

KIC 002715053

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})
002715053-01	OBS	No	1.936545	132.389808	49.6	8.881	8.4	9.0	1.07	6392	0.76	1727.96
002715053-02	OBS	No	209.863283	313.644645	555.1	10.847	8.7	6.6	1.07	6392	2.71	3.34
002715053-03	OBS	No	313.381390	338.850327	663.7	24.010	8.0	6.8	1.07	6392	2.77	1.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002715053-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
002715053-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
002715053-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

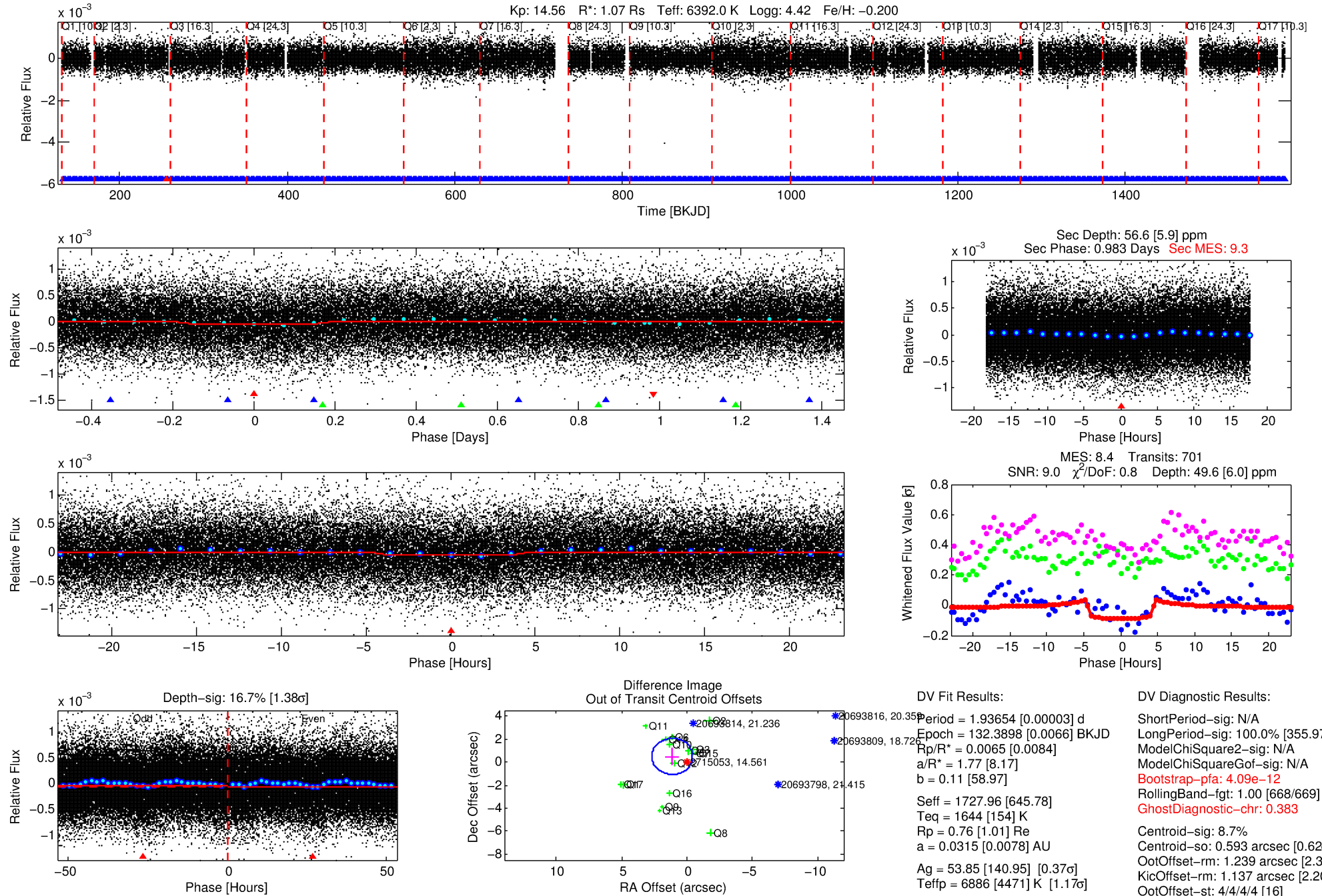
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002715053-01

No Significant Match Found

DV One-Page Summary

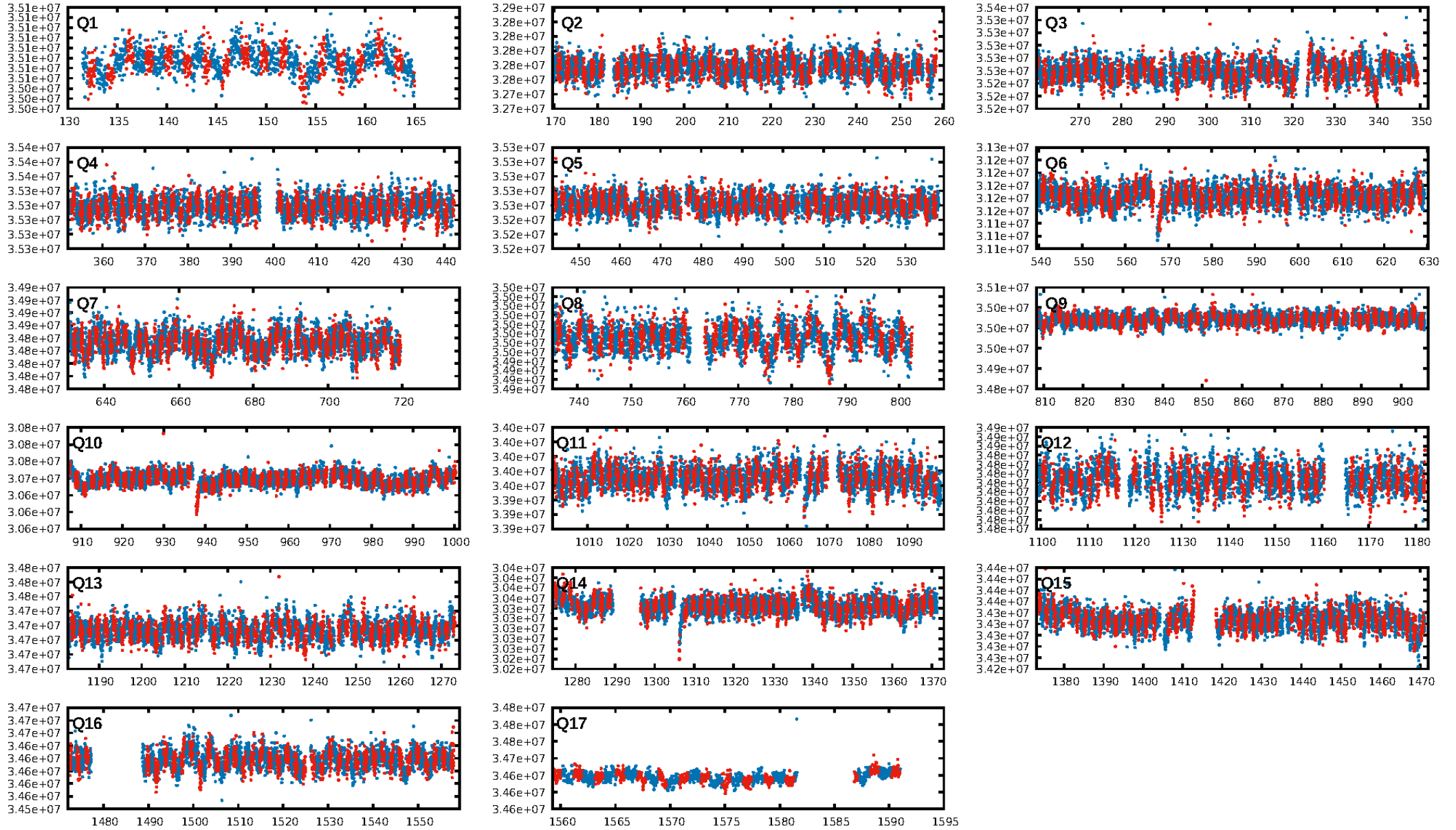
KIC: 2715053 Candidate: 1 of 3 Period: 1.937 d



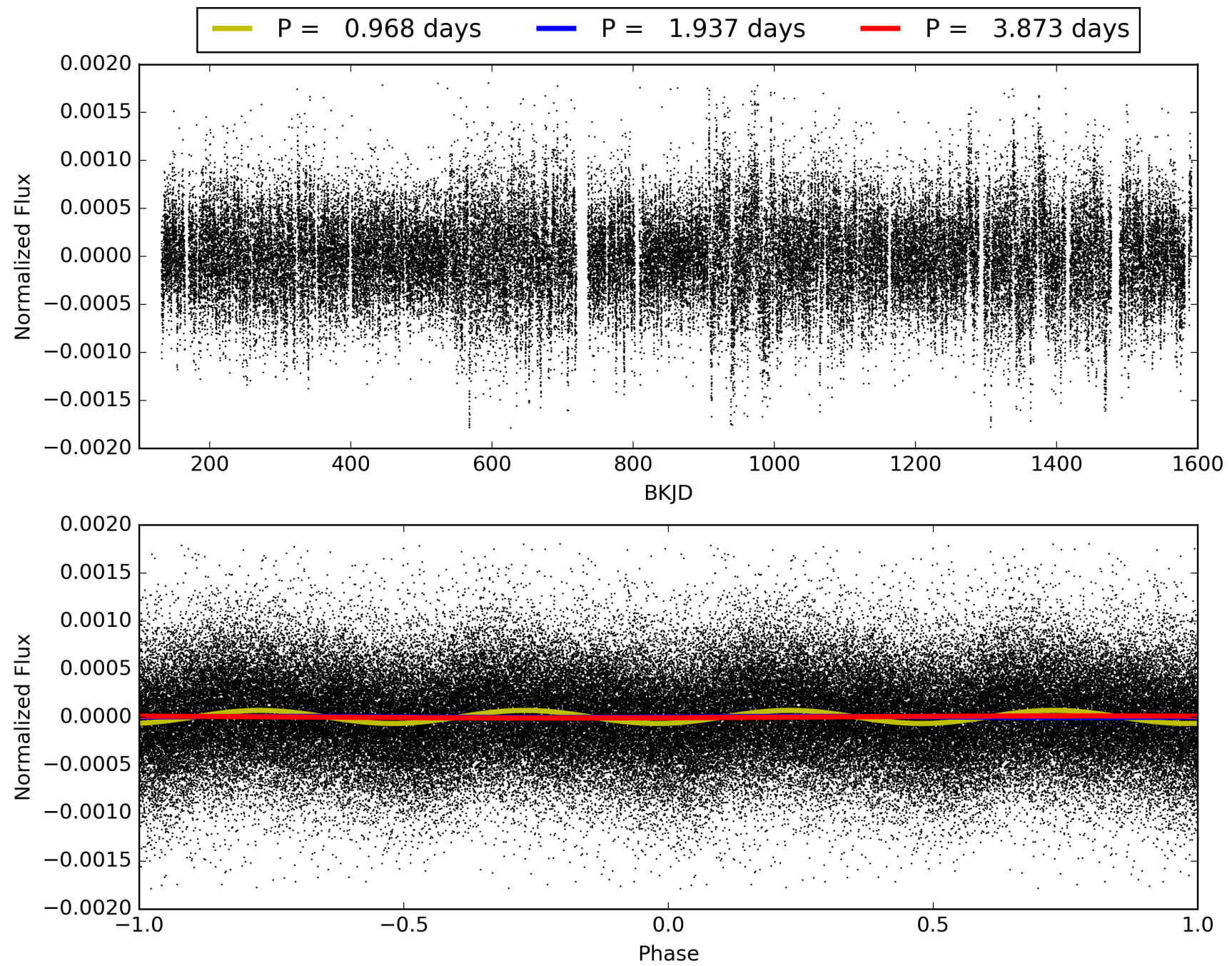
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:47:52 Z

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

TCE 002715053-01, PDC Light Curves

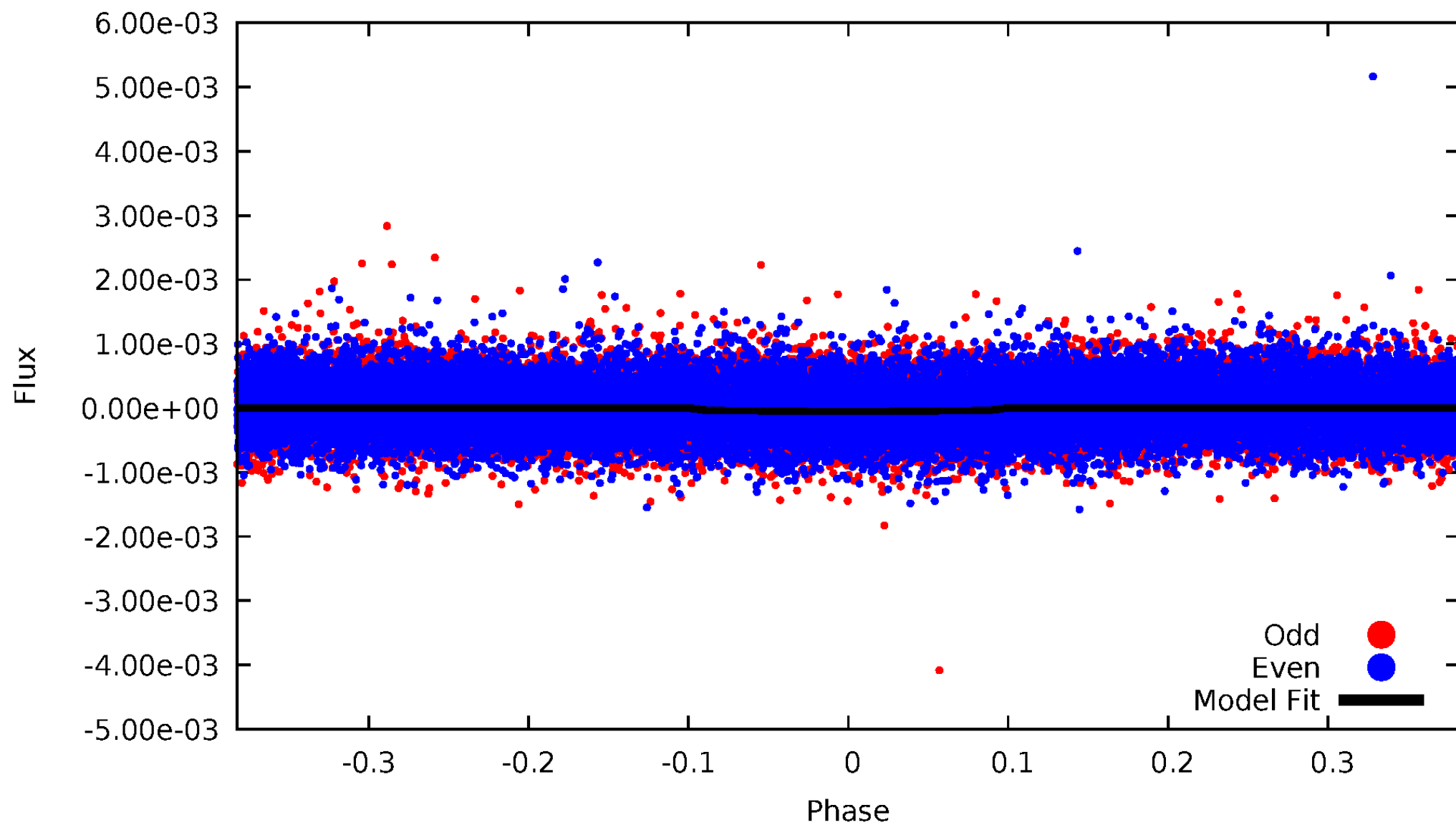


TCE 002715053-01



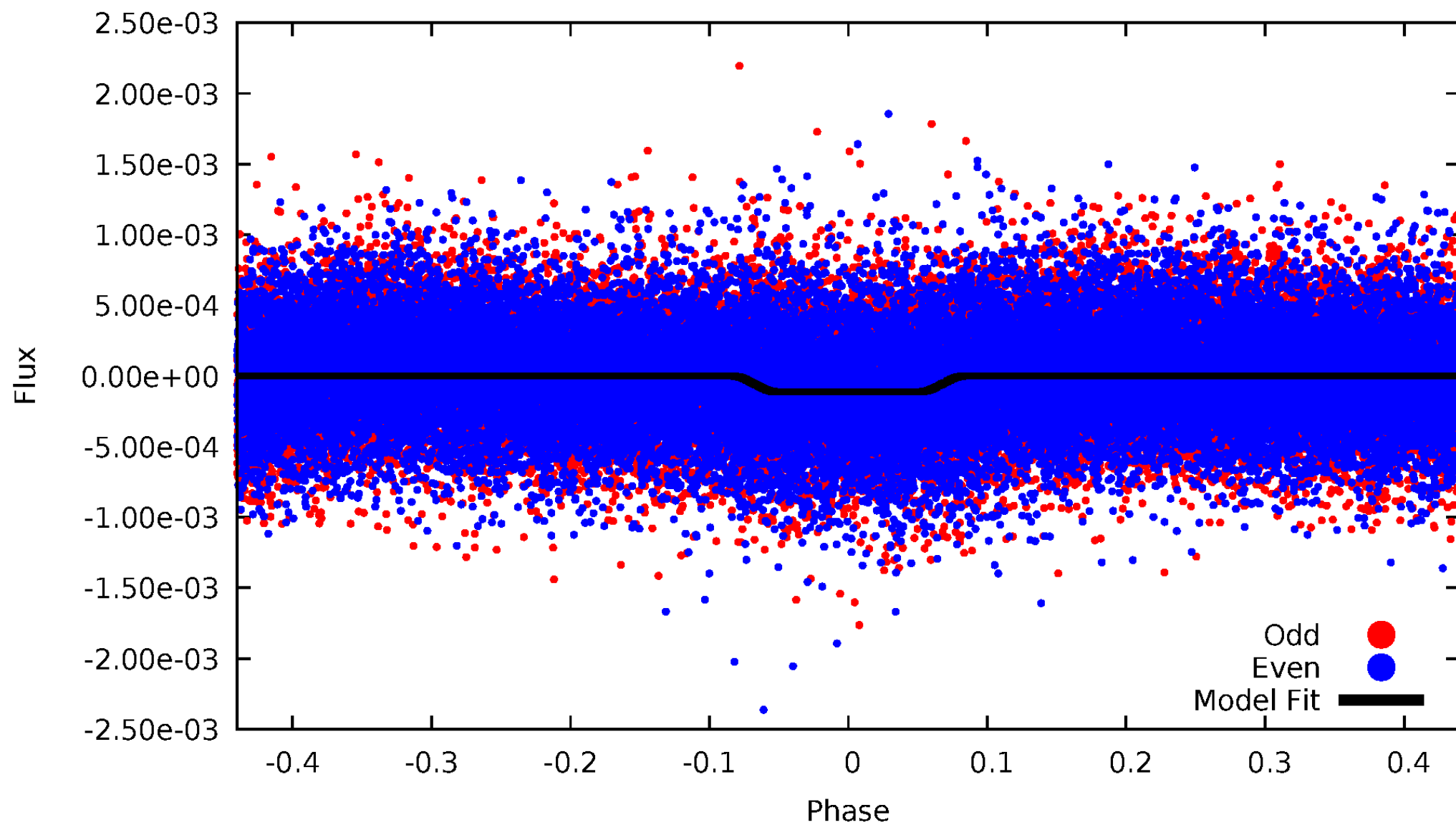
DV Odd/Even

TCE 002715053-01

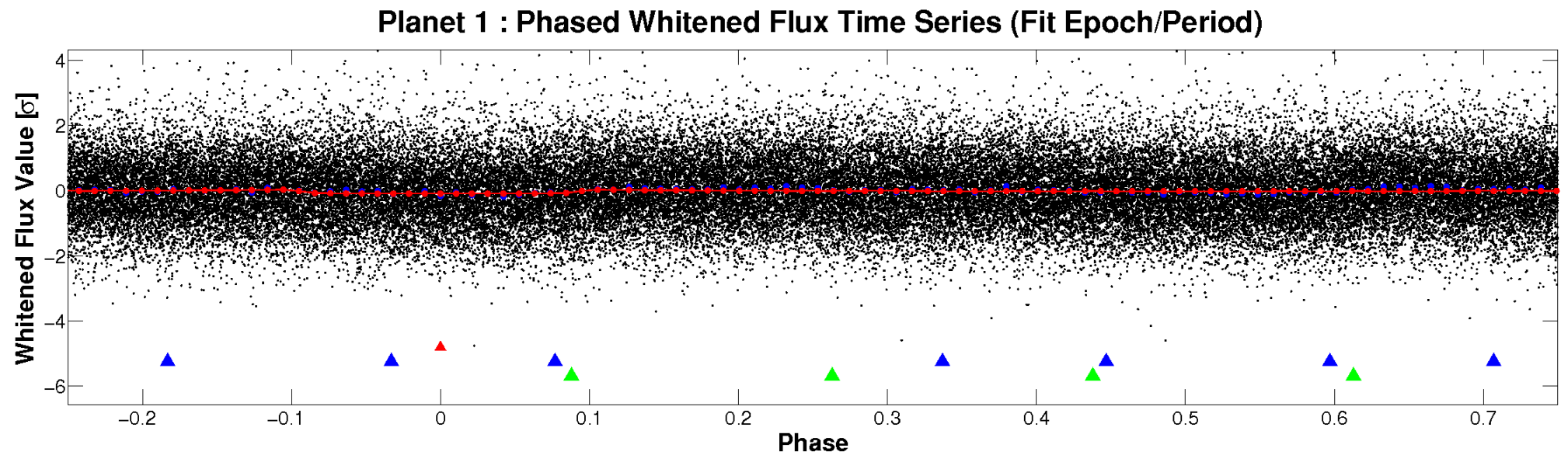
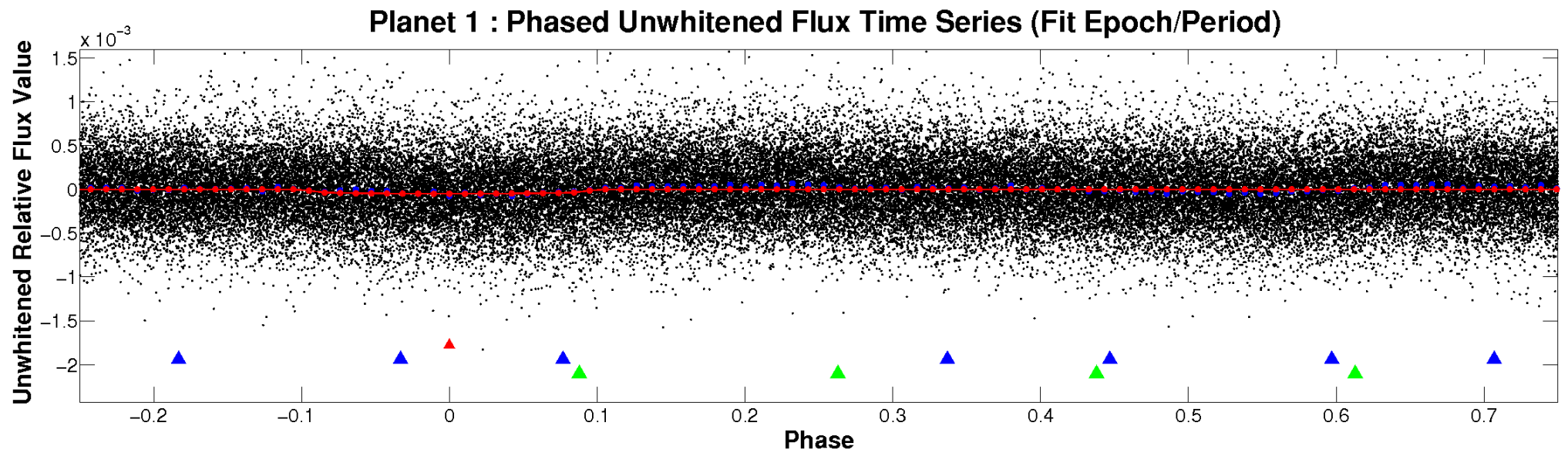


ALT Odd/Even

TCE 002715053-01

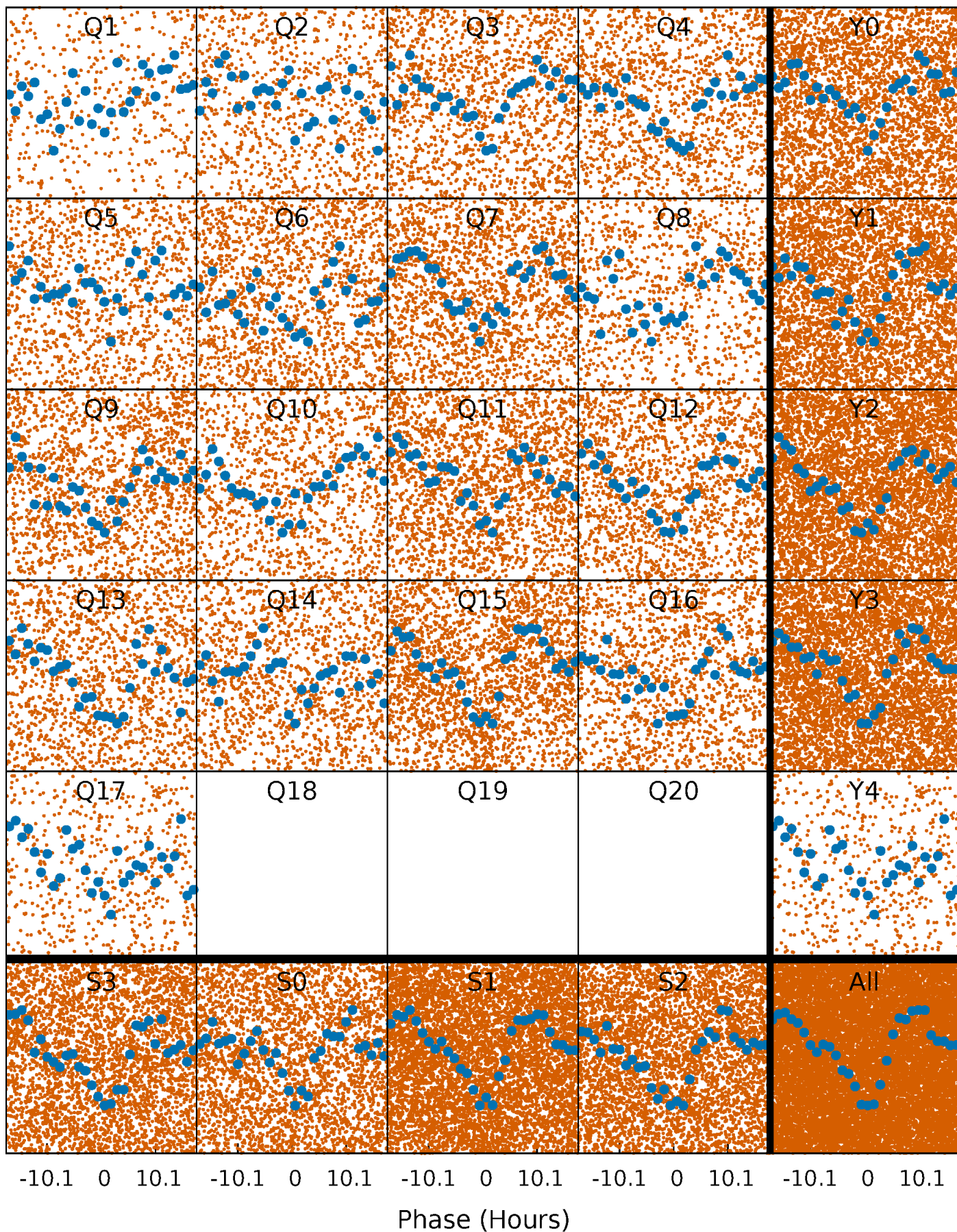


Non-Whitened Vs. Whitened Light Curve



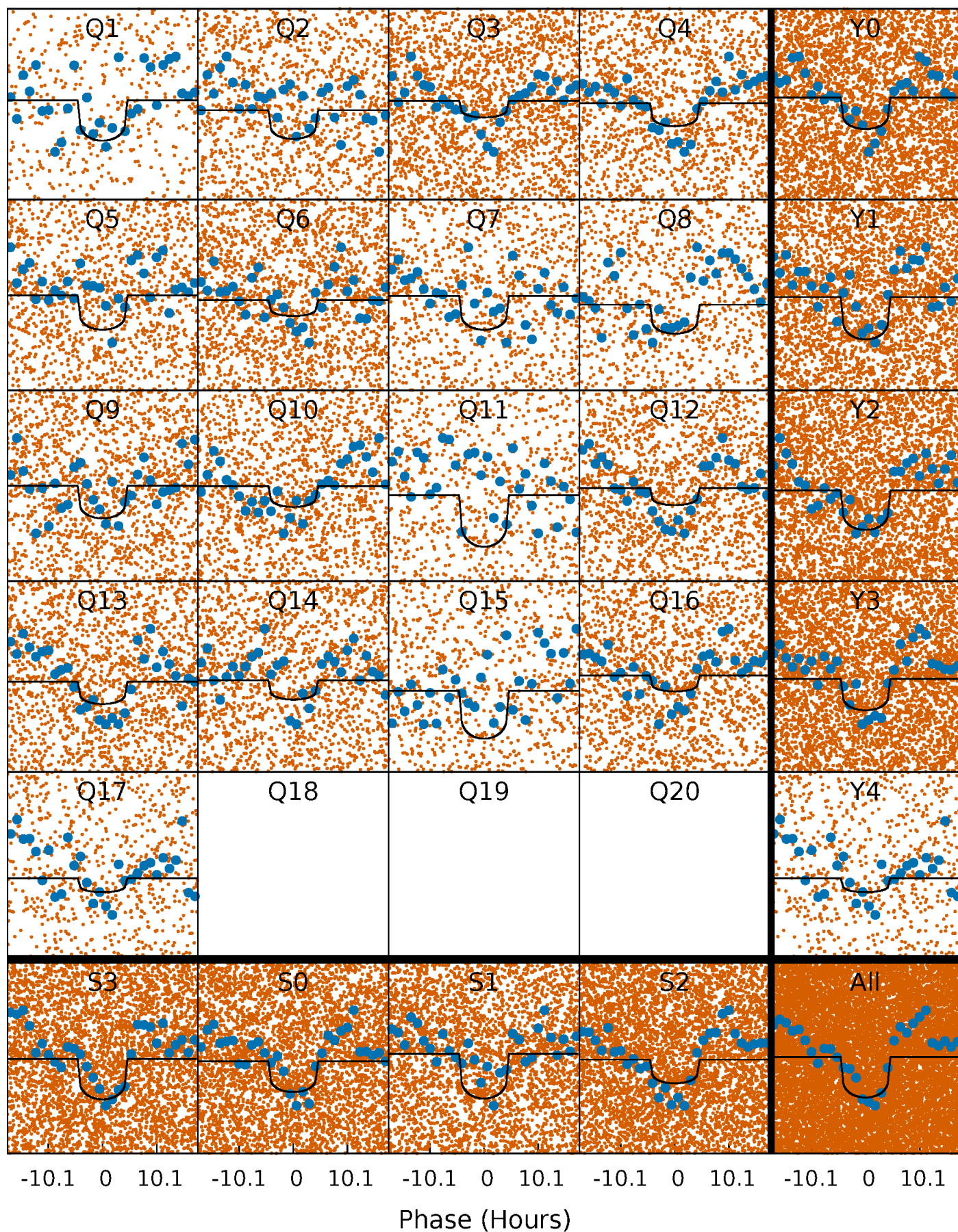
PDC Quarter-Phased Transit Curves

TCE 002715053-01 P= 1.936545 Days $T_0=132.389808$ (BKJD)



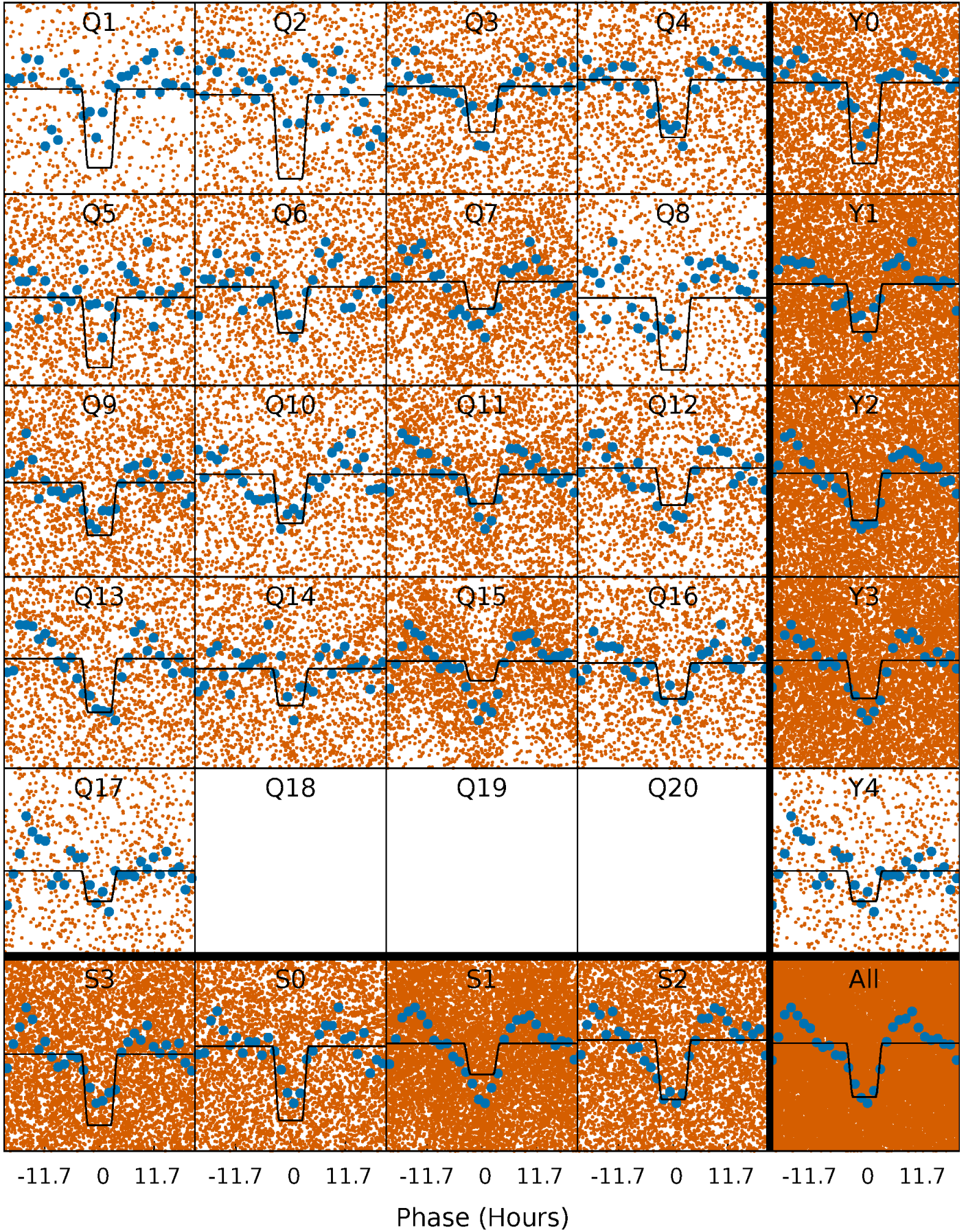
DV Quarter-Phased Transit Curves

TCE 002715053-01 P= 1.936545 Days $T_0=132.389808$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

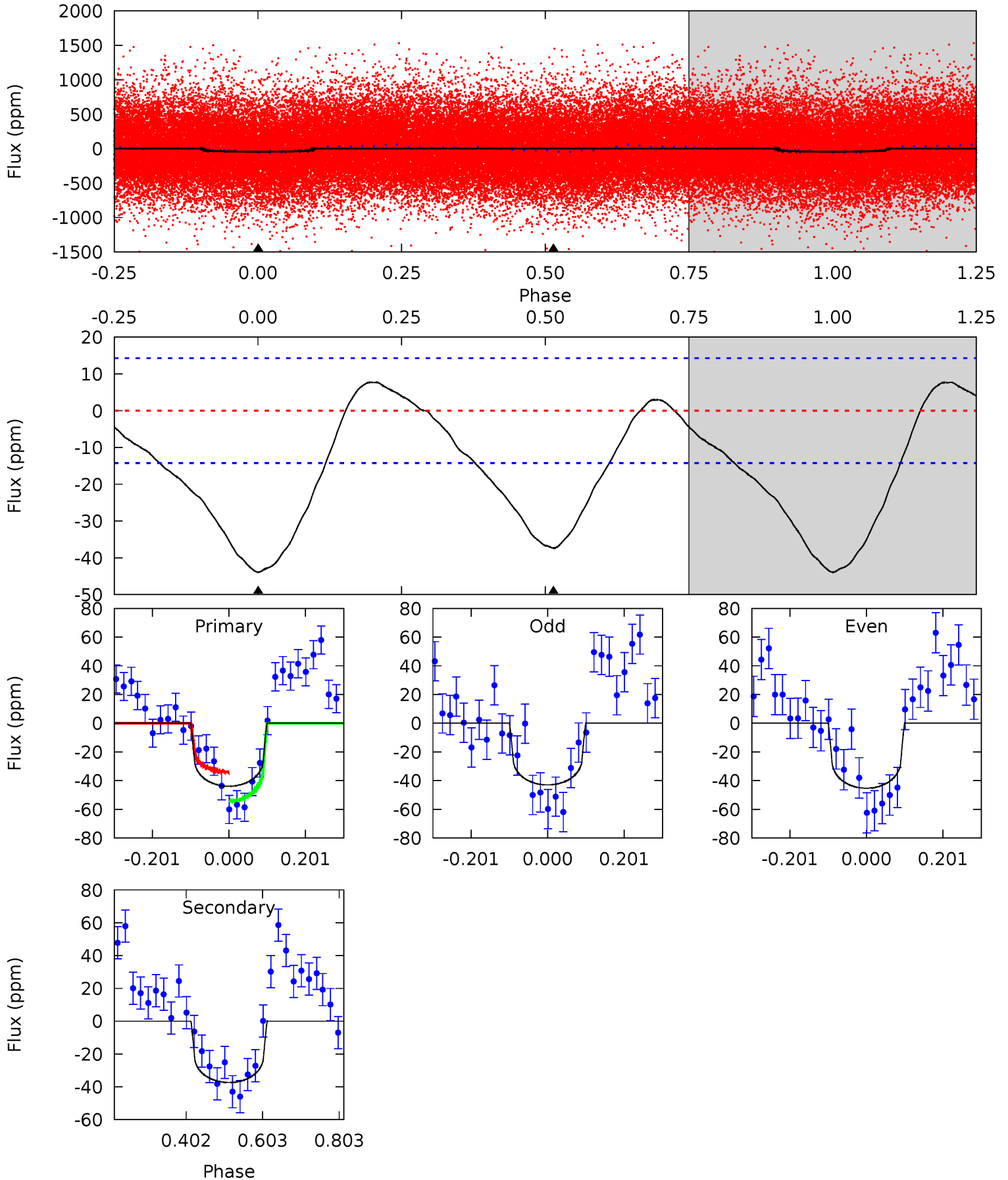
TCE 002715053-01 P= 1.936440 Days $T_0=132.445009$ (BKJD)



DV Model-Shift Uniqueness Test

002715053-01, P = 1.936545 Days, E = 130.453263 Days

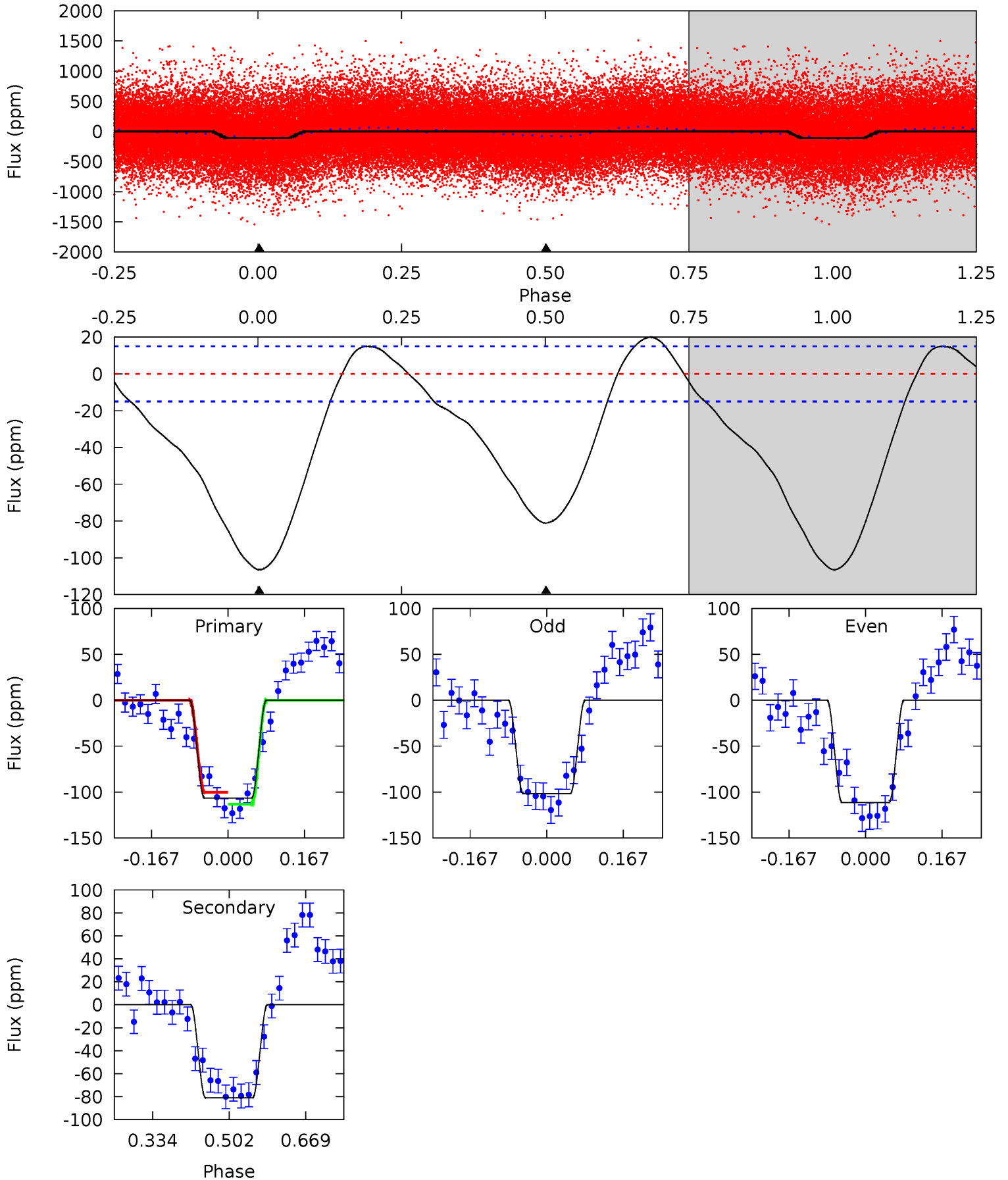
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	11.6	0	0	4.42	1.28	1.62	13.6	13.6	11.6	11.6	0.36	1.06	0.15	3.14



Alt Model-Shift Uniqueness Test

002715053-01, P = 1.936440 Days, E = 130.508569 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.6	24.0	0	0	4.46	1.38	4.58	31.6	31.6	24.0	24.0	1.42	1.07	0.16	1.91



Stellar Parameters For KIC 002715053

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6392^{+150}_{-207}	$4.425^{+0.062}_{-0.188}$	$-0.200^{+0.250}_{-0.300}$	$1.072^{+0.320}_{-0.107}$	$1.116^{+0.158}_{-0.143}$	$1.274^{+0.341}_{-0.651}$
	+2%/-3%	+1%/-4%	+125%/-150%	+30%/-10%	+14%/-13%	+27%/-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 002715053-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-37 ± 3	$1.07^{+0.92}_{-0.70}$	2342^{+148}_{-116}	5324^{+4345}_{-1166}	17^{+136}_{-12}
Alt.	-81 ± 3	$1.41^{+0.94}_{-0.81}$	2325^{+154}_{-110}	5624^{+3486}_{-1143}	22^{+96}_{-14}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

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

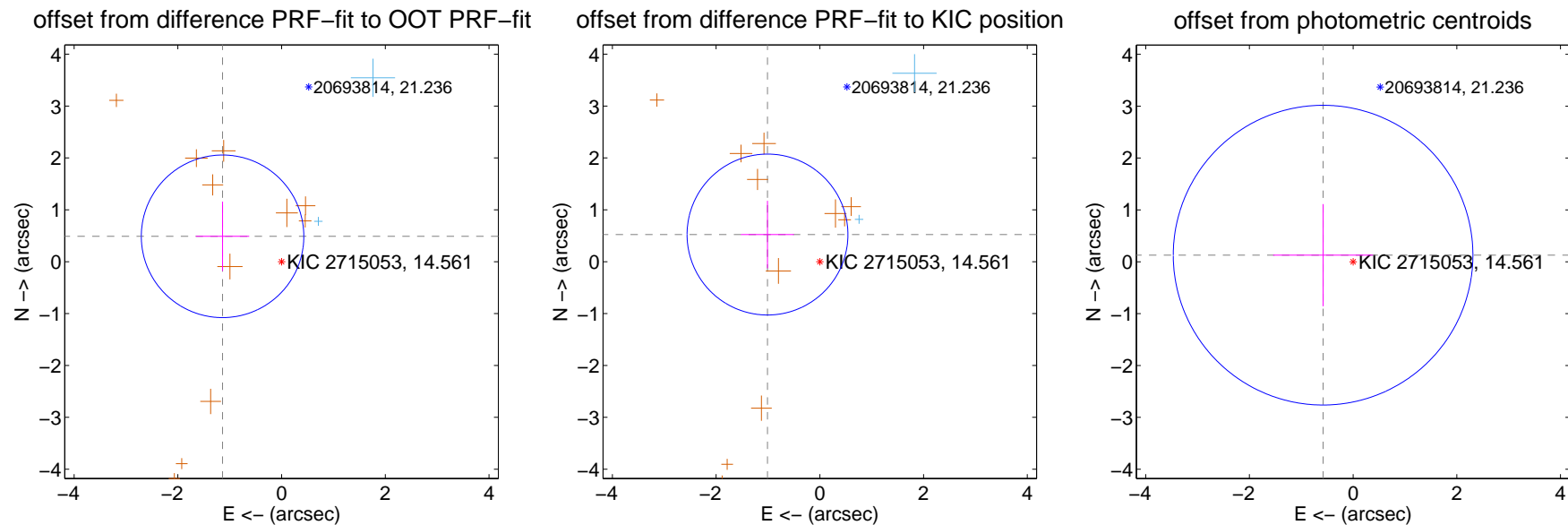
DV Centroid Data

Supplemental centroid analysis for 002715053-01. Kepler magnitude: 14.56. Transit SNR 9.04

There are 2 quarters with good PRF difference image offsets

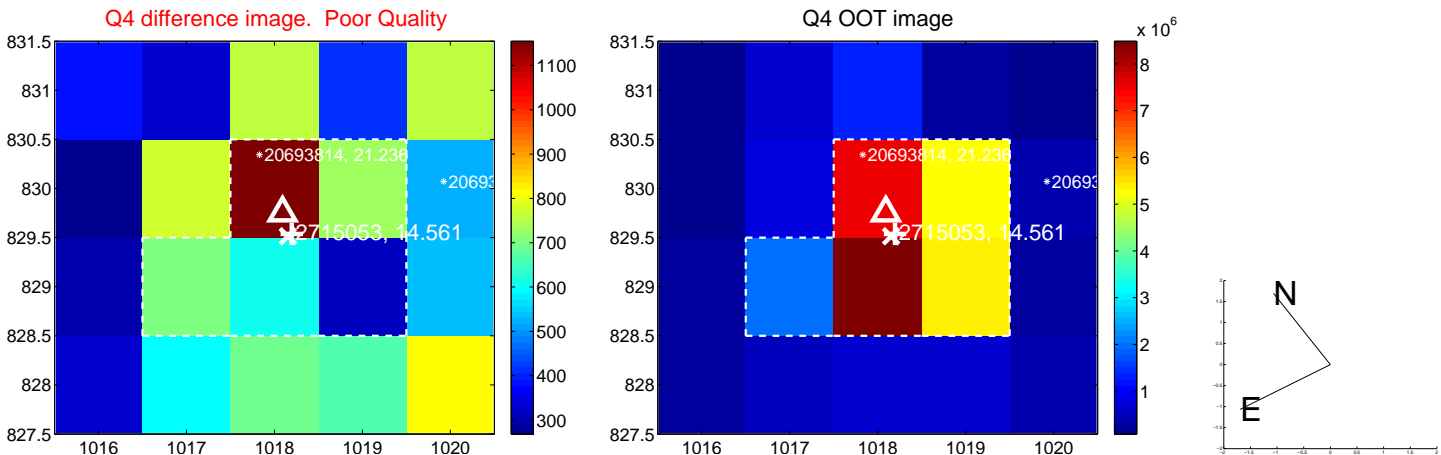
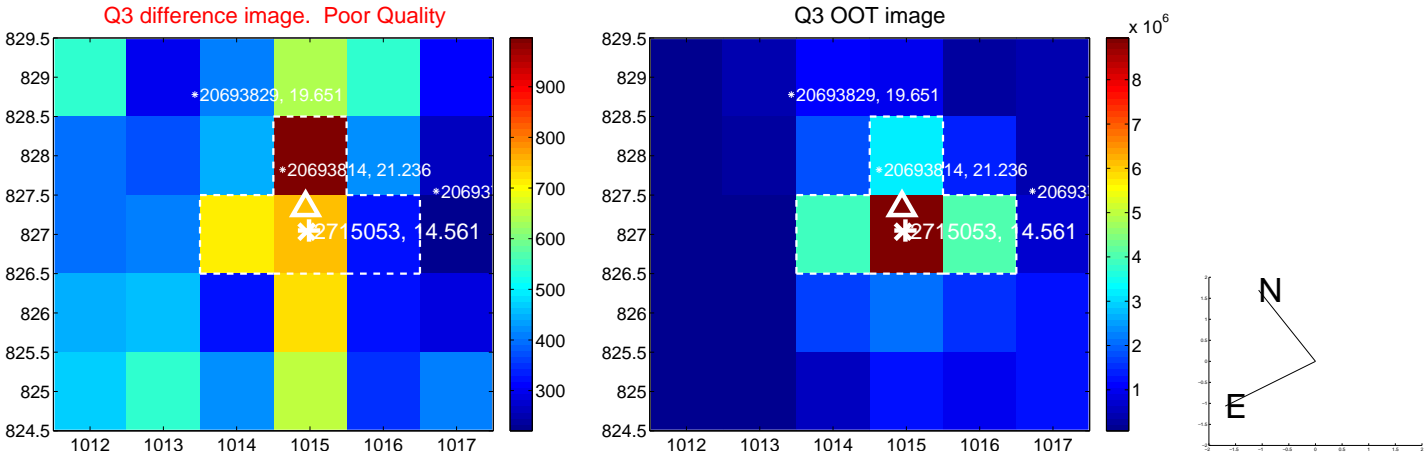
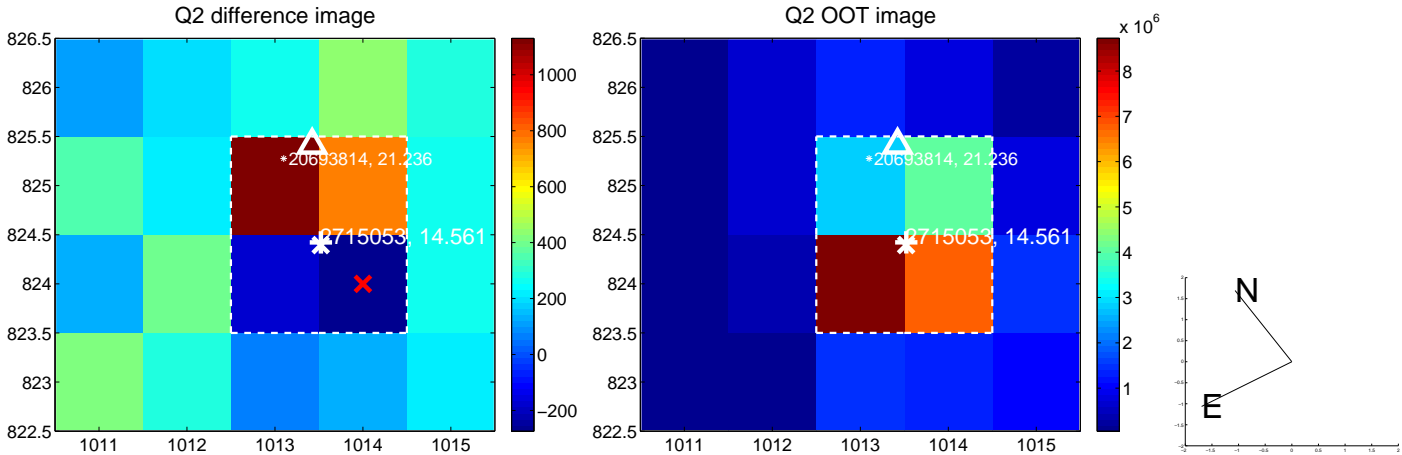
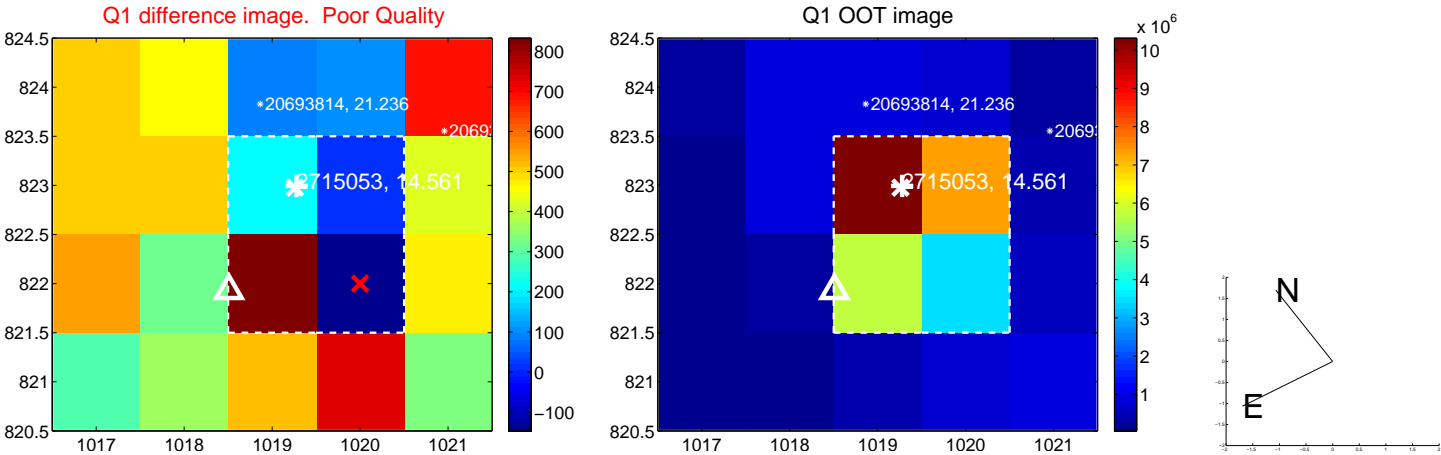
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.239 ± 0.522	2.37	1.138 ± 0.514	0.489 ± 0.669
PRF-fit source offset from KIC position	1.137 ± 0.517	2.20	1.010 ± 0.510	0.523 ± 0.651
photometric centroid source offset	0.59 ± 0.96	0.62	0.58 ± 0.96	0.13 ± 0.98

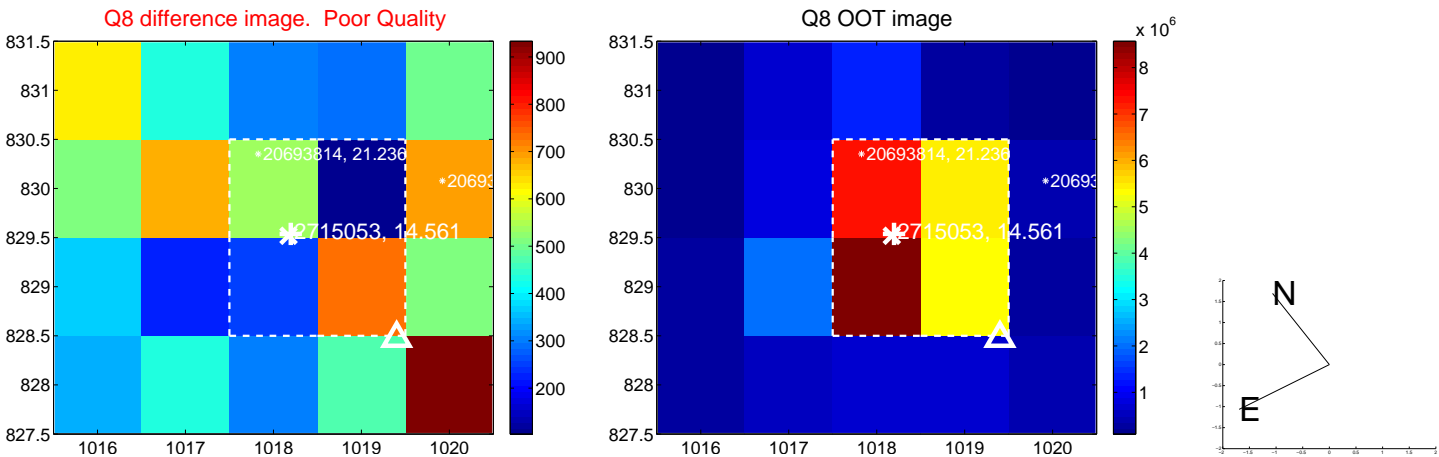
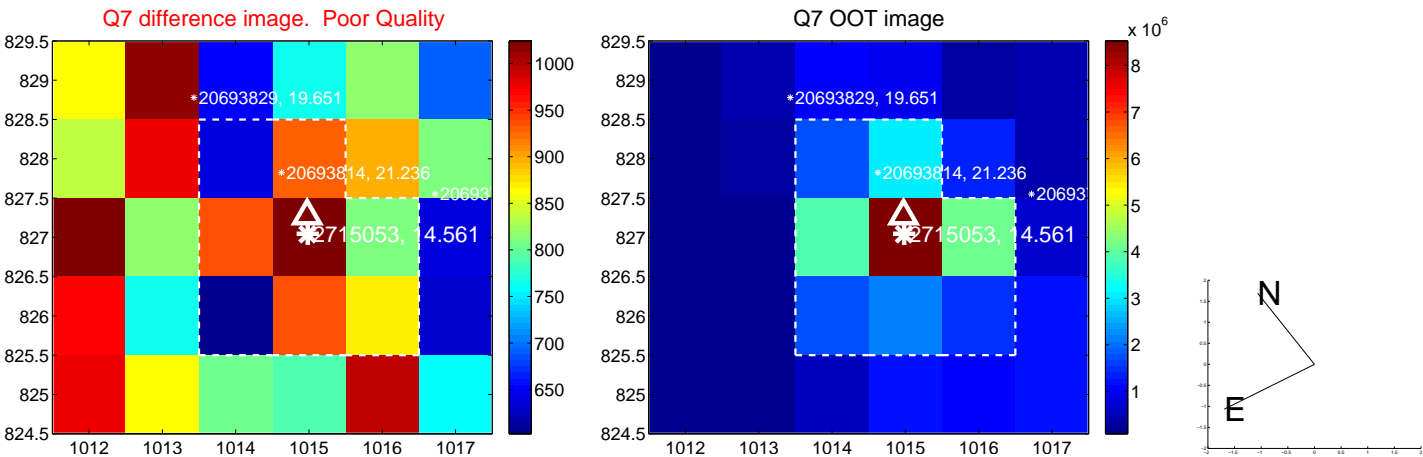
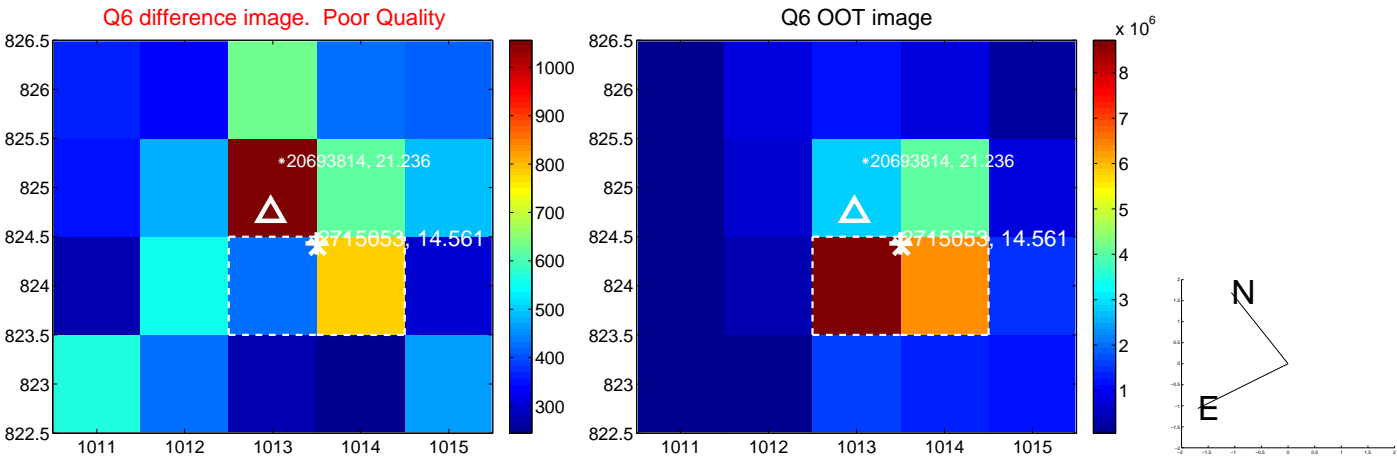
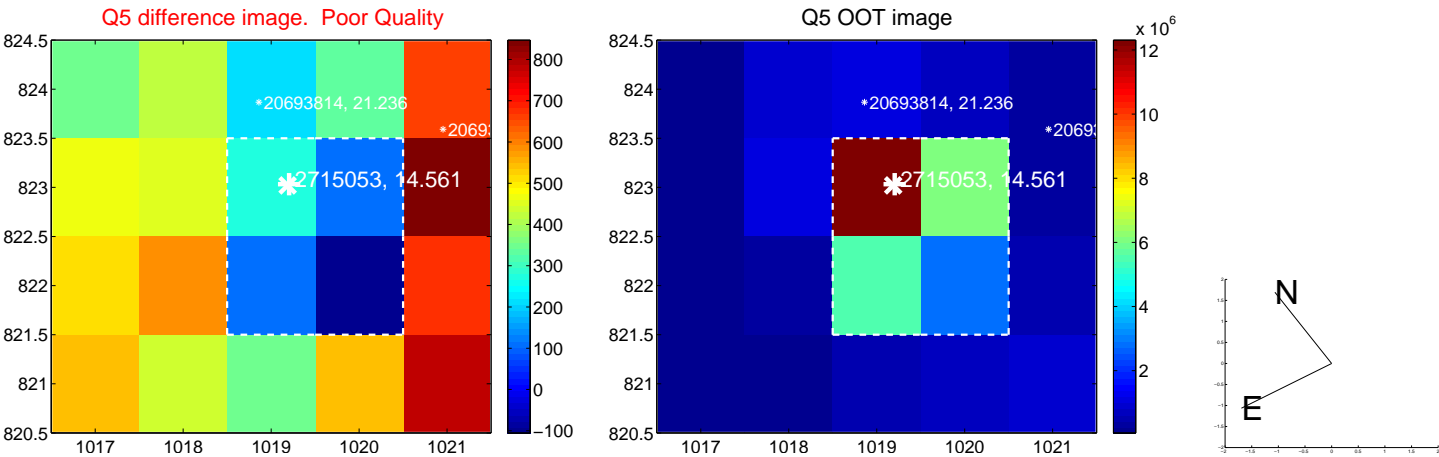


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

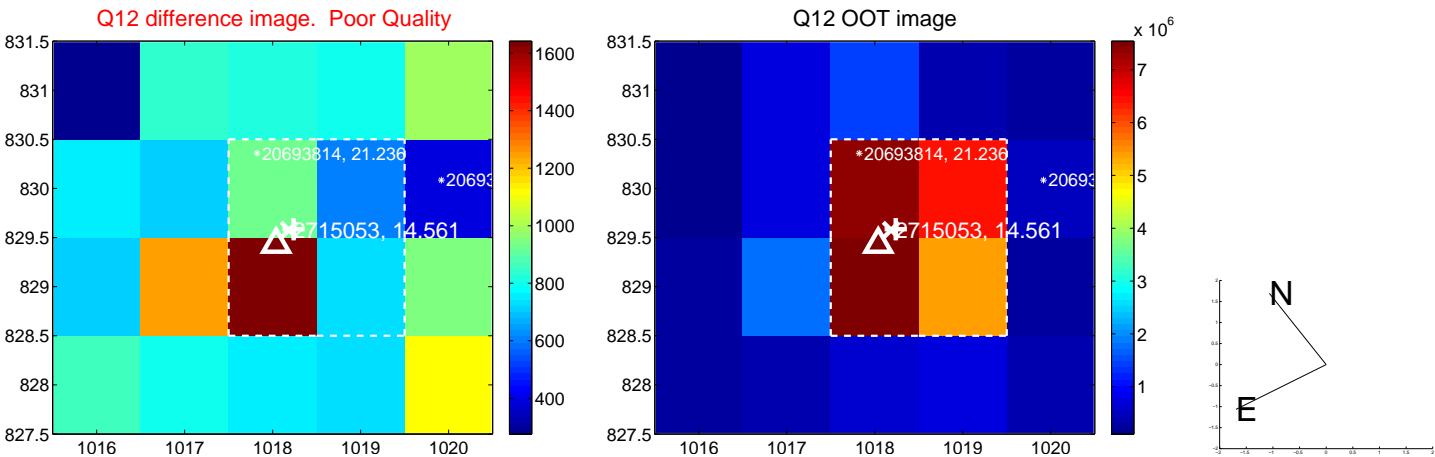
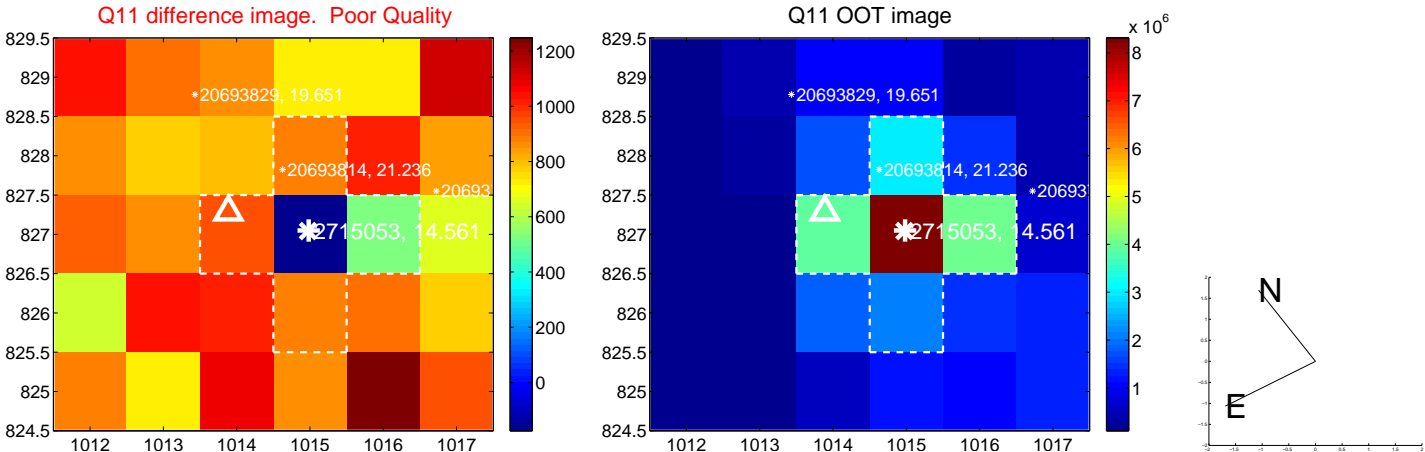
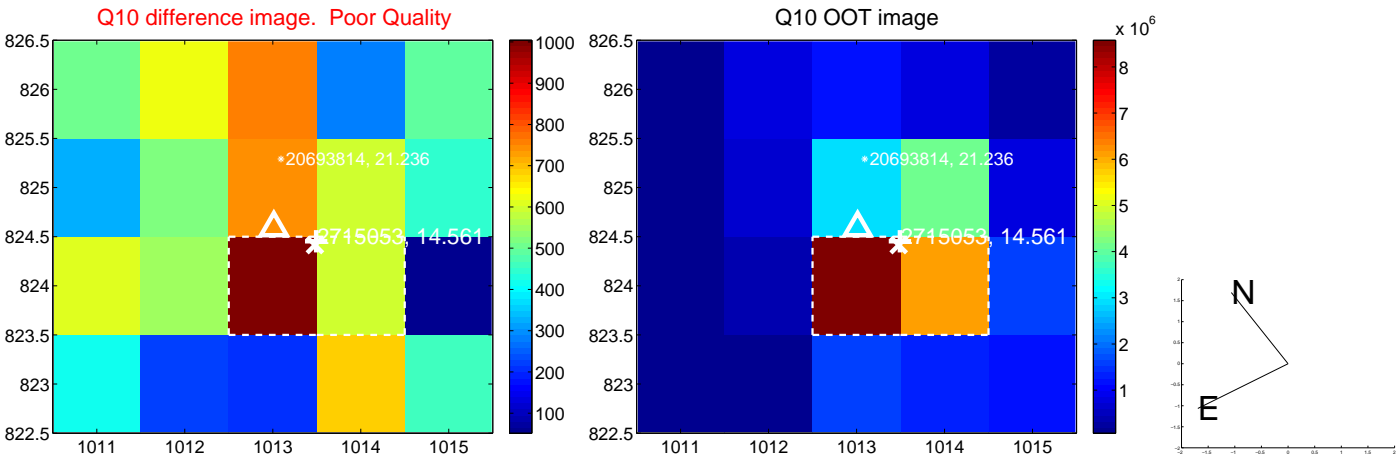
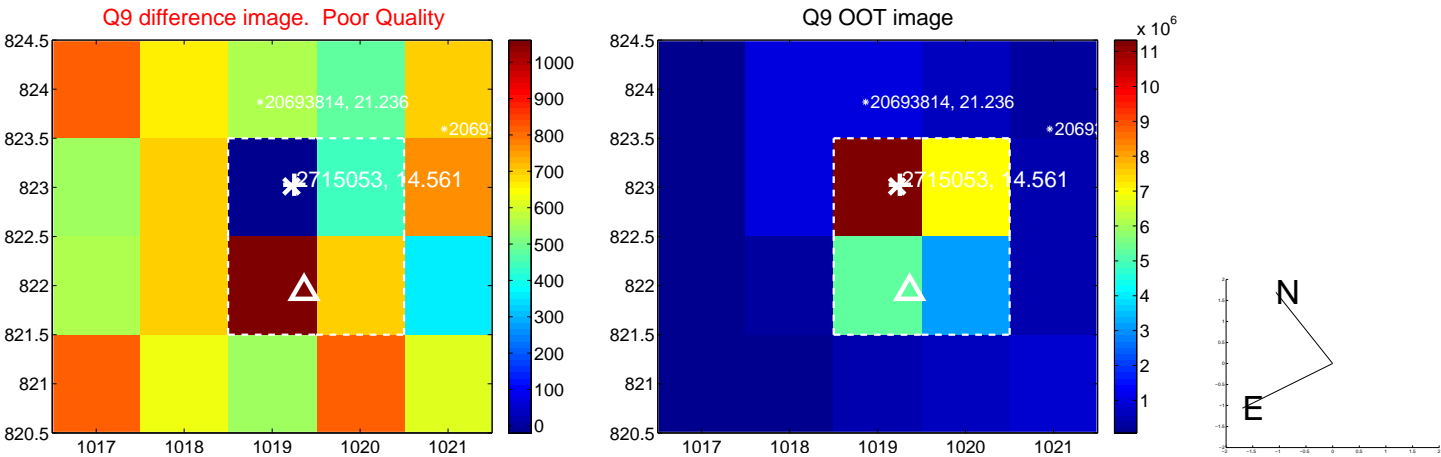
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



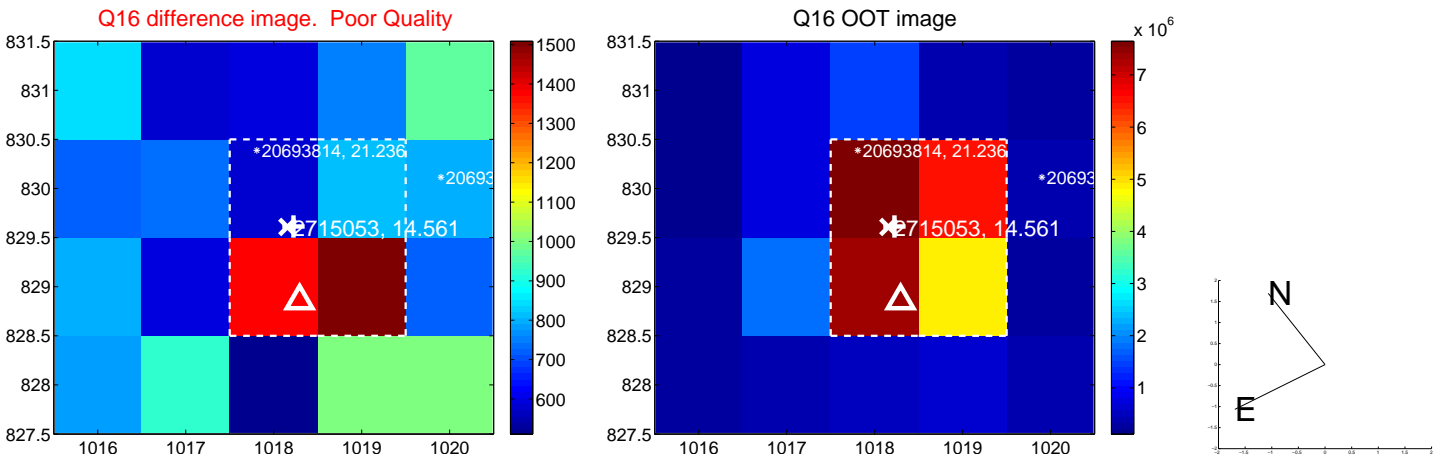
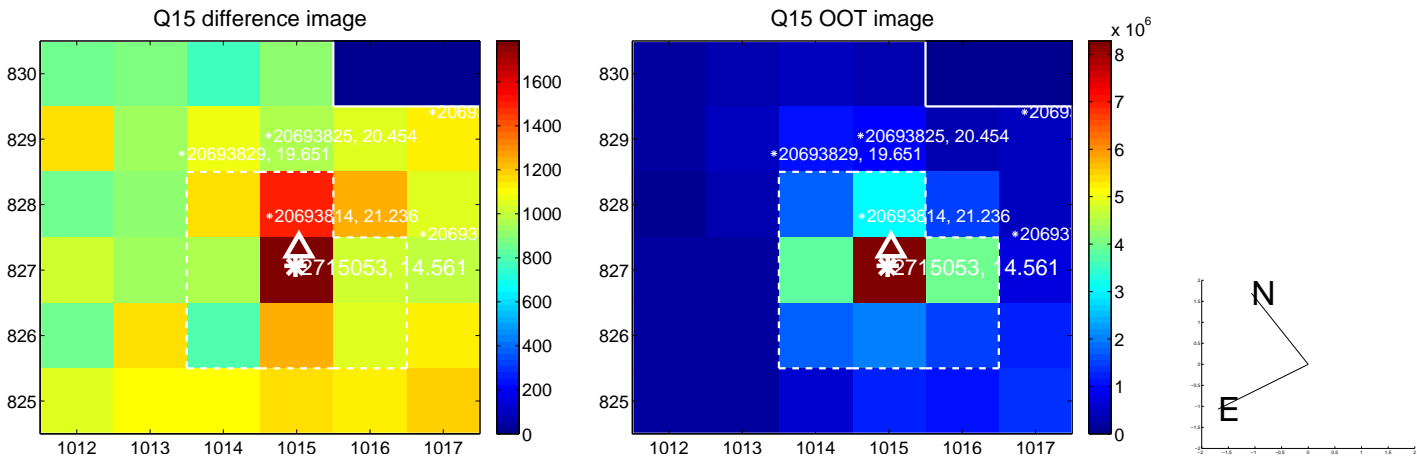
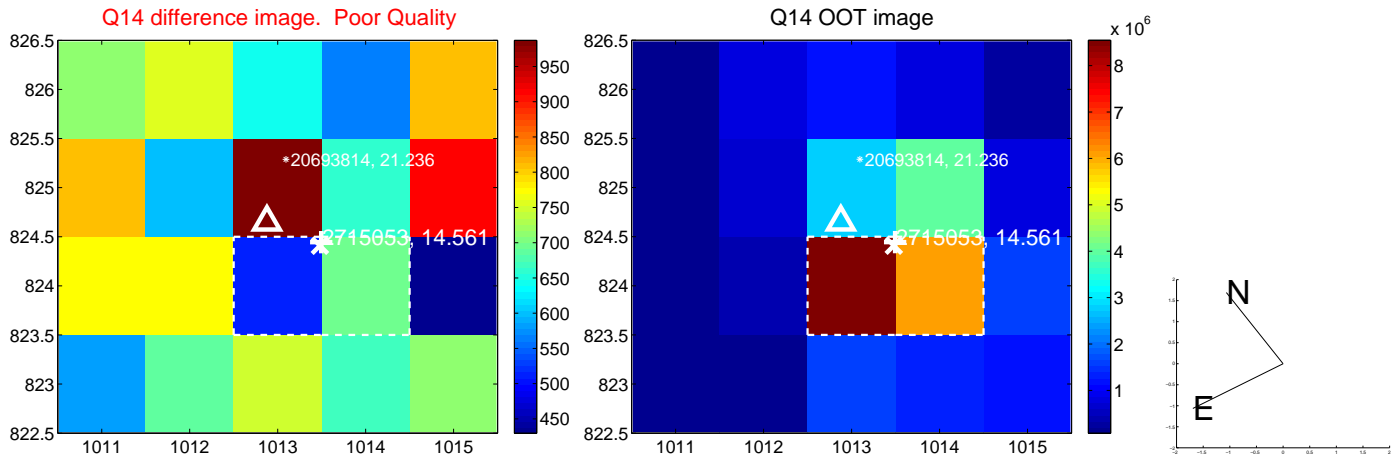
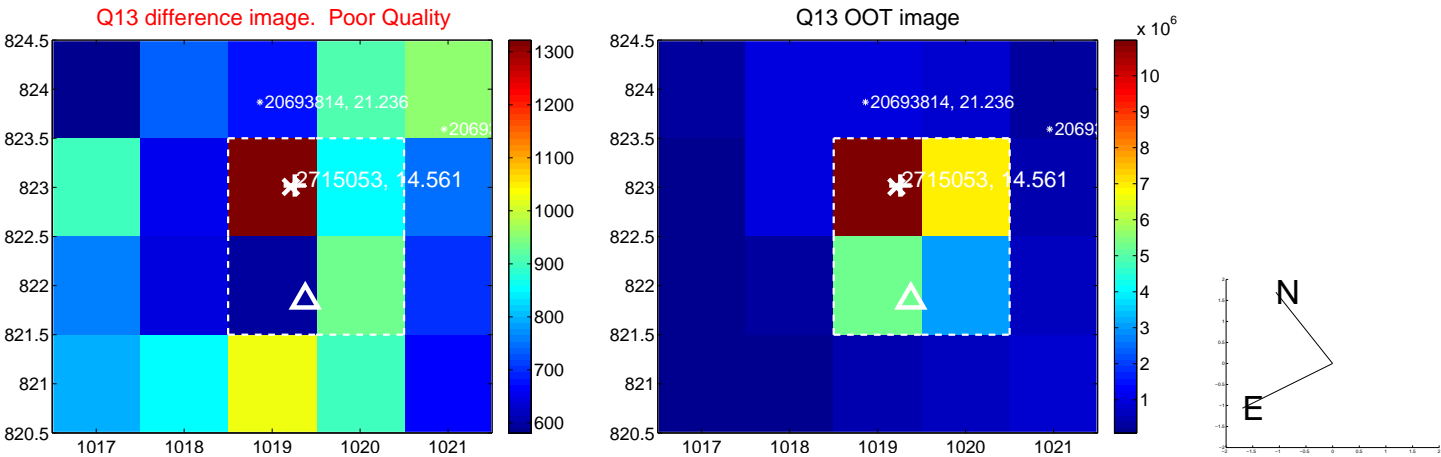
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



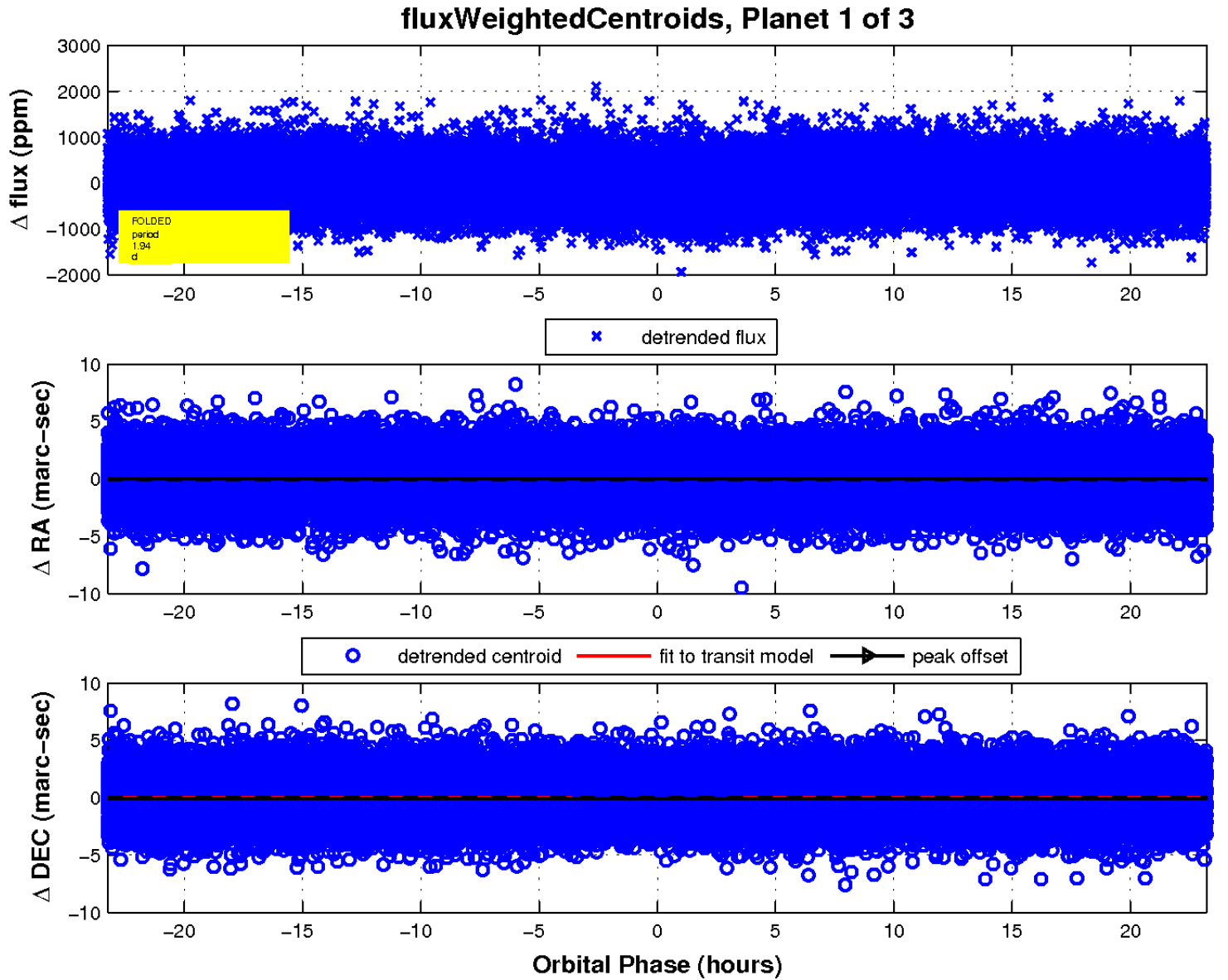
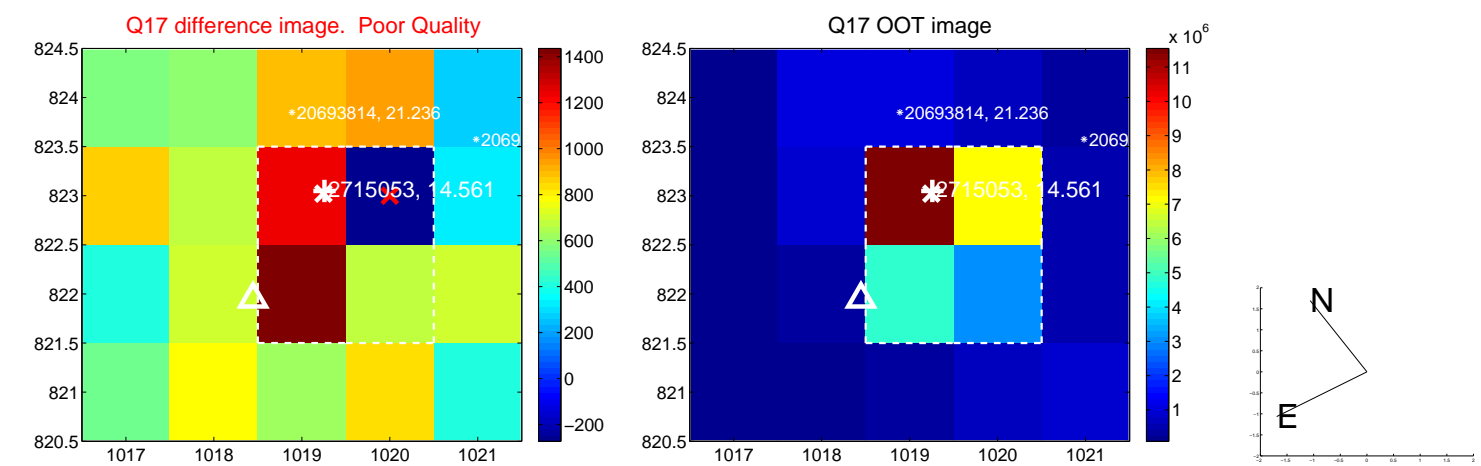
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

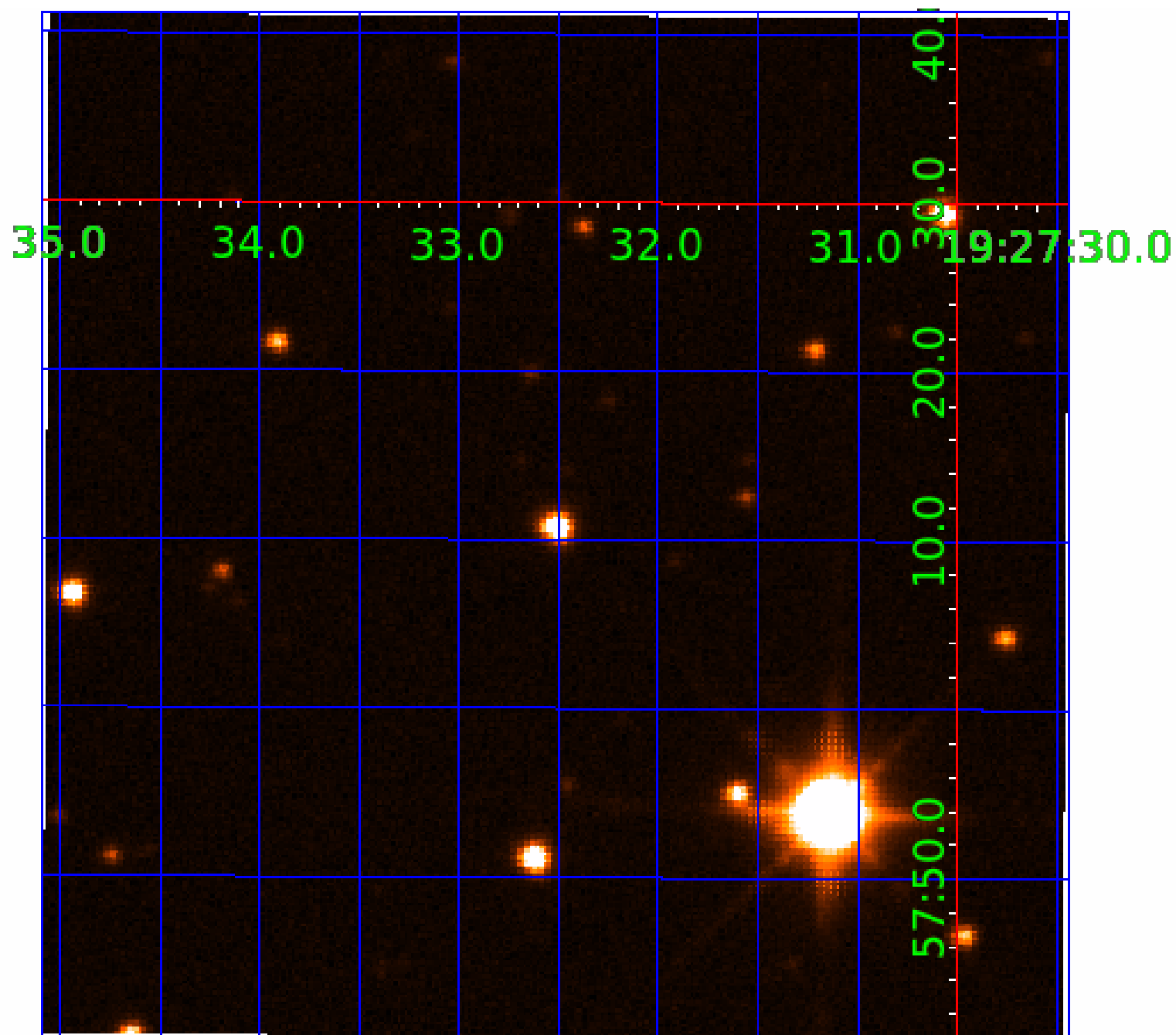


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002715053

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})
002715053-01	OBS	No	1.936545	132.389808	49.6	8.881	8.4	9.0	1.07	6392	0.76	1727.96
002715053-02	OBS	No	209.863283	313.644645	555.1	10.847	8.7	6.6	1.07	6392	2.71	3.34
002715053-03	OBS	No	313.381390	338.850327	663.7	24.010	8.0	6.8	1.07	6392	2.77	1.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002715053-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
002715053-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
002715053-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

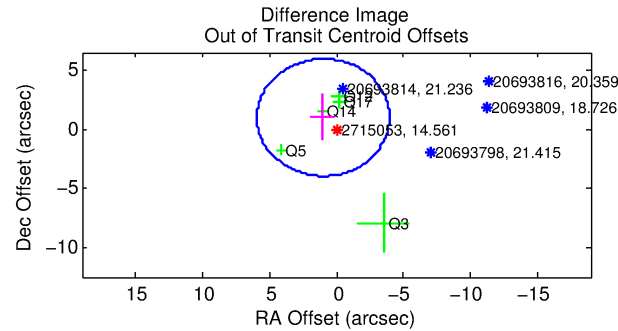
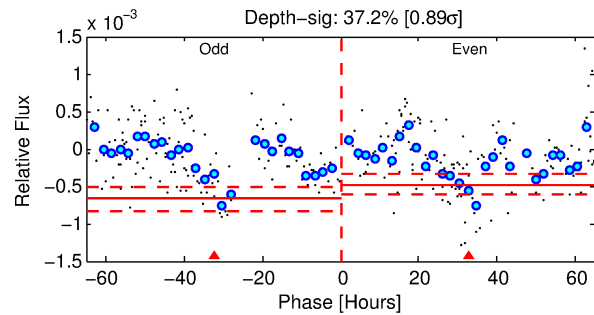
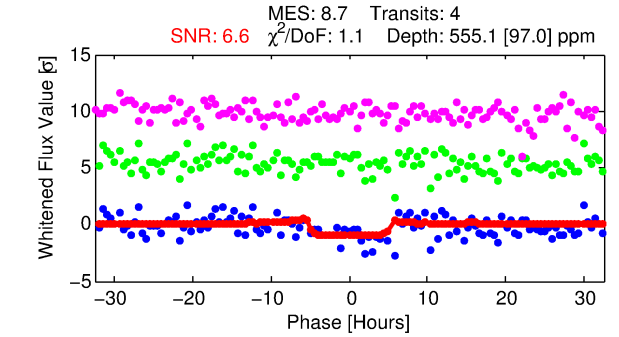
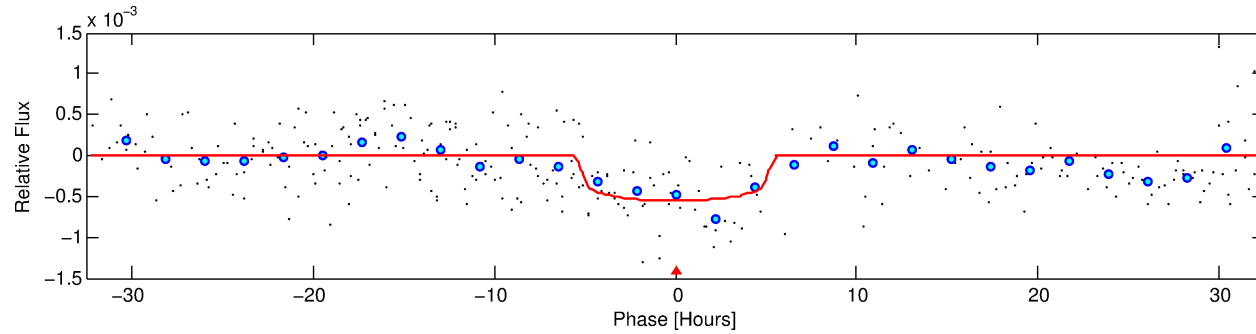
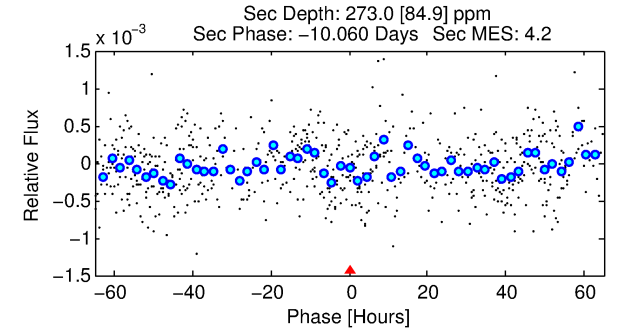
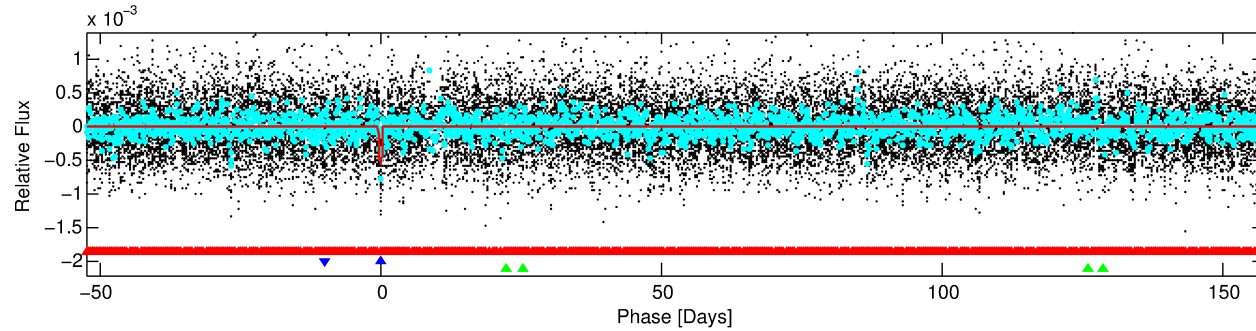
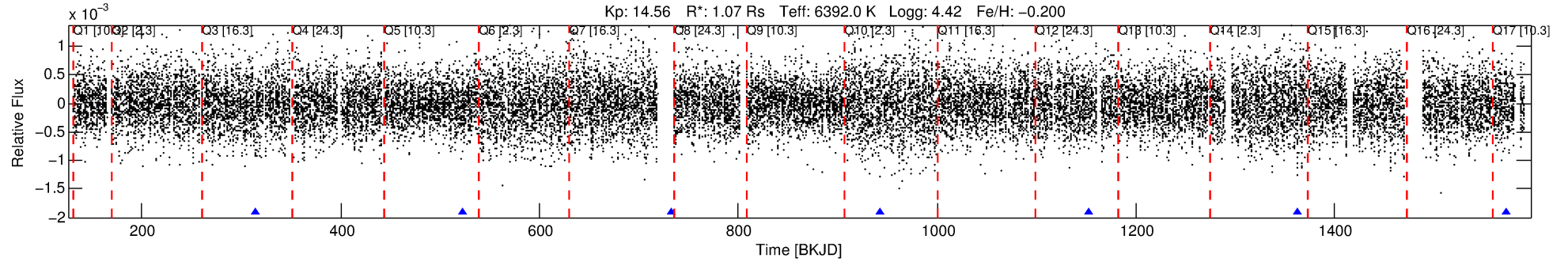
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002715053-02

No Significant Match Found

DV One-Page Summary

KIC: 2715053 Candidate: 2 of 3 Period: 209.863 d



DV Fit Results:

Period = 209.86328 [0.00430] d
Epoch = 313.6446 [0.0233] BKJD
Rp/R* = 0.0232 [0.0127]
a/R* = 107.89 [309.67]
b = 0.72 [1.95]
Seff = 3.34 [1.25]
Teff = 345 [32] K
Rp = 2.71 [1.69] Re
a = 0.7169 [0.1762] AU
Ag = 10479.42 [12496.66] [0.84 σ]
Teffp = 5394 [1547] K [3.26 σ]

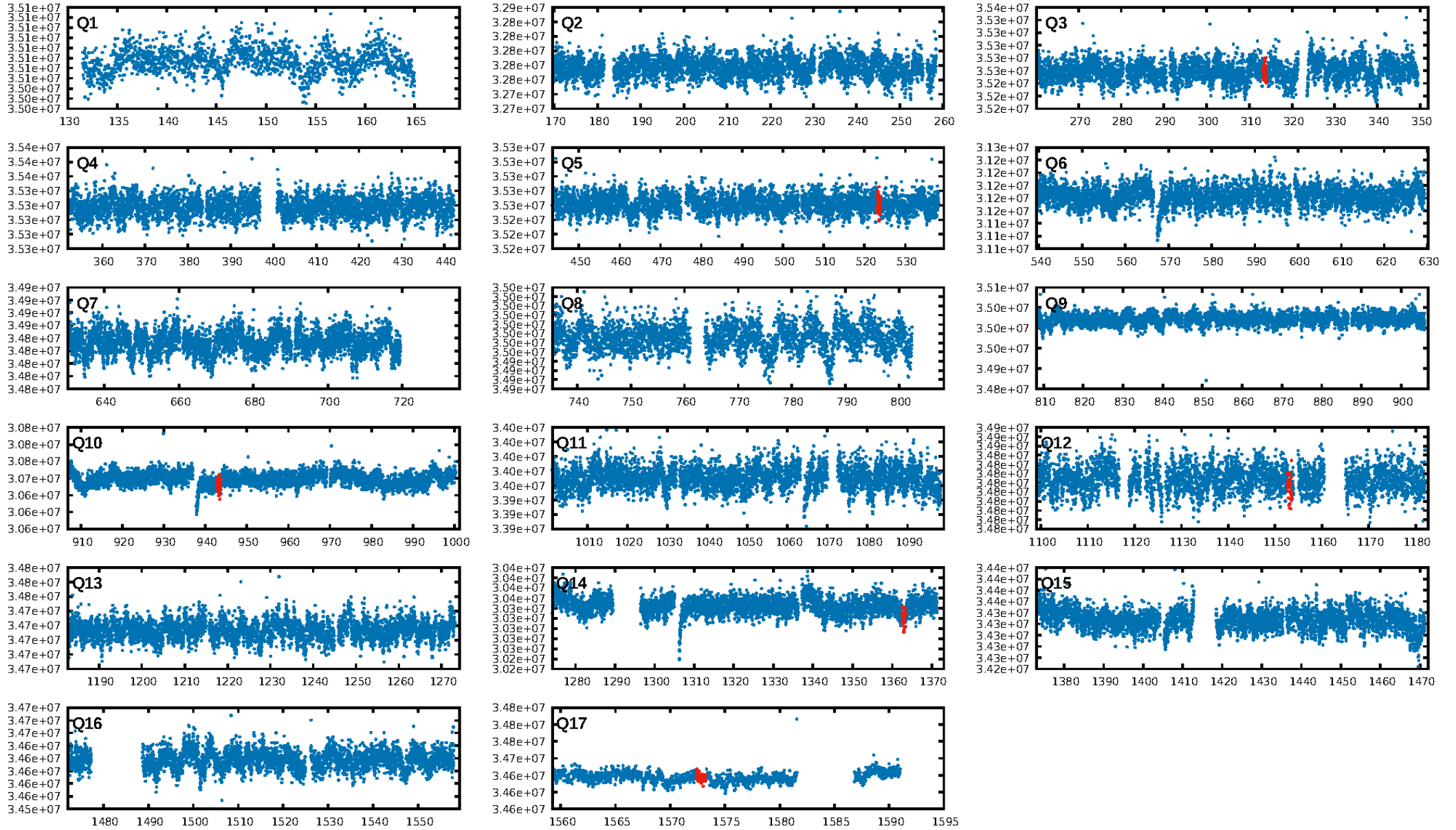
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [355.97 σ]
LongPeriod-sig: 100.0% [94.30 σ]
ModelChiSquare2-sig: 97.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.73e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.03162
Centroid-sig: 0.9%
Centroid-so: 1.843 arcsec [2.14 σ]
OotOffset-rm: 1.400 arcsec [0.85 σ]
KicOffset-rm: 1.539 arcsec [0.82 σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 0.00 [0/6]

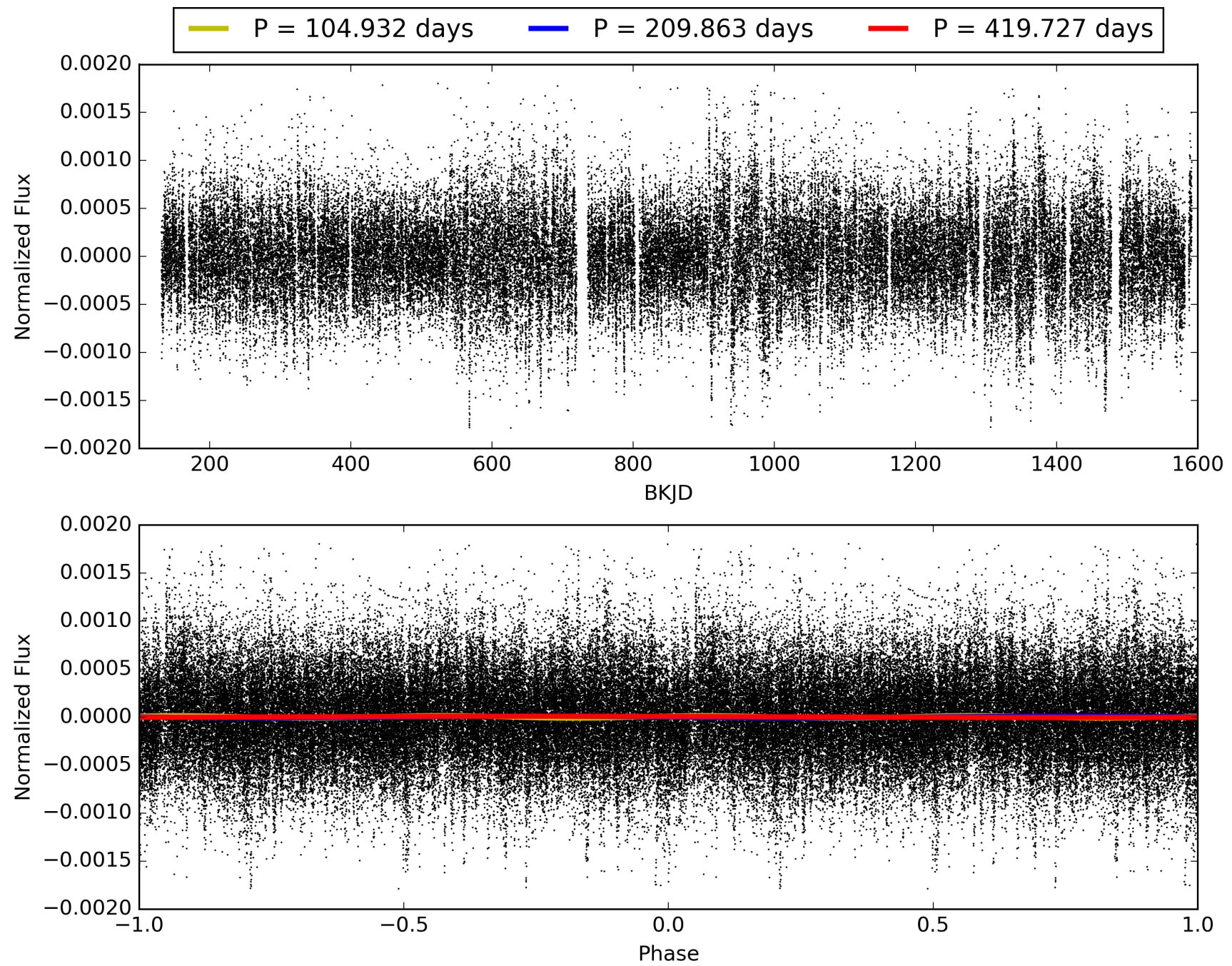
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:48:03 Z

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

TCE 002715053-02, PDC Light Curves

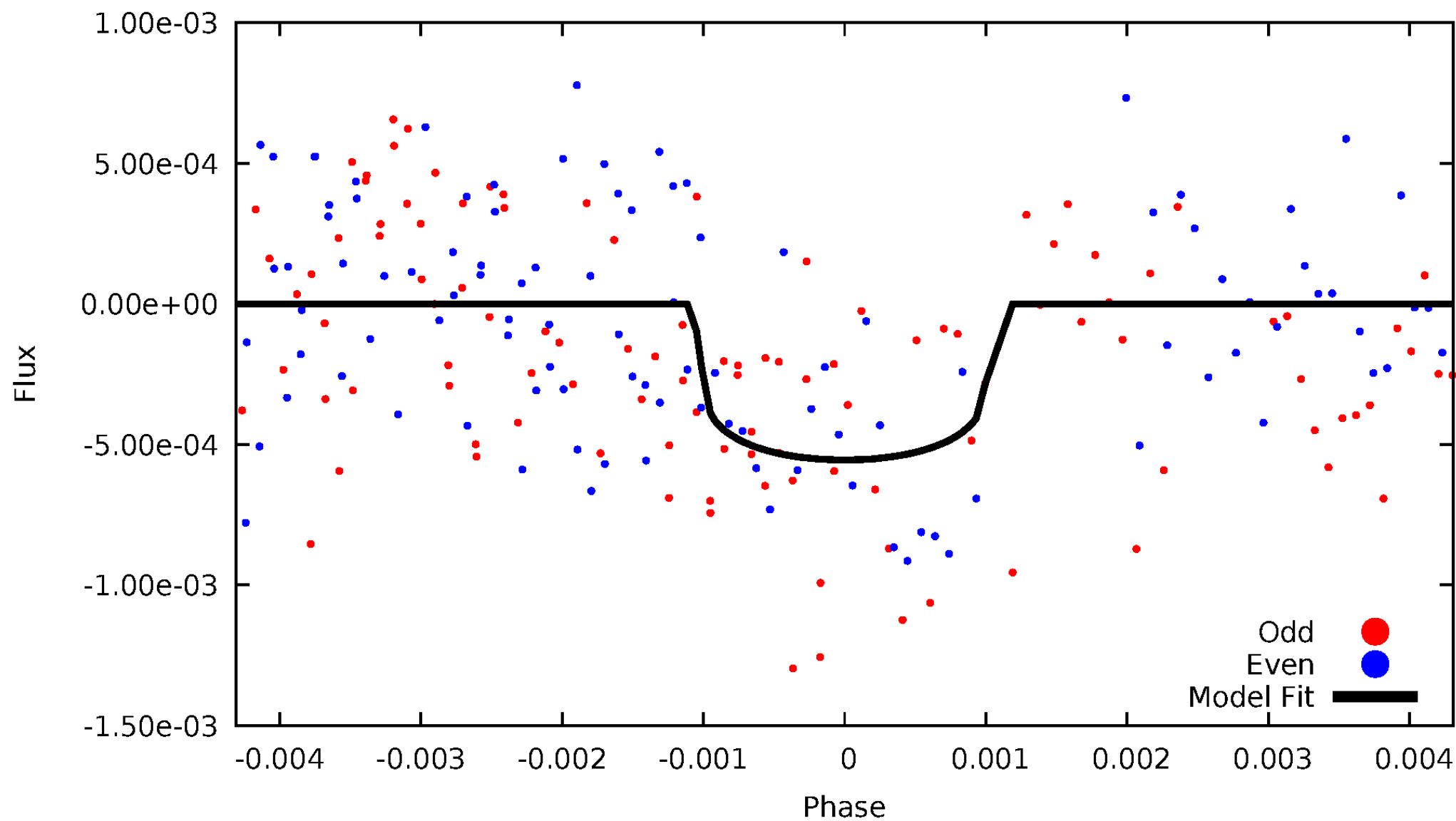


TCE 002715053-02



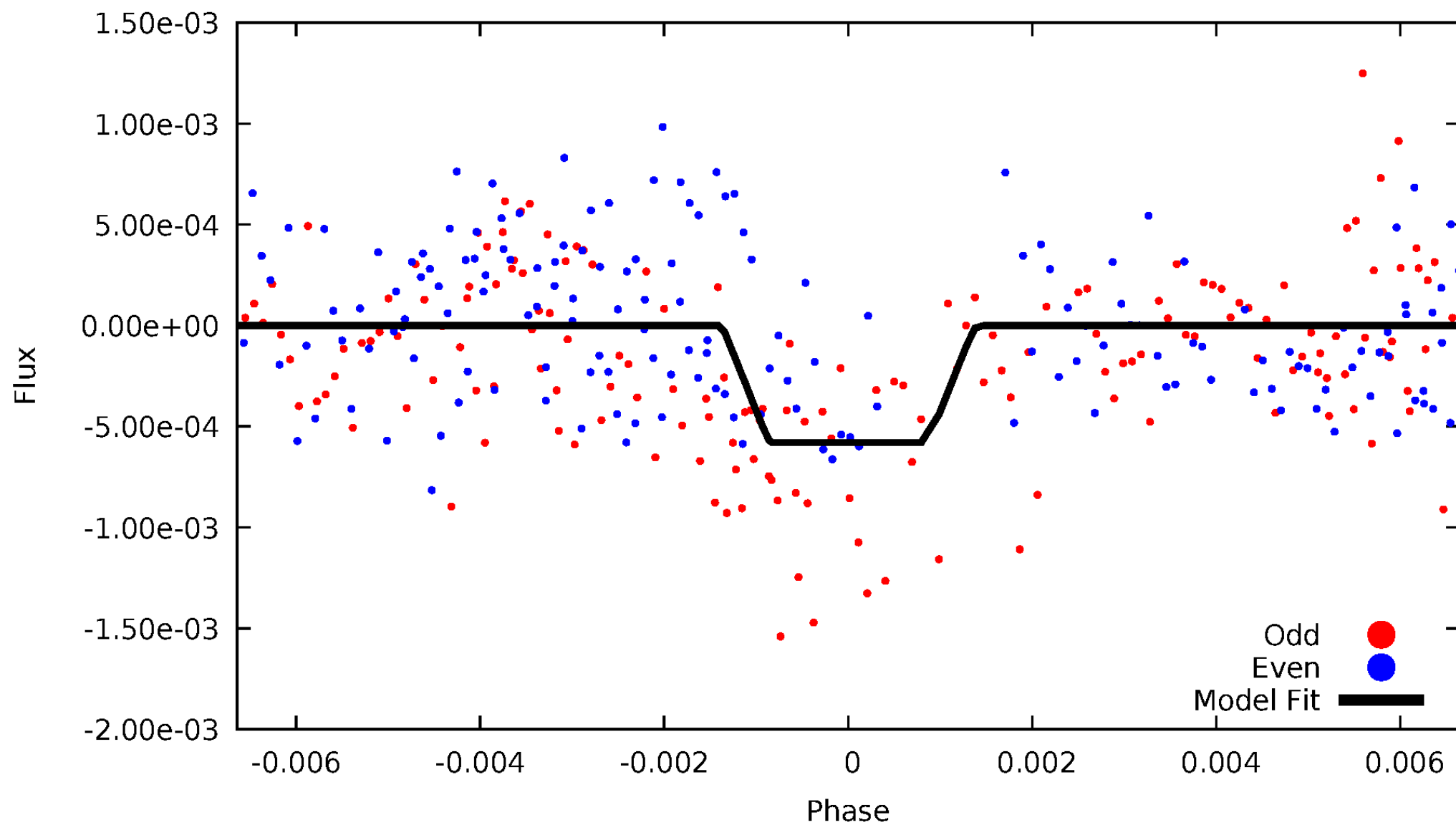
DV Odd/Even

TCE 002715053-02



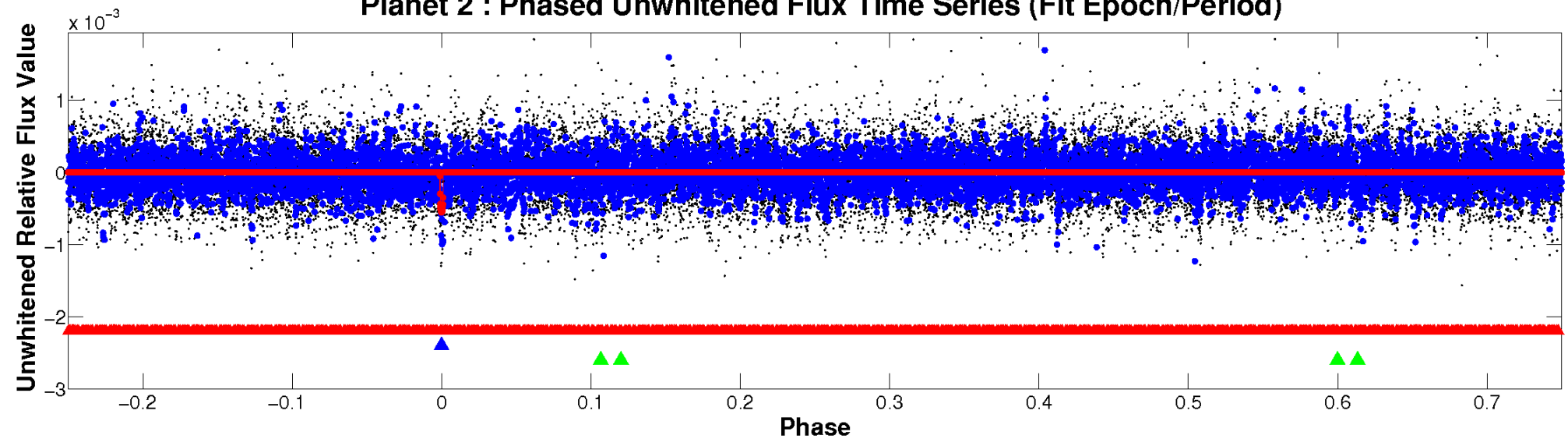
ALT Odd/Even

TCE 002715053-02

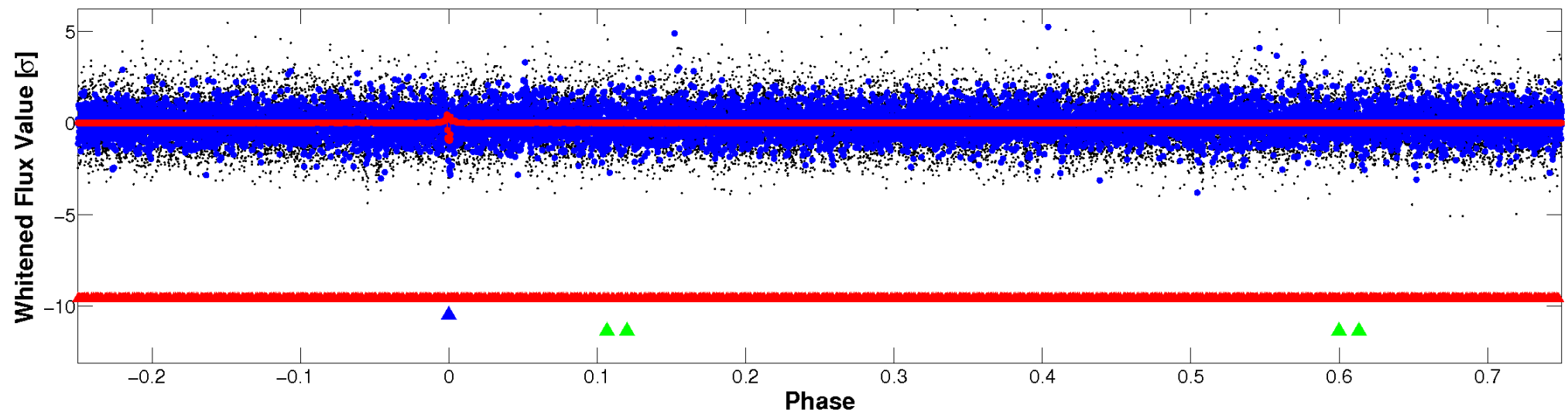


Non-Whitened Vs. Whitened Light Curve

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

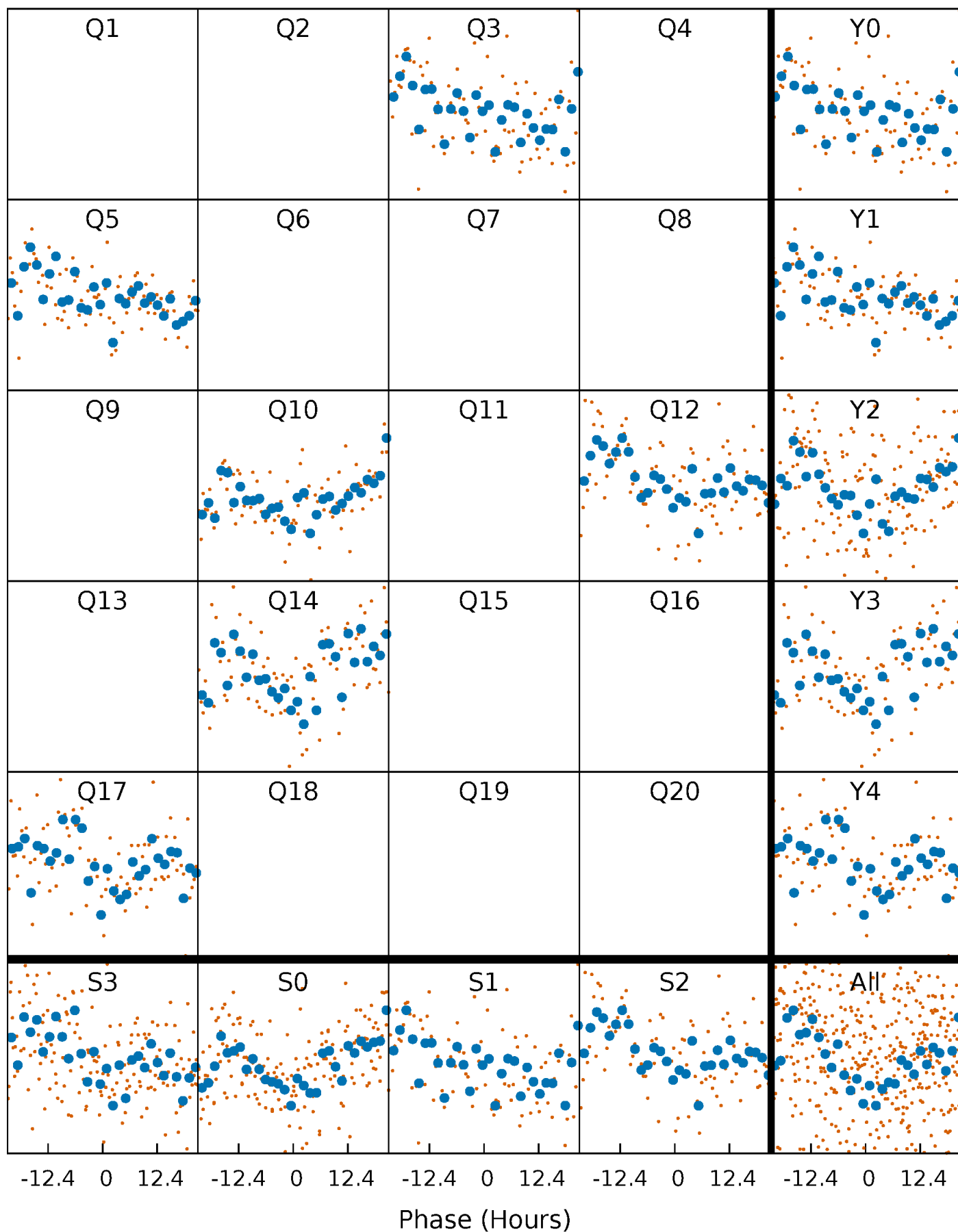


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



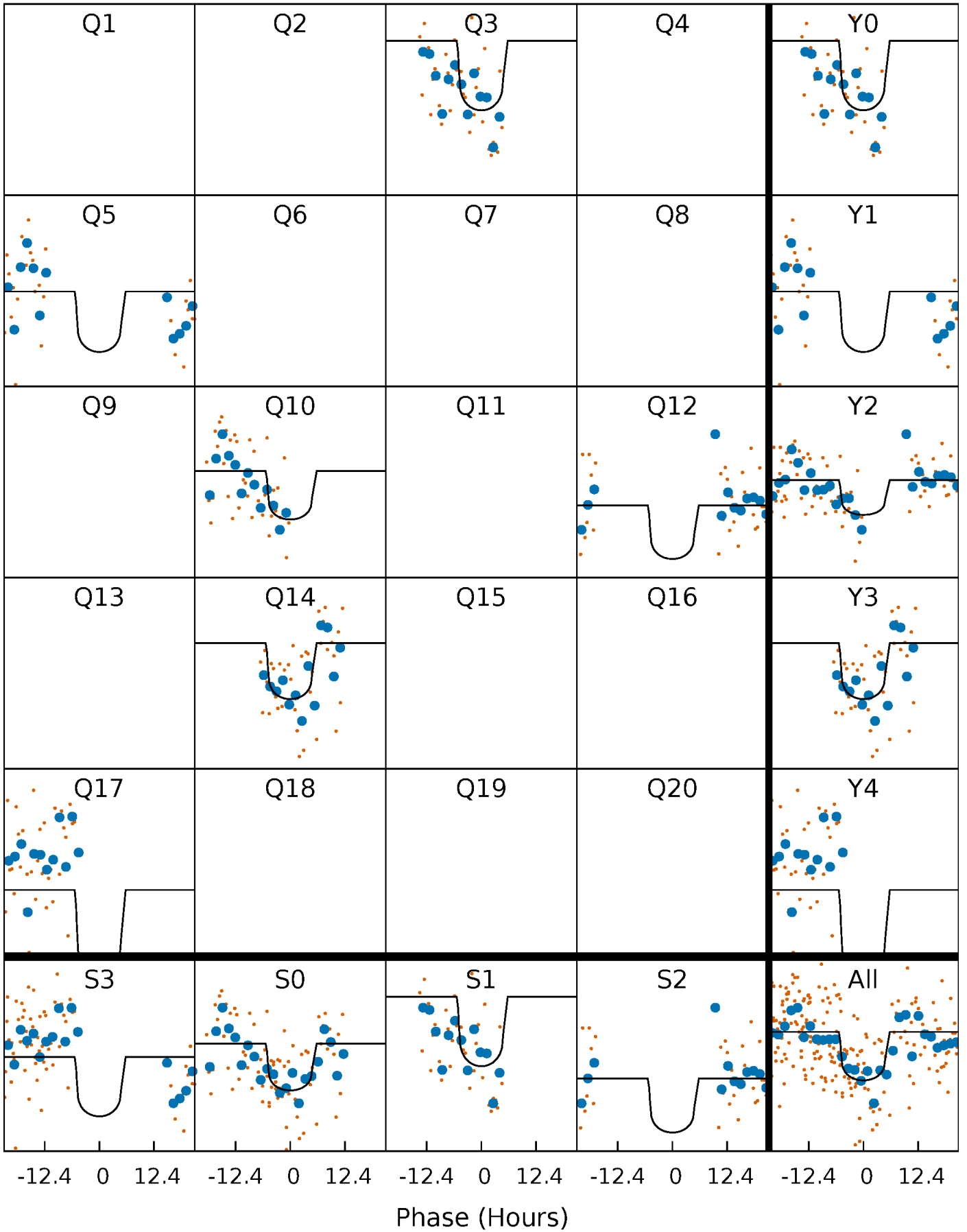
PDC Quarter-Phased Transit Curves

TCE 002715053-02 $P=209.863283$ Days $T_0=313.644645$ (BKJD)



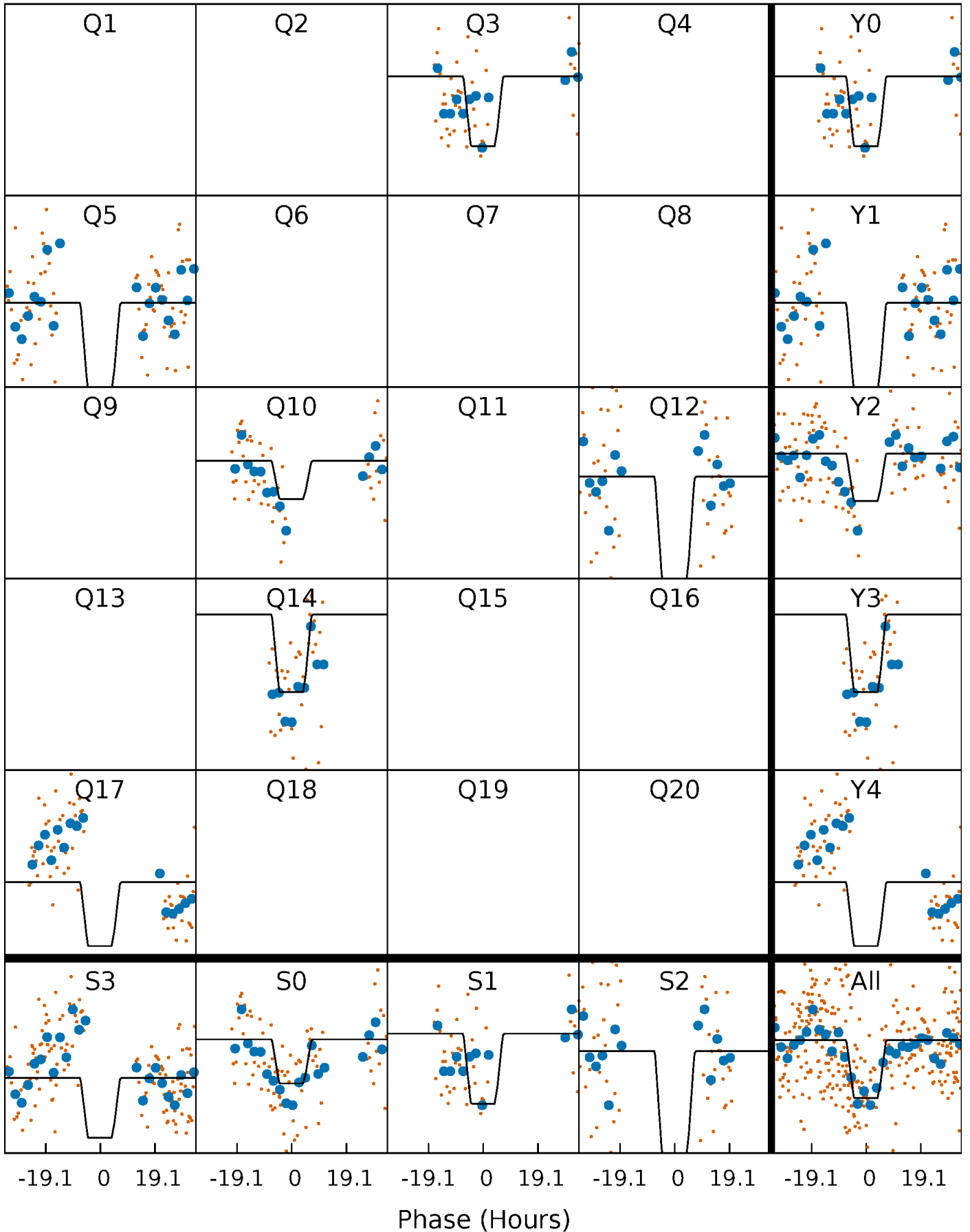
DV Quarter-Phased Transit Curves

TCE 002715053-02 $P=209.863283$ Days $T_0=313.644645$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

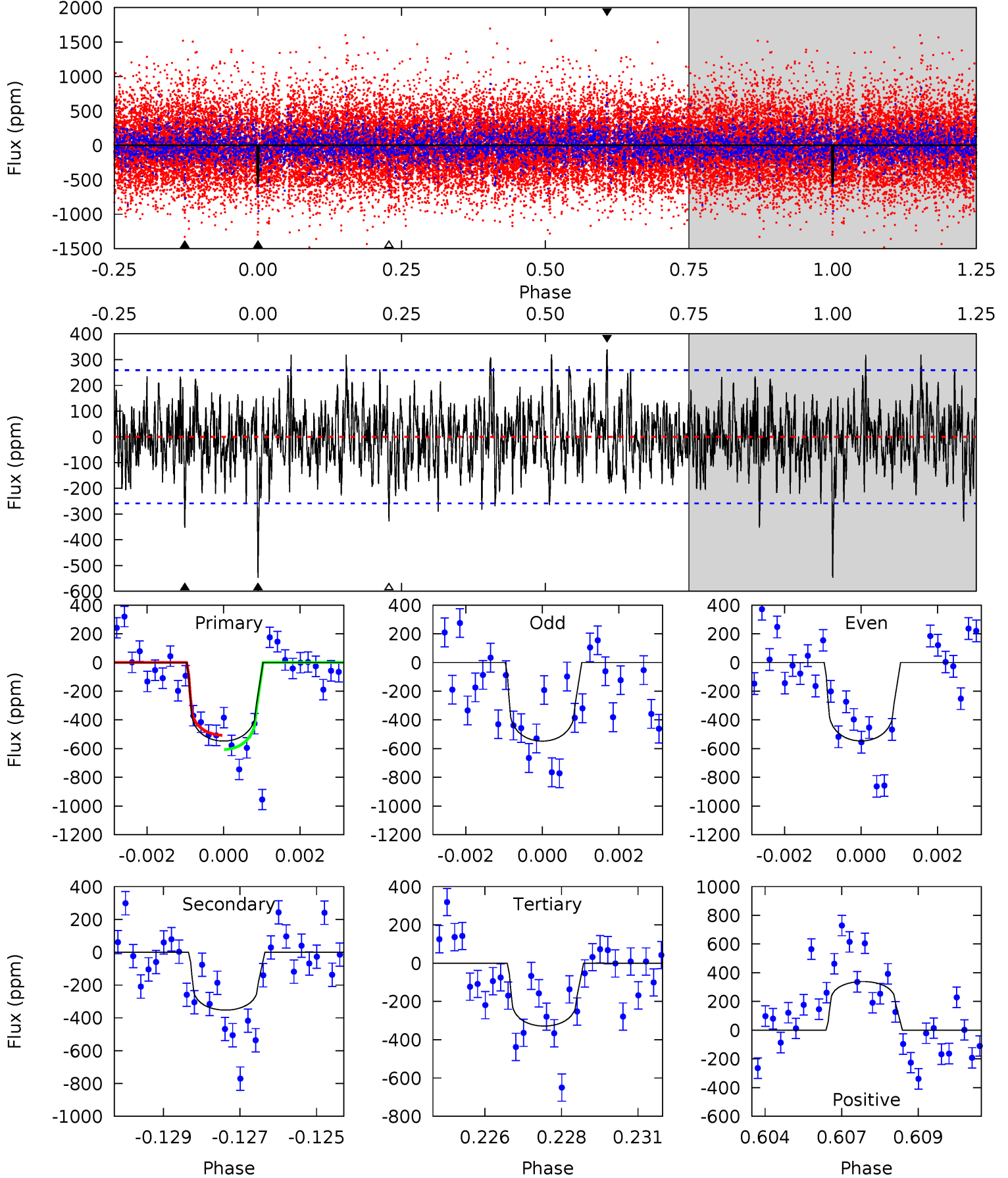
TCE 002715053-02 P=209.845850 Days $T_0=313.774716$ (BKJD)



DV Model-Shift Uniqueness Test

002715053-02, P = 209.863283 Days, E = 103.781362 Days

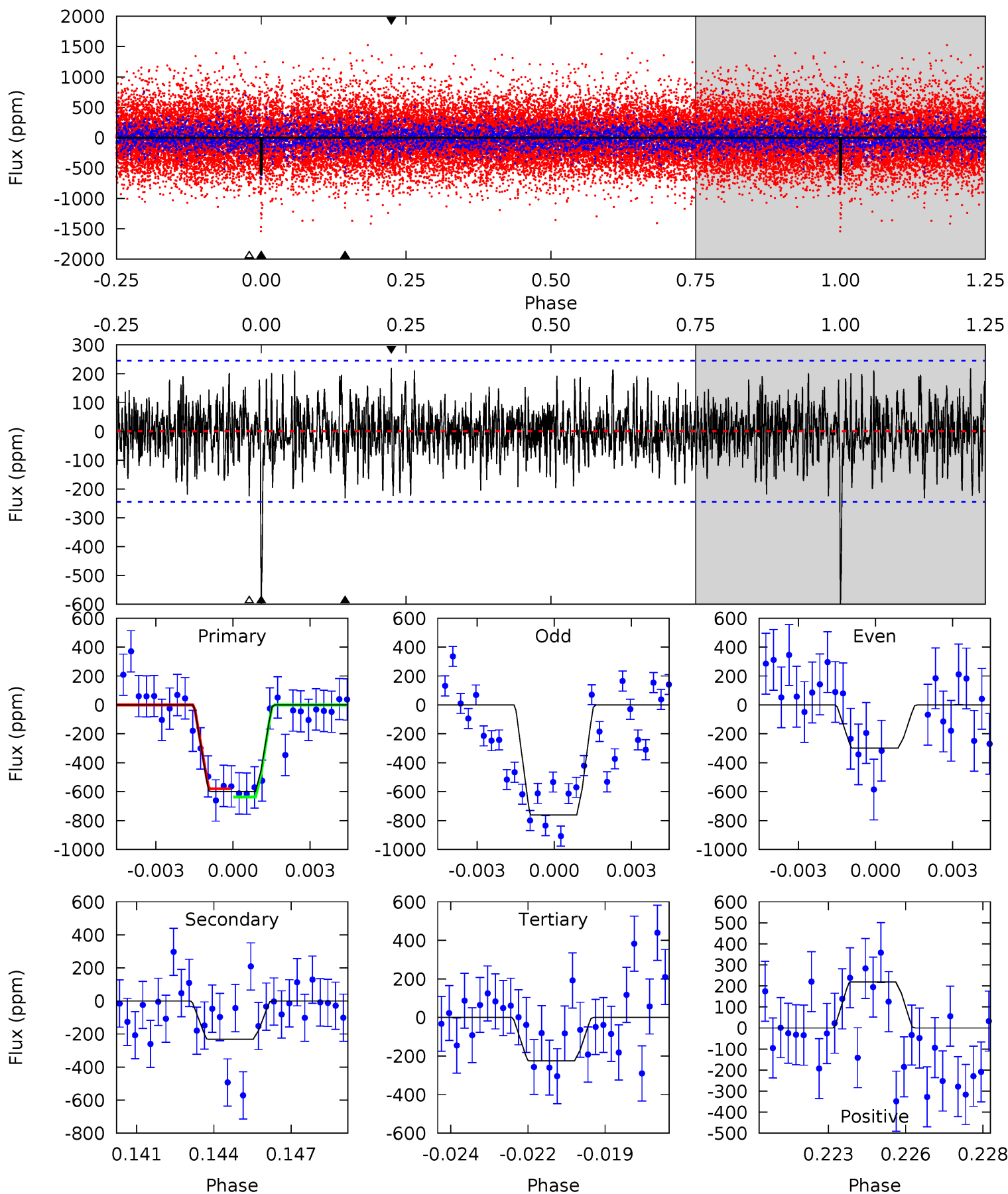
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	7.23	6.73	6.94	5.30	3.05	1.96	4.49	4.28	0.49	0.29	0.01	0.46	0.38	0.98



Alt Model-Shift Uniqueness Test

002715053-02, P = 209.845850 Days, E = 103.928866 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	4.98	4.84	4.70	5.27	3.00	1.48	8.04	8.18	0.14	0.28	4.80	0.20	0.27	0.56



Stellar Parameters For KIC 002715053

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6392^{+150}_{-207}	$4.425^{+0.062}_{-0.188}$	$-0.200^{+0.250}_{-0.300}$	$1.072^{+0.320}_{-0.107}$	$1.116^{+0.158}_{-0.143}$	$1.274^{+0.341}_{-0.651}$
	+2%/-3%	+1%/-4%	+125%/-150%	+30%/-10%	+14%/-13%	+27%/-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 002715053-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-353 ± 49	$3.00^{+1.47}_{-1.48}$	490^{+34}_{-22}	5572^{+2264}_{-883}	10627^{+29796}_{-5890}
Alt.	-232 ± 47	$2.97^{+1.53}_{-1.43}$	490^{+32}_{-23}	5075^{+2123}_{-794}	6978^{+20081}_{-4065}

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 $A_{obs} \gg 1.0$

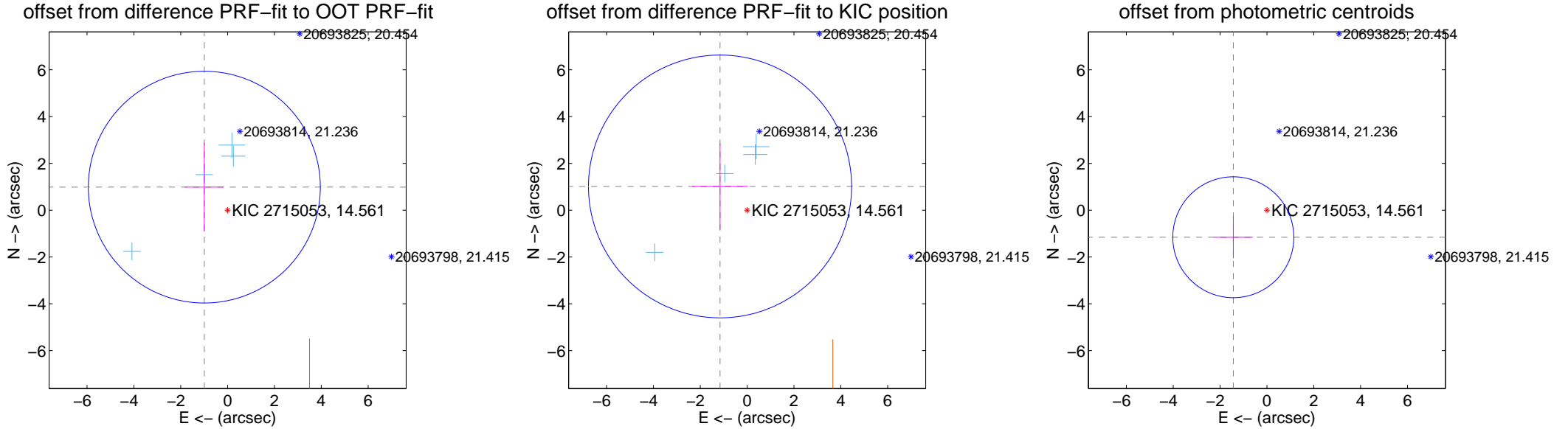
DV Centroid Data

Supplemental centroid analysis for 002715053-02. Kepler magnitude: 14.56. Transit SNR 6.57

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.400 ± 1.651	0.85	0.994 ± 0.833	0.985 ± 1.899
PRF-fit source offset from KIC position	1.539 ± 1.872	0.82	1.157 ± 1.185	1.015 ± 1.837
photometric centroid source offset	1.84 ± 0.86	2.14	1.44 ± 0.84	-1.16 ± 0.90



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.

Q1 no difference image



Q1 no OOT image



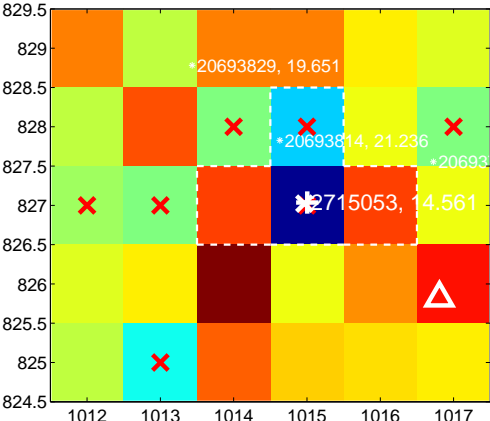
Q2 no difference image



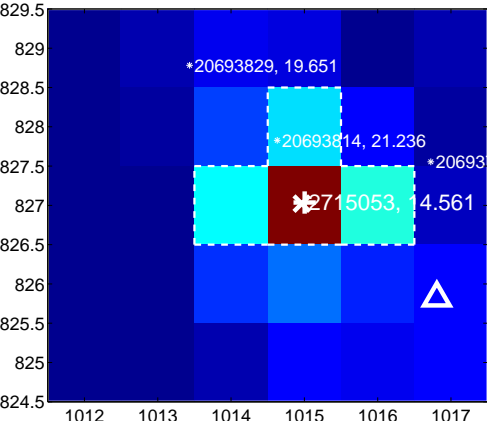
Q2 no OOT image



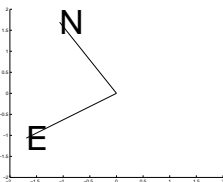
Q3 difference image. Poor Quality



Q3 OOT image



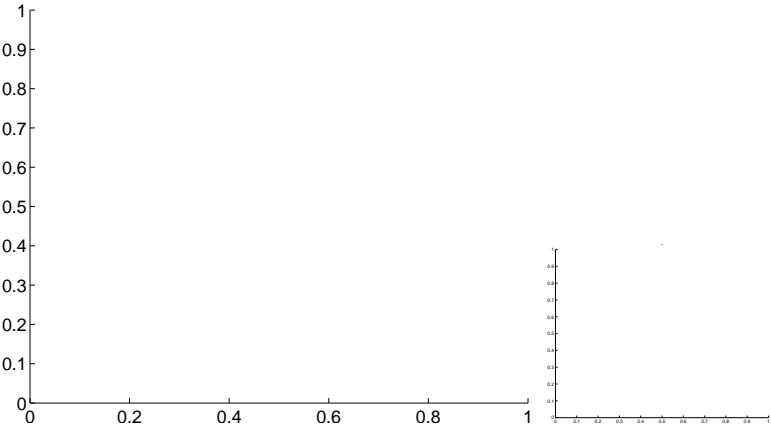
x 10⁶



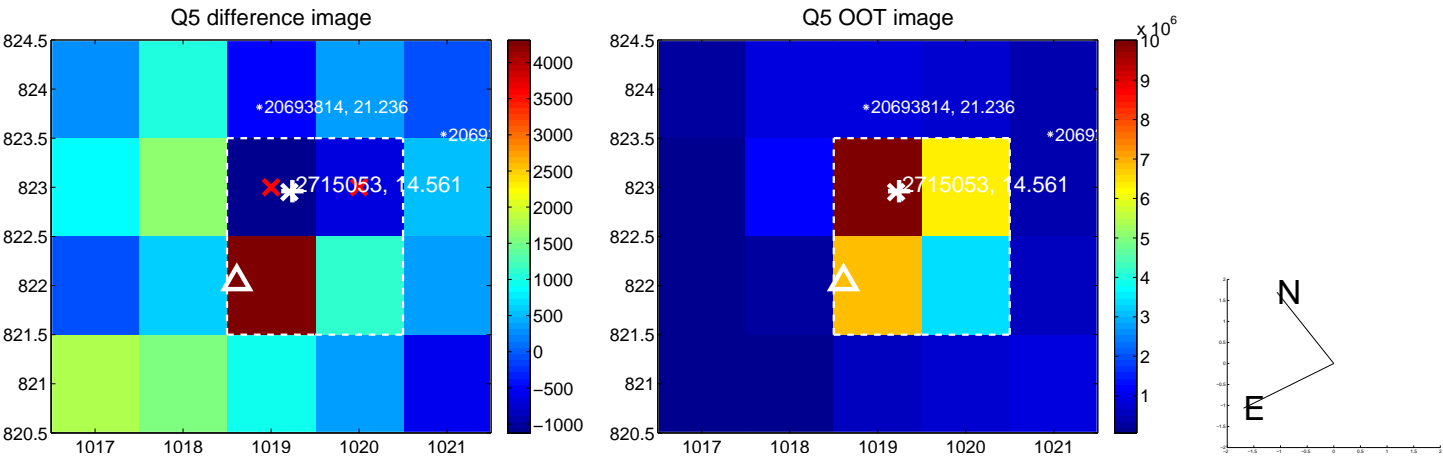
Q4 no difference image



Q4 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.

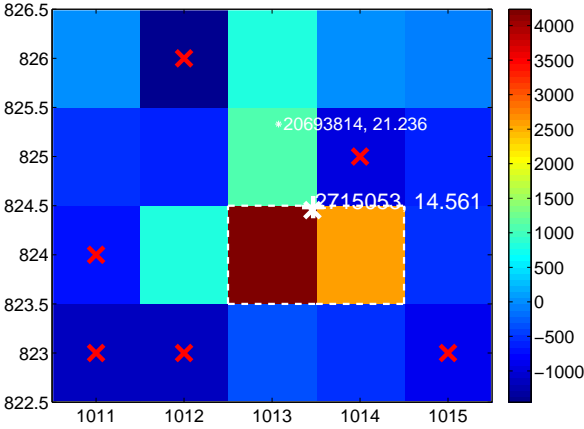
Q9 no difference image



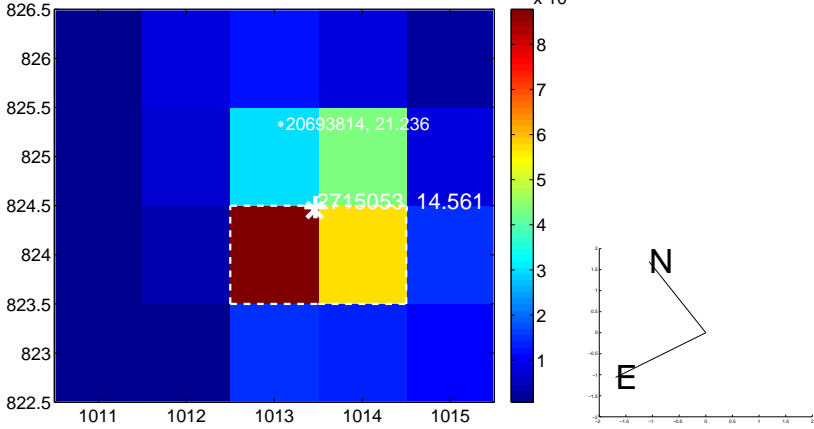
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



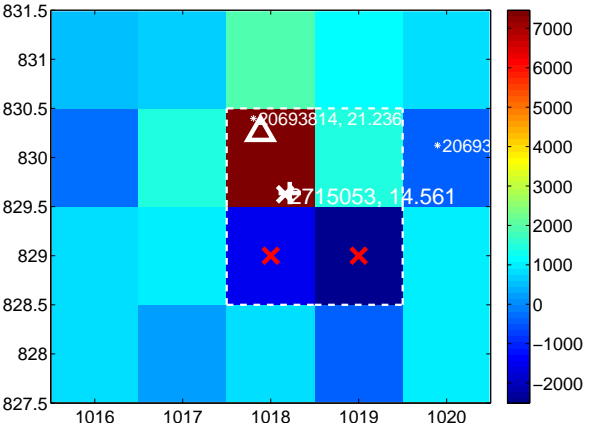
Q11 no difference image



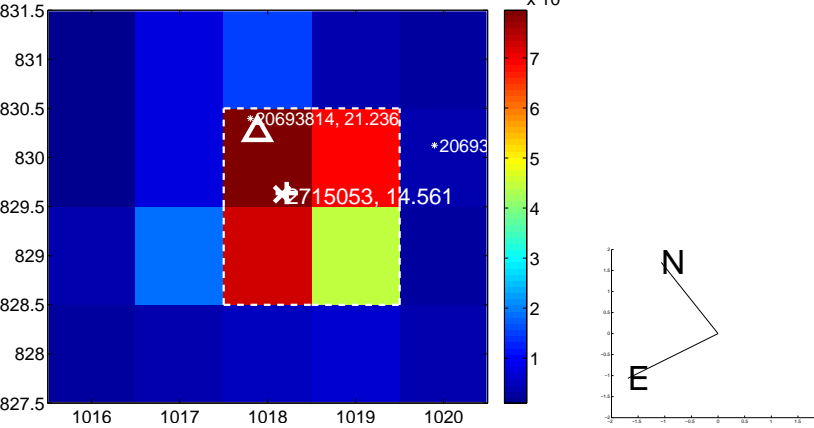
Q11 no OOT image



Q12 difference image

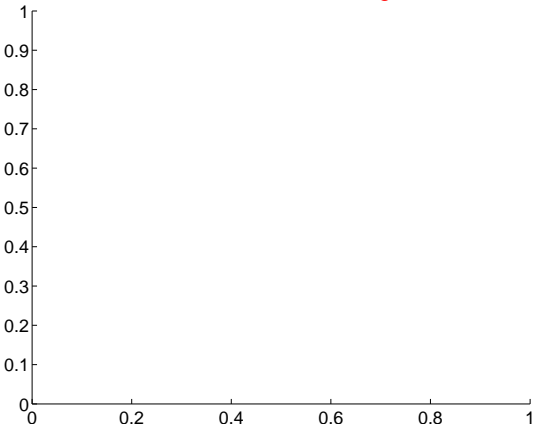


Q12 OOT image



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

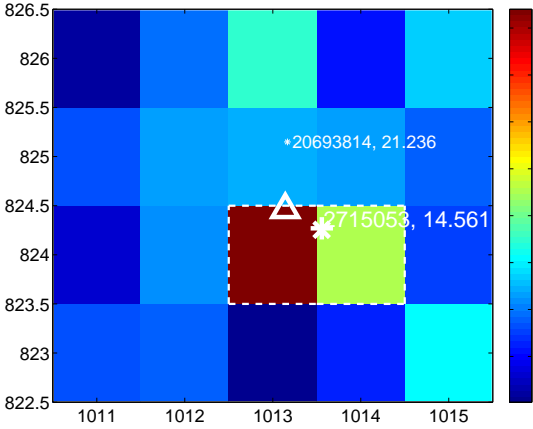
Q13 no difference image



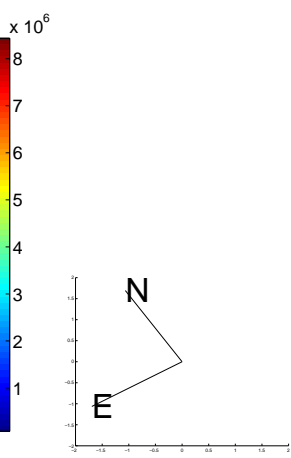
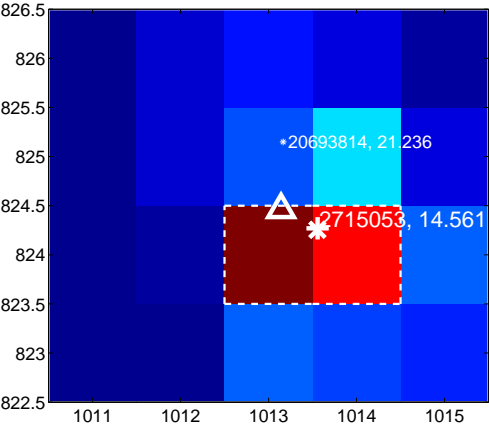
Q13 no OOT image



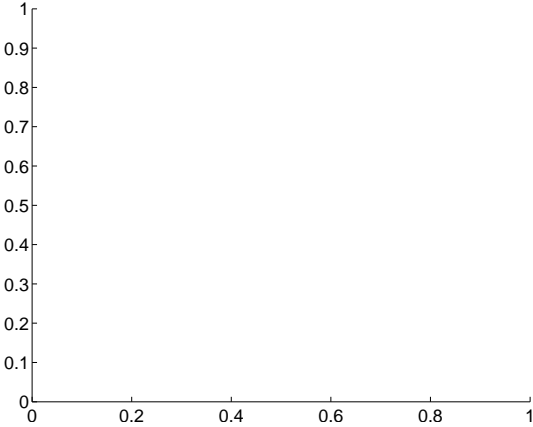
Q14 difference image



Q14 OOT image



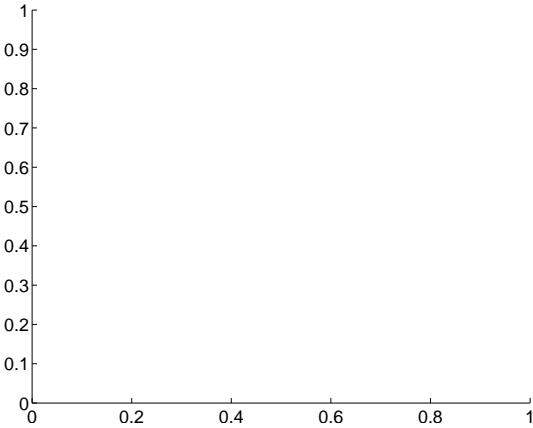
Q15 no difference image



Q15 no OOT image



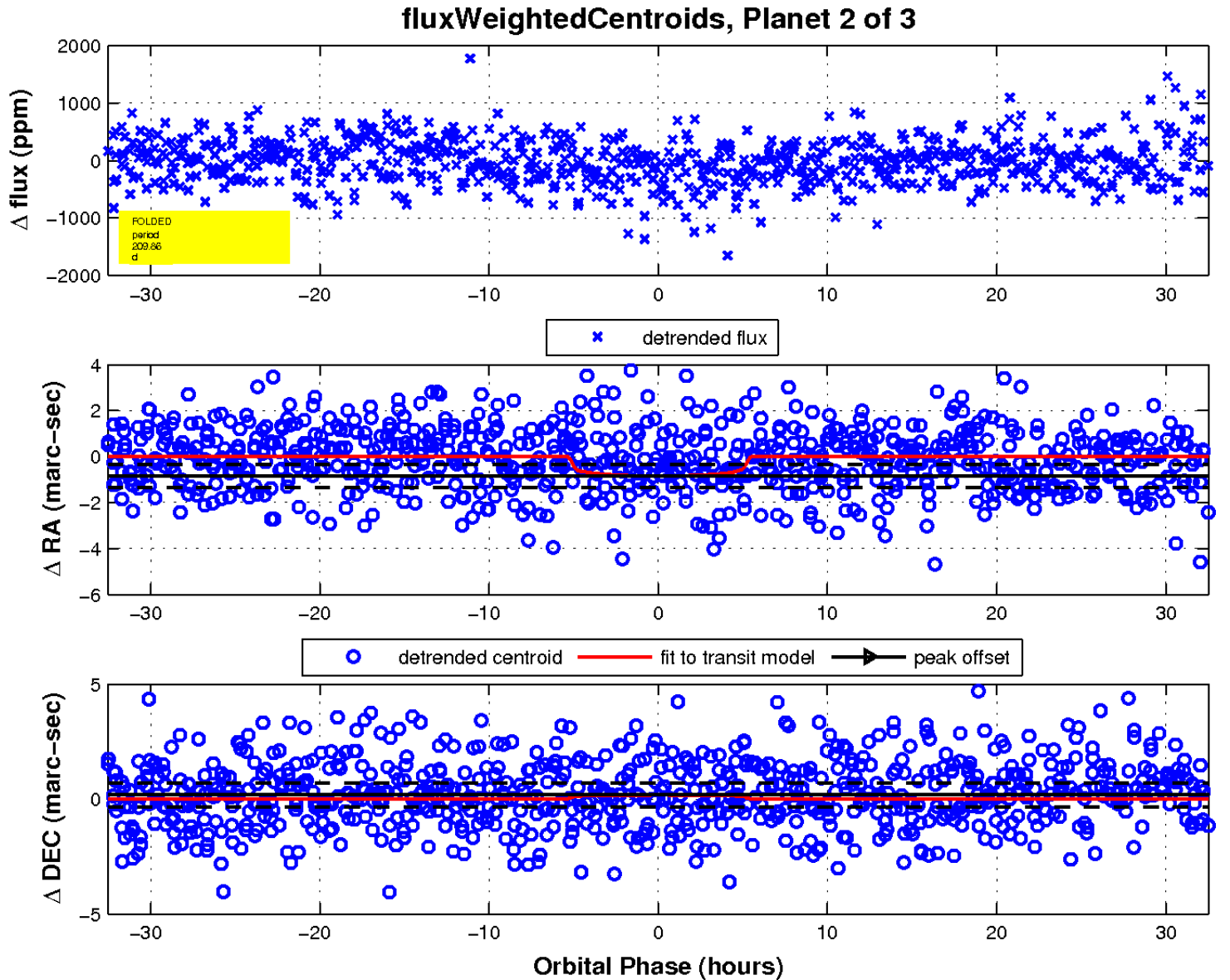
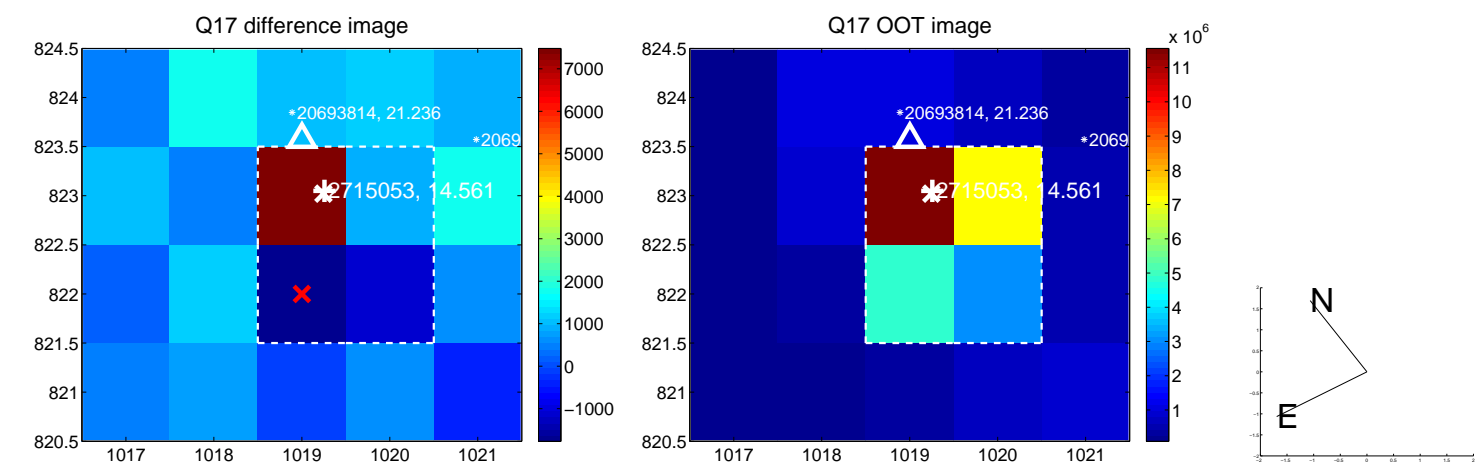
Q16 no difference image



Q16 no OOT image

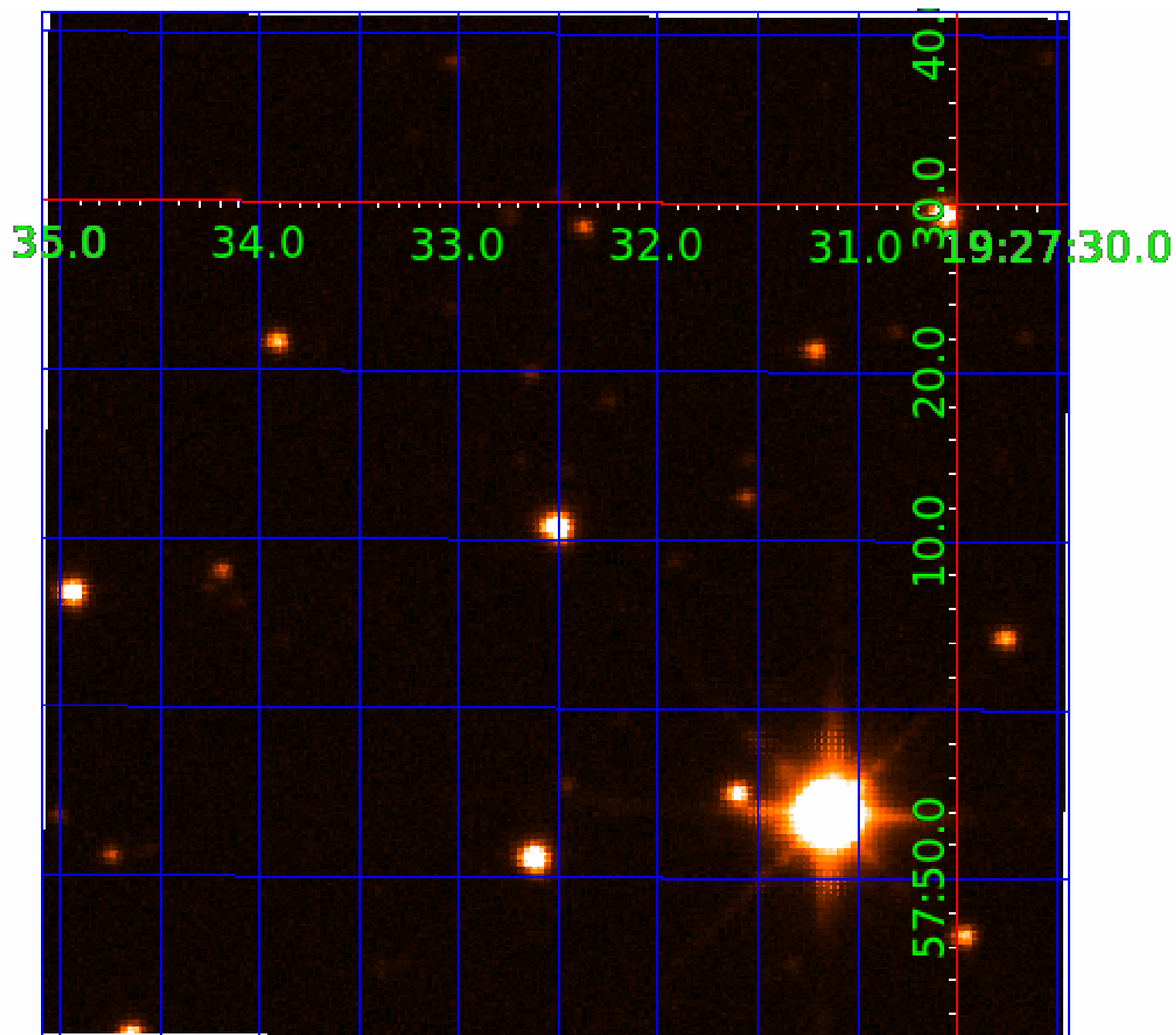


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002715053

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})
002715053-01	OBS	No	1.936545	132.389808	49.6	8.881	8.4	9.0	1.07	6392	0.76	1727.96
002715053-02	OBS	No	209.863283	313.644645	555.1	10.847	8.7	6.6	1.07	6392	2.71	3.34
002715053-03	OBS	No	313.381390	338.850327	663.7	24.010	8.0	6.8	1.07	6392	2.77	1.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002715053-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
002715053-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
002715053-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

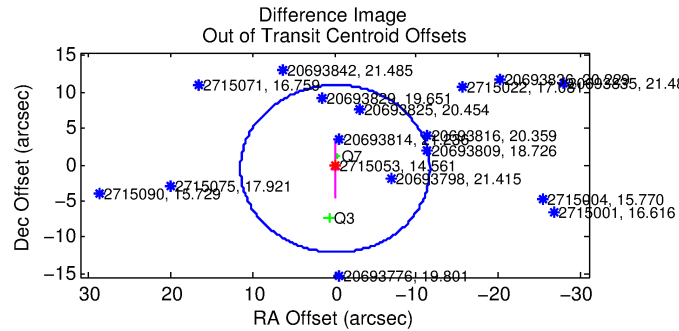
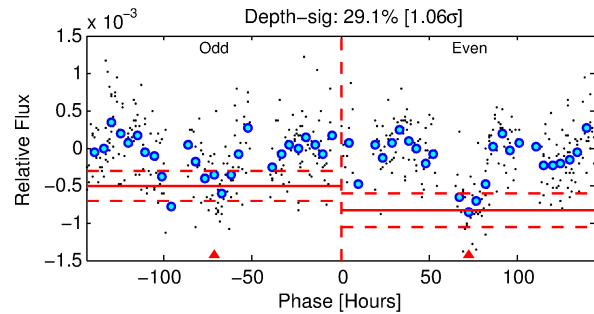
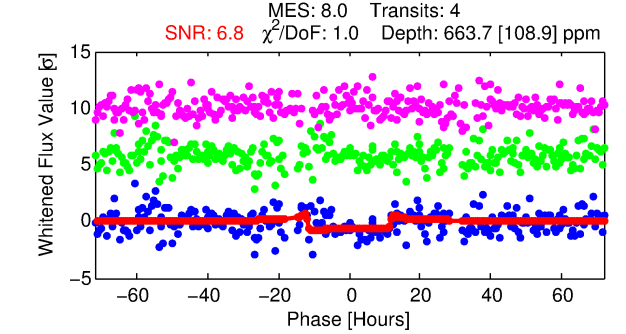
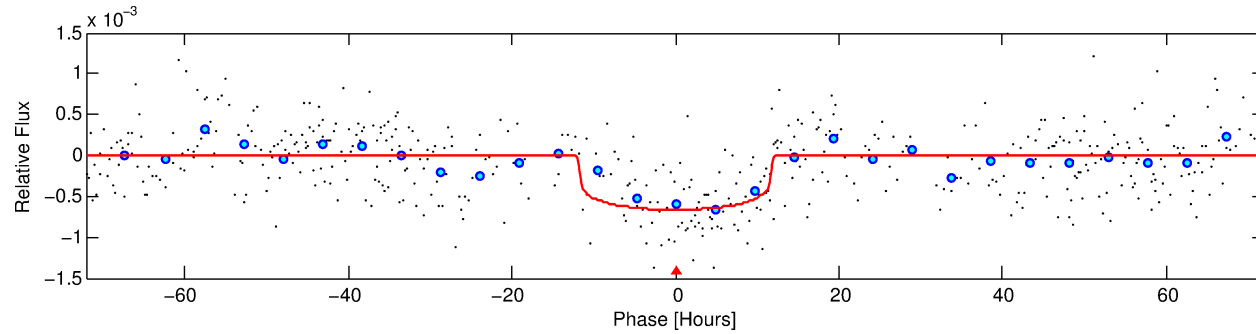
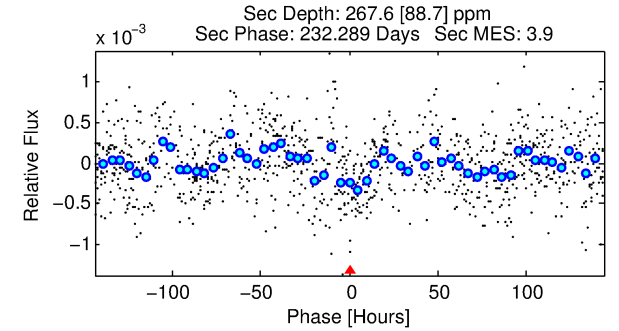
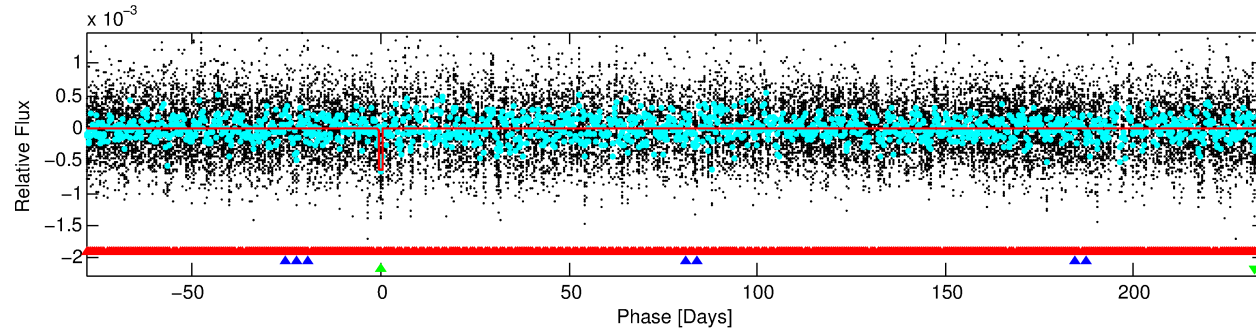
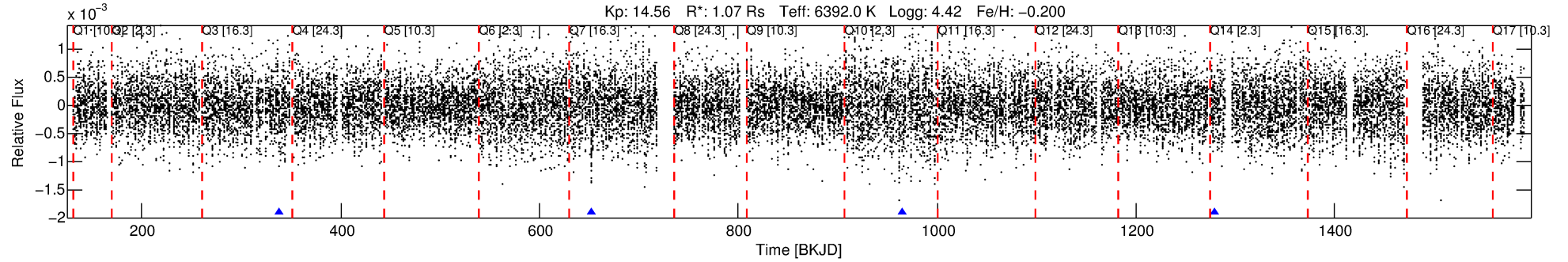
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002715053-03

No Significant Match Found

DV One-Page Summary

KIC: 2715053 Candidate: 3 of 3 Period: 313.381 d



DV Fit Results:

Period = 313.38139 [0.01813] d
Epoch = 338.8503 [0.0230] BKJD
Rp/R* = 0.0237 [0.0097]
a/R* = 101.69 [208.25]
b = 0.09 [22.90]
Seff = 1.96 [0.73]
Teff = 302 [28] K
Rp = 2.77 [1.40] Re
a = 0.9366 [0.2302] AU
Ag = 16799.94 [15964.58] [1.05 σ]
Teffp = 5310 [1185] K [4.22 σ]

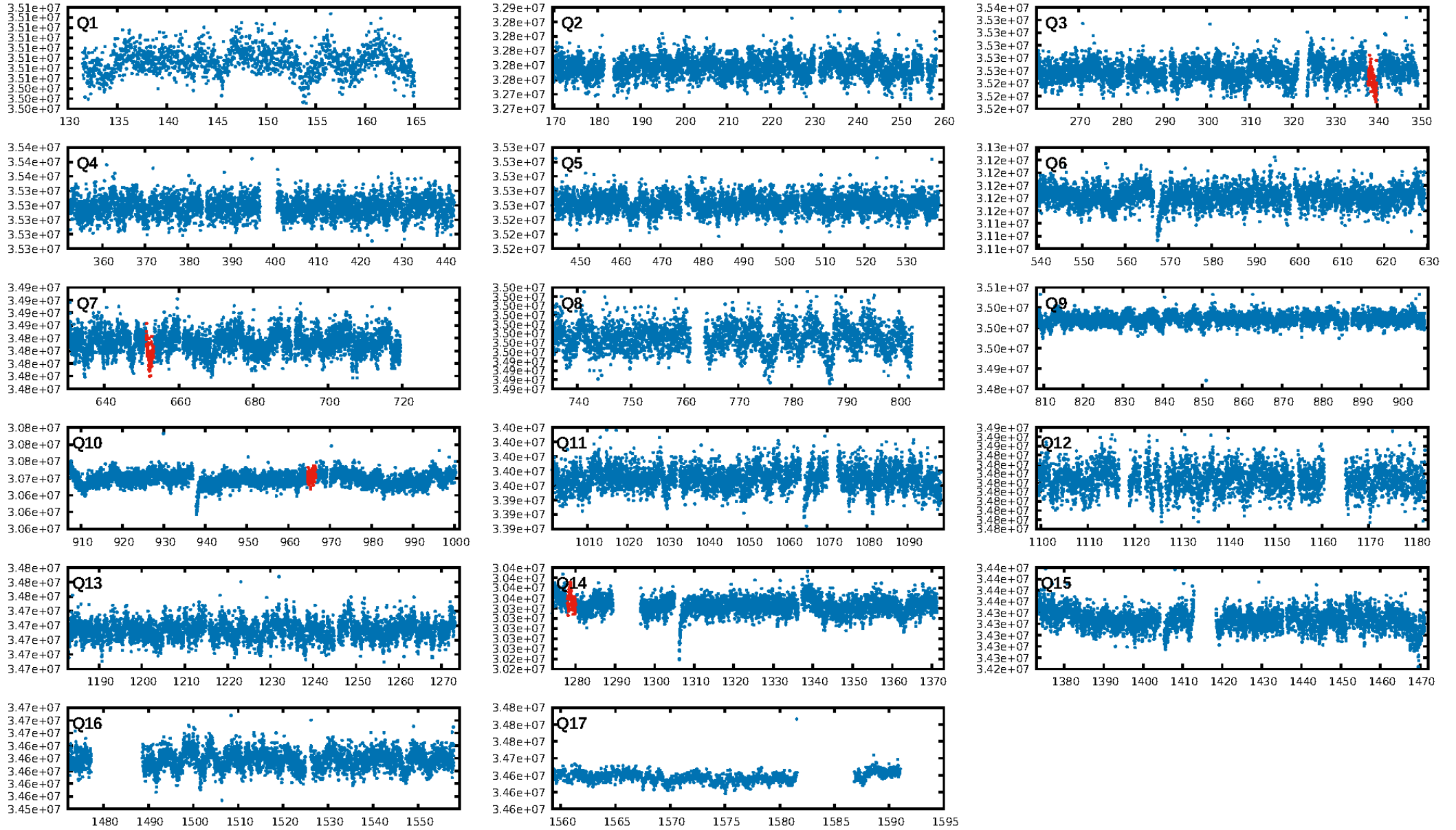
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [94.30 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.23e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.6794
Centroid-sig: 89.2%
Centroid-so: 0.809 arcsec [0.97 σ]
OotOffset-rm: 0.568 arcsec [0.15 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 0.525 arcsec [0.13 σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/2]

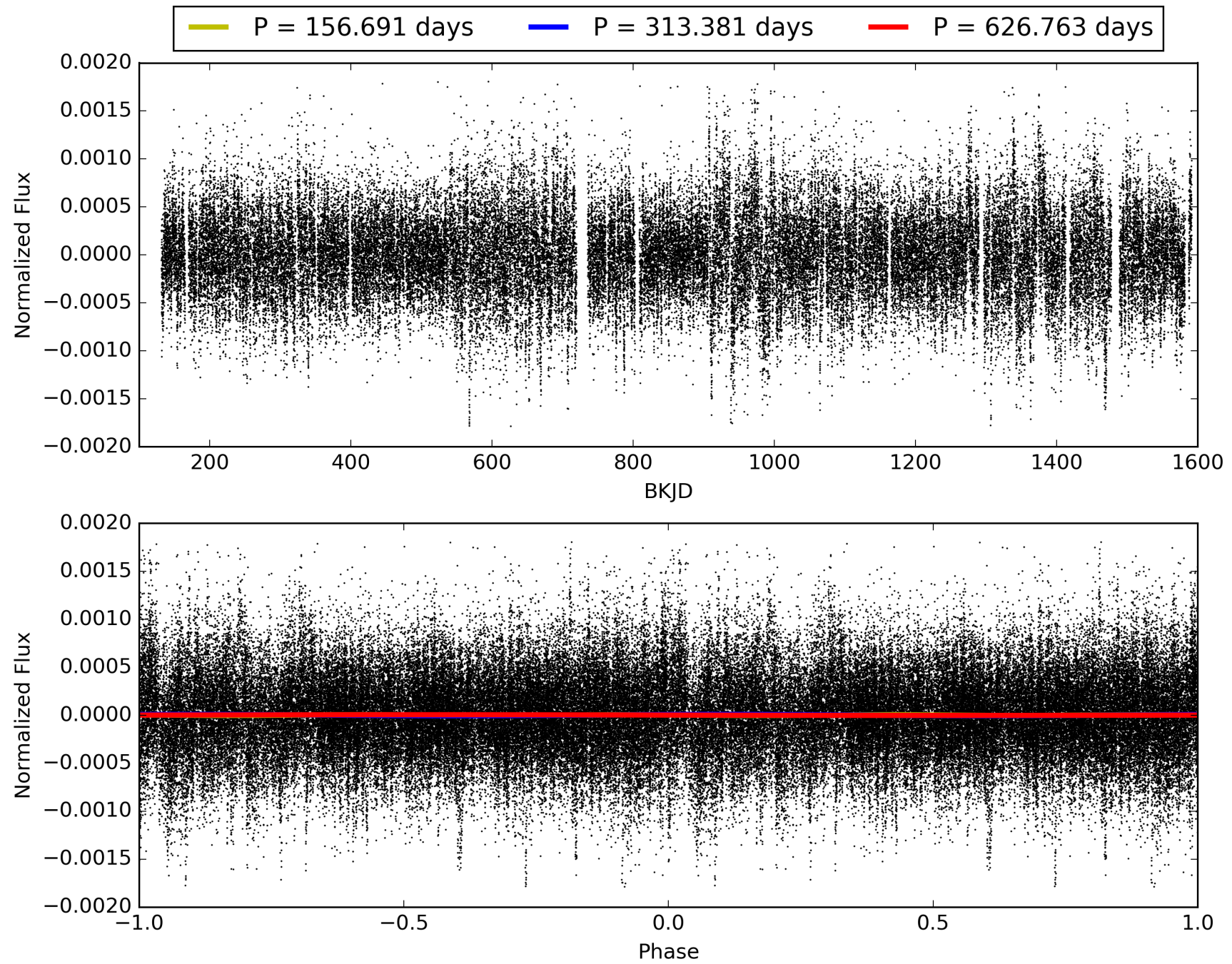
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:48:09 Z

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

TCE 002715053-03, PDC Light Curves

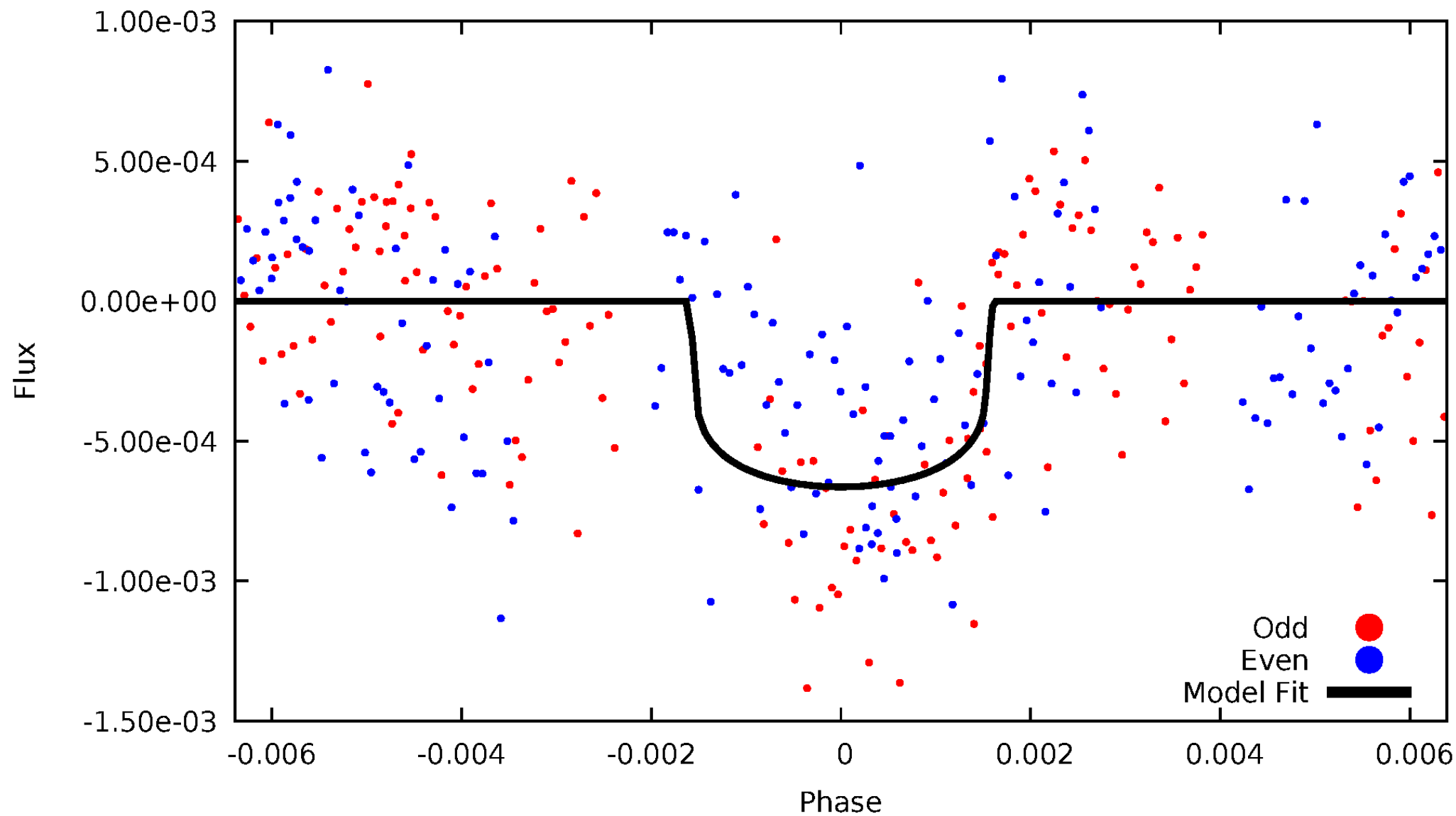


TCE 002715053-03



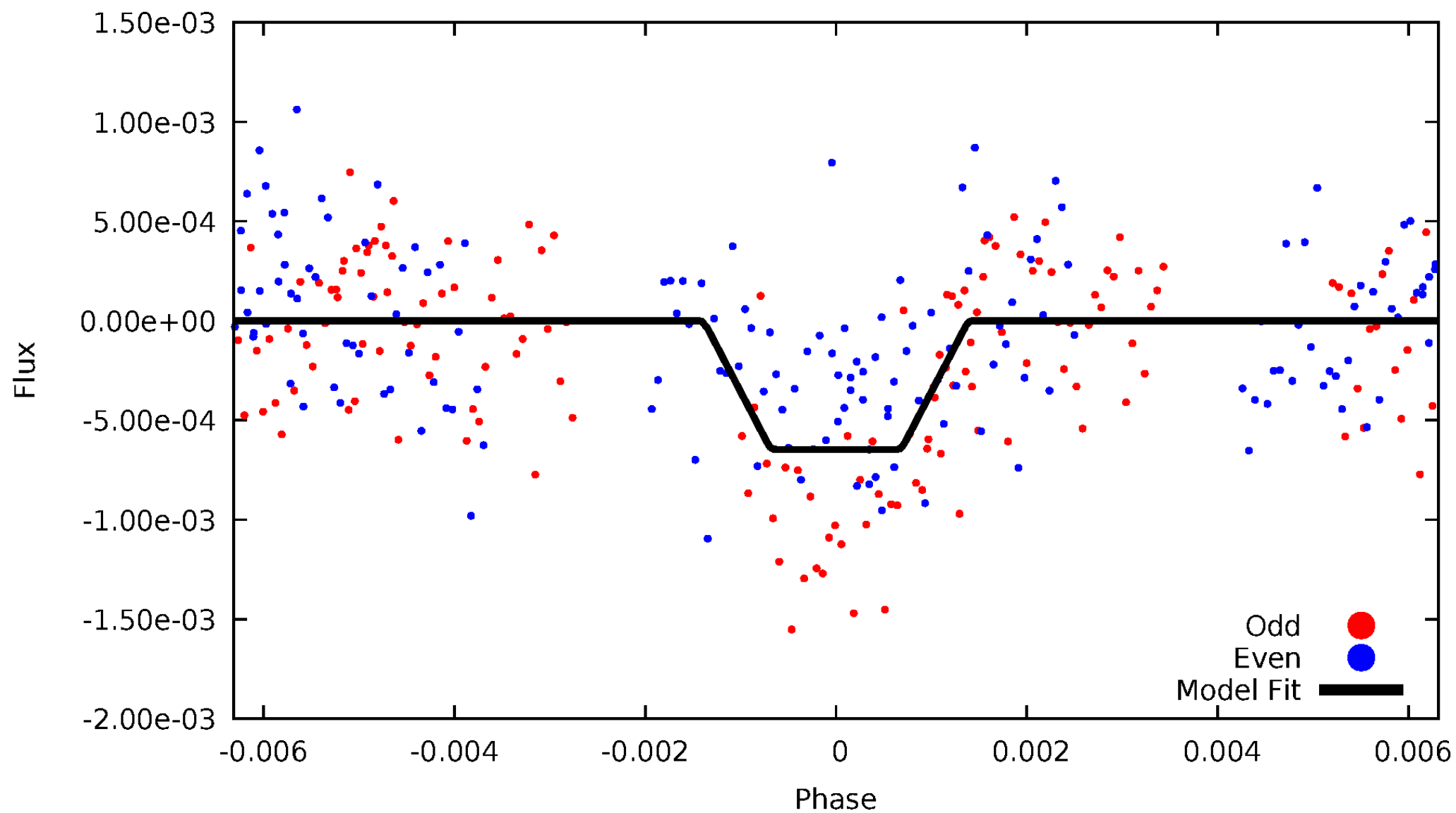
DV Odd/Even

TCE 002715053-03



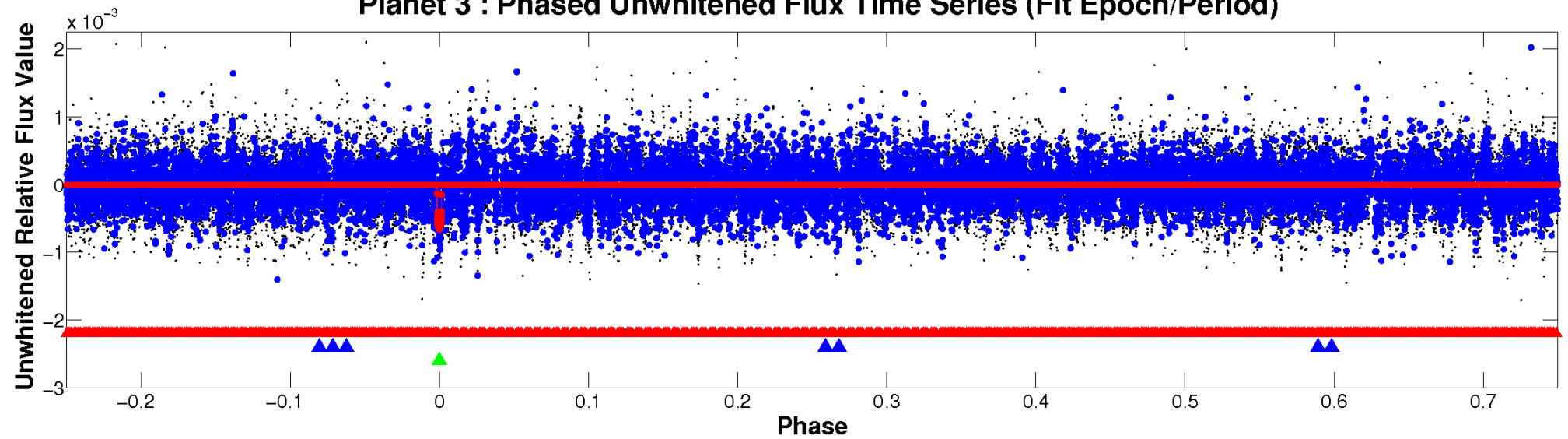
ALT Odd/Even

TCE 002715053-03

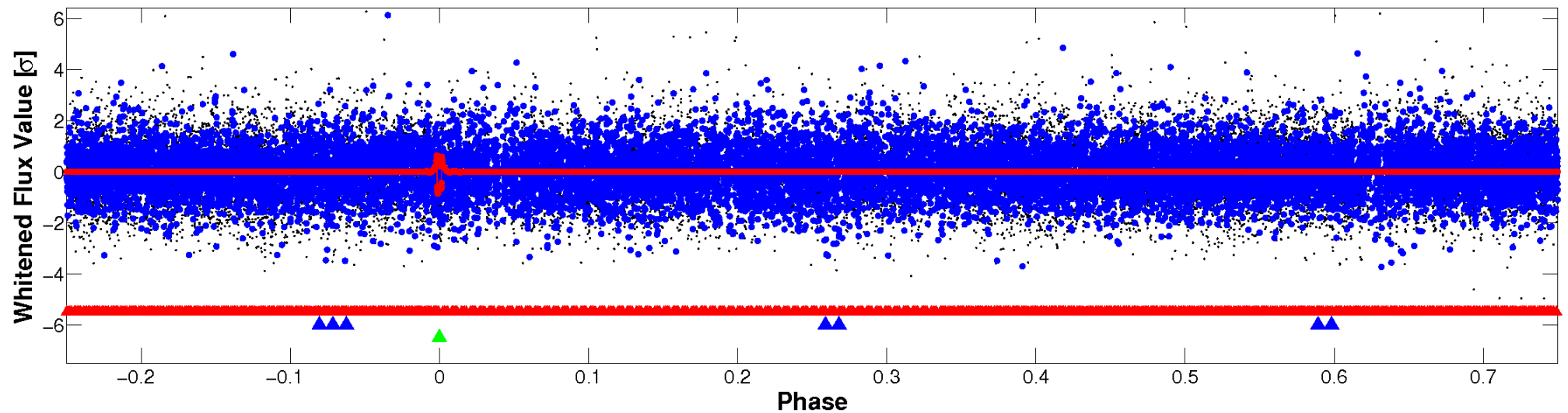


Non-Whitened Vs. Whitened Light Curve

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

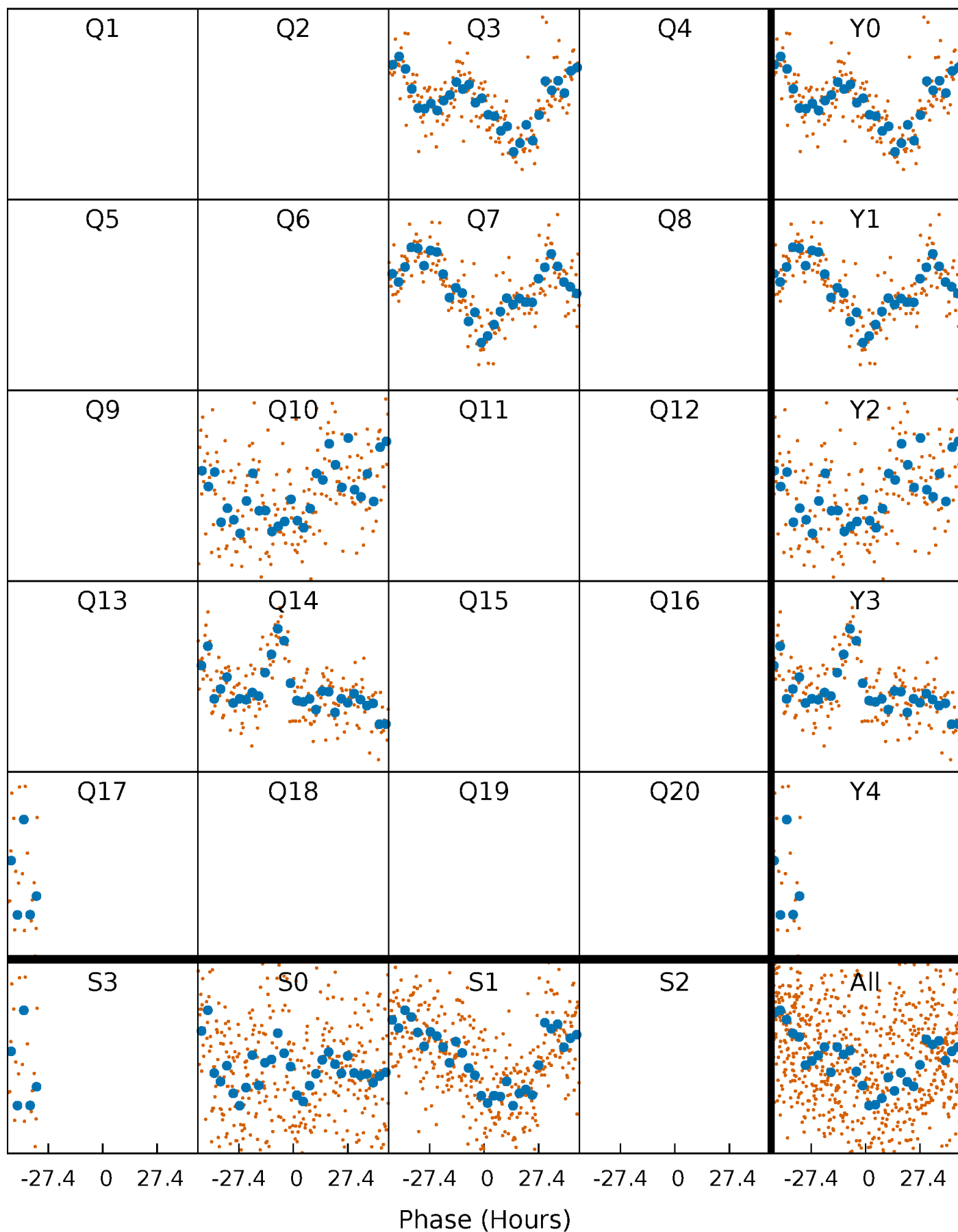


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 002715053-03 P=313.381390 Days $T_0=338.850327$ (BKJD)



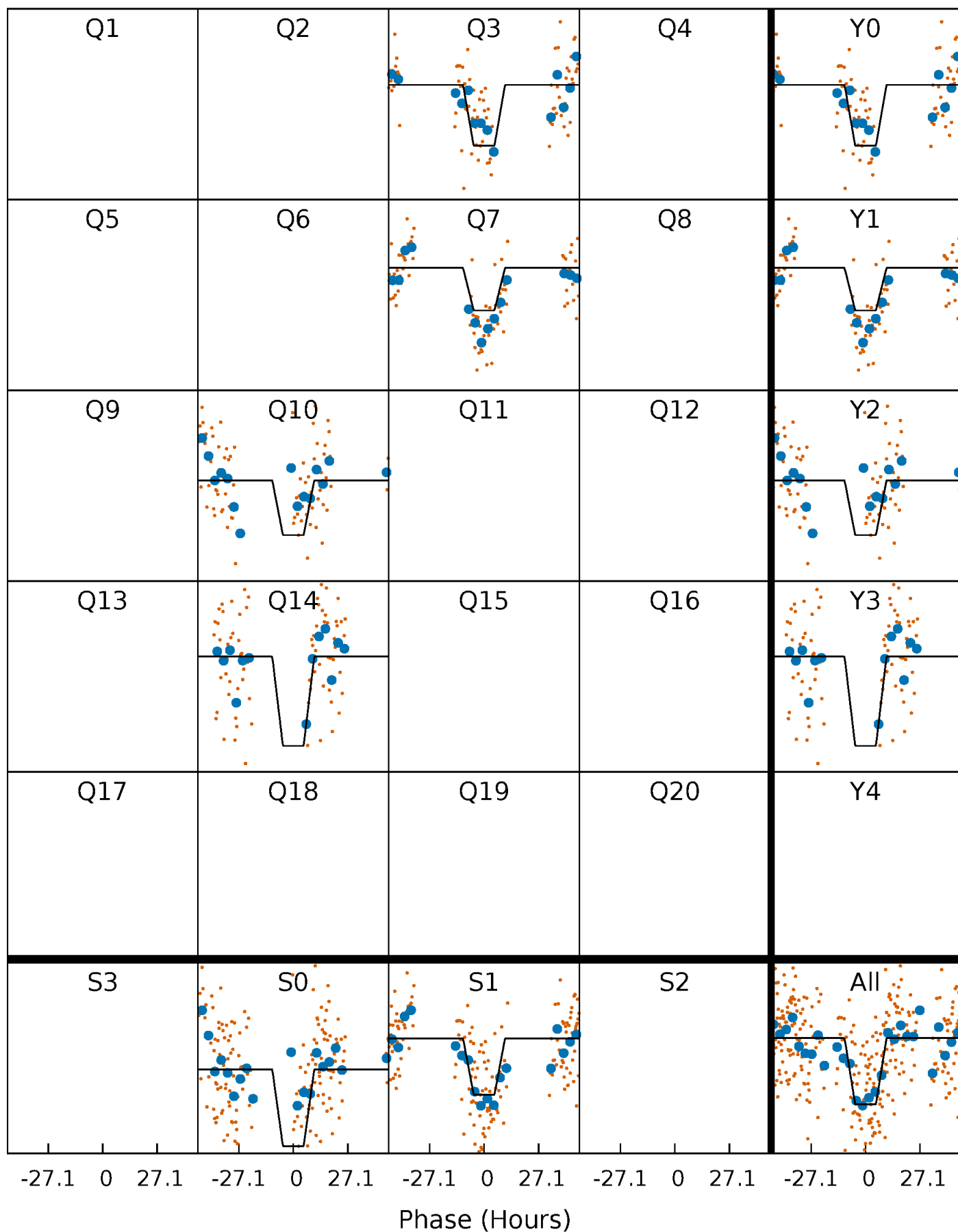
DV Quarter-Phased Transit Curves

TCE 002715053-03 P=313.381390 Days $T_0=338.850327$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

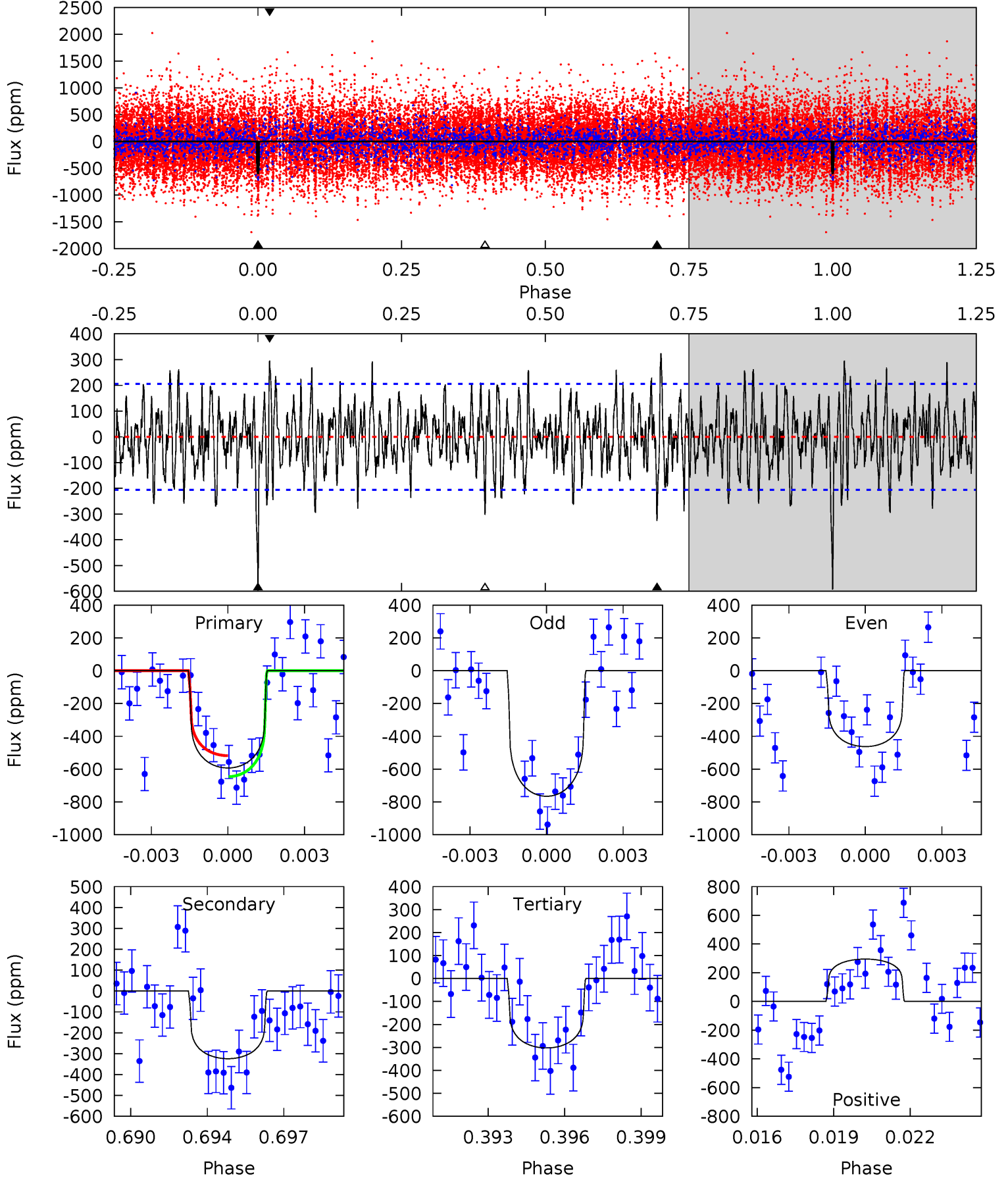
TCE 002715053-03 $P=313.423566$ Days $T_0=338.842299$ (BKJD)



DV Model-Shift Uniqueness Test

002715053-03, P = 313.381390 Days, E = 25.468937 Days

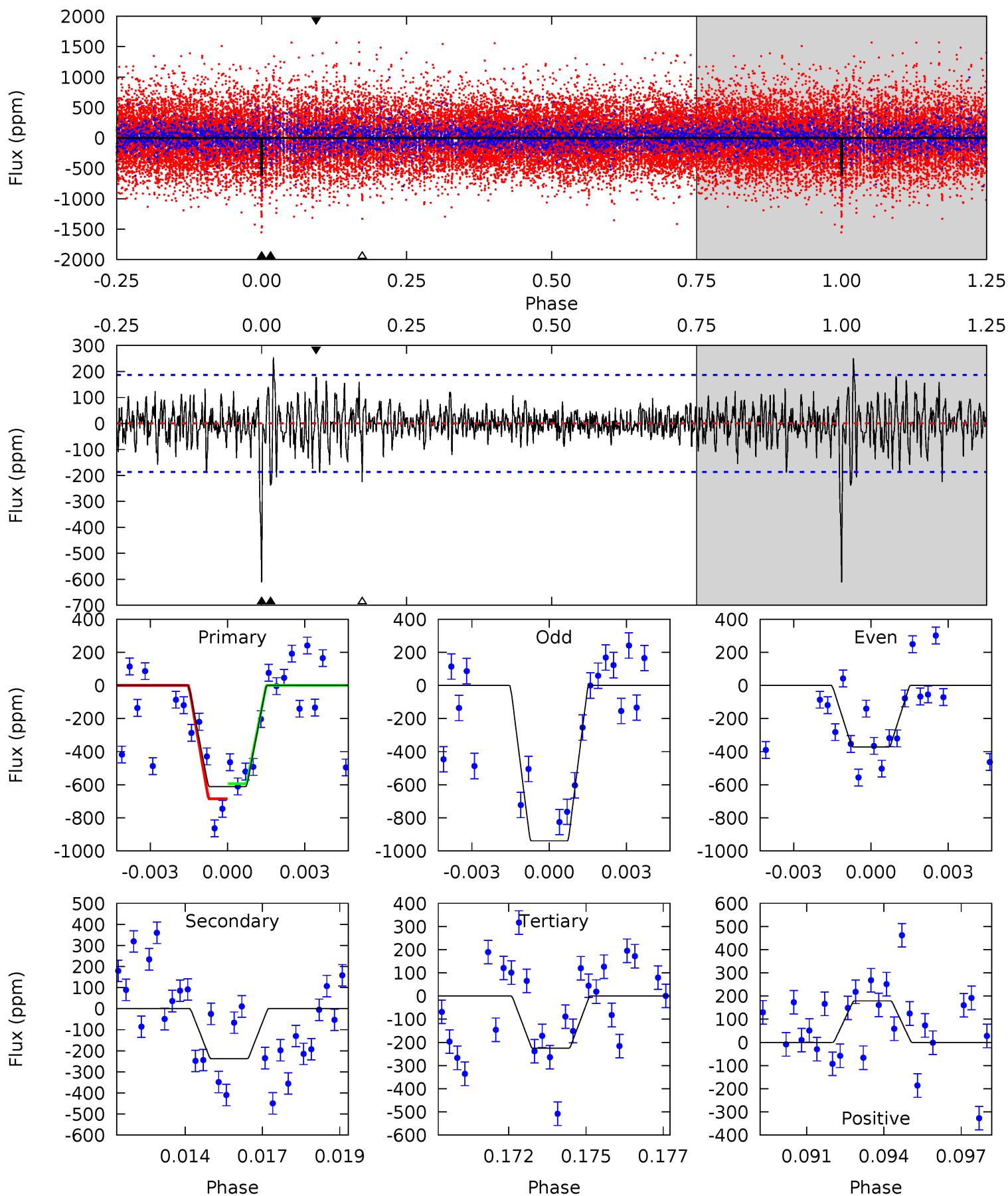
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	8.26	7.70	7.52	5.24	2.95	2.60	7.41	7.59	0.55	0.73	3.85	1.10	0.35	1.59



Alt Model-Shift Uniqueness Test

002715053-03, P = 313.423566 Days, E = 25.418733 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	6.69	6.35	5.05	5.27	2.99	1.44	10.9	12.2	0.35	1.65	7.96	1.05	0.29	1.23



Stellar Parameters For KIC 002715053

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6392^{+150}_{-207}	$4.425^{+0.062}_{-0.188}$	$-0.200^{+0.250}_{-0.300}$	$1.072^{+0.320}_{-0.107}$	$1.116^{+0.158}_{-0.143}$	$1.274^{+0.341}_{-0.651}$
	+2%/-3%	+1%/-4%	+125%/-150%	+30%/-10%	+14%/-13%	+27%/-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 002715053-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-324 ± 39	$2.89^{+1.20}_{-1.17}$	427^{+27}_{-20}	5582^{+1597}_{-790}	18707^{+32811}_{-9492}
Alt.	-237 ± 35	$3.10^{+1.28}_{-1.15}$	427^{+27}_{-21}	5007^{+1195}_{-623}	11445^{+18008}_{-5531}

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

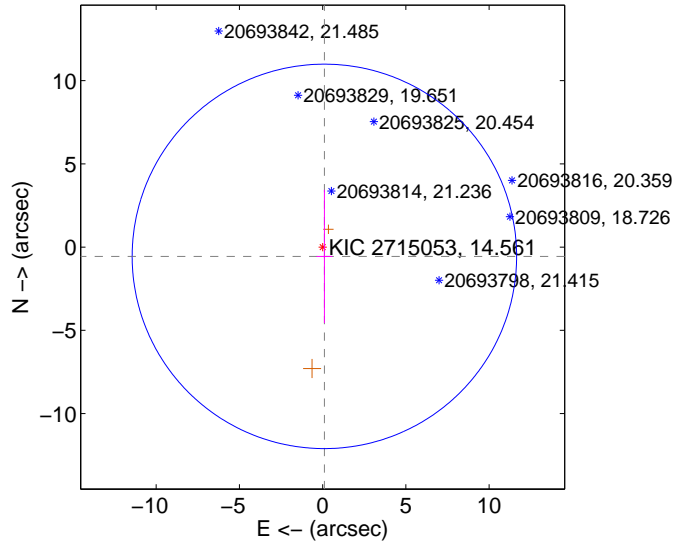
Supplemental centroid analysis for 002715053-03. Kepler magnitude: 14.56. Transit SNR 6.78

There are 0 quarters with good PRF difference image offsets

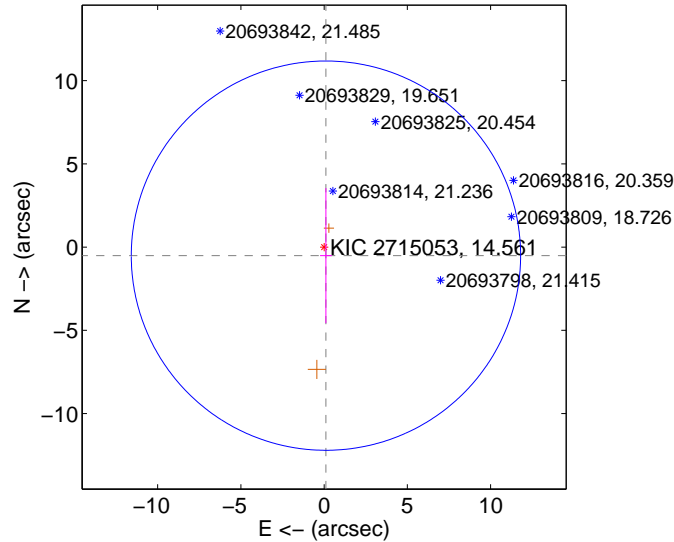
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.568 ± 3.849	0.15	-0.105 ± 0.474	-0.558 ± 4.005
PRF-fit source offset from KIC position	0.525 ± 3.898	0.13	-0.110 ± 0.354	-0.513 ± 4.061
photometric centroid source offset	0.81 ± 0.83	0.97	0.15 ± 0.82	-0.79 ± 0.83

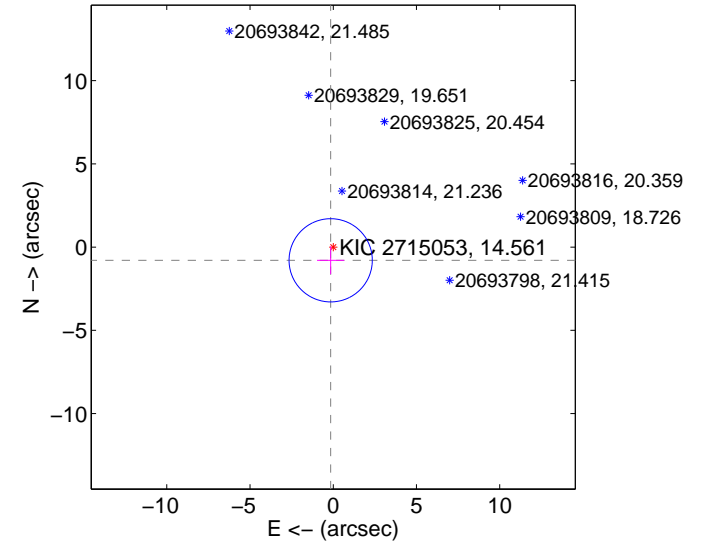
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

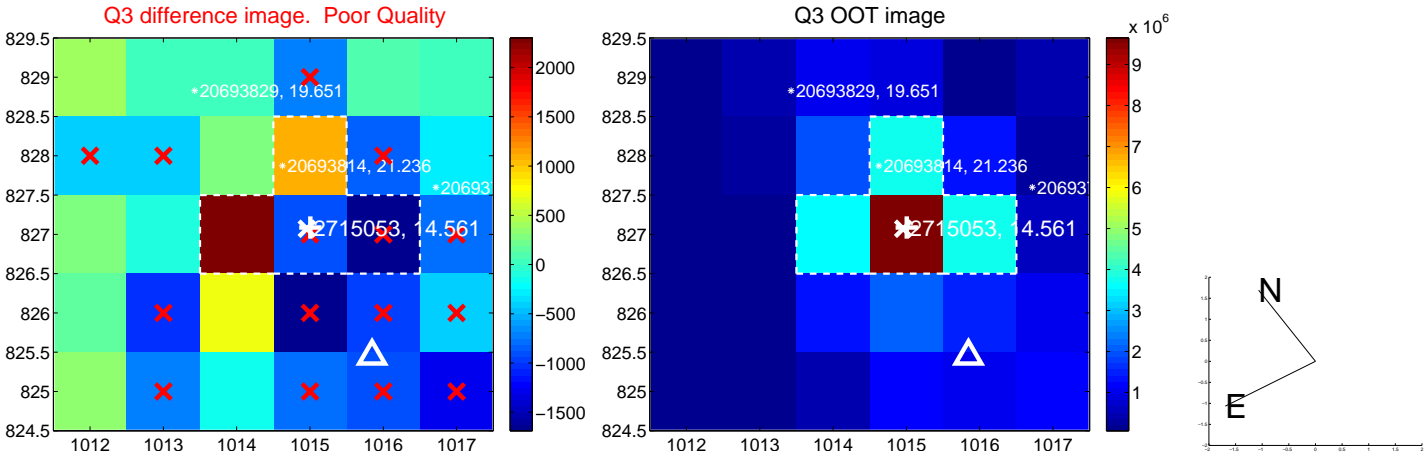


offset from photometric centroids

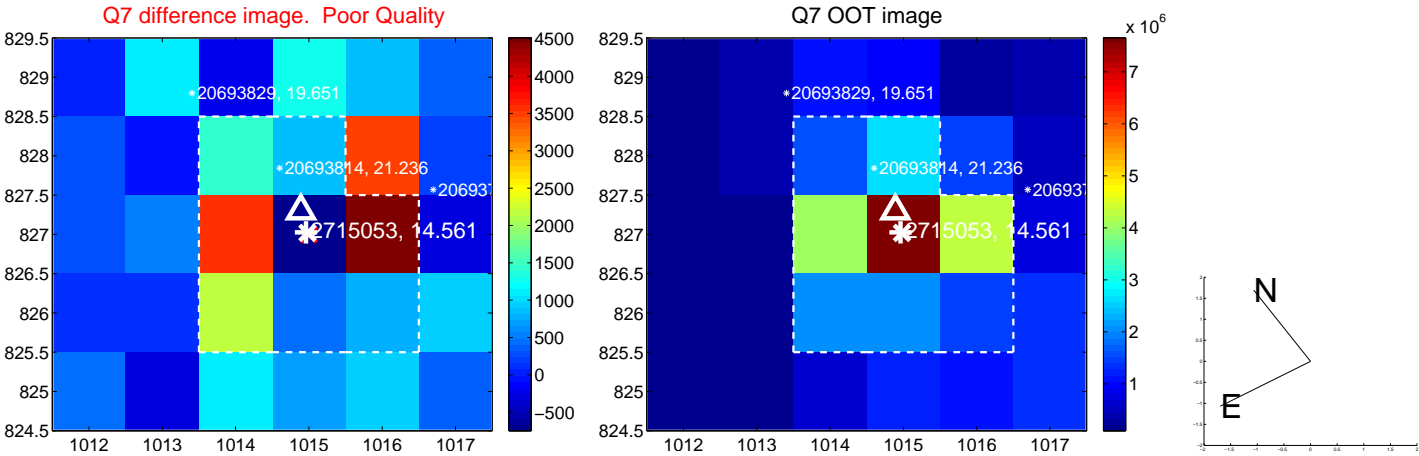


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



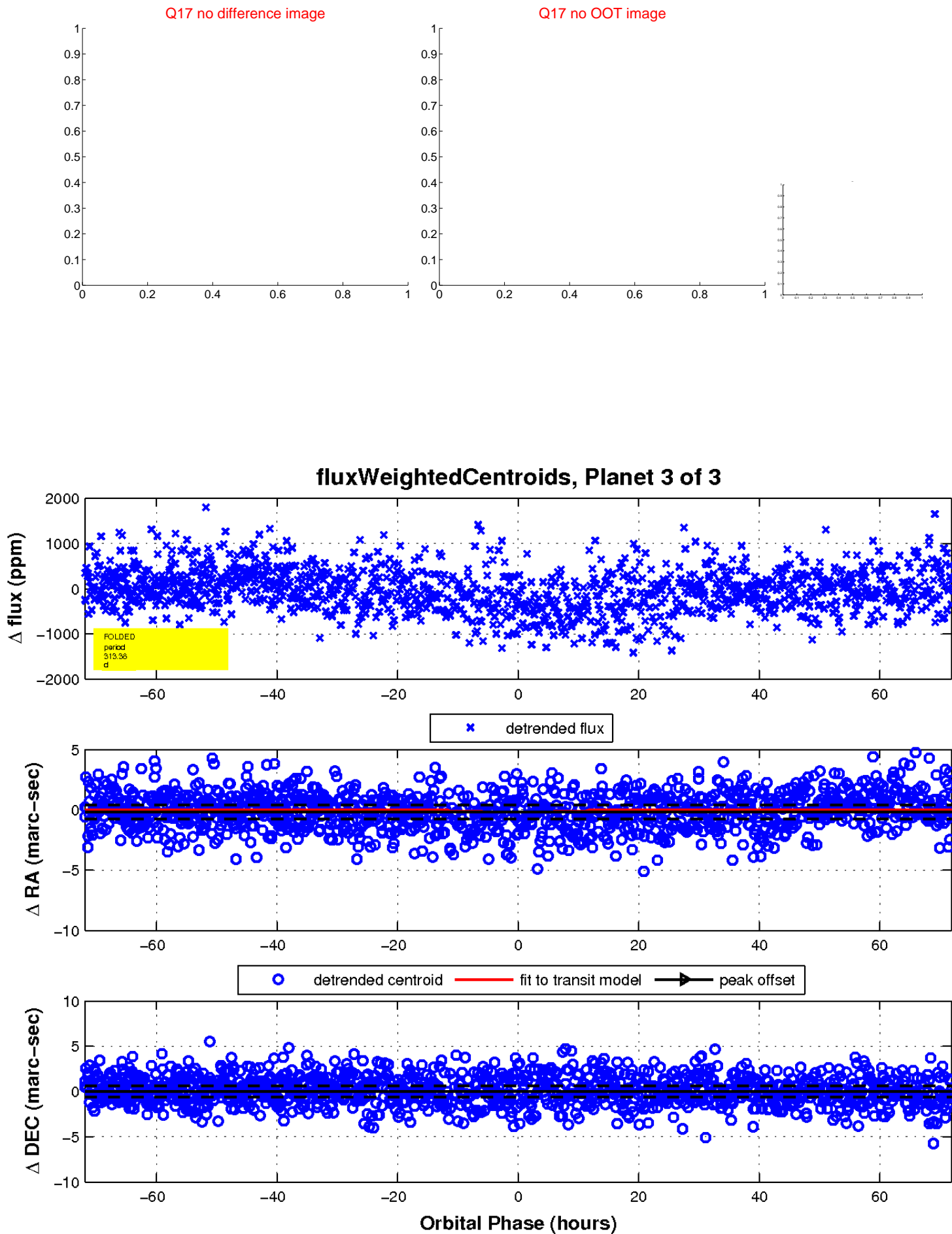
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

