

PREPARED IN COLLABORATION WITH  
RUSSIAN ACADEMY OF SCIENCES  
MONGOLIAN ACADEMY OF SCIENCES  
JILIN UNIVERSITY  
KOREAN INSTITUTE OF GEOSCIENCE AND  
MINERAL RESOURCES  
GEOLOGICAL SURVEY OF JAPAN/AIST

**EXPLANATION**

**CONTACTS, FAULTS, AND SYMBOLS**

- Sedimentary contact bordering overlap assemblage; contacts between terranes
- Active subduction zone
- Post-Accretion Faults**
  - Thrust
  - Rift
- Symbols**
  - Astrobleme
  - Major icefield
  - Lake
  - Shoreline

**TERRANES IN LATE PRECAMBRIAN AND PHANEROZOIC OROGENIC BELTS**

- Cratonal**
  - BY, Baydrag terrane; KA, Kan terrane; OH, Okhotsk terrane
- Passive Continental Margin**
  - AR, Arginsky; CA, Central Angara; CTK, Central Taimyr superterrane - Kolosovsky; DR, Darba; ID, Idemreg; KNG, Nagondzha (Kolyma-Omolon superterrane); KOV, Omulevka (Kolyma-Omolon superterrane); KY, Kotelnik; MM, Marny; OL, Oldoy; SA, Sanglien; UR, Urmi; VS, Voznesenka; WAG, West Angara
- Continental Margin Turbidite**
  - ACH - Anui-Chuya, AT - Altai; CHR, Charysh; GA, Govi Altai; HV, Hovd; KR, Kara; KNG, Nagondzha (Kolyma-Omolon superterrane); KR, Kular-Nera; LN, Lan; UB - Ulniya-Bom; UN, Ullan; WSY, West Sayan; ZRA, Zhuravlevsk-Amur River
- Continental Margin Arc**
  - Ol, Orhon-Ikatsky; TG, Tsagaan Uul-Guershans; ZA, Zavshan; ZN, Zhanguangcailing
- Island Arc**
  - BA, Beltianshan-Atasbogd; BM, Baikali-Muya; BN, Baaran; CTC, Central Taimyr superterrane - Chelyuskyn terrane; DN, Dongjiumqin-Nuhedavaa; DZ, Dzhdia; ED, Edren; GS, Gurvasayhan; IS, Isakov; KK, Kizir-Kazir; KPR, Kyushu-Palau; LA, Laoling; LG, Laoyaling-Grodekoy; LK, Lake; MO, Mandaloo-Olor; ND, Nora-Sukhotin-Duoboshan; NRS, North Sayan; OM, Ondum; RA, Rudny Altai; SAL, Salair; SG, Sergeevka; SK, South Kitakami; TN, Tokoro-Nemuro; TR, Terpeniy; TT, Telbes-Kilat; TU, Tunka; UL, Uimen-Lebed; UO, Uluog; WB, Waizunger-Baaran
- Oceanic Terranes and Cenozoic Oceanic Basin**
  - HL, Herlen terrane; ea, Eurasia oceanic basin; pb, Pacific Ocean basin; sh, Shikoku back-arc basin
- Accretionary Wedge A, Dominantly Turbidites with Lesser or No Oceanic Rocks**
  - AM, Akiyoshi-Maizuru; BG, Bayanleg; DZE, Dzhebash; HD, Hangay-Dauria; JT, Japan trench; KBN, Kalba-Naryn; KABAR, KPD, Polosny-Debin (Kolyma-Omolon superterrane); KUV, Kuvai; MN, Mandan; MR, Maralika; NN, Nankai trench; OD, Olakit-Delunuran; SHM, Shimanto; TK, Terekta; WSA, West Sakhalin
- Accretionary Wedge Terrane B, Dominantly Oceanic Rocks with Lesser Turbidites**
  - AM, Akiyoshi-Maizuru; ANU, Aniva; BD, Badzhai; BR, Barata; GL, Galam; HE, Heilongjiang; HU, Hui; IM, Imjingang; KRT, Kurtushiba; MC, Mino Tamba Chichibu; MK, Malokhingansk; NA, Naganhada; OG, Ogcheon; OS, Onosky; SH, Shalauru; SL, Solon; SMA, Samarkand; SS, Sosunay-Langeri; TD, Tukuringa-Dzhagdy; TH, Taukha; WD, Wundumiao; ZO, Zoolen
- Metamorphic**
  - BK, Belaya-Kitoy; BRG, Barguzin; CTF, Central Taimyr superterrane - Faddey; CTM, Central Taimyr superterrane - Mamont; HM, Hamar-Davaa; HX, Hutaguul-Xilinhot; JI, Jiamusi; QT, Qinghe-Tsai; SCJ, South China Craton - Jiaonan Ultra-High Pressure; SW, Sambagawa; WST, West Stanovoy; XC, Xichangjing

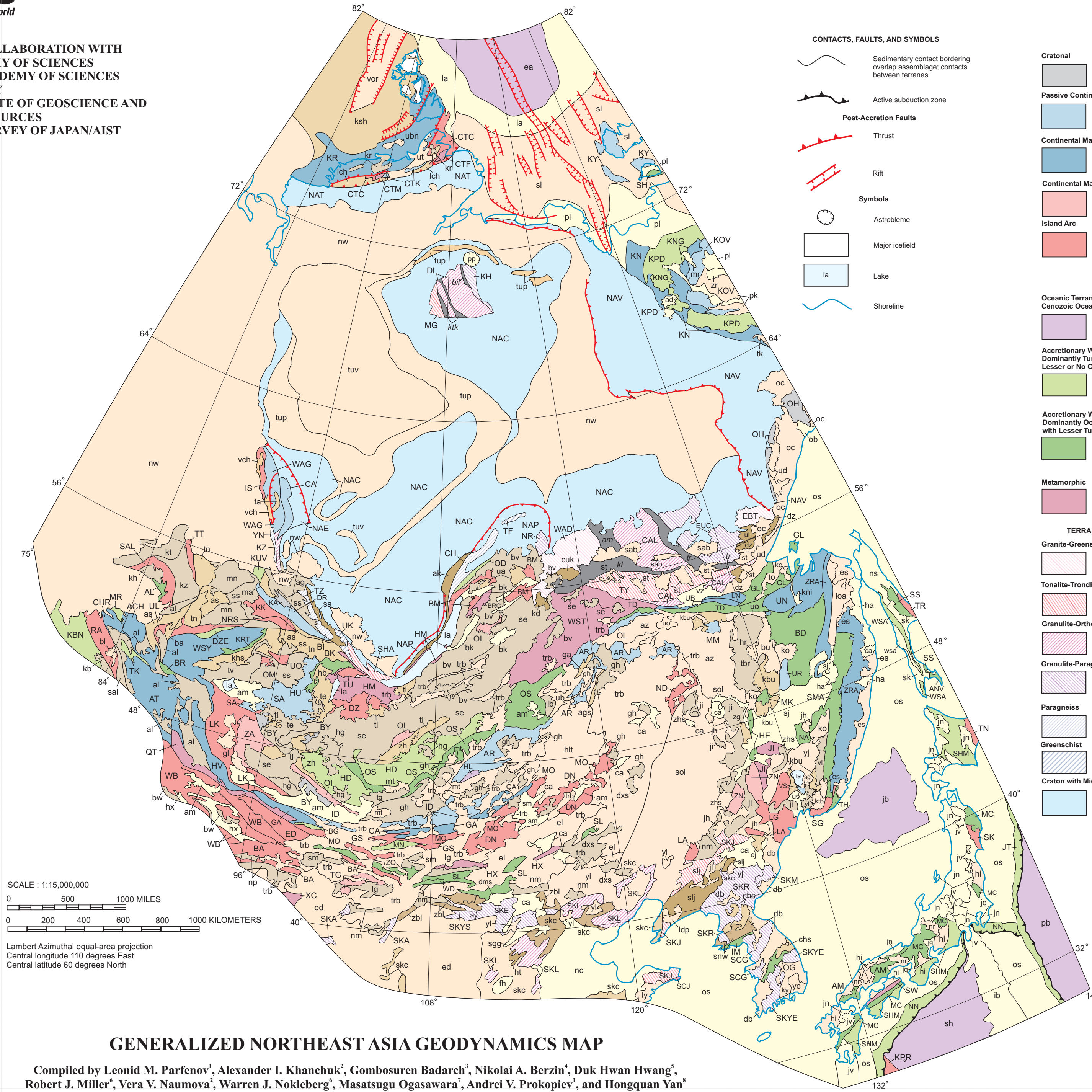
**TERRANES IN EARLY PRECAMBRIAN CRYSTALLINE BASEMENT OF CRATONS AND CRATONS WITH MIOGEOCLINAL OVERLAP**

- Granite-Greenstone**
  - EBT, East Aidan superterrane - Batonga; SKYS, Sino-Korean Craton - Yinshan; WAD, West Aidan
- Tonalite-Trochjemitic-Gneiss**
  - MG, Magan; SHA, Sharizhalgay; SKJ, Sino-Korean Craton - Jilin-Liaoning-East Shandong; TY, Tynda
- Granulite-Orthogneiss**
  - CAL, Central Aidan superterrane - Daldyn; KZ, Kuzeev; SKL, Sino-Korean Craton - West Liaoning-Hebei-Shanxi
- Granulite-Paragneiss**
  - EUC, East Aidan superterrane - Uchur; KH, Khapchan; NR, Nechera; SCG, South China (Yangzi) Craton - Gyenggi; SKA, Sino-Korean Craton - Alashan; SKE, Sino-Korean Craton - Erduosi; SKM, Sino-Korean Craton - Macholyyong; SKR, Sino-Korean Craton - Rangnim; SKYE, Sino-Korean Craton - Yeongnam
- Paragneiss**
  - BI, Birusa; CH, Chuja; TZ, Tumanshet; YN, Yenisey
- Greenschist**
  - TF, Tonod; UK, Unk-lya terrane
- Craton with Miogeoclinal Overlap and Craton Margin**
  - NAC, North Asian Craton; NAE, North Asian Craton Margin - East Angara fold and thrust belt; NAP, North Asian Craton Margin - Baikali-Patom fold and thrust belt; NAT, North Asian Craton Margin - South-Taimyr fold belt; NAV, North Asian Craton Margin - Verkhoyansk fold and thrust belt

**OVERLAP AND STITCH ASSEMBLAGES**

(Assemblages shown by lighter hues according to age; for overlap assemblages with long age span, the color of the youngest major unit is shown)

- Cenozoic**
  - ad, Adycha intermountain sedimentary basin; am, Altai-Mongolia Intermontane basin; bk, Baikali sedimentary-volcanic rift belt; ca, Central Asian plateau basalt belt; dms, Damaoqi sedimentary basin; fh, Fenhe sedimentary basin; ha, Hasan-Amurian volcanic-plutonic belt; hx, Hexizoulang sedimentary basin; ib, Izu-Bonin volcanic belt; jb, Japan basin; jn, Japan Cenozoic sedimentary basin; jg, Japan Quaternary sedimentary basin; kn, Konino-Nimelien sedimentary basin; la, Laptev Sea continental slope; mr, Moma rift sedimentary basin; nc, North China sedimentary basin; ns, North Sakhalin sedimentary basin; ob, Okhota sedimentary basin; os, Offshore sedimentary assemblages; pl, Primorsk lowland and Laptev Sea shelf sedimentary cover; pp, Popigay astrobleme; sgg, Shangganhe sedimentary basin; sj, Sanjiang sedimentary basin and Yishu graben; sk, South Sakhalin sedimentary basin; sol, Songliao sedimentary basin; vs, Verkhnezya sedimentary basin; wsa, West Sakhalin sedimentary basin; us, Ussuri sedimentary assemblage; zr, Zyrjanka sedimentary basin
- Mesozoic (Triassic, Jurassic, and Cretaceous)**
  - az, Amur-Zeya sedimentary basin; bl, Belokurikha plutonic belt; bu, Bureya sedimentary basin; db, Daebu granite belt; ed, Erduosi sedimentary basin; el, Erian sedimentary basin; es, East Sikhote-Alin volcanic-plutonic belt; gl, Great Lakes sedimentary basin; hi, Hiroshima granitic plutonic belt; hit, Hailar-Tamsag sedimentary basin; hr, Khairinsk granitic assemblage; jh, Jihei volcanic and plutonic belt; jl, Jilin-Liaoning-East Shandong volcanic-plutonic belt; ko, Khingan-Okhotsk volcanic-plutonic belt; kb, Khungari-Tatbi granitic belt; ky, Kyongsga sedimentary basin; ldp, Liaodong plutonic belt; loa, Lower Amur sedimentary basin; ly, Laiyang volcanic-sedimentary basin; ml, Mongol-Transbaikalian volcanic-plutonic belt; nr, North rhyolite volcanic belt; nw, Northern, Eastern, and Western Siberia sedimentary basins; oc, Okhotsk-Chukotka volcanic-plutonic belt; pk, Post-amalgamation assemblages of the Kolyma Omolon superterrane - Uyandina Yasachnaya volcanic belt and llin Tas back-arc basin; sab, South Aidan sedimentary basin; sl, Sedimentary basin of Laptev Sea shelf; st, Stanovoy granite belt; tk, Tas-Kyblatyt magmatic belt; to, Torom sedimentary basin; tr, Trans-Sakhalin-Daxinganling sedimentary-volcanic-plutonic belt; tuv, Tungus plateau basalt, sills, dikes, and intrusions - plutonic-rich part; tuv, Tungus plateau basalt, sills, dikes, and intrusions - volcanic-rich part; ub, Upper Borzja marine molasses basin; ubn, Uboynaya granite-syenite belt; ud, Uda volcanic-plutonic belt; um, Umliekam-Ogodzhin volcanic-plutonic belt; to, Torom sedimentary basin; tr, Trans-Sakhalin-Daxinganling sedimentary-volcanic-plutonic belt; uv, Ust-Taimyr sedimentary assemblage; vor, Voronin trough sedimentary basin; yc, Yucheon volcanic belt; yj, Yanji-Jixi-Raohe overlap sedimentary assemblage; yl, Yanliao volcanic-sedimentary basin and plutonic belt
- Middle and Late Paleozoic (Devonian through Permian)**
  - ag, Agul-Rybinsk molasse basin; al, Altai volcanic-plutonic belt; bv, Barguzin-Vitim granitoid belt; bw, Beltianshan-Waizunger sedimentary basin; dks, Daxingling sedimentary overlap assemblage; gh, Gobi-Khankask-Daxinganling volcanic-plutonic belt; hg, Hangay plutonic belt; ji, Jihei plutonic belt; kb, Kalba-Naryn plutonic belt; kh, Khmelev back-arc basin; kr, Kuznetsk-Sayan plutonic belt; kt, Kolyvan-Tom back-arc basin; kz, Kuznetsk orogenic basin; lb, Lower Borzja fore-arc basin; lg, Lugynol volcanic-sedimentary basin; mn, Minusa molasse basin; nm, North marginal plutonic belt of North China Platform; np, North Tarimu plutonic belt; sal, South Altai back-arc basin; se, Selenga sedimentary-volcanic plutonic belt; sg, Sinegorsk volcanic-plutonic assemblage; skc, Sino-Korea platform sedimentary cover; tl, Telmen plutonic belt; sm, South Mongolian volcanic-plutonic belt; ss, South Siberian volcanic-plutonic belt; tr, Tyra-Bureinsk granitic assemblage; te, Tes volcanic-plutonic belt; tg, Tamirgol sedimentary basin; tv, Tuva molasse basin; vl, Vladivostok sedimentary and magmatic assemblage; zhs, Zhanguangcailing sedimentary overlap assemblage
- Late Neoproterozoic and Early Paleozoic (Vendian through Silurian)**
  - ags, Argun sedimentary basin; as, Altai-Sayan back-arc basin; ba, Biya sedimentary basin; chs, Chosun sedimentary basin; ej, East Jilin plutonic belt; ga, Gazimur sedimentary basin; hb, Hungeji-Bokson sedimentary overlap assemblage; kbu, Khanka-Bureya granitic belt; khs, Khemchik-Sistigkhem basin; ksh, Kara Sea shelf sedimentary cover; lch, Lenivaya-Chelyuskyn sedimentary assemblage; ma, Mana sedimentary basin; skc, Sino-Korea platform sedimentary cover; ta, Tatarika-Ayakhta collisional granitic belt; tl, Telmen plutonic belt; tn, Tamnola plutonic belt; ua, Upper Angara carbonate sedimentary basin; vch, Vorogovka-Chapa basin; zg, Zhanguangcailing plutonic belt; zh, Zag-Haraa turbidite basin
- Mesoproterozoic**
  - snw, Sangwon sedimentary basin; zbl, Zhangbei-Bayan Obo-Langshan rift-related metasedimentary and metavolcanic rocks
- Paleoproterozoic**
  - ak, Akitkan volcanic-plutonic belt; ay, Alashan-Yinshan plutonic belt; cuk, Udokan basin; Chara-Uchur rift system; dz, Dzhugdzhur anorthositic belt; ht, Hutuo rift basin; kd, Kadar granitic belt; sa, Sayan collisional granitic belt; sl, East Shandong-East Liaoning-East Jilin rift basin; tr, Taraka collisional granitic belt; ul, Ullan plutonic belt
- Major Melange Zones**
  - am, Amga tectonic melange zone; bl, Bilykh tectonic melange zone; kl, Kalar tectonic melange zone; ktk, Kotuykan tectonic melange zone; tr, Tyrkanda tectonic melange zone



SCALE : 1:15,000,000  
0 500 1000 MILES  
0 200 400 600 800 1000 KILOMETERS  
Lambert Azimuthal equal-area projection  
Central longitude 110 degrees East  
Central latitude 60 degrees North

**GENERALIZED NORTHEAST ASIA GEODYNAMICS MAP**

Compiled by Leonid M. Parfenov<sup>1</sup>, Alexander I. Khanchuk<sup>2</sup>, Gombosuren Badarch<sup>3</sup>, Nikolai A. Berzin<sup>4</sup>, Duk Hwan Hwang<sup>5</sup>, Robert J. Miller<sup>6</sup>, Vera V. Naumova<sup>2</sup>, Warren J. Nokleberg<sup>6</sup>, Masatsugu Ogasawara<sup>6</sup>, Andrei V. Prokopiev<sup>7</sup>, and Hongquan Yan<sup>8</sup>

Map generalized from: Parfenov, L.M., Khanchuk, A.I., Badarch, Gombosuren, Miller, R.J., Naumova, V.V., Nokleberg, W.J., Ogasawara, Masatsugu, Prokopiev, A.V., and Yan, Hongquan, with contributions on specific regions by Belichenko, V.G., Berzin, N.A., Bulgatov, A.N., Byamba, Jamba, Deikunenko, A.V., Dong, Yongsheng, Drii, S.I., Gordienko, I.V., Hwang, Duk Hwan, Kim, B.I., Korago, E.A., Kosko, M.K., Kuzmin, M.I., Orolmaa, Demberel, Oxman, V.S., Popeko, L.I., Rudnev, S.N., Sklyarov, E.V., Smelov, A.P., Sud, Sadahisa, Suprunenko, O.I., Sun, Fengyue, Sun, Jiapeng, Sun, Weizhi, Timofeev, V.F., Tret'yakov, F.F., Tomurtogoo, Ononjing, Vernikovsky, V.A., Vladimirov, A.G., Wakita, Koji, Ye, Mao, and Zedgenizov, A.N., 2003, Preliminary Northeast Asia geodynamics map (Paper Print-On-Demand and Web versions): U.S. Geological Survey Open-File Report 03-205, 2 sheets, scale 1:5,000,000.

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