US Options Daily Trade and Quote Guide

version 1.0 (Mar 2023)

algoseek | the market data company

We provide research market data for machine learning and quantitative trading

CONTACT US

We are here to help you do great things with our market and reference data. For questions, feedback, and other concerns, you may reach our team of experts using the following contact information:

algoseek customer support

support@algoseek.com

(+1) 646 583 1832

algoseek sales

sales@algoseek.com

(+1) 646 583 1832

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INTRODUCTION

algoseek's Daily Trade and Quote (TAQ) dataset for US Options on Equity, ETF, ETN, and ADRs is based on the top-of-book quotes (bids and asks) and all trades from the Options Pricing Authority (OPRA) feed, which includes the consolidated last sale and quotation information from the 16 option exchanges that the Securities and Exchange Commission has approved.

The entire trading session includes market hours from 9:30:00 to 16:00:00 ET (16:15:00 ET for some index and ETF options).

DAILY BAR CALCULATIONS

What's Included

Quotes are calculated from the National Best Bid Offer (NBBO) using:

- Firm Quote Bid NB
- Firm Quote Ask NB
- Customer Trade Interest Bid NB
- Customer Trade Interest Ask NB

What's Not Included

The bars do not include the following quote events:

- Open Interest
- Rotation Bid
- Rotation Ask
- Trade Interest

Please see the table below for the trade events that are excluded.

Table 1: Excluded Trades

Trade Condition	Description
A	Previously reported
B	Reported late and out of sequence
C	Transaction last reported and now canceled

F	Late report of opening and out of sequence
G	Transaction only one reported for day and is to be canceled
N	Transaction is at price agreed by floor personal
O	Cancel of stopped transaction
T	Benchmark trade

DATA ORGANIZATION AND FILE FORMAT

algoseek provides Options daily data in plain-text CSV files. Data files have fixed headers on top and rows of data corresponding to individual bars. Data is organized with one file per ticker per trading day. It means, for example, that daily trade and quote bars for all the AAPL call and put options for every strike on the expiration date March 3, 2020 for the trading date February 27, 2020 are consolidated in one file.

Table 3 below provides the name, base event, default value, a brief description, and data type for each data field (column) in the Options TAQ Minute Bar CSV file. Table column "Missing" indicates a default behavior in case the data field value is not present or cannot be calculated. The column value "Never" means that the data field value is always present.

Table 3: CSV File Fields Schema

Field	Type (Format)	Missing	Description
TradeDate	String (yyyymmdd)	Never	Trading date in yyyymmdd format
Ticker	string	Never	Symbol name
CallPut	string	Never	Option type (Call or Put) displayed as "C" or "P"
Strike	decimal	Never	Fixed price for buying or selling an option contract
ExpirationDate	String (yyyymmdd)	Never	Expiration date of option contract in yyyymmdd format
OpenBidTime	string (timestamp)	Blank	Time of open NBBO bid price
OpenBidPrice	decimal	Blank	NBBO price of the first bid
OpenBidSize	integer	Blank	Size with OpenBidPrice
OpenAskTime	string (timestamp)	Blank	Time of open NBBO ask price

OpenAskPrice	decimal	Blank	NBBO price of the first ask
OpenAskSize	integer	Blank	Size with OpenAskPrice
OpenTradeTime	string (timestamp)	Blank	Time of the first trade
OpenTradePrice	decimal	Blank	Price of the first trade
OpenTradeSize	integer	Blank	Number of contracts of the first trade
HighBidTime	string (timestamp)	Blank	Time of highest NBBO bid price
HighBidPrice	decimal	Blank	The highest NBBO bid price
HighBidSize	integer	Blank	Size of the highest bid price
HighAskTime	string (timestamp)	Blank	Time of highest NBBO ask price
HighAskPrice	decimal	Blank	The highest NBBO ask price
HighAskSize	integer	Blank	Size of the highest ask price
HighTradeTime	string (timestamp)	Blank	Time of the highest trade
HighTradePrice	decimal	Blank	Price of the highest trade
HighTradeSize	integer	Blank	Number of contracts of the highest trade
LowBidTime	string (timestamp)	Blank	Time of lowest NBBO bid price
LowBidPrice	decimal	Blank	The lowest NBBO bid price
LowBidSize	integer	Blank	Size of the lowest bid price
LowAskTime	string (timestamp)	Blank	Time of lowest NBBO ask price
LowAskPrice	decimal	Blank	The lowest NBBO ask price
LowAskSize	integer	Blank	Size of the lowest ask price
LowTradeTime	string (timestamp)	Blank	Time of the lowest trade
LowTradePrice	decimal	Blank	Price of the lowest trade

LowTradeSize	integer	Blank	Number of contracts of the lowest trade
CloseBidTime	string (timestamp)	Blank	Time of the last NBBO bid price
CloseBidPrice	decimal	Blank	NBBO price of the last bid
CloseBidSize	integer	Blank	Size with CloseBidPrice
CloseAskTime	string (timestamp)	Blank	Time of the last NBBO ask price
CloseAskPrice	decimal	Blank	NBBO price of the last ask
CloseAskSize	integer	Blank	Size with CloseAskPrice
CloseTradeTime	string (timestamp)	Blank	Time of the last trade
CloseTradePrice	decimal	Blank	Price of the last trade
CloseTradeSize	integer	Blank	Size with CloseTradePrice
Volume	integer	0	Total number of contracts traded during market hours
OpenInterest	integer	0	Open interest
CurbCloseBidTime	string (timestamp)	Blank	Time of the last NBBO bid price of the Curb session
CurbCloseBidPrice	decimal	Blank	NBBO price of the last bid of Curb session (17:00 ET)
CurbCloseBidSize	integer	Blank	Size with CurbCloseBidkPrice
CurbCloseAskTime	string (timestamp)	Blank	Time of the last NBBO ask price of the Curb session
CurbCloseAskPrice	decimal	Blank	NBBO price of the last ask of Curb session (17:00 ET)
CurbCloseAskSize	integer	Blank	Size with CurbCloseAskPrice
IndicatBidTime1600	string (timestamp)	Blank	Time of bid indicative value
IndicatBidPrice1600	decimal	Blank	Indicative value calculated for bid as of 16:00 ET
IndicatAskTime1600	string (timestamp)	Blank	Time of ask indicative value

IndicatAskPrice1600	decimal	Blank	Indicative value calculated for ask as of 16:00 ET

Timestamp

Event timestamp is in milliseconds, EST. The field format is HH:MM:SS.mmm where

HH: Hour

MM: Minute

SS: Seconds

mmm: Milliseconds

For example, 09:31:01.723

CURB SESSION

The Curb session was introduced on April 25, 2022. The Curb session is limited to options on SPX, VIX, and XSP underlying products only. Curb trading begins at 16:15 ET, immediately after the close of the RTH (Regular Trading Hours) session, and ends at 17:00 ET. During US holidays when the market is closed and during trading dates when there are early closes - the curb session is closed.

INDICATIVE VALUES

On October 26, 2020, Cboe started to calculate indicative marking prices for listed index options. The purpose of the 16:00 ET indicative marking prices is to allow alignment of final prices for Cboe traded products with the settlement of related instruments traded on other exchanges. For details see the Cboe page:
https://www.cboe.com/us/options/market_statistics/proprietary_index_marking_prices
Also, on April 16, 2021, MIAX Options Exchange started to calculate indicative values for SPIKE options:
https://www.miaxoptions.com/alerts/2021/04/13/miax-options-exchange-indicative-price-messages-proprietary-products