

KIC 005530963

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})
005530963-01	OBS	No	1.080265	132.615791	40.7	7.525	7.8	9.5	7.09	6809	5.26	0.00
005530963-03	OBS	No	36.851619	162.904611	512.0	6.972	18.7	11.7	7.09	6809	19.65	1085.61
005530963-04	OBS	No	31.284956	141.366740	160.5	11.099	15.4	5.6	7.09	6809	10.23	1350.53
005530963-05	OBS	No	42.703161	150.898885	647.6	3.032	15.1	11.0	7.09	6809	34.32	891.94
005530963-06	OBS	No	81.817698	198.274623	853.0	5.251	13.3	12.4	7.09	6809	39.02	374.82
005530963-08	OBS	No	33.512239	161.196427	598.7	4.210	11.5	9.5	7.09	6809	30.31	1232.20
005530963-09	OBS	No	32.921168	160.165568	499.4	2.422	11.2	10.9	7.09	6809	17.72	1261.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005530963-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005530963-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
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Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

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

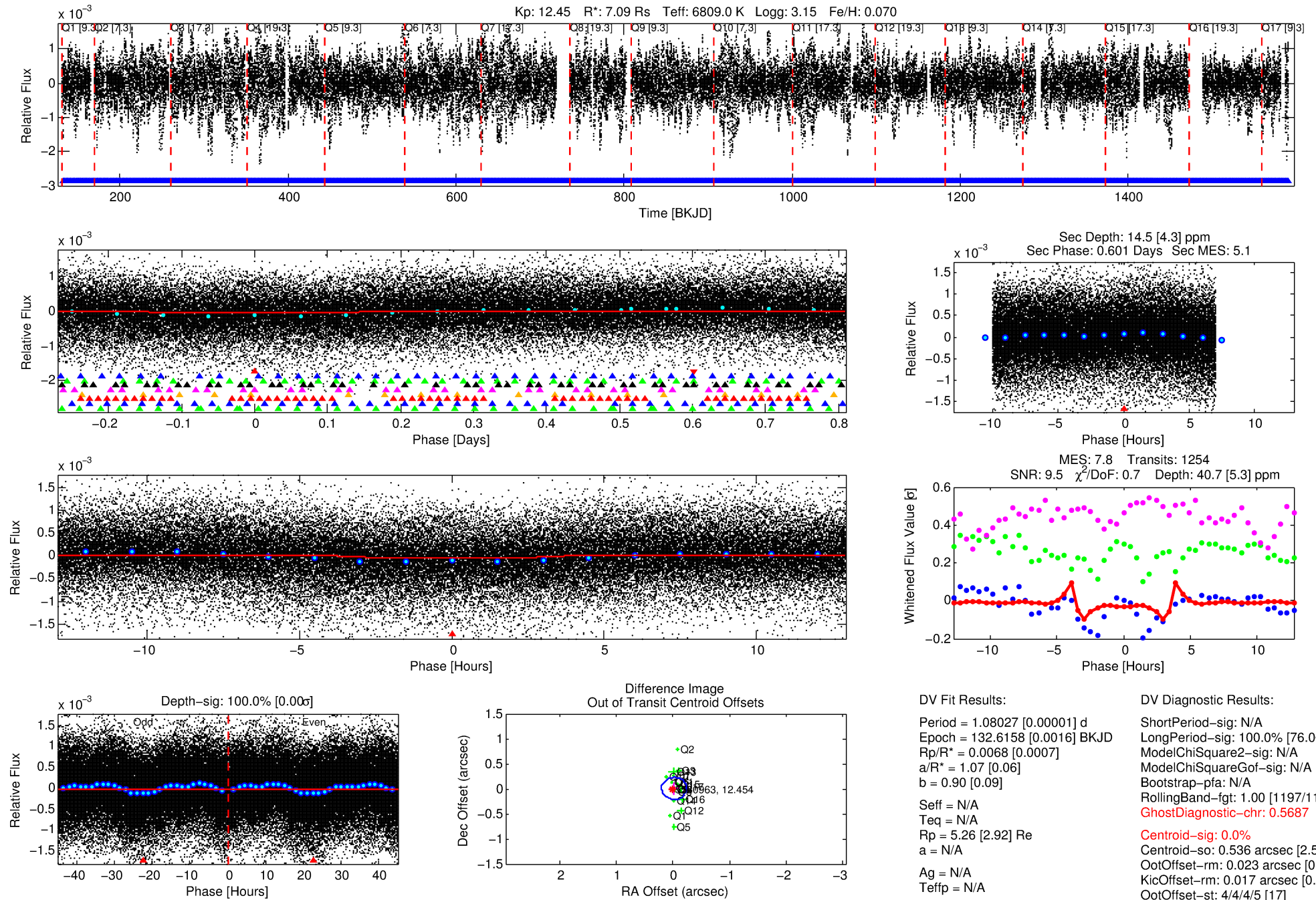
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005530963-01

No Significant Match Found

DV One-Page Summary

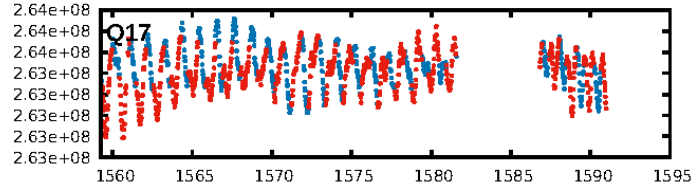
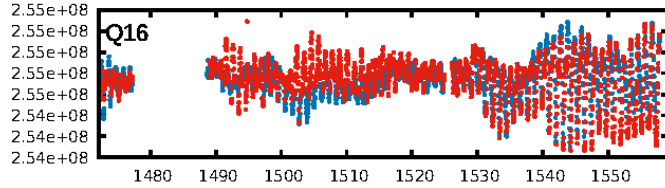
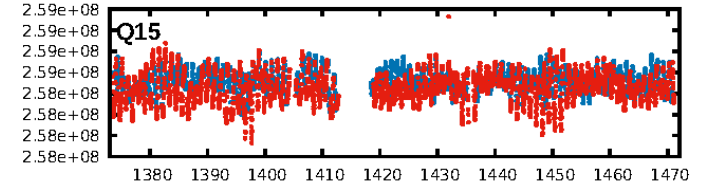
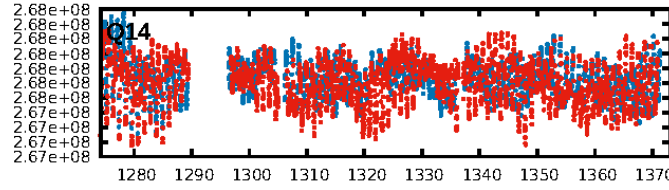
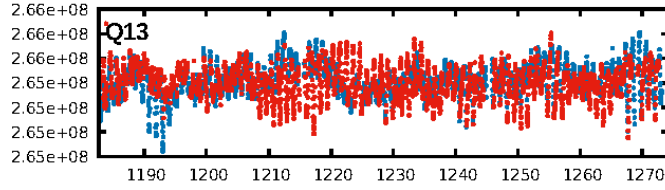
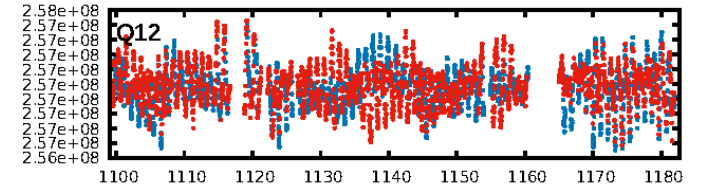
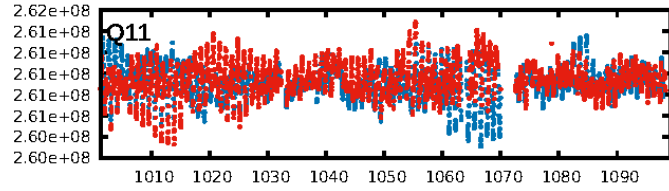
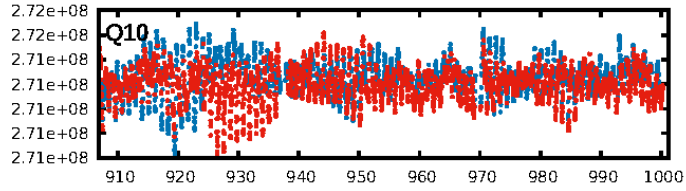
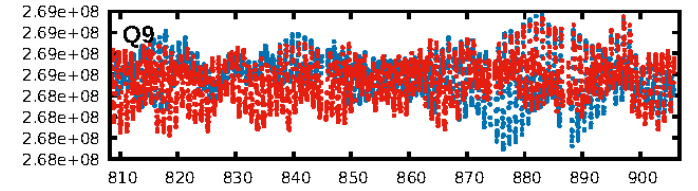
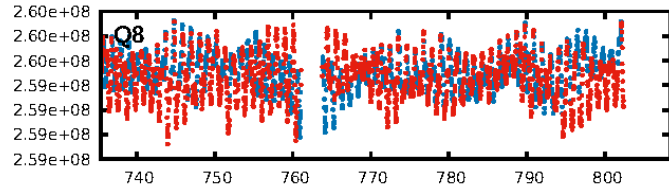
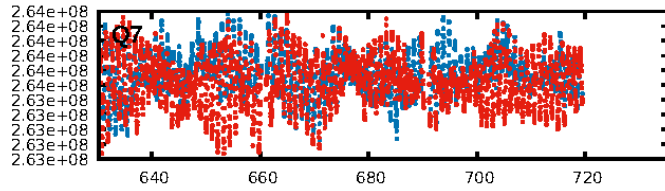
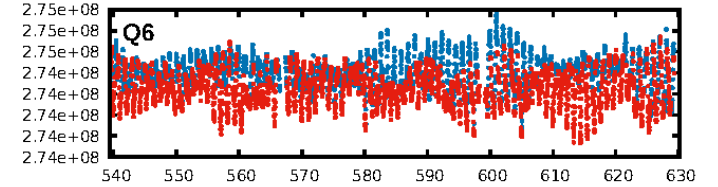
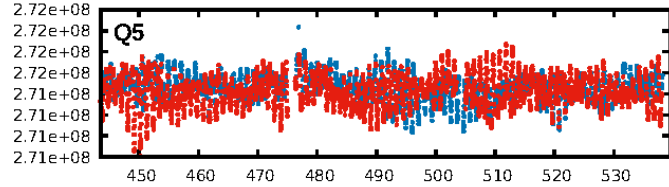
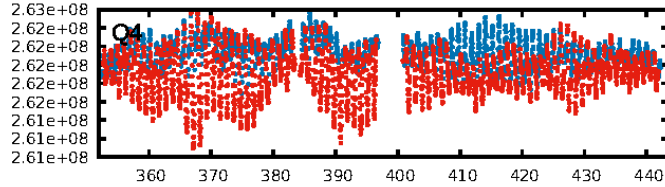
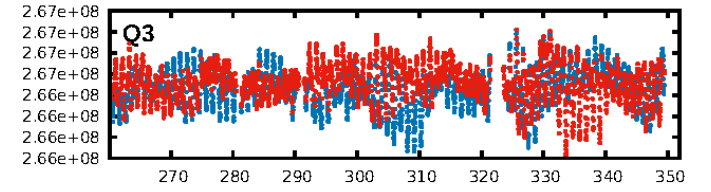
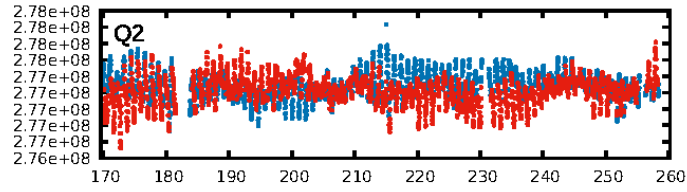
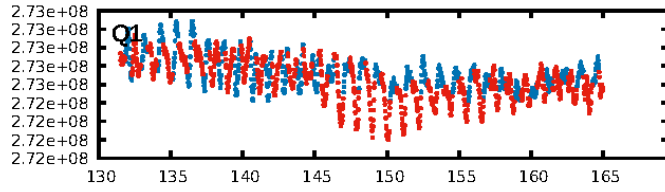
KIC: 5530963 Candidate: 1 of 9 Period: 1.080 d



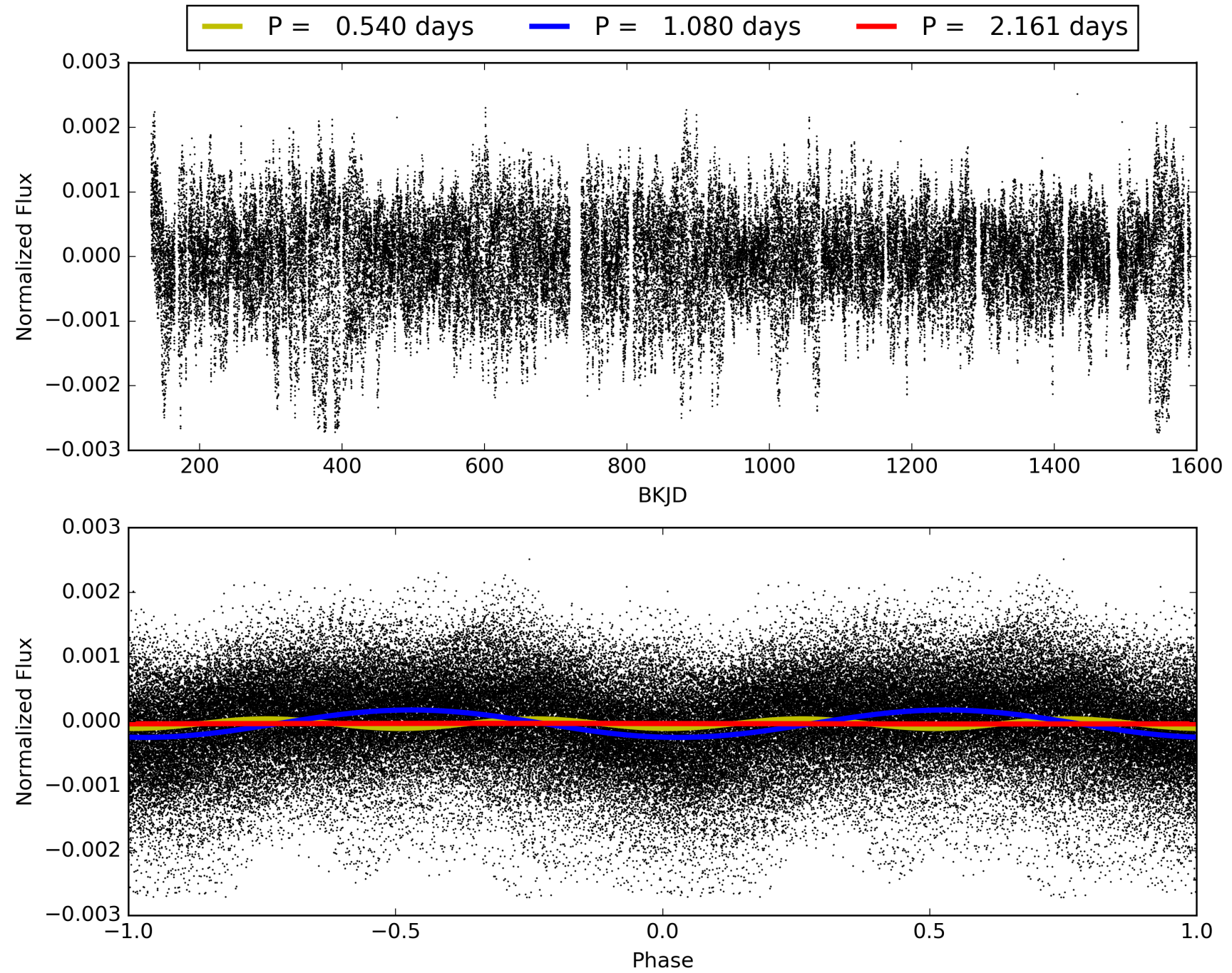
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005530963-01, PDC Light Curves

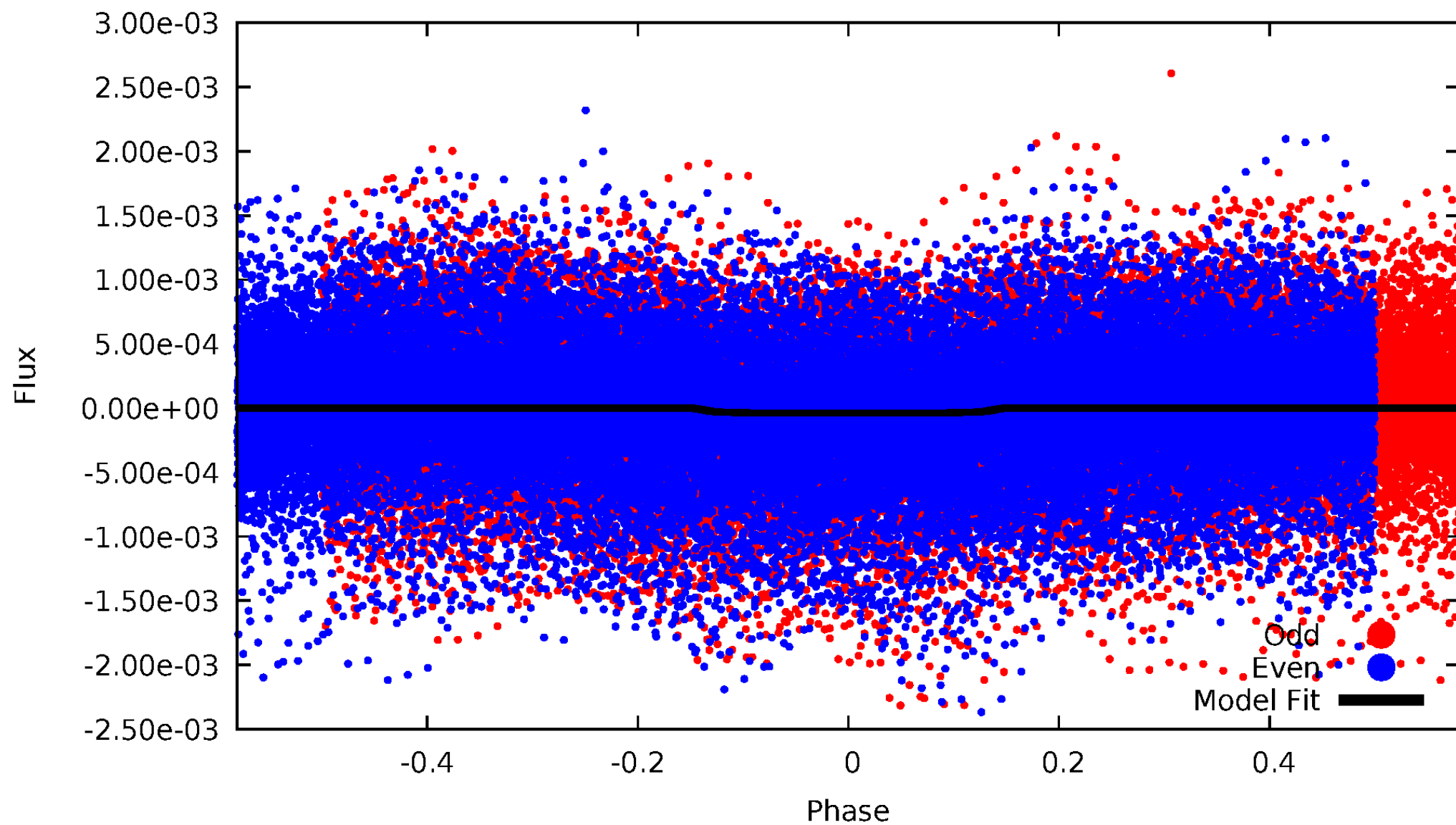


TCE 005530963-01



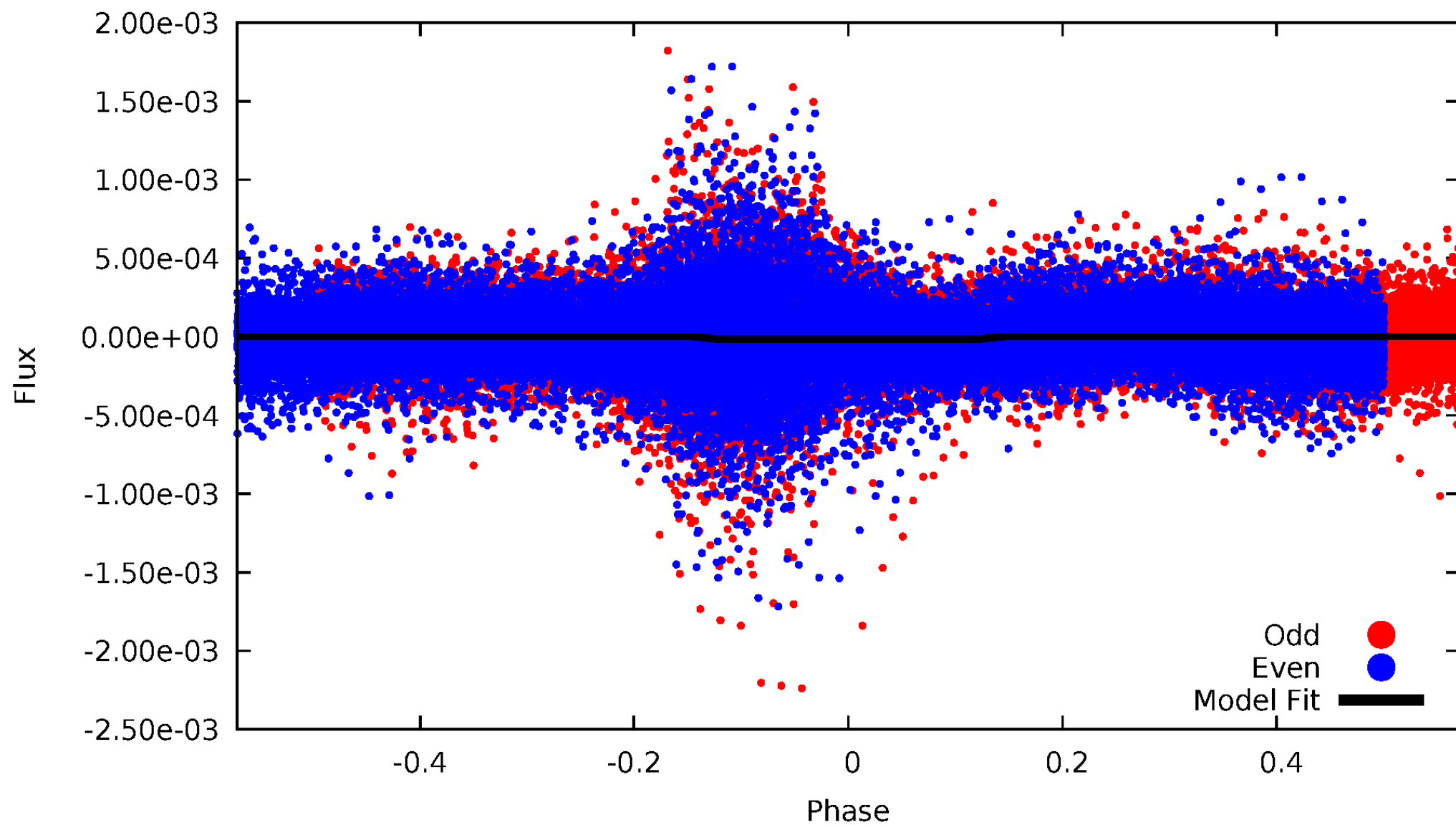
DV Odd/Even

TCE 005530963-01



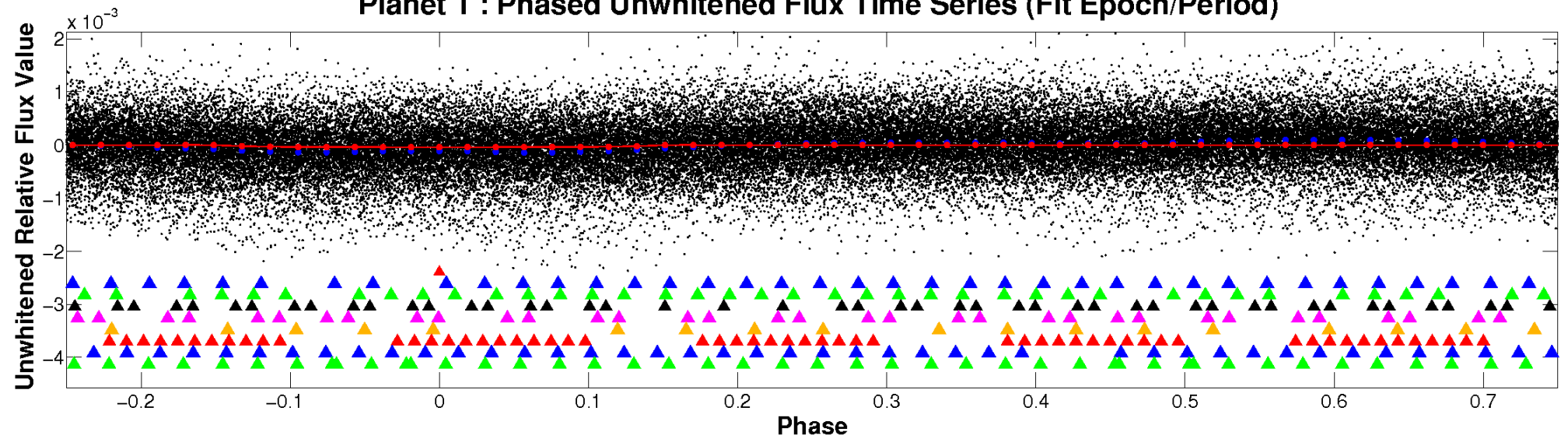
ALT Odd/Even

TCE 005530963-01

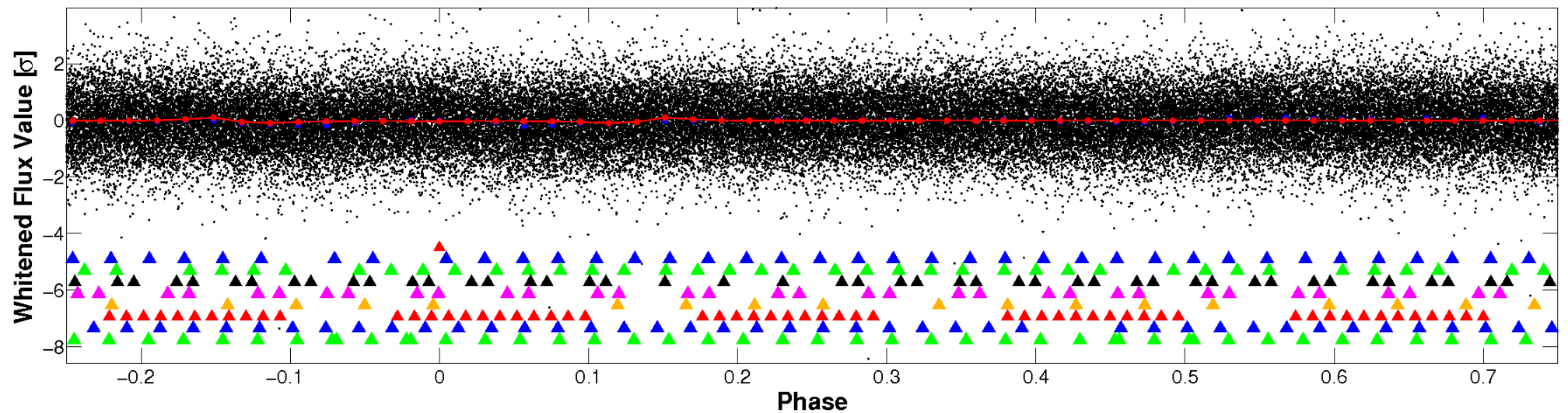


Non-Whitened Vs. Whitened Light Curve

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

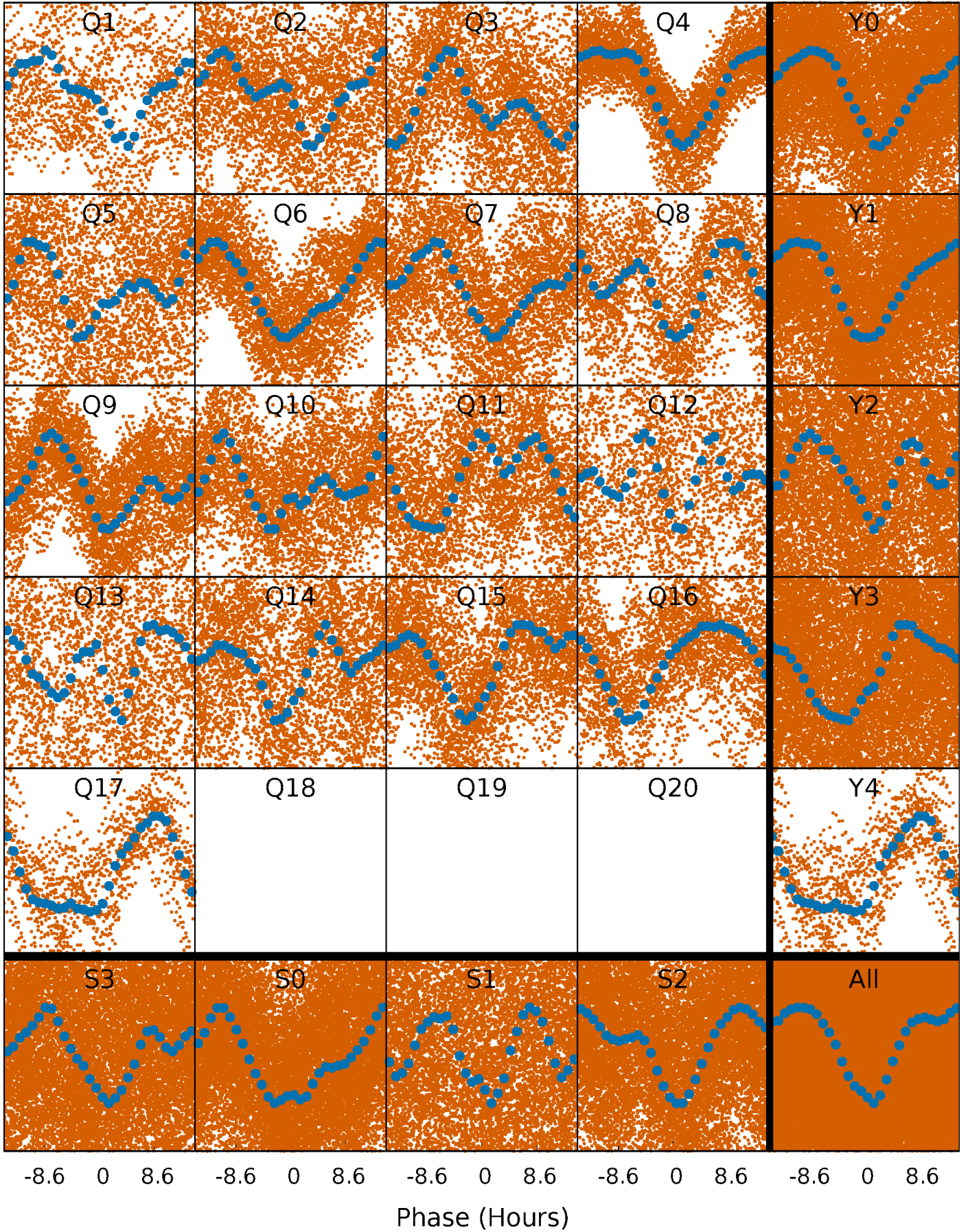


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



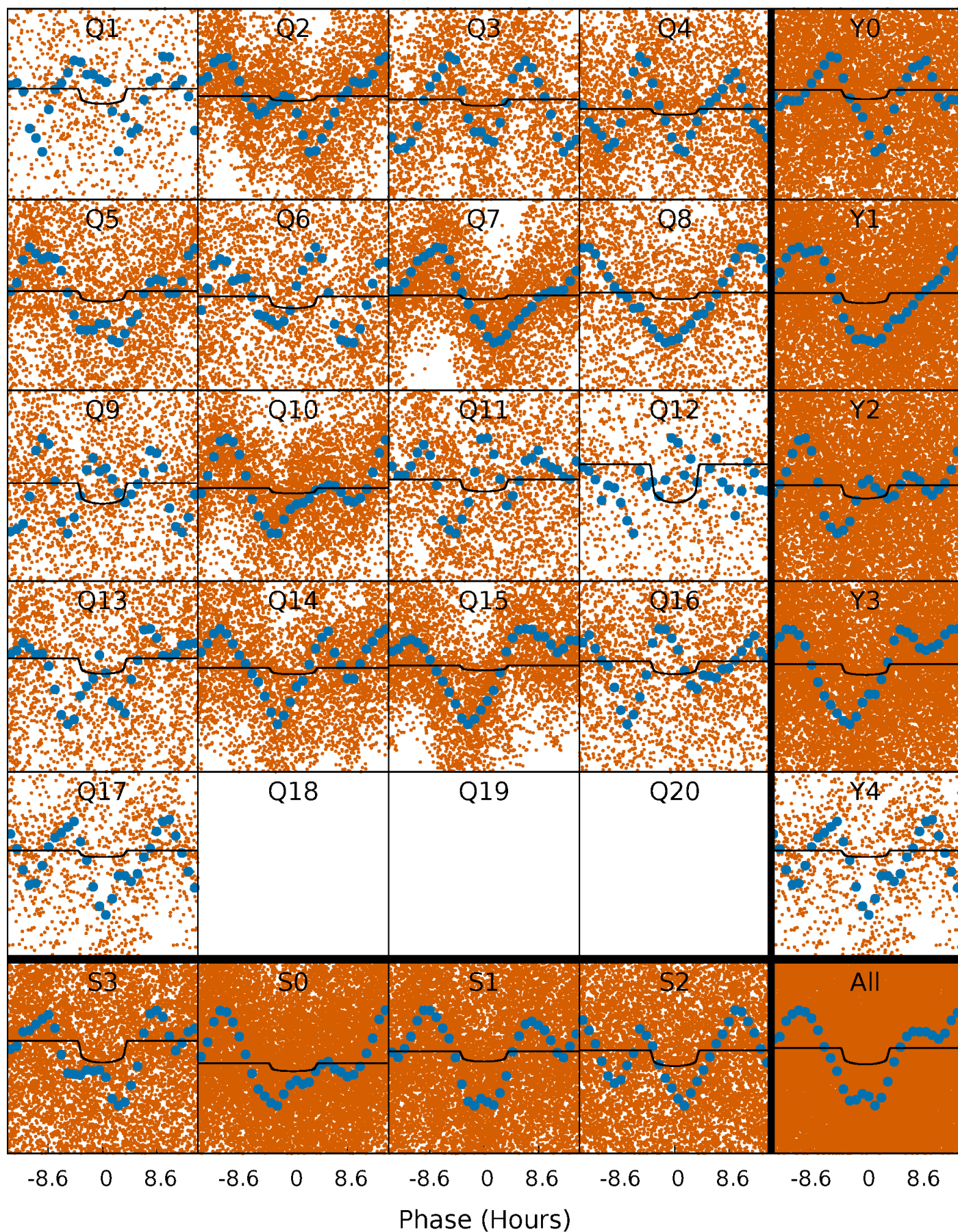
PDC Quarter-Phased Transit Curves

TCE 005530963-01 P= 1.080265 Days $T_0=132.615791$ (BKJD)



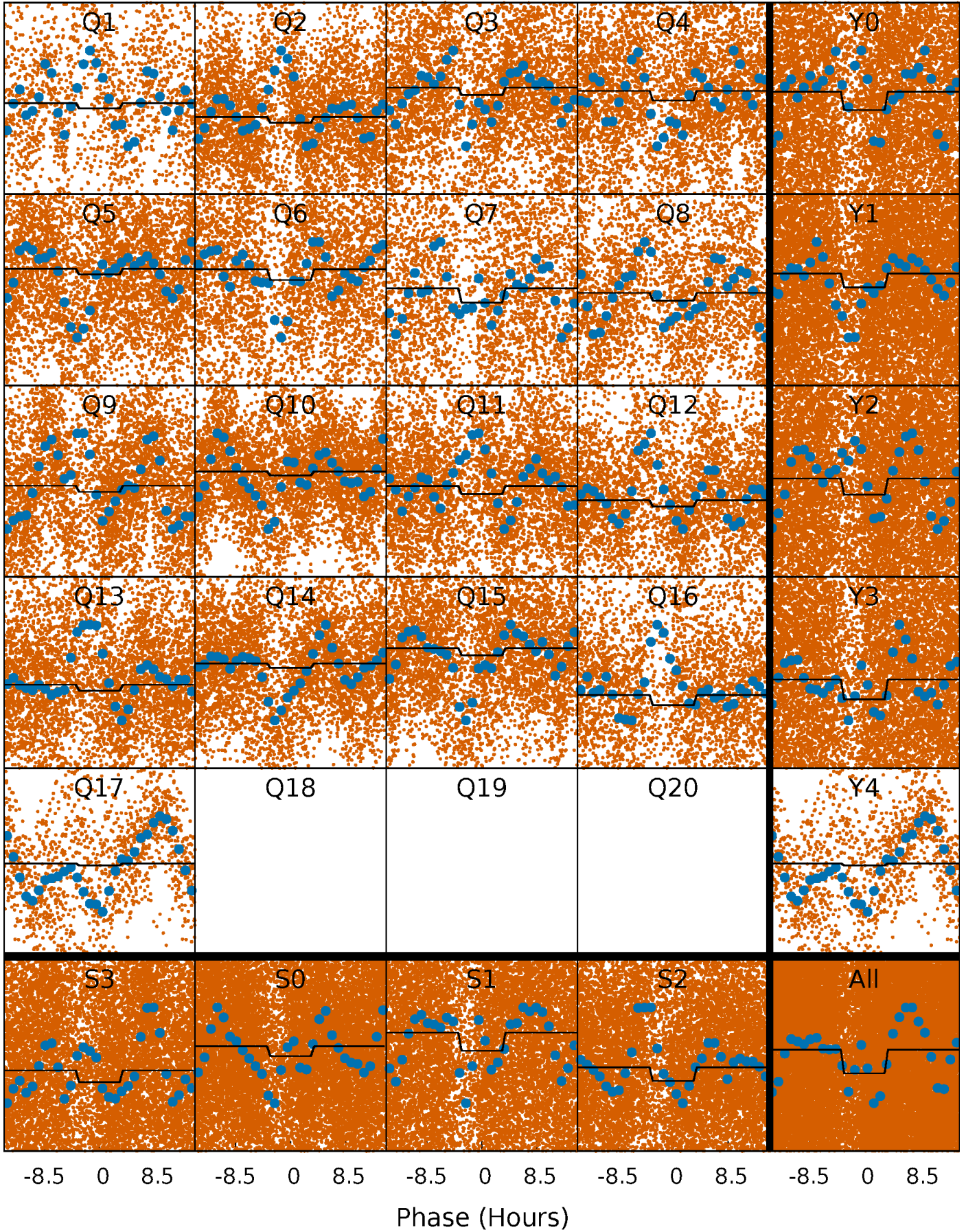
DV Quarter-Phased Transit Curves

TCE 005530963-01 P= 1.080265 Days $T_0=132.615791$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

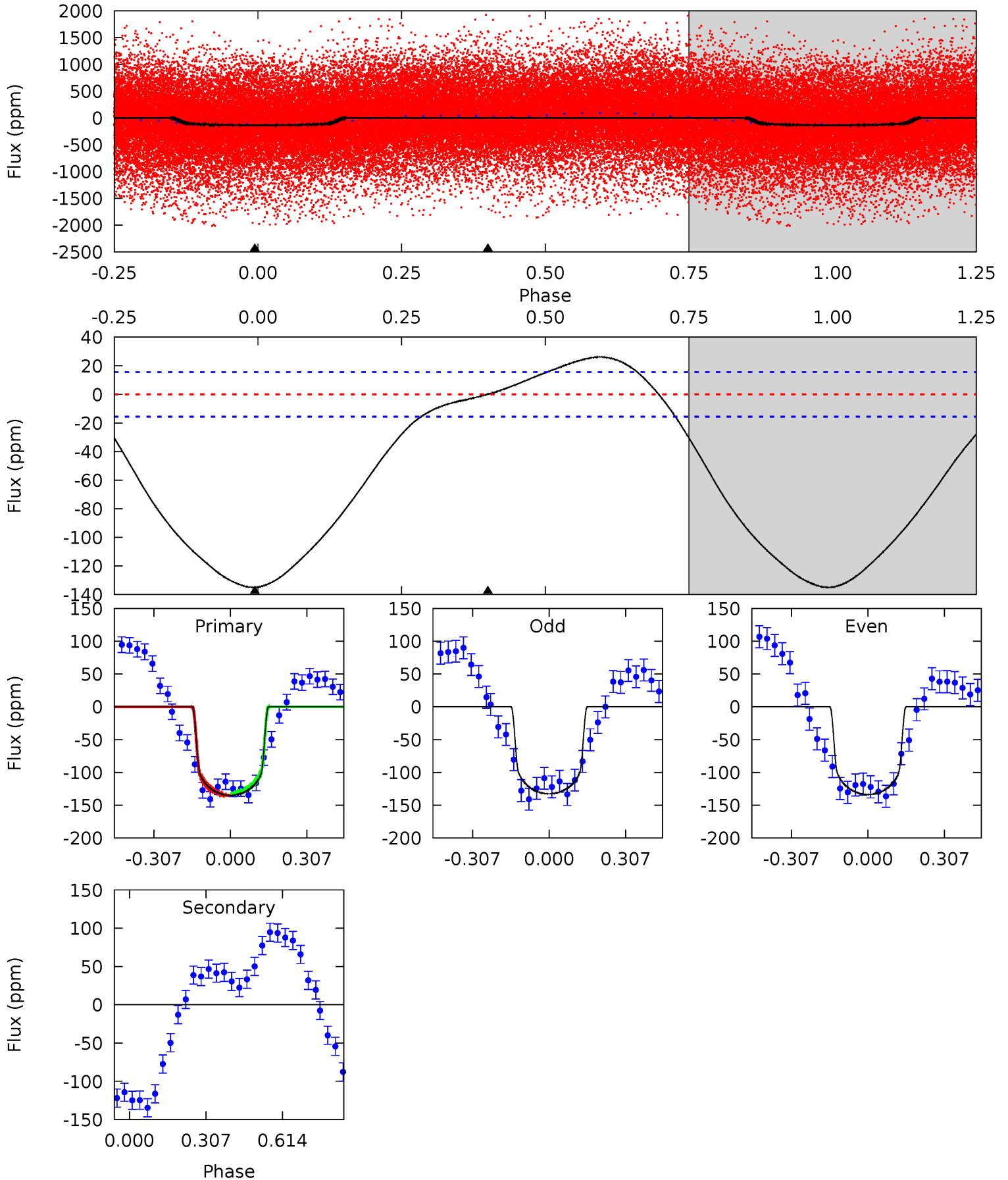
TCE 005530963-01 P= 1.080261 Days $T_0=132.618767$ (BKJD)



DV Model-Shift Uniqueness Test

005530963-01, P = 1.080265 Days, E = 130.455261 Days

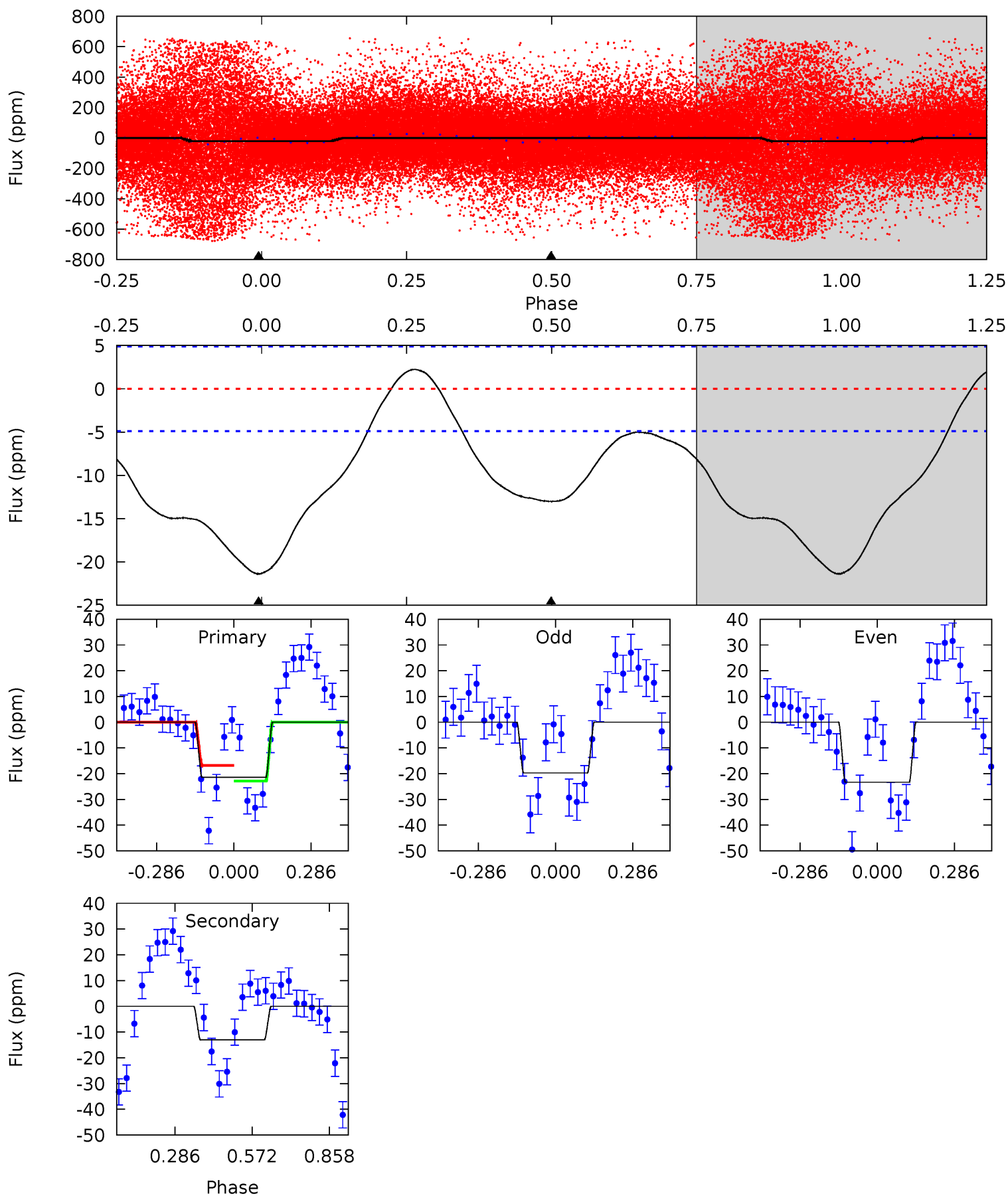
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.5	-0.04	0	0	4.32	1.02	4.02	37.5	37.5	-0.04	-0.04	0.15	1.13	0.16	0.51



Alt Model-Shift Uniqueness Test

005530963-01, P = 1.080261 Days, E = 130.458245 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	11.5	0	0	4.34	1.07	4.27	19.0	19.0	11.5	11.5	1.64	0.98	0.09	2.75



Stellar Parameters For KIC 005530963

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6809^{+162}_{-223}	$3.154^{+0.528}_{-0.132}$	$0.070^{+0.200}_{-0.400}$	$7.089^{+1.656}_{-3.864}$	$2.610^{+0.303}_{-0.909}$	$0.010^{+0.063}_{-0.004}$
	+2%/-3%	+17%/-4%	+286%/-571%	+23%/-55%	+12%/-35%	+609%/-37%
Source	PHO1	FLK73	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 005530963-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 4	$4.86^{+1.08}_{-1.36}$	6406^{+511}_{-919}	-5277^{+664}_{-455}	$-0.004^{+0.072}_{-0.073}$
Alt.	-13 ± 1	$2.83^{+0.86}_{-0.88}$	6429^{+529}_{-841}	5638^{+939}_{-1031}	$0.715^{+0.692}_{-0.274}$

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 $A_{obs} \gg 1.0$

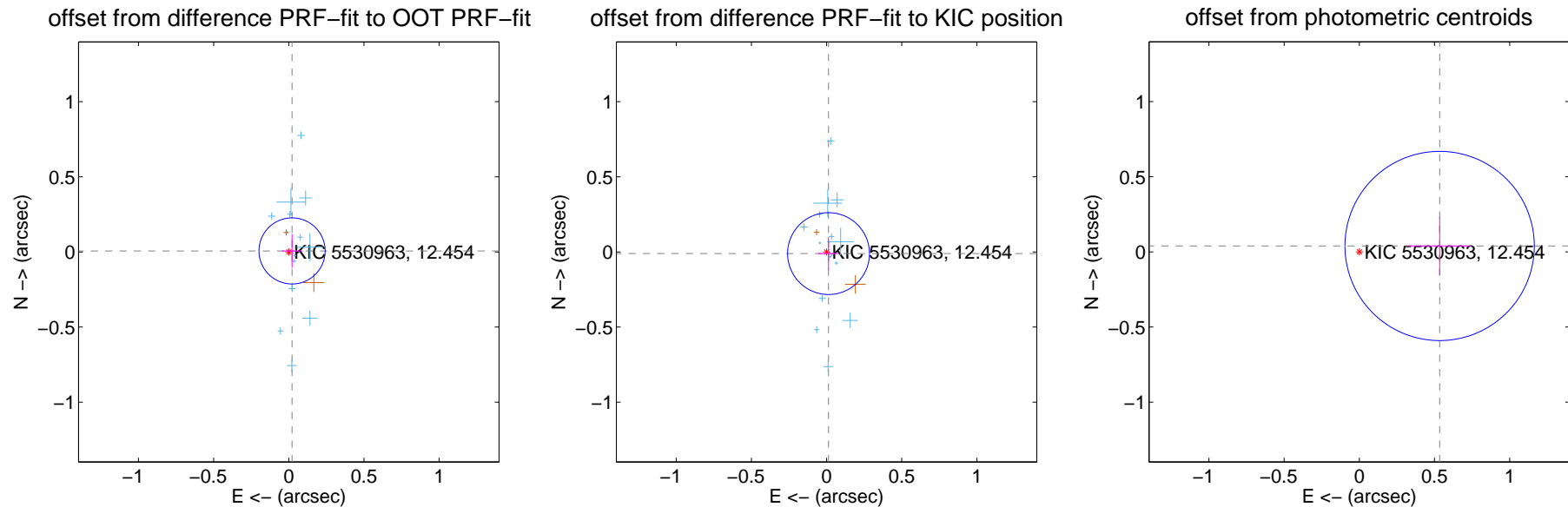
DV Centroid Data

Supplemental centroid analysis for 005530963-01. Kepler magnitude: 12.45. Transit SNR 9.46

There are 15 quarters with good PRF difference image offsets

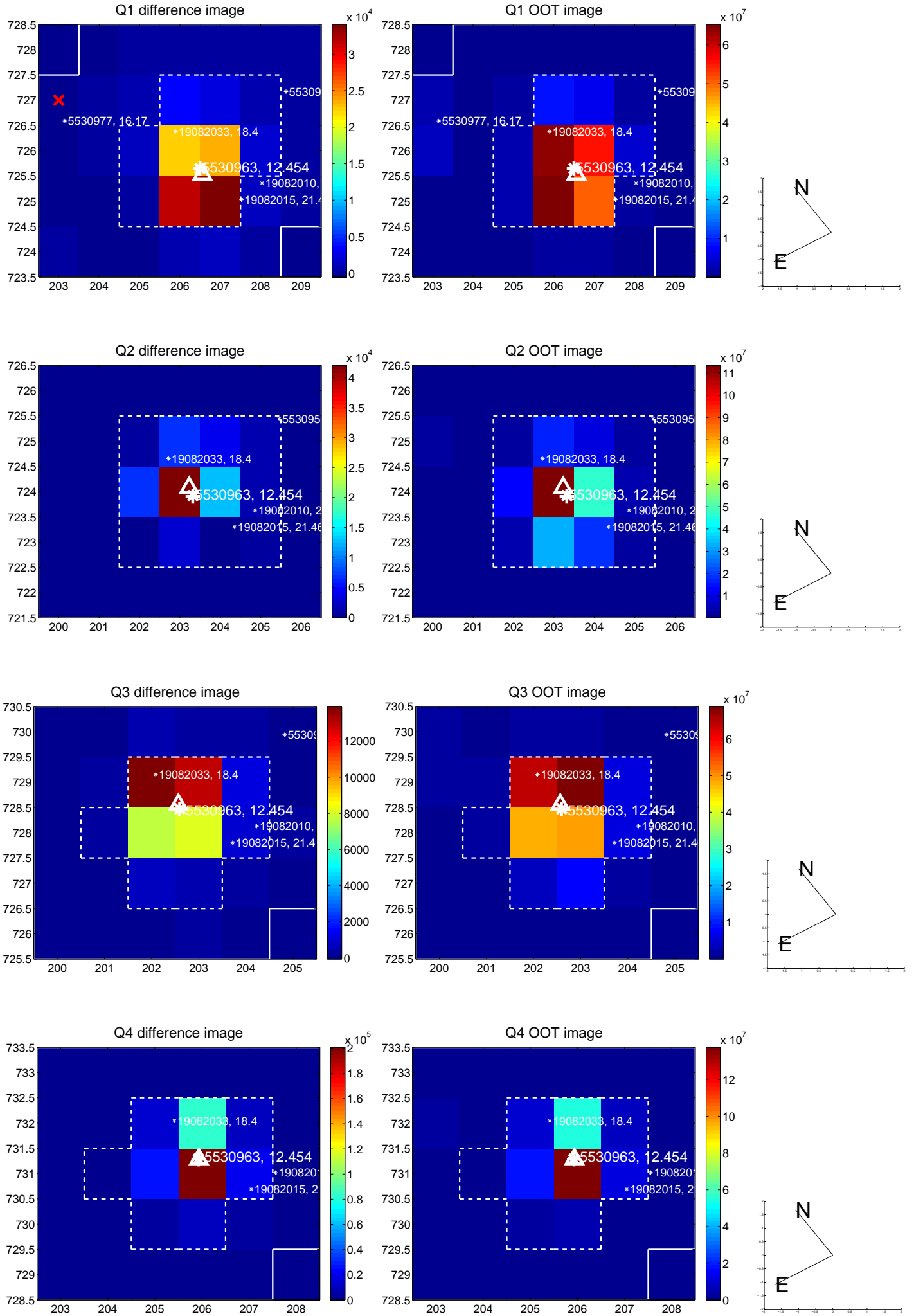
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.023 ± 0.073	0.31	-0.022 ± 0.069	0.007 ± 0.112
PRF-fit source offset from KIC position	0.017 ± 0.091	0.19	-0.013 ± 0.070	-0.011 ± 0.110
photometric centroid source offset	0.54 ± 0.21	2.55	-0.53 ± 0.21	0.04 ± 0.19

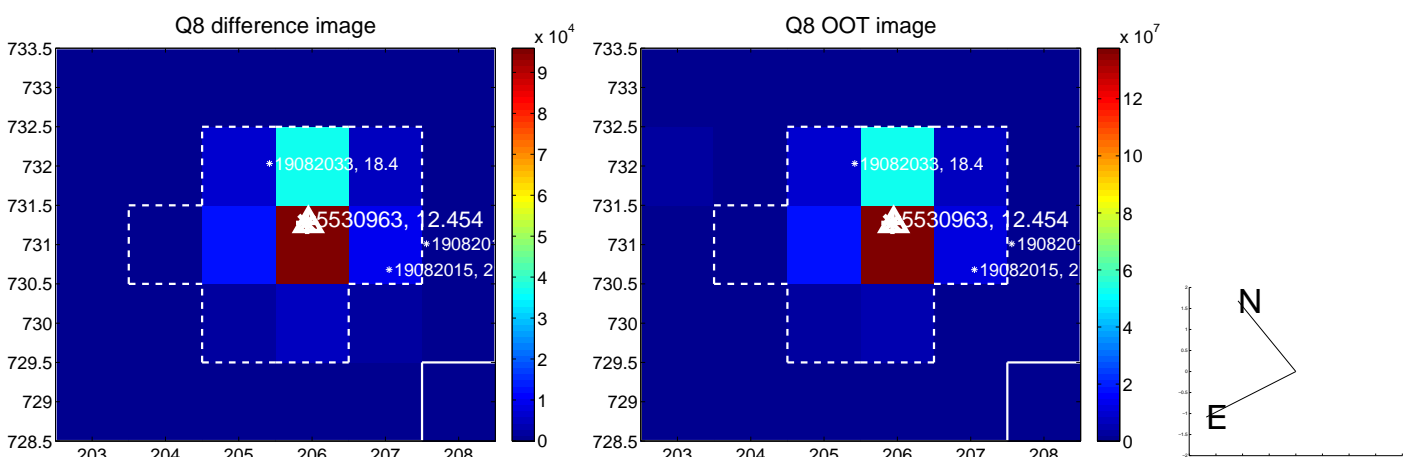
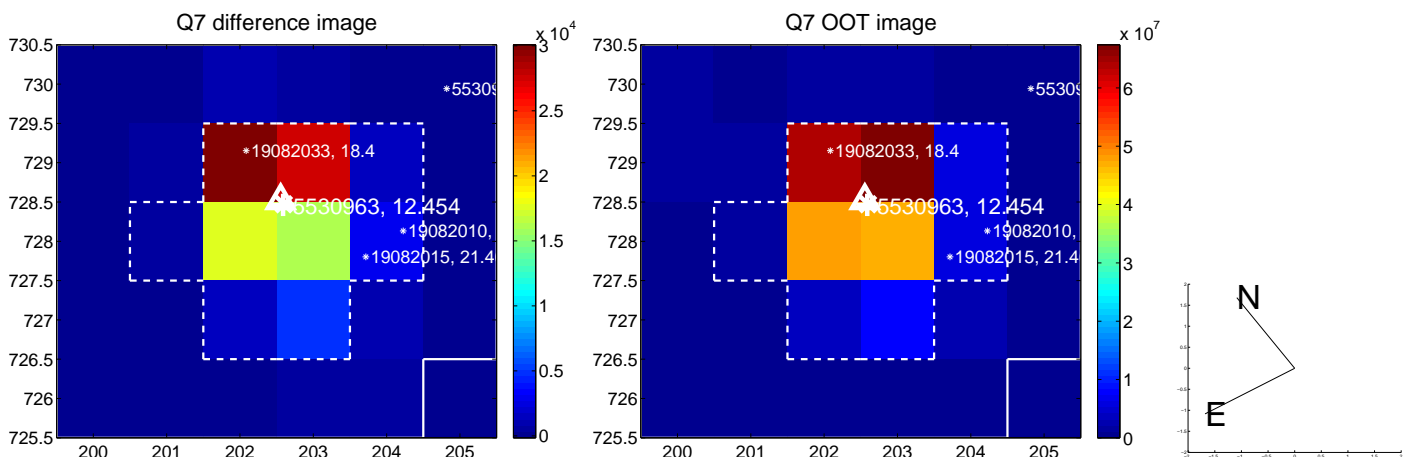
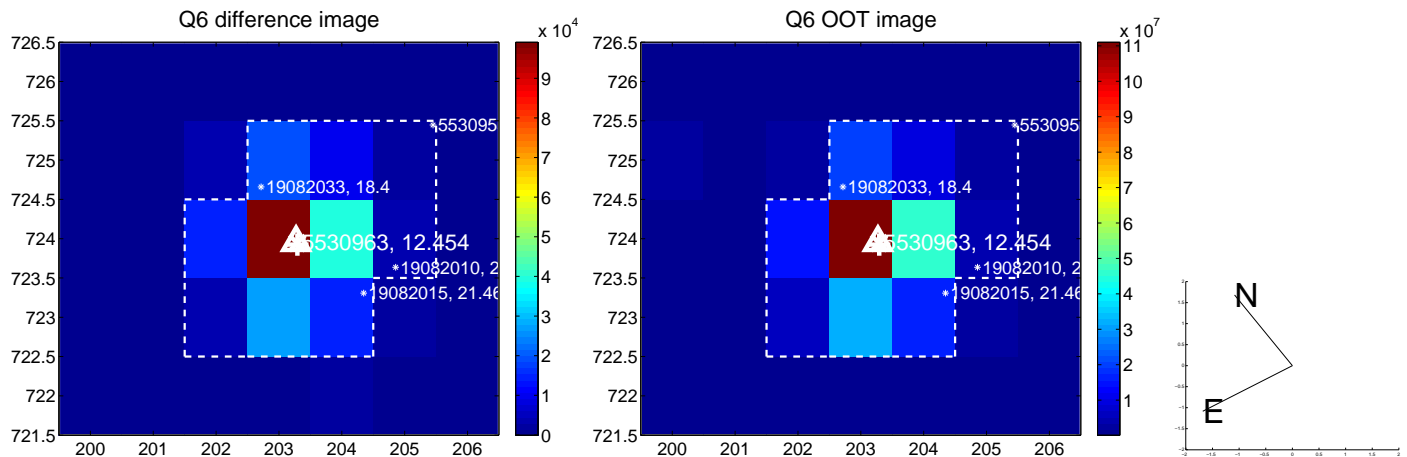
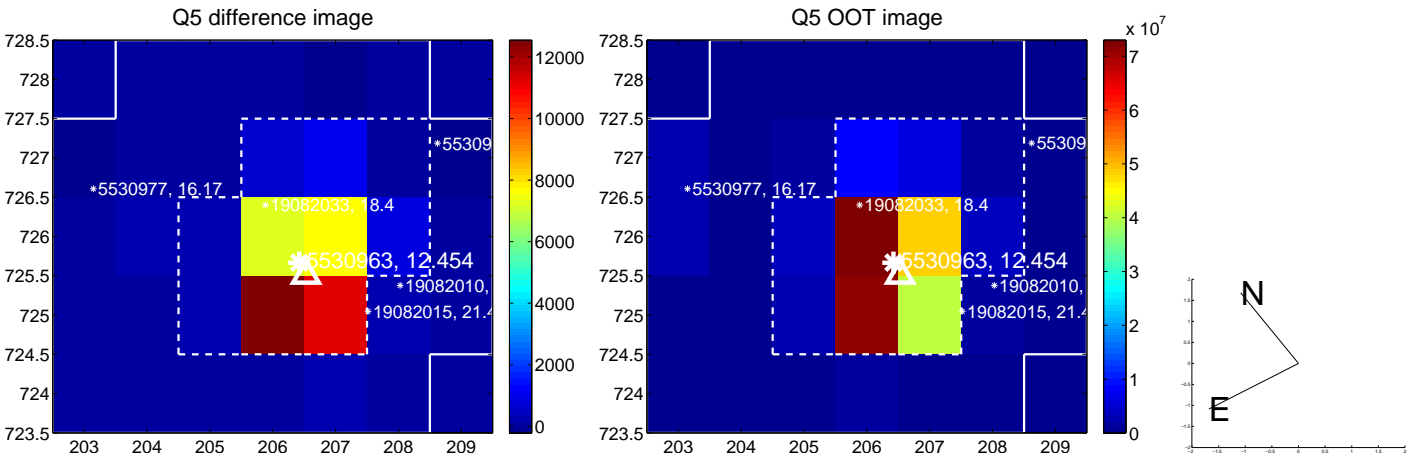


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

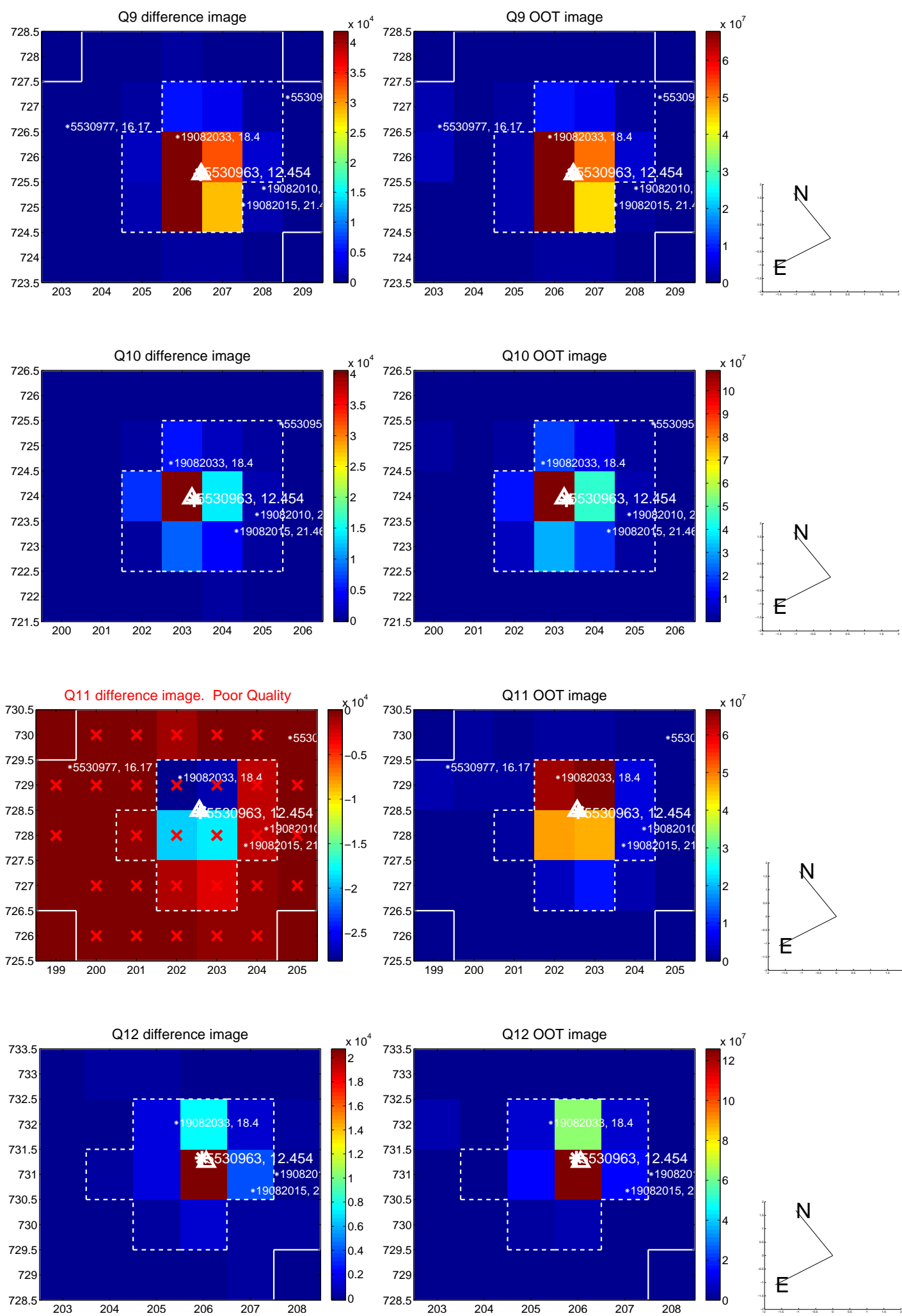
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



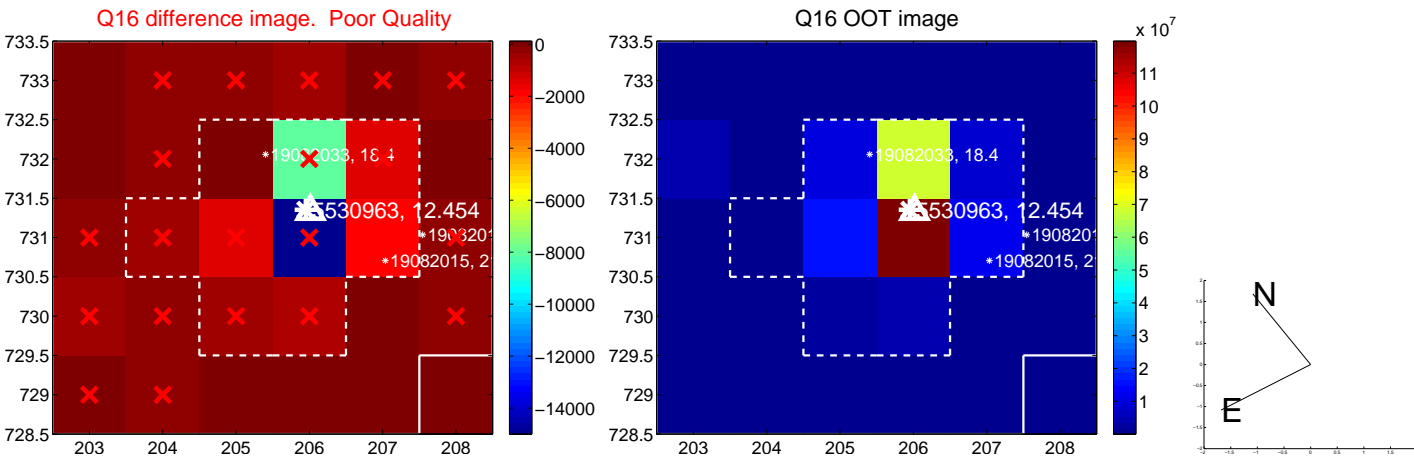
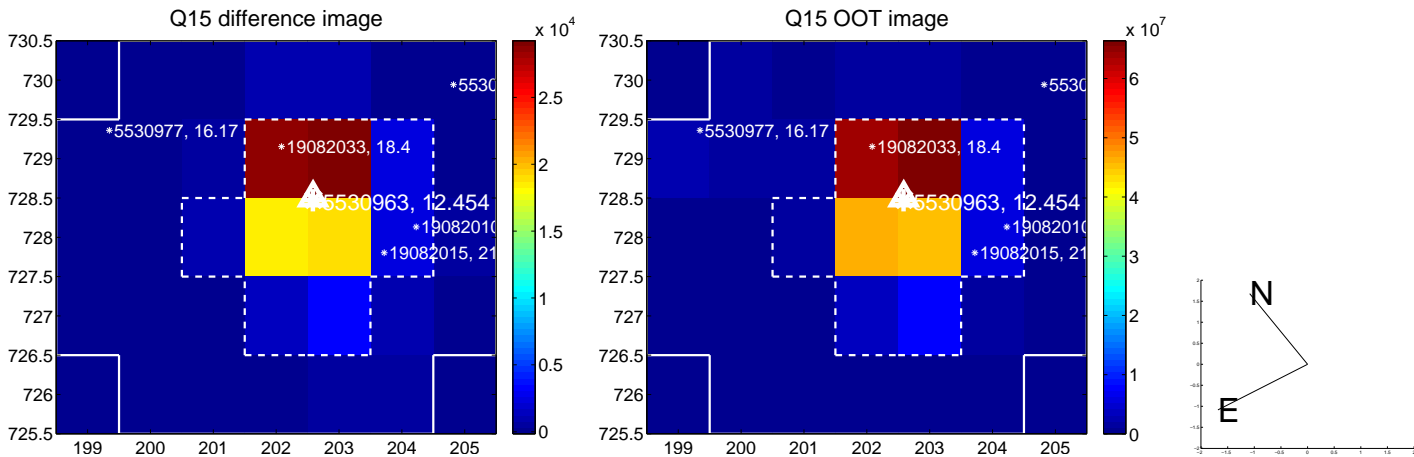
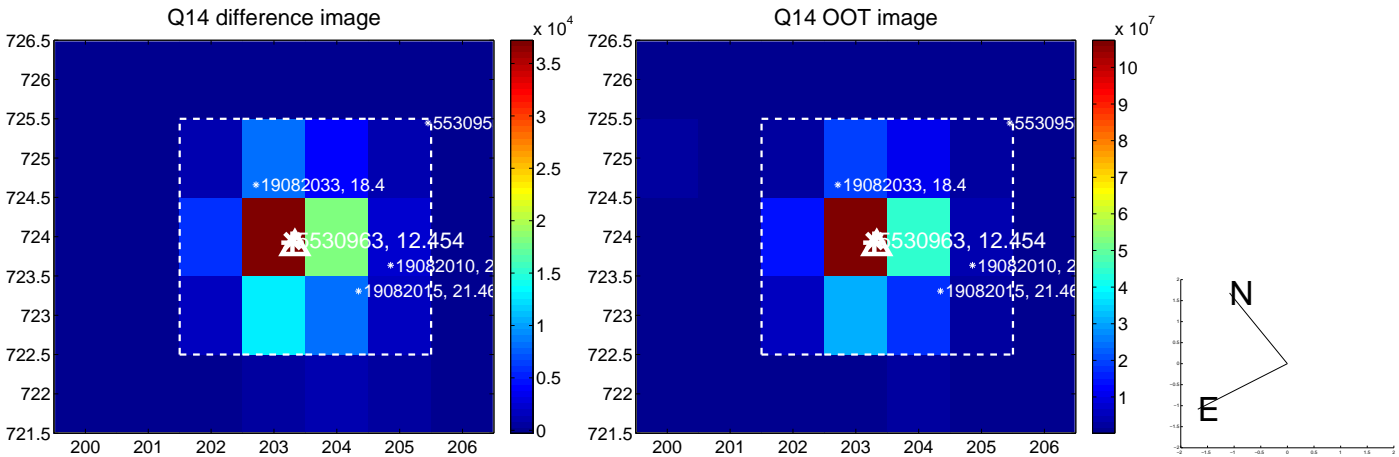
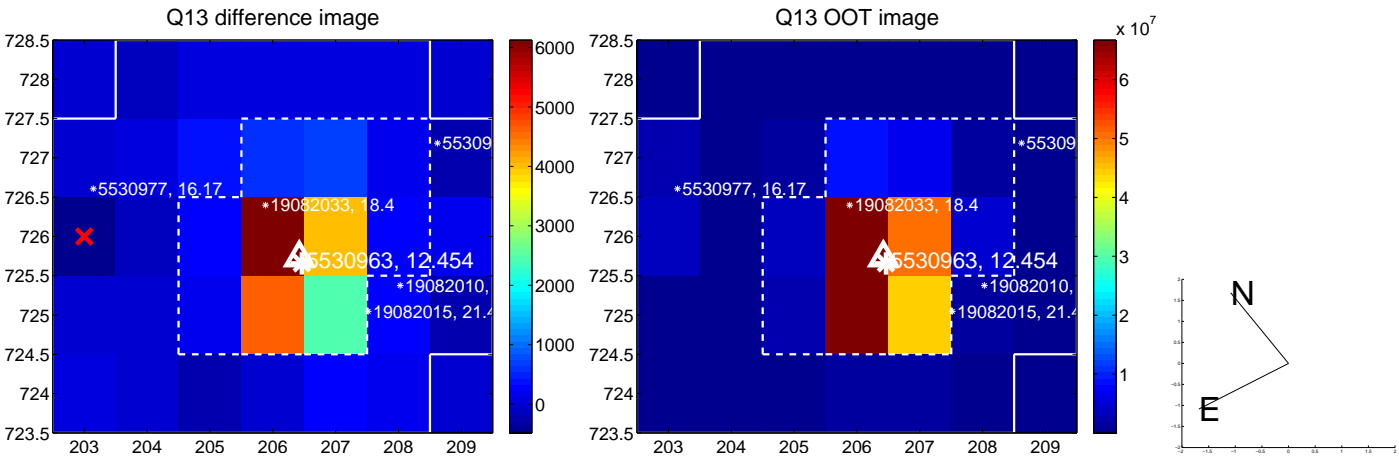
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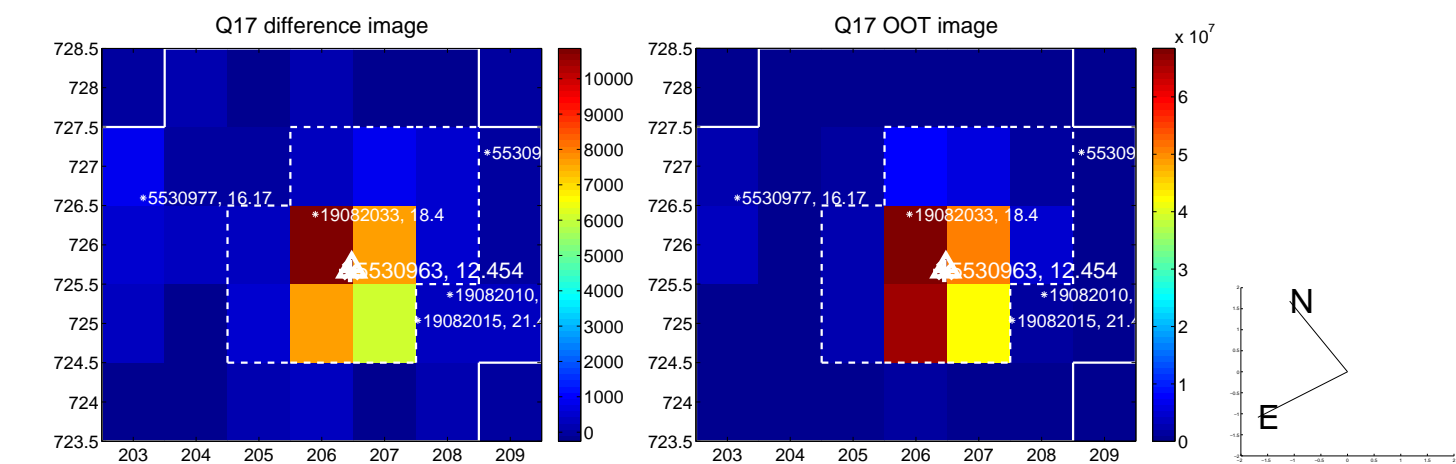
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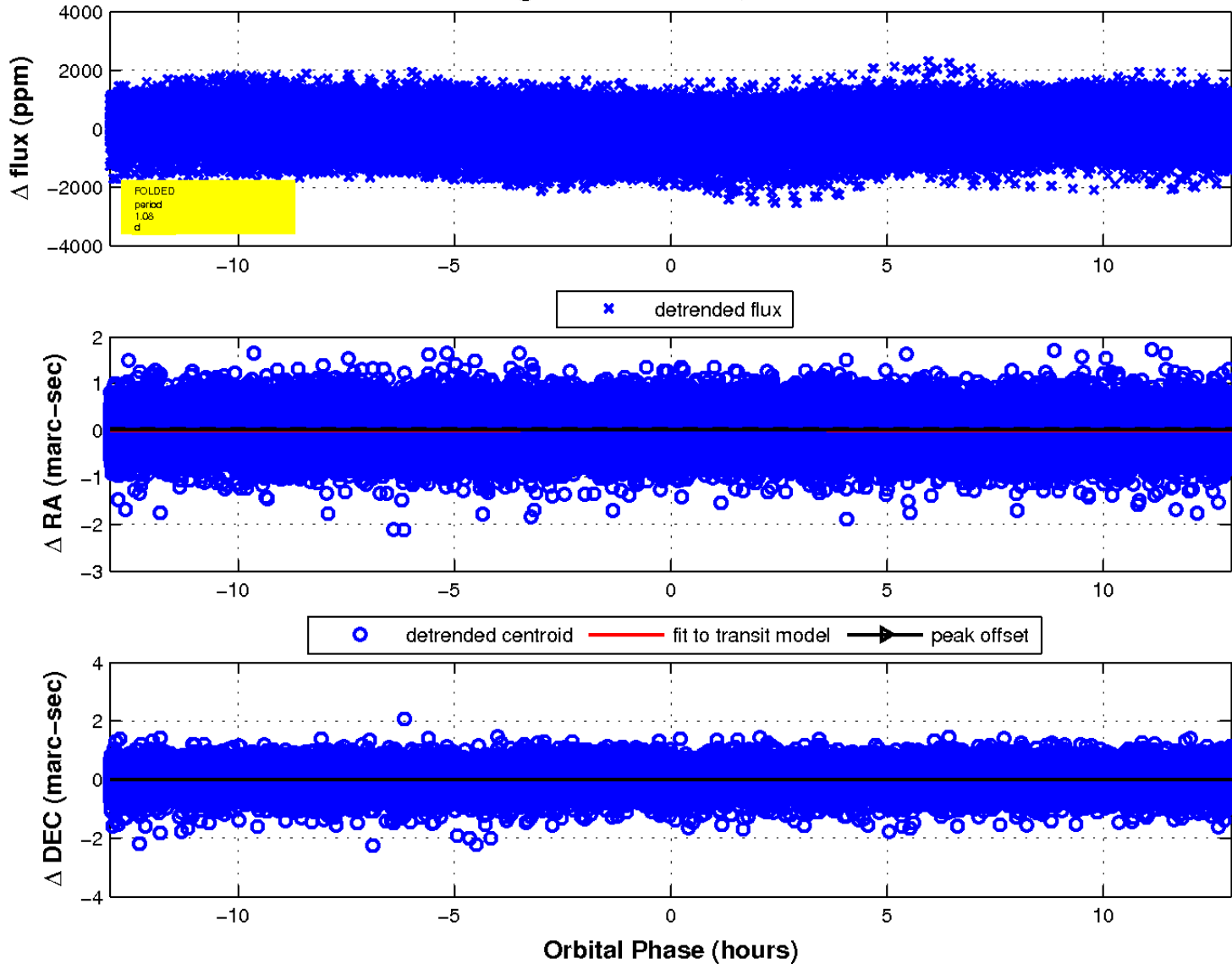
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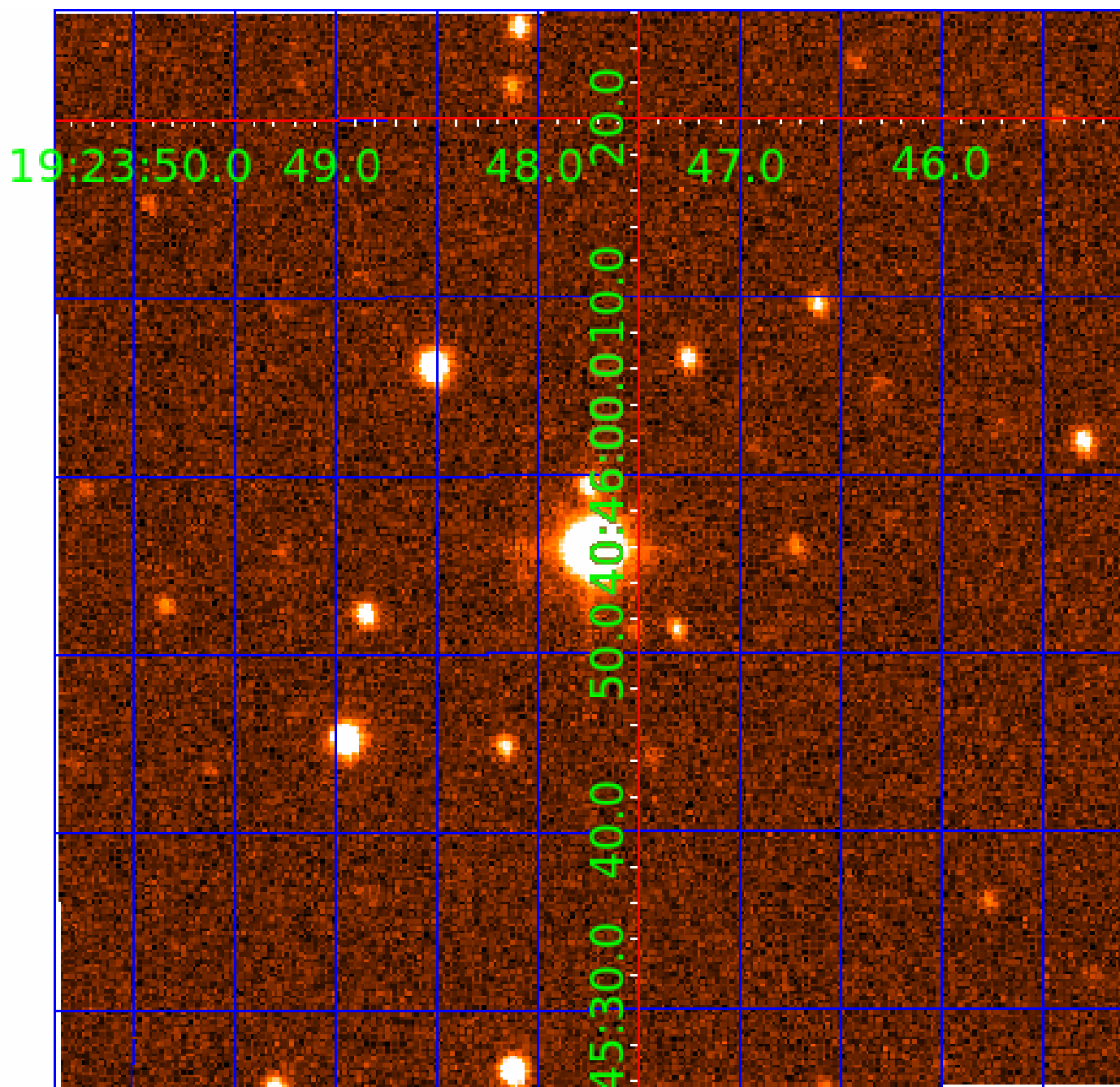


fluxWeightedCentroids, Planet 1 of 9



UKIRT Image

Declination



KIC 005530963

Q1-17 DR25 TCE Parameters

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005530963-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
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005530963-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
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Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

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

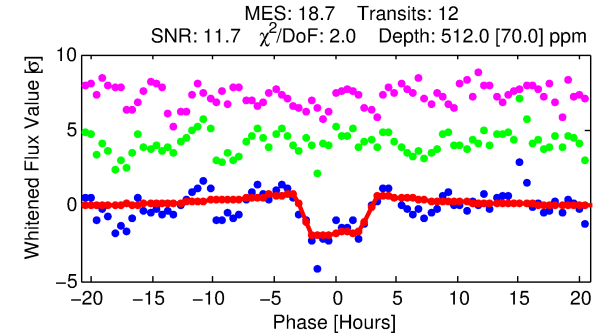
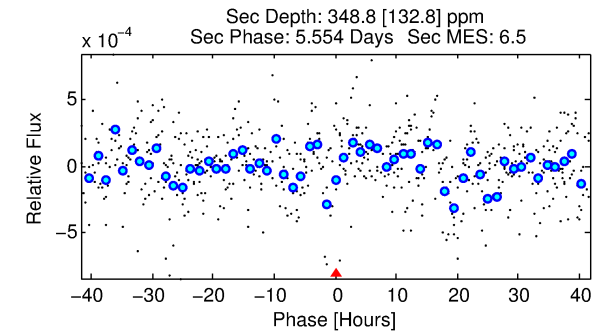
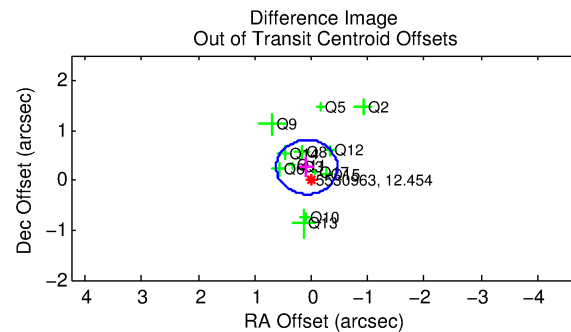
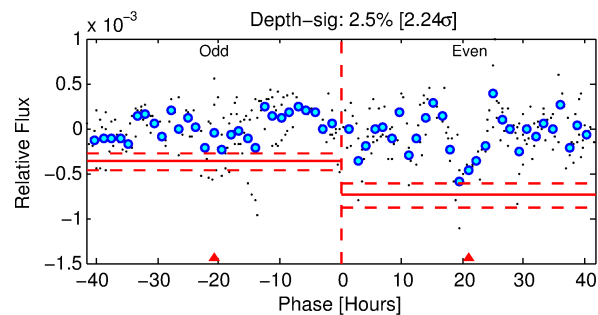
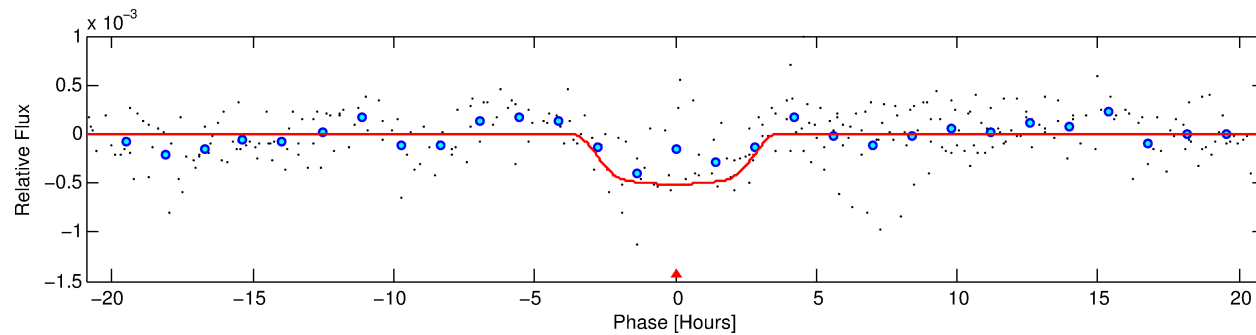
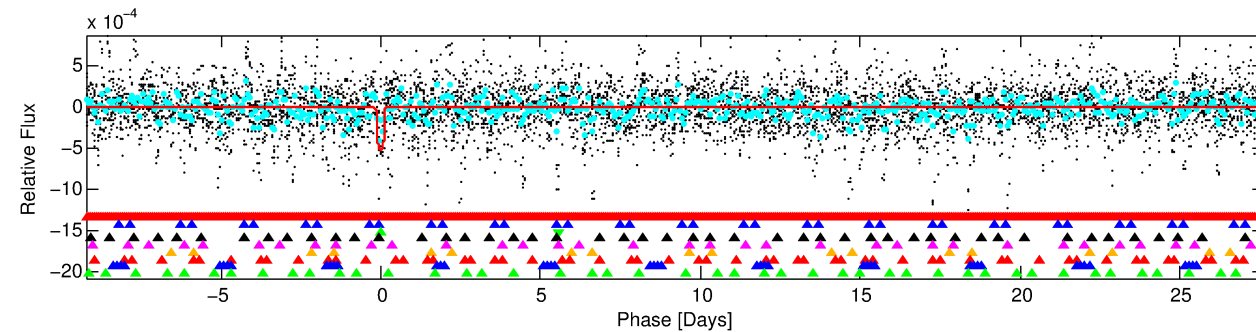
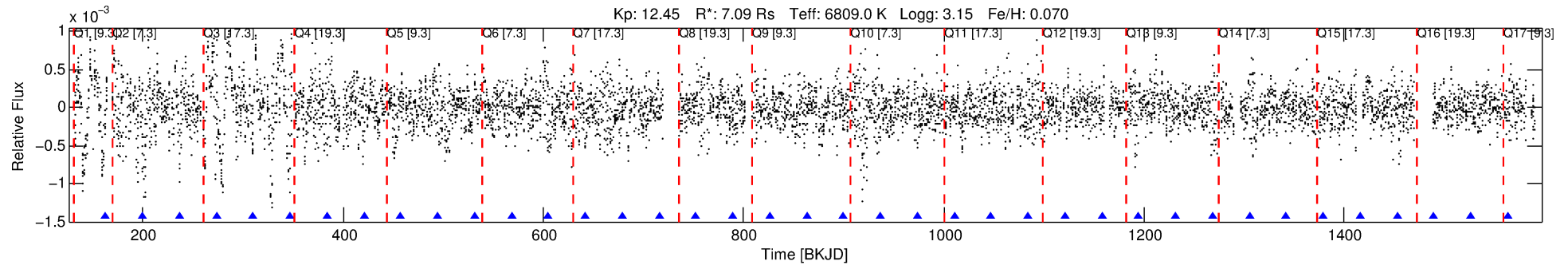
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005530963-03

No Significant Match Found

DV One-Page Summary

KIC: 5530963 Candidate: 3 of 9 Period: 36.852 d



DV Fit Results:

Period = 36.85162 [0.00067] d
Epoch = 162.9046 [0.0146] BKJD
Rp/R* = 0.0254 [0.0023]
a/R* = 15.78 [4.04]
b = 0.95 [0.03]
Seff = 1085.61 [974.72]
Teff = 1464 [329] K
Rp = 19.65 [10.85] Re
a = 0.2986 [0.1625] AU
Ag = 44.31 [43.56] [0.99σ]
Teffp = 5839 [644] K [6.05σ]

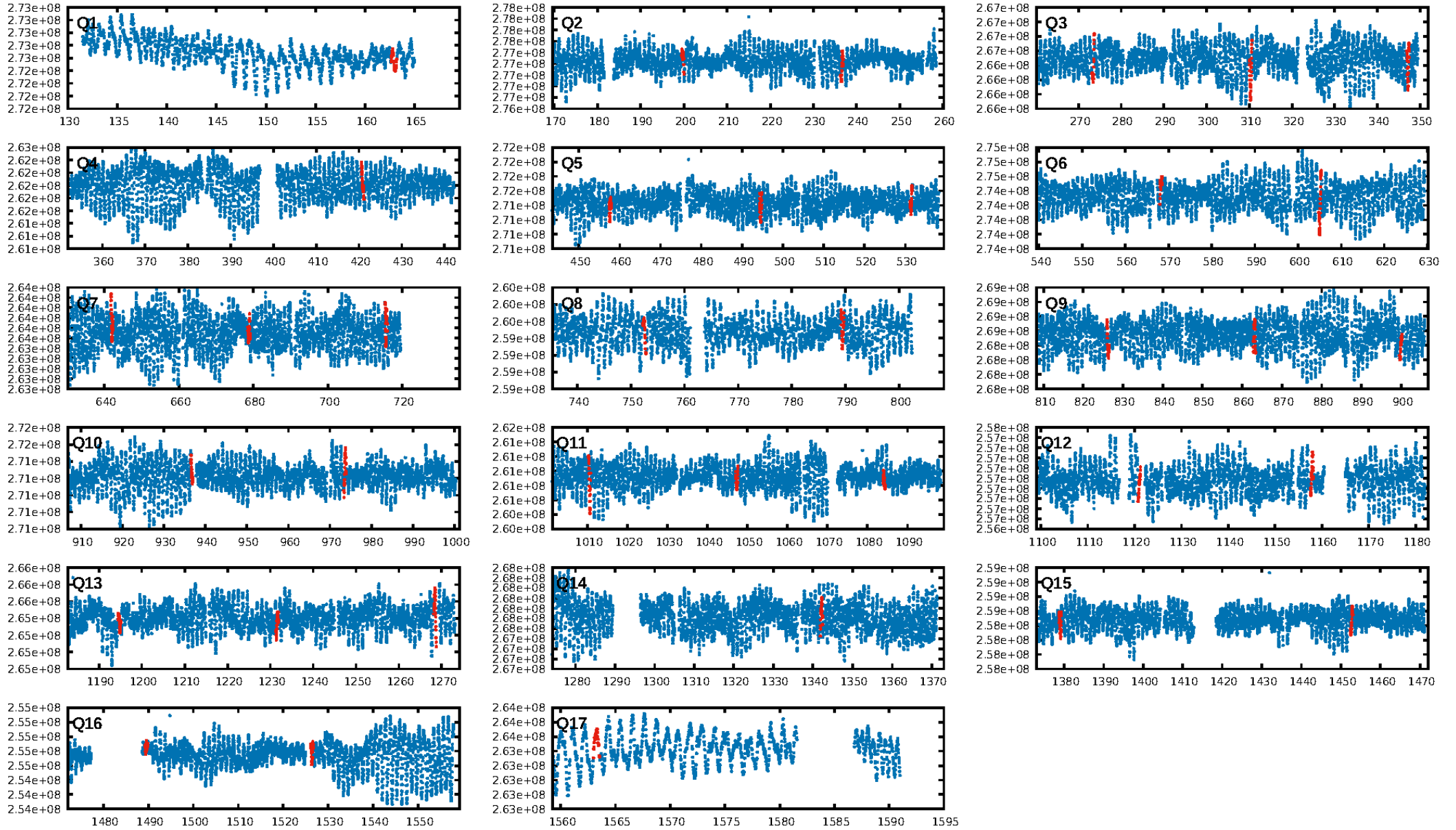
DV Diagnostic Results:

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LongPeriod-sig: 100.0% [5.12σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 0.3538
Centroid-sig: 29.7%
Centroid-so: 0.199 arcsec [1.72σ]
OotOffset-rm: 0.273 arcsec [1.51σ]
KicOffset-rm: 0.293 arcsec [1.61σ]
OotOffset-st: 4/3/2/4 [13]
KicOffset-st: 4/3/2/4 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.00 [0/16]

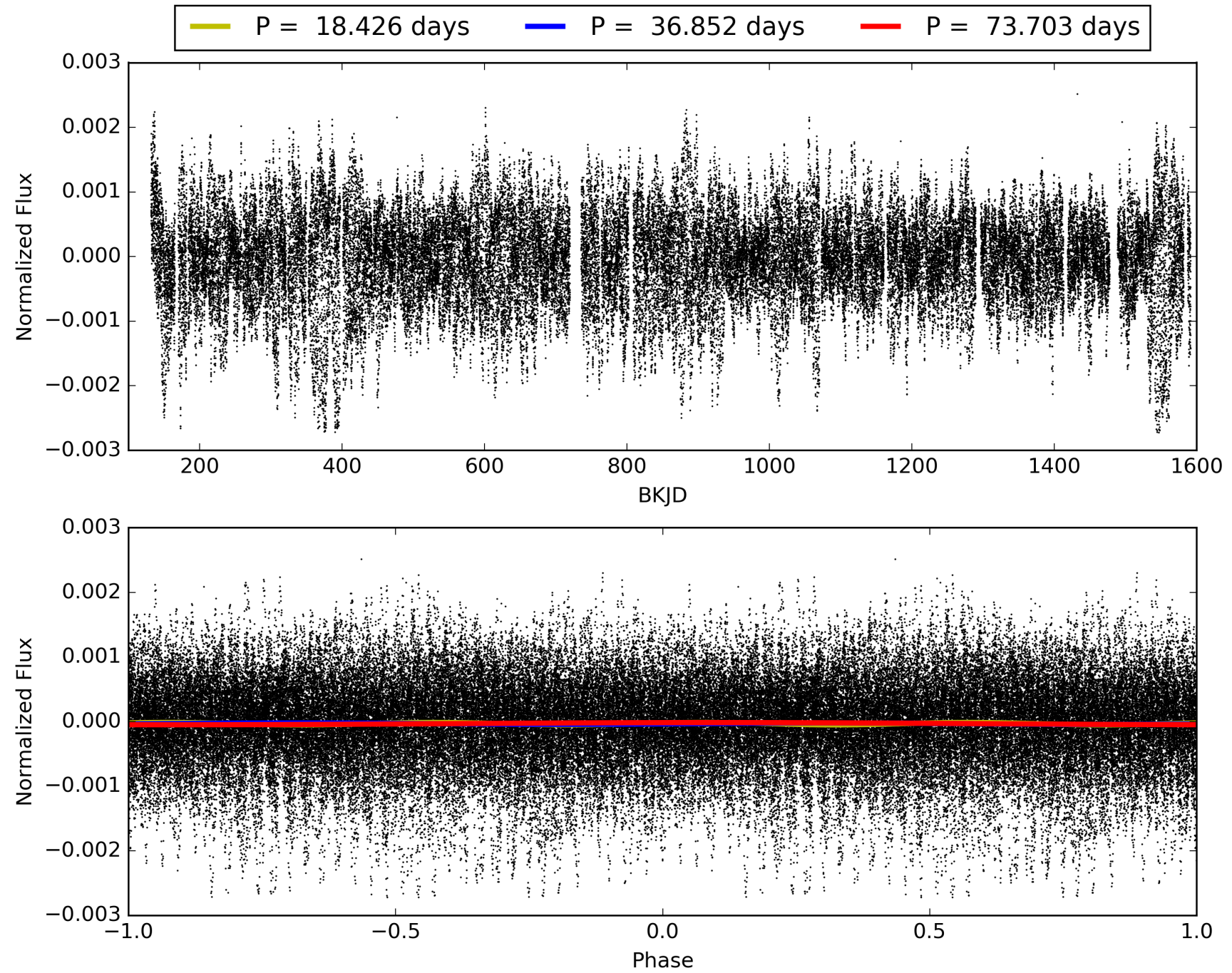
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:40:55 Z

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

TCE 005530963-03, PDC Light Curves

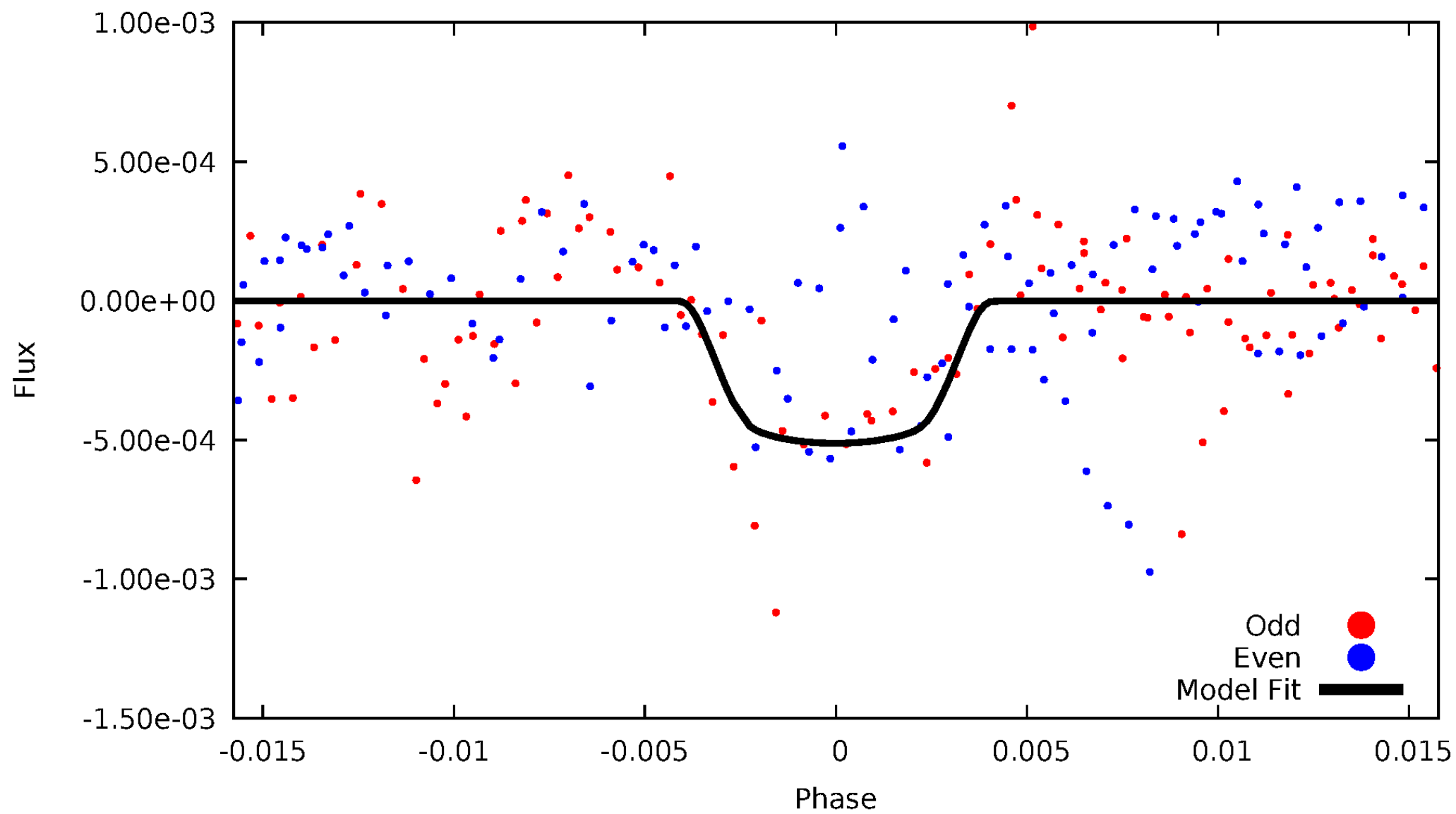


TCE 005530963-03



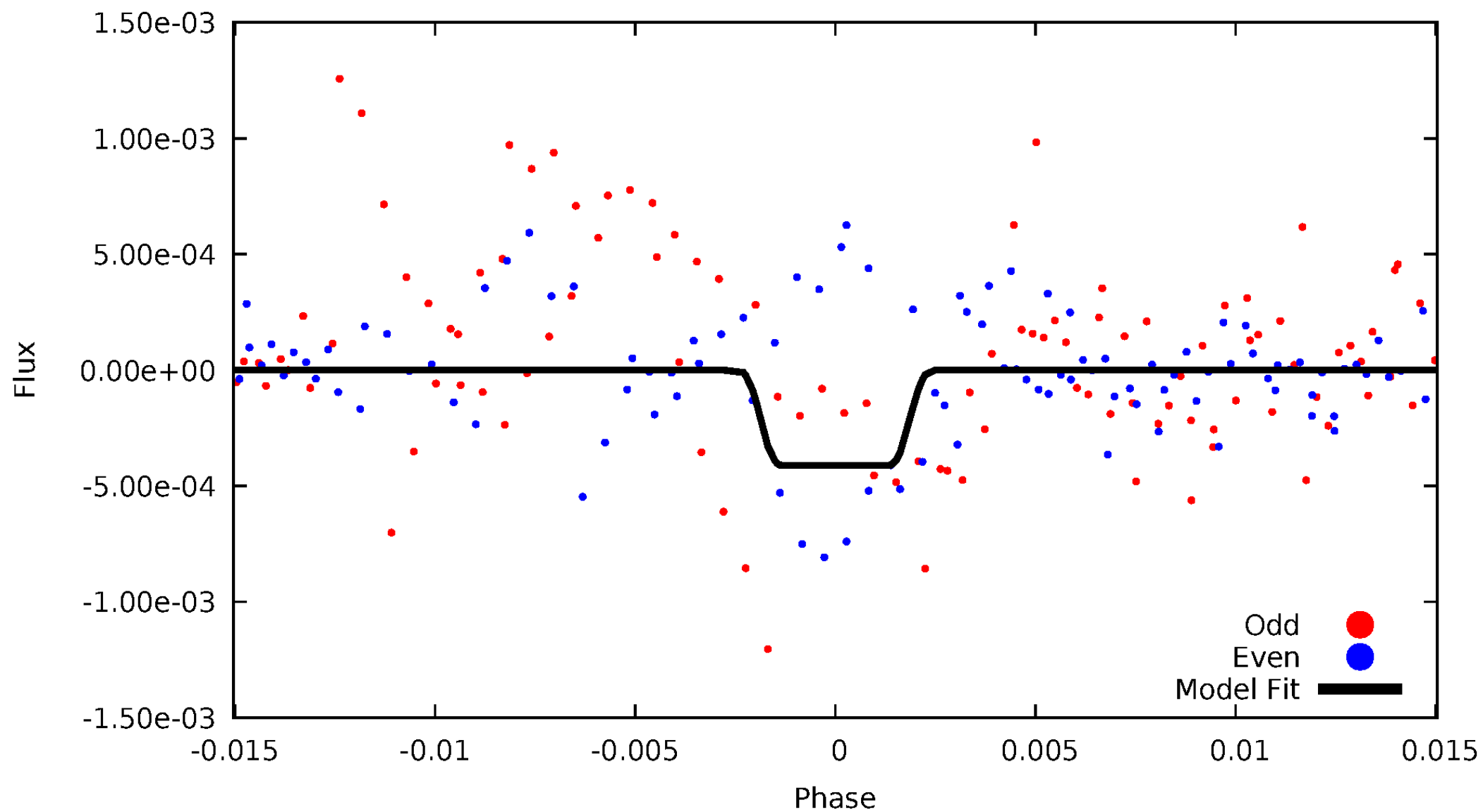
DV Odd/Even

TCE 005530963-03



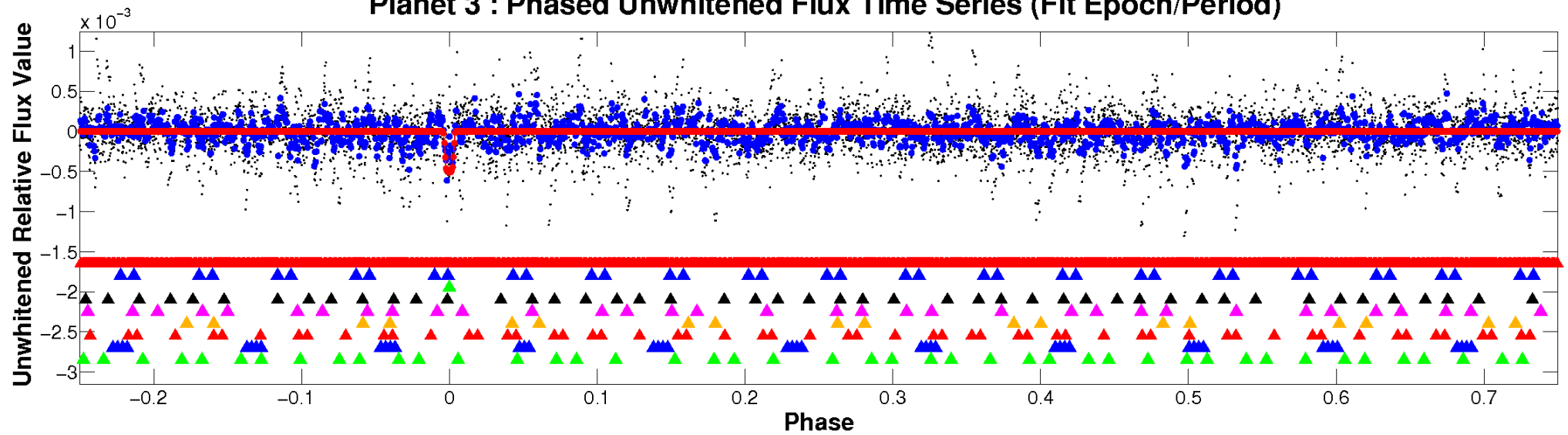
ALT Odd/Even

TCE 005530963-03

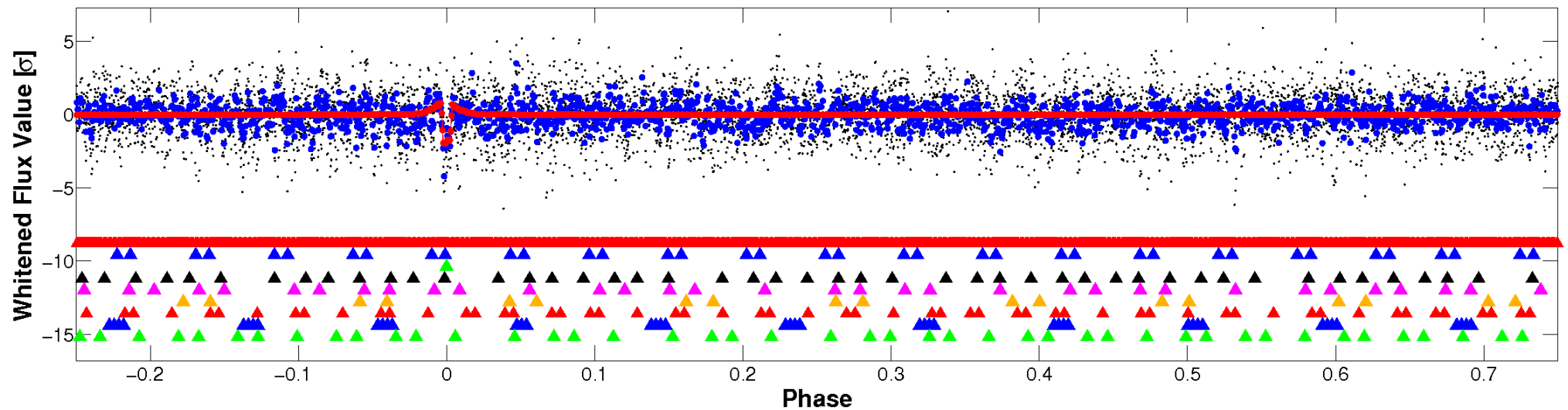


Non-Whitened Vs. Whitened Light Curve

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

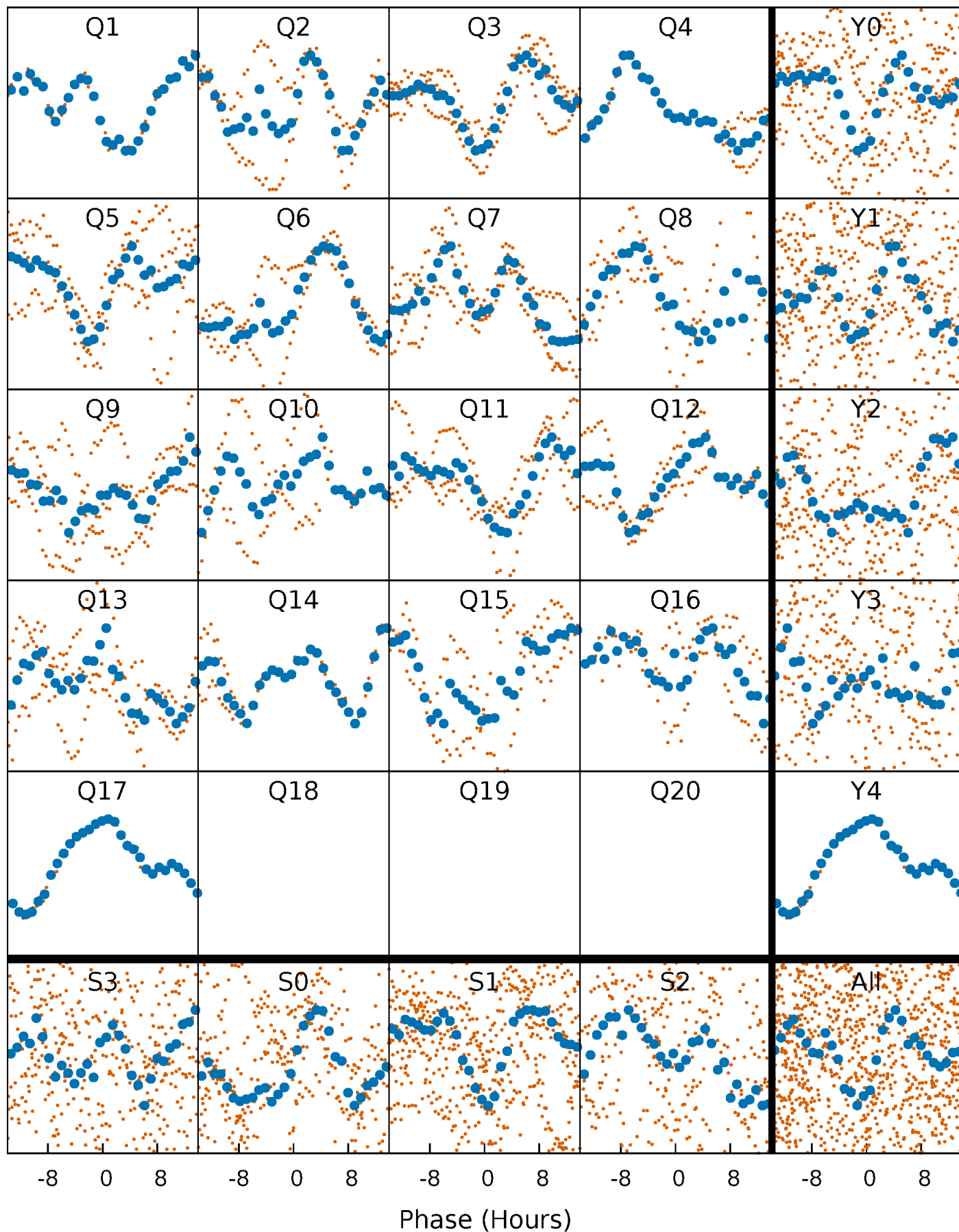


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



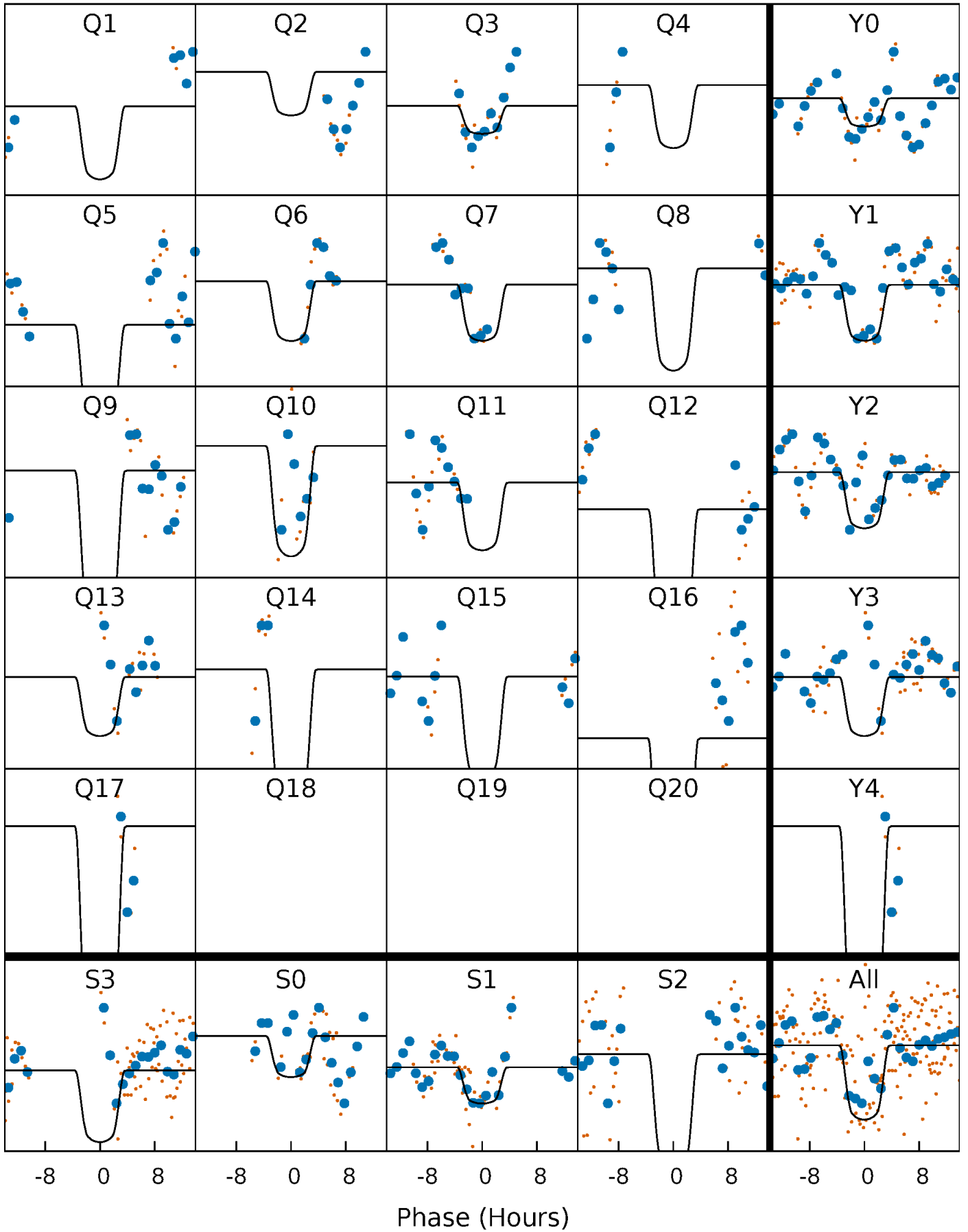
PDC Quarter-Phased Transit Curves

TCE 005530963-03 P= 36.851619 Days $T_0=162.904611$ (BKJD)



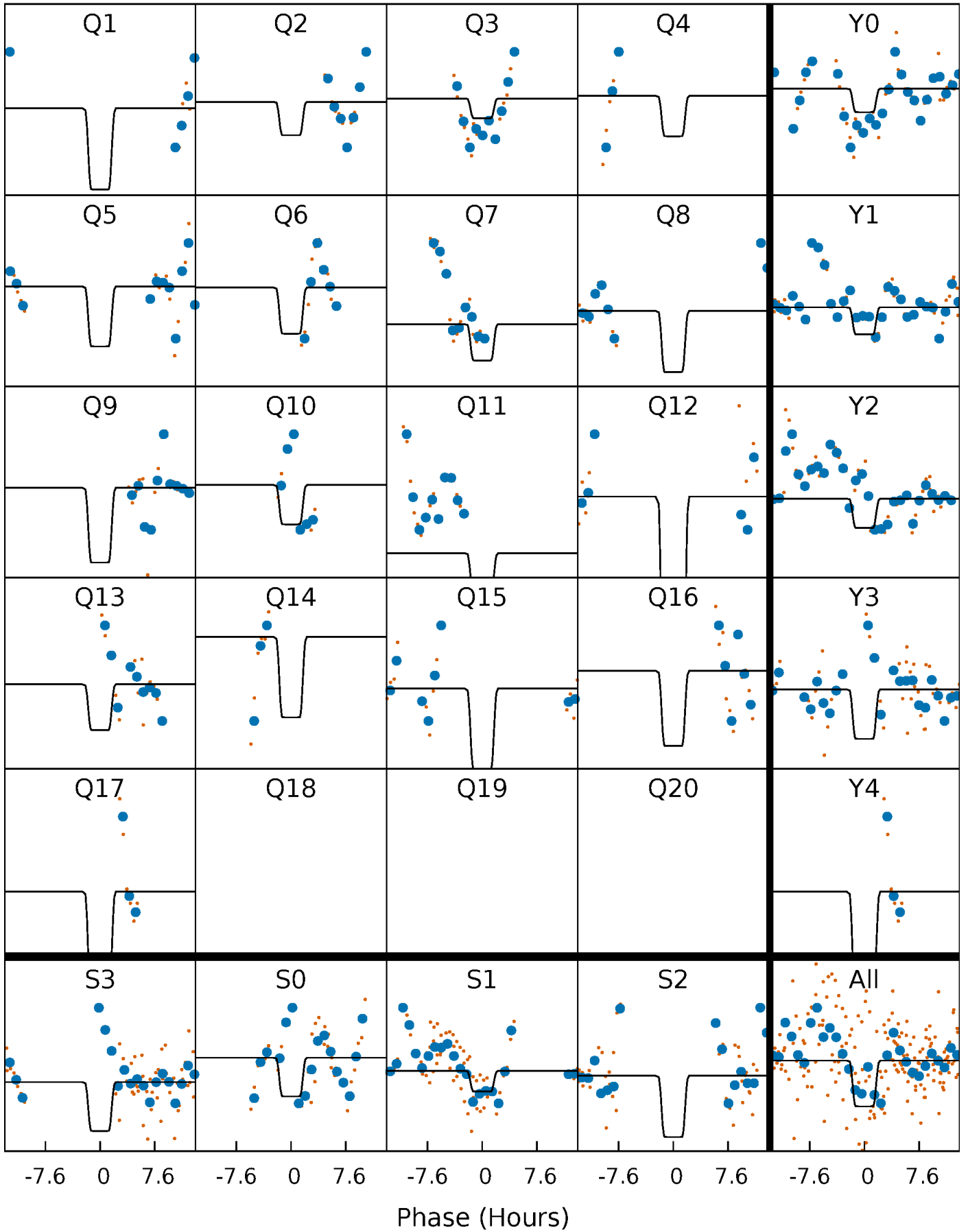
DV Quarter-Phased Transit Curves

TCE 005530963-03 P= 36.851619 Days $T_0=162.904611$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

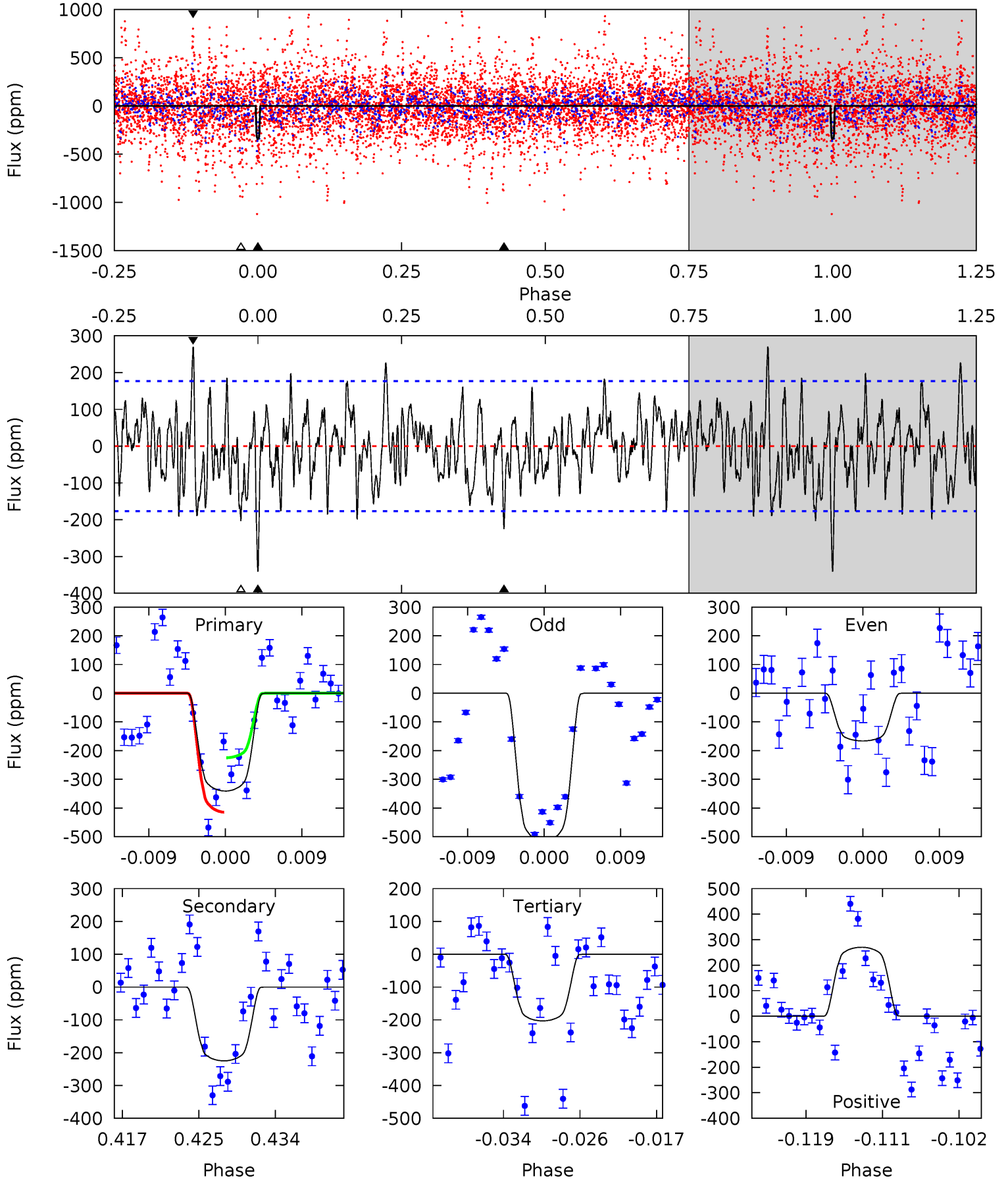
TCE 005530963-03 P= 36.851289 Days $T_0=162.910417$ (BKJD)



DV Model-Shift Uniqueness Test

005530963-03, P = 36.851619 Days, E = 126.052992 Days

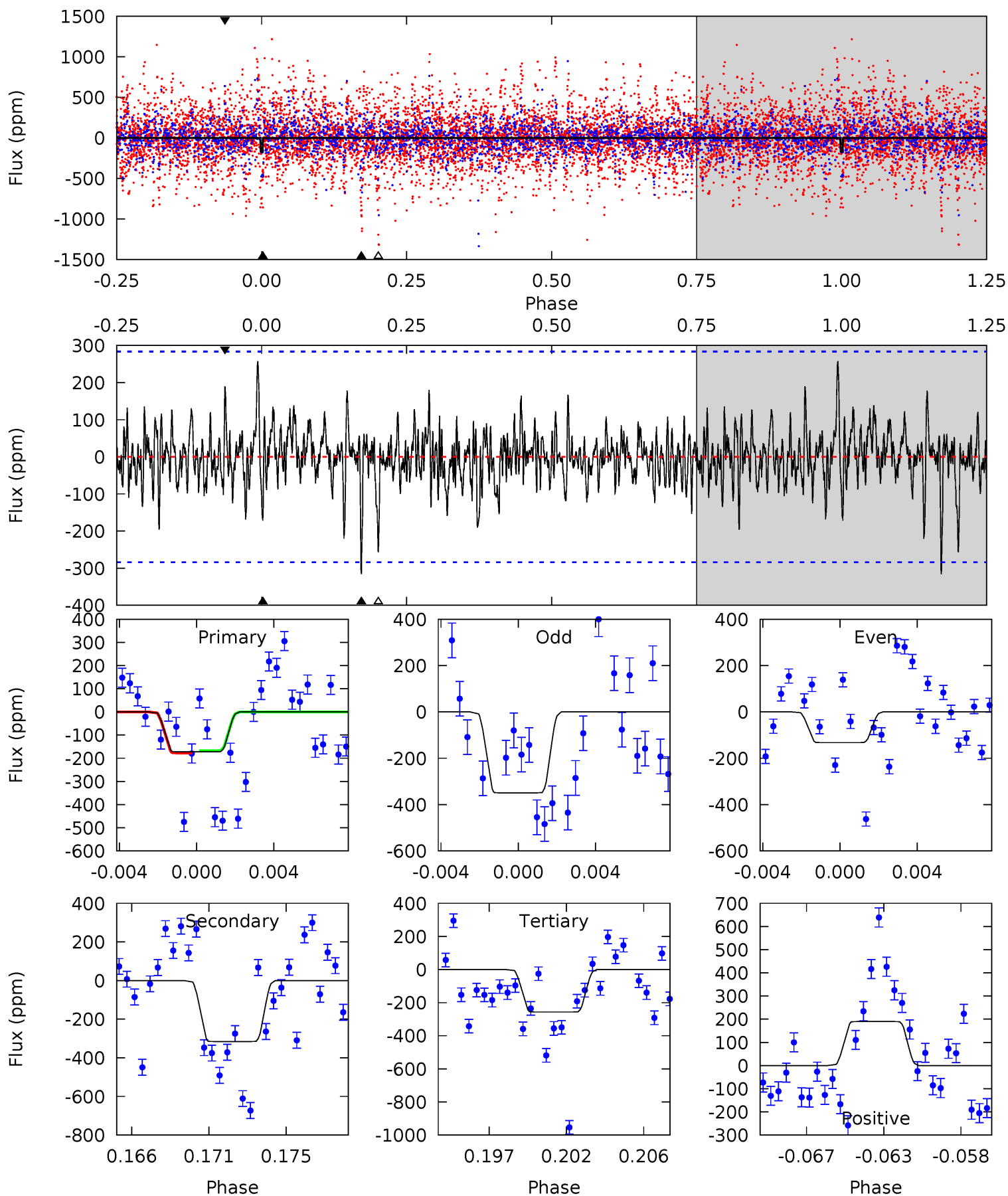
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.75	6.43	5.81	7.73	5.06	2.63	2.20	3.94	2.02	0.62	-1.30	4.83	0.80	0.44	2.77



Alt Model-Shift Uniqueness Test

005530963-03, P = 36.851289 Days, E = 126.059128 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.14	5.76	4.68	3.46	5.18	2.84	1.07	-1.55	-0.32	1.08	2.30	1.84	0.72	0.45	0.09



Stellar Parameters For KIC 005530963

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6809^{+162}_{-223}	$3.154^{+0.528}_{-0.132}$	$0.070^{+0.200}_{-0.400}$	$7.089^{+1.656}_{-3.864}$	$2.610^{+0.303}_{-0.909}$	$0.010^{+0.063}_{-0.004}$
	+2%/-3%	+17%/-4%	+286%/-571%	+23%/-55%	+12%/-35%	+609%/-37%
Source	PHO1	FLK73	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 005530963-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-225 ± 35	$18.34^{+4.00}_{-5.32}$	1976^{+169}_{-265}	5219^{+326}_{-284}	33^{+28}_{-11}
Alt.	-316 ± 55	$14.31^{+3.31}_{-4.10}$	1988^{+157}_{-276}	6367^{+534}_{-480}	74^{+65}_{-26}

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

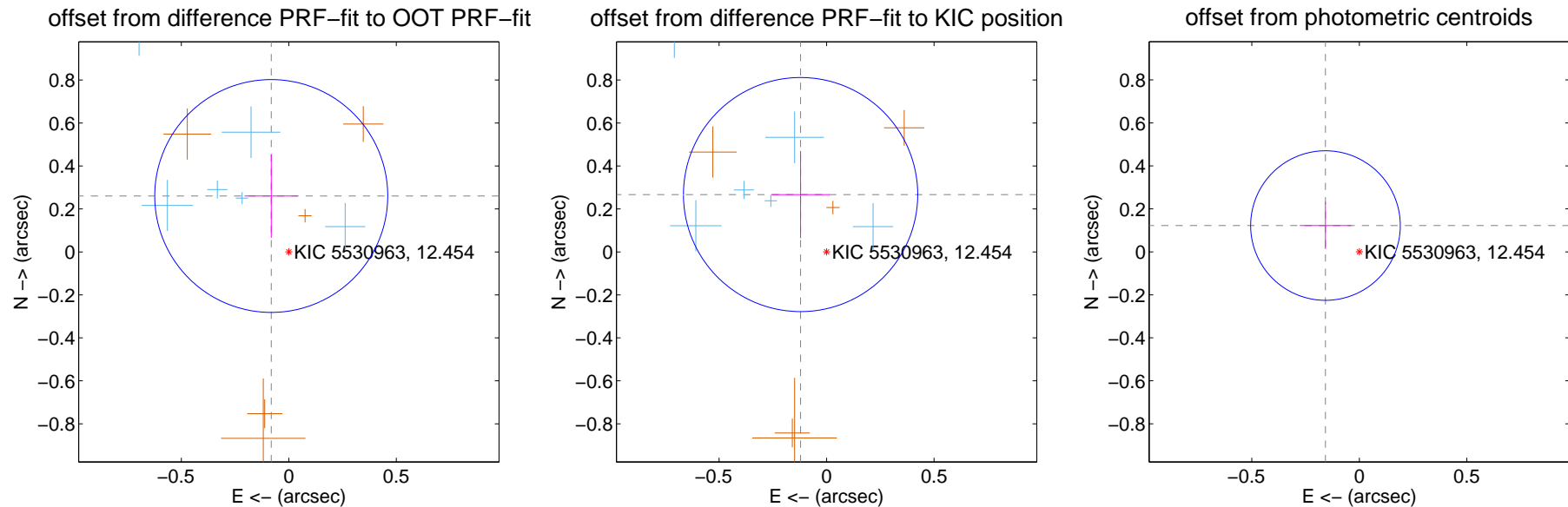
DV Centroid Data

Supplemental centroid analysis for 005530963-03. Kepler magnitude: 12.45. Transit SNR 11.66

There are 7 quarters with good PRF difference image offsets

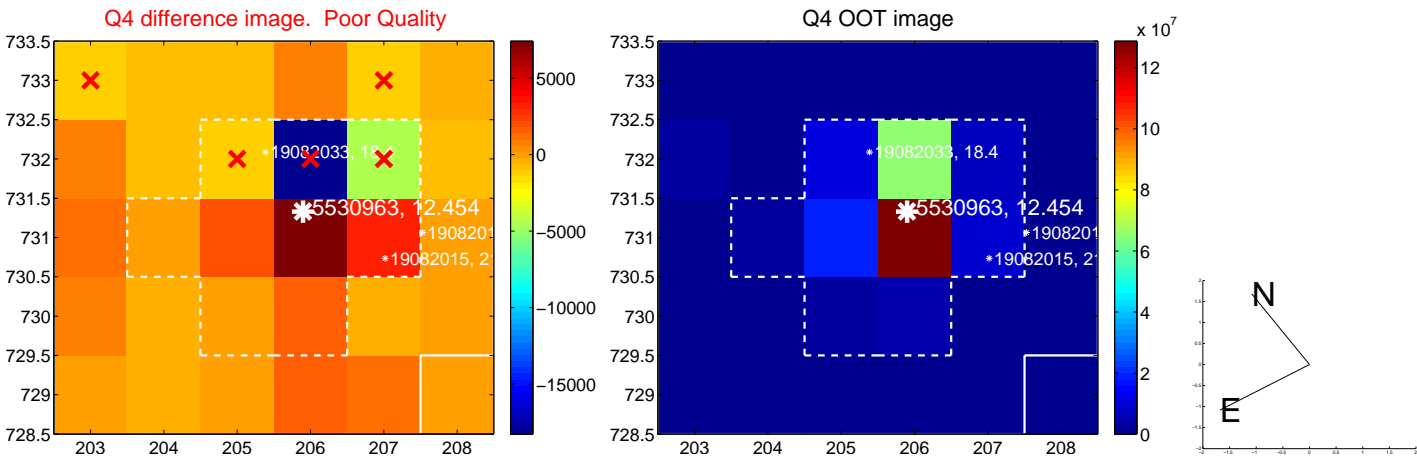
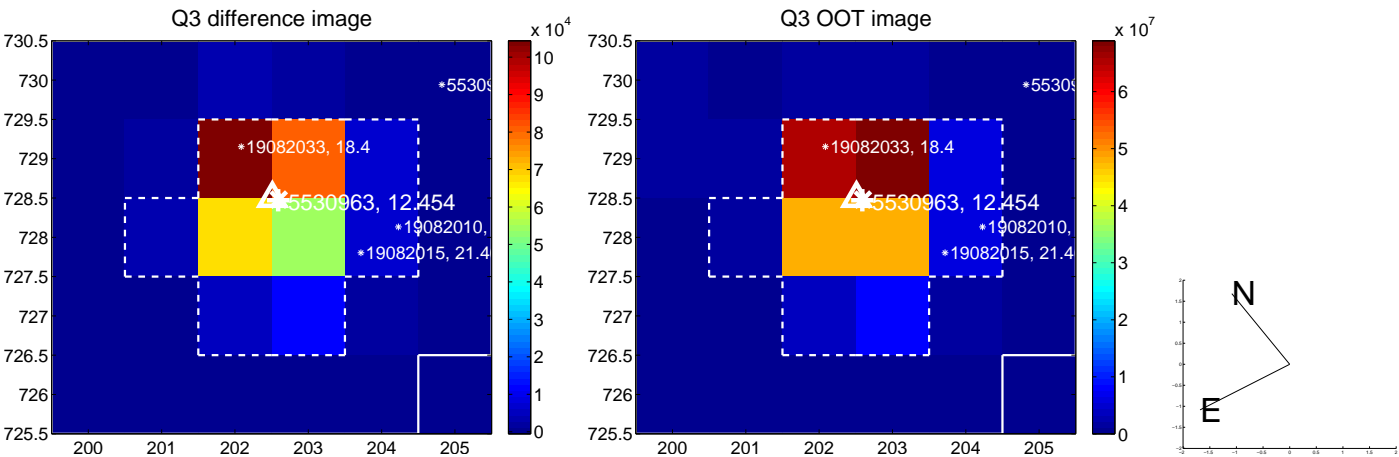
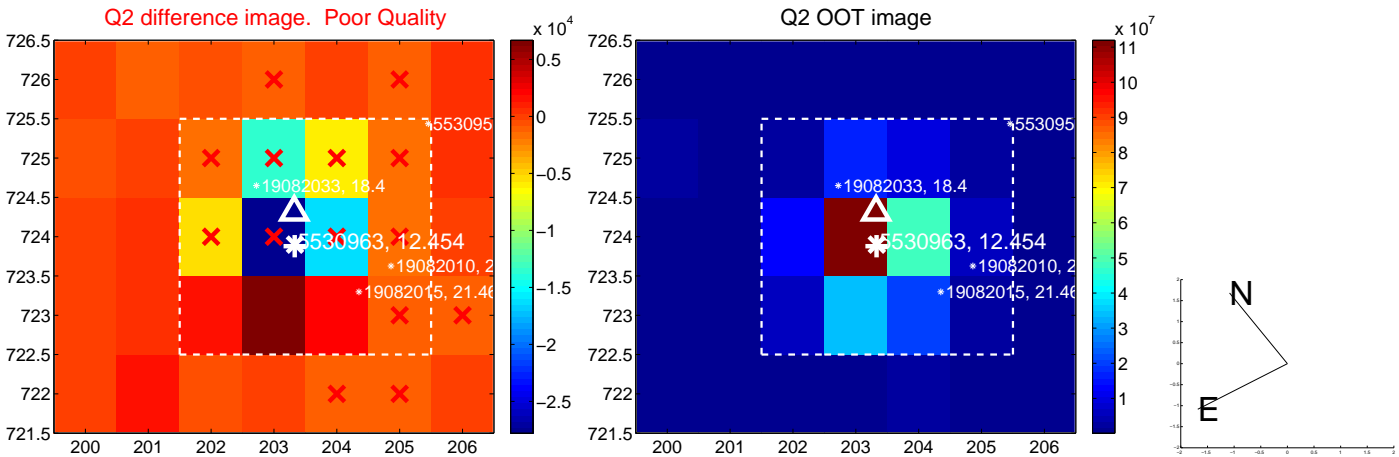
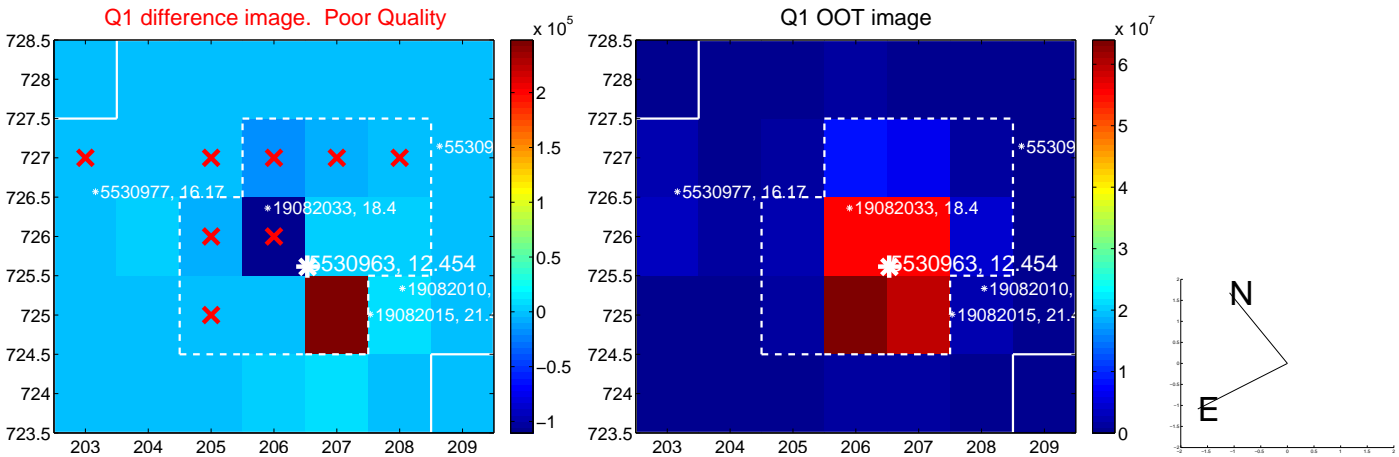
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.273 ± 0.181	1.51	0.082 ± 0.124	0.260 ± 0.195
PRF-fit source offset from KIC position	0.293 ± 0.182	1.61	0.121 ± 0.135	0.267 ± 0.203
photometric centroid source offset	0.20 ± 0.12	1.72	0.16 ± 0.12	0.12 ± 0.11

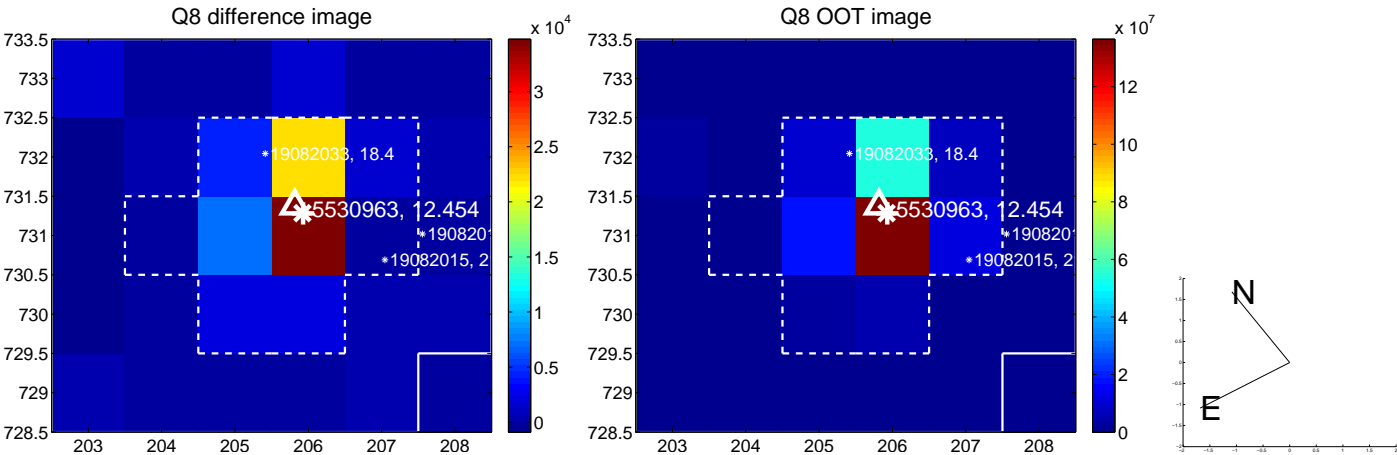
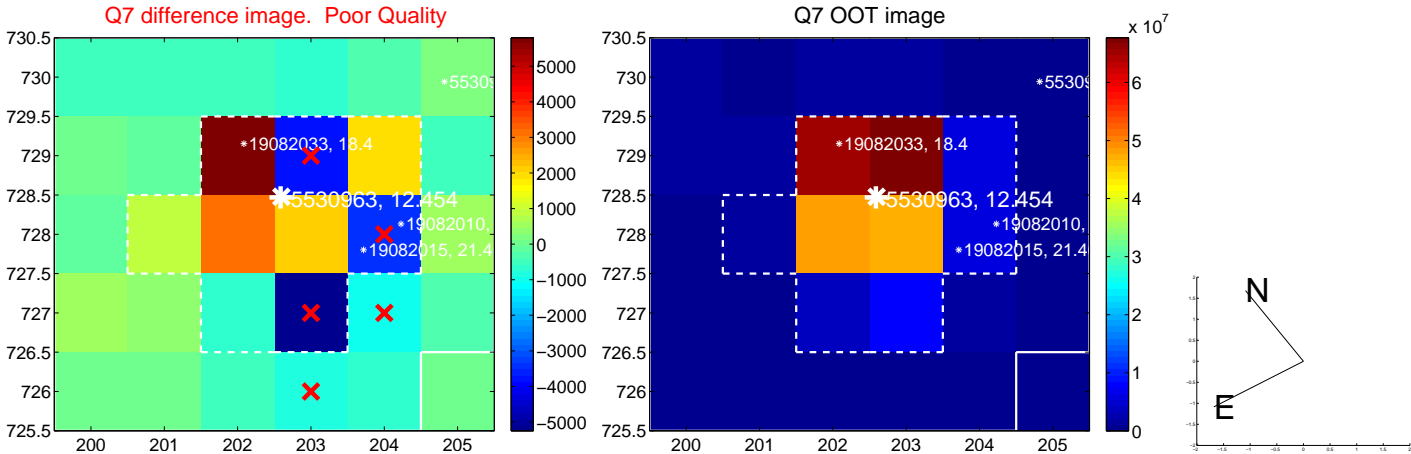
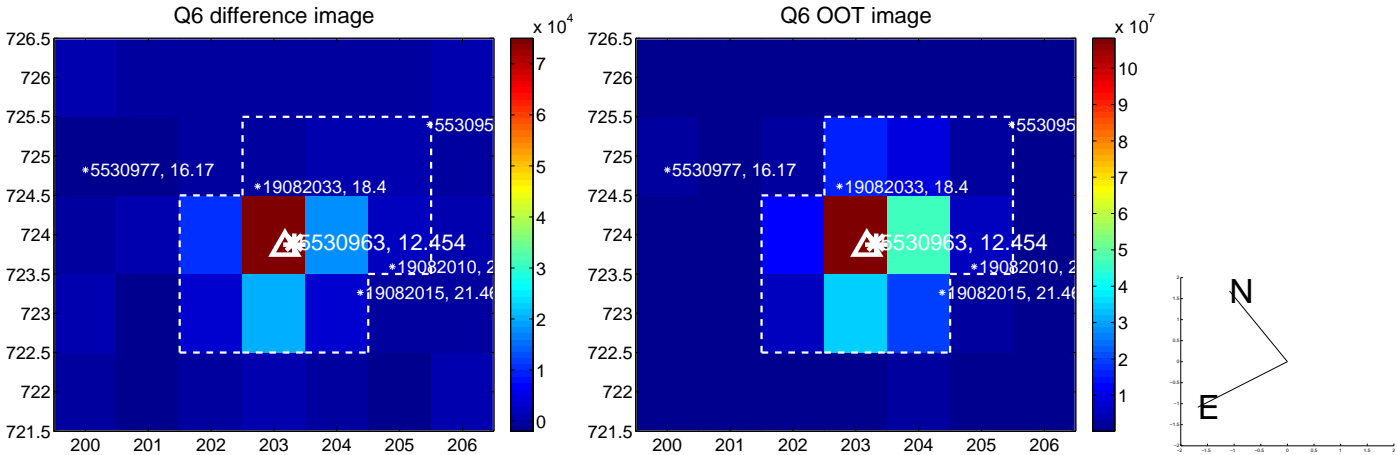
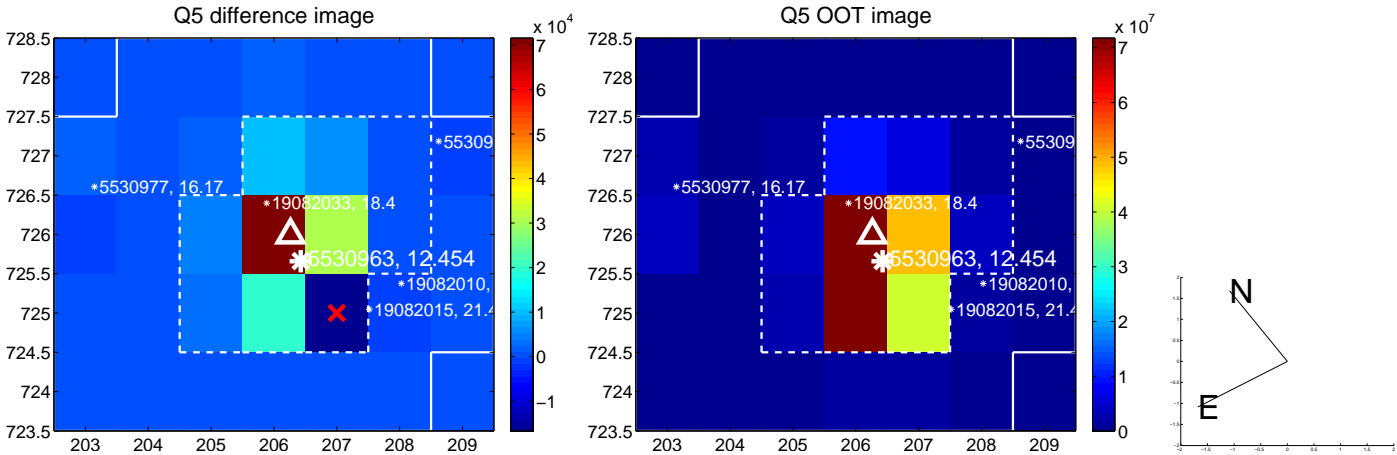


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

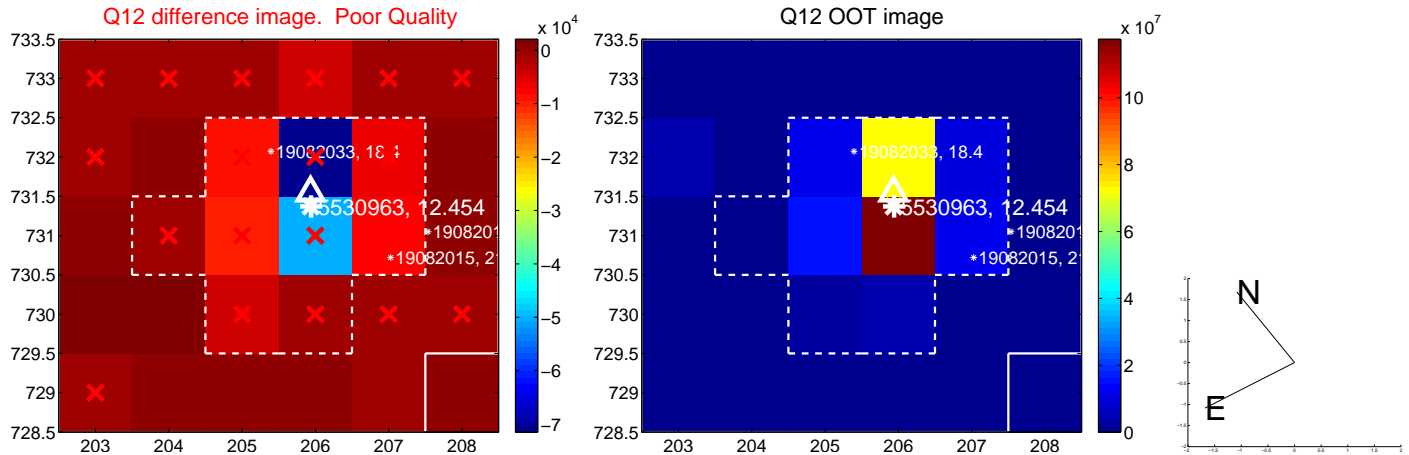
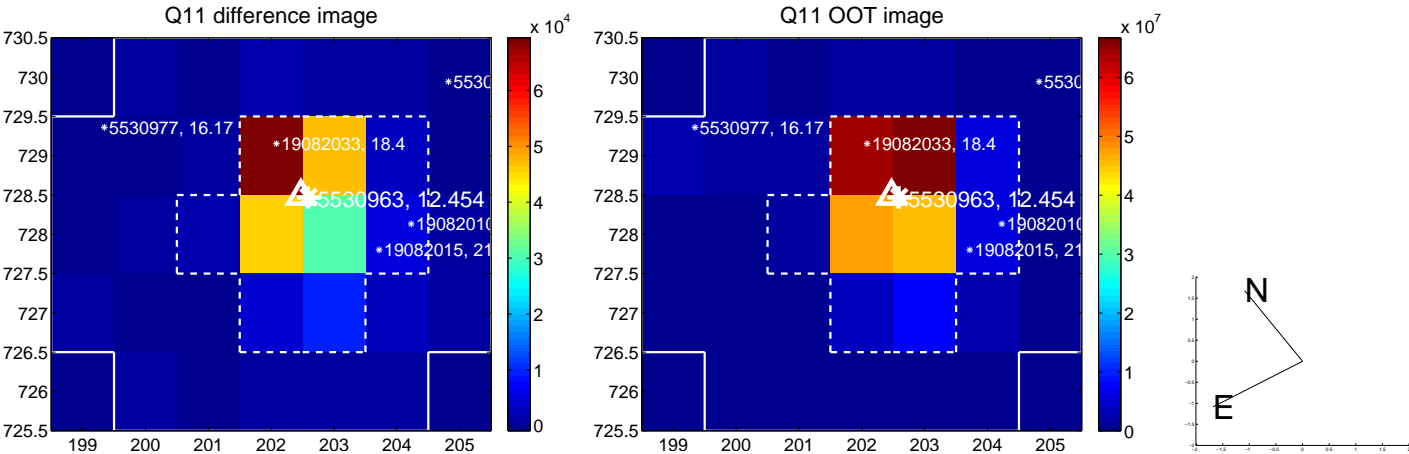
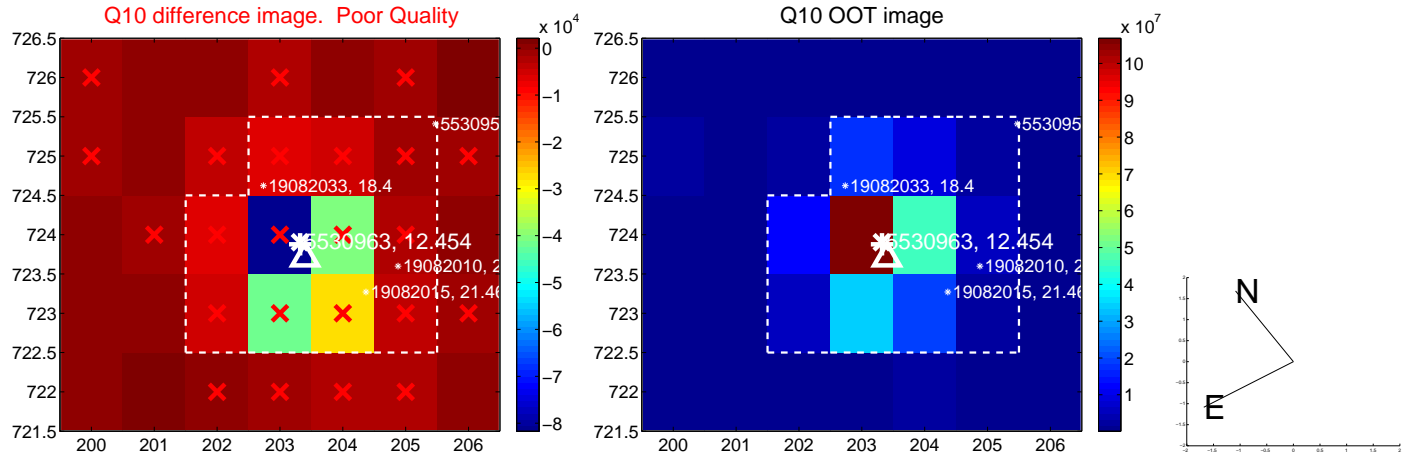
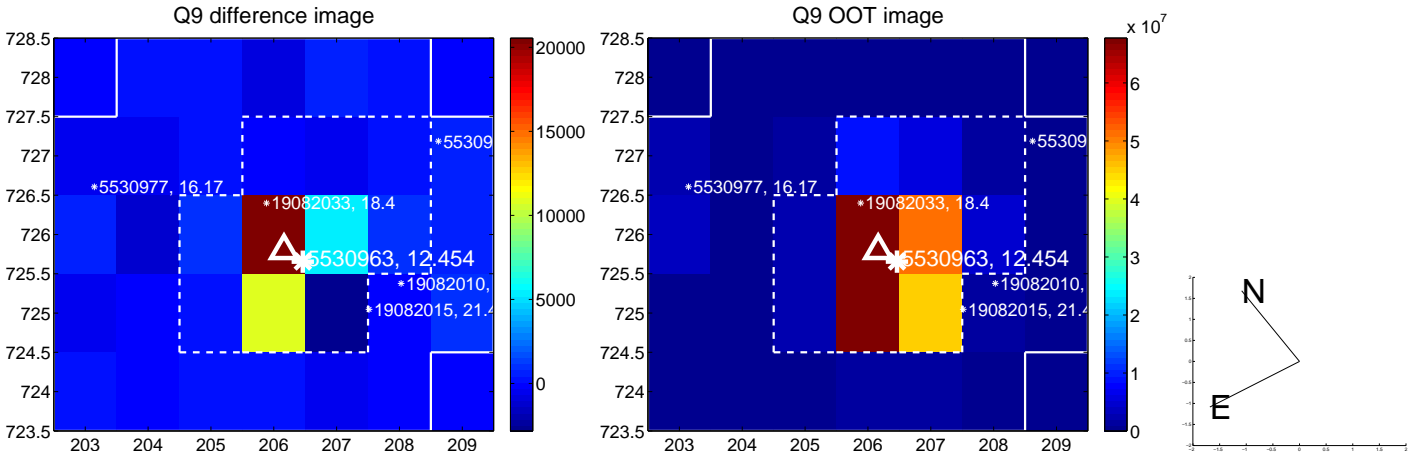
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



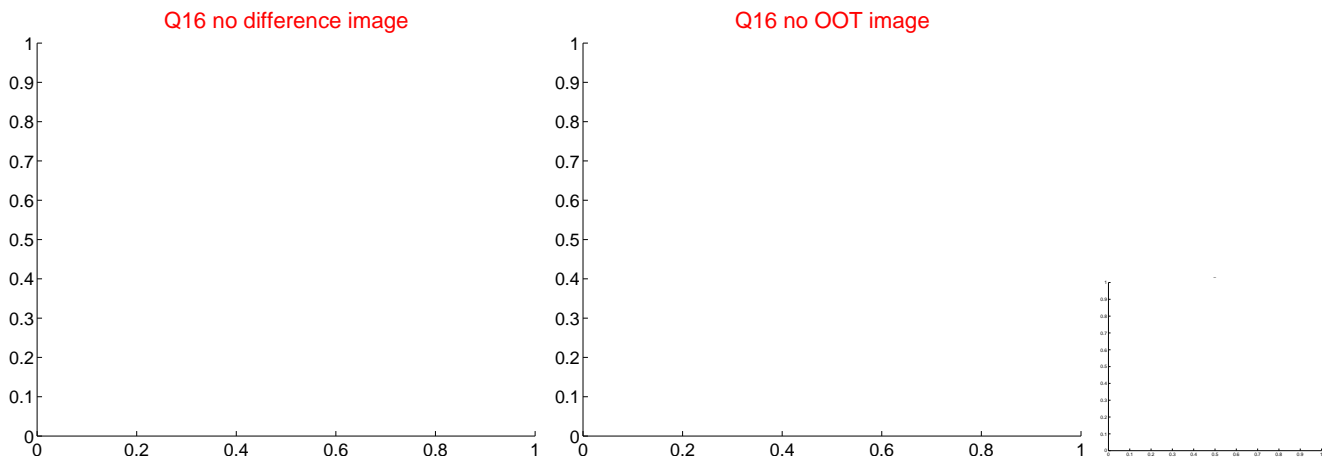
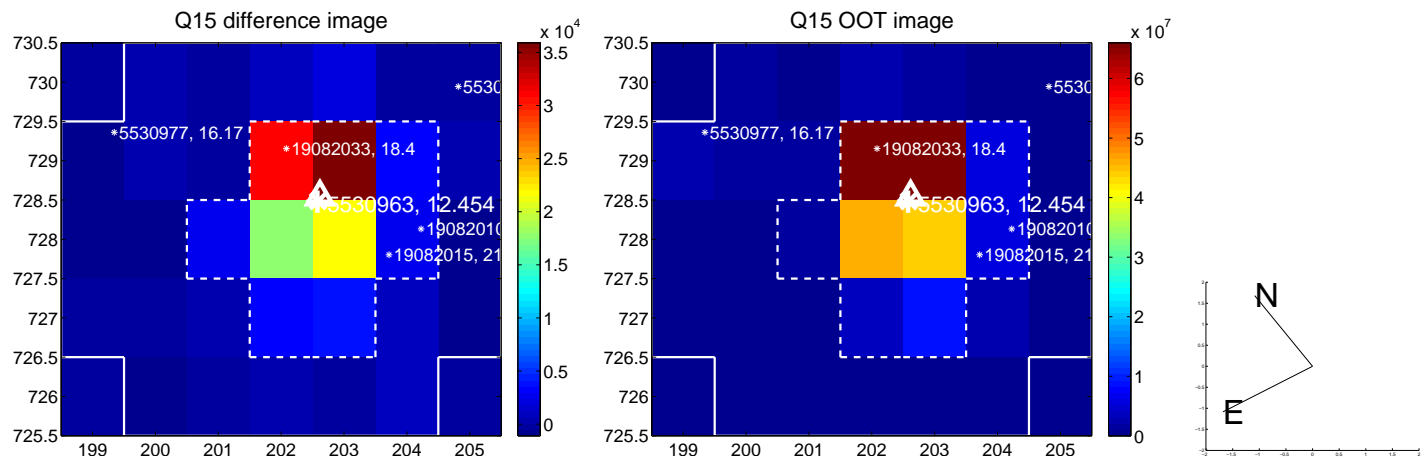
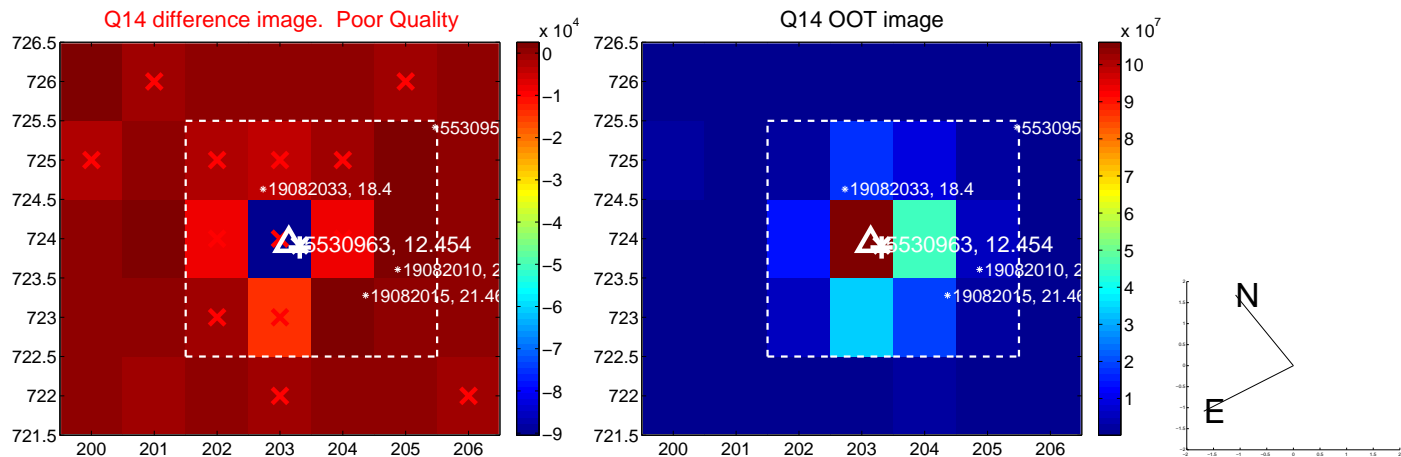
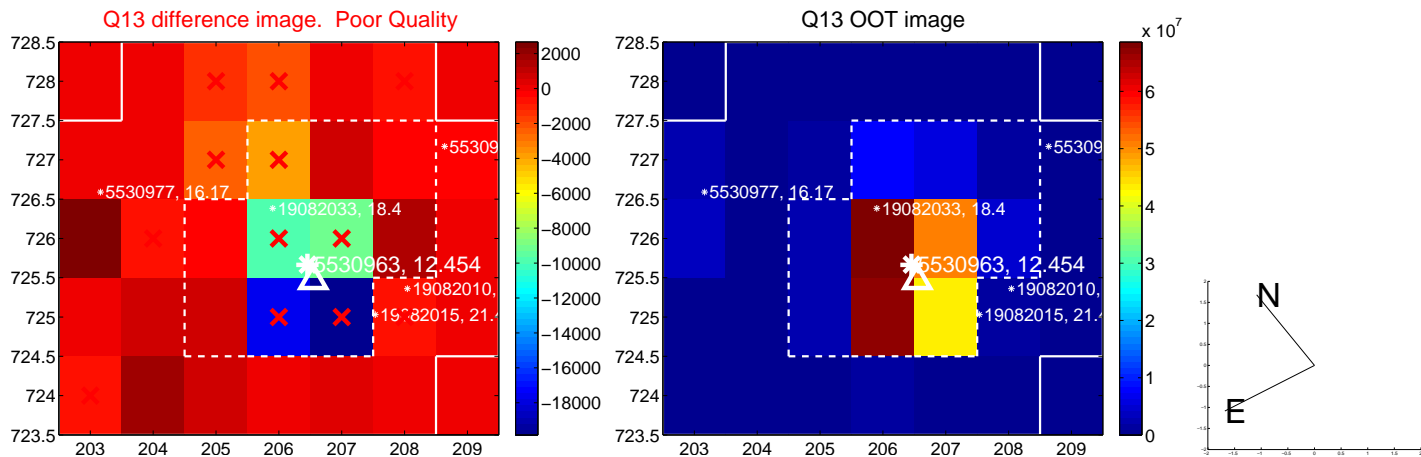
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



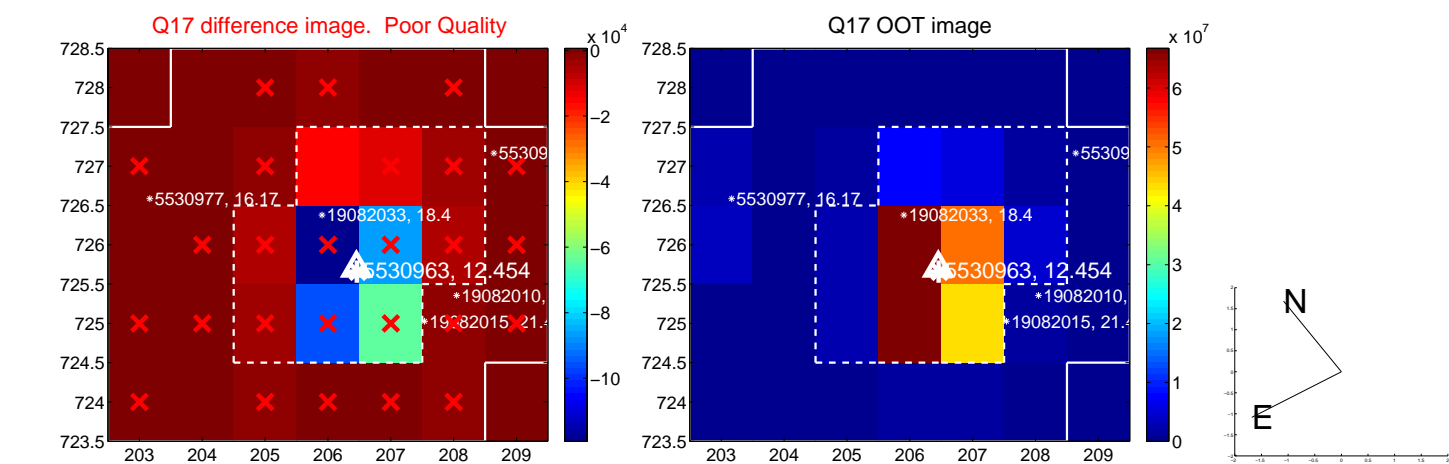
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



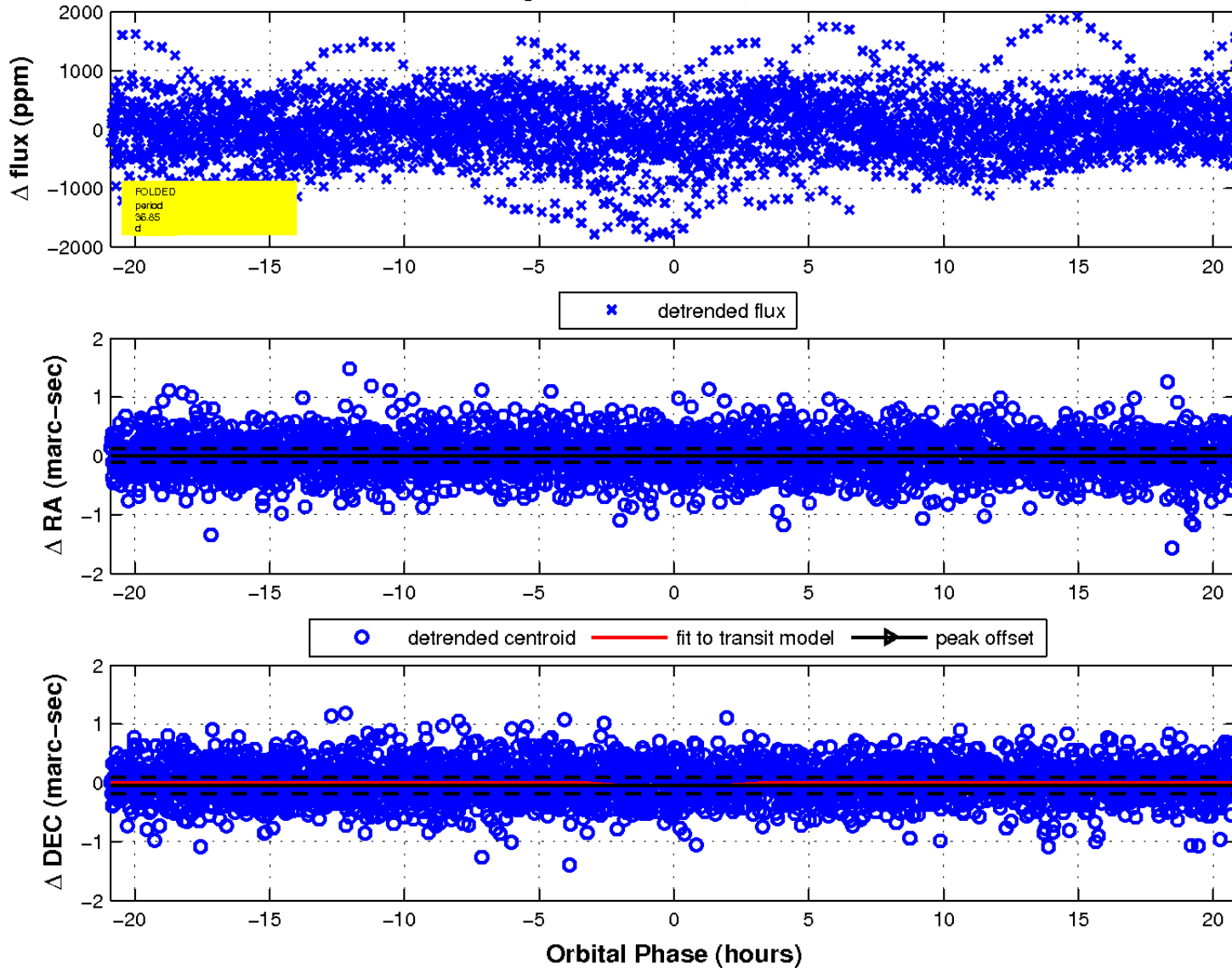
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

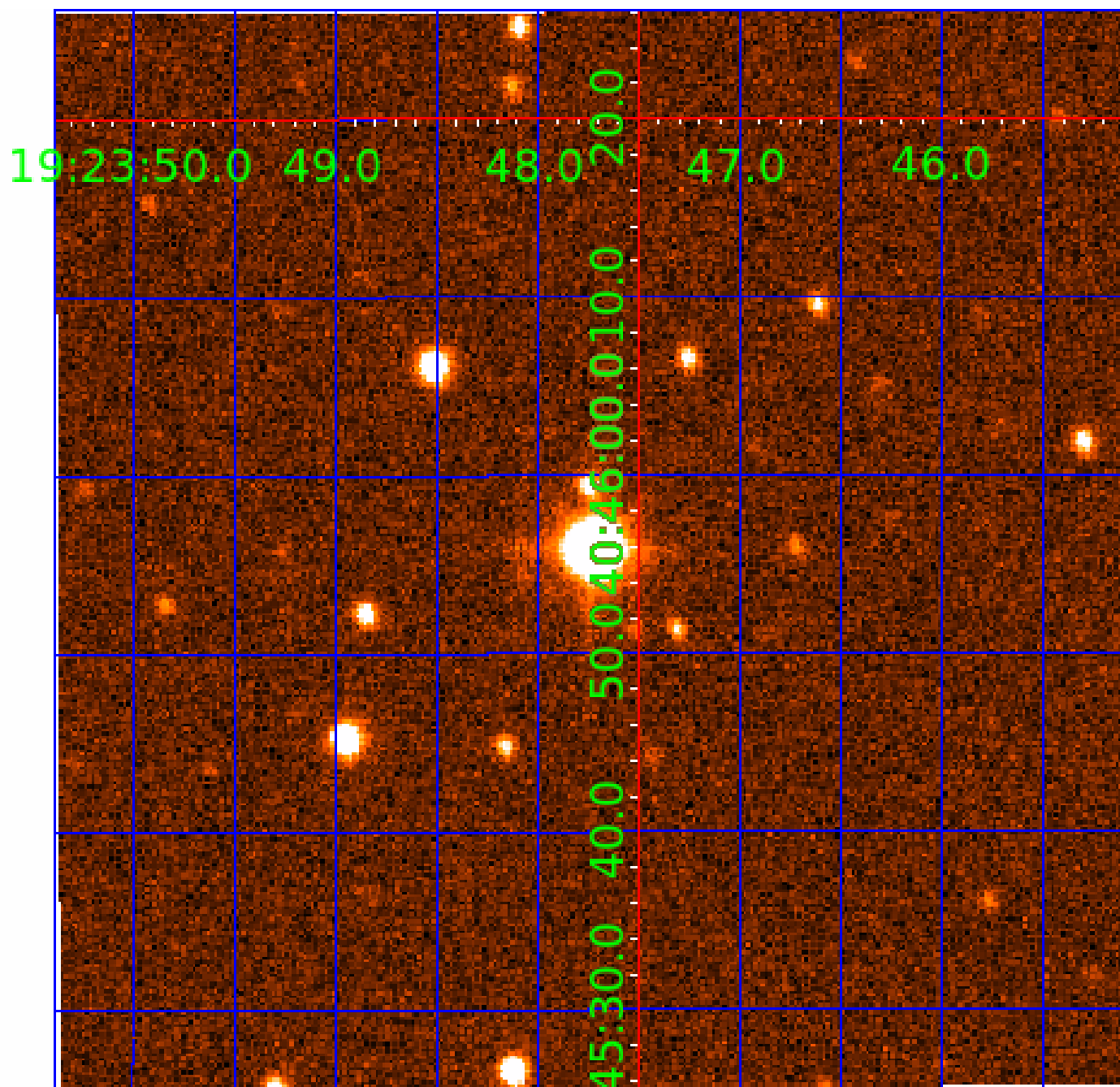


fluxWeightedCentroids, Planet 3 of 9



UKIRT Image

Declination



KIC 005530963

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})
005530963-01	OBS	No	1.080265	132.615791	40.7	7.525	7.8	9.5	7.09	6809	5.26	0.00
005530963-03	OBS	No	36.851619	162.904611	512.0	6.972	18.7	11.7	7.09	6809	19.65	1085.61
005530963-04	OBS	No	31.284956	141.366740	160.5	11.099	15.4	5.6	7.09	6809	10.23	1350.53
005530963-05	OBS	No	42.703161	150.898885	647.6	3.032	15.1	11.0	7.09	6809	34.32	891.94
005530963-06	OBS	No	81.817698	198.274623	853.0	5.251	13.3	12.4	7.09	6809	39.02	374.82
005530963-08	OBS	No	33.512239	161.196427	598.7	4.210	11.5	9.5	7.09	6809	30.31	1232.20
005530963-09	OBS	No	32.921168	160.165568	499.4	2.422	11.2	10.9	7.09	6809	17.72	1261.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005530963-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005530963-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
005530963-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
005530963-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005530963-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT

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

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

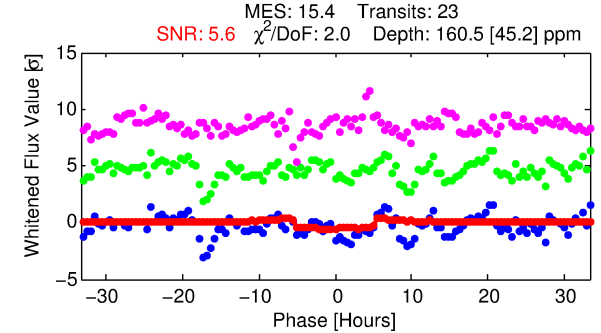
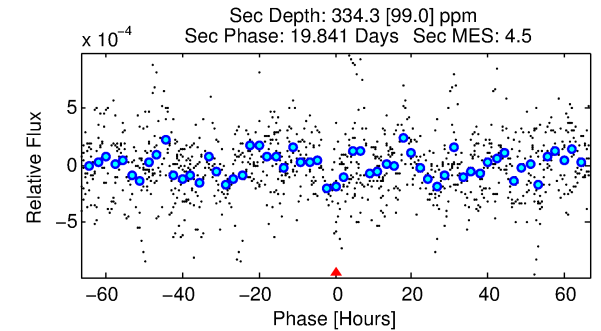
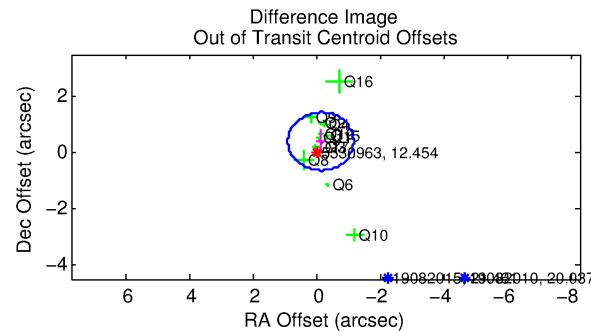
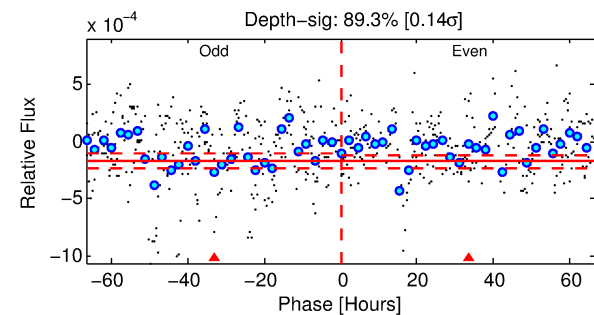
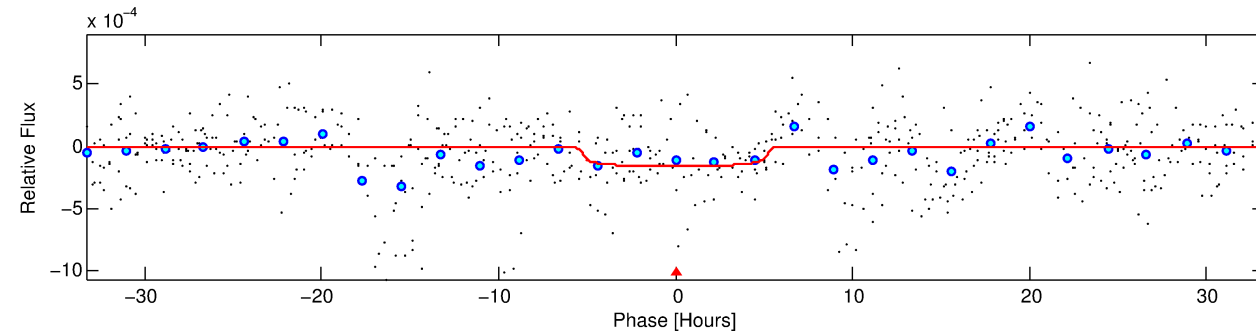
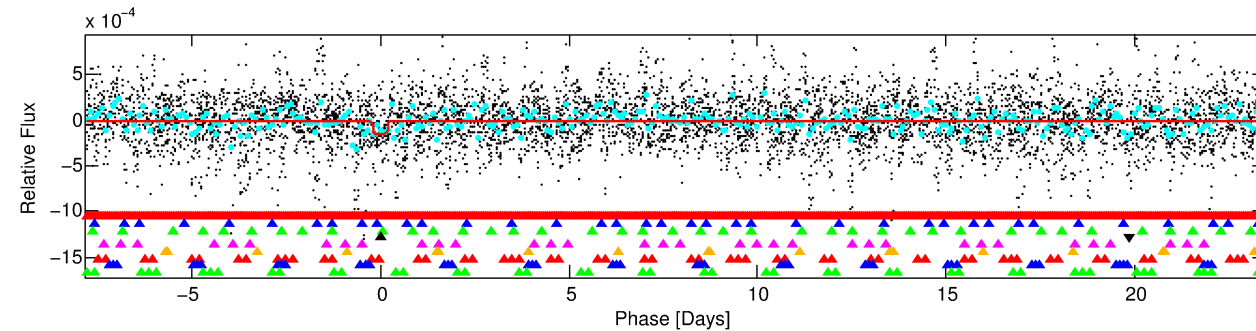
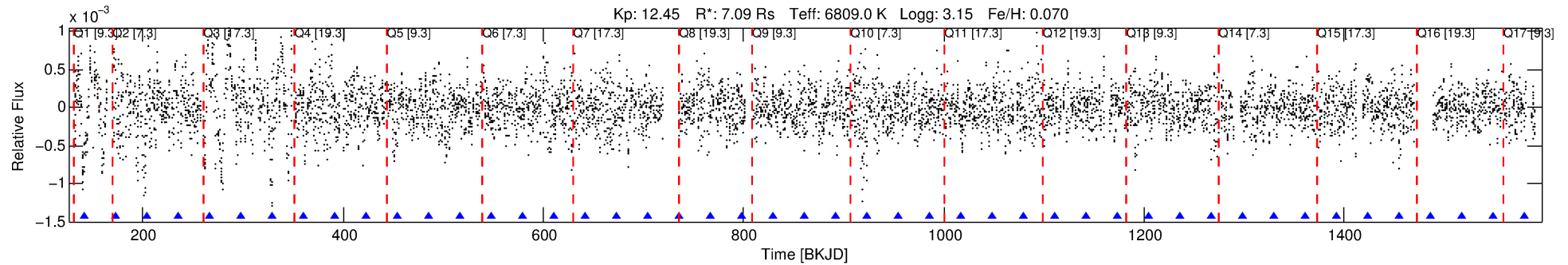
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005530963-04

No Significant Match Found

DV One-Page Summary

KIC: 5530963 Candidate: 4 of 9 Period: 31.285 d



DV Fit Results:

Period = 31.28496 [0.00123] d
Epoch = 141.3667 [0.0362] BKJD
Rp/R* = 0.0132 [0.0034]
a/R* = 11.27 [13.05]
b = 0.87 [0.33]
Seff = 1350.53 [1212.57]
Teq = 1546 [347] K
Rp = 10.23 [6.16] Re
a = 0.2677 [0.1457] AU
Ag = 126.01 [134.63] [0.93 σ]
Teff = 8007 [1217] K [5.11 σ]

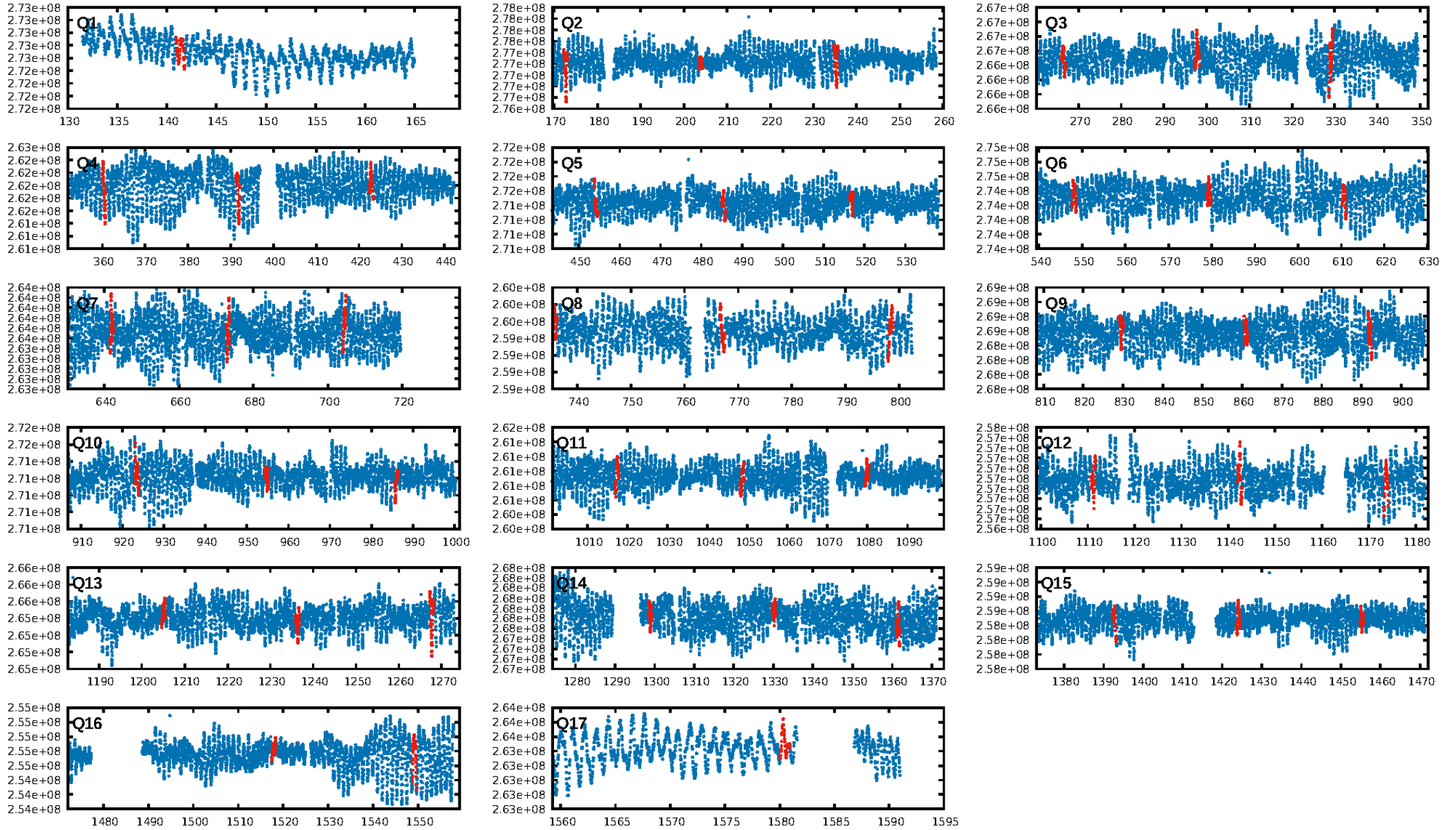
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.91 σ]
LongPeriod-sig: 99.9% [3.46 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 2.246
Centroid-sig: 4.6%
Centroid-so: 0.265 arcsec [1.09 σ]
OotOffset-rm: 0.412 arcsec [1.19 σ]
KicOffset-rm: 0.403 arcsec [1.13 σ]
OotOffset-st: 3/4/4/2 [13]
KicOffset-st: 3/4/4/2 [13]
DiffImageQuality-fgm: 0.23 [3/13]
DiffImageOverlap-fno: 0.00 [0/17]

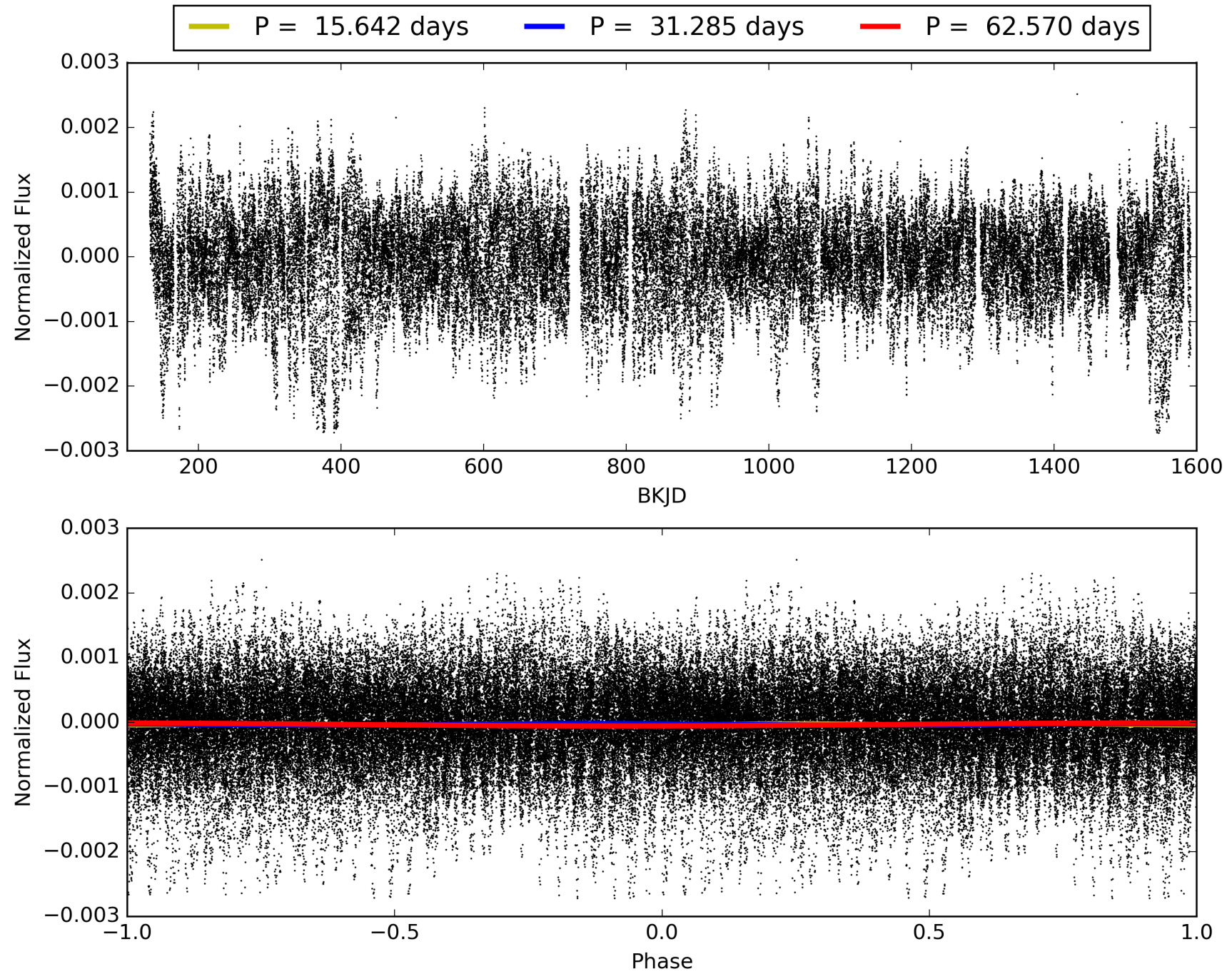
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:40:59 Z

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

TCE 005530963-04, PDC Light Curves

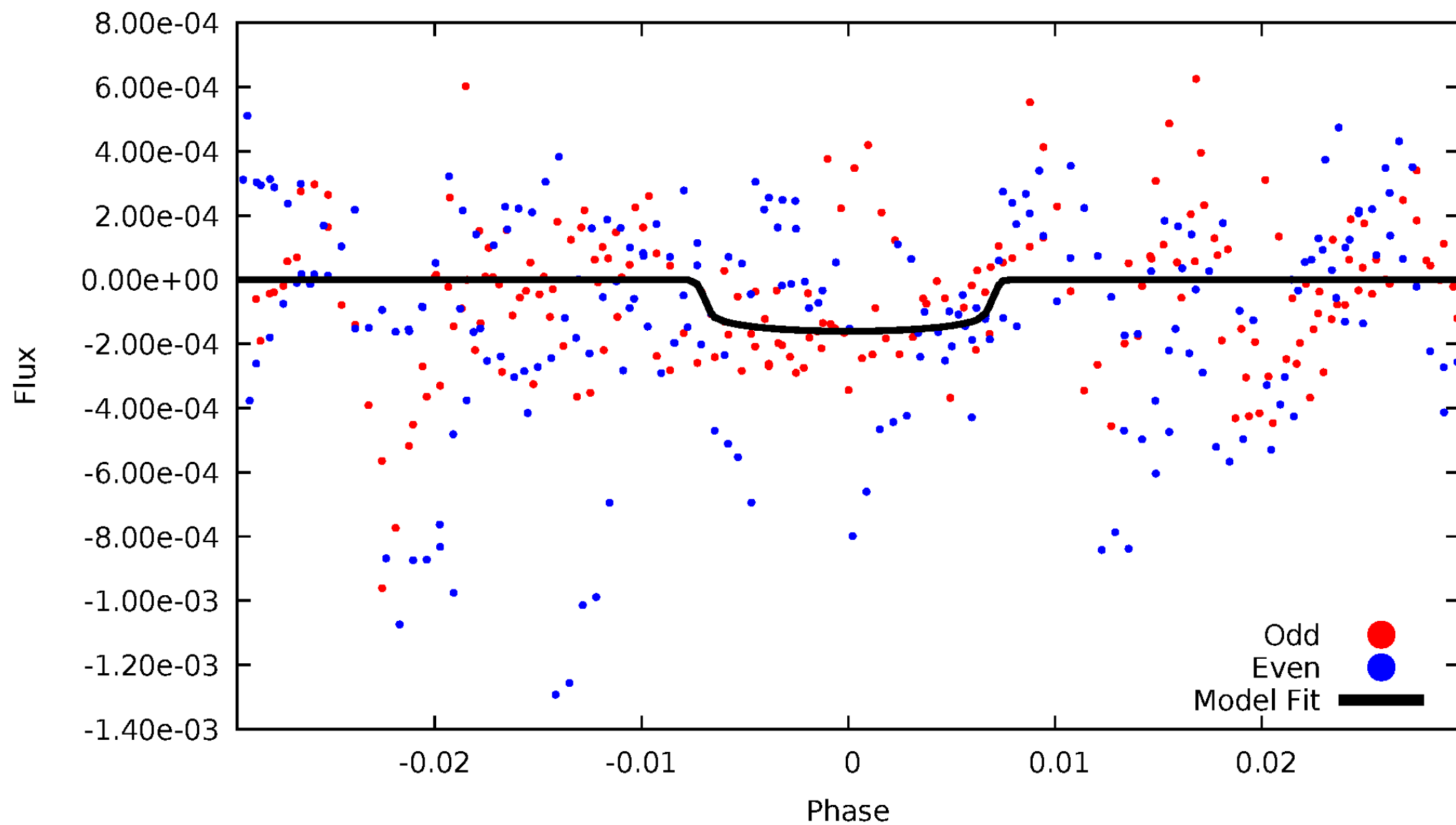


TCE 005530963-04



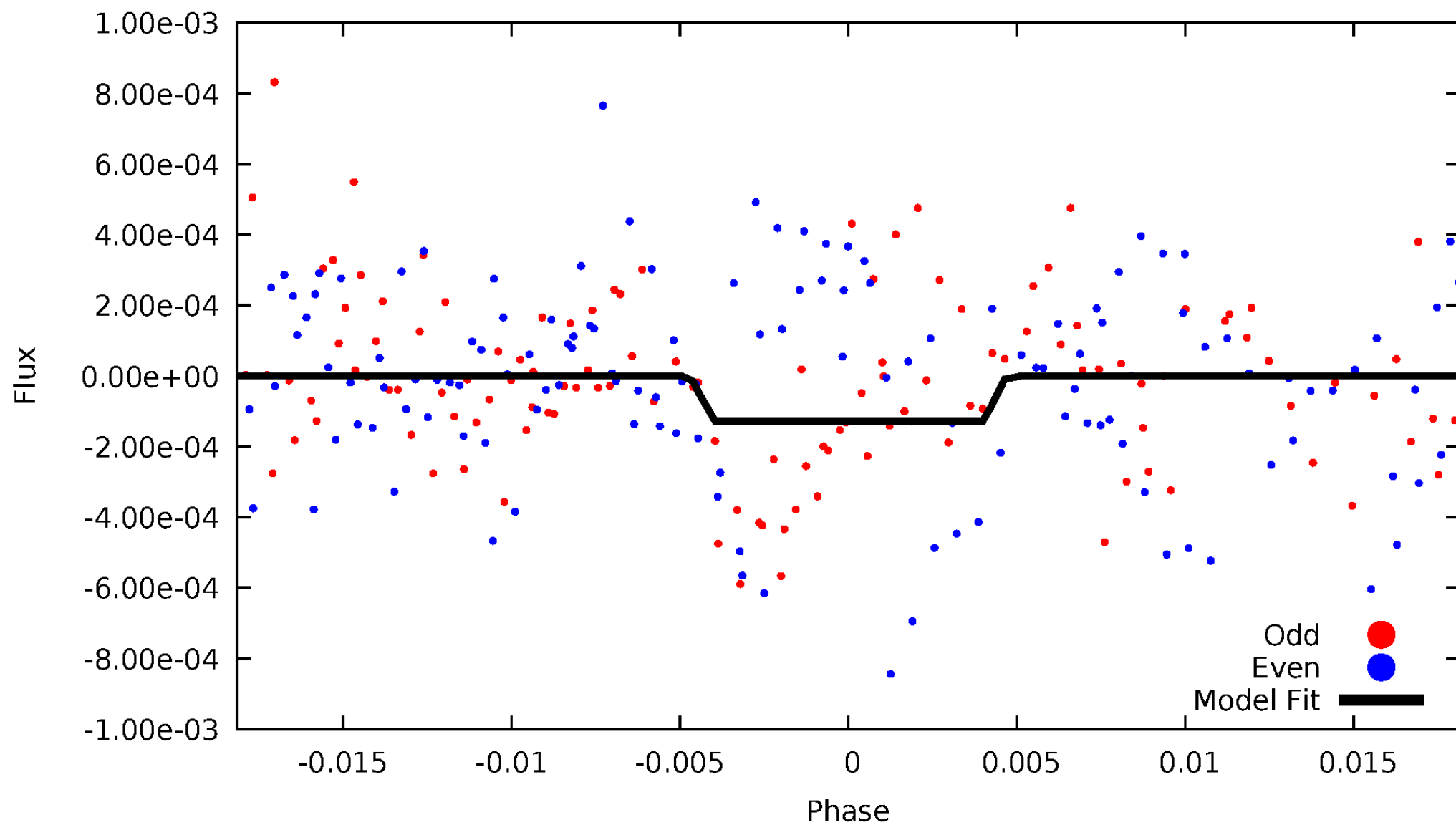
DV Odd/Even

TCE 005530963-04



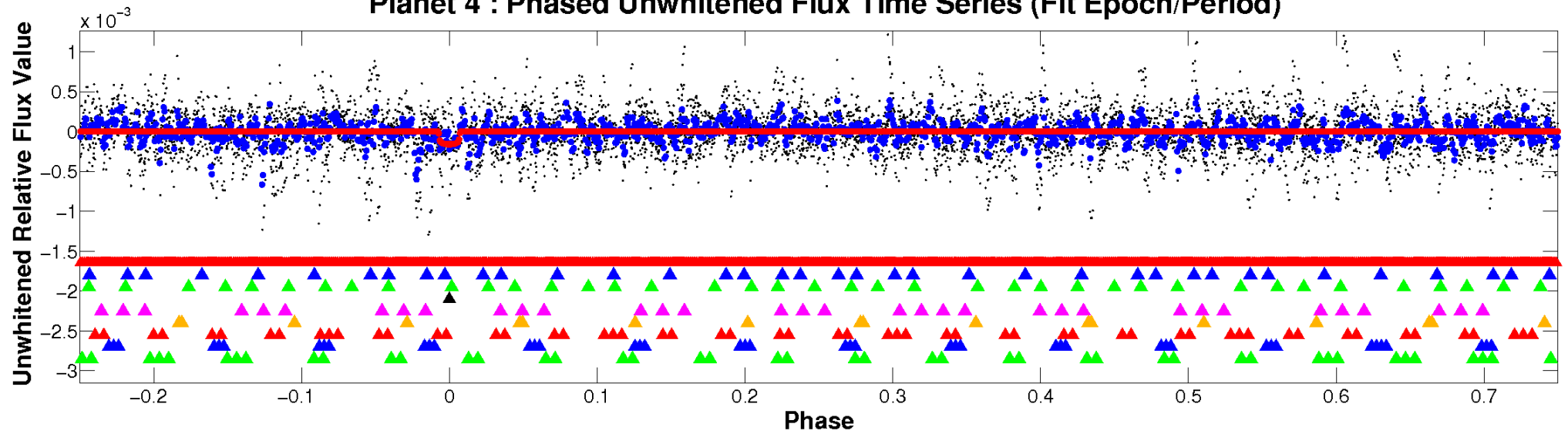
ALT Odd/Even

TCE 005530963-04

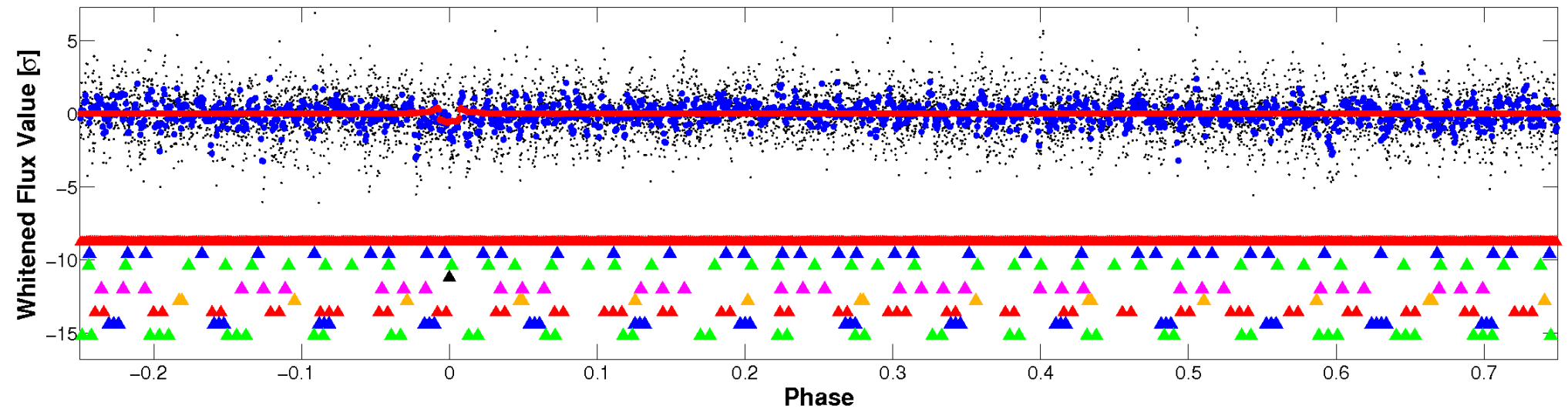


Non-Whitened Vs. Whitened Light Curve

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

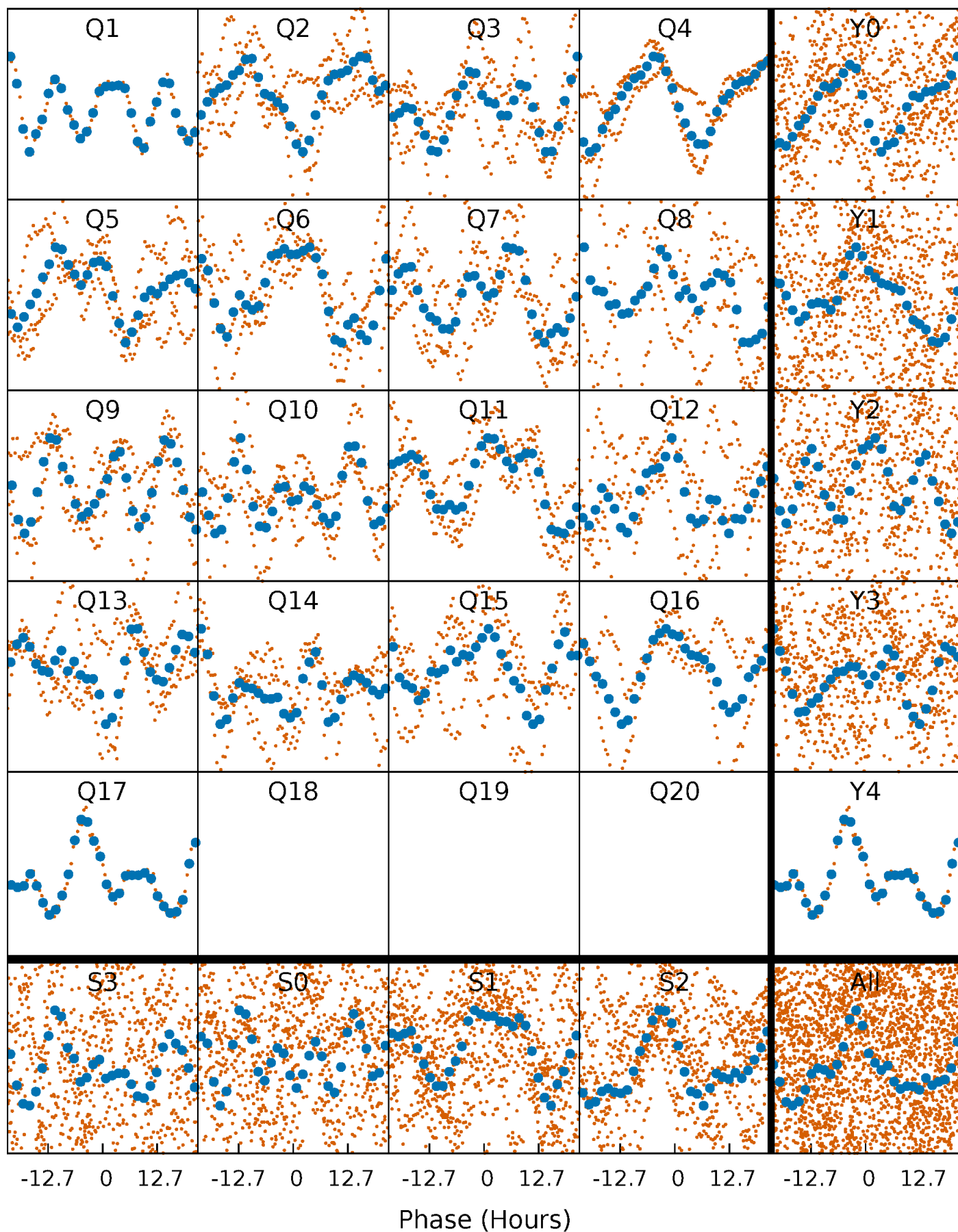


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



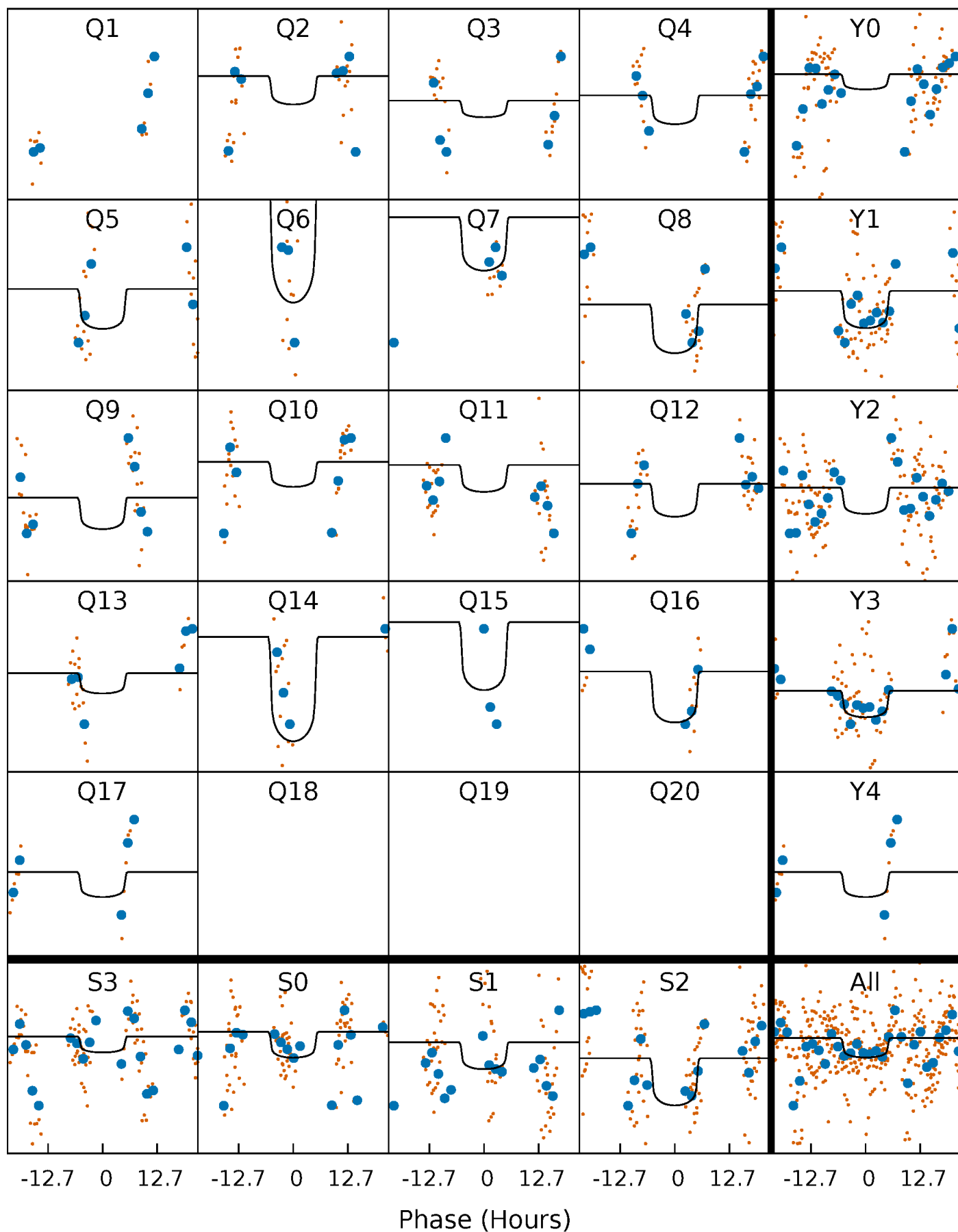
PDC Quarter-Phased Transit Curves

TCE 005530963-04 P= 31.284956 Days $T_0=141.366740$ (BKJD)



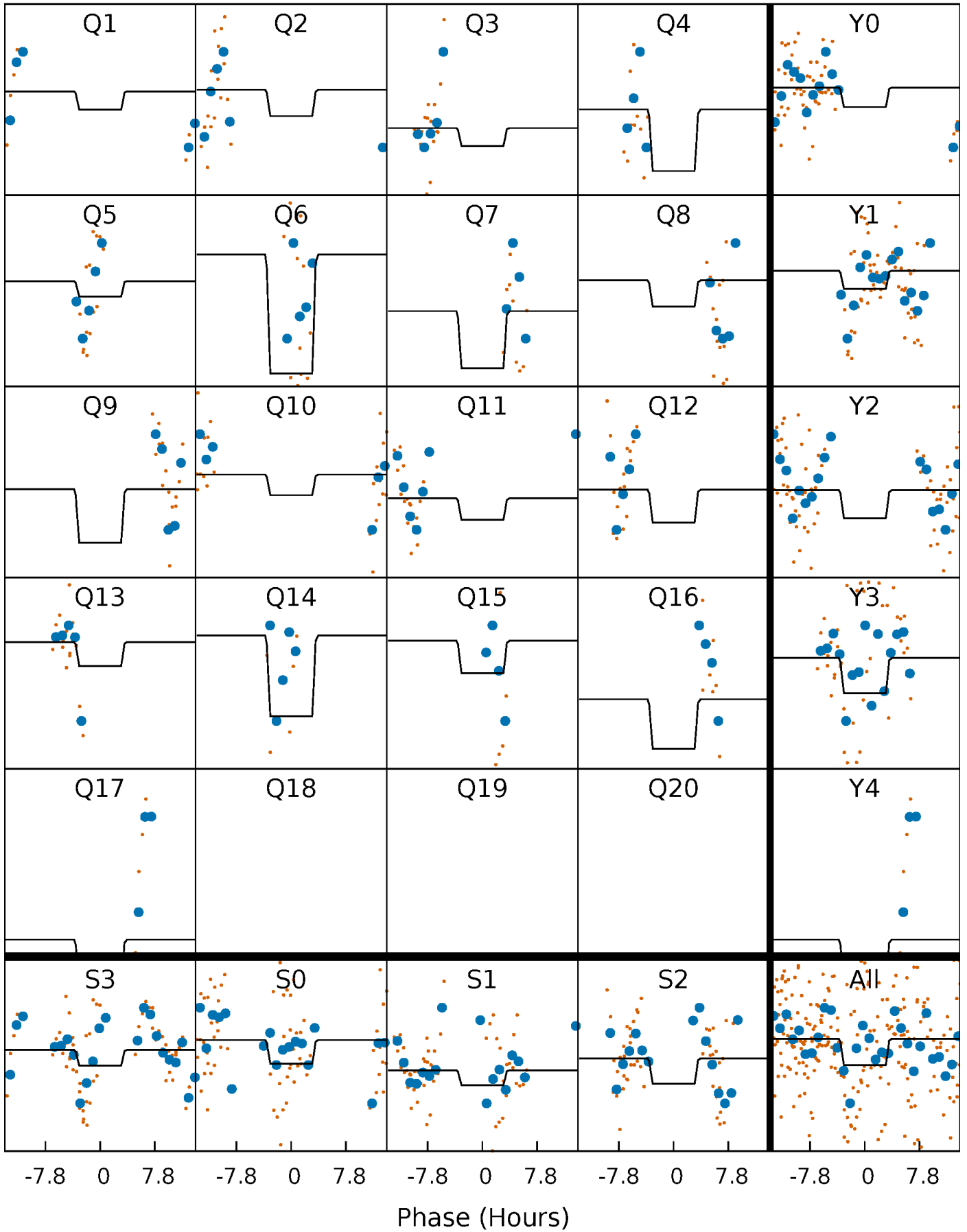
DV Quarter-Phased Transit Curves

TCE 005530963-04 P= 31.284956 Days $T_0=141.366740$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

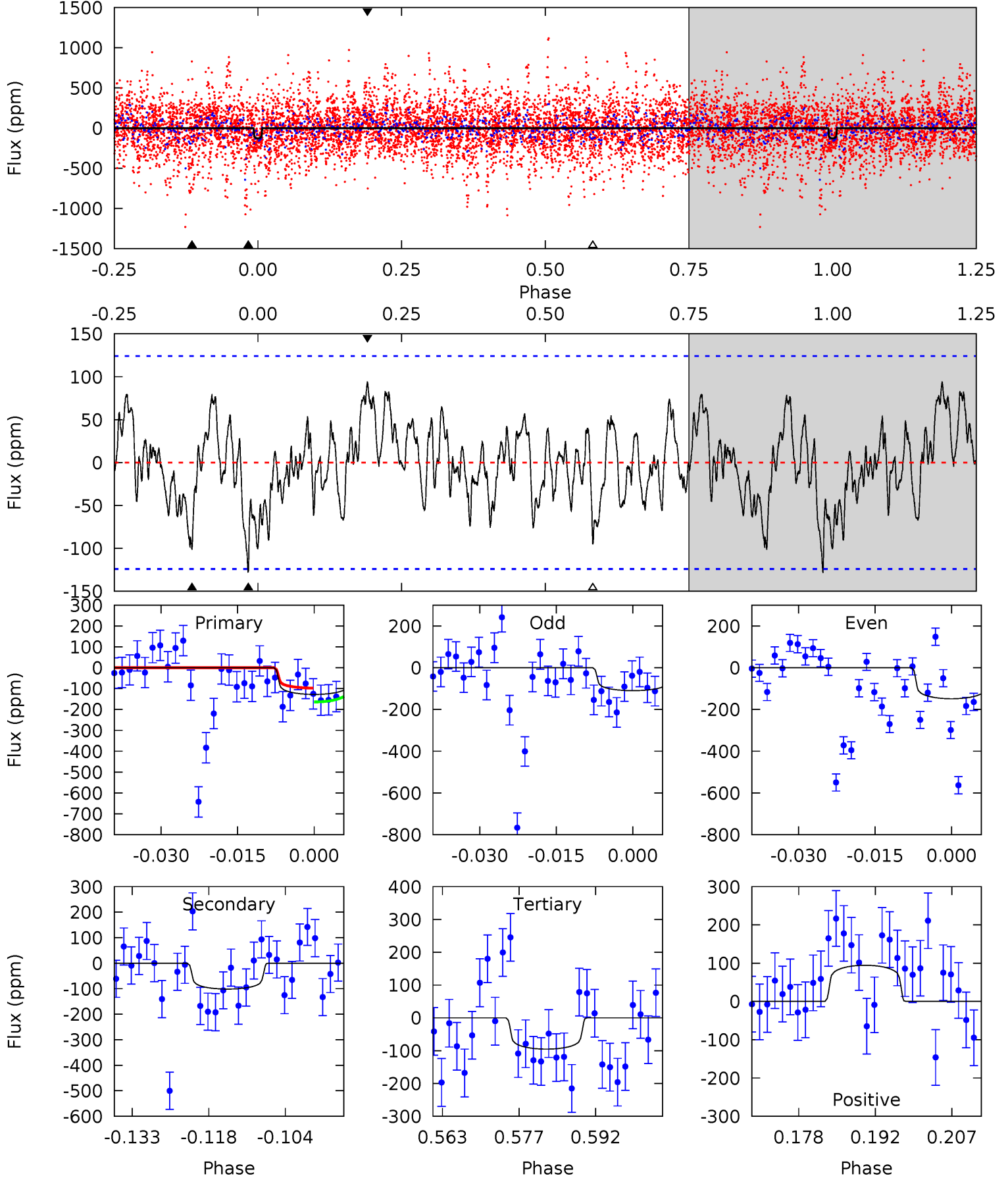
TCE 005530963-04 P= 31.287191 Days $T_0=141.240479$ (BKJD)



DV Model-Shift Uniqueness Test

005530963-04, P = 31.284956 Days, E = 110.081784 Days

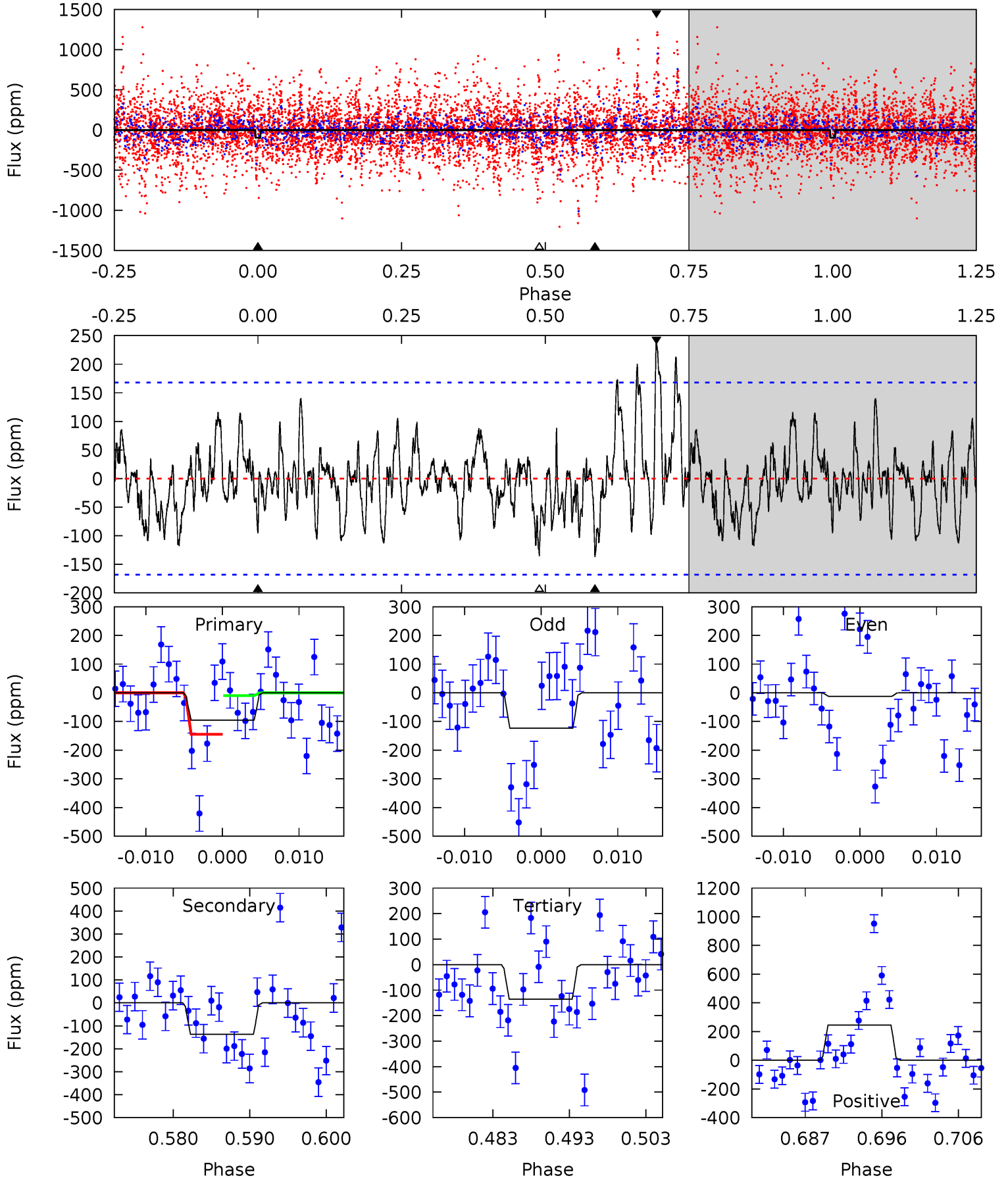
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.10	4.05	3.80	3.77	4.95	2.44	1.47	1.31	1.33	0.25	0.28	0.77	0.96	0.42	1.34



Alt Model-Shift Uniqueness Test

005530963-04, P = 31.287191 Days, E = 109.953288 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.86	4.11	4.06	7.36	5.03	2.59	1.66	-1.19	-4.49	0.05	-3.25	1.64	0.99	0.64	2.03



Stellar Parameters For KIC 005530963

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6809^{+162}_{-223}	$3.154^{+0.528}_{-0.132}$	$0.070^{+0.200}_{-0.400}$	$7.089^{+1.656}_{-3.864}$	$2.610^{+0.303}_{-0.909}$	$0.010^{+0.063}_{-0.004}$
	+2%/-3%	+17%/-4%	+286%/-571%	+23%/-55%	+12%/-35%	+609%/-37%
Source	PHO1	FLK73	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 005530963-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-101 ± 25	$9.17^{+3.67}_{-3.06}$	2104^{+158}_{-286}	5876^{+1064}_{-713}	46^{+59}_{-24}
Alt.	-137 ± 33	$7.85^{+3.23}_{-3.04}$	2108^{+178}_{-305}	6918^{+1598}_{-1010}	83^{+146}_{-42}

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 $A_{obs} \gg 1.0$

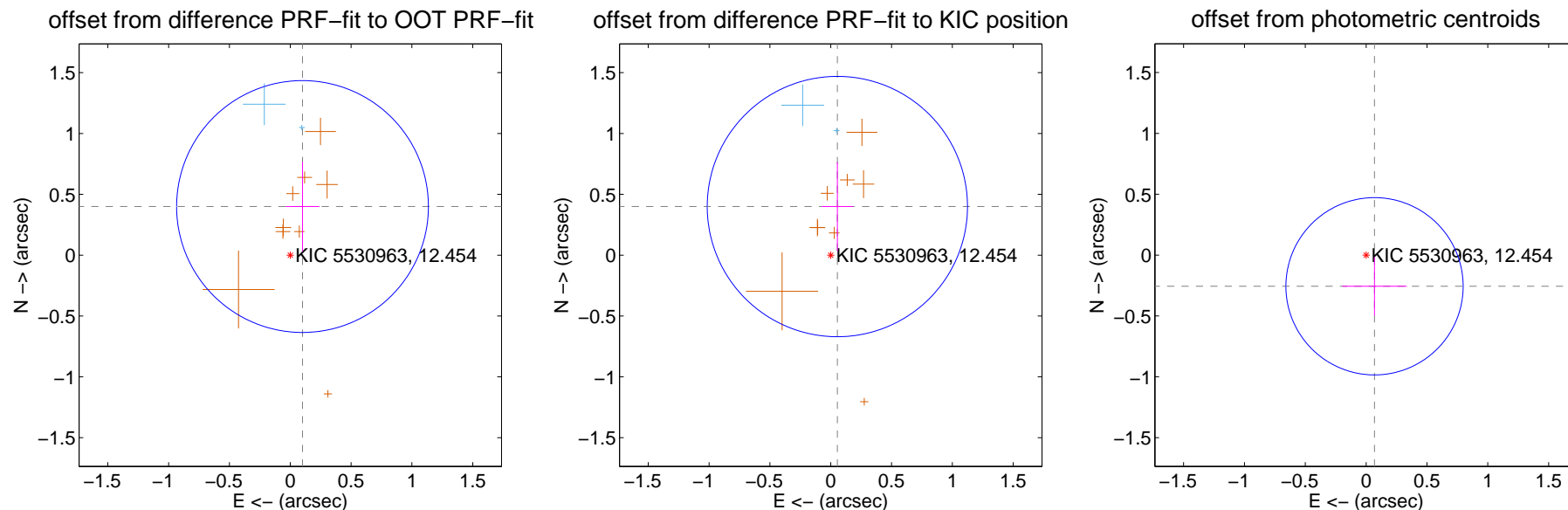
DV Centroid Data

Supplemental centroid analysis for 005530963-04. Kepler magnitude: 12.45. Transit SNR 5.56

There are 3 quarters with good PRF difference image offsets

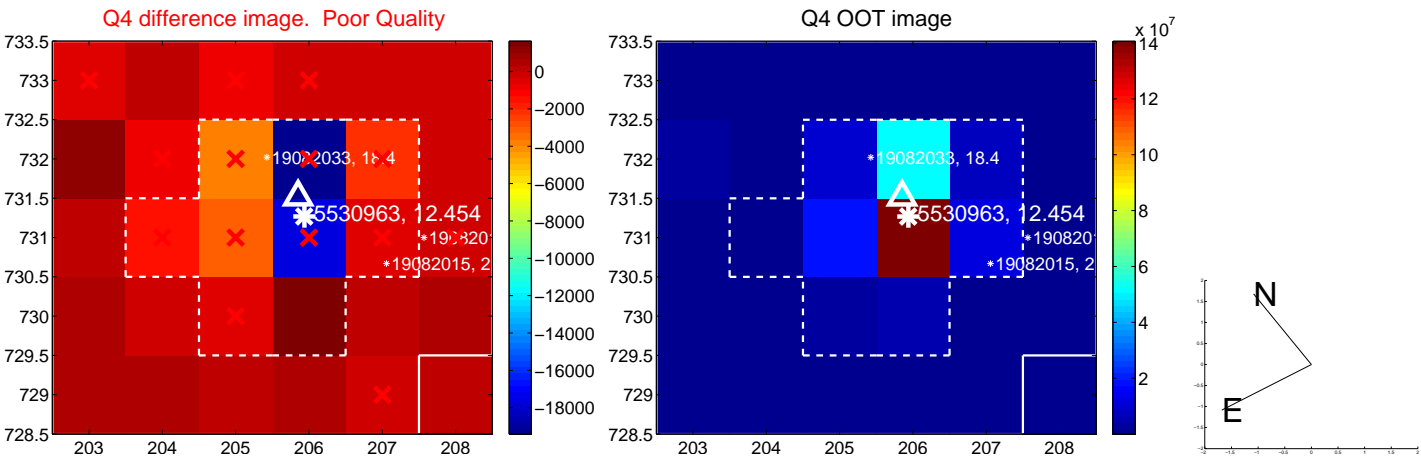
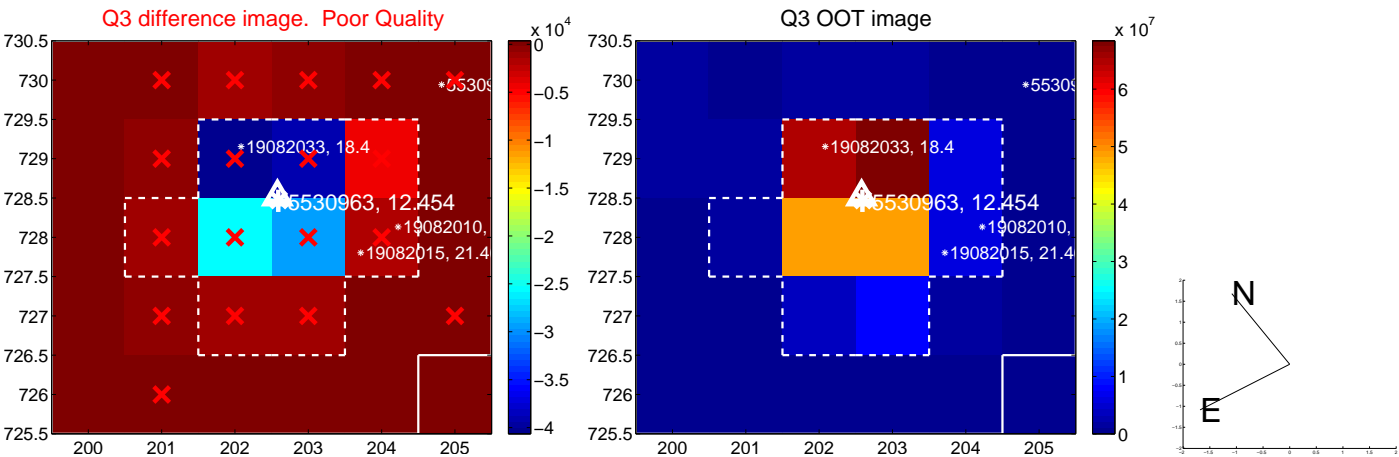
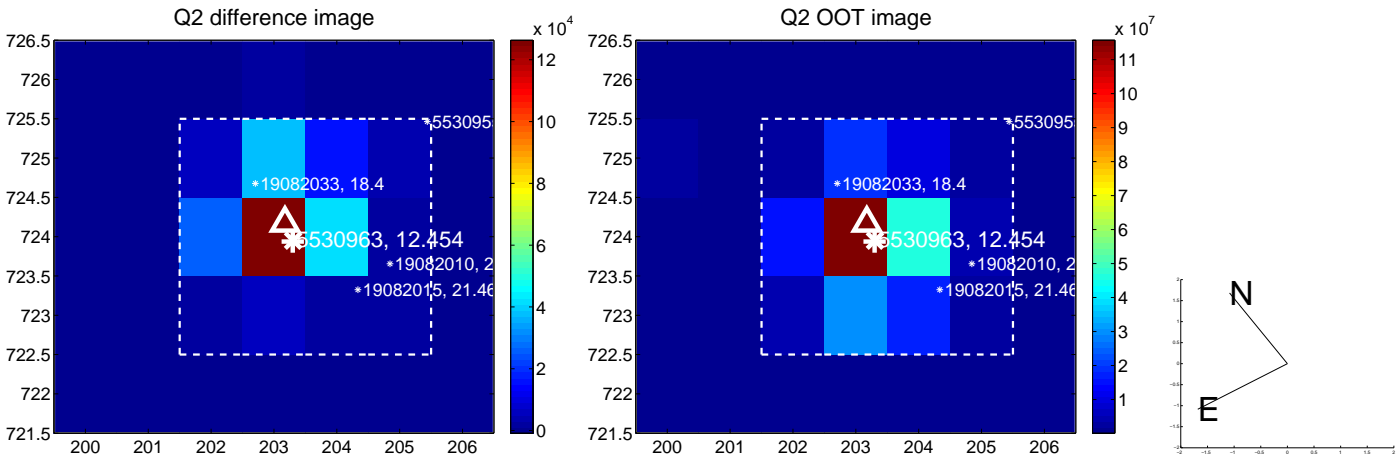
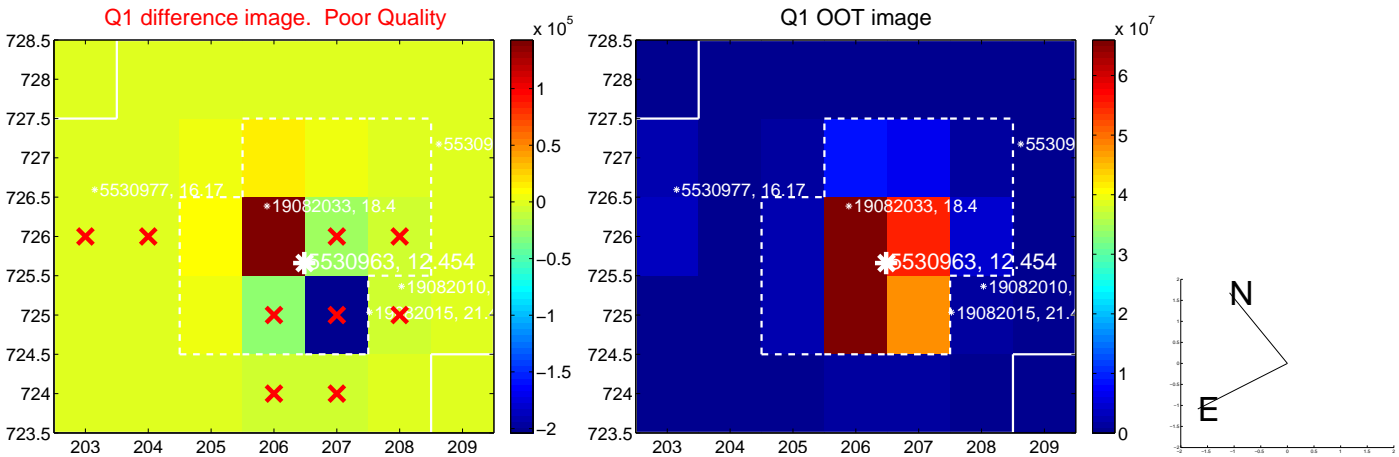
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.412 ± 0.345	1.19	-0.101 ± 0.138	0.400 ± 0.367
PRF-fit source offset from KIC position	0.403 ± 0.357	1.13	-0.055 ± 0.127	0.399 ± 0.365
photometric centroid source offset	0.27 ± 0.24	1.09	-0.07 ± 0.27	-0.26 ± 0.24

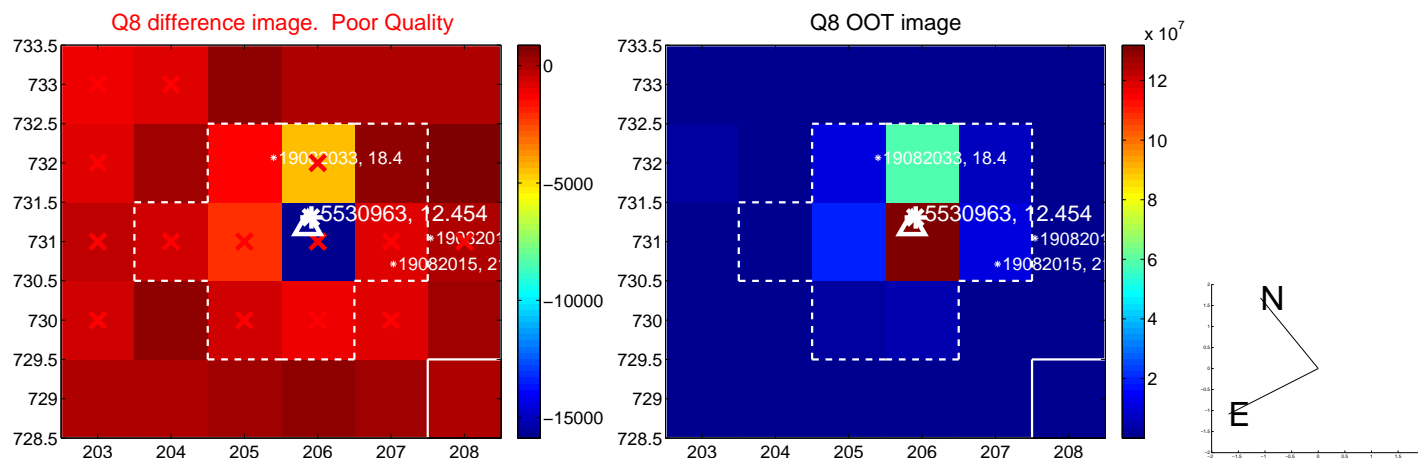
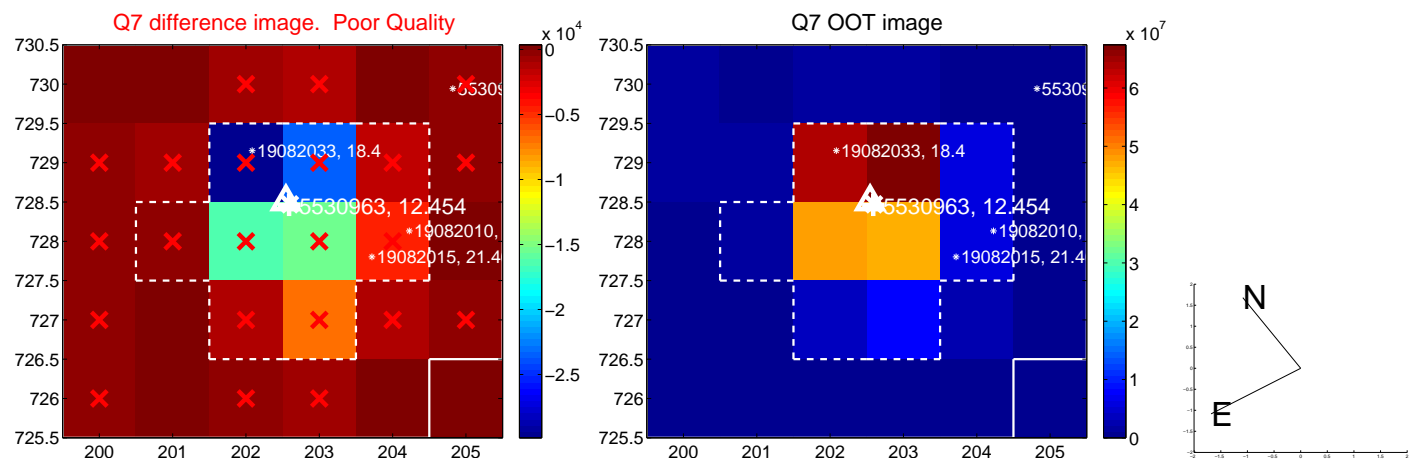
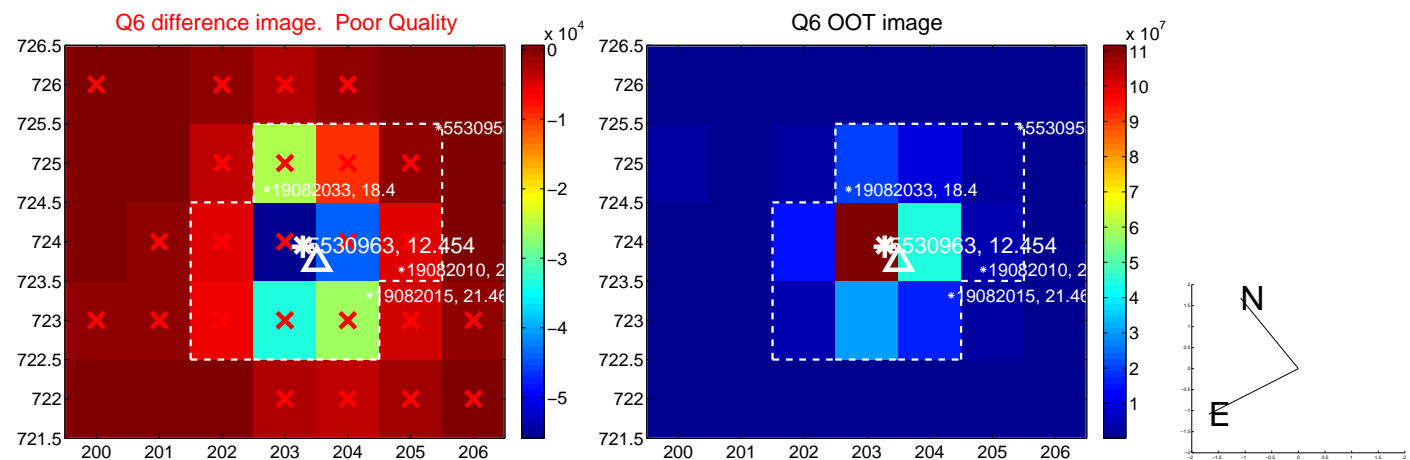
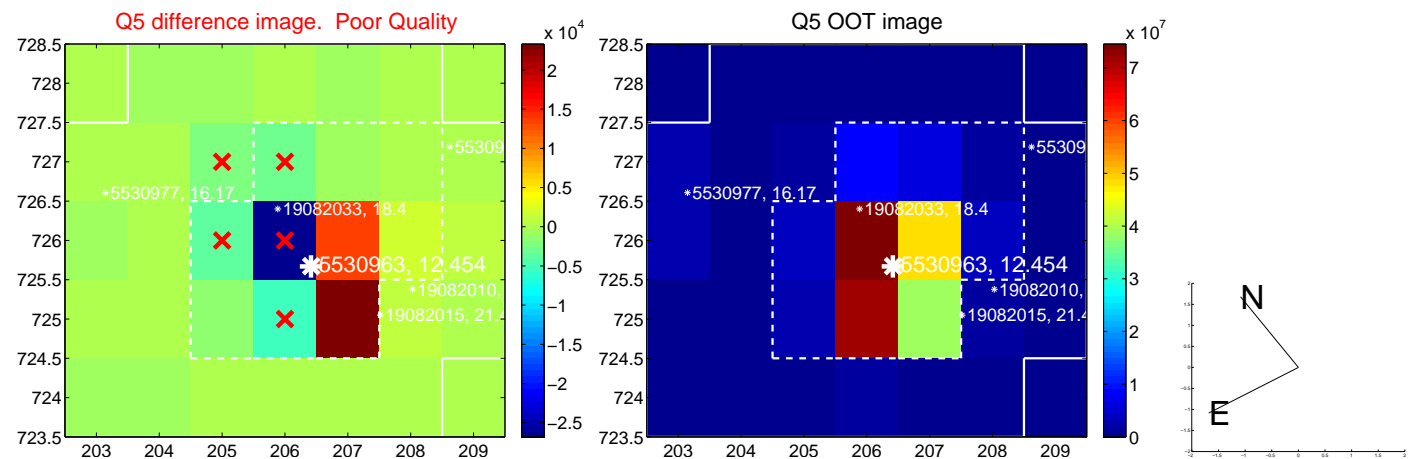


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

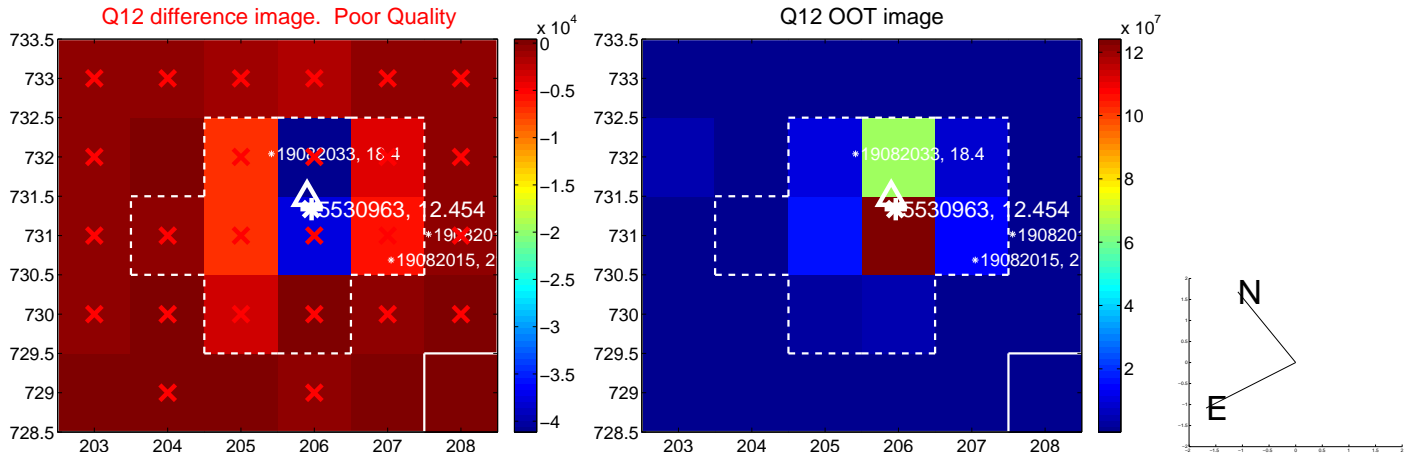
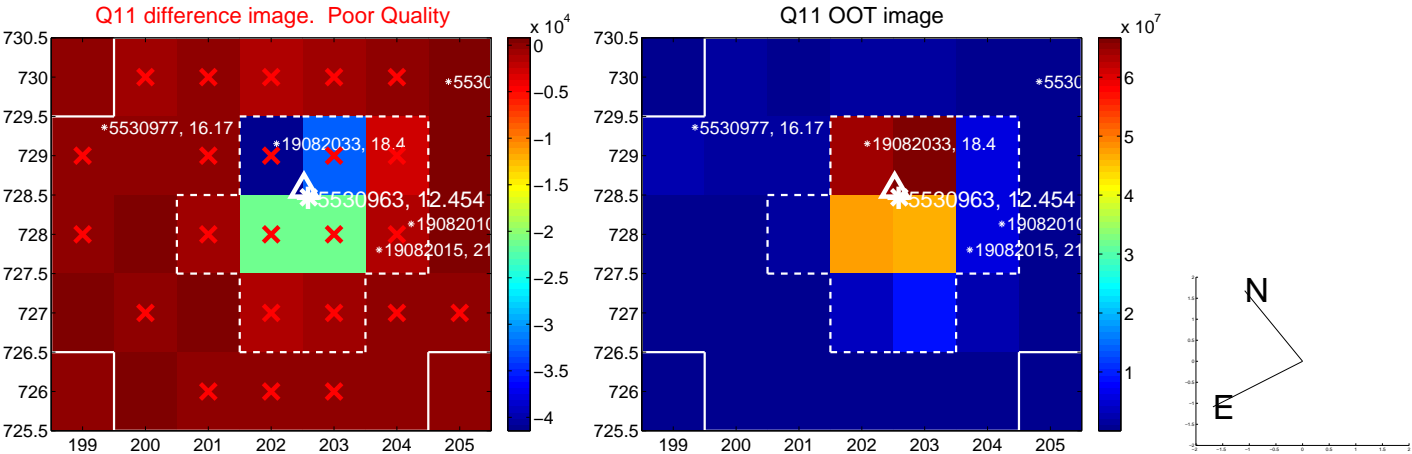
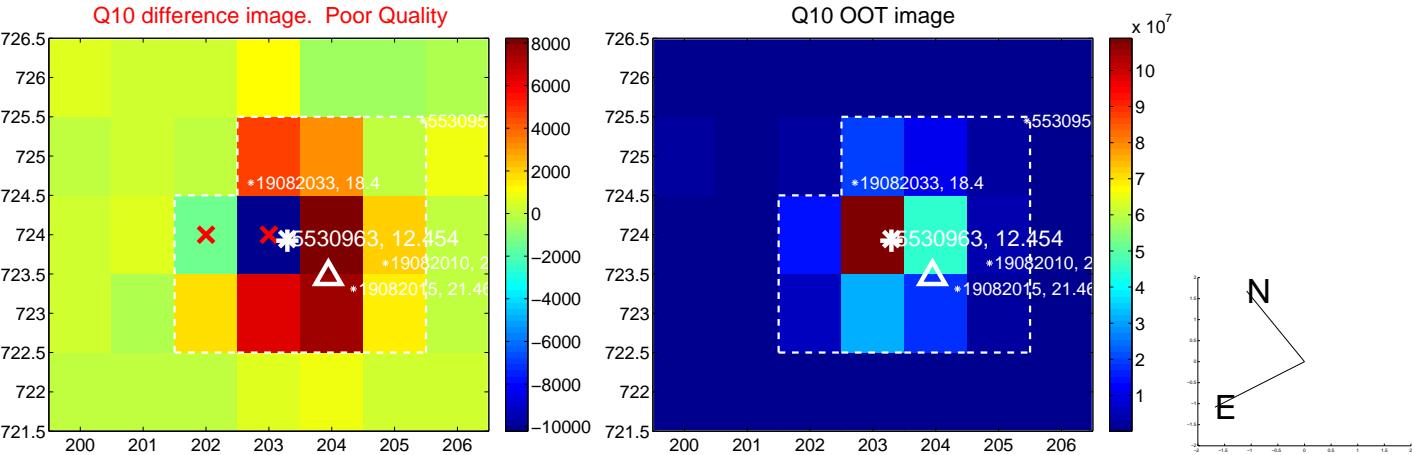
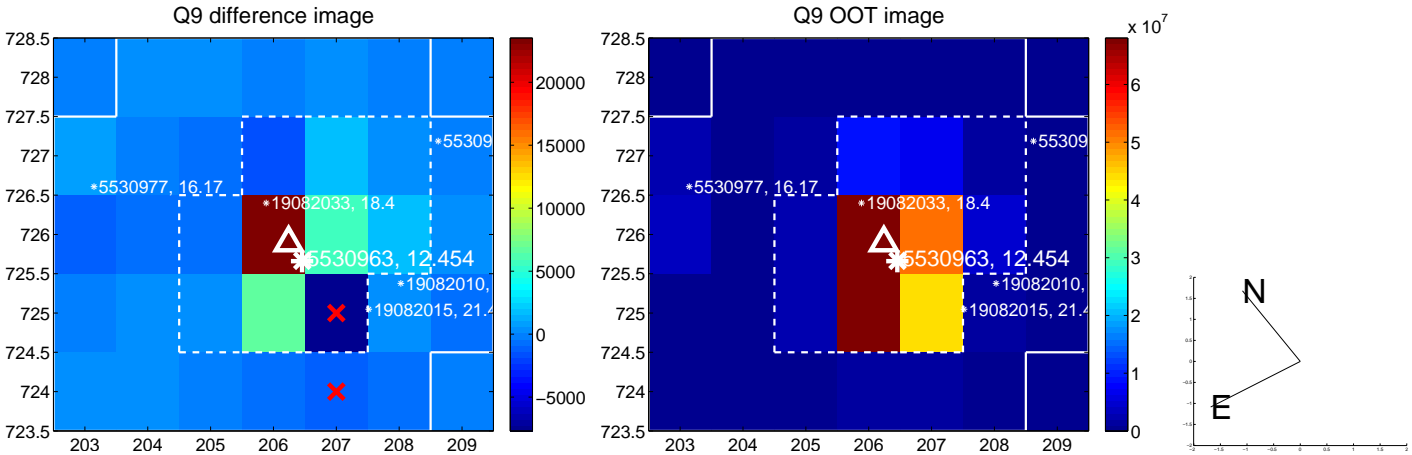
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



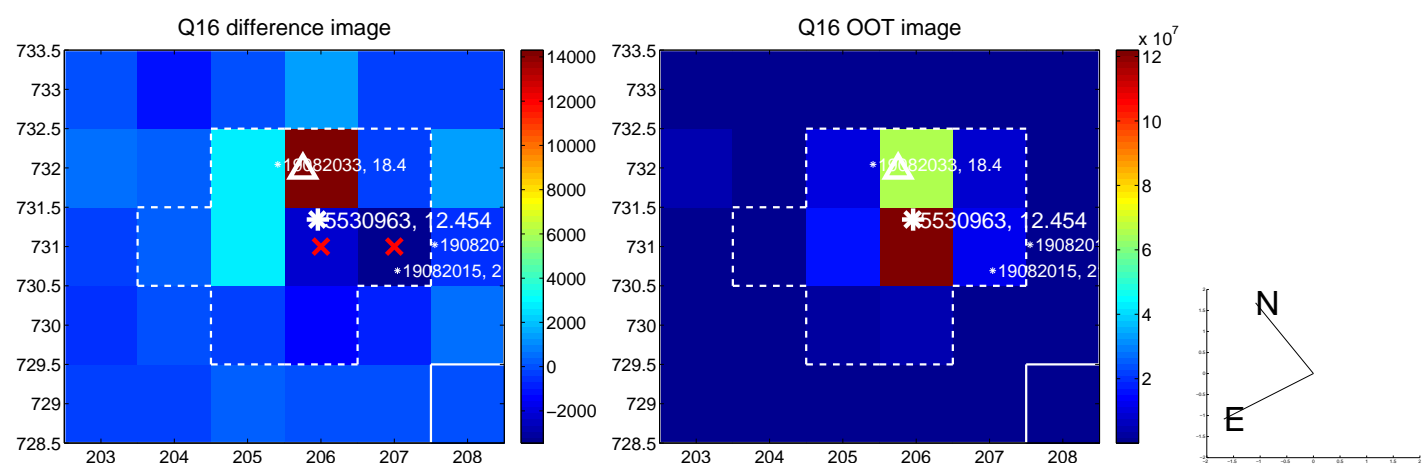
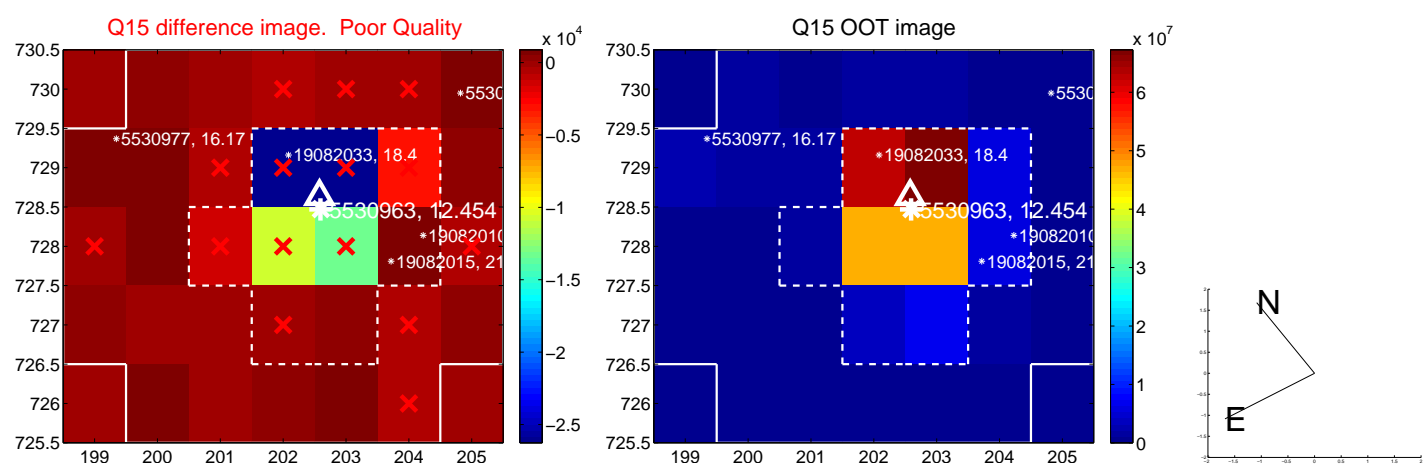
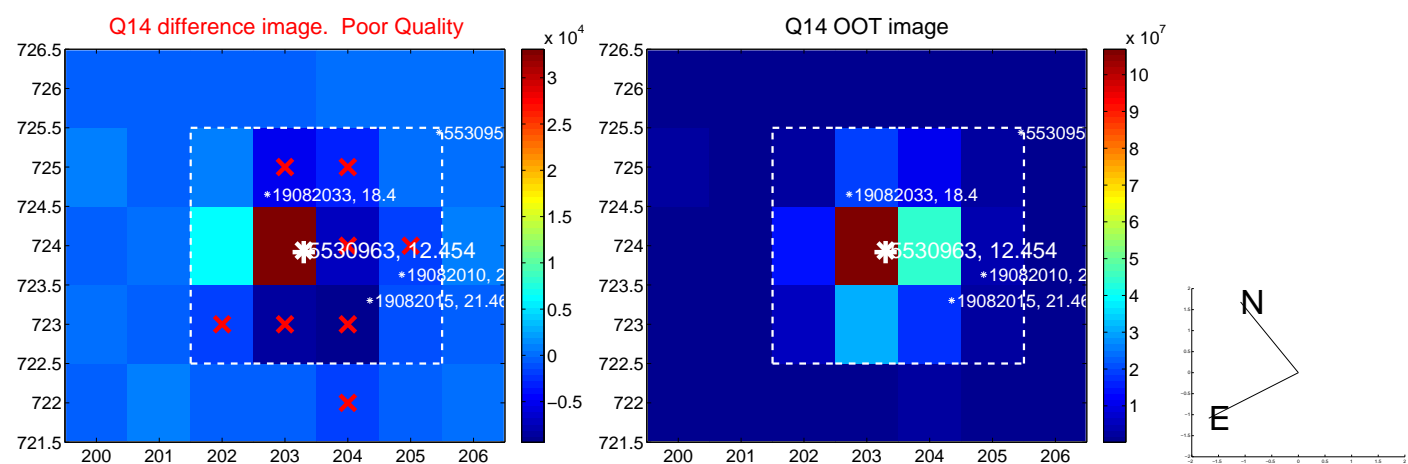
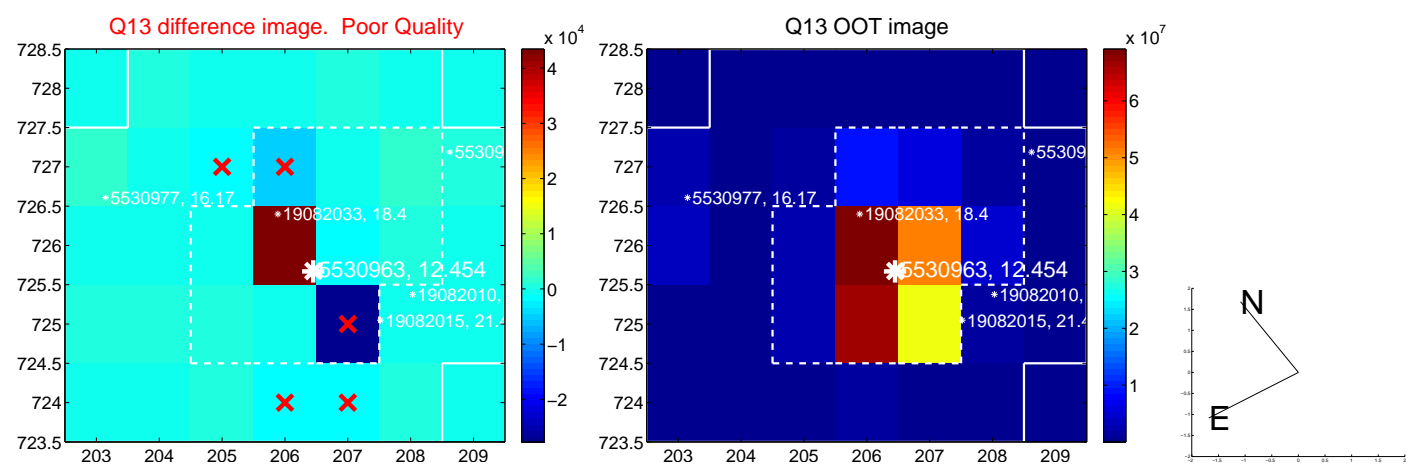
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



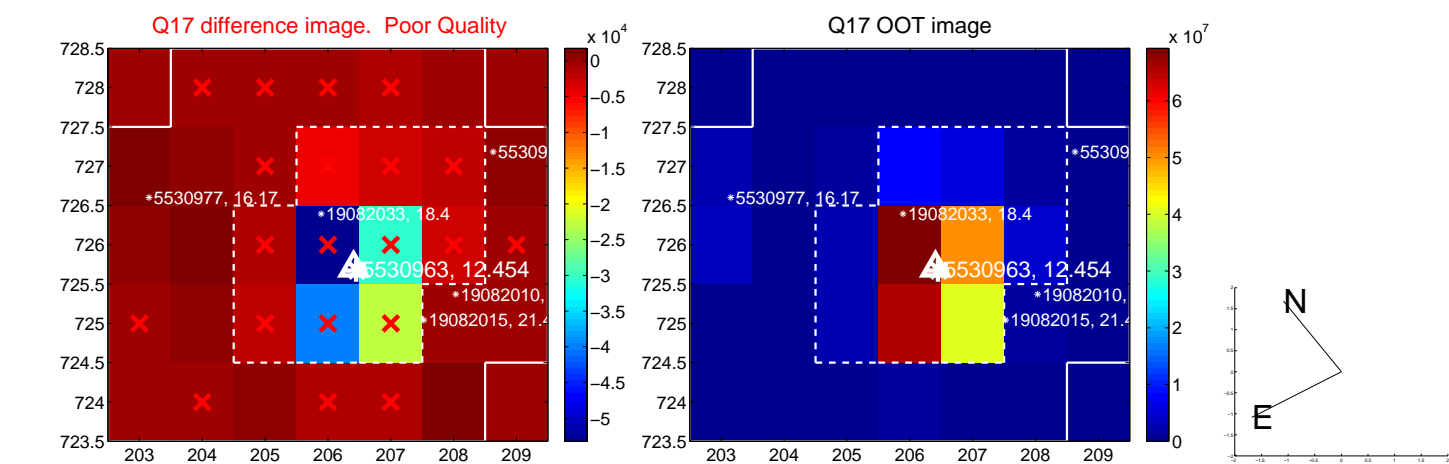
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



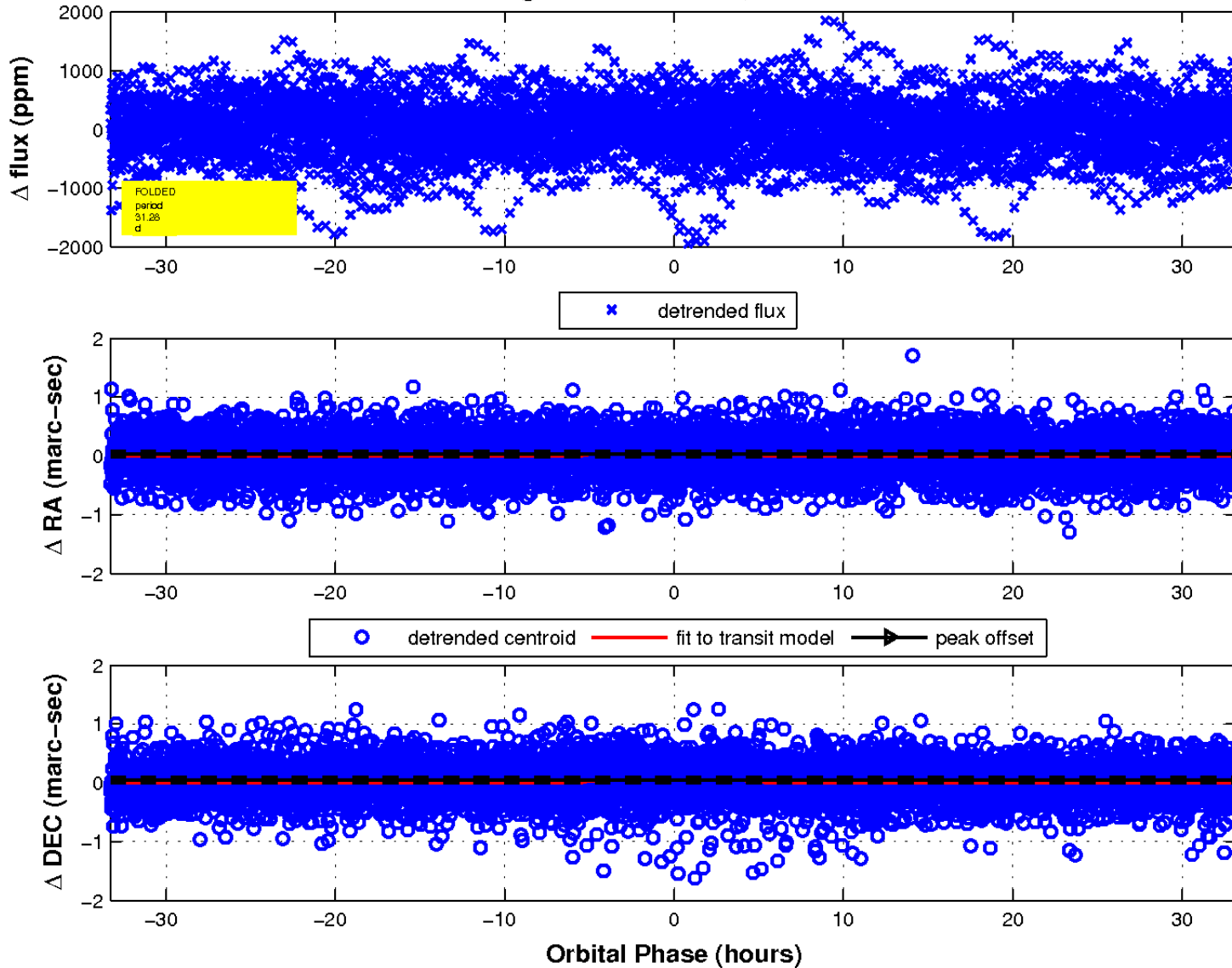
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

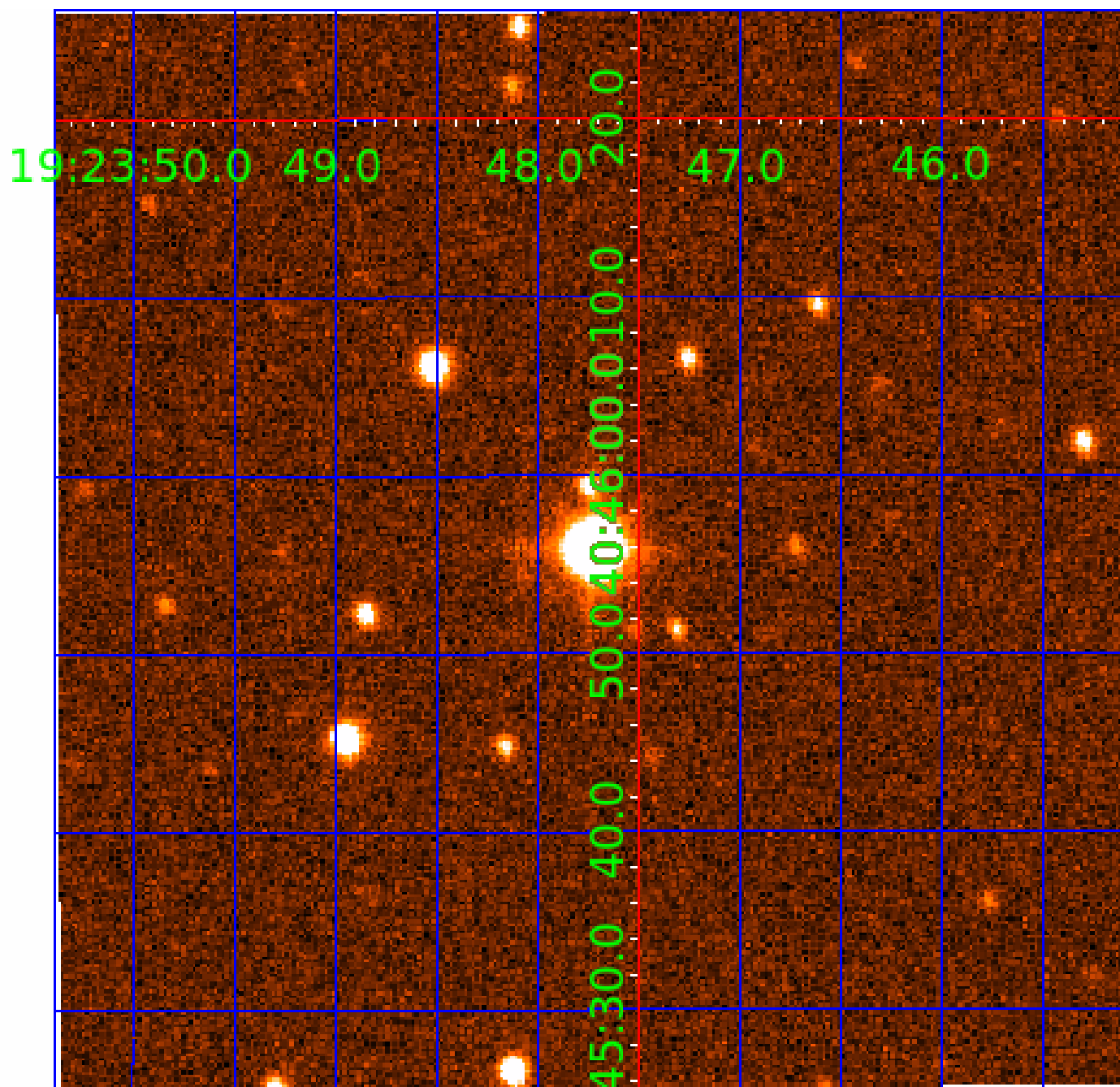


fluxWeightedCentroids, Planet 4 of 9



UKIRT Image

Declination



KIC 005530963

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})
005530963-01	OBS	No	1.080265	132.615791	40.7	7.525	7.8	9.5	7.09	6809	5.26	0.00
005530963-03	OBS	No	36.851619	162.904611	512.0	6.972	18.7	11.7	7.09	6809	19.65	1085.61
005530963-04	OBS	No	31.284956	141.366740	160.5	11.099	15.4	5.6	7.09	6809	10.23	1350.53
005530963-05	OBS	No	42.703161	150.898885	647.6	3.032	15.1	11.0	7.09	6809	34.32	891.94
005530963-06	OBS	No	81.817698	198.274623	853.0	5.251	13.3	12.4	7.09	6809	39.02	374.82
005530963-08	OBS	No	33.512239	161.196427	598.7	4.210	11.5	9.5	7.09	6809	30.31	1232.20
005530963-09	OBS	No	32.921168	160.165568	499.4	2.422	11.2	10.9	7.09	6809	17.72	1261.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005530963-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005530963-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
005530963-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
005530963-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005530963-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT

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

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

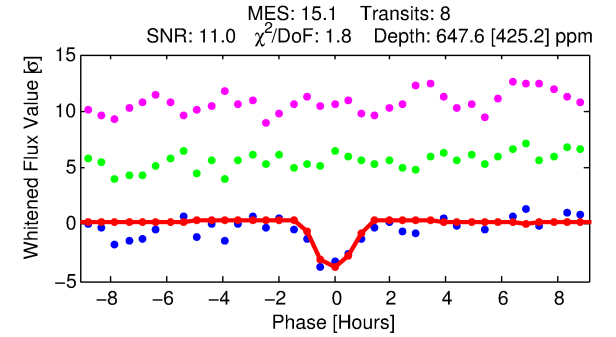
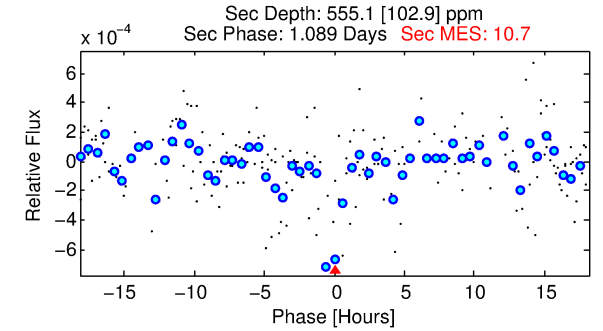
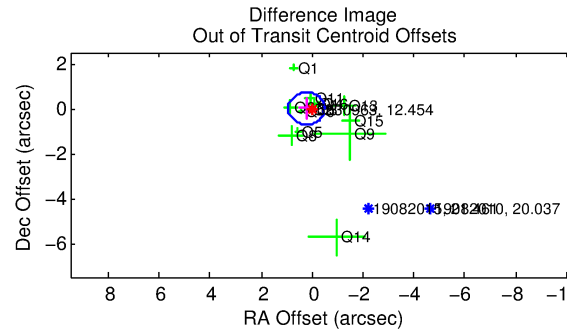
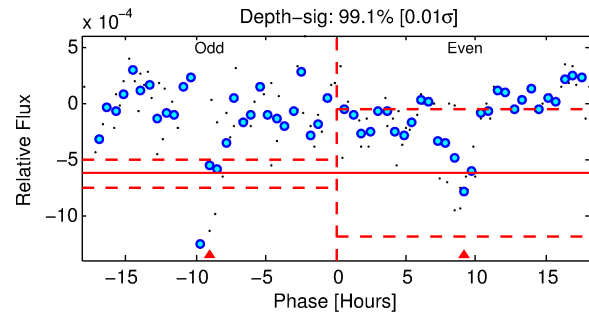
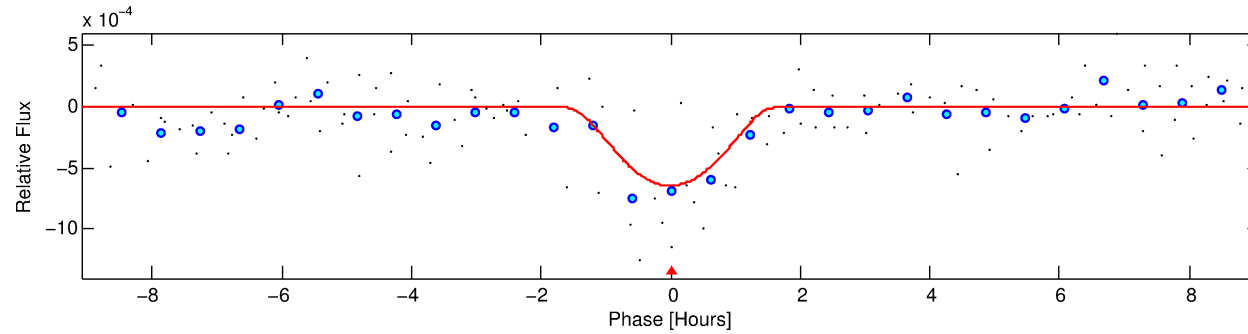
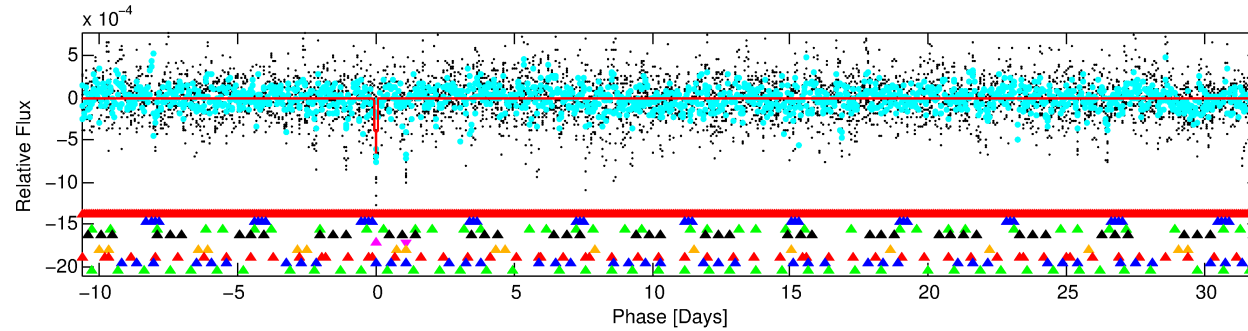
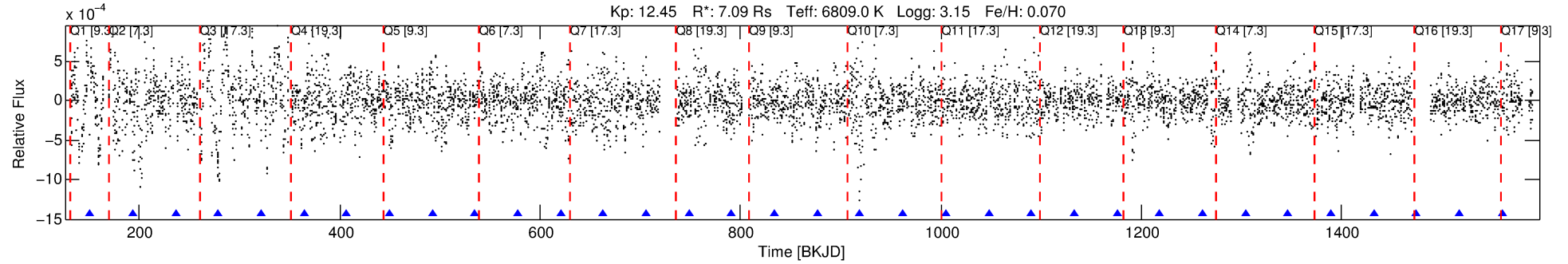
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005530963-05

No Significant Match Found

DV One-Page Summary

KIC: 5530963 Candidate: 5 of 9 Period: 42.703 d



DV Fit Results:

Period = 42.70316 [0.00042] d
Epoch = 150.8989 [0.0055] BKJD
Rp/R* = 0.0444 [0.2161]
a/R* = 32.48 [39.98]
b = 1.00 [0.33]
Seff = 891.94 [800.83]
Teq = 1394 [313] K
Rp = 34.32 [168.24] Re
a = 0.3294 [0.1793] AU
Ag = 28.13 [275.19] [0.10σ]
Teffp = 4962 [12088] K [0.30σ]

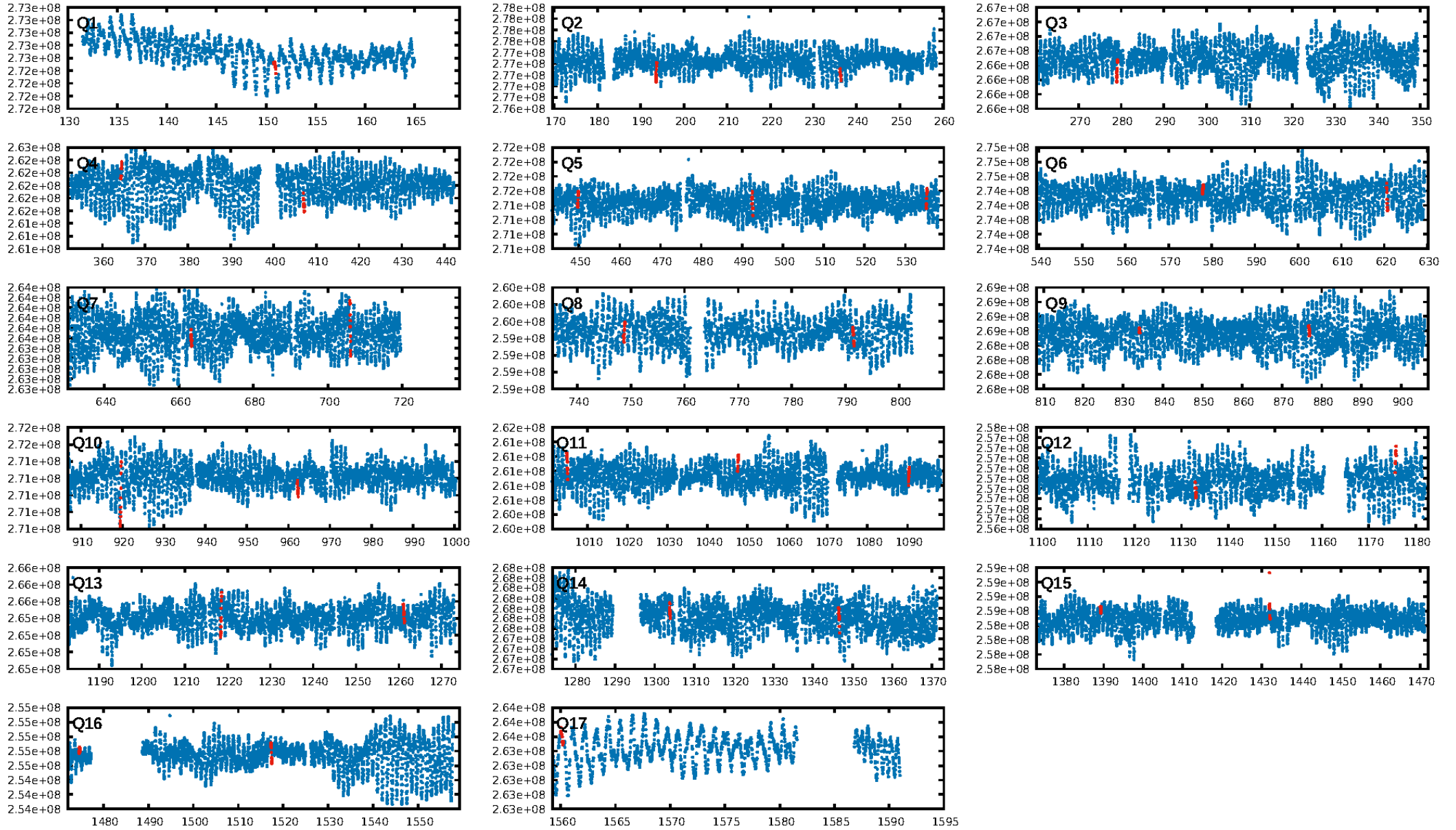
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.96σ]
LongPeriod-sig: 100.0% [154.82σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 99.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 2.366
Centroid-sig: 2.9%
Centroid-so: 0.447 arcsec [2.78σ]
OotOffset-rm: 0.218 arcsec [0.91σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-rm: 0.252 arcsec [1.19σ]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 0.19 [3/16]

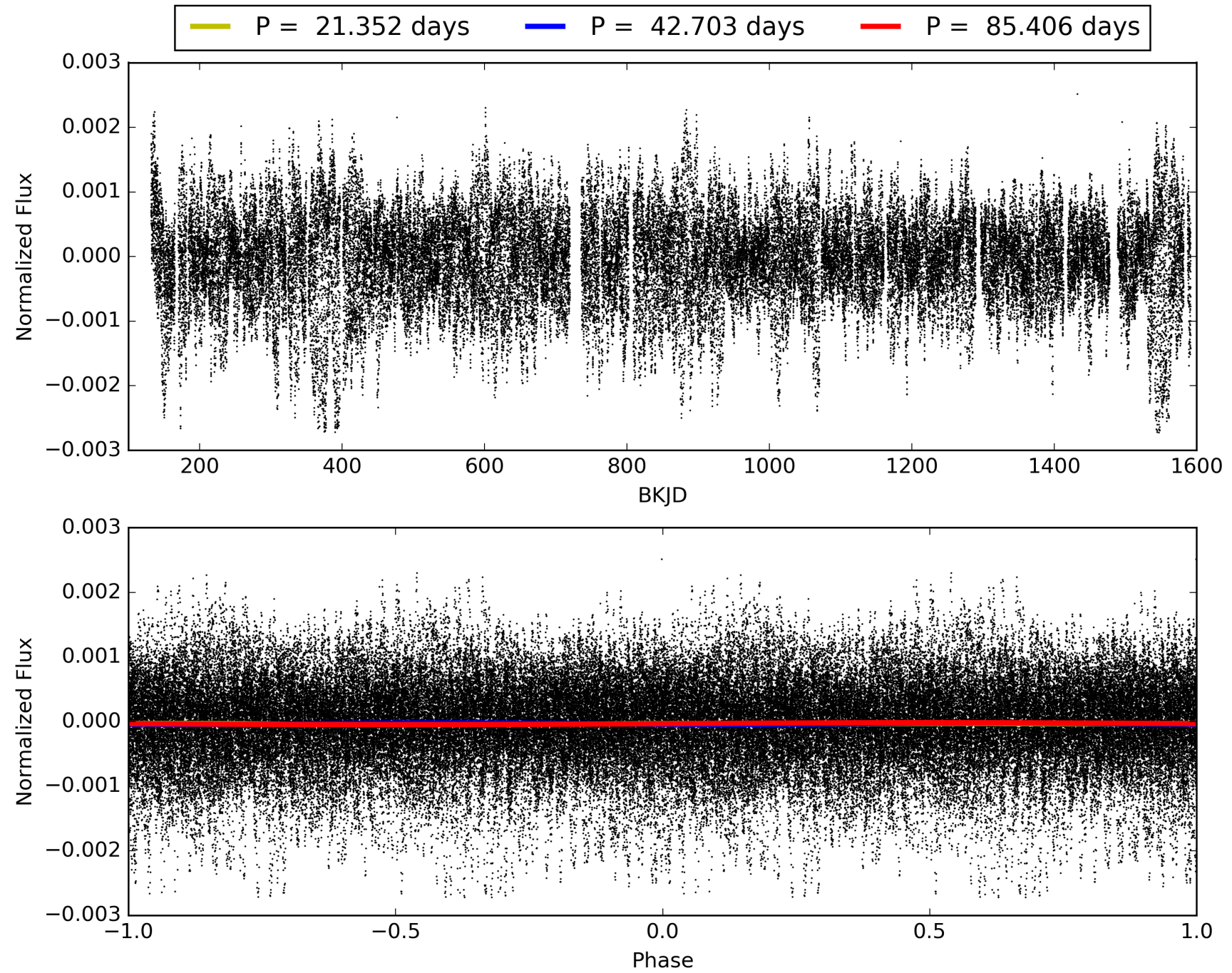
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:41:02 Z

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

TCE 005530963-05, PDC Light Curves

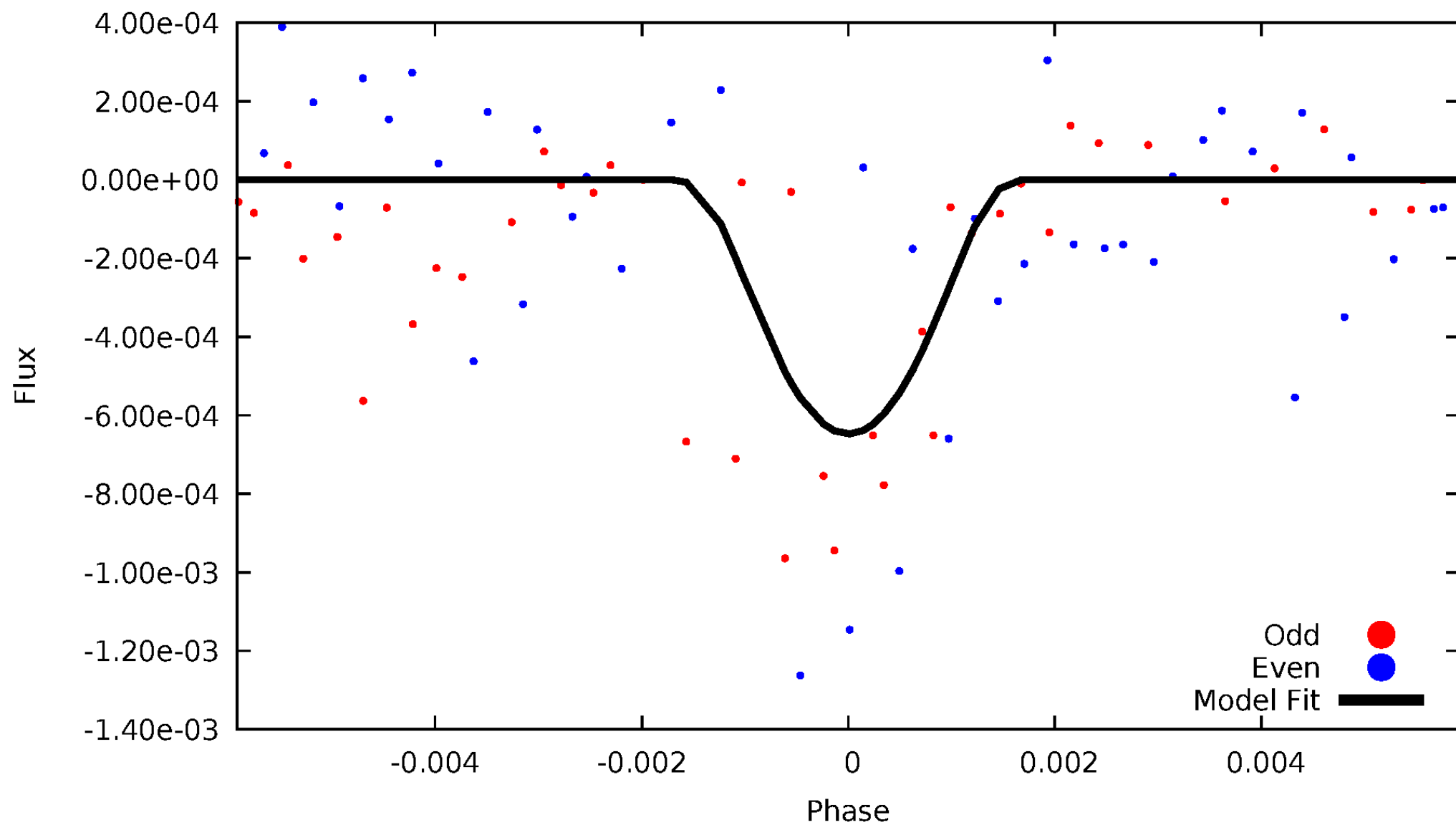


TCE 005530963-05



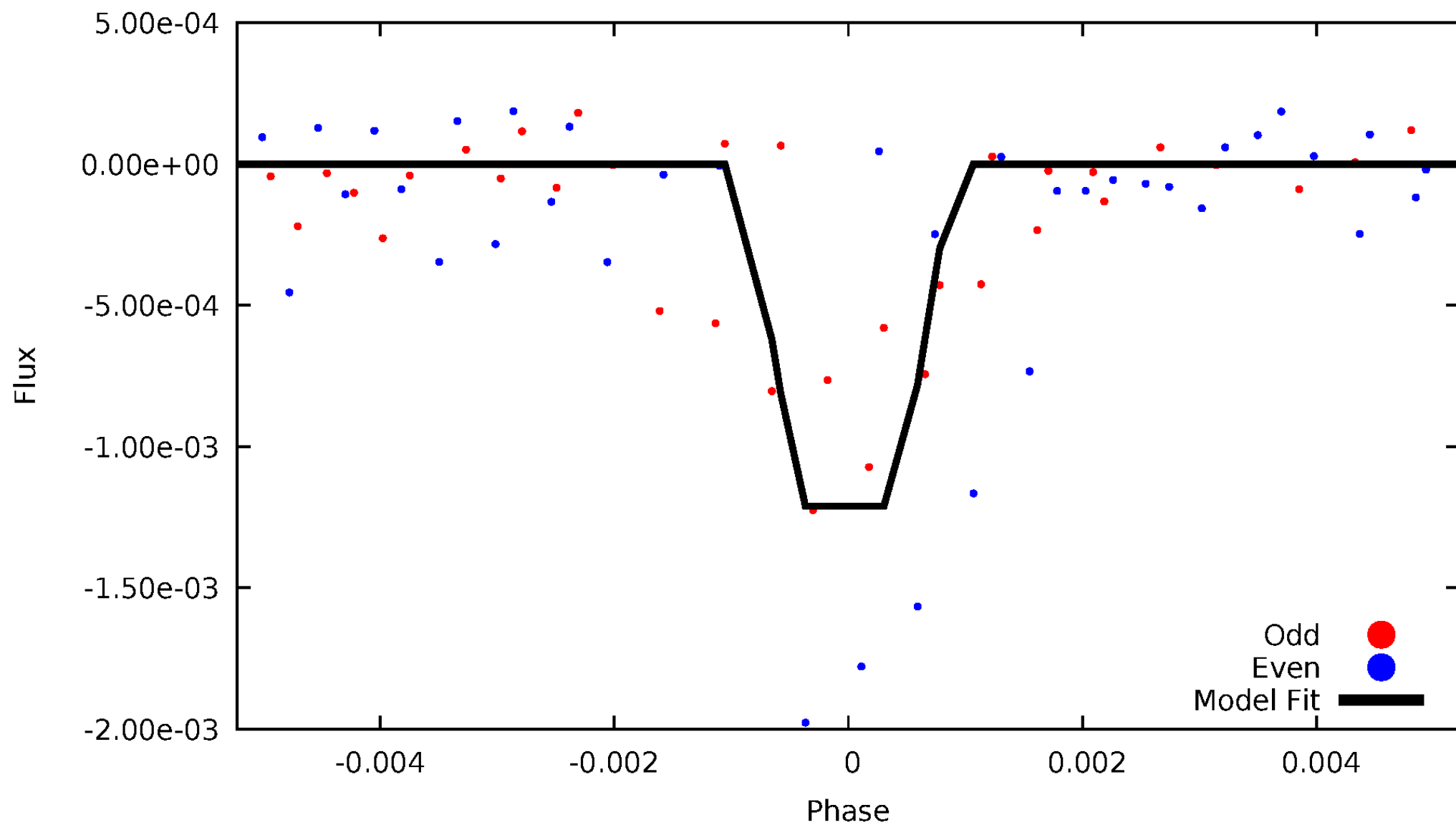
DV Odd/Even

TCE 005530963-05



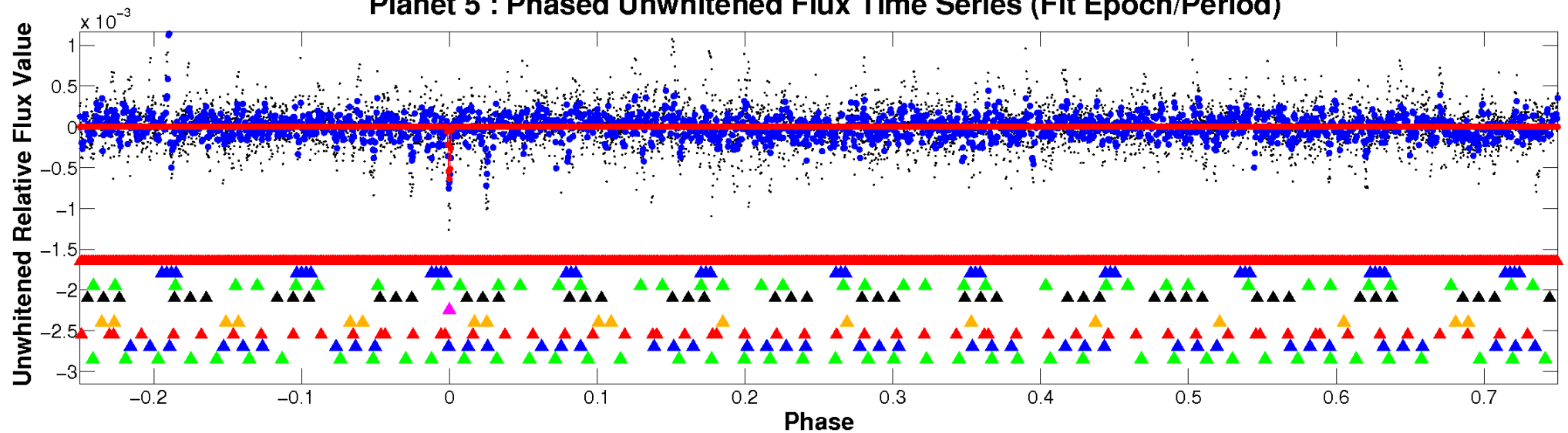
ALT Odd/Even

TCE 005530963-05

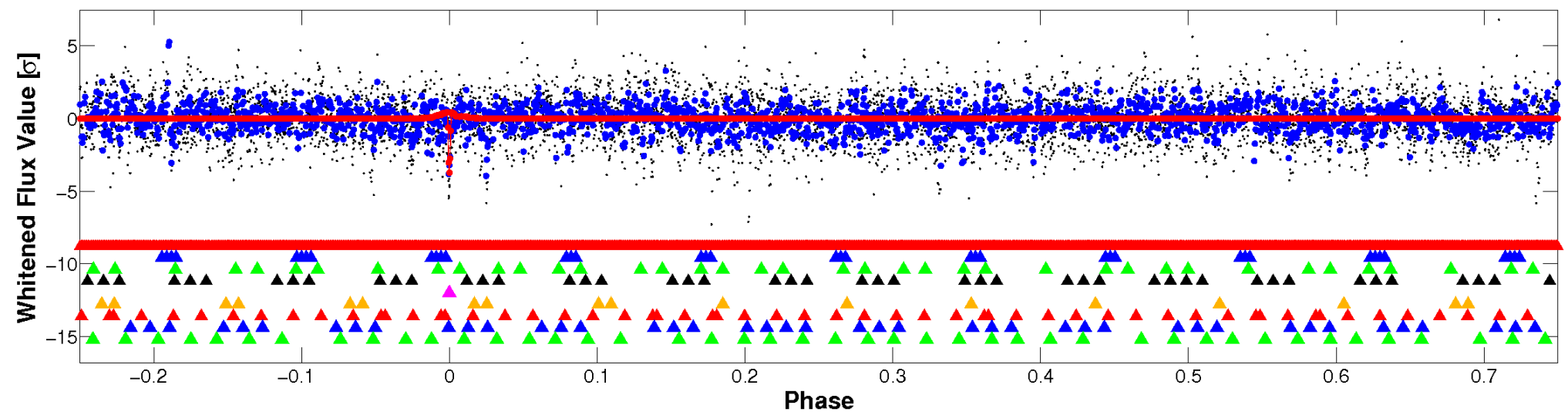


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

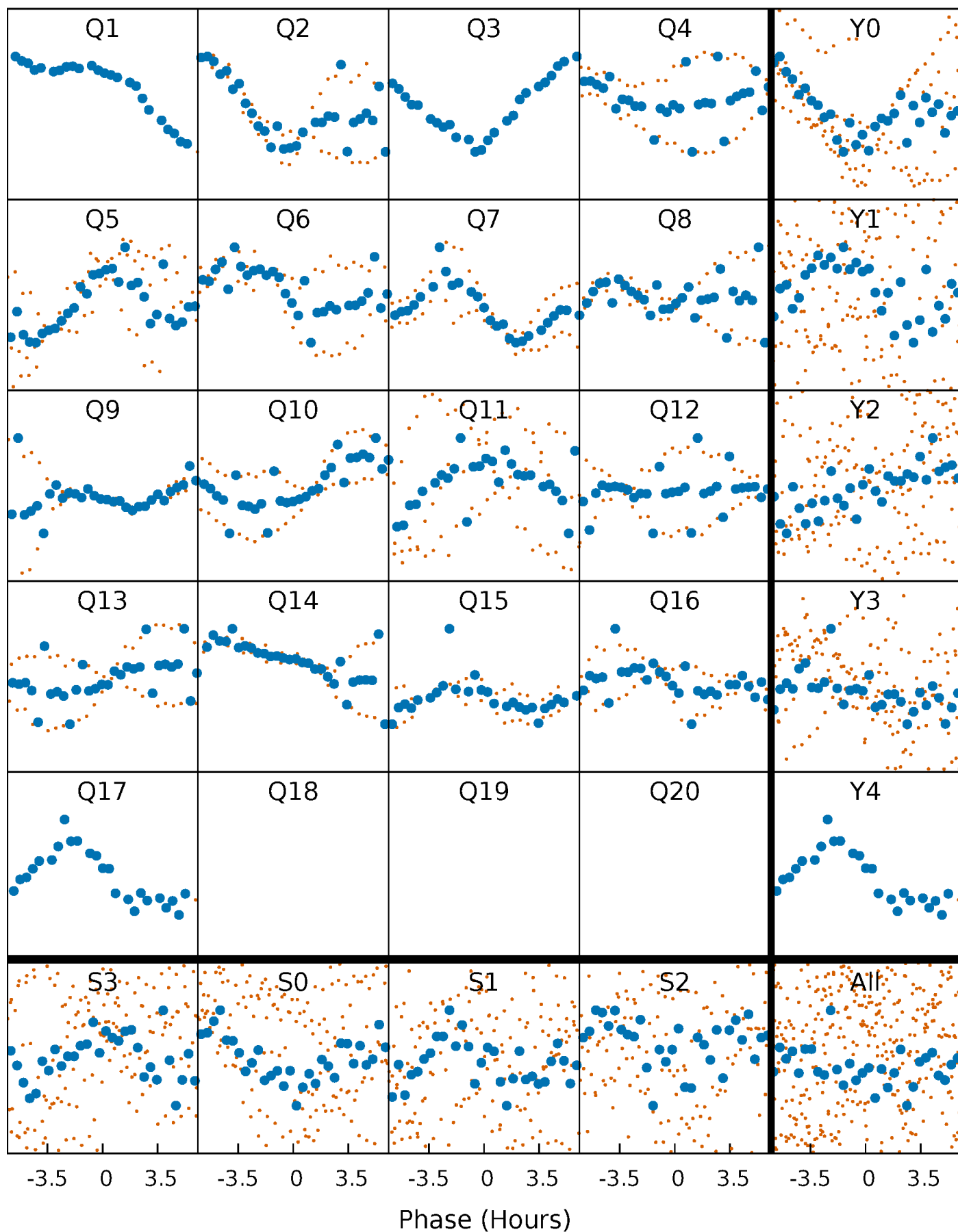


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



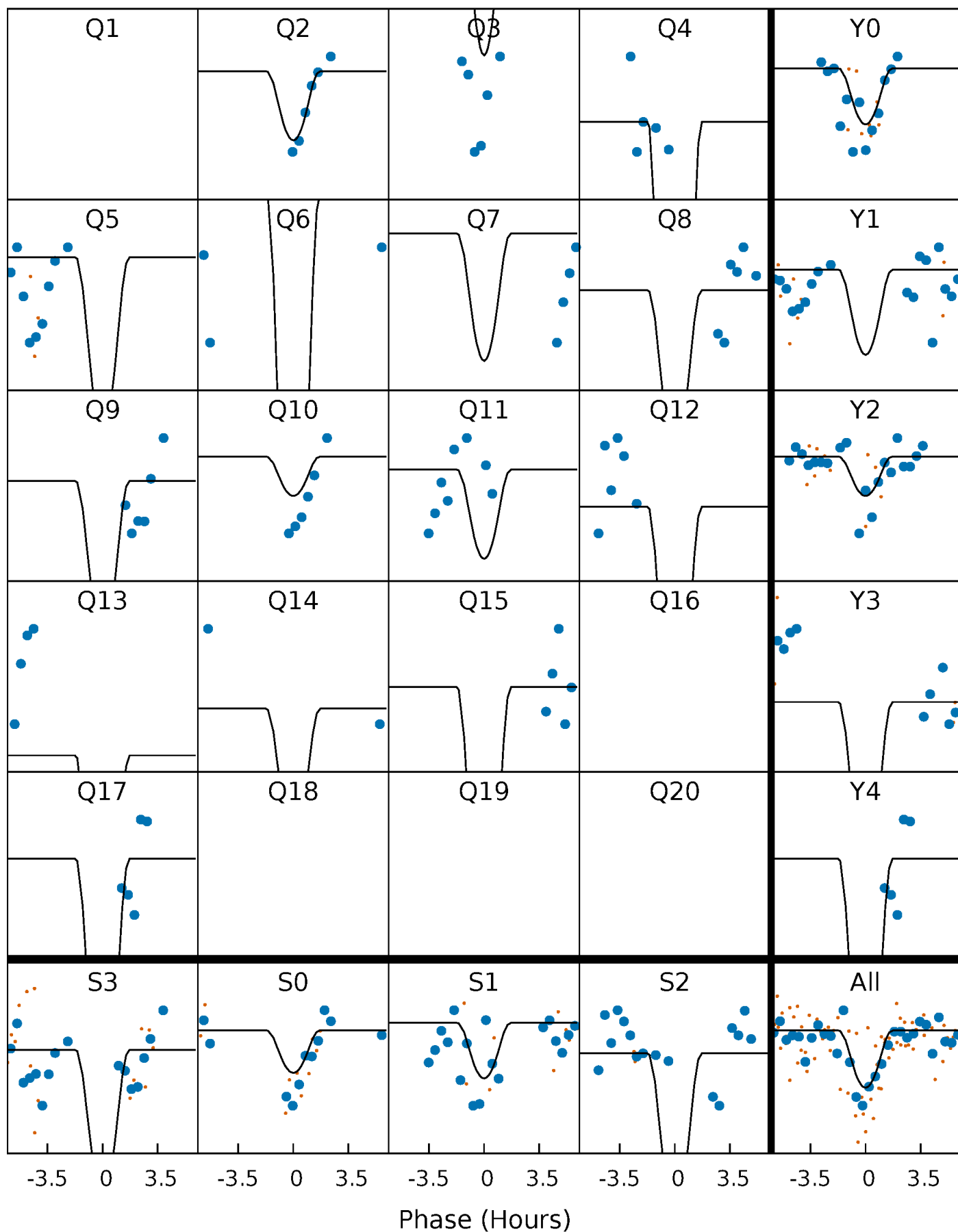
PDC Quarter-Phased Transit Curves

TCE 005530963-05 P= 42.703161 Days $T_0=150.898885$ (BKJD)



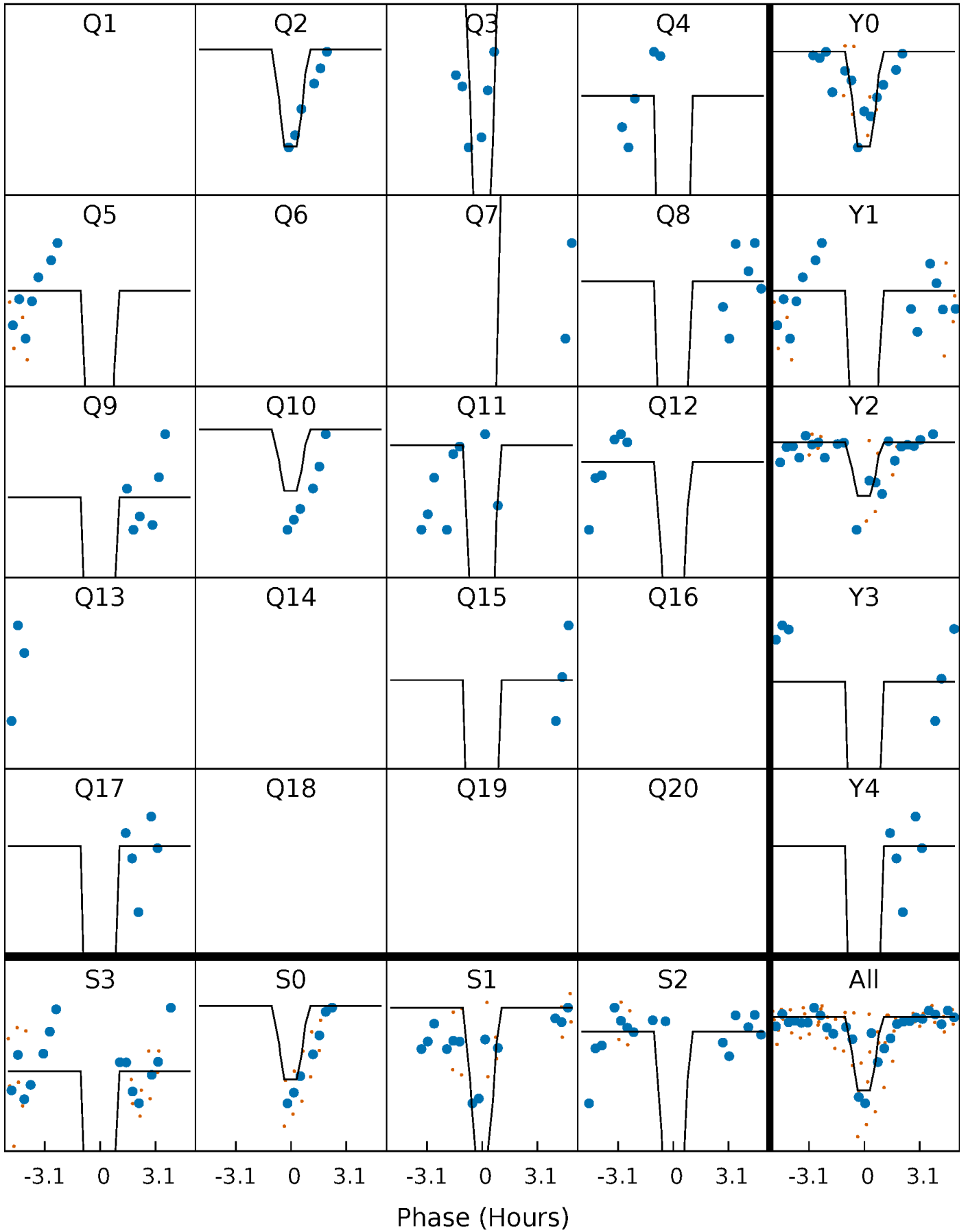
DV Quarter-Phased Transit Curves

TCE 005530963-05 P= 42.703161 Days $T_0=150.898885$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

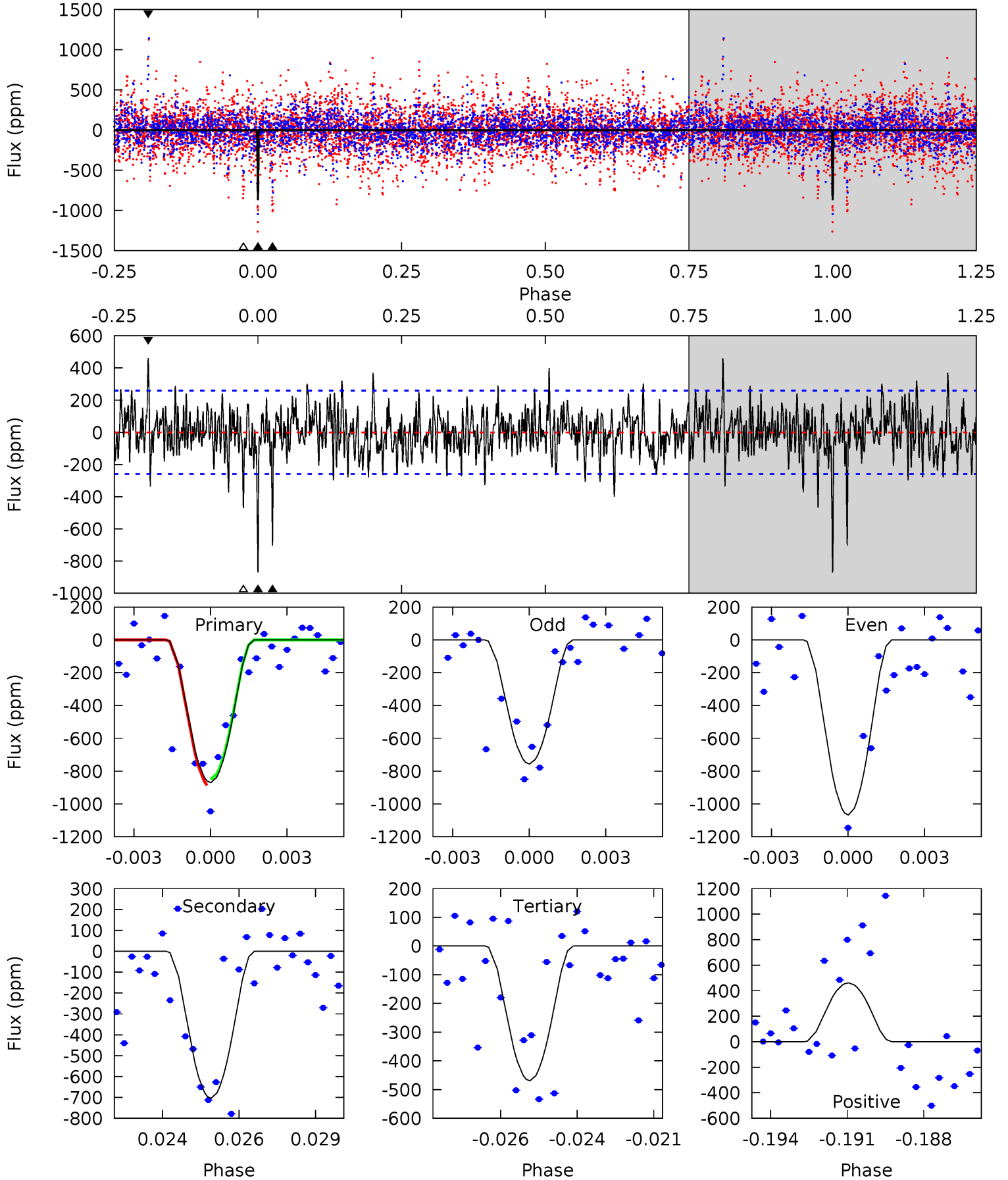
TCE 005530963-05 P= 42.702761 Days $T_0=150.901867$ (BKJD)



DV Model-Shift Uniqueness Test

005530963-05, P = 42.703161 Days, E = 108.195724 Days

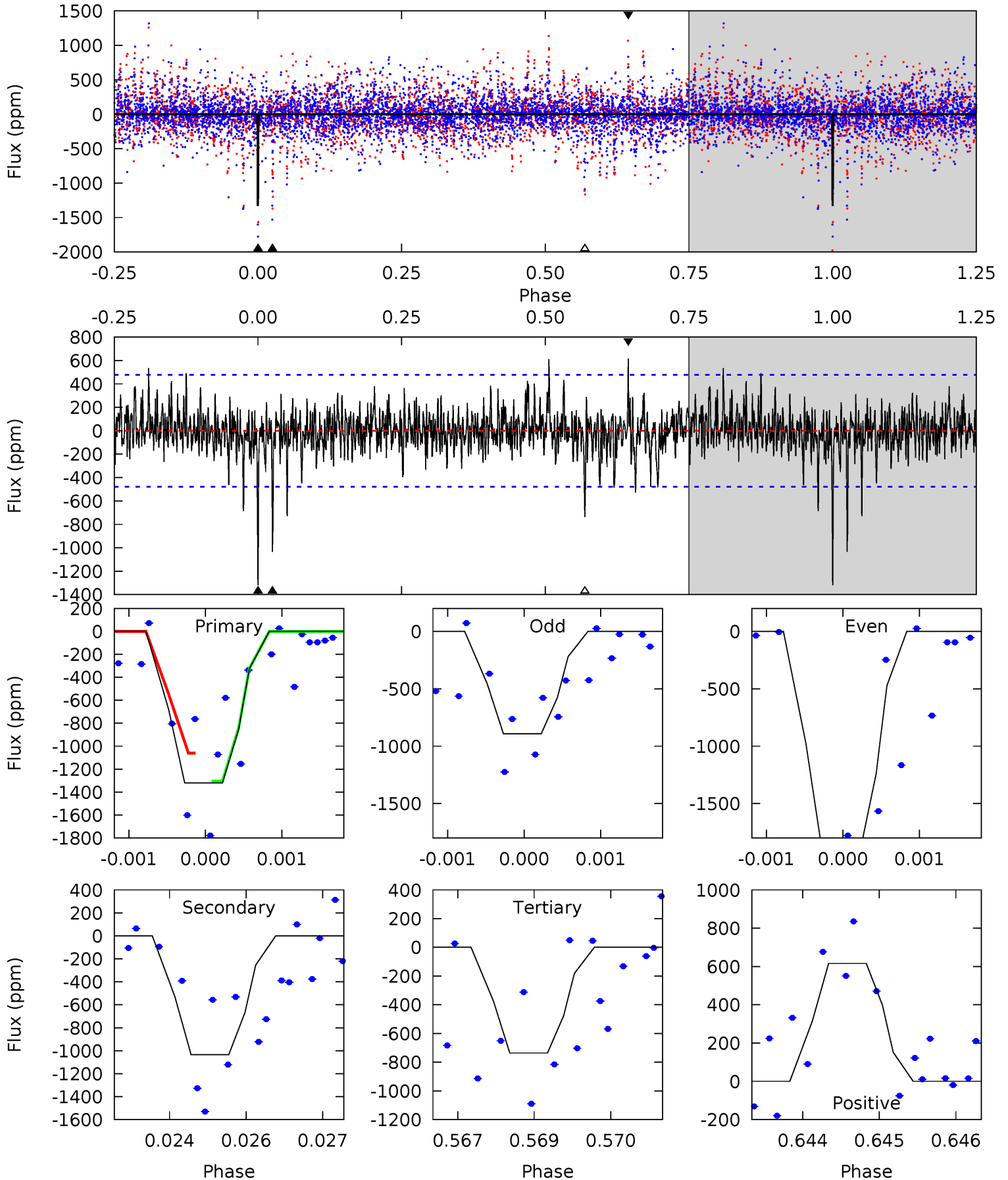
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	14.3	9.51	9.34	5.26	2.97	2.30	8.12	8.29	4.75	4.92	2.91	1.25	0.35	0.35



Alt Model-Shift Uniqueness Test

005530963-05, P = 42.702761 Days, E = 108.199106 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	11.7	8.31	6.95	5.40	3.20	1.62	6.59	7.95	3.36	4.72	5.42	1.01	0.32	1.13



Stellar Parameters For KIC 005530963

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6809^{+162}_{-223}	$3.154^{+0.528}_{-0.132}$	$0.070^{+0.200}_{-0.400}$	$7.089^{+1.656}_{-3.864}$	$2.610^{+0.303}_{-0.909}$	$0.010^{+0.063}_{-0.004}$
	+2%/-3%	+17%/-4%	+286%/-571%	+23%/-55%	+12%/-35%	+609%/-37%
Source	PHO1	FLK73	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 005530963-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-704 ± 49	$99.58^{+122.09}_{-69.05}$	1889^{+148}_{-257}	3307^{+2019}_{-746}	$4.078^{+39.259}_{-3.246}$
Alt.	-1034 ± 89	$106.19^{+123.28}_{-78.03}$	1892^{+160}_{-270}	3495^{+2241}_{-760}	$5.307^{+70.985}_{-4.154}$

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 $A_{obs} \gg 1.0$

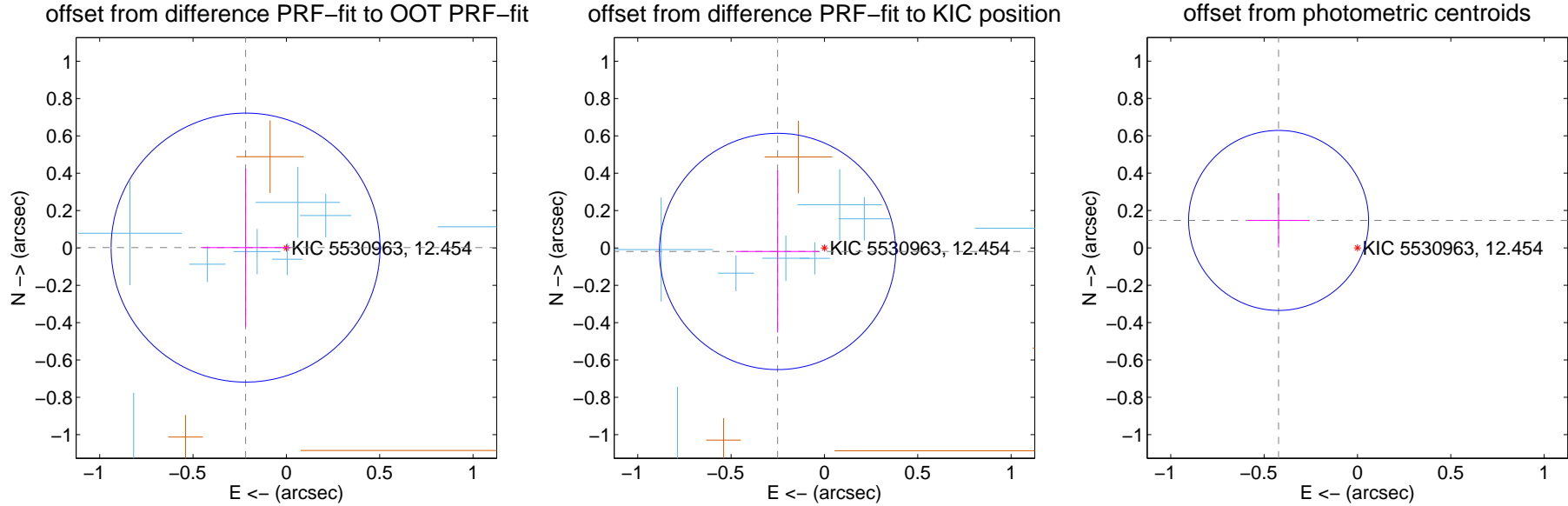
DV Centroid Data

Supplemental centroid analysis for 005530963-05. Kepler magnitude: 12.45. Transit SNR 10.98

There are 8 quarters with good PRF difference image offsets

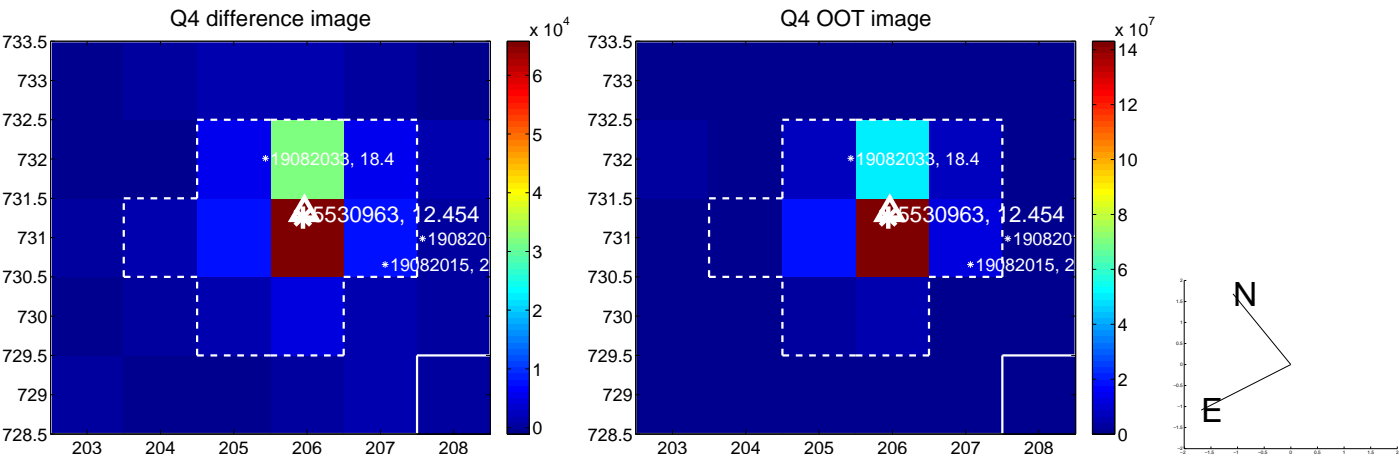
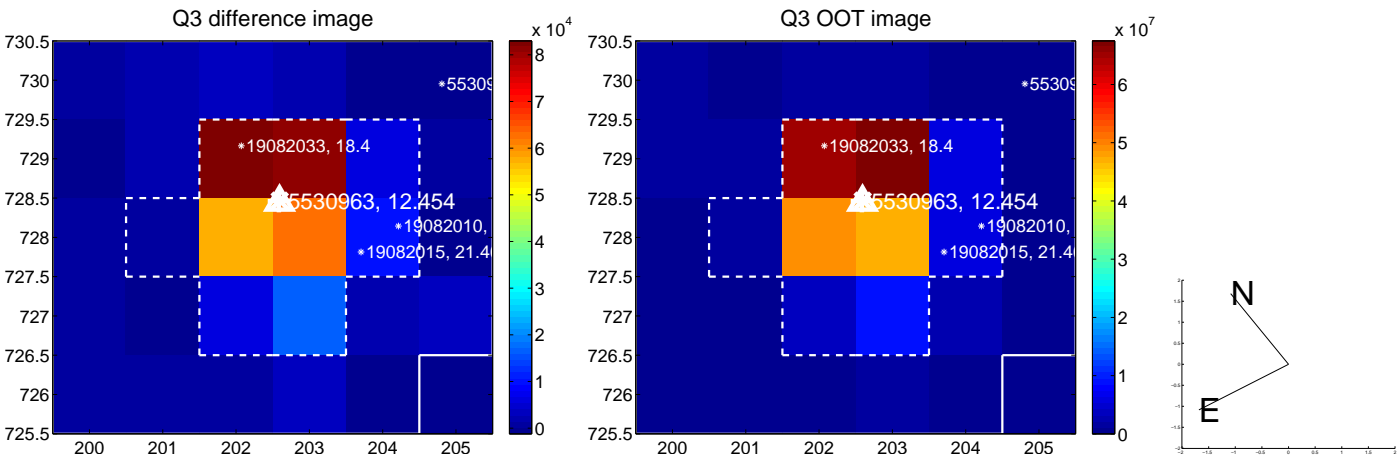
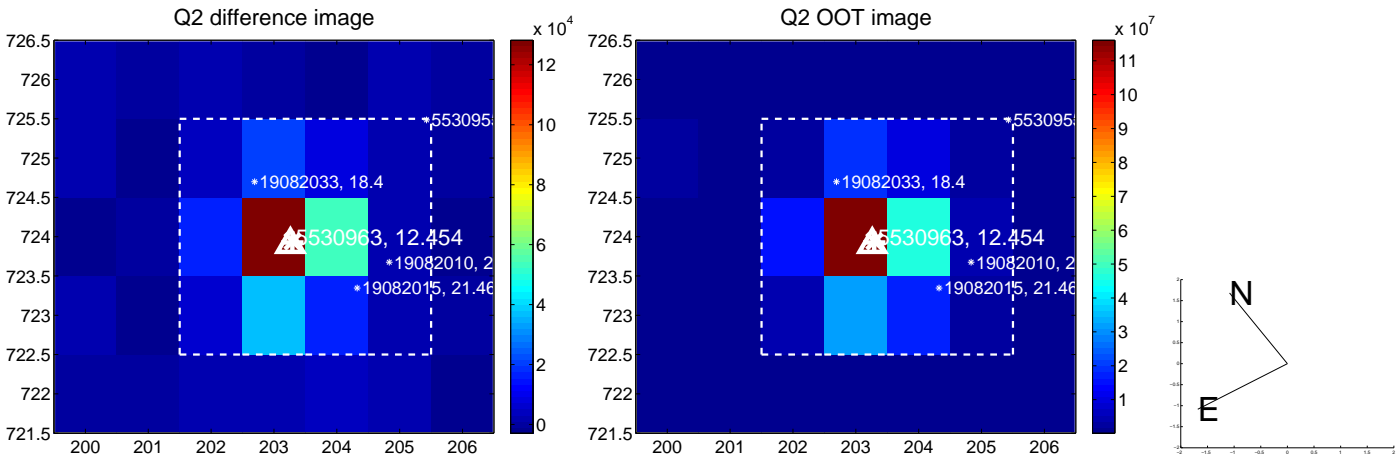
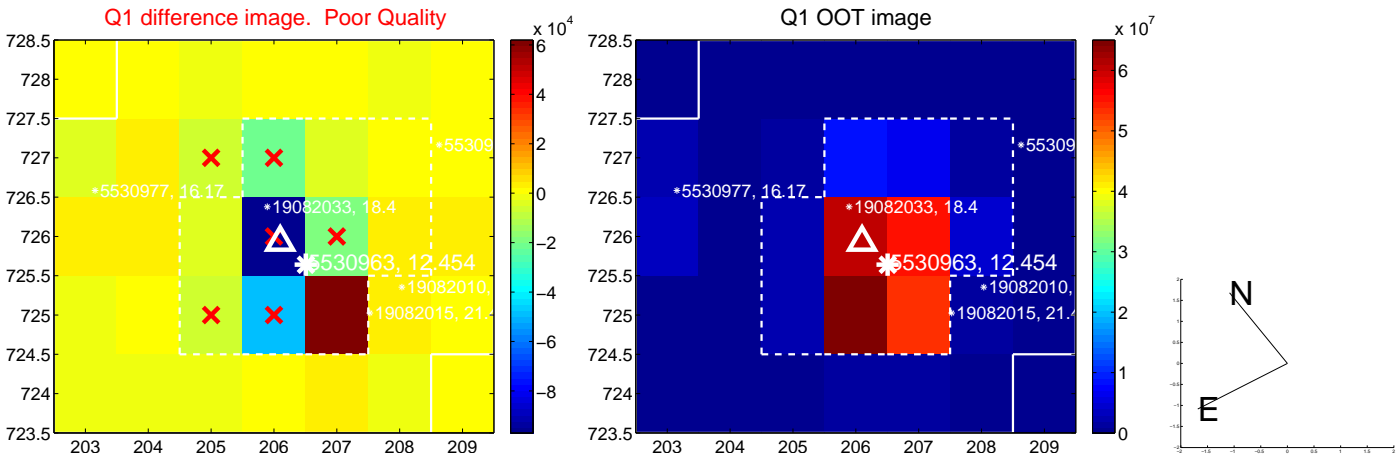
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.218 ± 0.240	0.91	0.218 ± 0.239	0.002 ± 0.422
PRF-fit source offset from KIC position	0.252 ± 0.211	1.19	0.251 ± 0.222	-0.019 ± 0.434
photometric centroid source offset	0.45 ± 0.16	2.78	0.42 ± 0.16	0.15 ± 0.14

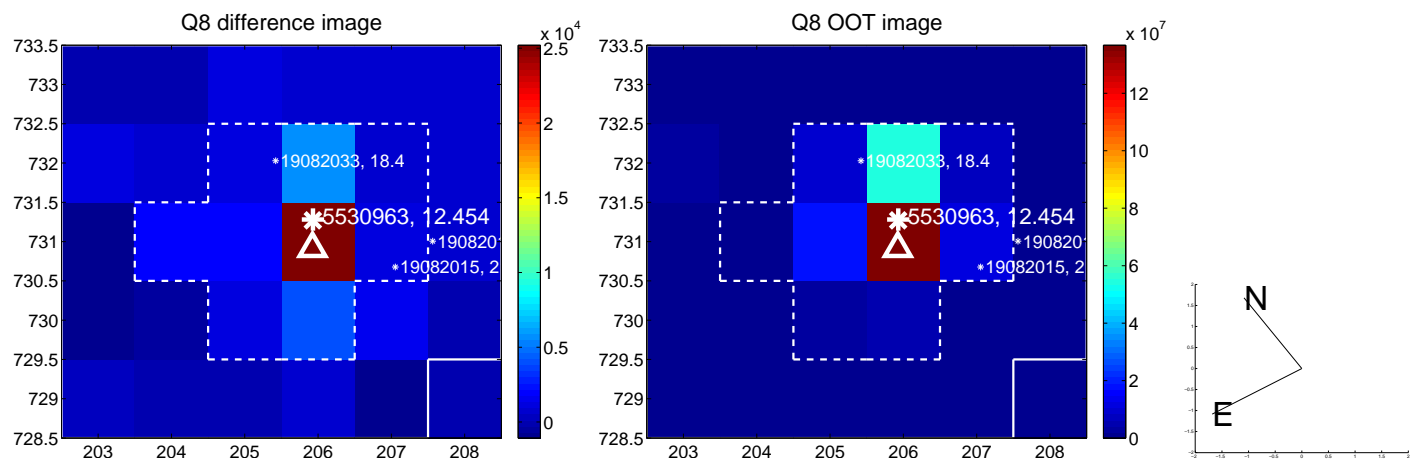
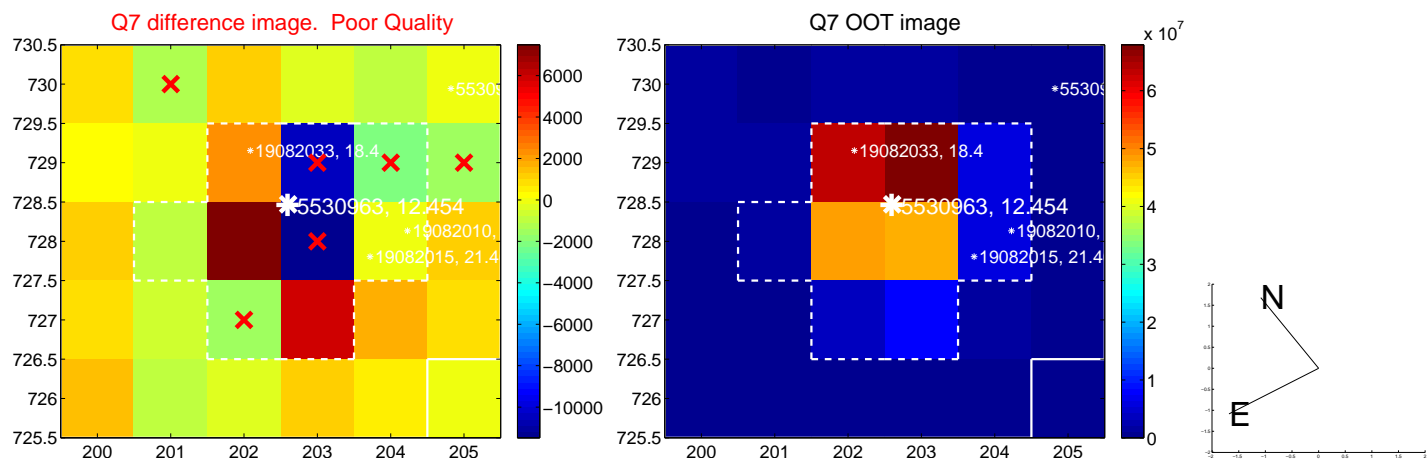
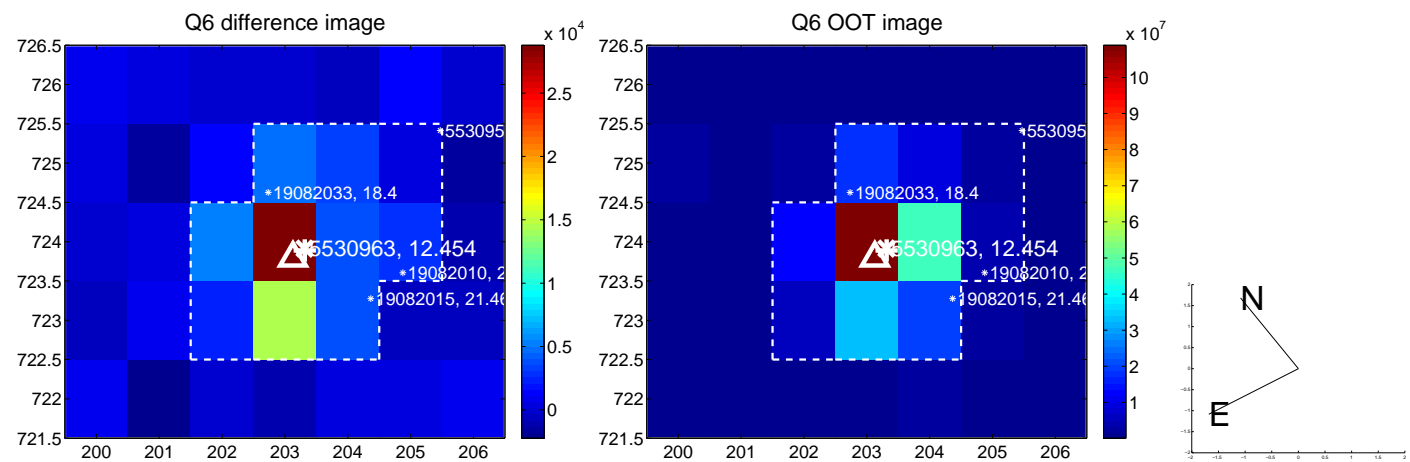
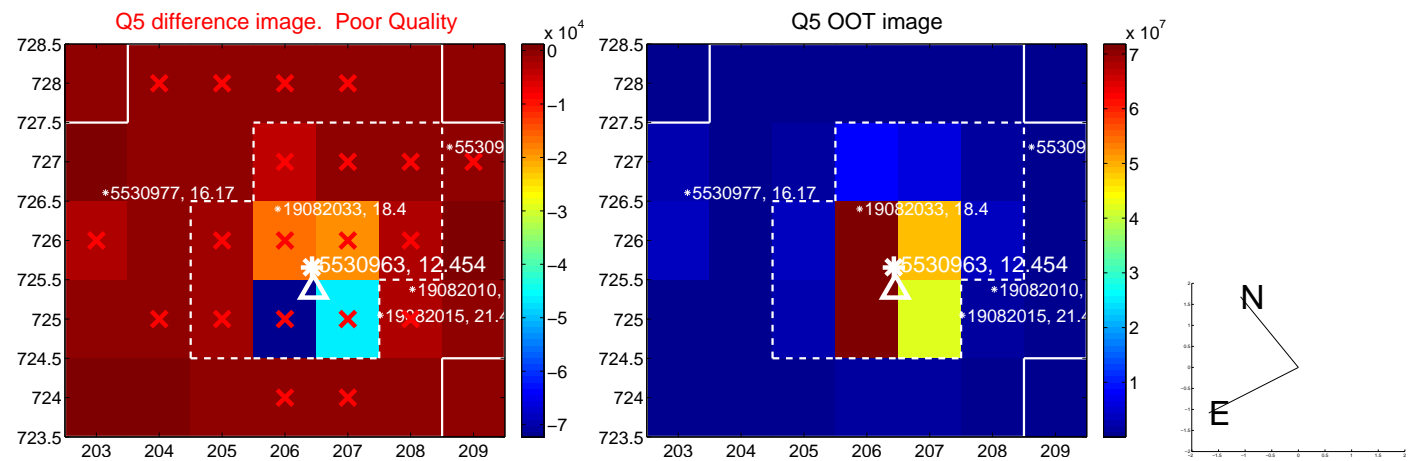


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

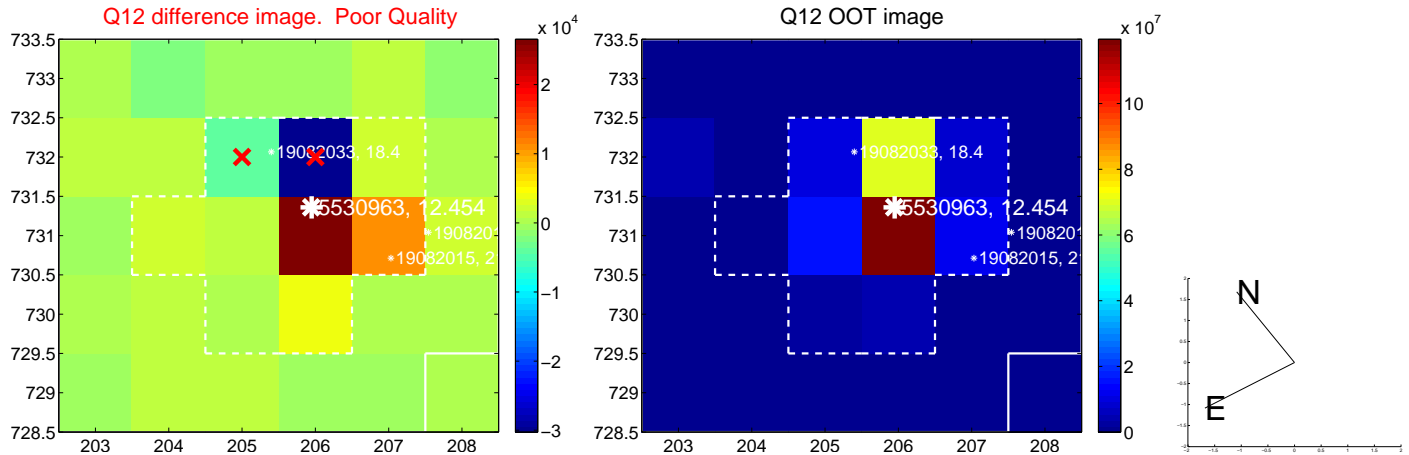
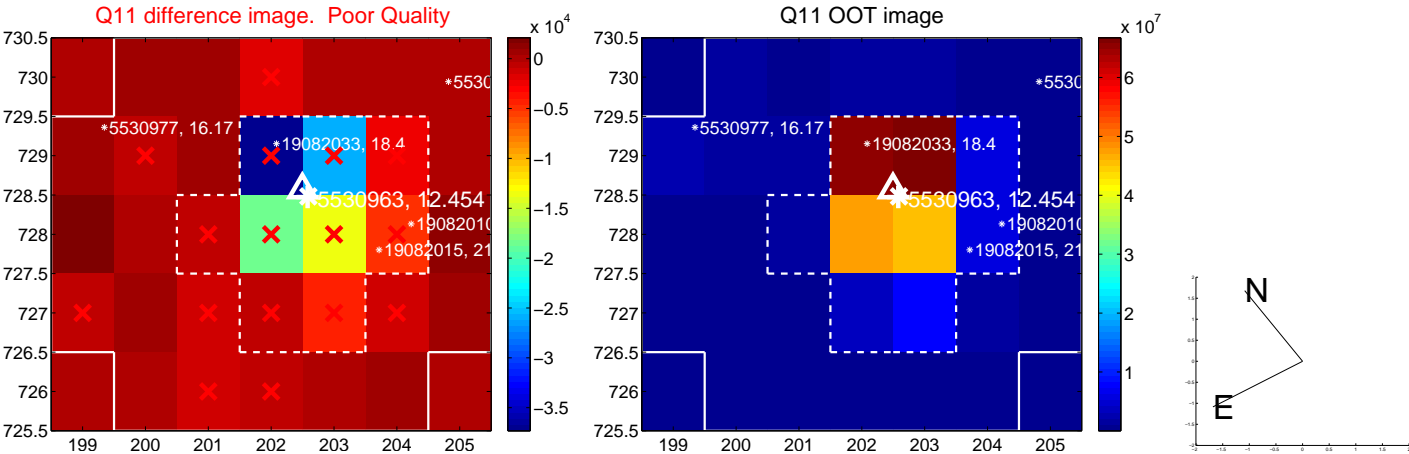
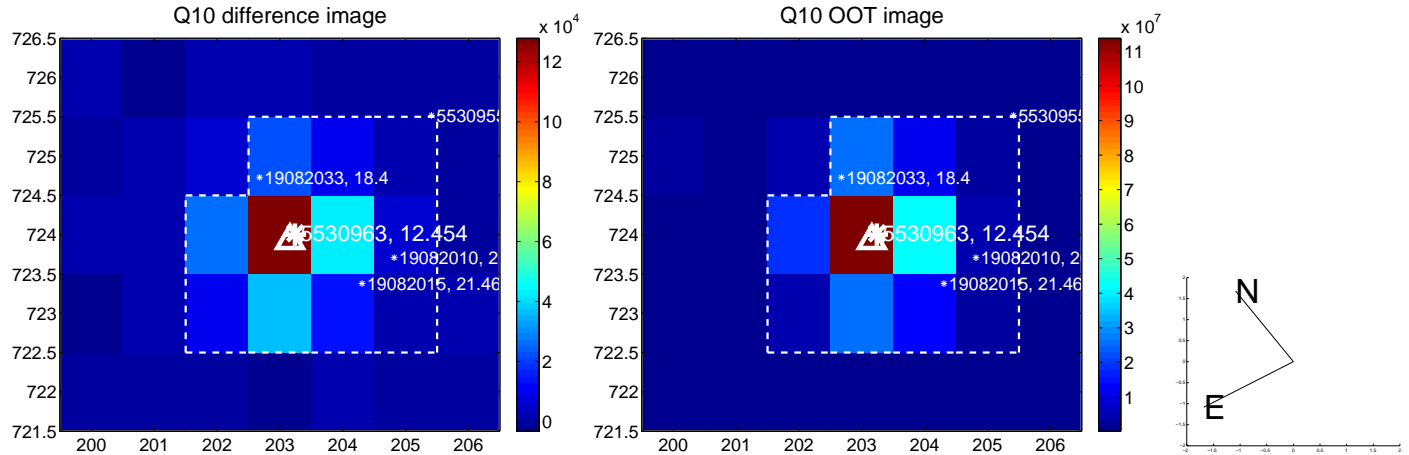
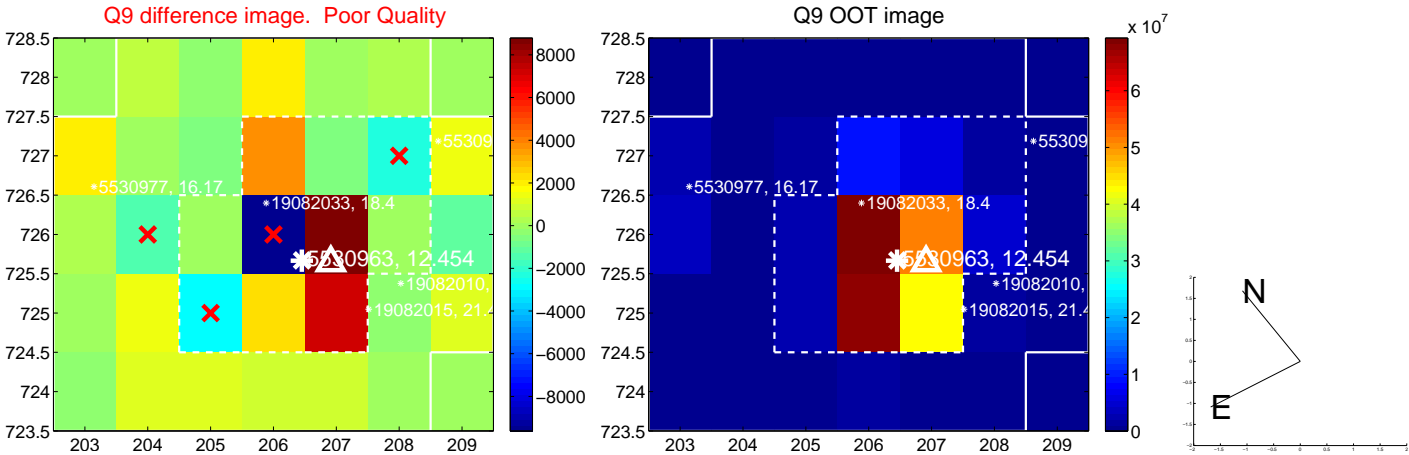
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



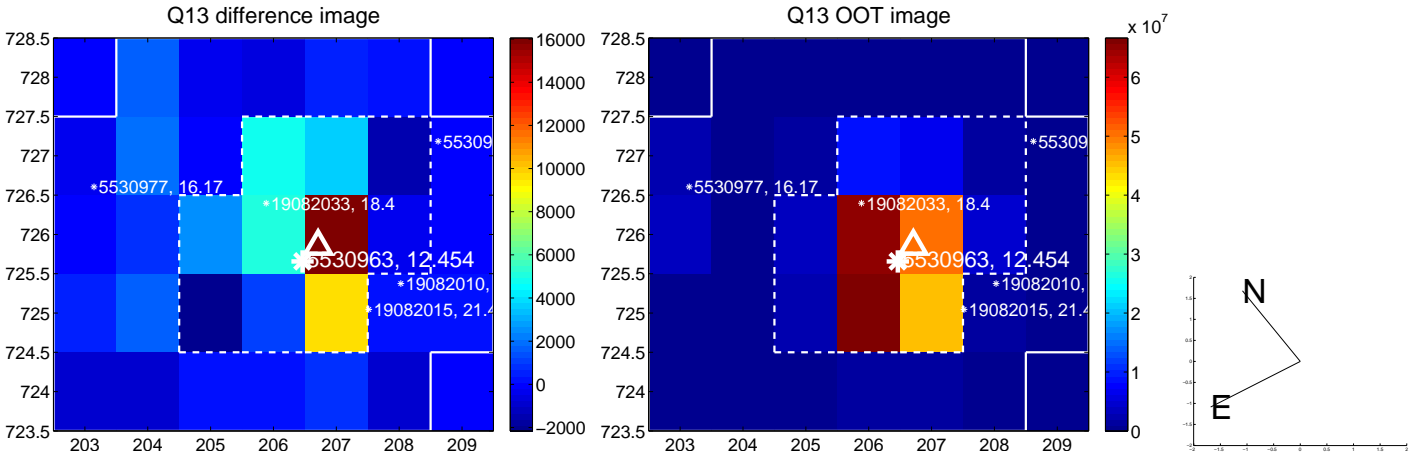
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



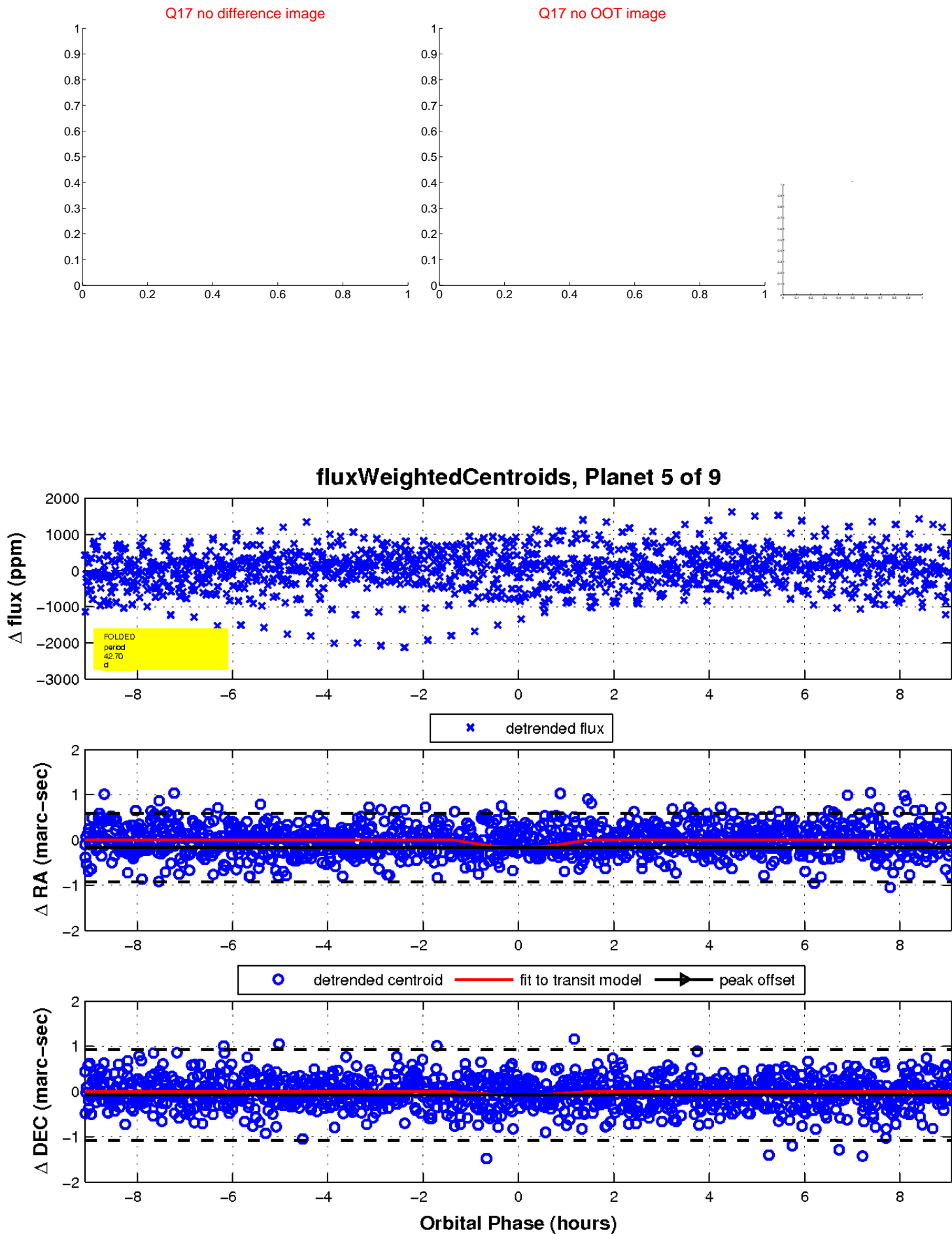
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

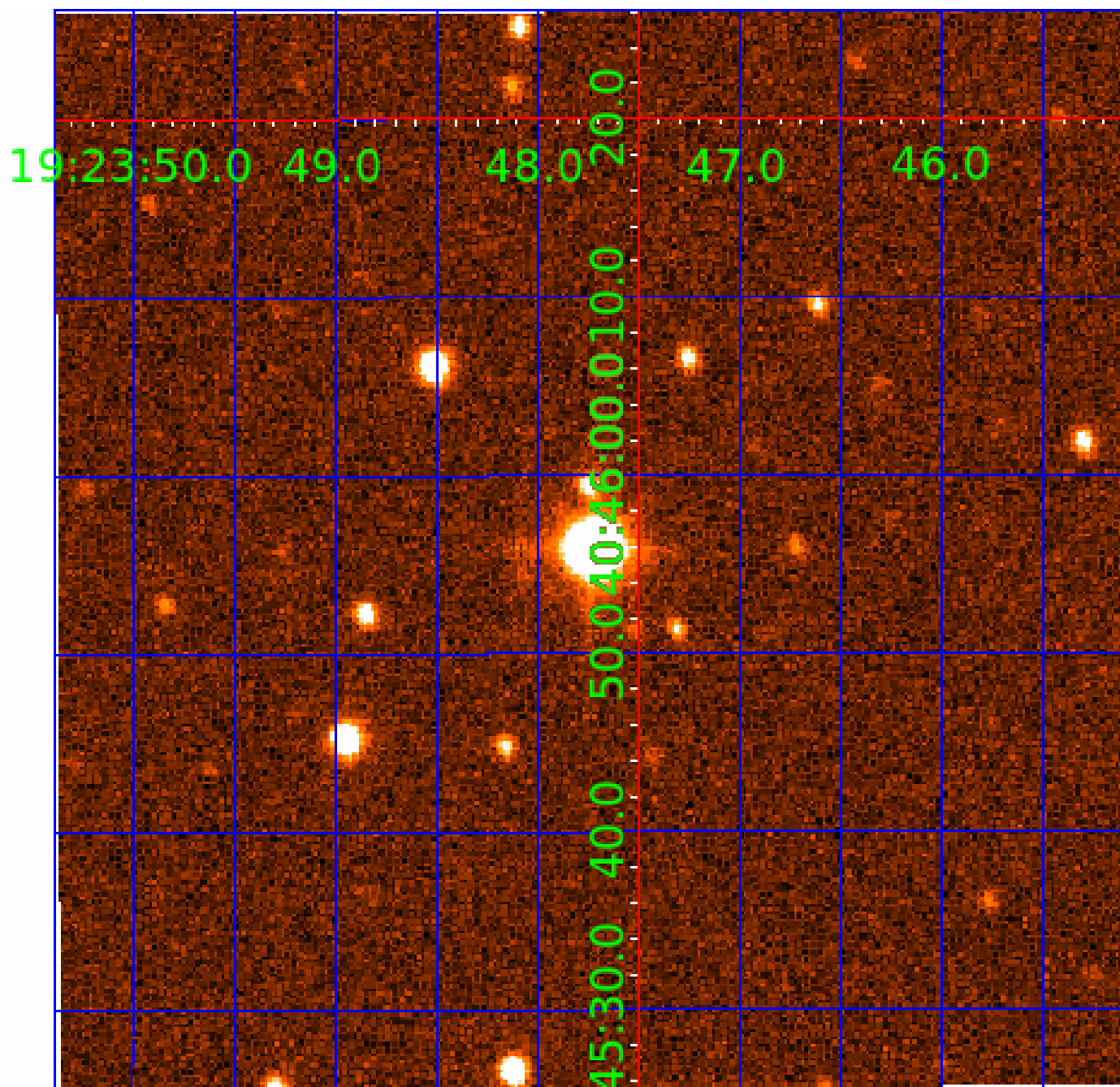


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005530963

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})
005530963-01	OBS	No	1.080265	132.615791	40.7	7.525	7.8	9.5	7.09	6809	5.26	0.00
005530963-03	OBS	No	36.851619	162.904611	512.0	6.972	18.7	11.7	7.09	6809	19.65	1085.61
005530963-04	OBS	No	31.284956	141.366740	160.5	11.099	15.4	5.6	7.09	6809	10.23	1350.53
005530963-05	OBS	No	42.703161	150.898885	647.6	3.032	15.1	11.0	7.09	6809	34.32	891.94
005530963-06	OBS	No	81.817698	198.274623	853.0	5.251	13.3	12.4	7.09	6809	39.02	374.82
005530963-08	OBS	No	33.512239	161.196427	598.7	4.210	11.5	9.5	7.09	6809	30.31	1232.20
005530963-09	OBS	No	32.921168	160.165568	499.4	2.422	11.2	10.9	7.09	6809	17.72	1261.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005530963-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005530963-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
005530963-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
005530963-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005530963-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT

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

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

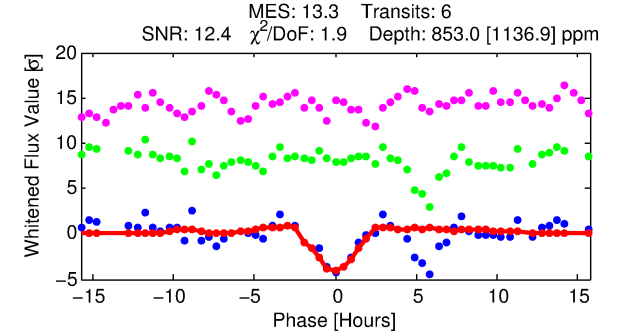
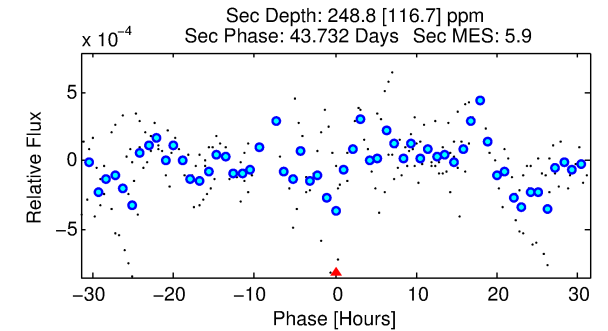
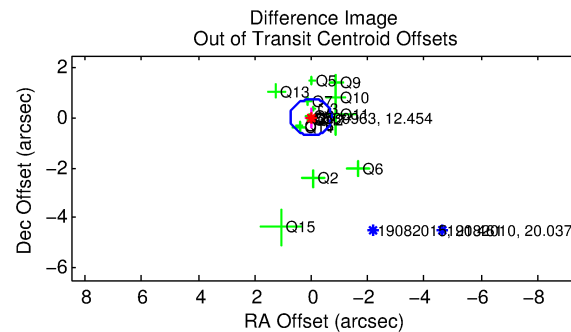
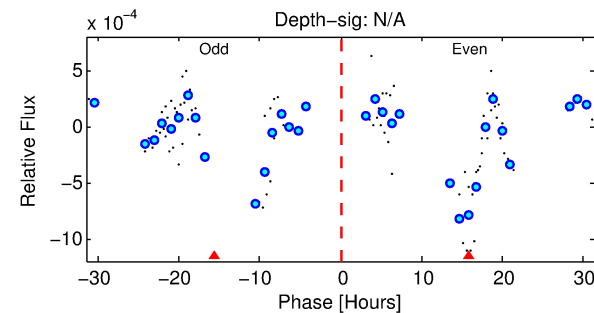
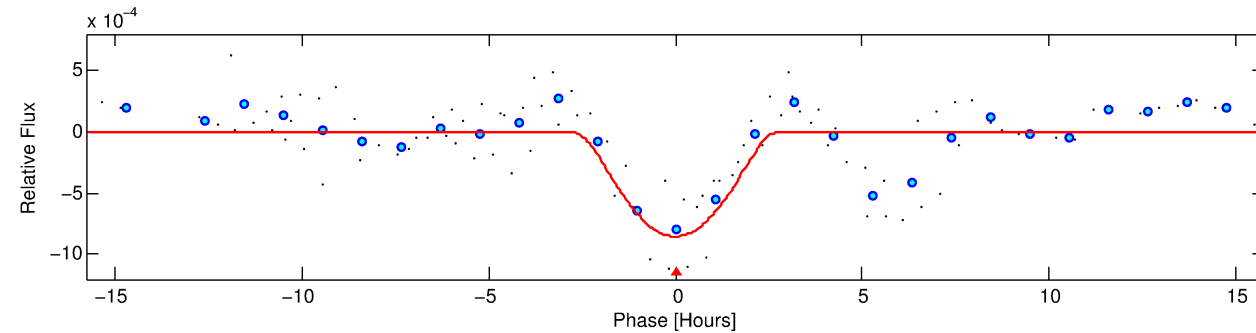
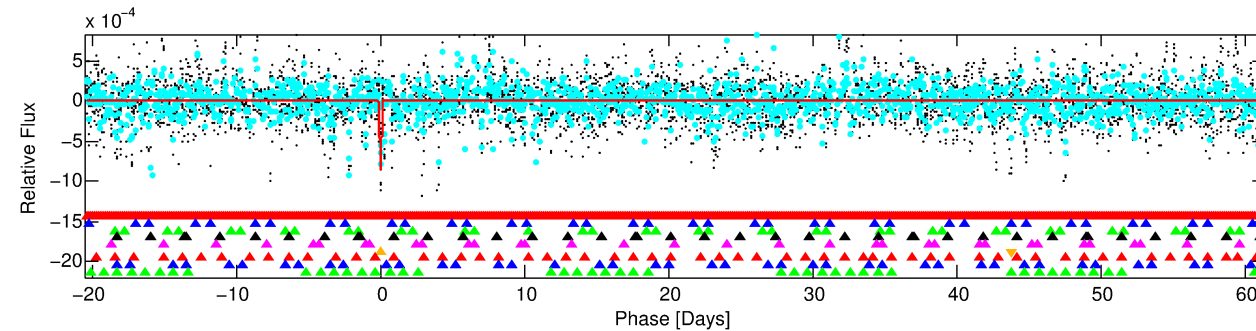
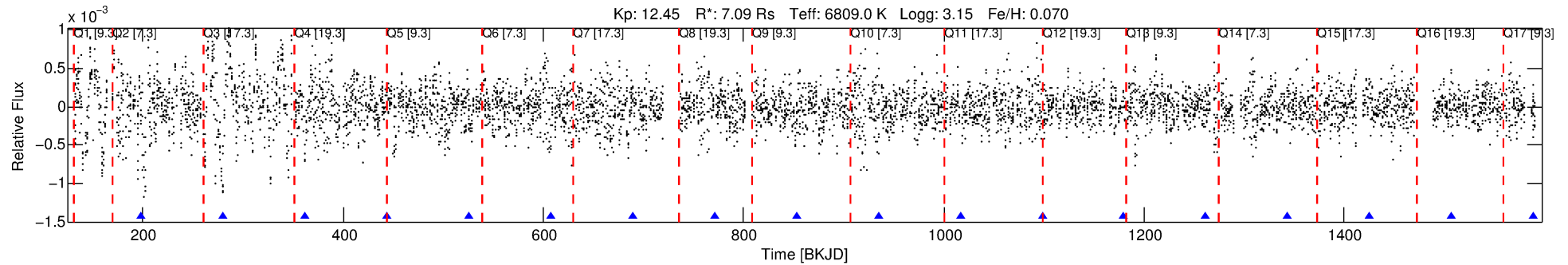
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005530963-06

No Significant Match Found

DV One-Page Summary

KIC: 5530963 Candidate: 6 of 9 Period: 81.818 d



DV Fit Results:

Period = 81.81770 [0.00110] d
Epoch = 198.2746 [0.0111] BKJD
Rp/R* = 0.0504 [0.1595]
a/R* = 38.30 [30.43]
b = 1.00 [0.18]
Seff = 374.82 [336.53]
Teff = 1122 [252] K
Rp = 39.02 [125.20] Re
a = 0.5081 [0.2766] AU
Ag = 23.22 [148.68] [0.15σ]
Teffp = 3808 [6038] K [0.44σ]

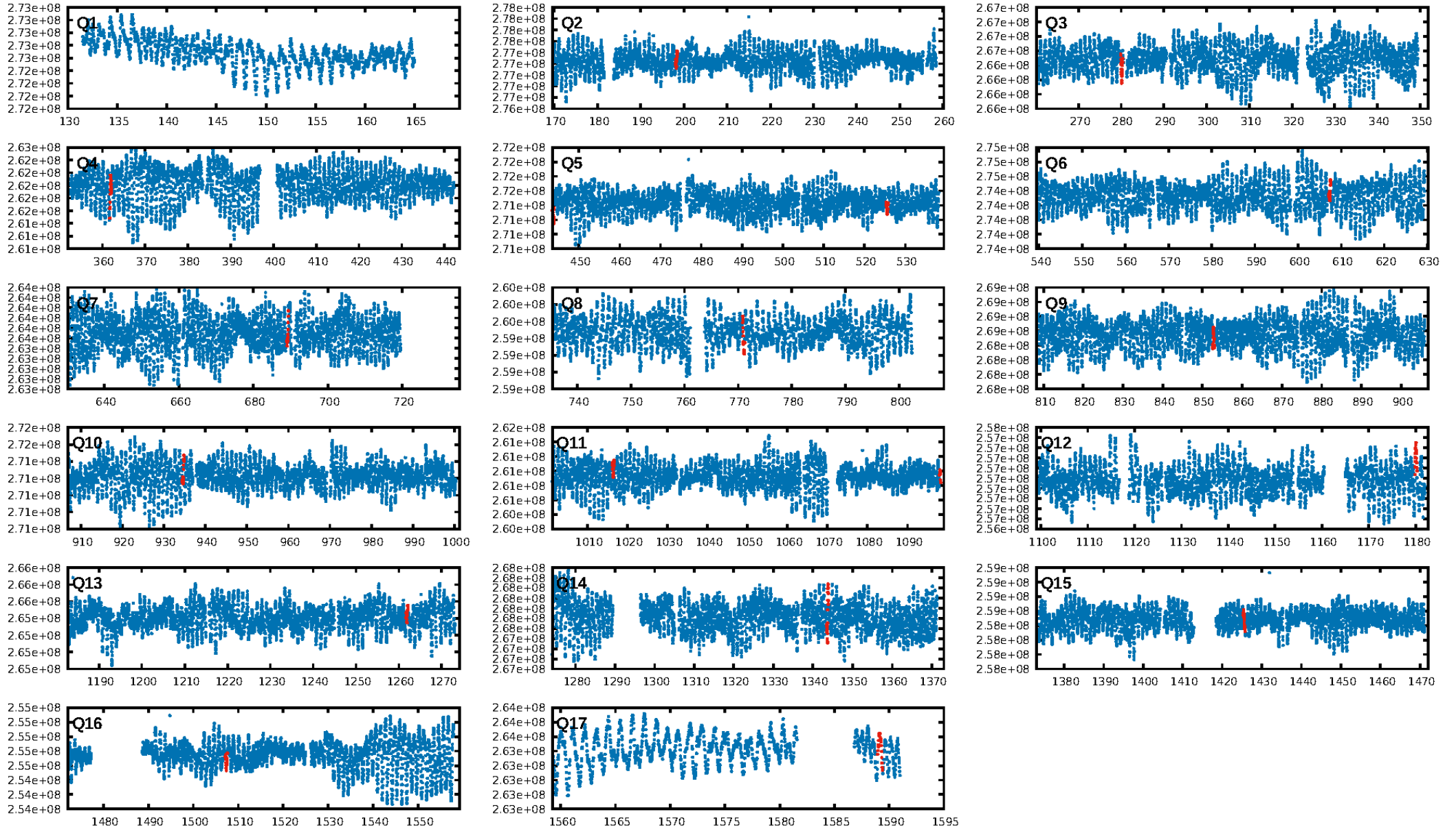
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [154.82σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 15.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.343
Centroid-sig: 6.0%
Centroid-so: 0.184 arcsec [1.52σ]
OotOffset-rm: 0.029 arcsec [0.12σ]
KicOffset-rm: 0.039 arcsec [0.22σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 0.00 [0/16]

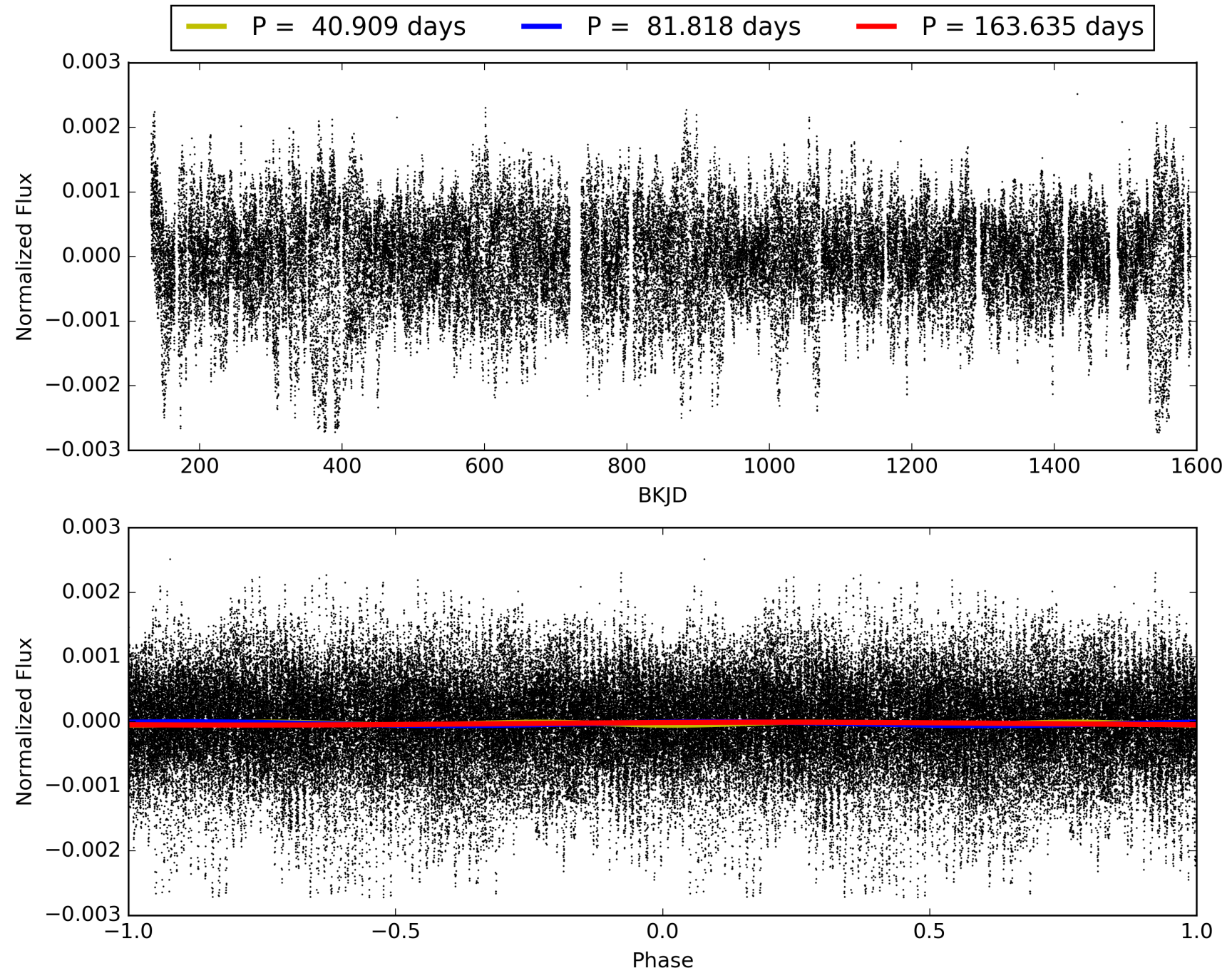
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:41:05 Z

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

TCE 005530963-06, PDC Light Curves

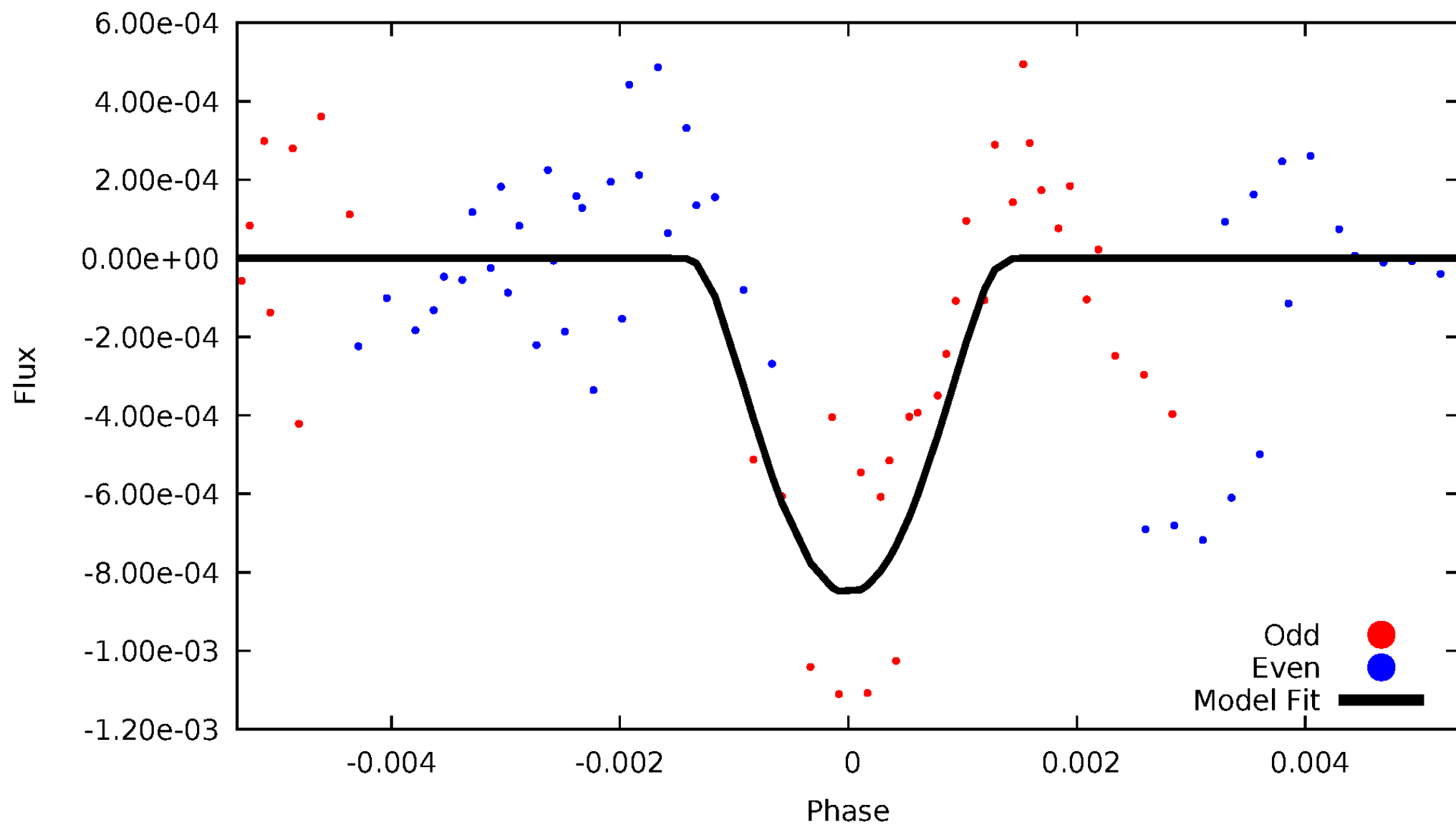


TCE 005530963-06



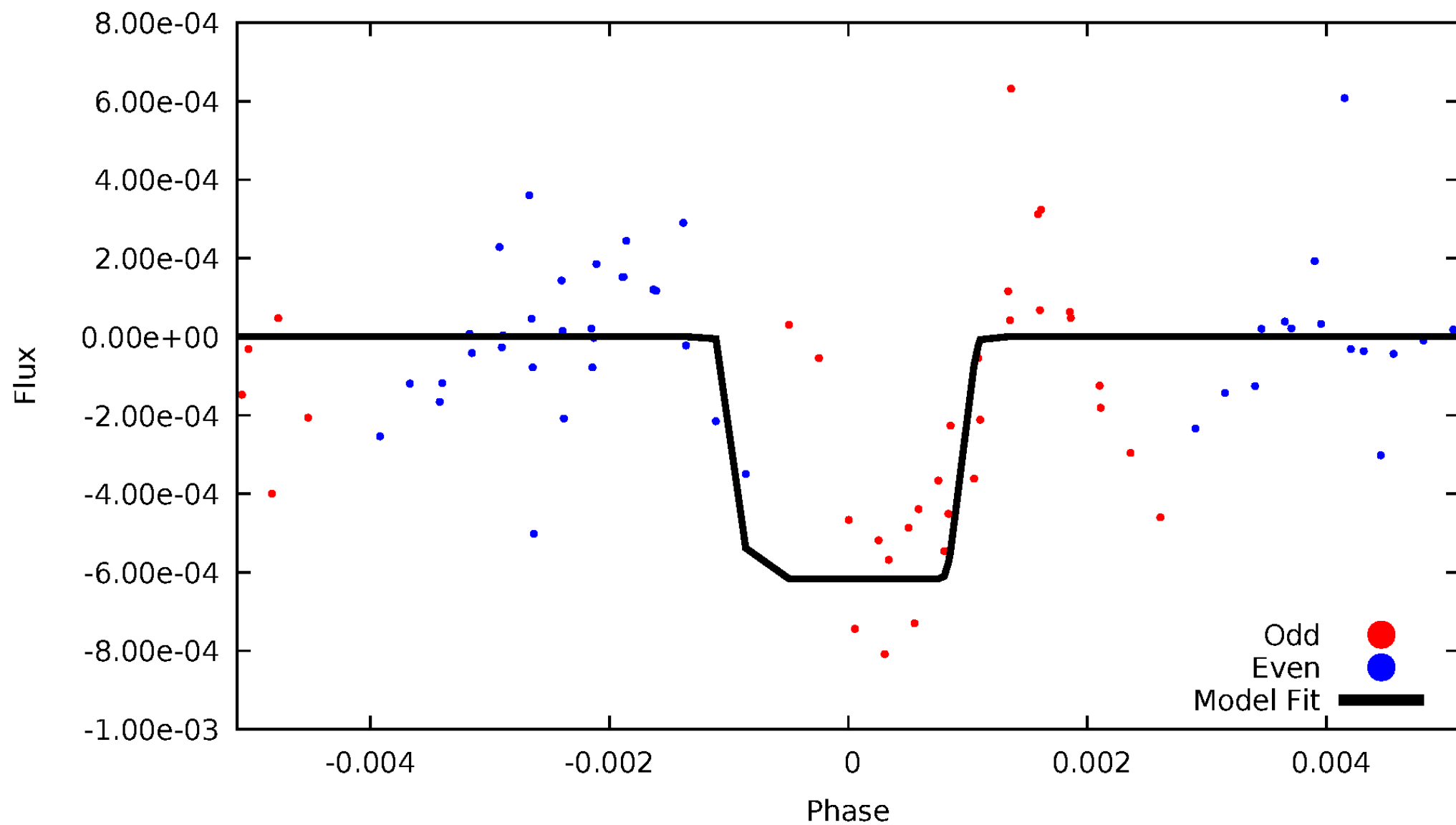
DV Odd/Even

TCE 005530963-06



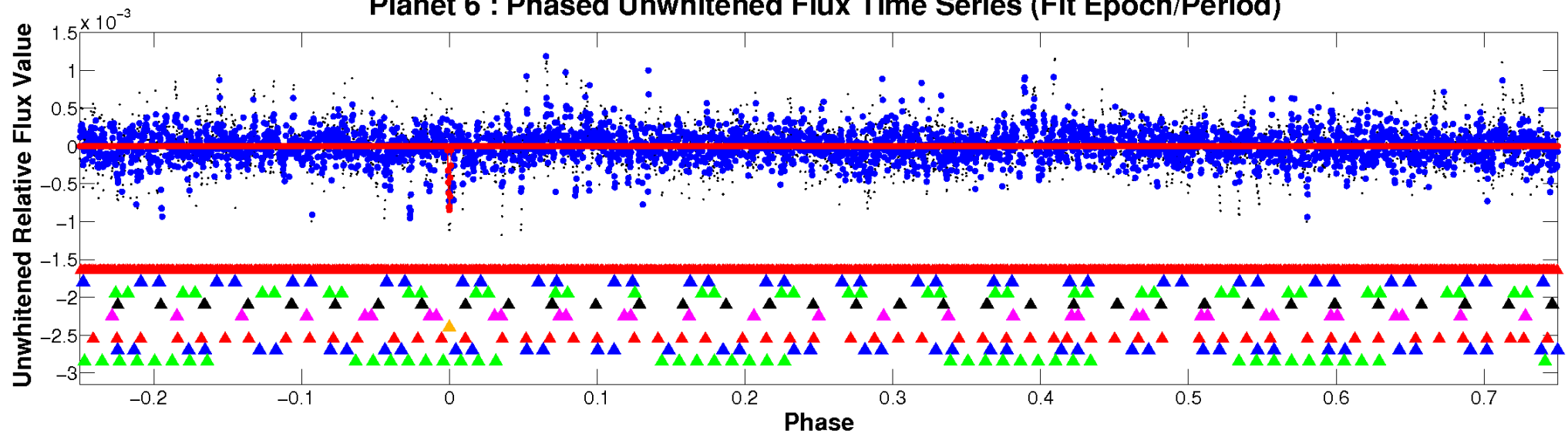
ALT Odd/Even

TCE 005530963-06

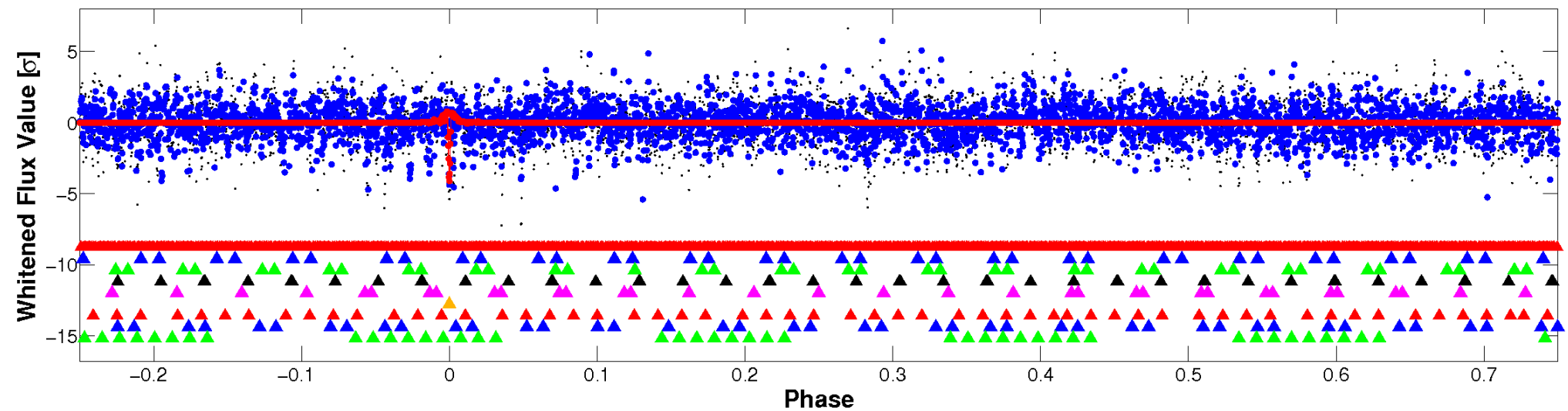


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

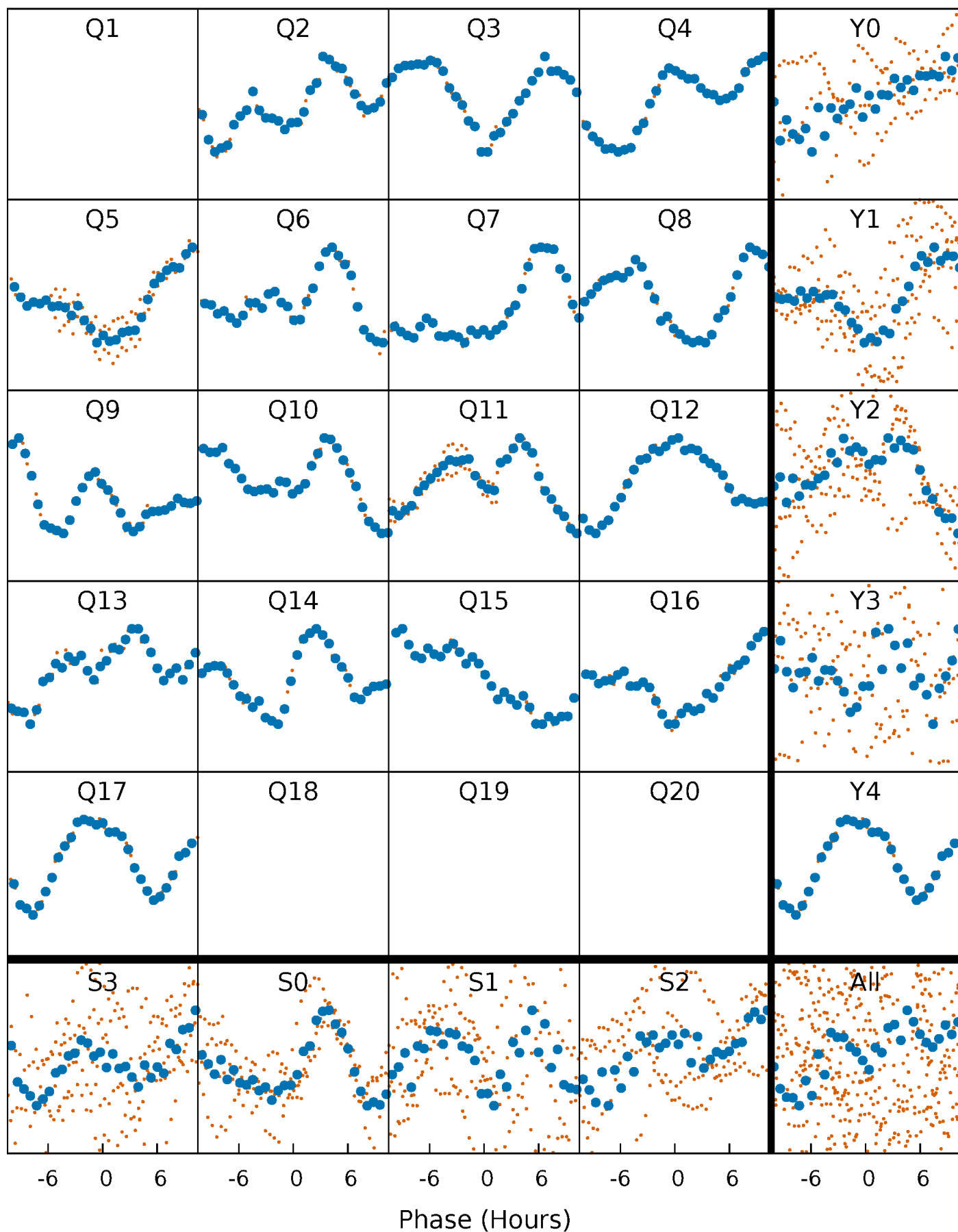


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



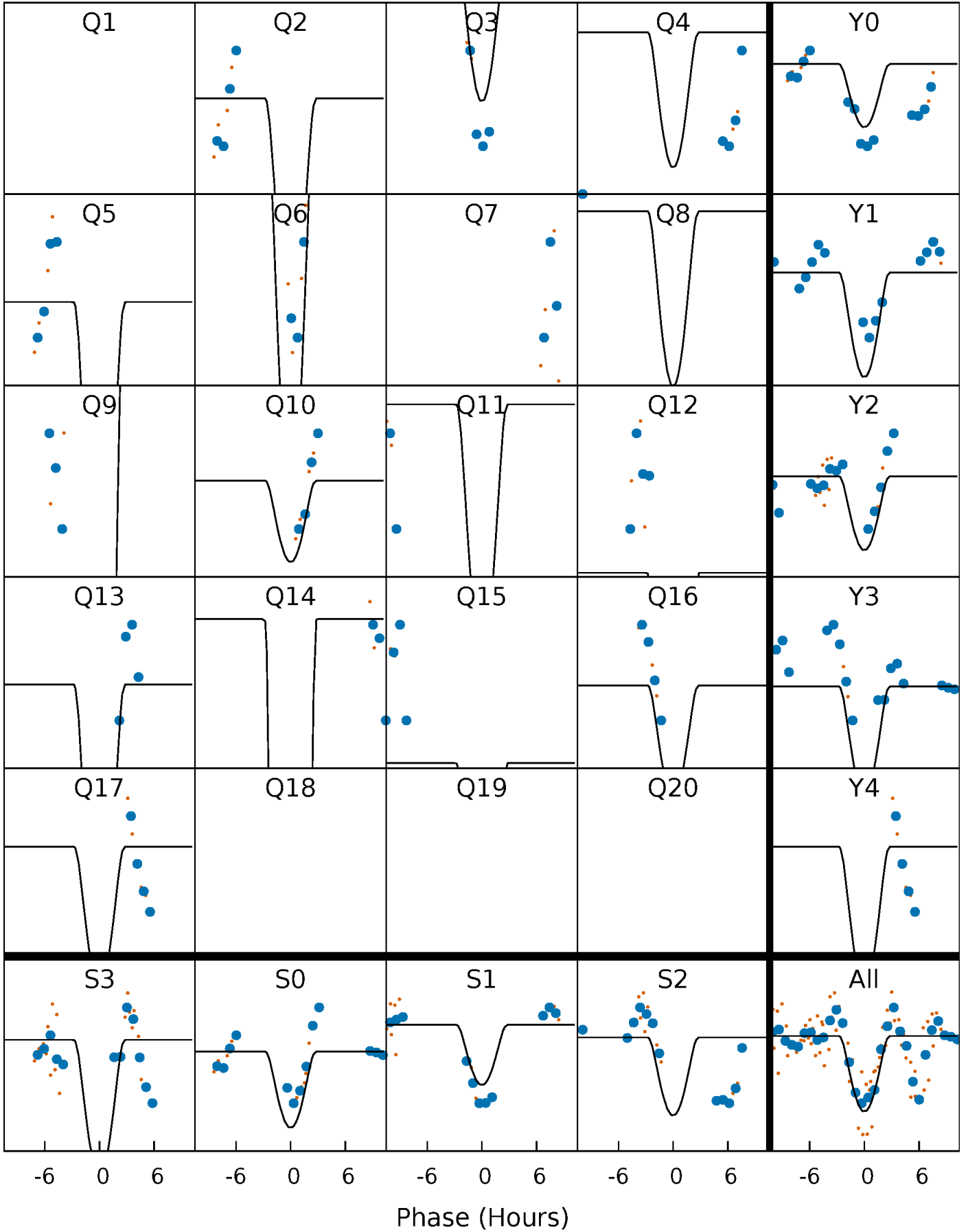
PDC Quarter-Phased Transit Curves

TCE 005530963-06 P= 81.817698 Days $T_0=198.274623$ (BKJD)



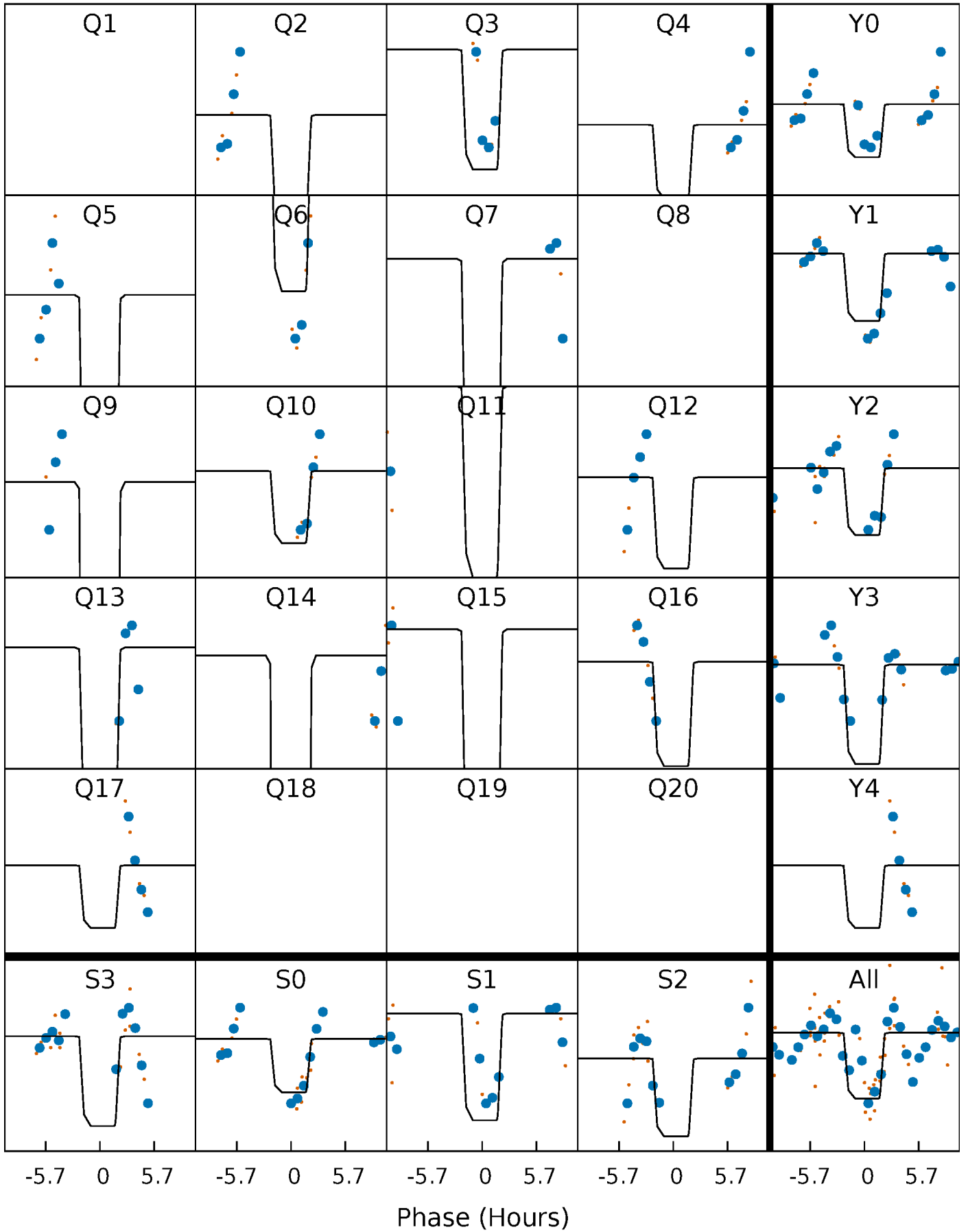
DV Quarter-Phased Transit Curves

TCE 005530963-06 P= 81.817698 Days $T_0=198.274623$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

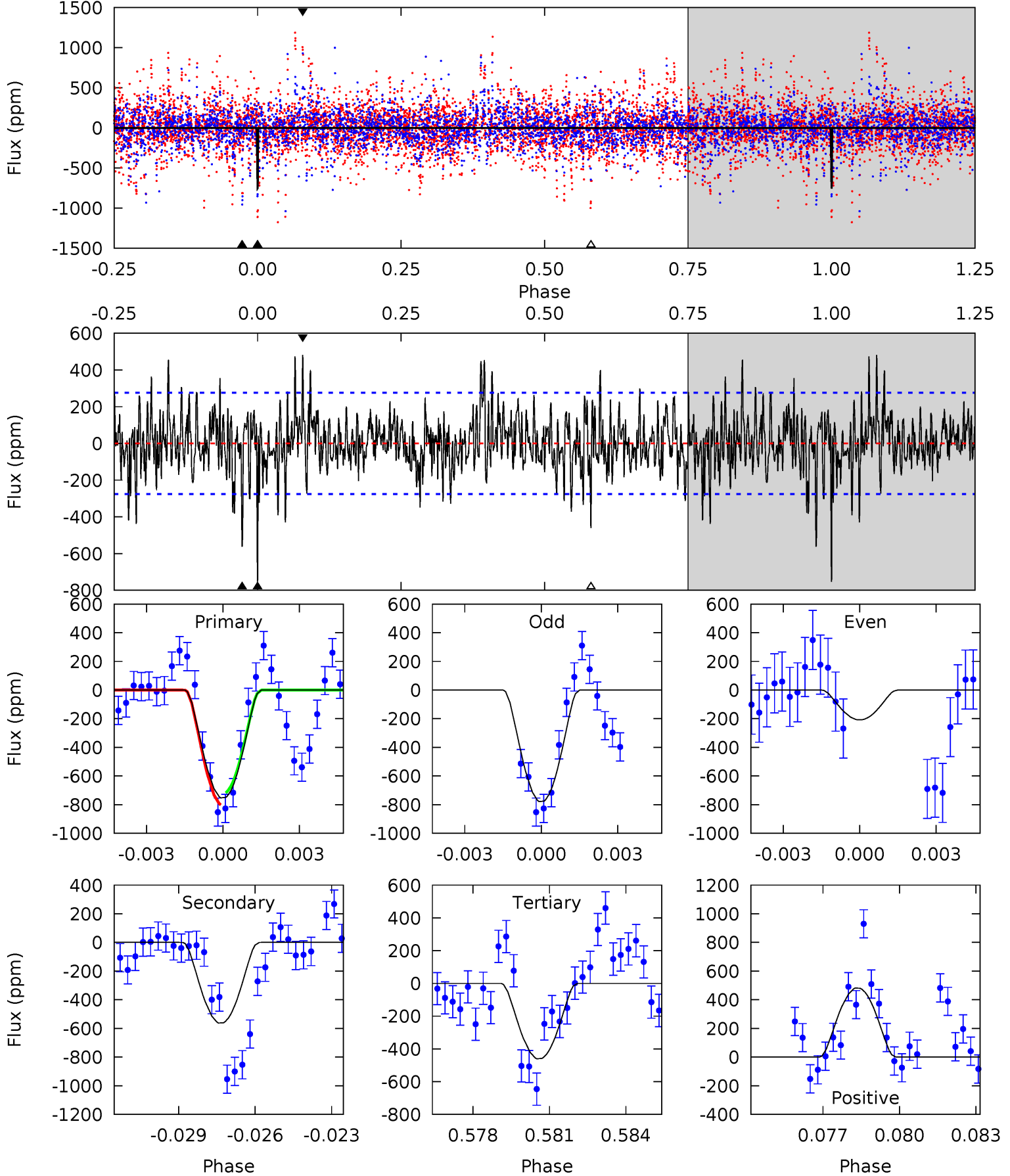
TCE 005530963-06 P= 81.820574 Days $T_0=198.244273$ (BKJD)



DV Model-Shift Uniqueness Test

005530963-06, P = 81.817698 Days, E = 116.456925 Days

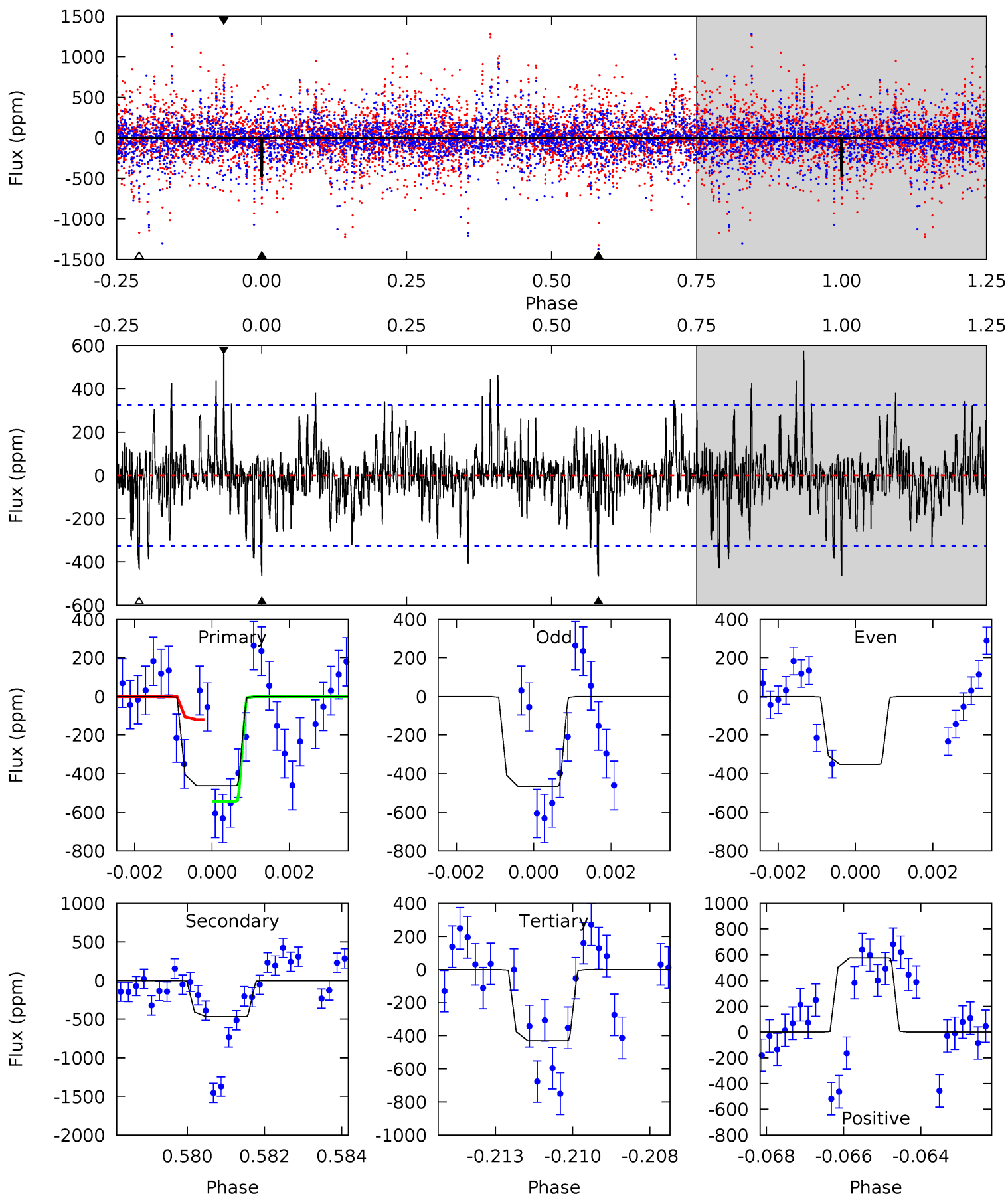
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	10.7	8.77	9.18	5.26	2.98	2.46	5.57	5.16	1.95	1.53	3.80	1.11	0.39	0.77



Alt Model-Shift Uniqueness Test

005530963-06, P = 81.820574 Days, E = 116.423699 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.55	7.62	7.01	9.40	5.29	3.03	1.77	0.53	-1.86	0.61	-1.78	0.44	1.08	0.55	2.56



Stellar Parameters For KIC 005530963

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6809^{+162}_{-223}	$3.154^{+0.528}_{-0.132}$	$0.070^{+0.200}_{-0.400}$	$7.089^{+1.656}_{-3.864}$	$2.610^{+0.303}_{-0.909}$	$0.010^{+0.063}_{-0.004}$
	+2%/-3%	+17%/-4%	+286%/-571%	+23%/-55%	+12%/-35%	+609%/-37%
Source	PHO1	FLK73	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 005530963-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-562 ± 52	$85.28^{+101.38}_{-59.92}$	1530^{+116}_{-224}	3409^{+1922}_{-661}	11^{+112}_{-9}
Alt.	-467 ± 61	$77.75^{+90.52}_{-55.74}$	1518^{+122}_{-221}	3397^{+1951}_{-684}	11^{+113}_{-8}

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

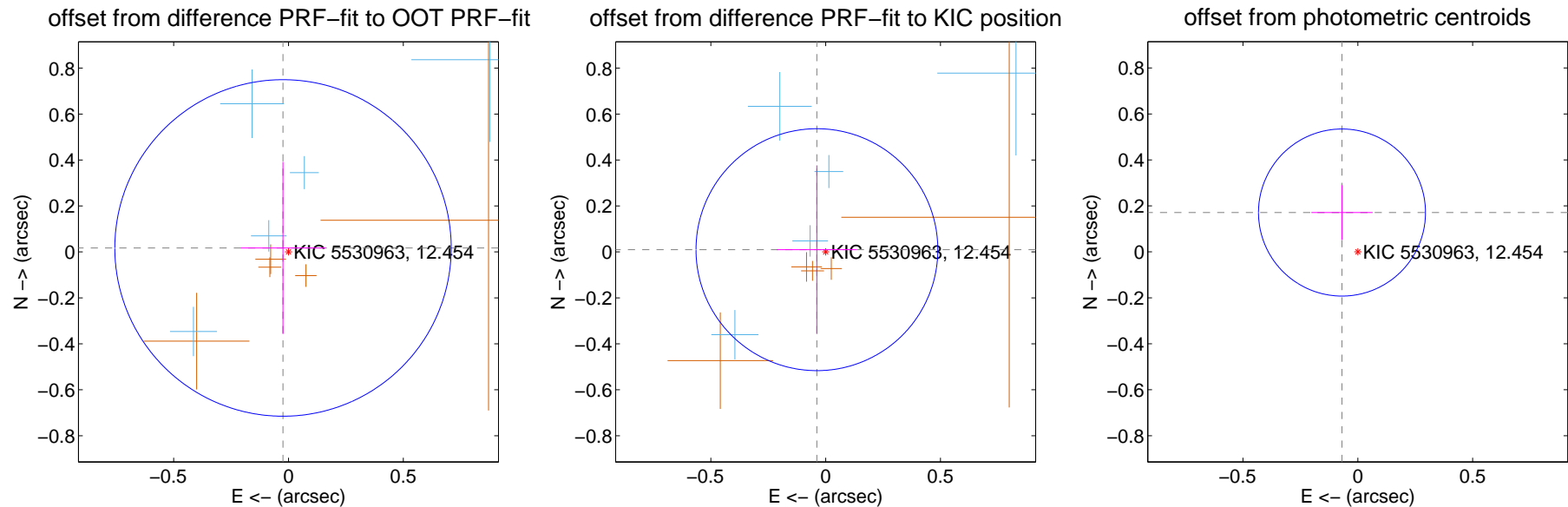
DV Centroid Data

Supplemental centroid analysis for 005530963-06. Kepler magnitude: 12.45. Transit SNR 12.43

There are 8 quarters with good PRF difference image offsets

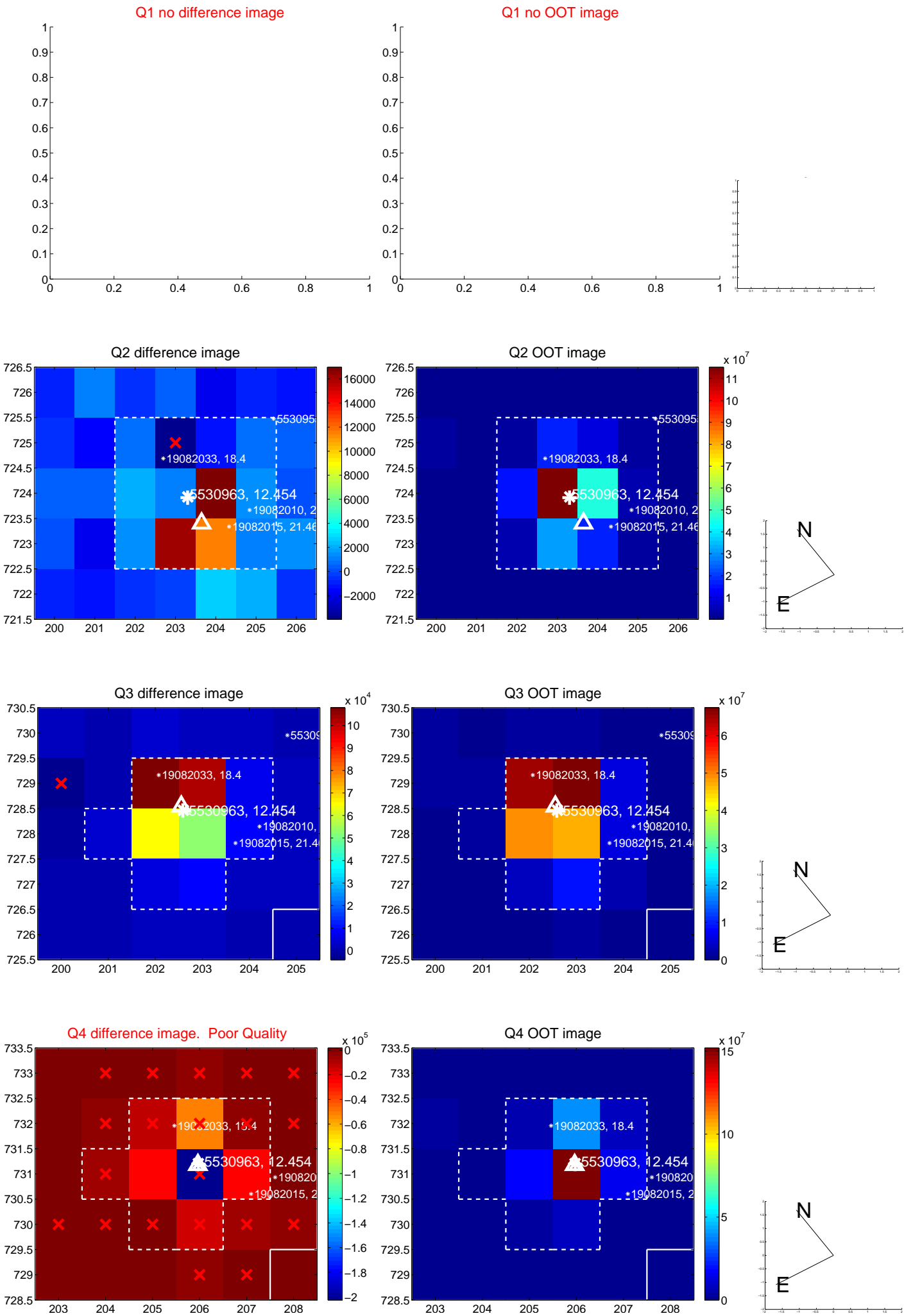
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.029 ± 0.244	0.12	0.024 ± 0.184	0.017 ± 0.374
PRF-fit source offset from KIC position	0.039 ± 0.175	0.22	0.038 ± 0.174	0.010 ± 0.367
photometric centroid source offset	0.18 ± 0.12	1.52	0.07 ± 0.13	0.17 ± 0.12

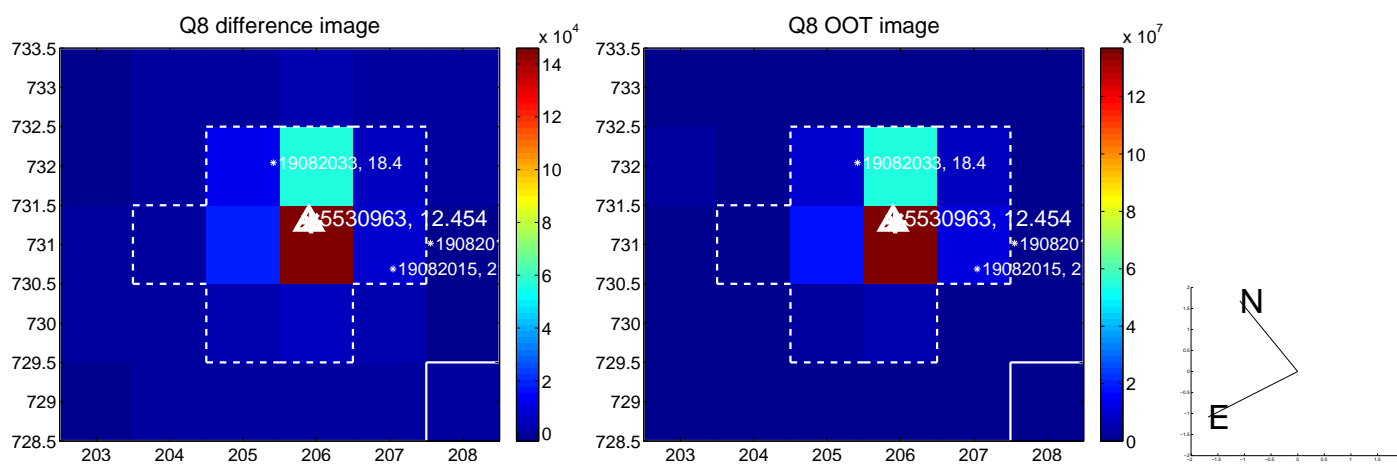
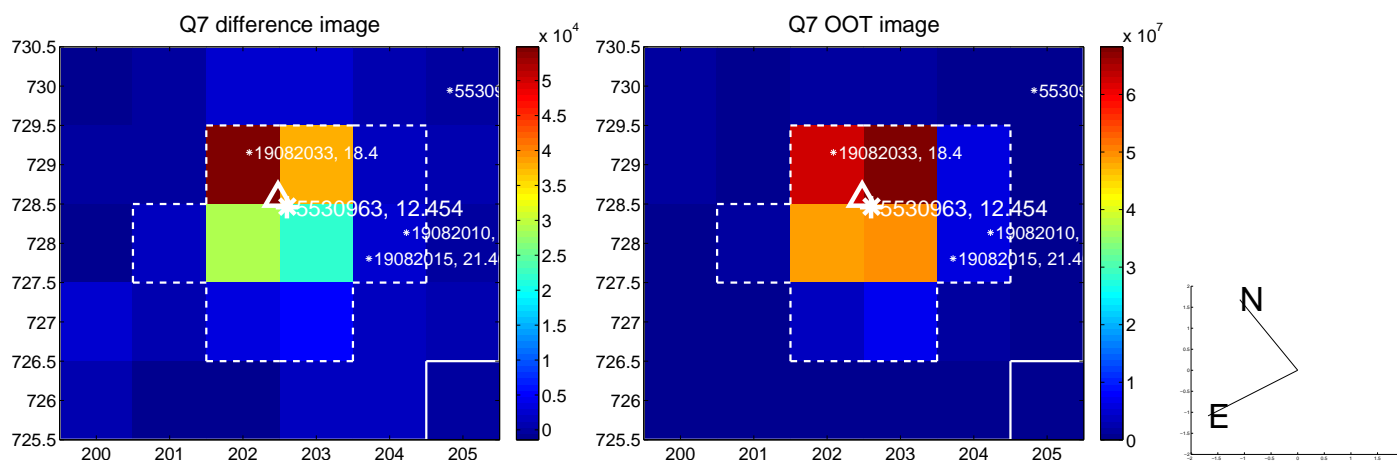
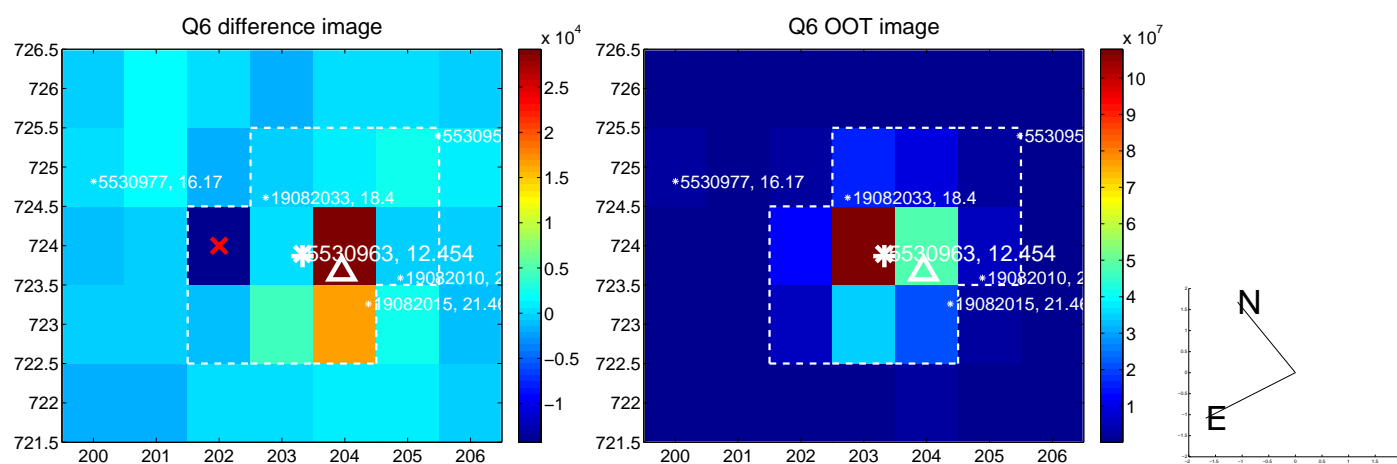
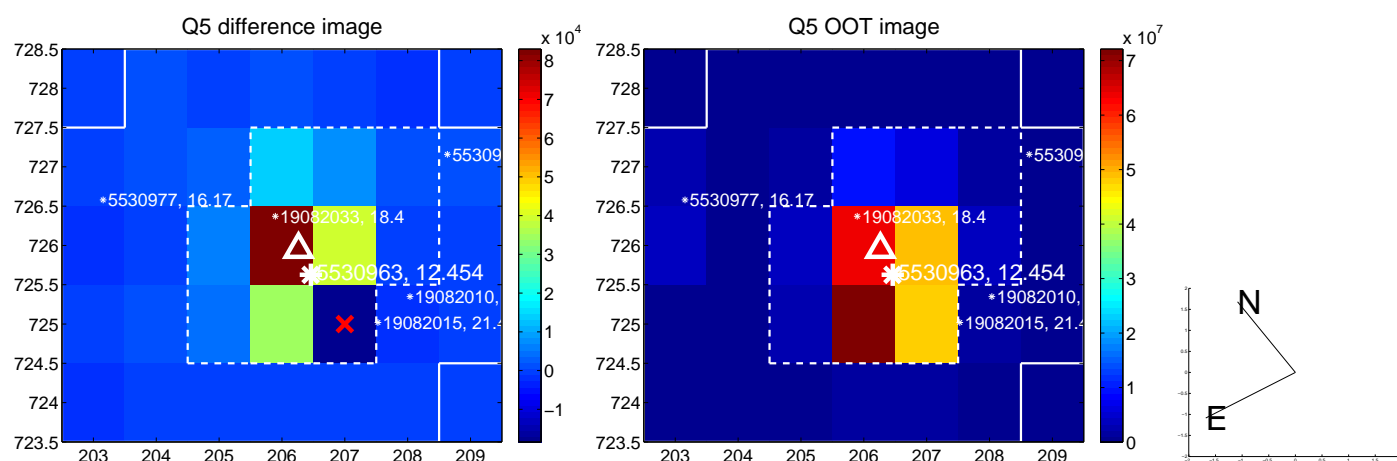


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

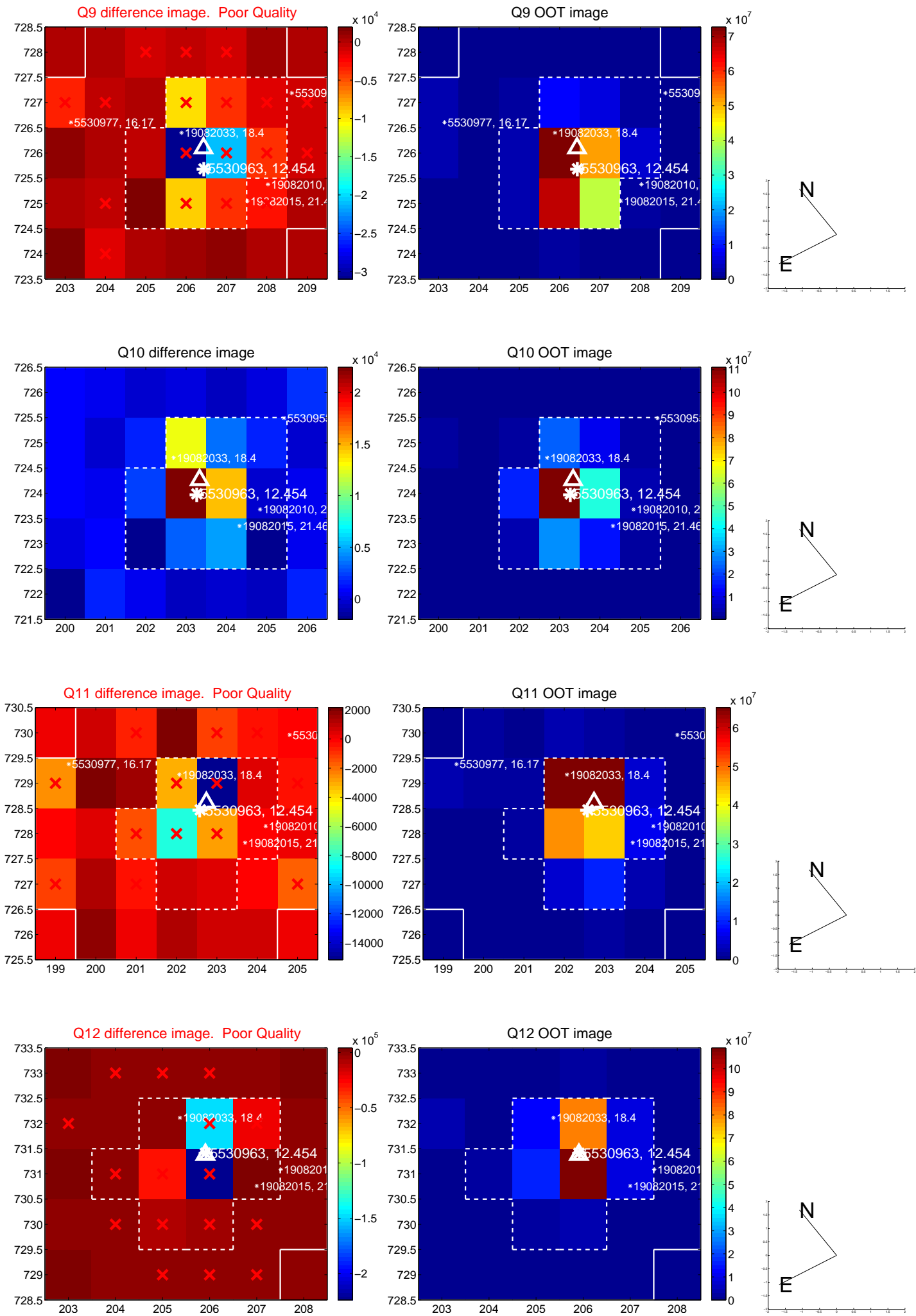
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



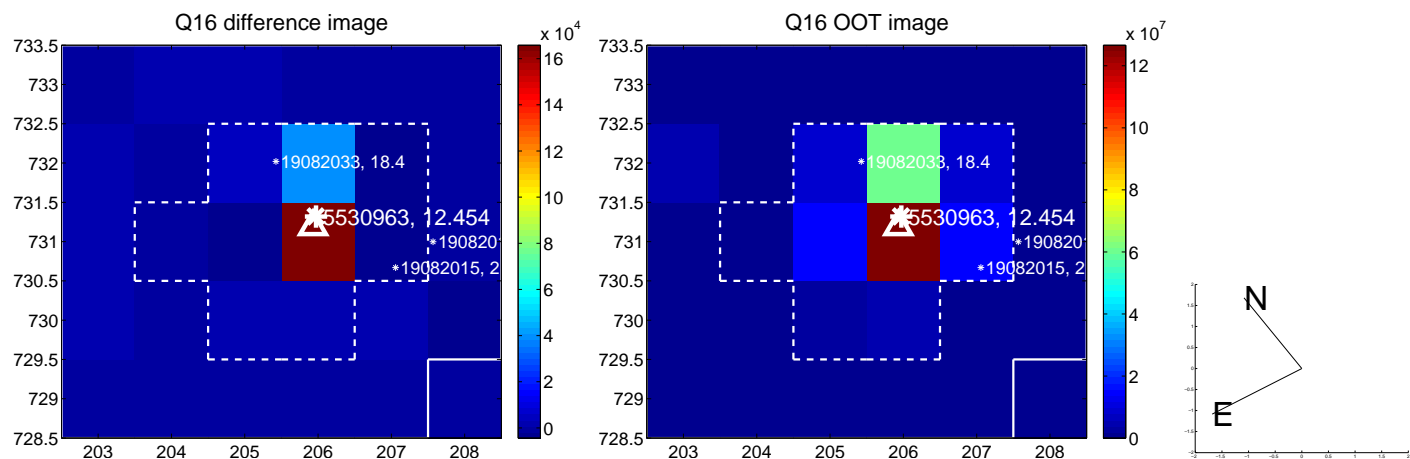
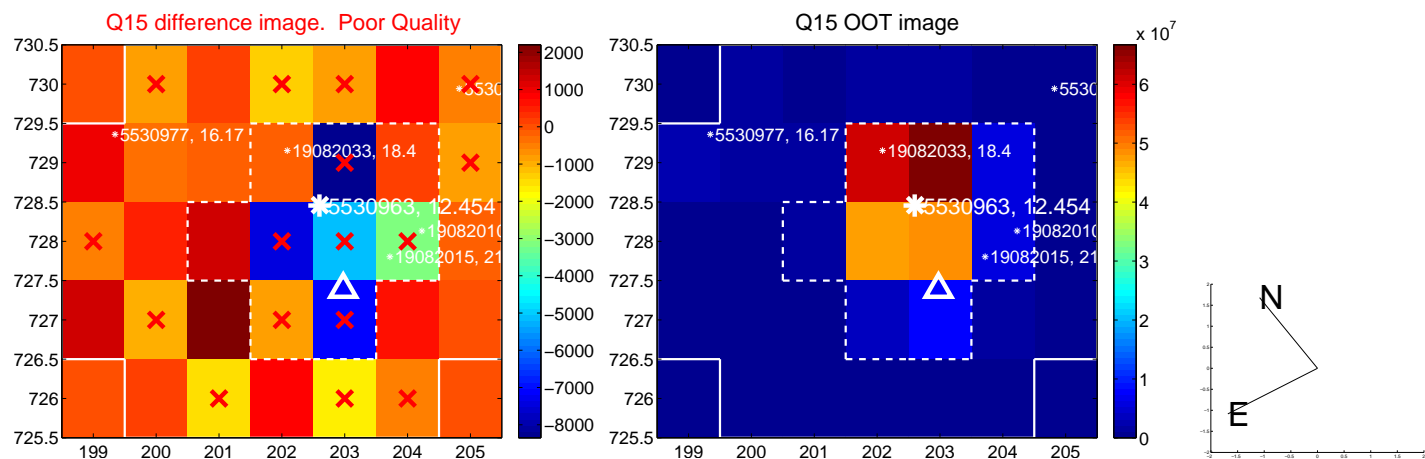
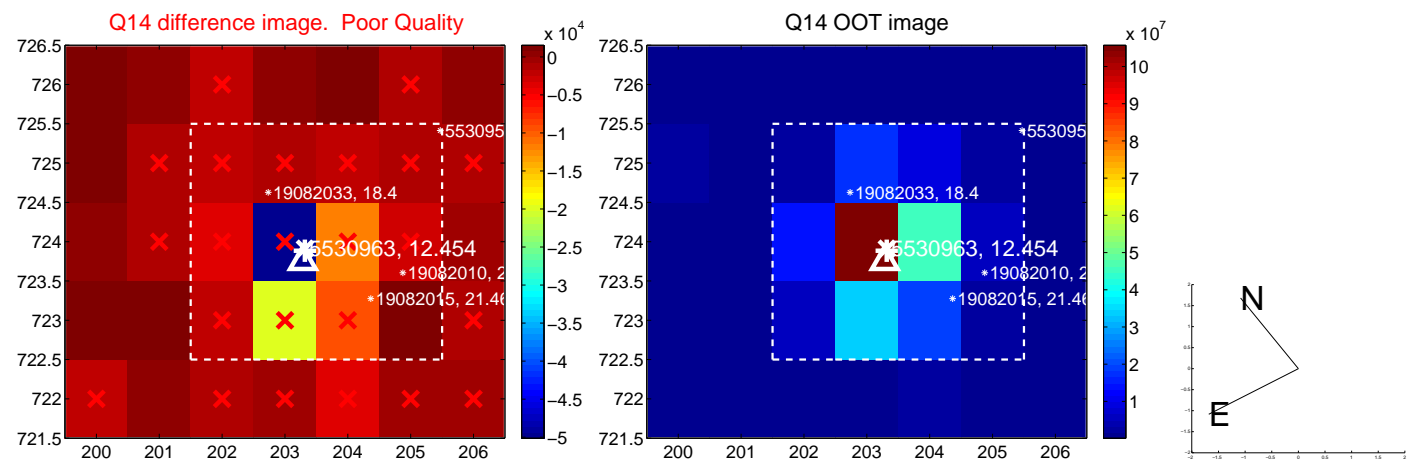
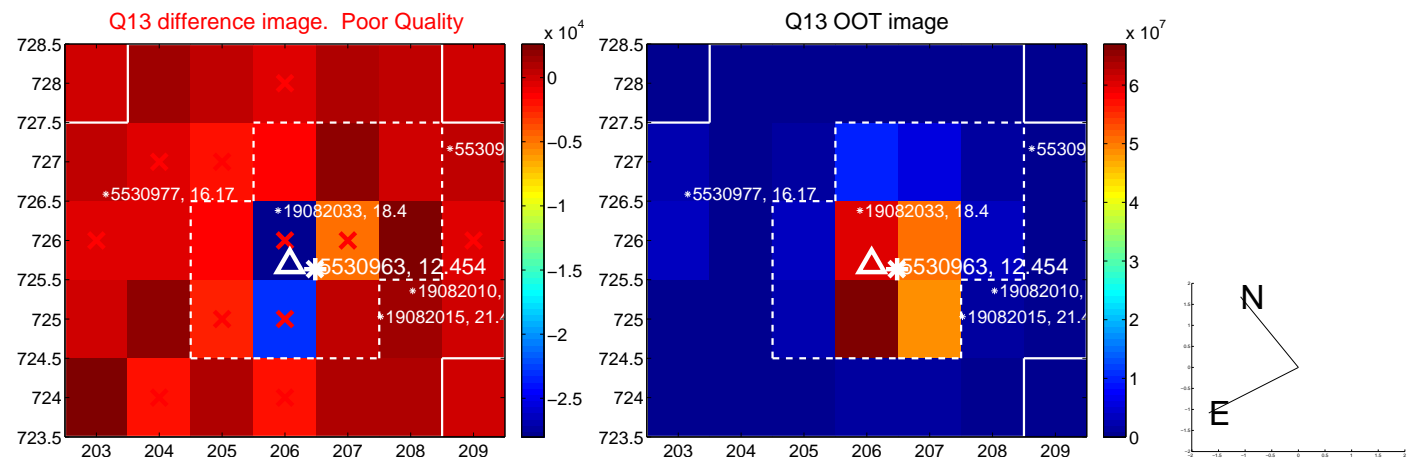
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



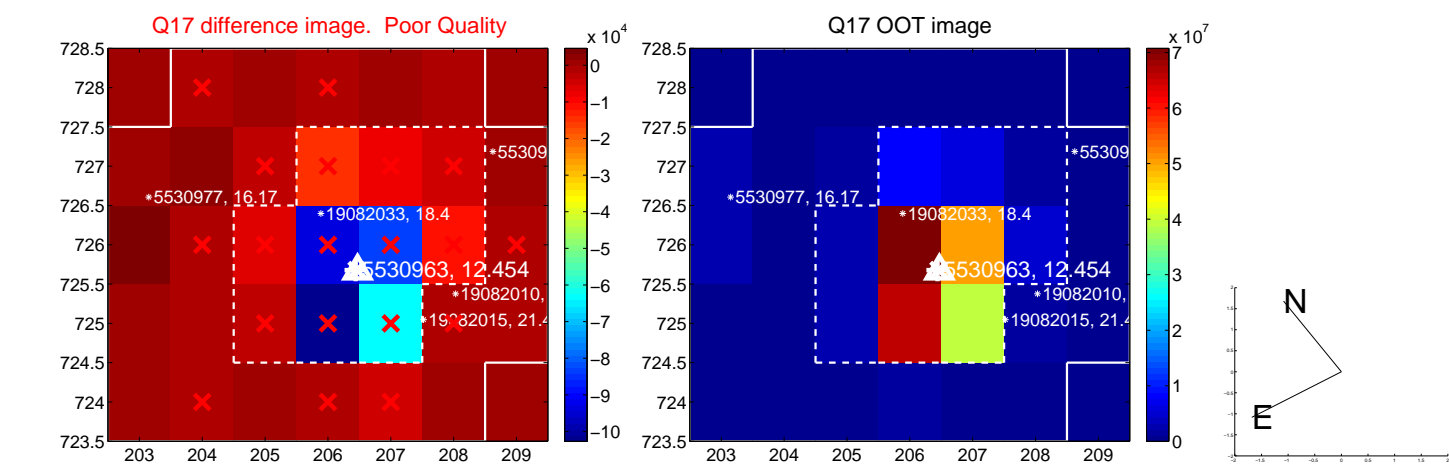
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



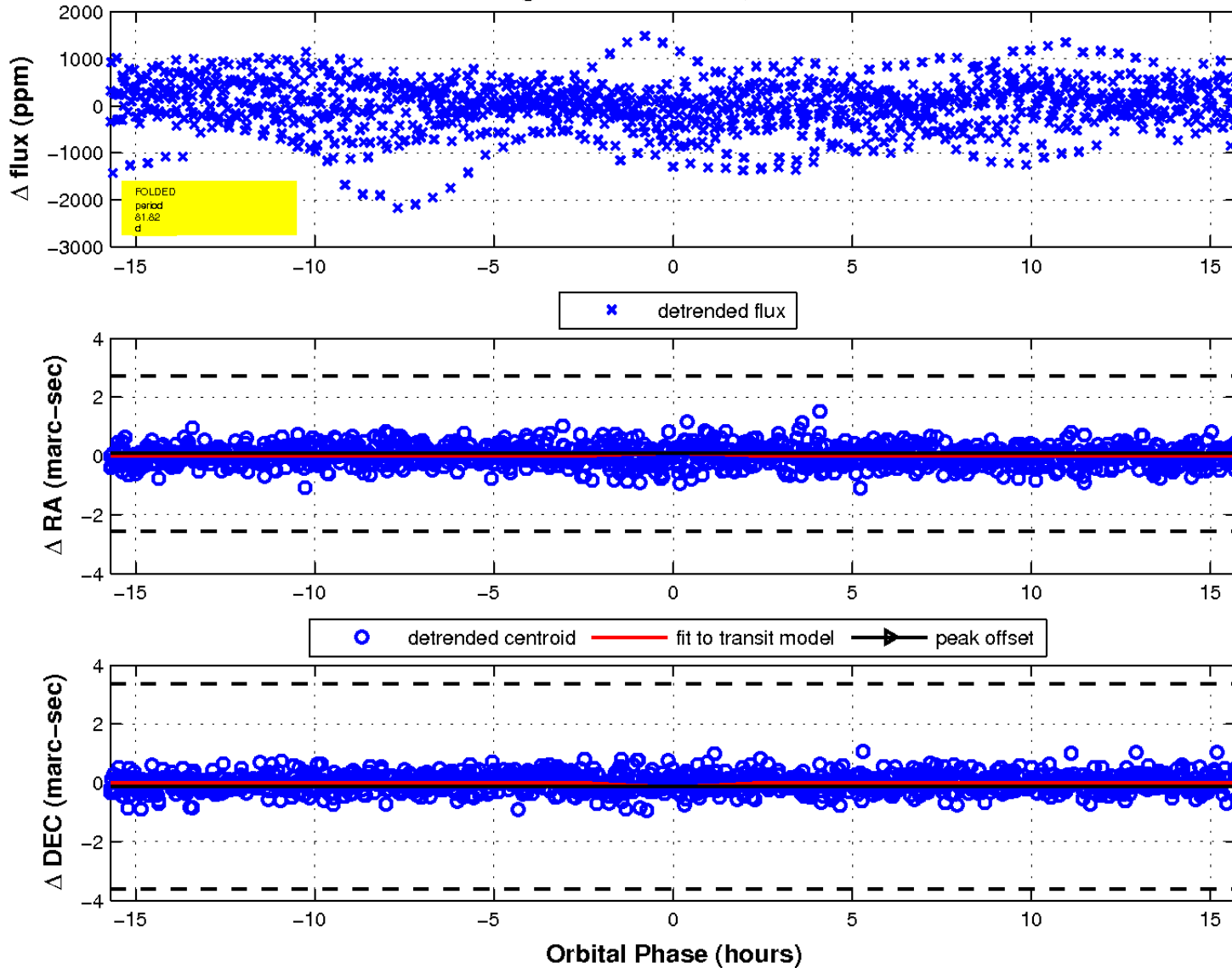
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

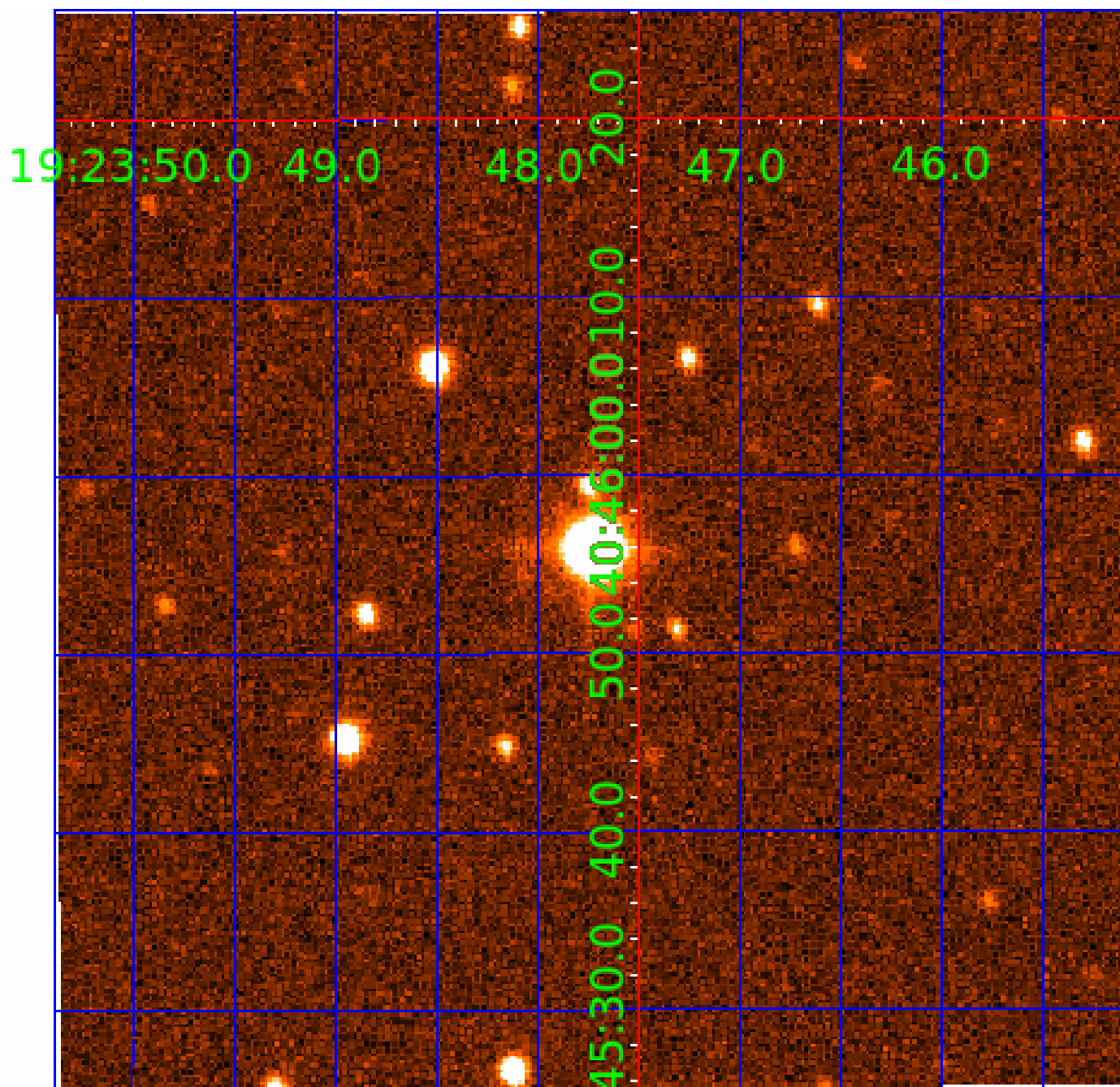


fluxWeightedCentroids, Planet 6 of 9



UKIRT Image

Declination



KIC 005530963

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})
005530963-01	OBS	No	1.080265	132.615791	40.7	7.525	7.8	9.5	7.09	6809	5.26	0.00
005530963-03	OBS	No	36.851619	162.904611	512.0	6.972	18.7	11.7	7.09	6809	19.65	1085.61
005530963-04	OBS	No	31.284956	141.366740	160.5	11.099	15.4	5.6	7.09	6809	10.23	1350.53
005530963-05	OBS	No	42.703161	150.898885	647.6	3.032	15.1	11.0	7.09	6809	34.32	891.94
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005530963-08	OBS	No	33.512239	161.196427	598.7	4.210	11.5	9.5	7.09	6809	30.31	1232.20
005530963-09	OBS	No	32.921168	160.165568	499.4	2.422	11.2	10.9	7.09	6809	17.72	1261.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005530963-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005530963-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
005530963-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
005530963-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005530963-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT

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

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

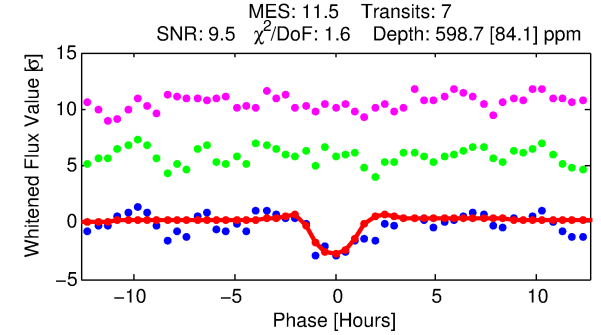
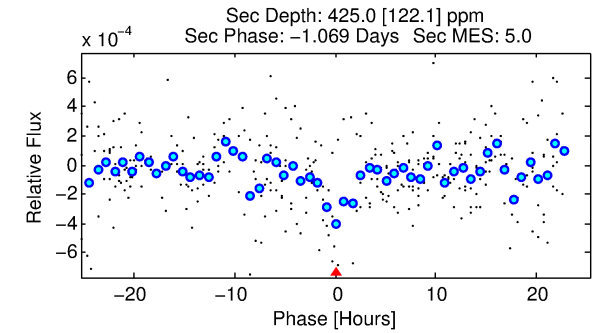
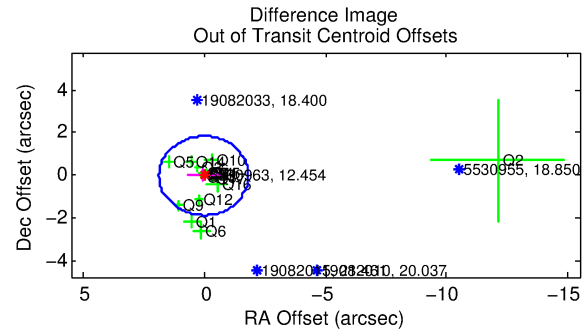
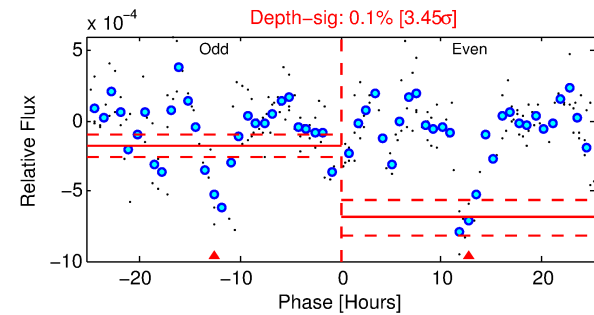
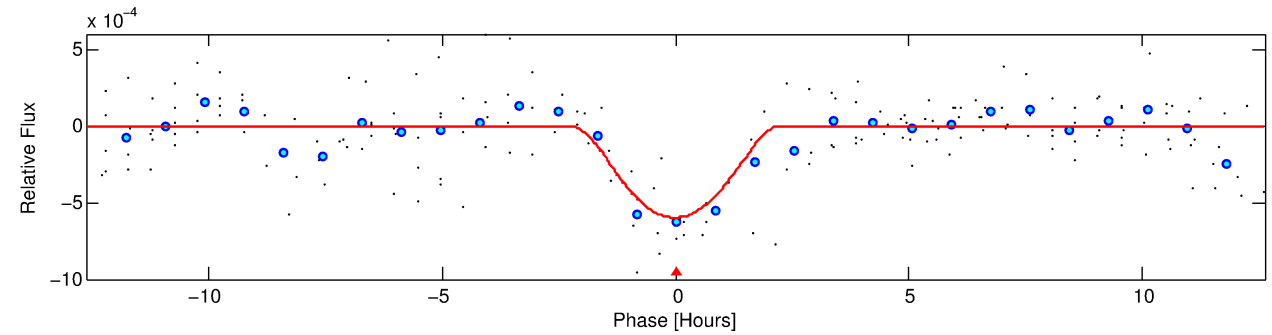
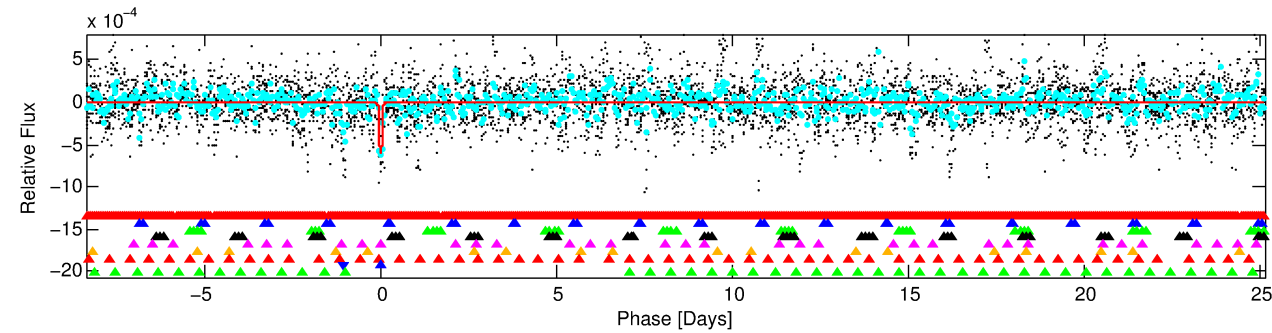
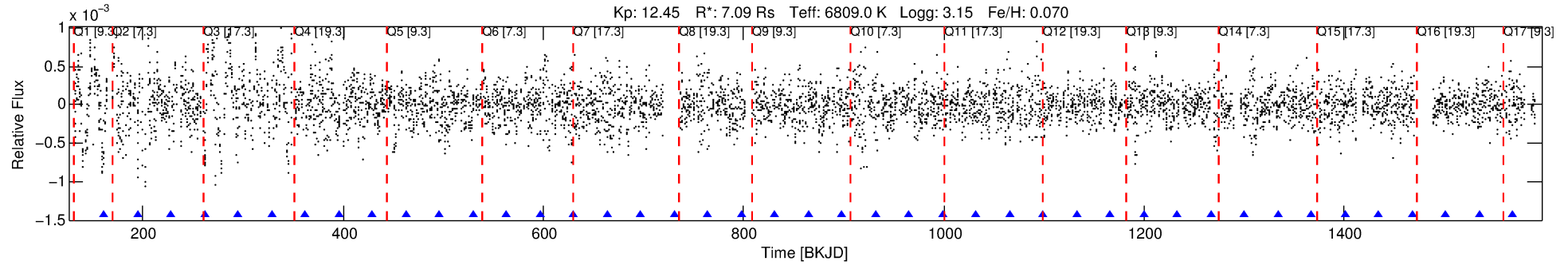
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005530963-08

No Significant Match Found

DV One-Page Summary

KIC: 5530963 Candidate: 8 of 9 Period: 33.512 d



DV Fit Results:

Period = 33.51224 [0.00067] d
Epoch = 161.1964 [0.0081] BKJD
Rp/R* = 0.0392 [0.1299]
a/R* = 18.35 [17.52]
b = 0.99 [0.21]
Seff = 1232.20 [1106.33]
Teq = 1511 [339] K
Rp = 30.31 [101.85] Re
a = 0.2803 [0.1525] AU
Ag = 19.99 [133.89] [0.14σ]
Teffp = 4939 [8198] K [0.42σ]

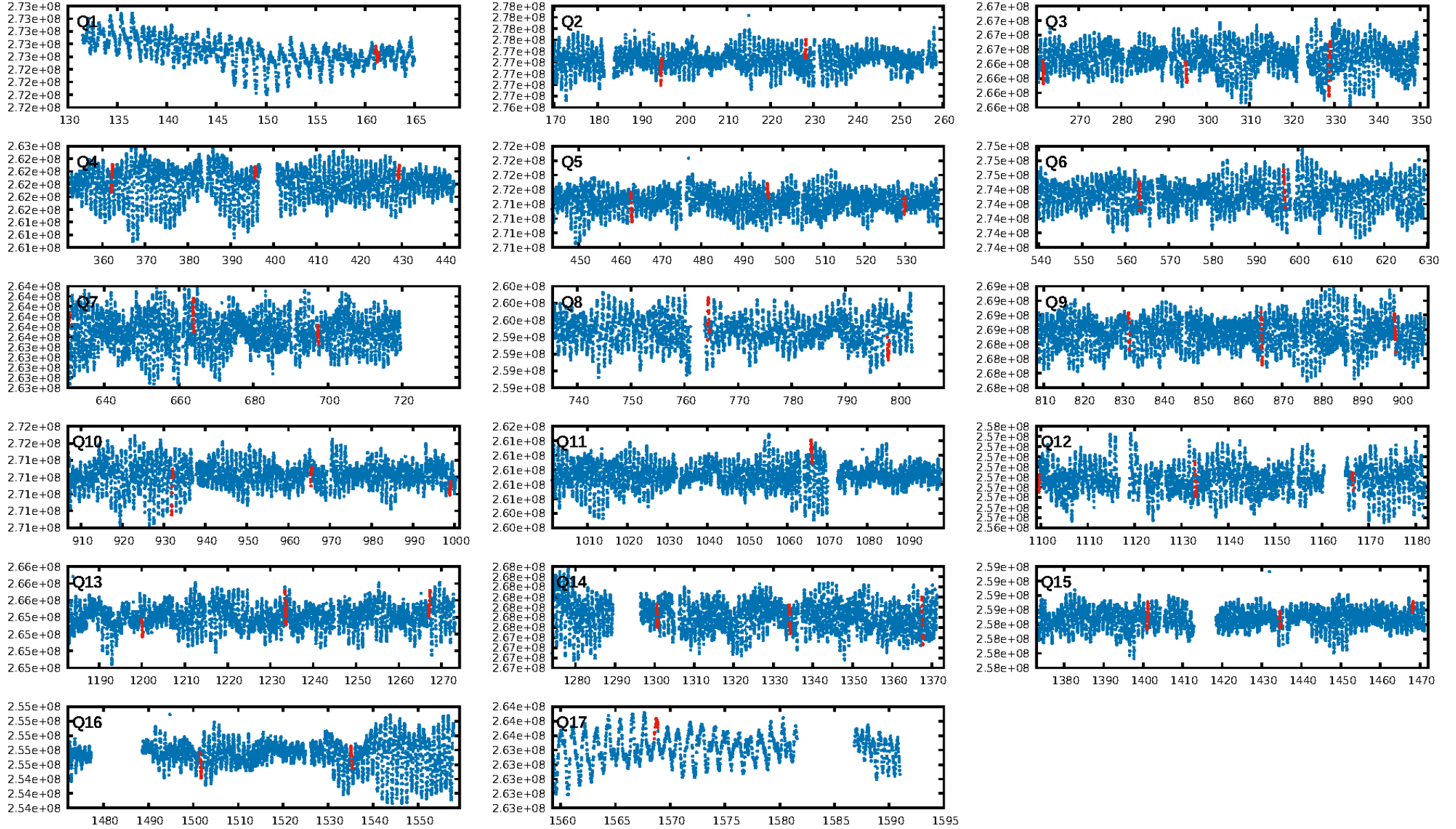
DV Diagnostic Results:

ShortPeriod-sig: 99.7% [2.92σ]
LongPeriod-sig: 100.0% [9.84σ]
ModelChiSquare2-sig: 64.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -3.046
Centroid-sig: 0.1%
Centroid-so: 0.334 arcsec [2.65σ]
OotOffset-rm: 0.031 arcsec [0.05σ]
KicOffset-rm: 0.028 arcsec [0.04σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 0.00 [0/17]

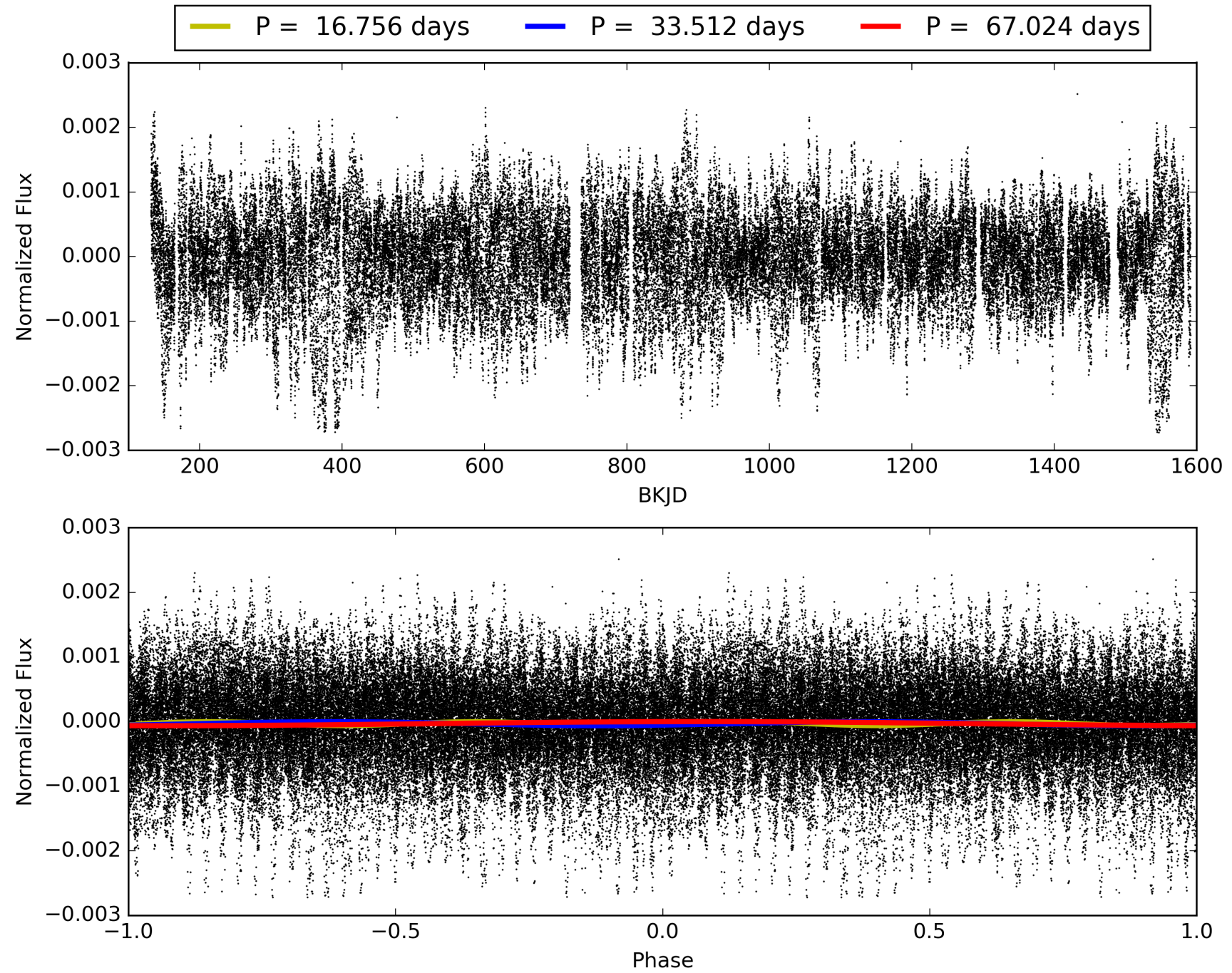
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:41:12 Z

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

TCE 005530963-08, PDC Light Curves

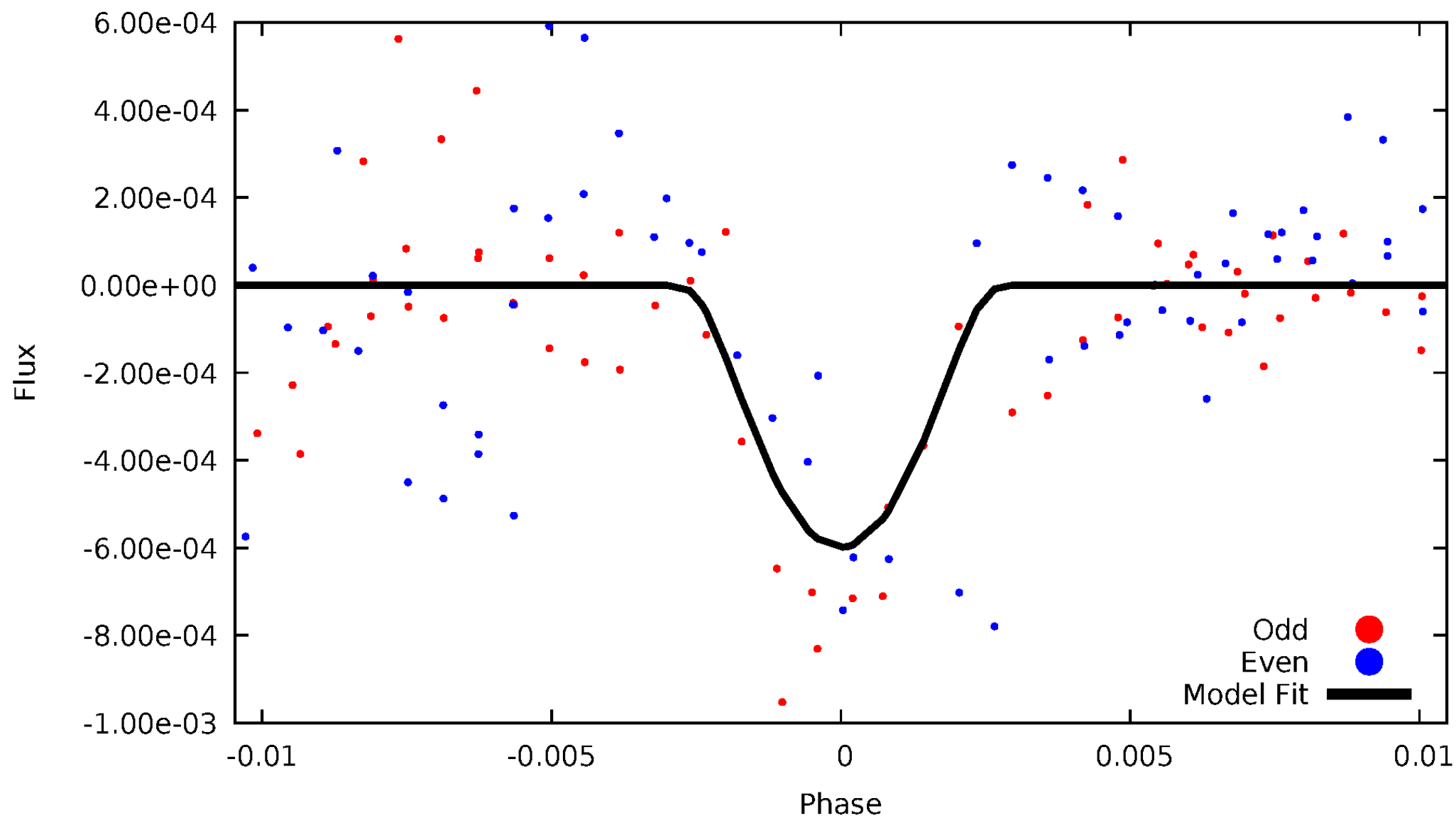


TCE 005530963-08



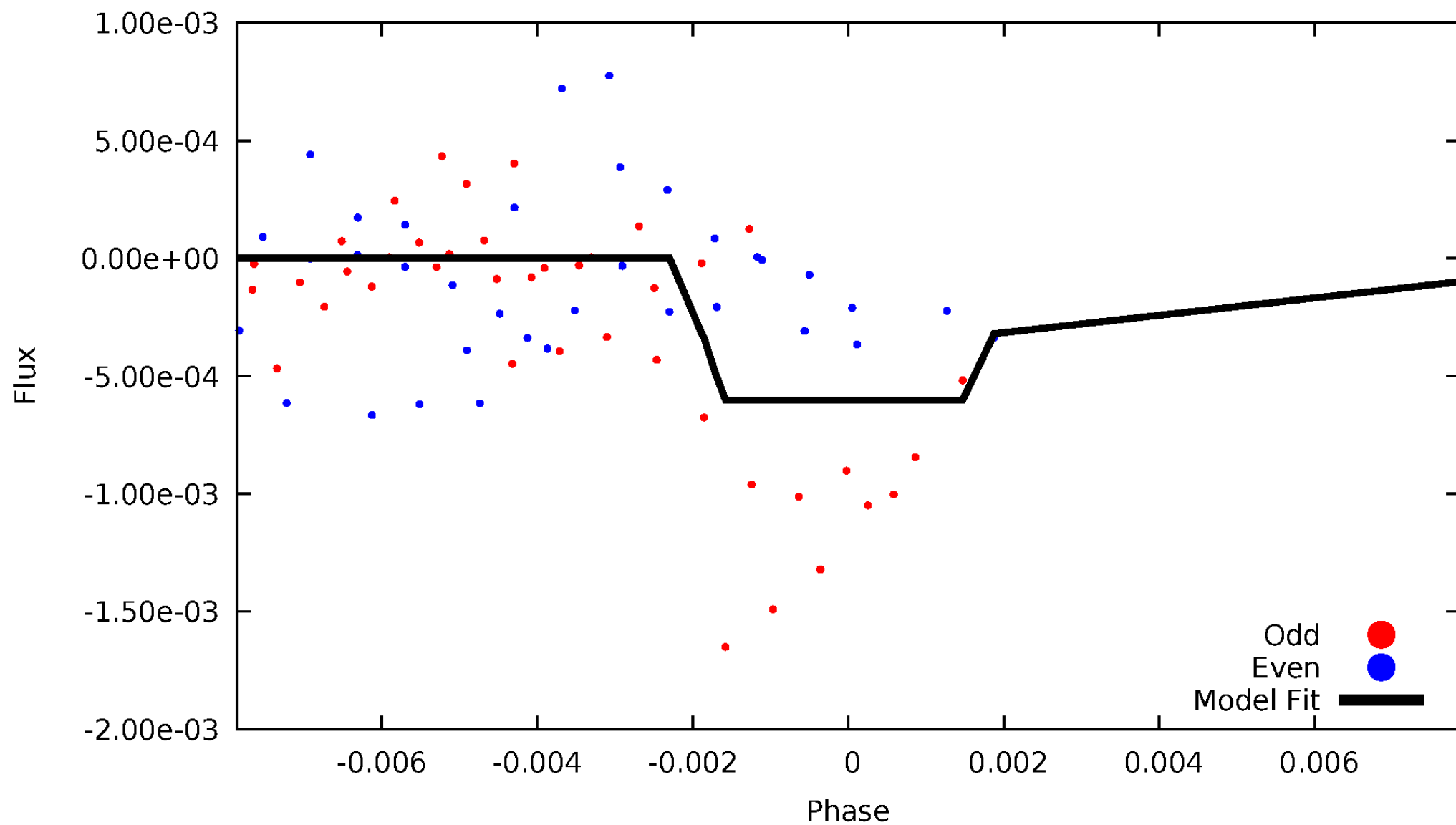
DV Odd/Even

TCE 005530963-08



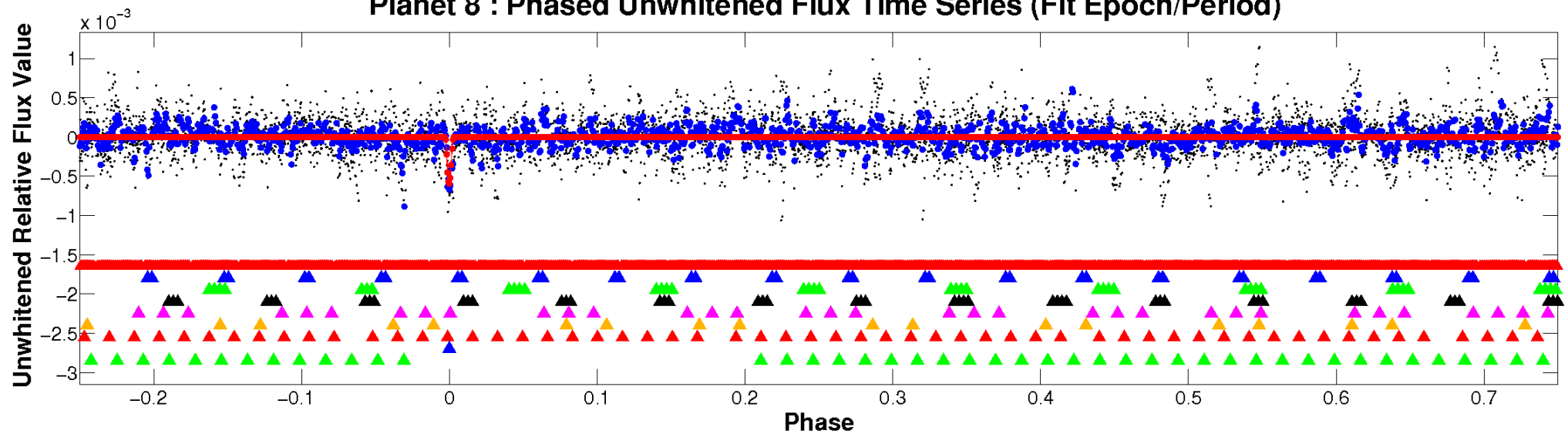
ALT Odd/Even

TCE 005530963-08

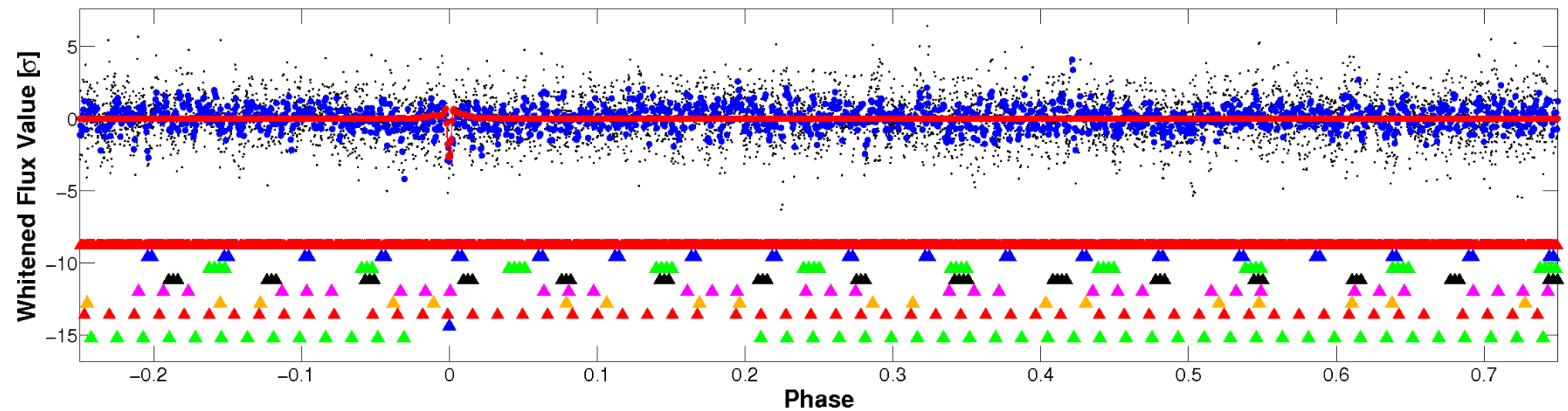


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

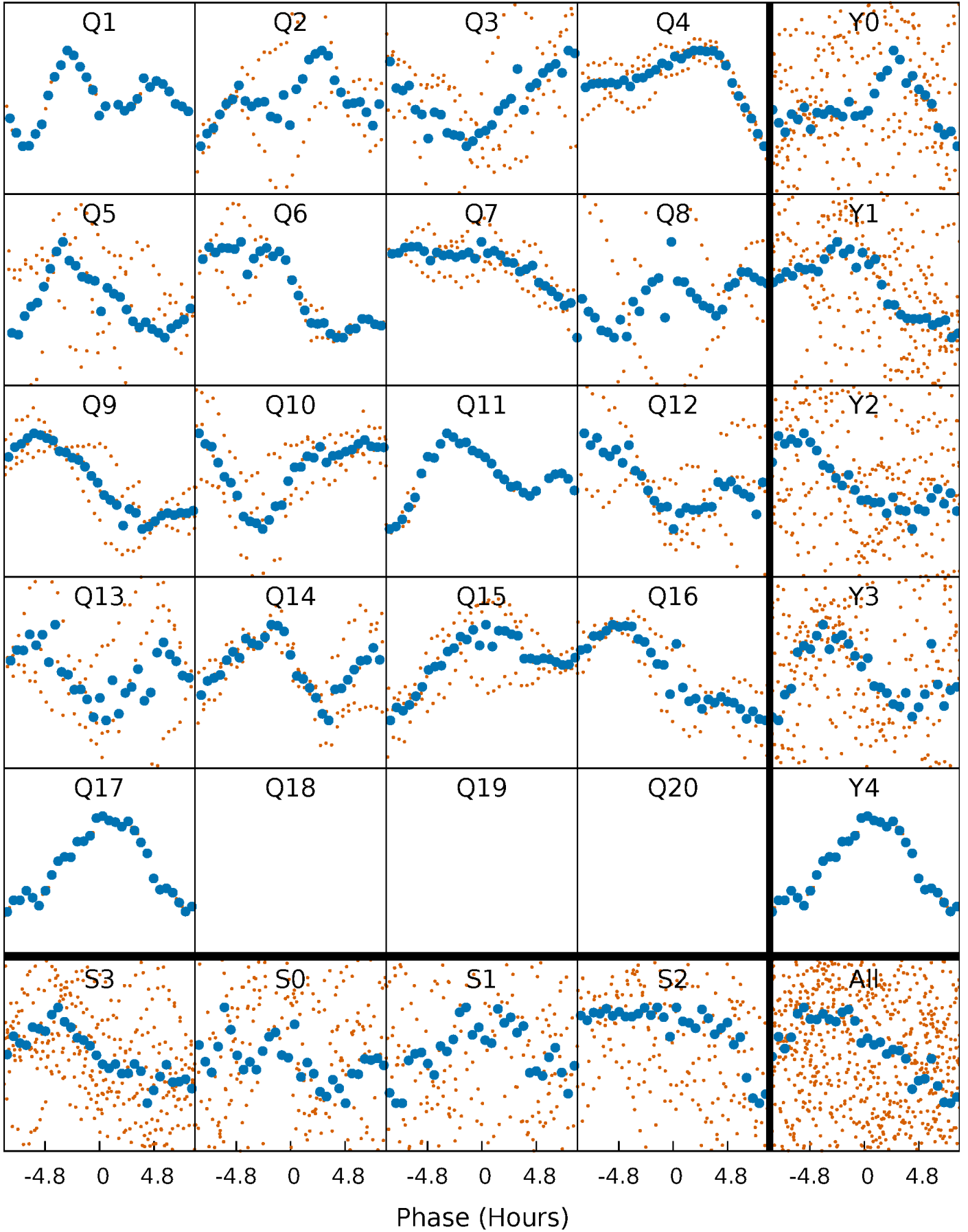


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



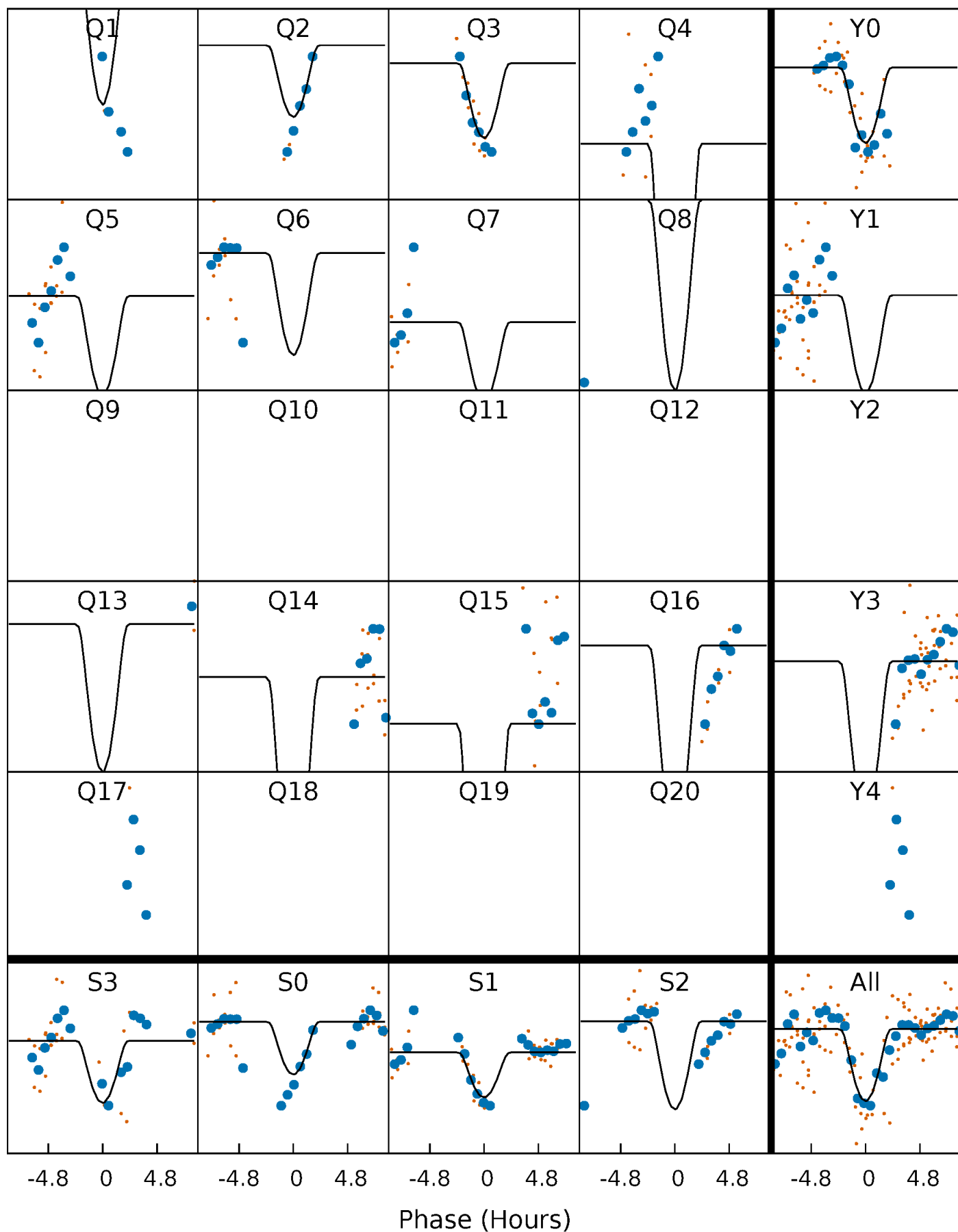
PDC Quarter-Phased Transit Curves

TCE 005530963-08 P= 33.512239 Days $T_0=161.196427$ (BKJD)



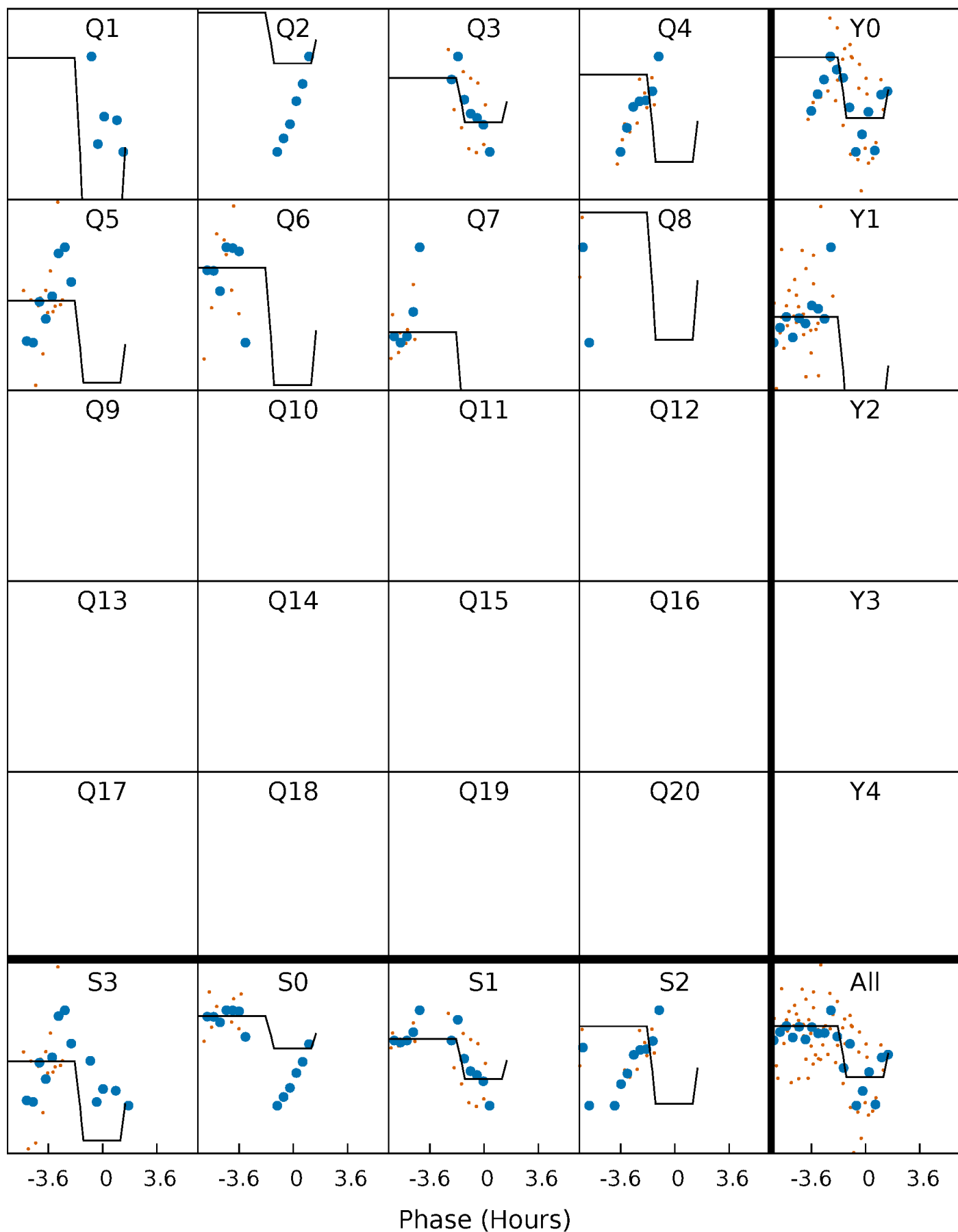
DV Quarter-Phased Transit Curves

TCE 005530963-08 P= 33.512239 Days $T_0=161.196427$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

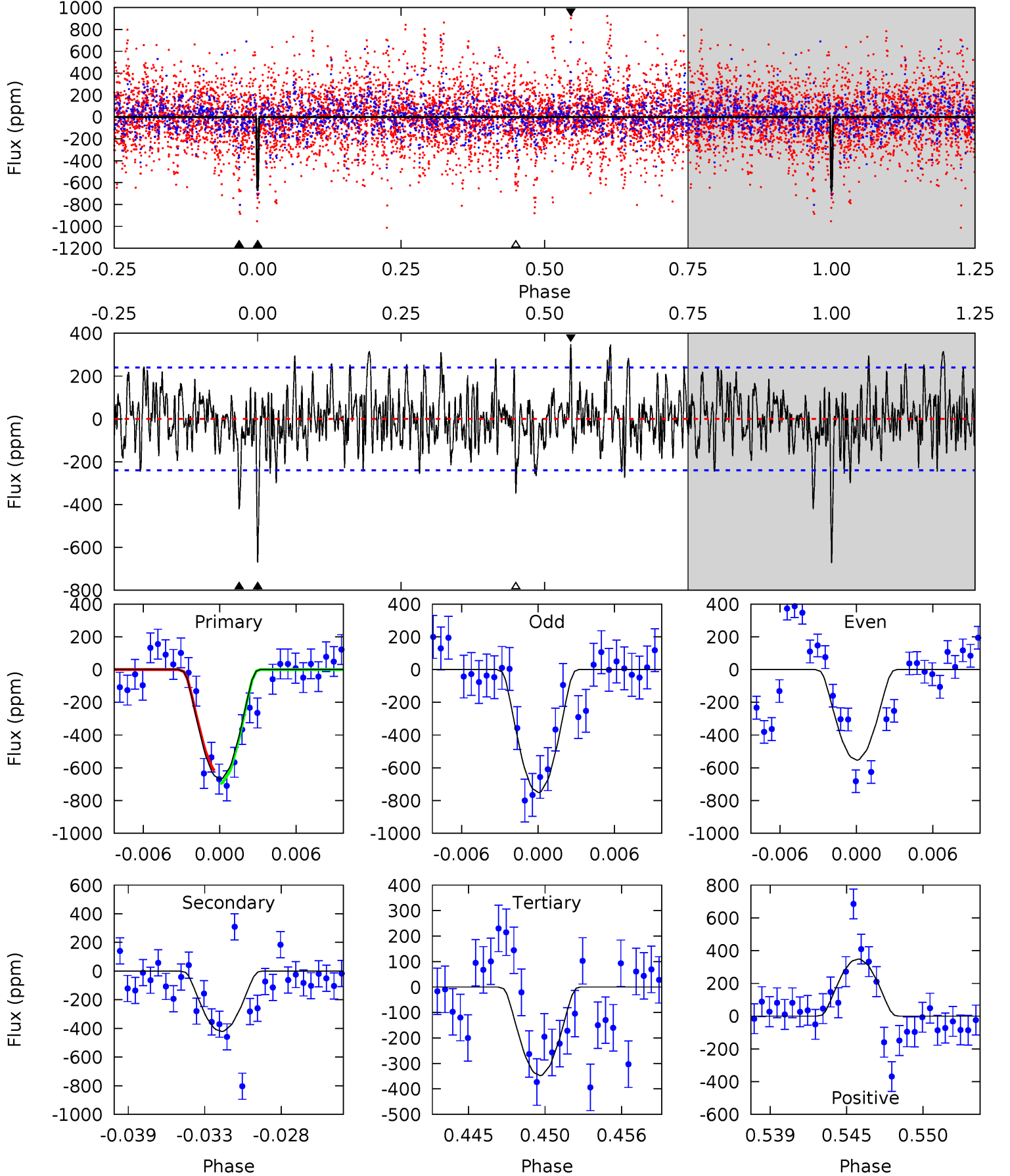
TCE 005530963-08 P= 33.505080 Days $T_0=161.222550$ (BKJD)



DV Model-Shift Uniqueness Test

005530963-08, P = 33.512239 Days, E = 127.684188 Days

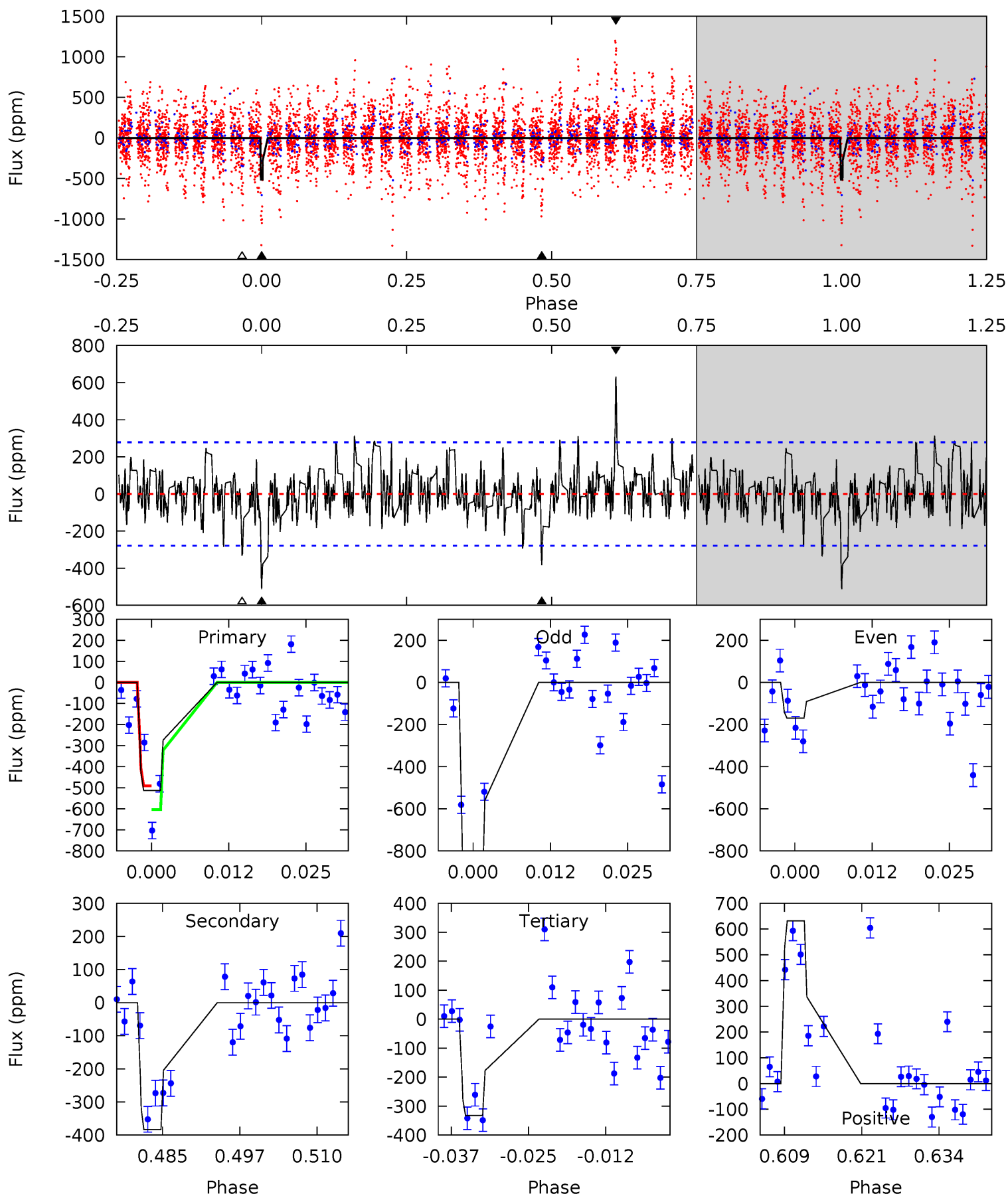
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	9.02	7.45	7.47	5.14	2.77	2.21	6.89	6.87	1.57	1.55	2.06	0.78	0.34	0.84



Alt Model-Shift Uniqueness Test

005530963-08, P = 33.505080 Days, E = 127.717470 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.16	6.84	5.93	11.3	4.98	2.50	1.74	3.23	-2.12	0.91	-4.44	7.80	2.21	0.55	0.98



Stellar Parameters For KIC 005530963

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6809^{+162}_{-223}	$3.154^{+0.528}_{-0.132}$	$0.070^{+0.200}_{-0.400}$	$7.089^{+1.656}_{-3.864}$	$2.610^{+0.303}_{-0.909}$	$0.010^{+0.063}_{-0.004}$
	+2%/-3%	+17%/-4%	+286%/-571%	+23%/-55%	+12%/-35%	+609%/-37%
Source	PHO1	FLK73	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 005530963-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-421 ± 47	$70.44^{+71.60}_{-50.10}$	2043^{+178}_{-302}	3427^{+1908}_{-701}	$3.728^{+40.120}_{-2.842}$
Alt.	-383 ± 56	$66.38^{+75.88}_{-46.34}$	2049^{+164}_{-274}	3449^{+1933}_{-798}	$3.702^{+34.969}_{-2.910}$

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

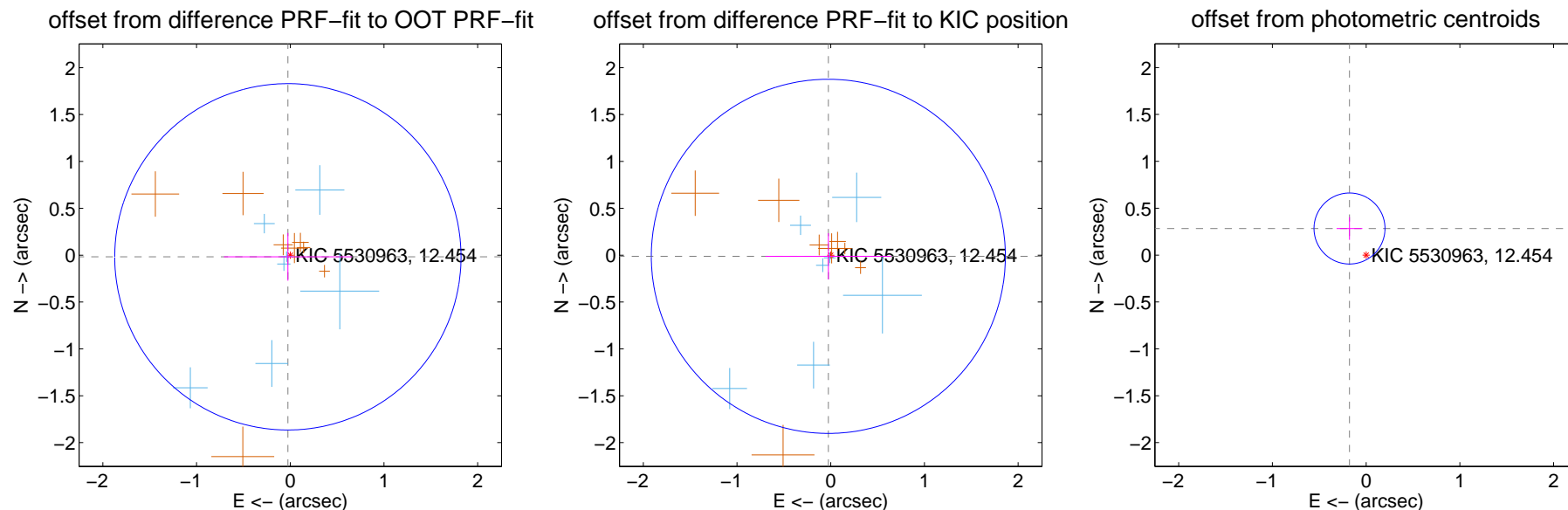
DV Centroid Data

Supplemental centroid analysis for 005530963-08. Kepler magnitude: 12.45. Transit SNR 9.53

There are 7 quarters with good PRF difference image offsets

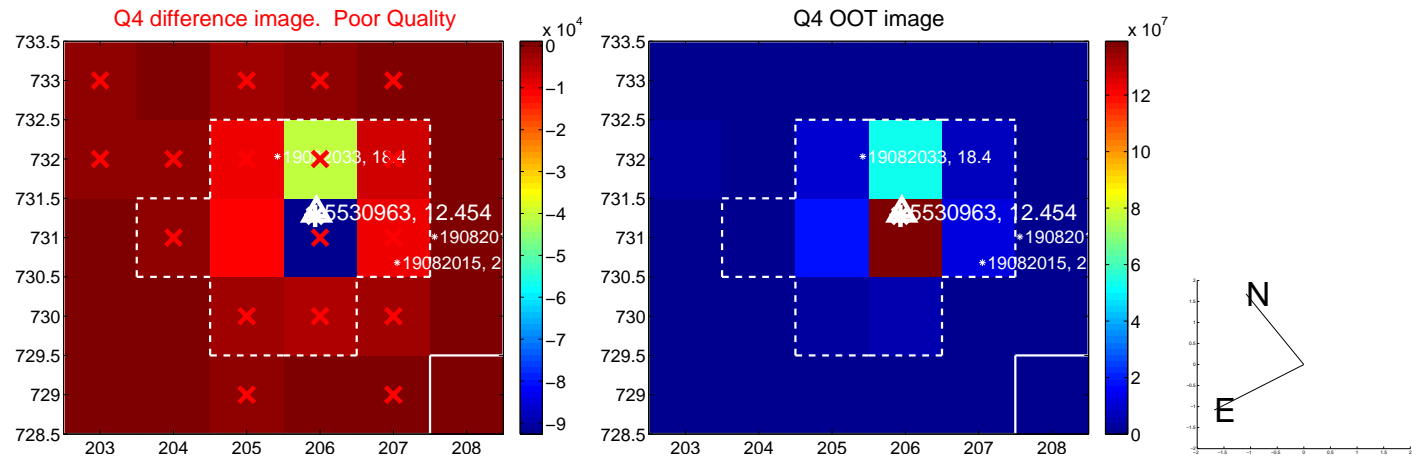
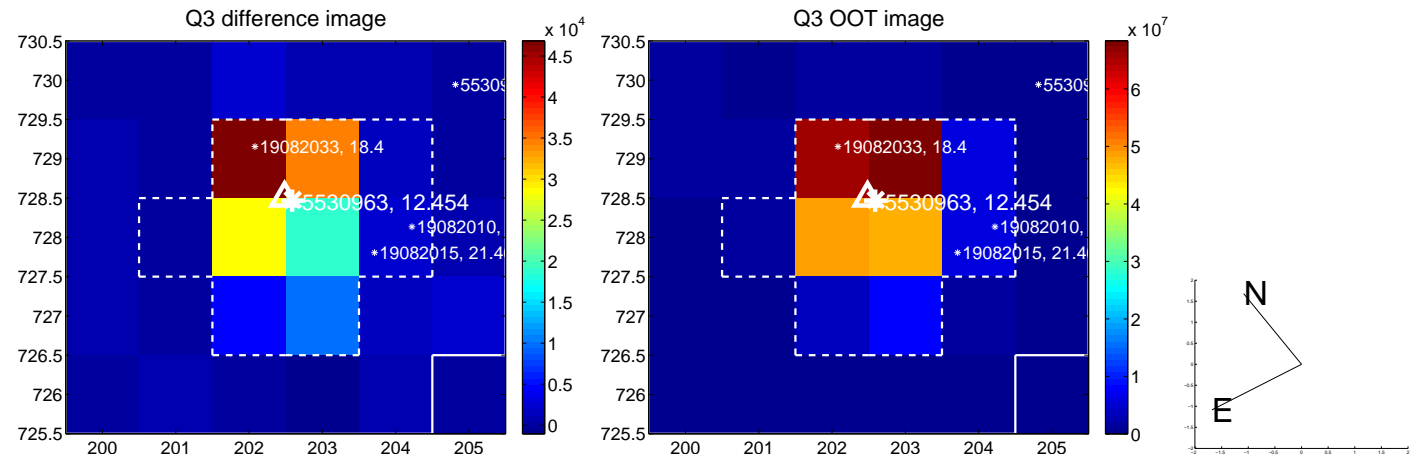
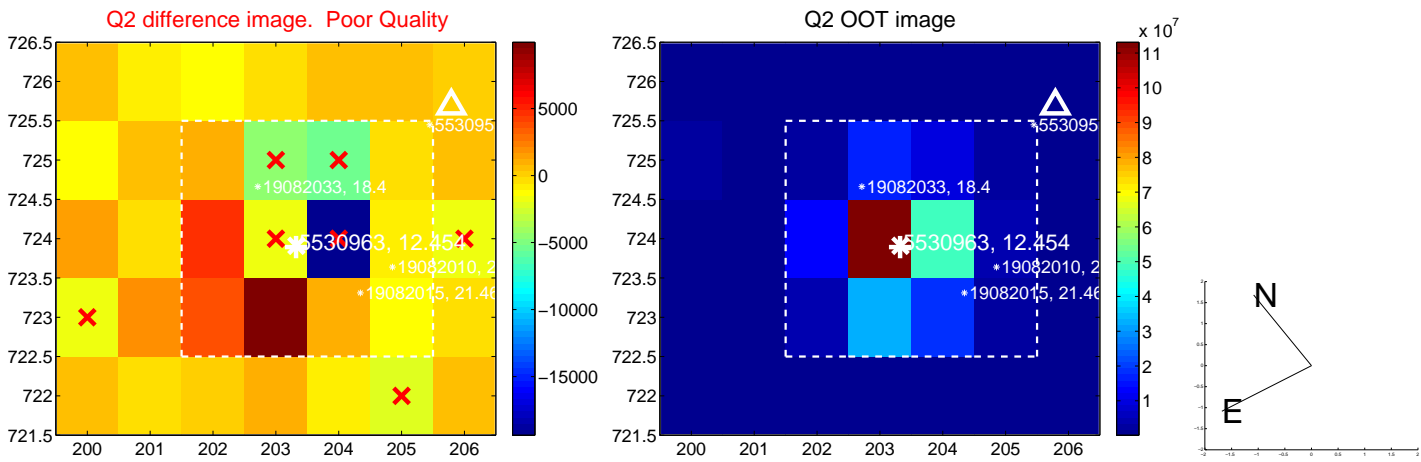
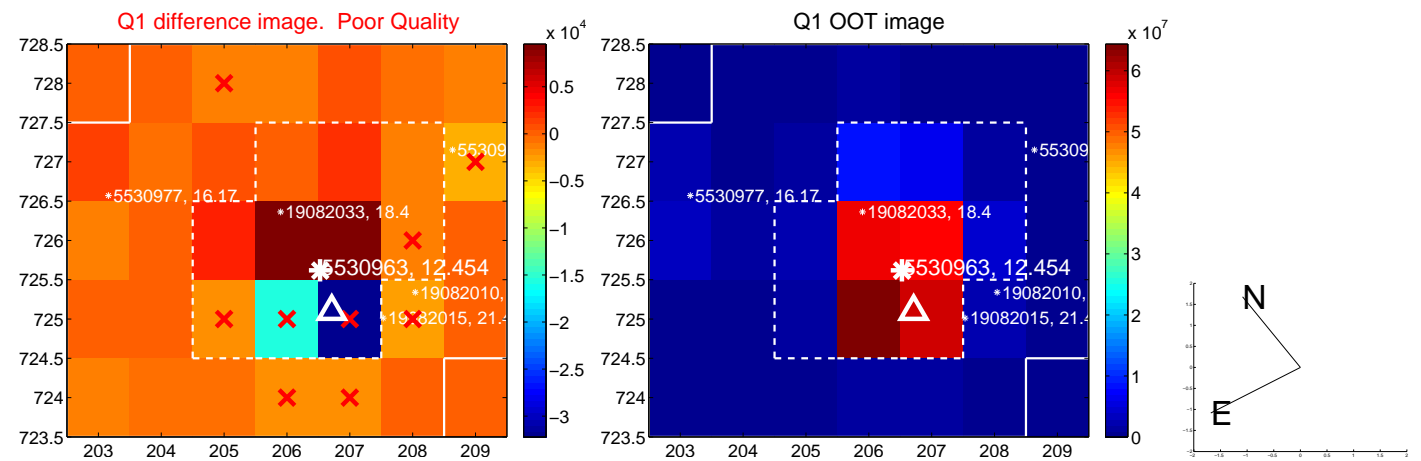
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.031 ± 0.616	0.05	0.025 ± 0.683	-0.018 ± 0.255
PRF-fit source offset from KIC position	0.028 ± 0.630	0.04	0.025 ± 0.670	-0.013 ± 0.246
photometric centroid source offset	0.33 ± 0.13	2.65	0.18 ± 0.14	0.28 ± 0.12

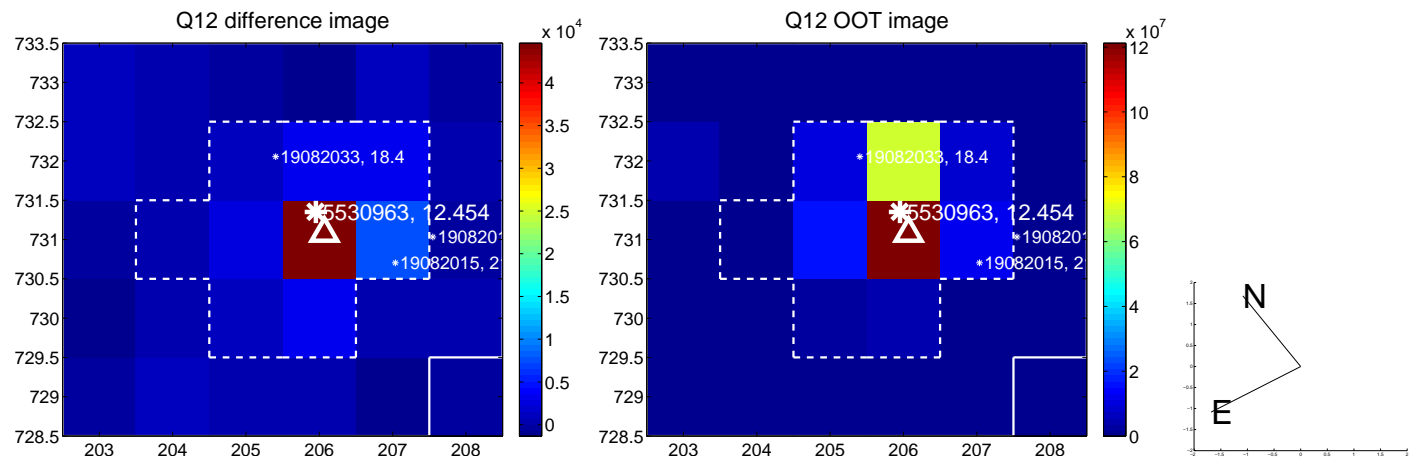
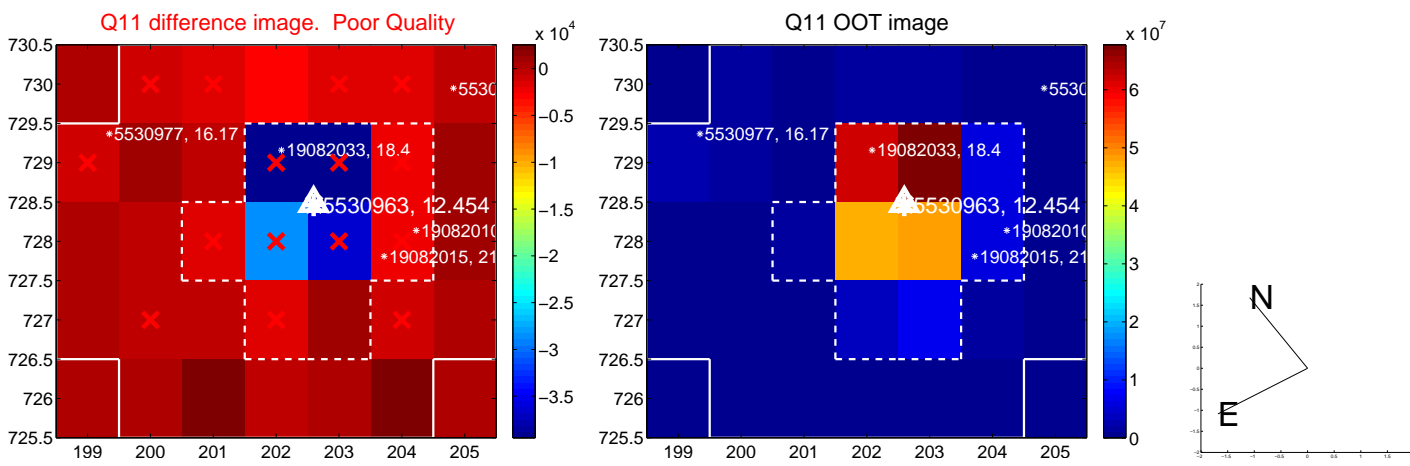
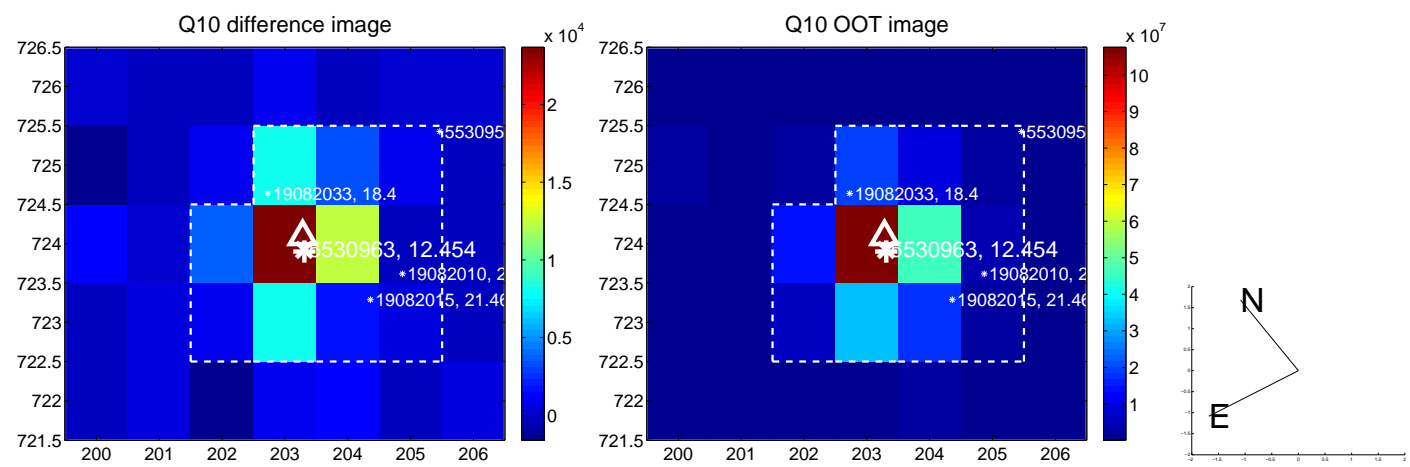
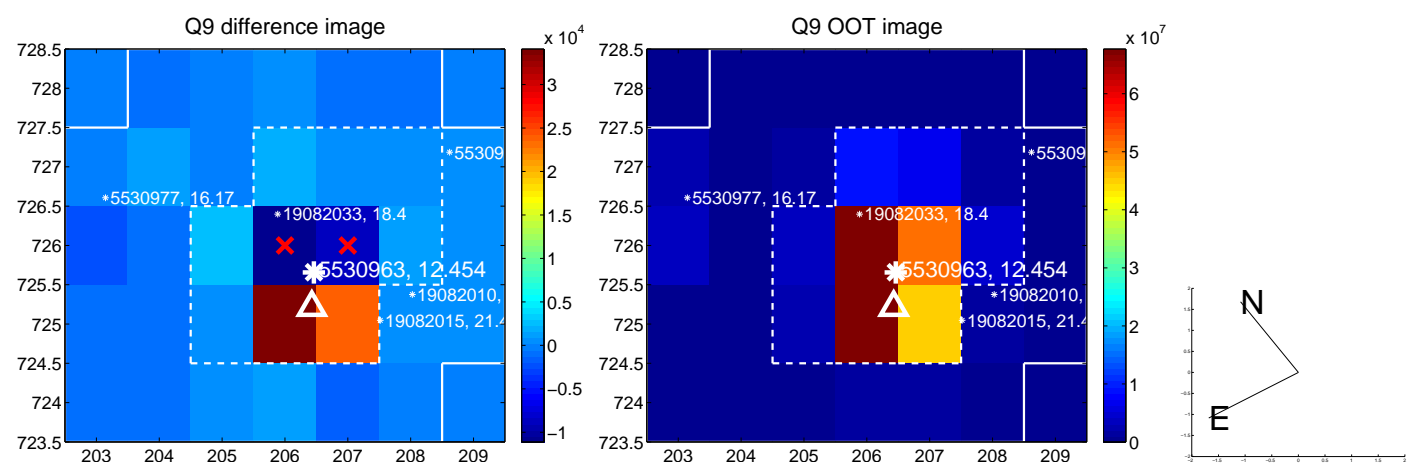


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

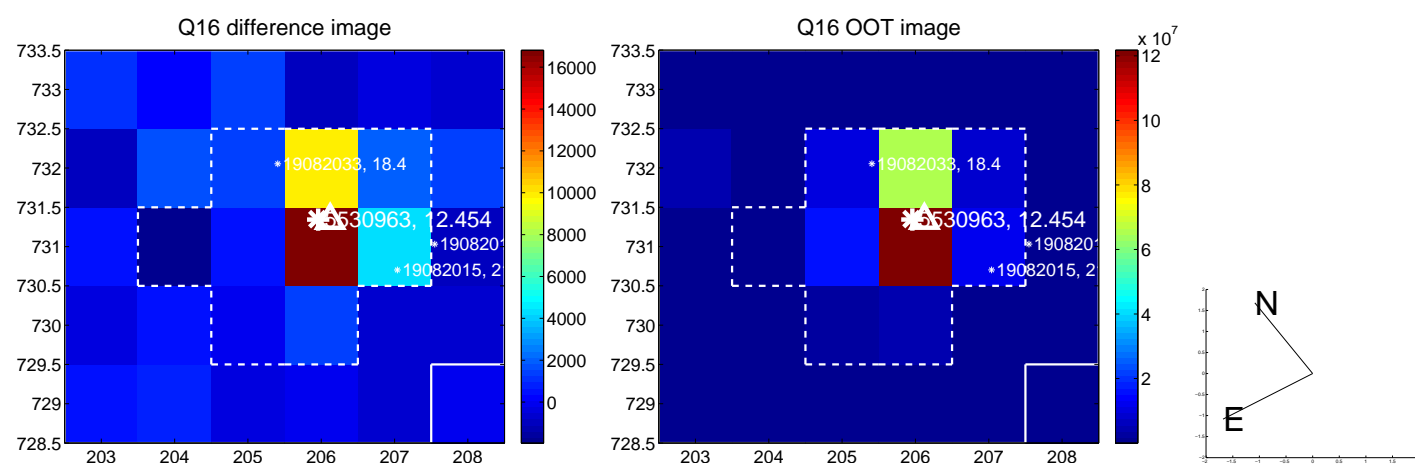
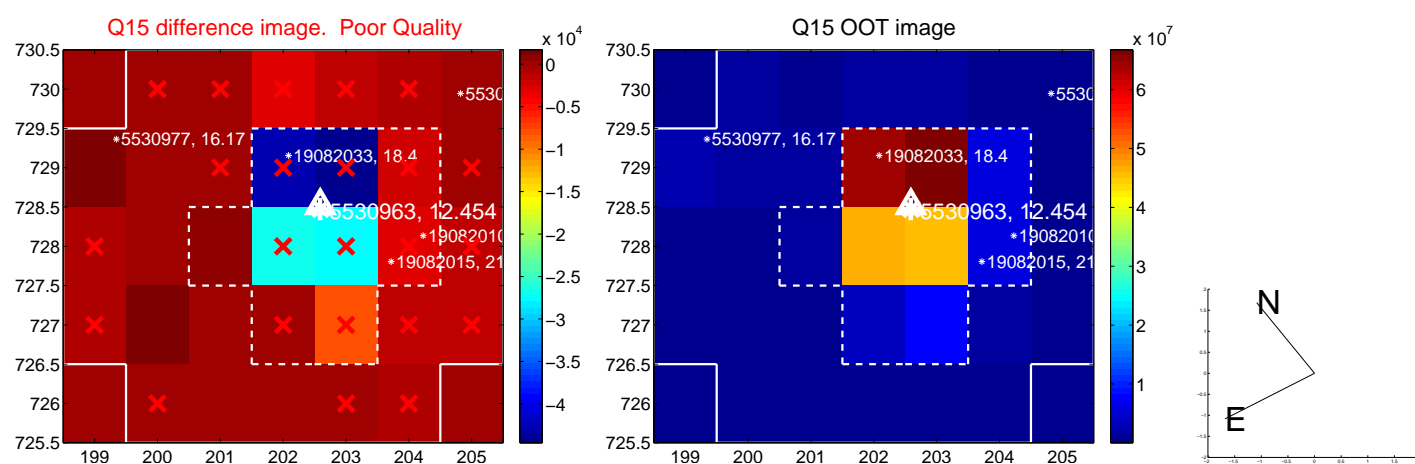
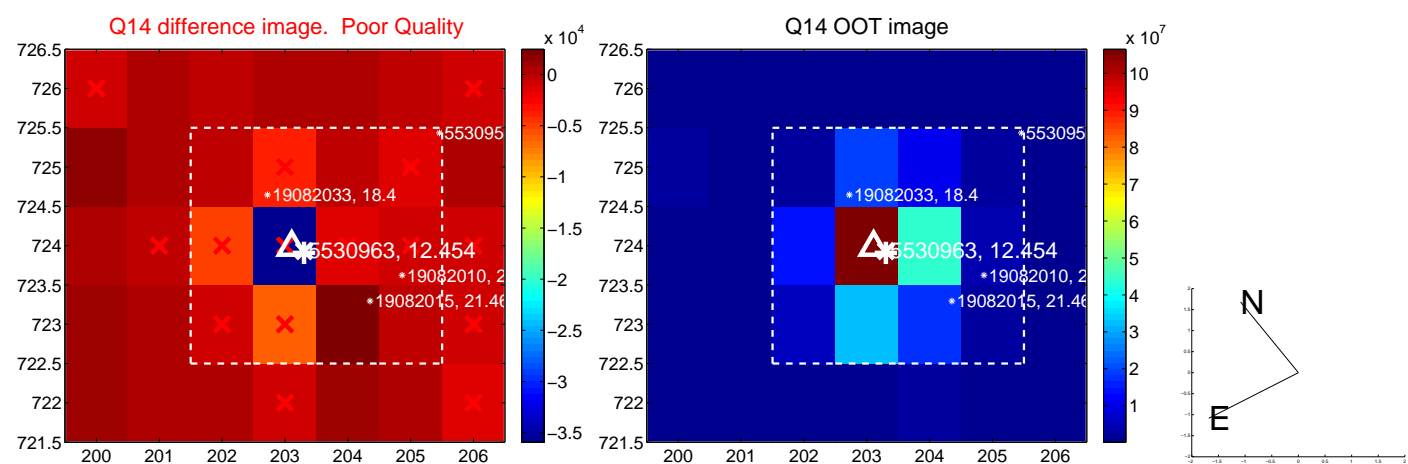
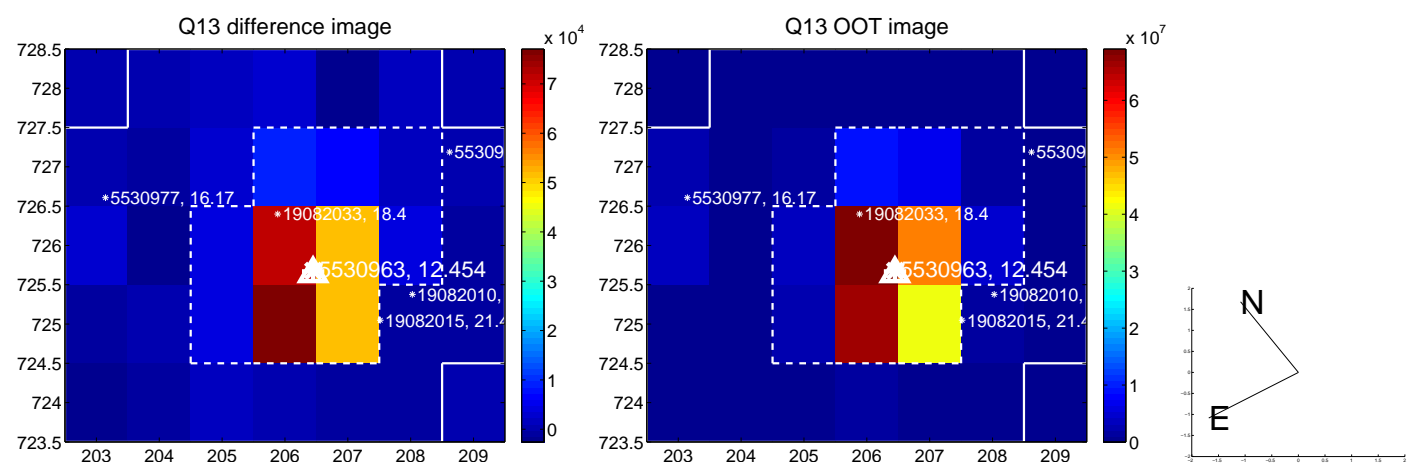
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



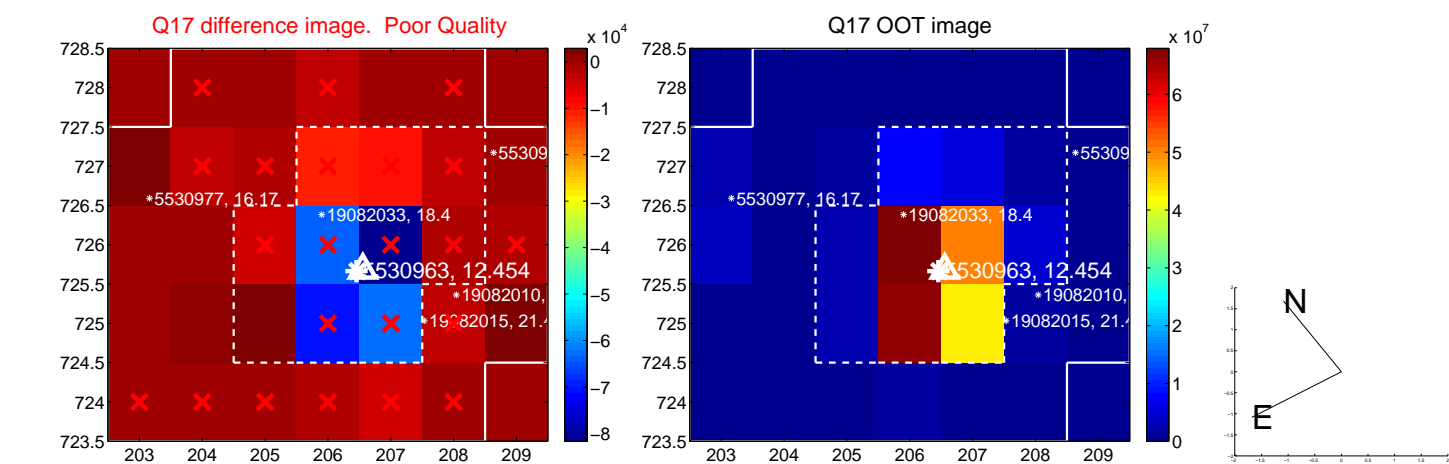
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



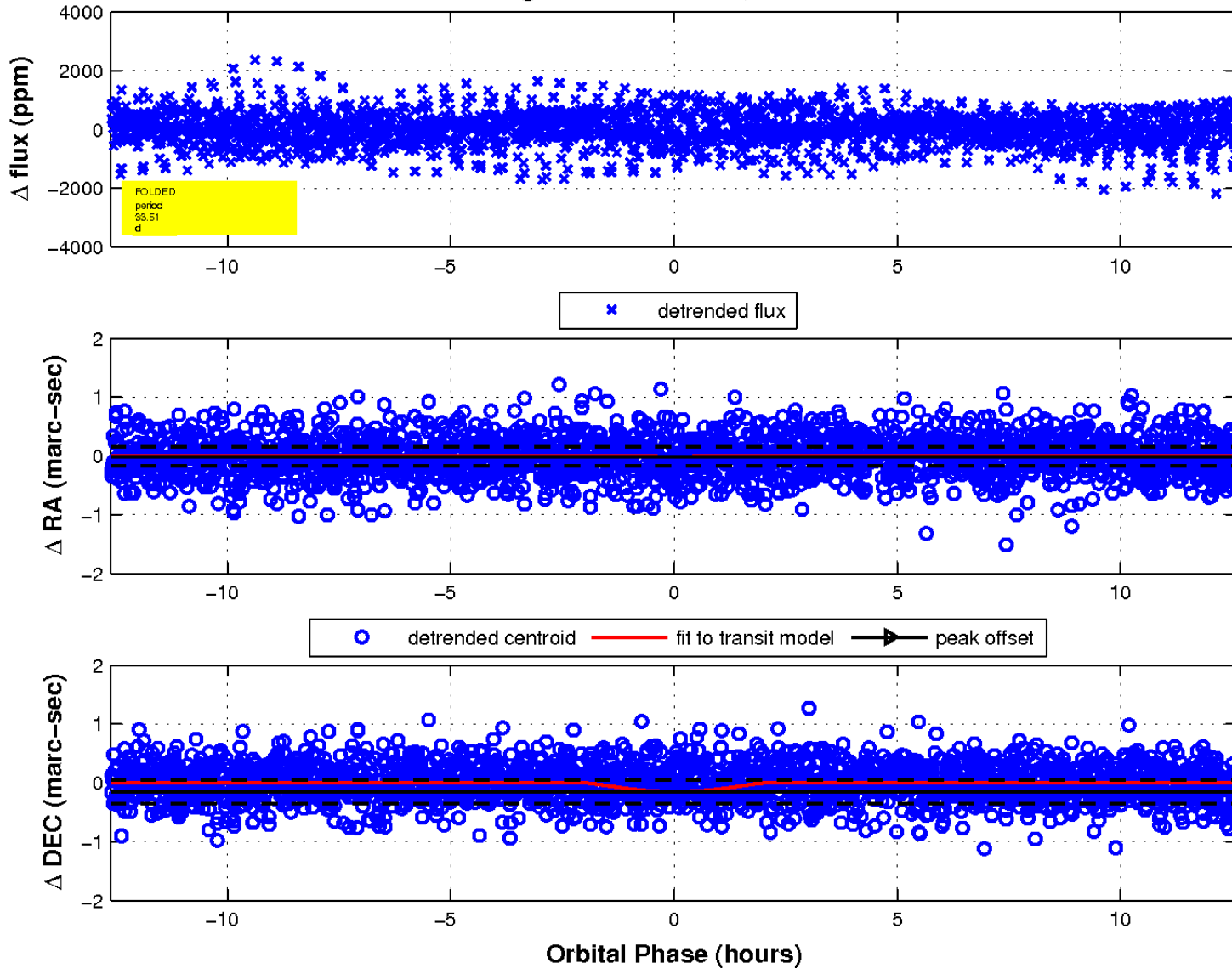
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

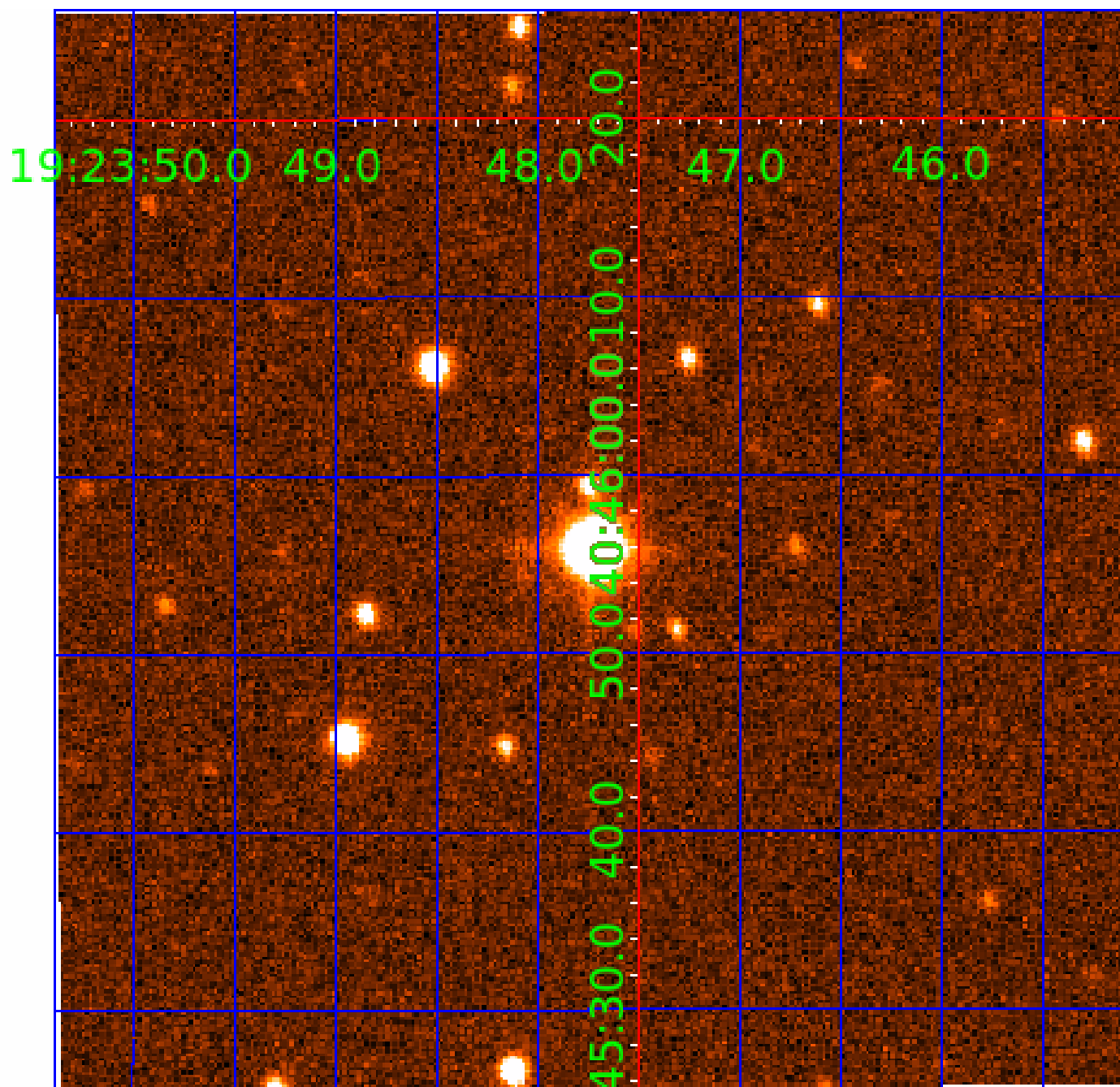


fluxWeightedCentroids, Planet 8 of 9



UKIRT Image

Declination



KIC 005530963

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})
005530963-01	OBS	No	1.080265	132.615791	40.7	7.525	7.8	9.5	7.09	6809	5.26	0.00
005530963-03	OBS	No	36.851619	162.904611	512.0	6.972	18.7	11.7	7.09	6809	19.65	1085.61
005530963-04	OBS	No	31.284956	141.366740	160.5	11.099	15.4	5.6	7.09	6809	10.23	1350.53
005530963-05	OBS	No	42.703161	150.898885	647.6	3.032	15.1	11.0	7.09	6809	34.32	891.94
005530963-06	OBS	No	81.817698	198.274623	853.0	5.251	13.3	12.4	7.09	6809	39.02	374.82
005530963-08	OBS	No	33.512239	161.196427	598.7	4.210	11.5	9.5	7.09	6809	30.31	1232.20
005530963-09	OBS	No	32.921168	160.165568	499.4	2.422	11.2	10.9	7.09	6809	17.72	1261.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005530963-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005530963-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
005530963-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT
005530963-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005530963-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005530963-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT

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

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

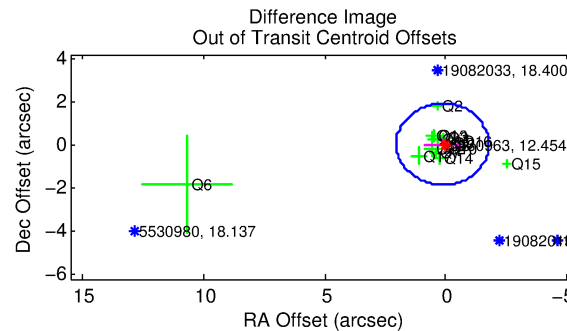
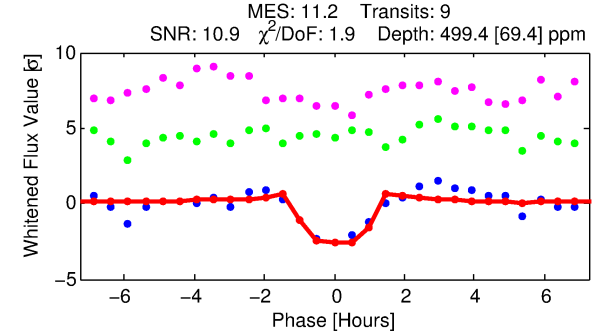
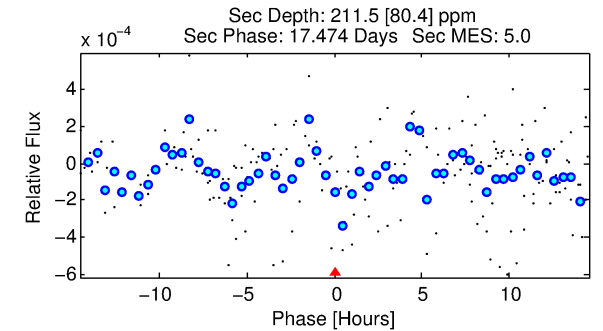
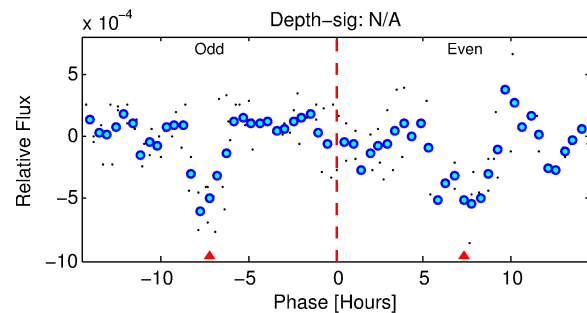
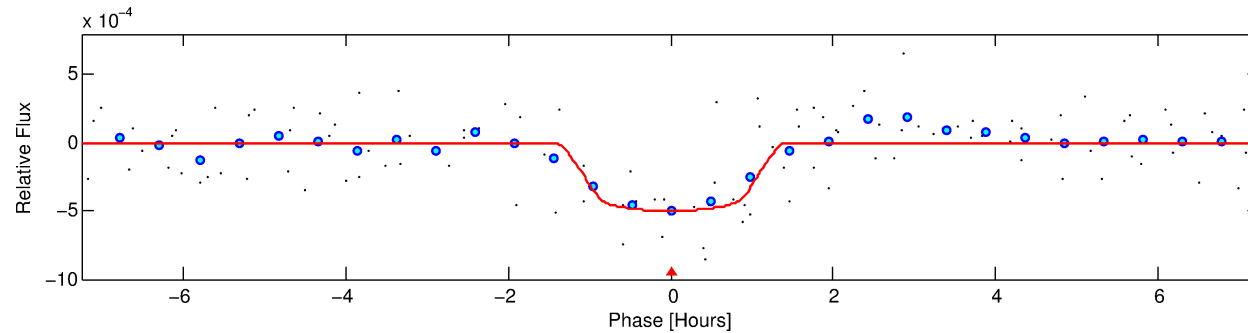
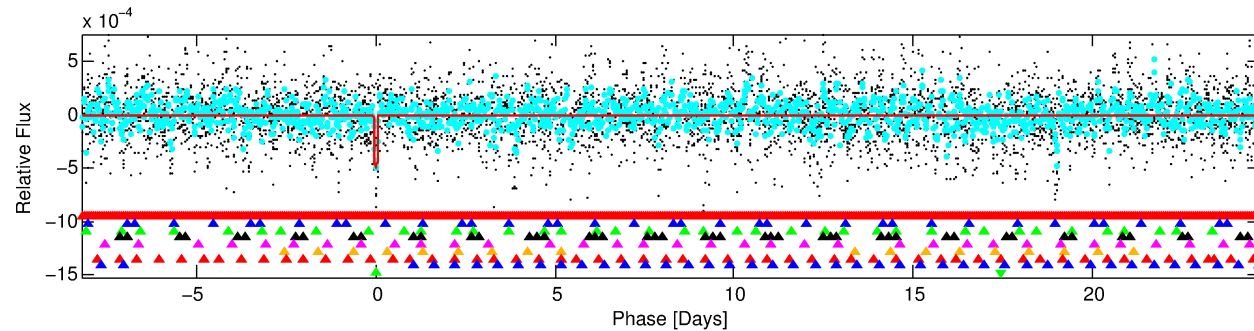
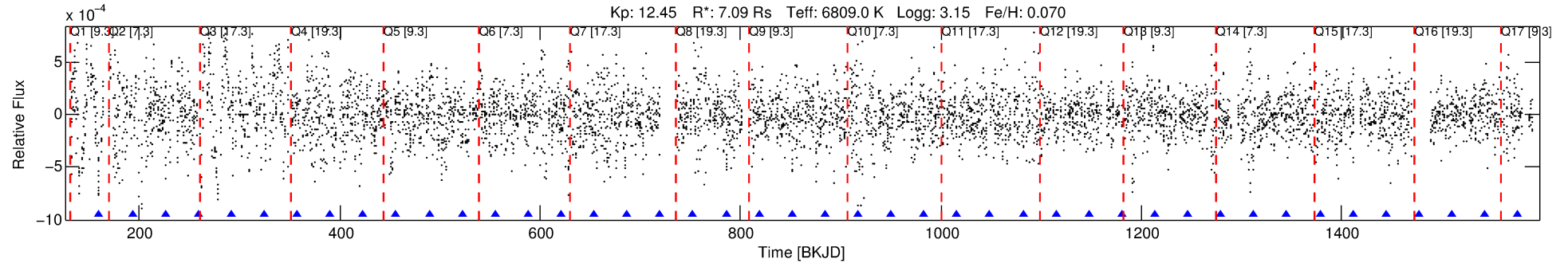
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005530963-09

No Significant Match Found

DV One-Page Summary

KIC: 5530963 Candidate: 9 of 9 Period: 32.921 d



DV Fit Results:

Period = 32.92117 [0.00021] d
Epoch = 160.1656 [0.0057] BKJD
Rp/R* = 0.0229 [0.0133]
a/R* = 62.00 [209.04]
b = 0.83 [1.27]
Seff = 1261.78 [1132.89]
Teq = 1520 [341] K
Rp = 17.72 [14.13] Re
a = 0.2770 [0.1507] AU
Ag = 28.42 [43.00] [0.64σ]
Teffp = 5425 [1671] K [2.29σ]

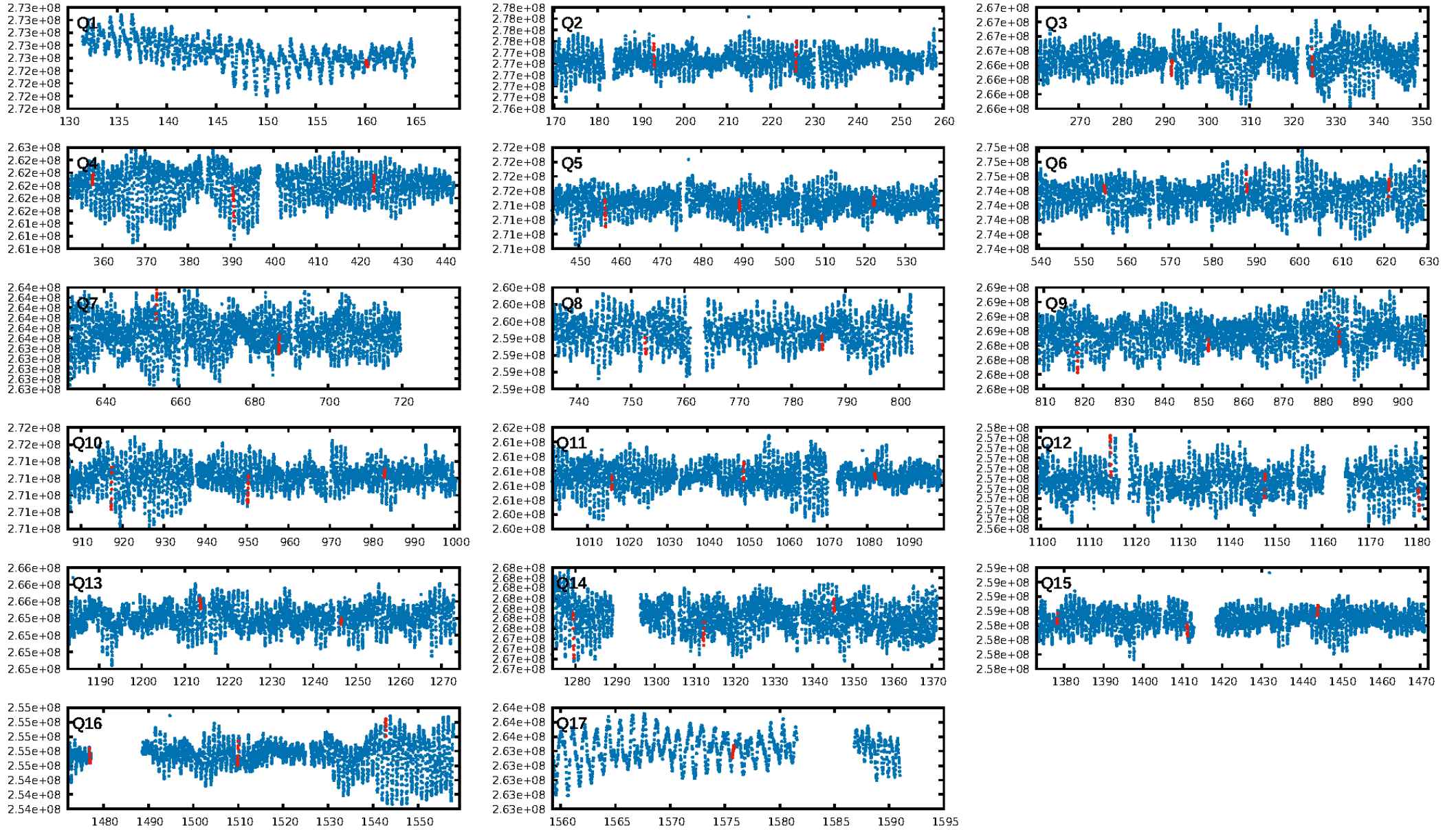
DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.46σ]
LongPeriod-sig: 99.7% [2.92σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 96.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 4.82
Centroid-sig: 3.7%
Centroid-so: 0.355 arcsec [2.19σ]
OotOffset-rm: 0.143 arcsec [0.22σ]
KicOffset-rm: 0.173 arcsec [0.27σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.47 [7/15]
DiffImageOverlap-fno: 0.41 [7/17]

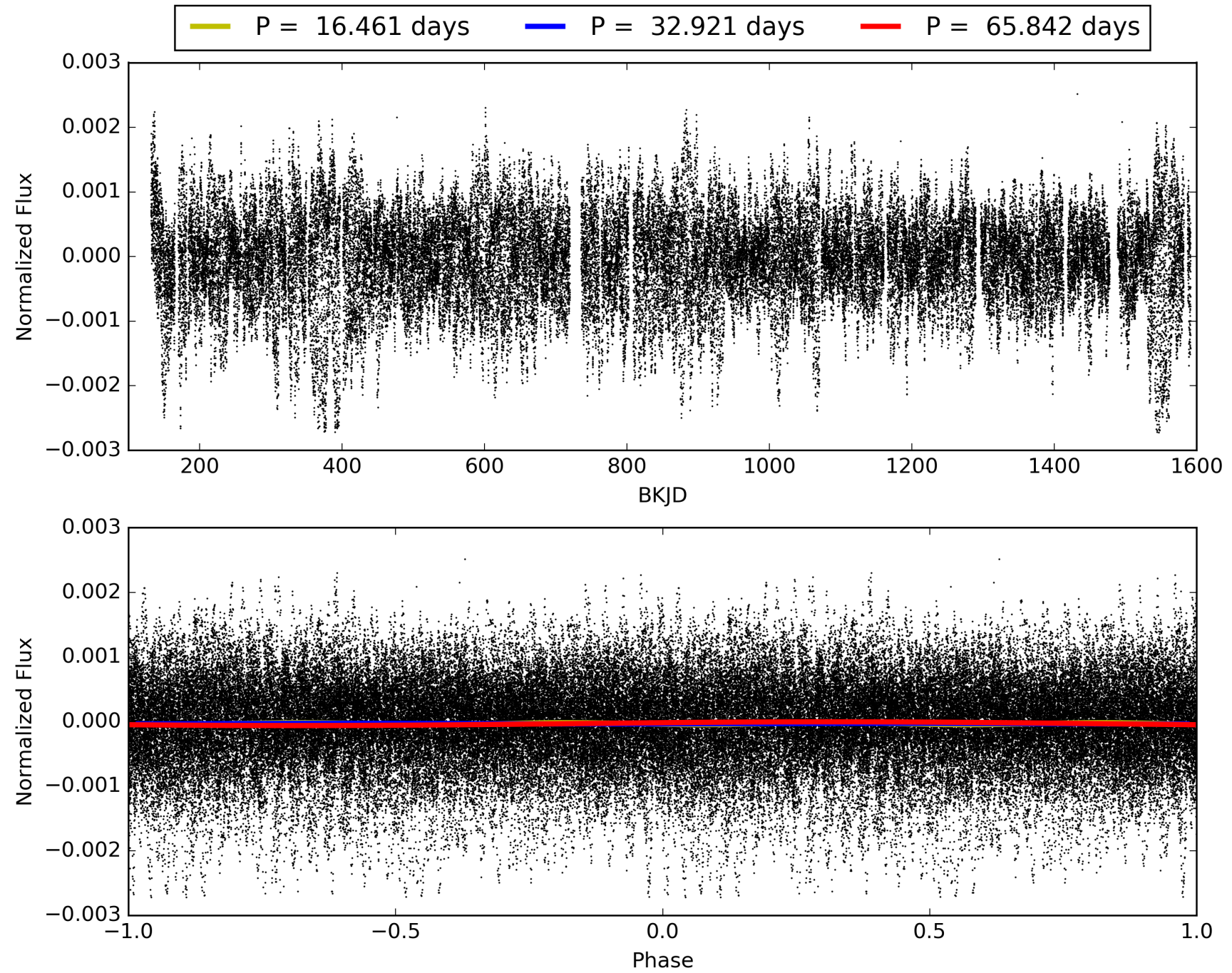
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:41:16 Z

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TCE 005530963-09, PDC Light Curves

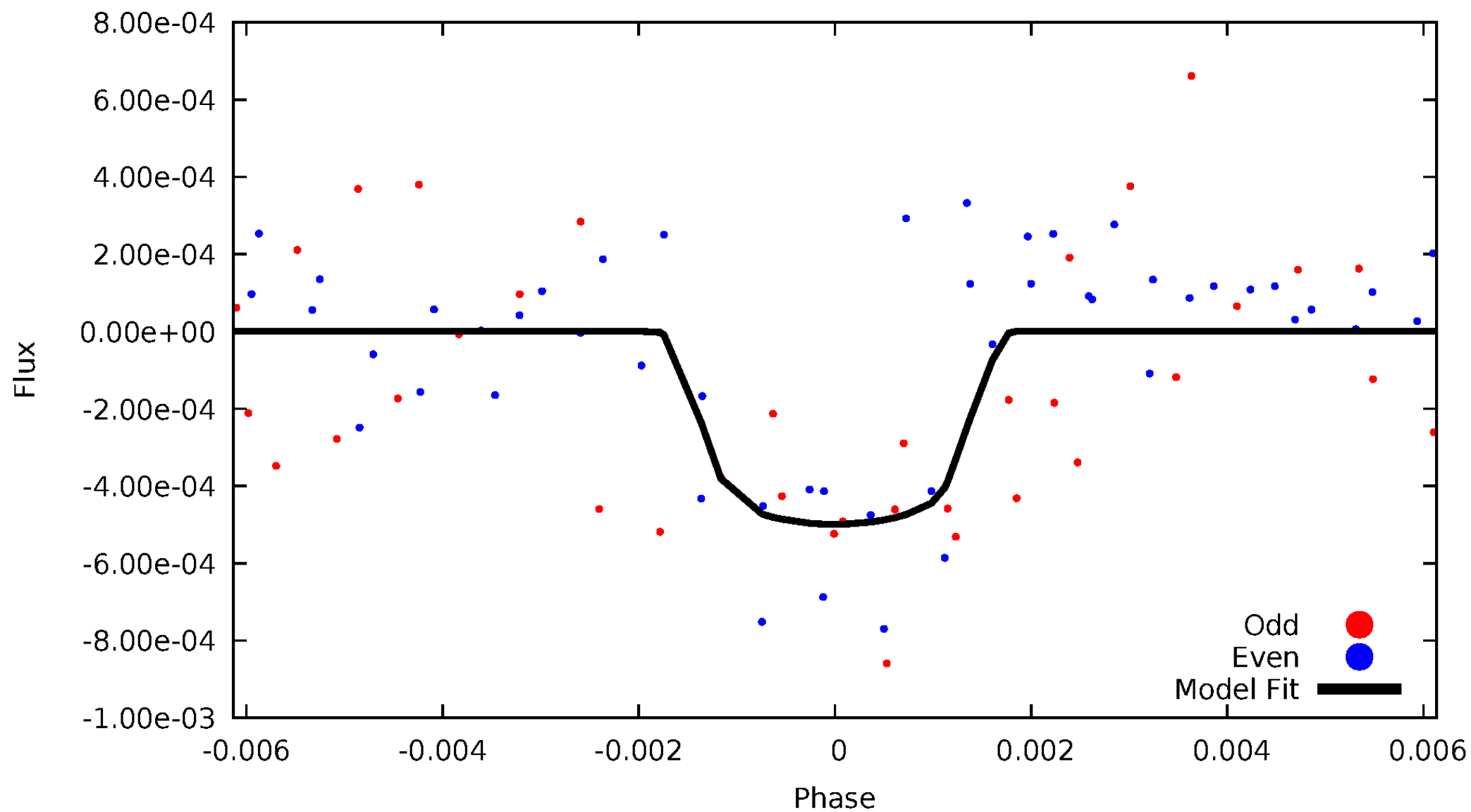


TCE 005530963-09



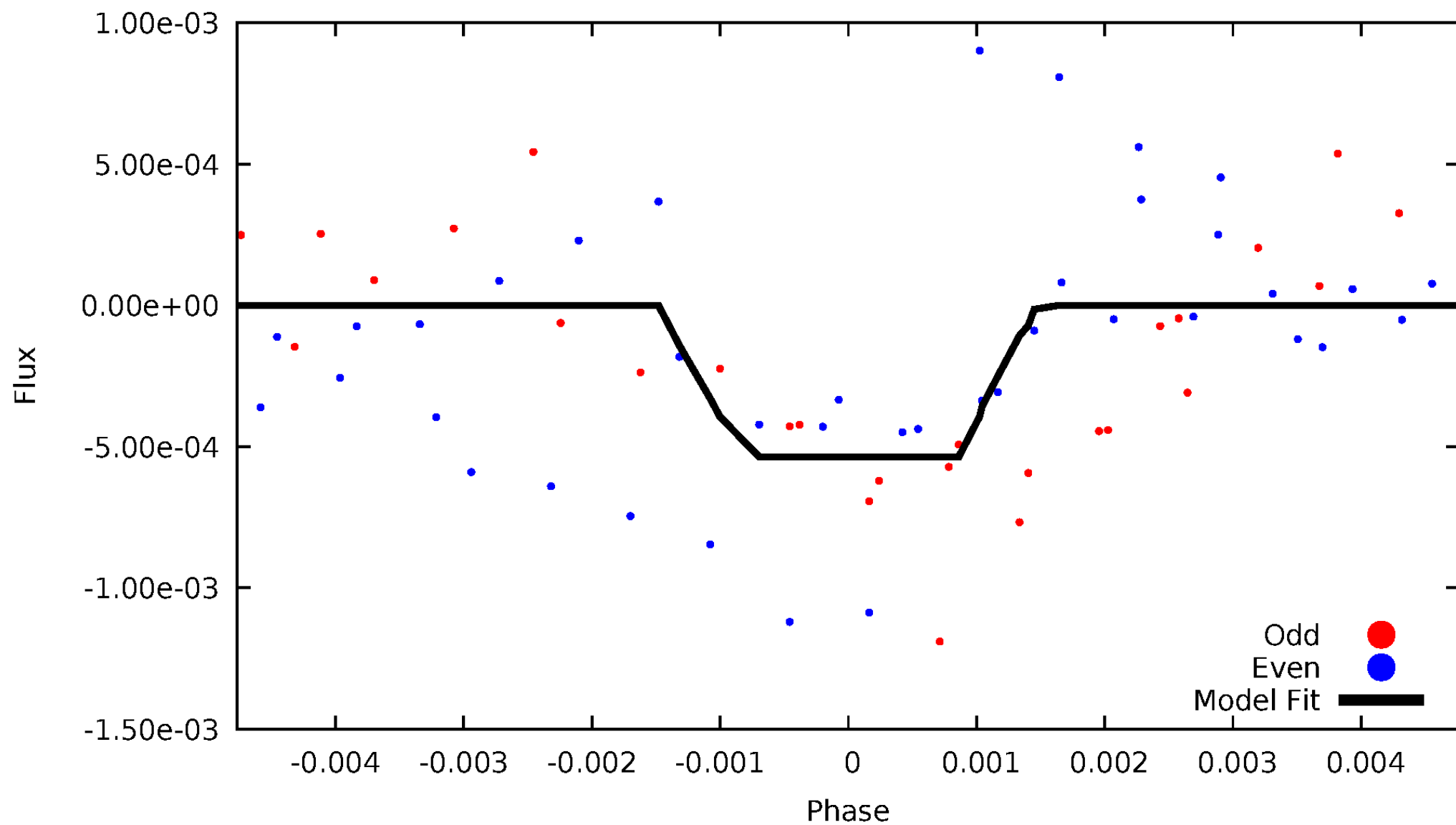
DV Odd/Even

TCE 005530963-09



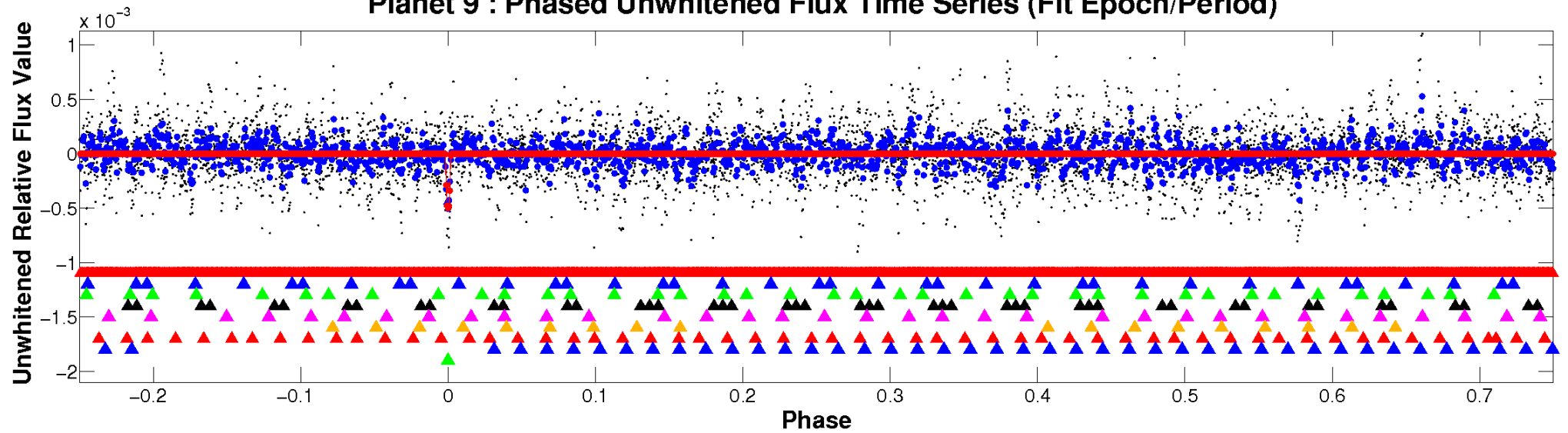
ALT Odd/Even

TCE 005530963-09

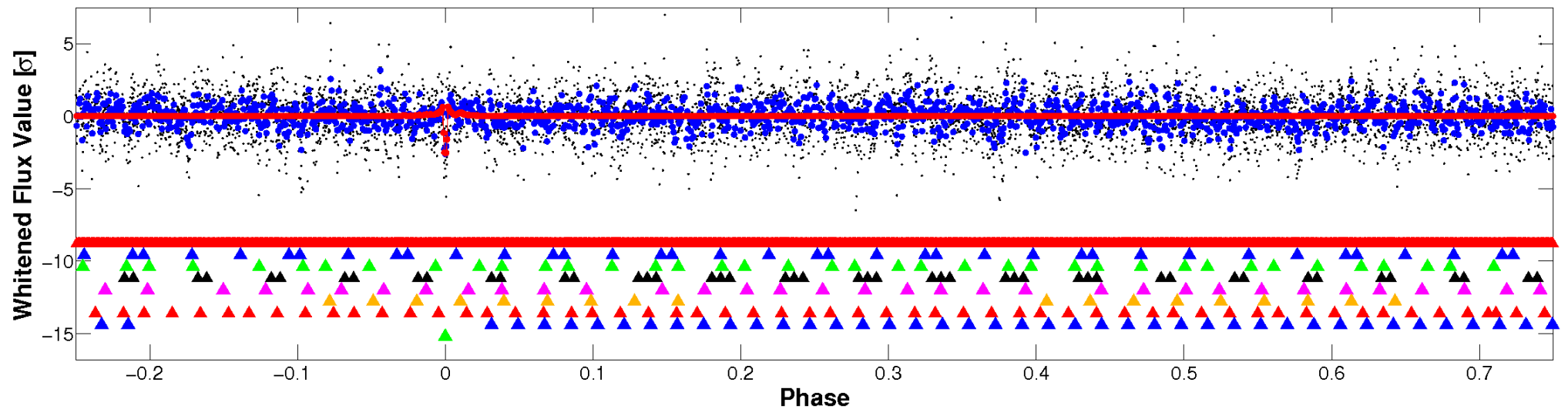


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

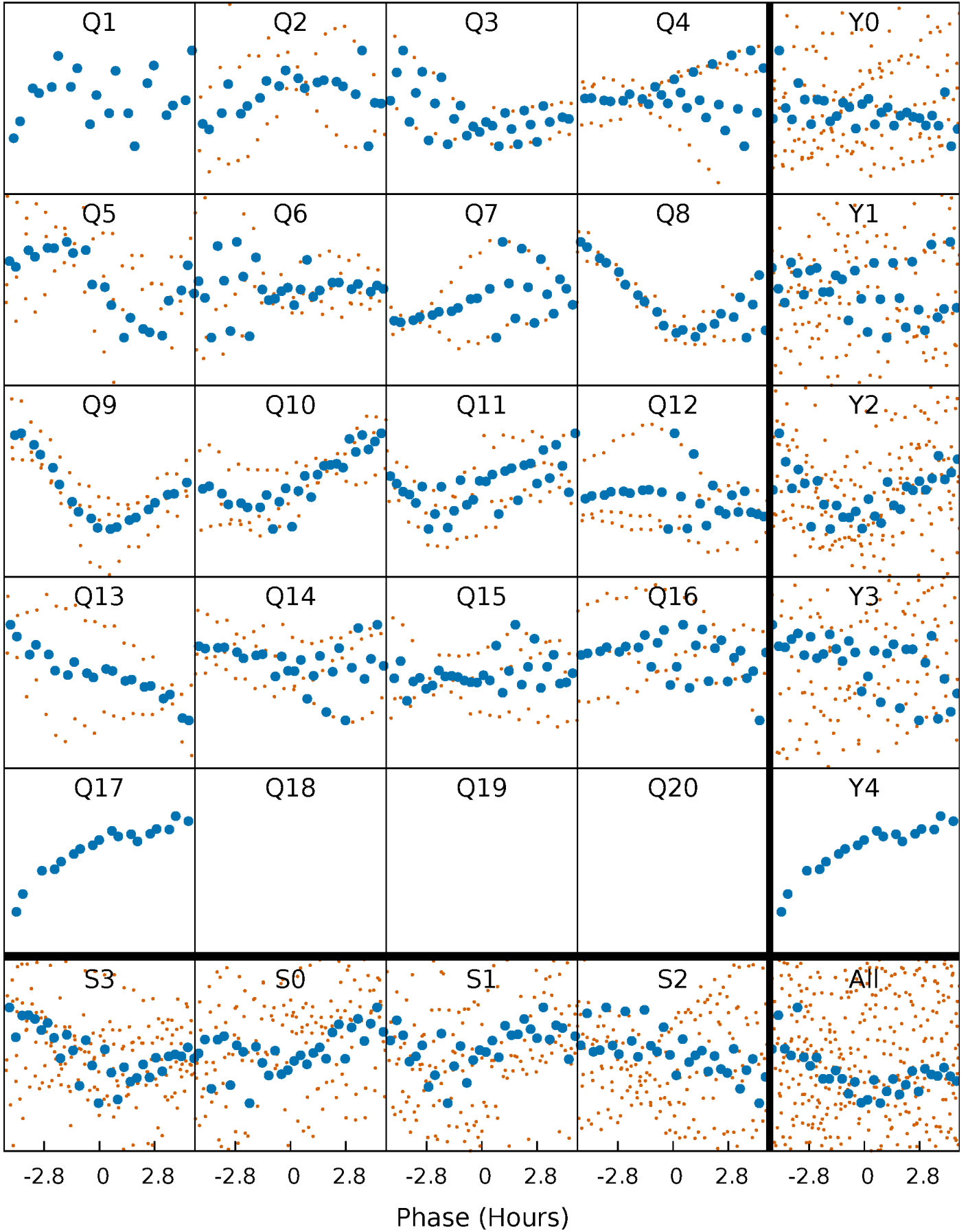


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



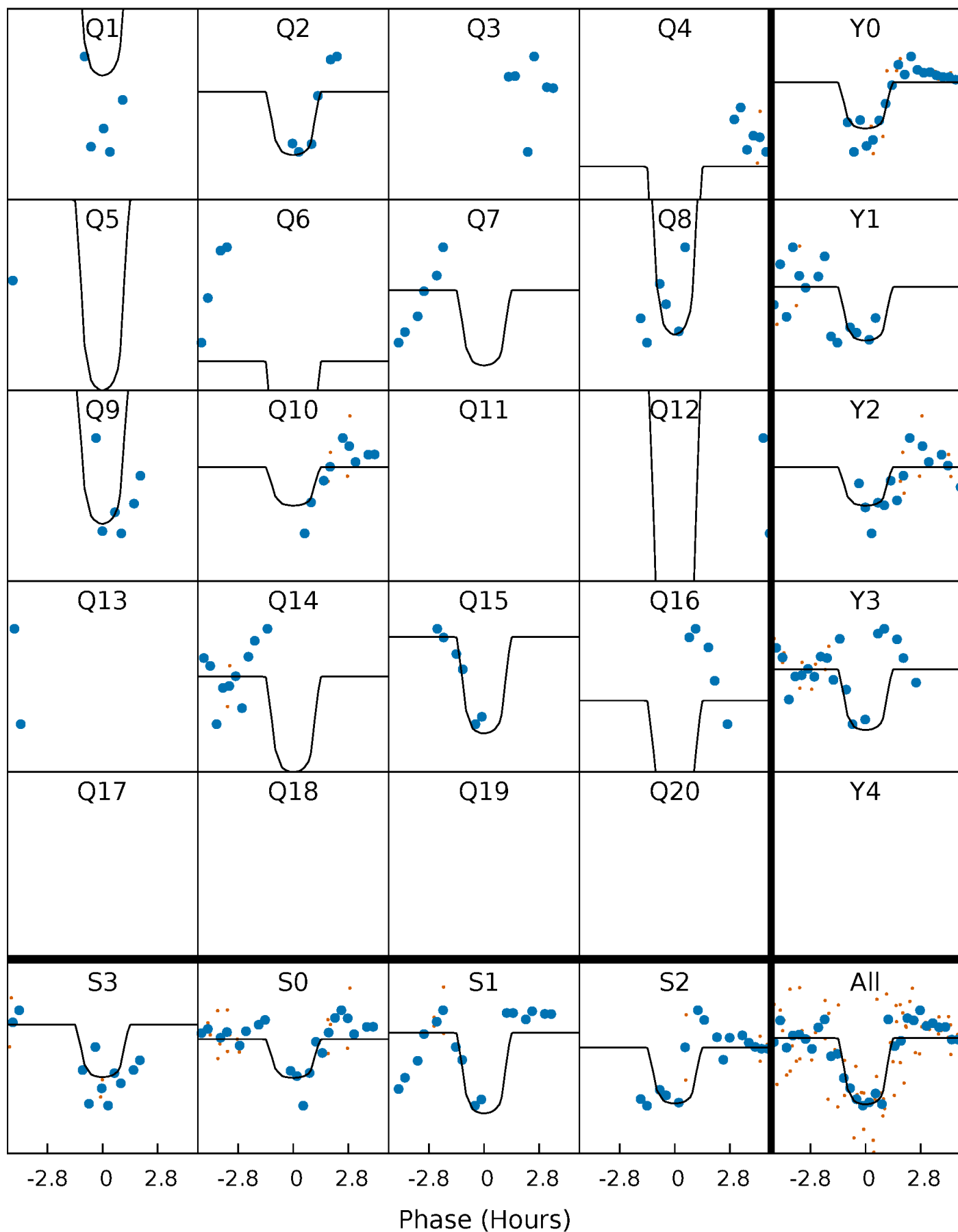
PDC Quarter-Phased Transit Curves

TCE 005530963-09 P= 32.921168 Days $T_0=160.165568$ (BKJD)



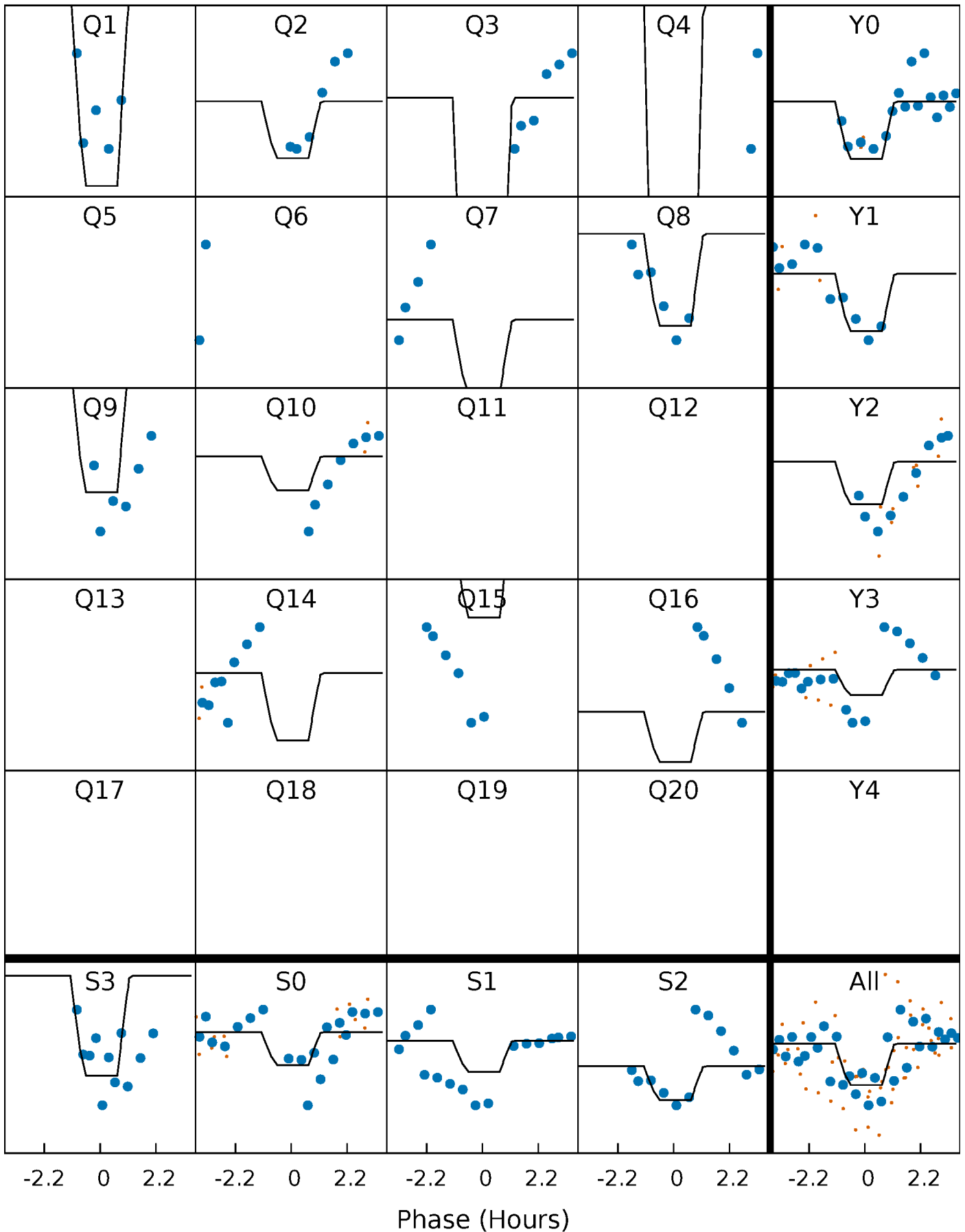
DV Quarter-Phased Transit Curves

TCE 005530963-09 P= 32.921168 Days $T_0=160.165568$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

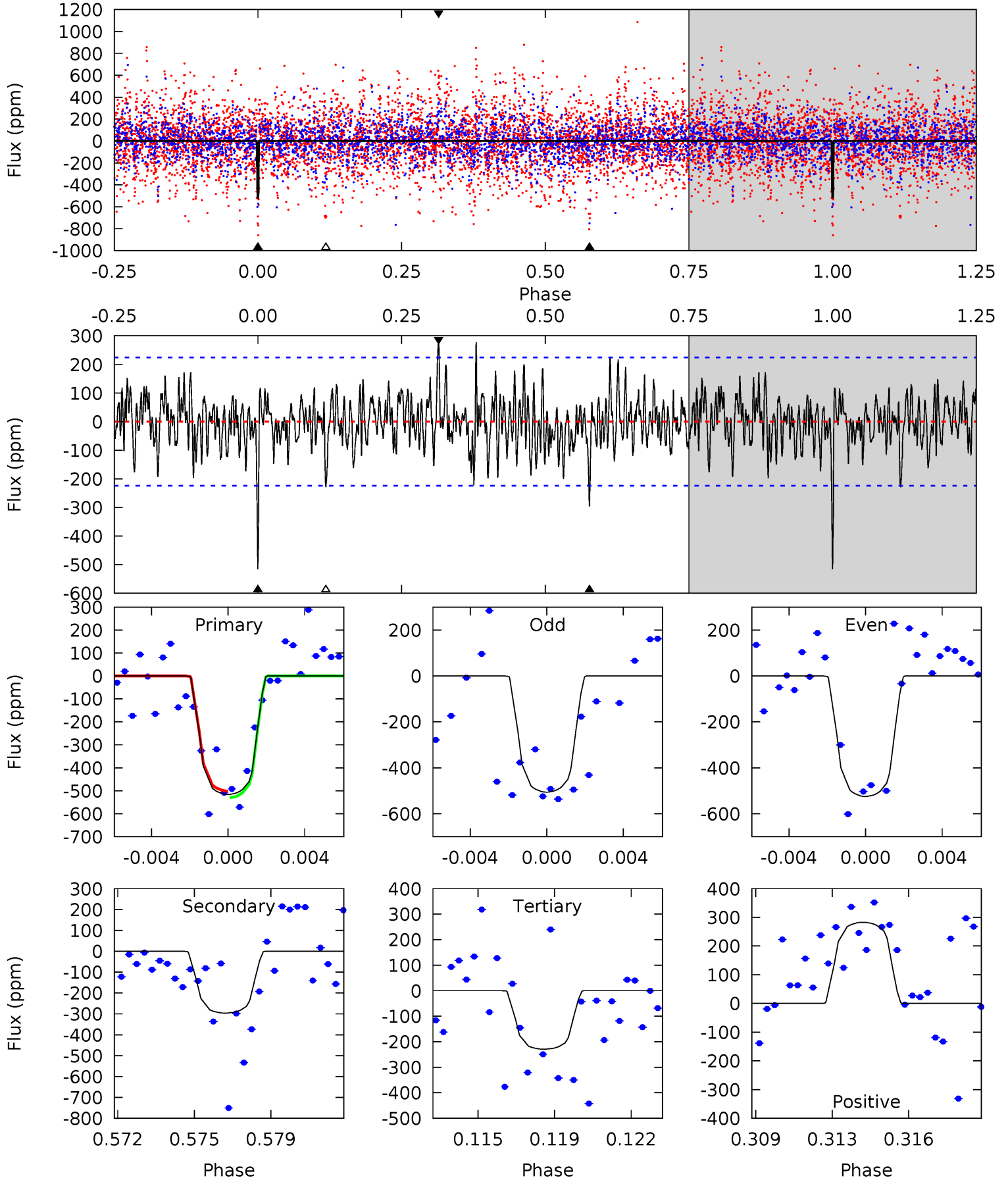
TCE 005530963-09 P= 32.920971 Days $T_0=160.164061$ (BKJD)



DV Model-Shift Uniqueness Test

005530963-09, P = 32.921168 Days, E = 127.244400 Days

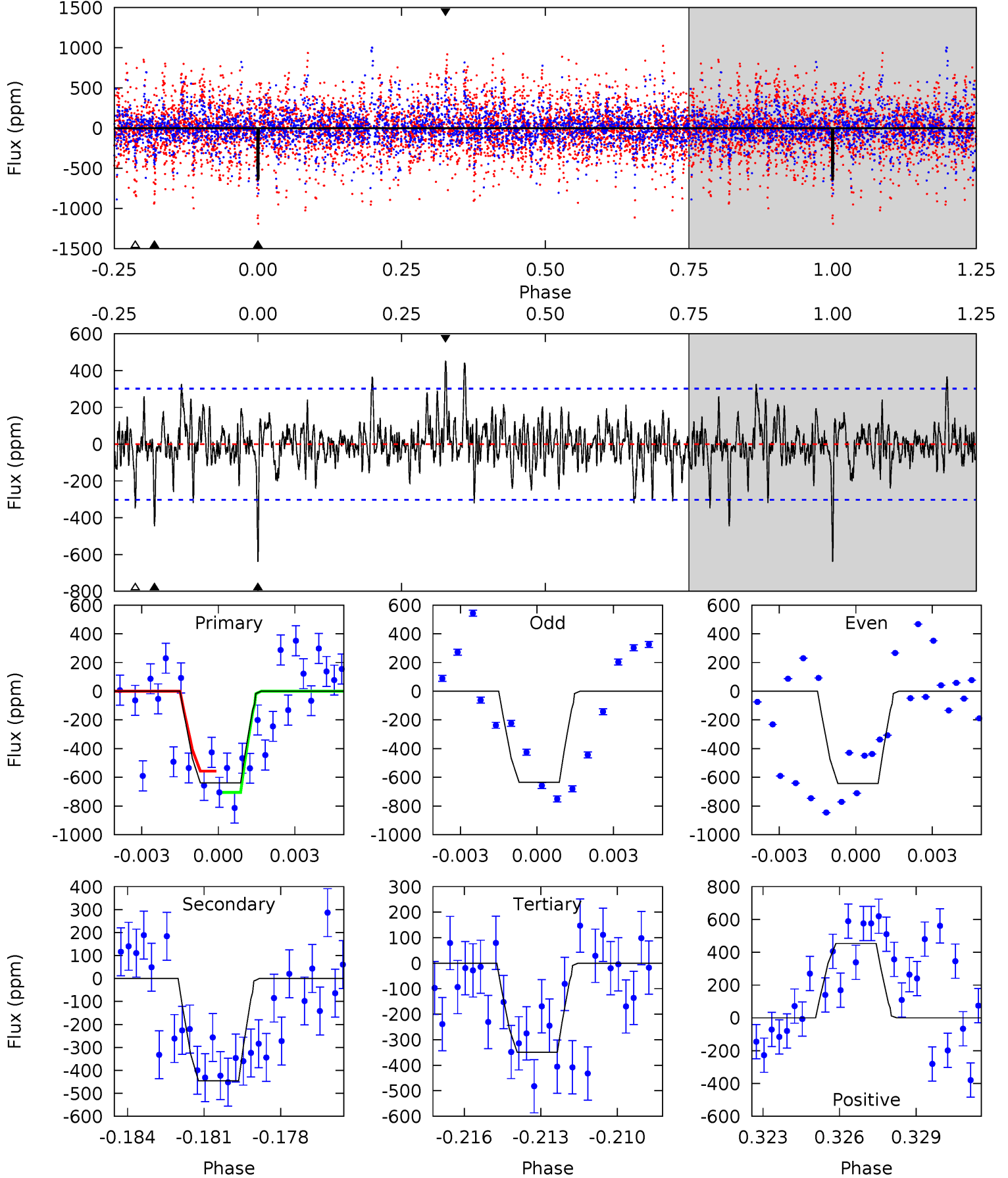
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	6.89	5.33	6.58	5.22	2.91	1.76	6.68	5.43	1.56	0.31	0.22	0.93	0.35	0.34



Alt Model-Shift Uniqueness Test

005530963-09, P = 32.920971 Days, E = 127.243090 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	7.74	6.06	7.89	5.25	2.97	1.76	5.05	3.22	1.68	-0.15	0.08	1.37	0.42	1.26



Stellar Parameters For KIC 005530963

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6809^{+162}_{-223}	$3.154^{+0.528}_{-0.132}$	$0.070^{+0.200}_{-0.400}$	$7.089^{+1.656}_{-3.864}$	$2.610^{+0.303}_{-0.909}$	$0.010^{+0.063}_{-0.004}$
	+2%/-3%	+17%/-4%	+286%/-571%	+23%/-55%	+12%/-35%	+609%/-37%
Source	PHO1	FLK73	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 005530963-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-296 ± 43	$15.60^{+10.51}_{-7.86}$	2069^{+168}_{-302}	5840^{+2496}_{-1099}	52^{+155}_{-33}
Alt.	-445 ± 58	$15.73^{+10.51}_{-8.11}$	2058^{+170}_{-291}	6380^{+3205}_{-1218}	71^{+238}_{-45}

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 $A_{obs} \gg 1.0$

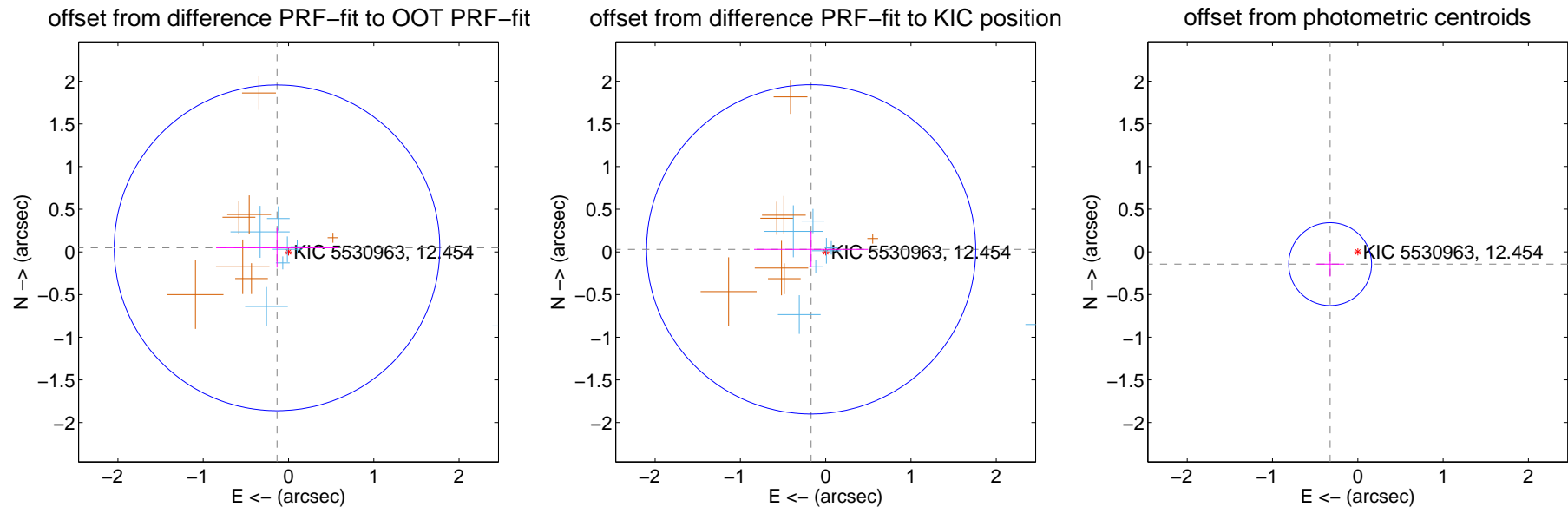
DV Centroid Data

Supplemental centroid analysis for 005530963-09. Kepler magnitude: 12.45. Transit SNR 10.91

There are 7 quarters with good PRF difference image offsets

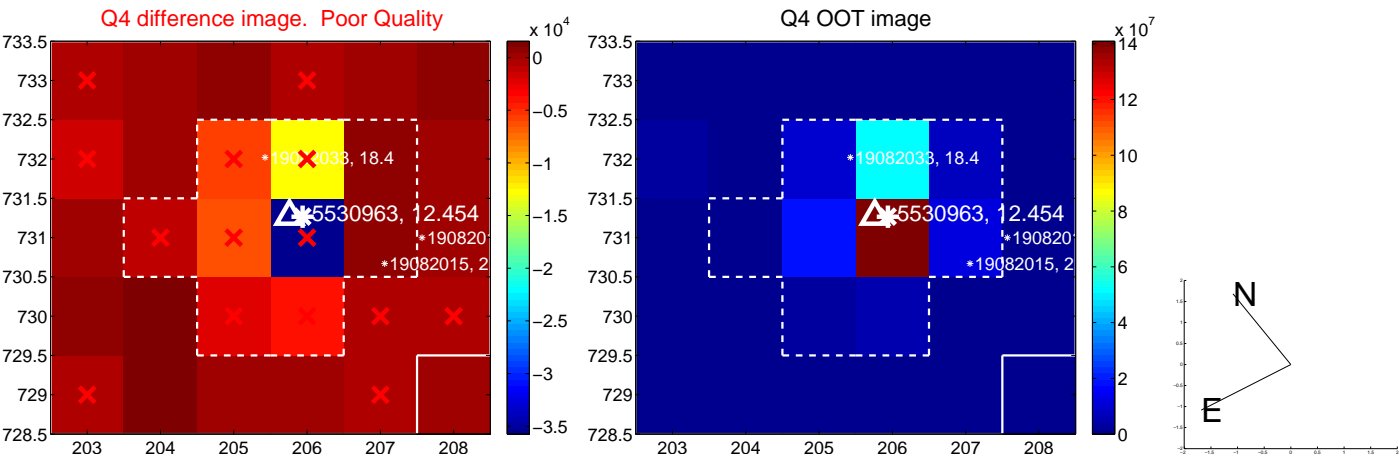
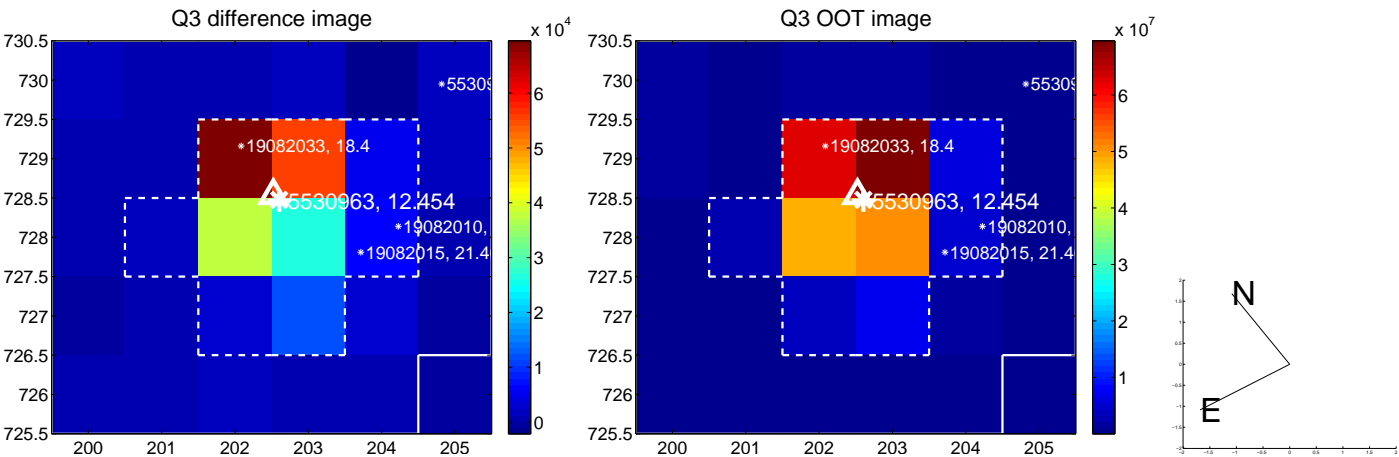
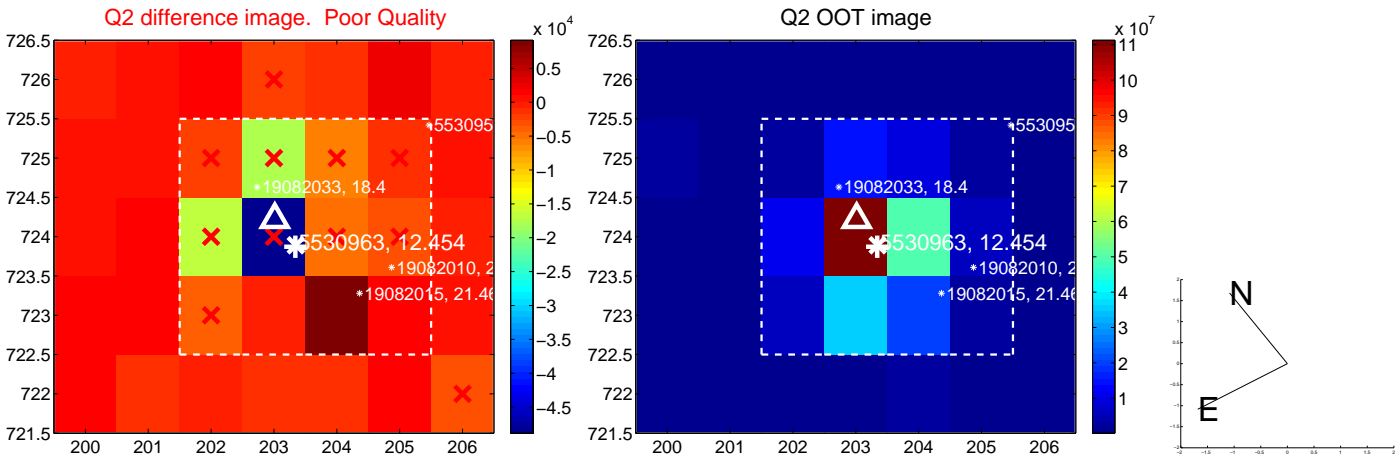
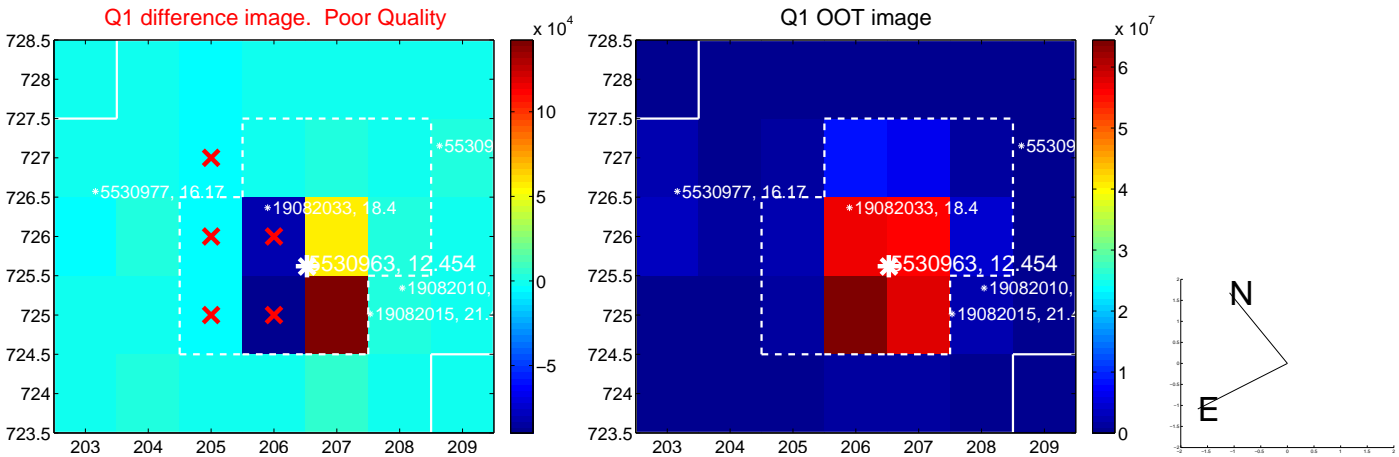
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.143 ± 0.636	0.22	0.135 ± 0.715	0.048 ± 0.231
PRF-fit source offset from KIC position	0.173 ± 0.643	0.27	0.170 ± 0.669	0.030 ± 0.212
photometric centroid source offset	0.35 ± 0.16	2.19	0.32 ± 0.16	-0.14 ± 0.15

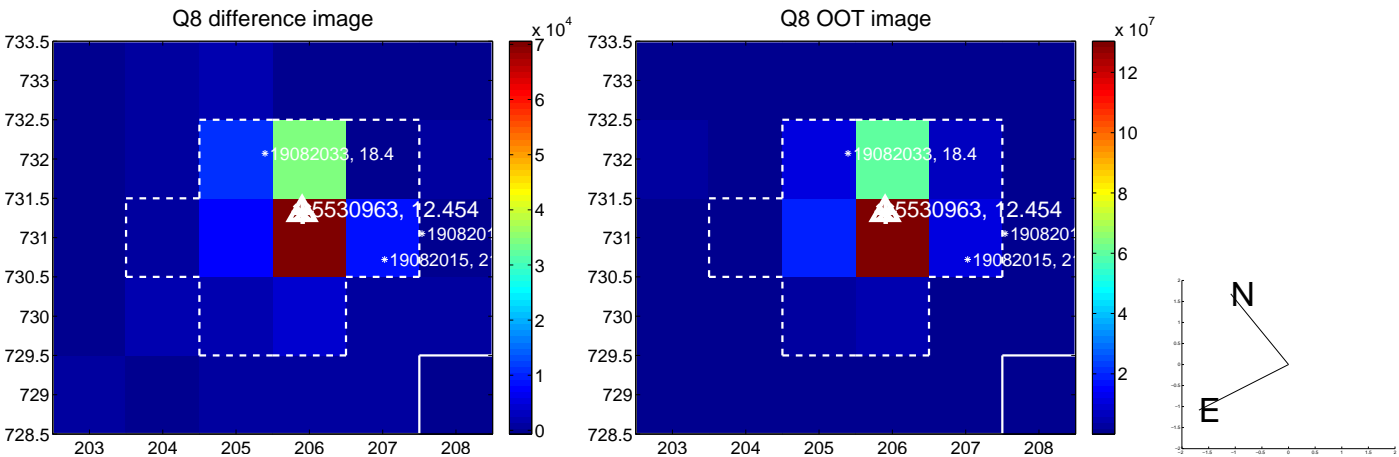
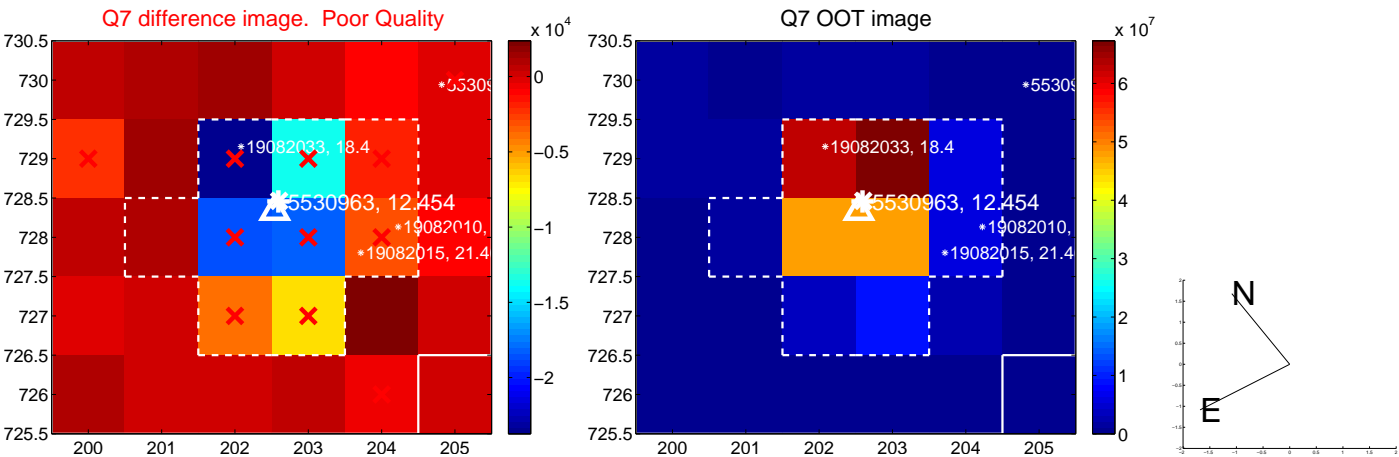
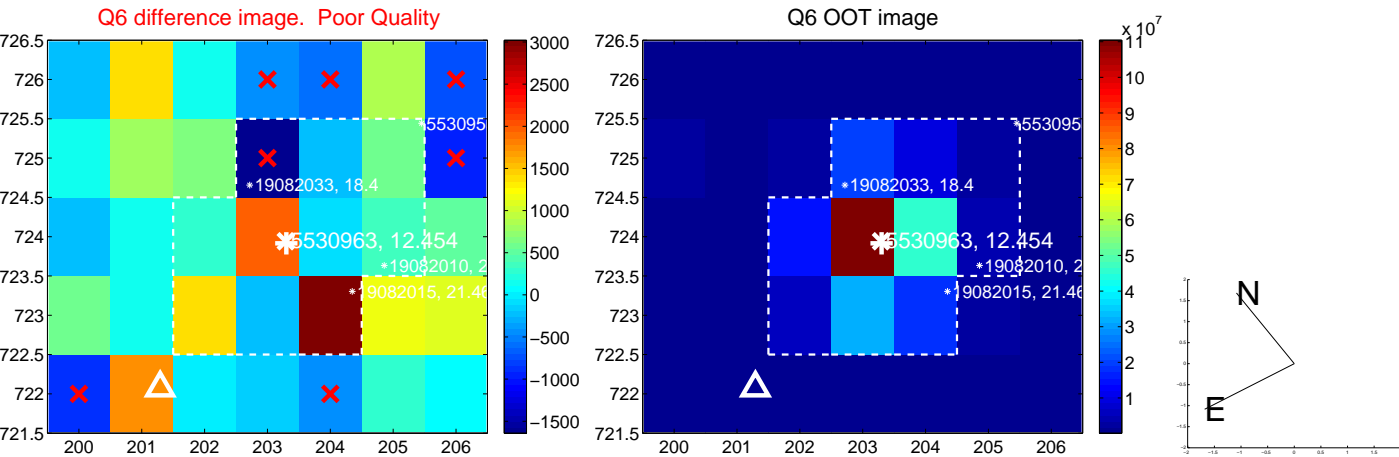
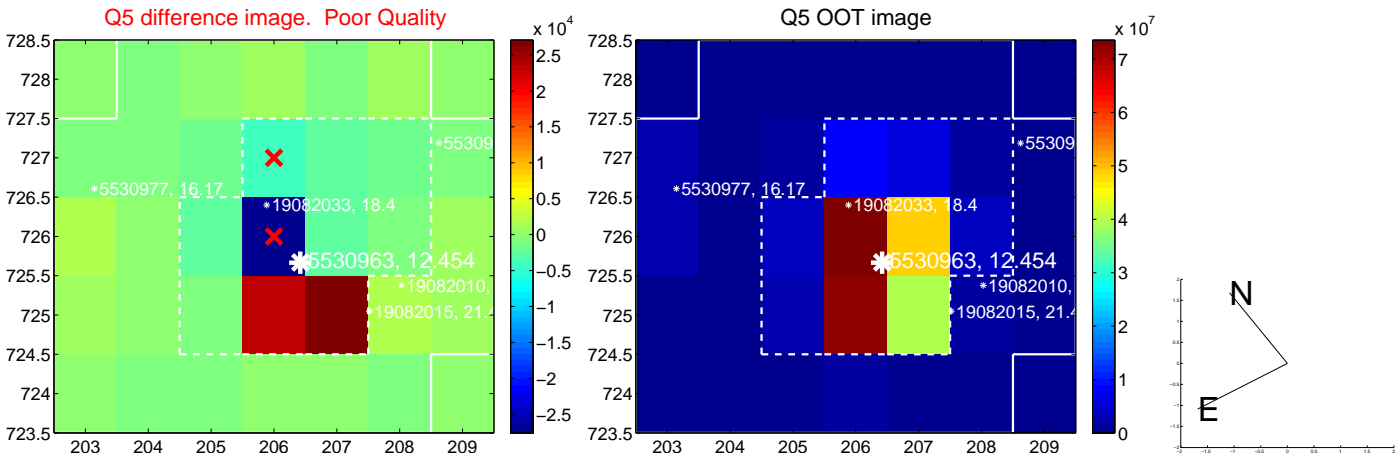


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

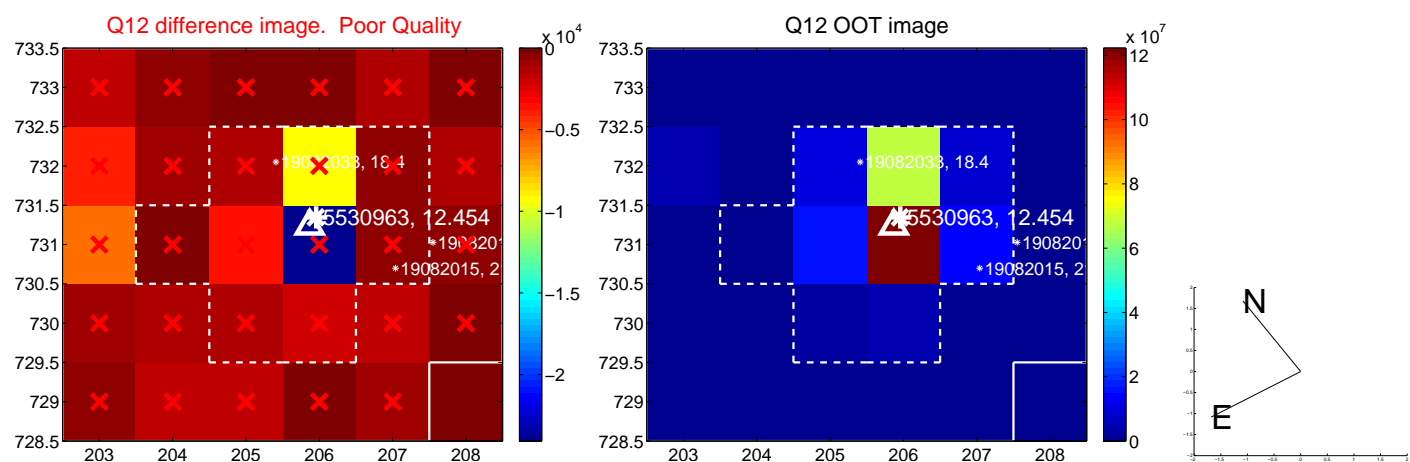
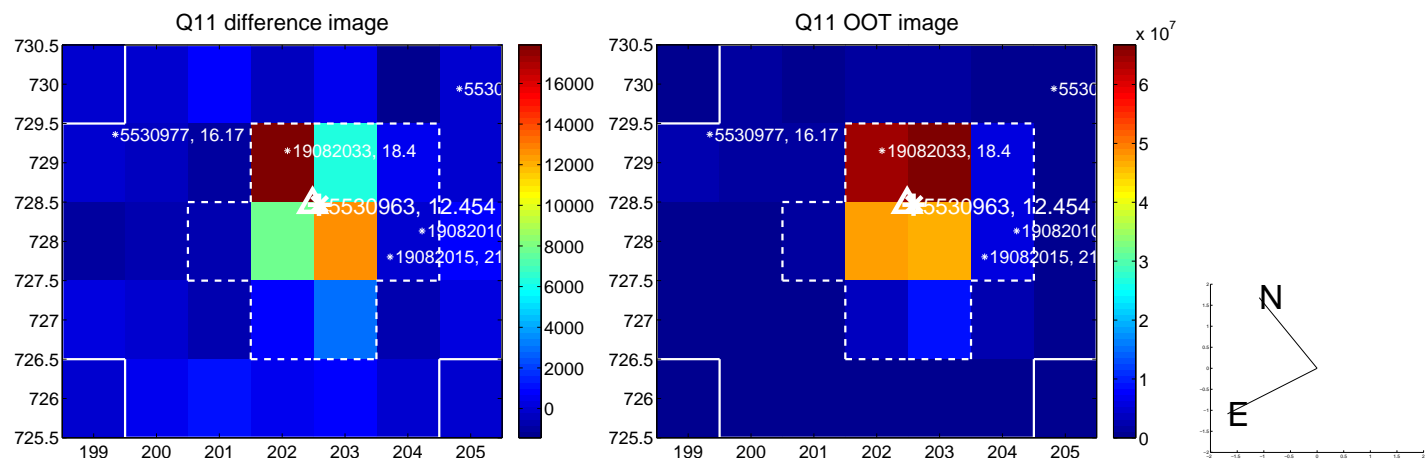
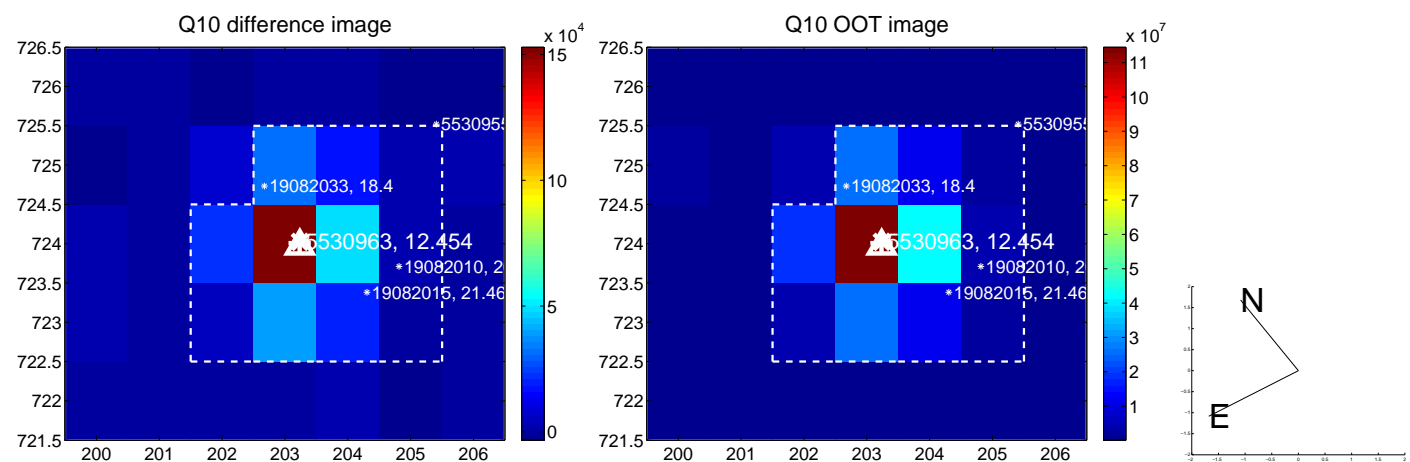
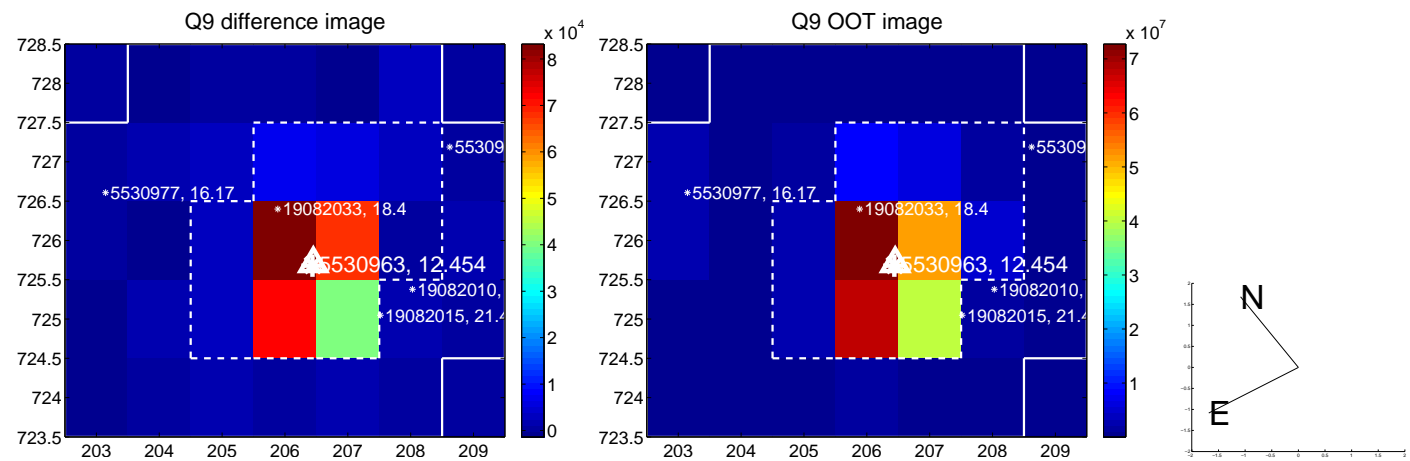
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



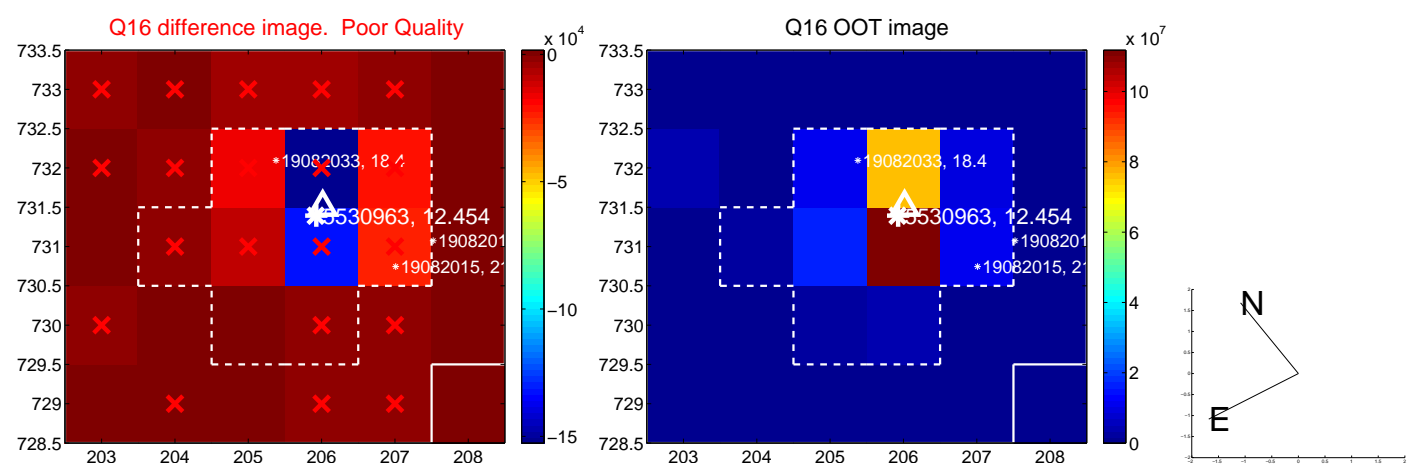
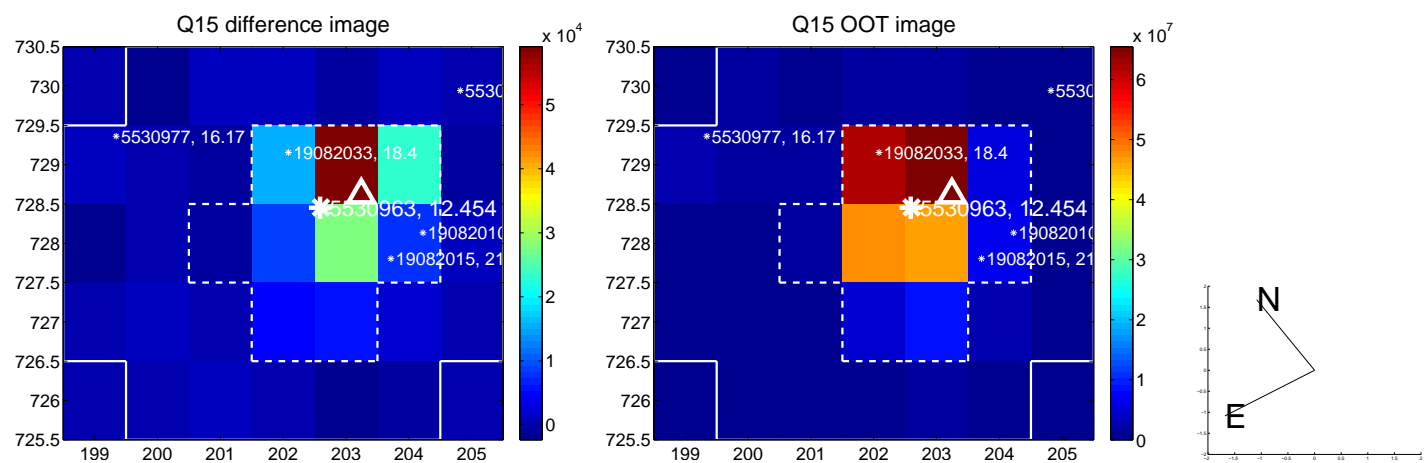
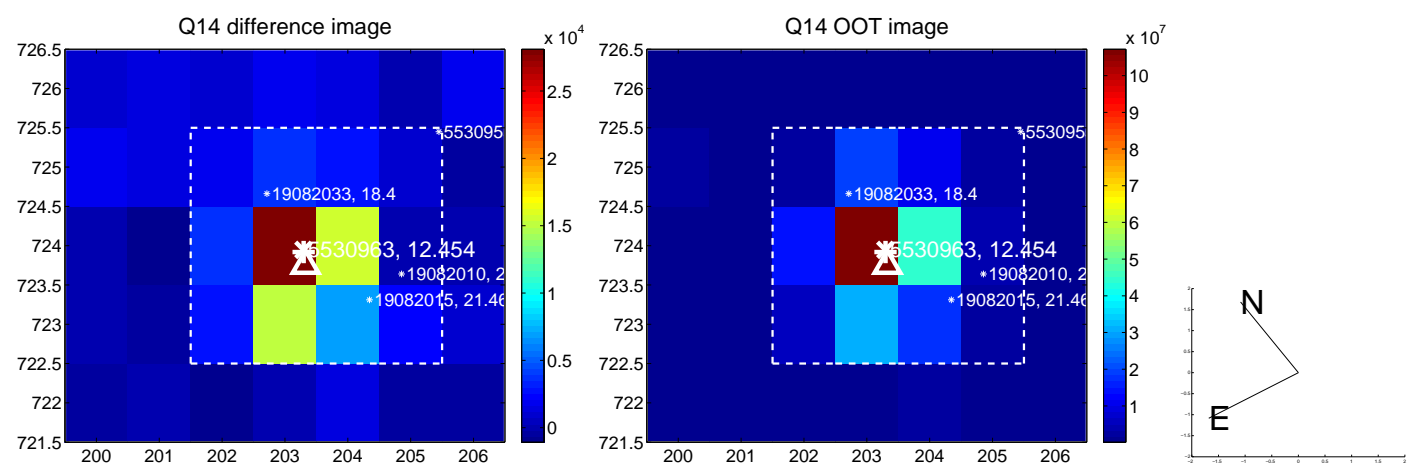
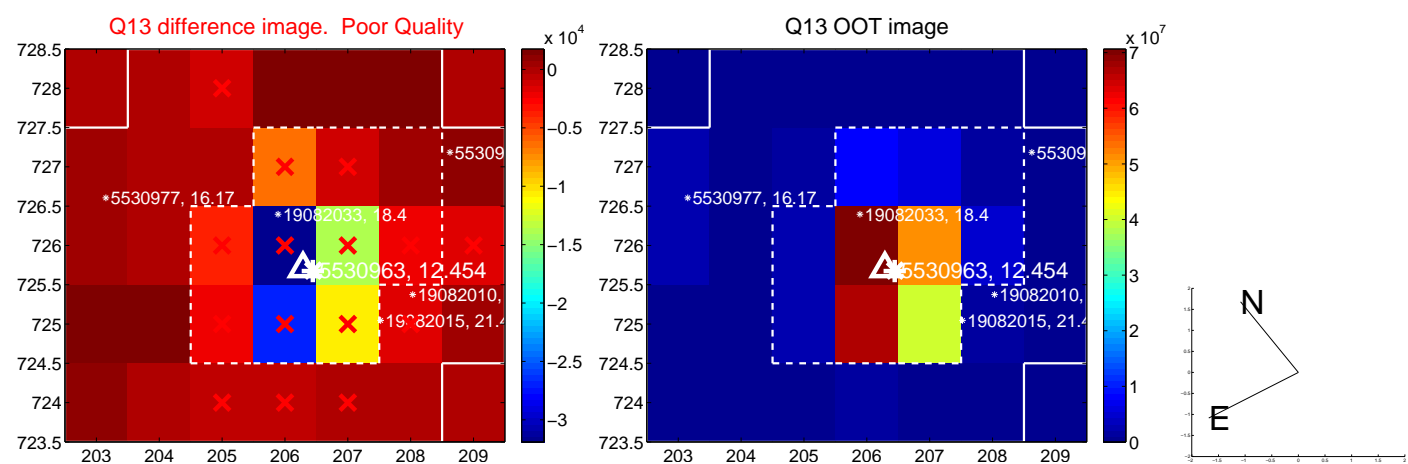
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



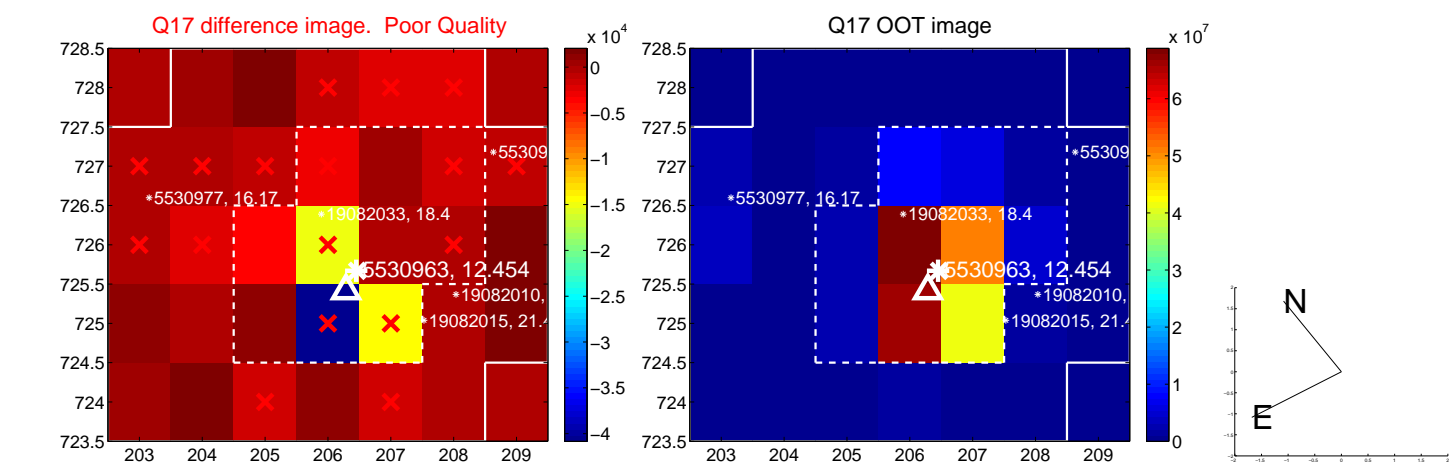
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



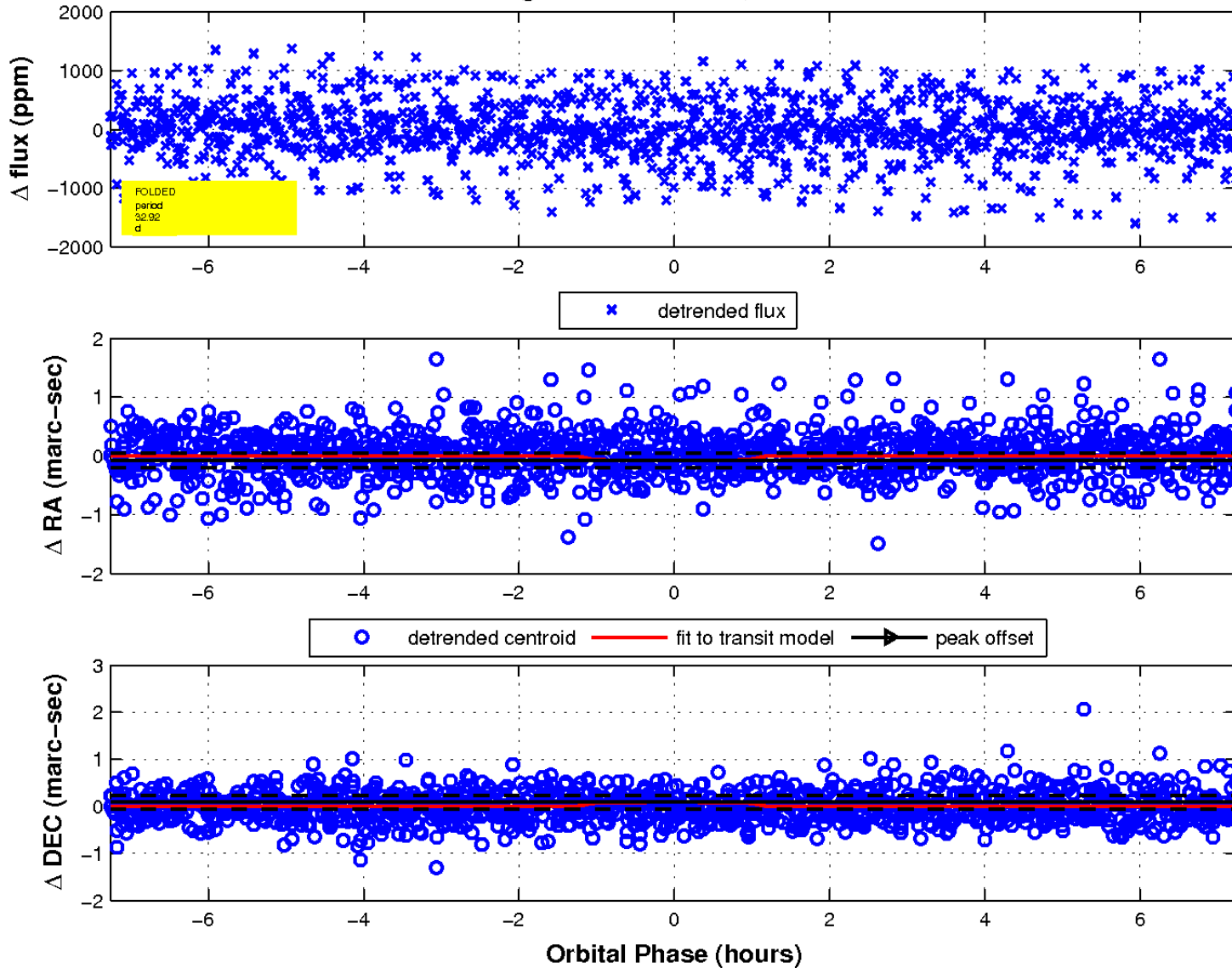
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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UKIRT Image

Declination

