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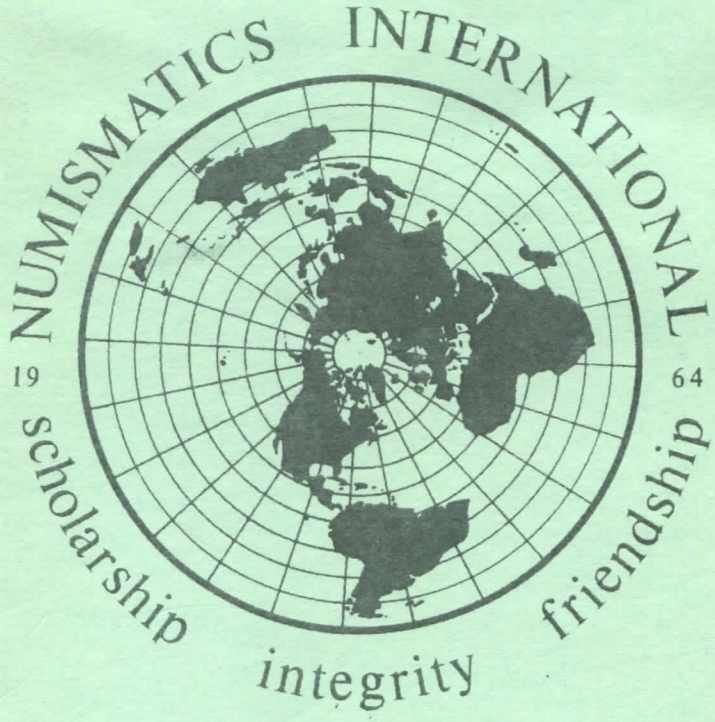

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Western and Eastern Calendars and the Appearance of Dates on Russian Coins

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1. Introduction

At the end of the 16th century dates appeared for the first time on Russian coins. These dates were added on kopecks issued by the city-republic of Novgorod. As in Byzantium, letters were used to express numbers, but, instead of the Greek Byzantine alphabet, the Russian Cyrillic alphabet, which derived from the Byzantine, was used[1]. Also, as in the Orthodox tradition, years were counted from the "Creation of the World" instead of from "the birth of Christ" (*Anno Domini*). This changed in 1700 when Russia adopted the Julian calendar and Cyrillic dates were gradually replaced by dates in Arabic numerals. I have written this short article, thinking that this subject is of interest to numismatists and collectors of Russian coins and convinced that it is well worth going into more details on this appearance of dating on coins of Novgorod, and later on a few of the seventeenth-century issues of Peter the Great. I start with a history of calendars in Europe and the economic importance of Novgorod as a link between East and West. In the second part, I describe the way dates were expressed on Russian coins and the slow irregular switching from dates in Cyrillic to Arabic numerals. Finally, I have put together a limited bibliography.

2. The Western calendars

2.1. The Julian calendar and *Anno Domini*

Dating depends on how time was reckoned.[2] The Roman Republic used a lunisolar[3] year counted *ab urbe condita* (*a.u.c., from the founding of the city*, Rome). Since 153 B.C. the two consuls had taken office on January 1 and this day marked probably the beginning of the year and the changing of the year number a.u.c. since that time. This year was shorter than the solar year and corrections had been made very irregularly . By the end of the Roman Republic, it was 3 months behind the sun which caused serious problems in agriculture and many other matters. Following his conquest of Egypt in 706 a.u.c. (48 B.C.) Julius Caesar consulted the Alexandrian astronomer Sosigenes about a reform of the calendar and, as Pontifex Maximus, introduced a year of 365 days and 6 hours or 365.25 days[4] with a regular year of 365 days divided into 12 months and a leap-day (*bissextum*) added after February 23 in the years divisible by 4. The years continued to be numbered a.u.c. and the changing of the year date remained 1 January. Introduced in Rome in 708 a.u.c. (46 B.C.), the new calendar was called the *Julian calendar*.

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[1] Saint Cyrillius (827-868) and his brother Methodius evangelized the Slavs, the Moravians and the Czechs. Cyrillius composed an alphabet from which derives Serbian, Bulgarian and Russian writing.

[2] On chronology from the ancient to modern times: the general work by GINZEL 1906. See also BOND 1875b; GIRY 1894; ALEXANDER 1921; POOLE 1934; STRUBBE 1960; VOIGTLÄNDER 1979; BICKERMAN 1980; BIÉMONT 2000. On the history of the Roman calendar: KUBITSCHEK 1928; LIETZMANN 1956. The Roman chronology before Caesar has been studied by MOMMSEN 1859 and MICHELS 1967, the reform of Julius Caesar by MOMMSEN 1886.

[3] The lunisolar calendar is based on the annual cycle of the sun and the cycle of the phases of the moon. Twelve lunar months corresponded to approximately 354 days or 11 days less than the solar year and needed a leap-month every 3 years.

[4] STRUBBE 1960, p. 45, 51; BIÉMONT 2000, p. 224.

Almost six centuries later, Dionysius Exiguus[5] introduced the *Anno Domini* era that was instituted in 526 A.D. in Western Europe. Dionysius reckoned that the Incarnation of Jesus Christ had occurred on March 25th in the year 754 a.u.c., with his birth nine months later on December 25th.[6] According to Dionysius, Jesus Christ was born in 753 a.u.c. but he made a mistake of 4 years and Christ was born in 749 a.u.c. Dionysius' system of numbering years A.D. spread gradually through the Western Christian world, once it was adopted by Bede (672/673-735).[7] The date of Julian years continued to change on 1 January until the eighth century under the Merovingians.[8] Even in medieval times the Julian year began on 1 January[9] and this day retained the name *New Year's Day* or an equivalent name (*annus incipiens*, French: *l'an neuf, jour de l'an*, Dutch: *Nieuwdag, Nieuwjaar, Nieuwjaarsdag, Jaarsdag*).[10] But in the Middle Ages the changing of the year date mostly took place on another day, for example at Easter (Easter style),[11] Christmas (Christmas style) or Saint John (24 June), etc. When the start of the Julian year was again adjusted to 1 January the term *style* was used to designate by the name of *new style*—the year beginning on January 1, while a different start of the year was called *old style*. In 1522 Venice introduced the New Year style or New style. This was legally imposed in Spain and Portugal on 1 January 1556, in France on 1 January 1564, and in Scotland on 1 January 1600.

2.2. The Gregorian reform

Astronomical data concerning the length of the tropical year lay at the base of the reform introduced at the end of the 16th century. Since the real solar year, the time between vernal equinoxes, counted in reality 365.2422 days, the Julian year was 0.0078 days longer (11 minutes and 14 seconds)[12] or one day and nearly 5 hours longer in 128 years. Every 128.2051 years the Julian calendar was about one day ahead of the sun and the spring equinox.[13] As the years and centuries passed the Julian calendar became more and more inaccurate, with the seasons and the date of Easter falling ever later in the year. In February 1582 the Julian calendar was about 10 days ahead of the solar year: that year the (properly calculated) date of the equinox was March 21 while according to the Julian calendar the spring equinox fell a little after midnight on March 11 and was moving steadily earlier. Since the Roman

[5] Dionysius Exiguus (c. 470-c. 544) was a monk in Scythia Minor, the modern Dobrudja, actually shared by Romania and Bulgaria. He lived in Rome from about 500, where he was a learned member of the Roman Curia.

[6] KRUSH 1937.

[7] Saint Bede (Beda Venerabilis) was an English monk who published many scientific, historic and religious works. JONES 1943.

[8] BOND 1875a.

[9] RÜHL 1897; BLACKBURN 2003.

[10] STRUBBE 1960, p. 51.

[11] The word *style* (Latin: *stilus*) indicates the day on which the number of the year changed: only in the *New Year style* the year date changed on 1 January. 'New Year' and 'style' were two completely independent events.

[12] SHIELDS 1924, p. 408.

[13] The equinox (Latin: *aequus*, equal and *nox*, night) is the day when the length of the day is equal to that of the night. In the northern hemisphere the spring equinox occurs on 20 or 21 March, the autumn equinox on 22 or 23 September. The summer solstice (Latin: *solstitium*) occurs on 21 June (the longest day) and the winter solstice on 21 December (the shortest day).

Catholic Church tied the determination and celebration of Easter[14] to the calculated spring equinox of the calendar, the problem became more and more acute until finally Pope Gregory XIII (1572-1585) issued a papal bull on 24 February 1582, known by its opening words *Inter gravissimas*, ordering the elimination of this steady movement in the date of the equinox.[15] He established a new calendar in which ten days that had been over counted since the Council of Nicea had to be withdrawn from the Julian calendar: the day after October 4, 1582 (a Thursday) would be October 15, 1582 (a Friday).[16] This papal bull did not mention the date of 1 January as the changing of the year since many European countries had already adopted the New Year style. But, on October 4, 1582 only four Catholic countries adopted the new calendar: Italy, Spain, Portugal and Poland. France did so after Sunday, December 9, 1582, the next day being Monday December 20, 1582[17] and in Germany the Catholic States switched to the new calendar in 1583, as did parts of Austria. The other parts of Austria, Bohemia and Moravia, only moved to the new calendar in January 1584, followed by Hungary in 1587. The protestant States adopted the reform much later, only in 1700, and jumped from February 18 to March 1. In England, the reform, a correction of 12 days, only took place in 1752, moving from September 2 to September 14. Sweden changed as late as 1753.

The use of two calendars made it necessary to name the new calendar '*Gregorian*' and the old one '*Julian*'. The word *stilus* indicated the year style, the date at which the year began, but it was soon used to designate the new calendar. The Gregorian calendar became the 'new style' (*stilus novus, reformatus, correctus* or *gregorianus*) while the Julian calendar was called 'old style' (*stilus antiquus* or *vetus*). Although the word '*stilus*' had nothing to do with '*calendar*' it eliminated quickly all the other names and became the only one used in the 17th century[18] since many European countries had adopted the new style (Gregorian calendar) after 1582.

Another system was used for a very long period of time and continued into modern times. In this system the date was indicated in the old and in the new calendar. For example, the Holy Alliance between Russia, Austria and Prussia was dated 14/26

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[14] The position of the full moon in March was not determined by astronomic observation but calculated by the calendar. The date of Easter, commemorating the resurrection of Jesus Christ, had been fixed by the Council of Nicea in 325 as the first Sunday after the full moon of March (the vernal equinox). SHIELDS 1924, p. 410. But it was not before the 9th century that Easter was generally fixed on the Sunday after this full moon, which was believed not to occur earlier than 21 March. Easter occured thus at the earliest on 22 March and this was the case when the date of the full moon was calculated on Saturday 21 March. If the spring full moon was calculated on 18 April and if this day was a Sunday, Easter would fall on 25 April. The date of Easter oscillated between 22 March and 25 April and on this date depended the other moving holidays of the Catholic Church. STRUBBE 1960, p. 34.

[15] On the Gregorian reform: ALEXANDER 1921; VAN WIJK 1932; MOYNE 1982; COYNE 1983.

[16] The rule for the leap-year was changed. The Julian leap-year was a year divisible by 4. In the reformed calendar the leap-year is also divisible by 4 with the leap-day added after February 28. The Gregorian calendar counts as leap-years only those century years where the first two digits are exactly divisible by four: only the years 1600, 2000, 2400, 2800, etc., are leap-years and 1700, 1800, 1900, 2100 and 2200 are not. During the space of 800 years six days are left out – contrary to the Julian calendar – and thus an average length of the calendar-year is obtained which differs only by twenty-six seconds from the length of the tropical year.

[17] LAMONT 1920, p. 18.

[18] STRUBBE 1960, p. 48.

September 1815. Sometimes the two dates were reversed but the date was always clear since the higher number (or the later date) indicated the Gregorian date.[19]

3. The Eastern calendars

3.1. The Byzantine calendar

In the Byzantine Empire, the dating of the biblical Creation of the world by the Christian chronographer Annianus of Alexandria led to the introduction of *Anno Mundi* eras based on this date. The most important of these was the *Etos Kosmou* (Ετος Κόσμου) or *Era of the World*, also named *Creation Era of Constantinople*. It was believed that the date of the Creation was 1 September 5509, B.C. and year one was supposed to be 1 September 5509 B.C. to 31 August 5508 B.C.[20] Years were counted *Anno Mundi* (*Ab Origine Mundi*), 'from the foundation of the World'. The number of the year did not change on New Year, Easter or another day but on 1 September.[21] Grumel has indeed shown that the indiction and the Byzantine year both began on 1 September (1 September style).[22]

3.2. The Old Russian Calendar

In 6496 Anno Mundi or 6496 – 5508 = 988 A.D. Prince Vladimir of Kiev adopted Christianity, the Cyrillic alphabet and the era *'from the Creation of the World'* transmitted from Constantinople to Kiev.[23] In this era the years were counted "from the Creation", an event that was placed in the year 5509 B.C. The old Russian calendar began however on 1 March, six months after the beginning of the Byzantine Anno Mundi year with the same number, and became later the calendar of all the Russian lands. The changing of the date of the Russian year was kept on March 1 up

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[19] STRUBBE 1960, p. 49.

[20] Since Jesus Christ was born c. 5504 A.M. his birthday fell actually in 4 B.C.

[21] 1 September is still used in the Eastern Orthodox Church for the beginning of the liturgical year.

[22] The Byzantine indiction, an institutional cycle of 15 years, commenced 1 September as of 312 A.D. in Constantinople where the Roman calendar was adopted. The first day of the indiction cycle moved to 23 September (conception of Saint John the Baptist) and returned to 1 September as of the first day of the civil year on 1 September 462, the day that inaugurated the new style. GRUMEL 1954, p. 128, 138, 142-143. Concerning the civil year, the religious year and the liturgical year, this author wrote, p. 139 : « *Aucune date ne pouvait mieux convenir pour sa célébration, aux yeux des Byzantins, que le jour même où l'année civile a son commencement. L'année religieuse, l'année liturgique se superposait ainsi à l'année civile, et les deux n'en faisaient qu'une* », p. 140 : « *Il est ainsi vraisemblable que lorsque l'indiction passa au 1^er^ septembre, ce jour-ci fut considéré seulement comme le début de l'année civile...*» and p. 142 : « *Quant au 1^er^ septembre, qui succéda au 23 septembre comme commencement de l'indiction et début d'année civile, il devint aussi début d'année ecclésiastique, quand on en fit une fête religieuse en y attachant le souvenir de la première prédication du Sauveur* ».

[23] On the christianization of Russia and the Cyrillic calendar: GRIVEC 1960; MÜLLER 1970. The Cyrillic and Glagolitic alphabets were studied by V.N. Shchepkin in his *Manuel of Russian Paleography*, published in Moscow in 1918. DONNERT 1991, p. 89, wrote : « *Bei dem von Konstantin geschaffenen slawischen Alphabet handelte es sich um das sogenannte glagolitische Alphabet, um im wesentlich frei erfundene Schriftzeichen.*(...) *Jedoch ungeachtet der Vorzüge, die glagolitische Alphabet auszeichneten, wurde dieses vom 9. Jh. an mehr und mehr vom sogenannten kyrillischen Alphabet verdrängt, benannt nach Konstantins Mönchnamen "Kyrill". Die kyrillische Schrift ist lediglich die Anpassung der griechischen Schrift an die Slawische Sprache. Neue Zeichen wurden in kyrillische Alphabet nur für die Laute der slawischen Sprache eingefügt, die das Griechische nicht kannte* » and also, p. 93 : « *Als am Ende des 10. Jh. die kirchenslawische Literatur immer mehr von der vordringenden griechisch-byzantinischen Literatur verdrängt wurde, übernahm Kiev das von den aus Thessalonich stammenden heiligen Kyrill und Method ausgehende reiche Erbe und errichtete darauf den festen Bau der Russischen Orthodoxen Kirche* ».

to the end of the 15th century when the Moscow government decided to begin the calendar year with 1 September.[24] Church tradition also placed the adoption of the September 1 style at the end of the 15th century. Ivan III would decide in Anno Mundi 7000 (7000 – 5508 = Anno Domini 1492) to adopt the Byzantine year and change the date of the year on 1 September. This way the Russian year A.M. 7000 only lasted for six months, from 1 March to 31 August 1492.

4. Silver ingots, dengi and kopecks and the role of Novgorod

4.1. The Novgorodian grivna ingot and the rouble

Not surprisingly, the first Russian dates appeared on coins struck in Novgorod,[25] the main Russian city with relations with the West. It was the most eastern town to which western merchants, mainly Germans called *Novgorodfahrer*, were allowed to travel since the twelfth century.[26] Organized in the Hanseatic League since the end of the 12th century, these merchants maintained a monopolistic trade system for several centuries.[27] The Hanse imported European products, lead for church roofs, wine, spices for magnates' tables, enamels from the Rhineland and Limoges and later mainly Flemish drapery. Large quantities of silver coins were brought to Novgorod by the German merchants to pay for the goods (furs, squirrel hides, amber, wood, wax) brought to *Peterhof*, the *Hansekontor* in Novgorod, by the Russian merchants from all places in the very large territory in the North and the North-East regions dependent on Novgorod. Beeswax and especially furs soon occupied an important place among the exports from Novgorod as did the import of silver from the West.[28] In Novgorod these silver coins had to be melted down into ingots of a fixed mass and very high purity which were used in commercial payments.[29] The silver ingot was named *grivna* (diminutive *grivenka*)[30] and circulated in all of Russia.[31] From the 13th century a new name appeared in Novgorod and replaced the old name *grivna* or *grivenka* to indicate the silver ingot: *rouble*. The grivna-rouble was the silver ingot of 204g and the grivna became a unit of mass named *grivna skalovaja*.[32] The use of

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[24] ROSSOVSKAJA 1936; ACHELIS 1954. According to STRUBBE 1960, p. 59, the 1 September style was introduced from Byzantium into Russia around the middle of the 13th century. According to SEVERIN 1965, p. 12, the March calendar was used until the 14th century. On the other hand, BOND 1875b, p. 128 and GIRY 1894, p. 103, were convinced that the beginning of the year was fixed at the spring equinox at least since the 11th century and they named the calendar starting 21 March *Russian style*.

[25] Archeological evidence indicates that the city of Novgorod (*Nova gorod*, '*the new town*') has been founded in the tenth century on the Volchov River, just north of Lake Ilmen. MARTIN 1995, p. 39.

[26] Before 1200, the German merchants had already founded their own establishment called *Peterhof* (*curia Sancti Petri*) close to the Novgorod market. Novgorod concluded commercial treaties with Scandinavians and Germans in 1191-1192. MARTIN 1995, p. xvii. By 1207-1209 the Germans had received their first privileges from prince Constantin. GOETZ 1922; JOHANSEN 1953; SZEFTEL 1958; HEINSIUS 1962; THOMPSON 1967; KARGER 1973; BIRNBAUM 1981.

[27] GOETZ 1922; ANGERMANN 2002a; ; ANGERMANN 2002b.

[28] ATTMAN 1981; ANGERMANN 2002b; SCHUBERT 2002.

[29] BAUER 1929; MEDVEDEV 1963.

[30] The theoretical mass of the silver grivna-ingot is 204 g. ELSEN 1995. SPASSKY 1967, p. 74, 109, also mentioned this mass of 204 g for a *grivenka* of silver. On Russian metrology see now also PRITSAK 1998; WITTHÖFT 2002.

[31] SPASSKY 1967, p. 63: « *In Novgorod the imported silver was made into the customary grivna-ingots suitable for the whole of Russia* ».

[32] When the grivna-rouble ceased to exist as a silver ingot, the name *grivna skalovaja* (derived from the English *scale*; the *scales* = the *balance*, French: *la balance*; Dutch: *de balans*; the Dutch word for scale is *schaal*) survived as a unit of mass. The *grivna skalovaja* was divided into 48 zolotniks

these ingots explains why the small silver coin, the *denga*, was struck rather late in Russia, late in the second part of the 14th century, and even much later in Novgorod (in 1420) than in the other, more eastern situated, Russian mints.

4.2. Novgorod at the end of the 15th century

The grand prince of Moscow, Ivan III (1462-1505), who wanted to favor the trade activities of Moscow,[33] defeated the Novgorodian army in 1471 and occupied the city seven years later in 1478—his greatest success.[34] Novgorod had to accept a governor appointed by Ivan but the powerful commercial city maintained a large measure of autonomy for a long time after the grand prince had put an end to the independence of the Novgorodian republic.[35] Some 70 Novogorod families were deported and given estates far away. The grand prince closed the Novgorod *Kontor* of the German Hanse in 1494, confiscated all their goods for an amount of 96,000 Lübeck marks and deported the 49 merchants of the *Peterhof* to Moscow.[36] The Novgorod *Kontor* remained closed for 20 years and was reopened in 1514, but it was never the same again. Novgorod had lost much of its importance by 1494.[37] The main economic center had moved to the more eastern Moscow[38] and even to Khazan on the Volga after it was taken by Tsar Ivan IV in 1552, but German merchants continued to visit *Peterhof*.[39] At that time, the Russian trade remained mainly an export trade (flax, hemp, tallow, wax, and furs) with persistent large export surpluses of which an important part flowed through the Baltic Sea. These exports continued to be paid for with an important inflow of silver and gold.[40]

4.3. The Novgorodian dengi

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of 4.25g and into 1,200 pochkas of 0.17g. The smallest unit of mass was the *dolja* and the theoretical mass of the *grivna skalovaja* was 4,800 *doli* of 0.0425g, that of the zolotnik 100 doli, and the pochka was 4 doli. ELSEN 1995, p. 12-13. The dolja was very probably the theoretical mass of thick nude barley grains. In Moscow, the rouble became a unit of payment, a money of account, equal to 200 dengi, at the end of the 14th century. SPASSKY 1967, p. 74, 102-103. After 1420, the rouble of account was equal to 216 dengi in Novgorod. It should be mentioned that the Russian monetary system is the oldest decimal (in fact centesimal) system in Europe.

[33] Moscow, on the Moskva, was conveniently situated on the river trade routes between the Baltic Sea and the Black and Caspian Seas. It had a huge forest hinterland which provided the valuable furs that composed a large part of the Moscow trade. The expanding trade between Moscow and the West is illustrated by the fact that Ivan III hired Hungarian minters to issue gold ducats. According to GRIERSON 1976, p. 286, they were not put into circulation since only a few patterns were produced. Spassky–on the contrary–believed that this undated ducat, precisely imitating the Hungarian type and called *ugorskij* (*Hungarian*), was a regular coin that circulated in Russia. In the 15th century Hungary indeed dominated the supply of gold flowing into Russia. Spassky cited a document of 1484 stating that a Moscow gold coin was sent by the grand prince to two foreign craftsmen employed in his service to use for travelling expenses ("*na protor*"). He also mentioned that Potin had discovered a reference to Moscow gold coins attributable to the early part of Ivan III's reign. SPASSKY 1960, p. 108-109 and fig. 76. See also POTIN 1975; HUGHES 1993.

[34] LESNIKOV 1961; KIRCHNER 1966; BIRNBAUM 1993. For the Grand Prince of Moscow the annexation of Novgorod with its rich trade and its large dependent territory represented a huge increase in power, resources and prestige. He was therefore named *Ivan the Great*.

[35] FISHER 1943; FENNELL 1961; HEINSIUS 1962; DOLLINGER 1964; RABA 1967a; ATTMAN 1973; ANGERMANN 2002a.

[36] DOLLINGER 1964, p. 290, 363, 384.

[37] LLOYD 1991, p. 363: « *to that extent its closure was more of a symbol than a critical blow* ».

[38] HUGHES 1993.

[39] ANGERMANN 2002c.

[40] FISHER 1943; ATTMAN 1973, chapter V.

After Novgorod had fallen under the control of Ivan III, the city remained an important economic center.[41] It kept its own system of account that was also used in Pskov, another important town economically turned toward the West.[42] When the Novgorod and Pskov silver *dengi* were finally struck, their mass was double that of the Moscow dengi. The silver rouble-ingot was not produced anymore but the name 'rouble' survived as a unit of account. In Novgorod the rouble was equal to 216 dengi while the rouble of account of Moscow was equivalent to 200 dengi.[43]

5. The appearance of the kopeck in Moscow

In 1534 the young Ivan IV became grand prince of Moscow (*knjaz veliki vseja Rusi*). That year, his mother Elena Glinskaya introduced a monetary reform: together with the traditional silver denga, the silver coin struck since the fourteenth century, a new coin with double the mass and value was added to the monetary system of the grand princes of Moscow, which soon became the Russian monetary system. The traditional 'horseman brandishing a sword' on the denga of Vasili III Ivanovich (1505-1533) remained on the new small denga but now represented the grand prince. On the new larger silver coin, the mounted grand prince holding a downward lance was depicted.[44] This new coin was issued in the name of Ivan IV and came to be called *kopje* (lance, spear) or *kopejnaja denga* ('denga with the lance' and also 'lance money'.) Later, the diminutive *kopejka* (little lance) was popularly applied to these pieces, called kopecks in the West. Kopecks were initially mentioned in the Pskov Chronicles for year 7043 (1535 A.D.) which cited a decree for issuance of new silver coins without alloy. This way the kopeck was worth two silver dengi.

At this time the Novgorod denga was called *novgorodka* and the Moscow denga *moscowka*. After the monetary reform of 1534, Novgorod and Pskov lost their semi-independence and their minting privileges. The new Moscow rouble, a money of account worth 200 dengi, was given the value of 100 kopecks while the Novgorod rouble of account of 216 dengi was replaced by the Moscow rouble of account.

Ivan IV became tsar and grand prince of all the Russian lands (*tsar i knjaz veliki vseja Rusi*) in 1547. He died in 1584 with the name Ivan the Terrible and was succeeded by his son Feodor Ivanovich (1584-1598) and Feodor's brother-in-law Boris Feodorovich Godunov (1598-1605). Boris Godunov had married the daughter of Ivan IV and, after the death of Feodor Ivanovich, Godunov was elected tsar by the Zemski Sobor (the 'assembly of the land'), the first Russian parliament. After Godunov's death in 1605 the 'Time of Troubles' (*smut*) began. Godunov's son, Feodor Borisovich Godunov, governed for only a few months in 1605 and an impostor, a first False Dmitri (1605-1606) till 1606. A Boyar, Vasili Shuiski (1606-1610), became tsar in 1606. In 1607 a second False Dmitri appeared and claimed the Russian throne. In 1610, a third Dmitri, acclaimed by a mob of Cossacks, was captured within months and executed in Moscow. Finally, at the head of an army, a son of the Polish king Sigismund, Vladislav Sigismundovich, occupied Moscow and the throne during the

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[41] ATTMAN 1973; ATTMAN 1981.
[42] KIRCHNER 1966.
[43] SPASSKY 1967, p. 103.
[44] This reform prescribed striking 300 kopecks in the *grivna skalovaja* which brought the theoretical mass of the kopeck to 204 g/300 = 0.68g each. In old units this was 4,800 doli/300 = 16 doli. The mass of the denga was accordingly 8 doli or 0.34g. A half-denga or *polushka* was also struck and the rouble was counted at 100 kopecks = 200 dengi = 400 *polushki*. In the old *grivna skalovaja* of 204 g were accordingly struck 1,200 *polushki* of 0.17g.

years 1610-1612. The Time of Troubles came to an end in 1613, after the Zemski Sobor elected Michaïl Feodorovich (1613-1645) to be the new tsar, the first of the Romanov dynasty.

6. Dates on Novgorodian kopecks

It was during the reign of Feodor Ivanovich that dated coins first appeared in Russia. Dated coins had already been minted regularly for a few centuries in Western Europe where these dates were first written in Roman numerals and later replaced by dates in Arabic numerals.[45] Under western influence, the earliest dates appeared on coins issued in Novgorod, the "*window to the West*", in 1596. Dates were added only on the *Novgorodka*, the kopeck struck in the mint of Novgorod. They did not appear on coins struck in other Russian mints except in Pskov, the other western Russian town, where dated kopecks were struck in 1599. The writing of the date was quite different from what it was in the West. Like the Russian alphabet and calendar, Russian reckoning and numbers are derived from the Byzantine ones. In the old Russian era the dates were shown by the corresponding Russian letters, the Old Cyrillic letters (Church Slavonic):

Byzantine numbers			Russian numbers			
α = Λ = 1	ι = I = 10	ρ = P = 100	а, Я, А = 1	І = 10	АІ = 11	Р = 100
β = В = 2	κ = К = 20	ς = Σ = 200	В = 2	К = 20	ВІ = 12	С = 200
γ = Г = 3	λ = Λ = 30	τ = Т = 300	Г = 3	Л = 30	ГІ = 13	Т = 300
δ = Δ = 4	μ = М = 40		Д = 4	М = 40	ДІ = 14	У = 400
ε = Е = 5	ν = N = 50		Е = 5	Н = 50	ЕІ = 15	Ф = 500
ς = S = 6			S = 6	Ѯ = 60	SІ = 16	Х = 600
ζ = Z = 7			З = 7	О = 70	ЗІ = 17	Ѱ = 700
η = Н = 8			И = 8	П = 80	ИІ = 18	ѿ = 800
0 = Θ = 9			Θ = 9	У = 90	ѲІ = 19	Ц = 900
						҂ = 'thousands'

Because the dates were reckoned from the 'Creation of the World' (which was believed to be 5508 B.C.), the initial numeral of the date, as recorded on documents, letters and coins at the end of the sixteenth century (c. 7100 Anno Mundi), was understood to be 7 and this numeral and the 'thousands' symbol ҂ were always omitted.[46] Only two numerals, and sometimes three, were used. On the kopeck issued in 1596 the letters under the horse НО·РД mean 'Novgorod 104' and indicate year 7104 from 'the foundation of the World' or 7104 – 5508 = 1596. The kopecks of the next years have НО·РЕ (Novgorod 105 or 1597), НОРЅ (Novgorod 106 or 1598), НО·Р3 (107 or 1599). In 1599 a kopeck of Pskov also gave a date: ПС·Р3.[47]

A few years later the date РЅІ (116 or 1608) was added on Novgorod kopecks of Vasili Ivanovich Shuiski (1606-1610), and, two years later, РІИ indicated 118 or 1610.[48] During the Swedish occupation of Novgorod (1611-1617) dated kopecks

[45] On dating systems used on coins: ROCKWELL 1974; LEVINSON 2007.
[46] In 1492 A.D. or 7000 Anno Mundi the first numeral was supposed to be kept for one millennium.
[47] SPASSKY 1960, p. 117, fig. 82, 5.
[48] At the end of the sixteenth century the mass of the kopeck had been kept unchanged (0.68g) since the reform of Elena Glinskaya in 1534. During Shuiski's reign, gold was valued at ten times the

were also issued.[49] Michaïl Feodorovich (1613-1645), the first tsar of the Romanov dynasty, struck a kopeck in Novgorod with РКЄ (= 125 or 7125 – 5508 = 1617.)[50]

7. Dated coins of Tsar Alexei Michaïlovich (1645-1676)

7.1. The dated 1654 rouble and polupoltinnik

In 1654, the year of the reunion of the Ukraine with Russia, Tsar Alexei Michaïlovich (1645-1676) decided to bring into circulation silver coins with the value of a rouble by restriking talers purchased from foreign merchants. After having them obliterated on both sides, they were struck with an obverse showing the tsar riding a horse to the right and holding a sceptre. On the reverse the value РУБЛЬ ('rouble') appeared under the two-headed eagle[51] and, above it, the Cyrillic date РѮБ or 162 for 7162, or 7162 – 5508 = 1654 A.D. The quarter rouble, *polupoltina* or *polupoltinnik*, was also struck with the same date РѮБ on talers cut into four equal parts.[52] The silver rouble of 1654 was worth 64 old kopecks, still in circulation, and the polupoltina 16 kopecks. At the same time the Moscow mint issued copper *jefimki*, round poltinniks or half-roubles in the naive belief that the copper coins would circulate at the value of the silver ones.

7.2. The date 1655 in Arabic numerals on countermarked large western silver coins

At the beginning of 1655, the devalued rouble was withdrawn from circulation and only the old silver kopecks remained **as** the legal currency. The Moscow Mint started to countermark leeuwendaalders, patagons, ducatons and talers circulating in Russia, thus producing a Russian coin. The round countermark showed the mounted tsar holding the downward lance, the normal obverse of a kopeck, and above it, in a rectangle, the date 1655 in Arabic numerals. The large silver coin bearing these two countermarks, called *jefimok*,[53] was legally valued at 64 kopecks.[54]

8. The chekhi of Sevsk of 1686

In 1686, a billon coin of only a quarter silver content, called *chekh*, was mechanically struck in Sevsk for circulation in the regained territory of Little Russia (Ukraine). It was issued in the names of co-rulers Peter I and Ivan V during their older sister Sophia's regency (1682-1689) and bore the date 1686 in Arabic numerals.[55]

After 1655, this was the second time a Russian coin bore a 'western' date with Arabic numerals and using the Julian calendar. The circulation area of the chekhi was limited

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value of silver and the *ugorskij*, the Hungarian gold ducat of about 3.4g, had a value of 34g silver. This corresponded to exactly 34g/0.68 g = 50 kopecks or a half-rouble.

[49] SPASSKY 1960, p. 117, fig. 83, 4-6.

[50] SPASSKY 1960, p. 119, fig. 86, 10.

[51] ALEF 1966.

[52] SPASSKY 1960, p. 127, fig. 91, 9-10.

[53] The old name for taler was *Joachimsthaler*, the large silver coin produced in the old center of Joachimsthal (Jahimov in Bohemia.) It passed in Russian as *jefimok* (plural *jefimki*) and meant 'large silver coin', or taler.

[54] SPASSKY 1960, p. 128.

[55] On the obverse the chekh shows the crowned double eagle within a circular legend formed by the Latin initials I A P A D G C & M D T M & P & A R A for I(oannes) A(lexii Filius) P(etrus) A(lexii Filius) D(ei) G(ratia) C(zari) & M(agni) D(uces) T(otius) M(agnae) & P(arvae) & A(lbae) R(ussiae) A(utocratores). The Latin legend on the reverse is MON(eta) NOV(a) FACTA SIEV(sk) A(nno) 1686. SPASSKY 1960, p. 135; SEVERIN 1965, p. 20, no. 8.

to the western part of Russia, close to territories using the Julian or Gregorian calendars.

9. Undated and dated silver coins of Peter the Great, 1696-1699

9.1. Undated altyns

The production of *wire money*, dengi and kopecks of oval shape, continued under the regency of Sophia (1682-1689), the older sister of Peter the Great (1689-1725).[56] But new and larger coins were also created to meet the needs of a rapidly growing economy. A silver coin with a value higher than 1 kopeck was struck in Moscow. The new coin, still issued on an oval flan, was valued at 3 kopecks and called *altyn*.[57] As on the kopeck, it showed the mounted tsar holding the downward lance and a six-line legend on the reverse. Altyns were struck in the name of Ivan V, Peter's brother,[58] in his own name and in both names during Sophia's regency. They bear no date except in the year 1700 on an altyn[59] mentioning the Cyrillic date СИ or 208.

9.2. Dated silver kopecks

Dates expressed in Cyrillic letters reappeared on silver kopecks of Peter in 1696-1699.[60] Under the horse, the letters СДГ mean 204 Goda (ГОДА = year) or 7204 – 5508 = 1696. Very large quantities of dated kopecks were also issued in the next three years: СЕ = 205 or 7205 – 5508 = 1697, СS = 206 or 1698 and СЗ = 207 or 1699.

9.3. Dated silver half-roubles

In 1699 the first known silver poltina (half-rouble or 50 kopecks) was struck in Moscow with a Cyrillic date, that normally should have been СЗ = 207 or 1699 A.D., but the Cyrillic З was replaced by the Greek letter Σ in the date at the end of the reverse legend: СΣ ГОДУ[61].

10. The Adoption of the Julian calendar by Peter the Great

After his journey to Western Europe in 1697-1698 Peter the Great decided to modernize his country and undertook reforms in most of the political, military, maritime, economic, religious, social and monetary fields.[62] The Russian alphabet was simplified and, on 1 January 1700, he eliminated the old Russian calendar and adopted the Christian era based on the Julian calendar. Numbering of the years began in Russia from 'the birth of Christ' (*Anno Domini*) from now on instead of from 'the

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[56] LAPA 1967.

[57] The *altyn* was an old unit of account and stemmed from the Tatar word *alti* meaning *six*. Altyn was equal to six dengi or 3 kopecks. SPASSKY 1960, p. 105.

[58] Ivan died in 1696 when Peter became sole tsar.

[59] SEVERIN 1965, p. 21, n° 17.

[60] During the 17th century the theoretical mass of the kopeck was lowered to the 1/480th part of the *grivna skalovaja* (204 g/480 = 0,425 g), that of the denga to 1/960th part (0,213 g) and that of the polushka (half-denga) to 1/1.920th part (0,106 g). The mass of the kopeck was thus reduced from 16 doli (0,68 g) to 10 doli (0,425 g), the denga from 8 (0,34 g) to 5 (0,213 g) and the polushka from 4 (0,17 g) to 2 ½ doli (0,106 g). Expressed in the later unit of mass, the *funt* (pound; German: *Pfund*; Dutch: *pond*), the double of the *grivna skalovaja* (408 g) or 9.600 doli, the later kopeck was the 1/960th part of the *funt* (10 doli).

[61] This unique specimen is in the collection of the Hermitage Museum in Saint Petersburg. SPASSKY 1960, p. 143, fig. 104 (pattern poltinas, 1699); SEVERIN 1965, p. 21, n° 16 and pl. 1, 16.

[62] CRACRAFT 2003.

Creation of the World' (*Anno Mundi*). Peter did not adopt the Gregorian calendar but the Julian, that was still in use in neighbouring protestant countries[63] and in England, but had long since been abandoned in large parts of catholic Western Europe in favor of the Gregorian calendar.[64] Before Peter's reform, the year started on 1 September (which ended Russia's tax year) but the tsar fixed the starting day of the year on 1 January: the day after December 31, 7208 (January 1, 7208) was named January 1, 1700.[65]

Bond, Giry and Strubbe dated the introduction of the New Year style in Russia on 1 January 1725.[66] However, Peter's decree, dated December 19, 7208/1699 and published by Lamont, indicates clearly that the day after December 31, 7208 was January 1st, 1700:

« (...) *And at present the year 1699 since the birth of our Lord is approaching its end, and on the first of the coming January will conjointly begin the new year of 1700 and the new century* (...) *the Grand Emperor has decreed ... to write from the first of this January the year 1700 since the birth of our Lord* ».[67]

11. Cyrillic dates on Russian coins according to the Julian calendar

11.1. Silver coins

From that year 1700 (1700 + 5508 = 7208 in the old calendar) coins were dated in accordance with the new chronology in *Anno Domini* and no longer in *Anno Mundi*. In the old calendar СИ or 208 was 7208 and corresponded to 1700 in the Julian calendar (7208- 5508 = 1700.) To mark this number, an inclined line crossed by two small lines was indicated in front of the corresponding letter A to represent 1000: ҂А. The date 1700 was written ҂АѰ since Ѱ was 700. Sometimes ҂ is missing and even the A before Ѱ. On some coins a date ѰВІ should be inscribed in full ҂АѰВІ or 1712. The adoption of the new dating is shown clearly on an altyn struck in 1700: the Old Cyrillic date СИ, that appeared for the first time on altyns issued that year, was revised on some coin dies into ҀѰ (700).[68] The inscriptions of numbers, thus also dates, were marked with a line bar (̃) called *titlo* above the number or date. This tradition had also originated in Byzantium.

In that same year 1700, as a first stage of Peter's monetary reform, the newly built Mint in Moscow began minting mechanically round silver coins, 10 dengi (5 kopecks), *grivennik* (10 kopecks), *polupoltinnik* (1/4 rouble), *poltina* (1/2 rouble) and rouble,[69] on which Cyrillic numeral dates were also used between 1700 and 1722. The dates were ҂АѰ (1700), ҂АѰА (1701), ҂АѰВ (1702), ҂АѰГ (1703),... and the last ones ҂АѰКА (1721) and ҂АѰКВ (1722).

11.2. Copper coins

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[63] Several protestant states adopted the Gregorian calendar in 1700.
[64] ANISOMOV 1993; TAYLOR 2005.
[65] This reform aroused the opposition of the Eastern Church. ROSSOVSKAJA 1936; ACHELIS 1954. In 1709 the calendar (the Julian calendar) was first printed in Russia, 127 years after the Gregorian calendar had been introduced in Poland, Italy, Spain and Portugal.
[66] BOND 1875a, BOND 1875b, p. 128, GIRY 1894, p. 103 and STRUBBE 1960, p. 52, 59.
[67] LAMONT 1966, p. 23-24.
[68] SEVERIN 1965, p. 21, n° 18.
[69] The irregular oval-shaped kopecks, similar to the earlier kopecks, continued well into the reign of Peter and circular kopecks were first struck in 1713.

It was also in 1700 that Peter the Great began his mechanically struck round copper coinage, all bearing Cyrillic dates, in the new Moscow mint, which produced all copper coins until 1756.[70] Different values were issued: 1/8 kopeck (*polupolushka*), 1/4 kopeck (*polushka*), 1/2 kopeck (denga), kopeck (in 1704), 5 kopecks (in 1723). In 1712 both writings ≠AΨBI and ≠AΨIB occured. On the denga and the kopeck the dates were Cyrillic until 1717.

11.3. Gold coins

Ducats and double ducats (chervonetz and double chervonetz) were minted with Cyrillic dates: ≠AΨA (1701), ≠AΨB (1702), ... 'til ≠AΨ3 (1707). None were struck in 1708 and 1709.[71]

12. Replacement of dates in Cyrillic numerals by Arabic numerals on coins of Peter the Great

12.1 Silver coins

In 1706 and 1707, Peter again issued *checki* and, this time, also half-*checki* for the provinces of White and Little Russia. They bore Peter's effigy, the double eagle and no value but Cyrillic dates ≠AΨS and ≠AΨ3. In 1707-1709 checki were struck with Arabic numerals.[72]

At the same time a date with Arabic numerals appeared on a rouble, a half-rouble and a quarter rouble in 1707, and again in 1710. Arabic numerals appeared also on the 3 kopecks of 1711, the 3 kopecks, the 10 kopecks, the half-rouble and the rouble of 1712. But a 10 kopecks of 1712 again had a Cyrillic date.

In 1713, all silver coins bore dates with Arabic numerals. They appeared on altyns, 5 kopecks (*pjatachok*), 10 kopecks and half-roubles in 1713 and 1714.[73] In 1713 the coinage reform touched the kopeck, which now was mechanically struck in round shape. Old kopecks continued circulating for a few years and were withdrawn from circulation at the end of 1717. In 1713 and 1714 round kopecks were also struck with Arabic numerals in the date on the reverse, under the eagle. 'Wire' kopecks were again issued in 1715.[74]

In 1718 and 1719 Cyrillic dates were again used except on the 10 kopecks which had these dates in Arabic numerals. In 1720, 1721 and 1722, all dates were again Cyrillic. On the 10 kopecks of 1720 some were Cyrillic, others Arabic.[75] Starting with 1723, dates were written with Arabic numerals on all the silver coins. In the new capital, Saint Petersburg, founded in 1703, the new mint built in this town (С.П.Б.) commenced issuing coins in 1724, all dated with Arabic numerals.[76] This chaotic 'back-and-forth' reform shows clearly the resistance of popular tradition against the coercive and authoritative reforms of Peter the Great.[77]

12.2. Copper coins

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[70] BREKKE 1977, p. 9, 11.
[71] SEVERIN 1958, p. 1-3.
[72] SEVERIN 1965, p. 29-33.
[73] SEVERIN 1965, p. 35-37; SPASSKY 1967, p. 150, 157.
[74] SEVERIN 1965, p. 35-37.
[75] SEVERIN 1965, p. 37-44.
[76] BREKKE 1977, p. 12.
[77] ANISOMOV 1993.

In 1710, 1714 and 1718-1722 dates also appeared in Arabic numerals on the copper polushka. On some polushkas the date was composed of mixed Cyrillic and Arabic numerals, for example 17K for 1720 or 17K1 for 1721, minted together with dates in Cyrillic numerals and dates in Arabic numerals.[78] On the denga and the kopeck, Arabic numerals appeared in 1718[79] and again in 1724 on the 2 kopecks (*groschen*) and in 1723-1725 on the 5 kopecks-piece (*pjatak*).[80]

12.3. Gold coins

The change to dates with Arabic numerals happened rather quickly and definitively on the gold coins which faced much less popular resistance since these coins were used by merchants and in international trade. Starting with 1710 all Russian gold coins bore dates with Arabic numerals. In 1711, a Russian coin was used for the first time for political reasons. After the capture of the fortress of Azov in 1696 and the Russo-Turkish war of 1710-1711, followed by the Treaty of Pruth (12 July 1711), Azov was returned to Turkey. On the ducat of 1711 the eagle is holding four charts (maps) in its beak and talons symbolising Peter the Great's sovereignty over the four seas: the Baltic, White, Caspian and Black Seas, but, after the return of Azov to Turkey, the 1711 ducats were recalled.[81]

13. Adoption of the Gregorian calendar in 1918

Peter the Great died on January 28, 1725. The Julian calendar (*starij stil*) continued to be used 'til the 20th century. The Gregorian calendar starting January 1 (*novij stil*), was only adopted in February 1918 by suppressing 13 days:[82] The day after January 31, 1918 (old style) was called February 14, 1918 (new style).[83]

14. Conclusion

After having reckoned the year date *ab urbe condita* (754 B.C), the Roman Republic adopted the Julian calendar in 46 B.C., with the year starting on January 1. The *Anno Domini* replaced the Republican dating in 526 A.D., and, starting from 1582, the Gregorian calendar replaced the Julian calendar in most of the Catholic states. In the Byzantine Empire the Anno Mundi calendar was used to reckon the years from the "Creation of the World", an event that was supposed to have taken place in 5508 B.C. The grand prince of Kiev and later all the Russian Lands adopted this Anno Mundi era and the Russian calendar also followed the years from the "Creation of the World". The first date, written in Old Cyrillic, appeared on a Novgorodian kopeck in 1596. A few coins bearing dates with Arabic numerals were issued during the 17th century. Other kopecks with Cyrillic dates were struck in the Moscow Mint in 1696-1699. Tsar Peter the Great imposed the Julian calendar in the Russian state on 1 January 1700. Dates continued to be written in Cyrillic on the new, mechanically produced silver, gold and copper coins while Arabic numerals also appeared in some years. From 1710, all gold coins bore definitively dates with Arabic numerals and after 1722 only dates with Arabic numerals were shown on all silver and copper coins.

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[78] BREKKE 1977, p. 26-27.
[79] BREKKE 1977, p. 28-34.
[80] BREKKE 1977, p. 34.
[81] SEVERIN 1958, p. 1-3.
[82] MILANKOVITCH 1924.
[83] STRUBBE 1960, p. 47 and n. 8.

Illustrations

1. Feodor Ivanovich (1584-1598), kopeck 1596, Novgorod, MELNIKOVA 1989, 2.
2. Feodor Ivanovich (1584-1598), kopeck 1597, Novgorod, MELNIKOVA 1989, 4.
3. Feodor Ivanovich (1584-1598), kopeck 1598, Novgorod, MELNIKOVA 1989, 5.
4. Alexei Michaïlovich (1645-1676), rouble, 1654, Moscow, KAIM, pl. 3.
5. Alexei Michaïlovich (1645-1676), jefimok, 1655, countermarked on a rijksdaalder 1651 of West-Frisia,Jean Elsen & ses Fils s.a., Auction 88, 10 June 2006, lot 1792.
6. Peter the Great (1689-1725), poltina, 1699, Moscow, SEVERIN 1965, pl. 1, 16.
7. Peter the Great (1689-1725), kopeck, 1701, Moscow.
8. Peter the Great (1689-1725), rouble, 1704, Moscow, SEVERIN 1965, pl. 3, 138.
9. Peter the Great (1689-1725), rouble, 1710, Moscow, SEVERIN 1965, pl. 7, 264.
10. Peter the Great (1689-1725), altyn, 1714, Moscow, SPASSKY 1967, p. 147, fig. 109, 2.
11. Peter the Great (1689-1725), altyn, 1718, Moscow, SPASSKY 1967, p. 147, fig. 109, 3.
12. Peter the Great (1689-1725), rouble, 1719, Moscow, SEVERIN 1965, pl. 9, 435.
13. Peter the Great (1689-1725), rouble, 1723, Moscow, SEVERIN 1965, pl. 11, 607.

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1↑ 3↓
(enlarged 1.5×)

2↑ 7↓
(enlarged 1.5×)

10
(enlarged 1.5×)

11
(enlarged 1.5×)

4↑ 5↓

6

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12

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