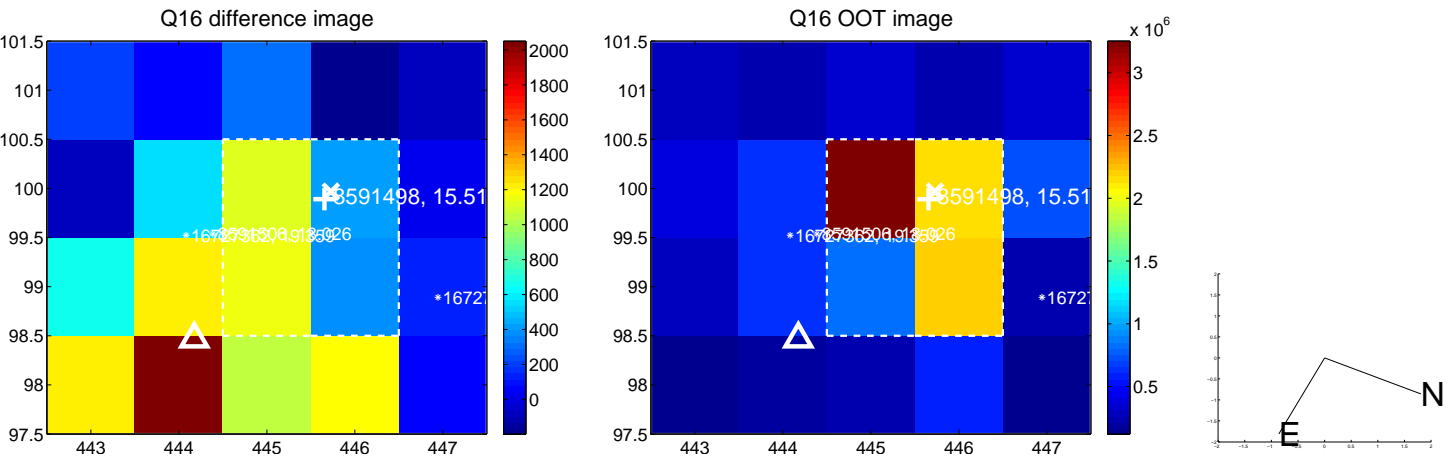
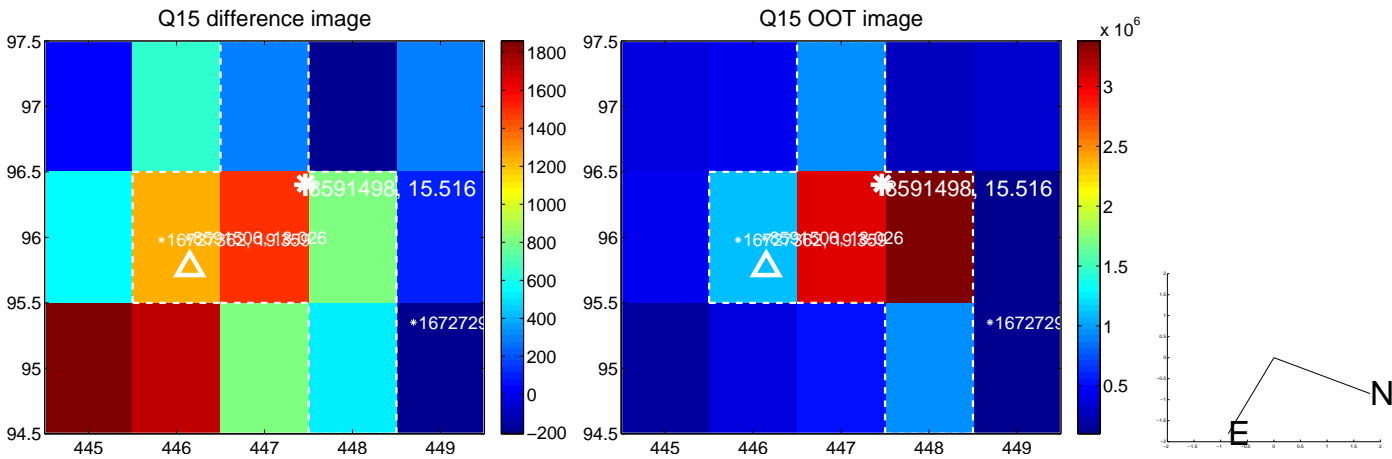
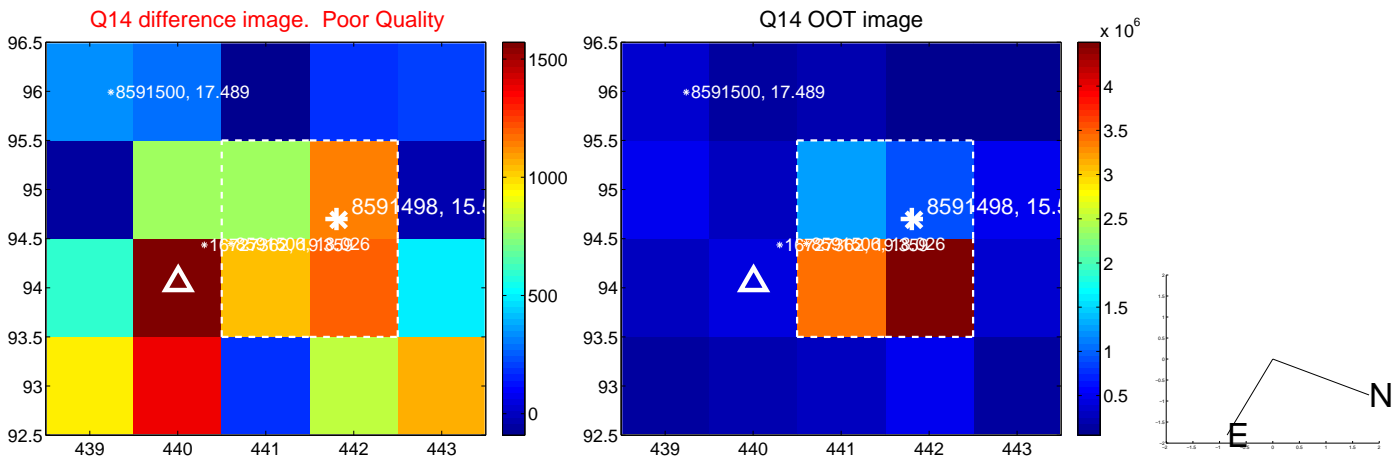
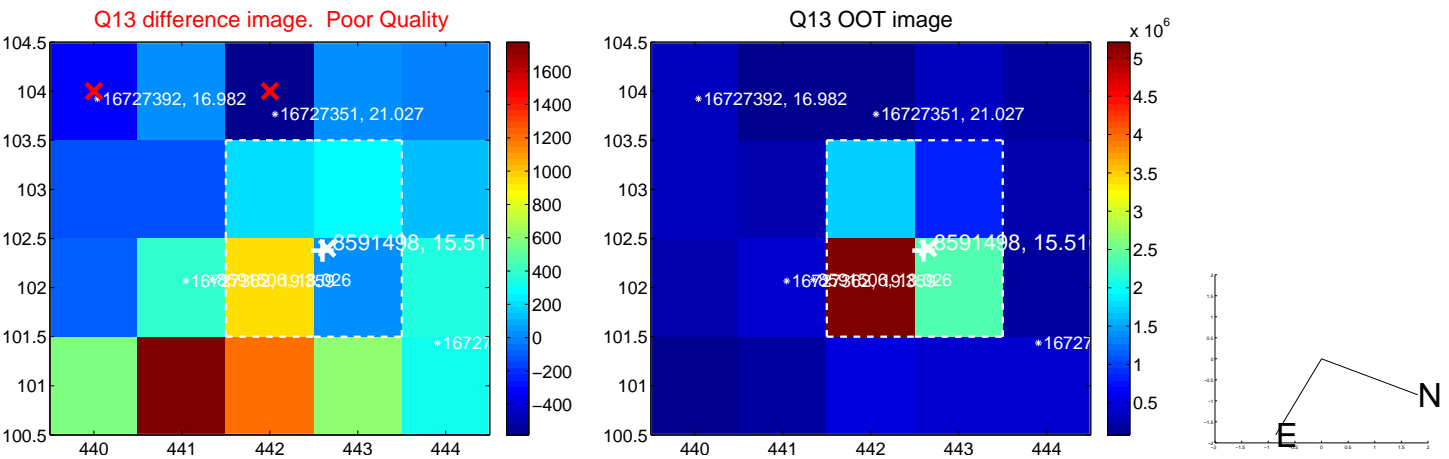
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



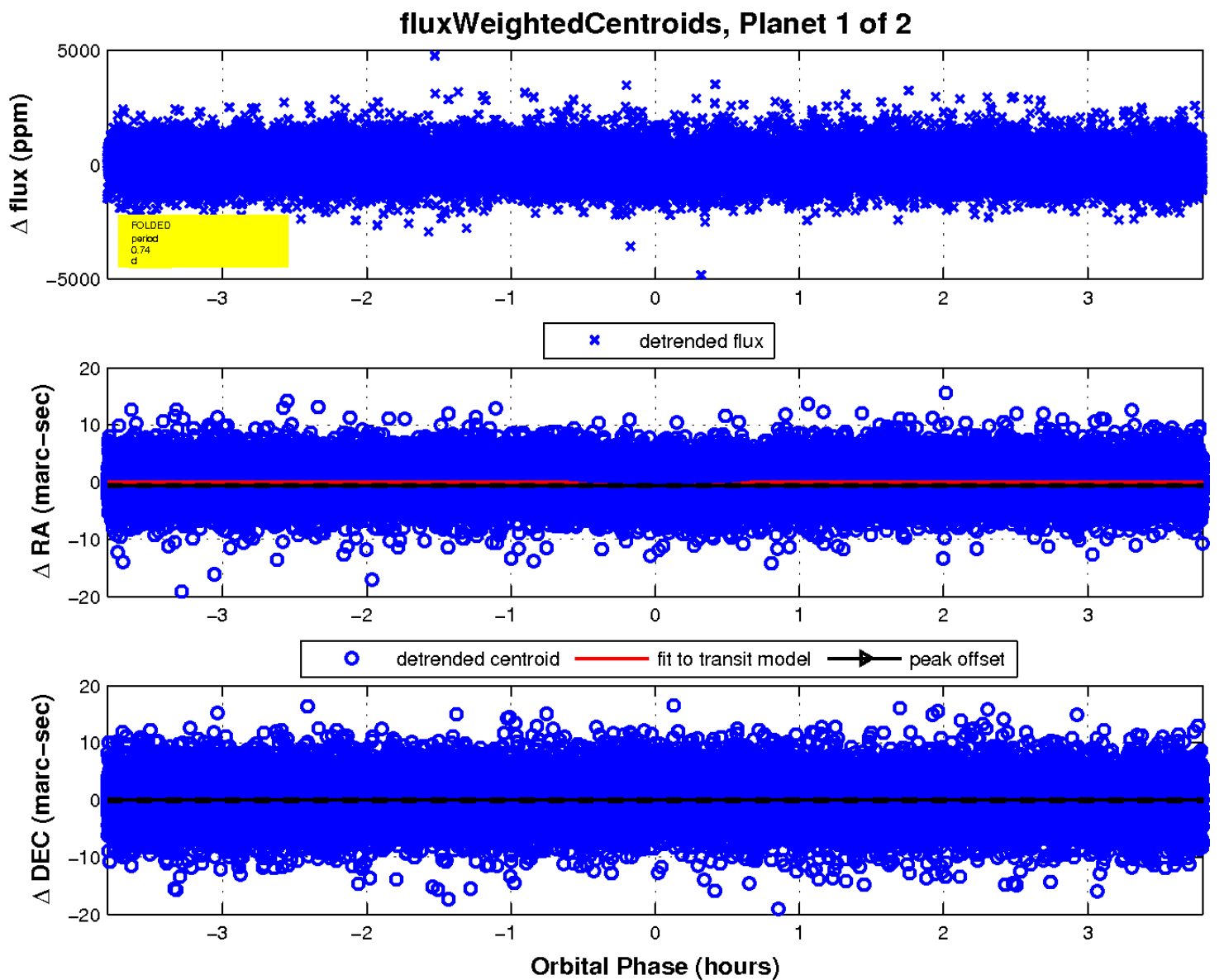
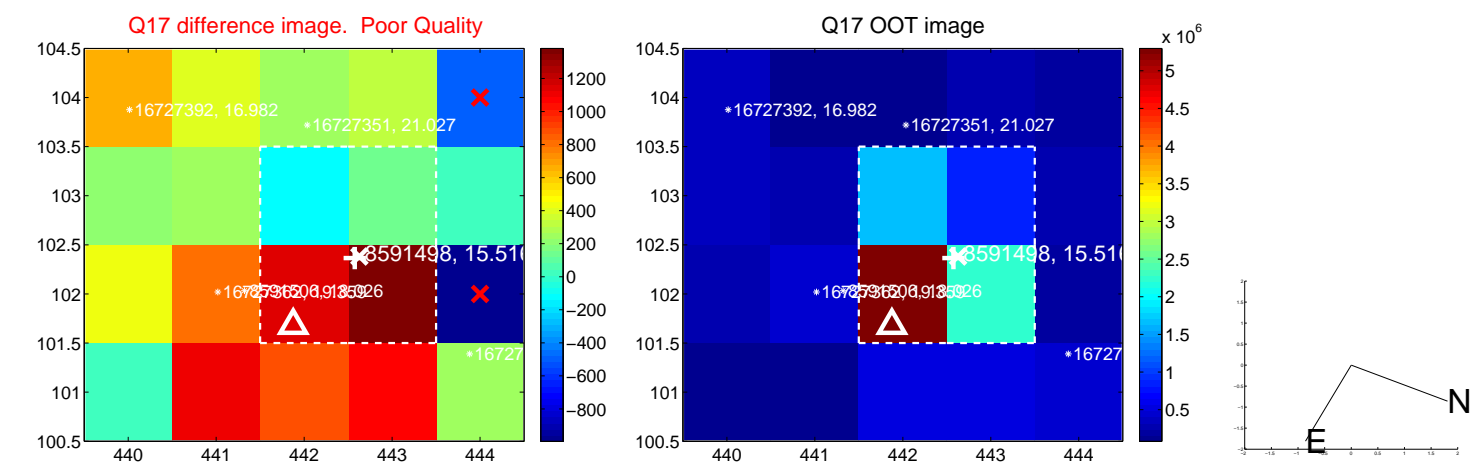
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

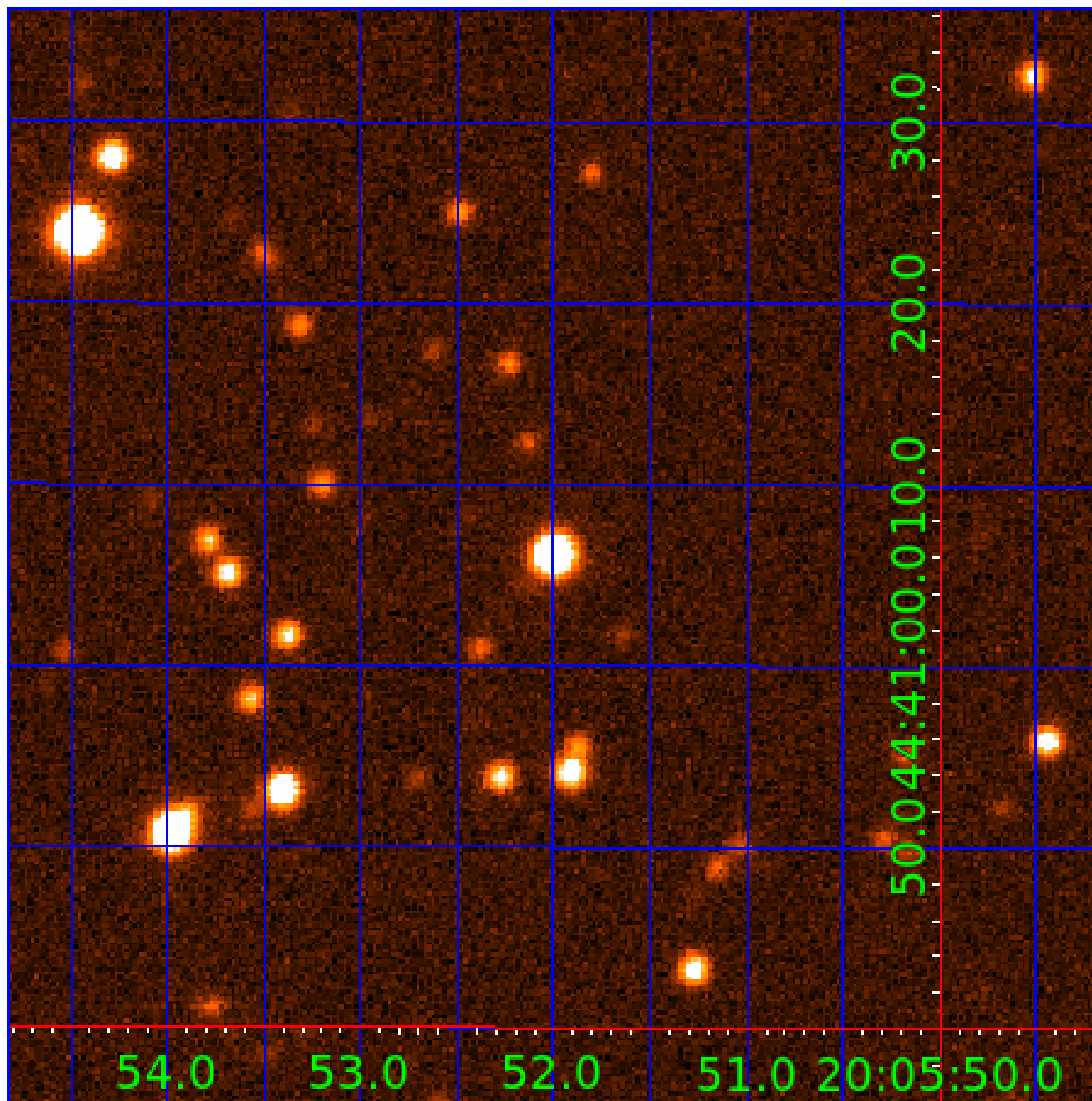


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008591498

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})
008591498-01	OBS	No	0.743473	131.764924	149.5	1.266	9.8	11.9	0.74	4682	1.14	1142.10
008591498-02	OBS	No	0.743473	131.521143	109.4	1.265	7.8	9.0	0.74	4682	0.97	1142.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008591498-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
008591498-02	OBS	FP	0.00	1	0	1	0	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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

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

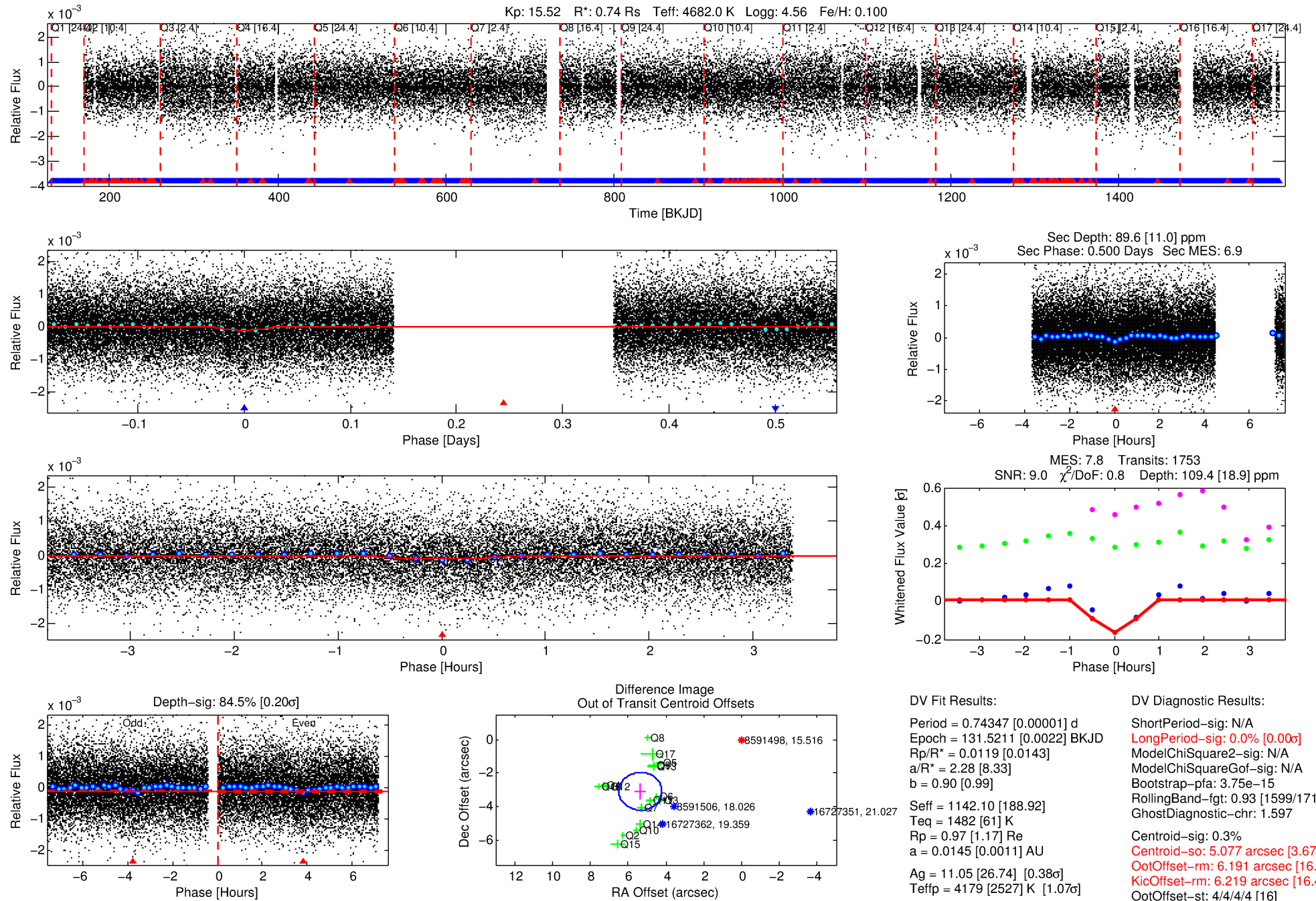
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008591498-02

No Significant Match Found

DV One-Page Summary

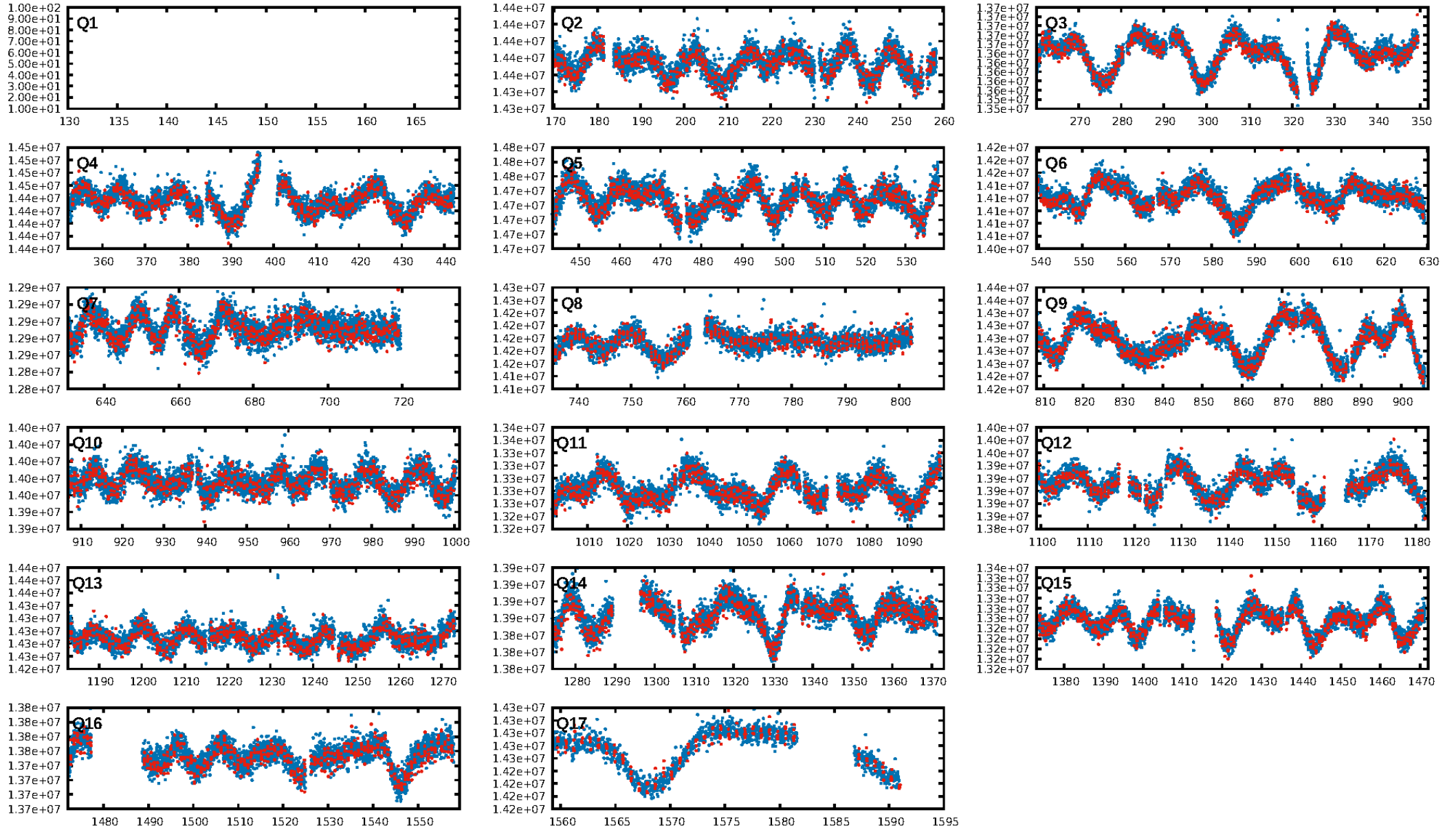
KIC: 8591498 Candidate: 2 of 2 Period: 0.743 d



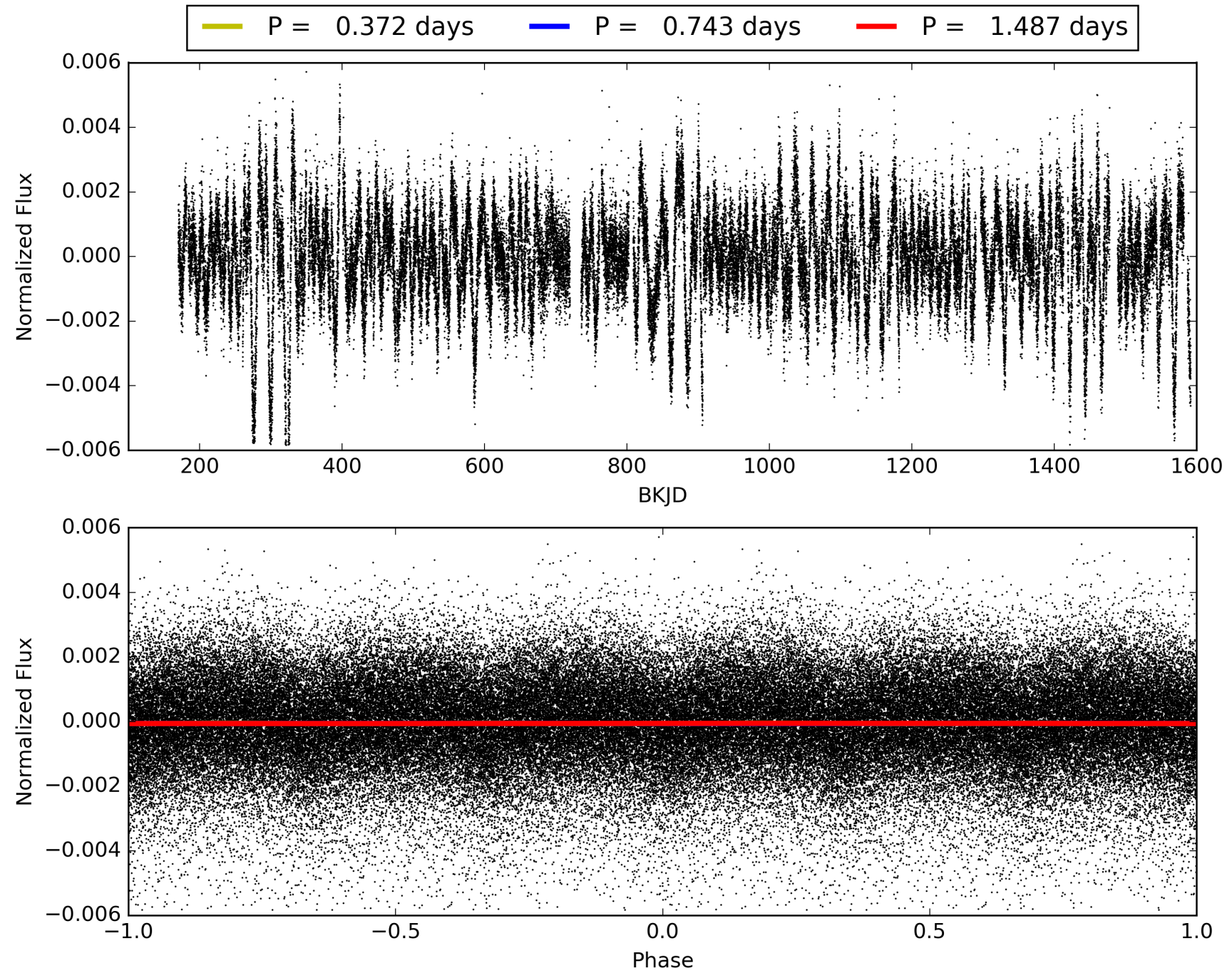
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008591498-02, PDC Light Curves

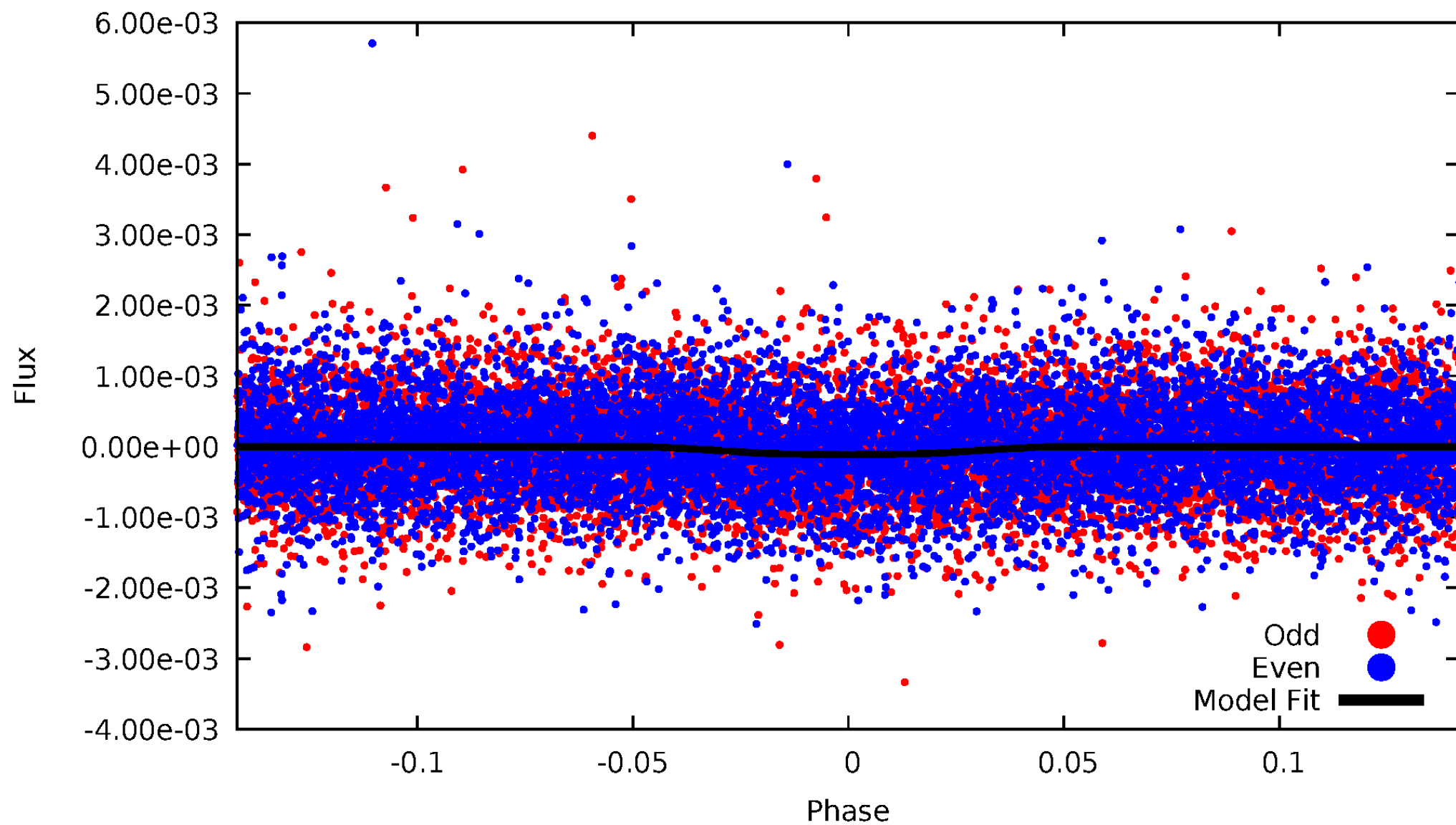


TCE 008591498-02



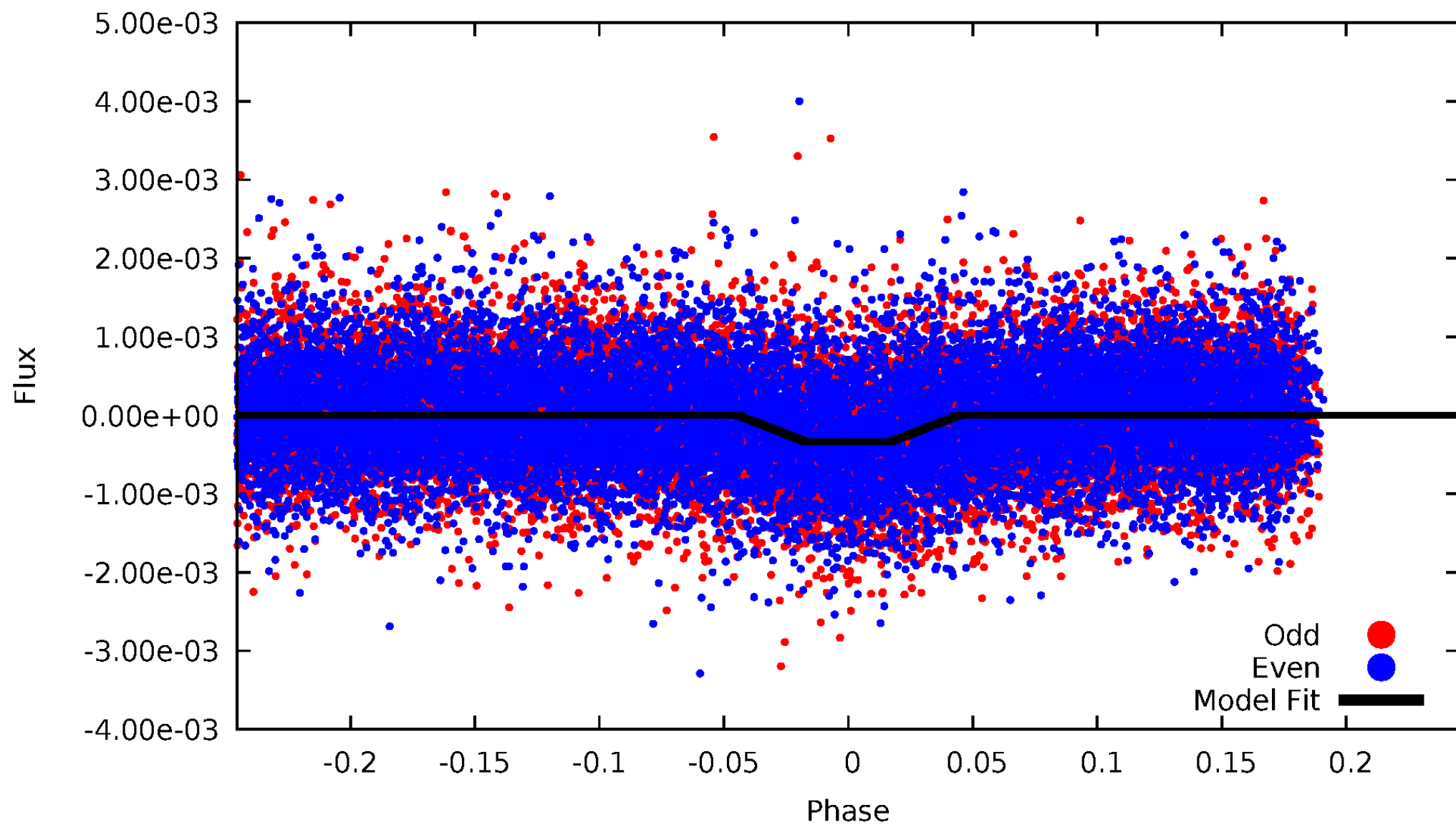
DV Odd/Even

TCE 008591498-02



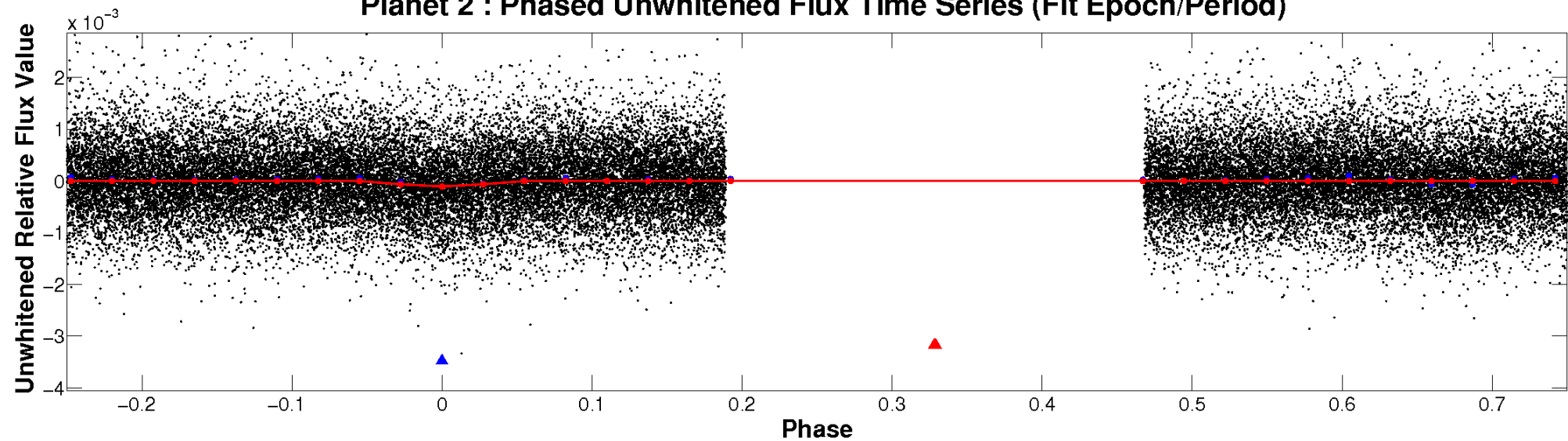
ALT Odd/Even

TCE 008591498-02

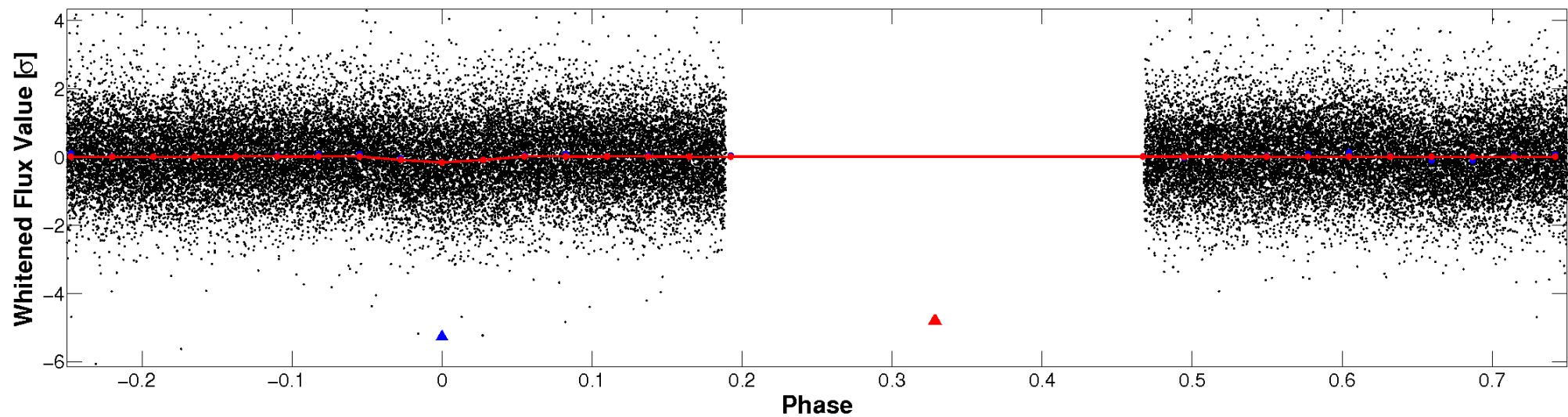


Non-Whitened Vs. Whitened Light Curve

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

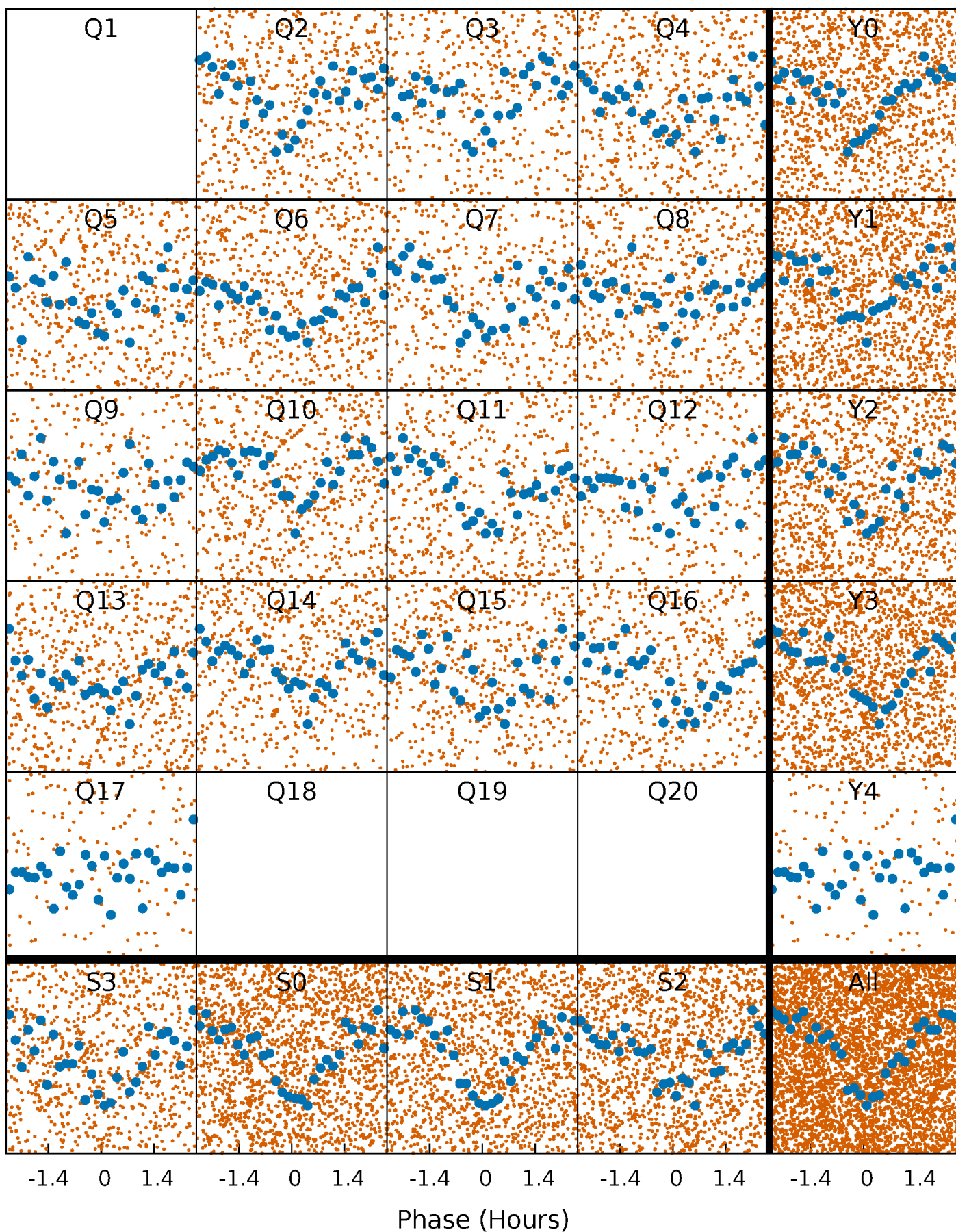


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



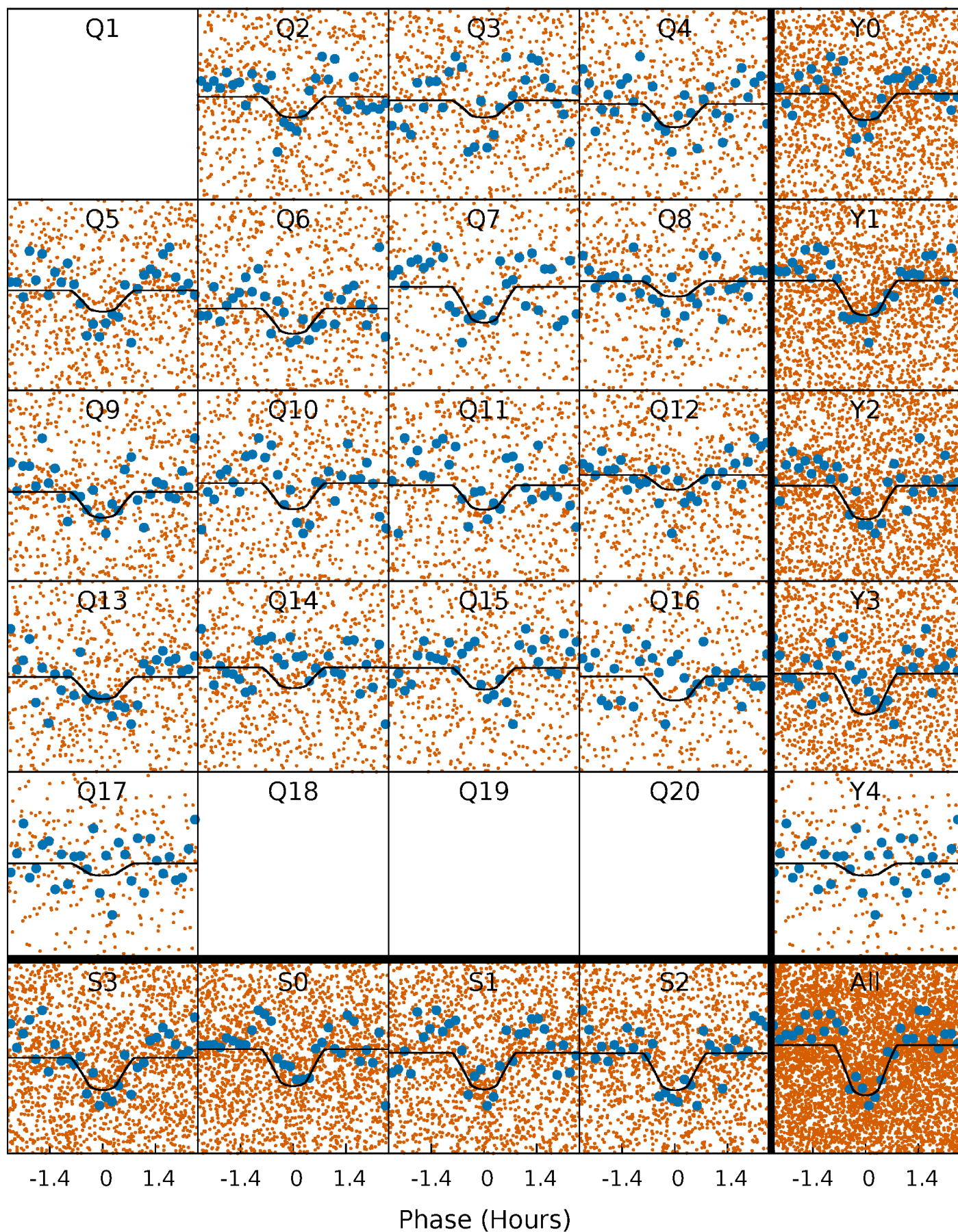
PDC Quarter-Phased Transit Curves

TCE 008591498-02 P= 0.743473 Days $T_0=131.521143$ (BKJD)



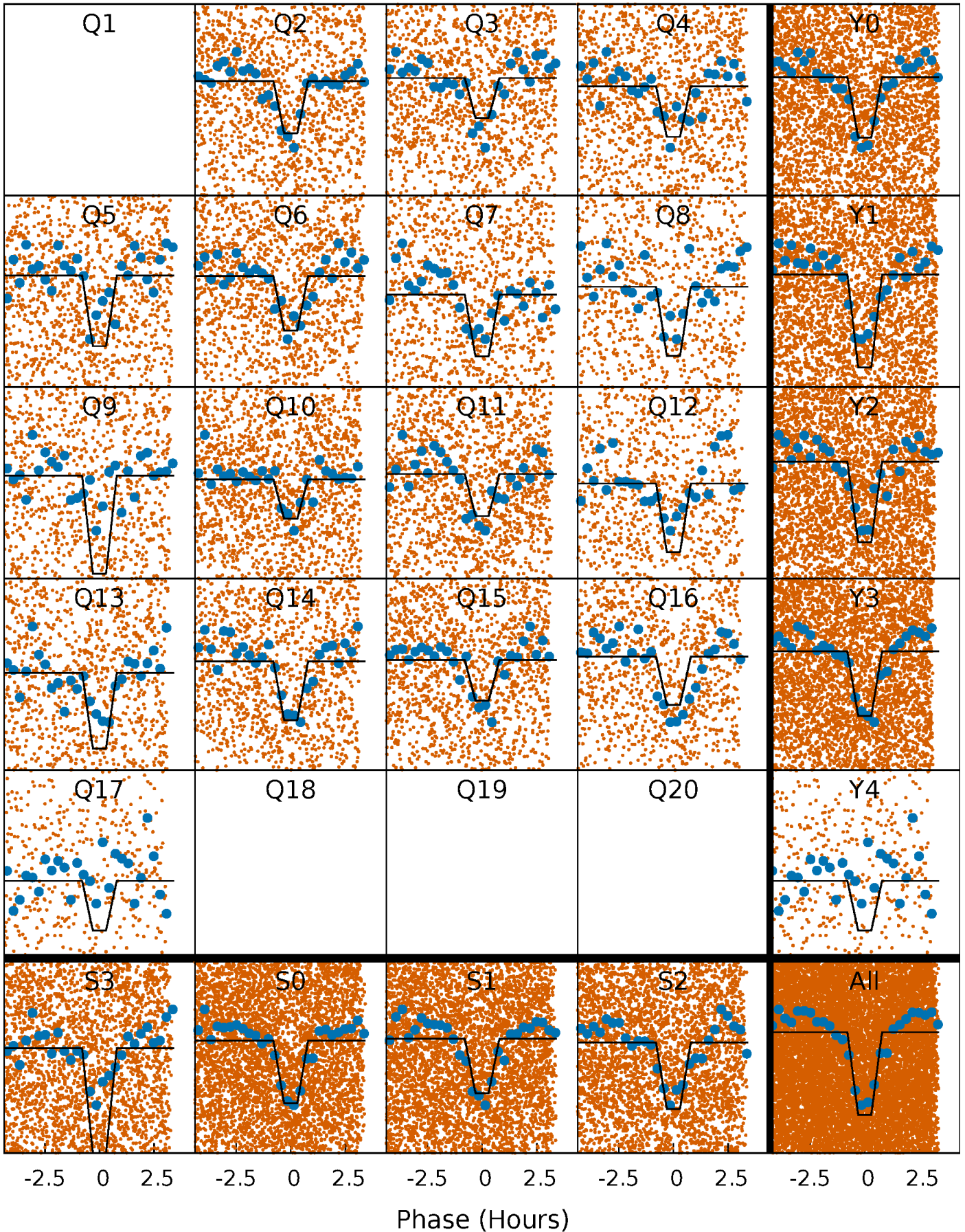
DV Quarter-Phased Transit Curves

TCE 008591498-02 $P = 0.743473$ Days $T_0 = 131.521143$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

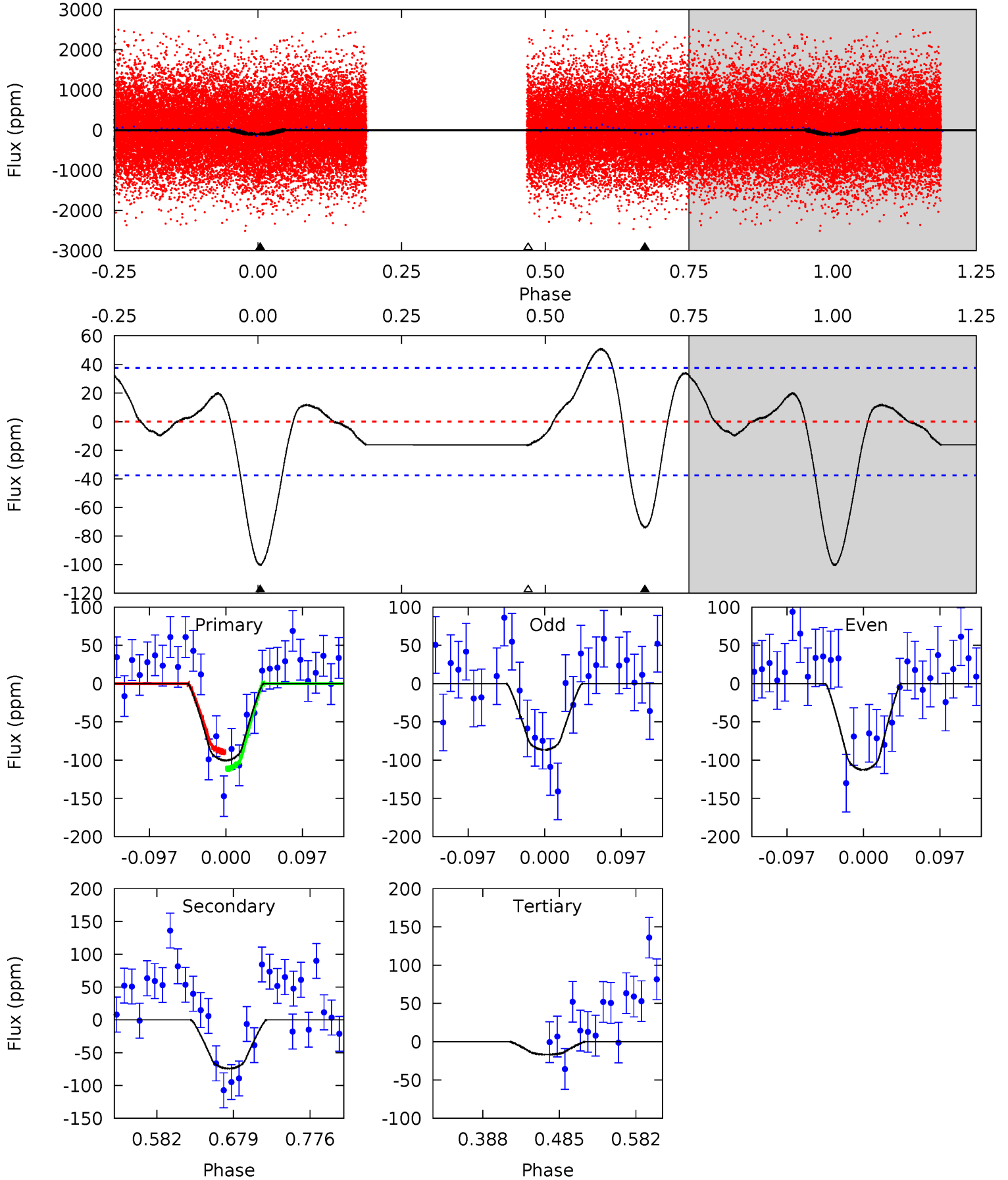
TCE 008591498-02 P= 0.743481 Days $T_0=131.518493$ (BKJD)



DV Model-Shift Uniqueness Test

008591498-02, P = 0.743473 Days, E = 131.521143 Days

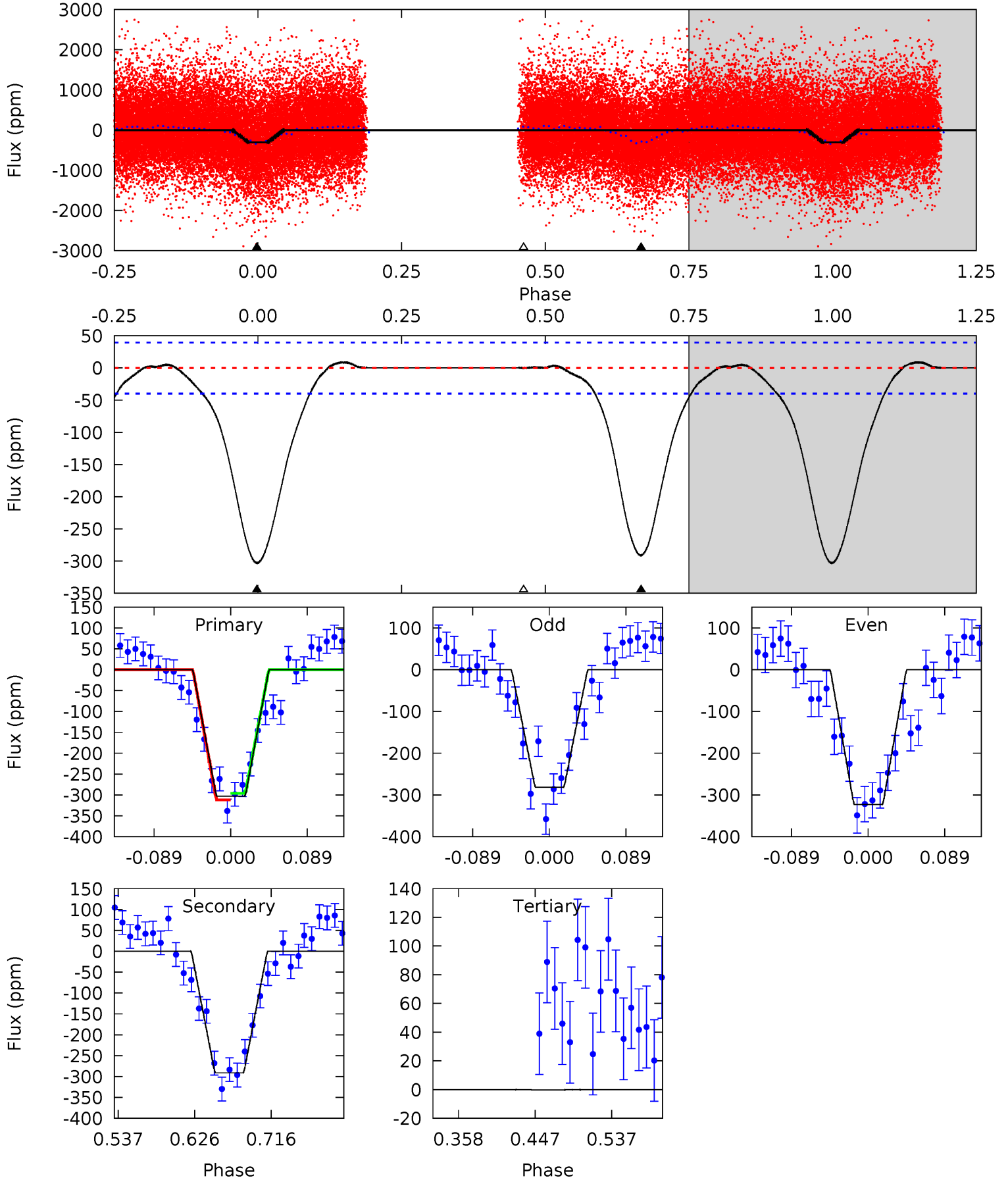
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	9.03	2.03	0	4.57	1.66	1.44	10.2	12.2	7.00	9.03	1.59	0.93	0.34	1.37



Alt Model-Shift Uniqueness Test

008591498-02, P = 0.743481 Days, E = 131.518493 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.1	33.7	0.02	0	4.59	1.70	1.49	35.1	35.1	33.7	33.7	2.40	0.97	0.03	0.91



Stellar Parameters For KIC 008591498

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4682^{+126}_{-140}	$4.557^{+0.063}_{-0.027}$	$0.100^{+0.250}_{-0.300}$	$0.745^{+0.037}_{-0.068}$	$0.730^{+0.063}_{-0.052}$	$2.490^{+0.679}_{-0.244}$
	+3%/-3%	+1%/-1%	+250%/-300%	+5%/-9%	+9%/-7%	+27%/-10%
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 008591498-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-74 ± 8	$1.26^{+1.07}_{-0.78}$	2056^{+67}_{-69}	3696^{+1740}_{-706}	$5.298^{+30.668}_{-3.758}$
Alt.	-291 ± 9	$1.63^{+1.15}_{-0.92}$	2056^{+68}_{-70}	4370^{+1982}_{-770}	13^{+56}_{-8}

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

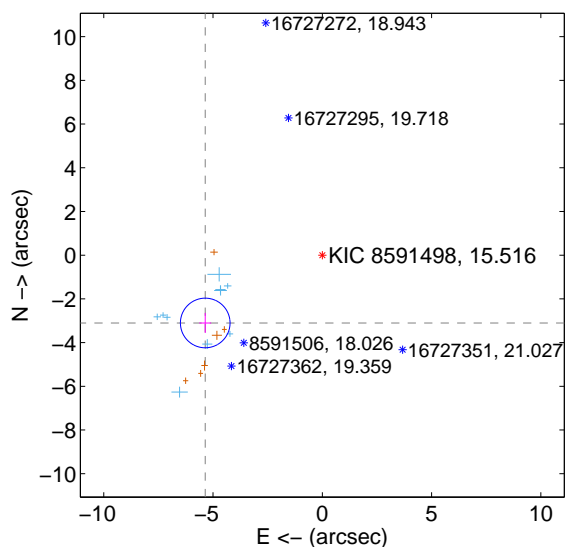
Supplemental centroid analysis for 008591498-02. Kepler magnitude: 15.52. Transit SNR 8.95

There are 10 quarters with good PRF difference image offsets

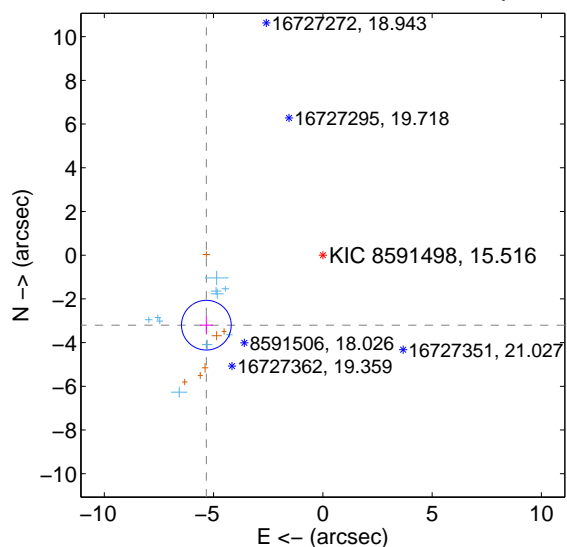
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.191 ± 0.379	16.35	5.357 ± 0.271	-3.102 ± 0.457
PRF-fit source offset from KIC position	6.219 ± 0.379	16.41	5.331 ± 0.301	-3.203 ± 0.427
photometric centroid source offset	5.08 ± 1.38	3.67	4.64 ± 1.35	-2.07 ± 1.54

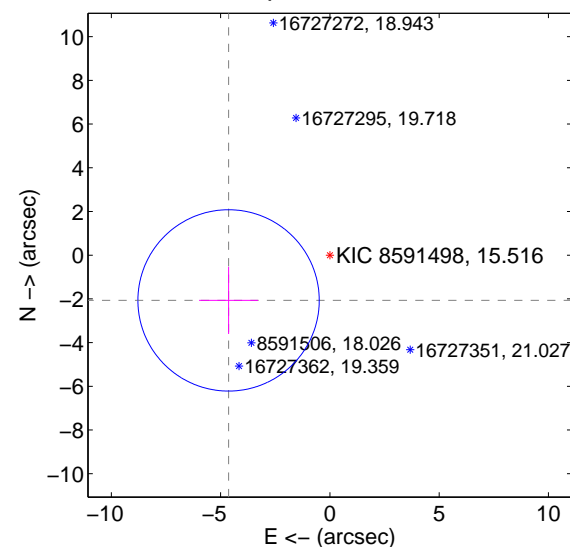
offset from difference PRF-fit to OOT PRF-fit



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.

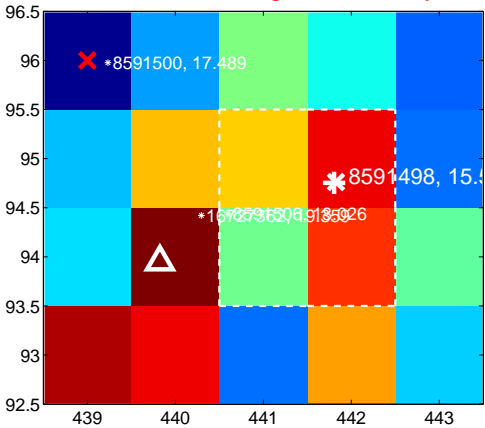
Q1 no difference image



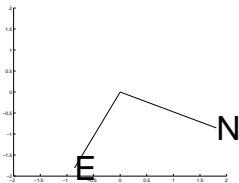
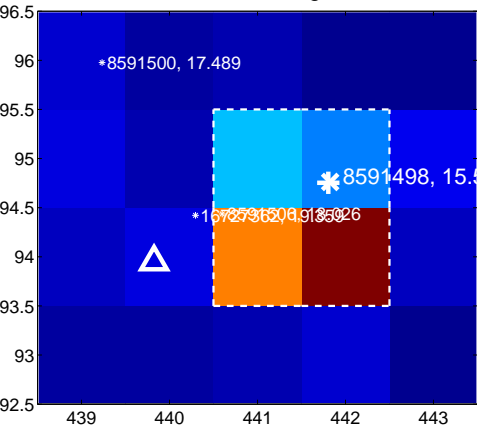
Q1 no OOT image



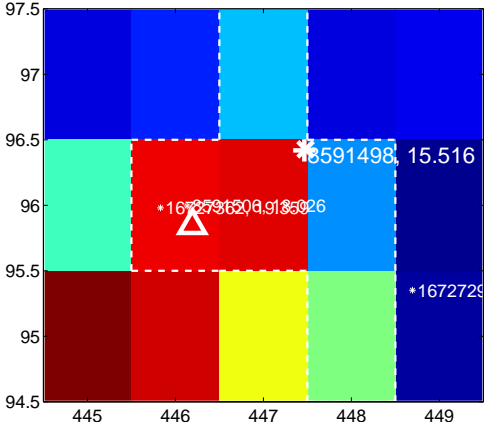
Q2 difference image. Poor Quality



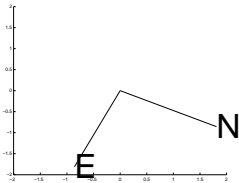
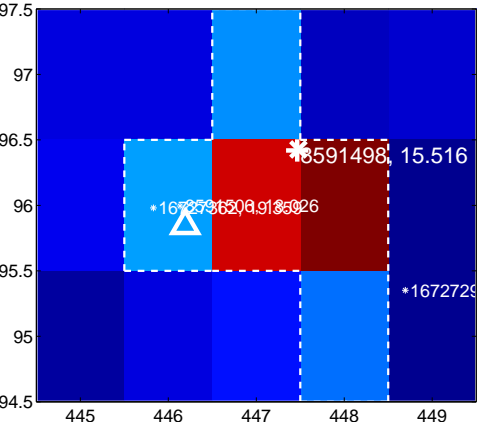
Q2 OOT image



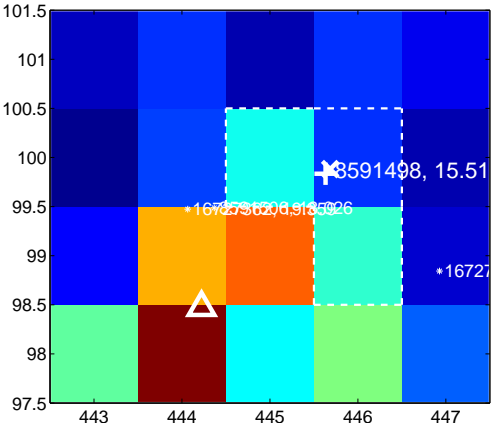
Q3 difference image



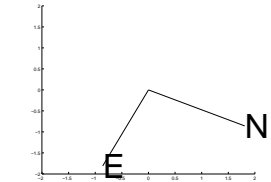
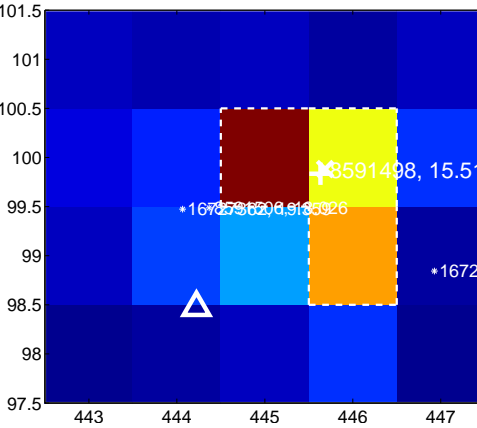
Q3 OOT image



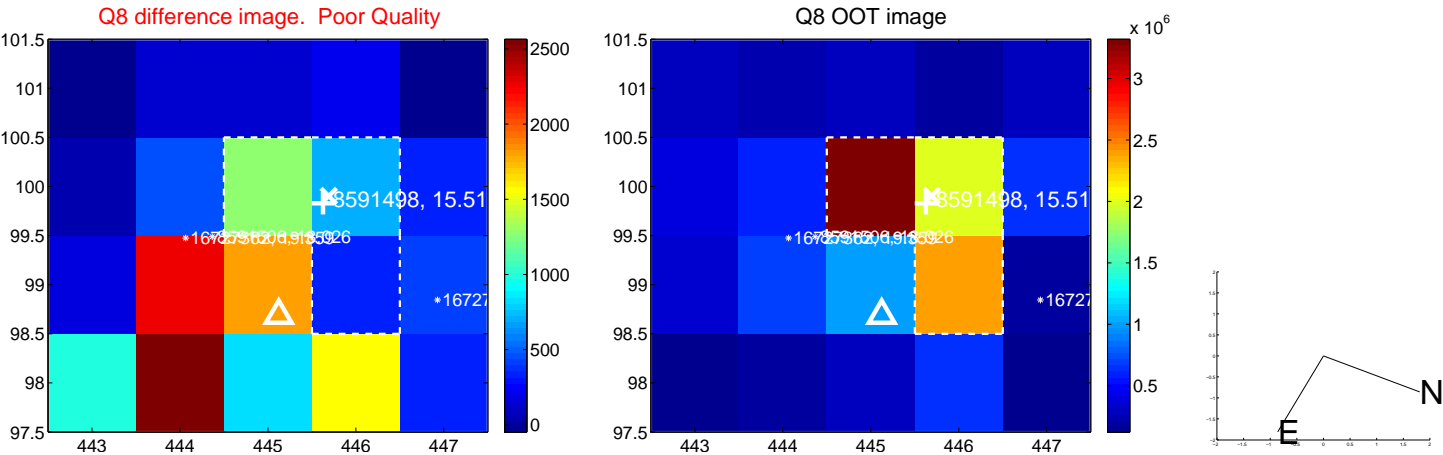
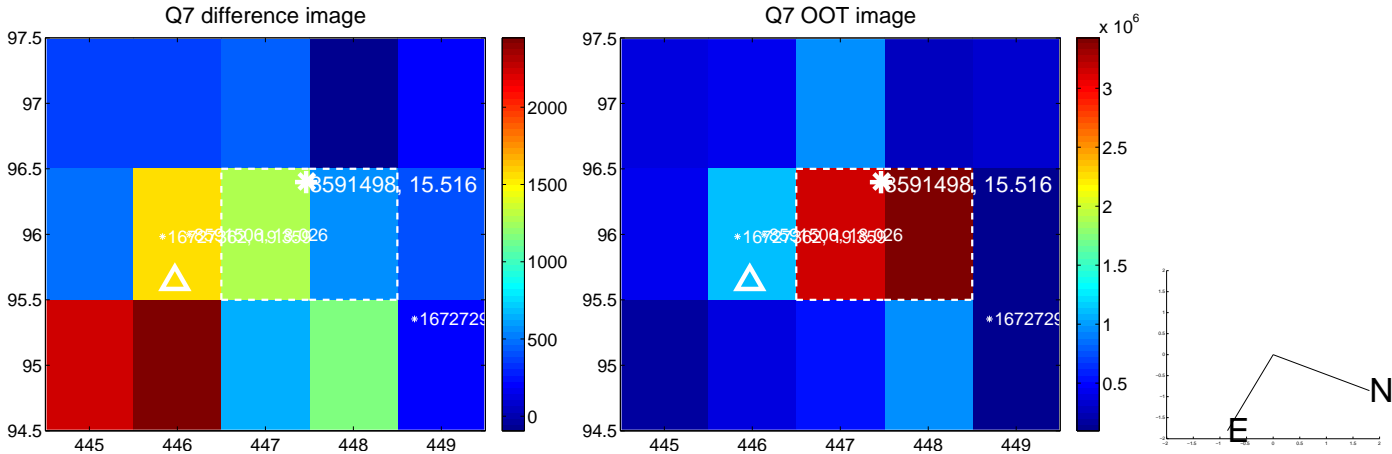
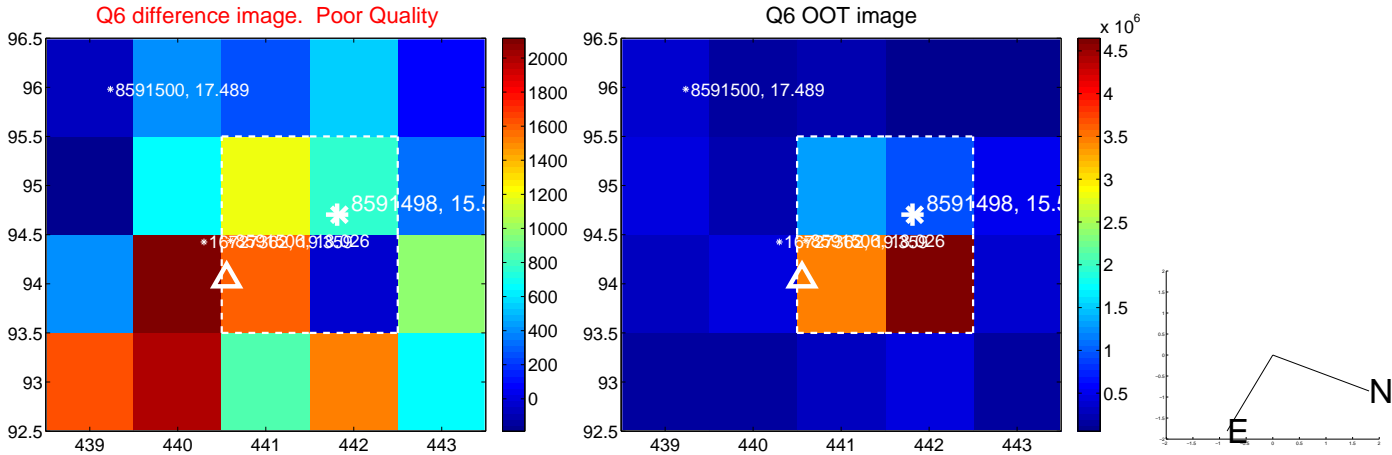
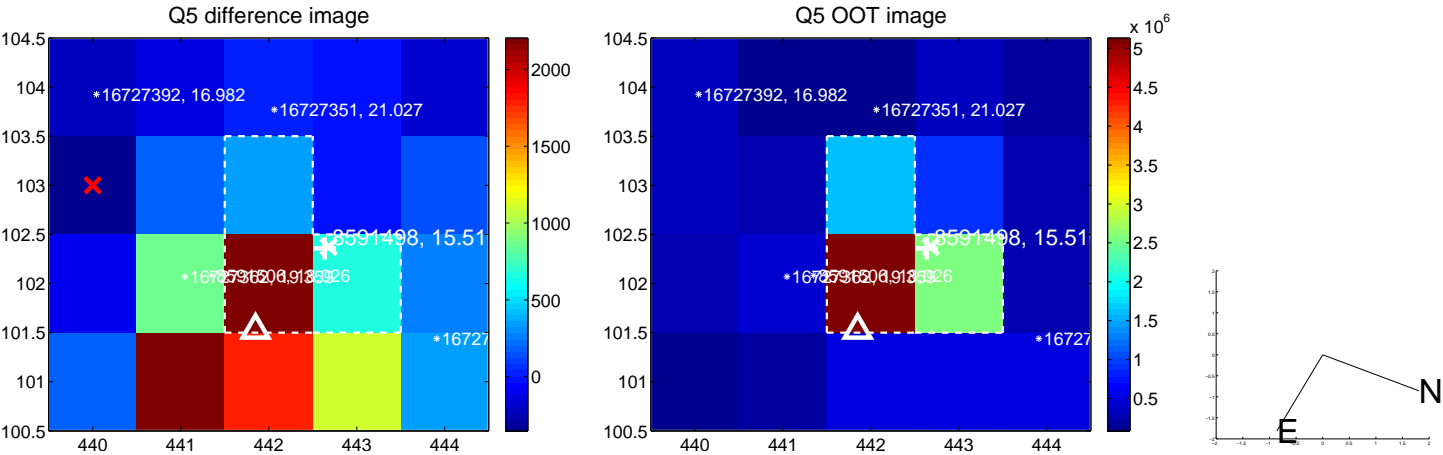
Q4 difference image



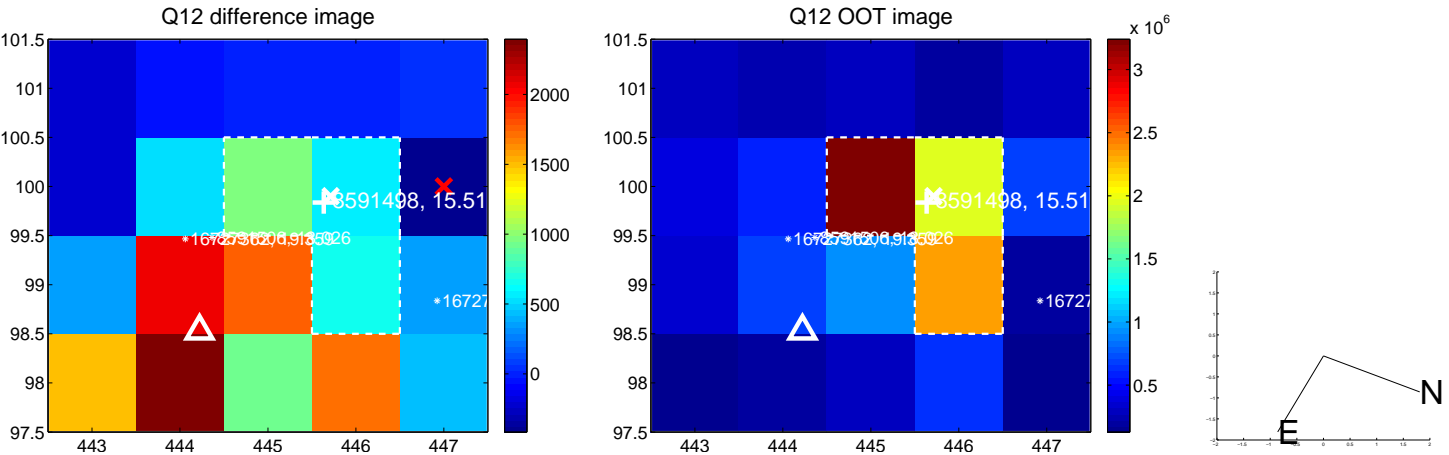
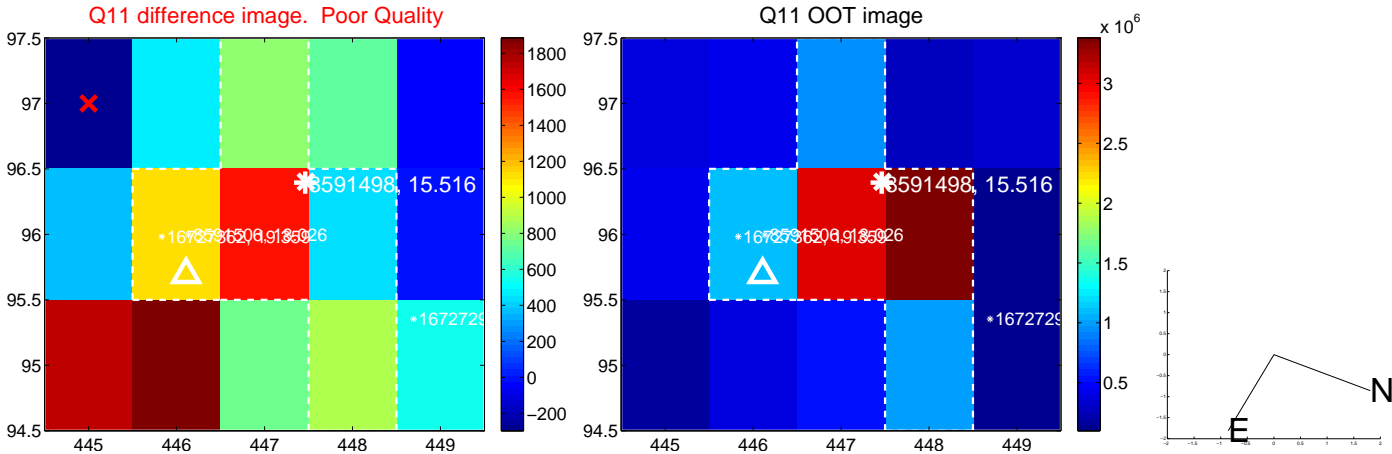
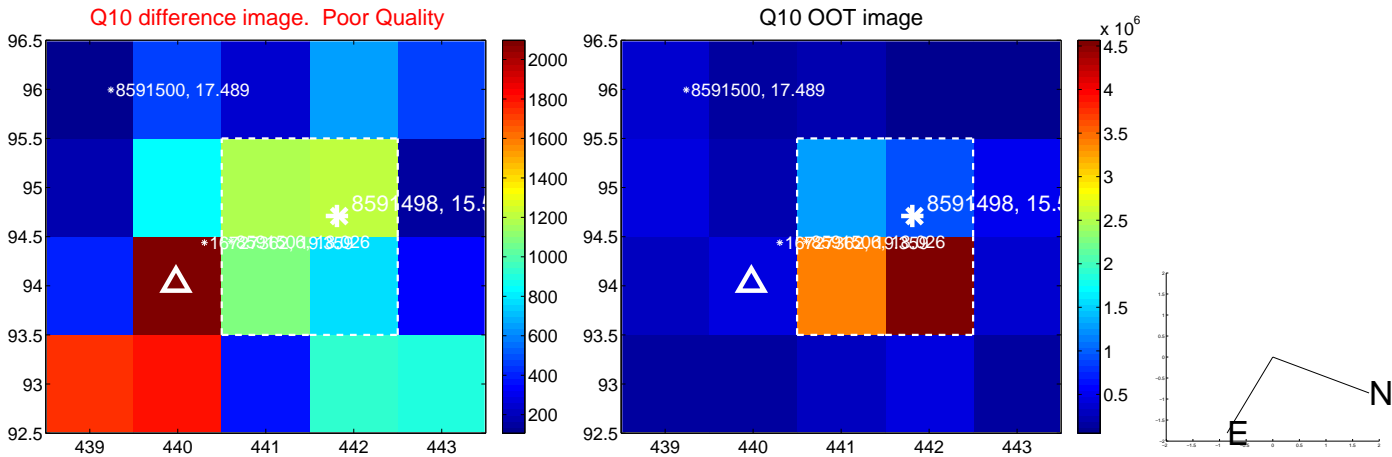
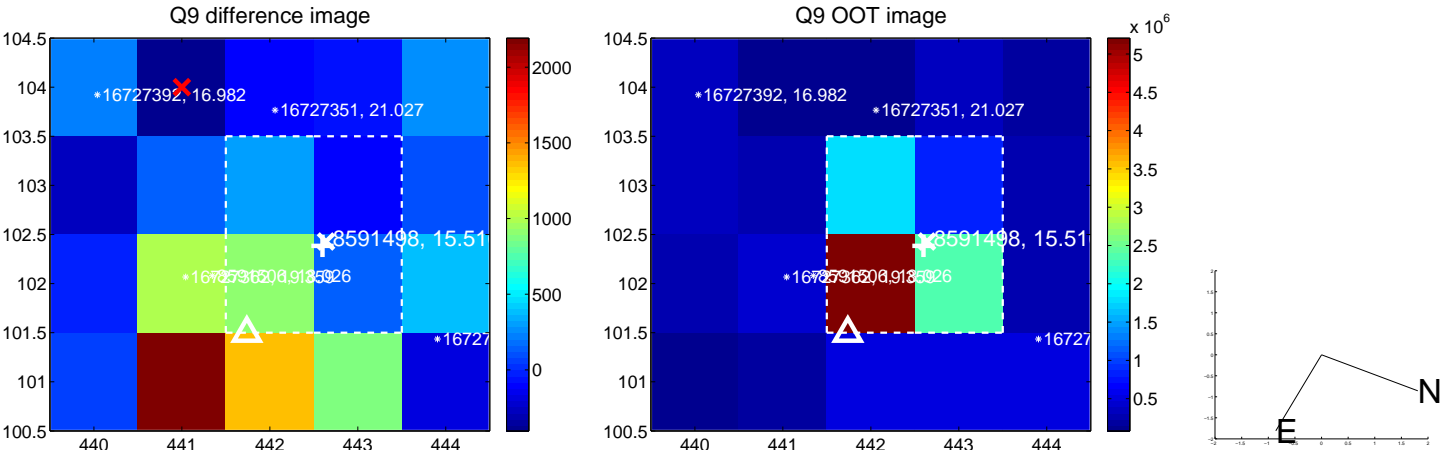
Q4 OOT image



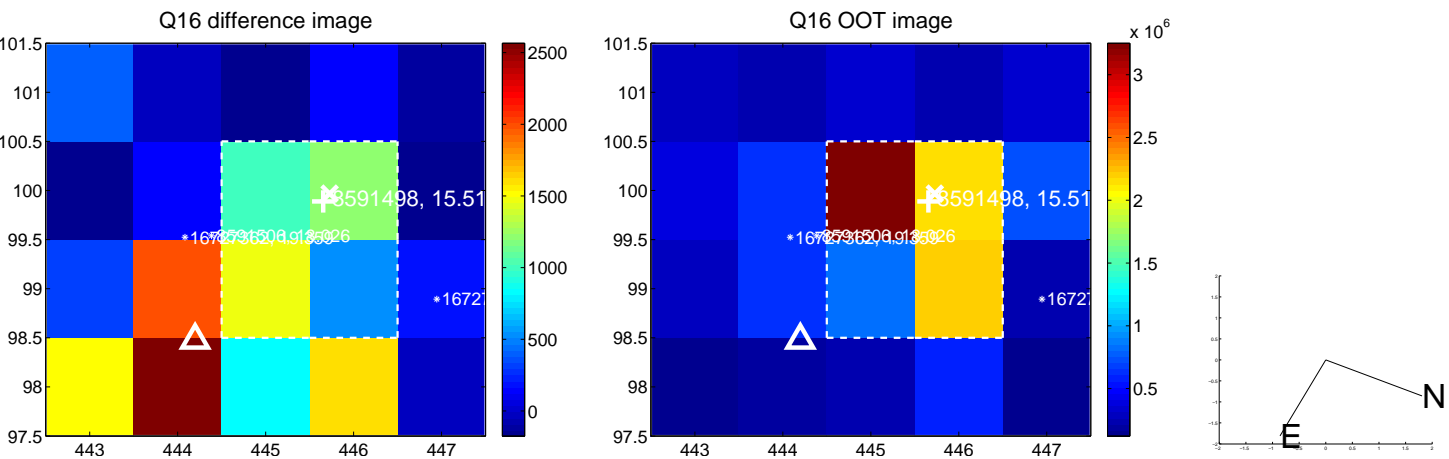
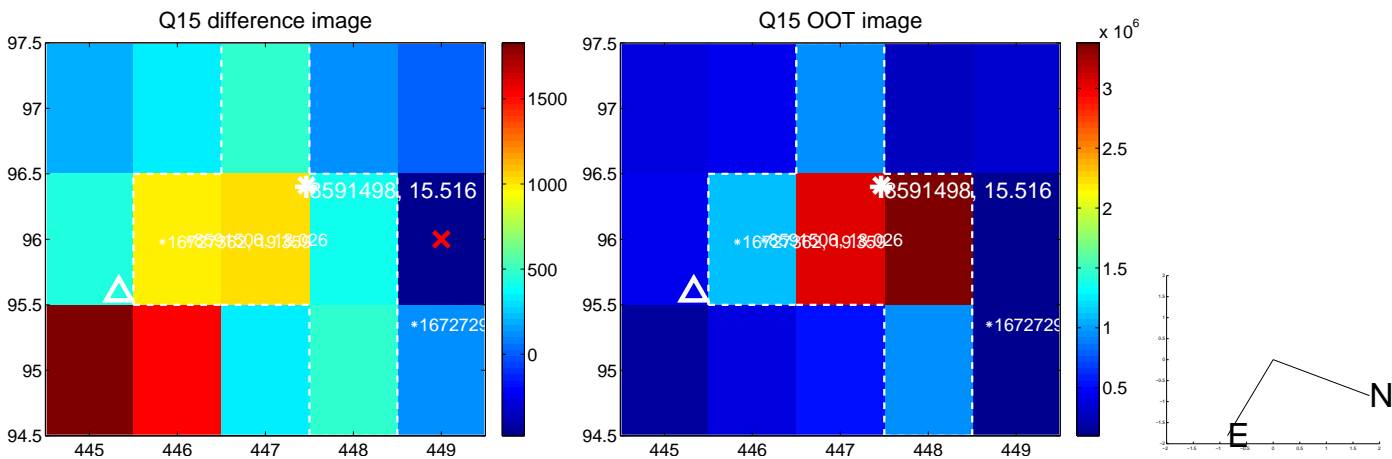
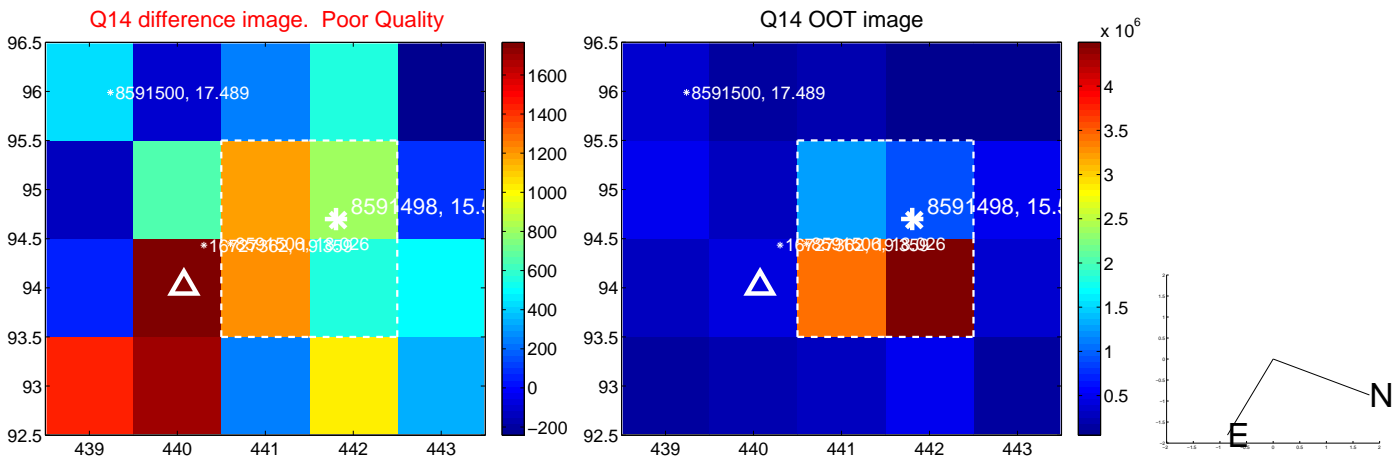
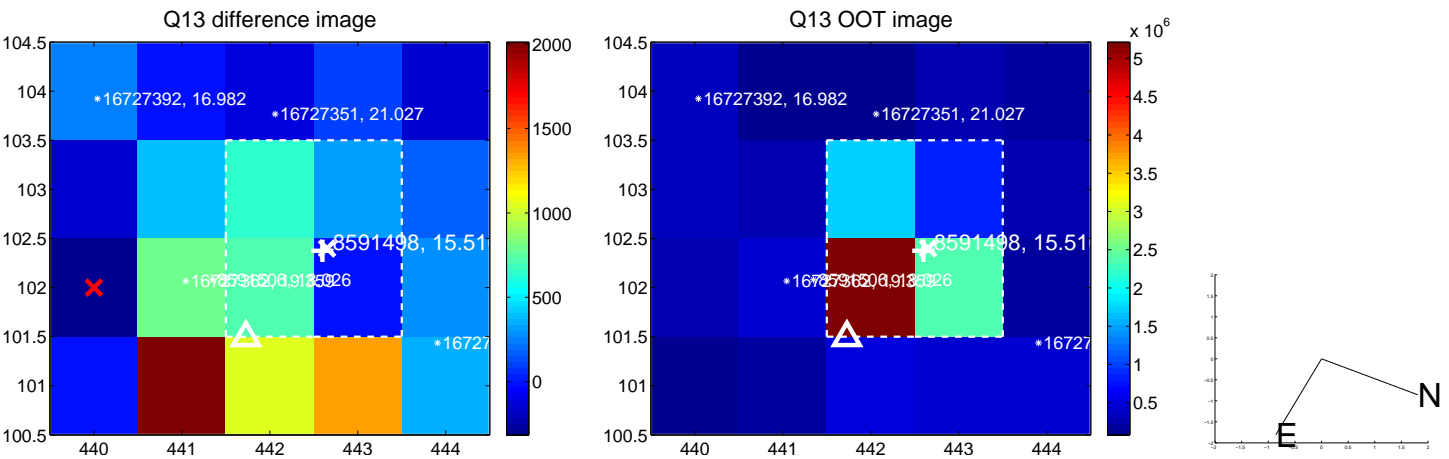
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



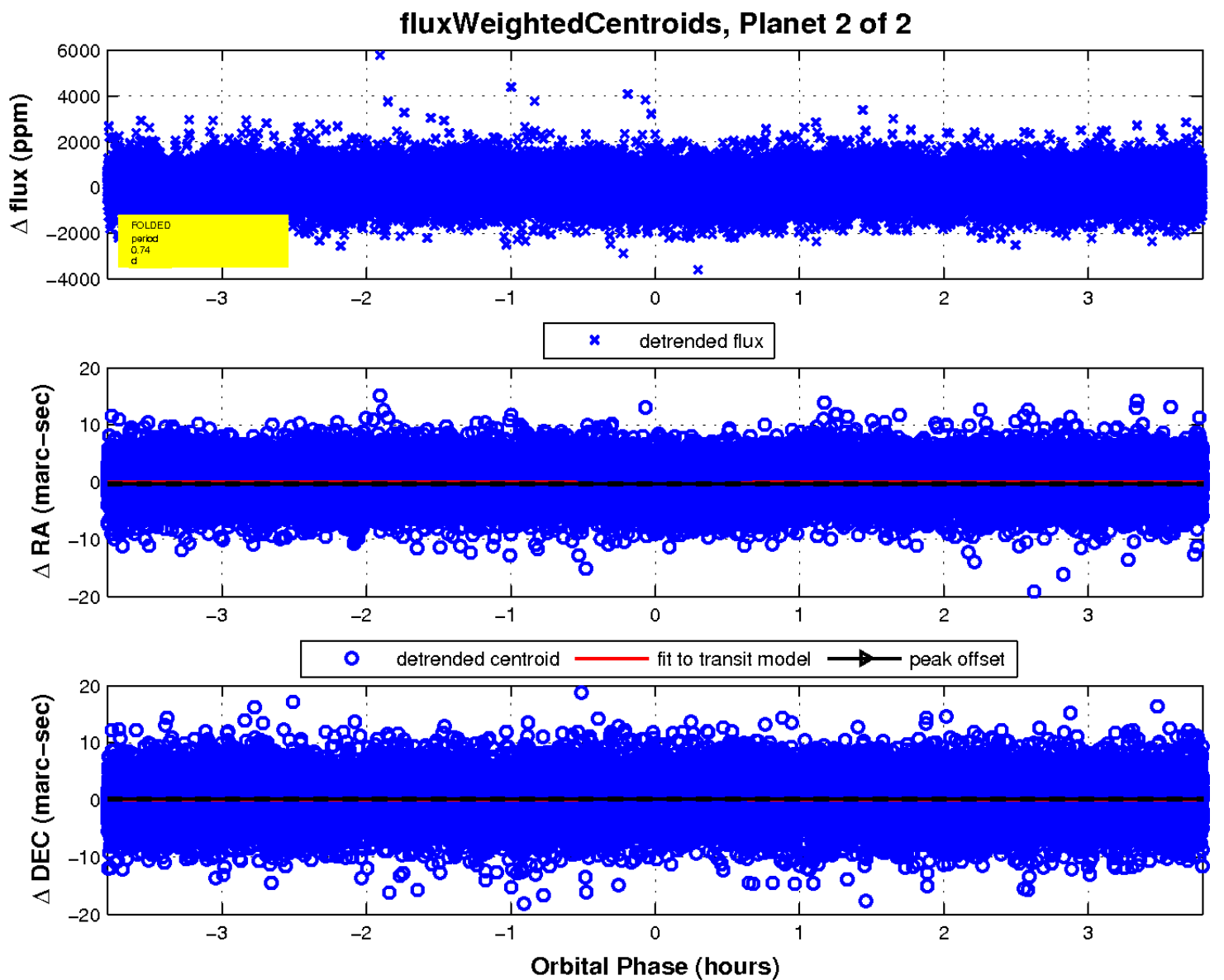
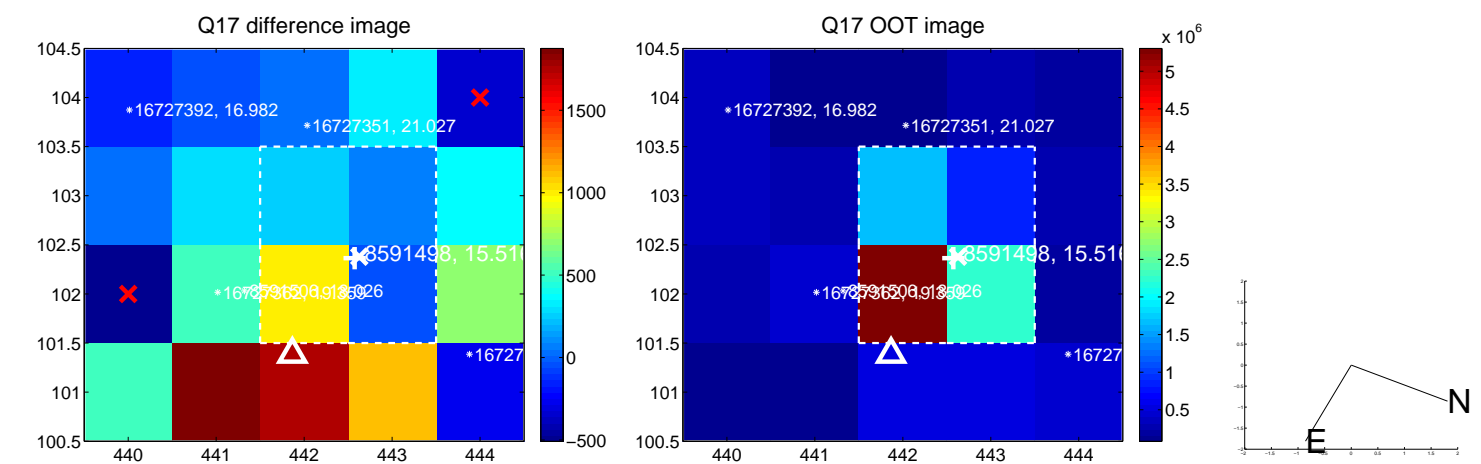
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

