

KIC 004075685

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})
004075685-01	OBS	No	0.608676	131.709104	182.2	4.591	11.1	15.4	3.51	7965	5.67	129170.32
004075685-02	OBS	No	5.285641	133.101124	3931.6	0.886	14.2	24.4	3.51	7965	24.20	7236.81
004075685-03	OBS	No	8.491717	134.500778	150.7	3.000	10.8	-1.0	3.51	7965	4.35	3846.06
004075685-04	OBS	No	2.438019	132.419353	2767.5	0.518	12.3	17.1	3.51	7965	19.66	20306.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004075685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004075685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004075685-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
004075685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

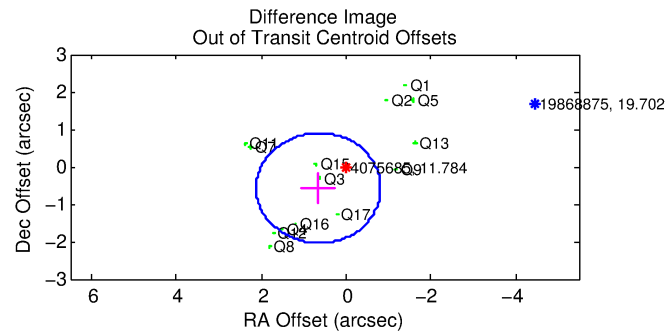
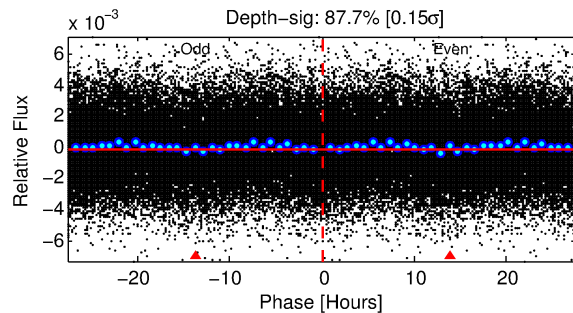
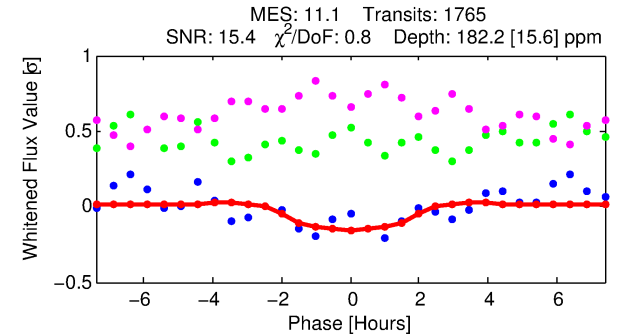
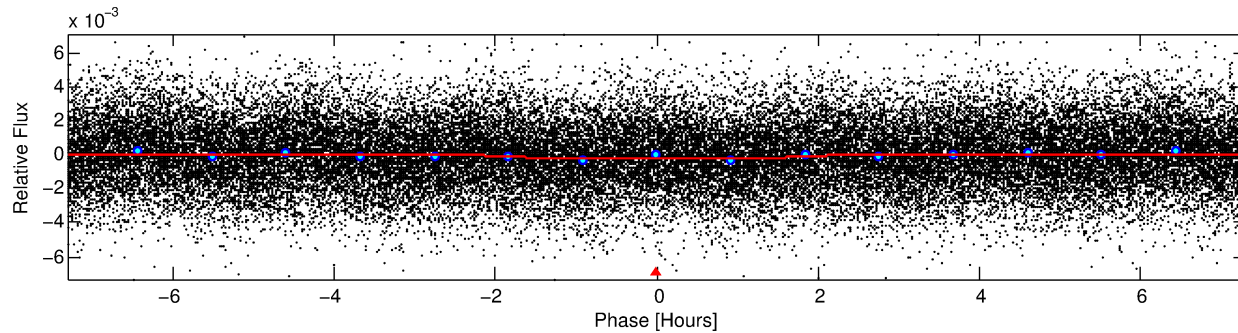
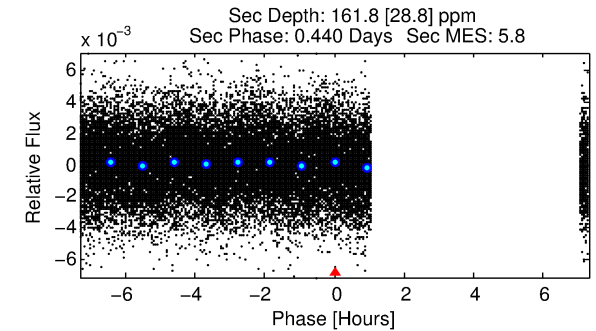
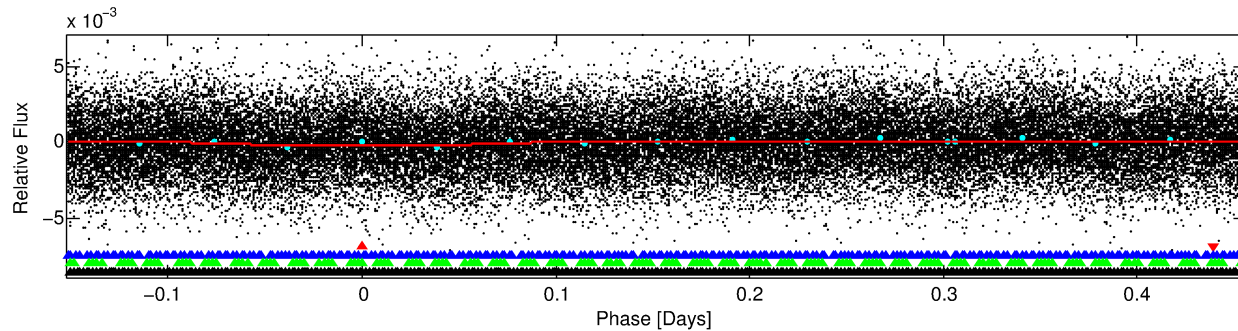
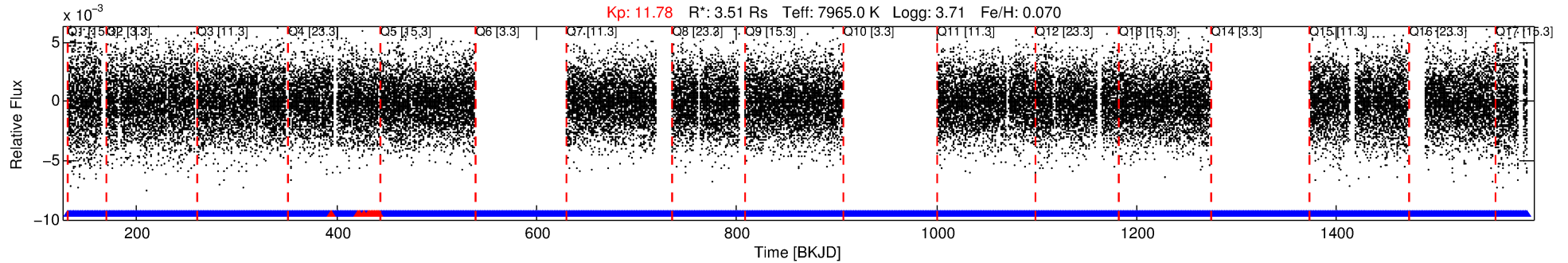
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004075685-01

No Significant Match Found

DV One-Page Summary

KIC: 4075685 Candidate: 1 of 4 Period: 0.609 d



DV Fit Results:

Period = 0.60868 [0.00001] d
Epoch = 131.7091 [0.0039] BKJD
Rp/R* = 0.0148 [0.0022]
a/R* = 1.05 [0.08]
b = 0.93 [0.13]
Seff = 129170.32 [98831.09]
Teq = 4834 [925] K
Rp = 5.67 [2.98] Re
a = 0.0185 [0.0088] AU
Ag = 0.95 [0.78] [-0.06σ]
Teffp = 7384 [712] K [2.18σ]

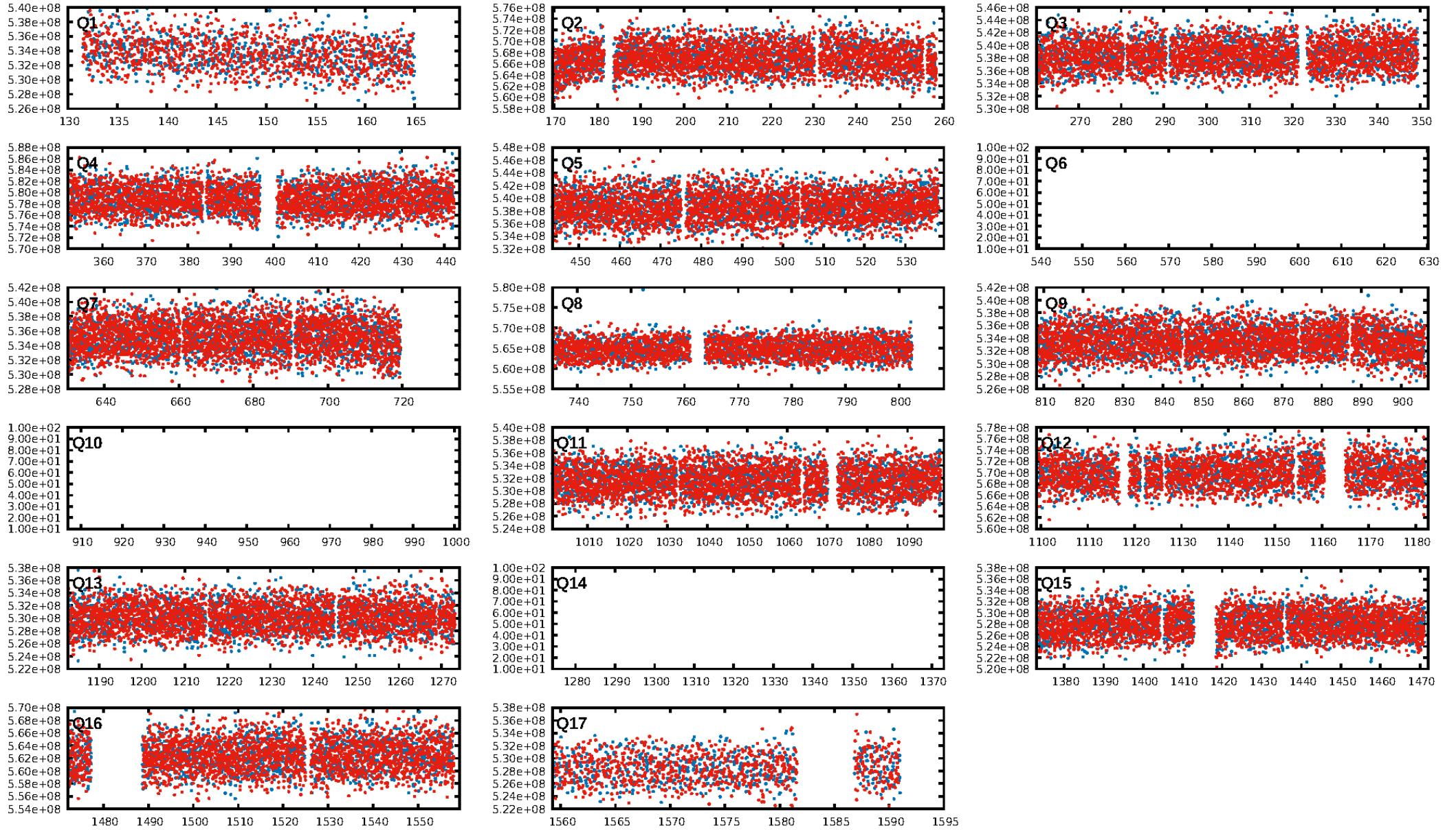
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [9.50σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.15e-05
RollingBand-fgt: 0.99 [1648/1666]
GhostDiagnostic-chr: 1.128
Centroid-sig: N/A
Centroid-so: 0.361 arcsec [6.63σ]
OotOffset-rm: 0.864 arcsec [1.76σ]
KicOffset-rm: 0.678 arcsec [1.38σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [14/14]

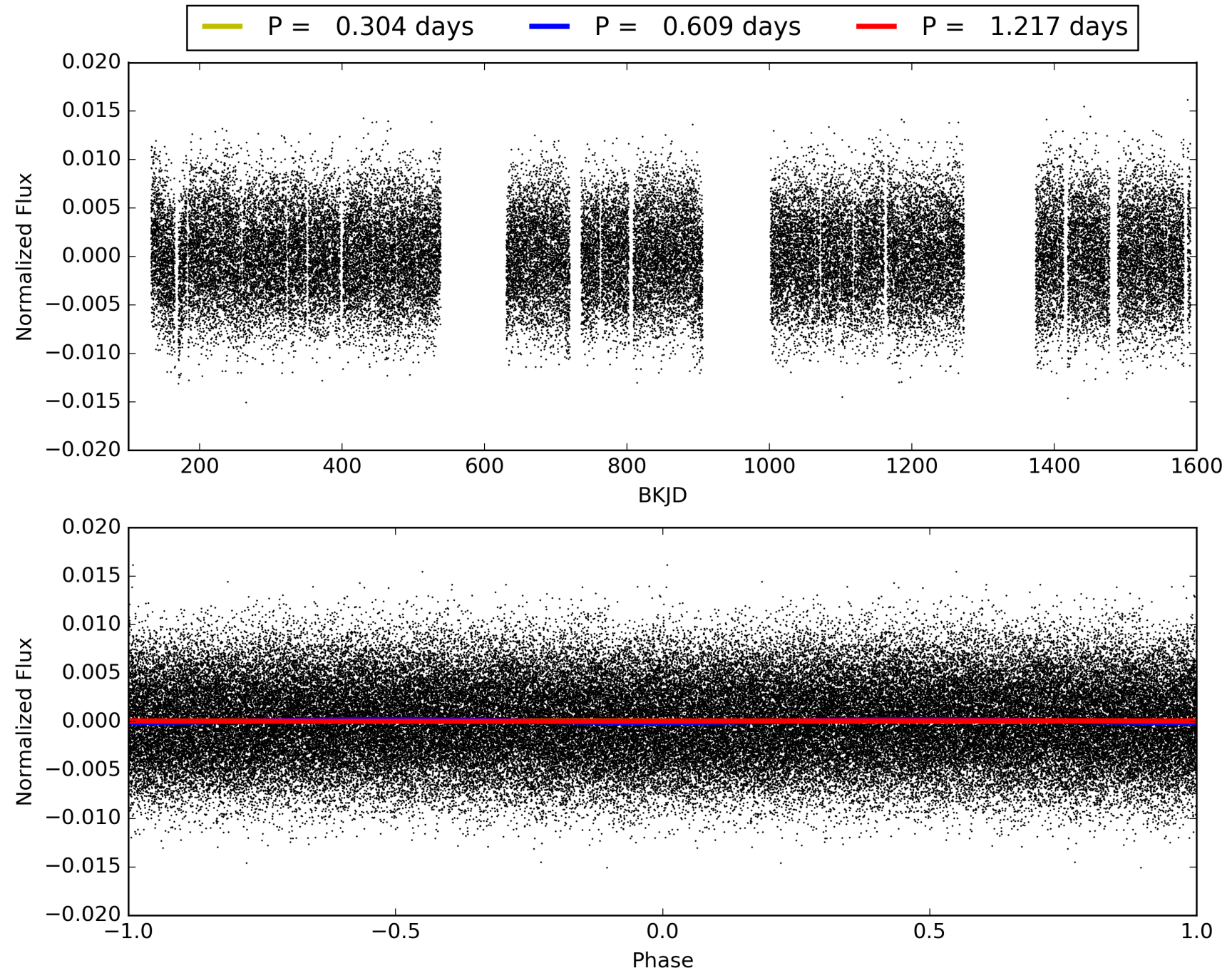
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:04:24 Z

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

TCE 004075685-01, PDC Light Curves

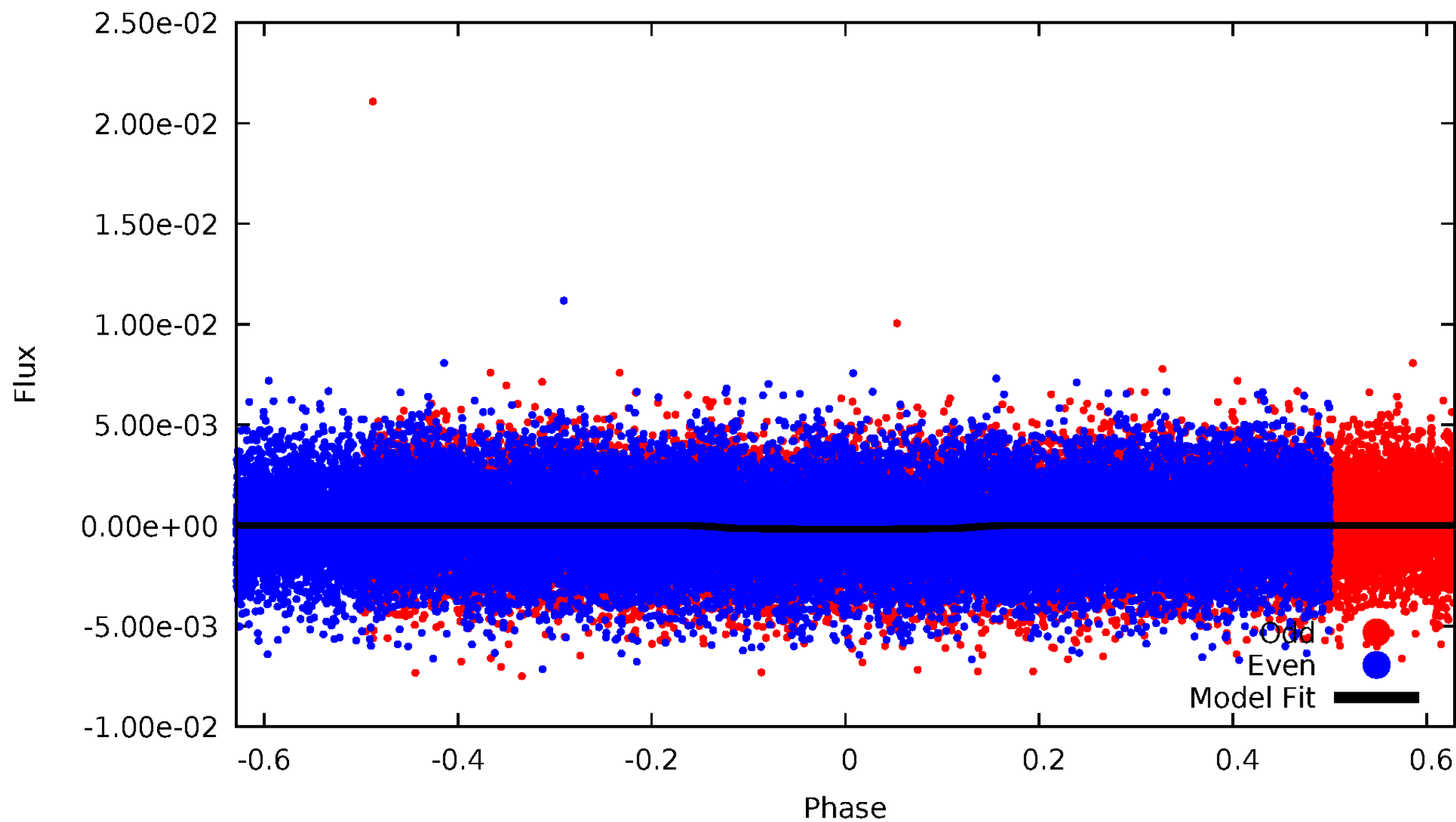


TCE 004075685-01



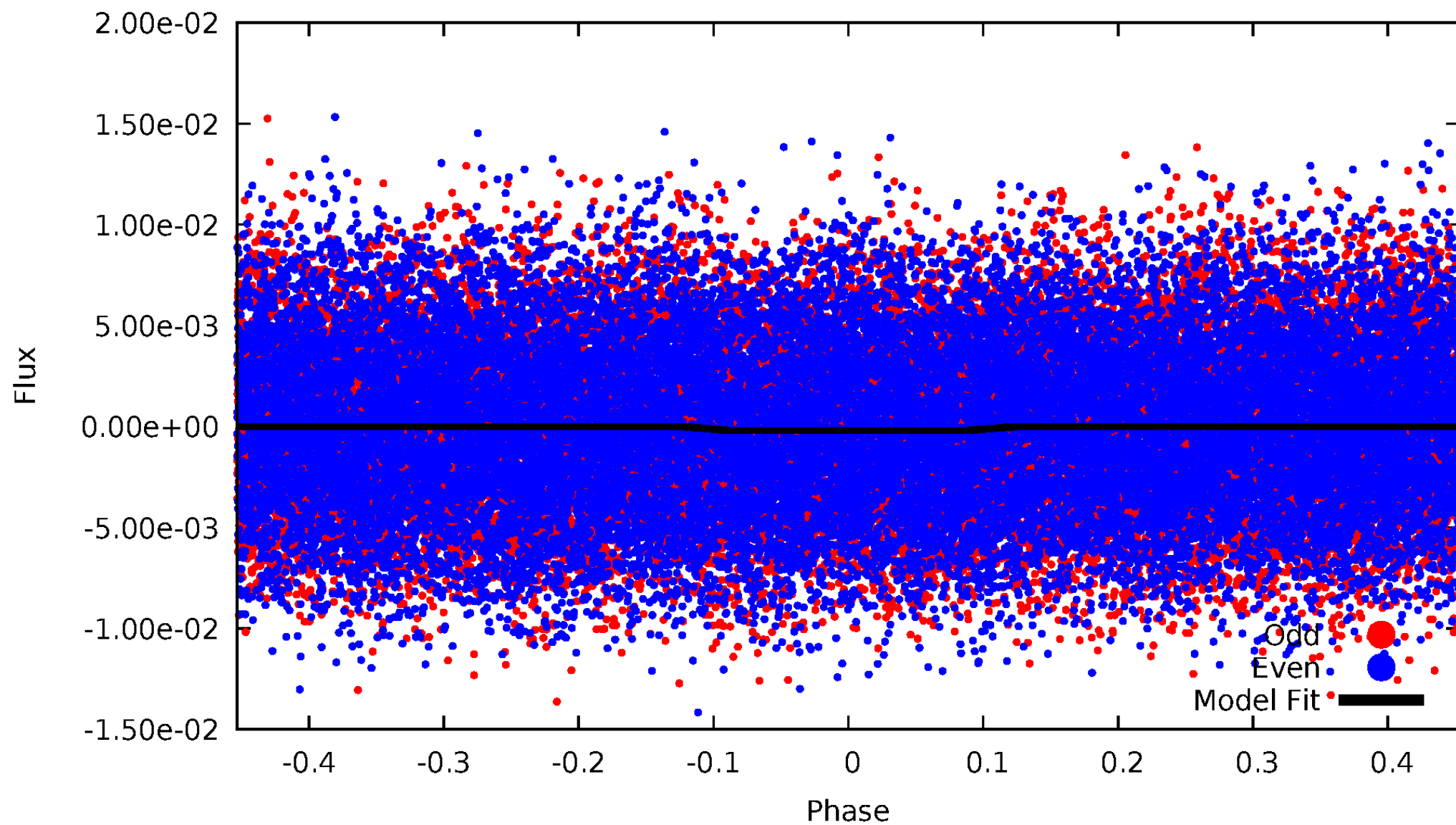
DV Odd/Even

TCE 004075685-01

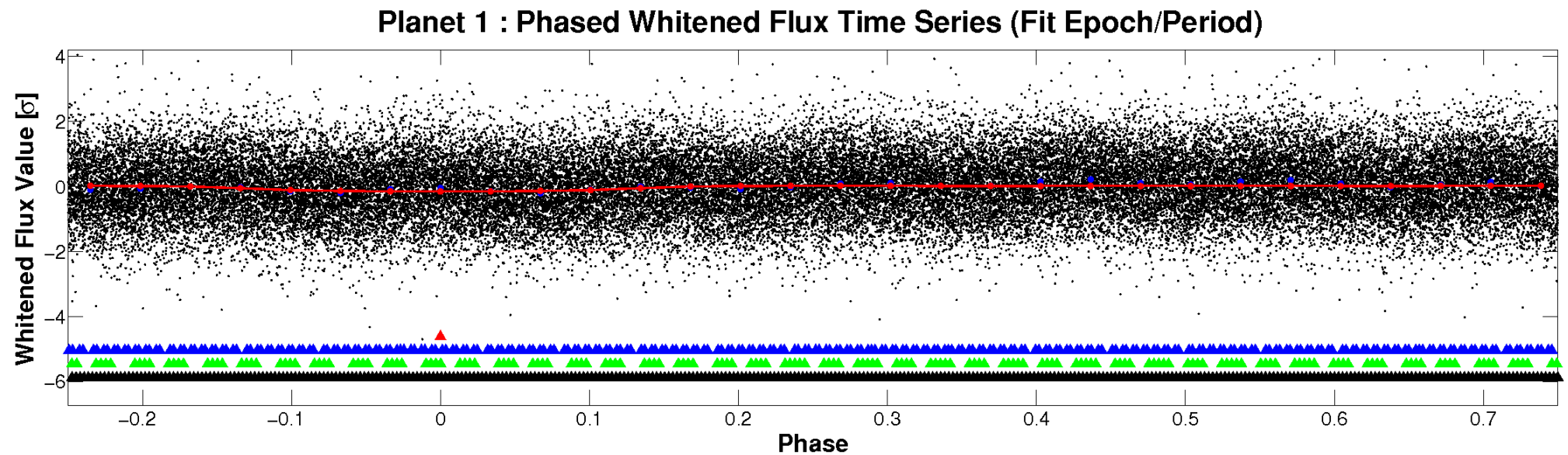
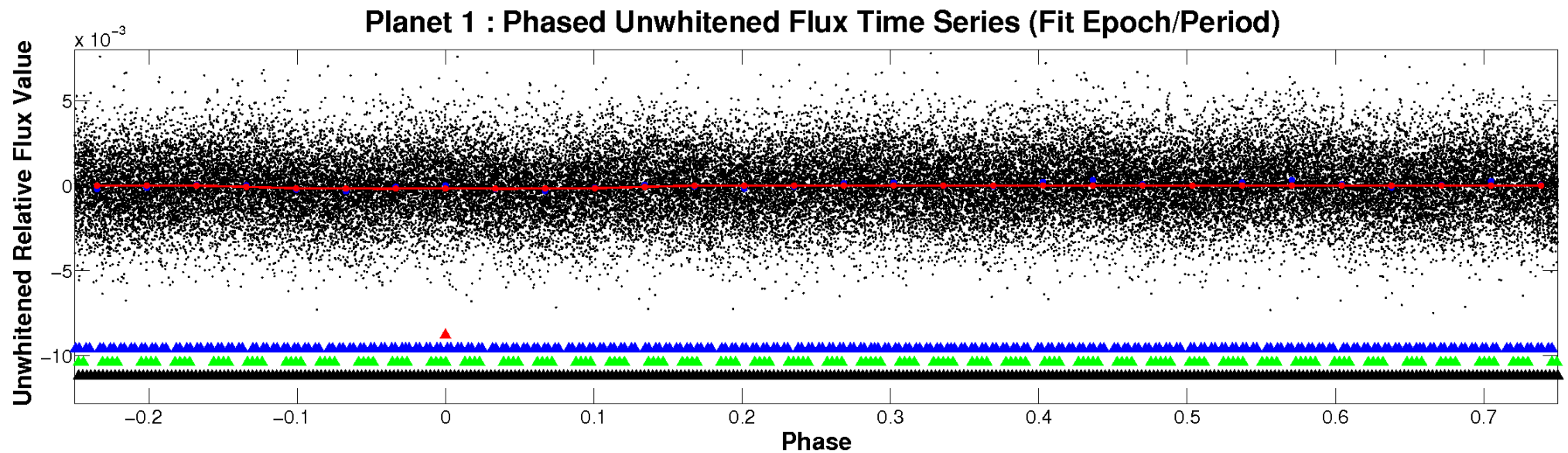


ALT Odd/Even

TCE 004075685-01

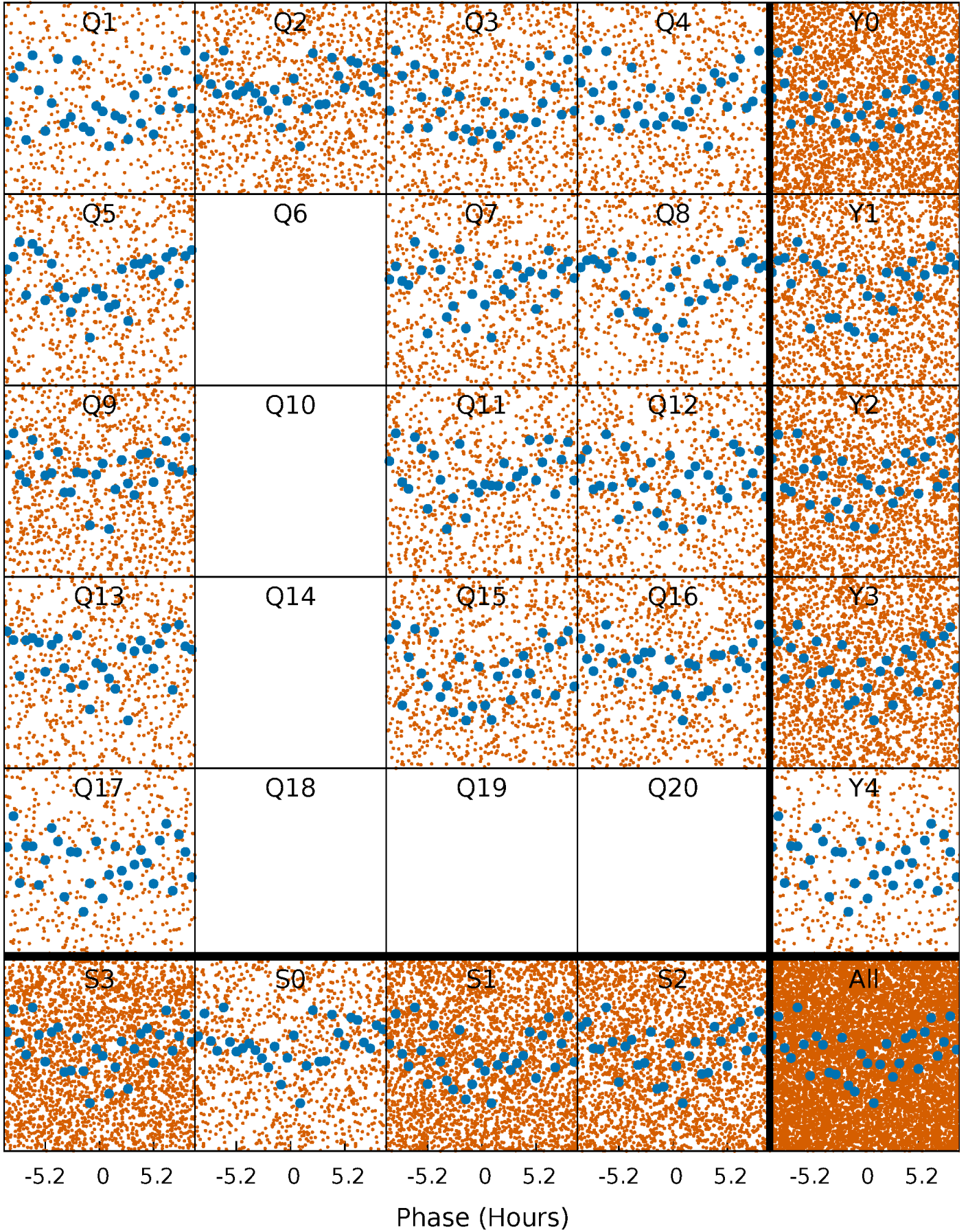


Non-Whitened Vs. Whitened Light Curve



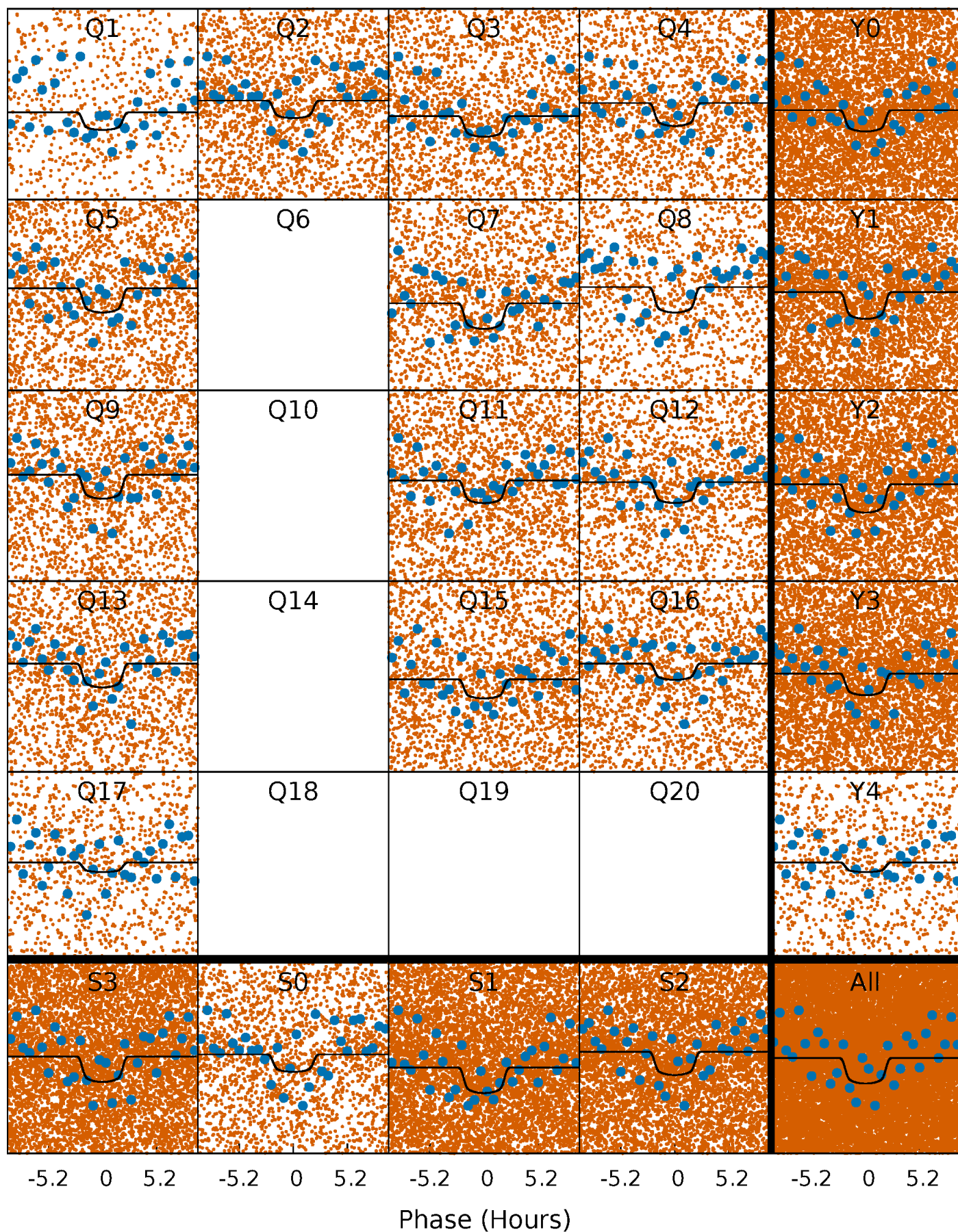
PDC Quarter-Phased Transit Curves

TCE 004075685-01 P= 0.608676 Days $T_0=131.709104$ (BKJD)



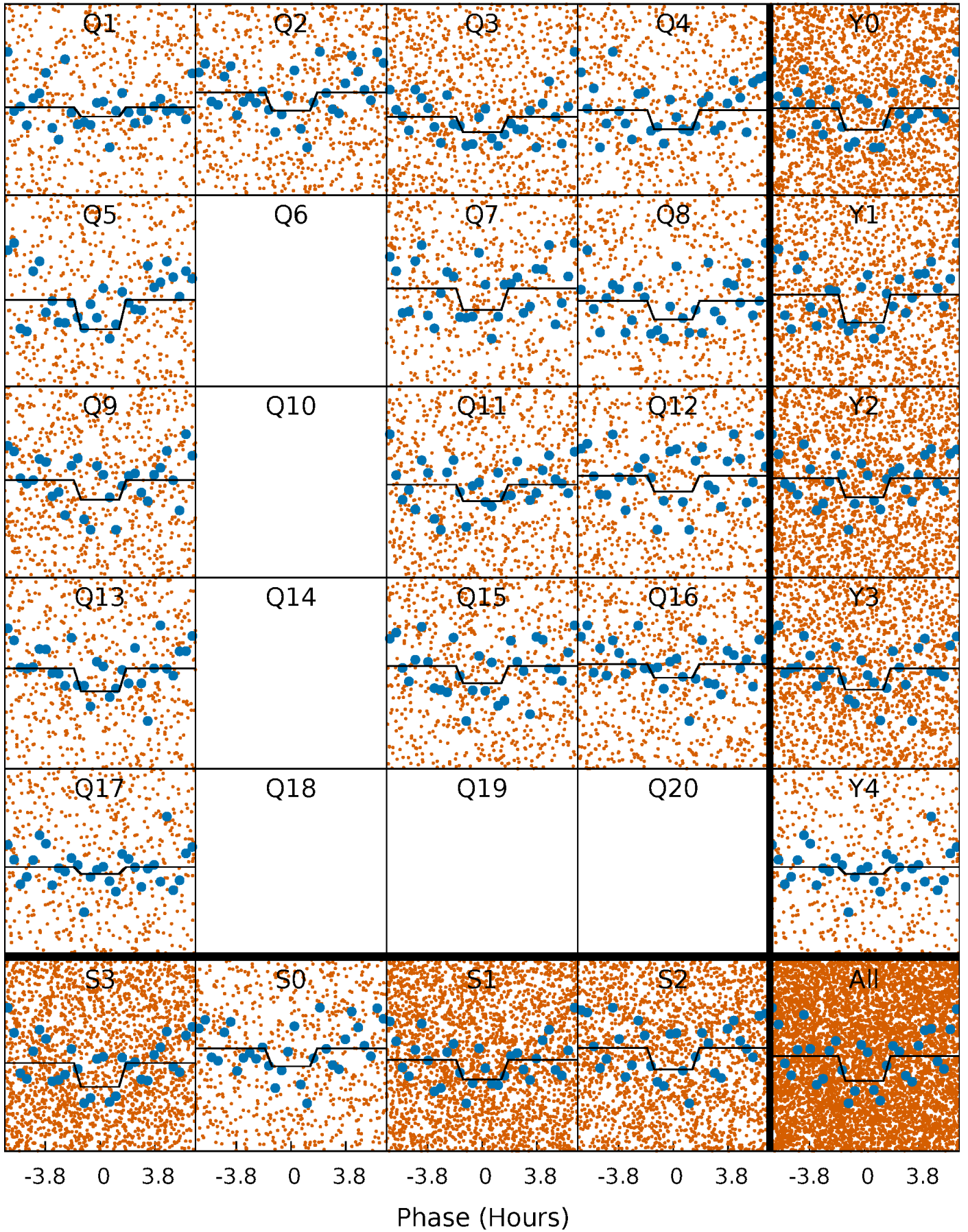
DV Quarter-Phased Transit Curves

TCE 004075685-01 P= 0.608676 Days $T_0=131.709104$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

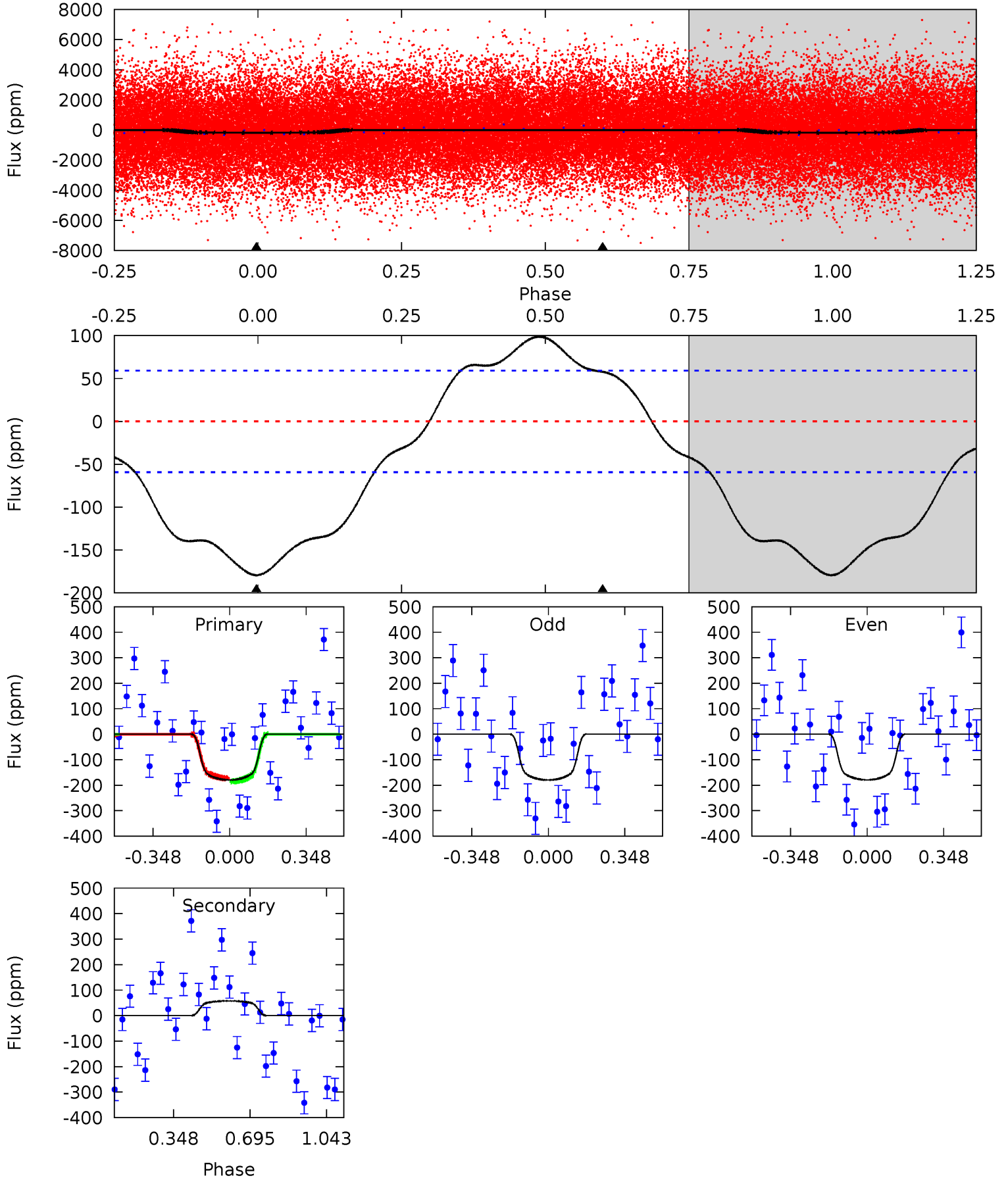
TCE 004075685-01 P= 0.608667 Days $T_0=131.715020$ (BKJD)



DV Model-Shift Uniqueness Test

004075685-01, P = 0.608676 Days, E = 131.100428 Days

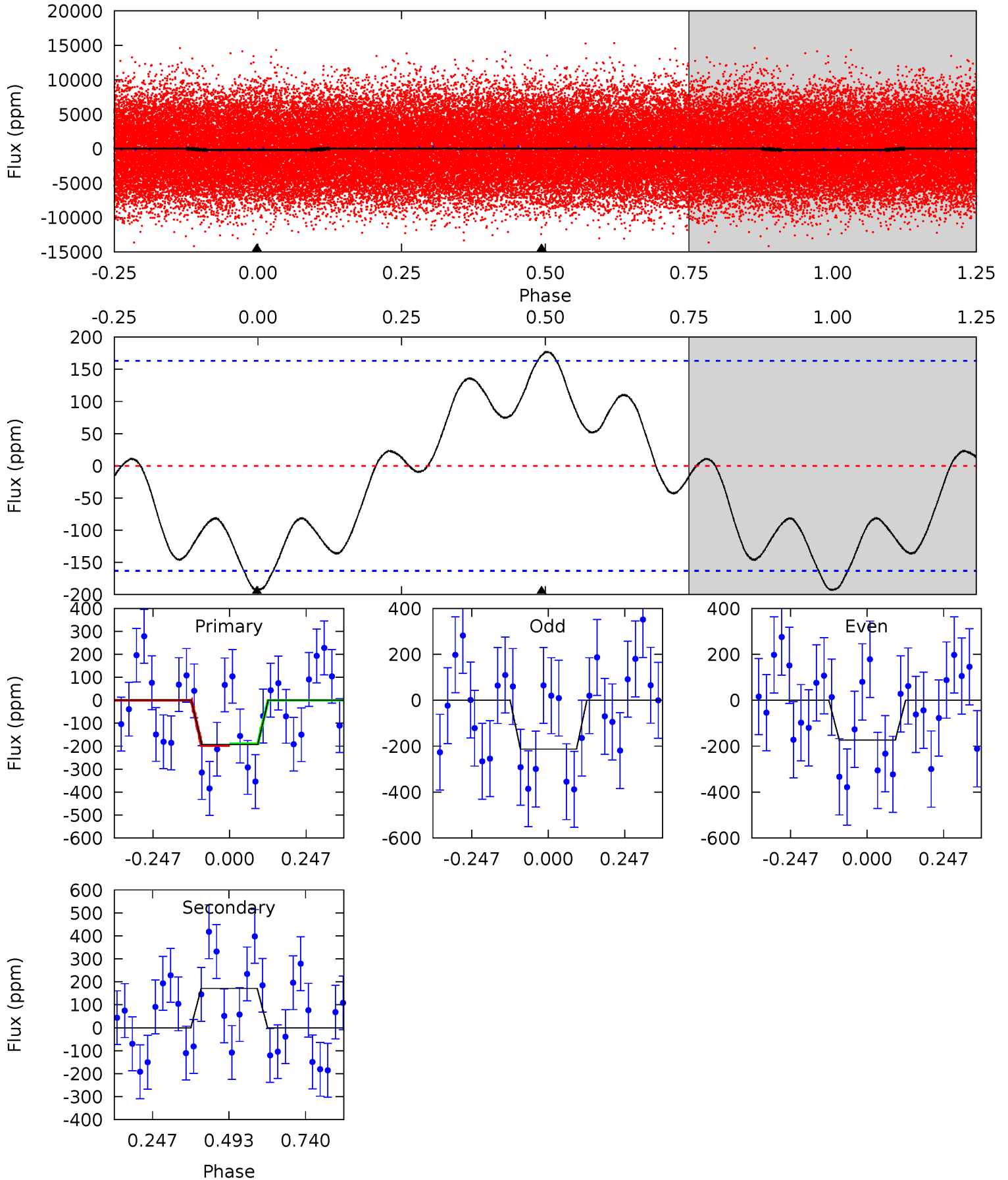
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	-4.19	0	0	4.30	0.94	2.10	13.0	13.0	-4.19	-4.19	0.02	0.98	0.36	0.43



Alt Model-Shift Uniqueness Test

004075685-01, P = 0.608667 Days, E = 131.106353 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.17	-4.59	0	0	4.37	1.16	0.59	5.17	5.17	-4.59	-4.59	0.53	1.07	0.48	0.09



Stellar Parameters For KIC 004075685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7965^{+221}_{-359}	$3.708^{+0.432}_{-0.135}$	$0.070^{+0.250}_{-0.400}$	$3.508^{+0.885}_{-1.770}$	$2.294^{+0.298}_{-0.645}$	$0.075^{+0.321}_{-0.030}$
	+3%/-5%	+12%/-4%	+357%/-571%	+25%/-50%	+13%/-28%	+429%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004075685-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	58 ± 14	$5.33^{+1.29}_{-1.47}$	6542^{+561}_{-830}	-6431^{+520}_{-475}	$-0.377^{+0.148}_{-0.306}$
Alt.	171 ± 37	$4.96^{+1.24}_{-1.31}$	6587^{+544}_{-810}	-8170^{+800}_{-992}	$-1.300^{+0.506}_{-1.088}$

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

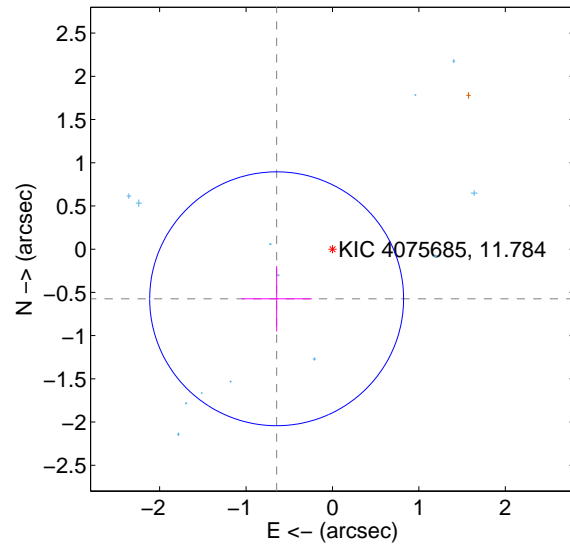
Supplemental centroid analysis for 004075685-01. **Kepler magnitude: 11.78.** Transit SNR 15.44

There are 13 quarters with good PRF difference image offsets

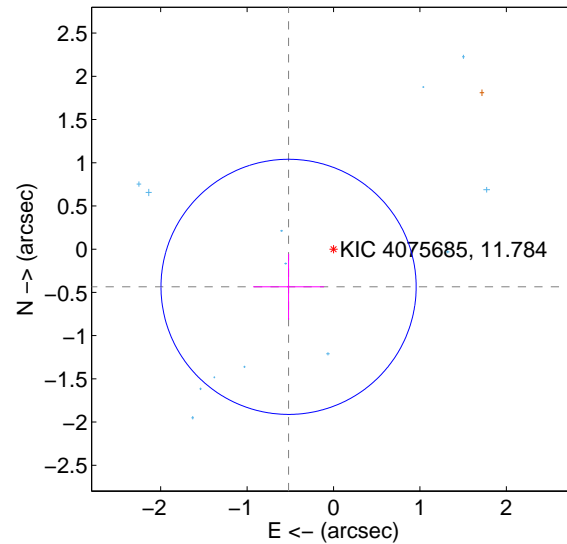
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.864 ± 0.490	1.76	0.646 ± 0.407	-0.574 ± 0.378
PRF-fit source offset from KIC position	0.678 ± 0.492	1.38	0.520 ± 0.411	-0.436 ± 0.380
photometric centroid source offset	0.36 ± 0.05	6.63	-0.22 ± 0.05	0.29 ± 0.05

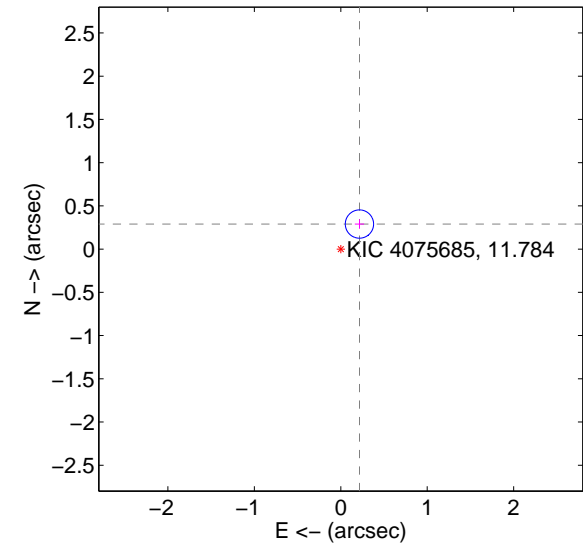
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

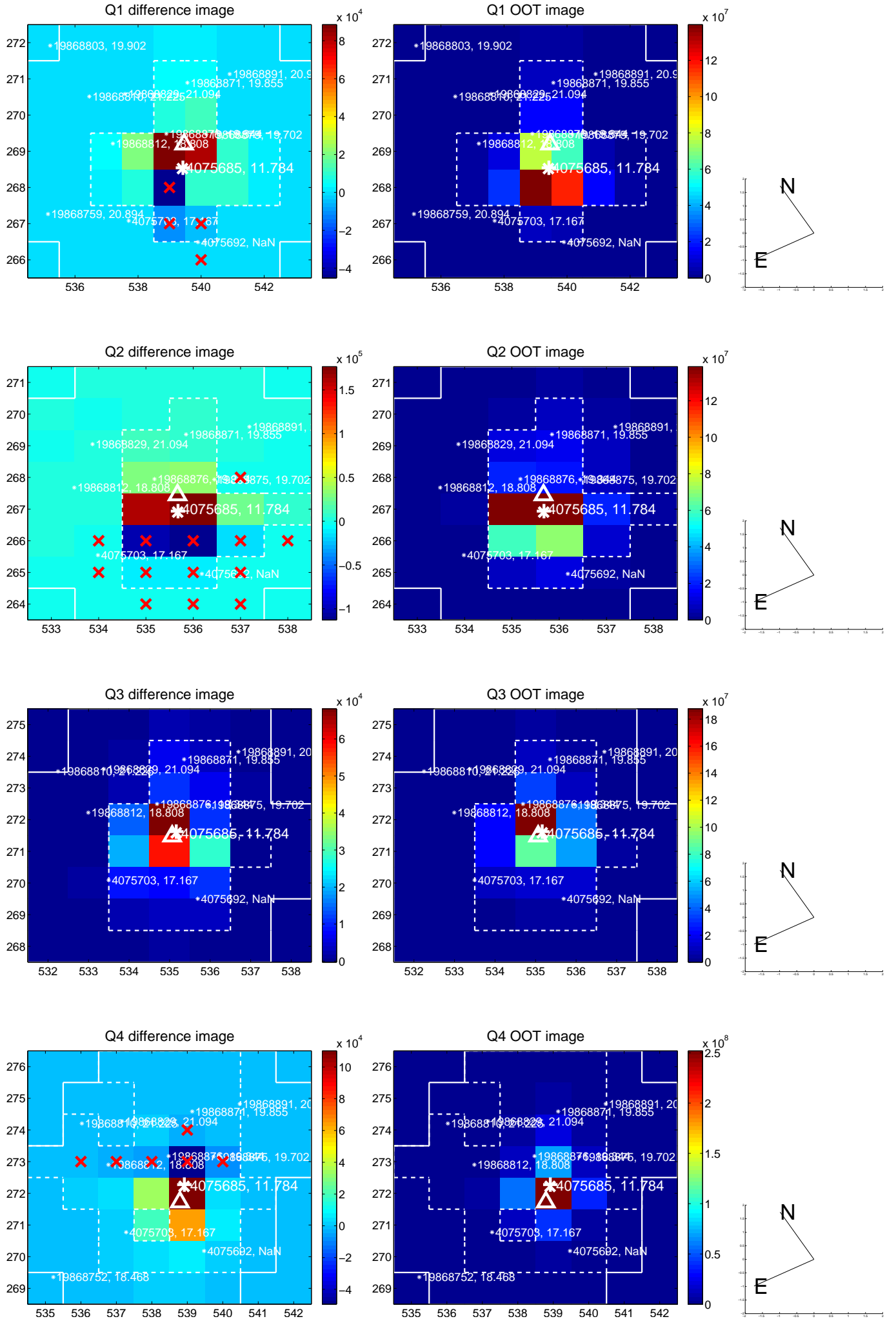


offset from photometric centroids

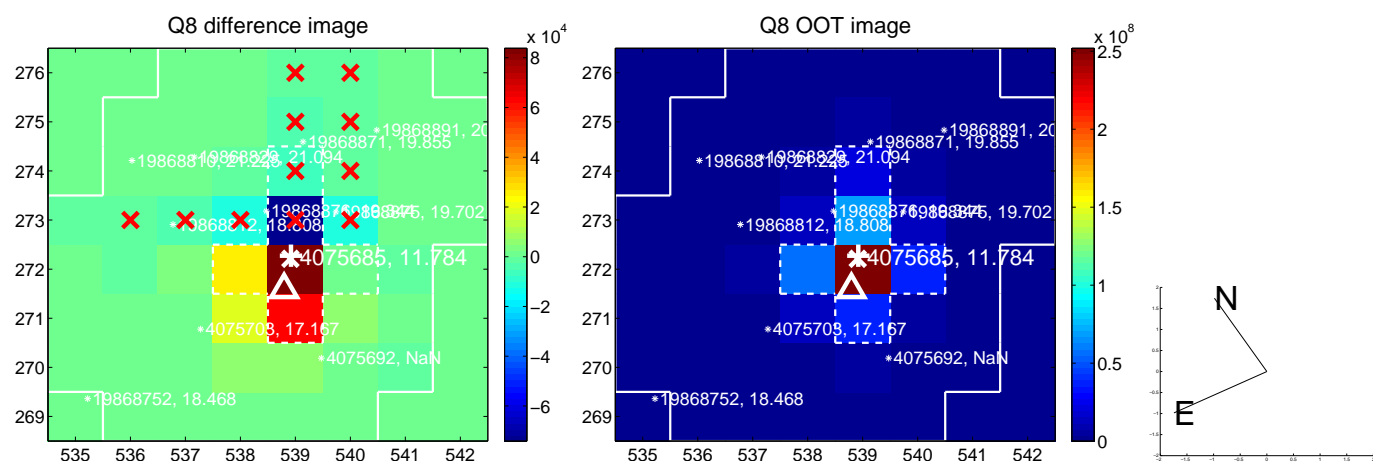
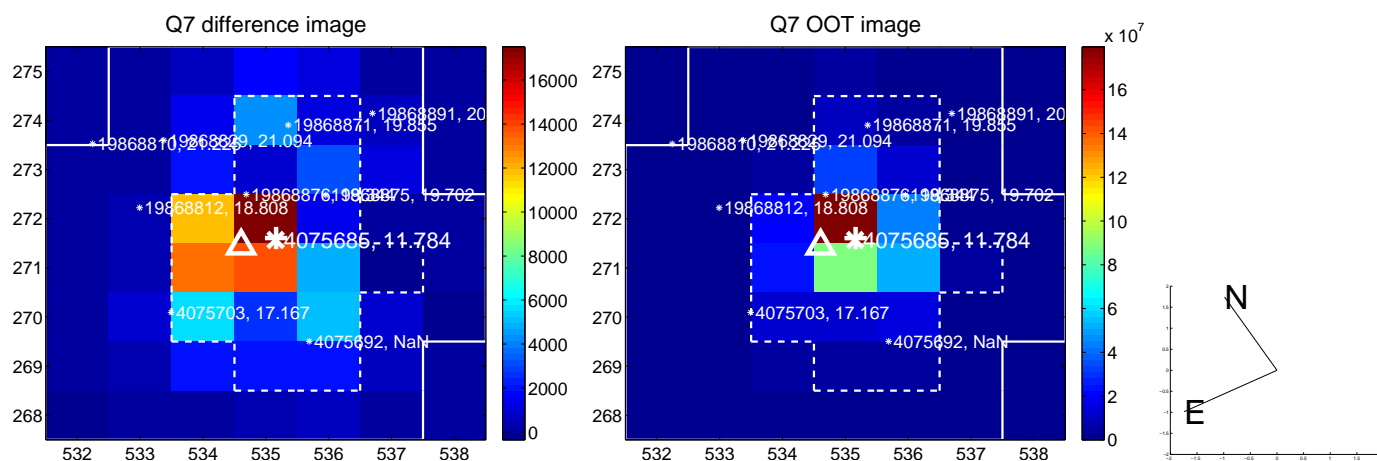
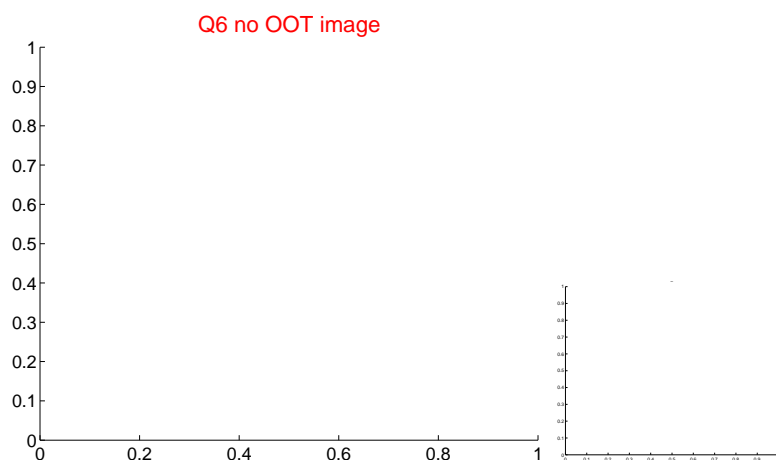
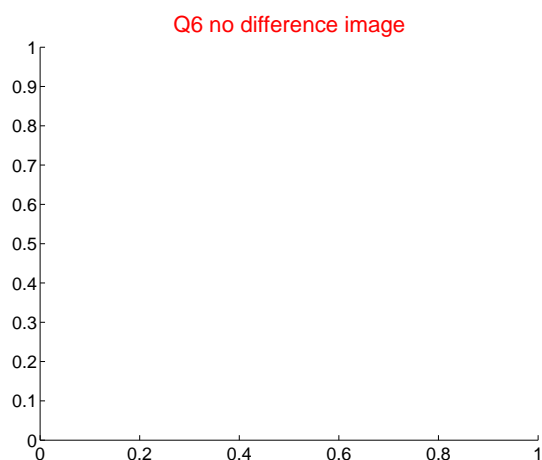
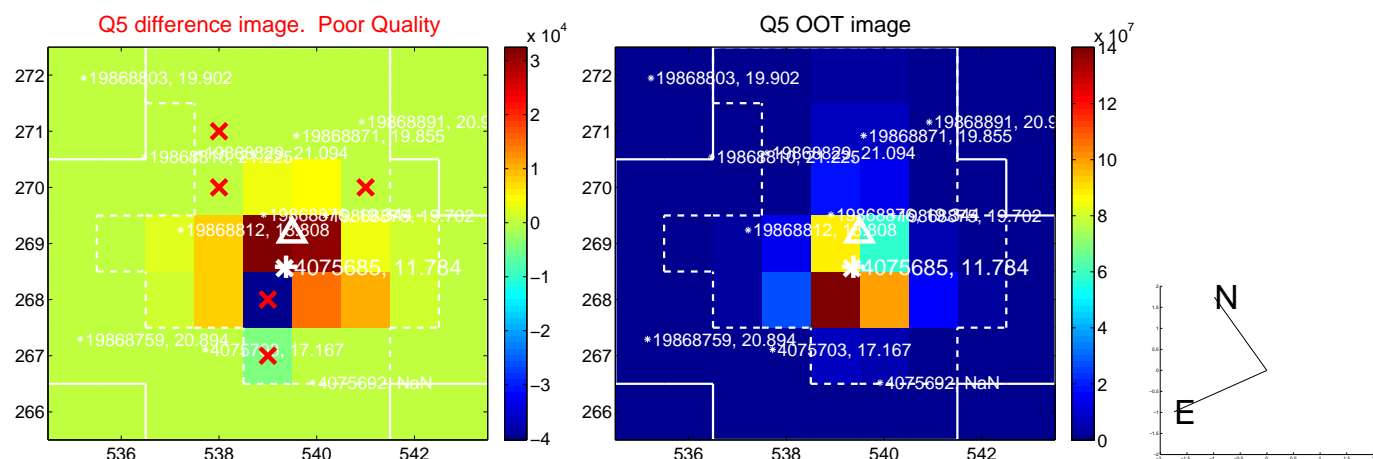


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

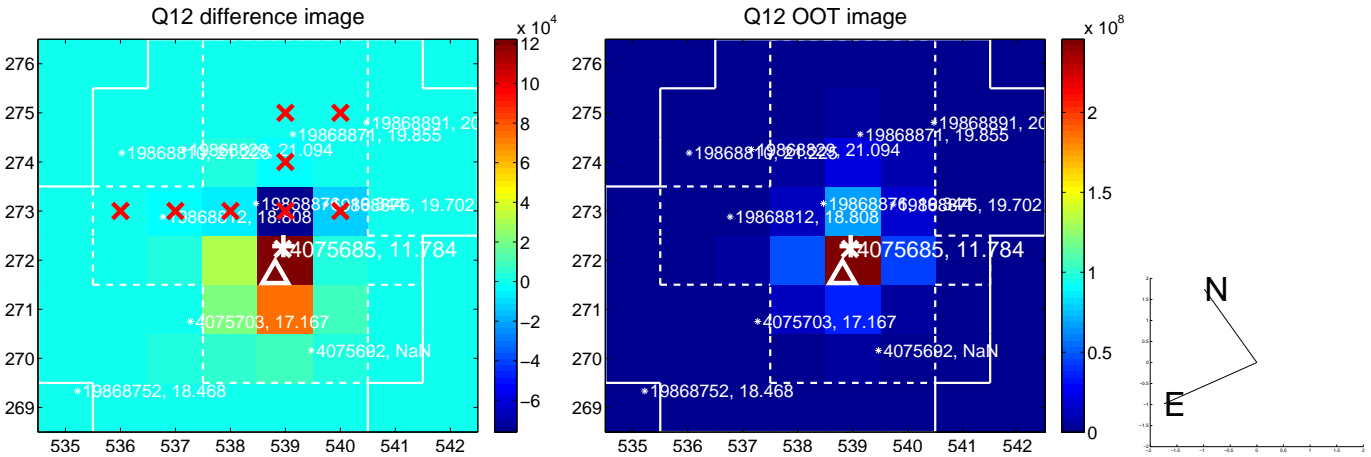
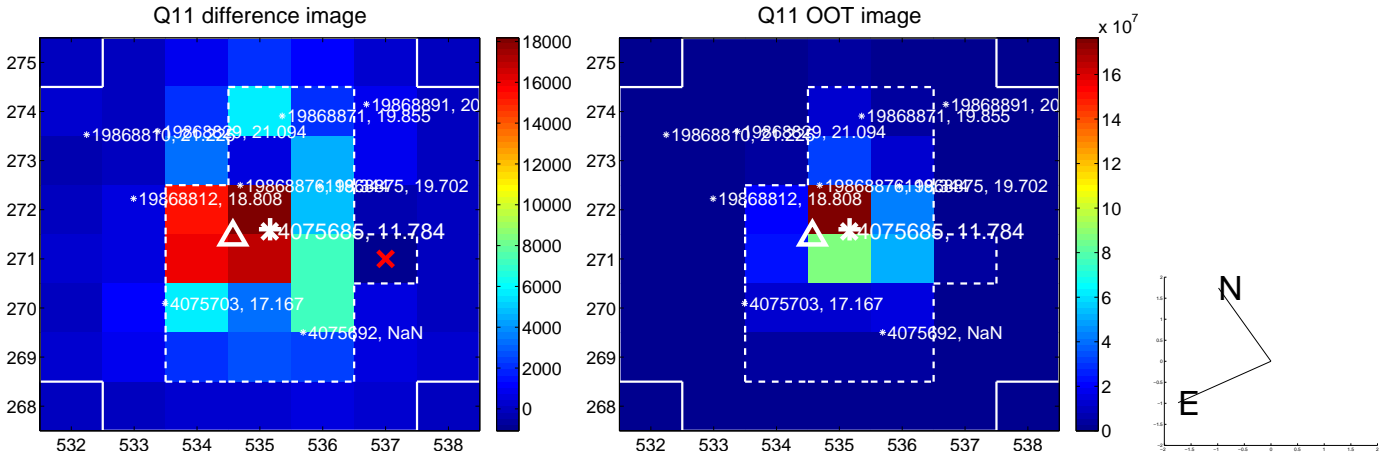
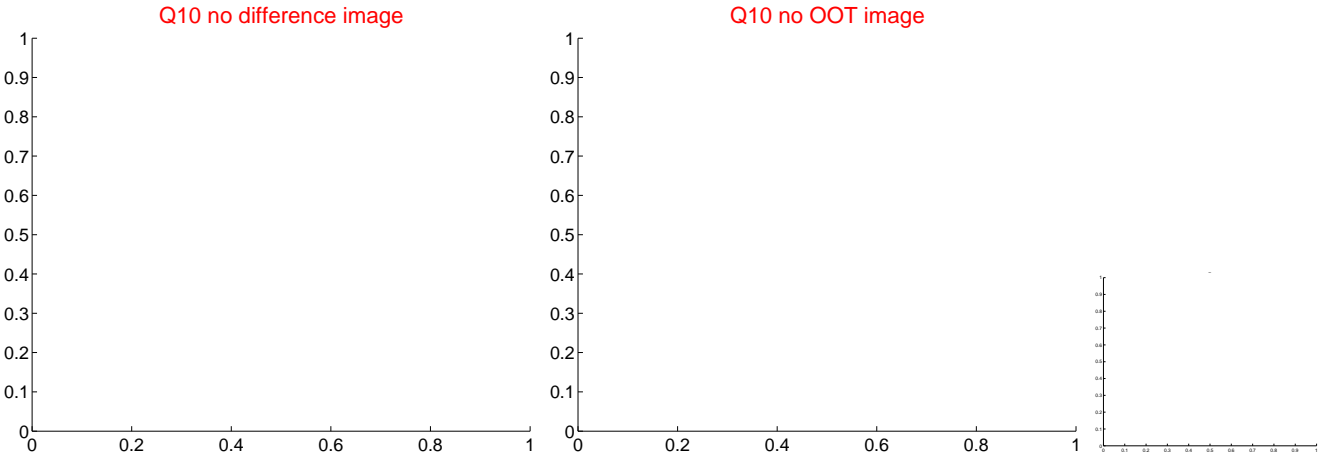
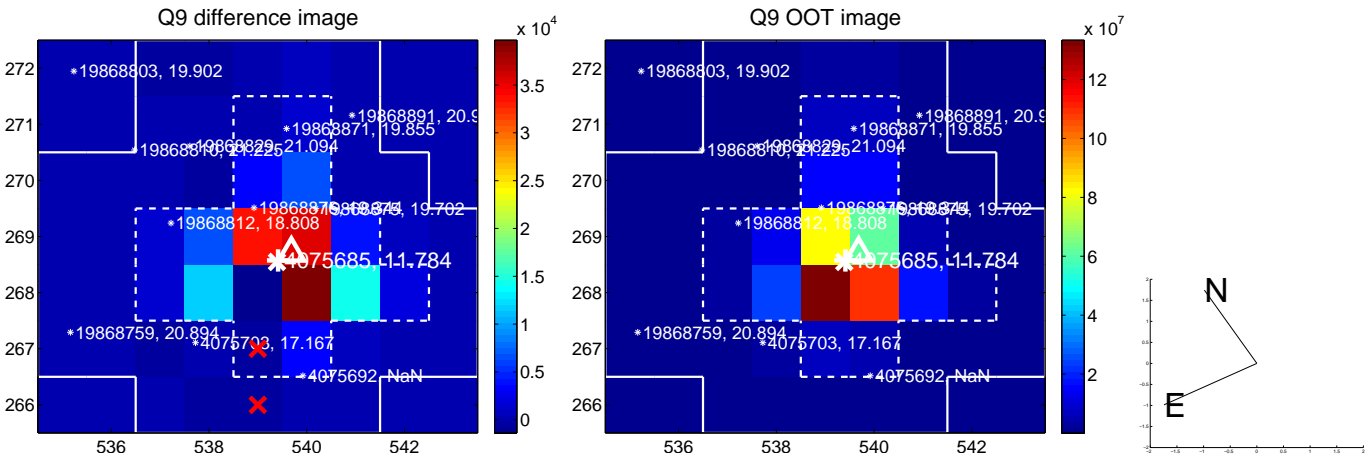
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



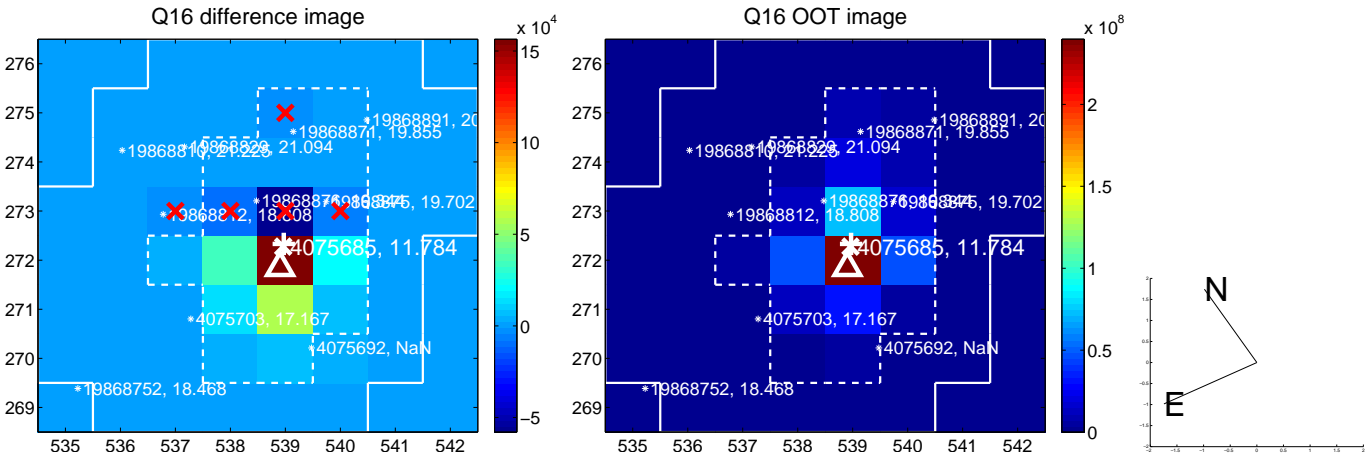
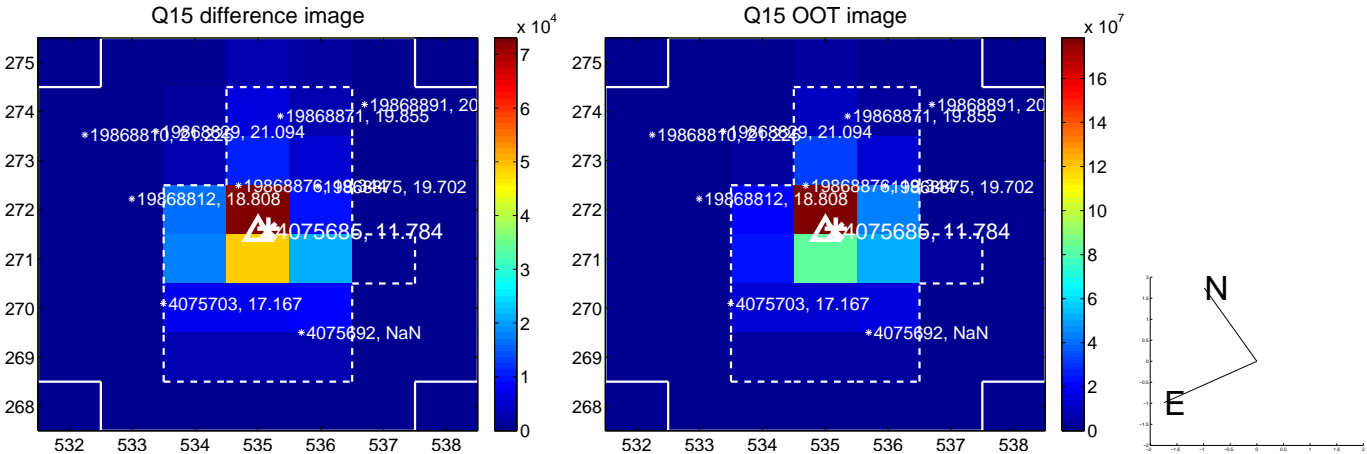
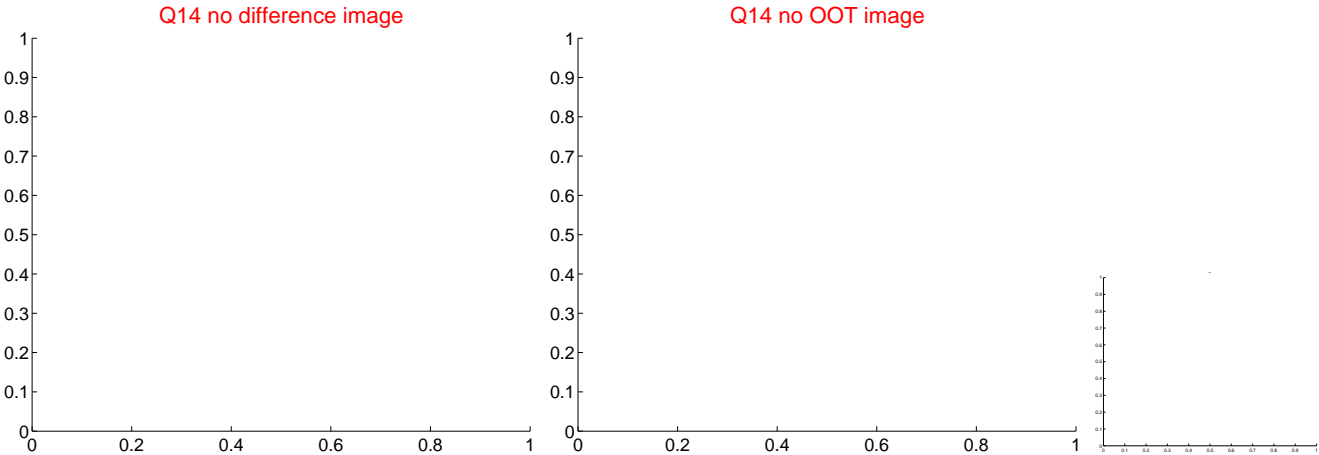
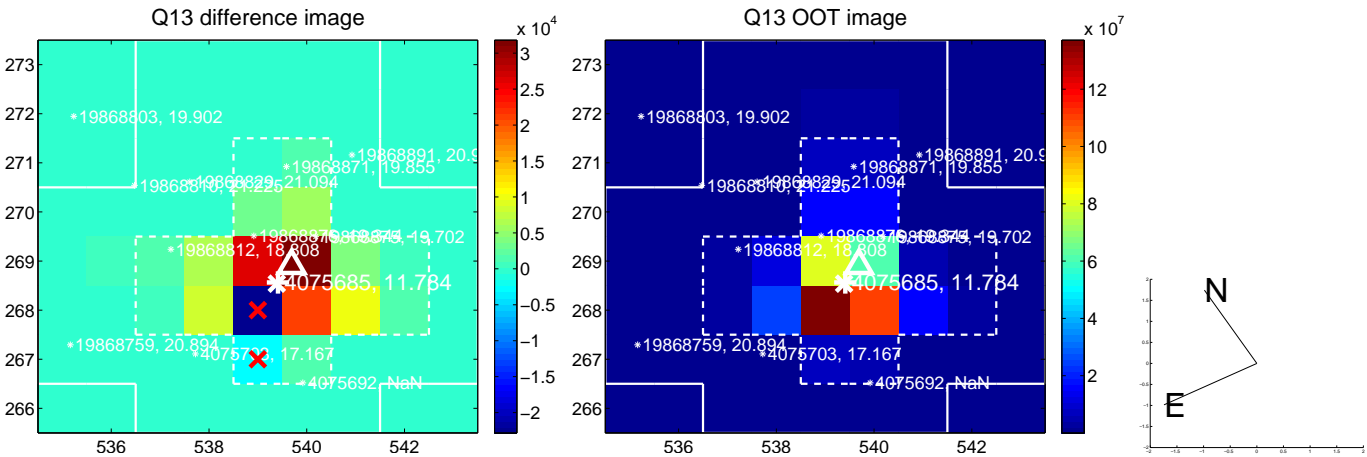
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



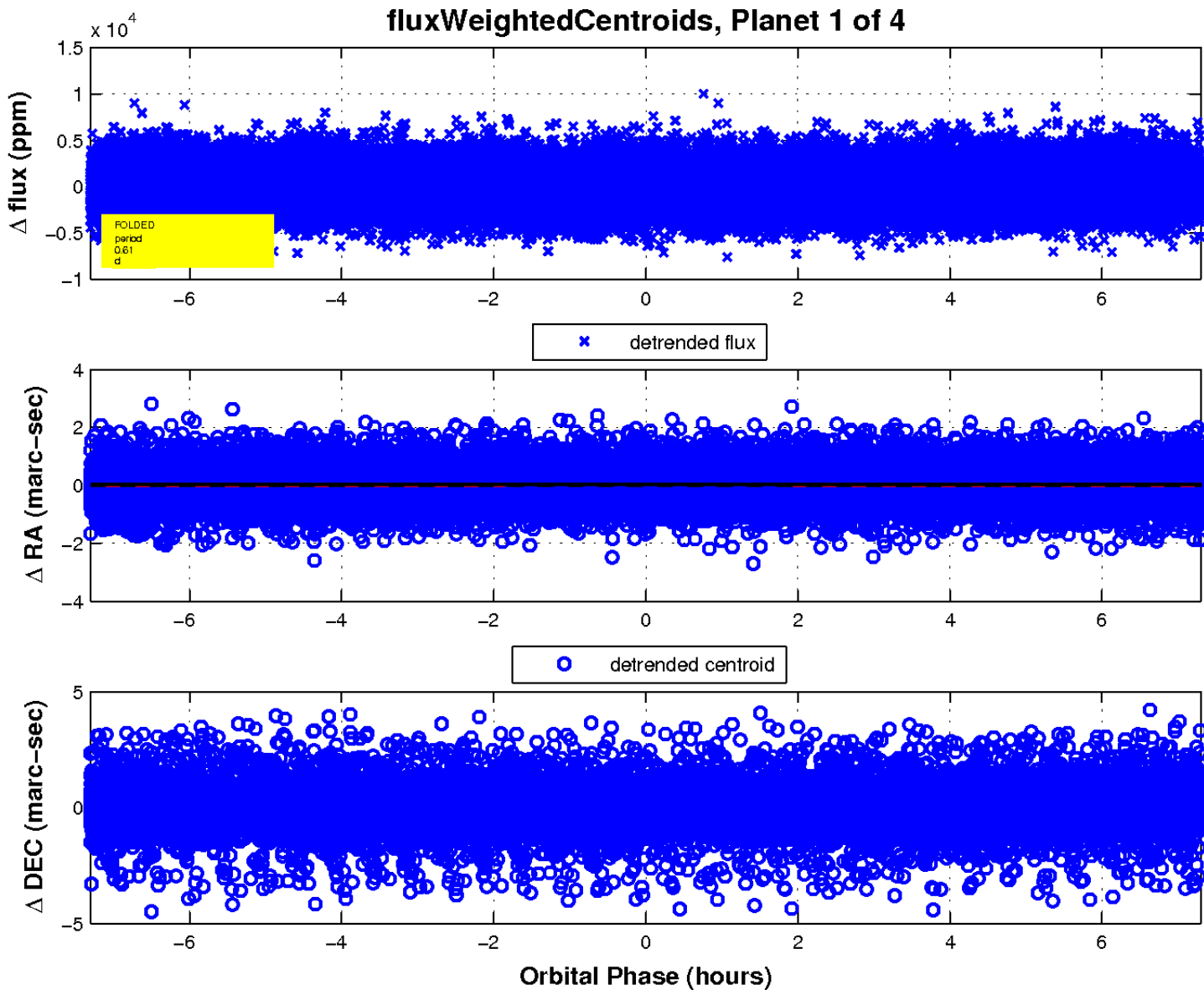
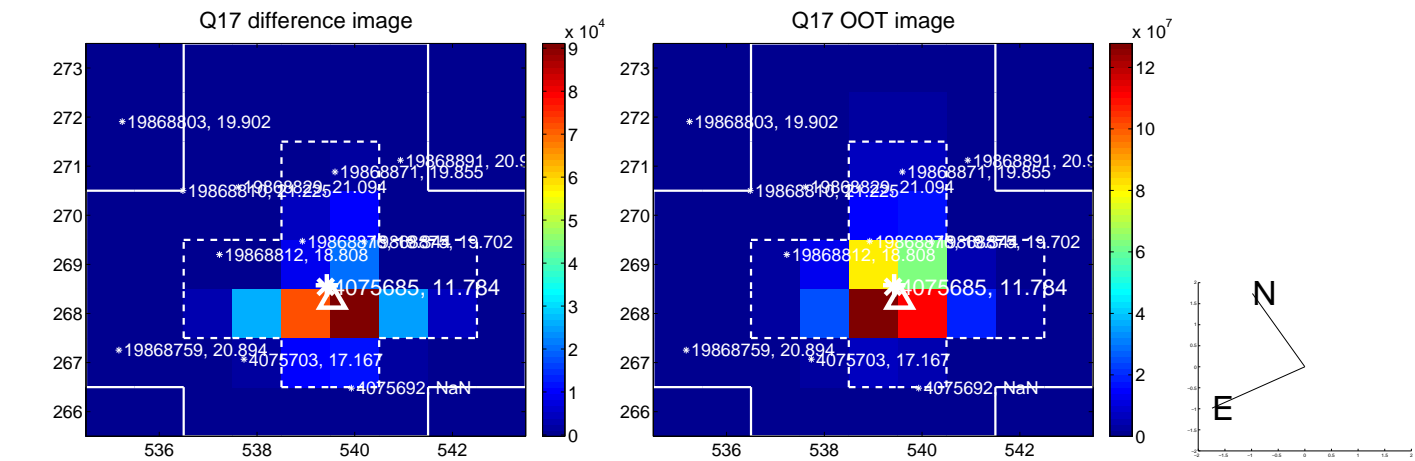
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

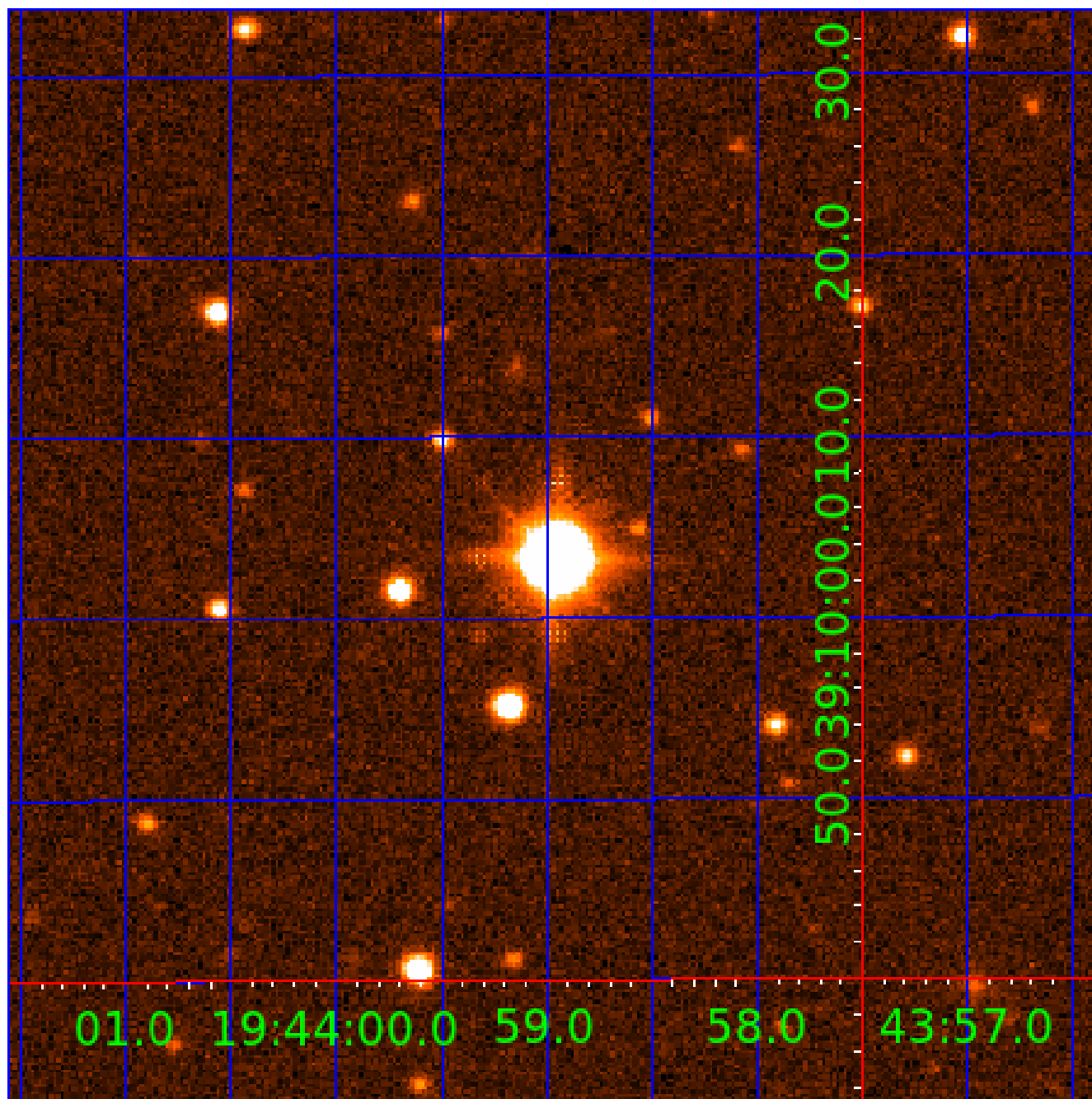


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004075685

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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004075685-04	OBS	No	2.438019	132.419353	2767.5	0.518	12.3	17.1	3.51	7965	19.66	20306.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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004075685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004075685-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
004075685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

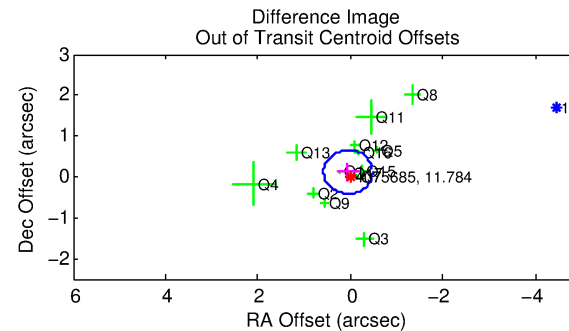
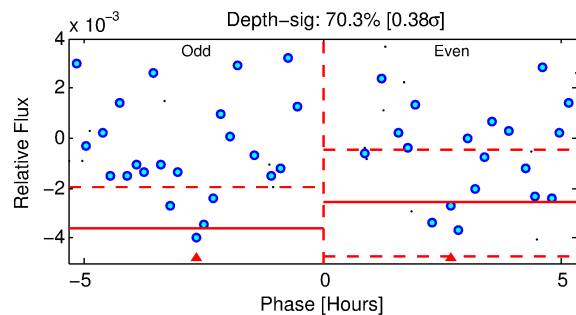
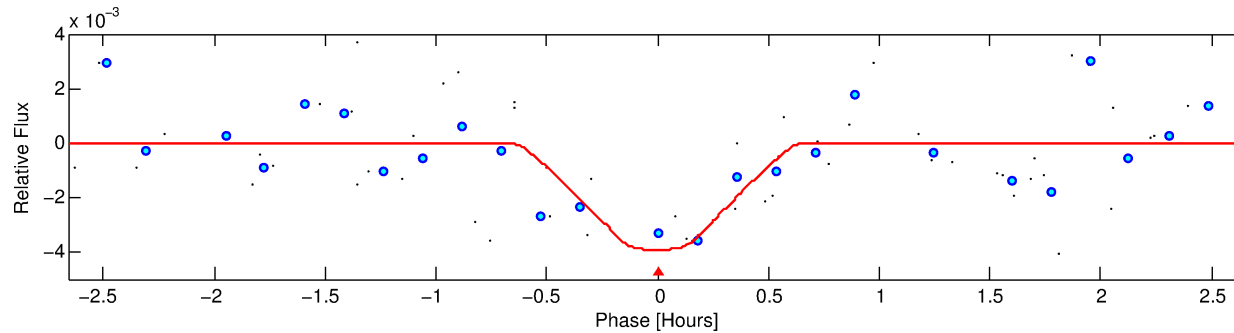
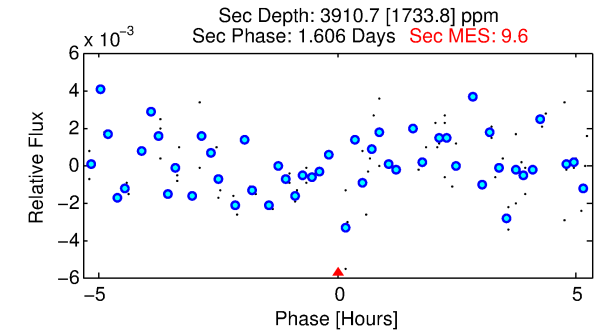
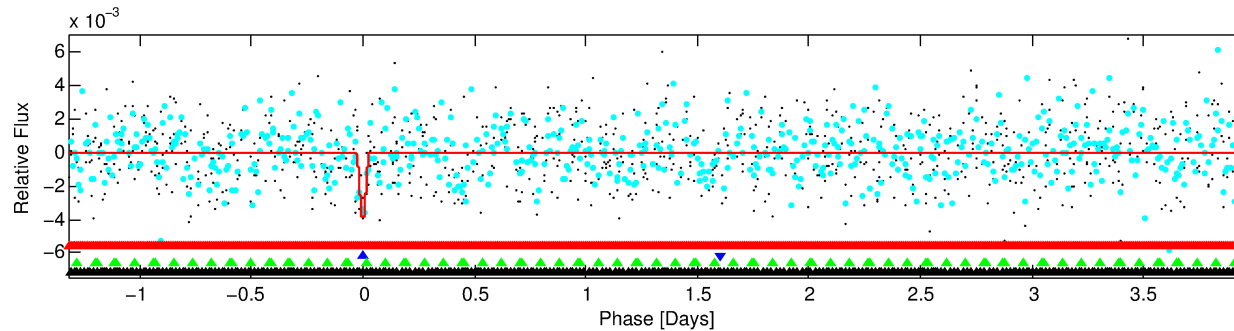
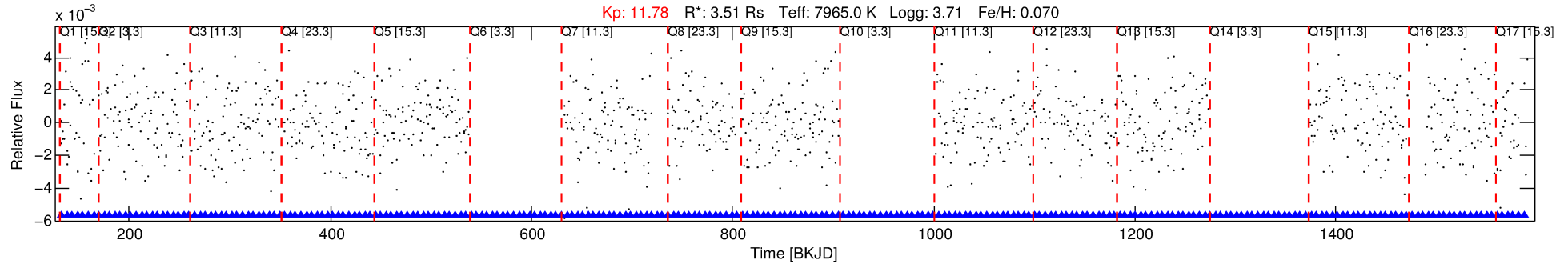
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004075685-02

No Significant Match Found

DV One-Page Summary

KIC: 4075685 Candidate: 2 of 4 Period: 5.286 d



DV Fit Results:

Period = 5.28564 [0.00004] d
Epoch = 133.1011 [0.0058] BKJD
Rp/R* = 0.0632 [0.0719]
a/R* = 34.40 [199.78]
b = 0.75 [3.50]
Seff = 7236.81 [5537.04]
Teq = 2352 [450] K
Rp = 24.20 [30.10] Re
a = 0.0783 [0.0370] AU
Ag = 22.54 [54.83] [0.39 σ]
Teffp = 7923 [4603] K [1.20 σ]

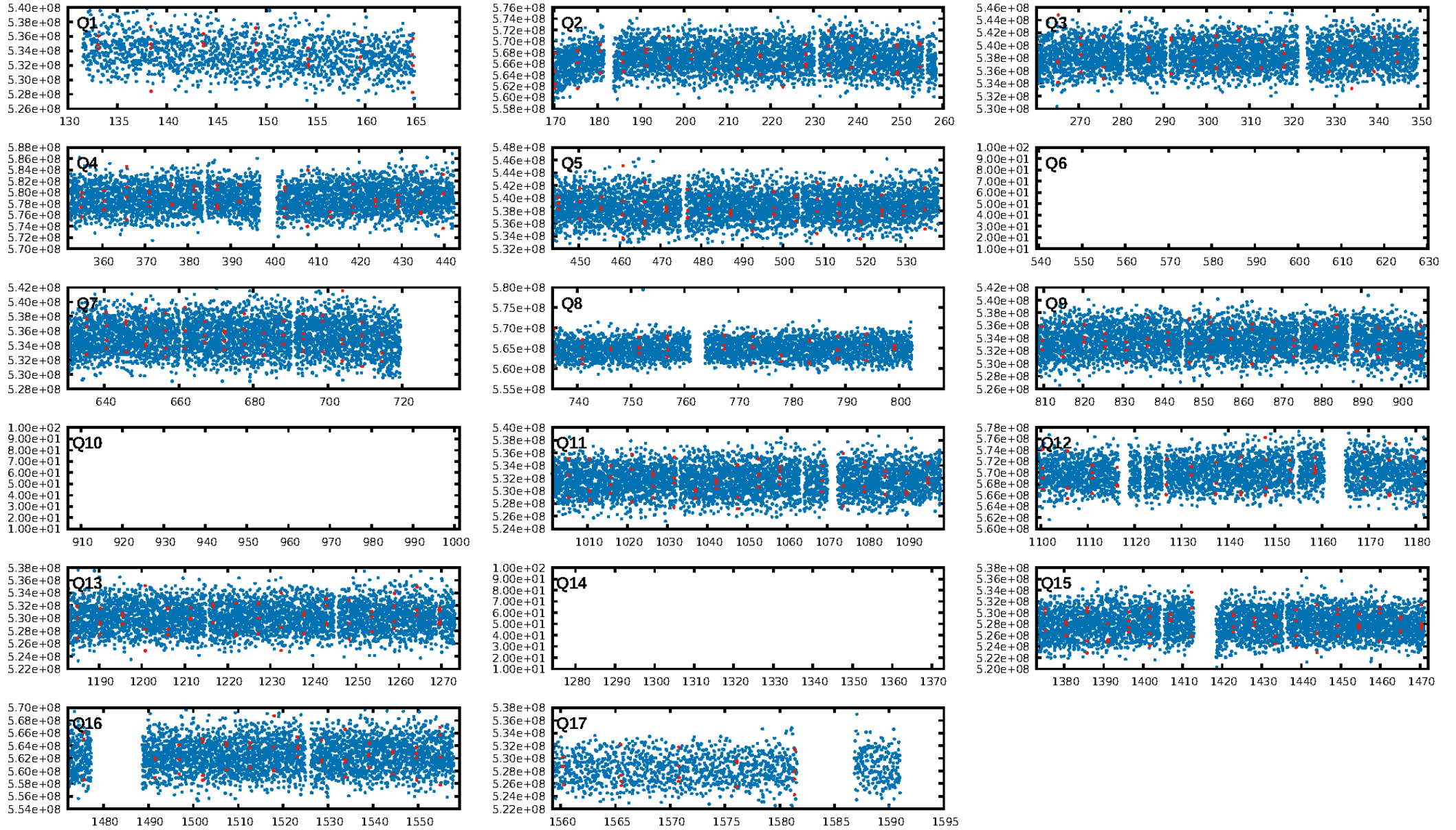
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [66.59 σ]
LongPeriod-sig: 100.0% [24.60 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 2.64e-07
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 0.6724
Centroid-sig: N/A
Centroid-so: 0.136 arcsec [7.87 σ]
OotOffset-rm: 0.136 arcsec [0.77 σ]
KicOffset-rm: 0.202 arcsec [0.78 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 0.00 [0/14]

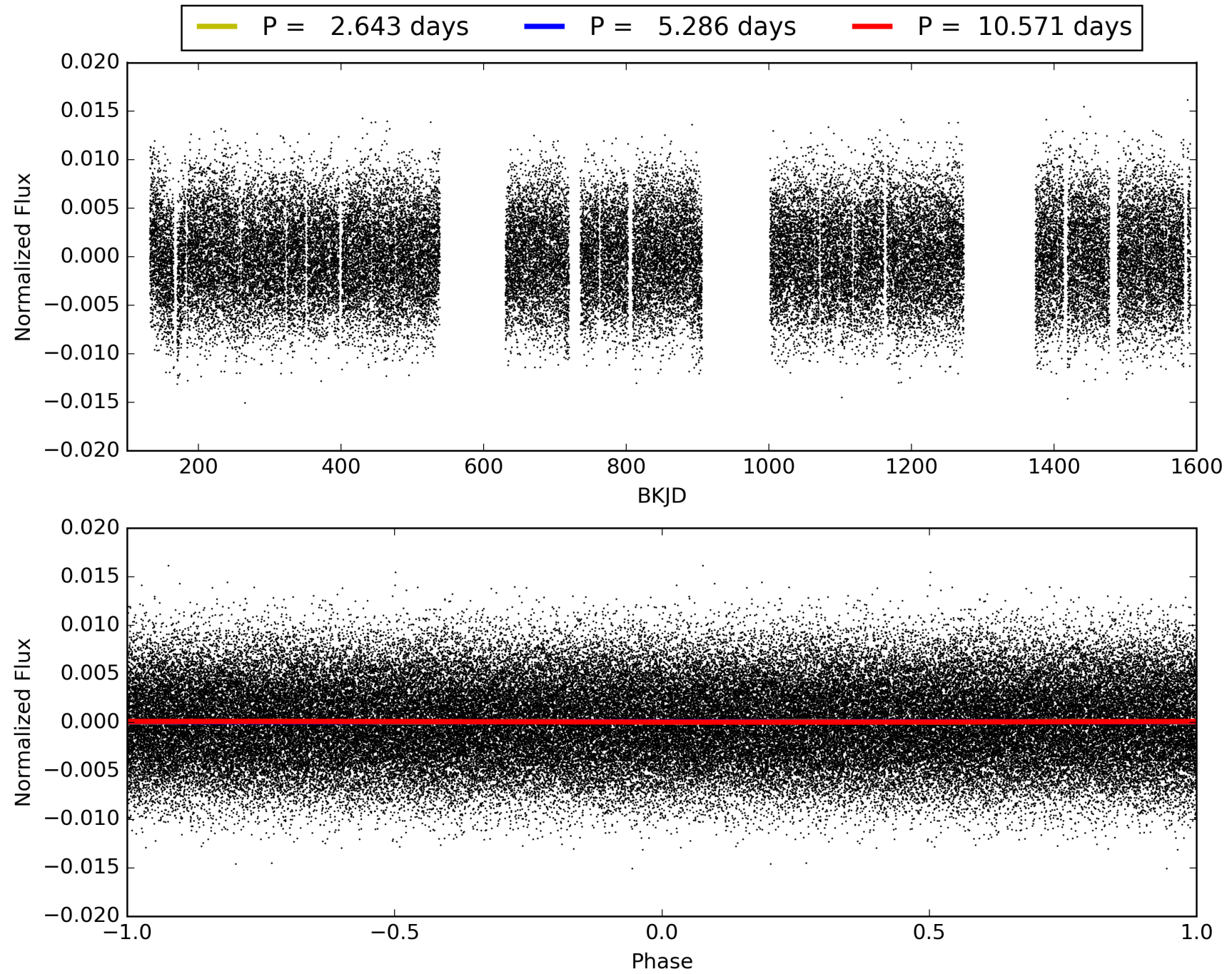
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:04:34 Z

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

TCE 004075685-02, PDC Light Curves

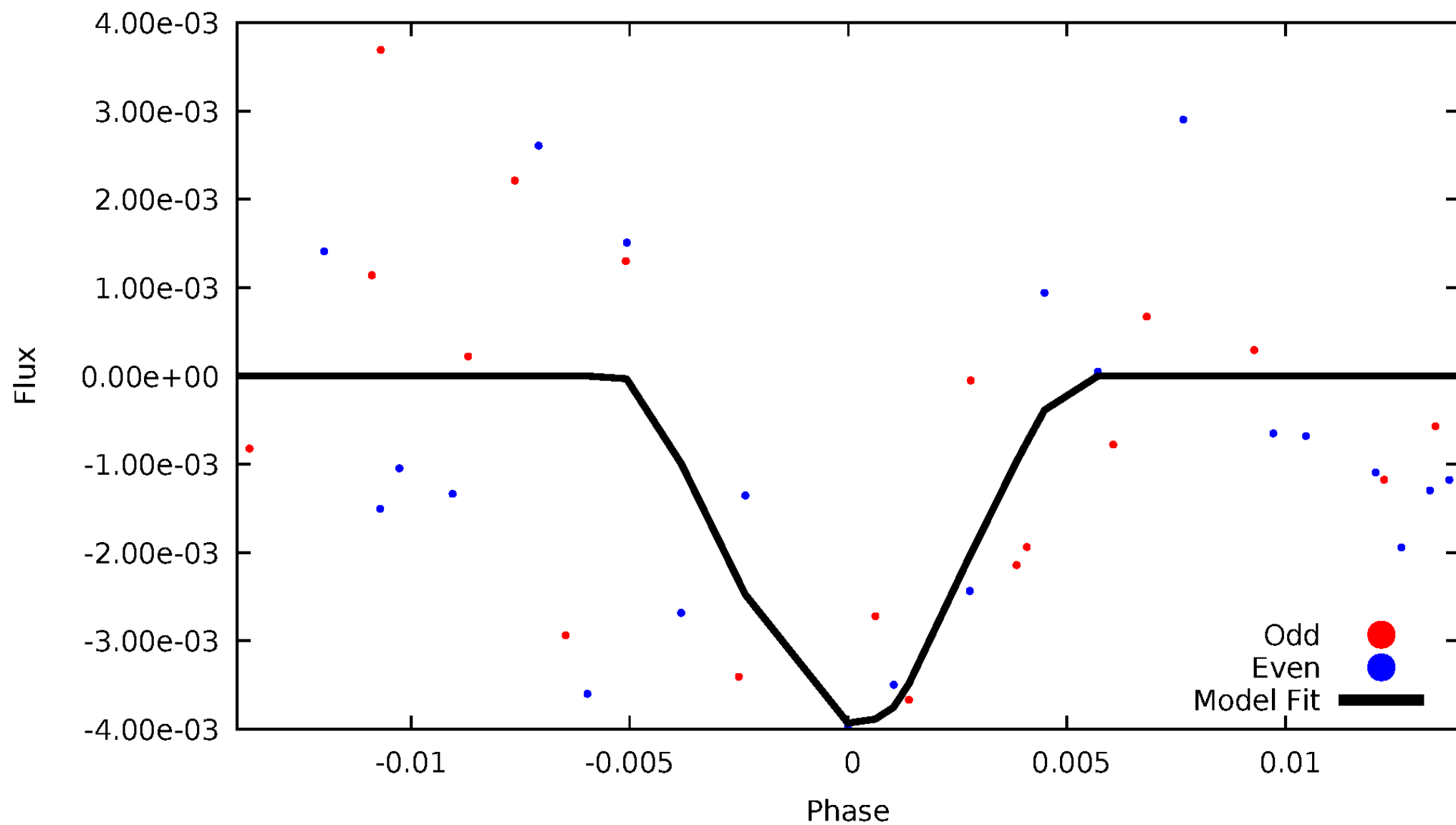


TCE 004075685-02



DV Odd/Even

TCE 004075685-02

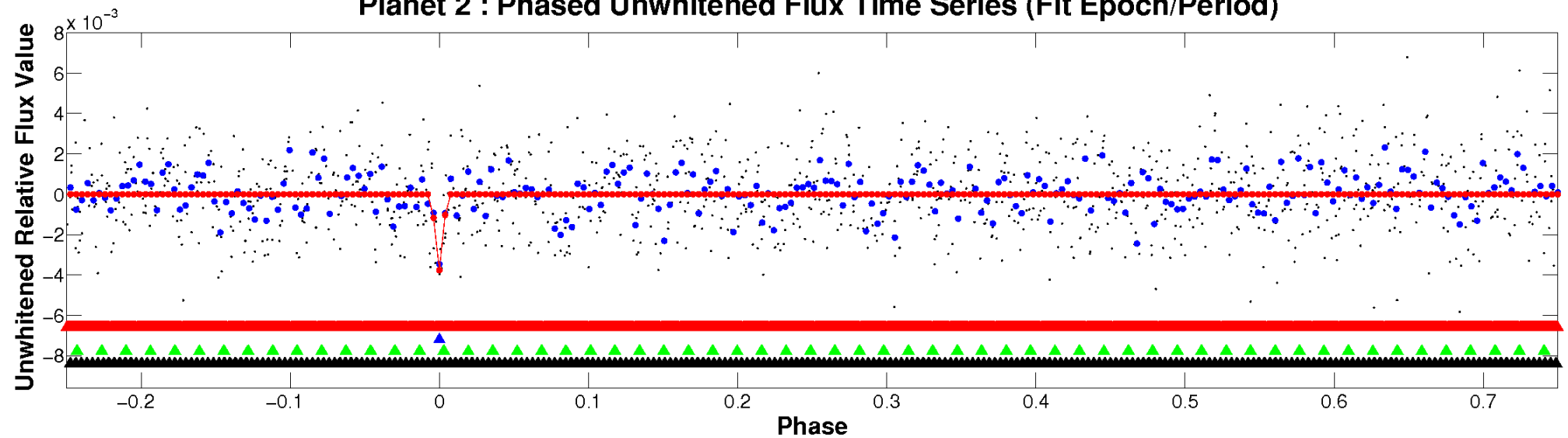


ALT Odd/Even

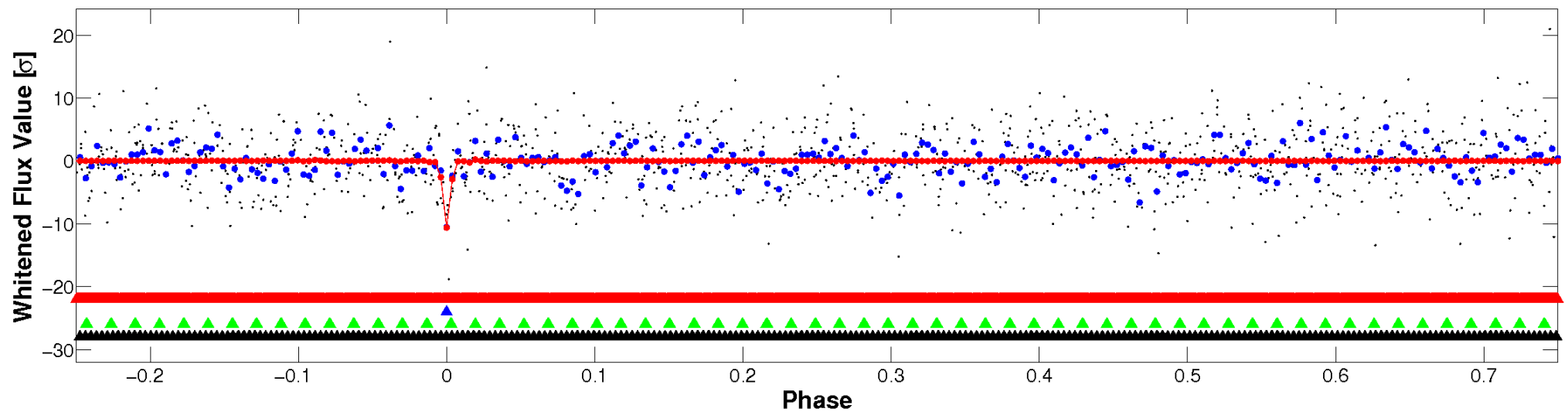
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

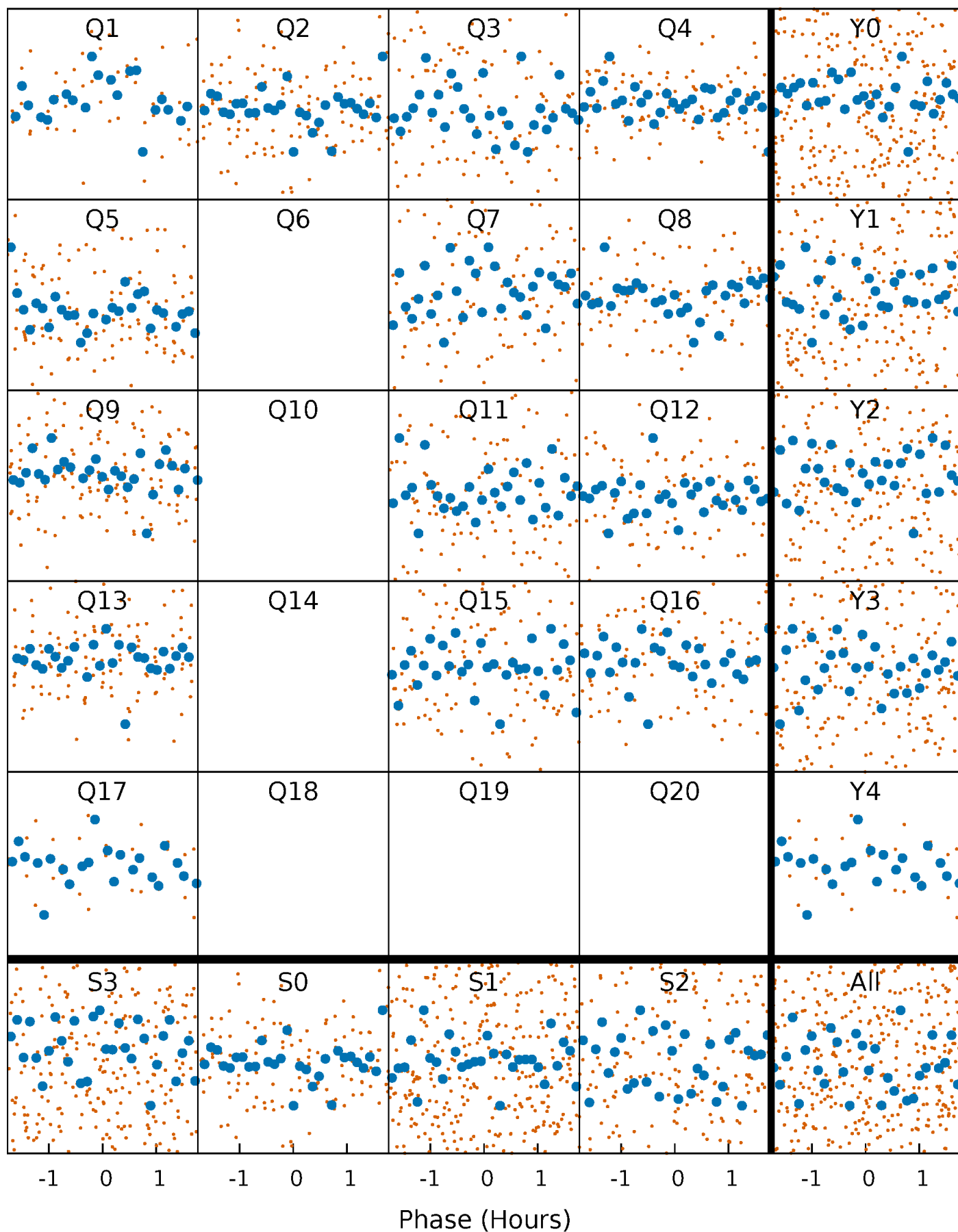


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



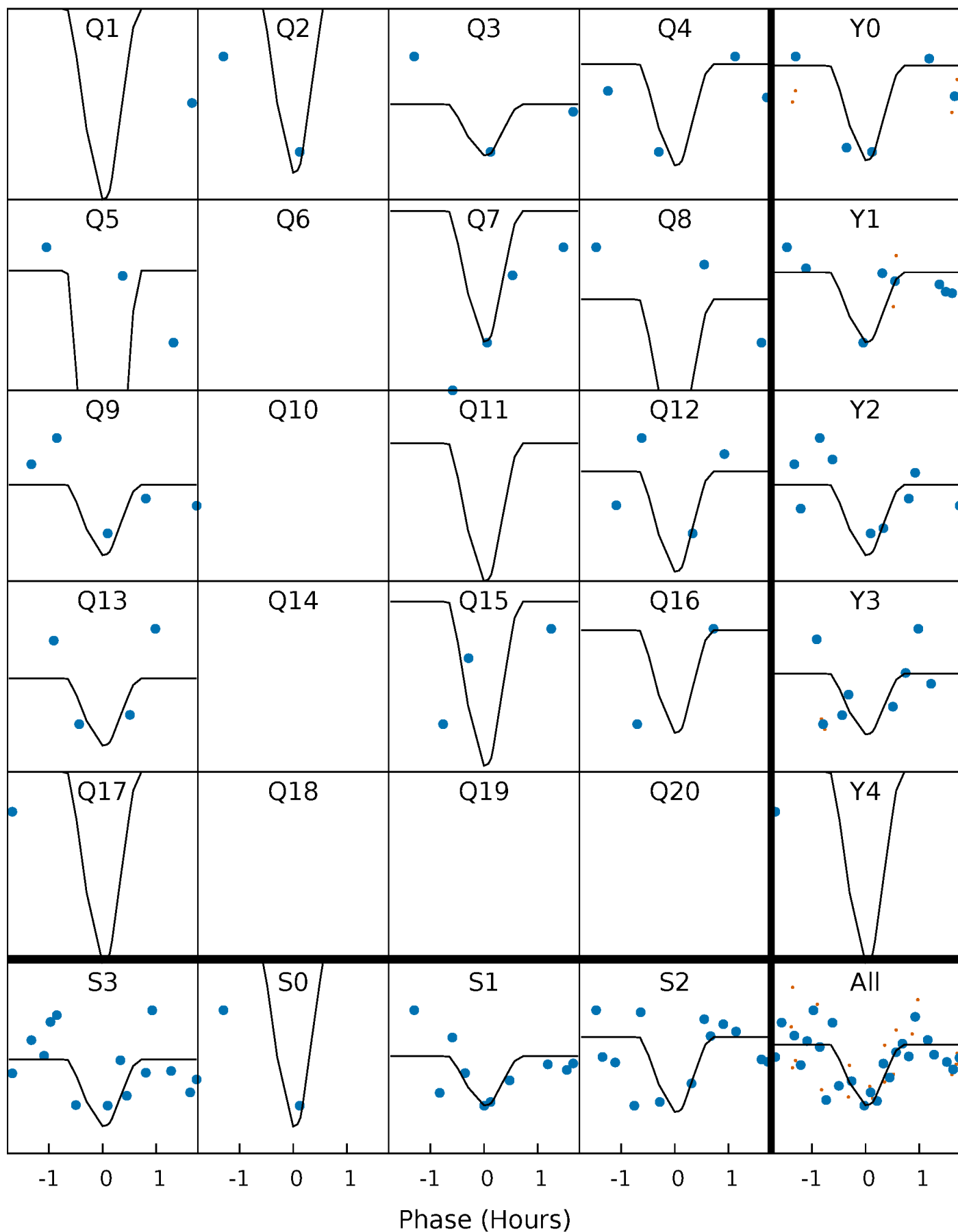
PDC Quarter-Phased Transit Curves

TCE 004075685-02 P= 5.285641 Days $T_0=133.101124$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004075685-02 P= 5.285641 Days $T_0=133.101124$ (BKJD)

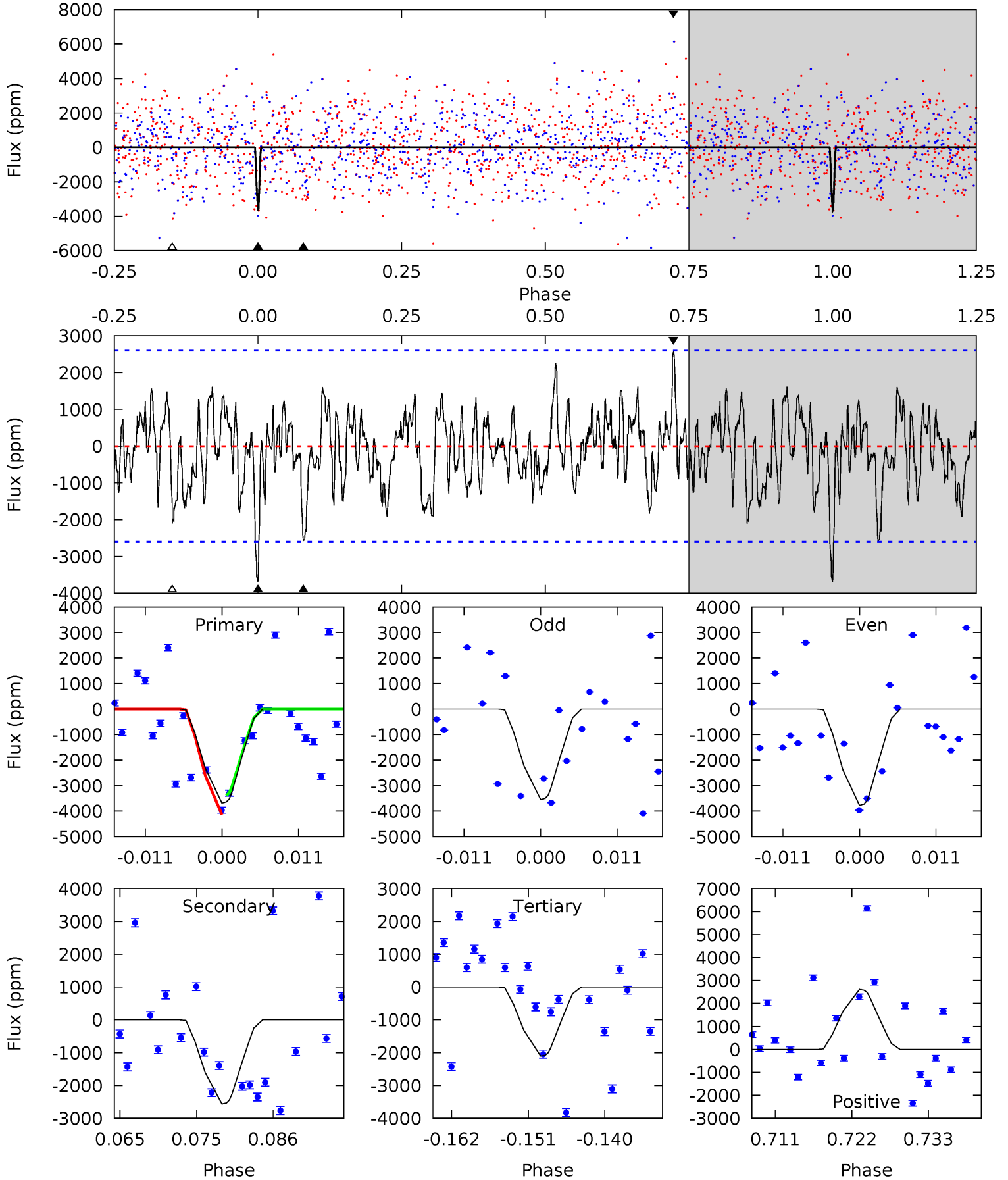


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

004075685-02, P = 5.285641 Days, E = 127.815483 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.10	4.94	4.06	5.03	5.01	2.55	1.59	3.04	2.06	0.89	-0.09	0.22	0	0.42	0.67



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 004075685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7965^{+221}_{-359}	$3.708^{+0.432}_{-0.135}$	$0.070^{+0.250}_{-0.400}$	$3.508^{+0.885}_{-1.770}$	$2.294^{+0.298}_{-0.645}$	$0.075^{+0.321}_{-0.030}$
	+3%/-5%	+12%/-4%	+357%/-571%	+25%/-50%	+13%/-28%	+429%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004075685-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2565 ± 519	$24.83^{+24.47}_{-15.57}$	3188^{+263}_{-394}	6321^{+6134}_{-1559}	13^{+81}_{-10}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

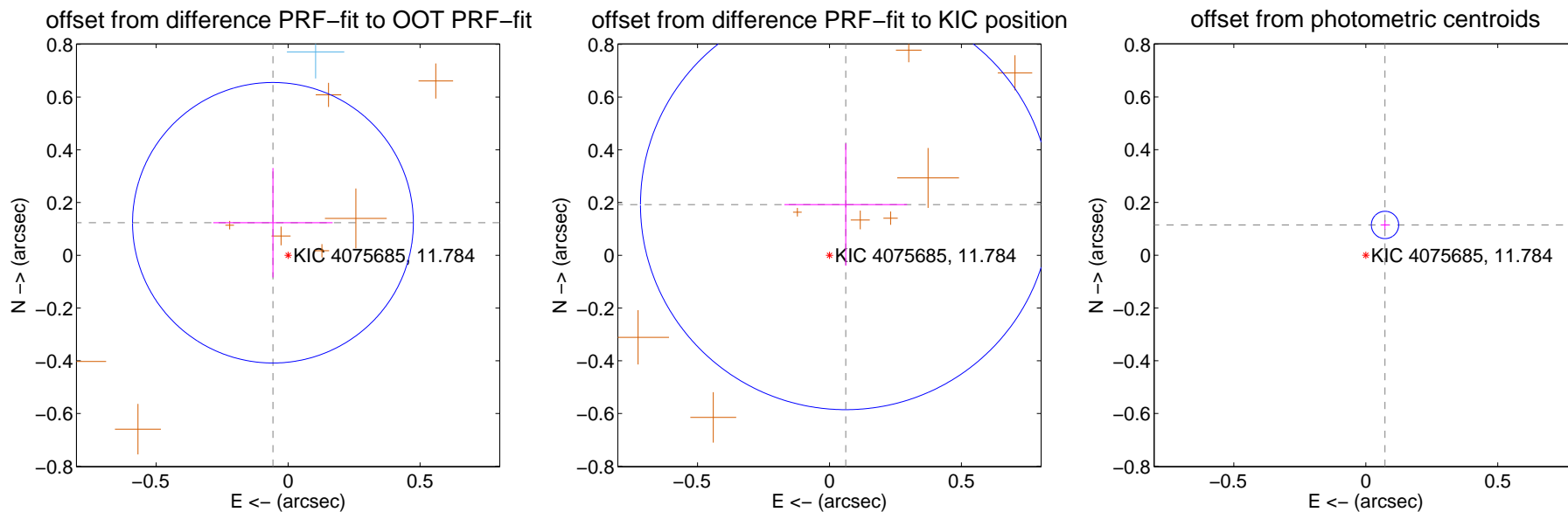
DV Centroid Data

Supplemental centroid analysis for 004075685-02. **Kepler magnitude: 11.78.** Transit SNR 24.43

There are 3 quarters with good PRF difference image offsets

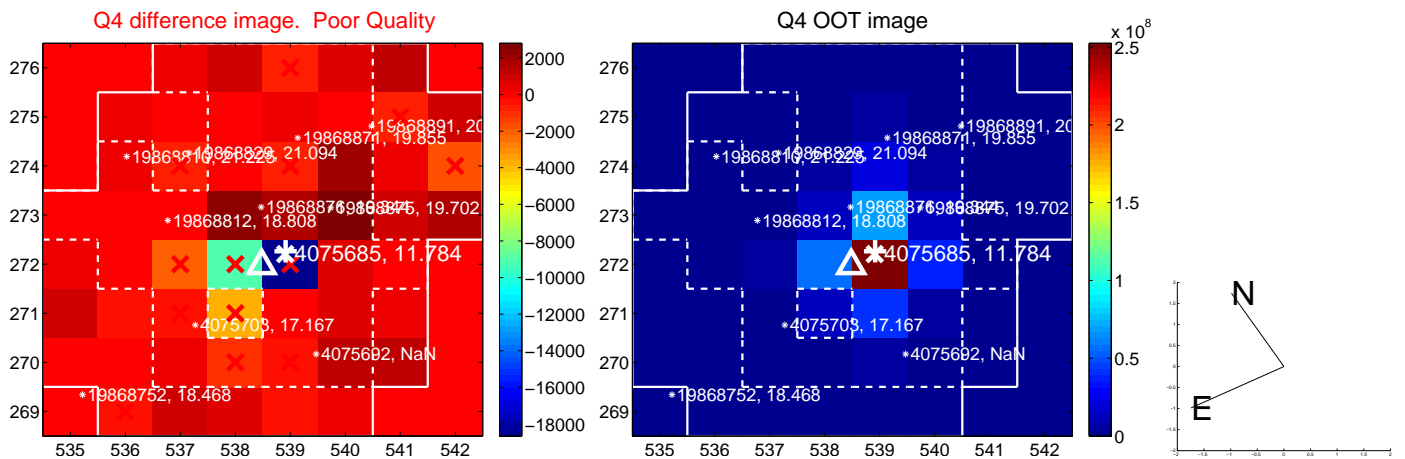
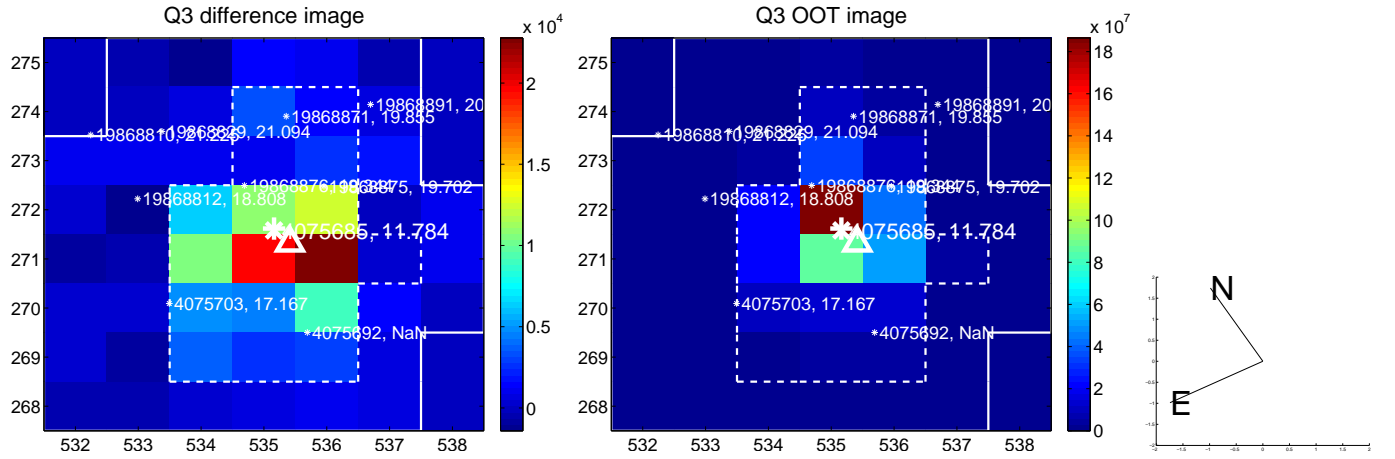
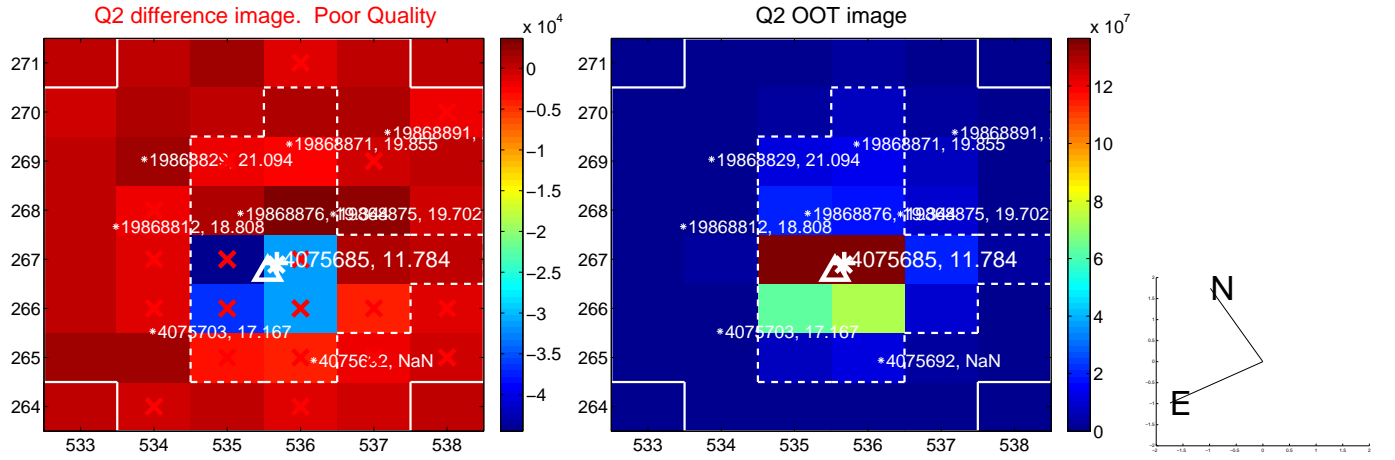
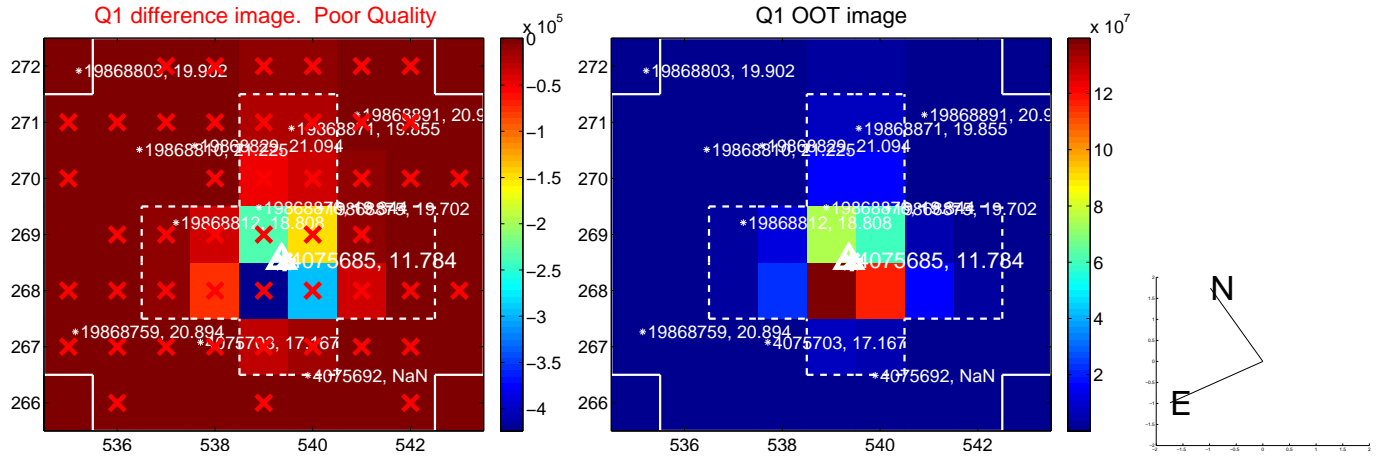
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.136 ± 0.177	0.77	0.058 ± 0.226	0.123 ± 0.208
PRF-fit source offset from KIC position	0.202 ± 0.259	0.78	-0.062 ± 0.232	0.192 ± 0.232
photometric centroid source offset	0.14 ± 0.02	7.87	-0.07 ± 0.02	0.11 ± 0.02

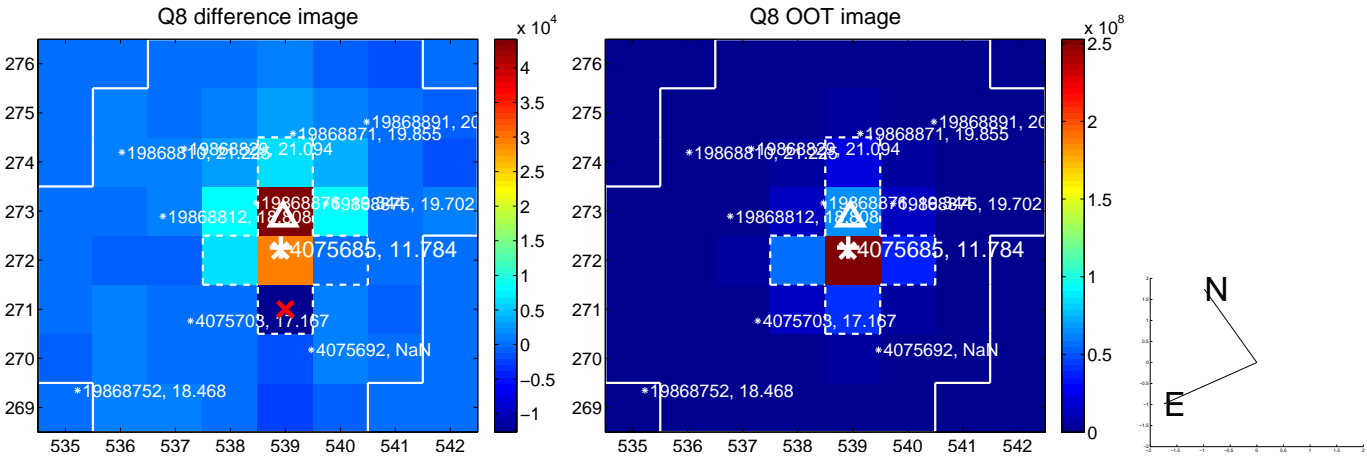
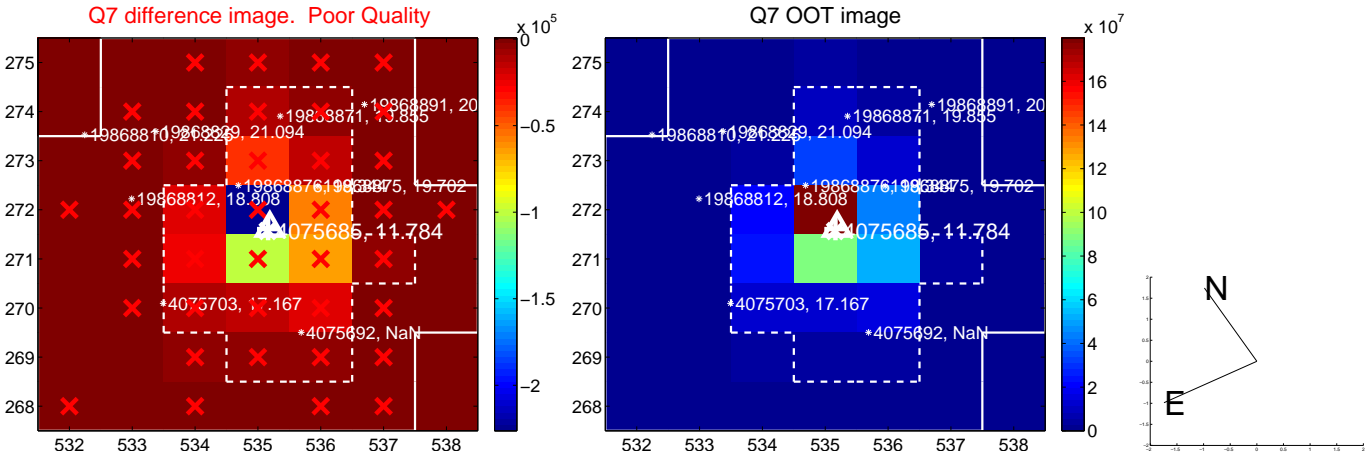
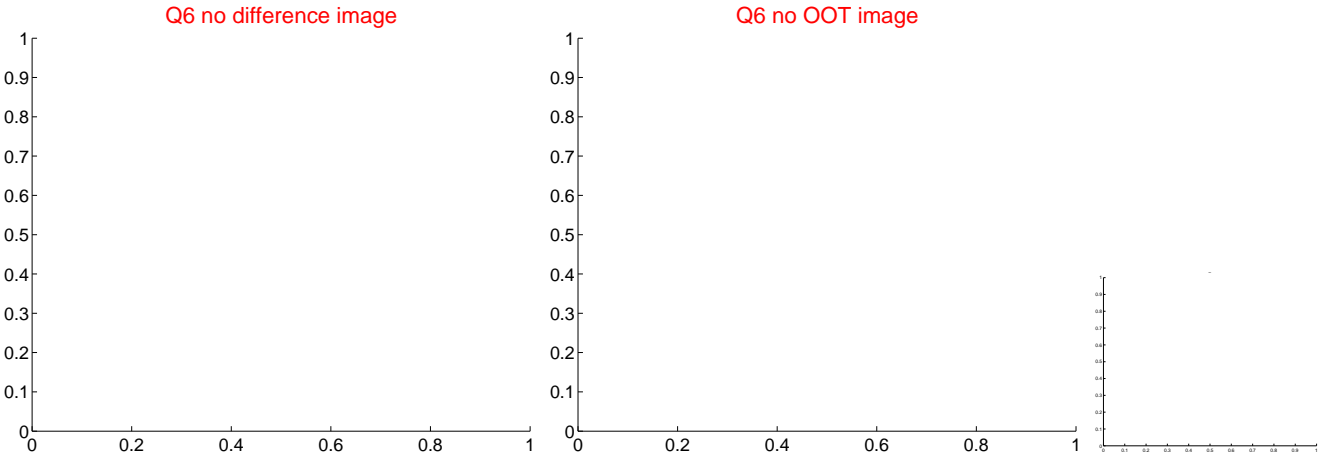
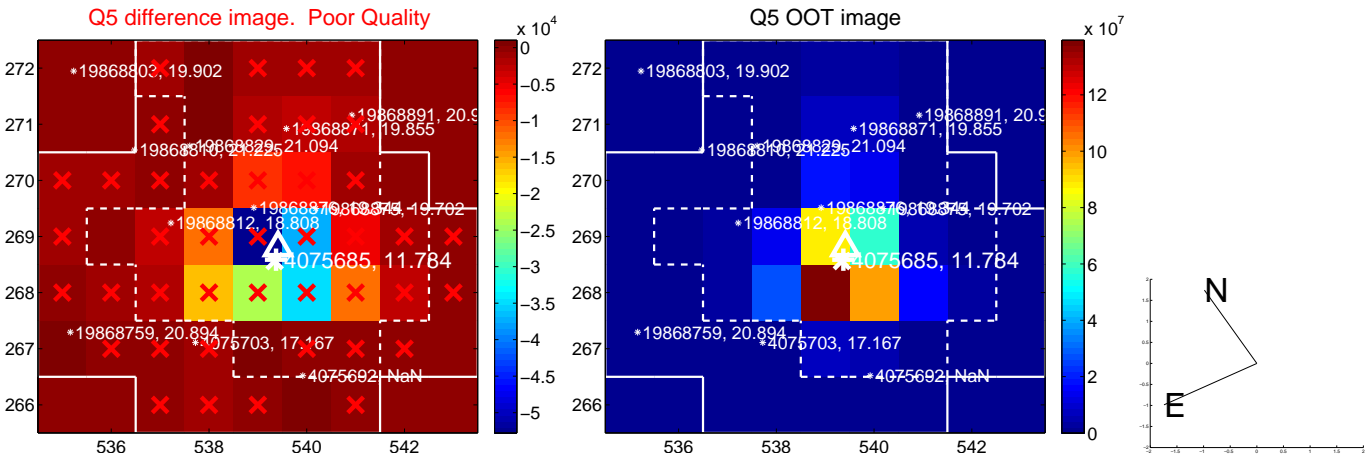


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

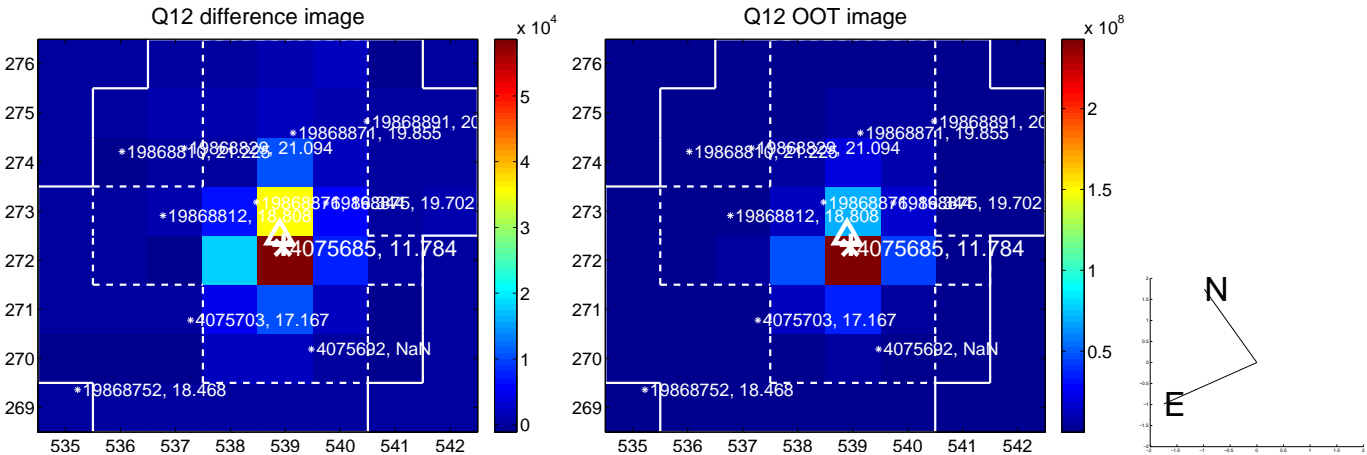
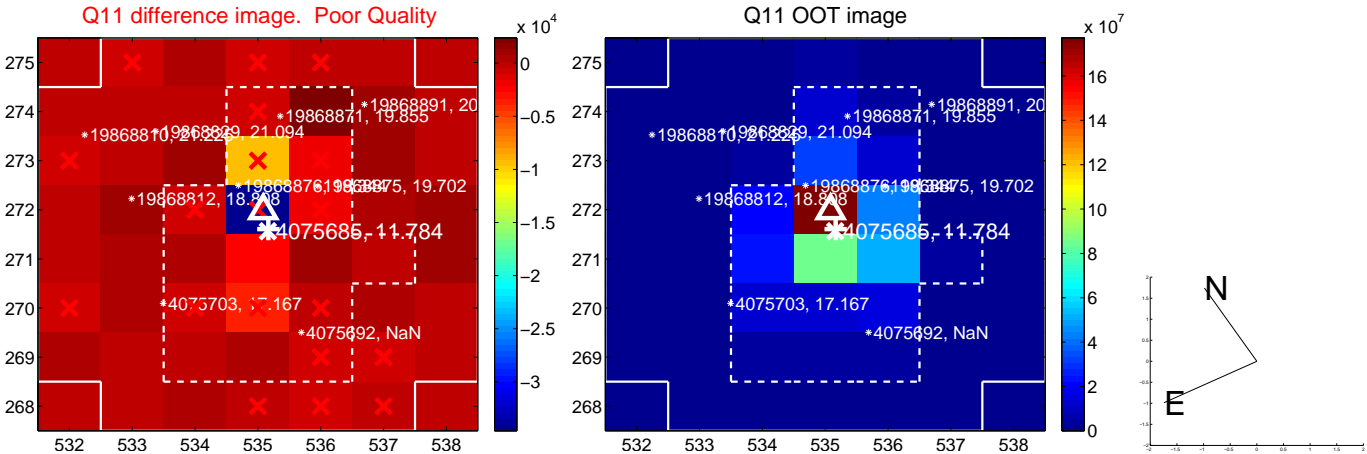
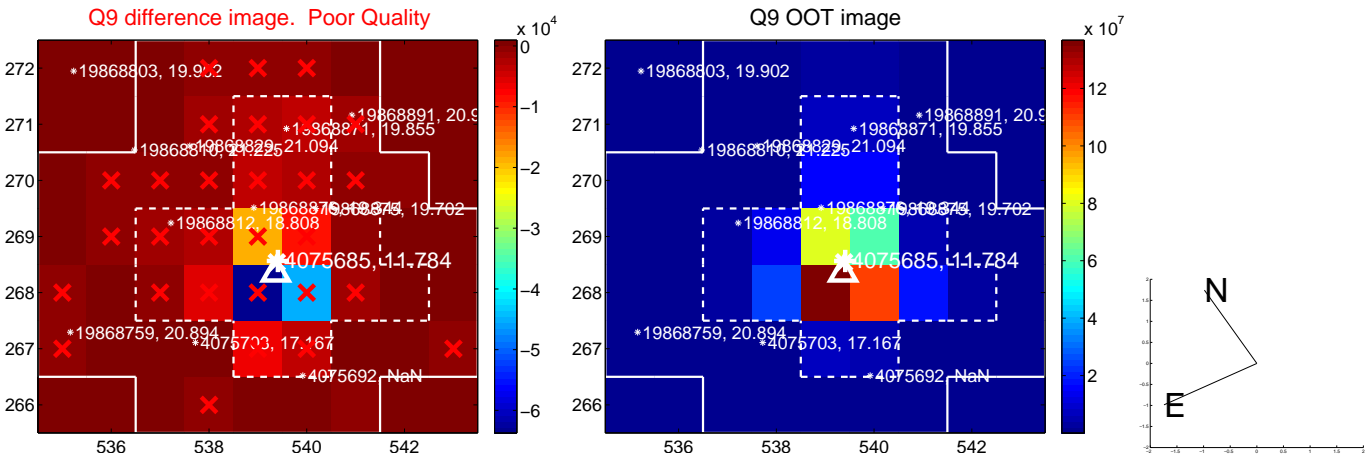
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



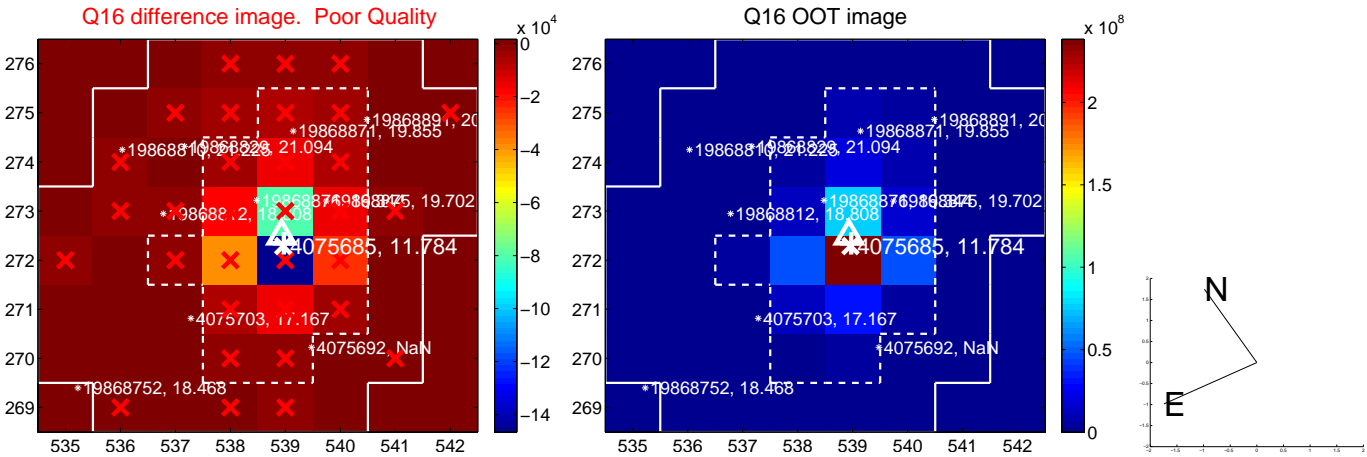
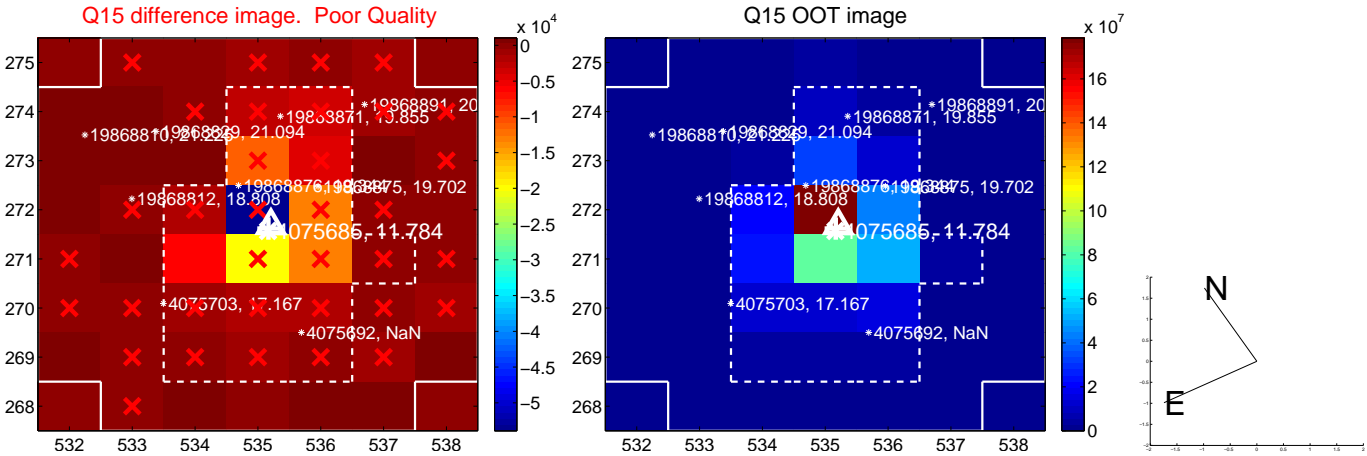
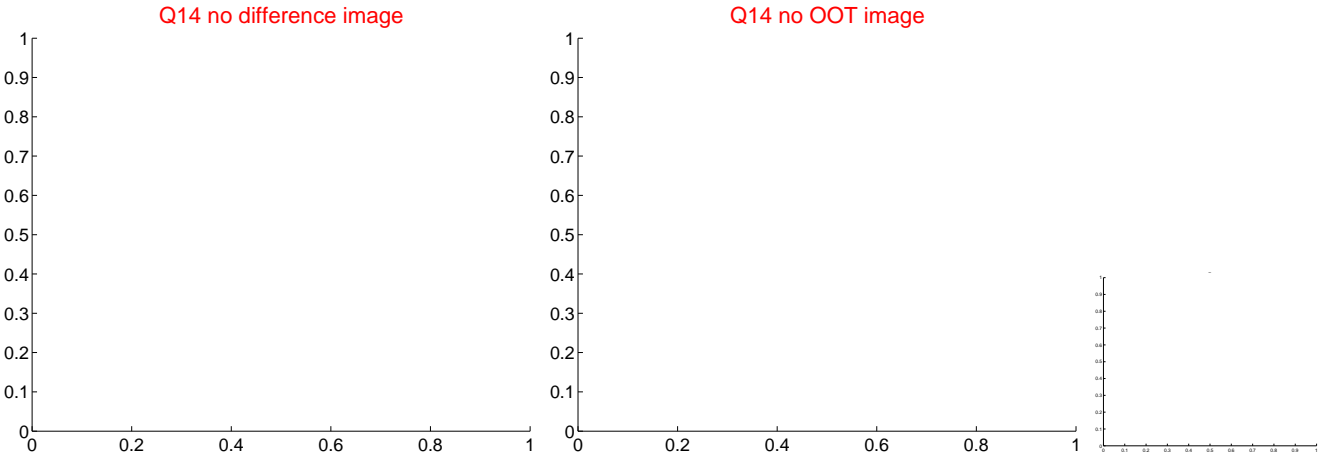
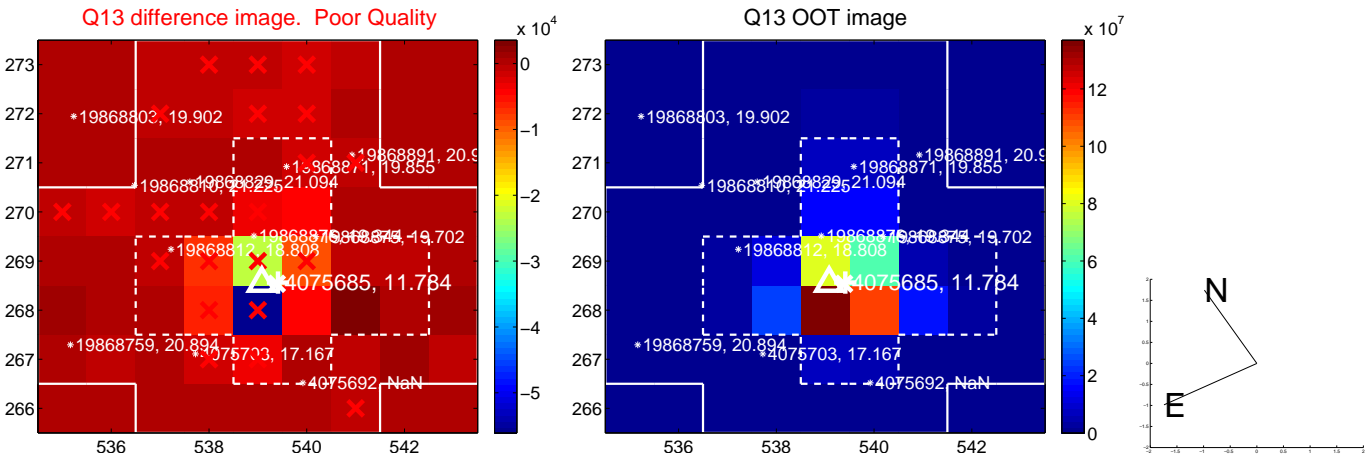
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

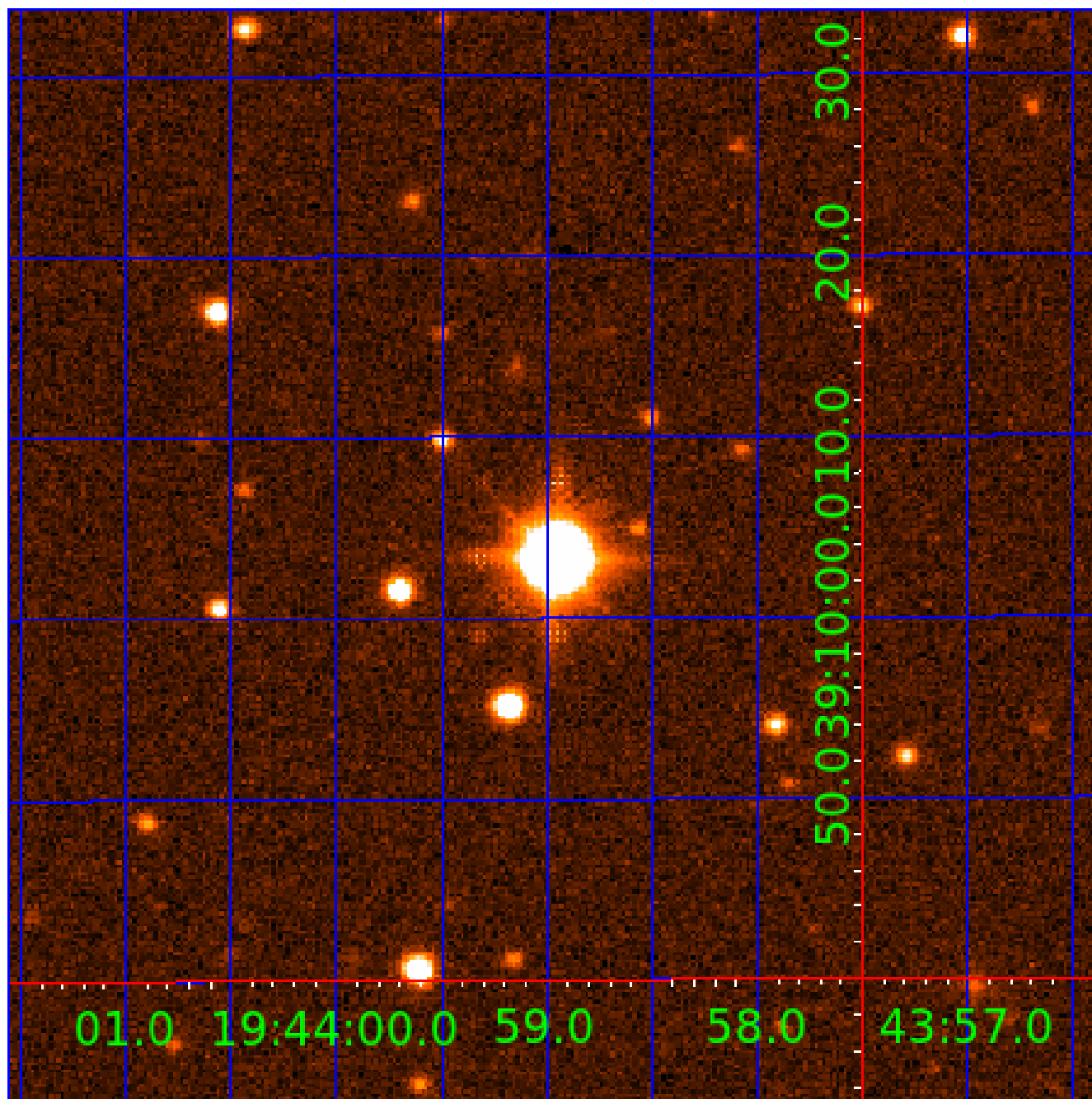


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004075685

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})
004075685-01	OBS	No	0.608676	131.709104	182.2	4.591	11.1	15.4	3.51	7965	5.67	129170.32
004075685-02	OBS	No	5.285641	133.101124	3931.6	0.886	14.2	24.4	3.51	7965	24.20	7236.81
004075685-03	OBS	No	8.491717	134.500778	150.7	3.000	10.8	-1.0	3.51	7965	4.35	3846.06
004075685-04	OBS	No	2.438019	132.419353	2767.5	0.518	12.3	17.1	3.51	7965	19.66	20306.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004075685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004075685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004075685-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
004075685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

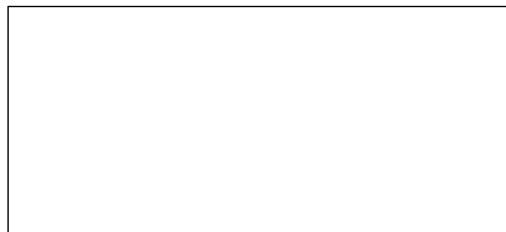
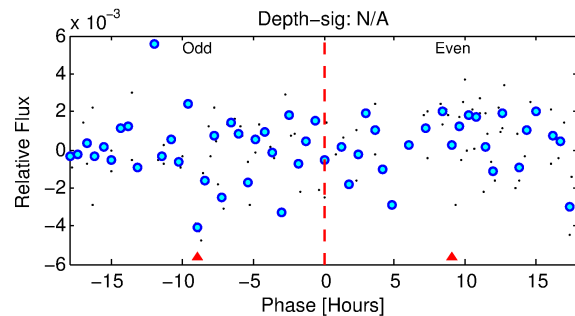
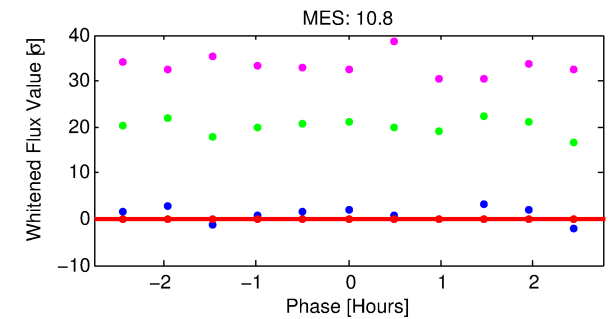
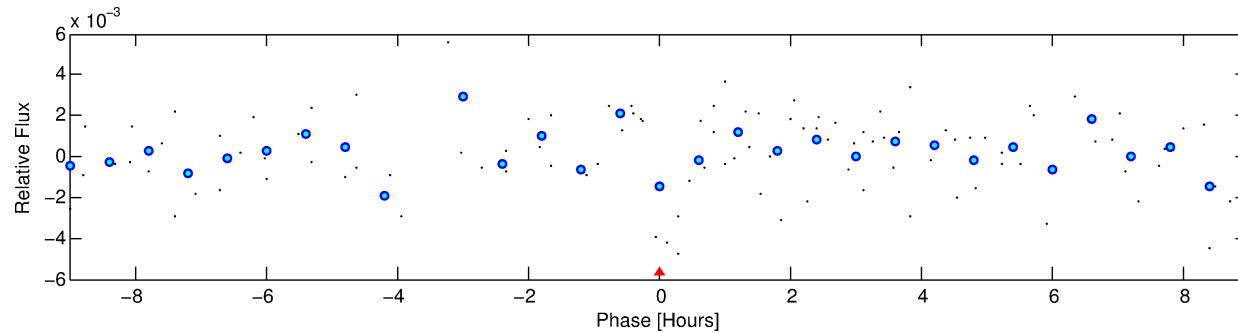
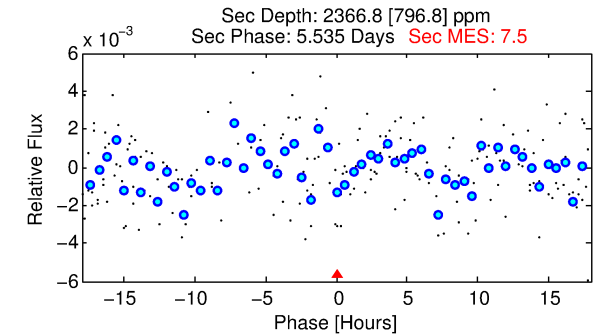
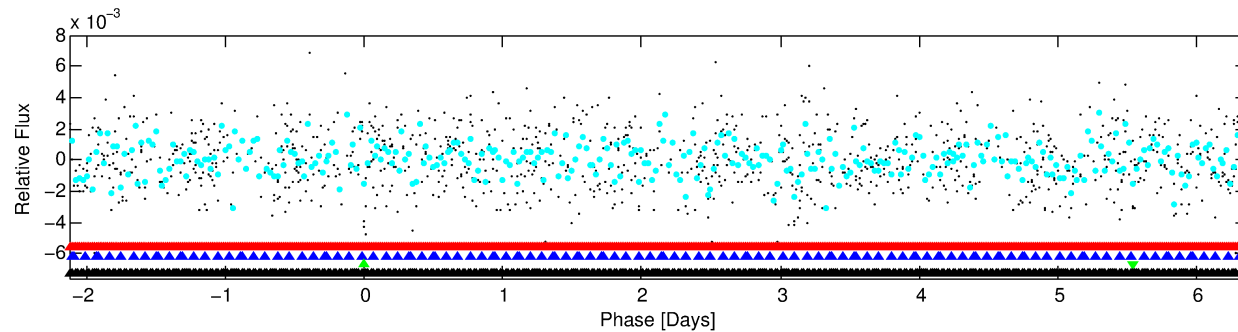
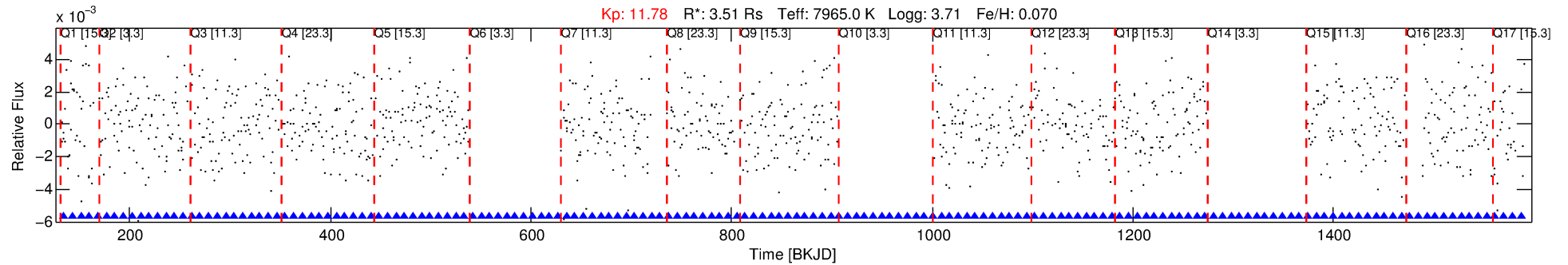
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004075685-03

No Significant Match Found

DV One-Page Summary

KIC: 4075685 Candidate: 3 of 4 Period: 8.492 d



TPS TCE Results:

Period = 8.49172 d
Epoch = 134.5008 BKJD

DV fit results are unavailable

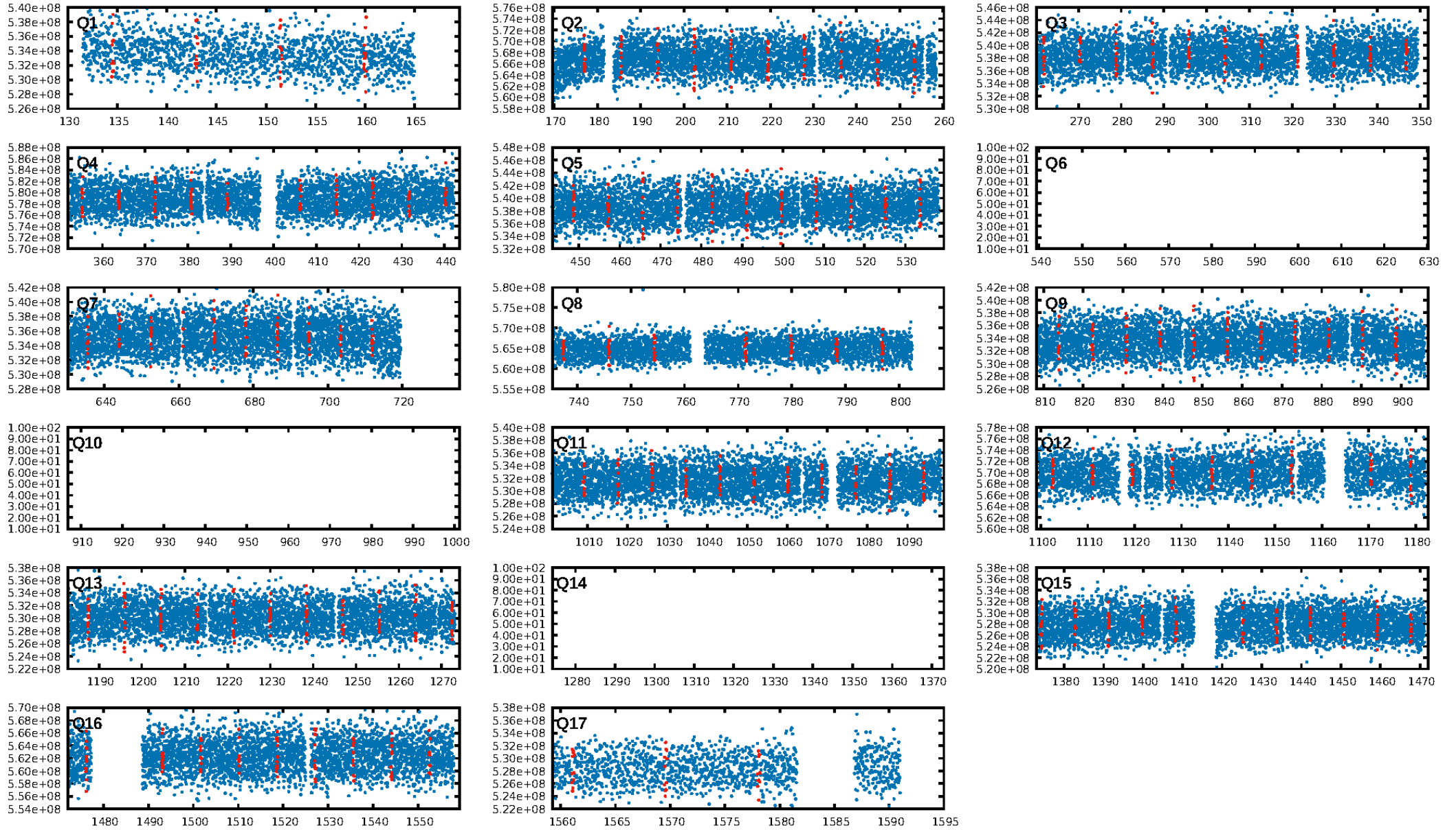
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.60σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 6.24e-08
RollingBand-fgt: N/A
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

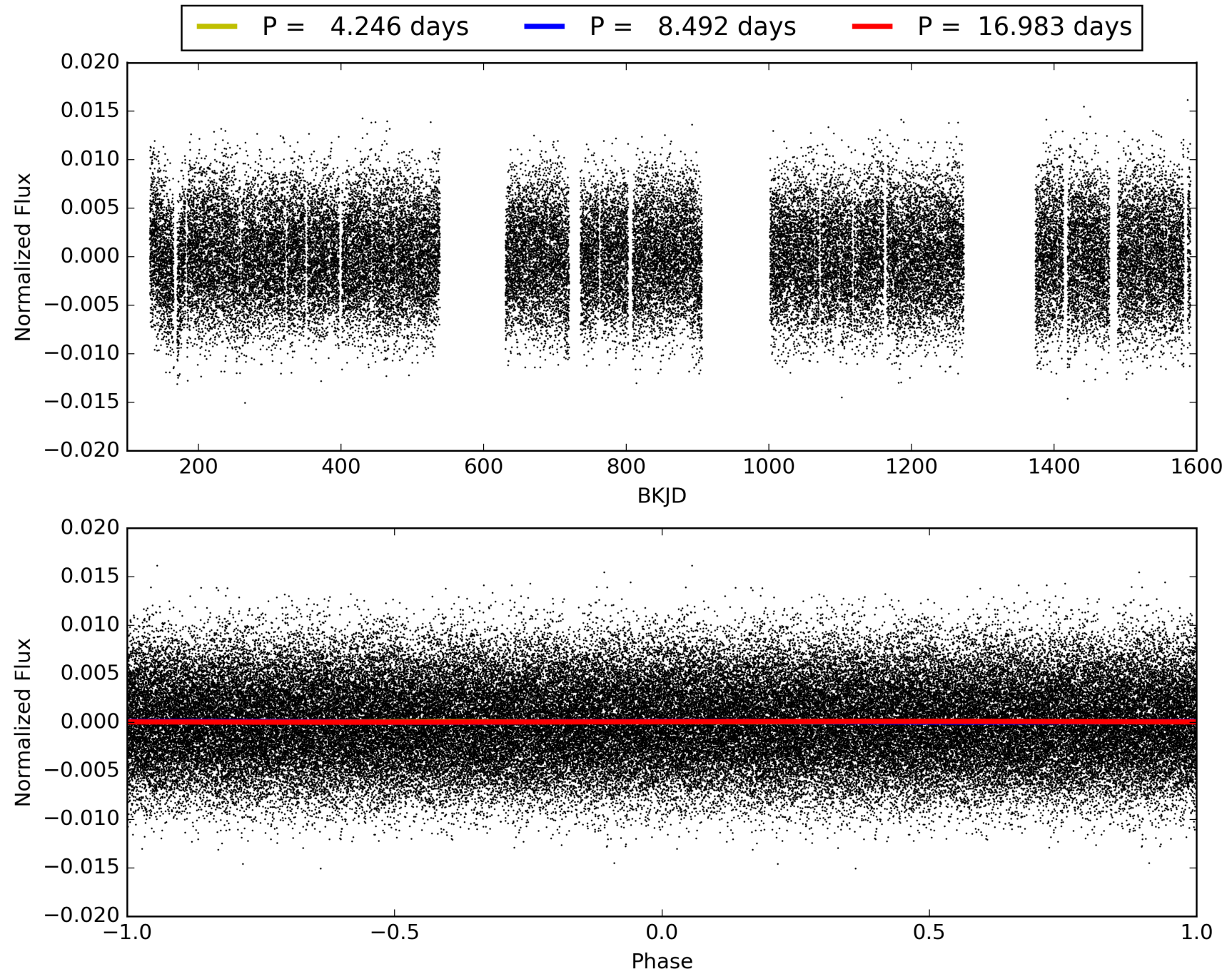
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:04:37 Z

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

TCE 004075685-03, PDC Light Curves

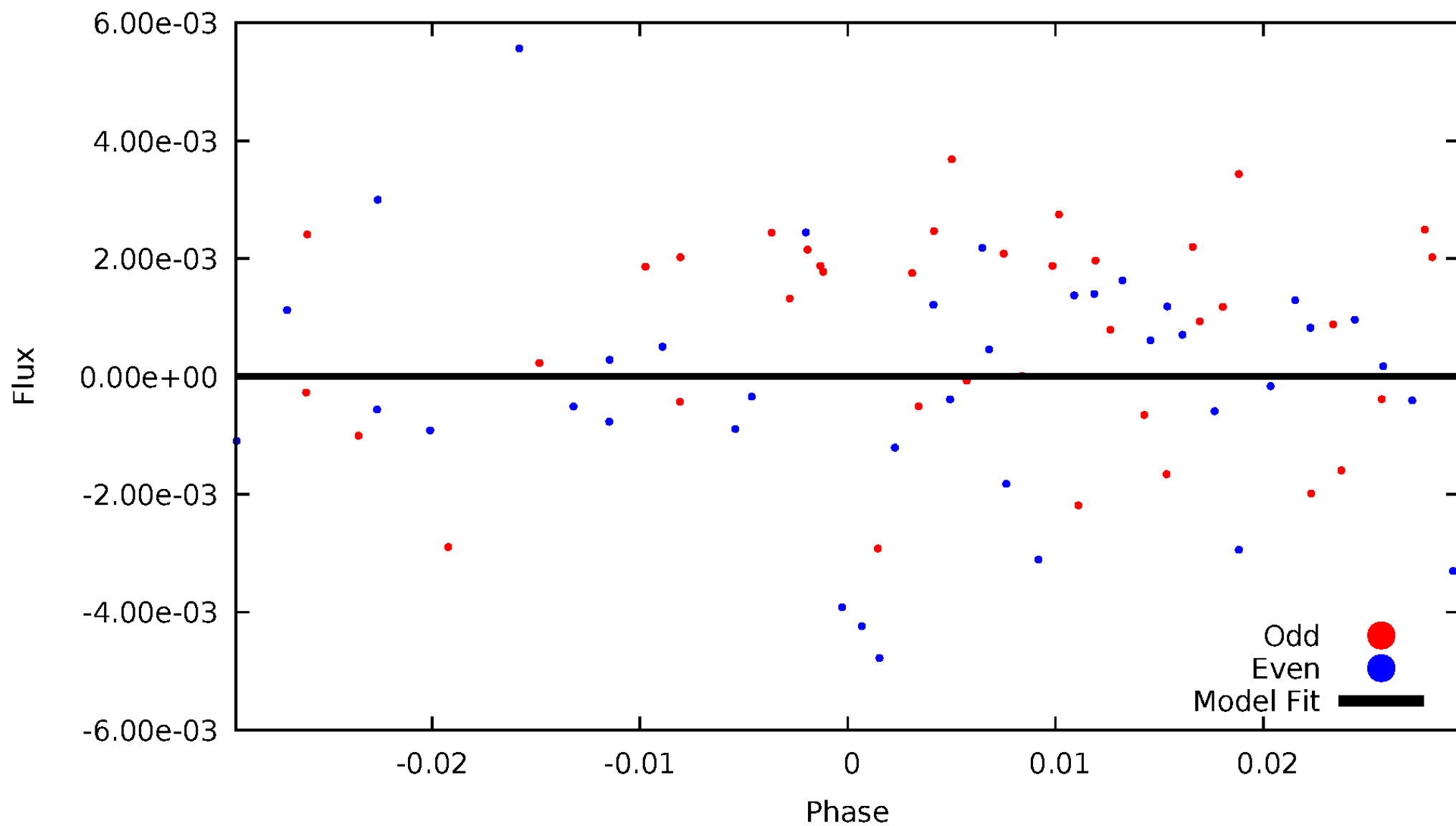


TCE 004075685-03



DV Odd/Even

TCE 004075685-03

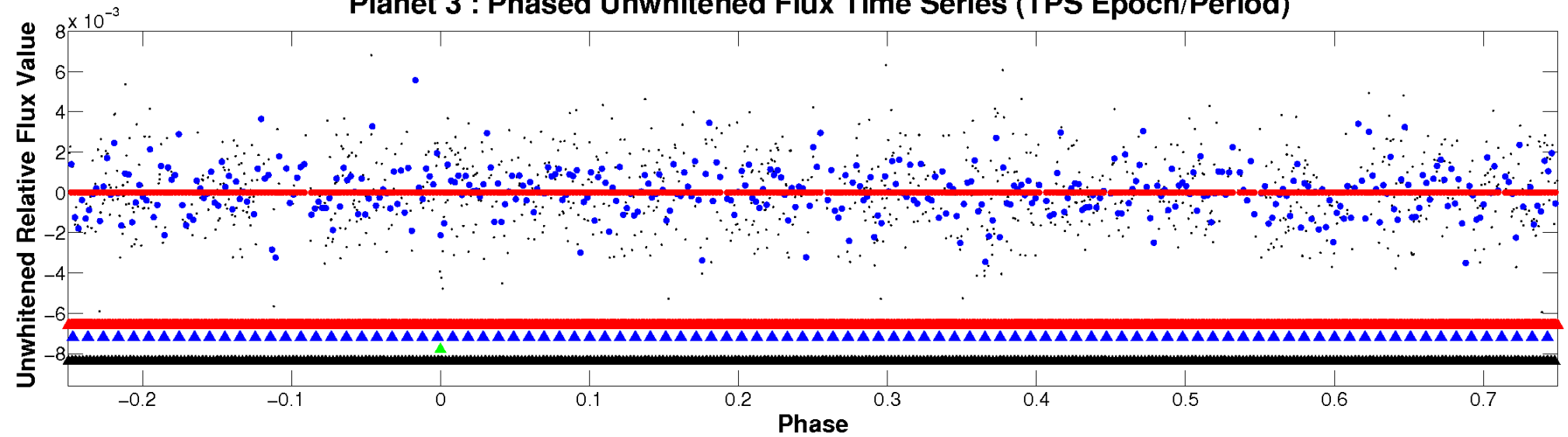


ALT Odd/Even

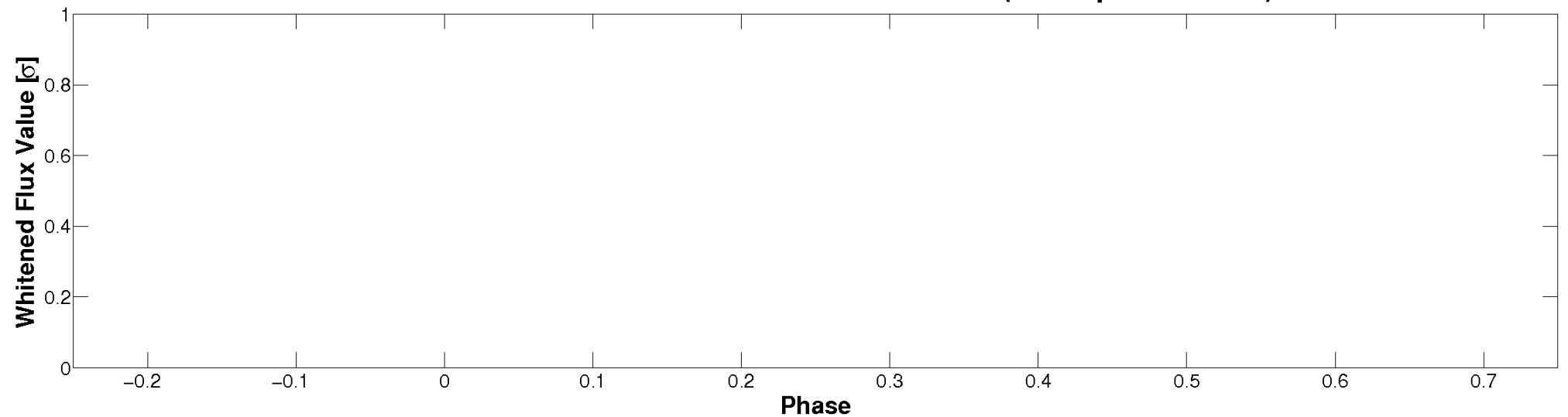
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

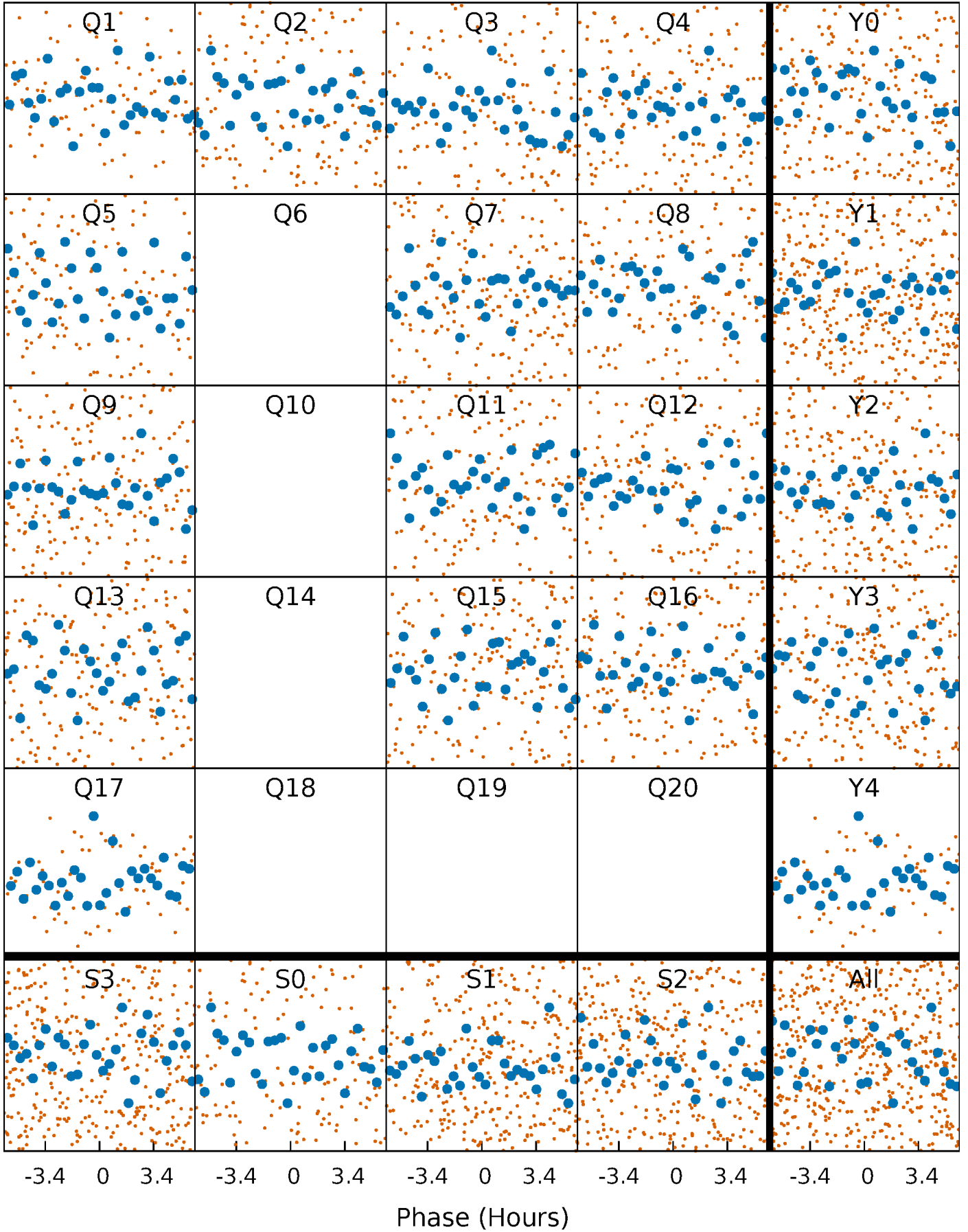


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



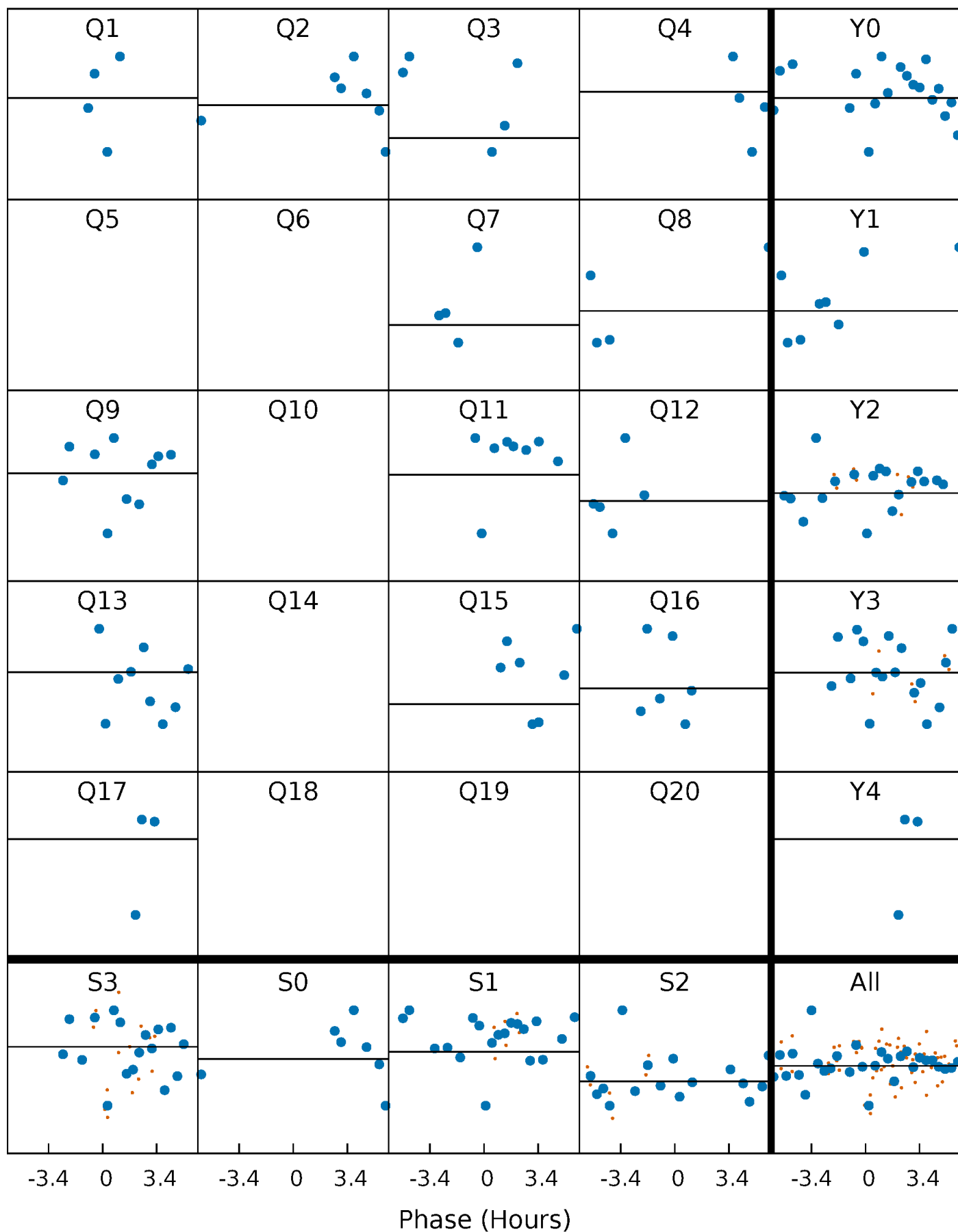
PDC Quarter-Phased Transit Curves

TCE 004075685-03 P= 8.491717 Days $T_0=134.500778$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004075685-03 P= 8.491717 Days $T_0=134.500778$ (BKJD)

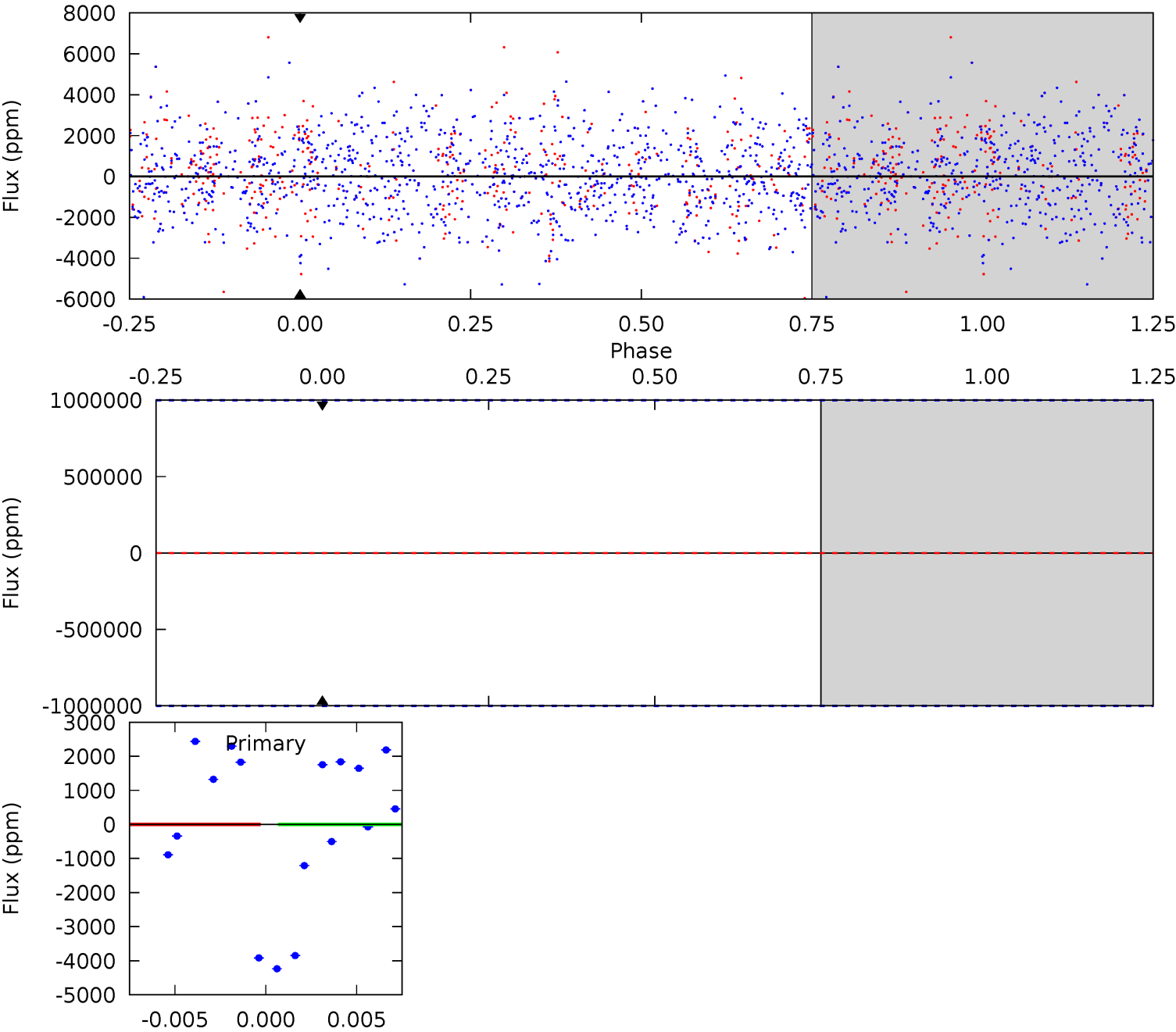


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

004075685-03, P = 8.491717 Days, E = 126.009061 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 004075685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7965^{+221}_{-359}	$3.708^{+0.432}_{-0.135}$	$0.070^{+0.250}_{-0.400}$	$3.508^{+0.885}_{-1.770}$	$2.294^{+0.298}_{-0.645}$	$0.075^{+0.321}_{-0.030}$
	+3%/-5%	+12%/-4%	+357%/-571%	+25%/-50%	+13%/-28%	+429%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004075685-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$26.03^{+27.33}_{-17.94}$	2731^{+229}_{-315}	5123^{+44174}_{-46714}	12^{+1860}_{-1548}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

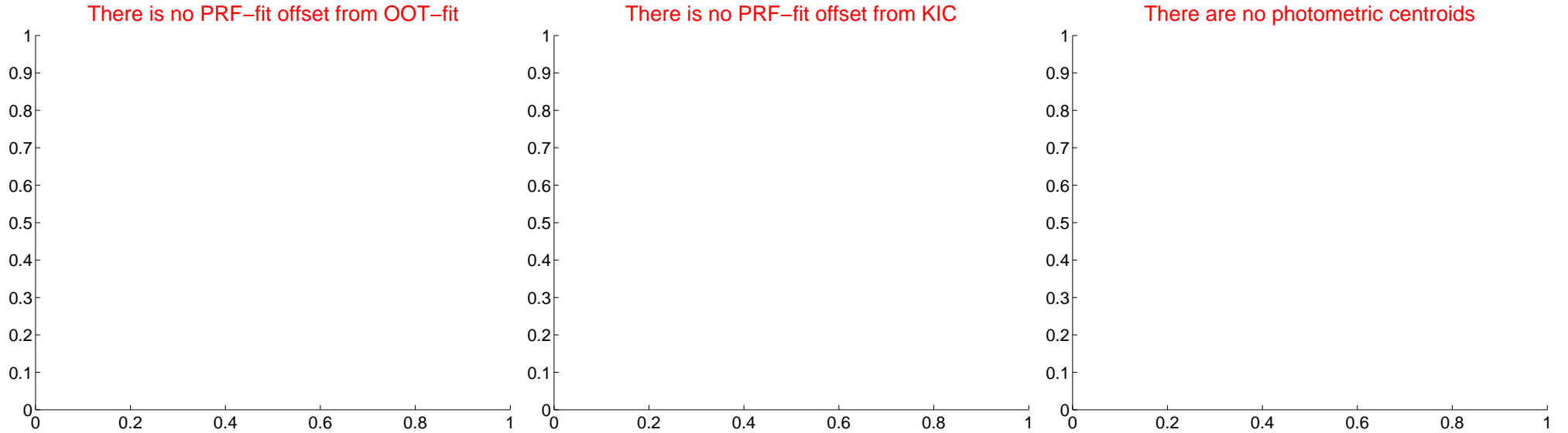
DV Centroid Data

Supplemental centroid analysis for 004075685-03. **Kepler magnitude: 11.78.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.



folded centroid time series figure for this object.

Declination

KIC 004075685

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})
004075685-01	OBS	No	0.608676	131.709104	182.2	4.591	11.1	15.4	3.51	7965	5.67	129170.32
004075685-02	OBS	No	5.285641	133.101124	3931.6	0.886	14.2	24.4	3.51	7965	24.20	7236.81
004075685-03	OBS	No	8.491717	134.500778	150.7	3.000	10.8	-1.0	3.51	7965	4.35	3846.06
004075685-04	OBS	No	2.438019	132.419353	2767.5	0.518	12.3	17.1	3.51	7965	19.66	20306.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004075685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004075685-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
004075685-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
004075685-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

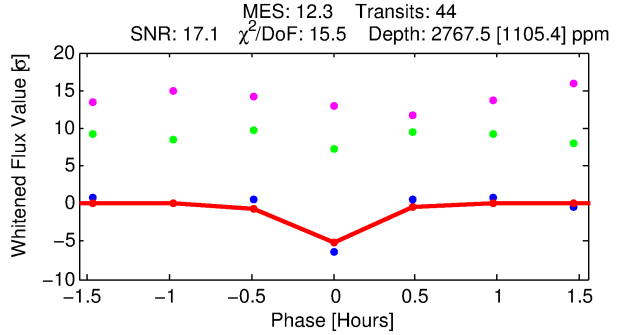
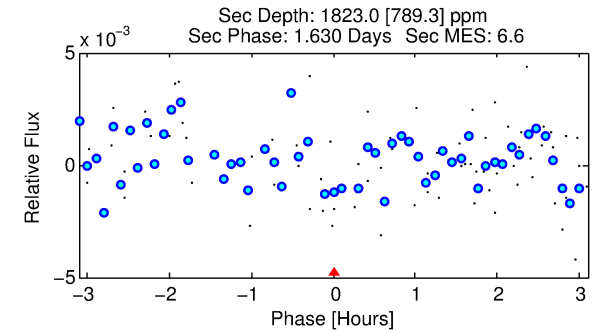
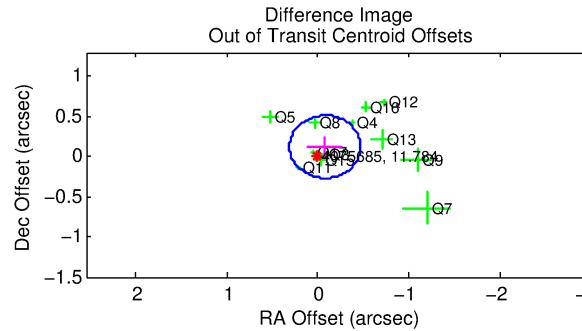
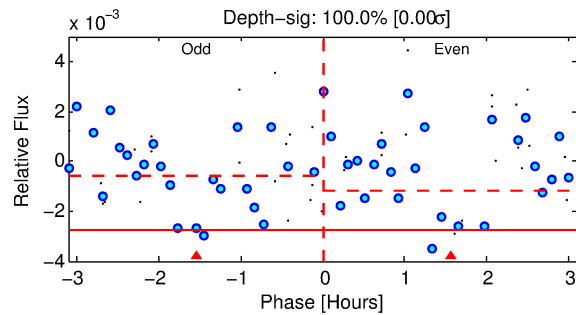
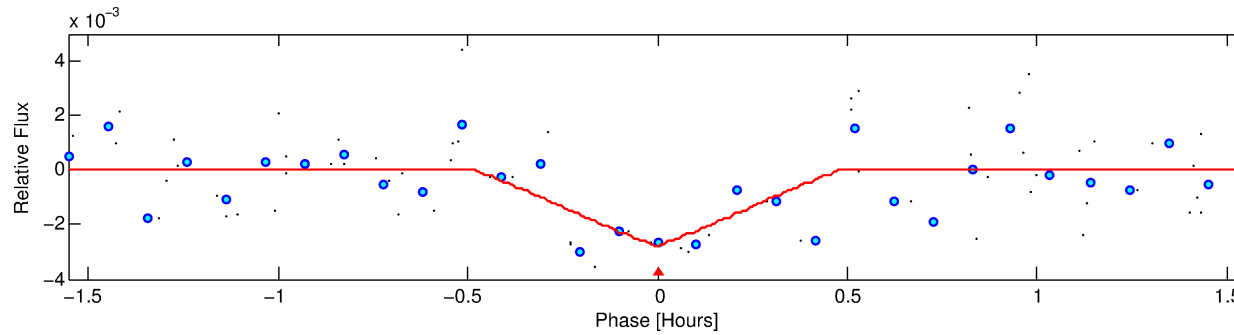
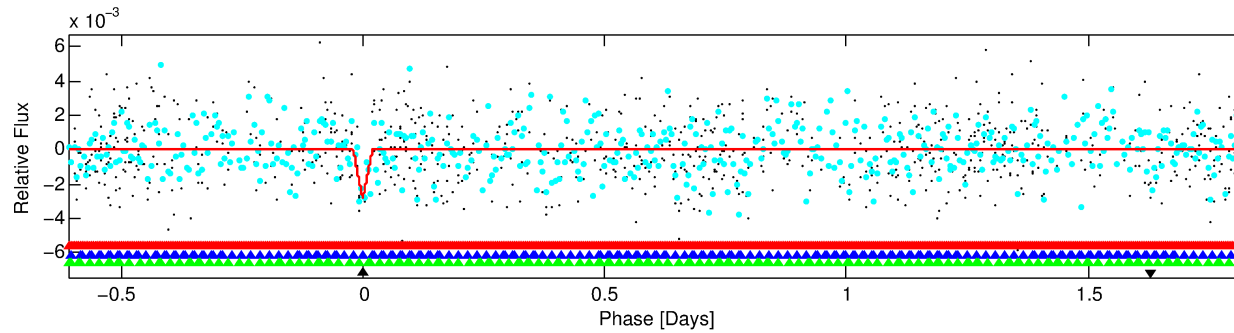
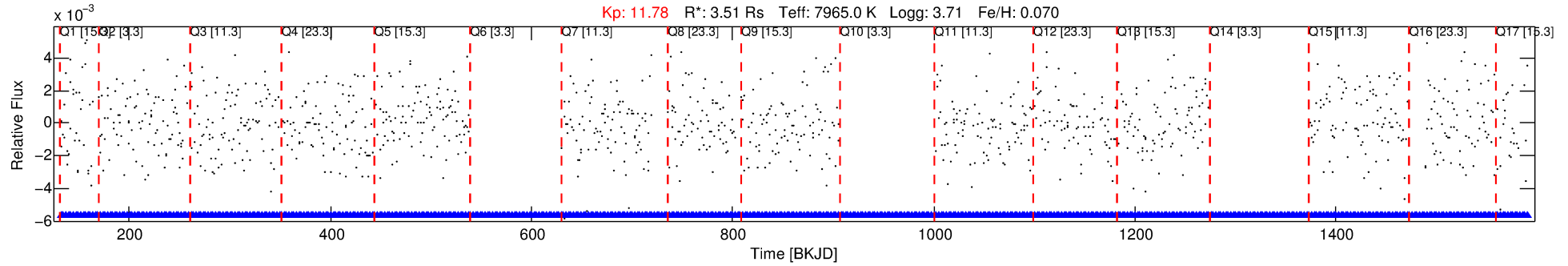
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004075685-04

No Significant Match Found

DV One-Page Summary

KIC: 4075685 Candidate: 4 of 4 Period: 2.438 d



DV Fit Results:

Period = 2.43802 [0.00002] d
Epoch = 132.4194 [0.0037] BKJD
Rp/R* = 0.0513 [0.0824]
a/R* = 36.25 [311.90]
b = 0.30 [26.38]
Seff = 20306.16 [15536.69]
Teq = 3044 [582] K
Rp = 19.65 [33.06] Re
a = 0.0467 [0.0221] AU
Ag = 5.67 [18.85] [0.25 σ]
Teffp = 7263 [5888] K [0.71 σ]

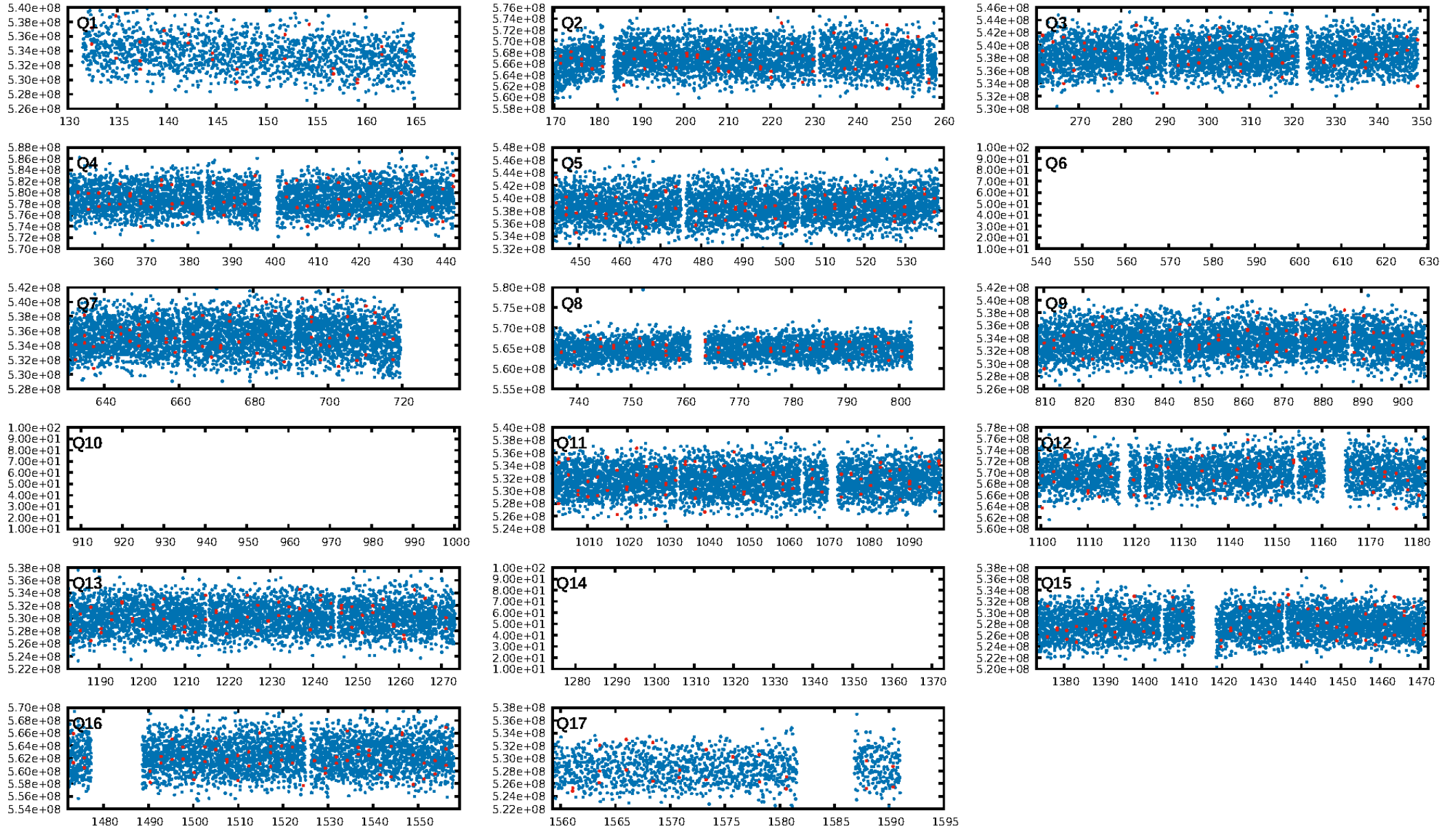
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.50 σ]
LongPeriod-sig: 100.0% [66.59 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 2.31e-07
RollingBand-fgt: 1.00 [44/44]
GhostDiagnostic-chr: 0.3181
Centroid-sig: N/A
Centroid-so: 0.168 arcsec [7.77 σ]
OotOffset-rm: 0.145 arcsec [1.11 σ]
KicOffset-rm: 0.300 arcsec [2.32 σ]
OotOffset-st: 0/4/4/4 [12]
KicOffset-st: 0/4/4/4 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.00 [0/14]

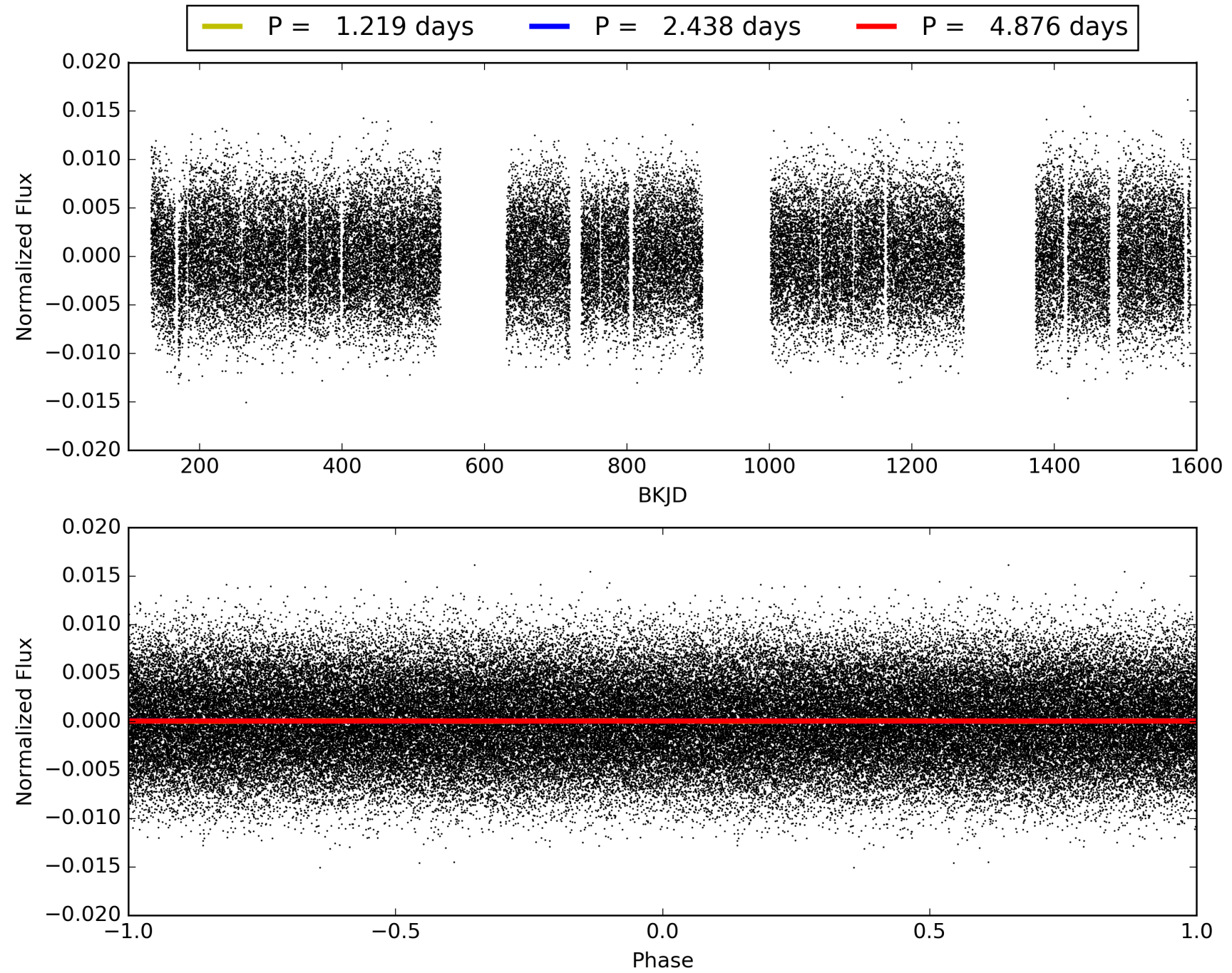
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:04:39 Z

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

TCE 004075685-04, PDC Light Curves

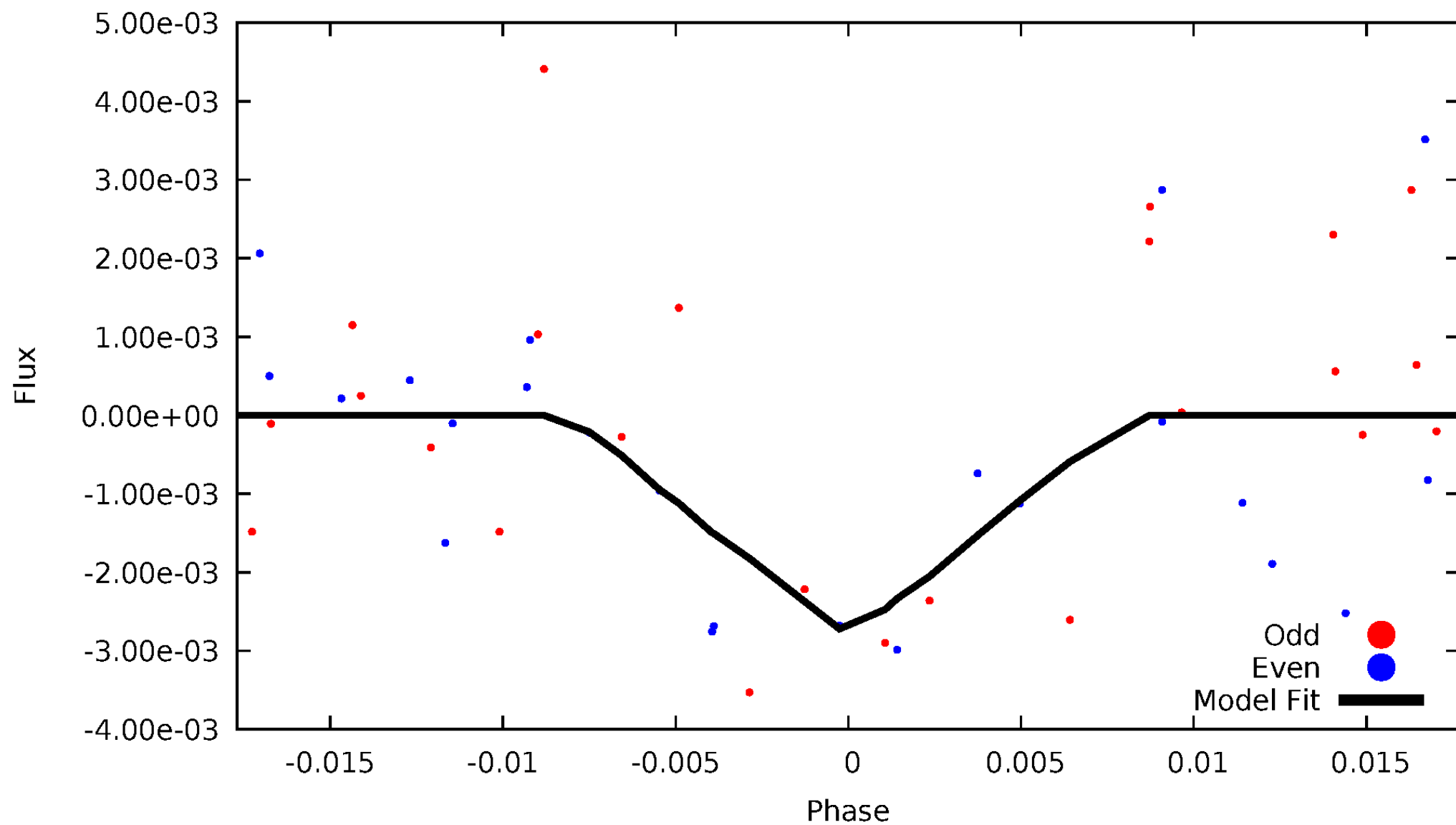


TCE 004075685-04



DV Odd/Even

TCE 004075685-04

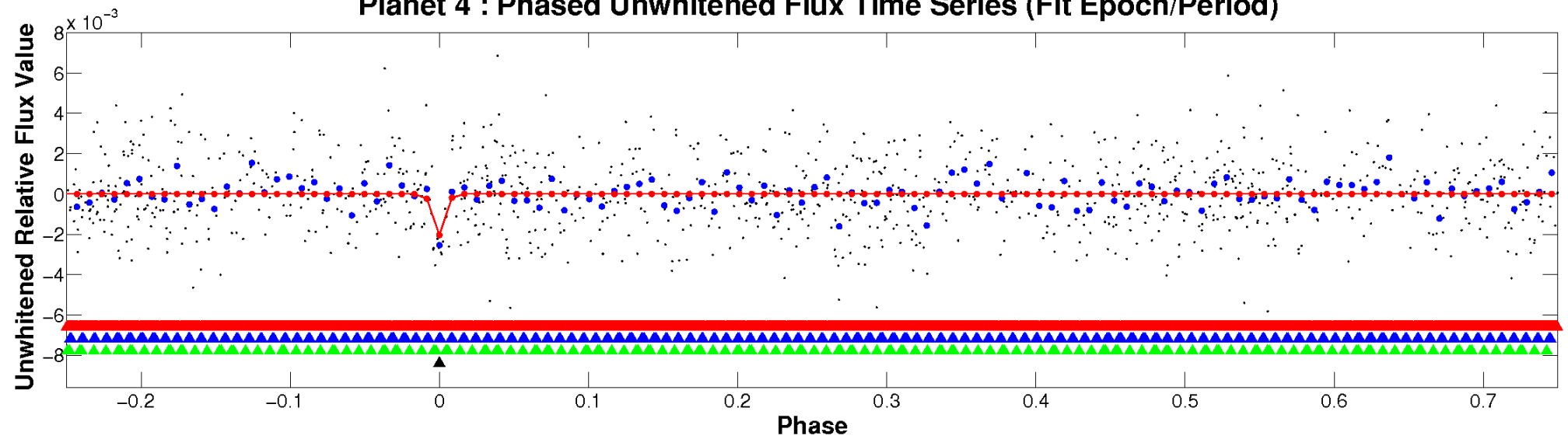


ALT Odd/Even

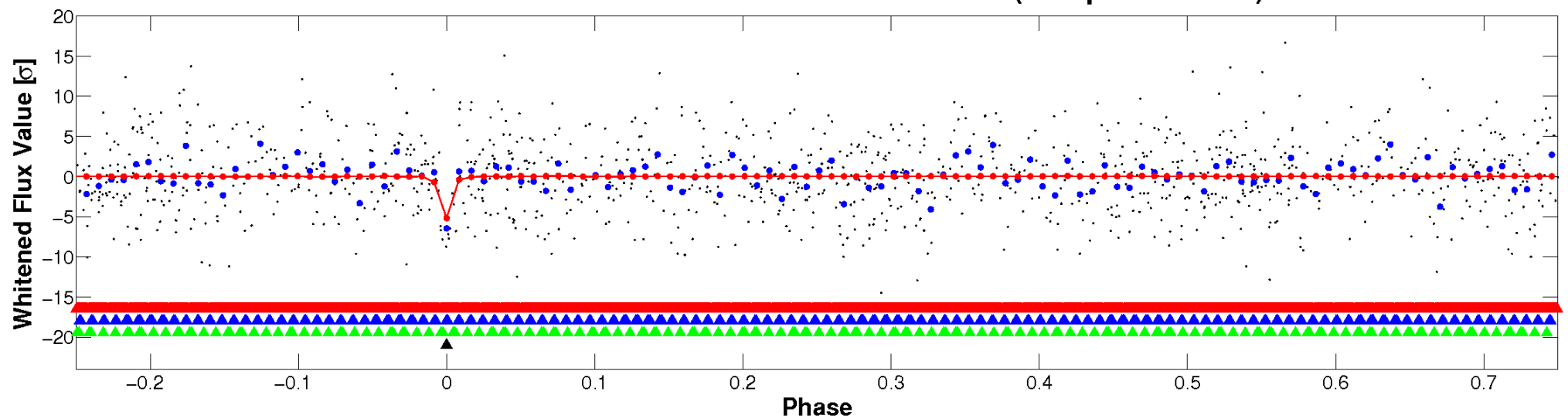
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

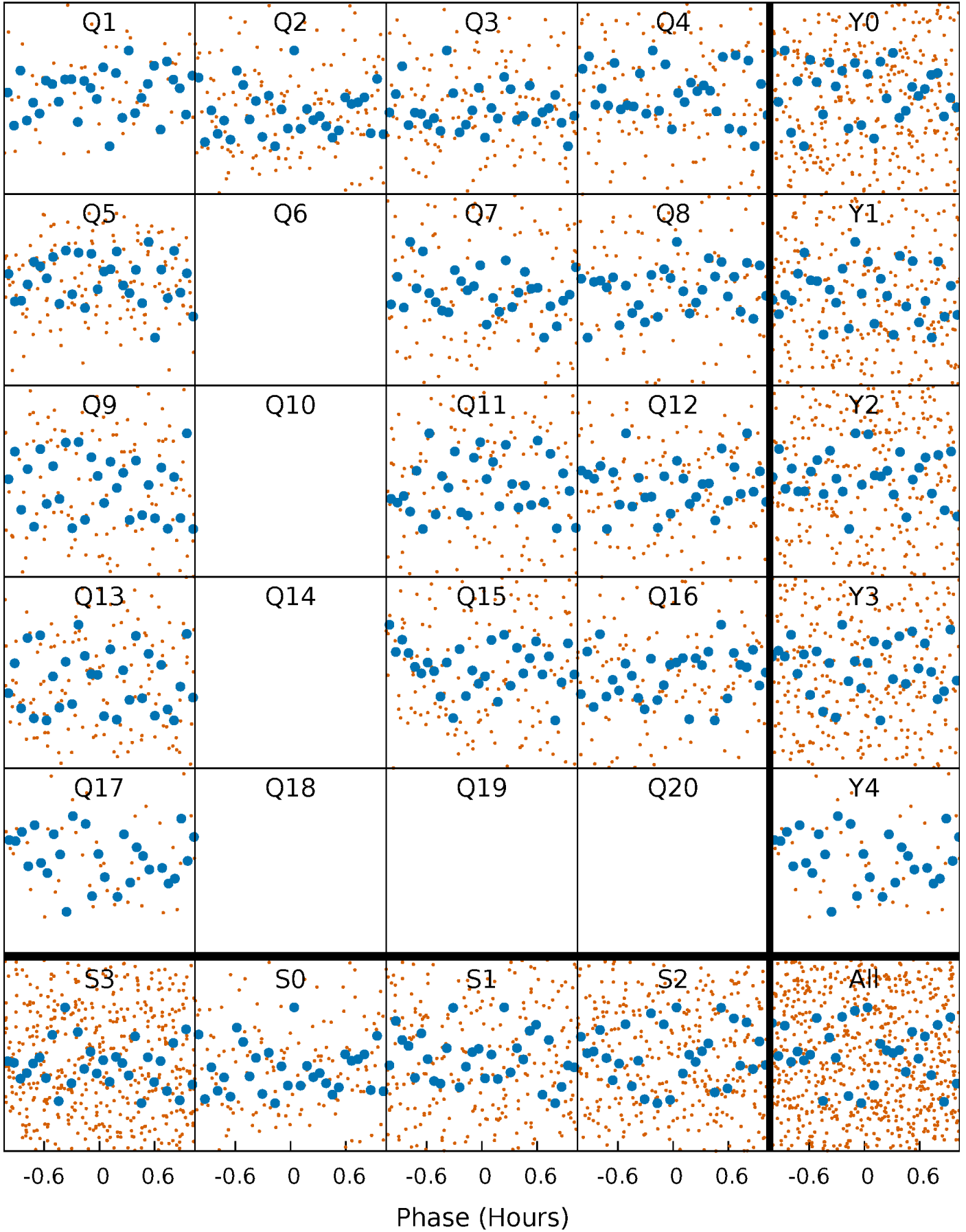


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



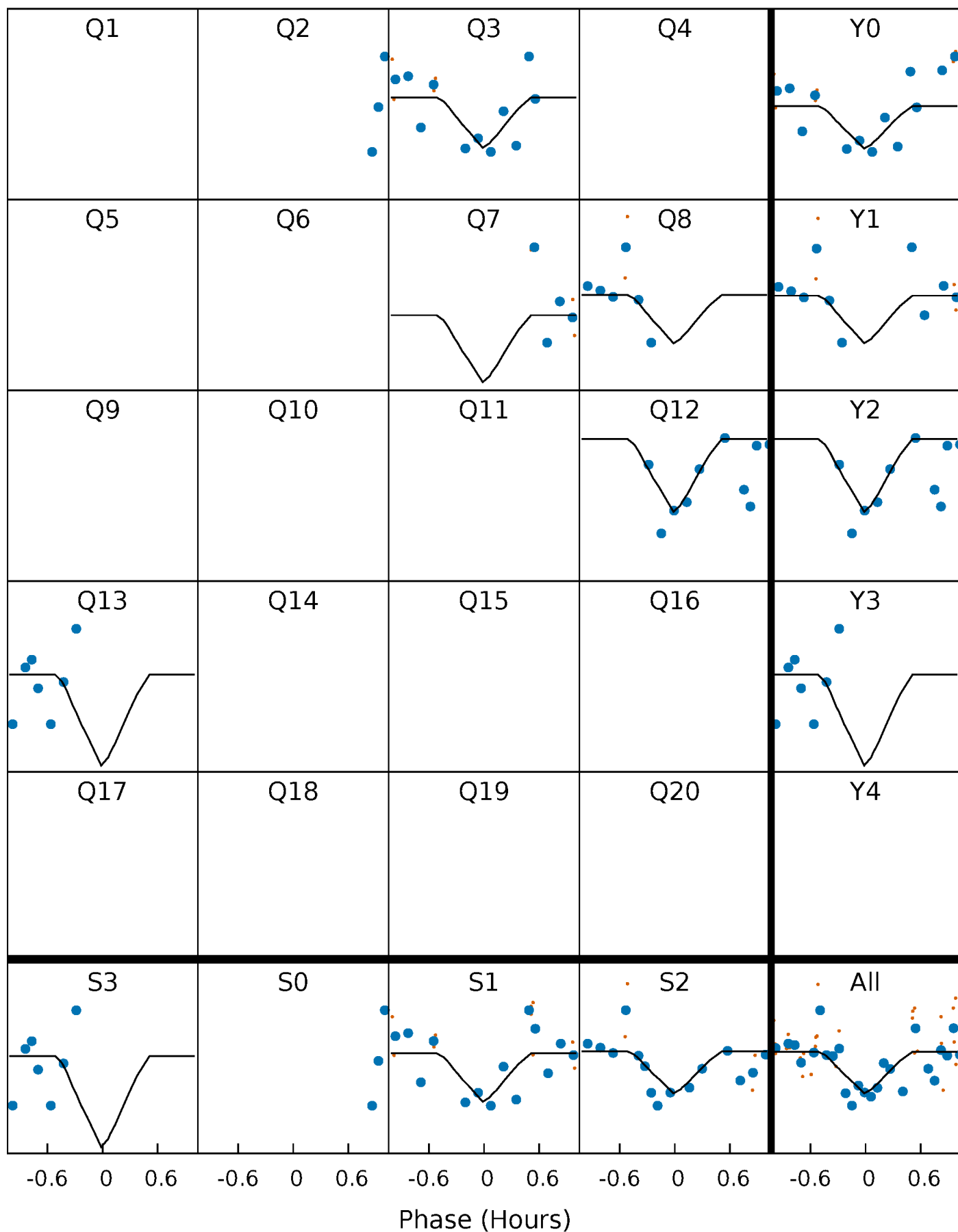
PDC Quarter-Phased Transit Curves

TCE 004075685-04 $P = 2.438019$ Days $T_0 = 132.419353$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004075685-04 P= 2.438019 Days $T_0=132.419353$ (BKJD)

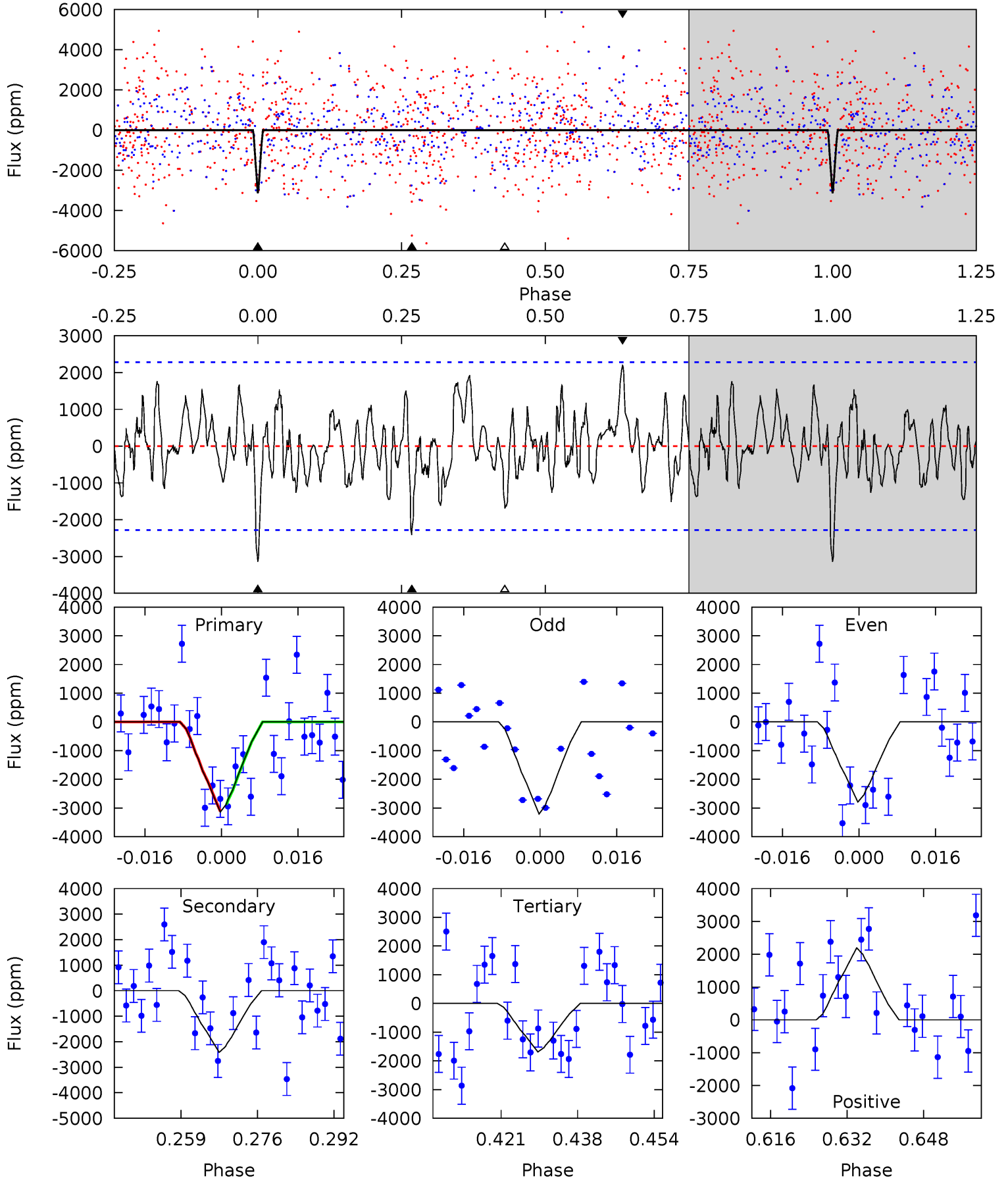


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

004075685-04, P = 2.438019 Days, E = 132.419353 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.79	5.22	3.65	4.74	4.93	2.40	1.59	3.14	2.05	1.57	0.48	0.46	0	0.41	0.25



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 004075685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7965^{+221}_{-359}	$3.708^{+0.432}_{-0.135}$	$0.070^{+0.250}_{-0.400}$	$3.508^{+0.885}_{-1.770}$	$2.294^{+0.298}_{-0.645}$	$0.075^{+0.321}_{-0.030}$
	+3%/-5%	+12%/-4%	+357%/-571%	+25%/-50%	+13%/-28%	+429%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004075685-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2414 \pm 462	$27.53^{+26.76}_{-18.29}$	4140^{+342}_{-464}	5910^{+5782}_{-1720}	$3.748^{+29.720}_{-2.814}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

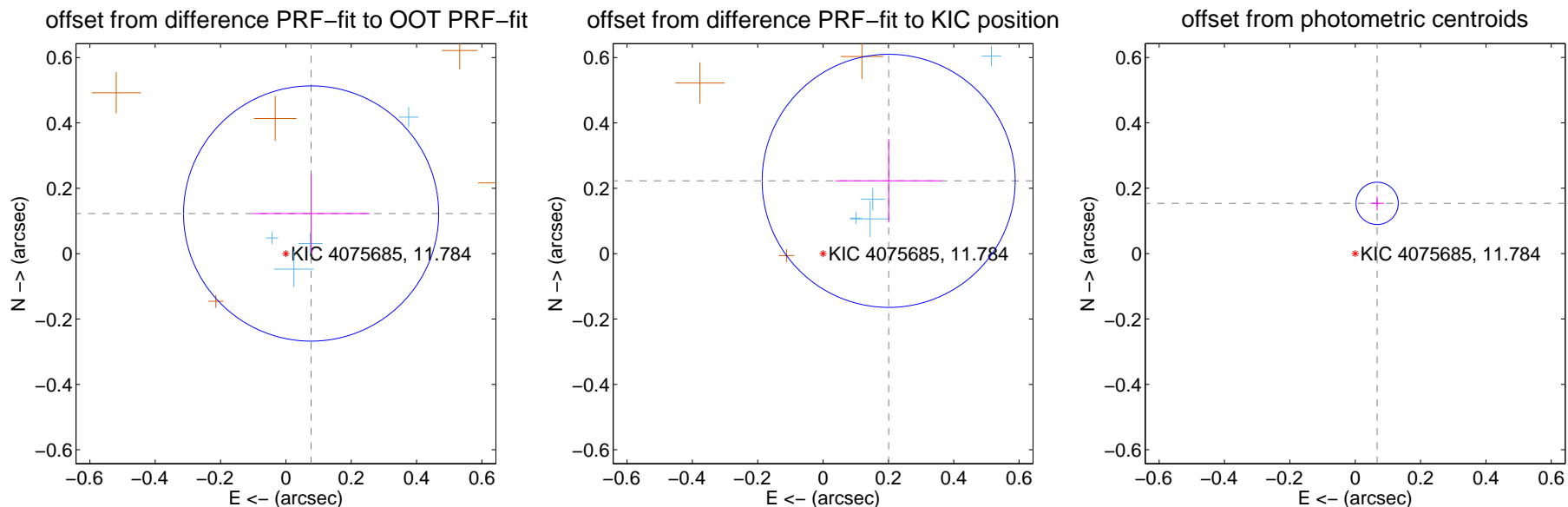
DV Centroid Data

Supplemental centroid analysis for 004075685-04. **Kepler magnitude: 11.78.** Transit SNR 17.09

There are 6 quarters with good PRF difference image offsets

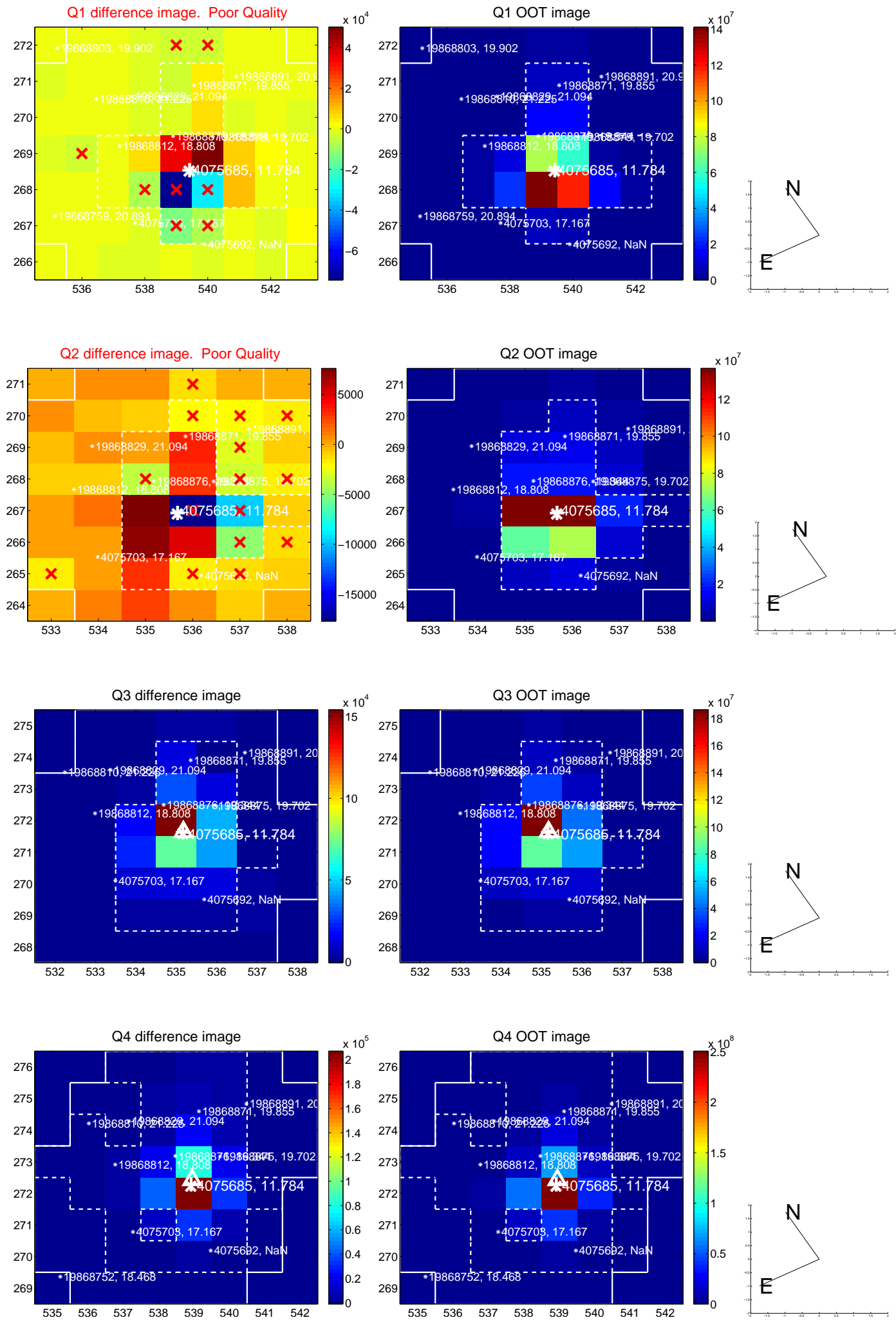
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.145 ± 0.130	1.11	-0.077 ± 0.179	0.123 ± 0.121
PRF-fit source offset from KIC position	0.300 ± 0.129	2.32	-0.201 ± 0.162	0.223 ± 0.127
photometric centroid source offset	0.17 ± 0.02	7.77	-0.07 ± 0.02	0.15 ± 0.02

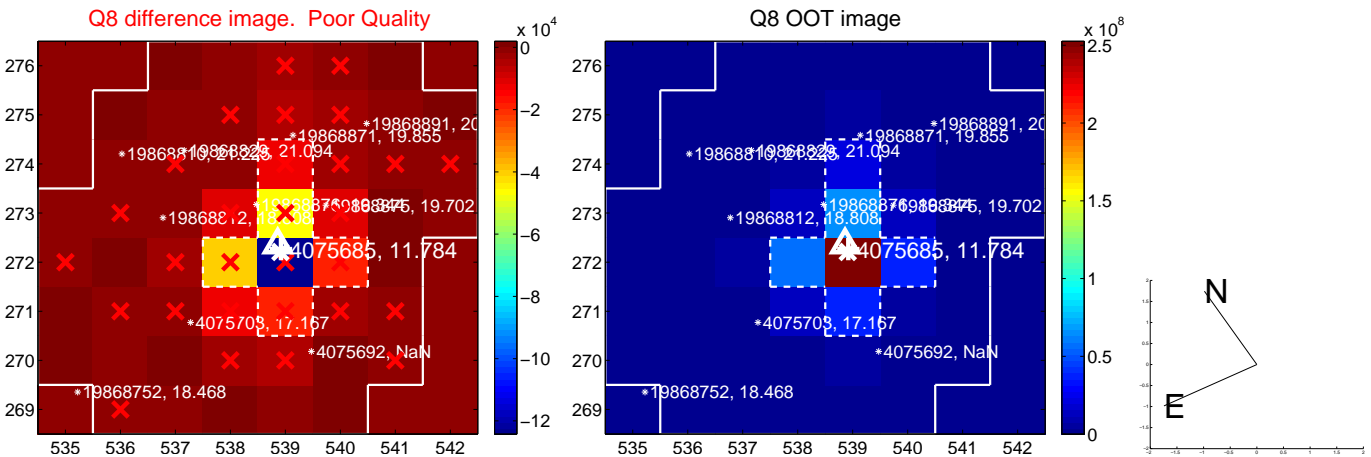
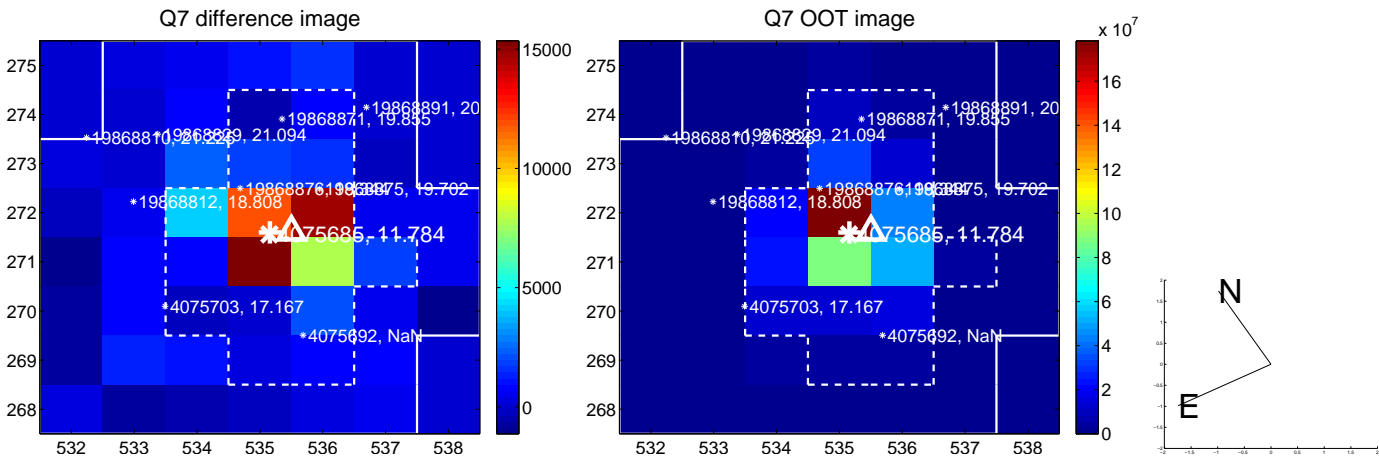
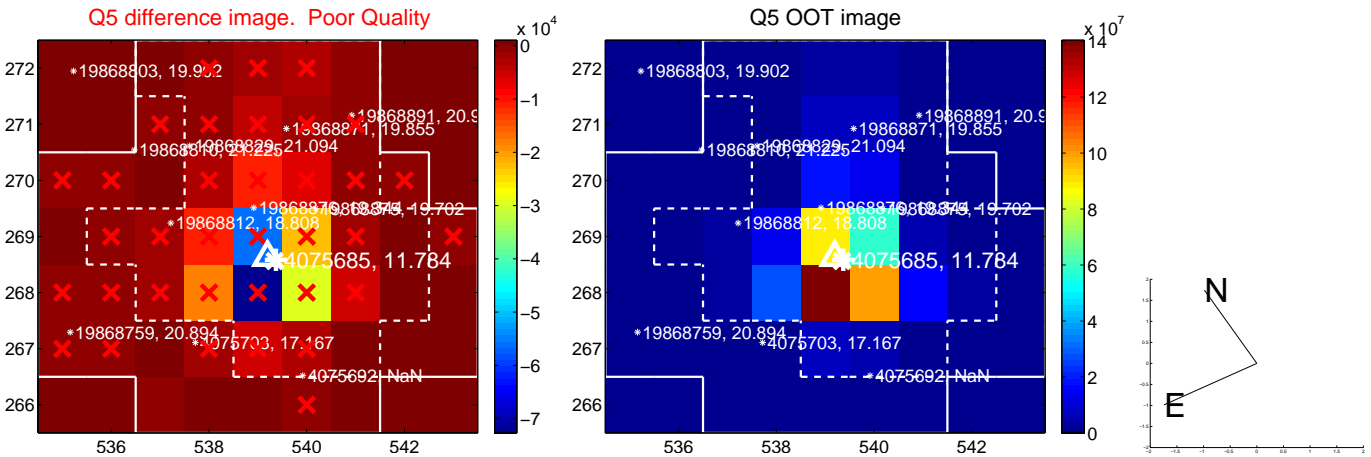


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

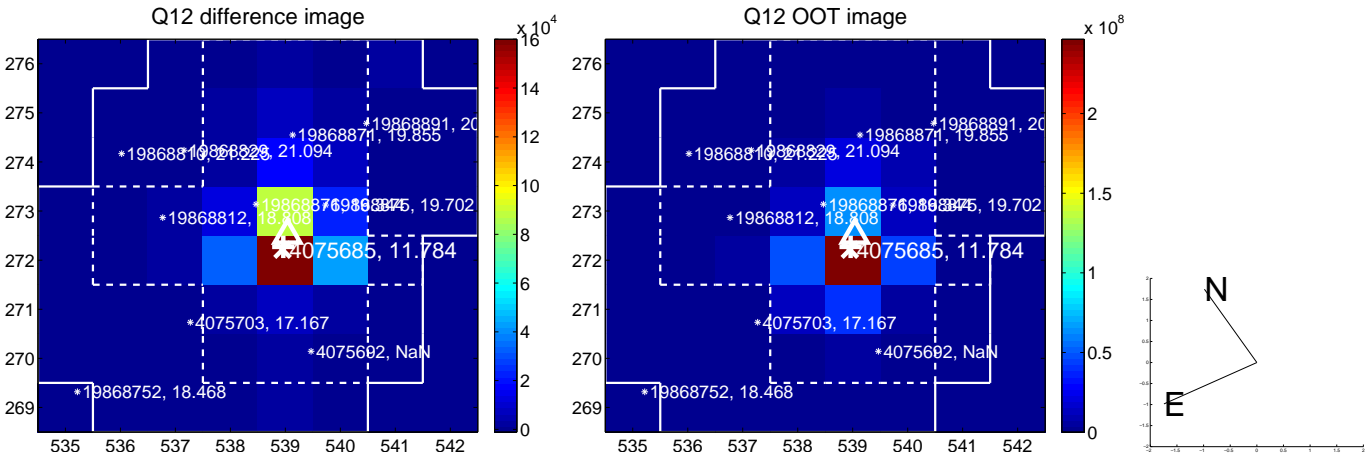
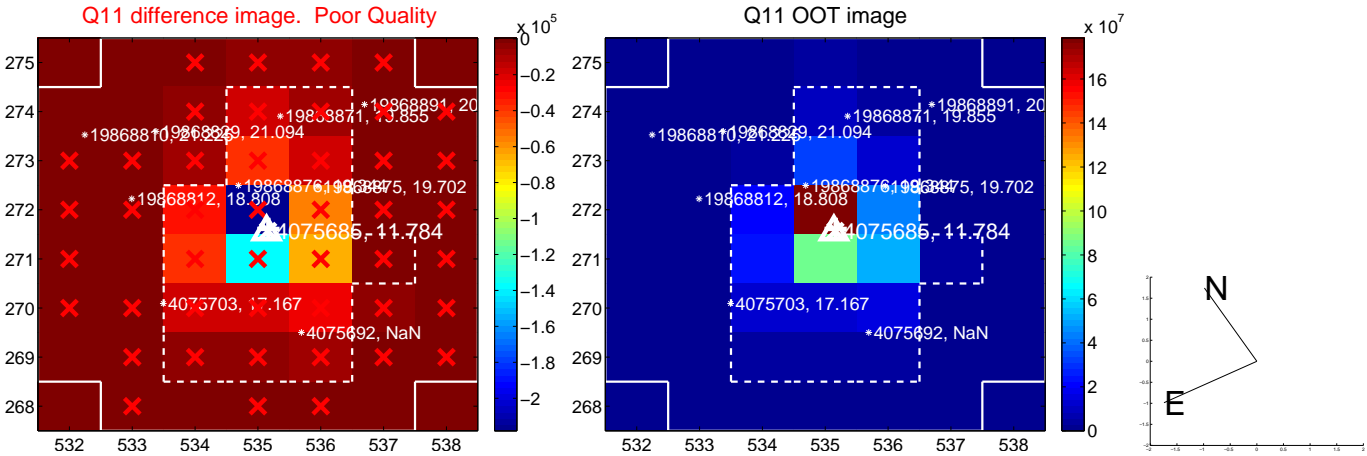
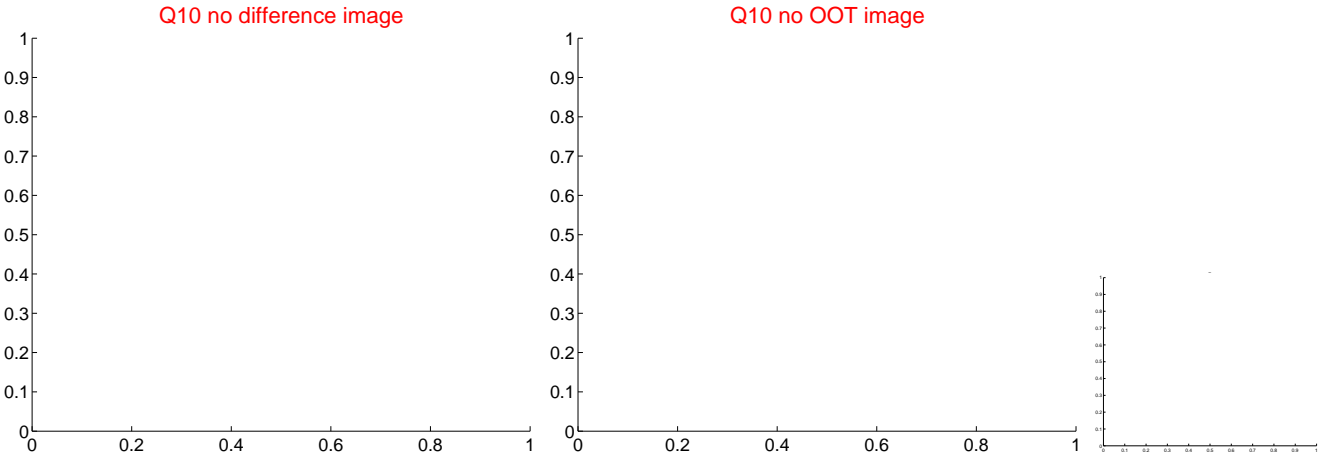
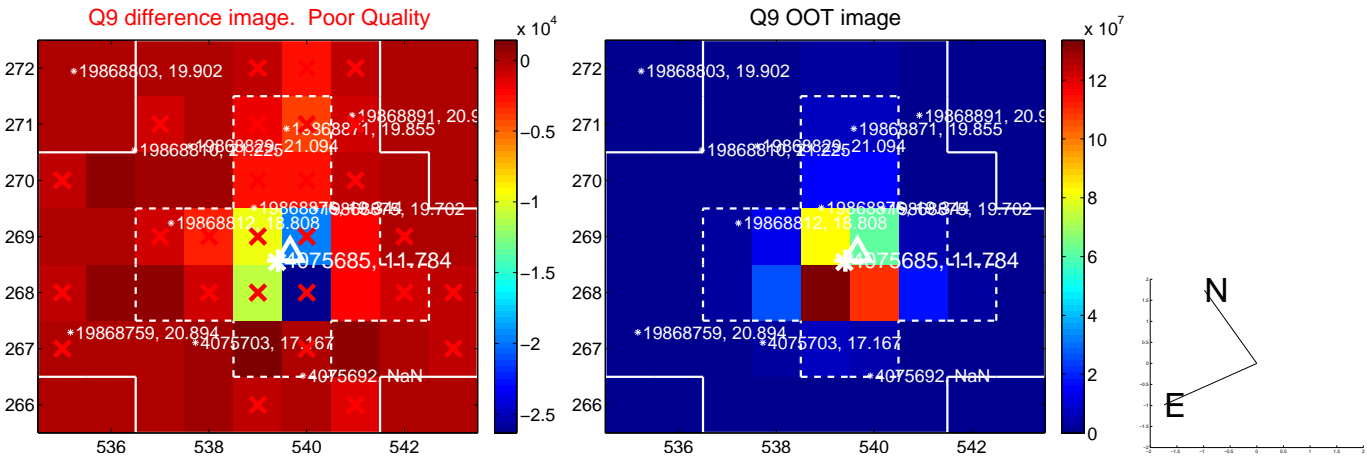
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



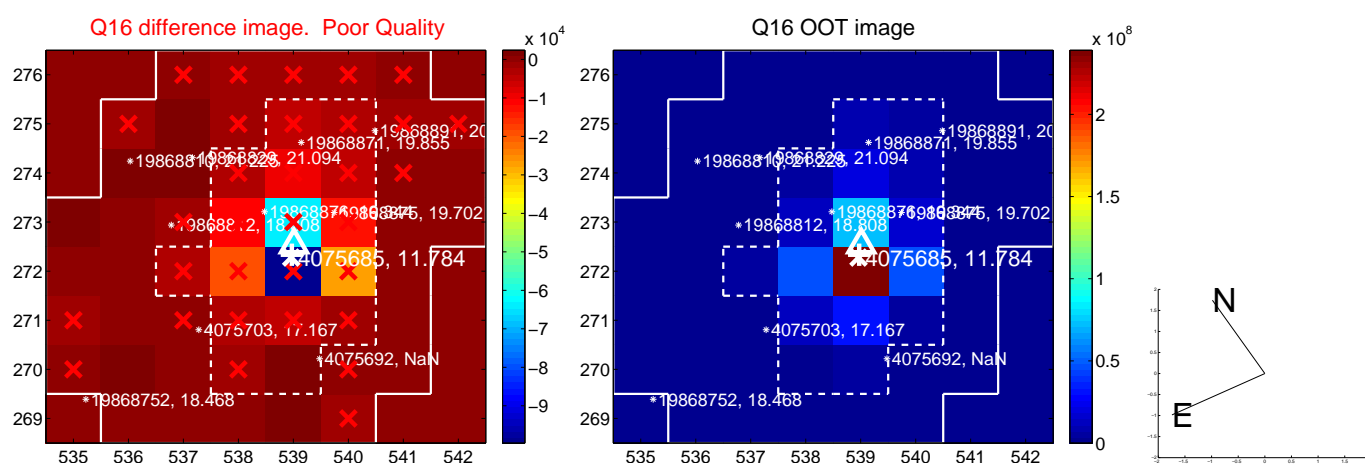
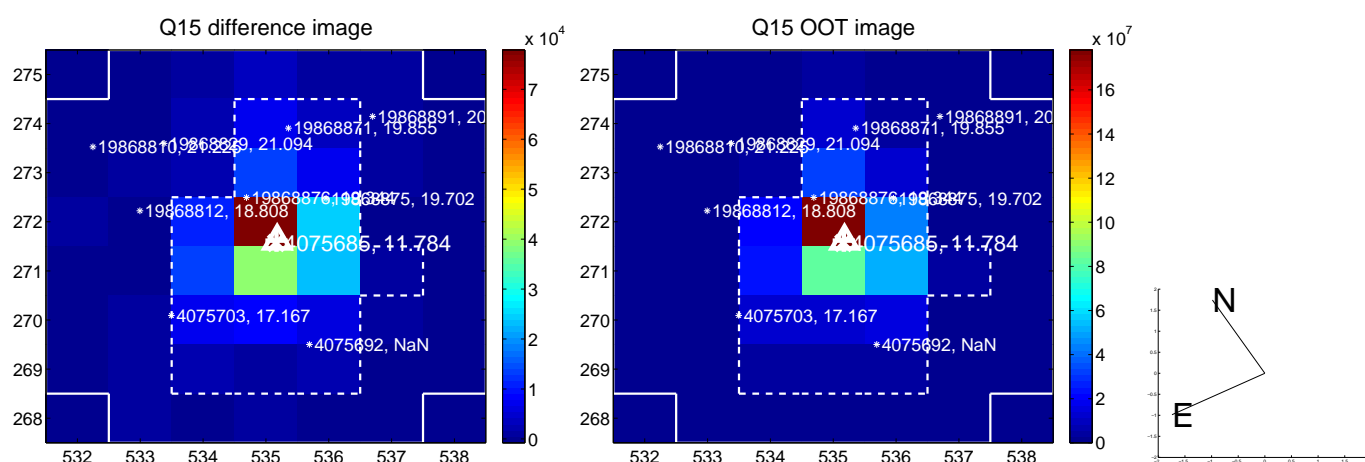
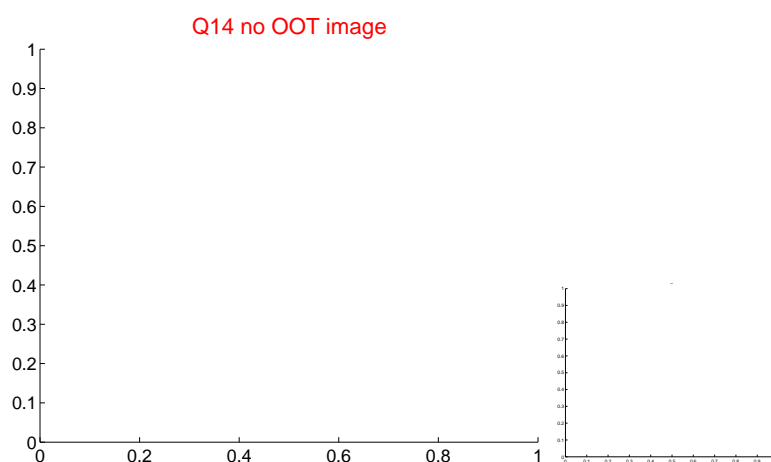
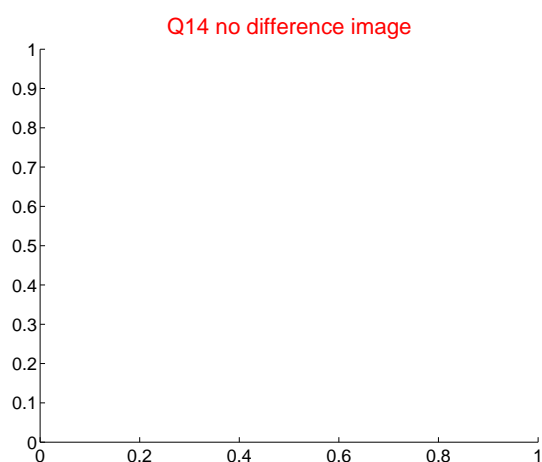
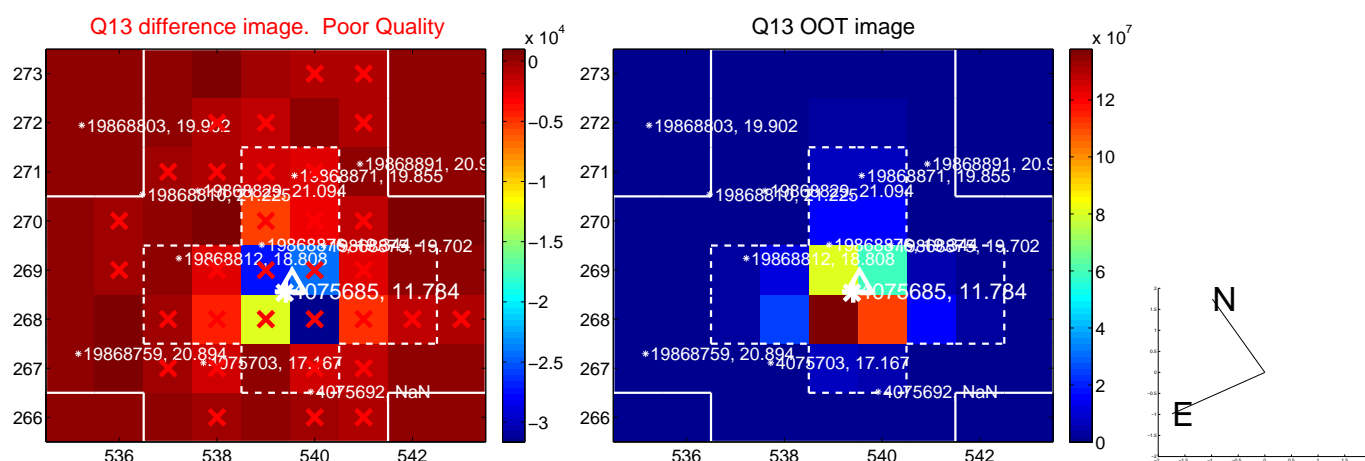
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



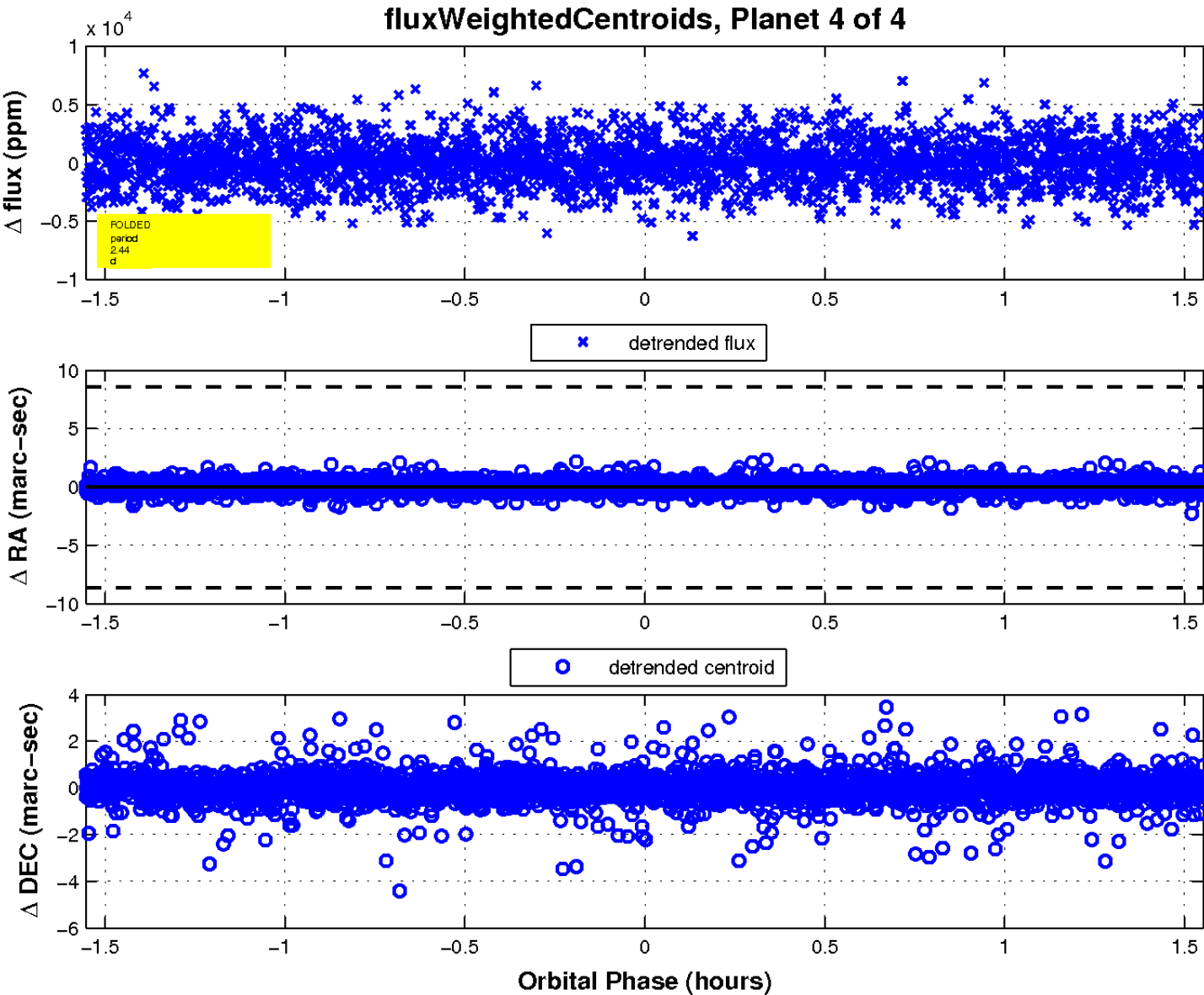
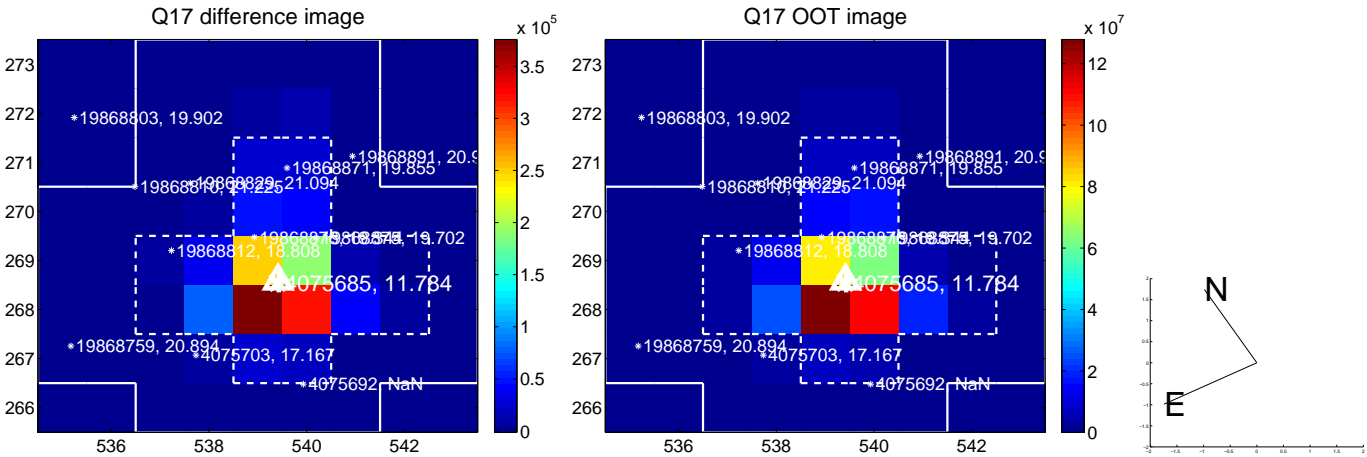
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UKIRT Image

Declination

