

KIC 005818165

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})
005818165-01	OBS	No	2.023562	131.790233	26.6	6.531	7.6	6.7	0.96	6093	0.60	1284.83
005818165-02	OBS	No	597.157980	189.397624	360.6	6.093	8.6	6.6	0.96	6093	2.01	0.65
005818165-03	OBS	No	181.493660	295.934265	306.4	11.243	8.3	7.0	0.96	6093	1.83	3.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005818165-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005818165-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005818165-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

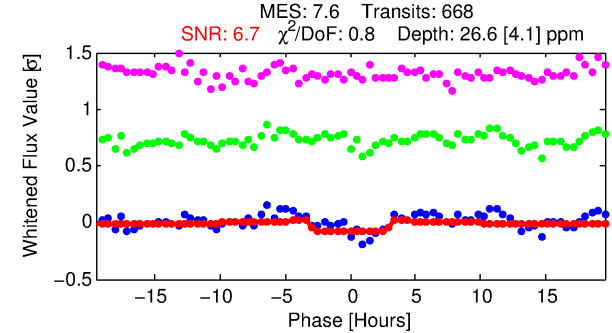
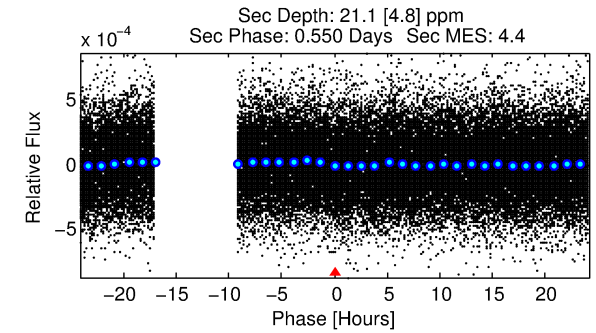
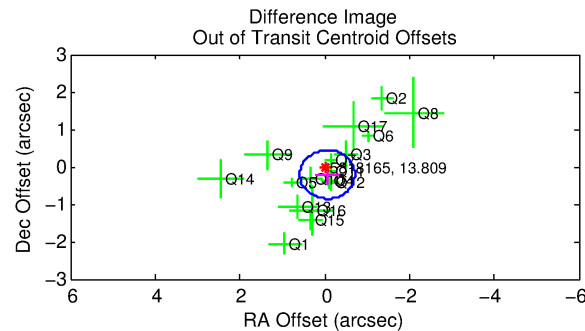
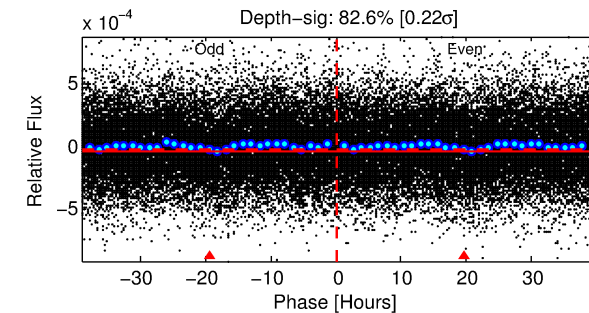
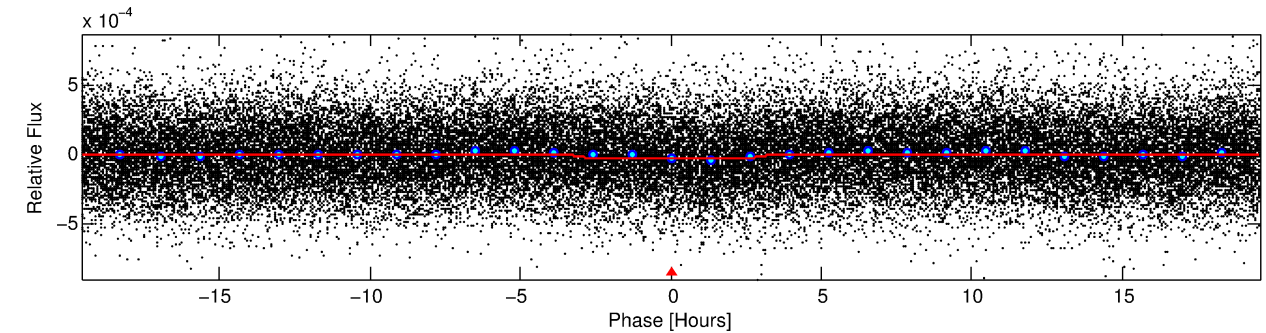
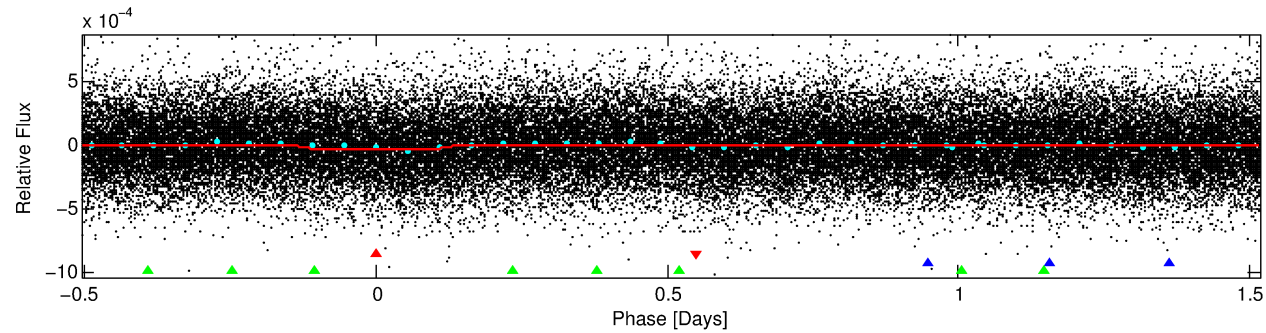
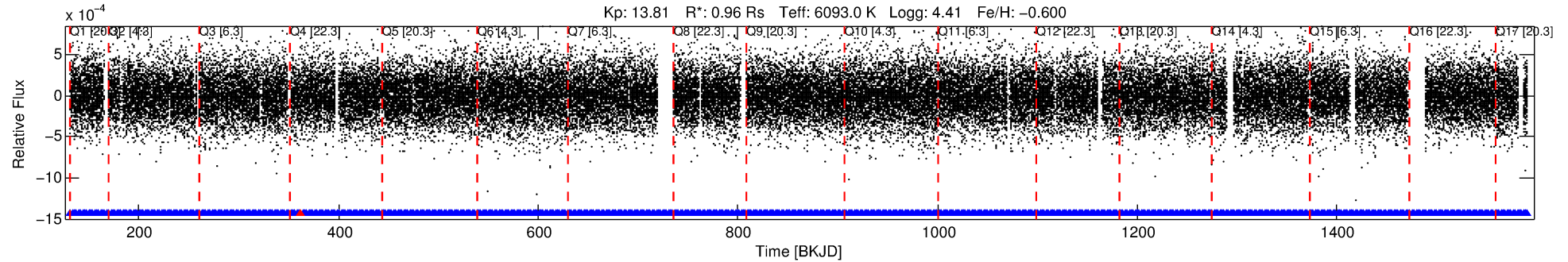
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005818165-01

No Significant Match Found

DV One-Page Summary

KIC: 5818165 Candidate: 1 of 3 Period: 2.024 d



DV Fit Results:

Period = 2.02356 [0.00003] d
Epoch = 131.7902 [0.0074] BKJD
Rp/R* = 0.0057 [0.0018]
a/R* = 1.31 [0.97]
b = 0.93 [0.25]
Seff = 1284.83 [451.03]
Teq = 1527 [134] K
Rp = 0.60 [0.24] Re
a = 0.0298 [0.0065] AU
Ag = 28.65 [21.45] [1.29 σ]
Teffp = 5461 [932] K [4.18 σ]

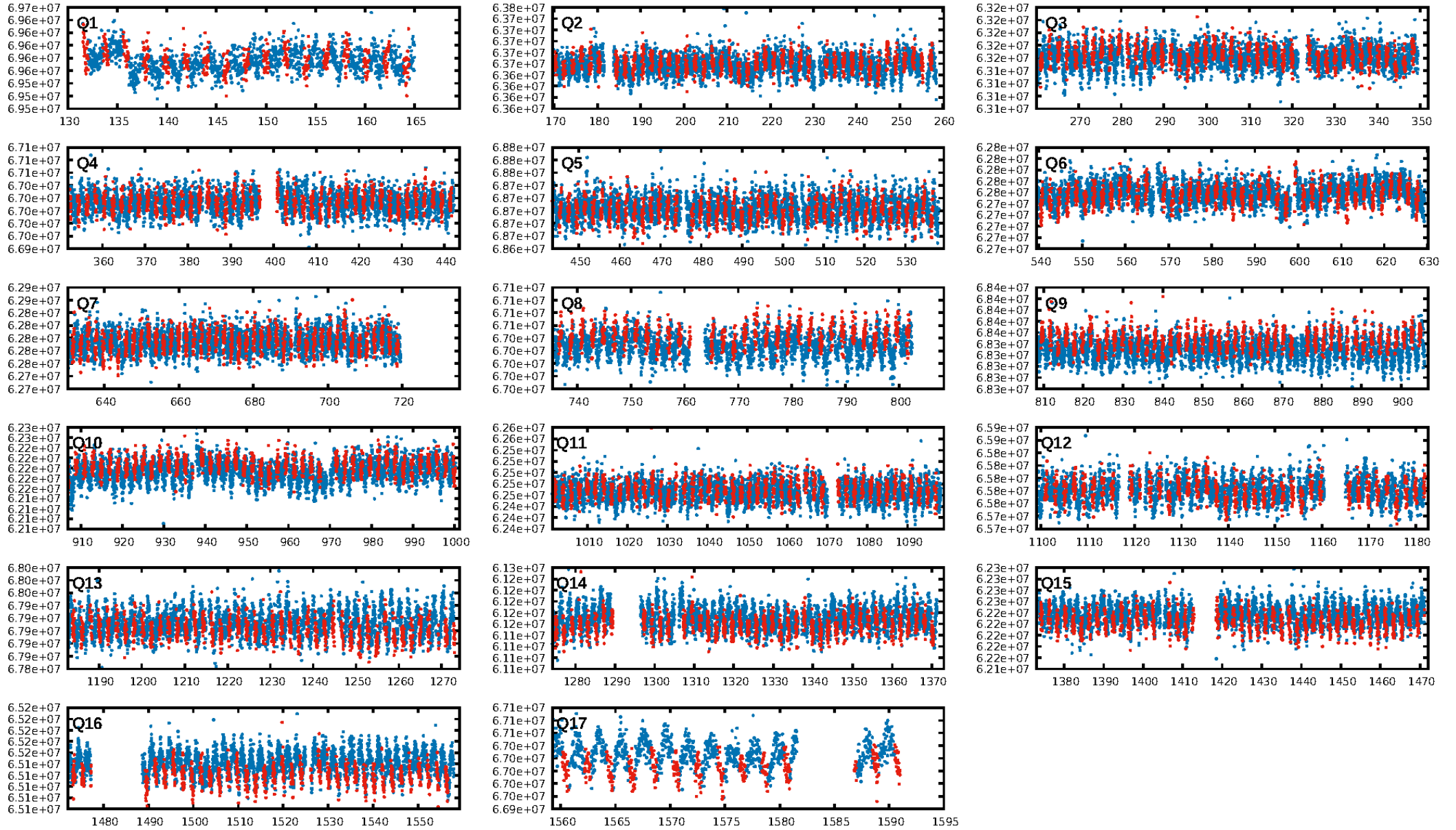
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [331.27 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.75e-13
RollingBand-fgt: 1.00 [636/637]
GhostDiagnostic-chr: 0.7551
Centroid-sig: 38.4%
Centroid-so: 0.992 arcsec [0.80 σ]
OotOffset-rm: 0.216 arcsec [1.00 σ]
KicOffset-rm: 0.162 arcsec [0.85 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 1.00 [17/17]

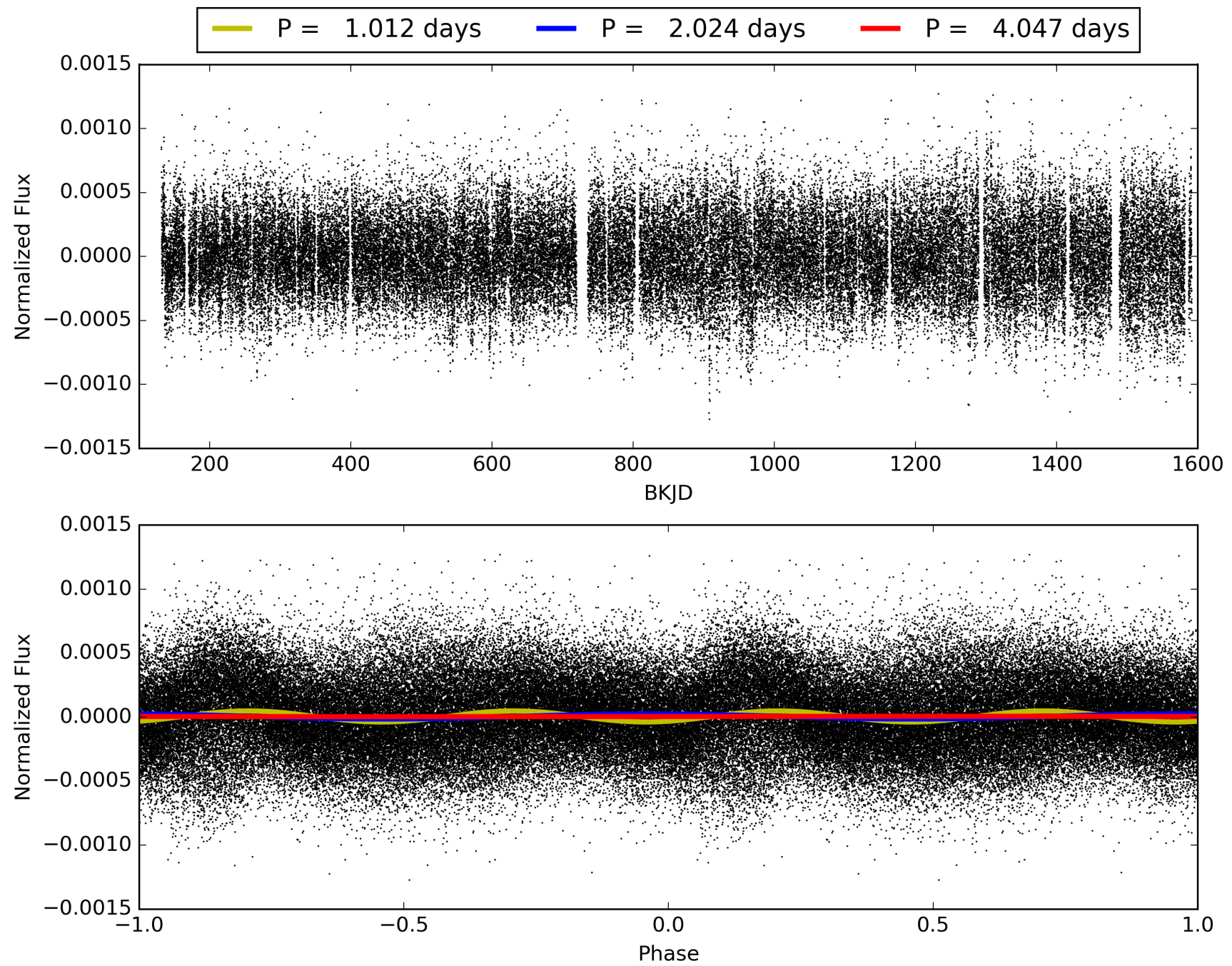
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:42:12 Z

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

TCE 005818165-01, PDC Light Curves

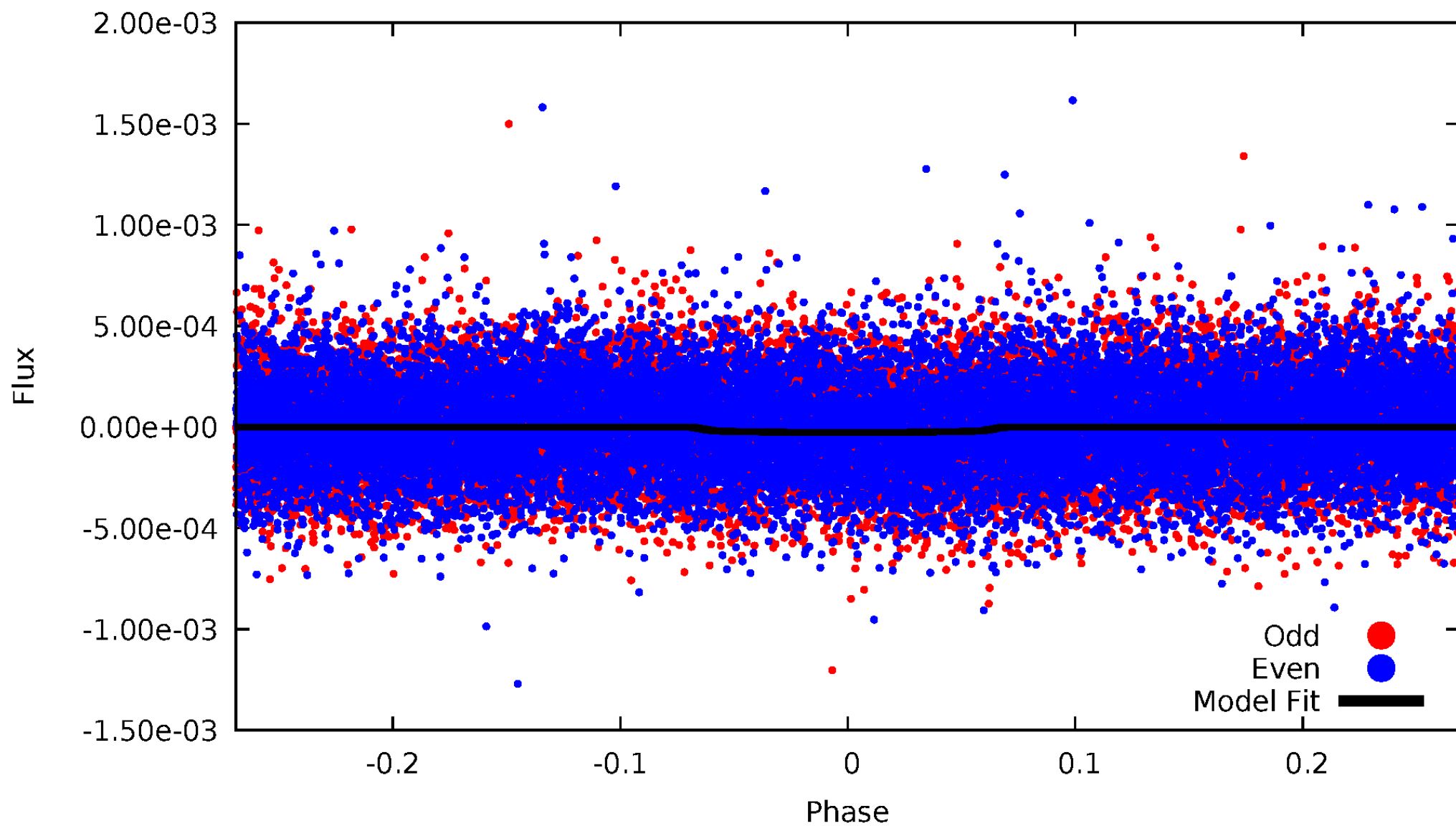


TCE 005818165-01



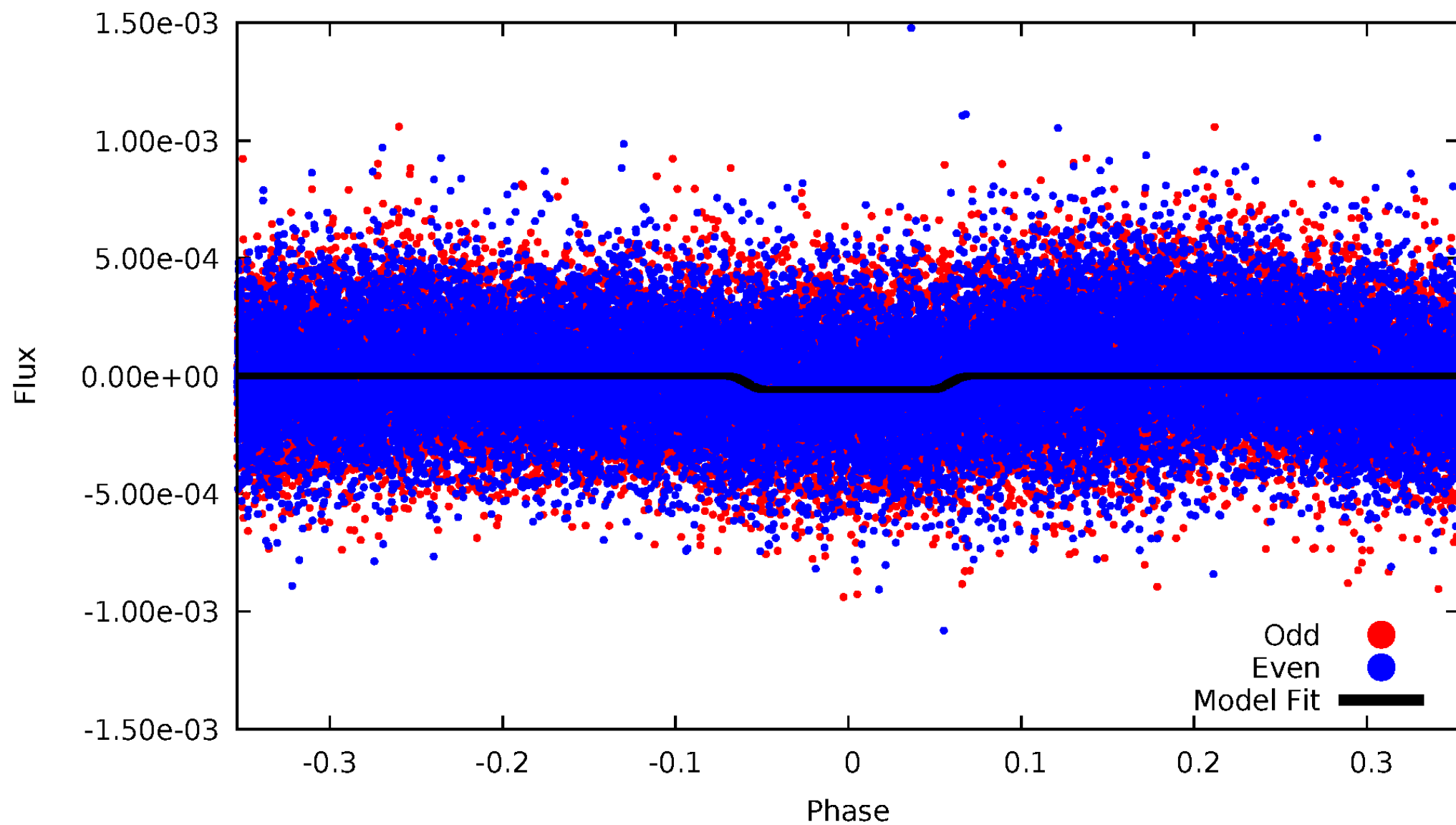
DV Odd/Even

TCE 005818165-01

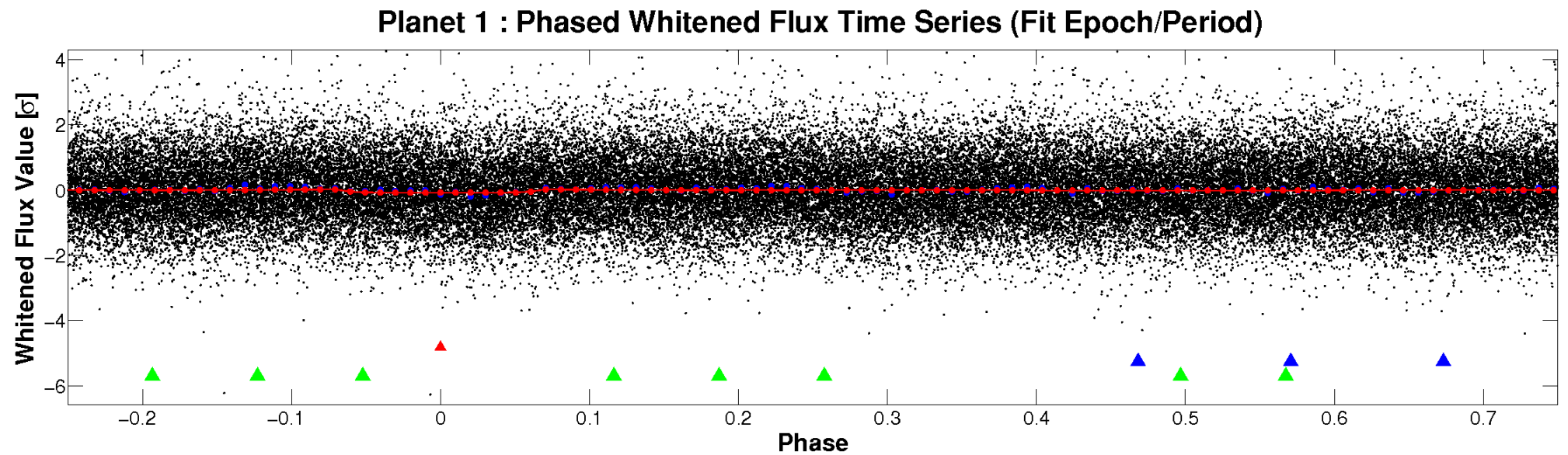
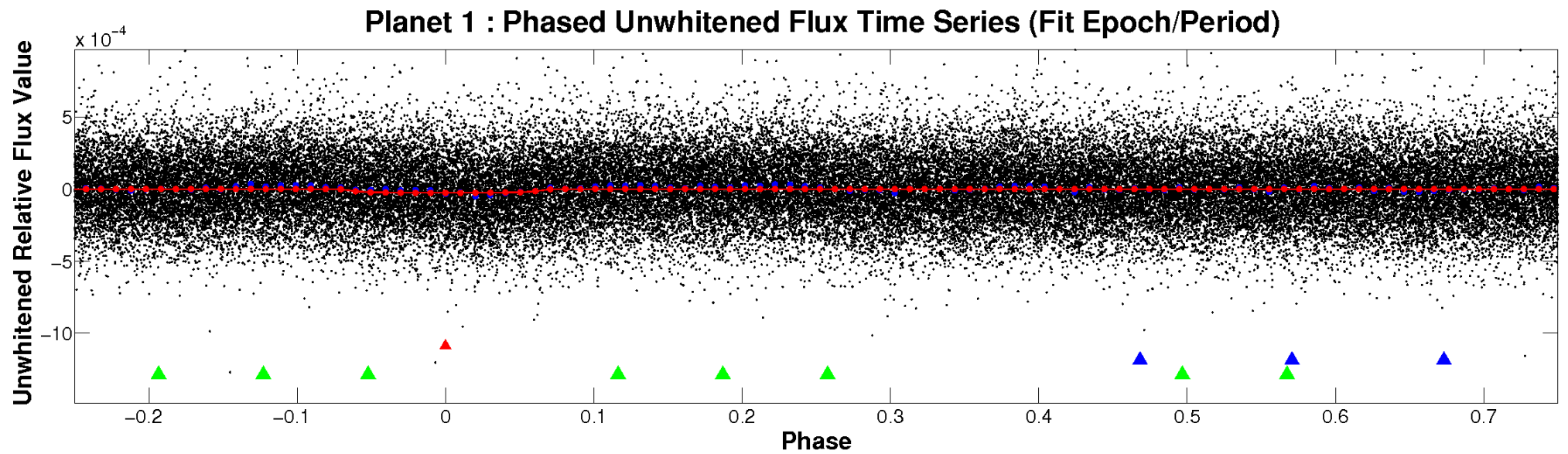


ALT Odd/Even

TCE 005818165-01

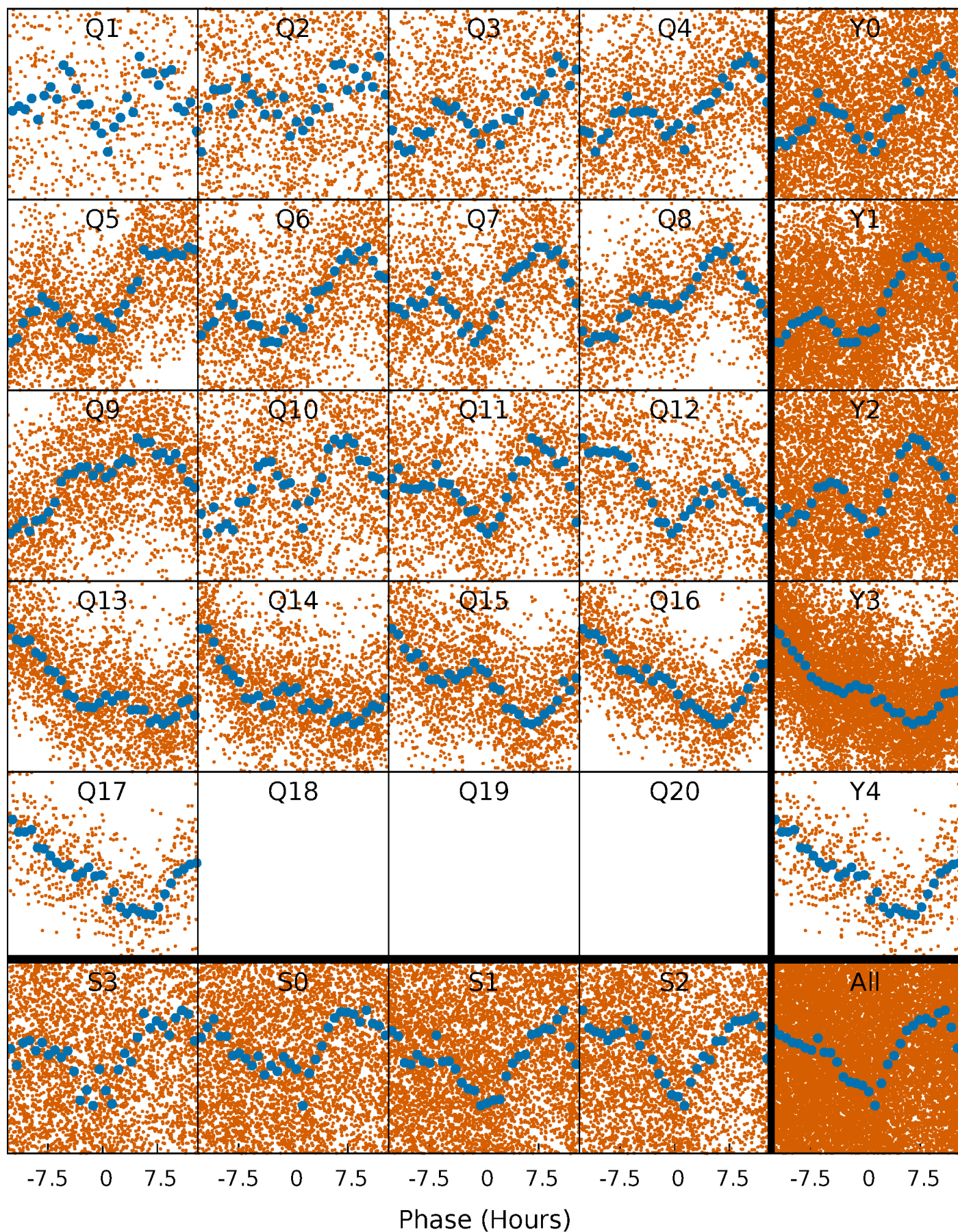


Non-Whitened Vs. Whitened Light Curve



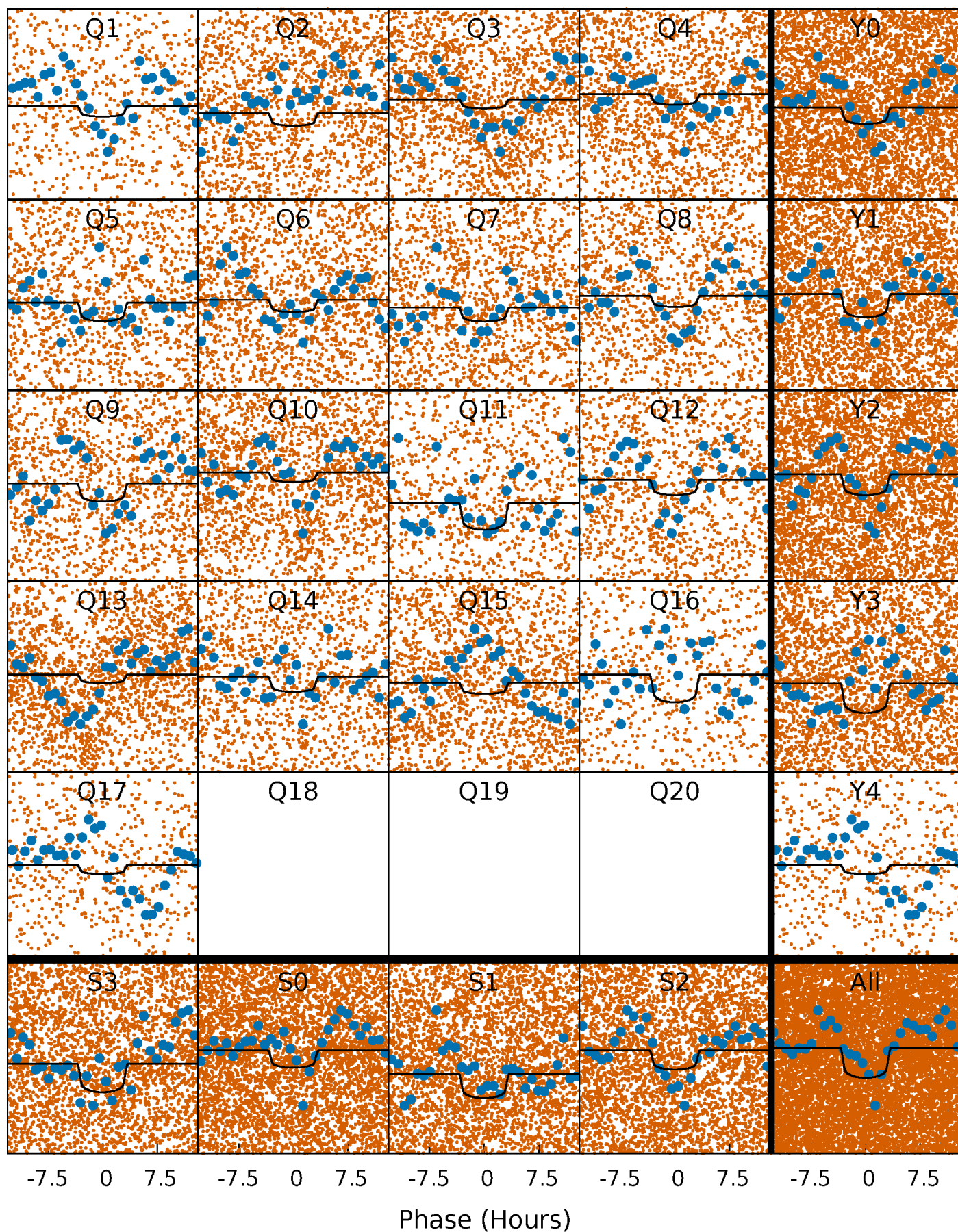
PDC Quarter-Phased Transit Curves

TCE 005818165-01 P= 2.023562 Days $T_0=131.790233$ (BKJD)



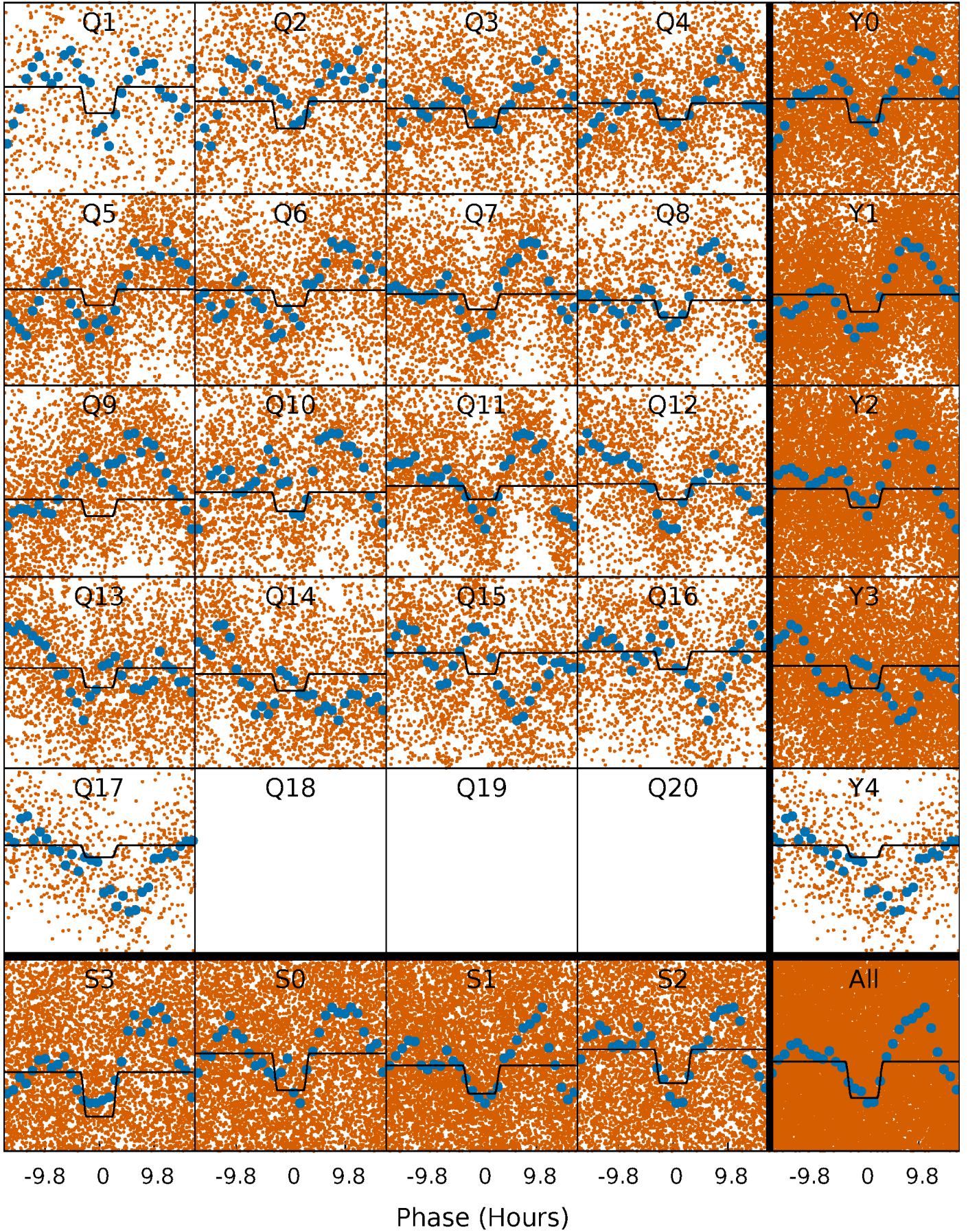
DV Quarter-Phased Transit Curves

TCE 005818165-01 P= 2.023562 Days $T_0=131.790233$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

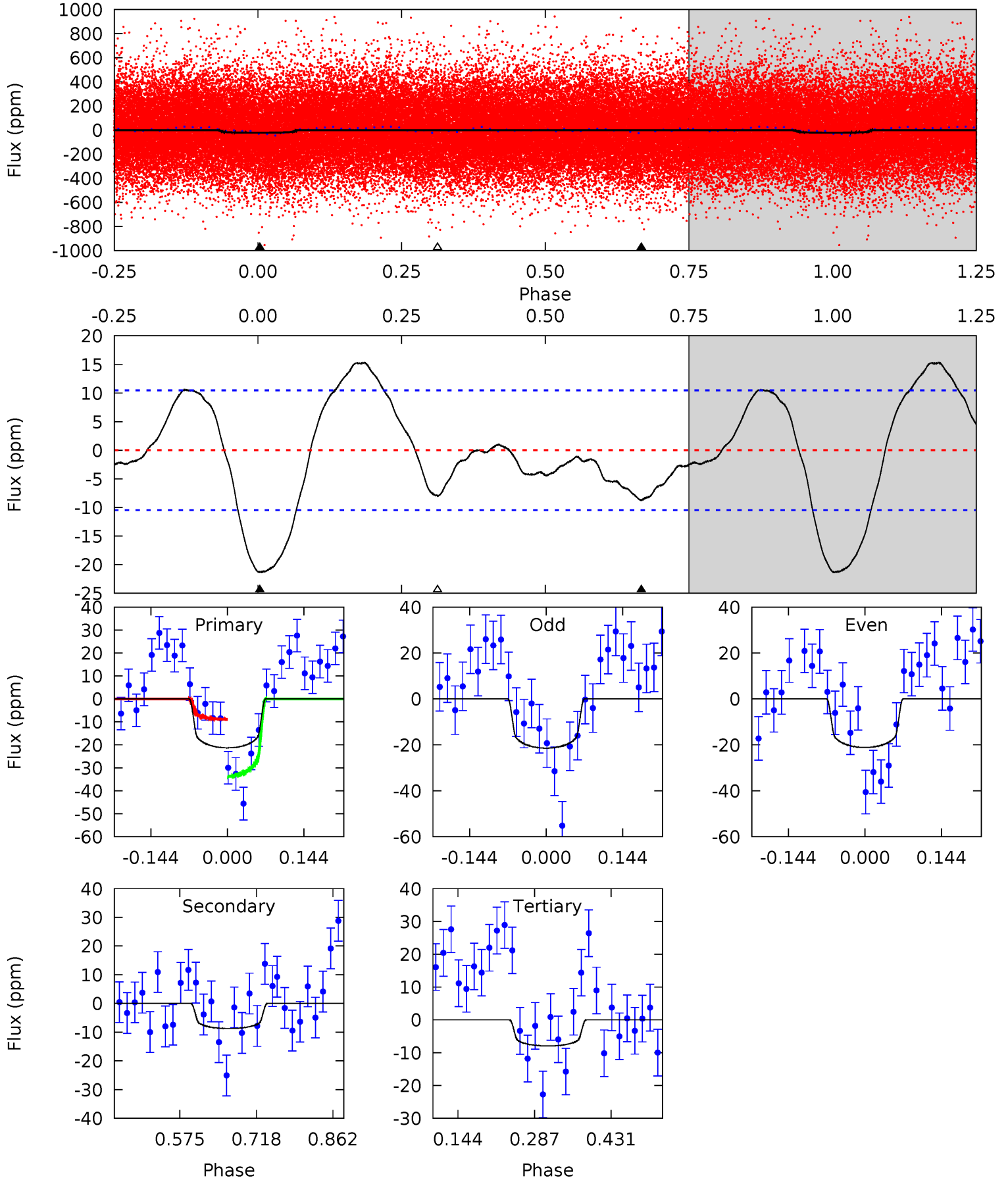
TCE 005818165-01 P= 2.023597 Days $T_0=131.774139$ (BKJD)



DV Model-Shift Uniqueness Test

005818165-01, P = 2.023562 Days, E = 129.766671 Days

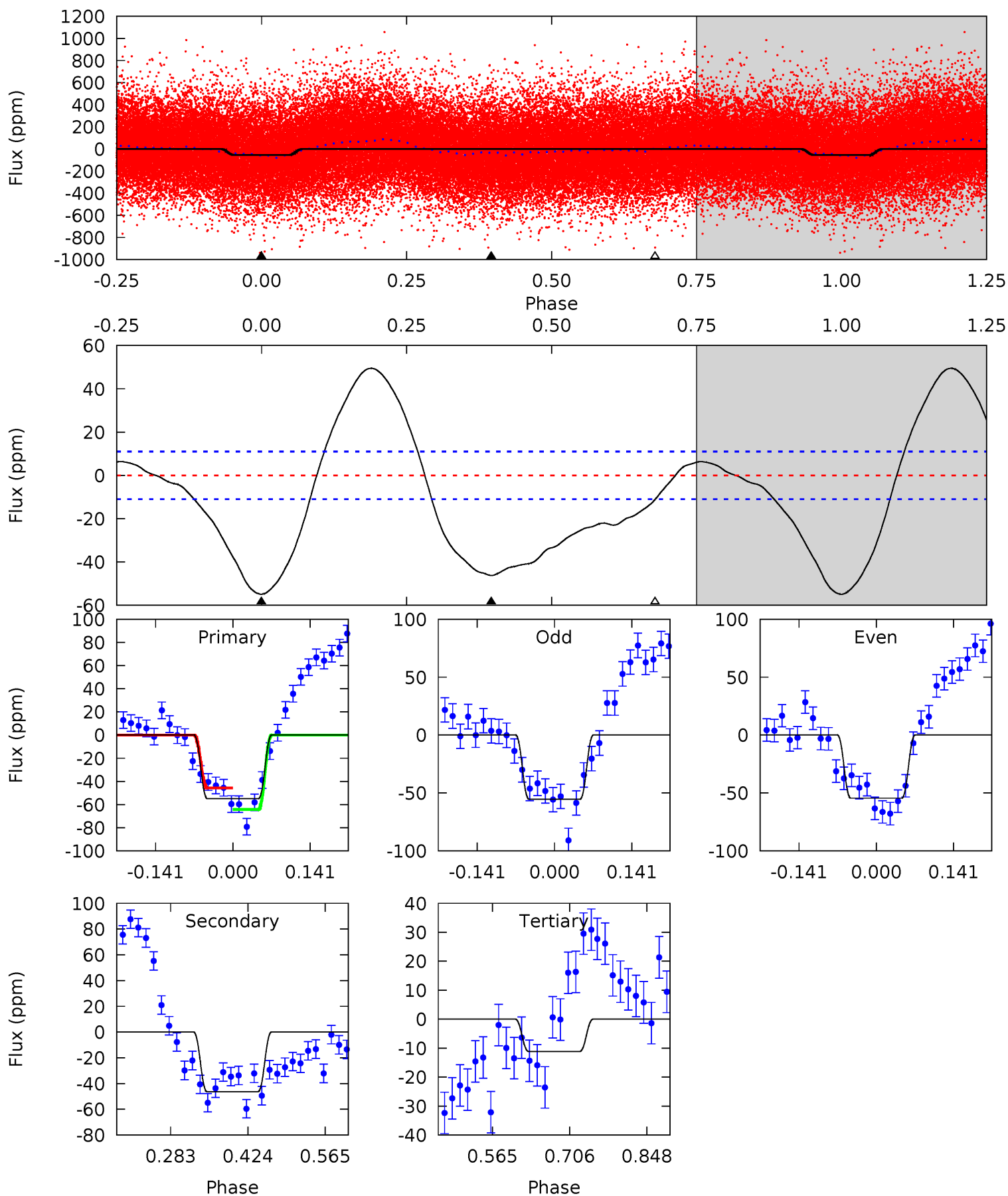
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.14	3.75	3.41	0	4.49	1.46	2.89	5.72	9.14	0.33	3.75	0.07	0.83	0.42	5.33



Alt Model-Shift Uniqueness Test

005818165-01, P = 2.023597 Days, E = 129.750542 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.5	18.9	4.56	0	4.49	1.47	9.94	17.9	22.5	14.4	18.9	0.18	0.90	0.47	3.80



Stellar Parameters For KIC 005818165

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6093^{+182}_{-182}	$4.408^{+0.124}_{-0.186}$	$-0.600^{+0.300}_{-0.300}$	$0.962^{+0.239}_{-0.140}$	$0.863^{+0.108}_{-0.081}$	$1.366^{+0.752}_{-0.655}$
	+3%/-3%	+3%/-4%	+50%/-50%	+25%/-15%	+13%/-9%	+55%/-48%
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 005818165-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 2	$0.60^{+0.21}_{-0.18}$	2142^{+143}_{-120}	4531^{+802}_{-549}	11^{+14}_{-6}
Alt.	-46 ± 2	$0.82^{+0.22}_{-0.20}$	2142^{+148}_{-122}	5732^{+853}_{-569}	34^{+26}_{-13}

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 $A_{obs} \gg 1.0$

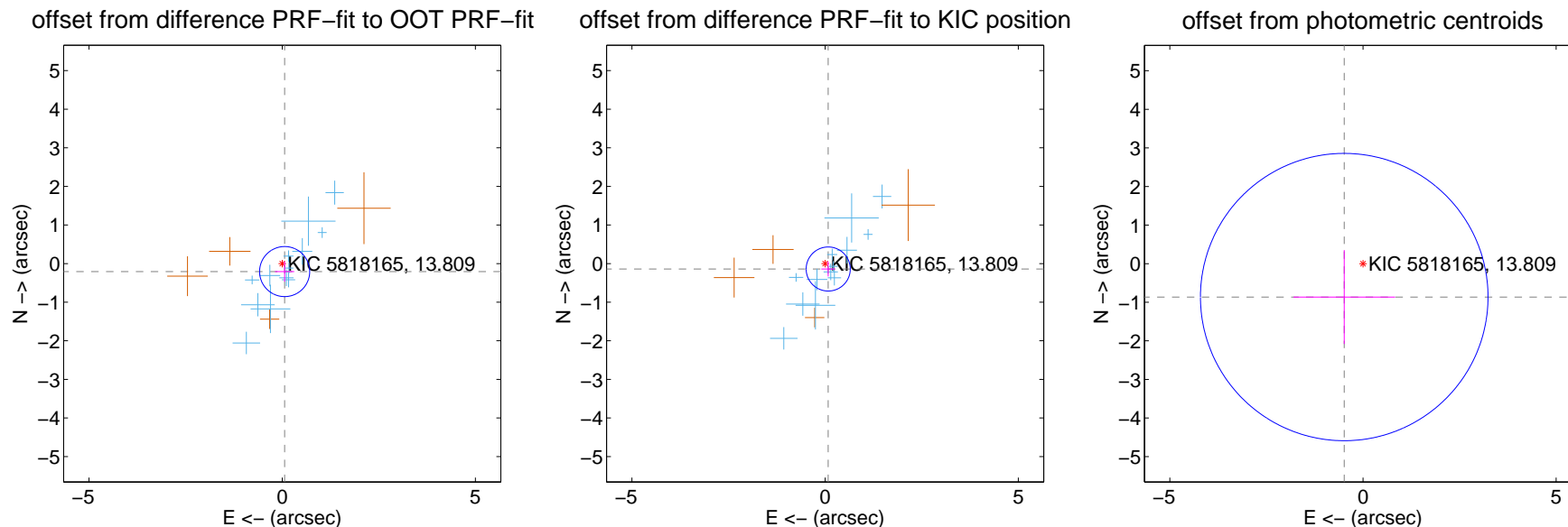
DV Centroid Data

Supplemental centroid analysis for 005818165-01. Kepler magnitude: 13.81. Transit SNR 6.71

There are 13 quarters with good PRF difference image offsets

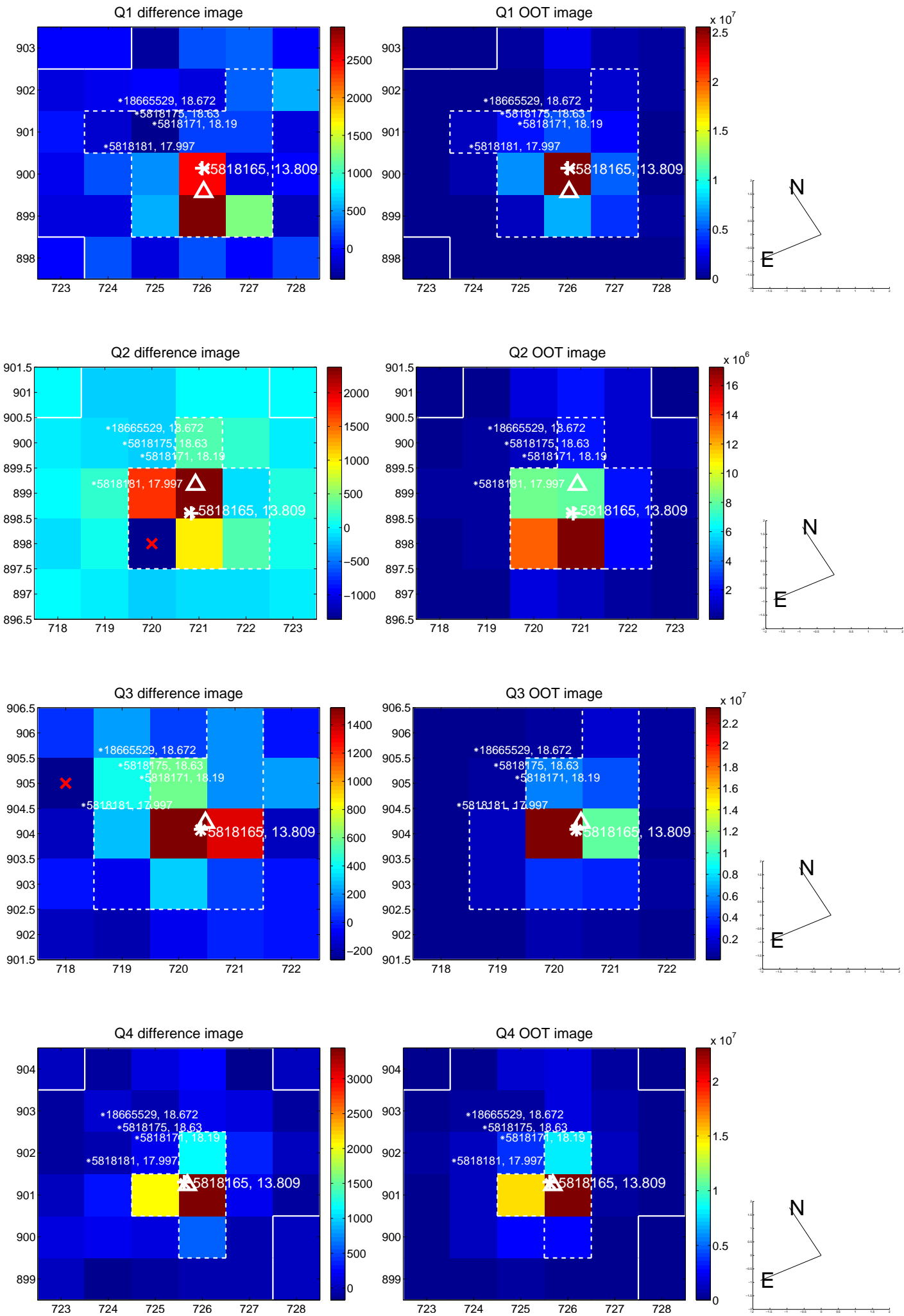
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.216 ± 0.216	1.00	-0.063 ± 0.250	-0.207 ± 0.261
PRF-fit source offset from KIC position	0.162 ± 0.190	0.85	-0.080 ± 0.178	-0.140 ± 0.194
photometric centroid source offset	0.99 ± 1.24	0.80	0.49 ± 1.32	-0.87 ± 1.22

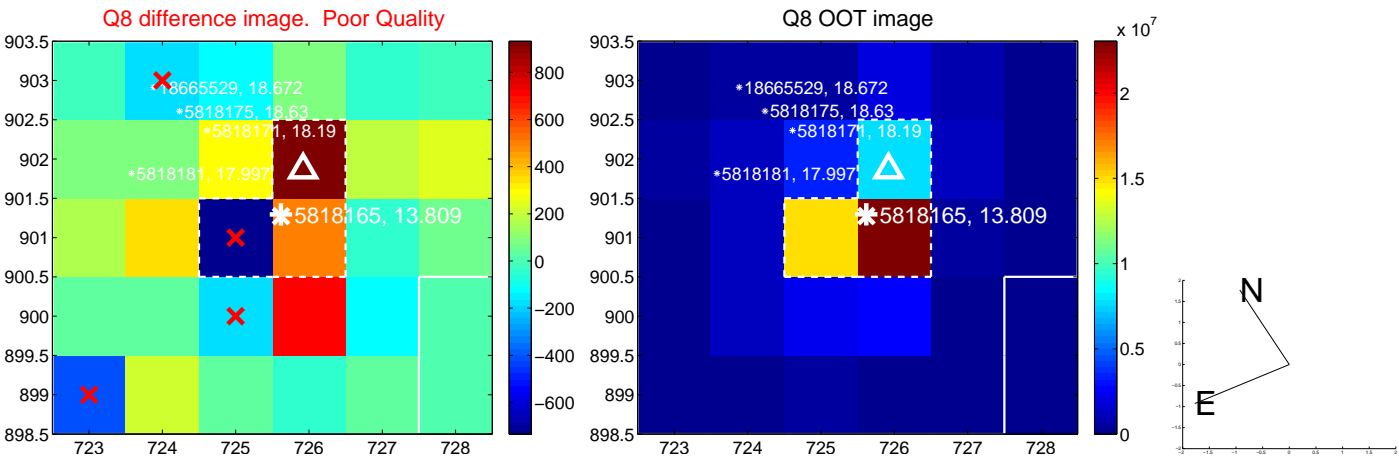
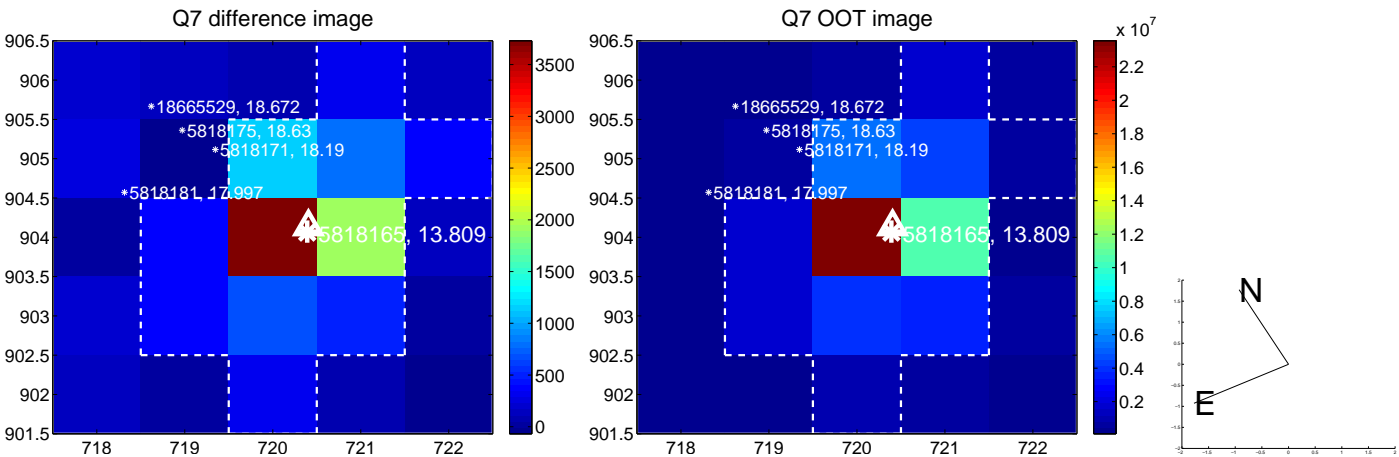
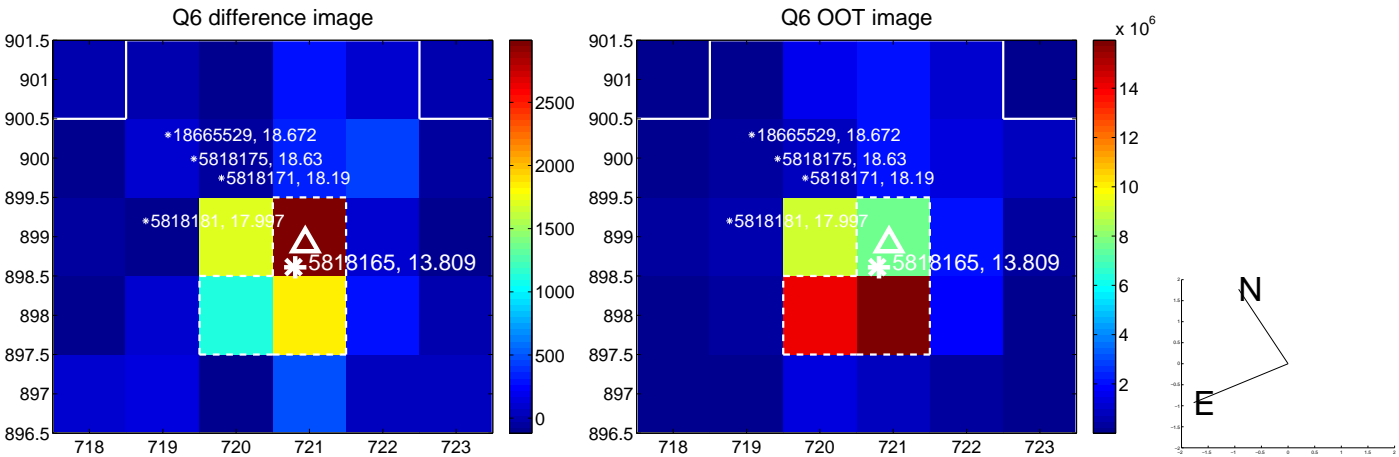
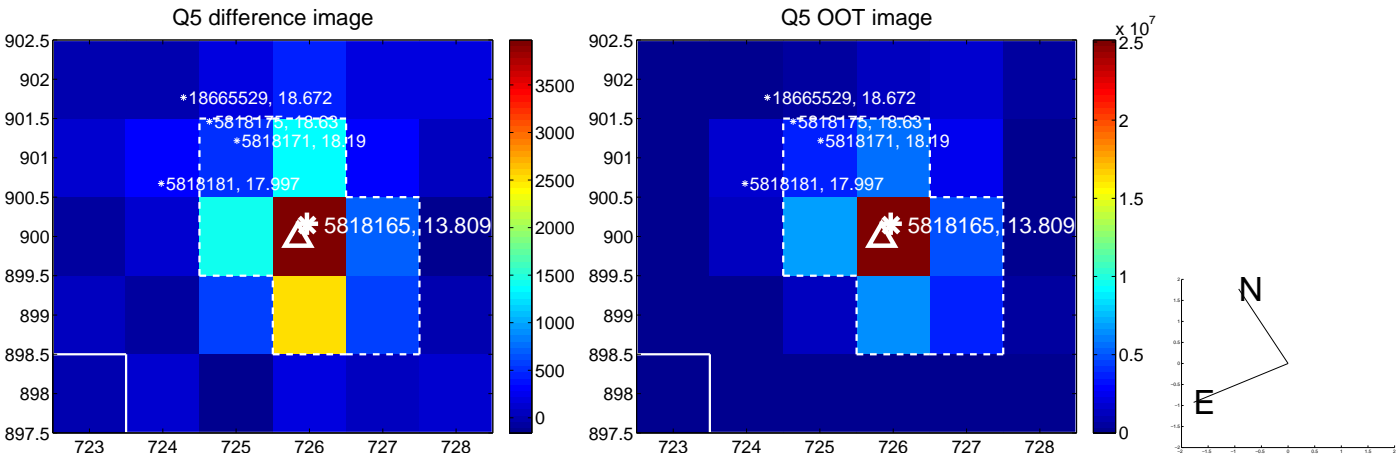


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

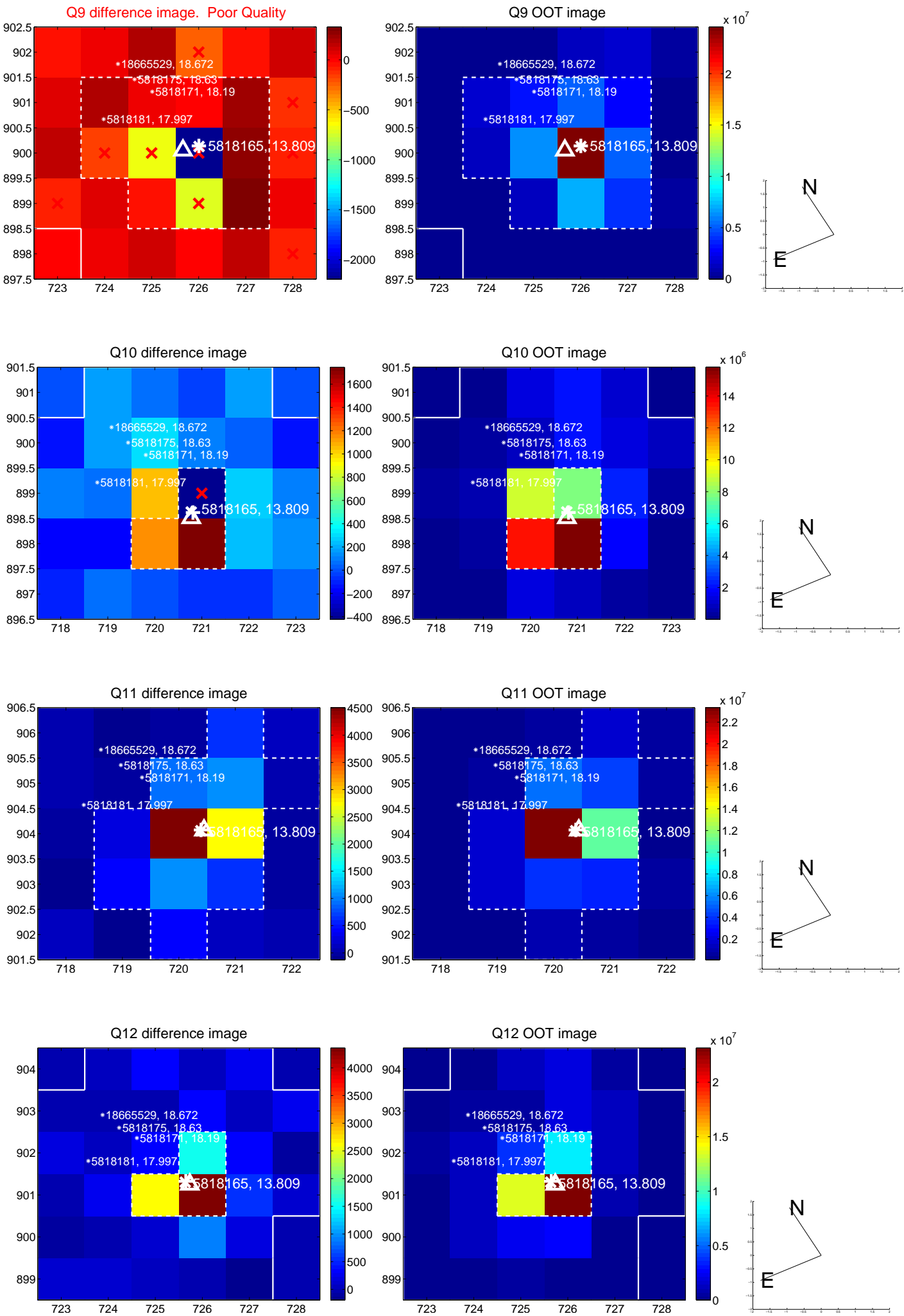
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



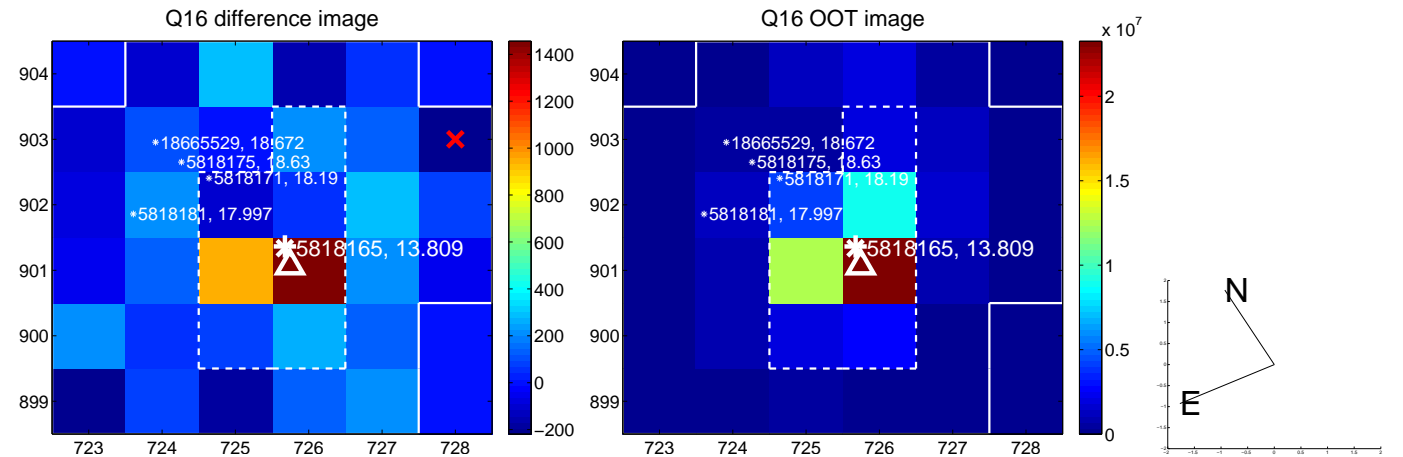
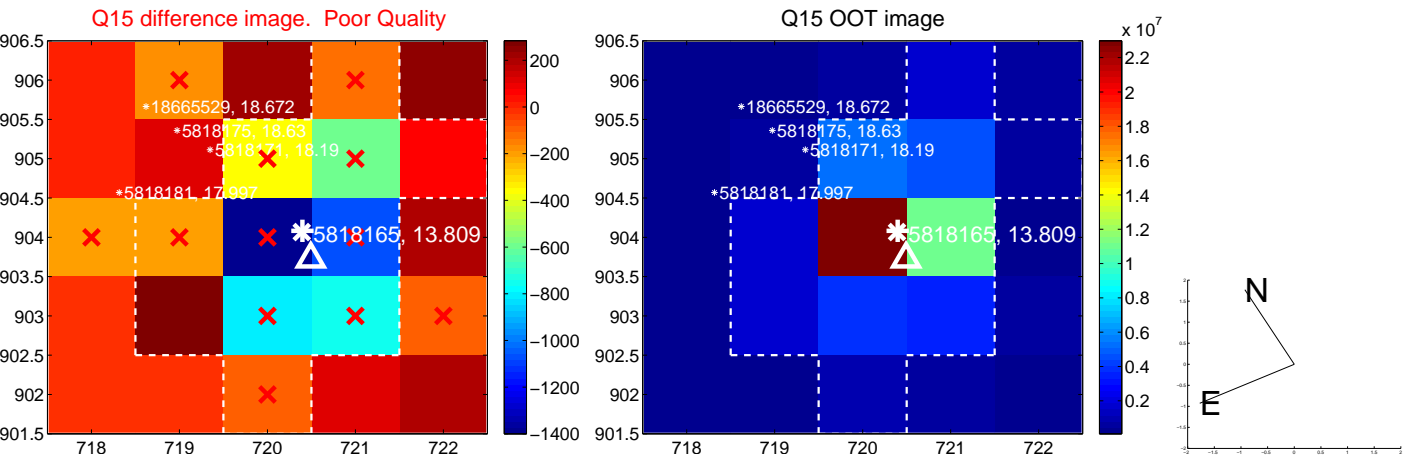
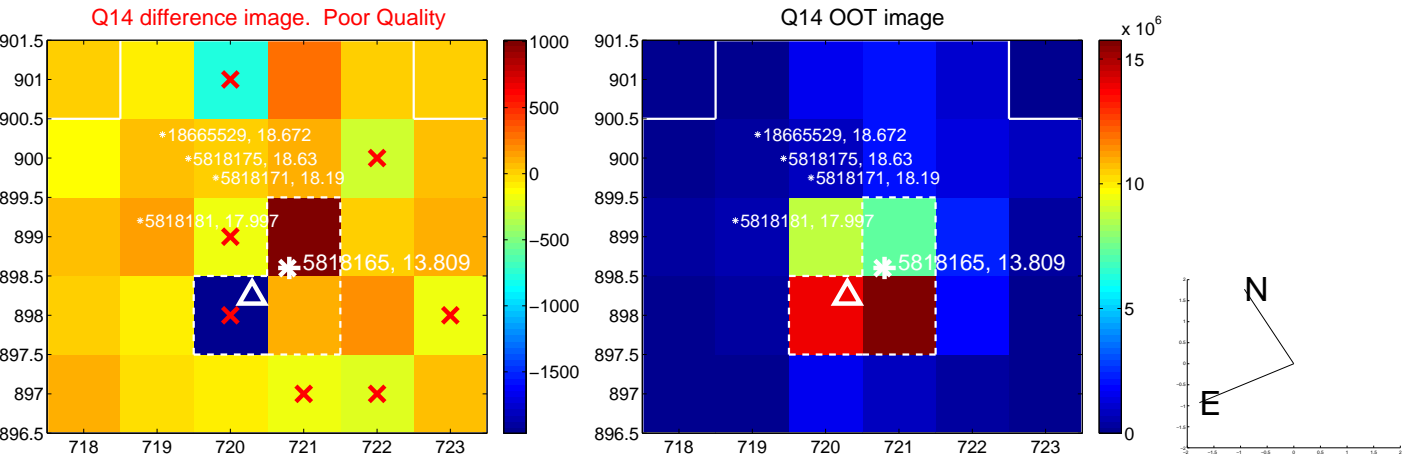
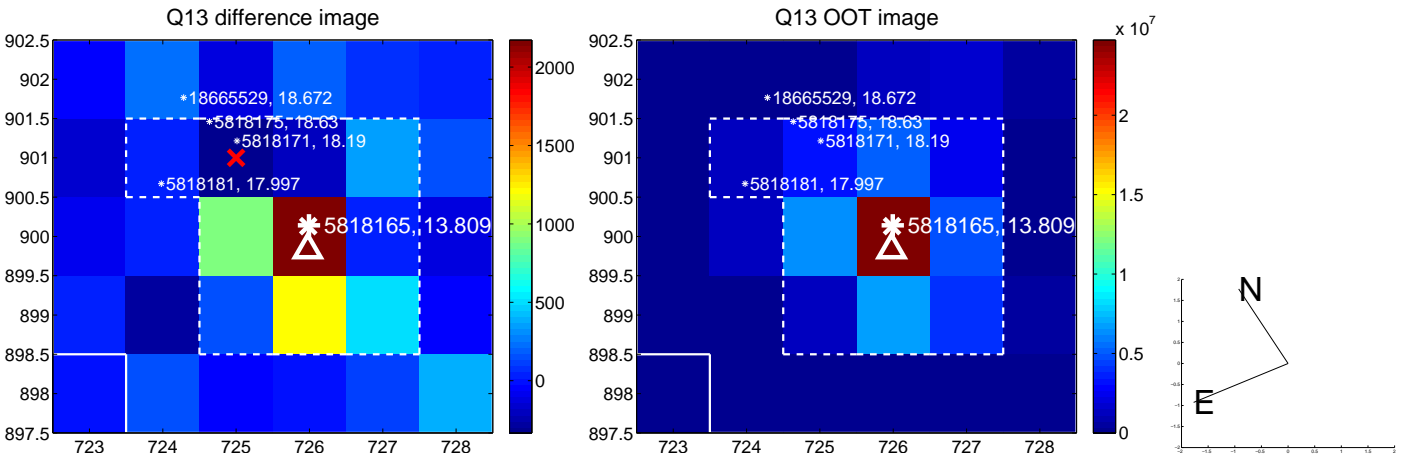
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



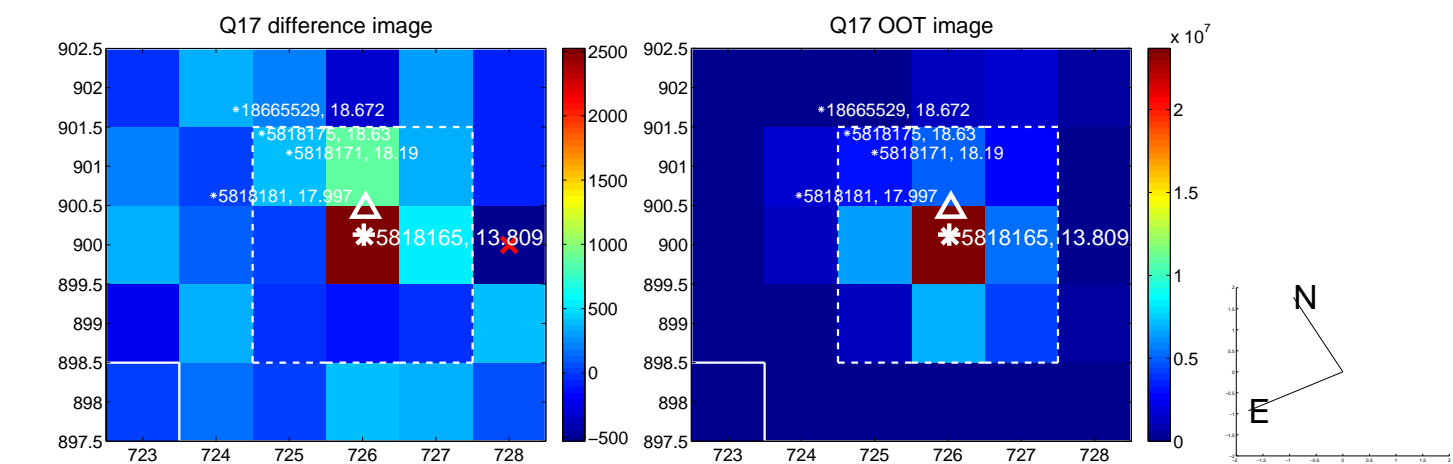
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



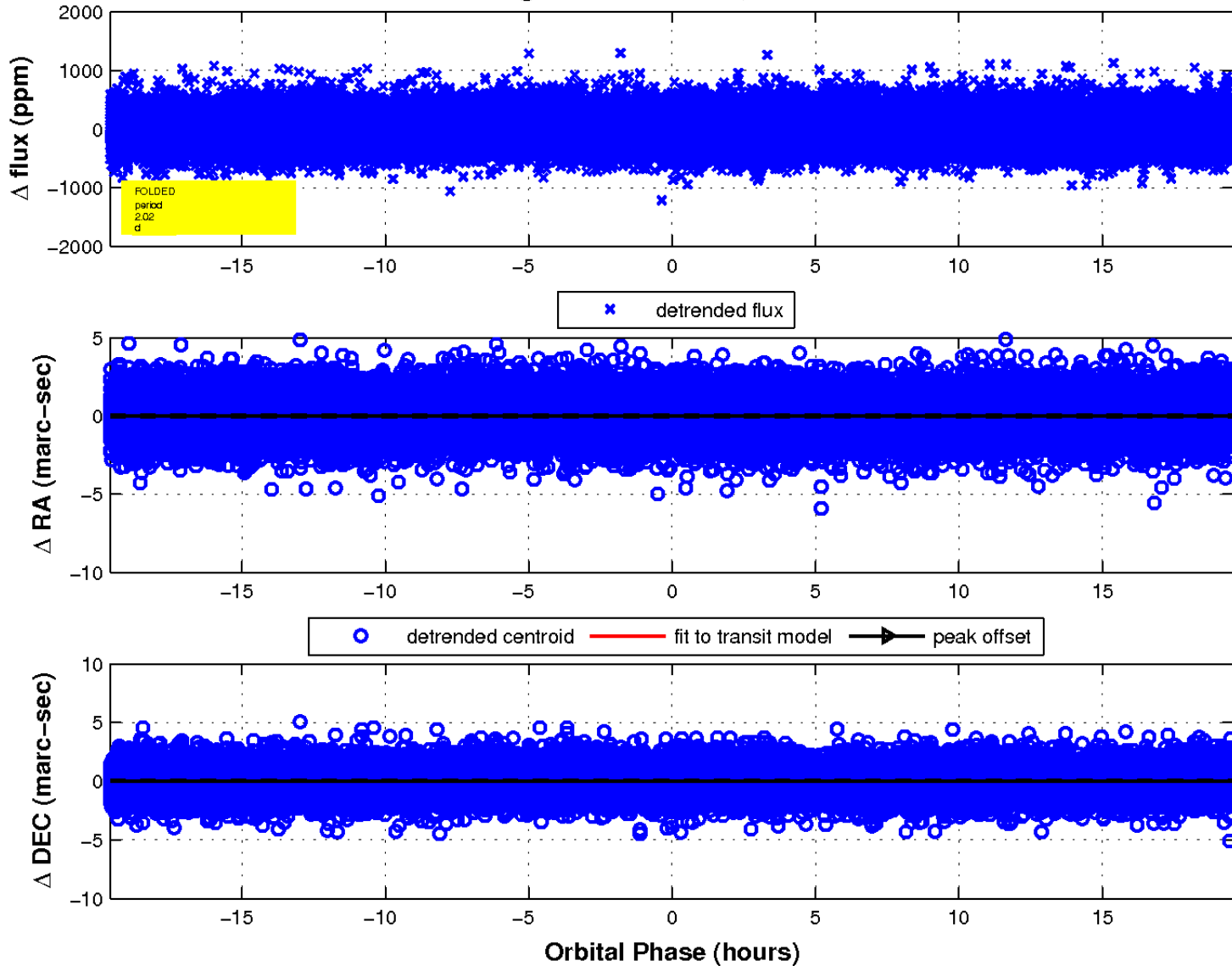
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

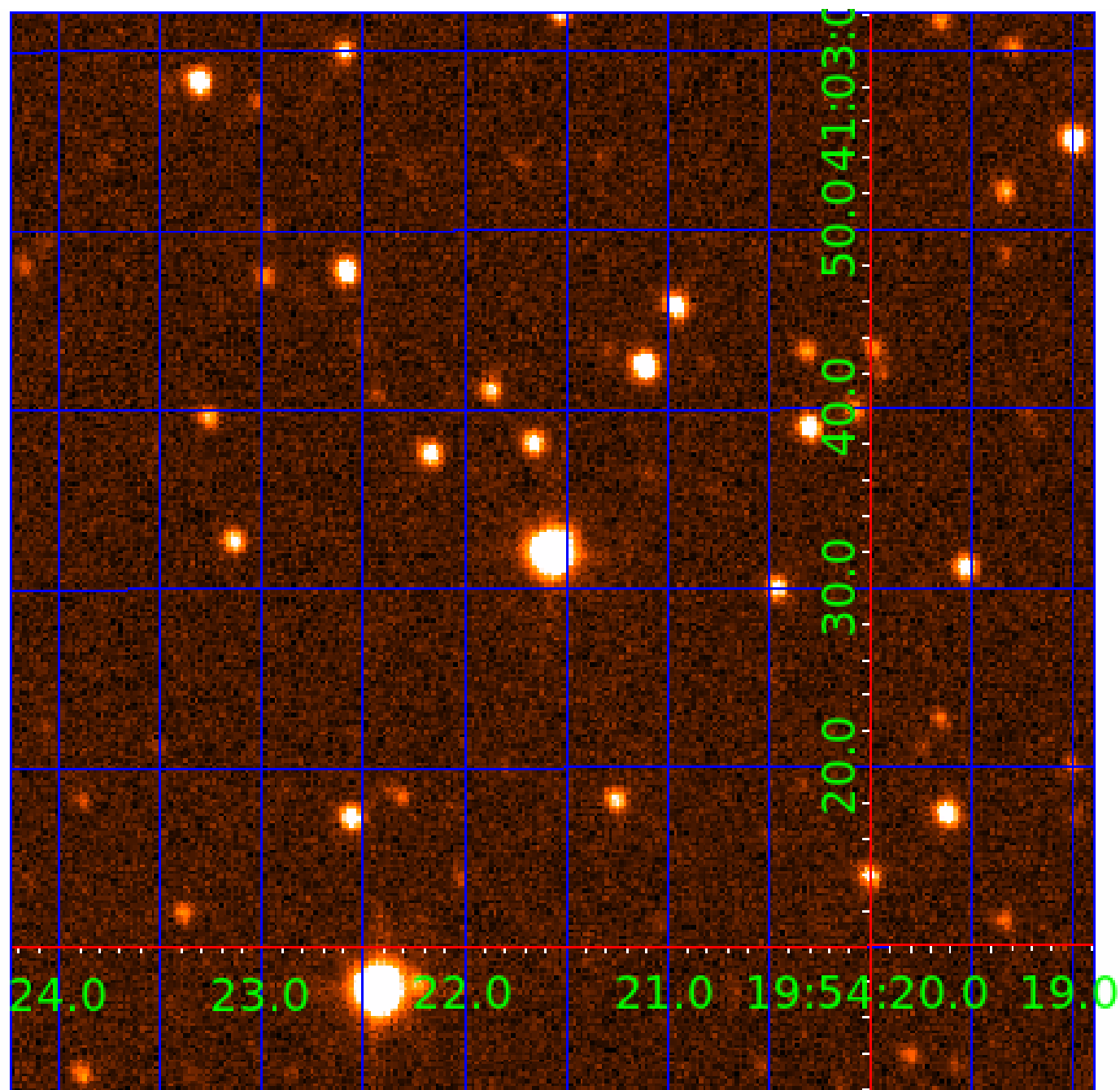


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 005818165

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})
005818165-01	OBS	No	2.023562	131.790233	26.6	6.531	7.6	6.7	0.96	6093	0.60	1284.83
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005818165-03	OBS	No	181.493660	295.934265	306.4	11.243	8.3	7.0	0.96	6093	1.83	3.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005818165-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005818165-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005818165-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

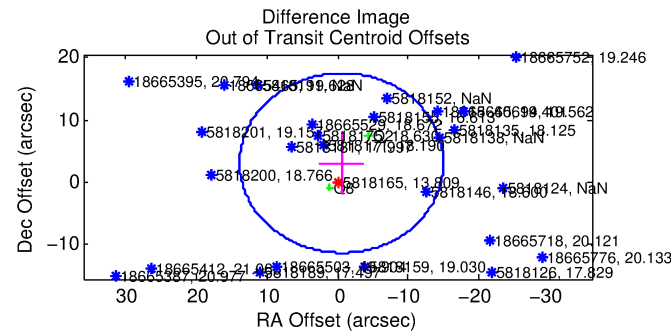
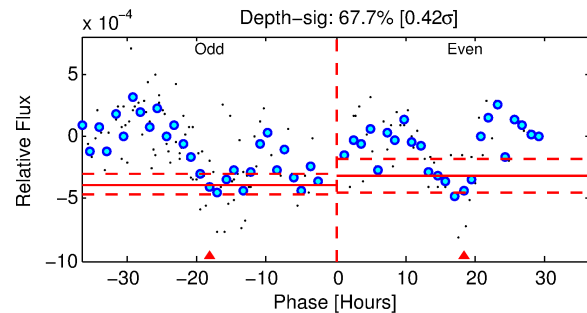
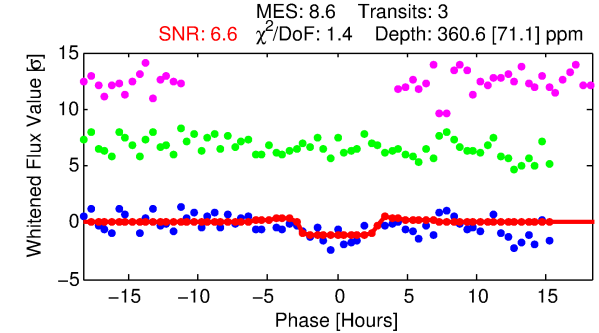
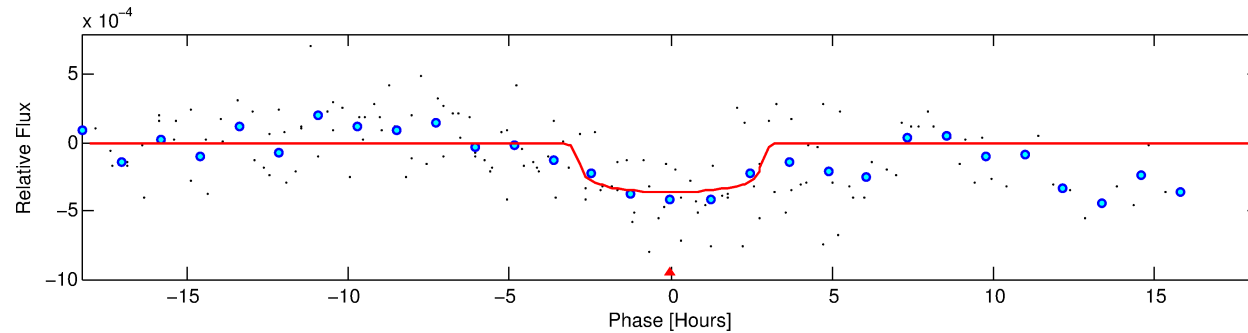
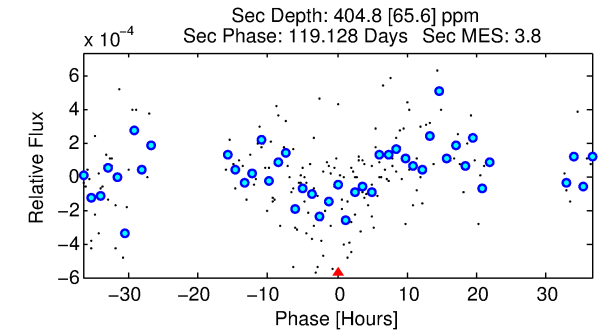
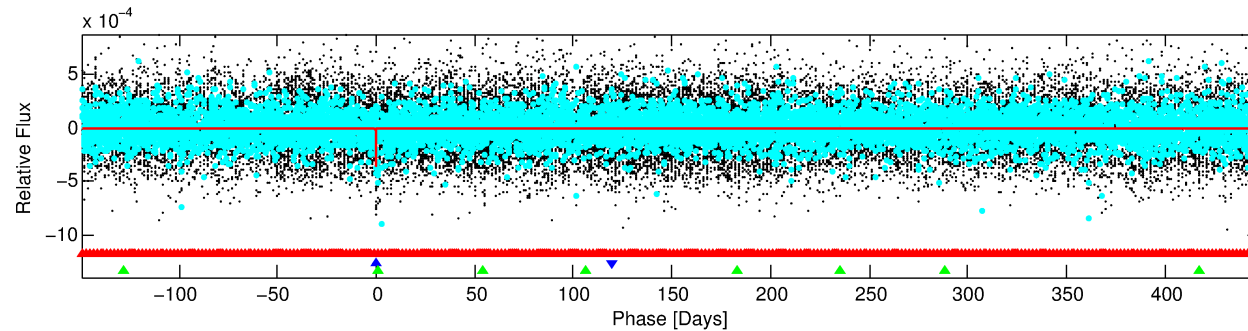
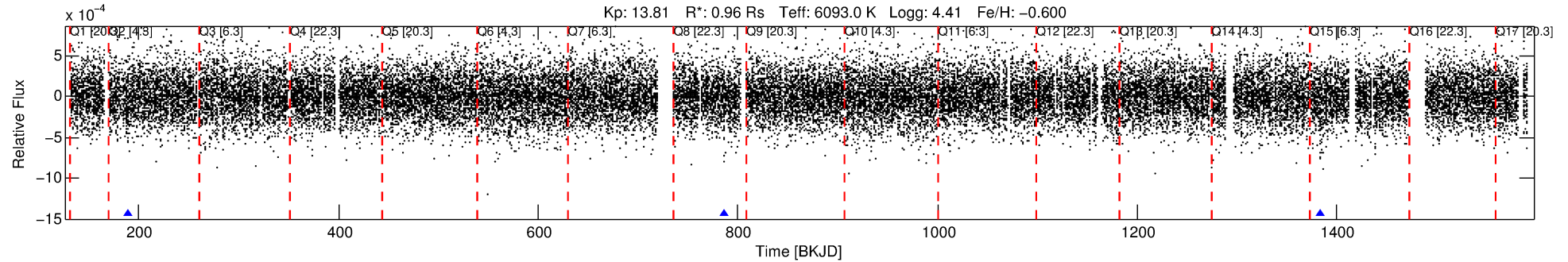
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005818165-02

No Significant Match Found

DV One-Page Summary

KIC: 5818165 Candidate: 2 of 3 Period: 597.158 d



DV Fit Results:

Period = 597.15798 [0.01071] d
Epoch = 189.3976 [0.0136] BKJD
Rp/R* = 0.0192 [0.0113]
a/R* = 481.25 [1459.34]
b = 0.79 [1.44]
Seff = 0.65 [0.23]
Teq = 229 [20] K
Rp = 2.01 [1.28] Re
a = 1.3219 [0.2891] AU
Ag = 96124.03 [118445.51] [0.81σ]
Teffp = 6243 [1862] K [3.23σ]

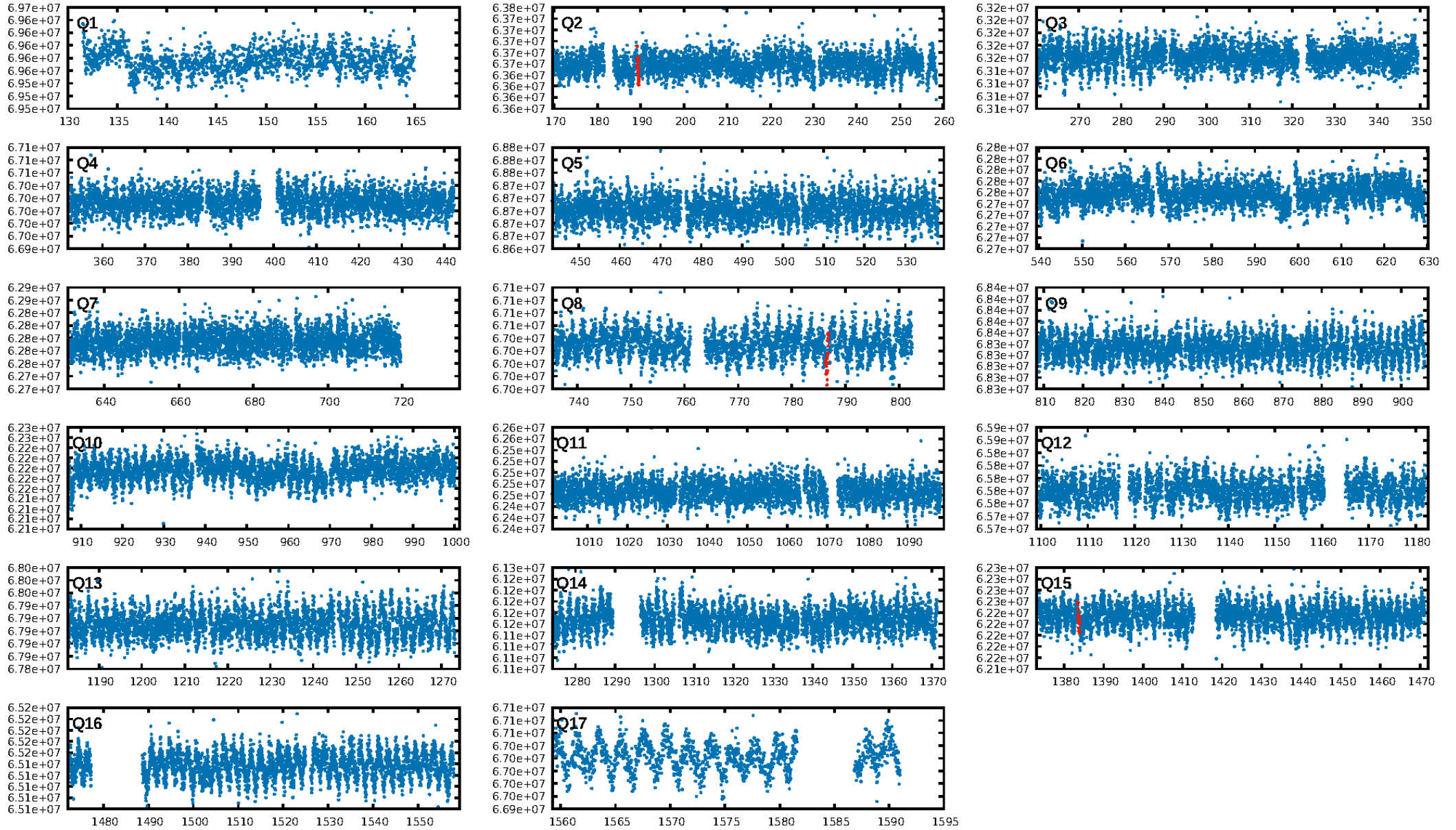
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [780.11σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.5%
ModelChiSquareGof-sig: 35.1%
Bootstrap-pfa: 1.96e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.527
Centroid-sig: 47.0%
Centroid-so: 1.115 arcsec [0.78σ]
OotOffset-rm: 3.124 arcsec [0.65σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-rm: 3.113 arcsec [0.66σ]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

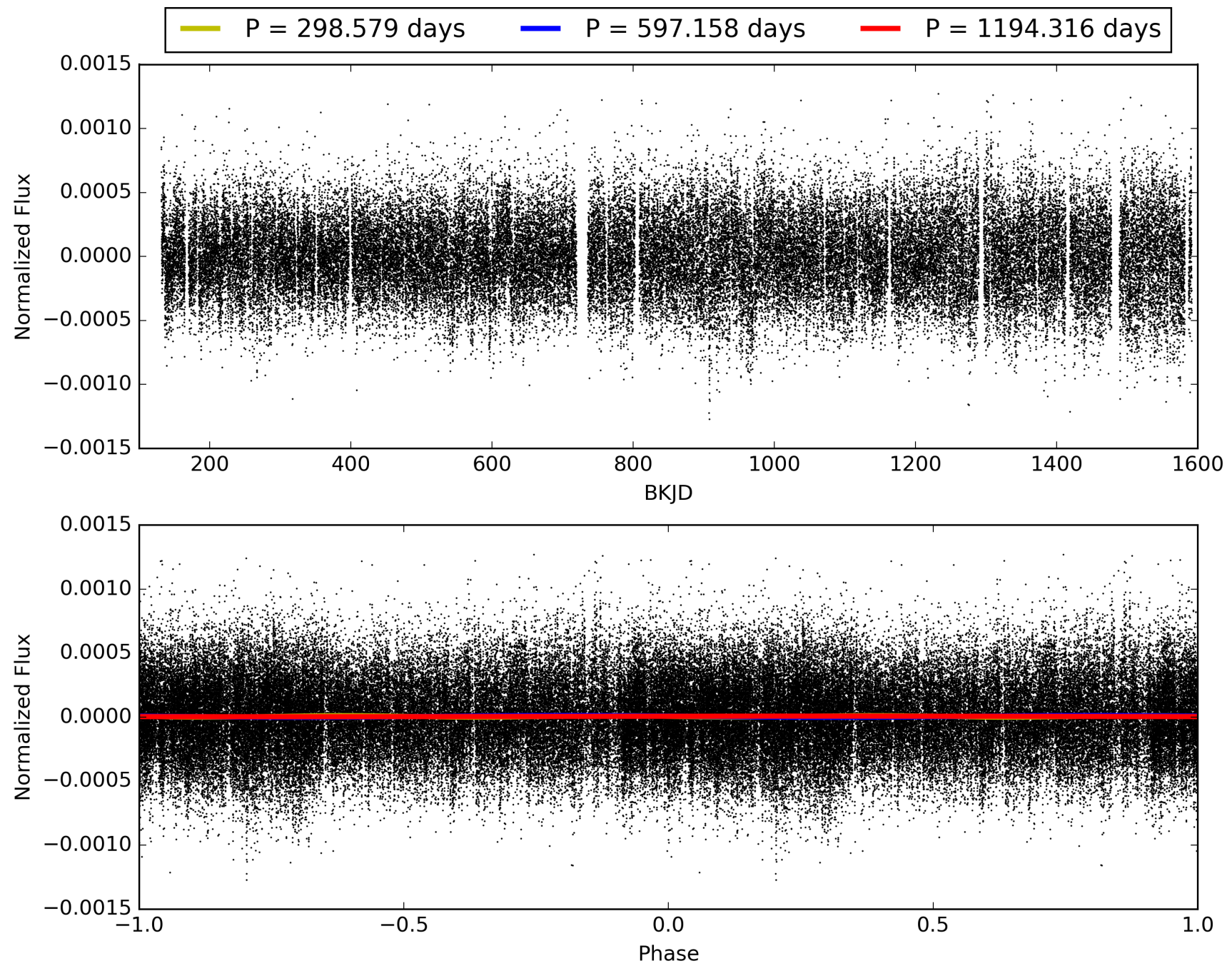
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:42:29 Z

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

TCE 005818165-02, PDC Light Curves

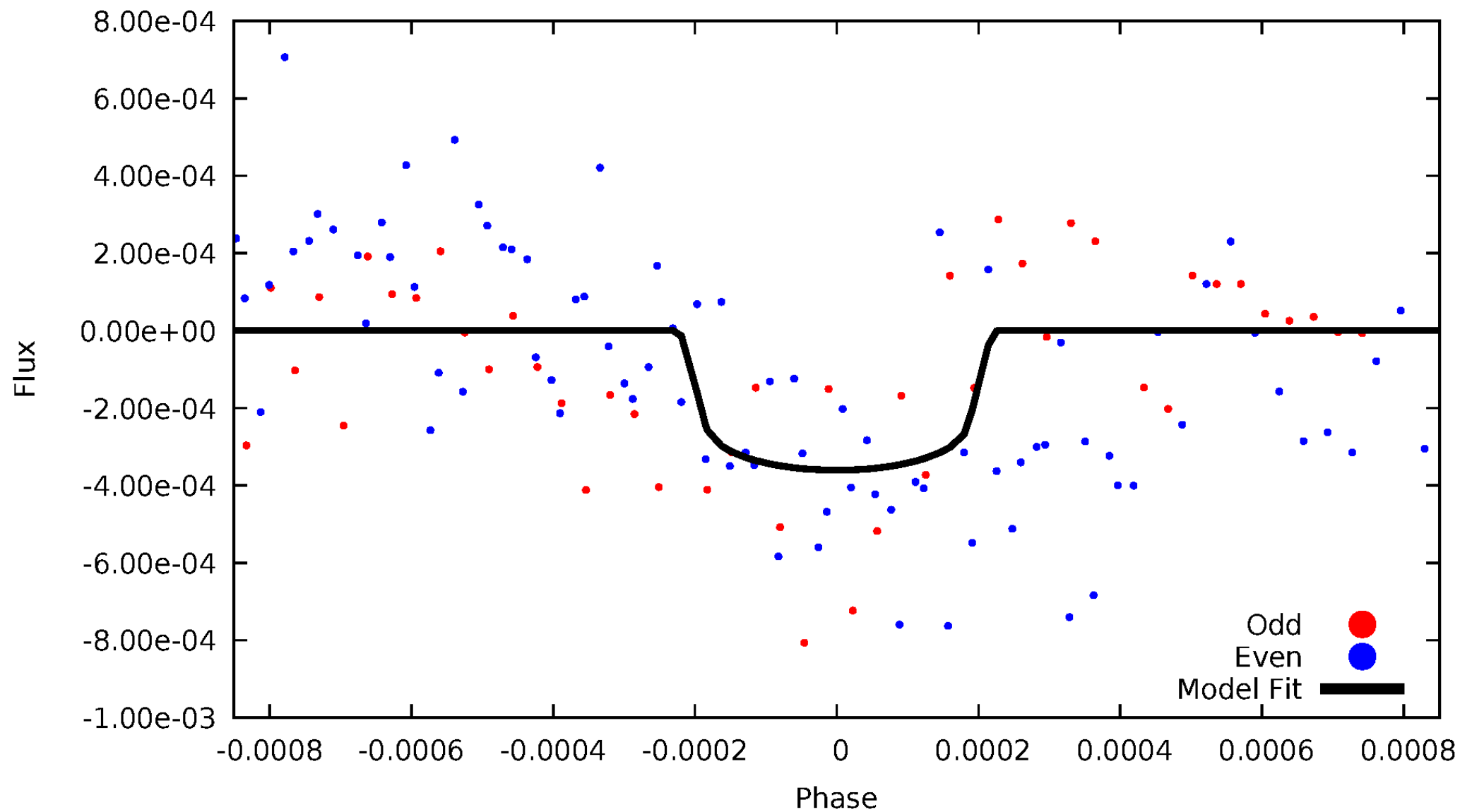


TCE 005818165-02



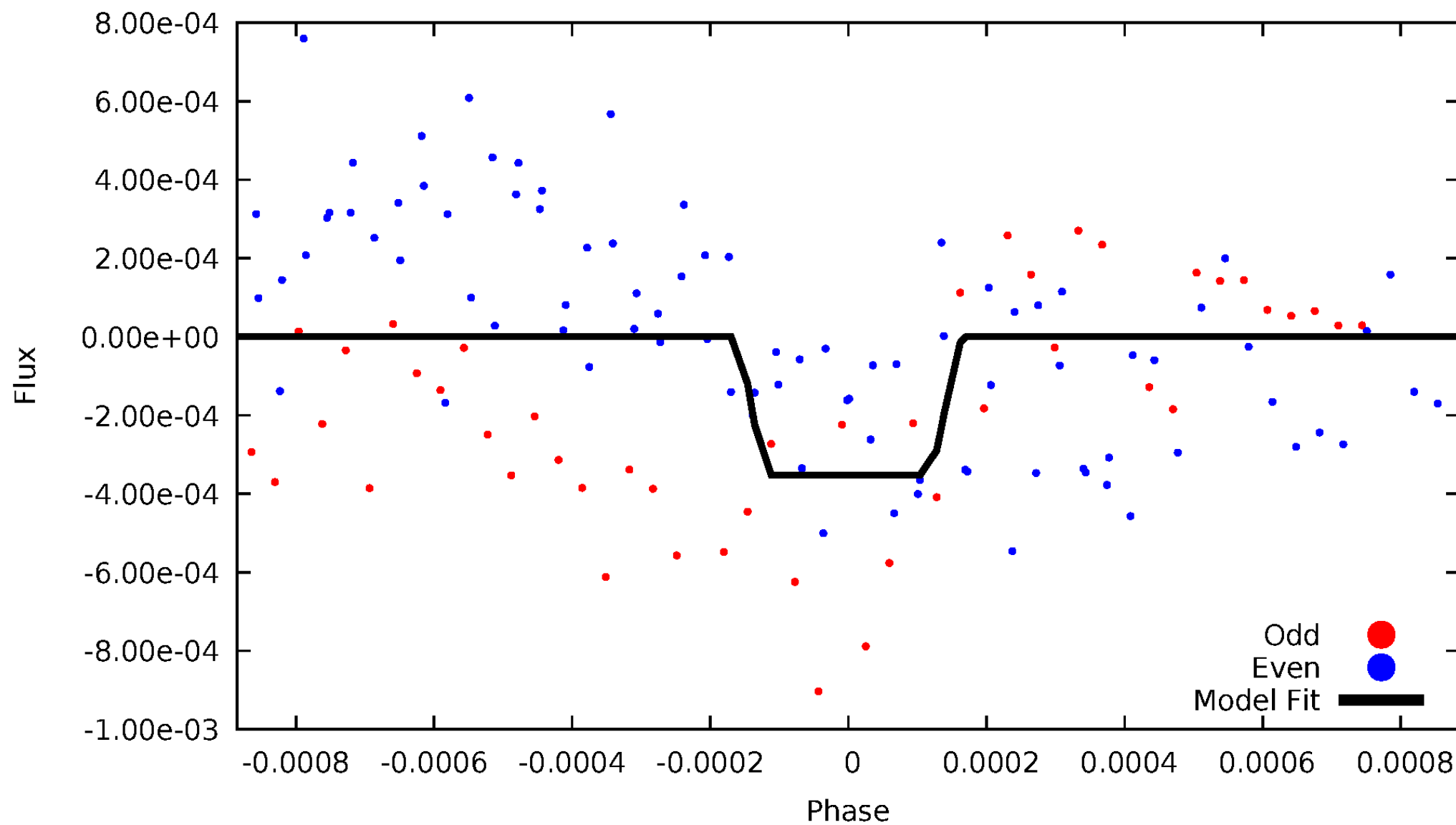
DV Odd/Even

TCE 005818165-02



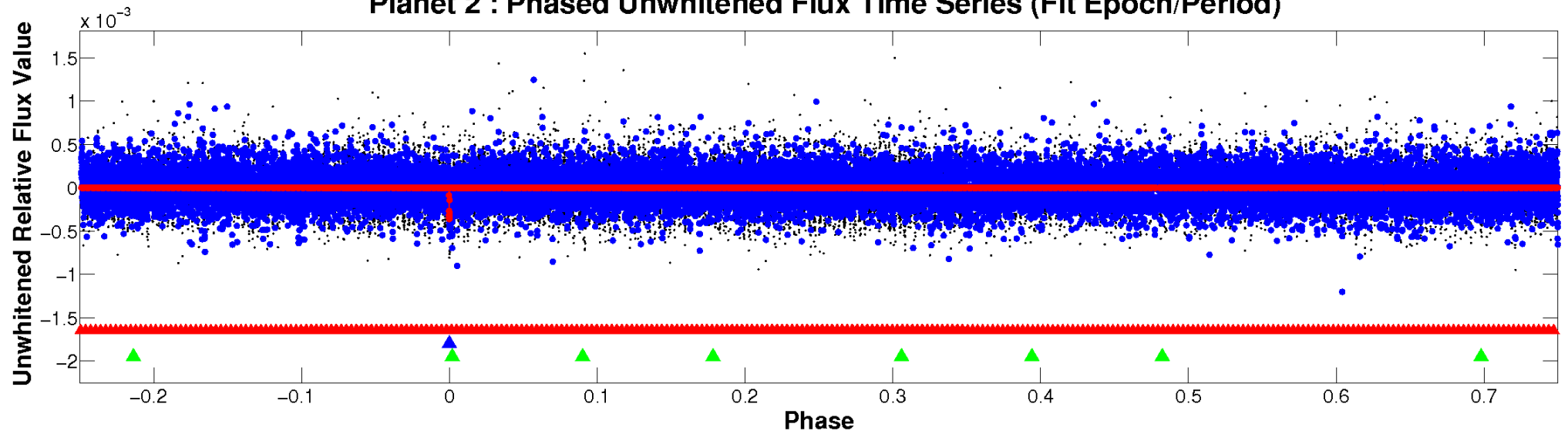
ALT Odd/Even

TCE 005818165-02

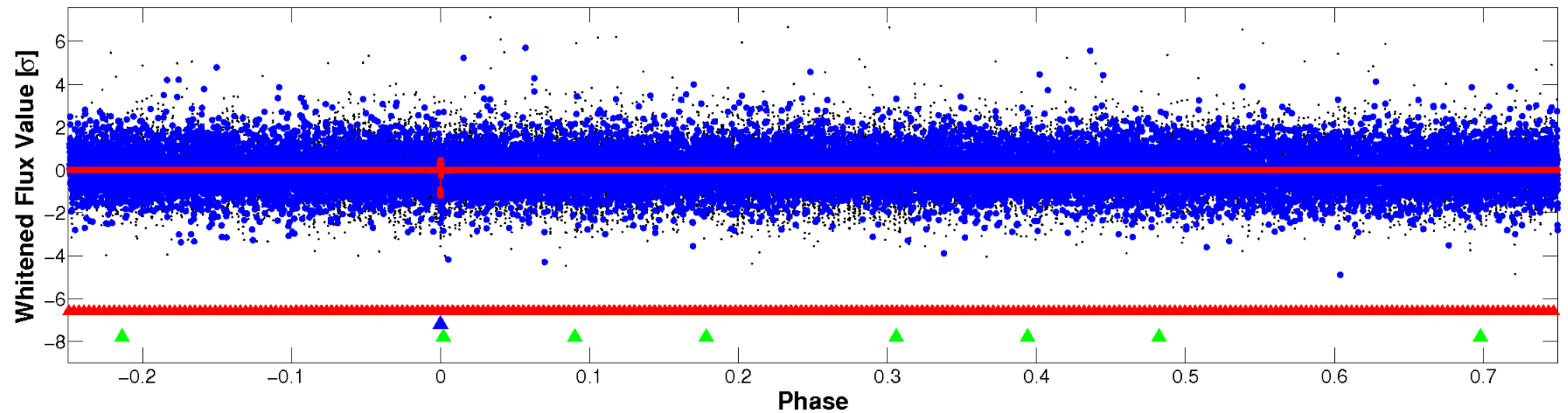


Non-Whitened Vs. Whitened Light Curve

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

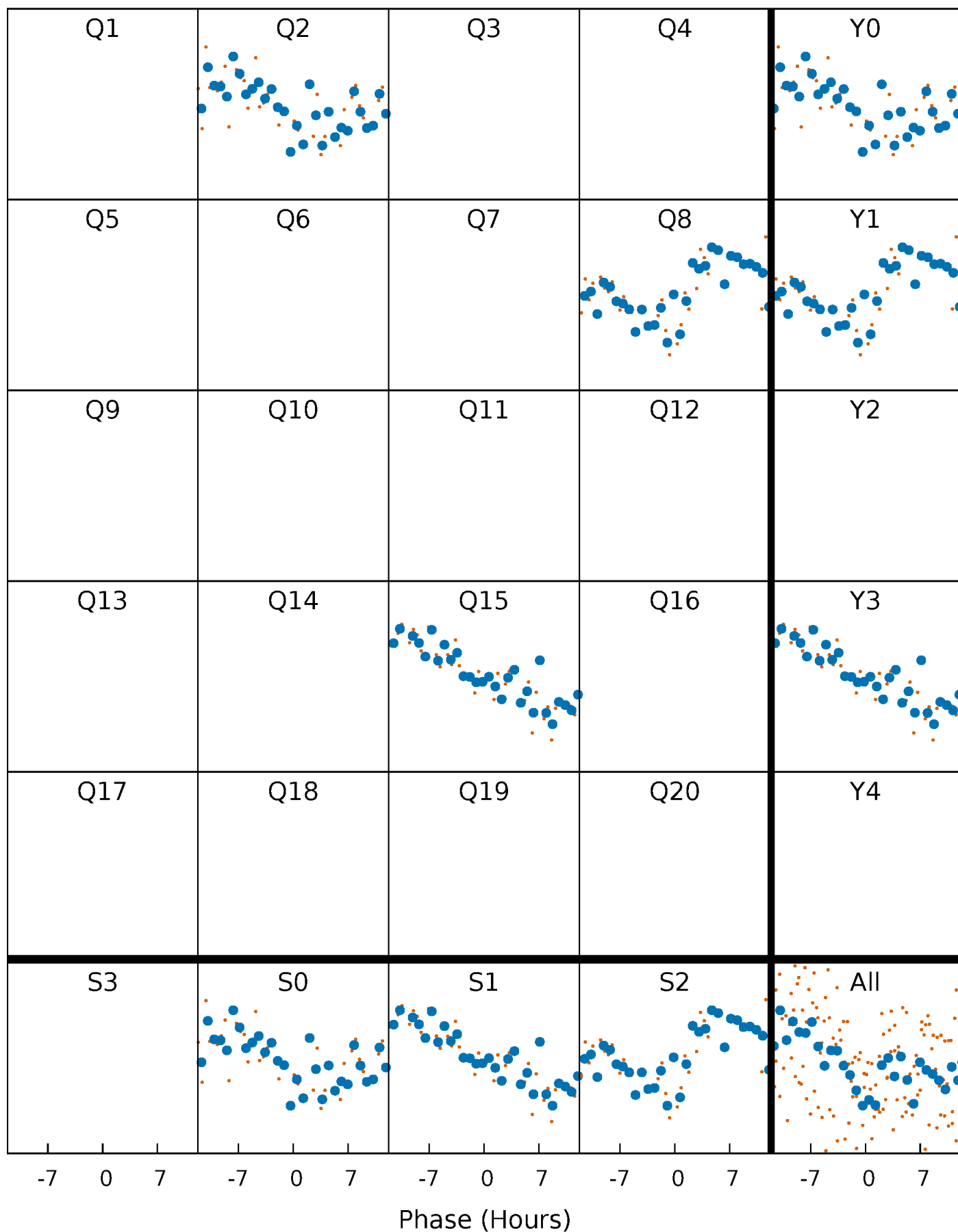


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



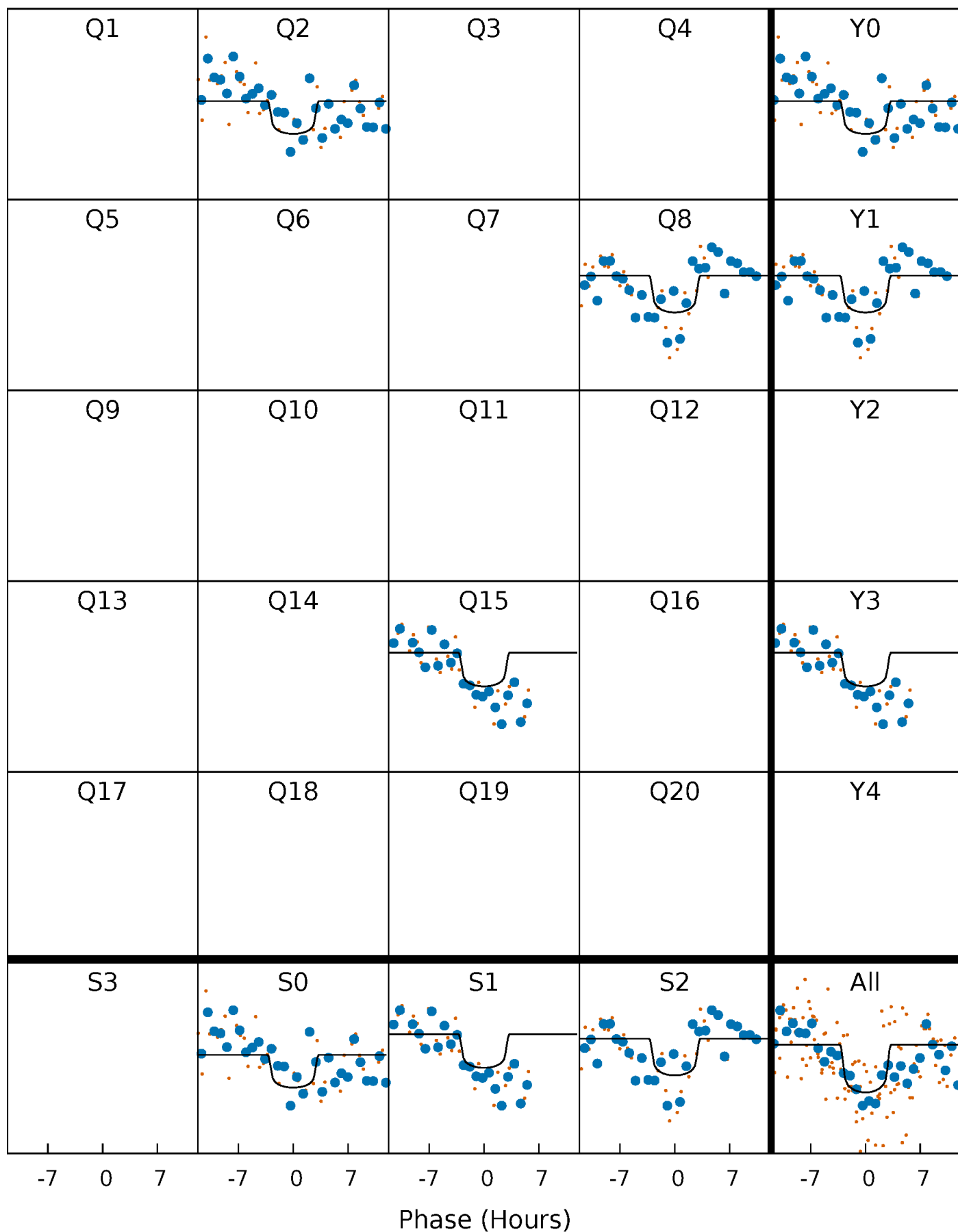
PDC Quarter-Phased Transit Curves

TCE 005818165-02 P=597.157980 Days $T_0=189.397624$ (BKJD)



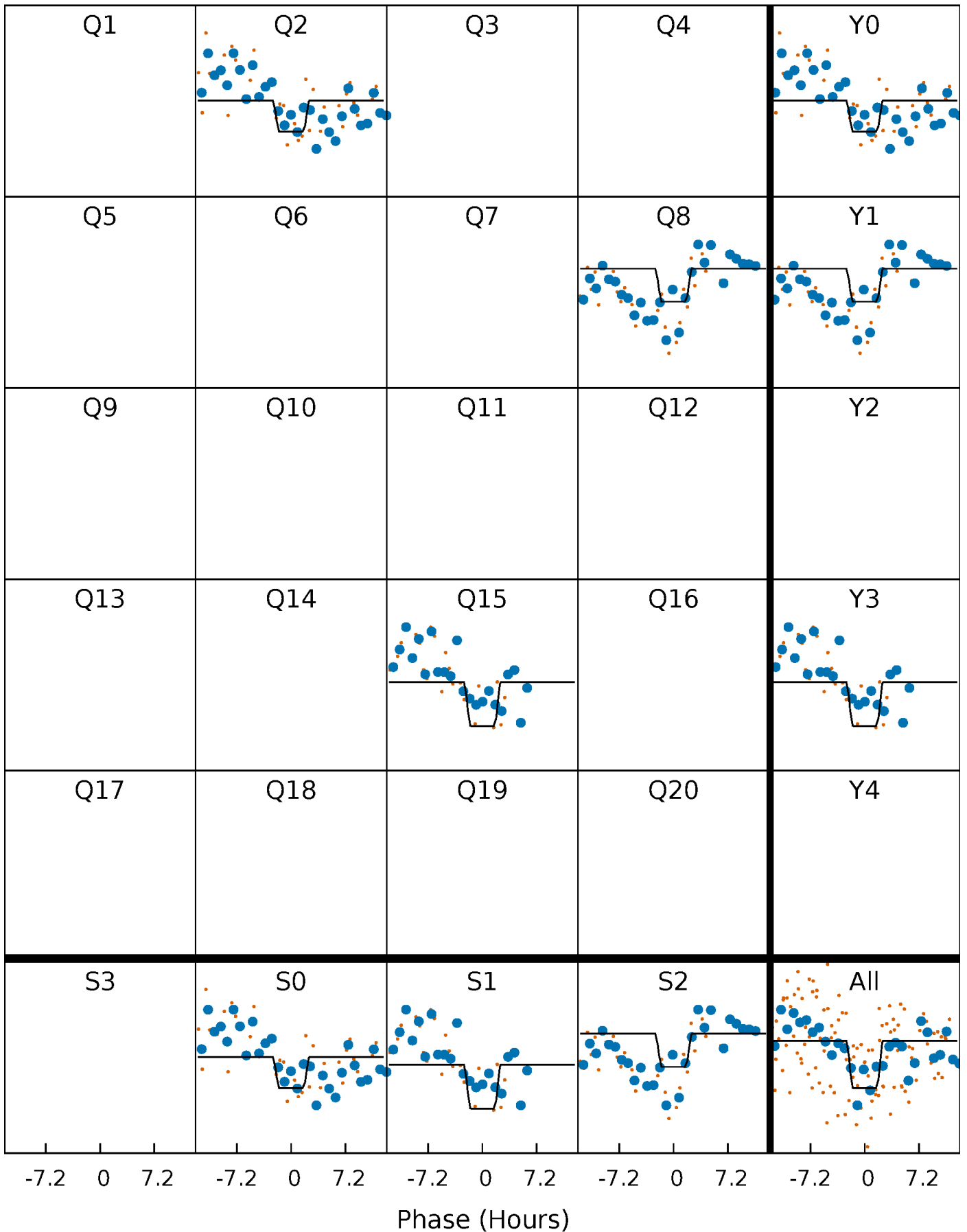
DV Quarter-Phased Transit Curves

TCE 005818165-02 P=597.157980 Days $T_0=189.397624$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

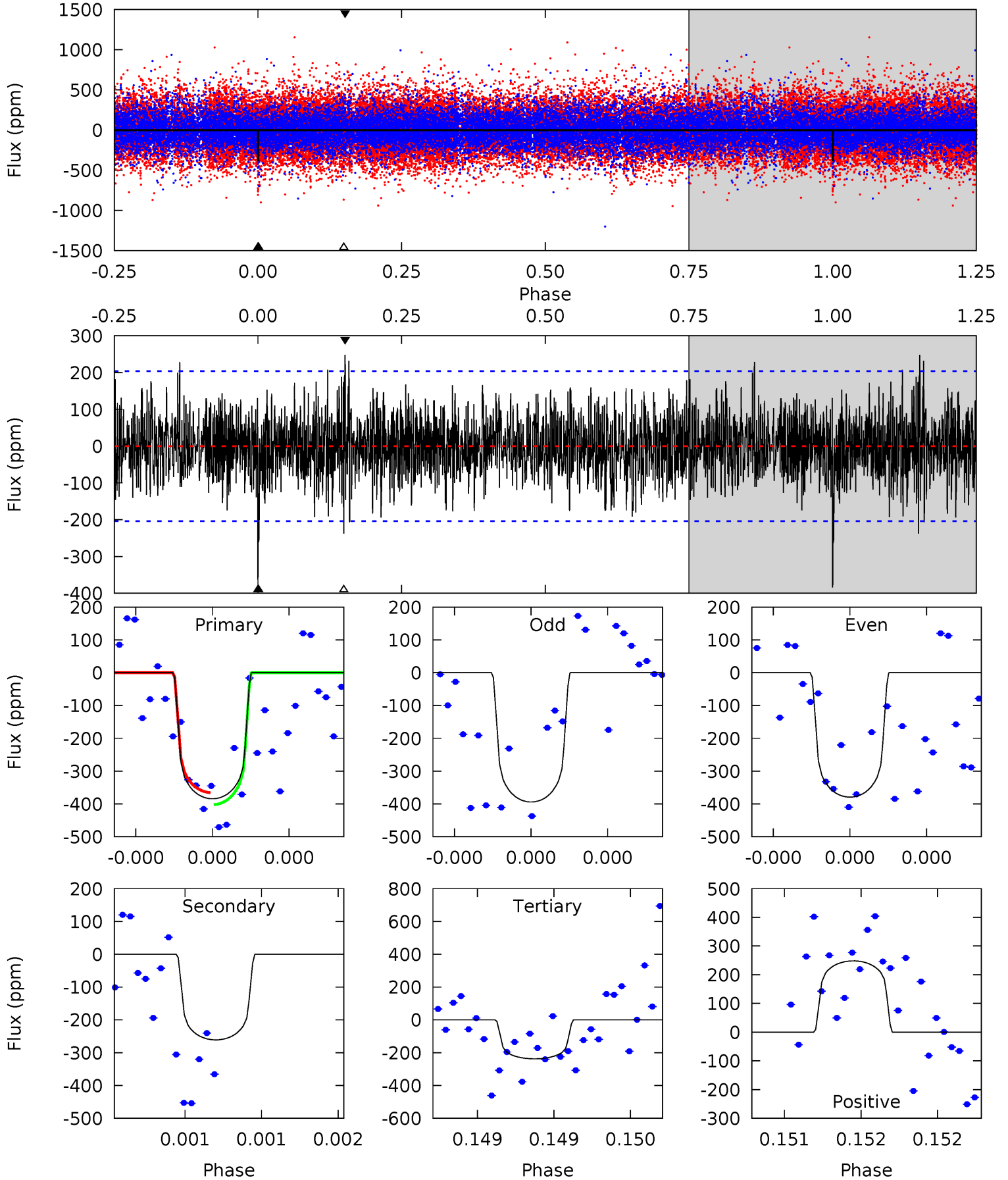
TCE 005818165-02 P=597.150357 Days $T_0=189.403794$ (BKJD)



DV Model-Shift Uniqueness Test

005818165-02, P = 597.157980 Days, E = 189.397624 Days

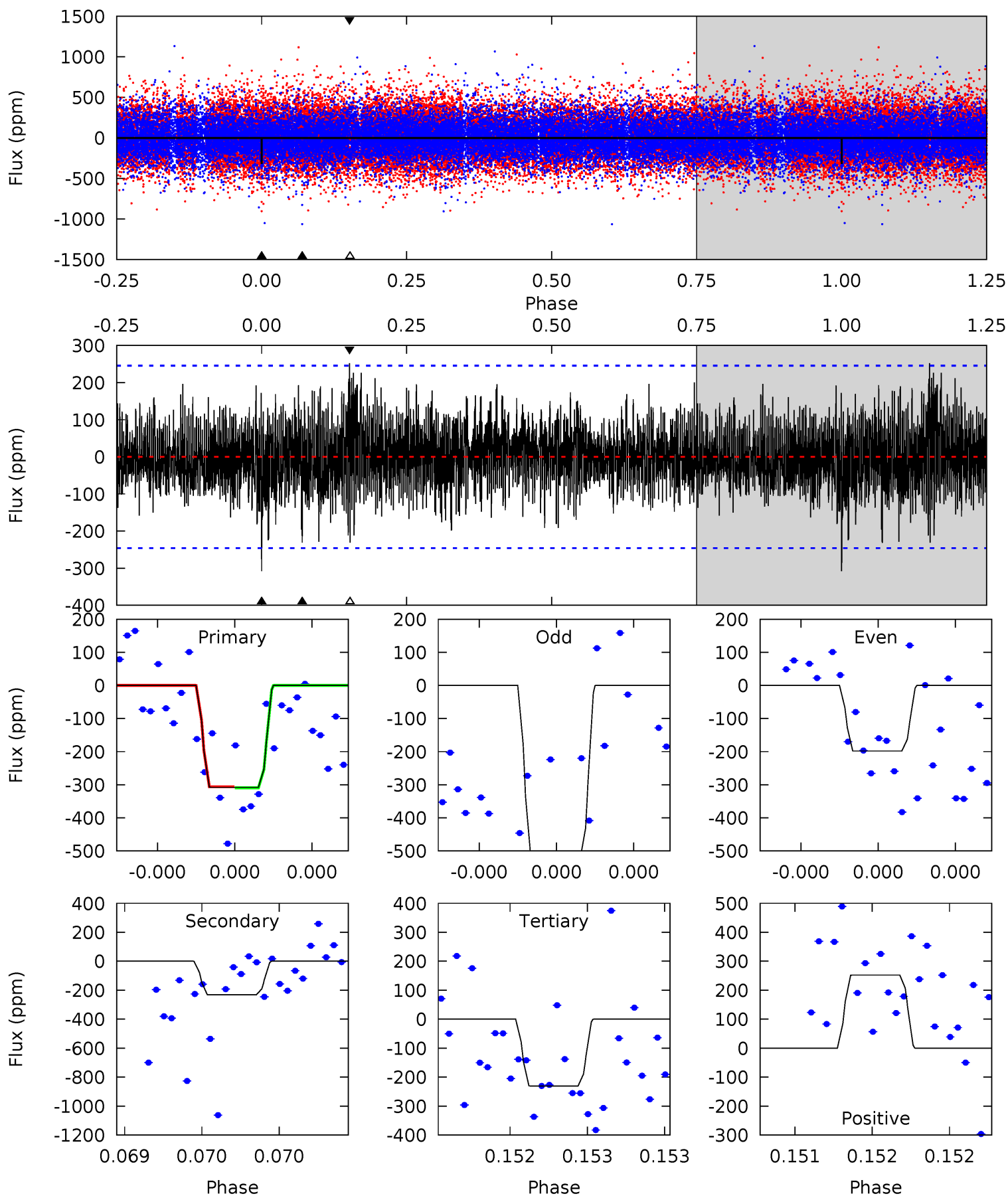
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	7.16	6.51	6.81	5.59	3.51	1.72	4.02	3.73	0.64	0.35	0.19	0.97	0.39	0.50



Alt Model-Shift Uniqueness Test

005818165-02, P = 597.150357 Days, E = 189.403794 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.06	5.31	5.29	5.79	5.64	3.58	1.49	1.77	1.27	0.02	-0.48	3.57	1.30	0.45	0.04



Stellar Parameters For KIC 005818165

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6093^{+182}_{-182}	$4.408^{+0.124}_{-0.186}$	$-0.600^{+0.300}_{-0.300}$	$0.962^{+0.239}_{-0.140}$	$0.863^{+0.108}_{-0.081}$	$1.366^{+0.752}_{-0.655}$
	+3%/-3%	+3%/-4%	+50%/-50%	+25%/-15%	+13%/-9%	+55%/-48%
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 005818165-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-261 ± 36	$2.16^{+1.26}_{-1.13}$	323^{+22}_{-18}	5520^{+2542}_{-949}	$53712^{+181082}_{-32379}$
Alt.	-231 ± 44	$2.03^{+1.23}_{-1.06}$	323^{+21}_{-18}	5500^{+2636}_{-1012}	$53276^{+205403}_{-33348}$

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 $A_{obs} \gg 1.0$

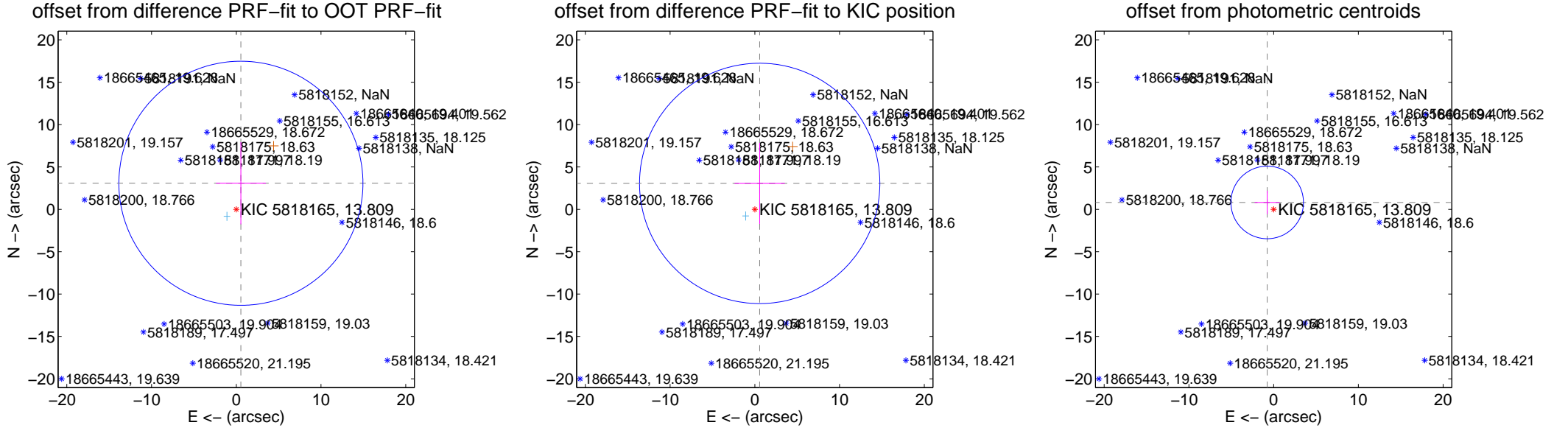
DV Centroid Data

Supplemental centroid analysis for 005818165-02. Kepler magnitude: 13.81. Transit SNR 6.59

There are 1 quarters with good PRF difference image offsets

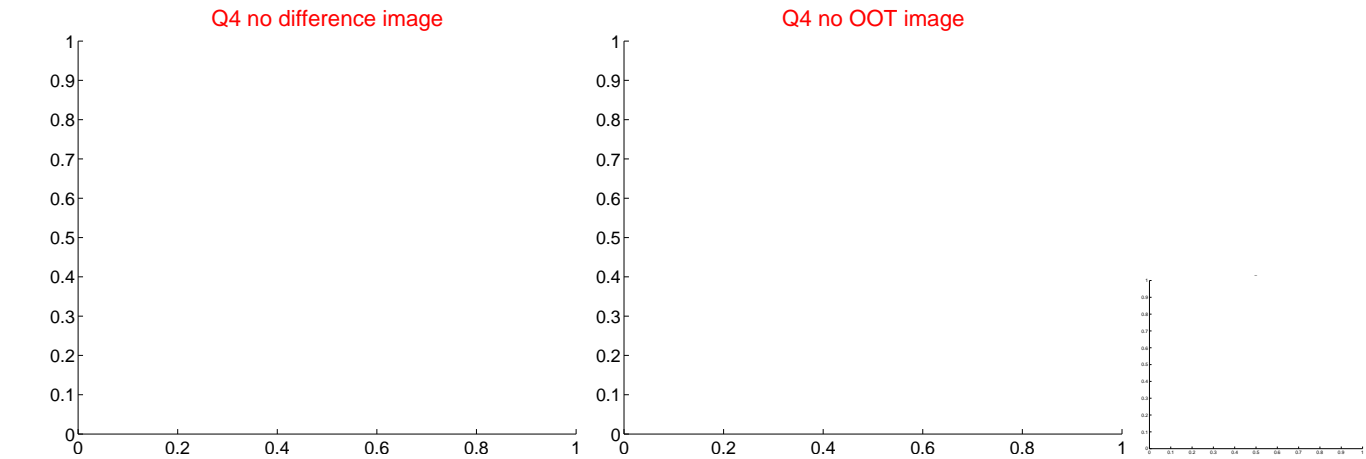
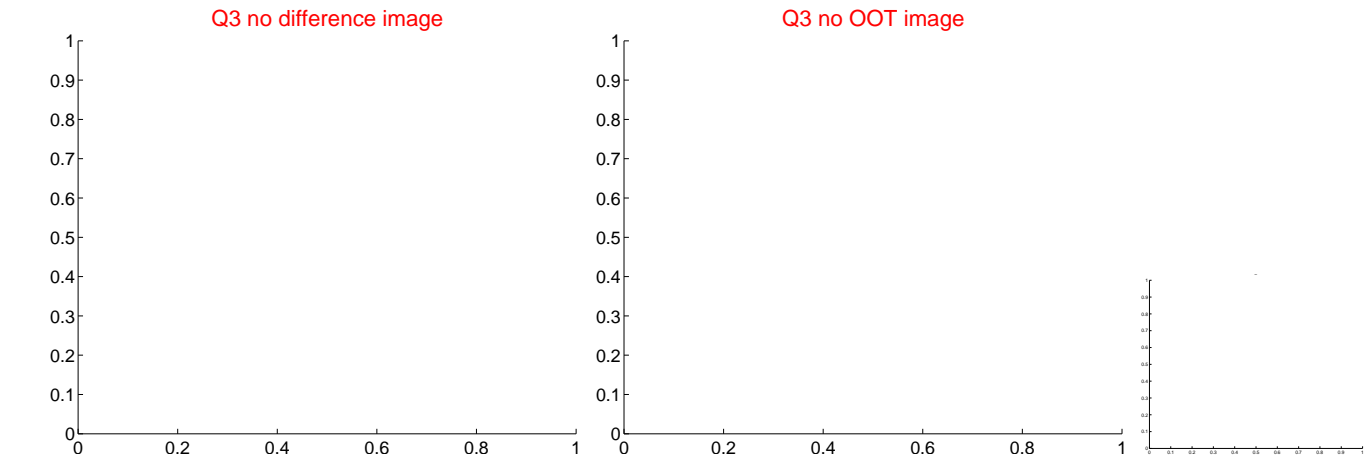
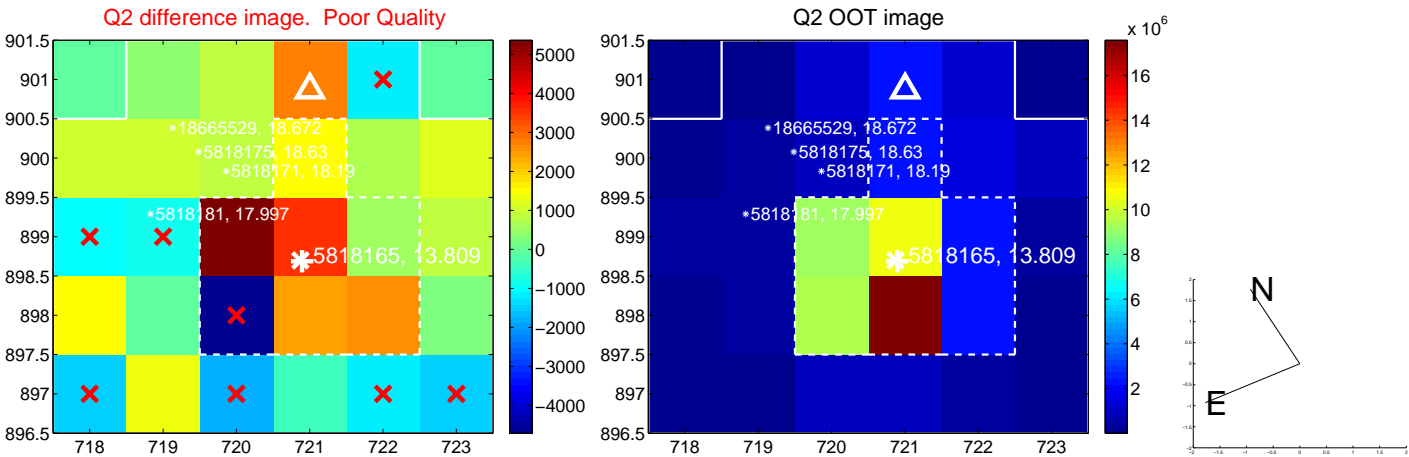
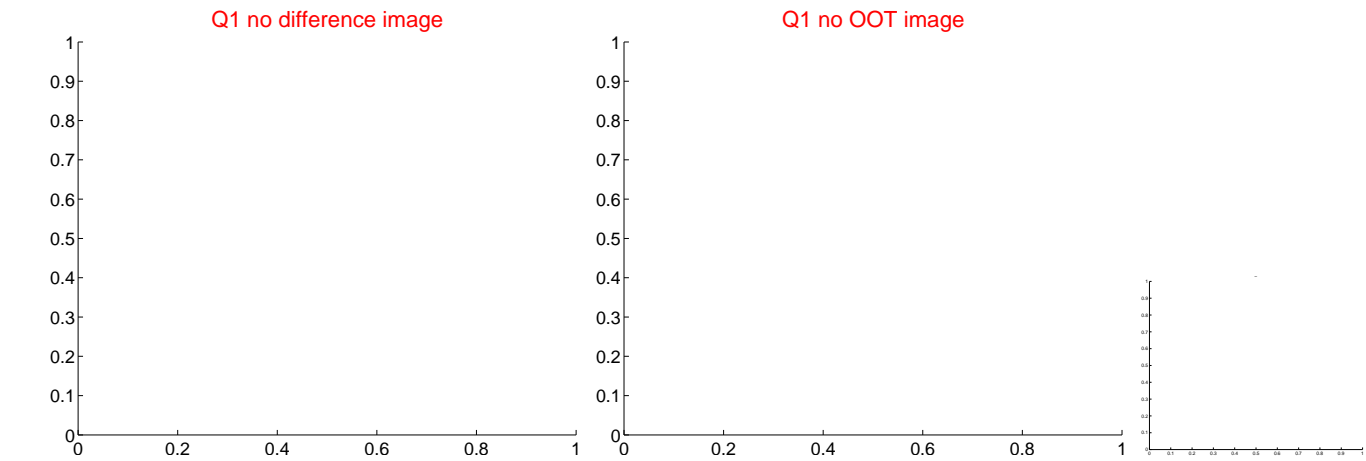
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.124 ± 4.801	0.65	-0.546 ± 2.941	3.076 ± 4.848
PRF-fit source offset from KIC position	3.113 ± 4.727	0.66	-0.574 ± 2.964	3.060 ± 4.777
photometric centroid source offset	1.11 ± 1.43	0.78	0.76 ± 1.48	0.81 ± 1.38

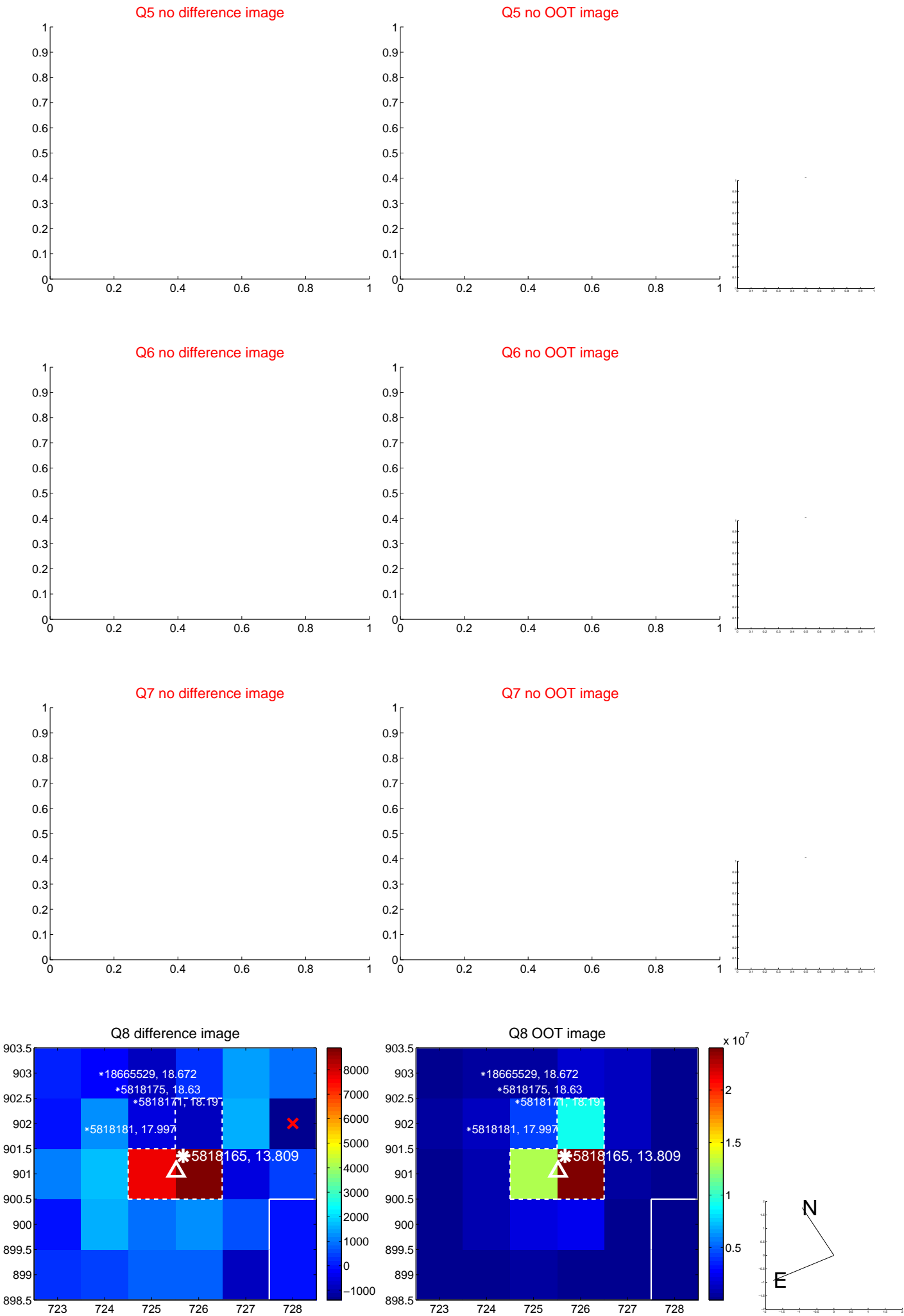


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

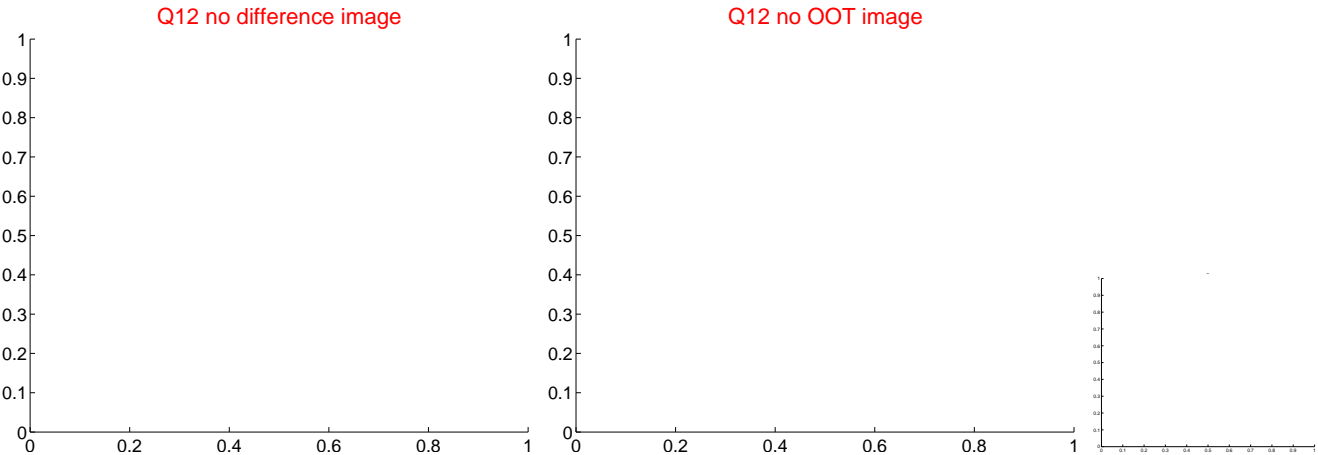
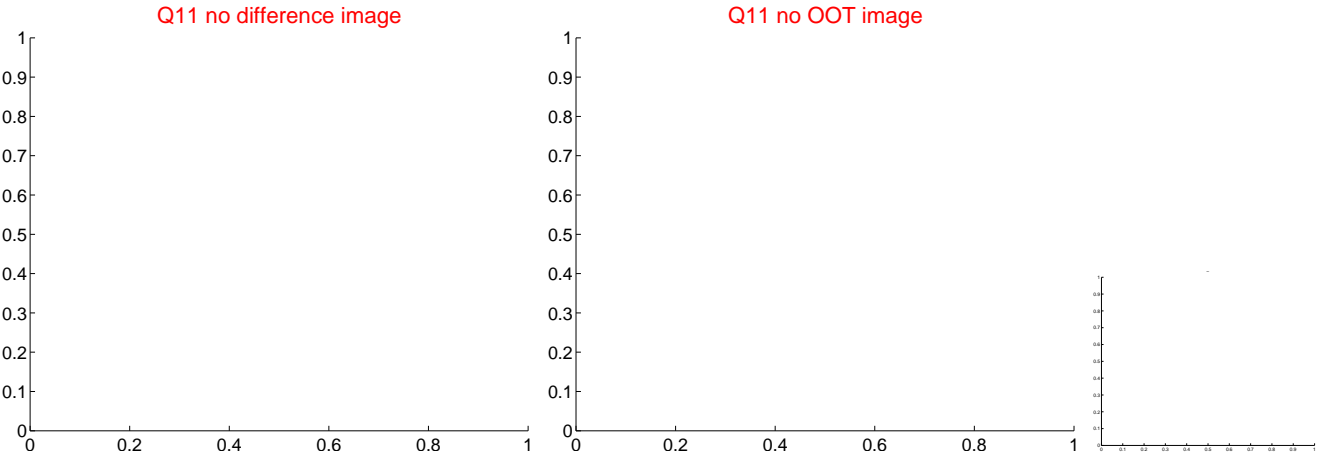
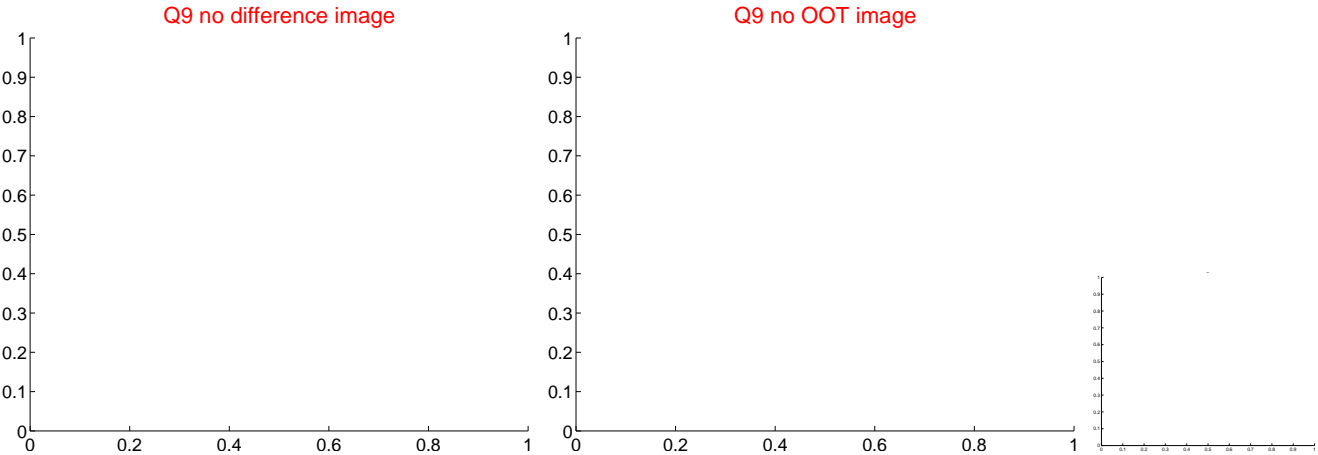
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



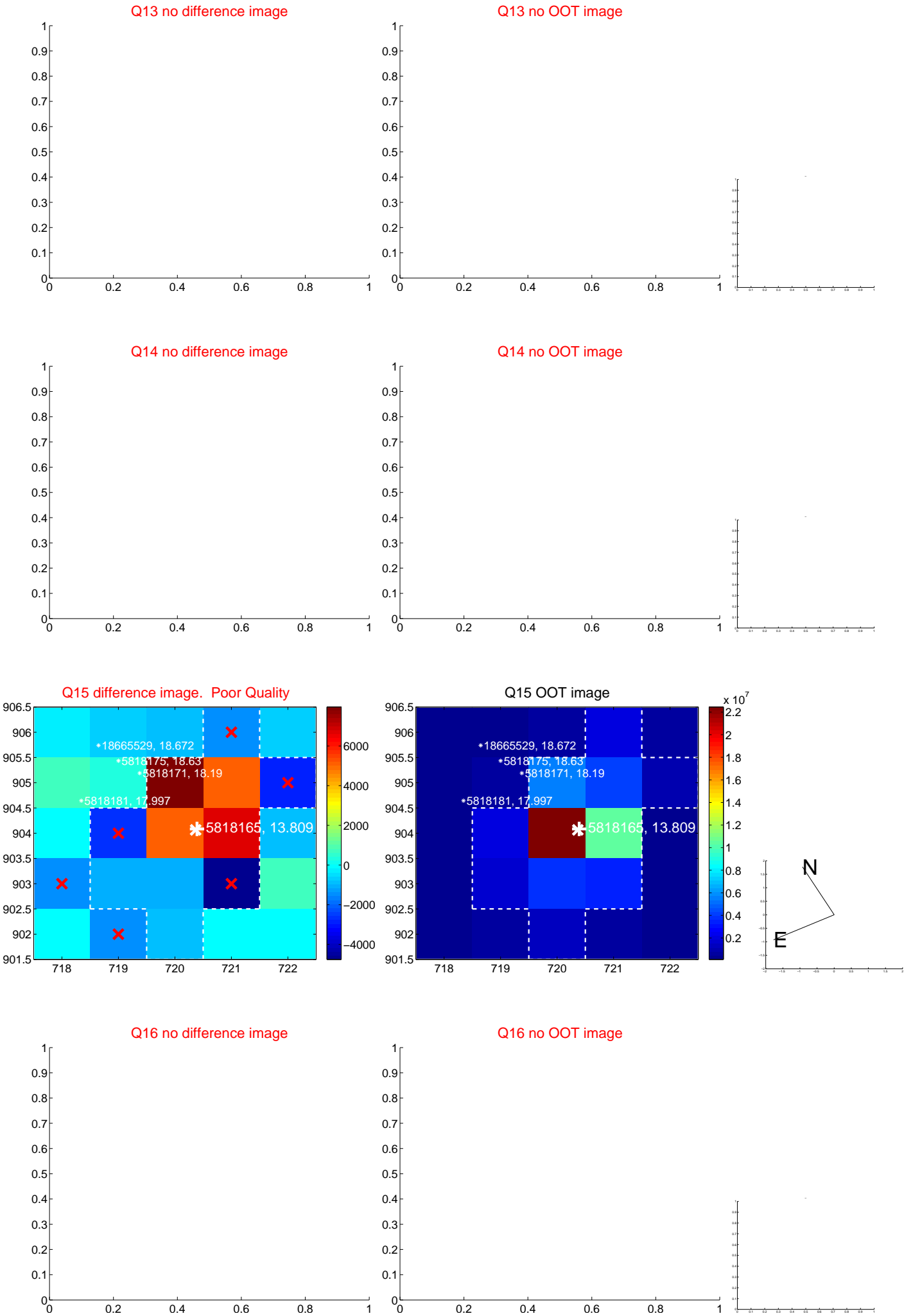
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



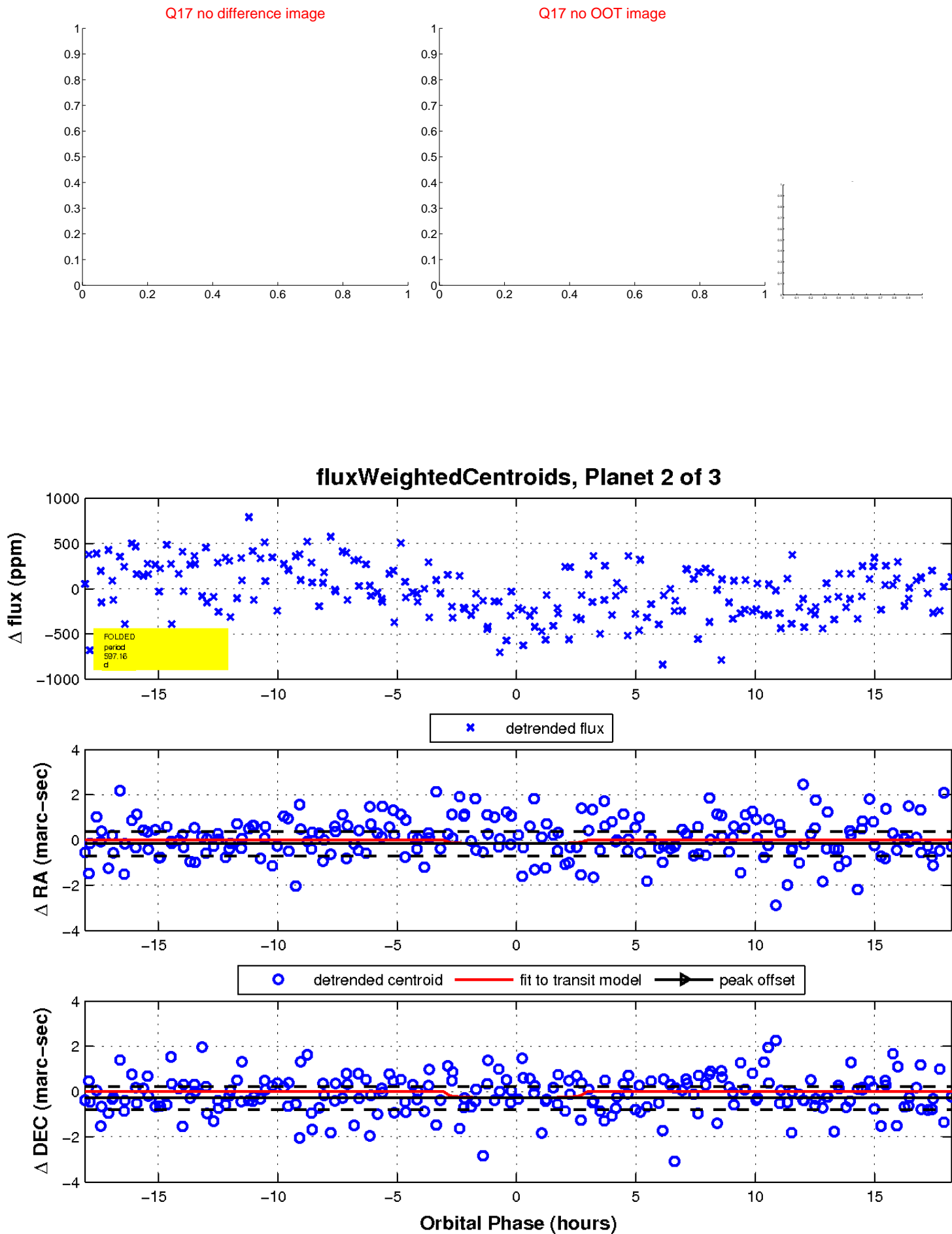
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

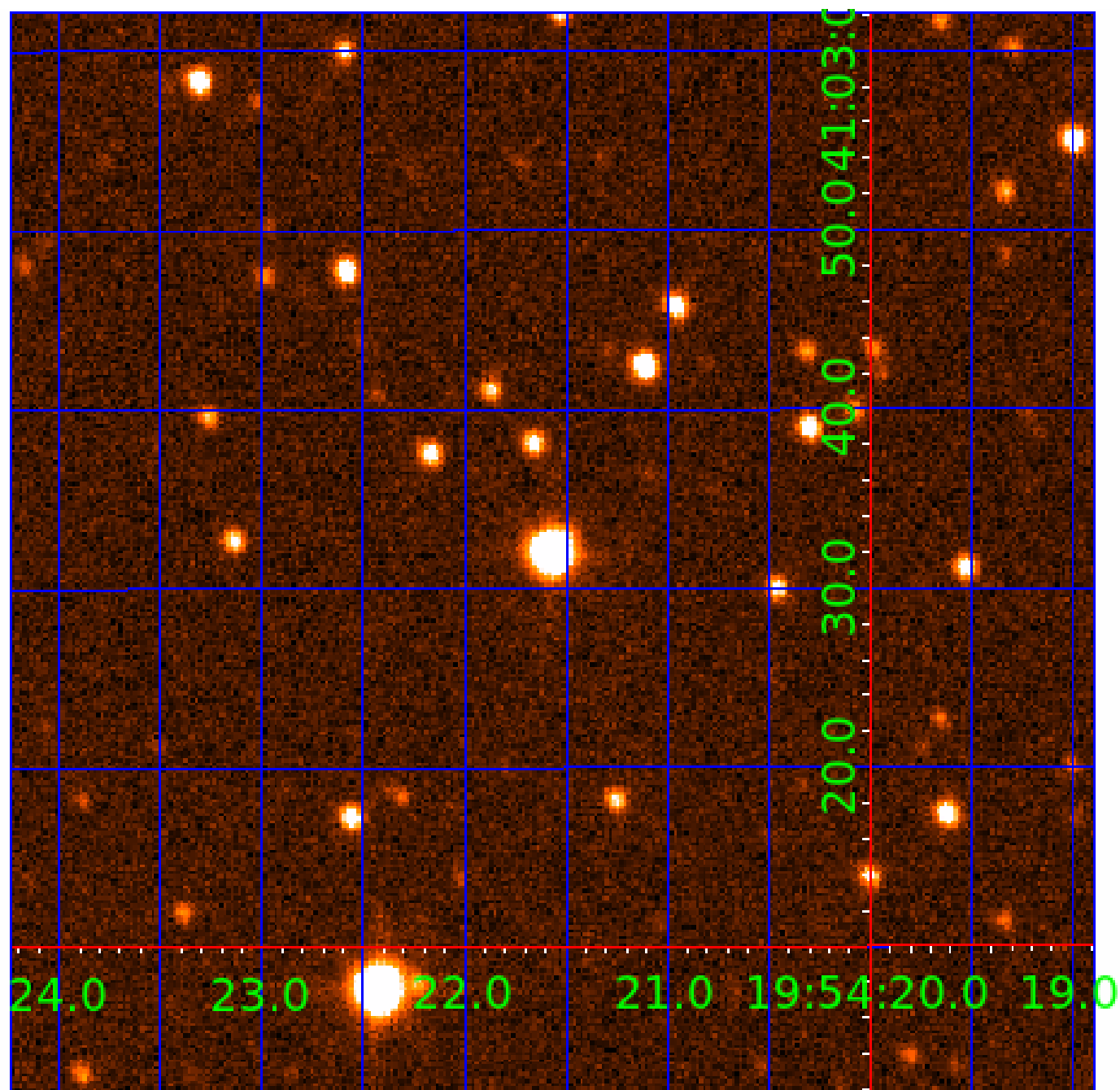


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005818165

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})
005818165-01	OBS	No	2.023562	131.790233	26.6	6.531	7.6	6.7	0.96	6093	0.60	1284.83
005818165-02	OBS	No	597.157980	189.397624	360.6	6.093	8.6	6.6	0.96	6093	2.01	0.65
005818165-03	OBS	No	181.493660	295.934265	306.4	11.243	8.3	7.0	0.96	6093	1.83	3.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005818165-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005818165-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005818165-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

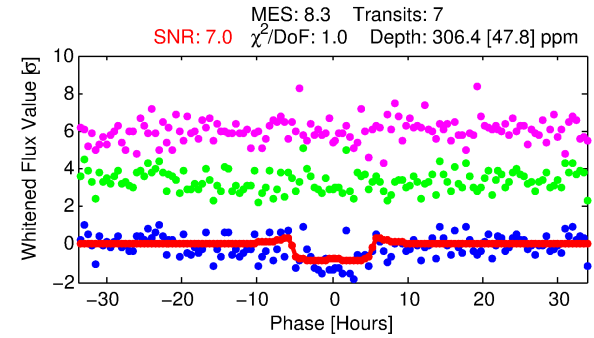
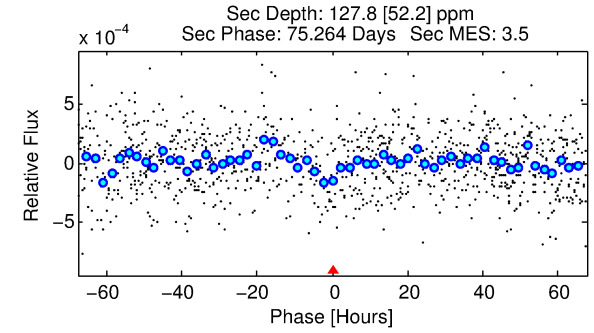
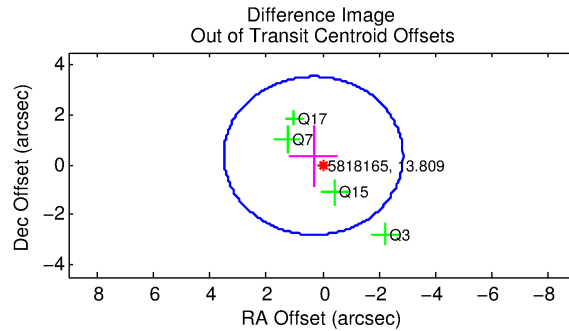
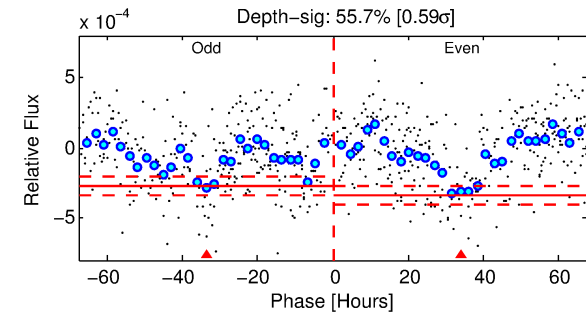
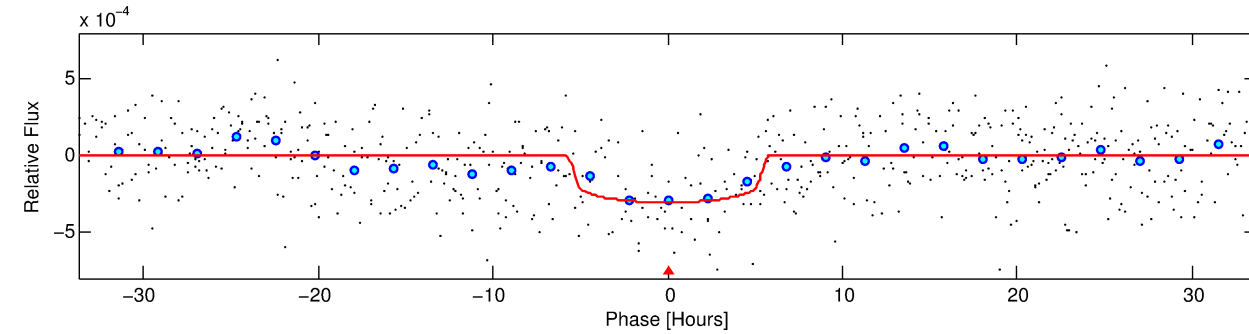
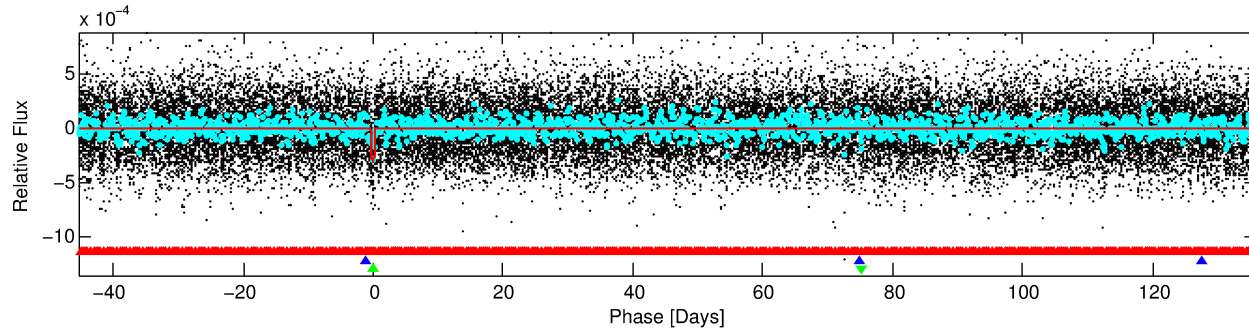
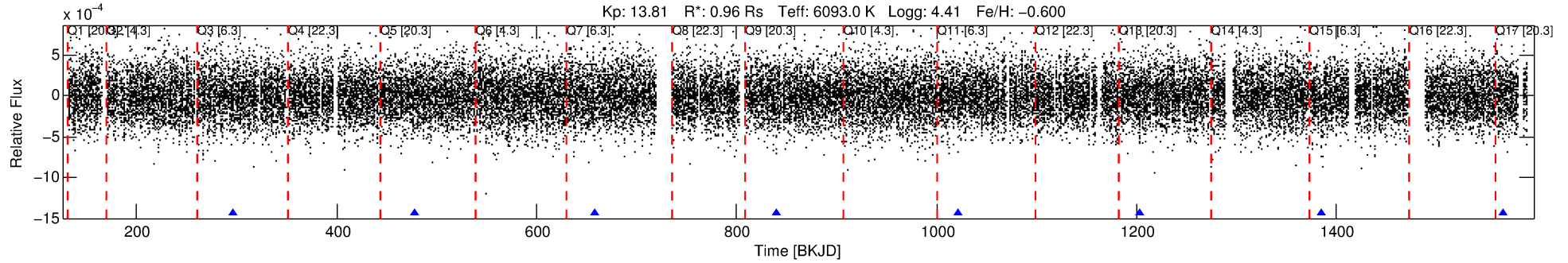
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005818165-03

No Significant Match Found

DV One-Page Summary

KIC: 5818165 Candidate: 3 of 3 Period: 181.494 d



DV Fit Results:

Period = 181.49366 [0.00499] d
Epoch = 295.9343 [0.0180] BKJD
Rp/R* = 0.0174 [0.0074]
a/R* = 84.77 [185.44]
b = 0.75 [1.29]
Seff = 3.20 [1.12]
Teq = 341 [30] K
Rp = 1.83 [0.90] Re
a = 0.5976 [0.1307] AU
Ag = 7516.24 [7495.25] [1.00 σ]
Teffp = 4910 [1164] K [3.92 σ]

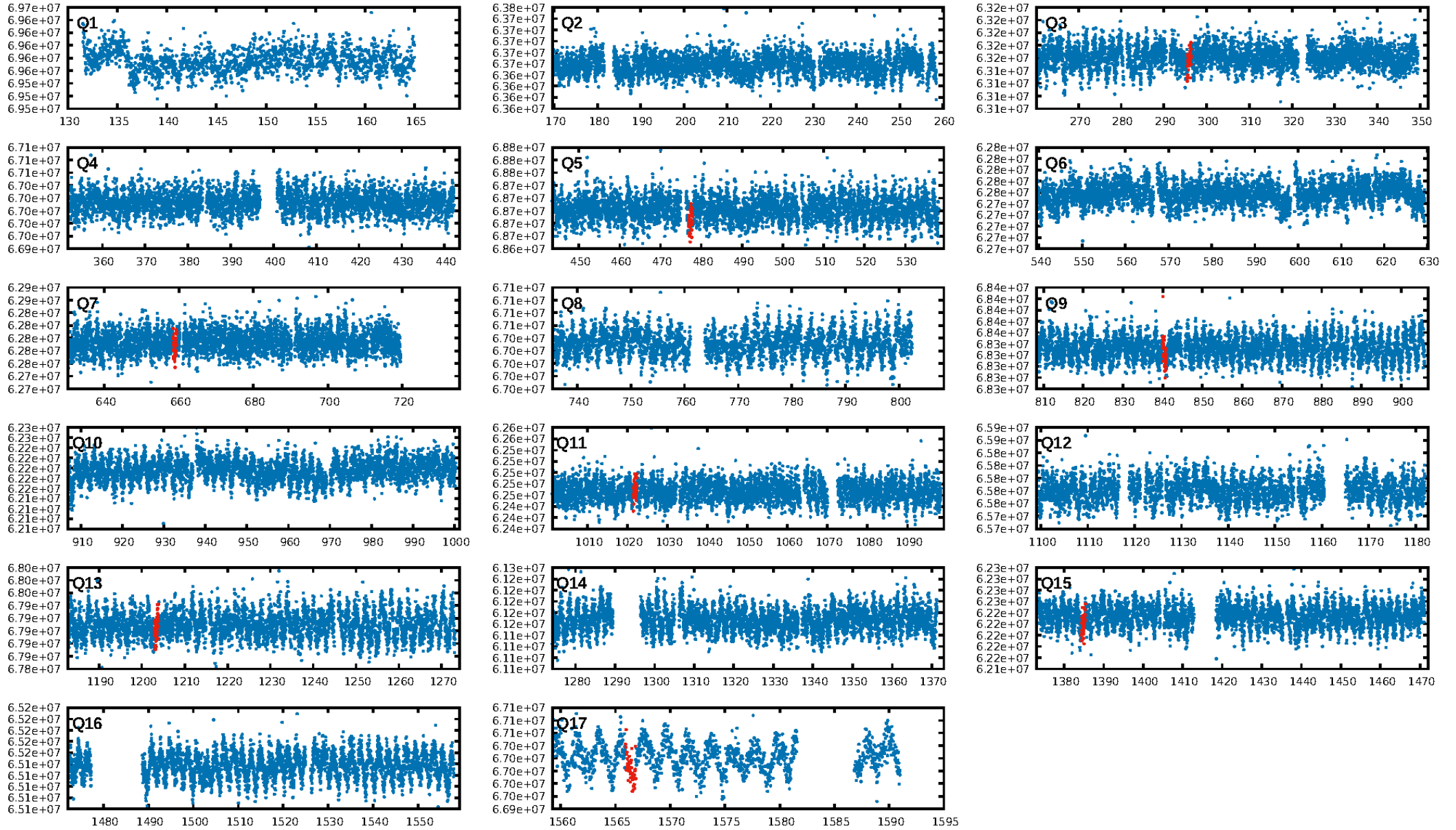
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [331.27 σ]
LongPeriod-sig: 100.0% [780.11 σ]
ModelChiSquare2-sig: 7.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.25e-11
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.9097
Centroid-sig: 4.7%
Centroid-so: 1.418 arcsec [1.58 σ]
OotOffset-rm: 0.482 arcsec [0.46 σ]
KicOffset-rm: 0.496 arcsec [0.38 σ]
OotOffset-st: 0/3/0/1 [4]
KicOffset-st: 0/3/0/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.17 [1/6]

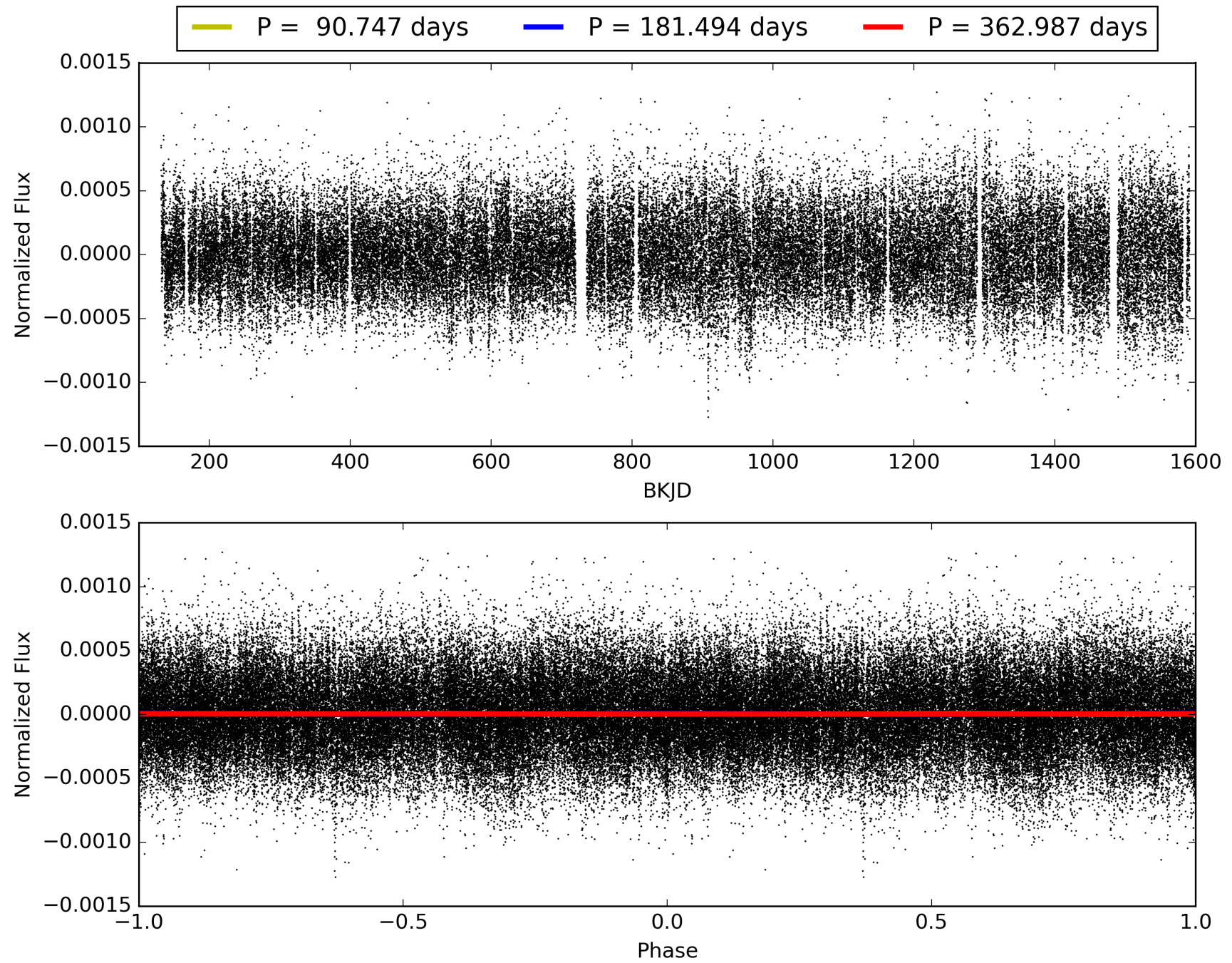
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:42:35 Z

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

TCE 005818165-03, PDC Light Curves

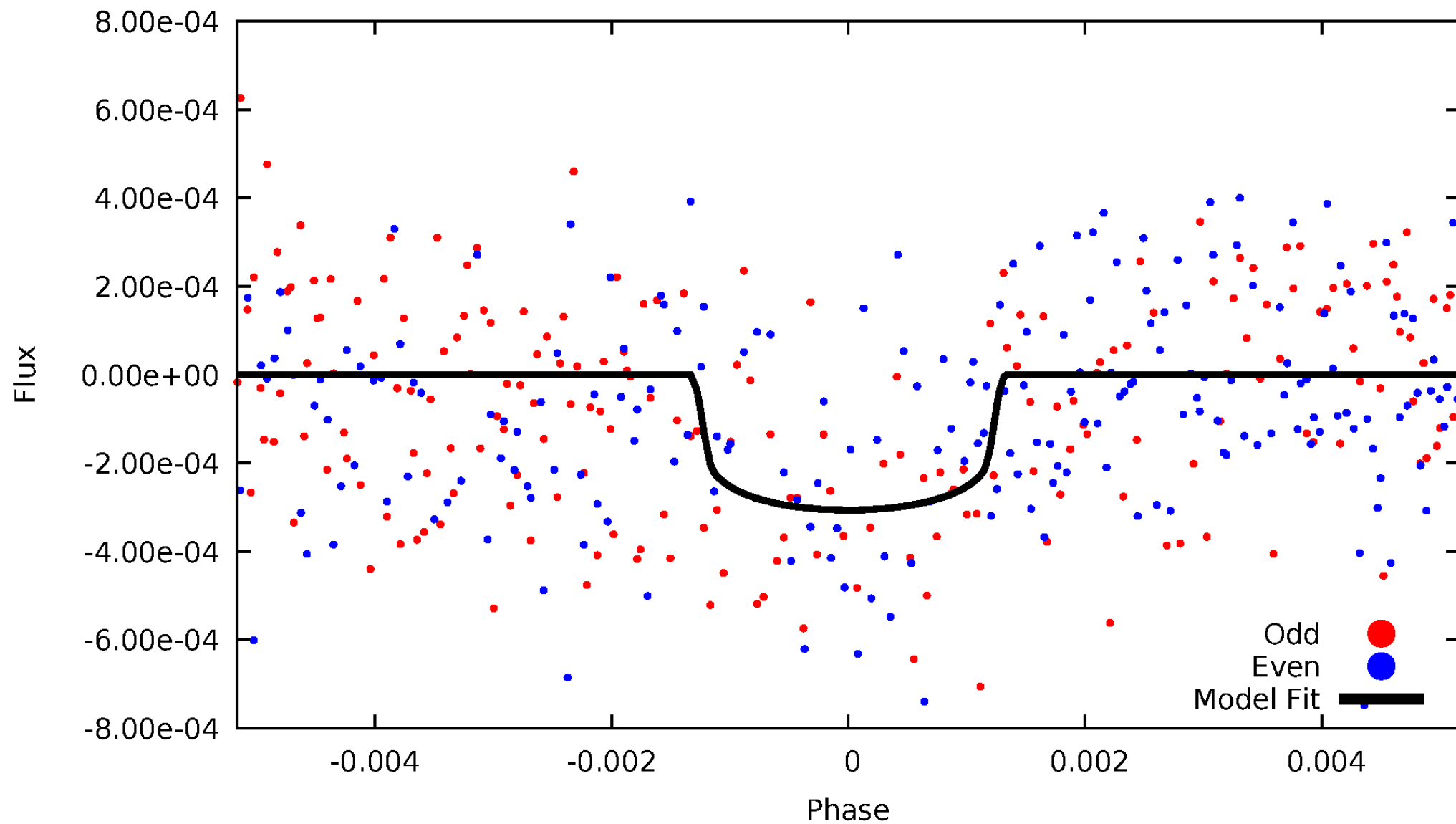


TCE 005818165-03



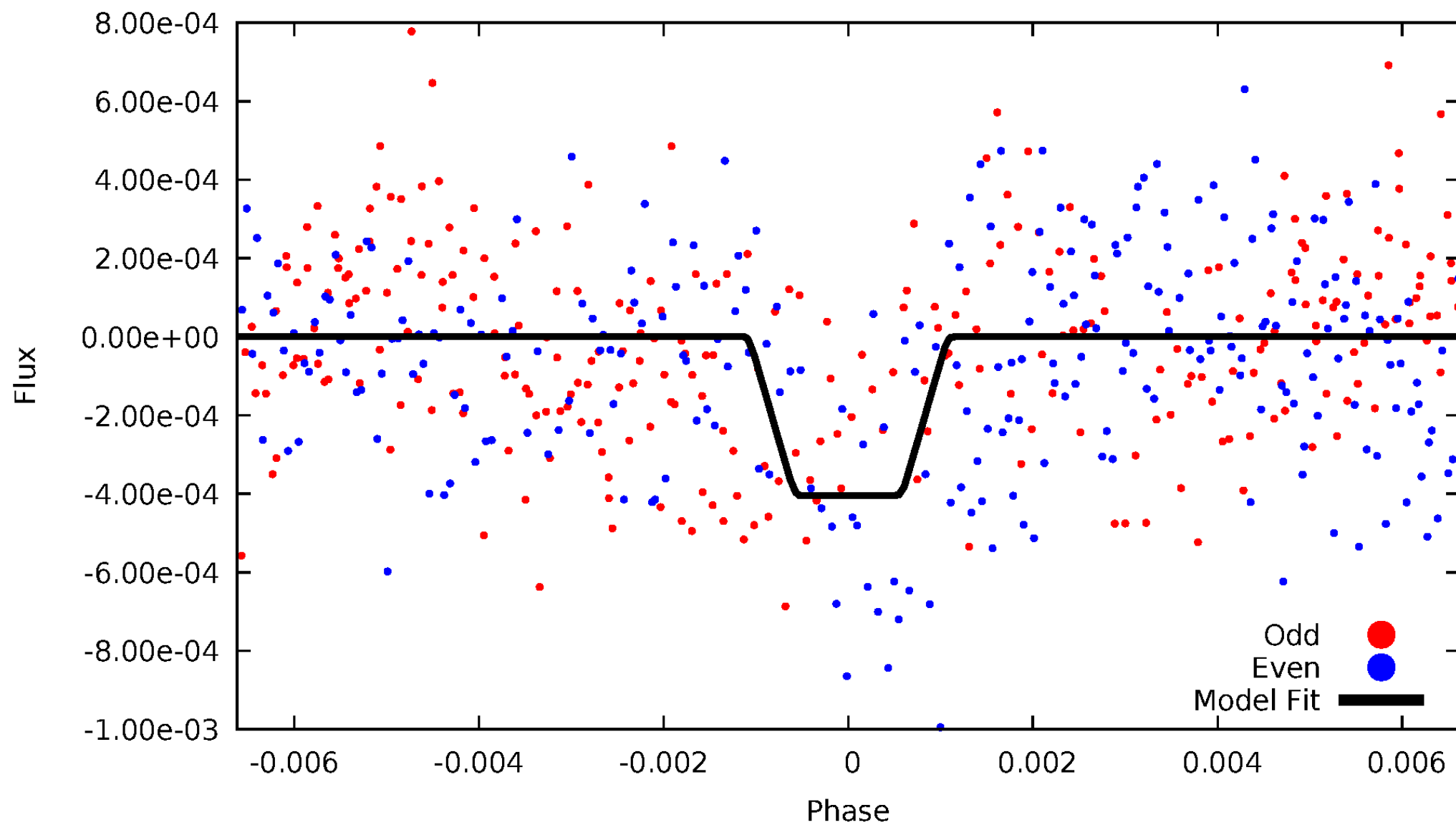
DV Odd/Even

TCE 005818165-03



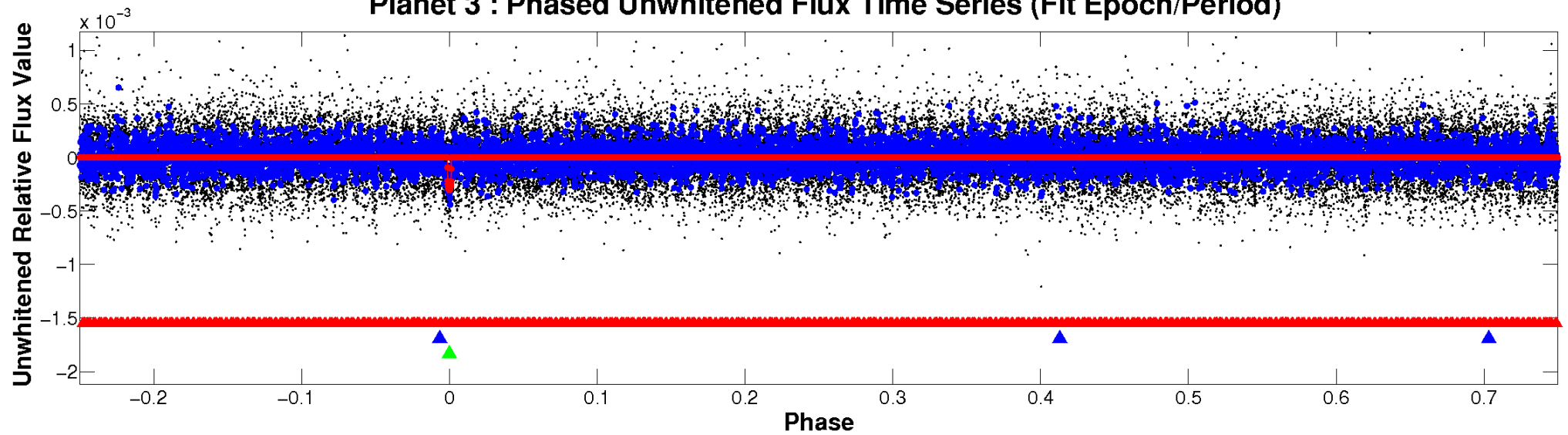
ALT Odd/Even

TCE 005818165-03

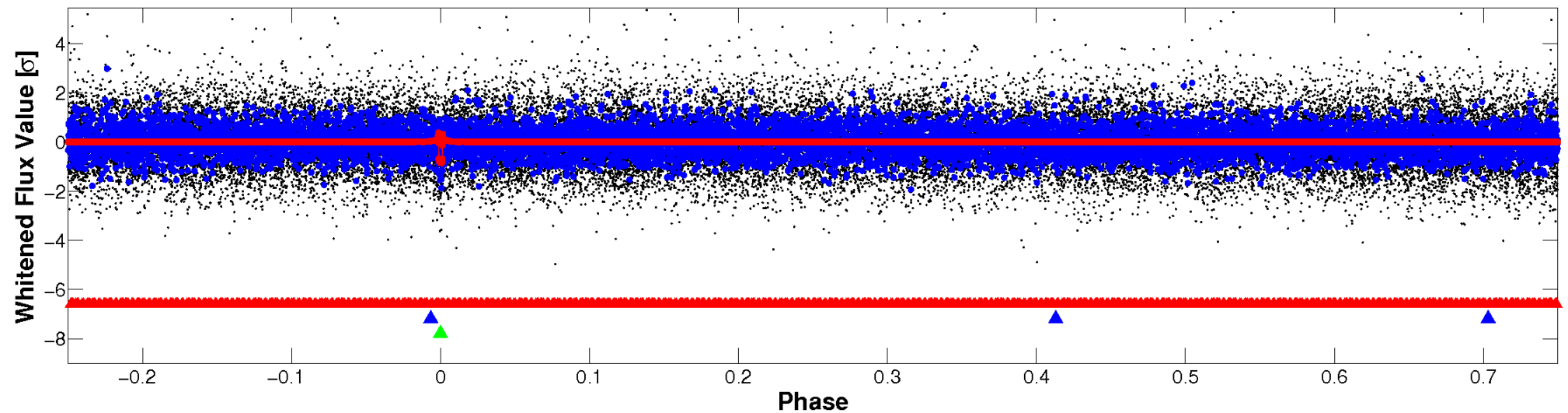


Non-Whitened Vs. Whitened Light Curve

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

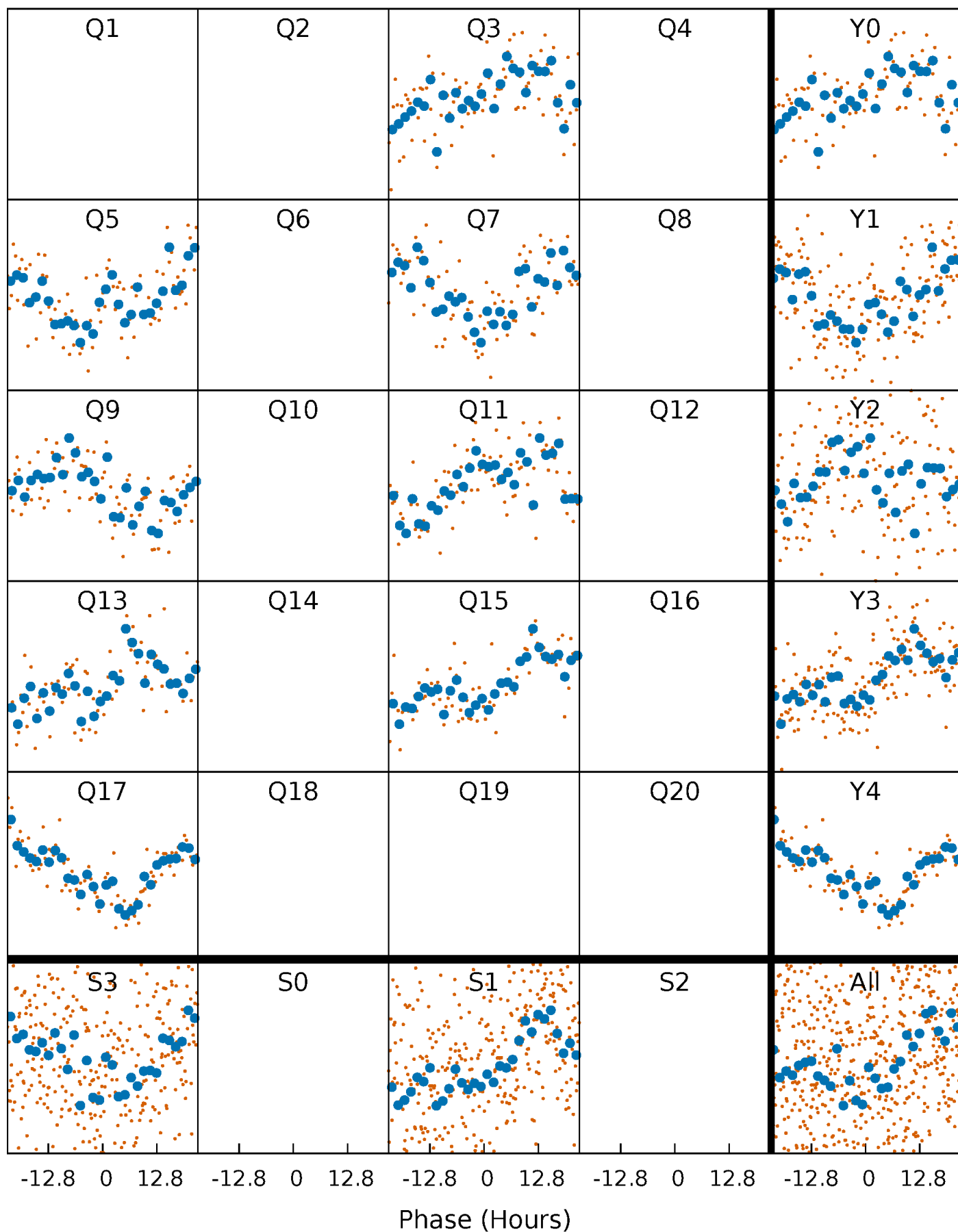


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



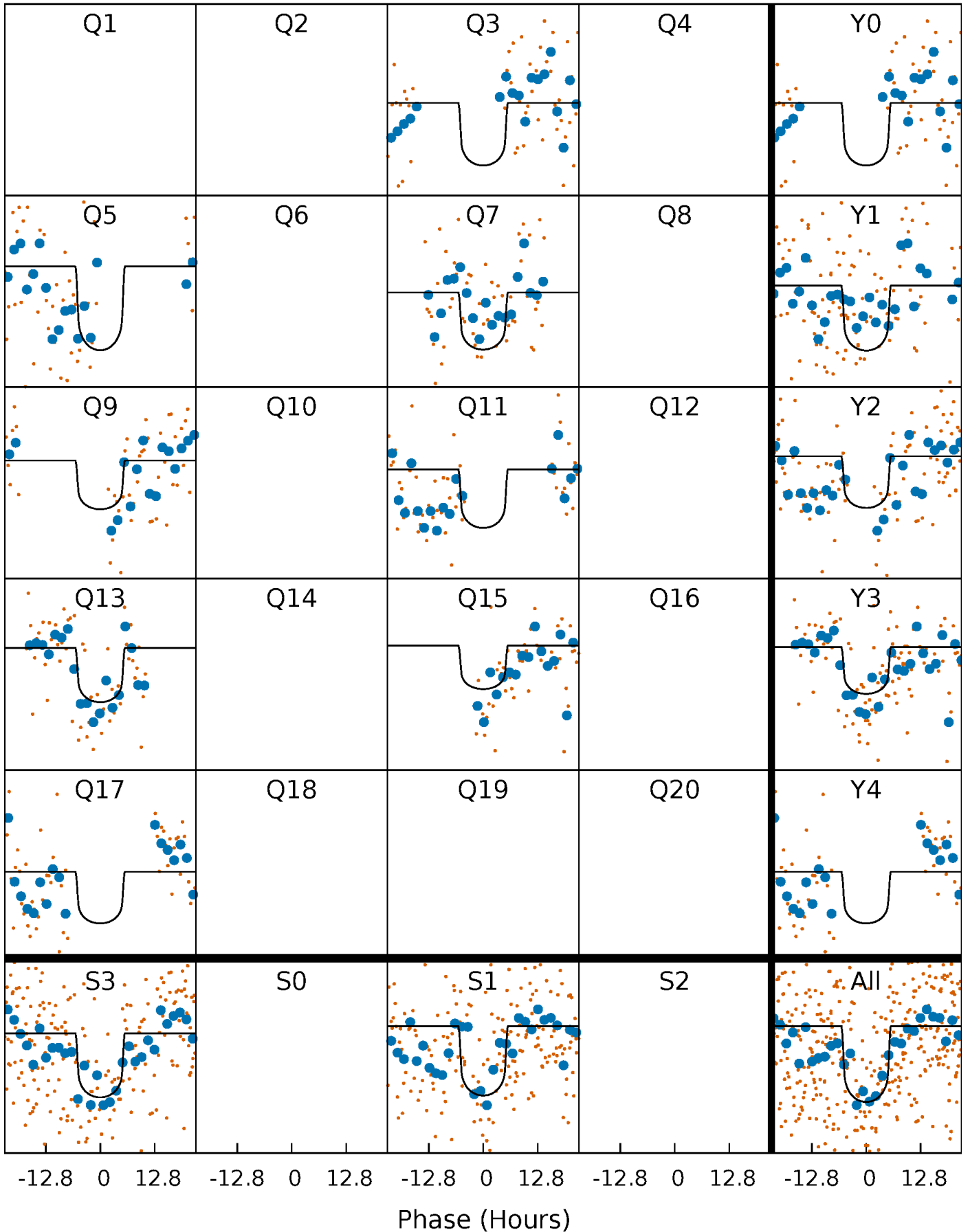
PDC Quarter-Phased Transit Curves

TCE 005818165-03 P=181.493661 Days $T_0=295.934265$ (BKJD)



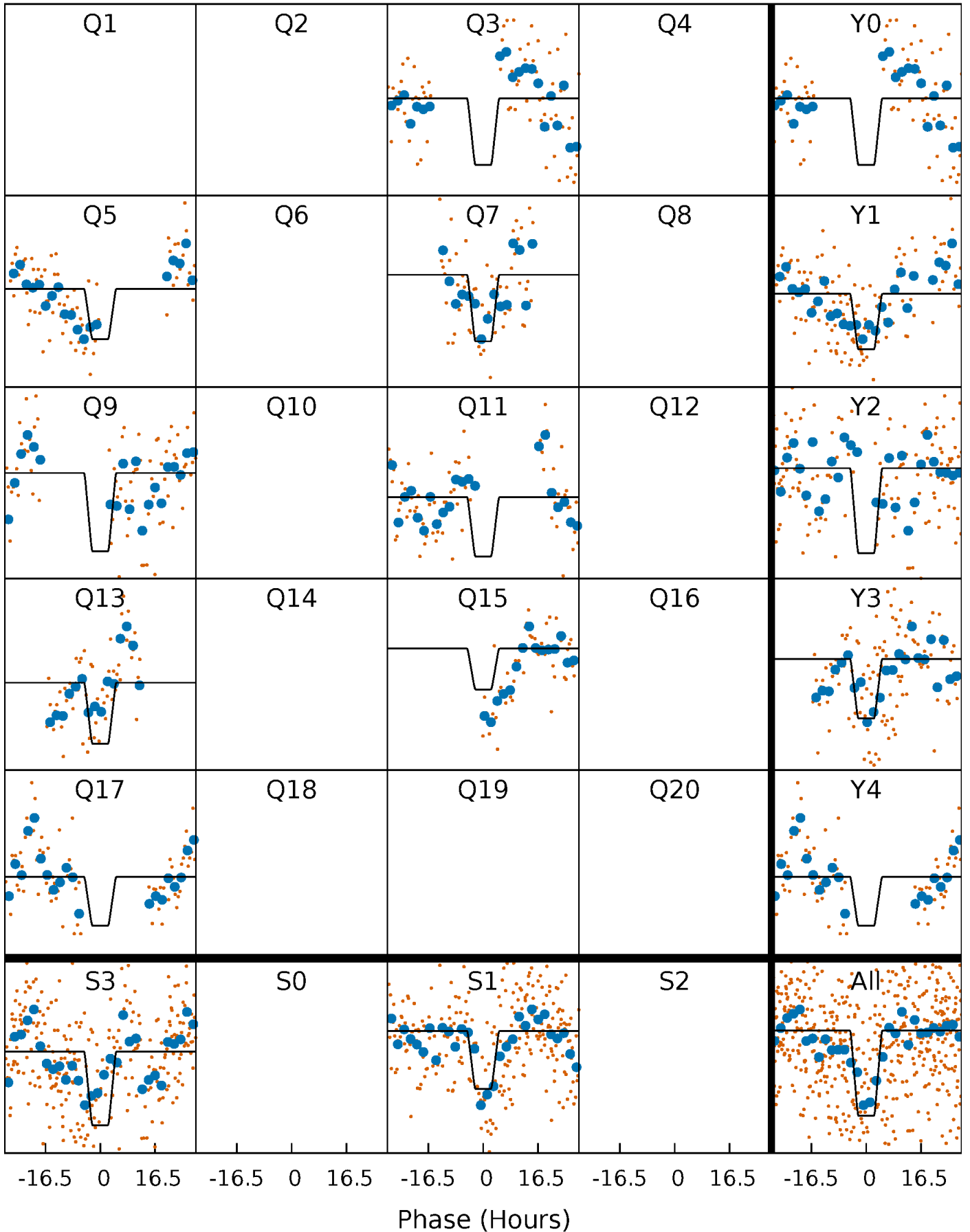
DV Quarter-Phased Transit Curves

TCE 005818165-03 P=181.493661 Days $T_0=295.934265$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

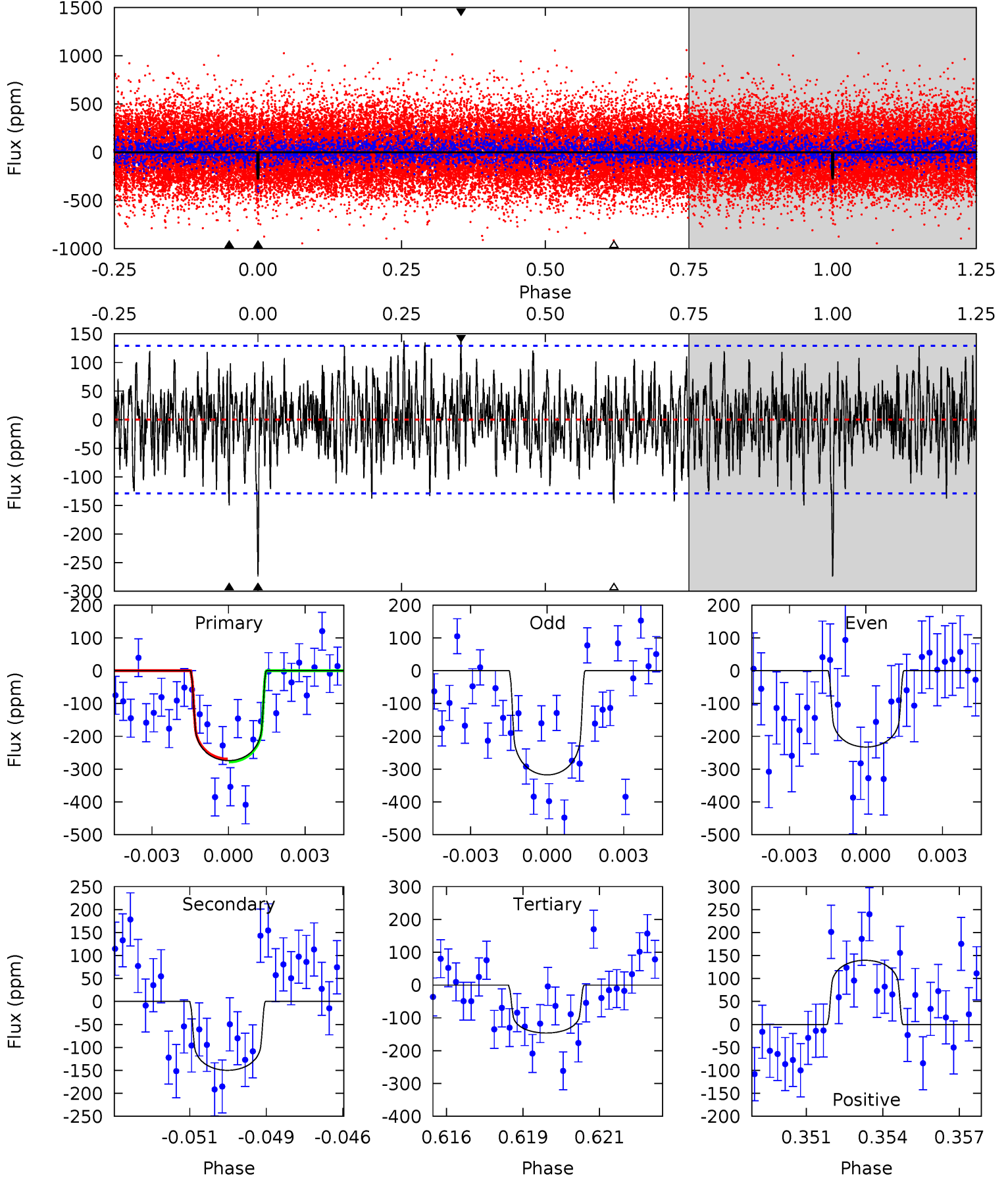
TCE 005818165-03 P=181.484069 Days $T_0=295.927746$ (BKJD)



DV Model-Shift Uniqueness Test

005818165-03, P = 181.493661 Days, E = 114.440604 Days

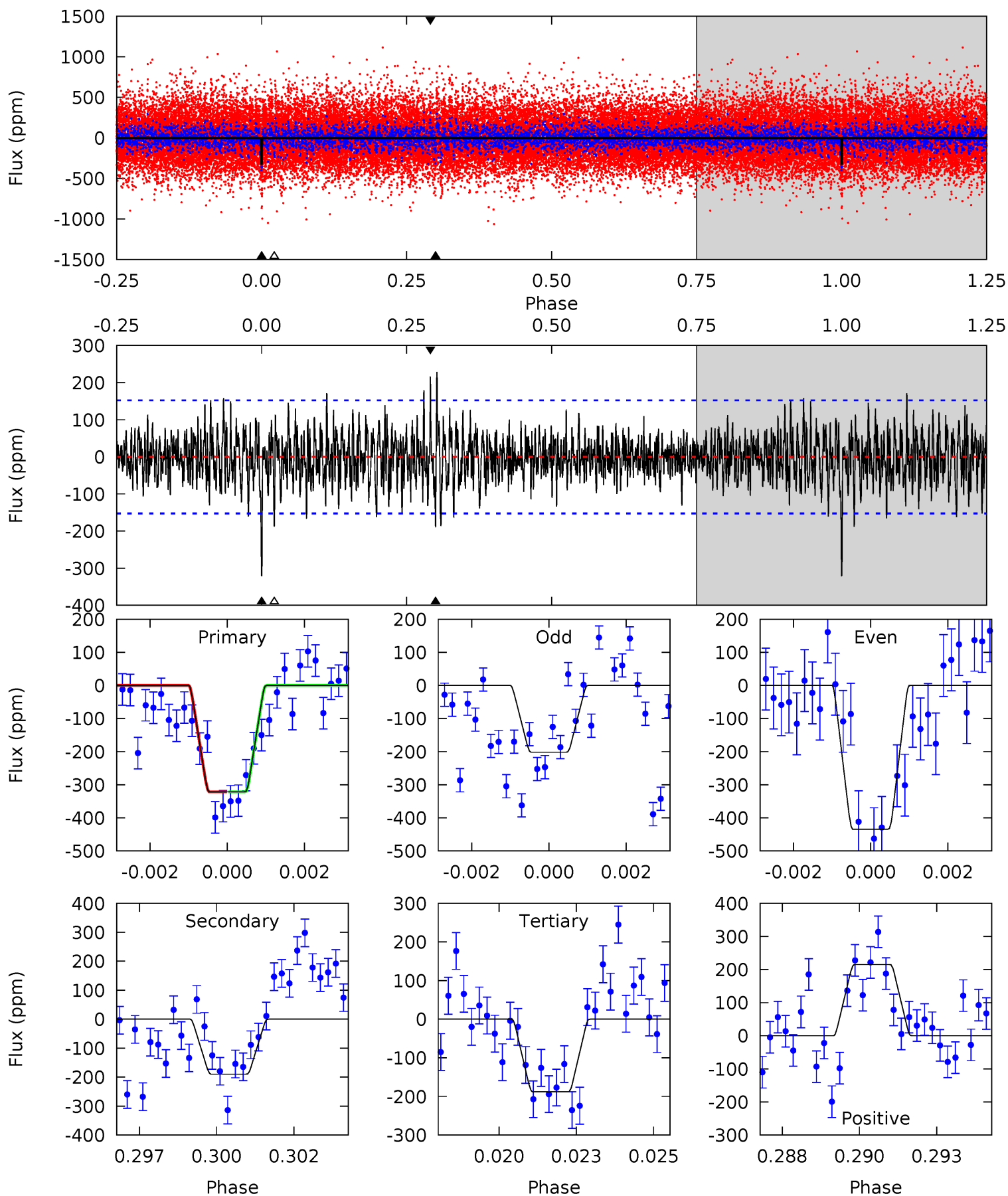
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	6.12	5.97	5.70	5.27	3.00	1.87	5.22	5.49	0.15	0.42	1.73	0.95	0.34	0.18



Alt Model-Shift Uniqueness Test

005818165-03, P = 181.484069 Days, E = 114.443677 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	6.62	6.55	7.50	5.31	3.05	1.81	4.65	3.71	0.07	-0.88	4.05	1.11	0.42	0.00



Stellar Parameters For KIC 005818165

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6093^{+182}_{-182}	$4.408^{+0.124}_{-0.186}$	$-0.600^{+0.300}_{-0.300}$	$0.962^{+0.239}_{-0.140}$	$0.863^{+0.108}_{-0.081}$	$1.366^{+0.752}_{-0.655}$
	+3%/-3%	+3%/-4%	+50%/-50%	+25%/-15%	+13%/-9%	+55%/-48%
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 005818165-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-150 ± 24	$1.85^{+0.90}_{-0.80}$	480^{+34}_{-29}	5190^{+1602}_{-738}	8710^{+18603}_{-4793}
Alt.	-190 ± 29	$2.16^{+0.84}_{-0.82}$	482^{+35}_{-28}	5104^{+1328}_{-650}	8130^{+12918}_{-4120}

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

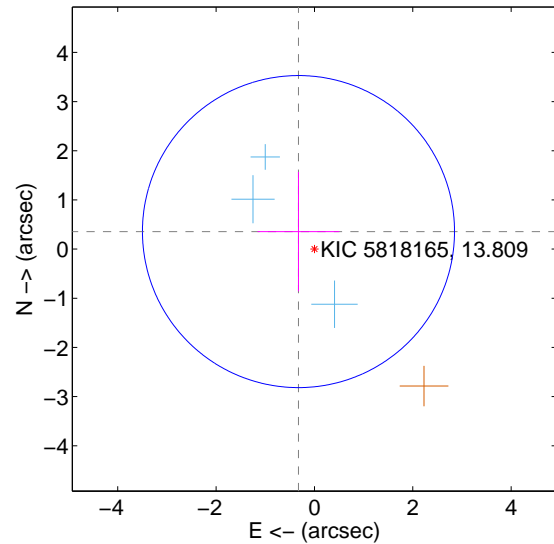
Supplemental centroid analysis for 005818165-03. Kepler magnitude: 13.81. Transit SNR 7.03

There are 3 quarters with good PRF difference image offsets

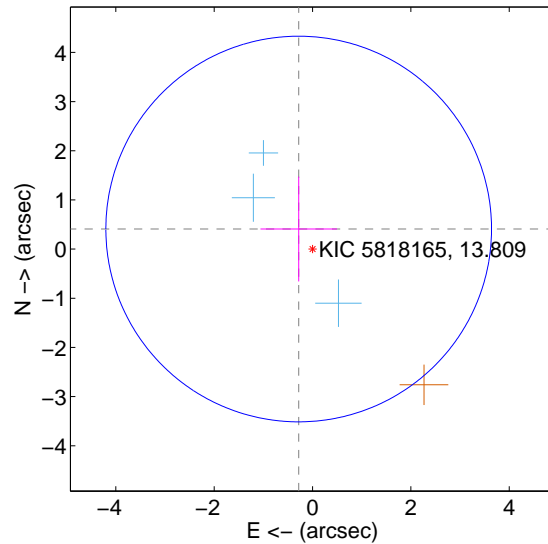
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.482 ± 1.058	0.46	0.325 ± 0.832	0.356 ± 1.214
PRF-fit source offset from KIC position	0.496 ± 1.307	0.38	0.281 ± 0.778	0.408 ± 1.066
photometric centroid source offset	1.42 ± 0.89	1.58	0.93 ± 0.97	-1.07 ± 0.84

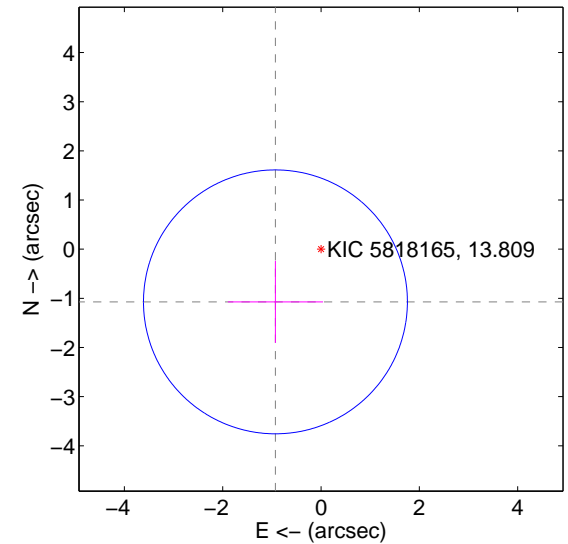
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

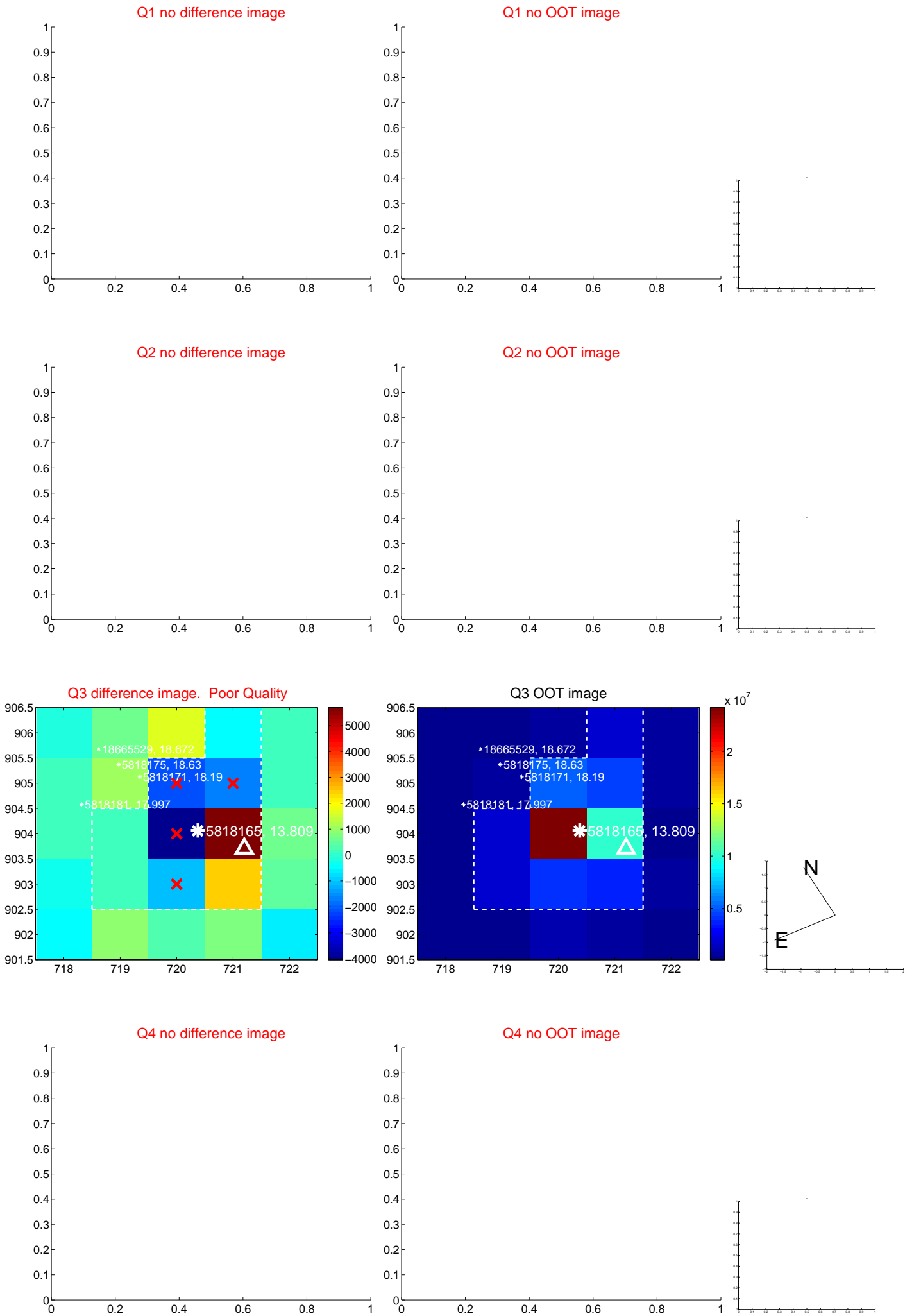


offset from photometric centroids

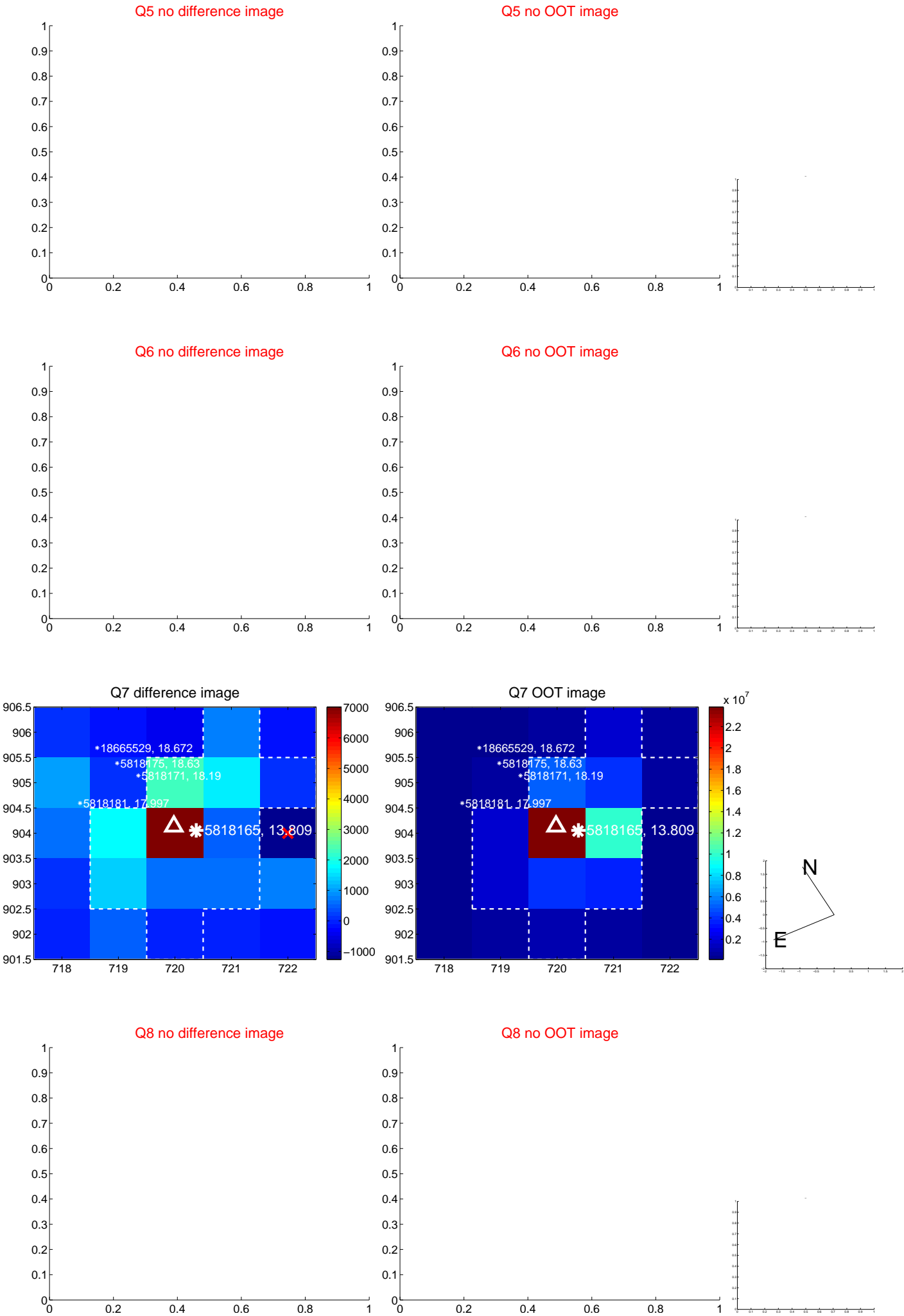


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

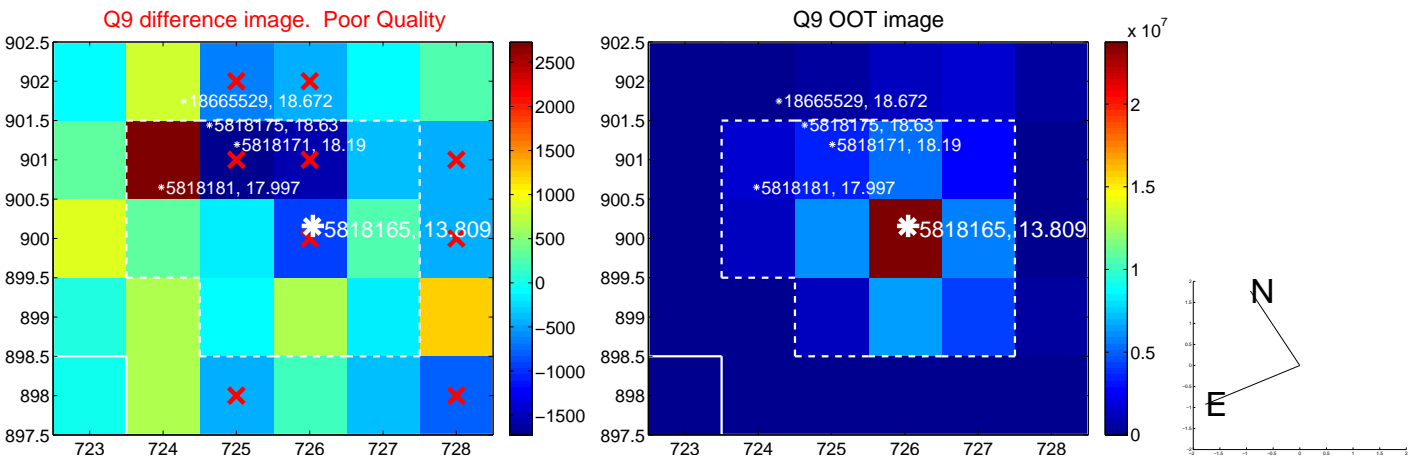
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



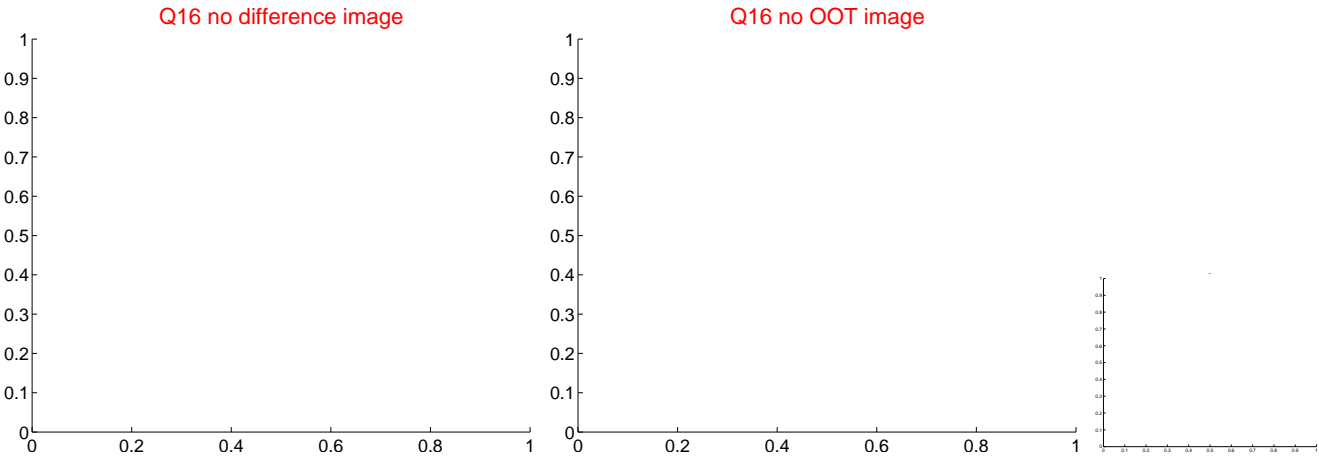
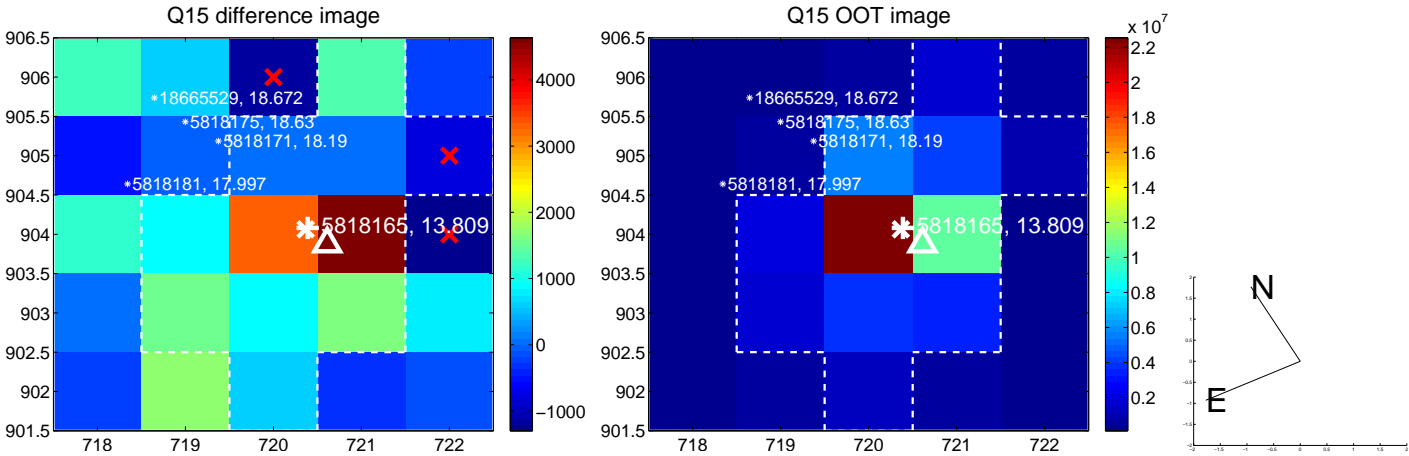
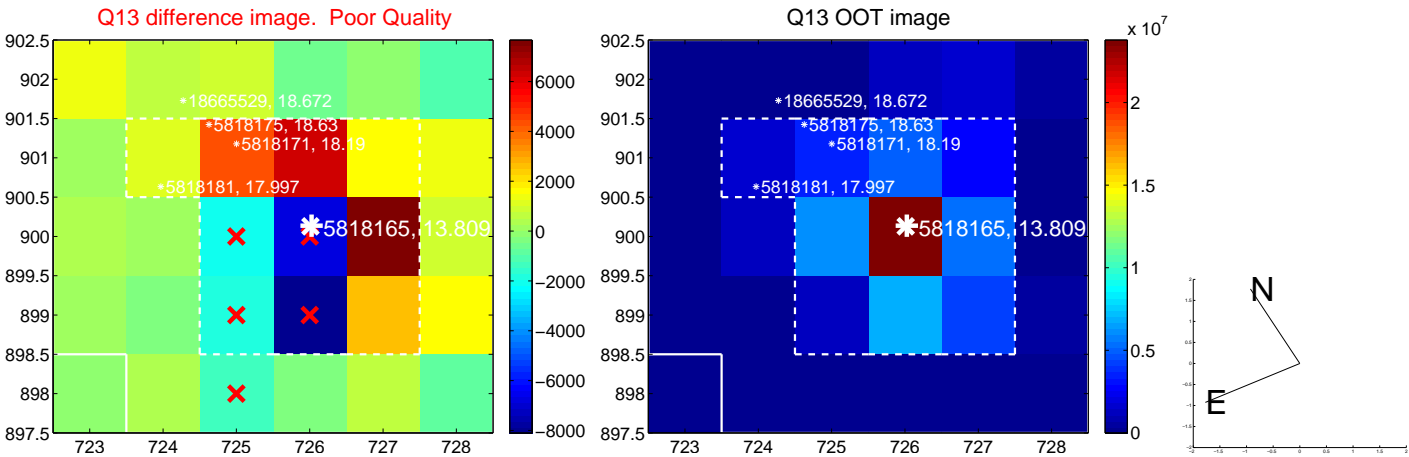
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



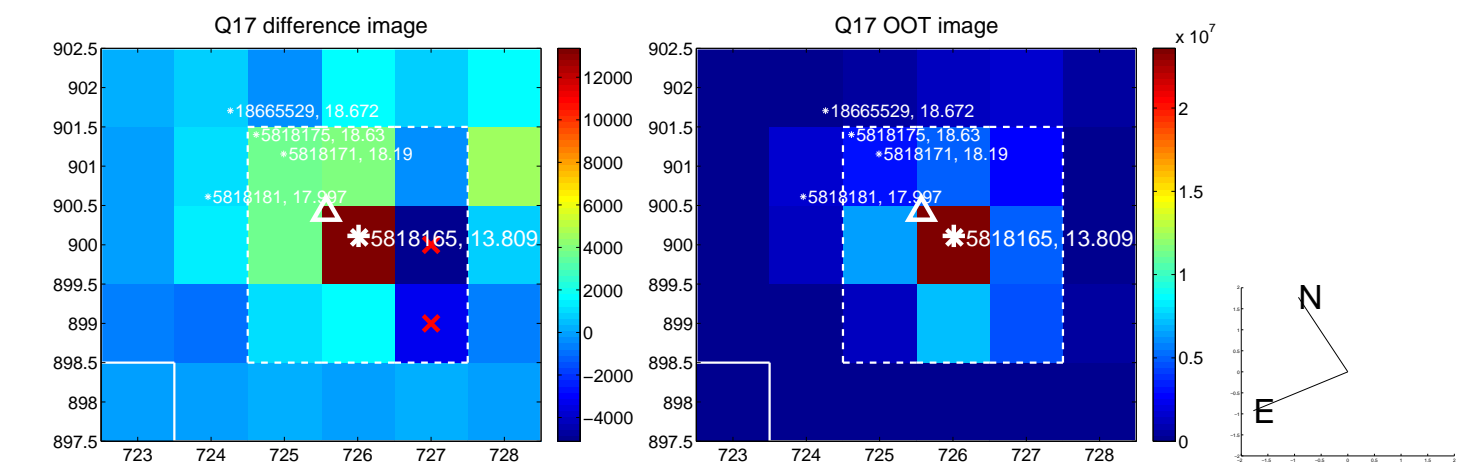
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



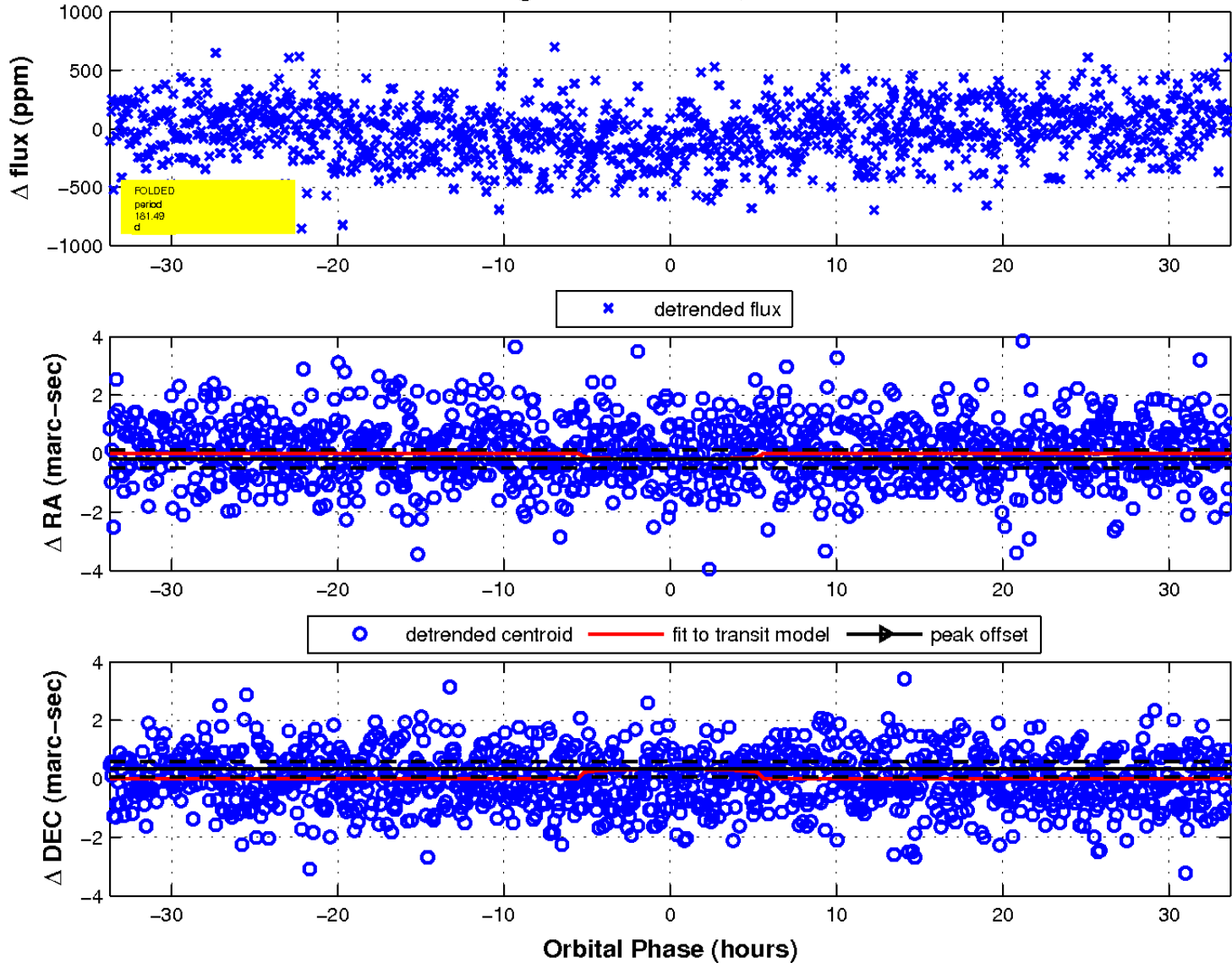
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

