

KIC 003543070

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})
003543070-01	OBS	No	2.392538	132.235373	19.4	12.520	10.2	6.9	3.71	6628	1.68	13165.90
003543070-02	OBS	No	226.846838	178.545570	384.3	3.671	8.5	9.3	3.71	6628	8.11	30.45
003543070-03	OBS	No	144.122262	133.266922	292.1	4.981	8.1	9.9	3.71	6628	7.10	55.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003543070-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003543070-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003543070-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_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.

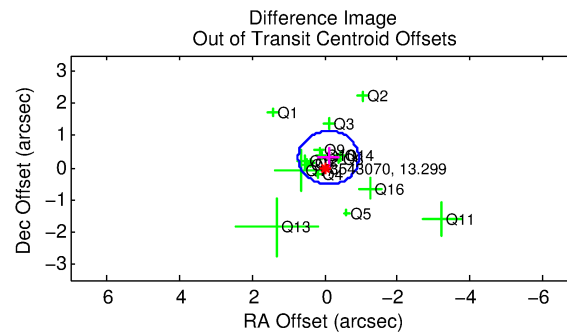
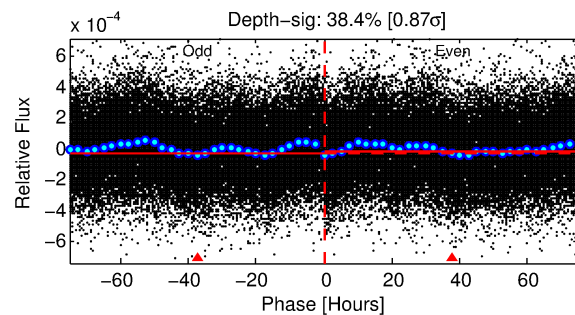
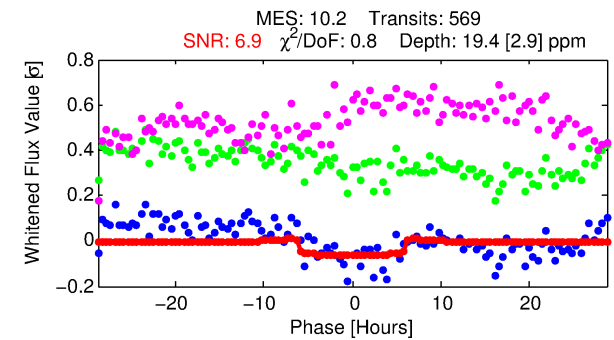
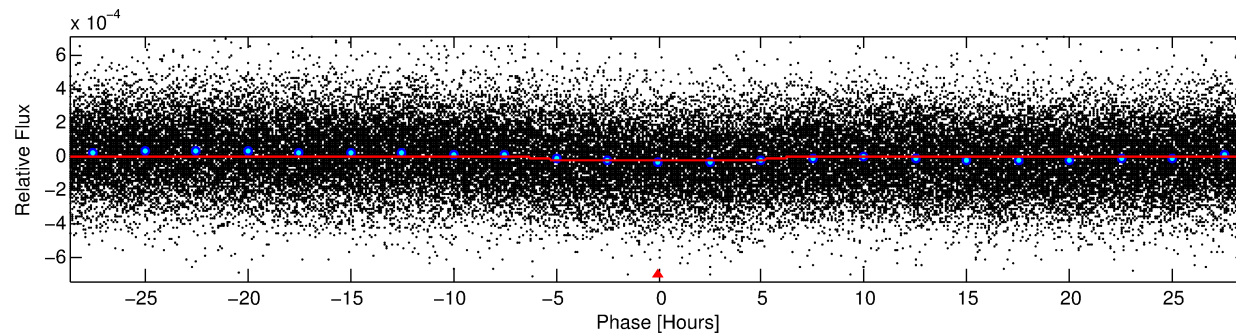
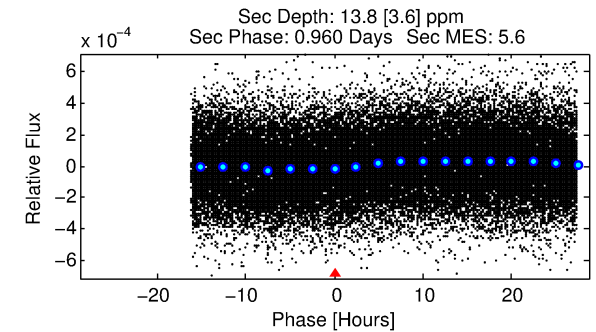
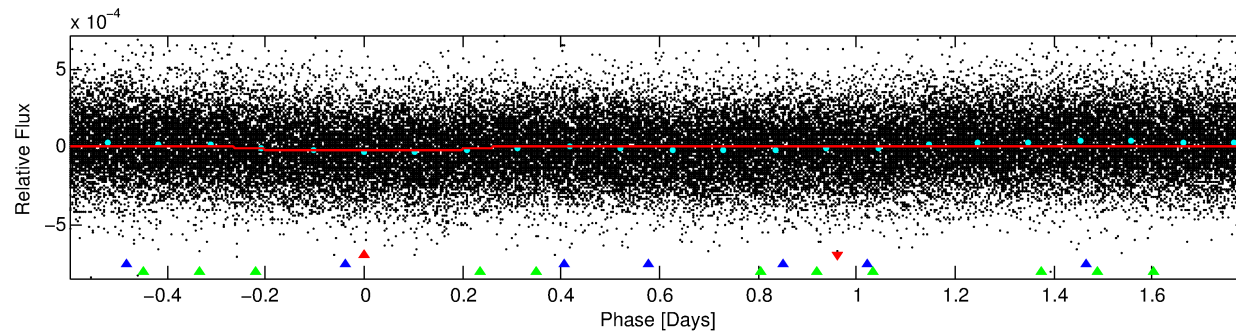
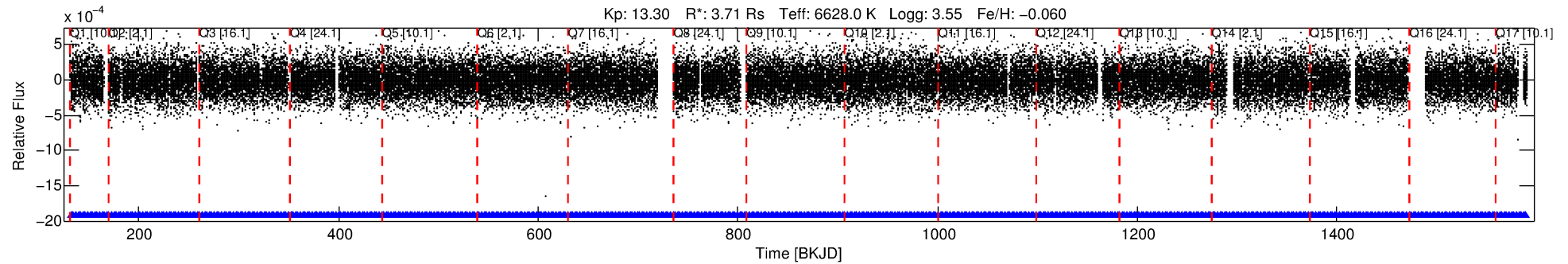
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003543070-01

No Significant Match Found

DV One-Page Summary

KIC: 3543070 Candidate: 1 of 3 Period: 2.393 d



DV Fit Results:

Period = 2.39254 [0.00005] d
Epoch = 132.2354 [0.0105] BKJD
Rp/R* = 0.0041 [0.0026]
a/R* = 1.49 [2.88]
b = 0.44 [6.45]
Seff = 13165.90 [6800.46]
Teq = 2731 [353] K
Rp = 1.68 [1.21] Re
a = 0.0425 [0.0136] AU
Ag = 4.86 [6.78] [0.57σ]
Teffp = 6270 [2050] K [1.70σ]

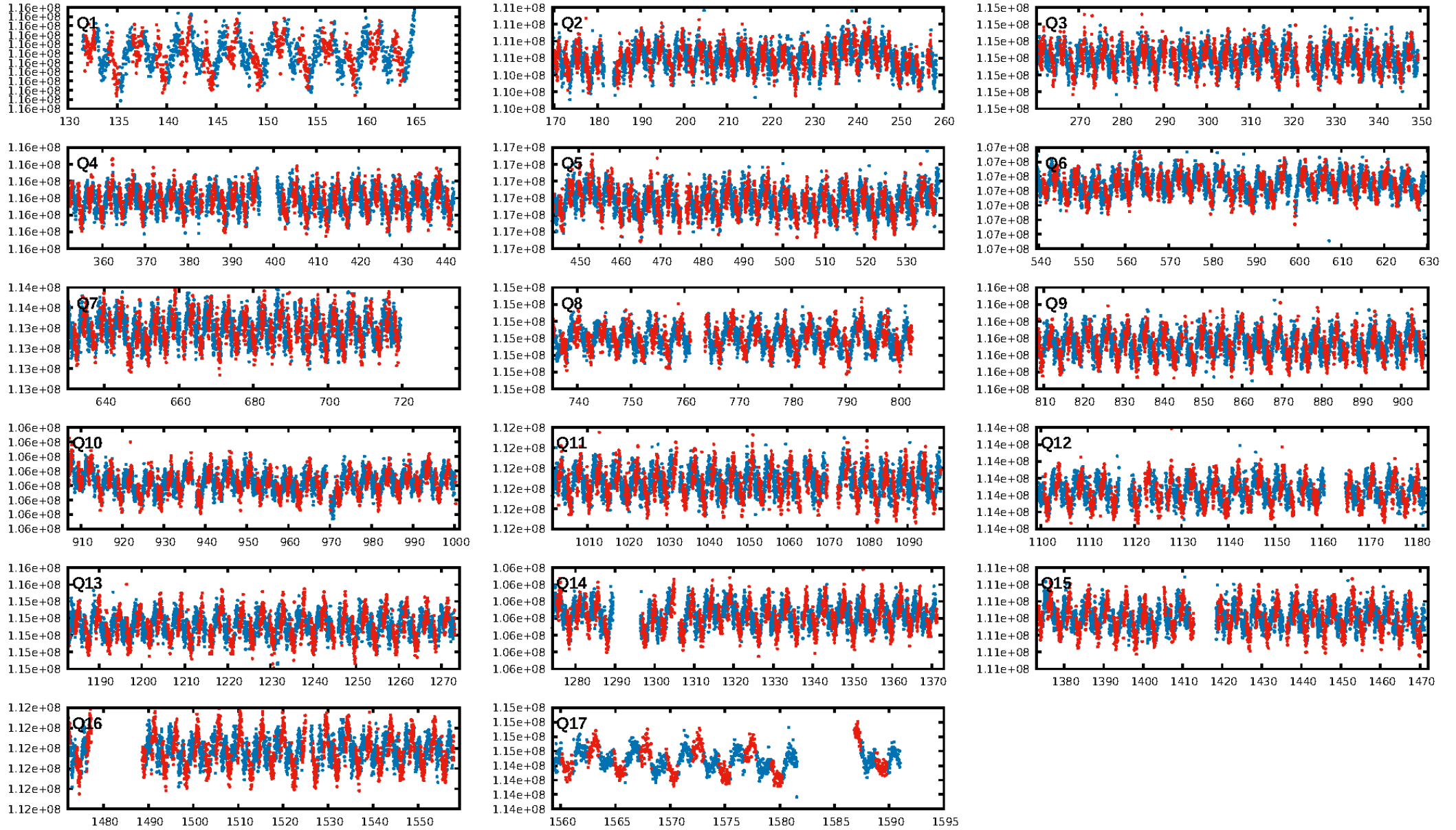
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [252.44σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.95e-16
RollingBand-fgt: 1.00 [544/544]
GhostDiagnostic-chr: 0.6767
Centroid-sig: 13.7%
Centroid-so: 0.874 arcsec [0.95σ]
OotOffset-rm: 0.327 arcsec [1.18σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-rm: 0.276 arcsec [1.12σ]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

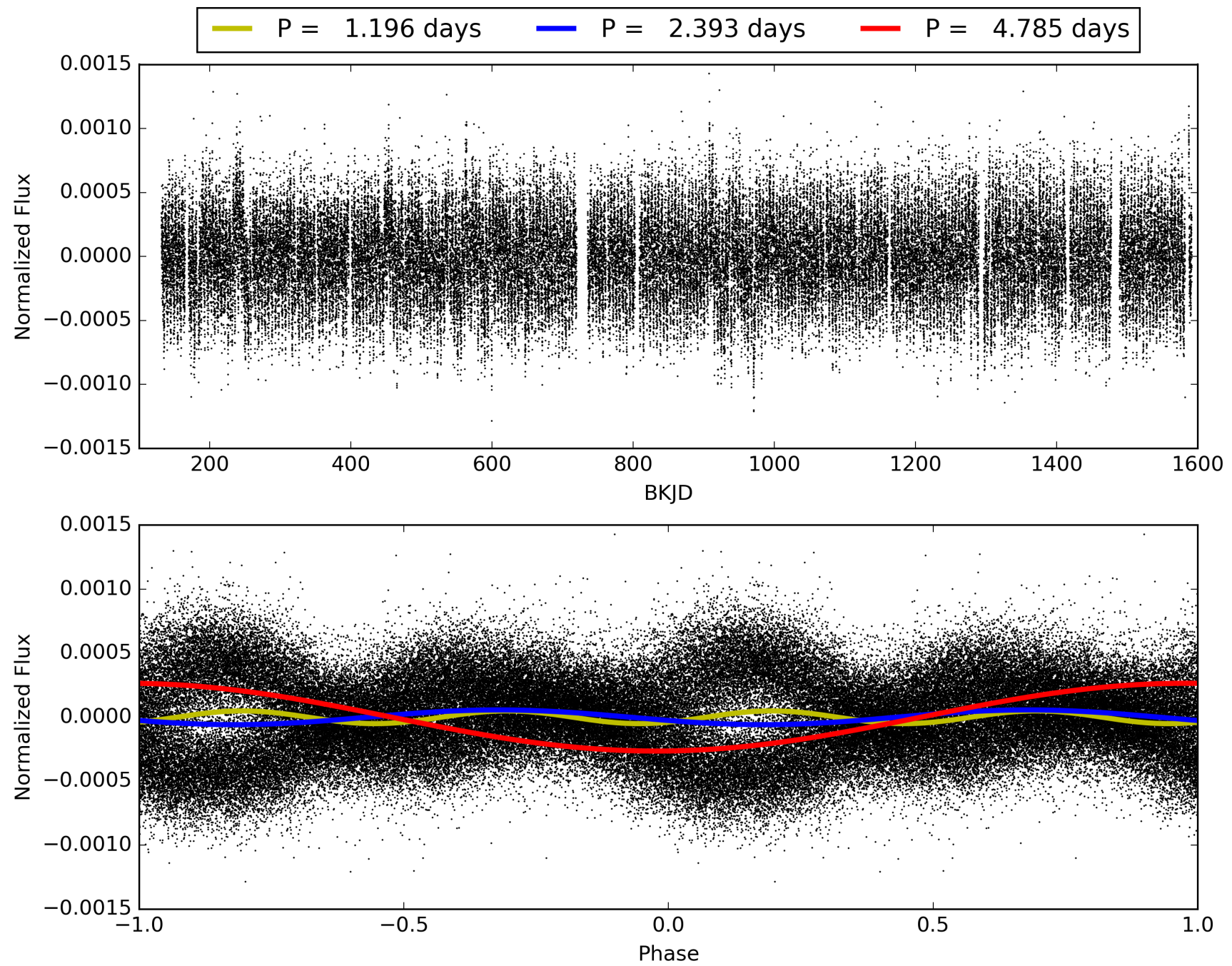
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:12:32 Z

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

TCE 003543070-01, PDC Light Curves

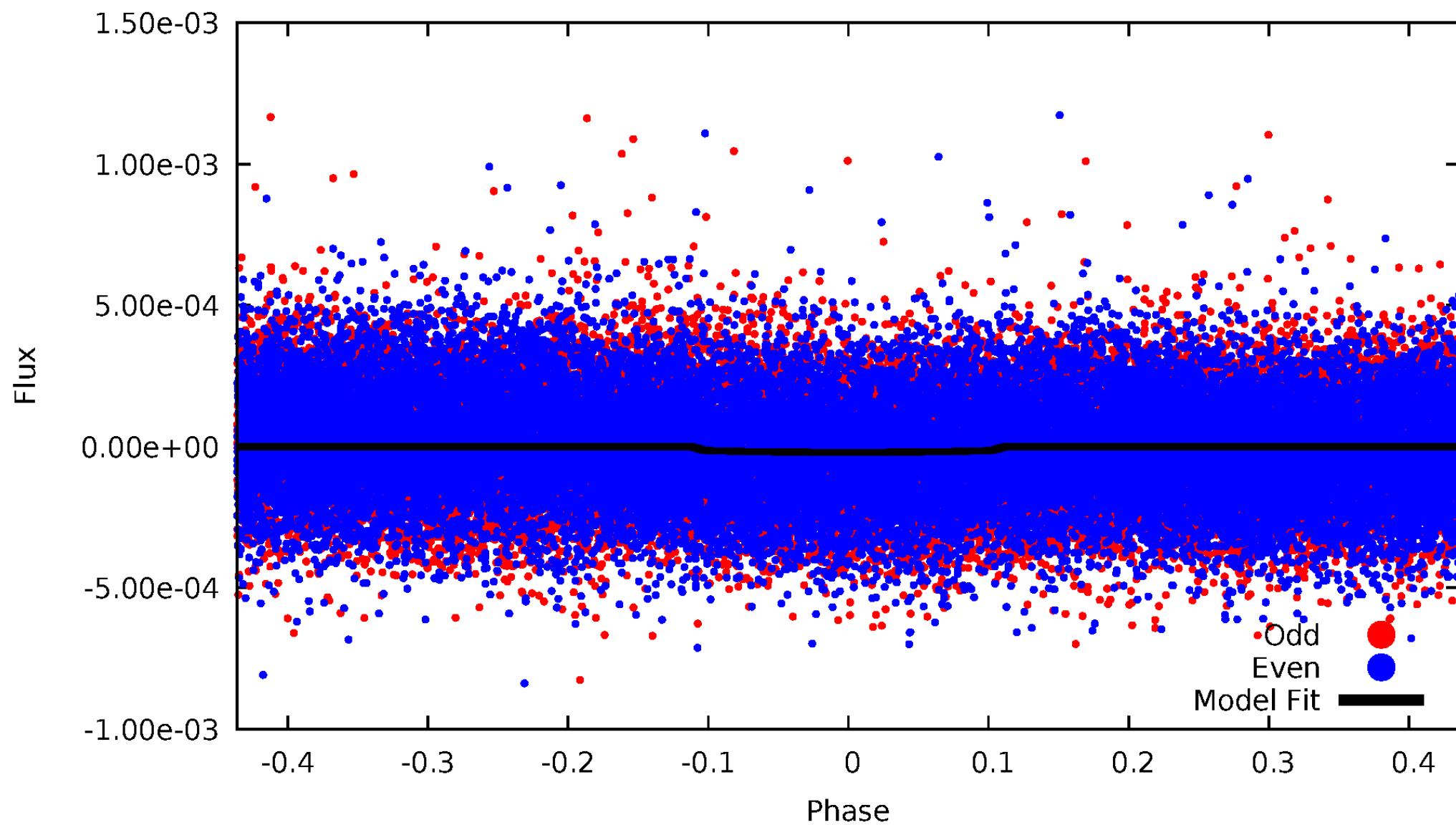


TCE 003543070-01



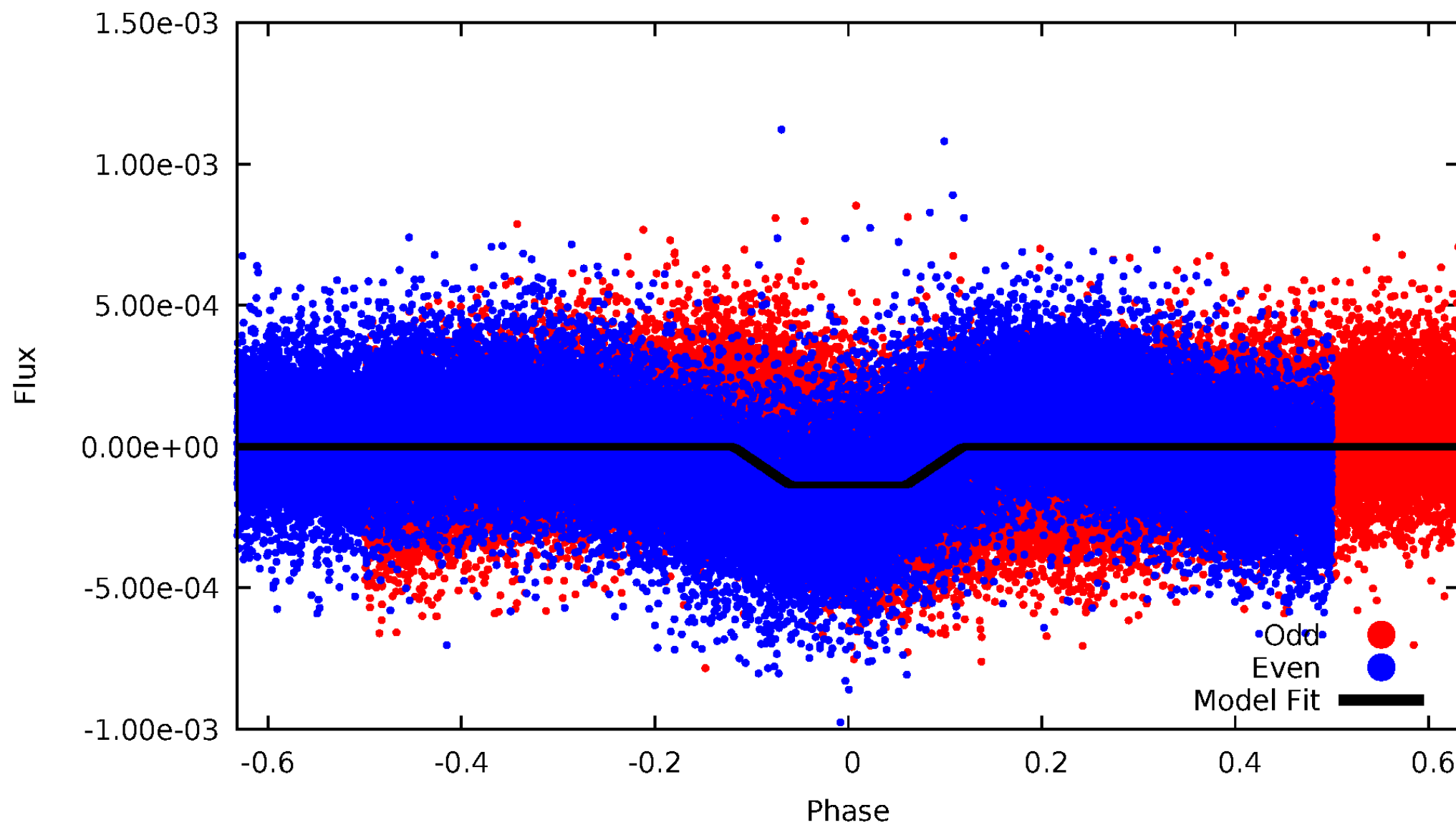
DV Odd/Even

TCE 003543070-01

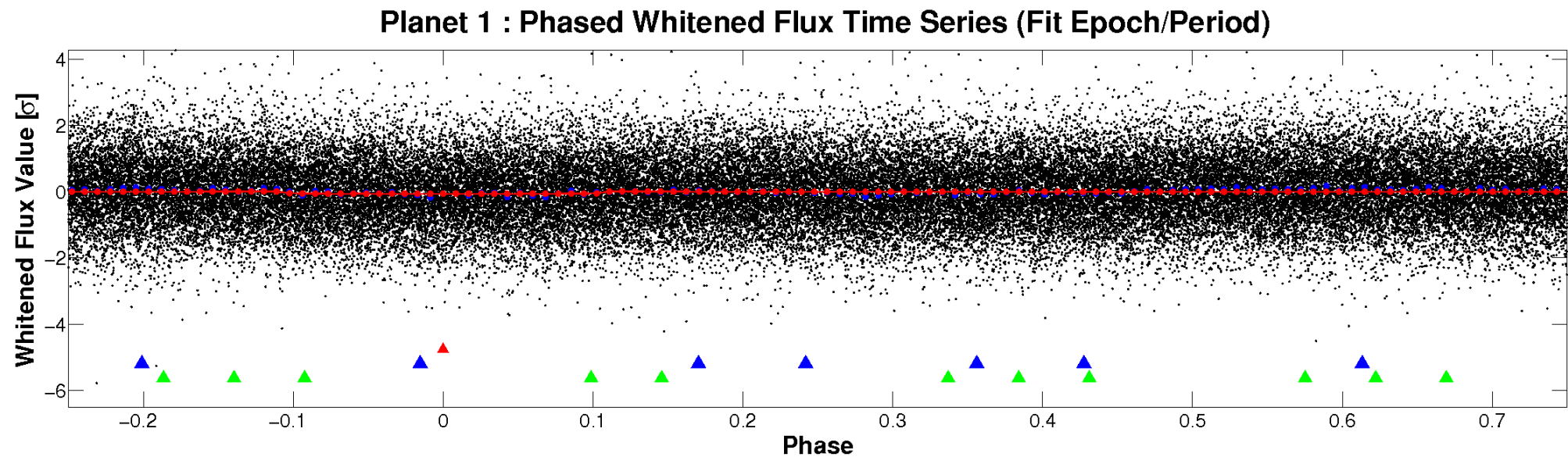
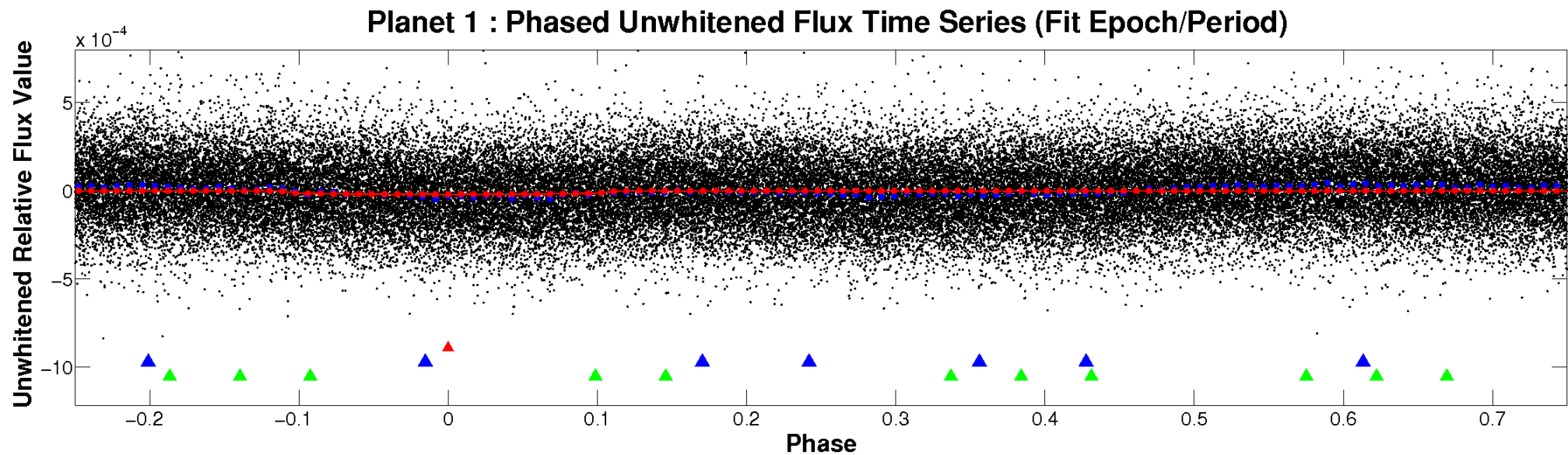


ALT Odd/Even

TCE 003543070-01

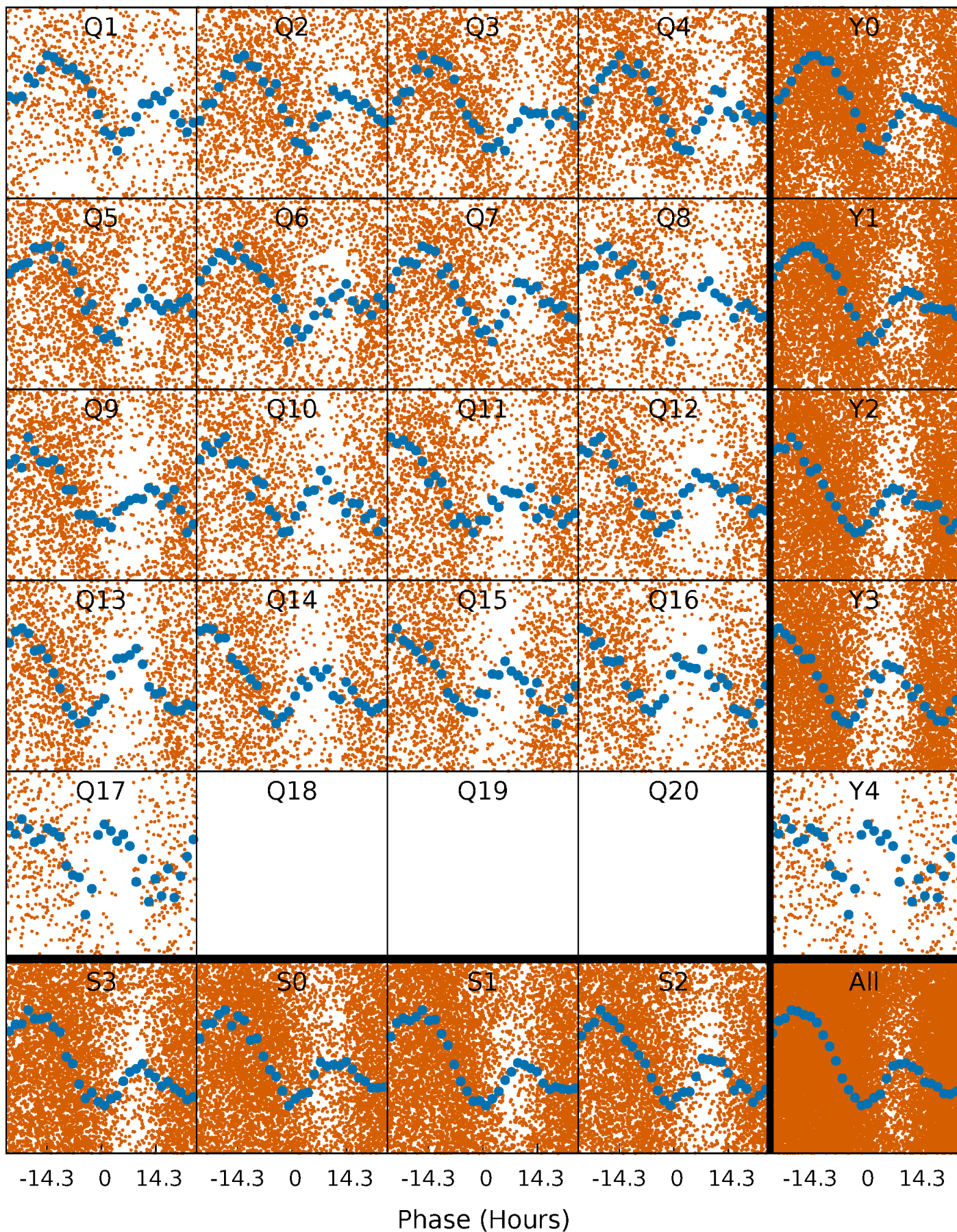


Non-Whitened Vs. Whitened Light Curve



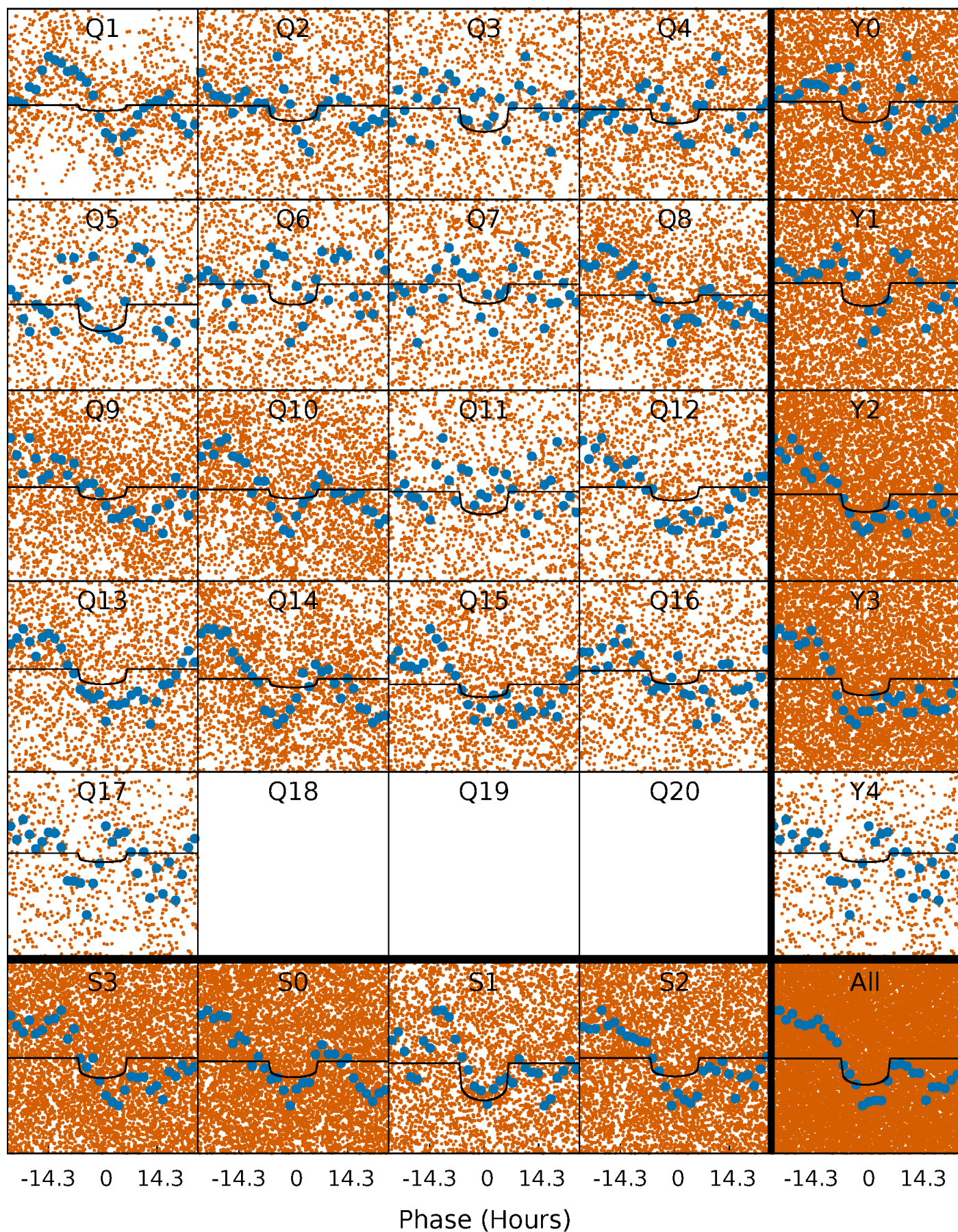
PDC Quarter-Phased Transit Curves

TCE 003543070-01 P= 2.392538 Days $T_0=132.235373$ (BKJD)



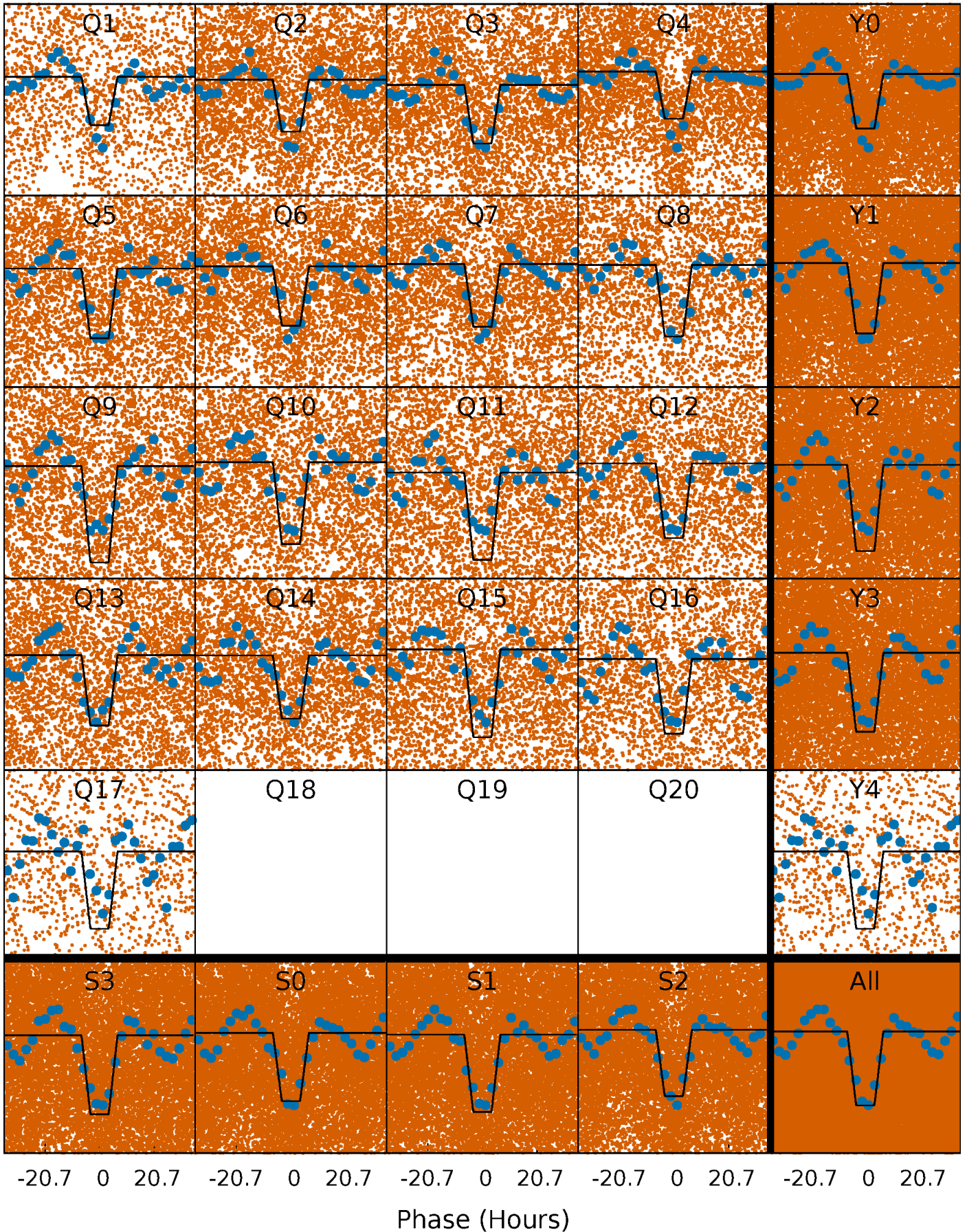
DV Quarter-Phased Transit Curves

TCE 003543070-01 P= 2.392538 Days $T_0=132.235373$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

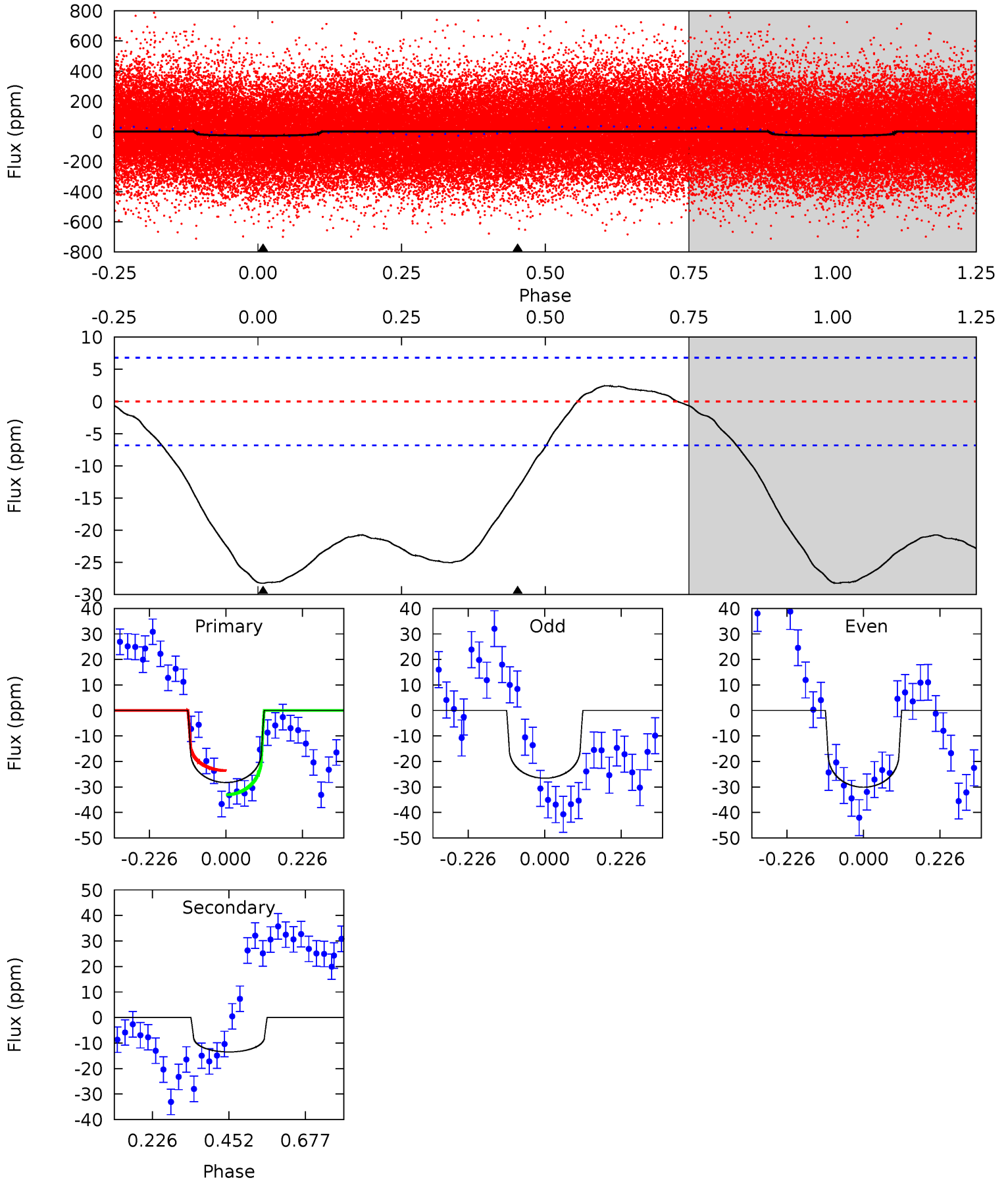
TCE 003543070-01 P= 2.391892 Days $T_0=132.365690$ (BKJD)



DV Model-Shift Uniqueness Test

003543070-01, P = 2.392538 Days, E = 129.842835 Days

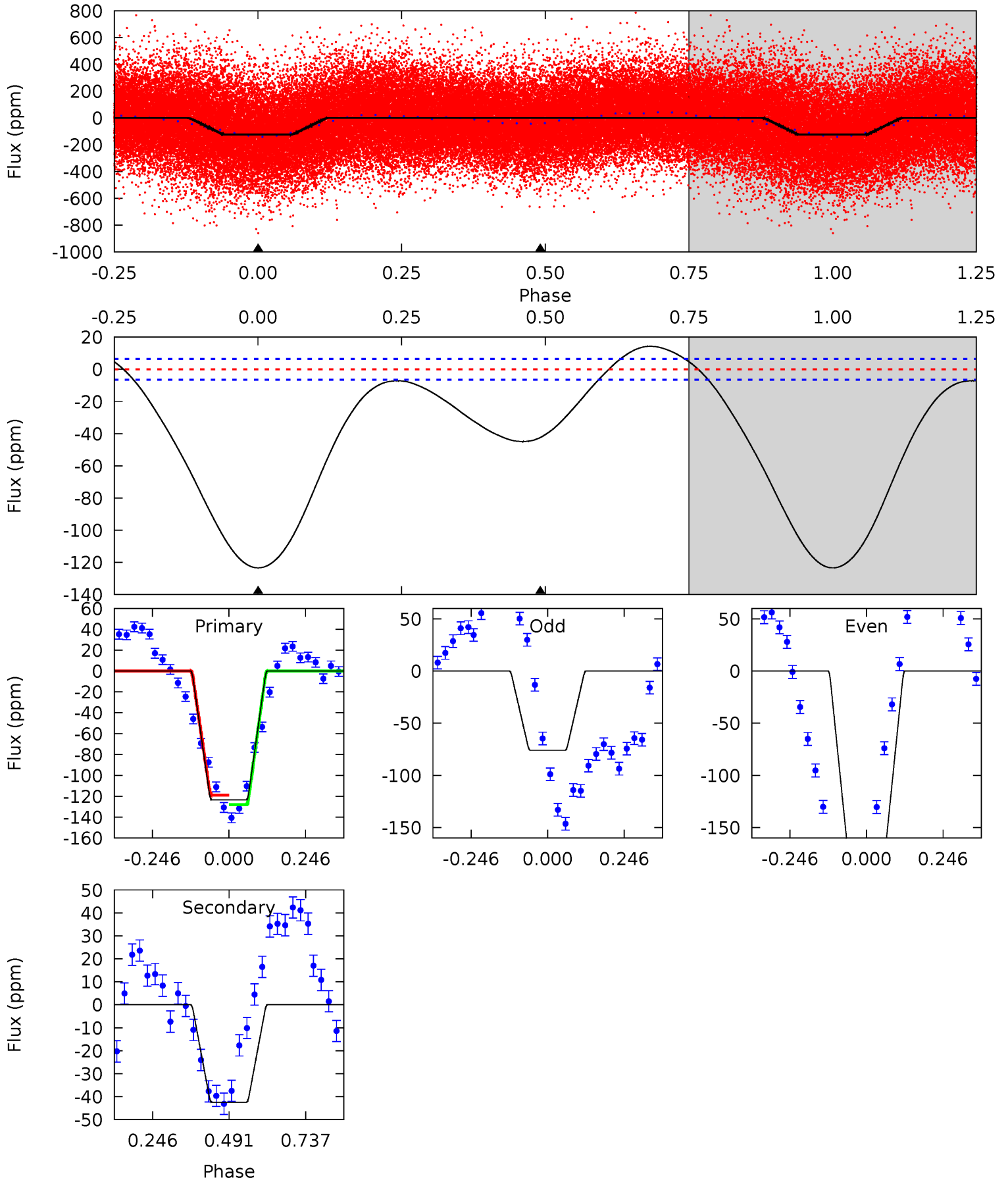
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	8.70	0	0	4.39	1.21	0.82	18.2	18.2	8.70	8.70	1.13	1.01	0.08	3.11



Alt Model-Shift Uniqueness Test

003543070-01, P = 2.391892 Days, E = 129.973798 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
83.5	28.7	0	0	4.37	1.16	4.78	83.5	83.5	28.7	28.7	31.2	1.03	0.10	3.03



Stellar Parameters For KIC 003543070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6628^{+166}_{-199}	$3.552^{+0.292}_{-0.078}$	$-0.060^{+0.300}_{-0.250}$	$3.709^{+0.336}_{-1.262}$	$1.787^{+0.174}_{-0.323}$	$0.049^{+0.107}_{-0.009}$
	+3%/-3%	+8%/-2%	+500%/-417%	+9%/-34%	+10%/-18%	+217%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003543070-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13 ± 2	$1.64^{+1.02}_{-0.88}$	3765^{+180}_{-301}	5961^{+3625}_{-1207}	$4.982^{+17.932}_{-3.134}$
Alt.	-42 ± 1	$4.53^{+1.12}_{-1.20}$	3758^{+193}_{-272}	4823^{+672}_{-423}	$2.038^{+1.779}_{-0.734}$

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

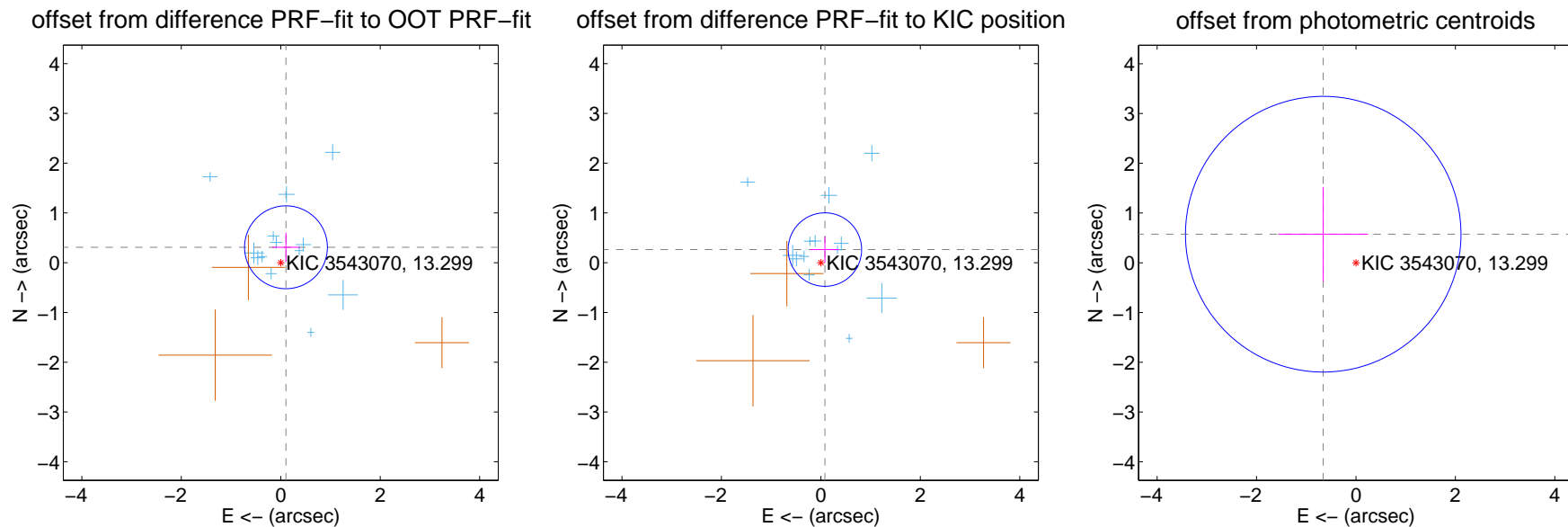
DV Centroid Data

Supplemental centroid analysis for 003543070-01. Kepler magnitude: 13.30. Transit SNR 6.86

There are 13 quarters with good PRF difference image offsets

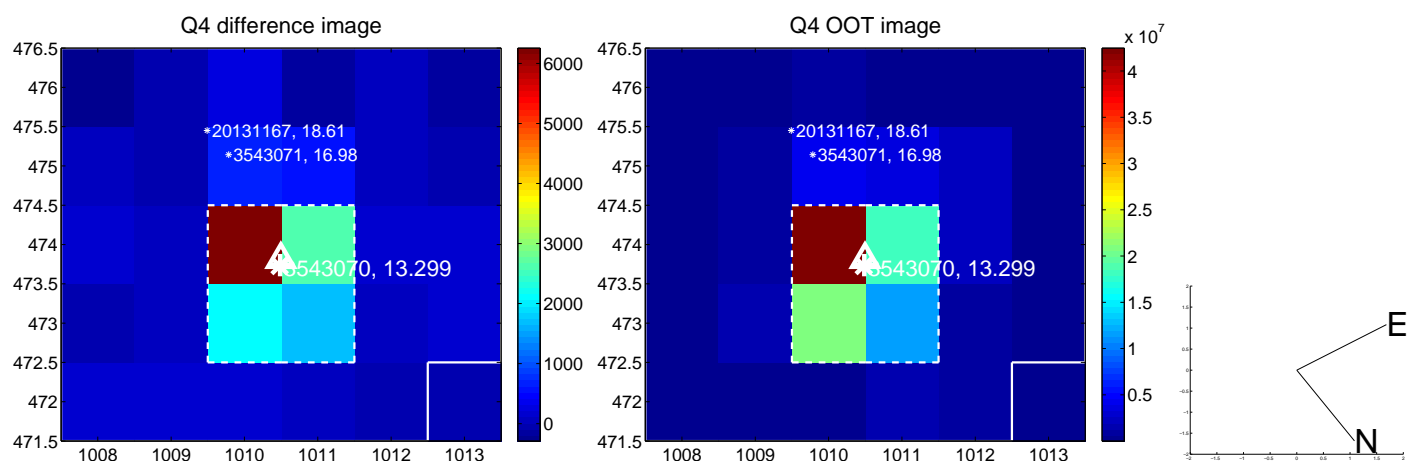
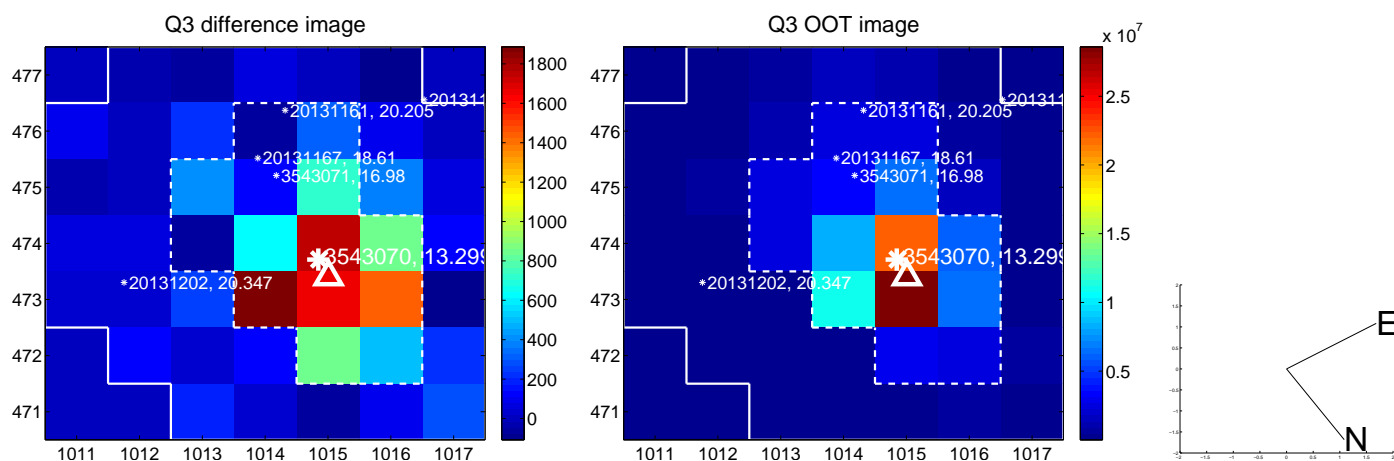
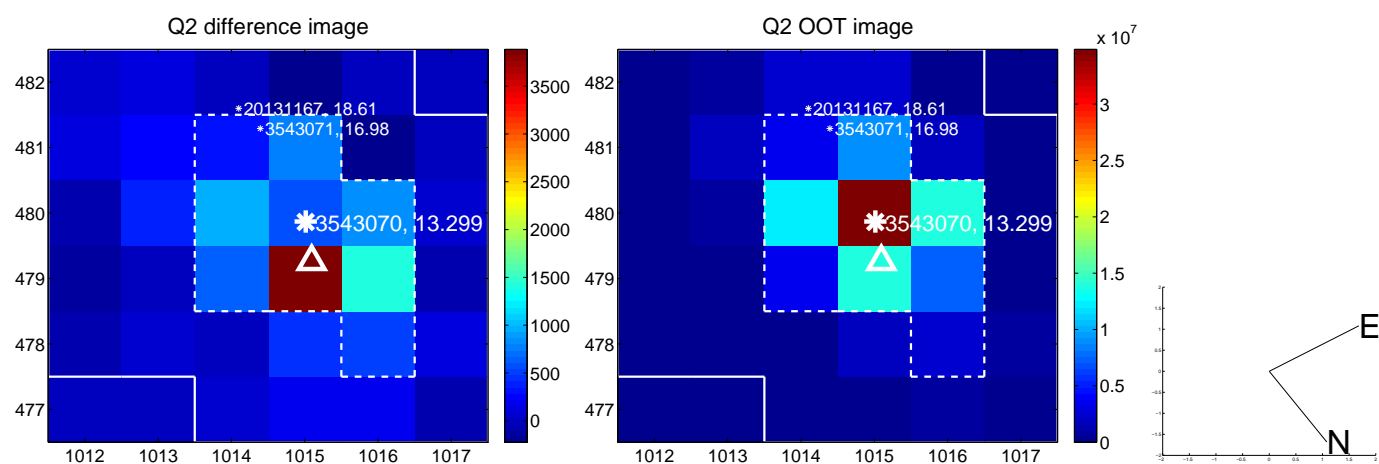
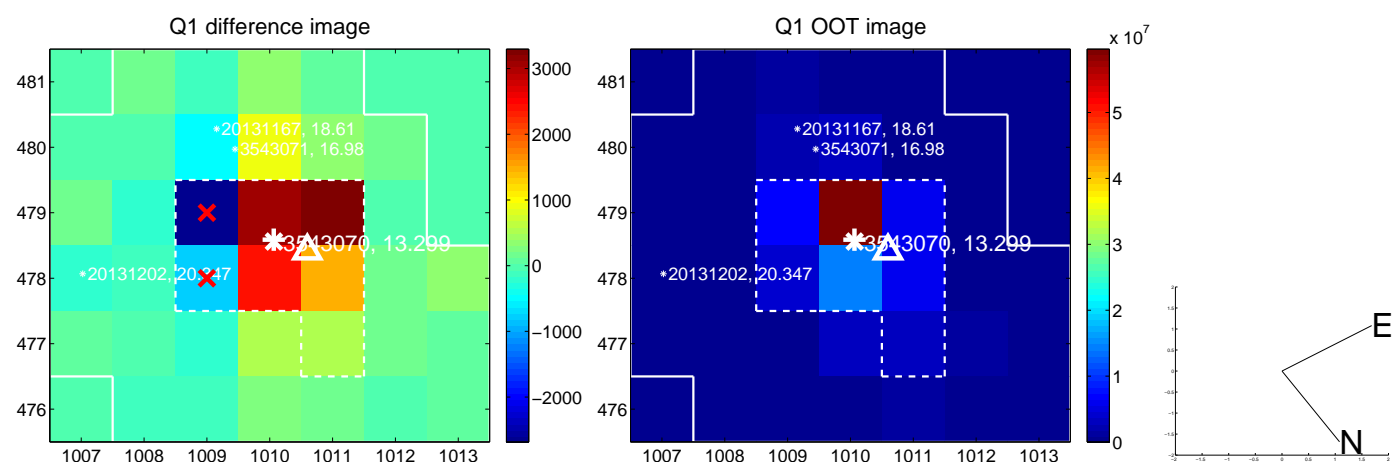
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.327 ± 0.278	1.18	-0.105 ± 0.278	0.310 ± 0.294
PRF-fit source offset from KIC position	0.276 ± 0.246	1.12	-0.081 ± 0.289	0.264 ± 0.262
photometric centroid source offset	0.87 ± 0.92	0.95	0.66 ± 0.90	0.57 ± 0.95

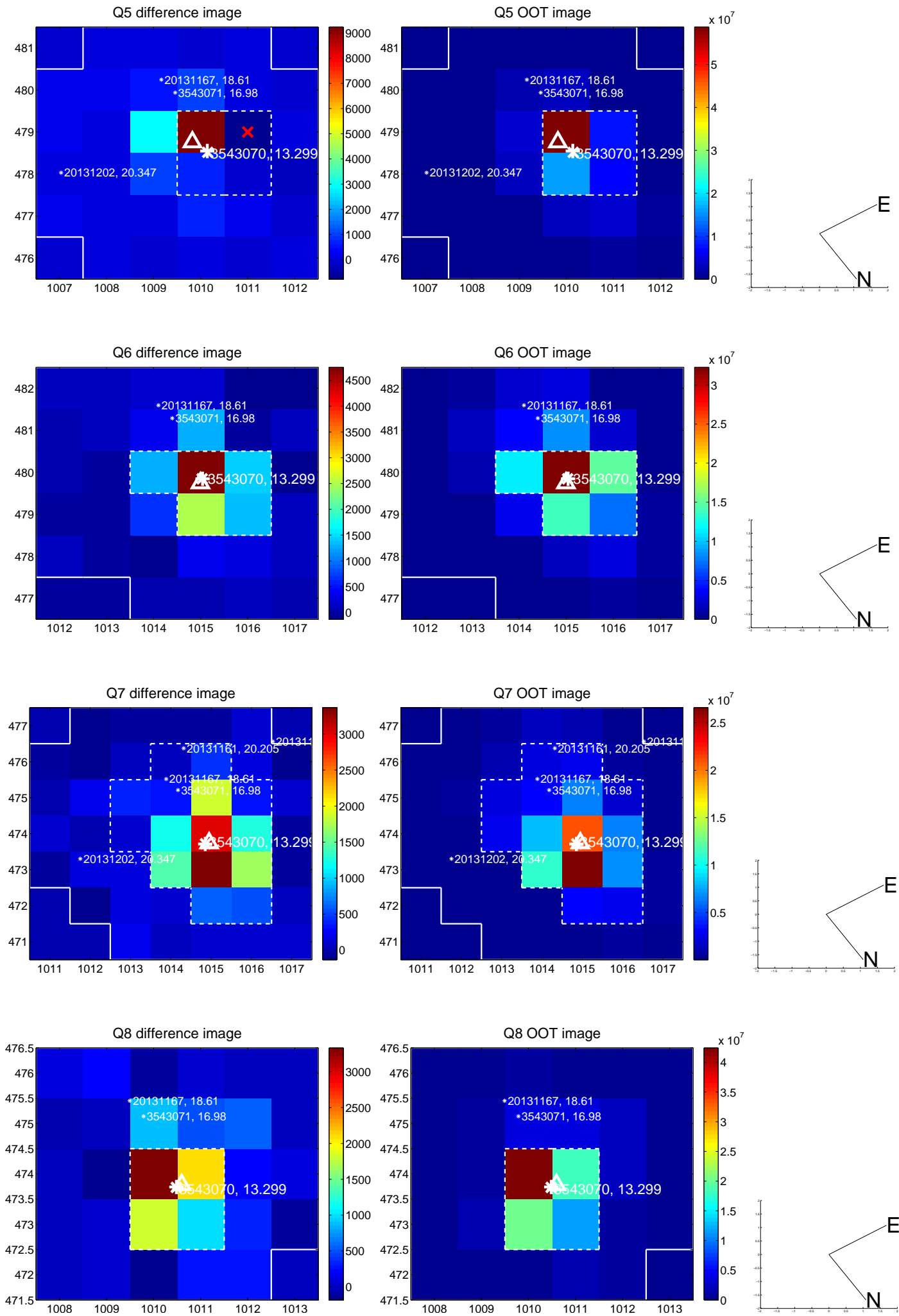


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

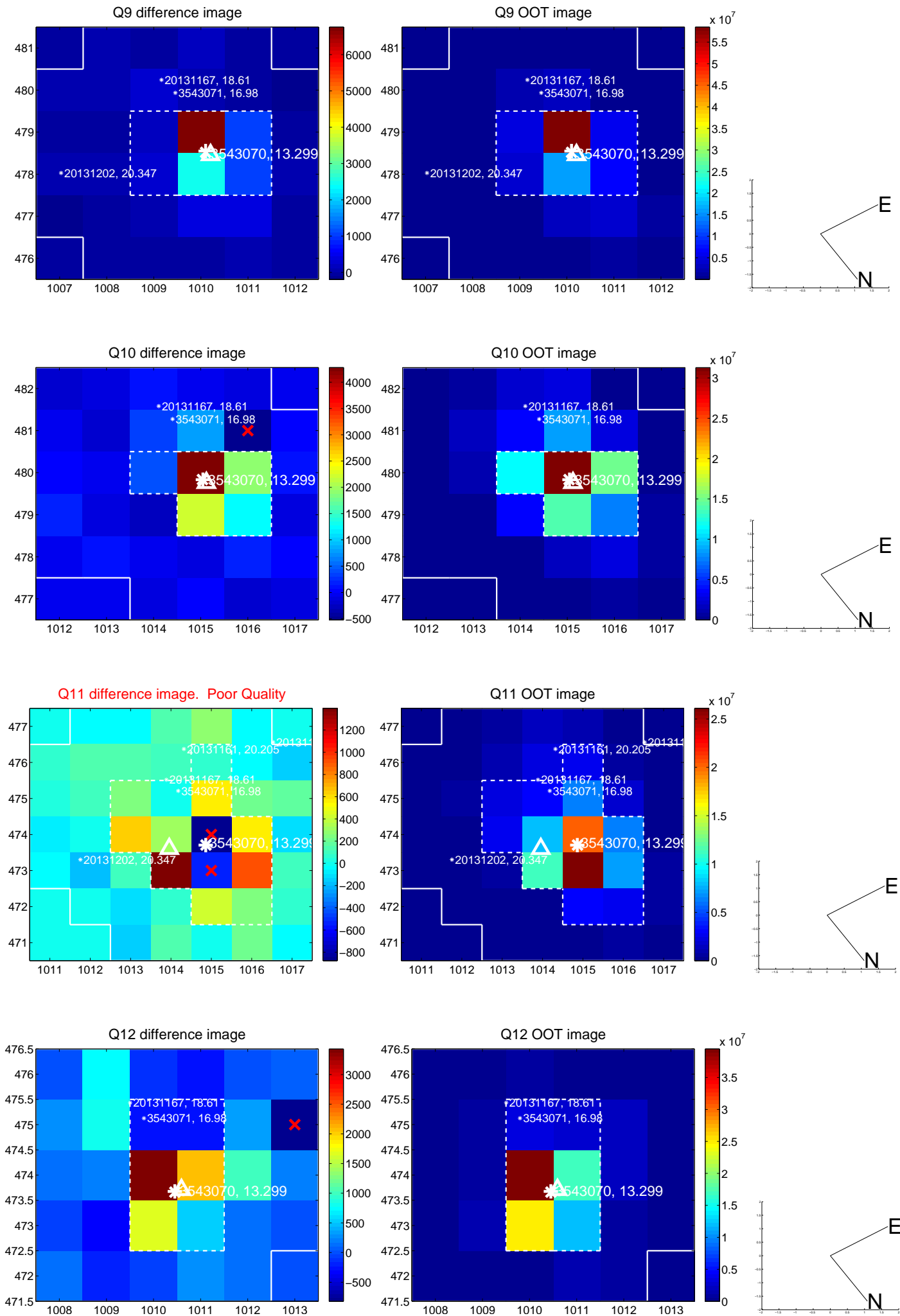
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



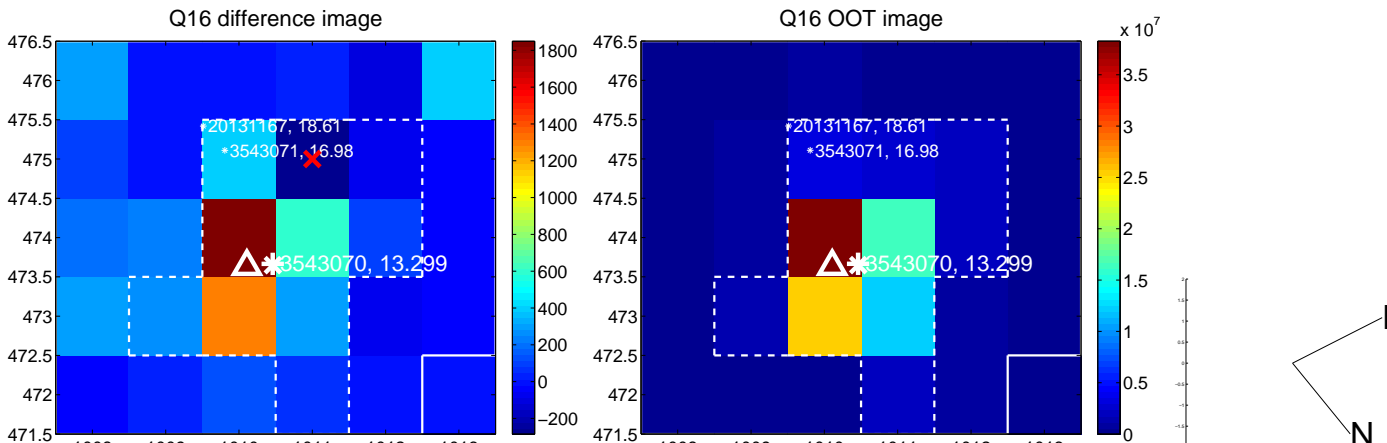
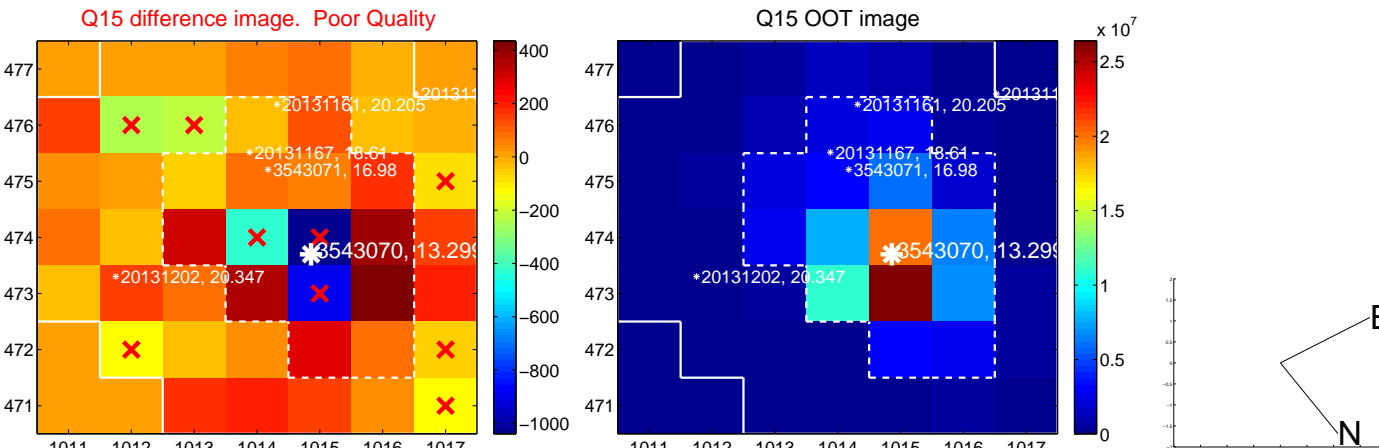
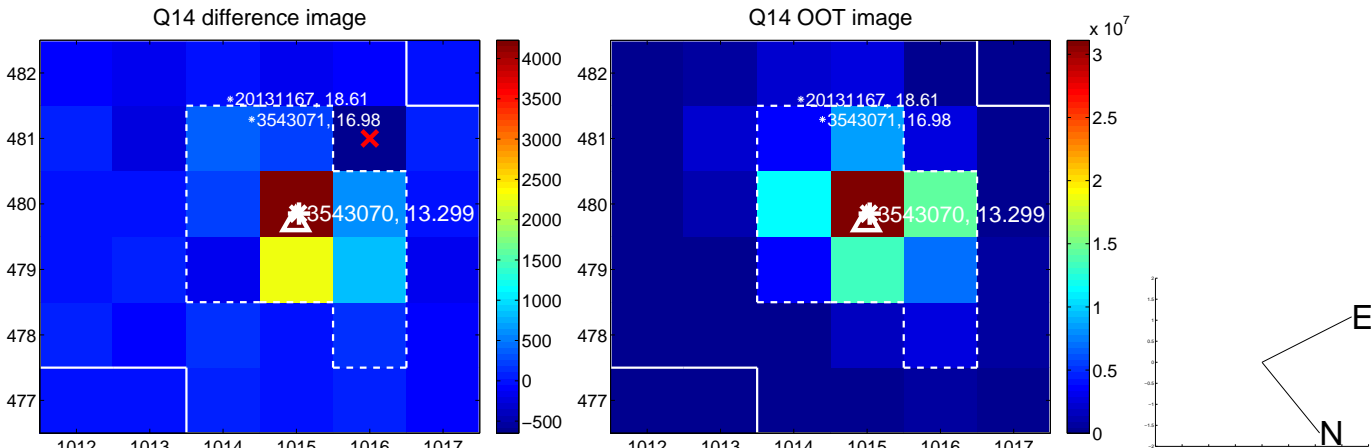
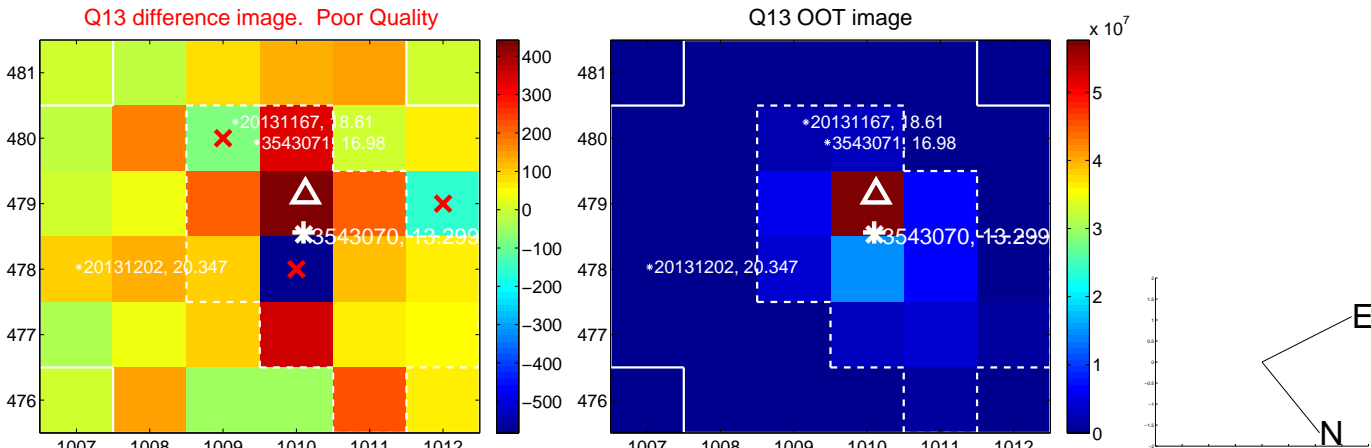
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



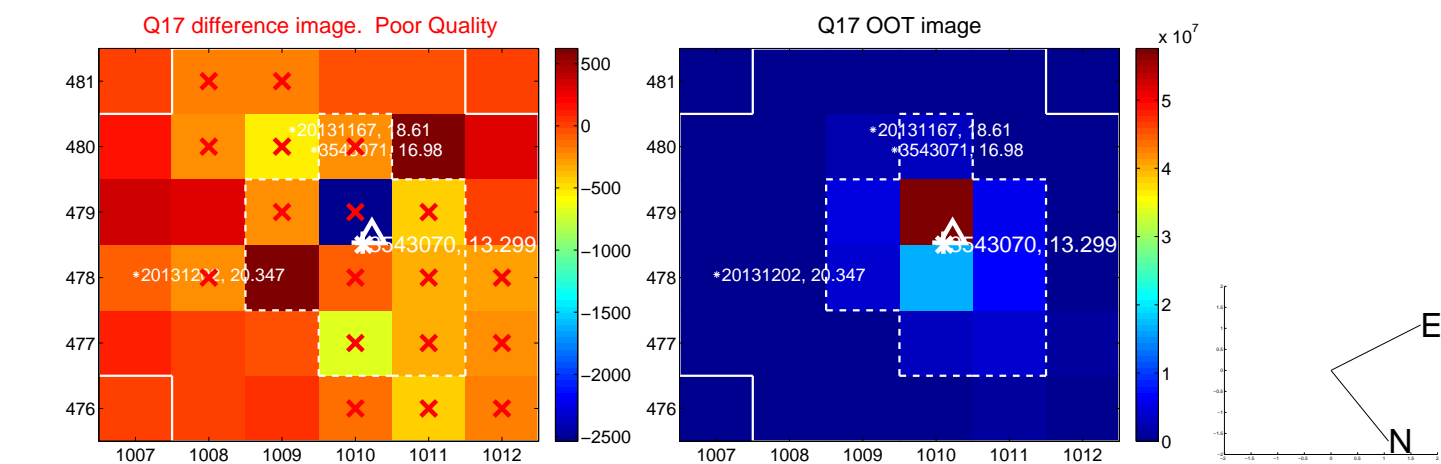
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



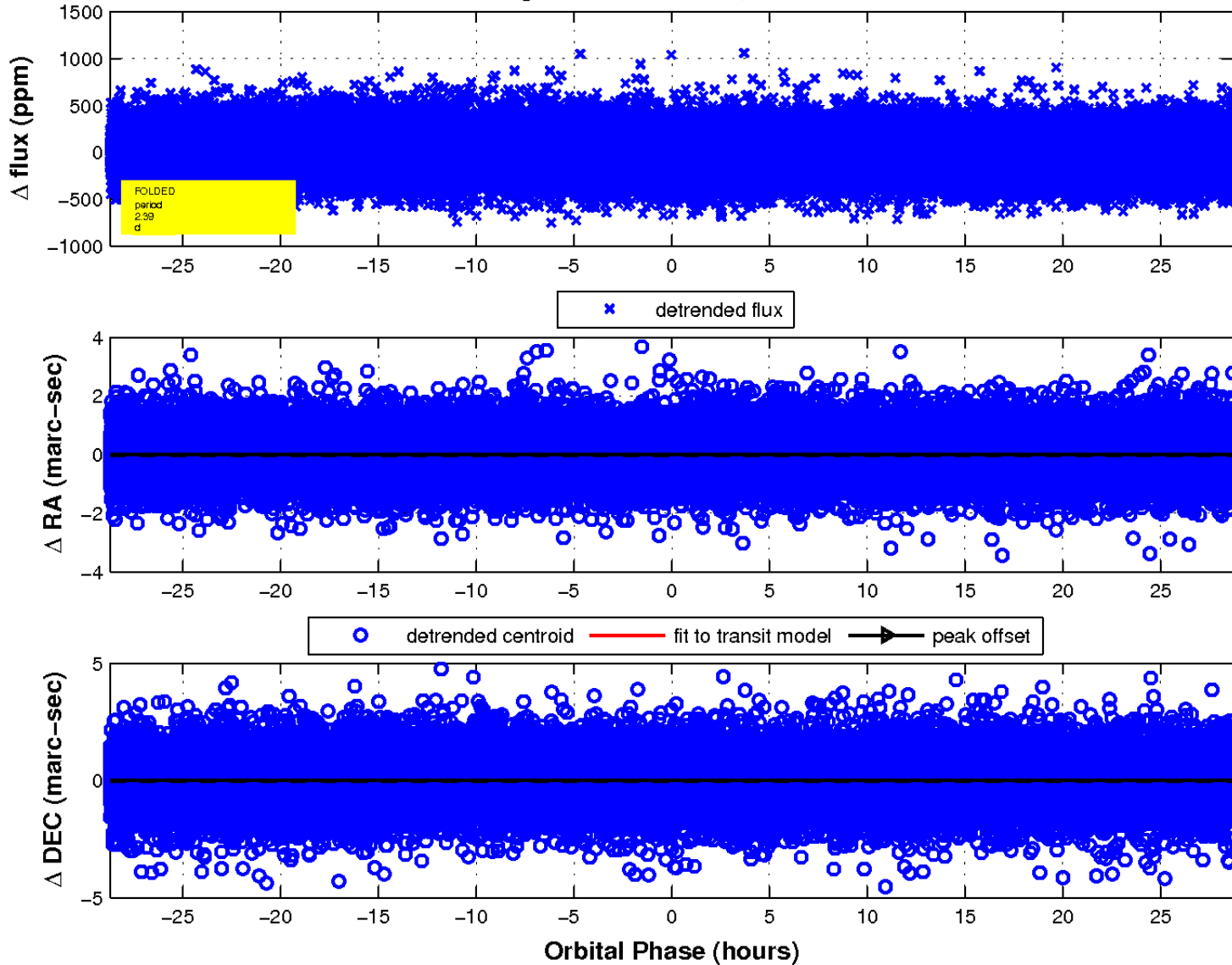
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

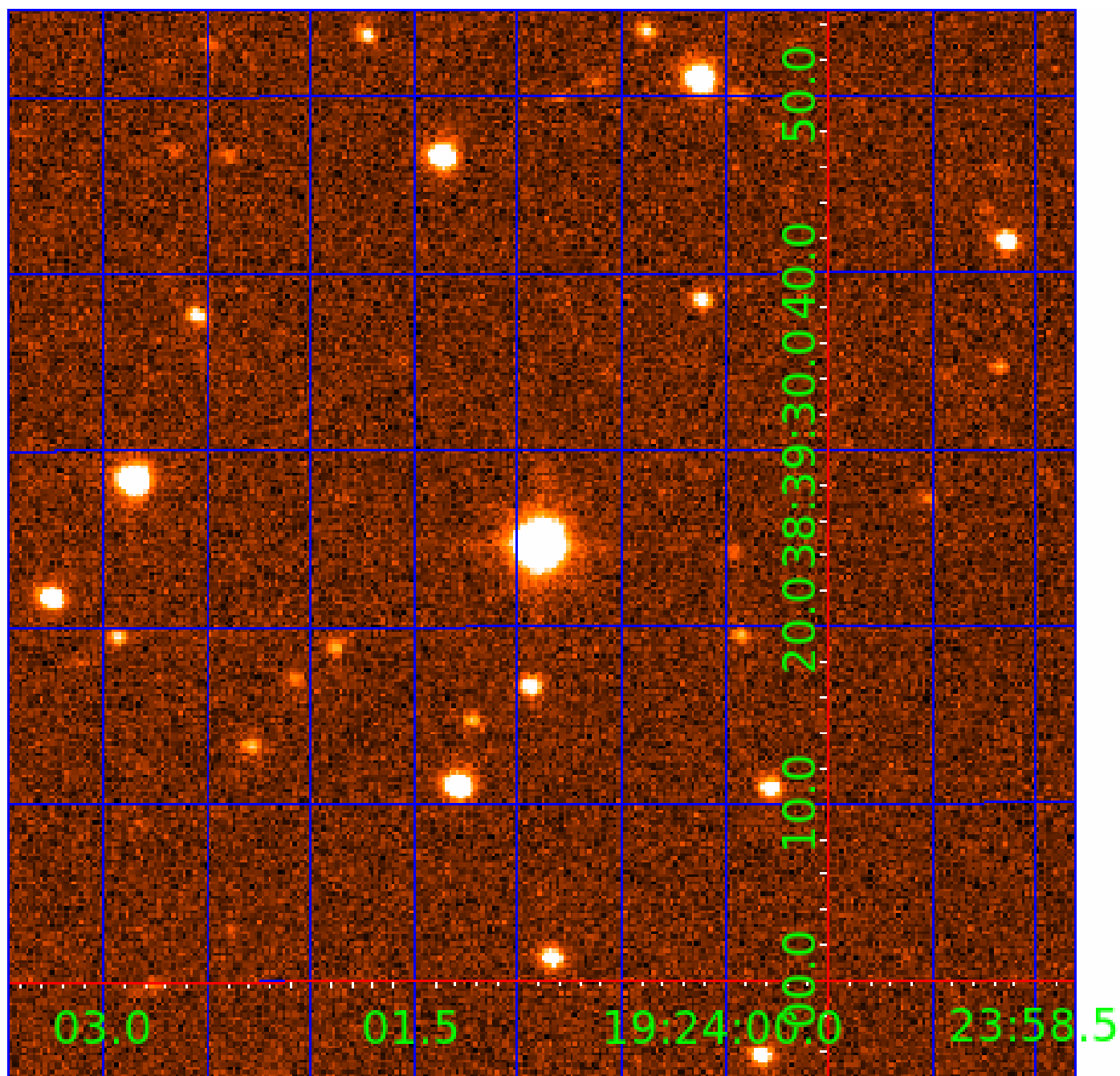


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 003543070

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})
003543070-01	OBS	No	2.392538	132.235373	19.4	12.520	10.2	6.9	3.71	6628	1.68	13165.90
003543070-02	OBS	No	226.846838	178.545570	384.3	3.671	8.5	9.3	3.71	6628	8.11	30.45
003543070-03	OBS	No	144.122262	133.266922	292.1	4.981	8.1	9.9	3.71	6628	7.10	55.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003543070-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003543070-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003543070-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_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.

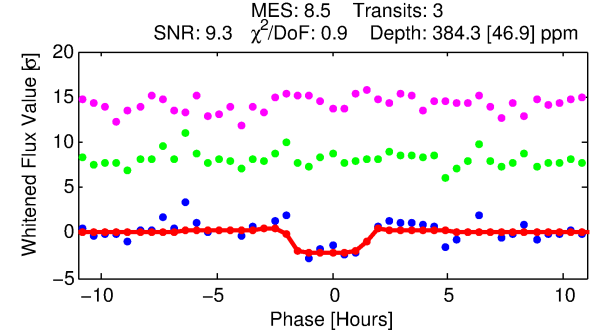
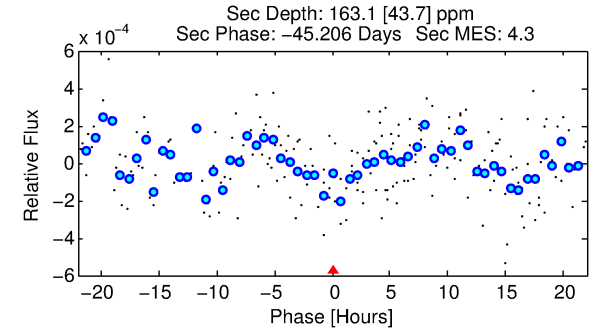
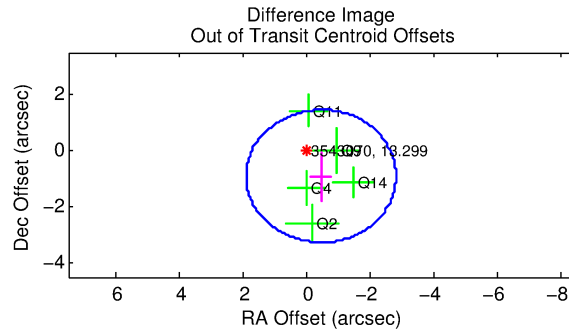
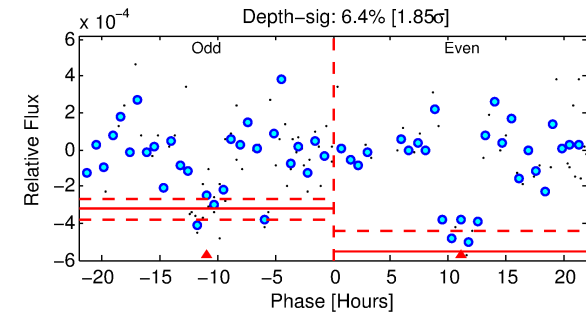
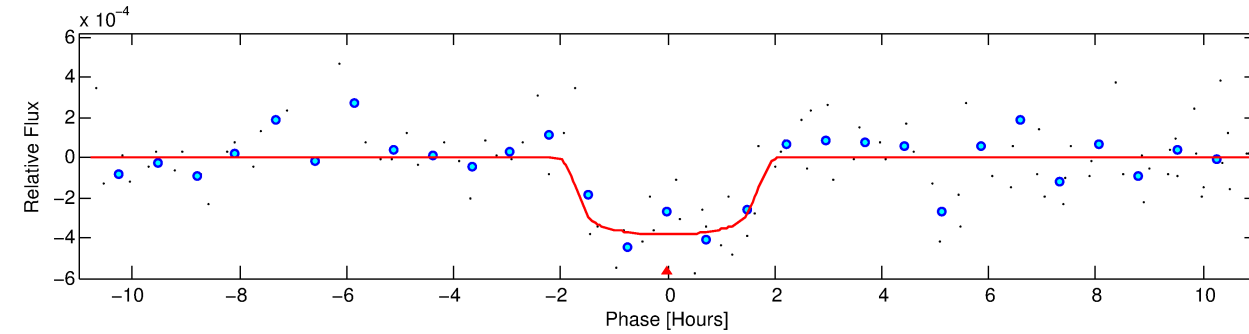
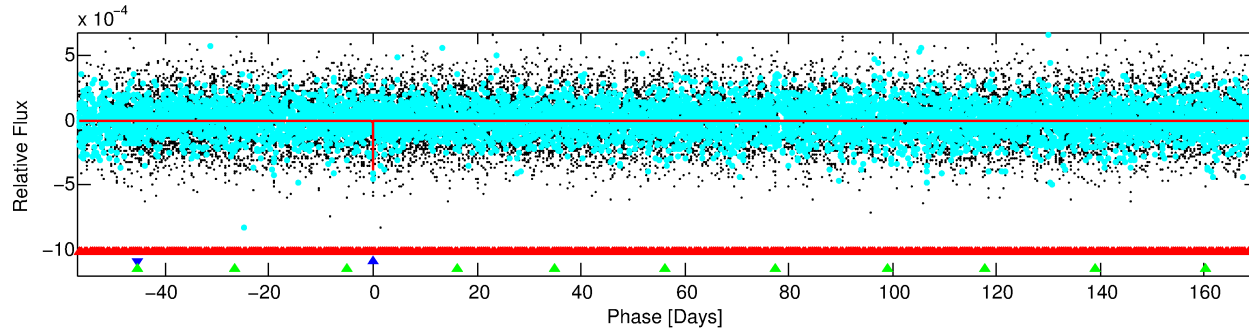
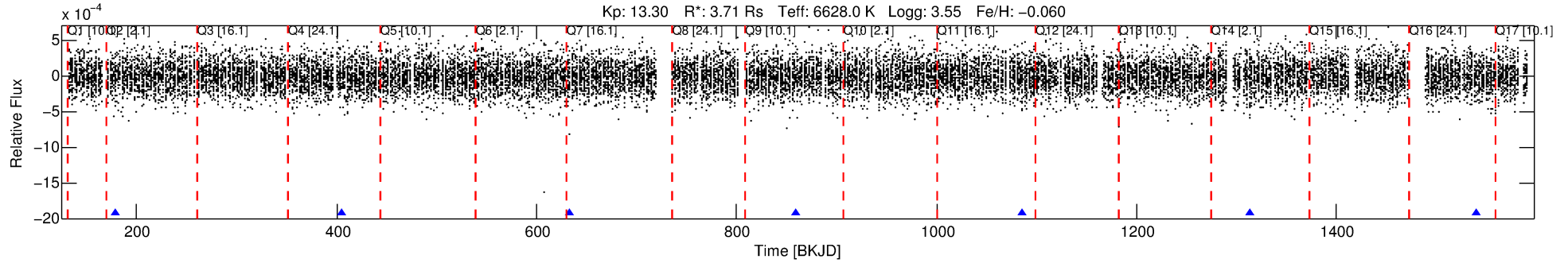
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003543070-02

No Significant Match Found

DV One-Page Summary

KIC: 3543070 Candidate: 2 of 3 Period: 226.847 d



DV Fit Results:

Period = 226.84684 [0.00293] d
Epoch = 178.5456 [0.0115] BKJD
Rp/R* = 0.0200 [0.0116]
a/R* = 283.47 [942.52]
b = 0.82 [1.29]
Seff = 30.45 [15.73]
Teq = 599 [77] K
Rp = 8.11 [5.44] Re
a = 0.8838 [0.2818] AU
Ag = 1064.65 [1372.66] [0.77 σ]
Teffp = 5290 [1578] K [2.97 σ]

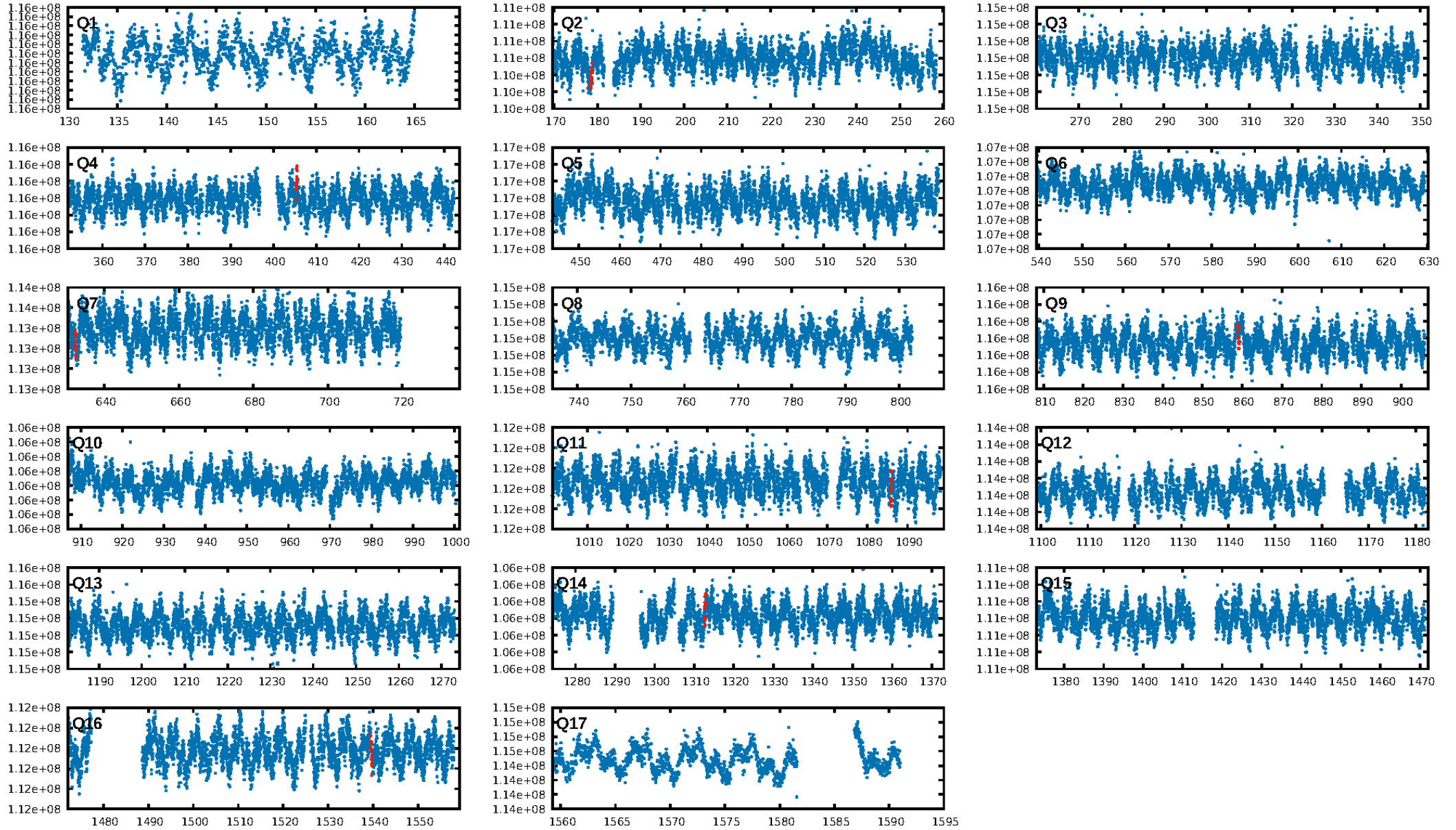
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [320.87 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.1%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 1.64e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.255
Centroid-sig: 39.5%
Centroid-so: 0.875 arcsec [1.12 σ]
OotOffset-rm: 1.015 arcsec [1.29 σ]
KicOffset-rm: 1.064 arcsec [1.32 σ]
OotOffset-st: 2/1/1/1 [5]
KicOffset-st: 2/1/1/1 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 0.43 [3/7]

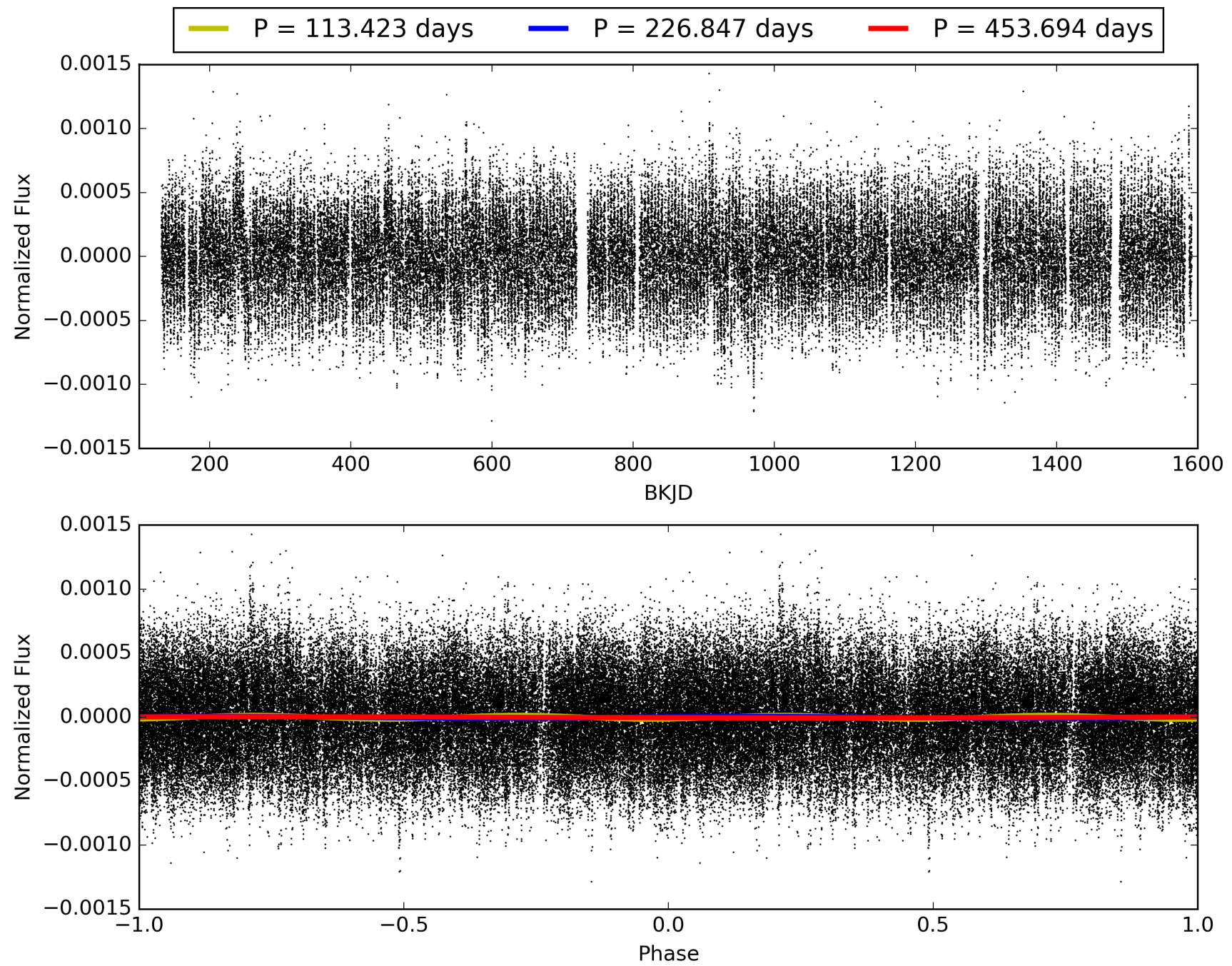
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:12:45 Z

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

TCE 003543070-02, PDC Light Curves

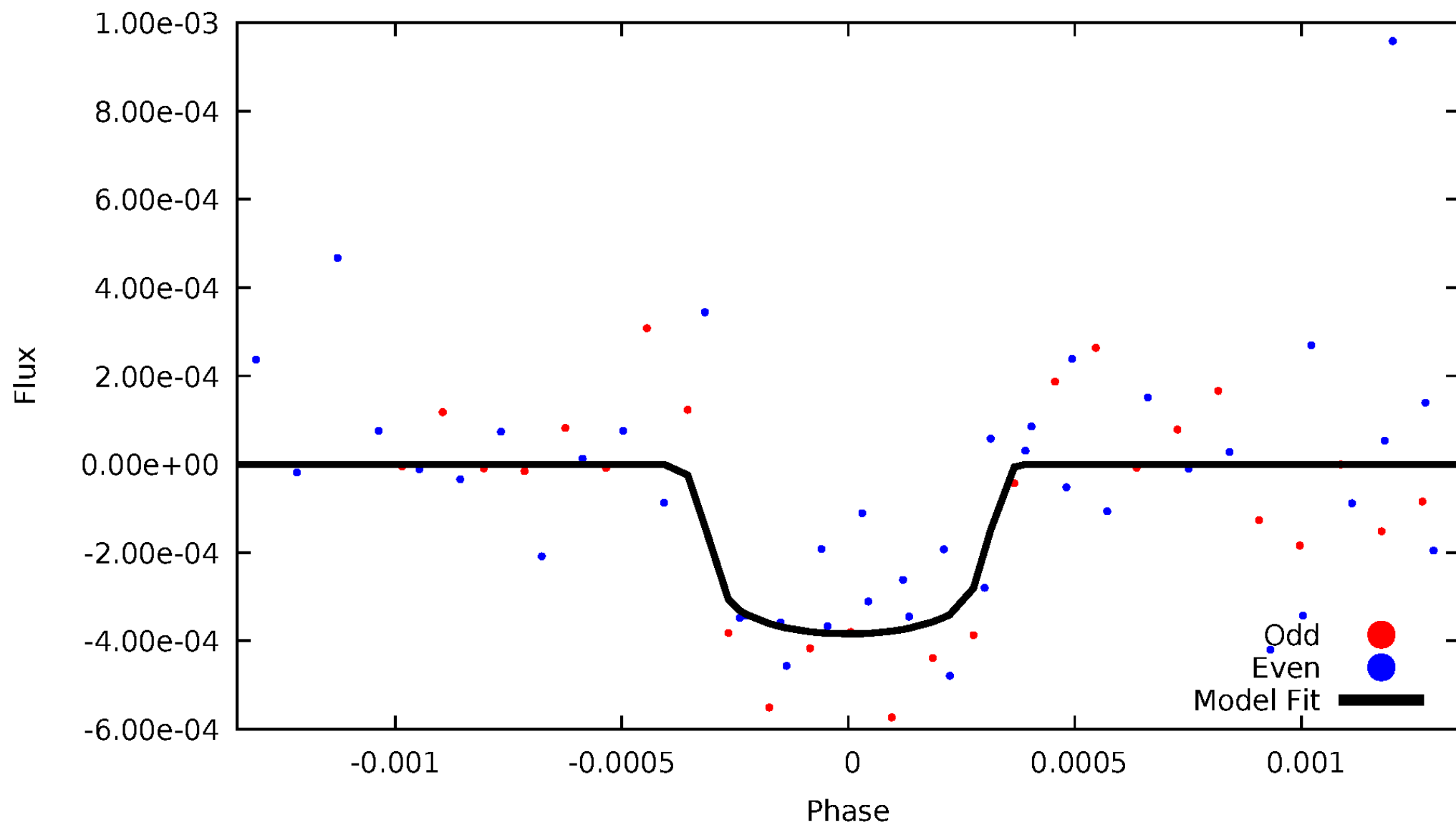


TCE 003543070-02



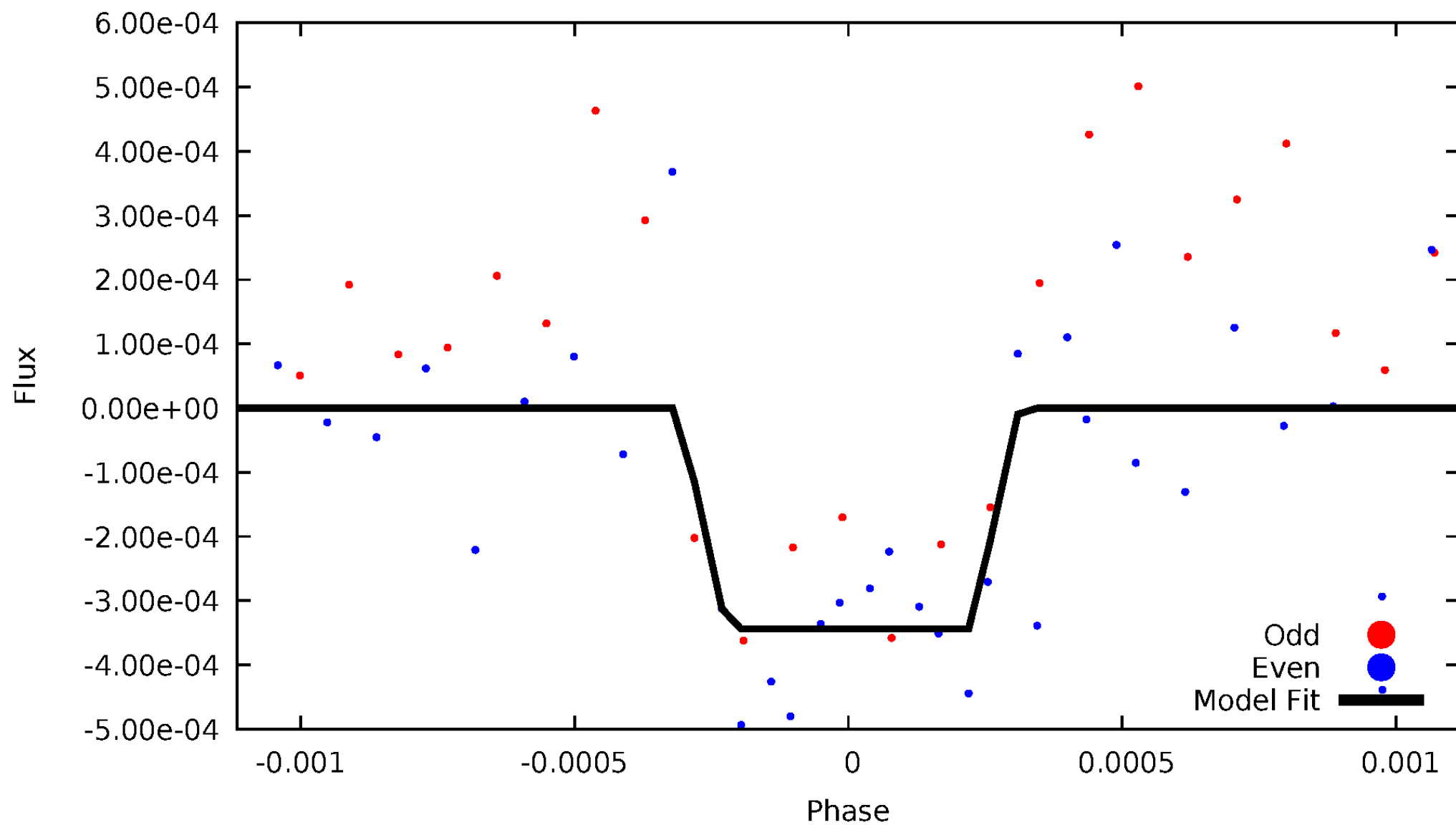
DV Odd/Even

TCE 003543070-02



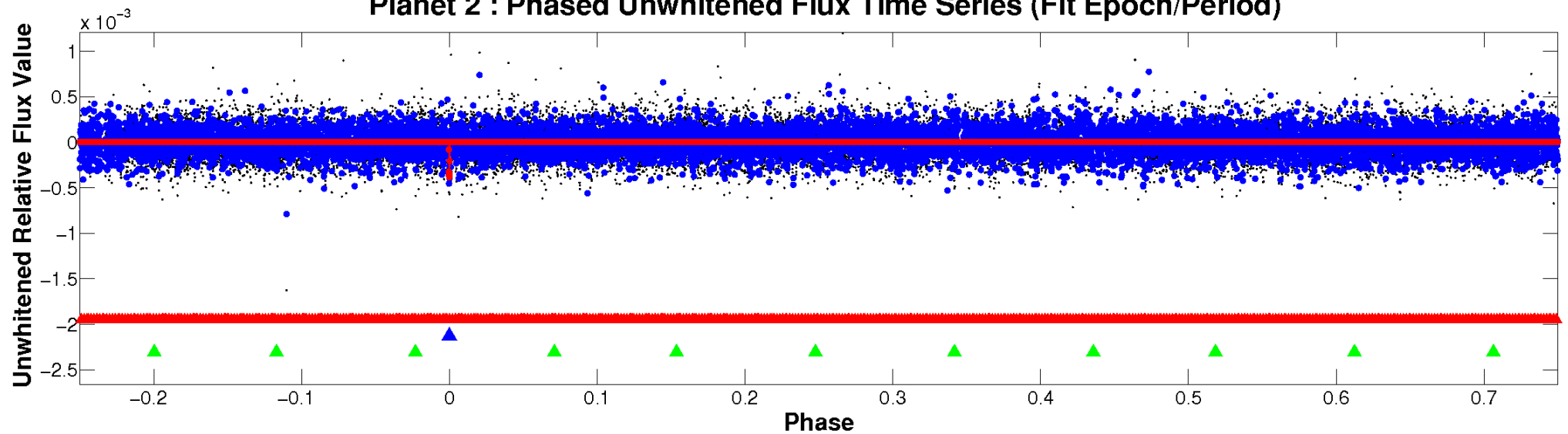
ALT Odd/Even

TCE 003543070-02

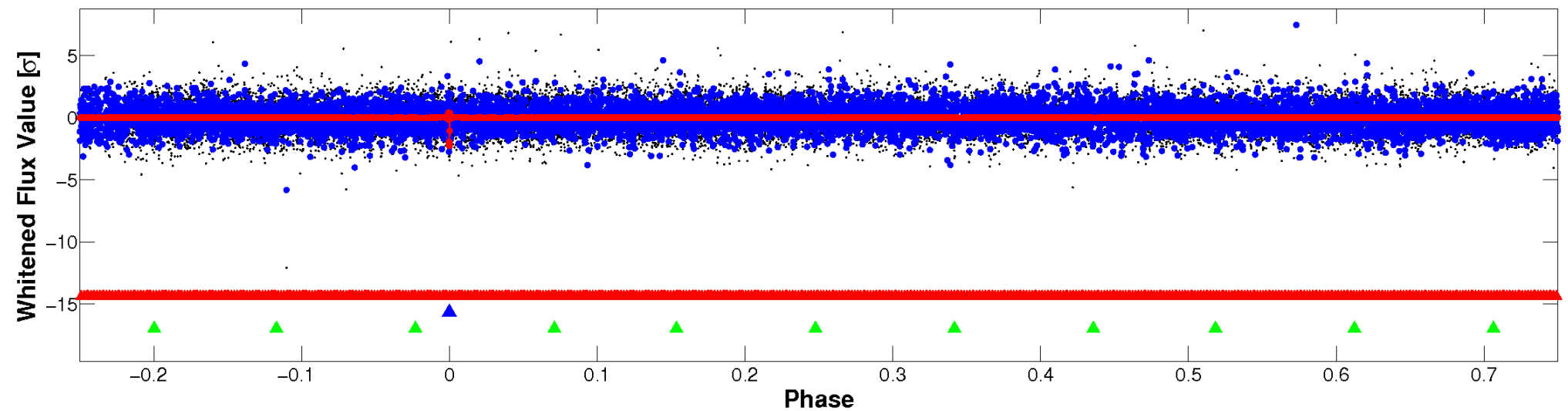


Non-Whitened Vs. Whitened Light Curve

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

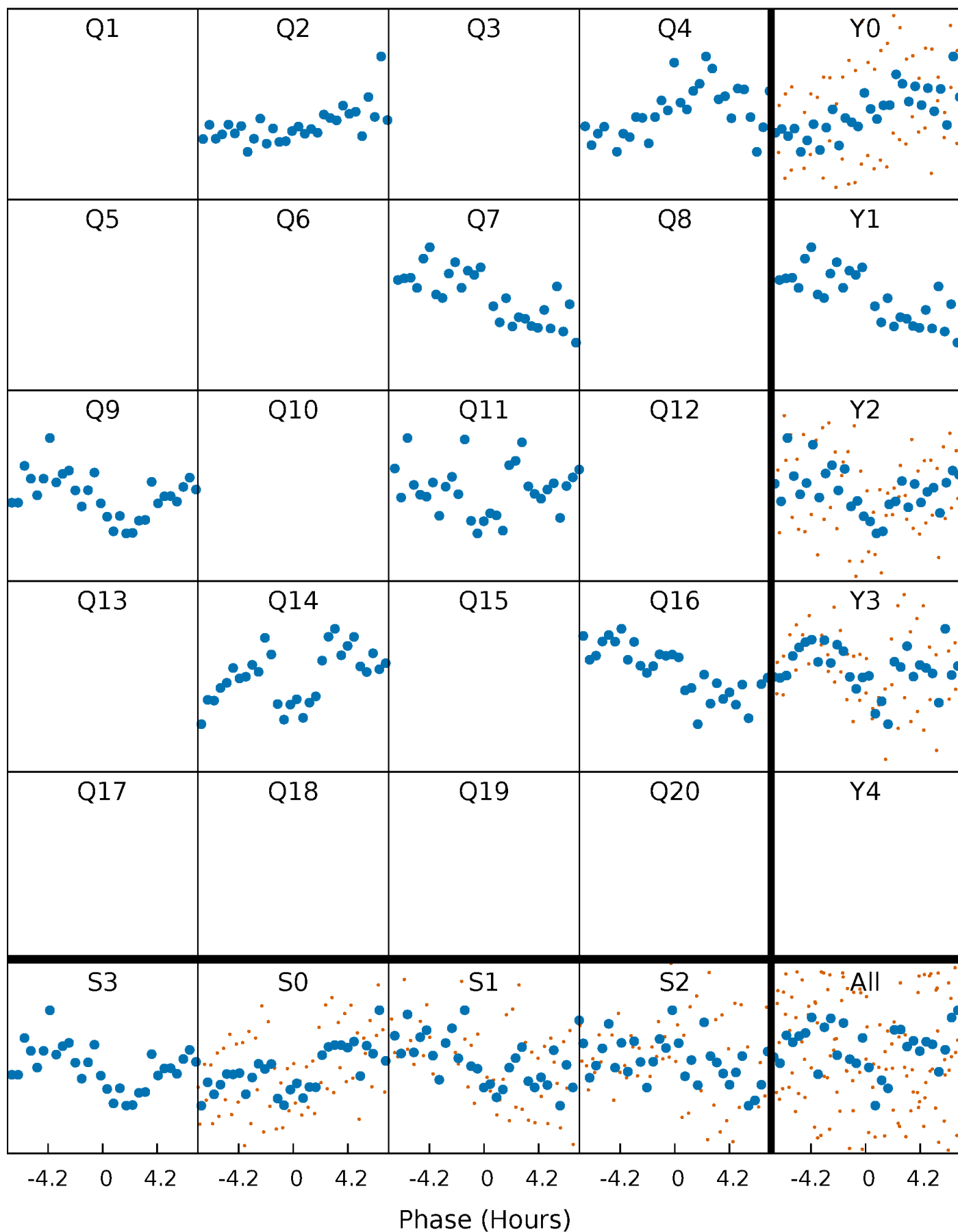


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



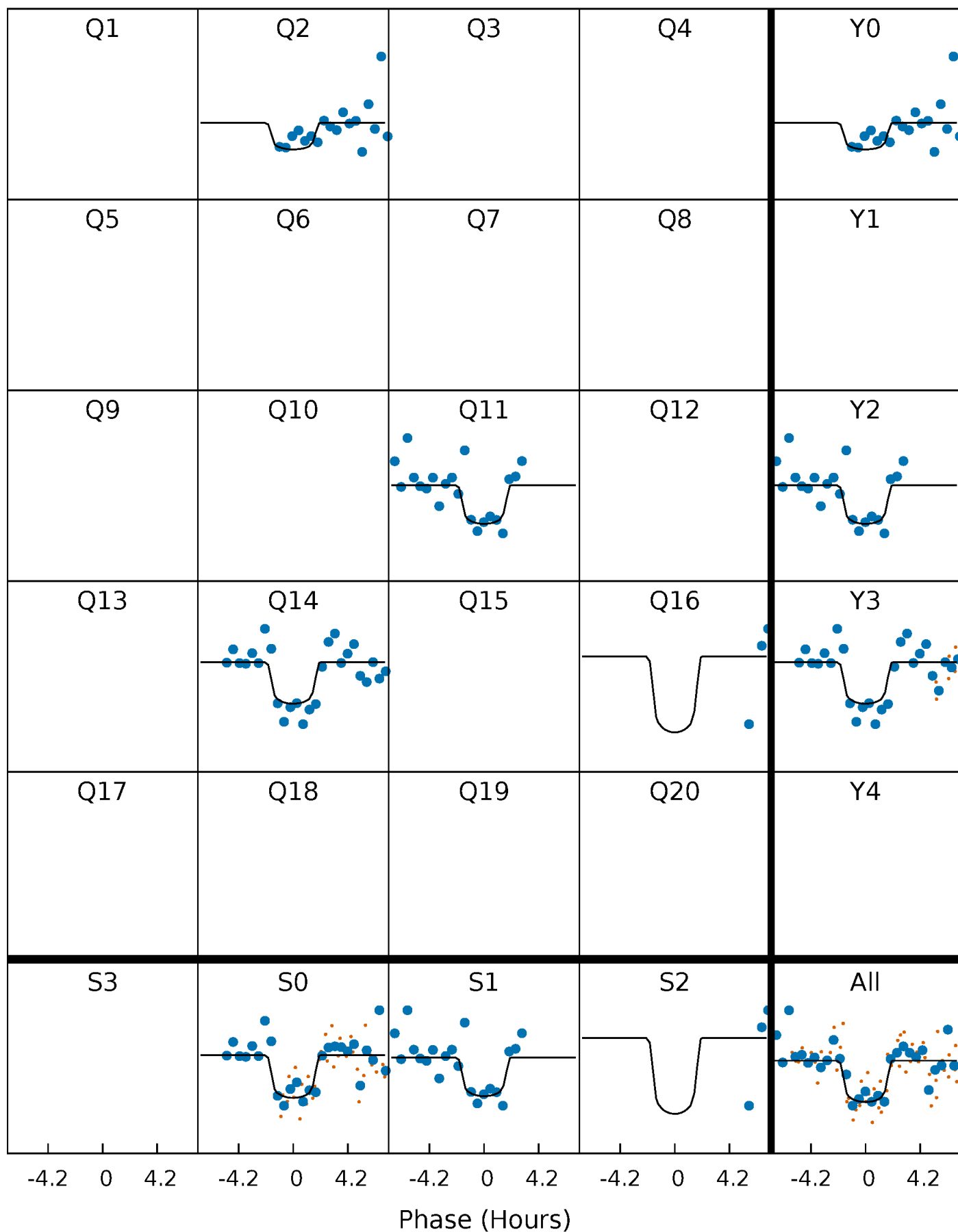
PDC Quarter-Phased Transit Curves

TCE 003543070-02 P=226.846838 Days $T_0=178.545570$ (BKJD)



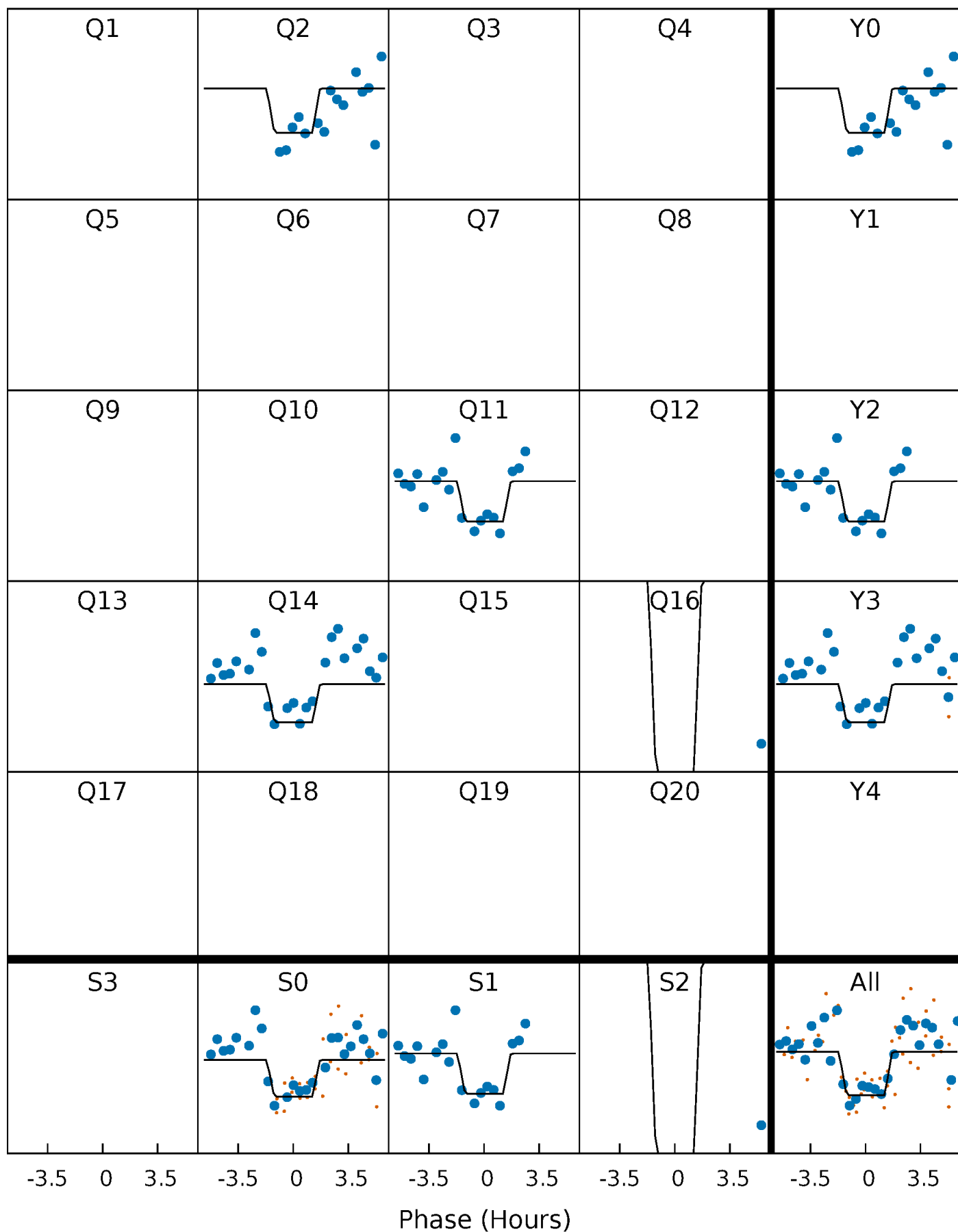
DV Quarter-Phased Transit Curves

TCE 003543070-02 P=226.846838 Days $T_0=178.545570$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

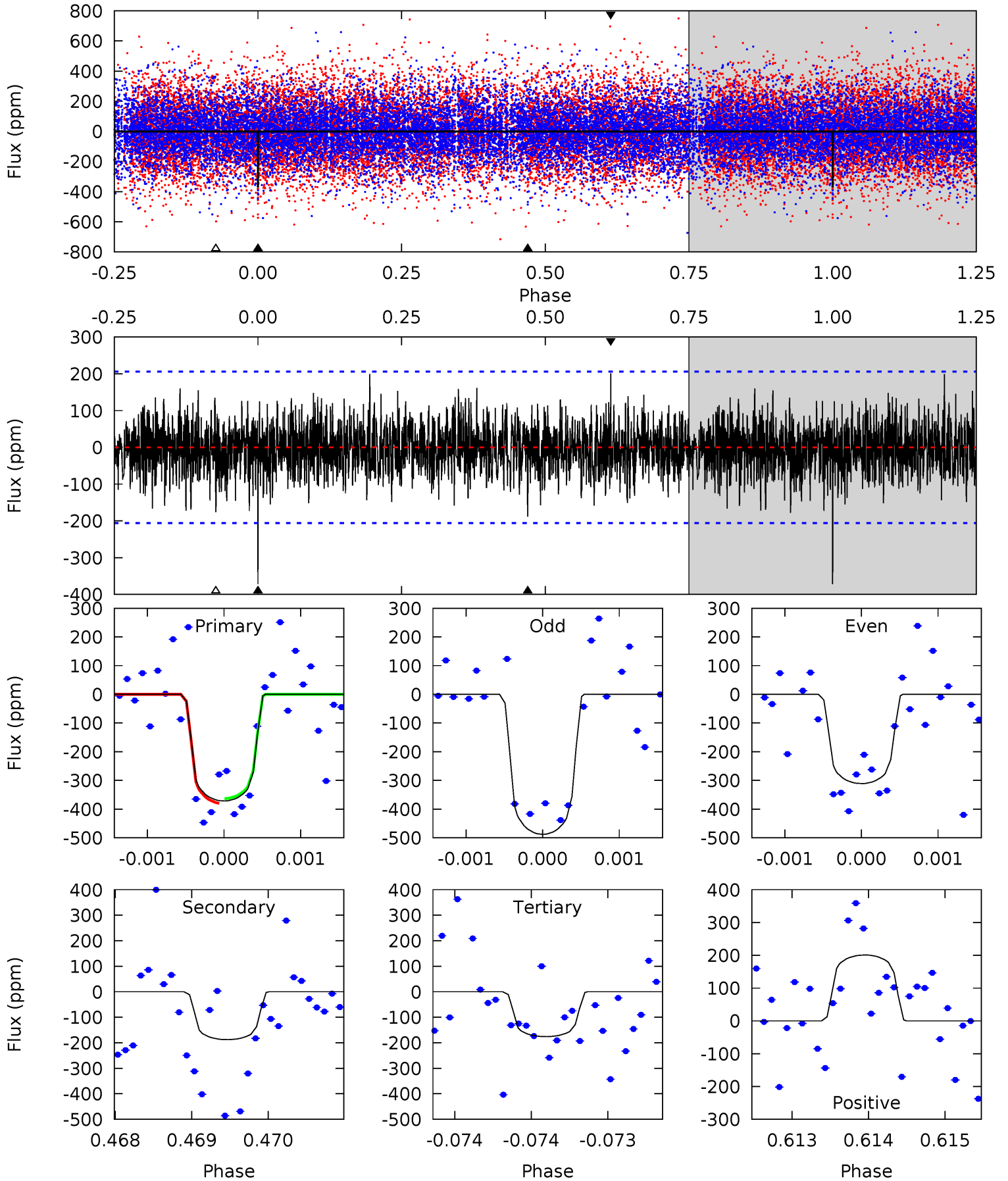
TCE 003543070-02 P=226.849582 Days $T_0=178.535628$ (BKJD)



DV Model-Shift Uniqueness Test

003543070-02, P = 226.846838 Days, E = 178.545570 Days

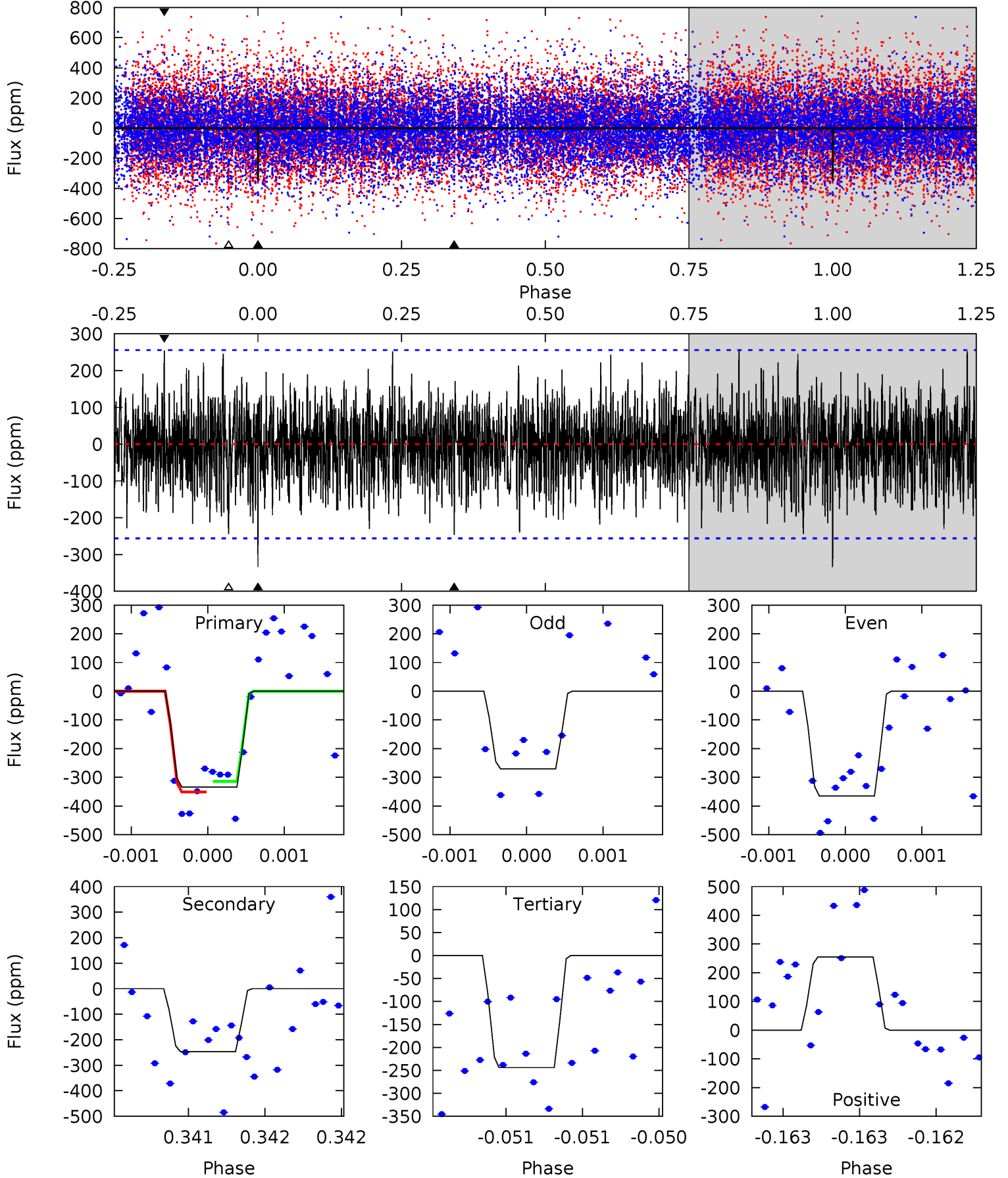
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.94	5.02	4.70	5.37	5.51	3.38	1.43	5.23	4.56	0.32	-0.35	2.19	1.04	0.35	0.22



Alt Model-Shift Uniqueness Test

003543070-02, P = 226.849582 Days, E = 178.535628 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.24	5.34	5.29	5.52	5.55	3.44	1.68	1.95	1.72	0.05	-0.18	0.95	0.94	0.43	0.40



Stellar Parameters For KIC 003543070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6628^{+166}_{-199}	$3.552^{+0.292}_{-0.078}$	$-0.060^{+0.300}_{-0.250}$	$3.709^{+0.336}_{-1.262}$	$1.787^{+0.174}_{-0.323}$	$0.049^{+0.107}_{-0.009}$
	+3%/-3%	+8%/-2%	+500%/-417%	+9%/-34%	+10%/-18%	+217%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003543070-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-188 ± 37	$7.65^{+4.80}_{-4.03}$	823^{+45}_{-67}	5441^{+2658}_{-964}	1325^{+4538}_{-815}
Alt.	-246 ± 46	$7.11^{+4.79}_{-3.58}$	826^{+39}_{-67}	6064^{+2892}_{-1202}	2095^{+6376}_{-1374}

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

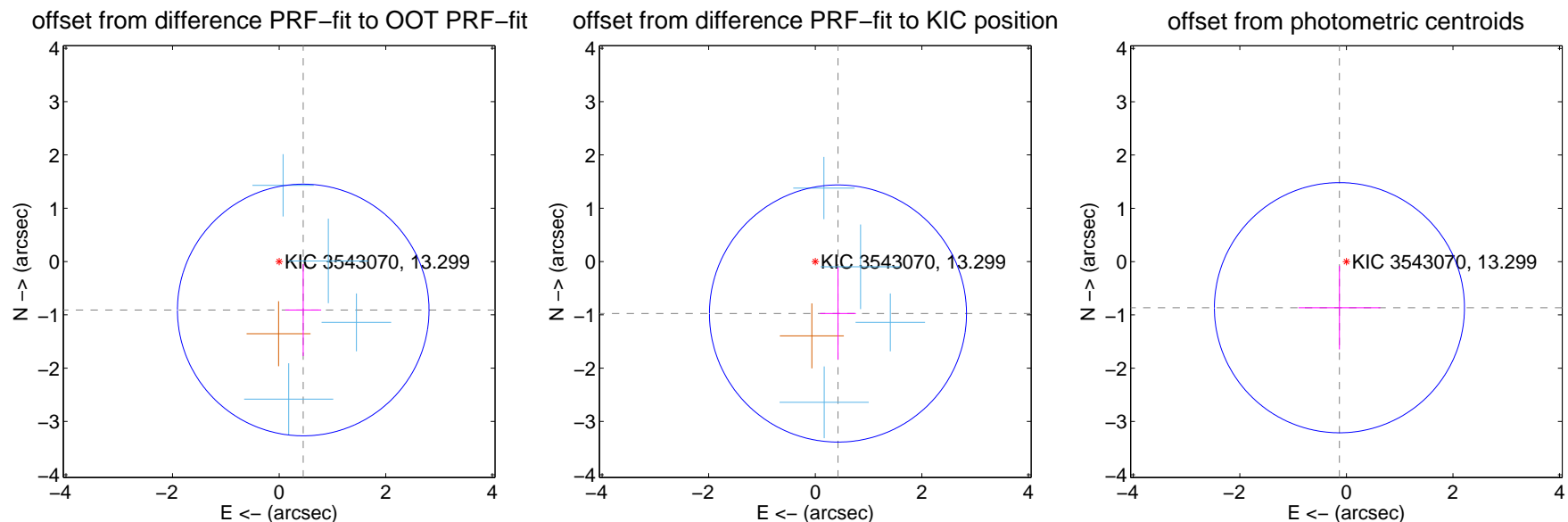
DV Centroid Data

Supplemental centroid analysis for 003543070-02. Kepler magnitude: 13.30. Transit SNR 9.26

There are 4 quarters with good PRF difference image offsets

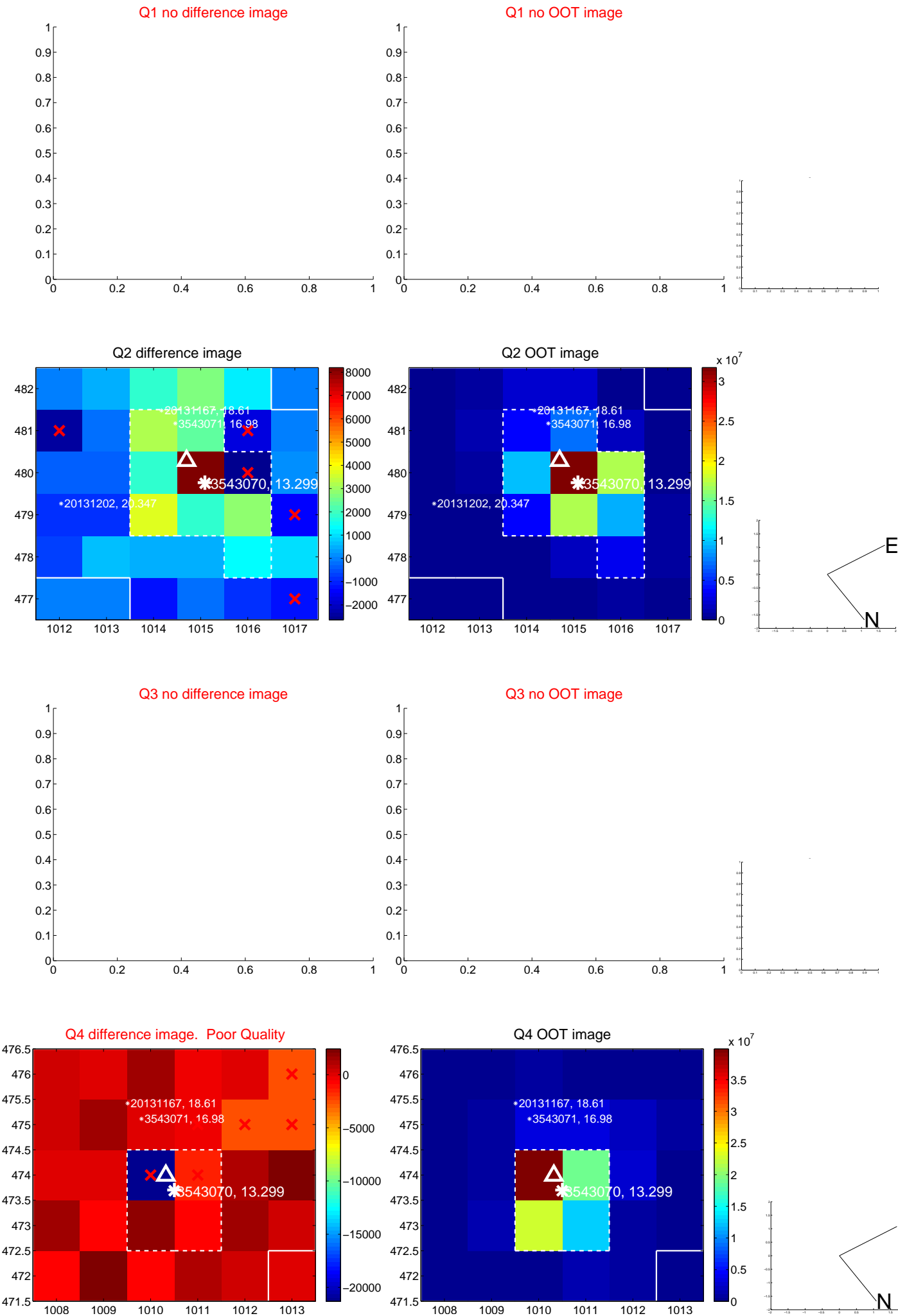
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.015 ± 0.787	1.29	-0.452 ± 0.337	-0.909 ± 0.863
PRF-fit source offset from KIC position	1.064 ± 0.804	1.32	-0.426 ± 0.336	-0.975 ± 0.865
photometric centroid source offset	0.88 ± 0.78	1.12	0.13 ± 0.77	-0.87 ± 0.78



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.

Q5 no difference image



Q5 no OOT image



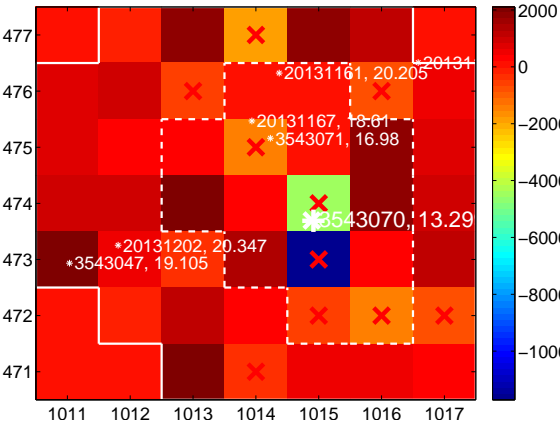
Q6 no difference image



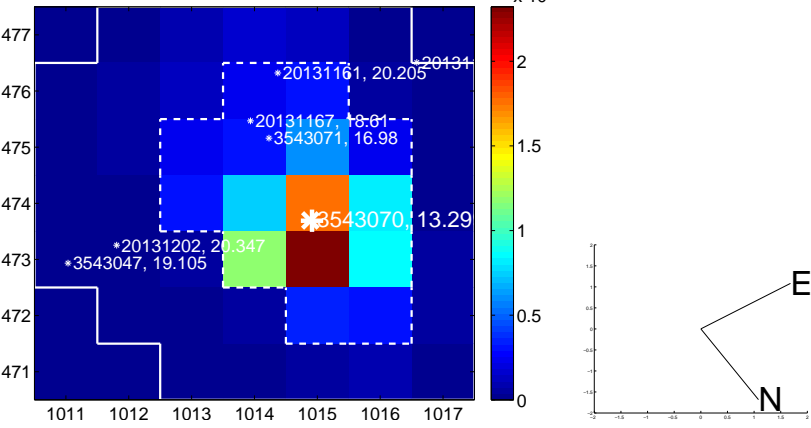
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



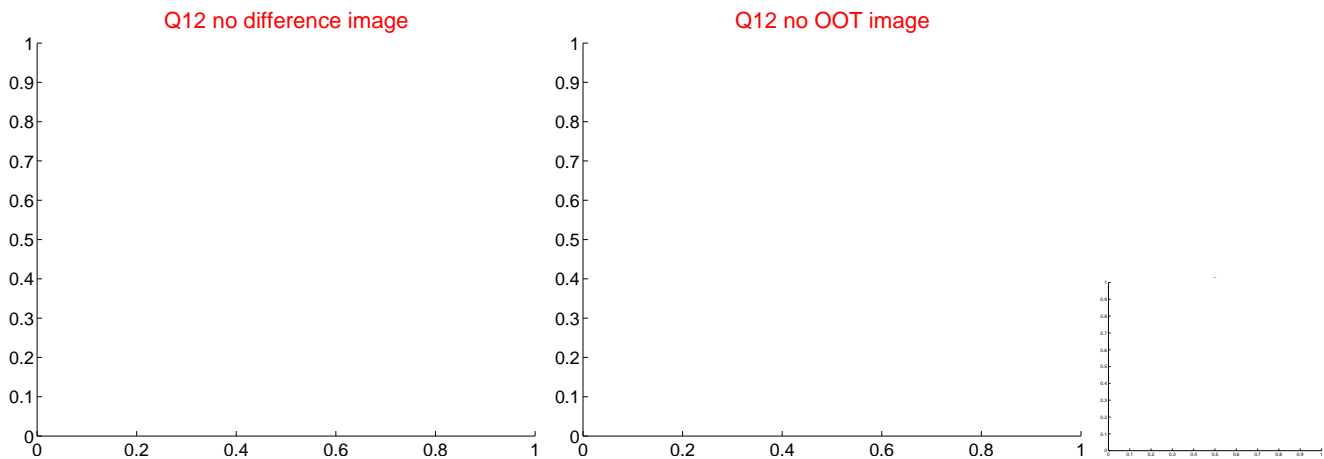
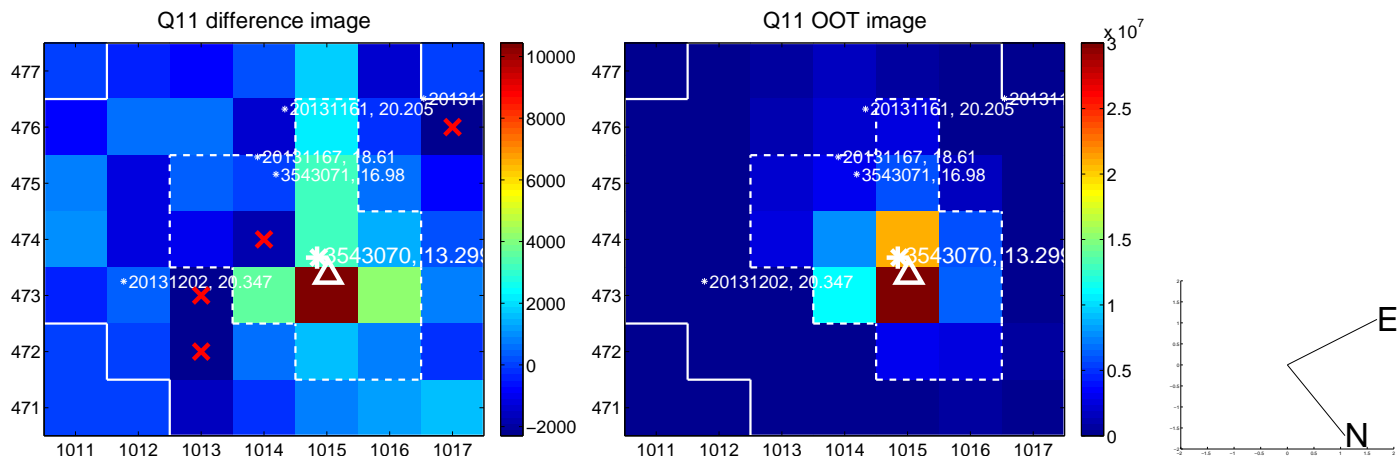
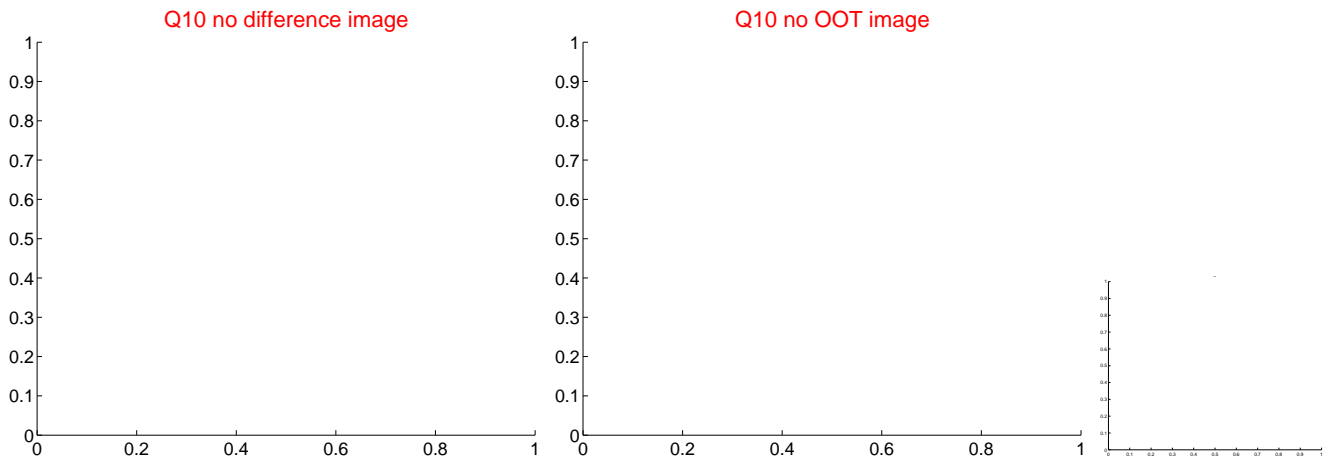
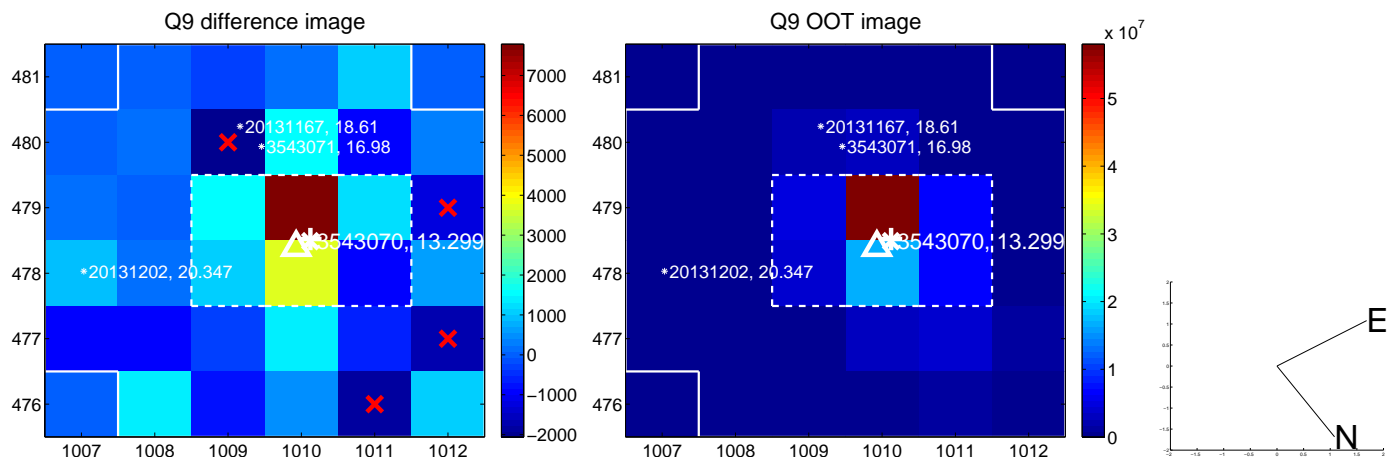
Q8 no difference image



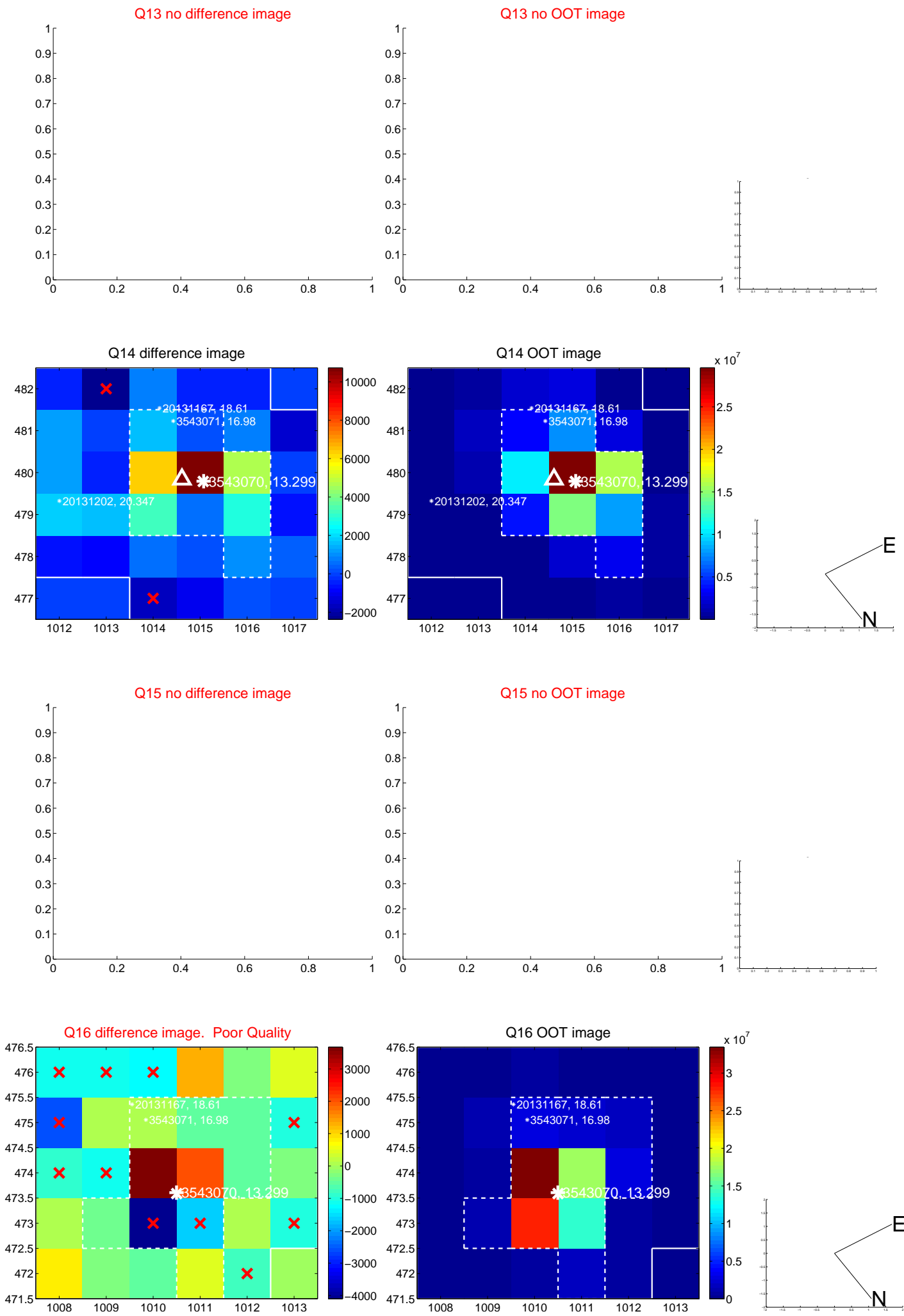
Q8 no OOT image



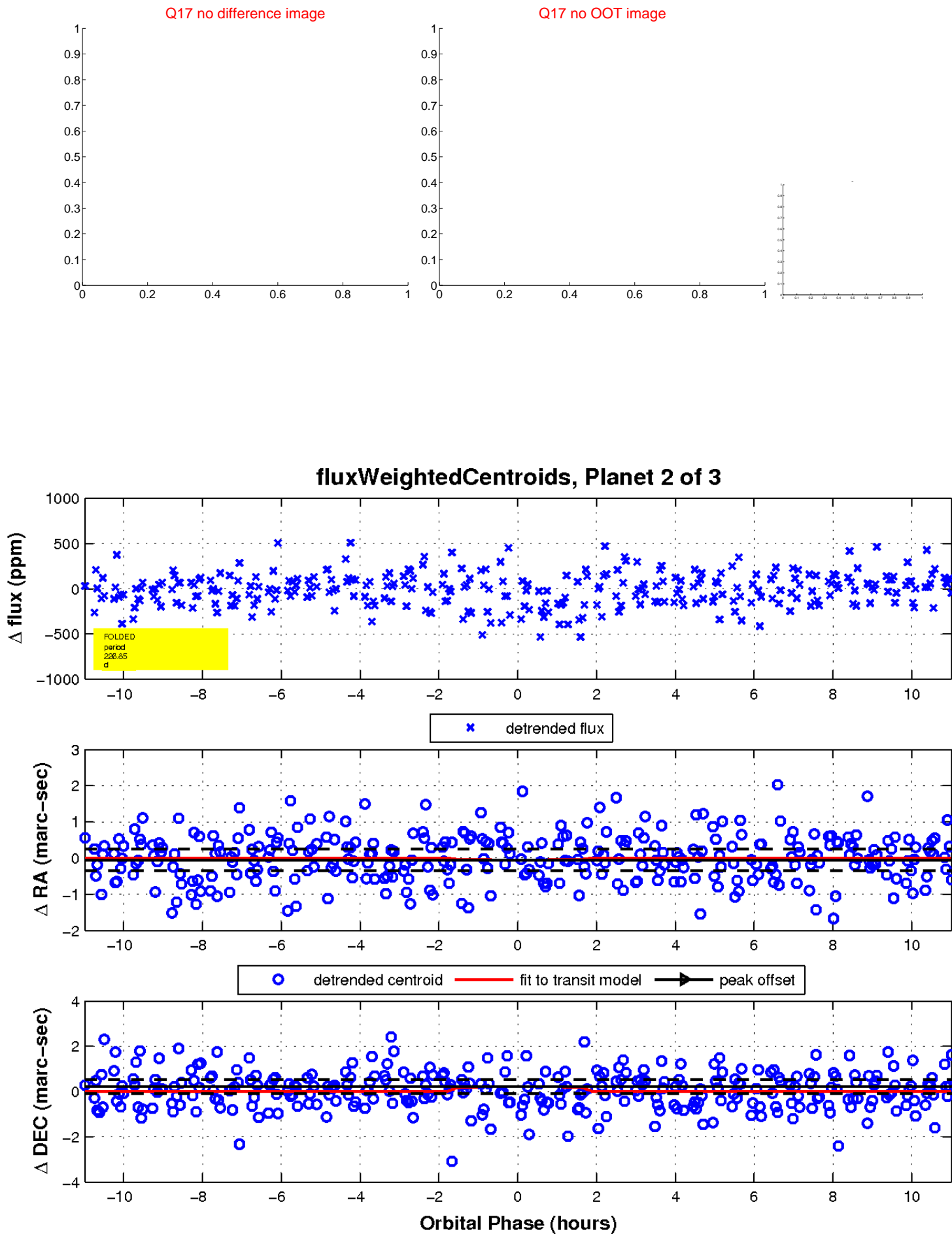
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

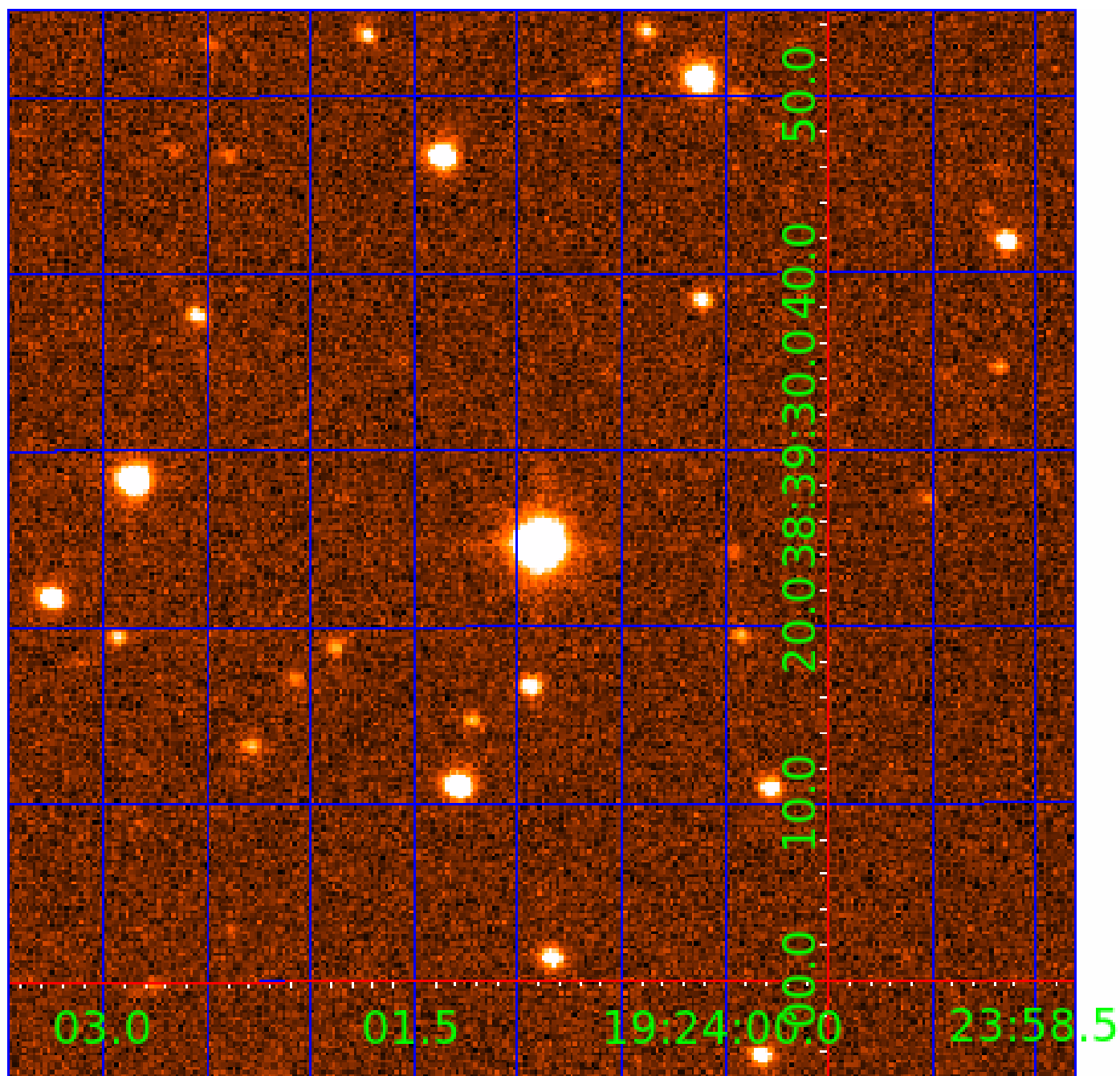


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003543070

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})
003543070-01	OBS	No	2.392538	132.235373	19.4	12.520	10.2	6.9	3.71	6628	1.68	13165.90
003543070-02	OBS	No	226.846838	178.545570	384.3	3.671	8.5	9.3	3.71	6628	8.11	30.45
003543070-03	OBS	No	144.122262	133.266922	292.1	4.981	8.1	9.9	3.71	6628	7.10	55.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003543070-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003543070-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003543070-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_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.

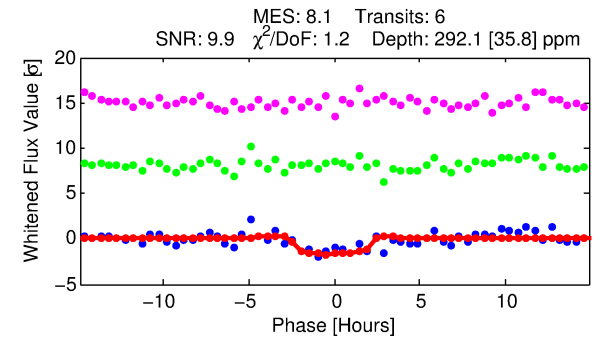
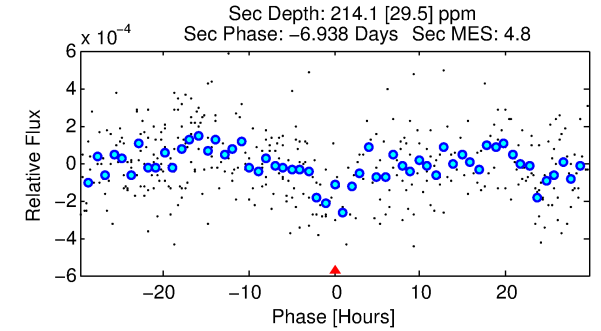
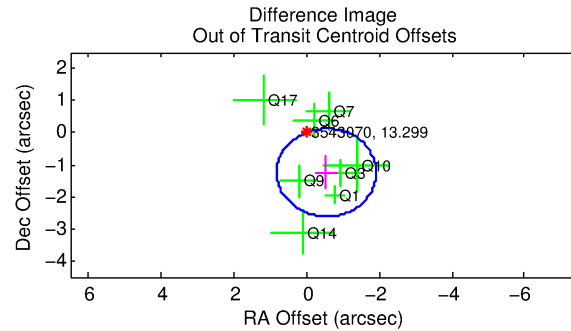
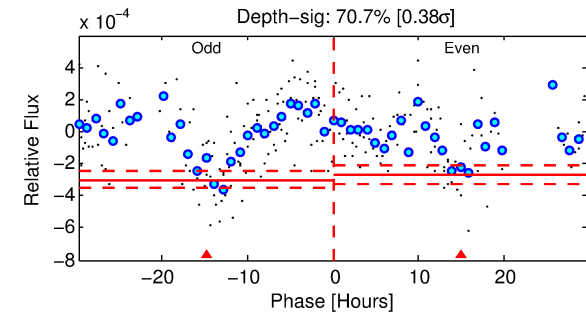
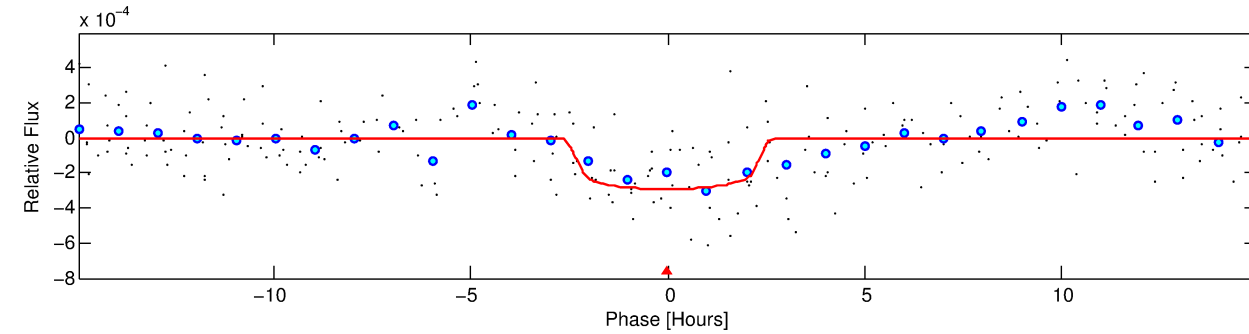
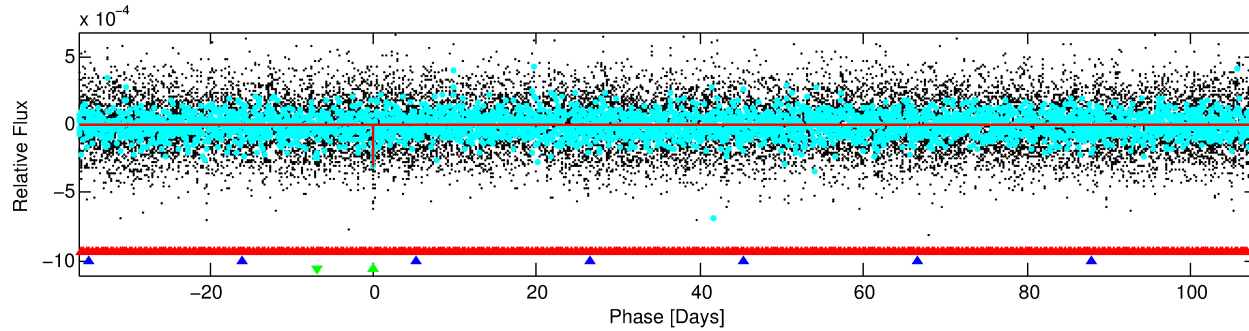
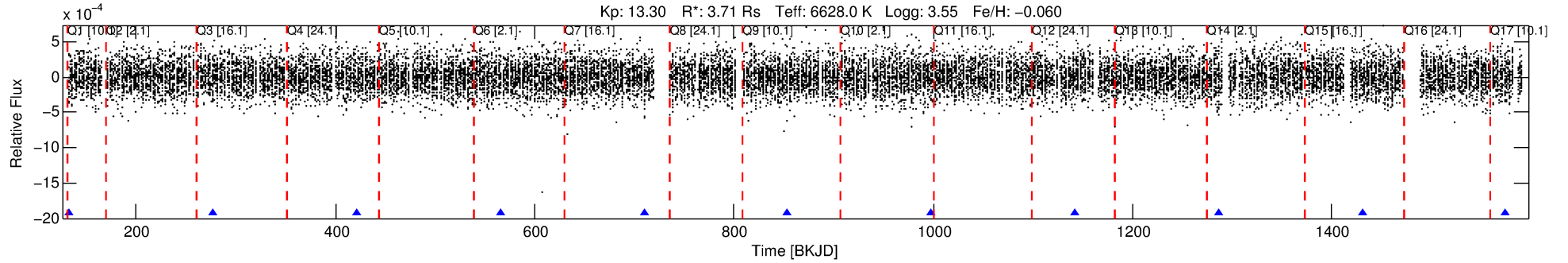
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003543070-03

No Significant Match Found

DV One-Page Summary

KIC: 3543070 Candidate: 3 of 3 Period: 144.122 d



DV Fit Results:

Period = 144.12226 [0.00169] d
Epoch = 133.2669 [0.0101] BKJD
Rp/R* = 0.0175 [0.0077]
a/R* = 129.02 [318.04]
b = 0.83 [0.91]
Seff = 55.76 [28.80]
Teq = 697 [90] K
Rp = 7.10 [3.94] Re
a = 0.6532 [0.2083] AU
Ag = 996.60 [1014.79] [0.98 σ]
Teffp = 6053 [1353] K [3.95 σ]

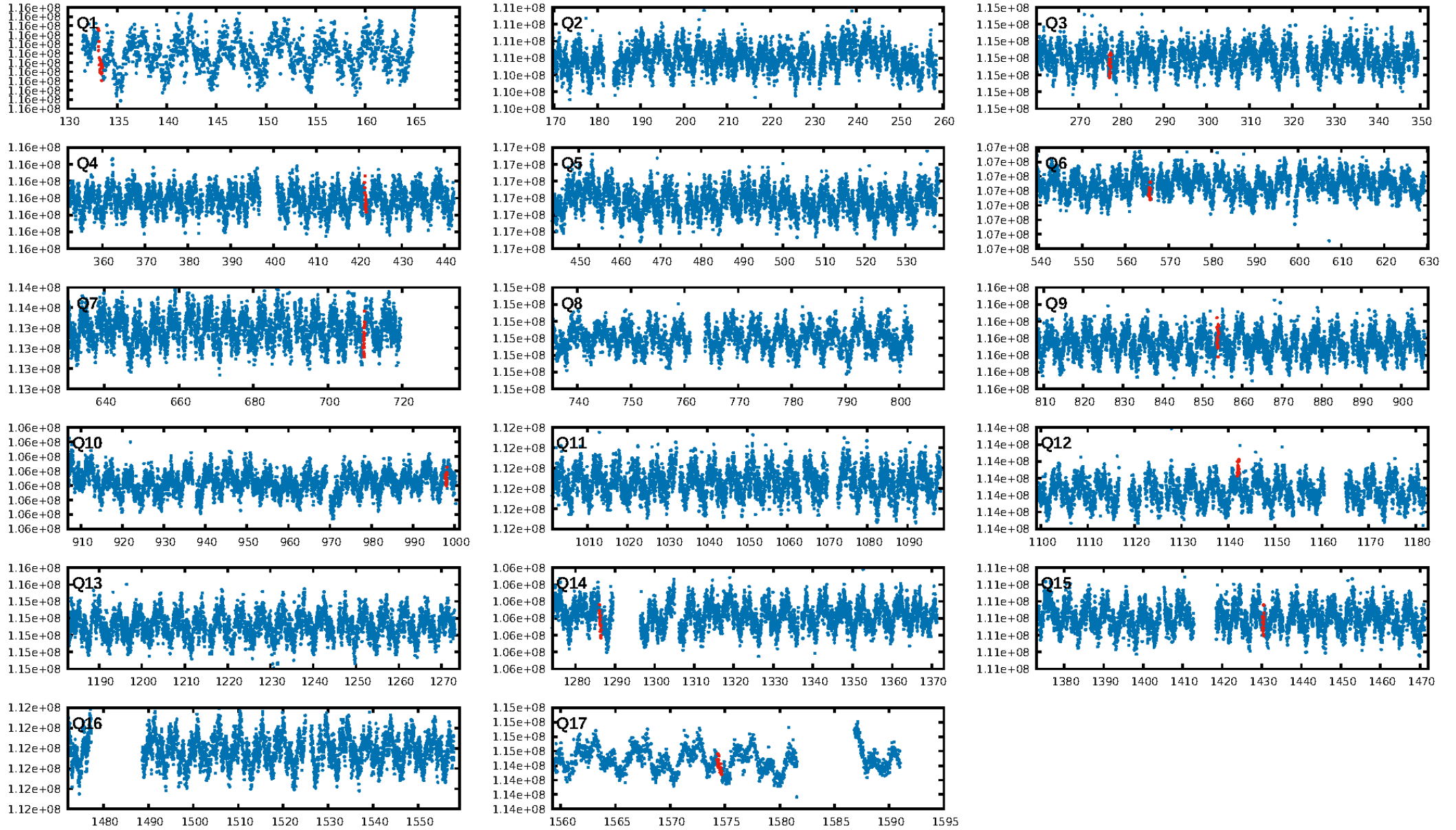
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [252.44 σ]
LongPeriod-sig: 100.0% [320.87 σ]
ModelChiSquare2-sig: 88.7%
ModelChiSquareGof-sig: 98.5%
Bootstrap-pfa: 2.96e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.212
Centroid-sig: 45.8%
Centroid-so: 0.216 arcsec [0.32 σ]
OotOffset-rm: 1.362 arcsec [2.98 σ]
KicOffset-rm: 1.395 arcsec [2.44 σ]
OotOffset-st: 3/2/0/3 [8]
KicOffset-st: 3/2/0/3 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 0.55 [6/11]

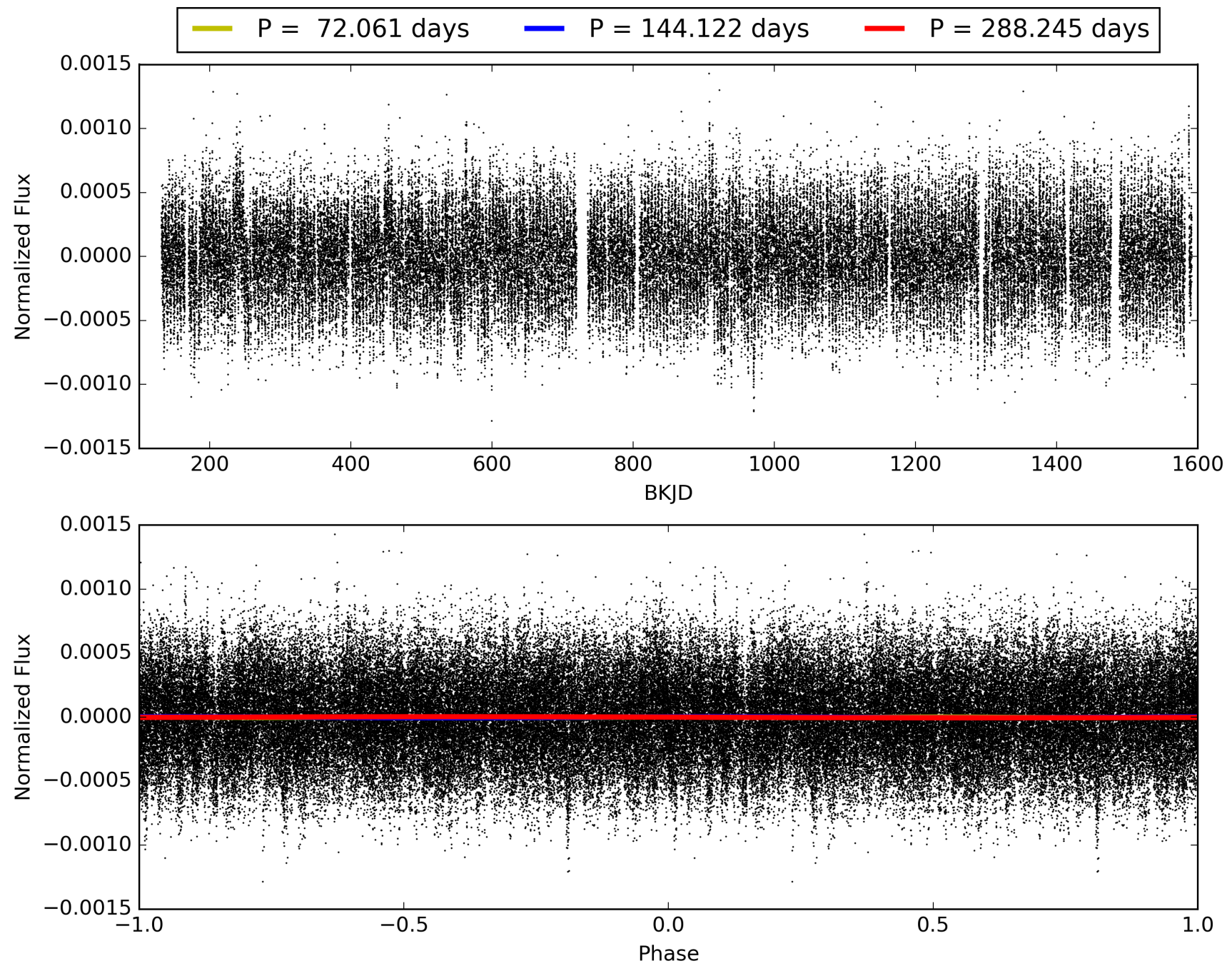
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:12:50 Z

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

TCE 003543070-03, PDC Light Curves

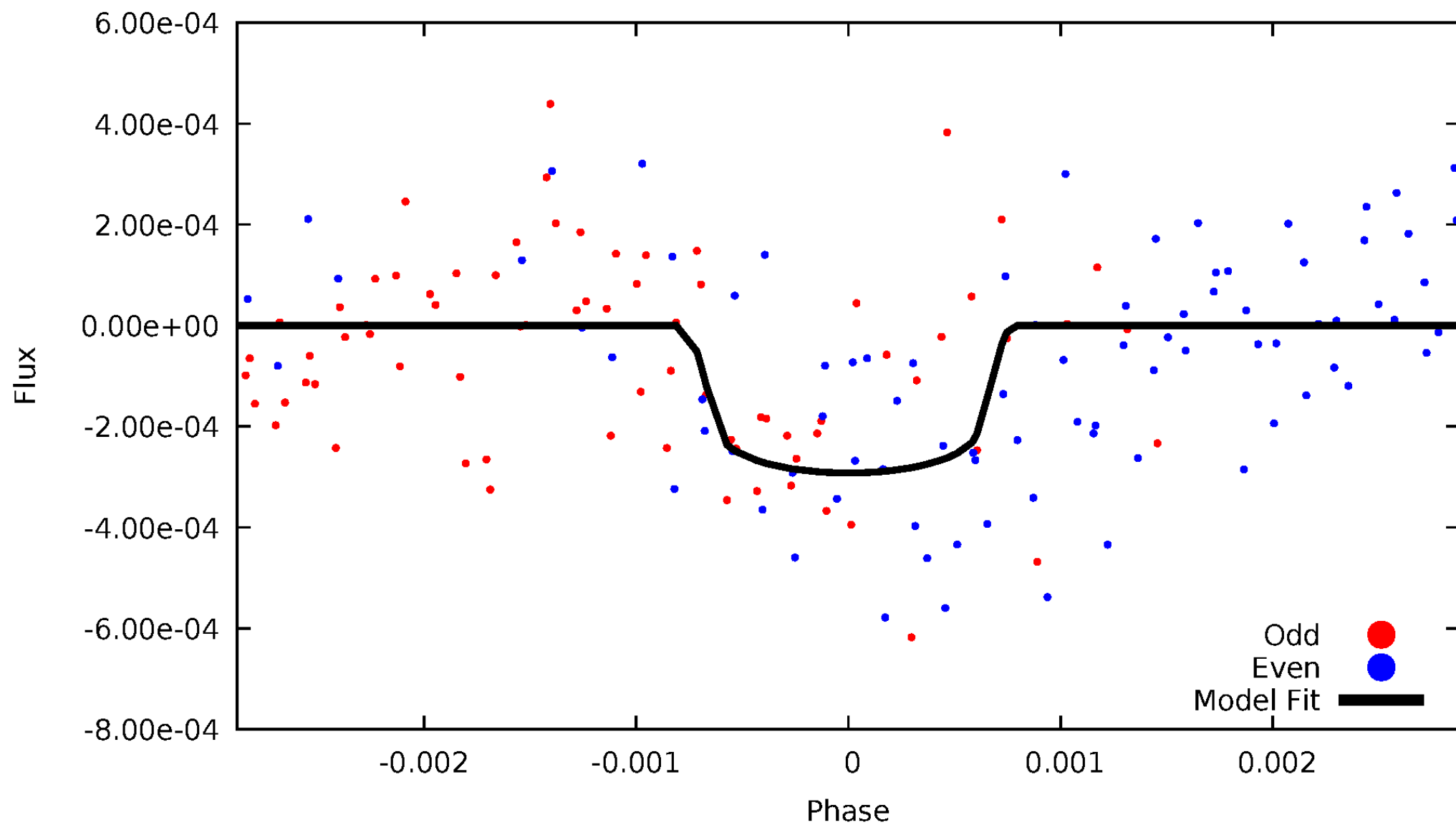


TCE 003543070-03



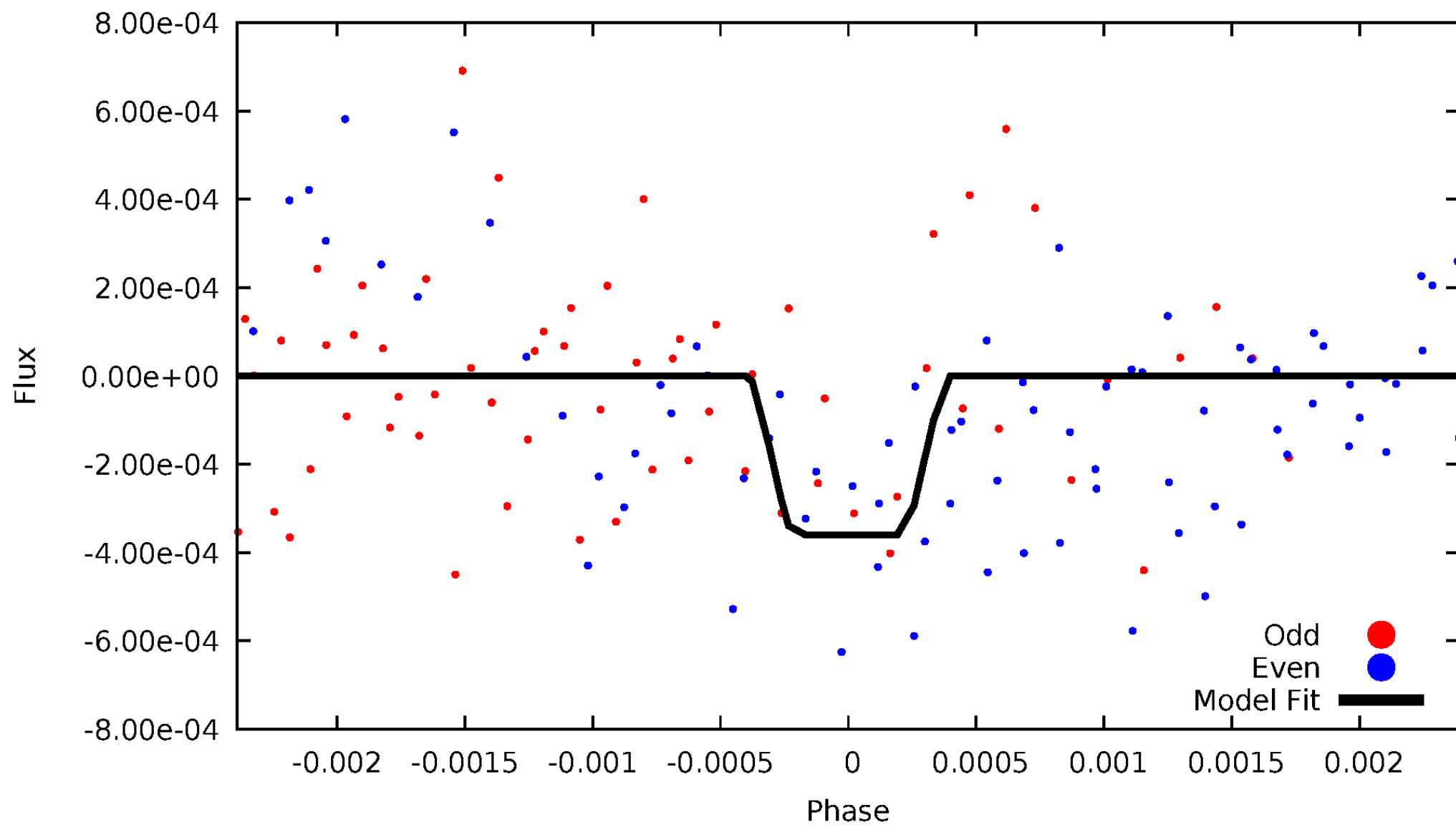
DV Odd/Even

TCE 003543070-03



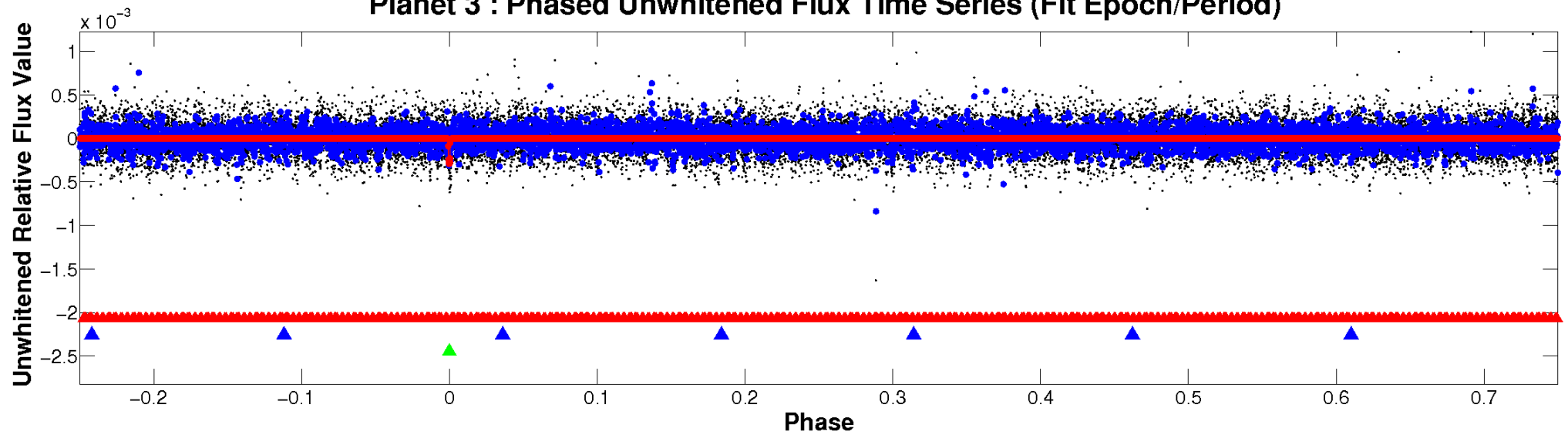
ALT Odd/Even

TCE 003543070-03

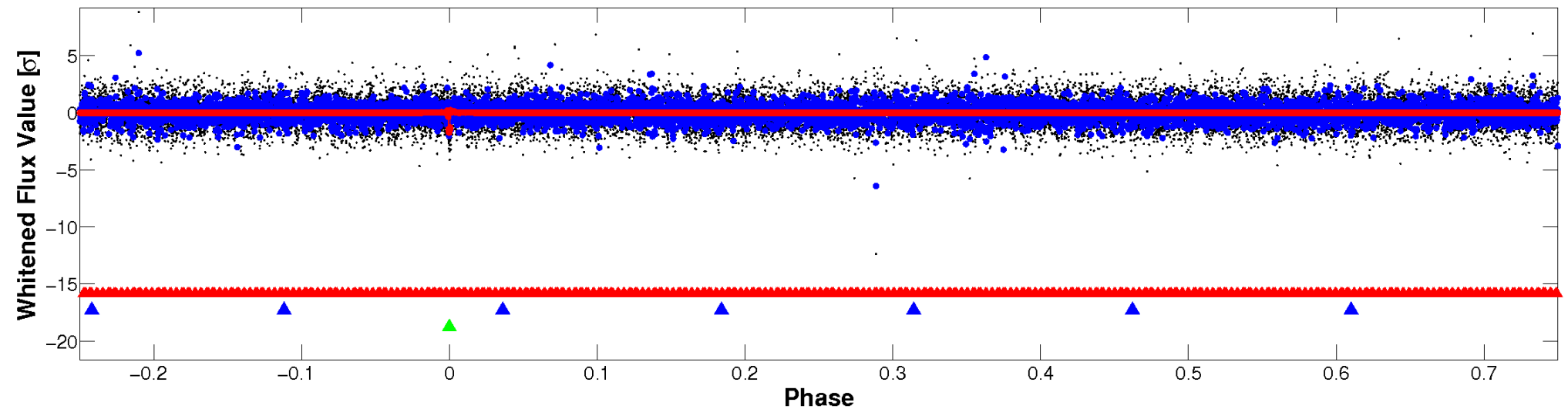


Non-Whitened Vs. Whitened Light Curve

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

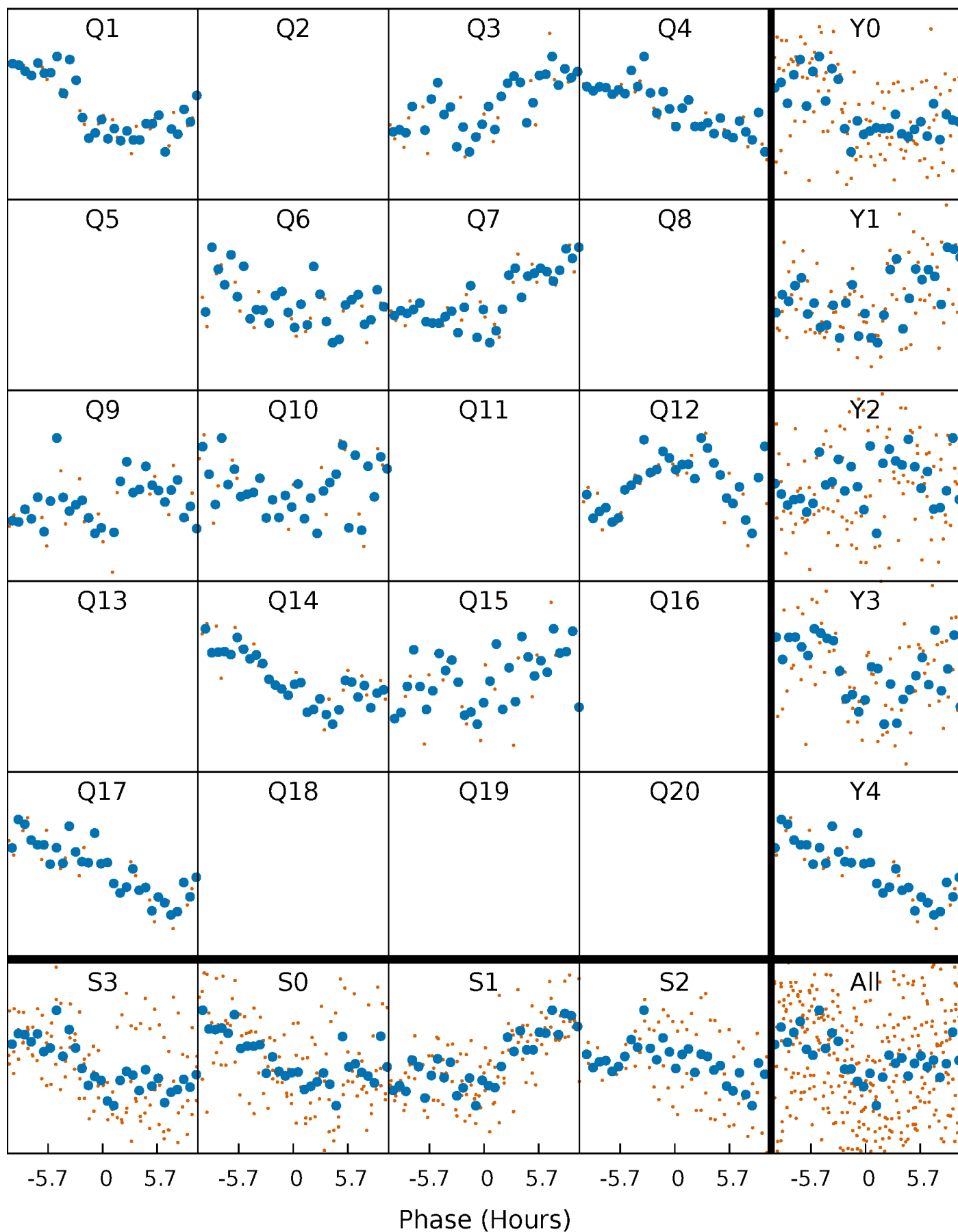


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



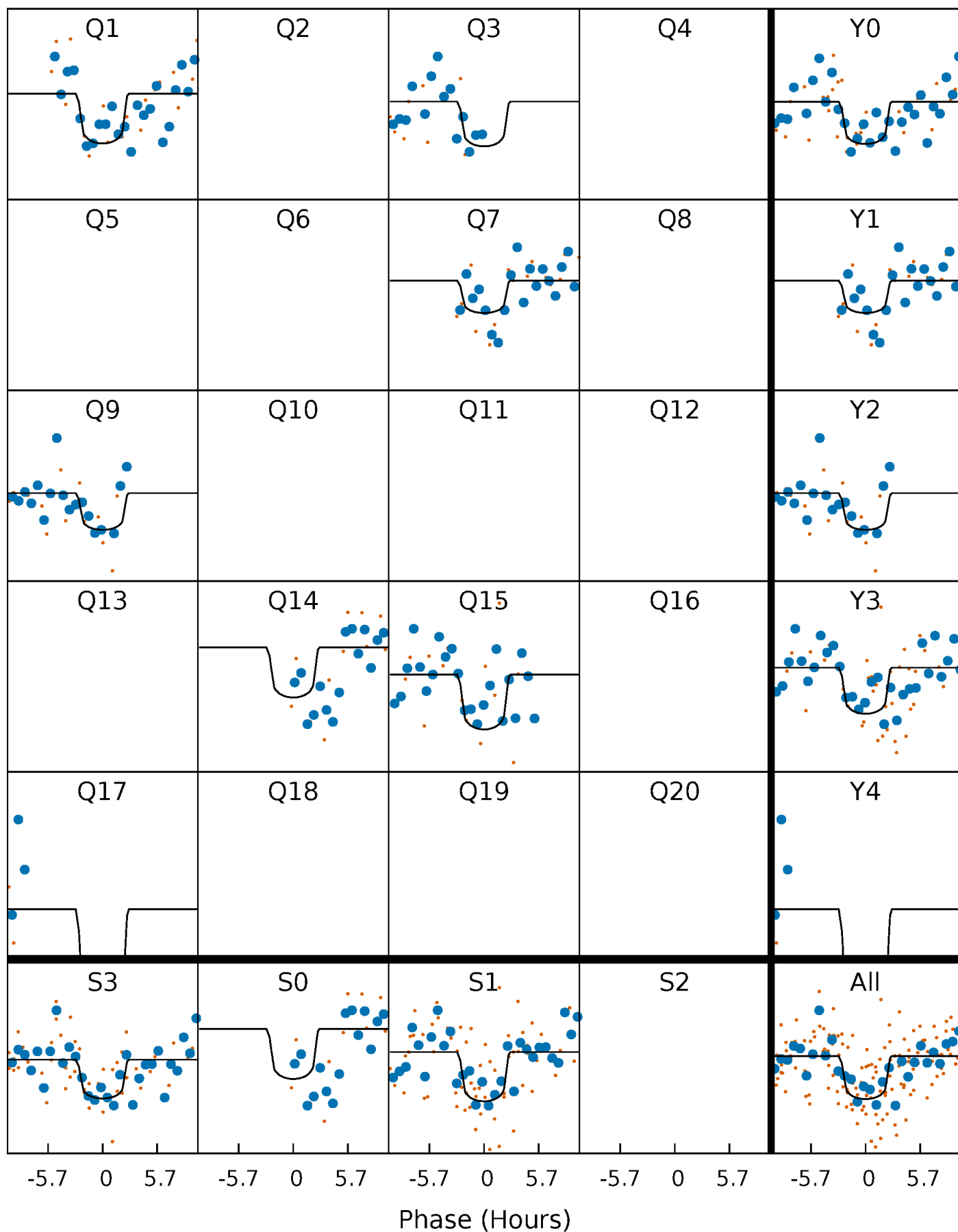
PDC Quarter-Phased Transit Curves

TCE 003543070-03 P=144.122262 Days $T_0=133.266922$ (BKJD)



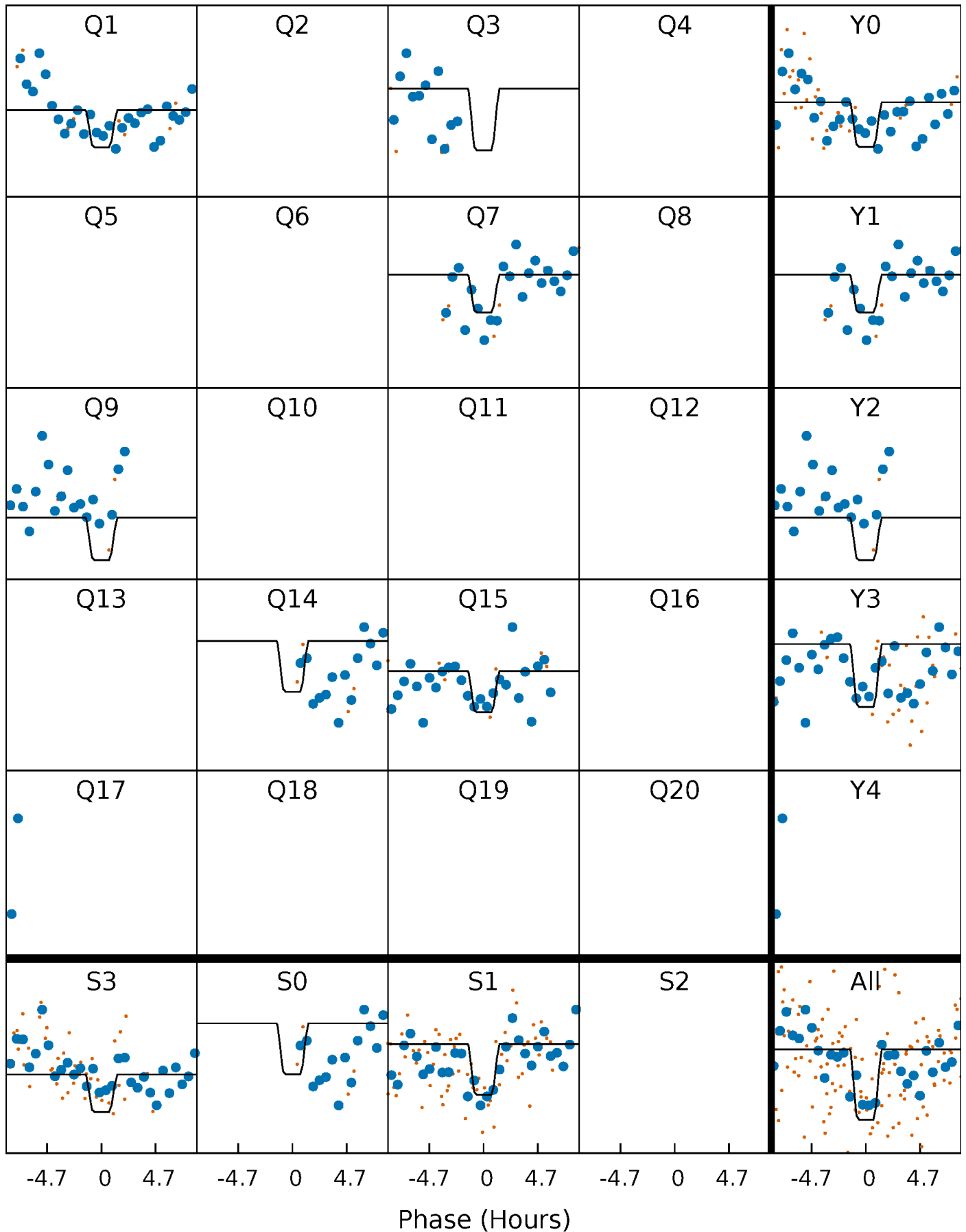
DV Quarter-Phased Transit Curves

TCE 003543070-03 $P=144.122262$ Days $T_0=133.266922$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

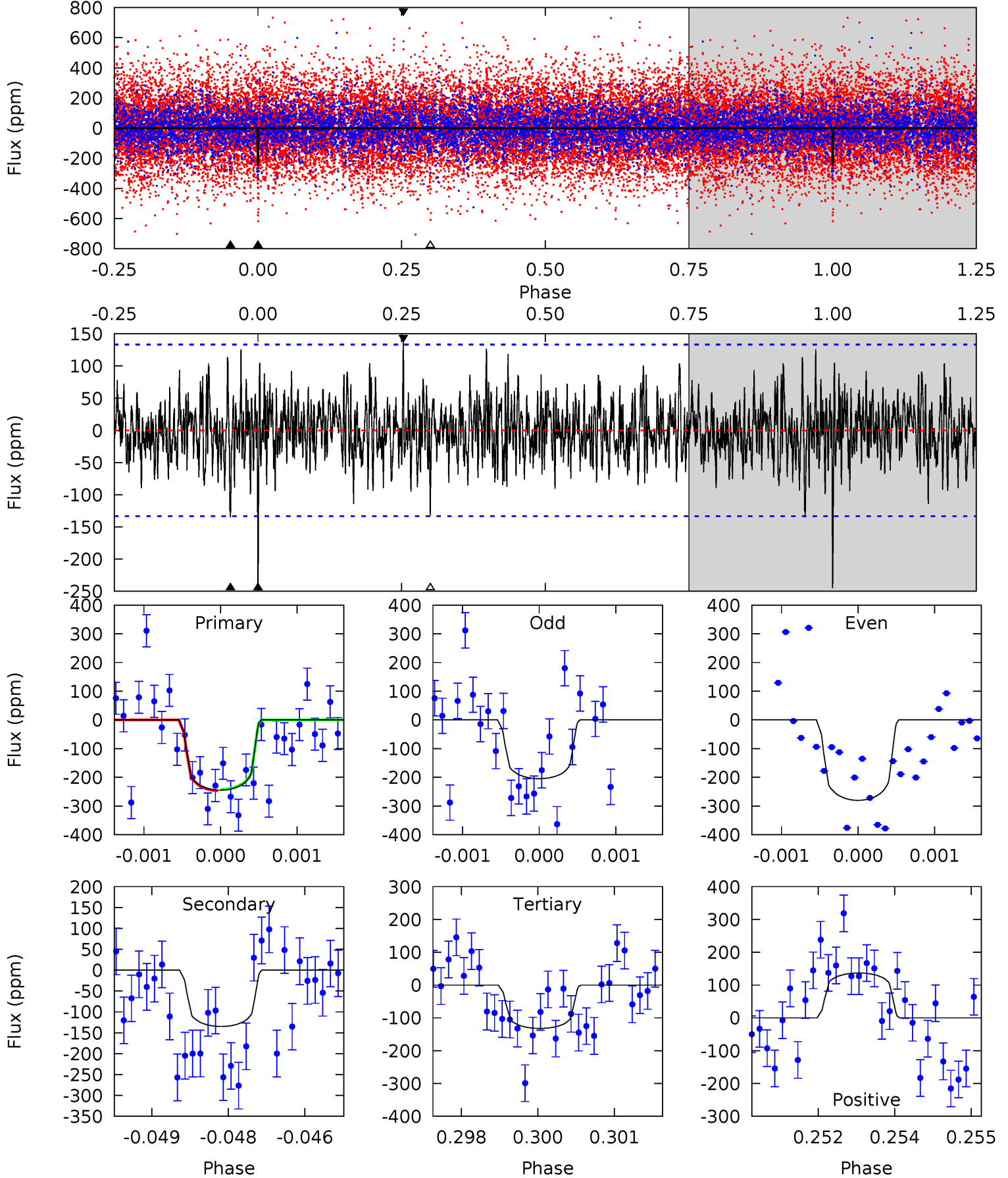
TCE 003543070-03 P=144.108829 Days $T_0=133.349392$ (BKJD)



DV Model-Shift Uniqueness Test

003543070-03, P = 144.122262 Days, E = 133.266922 Days

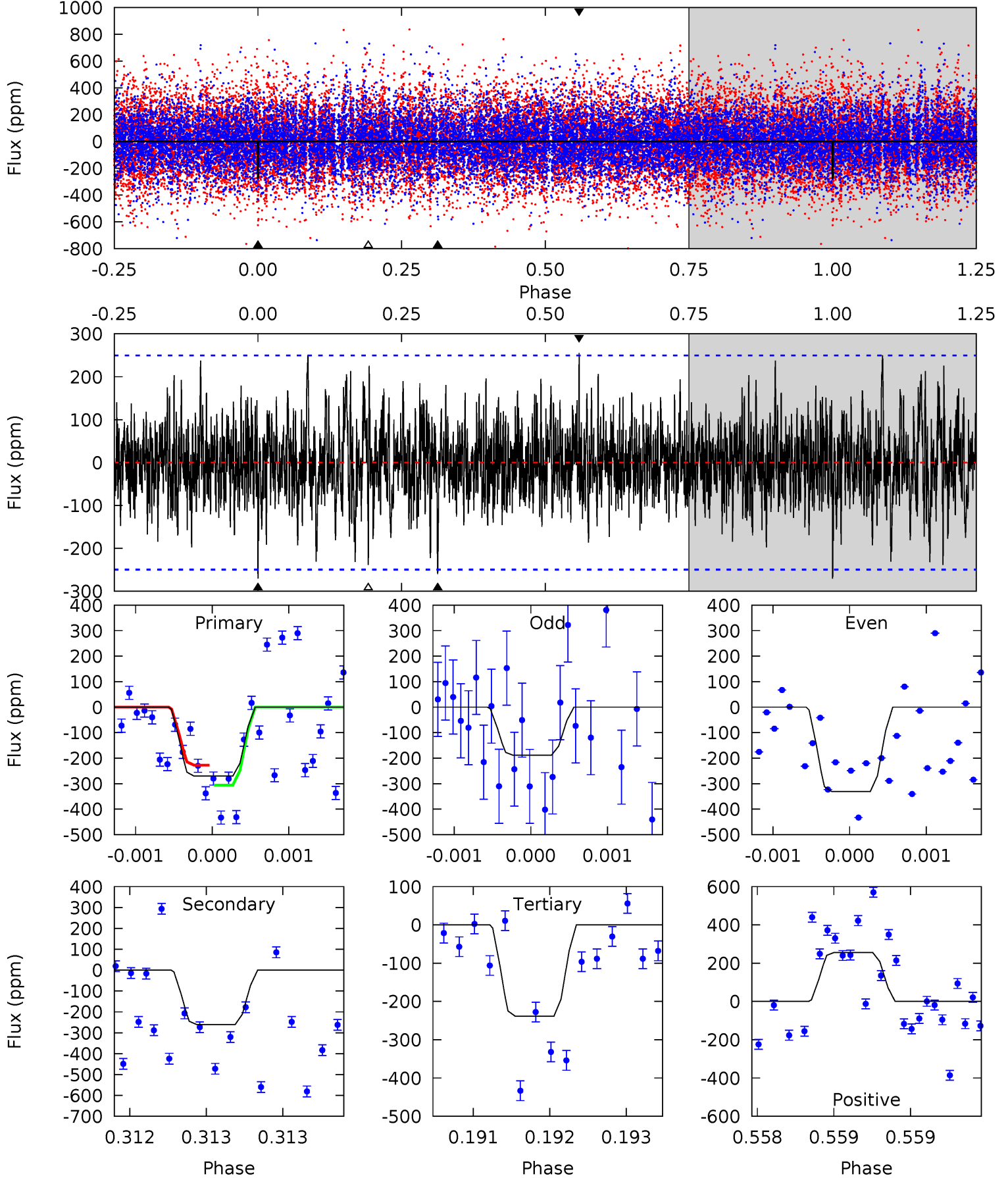
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.89	5.45	5.34	5.52	5.38	3.18	1.51	4.55	4.37	0.11	-0.07	1.53	0.94	0.36	0.09



Alt Model-Shift Uniqueness Test

003543070-03, P = 144.108829 Days, E = 133.349392 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.97	5.74	5.27	5.65	5.51	3.39	1.52	0.70	0.33	0.47	0.09	1.57	1.14	0.49	0.84



Stellar Parameters For KIC 003543070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6628^{+166}_{-199}	$3.552^{+0.292}_{-0.078}$	$-0.060^{+0.300}_{-0.250}$	$3.709^{+0.336}_{-1.262}$	$1.787^{+0.174}_{-0.323}$	$0.049^{+0.107}_{-0.009}$
	+3%/-3%	+8%/-2%	+500%/-417%	+9%/-34%	+10%/-18%	+217%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003543070-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-135 ± 25	$6.45^{+3.19}_{-2.57}$	963^{+46}_{-80}	5465^{+1708}_{-842}	777^{+1352}_{-450}
Alt.	-260 ± 45	$7.15^{+3.25}_{-2.83}$	957^{+48}_{-71}	6089^{+1753}_{-918}	1153^{+1978}_{-605}

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

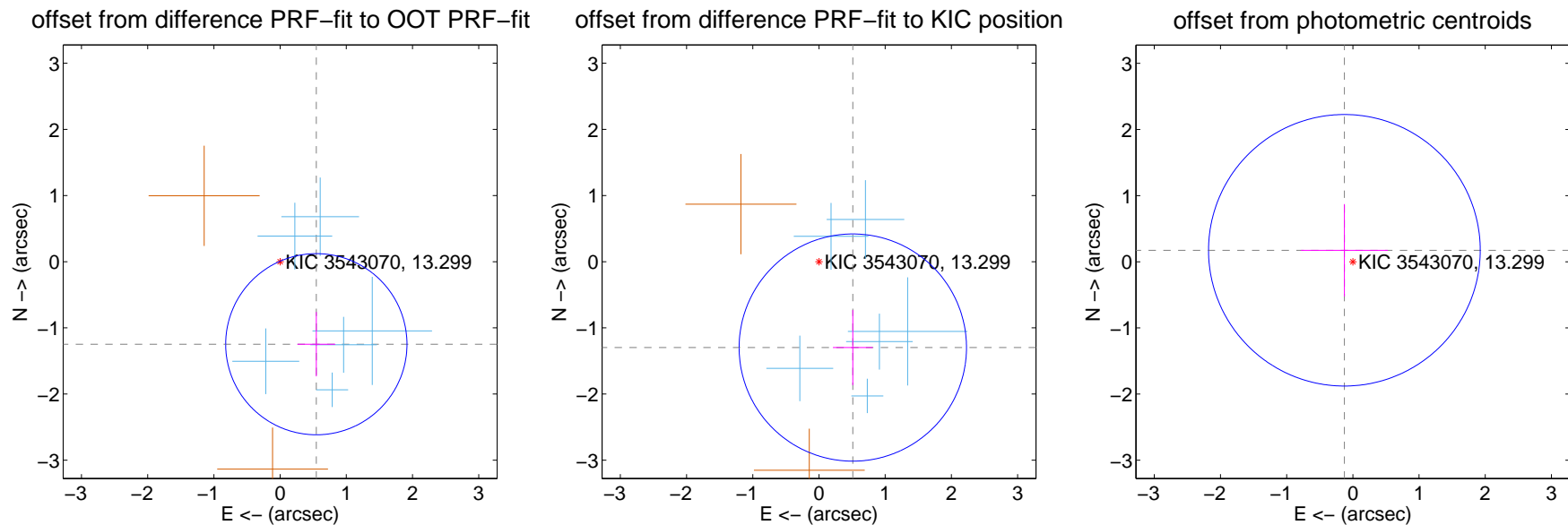
DV Centroid Data

Supplemental centroid analysis for 003543070-03. Kepler magnitude: 13.30. Transit SNR 9.91

There are 6 quarters with good PRF difference image offsets

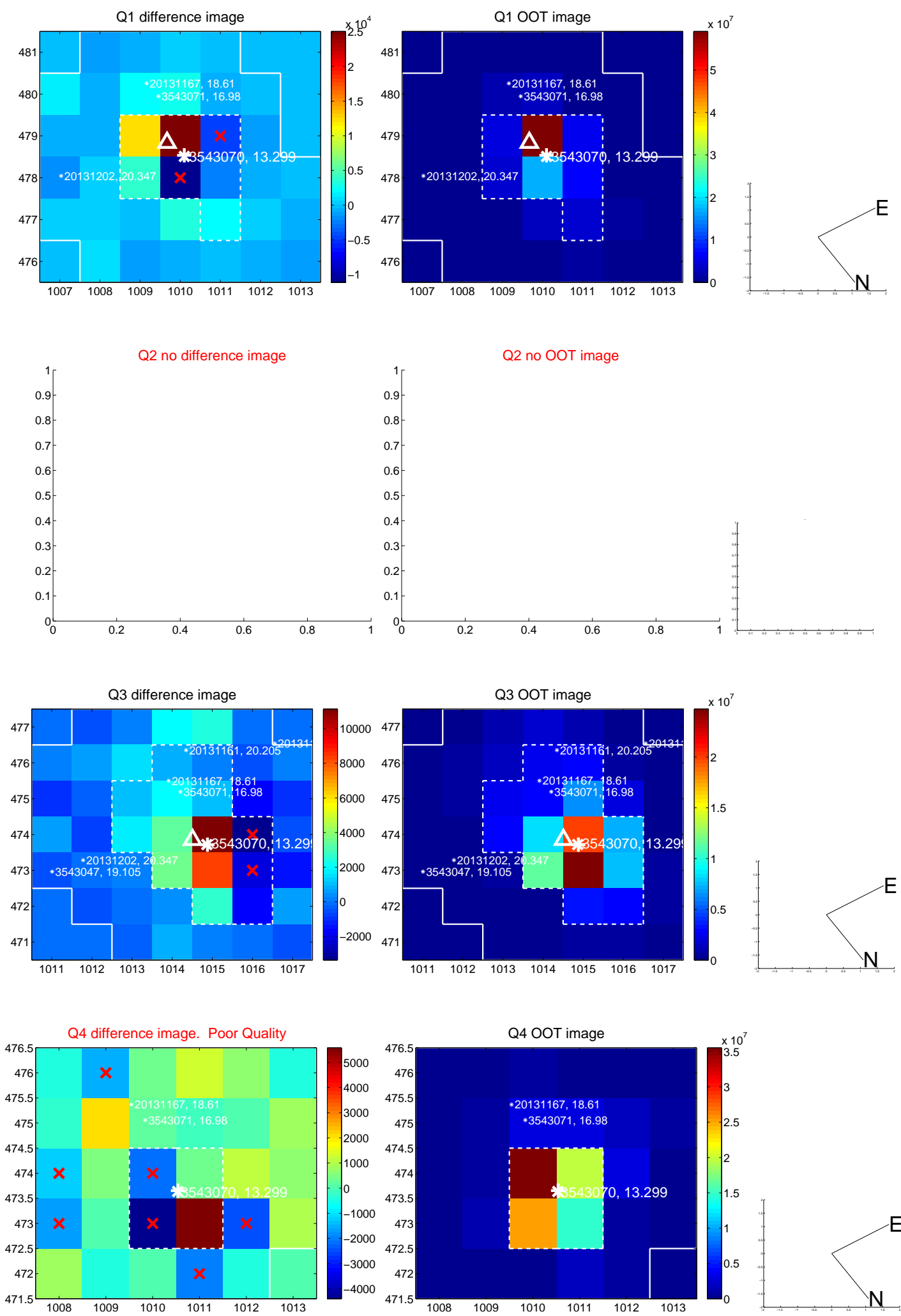
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.362 ± 0.456	2.98	-0.547 ± 0.286	-1.247 ± 0.486
PRF-fit source offset from KIC position	1.395 ± 0.572	2.44	-0.511 ± 0.300	-1.298 ± 0.567
photometric centroid source offset	0.22 ± 0.68	0.32	0.13 ± 0.66	0.17 ± 0.70



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.

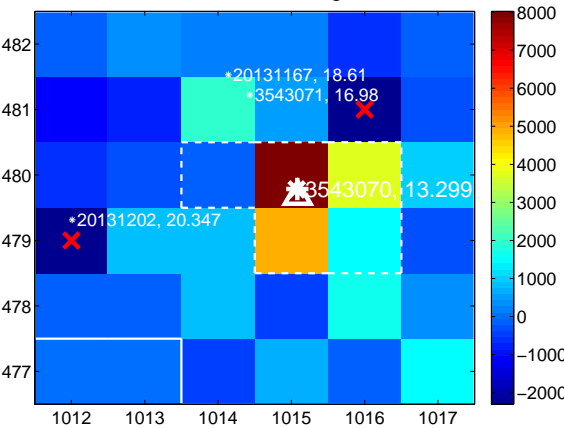
Q5 no difference image



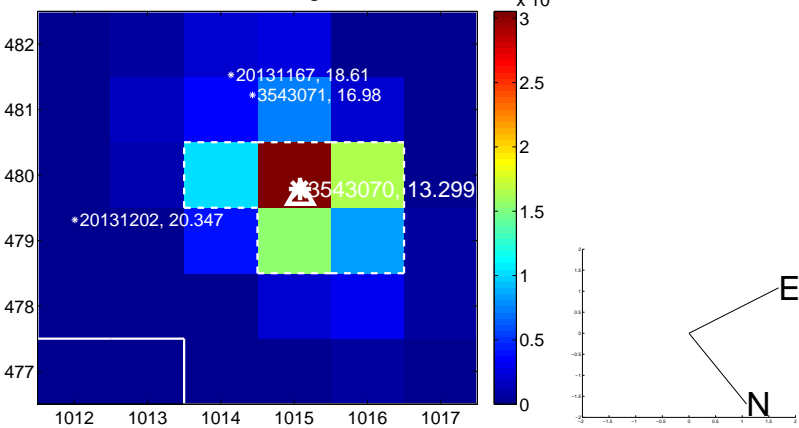
Q5 no OOT image



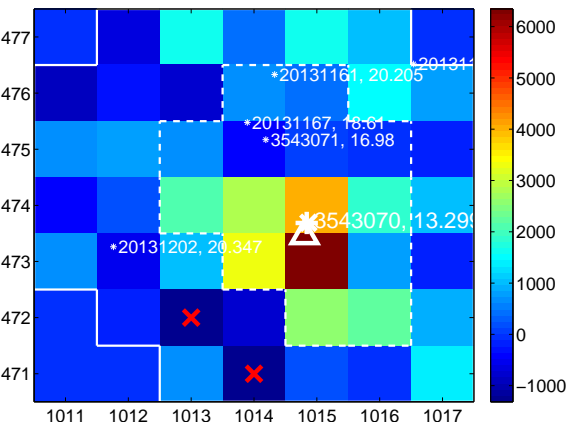
Q6 difference image



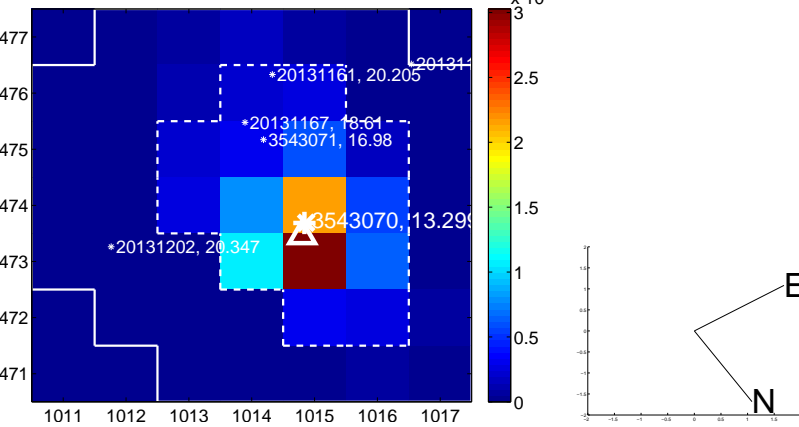
Q6 OOT image



Q7 difference image



Q7 OOT image



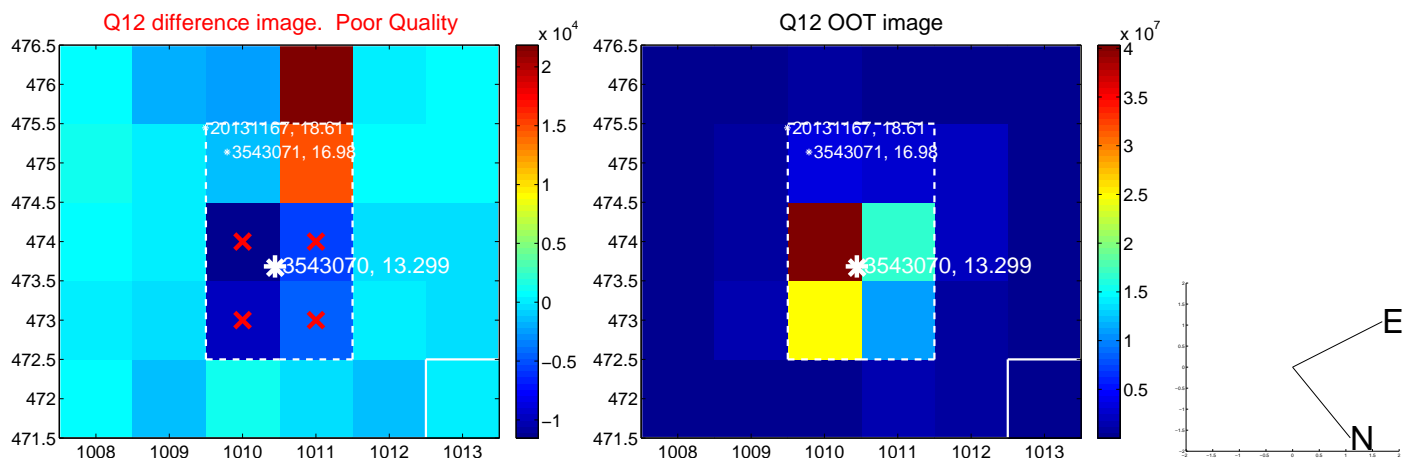
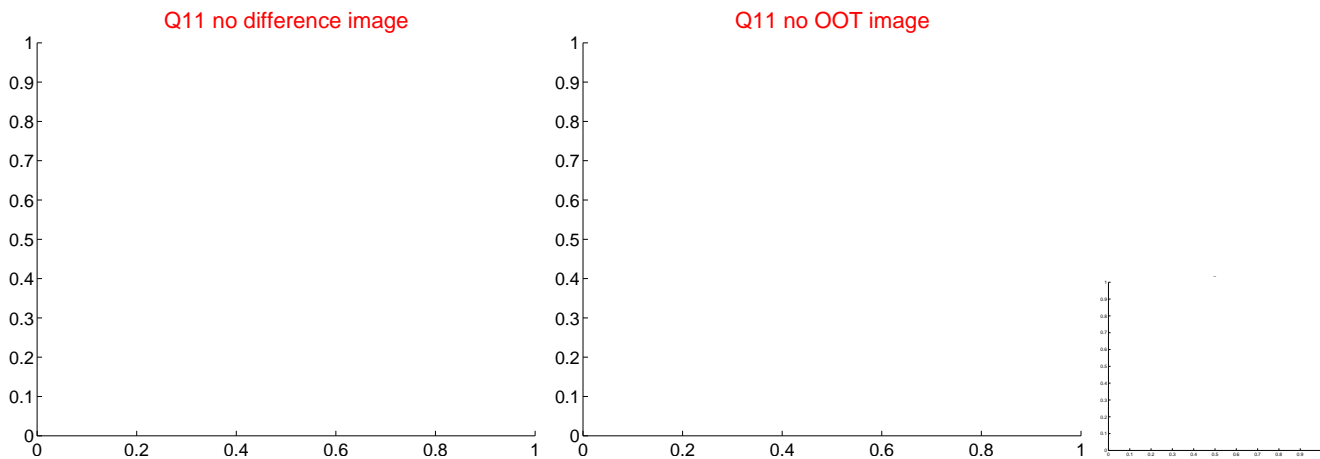
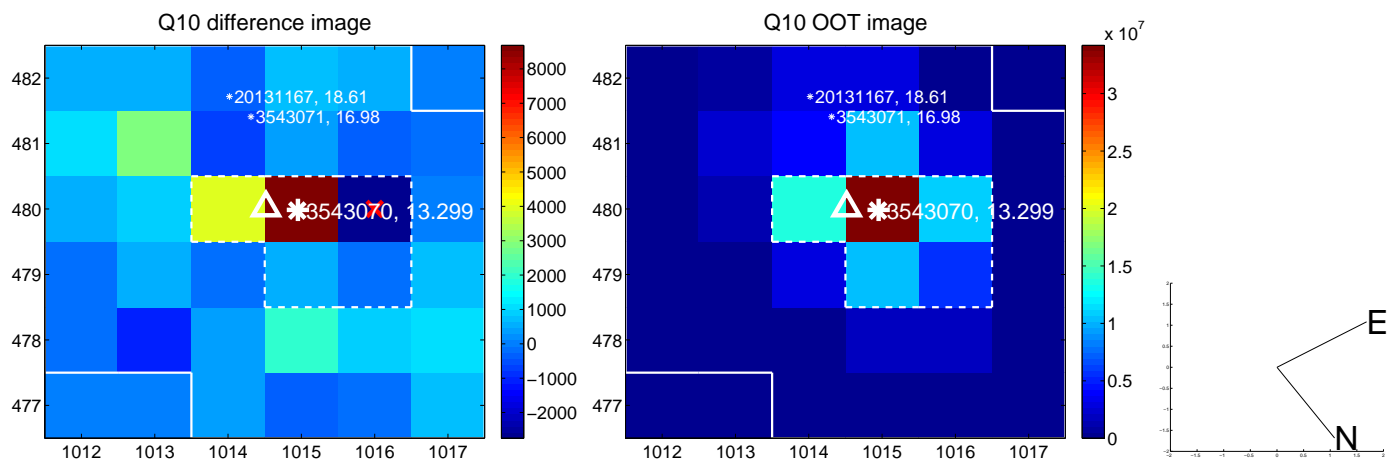
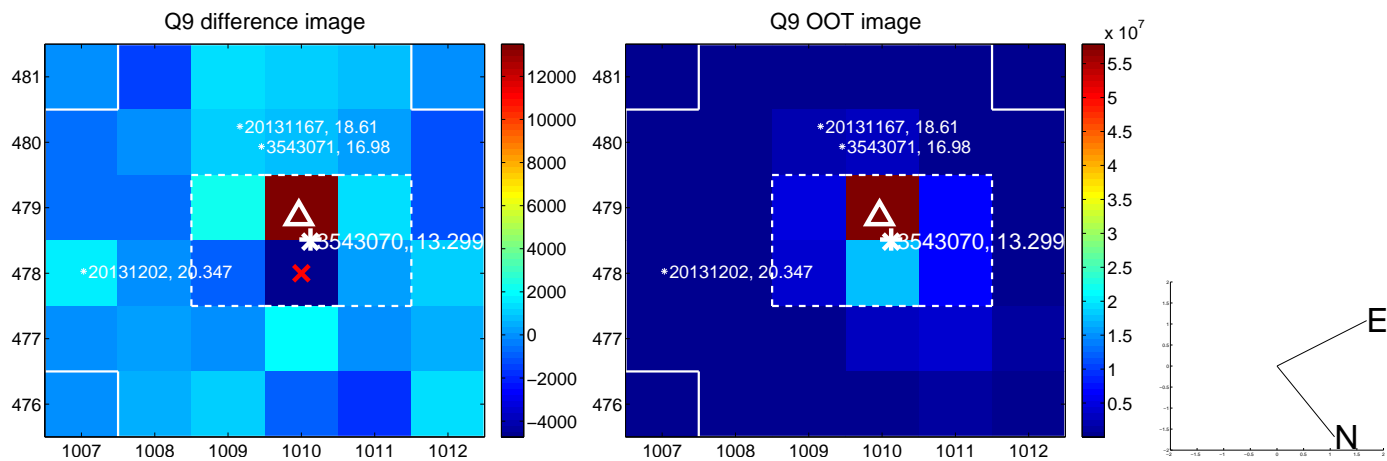
Q8 no difference image



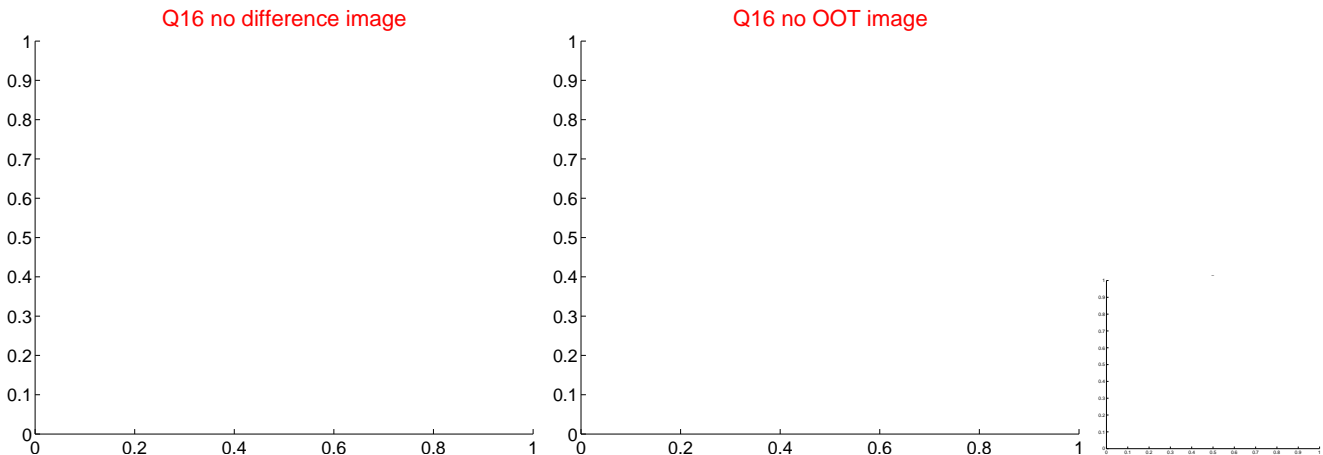
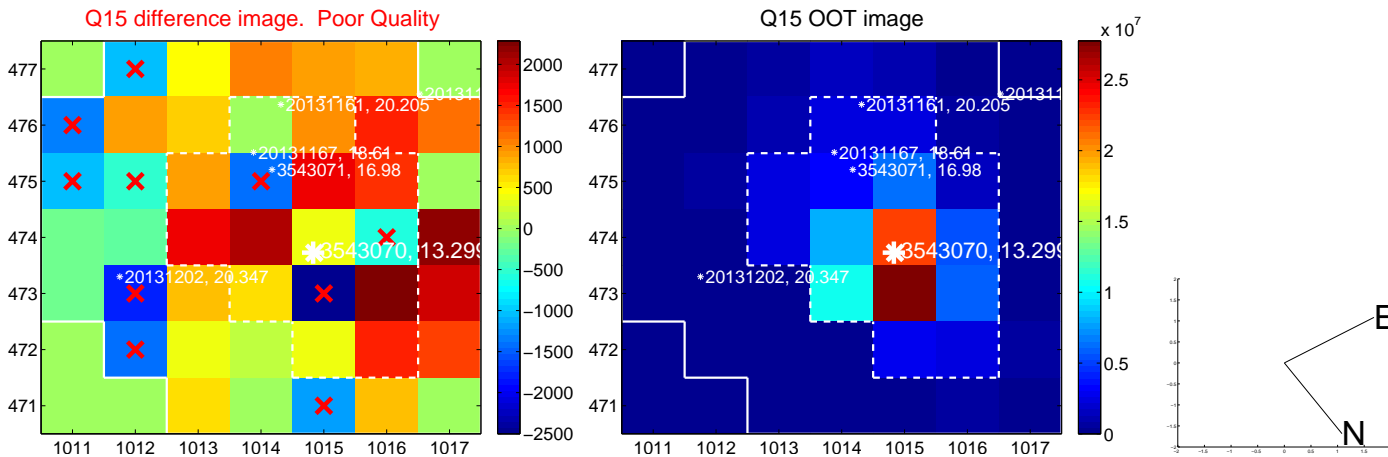
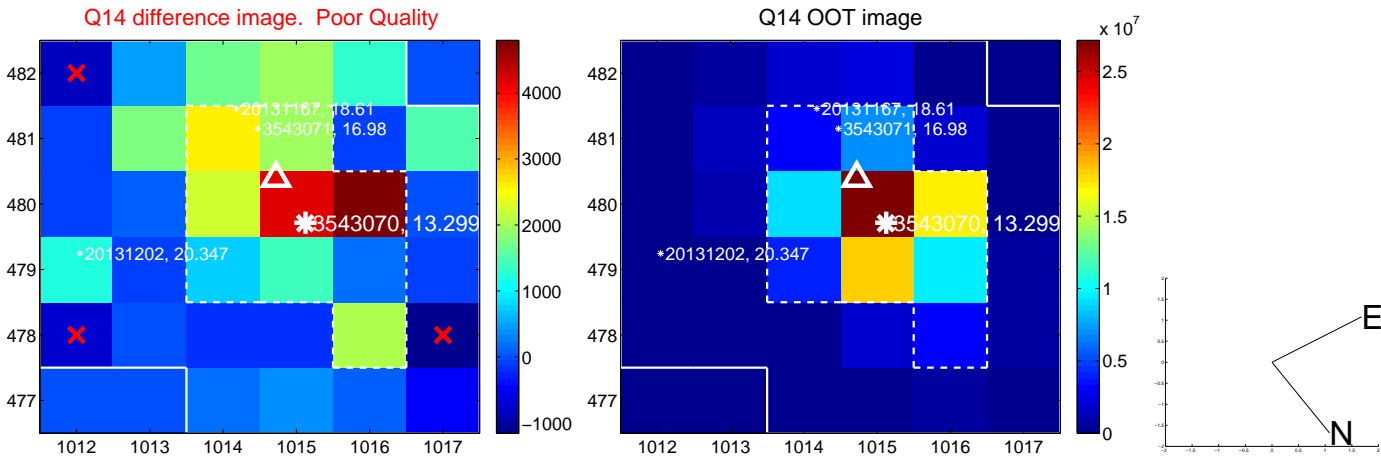
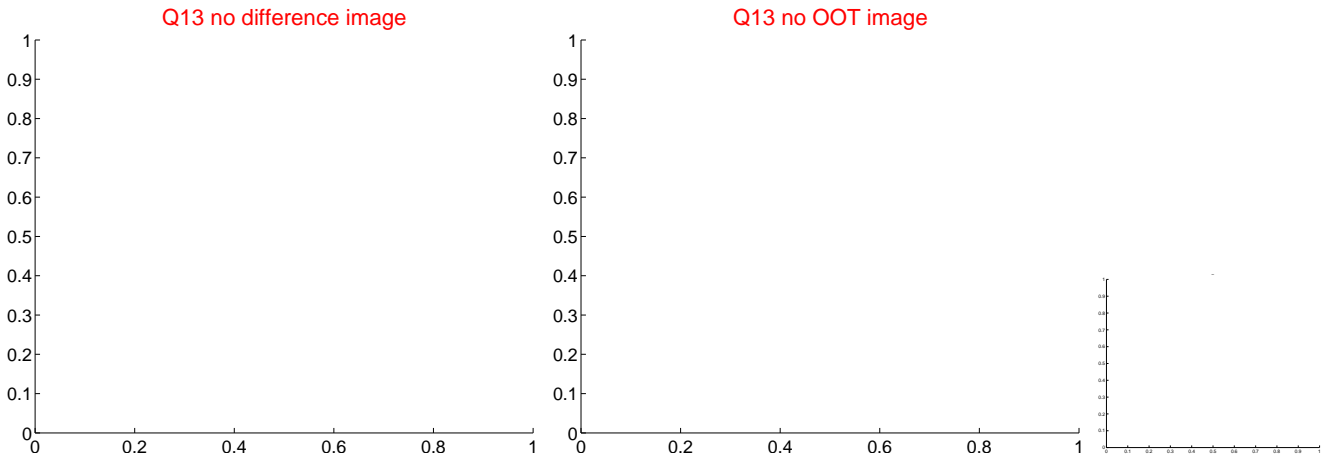
Q8 no OOT image



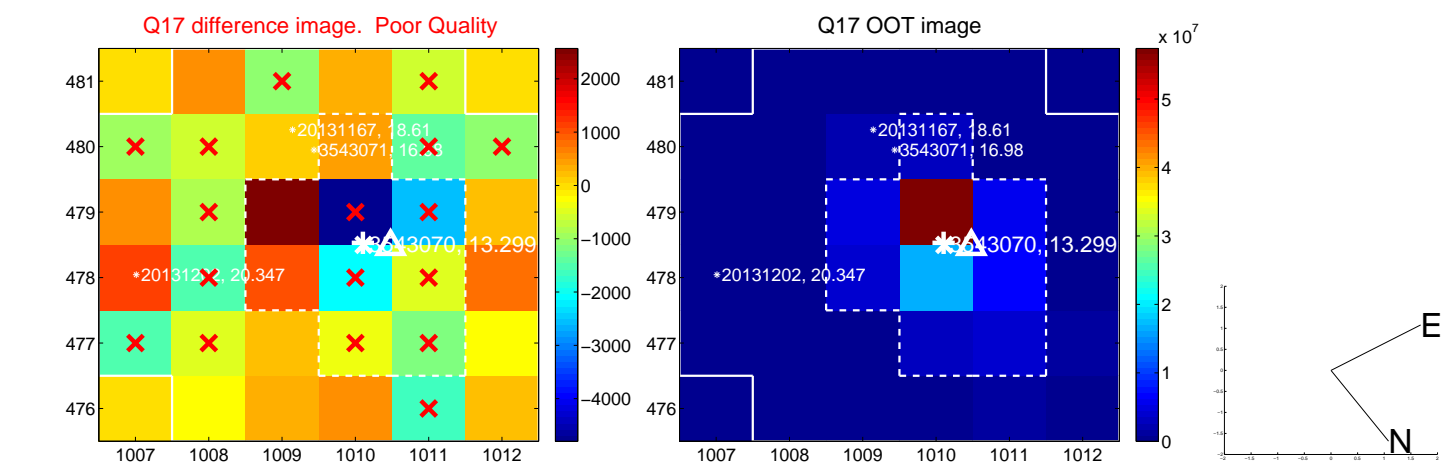
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



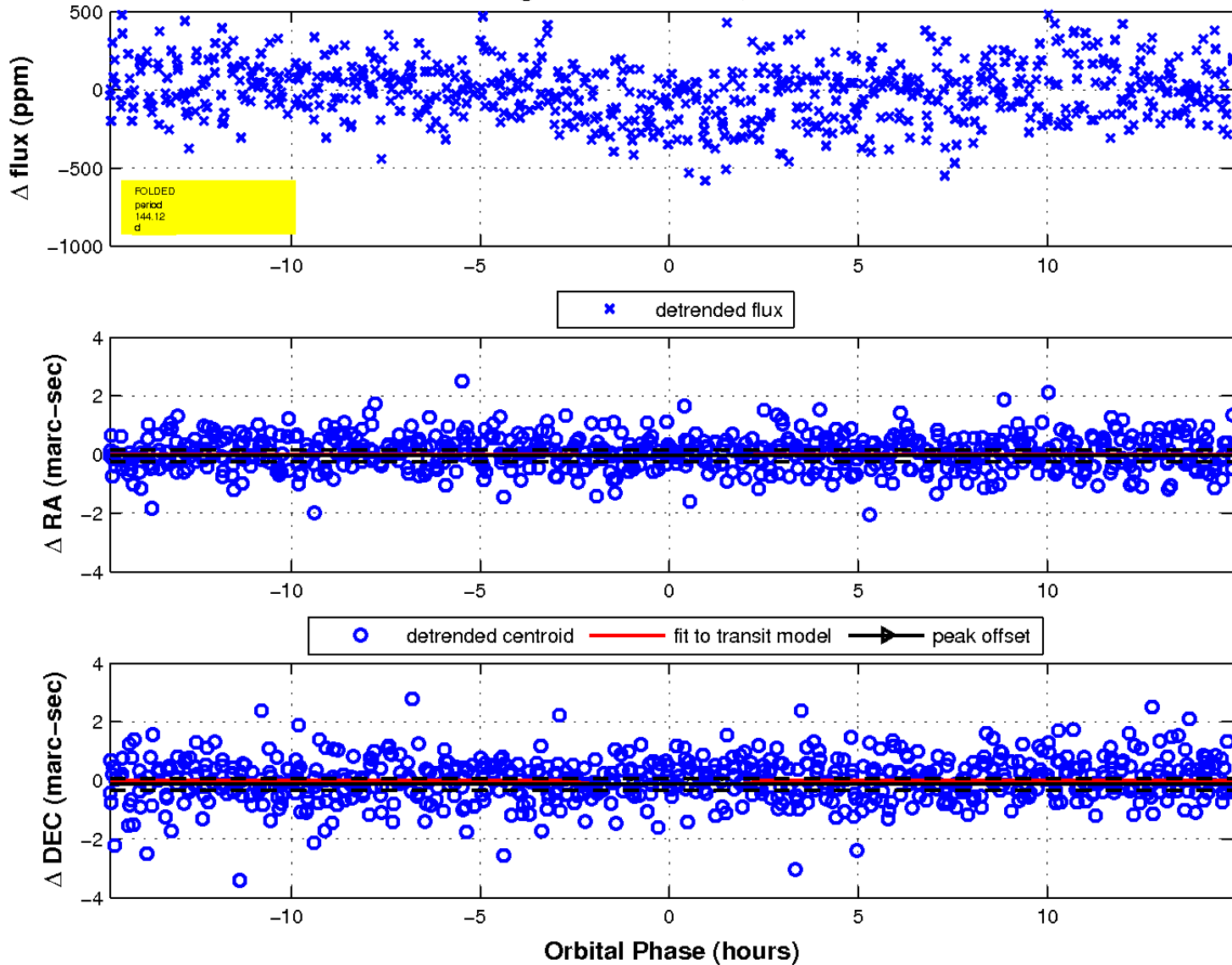
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

