

KIC 006143929

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})
006143929-01	OBS	No	3.998376	131.880635	26.2	13.013	8.8	6.2	0.95	6279	0.56	512.51
006143929-02	OBS	No	402.296365	253.122443	1266.4	54.193	25.3	17.3	0.95	6279	6.37	1.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006143929-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006143929-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

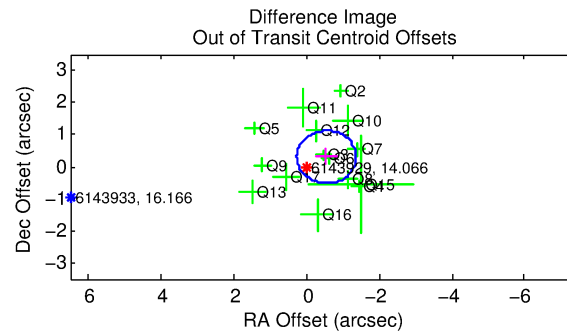
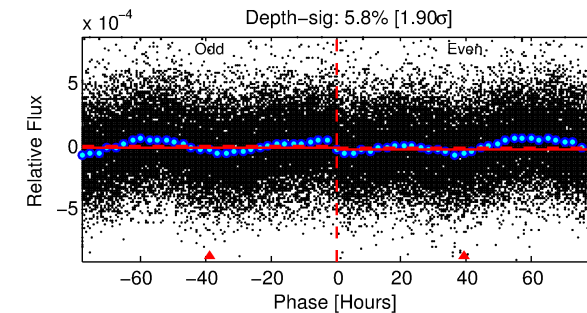
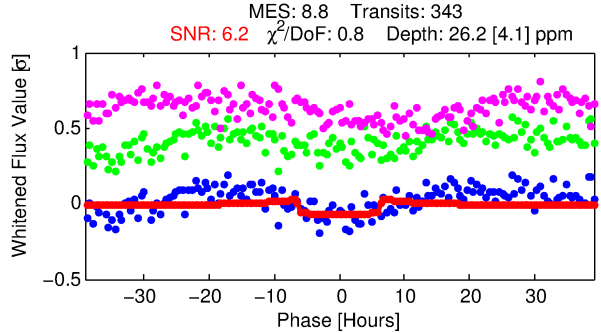
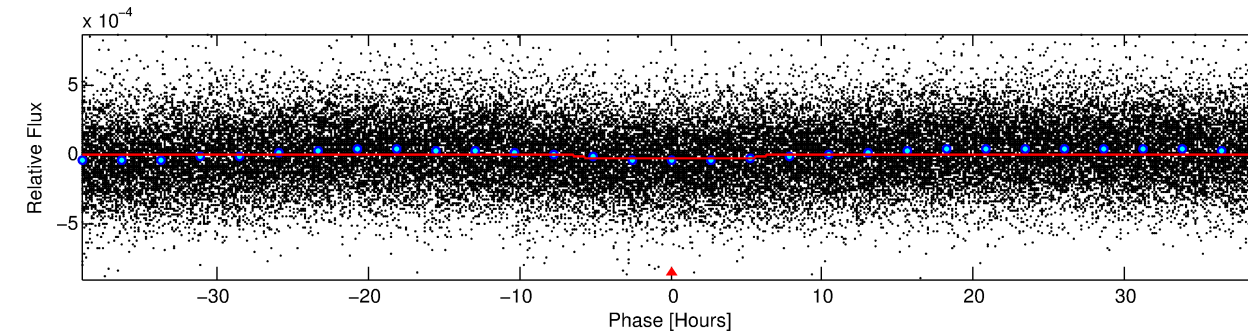
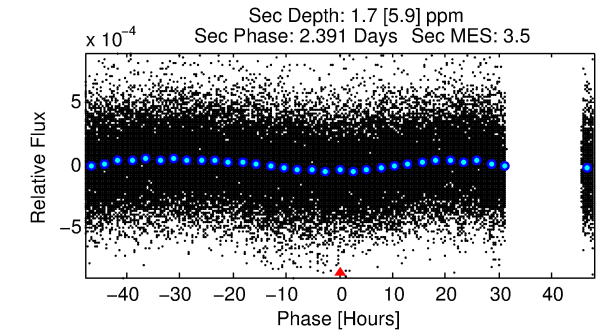
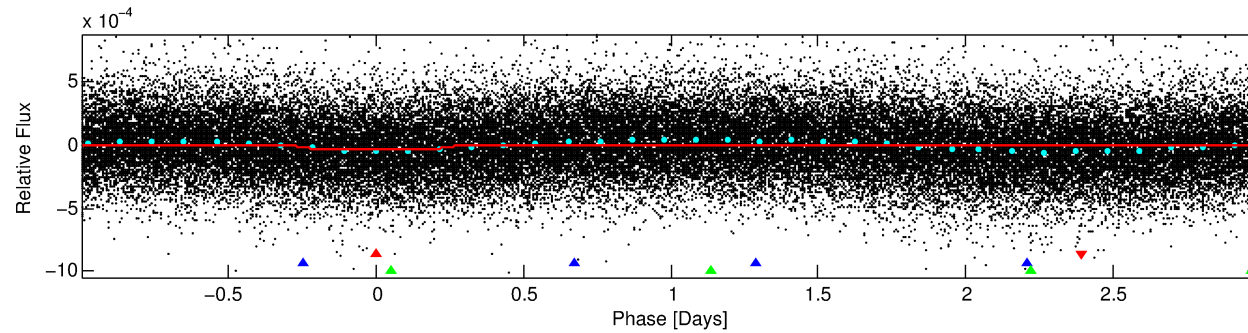
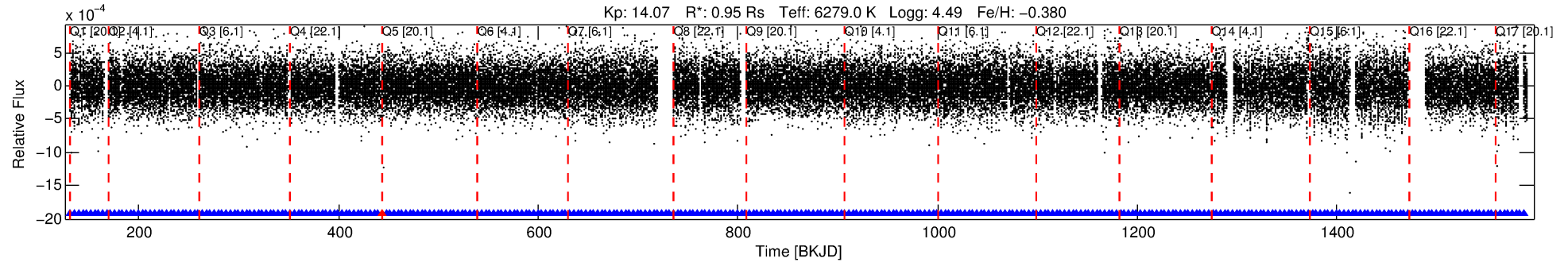
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006143929-01

No Significant Match Found

DV One-Page Summary

KIC: 6143929 Candidate: 1 of 3 Period: 3.998 d



DV Fit Results:

Period = 3.99838 [0.00009] d
Epoch = 131.8806 [0.0147] BKJD
Rp/R* = 0.0054 [0.0016]
a/R* = 1.45 [1.19]
b = 0.89 [0.38]
Seff = 512.51 [200.40]
Teq = 1213 [119] K
Rp = 0.56 [0.24] Re
a = 0.0496 [0.0126] AU
Ag = 7.40 [25.76] [0.25σ]
Teffp = 3094 [2678] K [0.70σ]

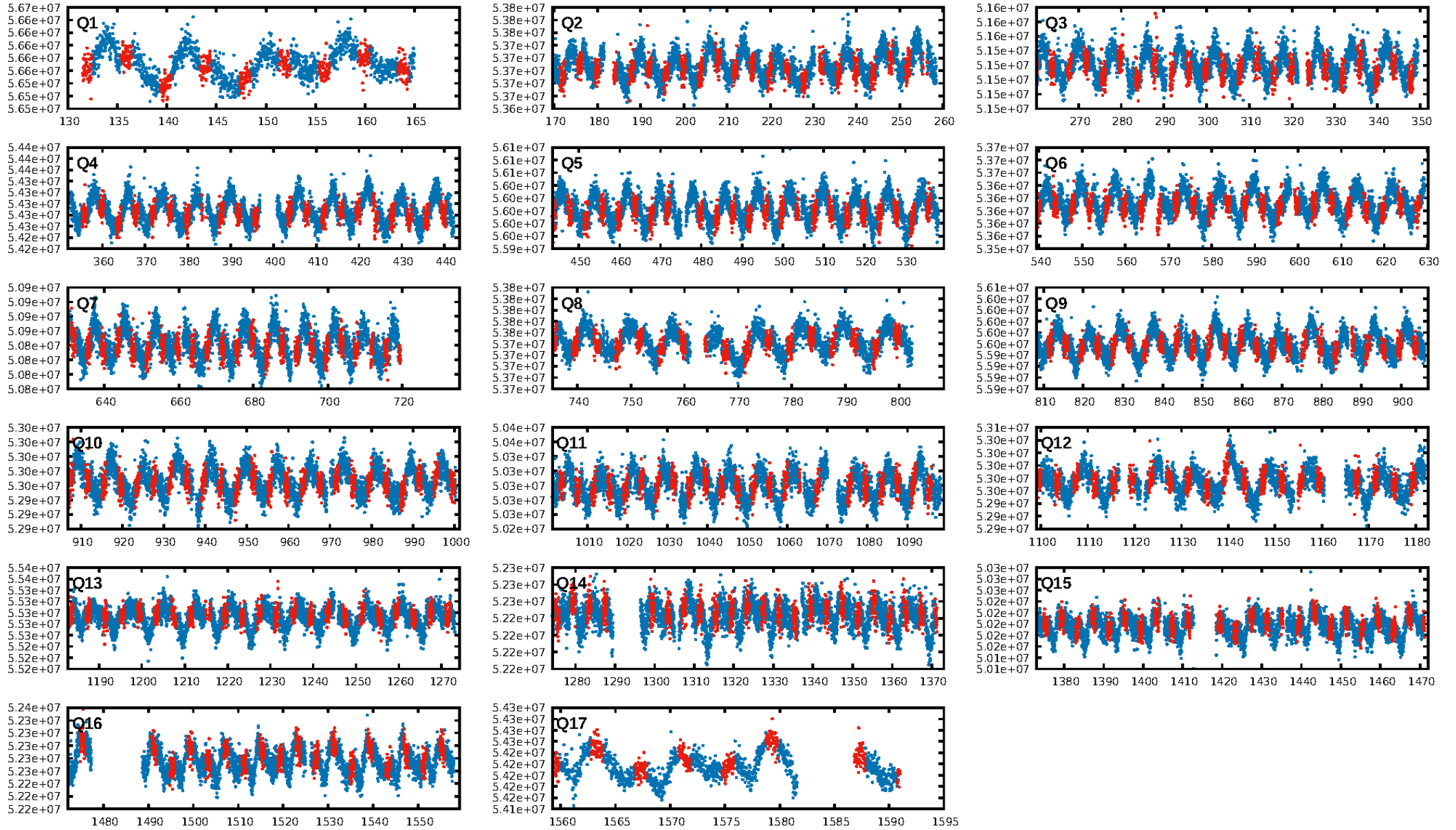
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [621.23σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.40e-11
RollingBand-fgt: 1.00 [326/327]
GhostDiagnostic-chr: 1.842
Centroid-sig: 0.0%
Centroid-so: 4.167 arcsec [2.56σ]
OotOffset-rm: 0.623 arcsec [2.28σ]
KicOffset-rm: 0.503 arcsec [1.71σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

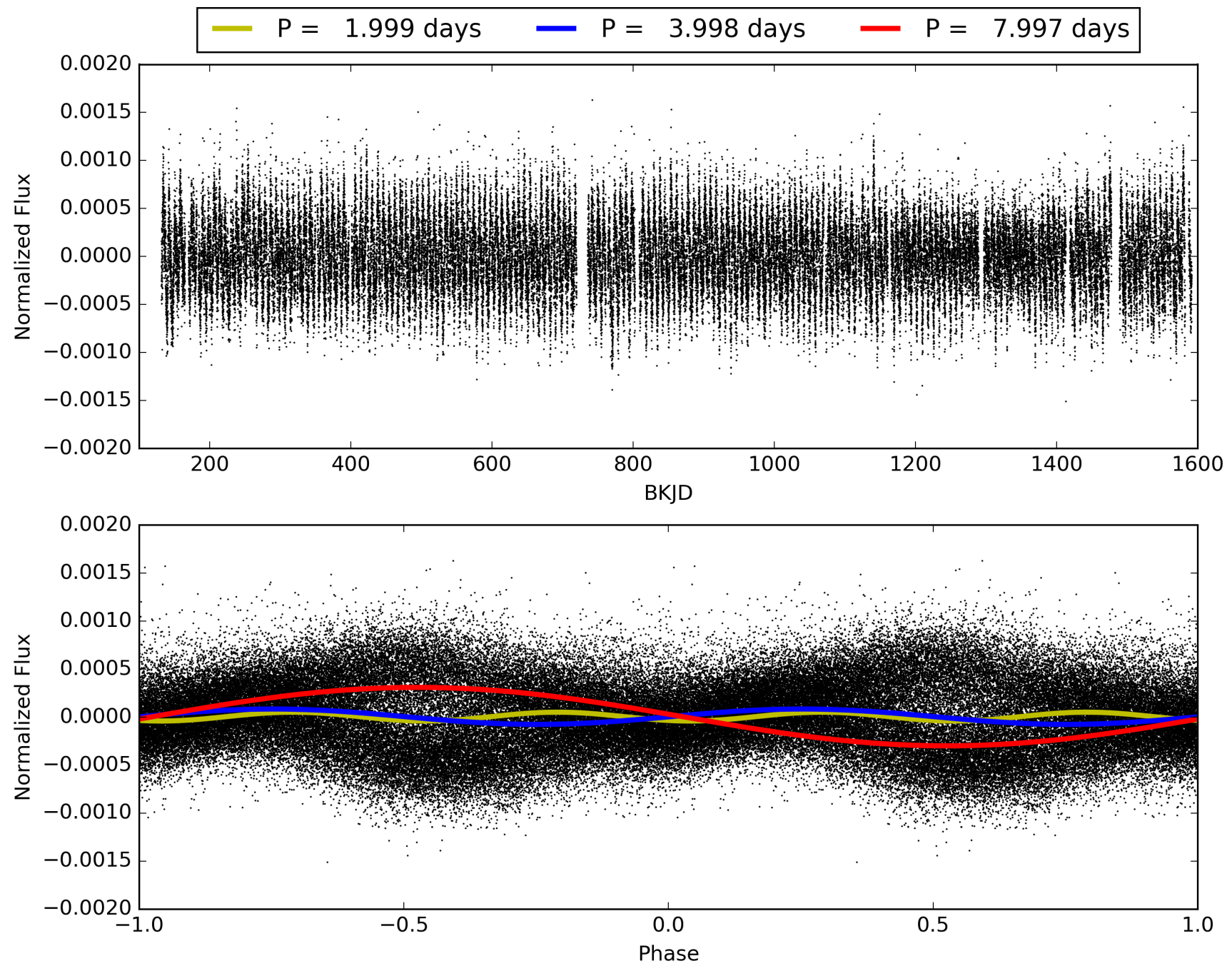
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:31:22 Z

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

TCE 006143929-01, PDC Light Curves

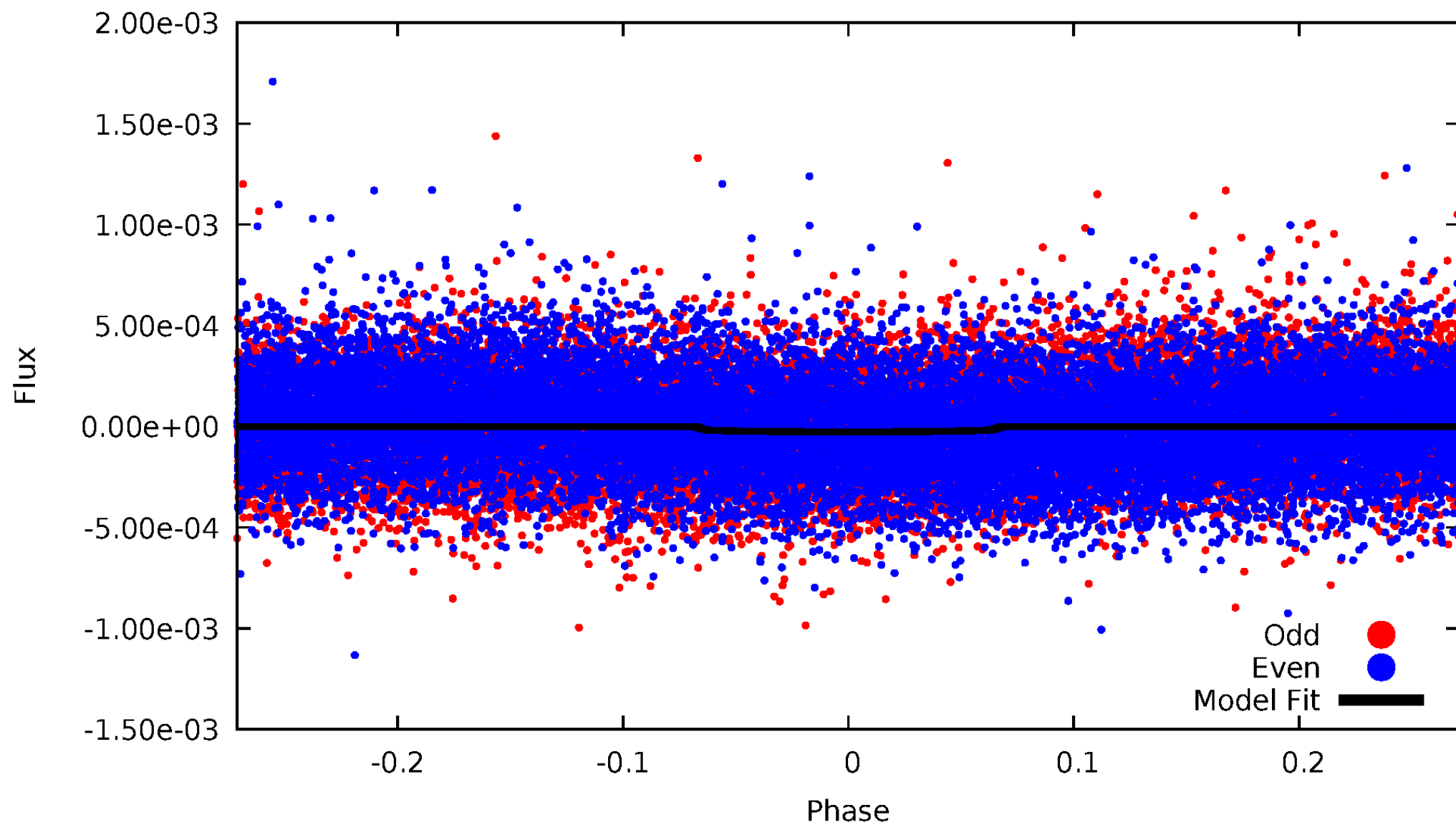


TCE 006143929-01



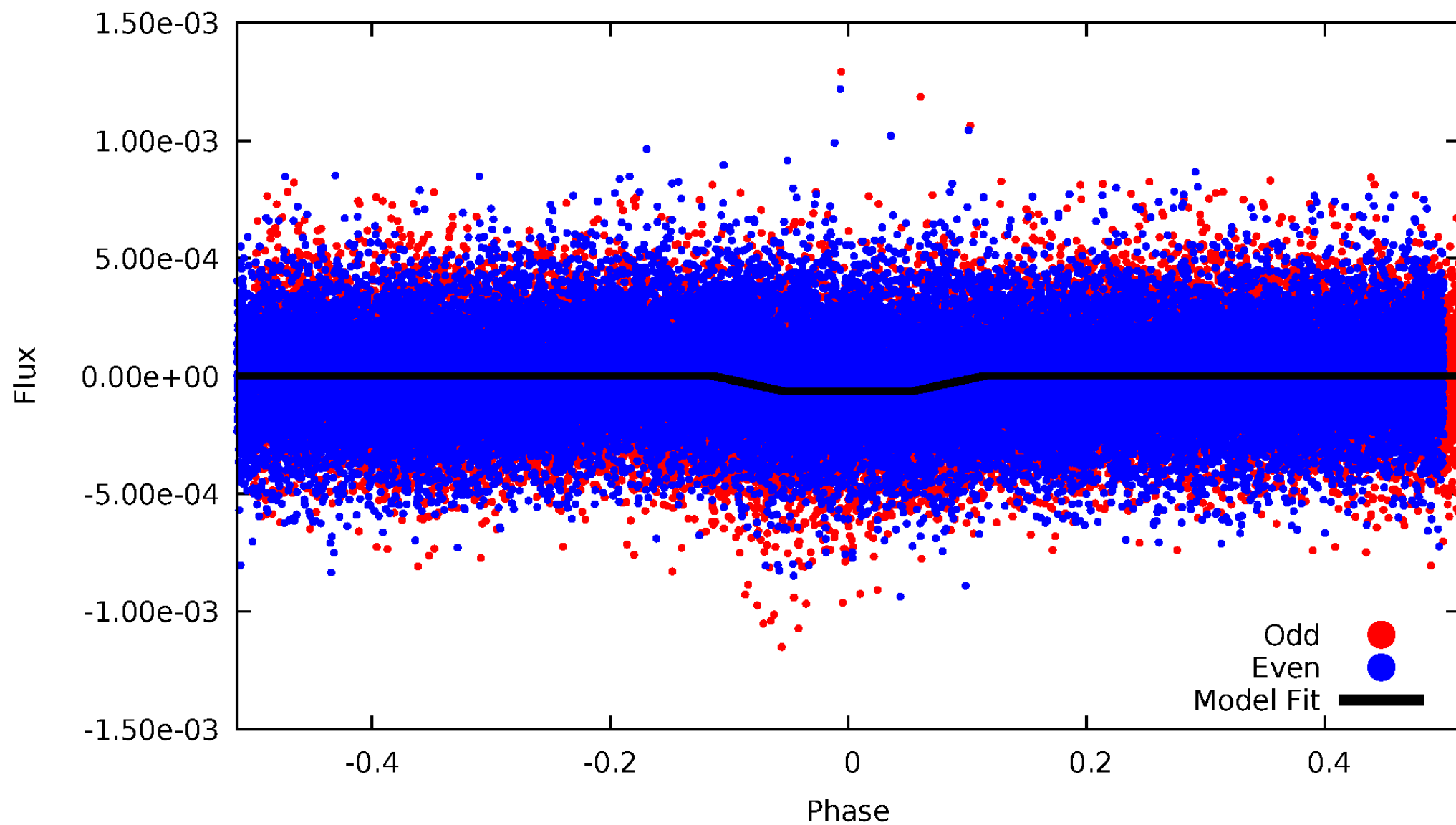
DV Odd/Even

TCE 006143929-01



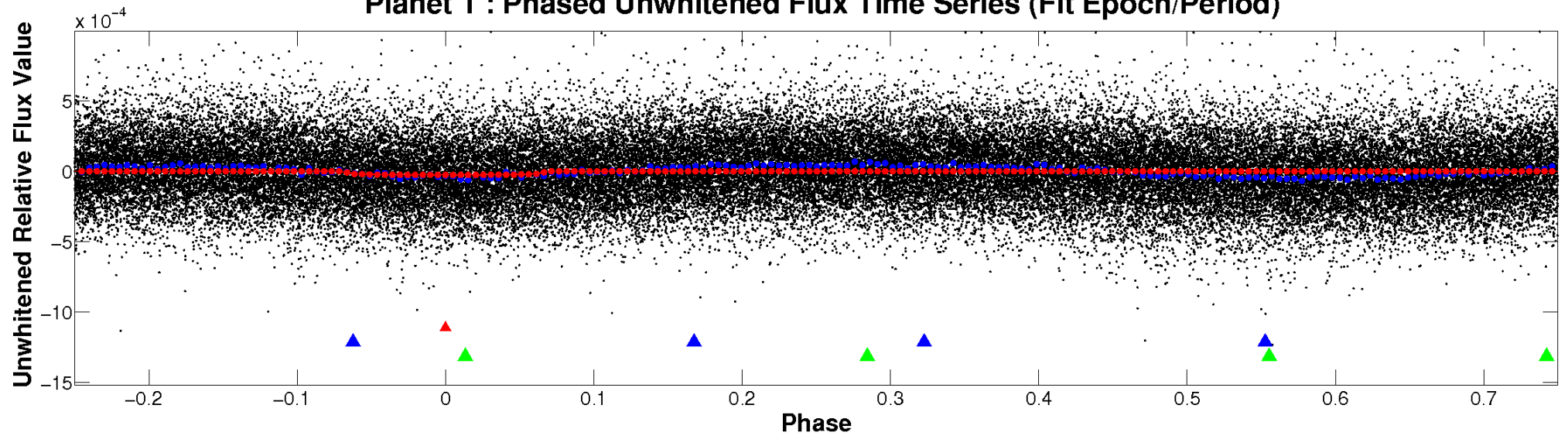
ALT Odd/Even

TCE 006143929-01

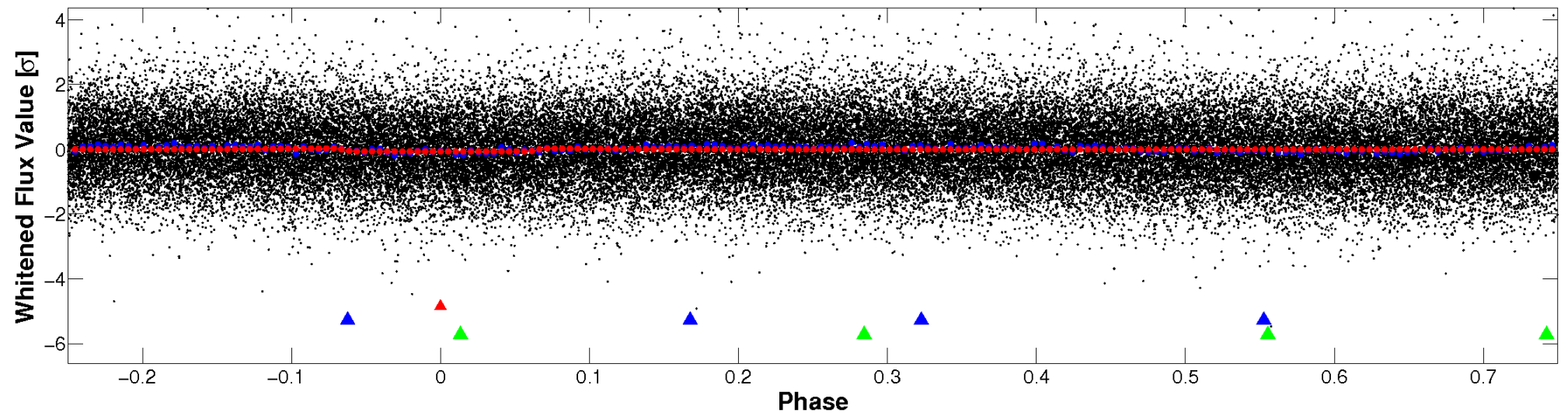


Non-Whitened Vs. Whitened Light Curve

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

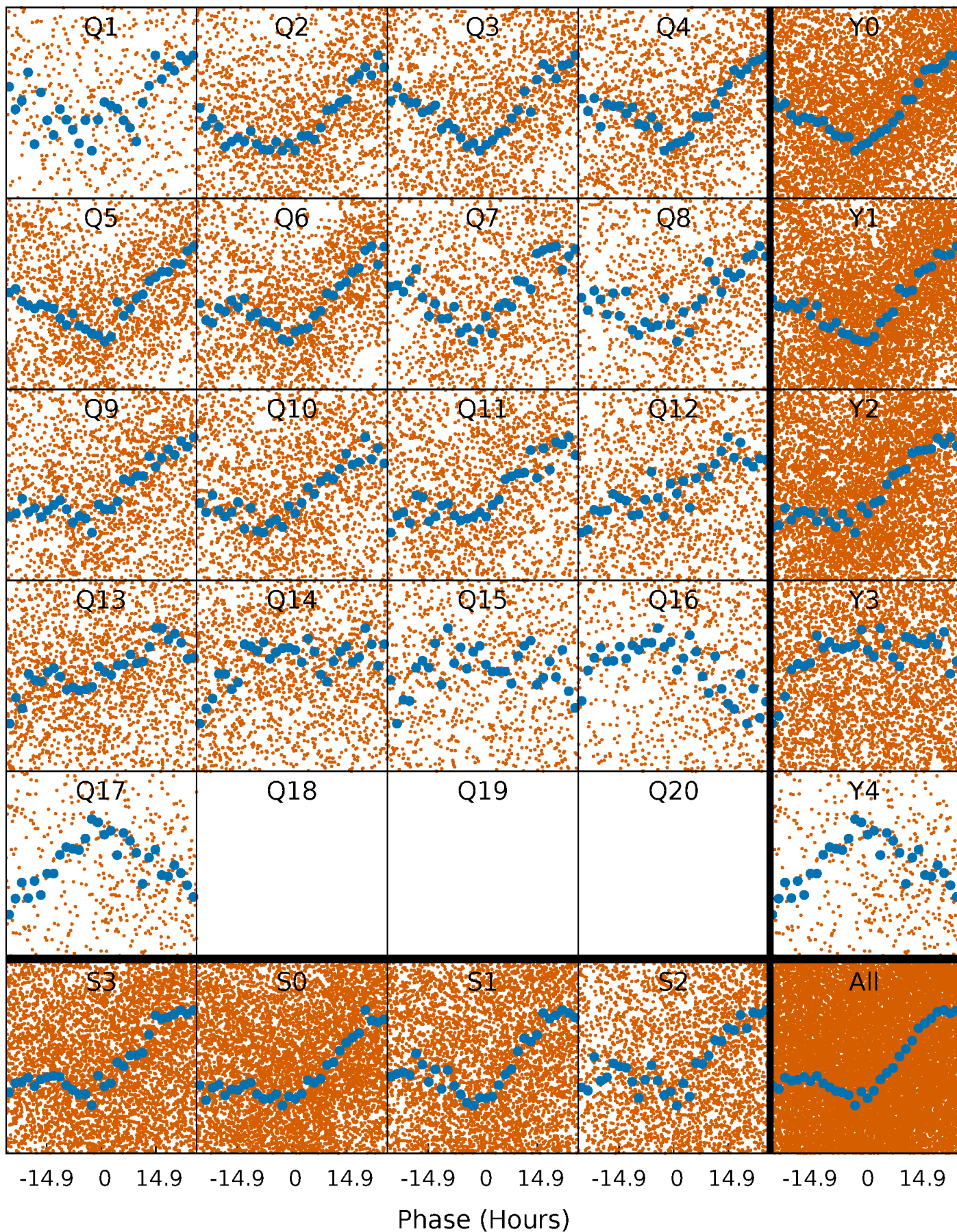


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



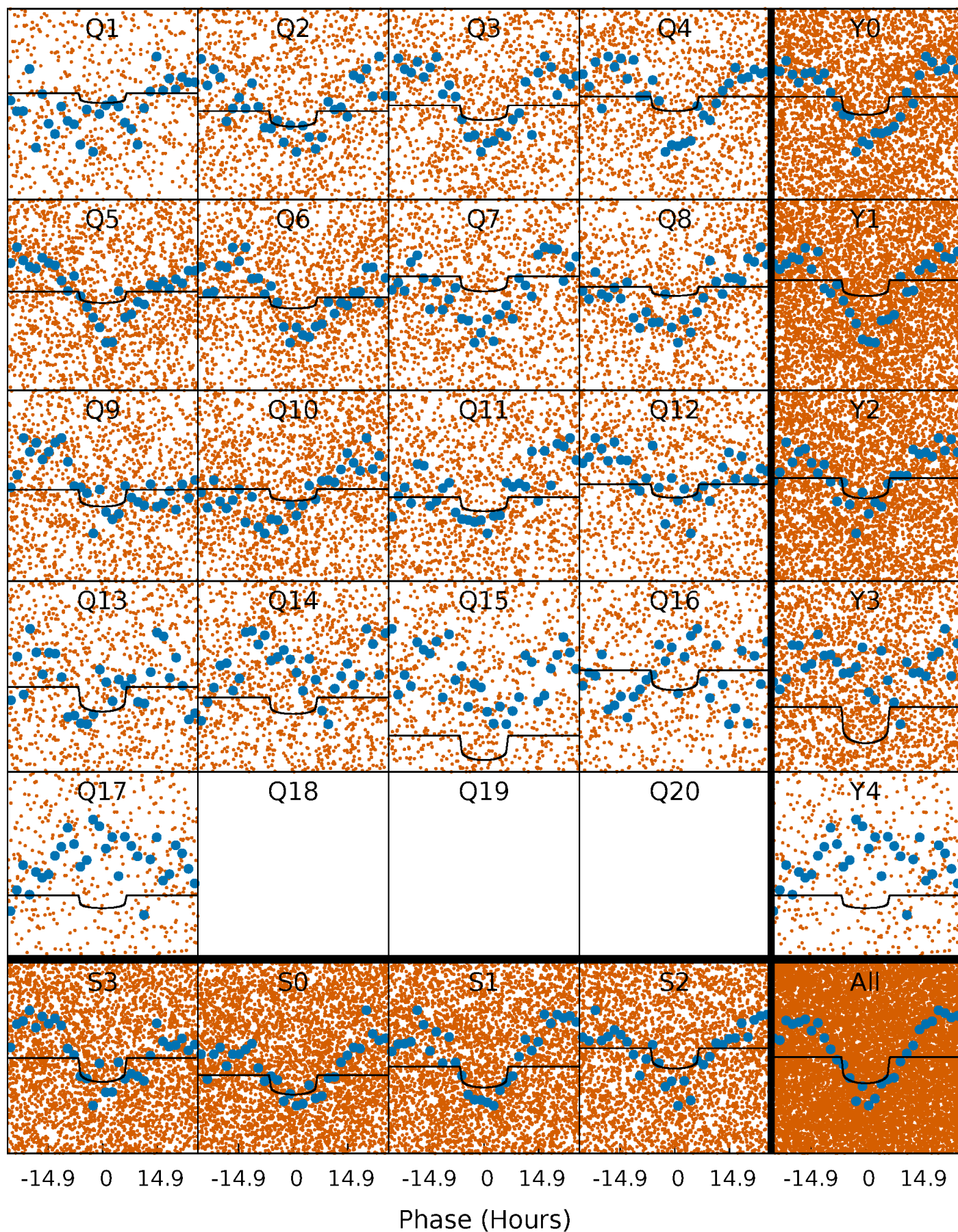
PDC Quarter-Phased Transit Curves

TCE 006143929-01 P= 3.998376 Days $T_0=131.880635$ (BKJD)



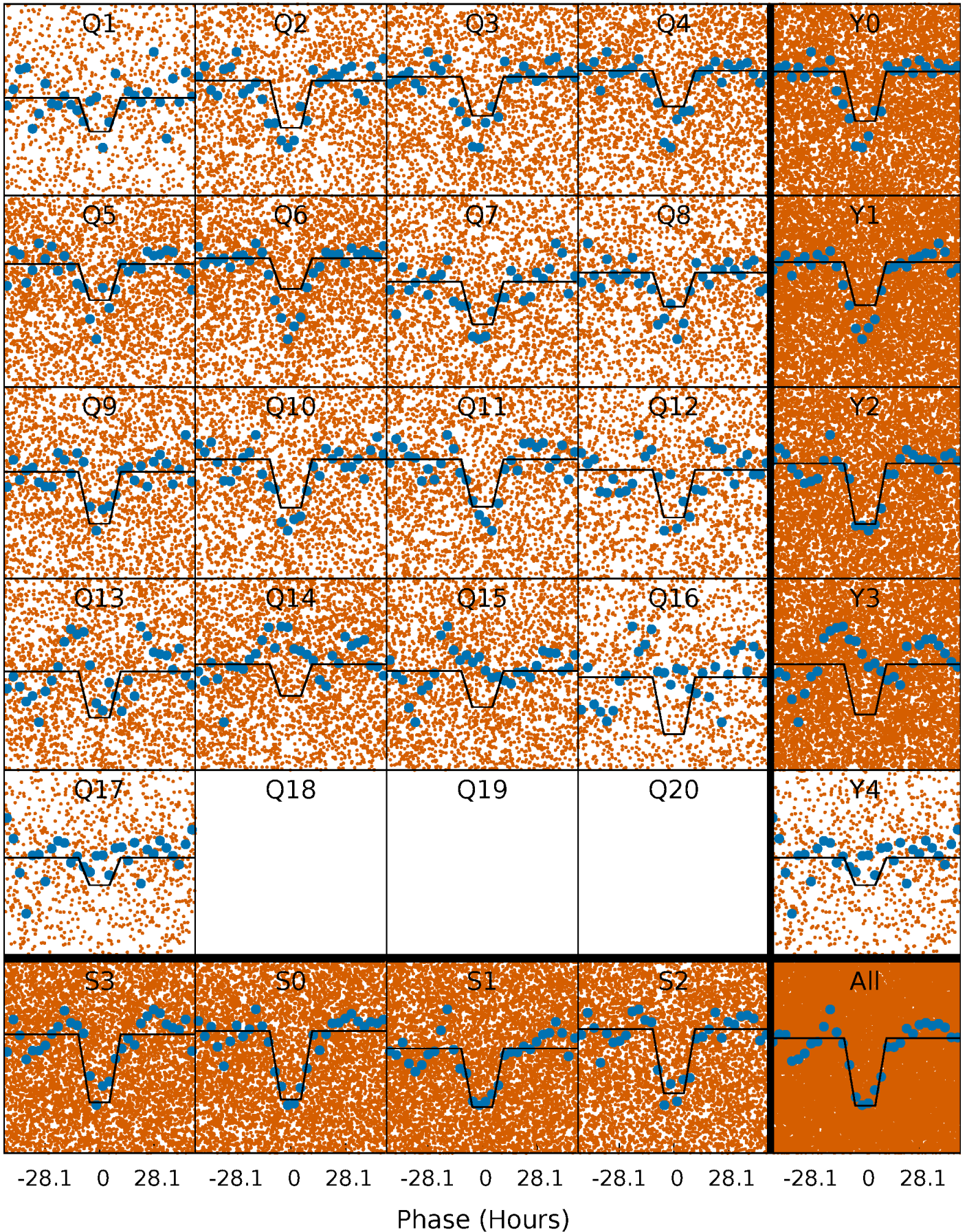
DV Quarter-Phased Transit Curves

TCE 006143929-01 P= 3.998376 Days $T_0=131.880635$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

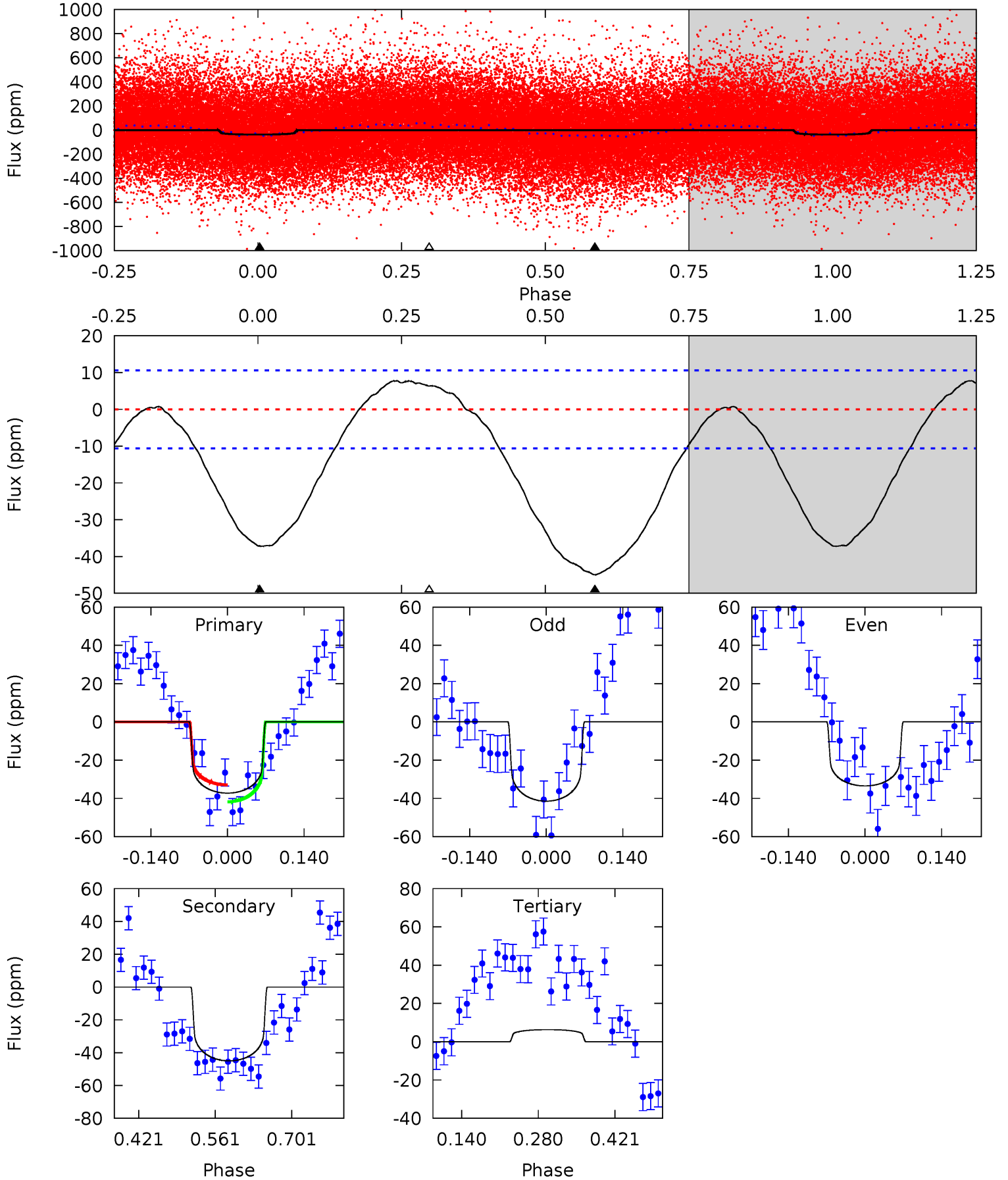
TCE 006143929-01 P= 3.996477 Days $T_0=132.154557$ (BKJD)



DV Model-Shift Uniqueness Test

006143929-01, P = 3.998376 Days, E = 127.882259 Days

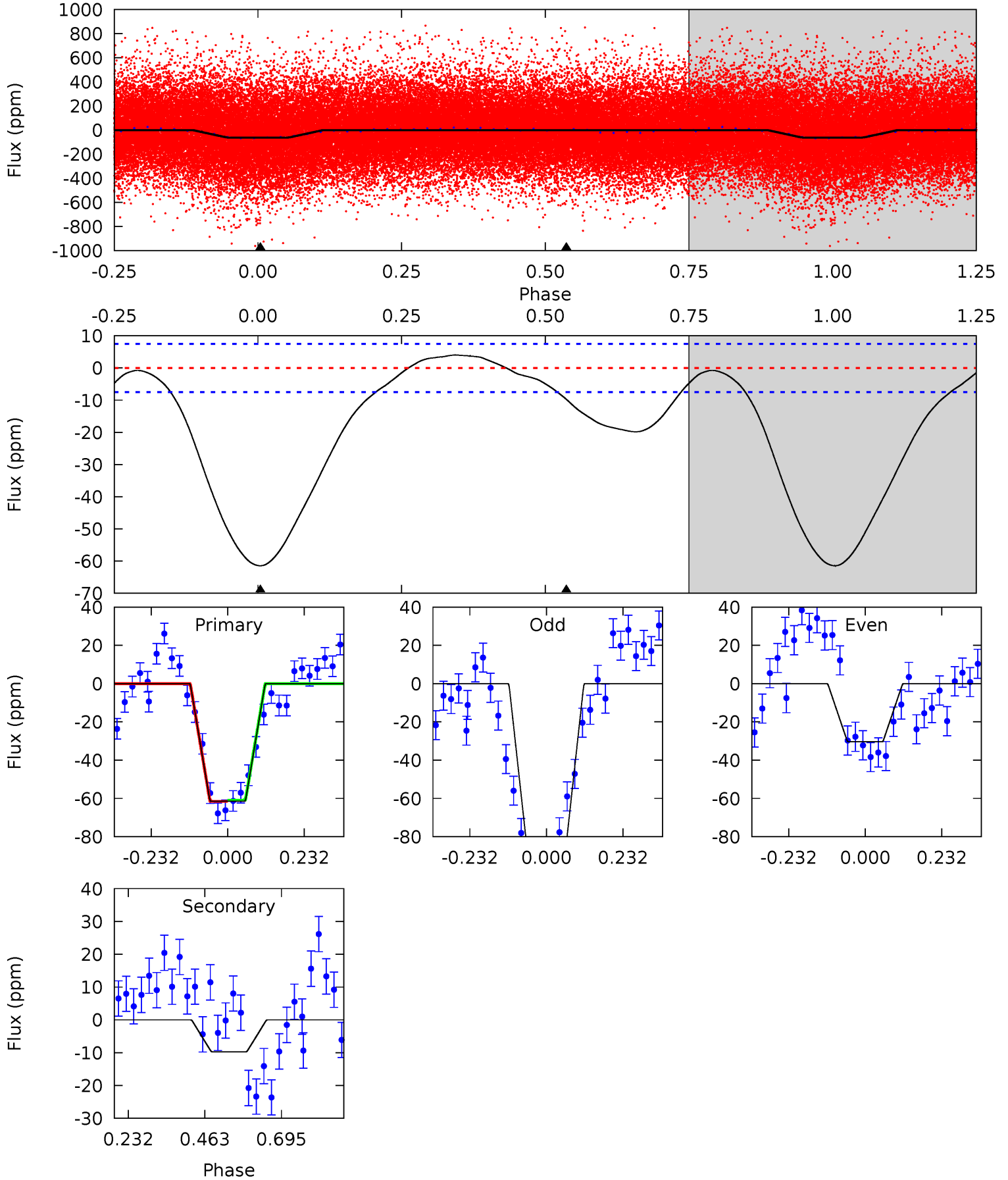
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	19.1	-2.68	0	4.49	1.47	2.76	18.5	15.8	21.8	19.1	1.69	0.87	0.15	1.88



Alt Model-Shift Uniqueness Test

006143929-01, P = 3.996477 Days, E = 128.158080 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.0	5.70	0	0	4.39	1.20	1.37	36.0	36.0	5.70	5.70	19.1	1.06	0.06	0.18



Stellar Parameters For KIC 006143929

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6279^{+169}_{-207}	$4.489^{+0.050}_{-0.200}$	$-0.380^{+0.300}_{-0.300}$	$0.952^{+0.290}_{-0.097}$	$1.018^{+0.123}_{-0.135}$	$1.662^{+0.363}_{-0.877}$
	+3%/-3%	+1%/-4%	+79%/-79%	+30%/-10%	+12%/-13%	+22%/-53%
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 006143929-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-45 ± 2	$0.59^{+0.18}_{-0.18}$	1728^{+127}_{-76}	7060^{+1763}_{-910}	175^{+199}_{-72}
Alt.	-10 ± 2	$0.87^{+0.21}_{-0.18}$	1734^{+115}_{-85}	4150^{+370}_{-303}	17^{+10}_{-6}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

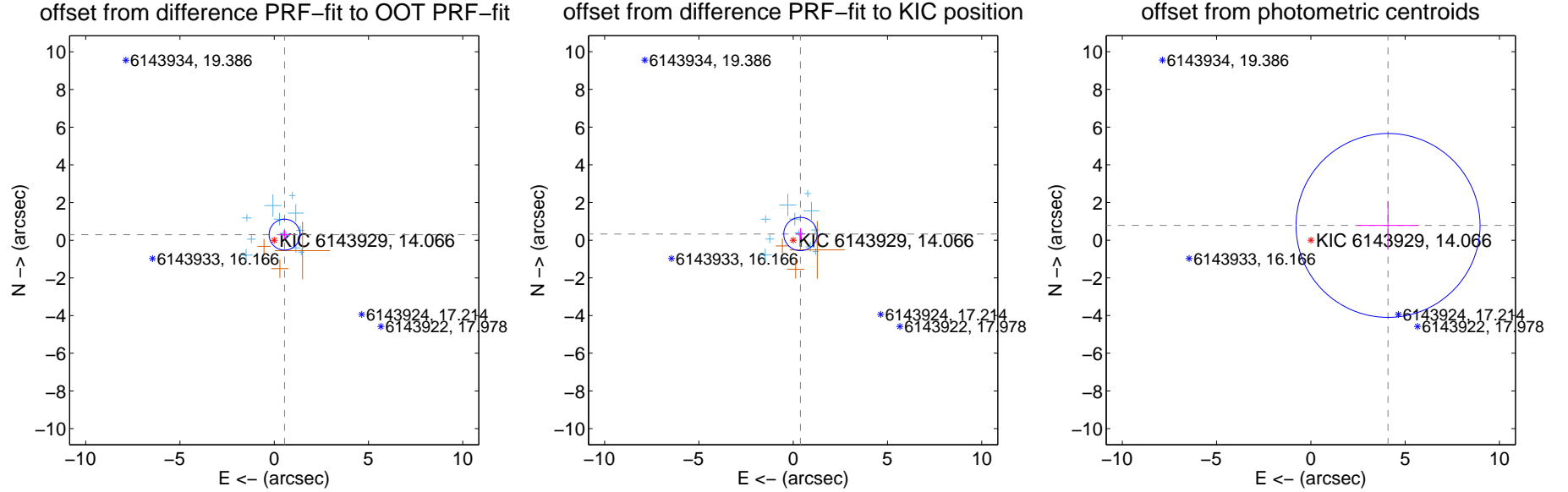
DV Centroid Data

Supplemental centroid analysis for 006143929-01. Kepler magnitude: 14.07. Transit SNR 6.16

There are 12 quarters with good PRF difference image offsets

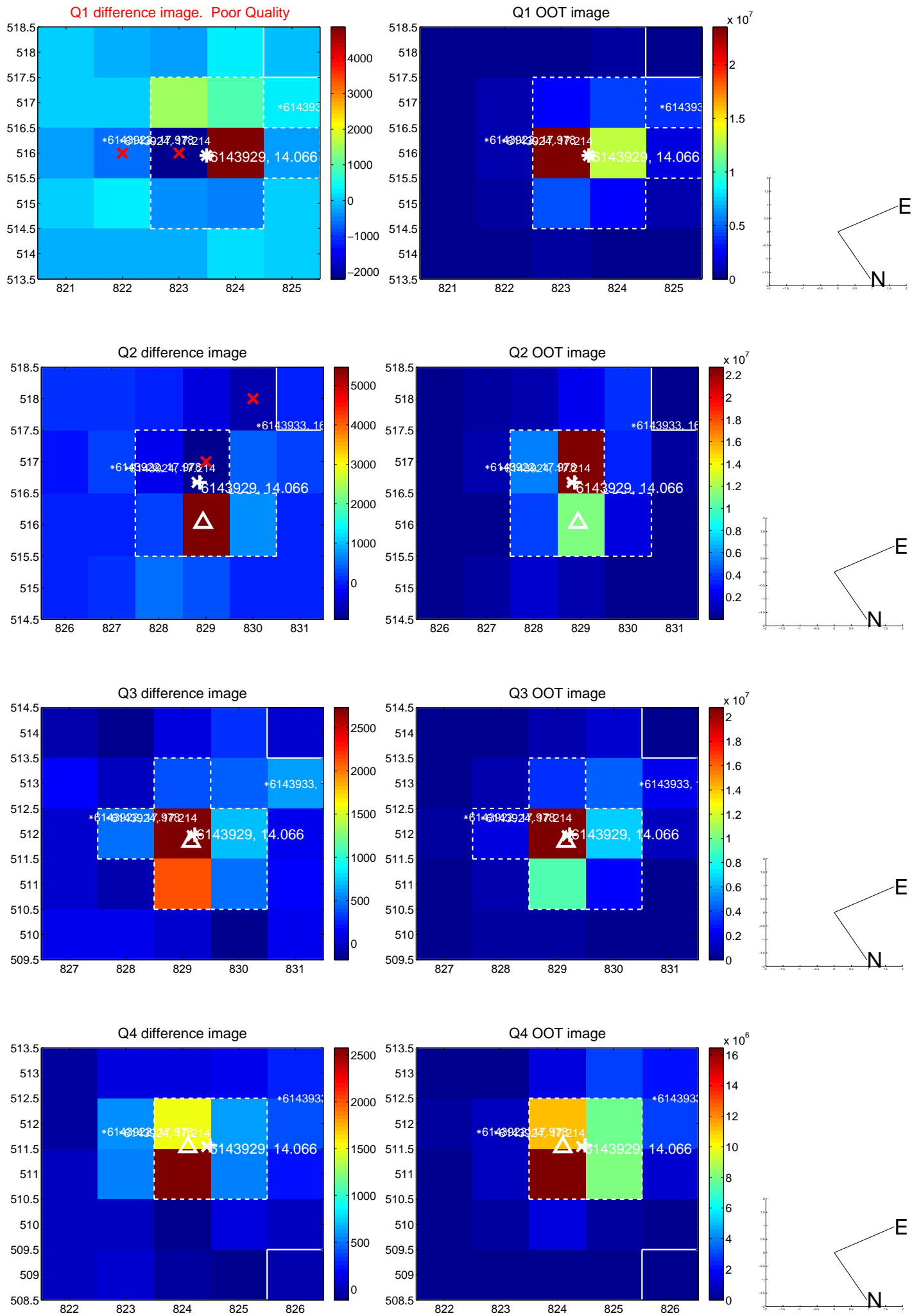
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.623 ± 0.273	2.28	-0.548 ± 0.283	0.296 ± 0.237
PRF-fit source offset from KIC position	0.503 ± 0.295	1.71	-0.383 ± 0.251	0.325 ± 0.312
photometric centroid source offset	4.17 ± 1.63	2.56	-4.09 ± 1.64	0.78 ± 1.27

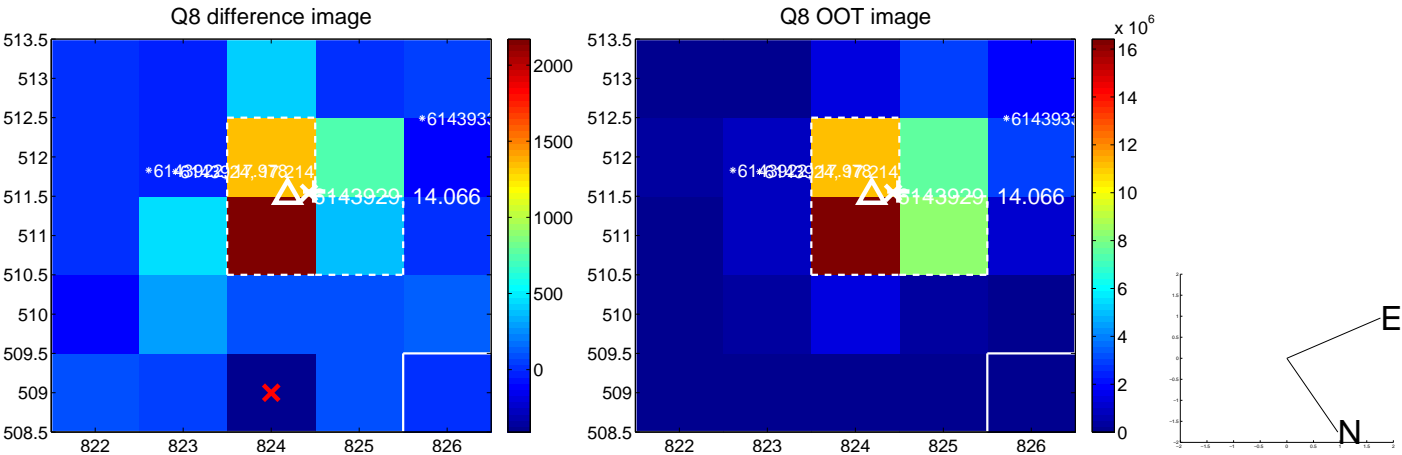
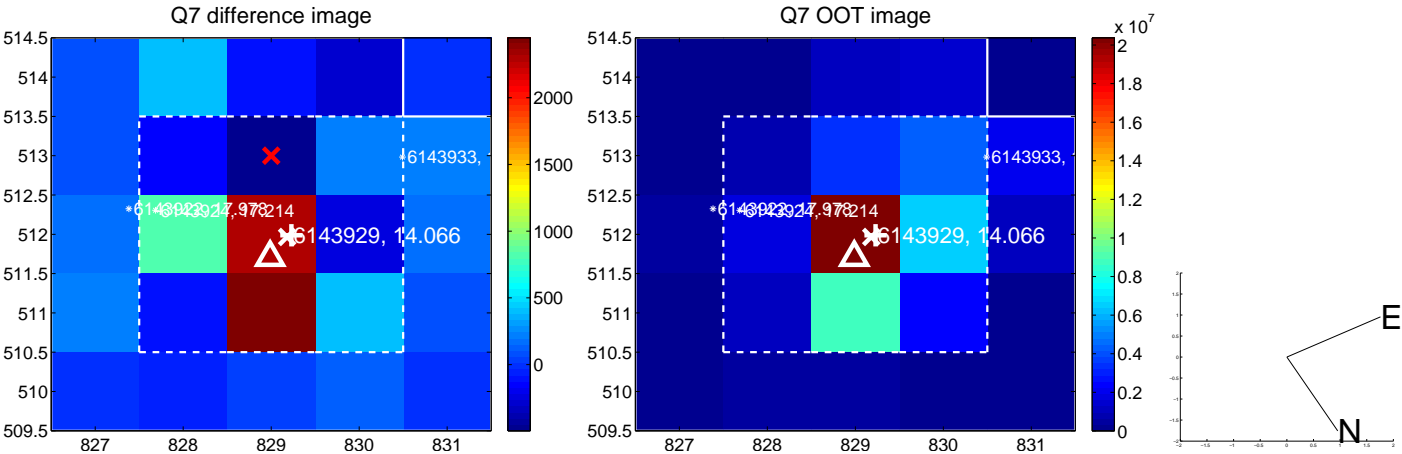
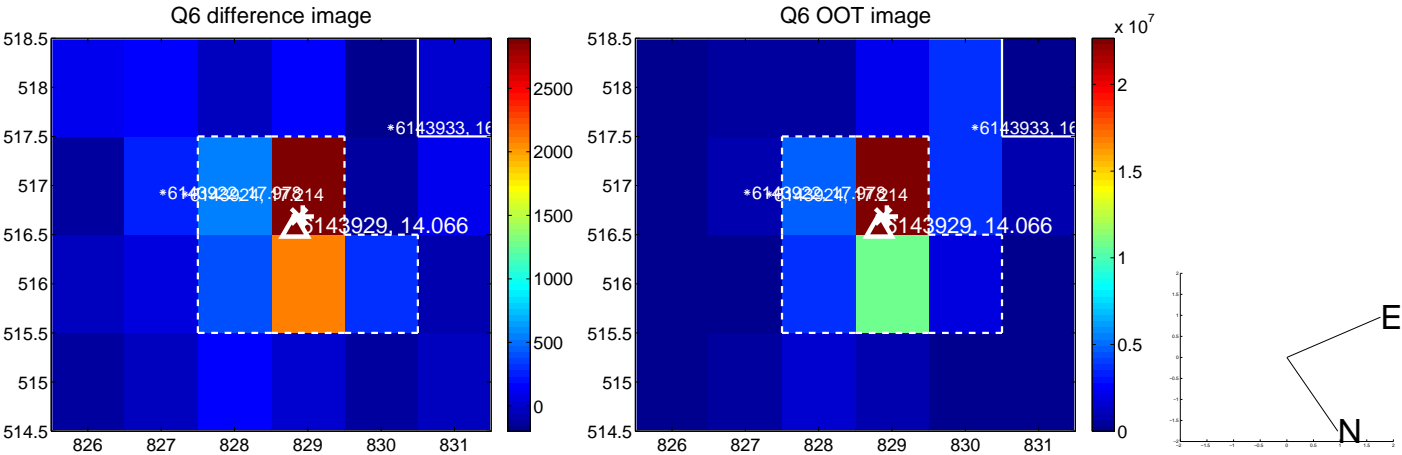
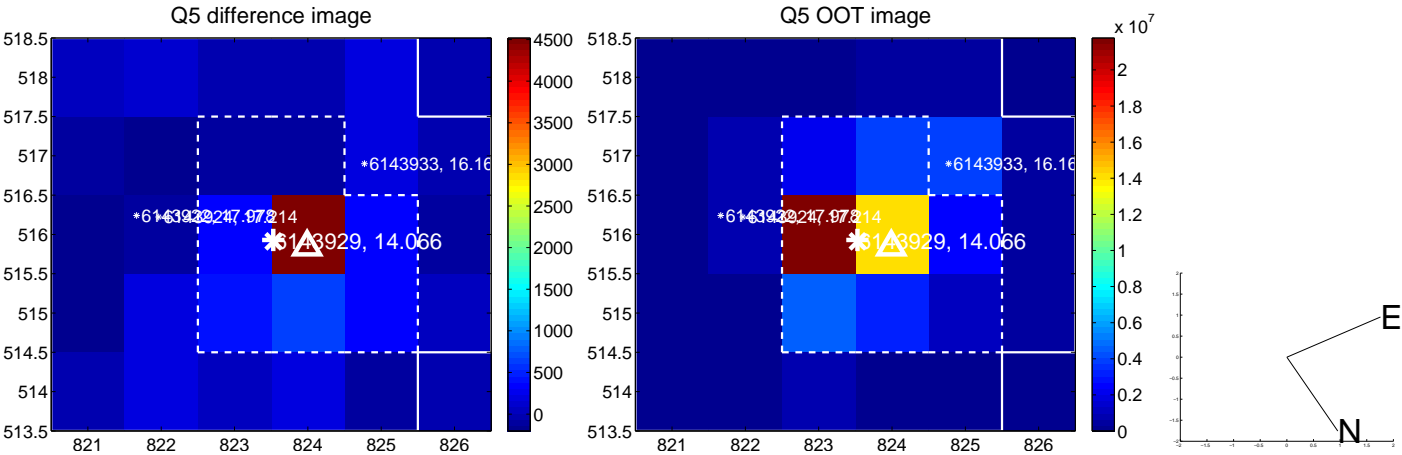


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

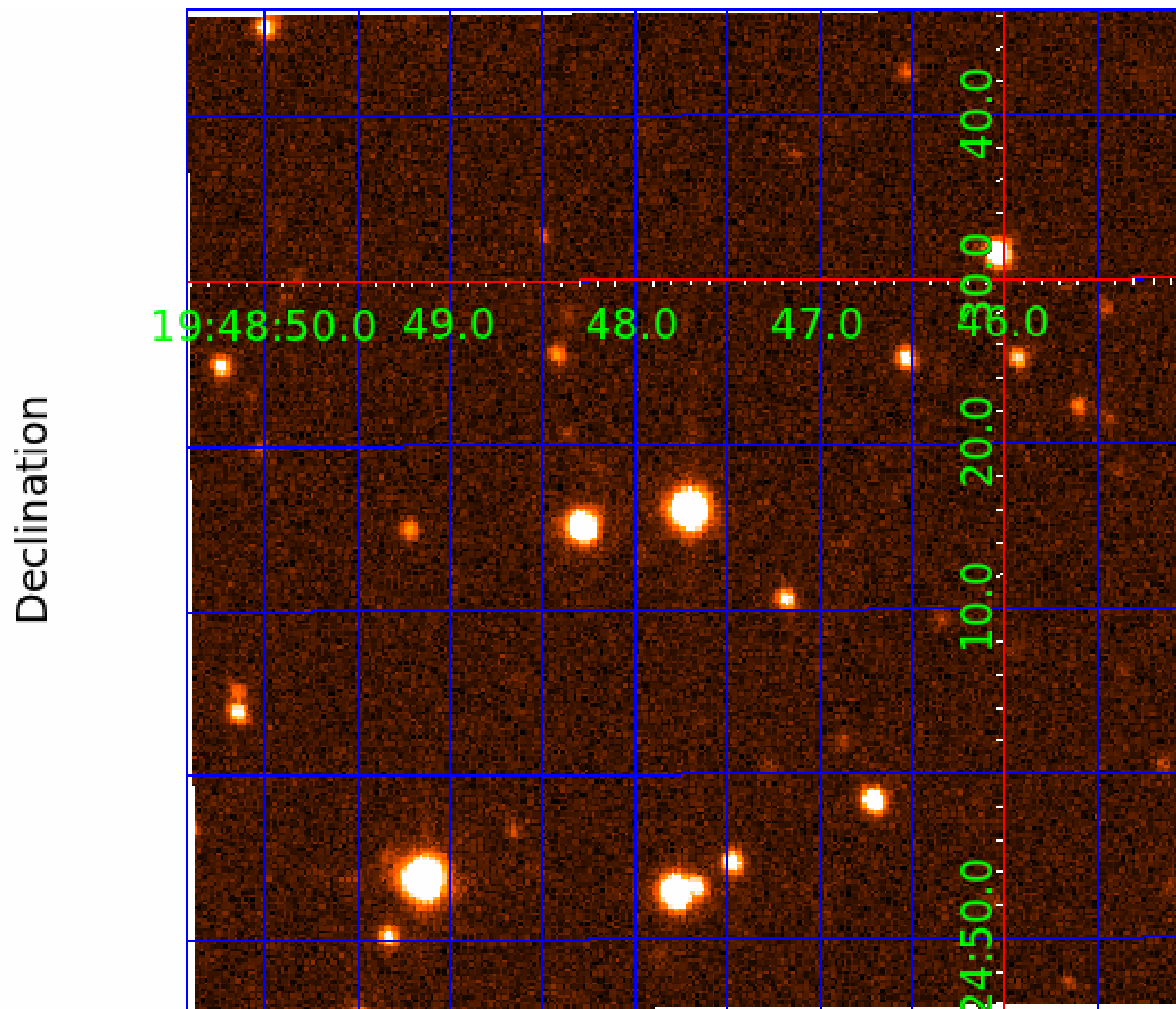
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006143929

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})
006143929-01	OBS	No	3.998376	131.880635	26.2	13.013	8.8	6.2	0.95	6279	0.56	512.51
006143929-02	OBS	No	402.296365	253.122443	1266.4	54.193	25.3	17.3	0.95	6279	6.37	1.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006143929-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006143929-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

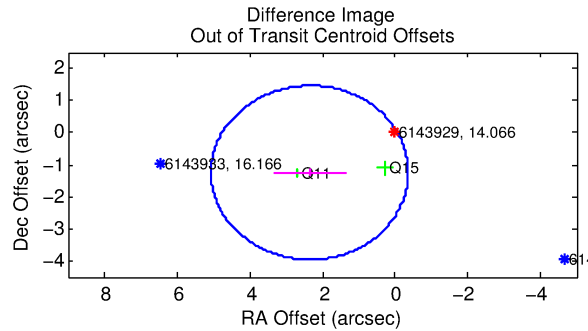
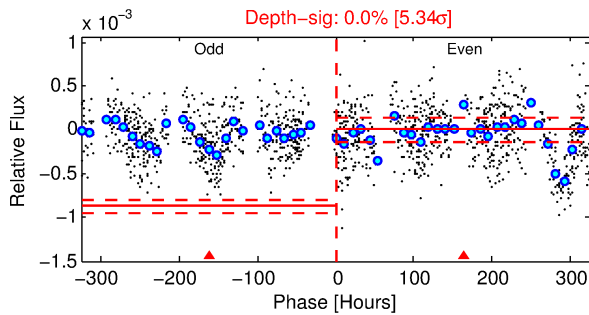
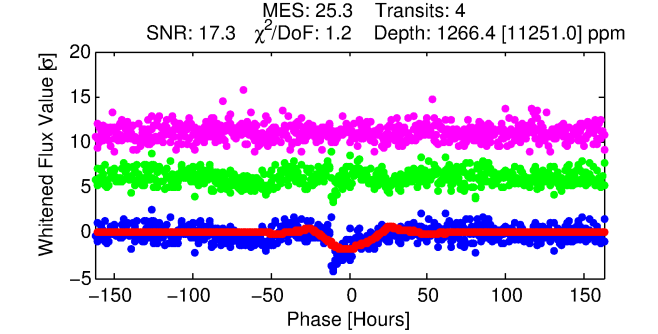
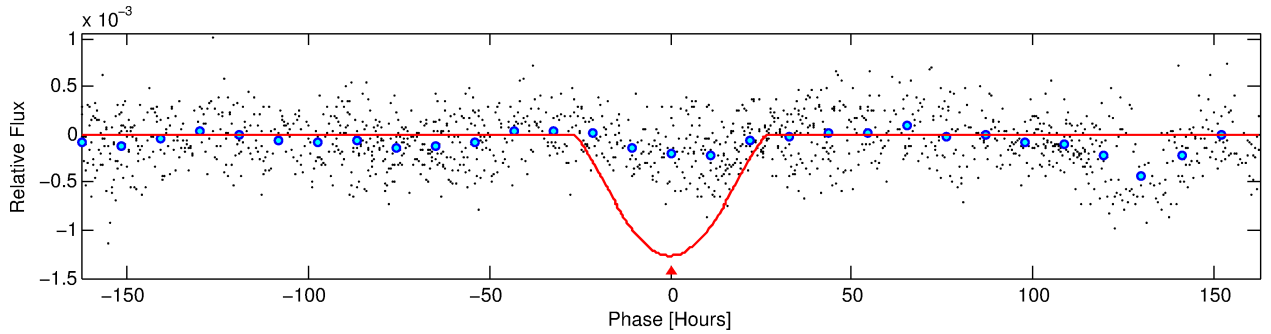
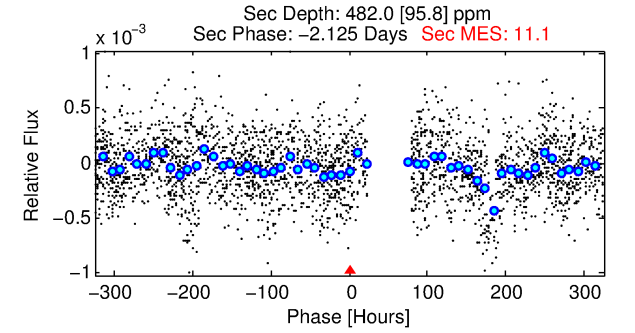
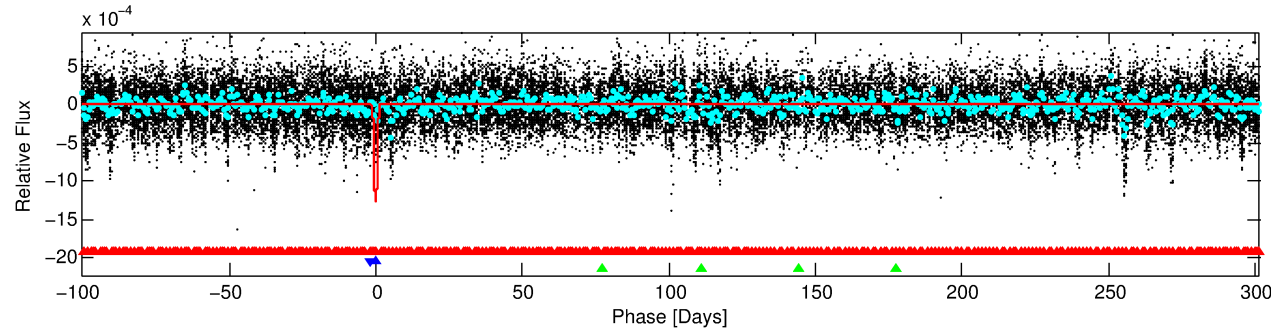
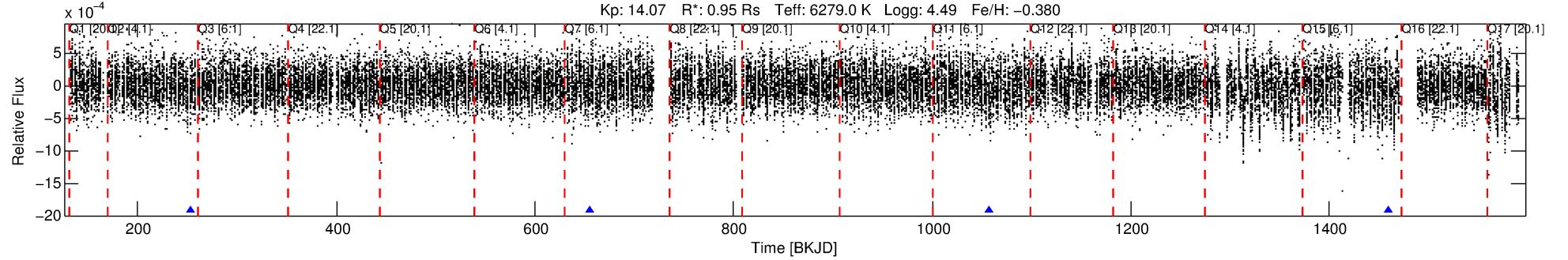
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006143929-02

No Significant Match Found

DV One-Page Summary

KIC: 6143929 Candidate: 2 of 3 Period: 402.296 d



DV Fit Results:

Period = 402.29637 [0.03249] d
Epoch = 253.1224 [0.0468] BKJD
Rp/R* = 0.0613 [0.0725]
a/R* = 20.19 [5.48]
b = 1.00 [0.27]
Seff = 1.10 [0.43]
Teff = 261 [25] K
Rp = 6.37 [7.77] Re
a = 1.0735 [0.2733] AU
Ag = 7535.02 [18088.82] [0.42 σ]
Teffp = 3758 [2232] K [1.57 σ]

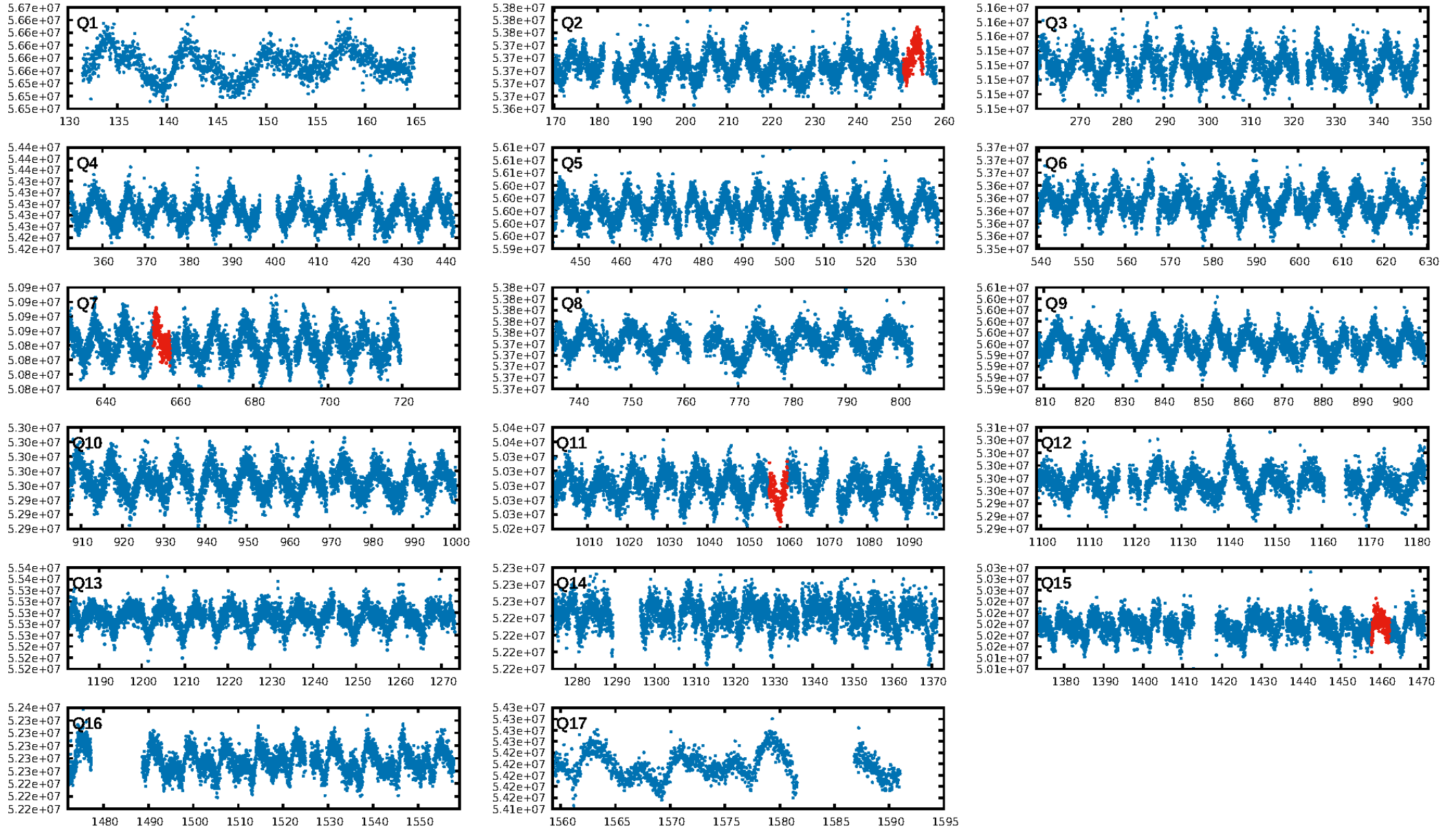
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.70 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.44e-94
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.095
Centroid-sig: 67.4%
Centroid-so: 0.272 arcsec [1.13 σ]
OotOffset-rm: 2.663 arcsec [2.95 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 2.831 arcsec [3.29 σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/3]

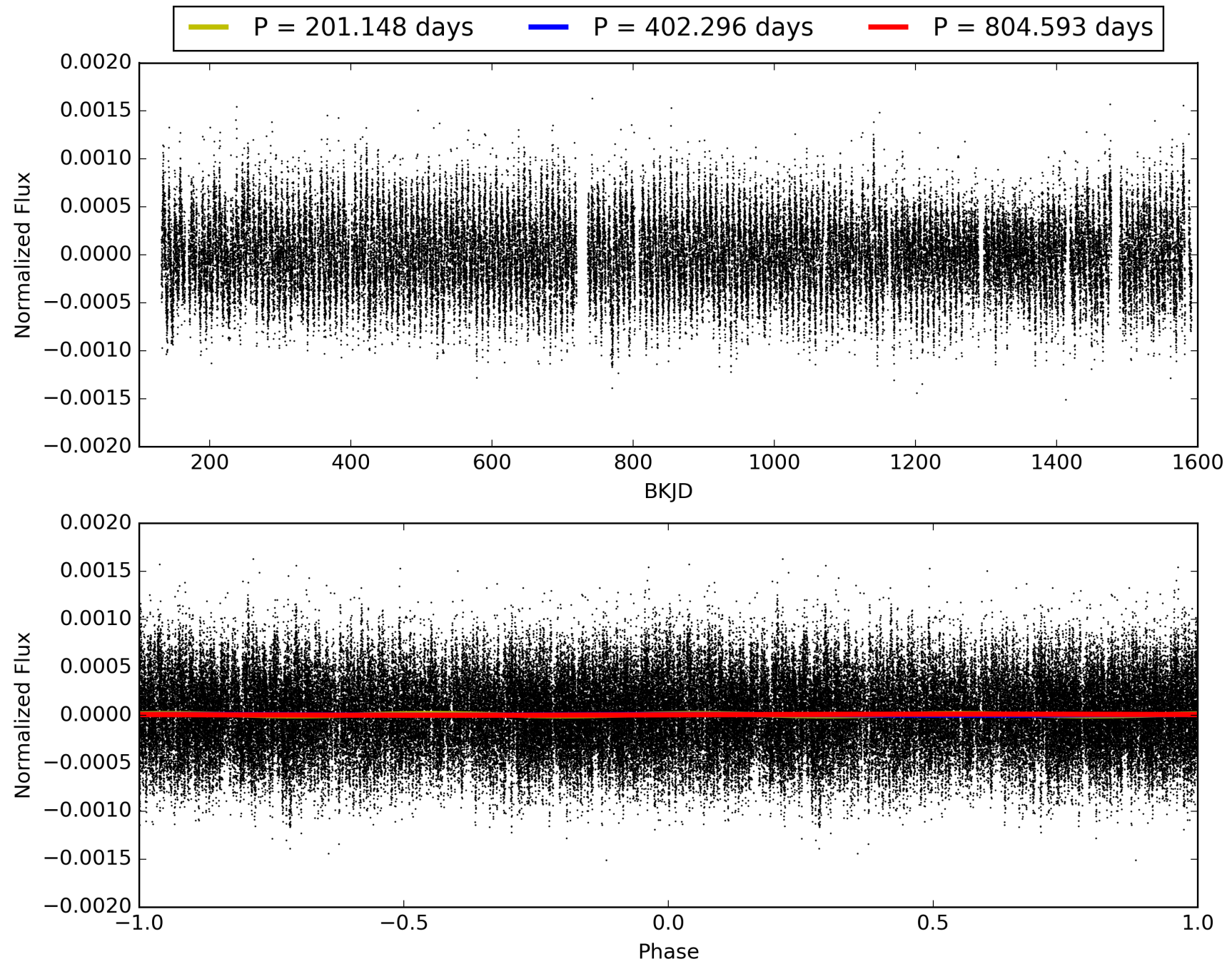
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:31:34 Z

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

TCE 006143929-02, PDC Light Curves

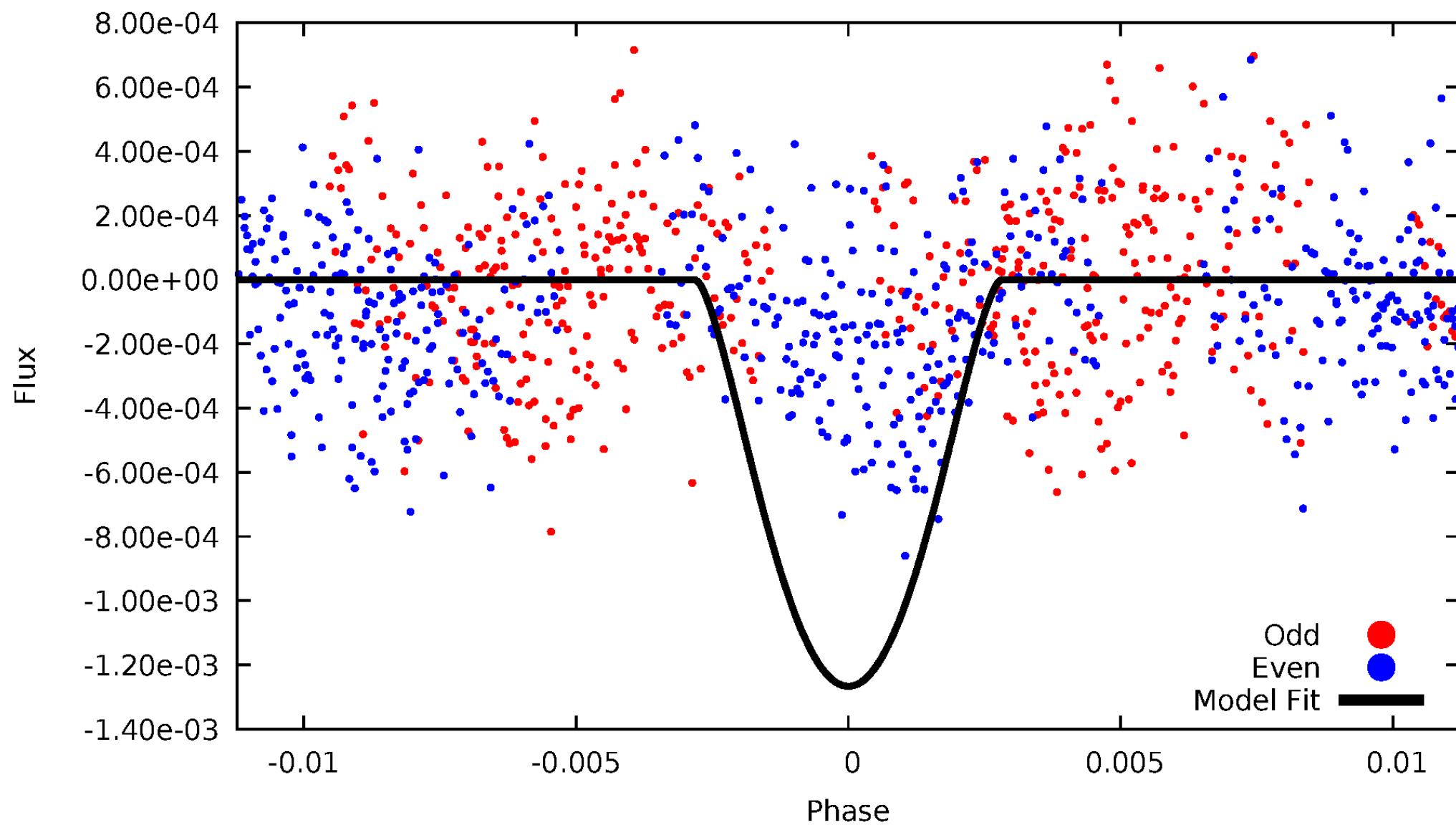


TCE 006143929-02



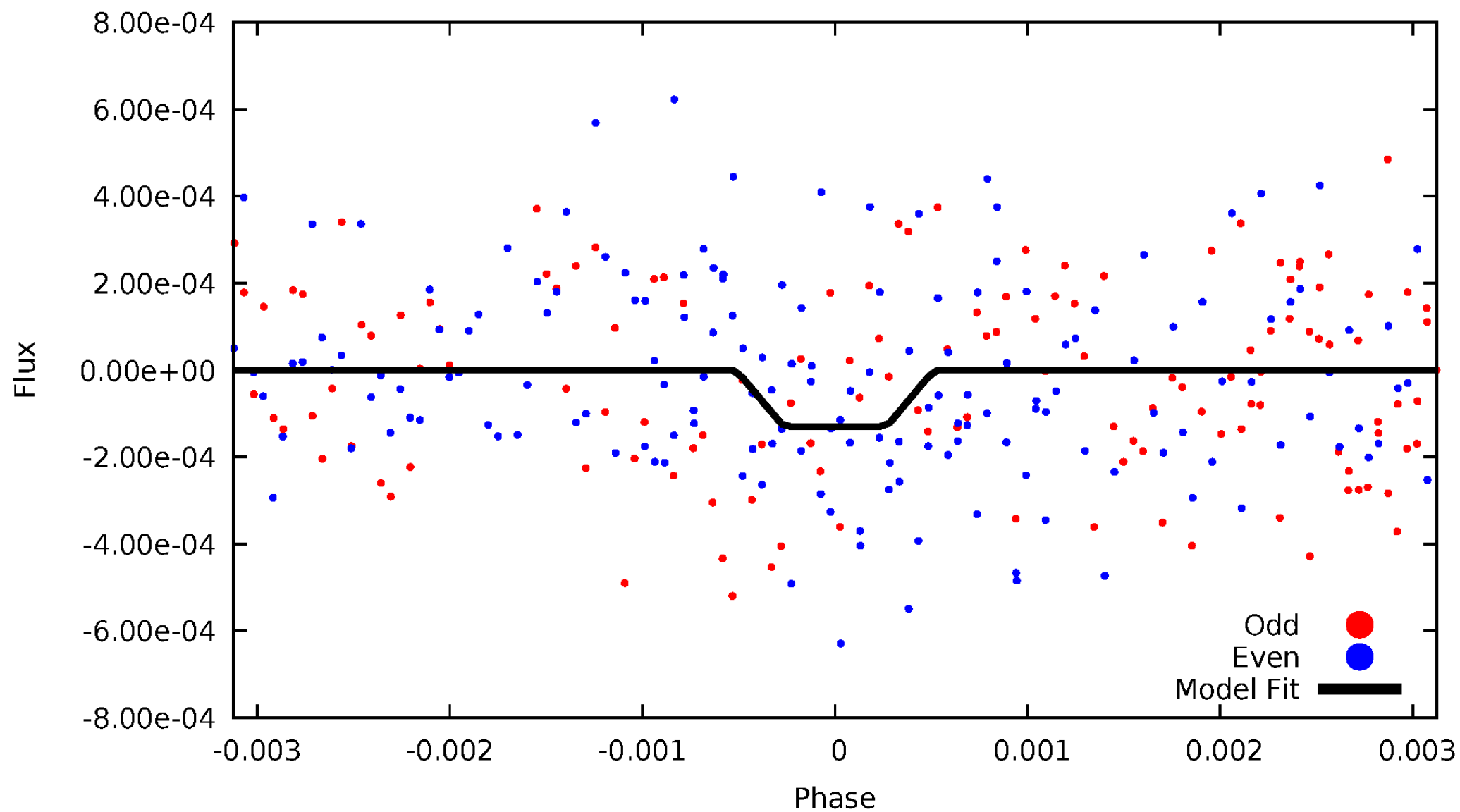
DV Odd/Even

TCE 006143929-02



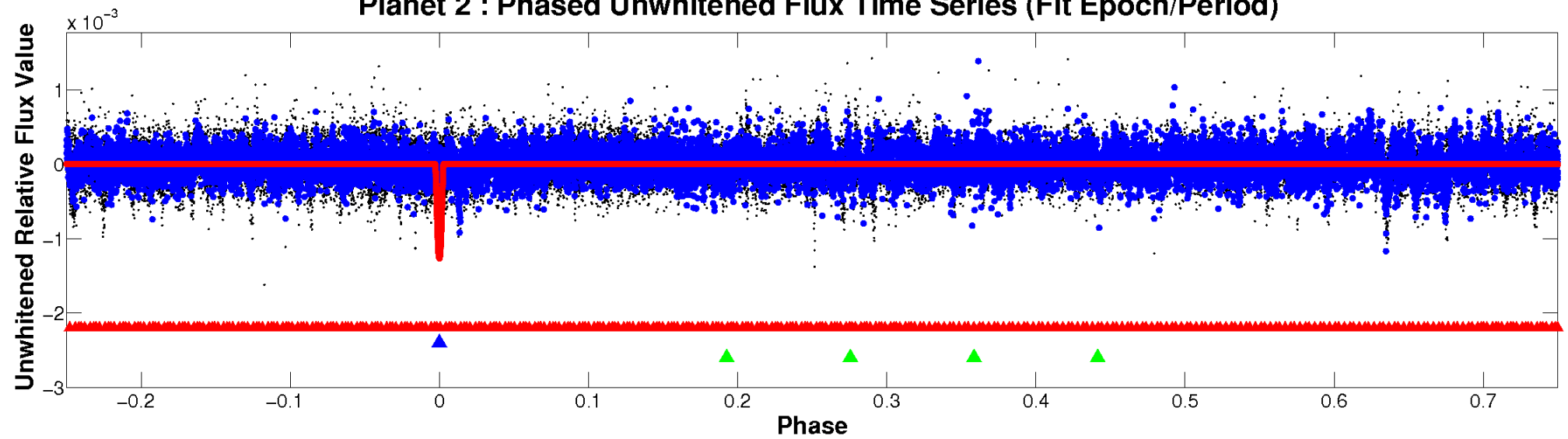
ALT Odd/Even

TCE 006143929-02

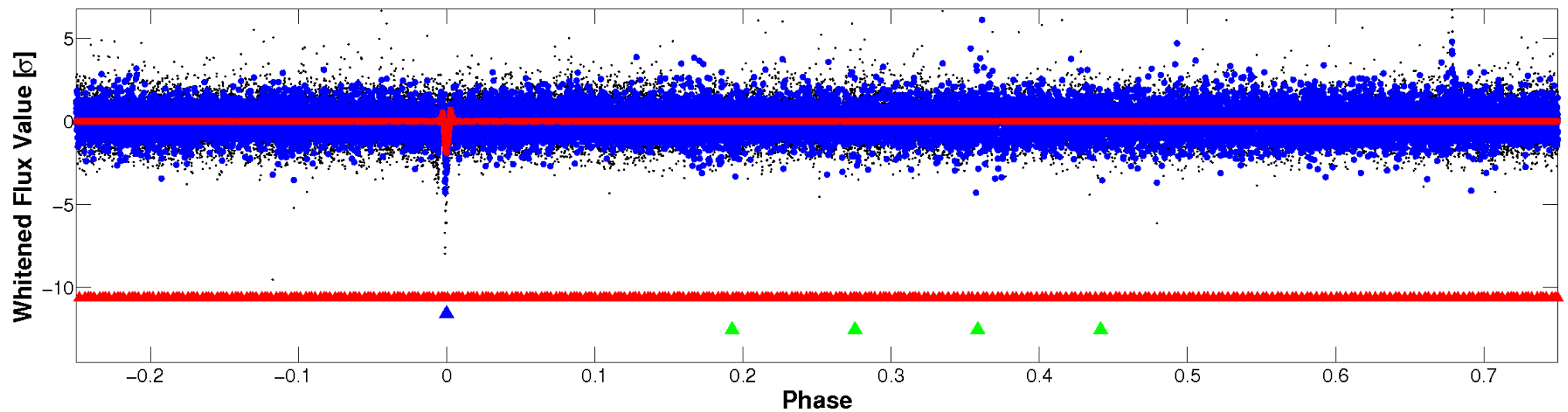


Non-Whitened Vs. Whitened Light Curve

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

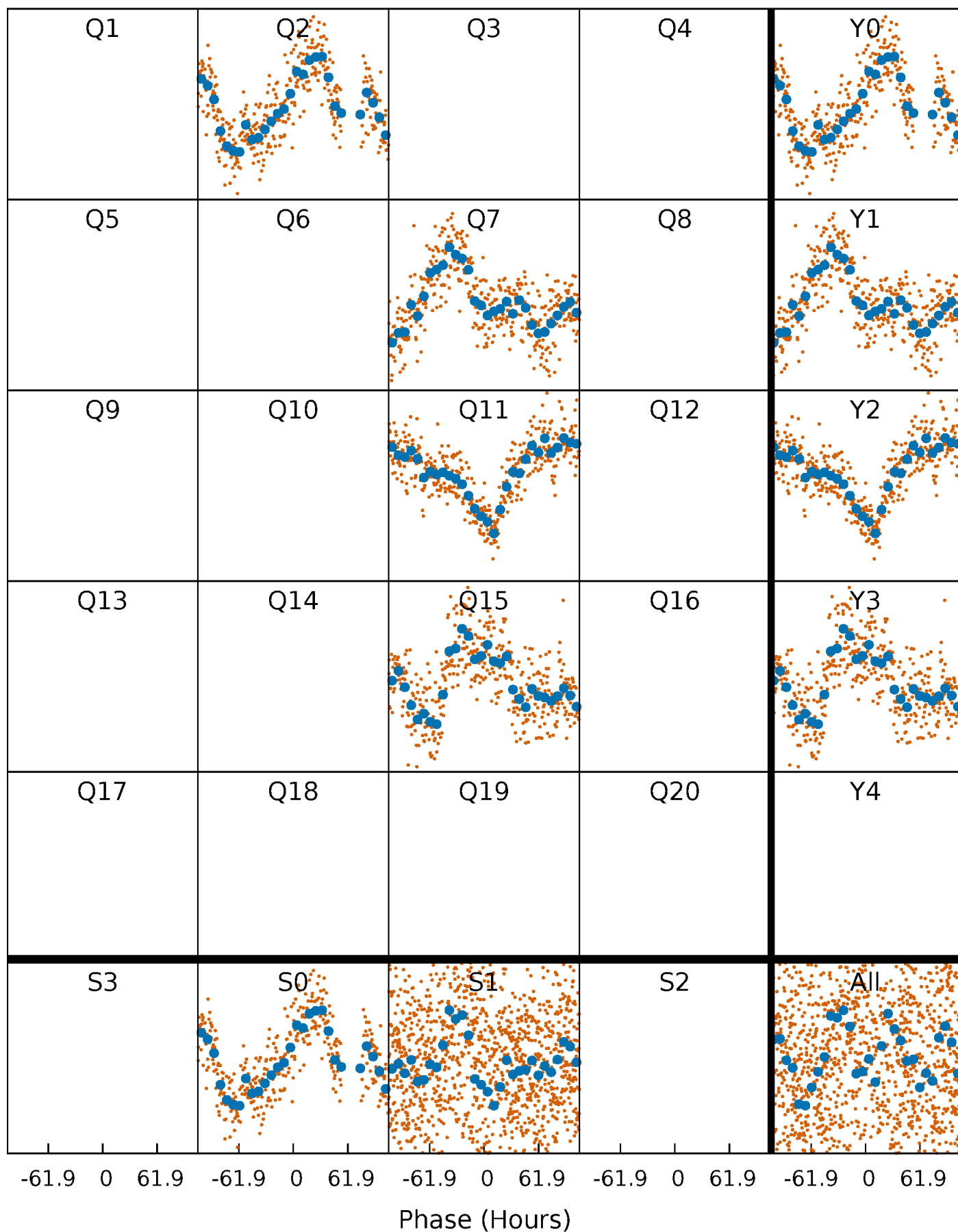


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



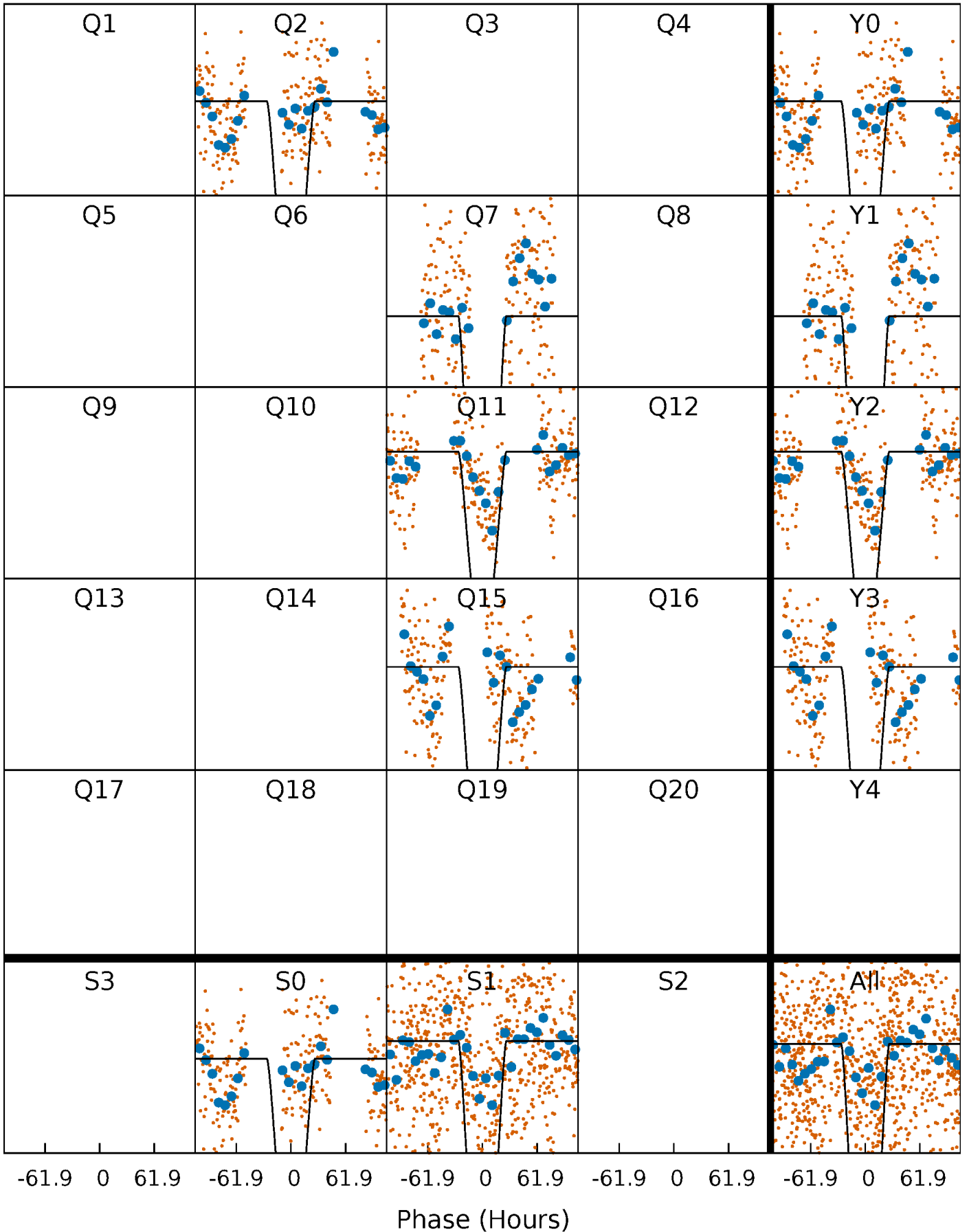
PDC Quarter-Phased Transit Curves

TCE 006143929-02 P=402.296365 Days $T_0=253.122443$ (BKJD)



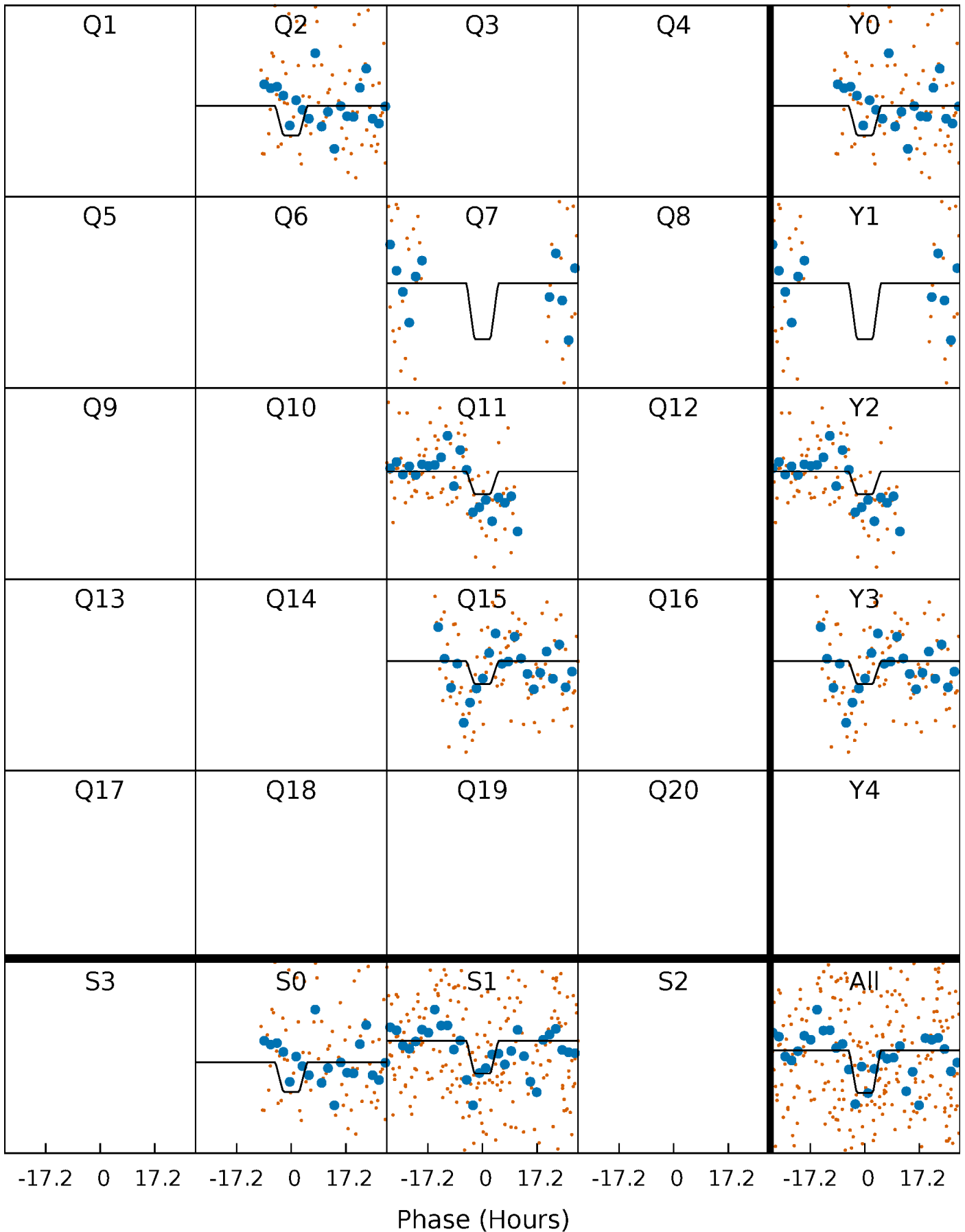
DV Quarter-Phased Transit Curves

TCE 006143929-02 P=402.296365 Days $T_0=253.122443$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

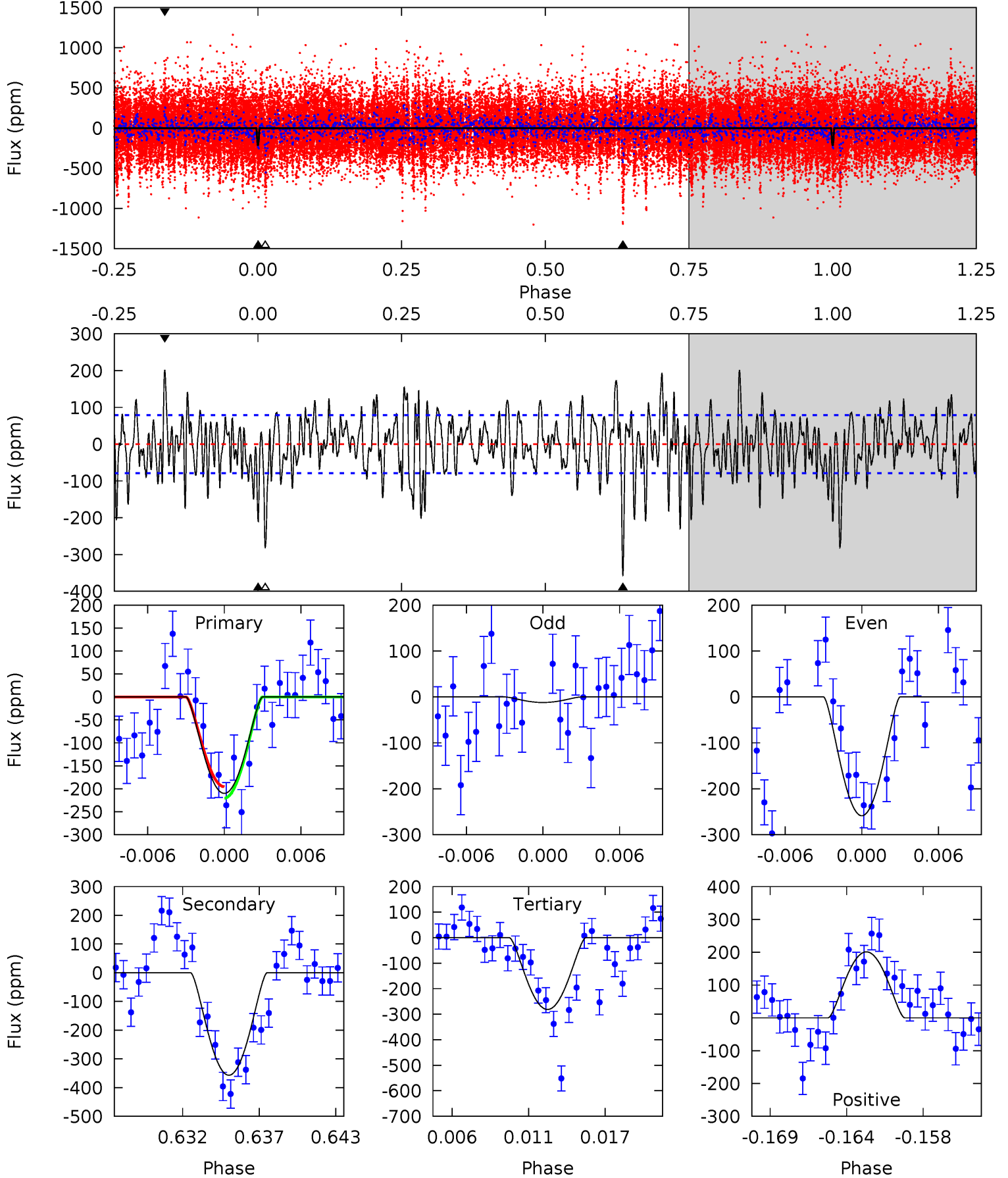
TCE 006143929-02 P=402.581999 Days $T_0=253.061890$ (BKJD)



DV Model-Shift Uniqueness Test

006143929-02, P = 402.296365 Days, E = 253.122443 Days

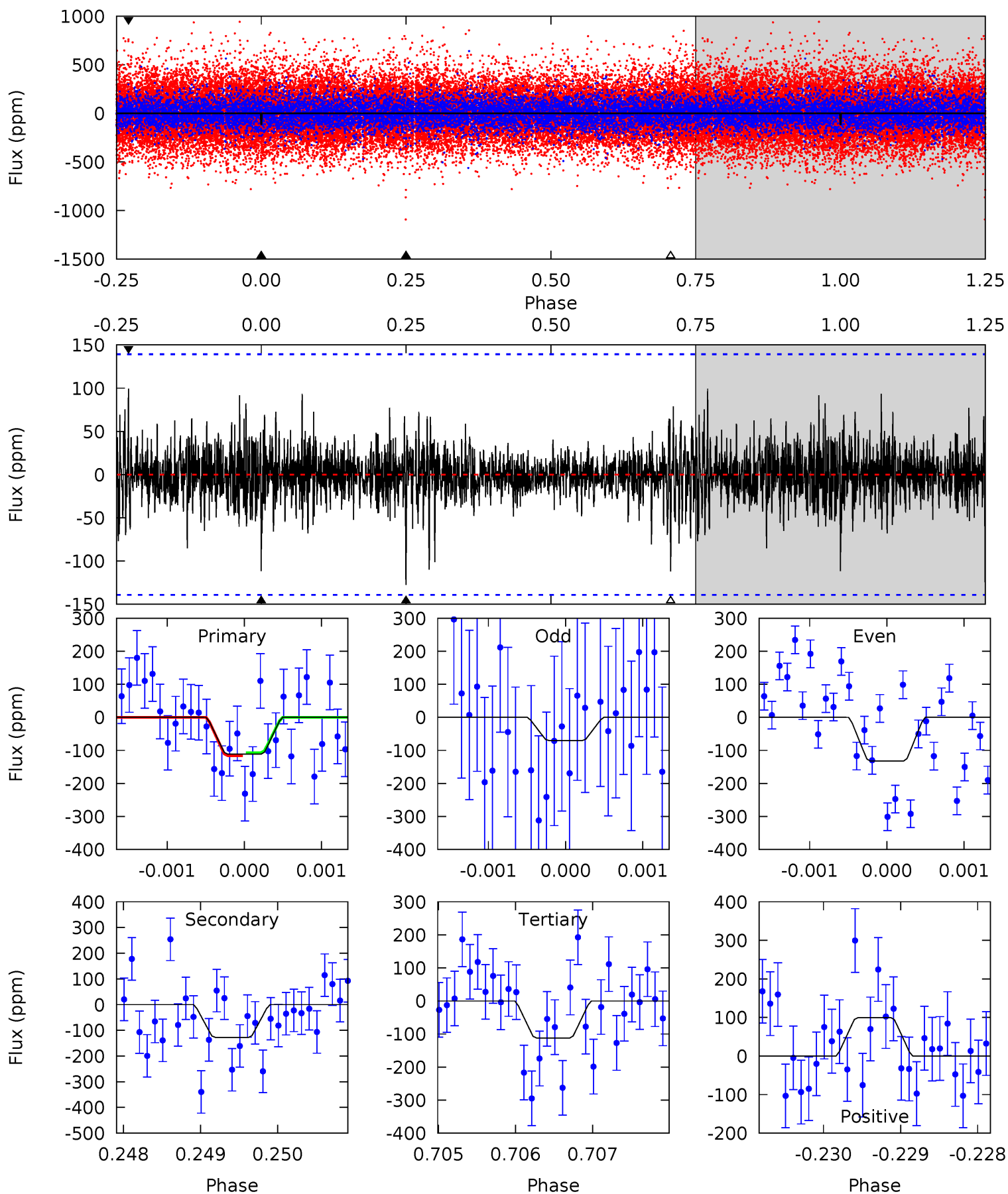
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	23.2	18.3	13.1	5.14	2.77	4.64	-4.64	0.58	4.92	10.1	7.17	1.58	0.36	0.80



Alt Model-Shift Uniqueness Test

006143929-02, P = 402.581999 Days, E = 253.061890 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.36	4.98	4.38	3.88	5.44	3.27	0.90	-0.02	0.48	0.60	1.10	1.14	1.59	0.44	0.17



Stellar Parameters For KIC 006143929

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6279^{+169}_{-207}	$4.489^{+0.050}_{-0.200}$	$-0.380^{+0.300}_{-0.300}$	$0.952^{+0.290}_{-0.097}$	$1.018^{+0.123}_{-0.135}$	$1.662^{+0.363}_{-0.877}$
	+3%/-3%	+1%/-4%	+79%/-79%	+30%/-10%	+12%/-13%	+22%/-53%
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 006143929-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-357 ± 15	$8.52^{+7.58}_{-5.44}$	373^{+25}_{-17}	3559^{+1679}_{-613}	3090^{+19739}_{-2225}
Alt.	-127 ± 26	$5.83^{+5.91}_{-4.05}$	371^{+26}_{-16}	3366^{+1826}_{-611}	2128^{+22850}_{-1579}

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

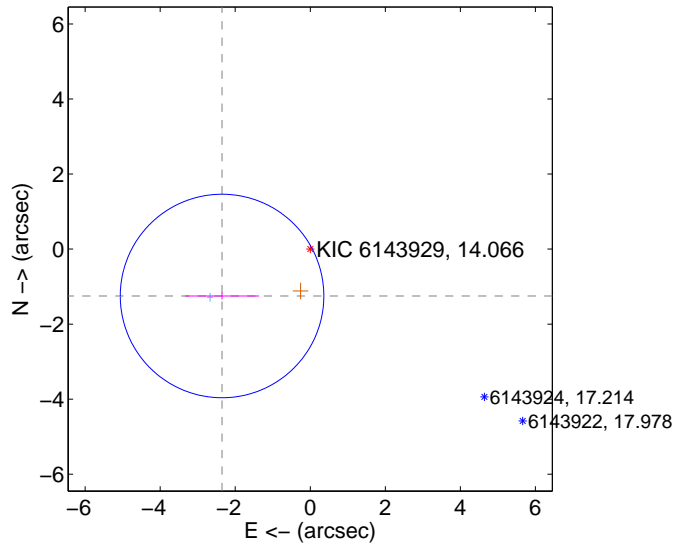
Supplemental centroid analysis for 006143929-02. Kepler magnitude: 14.07. Transit SNR 17.34

There are 1 quarters with good PRF difference image offsets

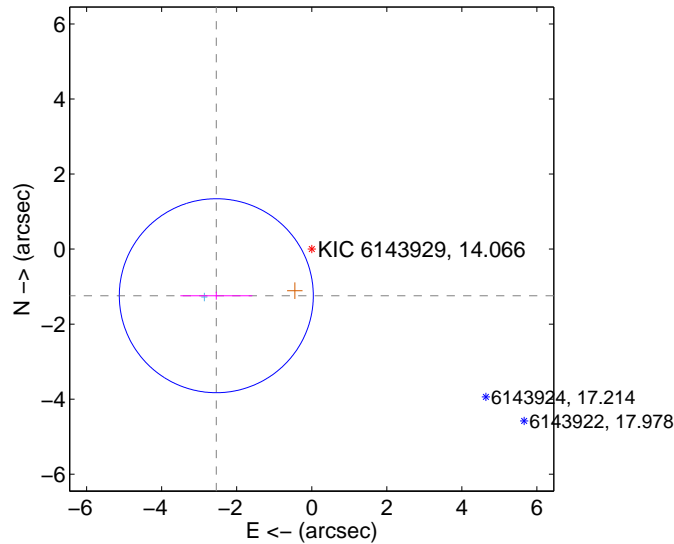
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.663 ± 0.904	2.95	2.351 ± 0.987	-1.250 ± 0.096
PRF-fit source offset from KIC position	2.831 ± 0.862	3.29	2.544 ± 0.958	-1.243 ± 0.104
photometric centroid source offset	0.27 ± 0.24	1.13	0.25 ± 0.25	-0.11 ± 0.19

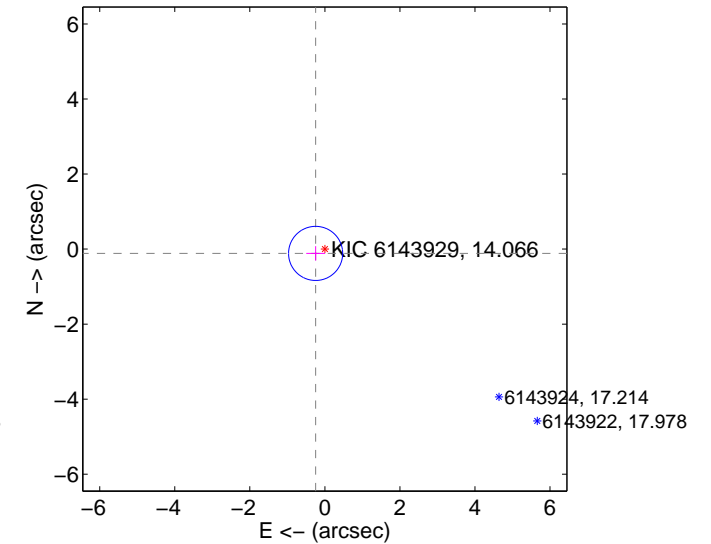
offset from difference PRF-fit to OOT PRF-fit



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.

Q5 no difference image



Q5 no OOT image



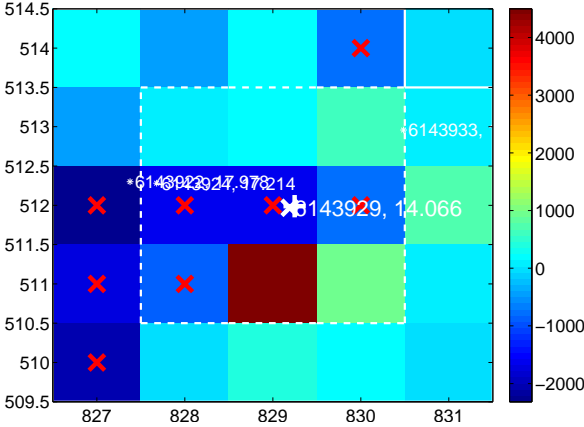
Q6 no difference image



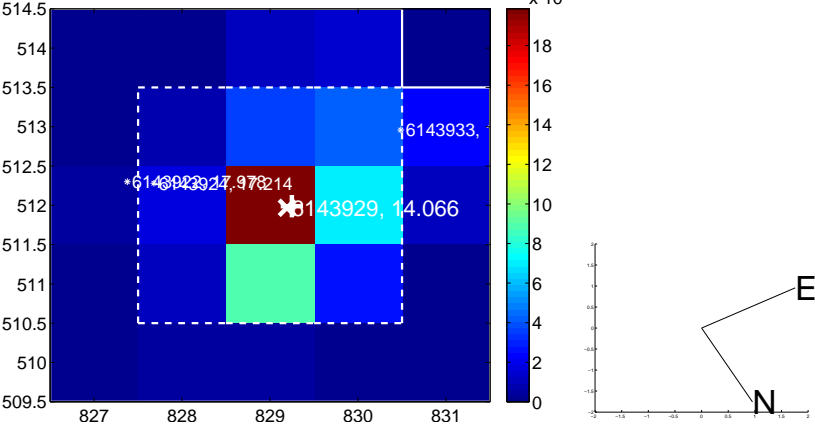
Q6 no OOT image



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.

Q9 no difference image



Q9 no OOT image



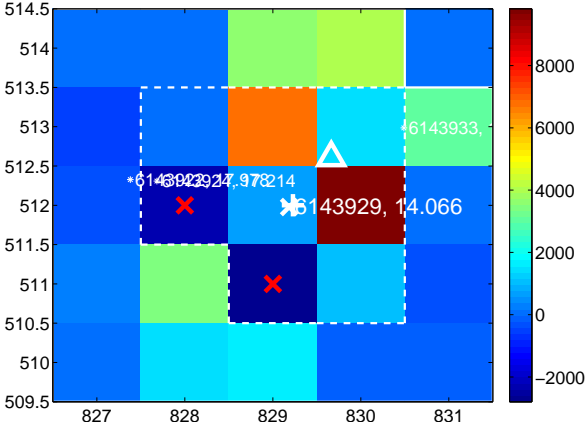
Q10 no difference image



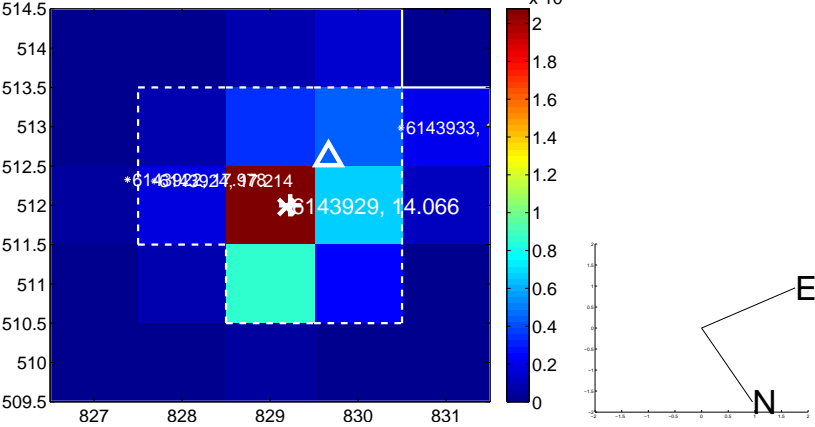
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



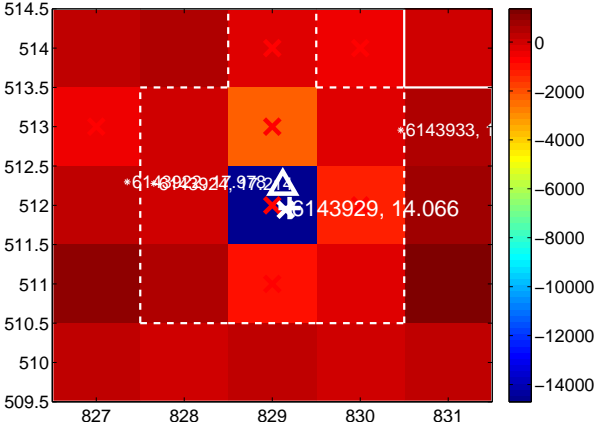
Q14 no difference image



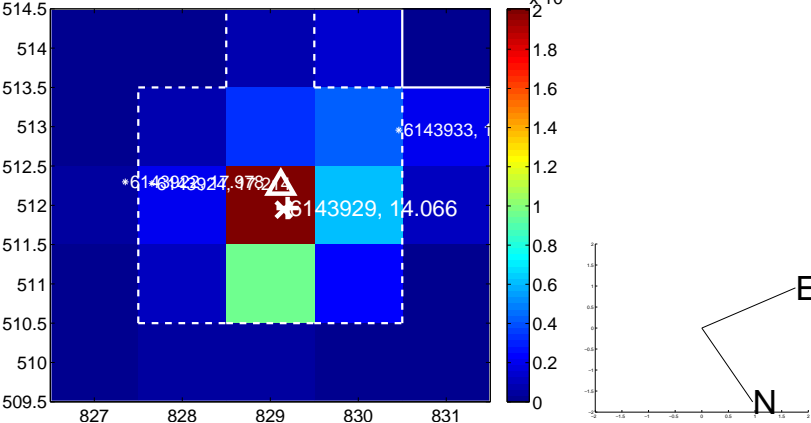
Q14 no OOT image



Q15 difference image. Poor Quality



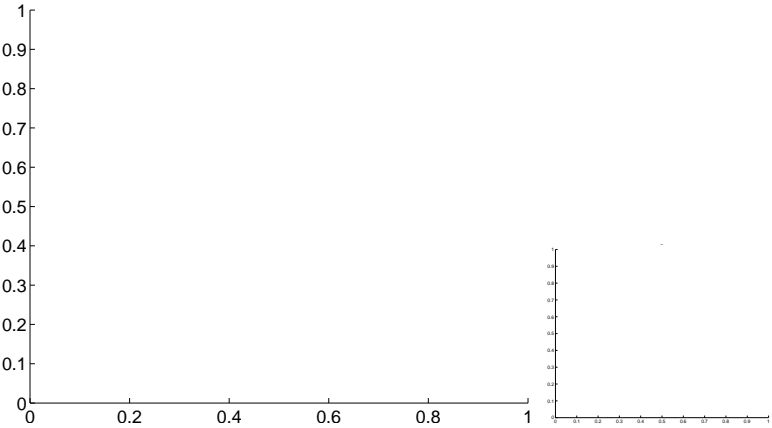
Q15 OOT image



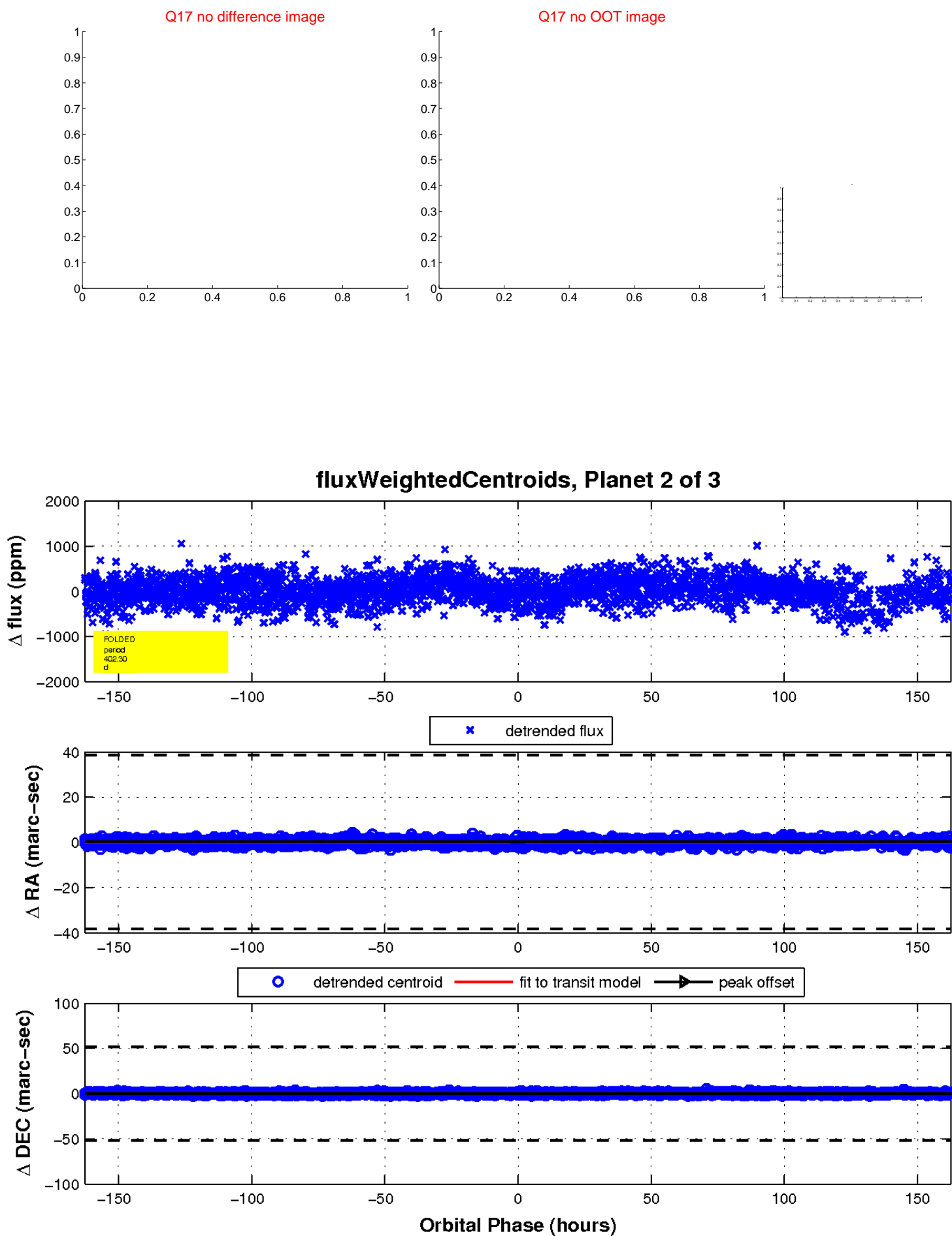
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

