

KIC 004168574

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})
004168574-01	OBS	No	0.610170	131.872236	94.3	1.497	9.6	10.1	4.43	7928	5.04	0.00
004168574-02	OBS	No	0.610172	131.566147	91.4	1.387	9.9	10.2	4.43	7928	4.54	0.00
004168574-03	OBS	No	53.366871	133.243110	1017.9	1.860	8.8	8.8	4.43	7928	15.54	506.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004168574-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
004168574-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
004168574-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

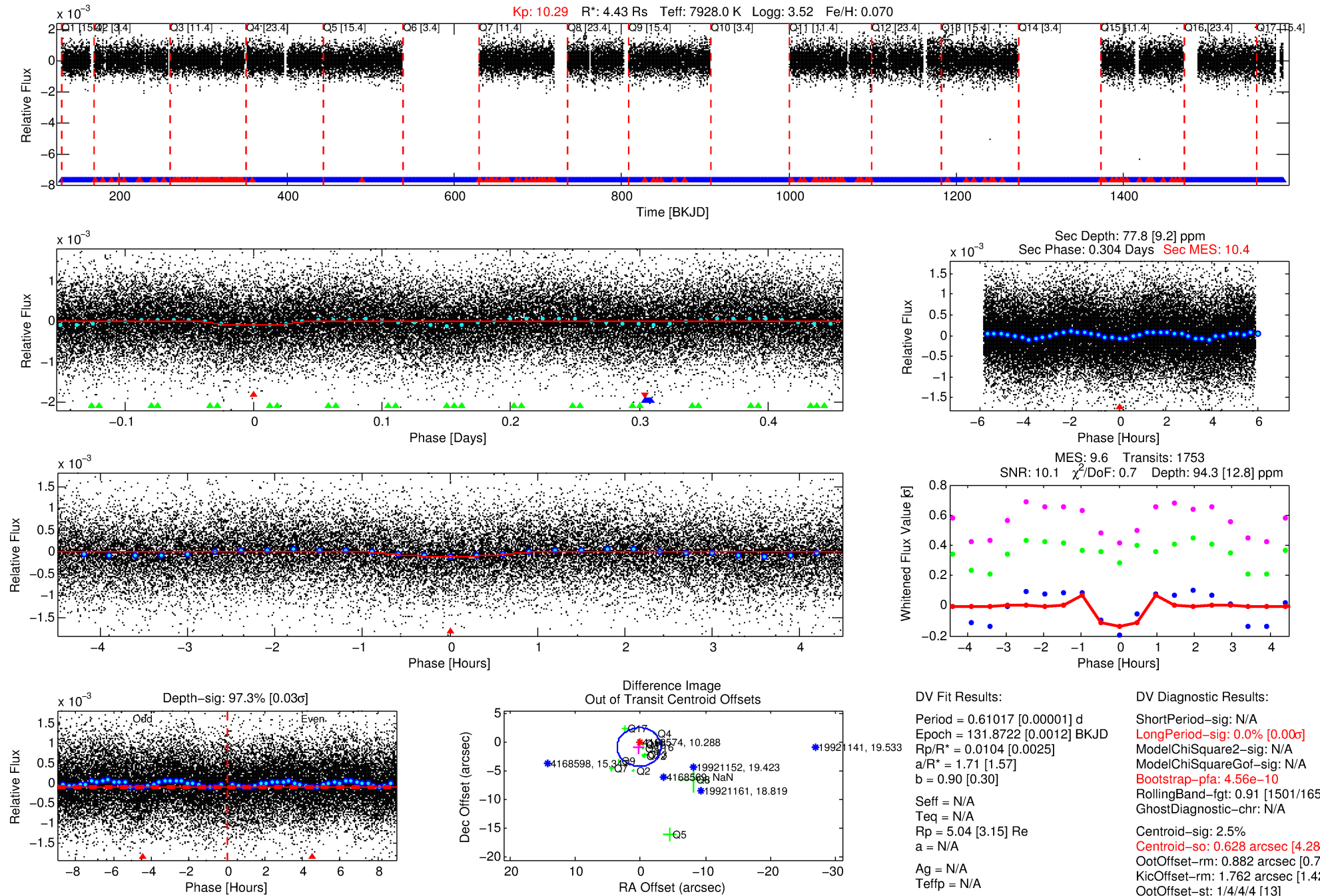
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004168574-01

No Significant Match Found

DV One-Page Summary

KIC: 4168574 Candidate: 1 of 3 Period: 0.610 d



DV Fit Results:

Period = 0.61017 [0.00001] d
Epoch = 131.8722 [0.0012] BKJD
Rp/R* = 0.0104 [0.0025]
a/R* = 1.71 [1.57]
b = 0.90 [0.30]
Seff = N/A
Teq = N/A
Rp = 5.04 [3.15] Re
a = N/A
Ag = N/A
Teffp = N/A

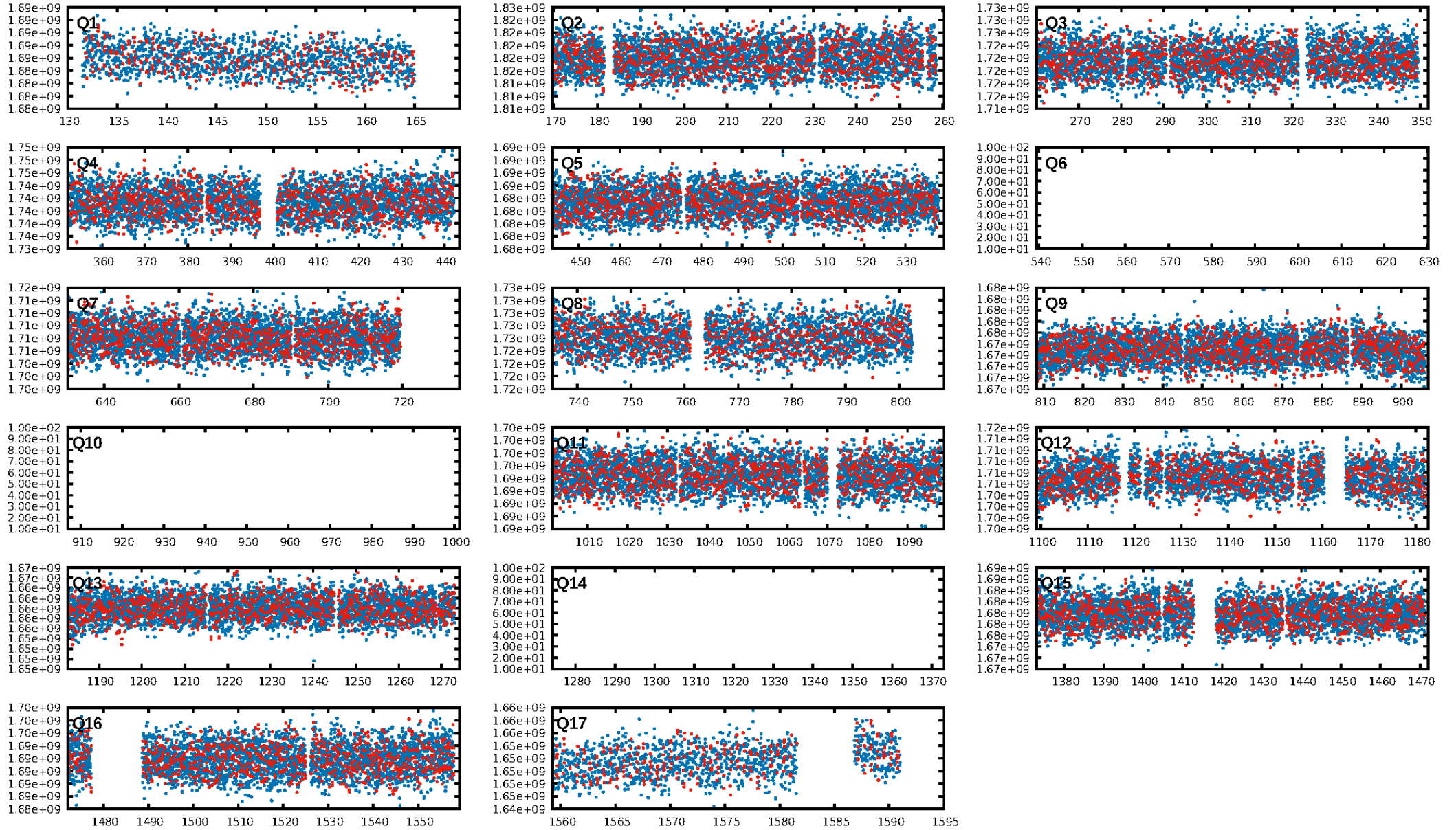
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.56e-10
RollingBand-fgt: 0.91 [1501/1656]
GhostDiagnostic-chr: N/A
Centroid-sig: 2.5%
Centroid-so: 0.628 arcsec [4.28σ]
OotOffset-rm: 0.882 arcsec [0.79σ]
KicOffset-rm: 1.762 arcsec [1.42σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 0.15 [2/13]
DiffImageOverlap-fno: 1.00 [14/14]

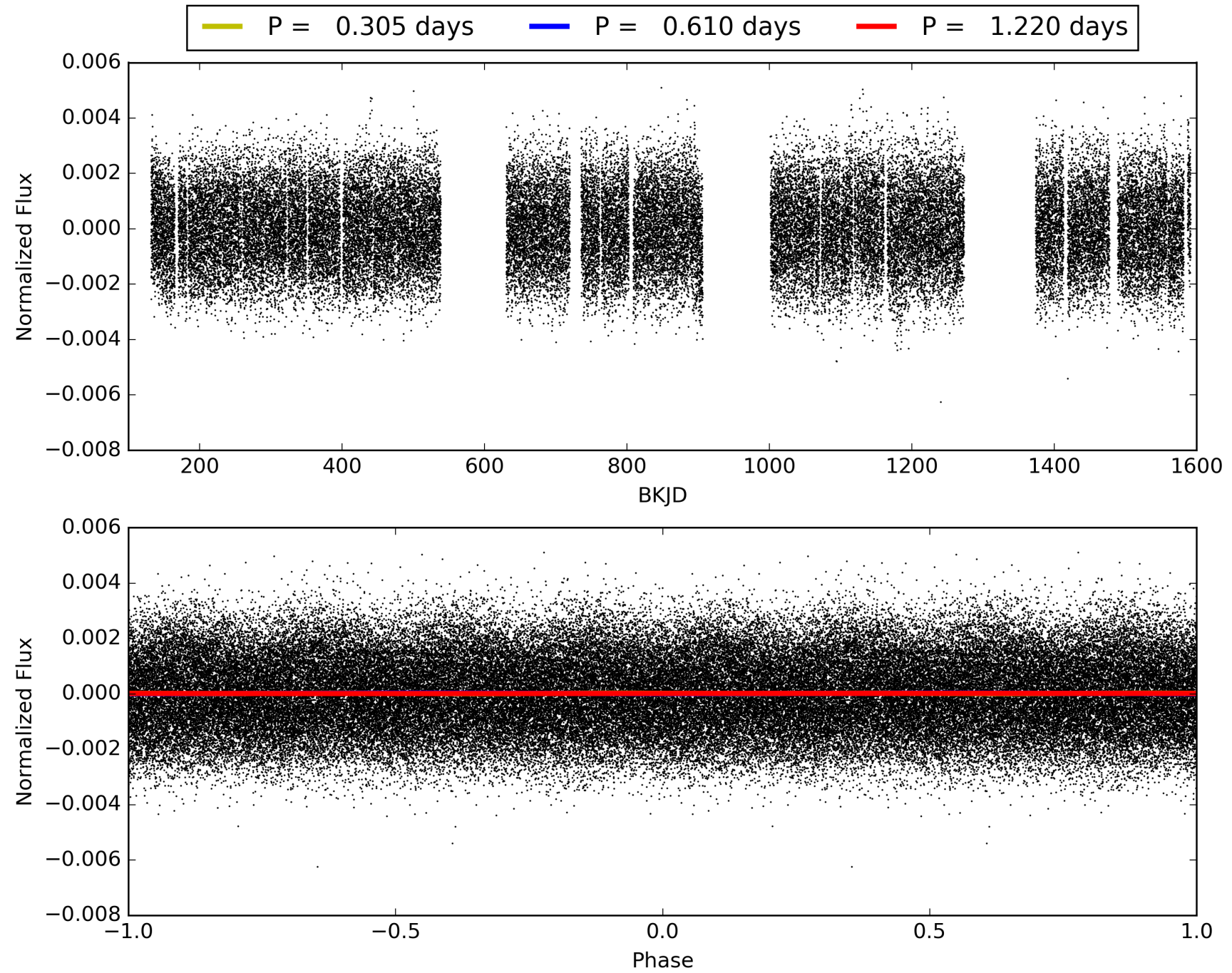
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:13:20 Z

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

TCE 004168574-01, PDC Light Curves

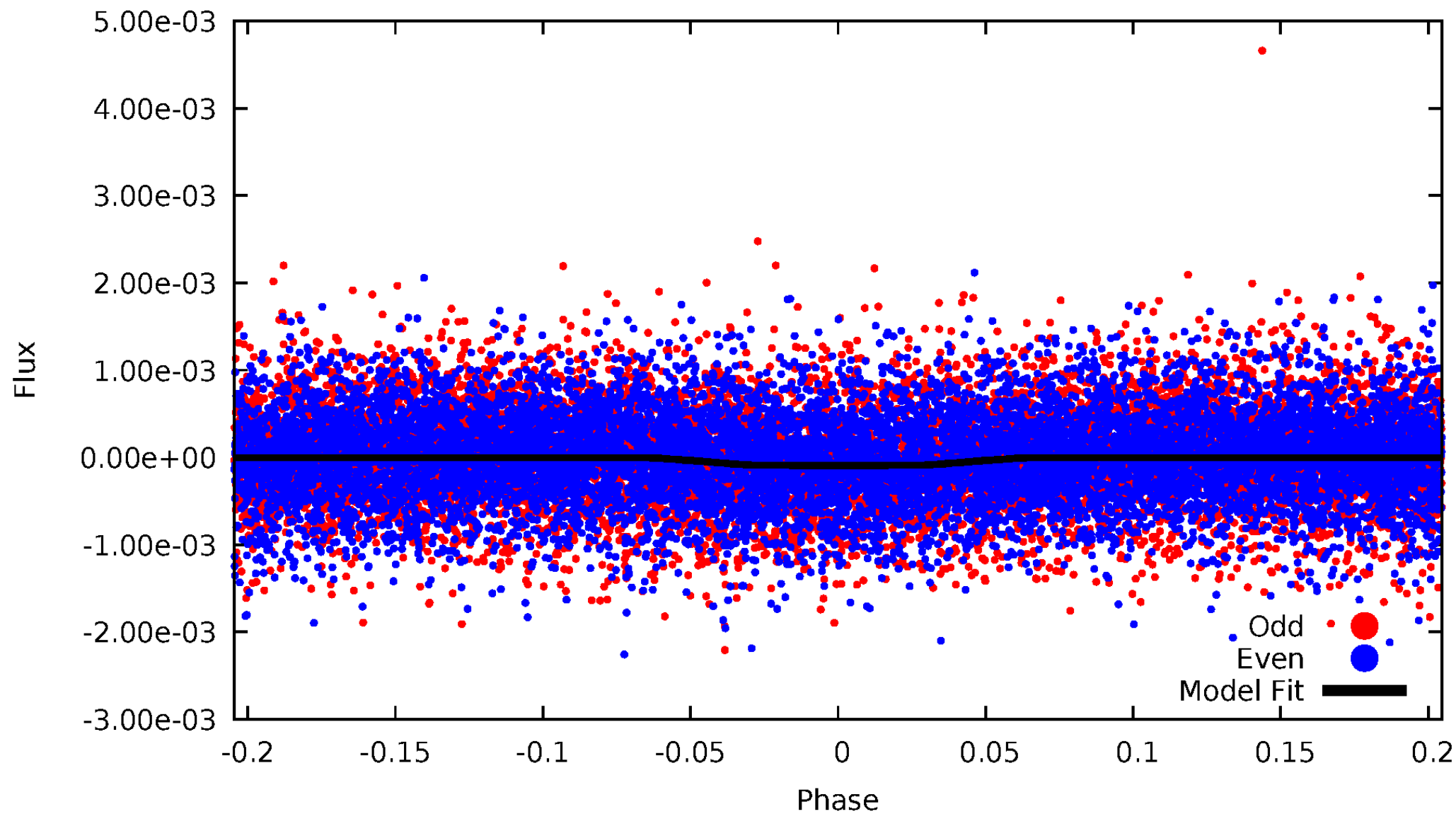


TCE 004168574-01



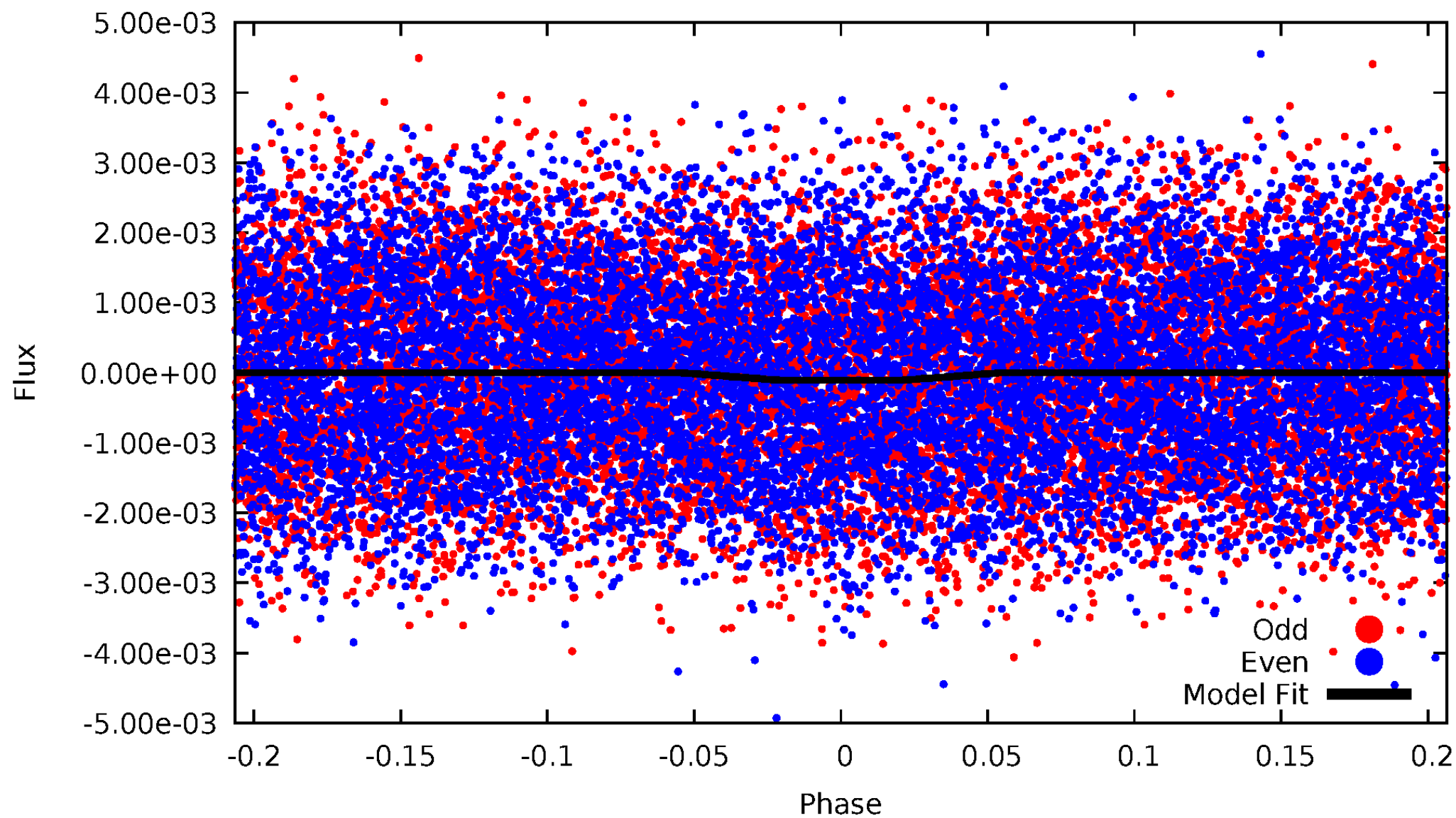
DV Odd/Even

TCE 004168574-01

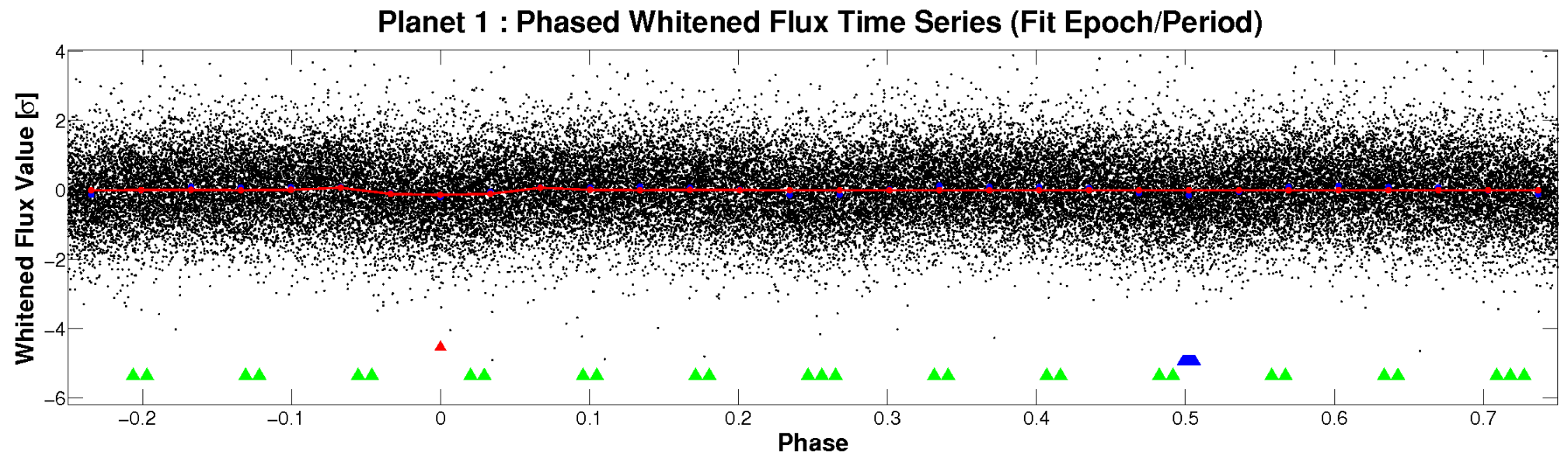
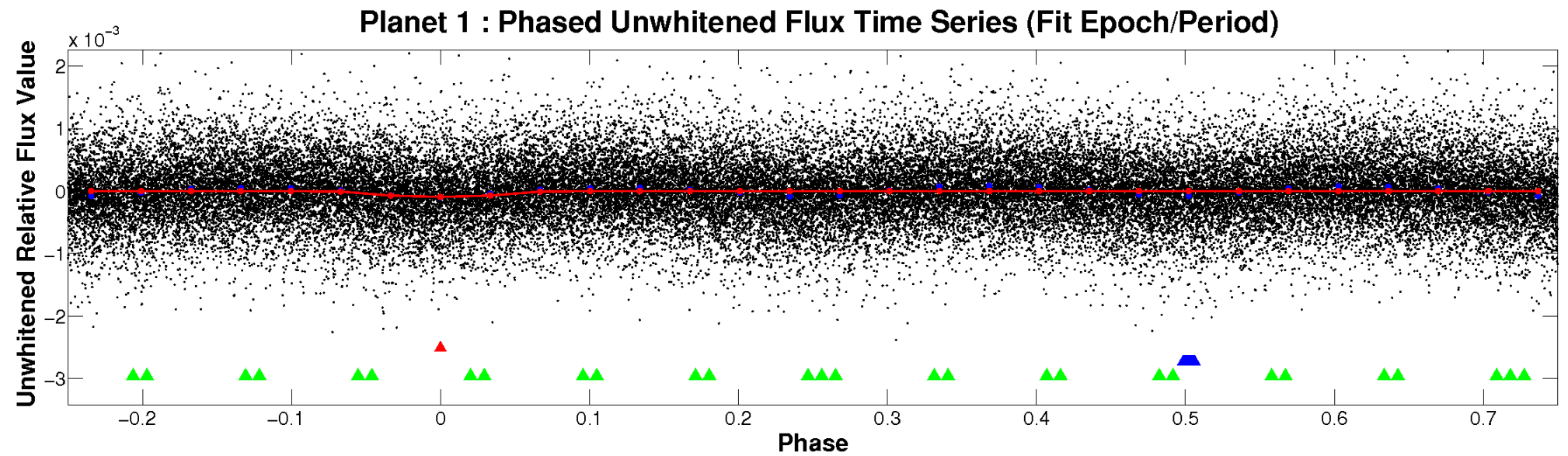


ALT Odd/Even

TCE 004168574-01

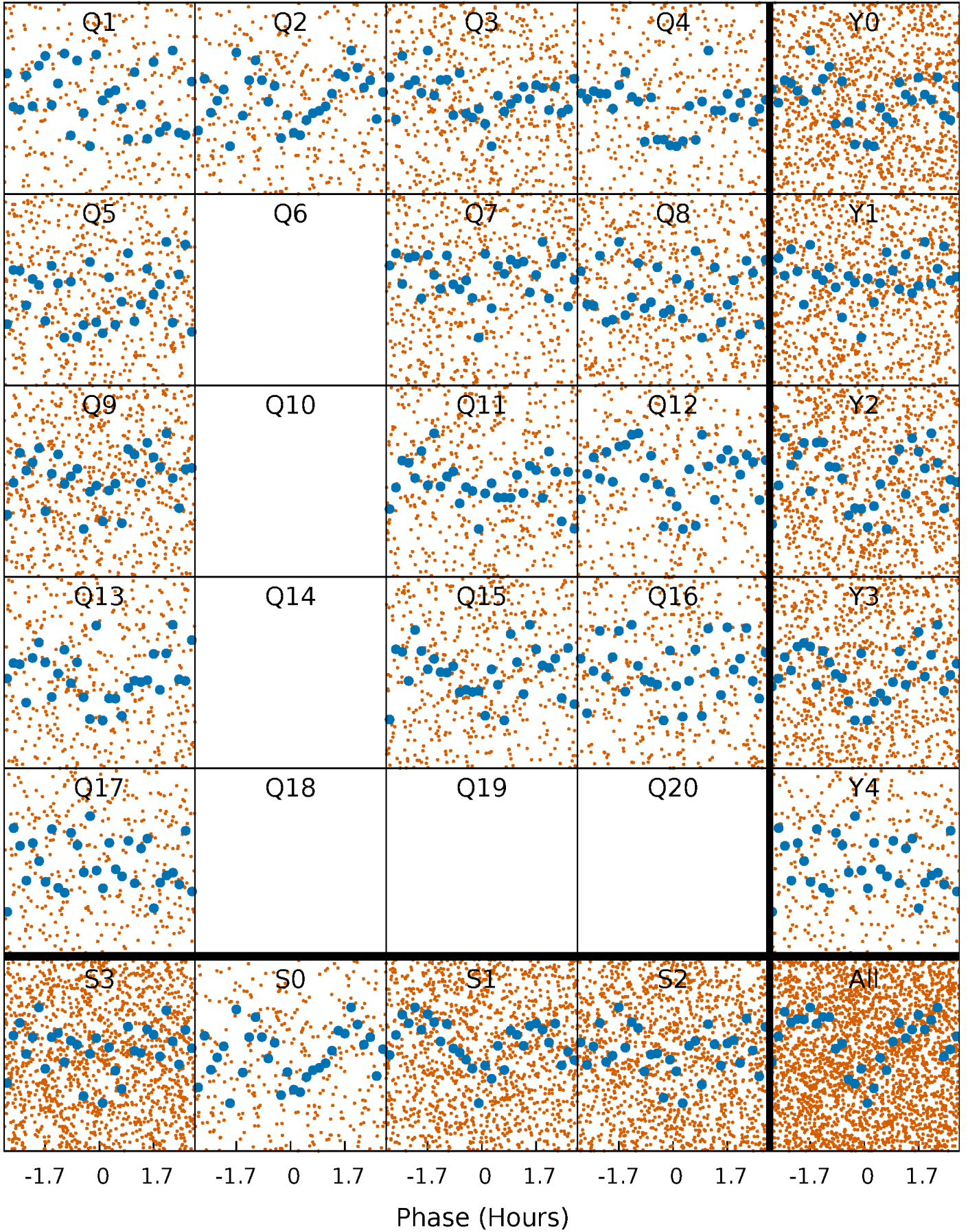


Non-Whitened Vs. Whitened Light Curve



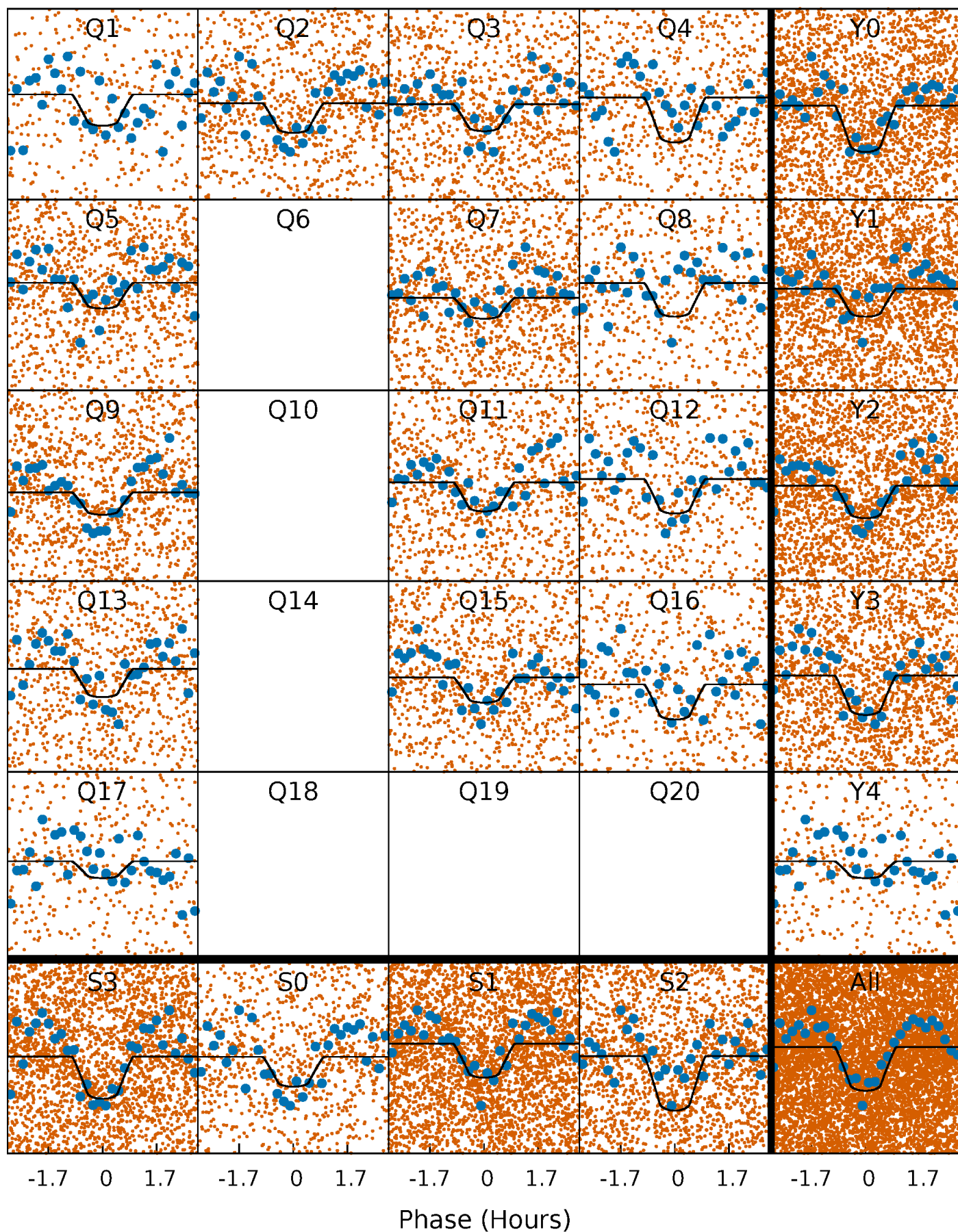
PDC Quarter-Phased Transit Curves

TCE 004168574-01 P= 0.610170 Days $T_0=131.872236$ (BKJD)



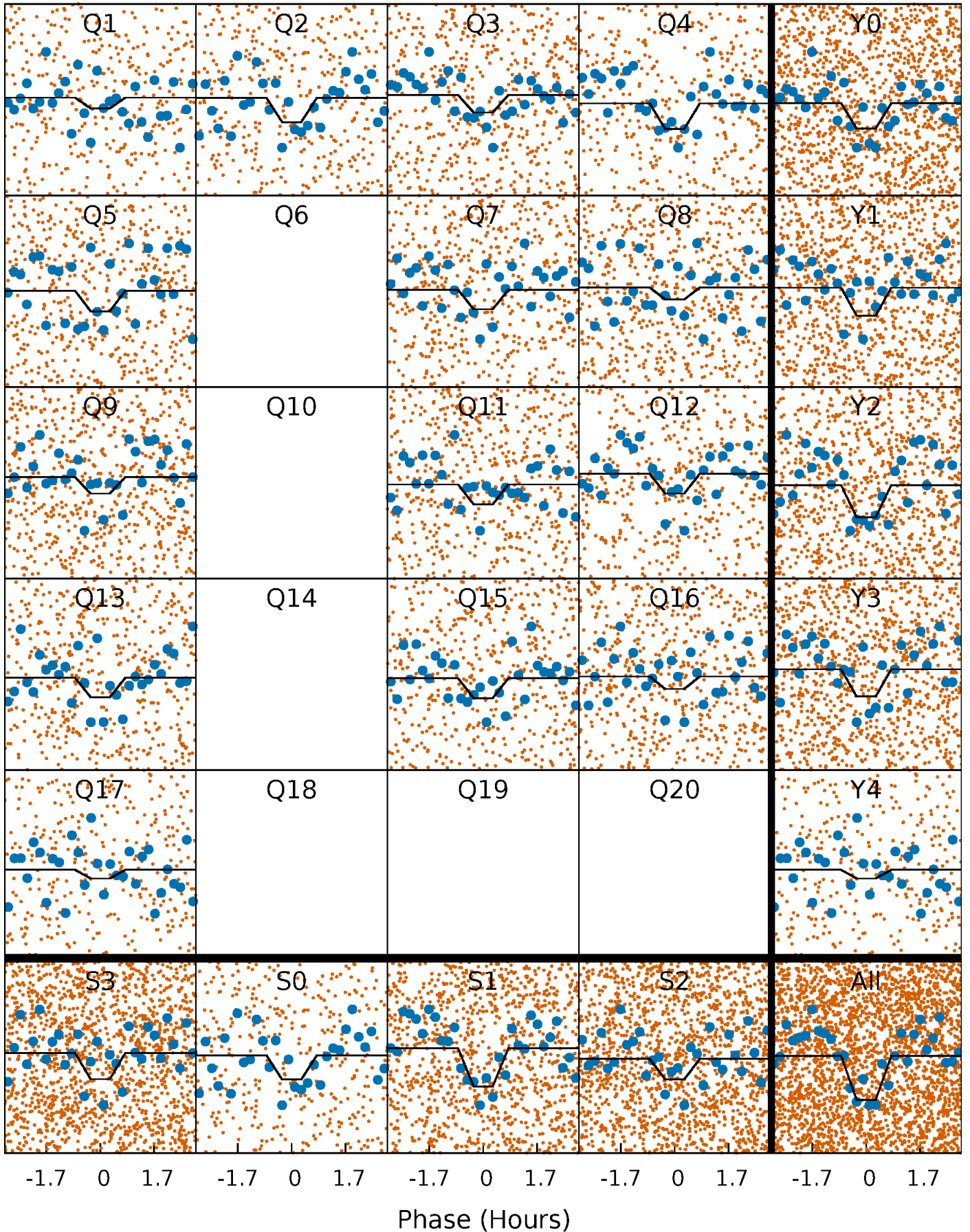
DV Quarter-Phased Transit Curves

TCE 004168574-01 P= 0.610170 Days $T_0=131.872236$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

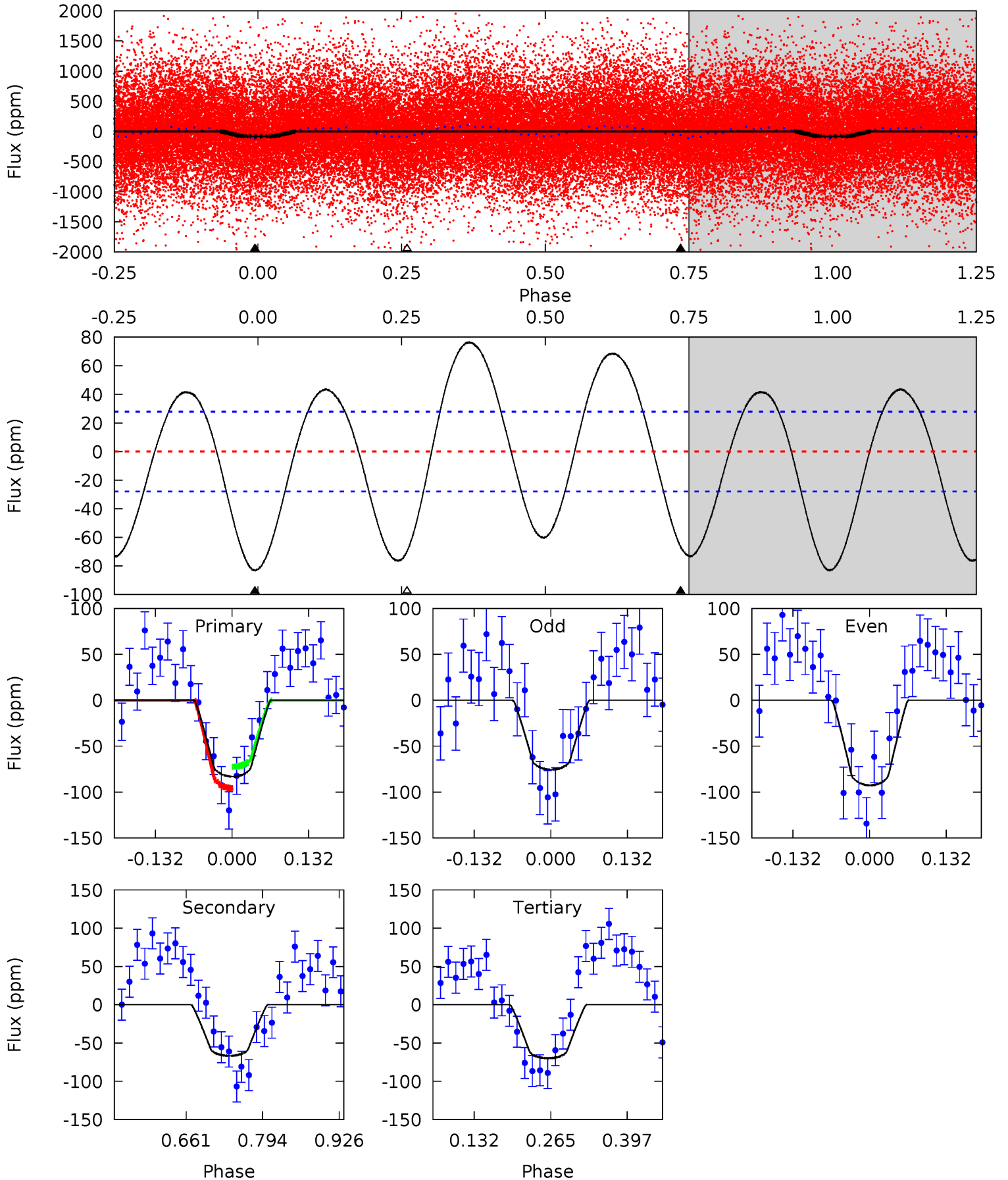
TCE 004168574-01 P= 0.610170 Days $T_0=131.872251$ (BKJD)



DV Model-Shift Uniqueness Test

004168574-01, P = 0.610170 Days, E = 131.262066 Days

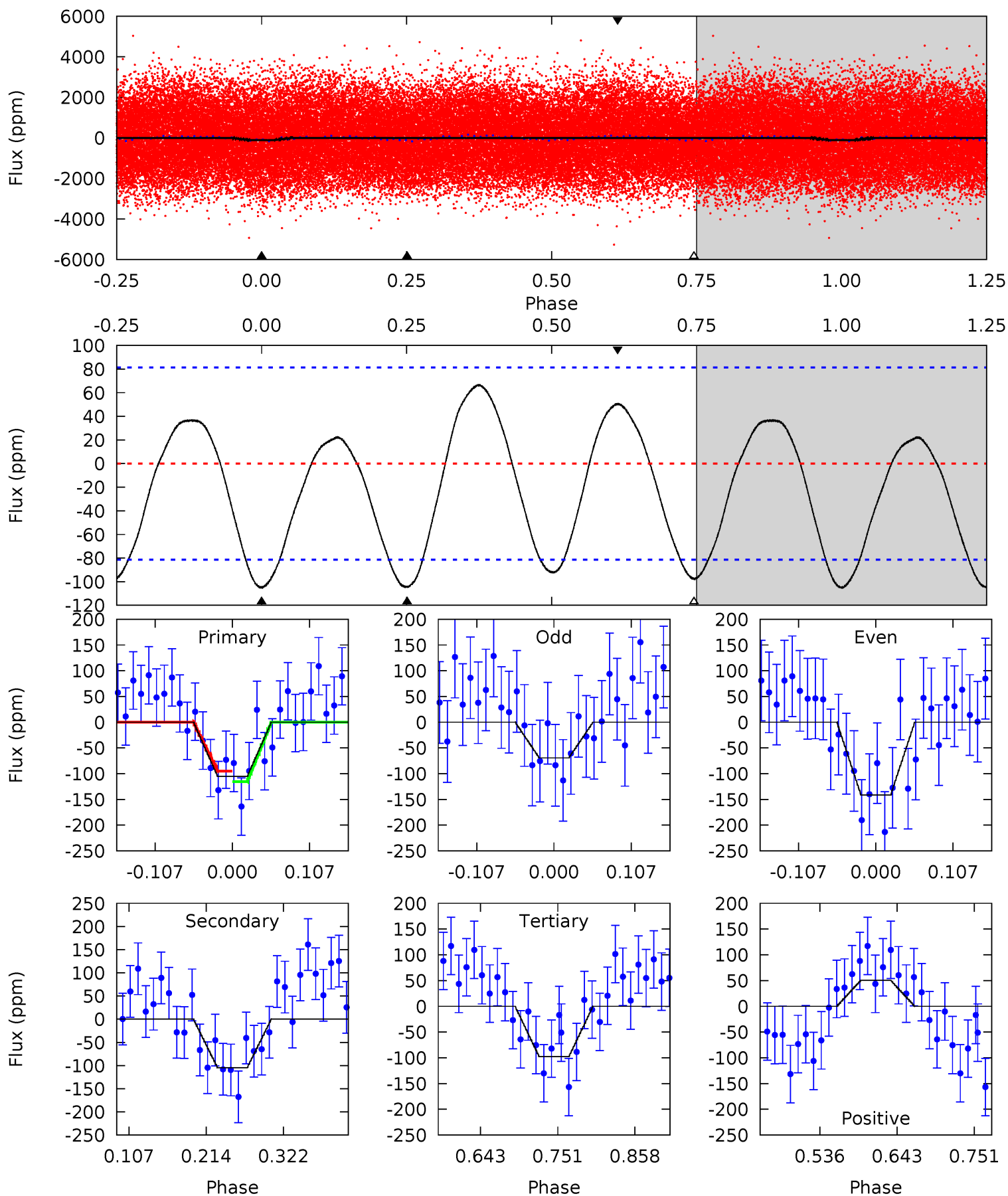
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	10.7	11.3	0	4.51	1.51	7.76	2.13	13.4	-0.53	10.7	1.38	1.01	0.48	1.90



Alt Model-Shift Uniqueness Test

004168574-01, P = 0.610170 Days, E = 131.262081 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.88	5.85	5.47	2.83	4.55	1.61	2.89	0.41	3.05	0.38	3.02	2.02	0.96	0.39	0.58



Stellar Parameters For KIC 004168574

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7928^{+220}_{-331}	$3.522^{+0.558}_{-0.031}$	$0.070^{+0.250}_{-0.450}$	$4.435^{+0.449}_{-2.546}$	$2.386^{+0.265}_{-0.795}$	$0.039^{+0.296}_{-0.008}$
	+3%/-4%	+16%/-1%	+357%/-643%	+10%/-57%	+11%/-33%	+768%/-21%
Source	KIC0	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 004168574-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-67 ± 6	$4.31^{+1.60}_{-1.39}$	7068^{+536}_{-947}	5806^{+1545}_{-1399}	$0.684^{+0.747}_{-0.304}$
Alt.	-105 ± 18	$4.34^{+1.56}_{-1.59}$	7059^{+537}_{-935}	7047^{+1934}_{-1277}	$1.084^{+1.388}_{-0.482}$

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

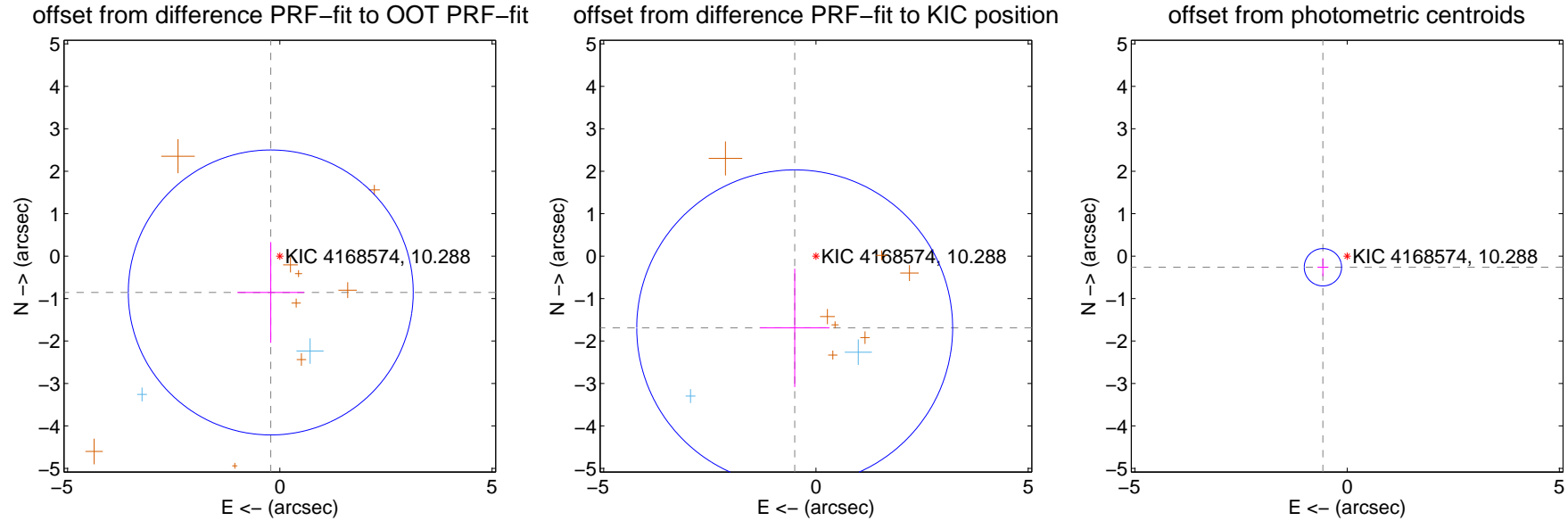
DV Centroid Data

Supplemental centroid analysis for 004168574-01. **Kepler magnitude: 10.29.** Transit SNR 10.06

There are 2 quarters with good PRF difference image offsets

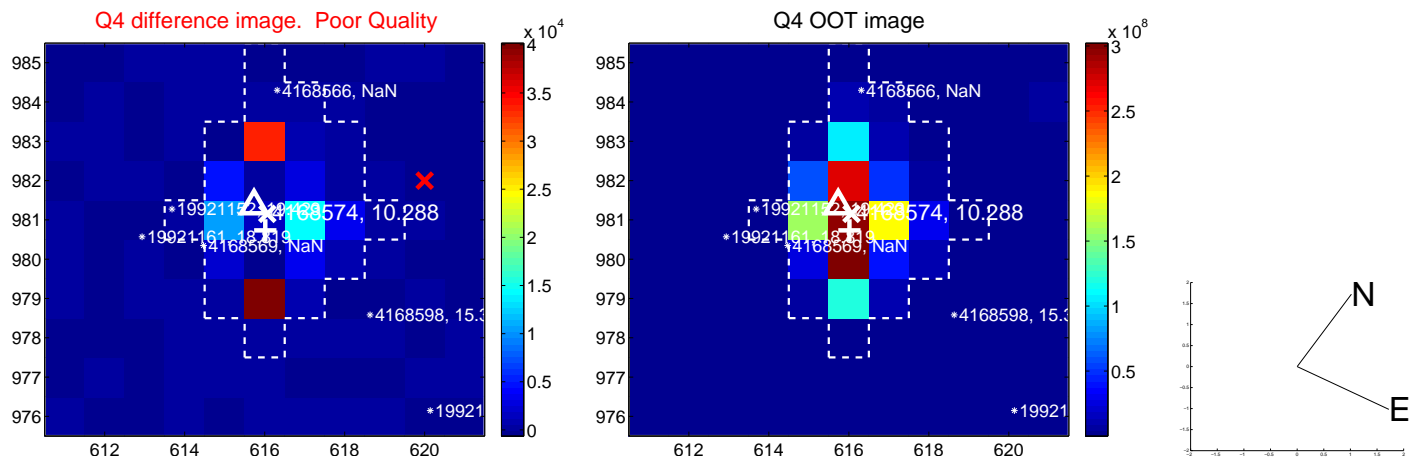
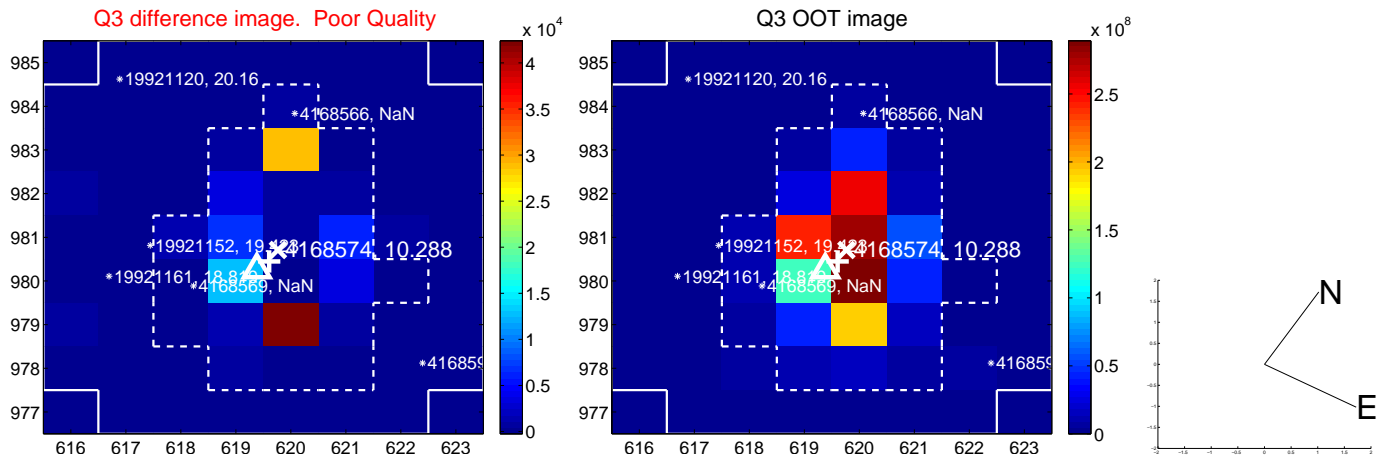
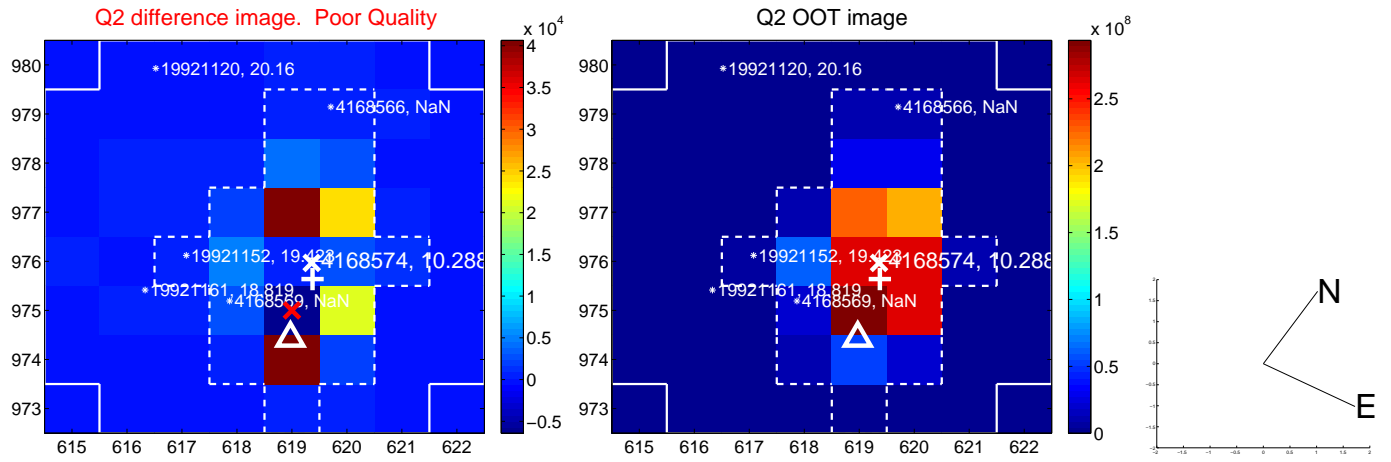
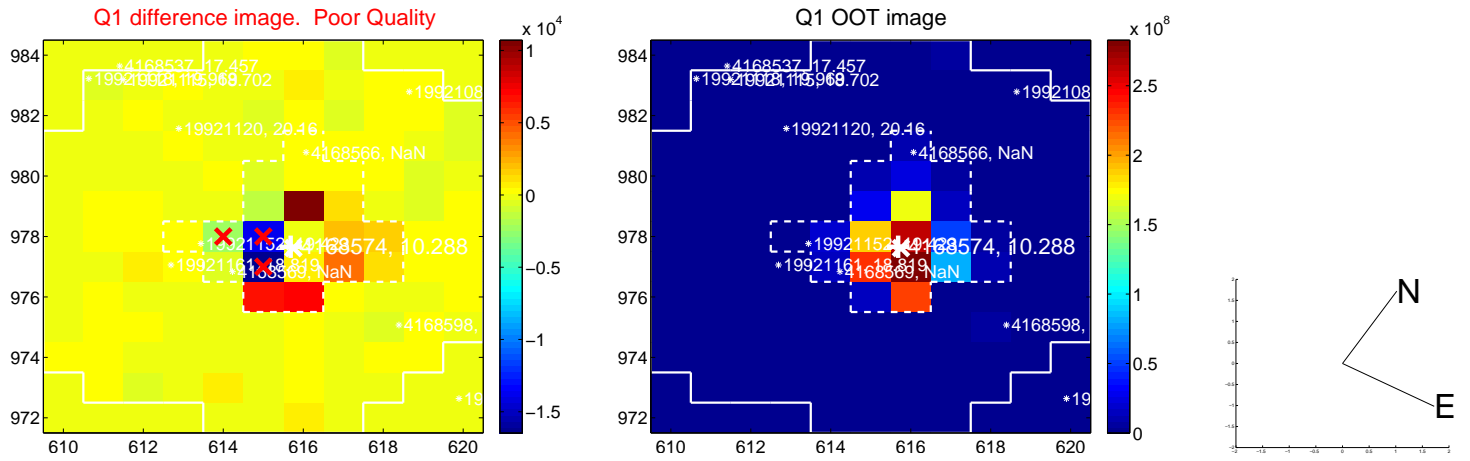
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.882 ± 1.119	0.79	0.213 ± 0.790	-0.856 ± 1.186
PRF-fit source offset from KIC position	1.762 ± 1.241	1.42	0.500 ± 0.820	-1.690 ± 1.396
photometric centroid source offset	0.63 ± 0.15	4.28	0.57 ± 0.13	-0.26 ± 0.21

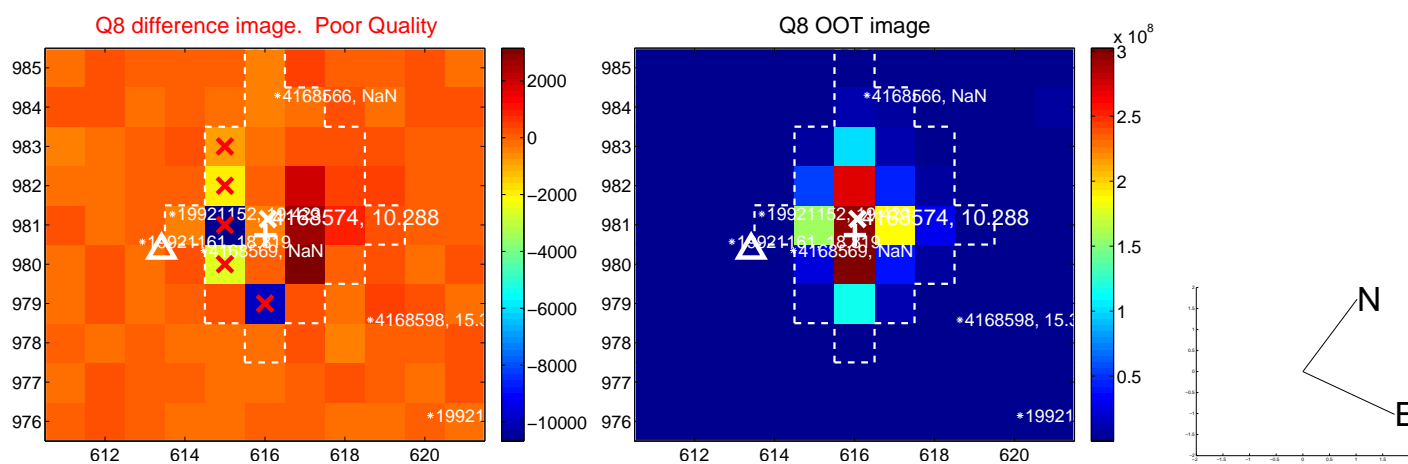
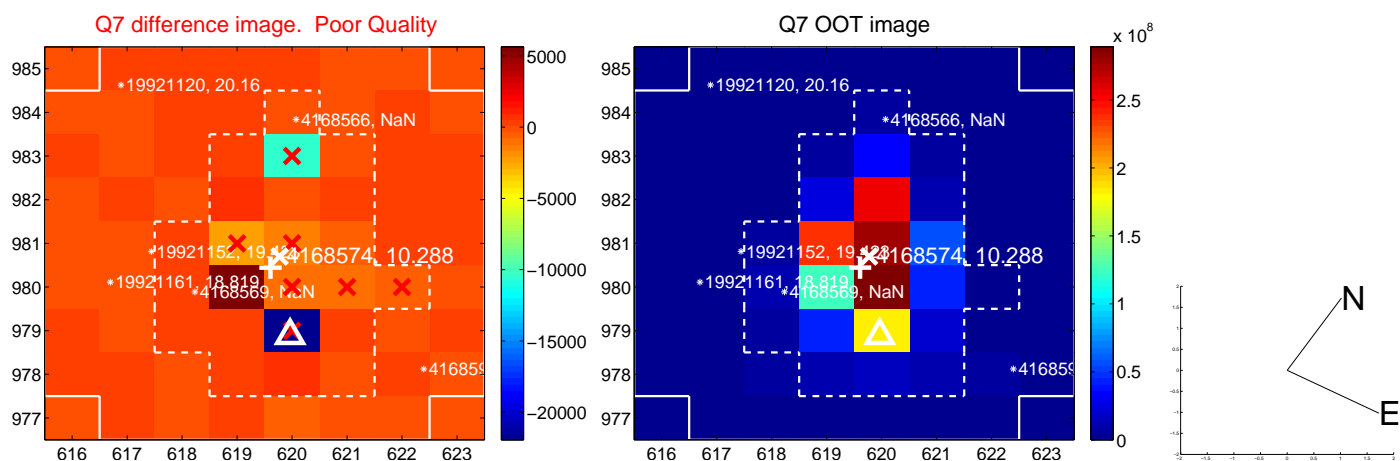
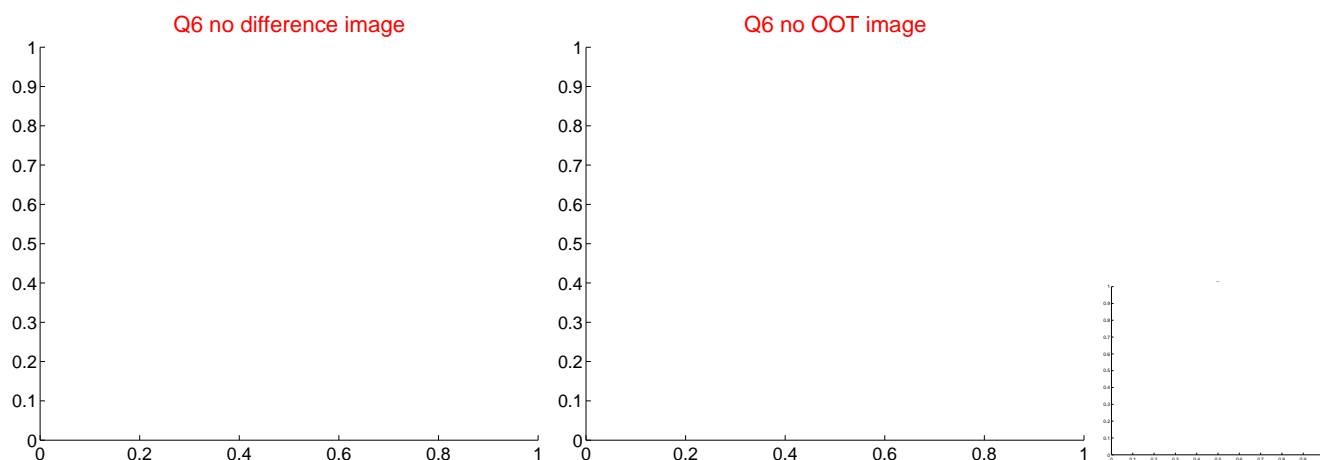
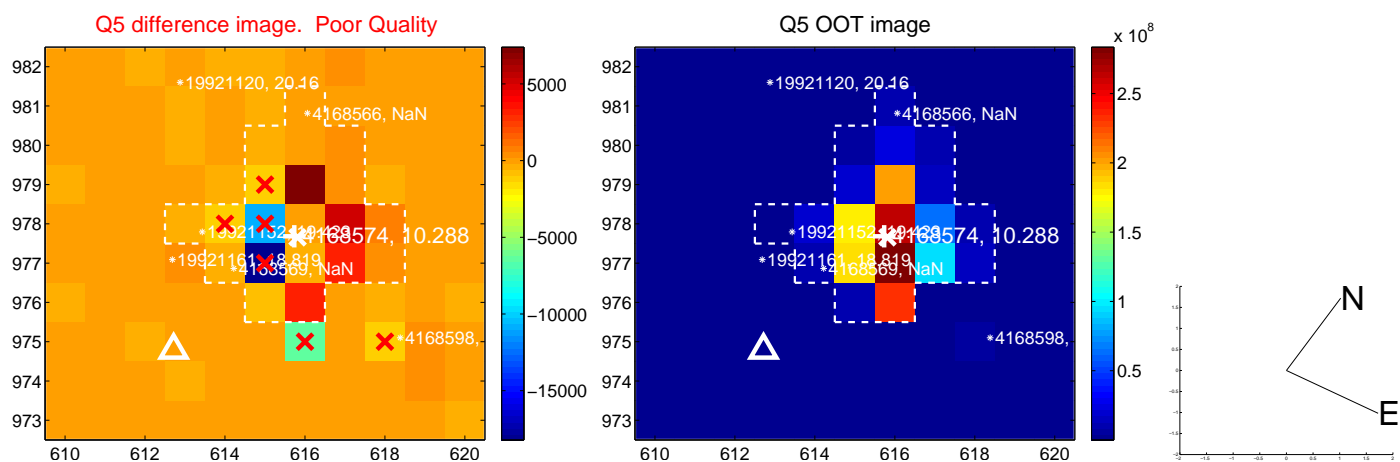


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

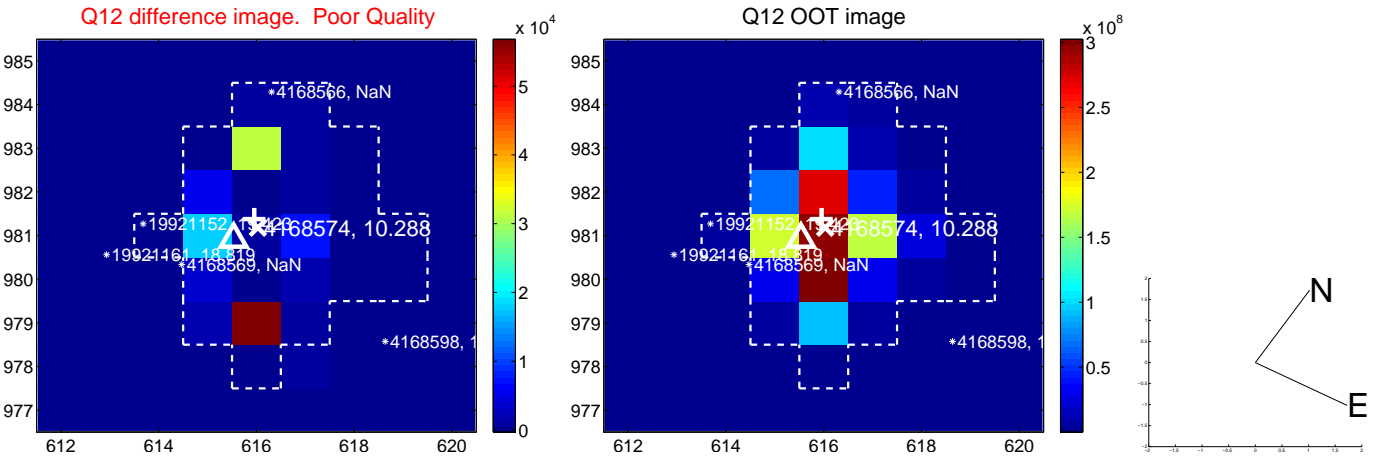
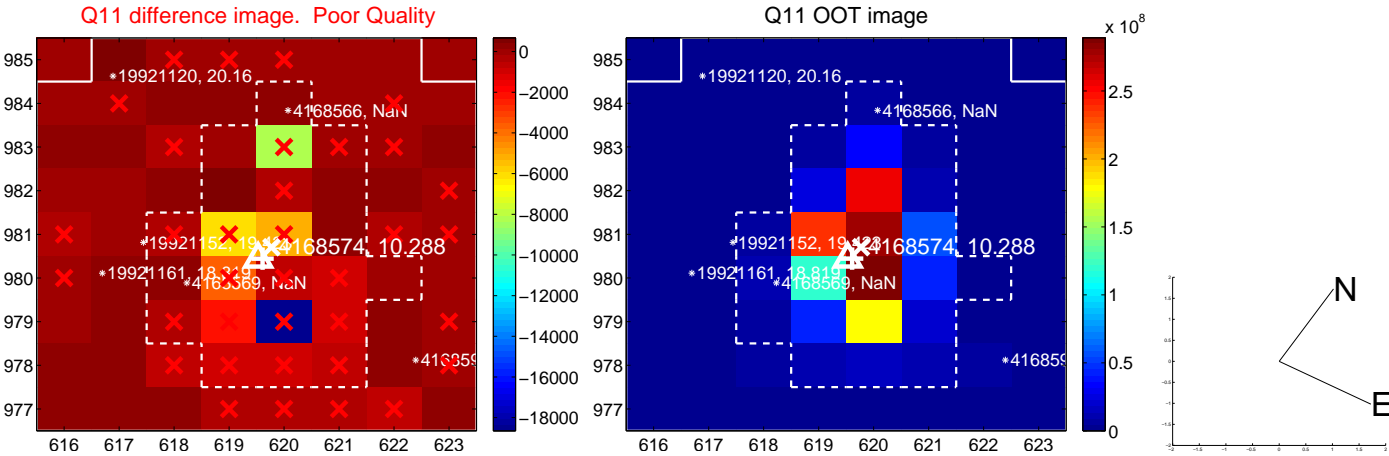
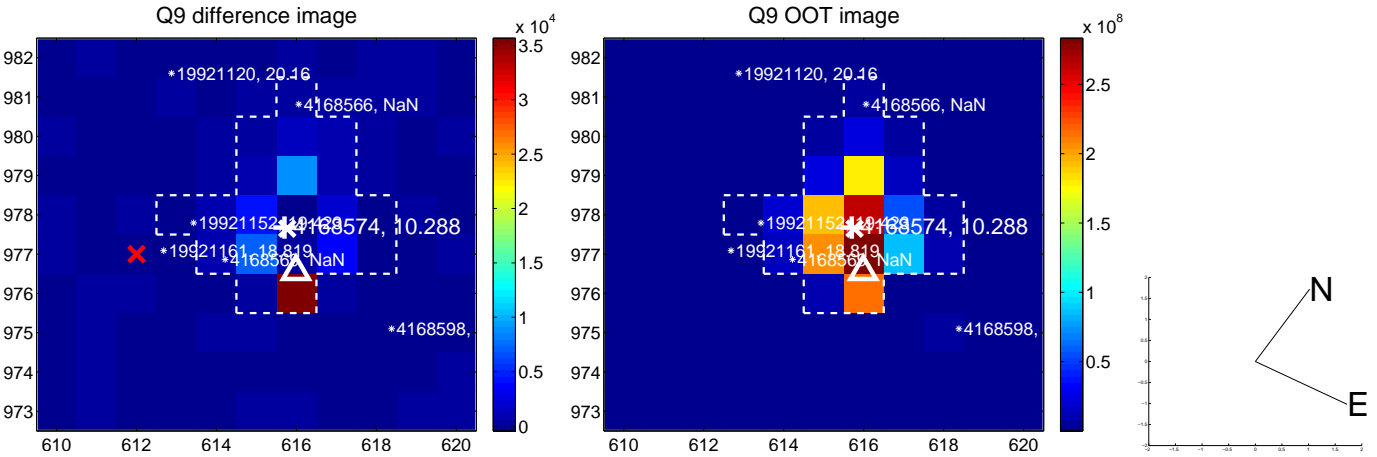
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



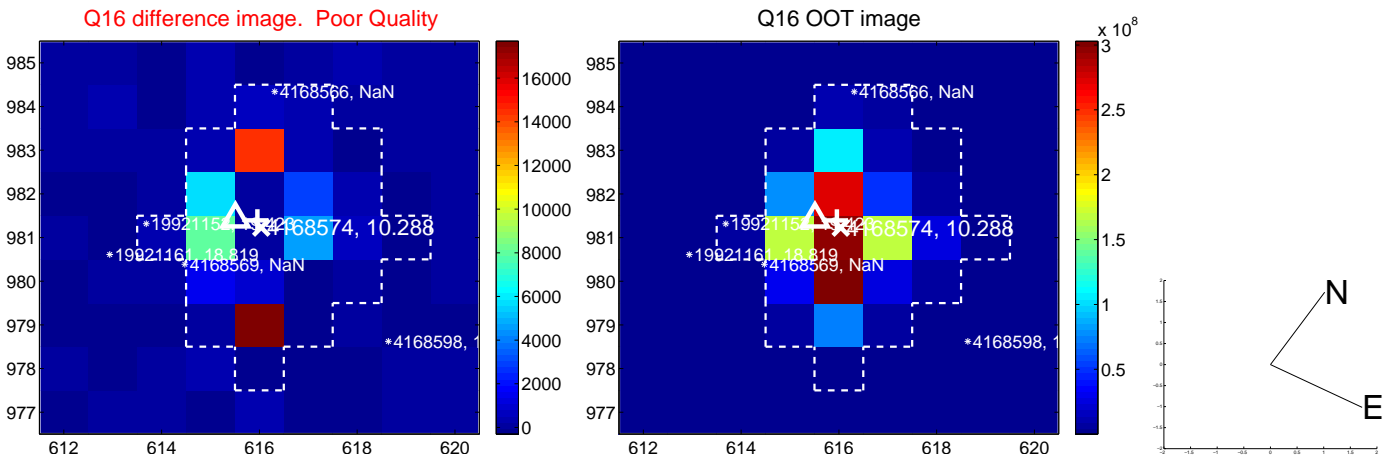
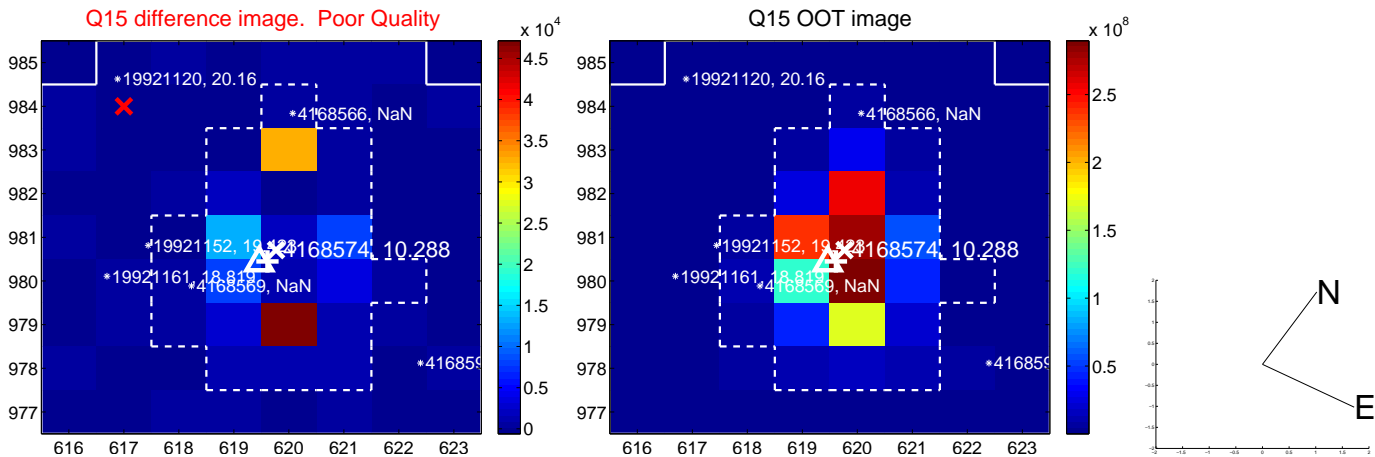
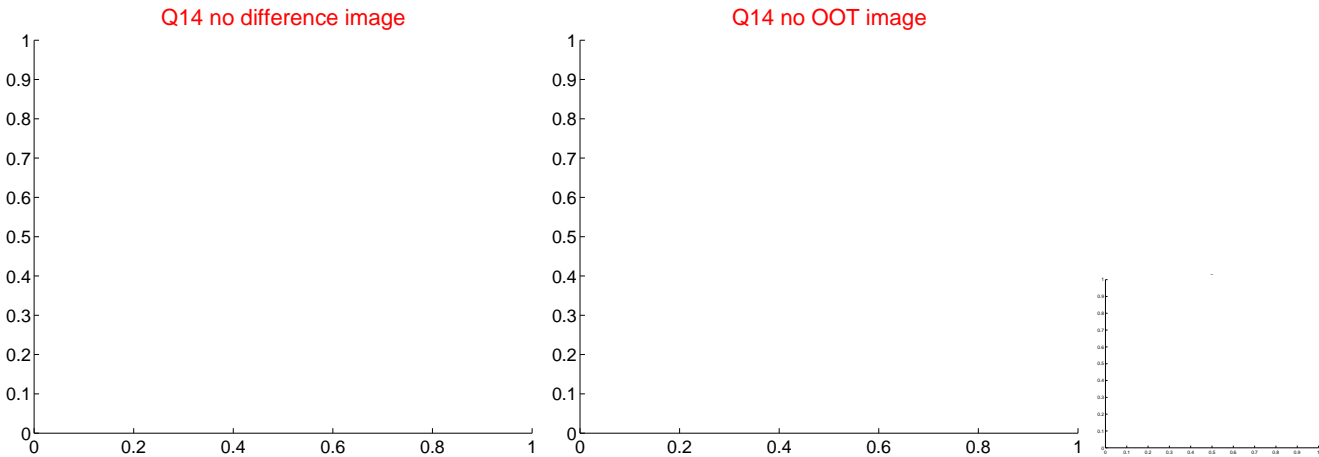
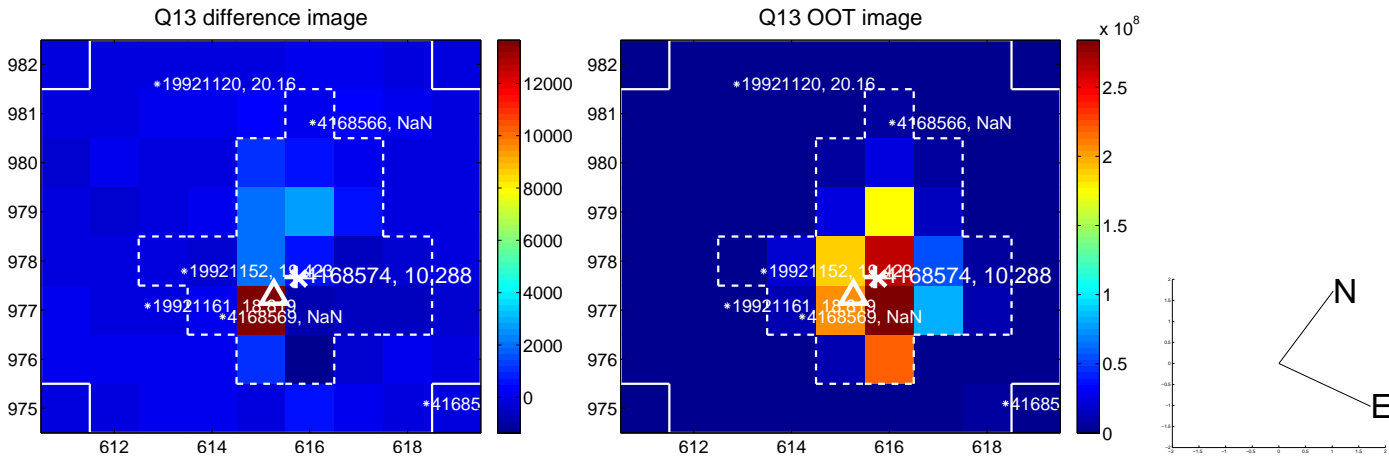
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



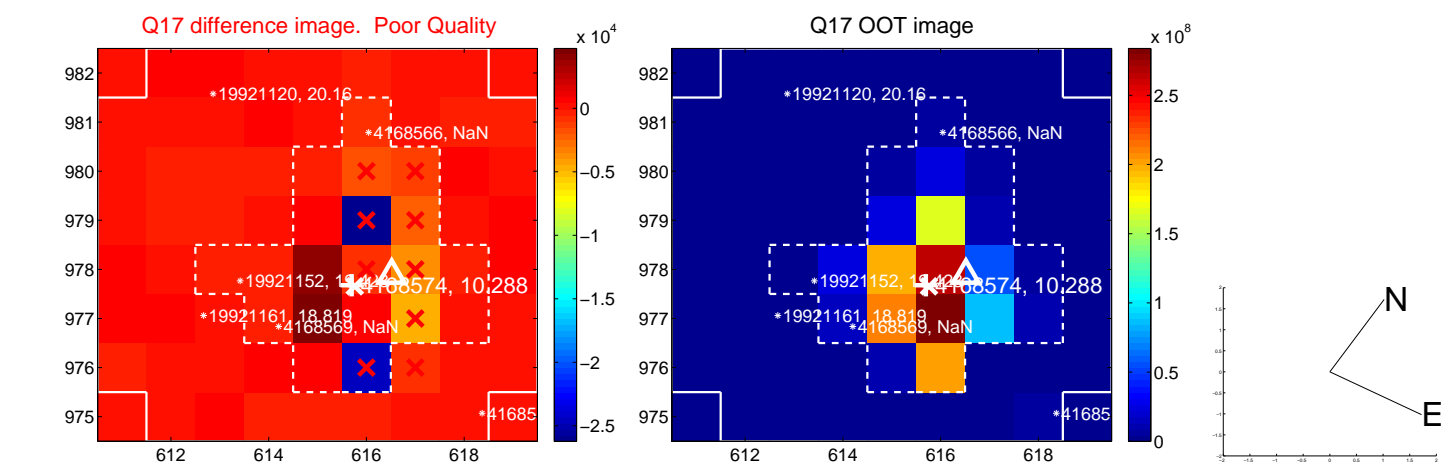
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



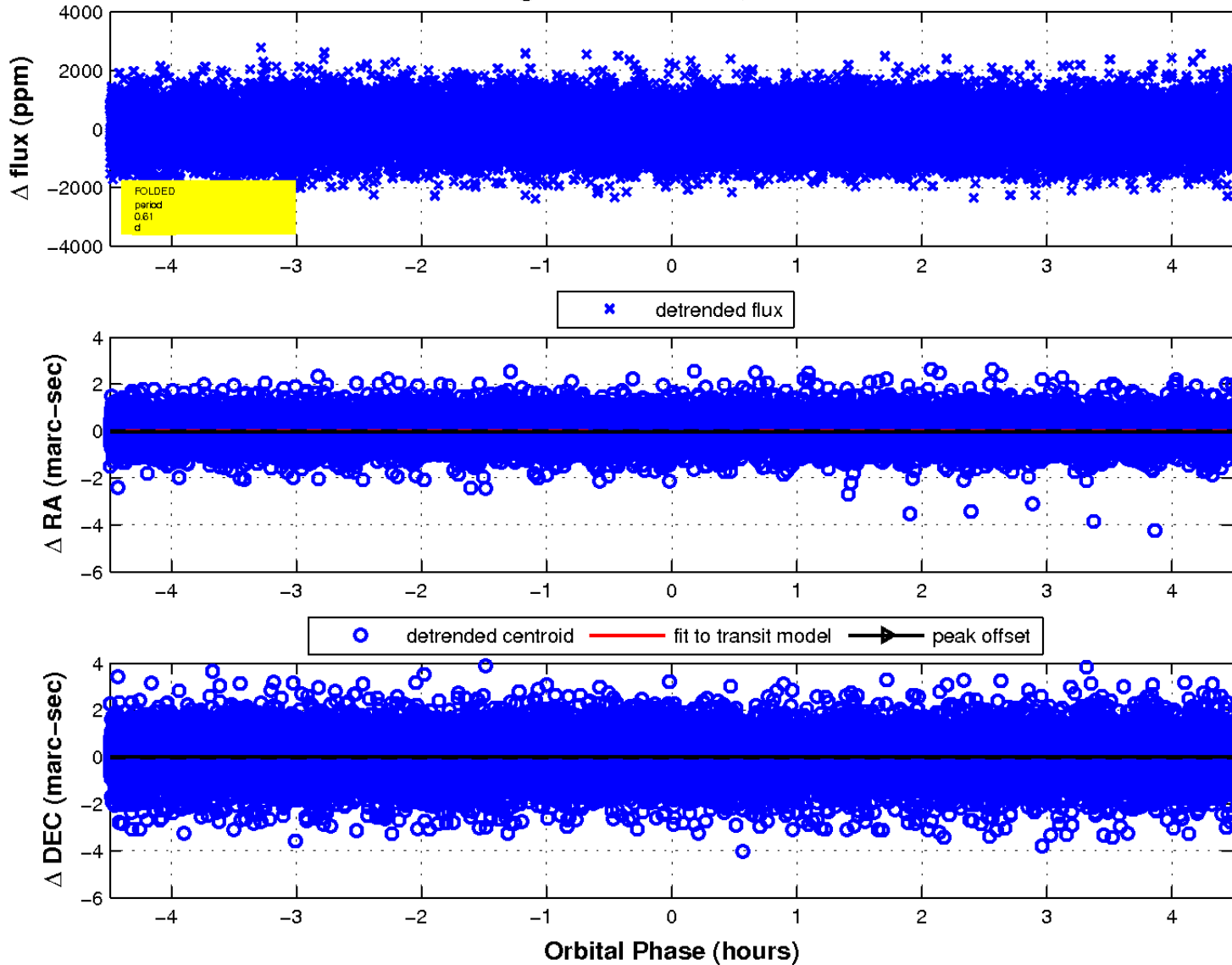
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



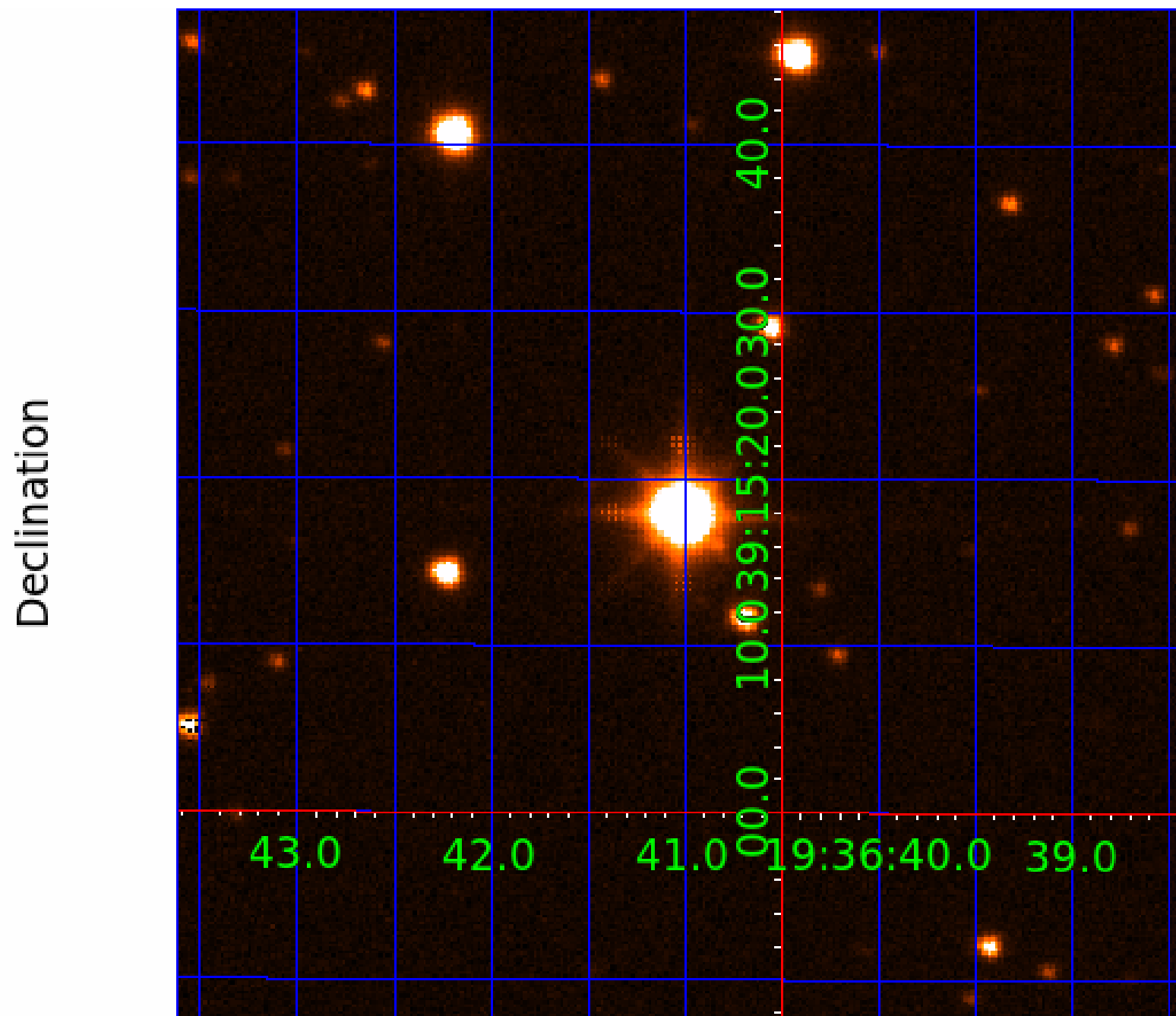
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 3



UKIRT Image



KIC 004168574

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})
004168574-01	OBS	No	0.610170	131.872236	94.3	1.497	9.6	10.1	4.43	7928	5.04	0.00
004168574-02	OBS	No	0.610172	131.566147	91.4	1.387	9.9	10.2	4.43	7928	4.54	0.00
004168574-03	OBS	No	53.366871	133.243110	1017.9	1.860	8.8	8.8	4.43	7928	15.54	506.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004168574-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
004168574-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
004168574-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

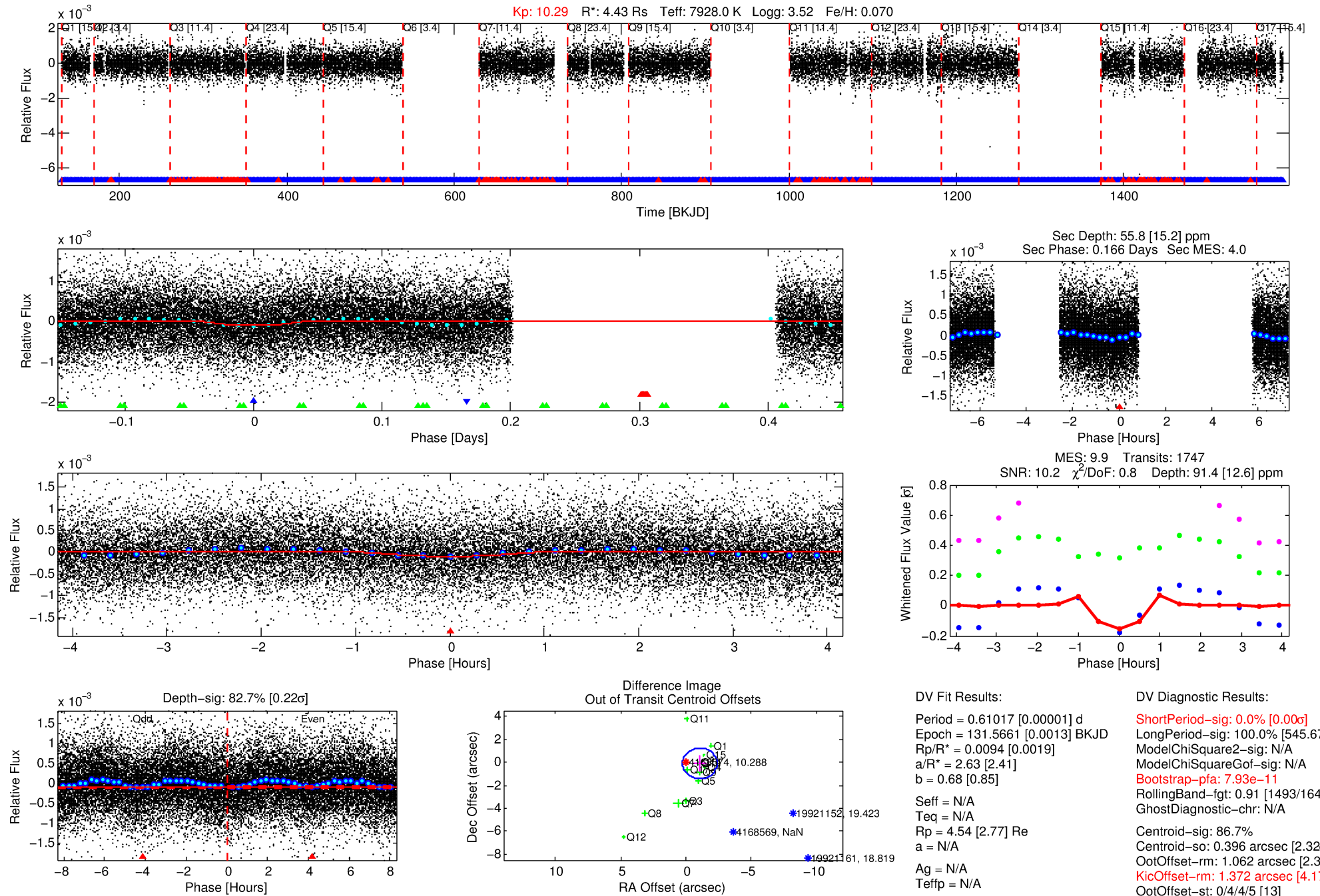
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004168574-02

No Significant Match Found

DV One-Page Summary

KIC: 4168574 Candidate: 2 of 3 Period: 0.610 d



DV Fit Results:

Period = 0.61017 [0.00001] d
Epoch = 131.5661 [0.0013] BKJD
Rp/R* = 0.0094 [0.0019]
a/R* = 2.63 [2.41]
b = 0.68 [0.85]
Seff = N/A
Teq = N/A
Rp = 4.54 [2.77] Re
a = N/A
Ag = N/A
Teffp = N/A

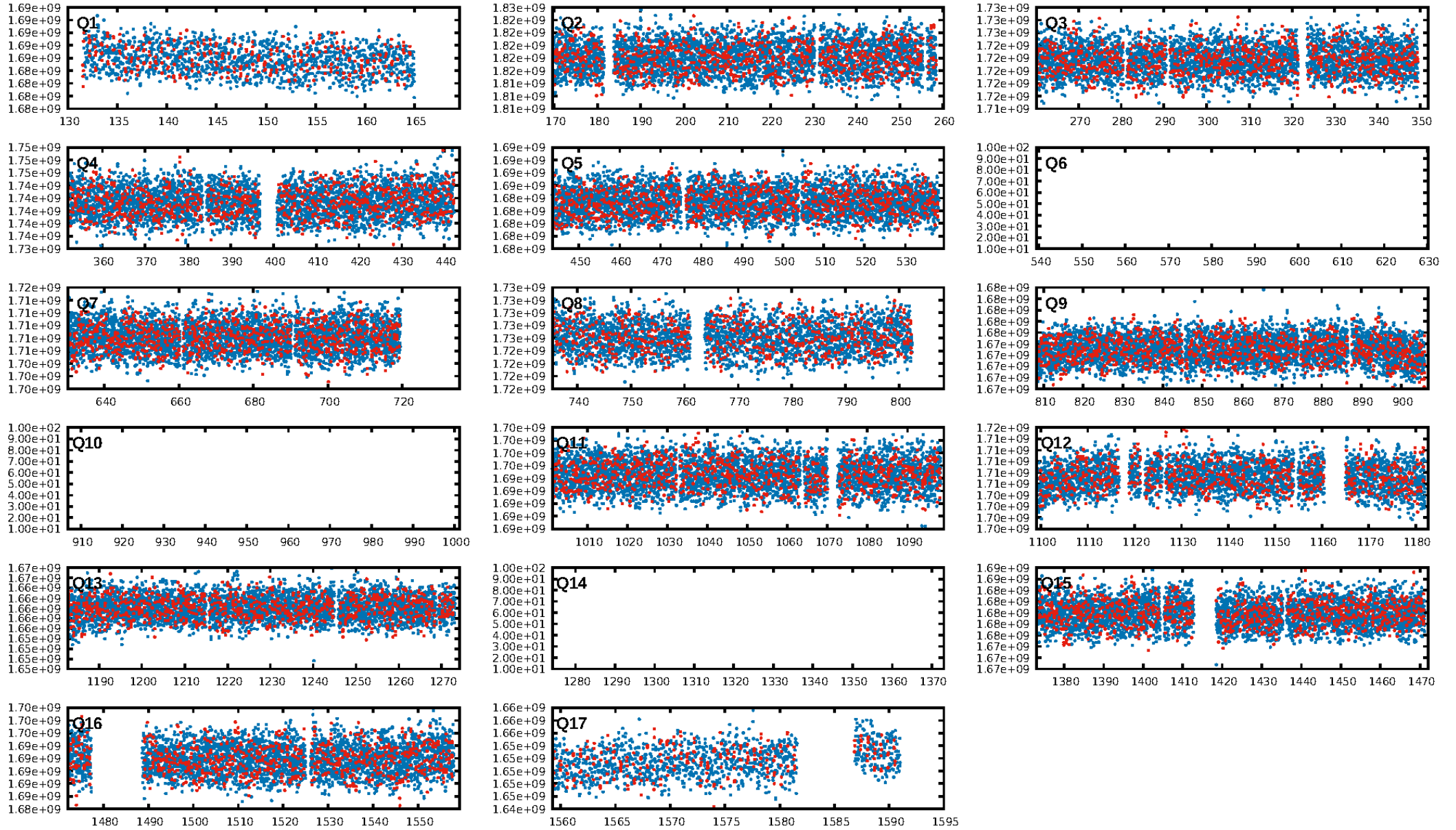
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [545.67σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.93e-11
RollingBand-fgt: 0.91 [1493/1648]
GhostDiagnostic-chr: N/A
Centroid-sig: 86.7%
Centroid-so: 0.396 arcsec [2.32σ]
OotOffset-rm: 1.062 arcsec [2.39σ]
KicOffset-rm: 1.372 arcsec [4.17σ]
OotOffset-st: 0/4/4/5 [13]
KicOffset-st: 0/4/4/5 [13]
DiffImageQuality-fgm: 0.15 [2/13]
DiffImageOverlap-fno: 1.00 [14/14]

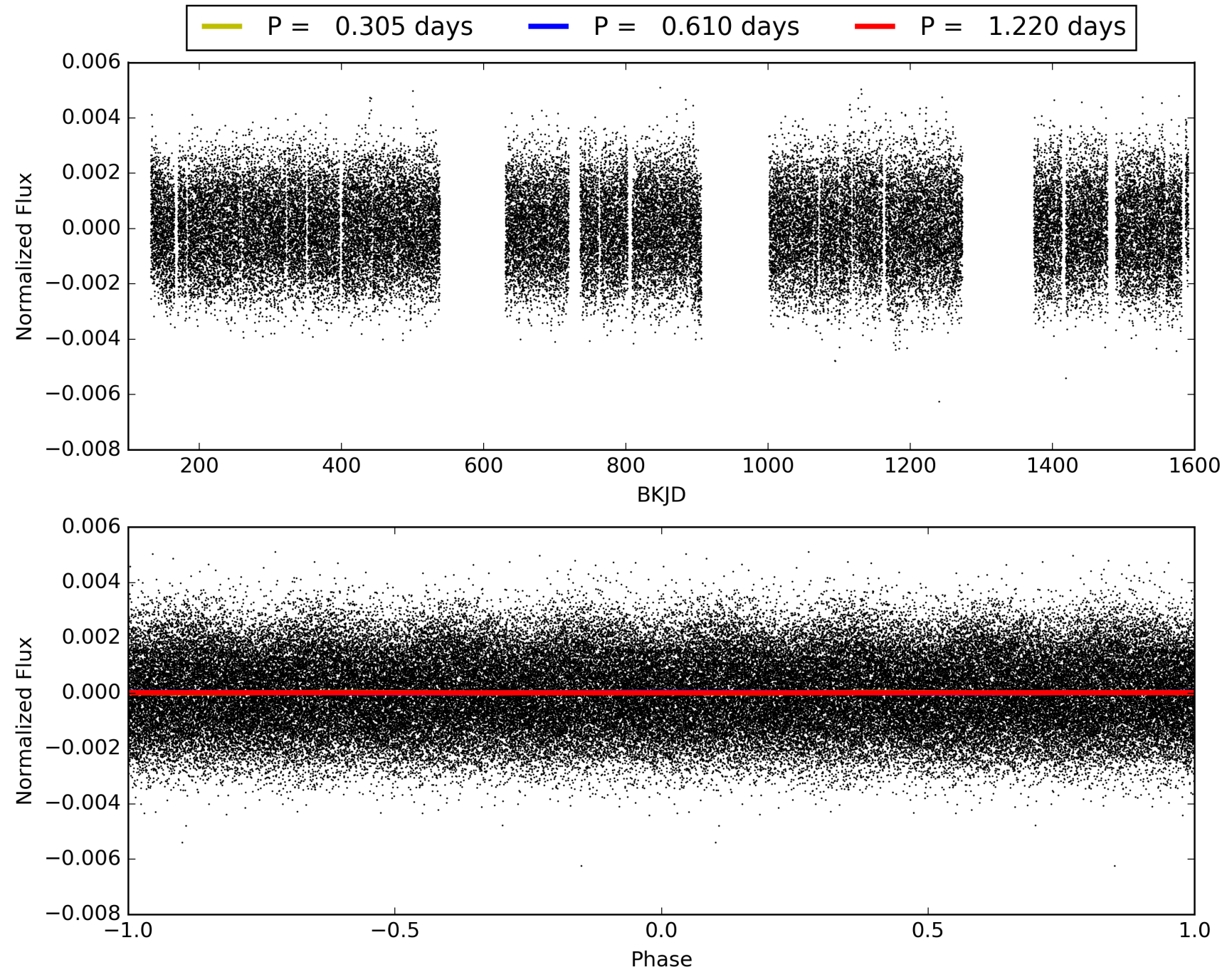
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:13:30 Z

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

TCE 004168574-02, PDC Light Curves

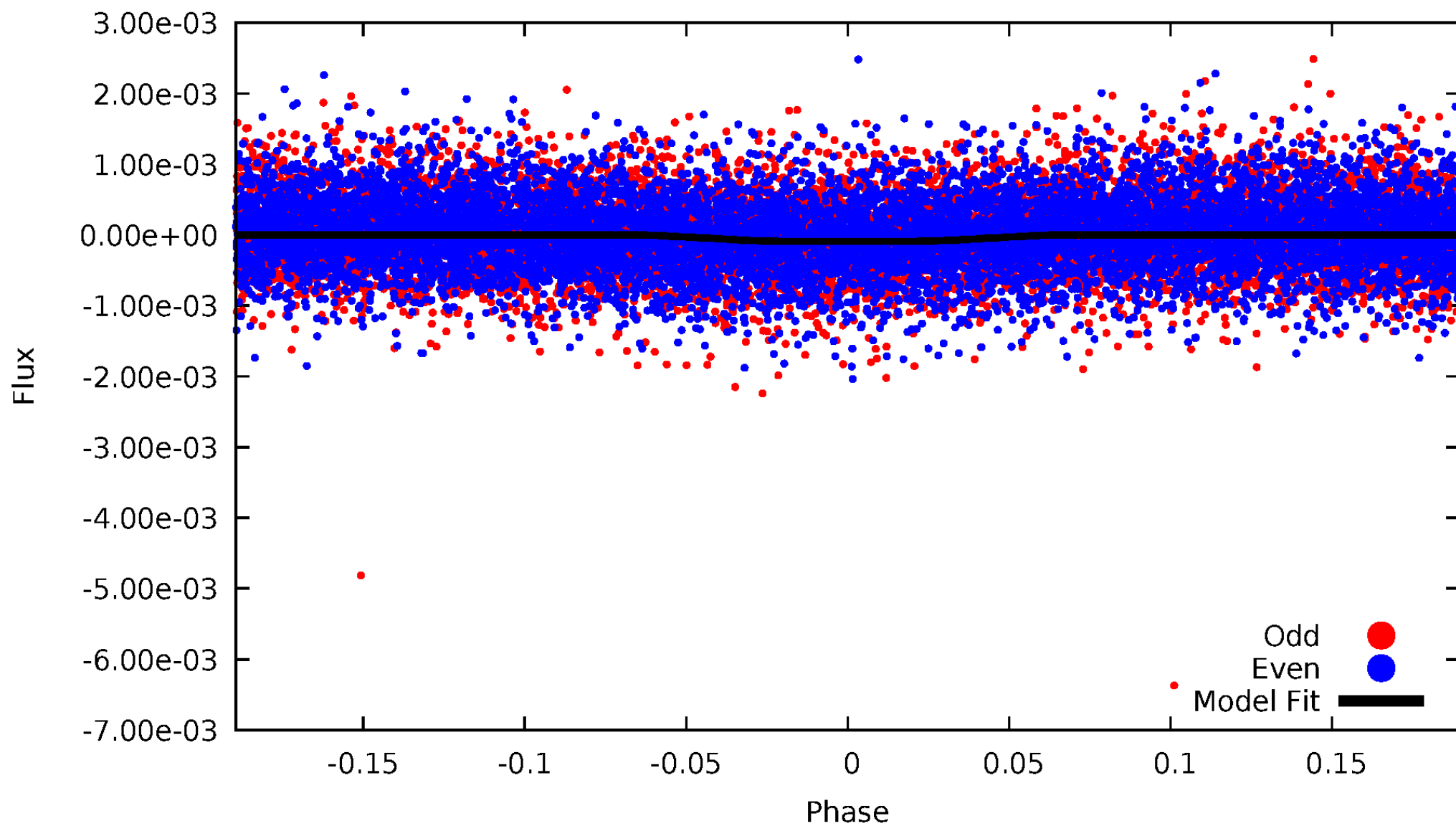


TCE 004168574-02



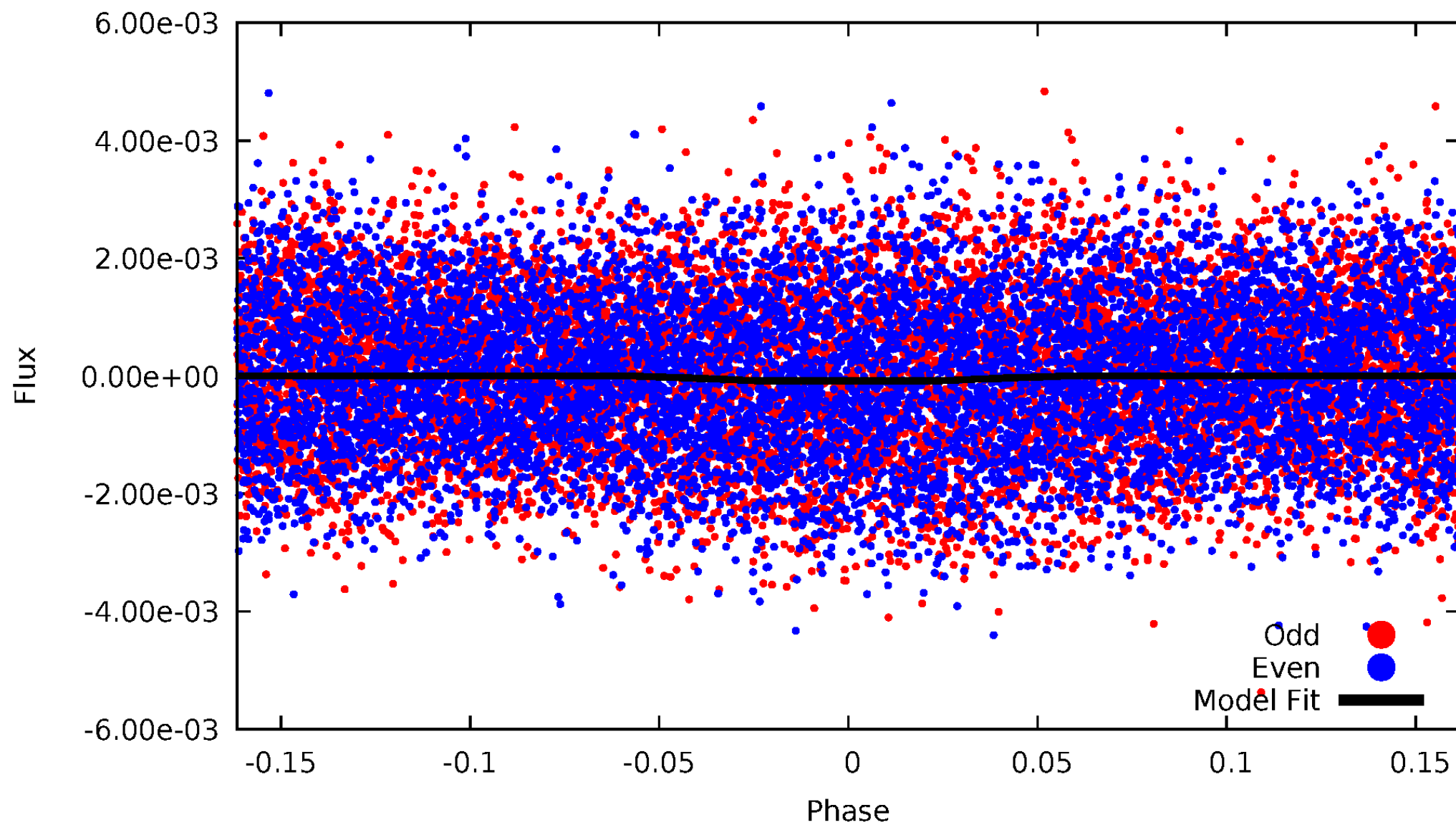
DV Odd/Even

TCE 004168574-02



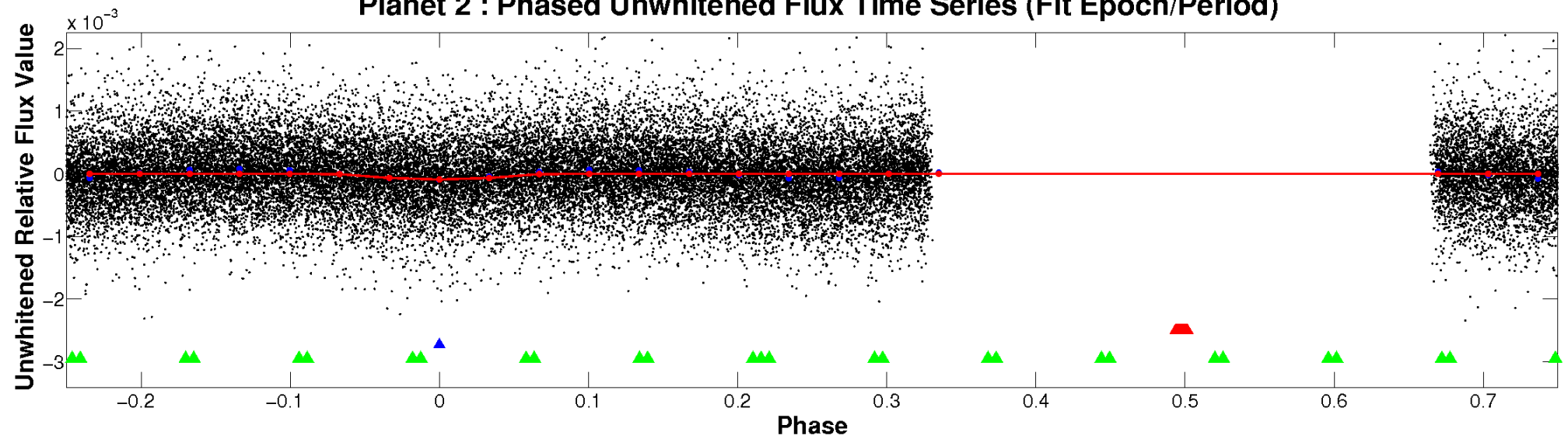
ALT Odd/Even

TCE 004168574-02

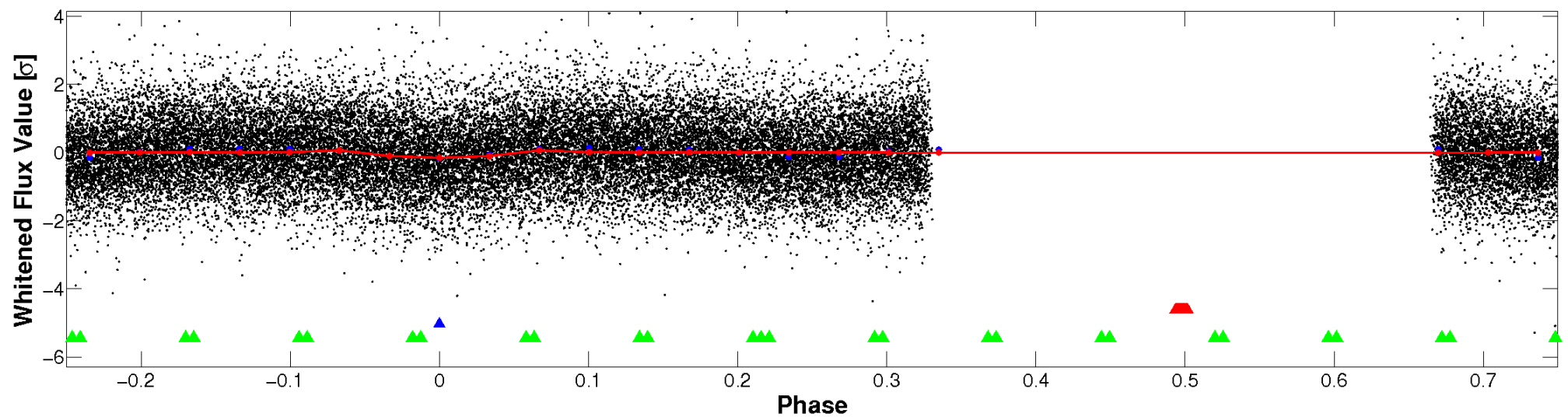


Non-Whitened Vs. Whitened Light Curve

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

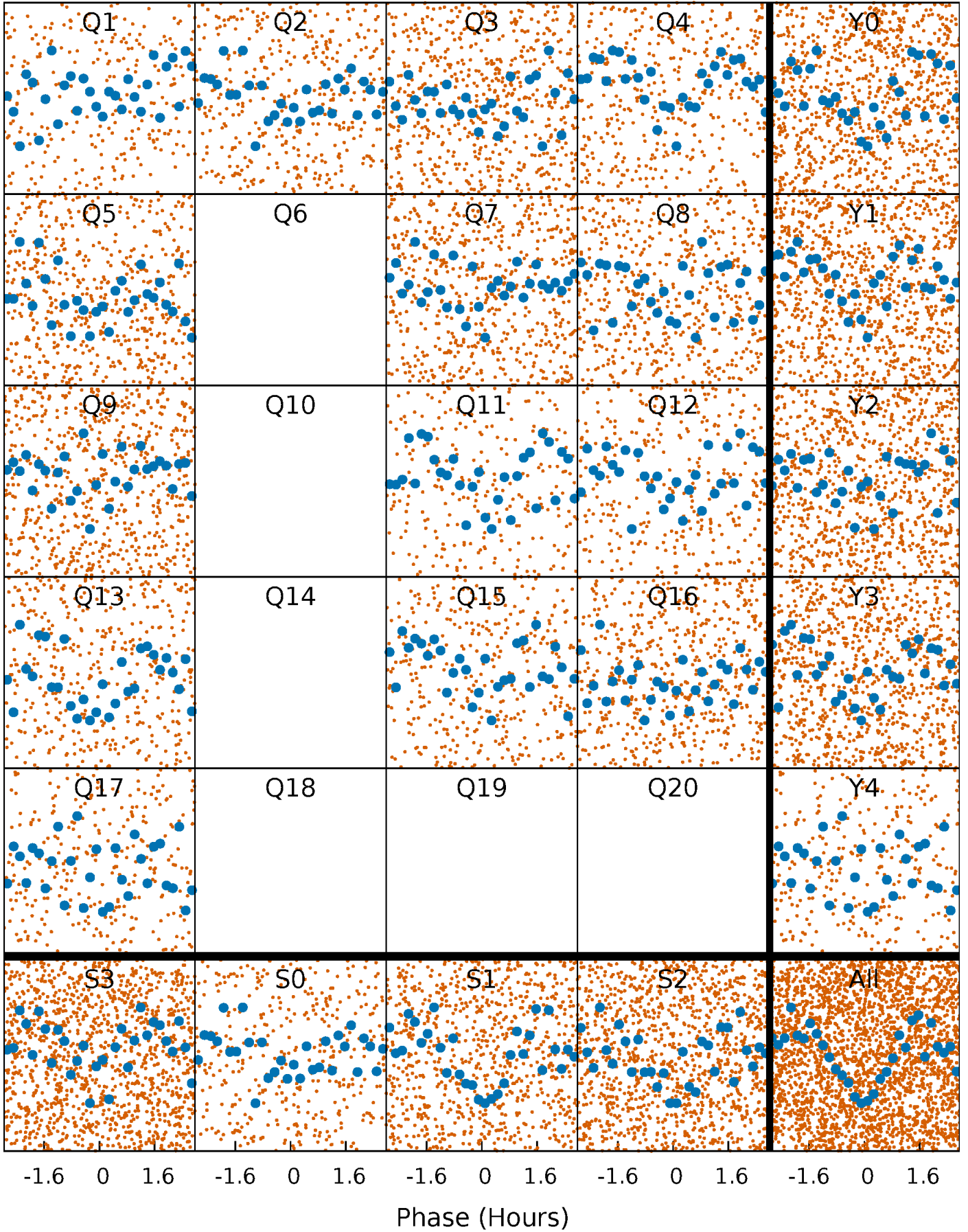


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



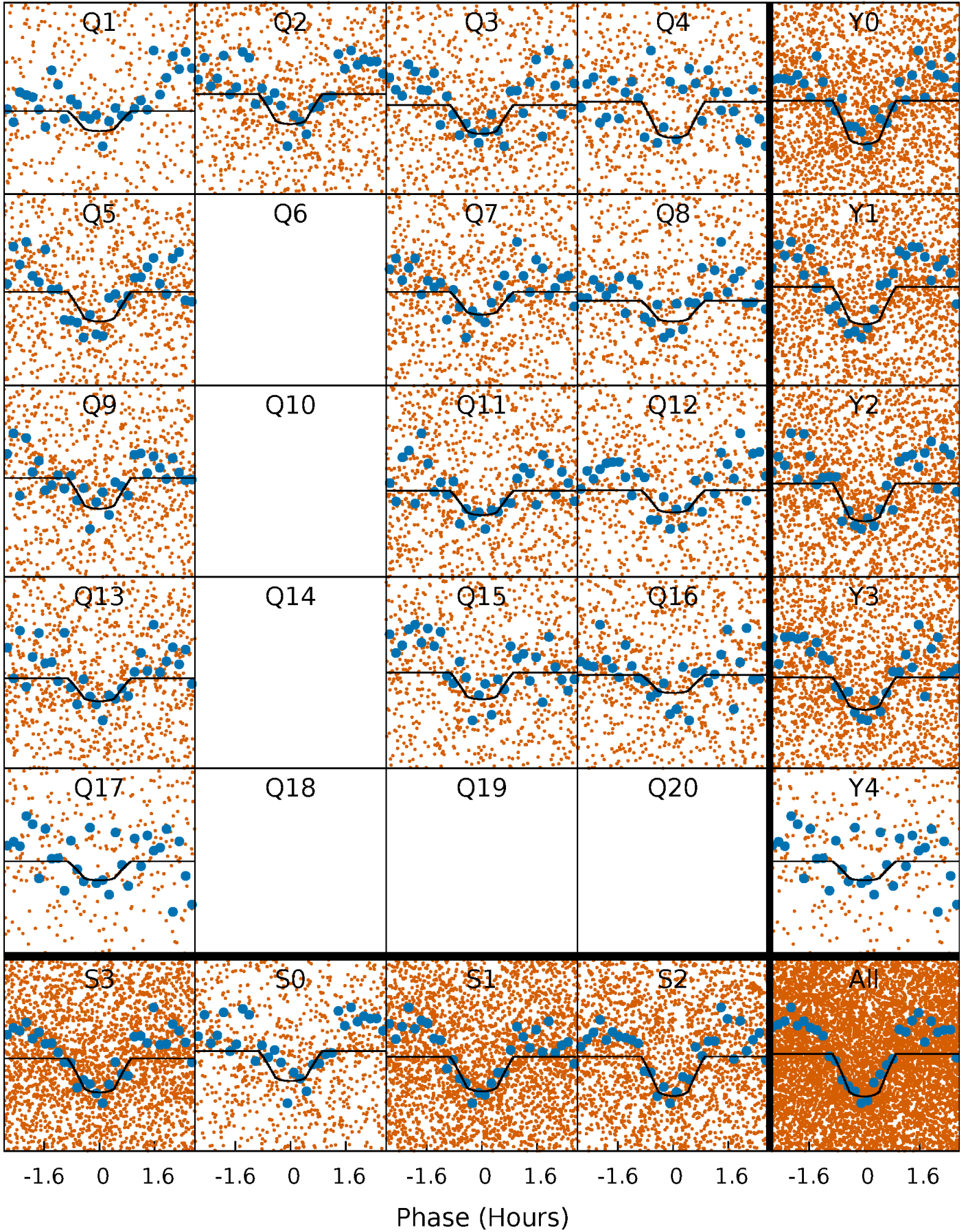
PDC Quarter-Phased Transit Curves

TCE 004168574-02 $P = 0.610172$ Days $T_0 = 131.566147$ (BKJD)



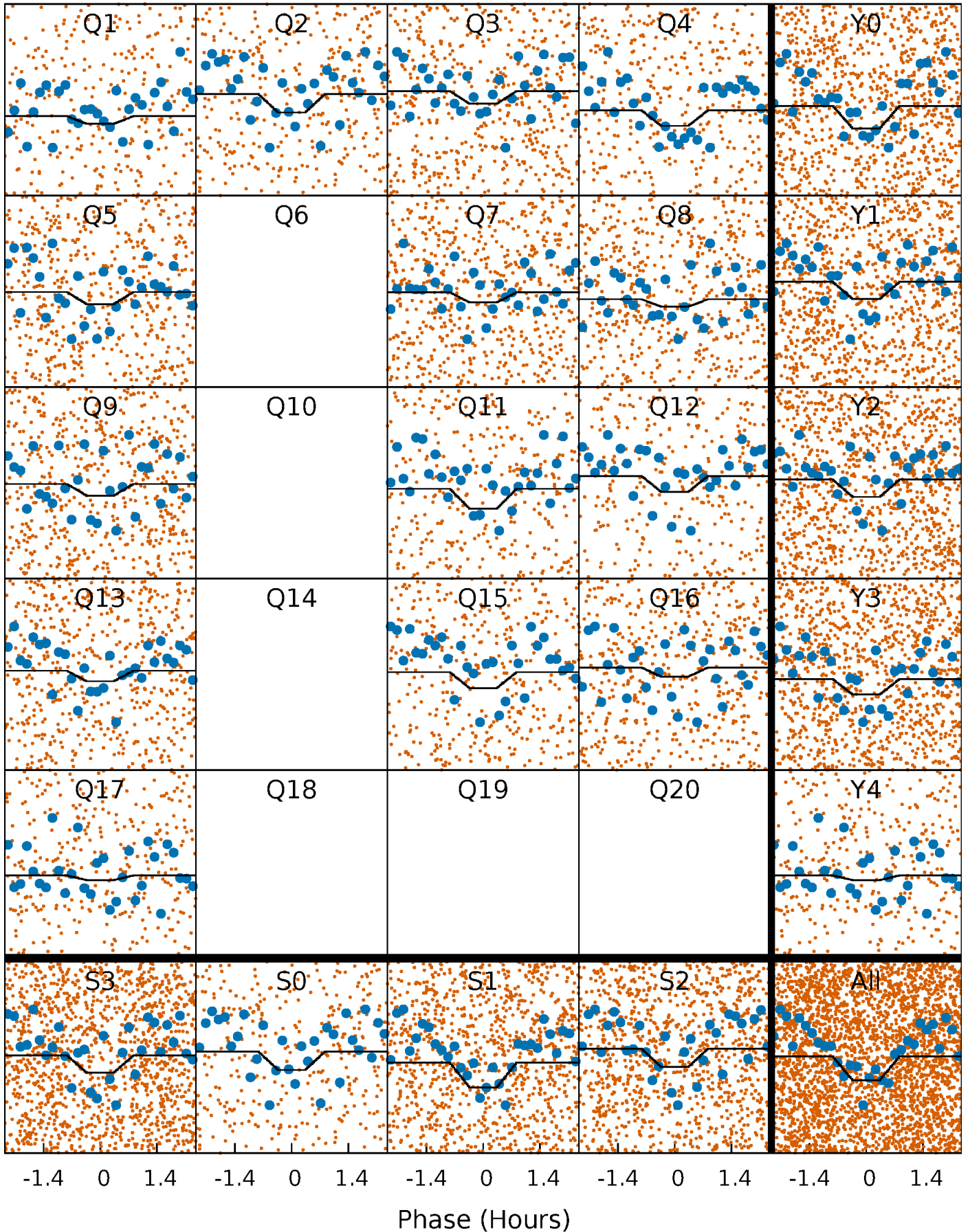
DV Quarter-Phased Transit Curves

TCE 004168574-02 P= 0.610172 Days $T_0=131.566147$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

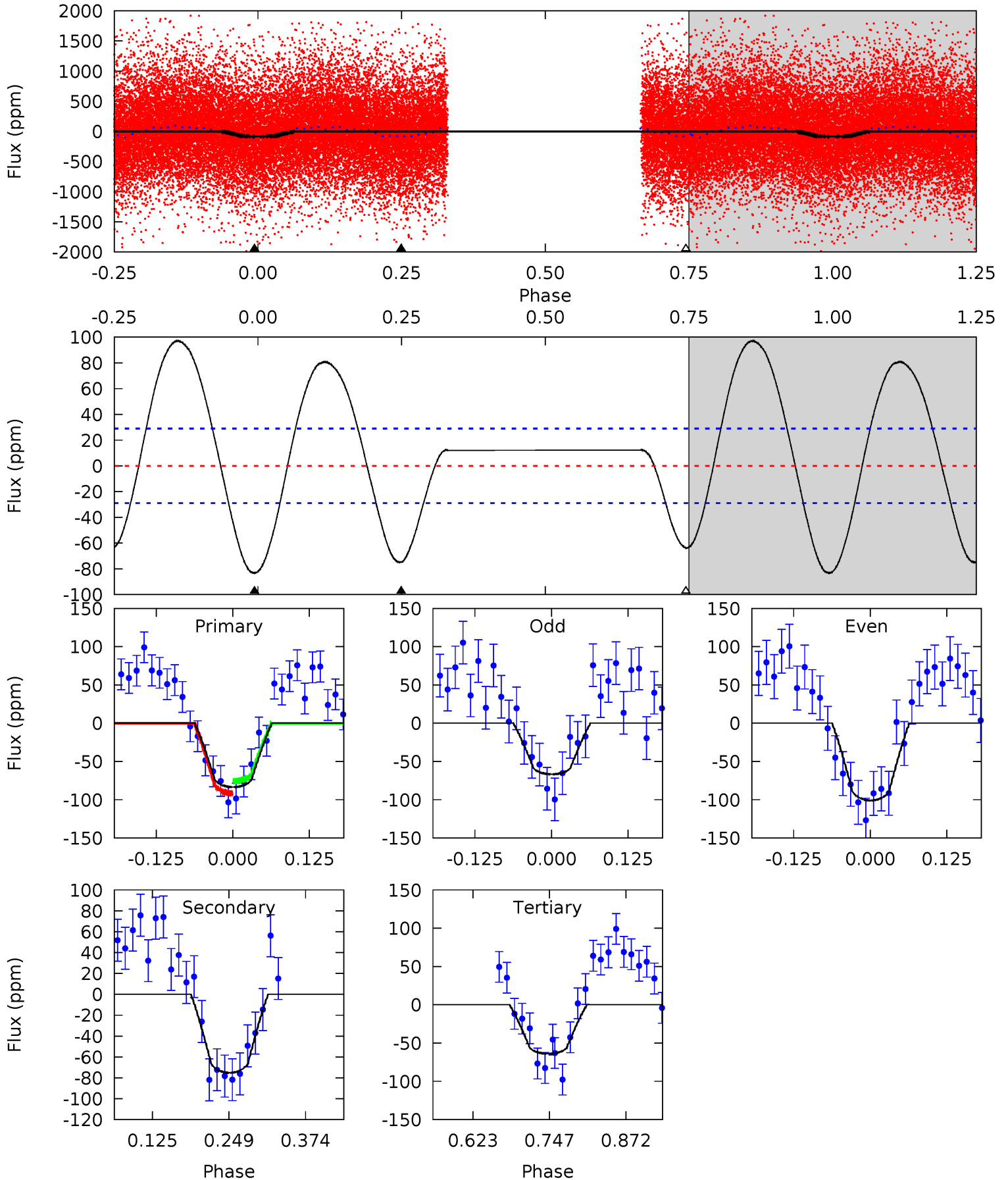
TCE 004168574-02 P= 0.610170 Days $T_0=131.566160$ (BKJD)



DV Model-Shift Uniqueness Test

004168574-02, P = 0.610172 Days, E = 130.955975 Days

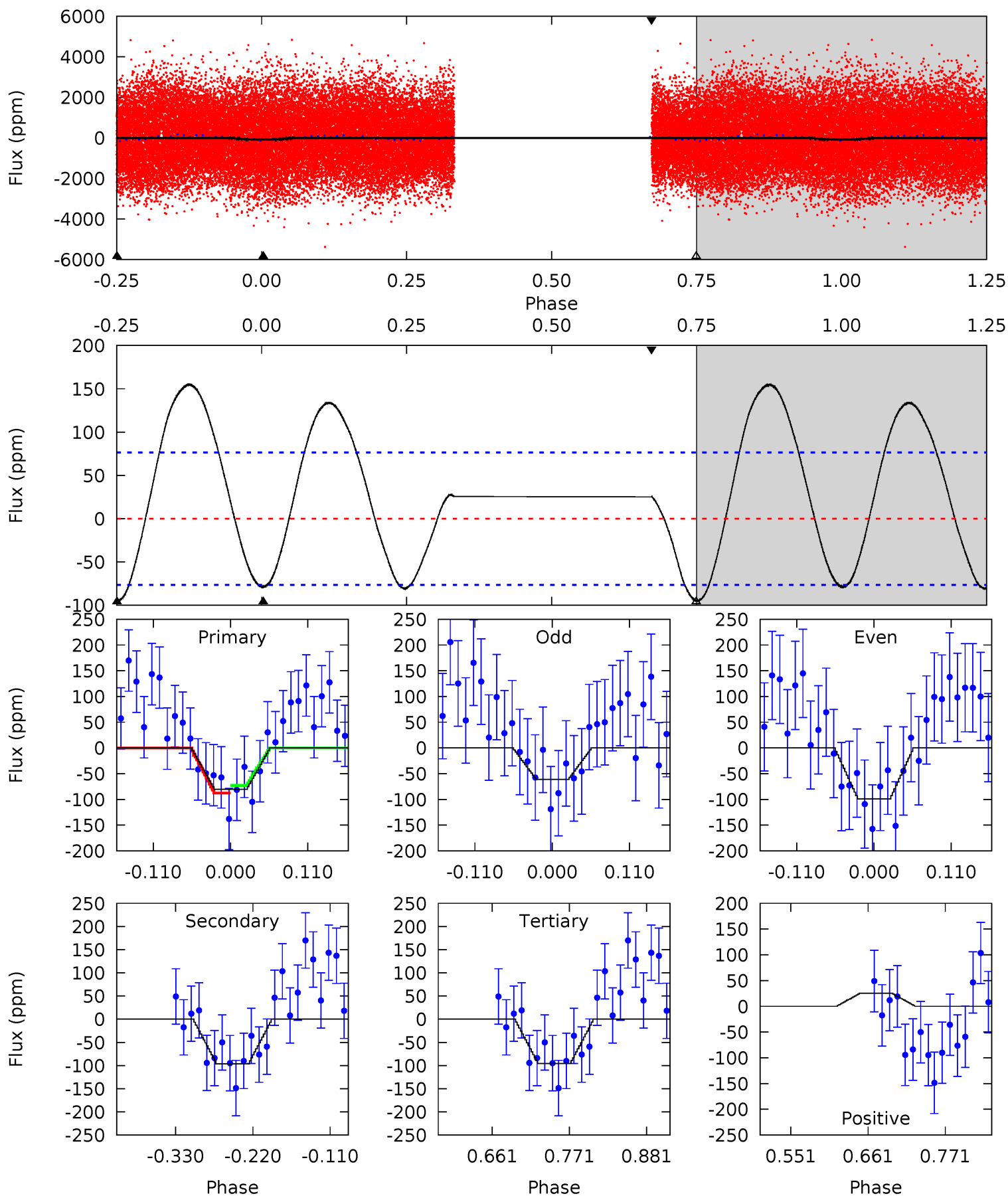
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	11.7	9.98	0	4.52	1.54	8.66	3.07	13.1	1.75	11.7	2.69	1.11	0.54	1.26



Alt Model-Shift Uniqueness Test

004168574-02, P = 0.610170 Days, E = 130.955990 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.76	5.71	5.68	1.50	4.54	1.60	4.63	-0.92	3.27	0.03	4.21	1.10	0.77	0.62	0.41



Stellar Parameters For KIC 004168574

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7928^{+220}_{-331}	$3.522^{+0.558}_{-0.031}$	$0.070^{+0.250}_{-0.450}$	$4.435^{+0.449}_{-2.546}$	$2.386^{+0.265}_{-0.795}$	$0.039^{+0.296}_{-0.008}$
	+3%/-4%	+16%/-1%	+357%/-643%	+10%/-57%	+11%/-33%	+768%/-21%
Source	KIC0	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 004168574-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-75 ± 6	$3.94^{+1.19}_{-1.35}$	7078^{+520}_{-1027}	6761^{+1579}_{-1110}	$0.961^{+1.250}_{-0.395}$
Alt.	-96 ± 17	$3.82^{+1.29}_{-1.26}$	7120^{+479}_{-967}	7636^{+1756}_{-1372}	$1.300^{+1.492}_{-0.589}$

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

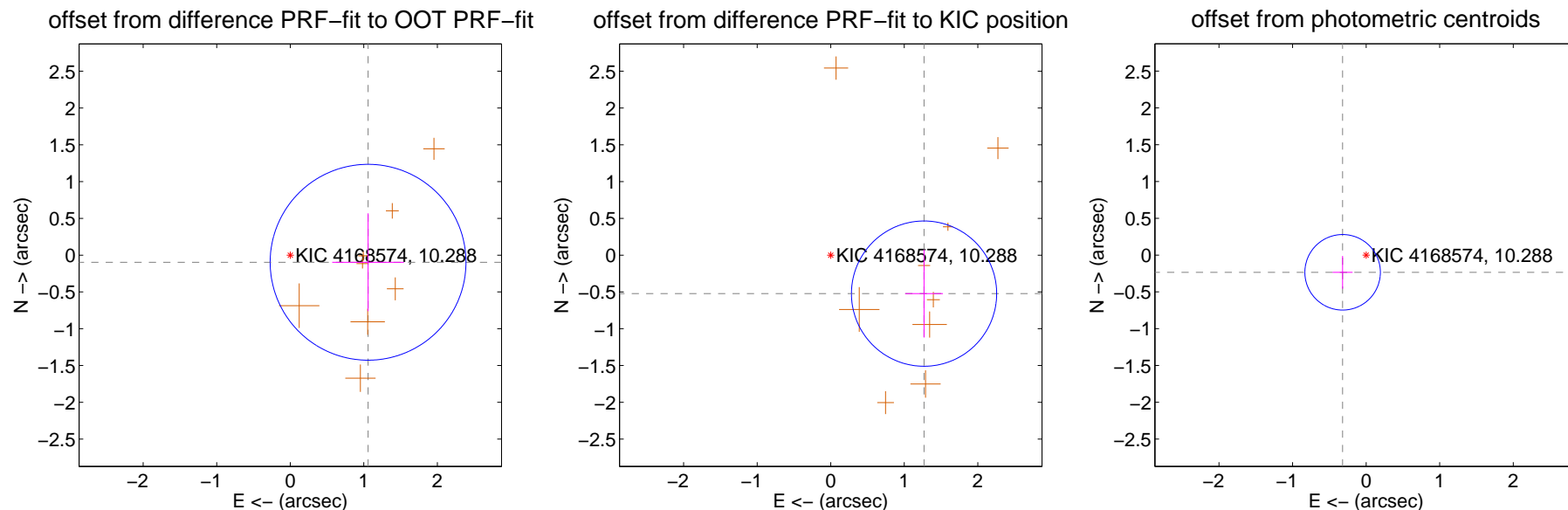
DV Centroid Data

Supplemental centroid analysis for 004168574-02. **Kepler magnitude: 10.29.** Transit SNR 10.20

There are 2 quarters with good PRF difference image offsets

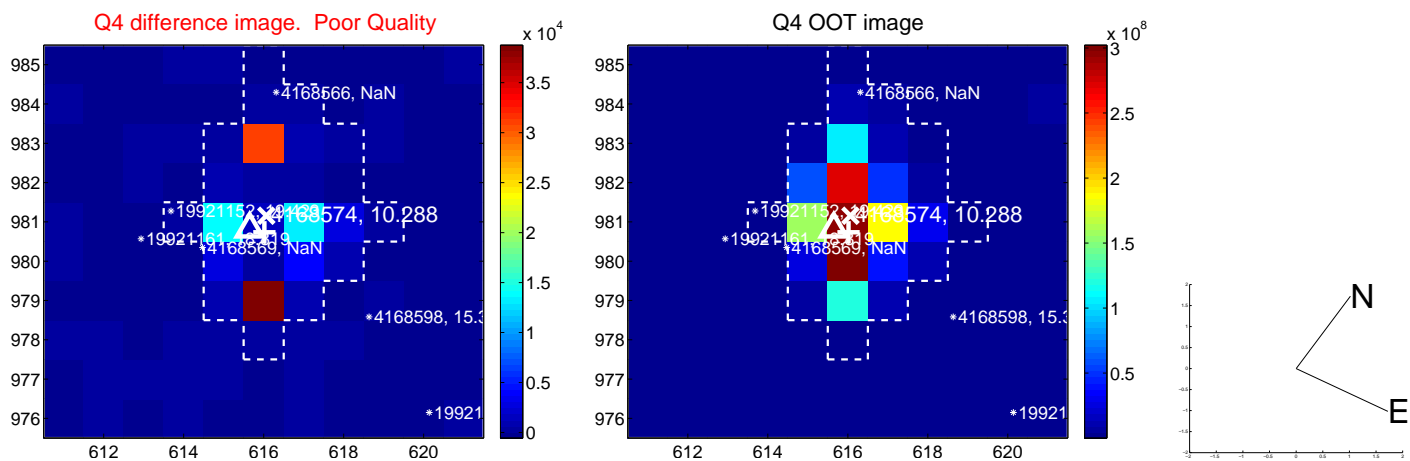
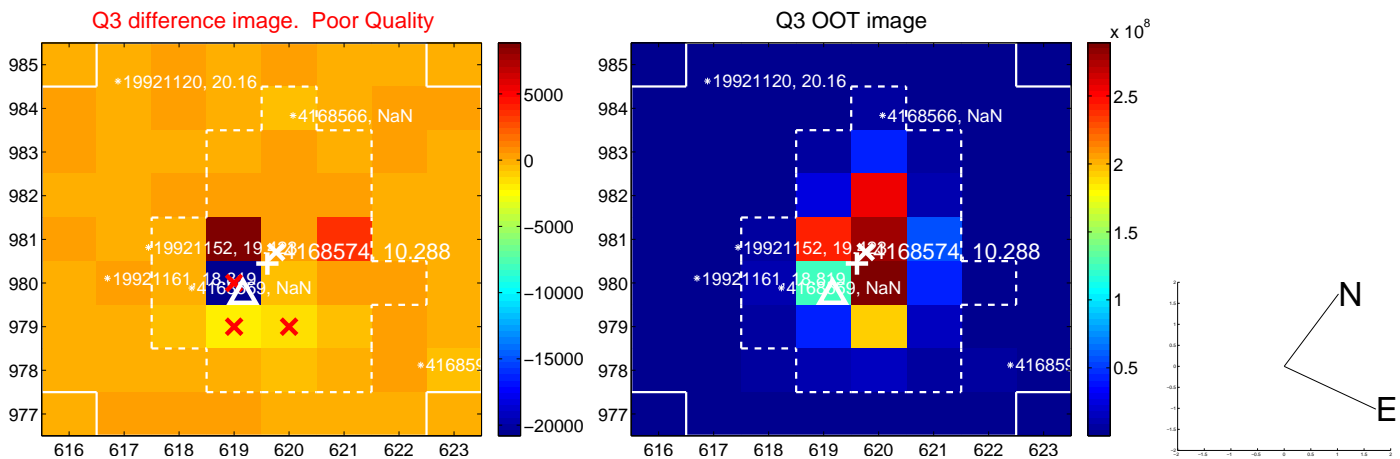
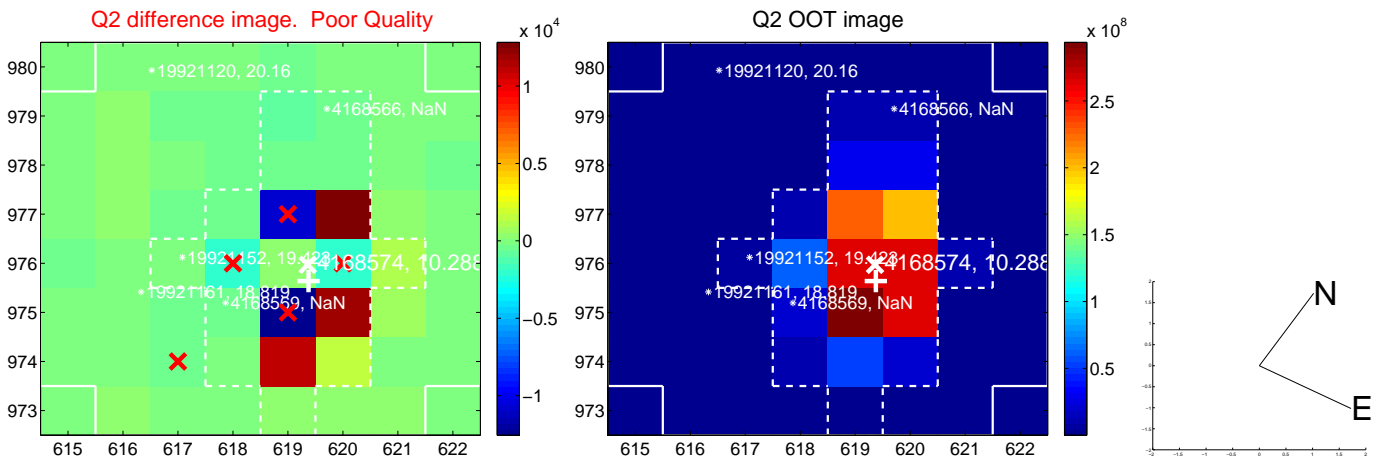
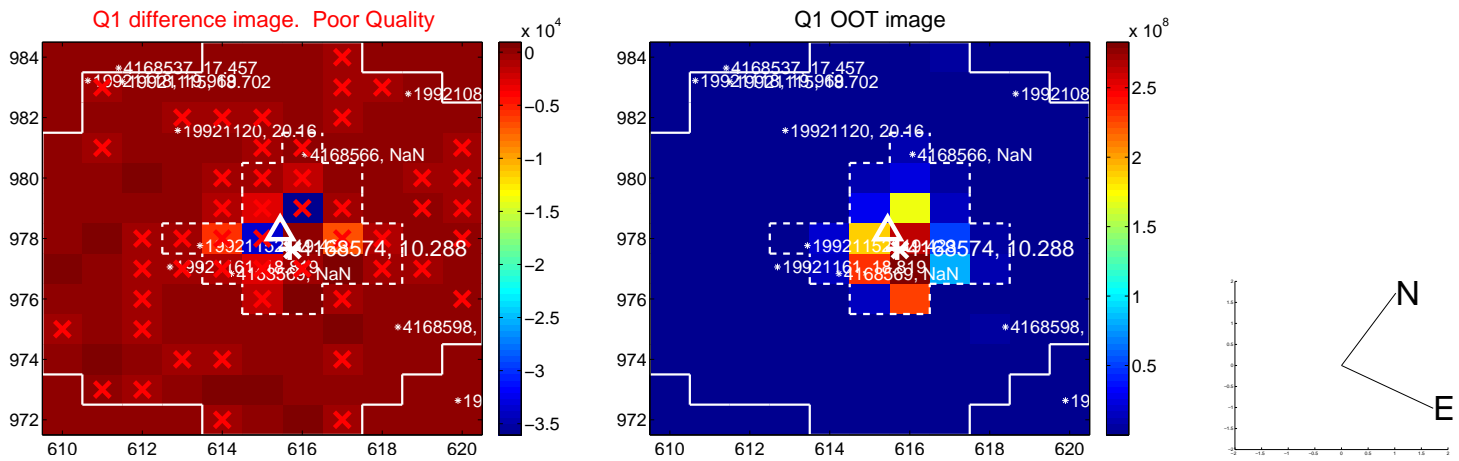
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.062 ± 0.444	2.39	-1.058 ± 0.488	-0.097 ± 0.665
PRF-fit source offset from KIC position	1.372 ± 0.329	4.17	-1.269 ± 0.257	-0.523 ± 0.597
photometric centroid source offset	0.40 ± 0.17	2.32	0.32 ± 0.14	-0.23 ± 0.22

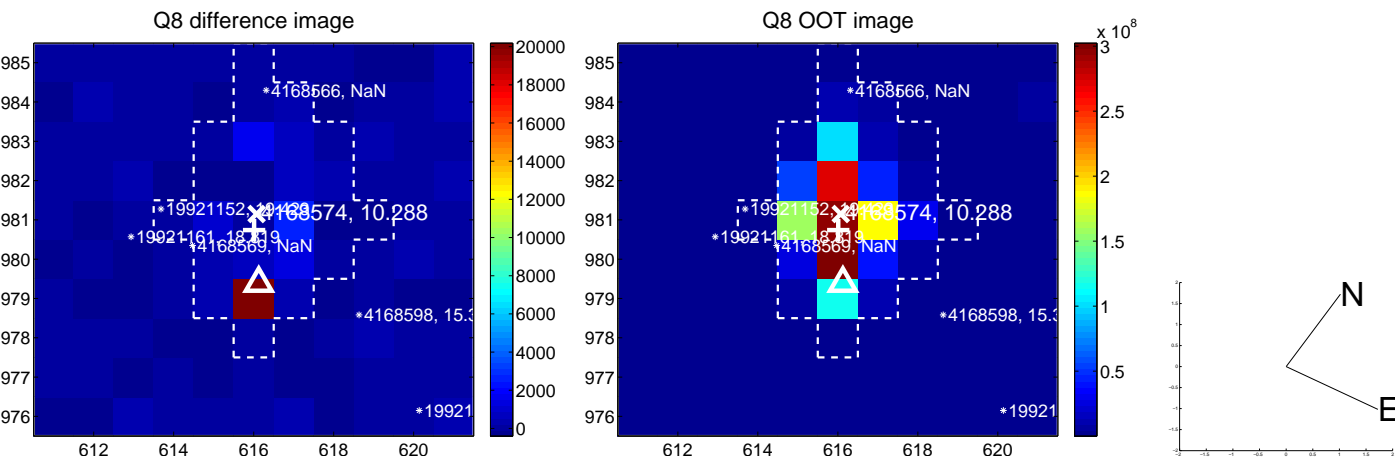
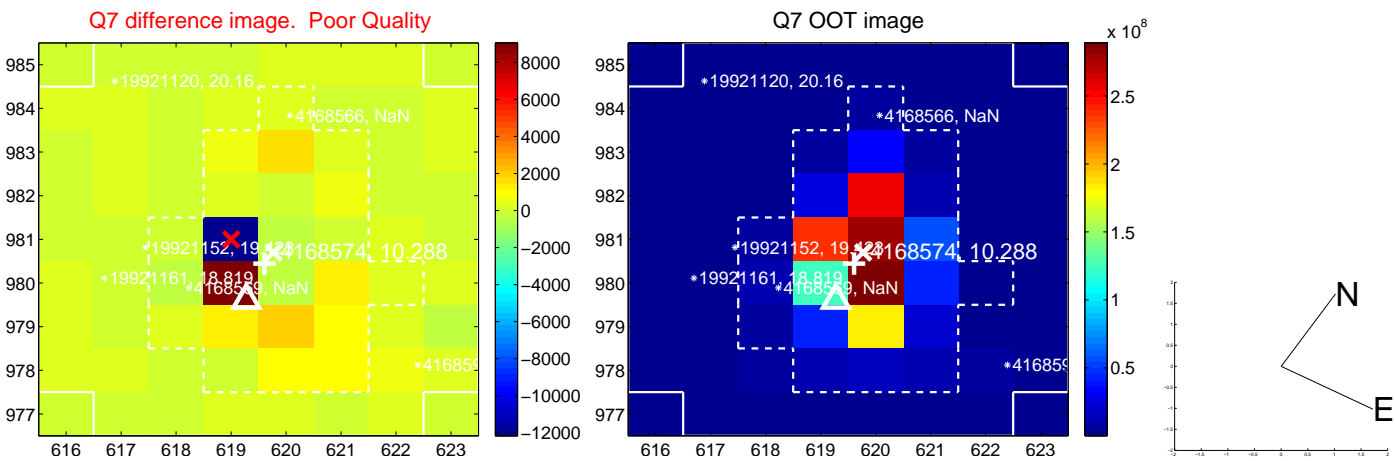
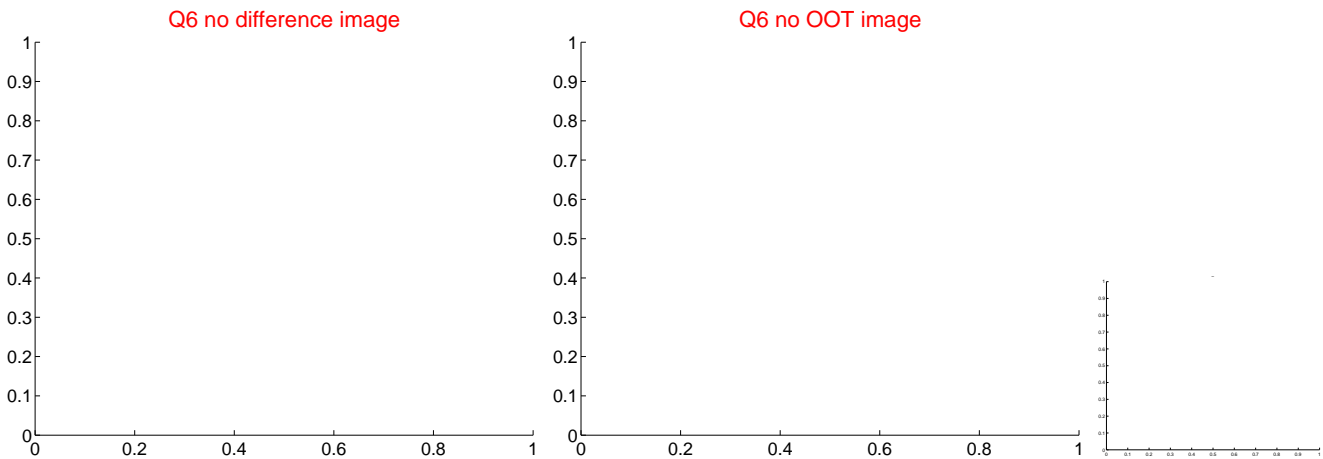
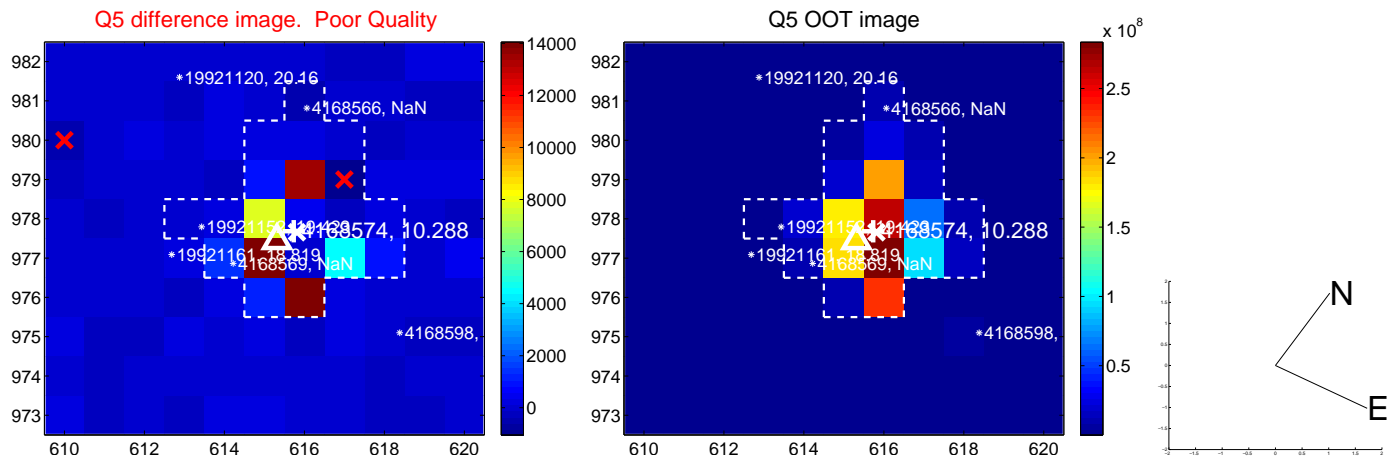


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

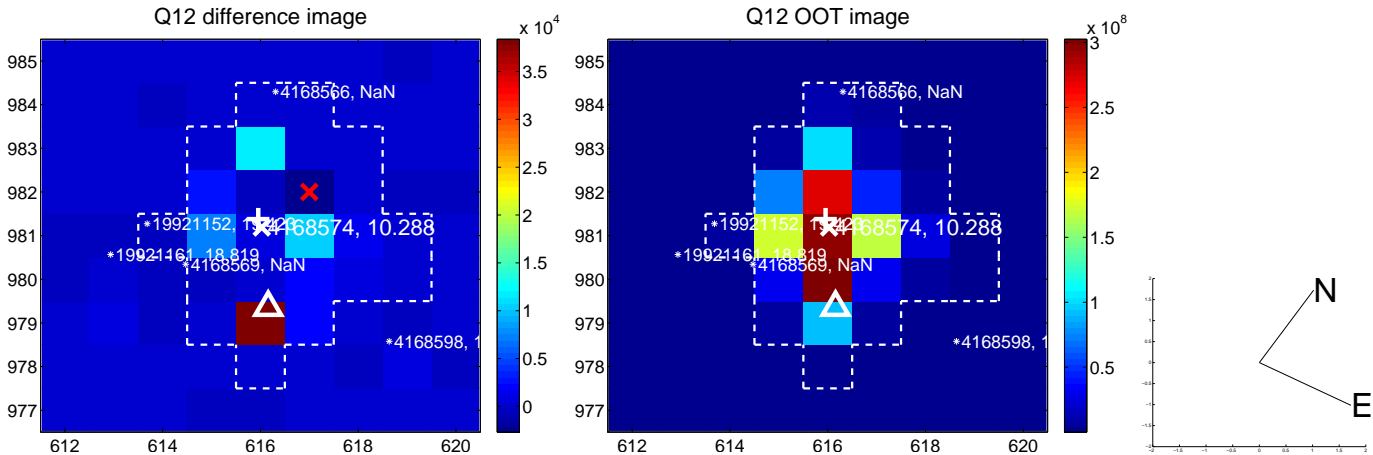
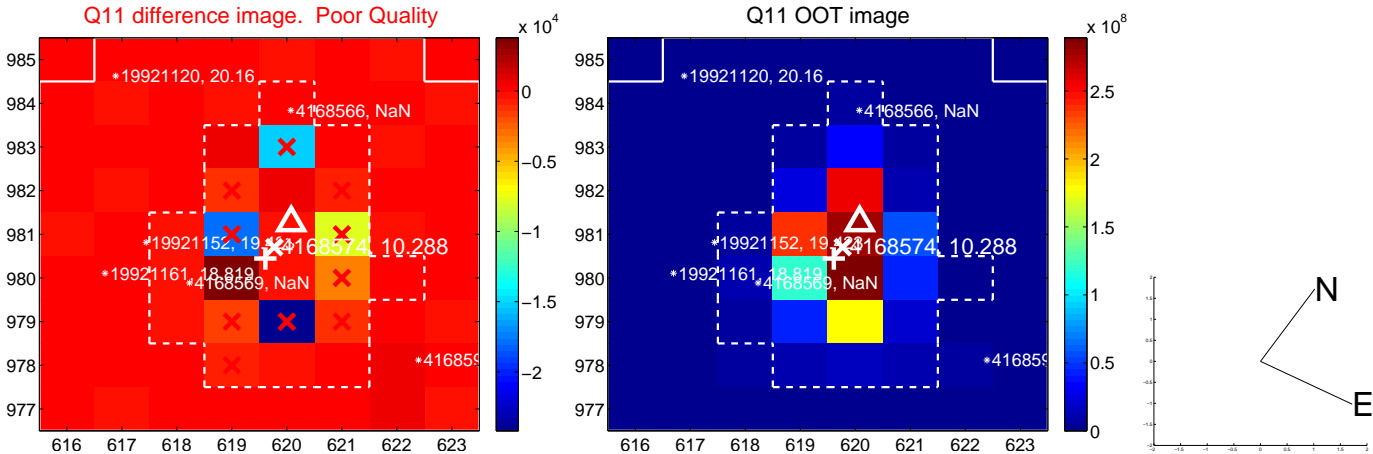
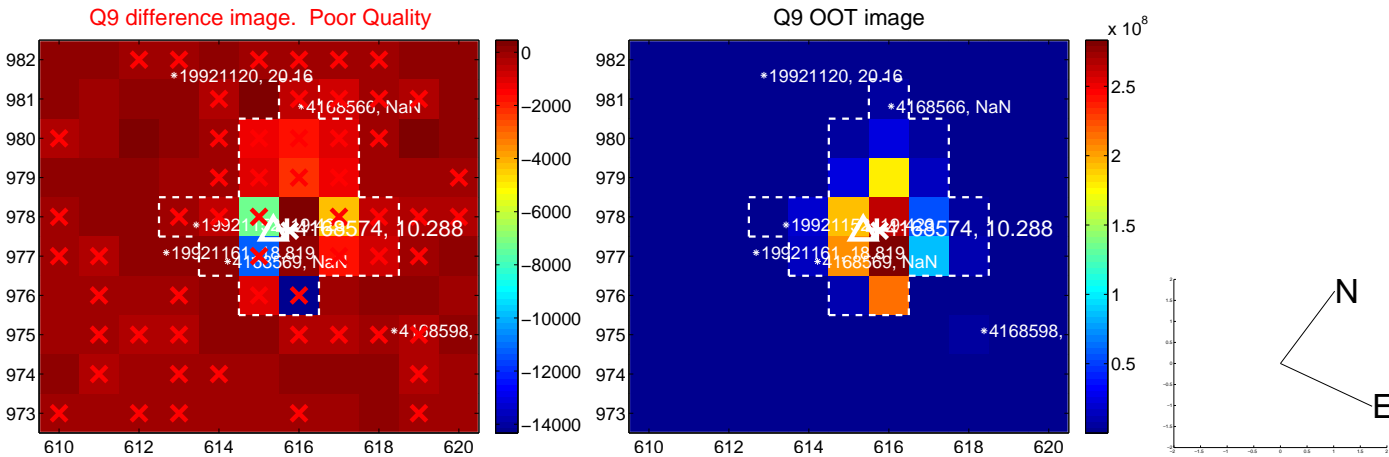
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



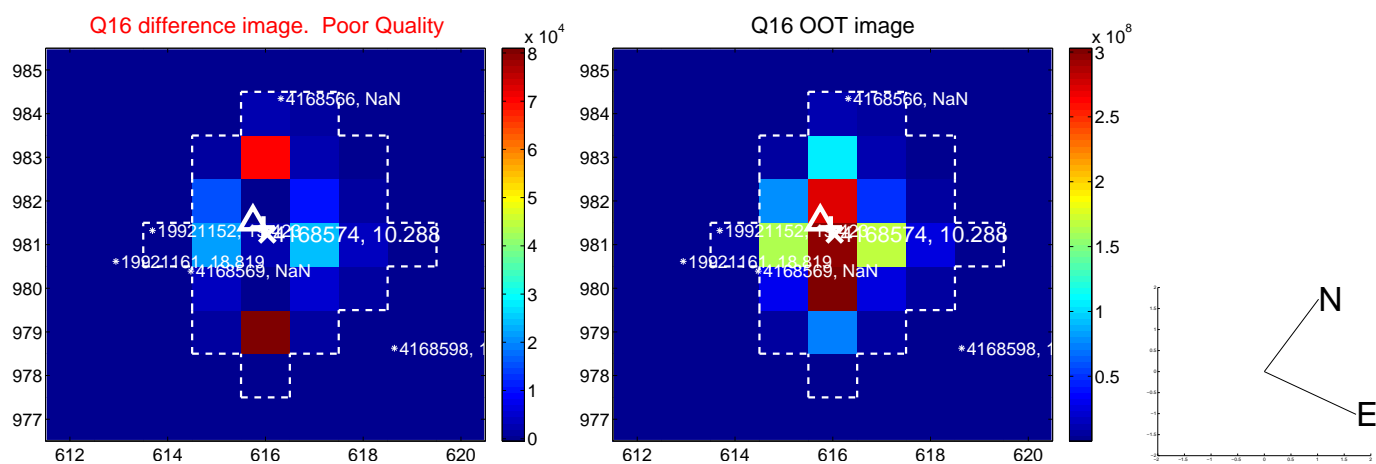
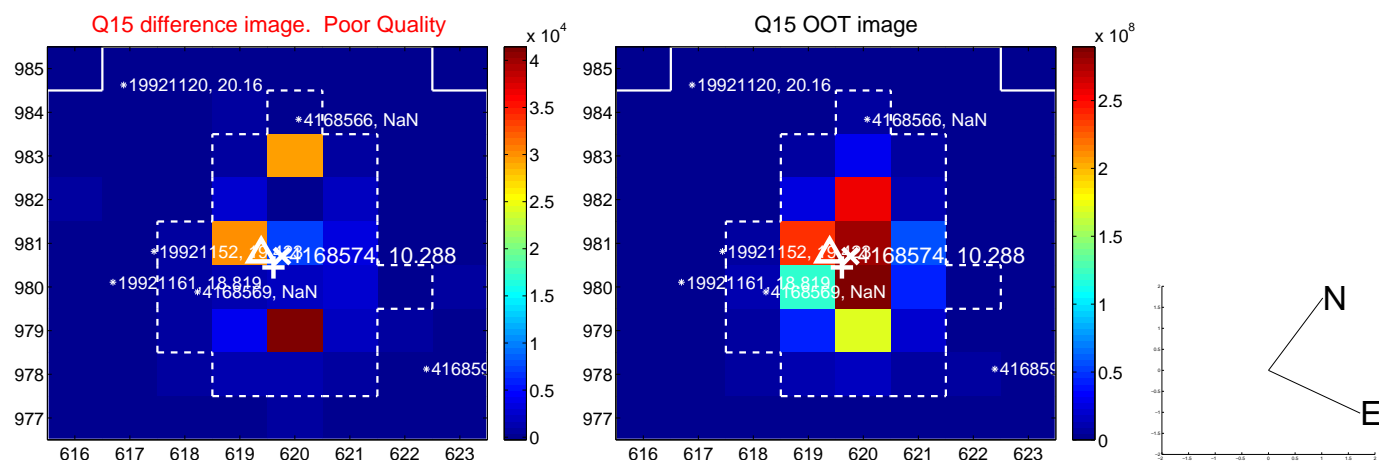
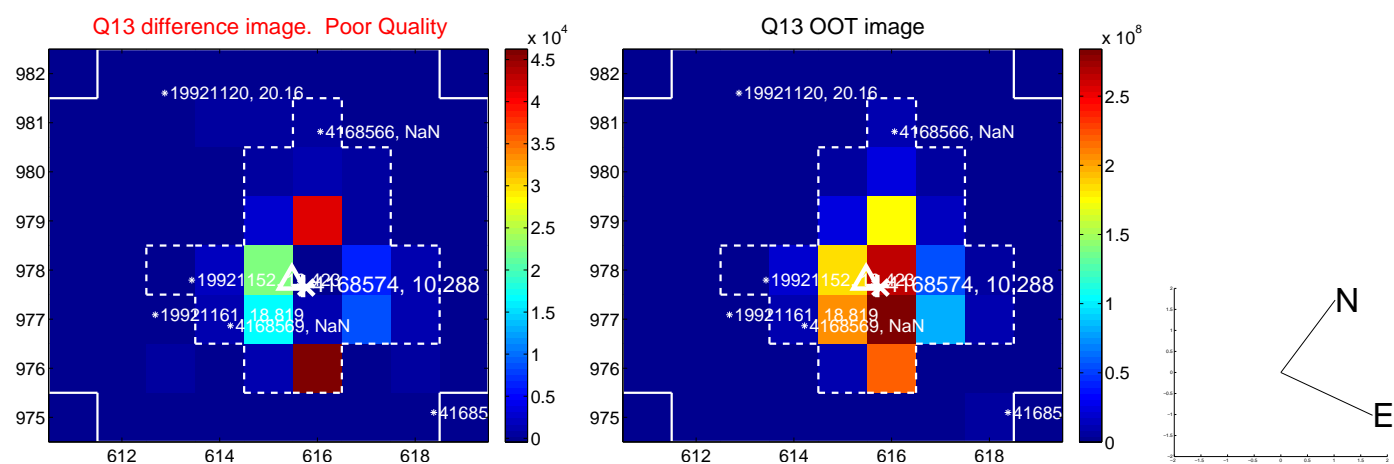
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



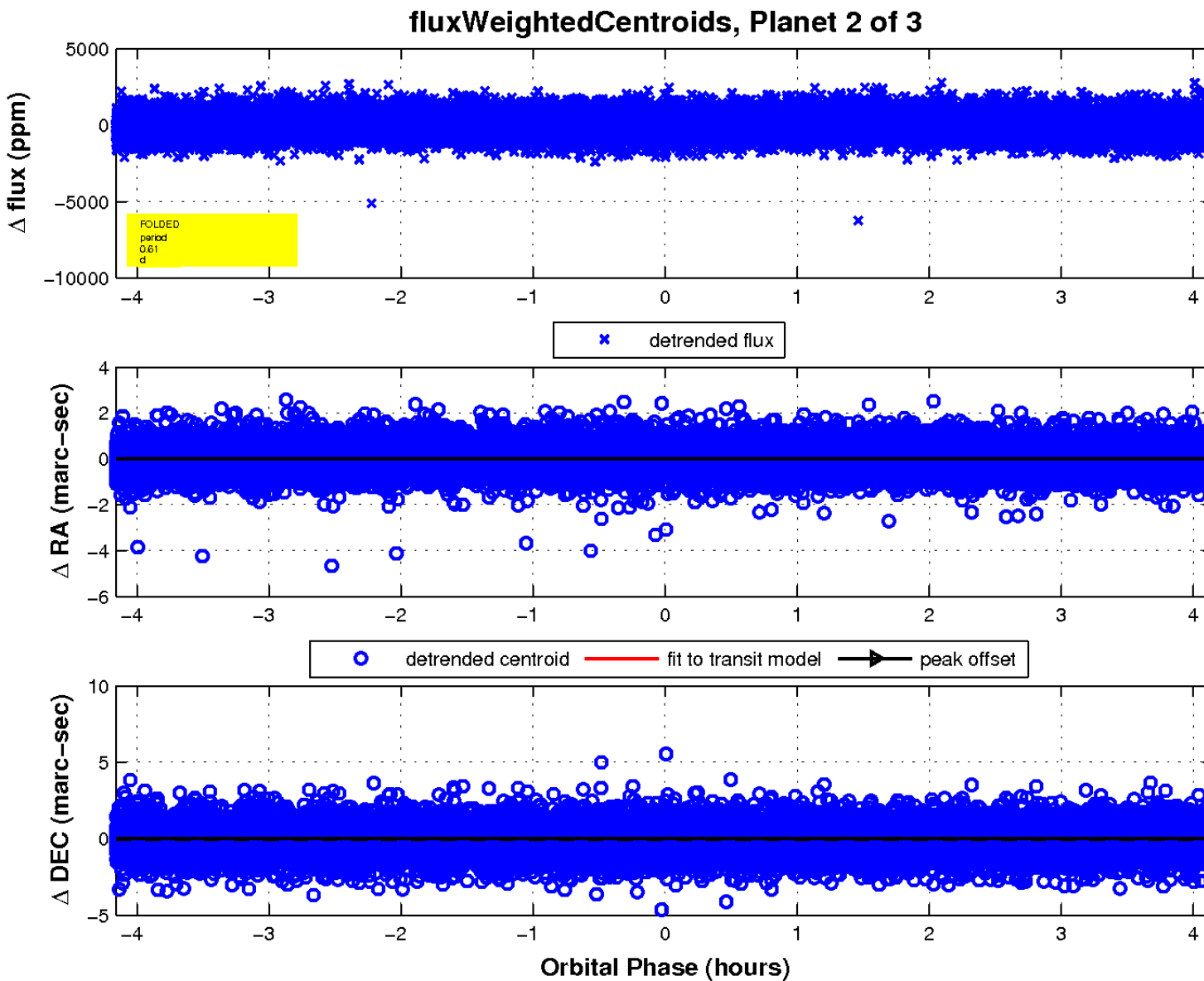
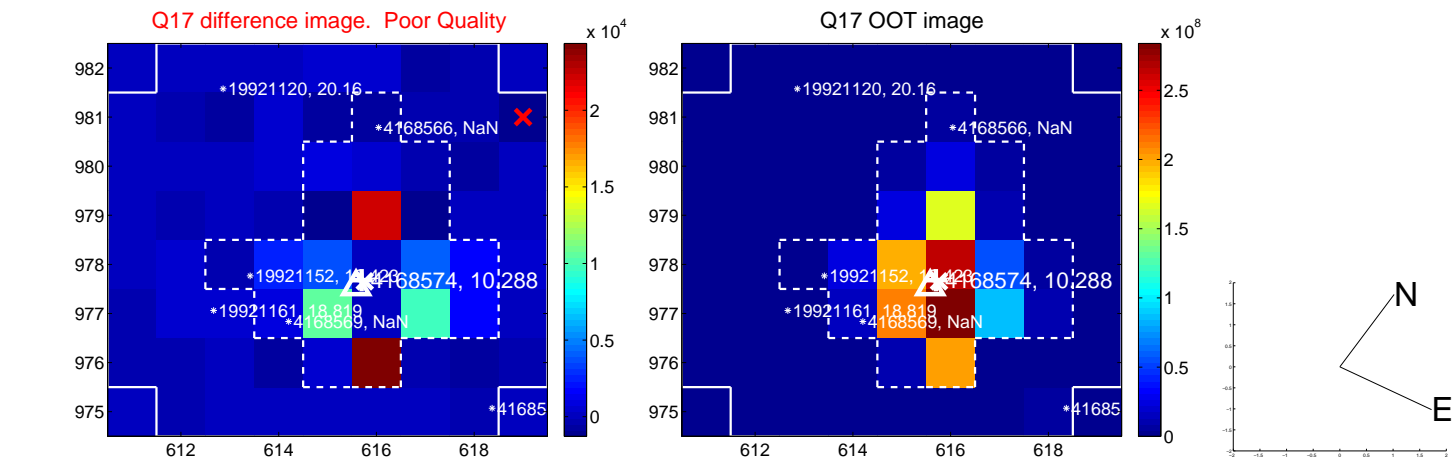
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

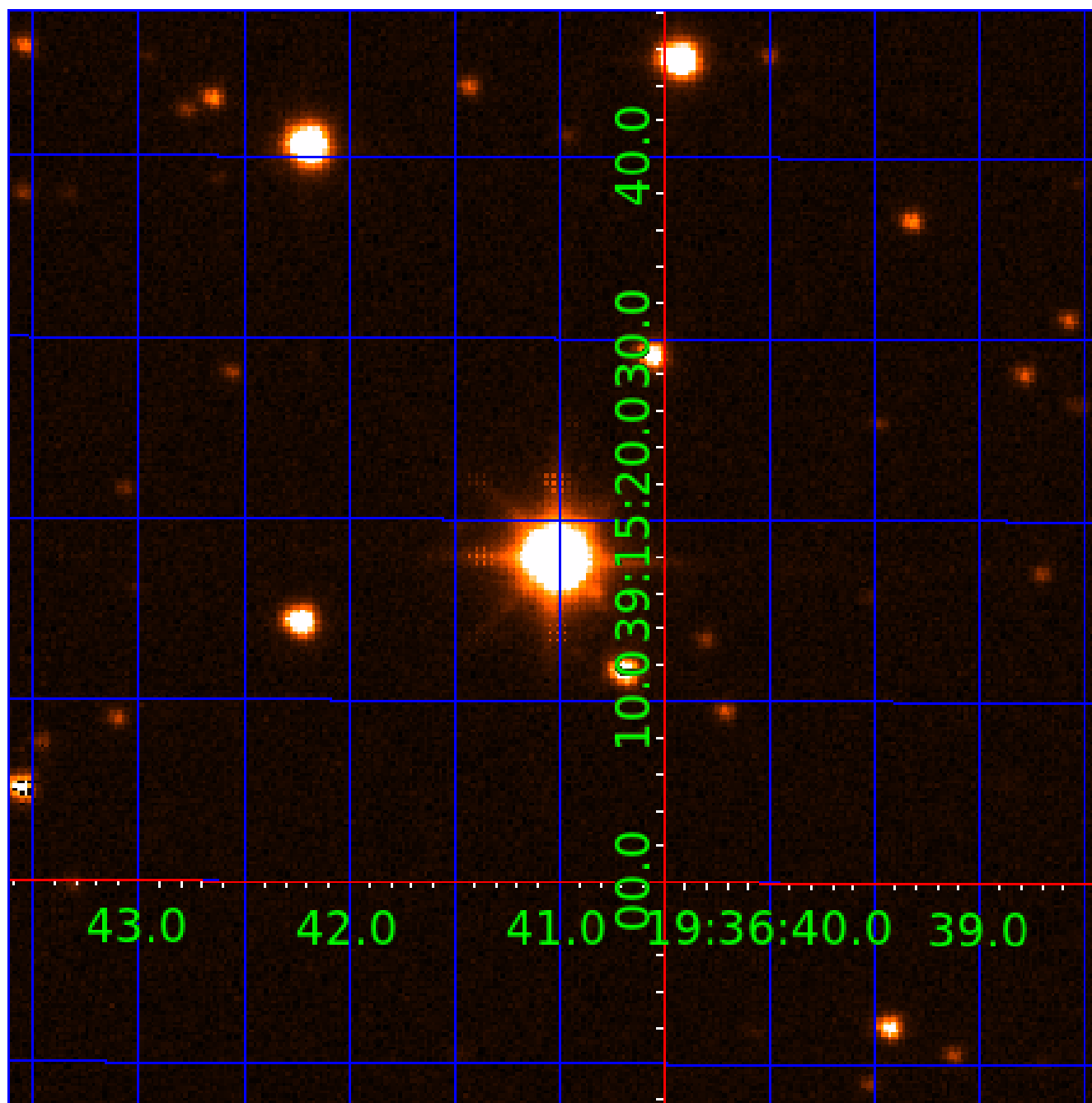


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004168574

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})
004168574-01	OBS	No	0.610170	131.872236	94.3	1.497	9.6	10.1	4.43	7928	5.04	0.00
004168574-02	OBS	No	0.610172	131.566147	91.4	1.387	9.9	10.2	4.43	7928	4.54	0.00
004168574-03	OBS	No	53.366871	133.243110	1017.9	1.860	8.8	8.8	4.43	7928	15.54	506.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004168574-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
004168574-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
004168574-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

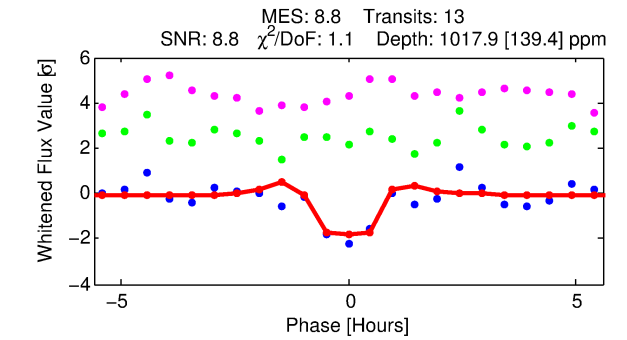
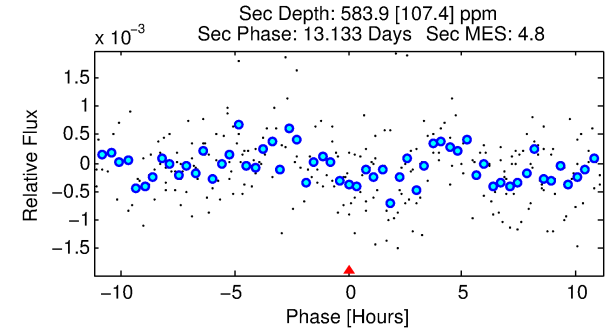
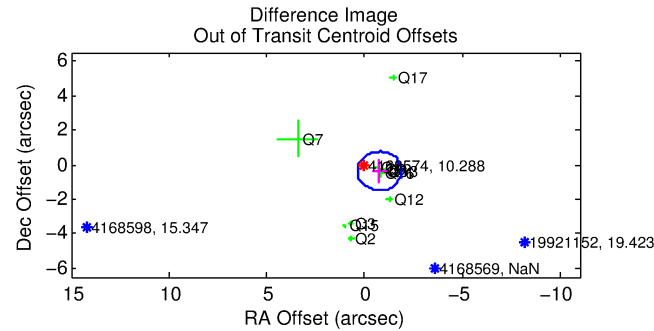
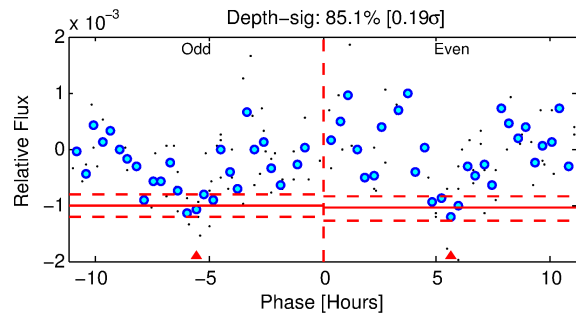
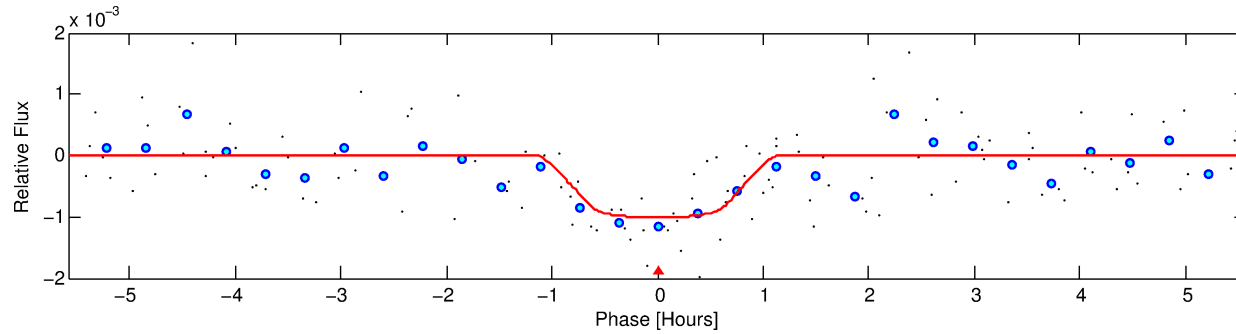
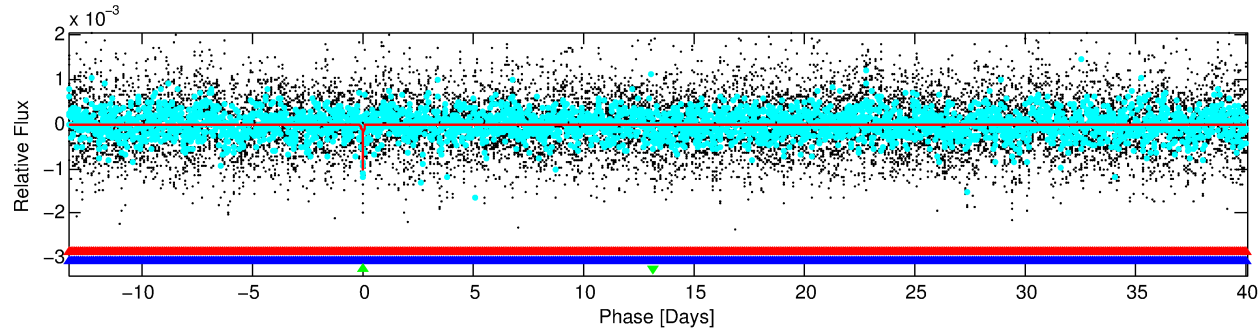
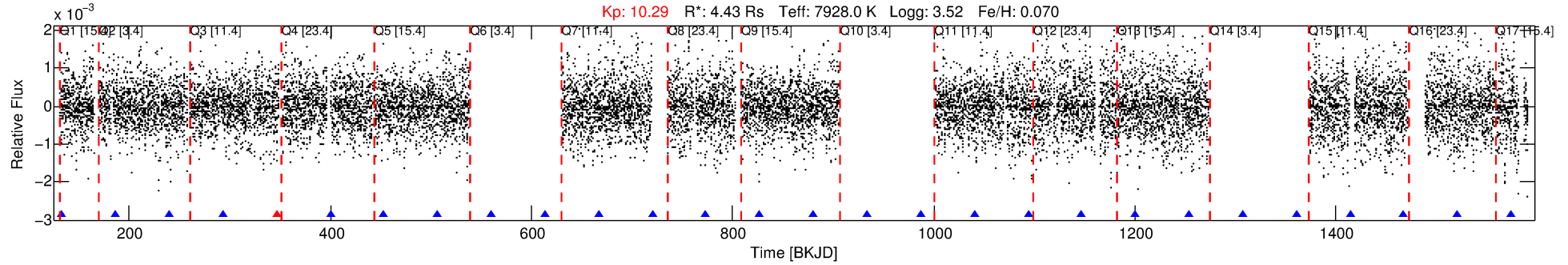
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004168574-03

No Significant Match Found

DV One-Page Summary

KIC: 4168574 Candidate: 3 of 3 Period: 53.367 d



DV Fit Results:

Period = 53.36687 [0.00026] d
Epoch = 133.2431 [0.0041] BKJD
Rp/R* = 0.0321 [0.0172]
a/R* = 148.50 [427.14]
b = 0.78 [1.47]
Seff = 506.35 [482.51]
Teq = 1210 [288] K
Rp = 15.54 [12.22] Re
a = 0.3708 [0.2130] AU
Ag = 182.79 [262.85] [0.69σ]
Teffp = 6877 [1895] K [2.96σ]

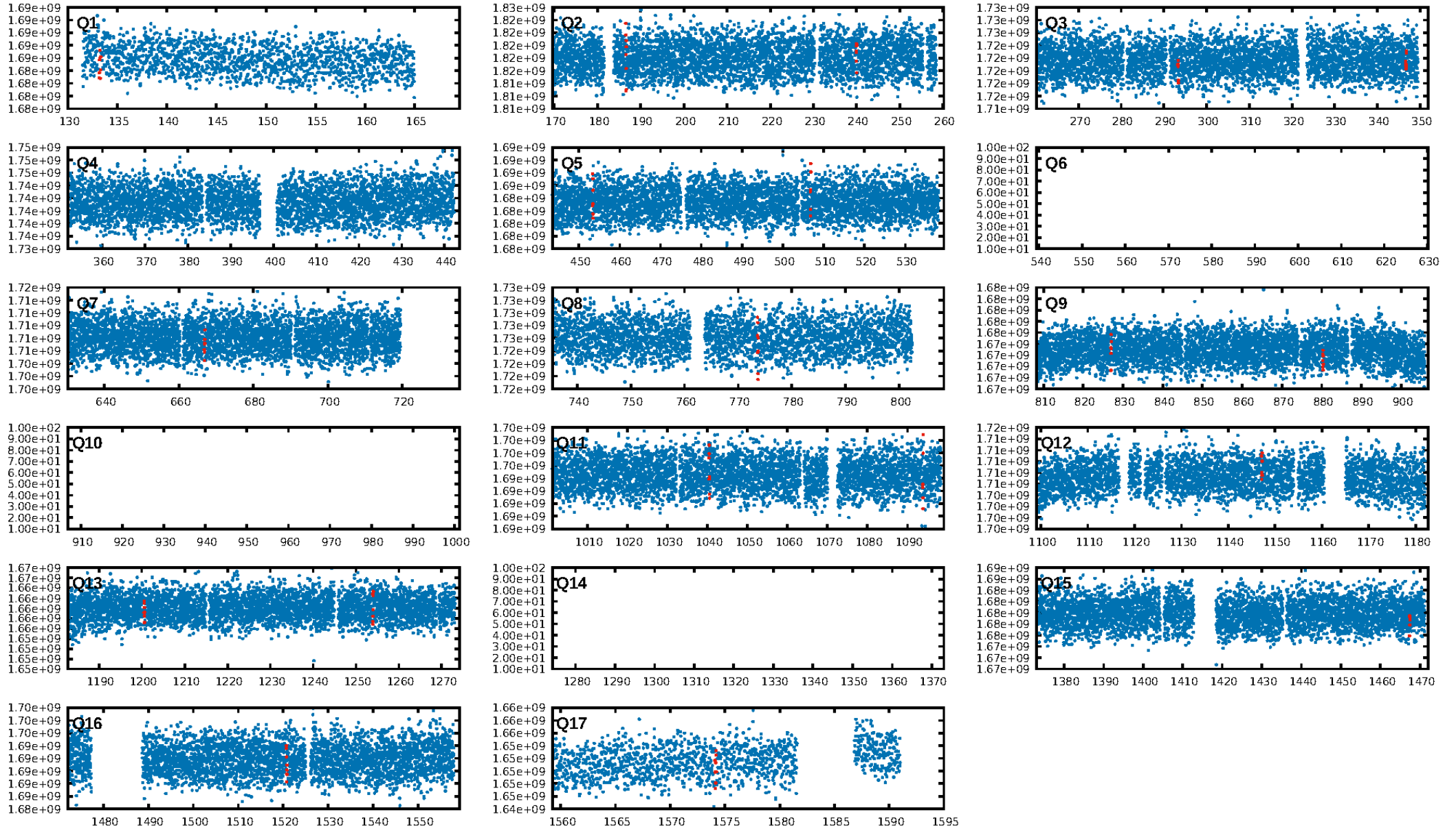
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [545.67σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 41.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.91e-12
RollingBand-fgt: 0.91 [10/11]
GhostDiagnostic-chr: N/A
Centroid-sig: 2.2%
Centroid-so: 0.242 arcsec [1.63σ]
OotOffset-rm: 0.838 arcsec [2.24σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-rm: 1.169 arcsec [2.69σ]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 0.17 [2/12]
DiffImageOverlap-fno: 0.00 [0/13]

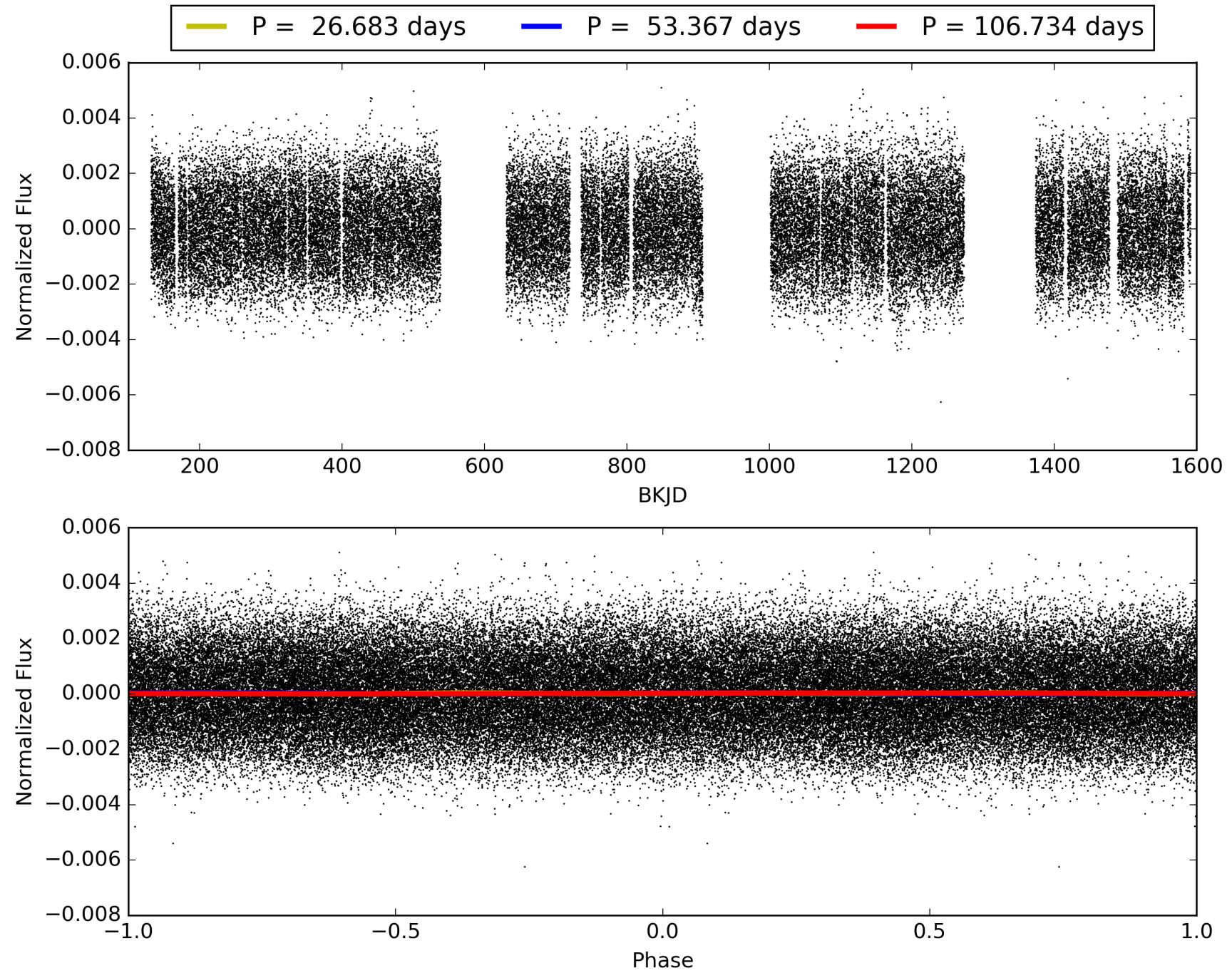
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:13:38 Z

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

TCE 004168574-03, PDC Light Curves

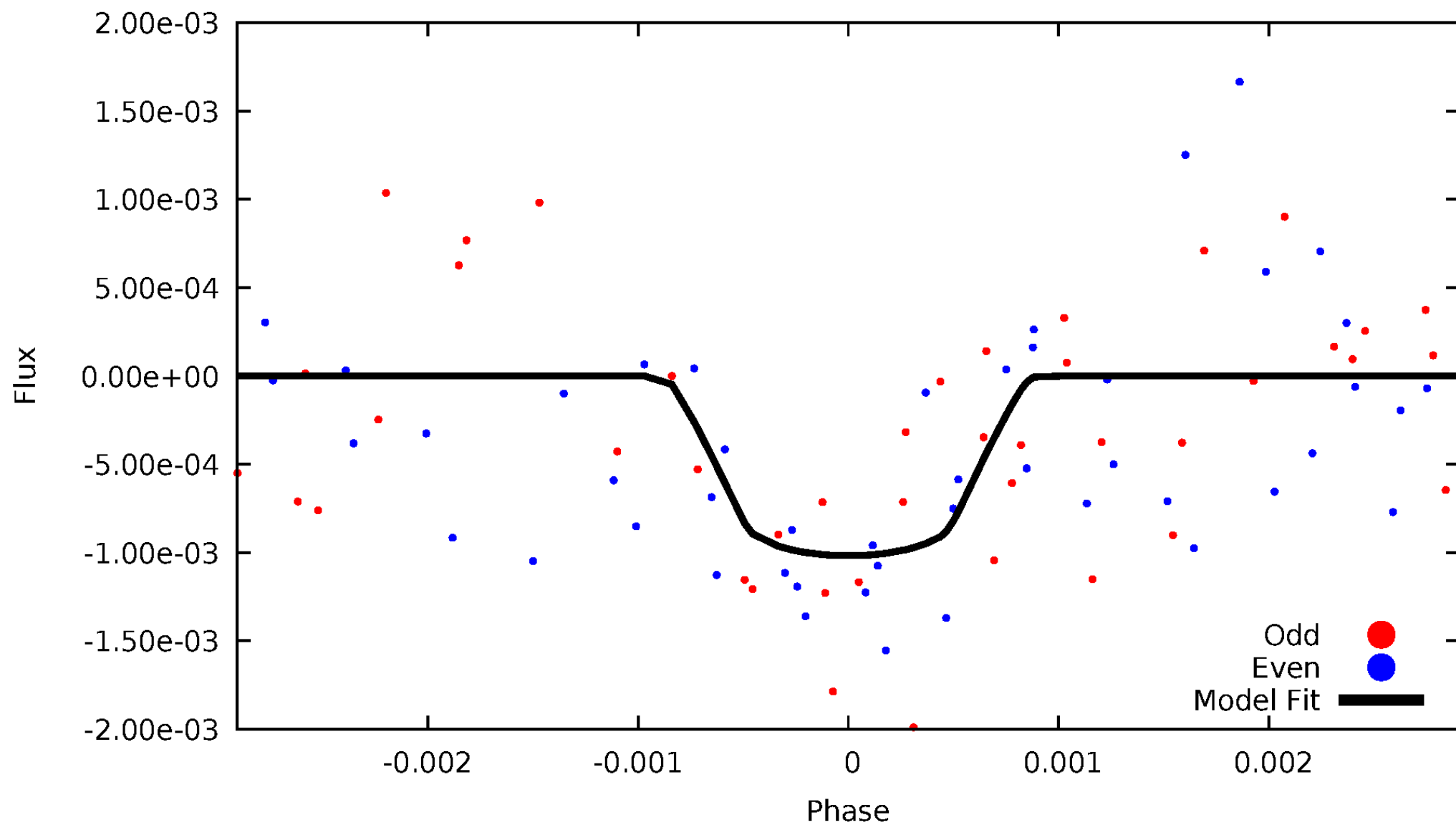


TCE 004168574-03



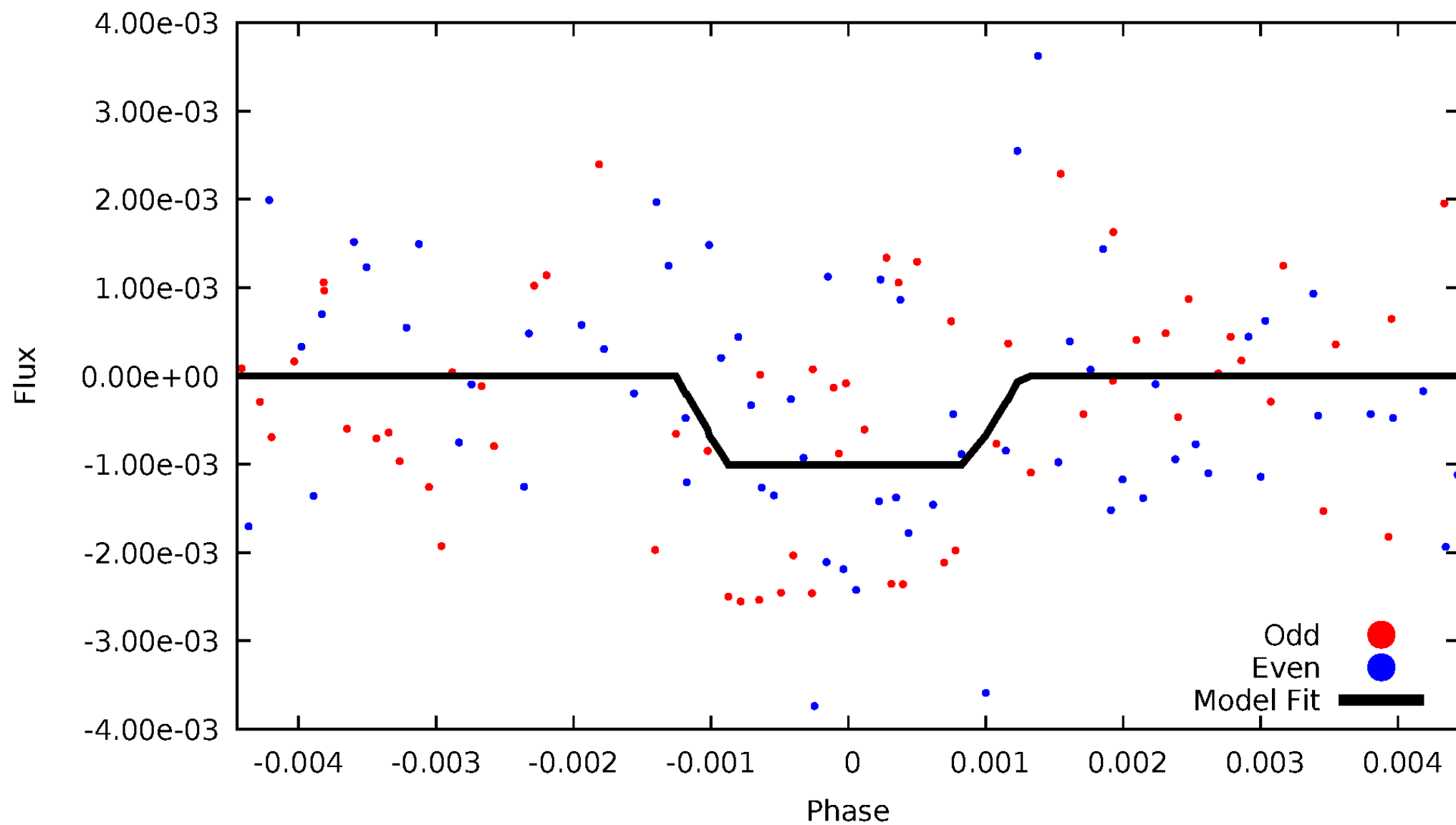
DV Odd/Even

TCE 004168574-03

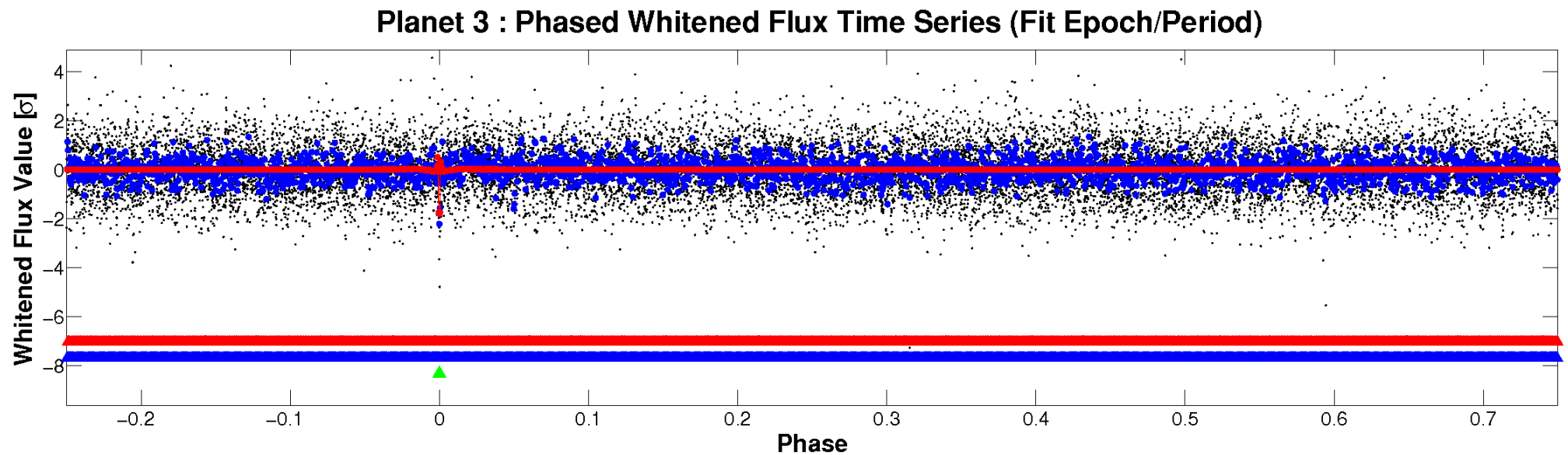
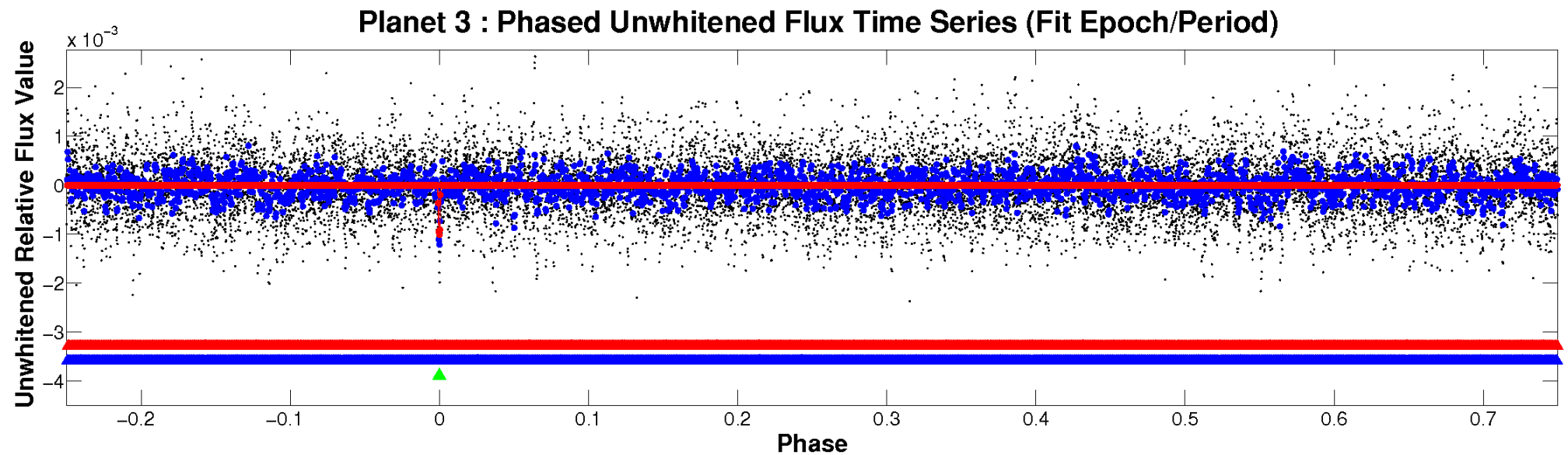


ALT Odd/Even

TCE 004168574-03

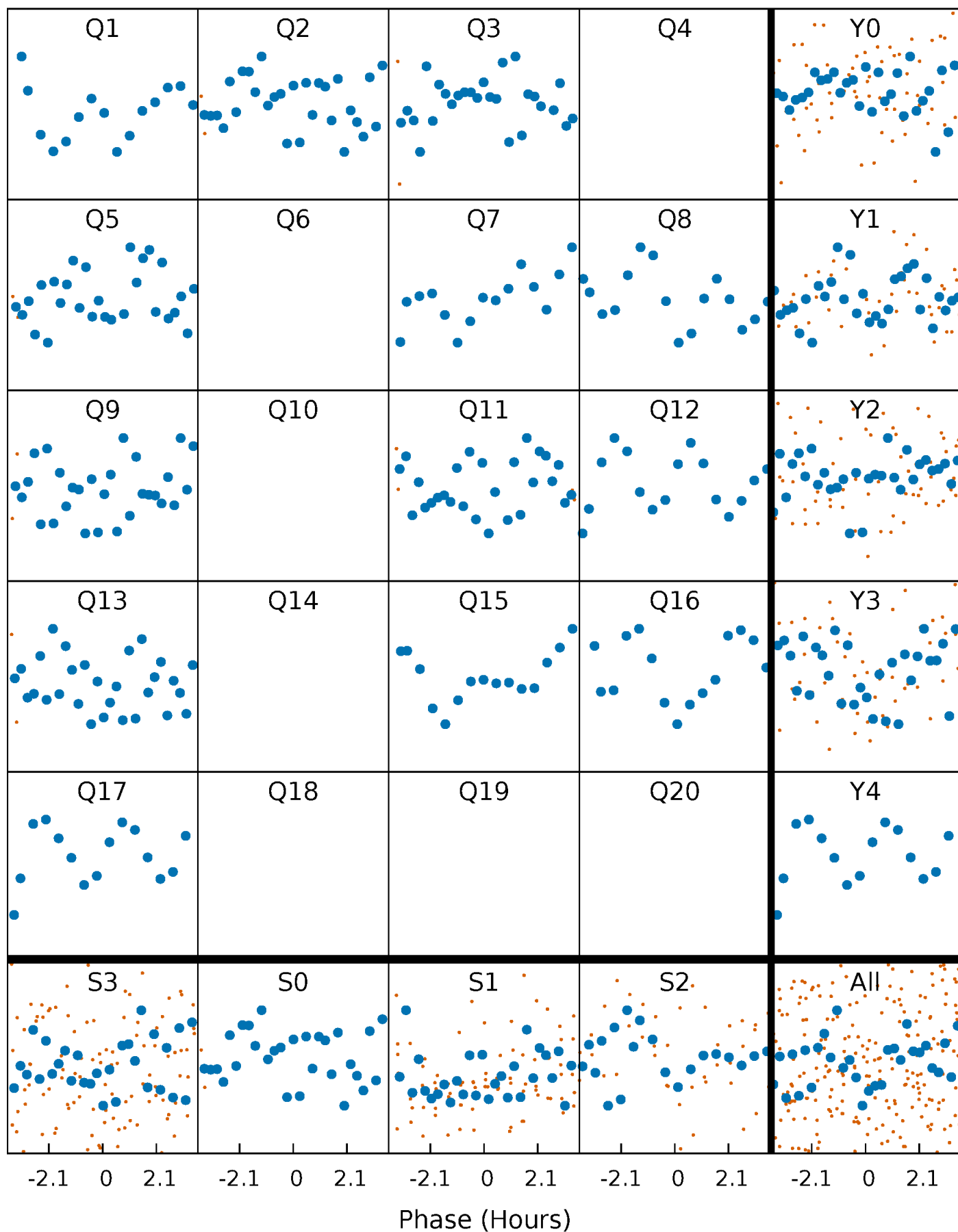


Non-Whitened Vs. Whitened Light Curve



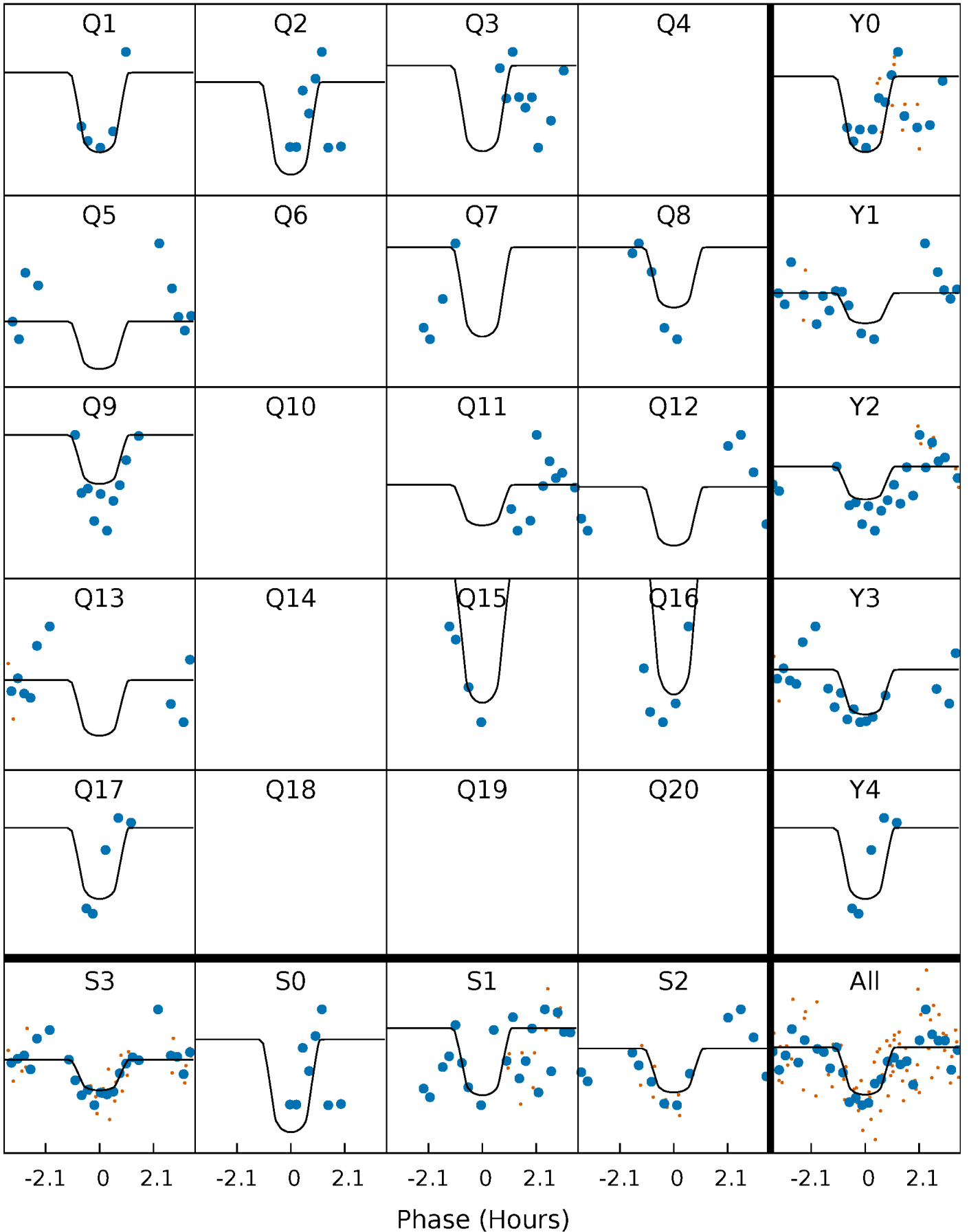
PDC Quarter-Phased Transit Curves

TCE 004168574-03 P= 53.366871 Days $T_0=133.243110$ (BKJD)



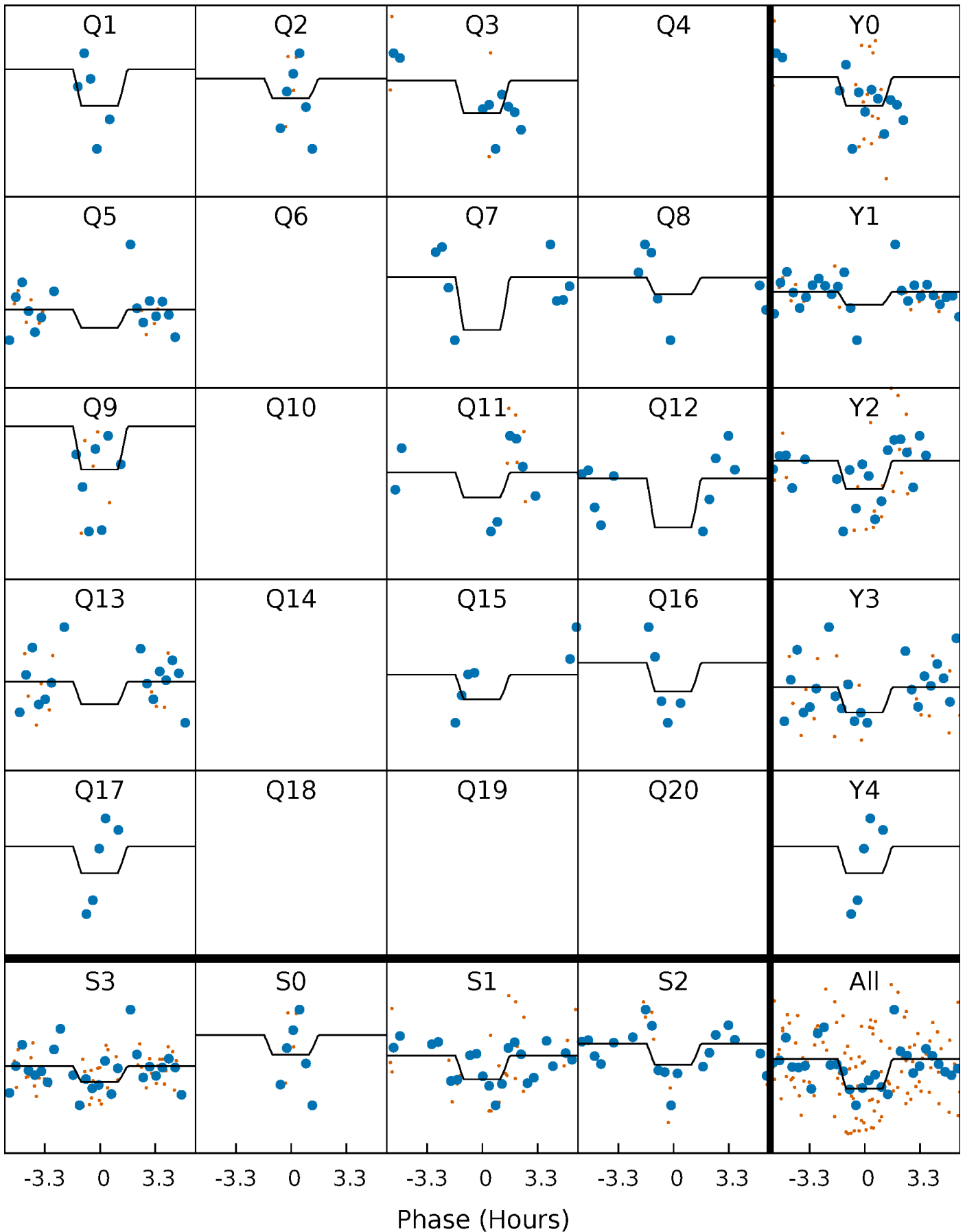
DV Quarter-Phased Transit Curves

TCE 004168574-03 P= 53.366871 Days $T_0=133.243110$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

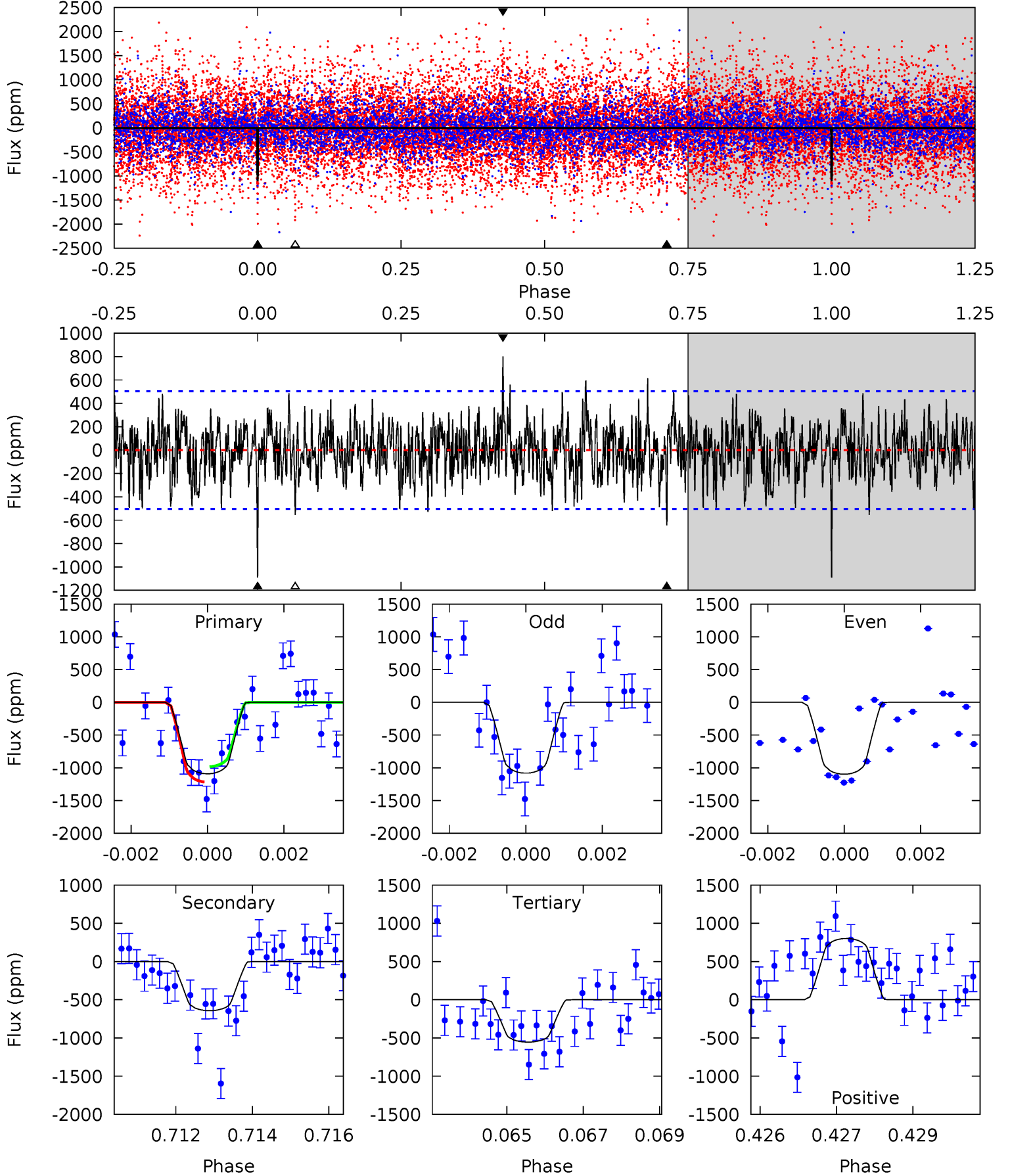
TCE 004168574-03 P= 53.366389 Days $T_0=133.271614$ (BKJD)



DV Model-Shift Uniqueness Test

004168574-03, P = 53.366871 Days, E = 79.876239 Days

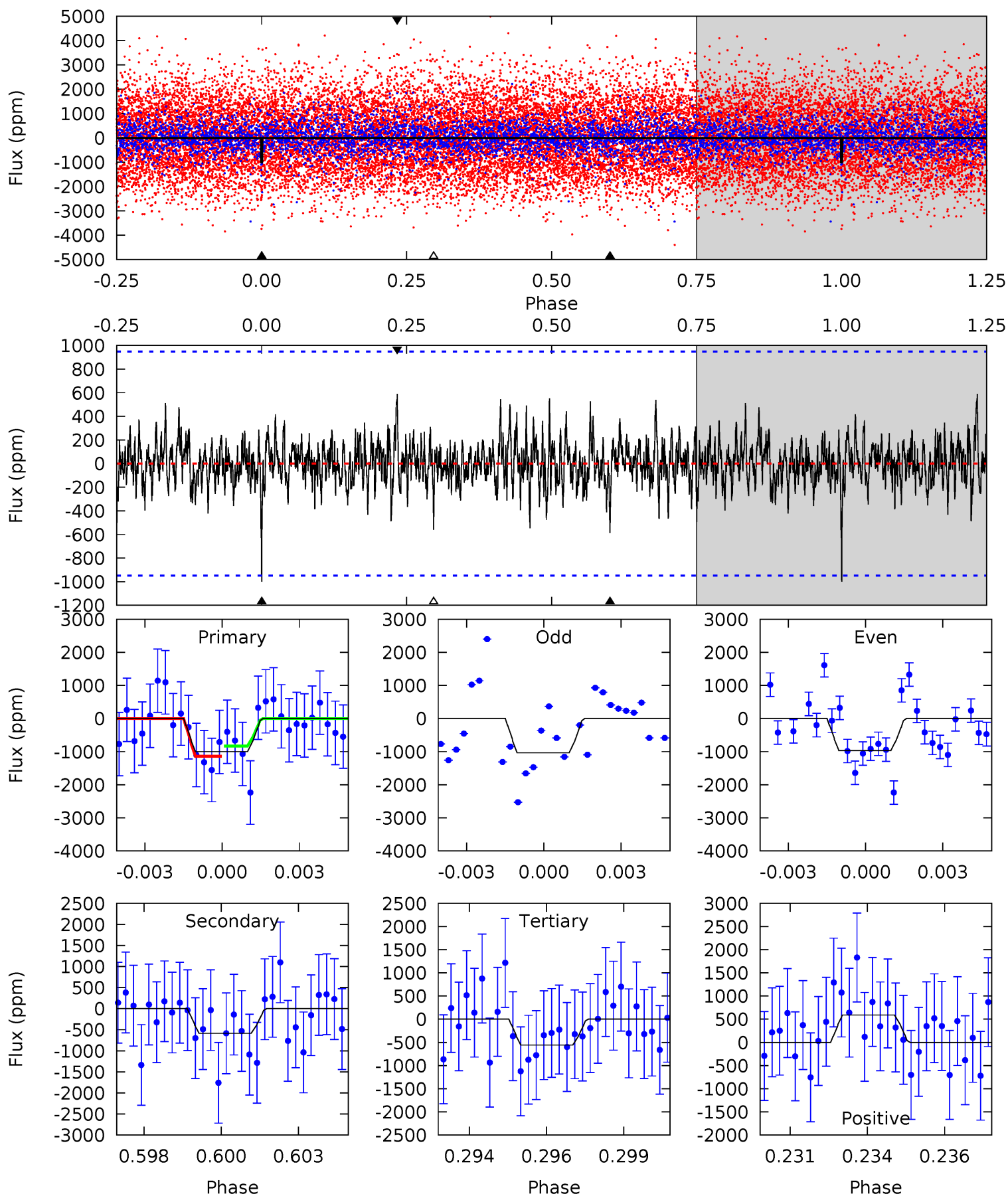
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	6.83	5.88	8.52	5.35	3.13	1.98	5.71	3.08	0.95	-1.69	0.08	0.92	0.42	1.21



Alt Model-Shift Uniqueness Test

004168574-03, P = 53.366389 Days, E = 79.905225 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.57	3.27	3.11	3.29	5.29	3.02	0.90	2.46	2.29	0.16	-0.01	0.20	1.00	0.37	0.86



Stellar Parameters For KIC 004168574

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7928^{+220}_{-331}	$3.522^{+0.558}_{-0.031}$	$0.070^{+0.250}_{-0.450}$	$4.435^{+0.449}_{-2.546}$	$2.386^{+0.265}_{-0.795}$	$0.039^{+0.296}_{-0.008}$
	+3%/-4%	+16%/-1%	+357%/-643%	+10%/-57%	+11%/-33%	+768%/-21%
Source	KIC0	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 004168574-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-643 ± 94	$13.13^{+8.09}_{-6.98}$	1600^{+116}_{-225}	6815^{+3532}_{-1272}	286^{+926}_{-178}
Alt.	-587 ± 179	$13.43^{+8.78}_{-7.27}$	1598^{+112}_{-249}	6489^{+3648}_{-1168}	245^{+810}_{-155}

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 $A_{obs} \gg 1.0$

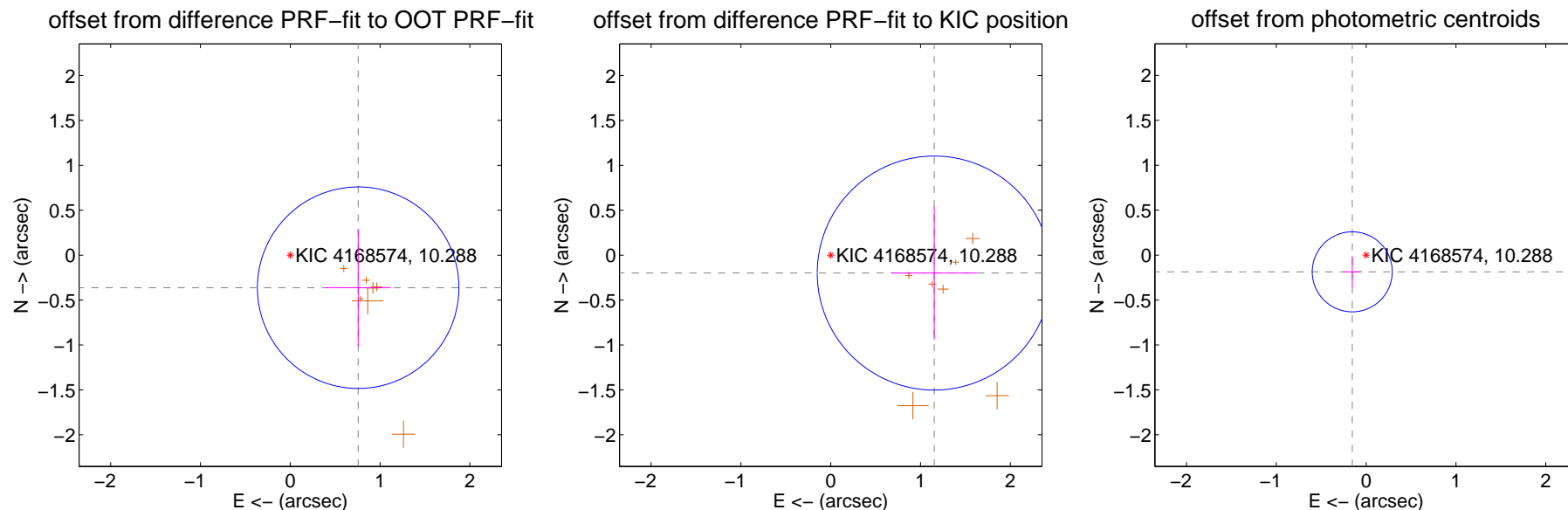
DV Centroid Data

Supplemental centroid analysis for 004168574-03. **Kepler magnitude: 10.29.** Transit SNR 8.79

There are 2 quarters with good PRF difference image offsets

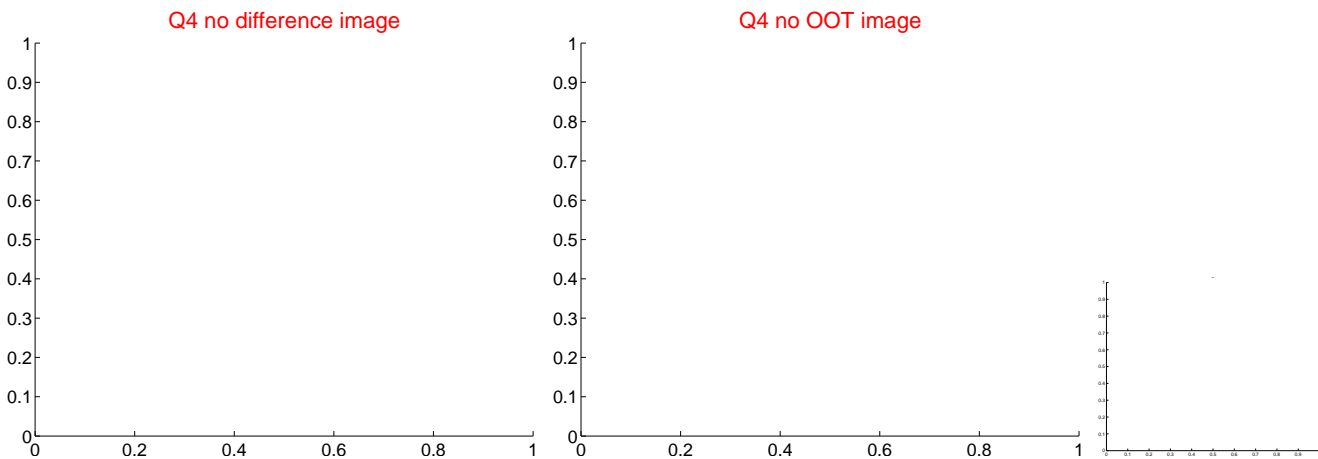
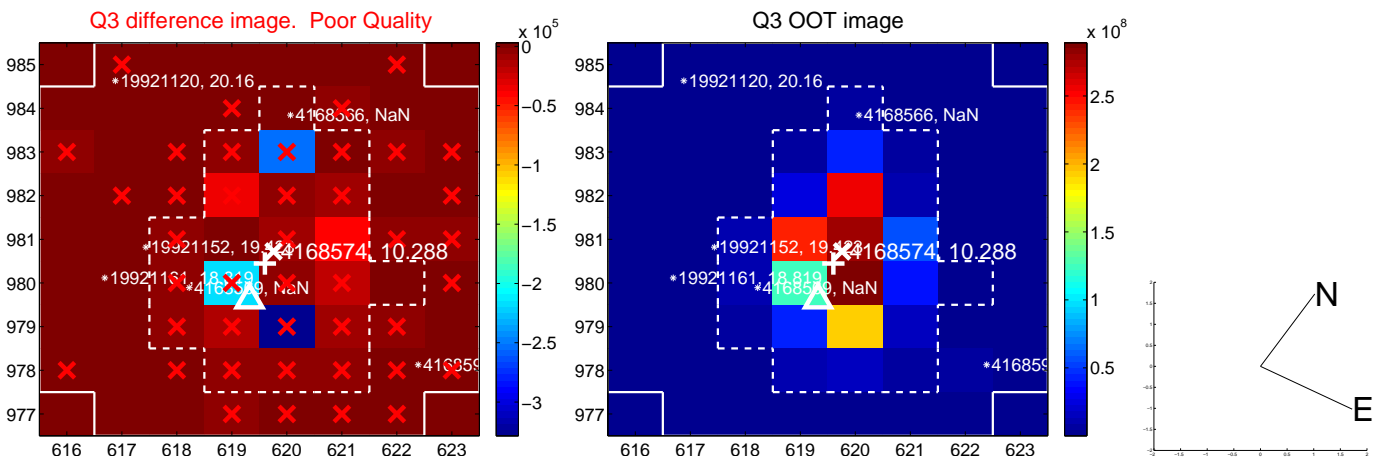
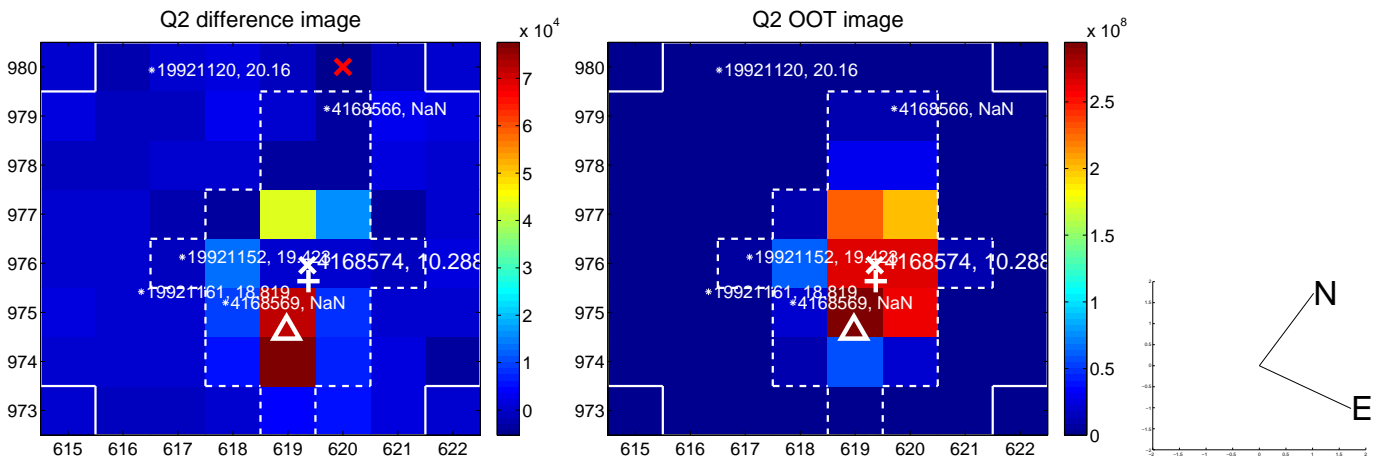
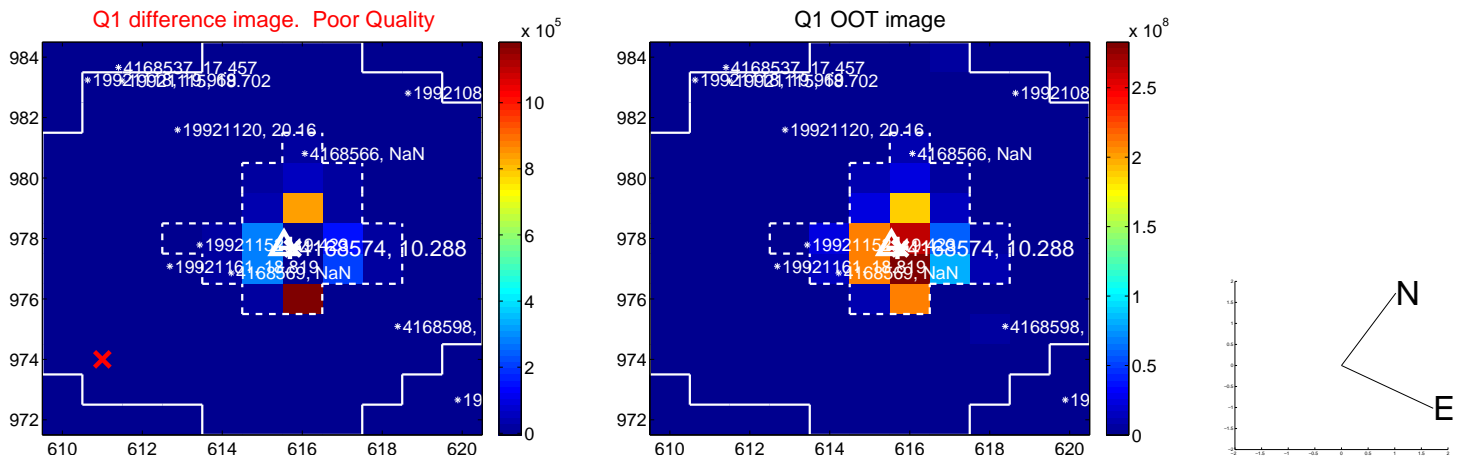
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.838 ± 0.374	2.24	-0.756 ± 0.365	-0.362 ± 0.652
PRF-fit source offset from KIC position	1.169 ± 0.434	2.69	-1.152 ± 0.477	-0.199 ± 0.742
photometric centroid source offset	0.24 ± 0.15	1.63	0.15 ± 0.10	-0.19 ± 0.17

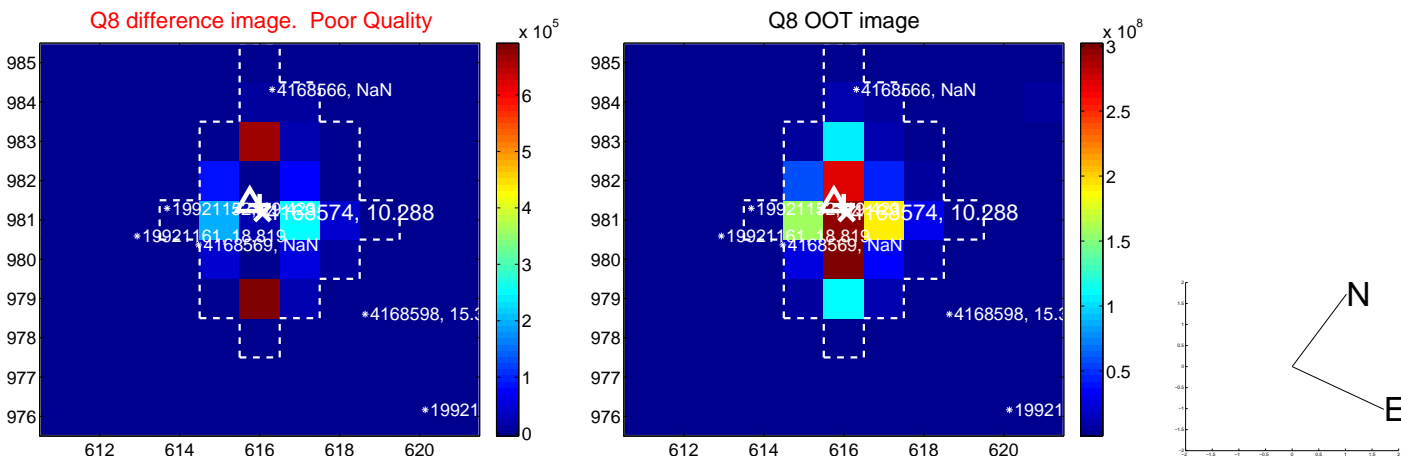
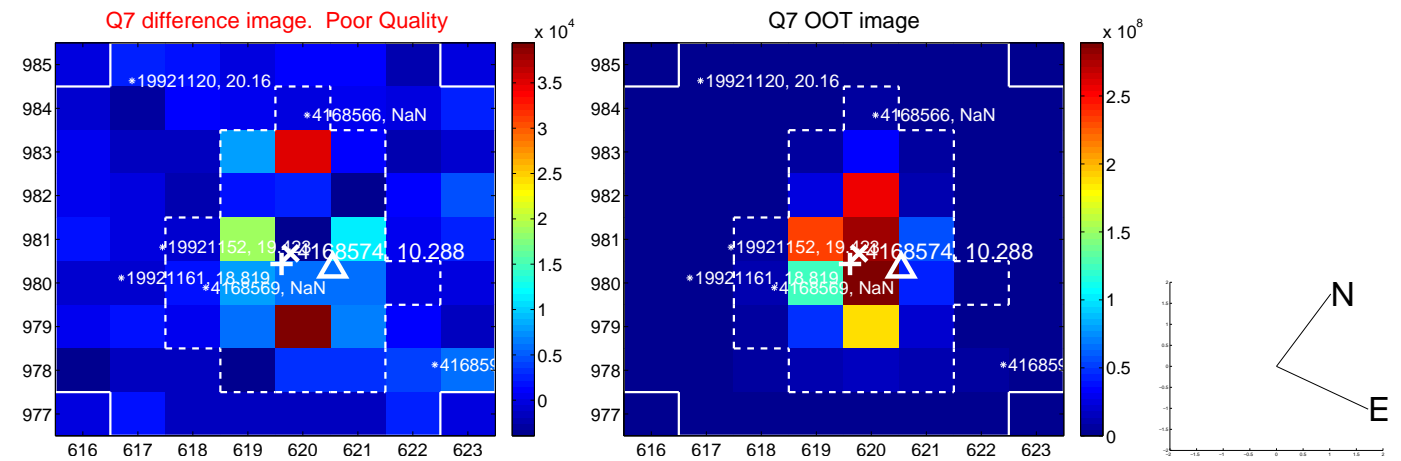
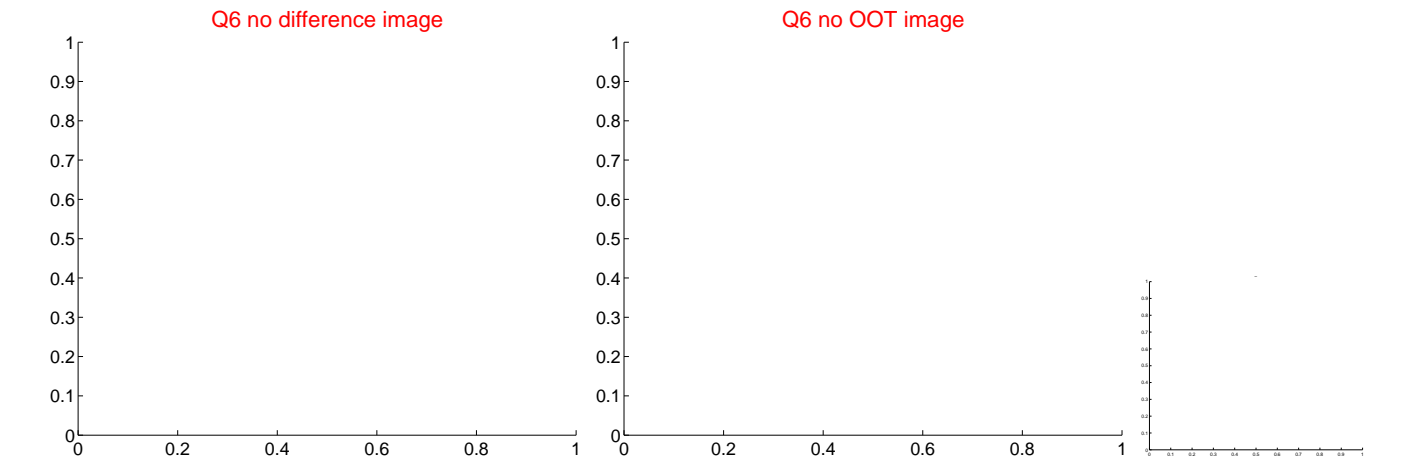
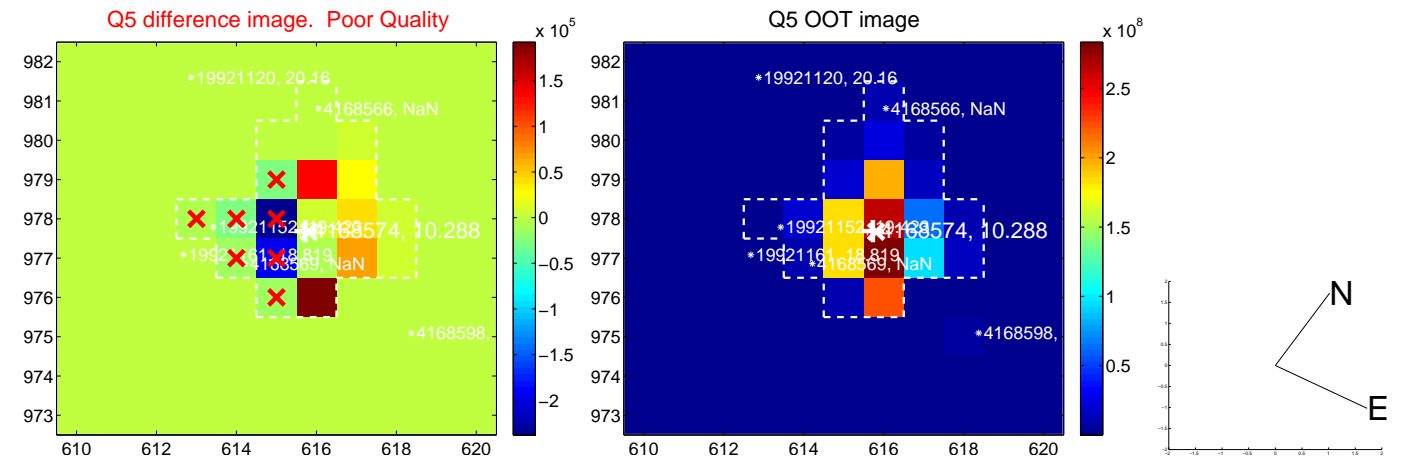


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

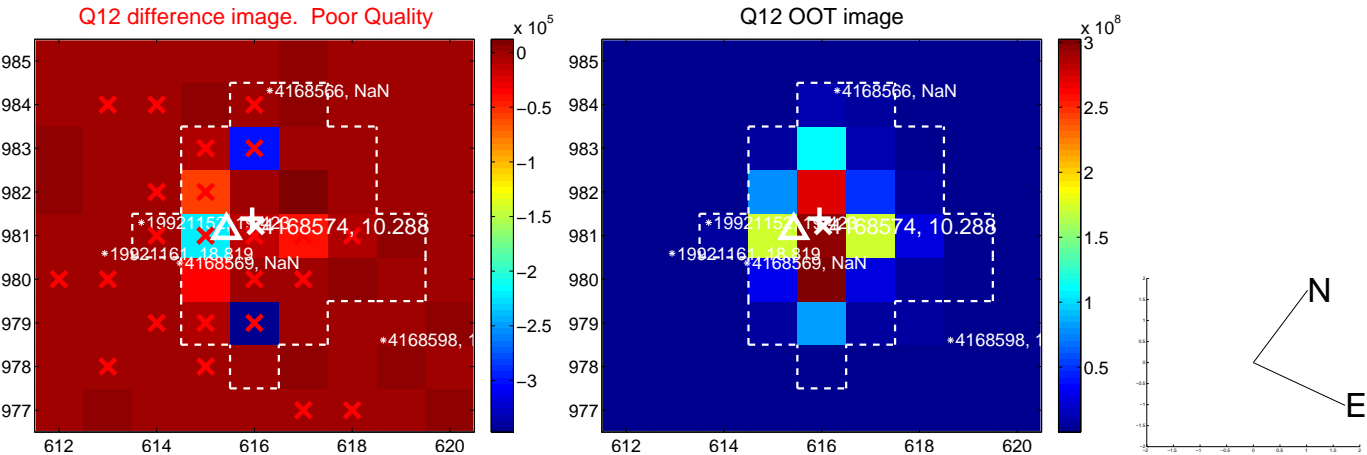
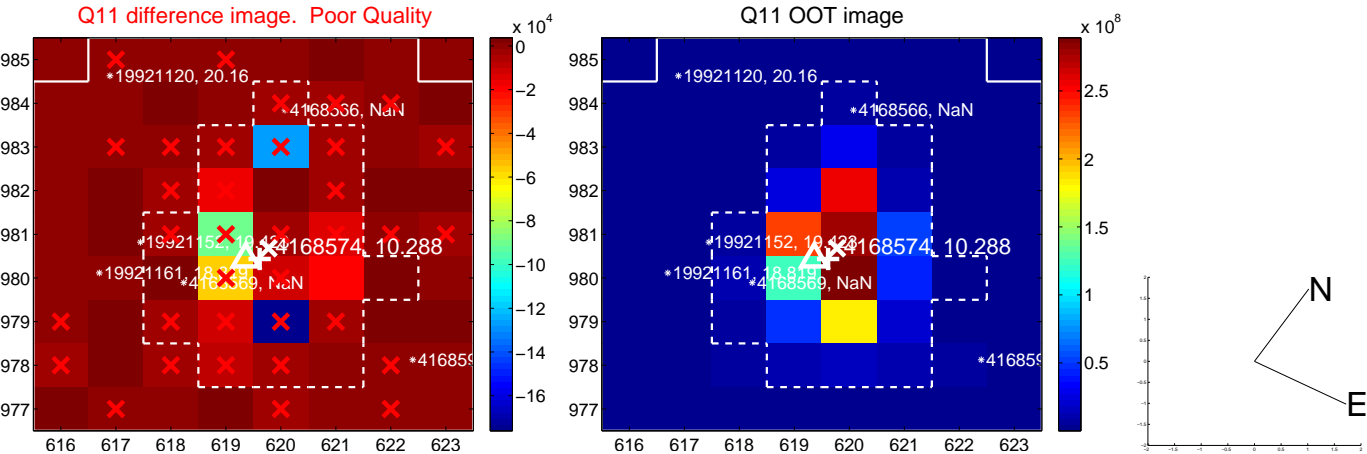
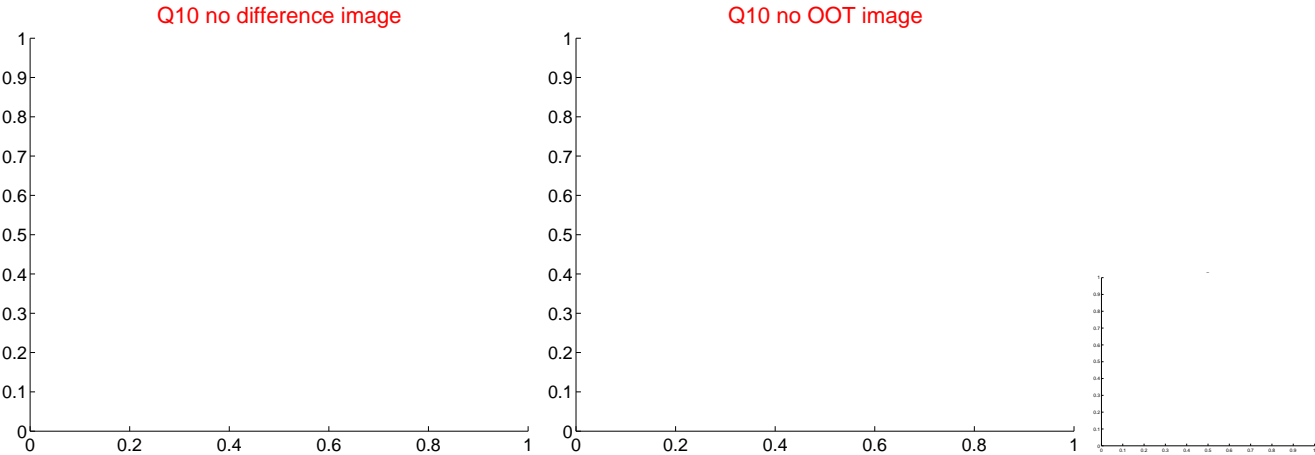
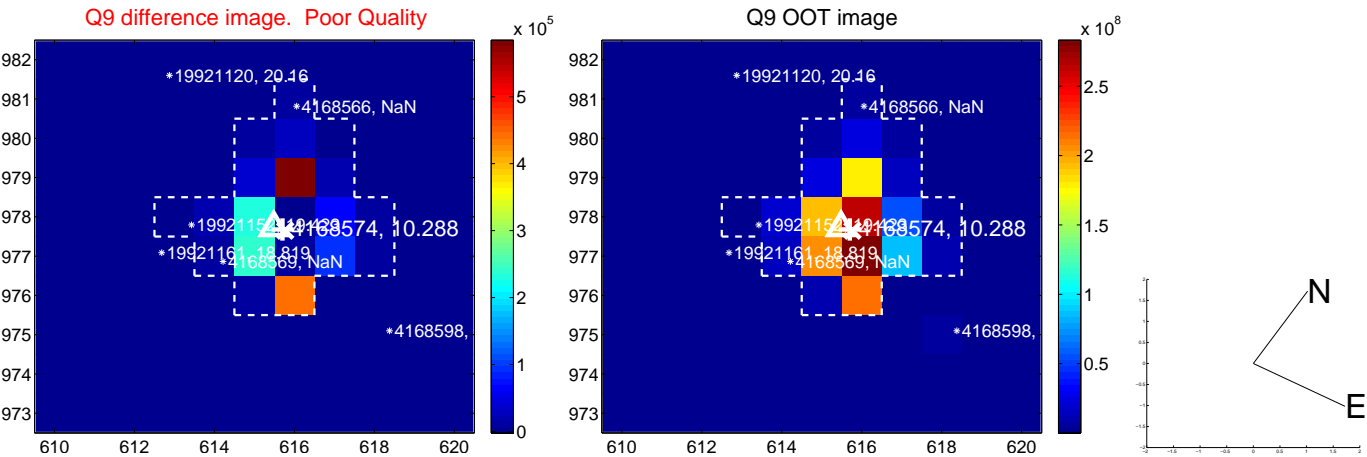
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



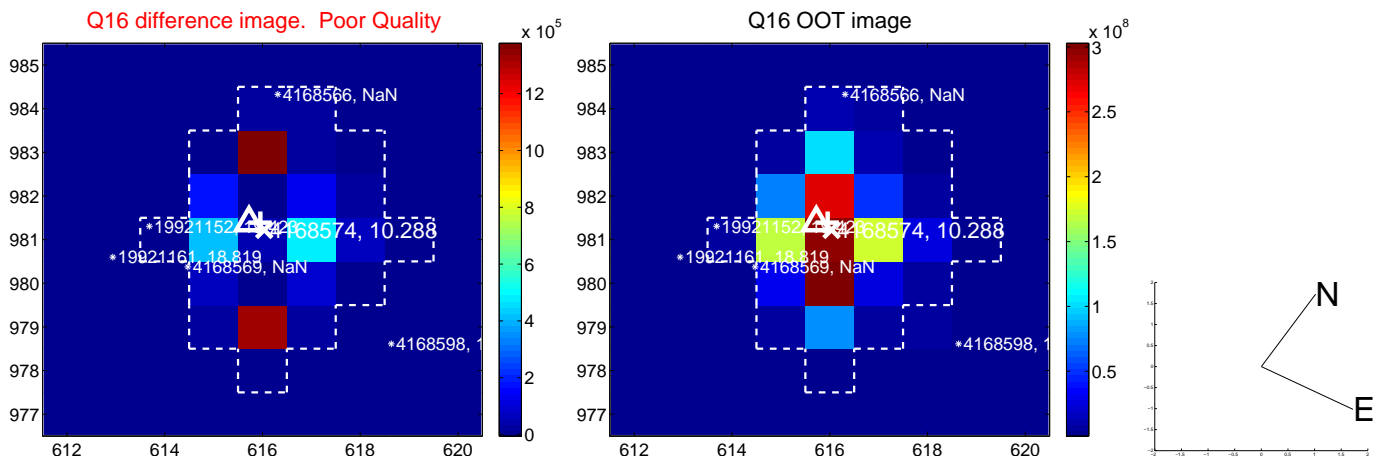
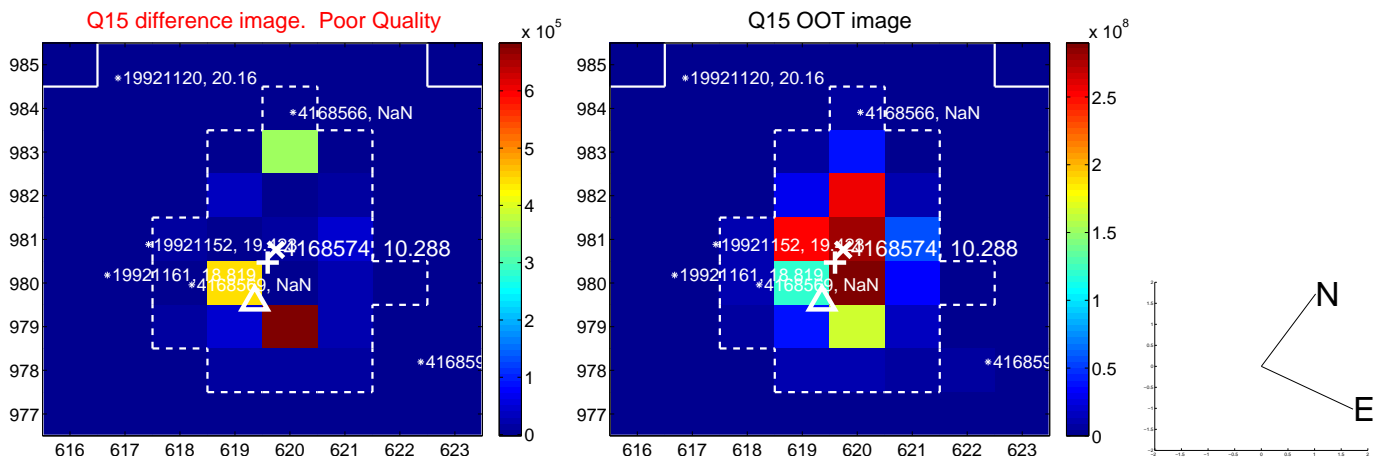
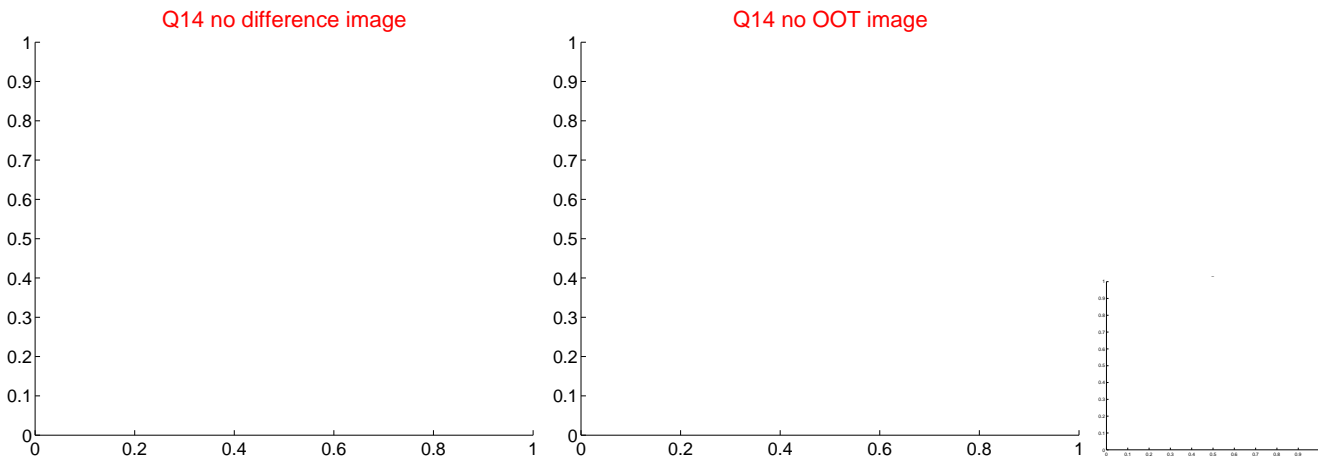
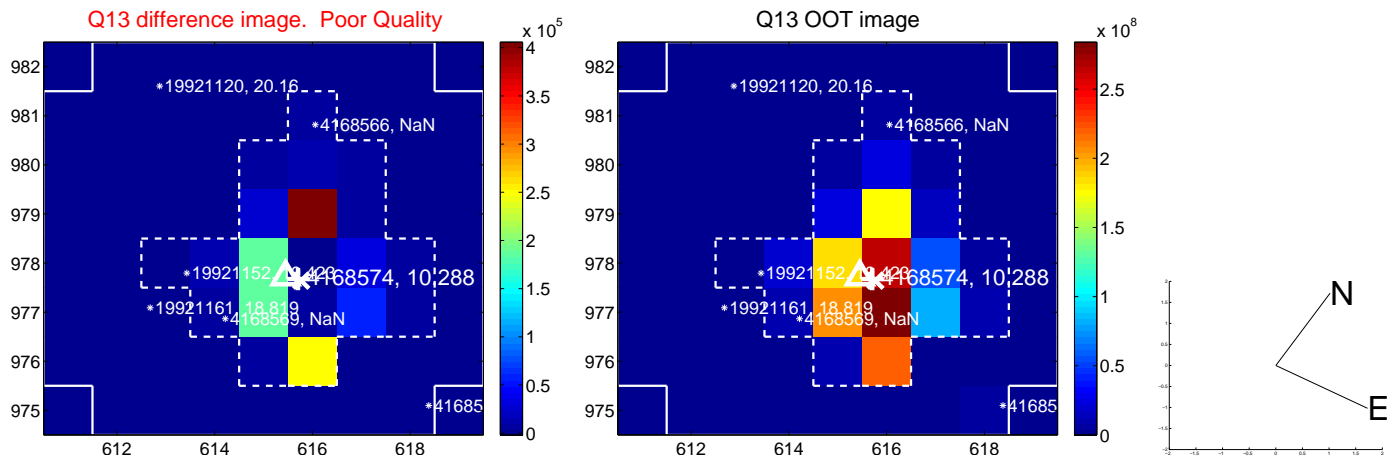
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



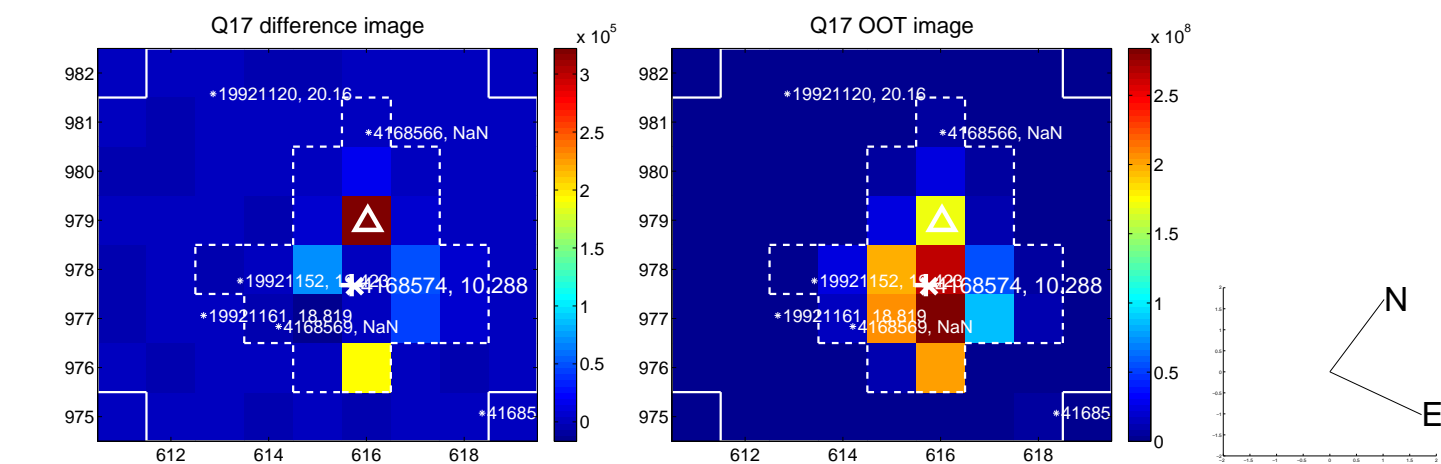
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



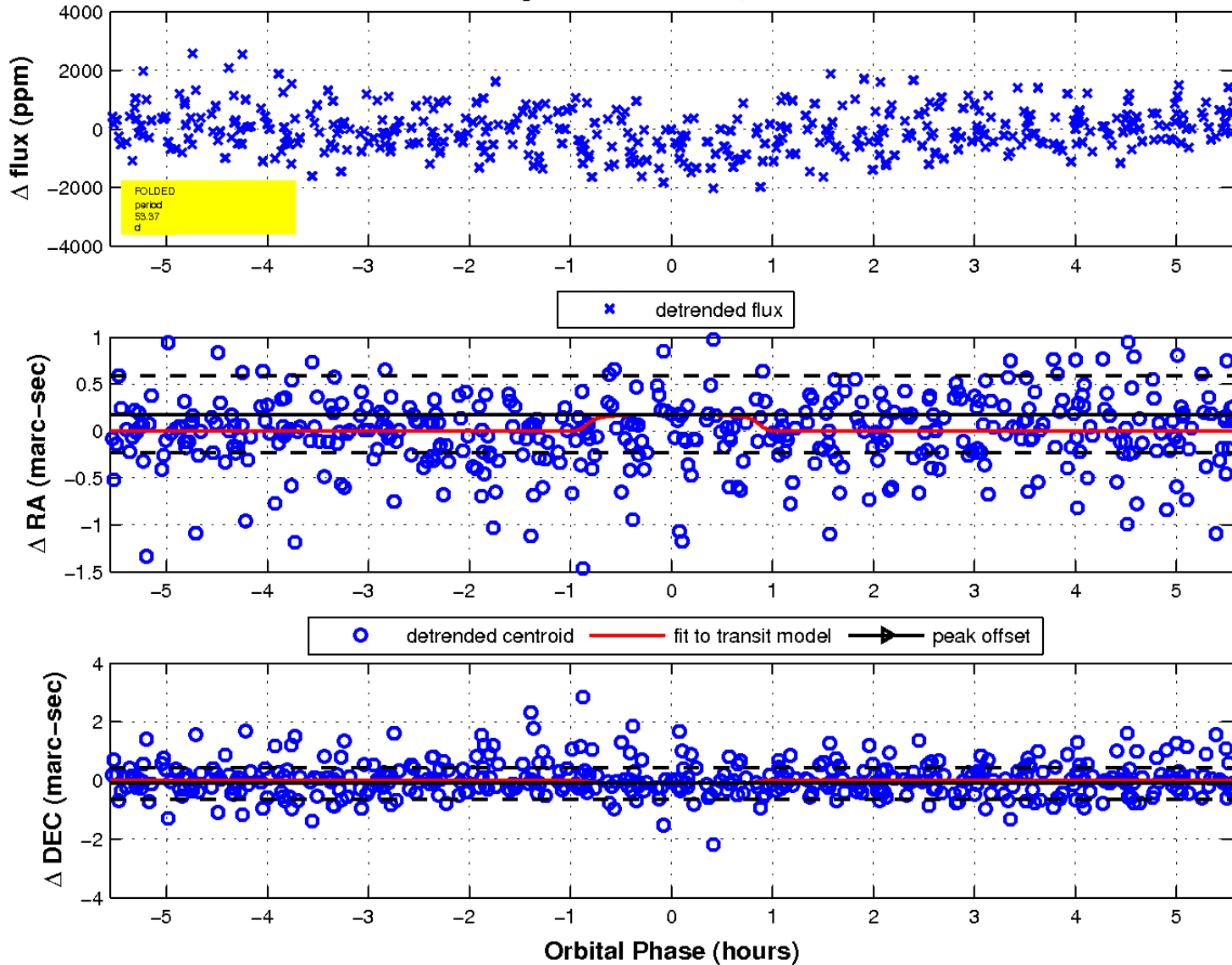
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

