

# *The Kasparov-World Game*

Article

Published Version

Haworth, G. and Karrer, P. (2000) The Kasparov-World Game. EG, 9 (136). pp. 107-111. ISSN 0012-7671 Available at <http://centaur.reading.ac.uk/35836/>

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Publisher: ARVES, Holland

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- vi) 12...Kc8?[-12] 13 Rh7  
(Ka5/Ra2/h1/h3/h4/h6[+12])
- vii) 17...Kb8?[-5] 18 Sd7+  
(Rb2+[7]) etc.
- viii) Against ...Qg3+. Two  
lengthening duals: 18 Kc6[+2]  
Qe8+, and 18 Kd5[+8], to which  
the best response is Kb8 19 Kc6  
Qe8+ 20 Kb6 Qg8 and we are back  
at move 12, though Black may also  
play 18...Qe8[-6].
- ix) 19...Kb8?[-2] 20 Sd7+  
(Rb4/g4[+4]) Kc8 21 Rc4+ Kb7  
22 Rb4+ Kc6 23 Rb6+ Kd5 24  
Sf6+. But after White's next Black  
is forced to play ...Kb8 after all.
- x) Or 21...Kb7?[-1], Ka7/a8?[-2]  
reaching the same positions a move  
or two sooner.
- xi) 23...Ka6?[-2] 24 Sb8+ and 25  
Sc6+ explains why wR must be on  
the 3rd or 4th rank. We already  
saw 23...Kc6?[-2] 24 Rb6+.
- xii) Kb8[-5] 8 Sd7+

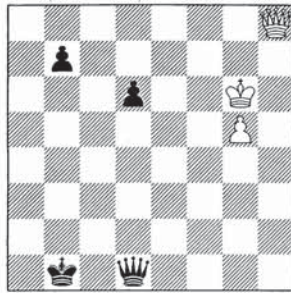
*THE KASPAROV-WORLD GAME*  
Guy Haworth and Peter Karrer

Kasparov-World, initiated by  
Microsoft and also sponsored by  
First USA, was a novel correspon-  
dence game played on the World  
Wide Web at one ply per day. The  
*World Team* was led by moderator  
Danny King and four, talented  
young coaches: GM Etienne Bacrot  
(France, 16), FM Florin Felecan  
(USA, 19), Irina Krush (USA, 15)  
and WIM Elisabeth Pähtz  
(Germany, 14). They each indepen-  
dently nominated a move and the  
*World Team* made its choice by

democratic vote.

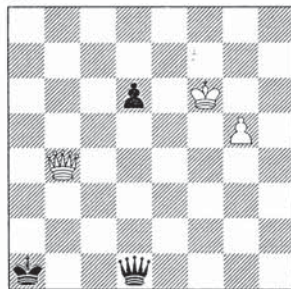
This was the first time that any  
group had attempted to form on the  
Web and then solve shared  
problems against fixed, short-term  
deadlines. The author first became  
involved in his role as a Web con-  
sultant, observing the dynamics and  
effectiveness of the group. These  
are fully described, together with  
observations on the technology  
contribution, in Marko *et al.*  
To move swiftly to the endgame,  
suffice it to say that the *World  
Team* far exceeded initial expect-  
ations and reached move 51 and  
**4000.12** position *K1* which is now  
a computer target. Black is fighting  
for a draw, and without the Black  
Pawns *has* a draw. This had been  
foreseen for three weeks, during  
which time the *World Team* had  
requested an **8000.00** endgame  
table (EGT). To everyone's  
surprise, two EGTs were created  
within days, independently drawn  
up to the Distance-to-Conversion  
(DTC) and Mate (DTM) metrics  
respectively (Nalimov *et al.*). Elkie  
and Stiller provided information to  
confirm that the two new EGTs  
agreed with Stiller's EGT. *World  
Team* thoughts turned to EGTs for  
**5000.01** and **4000.11**.

K1



g6b1 4000.12 after 50...d1=Q

K2



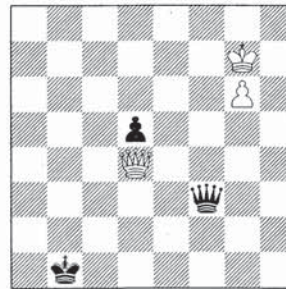
f6a1 4000.11 after 55.Qxb4

Serious analysts in the *World Team*, including FIDE World Champion Khalifman, had carried the vote thus far. However, the analysts' 51...Ka1 and 52...Kc1 lost out to 51...b5 and 52...Kb2, seriously increasing Black's difficulties. The game continued to **4000.11** positions *K2* and *K3*. At this point, the technology that had empowered suddenly depowered, a familiar risk in life today. Krush's essential recommendation of 58...Qf5, was delayed by e-mail glitches and then not displayed to the voters by

Microsoft. They saw only one coach for 58...Qf5 against two for 58...Qe4 which duly won. The *World Team* bulletin board already knew this was a loss and the rest is history.

To general consternation, Microsoft refused to rerun the vote, the media ran the story and the *World Team* soon resigned.

K3



g7b1 4000.11 after 58.g6

Post-hoc analysis proceeded by hand and by computer. Peter Karrer (2000), in a feat of programming, which the first author salutes, produced subset-EGTs for  $KQKQP \approx$  and  $KQPKQP \approx$ , the ' $\approx$ ' denoting a variant of chess with promotion option  $P=Q$  only. Karrer (2000) shows that only 0.09% of  $KQKQP(d2)$  positions change value if  $P=S$  is allowed as well as  $P=Q$ . One might conjecture that the % is much less with the P on d3, d4.... Practical players, if not theorists, will accept information this close to perfection. Peter's *Distance to Mate* (DTM)  $KQPKQP \approx$  lines are given here

with that caveat and in that spirit.

Below, we list and annotate:

a) the game as played,

b) an M-optimal line (minimaxing DTM) after Black's resignation,

c) a 58...Qf5 line, which Ken Regan believes, from Kasparov's immediate post-game analysis, was the most likely continuation, and

d) the 'endgame that got away': fitting, M-optimal but imaginary.

58...Qf5 still leads to a well deserved but much deeper win: **4000.10** arrives on move 84, not move 68. Kasparov described this game as "phenomenal ... the most complex in chess history."

This is an absorbing QP-finale for endgame enthusiasts. They will continue to benefit from the work of the web-enabled teams formed during the game. New 6-man tables and evaluation services are available from Nalimov, Thompson and Wirth as in the references. The author and others are contemplating ancillary projects and data-mining software to help find the finest gems to present in attractive problem and study settings.

Notation:

' *unique M-optimal move,*

" *literally-unique value-preserving move;*

[...] *equi-optimal move(s),*

<sup>n</sup> *one of n unlisted equi-optimal,*

<sup>v</sup> *value changing move,*

-*d* *lost depth of d moves*  
and {...} *commentary.*

a) with Krush/Regan annotation.

**G. Kasparov -World:** The World Wide Web, 21<sup>st</sup> June - 22<sup>nd</sup> October, 1999, ECO B52, 1-0.

1.e4 c5 2.Sf3 d6 3.Bb5+ Bd7

4.Bxd7+ Qxd7 5.c4 Sc6 6.Sc3 Sf6

7.0-0 g6 8.d4 cxd4 9.Sxd4 Bg7

10.Sde2 Qe6! 11.Sd5! Qxe4

12.Sc7+ Kd7 13.Sxa8 Qxc4

14.Sb6+ axb6 15.Sc3! Ra8 16.a4!

Se4! 17.Sxe4 Qxe4 18.Qb3 f5!

19.Bg5 Qb4! 20.Qf7 Be5 21.h3!

Rxa4! 22.Rxa4 Qxa4 23.Qxh7

Bxb2 24.Qxg6 Qe4 25.Qf7 Bd4

26.Qb3 f4! 27.Qf7 Be5 28.h4 b5

29.h5 Qc4! 30.Qf5+ Qe6 31.Qxe6+

Kxe6 32.g3 fxg3 33.fxg3 b4!

34.Bf4!? Bd4+ 35.Kh1! b3 36.g4

Kd5! 37.g5 e6! 38.h6!? Se7 39.Rd1

e5 40.Be3 Kc4 41.Bxd4 exd4

42.Kg2 b2 43.Kf3 Kc3 44.h7 Sg6

45.Ke4 Kc2 46.Rh1 d3 47.Kf5

b1=Q 48.Rxb1 Kxb1 49.Kxg6 d2

50.h8=Q d1=Q {K1, **4000.12**}

51.Qh7! b5? 52.Kf6+ Kb2?

53.Qh2+ Ka1 54.Qf4 b4?? {losing

in theory and in practice: Qd5

was required} 55.Qxb4 {K2, **4000.11**}

Qf3+ 56.Kg7" d5 57.Qd4+!" Kb1'

58.g6" {K3} Qe4? [Qf5'] -39

59.Qg1+' Kb2 60.Qf2+' Kc1

[Ka1'] -8 61.Kf6' d4' 62.g7' 1-0.

**b) 62.g7'** {and now} Qc6+'

63.Kg5' Qd5+' 64.Qf5' Qg2+'

65.Qg4' Qd5+' 66.Kf4' Qg8'

67.Qg1+' Kc2' 68.Qxd4'

{**4000.10**} 68...Qf7+' 69.Kg3'

Qb3+' 70.Kh4 [Kg2] Qg8' 71.Qf6

[Qg4] Kb1<sup>3</sup> 72.Qg6+' Ka1<sup>4</sup> 73.Kh3

[Kg3] Ka2 [Kb2] 74.Kh2 [Kg2]

Kb2<sup>3</sup> 75.Qg4 [Kg1] Qb8+<sup>8</sup> 76.Qg3'

Qg8' 77.Kg1' Kb1<sup>3</sup> 78.Qg2' Ka1

[Kc1] 79.Qf1+ Kb2' 80.Qf8' Qa2<sup>6</sup>  
 81. g8=Q [Qf2+] {5000} Qb1+'  
 82.Qf1' Qxf1+' 83.Kxf1' {1000}  
 Kc3' 84.Qe6<sup>4</sup> Kb2<sup>5</sup> 85.Qc6<sup>5</sup> Ka1<sup>5</sup>  
 86.Qb7<sup>5</sup> Ka2° 87.Ke2' Ka1 [Ka3]  
 88.Kd3<sup>3</sup> Ka2° 89.Kc3<sup>2</sup> Ka1<sup>2</sup>  
 90.Qb2# 1-0.

c) Ken Regan's conjectured 'most likely 58...Qf5 game continuation'.  
**58...Qf5'** 59.Kh6' Qe6' 60.Qg1+'  
 Kb2 [Ka2, Kc2] 61.Qf2+' Kb1'  
 62.Qd4' Kc2! -6 (62...Ka2'  
 63.Kg5' Qe7+' 64.Qf6' Qe3+'  
 65.Qf4" Qg1+' 66.Kf6' Qb6+'  
 67.Kg7! -7 Qe6' 68.Qf6! -10  
*seemed dangerous for Black*)  
 63.Kg5' Qe7+' 64.Qf6?! -12 {a-  
 lready on the slippery slope} Qe3+'  
 65.Kg4? (65. Qf4', 65. Kh5)  
 Qg1+"! 66.Kf5<sup>5</sup> d4" 67.g7<sup>18</sup> d3"  
 68.Qc6+<sup>15</sup> Kd2" 69. Qg6<sup>17</sup> Qc5+"  
 70.Ke4<sup>5</sup> Kc1"!! 71.g8=Q<sup>13</sup> d2" {no  
 checks and 72. Qg5/Qh6 leaves Bl.  
 with a perpetual check} ½-½!

d) **58. g6"** {and now} Qf5'  
 59.Kh6' Qe6' 60.Qg1+' Ka2 [Kb2,  
 Kc2] 61.Qf2+' Kb1' 62.Qd4' Ka2'  
 63.Kg5' Qe7+' 64.Qf6' Qe3+'  
 65.Qf4" Qg1+' 66.Kf6' Qb6+'  
 67.Kf7' Qb7+' 68.Ke6' Qc8+'  
 69.Kf6' Qd8+' 70.Kf5' Qc8+'  
 71.Kg5' Qc3' 72.Qh2+' Ka1'  
 73.Qe2' Kb1' 74.Qf2' Qc1+'  
 75.Kg4' Qc3' 76.Qf1+' Kb2 [Kc2]  
 77.Kf5' Qc7' 78.Qe2+' Kb1'  
 79.Qd3+' Ka2' 80.Qa6+' Kb3'  
 81.Qe6' Ka2' 82.Qf7' Qc2+'  
 83.Ke6" Qe2+' 84.Kxd5'  
 {4000.10} Ka3' 85.Qa7+' Kb3'  
 86.Qb6+' Ka3' 87.Qd6+' Ka4'  
 88.Qd7+ [Qc6+] Ka3' 89.g7'  
 Qd1+' 90.Kc6' Qa4+' 91.Kc7'

Qa7+' 92.Kd8' Qb8+' 93.Ke7'  
 Qe5+' 94.Kf7' Qf4+' 95.Kg6'  
 Qg3+' 96.Kf6' Qh4+' 97.Ke5'  
 Qg3+ [Qg5+] 98.Kd4' Qg1+  
 [Qf2+, Qf4+, Qh4+] 99.Kc4'  
 Qc1+' 100.Kb5' Qb2+' 101.Kc6  
 [Ka6] Qc2+ [Qc3+] 102.Kb7 [Kb6]  
 Qb3+ [Qe4+] 103.Ka6' {a 14 move  
 K-walk} Qg8' 104.Qd4' Ka2'  
 105.Kb5' Qe8+' 106.Kb4' Qe1+'  
 107.Kc4' Qe2+' 108.Kd5' Qb5+'  
 109.Ke6' Qe8+' 110.Kf6' Qc6+'  
 111.Ke5' Qe8+' 112.Kf4' Qf7+'  
 113.Kg3 [Ke3] Qg6+' 114.Kh3<sup>3</sup>  
 Qf5+<sup>5</sup> 115.Kh4 [Kg2] {an 11 move  
 K-walk} Qf7 [Qh7+] 116.Qd2+'  
 Ka1<sup>3</sup> 117.Qe1+ [Qd1+] Ka2'  
 118.Qe2+' Kb3' 119.Qg4' Qg8'  
 120.Kh3 [Kg3] Ka3 [Kc3]  
 121.Kg3' Ka2<sup>3</sup> 122.Kg2 [Kf2]  
 Qd5+<sup>7</sup> 123.Kg1' Qc5+ [Qg8]  
 124.Kh1" Qc1+' 125.Qg1" Qh6+'  
 126.Qh2+" Qxh2+' 127.Kxh2°  
 {0000.10} Ka3<sup>2</sup> 128.g8=Q<sup>4</sup> {1000}  
 Kb4' 129.Qe8<sup>11</sup> Kb3<sup>4</sup> 130.Qc6<sup>5</sup>  
 Ka2<sup>4</sup> 131.Qb7<sup>6</sup> {and mate on  
 m137} 1-0.

#### Acknowledgements

The *World Team's* endgame play was supported by information from the following, in αβ-order and with apologies for omissions: Noam Elkies, Rob Hyatt, Thomas Lincke, Peter Marko, Carter Mobley, Eugene Nalimov, SmartChess Online, John Tamplin and Christoph Wirth. Post-game computation and analysis was by Peter Karrer, Irina Krush and Ken Regan.

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- Thompson, K. (2000). <http://cm.bell-labs.com/cm/cs/who/ken/chesseg.html> 6-man EGT maximals, mutual-zugs and statistics.

### SIX-MAN ORACLE SURVEY, 1 Guy Haworth

This is a list in GBR order of existing 6-man endgame tables (EGTs) created by Nalimov (DTM, Distance to Mate) or Thompson (DTC, Distance to Conversion). An <sup>s</sup> indicates a past result by Stiller only. *max ww* denotes the maximum depth of wtm 1-0 positions in the endgame; *max bl* denotes the maximum depth of btm 1-0

positions. *max ww* and *max bl* are listed for both the DTM and DTC metrics.

Note the counter-intuitive relative values of DTM's *max ww* and *max bl* where these are in italics and the GBR code is marked <sup>nb</sup>. It is not always true that *bl* = *ww* or *ww*-1 as for DTC: these figures may not correspond to consecutive positions. For example, **1100** has DTM *max ww* = 6 but {Ka1 Qe6 Rf7 / Ke5 b}sets DTM *max bl* = 16: 1...Kxe6 **{0100}**. The first move converts to a maximal subgame position, always the case where the DTM figures are highlighted here.

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