Nobel Prize laureates and inexplicable statistical variations

James Gunasekera

This astroanthropological effect was first observed for Nobel Prize laureates in 2003, soon after the Trans-Neptunian object Quaoar was discovered in 2002, but the standard deviation was not calculated in that study, so it was not stated if the observed value is within three standard deviations of the mean value or outside.

In this study, the mean value is computed using a random numbers generator: for each of the 726 dates of birth, the (*Date+Random*) moment is added to the control group being formed, where Random is between -1024 and +1023 days.
Ten million control groups are formed this way and then used to calculate mean value and standard deviation (though both show little variation after first 100'000 tests)

Source code of the program is only 94 lines long, so it is included as Appendix 1.
All databases are downloadable, format of each line is:
year name; date; time; time difference with GMT; place of birth; comments.
It is important that astrologers do not use Quaoar, but some of the methods used in this study were derived from European astrological approaches.

For the criterion with the standard set of seven celestial objects,
Quaoar.90.Sun,Moon,Mercury,Venus,Mars,Jupiter,Saturn:
mean value=273.221, standard deviation=12.914, observed value=329 (this is +4.32 standard deviations)
In other words, if the angle between ecliptic longitudes of Quaoar and any of the seven aspecting objects is 90+-6 degrees, the probability that a Nobel Prize laureate is born at this time is much higher.
For example, on 26.09.2009 at 17:00 GMT the angle between Quaoar and Jupiter is exactly 60.75 degrees, Mercury is inside sector [-96,-84] from Quaoar, Uranus is in sector [+84,+96].
This is not astrology. While astrology is interpretations plus predictions, this study is examination of a strong correlation, and then examination of similar data.

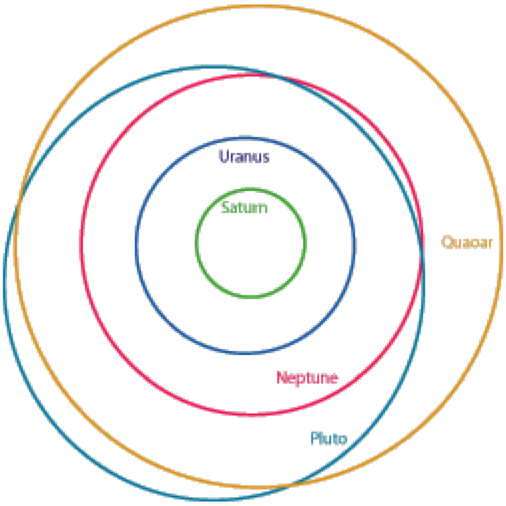
If only four objects with the biggest gravitational influence on Earth are used, for the criterion Quaoar.90.Sun,Moon,Venus,Jupiter :
mean value=177.357, standard deviation=11.537, observed value=243 (+5.690 standard deviations)
This criterion will be referred to as **the Quaoar criterion**. It is satisfied if the angle between ecliptic longitudes of Quaoar and any of the four aspecting objects is 90+-6 degrees in the geocentric system.
Another reason why this set of four objects is special:
Sun and Moon exert the biggest gravitational influence on **Earth**,
Jupiter and Venus exert the biggest gravitational influence on **Sun**.
But this certainly does not mean that correlation is caused by gravity directly. As shown below in item 6, the (Quaoar plus 90 degrees) point is much more important than (Quaoar minus 90 degrees), so the observed correlation with Quaoar position may be caused by the fact that Quaoar's cycle correlates with another yet unknown Solar or Lunar cycle. It is well known that some astronomical conditions do influence human health[1] [2]. But the possibility of influence on long-term physiological and psychological characteristics since the moment of birth is still under question[3] and there is almost no research in this field. Since no strong scientific evidence is acknowledged, it is widely believed that there is absolutely no such

possibility.

Quaoar is one of the ten biggest TNOs:

Name or designation		Perihelion,	Aphelion,a.e.	e	Incl.	Radius,km
(136199)	Eris	38.395	97.524	0.435	44.0	1300
(134340)	Pluto	29.719	49.719	0.252	17.1	1195
(136472)	Makemake	38.016	52.752	0.162	29.0	750
(90377)	Sedna	76.312	927	0.848	11.9	745
	2007 OR10	33.662	101	0.500	30.7	600
(136108)	Haumea	34.629	51.539	0.196	28.2	575
(84522)	2002 TC302	39.169	71.488	0.292	35.0	573
	2005 QU182	36.924	191	0.676	14.0	525
(50000)	Quaoar	41.816	45.246	0.039	8.0	500
(90482)	Orcus	30.277	48.057	0.227	20.6	473

As you can see from the table, other nine TNOs have bigger aphelion distance, while both inclination and eccentricity are much bigger. Only Quaoar looks like a regular planet more or less.



There are a few more facts to consider before concluding whether the observed value for the Quaoar criterion is so big because of a fortuity or not.

1. Other time of birth?

"Natural, non-induced labor onset in women is well known to peak during night hours".

If time of birth is set to 6:00 instead of 12:00 for each of the 726 natal data:

mean value=177.352, standard deviation=11.532, observed value=246 (+5.95 standard deviations)

If every birth time is set to 3:00:

mean value=177.357, standard deviation=11.534, observed value=245 (+5.86 standard deviations)

The problem is that uncertainty of birth time becomes asymmetrical: not plus-minus 12 hours, but -6 ... +18 hours.

This issue must be checked as well: if every time difference (with GMT) is set to +1 if it is zero or positive, and to -5 if it is negative,

mean value=177.279, standard deviation=11.530, observed value=241 (+5.53 standard deviations)

2. Other ranges for the Random item?

Between -512 and +511 (the program runs faster):

mean value=179.988, standard deviation=11.449, observed value=243 (+5.504 standard deviations)
Between -2048 and +2047 (the program runs slower):
mean value=177.053, standard deviation=11.553, observed value=243 (+5.708 standard deviations)

3. Other aspects?
180 degrees, 90 degrees and 45 degrees are considered "hard" or "stressful" aspects in the majority of astrological approaches (while 120 and 60 degrees are "harmonious" and "beneficial"). Zero degrees must be included to form a complete set, although *"whether the union is to be regarded as "positive" or "negative" depends upon what planets are involved"*:
360/1 = 360 or 0 degrees - conjunction,
360/2 = 180 degrees - opposition,
360/4 = 90 degrees - square,
360/8 = 45 degrees - semi-square.
Replacing 90 in the Quaoar criterion with
0: +1.591 standard deviations
180: +1.466
45: +0.755
120: -2.058
60: +0.487
Thus, correlation is similar **for all four aspects 360/N** where N is a power of 2.
Actually, unlike '*major*' aspects 1/1, 1/2, 1/3 and 1/4 with tolerance 4...8 degrees in most approaches, semi-square is considered a '*minor*' aspect with tolerance much less than 6 degrees: between 1 and 3 degrees.
45 and tolerance=3: +0.912 standard deviations
45 and tolerance=2: +0.715 standard deviations

4. Other sets of aspecting objects?
If Moon is excluded: +5.42 standard deviations
If Venus is excluded: +4.92
If Sun is excluded: +4.91
If Jupiter is excluded: +4.14
The uncertainty of time of birth is + - 12 hours, so the uncertainty of Moon position is +-6 degrees approximately, that's probably the reason why correlation with Moon position is so weak.
If Mars is included: +5.74 standard deviations
If Saturn is included: +5.23
If Uranus is included: +5.13
If Mercury is included: +4.66
Looks like Mars should be included, but in this case Saturn must be included also, because Saturn's gravitational influence on Earth is bigger on average.
If Mars and Saturn are included: +5.20 standard deviations
Thus, the biggest decrease is if Jupiter is excluded or if Mercury is included, probably because Mercury has the biggest orbital inclination, biggest eccentricity and the smallest gravitational influence on Earth. Jupiter's inclination is the smallest, only 1.3 degrees, and it is always 0.0 degrees for Sun.

Single-object criteria:
Quaoar.90.Sun +2.324 standard deviations

Quaoar.90.Moon +2.033
Quaoar.90.Mercury -0.090
Quaoar.90.Venus +3.082
Quaoar.90.Mars +2.264
Quaoar.90.Jupiter +3.206
Quaoar.90.Saturn +0.375
Quaoar.90.Uranus +0.247
Quaoar.90.Neptune +0.632

Single-object, other aspects:

	0	180	120	90	60	45
Sun	+1.159	+0.796	-1.394	+2.324	+0.240	-0.105
Moon	+0.141	+1.394	-1.241	+2.033	-0.060	-1.248
Venus	+1.099	+1.146	-1.552	+3.082	+0.523	+0.802
Jupiter	+0.399	-0.014	-0.445	+3.206	-0.412	+1.468

5. Other people?

All databases considered below can be found here:
http://james.freehoster.co.cc/np_data.zip

5a. **Presidents of the National Academy of Sciences, USA.**

9 of 21 presidents satisfy the Quaoar criterion, 42.86% (in five of nine cases the aspect is Sun.90.Quaoar).

For all 726 Nobel Prize laureates this percentage is 33.47% , while the mean value is only 25.16% for the NASP group.

Besides, current presidents of Chinese, Russian, Ukrainian and English Academies of Sciences satisfy the Quaoar criterion.

Natal data of the president of the Japan Academy was not found in the Internet.

As of 25.09.2009:

Lu Yongxiang, aka Yung-Hsiang Lu, is the current President of the Chinese Academy of Sciences

Yury Sergeevich Osipov is a full member and the President of the Russian Academy of Sciences

Borys Yevhenovych Paton is the long-term chairman of the National Academy of Sciences of Ukraine

Martin John Rees, Baron Rees of Ludlow became President of the Royal Society on 1 December 2005

(Sun.90.Quaoar twice, and Jupiter.90.Quaoar also twice)

5b. **All persons listed on the Presidium of the Russian Academy of Sciences web page.**

83 persons as of 28.09.2009, but in one case the date of birth is not available, and one person is listed twice.

Quaoar criterion: mean value=20.308, standard deviation=3.888, observed value=29 (+2.236 standard deviations)

5c. **The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.**

The name of this prize has changed eleven times since it was established in 1968.

"Some critics argue that the prestige of the Prize in Economics derives in part from its association with the Nobel Prizes, an association that has often been a source of controversy."

18 of 62 laureates satisfy the Quaoar criterion, only 19% more than the mean value 15.138.

But for the criterion with seven aspecting objects this deviation is higher: 30 of 62, this is

28% more than the mean value 23.453.

5d. **Kalinga Prize laureates.**

The Kalinga Prize for the Popularization of Science was created in 1952, it is administered by the Science Analysis and Policies Division of UNESCO.

Among those first 18 laureates who were awarded in 1950s and 1960s, eleven satisfy the Quaoar criterion (mean value=4.189), six do not, and in one case - Paul Couderc - natal data was not found.

In 1973 and 1975 the prize was not awarded, among those who received the prize in 1970s and later, biographical data is unavailable in almost half of the cases. Besides, the percentage of USA and UK citizens among those 18 awarded in 50s and 60s is 61.11%, it is 36.84% for 19 laureates awarded between 1970 and 1985, and 0% after 1985 (26 laureates).

5e. **Science fiction writers, science journal editors:**

Only four writers are listed both here

Grand Master Award, for lifetime achievement in science fiction and/or fantasy

and here

List of joint winners of the Hugo and Nebula awards =>Novel

1. Ursula Le Guin
2. Isaac Asimov
3. Arthur Clarke
4. Frederik Pohl

All four of them satisfy the Quaoar criterion. Plus the following four gentlemen:

5. Herbert Wells, an English author, best known for his work in the science fiction genre.

Together with Jules Verne, *Herbert Wells is often referred to as "The Father of Science Fiction"*.

6. Dennis Flanagan, who was the Editor-in-chief of Scientific American for 37 years, since 1947 until 1984.

7. Jonathan Piel, who was the next Editor-in-chief of Scientific American since June 1984 until August 1994.

"In the years after World War II, the magazine was dying. Three partners who were planning on starting a new popular science magazine, to be called The Sciences, instead purchased the assets of the old Scientific American and put its name on the designs they had created for their new magazine. Thus the partners -- publisher Gerard Piel, editor Dennis Flanagan, and general manager Donald H. Miller, Jr. -- created essentially a new magazine, the Scientific American magazine of the second half of the twentieth century."

Dates of birth of almost all other editors-in-chief were not found in the Internet. The same with Science, New Scientist and Nature.

8. Sir John Royden Maddox, a British science writer. He was the Editor-in-chief of Nature for 22 years, from 1966-1973 and 1980-1995.

"Most scientific journals are now highly specialized, and Nature is among the few journals that still publish original research articles across a wide range of scientific fields".

5f. National Medal of Science laureates can be used for future research.

6. **There are two types of aspect 90 between two objects**:

Type A: when the faster object is between aspect 0 and aspect 180 to the slower object;

Type B: when the faster object is between aspect 180 and aspect 0.

It is interesting that for the criterion with only type A aspects, the variation is **much higher** than for the criterion with type B aspects only.

Type A: mean value=93.048, standard deviation=8.916, observed value=141 (+5.379 standard deviations)
Type B: mean value=91.007, standard deviation=8.860, observed value=115 (+2.708 standard deviations)
In some cases both type A and type B aspects are present (from two aspecting objects), that is why the sum (141+115) is not equal to 243.
Will the same effect be observed on the additional data considered in items 5a...5e above? Yes, it will.
After merging all *.dat files from np_data.zip except np_data.dat:
copy/b PRAS.dat + NAS.dat + china_ussr_uk.dat + Kalinga1.dat + Nobel_Memory_Prize_Economics.dat my_data.dat
and then removing *the first line* from the resulting my_data.dat (because this person is present in *china_ussr_uk.dat*), and *any of the two lines with Arthur C. Clarke*,
Type A: mean value=24.705, standard deviation=4.581, observed value=44 (+4.211 standard deviations)
Type B: mean value=24.475, standard deviation=4.585, observed value=37 (+2.732 standard deviations)
There is no explanation.

To make the program that will consider only type A aspects, please insert these two lines:

```
a=x[0]-b;
if (a<0) a+=360;
```

instead of the original lines 72-73 (as in Appendix 1 below) :

```
a=x[0]-b; if (a<0) a=-a;
if (a>180) a=360-a;
```

To make the program that will consider only type B aspects, please insert these lines instead:

```
a=b-x[0];
if (a<0) a+=360;
```

Single-object criteria, type A and type B aspects, 726 Nobel Prize laureates:

	90 A	90 B
Sun	+2.540	+0.703
Moon	+2.674	+0.155
Venus	+2.623	+1.674
Jupiter	+2.409	+2.116
Mars	+2.226	+0.883

Single-object criteria for the additional data, 191 records:

	120	90
Sun	-1.321	+4.145
Moon	+0.660	+1.249
Venus	+0.761	+1.944
Jupiter	-1.190	+3.070
Mars	-0.508	+1.097

For aspects 0, 90A, 180, 90B the mean value is too small.
Unlike the table in item 4, Sun-alone criterion shows higher variation than Venus and Jupiter criteria. This may be a consequence of much lower percentage of persons born before year 1900 in the additional data. Quaoar's period is more than 282 years.

References

1. The Human Impacts of Space Weather, www.solarstorms.org, this web site has a guide to all known impacts of space weather to technology, human health, and an extensive newspaper archive of reported impacts since 1840.
2. Geomagnetic activity, humidity, temperature and headache: is there any correlation? A study done by De Matteis G, Vellante M, Marrelli A, Villante U, Santalucia P, Tuzi P, Prencipe M.
3. Suitbert Ertel and Kenneth Irving (1996). The Tenacious Mars Effect, Urania Trust, London, ISBN 1-871989-15-9

APPENDIX 1.

You will need these archives to run the program correctly:
ftp://ftp.astro.com/pub/swisseph/ephe/archive_zip/sweph_18.zip
ftp://ftp.astro.com/pub/swisseph/ephe/archive_zip/sweph_12.zip - for those born before 1800
ftp://ftp.astro.com/pub/swisseph/sweph.zip - the DLL, swedll32.lib, *.h include files, simple programs
plus the data for Quaoar: ftp://ftp.astro.com/pub/swisseph/ephe/longfiles/ast50/se50000.se1
All ***.se1** files must be put to the **C:\sweph\ephe** folder on your local hard disk.
If you use GCC to compile this C program: gcc -DUSE_DLL quaoar4.c swedll32.lib -oquaoar4.exe
If you need an executable file for Windows: quaoar4.zip

```
#include "swephexp.h"
#include <time.h>
#define MAX_REC 2000    // maximum number of data records, actually 726 in
my_data.dat
#define CNTRL_P 2048   // control points for each record, each point is
RECORD_DATE + RANDOM days,
                      // where RANDOM is -CNTRL_P/2...CNTRL_P/2-1  e.g. -
1024...1023
char qc_flags[MAX_REC][CNTRL_P]; // Does this point satisfy the Quaoar
criterion? 1=yes, 0=no
                                // 1st half of algorithm fills this array,
2nd uses
short outcome[10*1000*1000];
  int gregflag, jday,jmon,jyear,jhour,jmin,jsec,i,j,k,l,m=0,n=0,o=0,z;
  double x[6], jut,tjd_ut,tjd_et,a,b,c,d,e,f;
  char *sp, serr[AS_MAXCH*2], s[32768], objects[]= {0,1,3,5};  // Sun,
Moon, Venus, Jupiter
  FILE *datafile;

void zbs2tjd()
{
  jday = 21;    jhour= 12;
  jmon = 11;    jmin = 0;
  jyear = 2002; jsec = 0;
  for (i=0,sp=s;    (i!=';'); ) i = *sp++;
  jday  = atoi(sp);
  for (i=0; (i!=';') && (i!='.'); ) i = *sp++;
  if (i==';') goto srch_time;
  jmon  = atoi(sp);
  for (i=0; (i!=';') && (i!='.'); ) i = *sp++;
  if (i==';') goto srch_time;
  jyear = atoi(sp);

  for (i=0;        (i!=';'); ) i = *sp++;
srch_time:
  jhour = atoi(sp);
```

```
  for (i=0; (i!=';') && (i!=':'); ) i = *sp++;
  if (i==';') goto srch_zone;
  jmin  = atoi(sp);
  for (i=0; (i!=';') && (i!=':'); ) i = *sp++;
  if (i==';') goto srch_zone;
  jsec  = atoi(sp);

  for (i=0;        (i!=';'); ) i = *sp++;
srch_zone:
  j = atoi(sp); jhour-= j;
  for (i=0; (i!=';') && (i!=':'); ) i = *sp++;
  if (i==';') goto srch_done;
  if (j==0) *--sp=0x30, j = atoi(sp), jmin -= j;
  else if (j>0) jmin -= atoi(sp);
       else jmin += atoi(sp);
  for (i=0; (i!=';') && (i!=':'); ) i = *sp++;
  if (i==';') goto srch_done;
  if (j>0) jsec -= atoi(sp);
      else jsec += atoi(sp);

srch_done:
  if ((long) jyear * 10000L + (long) jmon * 100L + (long) jday < 15821015L)
    gregflag = FALSE;   else gregflag = TRUE;
  jut = jhour + jmin / 60.0 + jsec / 3600.0;
  tjd_ut = swe_julday(jyear,jmon,jday,jut,gregflag);
}

void main(int argc, char *argv[])
{
  clock_t start=clock();
  if ((datafile= fopen("my_data.dat", BFILE_R_ACCESS))==NULL)  return;
  printf("Processing my_data.dat , there must be less than %d records
:\n",MAX_REC);

  while(1) {
    fgets(s, 32768, datafile); if (feof(datafile)) break;
    zbs2tjd(); tjd_et = tjd_ut + swe_deltat(tjd_ut);

    for (i=-CNTRL_P/2; i<CNTRL_P/2; ++i) {
    if (swe_calc(tjd_et+i, SE_AST_OFFSET+50000, 0, x, serr)) printf("error:
%s",serr), exit(0);
    for (b=x[0], j=z=0; z<4; z++) {
        if (swe_calc(tjd_et+i, objects[z], 0, x, serr)) printf("error:
%s",serr), exit(0);
        a=x[0]-b; if (a<0) a=-a;
        if (a>180) a=360-a;
        if (a>=90-6 && a<=90+6)  { j=1; break; }
    }
    if (i==0) o+=j;
    qc_flags[n][i+CNTRL_P/2]=j;
    }
    printf("%3d done\r",++n);
  }

  if (argc>1)    z=atoi(&argv[1][0]);    else z=(int)(clock()-start);
  printf("\nSatisfy the Quaoar criterion: %d of %d\nRandom seed=
%d\n",o,n,z);    srand(z);

  for (k=l=c=0; k<100; ++k) {
    for (i=0; i<100000; ++i) {
        for (j=m=0; j<n; ++j) m+=qc_flags[j][rand()&(CNTRL_P-1)];
```

```
        outcome[l++]=m; c+=m;
    }
    for (e=c/l, i=d=0; i<l; i++) f=outcome[i]-e, d+=f*f;
    printf("%2d00000 tests, mean value=%3.3f, standard deviation=%3.3f, +-three sd? %3.3f\n",k+1,e,sqrt(d/l),(o-e)/sqrt(d/l));
  }
  printf("Random seed=%d  Satisfy the Quaoar criterion=%d/%d\nHow many sigmas: (%d-%3.3f)/%3.3f=%3.3f",z,o,n, o,e,sqrt(d/l),(o-e)/sqrt(d/l));
}
```

APPENDIX 2.

The following 243 Nobel Prize laureates satisfy the Quaoar criterion:
Chemistry:
1901 Jacobus Henricus van 't Hoff
1909 Wilhelm Ostwald
1918 Fritz Haber
1920 Walther Hermann Nernst
1921 Frederick Soddy
1922 Francis William Aston
1929 Hans Karl August Simon von Euler-Chelpin
1931 Carl Bosch
1931 Friedrich Bergius
1932 Irving Langmuir
1934 Harold Clayton Urey
1935 Frederic Joliot
1938 Richard Kuhn
1944 Otto Hahn
1948 Arne Wilhelm Kaurin Tiselius
1956 Nikolay Nikolaevich Semenov
1960 Willard Frank Libby
1961 Melvin Calvin
1962 Max Ferdinand Perutz
1964 Dorothy Crowfoot Hodgkin
1965 Robert Burns Woodward
1966 Robert S. Mulliken
1969 Odd Hassel
1973 Geoffrey Wilkinson
1974 Paul J. Flory
1975 John Warcup Cornforth
1979 Herbert C. Brown
1980 Paul Berg
1984 Robert Bruce Merrifield
1989 Thomas R. Cech
1993 Kary B. Mullis
1997 Paul D. Boyer
1997 John E. Walker
1999 Ahmed H. Zewail
2000 Alan J. Heeger
2000 Hideki Shirakawa
2001 William S. Knowles
2001 Ryoji Noyori
2002 John B. Fenn
2004 Avram Hershko
2007 Gerhard Ertl
2008 Roger Y. Tsien
Literature:
1908 Rudolf Christoph Eucken
1917 Henrik Pontoppidan
1922 Jacinto Benavente
1926 Grazia Deledda

1933 Ivan Bunin
1936 Eugene O'Neill
1938 Pearl S. Buck
1945 Gabriela Mistral
1948 T. S. Eliot
1950 Bertrand Russell
1951 Par Lagerkvist
1952 Francois Mauriac
1954 Ernest Hemingway
1955 Halldor Laxness
1958 Boris Pasternak
1959 Salvatore Quasimodo
1962 John Steinbeck
1963 Giorgos Seferis
1964 Jean-Paul Sartre
1965 Mikhail Sholokhov
1967 Miguel Angel Asturias
1968 Yasunari Kawabata
1972 Heinrich Boll
1973 Patrick White
1974 Harry Martinson
1976 Saul Bellow
1977 Vicente Aleixandre
1979 Odysseas Elytis
1981 Elias Canetti
1984 Jaroslav Seifert
1986 Wole Soyinka
1989 Camilo Jose Cela
1994 Kenzaburo Oe
1998 Jose Saramago
2002 Imre Kertesz
2008 J. M. G. Le Clezio
Medicine:
1901 Emil Adolf von Behring
1904 Ivan Petrovich Pavlov
1905 Robert Koch
1906 Camillo Golgi
1908 Ilya Ilyich Mechnikov
1908 Paul Ehrlich
1910 Albrecht Kossel
1911 Allvar Gullstrand
1913 Charles Richet
1914 Robert Barany
1923 John James Richard Macleod
1926 Johannes Andreas Grib Fibiger
1927 Julius Wagner-Jauregg
1928 Charles Jules Henri Nicolle
1929 Christiaan Eijkman
1931 Otto Heinrich Warburg
1933 Thomas Hunt Morgan
1934 George Richards Minot
1937 Albert Szent-Gyorgyi von Nagyrapolt
1939 Gerhard Domagk
1944 Joseph Erlanger
1947 Bernardo Alberto Houssay
1948 Paul Hermann Muller
1949 Walter Rudolf Hess
1950 Edward Calvin Kendall
1951 Max Theiler
1953 Fritz Albert Lipmann
1954 Thomas Huckle Weller

1956 Dickinson W. Richards
1958 Joshua Lederberg
1959 Arthur Kornberg
1960 Sir Frank Macfarlane Burnet
1961 Georg von Bekesy
1963 Andrew Fielding Huxley
1964 Feodor Lynen
1966 Peyton Rous
1966 Charles Brenton Huggins
1967 Ragnar Granit
1967 Haldan Keffer Hartline
1970 Sir Bernard Katz
1971 Earl W. Sutherland, Jr.
1972 Rodney R. Porter
1973 Karl von Frisch
1973 Konrad Lorenz
1974 Albert Claude
1974 George E. Palade
1975 Howard Martin Temin
1977 Roger Guillemin
1977 Andrew V. Schally
1978 Werner Arber
1978 Daniel Nathans
1980 Baruj Benacerraf
1980 George D. Snell
1983 Barbara McClintock
1986 Stanley Cohen
1988 Gertrude B. Elion
1988 George H. Hitchings
1989 J. Michael Bishop
1989 Harold E. Varmus
1991 Bert Sakmann
1994 Martin Rodbell
1995 Edward B. Lewis
1997 Stanley B. Prusiner
1998 Louis J. Ignarro
1998 Ferid Murad
1999 Gunter Blobel
2000 Eric R. Kandel
2002 H. Robert Horvitz
2003 Sir Peter Mansfield
2005 J. Robin Warren
2008 Harald zur Hausen
2008 Francoise Barre-Sinoussi
Peace:
1902 Charles Albert Gobat
1905 Bertha von Suttner
1907 Ernesto Teodoro Moneta
1907 Louis Renault
1909 Auguste Marie Francois Beernaert
1912 Elihu Root
1913 Henri La Fontaine
1921 Christian Lous Lange
1922 Fridtjof Nansen
1925 Austen Chamberlain
1926 Aristide Briand
1926 Gustav Stresemann
1931 Jane Addams
1931 Nicholas Murray Butler
1933 Sir Norman Angell (Ralph Lane)
1934 Arthur Henderson

1937 Lord Edgar Algernon Robert Gascoyne Cecil
1945 Cordell Hull
1949 Lord (John) Boyd Orr of Brechin
1953 George Catlett Marshall
1957 Lester Bowles Pearson
1973 Henry A. Kissinger
1973 Le Duc Tho
1974 Sean MacBride
1975 Andrei Dmitrievich Sakharov
1976 Mairead Corrigan
1979 Mother Teresa
1980 Adolfo Perez Esquivel
1982 Alva Myrdal
1982 Alfonso Garcia Robles
1991 Aung San Suu Kyi
1992 Rigoberta Menchu Tum
1993 Frederik Willem de Klerk
1994 Yasser Arafat
1996 Jose Ramos-Horta
2000 Kim Dae Jung
2003 Shirin Ebadi
2005 Mohamed ElBaradei
2007 Al Gore
2008 Martti Ahtisaari
Physics:
1905 Philipp Eduard Anton von Lenard
1906 Joseph John Thomson
1911 Wilhelm Wien
1914 Max von Laue
1915 William Henry Bragg
1915 William Lawrence Bragg
1918 Max Planck
1919 Johannes Stark
1923 Robert Andrews Millikan
1924 Manne Siegbahn
1925 James Franck
1925 Gustav Hertz
1926 Jean Baptiste Perrin
1927 Arthur Holly Compton
1927 Charles Thomson Rees Wilson
1929 Prince Louis-Victor Pierre Raymond de Broglie
1935 James Chadwick
1938 Enrico Fermi
1945 Wolfgang Pauli
1947 Edward Victor Appleton
1948 Patrick Maynard Stuart Blackett
1949 Hideki Yukawa
1951 John Douglas Cockcroft
1953 Frits Zernike
1964 Aleksandr Prokhorov
1965 Julian Schwinger
1966 Alfred Kastler
1967 Hans Albrecht Bethe
1969 Murray Gell-Mann
1972 Leon Neil Cooper
1972 John Robert Schrieffer
1975 Ben Roy Mottelson
1975 Leo James Rainwater
1976 Samuel Chao Chung Ting
1977 Philip Warren Anderson
1977 John Hasbrouck Van Vleck

1979 Sheldon Lee Glashow
1982 Kenneth G. Wilson
1986 Heinrich Rohrer
1987 Karl Alexander Muller
1988 Jack Steinberger
1990 Jerome I. Friedman
1990 Richard E. Taylor
1992 Georges Charpak
1996 David Morris Lee
1996 Douglas D. Osheroff
1997 William Daniel Phillips
1998 Daniel Chee Tsui
1999 Martinus J. G. Veltman
2000 Zhores Ivanovich Alferov
2000 Jack St. Clair Kilby
2004 Frank Wilczek
2005 Theodor W. Hansch
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