

KIC 009767486

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})
009767486-01	OBS	No	1.242618	131.665062	24.5	3.857	11.7	11.8	2.65	6784	1.52	17342.39
009767486-02	OBS	No	212.872737	276.819725	136.8	15.975	9.6	6.9	2.65	6784	3.42	18.23
009767486-03	OBS	No	372.759070	432.318360	339.5	18.239	7.3	7.4	2.65	6784	5.85	8.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009767486-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009767486-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009767486-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

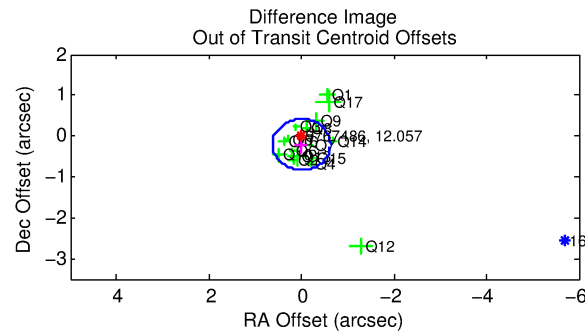
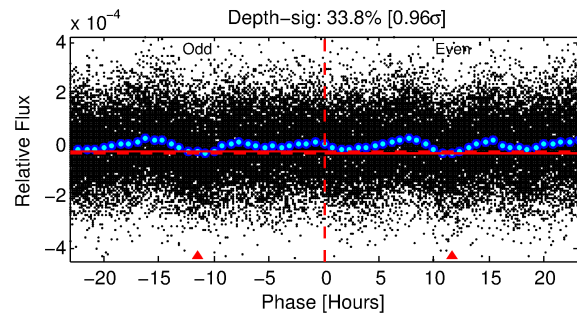
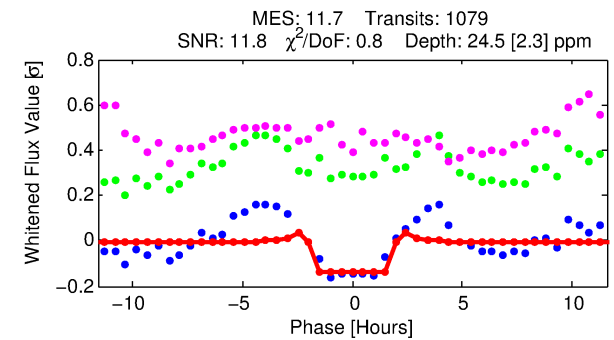
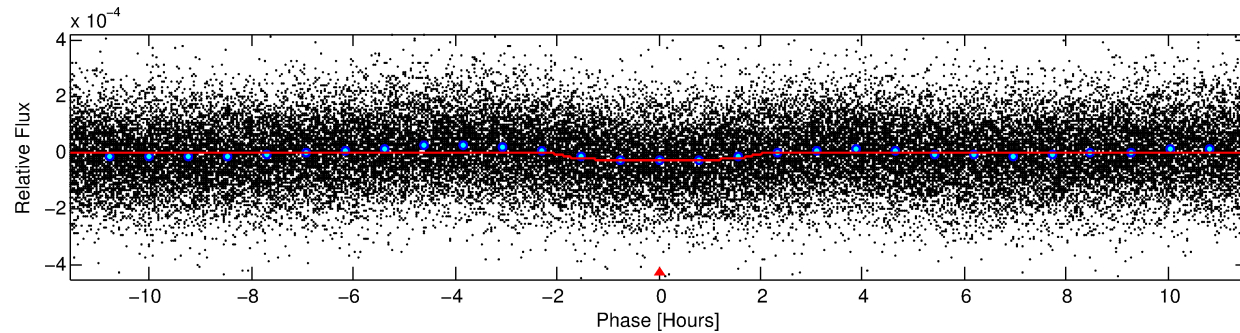
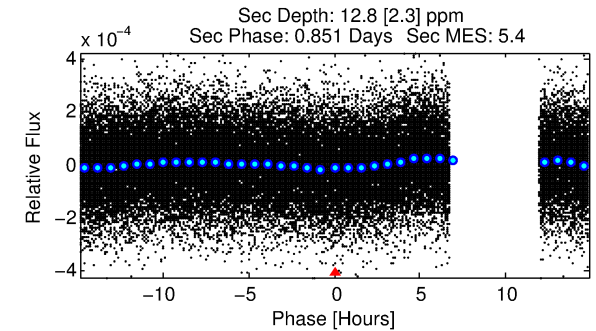
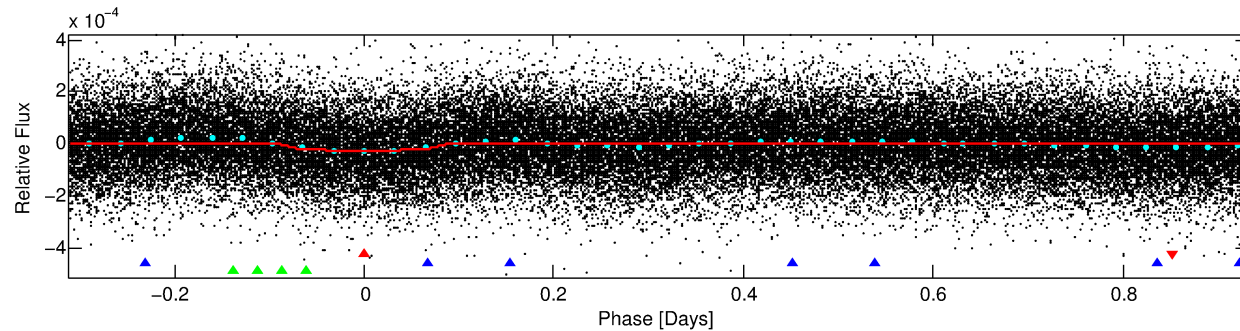
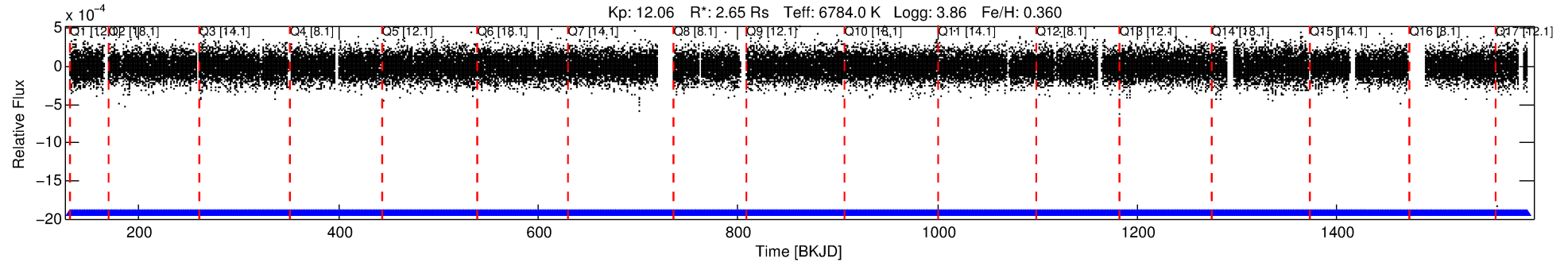
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009767486-01

No Significant Match Found

DV One-Page Summary

KIC: 9767486 Candidate: 1 of 3 Period: 1.243 d



DV Fit Results:

Period = 1.24262 [0.00001] d
Epoch = 131.6651 [0.0024] BKJD
Rp/R* = 0.0053 [0.0011]
a/R* = 1.46 [0.97]
b = 0.89 [0.28]
Seff = 17342.39 [10305.12]
Teff = 2926 [435] K
Rp = 1.52 [0.69] Re
a = 0.0277 [0.0102] AU
Ag = 2.34 [1.73] [0.78σ]
Teffp = 5597 [692] K [3.27σ]

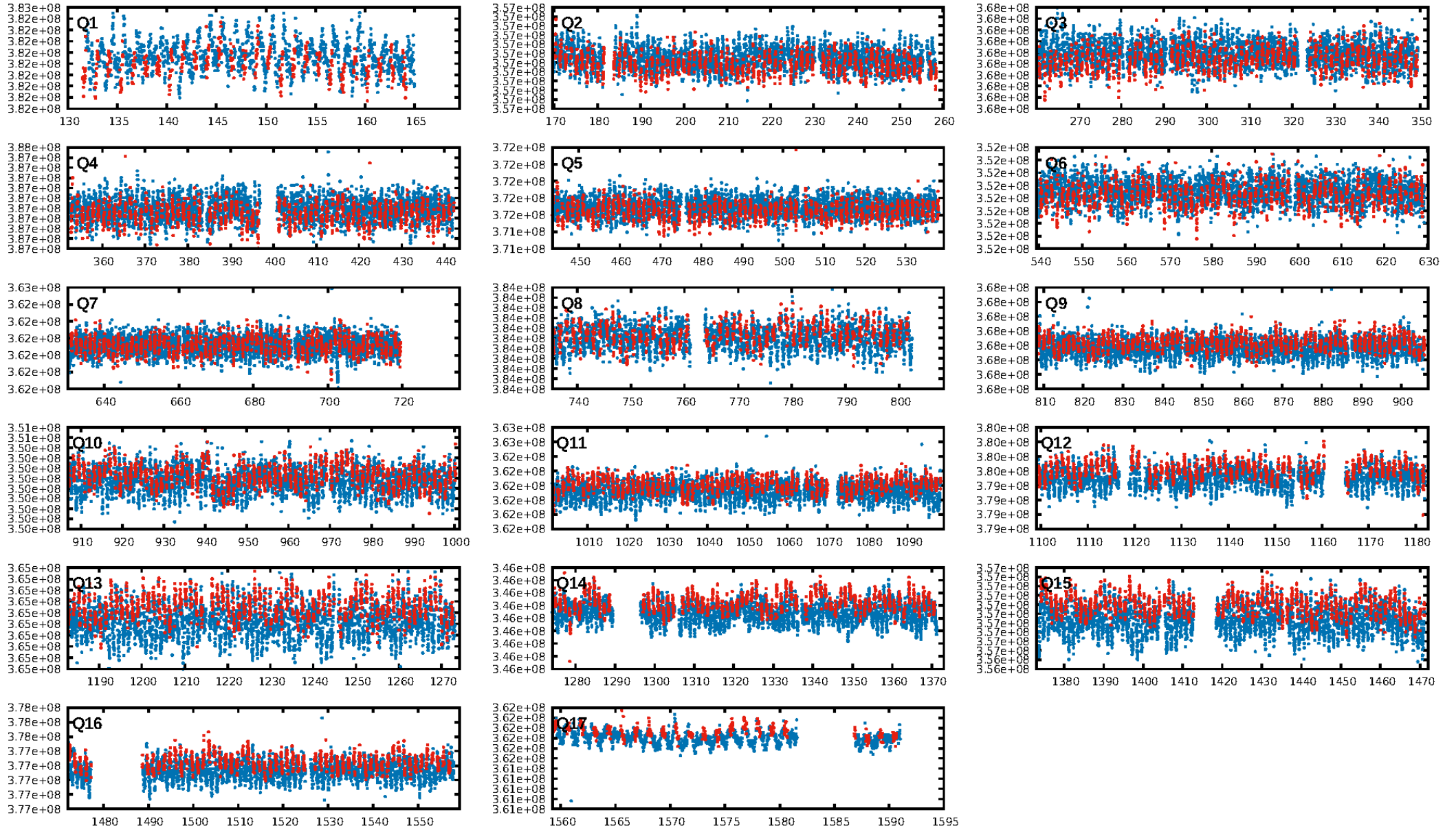
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [309.05σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.88e-21
RollingBand-fgt: 1.00 [1030/1030]
GhostDiagnostic-chr: 8.462
Centroid-sig: 1.1%
Centroid-so: 0.861 arcsec [1.81σ]
OotOffset-rm: 0.206 arcsec [0.99σ]
KicOffset-rm: 0.217 arcsec [1.04σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 1.00 [17/17]

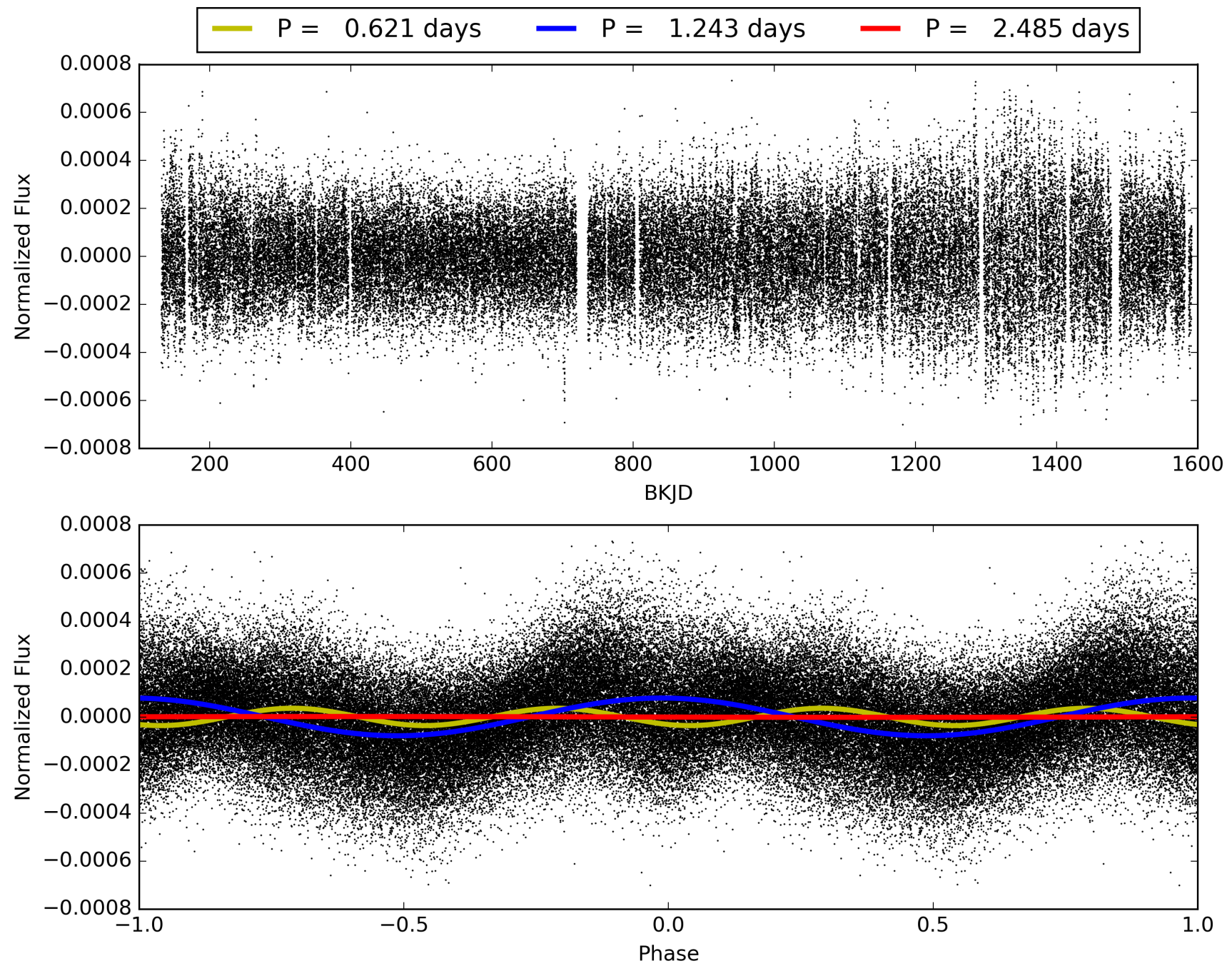
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009767486-01, PDC Light Curves

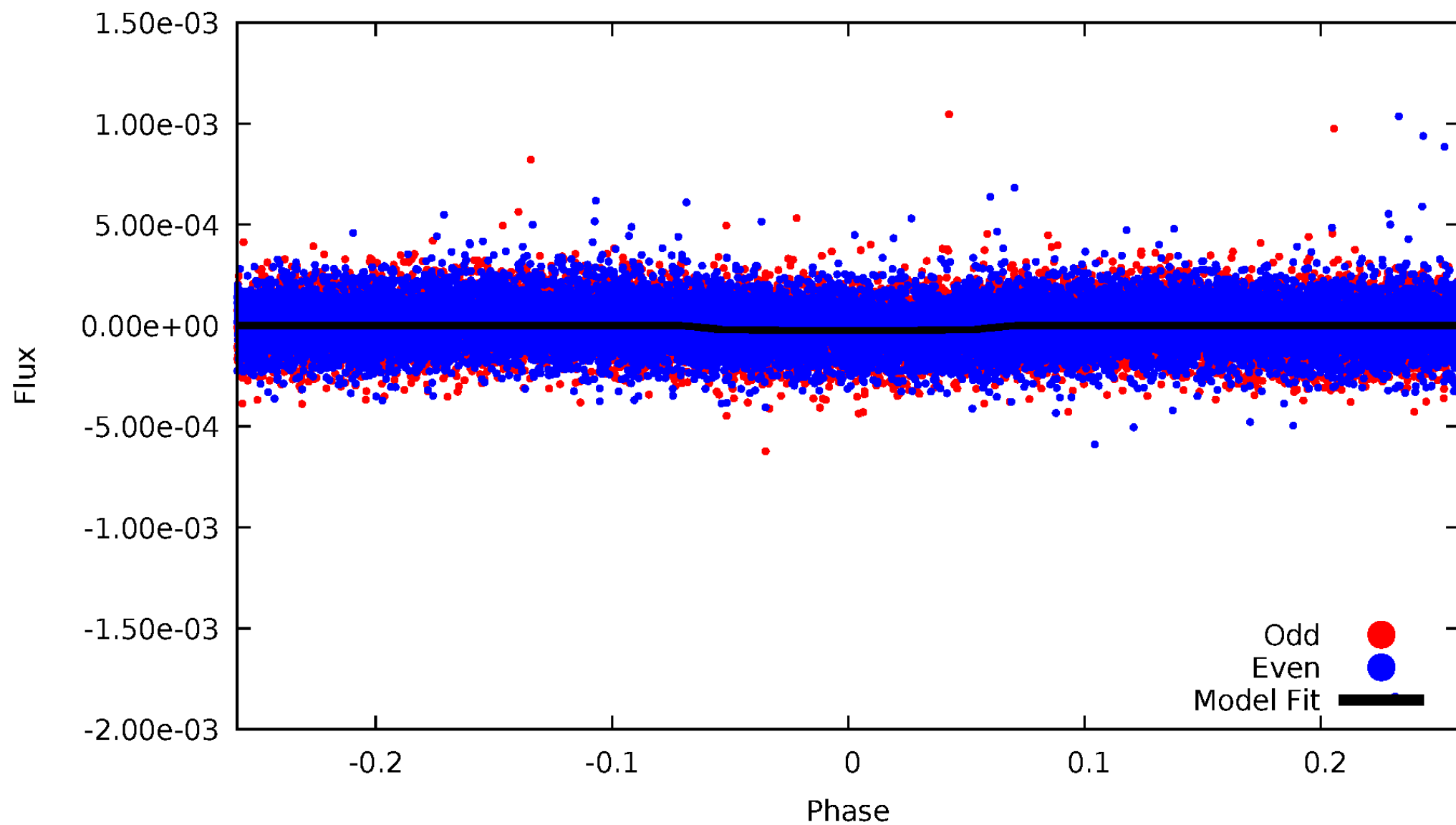


TCE 009767486-01



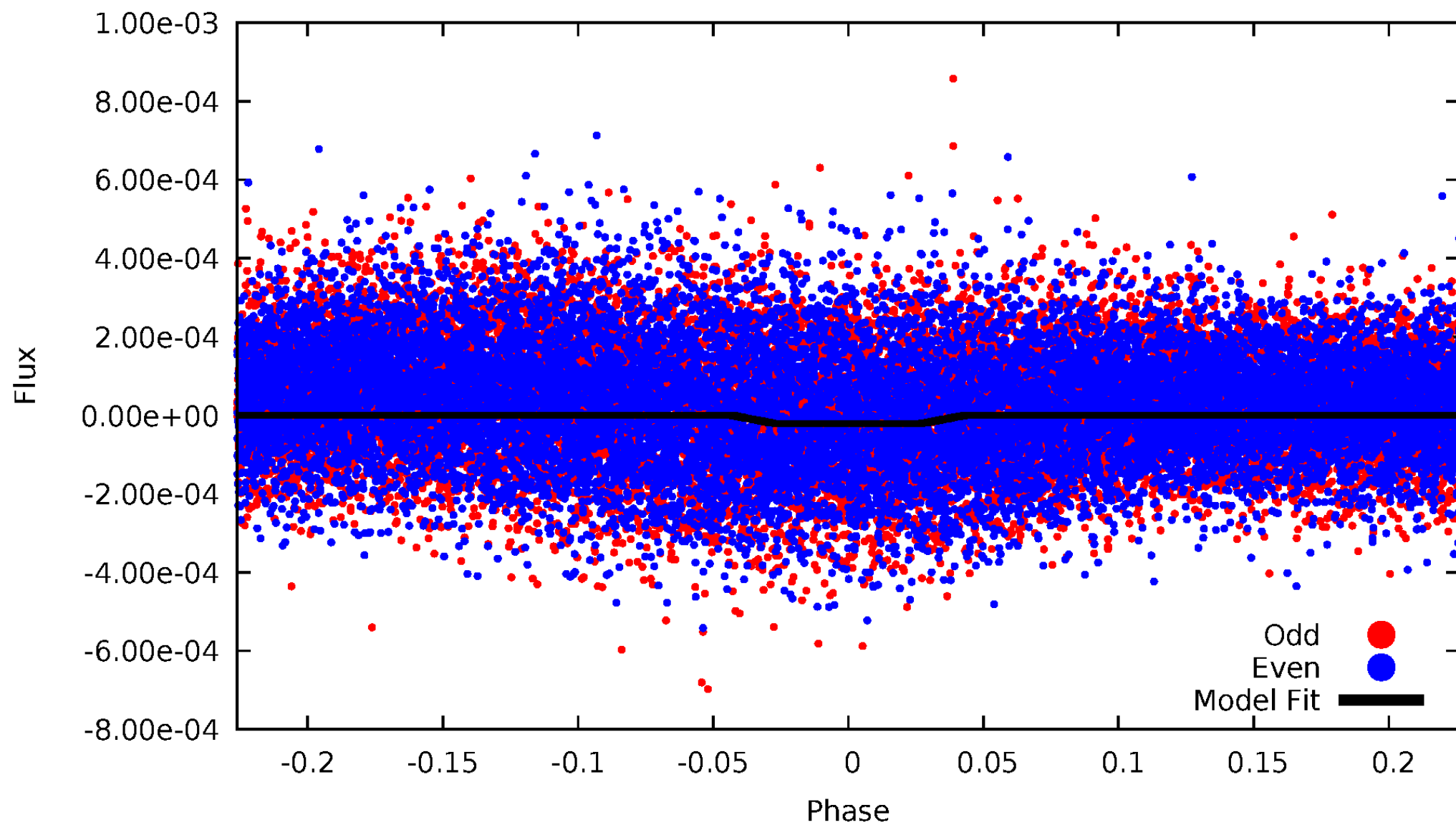
DV Odd/Even

TCE 009767486-01

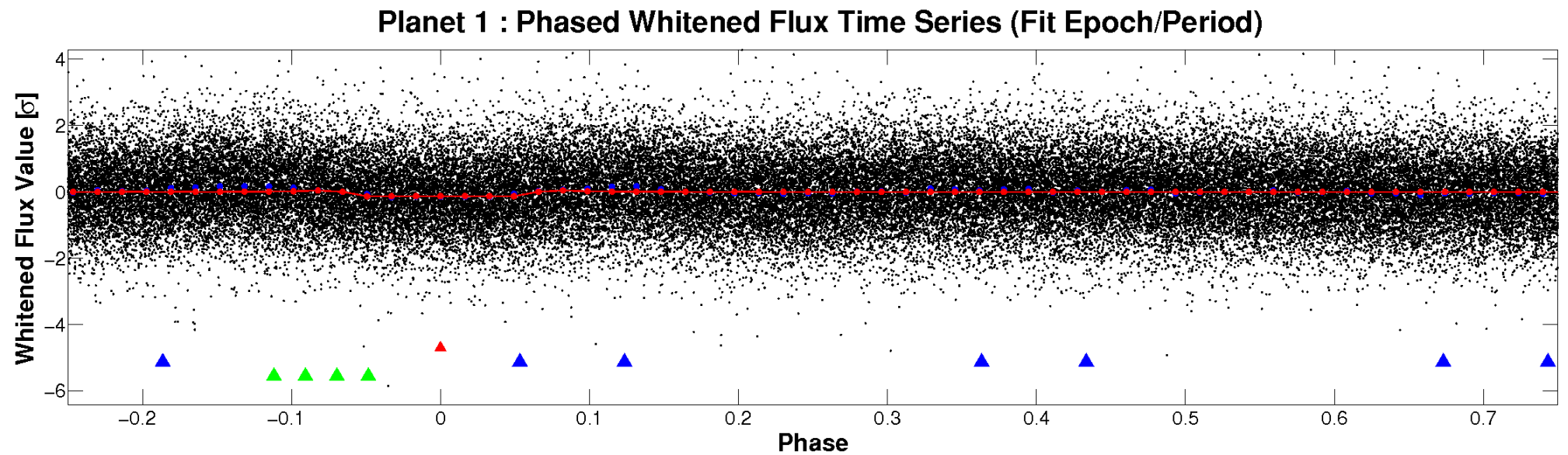
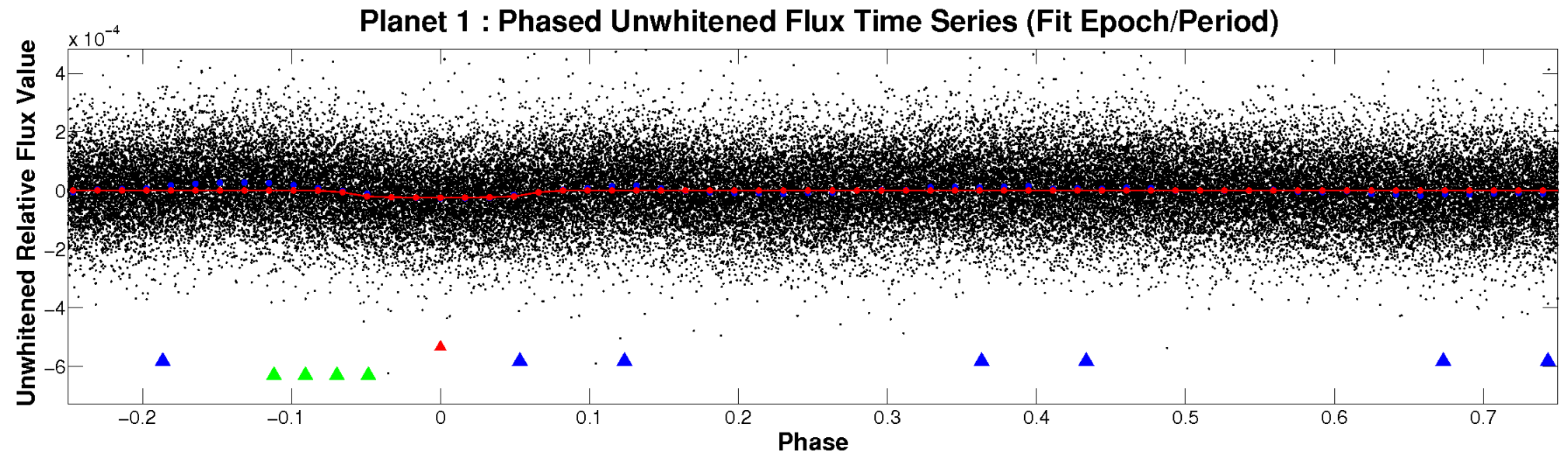


ALT Odd/Even

TCE 009767486-01

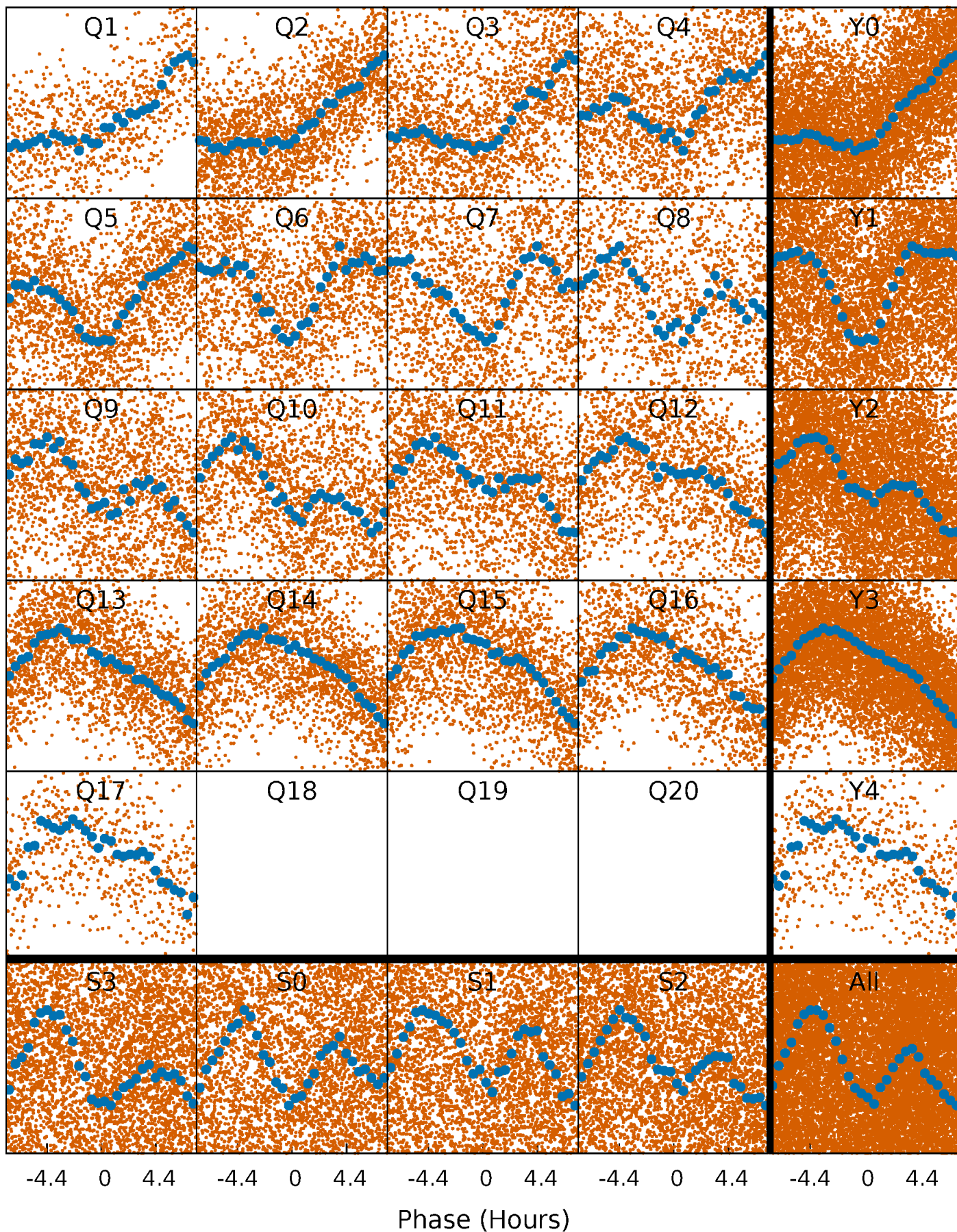


Non-Whitened Vs. Whitened Light Curve



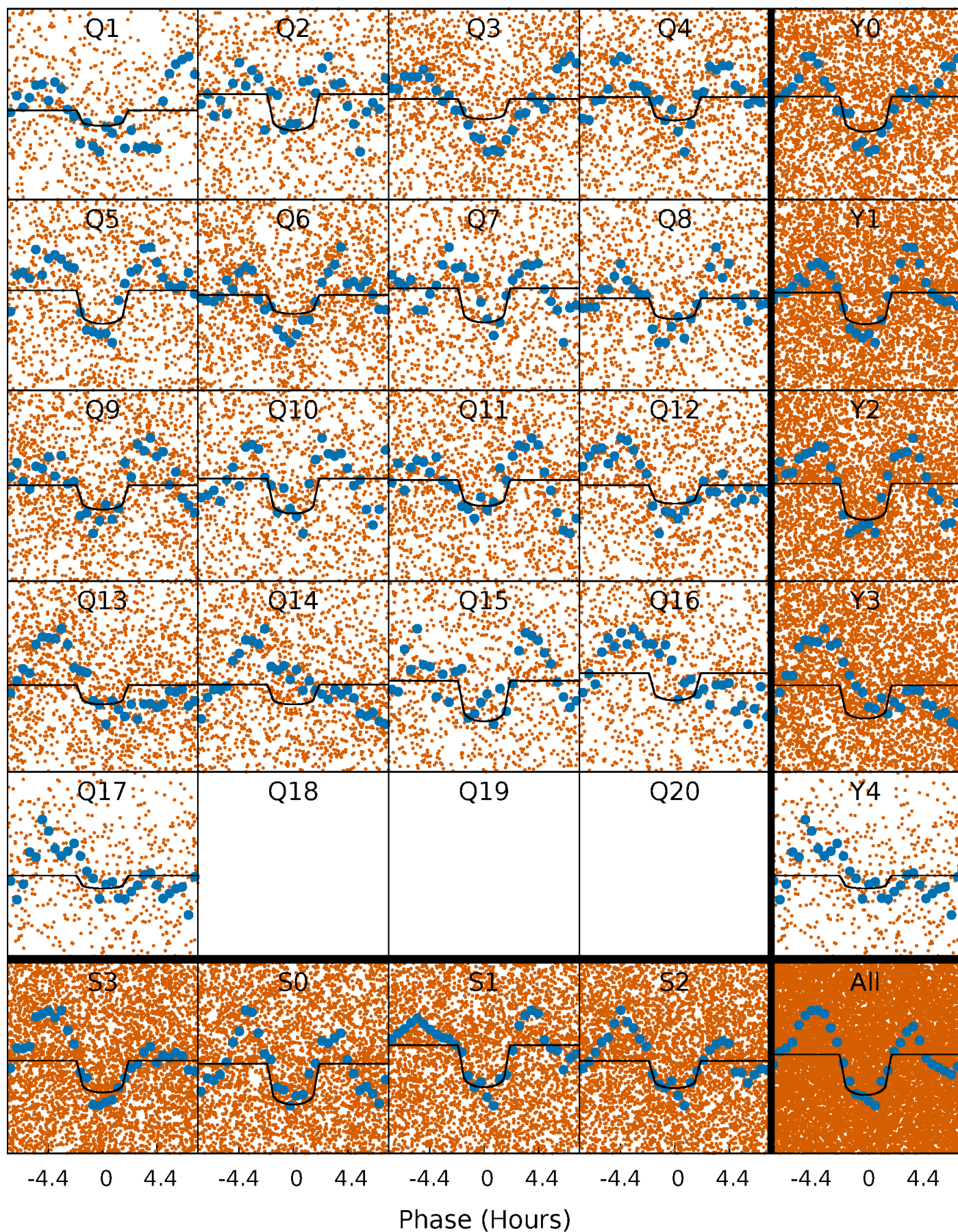
PDC Quarter-Phased Transit Curves

TCE 009767486-01 P= 1.242618 Days $T_0=131.665062$ (BKJD)



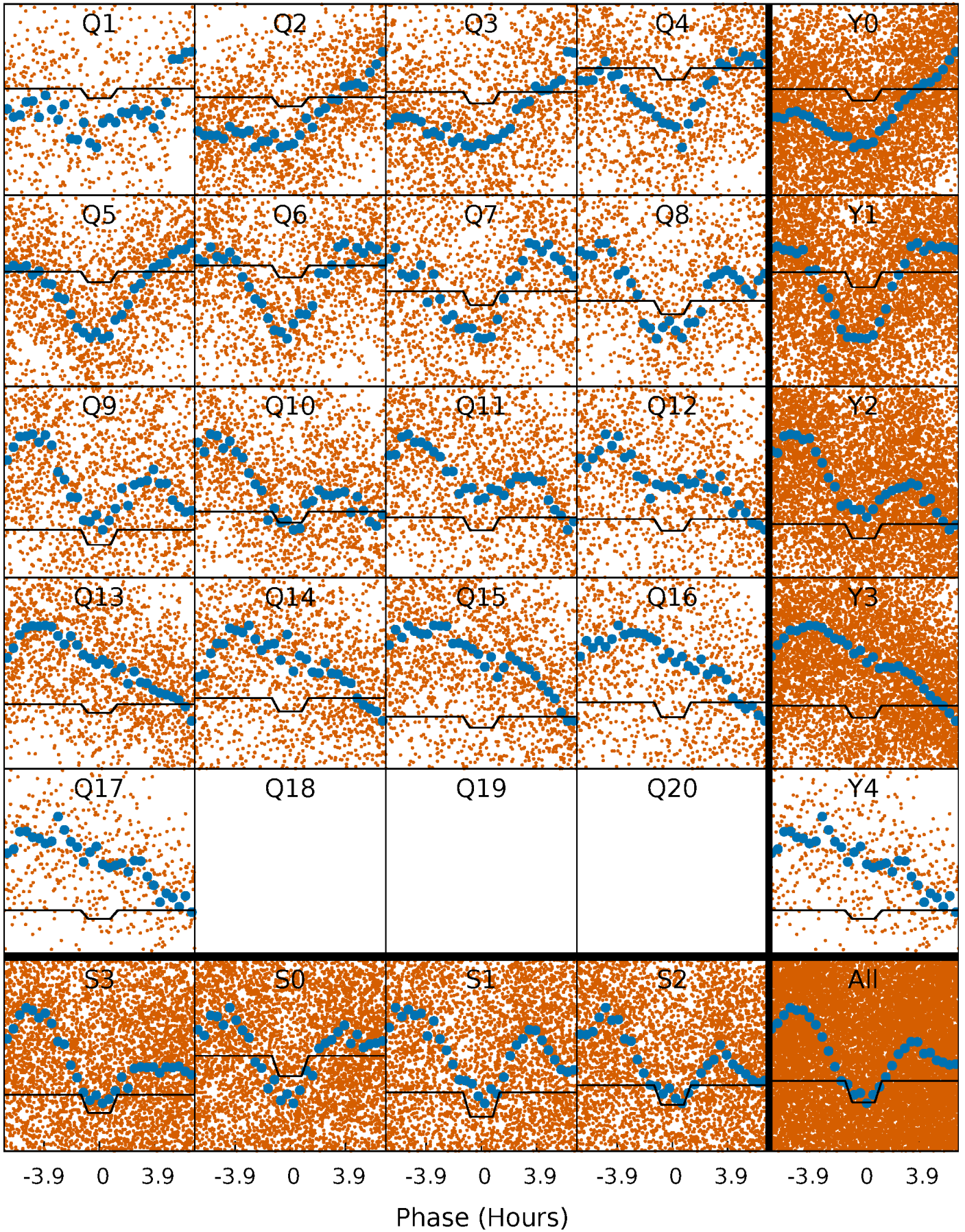
DV Quarter-Phased Transit Curves

TCE 009767486-01 P= 1.242618 Days $T_0=131.665062$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

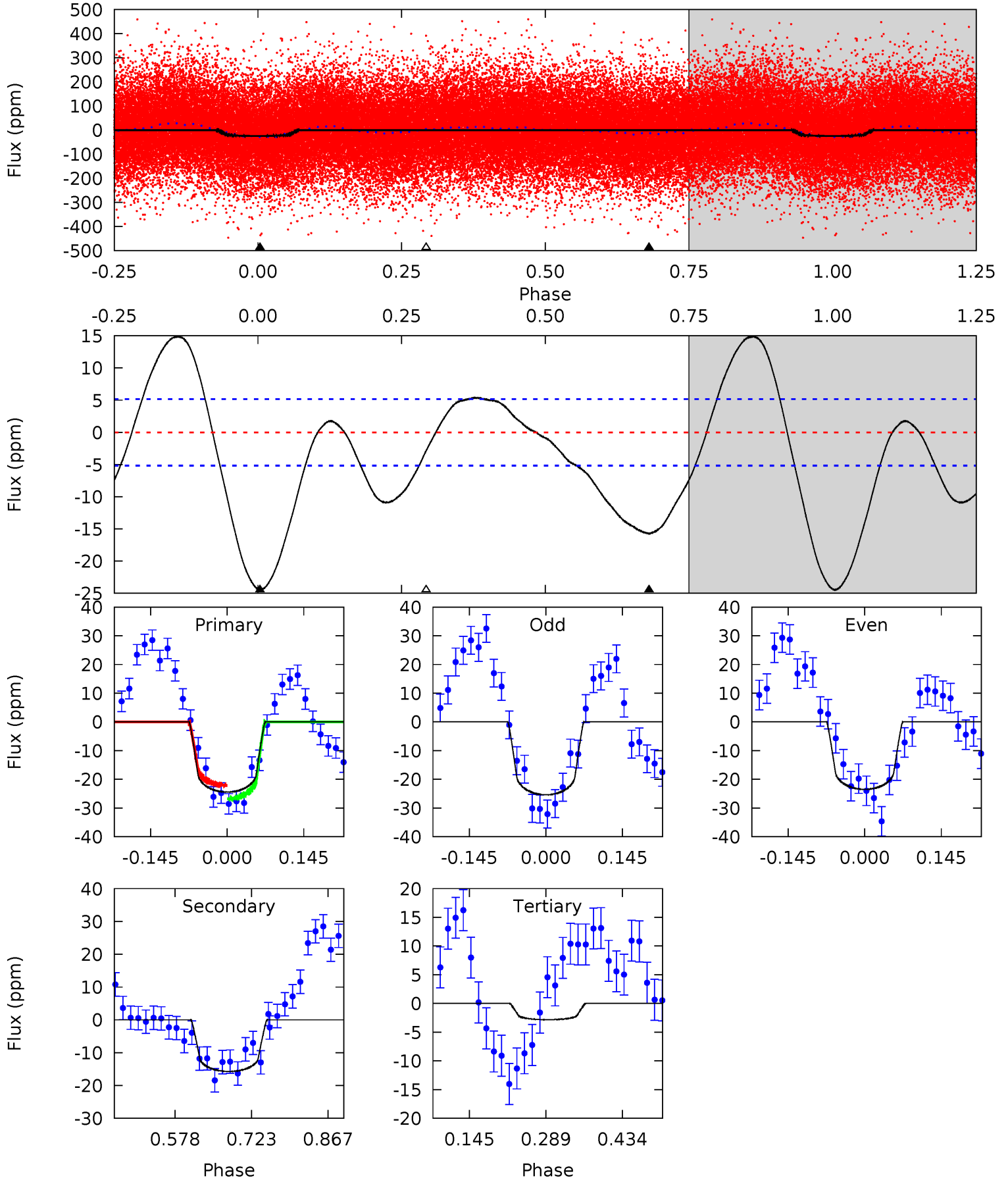
TCE 009767486-01 P= 1.242648 Days $T_0=131.660790$ (BKJD)



DV Model-Shift Uniqueness Test

009767486-01, P = 1.242618 Days, E = 130.422444 Days

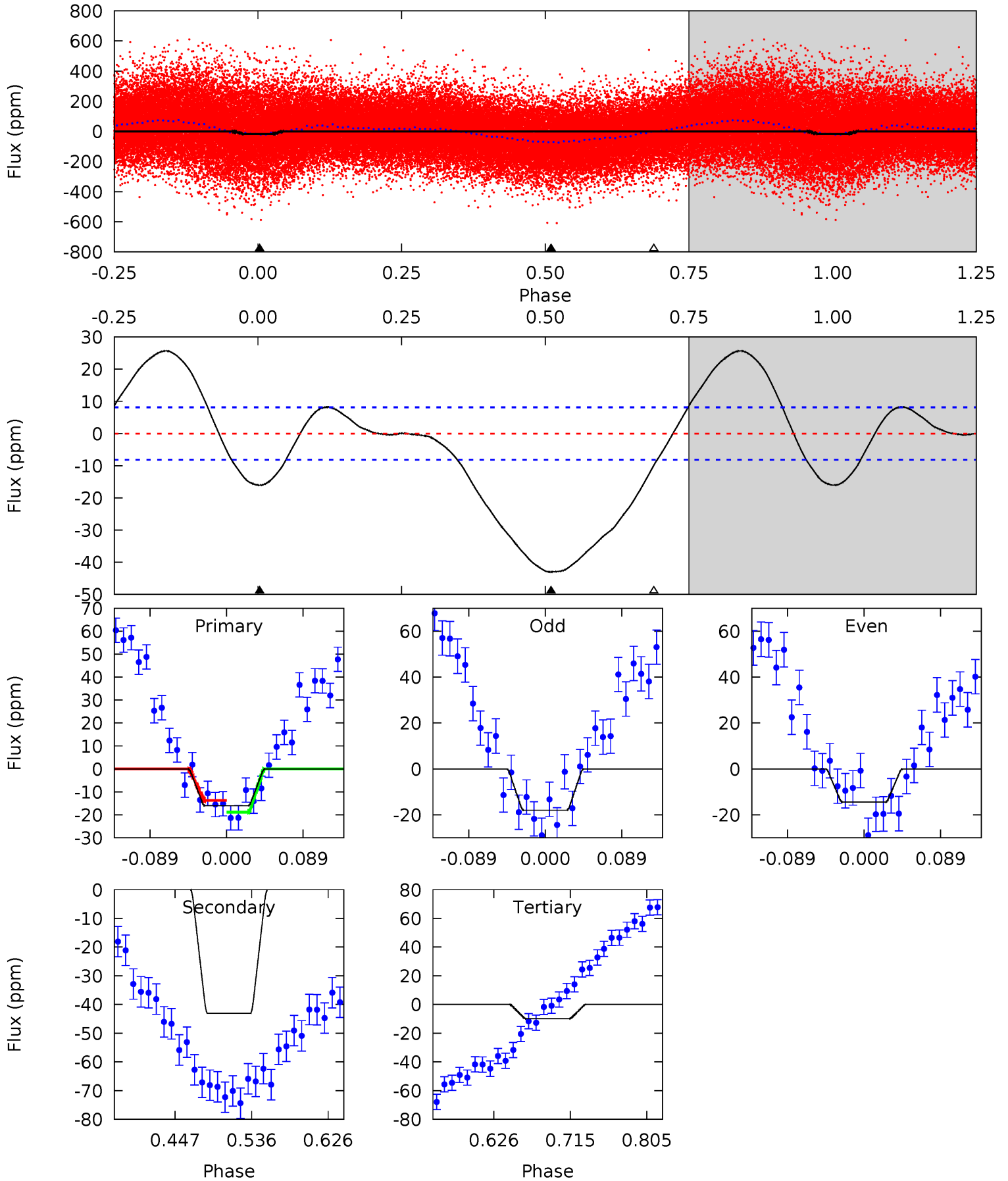
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	13.7	2.46	0	4.49	1.46	5.68	18.8	21.2	11.2	13.7	0.83	1.11	0.38	2.04



Alt Model-Shift Uniqueness Test

009767486-01, P = 1.242648 Days, E = 130.418142 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.06	24.3	5.57	0	4.59	1.70	8.57	3.48	9.06	18.7	24.3	1.01	0.66	0.37	1.44



Stellar Parameters For KIC 009767486

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6784^{+185}_{-278}	$3.856^{+0.329}_{-0.164}$	$0.360^{+0.100}_{-0.350}$	$2.649^{+0.652}_{-1.060}$	$1.838^{+0.178}_{-0.416}$	$0.139^{+0.362}_{-0.060}$
	+3%/-4%	+9%/-4%	+28%/-97%	+25%/-40%	+10%/-23%	+260%/-43%
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 009767486-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16 ± 1	$1.44^{+0.44}_{-0.40}$	4022^{+315}_{-419}	5684^{+854}_{-555}	$3.123^{+2.909}_{-1.254}$
Alt.	-43 ± 2	$1.28^{+0.38}_{-0.41}$	4015^{+336}_{-395}	8142^{+1882}_{-1063}	11^{+12}_{-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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

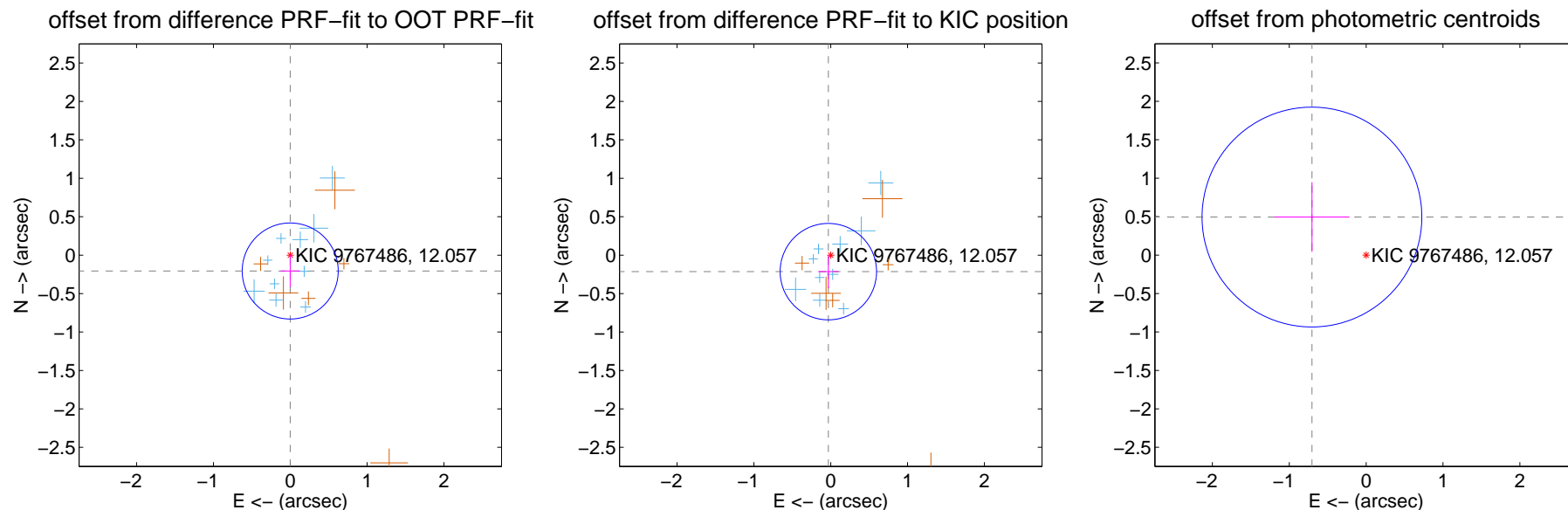
DV Centroid Data

Supplemental centroid analysis for 009767486-01. Kepler magnitude: 12.06. Transit SNR 11.82

There are 10 quarters with good PRF difference image offsets

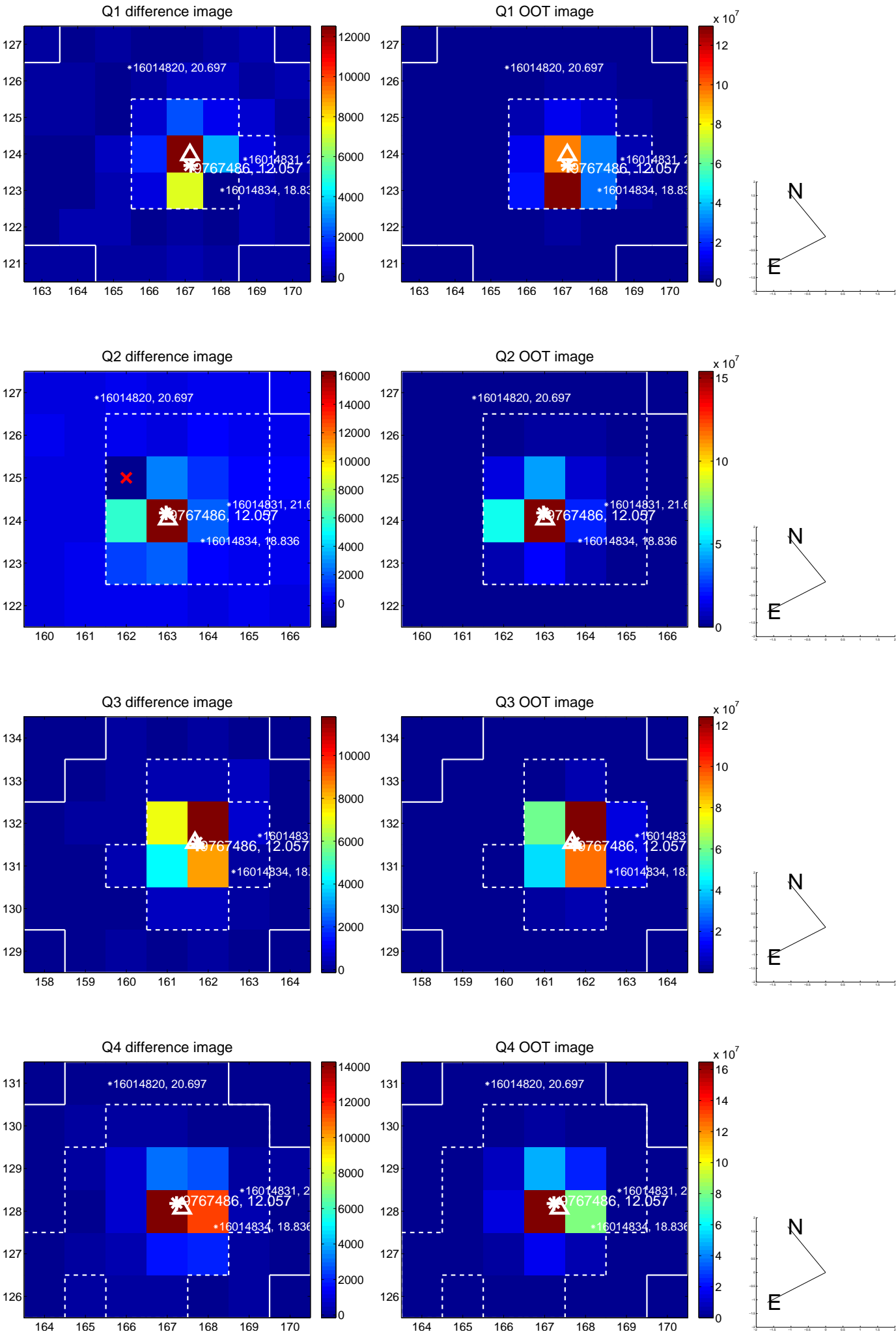
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.206 ± 0.208	0.99	0.001 ± 0.124	-0.206 ± 0.208
PRF-fit source offset from KIC position	0.217 ± 0.209	1.04	0.031 ± 0.131	-0.214 ± 0.215
photometric centroid source offset	0.86 ± 0.48	1.81	0.70 ± 0.49	0.49 ± 0.45

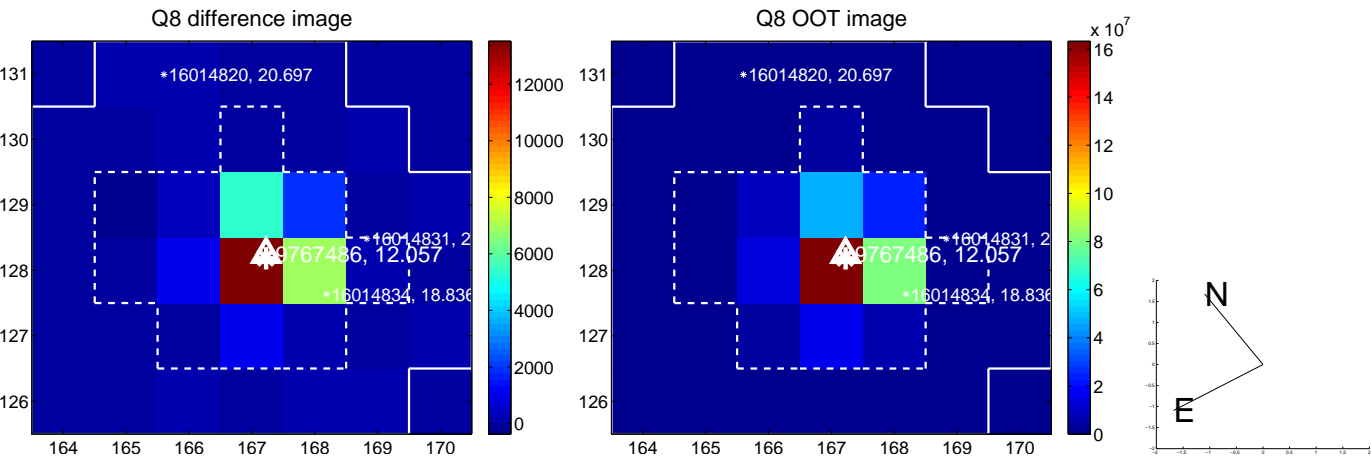
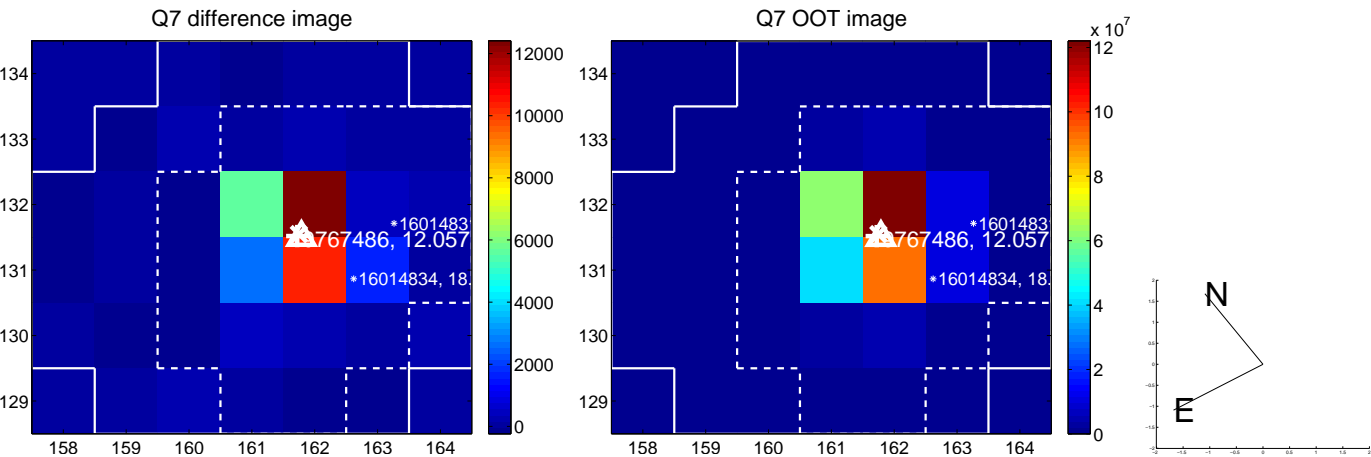
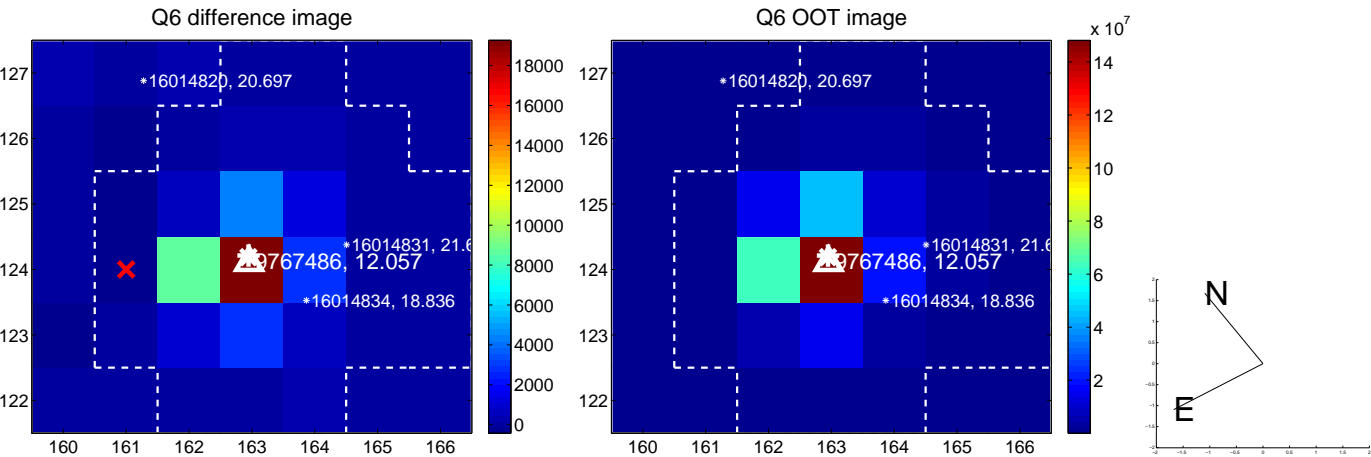
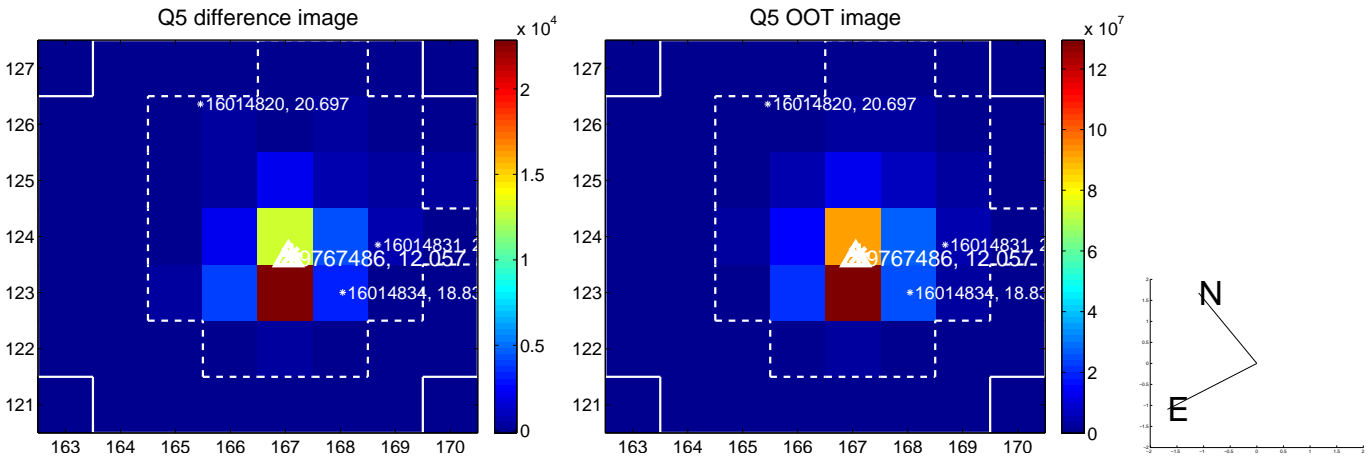


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

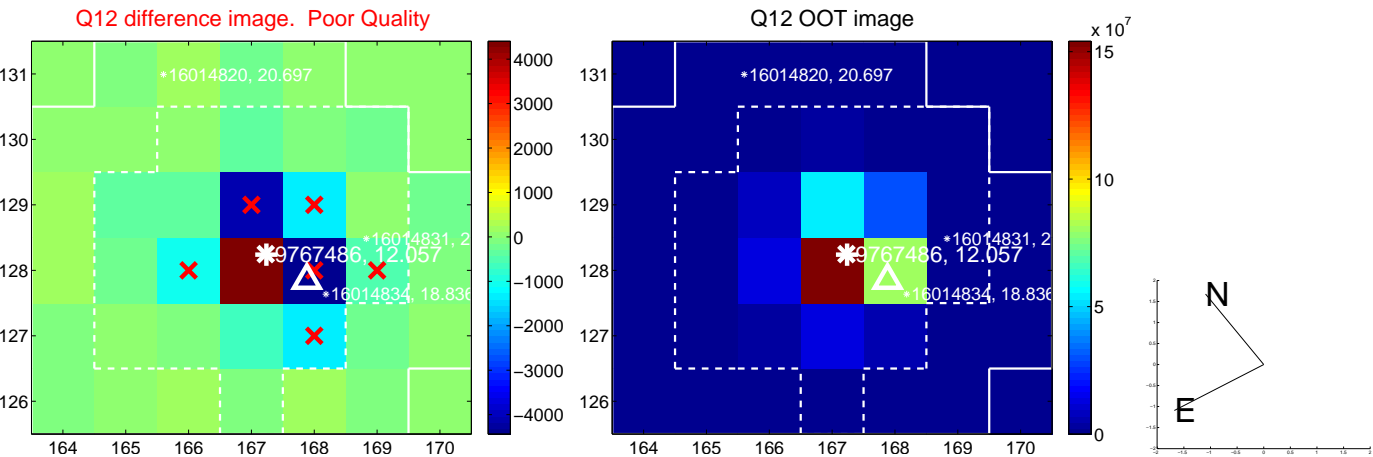
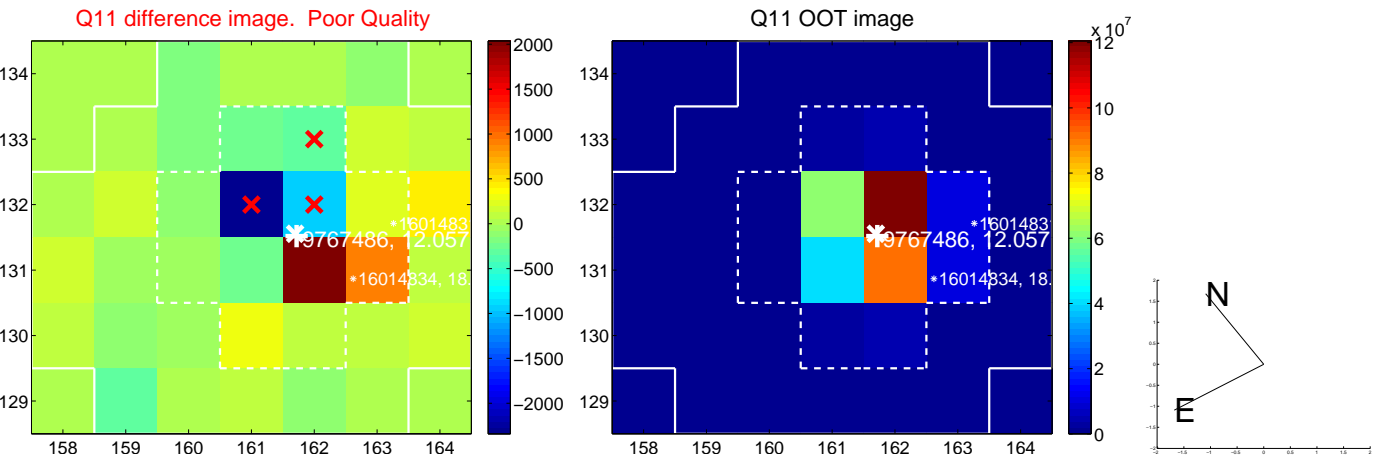
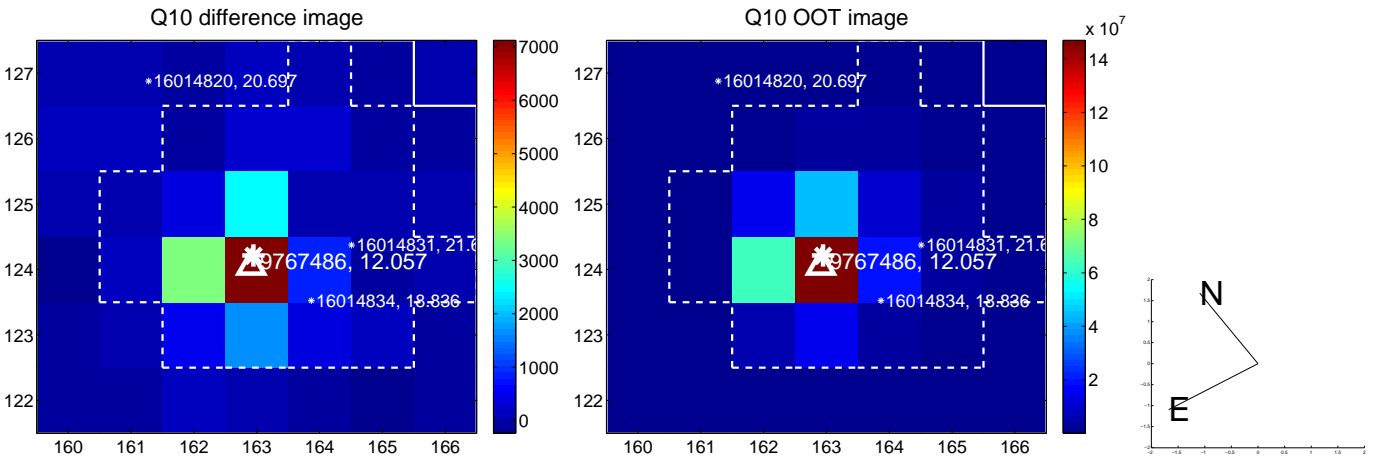
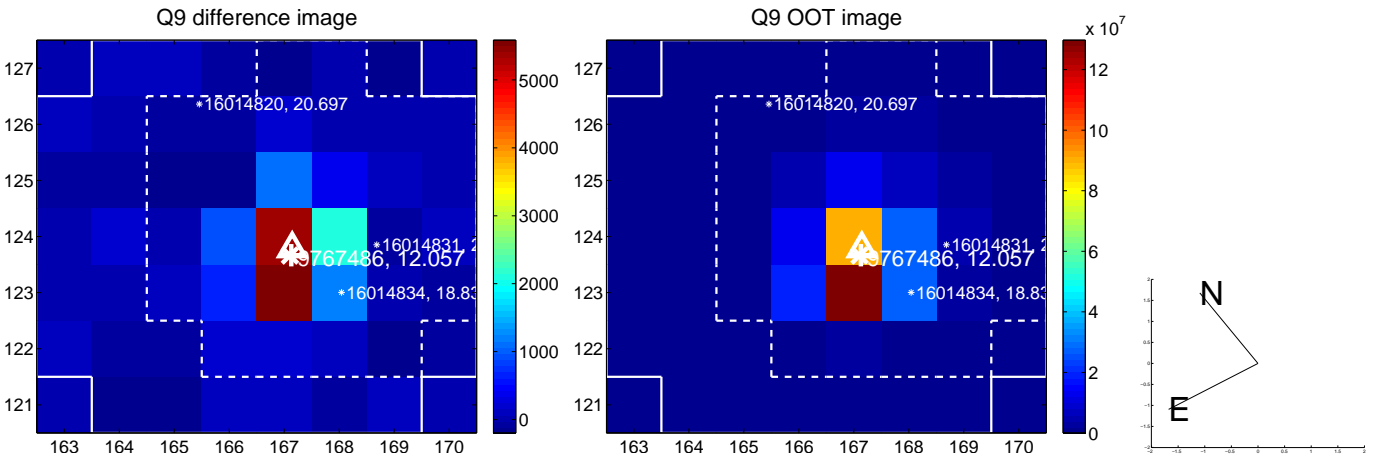
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



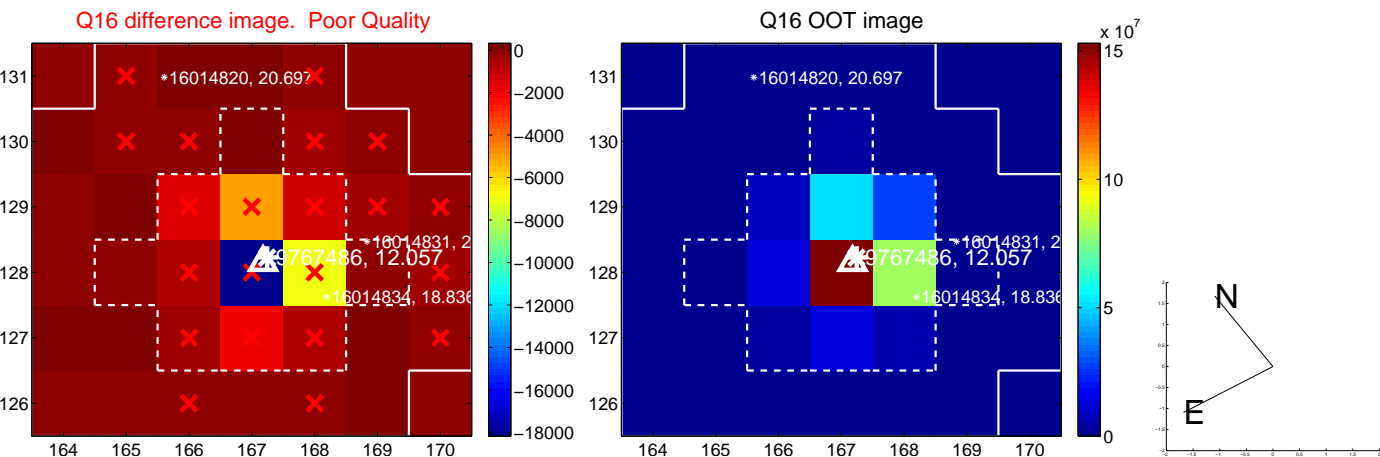
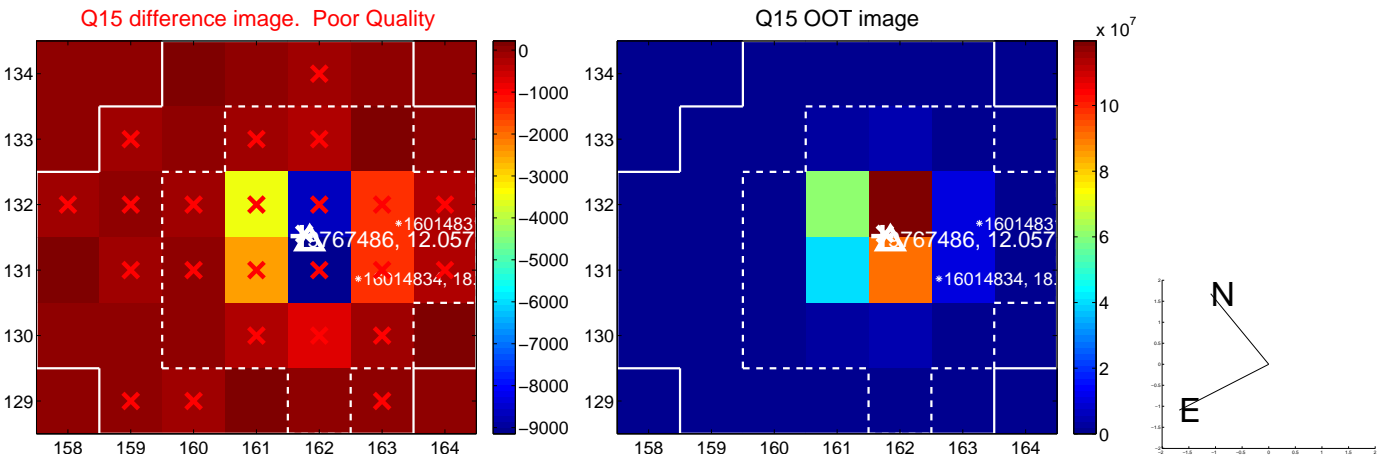
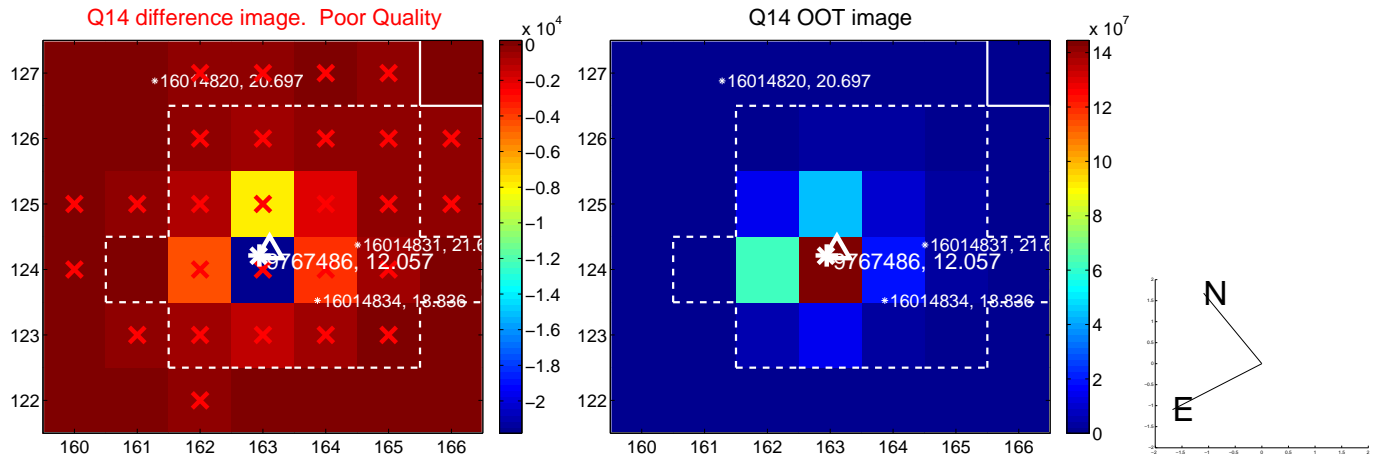
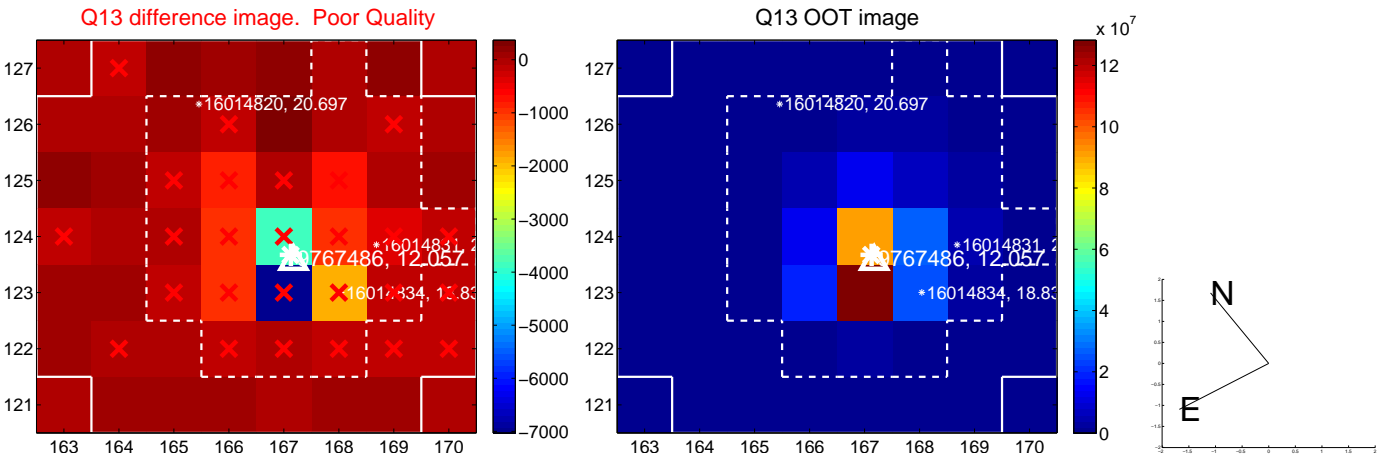
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



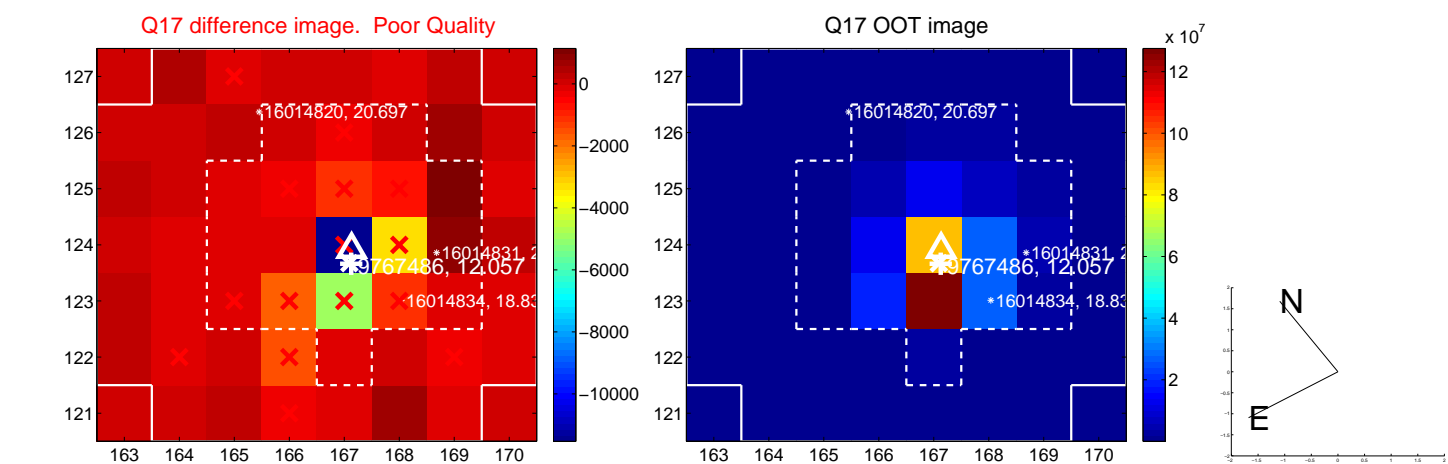
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



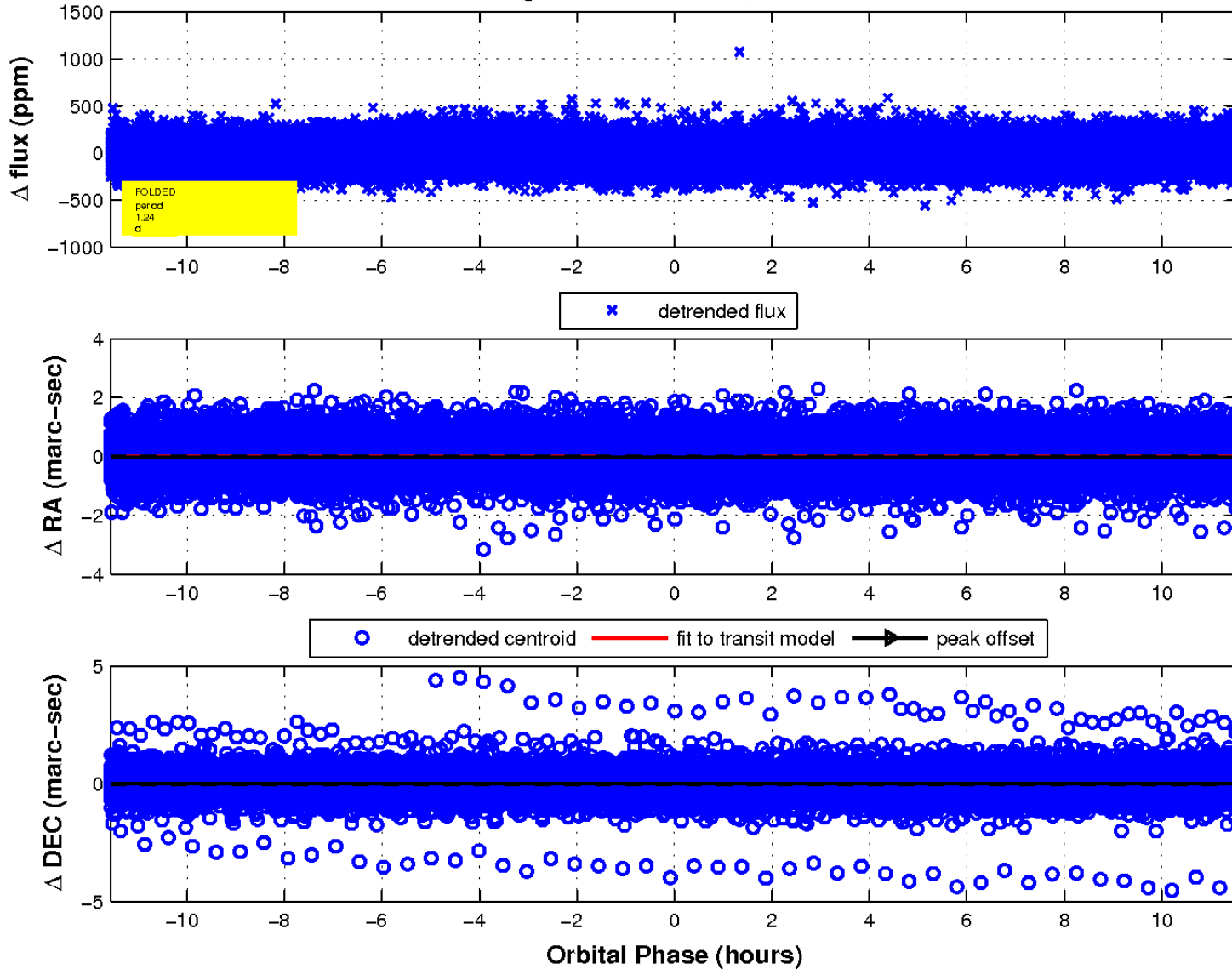
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

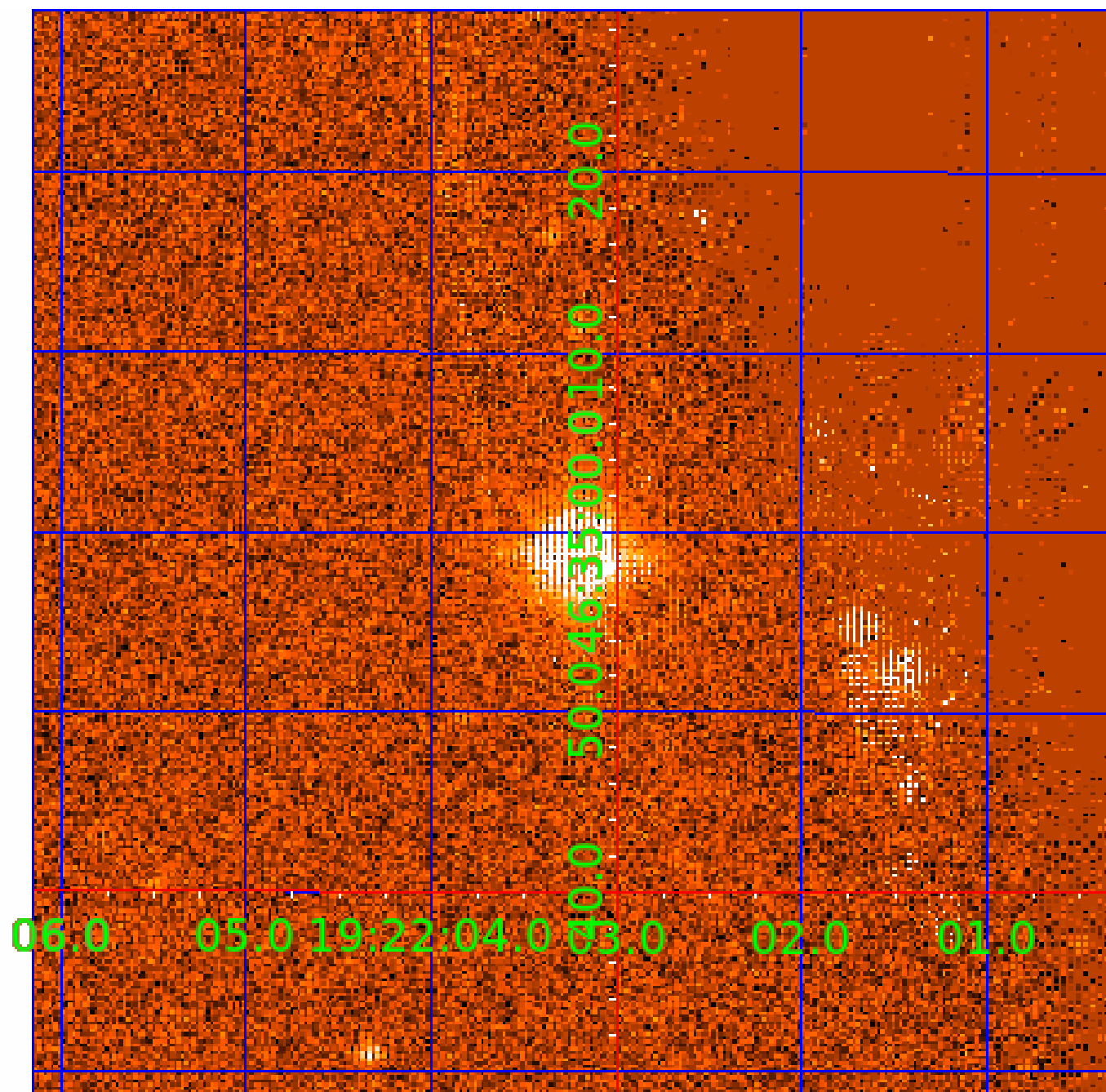


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 009767486

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})
009767486-01	OBS	No	1.242618	131.665062	24.5	3.857	11.7	11.8	2.65	6784	1.52	17342.39
009767486-02	OBS	No	212.872737	276.819725	136.8	15.975	9.6	6.9	2.65	6784	3.42	18.23
009767486-03	OBS	No	372.759070	432.318360	339.5	18.239	7.3	7.4	2.65	6784	5.85	8.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009767486-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009767486-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009767486-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

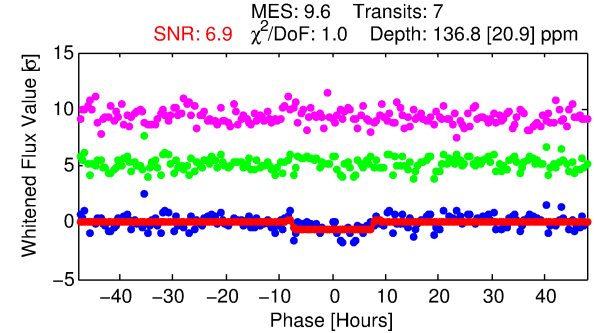
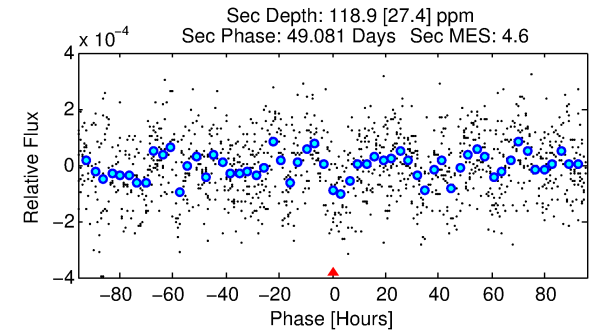
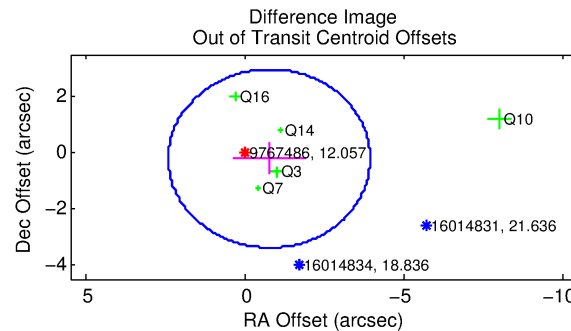
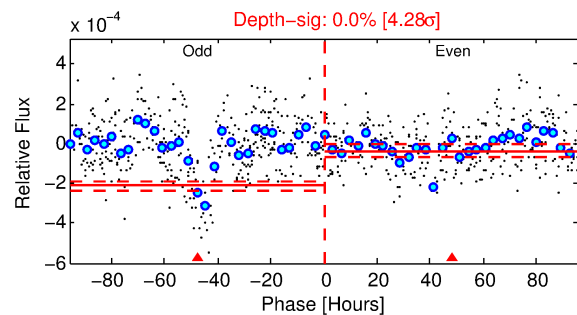
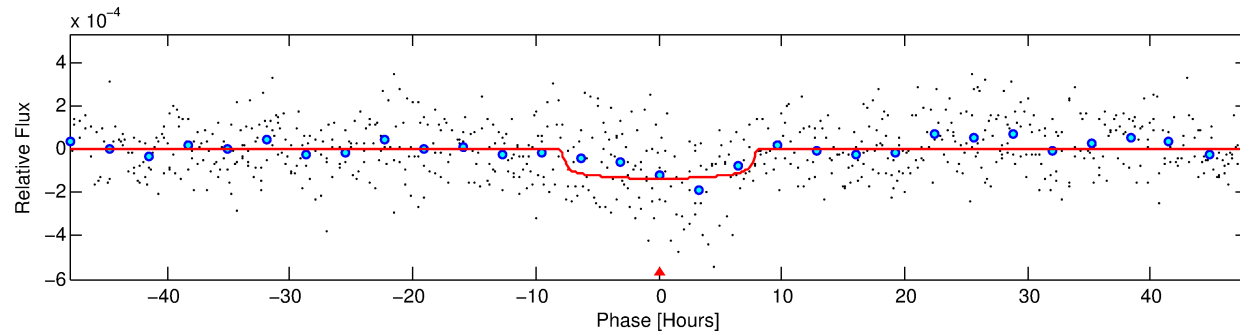
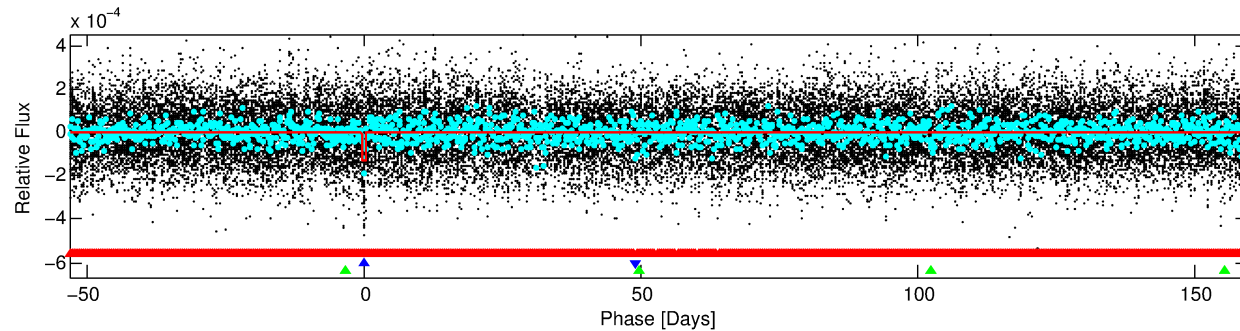
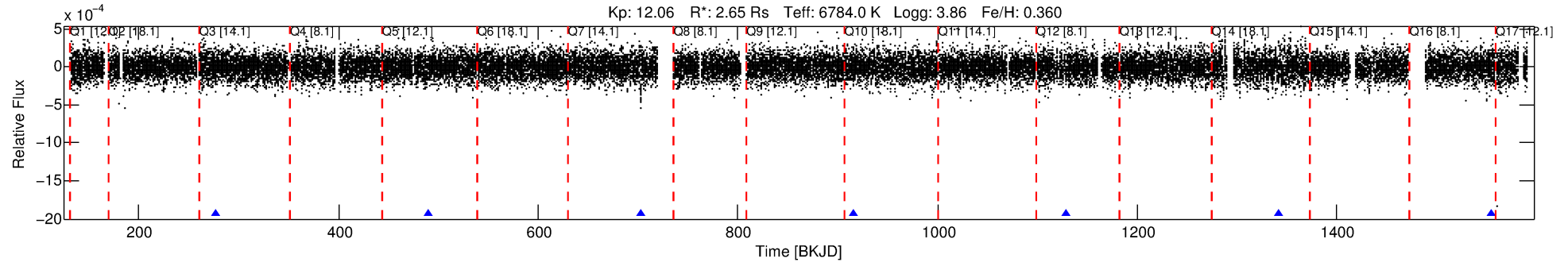
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009767486-02

No Significant Match Found

DV One-Page Summary

KIC: 9767486 Candidate: 2 of 3 Period: 212.873 d



DV Fit Results:

Period = 212.87274 [0.00590] d
Epoch = 276.8197 [0.0229] BKJD
Rp/R* = 0.0118 [0.0022]
a/R* = 62.87 [58.07]
b = 0.80 [0.42]
Seff = 18.23 [10.83]
Teq = 527 [78] K
Rp = 3.42 [1.51] Re
a = 0.8547 [0.3140] AU
Ag = 4085.10 [2941.07] [1.39 σ]
Teffp = 6513 [762] K [7.82 σ]

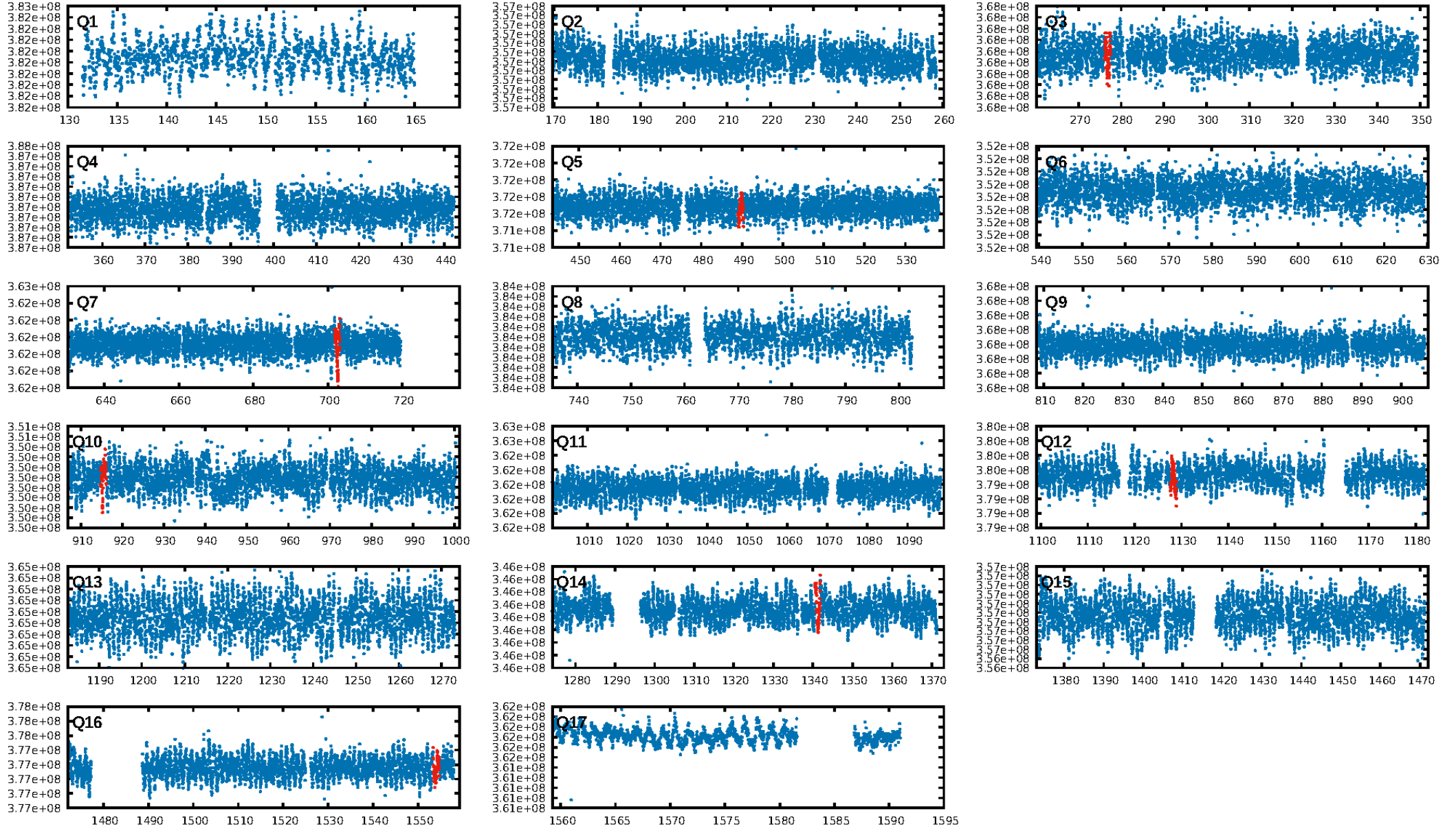
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [309.05 σ]
LongPeriod-sig: 100.0% [158.27 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.69e-16
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 6.378
Centroid-sig: 18.8%
Centroid-so: 0.886 arcsec [1.23 σ]
OotOffset-rm: 0.790 arcsec [0.75 σ]
KicOffset-rm: 0.804 arcsec [0.64 σ]
OotOffset-st: 2/2/1/0 [5]
KicOffset-st: 2/2/1/0 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 0.00 [0/6]

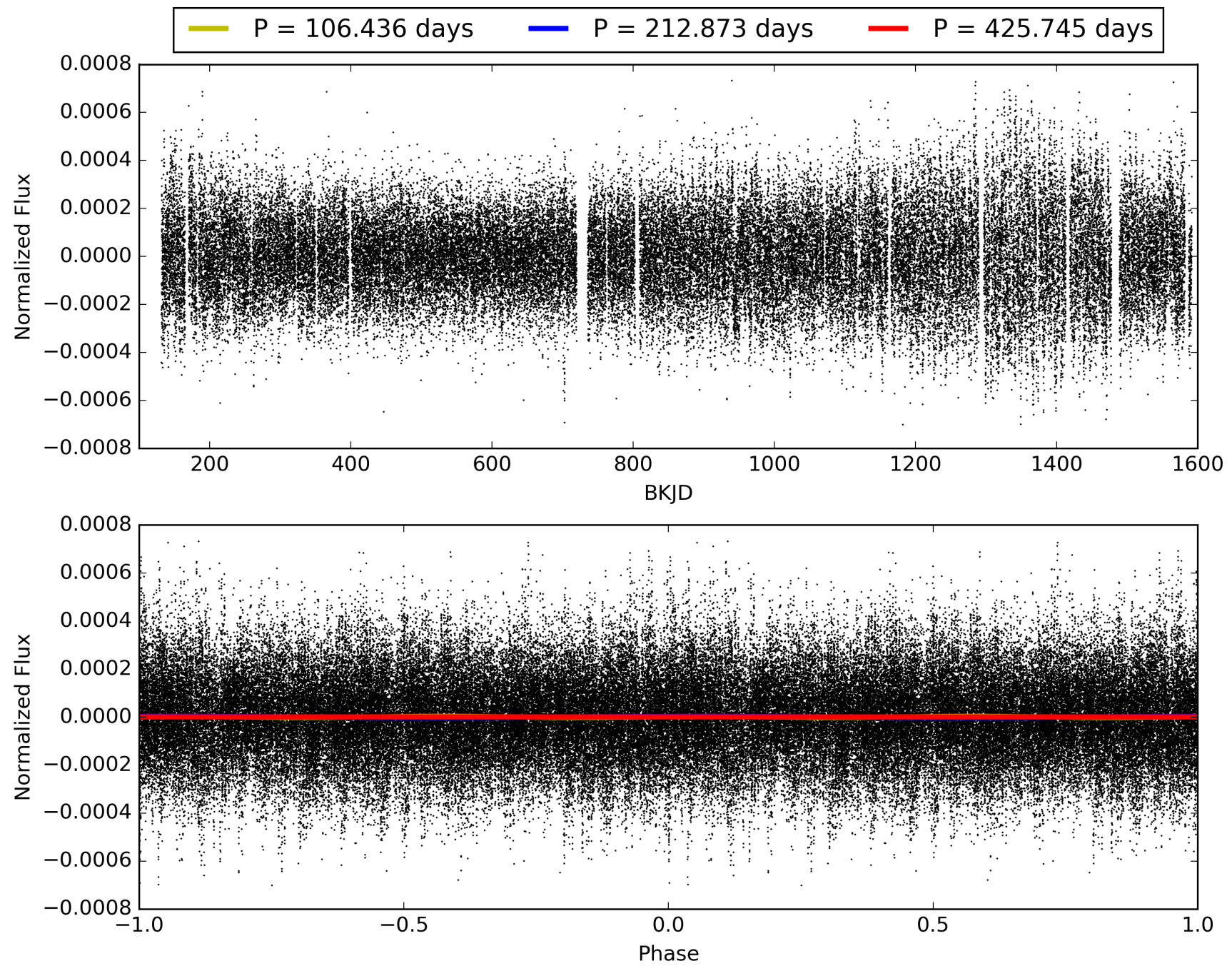
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:38:42 Z

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

TCE 009767486-02, PDC Light Curves

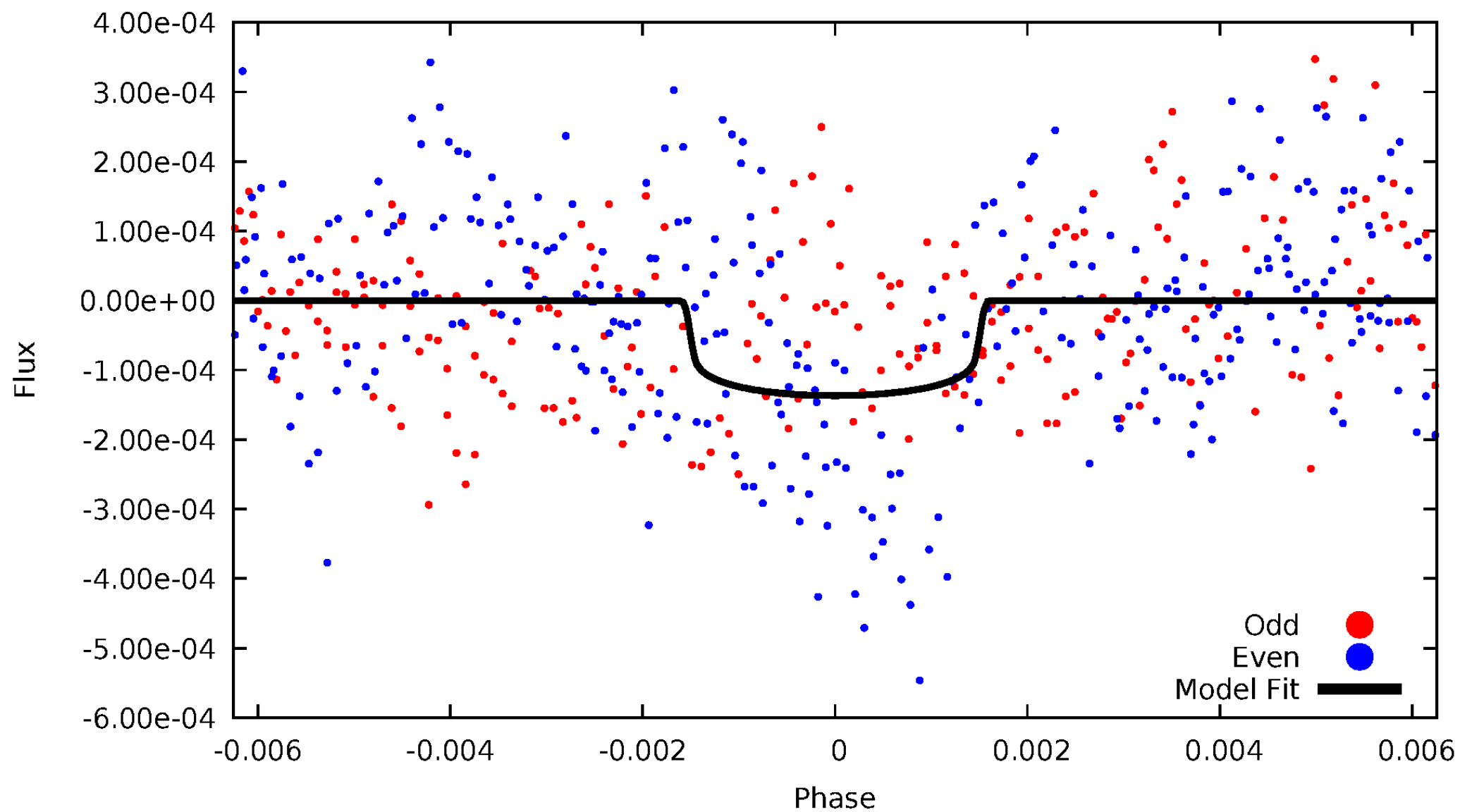


TCE 009767486-02



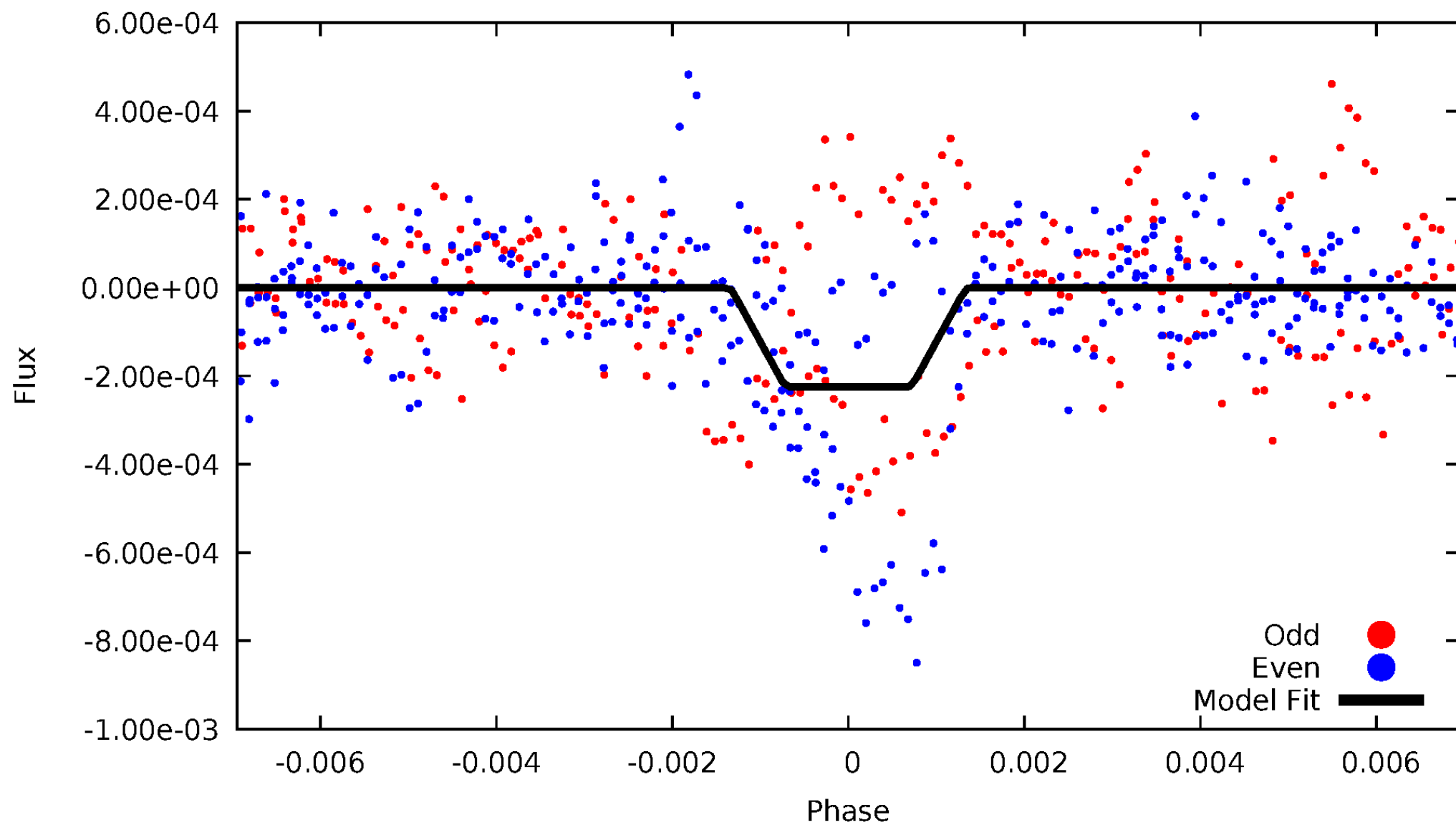
DV Odd/Even

TCE 009767486-02



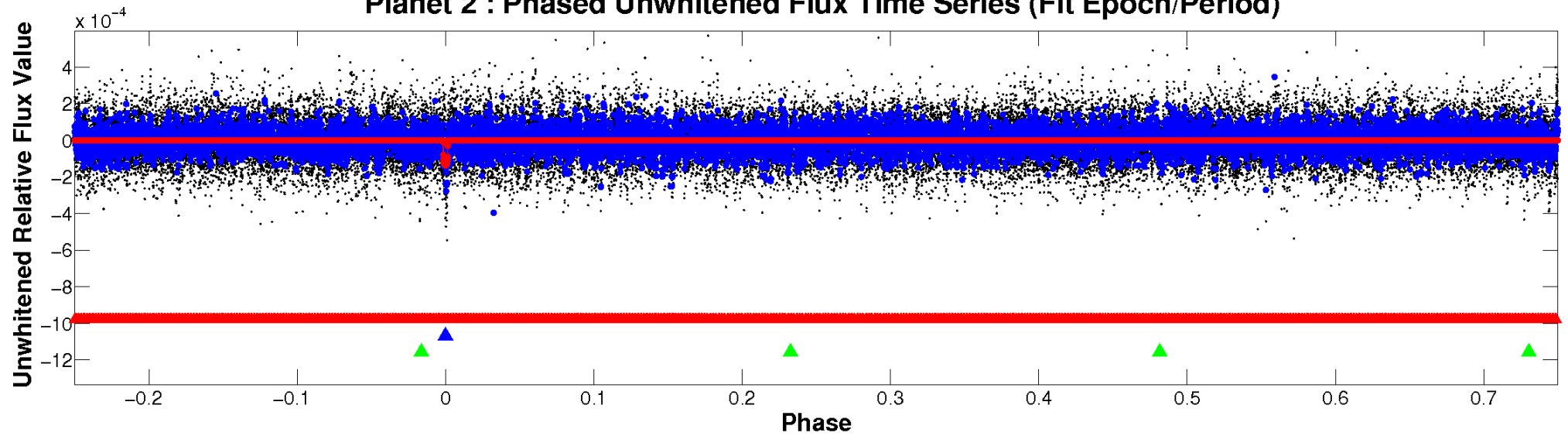
ALT Odd/Even

TCE 009767486-02

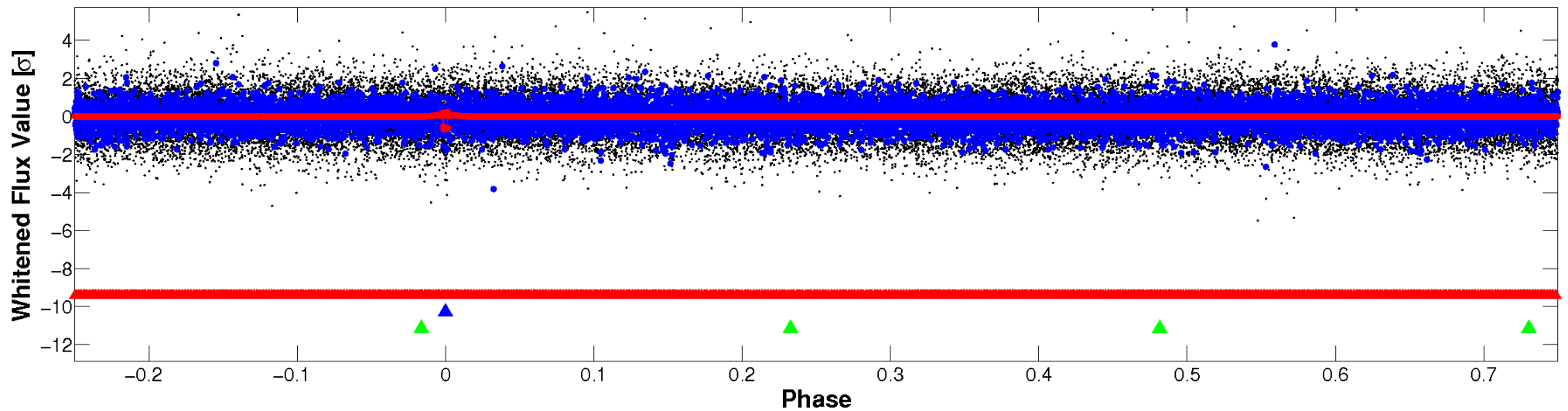


Non-Whitened Vs. Whitened Light Curve

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

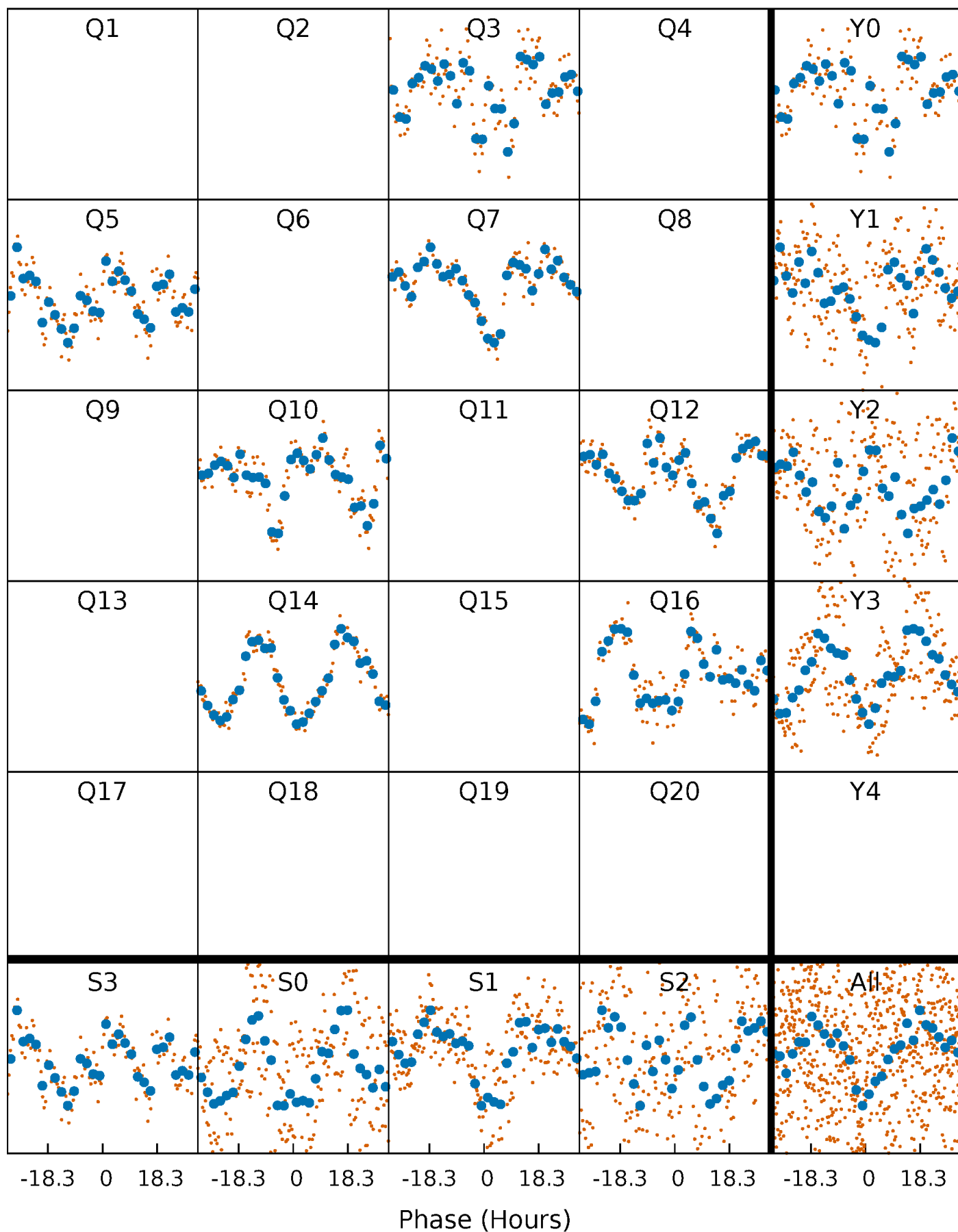


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



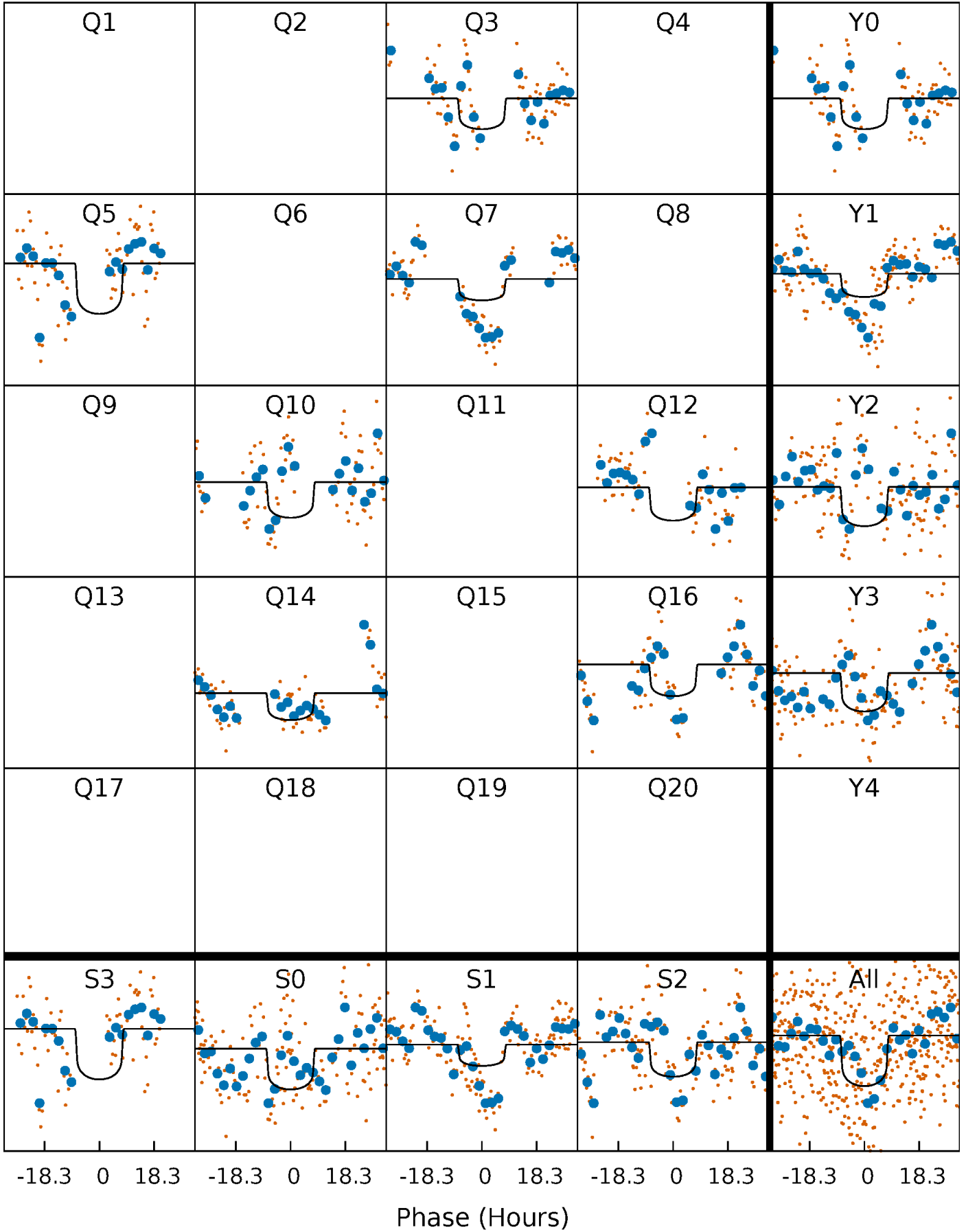
PDC Quarter-Phased Transit Curves

TCE 009767486-02 $P=212.872737$ Days $T_0=276.819725$ (BKJD)



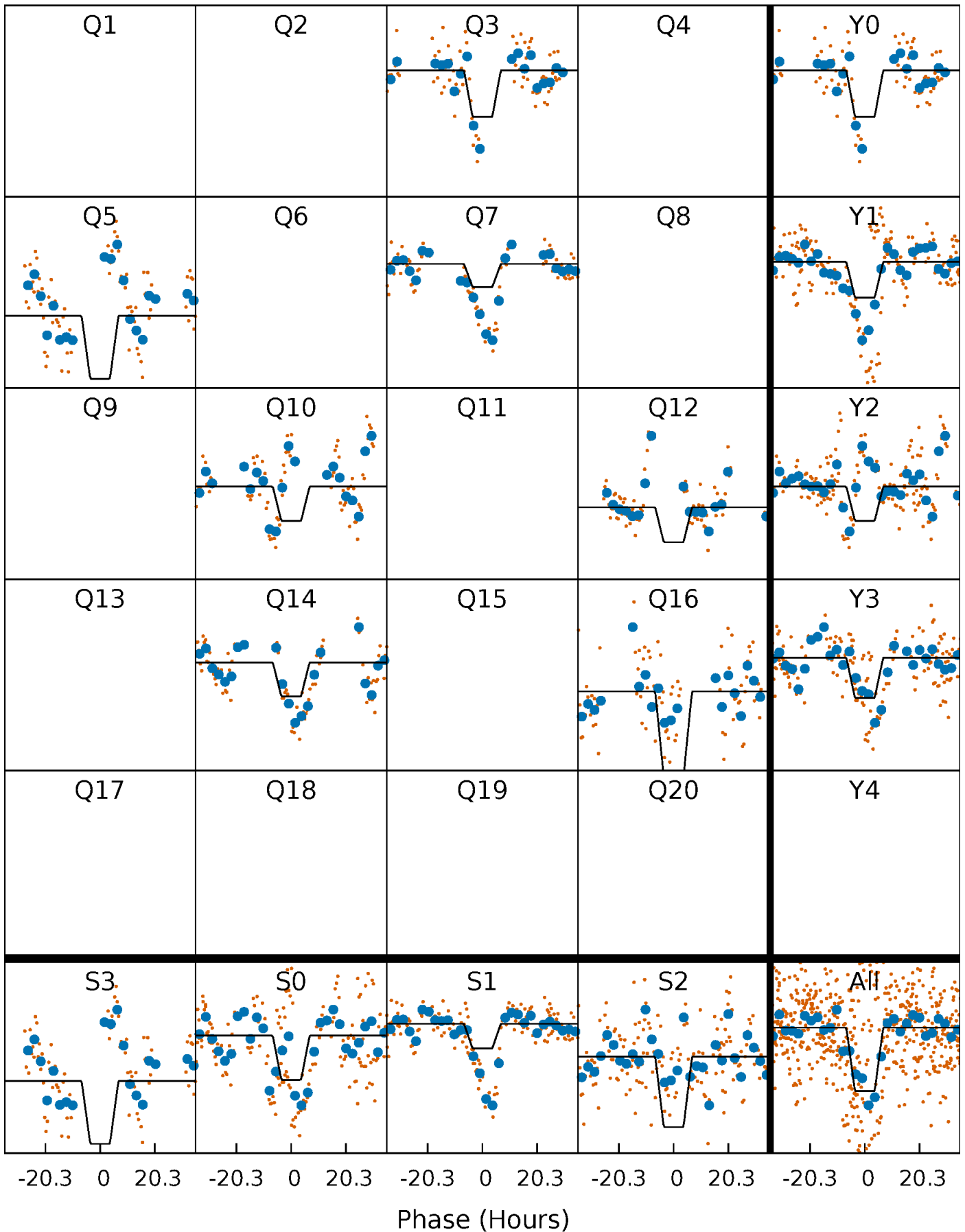
DV Quarter-Phased Transit Curves

TCE 009767486-02 $P=212.872737$ Days $T_0=276.819725$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

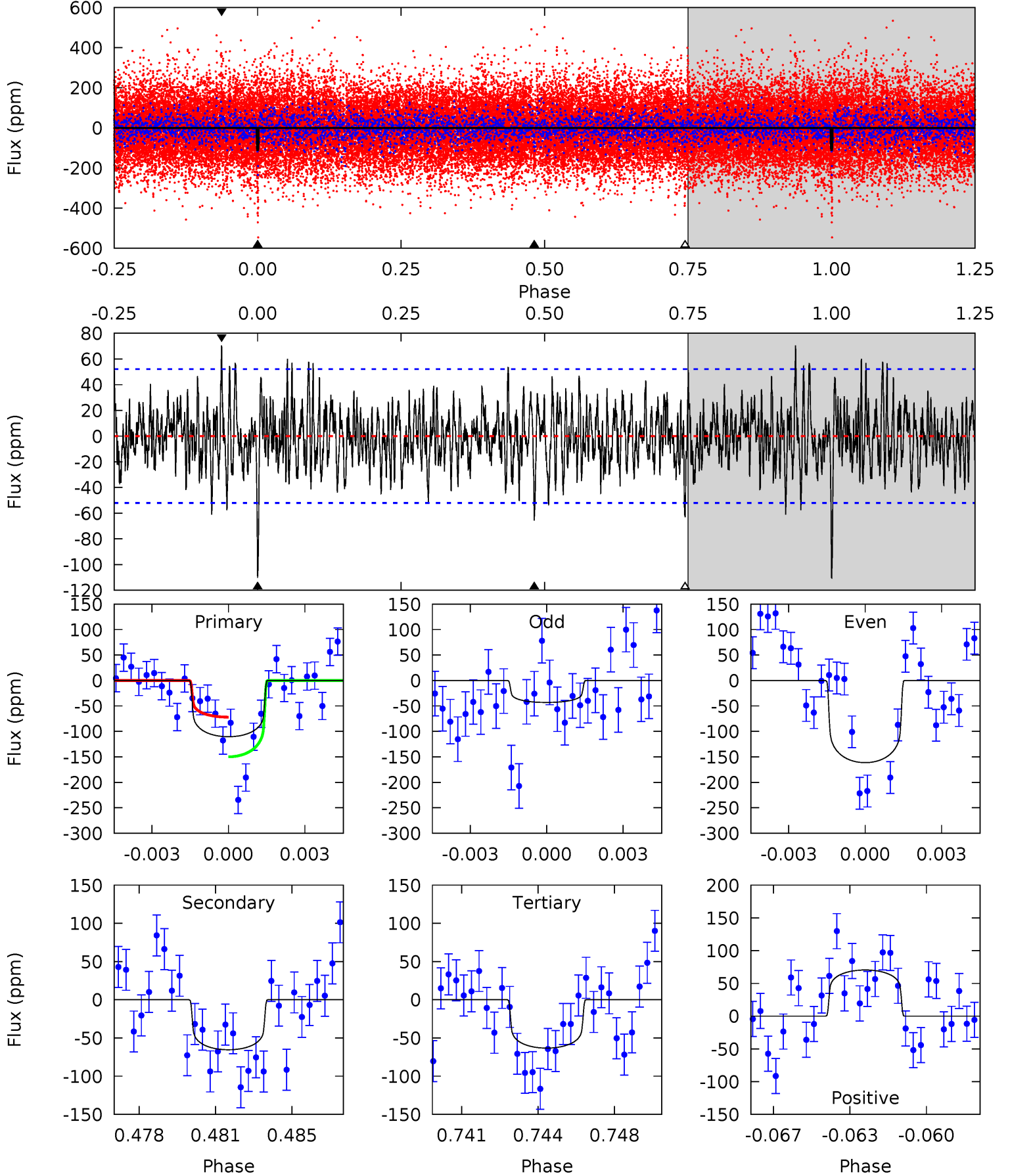
TCE 009767486-02 P=212.876828 Days $T_0=276.833851$ (BKJD)



DV Model-Shift Uniqueness Test

009767486-02, $P = 212.872737$ Days, $E = 63.946988$ Days

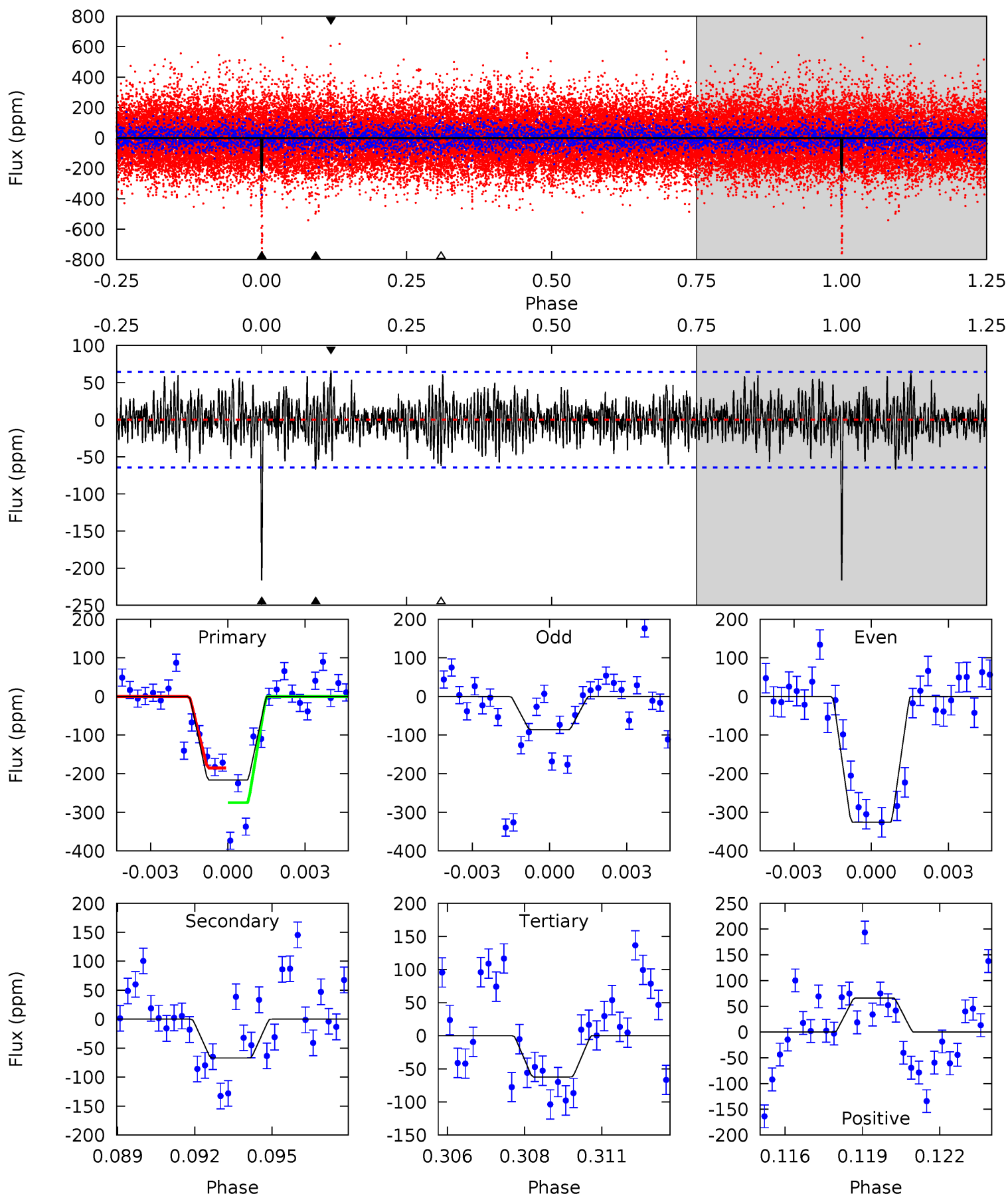
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	6.59	6.37	7.09	5.24	2.95	1.94	4.75	4.03	0.22	-0.50	5.86	1.07	0.39	3.89



Alt Model-Shift Uniqueness Test

009767486-02, $P = 212.876828$ Days, $E = 63.957023$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	5.48	5.09	5.42	5.27	3.00	1.62	12.6	12.3	0.39	0.07	9.73	1.83	0.23	3.64



Stellar Parameters For KIC 009767486

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6784^{+185}_{-278}	$3.856^{+0.329}_{-0.164}$	$0.360^{+0.100}_{-0.350}$	$2.649^{+0.652}_{-1.060}$	$1.838^{+0.178}_{-0.416}$	$0.139^{+0.362}_{-0.060}$
	+3%/-4%	+9%/-4%	+28%/-97%	+25%/-40%	+10%/-23%	+260%/-43%
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 009767486-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-65 ± 10	$3.22^{+0.92}_{-0.83}$	726^{+57}_{-73}	5634^{+618}_{-501}	2409^{+2033}_{-881}
Alt.	-67 ± 12	$4.16^{+1.05}_{-1.00}$	729^{+57}_{-72}	5028^{+462}_{-348}	1499^{+1138}_{-570}

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 $A_{obs} \gg 1.0$

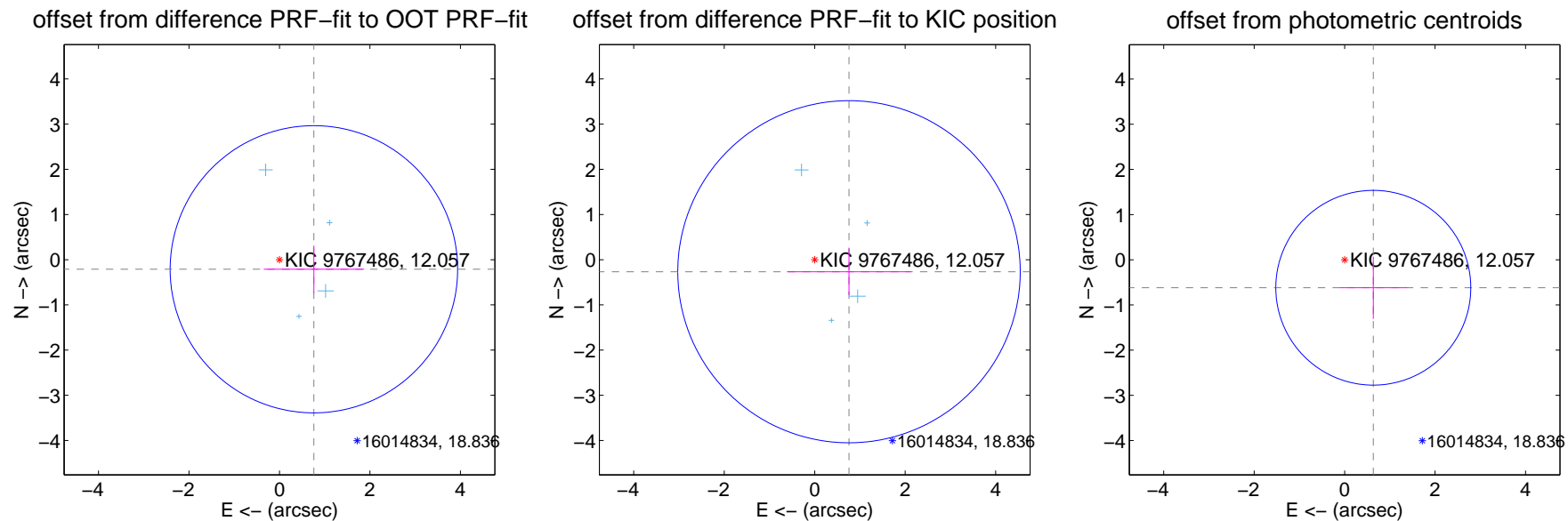
DV Centroid Data

Supplemental centroid analysis for 009767486-02. Kepler magnitude: 12.06. Transit SNR 6.95

There are 4 quarters with good PRF difference image offsets

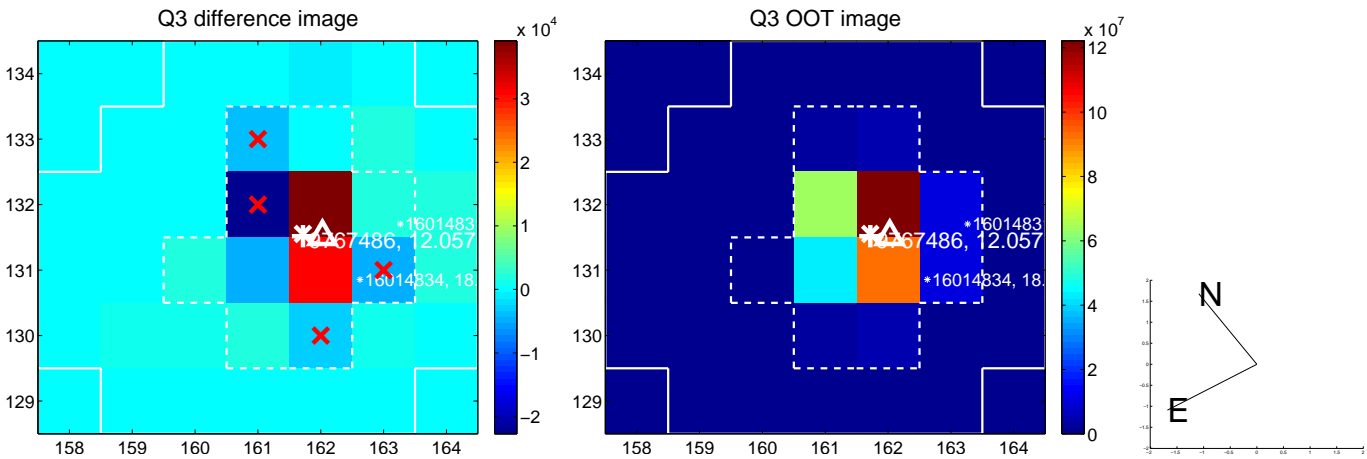
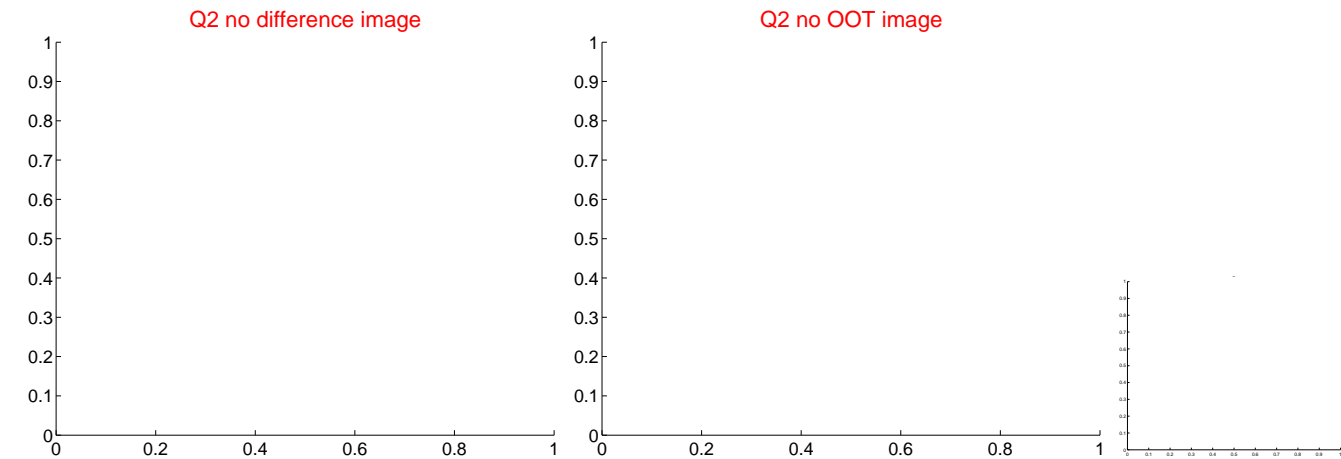
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.790 ± 1.059	0.75	-0.761 ± 1.110	-0.212 ± 0.523
PRF-fit source offset from KIC position	0.804 ± 1.261	0.64	-0.758 ± 1.369	-0.266 ± 0.515
photometric centroid source offset	0.89 ± 0.72	1.23	-0.63 ± 0.75	-0.62 ± 0.69

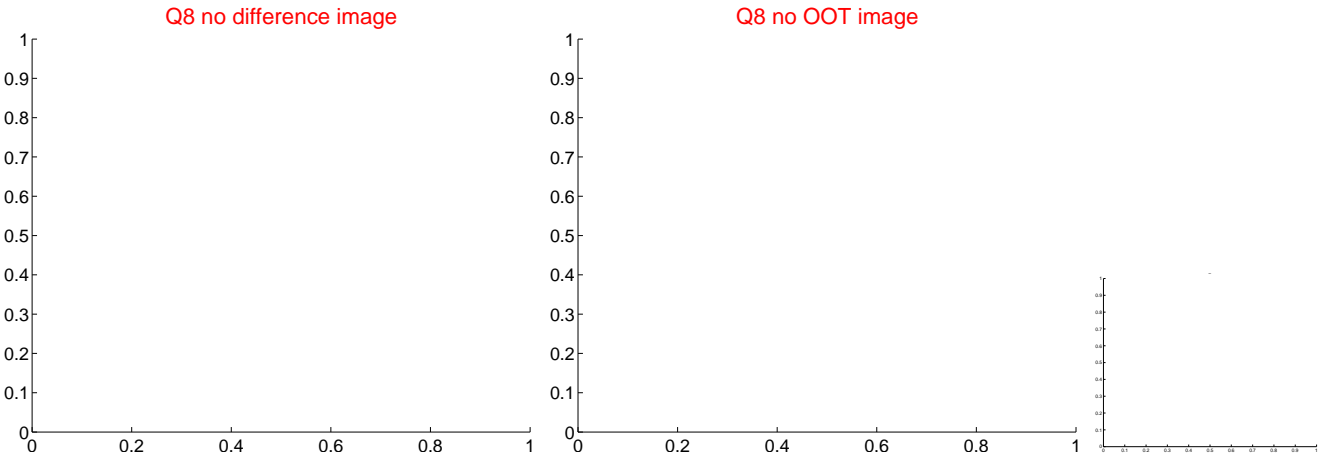
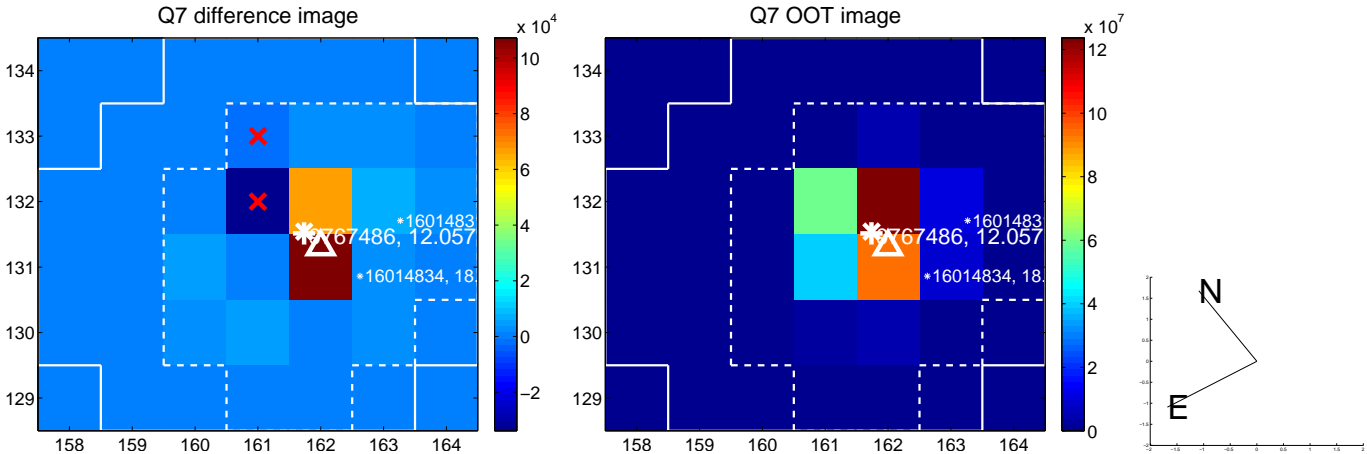
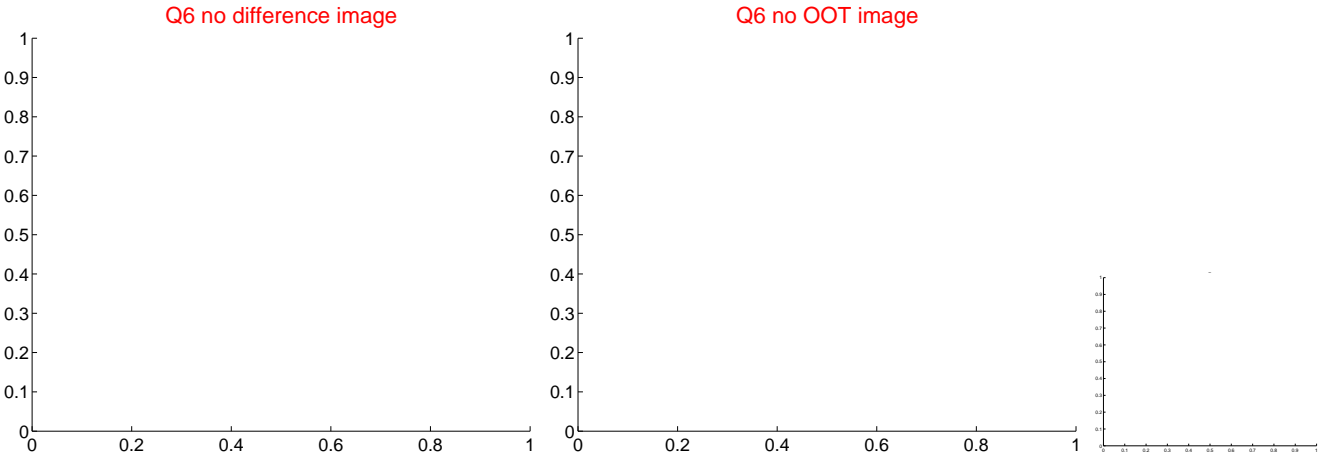
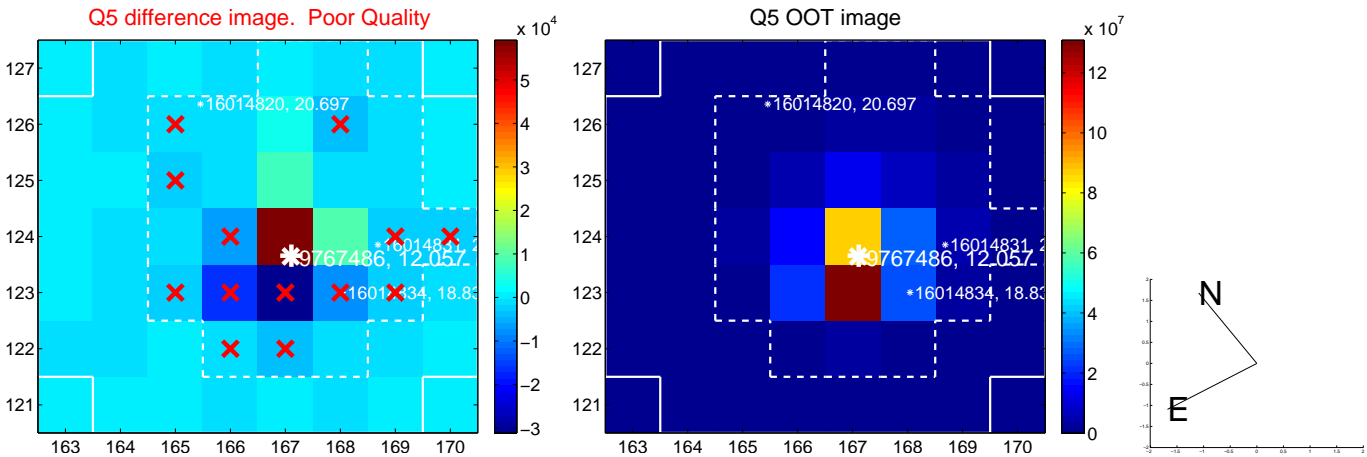


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

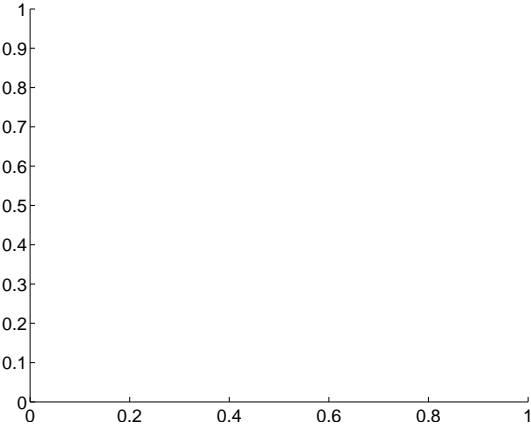


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

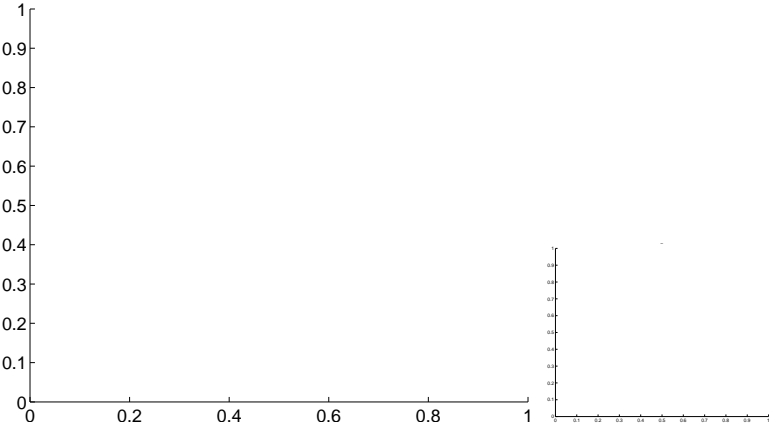


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

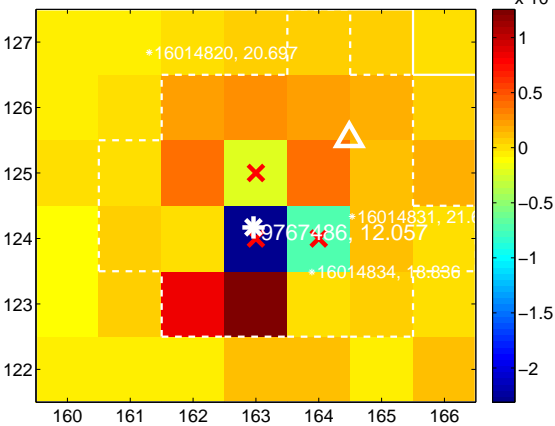
Q9 no difference image



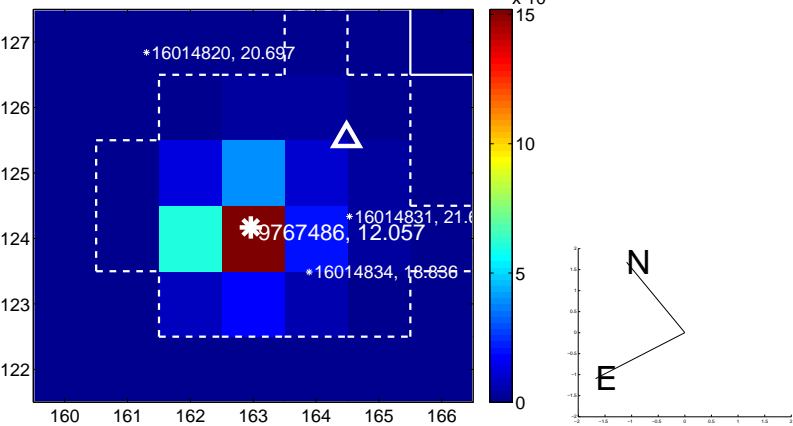
Q9 no OOT image



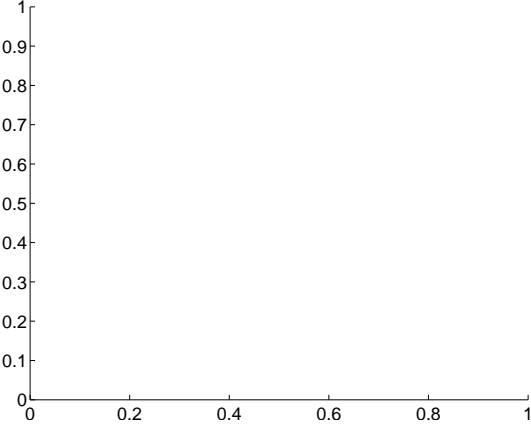
Q10 difference image. Poor Quality



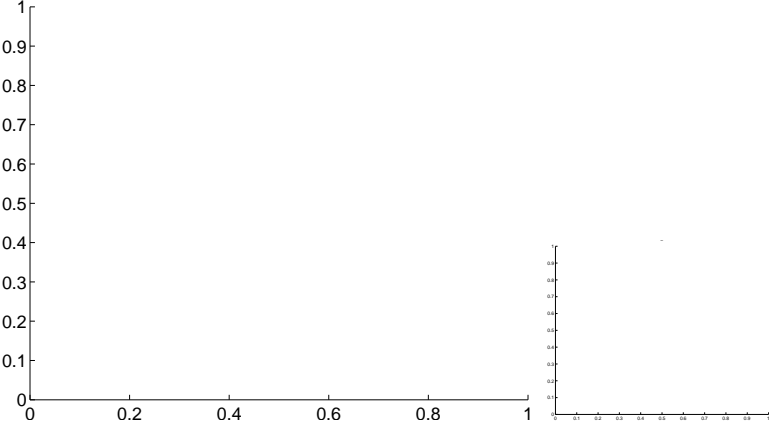
Q10 OOT image



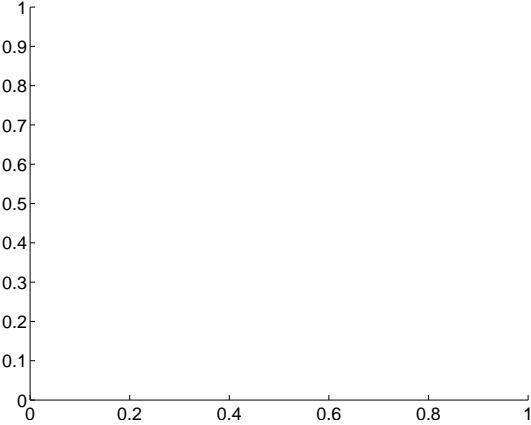
Q11 no difference image



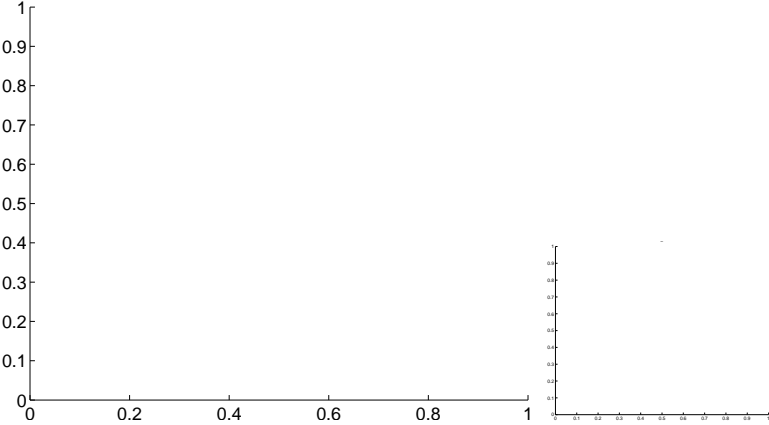
Q11 no OOT image



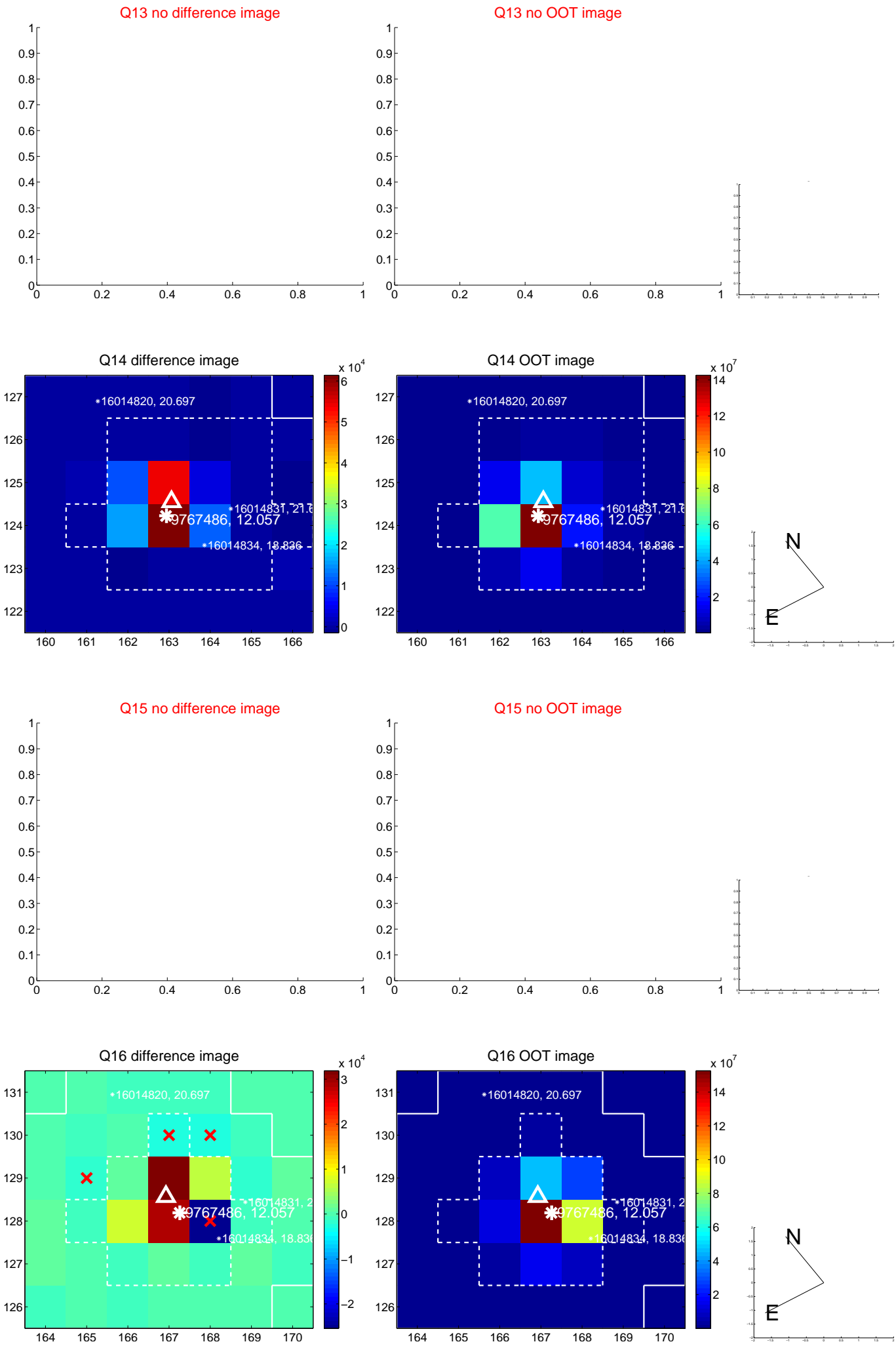
Q12 no difference image



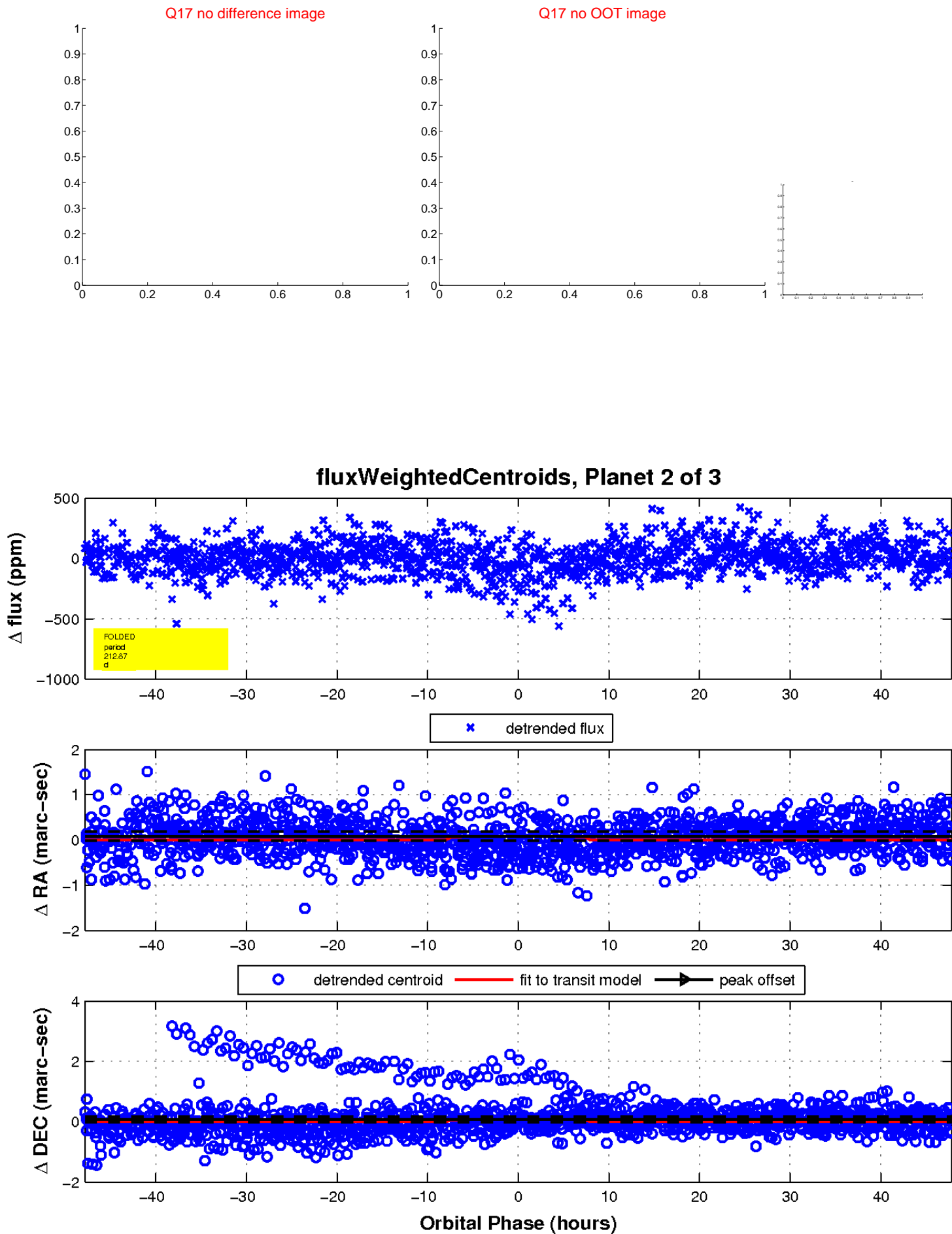
Q12 no OOT image



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

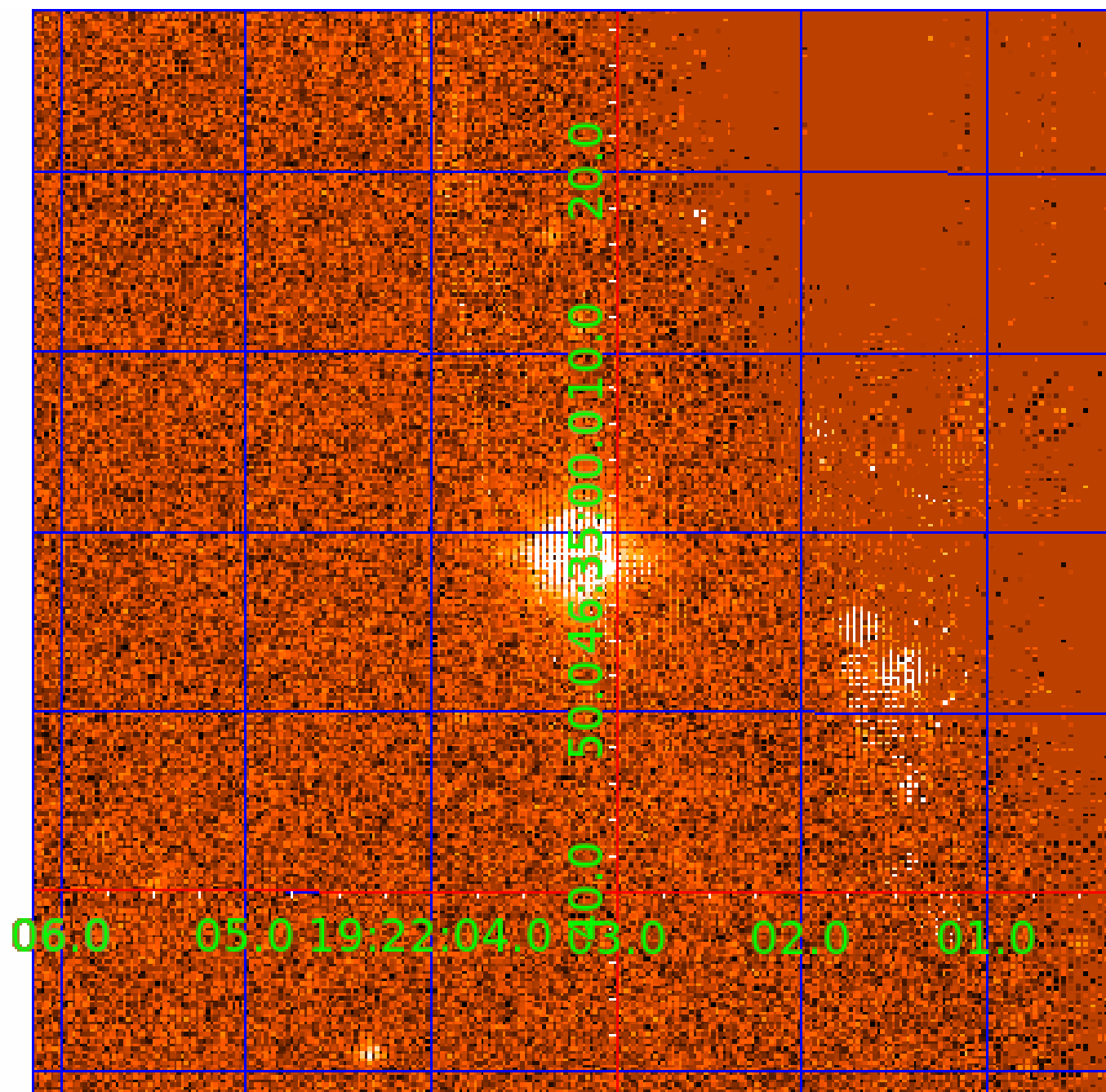


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009767486

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})
009767486-01	OBS	No	1.242618	131.665062	24.5	3.857	11.7	11.8	2.65	6784	1.52	17342.39
009767486-02	OBS	No	212.872737	276.819725	136.8	15.975	9.6	6.9	2.65	6784	3.42	18.23
009767486-03	OBS	No	372.759070	432.318360	339.5	18.239	7.3	7.4	2.65	6784	5.85	8.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009767486-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009767486-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009767486-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

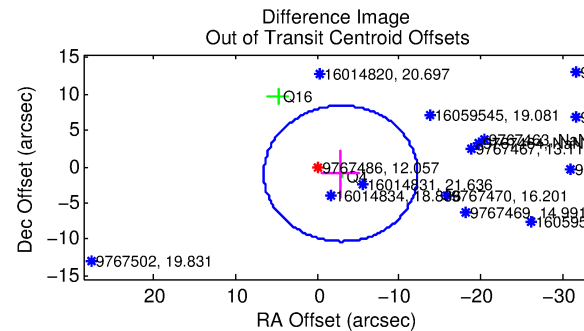
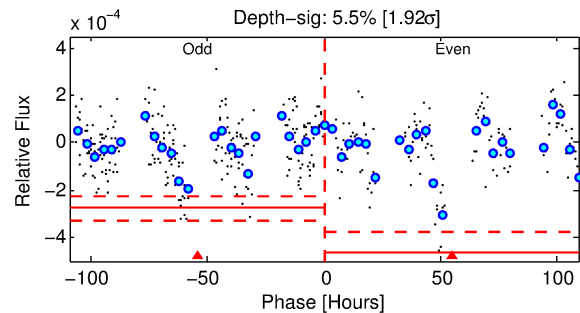
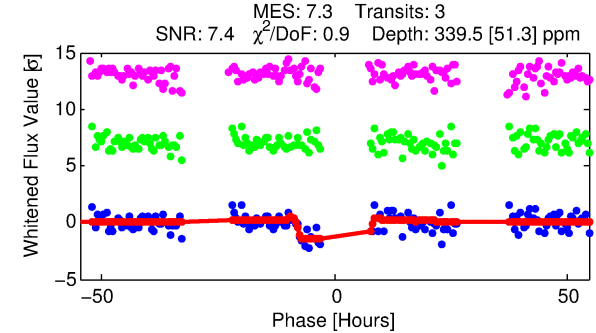
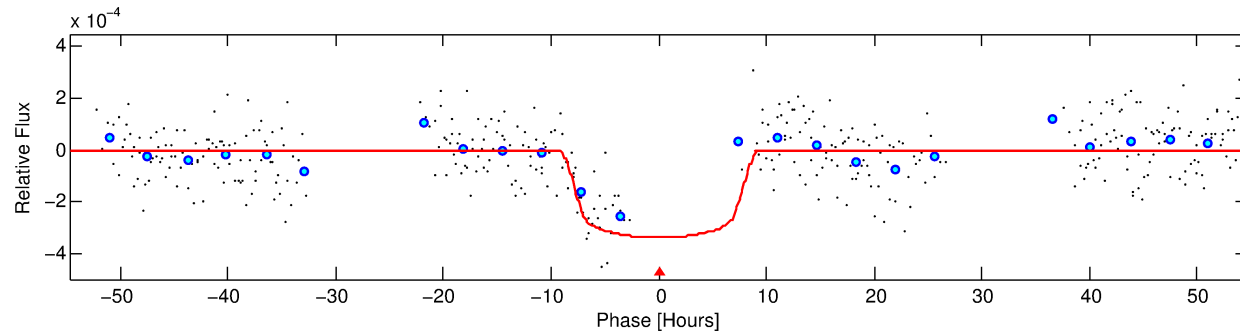
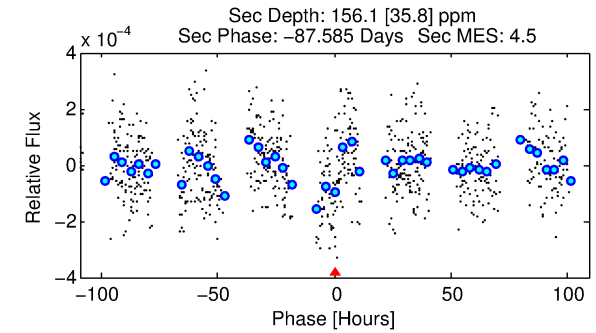
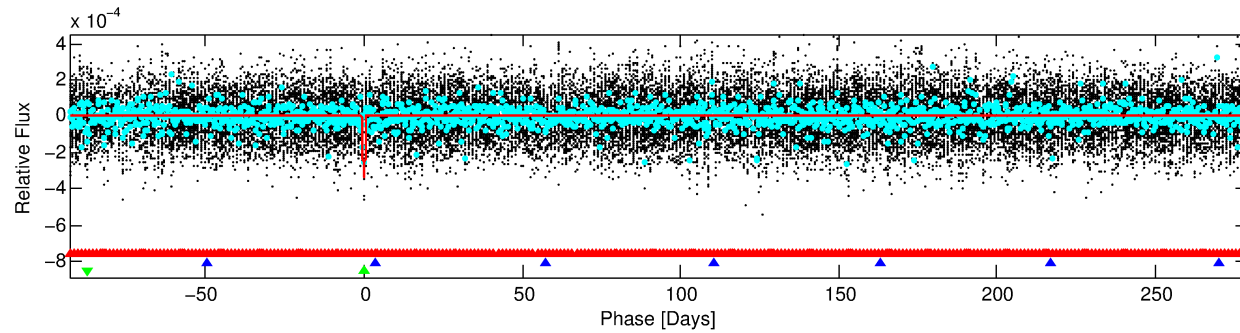
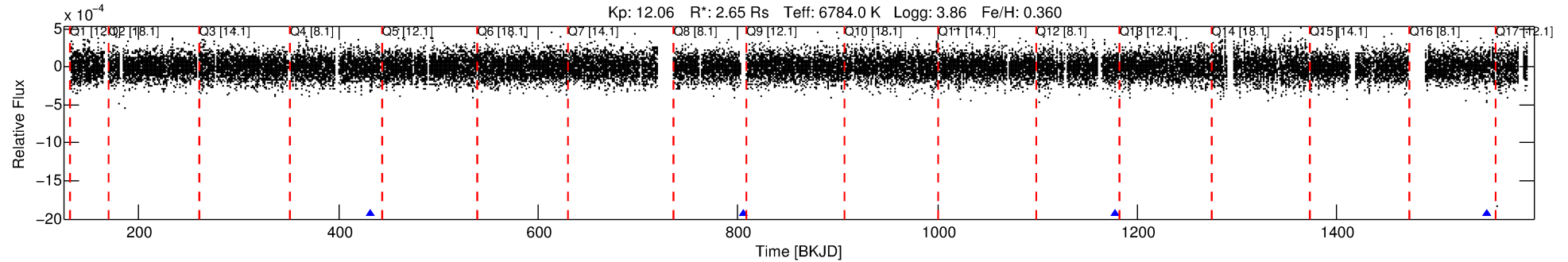
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009767486-03

No Significant Match Found

DV One-Page Summary

KIC: 9767486 Candidate: 3 of 3 Period: 372.759 d



DV Fit Results:

Period = 372.75907 [0.00935] d
Epoch = 432.3184 [0.0166] BKJD
Rp/R* = 0.0203 [0.0018]
a/R* = 65.57 [13.69]
b = 0.93 [0.03]
Seff = 8.64 [5.13]
Teq = 437 [65] K
Rp = 5.85 [2.40] Re
a = 1.2418 [0.4561] AU
Ag = 3863.95 [2478.10] [1.56 σ]
Teffp = 5328 [446] K [10.86 σ]

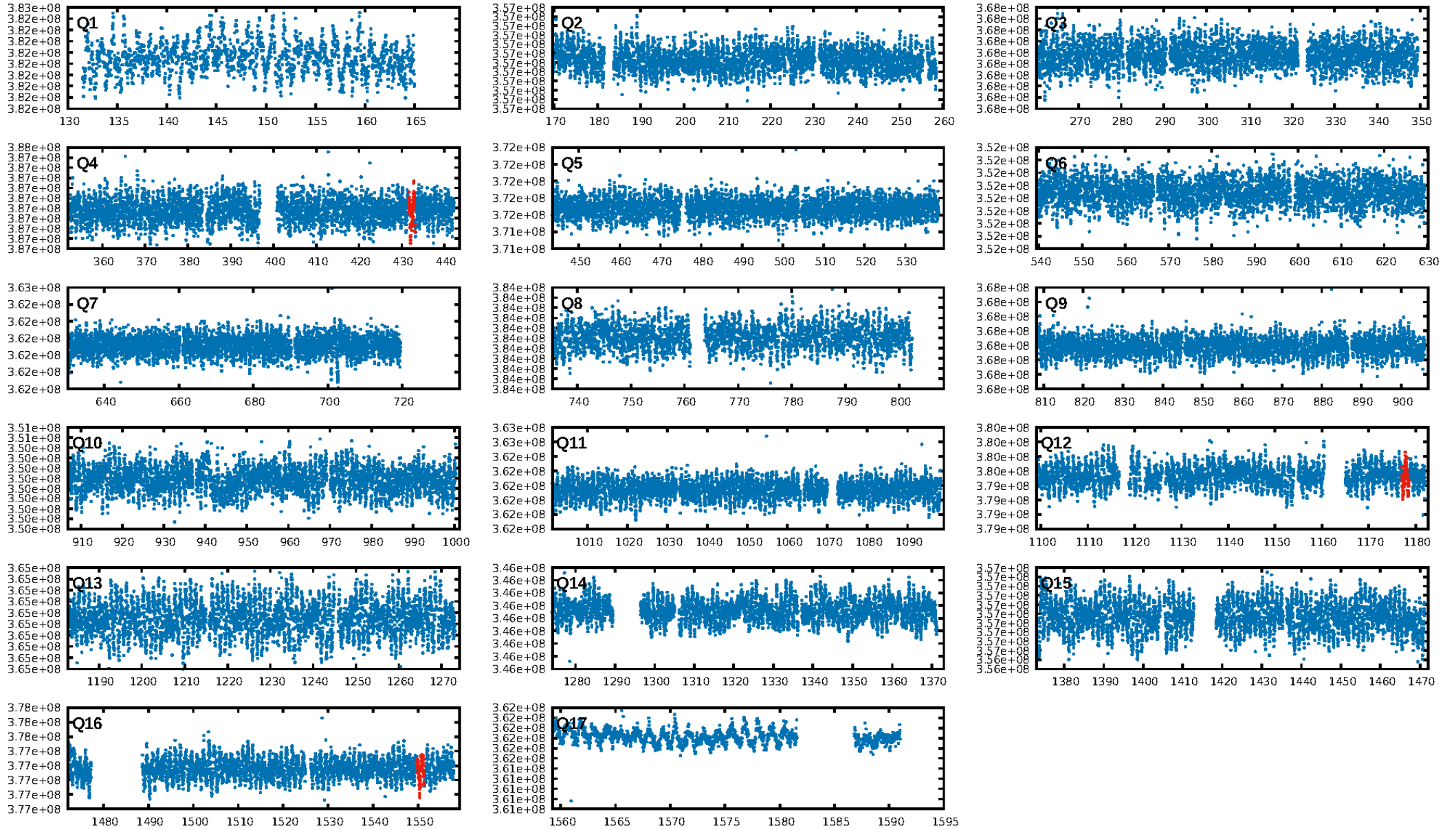
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [158.27 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 65.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.16e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.872
Centroid-sig: 4.6%
Centroid-so: 0.530 arcsec [1.50 σ]
OotOffset-rm: 3.050 arcsec [0.98 σ]
KicOffset-rm: 2.979 arcsec [0.68 σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

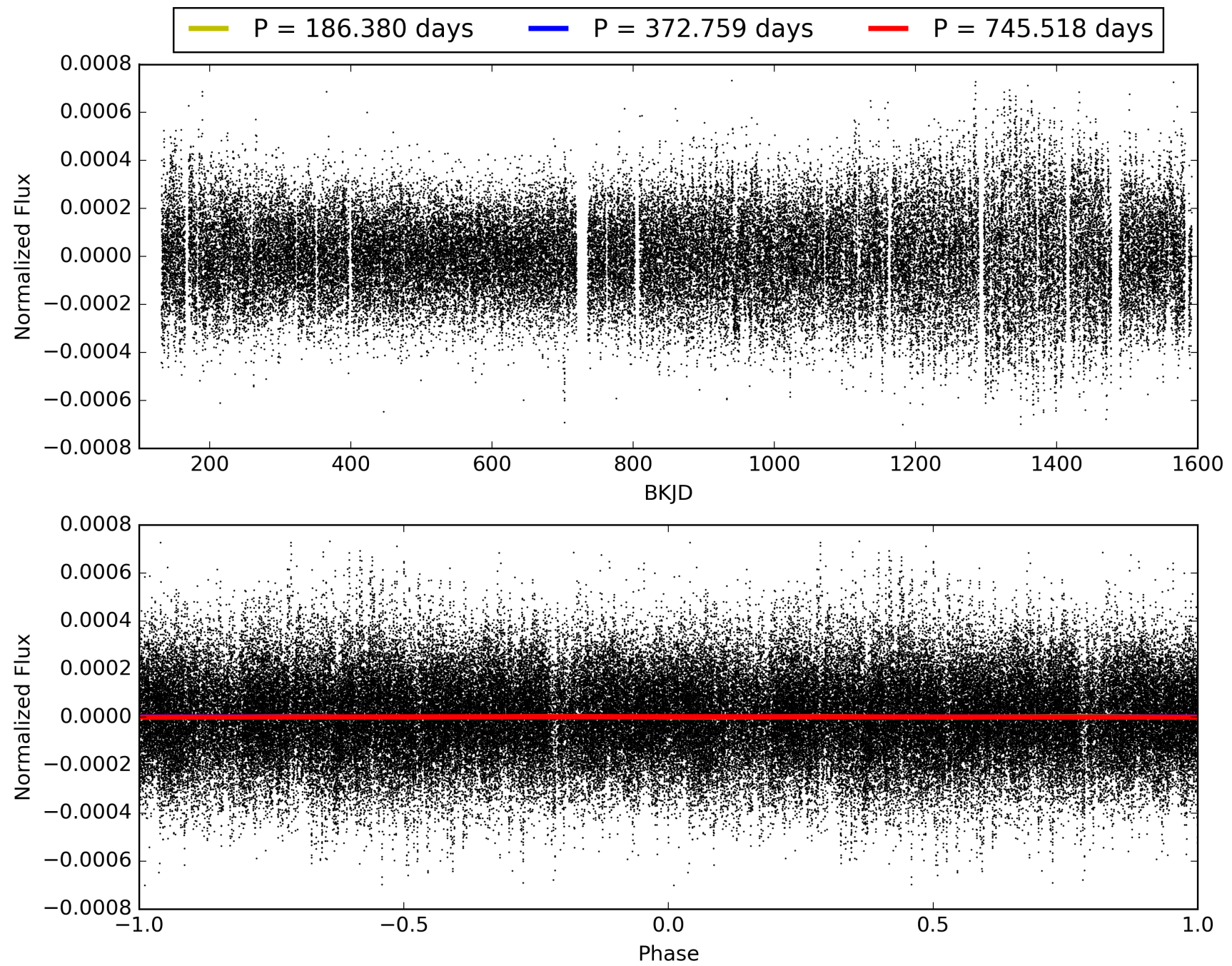
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:38:48 Z

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

TCE 009767486-03, PDC Light Curves

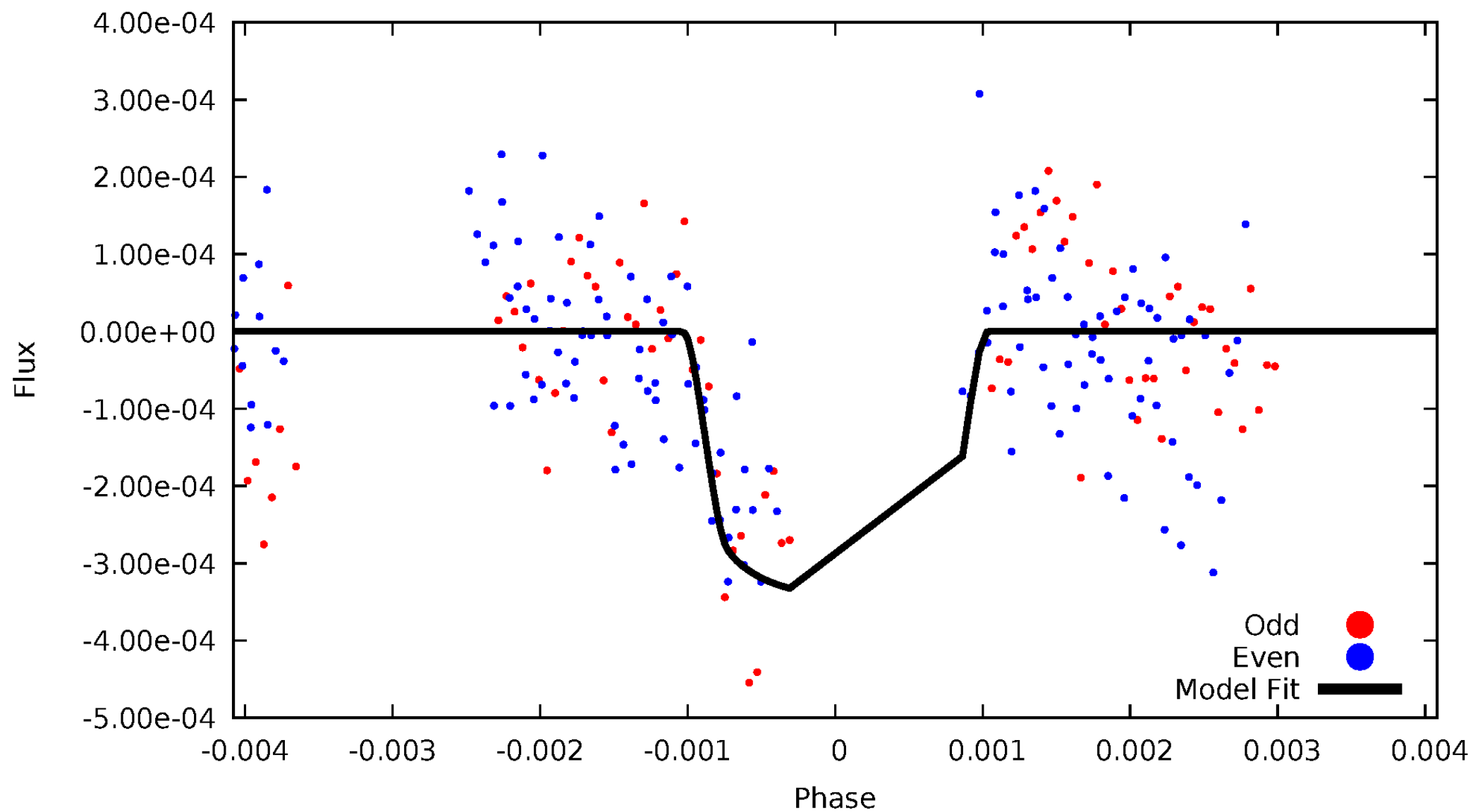


TCE 009767486-03



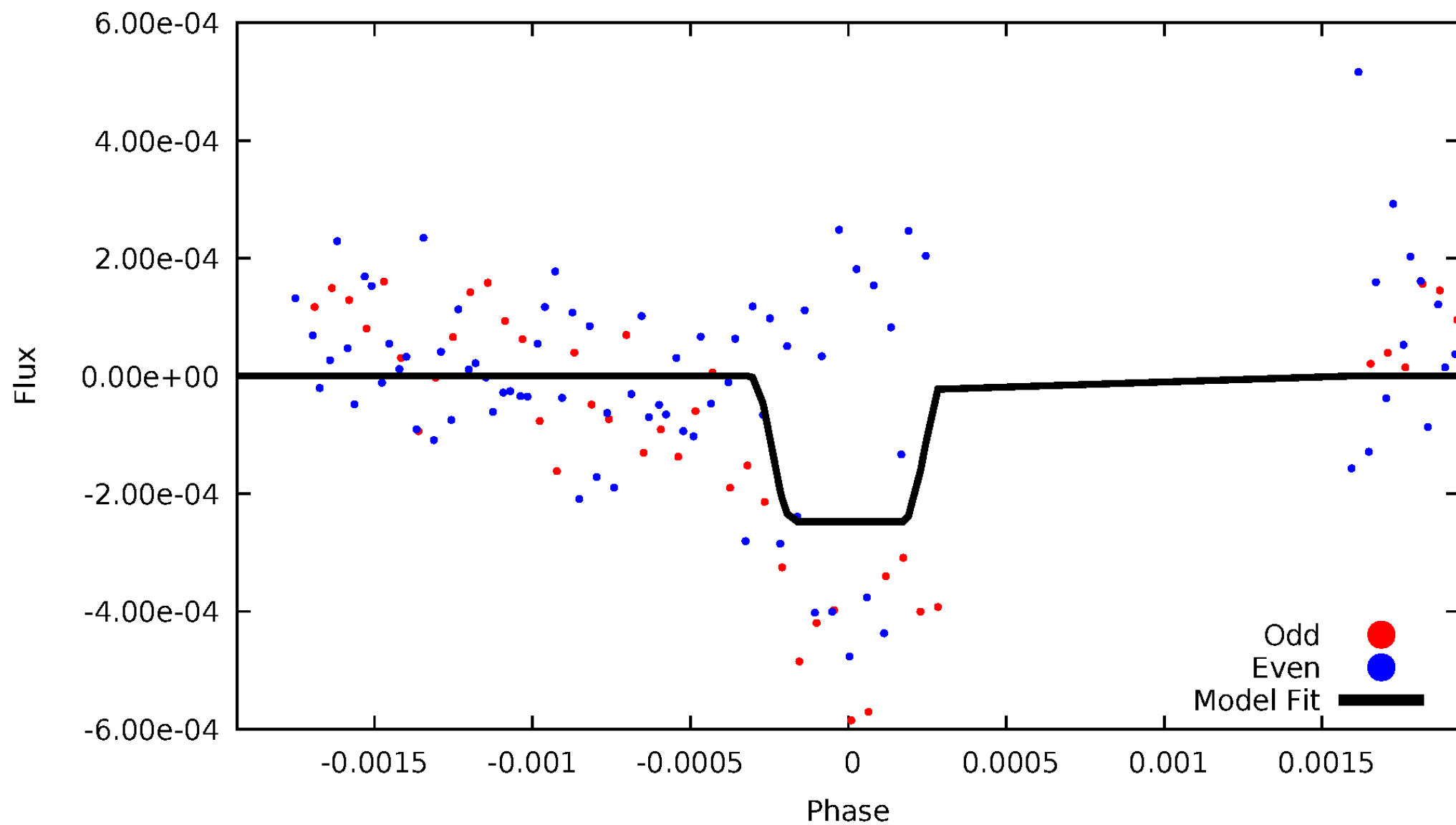
DV Odd/Even

TCE 009767486-03



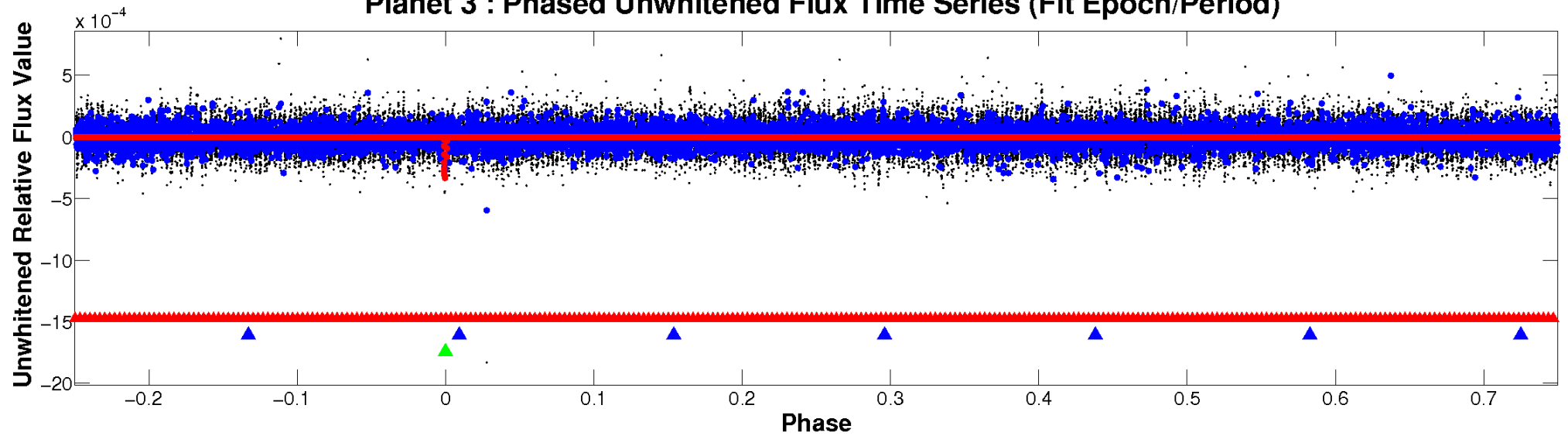
ALT Odd/Even

TCE 009767486-03

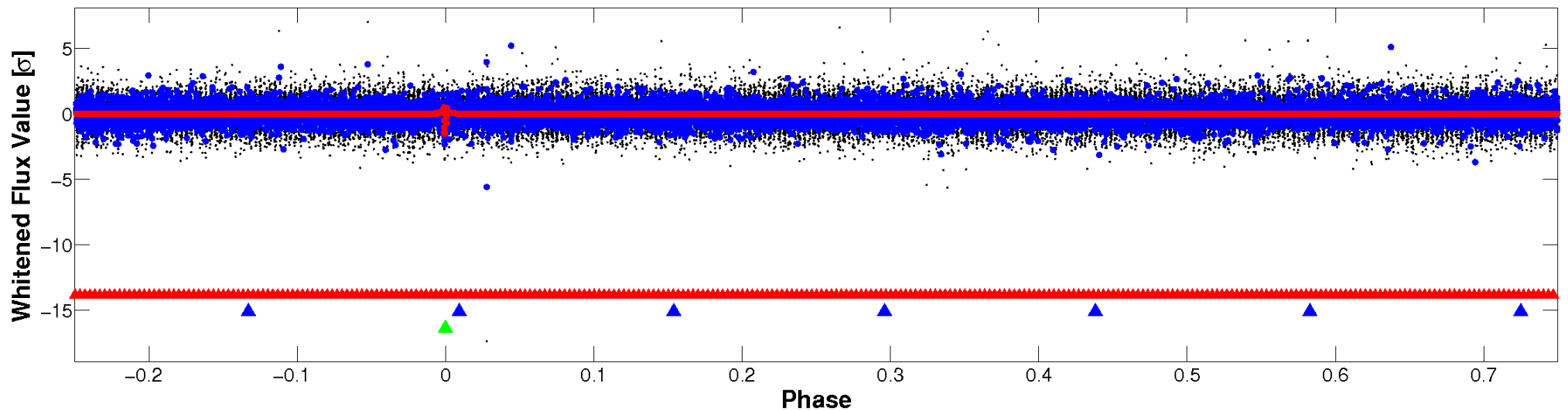


Non-Whitened Vs. Whitened Light Curve

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

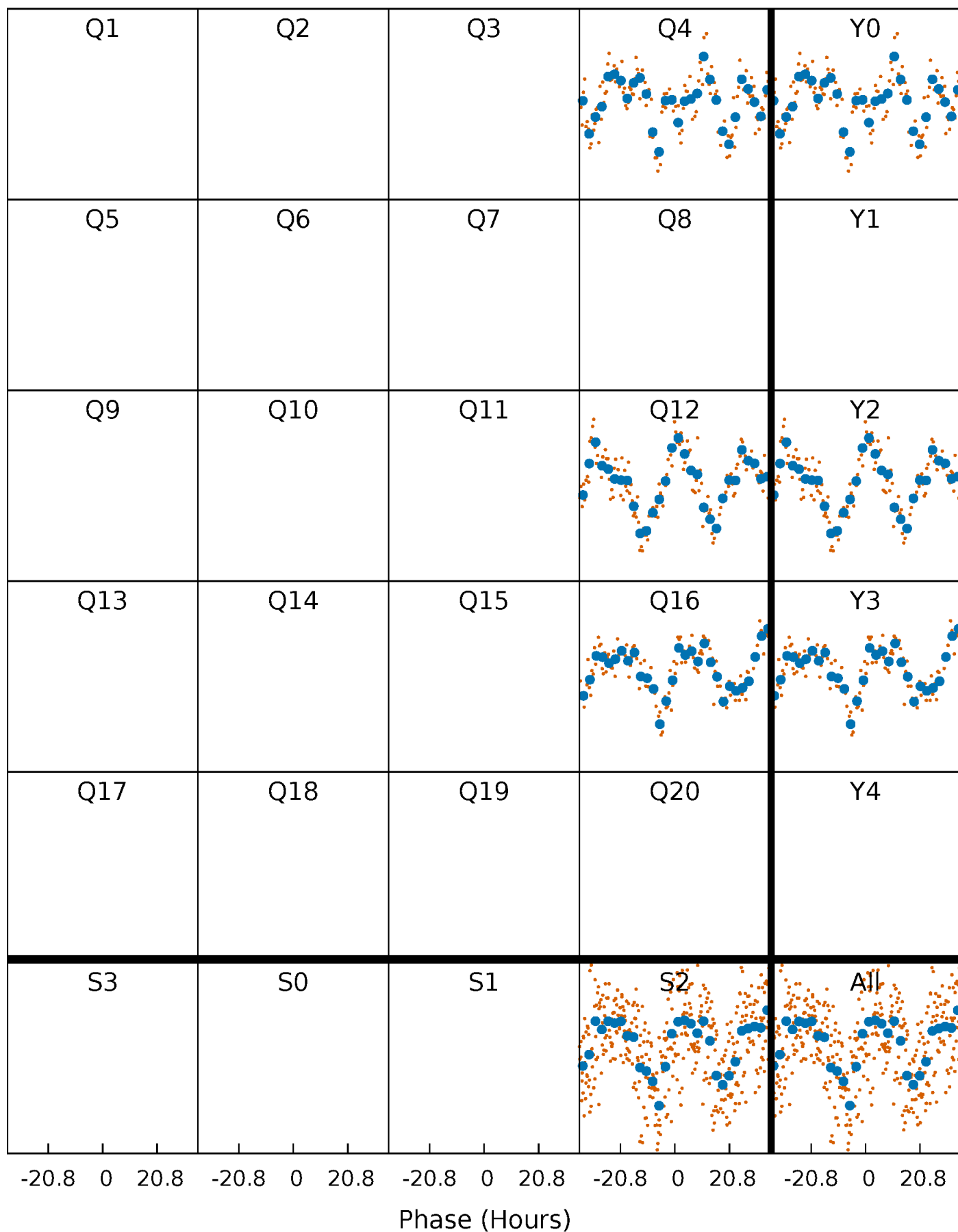


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



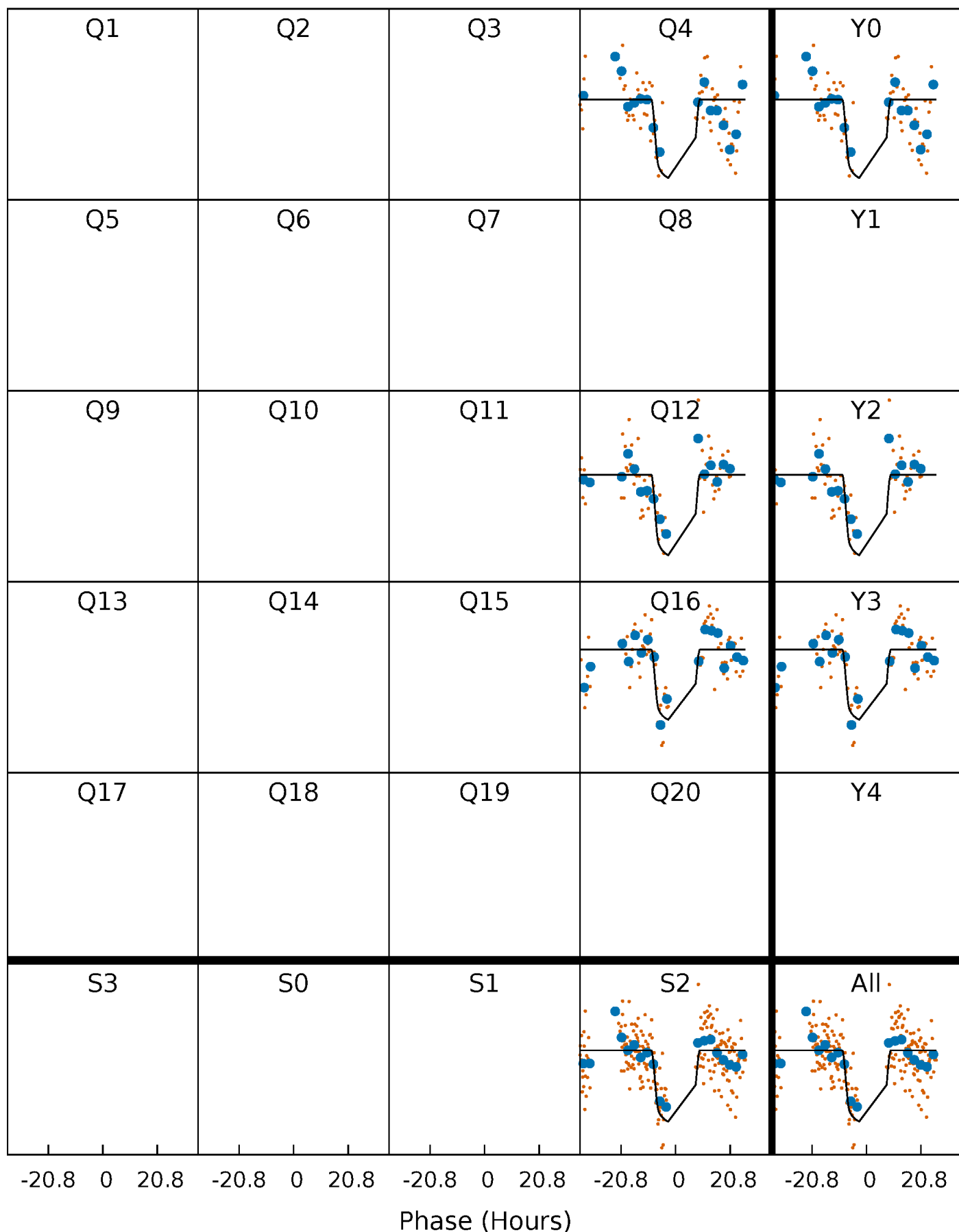
PDC Quarter-Phased Transit Curves

TCE 009767486-03 $P=372.759070$ Days $T_0=432.318360$ (BKJD)



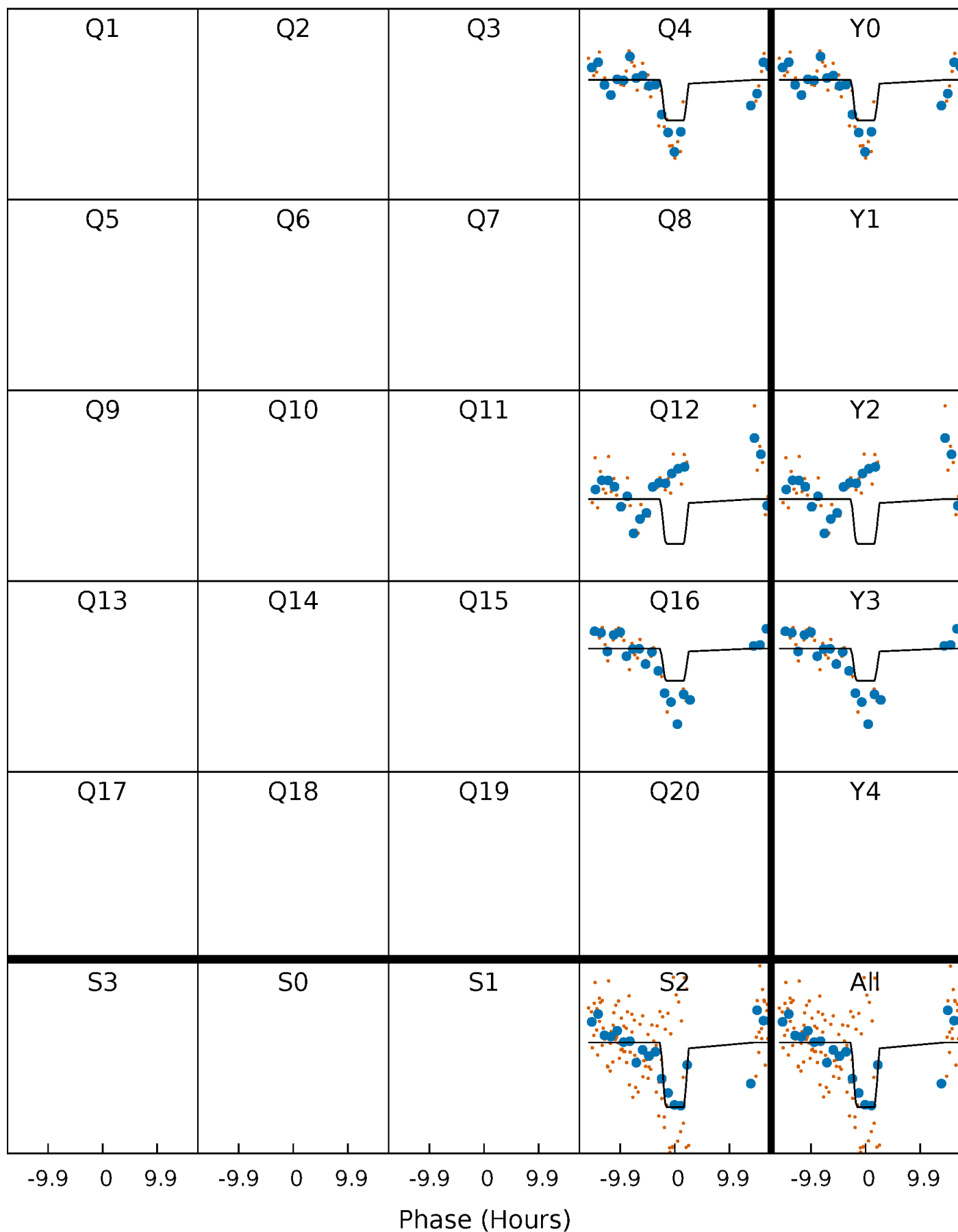
DV Quarter-Phased Transit Curves

TCE 009767486-03 P=372.759070 Days $T_0=432.318360$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

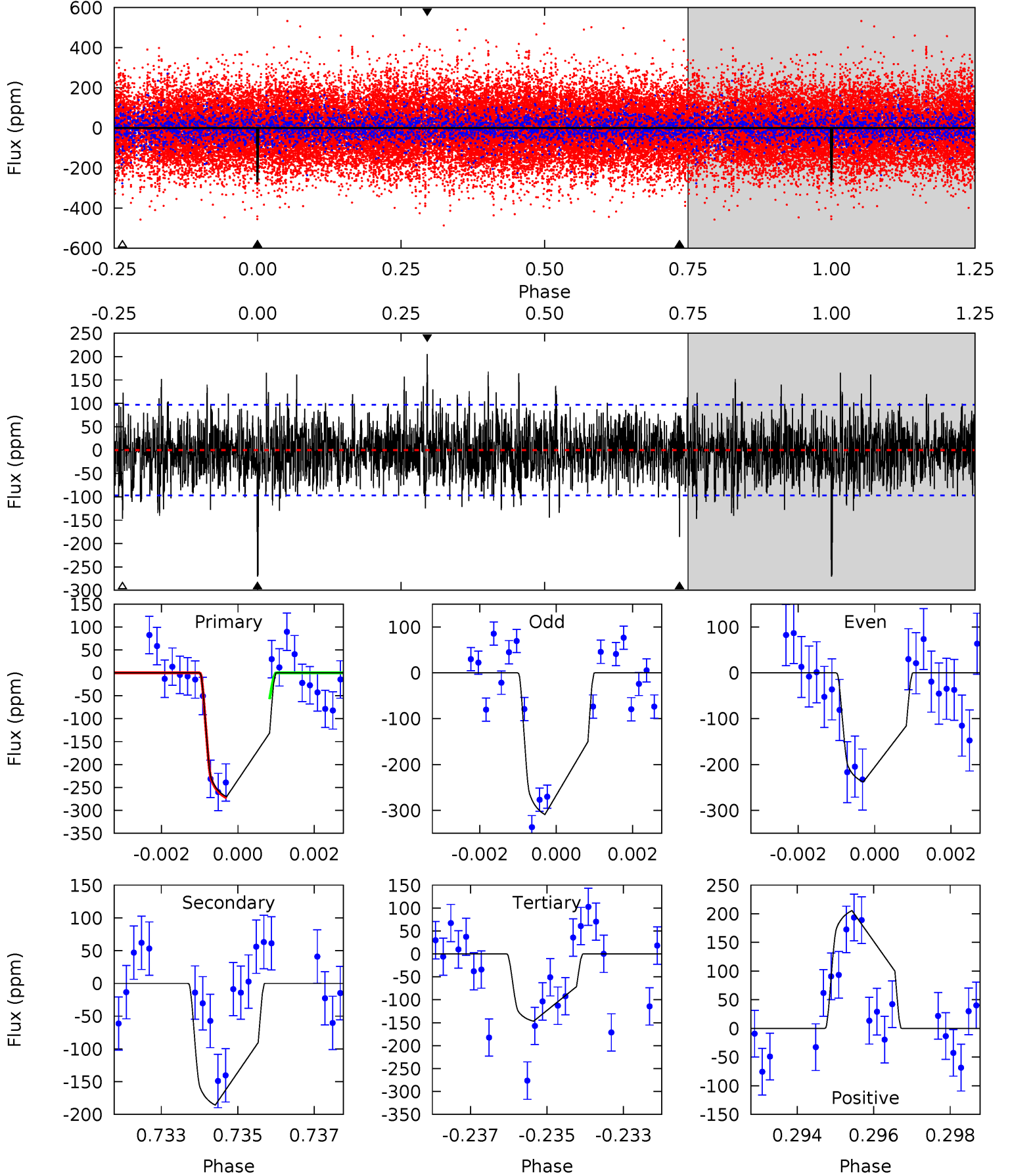
TCE 009767486-03 $P=372.776246$ Days $T_0=432.045940$ (BKJD)



DV Model-Shift Uniqueness Test

009767486-03, P = 372.759070 Days, E = 59.559290 Days

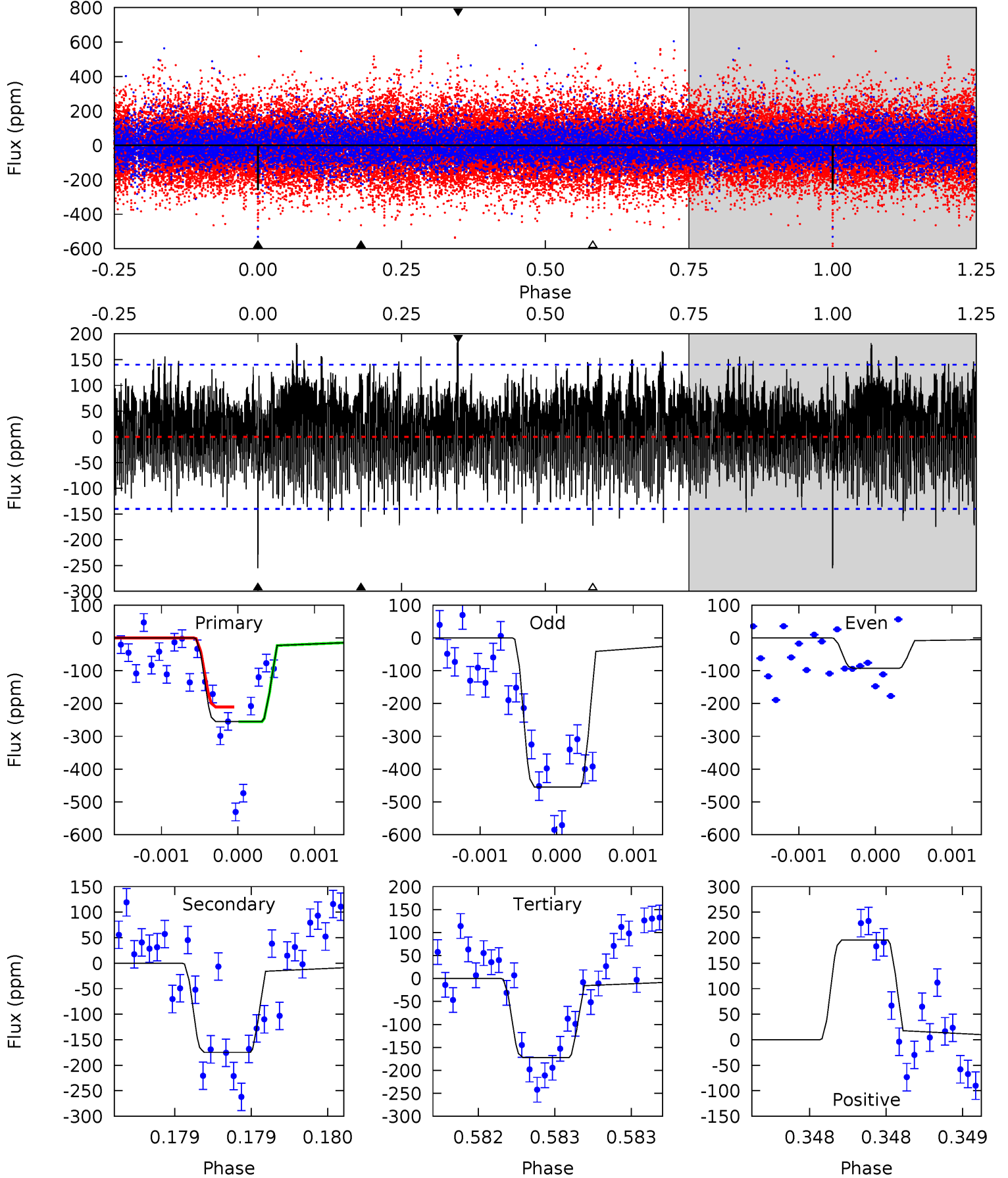
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	10.2	8.07	11.3	5.32	3.08	2.35	6.78	3.56	2.13	-1.08	1.84	1.02	0.43	4.15



Alt Model-Shift Uniqueness Test

009767486-03, $P = 372.776246$ Days, $E = 59.269694$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	6.94	6.84	7.76	5.56	3.45	2.25	3.28	2.36	0.11	-0.81	7.10	0.62	0.43	0.91



Stellar Parameters For KIC 009767486

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6784^{+185}_{-278}	$3.856^{+0.329}_{-0.164}$	$0.360^{+0.100}_{-0.350}$	$2.649^{+0.652}_{-1.060}$	$1.838^{+0.178}_{-0.416}$	$0.139^{+0.362}_{-0.060}$
	+3%/-4%	+9%/-4%	+28%/-97%	+25%/-40%	+10%/-23%	+260%/-43%
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 009767486-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-186 ± 18	$5.83^{+1.00}_{-1.25}$	604^{+48}_{-56}	5520^{+318}_{-287}	4693^{+2344}_{-1380}
Alt.	-175 ± 25	$4.35^{+0.95}_{-0.82}$	603^{+46}_{-61}	6172^{+501}_{-433}	7635^{+4708}_{-2504}

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 $A_{obs} \gg 1.0$

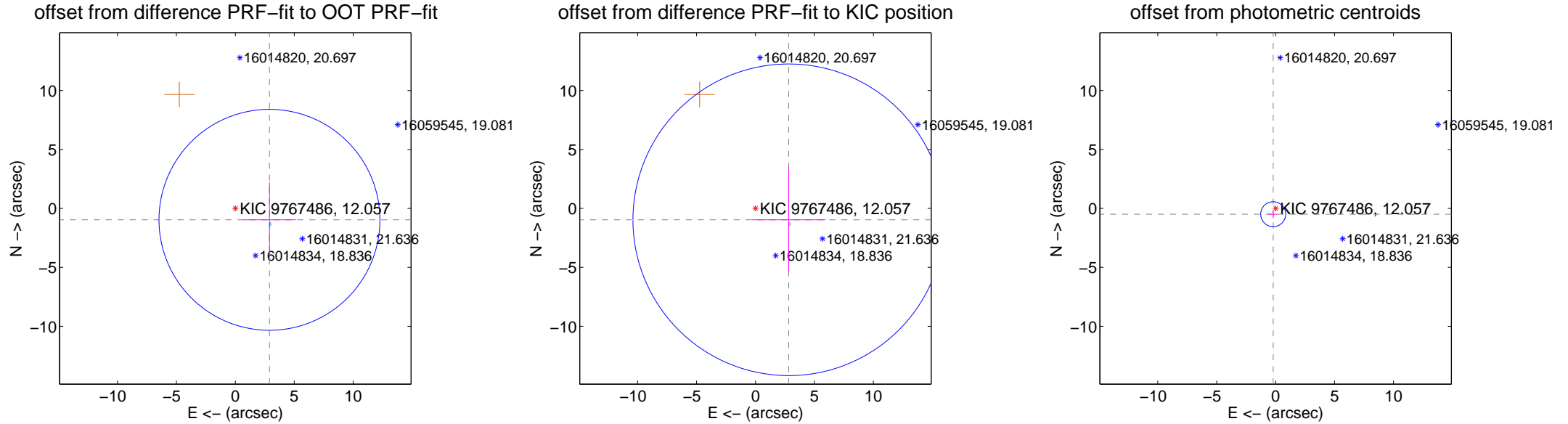
DV Centroid Data

Supplemental centroid analysis for 009767486-03. Kepler magnitude: 12.06. Transit SNR 7.43

There are 1 quarters with good PRF difference image offsets

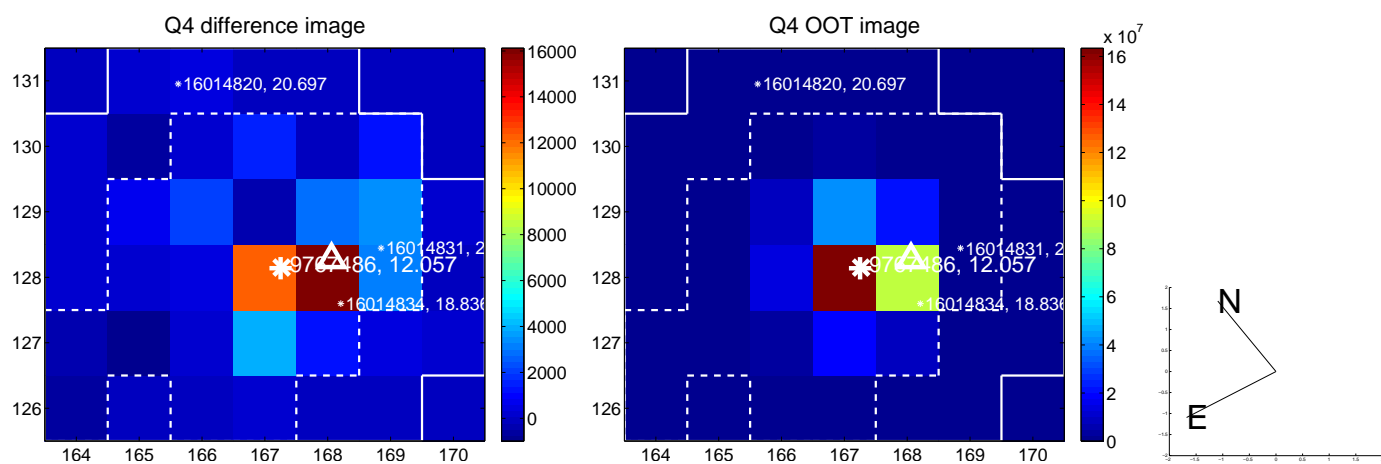
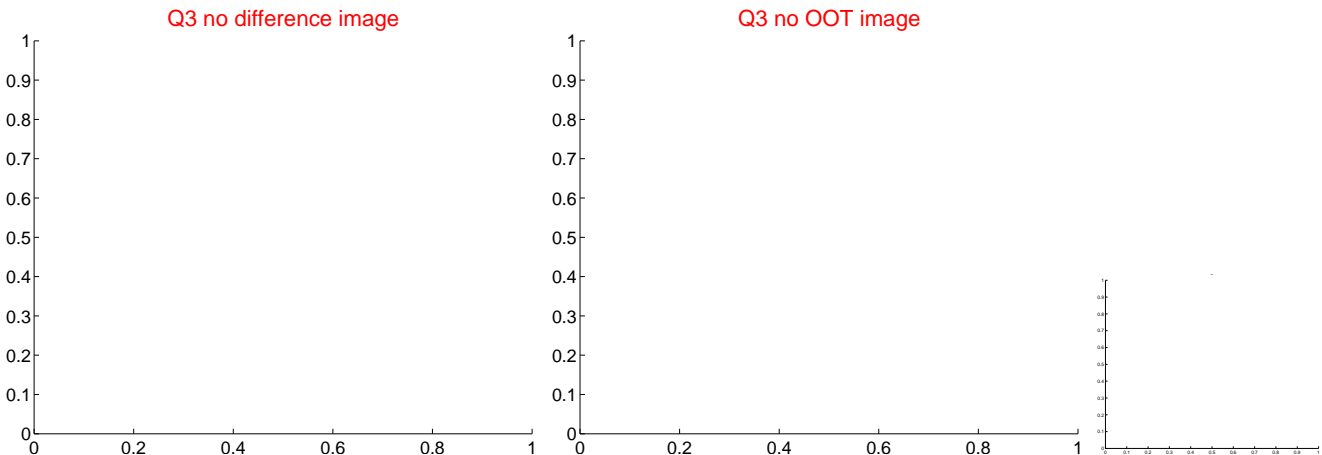
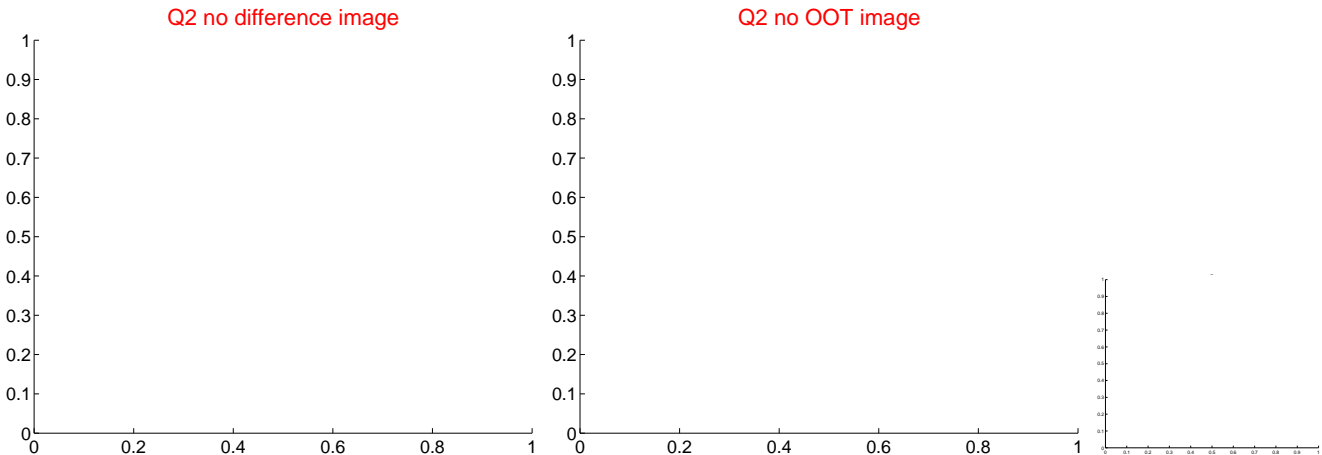
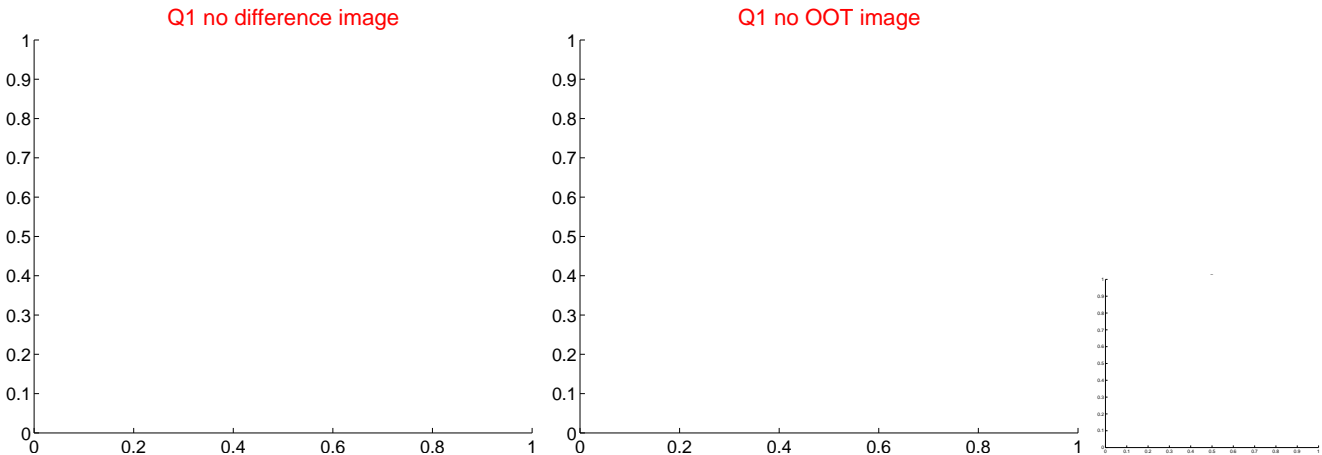
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.050 ± 3.123	0.98	-2.894 ± 2.234	-0.965 ± 3.175
PRF-fit source offset from KIC position	2.979 ± 4.406	0.68	-2.820 ± 3.123	-0.962 ± 4.489
photometric centroid source offset	0.53 ± 0.35	1.50	0.21 ± 0.42	-0.49 ± 0.34



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



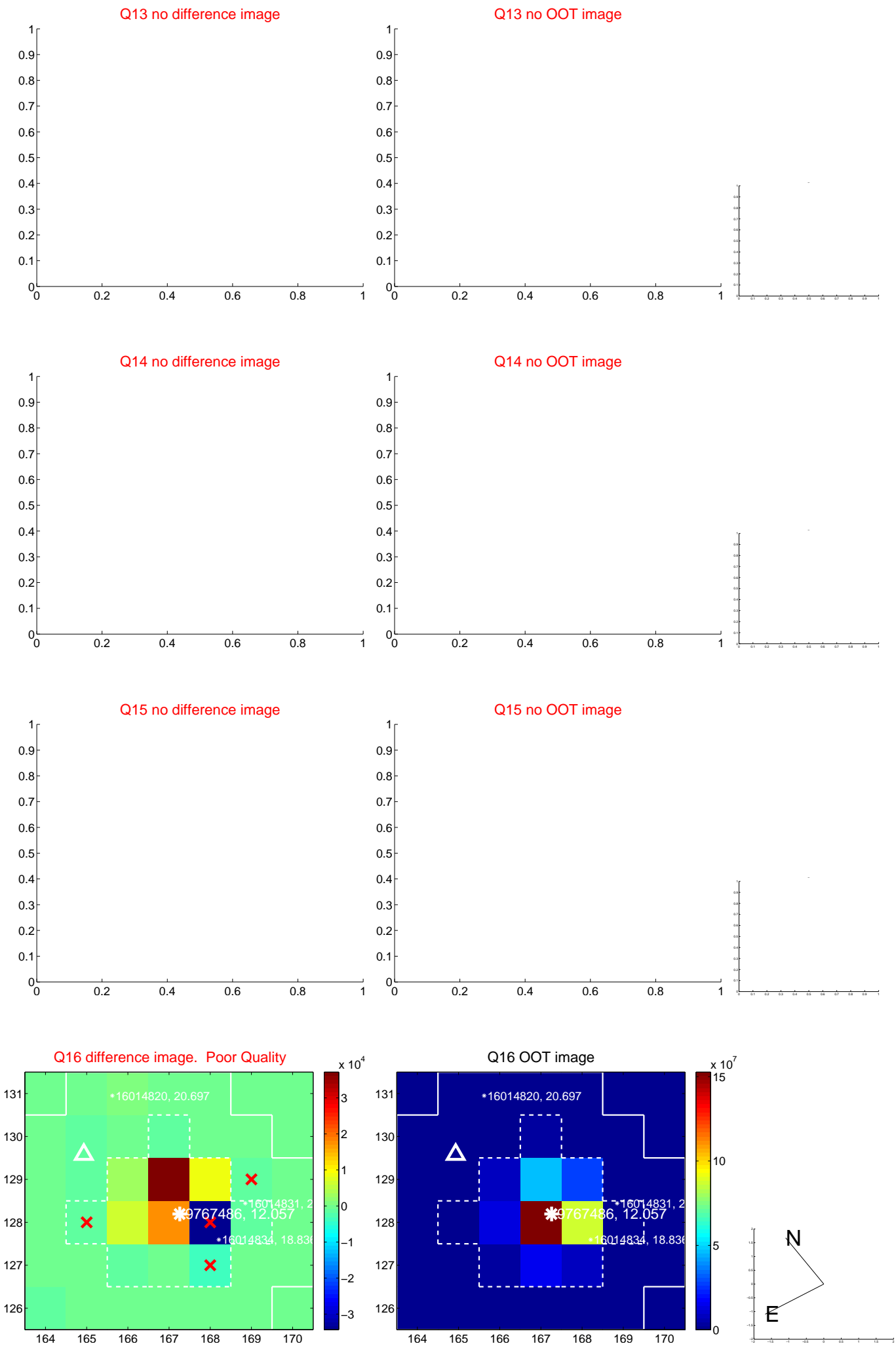
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



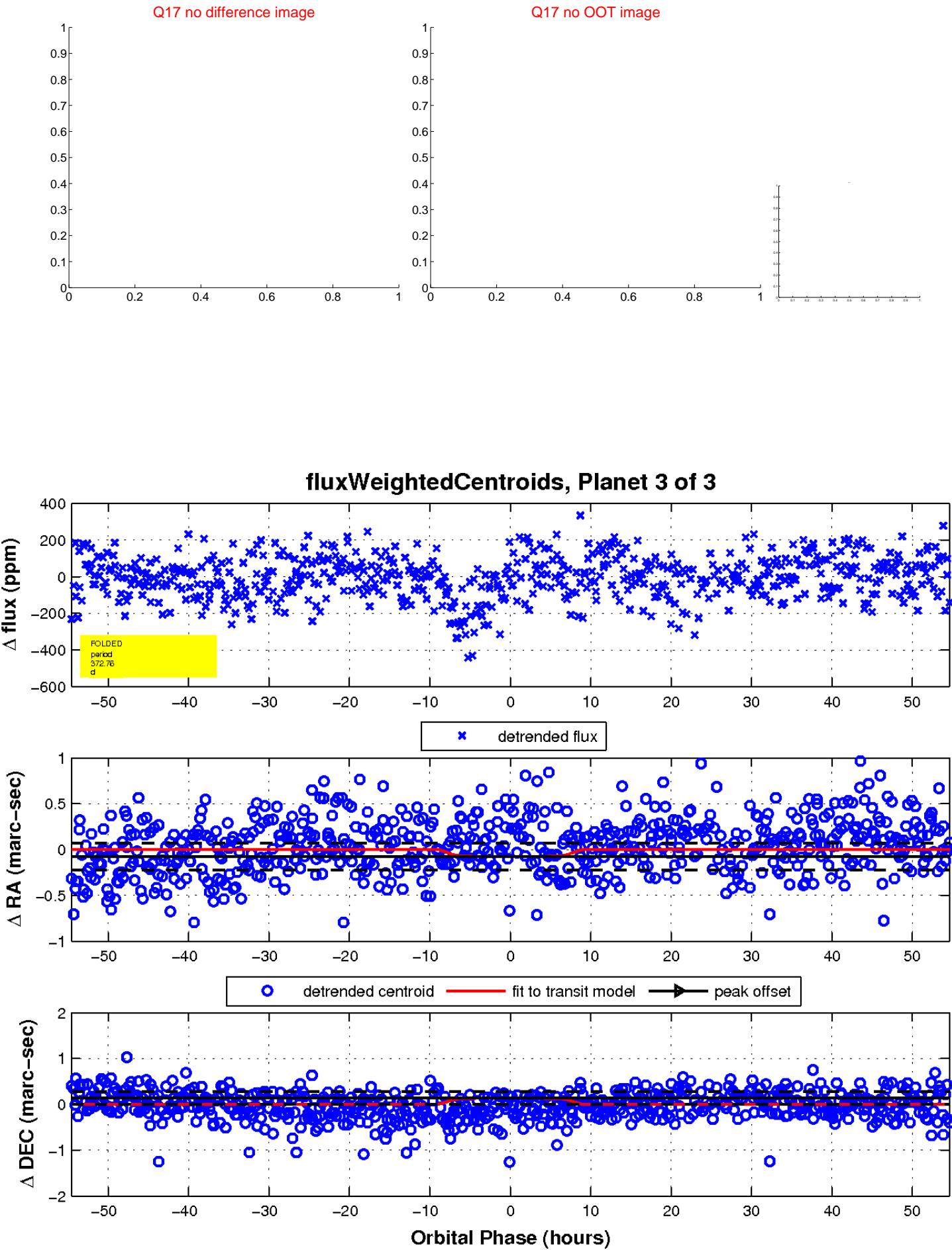
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

