TCEC10: the 10th Top Chess Engine Championship

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TCEC is the Top Chess Engine Championship (TCEC, 2018), originally created by Martin Thoresen in 2010 and now managed in its 10th season by a small team led by Anton Mihailov, CEO Chessdom (2017) and including Jeroen Noomen, 'KnightMoves', the second author here and other volunteers.

This is a report of TCEC10 which took place from October 14th to December 29th 2017 with Rapid and Blitz tournaments supplementing the main championship. Supporting files including all the games may be consulted online (Haworth and Hernandez, 2018; TCEC, 2018).

Stage 1 featured an inclusive set of twenty-four participants as in Figs. 1 and 2, spanning a range of 624 ELO. The top eight continued after the Stage 1 Round Robin to a Stage 2 of four phases, 28 rounds, starting on November 7th. The top two then started their 100-game match on November 20th to decide the champion. Tempi were 60′+10″/move for Stage 1, 90′+10″/m for Stage 2 and 120′+15″/move for the final match. Apparent draws and wins were adjudicated by defined and reasonable criteria. While some spectators on the chat site, eventually Twitch (2018), would have liked to see wins played out to a greater clarity, there were no cases of fortress-positions being mistaken for wins. Sub-6-man positions were adjudicated using Gaviota DTM endgame tables (Ballicora, 2017; Nalimov, 2000) although most engines using EGTs chose the 6-man Syzygy DTZ_{50}'' EGTs (de Man, 2017; Haworth, 2014).

Fig. 1. The TCEC10 logos of the twenty-four competing chess engines in alpha order.

The common platform server running Windows Server 2012 R2 supported UCI and Xboard (Winboard) engines. It sported two Intel® Xeon® E5-2699V4 processors @ 2.8 GHz (Intel, 2017), 64GB of DDR4

ECC RAM and a 240GB Crucial CT250M500 SSD. Engines could use 22 threads in Stage 1 and 43 threads thereafter. Multi-threading, Windows Large Pages and Opening Books were not used.

#	Engine	S1 version	pre-S1 ELO	thr.	S2 version	pre-S2 ELO	thr.	EGTs	Authors	Country Codes
01	Andscacs	0.92	3094	22	0.921	3100	43	—	Daniel José Queraltó	AD
02	Arasan	20.2	2741	22	—	—	—	Syzygy	Jon Dart	US
03	Bobcat	8	2891	22	—	—	—	—	Gunnar Harms	NL
04	Booot	6.2	3047	16	6.2	3091	16	—	Alex Morozov	UA
05	Chiron	040917	3004	22	251017	3013	43	Syzygy	Ubaldo Andrea Farina	IT
06	Fire	6.1	3113	22	6.2	3112	43	Syzygy	Norman Schmidt	US
07	Fizbo	1.91	2899	22	—	—	—	Syzygy	Youri Matiounine	US
08	Fruit	3.2	2606	16	—	—	—	Syzygy	Fabien Letouzey, Daniel	FR/DE/US
09	Gaviota	1.01	2757	22	—	—	—	Gaviota	Miguel A. Ballicora	AR
10	Ginkgo	2	3042	22	2.01	3052	43	—	Frank Schneider	DE
11	Gull	3	3112	22	—	—	—	—	Vadim Demichev	RU
12	Hakkapeliitta	210416	2778	1	—	—	—	Syzygy	Mikko Aarnos	FI
13	Hannibal	121017	3012	22	—	—	—	—	Sam Hamilton, Edsel Apostol	US/PH
14	Houdini	6.02	3184	22	6.02	3184	43	Syzygy	Robert Houdart	BE
15	Jonny	8.1	3040	22	—	—	—	Syzygy	Johannes Zwanzger	DE
16	Komodo	1937.00	3230	22	1959.00	3232	43	Syzygy	Don Dailey, Larry Kaufman,	US
17	Laser	200917	2660	22	—	—	—	Syzygy	Jeffrey An, Michael An	US
18	Nemorino	3.04	2899	22	—	—	—	Syzygy	Christian Günther	US
19	Nirvana	2.4	3034	22	—	—	—	—	Thomas Kolarik	US
20	Rybka	4.1	3102	22	—	—	—	Nalimov	Vasik Rajlich	US
21	Stockfish	041017	3227	22	051117	3228	43	Syzygy	Tord Romstad, Marco Costalba, Joona Kiiski, Gary Linscott	NO/IT/ FI/CA
22	Texel	1.07a35	2965	22	—	—	—	Syzygy	Peter Österlund	SE
23	Vajolet2	2.3.2	2918	22	—	—	—	Syzygy	Marco Belli	IT
24	Wasp	2.5	2824	22	—	—	—	—	John Stanback	US

Fig. 2. The TCEC10 engines and authors.

#	Engine	ELO	Pts	SB	Ko	St	Ho	An	Bt	Fi	Ch	Gi	Gu	Fz	Ha	Ni	Jo	Bo	Te	Va	Wa	Ar	Ry	Ne	Fr	Ga	Hk	La
01	Komodo 1937.00	3230	20.0	211.75		=	=	=	1	1	=	1	1	=	1	1	1	1	1	=	1	1	1	1	1	1	1	1
02	Stockfish 041017	3227	19.0	203.75	=		=	=	=	1	1	1	1	1	=	=	1	1	1	1	1	=	1	1	1	1	1	1
03	Houdini 6.02	3184	16.5	178.25	=	=		=	1	1	1	=	=	=	=	1	=	=	1	=	1	1	1	1	=	=	1	1
04	Andscacs 0.92	3094	16.0	162.75	=	=	=		=	=	=	=	=	1	=	=	1	=	1	=	=	1	=	1	1	1	1	1
05	Booot 6.2	3047	15.0	149.75	0	=	0	=		0	=	1	=	1	=	1	=	=	1	1	=	1	=	1	1	1	1	=
06	Fire 6.1	3113	15.0	141.00	0	0	0	=	1		=	=	=	0	=	=	1	1	1	=	1	1	=	1	1	1	1	1
07	Chiron 040917	3004	14.5	145.50	=	0	0	=	=	=		=	=	=	1	1	1	=	1	=	1	1	1	1	1	1	1	=
08	Ginkgo 2	3042	14.5	139.25	0	0	=	=	0	=	=		=	=	1	1	1	=	1	=	=	1	1	1	1	1	1	1
09	Gull 3	3112	14.5	137.25	0	0	=	=	=	=	=	=		=	=	=	1	=	1	=	1	1	1	1	1	1	1	1
10	Fizbo 1.91	2899	13.0	126.00	=	0	=	0	0	1	=	=	=		=	=	=	1	0	0	1	1	=	=	1	1	1	1
11	Hannibal 121017	3012	12.5	118.75	0	=	=	=	=	=	=	0	=	=		=	0	=	=	1	0	=	1	1	1	1	1	1
12	Nirvana 2.4	3034	12.5	114.50	0	=	0	=	0	=	0	0	=	=	=		=	1	1	=	1	1	=	=	1	1	1	1
13	Jonny 8.1	3040	12.5	113.75	0	0	=	0	=	0	0	=	0	=	1	=		1	=	1	=	1	1	=	1	1	1	1
14	Bobcat 8	2891	11.0	97.00	0	0	0	=	=	0	=	=	=	0	=	0	0		=	=	1	1	1	1	=	1	1	1
15	Texel 1.07a35	2965	11.0	94.75	0	0	0	0	0	0	0	=	0	1	=	0	=	=		1	0	1	1	1	=	1	1	1
16	Vajolet2 2.3.2	2918	9.5	92.00	=	0	=	0	0	=	=	=	0	1	=	=	0	=	0		0	=	0	=	1	1	1	1
17	Wasp 2.5	2824	9.5	90.25	0	0	=	=	=	0	=	=	0	0	=	0	=	0	=	1		0	1	0	=	1	1	1
18	Arasan 20.2	2741	9.5	81.00	0	=	0	0	0	0	=	0	=	0	1	0	0	0	1	=	1		=	=	1	1	1	1
19	Rybka 4.1	3102	9.0	77.50	0	0	0	=	=	=	0	0	0	=	=	=	0	=	0	=	0	=		1	=	=	1	1
20	Nemorino 3.04	2899	6.5	44.75	0	0	0	0	0	0	0	0	0	=	0	=	=	0	0	1	0	=	0		=	1	1	1
21	Fruit 3.2	2606	6.0	45.25	0	0	=	0	0	0	0	0	0	0	0	0	0	=	=	0	=	0	=	=		1	1	1
22	Gaviota 1.01	2757	4.5	43.75	0	=	=	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	=	0	=		0	1
23	Hakkapeliitta 210416	2778	3.0	14.75	0	0	0	0	0	0	0	0	0	0	0	0	=	0	0	0	0	0	0	0	=	1		1
24	Laser 200917	2660	1.0	14.75	0	0	0	0	=	0	=	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Fig. 3. The cross-table for TCEC10 Stage 1, a round robin of 23 rounds.

1 Stage 1: a round robin, 23 rounds, 276 games

Of 276 games, 165 (59.78%) were won (102 by White and 63 by Black) and 111 (40.22%) were drawn. Of the 165 games, only 12 (7.27%) were won by the engine finishing lower in the standings, the extreme being game g17.6, ARASAN - HANNIBAL, where, unusually, the loser seemed to see the loss before the winner saw the win. CHIRON exceeded ELO-based expectations while JONNY and RYBKA did not. GULL was edged out of the last qualification spot by just two Sonneborn-Berger points.

TEXEL-FIZBO (g2.5, 1-0) was one of the finely balanced but decisive games: a queen and pawn endgame actually concluded on move 139 but could have run to move 178. Despite rules to terminate games without a pulse, GINKGO - GAVIOTA (g3.4) was drawn on move 157 as was clear by move 104.

2 Stage 2: 4 phases, 28 rounds, 112 games

#	Engine	ELO	Pts	S B	Ho	Ko	St	Fi	Ch	Gi	An	Bt
1	Houdini 6.02	3184	18.5	237.25		=01=	====	==1=	111=	1=1=	=1==	1=1=
2	Komodo 1959.00	3232	18.5	232.50	=10=		==0=	==1=	=1=1	11==	1=11	=1=1
3	Stockfish 051117	3228	18.0	237.75	====	==1=		=1=1	====	=11=	1===	=1=1
4	Fire 6.2	3112	15.0	188.50	==0=	==0=	=0=0		==1=	===1	1==1	=1=1
5	Chiron 251017	3013	11.5	152.50	000=	=0=0	====	==0=		===1	====	====
6	Ginkgo 2.01	3052	10.5	139.75	0=0=	00==	=00=	===0	===0		1===	====
7	Andscacs 0.921	3100	10.0	137.75	=0==	0=00	0===	0==0	====	0===		====
8	Booot 6.2	3091	10.0	134.00	0=0=	=0=0	=0=0	=0=0	====	====	====	

Fig. 4. The cross-table for TCEC10 Stage 2, a round robin of 28 rounds.

Of the 112 games, 37 (31.25%) were won (31 by White and 6 by Black) and 75 (68.75%) were drawn – less wins and relatively fewer for Black but the ELO range had narrowed from 570 to 119 for this stage. Form was consistent even more than in Stage 1. Of the 37 decisive games, only two (5.41%) were won by the engine finishing lower in the standings: STOCKFISH - KOMODO (g19.1), and KOMODO - HOUDINI (g14.1) where author Robert Houdart noted that his engine was 'completely blind for some time'. These three engines were now almost equally powerful and so the three decisive games between them, also including HOUDINI - KOMODO (g21.1, 1-0), stand out. FIRE was a clear fourth, and CHIRON, GINKGO, ANDSCACS and BOOOT were tightly grouped in the lower half of the table.

The outcome of Stage 2 was uncertain to the end but behind HOUDINI, KOMODO edged out STOCKFISH by just half a point. STOCKFISH had the higher Sonnerborn-Berger score, being '+1' against HOUDINI and KOMODO, but had failed to land blows against weaker opposition, in particular CHIRON. The engines' contempt factors could only be set at the beginning of stages and perhaps STOCKFISH gave its weaker opposition too much credit for playing like itself. Many in the audience would have liked to see it in a three-way final: this would indeed have been fascinating, complete with an Olympian podium and flags, but the TCEC10 rules dictated a long match as the finale and so we said farewell, for the moment, to the formidable open-source STOCKFISH, the Season 6 and current TCEC champion.

#	Engine	ELO	Pts	Ho	Ko	Won games
1	Houdini 6.03	3185	53		+15 =76 -9	04, 06, 12, 14, 24, 40, 42, 58, 60, 62, 68, 76, 77, 88, 97
2	Komodo 1970.00	3232	47	+9 =76 -15		39, 49, 52, 57, 65, 73, 80, 83, 87

Fig. 5. The TCEC10 Superfinal of 100 games: the four Black wins are underlined.

3 The 'Superfinal': the HOUDINI - KOMODO match, 100 games

In Stage 2, HOUDINI and KOMODO had been locked together on 18.5 points, HOUDINI 4.75 better in Sonnerborn-Berger terms but KOMODO 48 better in ELO terms. All seemed set fair for a protracted, even struggle in the final but the opening games indicated otherwise. HOUDINI was 5-0 up before KOMODO scored a win with game 39. In reply, HOUDINI won games 40 and 42 before KOMODO scored again in game 49: 7-2 at half time. By this time, it was clear that a suboptimal compilation of the KOMODO code had left it rather down on speed but the rules did not allow recompilation.

Game 52 saw another 'first'. The TCEC9 Superfinal had seen Black unable to defeat White, but with the TCEC10 Superfinal half over, Black did win and, rather against the run of play, KOMODO was the winner. Did this signal a KOMODO come-back?! Not in fact. Although KOMODO was much more competitive in the second half of the match, it still lost the last 50 games 8-7 to HOUDINI leaving the final score at 15-9. This was certainly not the rout initially threatened and all games were keenly contested: average game length was over 63 moves despite TCEC's foreshortening adjudication rules deciding draws and wins. Perhaps more than expected, 24% of the games were decisive and Black again claimed one sixth of the wins as in Stage 2. White does seem to have an intrinsic advantage so should this be compensated for by giving White less thinking time than Black?

The most notable games are not exclusively decisive ones but significant wins include the four by Black (g26.2, g39.1, g40.2 and g49.1), KOMODO's first win (g20.1), and HOUDINI's longest win emerging from an apparent deadlock (g6.2, 134 moves). Game 38.1 was the longest draw at 213 moves.

Congratulation to Robert Houdart, author of TCEC10 champion HOUDINI: his hard work across two years has reaped its reward. This was a remarkable return to the top level after four years by the champion of TCECs 1, 2 and 4. Robert suggested that a Houdini advantage was its greater appreciation of mobility, leading to 'contempt-like play without the contempt factor': something similar was seen in the concurrent ALPHAZERO - STOCKFISH games (DeepMind, 2017).

Fig. 6. Some leading authors: Robert Houdart (HOUDINI); the late Don Dailey, Larry Kaufman and Mark Lefler (KOMODO); (second row) Tord Romstad, Marco Costalba's Github surrogate, Joona Kiiski and Gary Linscott (STOCKFISH).

4   The TCEC10 Rapid and Blitz events: 2 phases, 46 rounds and 552 games each

#	Engine	ELO	Pts	SB	St	Ho	Ko	Fe	Ch	Gi	An	Te	Fi	Jo	Bo	La	Gu	Ni	Ry	Ha	Wa	Bb	Ne	Ar	Va	Hk	Fr	Ga
01	Stockfish 051117	3226	40.0	841.50		=0	1=	11	==	1=	11	=1	1=	11	11	1=	11	11	1=	11	11	=1	11	11	11	11	11	11
02	Houdini 6.03	3192	39.5	832.00	=1		==	==	==	11	1=	11	1=	=1	11	11	1=	1=	11	11	1=	11	11	11	11	11	11	11
03	Komodo 1959.00	3224	36.0	751.75	0=	==		1=	==	=1	=1	==	=1	=1	11	=1	11	=1	1=	11	11	=1	11	11	11	11	==	11
04	Fire 6.2	3114	33.5	661.75	00	==	0=		1=	0=	1=	1=	=1	==	=1	=1	1=	1=	11	11	1=	1=	1=	11	11	11	11	11
05	Chiron 251017	3019	31.0	633.75	==	==	==	0=		01	0=	==	=1	01	=1	01	11	11	==	==	11	=1	11	11	01	11	11	11
06	Ginkgo 2.01	3047	30.0	580.75	0=	00	=0	1=	10		0=	==	==	1=	=1	==	11	==	11	==	11	==	1=	1=	11	11	11	11
07	Andscacs 0.921	3083	29.0	554.00	00	0=	=0	0=	1=	1=		=0	==	=0	1=	0=	==	==	=1	11	==	11	=1	11	11	11	11	1=
08	Texel 1.07a35	2964	28.5	542.25	=0	00	==	0=	==	==	=1		=0	0=	==	=1	0=	1=	=1	==	11	11	11	11	11	11	=1	11
09	Fizbo 1.91	3004	28.0	552.00	0=	0=	=0	=0	=0	==	==	=1		11	0=	10	==	=1	==	11	11	1=	=1	==	11	1=	11	=1
10	Jonny 8.1	3035	25.5	477.25	00	=0	==	==	10	0=	0=	1=	00		=1	0=	==	11	==	==	==	0=	11	11	11	11	=1	11
11	Booot 6.2	3051	25.5	464.75	00	00	00	00	==	=0	=1	==	0=	==		0=	=1	1=	1=	=1	1=	11	11	11	11	11	=1	11
12	Laser 271117	2510	24.0	460.50	0=	00	=0	=0	10	==	=0	=0	01	1=	1=		0=	0=	==	=1	=0	11	1=	1=	1=	1=	11	=1
13	Gull 3	3109	22.5	421.00	00	0=	00	0=	00	00	==	1=	==	==	0=	1=		==	0=	11	=1	11	==	==	1=	10	11	=1
14	Nirvana 2.4	3030	21.5	393.75	00	0=	=0	0=	00	==	==	0=	=0	00	==	1=	==		==	==	=0	10	1=	=1	11	=1	11	1=
15	Rybka 4.1	3083	20.5	371.50	0=	00	0=	00	==	00	=0	=0	==	==	0=	==	1=	==		=0	10	==	0=	==	11	11	=1	11
16	Hannibal 121017	3011	19.5	328.00	00	00	00	00	==	00	00	==	00	==	0=	=0	00	==	=1		==	=1	1=	1=	11	11	=1	
17	Wasp 2.5	2894	18.5	325.25	00	00	00	0=	==	==	==	00	00	==	=0	=1	00	=1	01	==		0=	=0	=1	=1	=1	1=	
18	Bobcat 8	2913	17.5	315.00	=0	00	=0	0=	=0	==	00	0=	0=	1=	00	=0	00	01	==	=0	10		=1	1=	=1	11	1=	
19	Nemorino 3.04a	2780	16.5	263.75	00	00	00	0=	00	0=	=0	00	=0	00	00	0=	==	0=	1=	==	=1	01		==	01	11	=1	11
20	Arasan 20.2	2797	12.5	214.25	00	00	00	00	00	00	00	00	==	00	==	0=	==	=0	0=	=0	=0	==	==		==	==	=1	==
21	Vajolet2 2.3.2	2901	11.5	162.50	00	00	00	00	10	00	00	00	00	00	0=	0=	0=	00	00	0=	=0	0=	10	==		11	1=	11
22	Hakkapeliitta 210416	2660	8.0	134.25	00	00	00	00	00	00	00	00	0=	00	0=	0=	01	=0	00	00	=0	=0	00	00	00		=1	10
23	Fruit 3.2	2688	6.5	116.50	00	00	==	00	00	00	00	=0	00	=0	00	00	00	00	=0	00	00	00	=0	0=	0=	=0		=1
24	Gaviota 1.01	2745	6.5	114.00	00	00	00	00	00	00	0=	00	=0	00	00	=0	=0	0=	00	=0	=0	=0	00	==	00	01	=0	

Fig. 7. The cross-table for TCEC10 Rapid Championship, a round robin of 46 rounds.

N	Engine	Rtng	Pts	SB	Ko	St	Ho	Fe	Ch	An	Jo	Gi	Bo	Gu	Te	Ry	La	Fi	Ha	Wa	Ne	Ni	Bb	Ar	Fr	Va	Hk	Ga
01	Komodo 1959.00	3224	41.5	888.25		=1	==	=1	=1	11	11	11	=1	11	=1	11	11	11	11	11	11	11	11	1=	11	=1	11	11
02	Stockfish 051117	3226	41.5	869.25	=0		1=	1=	11	1=	=1	11	11	=1	11	11	11	11	=1	11	11	11	11	11	11	11	11	11
03	Houdini 6.03	3192	39.5	812.25	==	=0		=1	=1	1=	11	1=	=1	1=	11	11	11	=1	11	=1	11	11	11	11	11	11	11	11
04	Fire 6.2	3114	37.5	759.75	=0	0=	=0		1=	=1	11	11	11	11	=1	11	11	11	=1	11	1=	=1	1=	1=	11	11	11	11
05	Chiron 251017	3019	34.0	640.00	=0	00	0=	0=		=0	11	11	1=	11	11	11	1=	==	=1	11	11	11	11	11	11	11	11	11
06	Andscacs 0.921	3083	31.5	611.00	00	0=	0=	=0	=1		==	=1	1=	==	==	11	11	11	==	11	11	=1	=1	11	==	1=	11	11
07	Jonny 8.1	3035	26.5	473.25	00	=0	00	00	00	==		0=	1=	==	1=	11	1=	10	10	1=	1=	=1	1=	11	11	11	=1	1=
08	Ginkgo 2.01	3047	26.0	467.25	00	00	0=	00	=0	=0	1=		==	11	==	0=	==	11	1=	=1	10	==	11	1=	11	1=	1=	11
09	Booot 6.2	3051	25.0	447.75	=0	00	=0	0=	0=	0=	0=	==		==	==	0=	==	==	=1	11	=1	11	1=	=1	11	=1	11	1=
10	Gull 3	3109	24.5	437.00	00	=0	00	00	0=	==	00	00	10		1=	1=	1=	=0	0=	=1	11	1=	1=	=1	11	=1	11	11
11	Texel 1.07a35	2964	24.0	435.25	=0	00	00	=0	00	==	0=	==	==	01		==	11	01	11	=0	11	=1	1=	01	==	11	11	11
12	Rybka 4.1	3083	23.0	374.25	00	00	00	00	00	00	00	1=	==	0=	==		=1	11	11	==	10	11	==	10	=1	11	11	11
13	Laser 271117	2510	21.0	346.75	00	00	00	00	0=	00	0=	==	0=	0=	==	=0		=0	1=	=1	=1	1=	11	11	1=	11	01	=1
14	Fizbo 1.91	3004	20.5	348.75	00	00	=0	00	00	00	11	00	=1	00	00	0=	1=		0=	1=	=0	==	0=	=0	01	11	1=	
15	Hannibal 121017	3011	19.5	371.25	00	=0	=0	=0	=0	=0	01	00	1=	10	00	0=	1=	0=		=1	10	10	0=	=0	01	11	11	
16	Wasp 2.5	2894	19.0	307.75	00	00	=0	00	0=	00	0=	=0	=0	=0	00	==	=0	==	1=		11	00	==	=1	11	11	=1	11
17	Nemorino 3.04a	2780	17.0	291.75	00	00	00	0=	00	00	0=	01	=0	01	=1	01	=0	0=	=0	00		==	=1	=1	=0	11	1=	=1
18	Nirvana 2.4	3030	16.0	268.75	00	00	00	00	00	=0	=0	=0	00	00	00	=0	=1	=0	11	==	==		1=	=1	=0	11	==	
19	Bobcat 8	2913	15.5	248.75	00	00	0=	0=	00	=0	=0	=0	00	=0	=0	00	00	01	==	=0	00	==		01	1=	10	11	
20	Arasan 20.2	2797	13.5	229.50	0=	00	00	0=	00	00	00	0=	=0	0=	01	00	00	1=	=0	=0	0=	==	==		1=	10	11	
21	Fruit 3.2	2688	11.0	197.75	00	00	00	00	00	==	00	00	0=	00	10	=0	0=	=0	=1	00	=1	=0	=0	==		00	01	01
22	Vajolet2 2.3.2	2901	11.0	185.75	=0	00	00	00	00	0=	00	0=	00	=0	==	00	00	10	00	00	00	=1	==	0=	11		=0	1=
23	Hakkapeliitta 210416	2660	8.0	114.50	00	00	00	00	00	00	=0	0=	00	00	00	00	10	00	00	=0	0=	00	00	01	10	=1		=1
24	Gaviota 1.01	2745	5.5	91.50	00	00	00	00	00	00	0=	00	0=	00	00	=0	0=	0=	00	00	=0	==	00	00	10	0=	=0	

Fig. 8. The cross-table for TCEC10 Blitz Championship, a round robin of 46 rounds.

The TCEC10 Rapid tournament ran 8th-25th December 2017 with a tempo of 15′+10″/m. The Blitz event followed, 26th-29th December, with a tempo of 3′+2″/m. Here, responding to audience requests for 'decisive' games to be played out further, the TCEC10 win rule was discarded and we saw 381 mates on the board, a 69.02% win-rate – significantly more than Stage 1's 59.78%. Both were double round robins of 46 rounds.

While HOUDINI, KOMODO and STOCKFISH continued to occupy the podium, the titles were neatly shared between them. STOCKFISH won the Rapid tournament and KOMODO (having reverted to its '1959.00' version) won the Blitz. FIRE and CHIRON dutifully fell in behind, fourth and fifth in all three tournaments. STOCKFISH as Black mated HOUDINI on move 110 of the very last blitz game, only failing to take first place by 20 Sonnerborn-Berger points, a fitting and dramatic finale to the TCEC10 proceedings.

5   A summary of TCEC10

First, our congratulations to the TCEC10 organisers, to the champions, podium placers and all the competitors wherever they finished in the standings. The event was absorbing throughout and various initiatives, including the choice of server platform, the strategy on openings (Hernandez, 2018) and the use of the Twitch video/chat service, added successfully to proceedings. The work needed to make the event of 1592 games run smoothly is by definition hidden if successful – as it was, so 'kudos' to the TCEC10 team and their suppliers. The event attracted web commentaries from 'GM Thechesspuzzler' (2017) and others: they usefully shed light on many of the most interesting games.

TCEC11 was trailed, discussed and announced during TCEC10 and brought more initiatives. Some 40 engines, ranked on the basis of TCEC10 and known ELOs, are to play in five divisions with promotions and demotions after each stage. Every engine's author can enjoy reasonable goals and closely contested games. Given their success in defining a fair allocation of interesting openings to the TCEC10 engines, Nelson Hernandez and Jeroen Noomen continue in these roles. Rules and logistics also remain unchanged though the lower divisions will have less generous time budgets.

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