



gnomonika.pl

# Royal Sundial Trail of Warsaw

ELA NIEDBAŁKA DAREK OCZKI



## The quest of a shadow of the Sun

Warsaw is the home of a major number of Polish monuments, among which sundials are the least known. Our capital proves to be the richest in sundials of all Polish cities (42 sundials were recorded in January 2012 and we know of another 8 that are not extant today.). The oldest dials were usually erected in the royal grounds and in noble residences. The public ones were placed on churches and town halls.

Unfortunately many works by Polish masters of gnomonics (the art of sundial construction) were destroyed during World War II, when the town was almost completely levelled to the ground. In the years following the war, some of these sundials were reconstructed and some new ones appeared. An important part in this work was undertaken by Dr. Tadeusz Przyppkowski, the greatest doyen in gnomonics of that time. He was raised in a family of enthusiasts of time measured by the Sun.



*A great fountain in the Ogród Saski with a sundial founded by Antoni Magier. In the background one can see the Saski Palace, much of which was destroyed during the war (a pre-war postcard)*

Warsaw is a very big and widely spread city, so that local sundials are to be found in very distant locations. This is why it's impossible to see them all within one day. However, some of the dials are located alongside the Royal Trail, which was used by kings to travel to their suburban residences. At the same time, this is a complex of the most beautiful and worthwhile places that one should see in the city.



*Dr. Tadeusz Przytkowski  
– a doyen of gnomonics,  
the art of sundial  
construction.*

*He became famous after  
designing a set of sundials  
for the Royal Observatory  
in Greenwich.*

Sundials were the first scientific instruments invented by mankind. They indicate the so called local apparent or true sun time, which usually differs from the mean time of our clocks. This is why many people consider sundials to be relics, useless remnants of a previous age. This is not true. The beauty of sundials combines science (astronomy and mathematics) with art and usefulness as well. Even today, the sundial allows us to observe the most important facts about our place in the Universe: the annual travel of the Earth around the Sun, the changes in the seasons, the daily rotation of our planet and, finally, the flow of time.

So we invite you to take part in this extraordinary trip through Warsaw, along the sundial trail, which will not only let you discover 19 most interesting sundials; but will lead you to the most beautiful places in the city, recommended by all tourist guides. We will show you Warsaw from a different and unknown perspective which is ruled by the shadow of the Sun.



*A pre-war postcard showing part of a sundial constructed by Tadeusz Przytkowski on Kamienica pod Lwem house in the corner of the Old Town's Square*



Before the war many postcards showed the Palace on the Water in Łazienki Królewskie and a nearby sundial standing on the bank of the lake

## General informations

If one only wishes to focus on the sundials, the whole tour will take about 4-5 hours. However, if one wishes to see all the parks and palaces (e.g. Łazienki Królewskie, Wilanów Palace or the Old Town) it is better to start the day early in the morning.

### Overall expenses:

- 24h bus/tram/metro ticket (regular **12 PLN**, students **6 PLN**)
- entry fee for the Wilanów Park (regular **5 PLN**, students **3 PLN**)
- entry fee for the Wilanów Palace (regular **20 PLN**, students **15 PLN**)

All other places visited during the trail are free.

### Must have list:

- a sunny day :)
- 24h bus/tram/metro ticket
- comfortable shoes
- a photo camera
- nuts for squirrels and bread for ducks
- street map of Warsaw
- optional binoculars

The trail should cause no inconvenience for the disabled.

# Pałac w Wilanowie



**Directions:** Our trip begins by the Wilanów Palace. You will get there by a bus (E2, 116, 117, 130, 139, 163, 164, 180, 422, 519, 700, 710, 724 or 725). A walk from the bus terminal to the Palace takes approx. 5 min. The first sundial can be seen from the south part of the park. There is an entrance fee, so you need to buy a ticket at the ticket office, located by the main entrance. Tickets can also be obtained from automats standing next to the park gate. The shortest way to the sundial shows a map on the opposite page.

The Wilanów Palace was a countryside residence of the king Jan III Sobieski and it was ruled according to the Sun. The sundial is located on a garden wall of the south-east facade of the Palace. The king's librarian and scientific advisor, Jesuit Adam Adamandy Kochański, was ordered to delineate the dial face, while a court architect, Augustyn Locci, was to design an artistic composition incorporating numerous symbols of a hidden meaning. It is said that Kochański was helped by a great astronomer from Gdańsk, John Hevelius, who served to give advice and inspiration. Hevelius himself never visited Warsaw so, most probably, Kochański contacted him by letters. Some historians maintain an opinion that there was another helper – also a Jesuit, Stanisław Solksi, the author of a book *Geometra polski* where he incorporated a chapter on sundial making.



*The southern facade of the Wilanów Palace with a grand and very impressive dial*



### Sundial data

address: **10/16 Stanisława Kostki**

**Potockiego Street**

latitude: **52.165027 N**

longitude: **21.090588 E**

designer: **Adam Adamandy Kochański**

maker: **Augustyn Locci**

roman numerals: **VII-XII-IV**

arabic numerals: **2-10** and **14-22**

sundial type: **vertical**

dimensions: **6 m x 3 m**

height above ground: **5 m**

creation date: **1684**

inscriptions: **PU BI**

**other features:** three faces (hours Babylonian, local and Italian), Zodiac signs, symbols of week days, Sun and Moon, a figure of Chronos holding the main gnomon, cupids holding the fabric and subside gnomons

The dial consists of three faces: the main one indicating equal hours and the two subsidiary dials showing Italian hours (left one), measured from the sunset on the previous day, where there are 24 equal hours per day, and Babylonian (right), indicating the number of equal hours that have elapsed since sunrise, also where there are 24 equal hours per day. A feather held by a figure of Chronos serves as a gnomon on the main face, while on the two other faces time is indicated by pointers held by two cupids.

Unfortunately, during some restoration works, a mistake was introduced to both subsidiary faces, when the numerals were inadvertently exchanged. Whilst the hour lines remain as they were originally delineated, the present numbers belong to the other face. Despite this serious mistake the Wilanów sundial remains the most beautiful work of scientific art of Polish gnomonics and one of the most impressive dials in Europe. It is admired by sundial enthusiasts from all over the world.



*Constellation Sobieski's Shield on a sky map after Hevelius, from Atlas Coelestis written in 1742 (library of Przytkowski Museum in Jędrzejów)*

On all three faces there are tiny golden bells dividing each day in the Palace into hours of work and time for rest. There are also symbols of the week days and signs of the Zodiac – all inspired by the king's interest in astronomy. Of course the crest of the king is there, too – a shield introduced by Hevelius in a map of the sky. He called it Sobieski's Shield but today it remains depicted just as a Shield.

This whole composition is complemented by a sculpture, seen on an opposite side of the Palace, (north) – see the photograph at the bottom of the other page – which depicts Uranus accompanied by Gaia (Earth) and allegories of Day and Night. The similarity of these two reliefs is very clear and according to historians there is a connection between them, however no one has discovered it yet. And still it is believed the second relief shows Death.







# Pałac w Wilanowie



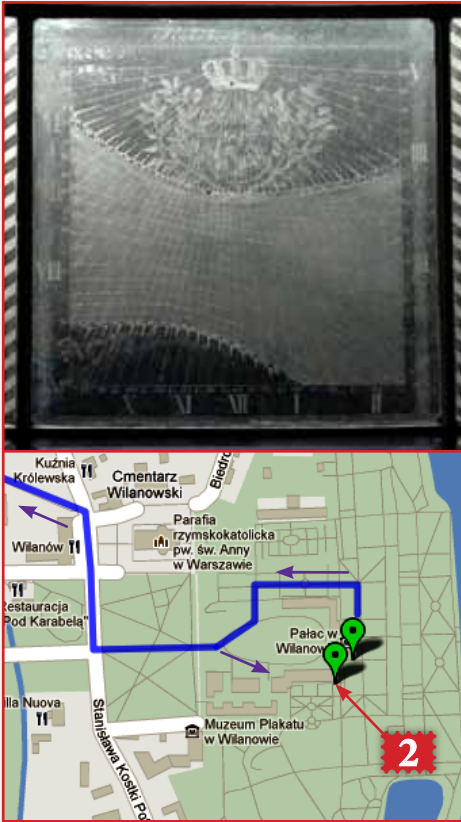
**Directions:** From the Palace's facade one needs to go back to the park gate and then walk through the courtyard to the other side, where an entrance for visitors is located. The second sundial of the Wilanów Palace is to be seen in Galeria Południowa, in a hall, with a copy of the Łazienki statue of King Jan III Sobieski. (Entrance fee)



This is a very special type of sundial, which would normally be classed as a vertical stained-glass dial. In this case, however, the dial has been beautifully engraved in the frosted panel of a clear glass south-facing window. The gnomon is fixed such that it projects on the outside of the building, although it may be read in comfort from the inside.

The dial was supposed to serve King Stanisław August Poniatowski who resided at the Zamek Królewski in Warsaw. The king ordered the dial in Jean-Francois Richter's workshop in Paris. This is the second oldest sundial of this kind in the world, after the 8-years earlier one which is held in the Zurich museum.

Unfortunately, somewhere during the crafting process, a heraldic mistake was made, leading to an exchange of some crest elements. Thus the dial fell into disuse and for many years it was kept in a storeroom.



### Sundial data

address: **10/16 Stanisława Kostki Potockiego Street**

latitude: **52.164782 N**

longitude: **21.090389 E**

designer: **Jean-François Richer**

maker: **Jean-François Richer**

roman numerals: **VI-XII-V**

arabic numerals: **none**

sundial type: **vertical, stained glass**

dimensions: **1,31 m x 2,65 m**

height above ground: **1 m**

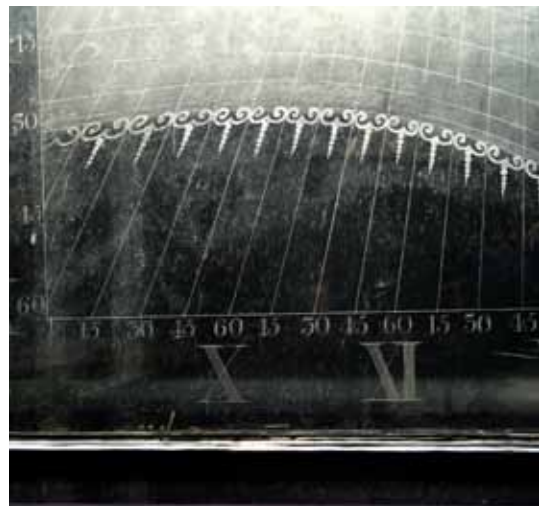
creation date: **1788**

inscriptions: **ULTIMAM TIME**

**other features:** crest Janina with a royal crown, precise calendar, inscription of Richer's workshop: *Richer breveté du Roi en 1788*

Only recently did it become available for public viewing. The original gnomon did not survive to present times, although there is a photograph showing it, thanks to which we know how it looked. It had the shape of a triangle, with a little hole at the outmost section, through which a spot of light would fall onto the dial face, indicating the exact date and time.

Sadly, even if the gnomon is restored, the dial will not work properly in Wilanów, since it was designed to be installed in another location for a different declination.



# Willa Neumannów



**Directions:** Return to the bus terminal by Powsińska Street. Take a bus number 116 and travel to Spacerowa bus stop (it's 13 stops away). When you get there walk 150 m back along the street. You will find the dial on your left on a yellowish building with a restaurant called Biała Gęś.

Today in the Neumanns' Villa there is a restaurant. The Villa itself was built within the years 1928-1929 and it was designed by Marcin Weinfeld, an architect, who was also responsible for several other residences in Warsaw. It is located in a triangle between three streets: Belwederska, Gagarina and Sułkowska.

This ceramic, made of tiny pieces of dial, is considered to be one of the most interesting ones in the city. It perfectly matches a wall of the stair tower. It is the only sundial in Warsaw and one of very few which can be viewed even at night, since it has a dedicated light.





### Sundial data

address: **18a Belwederska Street**

latitude: **52.206172 N**

longitude: **21.032116 E**

designer: **Marcin Weinfeld**

maker: **Marcin Weinfeld**

roman numerals: **none**

arabic numerals: **6-12-5**

sundial type: **vertical**

dimensions: **1 m x 1 m**

height above ground: **6 m**

creation date: **1929**

inscriptions: **none**

**other features:** symbols of seasons in all corners of the dial face, Sun



In all four corners of the dial face there are symbolic pictures of the seasons, represented by four figures. And so, starting clockwise from the top left corner, there is a figure surrounded by flowers (Spring), one with a sheaf of mowed hay (Summer), one with a bowl full of fruit (Autumn), and, finally, one with a bunch of brushwood on a sled (Winter).

The Neumanns' Villa is located by the Royal Trail, which makes it the most visible dial from a very busy street.

# Łazienki Królewskie Pałac na Wodzie



**Directions:** You return to a crossing, from where a yellowish gate can be seen on your right by which you enter the Łazienki Królewskie park. Follow the main alley and turn right after the Belvedere restaurant. Continue walking until you reach a lake, where you take another right turn and cross a little bridge. Keep walking along the path by the lake. On passing an antic theatre, you will find a view of the Pałace na Wodzie and a sundial in front of it.

In the common opinion of sundial enthusiasts, this is the central spot of the entire park. After all, no one can pass the dial indifferently. It stands at the main axis of the park, just by the stairs leading from

the palace to the lake. This makes it visible from all around the lake. This place was frequently depicted on many old paintings and sketches. Thus the sundial became a witness of all the events of past ages.



*Reproduction of a lithography from a collection of the Muzeum Historyczne m. st. on a post war postcard*



### Sundial data

address: **1 Agrykoli Street**

latitude: **52.214605 N**

longitude: **21.035822 E**

designer: **Jowin Fryderyk Bystrzycki**

maker: **Cwikel** (craftsman)

roman numerals: **IV-XII-VIII**

arabic numerals: **none**

sundial type: **horizontal**

dimensions: **diameter 1 m**

height above ground: **1,2 m**

creation date: **1786**

inscriptions: commemoration of king's name-day on 8<sup>th</sup> of May 1786

**other features:** monogram of the king Stanisław August Poniatowski

A shining gnomon gleams at the passing people and a beautifully ornate monogram of Stanisław August Poniatowski draws everyone's attention, as much as by an inscription commemorating the king's name-day on 8th of May 1786. According to historic research, the king was fascinated with all known methods of time-telling so his entire surroundings were filled with masterpieces of horology. Yet still, all such instruments of those times had to be adjusted at noon by sundials.





*Pałac na Wodzie on a postcard from the 60's*





In order to meet the demand to correct the time of the first imperfect clocks and watches, garden dials appeared in all the courts of Europe. Residences of the Polish kings followed this tendency, and so King Poniatowski ordered a sundial to be set up next to the fountain on the isle, to help all the nearby clocks to show the right hour.

The story of this sundial is told in detail in a book entitled *Zegary Stanisława Augusta* by Zuzanna Prószyńska. She names all the craftsmen who took part in this project; but also the most important role played by Father Bystrzycki, the king's astronomer, who delineated the dial face.



# B

## Łazienki Królewskie Biały dom



**Directions:** Facing the Pałace na Wodzie you turn left and walk straight ahead for about 200 m. Biały dom will appear on your right.



*Sundial in front of the Biały dom on an old postcard*

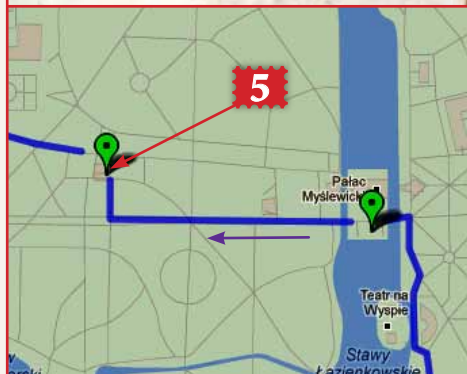
Very few visitors, walking along the main path in Łazienki Park, take a glance at the back of the Biały dom. Too bad, since, besides a gorgeous garden, an old sundial hides in there. A very simple, raw dial face has for centuries served as a playground of shadows, cast by a majestic black gnomon. This contrast strikes the eyes – white as a bedsheet plate and, arising from it, the major dark pointer. Its size increases optically, when compared with the flat surface of the stone. Yes – the picture makes this even more spectacular because all the

markings on the dial's plate almost vanish, disappearing in confrontation with time.

Zuzanna Prószyńska describes this dial as the most impressive of all sundials in Łazienki. Unfortunately its glory did not last to our present time.

Making a little extra effort, and looking at a certain angle, one can still read some





### Sundial data

address: **1 Agrykoli Street**

latitude: **52.215121 N**

longitude: **21.031533 E**

designer: **Jan Chryzostom Redler**

maker: **Andrzej Le Brun**

roman numerals: **IV-XII-VIII**

arabic numerals: **none**

sundial type: **horizontal**

dimensions: **diameter 0,7 m**

height above ground: **1,2 m**

creation date: **1777**

inscriptions: obliterated, probably monogram of the king Stanisław August Poniatowski

**other features:** half-moon at the gnomon's base, sculpture holding the dial face on his shoulders

of the Roman numerals engraved on the dial's face, however an inscription is almost totally obliterated. It is possible that a monogram of Stanisław August Poniatowski was here, who ordered the construction of this sundial in 1778. The possible maker was Jan Chryzostom Redler, who was one of the most important artists of the Warsaw school of the rococo sculpture style. According to historic sources, the commission was carried out by the workshop of Andrzej Le Brun. Still, these remain suppositions, since there is a lack of sources proving them to be facts.



# G

## Łazienki Królewskie Łaz Jastrzębowskiego



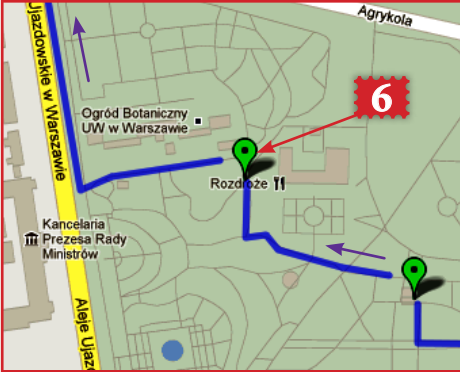
**Directions:** Walk to the other side of Biały dom and turn left onto a pathway. After passing the Stara Pomarańczarnia building (on your right) turn right onto another pathway leading up a hill. On the top there is a huge rock with a sundial on it.

This is the biggest and the oldest granite monolith featuring a sundial in Poland. At this location it appeared as the last one of the three dials, a long time after the death of the great dial enthusiast – Stanisław August.

The sundial was made by Wojciech Bogumił Jastrzębowski, Polish scientist, naturalist and inventor, professor of botany, physics, zoology and horticulture at the Marymont Institute of Agriculture and Forestry. He is credited for inventing ergonomics. In order to build this sundial he constructed an instrument – he called it the Polish compass or the Gnomonograph – which facilitated the drawing of sundials on any surface. Later he described it in a book entitled the same as the instrument – *Kompas polski*.

Interesting things here are 1: a heavy gnomon set straight into the rock and covered with thorns, and 2: usage of a numeral IIII (four vertical lines instead of





## Sundial data

address: **1 Agrykoli Street**

latitude: **52.216414 N**

longitude: **21.028985**

designer: **Wojciech Jastrzębowski**

maker: **Wojciech Jastrzębowski**

roman numerals: **IIII-XII-VIII**

sundial type: **horizontal**

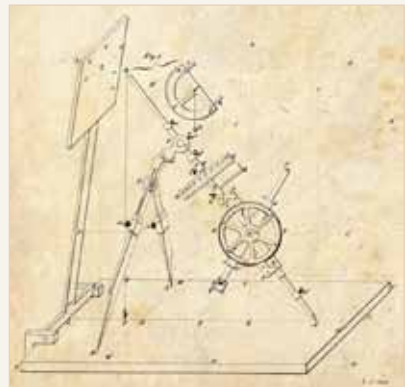
dimensions: **1 m x 0,7 m**

height above ground: **1,5 m**

creation date: **1828**

inscriptions: **on the rock:** Wojciech Jastrzębowski 1799-1882, a professor of Instytut Agronomiczny in Marymont, soldier of 1831 made himself the sundial on this rock using an instrument of his invention, which he called Kompas Polski; **on the dial face:** W. J. 1828; **on the gnomon:** Sundial of W. Jastrzębowski renovated by his students in 1887

IV) showing the hours of 4 in the morning and 16 in afternoon. This is rare but sometimes found on certain sundials. It is said that this is a custom taken from ancient Rome where letters IV were connected with the god Jupiter, one of the mightiest, thus reserved for him alone.



*A drawing taken from a book by Jastrzębowski Kompas Polski, explaining the construction of an instrument called by him Gnomonograph*

# Zentrum Sztuki Współczesnej Zamek Ujazdowski



**Directions:** Following the park's fence, go to the gate leading to Al. Ujazdowskie. There turn right and walk approx. 300 m. You will pass the Botanic Garden and Office of the Prime Minister of Poland. Just before the Rozdroże café, turn right and, passing Mokarabia café, Zamek Ujazdowski will appear before your eyes. The "sundial" is located within the south tower in the interior of Okna café.

Some centuries ago, Ujazdów used to be a small sub-Warsaw village where Polish kings established one of their residences. In a nearby neighbourhood there is a wonderful royal park called Łazienki Królewskie. The very name Ujazdów lasted to the present day only due to its proximity to the castle, which is the home of Centrum Sztuki Współczesnej. In 1996 a sundial was placed in the southern tower. The term "sundial" is used here to describe an ornamental representation of a sundial, since the dial is hidden from the sunlight, inside the building, and is not used as a time telling device.

The idea came from Wojciech Krukowski, the director of the Centre. The dial was designed so that lamps, set on the surrounding walls, would shine on the gnomon and thus imitate a working sundial.

The author and architect of this commission was Piotr Kowalski. The dial face was



designed by Piotr Maciej Przykowski, director of the Przykowski Museum in Jędrzejów. In his work he used a book by father Tadeusz Kowalski *Gnomonika, czyli nauka robienia zegarów słonecznych*



### Sundial data

address: **2 Jazdów Street**

latitude: **52.219288 N**

longitude: **21.030318 E**

designer: **Piotr Maciej Przypkowski**

maker: **Piotr Maciej Przypkowski**

roman numerals: **IIII-XII-VIII**

arabic numerals: **none**

sundial type: **horizontal**

dimensions: **diameter 0,6 m**

height above ground: **1,2 m**

creation date: **1996**

inscriptions: **none**

(published in 1866) which is being held in a library belonging to the Museum. He also agreed to make a copy of an historic gnomon from the Museum's collection. It was then cast by an artist Anna Konik. The pedestal was made by an anonymous soldier from a nearby garrison.

This dial makes an interesting addition to the design of the interior space of the castle tower, in the middle of which there is a staircase leading to the Okna Gallery, located in the basement hall. The sundial is an integral feature in the Okna Café.



# *P* Instytut Głuchoniemych Plac Trzech Krzyży



**Directions:** Go through a passage way on the axis of the main castle entrance. The passage will lead you to Plac na Rozdrożu where, on your right, you will find a bus stop. From there you take any bus and go to Plac Trzech Krzyży (1 stop by a red-number bus or 2 stops by a black-number bus). After stepping off the bus, you will find a sundial behind a fence in front of the bus stop.



This sundial is located in front of the Instytut Głuchoniemych i Ociemniałych. It seems that today no one knows any details about the dial, meaning the year, maker or circumstances of its appearance at this place. However, its crumbled dial

plate, made of sandstone, broken gnomon, with moss growing all over the dial – all these suggest a very long and tumultuous past.

The dial plate rests on an ancient sculpture, resembling armour surrounded by a collection of weapons. It was taken from the ruins of a triumphal arch built in 1809 for Prince Józef Poniatowski. Shortly before this, the Polish army, lead by Poniatowski, stopped Austrian troops marching on Warsaw. A battle took place in Raszyn not far from Warsaw. Another similar sculpture makes a pedestal for a small birdbath which, together with the sundial, make a decorative feature for the Institute.

The massive dial plate is missing many pieces, which were lost somewhere in its history. From the middle of it projects a rod which does not even resemble a gnomon – it's more of a random piece of metal, placed on the plate in order to make





### Sundial data

address: **4/6 Plac Trzech Krzyży**

latitude: **52.228649 N**

longitude: **21.023463 E**

designer: **unknown**

maker: **unknown**

roman numerals: **VI-XII-VI**

arabic numerals: **none**

sundial type: **horizontal**

dimensions: **diameter 0,6 m**

height above ground: **1,2 m**

creation date: **1809**

inscriptions: **none**



it look more like a proper sundial. Close to it one can see another hole suggesting that the original gnomon was mounted in two places and that it was polar oriented. In the middle section of the plate there are the numerous remains of engraved markings and hour lines, however it is impossible now to say whether there was any kind of inscription.

Today the sundial is just an ornamental adornment to the lawn, whilst expanding shrubs, step by step, cut off its sense of existence – access to the sunlight.

# Park Rydza-Śmigłego



**Directions:** After returning to the street, you turn left and walk to the Sheraton Hotel where you turn left again. Now you walk about 200 m until you find yourself at a huge two-level terrace with a view on a park going up to Wisła River. On the upper terrace turn right and walk another 150 m through a park. The sundial will be at your left by the path.

Care of this dial is presently taken by Zarząd Terenów Zielonych w Warszawie, from where we have the only existing information about it. According to this source, the dial was designed by an architect Z. Stępiński and then crafted by Alina Scholtzówna and her team. There is no inscription on the dial face confirming any of the above.

Most probably the sundial was installed here when Centralny Park Kultury (The Central Park of Culture) was formed in 1955. However, it is not known whether it served at any other place beforehand.



Today the dial plate is covered with a greenish patina which suggests that it must be made of a copper based metal alloy. All the markings were engraved on it.



## Sundial data

address: **Książęca Street**

latitude: **52.226704 N**

longitude: **21.03019 E**

designer: **Z. Stępiński**

maker: **Alina Scholtzówna**

roman numerals: **IV-XII-VIII**

arabic numerals: **none**

sundial type: **horizontal**

dimensions: **diameter 0,8 m**

height above ground: **1 m**

creation date: **1955**

inscriptions: Dial tells local solar time.

To obtain the civil time subtract number of minutes indicated in the table. Summer time – add 1 hour.

**other features:** table of Equation of Time

This is a very simple dial of neat construction. A solid brass gnomon is set according to the latitude of Warsaw which confirms the expertise of its designer. This becomes even clearer when one considers the presence of the time correction table on the dial face, which allows for the calculation of civil mean time. There is no Equation of Time curve – just a set of numerical data in 10-day intervals which gives 3 values for each month. The dial is of sufficient accuracy to provide a reading of local apparent mean time.



# A Pałac Kultury i Nauki leje Jerozolimskie



**Directions:** Return all the way to Plac Trzech Krzyży. From there follow the street until you reach the Rondo de Gaulle'a with a characteristic palm tree in the middle. Take any tram and go left for two stops to Centrum. When there, go to the underground and walk to the metro station. Pass the metro entrance and take the stairs up. Then walk another 100 m in the direction of Dworzec Centralny. In the front of Pałac Kultury i Nauki you will find a dial incorporated into the pavement.



Through the middle section of the sundial runs a brass plate, imitating a compass needle, which marks the North-South line, along which the months are engraved. In the North section of the dial plate there is a fleur-de-lis heraldic symbol which, since the Middle Ages, is a mark of North on magnetic compasses. On the opposite side of the dial plate one can see huge Roman numerals marking the year of the construction of the sundial – MCMLV, which stands for 1955.

The creator of this dial was Tadeusz Przypkowski whose contribution in sundial construction made Warsaw a city with the greatest number of sundials in all Poland. This dial is the only one in Warsaw of the analemmatic type. Using it is very simple despite the apparent lack of a pointer – it's the user, standing on a spot corresponding to the current month, who becomes the gnomon, casting a shadow on the dial plate.





### Sundial data

address: **Aleje Jerozolimskie**

latitude: **52.229728 N**

longitude: **21.007388 E**

designer: **Tadeusz Przypkowski**

maker: **unknown**

roman numerals: **none**

arabic numerals: **4-12-8**

sundial type: **analemmatic**

dimintions: **diameter 8 m**

height above ground: **0 m**

creation date: **1955**

inscriptions: **MCMLV**

**other features:** table with month names, hidden initials: HO, RC, JW

The 8-meter wide dial plate, made of granite cubes, merges with a pathway connecting the Dworzec Centralny with metro Centrum. Every day twelve thousand people walk this way, but, in their hurry, very few even notice the dial under their feet.

A careful eye will certainly notice three hidden initials left probably by the pavement makers – HO, RC and JW. They can easily be seen immediately after it has rained, when the wet stones show deeper colors adequate for different granite types.



# Pałac Kultury i Nauki Park Świętokrzyski



**Directions:** On the other side of Pałac Kultury i Nauki there is a park. You need to go there, where the next sundial stands, in front of a line of shrubs isolating the park from the noisy Świętokrzyska Street.

The sundial standing between Pałac Kultury i Nauki and Świętokrzyska Street is one of the few exceptional dials in Poland. This is because of two reasons: 1. it is the only one that, as a matter of fact, consists of no less than 8 component dials and 2. all of them have extraordinary gnomons. Time is indicated not by the shadow of a pointer, but rather by a spot of light projected through a tiny hole in a plate set above the dial face.

All four dial plates face the cardinal directions and each of them has two gnomons – one indicating time since the Summer solstice



to the Winter solstice (period of 22.VI-22.XII), and the second from the Winter solstice to the Summer solstice (22.XII-22.VI). The hour lines are specifically curved which means they are calibrated for the civil time.





### Sundial data

address: **Świętokrzyska Street**

latitude: **52.234295 N**

longitude: **21.005462 E**

designer: **Tadeusz Przyppkowski**

maker: **Tadeusz Przyppkowski**

roman numerals: **none**

arabic numerals: **4-19**

sundial type: **vertical multiple**

dimensions: **0,6 m x 0,6 m**

height above ground: **1,5 m**

creation date: **1955**

inscriptions: **A ray of Sun in a form of a spot of light falling on dial tells the East-european Time.** Plus names of seasons and corresponding dates

**other features:** very rare eight hole gnomons with Sun-shaped faces



This sundial, taking the form of a massive cube, placed on a granite pedestal, can be found in an isolated part of the park surrounded by shrubs by Płac Kultury i Nauki in range of the traffic noise of Świętokrzyska Street. An inscription below the south dial face describes the function of the sundial: A ray of light in the form of a beam indicates East-European Time. Unfortunately trees and bushes around the dial stop much of the sunlight.

# U Apartamentowiec lica Grzybowska



**Directions:** Standing with your back to Pałac Kultury i Nauki, turn left and walk to the nearest traffic lights, (at the crossing of Świętokrzyska Street and Emilii Plater Street). There you must cross Świętokrzyska and enter Twarda Street, where you should walk to Plac Grzyboski from where you will see a sundial on an apartment block.

This visually attractive sundial was probably designed using a dedicated computer program, which can be seen in a complex time scale set on its face. Masters of gnomonics of the past were able to delineate and construct much more sophisticated sundials using only trigonometry calculations and rules of geometry. However today, to design even the simplest sundial, almost everyone turns to a computer's help.

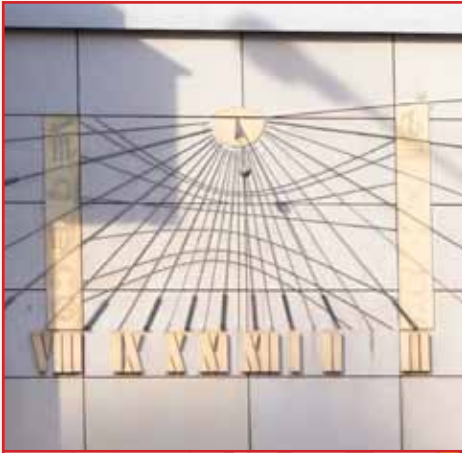
Besides the function of a time determining instrument this dial works also as a calendar. Next to radiantly spread hour lines, marked with Roman numerals, one can also see a set of transverse declination curves described with Zodiac signs. Potentially this sundial indicates the time from 6 in the morning till 5 in the afternoon. However, soon after midday, the dial plate becomes covered with the shadow of a nearby building. In this neighborhood new apartment blocks are being constructed so, at some future time,



this is likely to be the cause of further limitations.

An interesting device can be found on the gnomon of this dial: it's a nodus – in this case a little sphere. Its function is to indicate the current date. A given declination line touched by the sphere's shadow indicates one of twelve days in a year marking the precise moment of the Sun's entry into the next Zodiac sign. Four of these lines have a special meaning: the longest day in a year (Summer solstice – the lowest line), the shortest day (Winter solstice – the uppermost line) and two equinoctial





### Sundial data

address: **2 Grzybowska Street**

latitude: **52.237495 N**

longitude: **21.003231 E**

designer: **Krzysztof Kaszuba-Waławek**

maker: **unknown**

roman numerals: **VI-XII-V**

arabic numerals: **none**

sundial type: **vertical**

dimensions: **4 m x 2 m**

height above ground: **3 m**

creation date: **2002**

inscriptions: **Days are like a dream on earth; Sundial Fecit K. Kaszuba-Waławek 2002**

**other features:** Zodiac signs, declination lines, nodus on the gnomon, table with the Equation of Time

days (Autumn and Spring – the straight line in the middle).

At the base of the gnomon there is a Polish-Latin inscription reading: *Zegar słoneczny Fecit K. Kaszuba-Waławek 2002*. Below the dial face on the level of human eyes there is a small plate showing the Equation of Time graph. It helps in applying the correction of solar time for each given day of the year. It is here also that a biblical sentence is placed which reads: *Dni nasze jako cień na ziemi*, and instructions on how to use the sundial and the table of corrections



# Ogród Saski



**Directions:** On Plac Grybowski take the number 102 bus (it's a stop on demand so you need to wave your hand to make the bus pull over), go 2 stops and step off at Zachęta (again stop on demand so use the stop button). Now cross the street and walk through the Ogród Saski heading for a fountain. There you will find another sundial.



This dial stands on the main axis of Ogród Saski Park. It was sponsored by Antoni Magier, a professor of physics, a meteorologist and an observer of Warsaw's social life at the turn of the XVIII and XIX centuries. In the year 1863, i.e. over 20 years after his death, the sundial was finally carved out of a Canary marble stone and set on a pedestal next to a gorgeous fountain. Today one can still read the Latin inscription engraved on the dial face: *Erectum ex*

*legato Antoni Magier. A.D. MDCCCLX-III.* An attentive visitor will surely notice another inscription on the plate's ridge reading *S. SIKORSKI W WAR*, which most probably is the signature of the craftsman. The last word is the beginning of the name of the town or of a surname.

This sundial was designed with great precision which seems to be proven by the high density of hour-lines, dividing the day not only into hours and half-hours, but also into quarters and 5-minute intervals. In the middle of the dial plate there is a half-moon figure referring to another Warsaw sundial which was made for King Stanisław August Poniatowski and which can still be seen next to Pałac na Wodzie in Łazienki Królewskie (visited during this trail). The gnomon however is not original – it was reconstructed in 1969 by Tadeusz Łopieński, a bronze caster who reproduced most of the monuments of Warsaw



### Sundial data

address: **Królewska Street / Senatorska Street / Marszałkowska Street**

latitude: **52.240763 N**

longitude: **21.009958 E**

designer: **Antoni Magier**

maker: **A. Sikorski**

roman numerals: **IV-XII-VIII**

arabic numerals: **none**

sundial type: **horizontal**

dimensions: **diameter 0,8 m**

height above ground: **1 m**

creation date: **1863**

inscriptions: **on the plate:** ERECTUM EX LEGATO ANTONI MAGIER. A.D. MDCCCLXIII;

**on the gnomon:** T. ŁOPIEŃSKI, WARSZAWA – 1969; **of the plate's ridge:** A. SIKORSKI W WAR

**other features:** half-moon at the gnomon base



destroyed during the war. There are also some clear spots on the dial plate which had to be replaced with new material.

Nowadays the sundial, surrounded by small railings, makes an interesting addition to a pedestrian part of the city and at the same time a romantic setting. On almost every sunny day one will meet here many parents teaching their children how to read the solar time.

# U Wydział Sławistyki niwersytet Warszawski

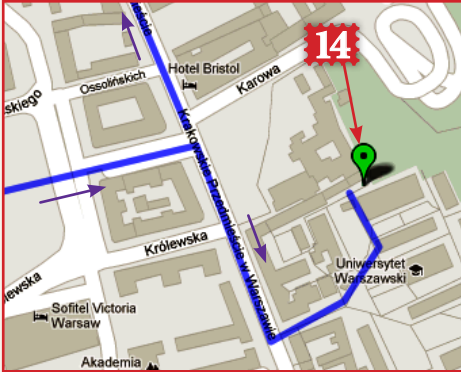
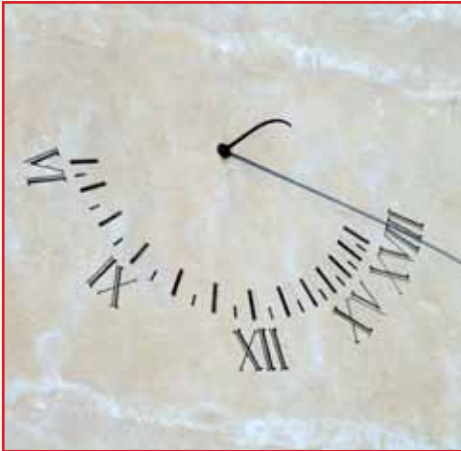


**Directions:** Pass the fountain and walk towards the Grób Nieznanego Żołnierza monument. Keep walking through Plac Piłsudskiego and then down Tokarzewskiego-Karaszewicza Street until you reach Krakowskie Przedmieście Street. At this point turn right and walk another 200 m. On your right you will see a wonderful neo-baroque gate which is the entrance to the main campus of the Warsaw University. Go through a courtyard and turn left, heading for a building called Mały Belweder. There you will also find a sundial.

The grounds of the Warsaw University by Krakowskie Przedmieście are very scenic and right after stepping through the main gate they take one into a world of antiquity. It is because all the buildings of this area are in a classic style and are decorated with sculptures relating to this era.

Very few people know about a sundial which can be seen on a wall of the Slavic Studies College. The cause is its very secluded location, which is rarely seen by visitors. From the other side, the College abuts the female convent of Wizytki. The dial can best be seen from the side of Mały Belweder – a small building hosting a branch





### Sundial data

address: **26/28 Krakowskie**

**Przedmieście Street**

latitude: **52.241289 N**

longitude: **21.018428 E**

designer: **unknown**

maker: **unknown**

roman numerals: **VI-XII-XVIII**

arabic numerals: **none**

sundial type: **vertical**

dimensions: **1 m x 0,7 m**

height above ground: **8 m**

creation date: **1970 (?)**

inscriptions: **none**

of the Faculty of Polish Studies – since it is located on a first floor level and a narrow street makes perceiving it very difficult.

We know nothing about the dial's maker and the year when it was constructed is unclear too. One can easily see traces of some changes made to the dial face, which suggests that there was some kind of mistake made during its construction, or that someone had subsequently tried to improve its accuracy. This would mean that the dial was not delineated according to gnomonic rules but rather using some intuitive ideas. Perhaps the maker

simply marked out the hours on the wall using his clock? However, these views are just an attempt to explain such obvious corrections.



# Kamienica pod Lwem

Rynek Starego Miasta



**Directions:** Return to Krakowskie Przemieście Street, turn right and walk along the street to Plac Zamkowy (approx. 1 km). There turn left into Świętojańska Street which runs up to Rynek Starego Miasta. A residence with a sundial is located on your right at the end of the street.

*Tadeusz Przykowski inspecting the constructing process (source: Wikipedia)*



Residences No. 13 (Pod Lwem) can be found in the southern-most corner of Rynek Starego Miasta. The sundial is incorporated into a space between two windows at the second floor level on a wall, visible from Świętojańska Street. The best view of the dial is obtained from Zapiecek Street which is connected with Świętojańska exactly under the dial. This is one of the most beautiful sundials of Warsaw. It was constructed in 1954 by Tadeusz Przykowski.

His most preferred technique was sgrafitto (layers of plaster of different colour are applied one on another and then parts of the topmost layer are removed to uncover the colours from below). This sundial is a fine example of this art. On the right-hand side in the middle of the dial face one can see the maker's signature – a tiny pictogram resembling a sable or inverted capital letter P.



### Sundial data

address: **13 Rynek**

latitude: **52.249257 N**

longitude: **21.012307 E**

designer: **Tadeusz Przyppkowski**

maker: **Tadeusz Przyppkowski**

roman numerals: **XI-XII-VIII**

arabic numerals: **none**

sundial type: **vertical**

dimenitions: **2,5 m x 2,5 m**

height above ground: **8 m**

creation date: **1954**

inscriptions: **none**

**other features:** Sun, planets symbols and Zodiac signs

The face of the sundial is a square with a circle inscribed in it. Within the circle all the hour lines and markings are contained, across which runs the shadow of a golden gnomon. Gold is also a symbol of the Sun located at the gnomon's foot, from where all the hour lines emanate. In all four corners there are Zodiac signs and symbolic representations of the constellations: Aries, Cancer, Capricorn and Libra. These refer to the most special days of the year, namely the winter solstice, the summer solstice, and the two equinoxes (spring and autumn) which



*The signature of Tadeusz Przykowski is visible on the dial face*



at the same time are the starting points for the seasons. Among other ornaments and furniture one can find symbols of the planets and the Moon. Since the sundial was made on a west declining wall, it indicates the time from 11 a.m. till 8 p.m.



*A photograph of Kamienica pod Lwem taken in the 50's – shortly after Rynek Starego Miasta was fully reconstructed (author unknown)*





# Kościół św. Ducha

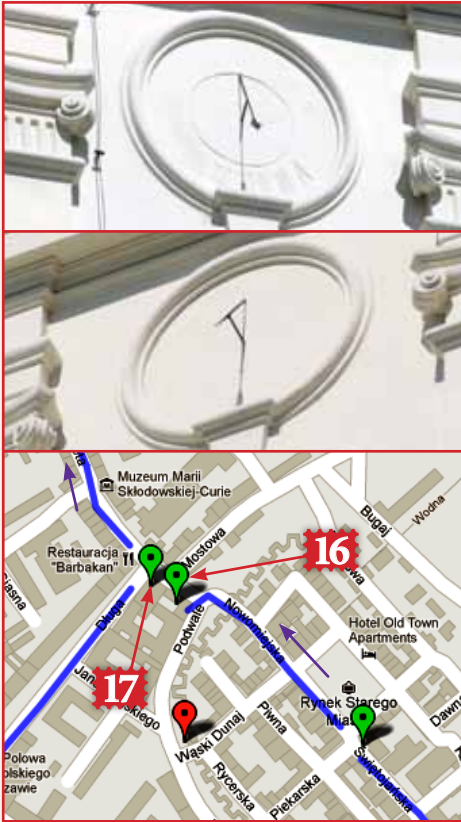


**Directions:** Pass Rynek Starego Miasta and follow Nowomiejska Street to the old outer city walls. Turn left after the Barbakan (barbican) and enter Podwale Street. Walk into the first gate on your right which is the home of The Mexican restaurant. In its courtyard look up high on the nearby church tower – there you will find a sundial. The other one (a twin brother) can be seen from Długa Street.



These are probably the most mysterious twins of Warsaw – as we know nothing about them, neither the name of the maker, nor the date of their construction. This is why we assume that they were made dur-

ing the last reconstruction of the church of the Pauline convent. Furthermore, it is impossible to view them both at the same time – each has to be approached from a different side of the church.



### Sundials' data

address: **3 Długa Street**

typ zegarów: **vertical**

dimensions: **diameter 1 m**

height above ground: **15 m**

creation date: **1845**

inscriptions: **none**

designer: **unknown**

maker: **unknown**

### Dial on Eastern tower (16)

latitude: **52.250702 N**

longitude: **21.00933 E**

roman numerals: **none**

visible from Podwale Street

### Dial on Western tower (17)

latitude: **52.250817 N**

longitude: **21.009116 E**

roman numerals: **XII-V**

visible from Długa Street

After the Warsaw Uprising in 1944 the church and both towers collapsed. Reconstruction took place in 1955 as a part of an extensive reconstruction project of the Stare Miasto. At that time both dials were restored.

There is a curious thing about these sundials – only one of them has hour lines or any markings, which means that only the one can, in fact, indicate time. However it has a very narrow range, since only the hours from XII to V were marked on its face. Still, these dials are located so high above the pavement that hardly anyone can see or use them.



# Rynek Nowego Miasta



**Directions:** From Długa Street turn right and following Freta Street walk to Rynek Nowego Miasta. At the diagonal end there is Przyrynek Street where on your right you will see a residence with a sundial.

This residence was built in 1955 to the design of the architect team of Jacek Gejewski and Włodzimierz Wapiński. It is decorated with a couple of modern sculptures in a mysterious style and with a sundial kept in the same mood. Most probably the dial was created together with the residence and all the sculptures. This sundial can be seen from Przyrynek Street and Rynek Nowego Miasta. As the wall supporting the dial declines west,

sunlight does not appear here until mid-day. In theory it could indicate the time from 11 a.m. till 9 p.m. However, a line of tall trees casts a shadow over the dial face, so that the sundial is more of a decoration than a time determining instrument.

The hours marked on the sundial are quite curious – besides the range mentioned above there are also other markings on the plate, namely the numerals 3-10, showing the early morning hours. However, in this latitude, no sundial can indicate the time before 4 a.m., let alone 3 a.m. So there is no chance for this west-declining sundial to show these hours. What are these markings then? These must be imaginary hours suggesting that time passes by even when there is no shadow on the sundial.

The residence is on a list of historical treasures and, as such, it is protected by the law.





### Sundial data

address: **4/6/8 Przyrynek Street**

latitude: **52.253688 N**

longitude: **21.008686 E**

designer: **unknown**

maker: **unknown**

roman numerals: **none**

arabic numerals: **(3-10) i 11-21**

sundial type: **vertical**

dimintions: **2 m x 2 m**

height above ground: **4 m**

creation date: **1955**

inscriptions: **none**



# A Muzeum Archeologiczne Arsenał



**Directions:** From Rynek Nowego Miasta you need to return to Długa Street and follow it until you reach the entrance to Ratusz-Arsenał metro station. On its right there is a building which houses the Muzeum Archeologiczne and the Arsenał restaurant. In the inner yard you will find the last sundial of this trail.

The inner courtyard of the Warsaw Arsenal hides an interesting surprise for hunters of the shadow of the Sun. This is a rare type of sundial, set on a vertical wall – as many other vertical dials – but this wall declines west to such a degree that the gnomon does not touch the wall. Most wall dials in Poland are made on south walls, so this one looks very different.

A person who knows the Art of Dialling (i.e. gnomonics), as called in past centuries, can make a sundial on liter-



ally any wall and on any surface. Tadeusz Przytkowski made this sundial in 1938 but what can be seen in the yard of the Arsenał is certainly a reconstruction, since after the Warsaw Uprising in 1944, the city was almost completely levelled to the ground.

The very gnomon is worth notice – it has takes the form of an arrow stopped in its flight and hung above the face of the dial. It does not touch the wall but is fixed by special holders. The gnomon is nearly parallel to the wall.



### Sundial data

address: **52 Długa Street**

latitude: **52.246012 N**

longitude: **21.001541 E**

designer: **Tadeusz Przytkowski**

maker: **Tadeusz Przytkowski**

roman numerals: **XII-VIII**

arabic numerals: **12-8**

sundial type: **vertical**

dimensions: **1 m x 1 m**

height above ground: **3 m**

creation date: **1938**

inscriptions: **NOSCE TEMPVS;**

date: **MCMXXXVIII**

**other features:** gnomon in a form of an arrow

Interestingly, at that time, Przytkowski constructed here not one but two sundials. The second sundial was located exactly on the opposite wall of the yard – an east-declining one. Unfortunately, after the war, it was never restored.

These facts are described by Adam W. Englert, a former director of Archiwum Miejskie w Arsenale, in a book *Archiwum Miejskie Warszawy w Arsenale warszawskim* published on the occasion of the 300th anniversary celebration of the founding of the building by



Władysław IV. He writes: *Also new are two sundials in the yard – delineated and designed by Dr. Tadeusz Przytkowski, and made in sgrafitto by Mr. Kazimierz Knot.*

### The authors

**Ela Niedbałka** and **Darek Oczki** are travellers and long-time sundial enthusiasts, who search for them not only in Poland but in other countries as well. The results of these efforts are published on **Gnomonika.pl** website where they compile the **Register of sundials in Poland**.

### Guided tours

In case there is an interest in taking a guided tour (English only) as described here, please contact us by e-mail:

**gnomonika@gnomonika.pl**

You want to know more about sundials in Poland? Visit **www.gnomonika.pl**

### Bibliography

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