

KIC 006519865

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})
006519865-01	OBS	7782.01	0.566830	131.779787	57.0	2.467	8.0	8.9	0.97	6106	0.84	6280.15
006519865-02	OBS	No	170.118633	235.811078	704.4	0.729	8.7	2.1	0.97	6106	2.90	3.12
006519865-03	OBS	No	188.596718	142.849423	673.4	3.989	8.3	3.8	0.97	6106	2.65	2.72
006519865-04	OBS	No	126.608283	200.752887	861.2	10.896	8.2	6.6	0.97	6106	2.87	4.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006519865-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST
006519865-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006519865-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS— HALO_GHOST
006519865-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

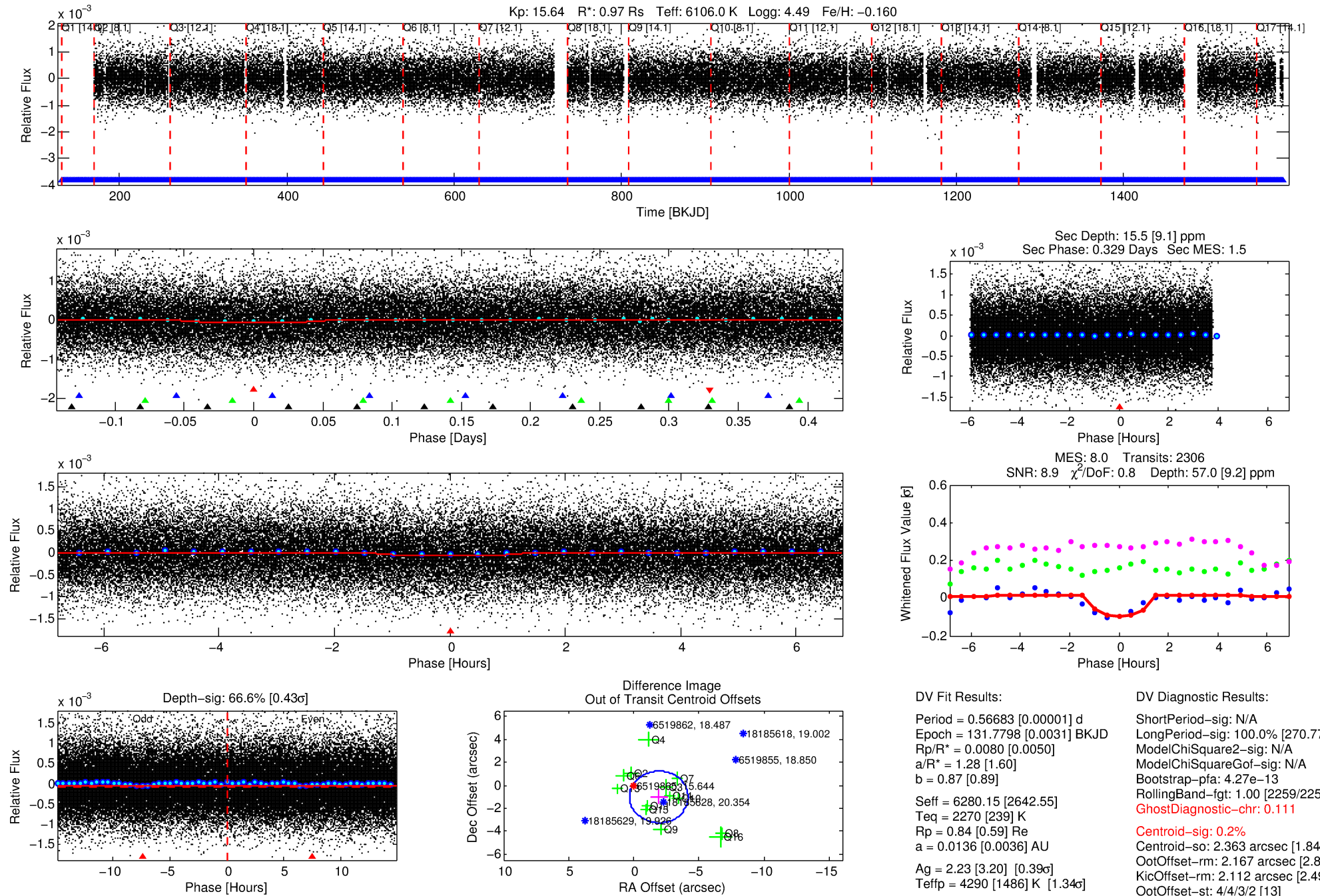
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006519865-01

No Significant Match Found

DV One-Page Summary

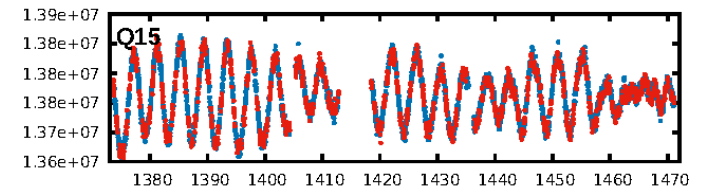
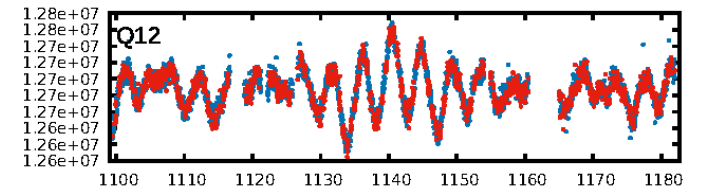
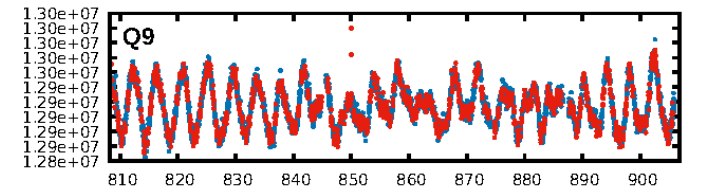
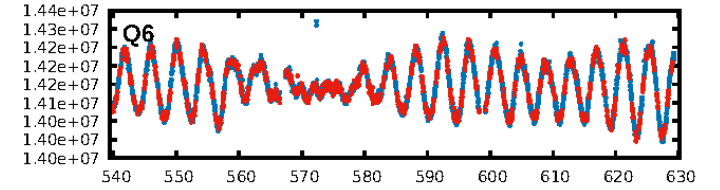
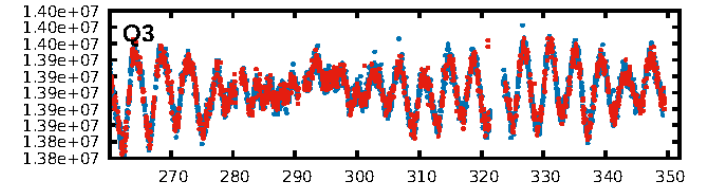
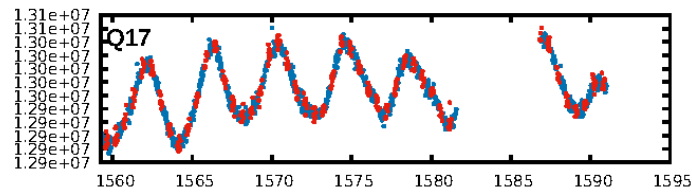
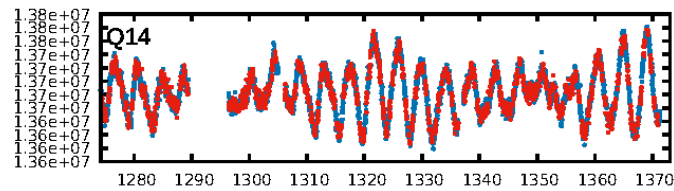
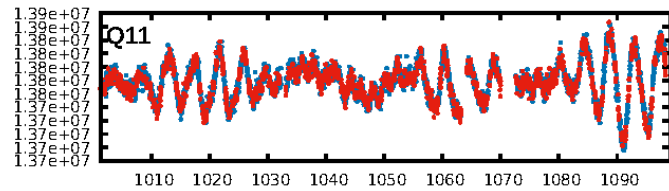
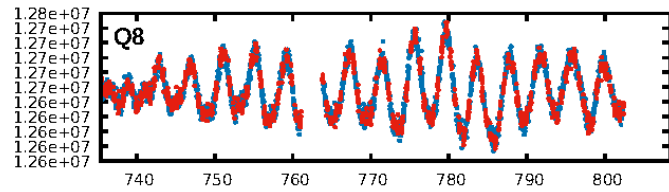
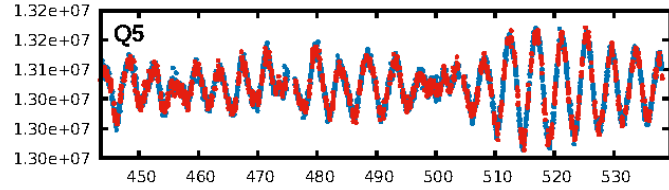
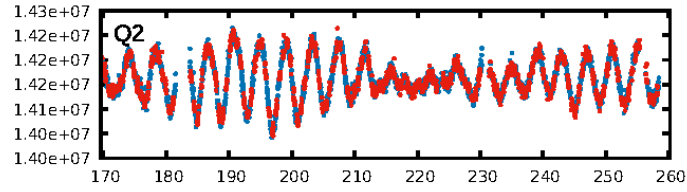
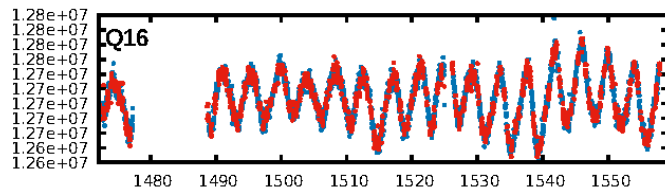
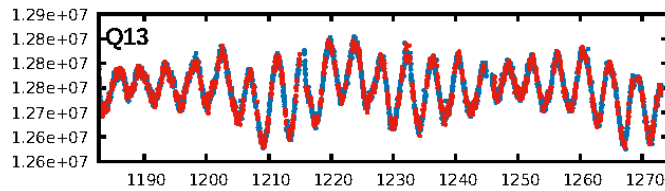
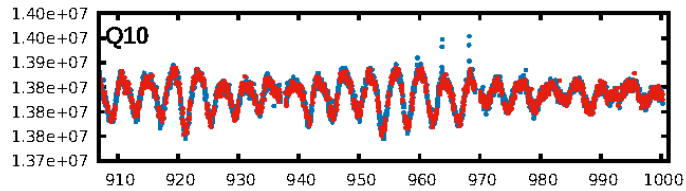
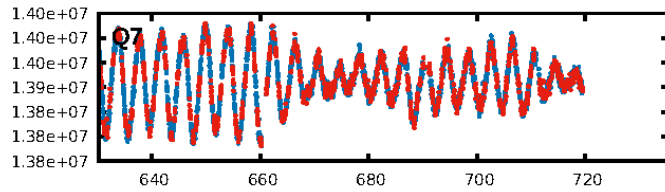
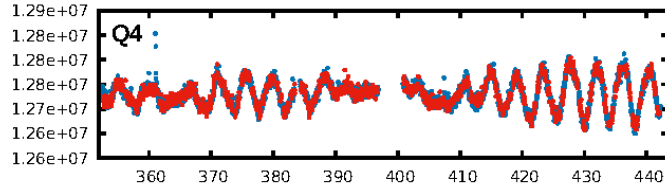
KIC: 6519865 Candidate: 1 of 4 Period: 0.567 d



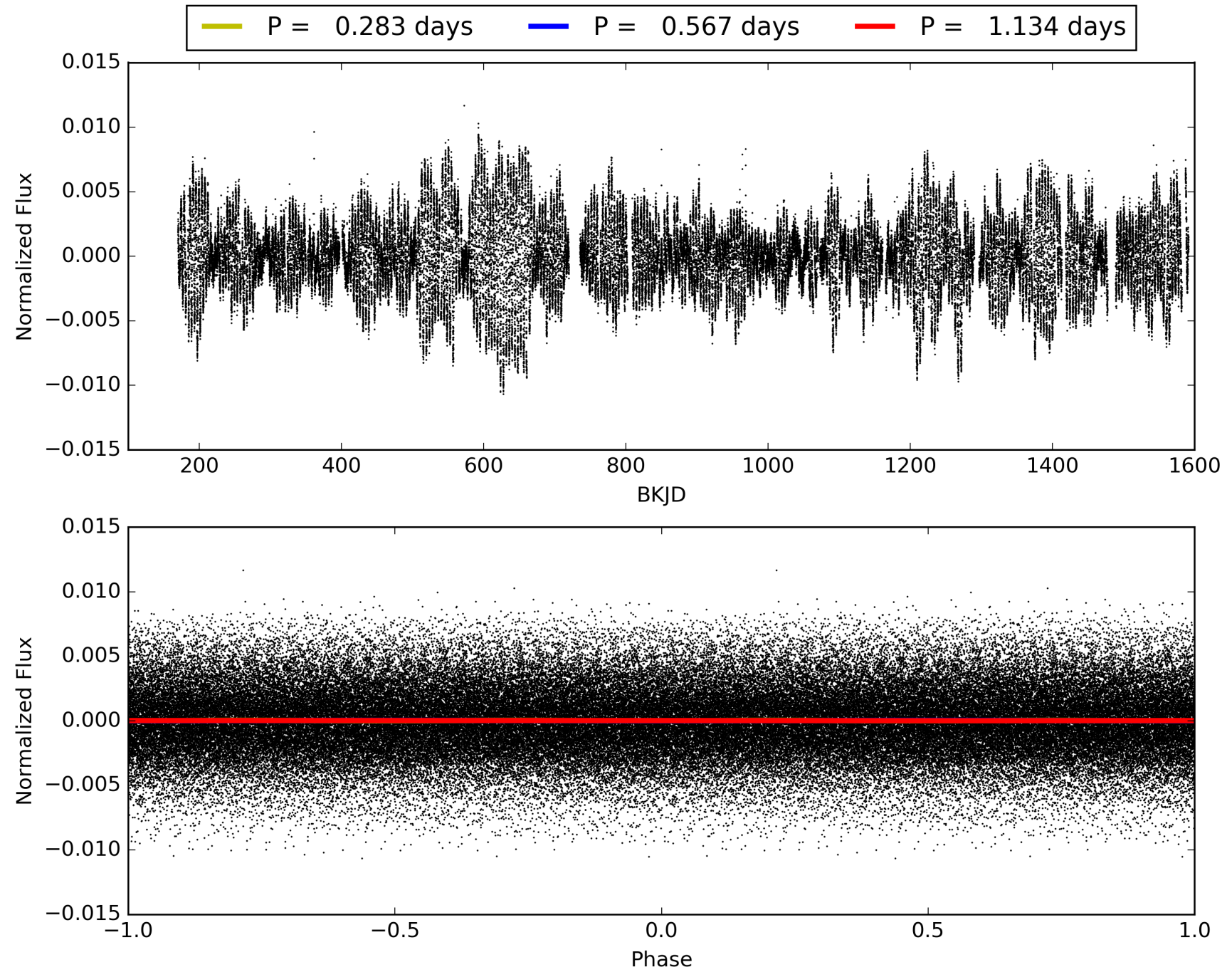
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006519865-01, PDC Light Curves

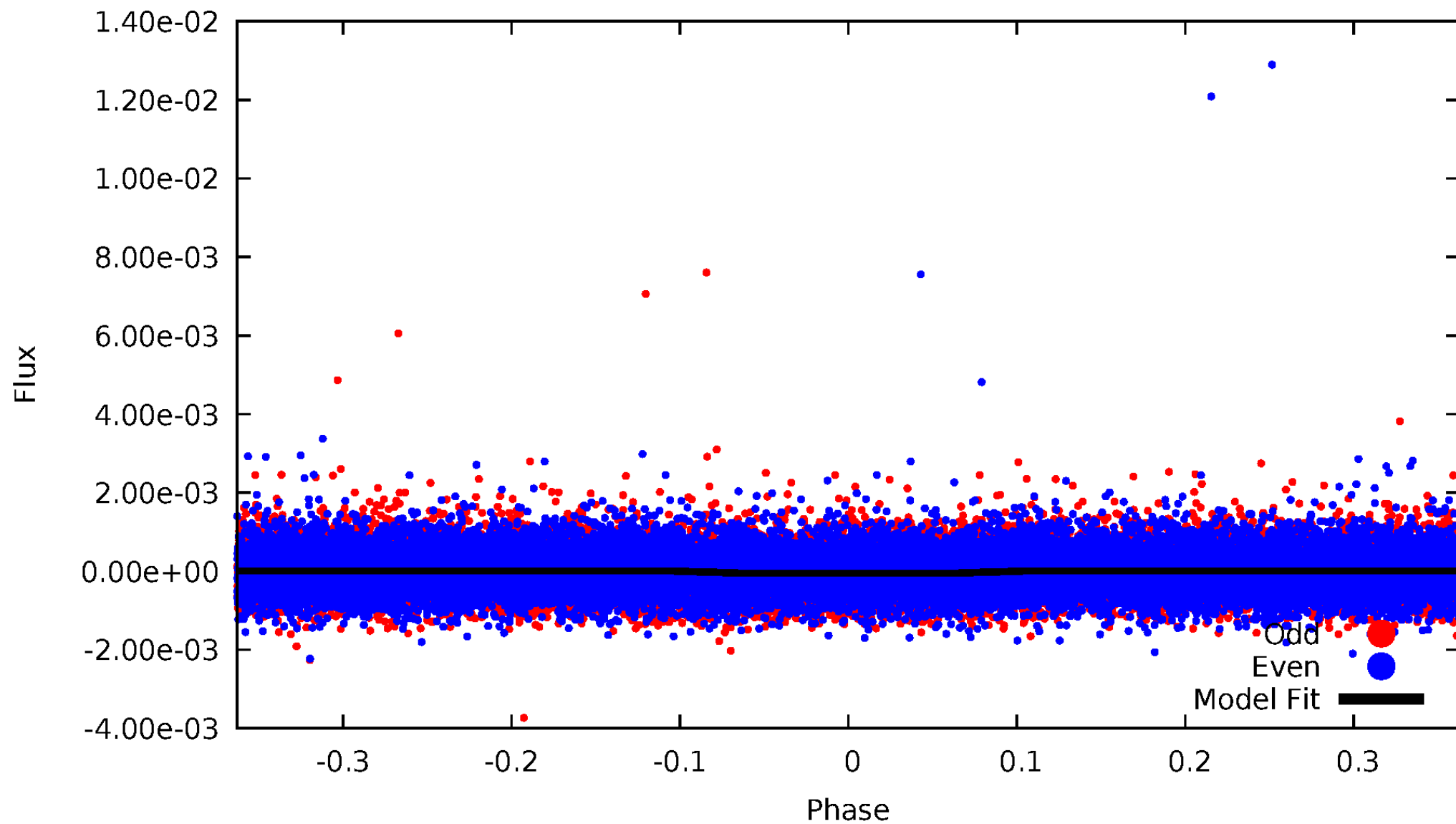


TCE 006519865-01



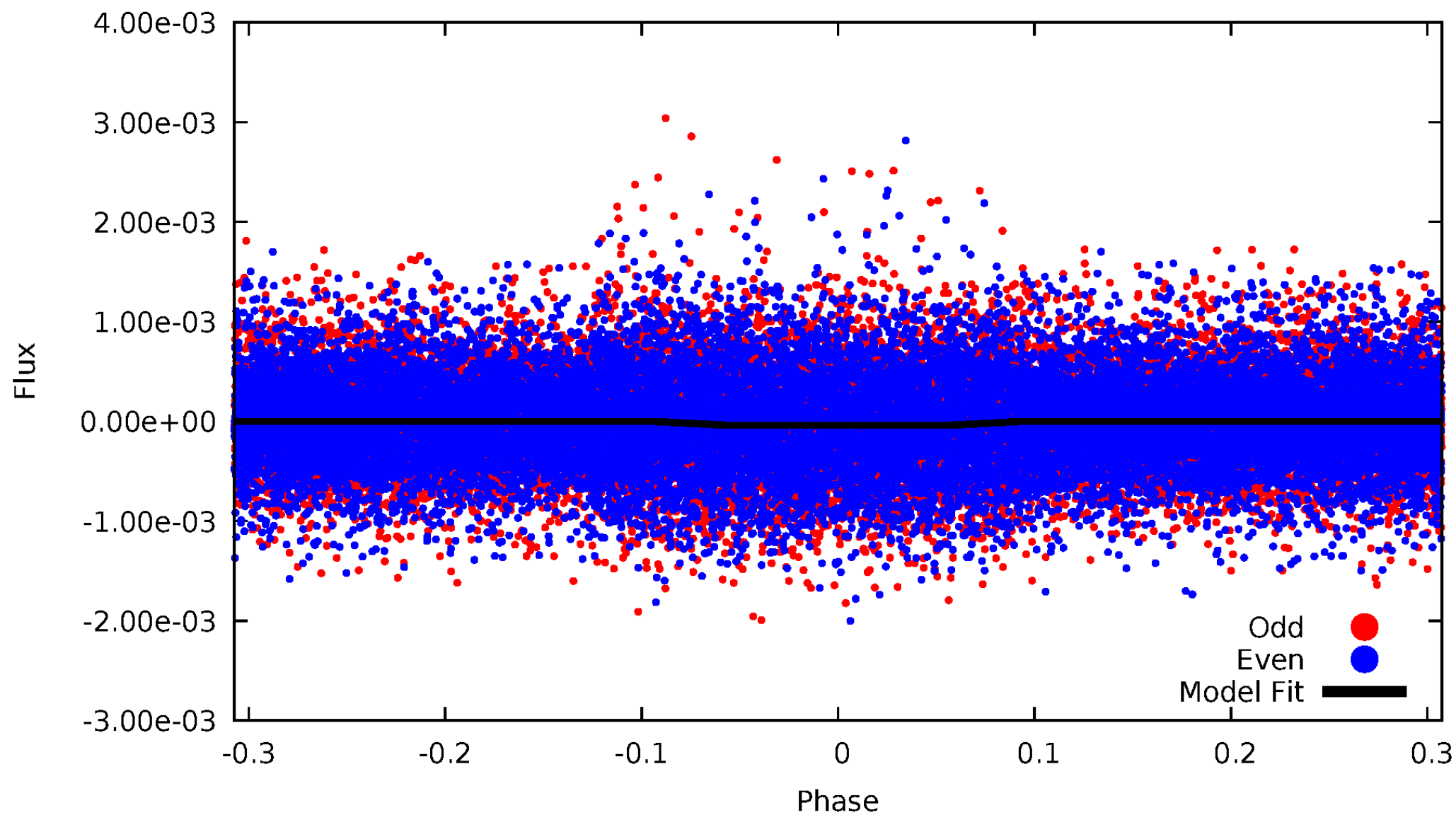
DV Odd/Even

TCE 006519865-01



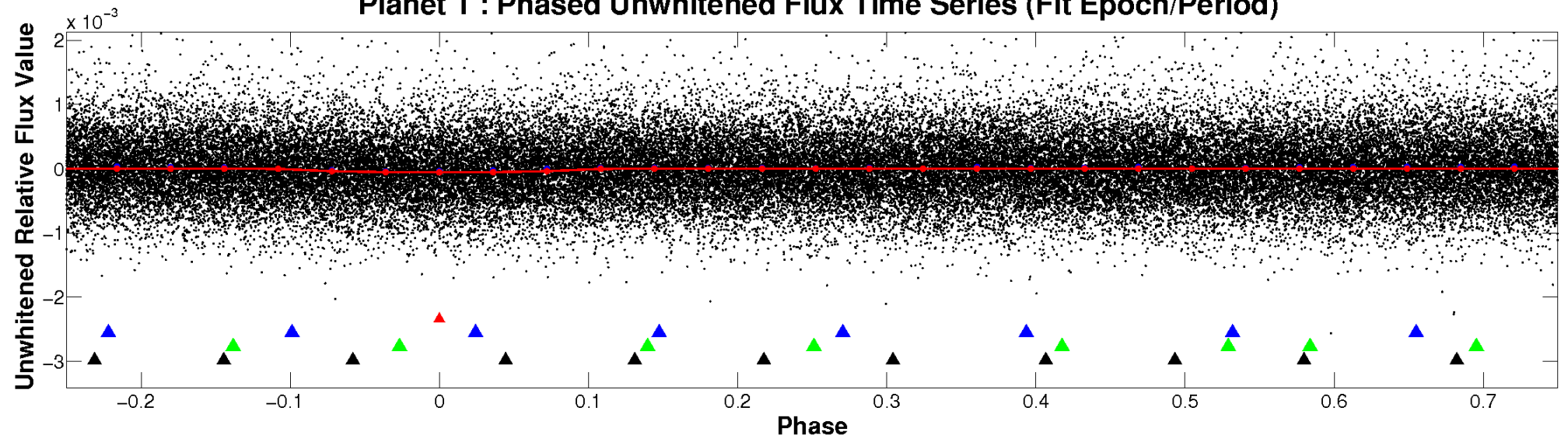
ALT Odd/Even

TCE 006519865-01

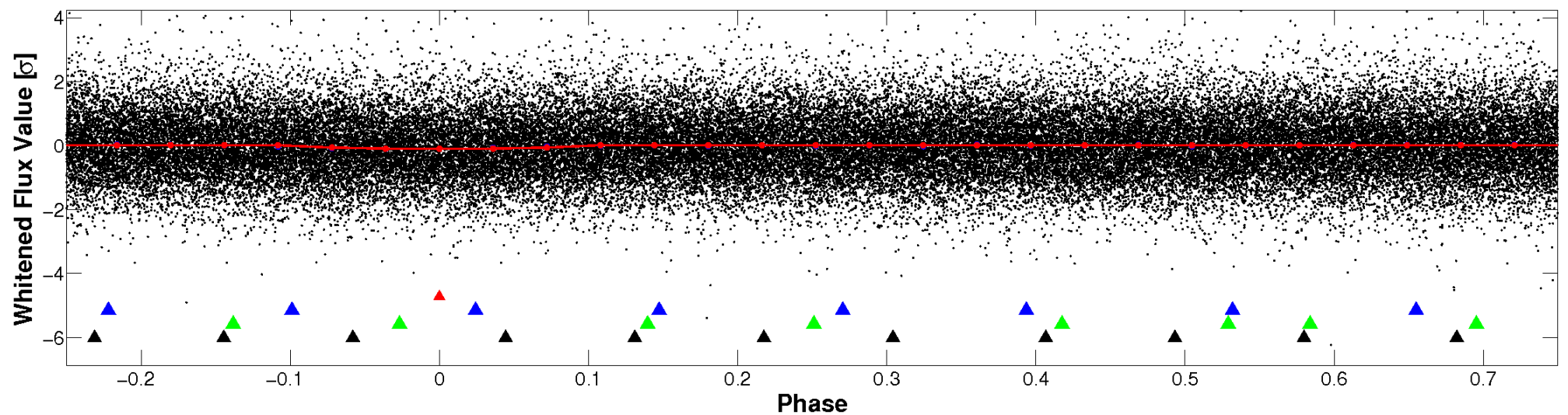


Non-Whitened Vs. Whitened Light Curve

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

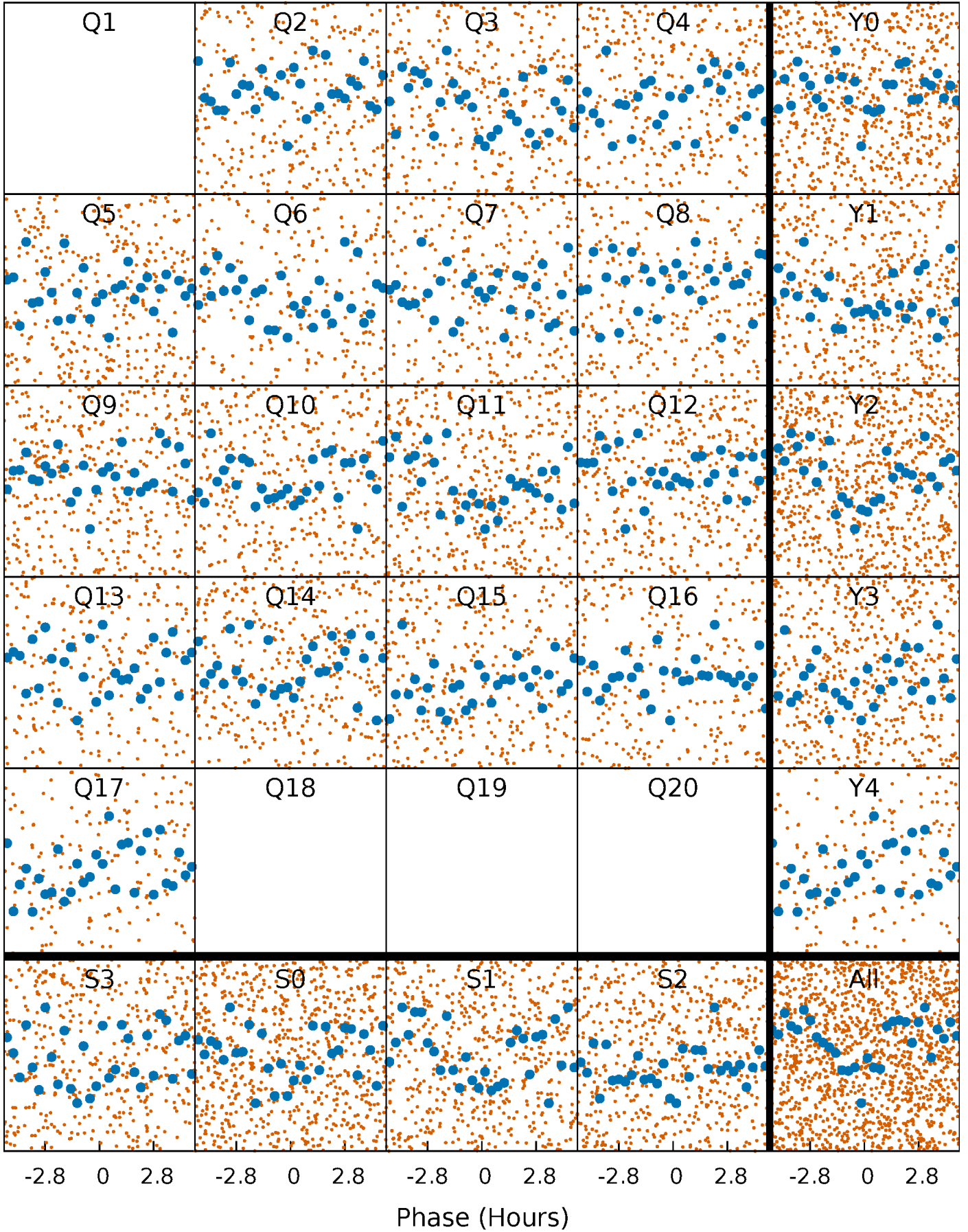


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



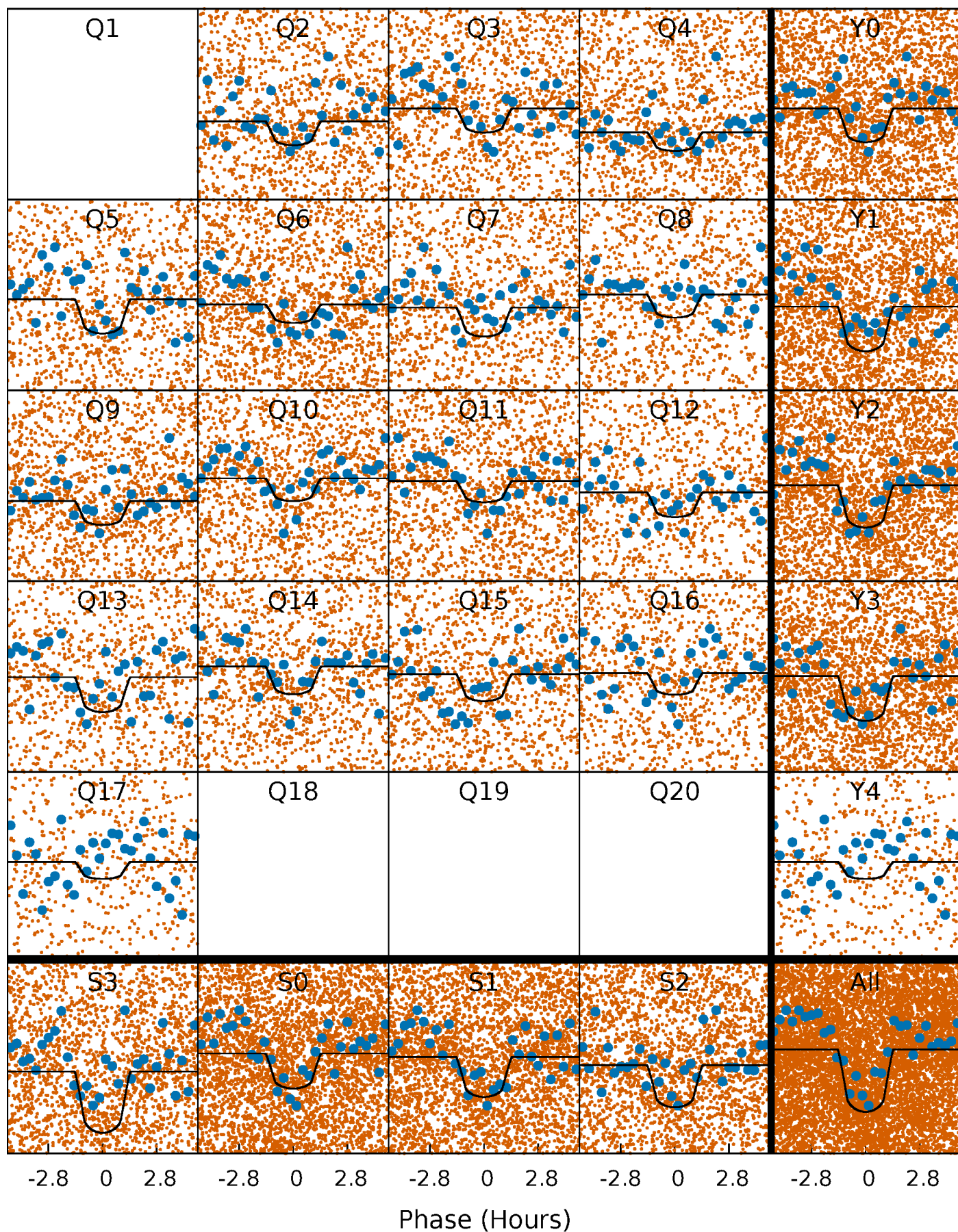
PDC Quarter-Phased Transit Curves

TCE 006519865-01 P= 0.566830 Days $T_0=131.779787$ (BKJD)



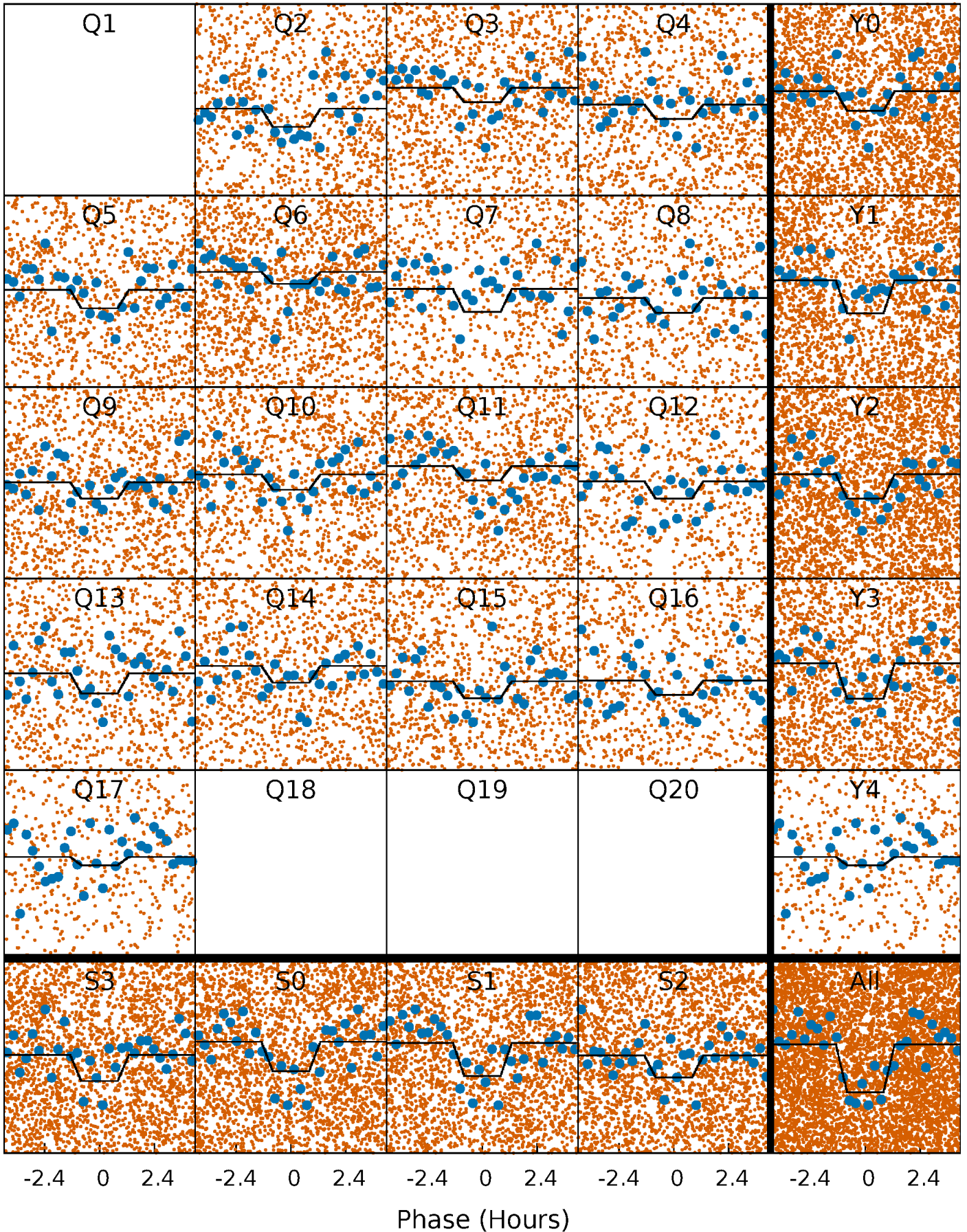
DV Quarter-Phased Transit Curves

TCE 006519865-01 P= 0.566830 Days $T_0=131.779787$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

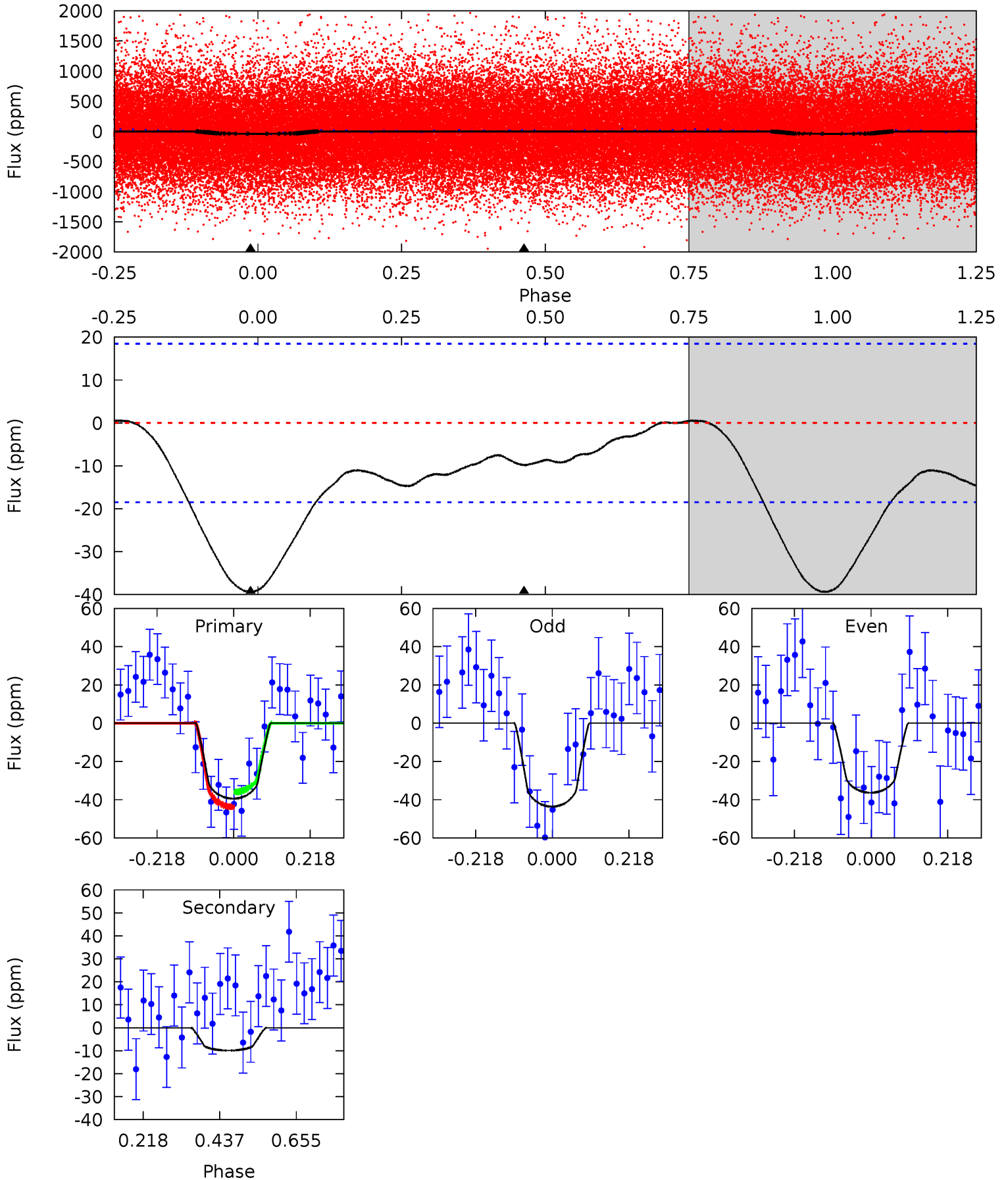
TCE 006519865-01 P= 0.566814 Days $T_0=131.786509$ (BKJD)



DV Model-Shift Uniqueness Test

006519865-01, P = 0.566830 Days, E = 131.779787 Days

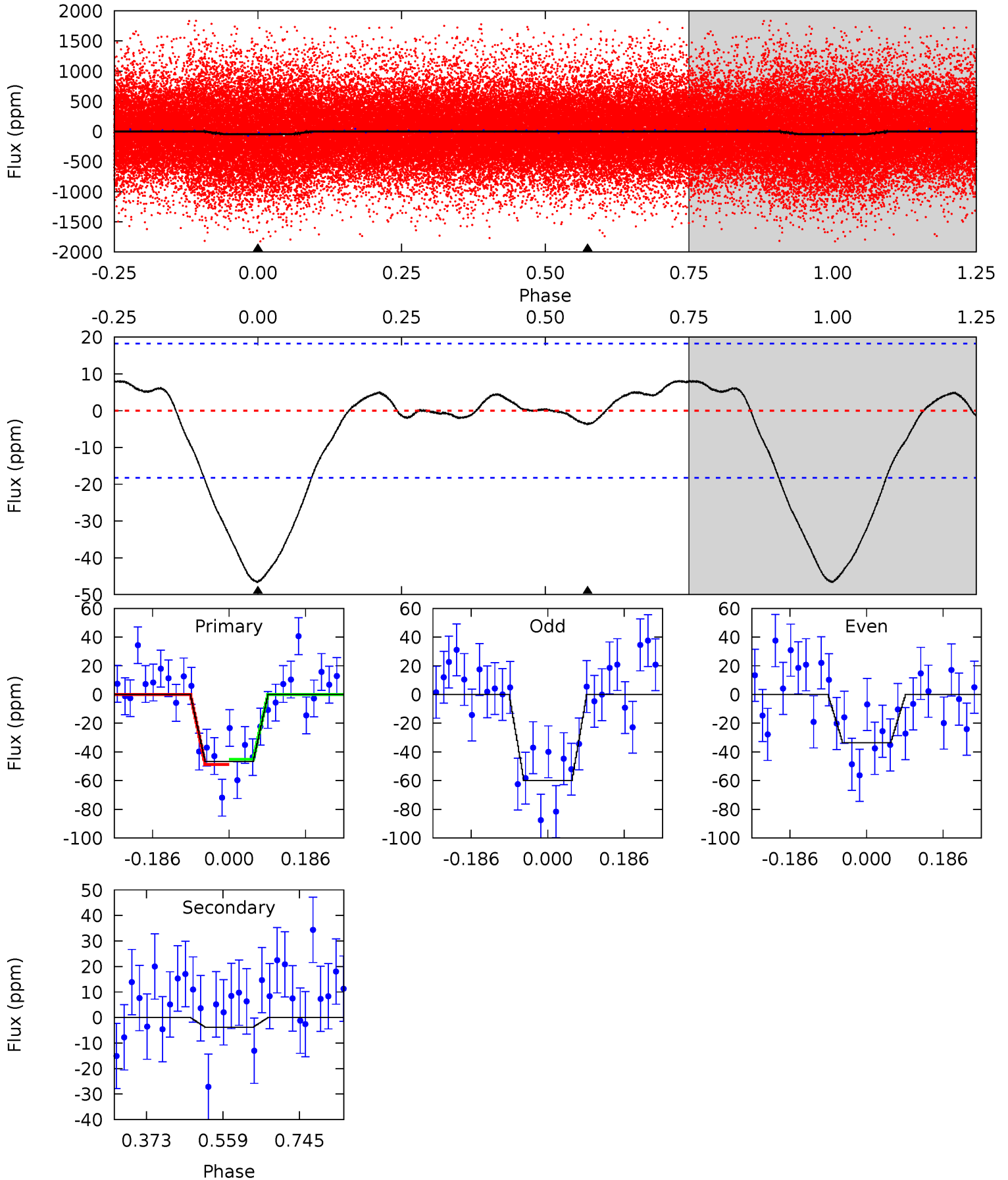
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.40	2.36	0	0	4.40	1.23	1.47	9.40	9.40	2.36	2.36	0.87	0.94	0.02	0.92



Alt Model-Shift Uniqueness Test

006519865-01, P = 0.566814 Days, E = 131.786509 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	0.92	0	0	4.43	1.32	0.77	11.3	11.3	0.92	0.92	3.21	1.16	0.15	0.44



Stellar Parameters For KIC 006519865

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6106^{+169}_{-232}	$4.487^{+0.054}_{-0.216}$	$-0.160^{+0.300}_{-0.300}$	$0.966^{+0.304}_{-0.101}$	$1.043^{+0.140}_{-0.140}$	$1.631^{+0.459}_{-0.848}$
	+3%/-4%	+1%/-5%	+188%/-188%	+31%/-10%	+13%/-13%	+28%/-52%
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 006519865-01 / KOI 7782.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 4	$0.90^{+0.56}_{-0.47}$	3248^{+231}_{-184}	3832^{+1581}_{-1193}	$1.137^{+4.215}_{-0.770}$
Alt.	-4 ± 4	$0.75^{+0.53}_{-0.45}$	3237^{+235}_{-170}	3035^{+2098}_{-6366}	$0.495^{+3.506}_{-0.535}$

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

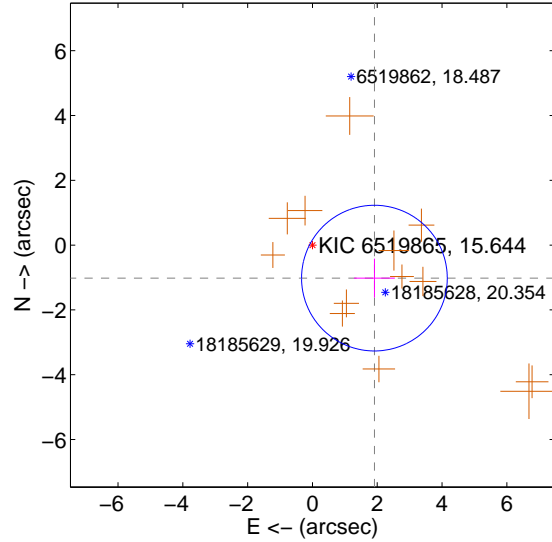
Supplemental centroid analysis for 006519865-01. Kepler magnitude: 15.64. Transit SNR 8.87

There are 0 quarters with good PRF difference image offsets

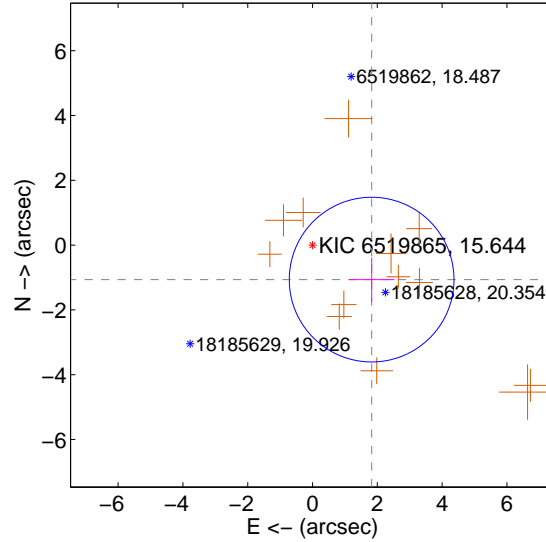
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.167 ± 0.749	2.89	-1.912 ± 0.629	-1.019 ± 0.598
PRF-fit source offset from KIC position	2.112 ± 0.847	2.49	-1.824 ± 0.701	-1.065 ± 0.685
photometric centroid source offset	2.36 ± 1.29	1.84	0.02 ± 1.39	2.36 ± 1.29

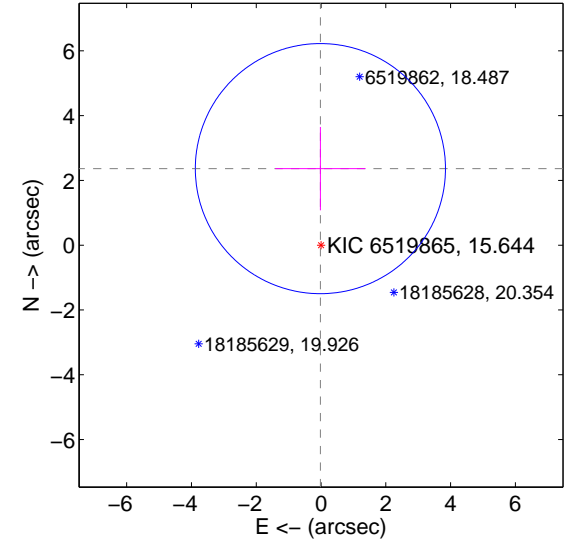
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

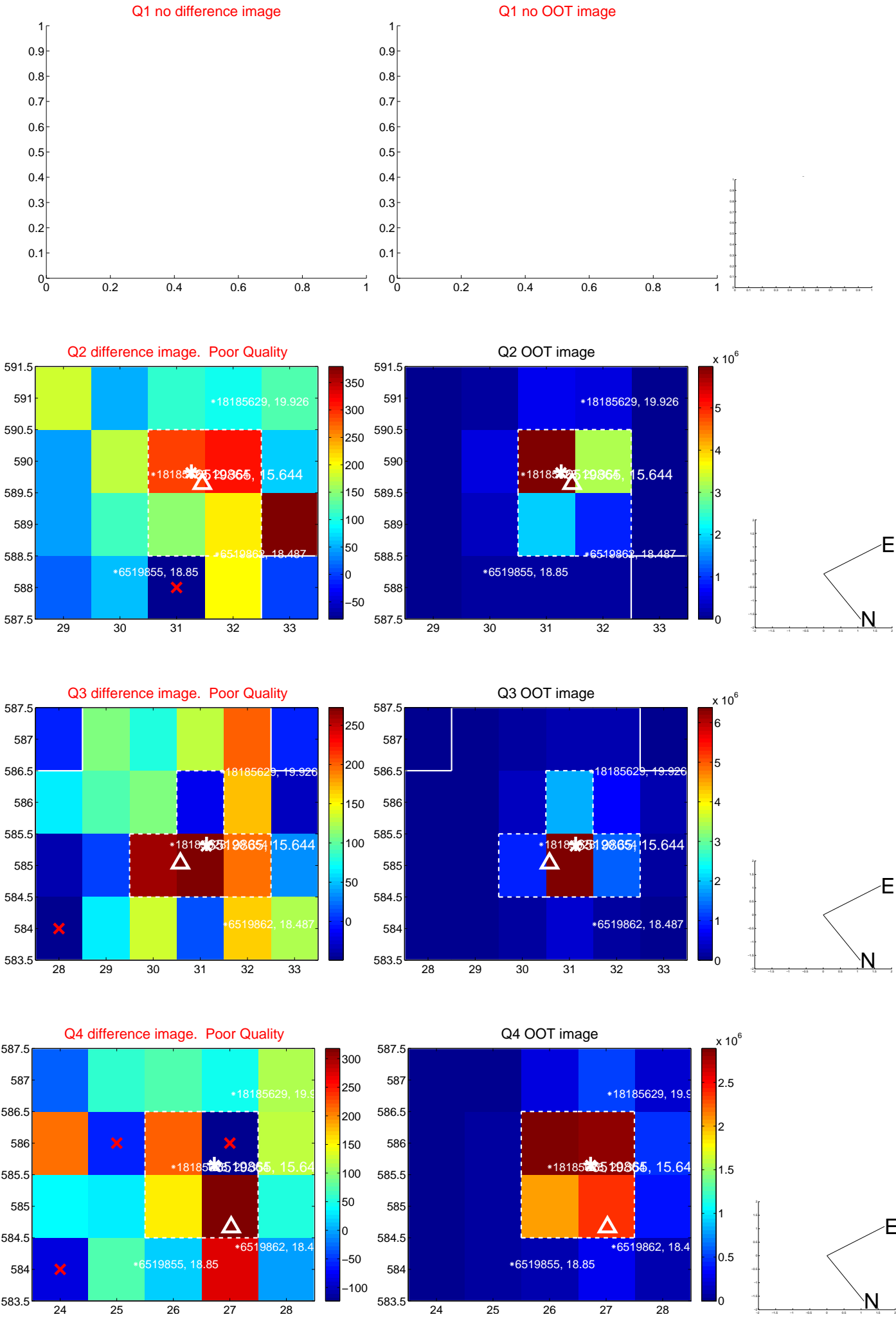


offset from photometric centroids

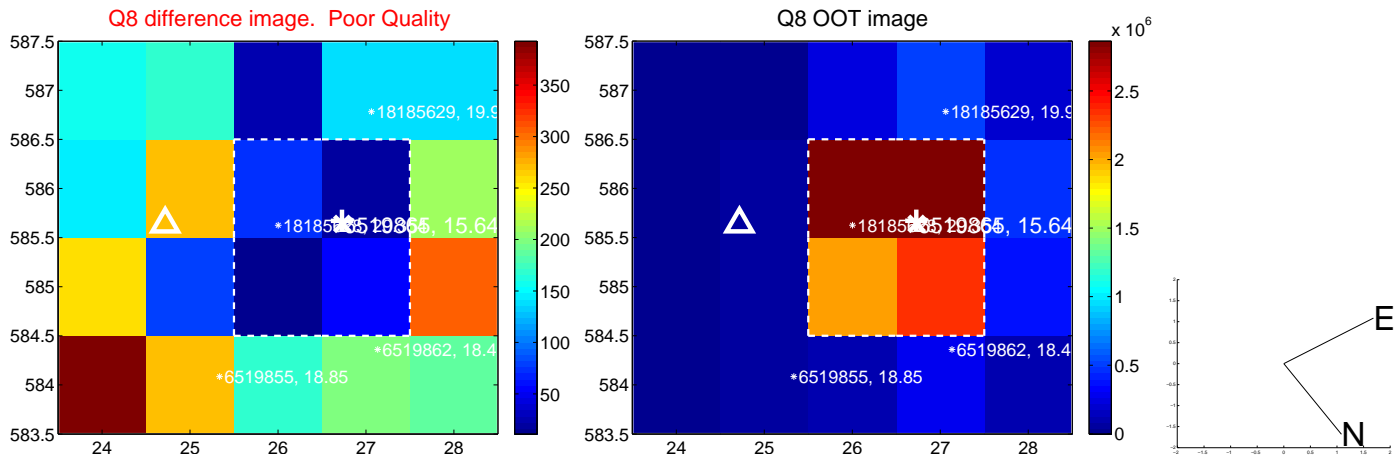
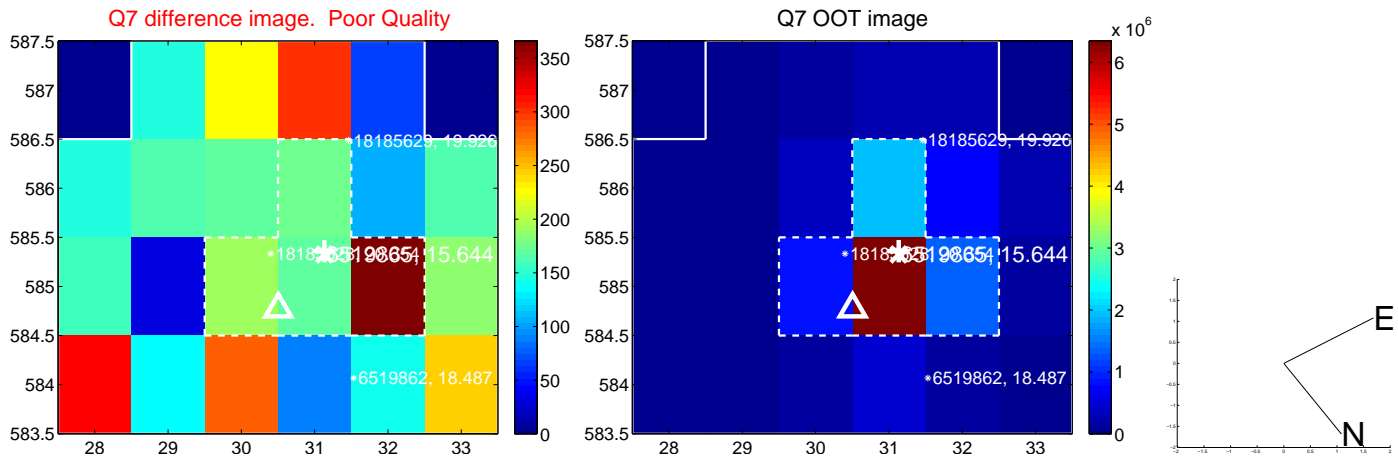
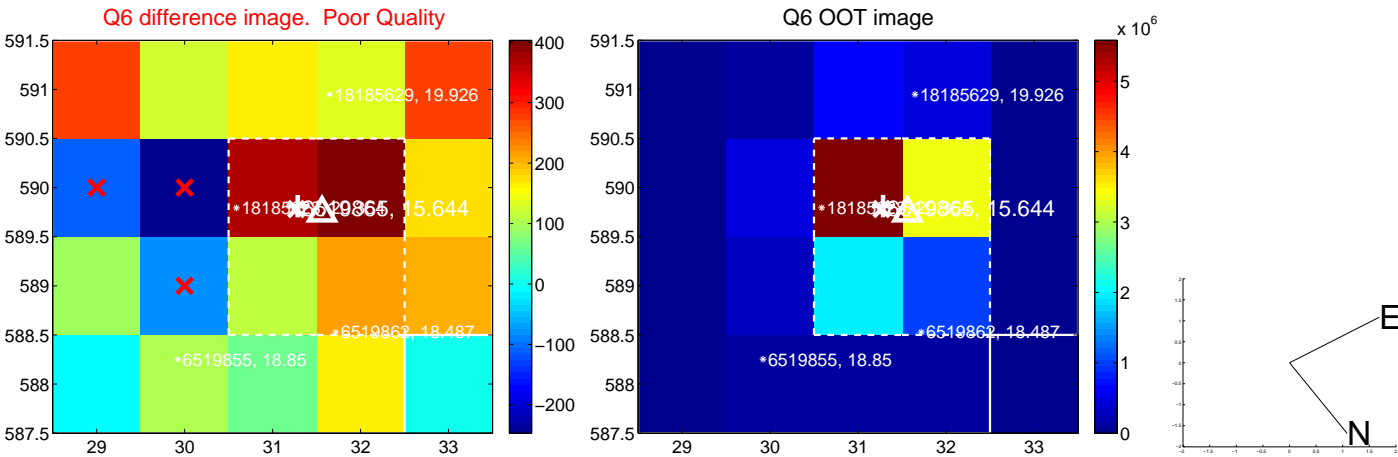
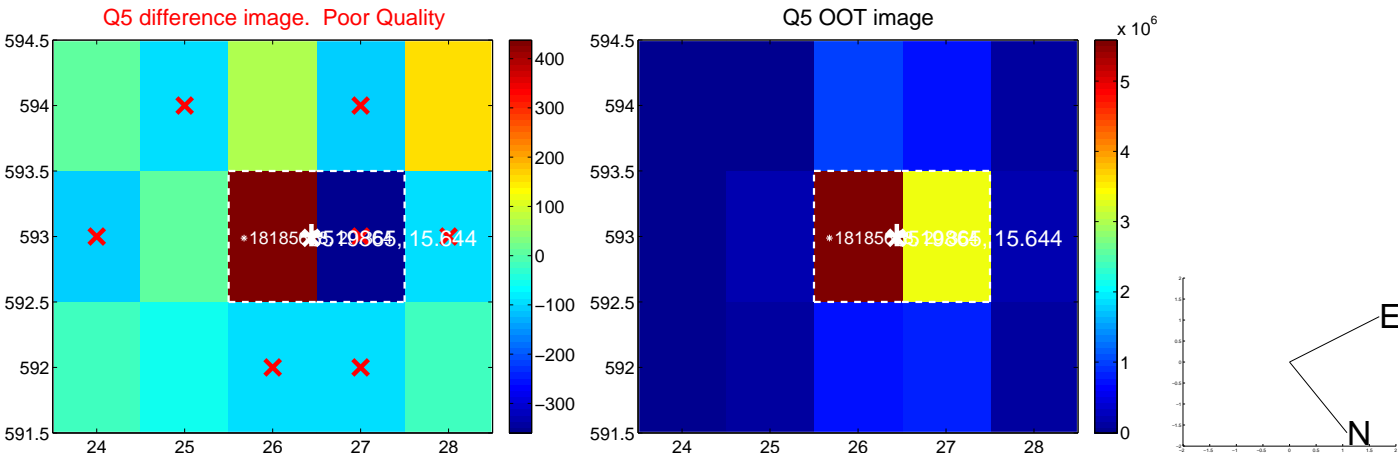


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

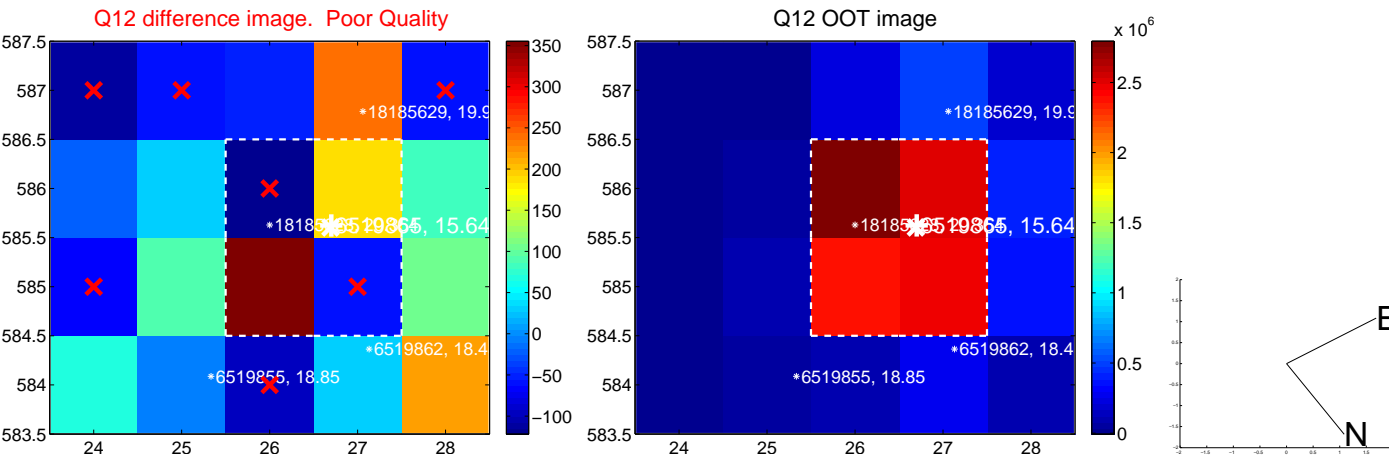
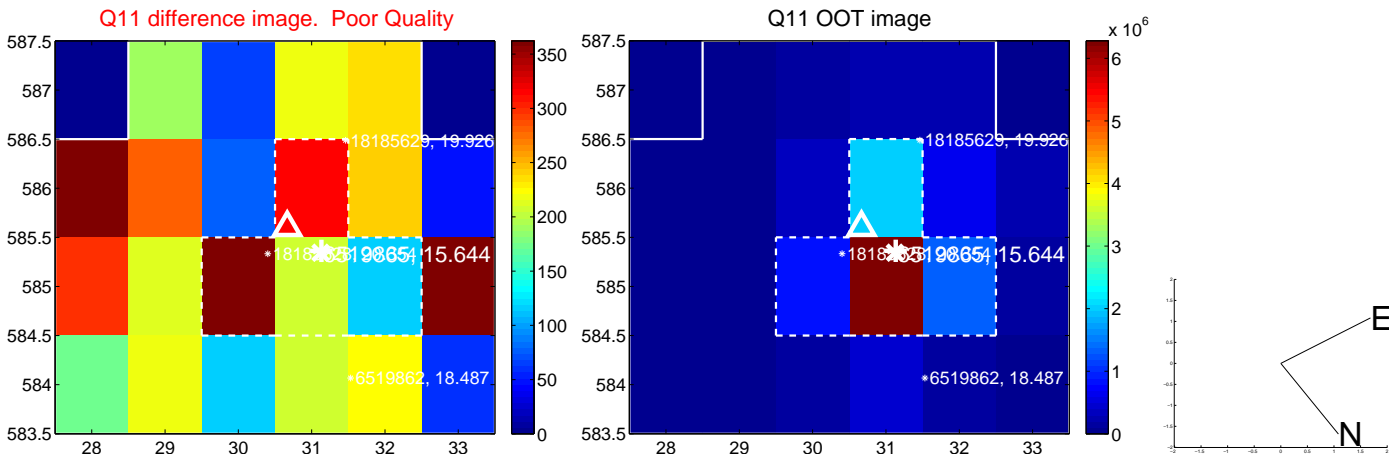
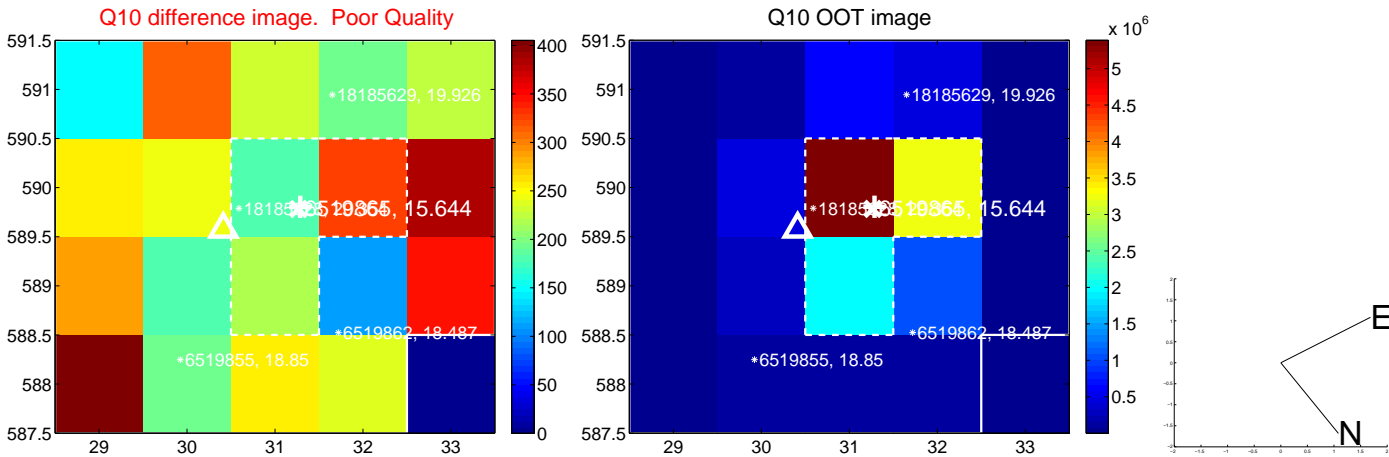
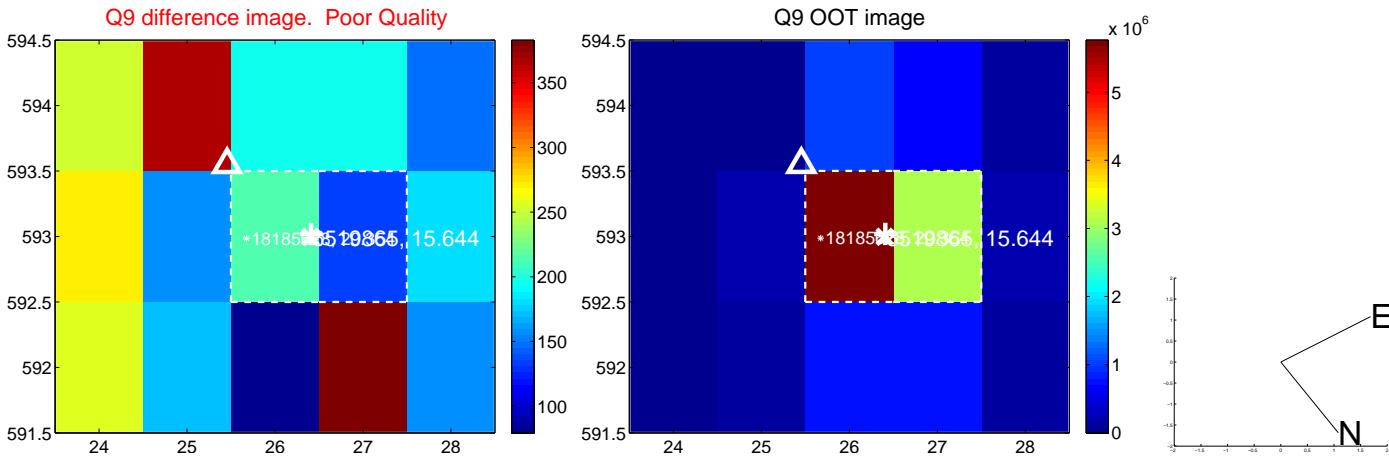
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



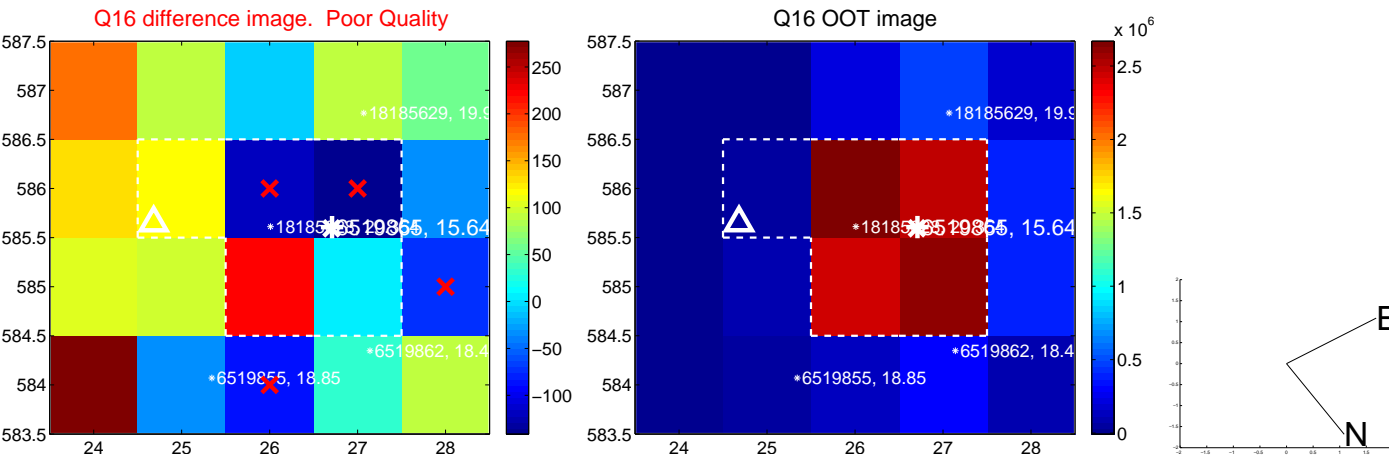
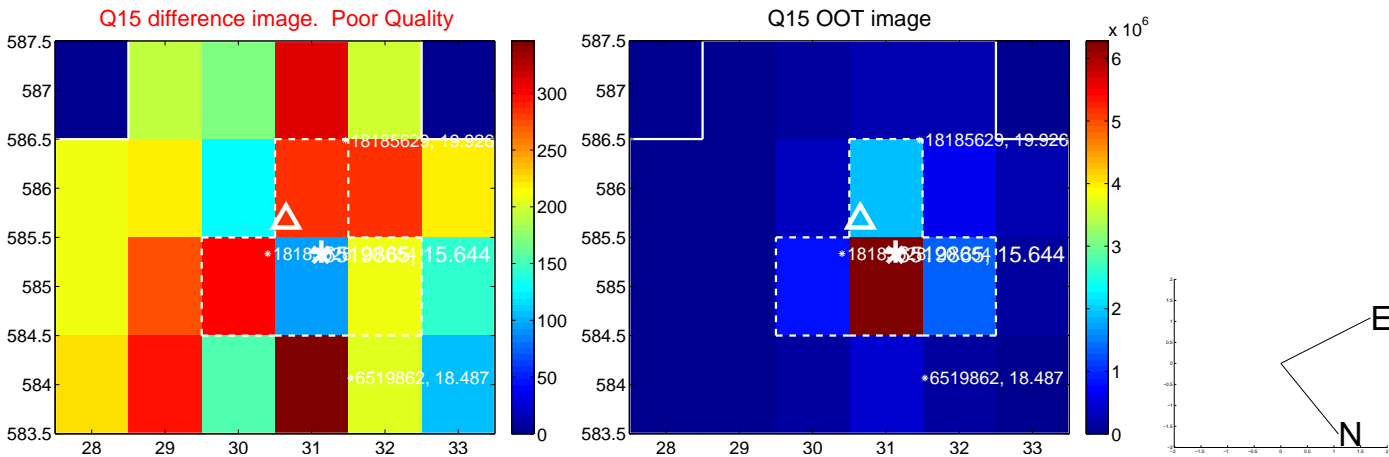
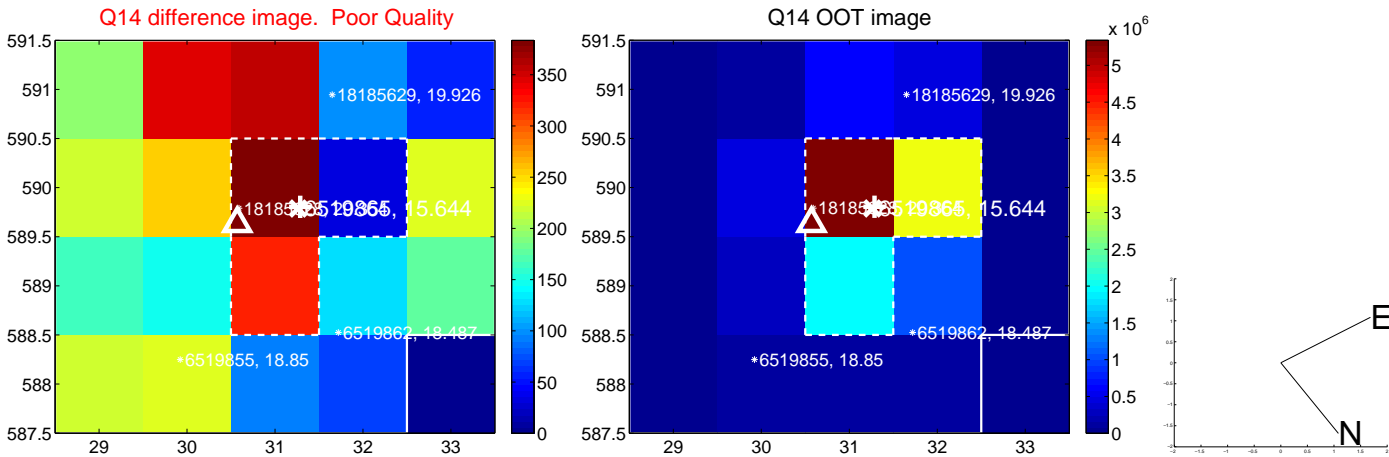
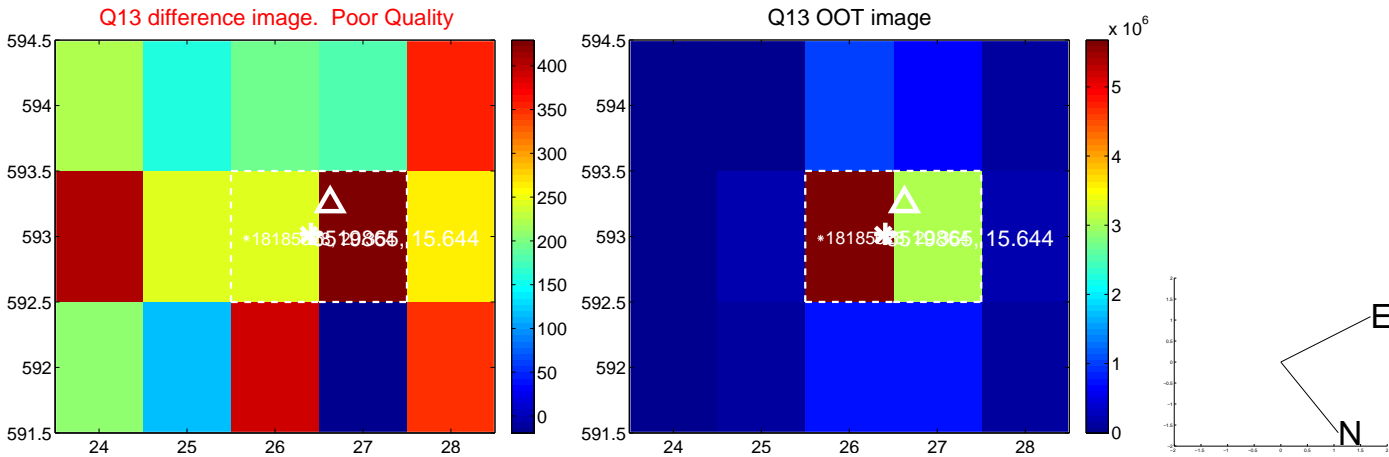
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

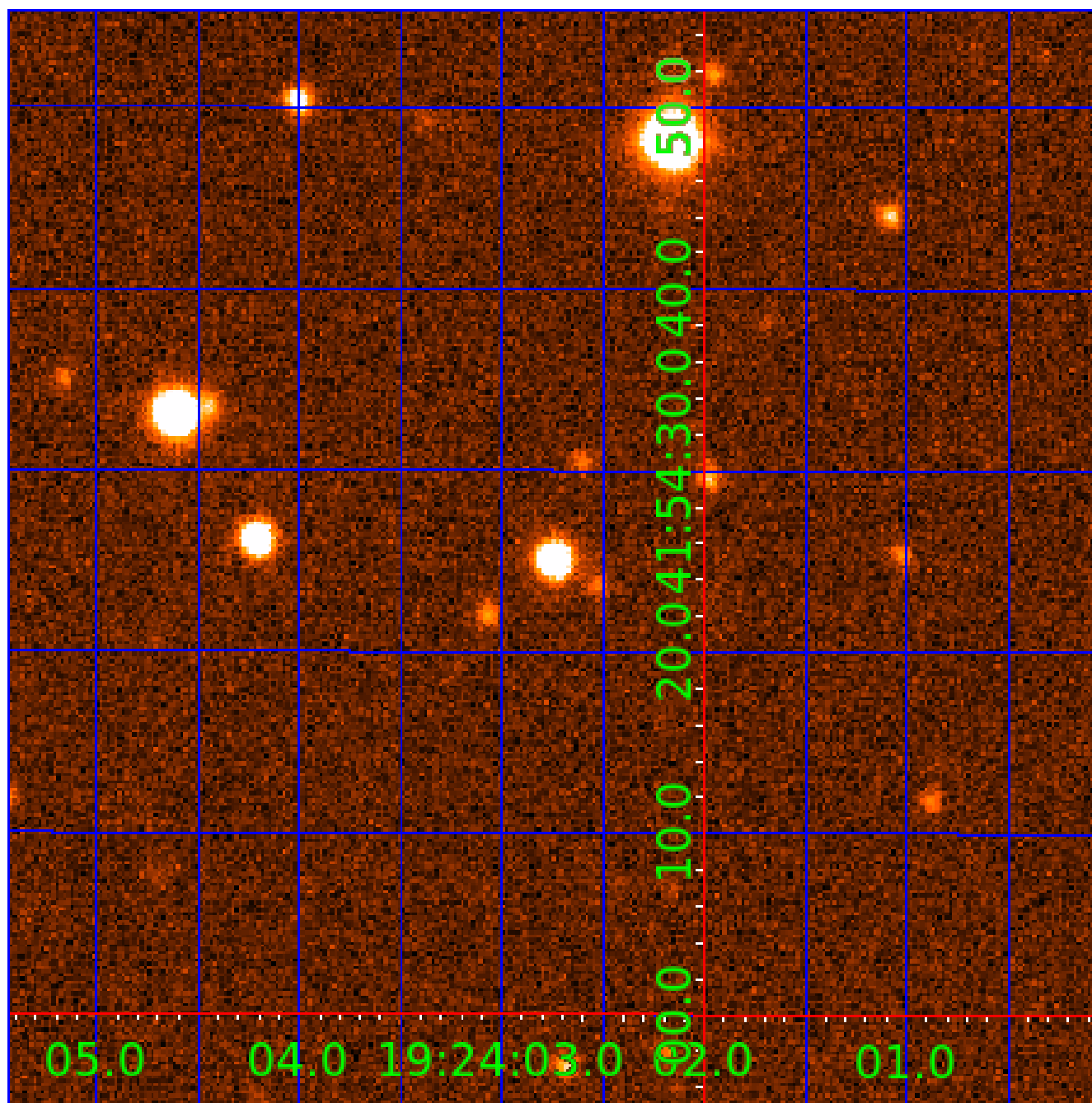


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006519865

Q1-17 DR25 TCE Parameters

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006519865-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS— HALO_GHOST
006519865-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

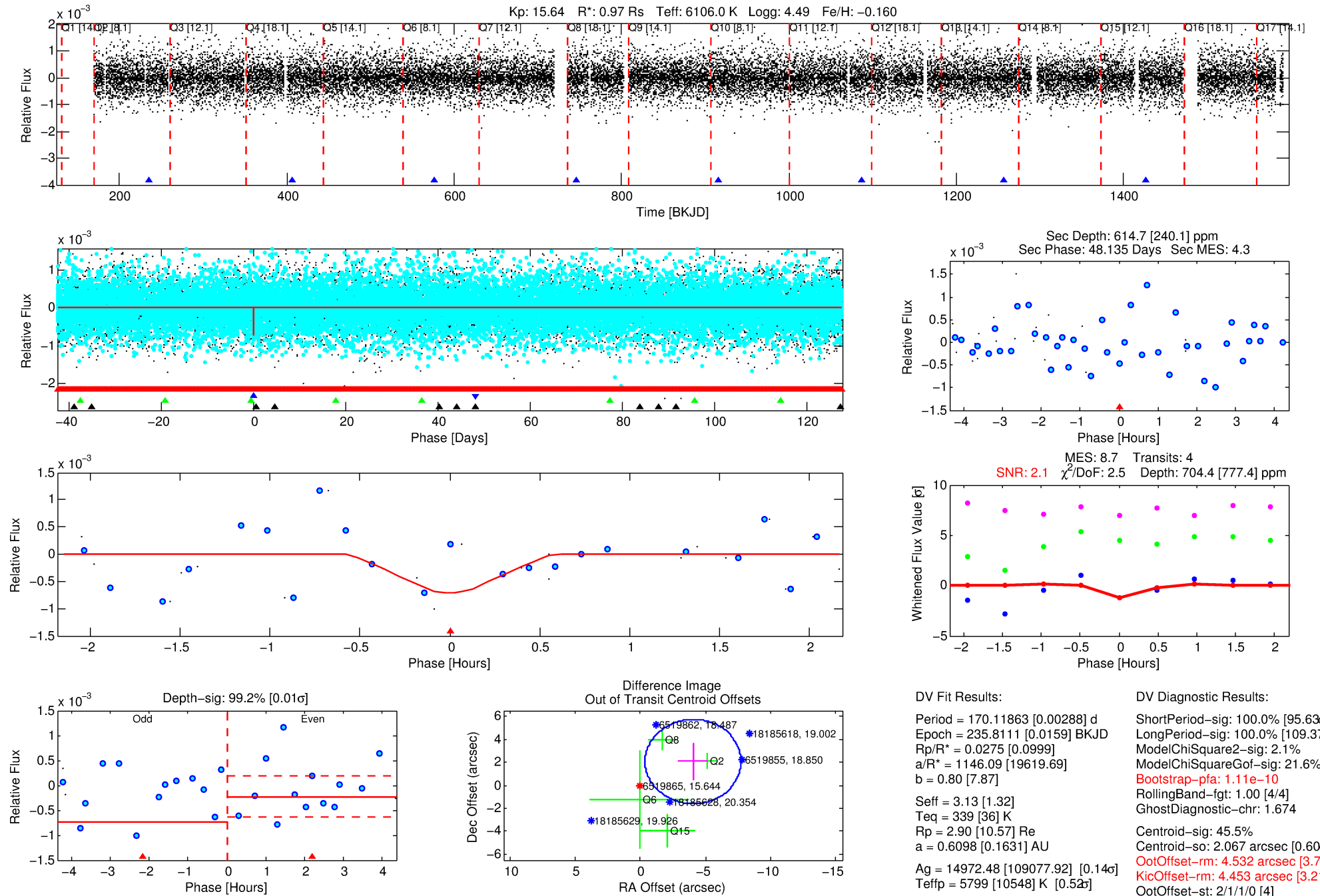
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006519865-02

No Significant Match Found

DV One-Page Summary

KIC: 6519865 Candidate: 2 of 4 Period: 170.119 d



DV Fit Results:

Period = 170.11863 [0.00288] d
Epoch = 235.8111 [0.0159] BKJD
Rp/R* = 0.0275 [0.0999]
a/R* = 1146.09 [19619.69]
b = 0.80 [7.87]
Seff = 3.13 [1.32]
Teff = 339 [36] K
Rp = 2.90 [10.57] Re
a = 0.6098 [0.1631] AU
Ag = 14972.48 [109077.92] [0.14 σ]
Teffp = 5799 [10548] K [0.52 σ]

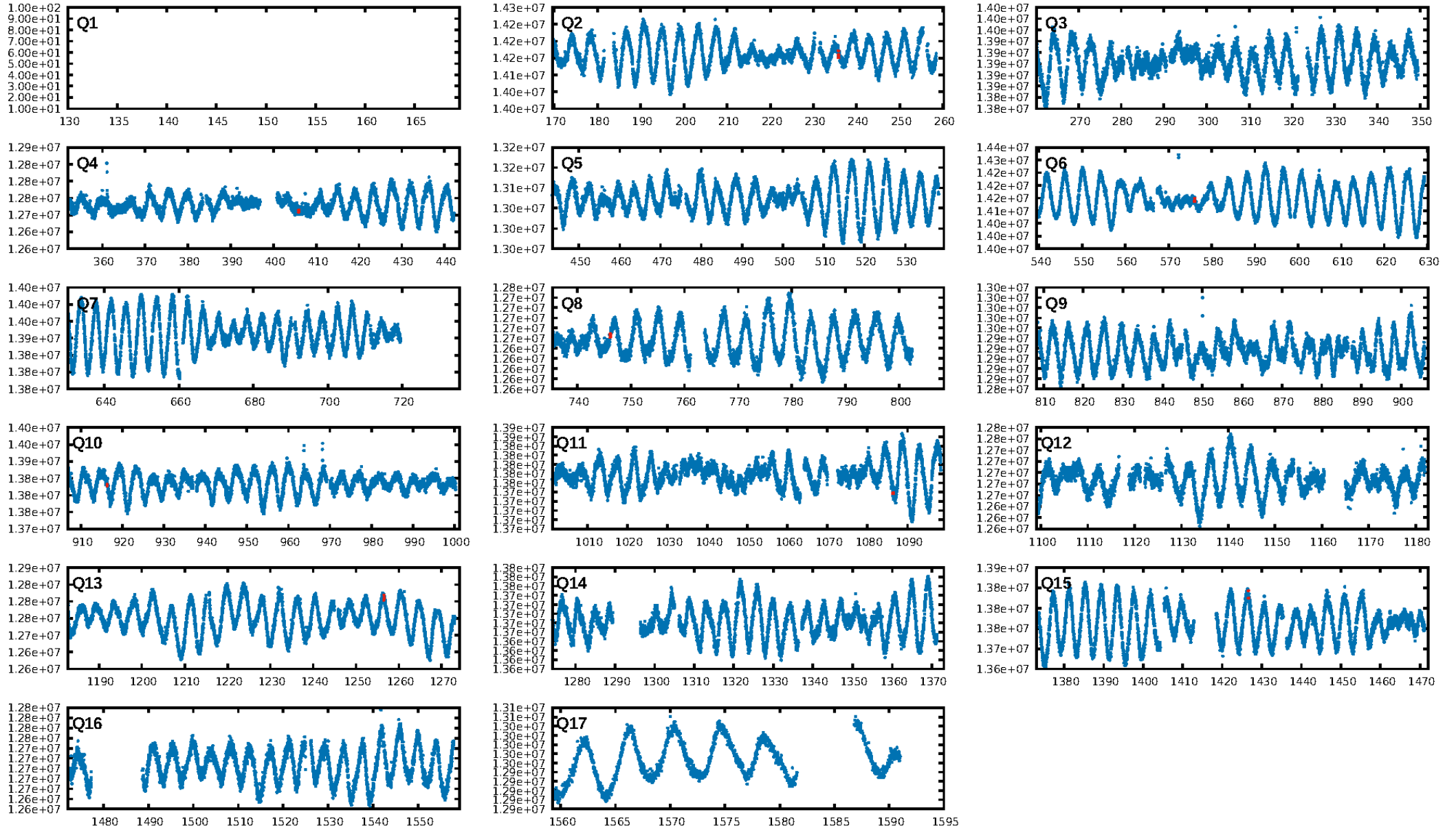
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [95.63 σ]
LongPeriod-sig: 100.0% [109.37 σ]
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 21.6%
Bootstrap-pfa: 1.11e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.674
Centroid-sig: 45.5%
Centroid-so: 2.067 arcsec [0.60 σ]
OotOffset-rm: 4.532 arcsec [3.70 σ]
KicOffset-rm: 4.453 arcsec [3.21 σ]
OotOffset-st: 2/1/1/0 [4]
KicOffset-st: 2/1/1/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/7]

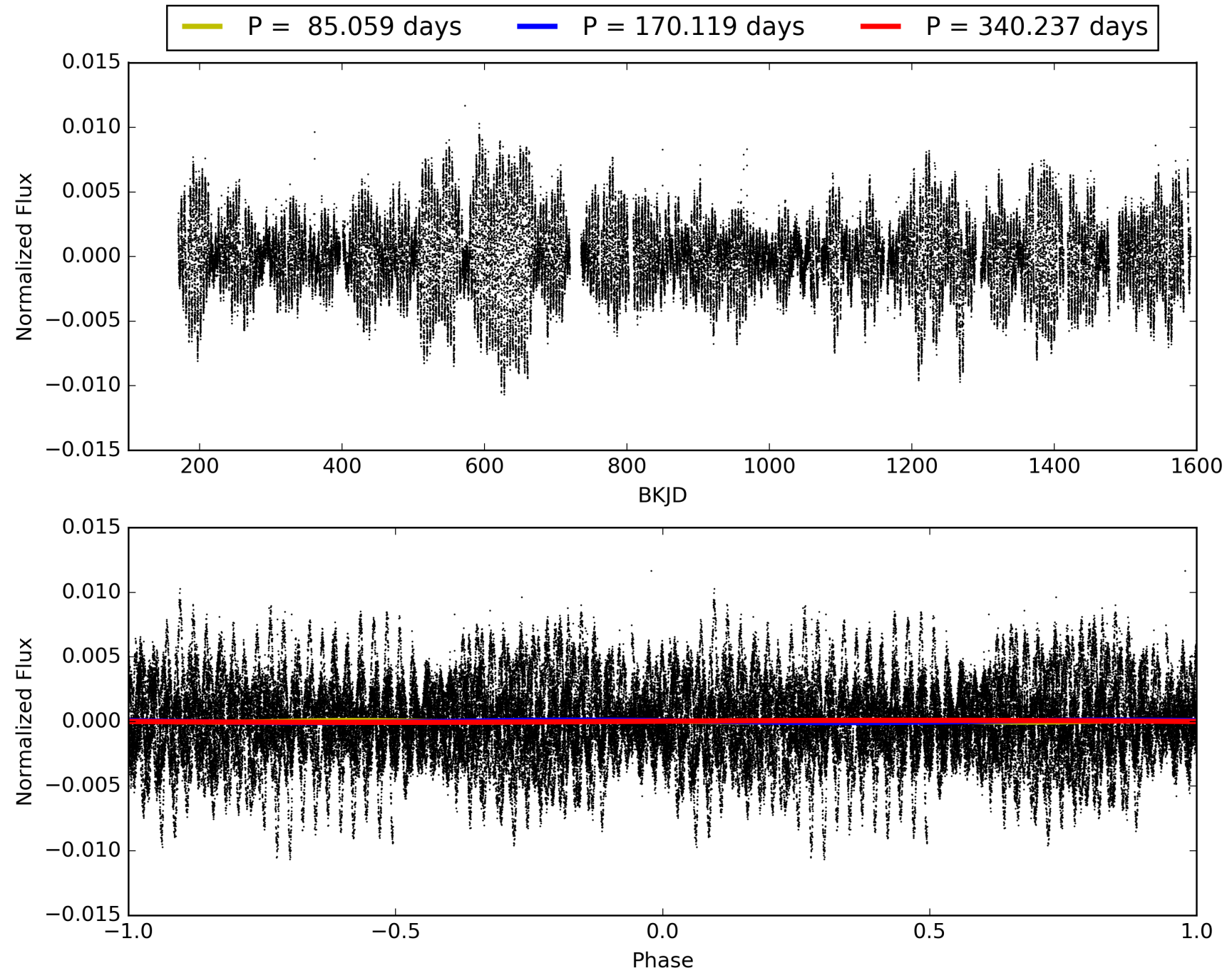
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:07:45 Z

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

TCE 006519865-02, PDC Light Curves

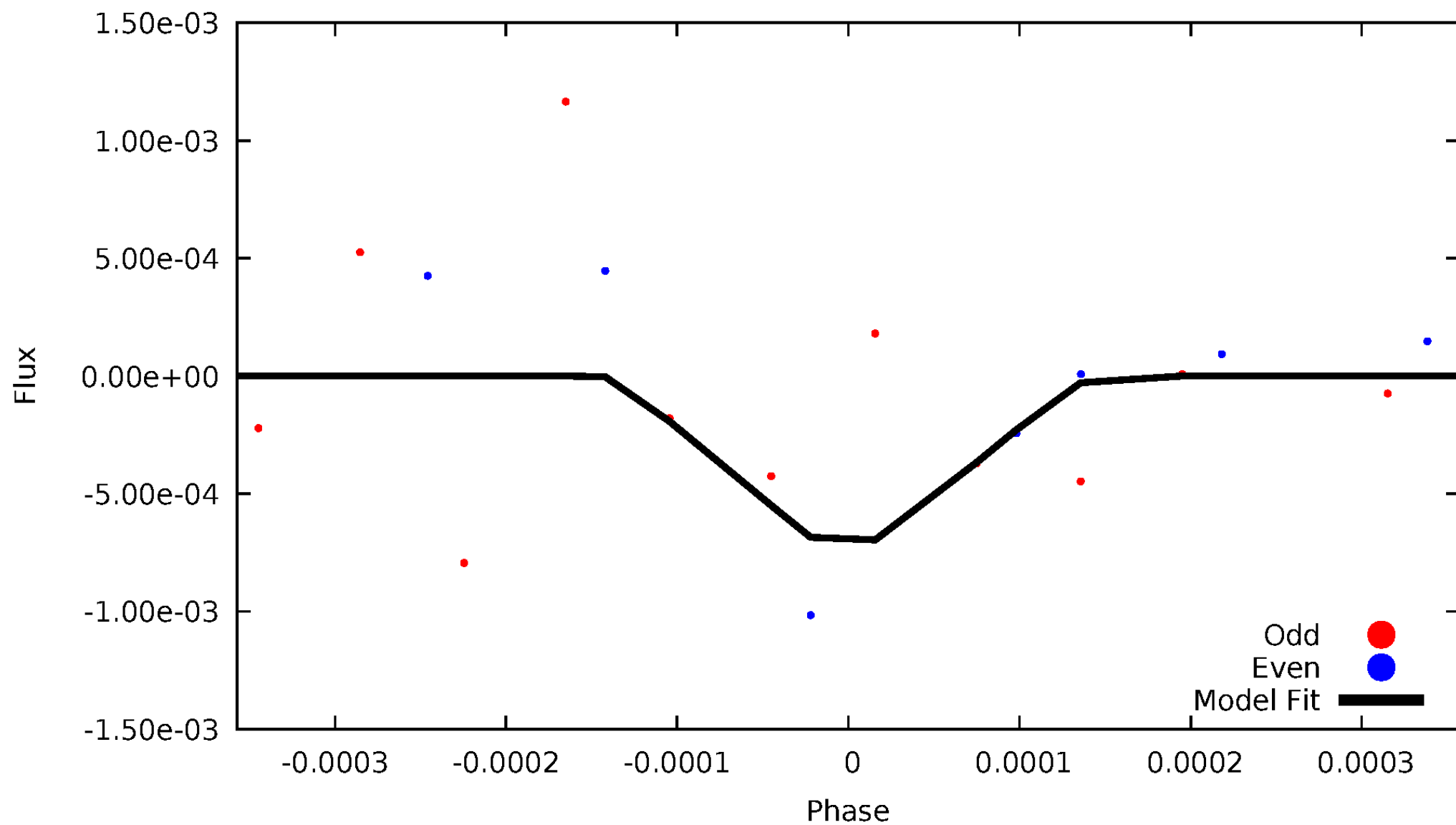


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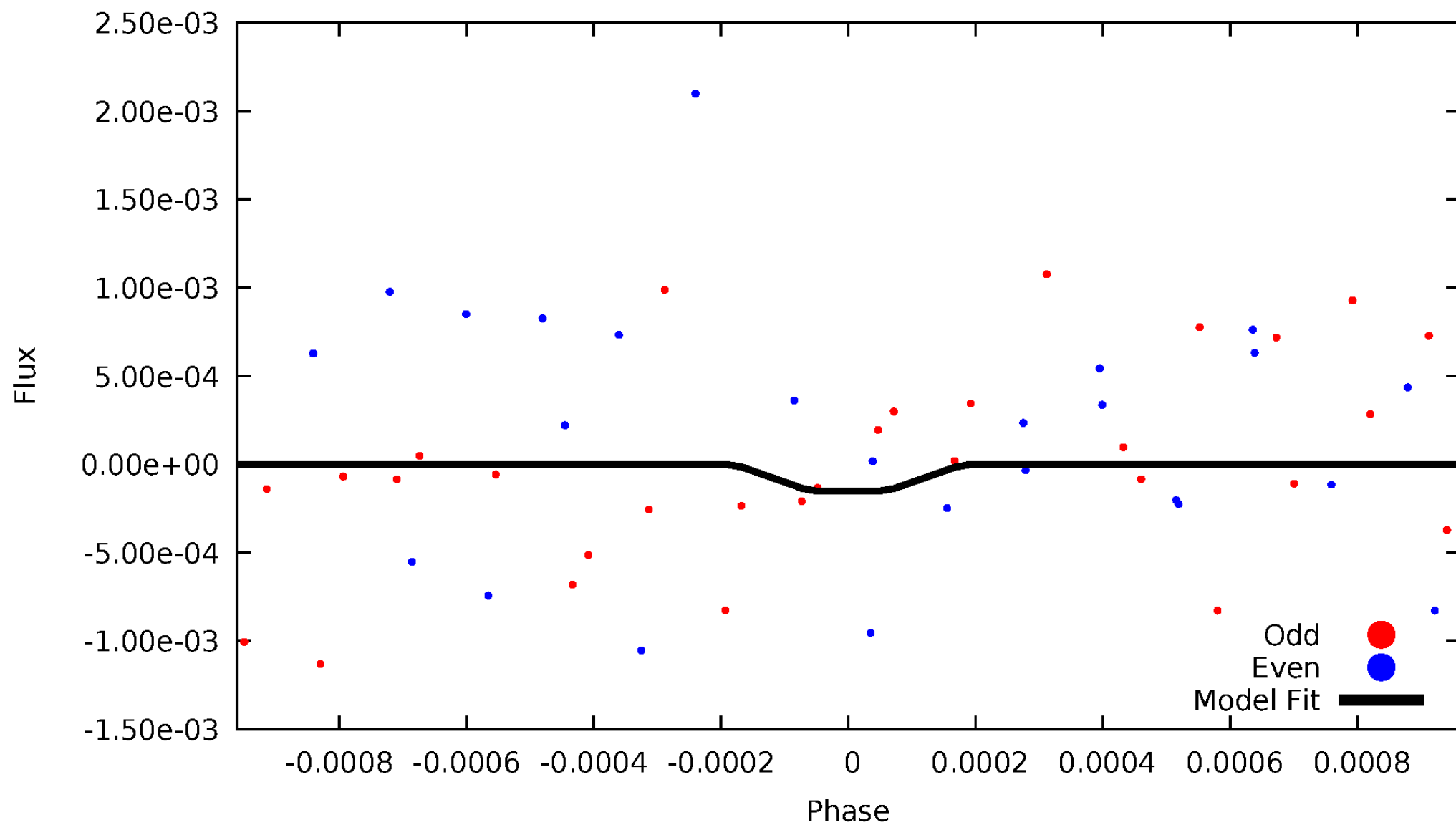
DV Odd/Even

TCE 006519865-02



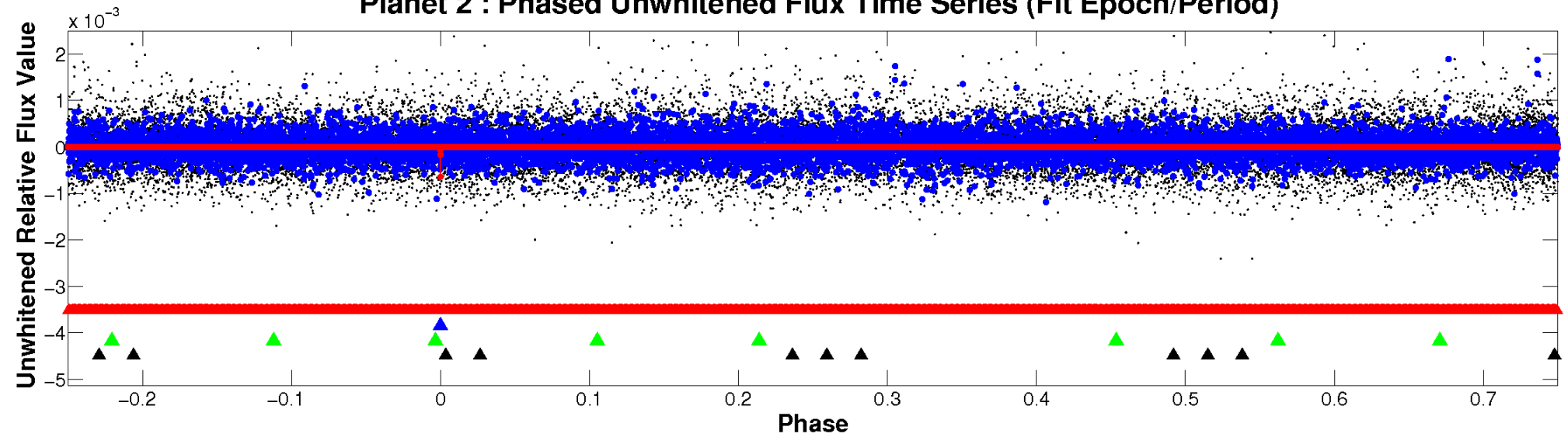
ALT Odd/Even

TCE 006519865-02

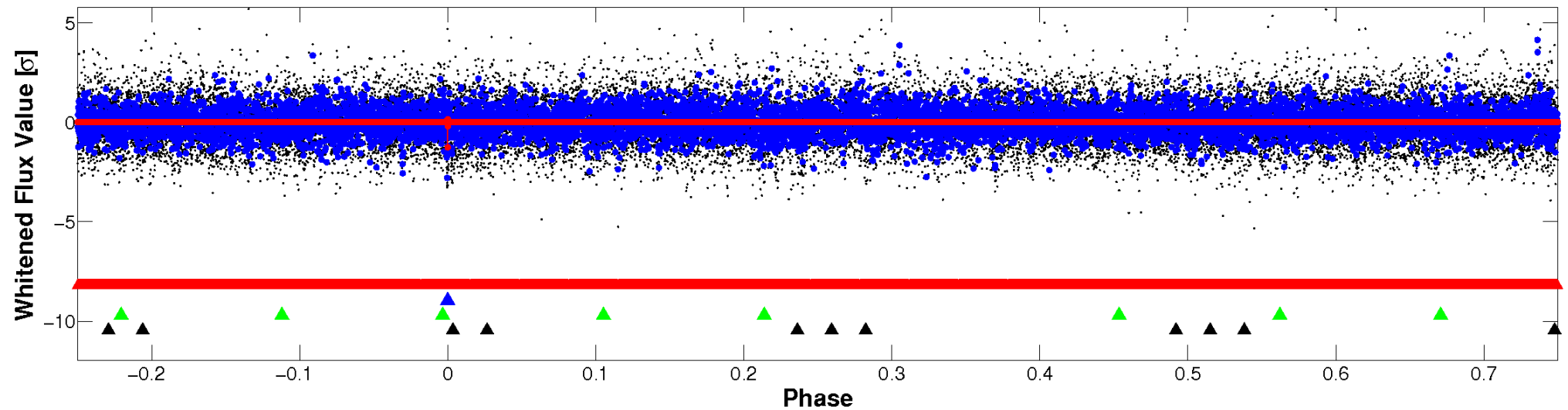


Non-Whitened Vs. Whitened Light Curve

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

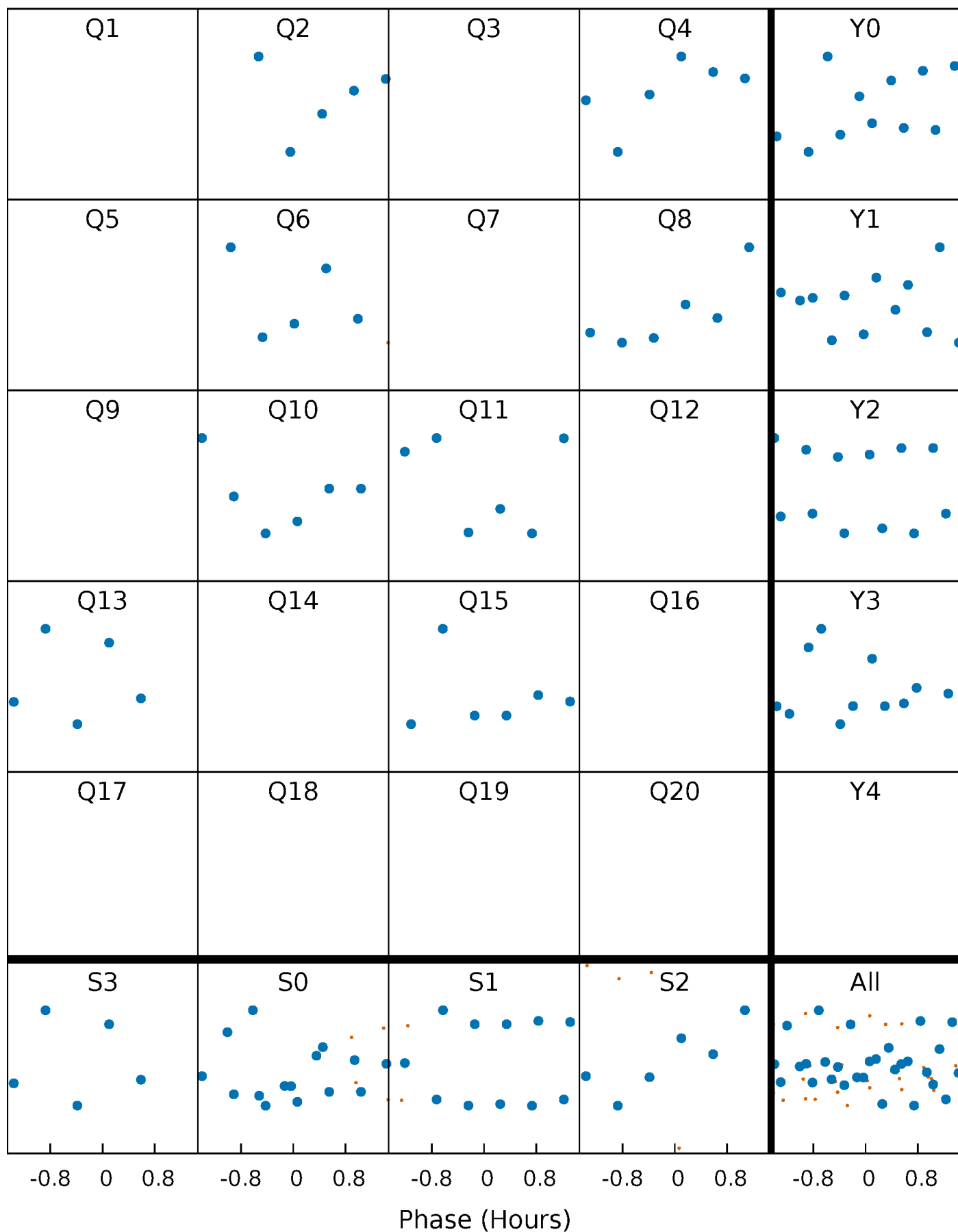


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



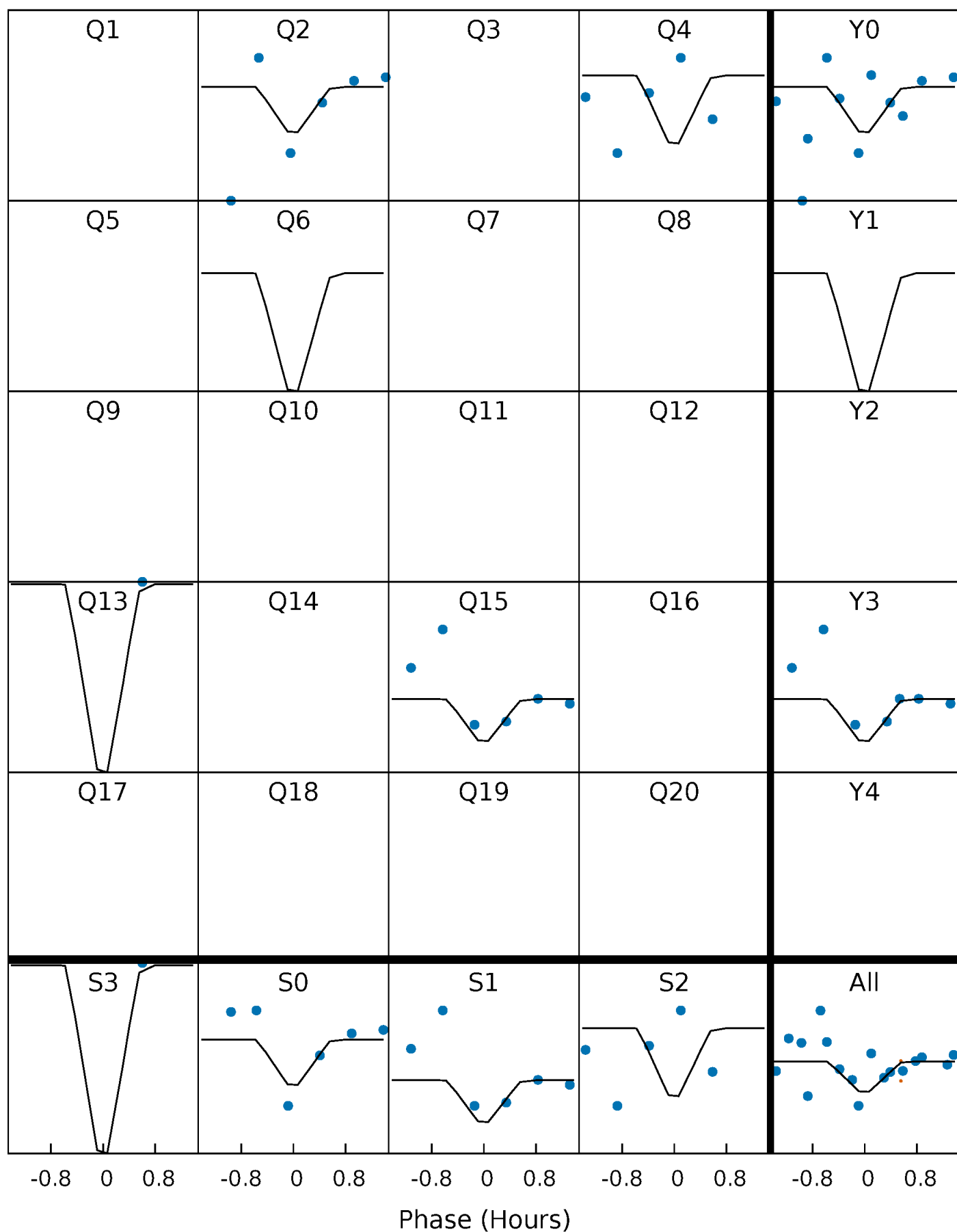
PDC Quarter-Phased Transit Curves

TCE 006519865-02 P=170.118633 Days $T_0=235.811078$ (BKJD)



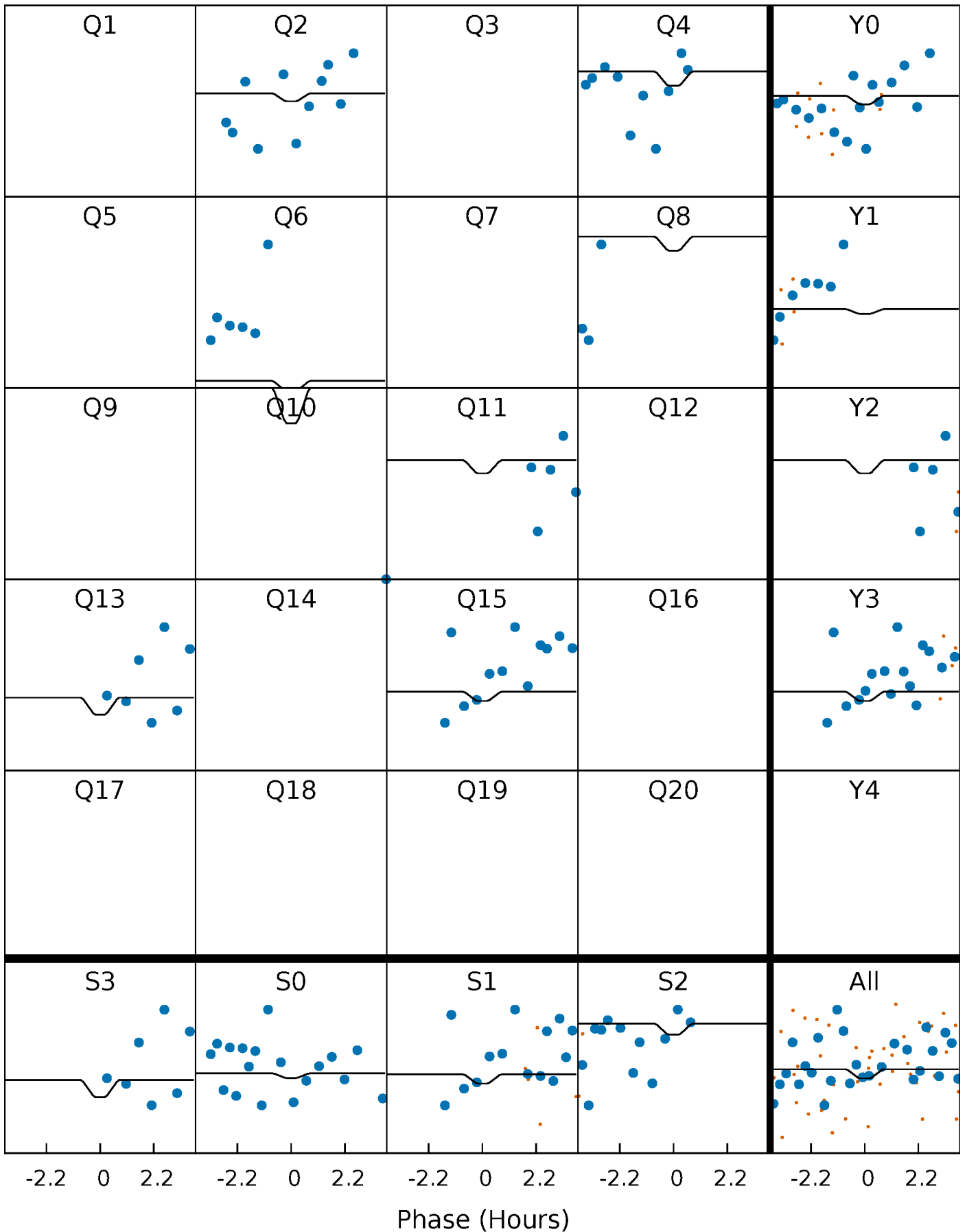
DV Quarter-Phased Transit Curves

TCE 006519865-02 P=170.118633 Days $T_0=235.811078$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

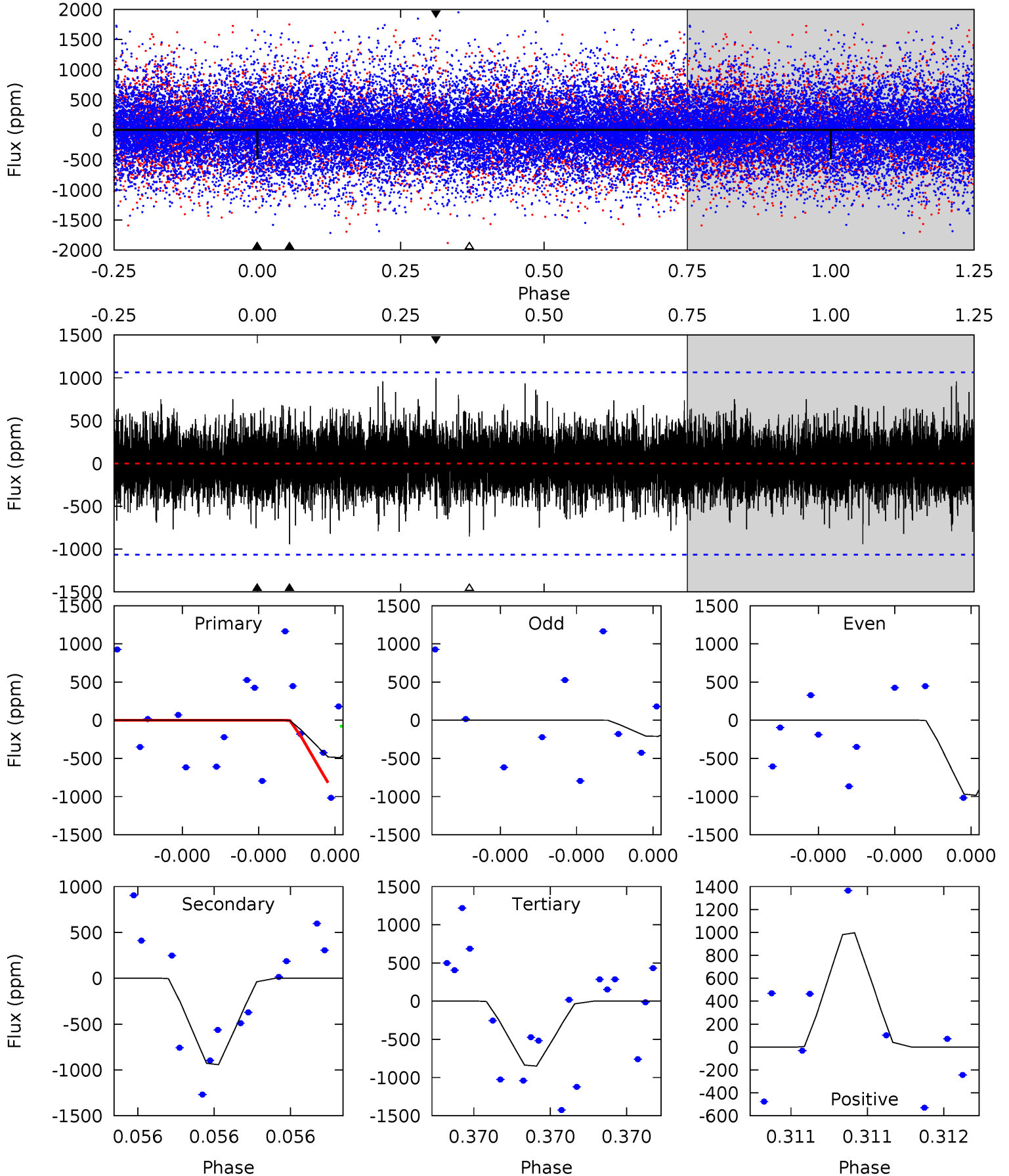
TCE 006519865-02 P=170.123009 Days $T_0=235.801408$ (BKJD)



DV Model-Shift Uniqueness Test

006519865-02, P = 170.118633 Days, E = 65.692445 Days

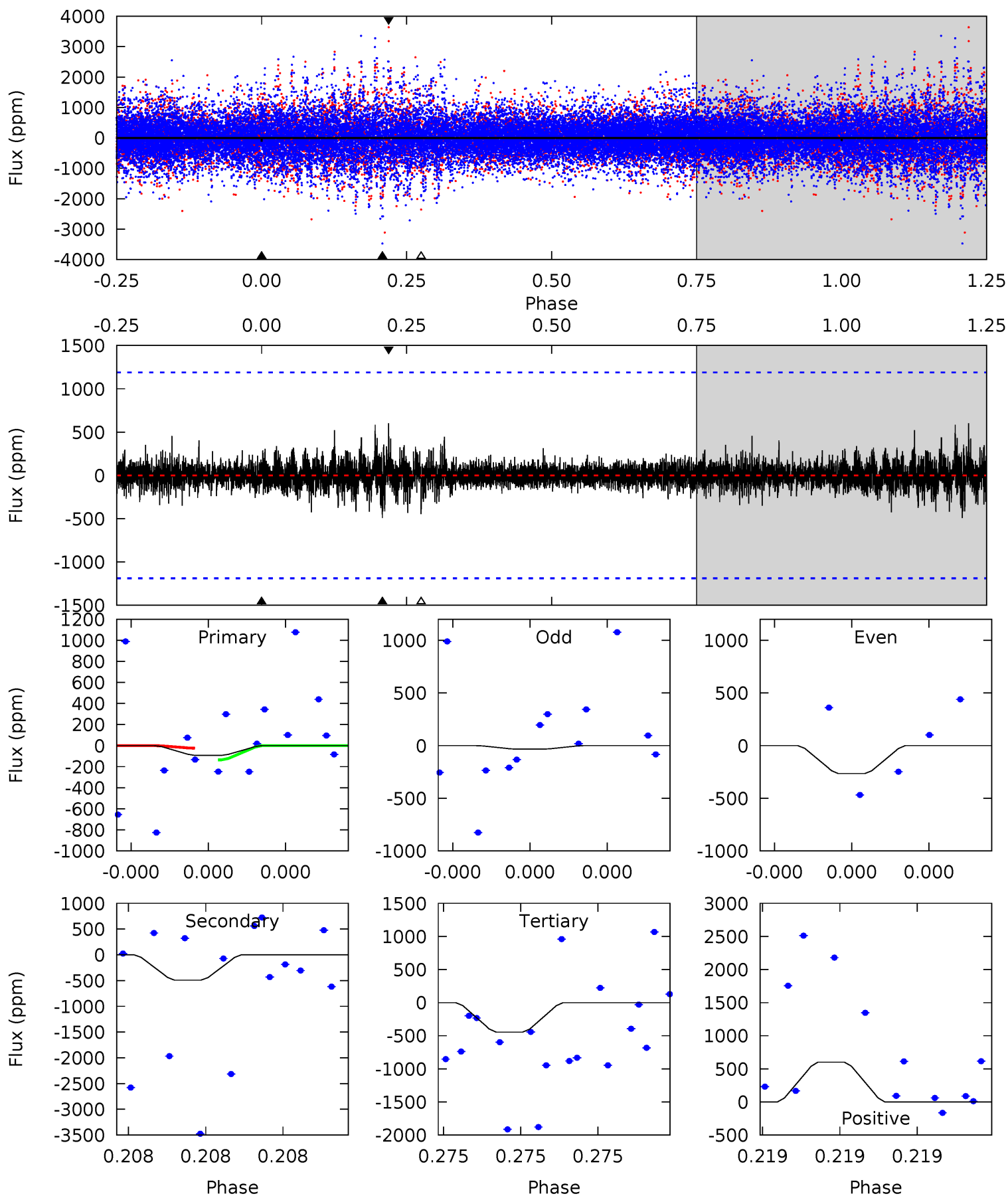
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.62	5.05	4.55	5.34	5.70	3.67	1.14	-1.93	-2.72	0.49	-0.29	2.21	0.84	0.51	1.87



Alt Model-Shift Uniqueness Test

006519865-02, P = 170.123009 Days, E = 65.678399 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.44	2.35	2.13	2.87	5.68	3.64	0.46	-1.68	-2.43	0.22	-0.52	0.53	-21.3	0.55	0.24



Stellar Parameters For KIC 006519865

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6106^{+169}_{-232}	$4.487^{+0.054}_{-0.216}$	$-0.160^{+0.300}_{-0.300}$	$0.966^{+0.304}_{-0.101}$	$1.043^{+0.140}_{-0.140}$	$1.631^{+0.459}_{-0.848}$
	+3%/-4%	+1%/-5%	+188%/-188%	+31%/-10%	+13%/-13%	+28%/-52%
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 006519865-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-943 ± 187	$8.61^{+8.64}_{-5.78}$	484^{+37}_{-24}	4107^{+2668}_{-855}	2521^{+20680}_{-1895}
Alt.	-492 ± 209	$7.84^{+8.27}_{-5.61}$	485^{+38}_{-24}	3782^{+2523}_{-809}	1545^{+17024}_{-1219}

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 $A_{obs} \gg 1.0$

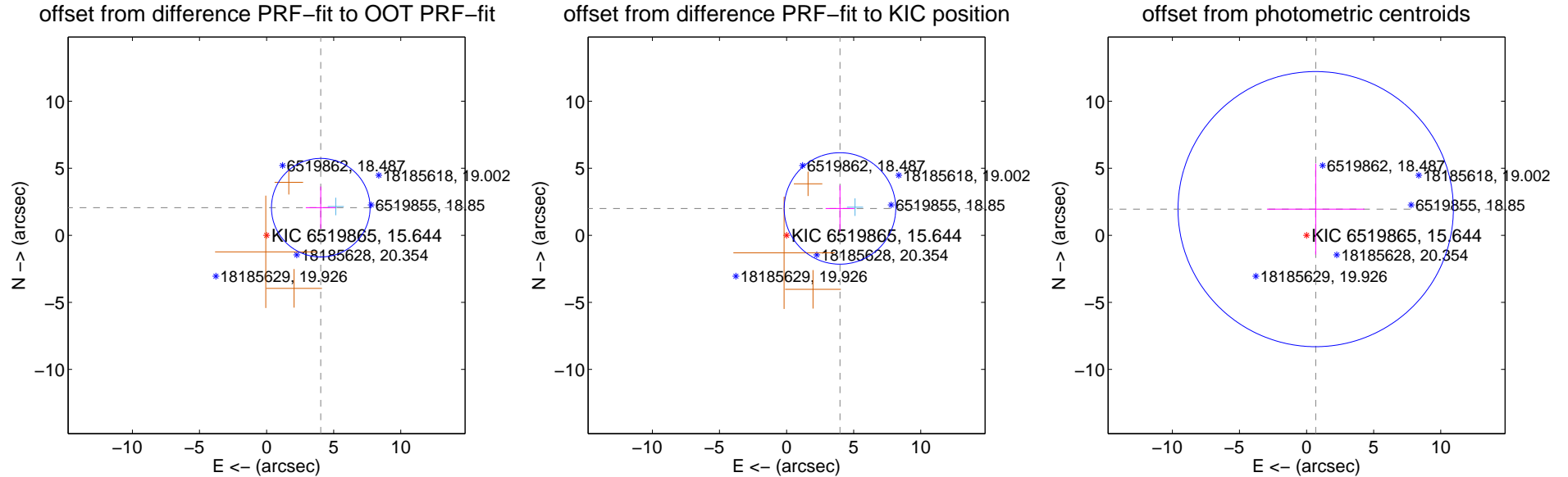
DV Centroid Data

Supplemental centroid analysis for 006519865-02. Kepler magnitude: 15.64. Transit SNR 2.08

There are 1 quarters with good PRF difference image offsets

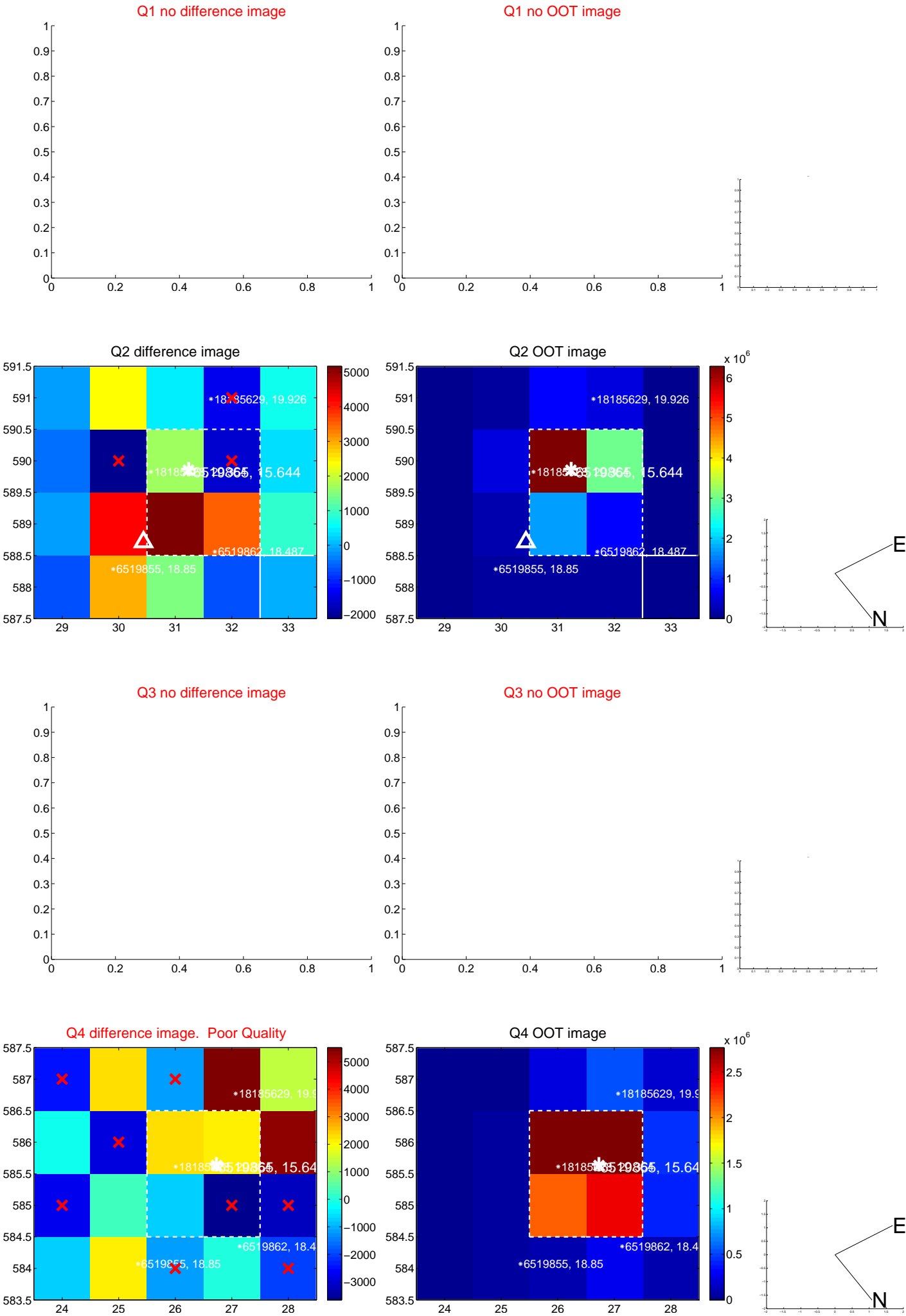
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.532 \pm 1.225	3.70	-4.037 \pm 1.116	2.060 \pm 1.575
PRF-fit source offset from KIC position	4.453 \pm 1.385	3.21	-3.978 \pm 1.070	2.001 \pm 1.727
photometric centroid source offset	2.07 \pm 3.42	0.60	-0.68 \pm 3.63	1.95 \pm 3.39

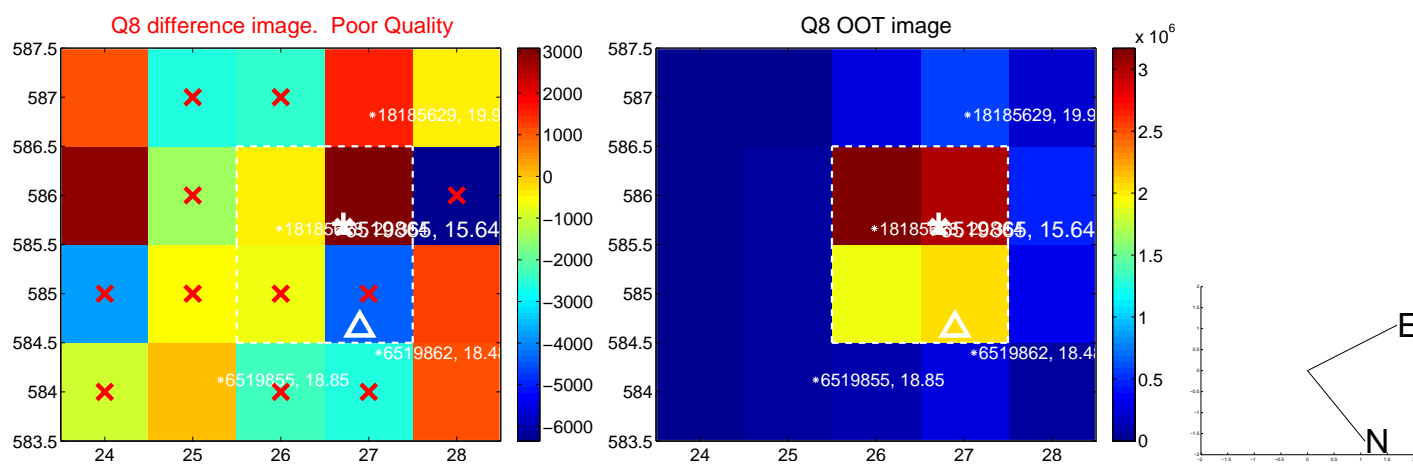
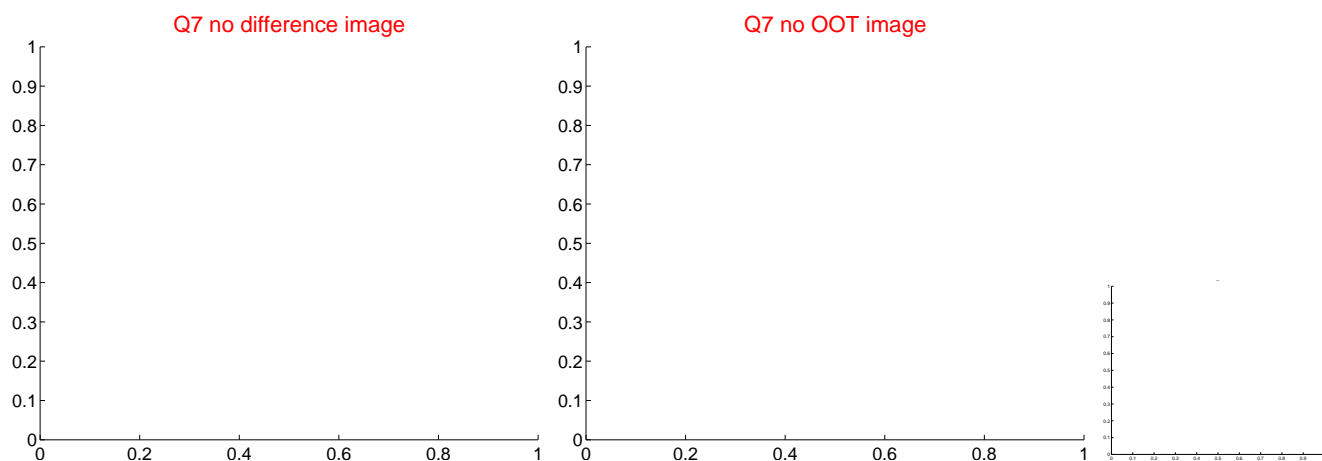
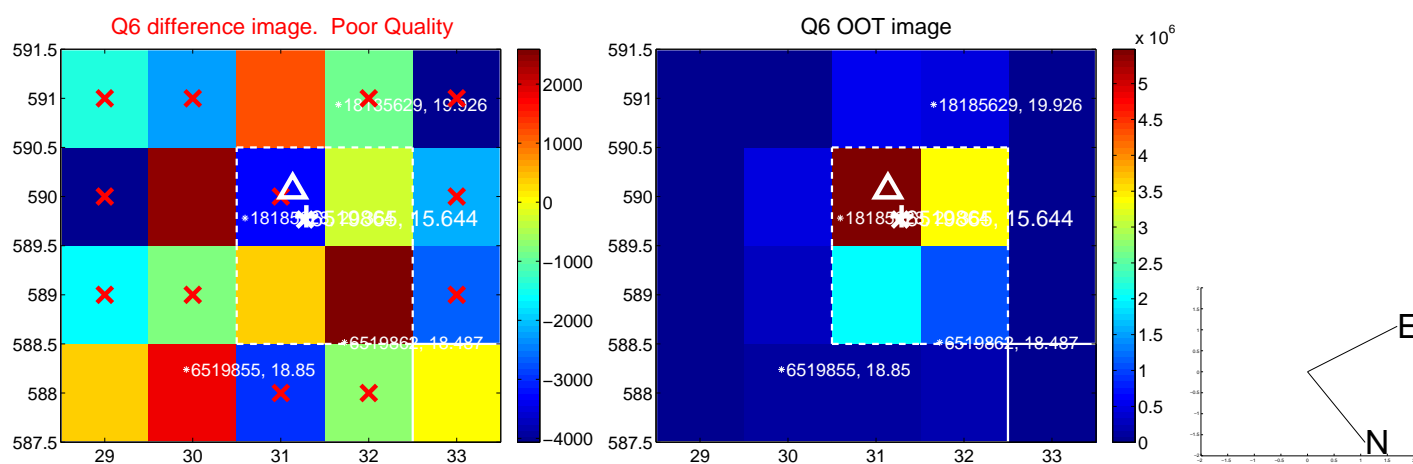
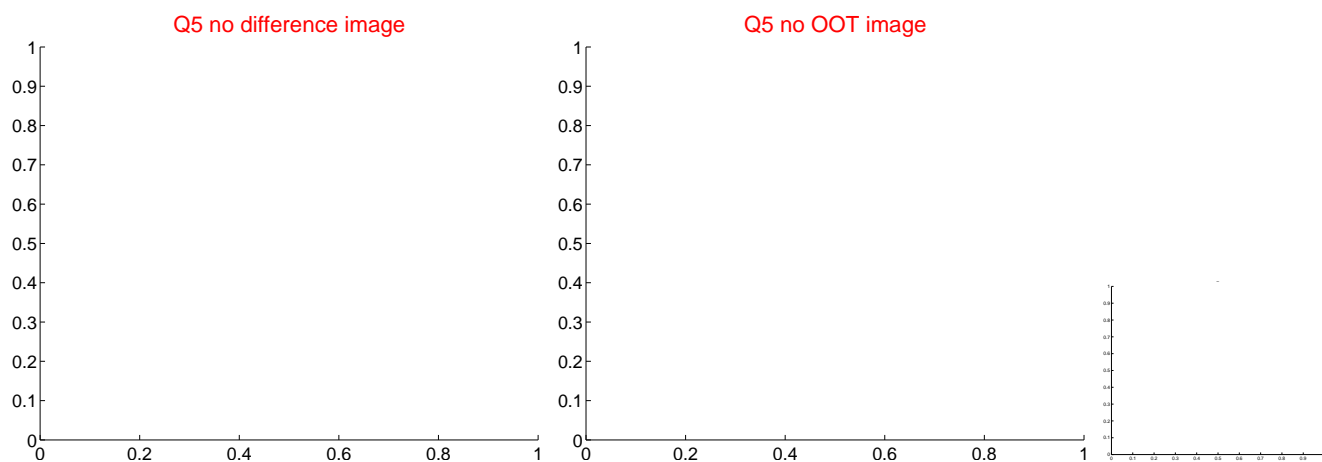


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

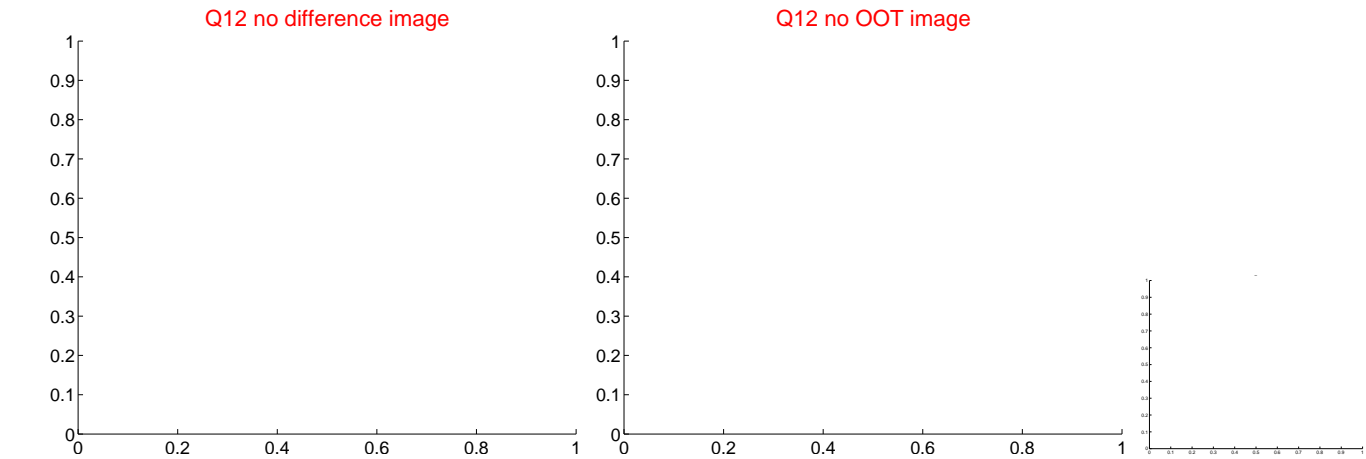
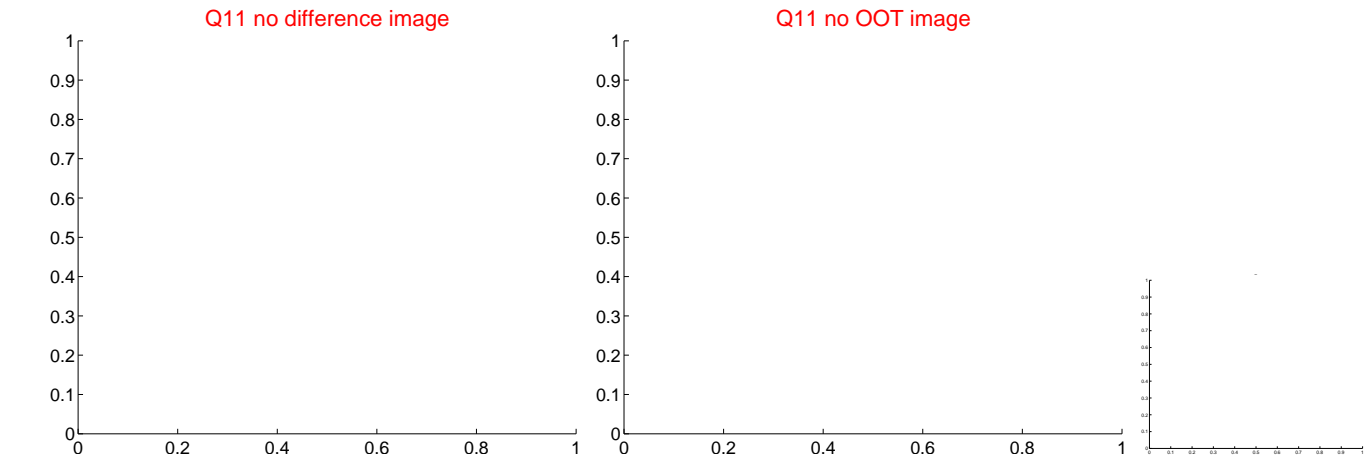
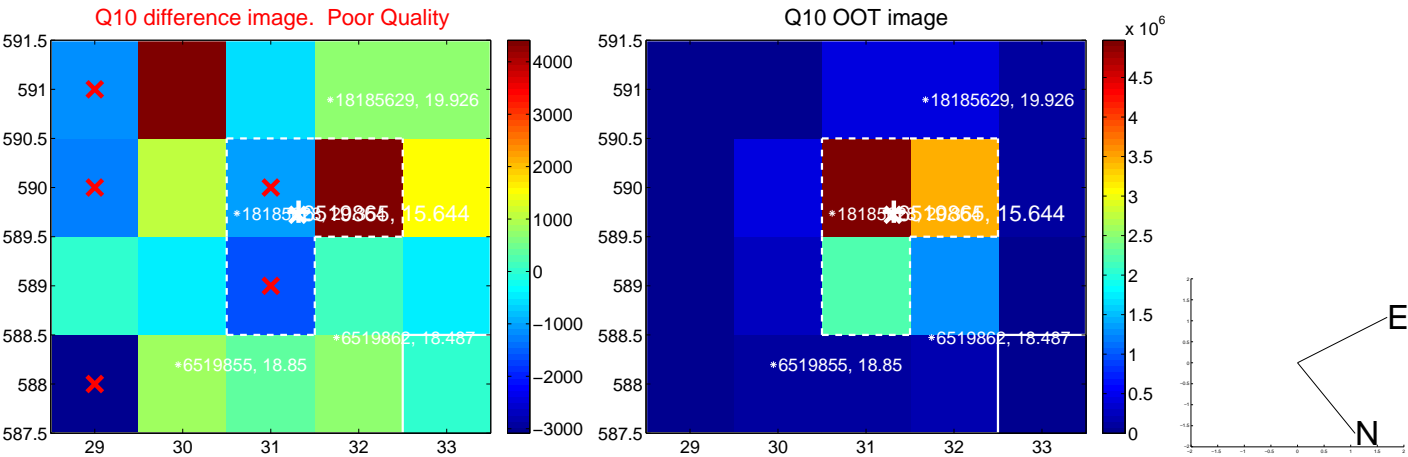
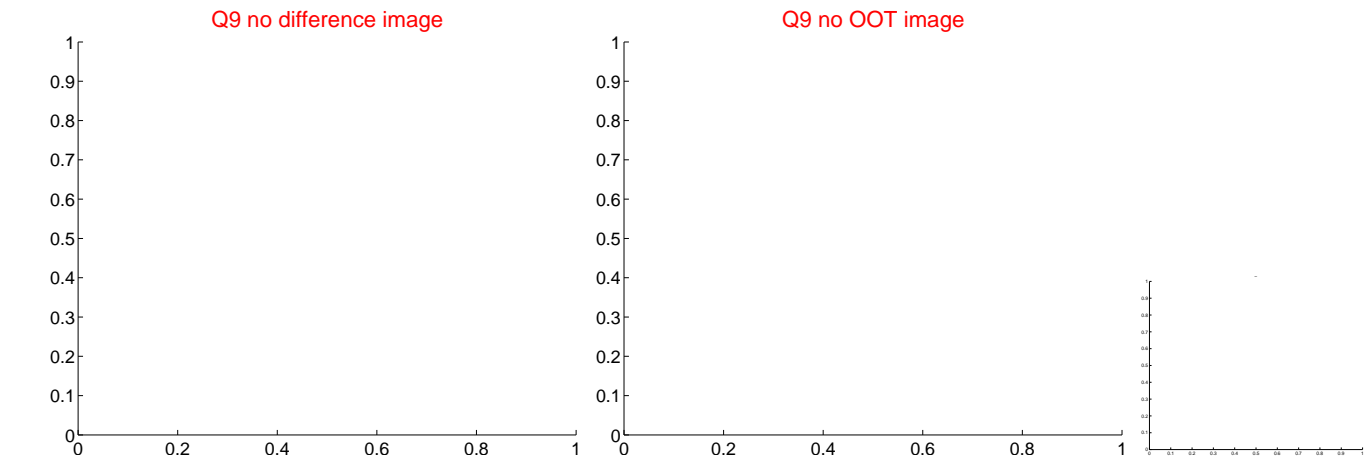
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



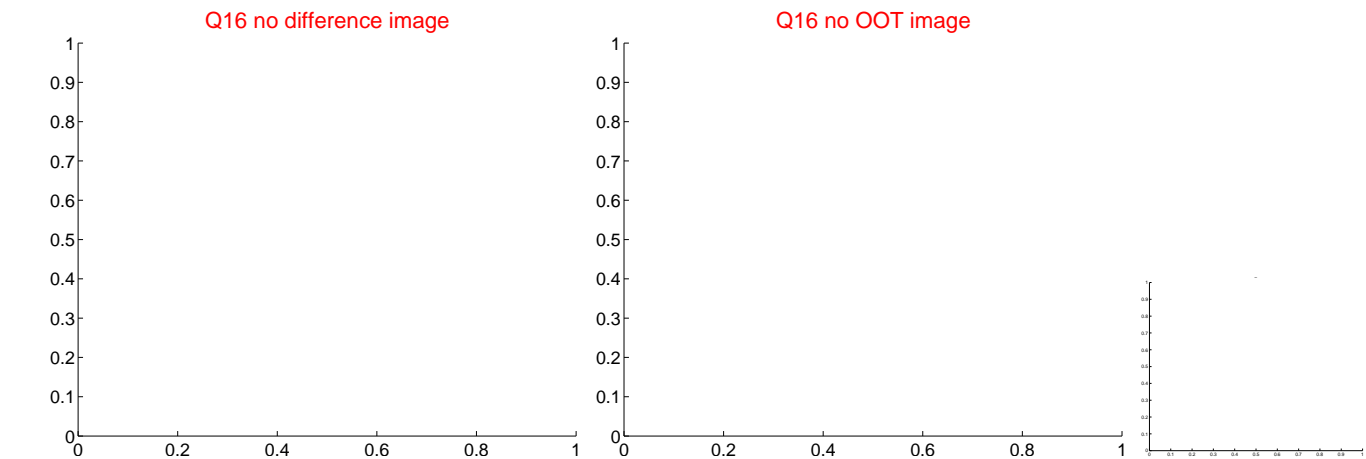
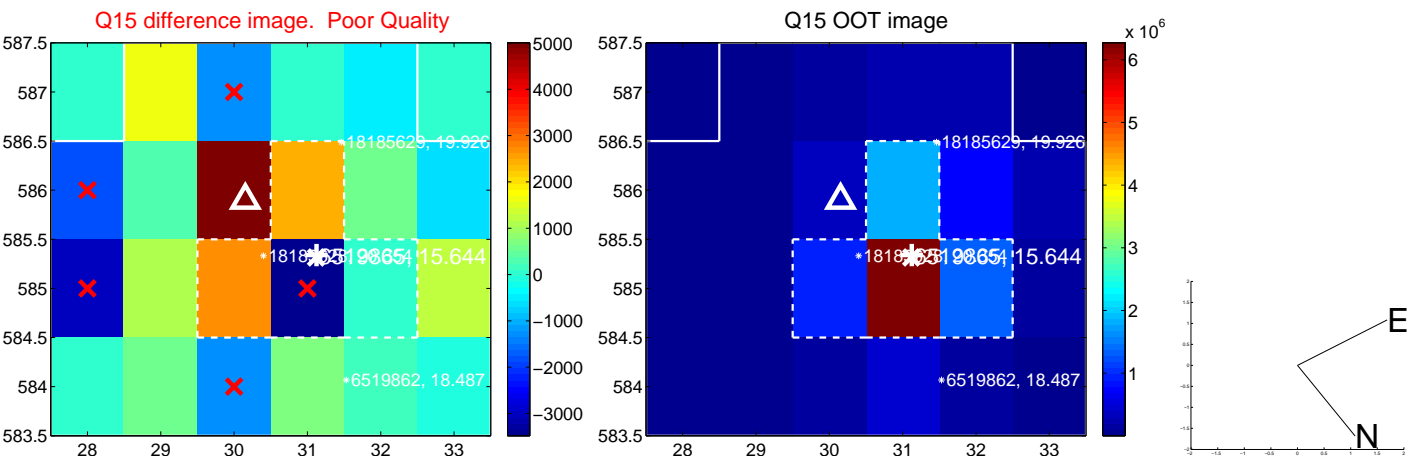
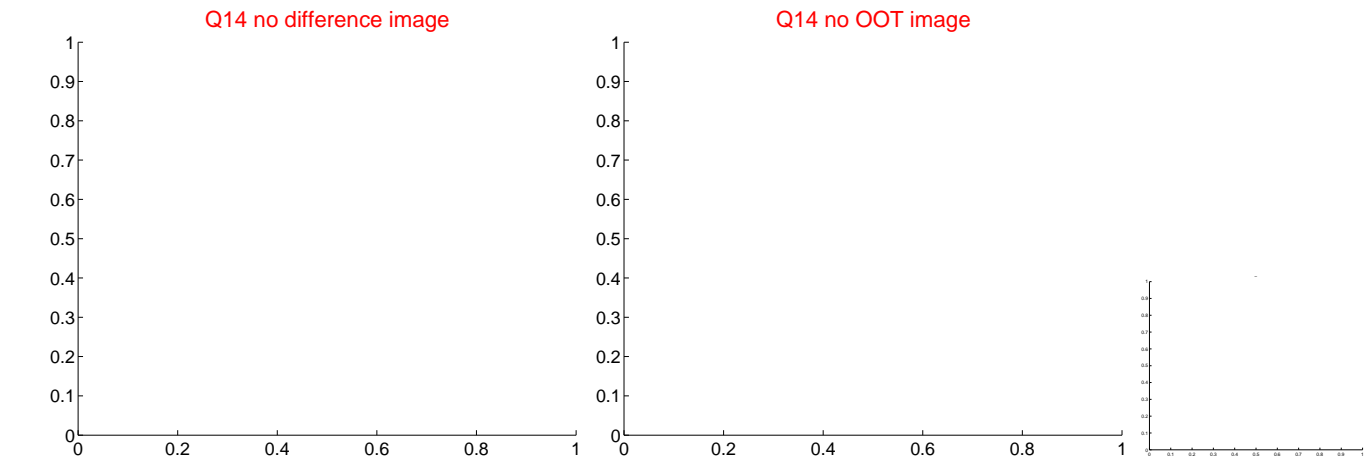
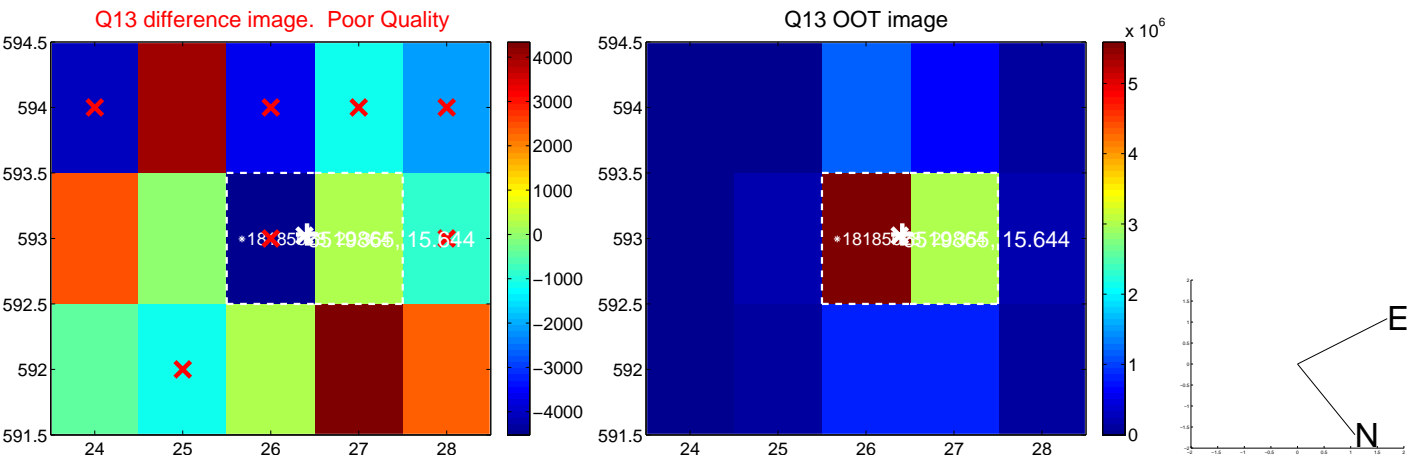
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



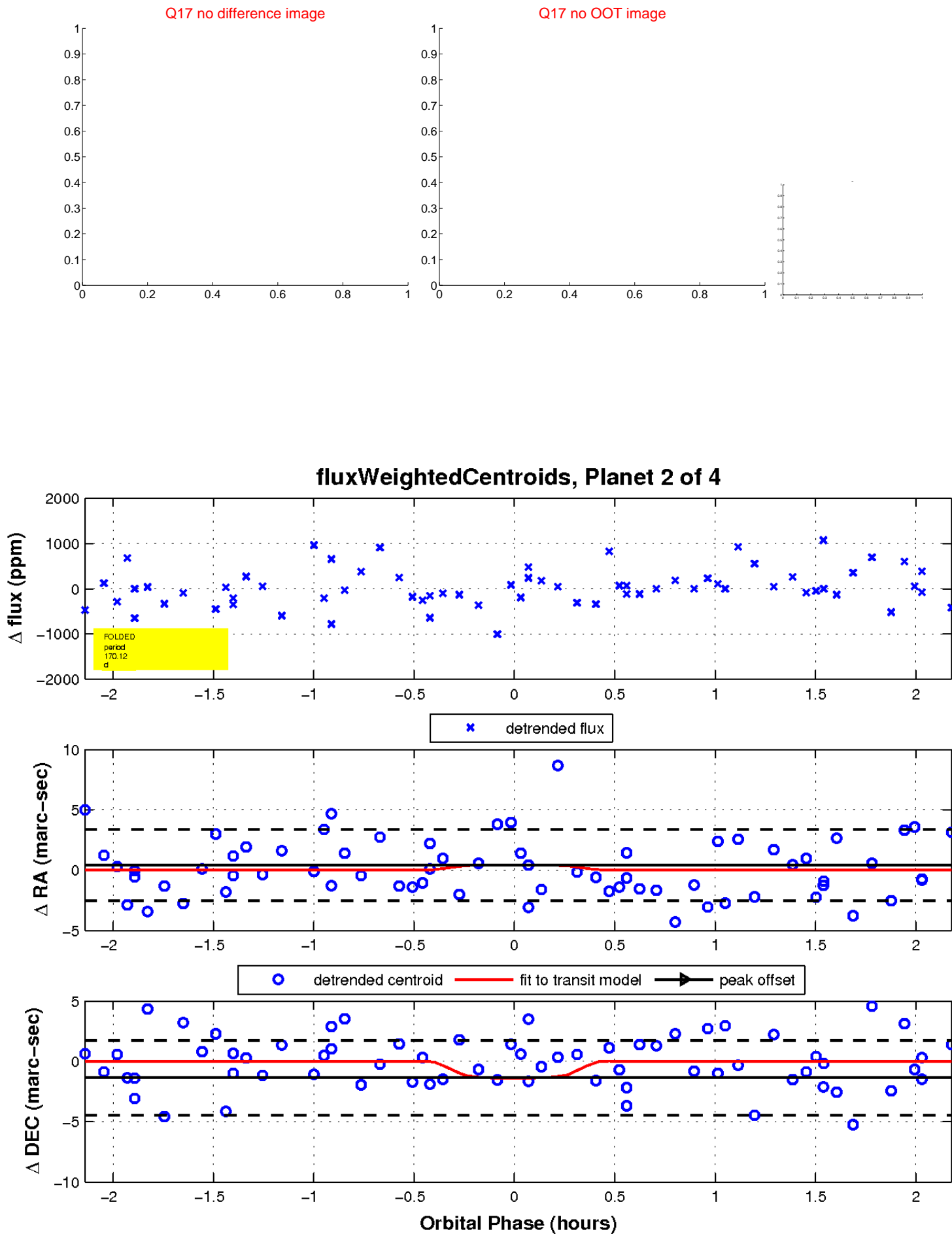
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

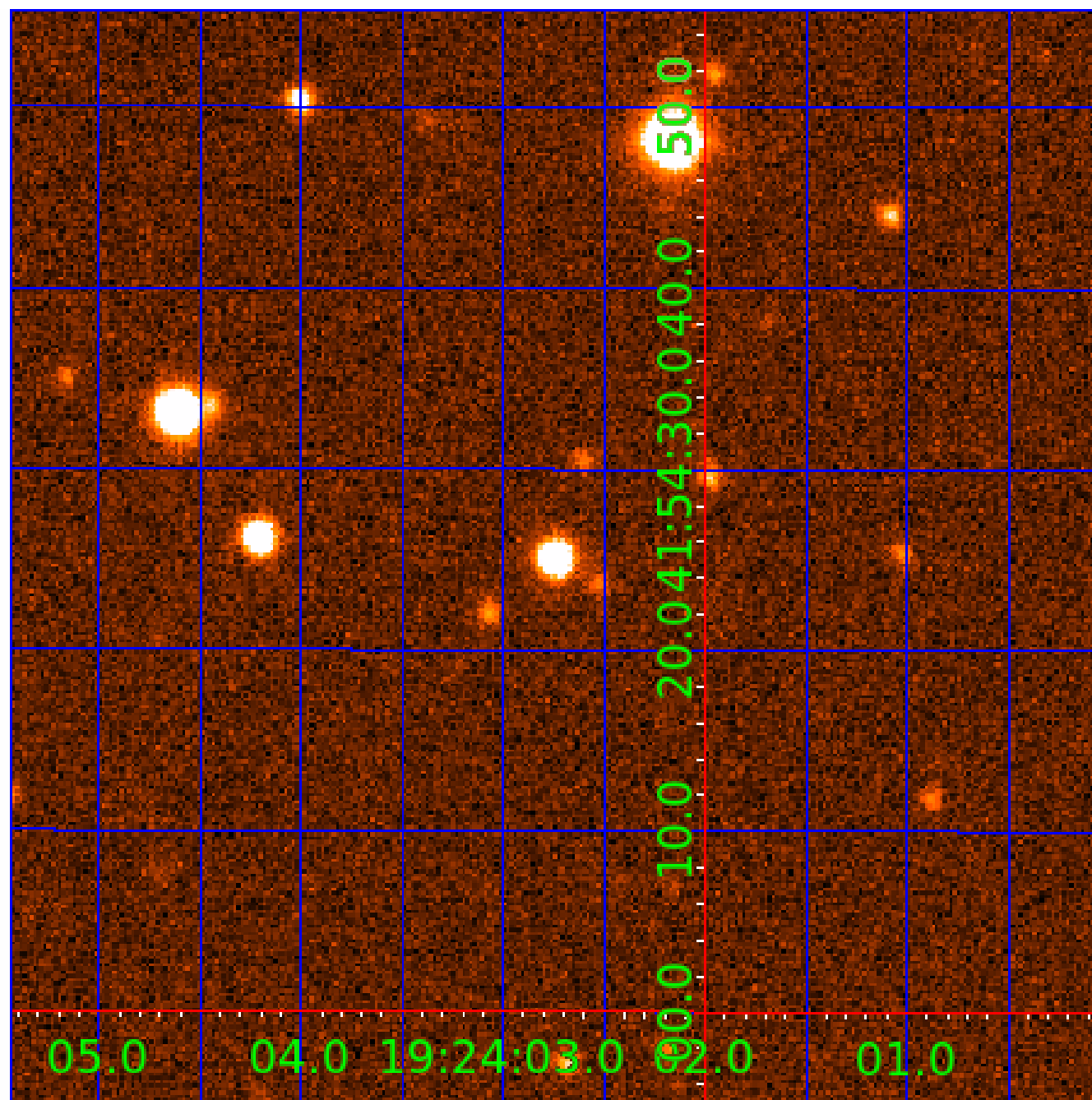


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006519865

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})
006519865-01	OBS	7782.01	0.566830	131.779787	57.0	2.467	8.0	8.9	0.97	6106	0.84	6280.15
006519865-02	OBS	No	170.118633	235.811078	704.4	0.729	8.7	2.1	0.97	6106	2.90	3.12
006519865-03	OBS	No	188.596718	142.849423	673.4	3.989	8.3	3.8	0.97	6106	2.65	2.72
006519865-04	OBS	No	126.608283	200.752887	861.2	10.896	8.2	6.6	0.97	6106	2.87	4.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006519865-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST
006519865-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006519865-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS— HALO_GHOST
006519865-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

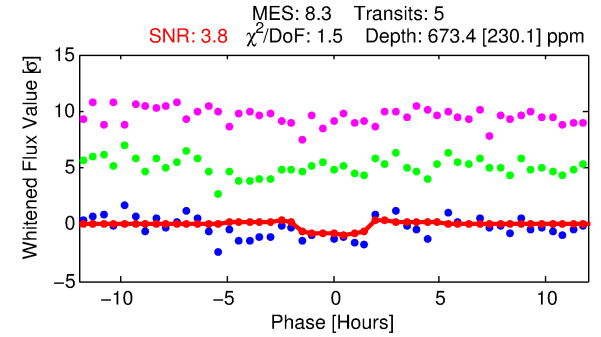
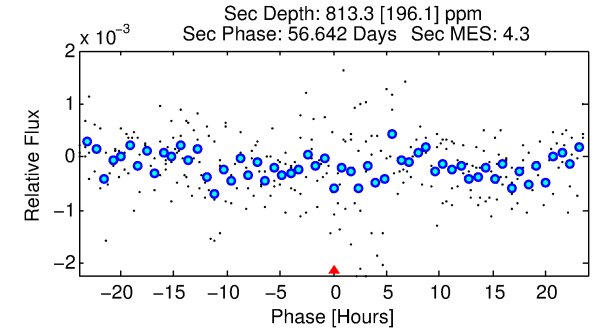
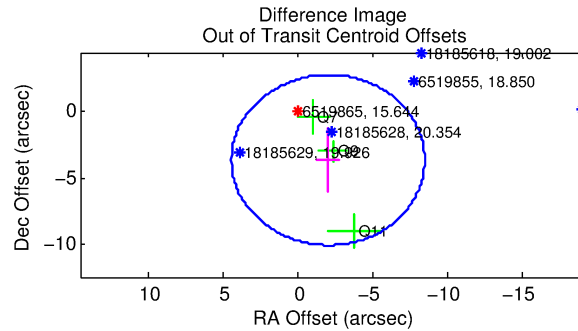
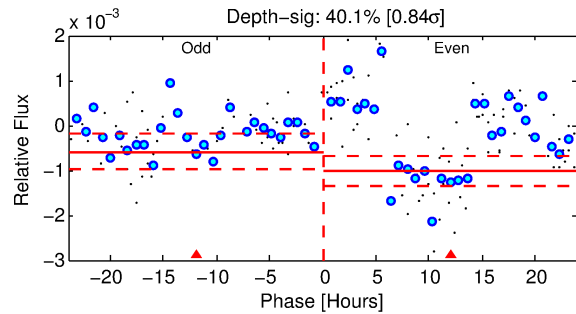
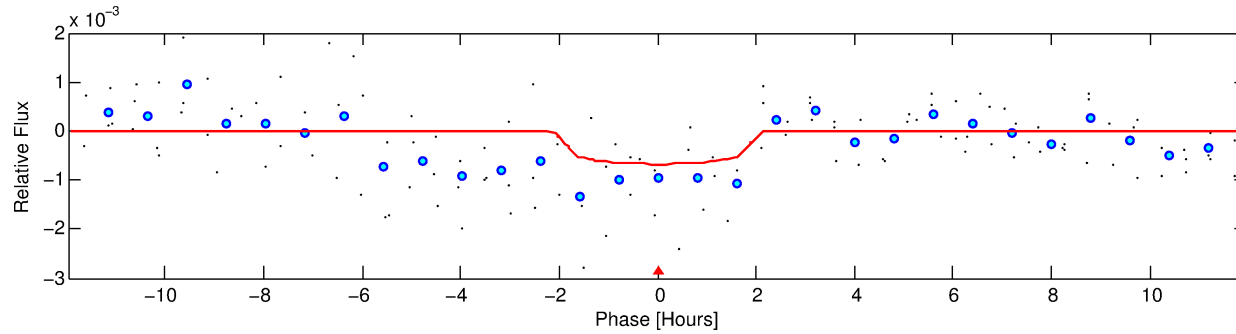
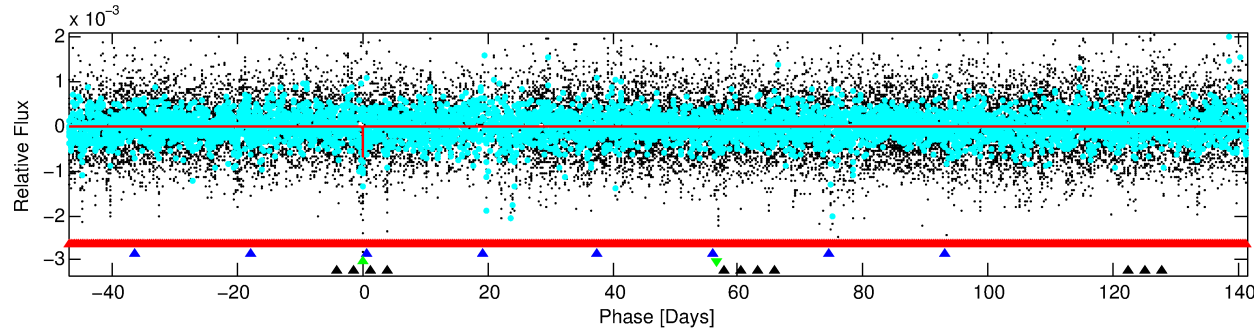
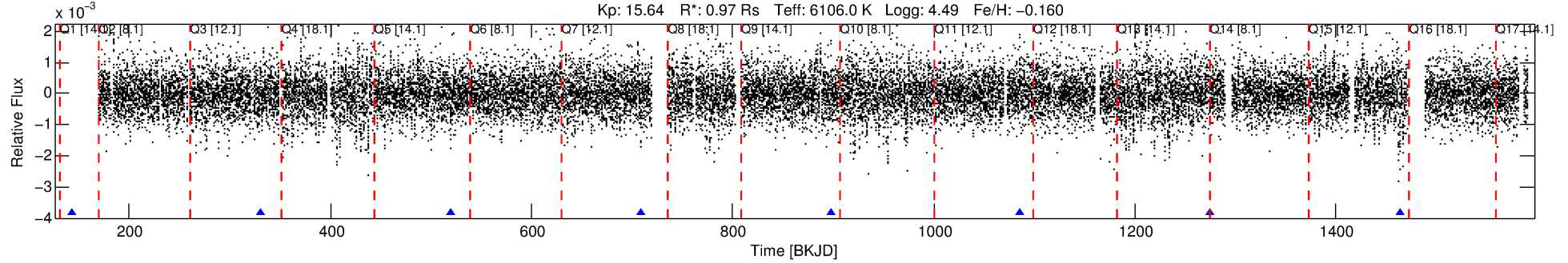
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006519865-03

No Significant Match Found

DV One-Page Summary

KIC: 6519865 Candidate: 3 of 4 Period: 188.597 d



DV Fit Results:

Period = 188.59672 [0.00795] d
Epoch = 142.8494 [0.0331] BKJD
Rp/R* = 0.0251 [0.0683]
a/R* = 286.81 [3805.28]
b = 0.65 [11.98]
Seff = 2.72 [1.15]
Teq = 328 [34] K
Rp = 2.65 [7.24] Re
a = 0.6532 [0.1747] AU
Ag = 27257.23 [148777.01] [0.18 σ]
Teffp = 6508 [8861] K [0.70 σ]

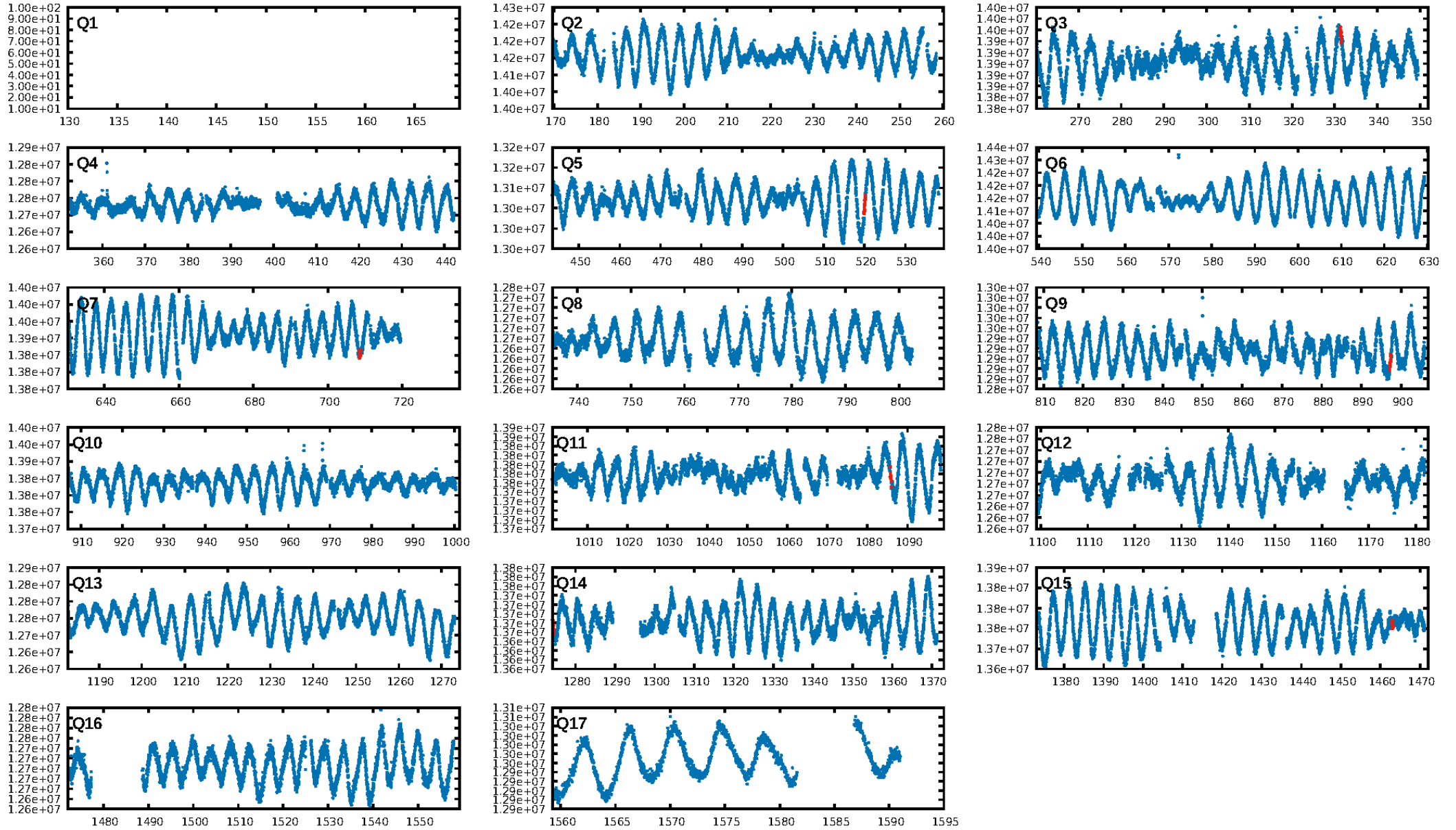
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [109.37 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.5%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 6.03e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.1911
Centroid-sig: 15.5%
Centroid-so: 1.737 arcsec [1.09 σ]
OotOffset-rm: 4.200 arcsec [1.95 σ]
KicOffset-rm: 4.211 arcsec [1.83 σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/6]

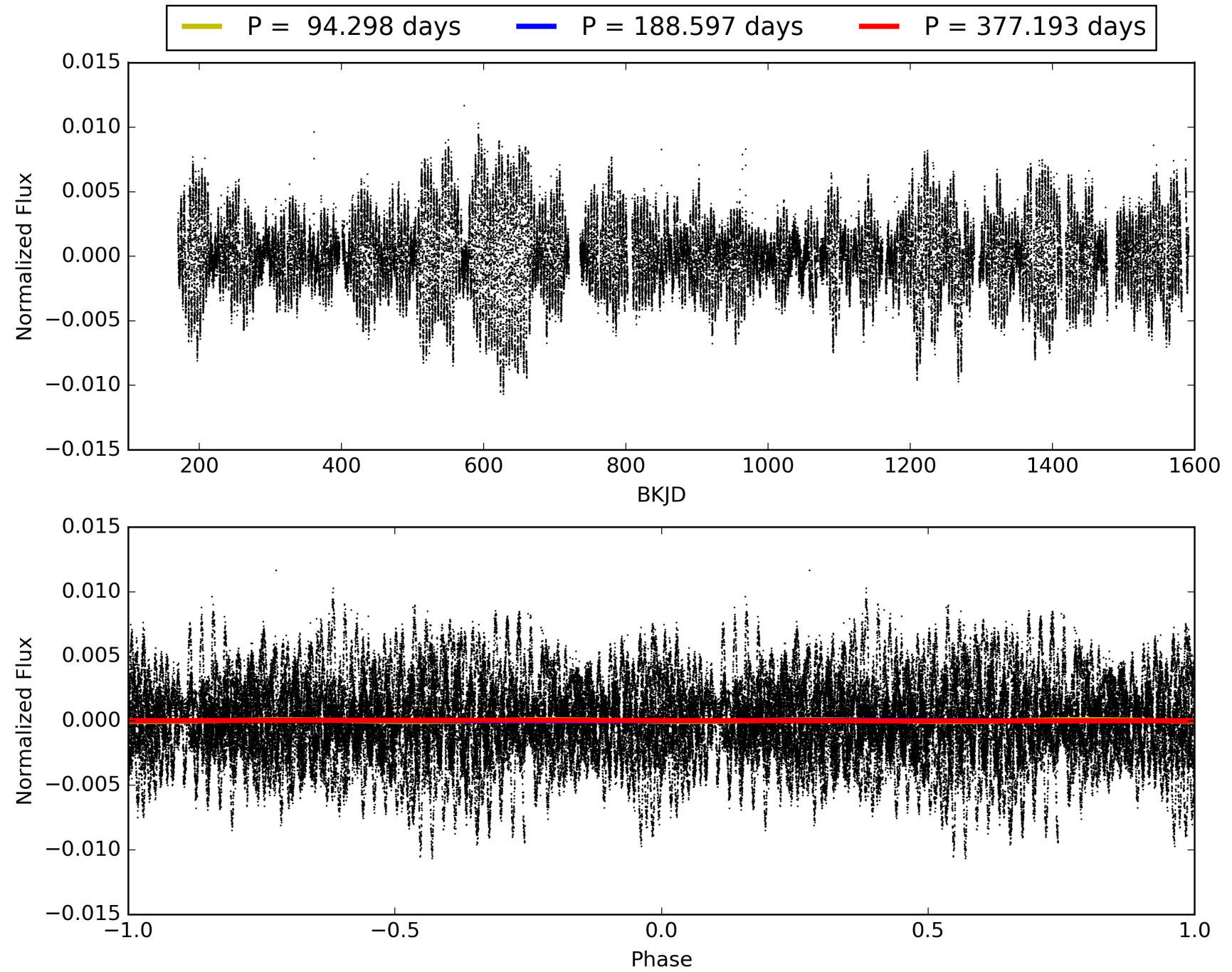
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:07:53 Z

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

TCE 006519865-03, PDC Light Curves

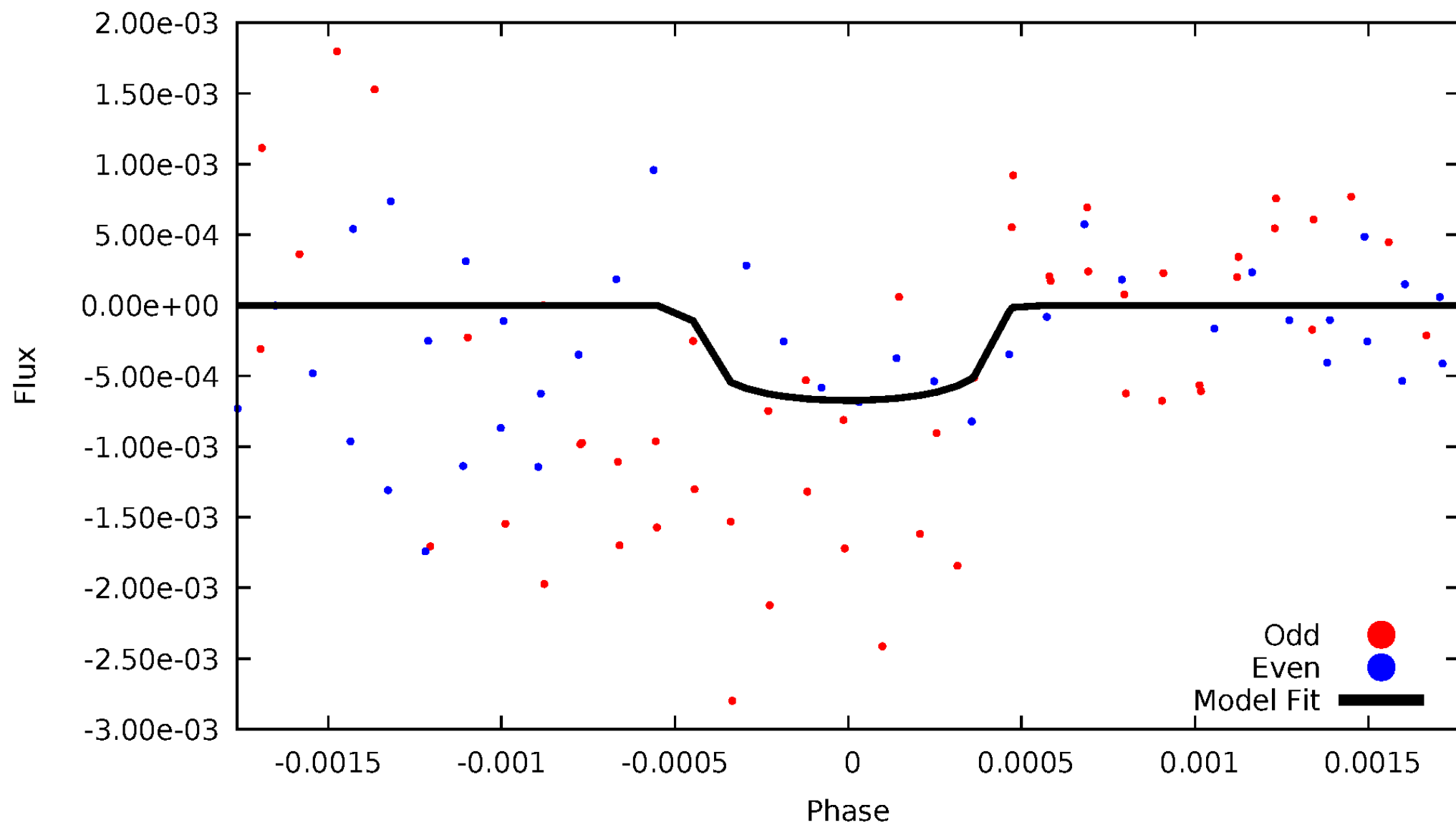


TCE 006519865-03



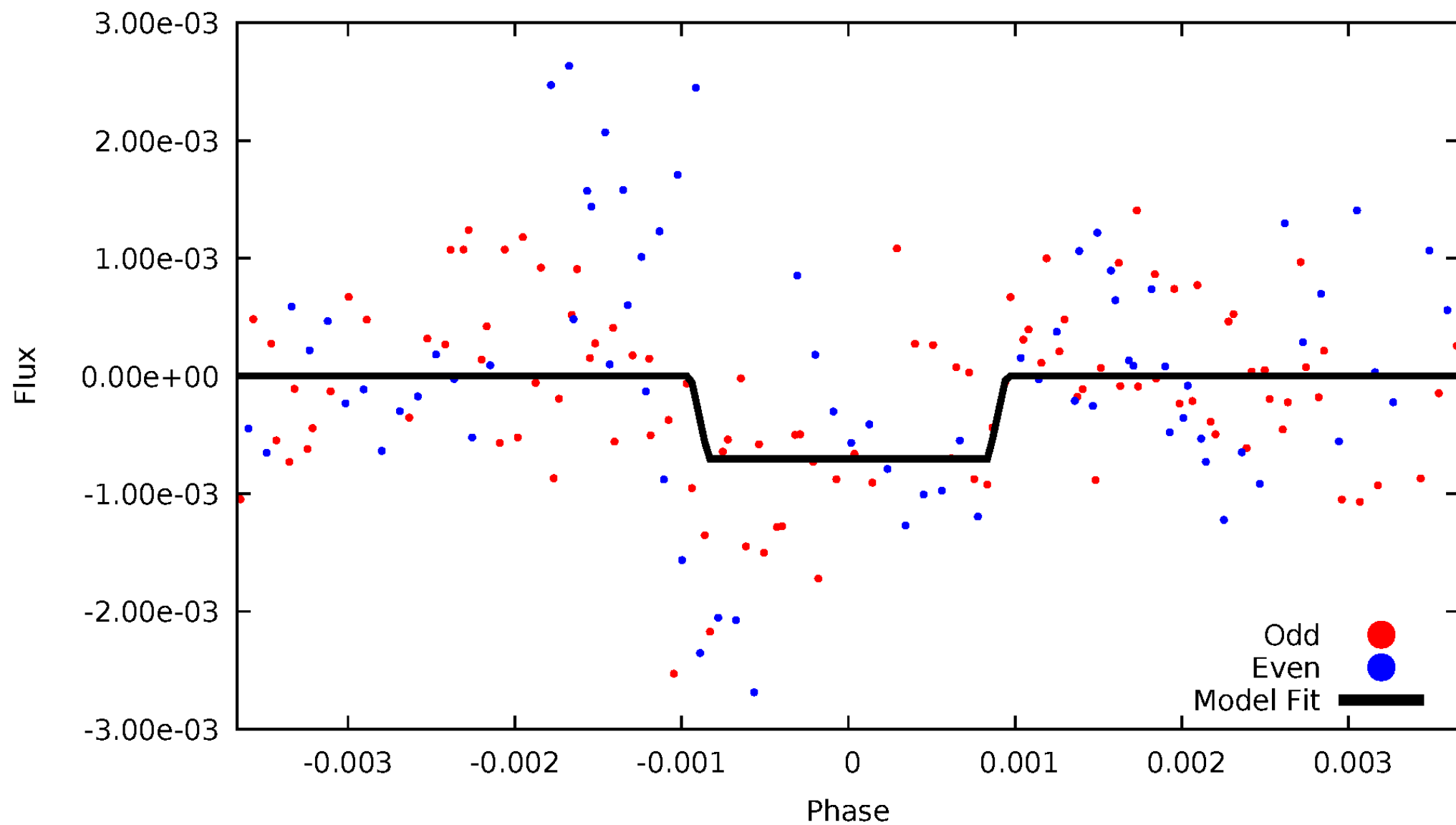
DV Odd/Even

TCE 006519865-03



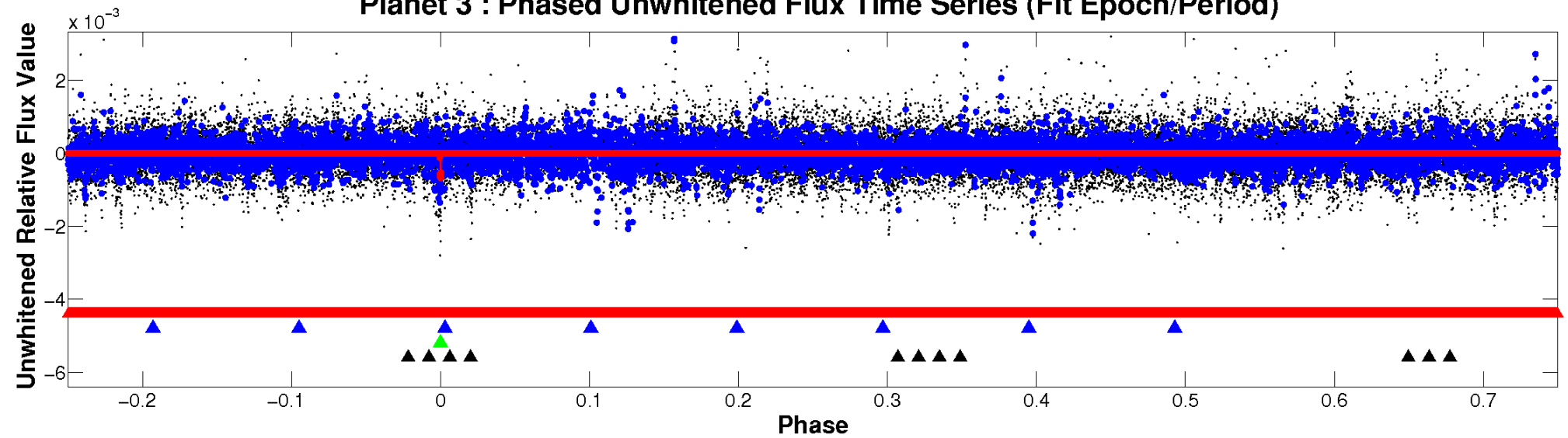
ALT Odd/Even

TCE 006519865-03

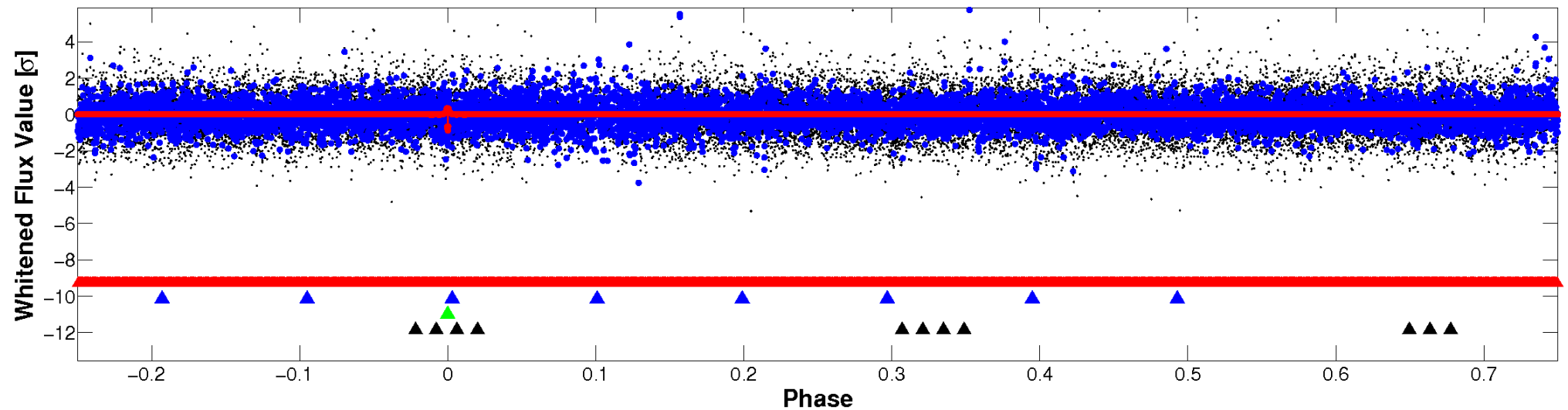


Non-Whitened Vs. Whitened Light Curve

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

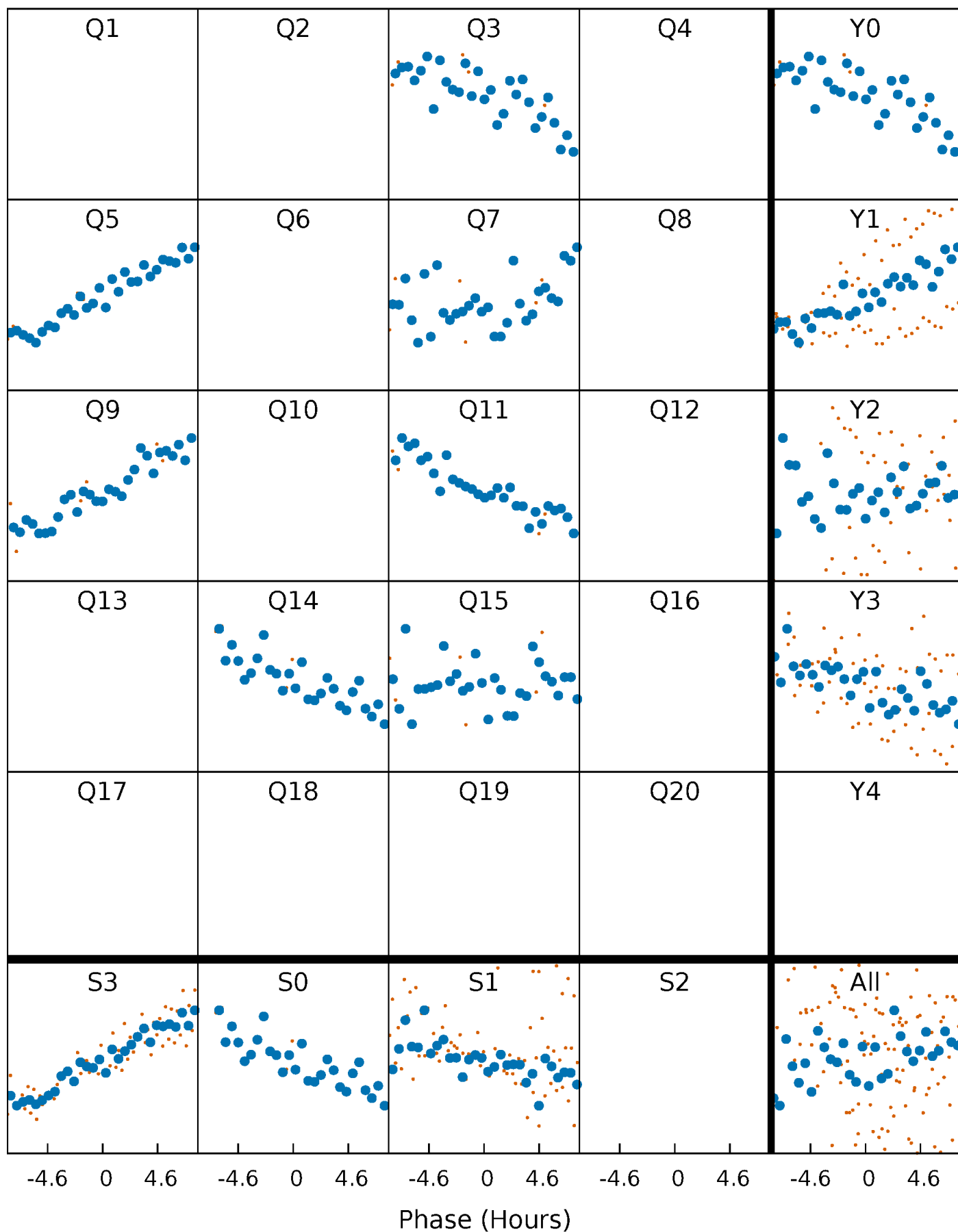


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



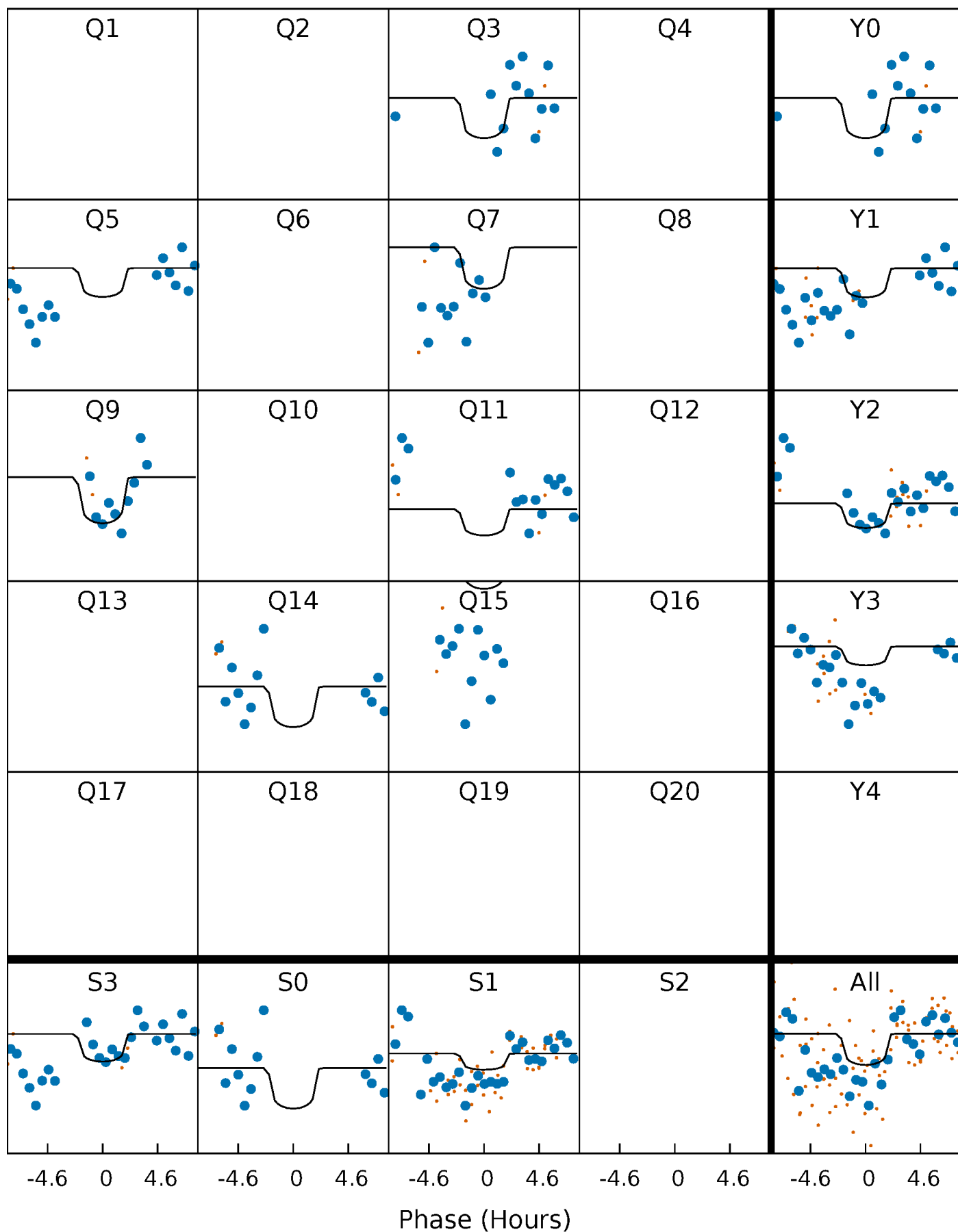
PDC Quarter-Phased Transit Curves

TCE 006519865-03 $P=188.596718$ Days $T_0=142.849423$ (BKJD)



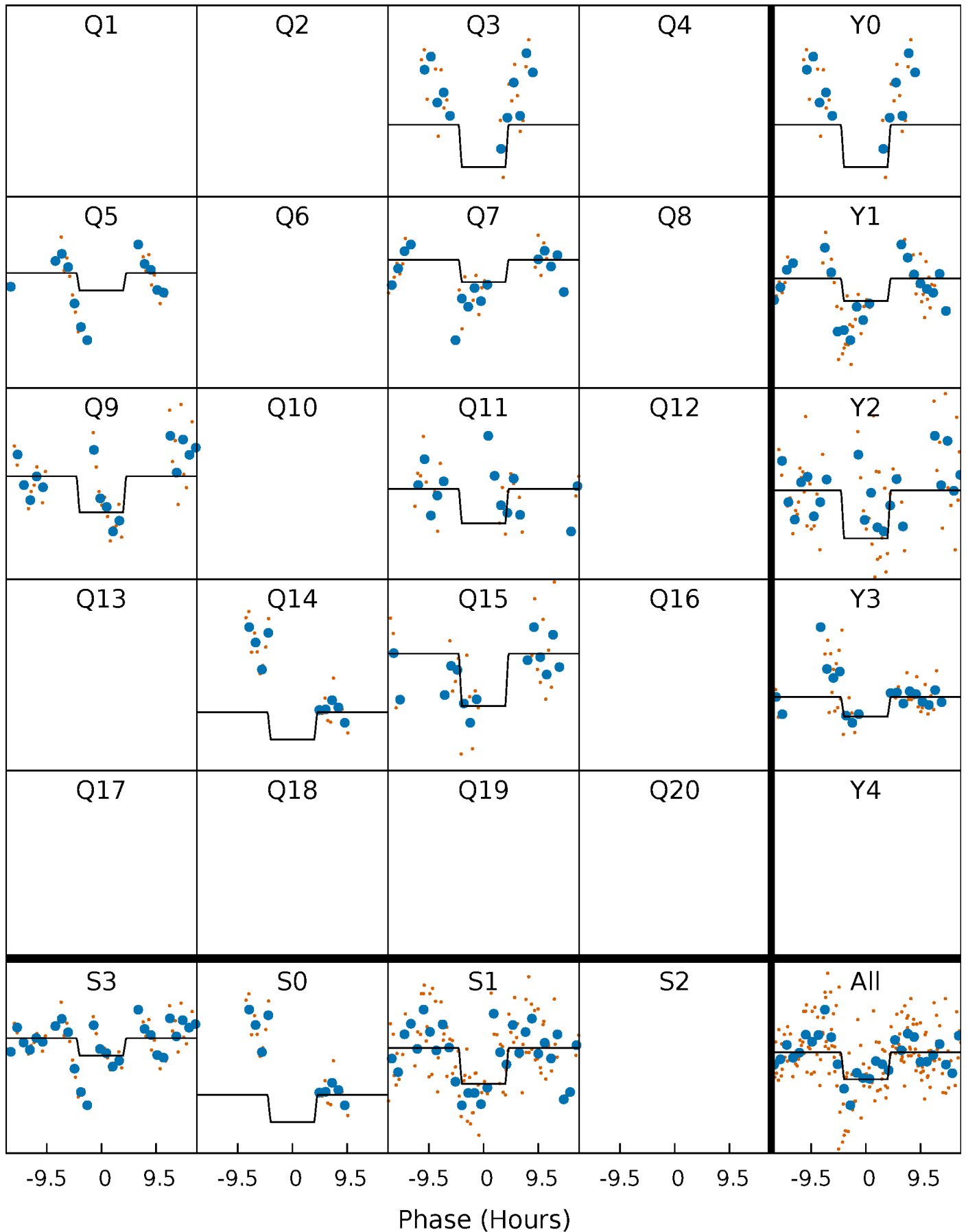
DV Quarter-Phased Transit Curves

TCE 006519865-03 P=188.596718 Days $T_0=142.849423$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

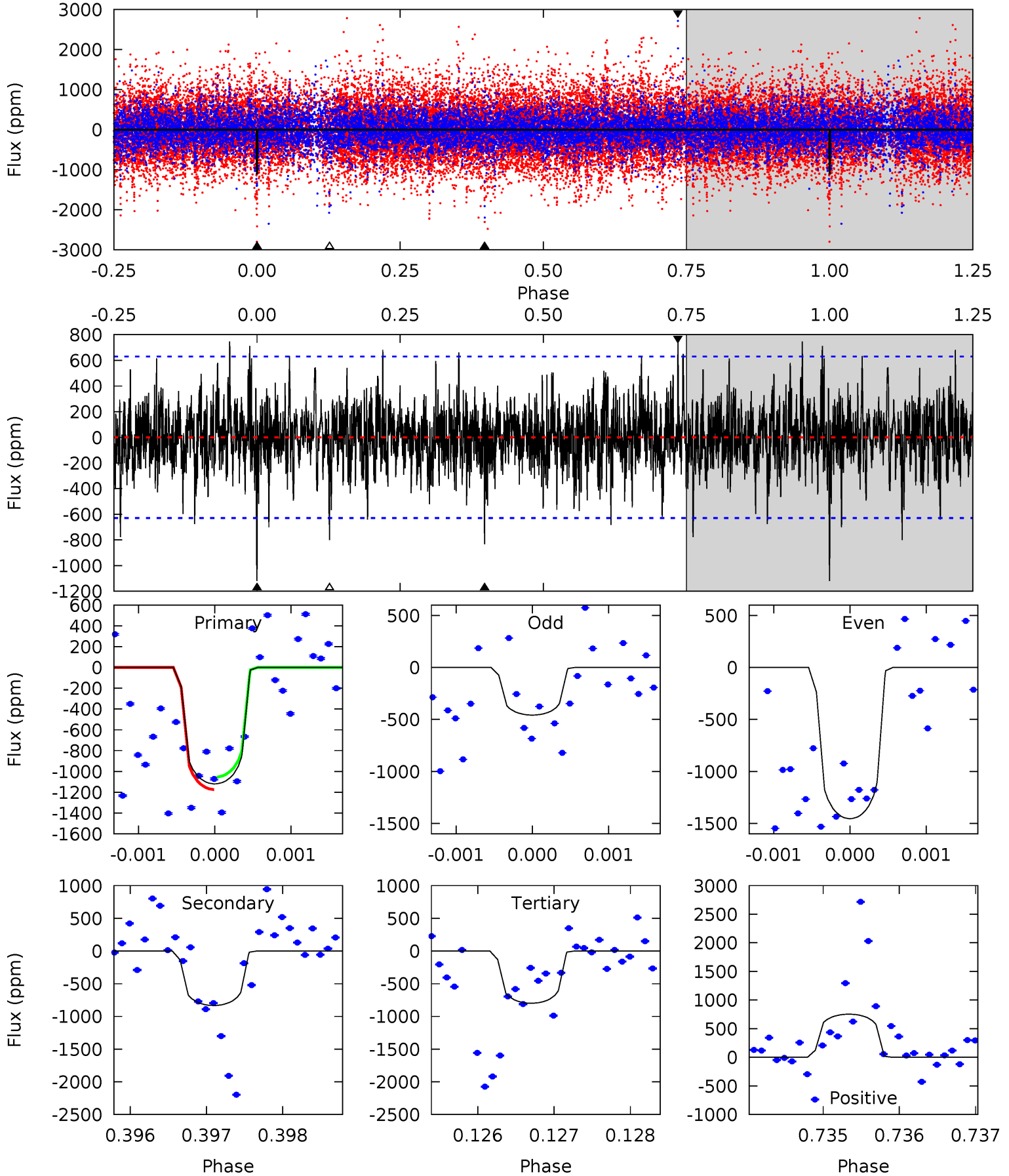
TCE 006519865-03 P=188.629004 Days $T_0=142.722659$ (BKJD)



DV Model-Shift Uniqueness Test

006519865-03, P = 188.596718 Days, E = 142.849423 Days

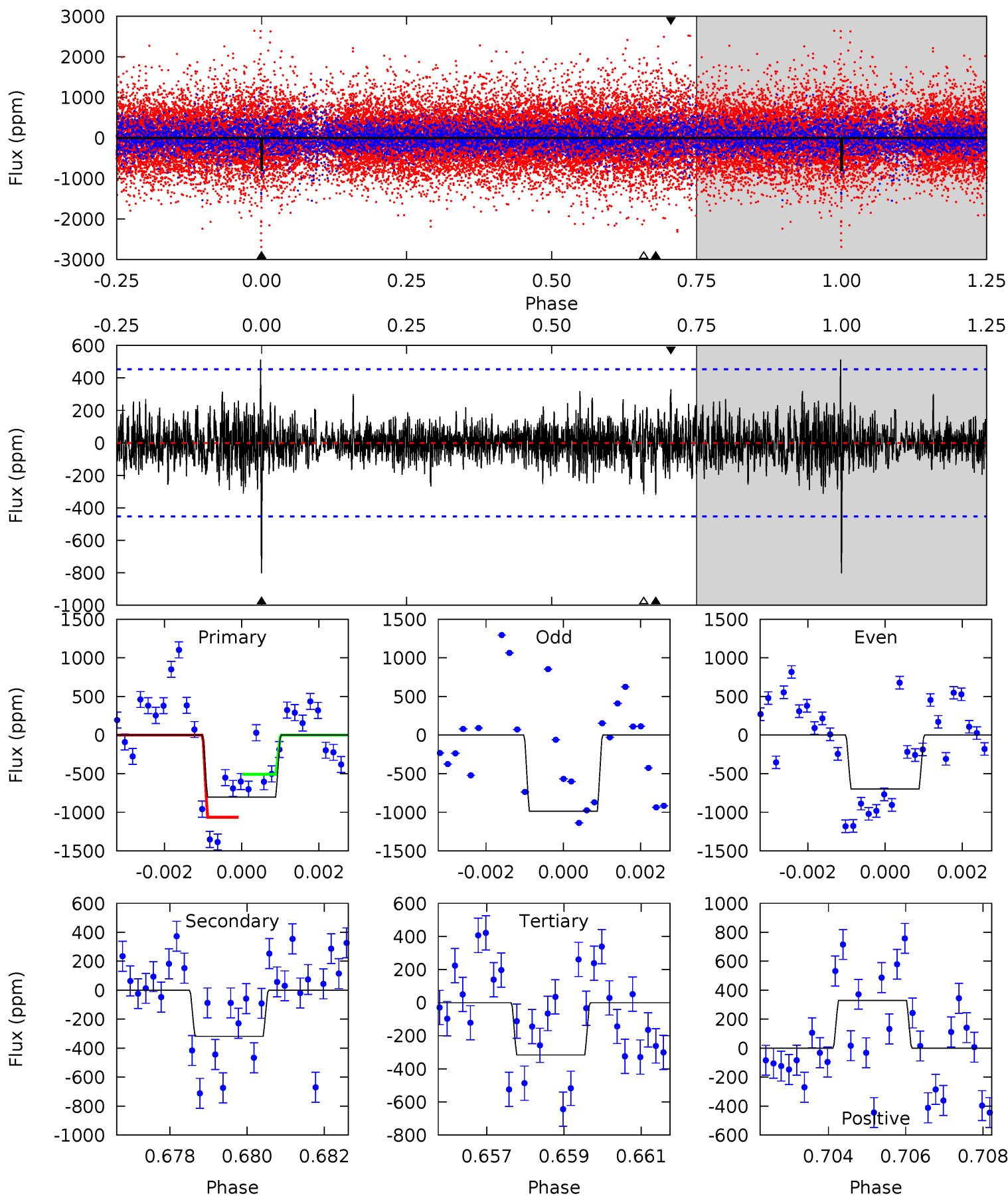
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.69	7.21	6.91	6.52	5.45	3.29	1.65	2.77	3.17	0.30	0.70	4.01	1.41	0.40	0.52



Alt Model-Shift Uniqueness Test

006519865-03, P = 188.629004 Days, E = 142.722659 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.45	3.75	3.72	3.88	5.34	3.11	1.03	5.73	5.57	0.03	-0.13	1.65	1.39	0.39	3.29



Stellar Parameters For KIC 006519865

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6106^{+169}_{-232}	$4.487^{+0.054}_{-0.216}$	$-0.160^{+0.300}_{-0.300}$	$0.966^{+0.304}_{-0.101}$	$1.043^{+0.140}_{-0.140}$	$1.631^{+0.459}_{-0.848}$
	+3%/-4%	+1%/-5%	+188%/-188%	+31%/-10%	+13%/-13%	+28%/-52%
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 006519865-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-834±116	$6.29^{+6.21}_{-4.22}$	468^{+35}_{-23}	4493^{+3340}_{-948}	4851^{+41280}_{-3638}
Alt.	-319±85	$6.52^{+6.54}_{-4.27}$	468^{+36}_{-24}	3677^{+2061}_{-664}	1567^{+12699}_{-1174}

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 $A_{obs} \gg 1.0$

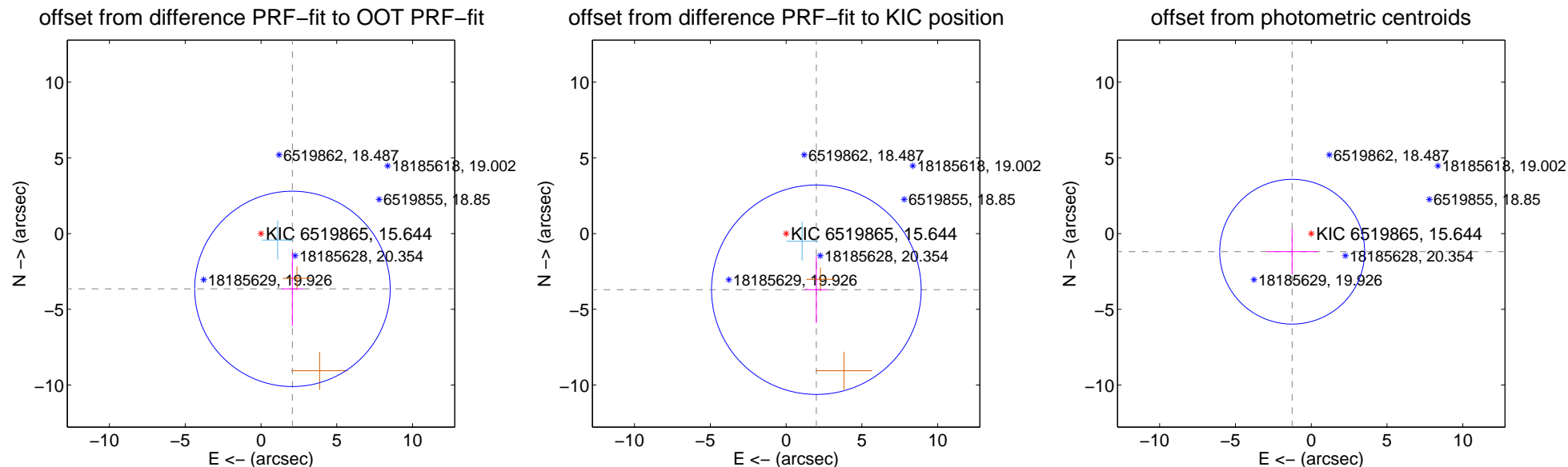
DV Centroid Data

Supplemental centroid analysis for 006519865-03. Kepler magnitude: 15.64. Transit SNR 3.85

There are 1 quarters with good PRF difference image offsets

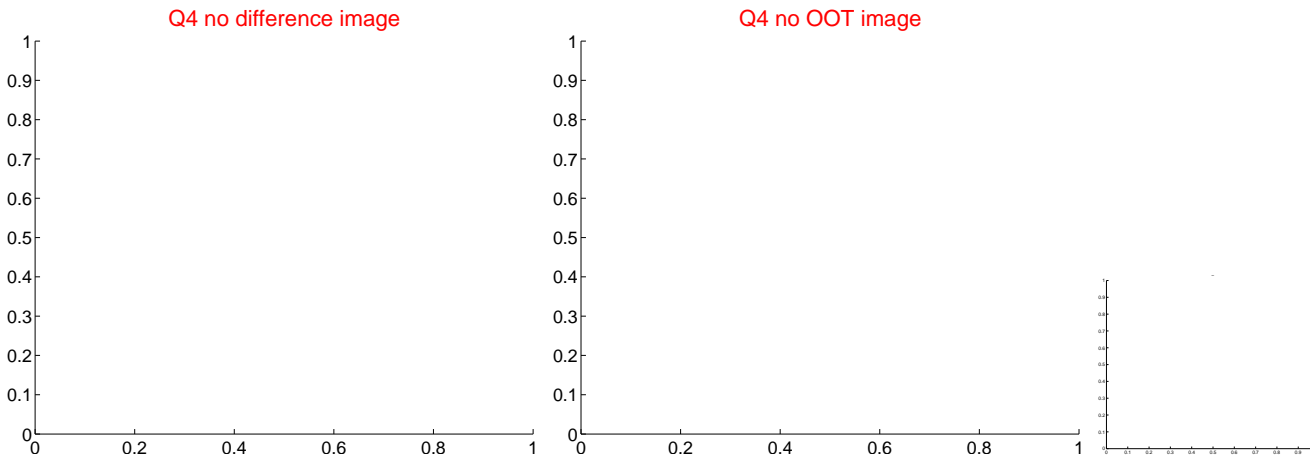
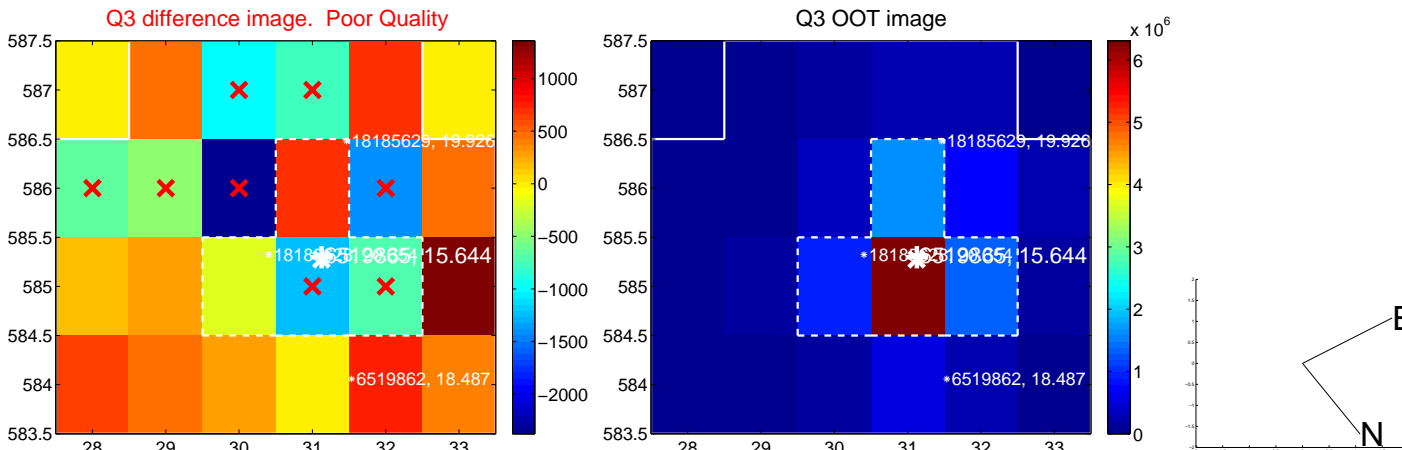
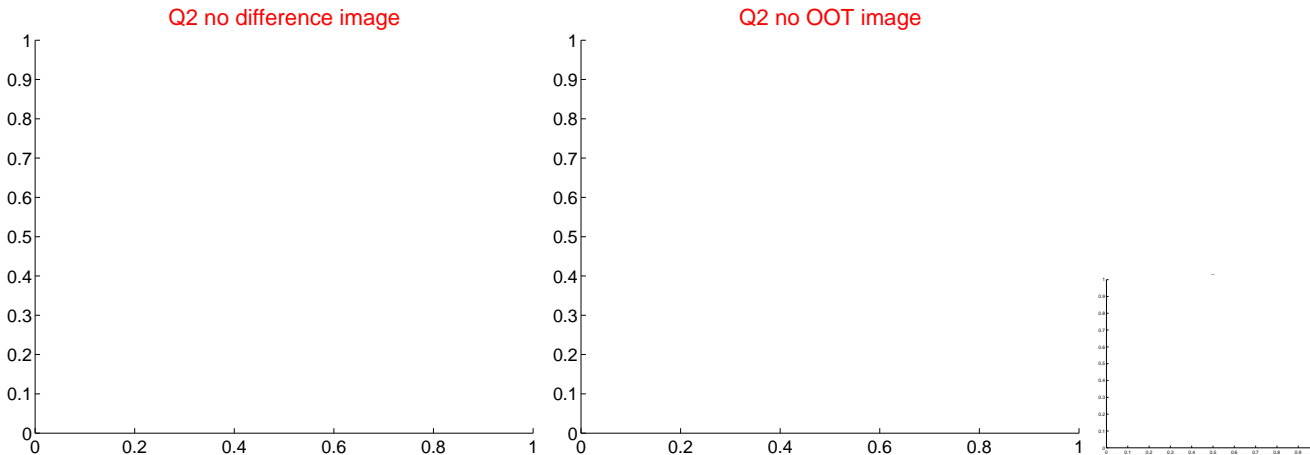
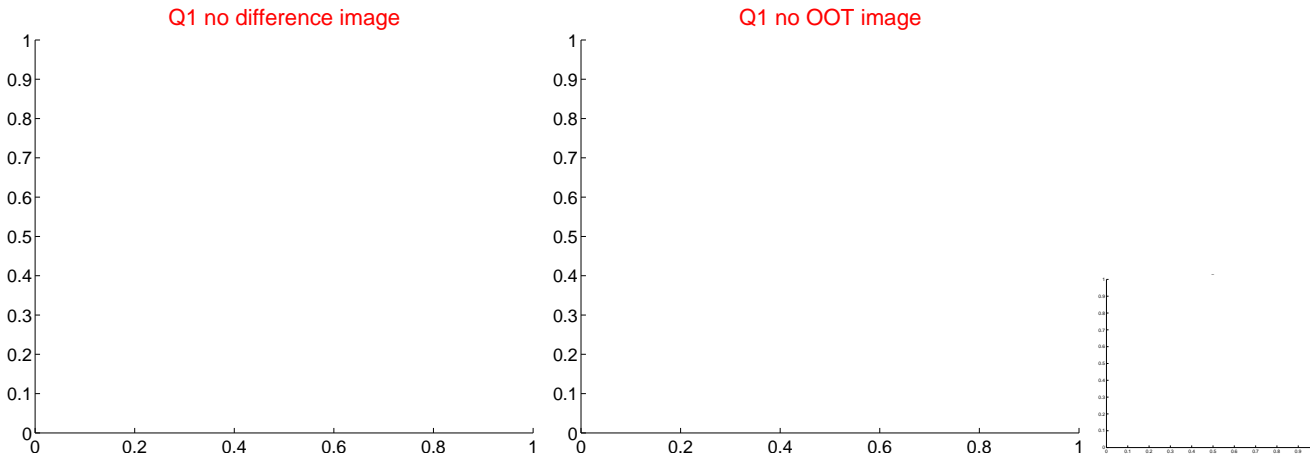
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.200 ± 2.151	1.95	-2.074 ± 0.706	-3.653 ± 2.440
PRF-fit source offset from KIC position	4.211 ± 2.305	1.83	-1.995 ± 0.773	-3.708 ± 2.207
photometric centroid source offset	1.74 ± 1.59	1.09	1.26 ± 1.67	-1.20 ± 1.51

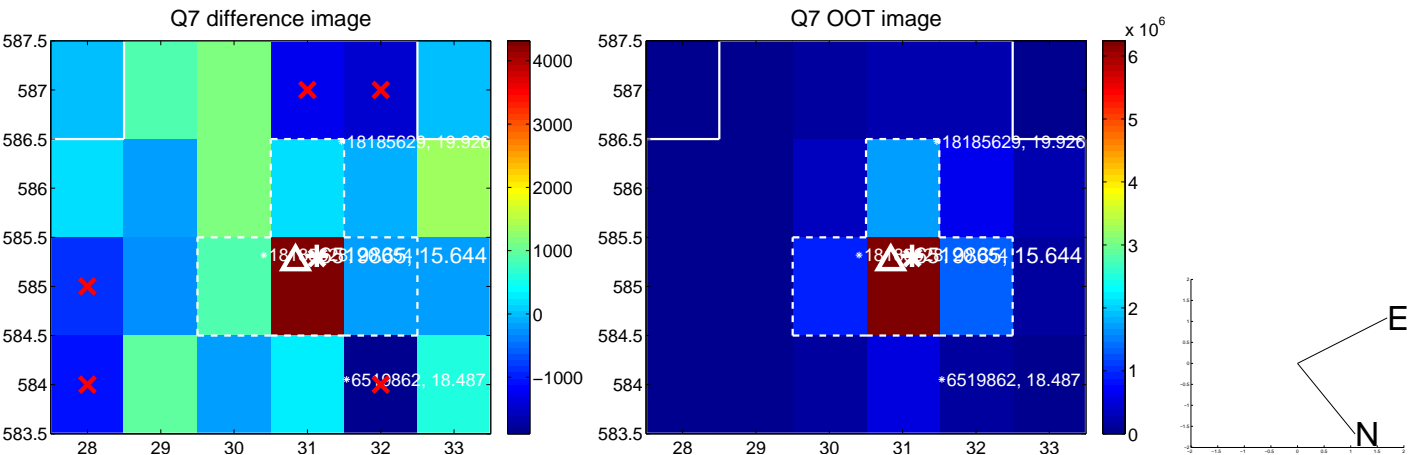
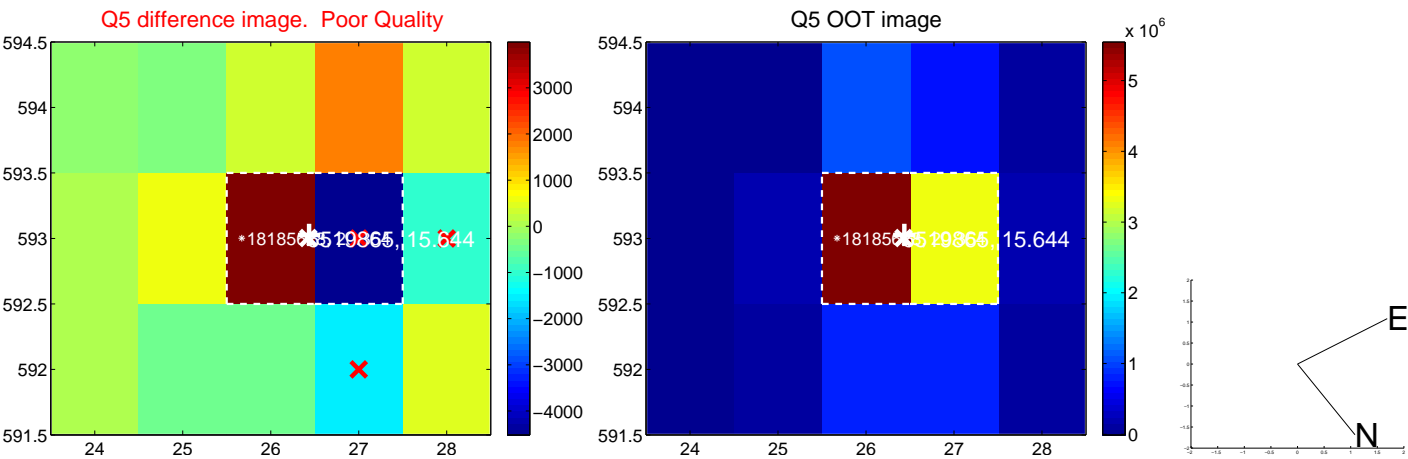


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

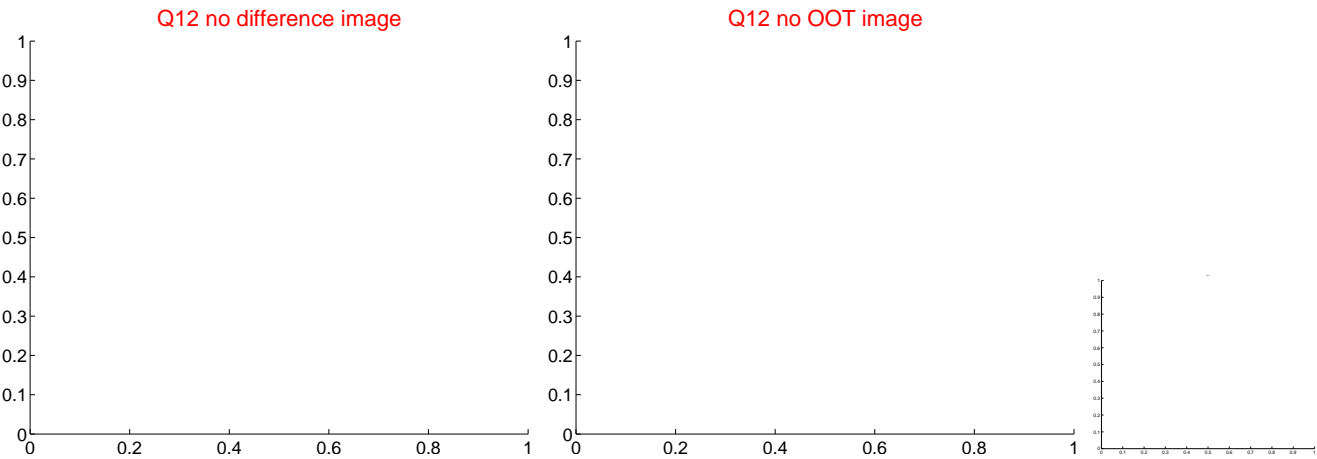
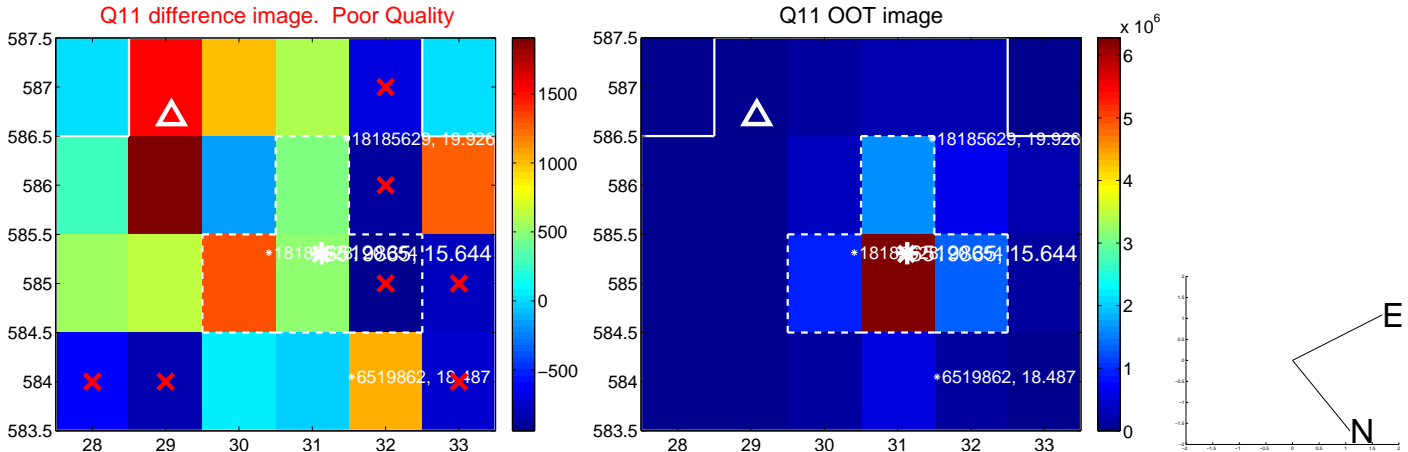
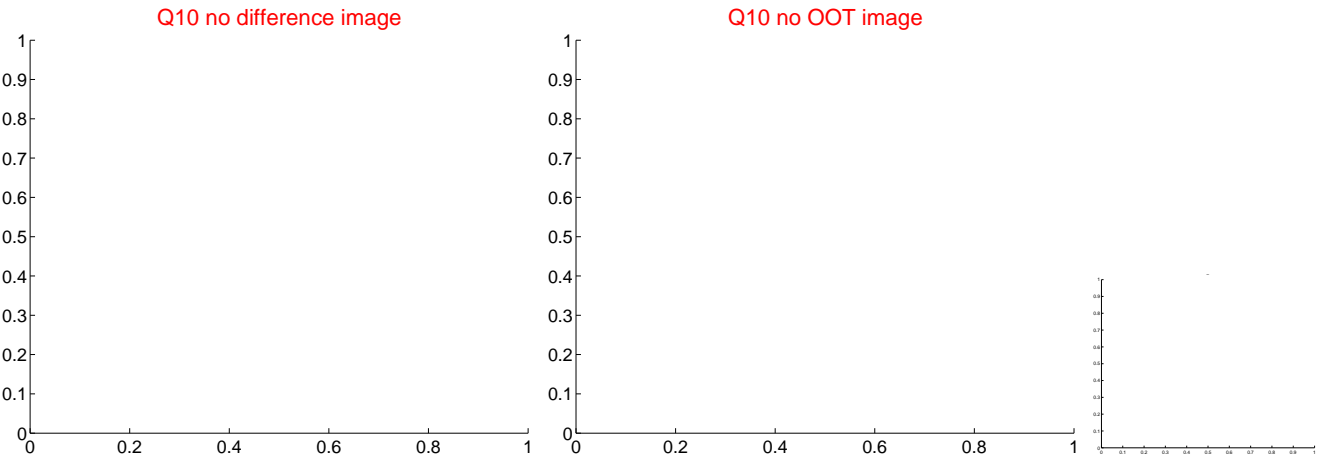
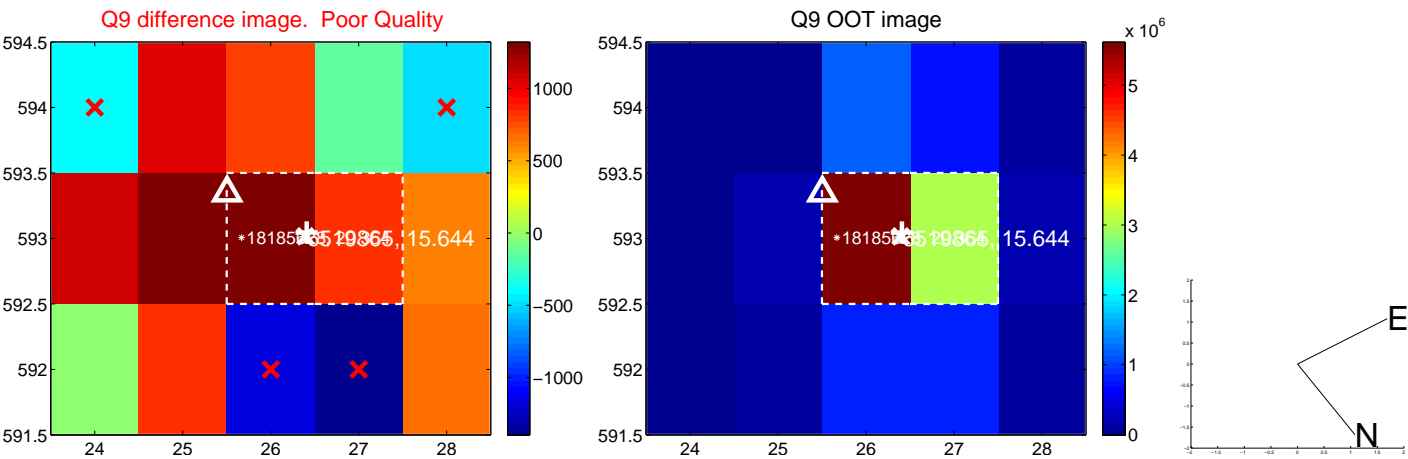
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



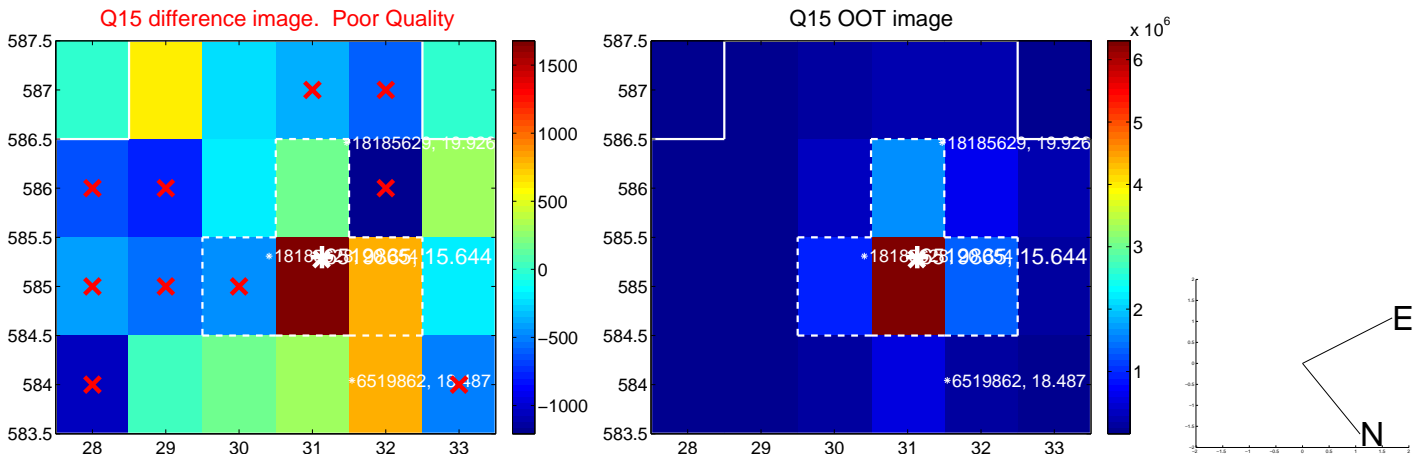
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



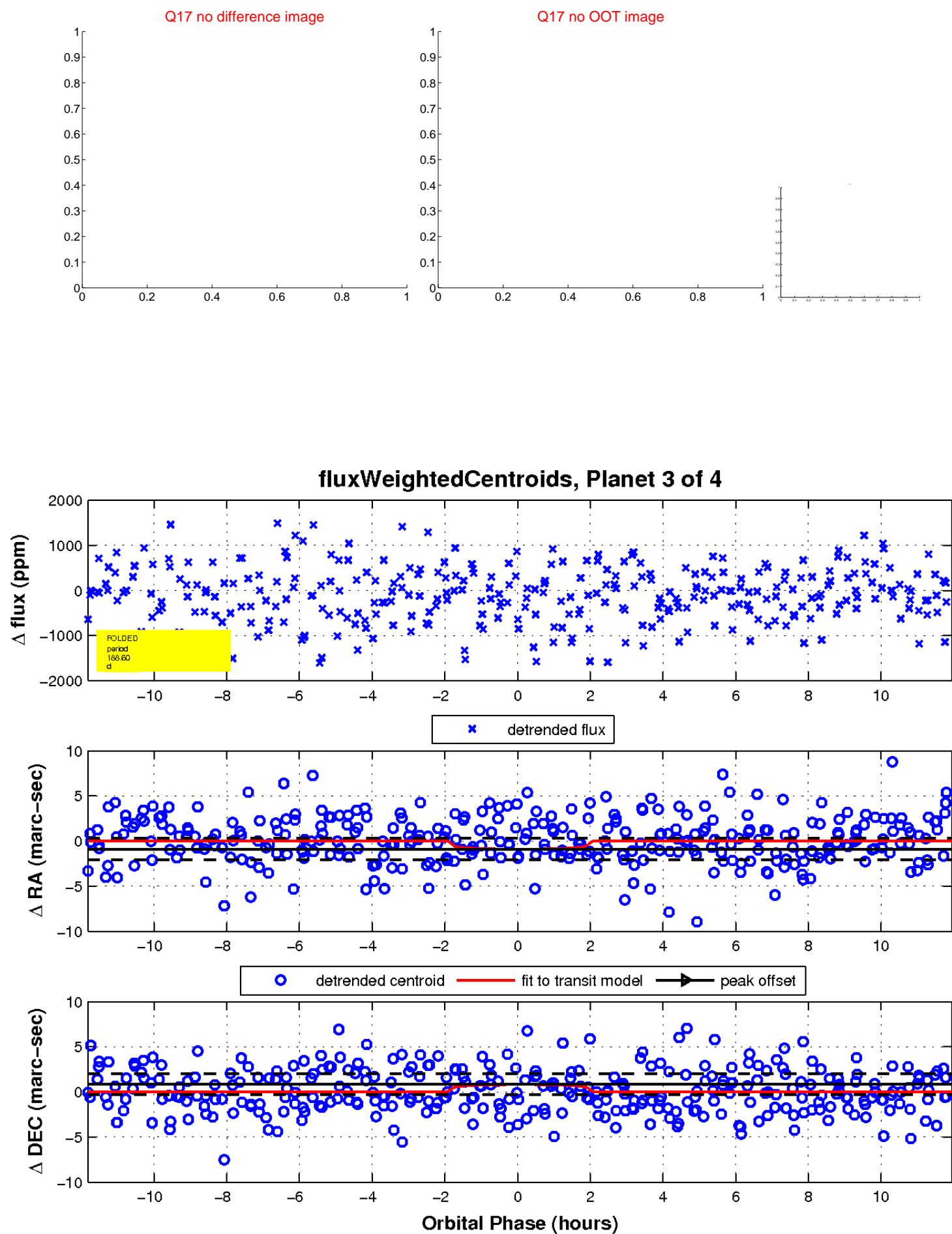
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

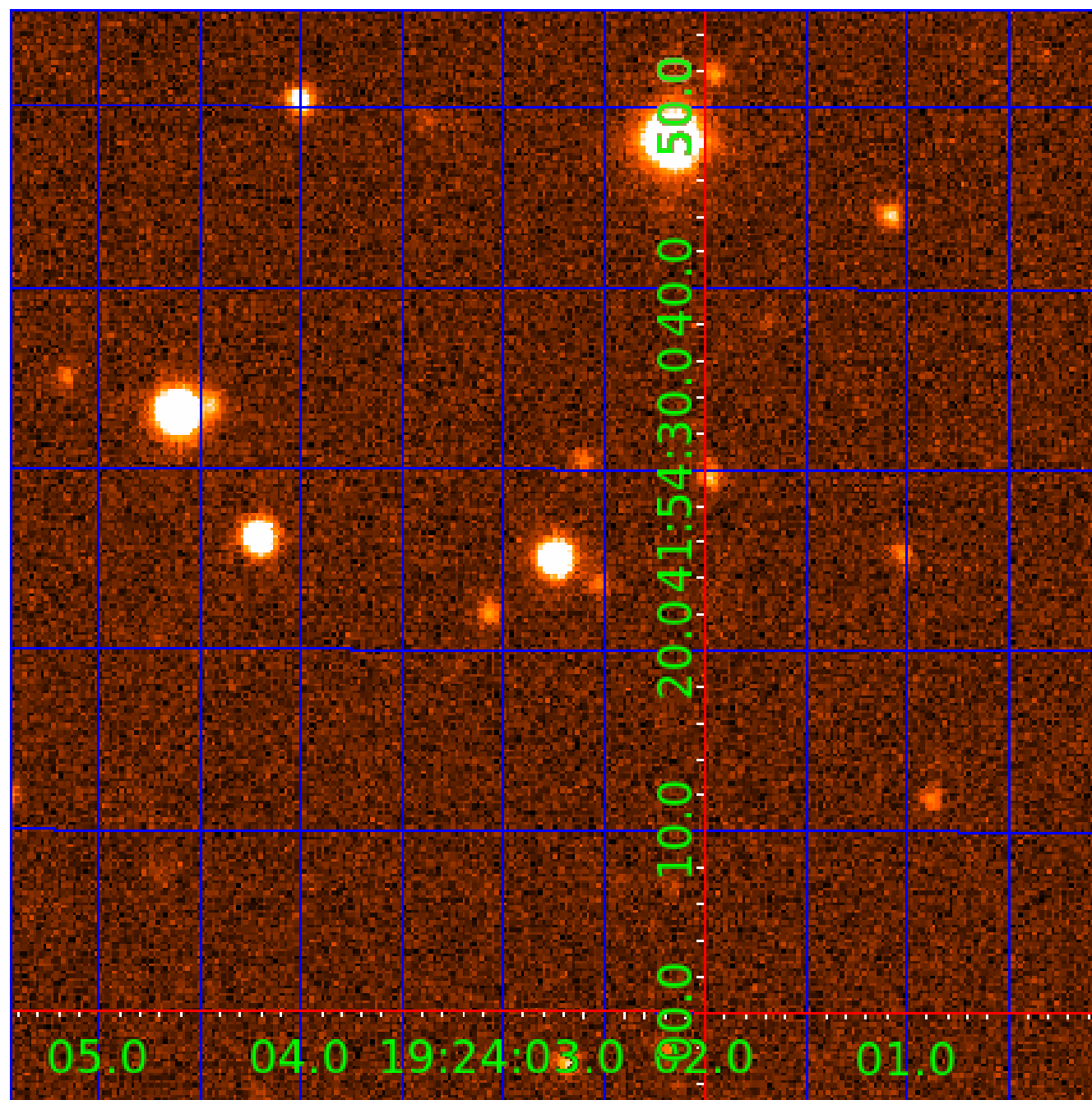


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006519865

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})
006519865-01	OBS	7782.01	0.566830	131.779787	57.0	2.467	8.0	8.9	0.97	6106	0.84	6280.15
006519865-02	OBS	No	170.118633	235.811078	704.4	0.729	8.7	2.1	0.97	6106	2.90	3.12
006519865-03	OBS	No	188.596718	142.849423	673.4	3.989	8.3	3.8	0.97	6106	2.65	2.72
006519865-04	OBS	No	126.608283	200.752887	861.2	10.896	8.2	6.6	0.97	6106	2.87	4.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006519865-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST
006519865-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006519865-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS— HALO_GHOST
006519865-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

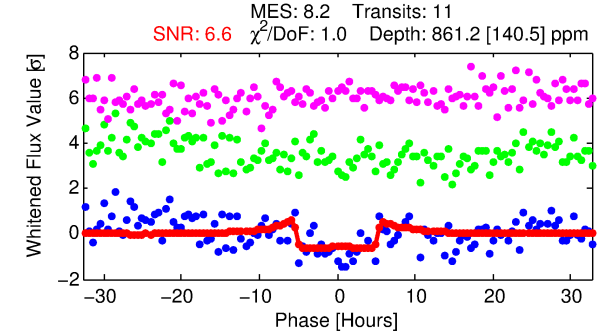
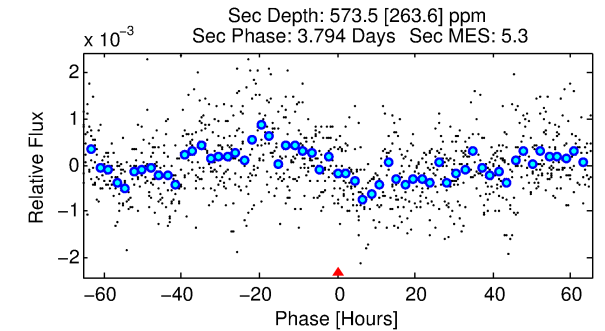
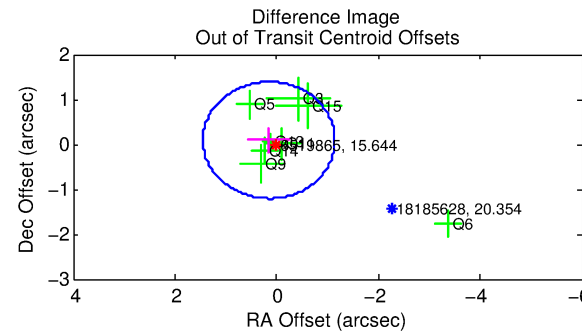
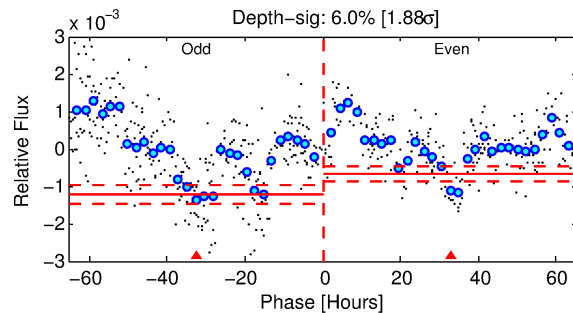
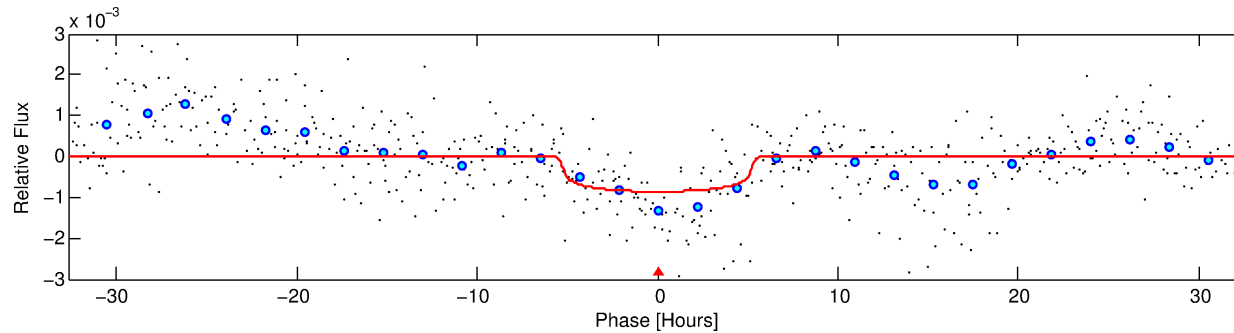
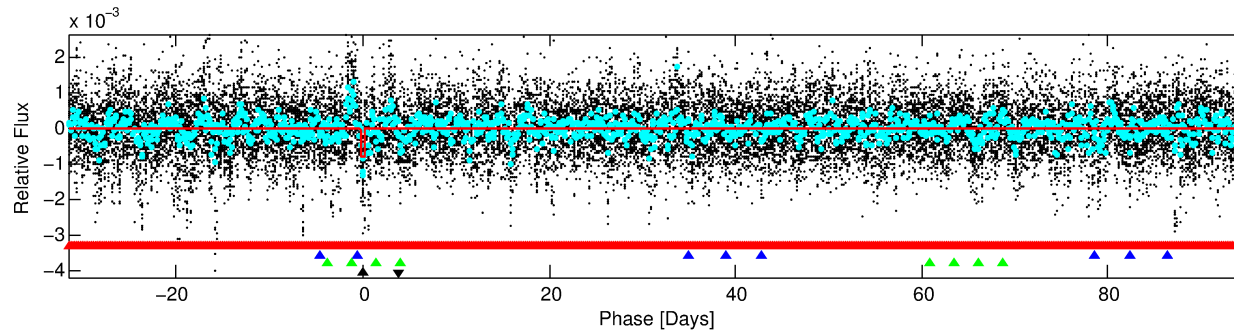
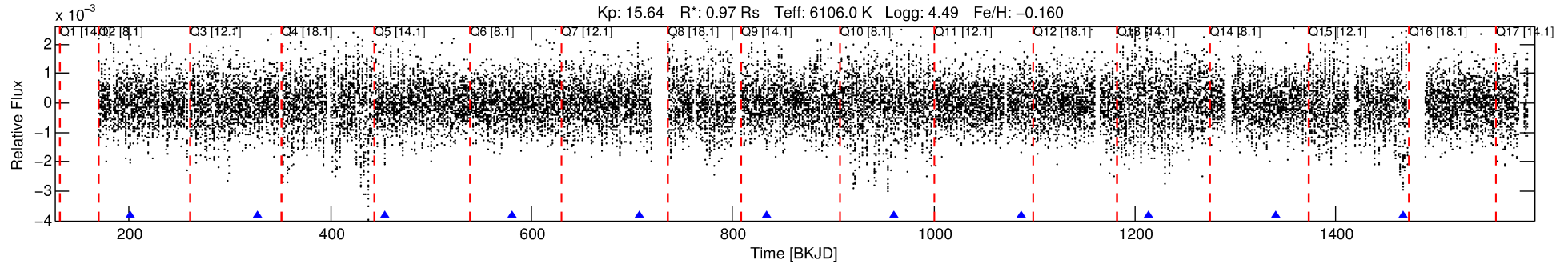
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006519865-04

No Significant Match Found

DV One-Page Summary

KIC: 6519865 Candidate: 4 of 4 Period: 126.608 d



DV Fit Results:

Period = 126.60828 [0.00217] d
Epoch = 200.7529 [0.0130] BKJD
Rp/R* = 0.0273 [0.0185]
a/R* = 85.07 [278.13]
b = 0.37 [7.67]
Seff = 4.63 [1.95]
Teq = 374 [39] K
Rp = 2.87 [2.15] Re
a = 0.5008 [0.1339] AU
Ag = 9589.65 [14227.25] [0.67σ]
Teffp = 5724 [2059] K [2.60σ]

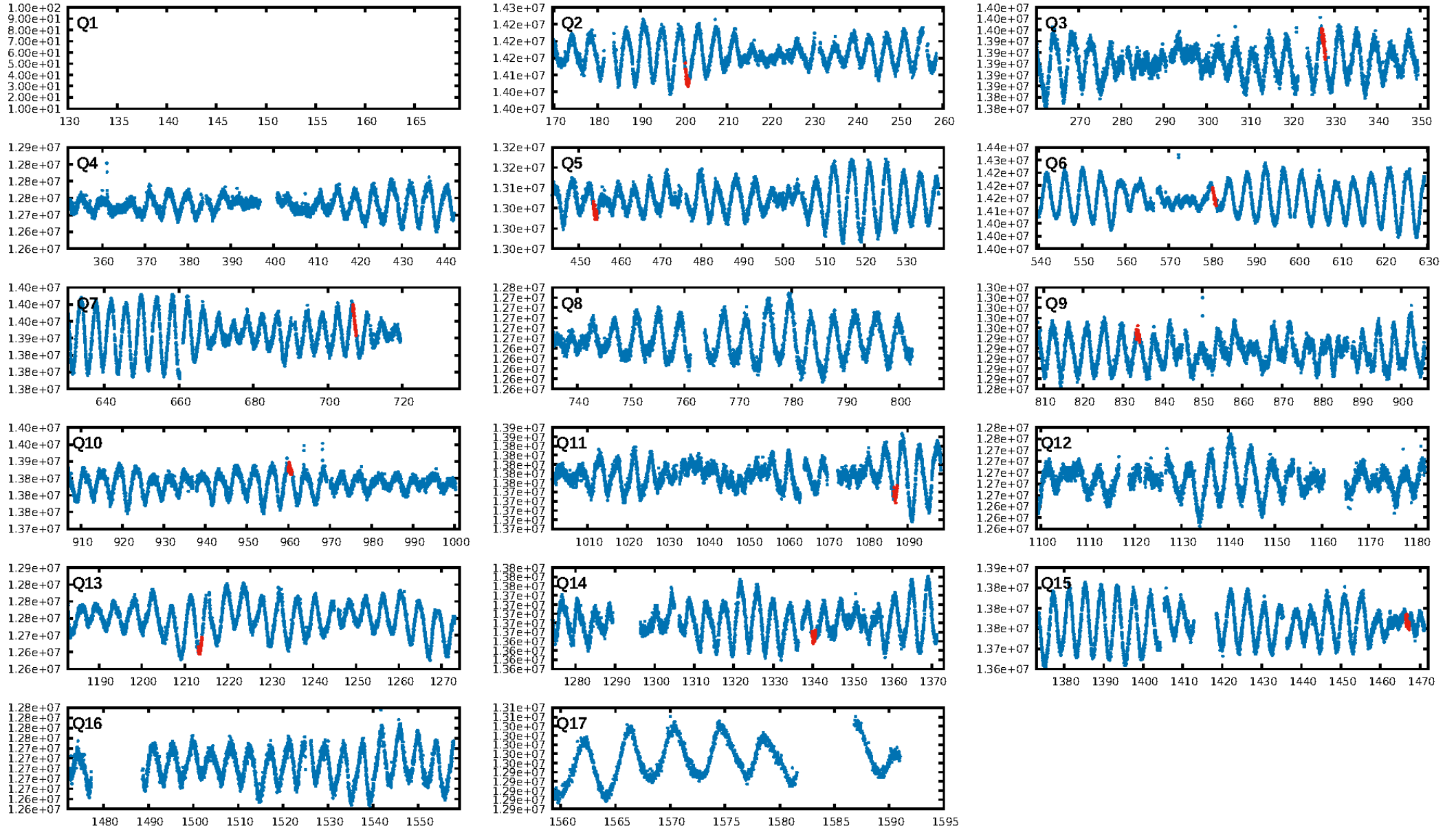
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [270.77σ]
LongPeriod-sig: 100.0% [95.63σ]
ModelChiSquare2-sig: 59.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.53e-10
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 5.446
Centroid-sig: 31.0%
Centroid-so: 0.561 arcsec [0.95σ]
OotOffset-rm: 0.176 arcsec [0.41σ]
KicOffset-rm: 0.250 arcsec [0.49σ]
OotOffset-st: 2/3/0/3 [8]
KicOffset-st: 2/3/0/3 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 0.00 [0/10]

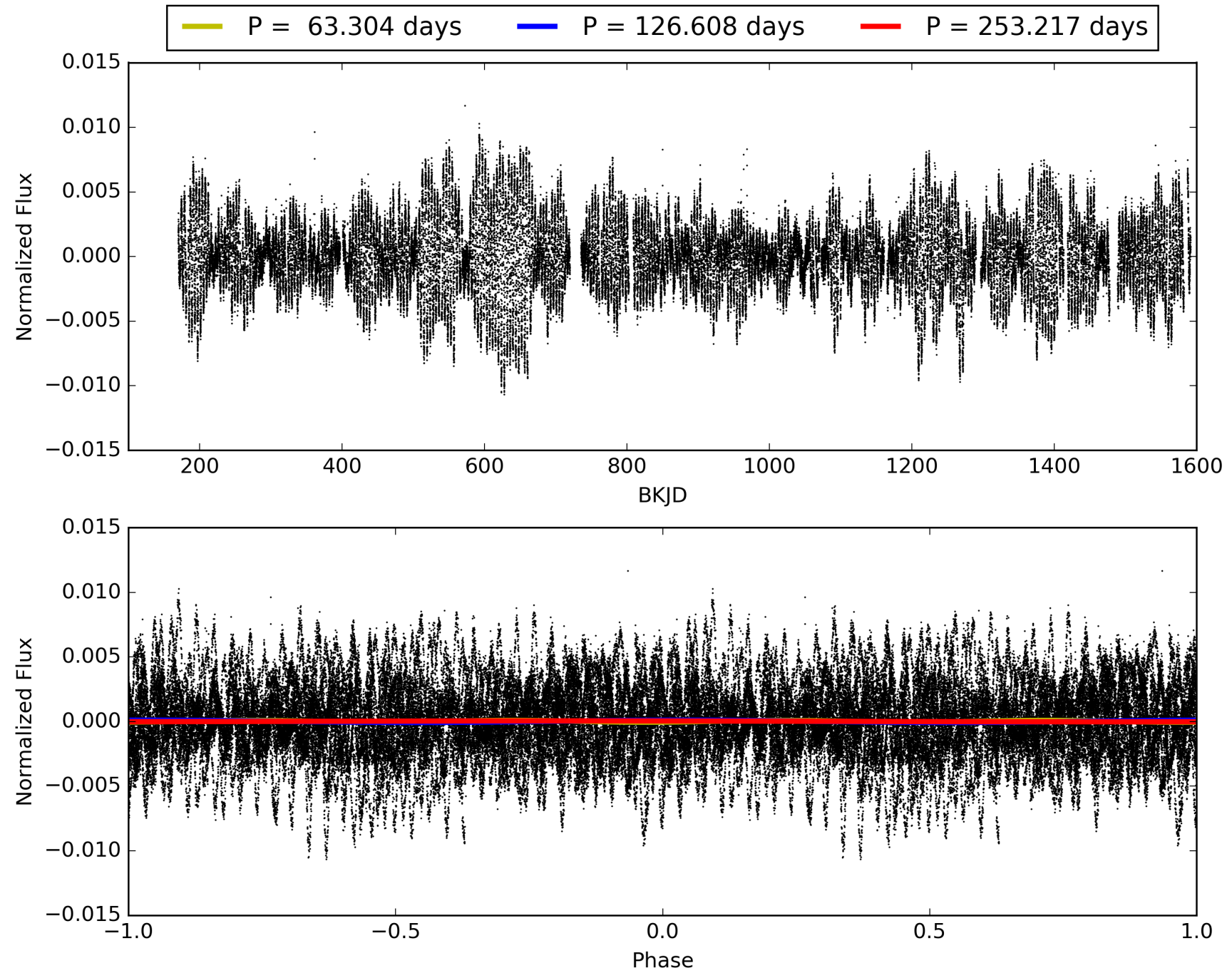
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:07:58 Z

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

TCE 006519865-04, PDC Light Curves

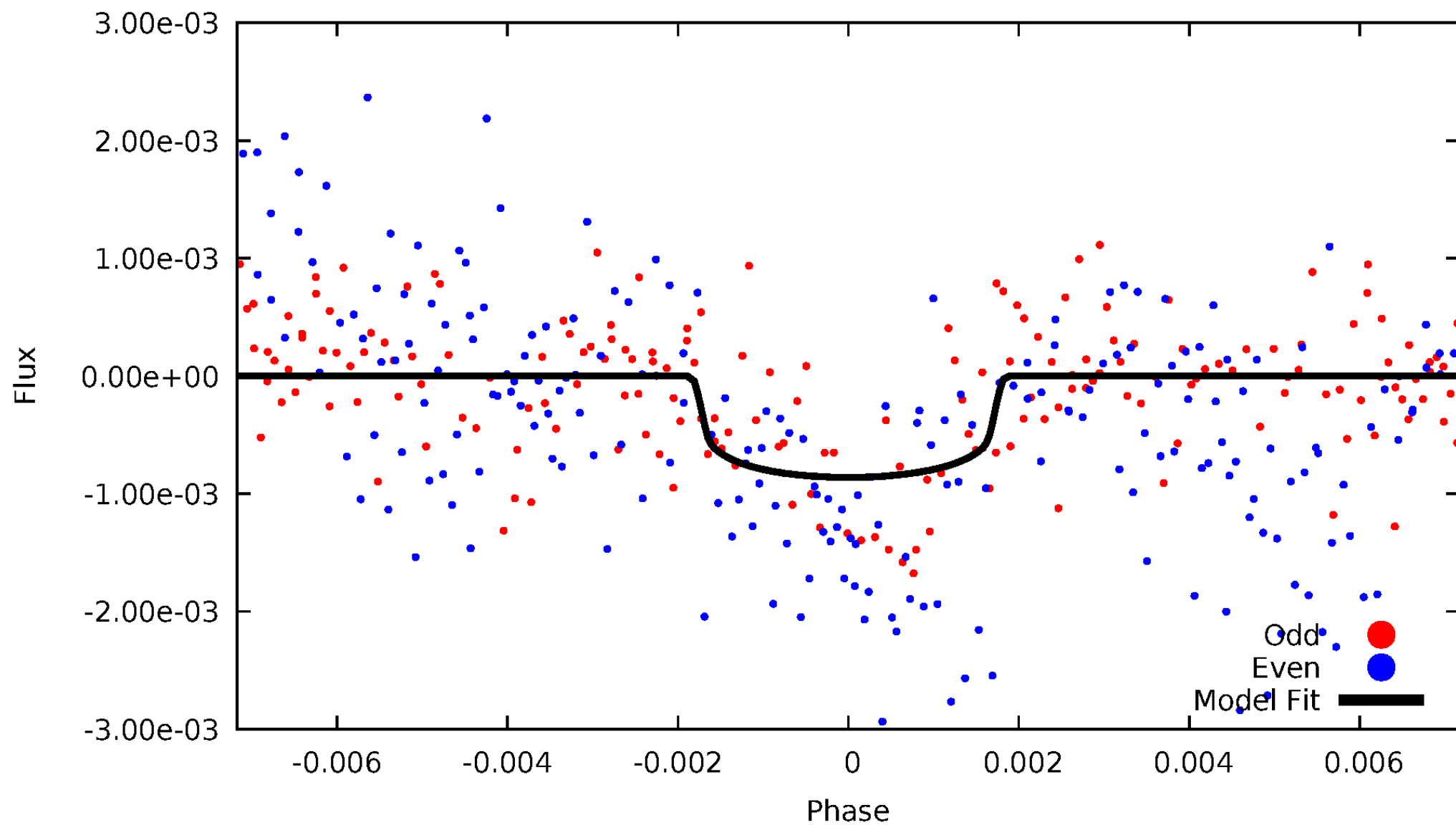


TCE 006519865-04



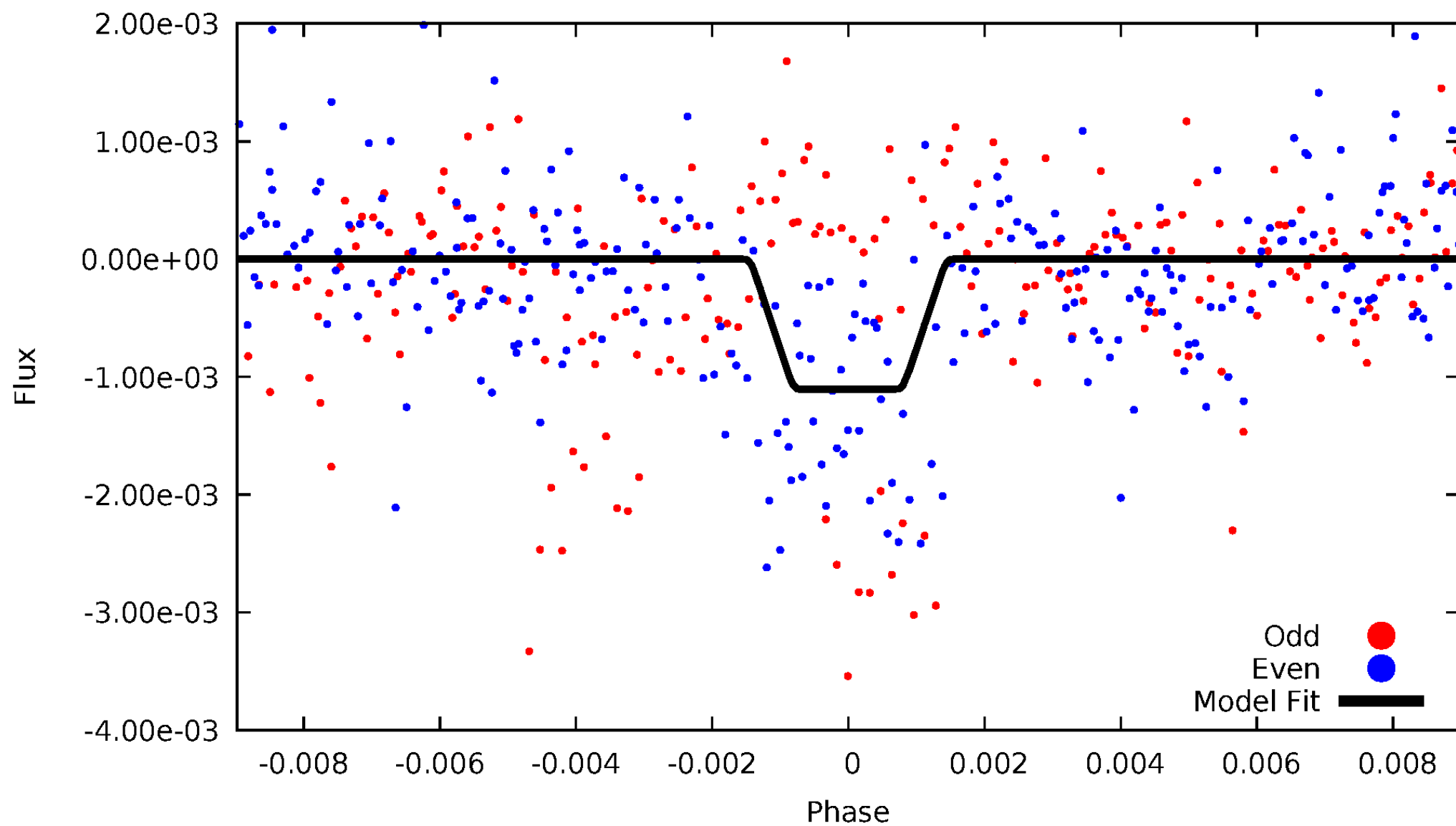
DV Odd/Even

TCE 006519865-04



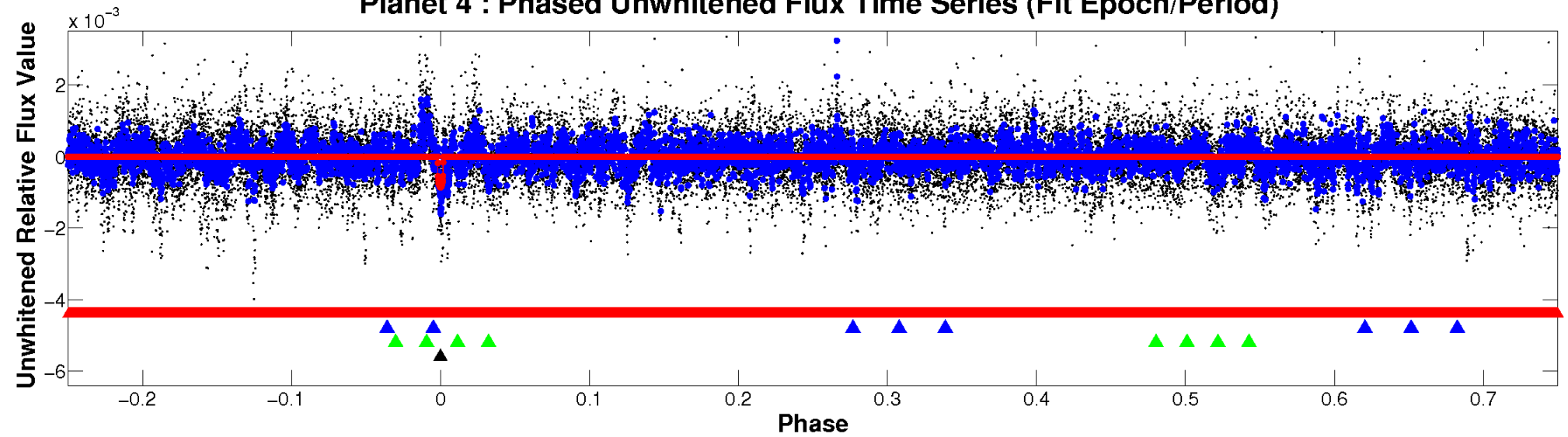
ALT Odd/Even

TCE 006519865-04

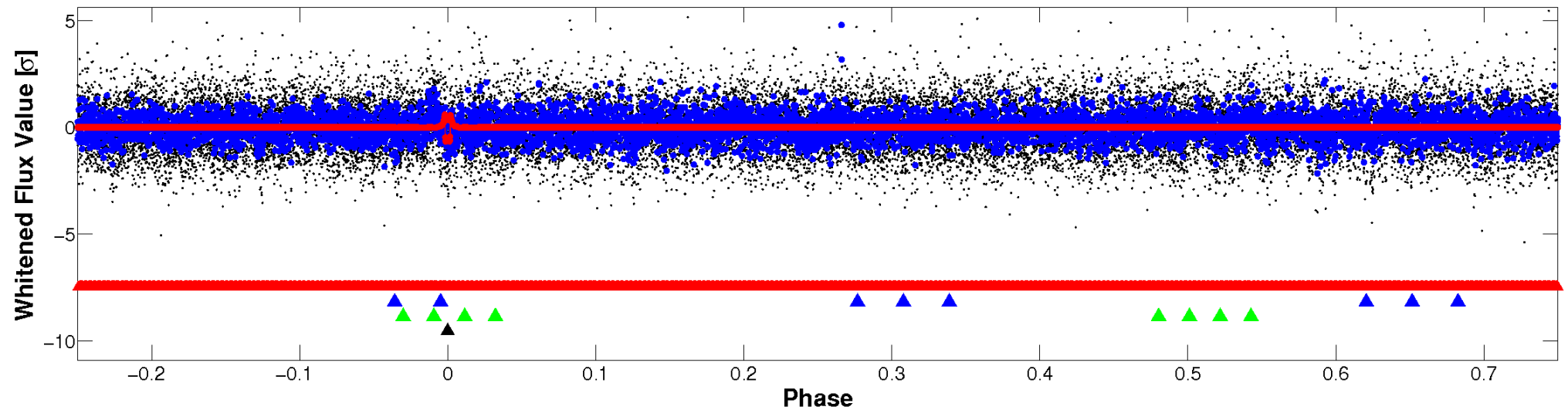


Non-Whitened Vs. Whitened Light Curve

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

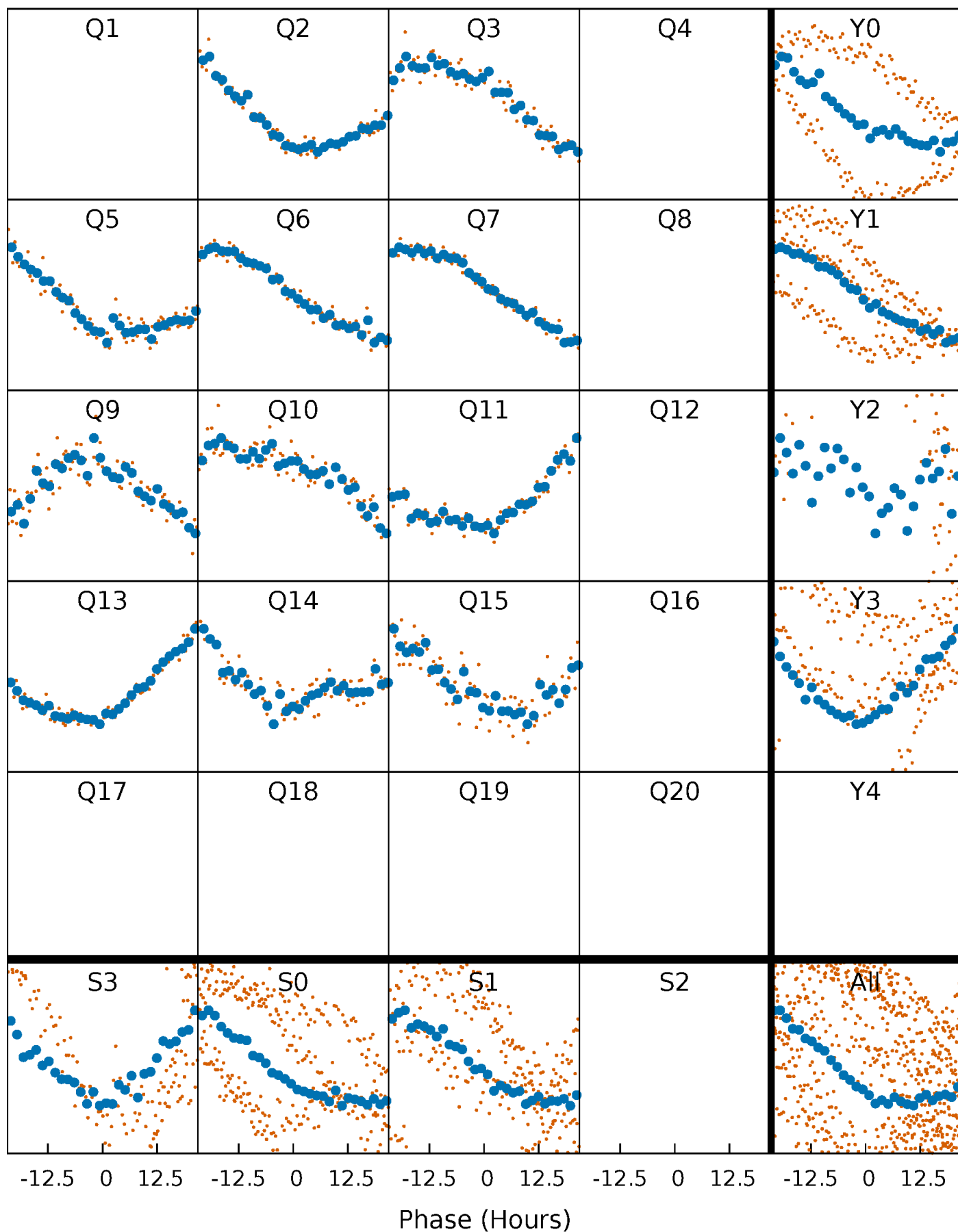


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



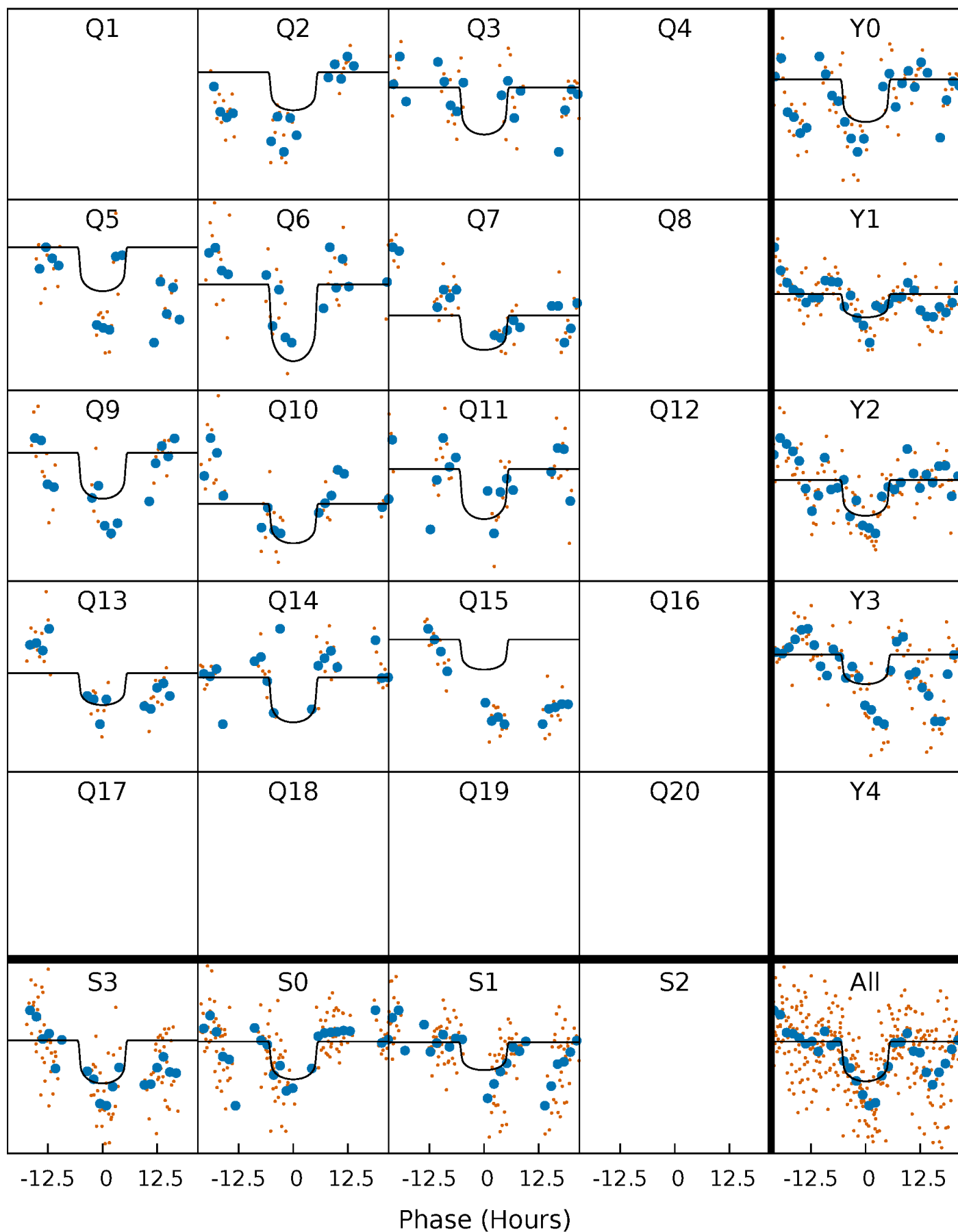
PDC Quarter-Phased Transit Curves

TCE 006519865-04 P=126.608283 Days $T_0=200.752887$ (BKJD)



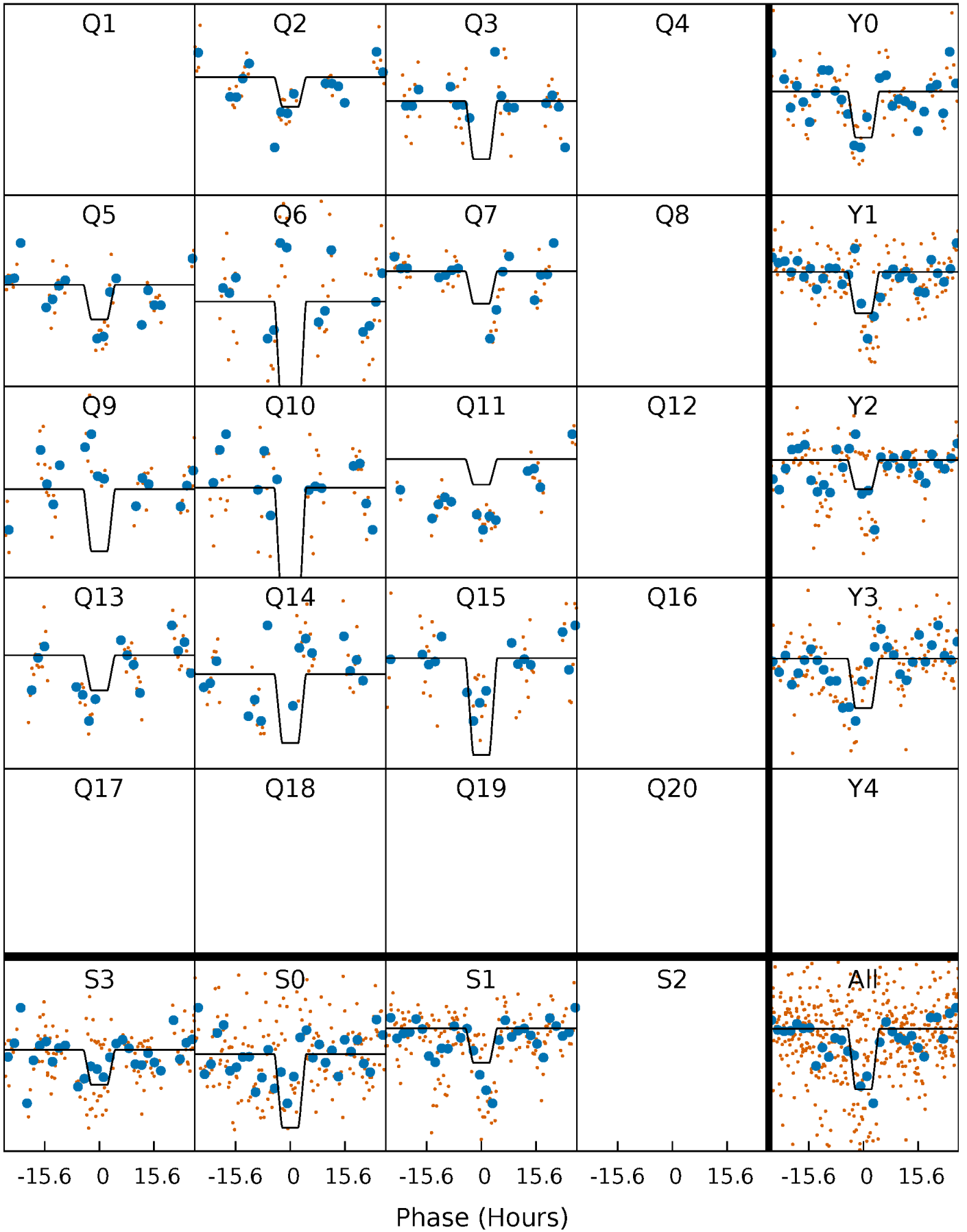
DV Quarter-Phased Transit Curves

TCE 006519865-04 P=126.608283 Days $T_0=200.752887$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

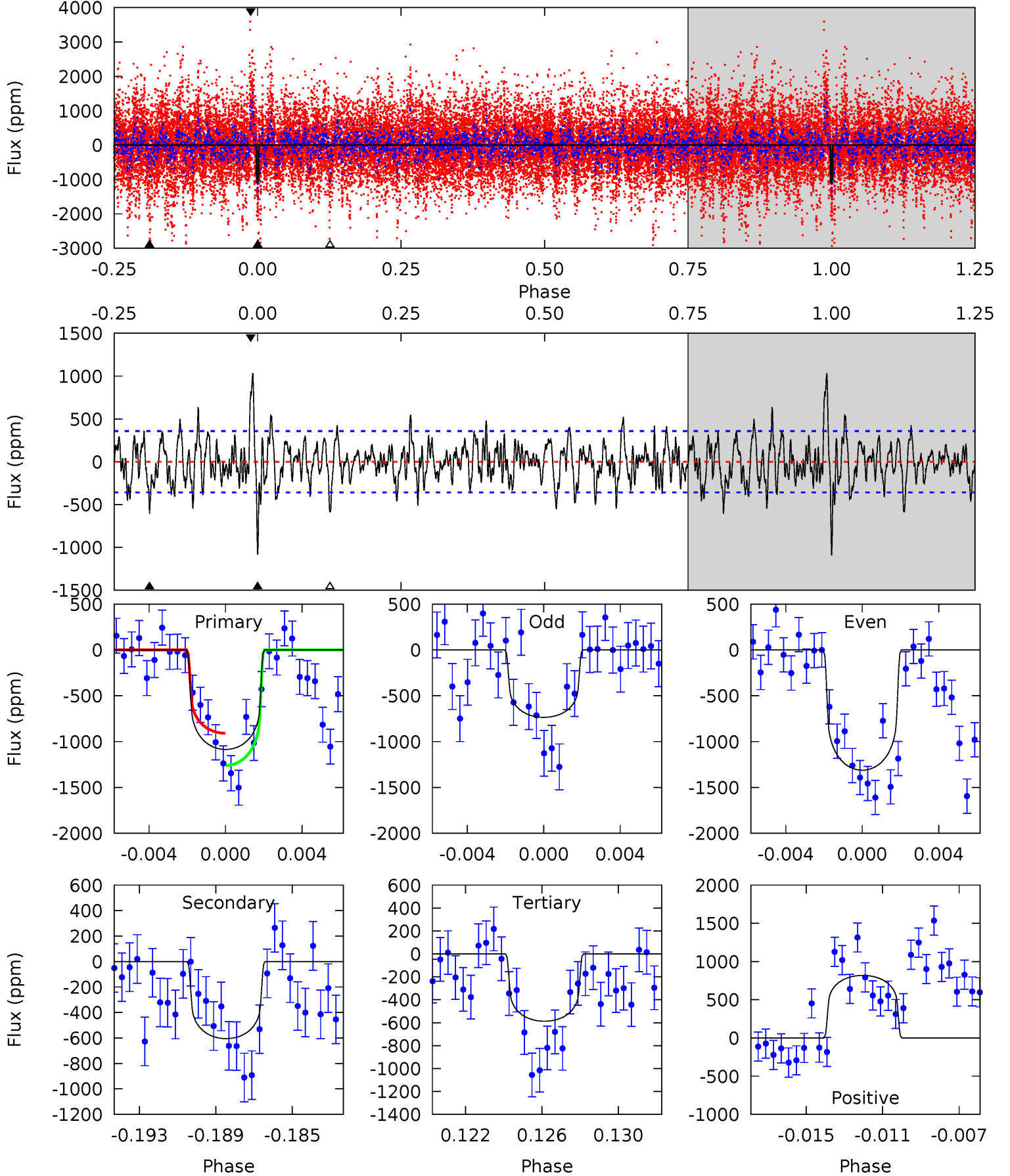
TCE 006519865-04 P=126.631118 Days $T_0=200.690852$ (BKJD)



DV Model-Shift Uniqueness Test

006519865-04, P = 126.608283 Days, E = 74.144604 Days

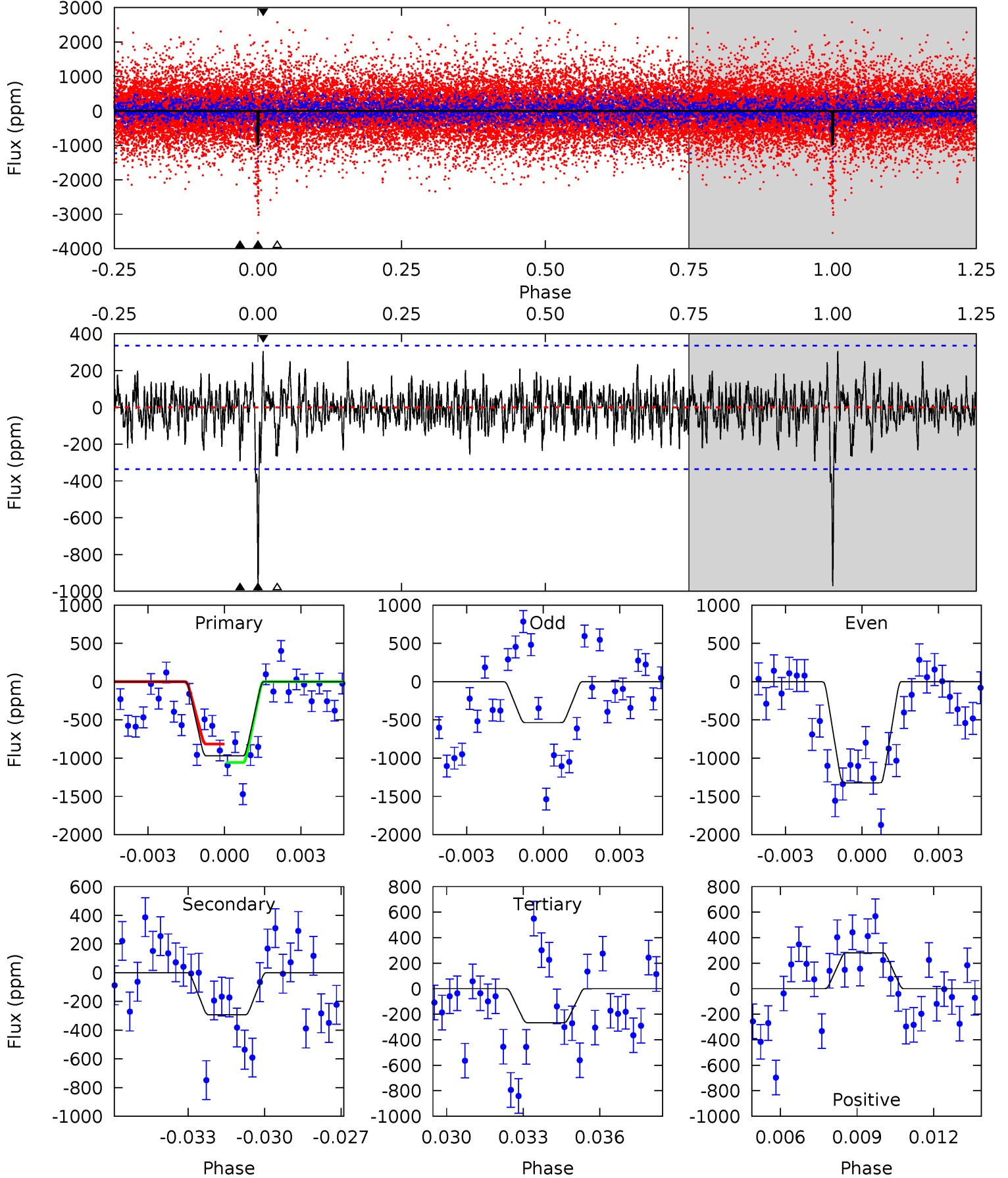
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	8.79	8.53	11.9	5.21	2.90	3.01	7.24	3.88	0.26	-3.10	4.16	1.28	0.49	2.55



Alt Model-Shift Uniqueness Test

006519865-04, P = 126.631118 Days, E = 74.059734 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	4.58	4.17	4.41	5.25	2.97	1.34	11.0	10.8	0.41	0.17	6.07	1.30	0.24	1.87



Stellar Parameters For KIC 006519865

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6106^{+169}_{-232}	$4.487^{+0.054}_{-0.216}$	$-0.160^{+0.300}_{-0.300}$	$0.966^{+0.304}_{-0.101}$	$1.043^{+0.140}_{-0.140}$	$1.631^{+0.459}_{-0.848}$
	+3%/-4%	+1%/-5%	+188%/-188%	+31%/-10%	+13%/-13%	+28%/-52%
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 006519865-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-605 ± 69	$3.12^{+2.06}_{-1.62}$	533^{+45}_{-28}	5697^{+2707}_{-1155}	8492^{+27549}_{-5506}
Alt.	-293 ± 64	$3.63^{+2.32}_{-1.70}$	535^{+41}_{-28}	4538^{+1605}_{-733}	2789^{+8343}_{-1727}

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 $A_{obs} \gg 1.0$

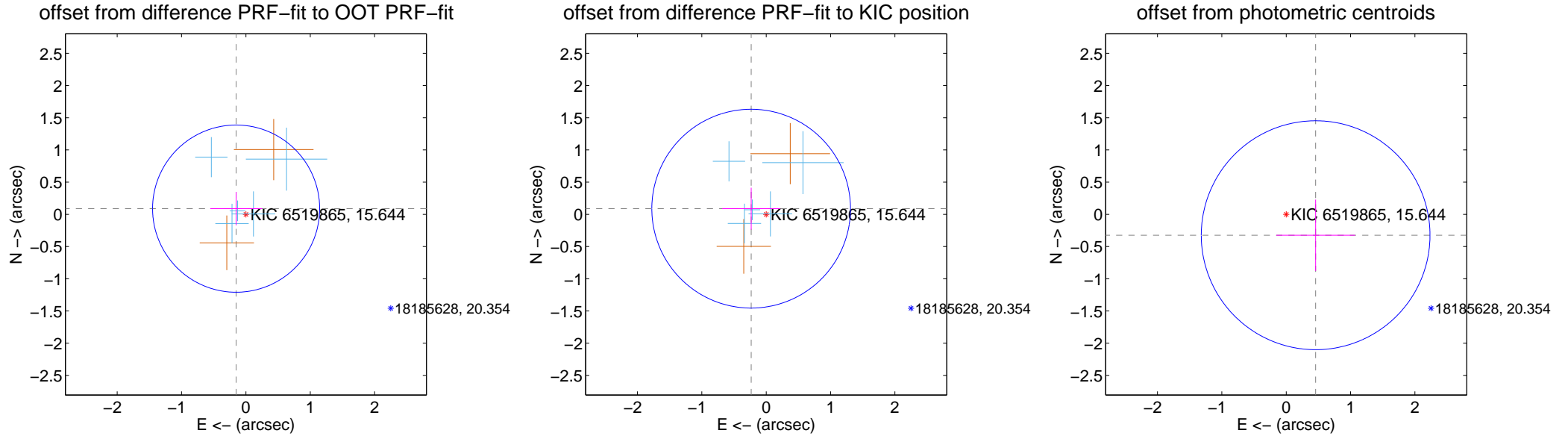
DV Centroid Data

Supplemental centroid analysis for 006519865-04. Kepler magnitude: 15.64. Transit SNR 6.64

There are 6 quarters with good PRF difference image offsets

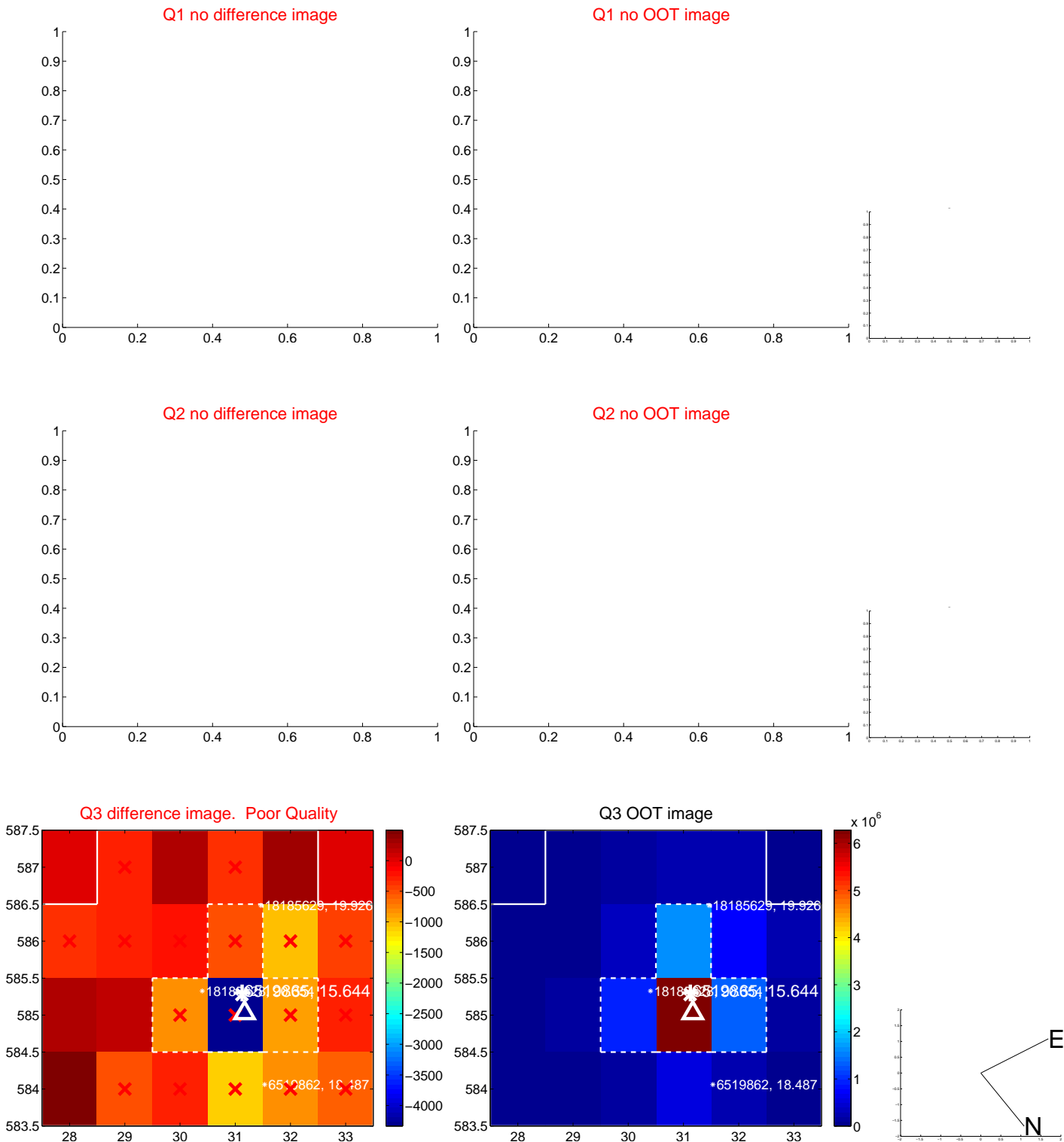
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.176 ± 0.433	0.41	0.152 ± 0.403	0.089 ± 0.259
PRF-fit source offset from KIC position	0.250 ± 0.515	0.49	0.234 ± 0.451	0.088 ± 0.325
photometric centroid source offset	0.56 ± 0.59	0.95	-0.46 ± 0.61	-0.32 ± 0.55

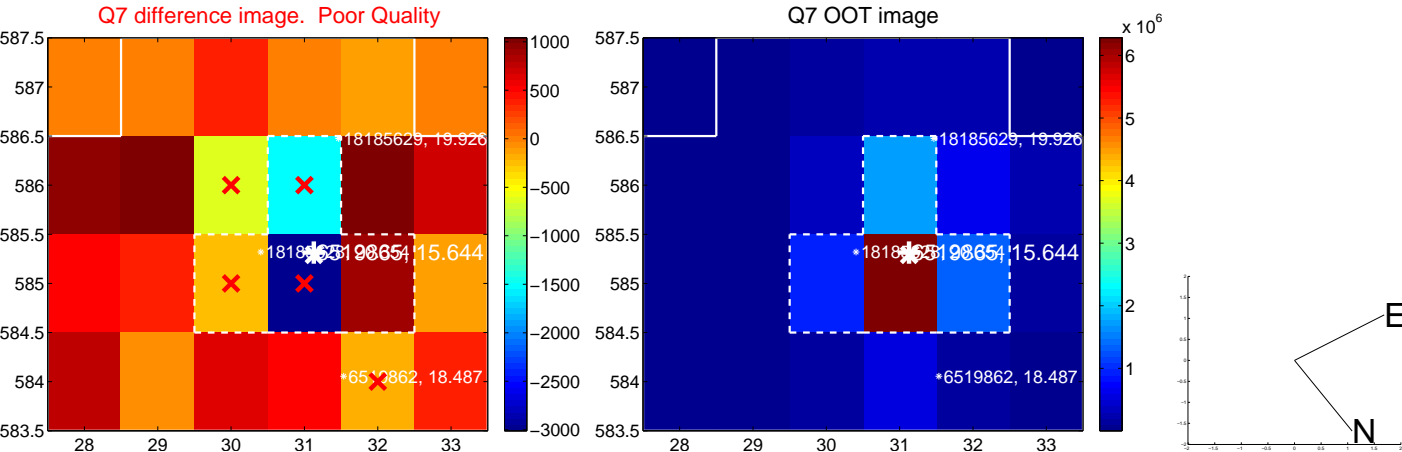
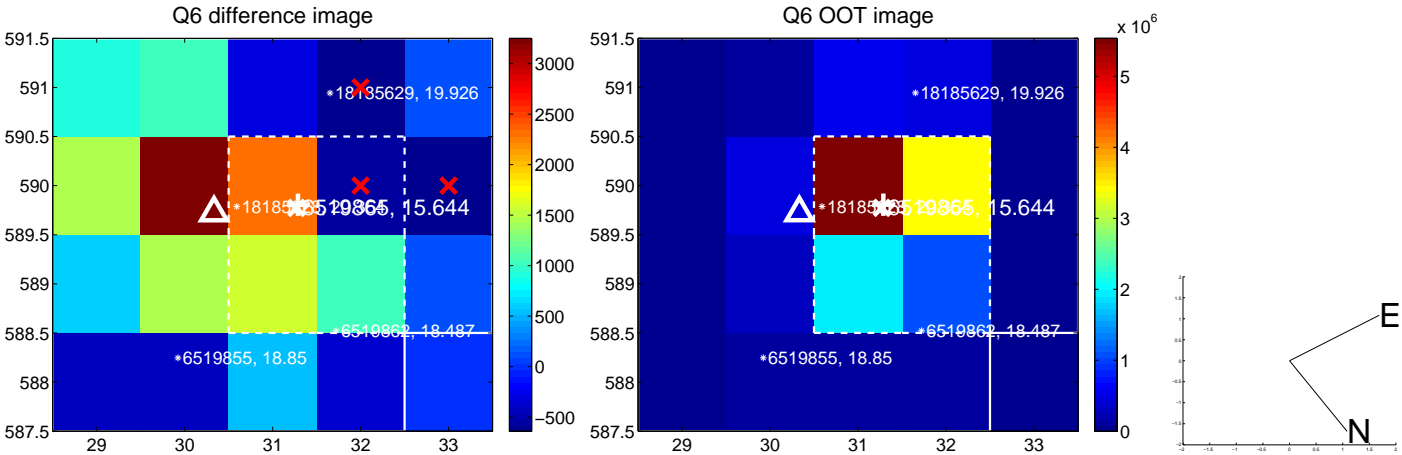
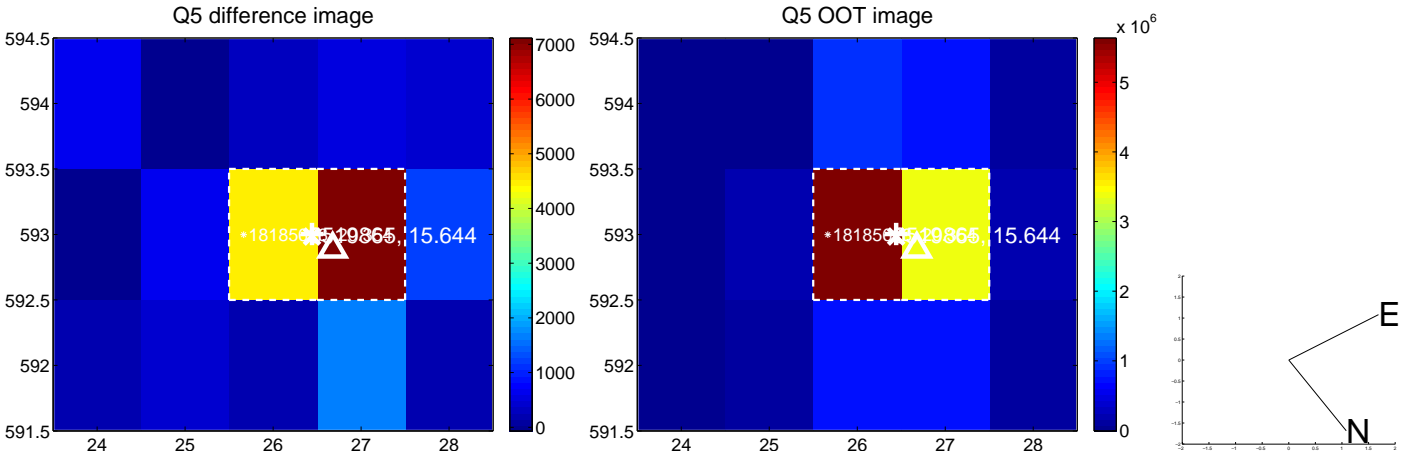


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

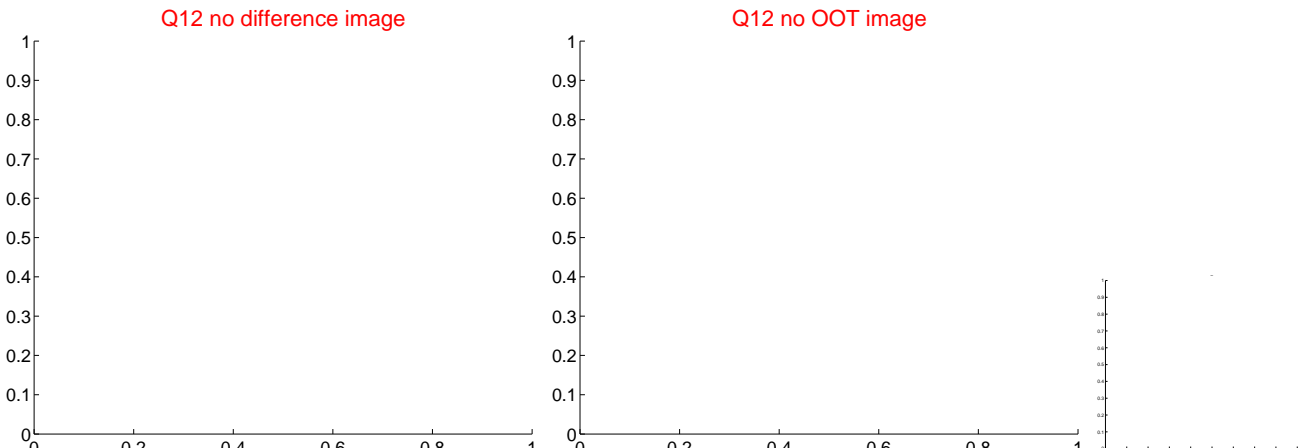
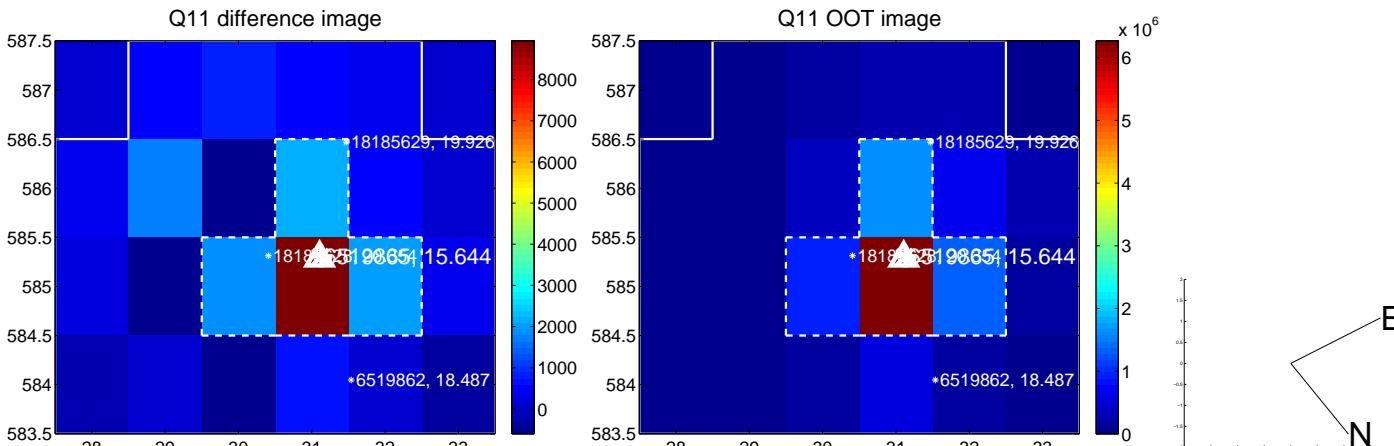
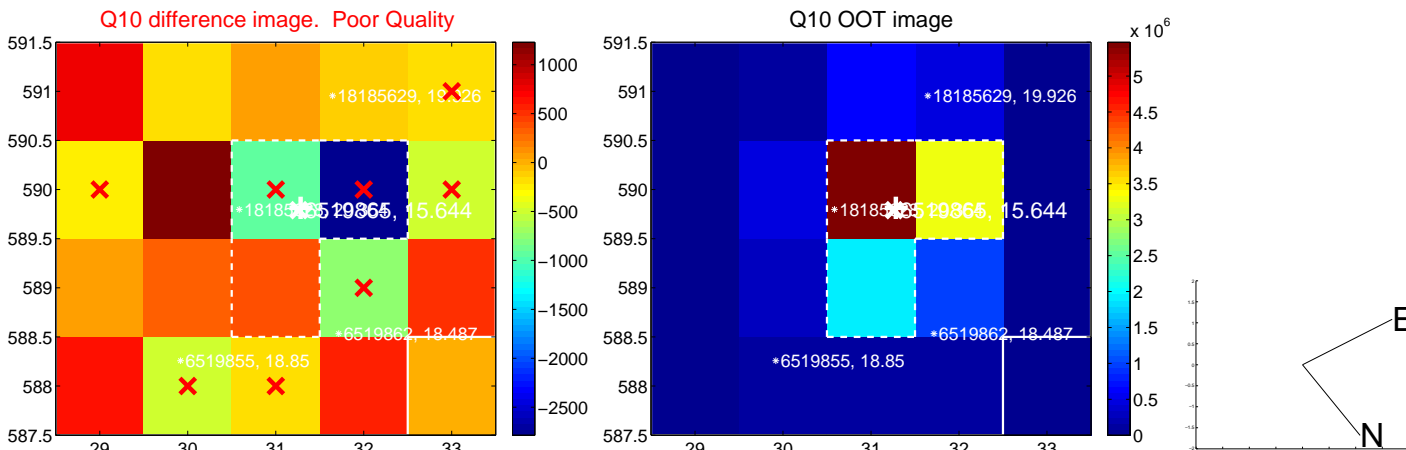
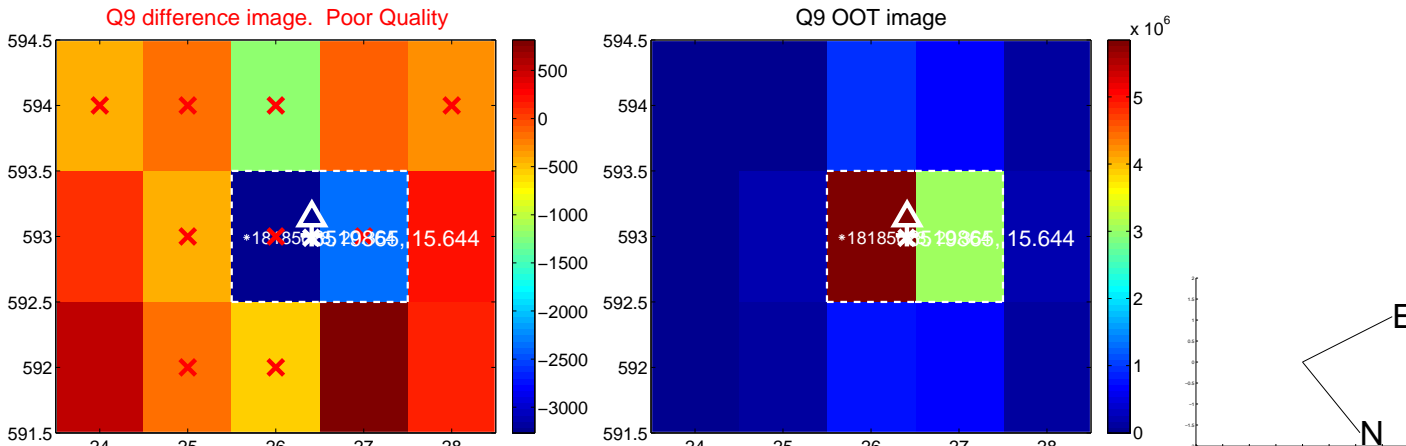
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



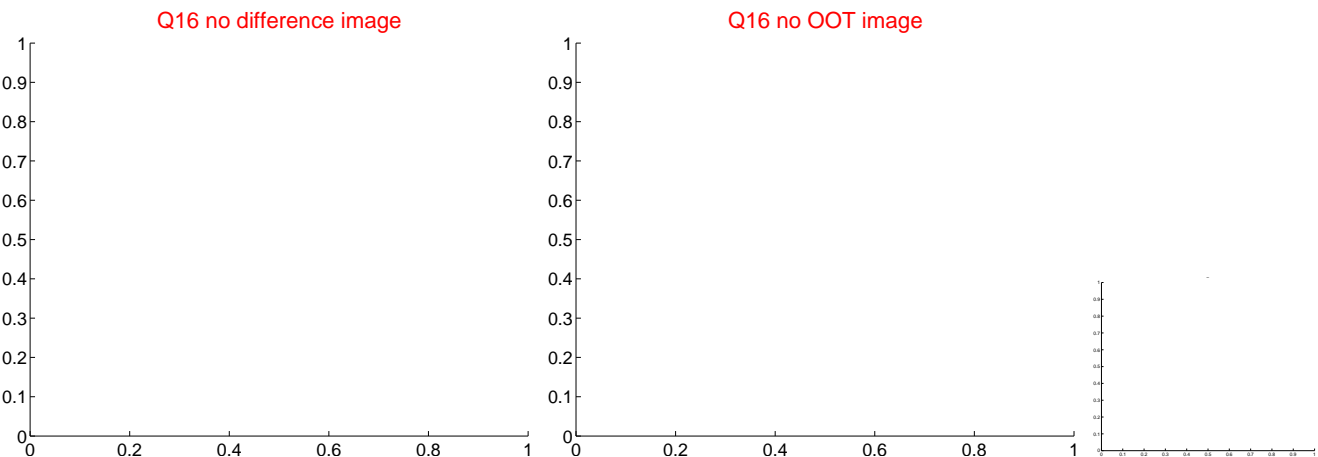
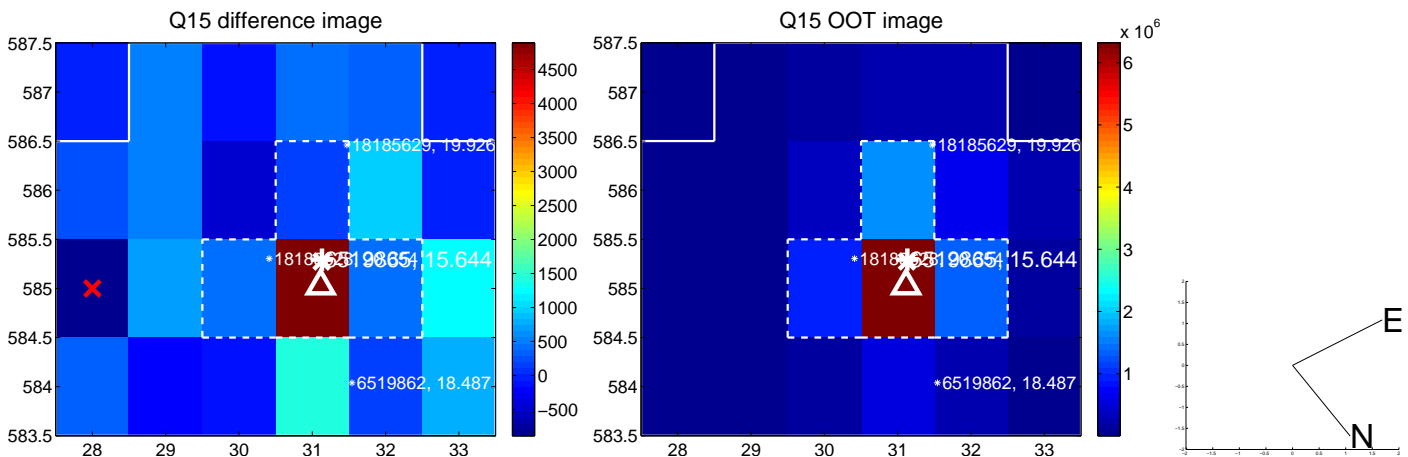
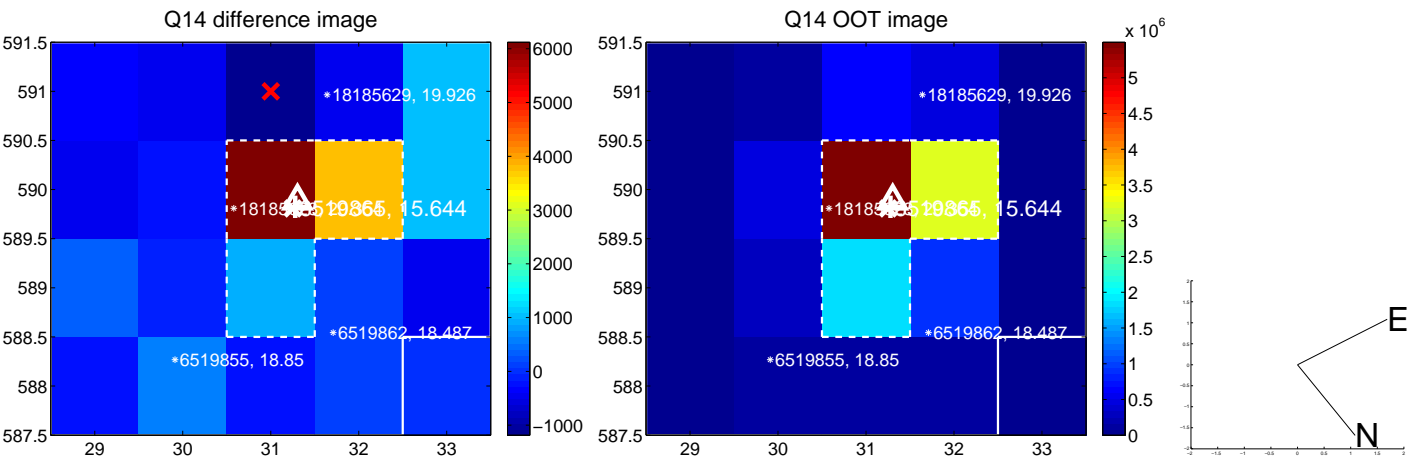
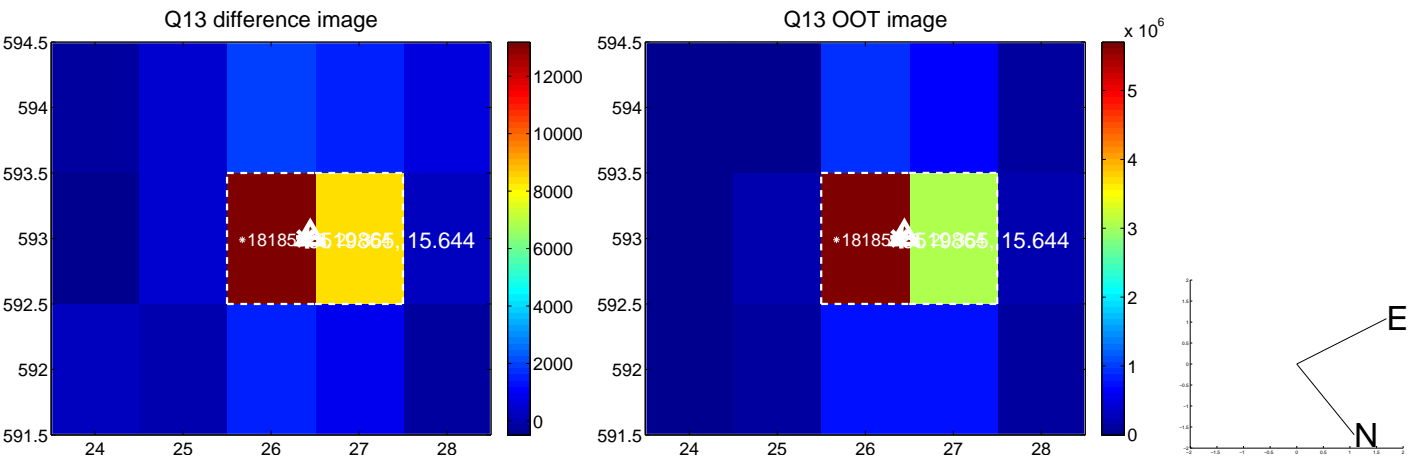
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



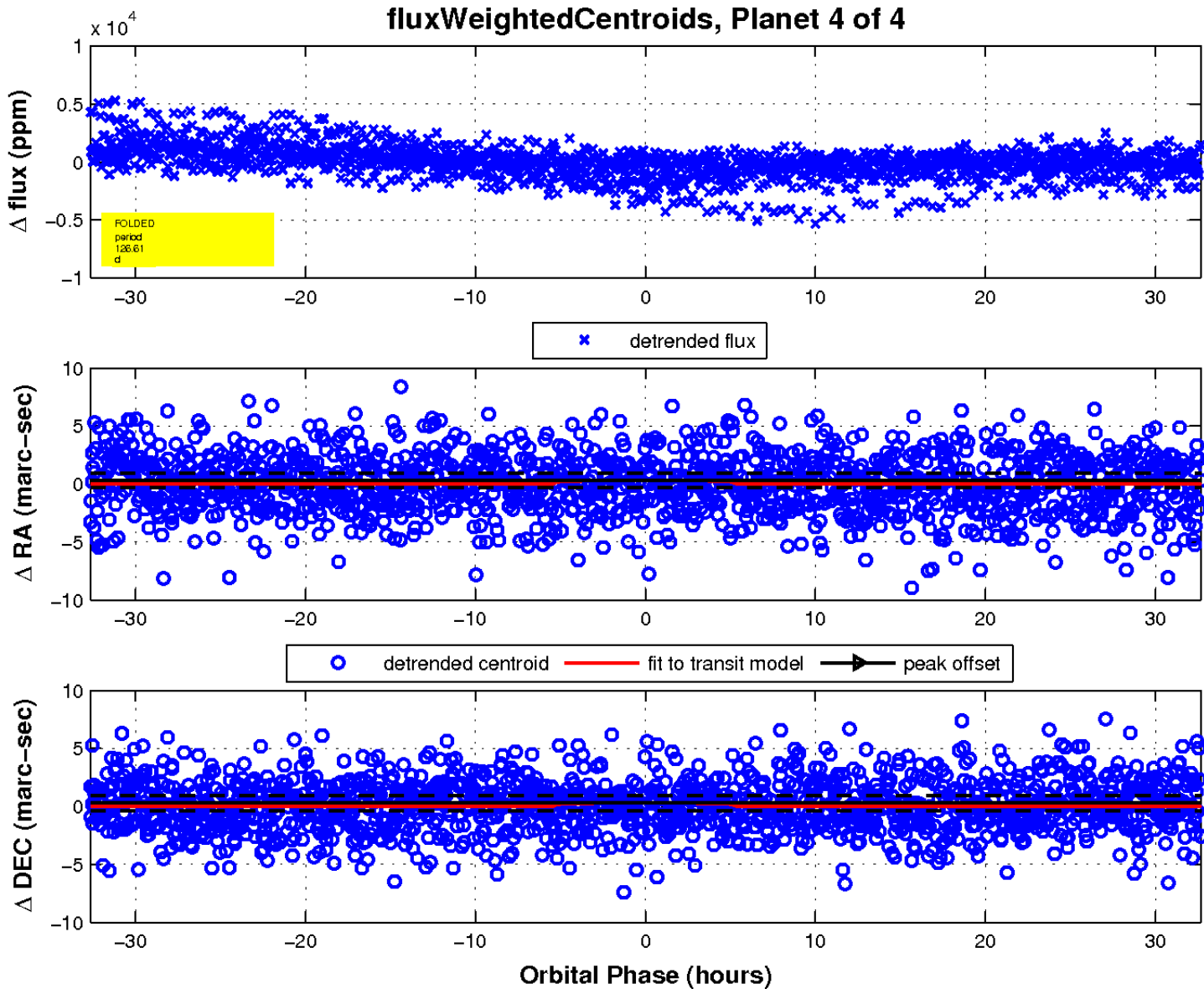
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination

