## Manual ASTRO-extended

The program calculates the gravitational interactions of sun, moon and the planets up to Pluto according to [Jean Meeus (1992) Astronomische Algorithmen. Barth, Johann Ambrosius, Germany pp. 464.]. Asteroids are not calculated. The calculated correlation function can be interpreted as an oscillating vector field with higher harmonics.

## Start of the program

The program "astro-extended.exe " is started by double-clicking in the directory ASTRO-extended. Important: The *.txt files already present in the directory must not be changed.


The start screen appears:
Before the input can be started, the program calculates the lists for the orders 1 to 12 of the correlation function.

This calculation is displayed in the upper left corner and in the lower right corner.
The duration of these calculations depends on the performance of the computer. If these calculations are finished, then the actual examinations can be started. After that, the menu appears on the right side of the screen. As a rule, for researches, 1-Statistics 1 Continuum is started. The data entered here are remembered by the program, they do not have to be entered again later. After that follows 2- Event Analysis.
Then the sequence of the other programs is selected according to the task.

It is recommended to recalculate the following example to understand how to use the program. Many other research tasks can then be solved according to this example.

| O- Welcome |
| :---: |
| 1-Statistics 1 - Continum |
| 2- Event Analysis |
| 3- Statistics 2 - Density Function |
| 4- Matrix Probability |
| 5- Artificial_Intelligence |
| 6- Planetary Fluctuations - resonances |
| 7- Resonance-for-probability |
| 8- Resonance-probability |
| 9- Team-analysis |
| 10- Biografic - rhythms |
| 11- Planetary Fluctuations - time quality |
| 12- Art color transformation |
| 13- Correlation function |
| 14- Optimal curve |
| 15- Urn - model toy |
| 16- Transite classic |

## 1. Statistics 1 - Continuum


(Example 41 Earthquakes)
The file of the earthquakes is saved in the database format *.dbf. It can also be edited with the OpenOffice.org Writer. Other formats are not processed.
It is useful to label the database with the number of events and the time period.
Calculations can be found in the book
"Microgravity; Chapter 2.1 A first study of 41 of the strongest earthquakes".

To create your own databases, it is important that at least column A (name), D (longitude), E (latitude), F (time zone) G (date) and H (time of the event) are entered.

|  | A | B | C | D | E | F | G | H | I |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | NAME, C, 200 | VORNAM | ORT, C, 200 | LAENG | BREIT | ZEI | DATUM, C, | ZEIT,C,20 |  | KA |
| 2 | China | Tangshan | Peking | 116.25 | 39.55 | 8 | 28.7.1976 | 03:42:00 | 0 |  |

For statistical studies, calculations always start with the Statistics 1 - Continuum program.


First the order is asked. For general time qualities the lower orders are used, for triggering events the higher orders.


Query for the IC (direction to the center of the earth). The IC is only calculated if the earth is to be examined. It brings the highest frequencies in the correlation function and is not suitable for trends.


Next, the number of events is requested.


If this question is answered with Yes:

| Inputatray |  |
| :--- | :--- |
| selected planets |  |
| Sun | $\sqrt{1}$ |
| Moon | $\sqrt{1}$ |
| Mercury | $\sqrt{0}$ |
| Venus | $\sqrt{0}$ |
| Mars | $\sqrt{0}$ |
| Jupiter | $\sqrt{1}$ |
| Saturn | $\sqrt{1}$ |
| Uranus | $\sqrt{1}$ |
| Neptune | $\sqrt{1}$ |
| Pluto | $\sqrt{0}$ |
| IC | $\sqrt{0}$ |
|  | OK |

Planets can be selected here with 1. or deselected with 0 .
You can also enter a weighting in the number format 12.05 can be entered.

These are approximately the square roots of the gravitational effect. However, this weighting has proved to be of little use, since other interactions are relevant here. These numbers can be changed.

If this question is answered with No:


If this question is answered with Yes, appears:

| Inpuatray |  |
| :---: | :---: |
| gravity planets |  |
| Sun | 57.2 |
| Moon | 10.2 |
| Mercury | 0.31 |
| Venus | 0.77 |
| Mars | 0.3 |
| Jupiter | 1.87 |
| Saturn | 0.84 |
| Uranus | 0.28 |
| Neptune | 0.22 |
| Pluto | 0.01 |
| IC | 0 |
| OK |  |


| InputyesNo |
| :--- |
| Should self- <br> correlations of the <br> planets be <br> calculated? <br> Yes |

This query is usually answered with No for statistical investigations. It is relevant for calculations with reosnances and there Yes will be clicked

The following inputs define the time period in which the mean value for the correlation function is
to be calculated.

Start of calculations:


## End of calculations:




This input sets the number of calculations in the previously selected time interval. The size 100000 is preselected and is calculated by most computers in a reasonable time.


One last question is asked before the calculation starts. Should events in the period be calculated randomly or continuously (with equal intervals)? This question can be answered with No. The differences are small.

The blue bar shows the progress of the calculation:

The results can be found in the text field Text 1 :


## 2. event analysis

```
E./ Research-Program Institut Z & S
Ele
Menu |Graphic 1|Graphic 2|
After the Statistic 1- Continuum program is finished, the "Event Analysis" Eile program is called via the Menu button.
```



If the continuum has already been calculated, the queries are simplified and the values already stored are taken over. If the question is answered with No, the entries must be made again.
Please run the Statistics $\mathbf{1 - C o n t i n u u m ~ p r o g r a m ~ b e f o r e h a n d ~ s o ~ t h a t ~}$ the event analysis can be evaluated.


The events are read in automatically if this query is answered with Yes. If the answer is No, the events must be selected by double-clicking.

Double click or click once and then click open at the bottom to open the file.
events1-41-19002000 n .dbf


Before the calculations start, it is still possible to postpone the calculation of the correlation function before or after the actual event. With these following boxes the events can be shifted by days and hours.

The following query determines the beginning of the data in the file of events.
If the file contains only the events to be examined, the offset will usually be 1 . However, it is also possible to combine several groups in one file. Then the offset is the line where the group starts.

Menu| Graphic 1|Graphic 2 Graphic 3 |Graphic 4|Graphic 5|Graphic 6| Text 1 | Text 2| Text 3| Text 4| Text 5| Text 6| saved with save as....
s.

The results are in Graphic 3 and Text 2 and can each be

Example:


## 3. Statistics 2 - Density Function

This module calculates the density function and thus gives a first pictorial representation of the particular properties of the events under investigation. If the correlation function lies at the edge of the (almost Gaussian) distribution, then the group of events is probably not random in this time period.
This module need not be computed if only the probabilities are to be computed. This module is not a prerequisite to start the Statistics 3 - probability module.


At the beginning the time range of the events is queried again. If no changes to the time period are necessary (normal case), the displayed data need only be accepted with OK.


Next, the control groups to be calculated are queried.
The number of control groups should not be less than 1000 (per mille range), otherwise the probabilities become uncertain.

hould the intervals for the tests be set automatically?
This question must normally first be answered with Yes. If the results in the graphs do not meet expectations because the density curve is too narrow or too wide, the program must be started again.
The program has remembered the maximum and minimum values during the calculation. These values can now be entered manually to better fit the curves into the given graph.

```
!! Limits:
minH: -15.97 maxH : 16.02
minI: 64.78 maxI: 88.82
minD: -109.76 maxD : 85.65
minDA: 445.34 maxDA: 590.25
```

These values can be found in the Manuel. For this case it is recommended to enter the following values:

| H: | -16 | 16.1 |
| :--- | :---: | :---: |
| I | 64.5 | 89 |
| D | -109 | 86 |
| DA | 445 | 591 |


| InputresNo |
| :--- |
| Interval- |
| establishing |
| automatically? |
| Yes No |

The module is now restarted. The query for the interval definition is now answered with No. The automatically generated values appear in the Manuel (lower left corner):
The following window asks whether these values should be entered again.


If the values are to be entered again, this question is answered with Yes and the input window for the start of the interval appears.


The new value can now be entered here. For the above example - 16

After OK the window for the end of the interval will be opened.


According to the example above, 16.1 is entered here

This concludes the input for correlation function H (matrix harmony) and prompts for correlation function I (matrix I).


This is repeated until the values for the matrix DA (dynamics absolute) are entered.

After the somewhat longer calculation, the results can be found in the graphic fields Graphic 1 to Graphic 4. These graphics can be selected individually with the button:

$$
\begin{aligned}
& \text { save as... } \\
& \text { be saved. }
\end{aligned}
$$

Example:


The black vertical line indicates the probability of the events in the Gaussian distribution.

## 4. matrix probability

This module compares the group of events with randomly selected groups of the same strength in the selected period (Monte Carlo simulation).


At the beginning, the time period is queried again. If the Continuum module has run, this only needs to be confirmed with OK.
The Event Analysis module must have been calculated before (at some point!).
The last query is:


The program was now calculating and with a high number of events per group it can take a little longer.

The results can be found in Text 3 and Graphic 1 to Graphic 4. They can again be saved individually with the button.


## Example:

Statistics 4: Probability of events: correlation matrix H
Order of the correlation: 7 ; time shift d: $0 \mathrm{~h}: 0$;
Range in + - of julian date $=10$
GROUP-MEMBERS: 33 ; NUMBER OF THE GROUPS: 10000
Accidental selection; TEST: Number of accidental selection $>=$ correlation

```
CORRELATION-MATRIX H AS INPUT
    1
    0.02
    -0.02
    0.00
    0.03
    -0.04
    0.01
    0.01
    -0.00
    0.02
    -0.04
MatrixSH=-0.366
Matrix H of the probability of error:
    1
    22.52
    86.15
```



```
    13.25
    59.83
    5.98}908.41 67.73 98.25 7.06 35.87 99.92 0.86 24.52 89.88 PR 9.12 
    44.75
    26.05
    0.38}44.4
10
bigger are: 82.260 %
1=SUN; 2=MOON; 3=MERKUR;4=VENUS; 5=MARS; 6=JUPITER; 7=SATURN; 8=URANUS; 9=NEPTUN; 10=PLUTO;
11=IC;
```



A high bar means that the controll groups have a higher average value. If the first bar on the left is very smalt, the group as a whole has great harmony and stability time shift: $\theta \mathrm{d} \theta \mathrm{h} *$ Range of julian date $=+-10$ days

Significant correlations ( $>=95$ and $<=5$ ) are highlighted in red and blue.

## 5. artificial intelligence

This program enables the search for similar patterns in time as they were obtained in the event analysis as a matrix.
Prerequisite for the correct course are the program parts 2- Event Analysis and 4- Matrix Probability.
The program starts with the definition of the period of investigation and the number of calculations in the period of time


For the search, the limit values for the Linfoot criteria (comparison criteria to the initial matrix) can now be set:


The limits are the same for all Linfoot criteria and all elements of the correlation. However, the calculations can be repeated for other variants as desired.

Which elements of the matrix should be compared?
If "all matrix elements" is selected, the question "Should only significance be selected?" appears. If significances are present in the matrix of probabilities, this choice may make sense.
selected?
Yes No

Which curves should be calculated?

| InputYesNo |
| :--- |
| Curve calculation <br> for amplitude? |
| Yes |



Should only the curve of the mean values be drawn?


This is where the selection of the comparison criterion takes place.


The curves are calculated and the question is asked if there are any events in this period and if so, they can be marked.

The results are shown in Graphic 6 and Text 6 .


As limit for H (harmony) 0.4 was chosen. The curve shows a time range in which this value for the correlation is reached. More exact values are shown in the text file:

## Excerpt:

ARTIFICIAL INTELLIGENC
ATTENTION !!! This Program requires special instructions !!!
For help: michael.nitsche@lettris.de
ATTENTION !!! the program event analysis and matrix probability should have been run ATTENTION !!!
!!! Calculations in world time !!! h=h-time zone-sommertime
The AI then searches for similar events in the set period
results in graphic 6 and text 6
Amplitudes Fidelität: - 0.691643 KQ: $\mathbf{0 . 4 2 6 0 0 0}$ RS: 1.543644
zyklus 293 Date: 1883-4-17-22-40
Amplitudes Fidelität: - 0.558611 KQ: 0.446167 RS: 1.450946 zyklus 294 Date: 1883-4-18-7-26
Amplitudes Fidelität: $-0.413585 \mathrm{KQ}: 0.454932$ RS: 1.323450 zyklus 295 Date: 1883-4-18-16-12
Amplitudes Fidelität: -0.269534 KQ: 0.453538 RS: 1.176611 zyklus 296 Date: 1883-4-19-0-57
Amplitudes Fidelität: - $0.140603 \mathrm{KQ}: 0.444433$ RS: 1.029469 zyklus 297 Date: 1883-4-19-9-43
Amplitudes Fidelität: - 0.037608 KQ: 0.430964 RS: 0.899536 zyklus 298 Date: 1883-4-19-18-28
...
Attention! Using this program requires a lot of experience!

## 6. planetary fluctuations - resonance

This part of the program calculates the correlations of a time period related to a fixed point of time (among others time of birth). For resonances related to persons, experience shows that the 7th order of correlation is well suited.

Is the 7 th order of correlation oky?

Next, the event is selected from a *.dbf file
namen.dbf


Should the resonances be connected with the qualities of the event? Only the experiences can show when it can be useful. In the beginning,

The question can be answered with "Yes" for persons.

Next, the ent


The next step is to define the time range.

The results (curves) are in Graphic 1 to 4 .


Example:


## 7. resonance for probability

This program prepares the calculation of the probability for a group of transits.


Prerequisites are the programs 1. Statistics 1 - Continuum and 2. EventAnalysis.


There is a possibility to postpone the time of transit

Next, the timing of the transits is asked:


The last option is to include the quality of the reference time in the correlation.

## 8. resonance probability

This program part calculates the probability of the transits by comparison with control groups.
The group strength, the order of correlation and the time range around the transit for the control groups can be varied here.
For repetitions of the calculations with other parameters it is not necessary to call


## InputYesNo

Is the 7 th order of correlation oky? the program Resonance for probability.


Results: Graphic 1 to 4, the matrices of probability in Text 5 .

Example of graphic:


## 9. team analysis

The program compares the group calculated in the 2nd Event Analysis with the values of the continuum. The programs 1. Statistics 1 - Continuum and the program 2. Event Analysis must have run before.


Correct results are obtained only with the choice "Yes".

The results are shown in charts 5 and 6 in German and English.
Example:



There is still the possibility to transform the harmonic and disharmonic qualities of the group into character colors (mandalas).


The results are in Text 5 and 6. The mandalas in Graphic 1 and 2.

Example:


## 10. biografic -rhythms

This part of the program calculates the Biographical Rhythms for a selected period of 12 years.

A name is selected.

namen.dbf
Data on cross-correlation.
The value 0 means that all events (births) have very similar rhythms in a larger time period (generational aspect).
The value 100 takes into account the qualities of the event and is therefore similar only in a small period around the event (strongly individual rhythm).


This is where the life stage is selected:
Results in Graphic 1

| rhythms for the years: |
| :--- |
| $0-12$ <br> $13-24$ <br> $25-36$ <br> $37-48$ <br> $49-60$ <br> $61-72$ <br> $73-84$ <br> $85-96$ |

## Example:



## 11. planetary fluctuations - time quality

This module calculates the correlation function for a selected period.


The first query defines the interval to be calculated.
Attention: The resolution of the graphic is limited (1920 x 1080). Therefore it must be considered that the high frequencies (IC, Moon, Mercury, Venus) can be calculated meaningfully only for small periods like day and month.


The graph has a horizontal extension of 1920 bits. It is normally not necessary to increase the interval divider. However, it should not be smaller than 1920 either.


If the program "event analysis" has run before, the events can be displayed as vertical lines in the graphic. To do this, the following input must be answered with Yes.

## InputYesNo

mark events?

Yes

This module can calculate for the events in this period how many events exceed a limit value. Here it can be useful to select the "Interval divider" larger
(up to 100000 ).

The limit values for H , then for I, D and DA are queried.


The curves are in Graphic 1 to 4, the limits in Text 1 to Text 4.
The numbers of the events in the list and the value of the matrix are given.
Example:

```
year 1911.00 month 6.00 day 15.00 hour 1.00 minute 59.00
i=37 event H -41.319
year 1911.00 month 1.00 day 3.00 hour 15.00 minute 24.00
i=39 event H -38.072
** limit H: -40.00 events: 2 * 1 events over limit **
```



The vertical black line shows an event that lies in this period.

## 12. type color transformation

For an event (birthday), the program calculates the harmonic (Graphic 4) and the
 disharmonic (Graphic 5) correlations into character colors.
namen.dbf
Example:


## 13. correlation function

The program calculates the correlation function.
You are asked whether the function or the 1st derivative should be calculated.

Then the order of the correlation is asked. The order can be the values 1 to 12 .


For better display, the thickness of the curve can still be specified.

## T

he values of the curve are in Tex1 1, the curve is in Graphic 1.
Example:


## 14. optimum curve

This utility calculates a Gaussian compensation curve from given pairs of values. First the degree of the polynomial is set.

Inputint
Degree of the polynomial ?


OK

Then the minimum number of value pairs is displayed. If more value pairs are available, the number for an individual entry must be specified here.


It is better if the value pairs are written in *.txt files beforehand. Examples are available in the files directory.
xny.txt (number of value pairs)
x.txt and y.txt (value pair $\mathrm{x} / \mathrm{y}$ )

It is always valid: One line one value!

## InputYesNo

Input from file
xny.txt; (number)
$x . t \times t$ and $y . t \times t$ ?

It is possible to stretch or compress both the x - and the y -values with a factor for a better representation. If this should be necessary, the question is answered with Yes.

InputYesNo
scaling?

Yes

Next, the origin of the coordinate system is set.


Specifying the maximum values allows a better fit of the curve to the graph.


These inputs define the thickness and the color of the curve.

Results are in Text 1 and Graphic 1.

| Inputint |
| :---: |
| Thickness of the curve (1,2, $\ldots$ 10): |
| 珰 |
| ок |

InputArray
Choose the color value

| green 0-255 | $\boxed{0}$ |
| :--- | :--- |
| blue 0-255 | 0 |

OK

Example:


## 15. urn - model toy

This utility requires knowledge of probability theory.
The urn model is requested.
1.hypergeometric (colored balls in the urn, drawn without putting back the

Distribution:
Hypergeometric (withou...
Binomial (with lay back):
2.binomial distribution (with putting back)

The second urn model is needed for checking the probability matrices. It starts with the query for the probability of the event. (If the significance correlations are to be examined, then the probability is 0.95 or 0.05).


How many events are there anyway?


How many events are to be hit? (-from to-)

The results are shown in Text 1.
Example:


Binomial (with lay back)
p: 0.500000 n: 8 ka: 1 ke: 3
j: 1 a: 0.031250
j: 2 a: 0.109375
j: 3 a: 0.218750
k: 1 ke: 3 Probability in range: 0.359375
Expected value : 4.000000 Variance : 2.000000

## 16. transits classic

This part of the program calculates the transits according to the classical way of astrology (aspects) and is self-explanatory for an astrologer. It is comparable with the program part 6 . planetary fluctuations - resonances.

Example:

```
Monat*Tag*Stunde * TRANSITE * Orbis der Aspekte: 1.000000
                        sx Sa-So qd Me-Mo qd Ne-Ma sx So-Ju qd Ne-Ur op Sa-Pl tr Me-AC
    sx Sa-So sx Ve-Ve qd Ne-Ma op Me-Sa op Ma-Ur op Sa-Pl
    sx Sa-So sx Mo-Mo qd Ne-Ma sx Ve-Ju tr Me-Ne op Sa-Pl op Mo-Mk qd Mo-AC kj Mo-MC
    sx Sa-So qd Me-Mo sx Ju-Mo qd Ne-Ma sx Ju-Mk tr Ju-MC
    sx Ju-Mo kj Mo-Ve qd Ne-Ma qd Sa-Ju qd Ve-Ne sx Ju-Mk tr Ju-MC
    tr Ma-Mo qd Ne-Ma qd Sa-Ju qd Ve-Ne kj Ma-Mk tr Mo-AC op Ma-MC
    qd So-Ve qd Ne-Ma qd Sa-Ju
    qd So-Me qd Sa-Ve sx So-Ma qd Ne-Ma kj Mo-Ur
    qd Mo-Me tr Ne-Me sx Ve-Ve sx Ma-Ve qd Sa-Ve qd Ne-Ma
    tr Ne-Me qd Sa-Ve qd Ne-Ma
    sx Me-So qd Ju-So sx Ve-Me tr Ne-Me sx Mo-Ju op Me-Pl
    qd So-So tr Ne-Me sx Me-Ma tr Ju-Ju tr Me-Ur tr Sa-Ur
    tr Ne-Me tr Ju-Ju tr Sa-Ur tr Mo-AC
```

Good luck with the use of the program!
If you have any problems or suggestions for improvement, please contact: michael.nitsche@lettris.de or go to the homepage: www.planetare-korrelation.eu

