

KIC 007966985

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})
007966985-01	OBS	No	1.174203	132.287168	50.5	3.889	65.1	10.0	0.86	5639	0.61	1450.02
007966985-02	OBS	No	1.173967	132.325965	76.8	8.304	16.0	8.5	0.86	5639	0.79	1450.41
007966985-03	OBS	No	29.653549	137.518119	668.1	1.745	10.9	9.9	0.86	5639	2.27	19.57
007966985-04	OBS	No	35.929415	163.201969	578.9	1.849	10.7	8.2	0.86	5639	2.44	15.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007966985-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
007966985-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
007966985-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007966985-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

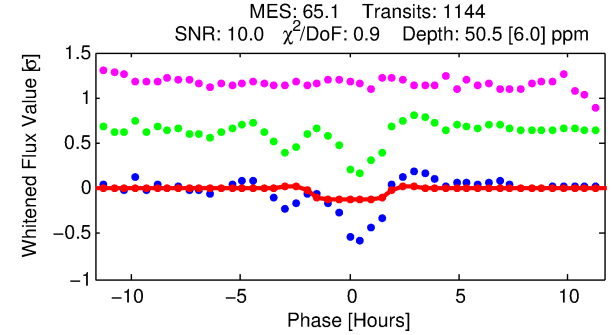
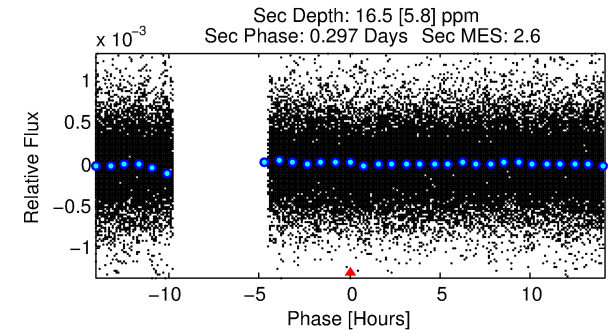
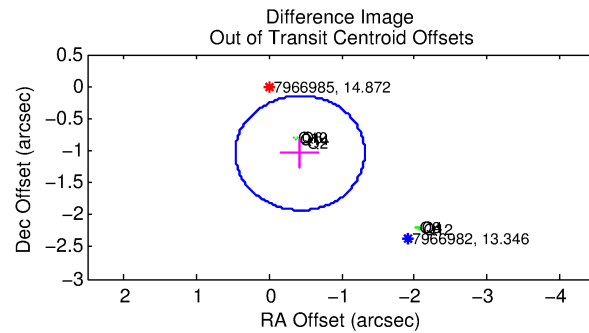
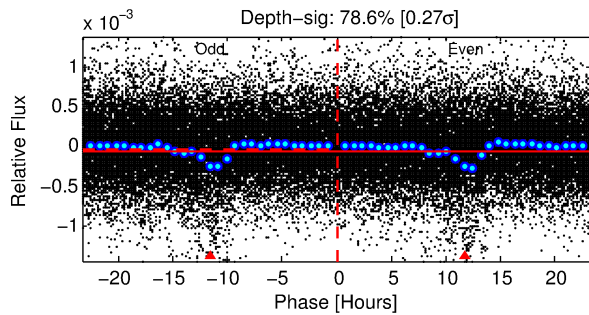
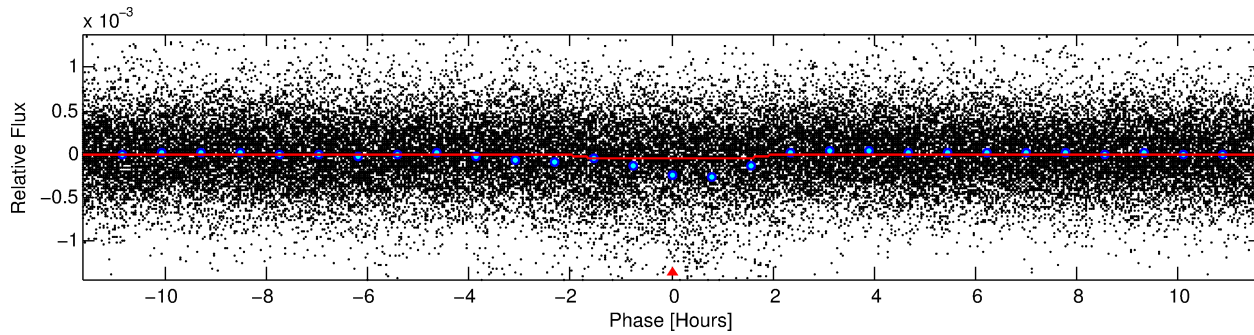
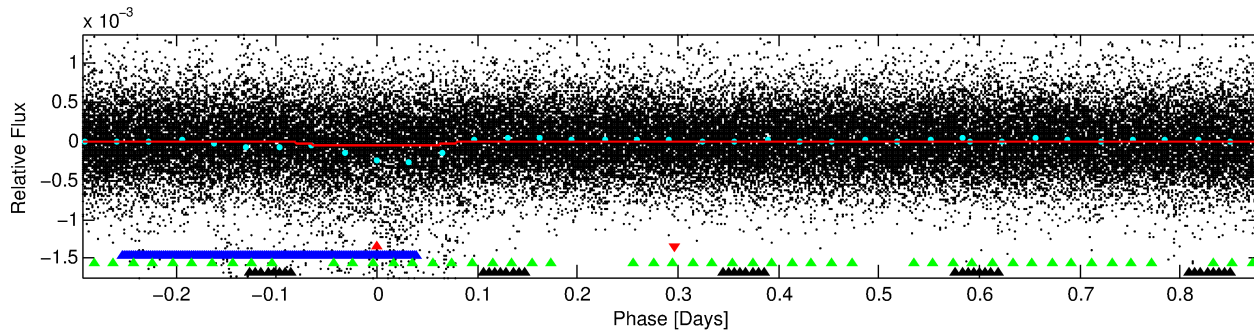
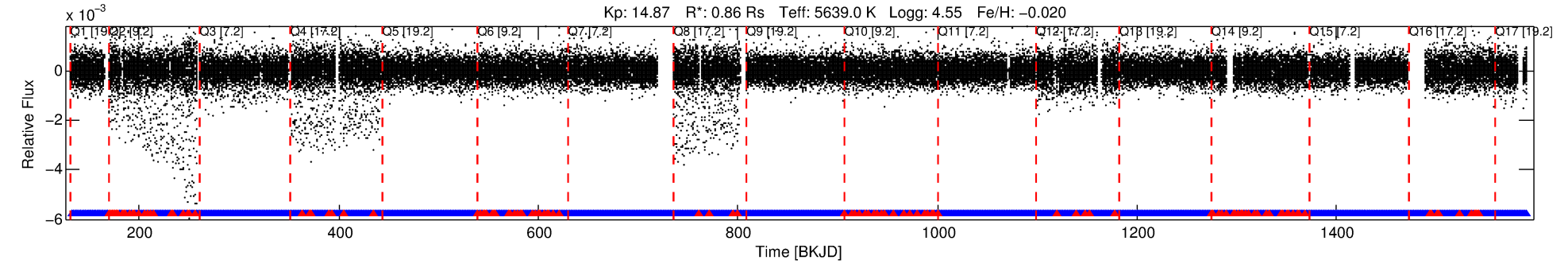
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007966985-01

No Significant Match Found

DV One-Page Summary

KIC: 7966985 Candidate: 1 of 4 Period: 1.174 d



DV Fit Results:

Period = 1.17420 [0.00001] d
Epoch = 132.2872 [0.0047] BKJD
Rp/R* = 0.0066 [0.0050]
a/R* = 2.23 [5.71]
b = 0.41 [6.60]
Seff = 1450.02 [516.44]
Teq = 1574 [140] K
Rp = 0.61 [0.50] Re
a = 0.0215 [0.0049] AU
Ag = 11.07 [17.78] [0.57 σ]
Teffp = 4437 [1748] K [1.63 σ]

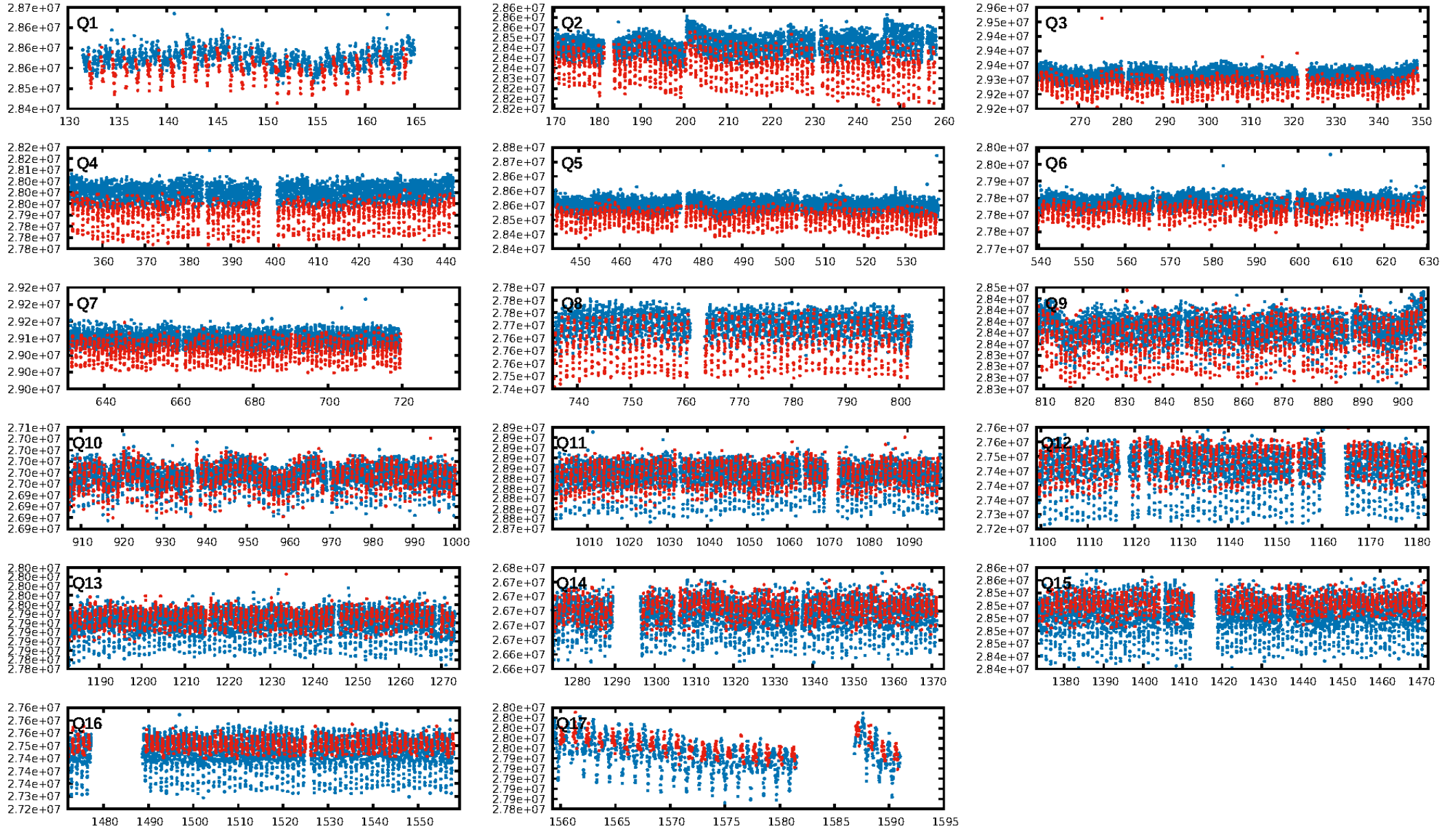
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [160.36 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.89 [968/1093]
GhostDiagnostic-chr: 24
Centroid-sig: N/A
Centroid-so: 6.913 arcsec [4.02 σ]
OotOffset-rm: 1.122 arcsec [3.78 σ]
KicOffset-rm: 6.136 arcsec [76.89 σ]
OotOffset-st: 4/0/3/0 [7]
KicOffset-st: 4/0/3/0 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.00 [0/17]

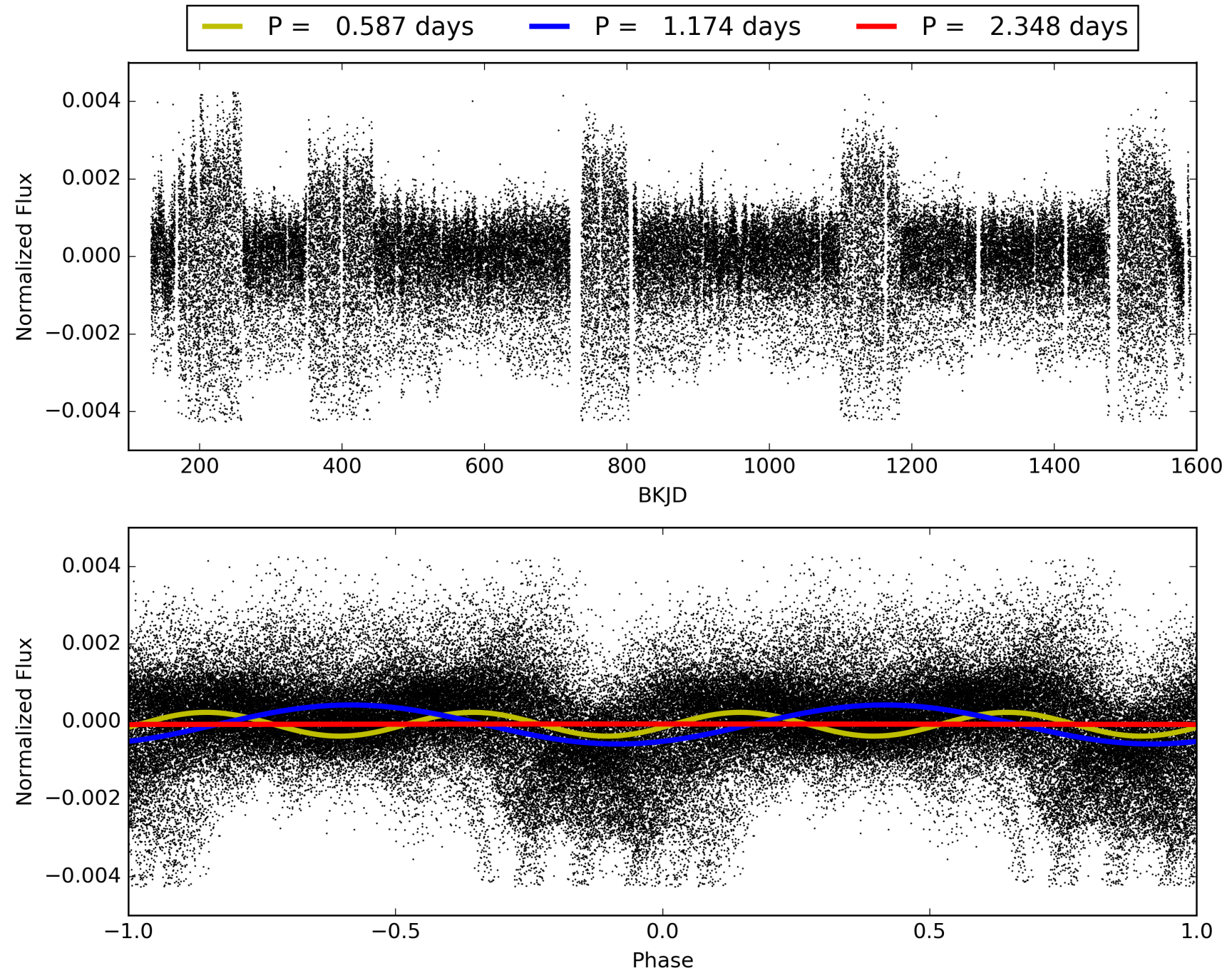
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:42:50 Z

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

TCE 007966985-01, PDC Light Curves

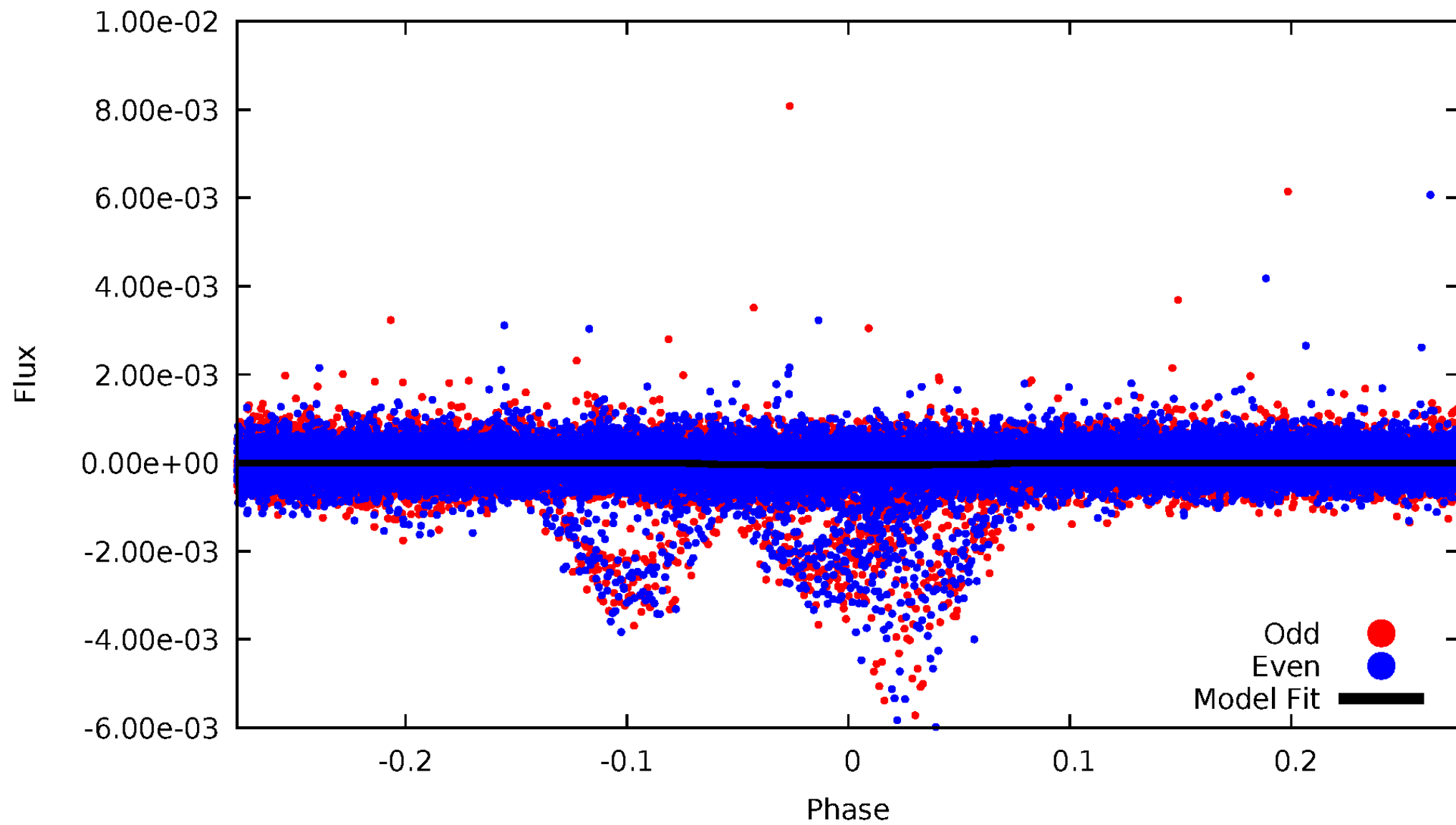


TCE 007966985-01



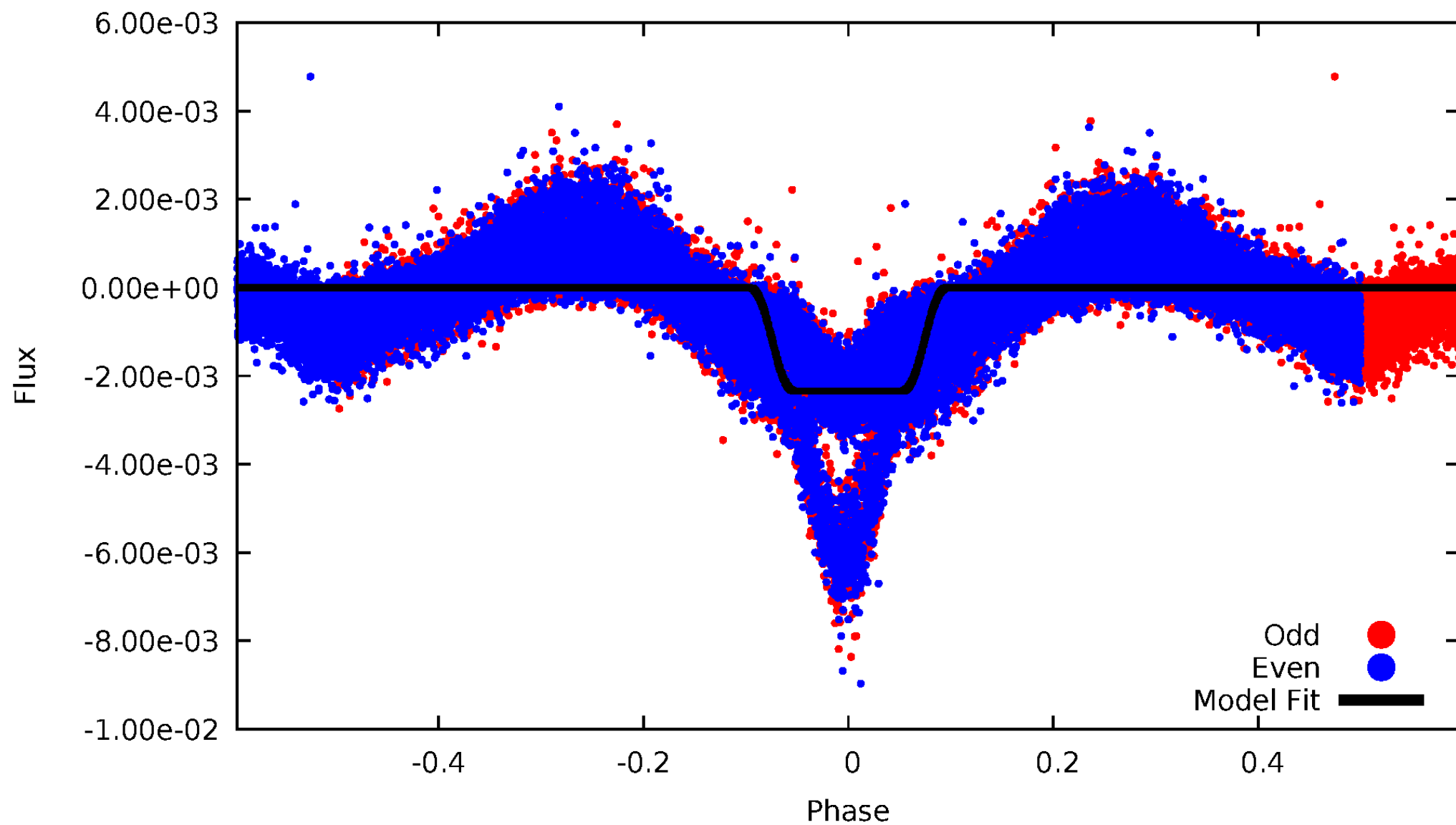
DV Odd/Even

TCE 007966985-01



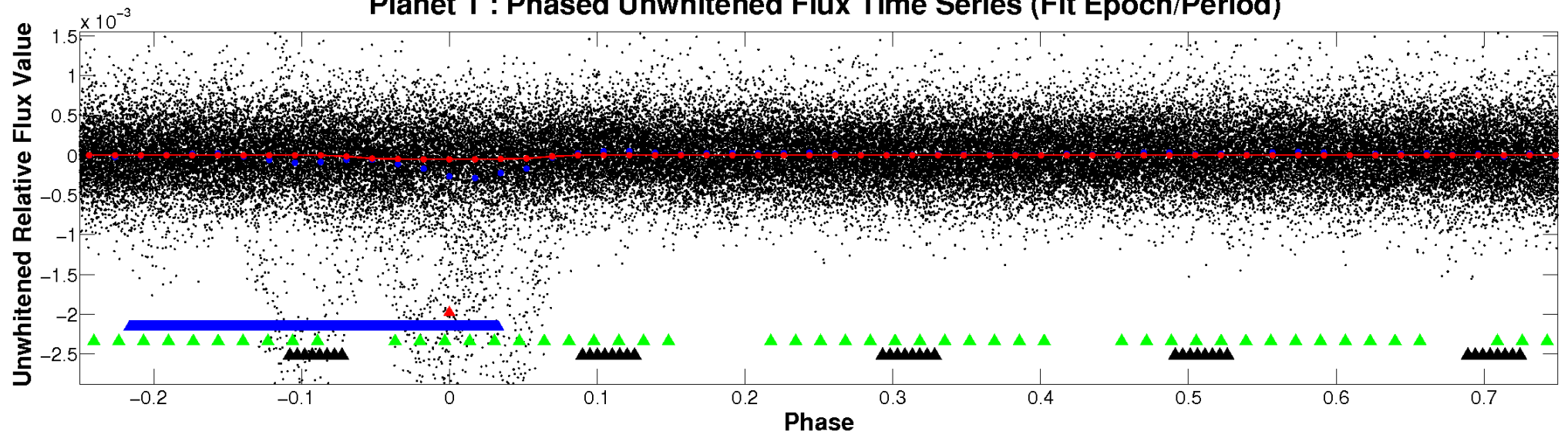
ALT Odd/Even

TCE 007966985-01

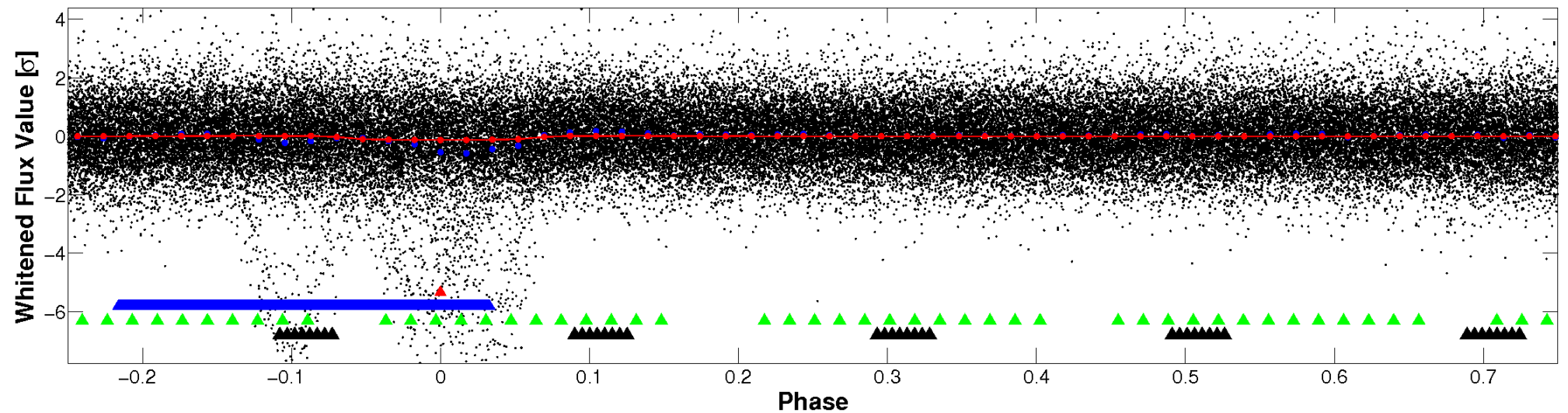


Non-Whitened Vs. Whitened Light Curve

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

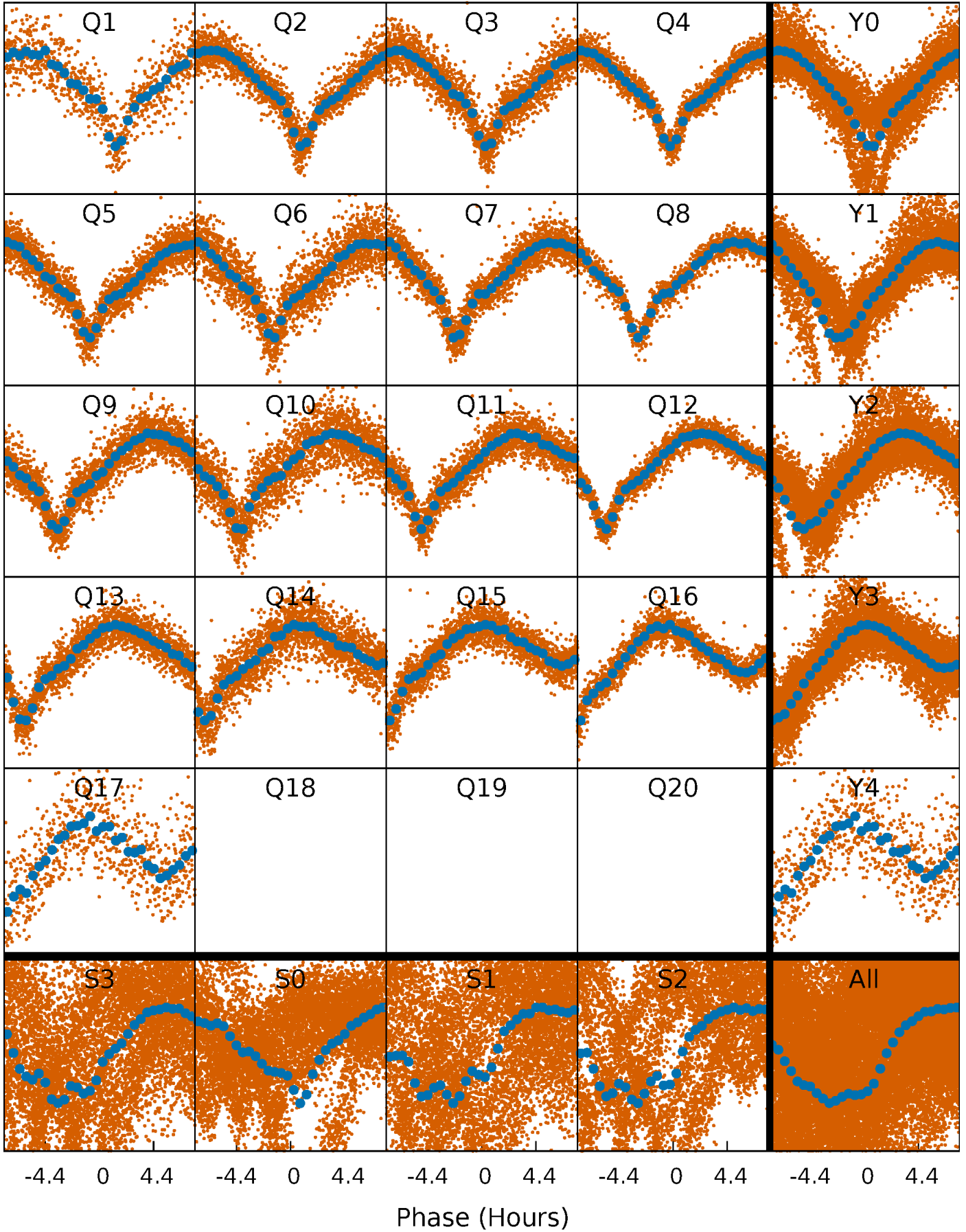


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



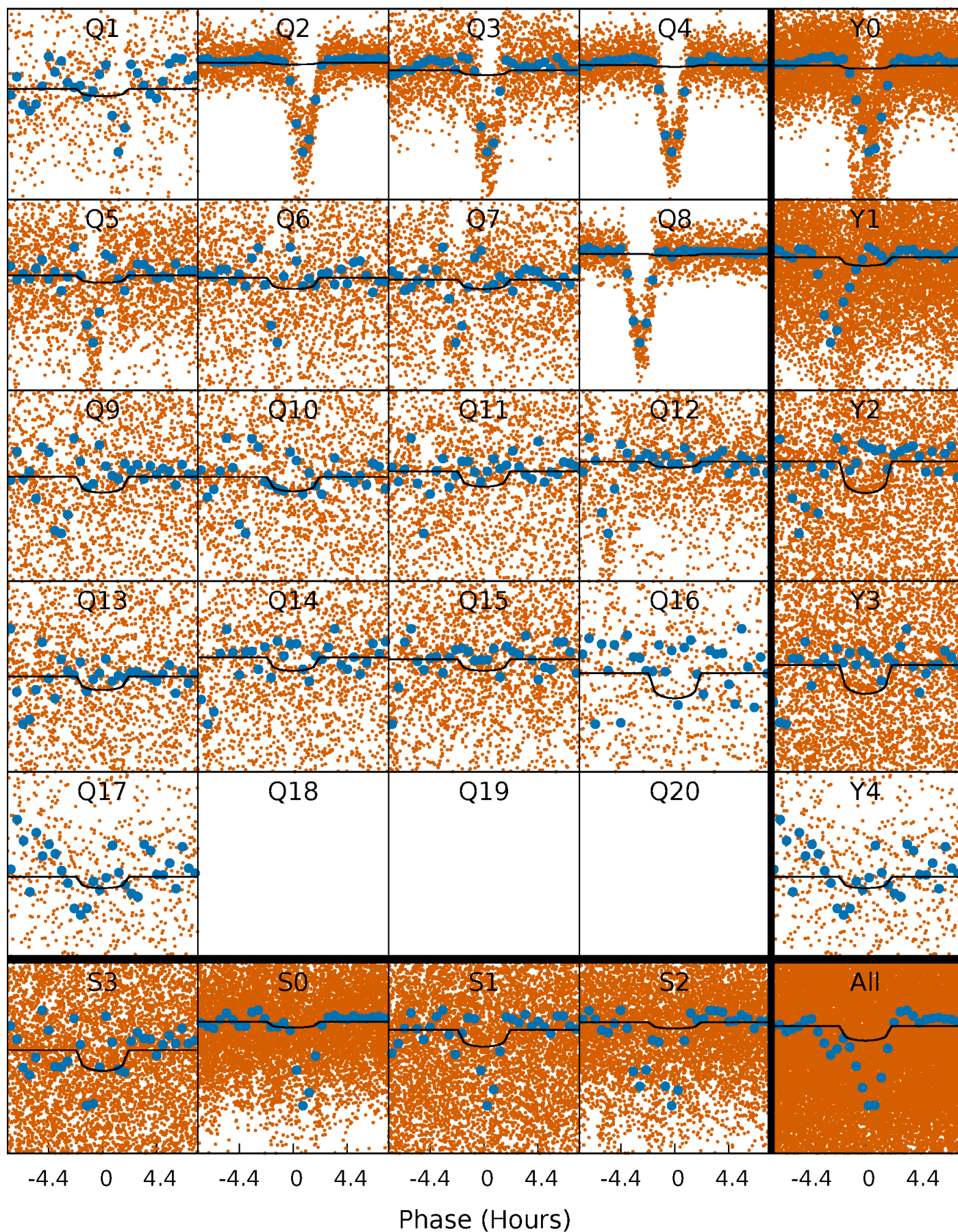
PDC Quarter-Phased Transit Curves

TCE 007966985-01 P= 1.174203 Days $T_0=132.287168$ (BKJD)



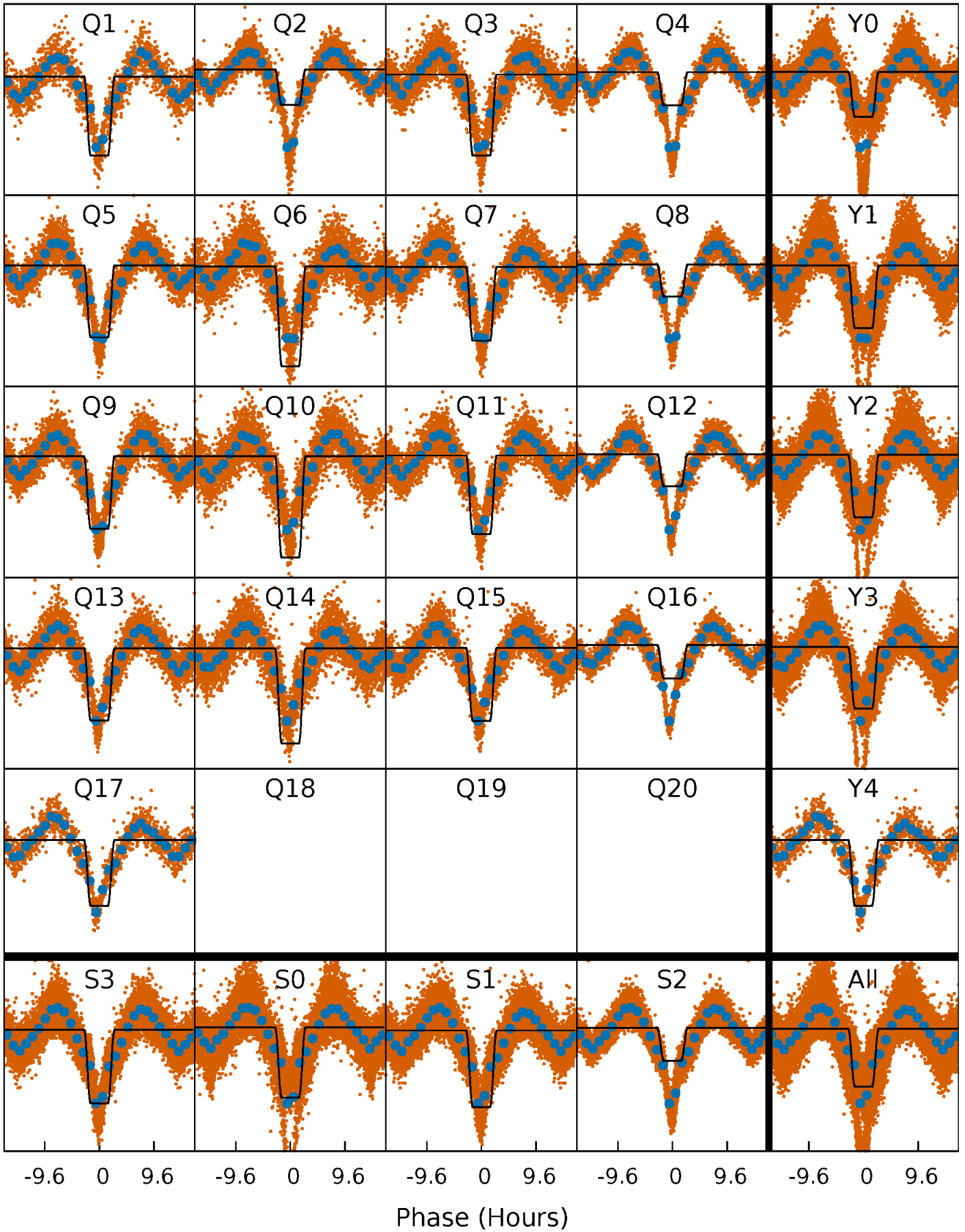
DV Quarter-Phased Transit Curves

TCE 007966985-01 P= 1.174203 Days $T_0=132.287168$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

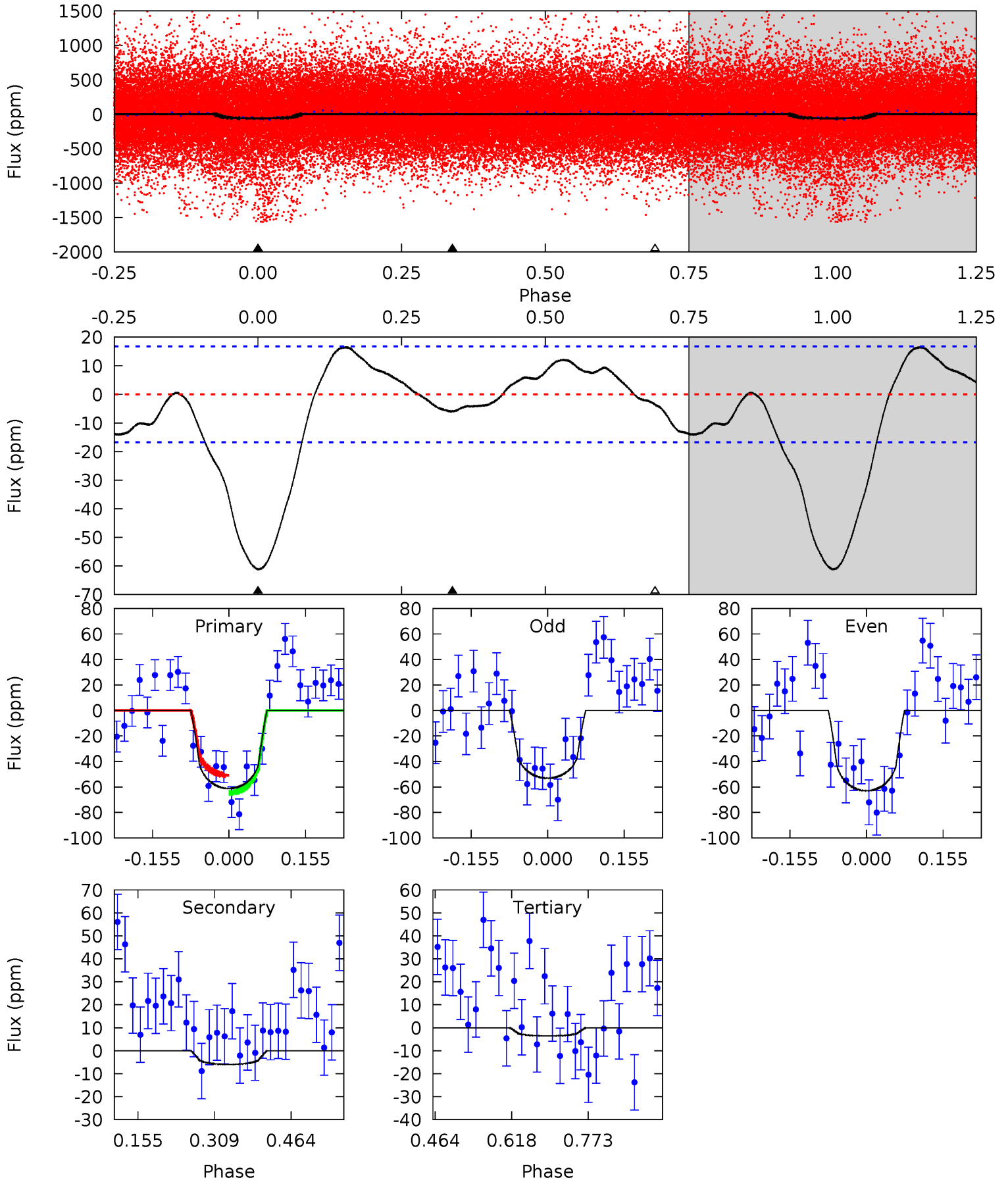
TCE 007966985-01 P= 1.173867 Days $T_0=132.353145$ (BKJD)



DV Model-Shift Uniqueness Test

007966985-01, P = 1.174203 Days, E = 131.112965 Days

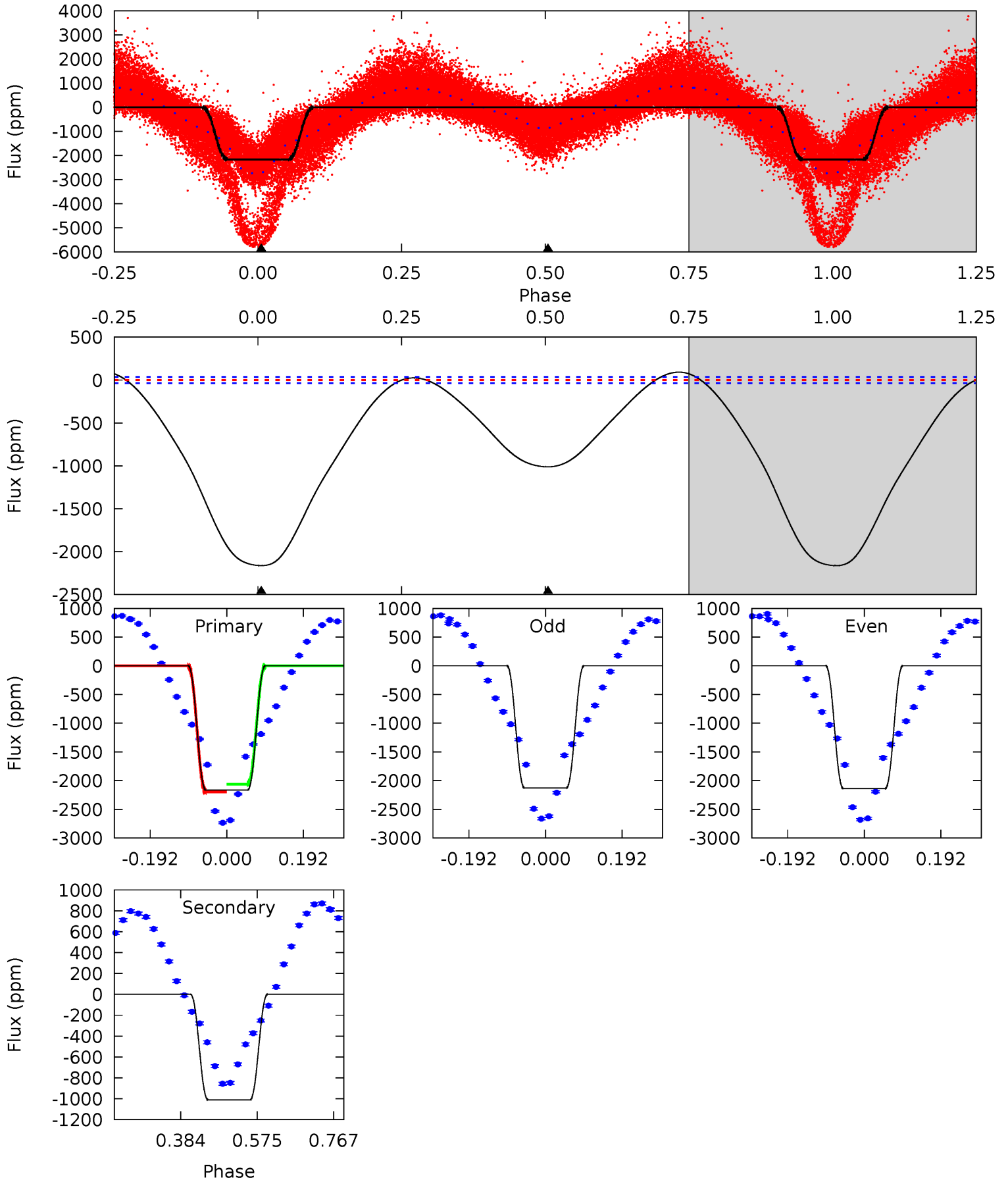
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	1.60	0.96	0	4.47	1.42	2.56	15.4	16.3	0.65	1.60	1.34	3.42	0.21	1.87



Alt Model-Shift Uniqueness Test

007966985-01, P = 1.173867 Days, E = 131.179278 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
258.2	120.8	0	0	4.43	1.31	12.3	258.2	258.2	120.8	120.8	0.69	1.27	0.04	7.92



Stellar Parameters For KIC 007966985

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5639^{+169}_{-169}	$4.551^{+0.034}_{-0.184}$	$-0.020^{+0.300}_{-0.300}$	$0.859^{+0.233}_{-0.078}$	$0.959^{+0.094}_{-0.115}$	$2.131^{+0.377}_{-1.013}$
	+3%/-3%	+1%/-4%	+1500%/-1500%	+27%/-9%	+10%/-12%	+18%/-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 007966985-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6 ± 4	$0.71^{+0.45}_{-0.42}$	2253^{+144}_{-101}	3542^{+1565}_{-812}	$2.658^{+15.227}_{-1.990}$
Alt.	-1012 ± 8	$4.76^{+0.72}_{-0.62}$	2251^{+134}_{-100}	4672^{+254}_{-224}	11^{+3}_{-3}

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

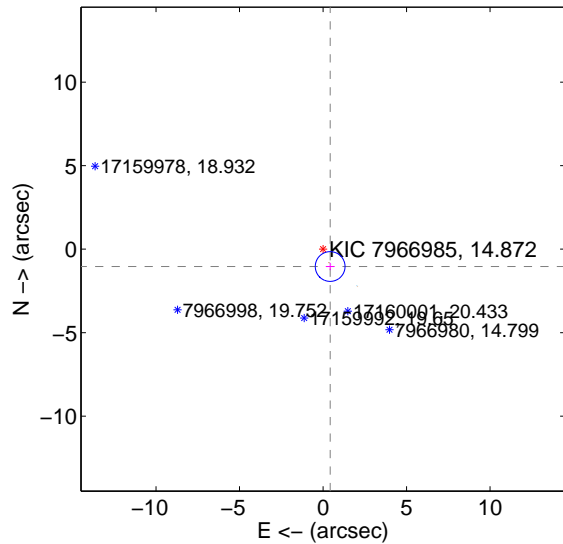
Supplemental centroid analysis for 007966985-01. Kepler magnitude: 14.87. Transit SNR 9.97

There are 4 quarters with good PRF difference image offsets

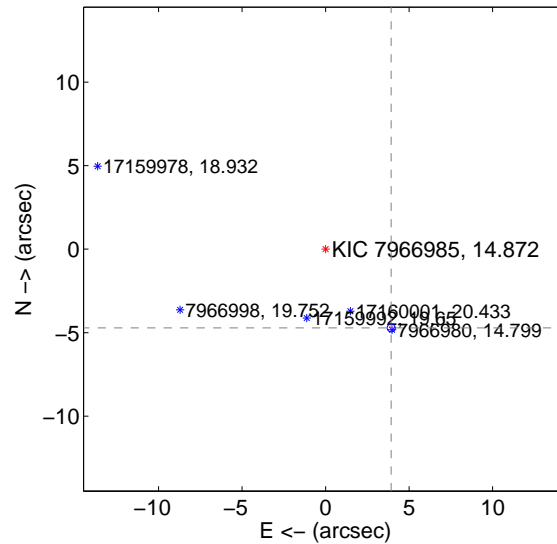
The OOT PRF centroid is offset from the target star catalog position by about 5.15 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.122 ± 0.297	3.78	-0.426 ± 0.261	-1.038 ± 0.220
PRF-fit source offset from KIC position	6.136 ± 0.080	76.89	-3.927 ± 0.070	-4.715 ± 0.080
photometric centroid source offset	6.91 ± 1.72	4.02	-4.89 ± 1.44	-4.89 ± 1.96

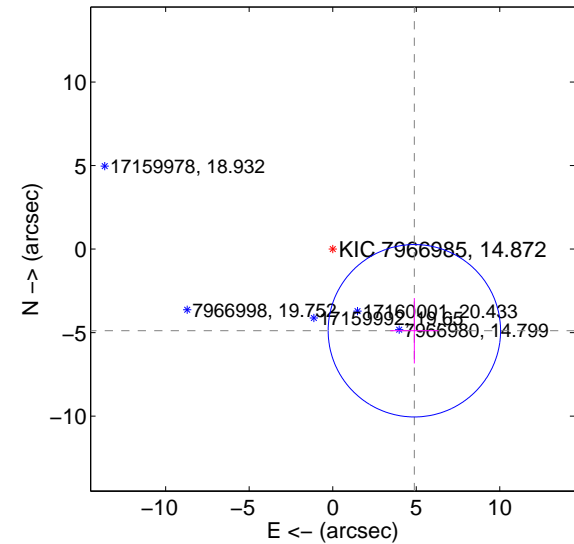
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

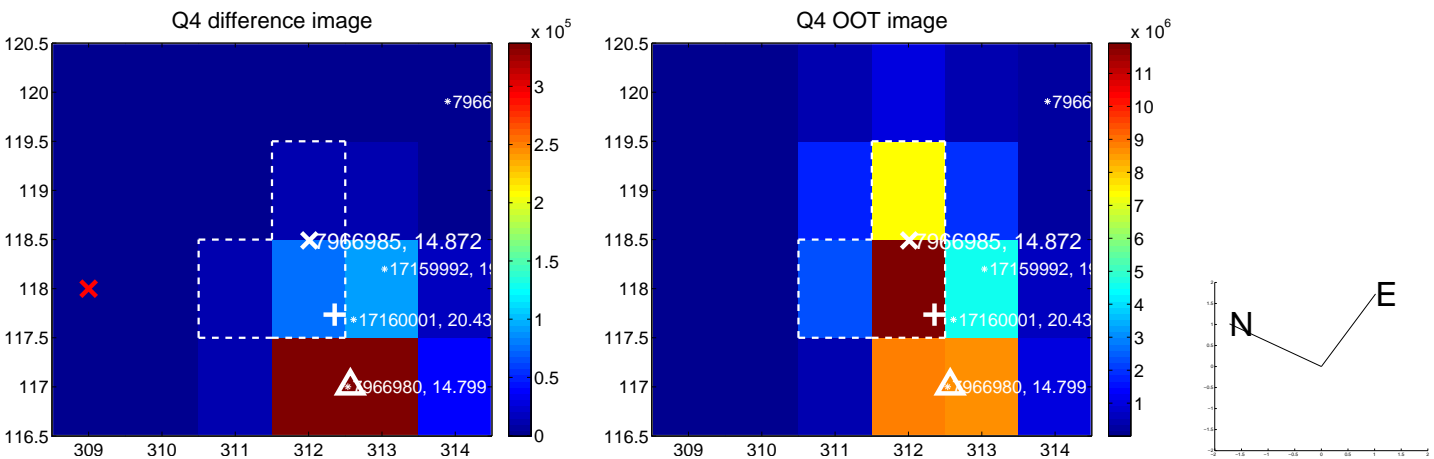
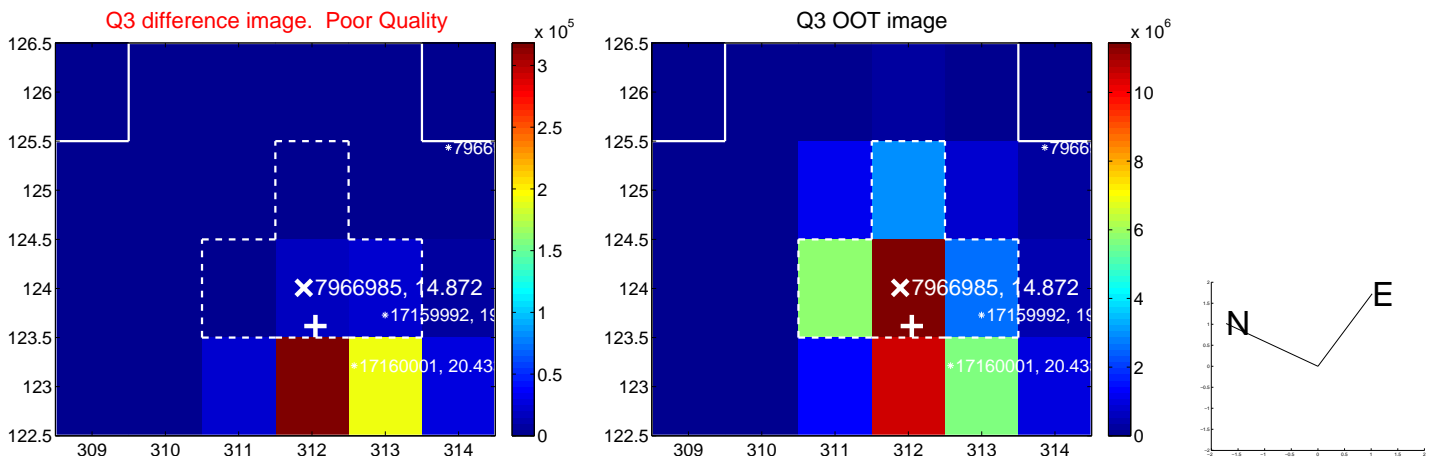
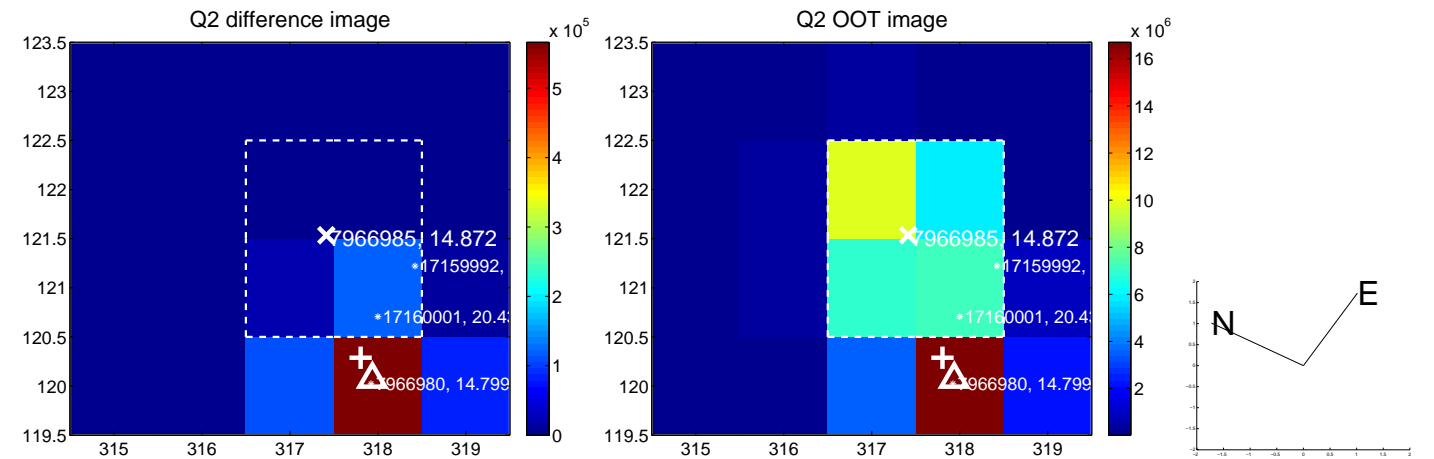
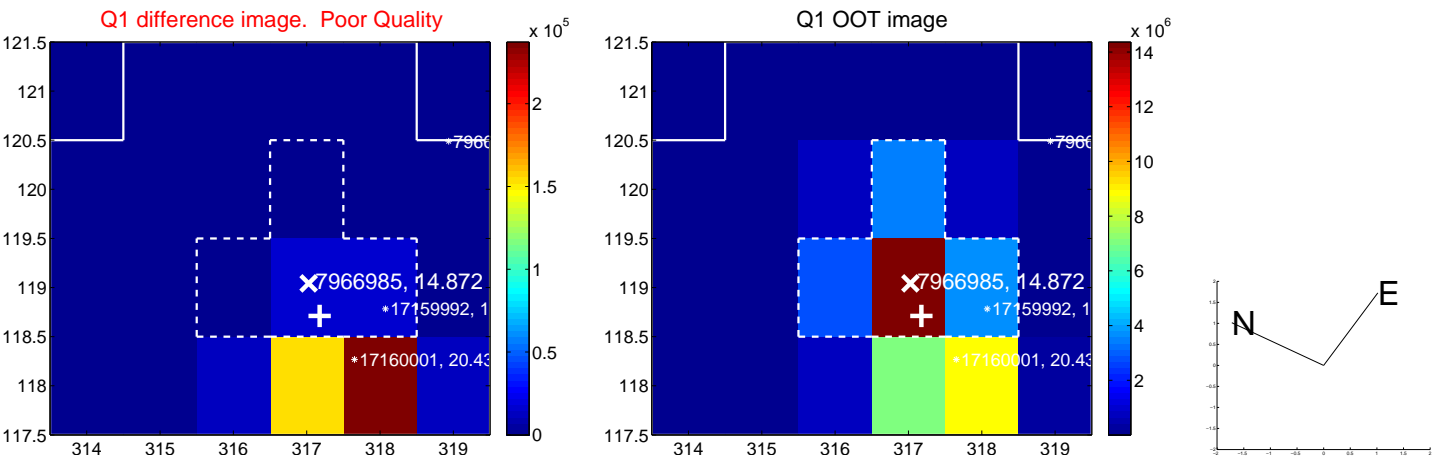


offset from photometric centroids

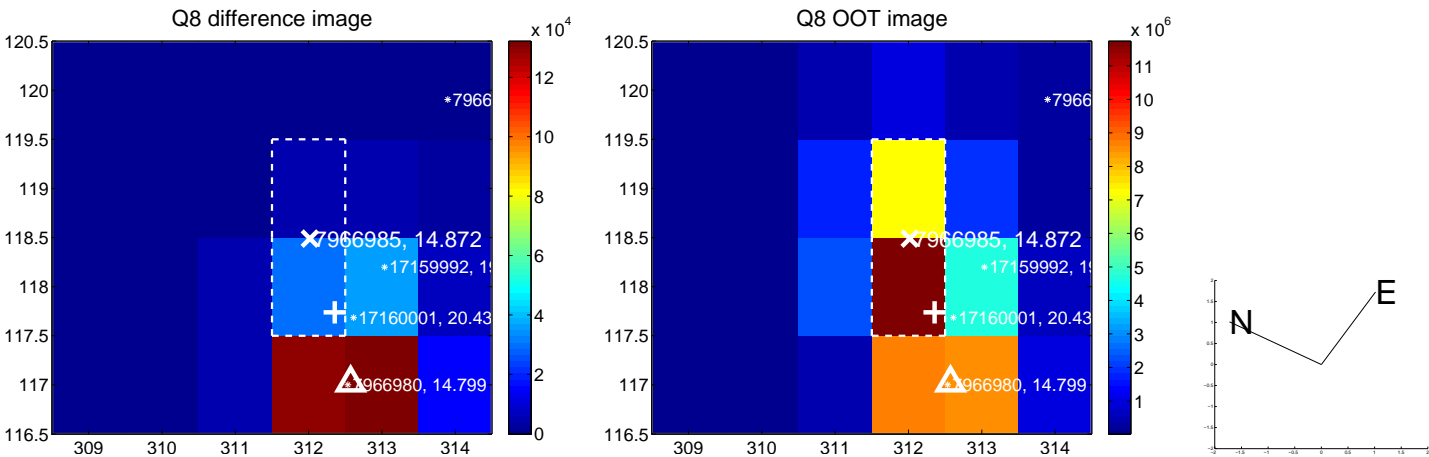
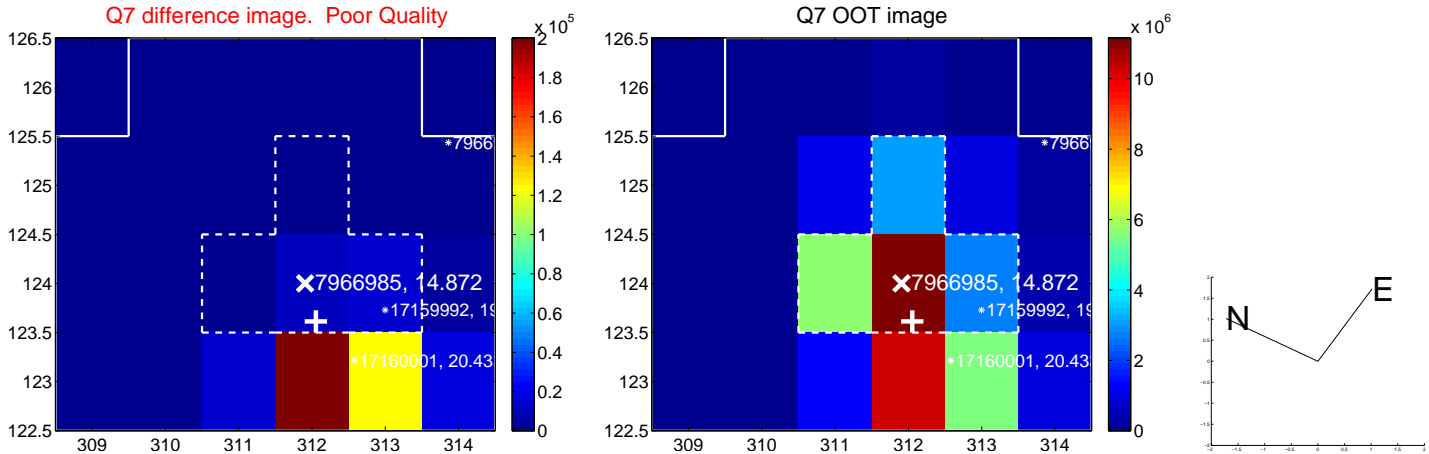
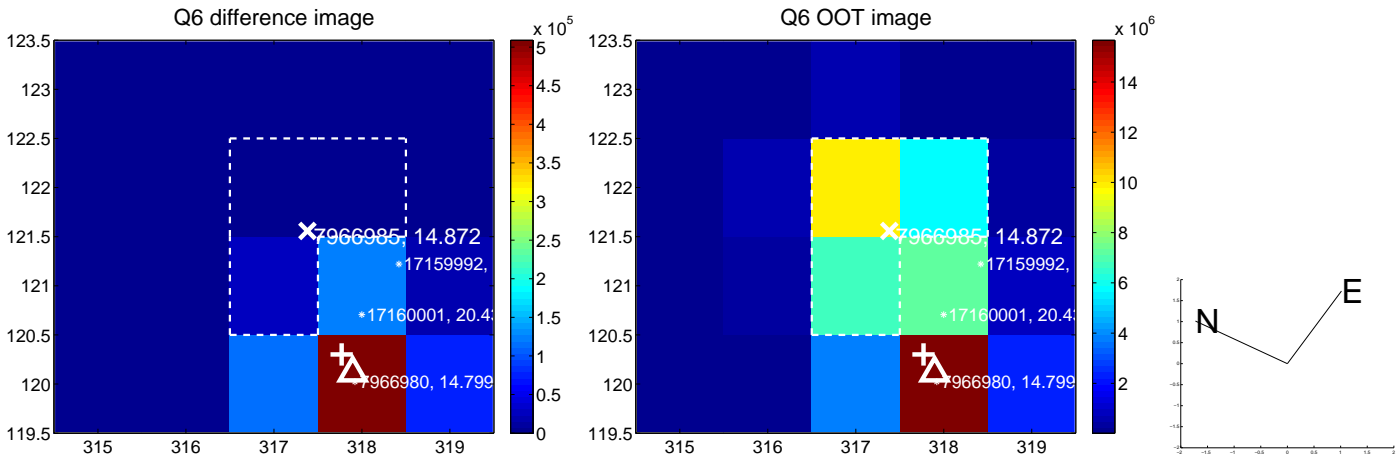
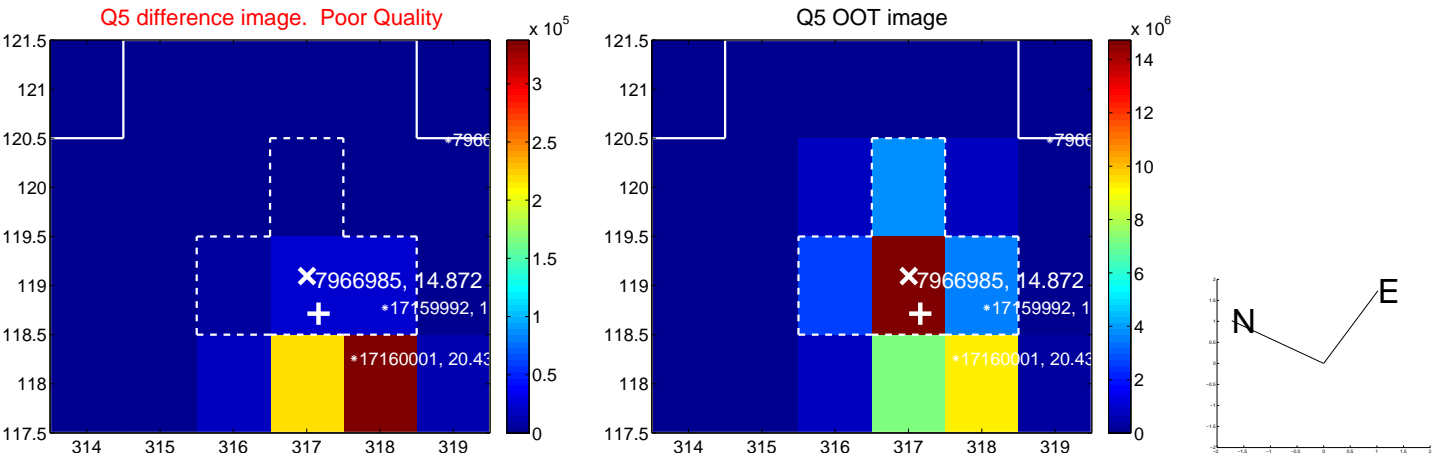


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

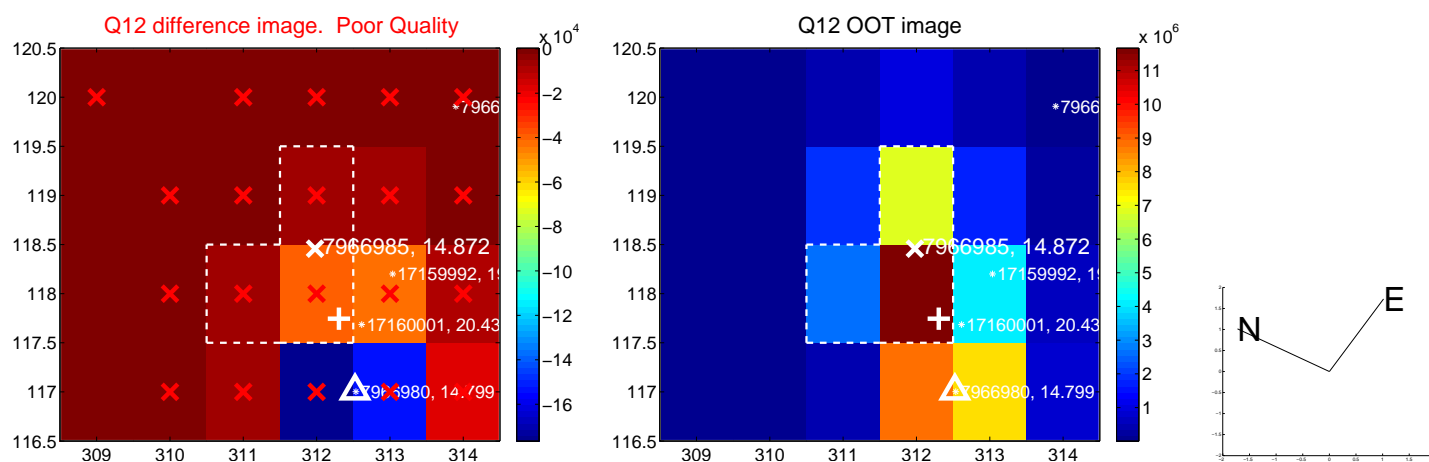
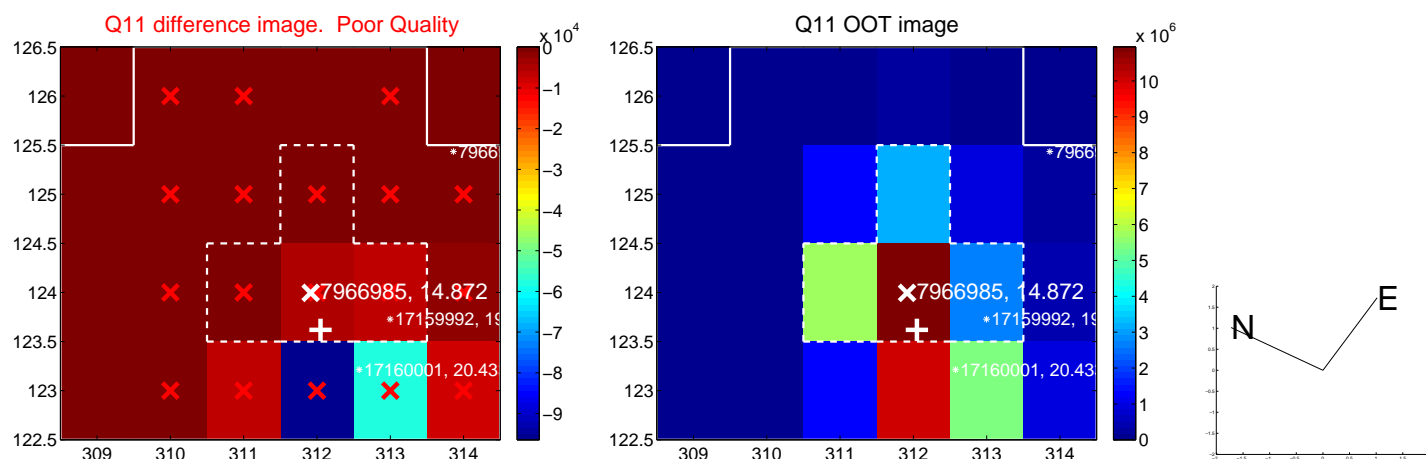
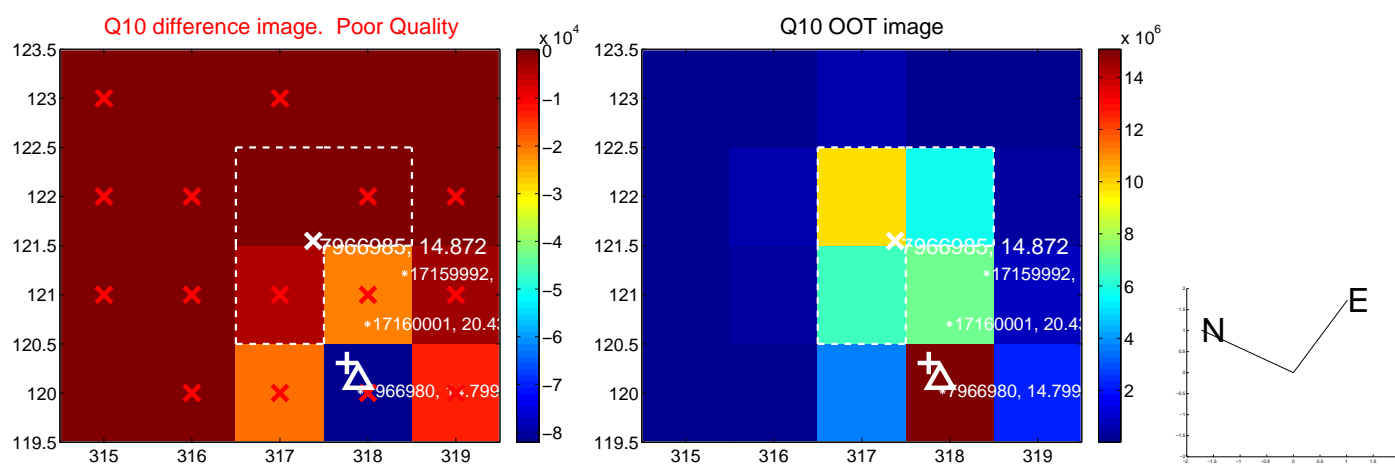
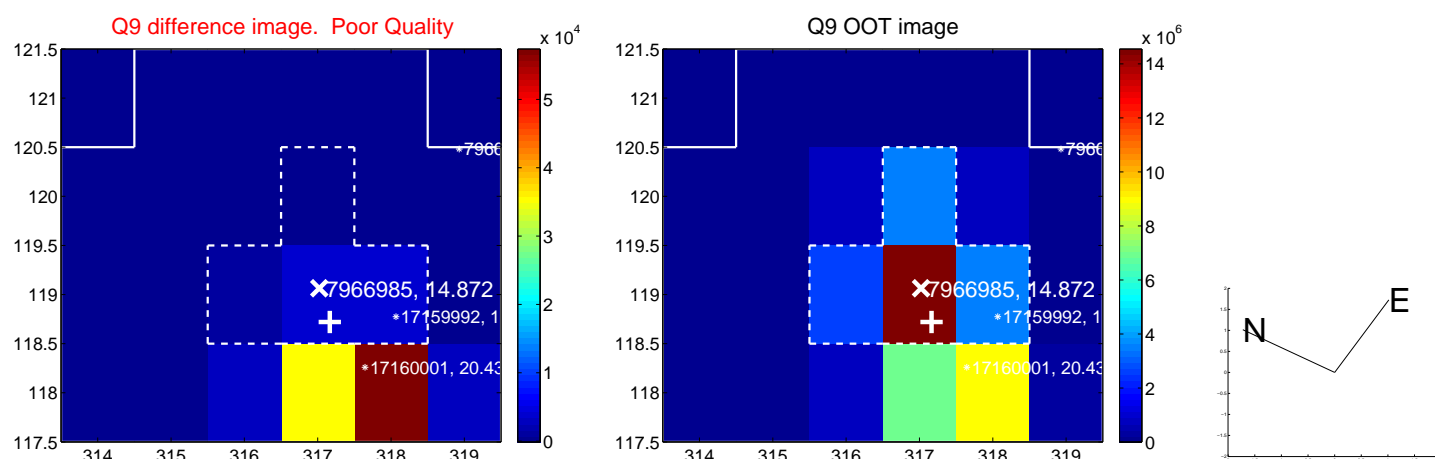
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



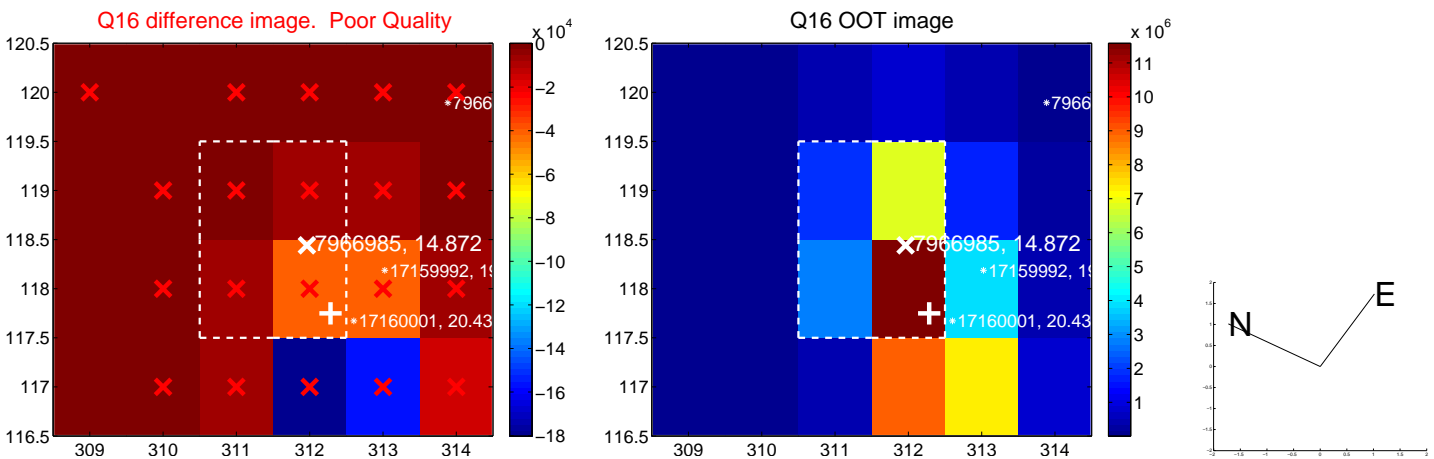
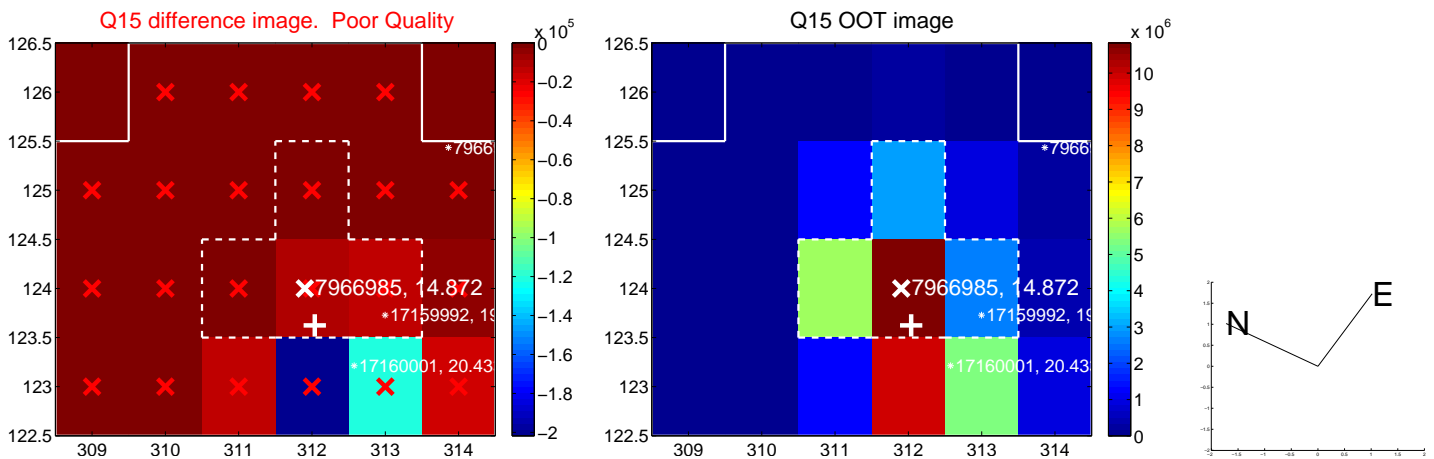
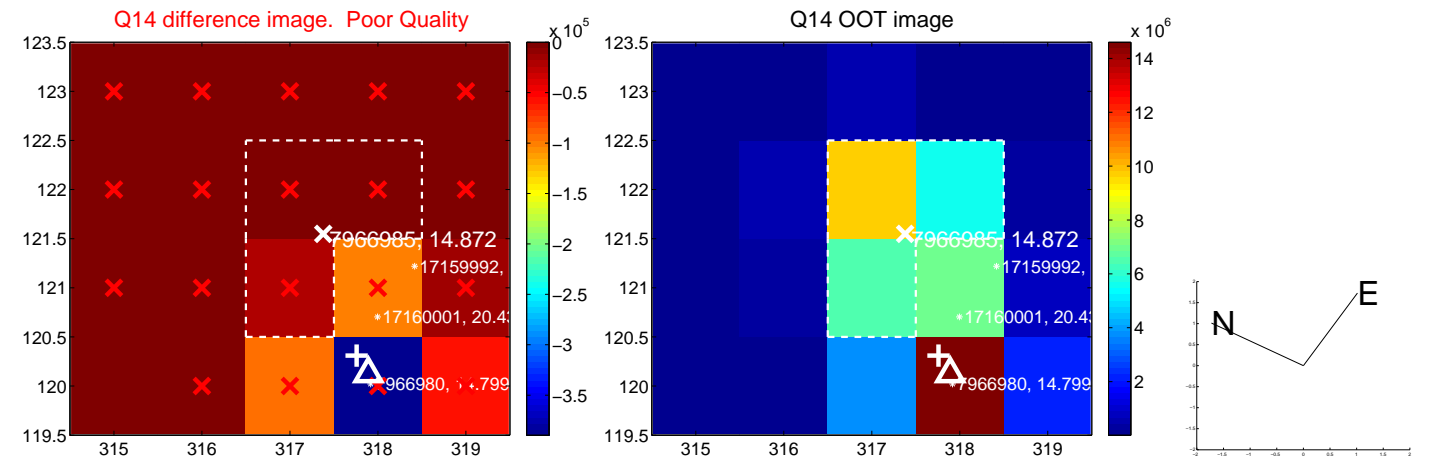
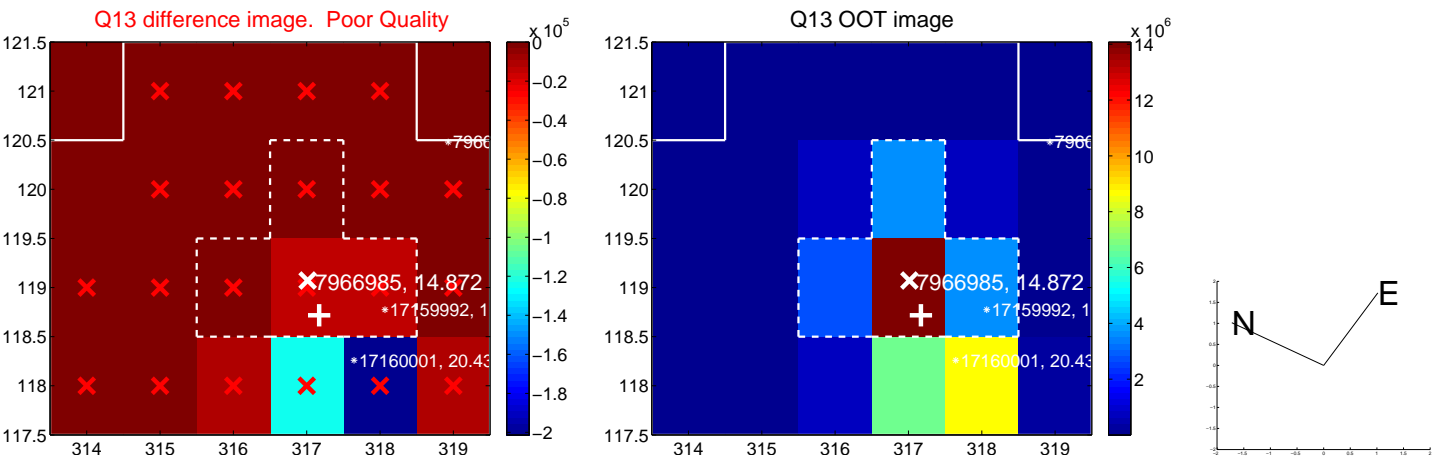
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



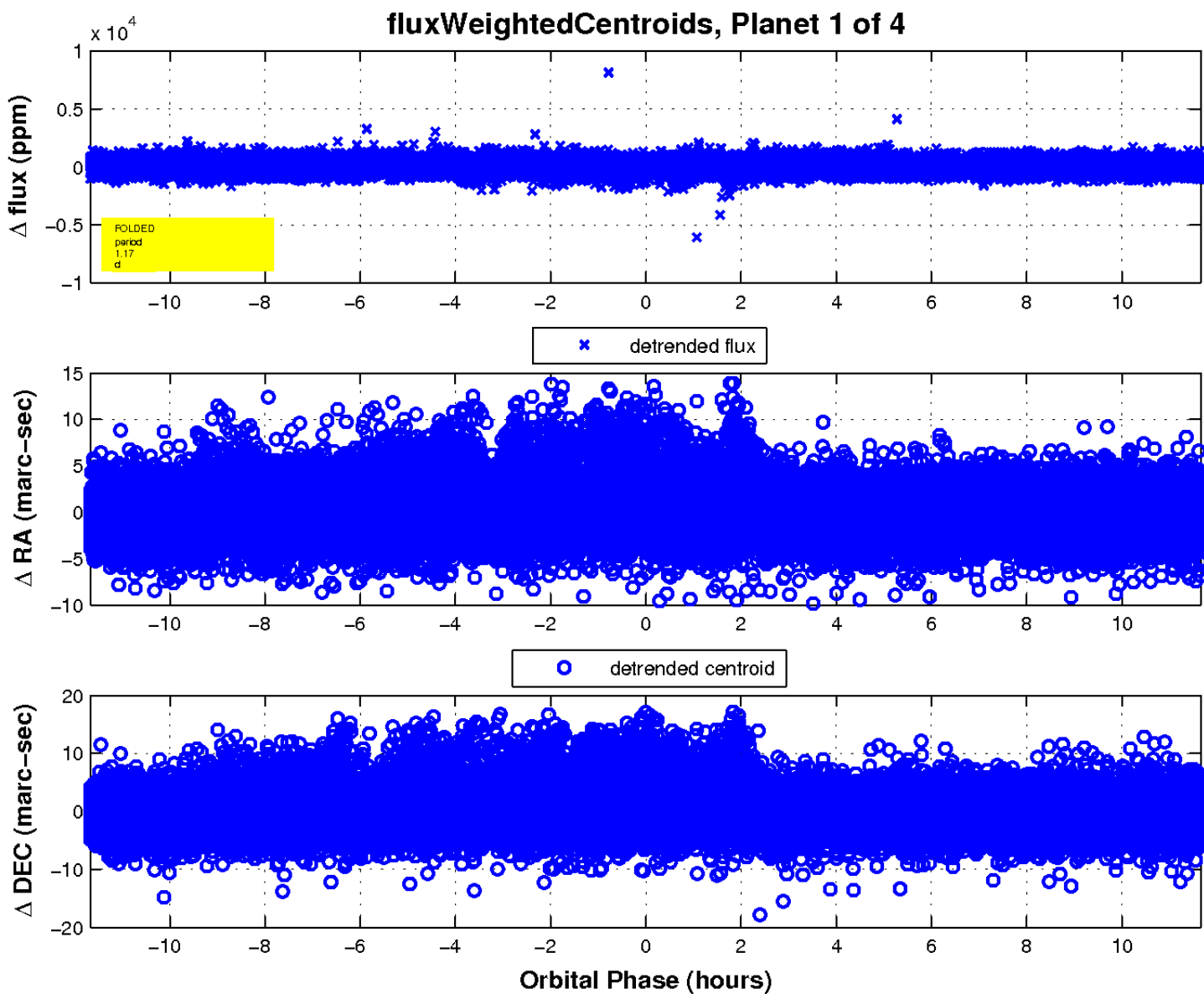
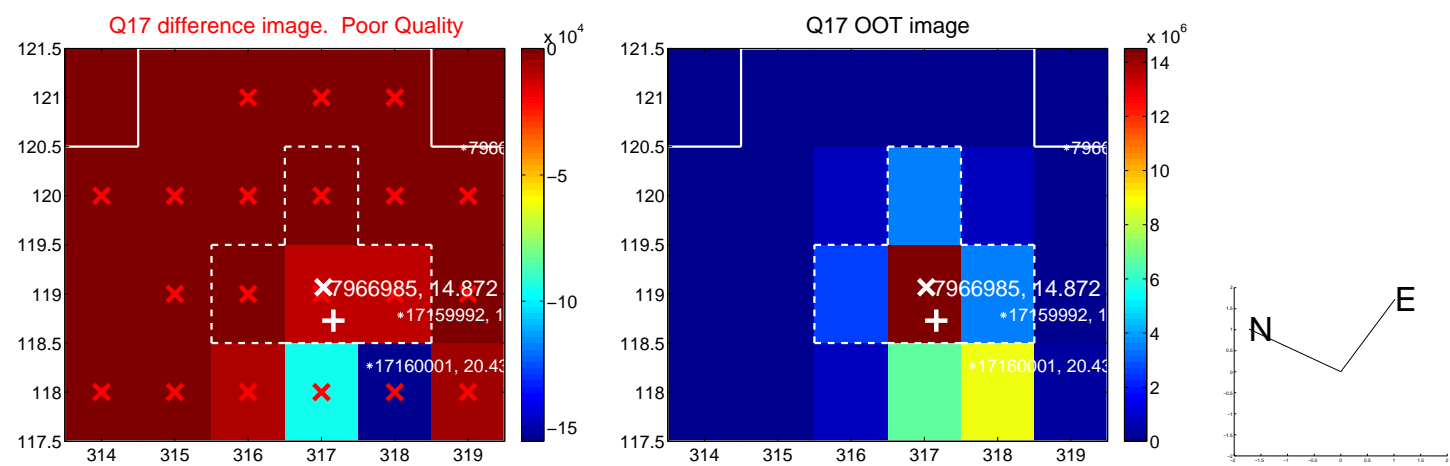
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

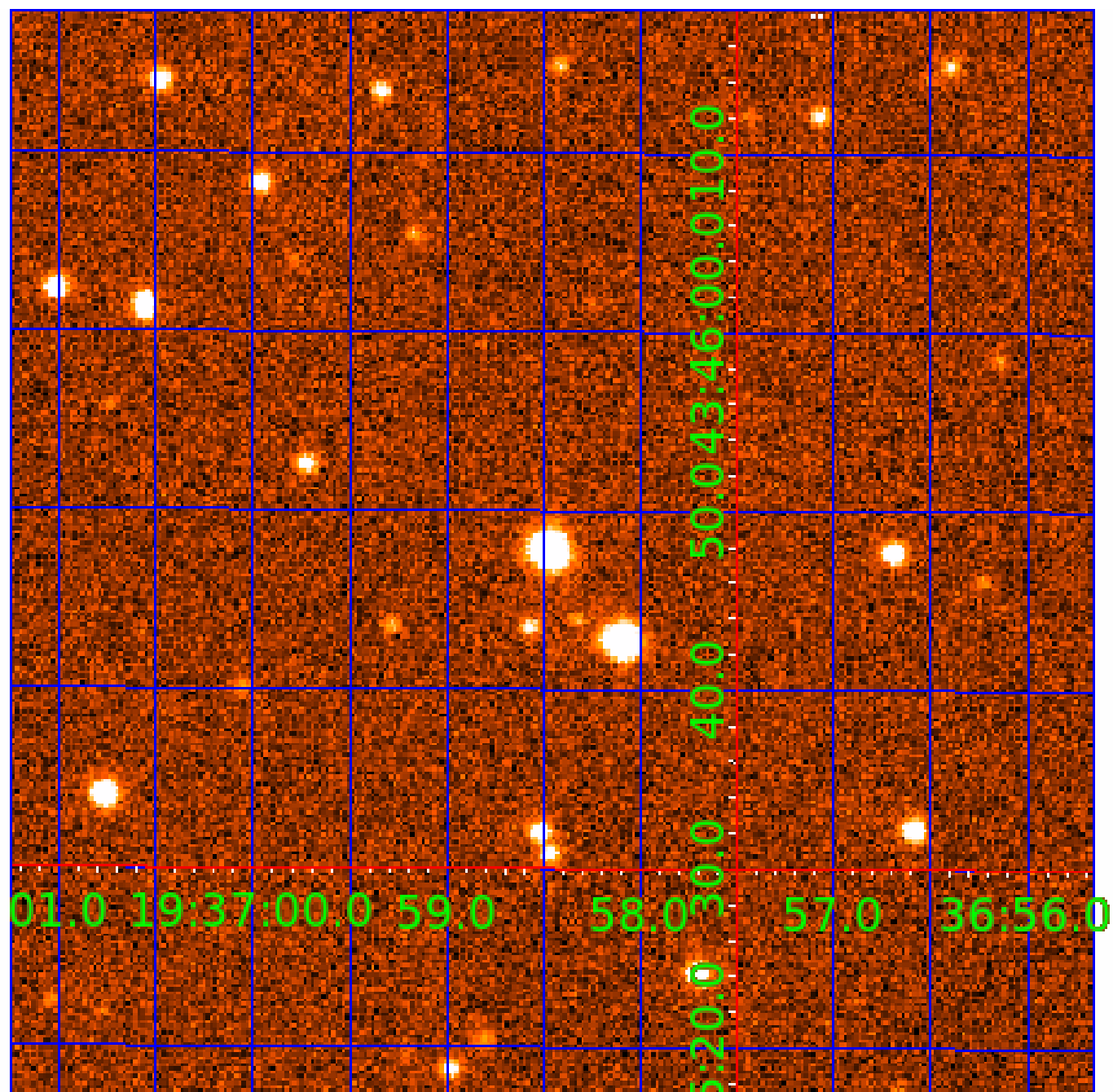


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007966985

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})
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007966985-03	OBS	No	29.653549	137.518119	668.1	1.745	10.9	9.9	0.86	5639	2.27	19.57
007966985-04	OBS	No	35.929415	163.201969	578.9	1.849	10.7	8.2	0.86	5639	2.44	15.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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007966985-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
007966985-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007966985-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

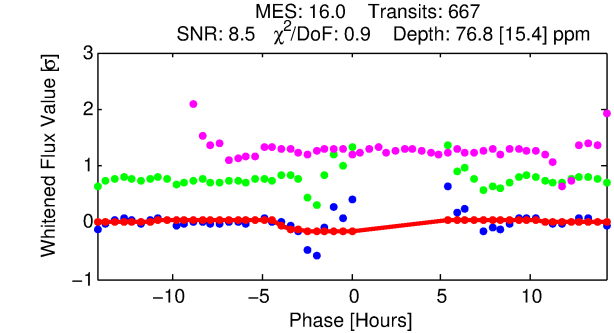
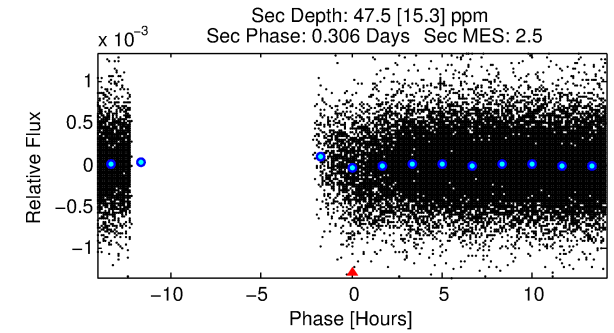
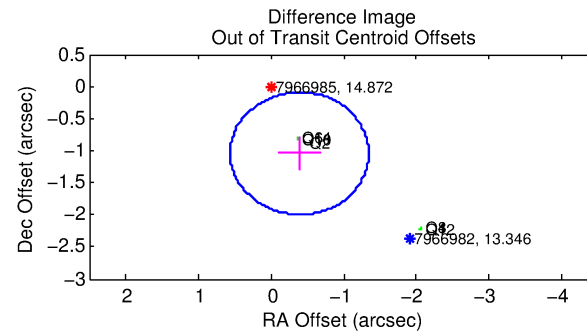
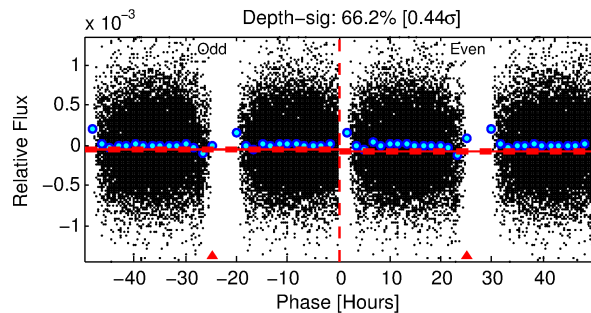
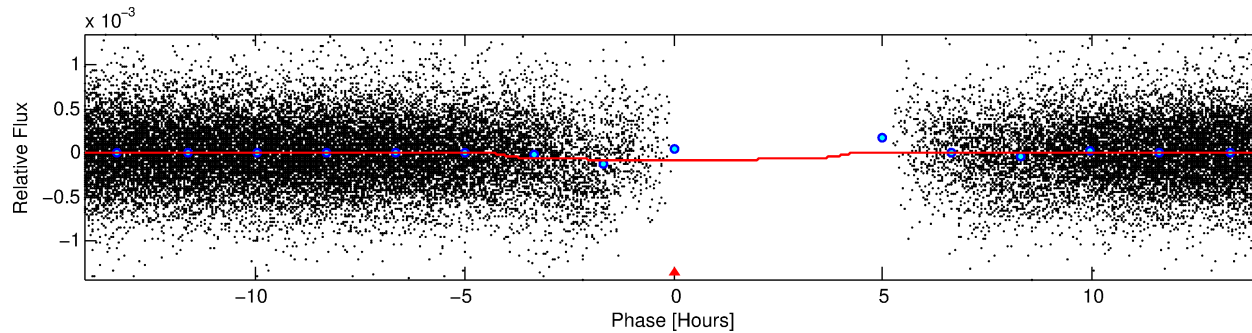
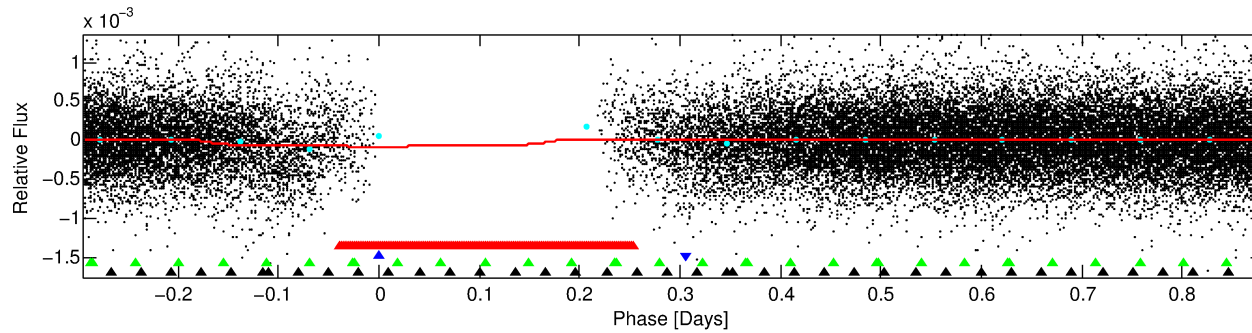
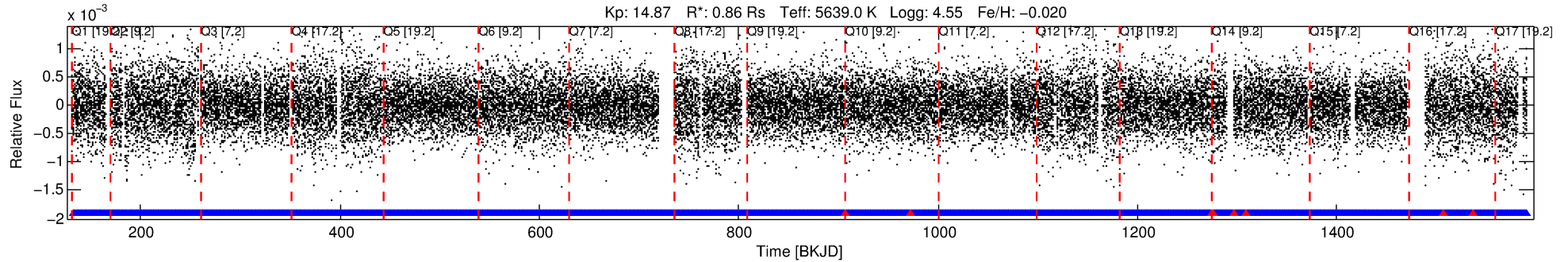
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007966985-02

No Significant Match Found

DV One-Page Summary

KIC: 7966985 Candidate: 2 of 4 Period: 1.174 d



DV Fit Results:

Period = 1.17397 [0.00003] d
Epoch = 132.3260 [0.0230] BKJD
Rp/R* = 0.0084 [0.0081]
a/R* = 1.17 [1.29]
b = 0.62 [4.10]
Seff = 1450.41 [516.58]
Teq = 1574 [140] K
Rp = 0.79 [0.79] Re
a = 0.0215 [0.0049] AU
Ag = 19.53 [38.94] [0.48σ]
Teffp = 5115 [2518] K [1.40σ]

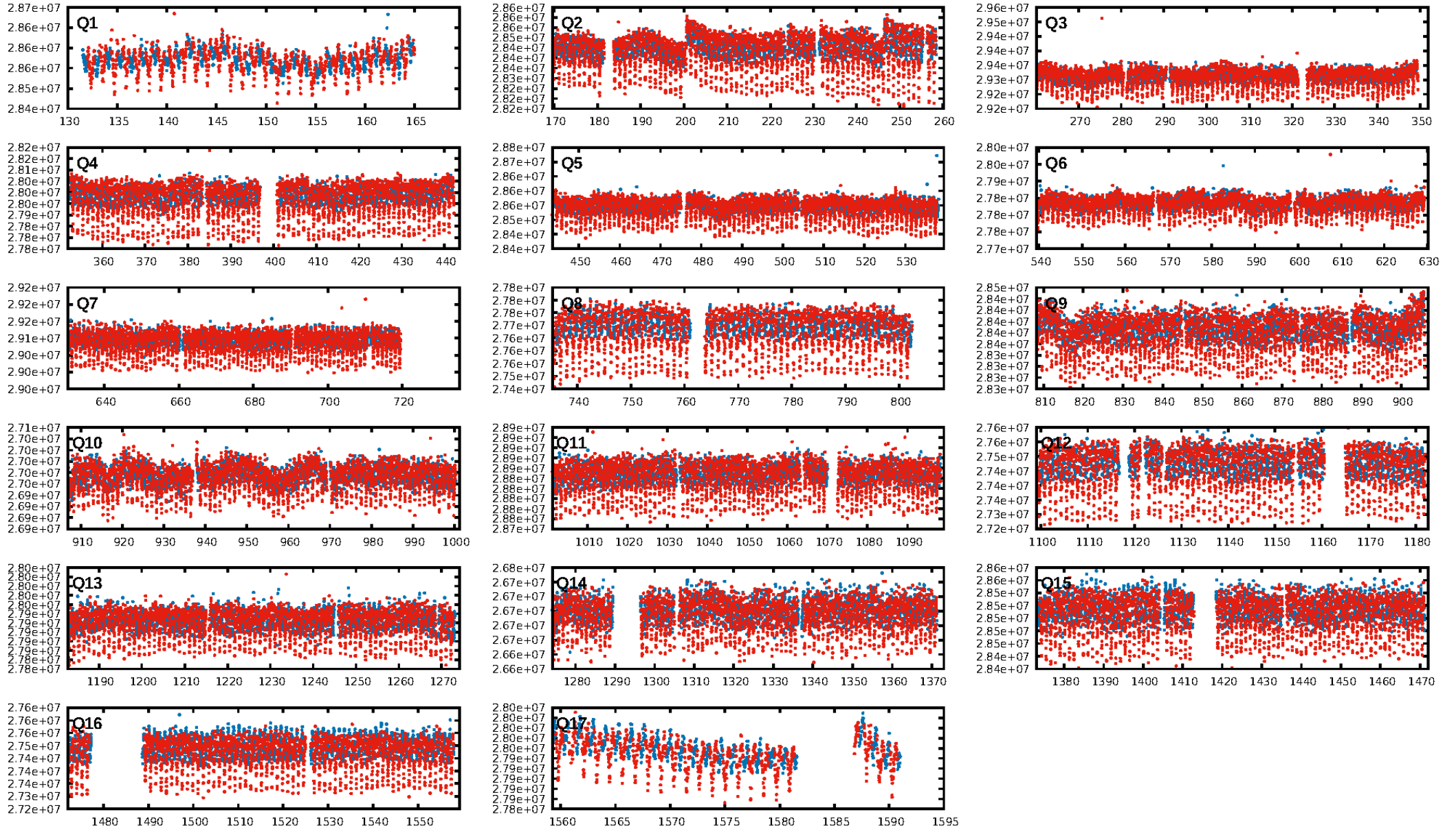
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.85e-18
RollingBand-fgt: 0.99 [636/644]
GhostDiagnostic-chr: -1.009
Centroid-sig: N/A
Centroid-so: 2.700 arcsec [2.53σ]
OotOffset-rm: 1.115 arcsec [3.51σ]
KicOffset-rm: 6.103 arcsec [79.25σ]
OotOffset-st: 4/0/3/0 [7]
KicOffset-st: 4/0/3/0 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 0.00 [0/17]

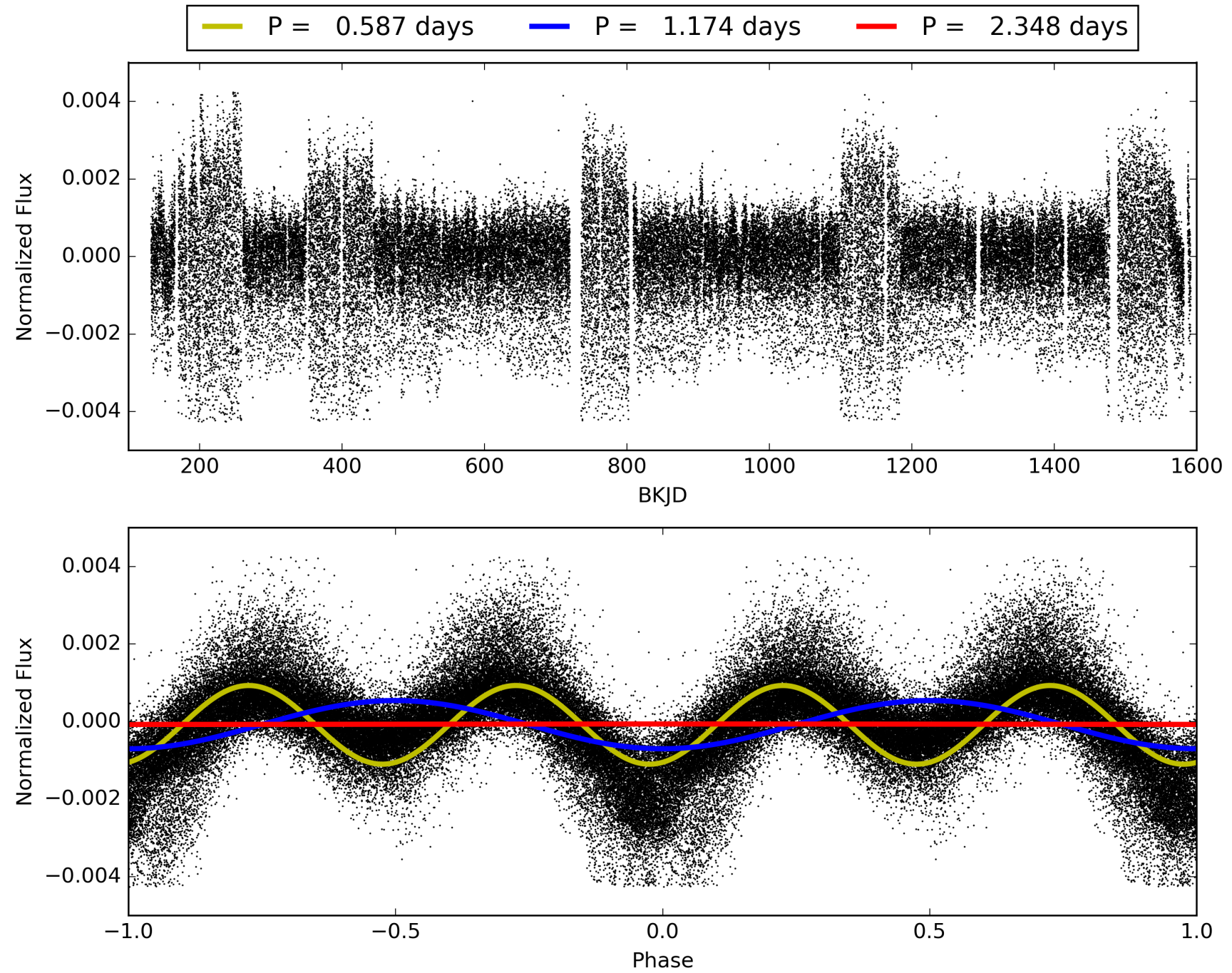
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:43:04 Z

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

TCE 007966985-02, PDC Light Curves

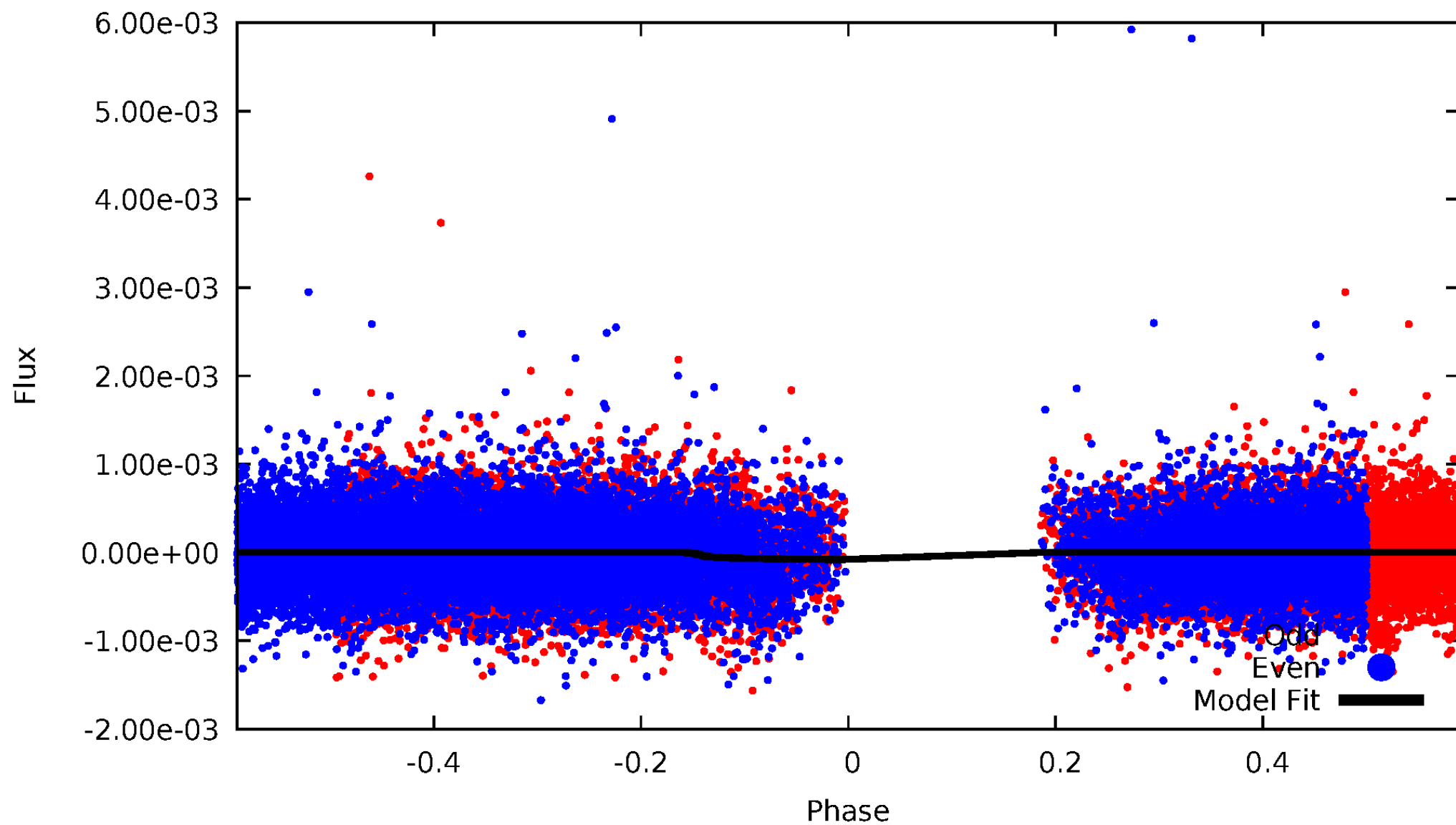


TCE 007966985-02



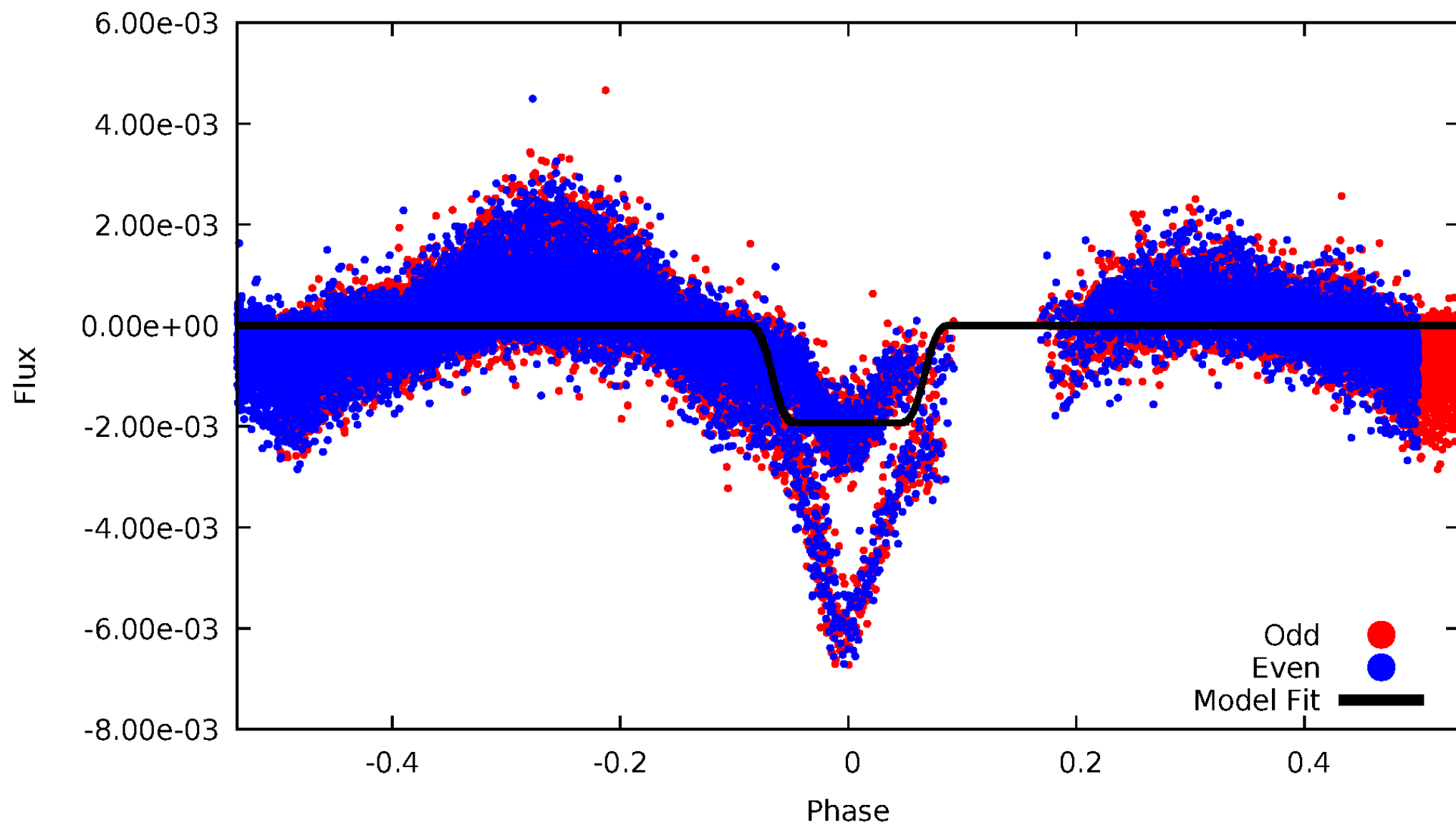
DV Odd/Even

TCE 007966985-02



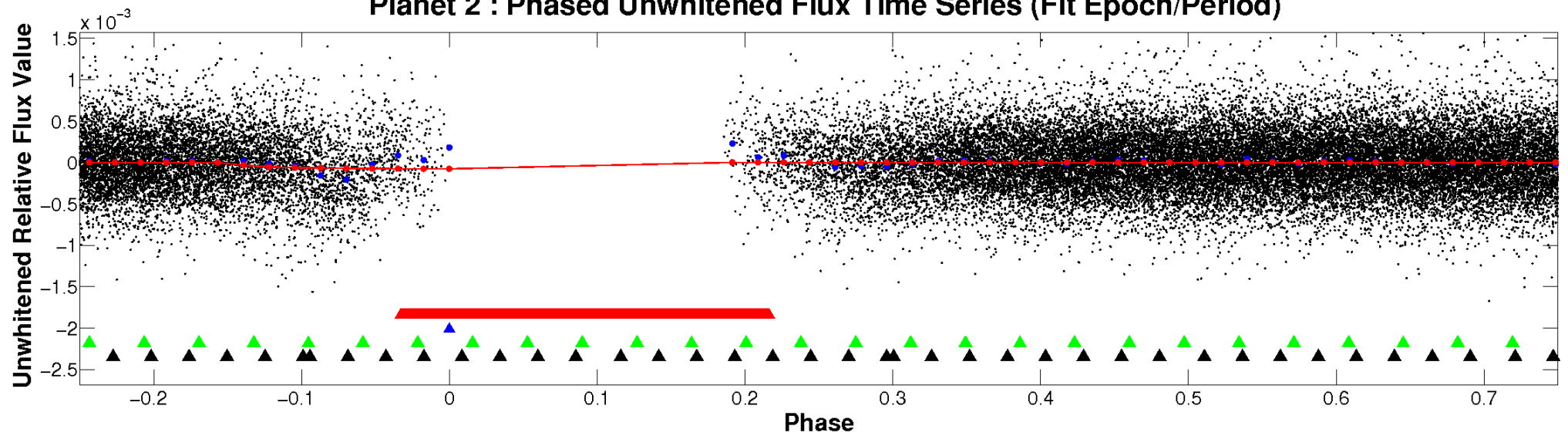
ALT Odd/Even

TCE 007966985-02

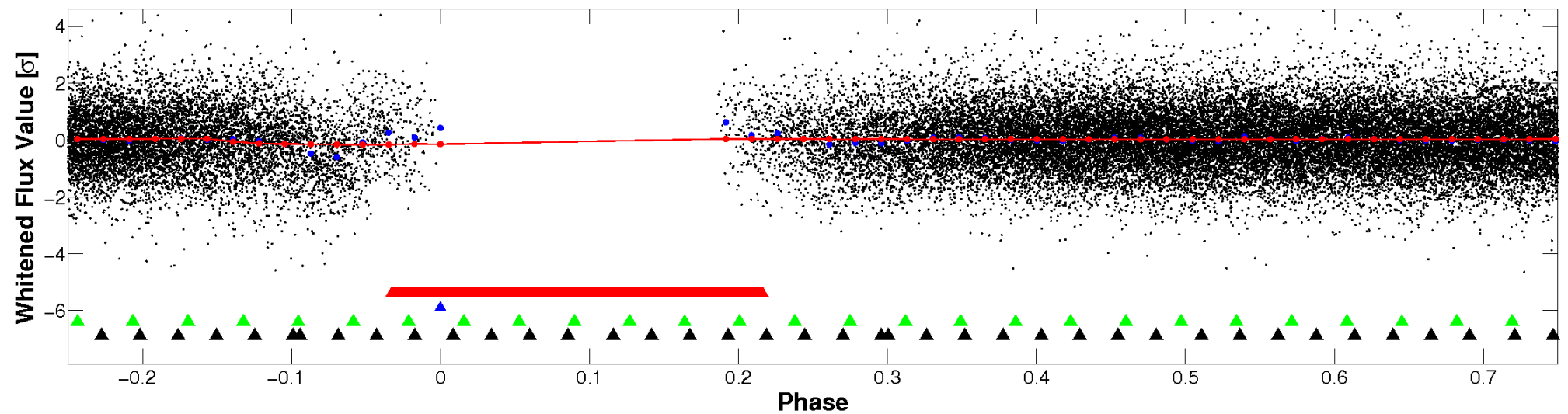


Non-Whitened Vs. Whitened Light Curve

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

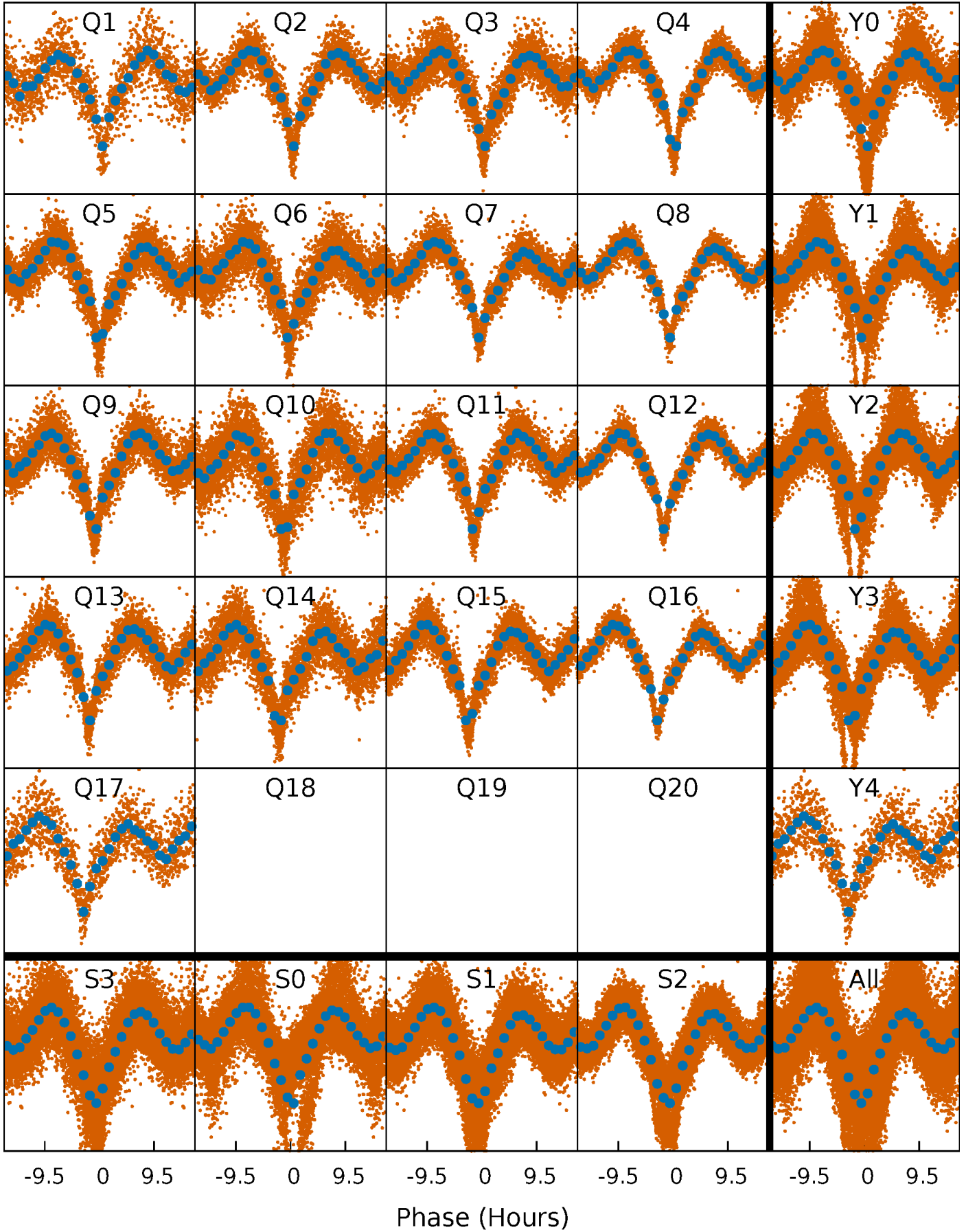


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



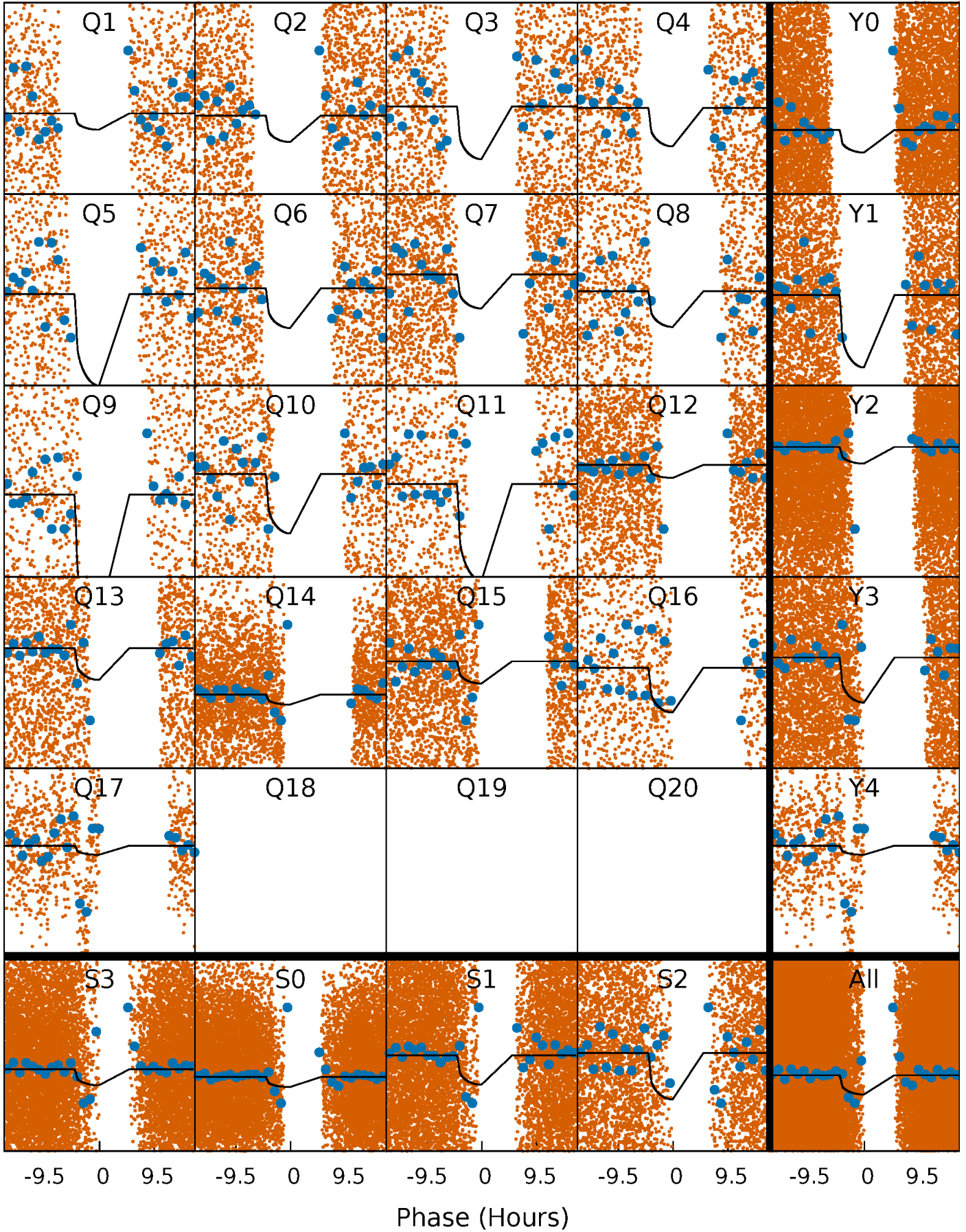
PDC Quarter-Phased Transit Curves

TCE 007966985-02 P= 1.173967 Days $T_0=132.325965$ (BKJD)



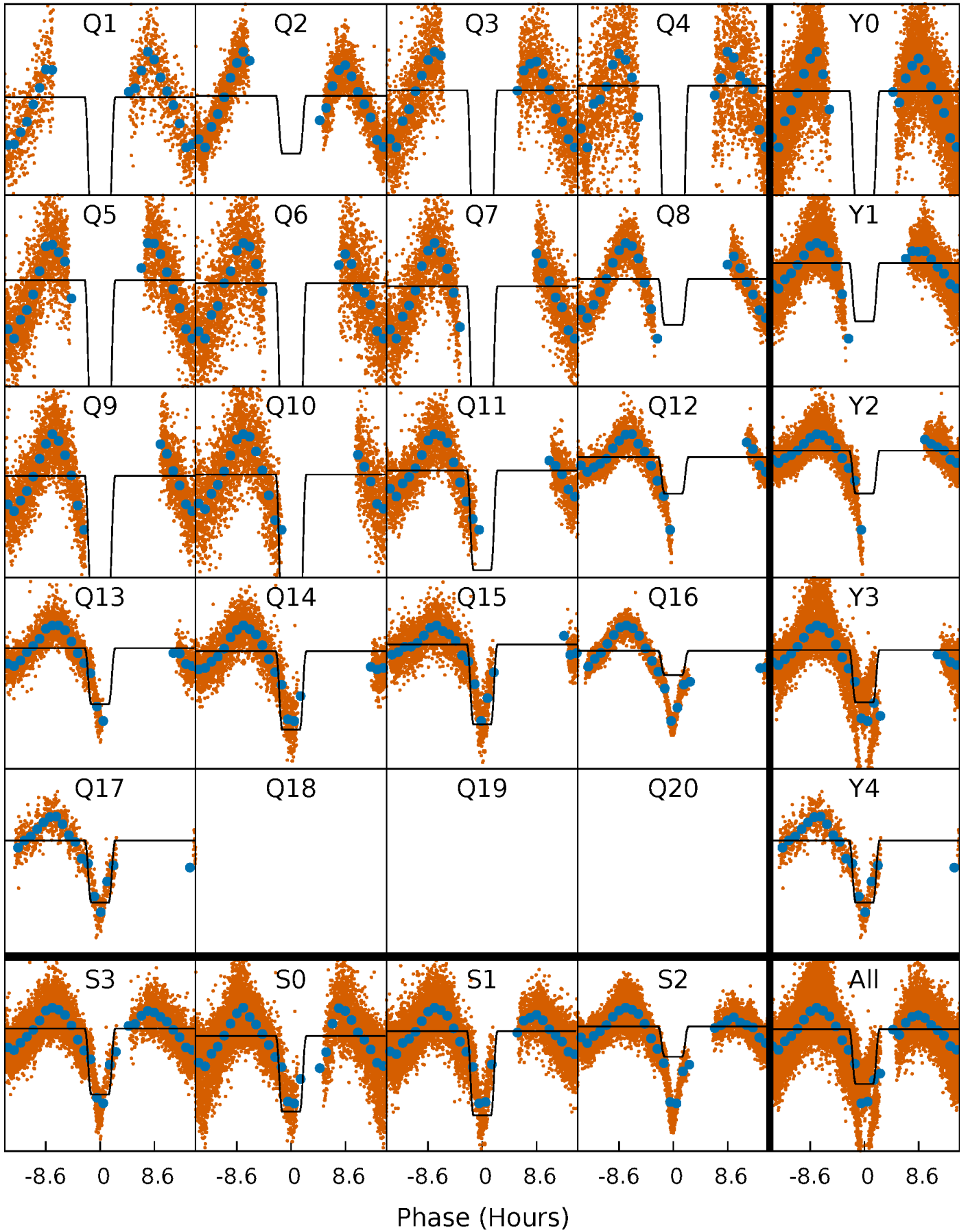
DV Quarter-Phased Transit Curves

TCE 007966985-02 P= 1.173967 Days $T_0=132.325965$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

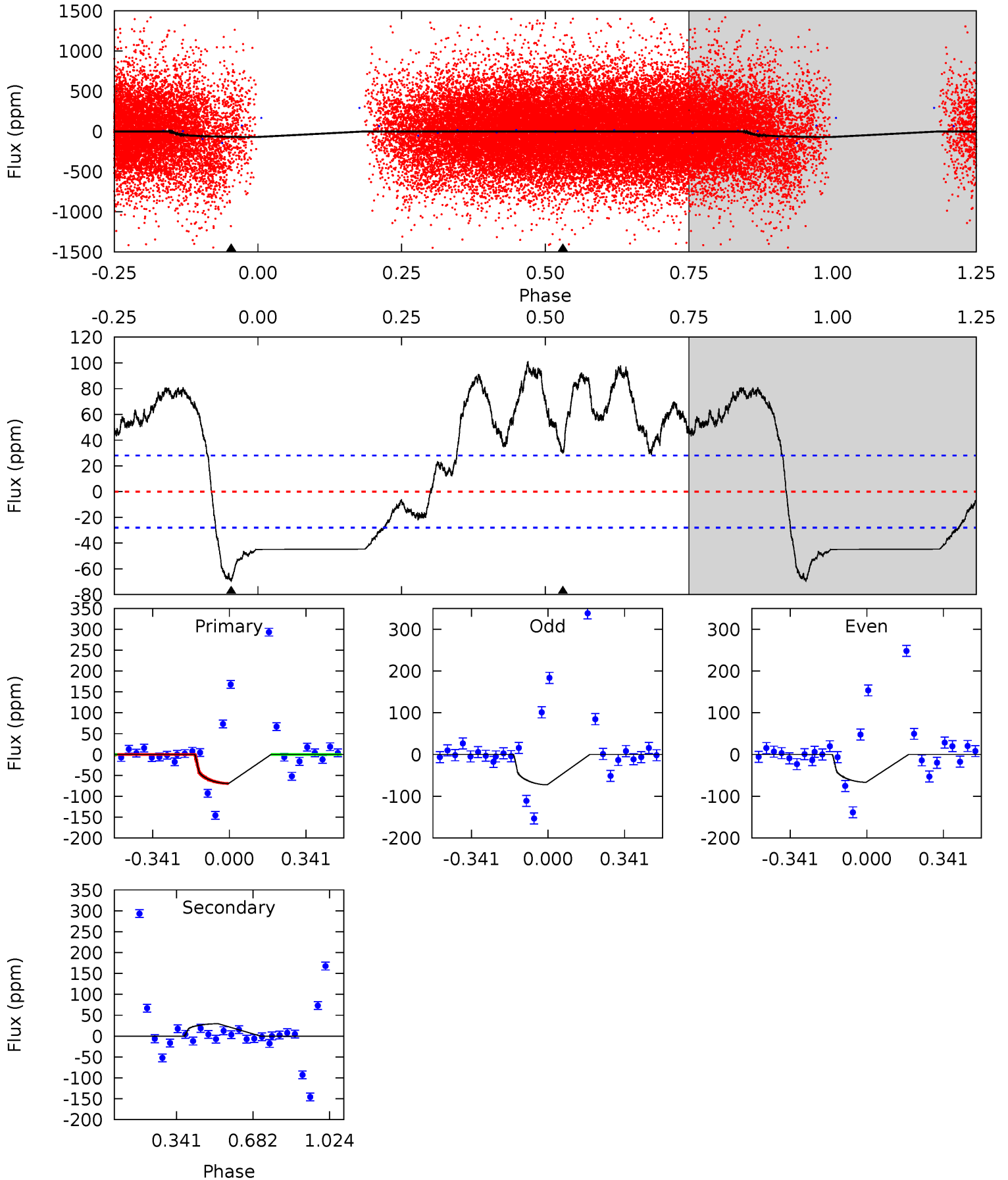
TCE 007966985-02 P= 1.173859 Days $T_0=132.346962$ (BKJD)



DV Model-Shift Uniqueness Test

007966985-02, P = 1.173967 Days, E = 131.151998 Days

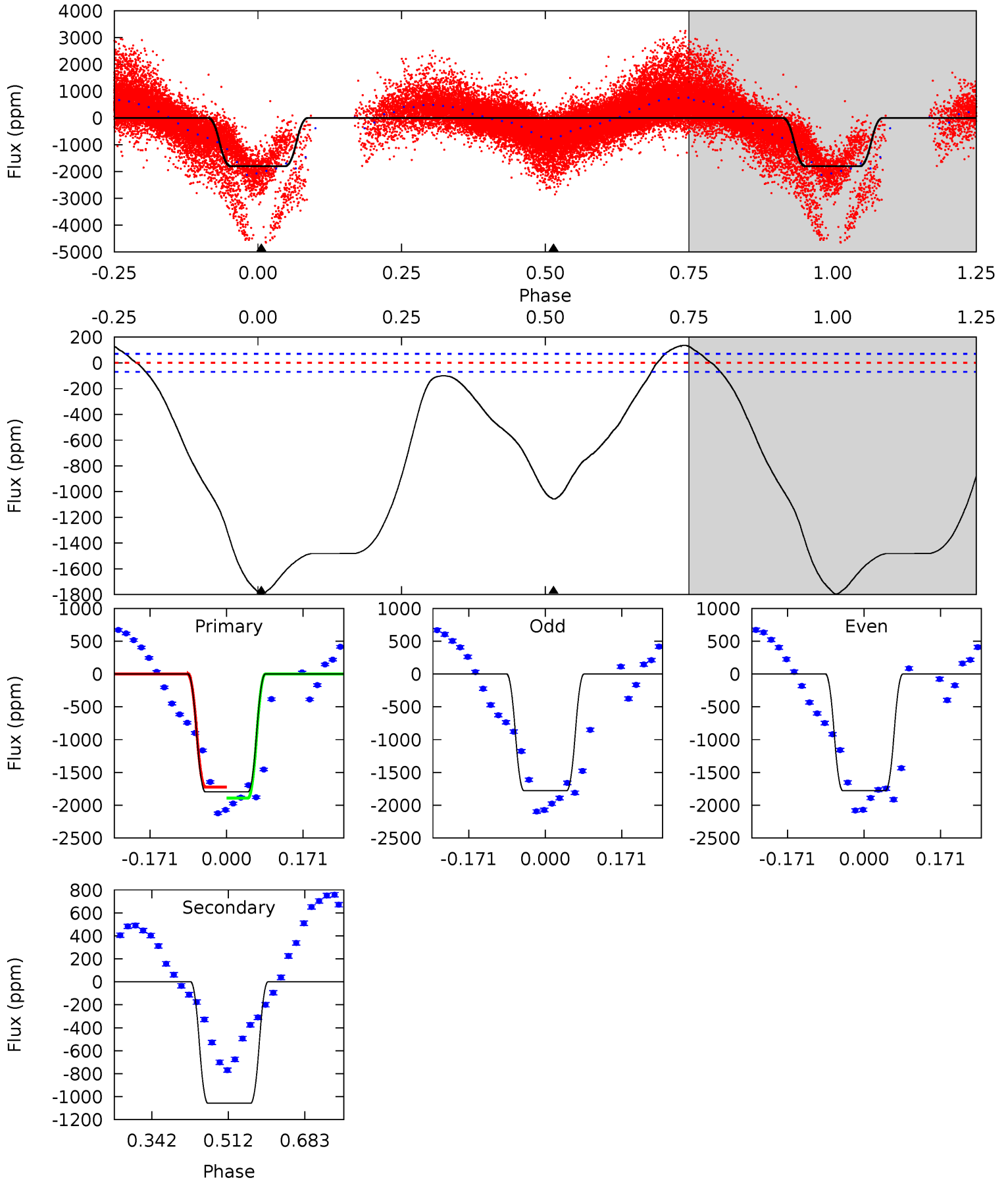
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	-4.54	0	0	4.30	0.95	3.59	10.7	10.7	-4.54	-4.54	0.47	0	0.59	0



Alt Model-Shift Uniqueness Test

007966985-02, P = 1.173859 Days, E = 131.173103 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
115.0	67.7	0	0	4.45	1.37	20.3	115.0	115.0	67.7	67.7	0.04	1.28	0.07	5.26



Stellar Parameters For KIC 007966985

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5639^{+169}_{-169}	$4.551^{+0.034}_{-0.184}$	$-0.020^{+0.300}_{-0.300}$	$0.859^{+0.233}_{-0.078}$	$0.959^{+0.094}_{-0.115}$	$2.131^{+0.377}_{-1.013}$
	+3%/-3%	+1%/-4%	+1500%/-1500%	+27%/-9%	+10%/-12%	+18%/-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 007966985-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	30 ± 7	$0.95^{+0.75}_{-0.62}$	2259^{+135}_{-107}	-4442^{+779}_{-2732}	$-8.077^{+5.695}_{-56.851}$
Alt.	-1058 ± 16	$4.32^{+0.95}_{-0.83}$	2260^{+135}_{-109}	4922^{+455}_{-336}	14^{+7}_{-4}

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

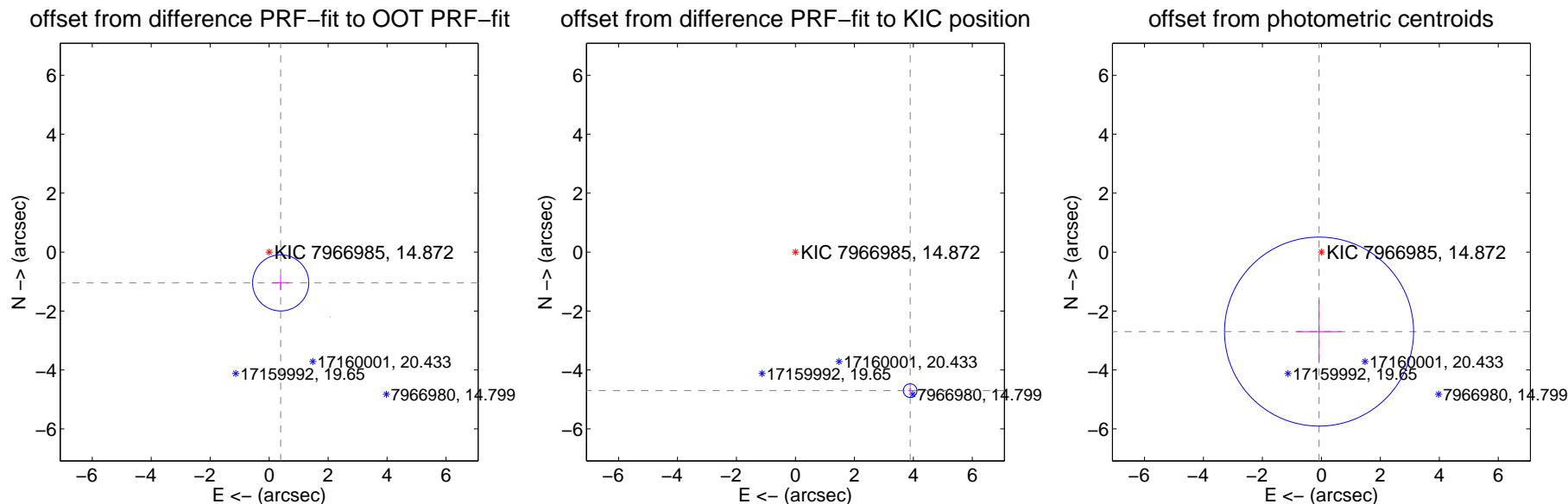
DV Centroid Data

Supplemental centroid analysis for 007966985-02. Kepler magnitude: 14.87. Transit SNR 8.48

There are 7 quarters with good PRF difference image offsets

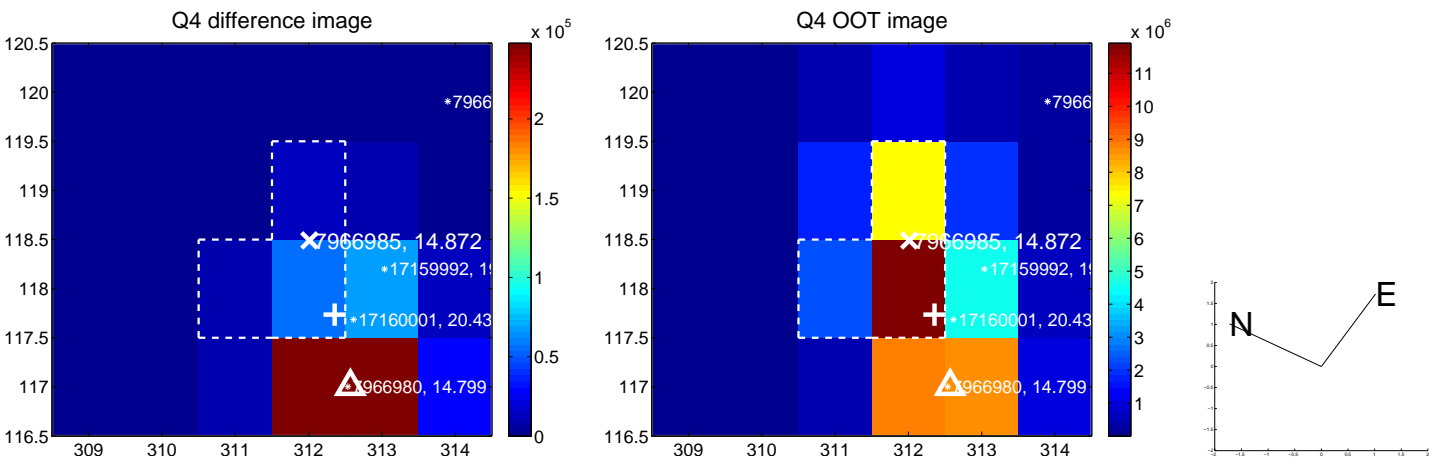
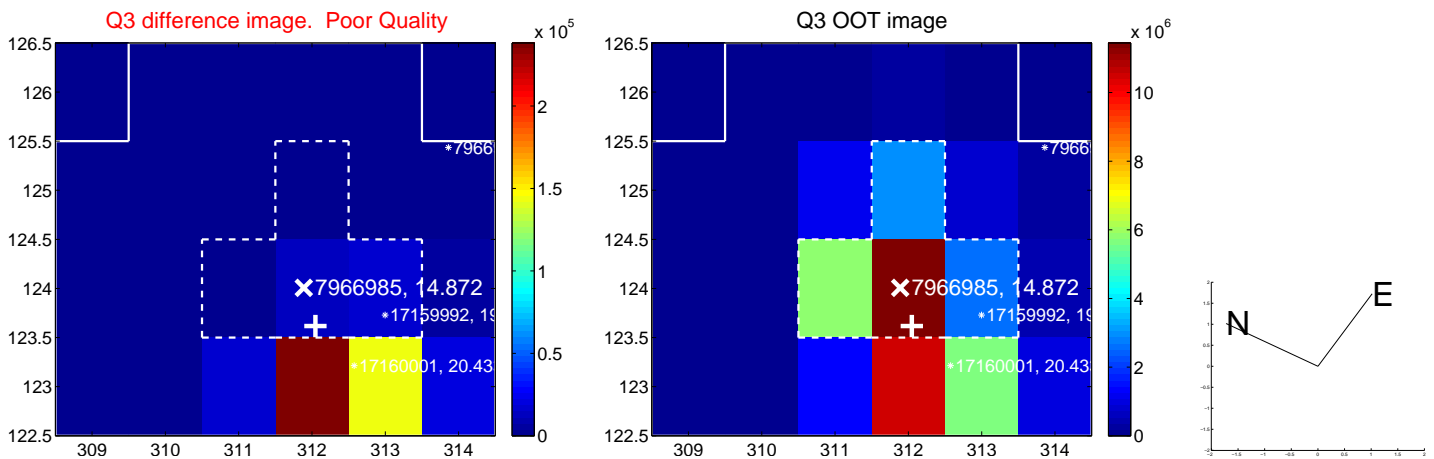
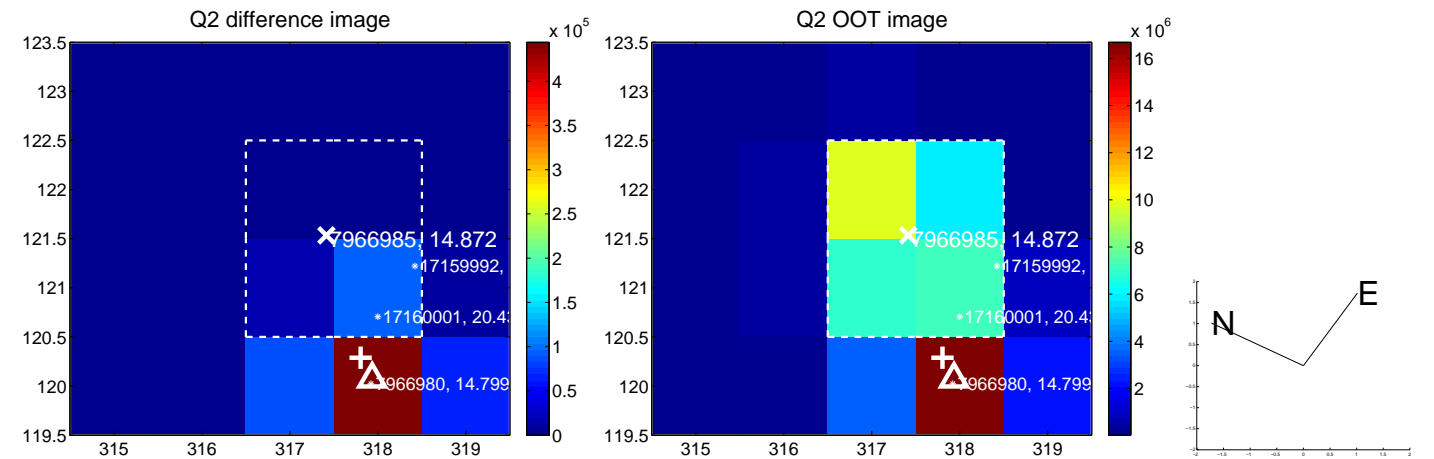
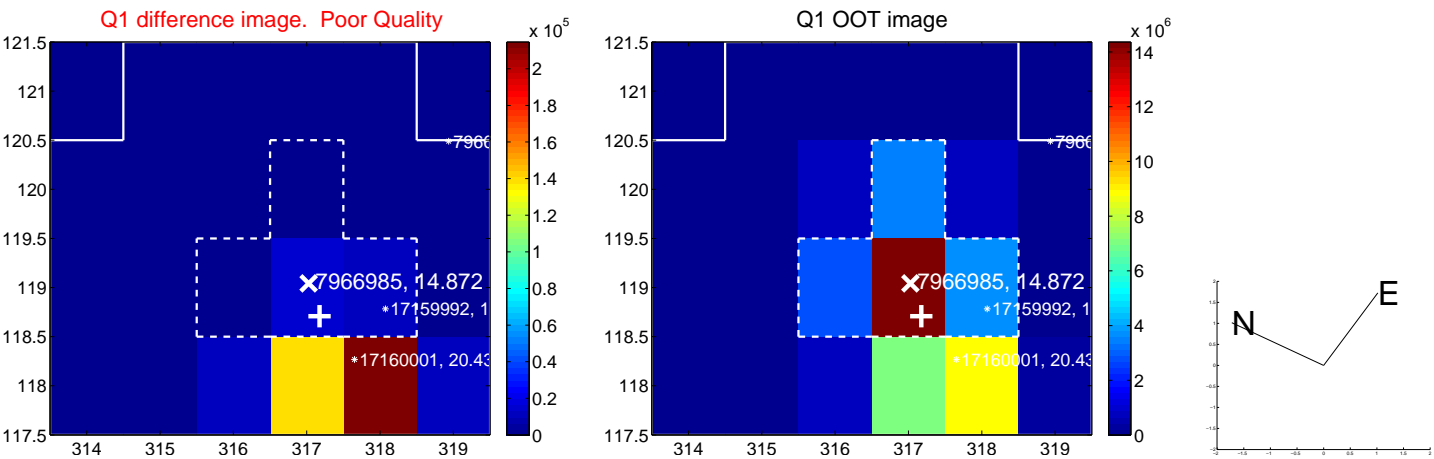
The OOT PRF centroid is offset from the target star catalog position by about 5.16 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.115 ± 0.318	3.51	-0.392 ± 0.285	-1.044 ± 0.237
PRF-fit source offset from KIC position	6.103 ± 0.077	79.25	-3.891 ± 0.069	-4.702 ± 0.077
photometric centroid source offset	2.70 ± 1.07	2.53	0.08 ± 0.76	-2.70 ± 1.07

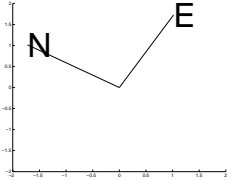
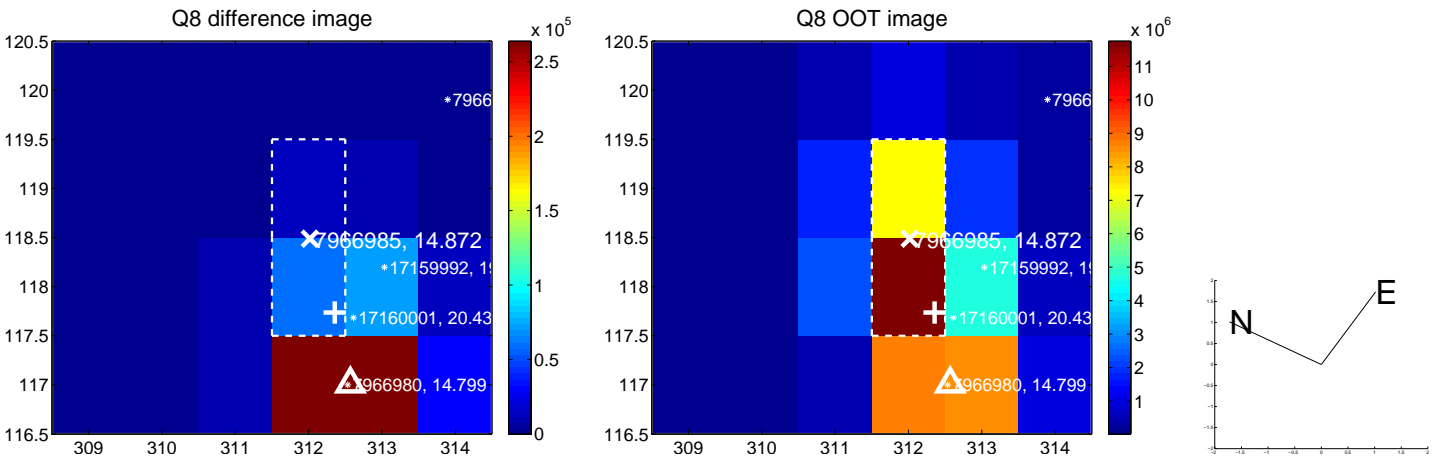
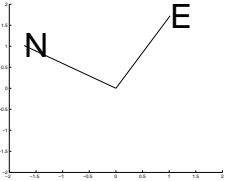
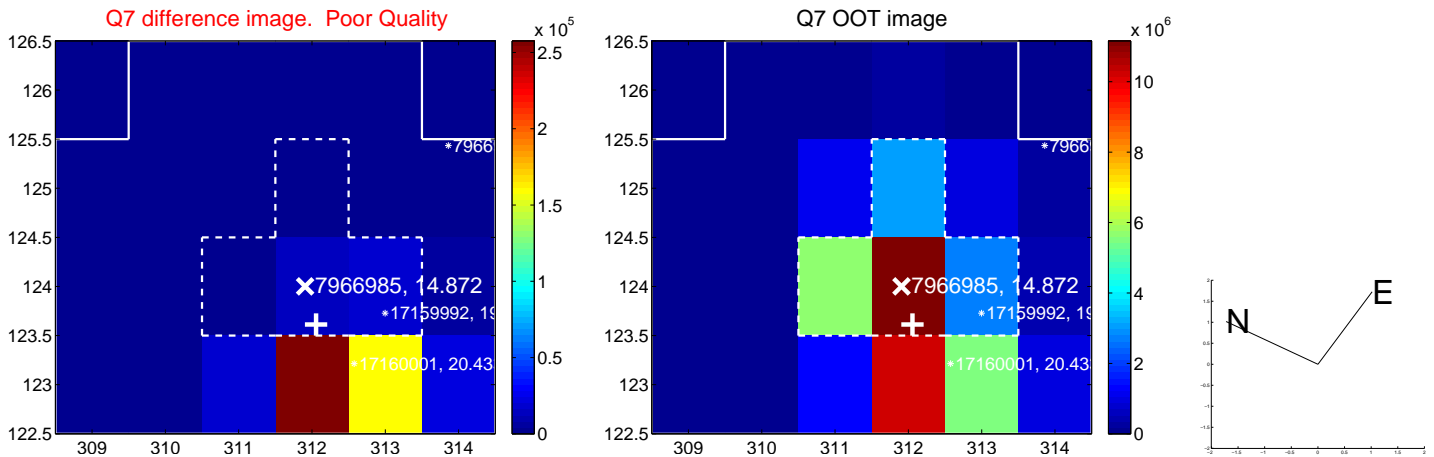
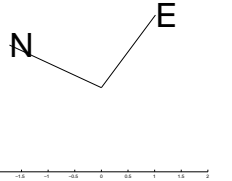
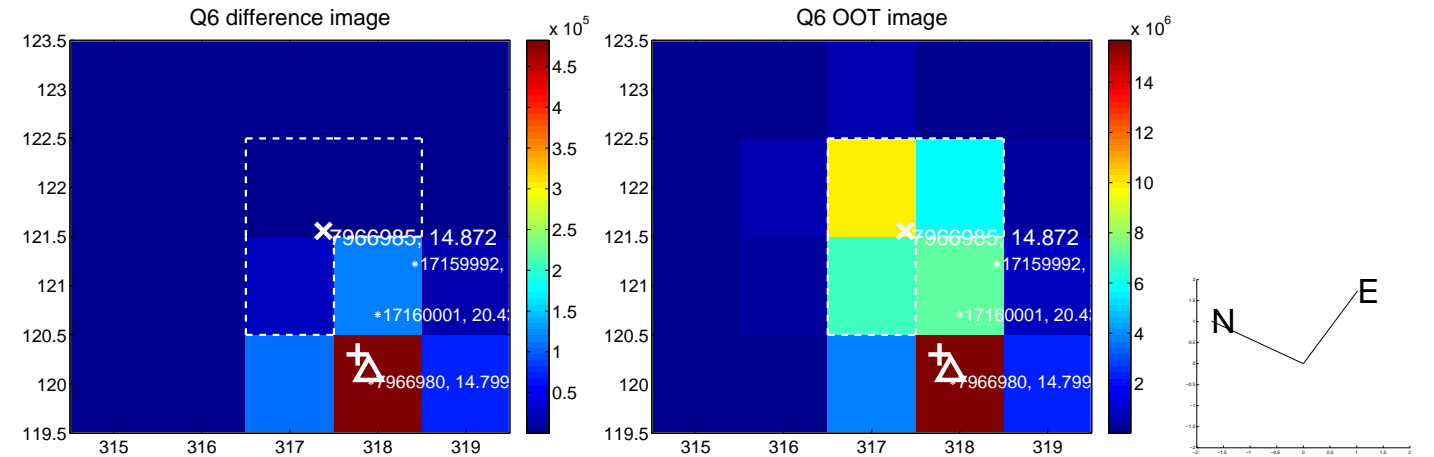
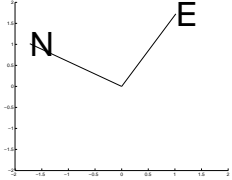
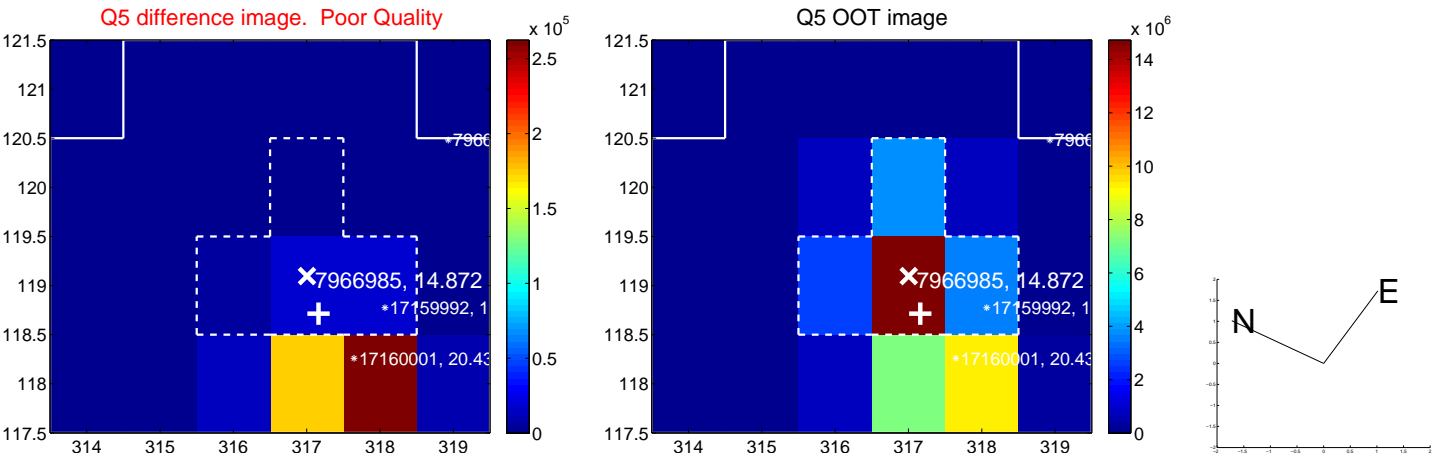


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

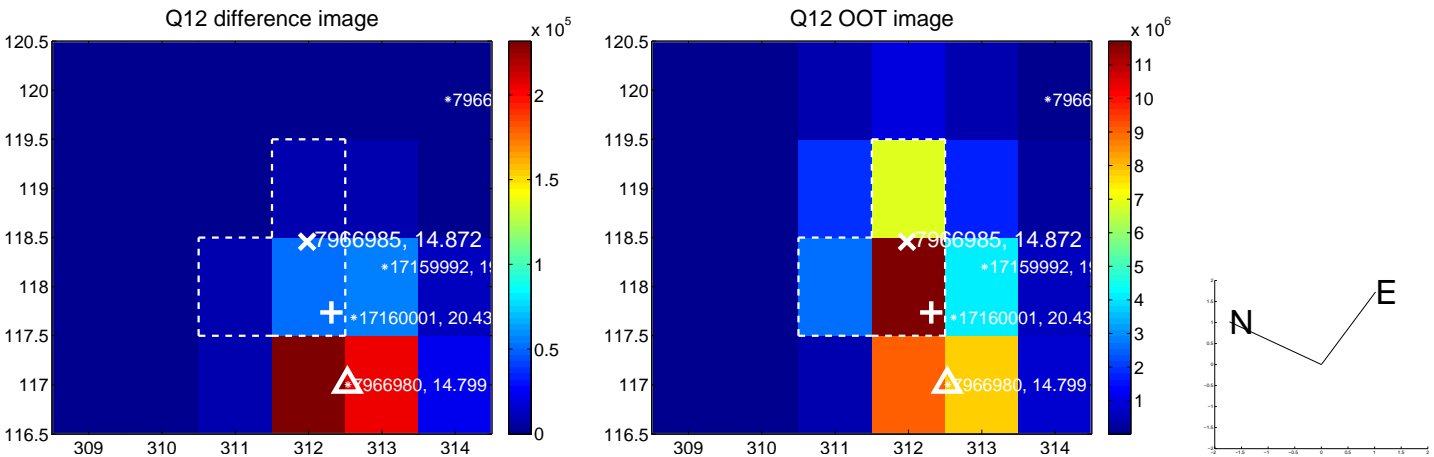
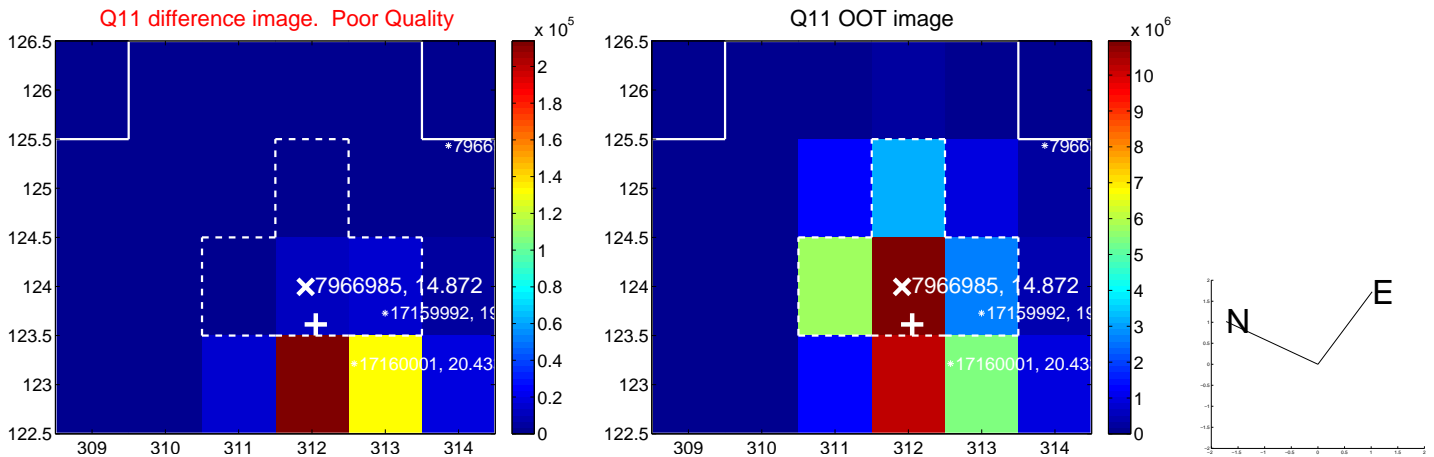
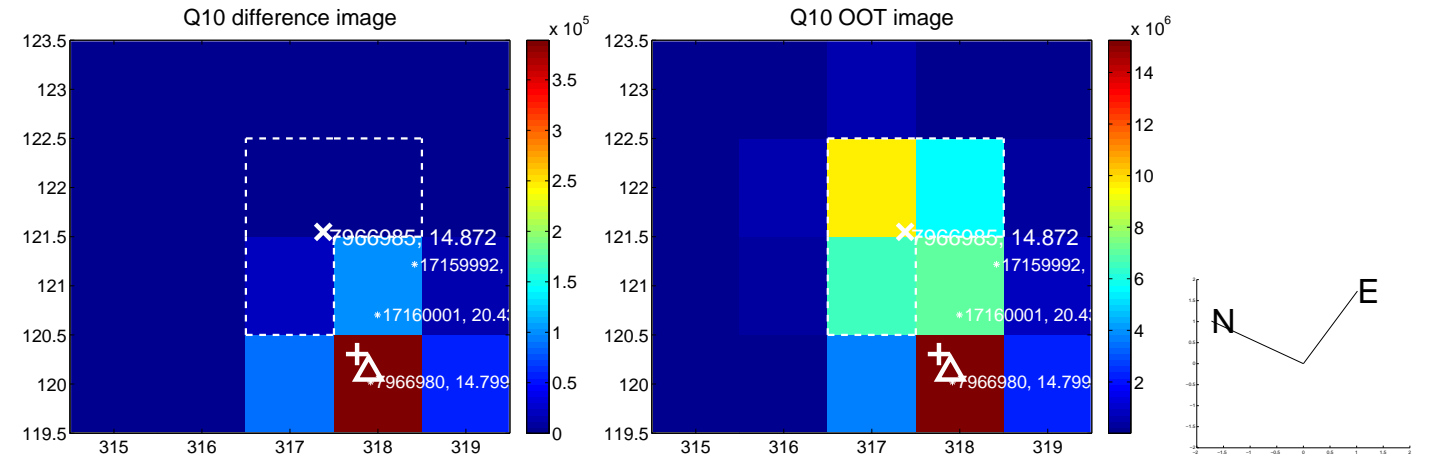
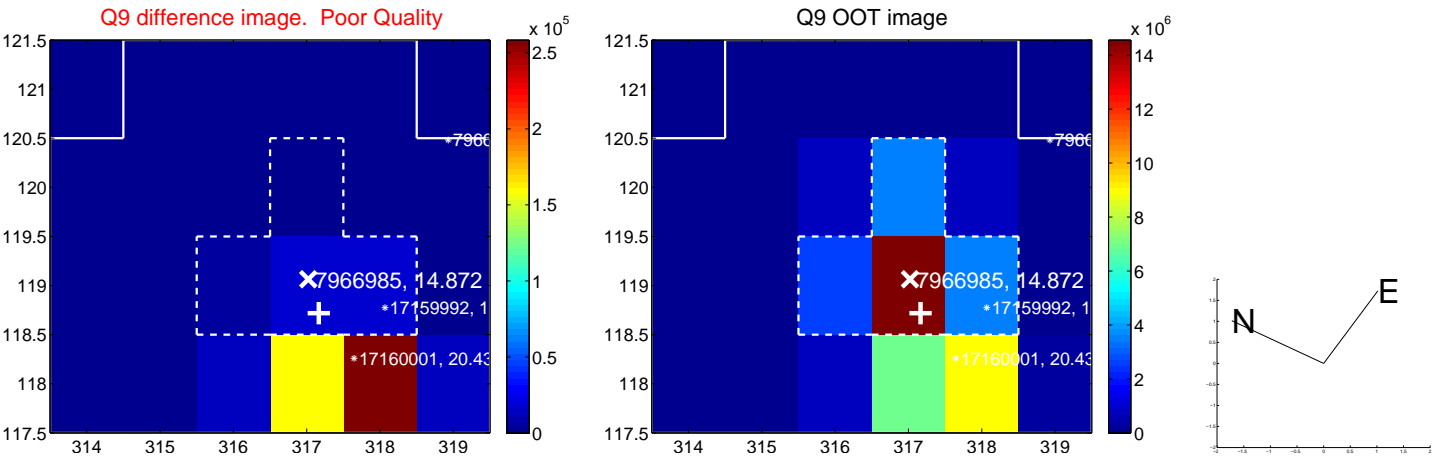
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



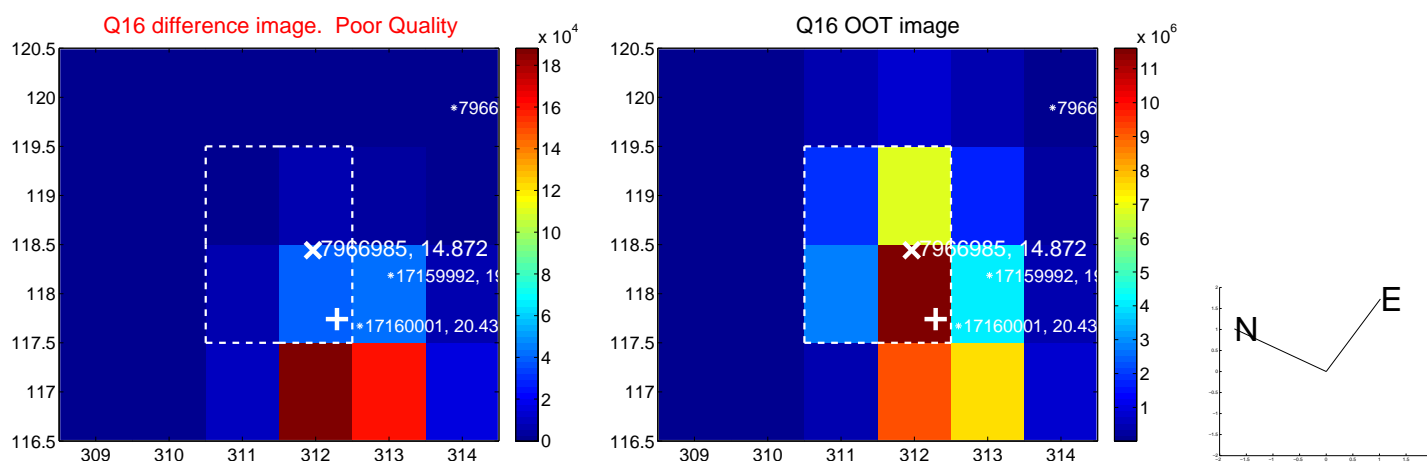
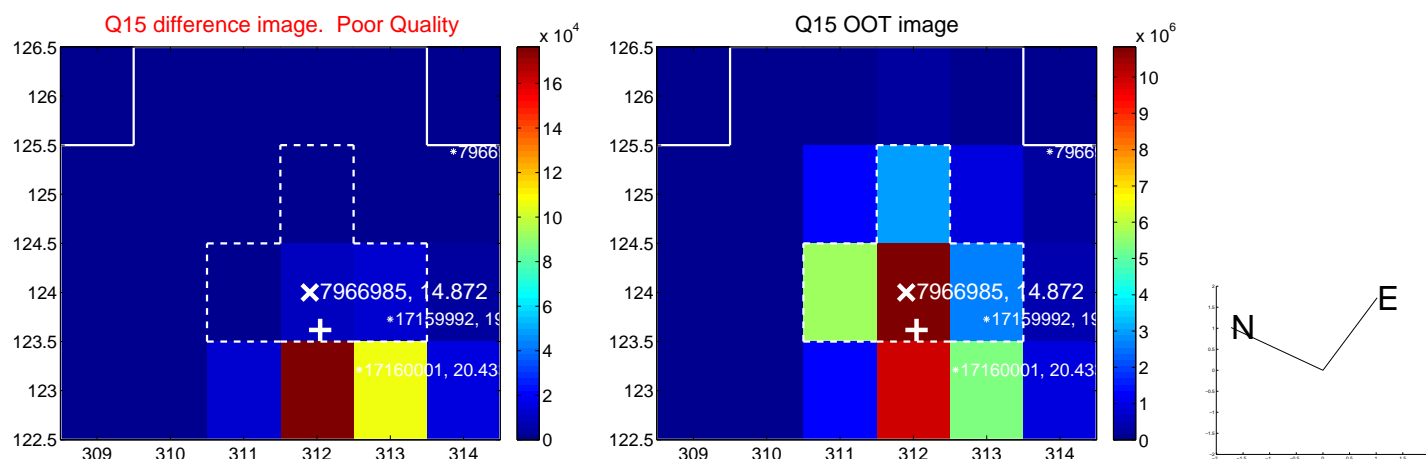
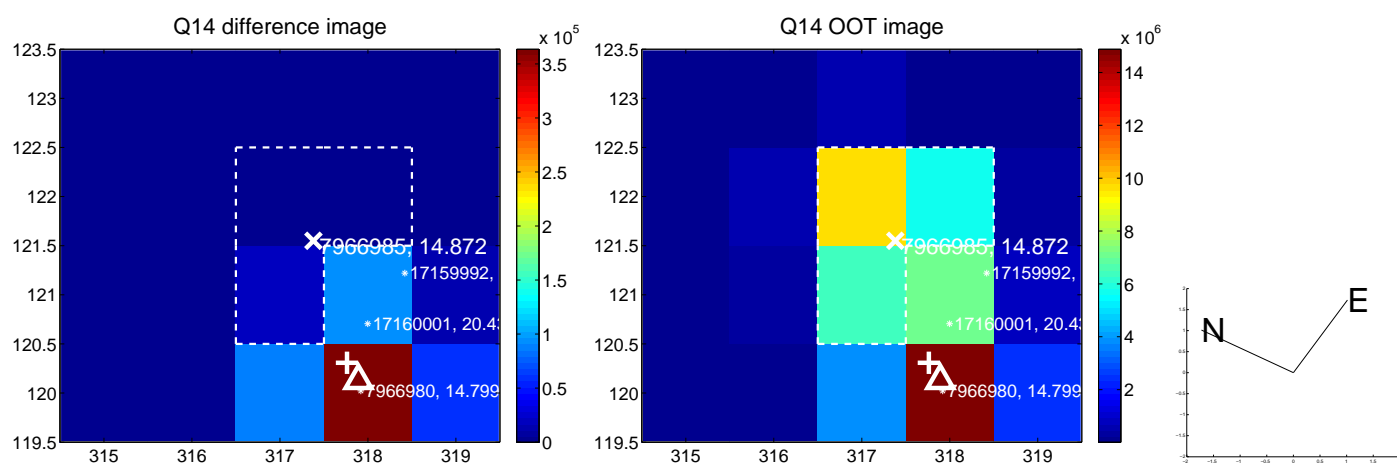
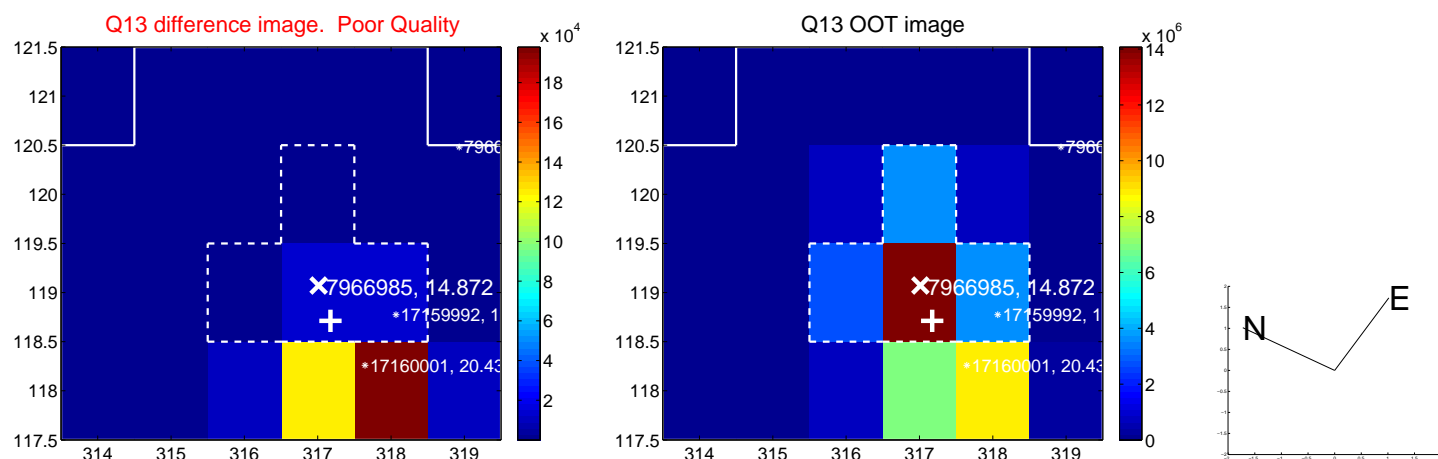
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



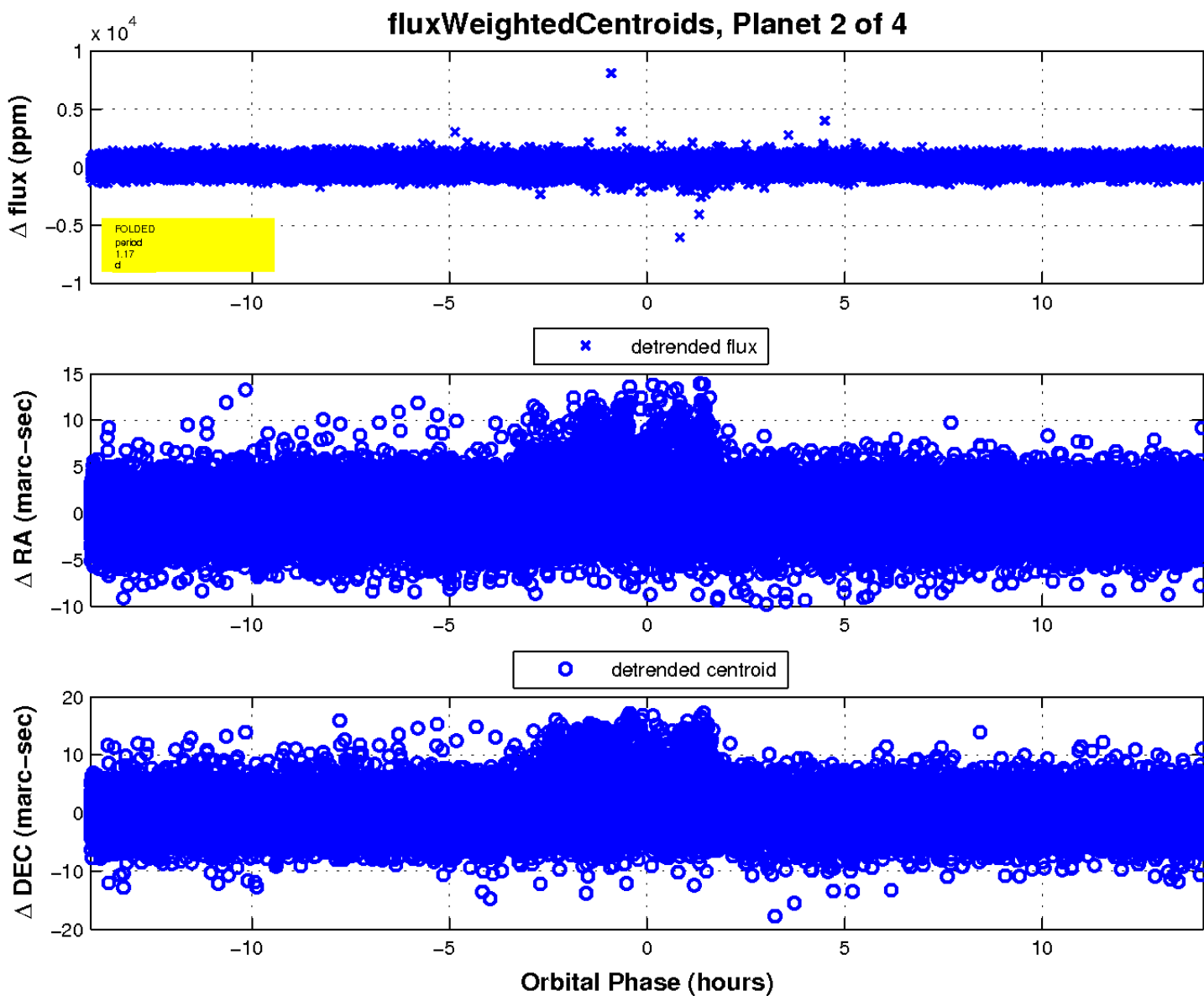
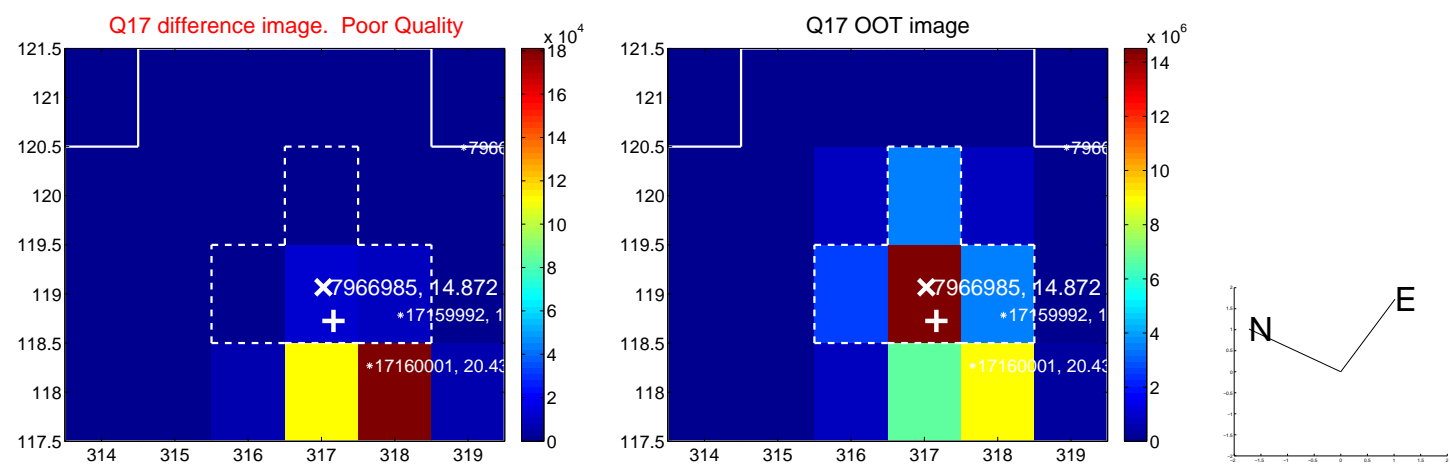
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

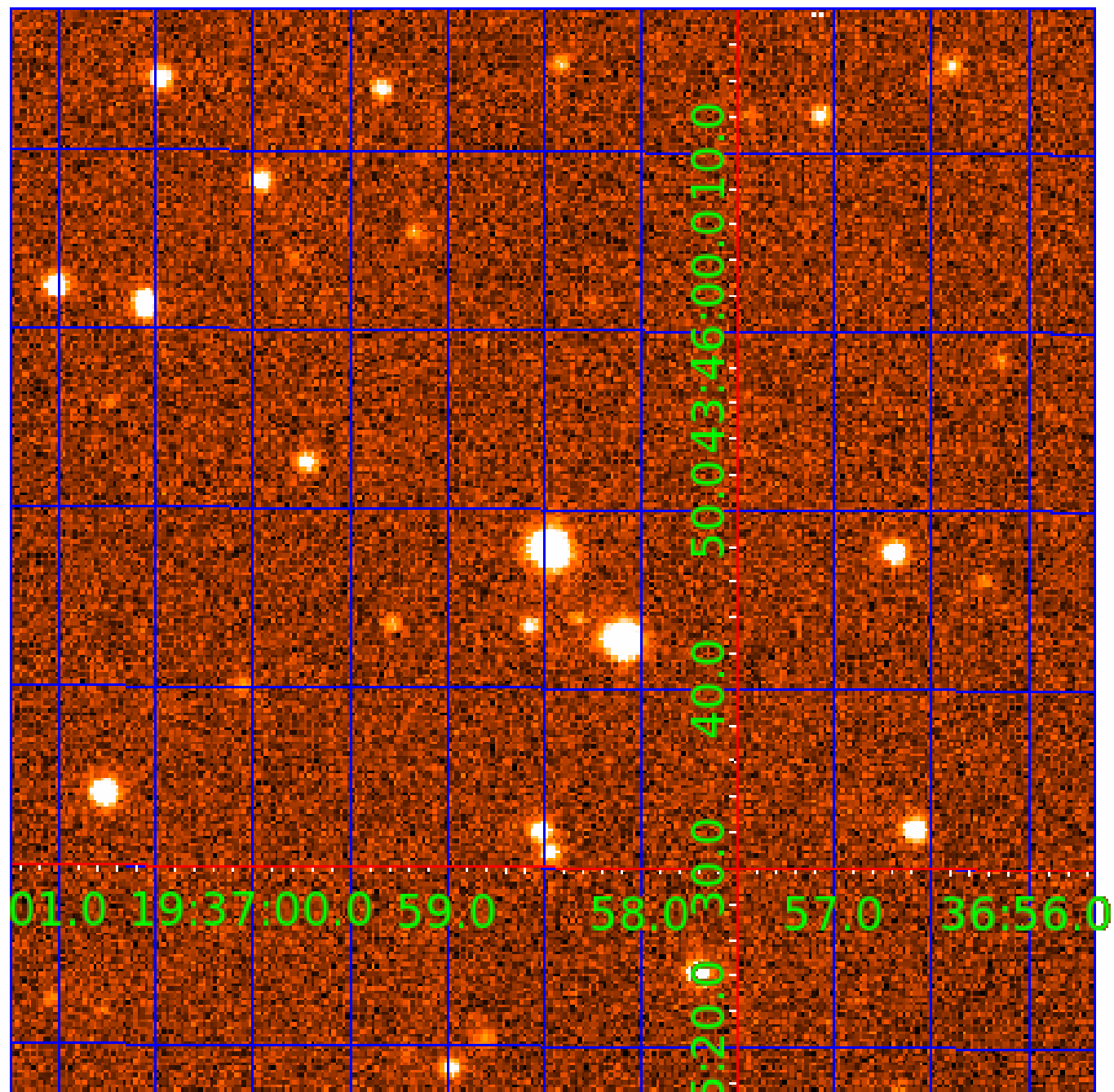


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007966985

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})
007966985-01	OBS	No	1.174203	132.287168	50.5	3.889	65.1	10.0	0.86	5639	0.61	1450.02
007966985-02	OBS	No	1.173967	132.325965	76.8	8.304	16.0	8.5	0.86	5639	0.79	1450.41
007966985-03	OBS	No	29.653549	137.518119	668.1	1.745	10.9	9.9	0.86	5639	2.27	19.57
007966985-04	OBS	No	35.929415	163.201969	578.9	1.849	10.7	8.2	0.86	5639	2.44	15.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007966985-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
007966985-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
007966985-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007966985-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

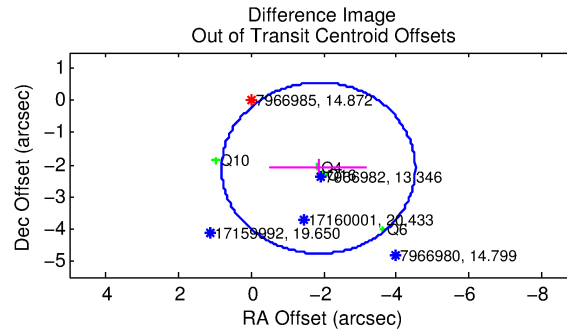
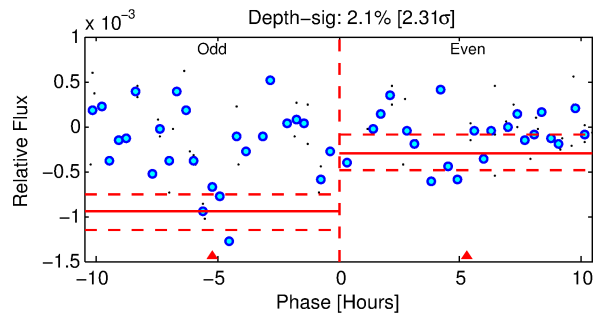
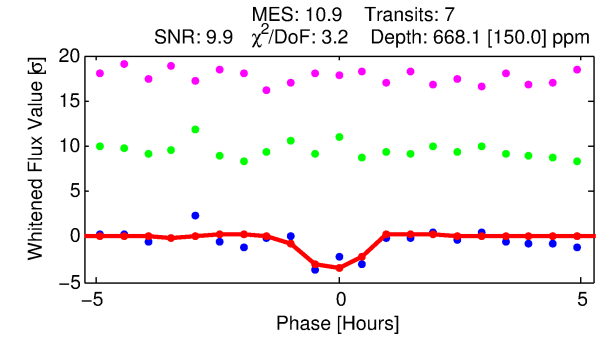
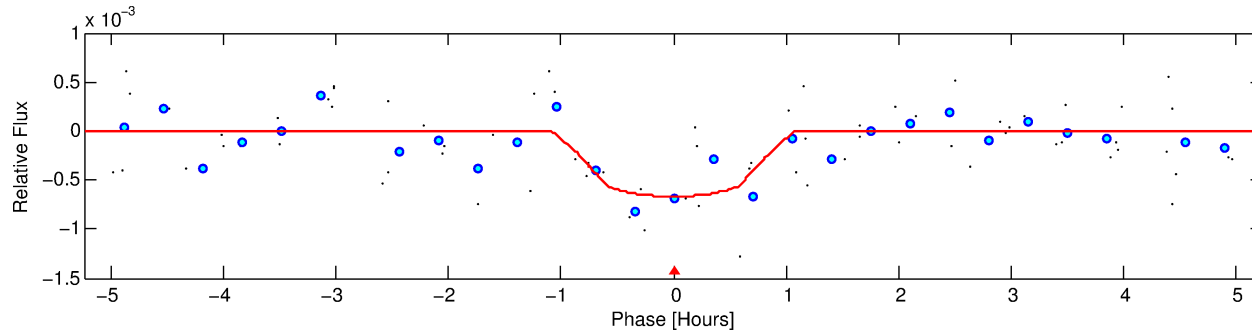
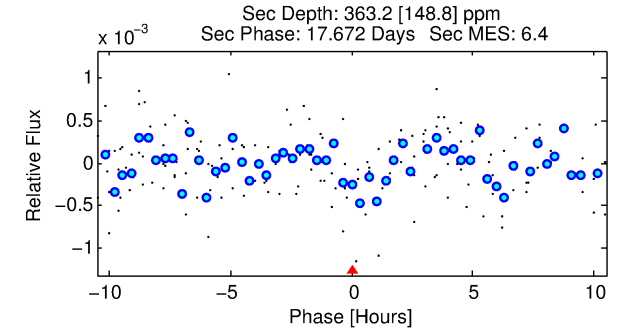
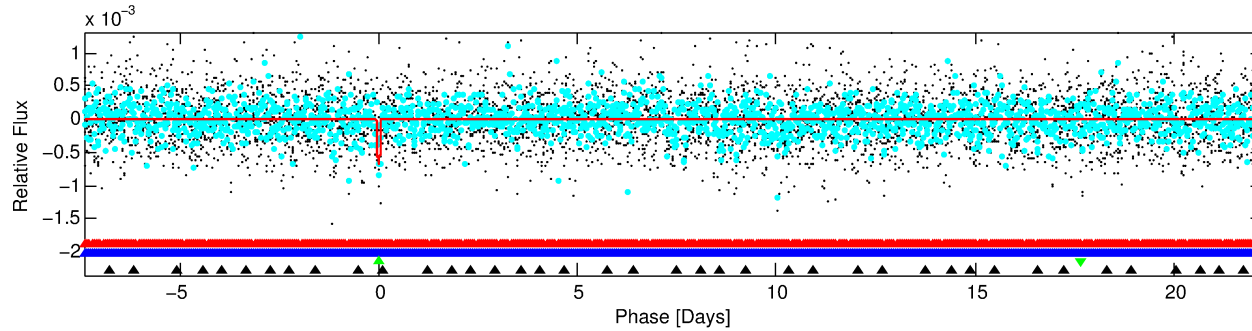
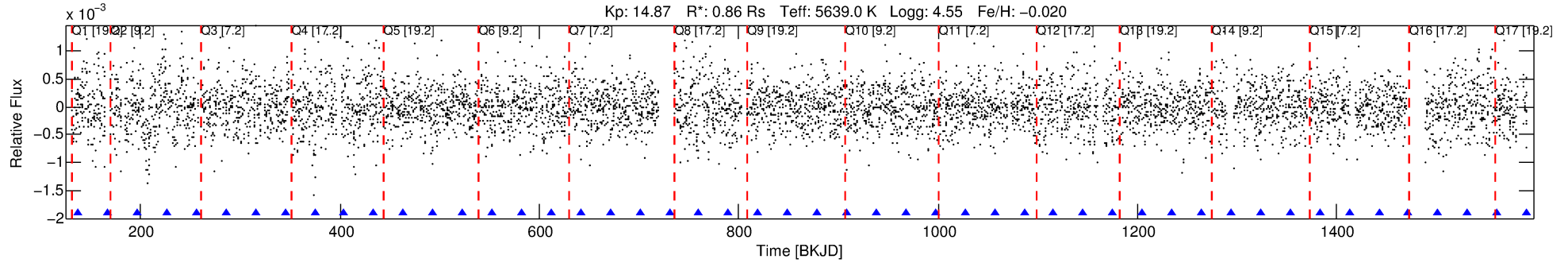
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007966985-03

No Significant Match Found

DV One-Page Summary

KIC: 7966985 Candidate: 3 of 4 Period: 29.654 d



DV Fit Results:

Period = 29.65355 [0.00042] d
Epoch = 137.5181 [0.0098] BKJD
Rp/R* = 0.0242 [0.0767]
a/R* = 116.58 [1537.36]
b = 0.49 [20.53]
Seff = 19.57 [6.97]
Teq = 536 [48] K
Rp = 2.27 [7.22] Re
a = 0.1848 [0.0424] AU
Ag = 1326.57 [8438.63] [0.16σ]
Teffp = 5004 [7949] K [0.56σ]

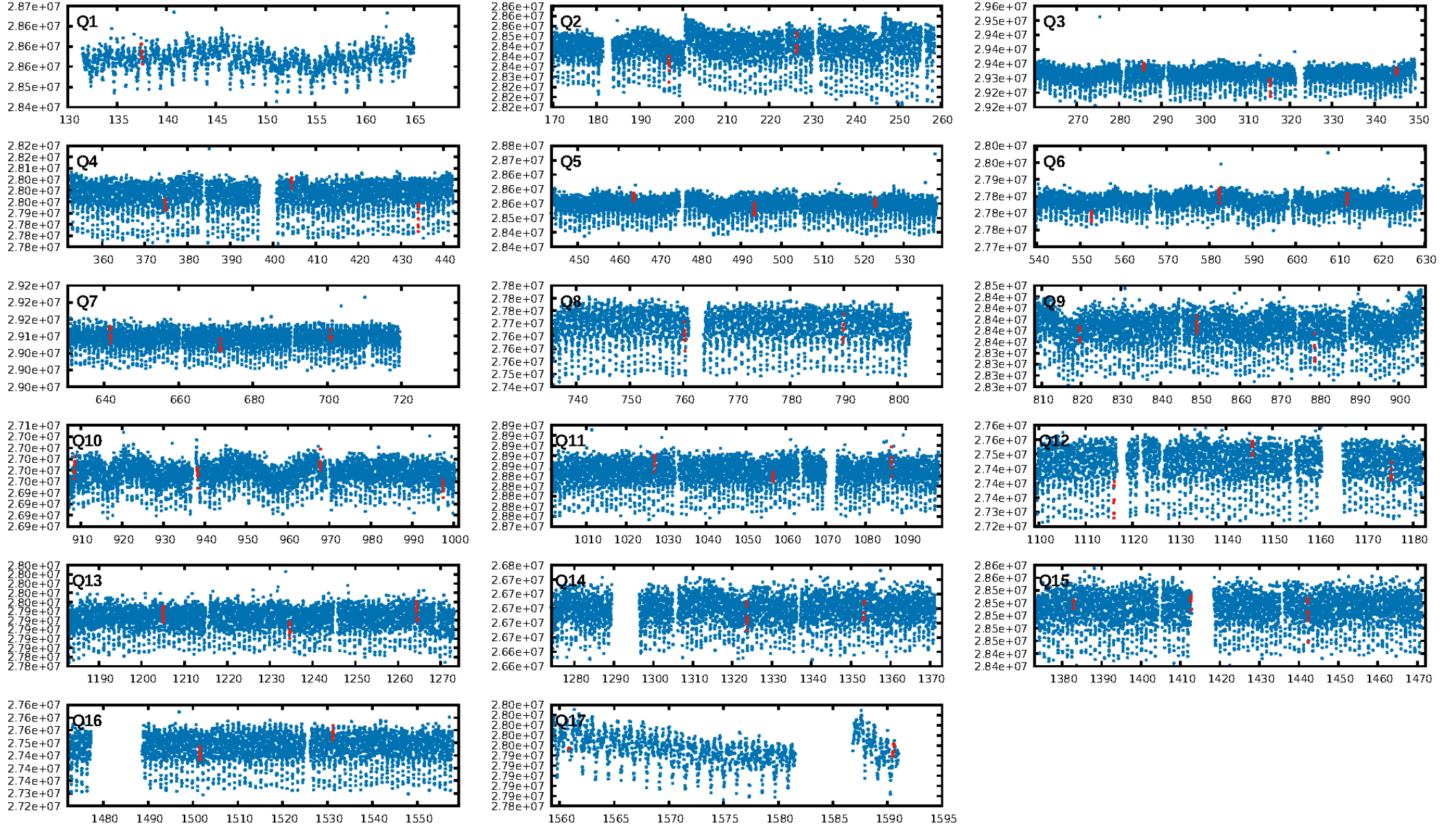
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [160.36σ]
LongPeriod-sig: 100.0% [59.25σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 39.8%
Bootstrap-pfa: 2.77e-12
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -5.04
Centroid-sig: N/A
Centroid-so: 1.258 arcsec [1.46σ]
OotOffset-rm: 2.810 arcsec [3.16σ]
KicOffset-rm: 6.150 arcsec [30.45σ]
OotOffset-st: 2/0/2/0 [4]
KicOffset-st: 2/0/2/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.56 [9/16]

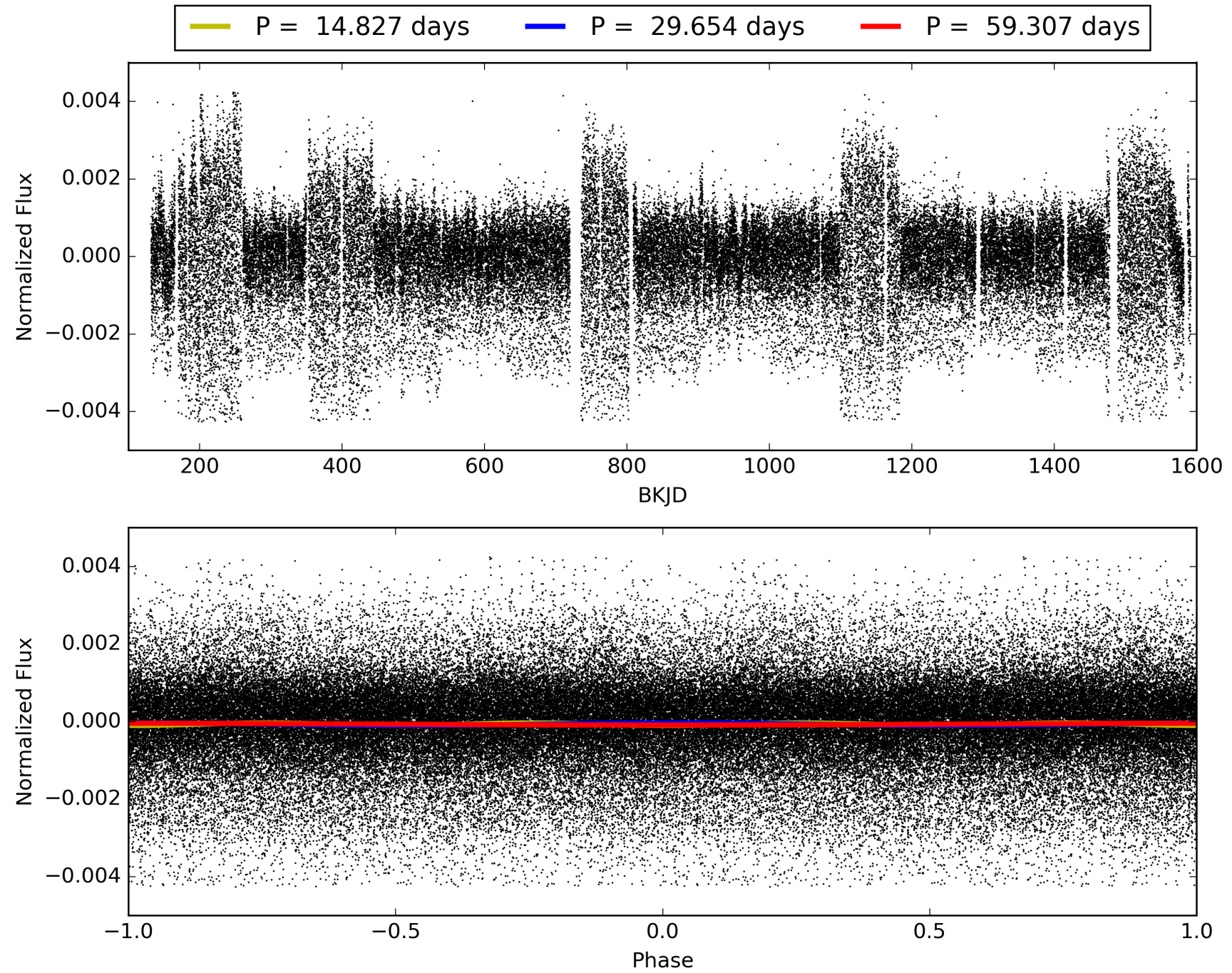
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:43:12 Z

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

TCE 007966985-03, PDC Light Curves

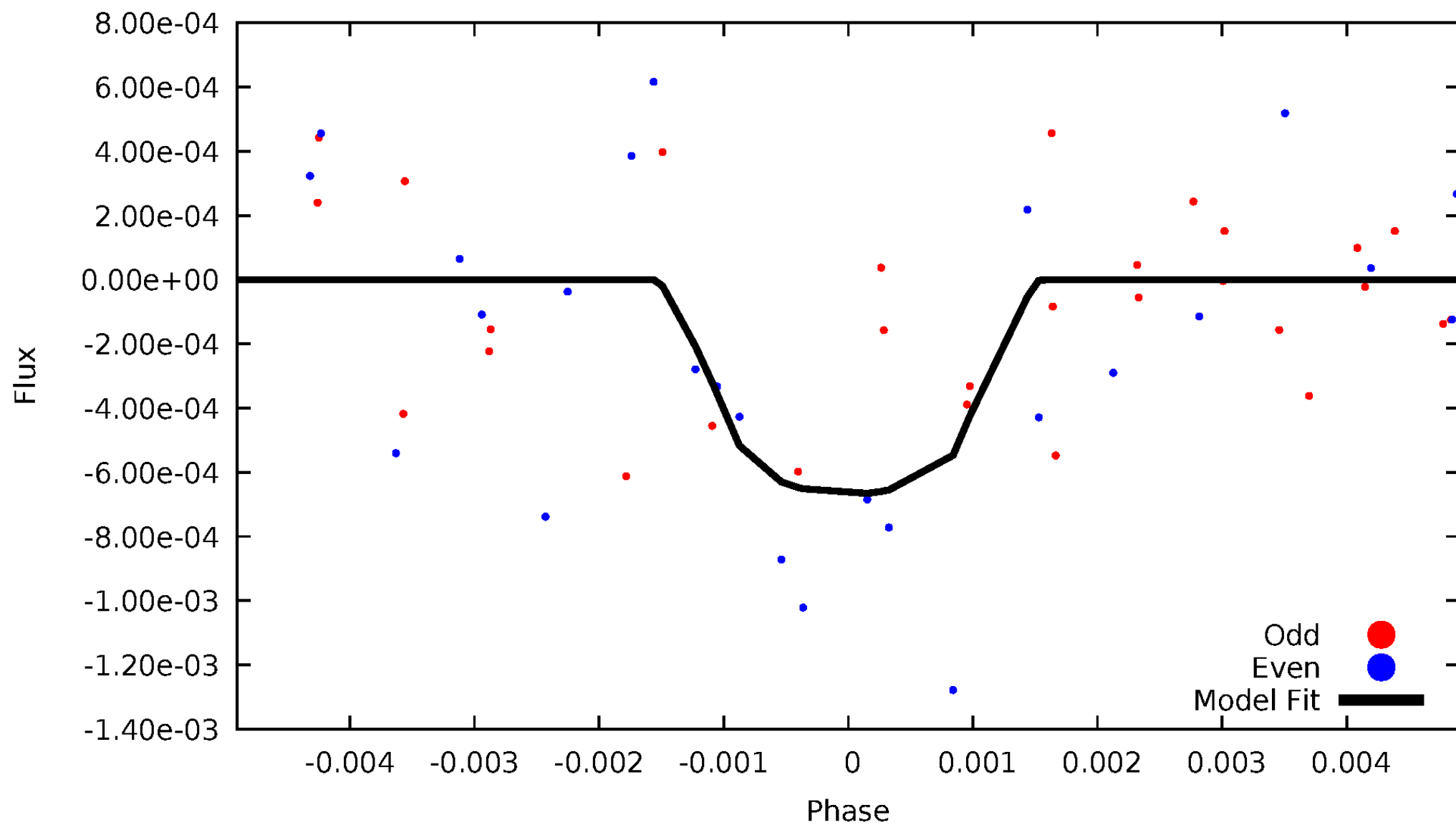


TCE 007966985-03



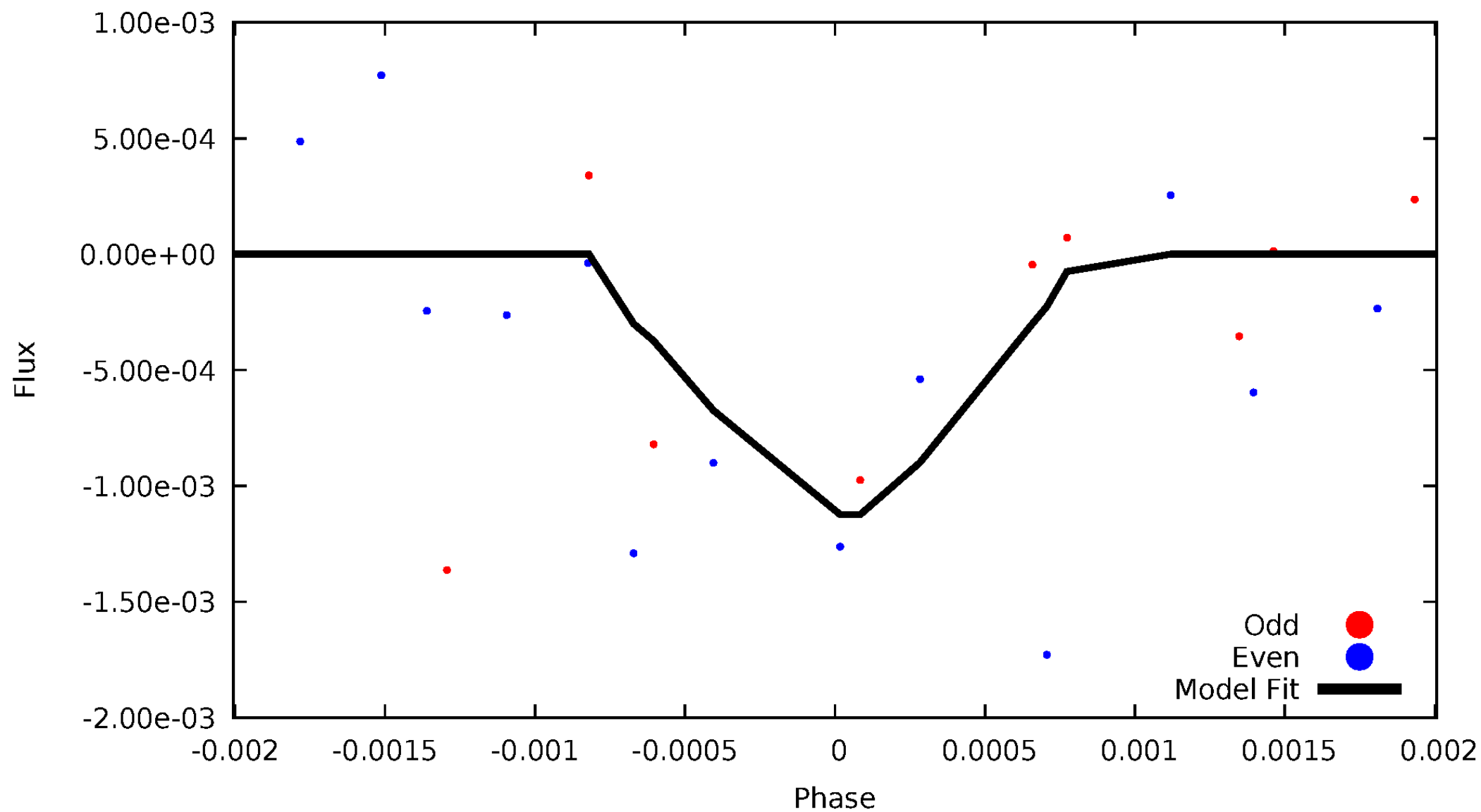
DV Odd/Even

TCE 007966985-03



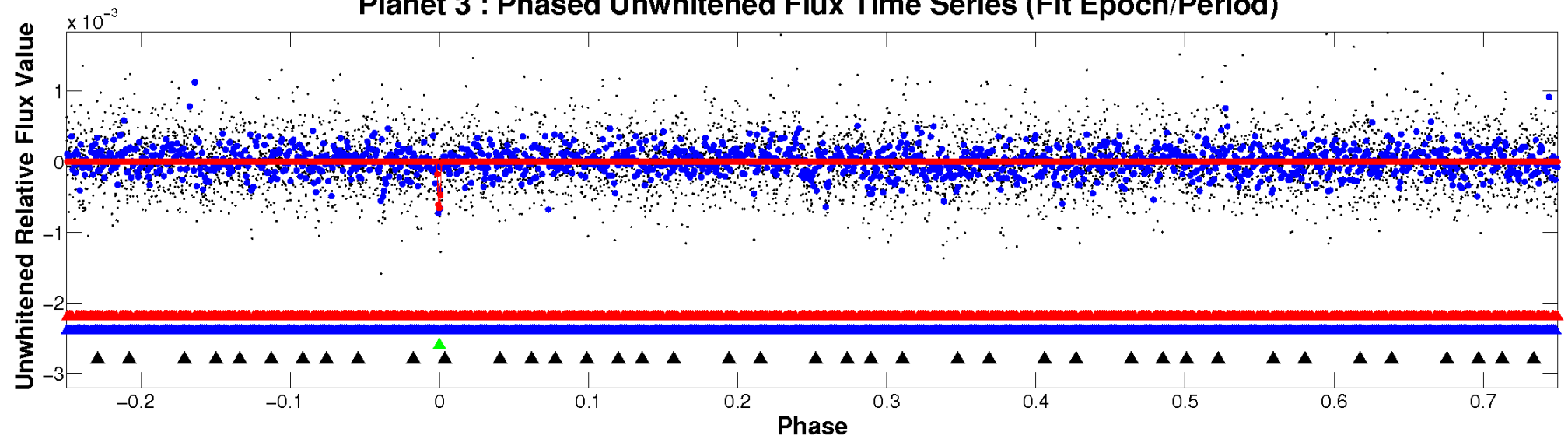
ALT Odd/Even

TCE 007966985-03

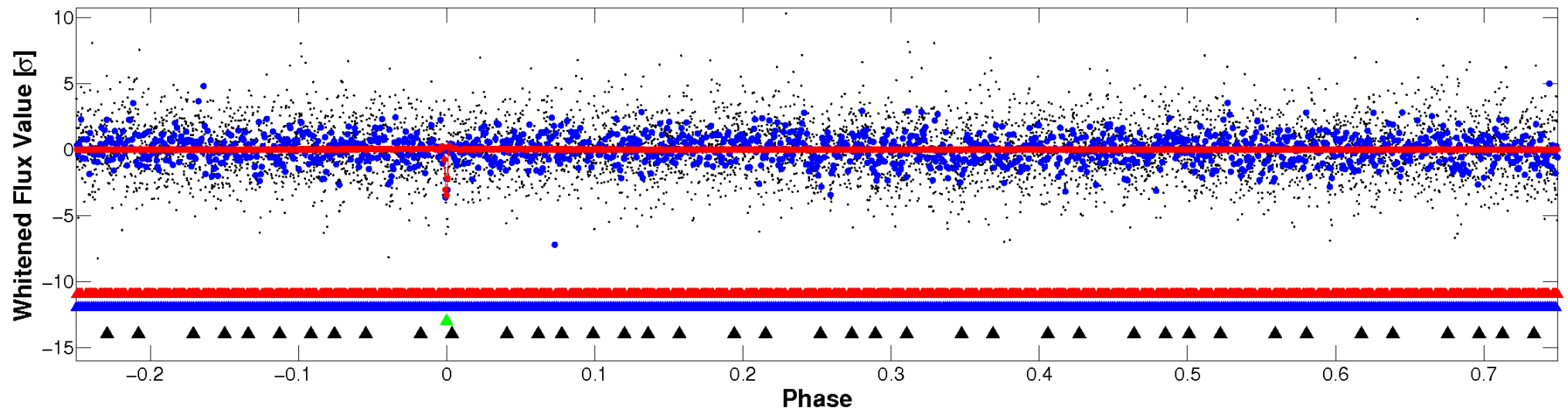


Non-Whitened Vs. Whitened Light Curve

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

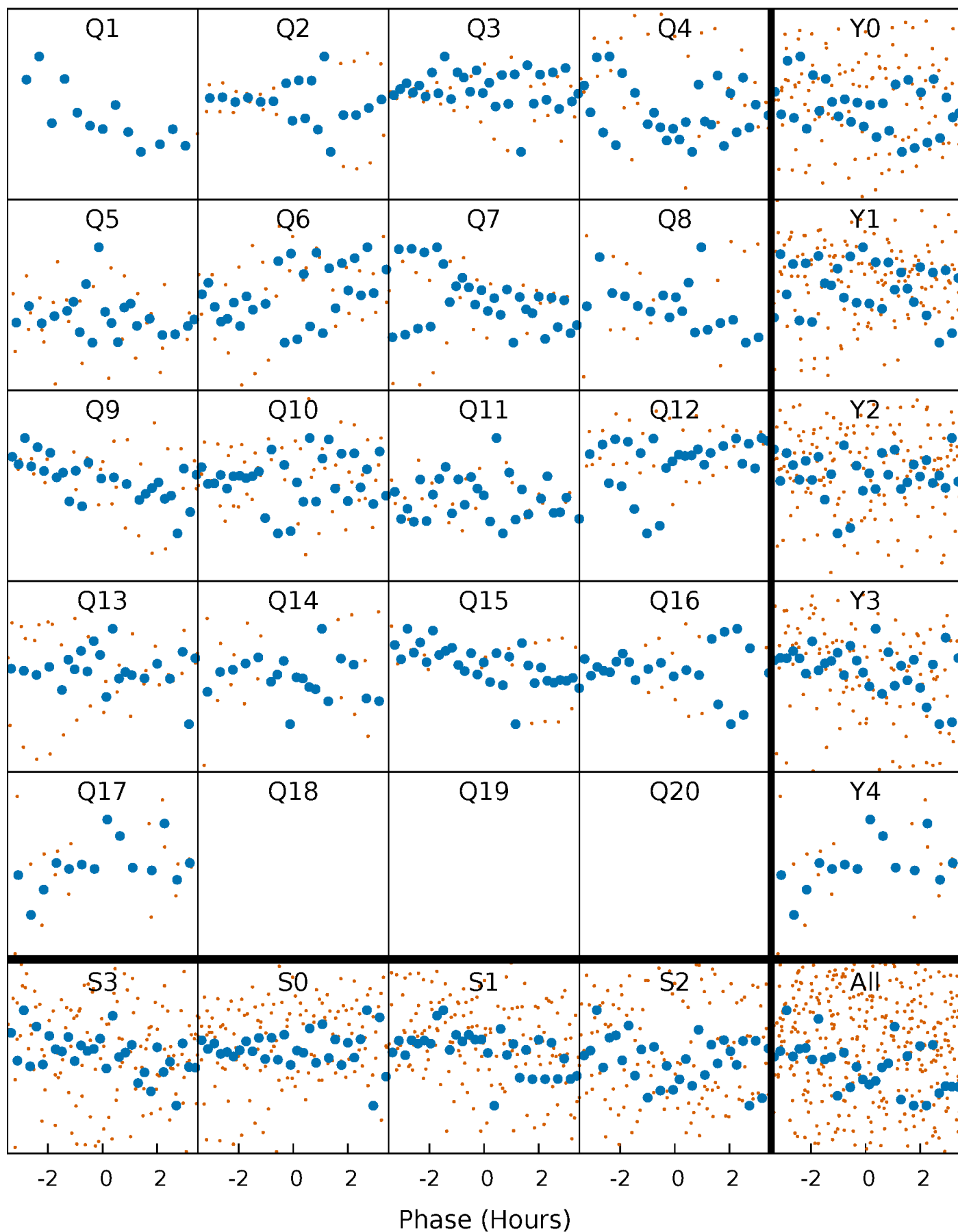


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



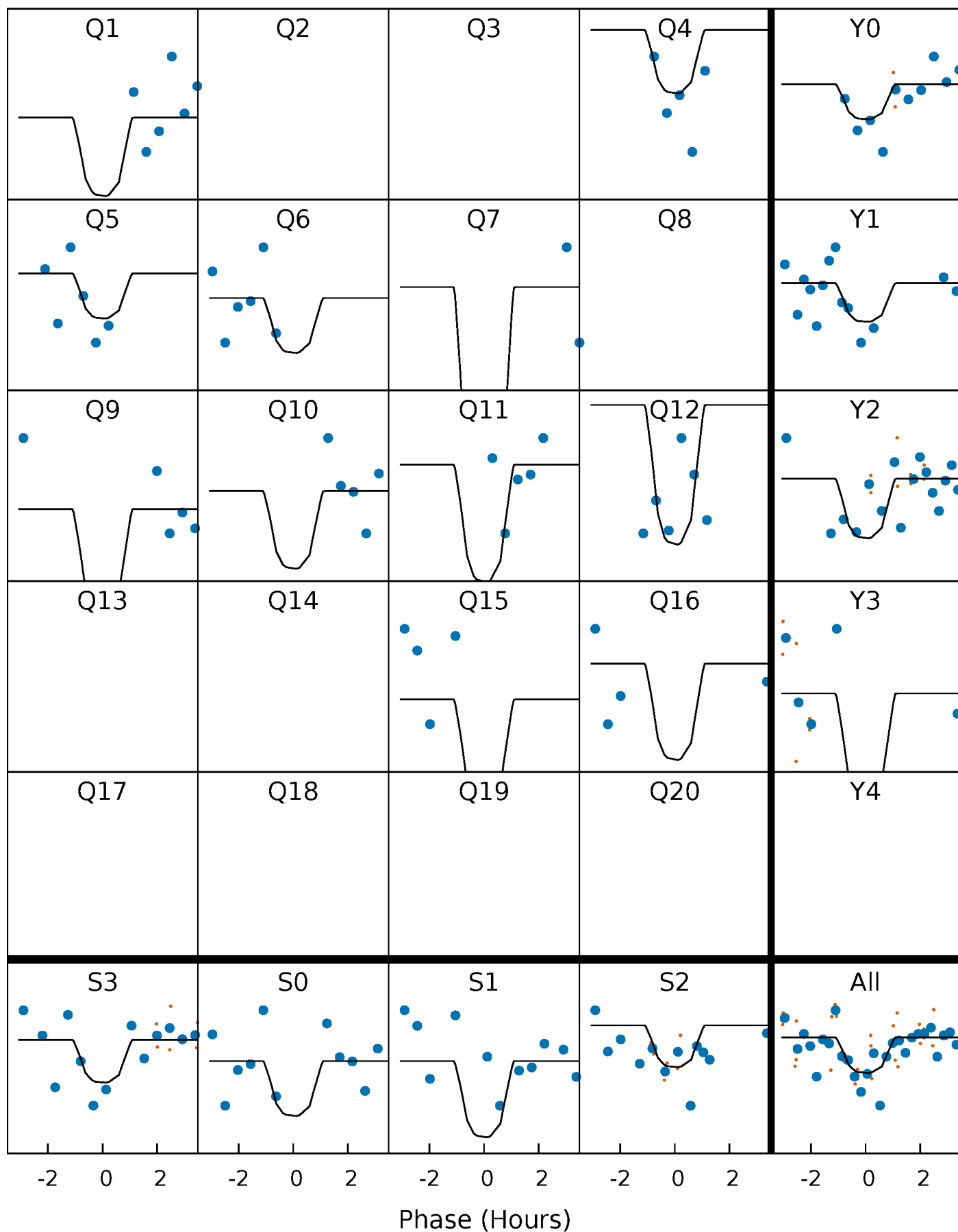
PDC Quarter-Phased Transit Curves

TCE 007966985-03 P= 29.653549 Days $T_0=137.518119$ (BKJD)



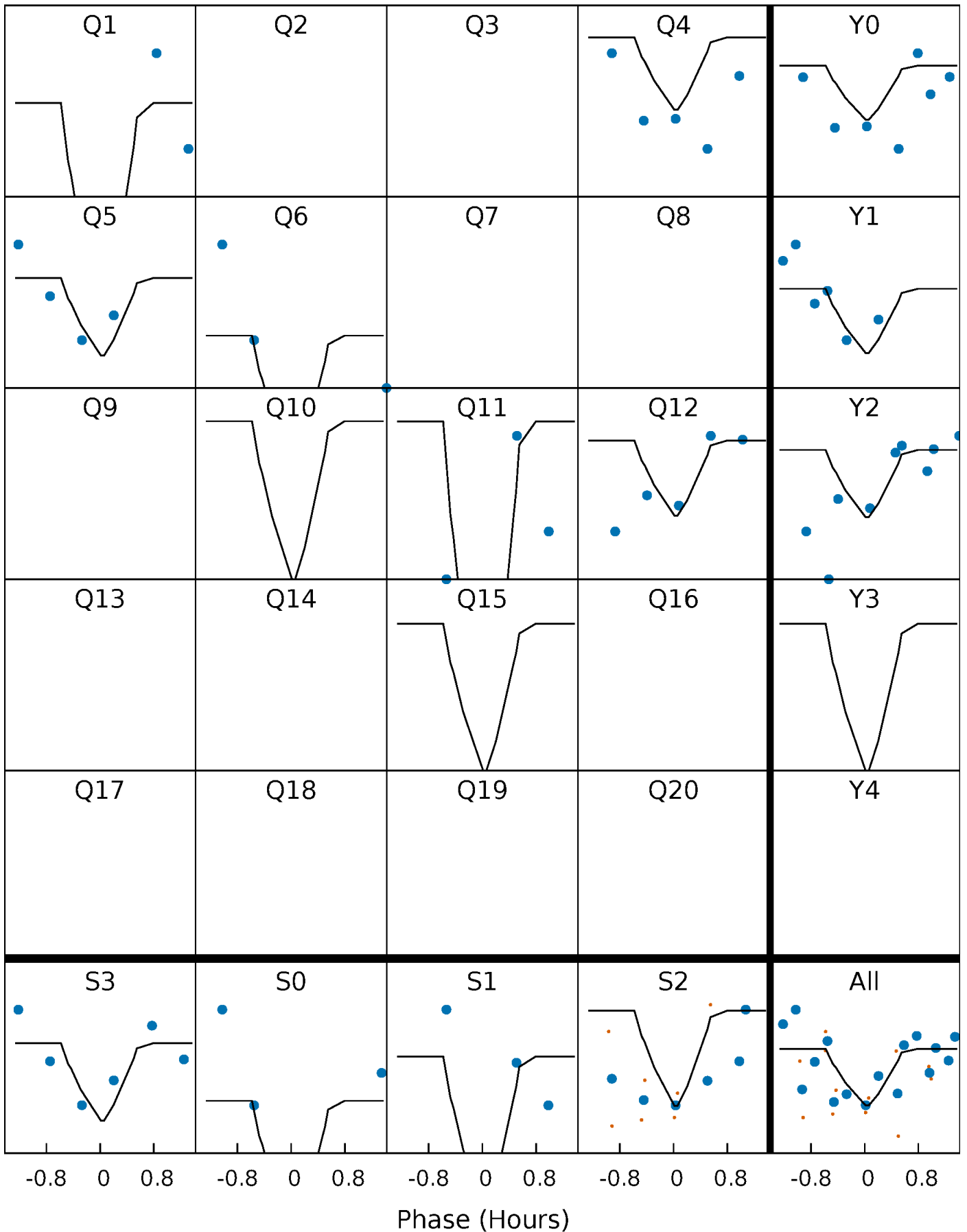
DV Quarter-Phased Transit Curves

TCE 007966985-03 P= 29.653549 Days $T_0=137.518119$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

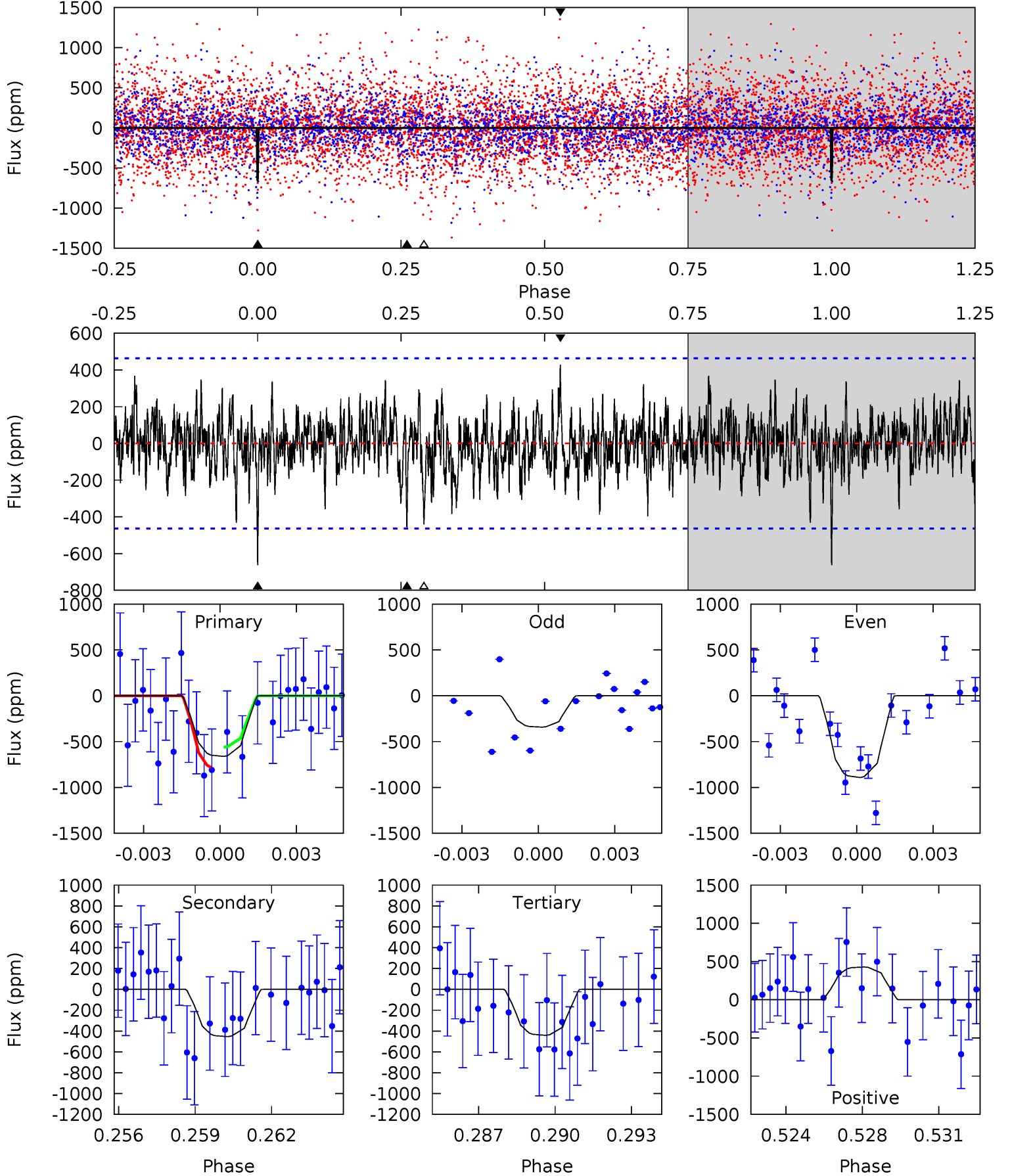
TCE 007966985-03 P= 29.652866 Days $T_0=137.527543$ (BKJD)



DV Model-Shift Uniqueness Test

007966985-03, P = 29.653549 Days, E = 107.864570 Days

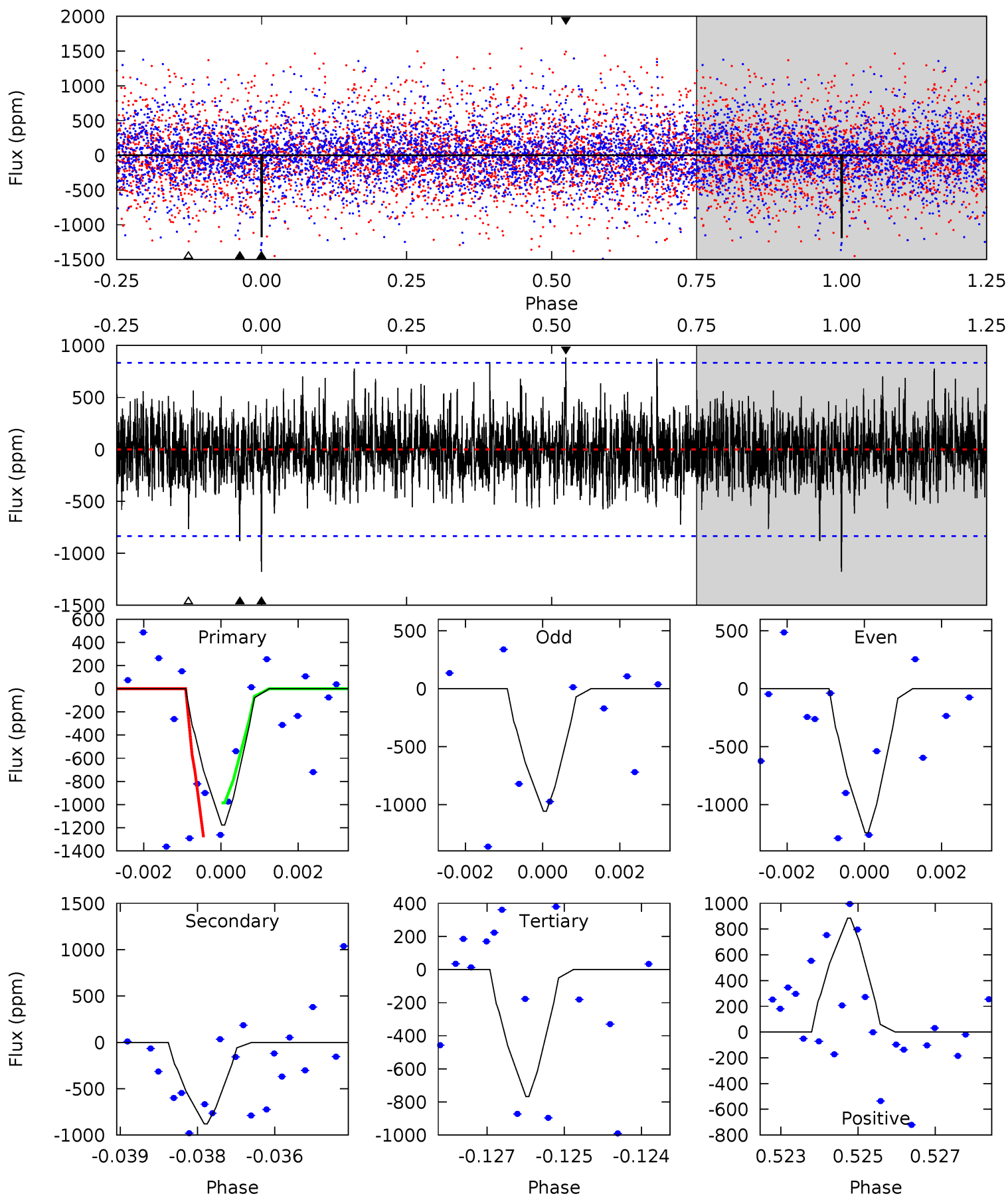
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.50	5.14	5.00	4.86	5.25	2.96	1.40	2.50	2.64	0.15	0.29	2.99	0.93	0.39	1.25



Alt Model-Shift Uniqueness Test

007966985-03, P = 29.652866 Days, E = 107.874677 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.54	5.65	4.92	5.67	5.35	3.12	1.38	2.63	1.87	0.73	-0.03	0.63	1.15	0.43	0.86



Stellar Parameters For KIC 007966985

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5639^{+169}_{-169}	$4.551^{+0.034}_{-0.184}$	$-0.020^{+0.300}_{-0.300}$	$0.859^{+0.233}_{-0.078}$	$0.959^{+0.094}_{-0.115}$	$2.131^{+0.377}_{-1.013}$
	+3%/-3%	+1%/-4%	+1500%/-1500%	+27%/-9%	+10%/-12%	+18%/-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 007966985-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-454 ± 88	$5.70^{+6.24}_{-3.80}$	768^{+50}_{-36}	3775^{+2165}_{-780}	250^{+2098}_{-195}
Alt.	-881 ± 156	$6.56^{+6.23}_{-4.73}$	768^{+47}_{-33}	4035^{+3136}_{-777}	370^{+4844}_{-272}

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 $A_{obs} \gg 1.0$

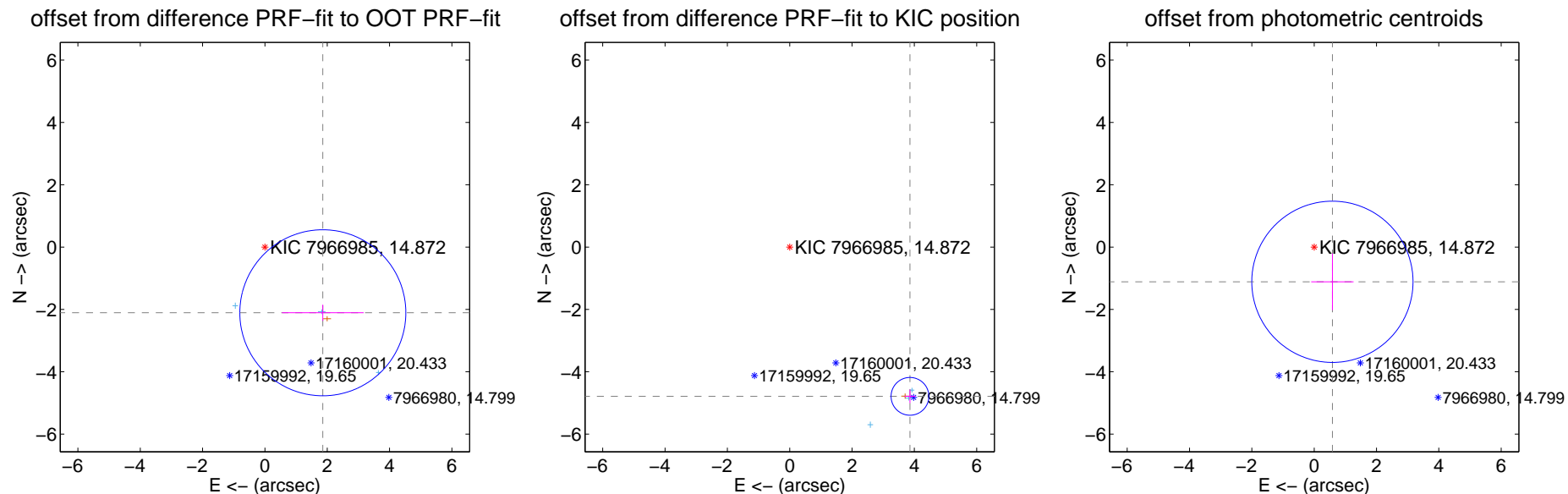
DV Centroid Data

Supplemental centroid analysis for 007966985-03. Kepler magnitude: 14.87. Transit SNR 9.92

There are 3 quarters with good PRF difference image offsets

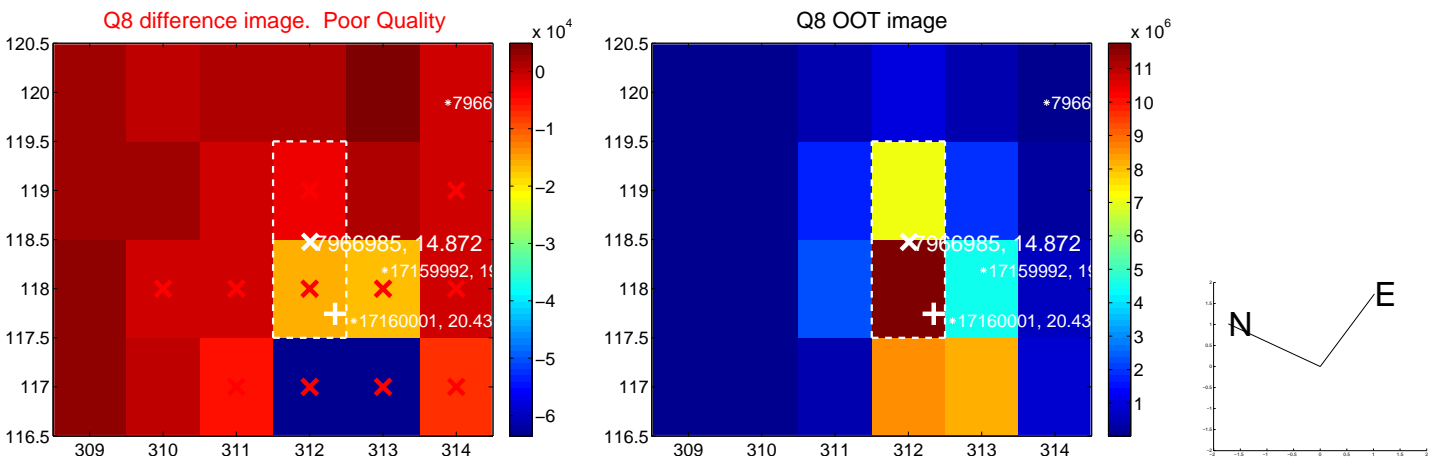
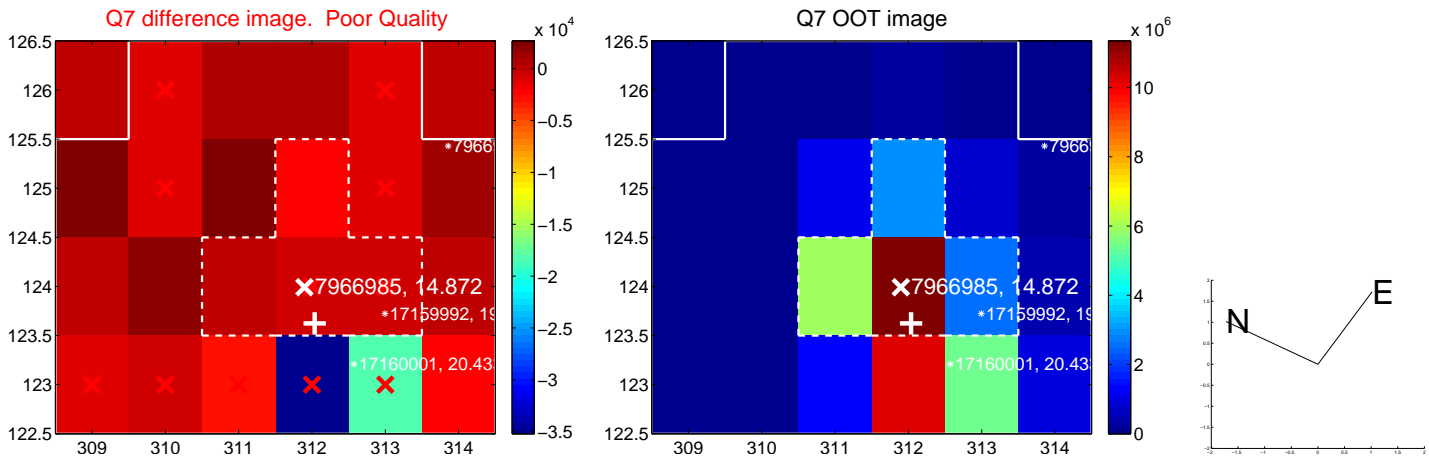
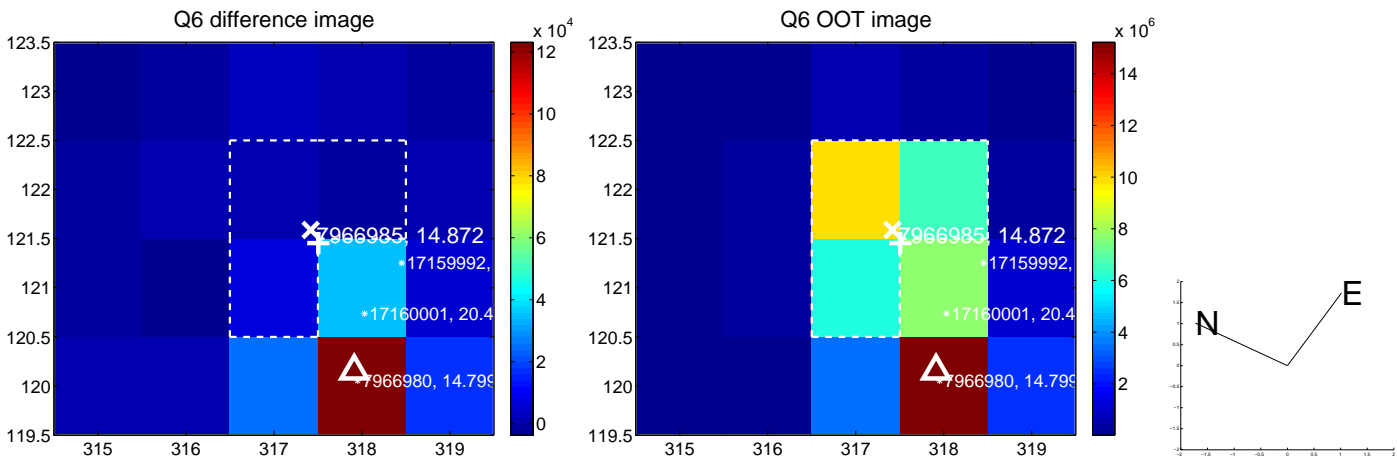
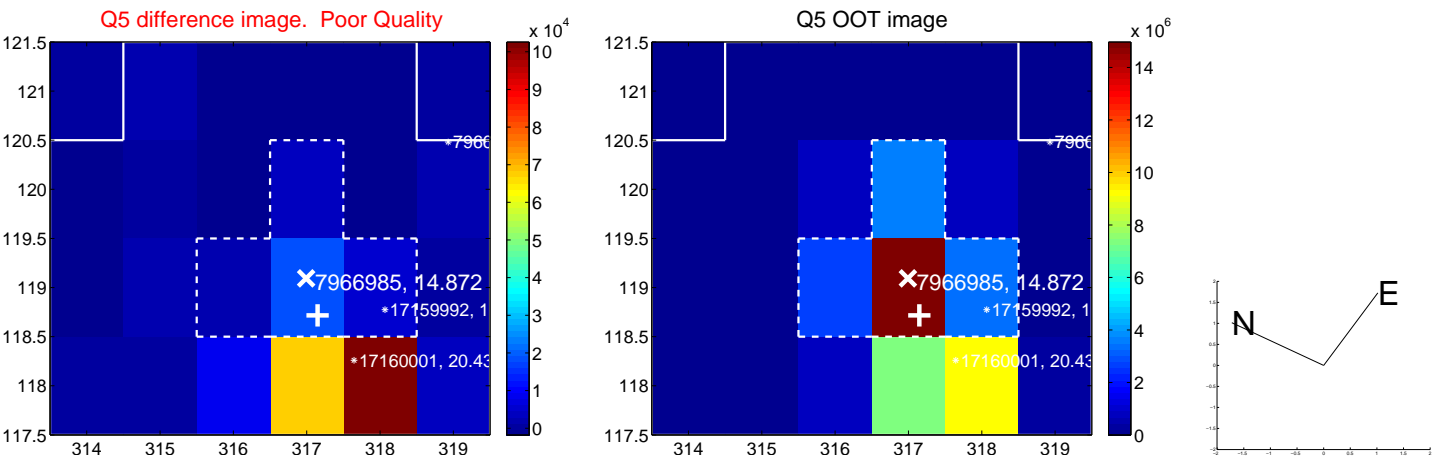
The OOT PRF centroid is offset from the target star catalog position by about 3.01 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.810 ± 0.888	3.16	-1.858 ± 1.310	-2.107 ± 0.260
PRF-fit source offset from KIC position	6.150 ± 0.202	30.45	-3.859 ± 0.175	-4.789 ± 0.218
photometric centroid source offset	1.26 ± 0.86	1.46	-0.58 ± 0.68	-1.11 ± 0.91

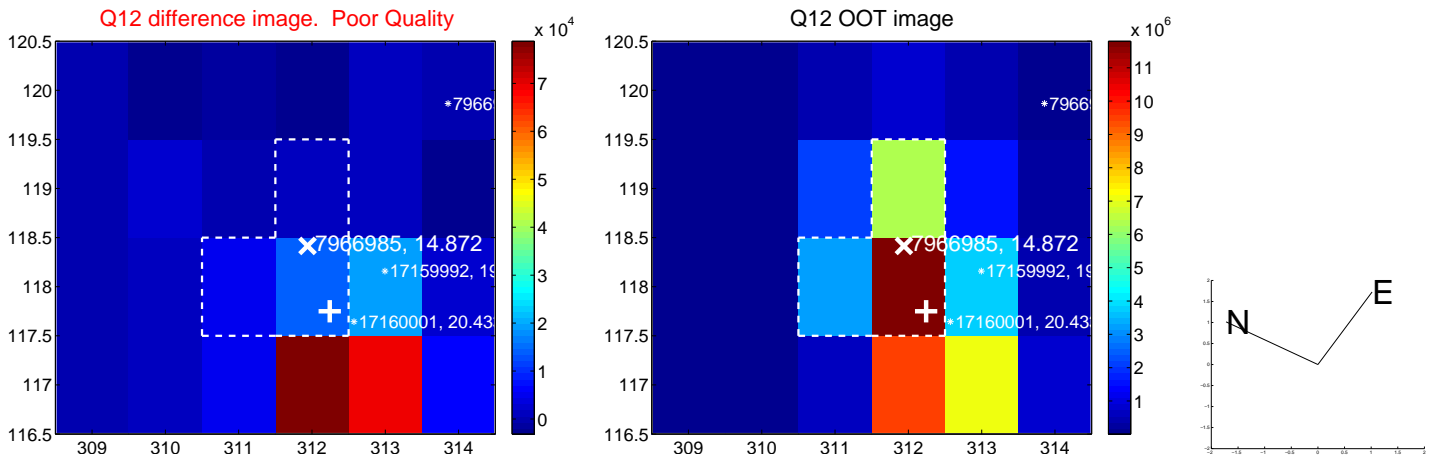
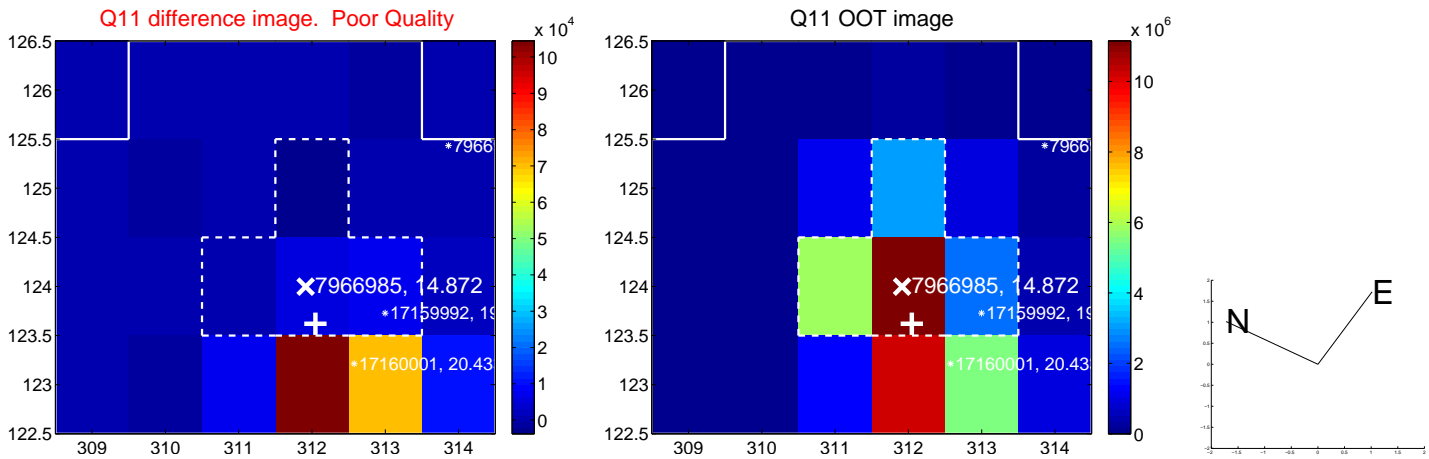
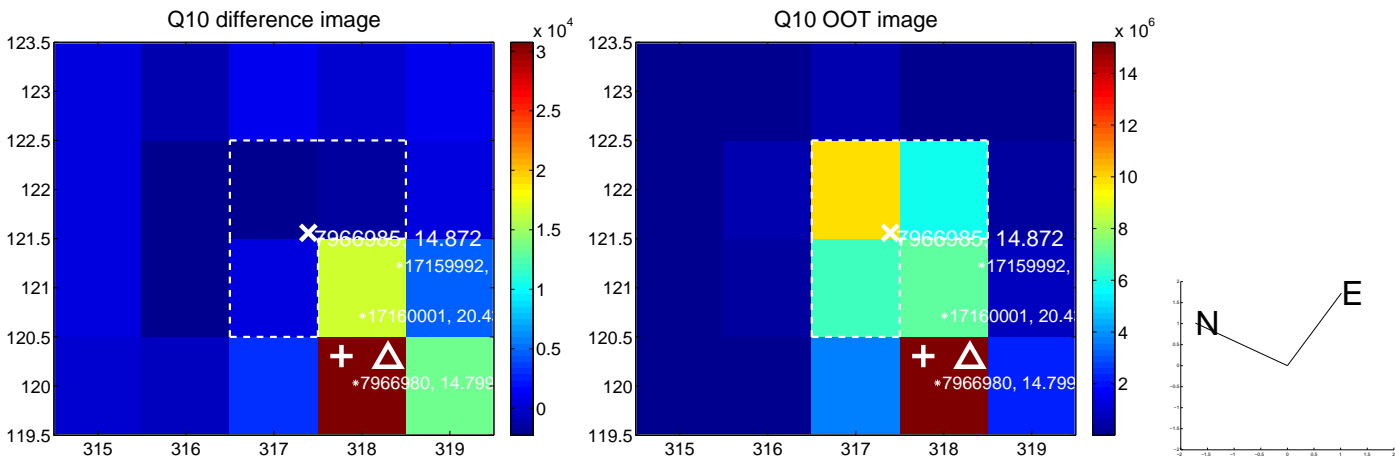
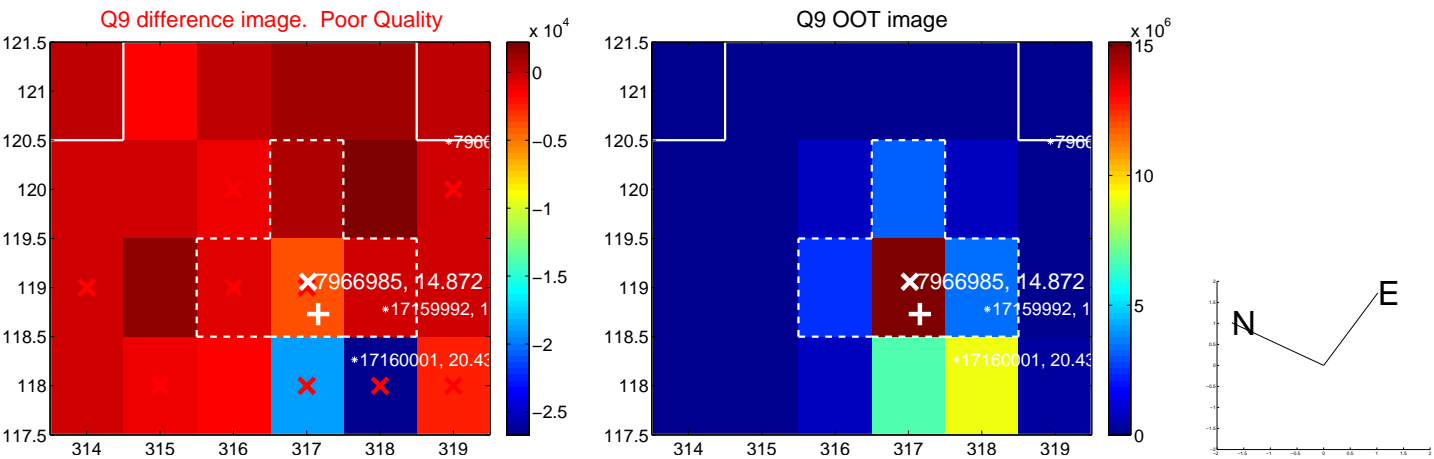


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

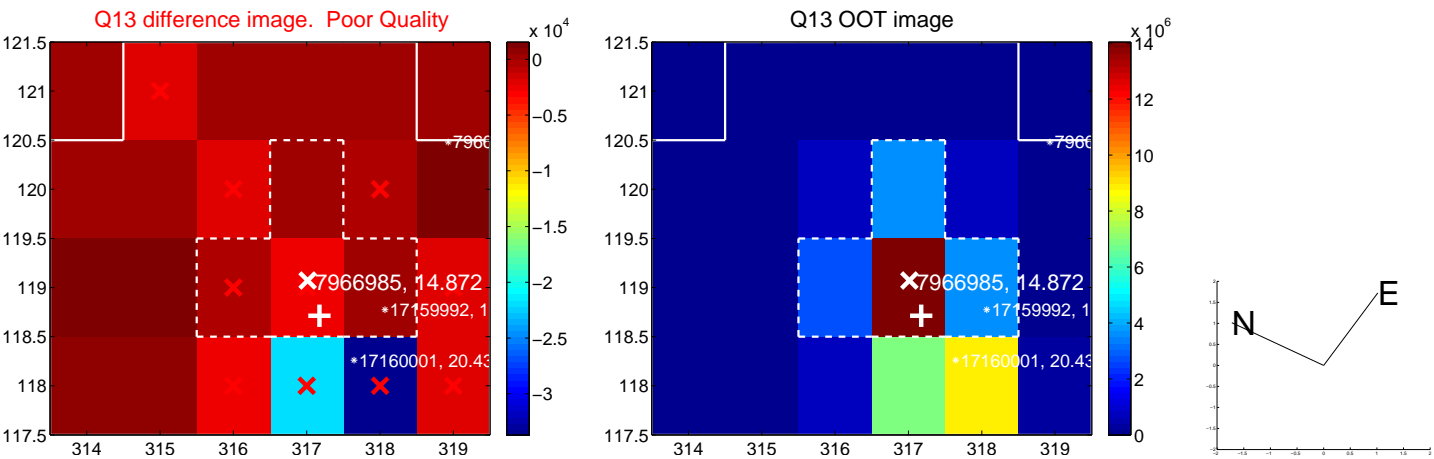
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



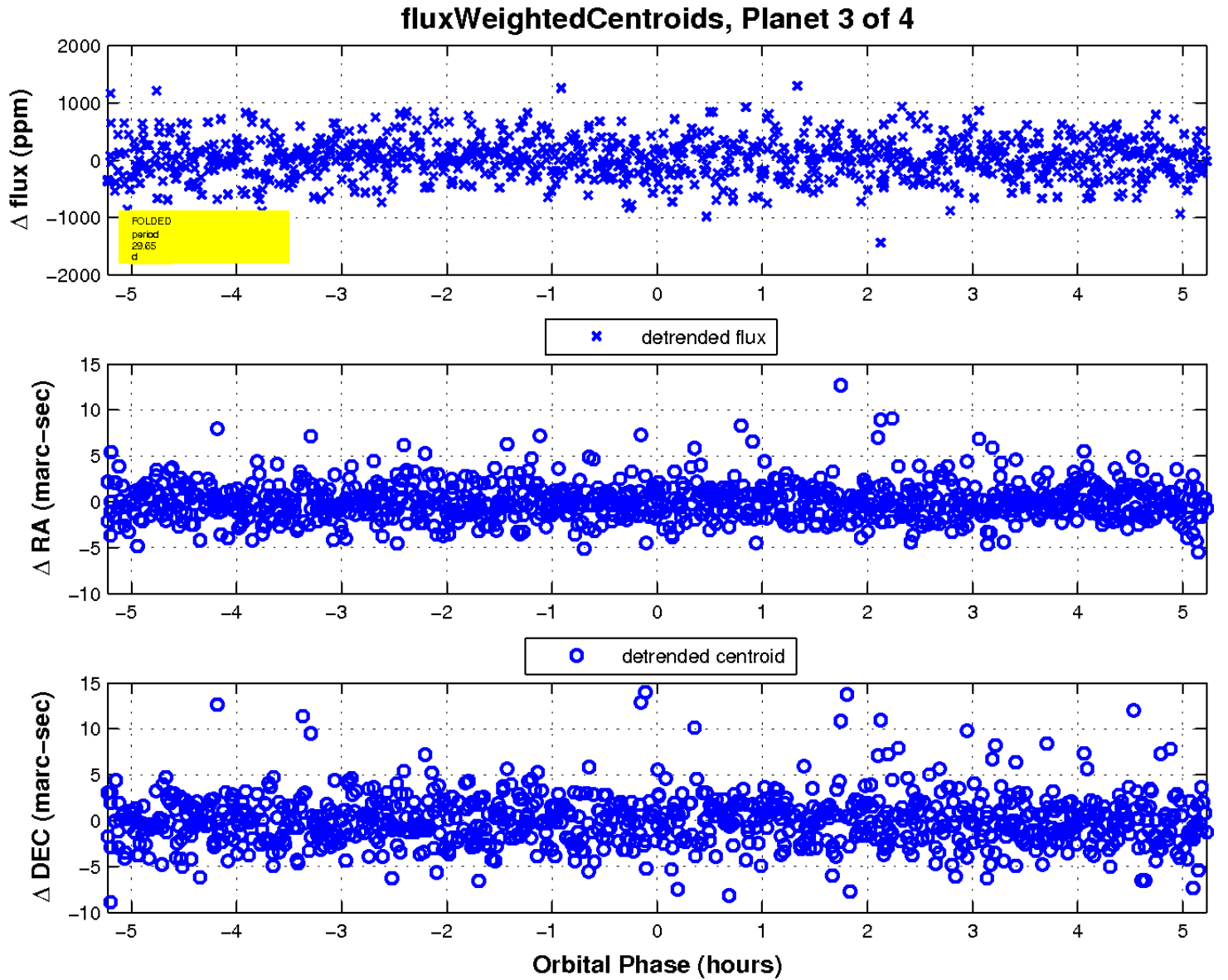
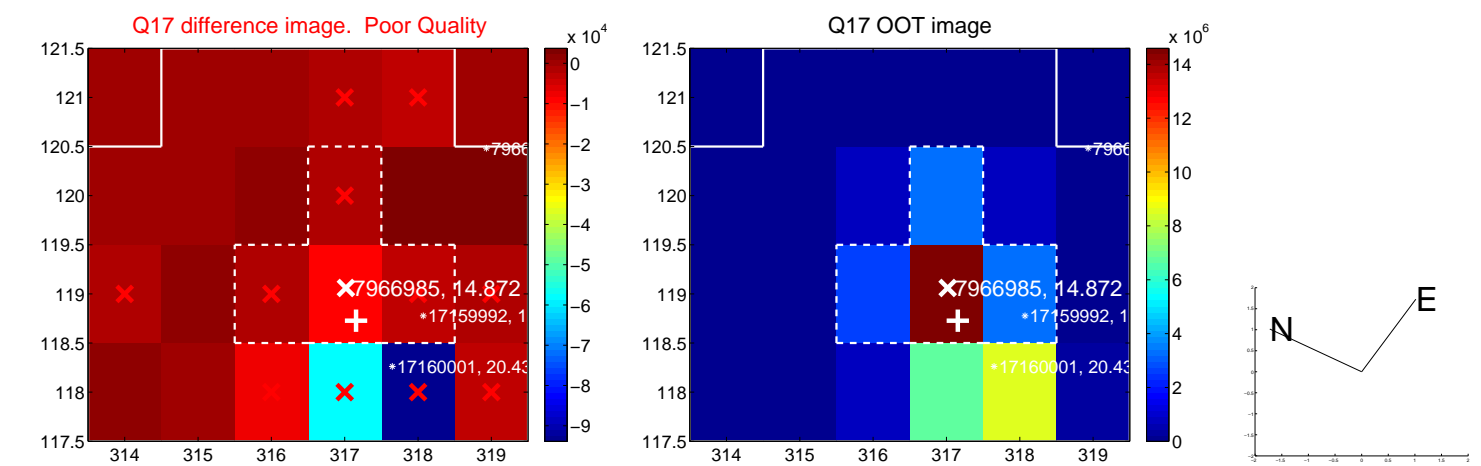
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

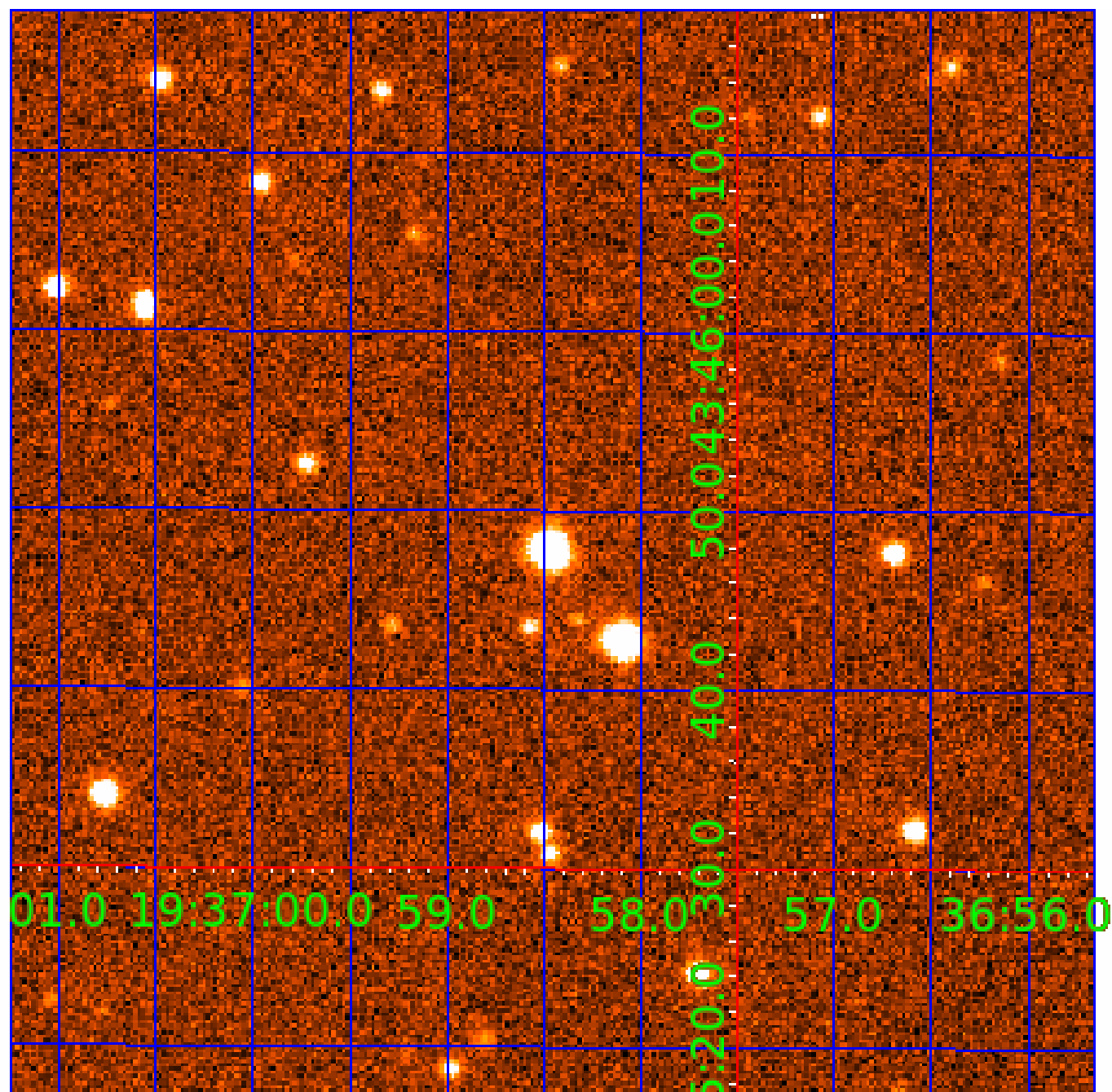


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007966985

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})
007966985-01	OBS	No	1.174203	132.287168	50.5	3.889	65.1	10.0	0.86	5639	0.61	1450.02
007966985-02	OBS	No	1.173967	132.325965	76.8	8.304	16.0	8.5	0.86	5639	0.79	1450.41
007966985-03	OBS	No	29.653549	137.518119	668.1	1.745	10.9	9.9	0.86	5639	2.27	19.57
007966985-04	OBS	No	35.929415	163.201969	578.9	1.849	10.7	8.2	0.86	5639	2.44	15.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007966985-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
007966985-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
007966985-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007966985-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

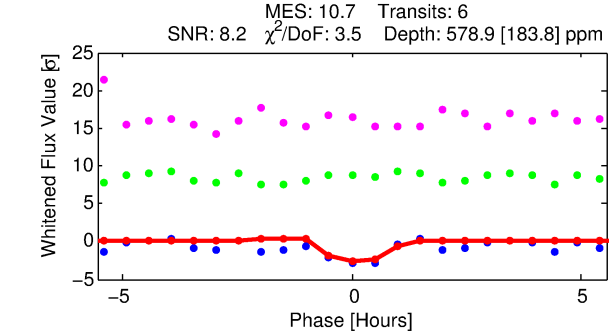
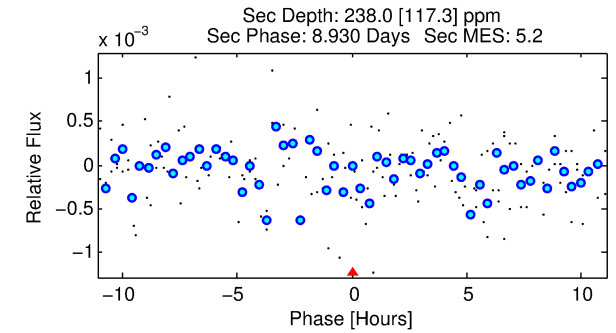
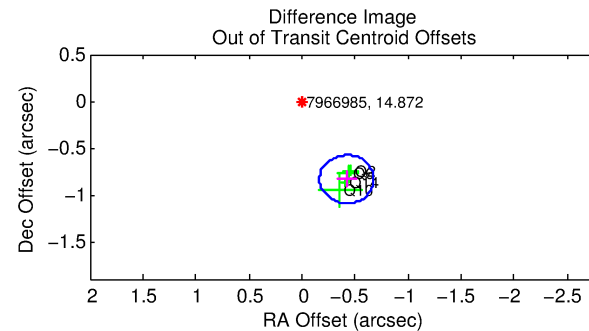
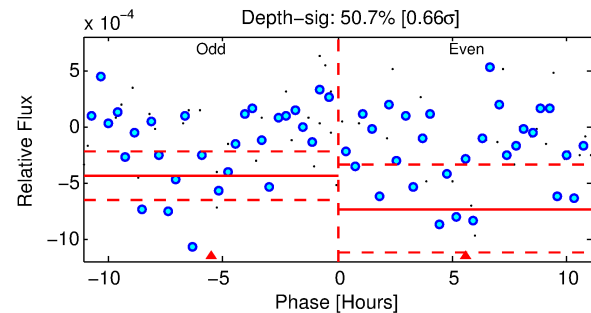
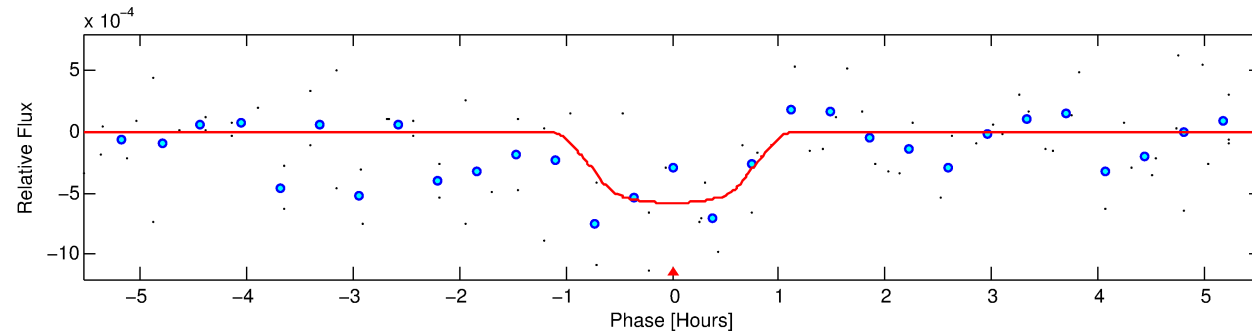
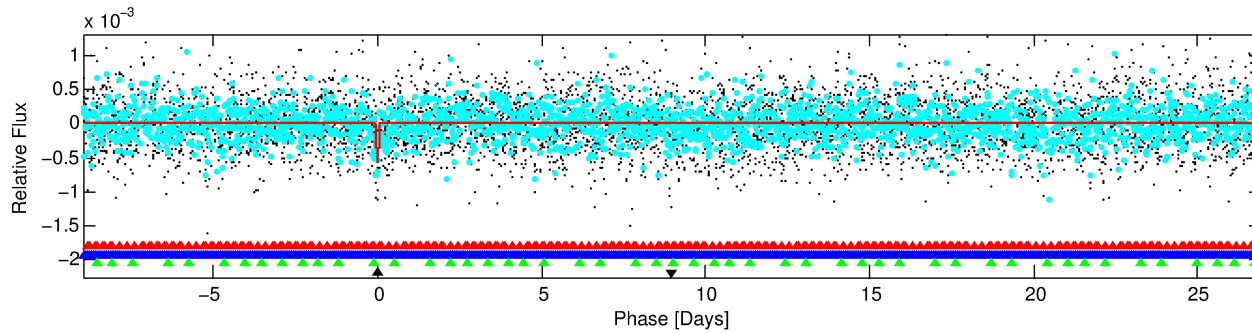
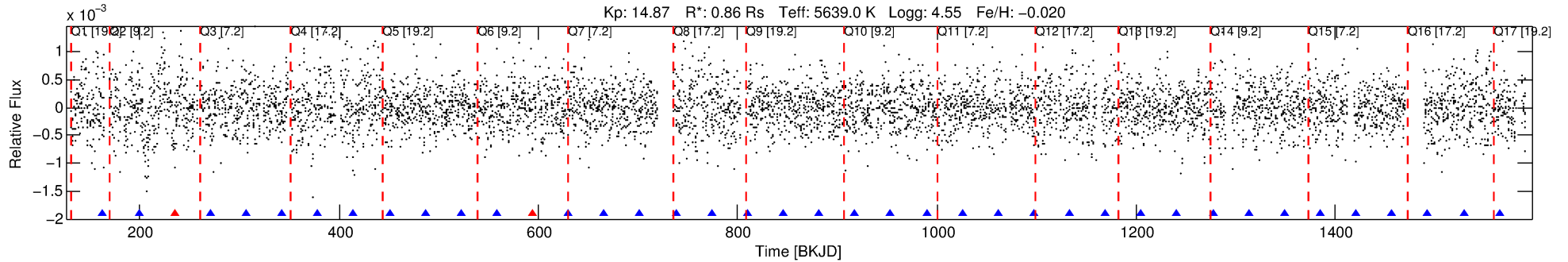
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007966985-04

No Significant Match Found

DV One-Page Summary

KIC: 7966985 Candidate: 4 of 4 Period: 35.929 d



DV Fit Results:

Period = 35.92941 [0.00064] d
Epoch = 163.2020 [0.0123] BKJD
Rp/R* = 0.0261 [0.0767]
a/R* = 76.67 [1014.46]
b = 0.89 [3.25]
Seff = 15.15 [5.40]
Teq = 503 [45] K
Rp = 2.44 [7.22] Re
a = 0.2101 [0.0482] AU
Ag = 967.84 [5724.77] [0.17σ]
Teffp = 4338 [6406] K [0.60σ]

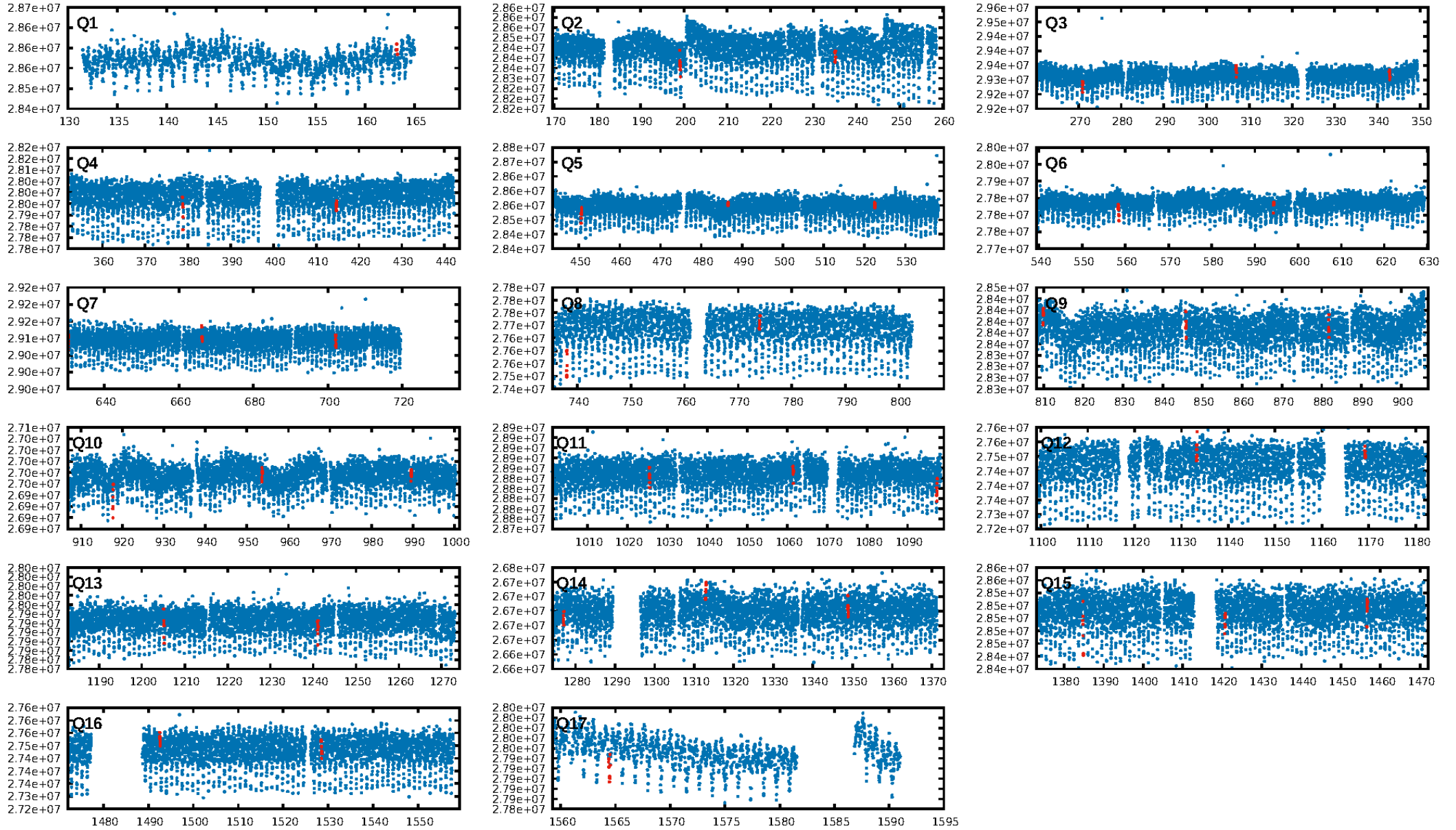
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [59.25σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.7%
ModelChiSquareGof-sig: 46.7%
Bootstrap-pfa: 6.30e-13
RollingBand-fgt: 0.67 [4/6]
GhostDiagnostic-chr: 0.005049
Centroid-sig: N/A
Centroid-so: 2.776 arcsec [2.60σ]
OotOffset-rm: 0.935 arcsec [10.90σ]
KicOffset-rm: 6.083 arcsec [70.27σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.65 [11/17]

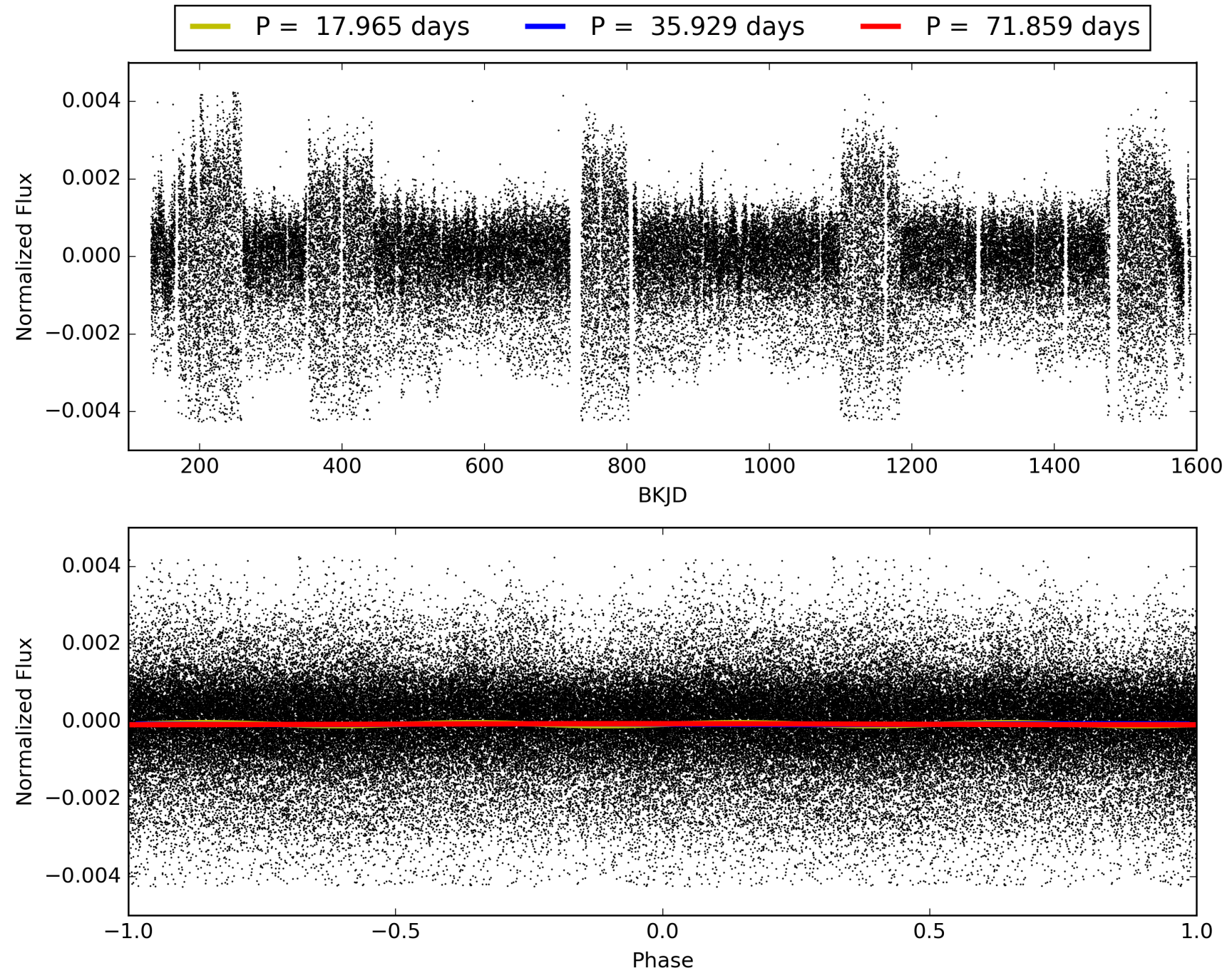
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:43:15 Z

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

TCE 007966985-04, PDC Light Curves

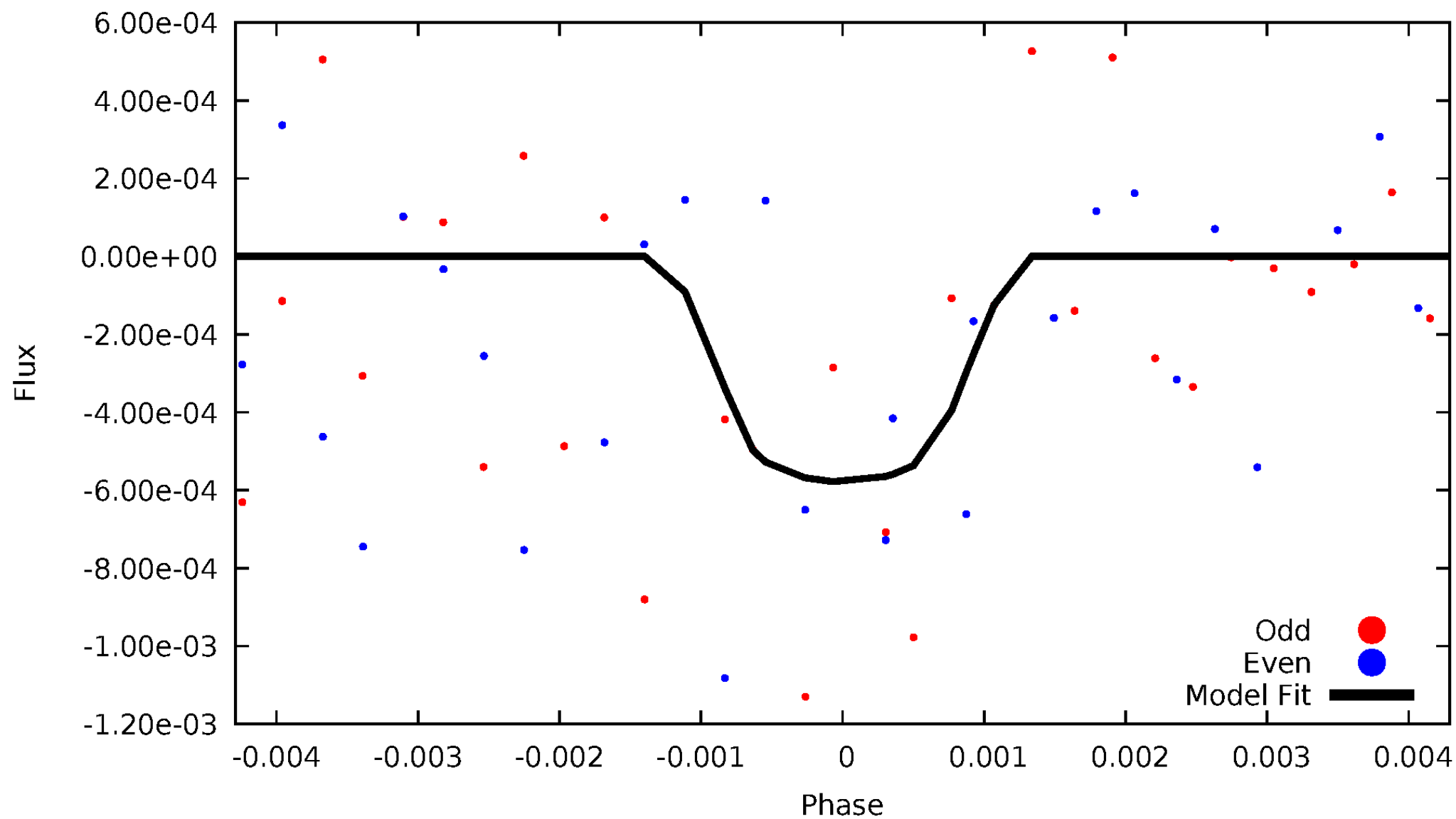


TCE 007966985-04



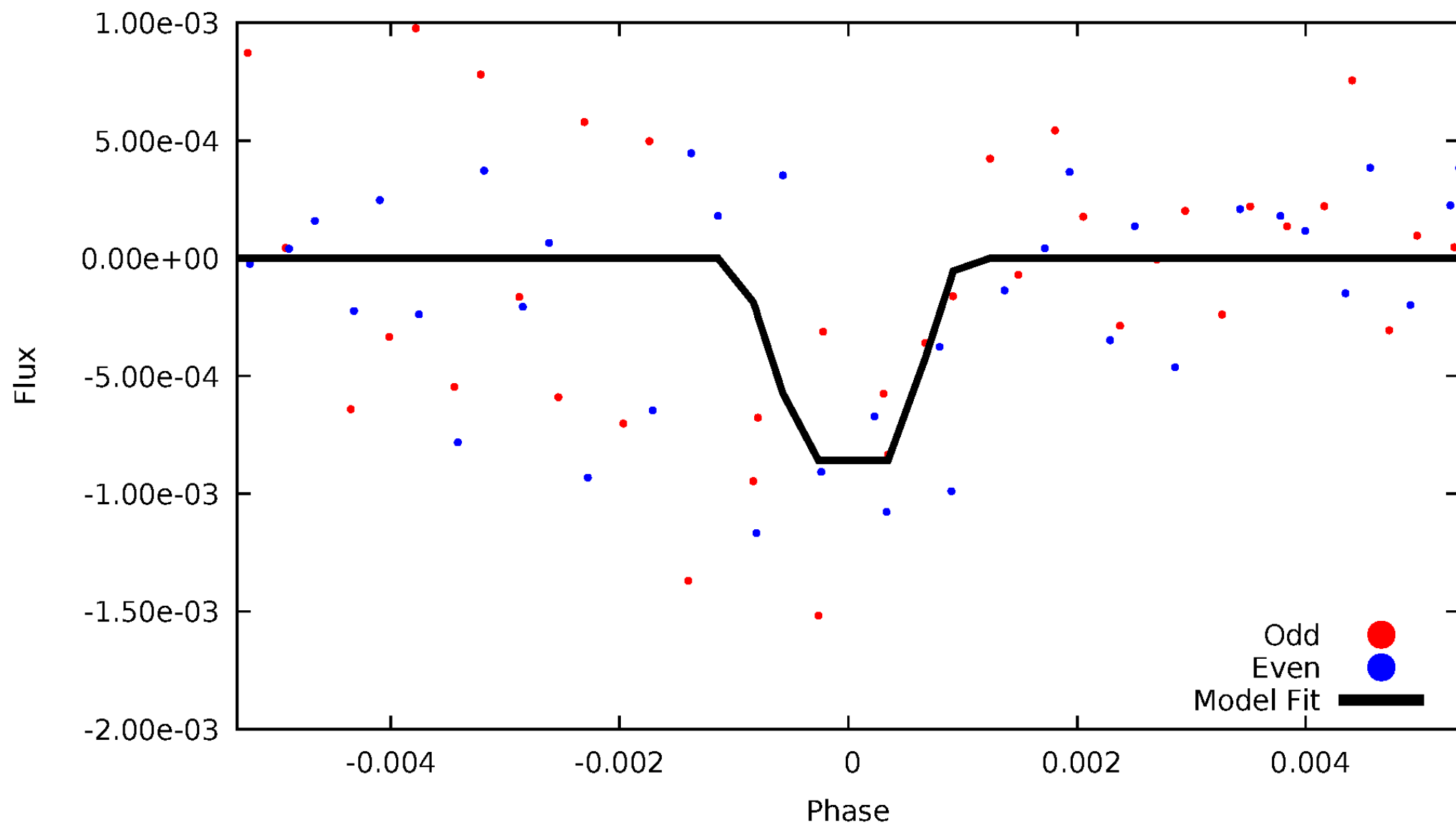
DV Odd/Even

TCE 007966985-04



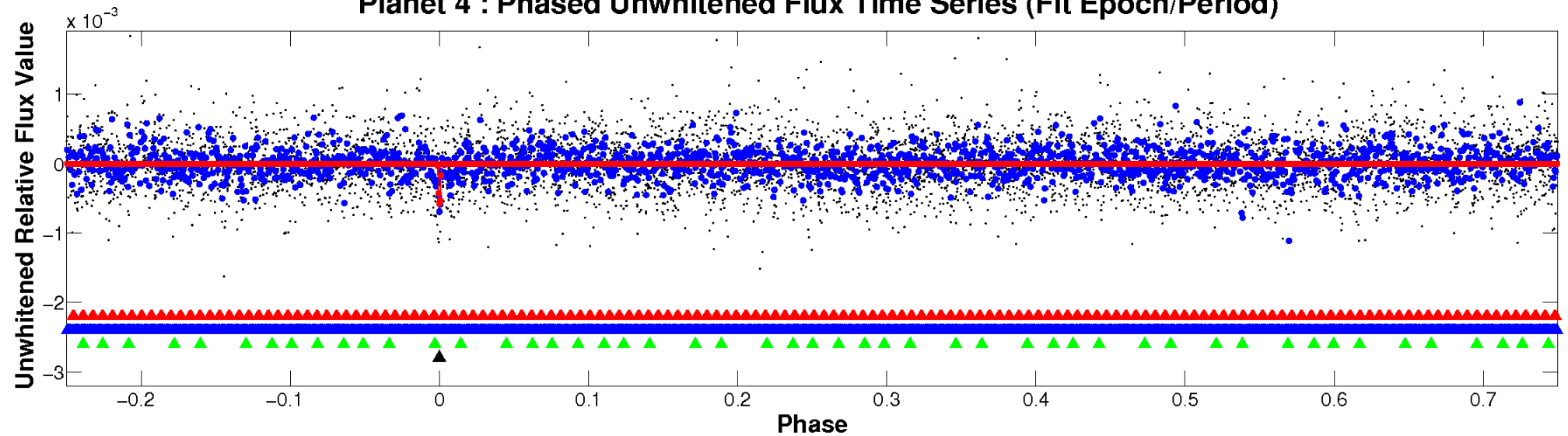
ALT Odd/Even

TCE 007966985-04

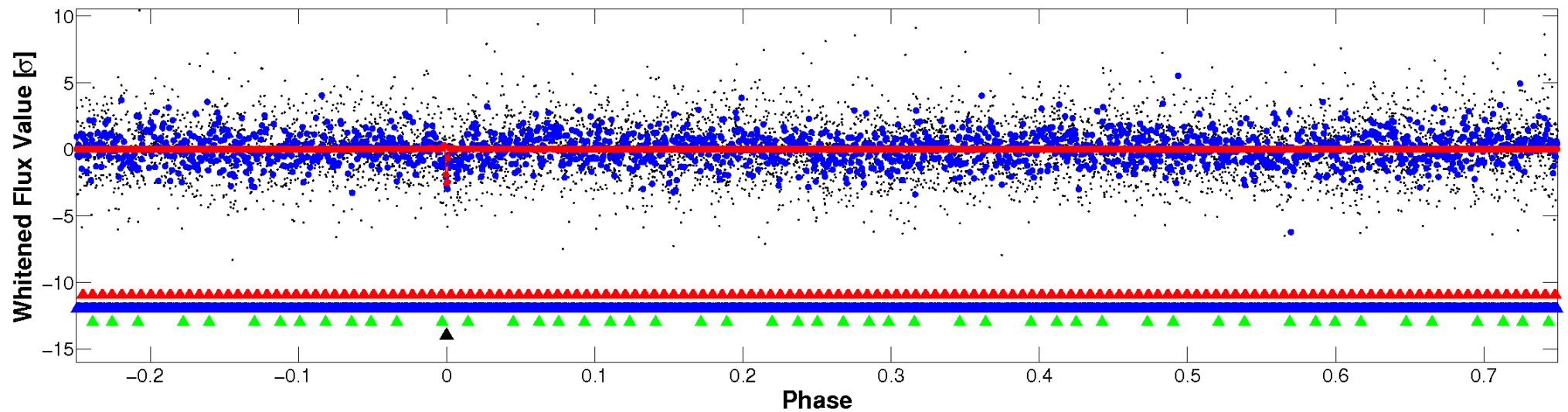


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

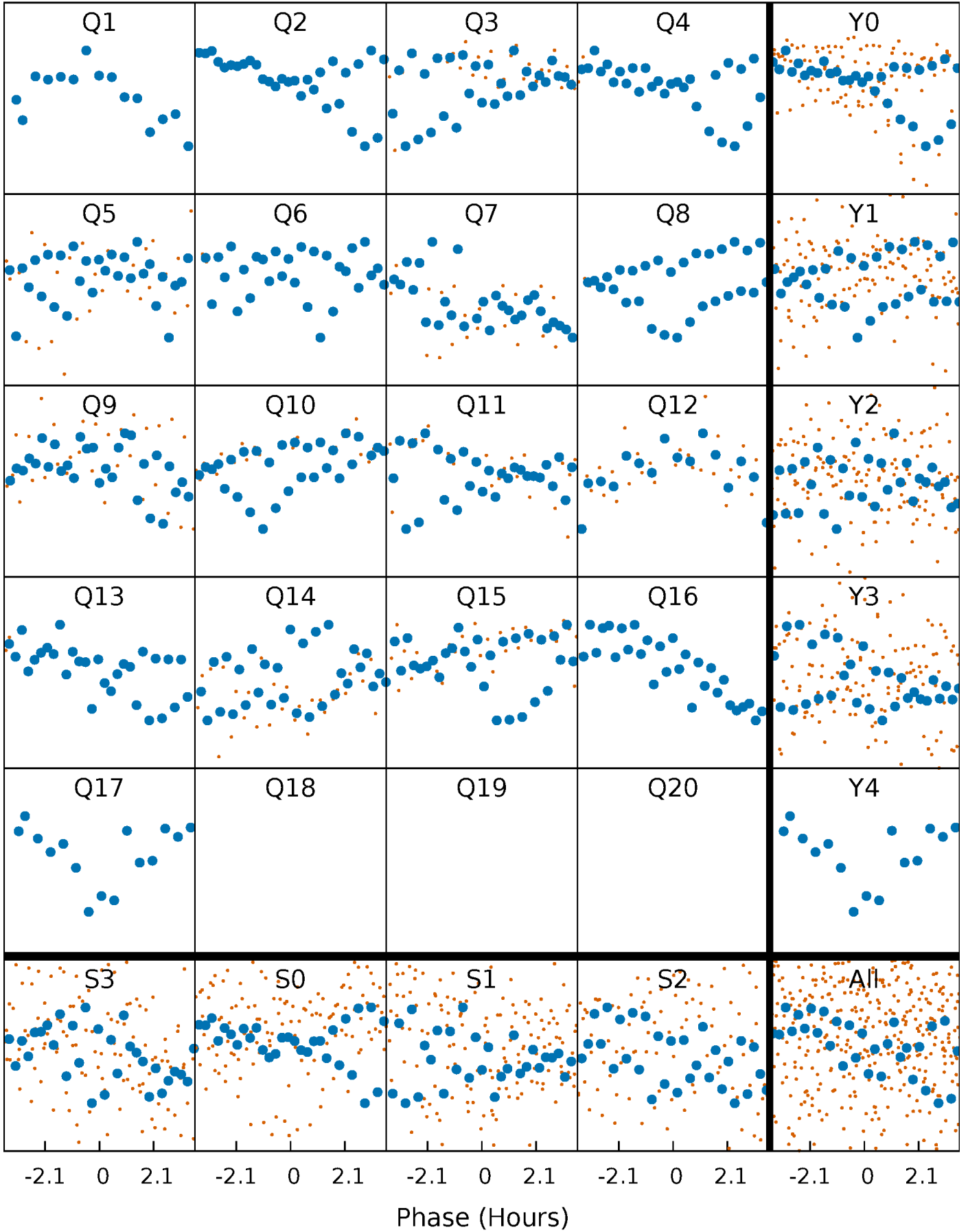


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



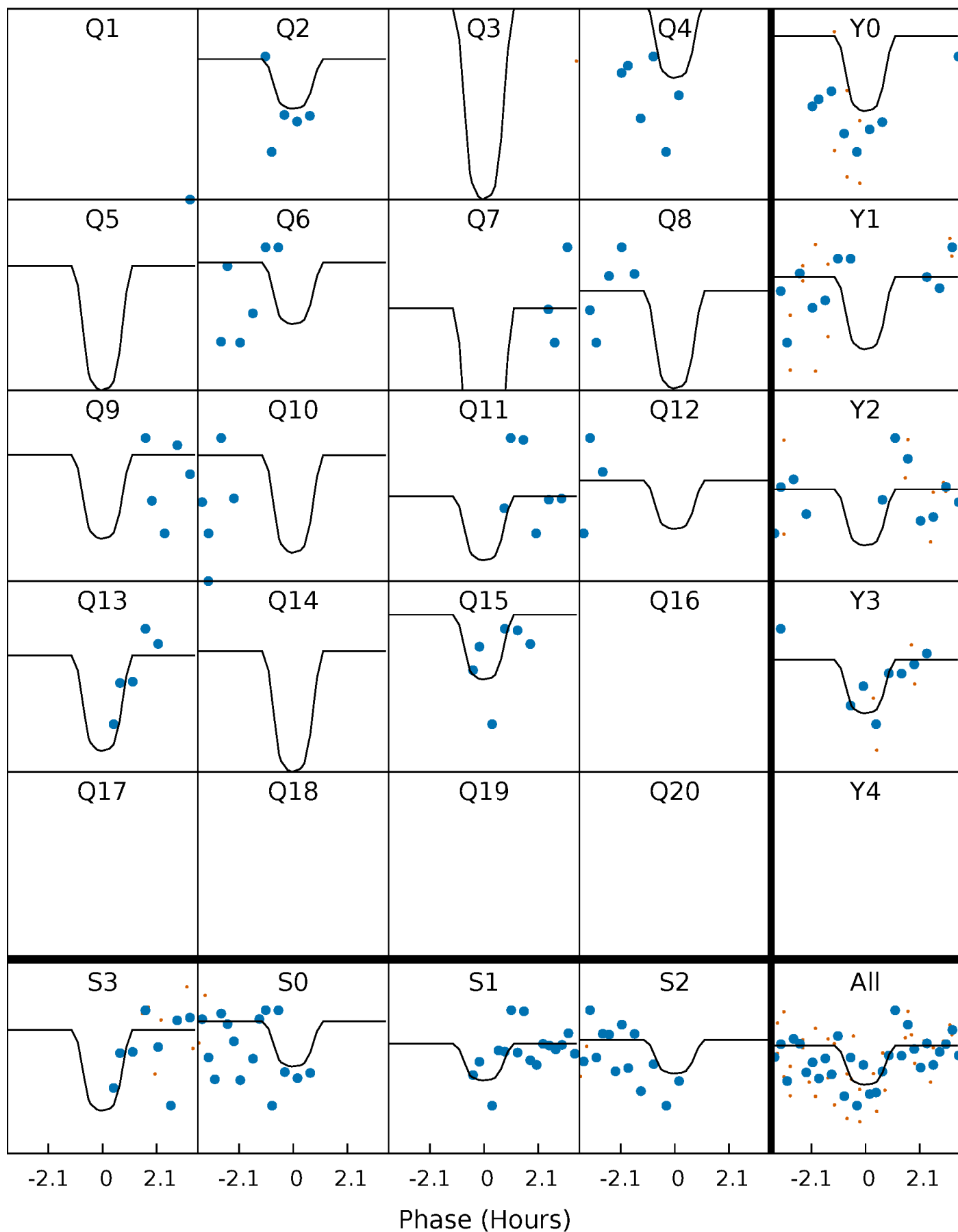
PDC Quarter-Phased Transit Curves

TCE 007966985-04 P= 35.929415 Days $T_0=163.201969$ (BKJD)



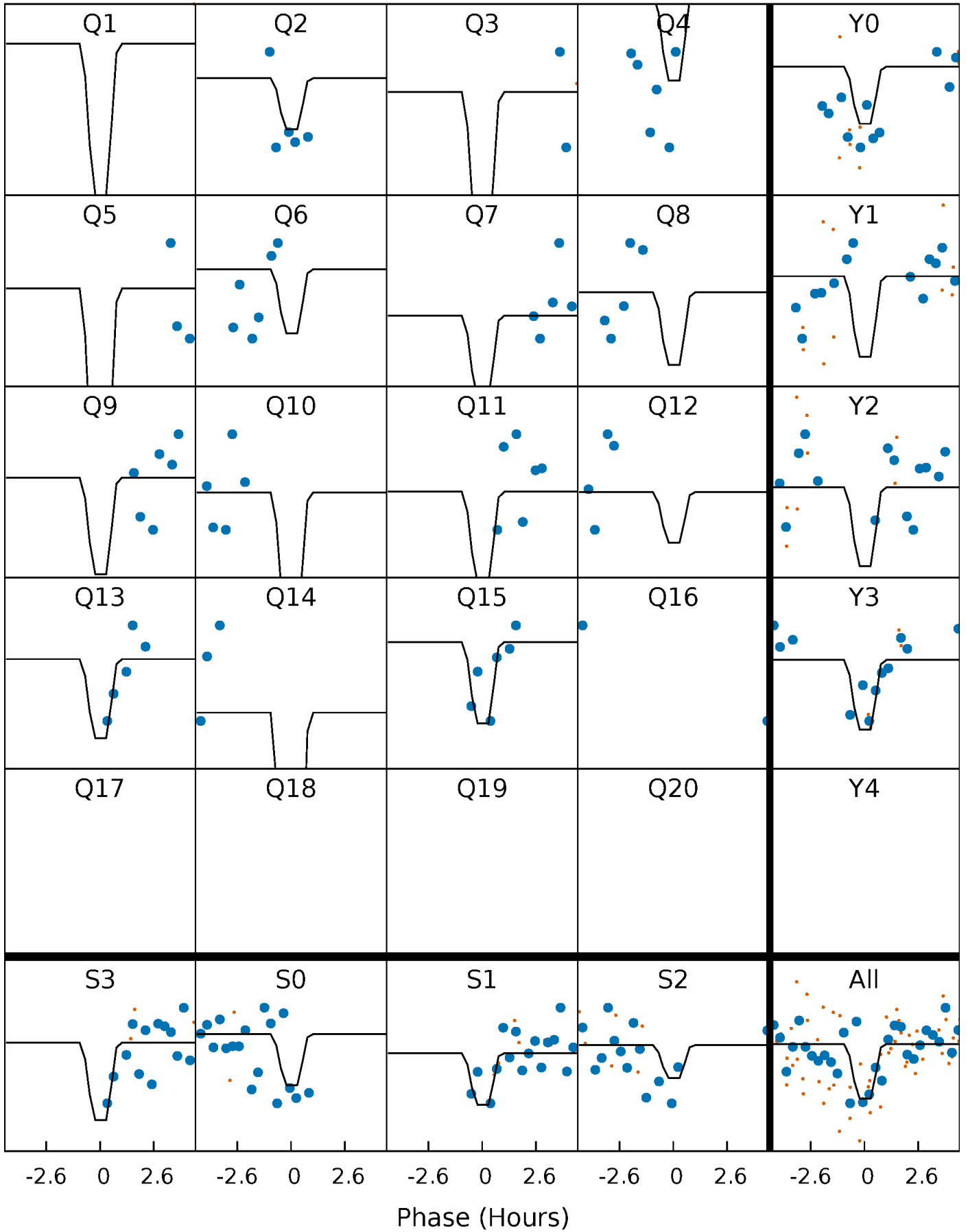
DV Quarter-Phased Transit Curves

TCE 007966985-04 P= 35.929415 Days $T_0=163.201969$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

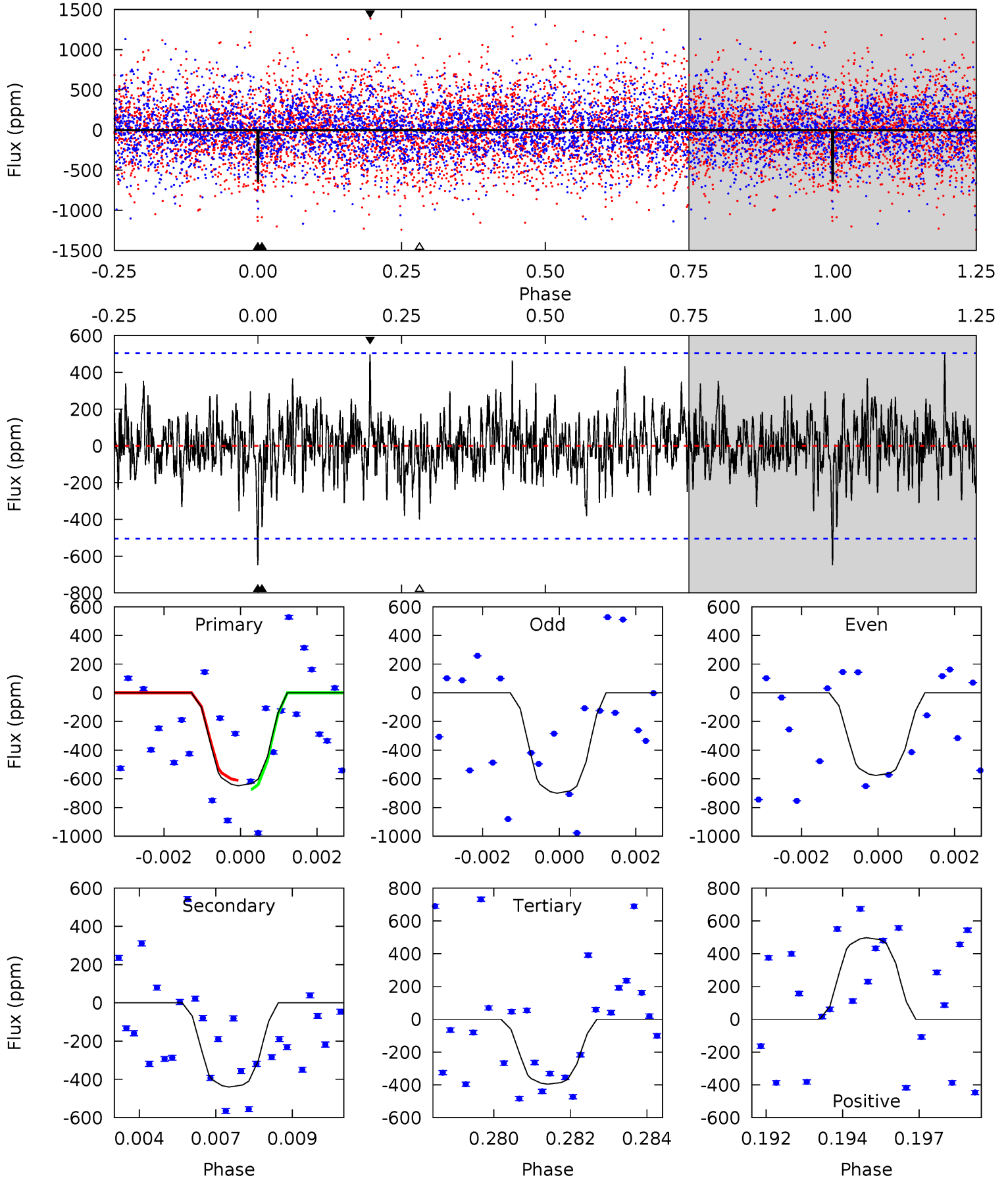
TCE 007966985-04 P= 35.929613 Days $T_0=163.200596$ (BKJD)



DV Model-Shift Uniqueness Test

007966985-04, P = 35.929415 Days, E = 127.272554 Days

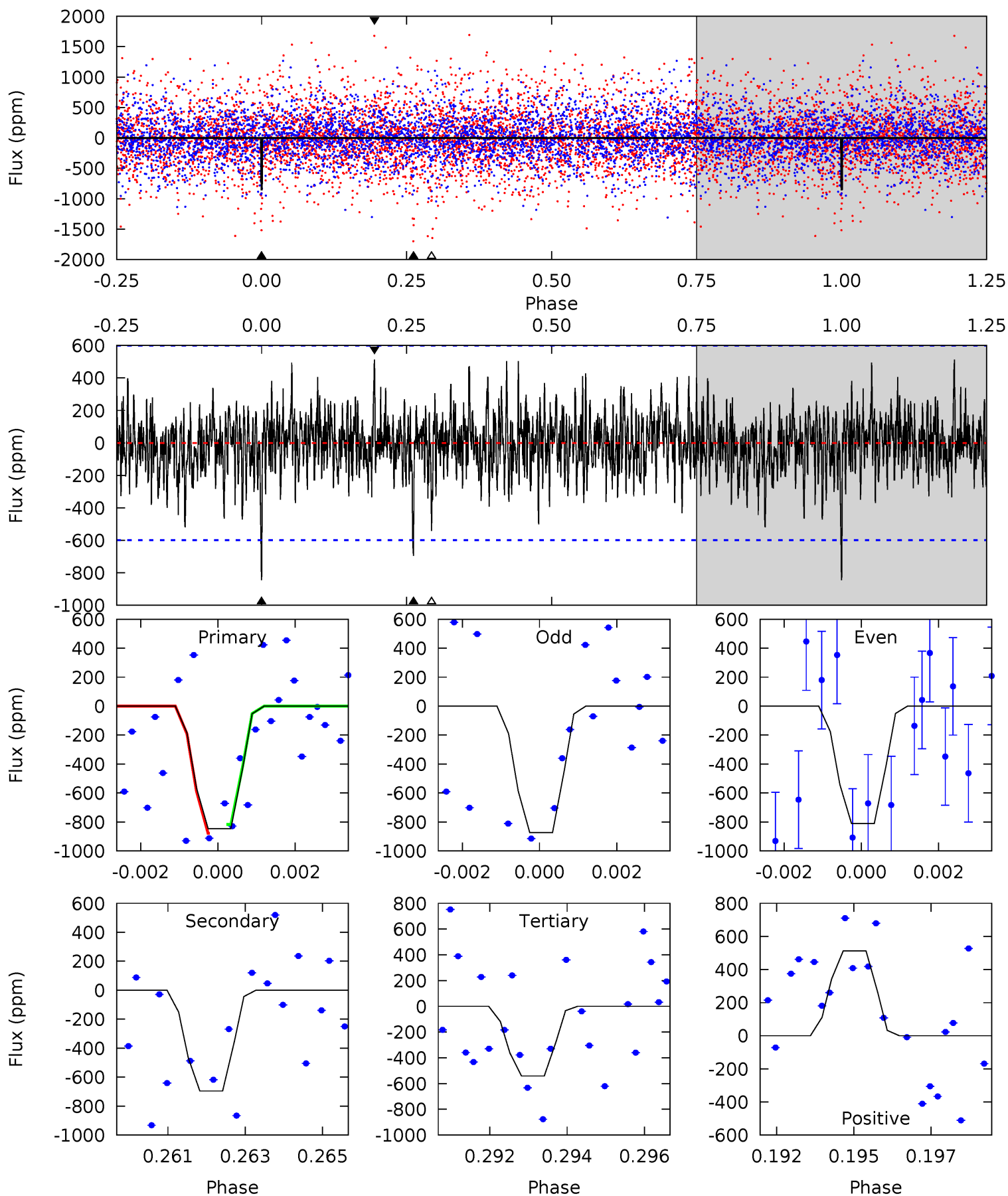
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.82	4.63	4.16	5.24	5.31	3.06	1.29	2.66	1.59	0.47	-0.60	0.68	0.87	0.43	0.33



Alt Model-Shift Uniqueness Test

007966985-04, P = 35.929613 Days, E = 127.270983 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.51	6.18	4.81	4.55	5.32	3.08	1.36	2.70	2.96	1.37	1.63	0.28	0.99	0.38	0.27



Stellar Parameters For KIC 007966985

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5639^{+169}_{-169}	$4.551^{+0.034}_{-0.184}$	$-0.020^{+0.300}_{-0.300}$	$0.859^{+0.233}_{-0.078}$	$0.959^{+0.094}_{-0.115}$	$2.131^{+0.377}_{-1.013}$
	+3%/-3%	+1%/-4%	+1500%/-1500%	+27%/-9%	+10%/-12%	+18%/-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 007966985-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-440 ± 95	$6.18^{+6.33}_{-4.26}$	722^{+48}_{-32}	3670^{+2294}_{-714}	281^{+2844}_{-217}
Alt.	-696 ± 113	$6.31^{+6.05}_{-4.22}$	721^{+47}_{-34}	3943^{+2280}_{-738}	411^{+3176}_{-300}

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

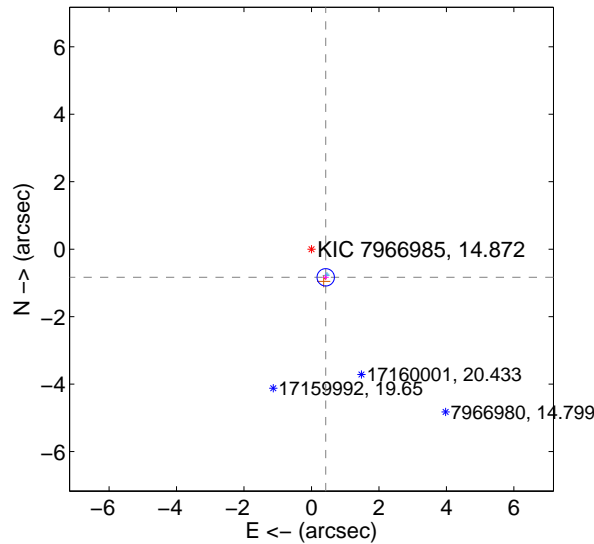
Supplemental centroid analysis for 007966985-04. Kepler magnitude: 14.87. Transit SNR 8.21

There are 2 quarters with good PRF difference image offsets

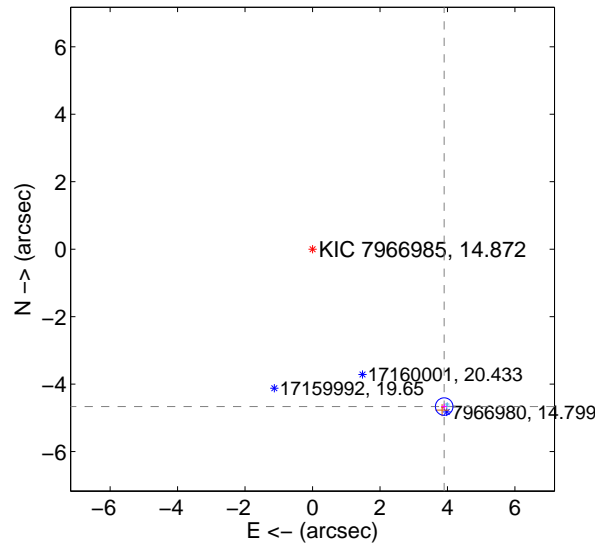
The OOT PRF centroid is offset from the target star catalog position by about 5.15 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.935 ± 0.086	10.90	-0.422 ± 0.089	-0.834 ± 0.085
PRF-fit source offset from KIC position	6.083 ± 0.087	70.27	-3.903 ± 0.089	-4.666 ± 0.085
photometric centroid source offset	2.78 ± 1.07	2.60	-0.92 ± 0.81	-2.62 ± 1.09

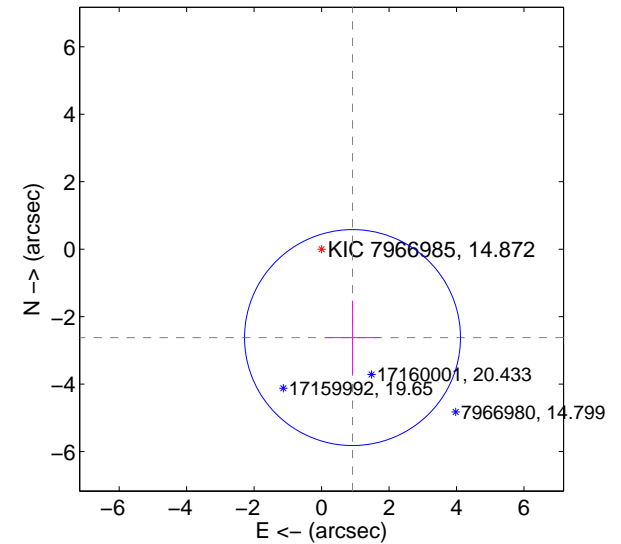
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

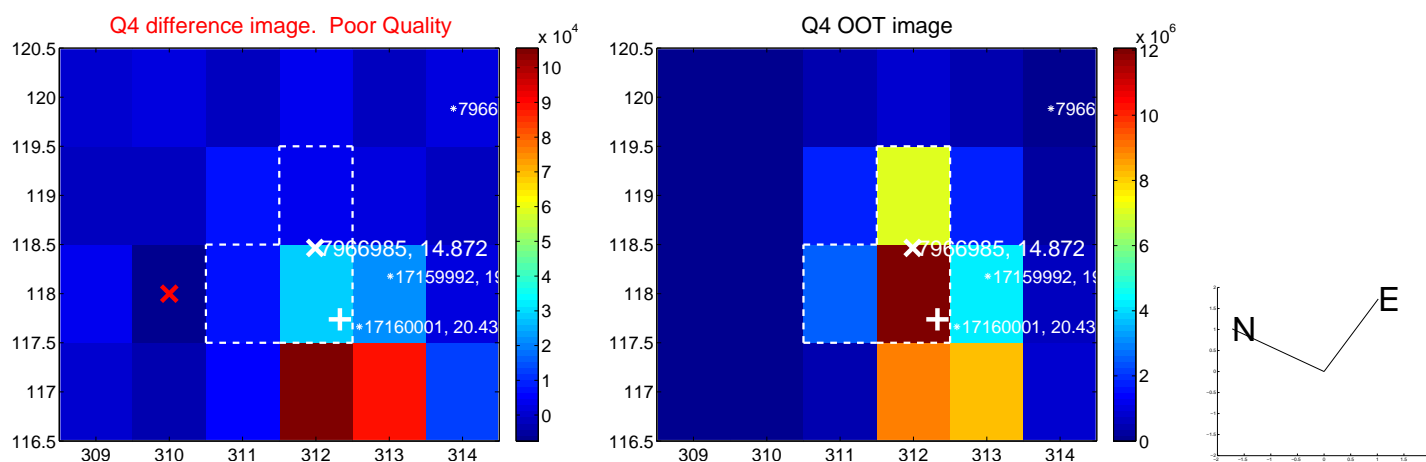
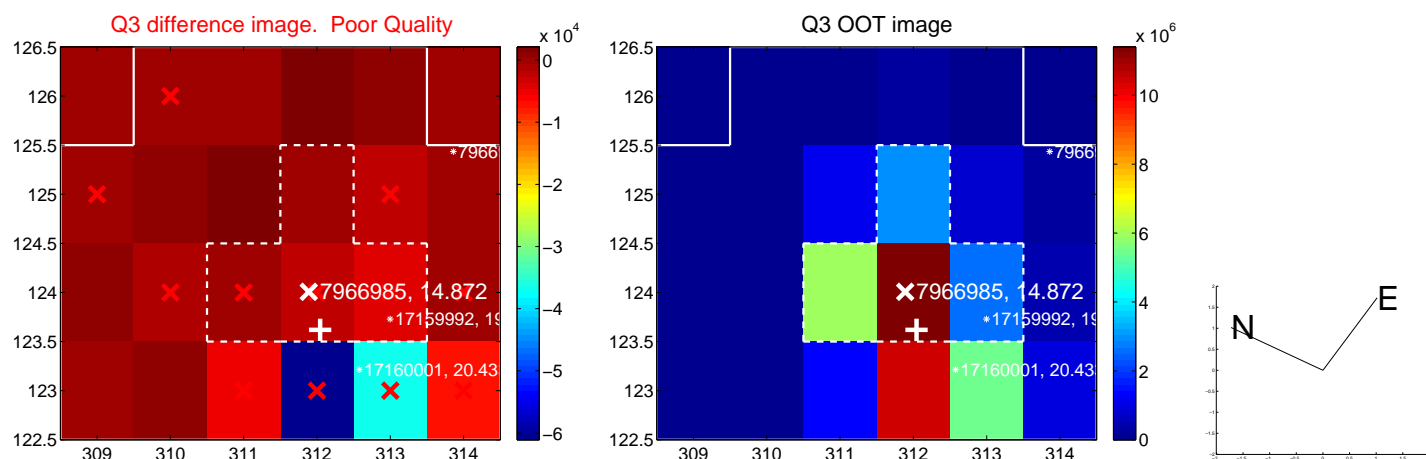
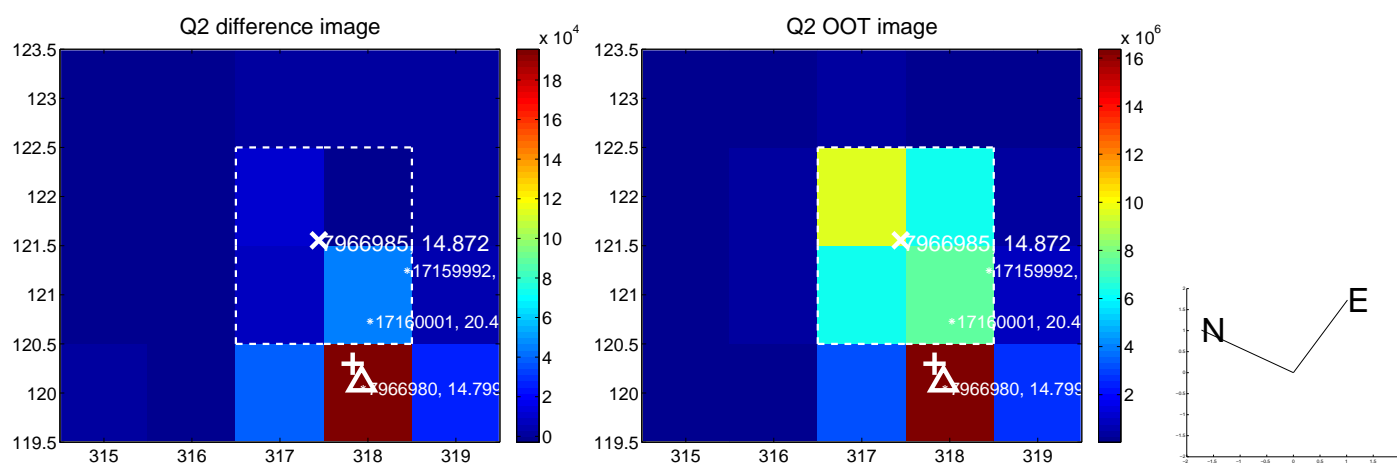
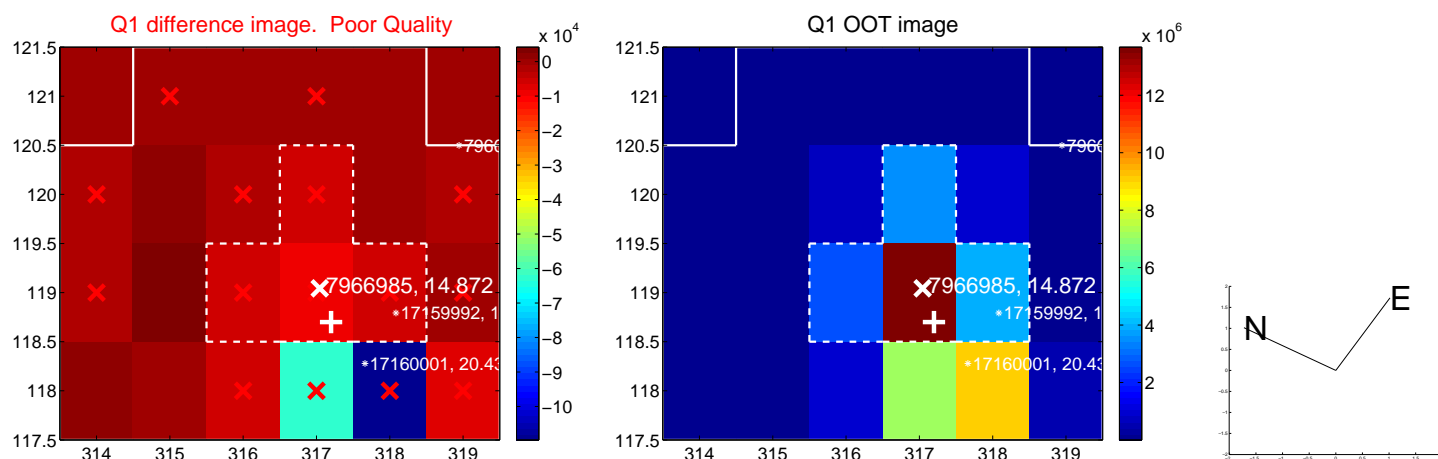


offset from photometric centroids

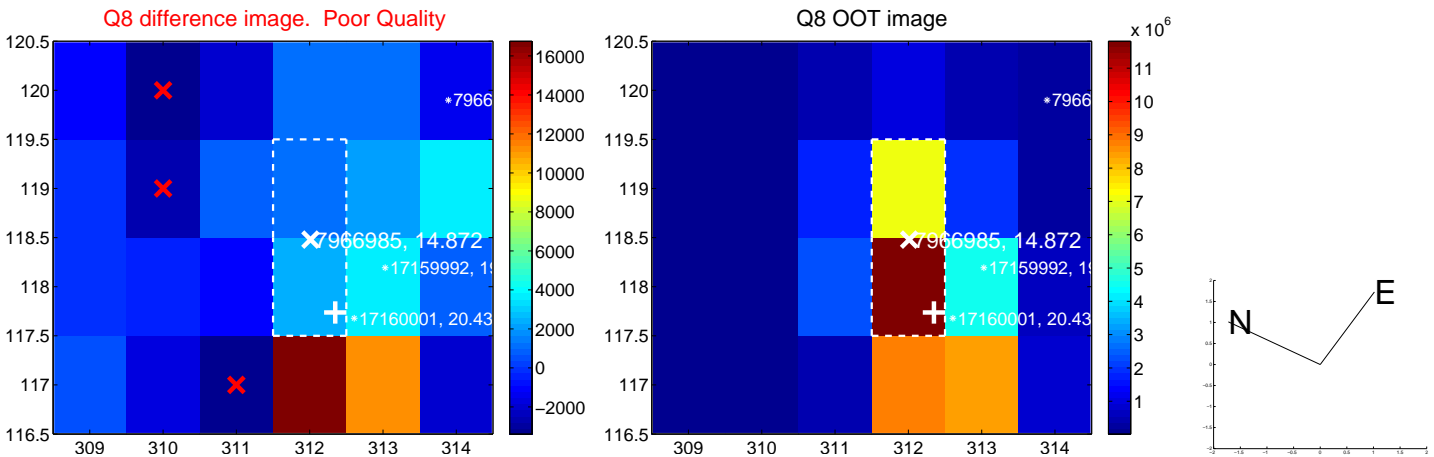
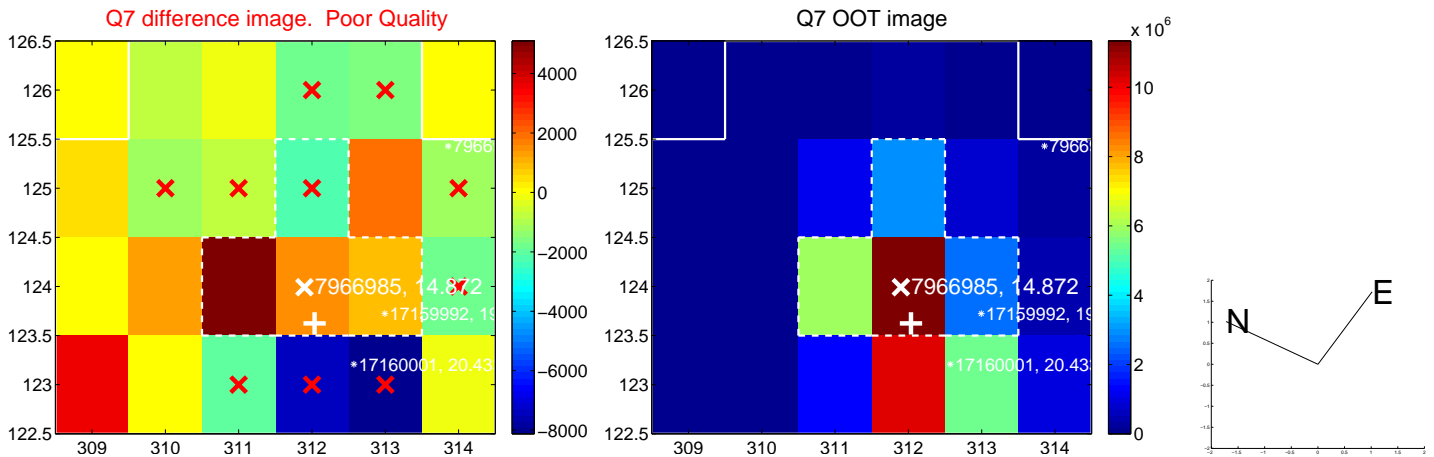
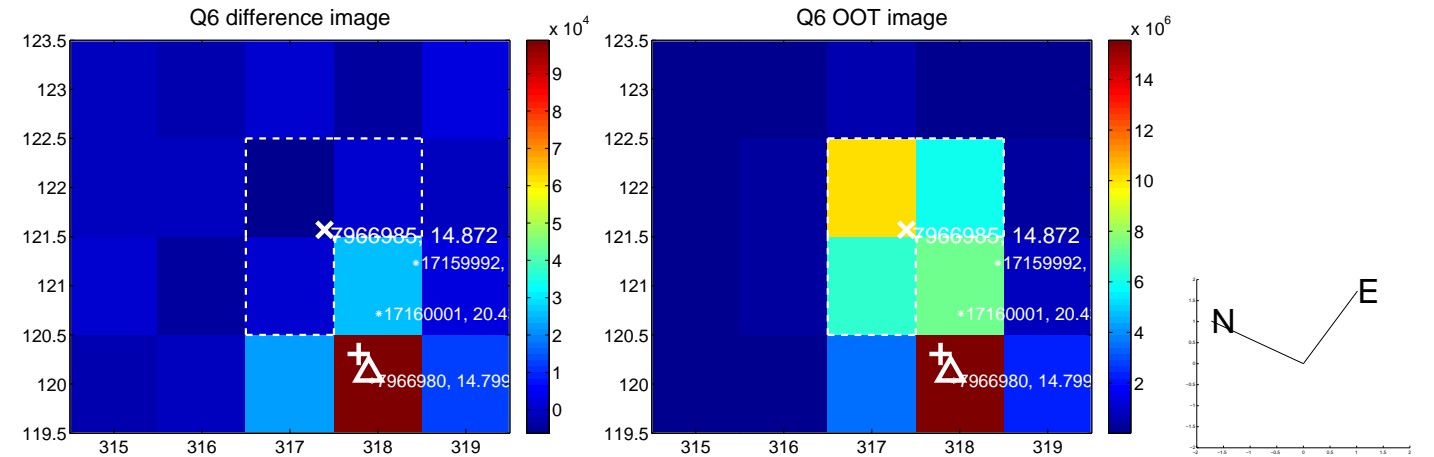
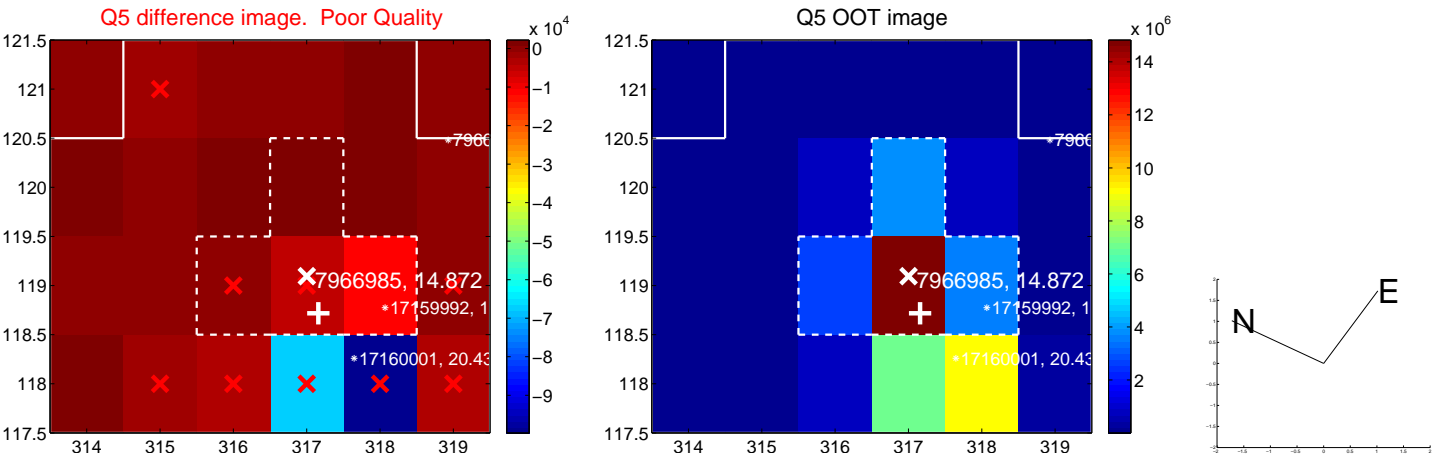


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

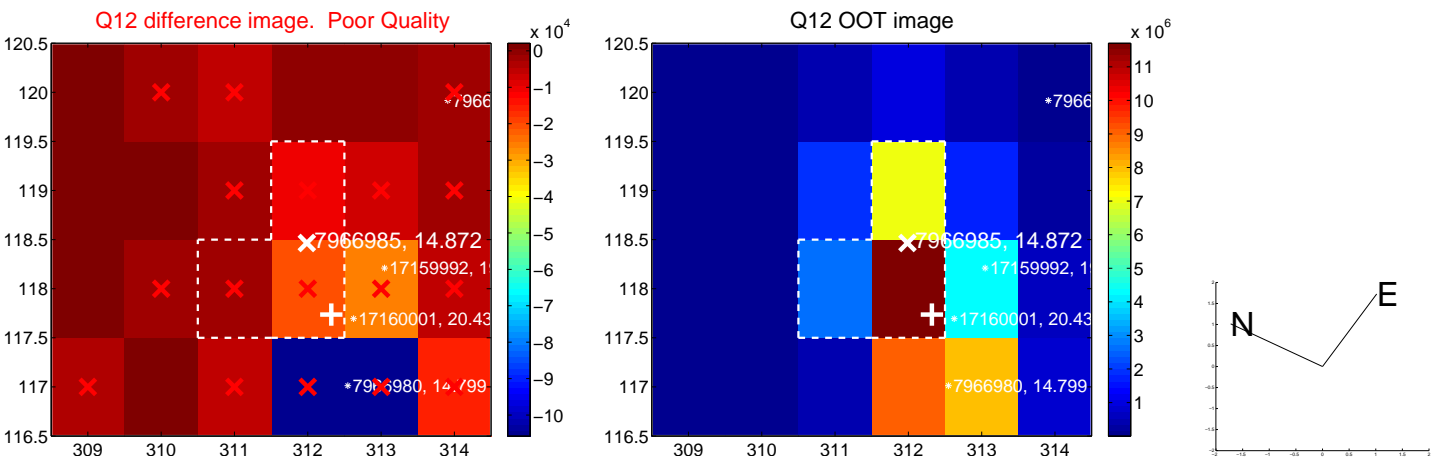
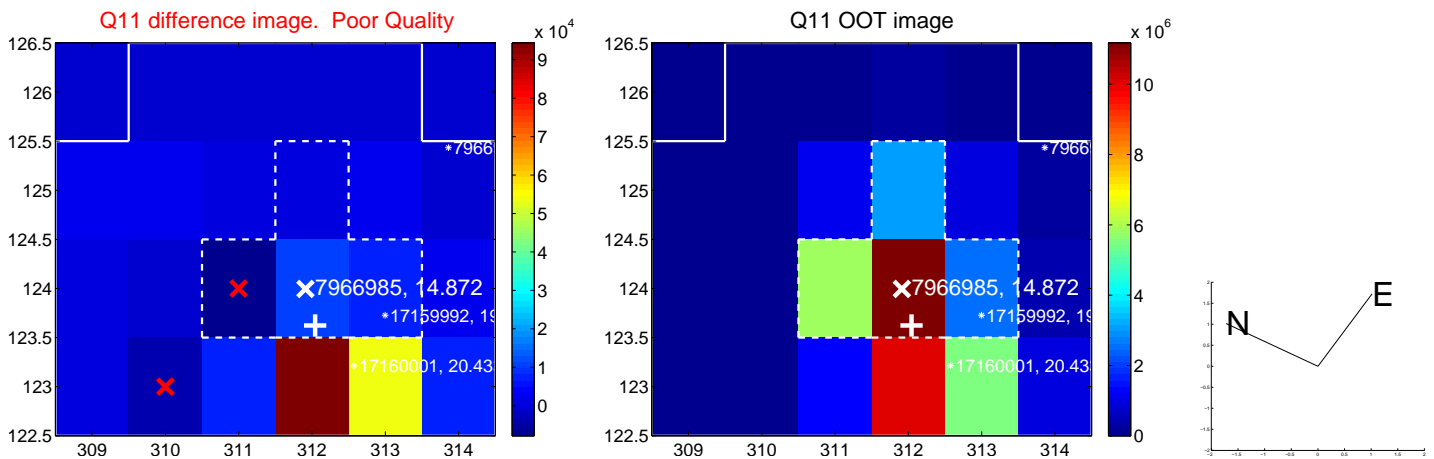
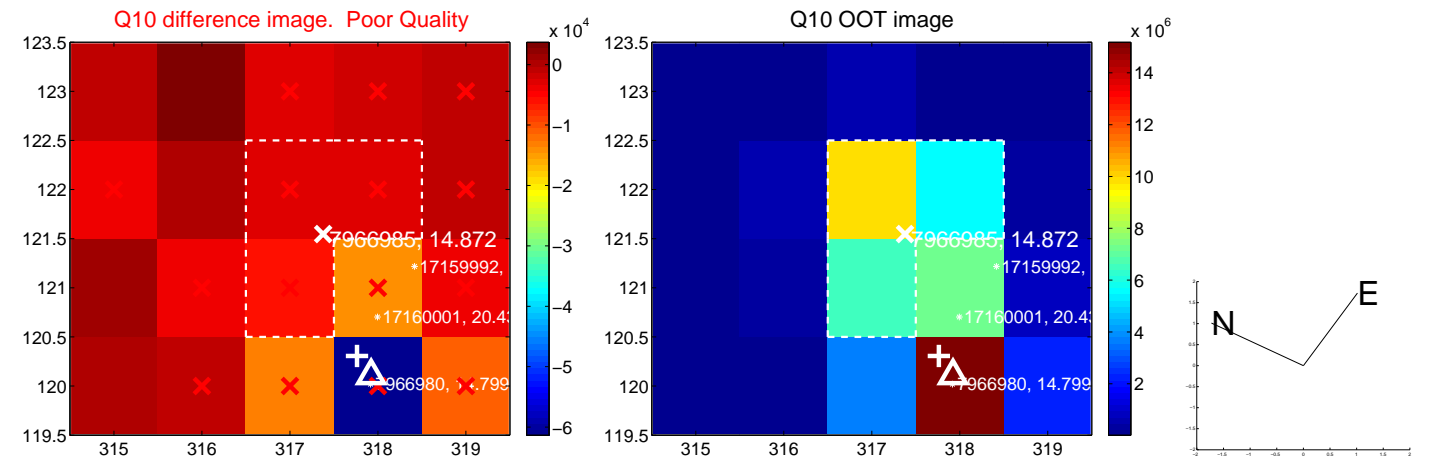
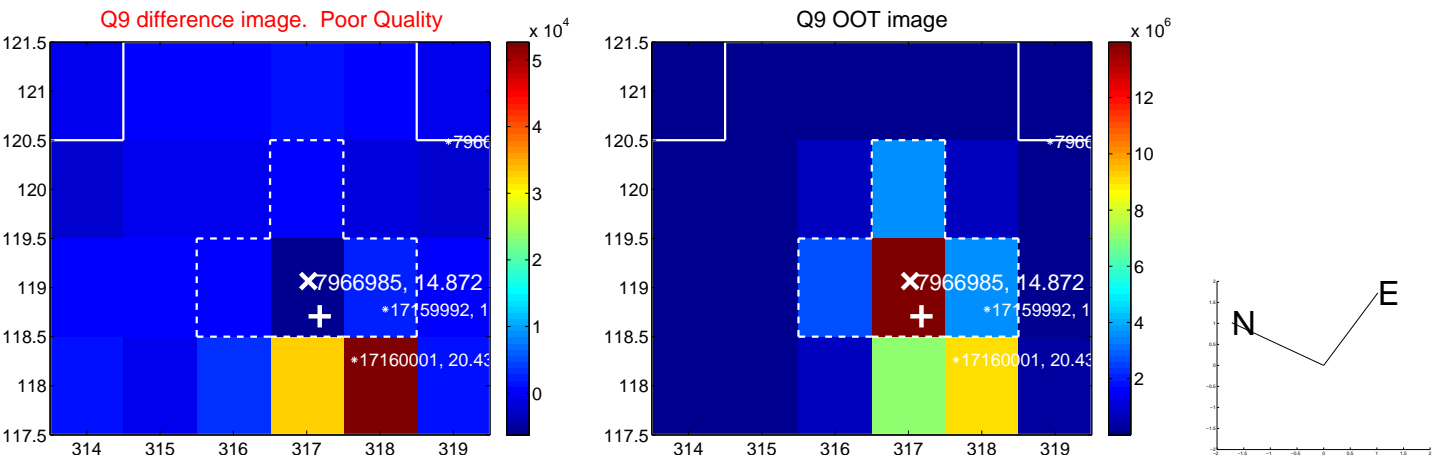
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



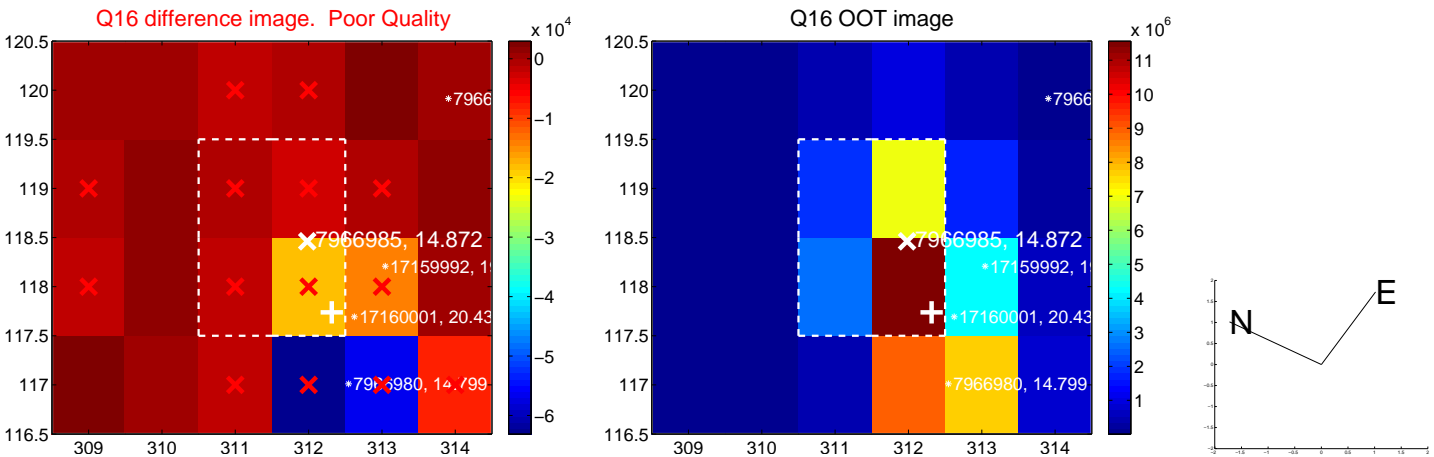
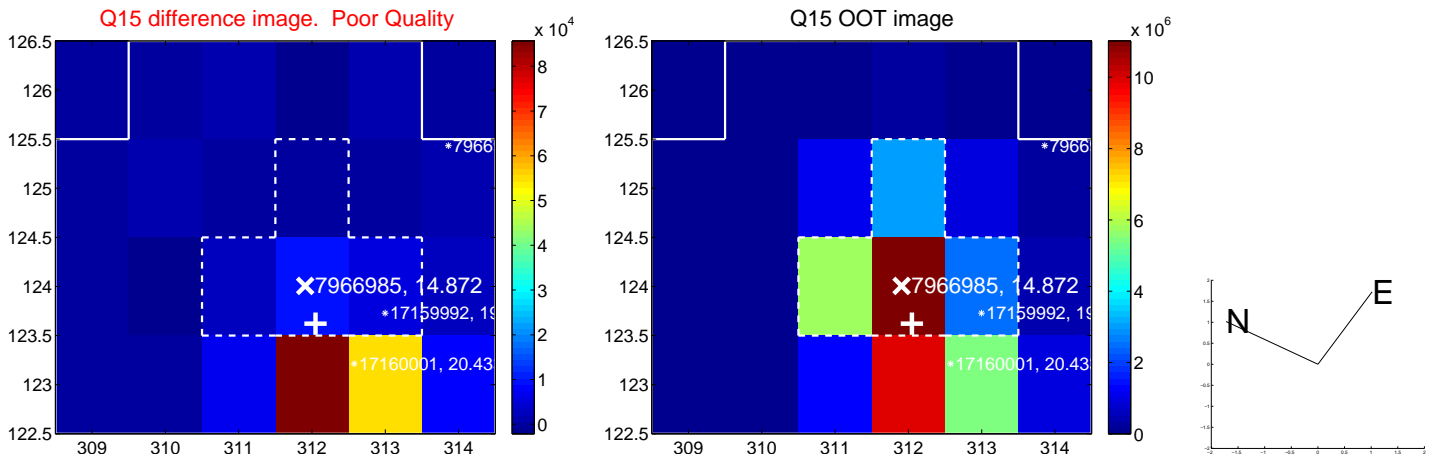
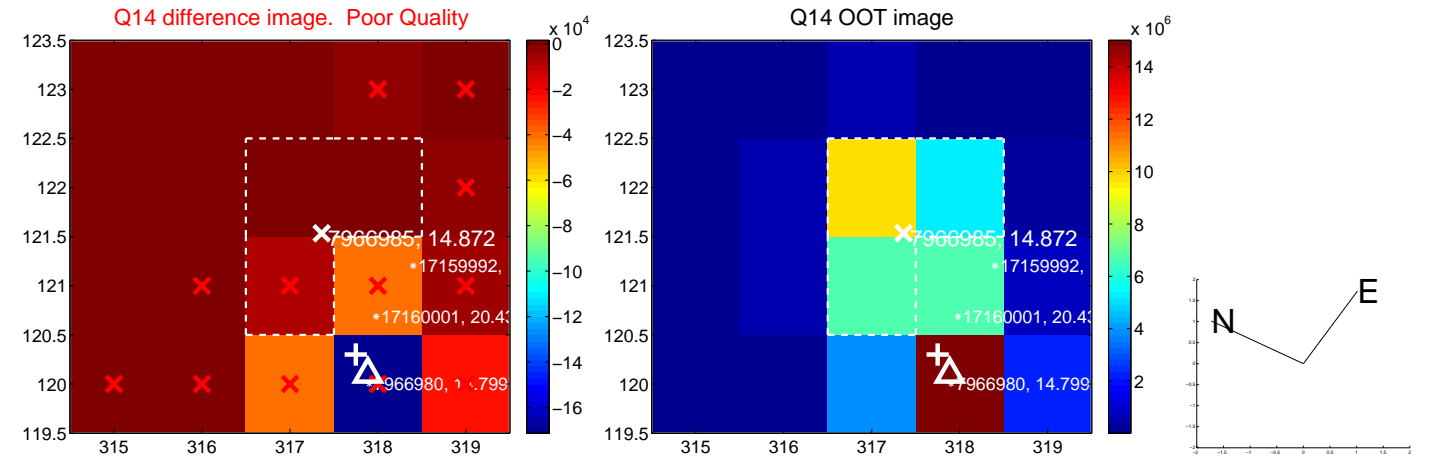
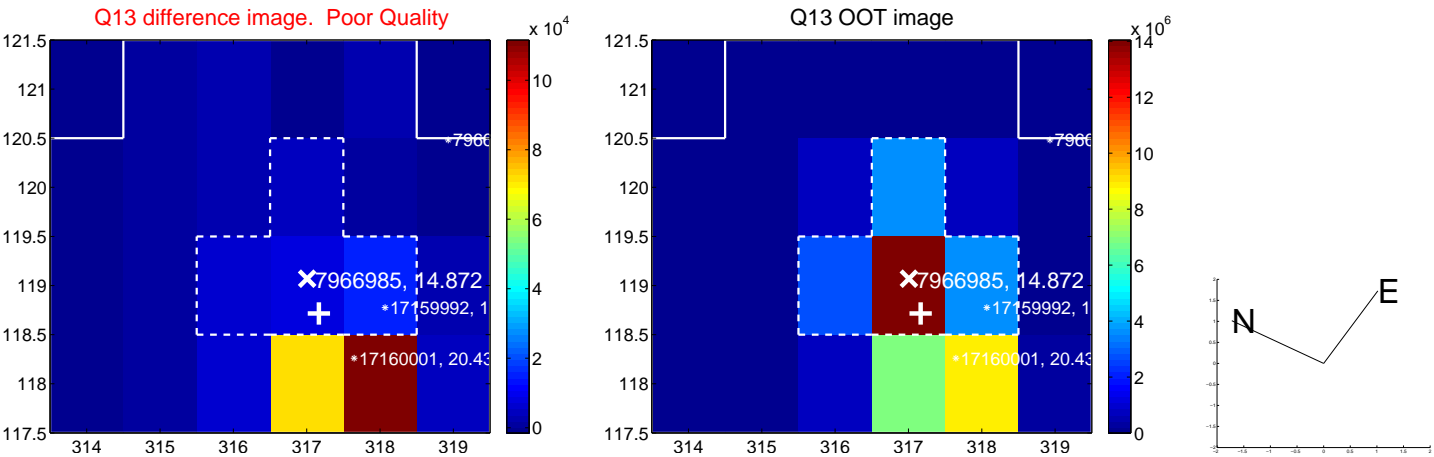
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



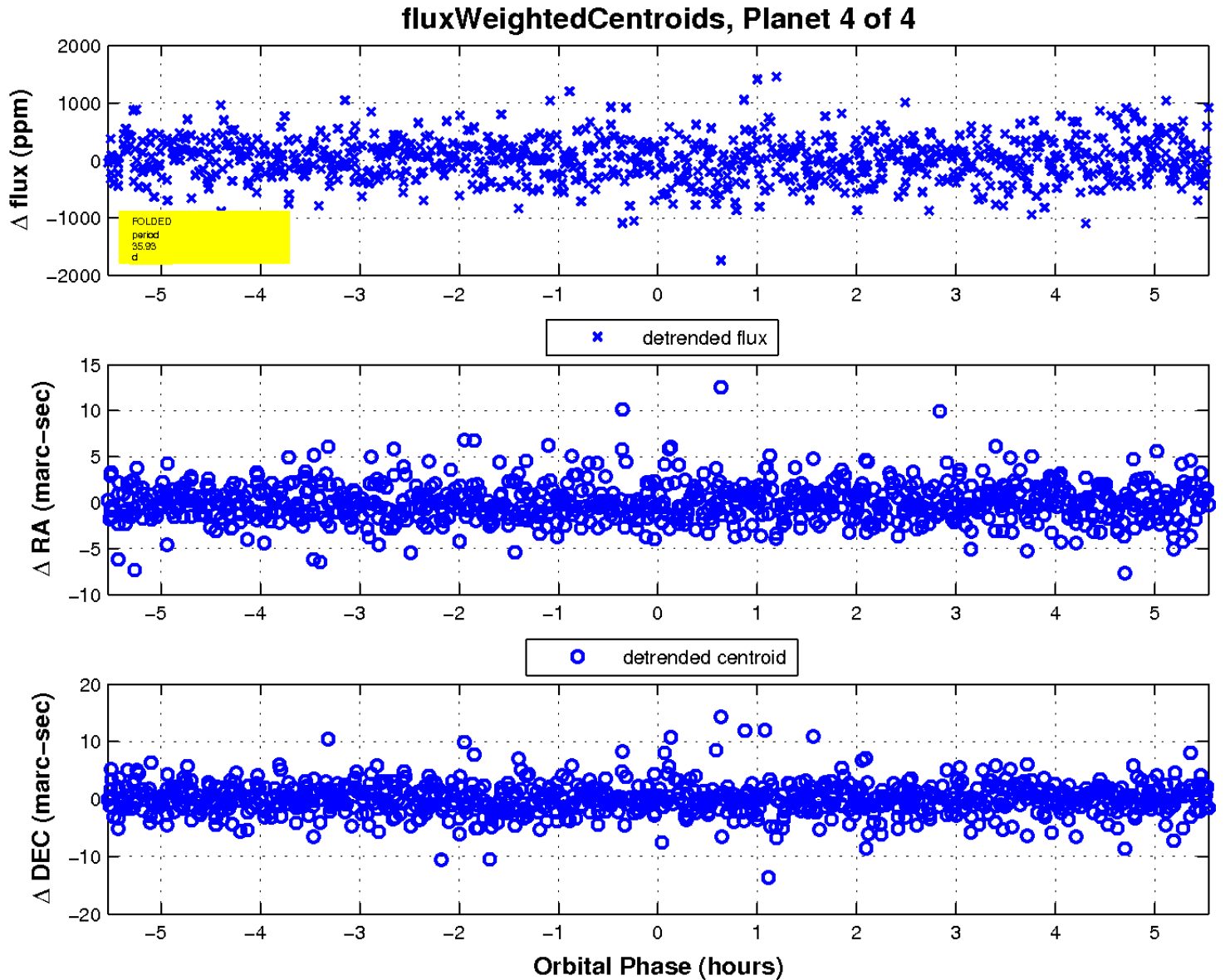
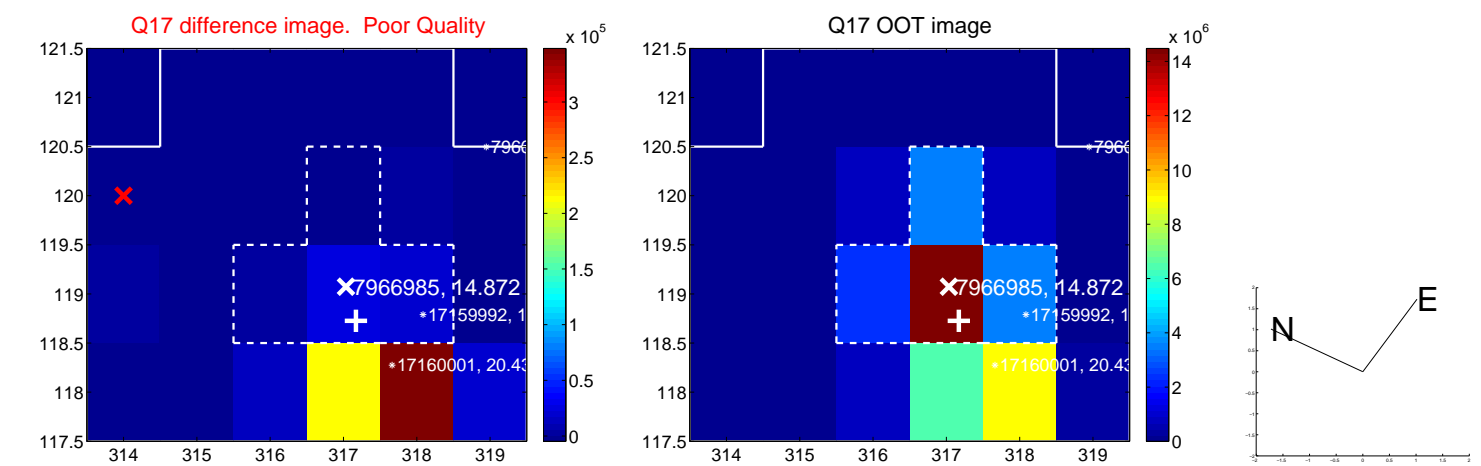
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

