When I first subscribed to Word Ways and enquired about word squares with diagonal words, Jeff Grant commented that such items were rare and hard to find. That is true, but here is a rather belated reply!

An eight-square is a square array of eight different 8-letter words placed in rows, so that column 1 is the same word as row 1, column 2 the same as row 2, and so on. Contrary to the opinion of one soi-disant expert, words of length 1 to 7 are inadmissible. All word squares necessarily have a palindromic NW-SE diagonal, and in the squares below, this palindrome is a word. In the squares below, the diagonal starting on the NW corner is also a word, as is the diagonal starting in the SE corner: alert readers will spot the implication that the word on this diagonal is a reversible word. As palindromic words and reversible words are scarce, so are all-diagonal squares. In the case of 9-squares, I found squares with all three diagonals, but never in the same square. I conclude that the squares below are the largest all-diagonal squares ever published. The squares in this article are one-tenth as common as ten-squares.

In fact, out of over three-quarters of a million 8-letter words, there were just 496 reversible words (you could say 2 x 248), and only 170 palindromes. The squares below were selected from 212, with a bias to dictionary words. I could not construct a square without proper nouns. I found no squares starting F, J, O, P, Q, or U-Z at the top left. The squares on the following pages are in order of top row word within palindrome. The most popular palindromes were: AAAAAAAAA 149, HRRRRRRR 17, SAASSAAS 11, EEEEEEEE 9, SIISSIIS 5, SNERNRENS 5, ANNEENNA 3, ANASSANA 2, SEISSIES 2, with ANNAANNA, ANTEETNA, KNITTINK, LIIIIIL, MMMMMMM, SFISSIFS, SHALLAHS, SNIBBINS, TUUTTUUT occurring just once each. Following each square are the diagonals, as read from NE or SW, NW, and SE. The square below is one of a few that has place names as ten of the eleven items (the palindrome being the exception).

### Place names

- **MYSATIYA**
  - Mys Atiya, Bulgaris, 42°28, 27°35
- **YIALOVAS**
  - (Potamos) Yialovas, Greece, 36°57, 21°42
- **SALANANG**
  - (Phou) Salanang, Laos, 19°47, 102°35
- **ALALANDA**
  - *(Tawil) al-'Alanda, Libya, 33°03, 11°36
- **TONAIJAR**
  - (Ouled) Tonaijar, Morocco, 34°30, -5°49
- **IVANJSKI**
  - Ivanjski (Bok), Croatia, 45°20, 16°44
- **YANDAKLY**
  - *(Rodnik) Yandakly, Turkmenistan, 37°49, 64°38
- **ASGARIYE**
  - (Chah-e) 'Asgari-ye (Kamran), Iran, 31°50, 54°26
  * or **ALALANGA**
  - (Quebrada) Alalanga, Peru, -14°39, -74°14
  † or **YANGAKLY**
  - (Kolodets) Yangakly, Turkmenistan, 38°21, 64°14
- **AAAAAAA**
  - Pa, a Brooklyn business name
- **MILLISLE**
  - Millisle, UK, 54°36, -5°32
- **ELSILLIM**
  - Naqb el-Sillim, Egypt, 27°46, 28°33

Place names are from the NIMA database. ITIS is the Integrated Taxonomic Information System of the USDA (Dept. of Agriculture). Pa is the Palindromicon. Latitude precedes longitude.

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The following three look different, but have the same diagonals:

D A S G U P T A  author of History of Indian Philosophy, US Census
A R P A A L A N  Arpaalan, Turkey, 40°22, 37°52
S P A N I A R D  OED
G A N G A N T A  Ganggalta, 14°03, -10°45
U A I A N A R I  Cachoeira Grande de Uaianari, Brazil, 0°41, -64°13
P L A N A E I N  Greek to wander, hence "planet"
T A R T R I T E  OED
A N D A I N E S  Saint-Michel-des-Andaines, France, 48°35, -0°25

AAA AAAAA  Pa, a Brooklyn business name
D R A G N E T S  OED tip 2, 1955q
S T E N G A R D  Stengard, Sweden, 57°45, 14°42

D O M B O S H A  Dombosha, Zimbabwe, -19°55, 31°34
O R B E R T A L  Orber Tal, Germany, 50°15, 9°21
M B A N G A R I  Mbangari, South Africa, -24°12, 31°38
B E N G A L I E  (Baie du) Bengalie, Vietnam, 20°44, 107°00
O R G A N M A N  OED organ 8, 1626q
S T A L M E N T  OED
H A R I A N T E  OED verme
A L I E N T E S  OED turn 25, 1526q

AAA AAAAA  Pa, a Brooklyn business name
D R A G N E T S  OED tip 2, 1955q
S T E N G A R D  Stengard, Sweden, 57°45, 14°42

D U N S M A L A  Dunsmala, Sweden, 56°32, 14°46
U R T A A R A L  (Ostrov) Urta-Aral, Kazakhstan, 45°23, 73°52
N T A N T A M A  Ntantama, South Africa, -27°09, 30°20
S A N G A M I N  (Dahane) Sangamin, Afghanistan, 34°10, 63°32
M A T A N A N I  Matanani, Cameroon, 4°59, 8°55
A R A M A E A N  OED
L A M I N A T E  OED
A L A N I N E S  OED

AAA AAAAA  Pa, a Brooklyn business name
D R A G N E T S  OED tip 2, 1955q
S T E N G A R D  Stengard, Sweden, 57°45, 14°42

The following three look different, but have the same diagonals:

S H A M M A S A  (Wadi Ganis esh) Shammasa, Sudan, 15°17, 34°25
H A L B A D A N  Halbadan, Finland, 62°51, 21°07
A L B A H A C A  Web2
M B A B A R A M  in the Australian South-East Marine Region*
M A H A A A L I  Mahaa Ali, Yemen, 14°49, 43°33
A D A R A T A R  Ot 2 after adorative ST
S A C A L A I T  OED sac-à-lac
A N A M I R T A  Anamirta cocculus, Chambers coccus

*http://aqua.hba.marine.csiro.au:7373/nddq/owa/ndd_search.Browse_Citation?txtSession=114
AAA AAAAA  Pa, a Brooklyn business name
S A B B A T I A  OED
A I T A B B A S  Ait Abbas, Algeria, 36°33, 4°13
<table>
<thead>
<tr>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smabacka, Sweden</td>
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<tr>
<td>Mala Khan, Afghanistan</td>
<td>30°29, 63°23</td>
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<td></td>
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<tr>
<td>Bai Banda, Pakistan</td>
<td>34°19, 73°01</td>
</tr>
<tr>
<td>Akcaagil, Turkey</td>
<td>40°12, 38°04</td>
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<tr>
<td>Chang-ts’o, Taiwan</td>
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<td>Kandi Sim, Pakistan</td>
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<td>-11°49, -76°15</td>
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<tr>
<td>Stabacka, Finland</td>
<td>62°24, 21°21</td>
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<tr>
<td>Talaghan, Iran</td>
<td>36°23, 50°25*</td>
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<tr>
<td>or Talakhan, Russia</td>
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<tr>
<td>or Akcaagil, Turkey</td>
<td>40°12, 38°04</td>
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<td>Estrelia, Colombia</td>
<td>3°46, -76°27</td>
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<tr>
<td>OED occasional 1, 1563q</td>
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<tr>
<td>Tettan-To, Russia</td>
<td>68°29, 70°36</td>
</tr>
<tr>
<td>rat-eaten, OED rat c</td>
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<td>El Aalali, Lebanon</td>
<td>34°12, 35°46</td>
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<tr>
<td>OED limtel 1, 1601q</td>
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<td>Tellet, Algeria</td>
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<td>Anna Anna, Pa, personal name, my twins!</td>
<td></td>
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<tr>
<td>OED ettle 1a, 1400q</td>
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<td>OED</td>
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<tr>
<td>Al-Masna’a, Oman</td>
<td>23°46, 57°38</td>
</tr>
<tr>
<td>Liantang, China</td>
<td>32°52, 118°38</td>
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<tr>
<td>Manoendi, Indonesia</td>
<td>-0°38, 135°22</td>
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<tr>
<td>Ano Aetos, Greece</td>
<td>38°01, 24°27</td>
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<td>Nantiria, Mozambique</td>
<td>-13°26, 39°22</td>
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<td>US Census</td>
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<tr>
<td>Agisgang, Philippines</td>
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<td>Anne Enna, Pa, personal name</td>
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<tr>
<td>Ain Ar Rag, Western Sahara</td>
<td>25°50, -13°17</td>
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<td>Garringia</td>
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</tbody>
</table>

- STABACKA: Smabacka, Sweden, 64°27, 20°49
- MALAKHAN: Mala Khan, Afghanistan, 30°29, 63°23
- ALBICANT: OED
- BAI BANDA: Bai Banda, Pakistan, 34°19, 73°01
- AKCAAGIL: Akcaagil (Koyu), Turkey, 40°12, 38°04
- CHANGTSO: Chang-ts’o, Taiwan, 25°02, 121°07
- KANDISIM: Kandi Sim, Pakistan, 26°43, 69°04
- ANATALOMA: (Cerro) Antaloma, Peru, -11°49, -76°15
- or TALAKHAN: Talakhan, Russia, 64°23, 119°57
- or Akcaagil (Koyu), Turkey, 40°12, 38°04
- ESTRELA: (La) Estrelia, Colombia, 3°46, -76°27
- STEALING: OED occasional 1, 1563q
- TETTANTO: (Ozero) Tettan-To, Russia, 68°29, 70°36
- RATEATEN: rat-eaten, OED rat c
- ELALALI: El Aalali, Lebanon, 34°12, 35°46
- LYNTALLS: OED limtel 1, 1601q
- INTELLET: (Oued) i-n- Tellet, Algeria, 28°44, 7°37
- AGONISTS: OED
- ANNAANNA: Anna Anna, Pa, personal name, my twins!
- ETTELLES: OED ettle 1a, 1400q
- SELLETTE: OED
- ALMASNA: Al-Masna’a, Oman, 23°46, 57°38
- LIANTANG: Liantang, China, 32°52, 118°38
- MANOENDI: (Kaap) Manoendi, Indonesia, -0°38, 135°22
- ANOAETOS: Ano Aetos, Greece, 38°01, 24°27
- STEERING: OED
- NANTIRIA: Nantiria, Mozambique, -13°26, 39°22
- ANDONIAN: US Census
- AGISGANG: Agisgang (River), Philippines, 13°30, 120°35
- ANNEENNA: Anne Enna, Pa, personal name
- AINARRAG: Ain Ar Rag, Western Sahara, 25°50, -13°17
- GARRANIA: (Bir el) Garrania, Libya, 31°10, 15°04
Two squares, with diagonals similar to some previous ones.

**STOWINGE** OED stow, 1641q

**TUVANGEN** Tuvangen, Sweden, 59°43, 14°47

**OVERSEME** OED

**WARRENER** OED

**INSEEING** OED

**NGENINGI** Ngeningi, Tanzania, -5°20, 39°46

**GEMENGED** OED white, 1000q (g has Anglo-Saxon form)

**ENERGIDS** OED energid

**SUERENES** OED swereness 1, 1456q

**SENEREUS** Senereus, Romania, 46°20, 24°39

**AMTASHAH** Amtashah, Sudan, 10°49, 24°54

**MIANPARA** Mianpara, Bangladesh, 23°20, 90°04

**TANGURMI** Tangurmi, Nigeria, 10°42, 12°10

**ANGARBH** Angarbah, Pakistan, 35°47, 71°58

**SPURRERS** OED spurrer

**HARBERIE** OED

**ARMARIAN** OED

**HAIHSENG** Hai-hseng, Burma, 21°34, 98°00

**HRRRRRRH** hr-r-r-r-r-rh, Pa, EDD

**AINNARRAG** Ain Ar Rag, Western Sahara, 25°50, -13°17

**GARRANIA** (Bir el) Garrania, Libya, 31°10, 15°04

**SHABBABIK** Shababik, Israel, 33°03, 35°37

**HELOUANI** Karm el Helouani, Syria, 35°31, 36°05

**ALLUSION** OED

**BOULTERS** OED boulter

**AUSTERNE** OED austere

**BAIERTAL** Baiertal, Germany, 49°41, 9°45

**INORNATA** Grindelia inornata angusta, ITIS plant

**KINSELAE** (Quercus) kinselae (glandulosa), ITIS plant

**KNITTINK** Pa

**SEELLETTE** OED

**ETTELLES** OED ettle 1a, 1400q
NGKESILL Ngkesill, Palau, 7°13, 134°23
GIANTRIE OED giantry, 1611q
KA CHAI N A Kachaina, Niger, 14°52, 8°20
ENHOLDEN OED pyrite 1, 1567q
STALLIAN OED stallion
IRIDIATE OED
LINEATUS OED hen-hawk. Buteo lineatus is the blue hen-hawk
LEANNESS OED
LIII II LI liil‘iil’, Pa, Yapese
NICOLAUS OED boon 1, 1641q: Nicolaus Damascenus
SUALOCIN Web2 Sualocin
GLASTIGS OED glaidtig, 1925q
LASTAREH (Kuh-e) Lastareh, Iran, 33°44, 51°15
ASTERINA Asterina, Web2, under Asterinidae (starfish genus)
STENSDAL Stensdal, Norway, 63°32, 9°36
TARSIIDA perhaps misspelling for Tarsiidae, but see below*
IRIDITIS OED
GENADISH Genadish, Iran, 30°42, 56°11
SHALASHA Shalasha, Sudan, 10°31, 26°41
*P. D. Jenkins, Catalogue of Primates in the British Museum (Natural History) and elsewhere in the British Isles, Part 4, Suborder Strepsirrhini, including the subfossil Madagascan lemurs and family Tarsiida. [British Museum (Natural History), London, 1987]
SEISSIES Pa, plural of place in Ethiopia
GATNITSA Gatnitsa, Russia, 54°36, 37°23
ASTINTAG Astintag, China, 38°48, 89°12
S P I L L E T S OED spillet
PEN LIGHT OED
INNUFARA In-Nufara, Malta, 36°02, 14°16
LLUN LUN (Cerro) Llunllun, Peru, -11°29, -76°34
LIFELEASE OED lifeless 1, 1000q
EGALANTE Egalante, Mozambique, -17°19, 37°36
THRUSTEN OED thring A2, 1400q
STANEENS Dict. of Newfoundland Eng, 2d ed, 1982 + 1990 sup
SHALLAHS Pa, plural of family name
SENNENES Sennenes, Norway, 70°21, 22°27
SENNENES Sennennes, Belgium, 50°18, 4°53
GLOTTONS OED glotton
LAURELIA Laurelia novæ-zelandiae, OED pukatea
OUTASITE OED outasight
TRANSAVAL Transval, Brazil, -4°23, -39°11
TESSIERA now known as Spermacoce, family Rubiaceae
OLIVETAN Olivetan, OED
NITARASI Nitar Asi, Bangladesh, 24°57, 90°28
SAELANIA Saelania jamesii tauricum, ITIS plant
SISSIIS siissii’s, Pa, possessive of Tuvaluan verb
GATNITSA Gatnitsa, Russia, 54°36, 37°23
ASTINTAG Astintag, China, 38°48, 89°12
<table>
<thead>
<tr>
<th>Location</th>
<th>Description</th>
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<tr>
<td>AMPUSSIS</td>
<td>Orthoporus ampussis nagurensis, ITIS animal</td>
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<tr>
<td>MIONHANA</td>
<td>Lago Mionhana, Mozambique, -26°41, 32°22</td>
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<tr>
<td>PONGUENE</td>
<td>Ponguene, Congo, Dem Rep, -4°12, 16°01</td>
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<td>UNGARTER</td>
<td>OED</td>
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<tr>
<td>SHURRERY</td>
<td>Loch Shurrery, UK, 58°29, -3°38</td>
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<td>SAETERMO</td>
<td>Saetermo, Norway, 69°16, 18°13</td>
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<td>INNERMAN</td>
<td>inner man, OED man, 3b</td>
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<tr>
<td>SAERYONG</td>
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